

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

**LIC-37 / 661-16.59 / 0.00**

**VILLAGE OF GRANVILLE  
GRANVILLE TOWNSHIP  
LICKING COUNTY**

**PROJECT DESCRIPTION**

BRIDGE REPLACEMENT AND WIDENING OF THE EXISTING SR 661 OVER SR 16 BRIDGE (LIC-661-0.030). WORK INCLUDES RECONSTRUCTION OF THE SR 37/661 & SR 16 INTERCHANGE RAMPS AND PAVEMENT WIDENING OF SR 37/661 FOR TURN LANES.

PROJECT EARTH DISTURBED AREA: 13 ACRES  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 2 ACRES  
NOTICE OF INTENT EARTH DISTURBED AREA: 15 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**

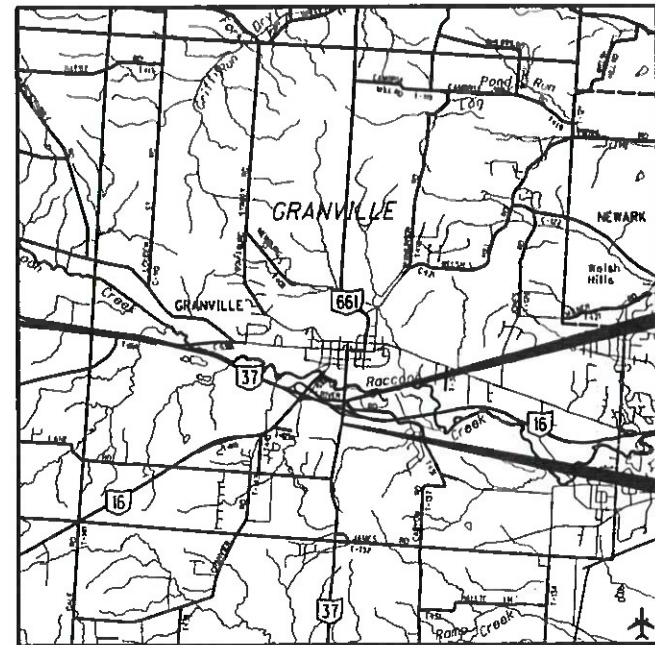
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE PART TIME CLOSING OF THE HIGHWAY TO TRAFFIC, AS NOTED ON SHEETS 31-35. DURING WHICH TIME DETOURS WILL BE PROVIDED AS SHOWN HEREIN. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

**CONFORMED SET**

APPROVED: *Jason P. Stang*  
DATE: 11/15/19 DISTRICT DEPUTY DIRECTOR

APPROVED: *Paul Markham*  
DATE: 11/26/19 DIRECTOR, DEPARTMENT OF TRANSPORTATION



END PROJECT  
STA. 380+50.00  
E.S.R. 661  
SLM 0.24

BEGIN PROJECT  
STA. 361+50.00  
E.S.R. 37  
SLM 16.59

**LOCATION MAP**

LATITUDE: 40° 03' 32" LONGITUDE: -82° 31' 16"  
SCALE IN MILES



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

**DESIGN DESIGNATION** S.R. 37/661

CURRENT ADT (2021)	7,370
DESIGN YEAR ADT (2041)	9,010
DESIGN HOURLY VOLUME (2041)	930
DIRECTIONAL DISTRIBUTION	53%
TRUCKS (24 HOUR B&C)	7%
DESIGN SPEED	45/35
LEGAL SPEED	45/35
DESIGN FUNCTIONAL CLASSIFICATION	URBAN MAJOR COLLECTOR
NHS PROJECT	NO

**DESIGN EXCEPTIONS:**  
SUPERELEVATION (RAMP F) 6/08/2018



PLAN PREPARED BY:  
OHIO DEPARTMENT OF TRANSPORTATION  
DISTRICT 5 PLANNING & ENGINEERING

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ENGINEERS SEAL:  
  
SIGNED: *Heather Ann Gilbert*  
DATE: 11/18/2019

ENGINEERS SEAL:  
  
SIGNED: *Christopher Shorb*  
DATE: 11/18/2019

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-2.1	7/17/15	MGS-1.1	1/19/18	MT-95.31	7/19/19	HL-10.11	7/19/19	TC-41.50	10/18/13	800-2019	10/18/19	ASBESTOS SURVEY REPORT	
BP-2.2	7/18/08	MGS-2.1	1/19/18	MT-95.41	7/21/17	HL-10.12	1/20/17	TC-42.10	10/18/13	809	10/18/19	06/07/18	
BP-3.1	10/18/19	MGS-3.1	1/19/18	MT-95.50	7/21/17	HL-10.13	7/20/18	TC-42.20	10/18/13	813	10/19/18		
BP-4.1	7/19/13	MGS-3.2	1/18/13	MT-96.11	1/18/19	HL-20.11	4/21/17	TC-51.11	1/15/16	823	7/18/14		
BP-5.1	1/18/19	MGS-4.2	7/19/13	MT-96.20	7/15/16	HL-20.14	1/18/19	TC-52.10	10/18/13	832	10/19/18		
		MGS-5.2	7/15/16	MT-96.26	1/18/19	HL-30.21	1/17/14	TC-52.20	7/20/18	840	1/18/19		
CB-2.1	7/20/18	MGS-5.3	7/15/16	MT-97.12	1/20/17	HL-30.22	1/17/14	TC-61.10	1/17/14	867	1/18/19		
CB-2.2	7/20/18			MT-99.20	4/19/19	HL-30.32	1/17/14	TC-61.30	7/19/19	878	1/18/19		
CB-3.2	1/15/16	HW-2.1	7/20/18	MT-99.60	7/15/16	HL-40.20	7/20/18	TC-65.10	1/17/14	902	7/19/19		
		HW-2.2	7/20/18	MT-101.60	1/20/17	HL-50.11	1/16/15	TC-65.11	7/21/17	913	4/21/17		
J-2.3	1/15/16			MT-101.70	7/20/18	HL-50.21	1/18/19	TC-71.10	1/19/18	916	1/19/18		
		RM-1.1	7/18/14	MT-101.75	7/15/16	HL-60.11	7/21/17	TC-81.21	1/18/19				
F-1.1	7/19/13	RM-4.2	10/24/19	MT-101.90	7/21/17	HL-60.31	1/18/19	TC-83.20	7/21/17	TC-73.20	7/21/17		
F-3.3	7/19/13	RM-4.3	7/18/14	MT-102.10	1/18/19			TC-85.10	1/18/19				
		RM-4.4	7/19/19	MT-102.20	4/19/19			TC-85.20	7/20/18				
DM-1.1	7/21/17	RM-4.5	7/21/17	MT-103.10	1/19/18	TC-12.30	1/19/18	AS-1-15	7/17/15				
DM-1.2	1/18/13	RM-4.6	7/19/13	MT-105.10	7/19/13	TC-21.20	7/20/18	AS-2-15	1/18/19				
DM-3.1	1/18/13	RM-5.1	7/18/14	MT-120.00	1/19/18	TC-22.10	10/18/13	GSD-1-19	1/18/19				
DM-4.1	1/18/19					TC-22.20	1/17/14	PCB-91	1/18/13				
DM-4.2	7/20/12			ITS-12.50	7/19/19	TC-41.10	7/19/13	SBR-1-13	7/20/18				
DM-4.3	1/15/16			ITS-50.10	7/19/19	TC-41.15	10/18/13	SICD-1-96	7/18/14				
DM-4.4	1/15/16					TC-41.20	10/18/13	SICD-2-14	7/18/14				
						TC-41.30	10/18/13	VPF-1-90	7/20/18				

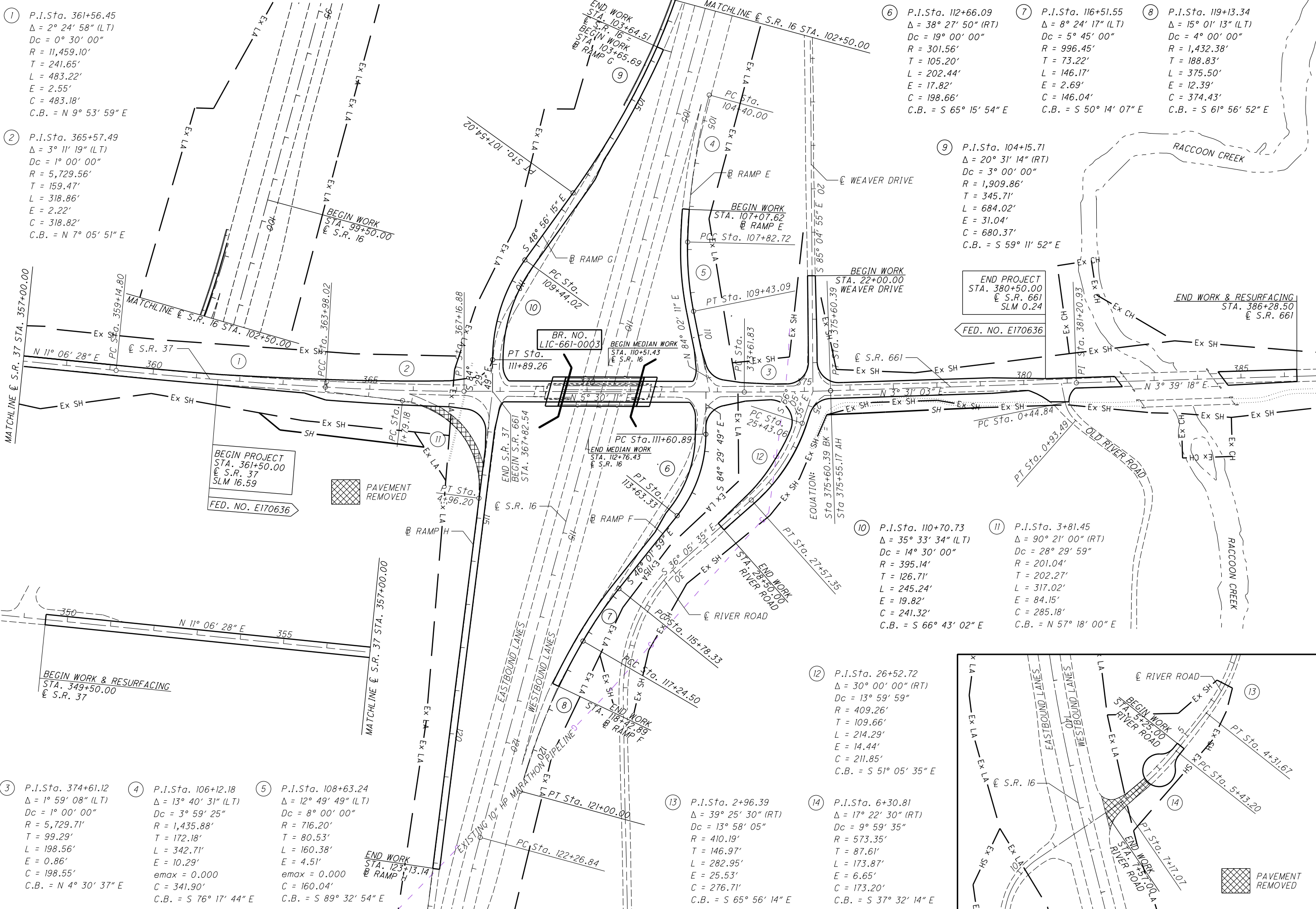
FEDERAL PROJECT NO. E 170 (636)  
PID NO. 92411  
CONSTRUCTION PROJECT NO. NONE  
RAILROAD INVOLVEMENT NONE  
LIC-37 / 661-16.59 / 0.00  
1/341

LIC - SR 37/SR 661-16.59/00.00  
200062 PID - 92411  
Dist 5 2/13/2020

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

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I:\ProjectData\LIC-924\Design\Roadway\Sheets\924\11\GB001.dgn Sheet 11/18/2019 1:43:42 PM bharlow



1 P.I.Sta. 361+56.45  
Δ = 2° 24' 58" (LT)  
Dc = 0° 30' 00"  
R = 11,459.10'  
T = 241.65'  
L = 483.22'  
E = 2.55'  
C = 483.18'  
C.B. = N 9° 53' 59" E

2 P.I.Sta. 365+57.49  
Δ = 3° 11' 19" (LT)  
Dc = 1° 00' 00"  
R = 5,729.56'  
T = 159.47'  
L = 318.86'  
E = 2.22'  
C = 318.82'  
C.B. = N 7° 05' 51" E

3 P.I.Sta. 374+61.12  
Δ = 1° 59' 08" (LT)  
Dc = 1° 00' 00"  
R = 5,729.71'  
T = 99.29'  
L = 198.56'  
E = 0.86'  
C = 198.55'  
C.B. = N 4° 30' 37" E

4 P.I.Sta. 106+12.18  
Δ = 13° 40' 31" (LT)  
Dc = 3° 59' 25"  
R = 1,435.88'  
T = 172.18'  
L = 342.71'  
E = 10.29'  
emax = 0.000  
C = 341.90'  
C.B. = S 76° 17' 44" E

5 P.I.Sta. 108+63.24  
Δ = 12° 49' 49" (LT)  
Dc = 8° 00' 00"  
R = 716.20'  
T = 80.53'  
L = 160.38'  
E = 4.51'  
emax = 0.000  
C = 160.04'  
C.B. = S 89° 32' 54" E

6 P.I.Sta. 110+70.73  
Δ = 35° 33' 34" (LT)  
Dc = 14° 30' 00"  
R = 395.14'  
T = 126.71'  
L = 245.24'  
E = 19.82'  
C = 241.32'  
C.B. = S 66° 43' 02" E

7 P.I.Sta. 116+51.55  
Δ = 8° 24' 17" (LT)  
Dc = 5° 45' 00"  
R = 996.45'  
T = 73.22'  
L = 146.17'  
E = 2.69'  
C = 146.04'  
C.B. = S 50° 14' 07" E

8 P.I.Sta. 119+13.34  
Δ = 15° 01' 13" (LT)  
Dc = 4° 00' 00"  
R = 1,432.38'  
T = 188.83'  
L = 375.50'  
E = 12.39'  
C = 374.43'  
C.B. = S 61° 56' 52" E

9 P.I.Sta. 104+15.71  
Δ = 20° 31' 14" (RT)  
Dc = 3° 00' 00"  
R = 1,909.86'  
T = 345.71'  
L = 684.02'  
E = 31.04'  
C = 680.37'  
C.B. = S 59° 11' 52" E

10 P.I.Sta. 110+70.73  
Δ = 35° 33' 34" (LT)  
Dc = 14° 30' 00"  
R = 395.14'  
T = 126.71'  
L = 245.24'  
E = 19.82'  
C = 241.32'  
C.B. = S 66° 43' 02" E

11 P.I.Sta. 3+81.45  
Δ = 90° 21' 00" (RT)  
Dc = 28° 29' 59"  
R = 201.04'  
T = 202.27'  
L = 317.02'  
E = 84.15'  
C = 285.18'  
C.B. = N 57° 18' 00" E

12 P.I.Sta. 26+52.72  
Δ = 30° 00' 00" (RT)  
Dc = 13° 59' 59"  
R = 409.26'  
T = 109.66'  
L = 214.29'  
E = 14.44'  
C = 211.85'  
C.B. = S 51° 05' 35" E

13 P.I.Sta. 2+96.39  
Δ = 39° 25' 30" (RT)  
Dc = 13° 58' 05"  
R = 410.19'  
T = 146.97'  
L = 282.95'  
E = 25.53'  
C = 276.71'  
C.B. = S 65° 56' 14" E

14 P.I.Sta. 6+30.81  
Δ = 17° 22' 30" (RT)  
Dc = 9° 59' 35"  
R = 573.35'  
T = 87.61'  
L = 173.87'  
E = 6.65'  
C = 173.20'  
C.B. = S 37° 32' 14" E

15 P.I.Sta. 112+66.09  
Δ = 38° 27' 50" (RT)  
Dc = 19° 00' 00"  
R = 301.56'  
T = 105.20'  
L = 202.44'  
E = 17.82'  
C = 198.66'  
C.B. = S 65° 15' 54" E

16 P.I.Sta. 112+66.09  
Δ = 38° 27' 50" (RT)  
Dc = 19° 00' 00"  
R = 301.56'  
T = 105.20'  
L = 202.44'  
E = 17.82'  
C = 198.66'  
C.B. = S 65° 15' 54" E

17 P.I.Sta. 116+51.55  
Δ = 8° 24' 17" (LT)  
Dc = 5° 45' 00"  
R = 996.45'  
T = 73.22'  
L = 146.17'  
E = 2.69'  
C = 146.04'  
C.B. = S 50° 14' 07" E

18 P.I.Sta. 119+13.34  
Δ = 15° 01' 13" (LT)  
Dc = 4° 00' 00"  
R = 1,432.38'  
T = 188.83'  
L = 375.50'  
E = 12.39'  
C = 374.43'  
C.B. = S 61° 56' 52" E

19 P.I.Sta. 104+15.71  
Δ = 20° 31' 14" (RT)  
Dc = 3° 00' 00"  
R = 1,909.86'  
T = 345.71'  
L = 684.02'  
E = 31.04'  
C = 680.37'  
C.B. = S 59° 11' 52" E

20 P.I.Sta. 110+70.73  
Δ = 35° 33' 34" (LT)  
Dc = 14° 30' 00"  
R = 395.14'  
T = 126.71'  
L = 245.24'  
E = 19.82'  
C = 241.32'  
C.B. = S 66° 43' 02" E

21 P.I.Sta. 3+81.45  
Δ = 90° 21' 00" (RT)  
Dc = 28° 29' 59"  
R = 201.04'  
T = 202.27'  
L = 317.02'  
E = 84.15'  
C = 285.18'  
C.B. = N 57° 18' 00" E

22 P.I.Sta. 26+52.72  
Δ = 30° 00' 00" (RT)  
Dc = 13° 59' 59"  
R = 409.26'  
T = 109.66'  
L = 214.29'  
E = 14.44'  
C = 211.85'  
C.B. = S 51° 05' 35" E

23 P.I.Sta. 2+96.39  
Δ = 39° 25' 30" (RT)  
Dc = 13° 58' 05"  
R = 410.19'  
T = 146.97'  
L = 282.95'  
E = 25.53'  
C = 276.71'  
C.B. = S 65° 56' 14" E

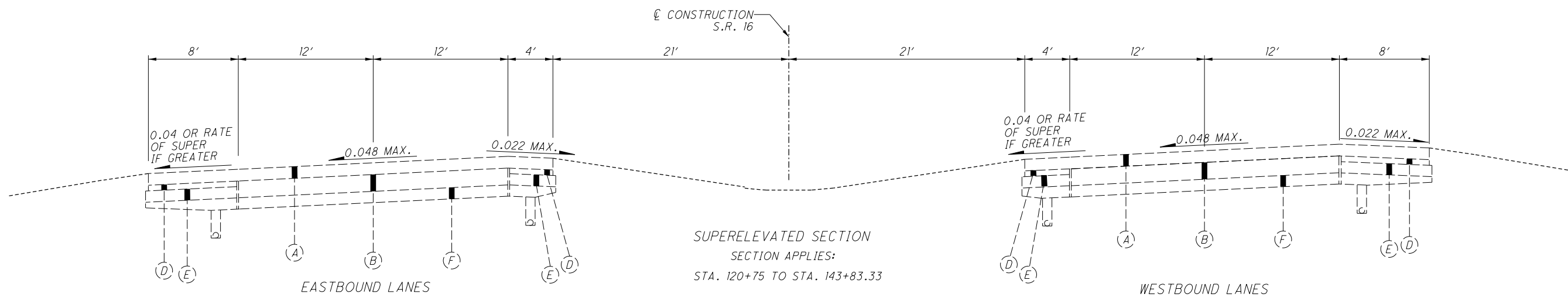
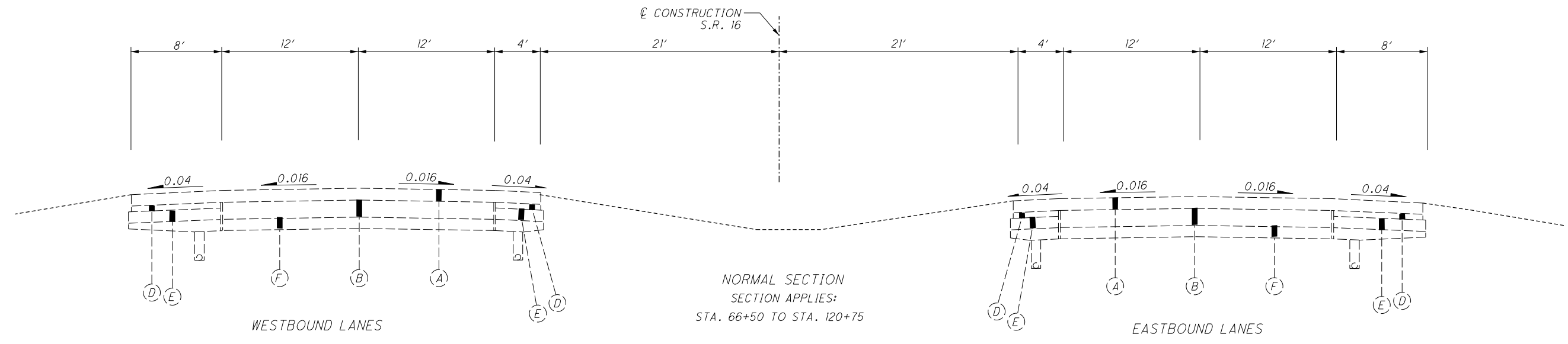
24 P.I.Sta. 6+30.81  
Δ = 17° 22' 30" (RT)  
Dc = 9° 59' 35"  
R = 573.35'  
T = 87.61'  
L = 173.87'  
E = 6.65'  
C = 173.20'  
C.B. = S 37° 32' 14" E



CALCULATED  
BRH  
CHECKED  
HAG

# SCHEMATIC PLAN

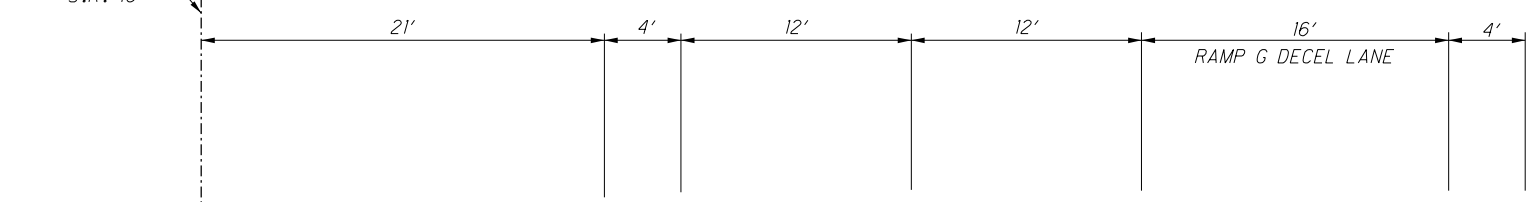
LIC-37 / 661-  
16.59 / 0.00



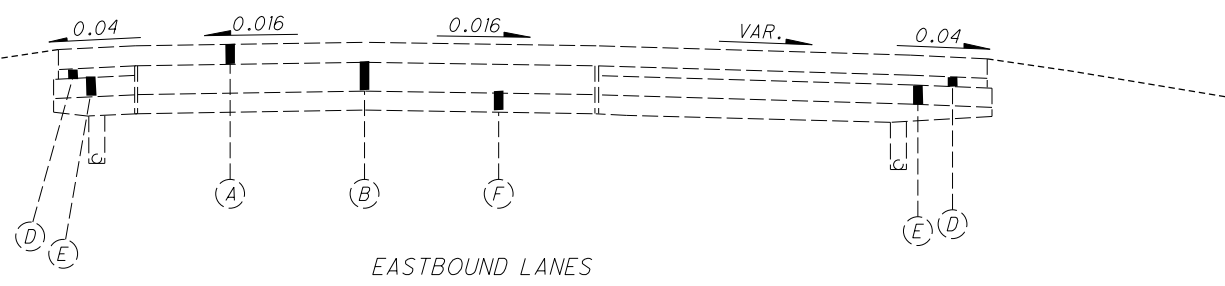
- (A) EXISTING 12" ASPHALT CONCRETE
- (B) EXISTING 9" CONCRETE
- (C) EXISTING 6" CONCRETE
- (D) EXISTING 3" ASPHALT CONCRETE
- (E) EXISTING 7" ASPHALT CONCRETE
- (F) EXISTING SUBBASE
- (G) EXISTING 2" ASPHALT CONCRETE
- (H) EXISTING 5" ASPHALT CONCRETE

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EX. CONSTRUCTION  
S.R. 16

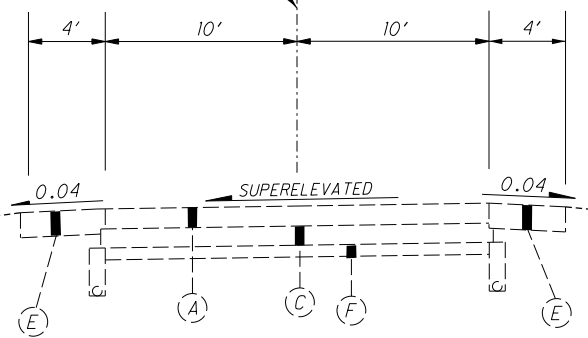


NORMAL SECTION  
SECTION APPLIES:  
STA. 100+10.00 TO STA. 103+65.69



EASTBOUND LANES

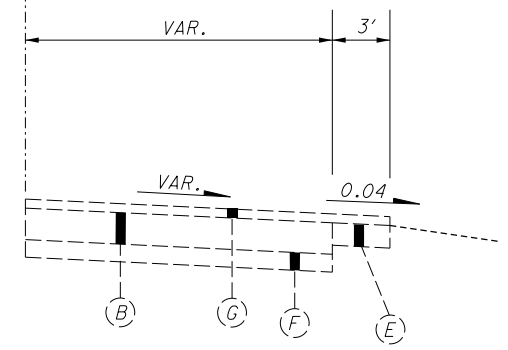
EX. S.R. 37



NORMAL SECTION  
SECTION APPLIES:  
STA. 360+00 TO STA. 367+25  
STA. 373+21 TO STA. 377+20

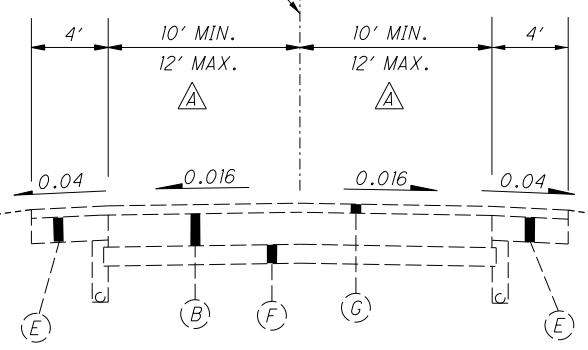
STATION EQUATION:  
STA. 375+55.17 AH =  
STA. 375+60.39 BK

EX. SLIP RAMP



SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 0+00 TO STA. 1+00

EX. S.R. 661

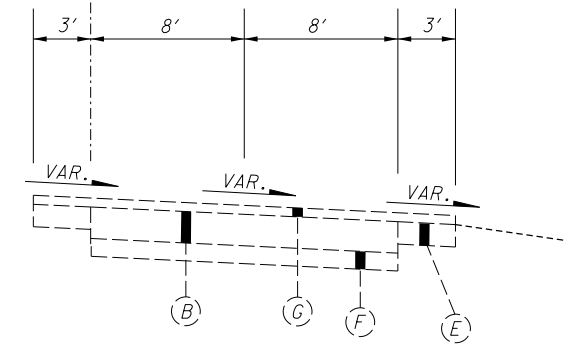


NORMAL SECTION  
SECTION APPLIES:  
STA. 367+25 TO STA. 373+21  
STA. 377+20 TO STA. 382+39

BRIDGE LIMITS  
STA. 368+80 TO STA. 372+10

▲ 10' FROM STA. 377+20 TO STA. 380+10  
12' FROM STA. 367+25 TO STA. 373+21  
FROM STA. 381+10 TO STA. 382+39

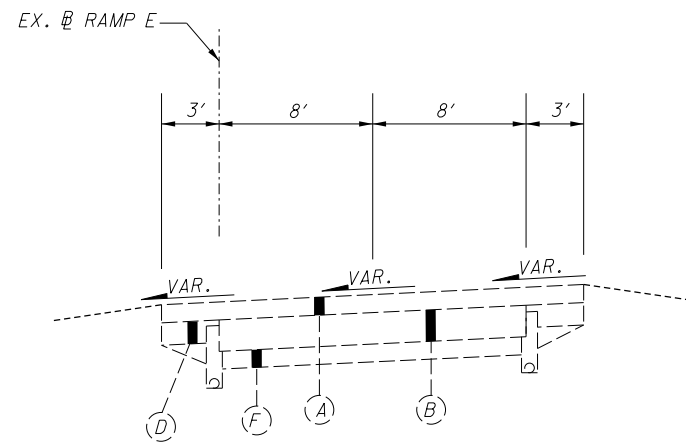
EX. SLIP RAMP



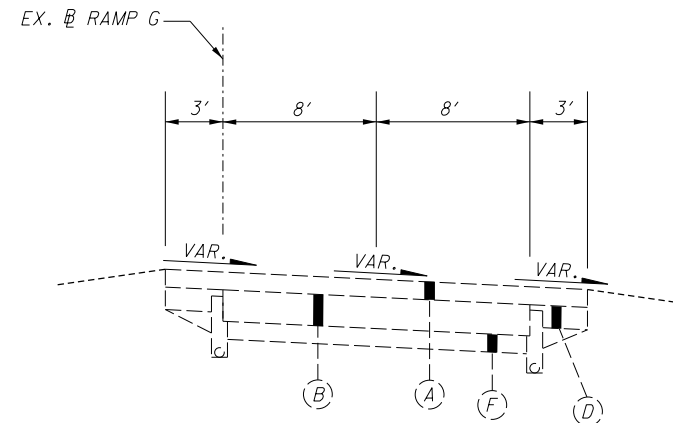
SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 1+00 TO STA. 4+96.20

- (A) EXISTING 12" ASPHALT CONCRETE
- (B) EXISTING 9" CONCRETE
- (C) EXISTING 6" CONCRETE
- (D) EXISTING 3" ASPHALT CONCRETE
- (E) EXISTING 7" ASPHALT CONCRETE
- (F) EXISTING SUBBASE
- (G) EXISTING 2" ASPHALT CONCRETE
- (H) EXISTING 5" ASPHALT CONCRETE

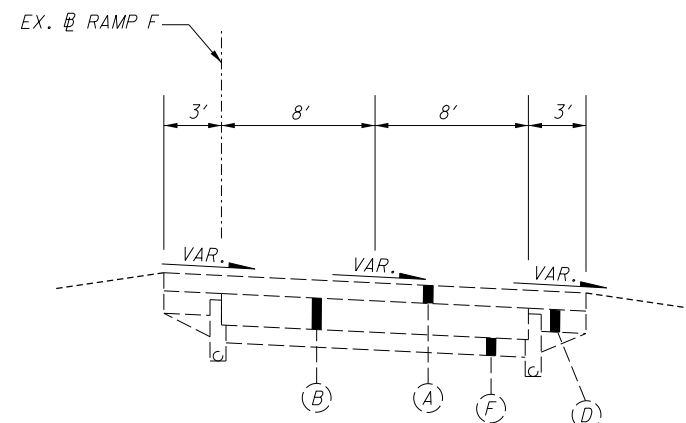
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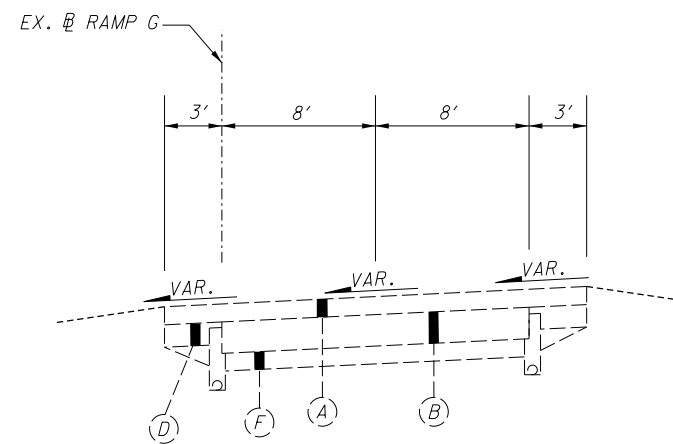
SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 104+40 TO STA. 111+20.13



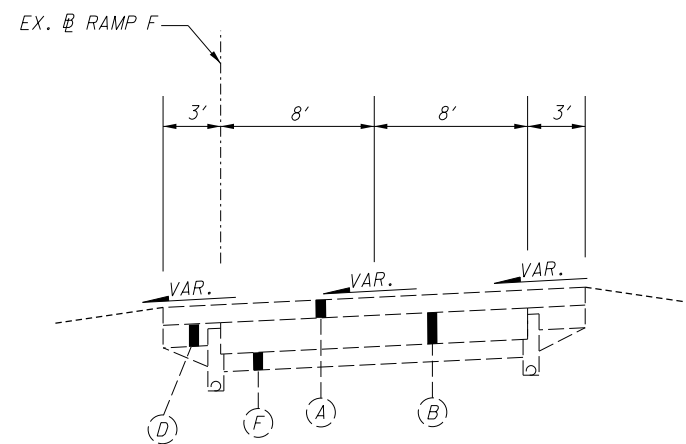
SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 100+70 TO STA. 106+00



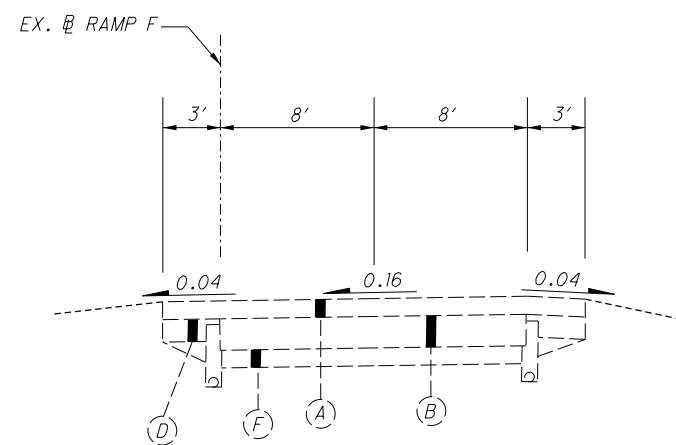
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SECTION APPLIES:  
STA. 110+86.32 TO STA. 113+00



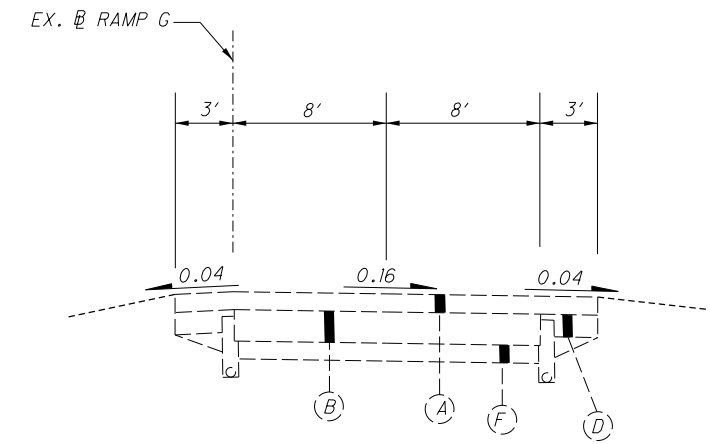
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SECTION APPLIES:  
STA. 110+00 TO STA. 112+44.6



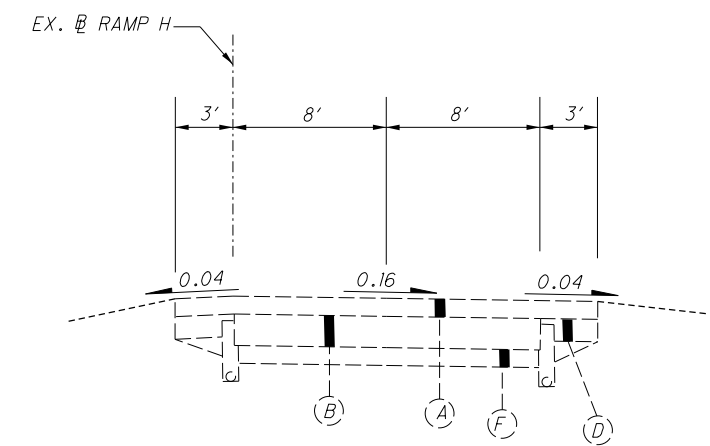
SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 116+00 TO STA. 121+00



SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 113+00 TO STA. 116+00



SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 106+00 TO STA. 110+00



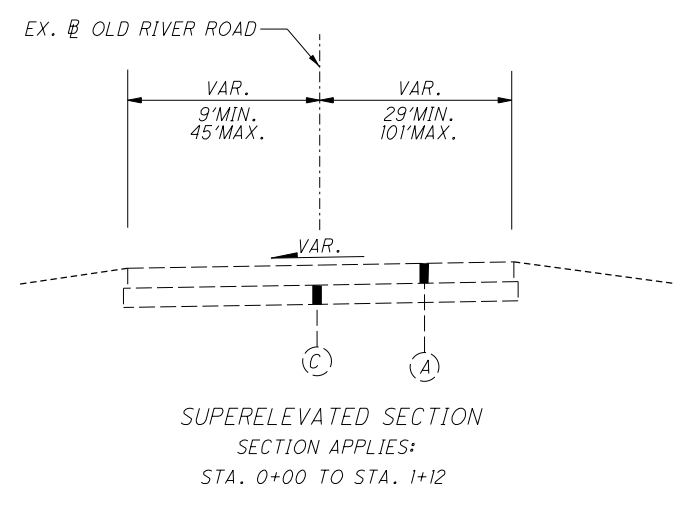
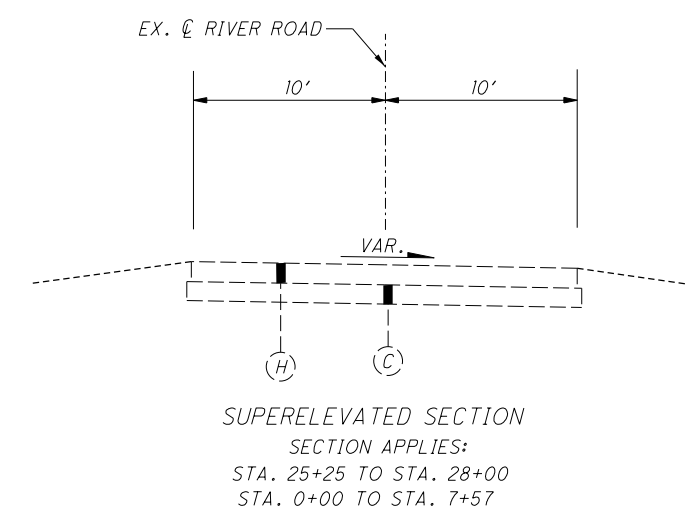
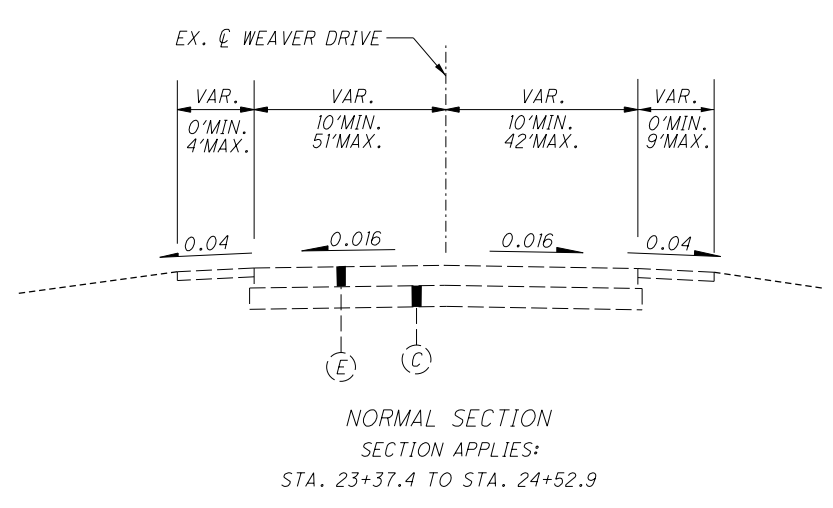
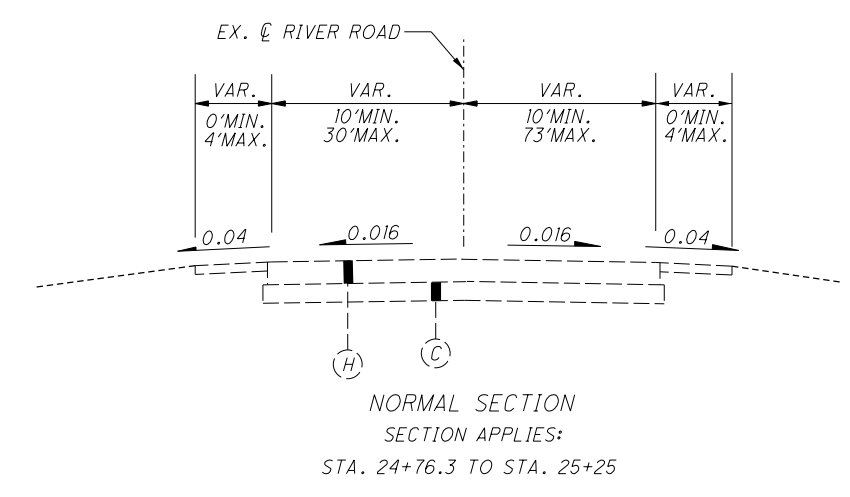
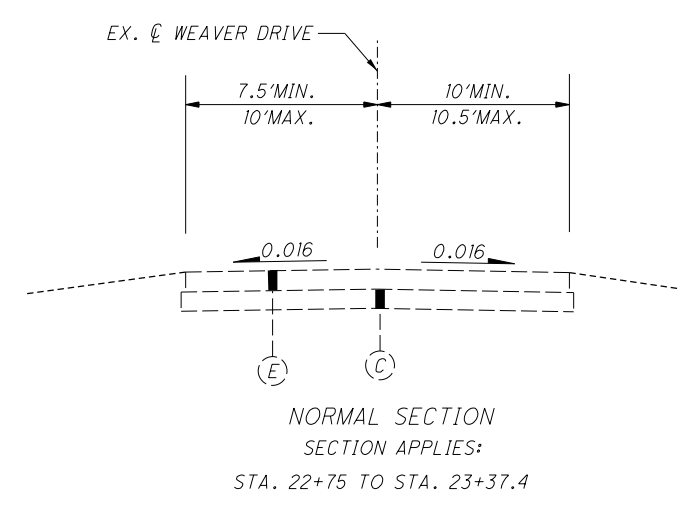
SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 112+18.72 TO STA. 127+75.21

- (A) EXISTING 12" ASPHALT CONCRETE
- (B) EXISTING 9" CONCRETE
- (C) EXISTING 6" CONCRETE
- (D) EXISTING 3" ASPHALT CONCRETE
- (E) EXISTING 7" ASPHALT CONCRETE
- (F) EXISTING SUBBASE
- (G) EXISTING 2" ASPHALT CONCRETE
- (H) EXISTING 5" ASPHALT CONCRETE

CALCULATED  
CHECKED

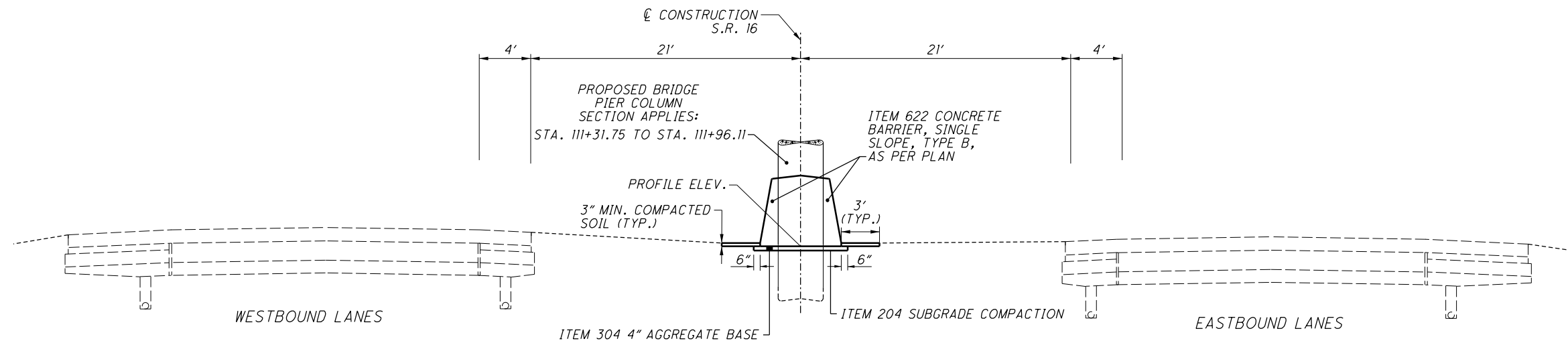
EXISTING TYPICAL SECTIONS - RAMPS

LIC-37 / 661-  
16.59 / 0.00



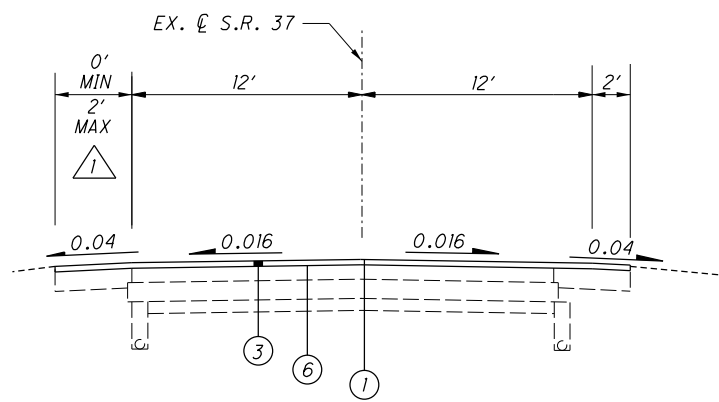
- (A) EXISTING 12" ASPHALT CONCRETE
- (B) EXISTING 9" CONCRETE
- (C) EXISTING 6" CONCRETE
- (D) EXISTING 3" ASPHALT CONCRETE
- (E) EXISTING 7" ASPHALT CONCRETE
- (F) EXISTING SUBBASE
- (G) EXISTING 2" ASPHALT CONCRETE
- (H) EXISTING 5" ASPHALT CONCRETE

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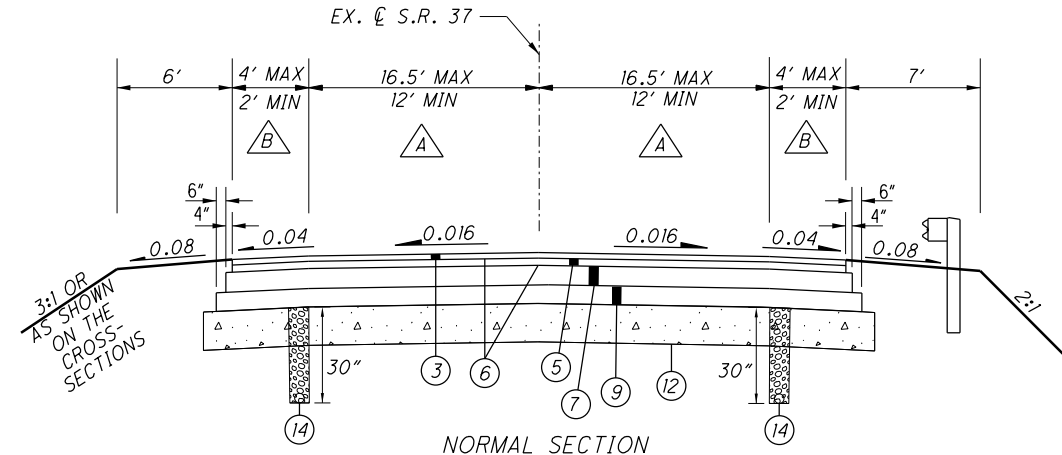
NORMAL SECTION  
SECTION APPLIES:  
STA. 110+51.43 TO STA. 112+76.43 = 225.00 FT.

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)



NORMAL SECTION  
SECTION APPLIES:  
STA. 349+50.00 TO STA. 361+50.00 = 1,200.00 FT.  
TOTAL = 1,200.00 FT.

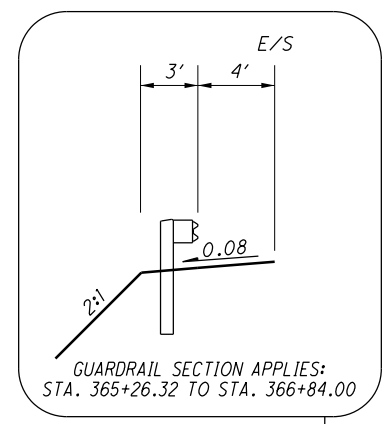
△ 1 0' FROM STA. 349+50.00 TO STA. 351+50.00



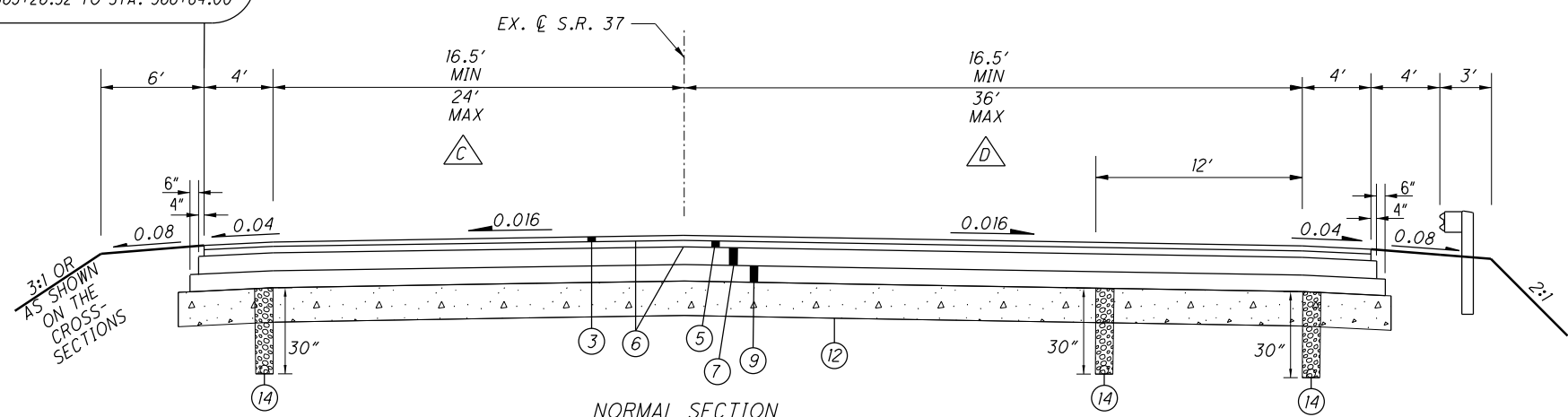
NORMAL SECTION  
SECTION APPLIES:  
STA. 361+50.00 TO STA. 363+50.00 = 200.00 FT.  
TOTAL = 200.00 FT.

△ A TAPERS FROM 12' @ STA. 361+50.00 TO 16.5' @ STA. 363+50.00

△ B TAPERS FROM 2' @ STA. 361+50.00 TO 4' @ STA. 362+00.00



GUARDRAIL SECTION APPLIES:  
STA. 365+26.32 TO STA. 366+84.00



NORMAL SECTION  
SECTION APPLIES:  
STA. 363+50.00 TO STA. 366+84.00 = 334.00 FT.  
TOTAL = 334.00 FT.

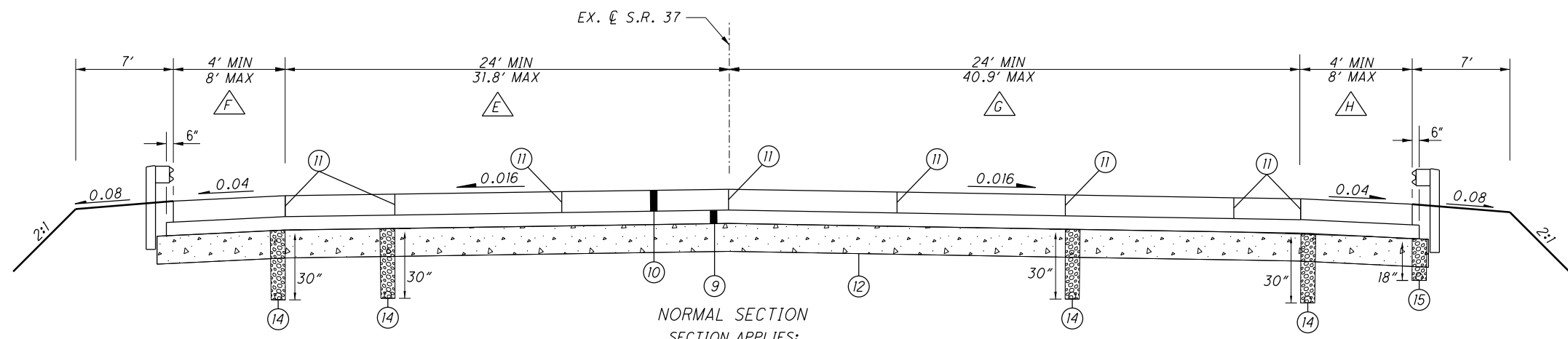
△ C TAPERS FROM 16.5' @ STA. 363+50.00 TO 24' @ STA. 366+84.00

△ D TAPERS FROM 16.5' @ STA. 363+50.00 TO 29.6' @ STA. 364+00.00  
TAPERS FROM 29.6' @ STA. 364+00.00 TO 36' @ STA. 366+84.00

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

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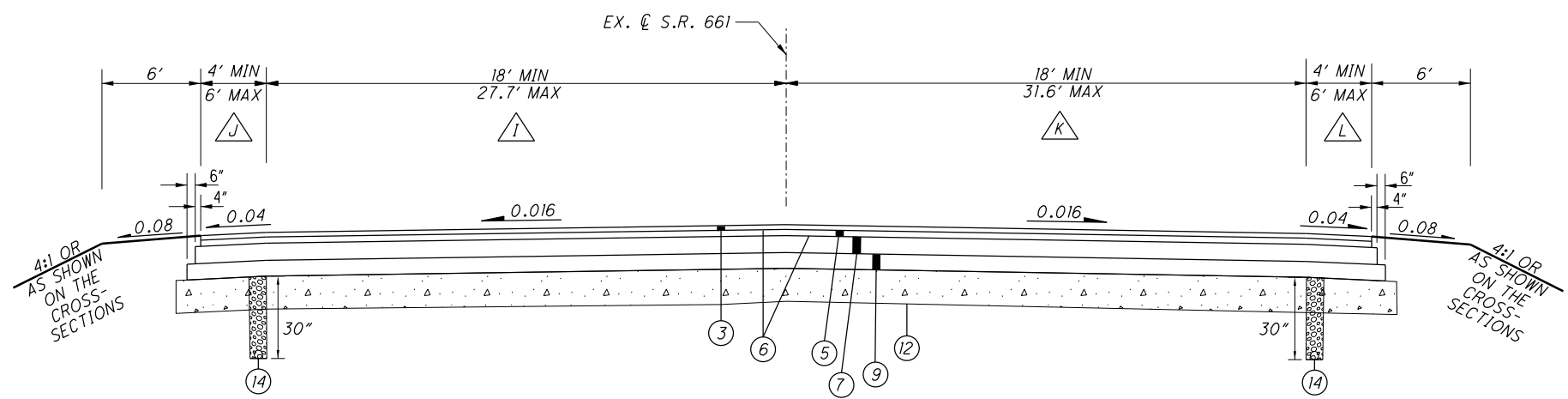


NORMAL SECTION  
SECTION APPLIES:  
STA. 366+84.00 TO STA. 369+12.50 = 228.50 FT.  
STA. 371+52.58 TO STA. 373+14.06 = 161.48 FT.  
TOTAL = 389.98 FT.

BRIDGE LIMITS  
STA. 369+12.50 TO STA. 371+52.58

- △ E TAPERS FROM 24' @ STA. 366+84.00 TO 31.8' @ STA. 367+40.29  
TAPERS FROM 31.8' @ STA. 367+40.29 TO 24' @ STA. 368+19.88  
24' FROM STA. 368+19.88 TO STA. 369+12.50  
24' FROM STA. 371+52.58 TO STA. 372+43.63  
TAPERS FROM 24' FROM STA. 372+43.63 TO 27.7' @ STA. 373+14.06
- △ F TAPERS FROM 4' @ STA. 366+84.00 TO 6' @ STA. 367+40.29  
8' FROM STA. 368+19.88 TO STA. 369+12.50  
8' FROM STA. 371+52.58 TO STA. 372+43.63

- △ G TAPERS FROM 36' @ STA. 366+84.00 TO 40.9' @ STA. 367+23.66  
TAPERS FROM 40.9' @ STA. 367+23.66 TO 24' @ STA. 368+07.48  
24' FROM STA. 368+07.48 TO STA. 369+12.50  
24' FROM STA. 371+52.58 TO STA. 372+36.20  
TAPERS FROM 24' @ STA. 372+36.20 TO 31.6' @ STA. 373+14.06
- △ H TAPERS FROM 4' @ STA. 366+84.00 TO 6' @ STA. 367+23.66  
8' FROM STA. 368+07.48 TO STA. 369+12.50  
8' FROM STA. 371+52.58 TO STA. 372+36.20



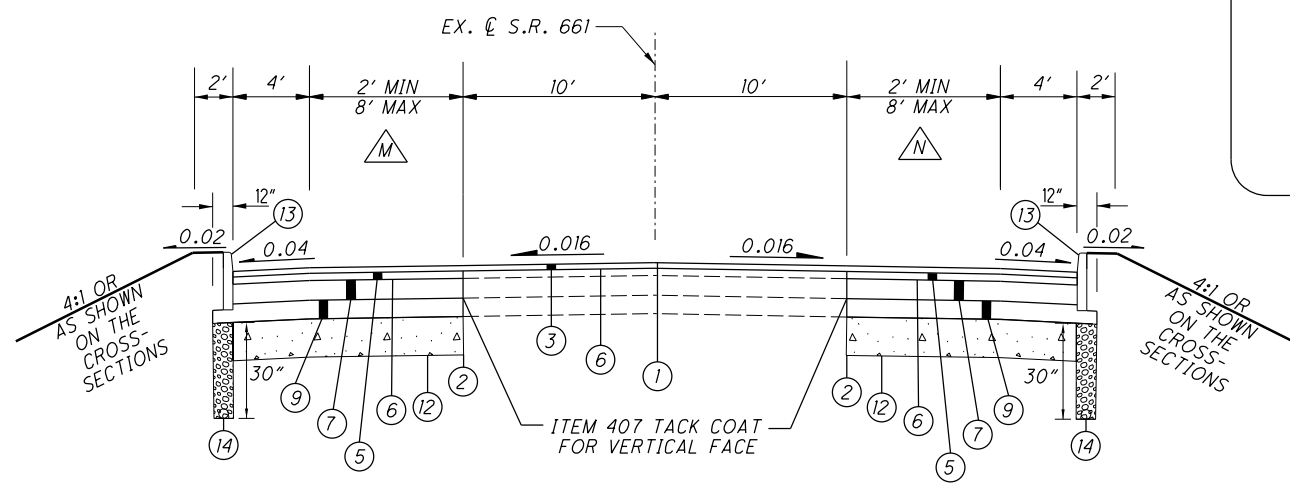
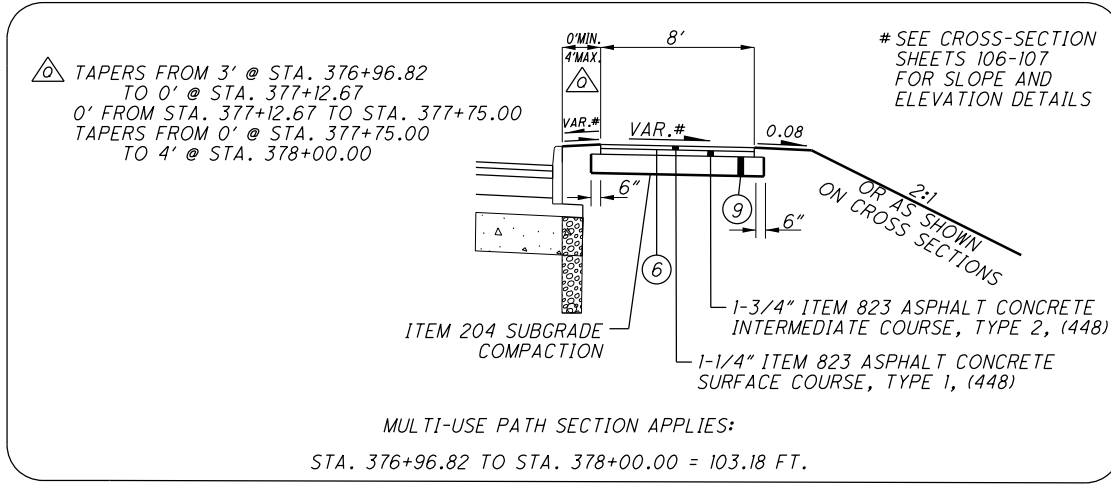
NORMAL SECTION  
SECTION APPLIES:  
STA. 373+14.06 TO STA. 374+80.19 = 166.13 FT.  
TOTAL = 166.13 FT.

- △ I TAPERS FROM 27.7' @ STA. 373+14.06 TO 21.8' @ STA. 373+53.82  
TAPERS FROM 21.8' @ STA. 373+53.82 TO 18.0' @ STA. 374+32.11  
18.0' FROM STA. 374+32.11 TO STA. 374+60.25  
VAR. 18.0' TO 22.0' (EX. E/S) FROM STA. 374+60.25 TO STA. 374+80.19
- △ J TAPERS FROM 6' @ STA. 373+14.06 TO 4' @ STA. 373+53.82

- △ K TAPERS FROM 31.6' @ STA. 373+14.06 TO 21.0' @ STA. 373+64.20  
TAPERS FROM 21.0' @ STA. 373+64.20 TO 18.0' @ STA. 374+21.45  
VAR. 18.0' TO 41.3' (EX. E/P) FROM STA. 374+21.45 TO STA. 374+80.19
- △ L TAPERS FROM 6' @ STA. 373+14.06 TO 4' @ STA. 373+64.20

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

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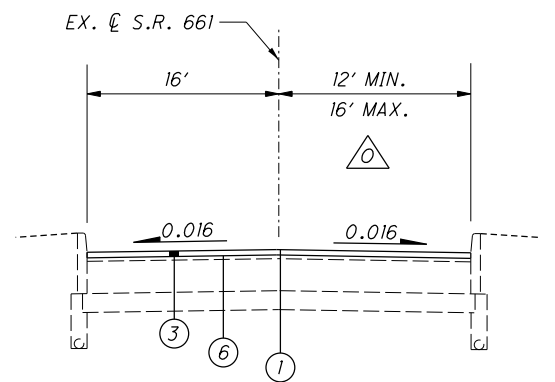
NORMAL SECTION  
SECTION APPLIES:  
STA. 374+80.19 TO STA. 375+60.39 (BK) = 80.20 FT.  
STA. 375+55.17 (AH) TO STA. 382+18.00 = 662.83 FT.  
TOTAL = 743.03 FT.

M 8' FROM STA. 375+76.24 TO STA. 379+25.00  
TAPERS FROM 8' @ STA. 379+25.00  
TO 2' @ STA. 380+50.00  
2' FROM STA. 380+50.00 TO STA. 382+18.00

STATION EQUATION:  
STA. 375+60.39 BK =  
STA. 375+55.17 AH

N 8' FROM STA. 375+58.47 TO STA. 379+25.00  
TAPERS FROM 8' @ STA. 379+25.00  
TO 4' @ STA. 380+10.08  
TAPERS FROM 4' @ STA. 380+10.08  
TO 2' @ STA. 381+18.22  
2' FROM STA. 381+18.22 TO STA. 382+18.00

BRIDGE LIMITS  
STA. 382+18.00 TO STA. 384+58.50

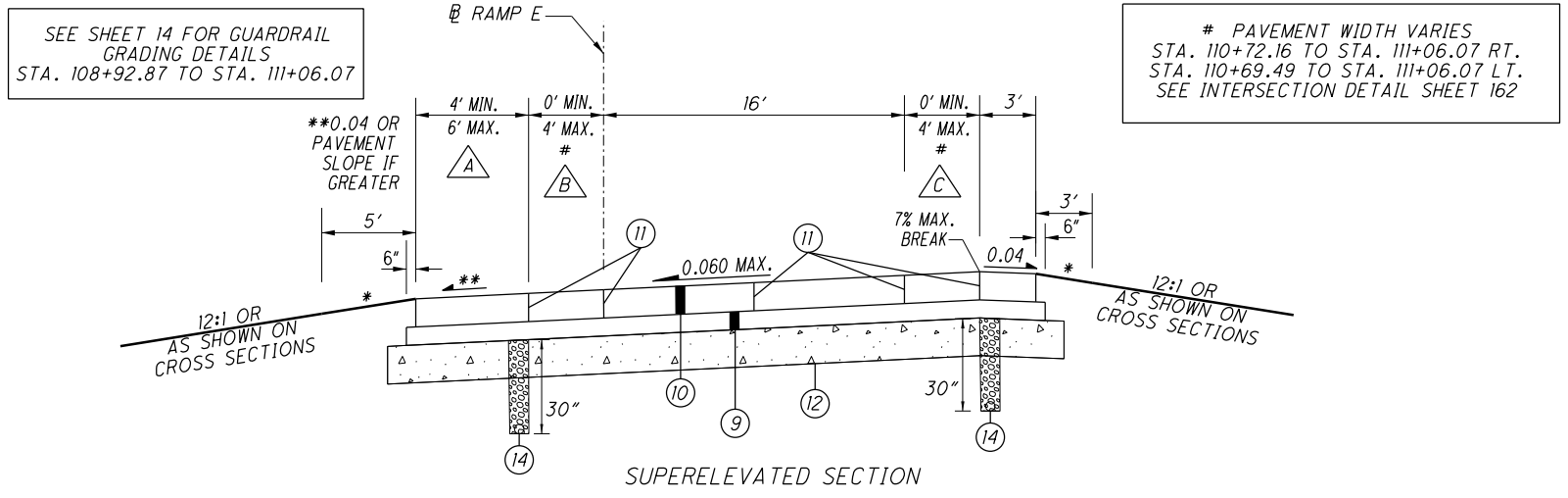


NORMAL SECTION  
SECTION APPLIES:  
STA. 384+58.50 TO STA. 386+28.50 = 170.00 FT.  
TOTAL = 170.00 FT.

O TAPERS FROM 16' @ STA. 384+58.50  
TO 12' @ STA. 386+28.50

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/2")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

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SEE SHEET 14 FOR GUARDRAIL GRADING DETAILS  
STA. 108+92.87 TO STA. 111+06.07

# PAVEMENT WIDTH VARIES  
STA. 110+72.16 TO STA. 111+06.07 RT.  
STA. 110+69.49 TO STA. 111+06.07 LT.  
SEE INTERSECTION DETAIL SHEET 162

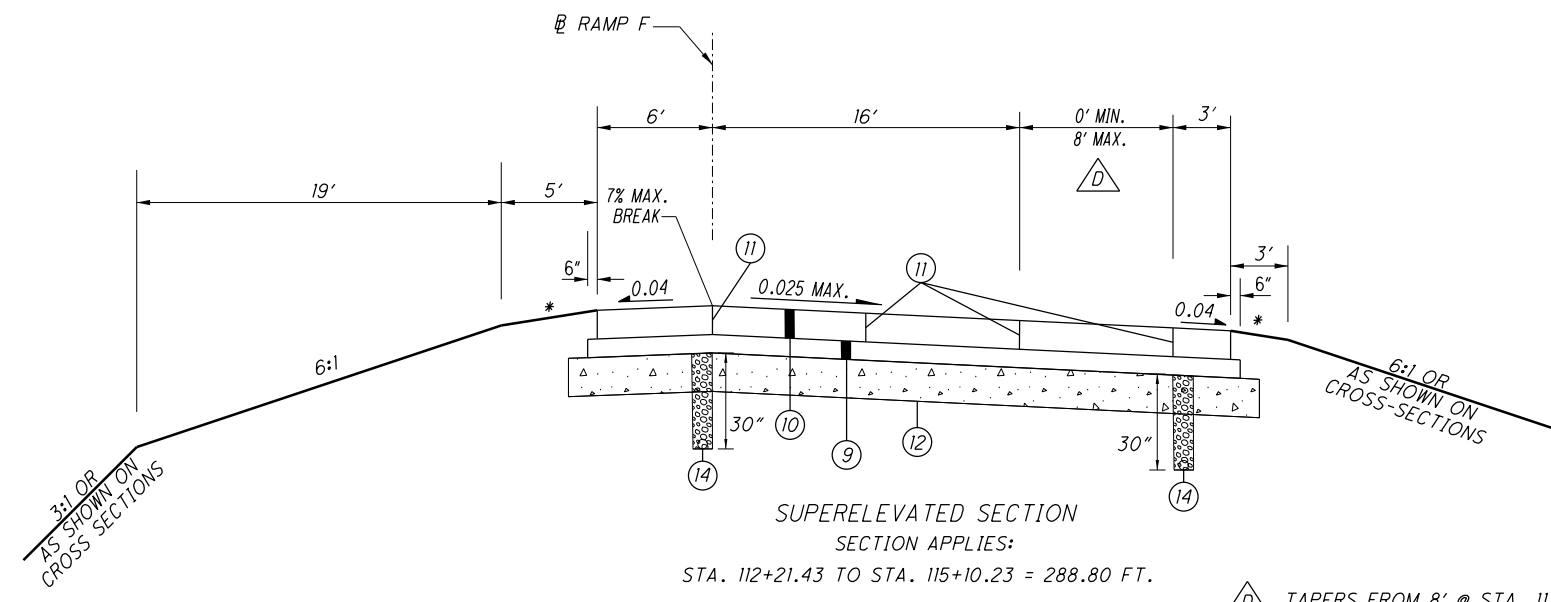
SUPERELEVATED SECTION

SECTION APPLIES:  
STA. 107+07.62 TO STA. 111+06.07 = 398.45 FT.

- △ TAPERS FROM 4' @ STA. 107+07.62 TO 6' @ STA. 107+58.00
- △ TAPERS FROM 0' @ STA. 110+29.49 TO 4' @ STA. 110+69.49

- △ TAPERS FROM 0' @ STA. 110+32.16 TO 4' @ STA. 110+72.16

\* 12:1 MAX.

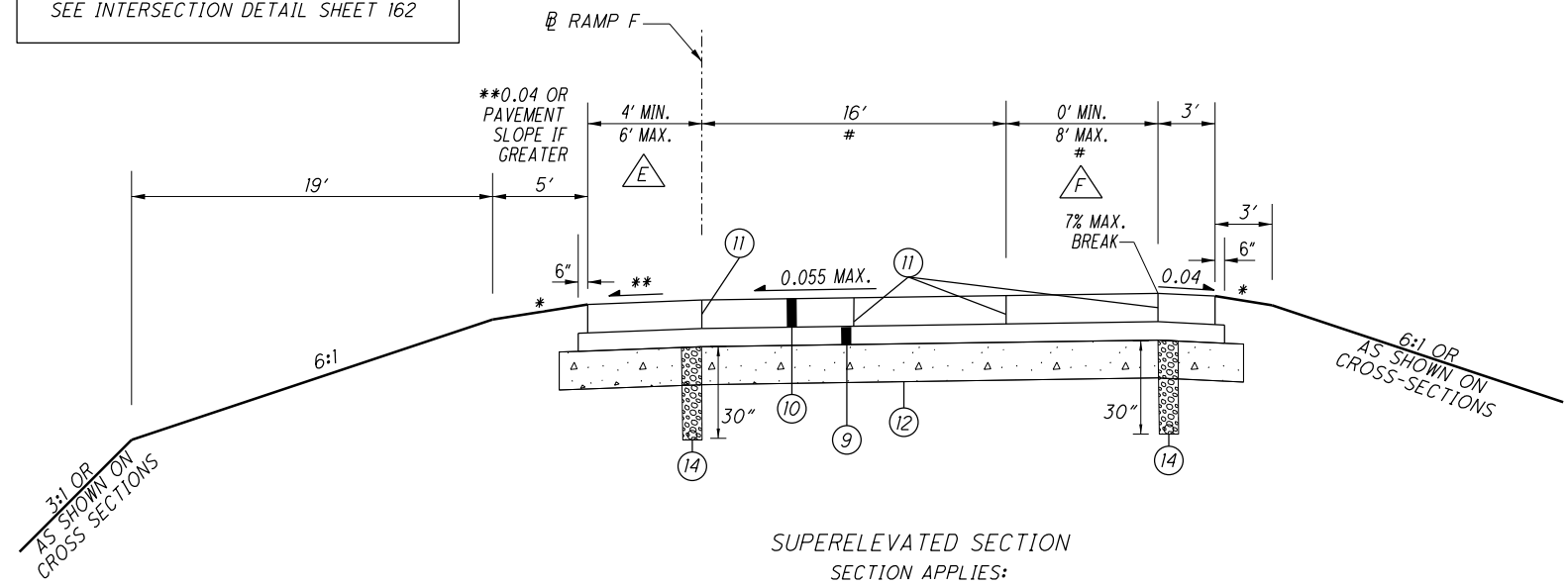


SUPERELEVATED SECTION

SECTION APPLIES:  
STA. 112+21.43 TO STA. 115+10.23 = 288.80 FT.

- △ TAPERS FROM 8' @ STA. 113+75.00 TO 0' @ STA. 114+25.00

# PAVEMENT WIDTH VARIES  
STA. 110+91.12 TO STA. 111+21.47 RT.  
STA. 110+91.12 TO STA. 111+44.04 LT.  
SEE INTERSECTION DETAIL SHEET 162



SUPERELEVATED SECTION

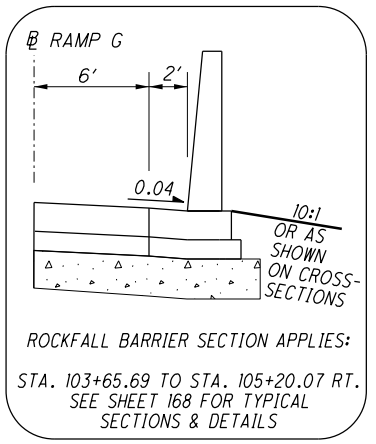
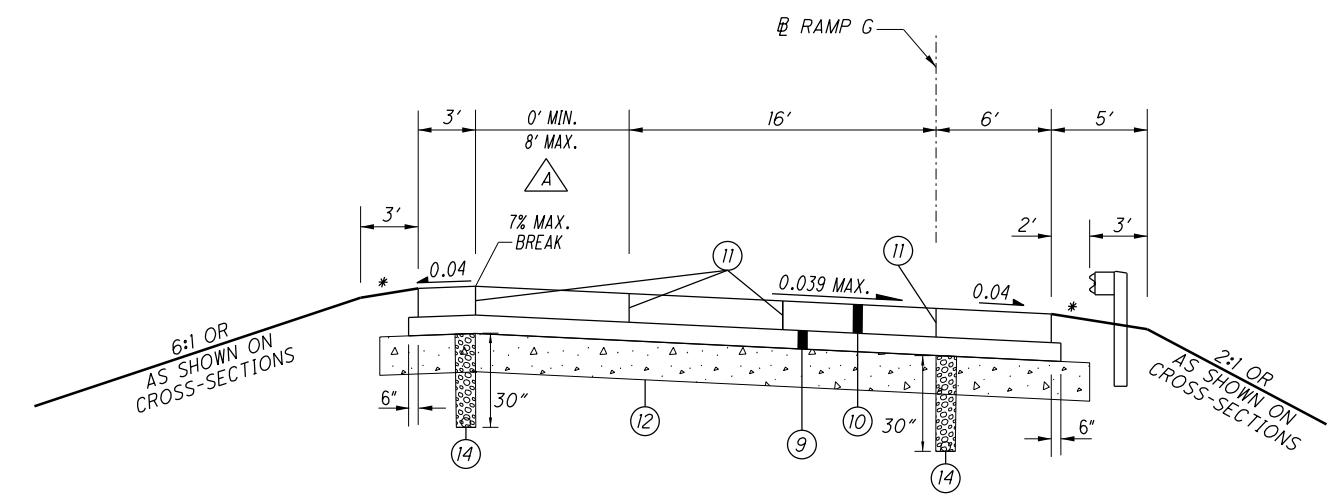
SECTION APPLIES:  
STA. 110+91.12 TO STA. 112+21.43 = 130.31 FT.  
STA. 115+10.23 TO STA. 118+42.89 = 332.66 FT.

- △ TAPERS FROM 6' @ STA. 117+80.00 TO 4' @ STA. 118+42.89

- △ 8' FROM STA. 111+21.47 TO STA. 112+21.43  
0' FROM STA. 115+10.23 TO STA. 118+42.89

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

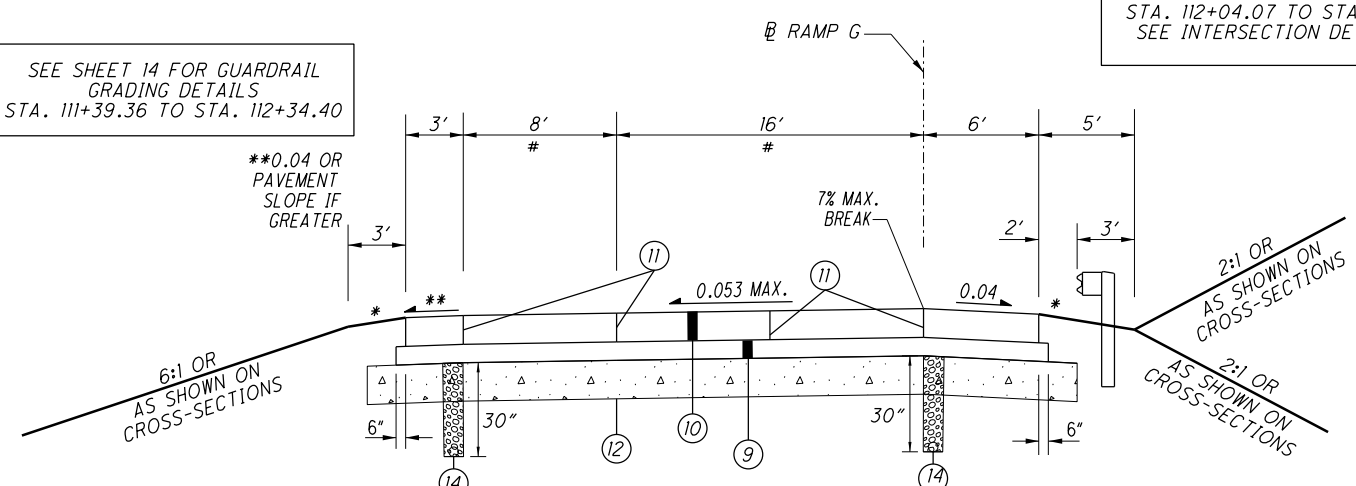
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**SUPERELEVATED SECTION**  
SECTION APPLIES:  
STA. 103+65.69 TO STA. 107+83.76 = 418.07 FT.

SEE SHEET 14 FOR GUARDRAIL  
GRADING DETAILS  
STA. 111+39.36 TO STA. 112+34.40

\* 12:1 MAX.

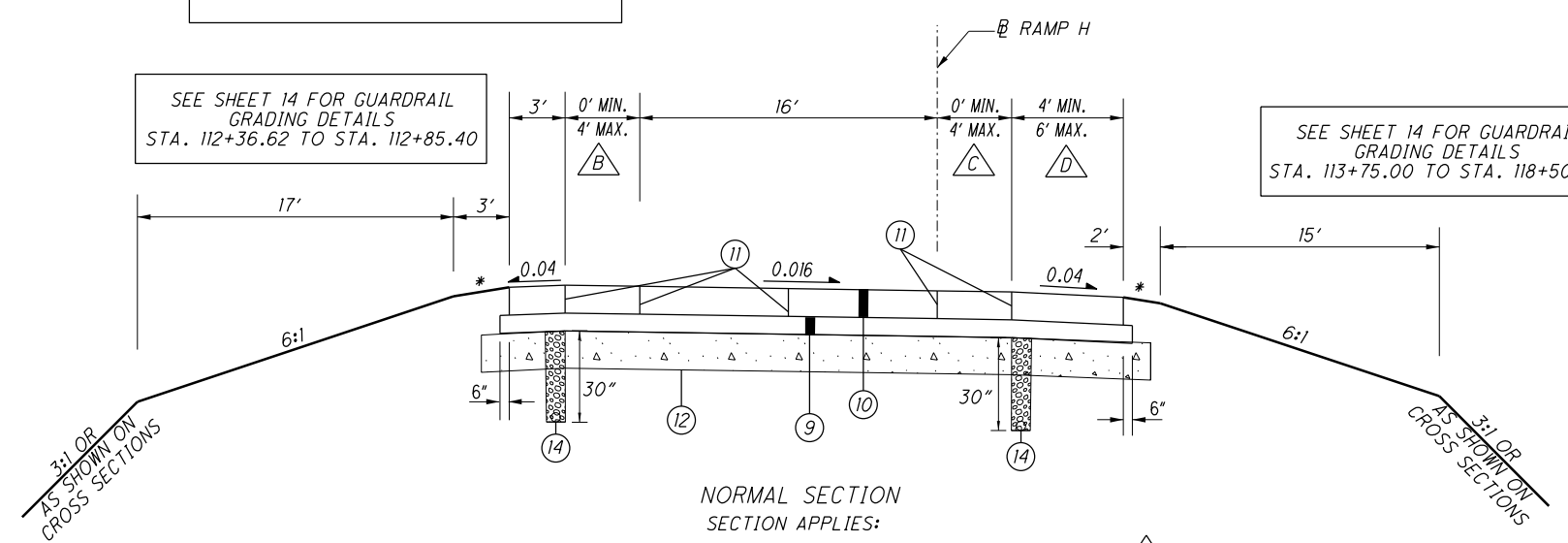


**SUPERELEVATED SECTION**  
SECTION APPLIES:  
STA. 107+83.76 TO STA. 112+34.40 = 450.64 FT.

# PAVEMENT WIDTH VARIES  
STA. 112+36.62 TO STA. 112+99.43 RT.  
STA. 112+36.62 TO STA. 112+51.33 LT.  
SEE INTERSECTION DETAIL SHEET 161

SEE SHEET 14 FOR GUARDRAIL  
GRADING DETAILS  
STA. 112+36.62 TO STA. 112+85.40

SEE SHEET 14 FOR GUARDRAIL  
GRADING DETAILS  
STA. 113+75.00 TO STA. 118+50.00



**NORMAL SECTION**  
SECTION APPLIES:  
STA. 112+36.62 TO STA. 123+13.14 = 1,076.52 FT.

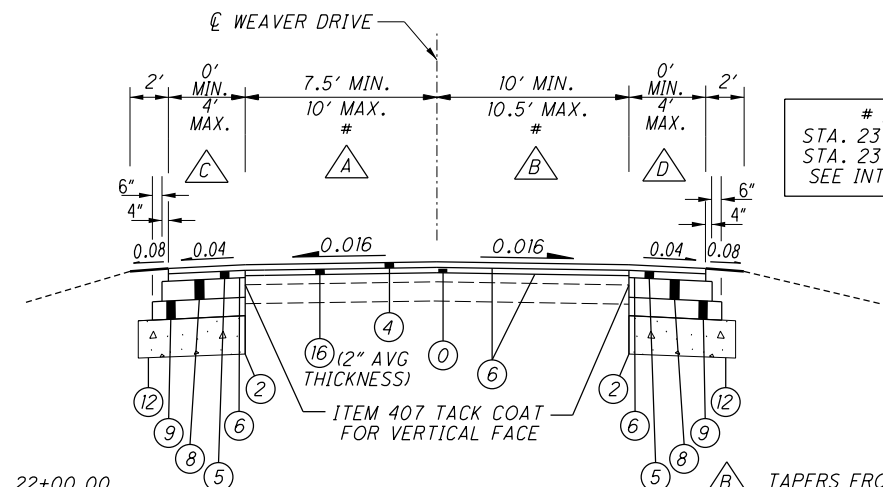
**B** TAPERS FROM 4' @ STA. 112+51.33 TO 0' @ STA. 112+91.33

**C** TAPERS FROM 4' @ STA. 112+99.43 TO 0' @ STA. 113+39.43

**D** TAPERS FROM 6' @ STA. 122+50.00 TO 4' @ STA. 123+13.14

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/2")
- ② ITEM 252 FULL-DEPTH PAVEMENT SAWING
- ③ 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ⑤ 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑥ ITEM 407 NON TRACKING TACK COAT
- ⑦ 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑧ 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- ⑨ 6" ITEM 304 AGGREGATE BASE
- ⑩ 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑪ STANDARD LONGITUDINAL JOINT
- ⑫ ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- ⑬ ITEM 609 CURB, TYPE 6
- ⑭ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑮ ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- ⑯ ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

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# PAVEMENT WIDTH VARIES  
STA. 23+98.55 TO STA. 24+47.52 RT.  
STA. 23+96.48 TO STA. 24+47.52 LT.  
SEE INTERSECTION DETAIL SHEET 163

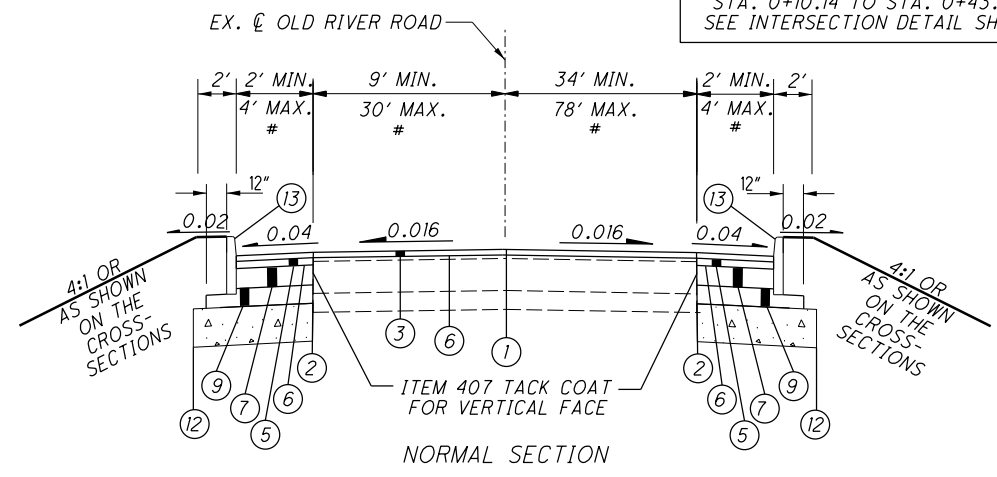
**A** TAPERS FROM 7.5' @ STA. 22+00.00  
TO 10' @ STA. 23+37.40  
10' FROM STA. 23+37.40 TO STA. 23+96.48

**C** 0' FROM STA. 22+00.00 TO STA. 23+96.48  
4' FROM STA. 23+96.48 TO STA. 24+47.52

NORMAL SECTION  
SECTION APPLIES:  
STA. 22+00.00 TO STA. 24+47.52 = 247.52 FT.

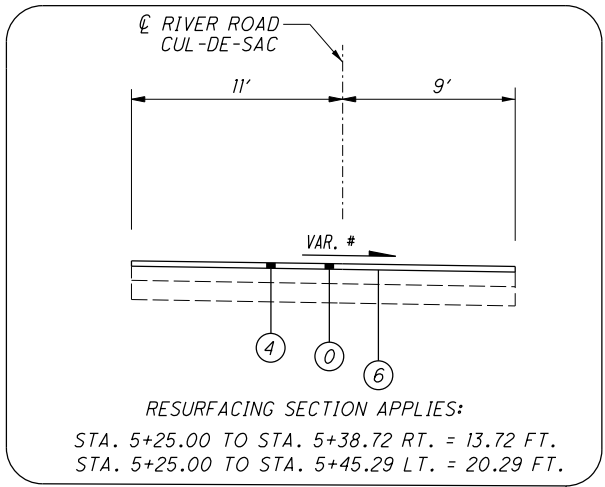
**B** TAPERS FROM 10.5' @ STA. 22+00.00  
TO 10' @ STA. 23+37.40  
10' FROM STA. 23+37.40 TO STA. 23+98.55

**D** 0' FROM STA. 22+00.00 TO STA. 24+18.34  
4' FROM STA. 24+18.34 TO STA. 24+47.52

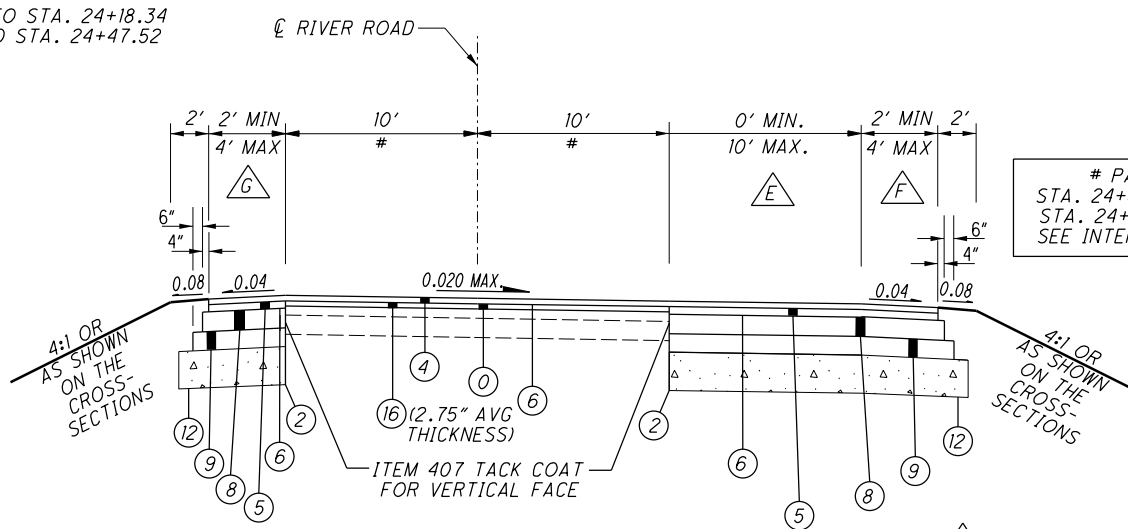


# PAVEMENT WIDTH VARIES  
STA. 0+10.14 TO STA. 0+43.37 RT.  
STA. 0+10.14 TO STA. 0+43.37 LT.  
SEE INTERSECTION DETAIL SHEET 165

NORMAL SECTION  
SECTION APPLIES:  
STA. 0+10.14 TO STA. 0+43.37 = 33.23 FT.  
TOTAL = 33.23 FT.



RESURFACING SECTION APPLIES:  
STA. 5+25.00 TO STA. 5+38.72 RT. = 13.72 FT.  
STA. 5+25.00 TO STA. 5+45.29 LT. = 20.29 FT.



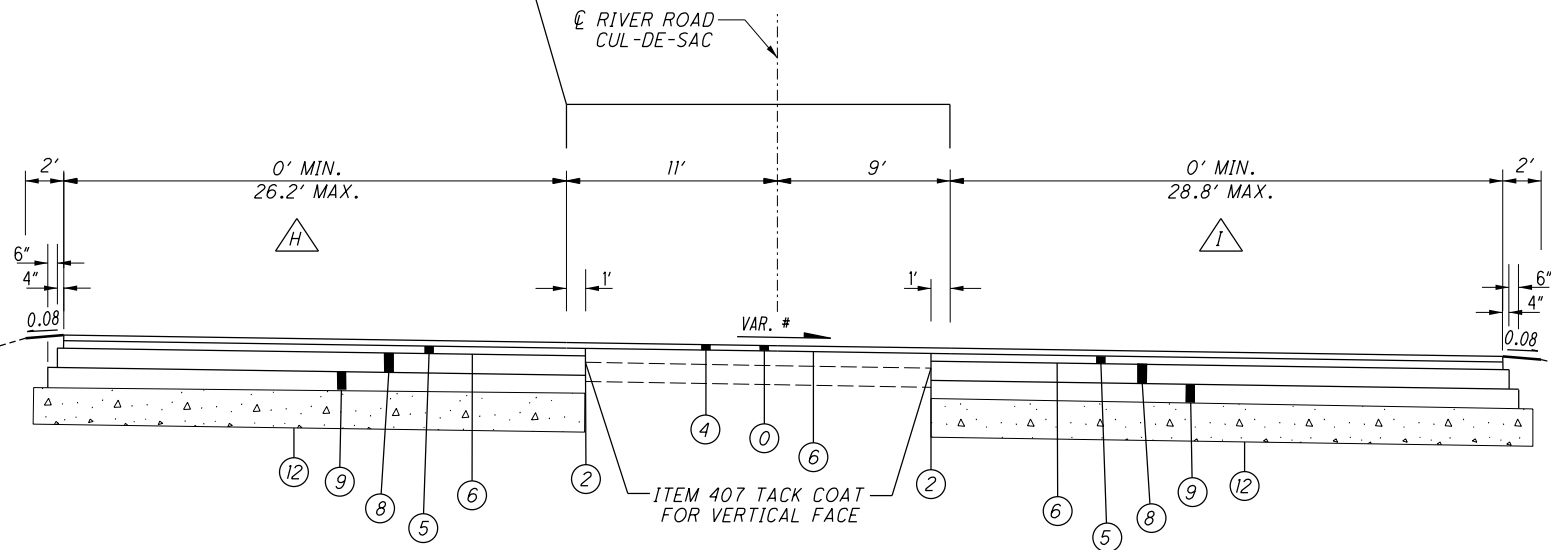
# PAVEMENT WIDTH VARIES  
STA. 24+84.11 TO STA. 25+66.47 RT.  
STA. 24+84.11 TO STA. 25+15.75 LT.  
SEE INTERSECTION DETAIL SHEET 163

SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 24+84.11 TO STA. 28+50 = 365.89 FT.

**G** TAPERS FROM 4' @ STA. 28+00.00  
TO 2' @ STA. 28+50.00

**E** TAPERS FROM 10' @ STA. 26+50.00  
TO 0' @ STA. 28+50.00

**F** TAPERS FROM 4' @ STA. 28+00.00  
TO 2' @ STA. 28+50.00



SUPERELEVATED SECTION  
SECTION APPLIES:  
STA. 5+25.00 TO STA. 6+37.52 = 112.52 FT.

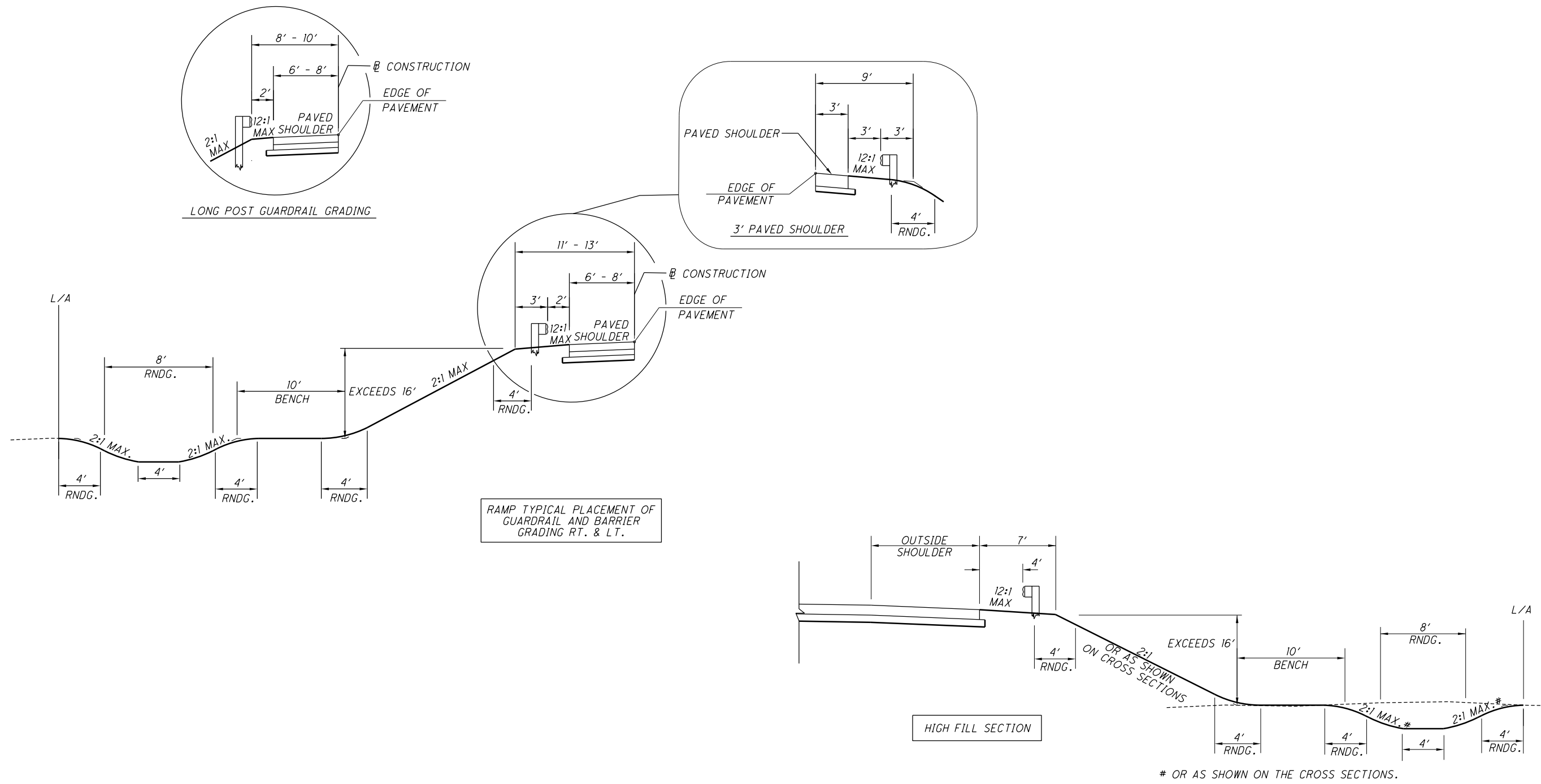
**H** VARIES FROM STA. 5+45.29 TO STA. 6+37.52  
# SEE CUL-DE-SAC PAVEMENT DETAIL SHEET 166

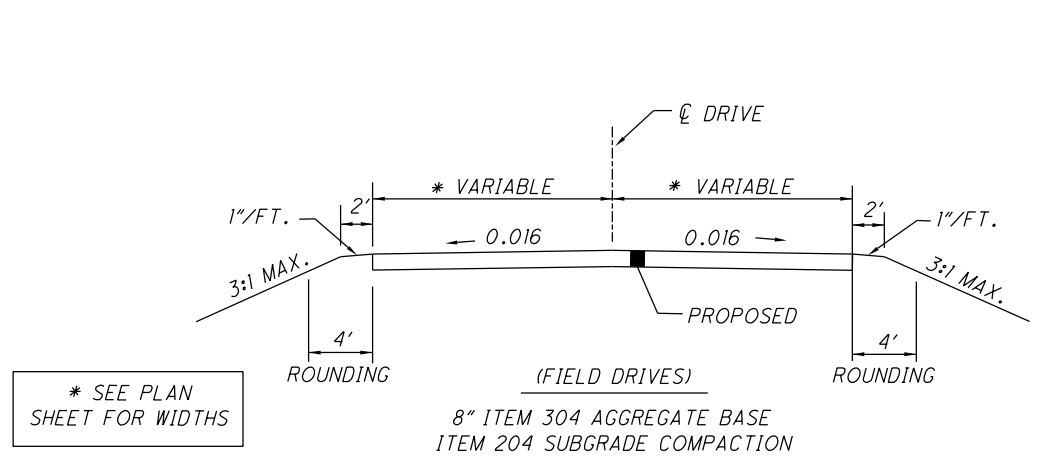
**I** VARIES FROM STA. 5+38.72 TO STA. 6+37.52  
# SEE CUL-DE-SAC PAVEMENT DETAIL SHEET 166

- (0) ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/4")
- (1) ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1-1/2")
- (2) ITEM 252 FULL-DEPTH PAVEMENT SAWING
- (3) 1-1/2" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- (4) 1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- (5) 1-3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- (6) ITEM 407 NON TRACKING TACK COAT
- (7) 6" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- (8) 4" ITEM 301 ASPHALT CONCRETE BASE, PG64-22
- (9) 6" ITEM 304 AGGREGATE BASE
- (10) 9" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- (11) STANDARD LONGITUDINAL JOINT
- (12) ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP
- (13) ITEM 609 CURB, TYPE 6
- (14) ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- (15) ITEM 605 6" BASE UNDERDRAINS (18" DEPTH)
- (16) ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (VARIABLE)

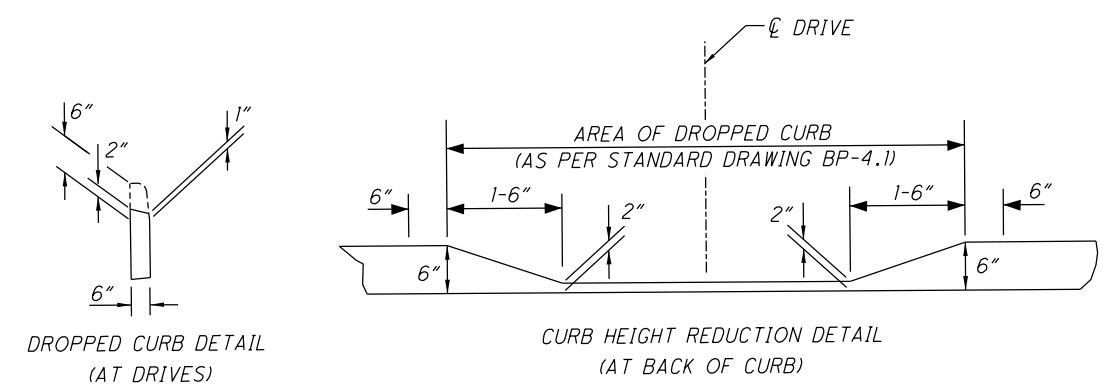
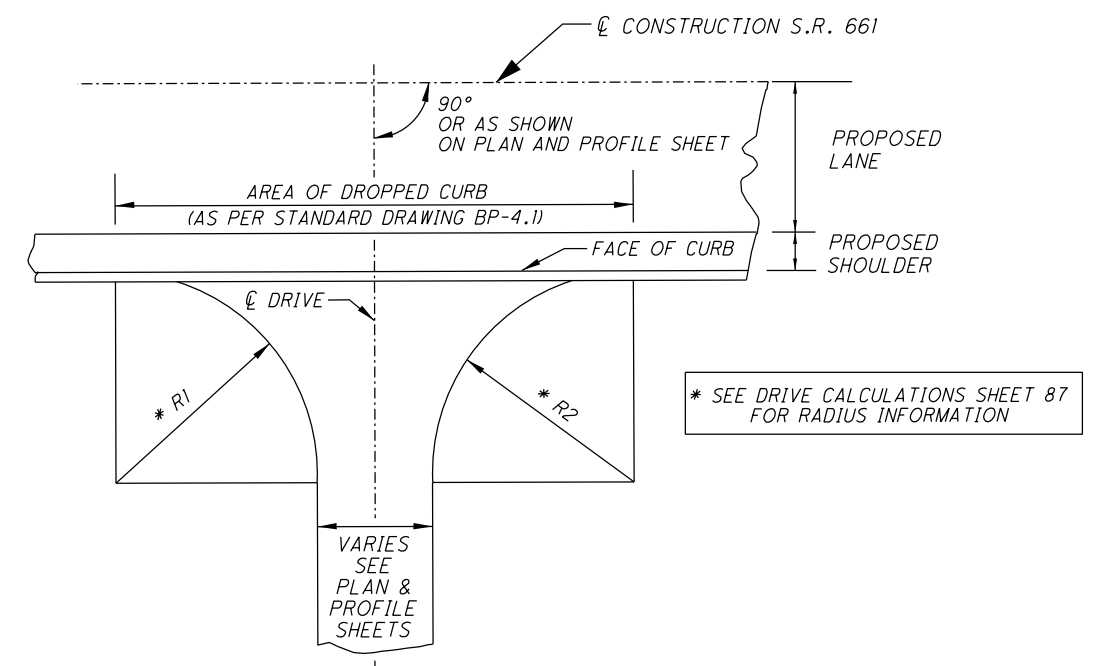
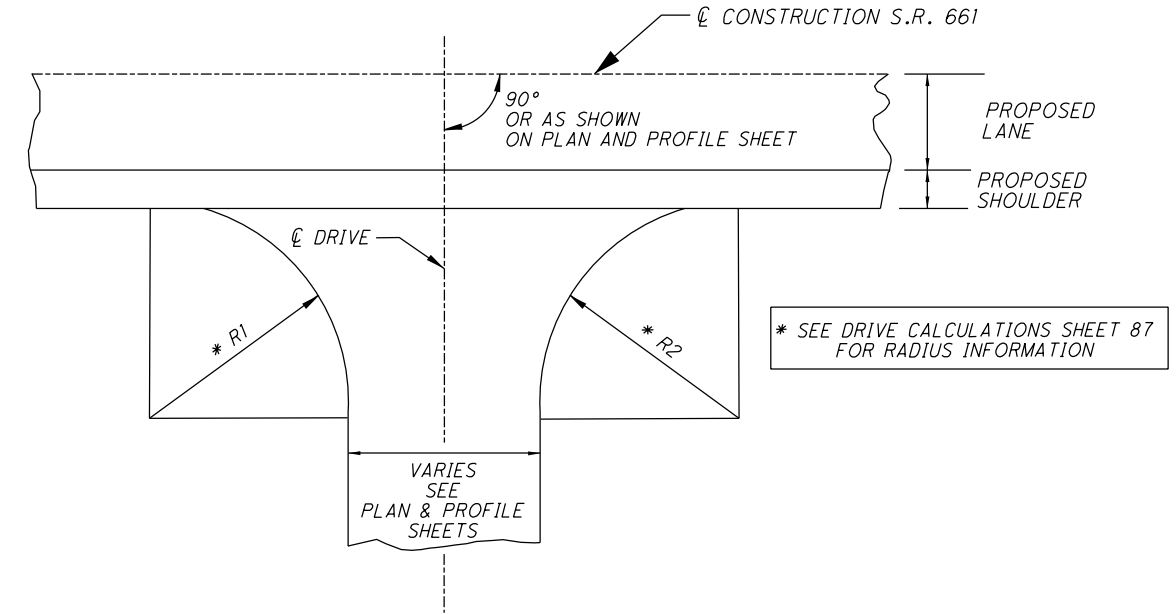
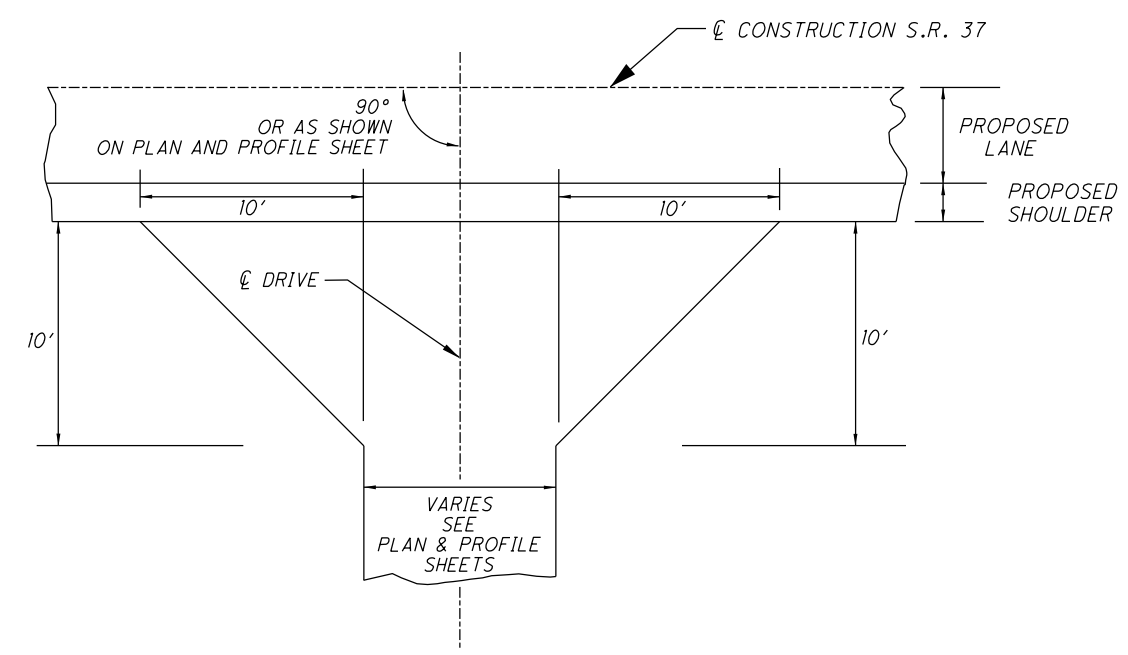
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- (FIELD DRIVES)  
8" ITEM 304 AGGREGATE BASE  
ITEM 204 SUBGRADE COMPACTION
- (RESIDENCE DRIVES)  
1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS)  
ON 5" ITEM 301 ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)  
ITEM 204 SUBGRADE COMPACTION
- (COMMERCIAL DRIVES)  
1-1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS)  
ON 5" ITEM 301 ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)  
ITEM 204 SUBGRADE COMPACTION  
OR  
8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT  
ITEM 204 SUBGRADE COMPACTION



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**ROUNDING**

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

**LOCATION OF UTILITIES**

NOT ALL UTILITIES ARE SHOWN ON THE CONSTRUCTION PLANS. THE SIZE, DEPTH AND LOCATION OF THE BURIED UTILITIES SHOWN OR NOT, ARE NOT WARRANTED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT SIZE, DEPTH AND LOCATION OF ALL BURIED UTILITIES WITHIN THE CONSTRUCTION AREA PRIOR TO EXCAVATING.

**UNDERGROUND UTILITIES**

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.

**UTILITIES**

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

AMERICAN ELECTRIC POWER COMPANY  
850 TECH CENTER DRIVE  
GAHANNA, OHIO 43230  
ATTN: PAUL PAXTON  
614-883-6831  
ppaxton@aep.com

COLUMBIA GAS OF OHIO  
3550 JOHNNY APPLESEED CT.  
COLUMBUS, OHIO 43231  
ATTN: MARK CHRISTMAN  
614-818-2109  
mchristman@nisource.com

GRANVILLE WATER/WASTE WATER  
141 EAST BROADWAY  
PO BOX 514  
GRANVILLE, OHIO 43023  
ATTN: PETE KLASS  
740-587-0165  
waterdist@granville.oh.us

MARATHON ASHLAND PIPE LINE LLC  
20-C INDUSTRIAL DR.  
LEXINGTON, OHIO 44904  
ATTN: GREG NEWMAN  
419-884-0800  
gcnewman@marathonpetroleum.com

SPECTRUM CABLE  
3760 INTERCHANGE ROAD  
COLUMBUS, OHIO 43204  
ATTN: ANTHONY ADAMS  
614-827-7971  
Anthony.Adams@charter.com

WINDSTREAM COMMUNICATIONS  
776 HOPEWELL DR.  
HEATH, OHIO 43056  
ATTN: TIM LILLY  
740-349-8846  
timothy.lilly@windstream.com

**WORK LIMITS**

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

**CLEARING AND GRUBBING**

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

ALL TREES AND STUMPS SHOULD BE REMOVED FROM THIS PROJECT THAT WERE PREVIOUSLY CUT DOWN BY ODOT COUNTY FORCES DUE TO THE BAT TREE CUTTING RESTRICTION DATES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMAINING TREES, STUMP REMOVAL AND CLEARING AND GRUBBING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT AS PER ITEM 201.

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE THE TABLE BELOW FOR A LIST OF CONTROL POINTS.

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

**PROJECT CONTROL:**

POSITIONING METHOD: ODOT VRS  
MONUMENT TYPE: TYPE B, IRON PIN AND ODOT CAP SET

**VERTICAL POSITIONING:**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID12A

**HORIZONTAL POSITIONING:**

REFERENCE FRAME: NAD83/2011 EPOCH 2010  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC  
COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE 3402  
COMBINED SCALE FACTOR: 1.000064924  
ORIGIN OF COORDINATE SYSTEM: 0,0

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

UNITS ARE IN U.S. SURVEY FEET.

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

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 100 FEET. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

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

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

OHIO DEPARTMENT OF TRANSPORTATION  
OFFICE OF AVIATION  
2829 WEST DUBLIN-GRANVILLE ROAD  
COLUMBUS, OHIO 43235-2786  
614-387-2358

**CONSTRUCTION NOTIFICATION**

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY-ONE (21) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND/OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT 5 PUBLIC INFORMATION OFFICER (PIO)  
BY PHONE: (740) 323-5204 OR  
BY EMAIL: D05.PIO@DOT.STATE.OH.US

DISTRICT 5 PERMIT SECTION  
BY PHONE: (740) 323-5182 OR  
BY EMAIL: BRIAN.BOSCH@DOT.STATE.OH.US

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION  
BY FAX: (614) 728-4099 OR  
BY EMAIL: HAULING.PERMITS@DOT.STATE.OH.US

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

**STAGING AND STORING OF EQUIPMENT**

NO EQUIPMENT OR MATERIAL SHALL BE STAGED OR STORED ON PARCEL 1 ON S.R. 37 STA. 362+50 TO STA. 366+30 RT AS PER RIGHT-OF-WAY ACQUISITION AGREEMENT WITH THE PROPERTY OWNER. IN ADDITION, NO STAGING OR STORING OF EQUIPMENT OR MATERIAL SHALL TAKE PLACE OUTSIDE THE CONSTRUCTION LIMITS OF THE DEFINED 4F PROPERTY. ALSO, THE HISTORIC NELSON LANDFILL PROPERTY LOCATED AT 1833 LANCASTER RD NW SHALL NOT BE USED FOR STORAGE OR STAGING ACTIVITIES OF ANY KIND INCLUDING USE FOR EQUIPMENT, WASTE OR FILL MATERIAL.

**DRINKING WATER SOURCE AREA**

THE PROJECT IS LOCATED NEAR THE VILLAGE OF GRANVILLE WATER DISTRICT. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE INTO THE SENSITIVE AREA, PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL NOT BE PERFORMED FROM STA. 107+07.62 TO STA. 109+50; STA. 22+00 TO 23+50; OR STA. 100+06 TO 106+50. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO THE DRINKING WATER SOURCE AREA SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT THE CERTIFIED OIL COMPANY, STEVE SWISHER AT (614) 425-1514 FOR CLEANUP OF THE SPILL.

**ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE DEPARTMENT:

THE CONTRACTOR SHALL PROVIDE AS-BUILT DATA FOR THE SPECIFIED COMPLETED CONSTRUCTION ITEMS IN OHIO STATE PLANE COORDINATES (GRID). THE CONSTRUCTION ITEMS SHALL BE LOCATED AS PER THE SURVEY FEATURE CODE LIST FOUND ON THE OHIO DEPARTMENT OF TRANSPORTATION OFFICE OF CADD & MAPPING SERVICES WEBSITE. A CD CONTAINING A COMMA DELIMITED ASCII FILE AND A SURVEYOR'S CERTIFICATION SHALL BE DELIVERED TO THE PROJECT ENGINEER AFTER ALL INFORMATION HAS BEEN COLLECTED. THE ASCII FILE SHALL INCLUDE A HEADER CONTAINING NAME OF SURVEYOR, DATE(S) OF COLLECTION, HORIZONTAL DATUM (I.E. NAD83 (2011), OHIO STATE PLANE COORDINATE SYSTEM NORTH OR SOUTH), VERTICAL DATUM (I.E. NAVD 88, GEOID12A) AND METHOD OF COLLECTION (I.E. OHIO VRS, GPS RTK, TOTAL STATION, ETC.) AND BE IN A TABLE FORM AS FOLLOWS:

POINT NUMBER, NORTHING, EASTING, ELEVATION, FEATURE CODE, DESCRIPTION

BELOW IS A LIST OF THE ITEMS THE CONTRACTOR IS REQUIRED TO PROVIDE.

- RIGHT-OF-WAY FENCE (POINTS AT ALL CHANGES IN DIRECTION)
- LIGHT POLES AND LIGHTING PULLBOXES
- BARRIER (GUARDRAIL, CONCRETE, OR CABLE)
- BMP'S (SEE PROJECT SITE PLAN FOR INFO)
- CULVERTS (INLET INVERT, OUTLET INVERT, TYPE, AND SIZE)
- STORM SEWER OUTLETS (OUTLET INVERT, TYPE, AND SIZE)
- CATCH BASINS, MANHOLES, AND INLETS
- UNDERDRAIN OUTLETS
- SIGNS (WITH DESCRIPTION)
- TRAFFIC SIGNAL POLES, CONTROLLER LOCATION, AND SIGNAL PULLBOXES

THE ABOVE ITEMS SHALL BE COLLECTED USING SURVEY GRADE EQUIPMENT MEETING THE REQUIREMENTS OF SECTION 400 IN THE OHIO DEPARTMENT OF TRANSPORTATION SURVEY & MAPPING SPECIFICATIONS MANUAL.

ALL COST ASSOCIATED WITH OBTAINING THE INFORMATION LISTED ABOVE INCLUDING THE COST OF THE CD SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

PRIMARY PROJECT CONTROL INFORMATION							
POINT	ALIGNMENT	STATION	OFFSET (FT.)	SCALED COORDINATES U.S. SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	DESCRIPTION
				NORTHING	EASTING		
SV1	S.R. 16	108+66.88	83.4' LT.	750,047.684	1,962,378.854	927.236	CNPT 1" REBAR W/ALUM. ODOT CAP
SV2	S.R. 37	368+76.69	18.6' LT.	749,712.046	1,962,594.299	953.975	CNPT 1" REBAR W/ALUM. ODOT CAP
SV3	S.R. 16	116+27.99	10.7' L.	749,712.575	1,963,066.069	921.861	CNPT 1" REBAR W/ALUM. ODOT CAP
SV1000	S.R. 16	368+01.16	41.9' RT.	749,631.061	1,962,647.321	957.992	CNPT 1" REBAR W/ALUM. ODOT CAP
SV1001	S.R. 37	371+65.16	21.7' RT.	749,995.325	1,962,662.098	941.714	CNPT 1" REBAR W/ALUM. ODOT CAP

TO ATTAIN GRID COORDINATES, DIVIDE EACH BY THE COMBINED SCALE FACTOR

CALCULATED

CHECKED

**GENERAL NOTES**

LIC-37 / 661-16.59 / 0.00

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341

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**FENCE LENGTHS**

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. ALL OTHER SLOPED EMBANKMENT AREAS SHALL BE BENCHED AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

**FOR EXCAVATION AND EMBANKMENT QUANTITIES FROM CROSS-SECTIONS, SEE TABLE BELOW:**

	ITEM 203 EXCAVATION	ITEM 203 EMBANKMENT
EARTHWORK CARRIED FROM SHEETS 109 & 274		
PLAN SPLIT 02/NHS/PV	4,877 CY	14,655 (+1,603) = 16,258 CY
PLAN SPLIT 03/S<2/PV	6,180 CY	11,492 CY
TOTALS	11,057 CY	27,750 CY

QUANTITIES CARRIED TO THE GENERAL SUMMARY

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS AS PER ITEM 659:

SEEDING CARRIED FROM SHEETS 109 & 274 26,701 SQ YD

PLAN SPLIT 02/NHS/PV  
ITEM 659 SEEDING AND MULCHING, CLASS 2 15,298 (+1,000) =  
16,298 SQ YD

PLAN SPLIT 03/S<2/PV  
ITEM 659 SEEDING AND MULCHING, CLASS 2 10,403 SQ YD

ITEM 659 COMMERCIAL FERTILIZER 3.6 TON

PLAN SPLIT 02/NHS/PV  
1 TON PER 7,410 SQ. YD. OF THE PERMANENT SEEDED AREA  
16,298 SQ.YD. ÷ 7,410 = 2.2 TON

PLAN SPLIT 03/S<2/PV  
1 TON PER 7,410 SQ. YD. OF THE PERMANENT SEEDED AREA  
10,403 SQ.YD. ÷ 7,410 = 1.4 TON

ITEM 659 LIME 5.5 ACRES

PLAN SPLIT 02/NHS/PV  
16,298 SQ.YD. ÷ 4,840 = 3.4 ACRES

PLAN SPLIT 03/S<2/PV  
10,403 SQ.YD. ÷ 4,840 = 2.1 ACRES

ITEM 659 WATER 144.2 M GAL.

PLAN SPLIT 02/NHS/PV  
0.0054 M. GAL PER SQ. YD. OF THE PERMANENT SEEDED AREA  
16,298 SQ.YD. x 0.0054 = 88.0 M GAL.

PLAN SPLIT 03/S<2/PV  
0.0054 M. GAL PER SQ. YD. OF THE PERMANENT SEEDED AREA  
10,403 SQ.YD. x 0.0054 = 56.2 M GAL.

ITEM 659 MOWING 721.0 MSF

PLAN SPLIT 02/NHS/PV  
16,298 SQ.YD. x 0.009 = 146.7 MSF x 3 MOWINGS = 440.1 MSF

PLAN SPLIT 03/S<2/PV  
10,403 SQ.YD. x 0.009 = 93.6 MSF x 3 MOWINGS = 280.9 MSF

QUANTITIES CARRIED TO GENERAL SUMMARY

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

ITEM 659 REPAIR SEEDING AND MULCHING 1,335.1 SQ. YD.

PLAN SPLIT 02/NHS/PV  
5% OF THE PERMANENT SEEDED AREA  
.05 x 16,298 SQ.YD. = 814.9 SQ. YD.

PLAN SPLIT 03/S<2/PV  
5% OF THE PERMANENT SEEDED AREA  
.05 x 10,403 SQ.YD. = 520.2 SQ. YD.

ITEM 659 INTER-SEEDING 1,335.1 SQ. YD.

PLAN SPLIT 02/NHS/PV  
5% OF THE PERMANENT SEEDED AREA  
.05 x 16,298 SQ.YD. = 814.9 SQ. YD.

PLAN SPLIT 03/S<2/PV  
5% OF THE PERMANENT SEEDED AREA  
.05 x 10,403 SQ.YD. = 520.2 SQ. YD.

ITEM 659 COMMERCIAL FERTILIZER 0.8 TON

PLAN SPLIT 02/NHS/PV  
1 TON PER 29,940 SQ. YD. OF THE PERMANENT SEEDED AREA  
16,298 SQ.YD. ÷ 29,940 = 0.5 TON

PLAN SPLIT 03/S<2/PV  
1 TON PER 29,940 SQ. YD. OF THE PERMANENT SEEDED AREA  
10,403 SQ.YD. ÷ 29,940 = 0.3 TON

ITEM 659 WATER 23.1 M. GAL.

PLAN SPLIT 02/NHS/PV  
0.00216 M. GAL. PER 40% OF THE SEEDED AREA  
16,298 SQ.YD. x 0.40 x 0.00216 = 14.1 M. GAL.

PLAN SPLIT 03/S<2/PV  
0.00216 M. GAL. PER 40% OF THE SEEDED AREA  
10,403 SQ.YD. x 0.40 x 0.00216 = 9.0 M. GAL.

QUANTITIES CARRIED TO GENERAL SUMMARY

**FOR TOPSOIL FURNISHED AND PLACED QUANTITY FROM CROSS-SECTIONS, SEE BELOW:**

TOPSOIL FURNISHED AND PLACED CARRIED FROM SHEET 109

PLAN SPLIT 02/NHS/PV  
ITEM 653 TOPSOIL FURNISHED AND PLACED 1,308 CY  
QUANTITY CARRIED TO THE GENERAL SUMMARY

**FOR SLOPE EROSION PROTECTION FROM CROSS-SECTIONS, SEE BELOW:**

SLOPE EROSION PROTECTION CARRIED FROM SHEET 109

PLAN SPLIT 02/NHS/PV  
ITEM 670 SLOPE EROSION PROTECTION 11,415 SY  
QUANTITY CARRIED TO THE GENERAL SUMMARY

**DUST CONTROL**

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

ITEM 616, WATER 155.2 M. GAL

PLAN SPLIT 02/NHS/PV  
0.004 M. GAL. PER CU. YD. OF THE TOTAL EARTHWORK  
4,877 + 16,258 = 21,135 CU. YD. (TOTAL)  
21,135 x 0.004 = 84.5 M. GAL.

PLAN SPLIT 03/S<2/PV  
0.004 M. GAL. PER CU. YD. OF THE TOTAL EARTHWORK  
6,180 + 11,492 = 17,672 CU. YD. (TOTAL)  
17,672 x 0.004 = 70.7 M. GAL.

QUANTITY CARRIED TO GENERAL SUMMARY

**ITEM 206 CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP**

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED TO BE USED AS PER ITEM 206 AT THE DIRECTION OF THE PROJECT ENGINEER. THE ENTIRE PROJECT WILL BE CEMENT STABILIZED UNLESS DETAILED OTHERWISE.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THE STABILIZATION OF THE SUBGRADE AS PER ITEM 206.

PLAN SPLIT: 02/NHS/PV

ITEM 206 CEMENT STABILIZED SUBGRADE, 12" DEEP 13,537 SY  
(FROM SHEET 86)

CALCULATION:

CEMENT @ 51.8 LBS./S.Y.  
13,537 S.Y. x 51.8 LBS. = 701,217 LBS. ÷ 2,000 = 351 TON

PROOF ROLLING @ 1 HR/3000 SY  
13,537 SY ÷ 3000 SY = 4.5 HR USE 5 HR

ITEM 206 CEMENT 351 TON  
ITEM 206 CURING COAT 13,537 SQ.YD.  
ITEM 204 PROOF ROLLING 5 HR

QUANTITIES CARRIED TO THE GENERAL SUMMARY

PLAN SPLIT: 03/S<2/PV

ITEM 206 CEMENT STABILIZED SUBGRADE, 12" DEEP 7,058 SY  
(FROM SHEET 86)

CALCULATION:

CEMENT @ 51.8 LBS./S.Y.  
7,058 S.Y. x 51.8 LBS. = 365,604 LBS. ÷ 2,000 = 183 TON

PROOF ROLLING @ 1 HR/3000 SY  
7,058 SY ÷ 3000 SY = 2.4 HR USE 3 HR

ITEM 206 CEMENT 183 TON  
ITEM 206 CURING COAT 7,058 SQ.YD.  
ITEM 204 PROOF ROLLING 3 HR

QUANTITIES CARRIED TO THE GENERAL SUMMARY

**ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING**

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05. IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
- COMPACT THE SUBGRADE ACCORDING TO 204.03.
- APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.
- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

ITEM 204 EXCAVATION OF SUBGRADE 425 CY  
(STA. 103+65.69 - STA. 105+50.00 RAMP G - SEE CROSS-SECTIONS FOR INFORMATION)

**ITEM 607 FENCE, SNOW**

TEMPORARY ORANGE SNOW FENCE PLASTIC/NYLON SHALL BE PLACED FOR THE PROTECTION OF PEDESTRIAN TRAFFIC. THE FENCE WILL BE INSTALLED AND SECURELY FASTENED TO WOOD OR METAL POST AT NO MORE THAN 6 FOOT SPACING. THE FENCE SHALL BE NOMINALLY 42" HIGH AND AT THE TOP SHALL NOT SAG BELOW 30". THE FENCE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT THE FENCE IS IN GOOD CONDITION AND PROPERLY PLACED AND MAINTAINED FOR THE DURATION OF THE WORK ADJACENT TO THE PUBLIC USE MULT-USE PATH.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO PERFORM THE WORK AS DESCRIBED ABOVE.

S.R. 661 STA. 375+55 TO STA. 380+50  
S.R. 661 STA. 381+00 TO STA. 382+50  
RIVER ROAD STA. 25+00 TO STA. 26+00

ITEM 607 FENCE, SNOW 745 FT.

CALCULATED  
HC  
CHECKED  
HC

GENERAL NOTES

LIC-37 / 661-  
16.59 / 0.00

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**LOCATION OF GUARDRAIL**

THE LOCATION OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

**REMOVAL MISC.: BOLLARDS (1956 LANCASTER ROAD)**

**REMOVAL MISC.: TWO SHEDS PLUS VEHICLES/EQUIPMENT (2108 LANCASTER ROAD)**

**REMOVAL MISC.: WOOD FENCING (1844 LANCASTER ROAD)**

**REMOVAL MISC.: WOOD SIGN (1844 LANCASTER ROAD)**

**REMOVAL MISC.: SIGN INCLUDING LIGHTS (1919 LANCASTER ROAD)**

THE ITEMS LISTED ABOVE SHALL BE REMOVED BY THE CONTRACTOR AS PER CMS 202, IF NOT ALREADY DONE SO BEFORE THE COMMENCING OF WORK ON THE PROJECT. ALL OF THE ITEMS SHALL BE COMPLETELY REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AS PER CMS 202.

**SURFACE SMOOTHNESS FOR BRIDGES AND APPROACHES**

AFTER THE COMPLETION OF WORK FOR ALL PHASES AND AFTER OPENING ALL LANES TO TRAFFIC, THE CONTRACTOR SHALL PERFORM THE FOLLOWING AS PER PROPOSAL NOTE 555:

1. CLEAN, SWEEP, AND PREPARE THE FINAL DECK AND FINAL ROADWAY SURFACE.
2. MEASURE, GRIND, AND RE-MEASURE THE BRIDGE AND/OR ROADWAY AS NECESSARY.
3. PERFORM RE-GROOVING OF THE BRIDGE DECK AS NECESSARY.

**CONTRACTION AND/OR EXPANSION JOINTS**

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

**PART-WIDTH CONSTRUCTION**

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

**ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN**

**ITEM 622 CONCRETE BARRIER, END SECTION, TYPE B, AS PER PLAN**

THE BARRIER AND END SECTIONS SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING RM-4.3, 4.4 & 4.6.

UNLESS ITEMIZED SEPARATELY, ALL ACTIVITIES INCLUDING EXCAVATION, SUBGRADE COMPACTION, AGGREGATE BASE, COMPACTED SOIL BACKFILL AND SEEDING NECESSARY TO CONSTRUCT THESE ITEMS SHALL BE AT THE CONTRACT UNIT PRICE BID PER FOOT FOR ITEM 622, CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN AND PER EACH FOR ITEM 622 CONCRETE BARRIER, END SECTION, TYPE B, AS PER PLAN. THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS TO PERFORM THE WORK.

**ITEM 606 - IMPACT ATTENUATOR, TYPE 2, (BIDIRECTIONAL)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. THE FACE OF THE IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 [(SPEED (IN MPH), HAZARD WIDTH (IN INCHES)), (BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/ BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

**ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350 OR MASH 2016)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

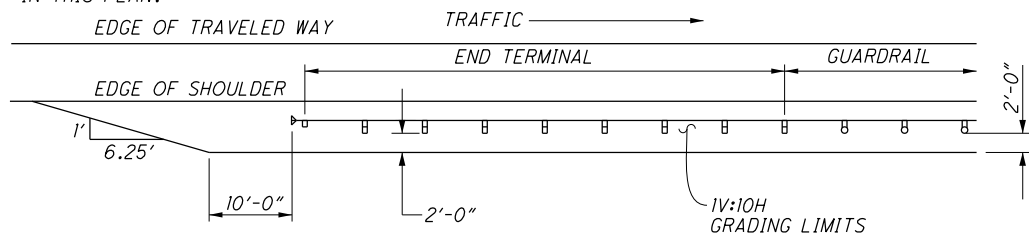
REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

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

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

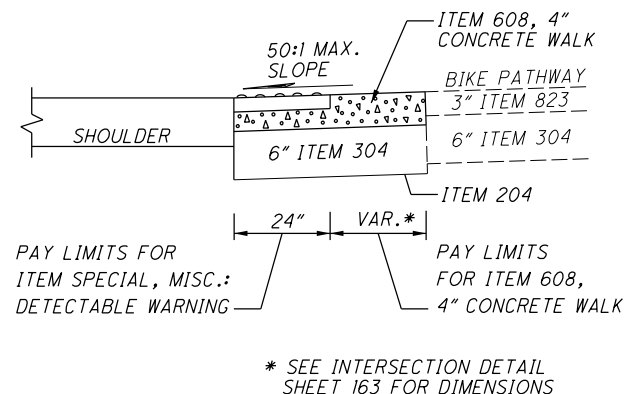
**GRADING FOR MGS TYPE E ANCHOR ASSEMBLY**

THE GRADING LAYOUT SHOWN HERE SHALL BE USED WITH ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E, AS DETAILED IN THIS PLAN.



**ITEM SPECIAL, MISC.: DETECTABLE WARNING**

DETECTABLE WARNINGS CONSTRUCTED IN THE PROPOSED PATH AT-GRADE CROSSING LOCATIONS SPECIFIED IN THE PLANS ARE PAID FOR UNDER ITEM SPECIAL, MISC.: DETECTABLE WARNING (SQ. FT.) AND IS FULL COMPENSATION FOR EXCAVATION, BACKFILL, BASE COURSE MATERIAL, REINFORCING STEEL, EXPANSION JOINT MATERIALS, AND ANY INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION AS SPECIFIED BELOW.



**ITEM SPECIAL - BOLLARD**

THE CONTRACTOR SHALL INSTALL PERMANENT STEEL BOLLARDS PER SCD RM-5.1. PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL - BOLLARD.

**EXISTING 10" MARATHON HP GASLINE CONSTRUCTION RESTRICTIONS**

THE PLANS INDICATE THE LOCATION OF AN EXISTING 10" MARATHON HP GASLINE THAT CROSSES EXISTING S.R. 661 AT APPROXIMATELY STA. 374+55. THE LOCATION AND DEPTH OF THE EXISTING GASLINE WERE DETERMINED BY SUBSURFACE UTILITY EXPLORATION. THE REQUIRED CONSTRUCTION RESTRICTIONS ARE AS FOLLOWS:

THE CROSSING OF THE GASLINE BY LOADED DUMP TRUCKS SHOULD BE ACCEPTABLE PROVIDED THE TRUCKS ARE NOT SINKING INTO THE SUBGRADE.

ANY USE OF A SHEEP FOOT ROLLER SHALL BE RESTRICTED TO 10 FT. EACH SIDE OF THE GASLINE. THERE IS CONCERN OF ROCKS BEING PUSHED INTO THE GASLINE CAUSING DENTING OR SCRATCHING OF THE COATING.

THE USE OF A SMOOTH ROLLER IS ACCEPTABLE BUT THE VIBRATOR SHALL NOT BE USED 10 FT. EACH SIDE OF THE GASLINE.

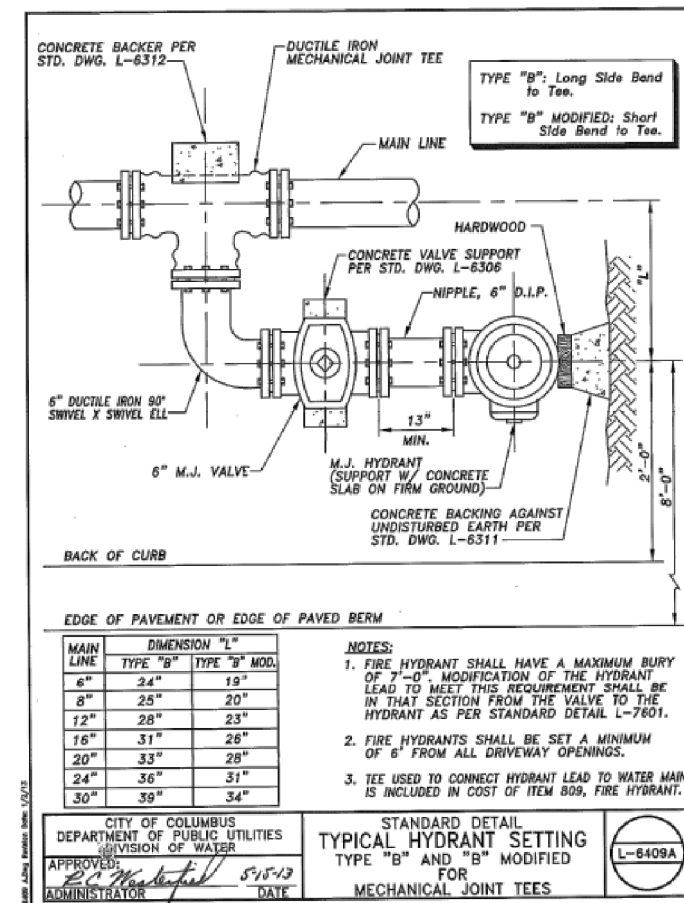
THE GLOBAL CEMENT STABILIZATION PROPOSED FOR THE PROJECT SHALL BE NON-PERFORMED 25 FT. EACH SIDE OF THE GASLINE.

IN ADDITION, MARATHON PETROLEUM SHALL BE NOTIFIED 5 DAYS PRIOR TO ANY WORK THAT WILL OCCUR WITHIN 25 FT. OF THE GASLINE. CONTACT GREG NEWMAN AT MARATHON PIPE LINE LLC. (419-884-0800).

**VILLAGE OF GRANVILLE WATERLINE WORK**

THE VILLAGE OF GRANVILLE WATER DEPARTMENT SHALL BE CONTACTED AT (740) 587-0165 5 WORKING DAYS BEFORE THE START OF ANY WORK ON THEIR RESPECTIVE WATERLINES.

BELOW IS THE STANDARD DETAIL TO BE USED FOR ITEM SPECIAL - FIRE HYDRANT AND GATE VALVE REMOVED AND RESET WORK.



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**ITEM SPECIAL - MAILBOX SUPPORT**

**DESCRIPTION**

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATION SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER. THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING POSTS AND OTHER MATERIAL NOT CONSIDERED SALVAGEABLE AND DISPOSED OF IN ACCORDANCE WITH 202.02.

**MATERIALS**

WOOD POSTS SHALL BE NOMINAL 4" x 4" SQUARE OR 4" DIAMETER ROUND, AND CONFORM TO 710.04. THE WOOD PLATE THAT IS ATTACHED TO THE TOP OF THE POST SHALL BE PRESSURE TREATED WOOD. STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2" I.D., AND CONFORM TO AASHTO M 181. HARDWARE (PLATES, SCREWS, BOLTS, ETC.) SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

**SETTING POSTS**

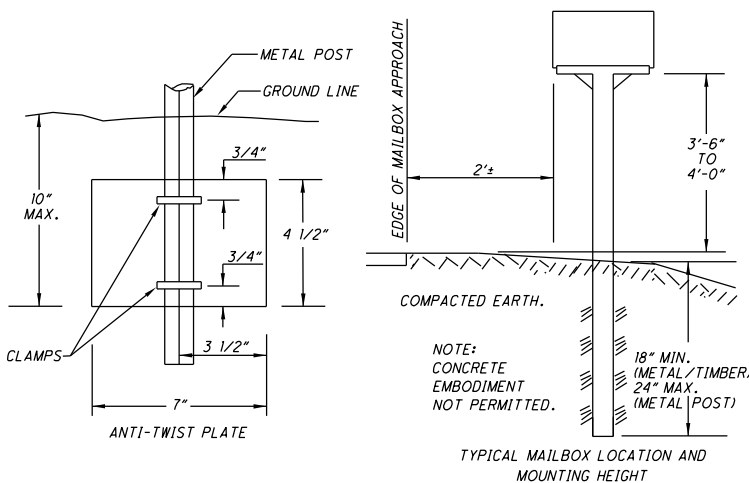
POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03 AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

**MOUNTING BOXES**

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST. THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION. IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING AND BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

**BASIS OF PAYMENT**

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.12. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY. MAILBOX SUPPORTS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE OF ITEM SPECIAL MAILBOX SUPPORT SYSTEM, SINGLE.



**ITEM SPECIAL - SETTLEMENT PLATFORM**

BASED ON THE SOIL TYPES ENCOUNTERED, IT IS ANTICIPATED THAT SETTLEMENT OF THE UNDERLYING SOILS WILL OCCUR AT CERTAIN LOCATIONS ON THIS PROJECT. IN THESE LOCATIONS, SETTLEMENT OF UNDERLYING SOILS SHOULD BE MONITORED BY MEANS OF SETTLEMENT PLATFORMS. SETTLEMENT PLATFORMS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:

- LOCATION 1: CL S.R. 661 STA. 369+00
- LOCATION 2: CL S.R. 661 STA. 371+65

**DESCRIPTION**

THIS ITEM CONSISTS OF FURNISHING, CONSTRUCTING, AND MAINTAINING SETTLEMENT PLATFORMS AND OBTAINING SETTLEMENT READINGS AS REQUIRED BY THE PLANS OR AS DIRECTED BY THE ENGINEER. AT THE OPTION AND EXPENSE OF THE CONTRACTOR, ADDITIONAL SETTLEMENT PLATFORMS MAY BE INSTALLED AT LOCATIONS APPROVED BY THE ENGINEER.

SETTLEMENT READINGS SHALL BE TAKEN WEEKLY DURING CONSTRUCTION AND DURING ANY SPECIFIED WAITING PERIOD. THE READINGS SHALL BE PLOTTED ON GRAPH PAPER PRESENTING DEFORMATION (ON THE NEGATIVE Y-AXIS) AND FILL HEIGHT (ON THE POSITIVE Y-AXIS) VERSUS TIME (ON THE X-AXIS). A COPY OF EACH CUMULATIVE PLOT SHALL BE SENT TO THE DISTRICT GEOTECHNICAL ENGINEER AND THE OFFICE OF GEOTECHNICAL ENGINEERING, ATTENTION: GEOTECHNICAL DESIGN COORDINATOR, AFTER EACH SETTLEMENT READING IS RECORDED.

THE CONTRACTOR SHALL IDENTIFY, SET AND MAINTAIN AN APPROPRIATE NUMBER OF FIXED BENCHMARKS, REFERENCE POINTS, ETC. TO FACILITATE THE SURVEYING OF THE SETTLEMENT PLATFORMS. ALL FIXED POINTS SHALL BE LOCATED NOT LESS THAN 150 FEET FROM THE TOE OF PROPOSED EMBANKMENT FILL AT ANY LOCATION.

**MATERIALS**

SOUND LUMBER SUCH AS (3/4-INCH) EXTERIOR GRADE PLYWOOD SHALL BE USED FOR THE BASE. THE PIPE SHALL BE (2-1/2-INCH) STANDARD BLACK PIPE WITH THREADED FITTINGS AS SHOWN ON THE PLANS. A STEEL PLATE (36" X 36" X 1/8") MAY BE SUBSTITUTED FOR THE LUMBER FOR THE PLATFORMS, AT THE CONTRACTOR'S OPTION.

**CONSTRUCTION METHODS**

THE PLATFORM SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS. IF EXISTING PAVEMENT IS ENCOUNTERED AT THE SPECIFIED LOCATIONS, THE PAVEMENT (INCLUDING ANY BASE MATERIAL) SHALL BE REMOVED AND THE SETTLEMENT PLATFORM SHALL BE SET ON THE EXPOSED SUBGRADE. THE PLATFORM SHALL BE SET ON A LEVEL SURFACE. THE PIPE SHALL BE FIRMLY SECURED TO THE PLATFORM AND SHALL BE MAINTAINED IN A PLUMB POSITION DURING THE PLACEMENT OF THE EMBANKMENT. THE PIPE SHALL BE MARKED AT INTERVALS TO FACILITATE MEASUREMENT OF THE DEPTH OF FILL.

THE CONTRACTOR SHALL PROTECT SETTLEMENT PLATFORMS FROM CONSTRUCTION TRAFFIC/ACTIVITIES USING APPROPRIATE METHODS SUCH AS BARRICADES, CONES, ETC. THE CONTRACTOR SHALL STOP WORK IN ANY LOCATION WHERE THE SETTLEMENT PLATFORM HAS BEEN DISTURBED OR DAMAGED. PLATFORMS OR PIPES DAMAGED OR DISPLACED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR PROPER CONDITION AT THE CONTRACTOR'S EXPENSE.

**PRIOR TO PAVING**

THE TOP OF THE SETTLEMENT PLATFORM PIPE SHALL BE CUT OFF TWO FEET BELOW THE FINISHED SURFACE OF THE SUBGRADE OR FINISHED GROUND SURFACE, WHICHEVER IS APPLICABLE.

**WAITING PERIOD**

THE WAITING PERIOD SHALL NOT BE CONSIDERED TO BEGIN UNTIL ALL PROPOSED WICK DRAINS OR ALTERNATE SETTLEMENT ACCELERATION METHODS HAVE BEEN INSTALLED AND ALL FILL FOR THE LOADING HAS BEEN PLACED. AT ANY LOCATION ON THE PROJECT THE LOADING FILL SHALL CONSIST OF THE PROPOSED EMBANKMENT CONSTRUCTED TO THE ENTIRE PROPOSED LATERAL EXTENTS AND TO WITHIN ONE FOOT OF THE PROPOSED VERTICAL EXTENTS.

NO CONSTRUCTION OF STRUCTURES (INCLUDING FOUNDATIONS, PILE DRIVING, MSE WALLS TOP PANELS, COPING OR BARRIER AND MOMENT SLABS, ETC.) OR PAVING OF ROADWAYS SHALL BEGIN UNTIL CONFIRMATION HAS BEEN RECEIVED FROM THE ENGINEER THAT THE CRITERIA TO END THE WAITING PERIOD HAVE BEEN MET.

**WAITING PERIOD CRITERIA**

THE ENGINEER WILL CONSIDER THE WAITING PERIOD COMPLETE WHEN CONSECUTIVE SETTLEMENT READINGS, RECORDED AFTER EMBANKMENT CONSTRUCTION IS COMPLETE AND AT LEAST ONE WEEK (168 HOURS) APART, RESULT IN ELEVATION DIFFERENCES EQUAL TO OR LESS THAN 1/8 INCH.

THE ANTICIPATED WAITING PERIODS IN CALENDAR DAYS ARE LISTED IN THE FOLLOWING TABLE:

ANTICIPATED WAITING PERIODS		
ROUTE	STATION	ESTIMATED WAITING PERIOD
661	369+00 CL	20 DAYS
661	371+65 CL	20 DAYS

IF SETTLEMENT RATES EXCEED 3/4 INCH PER MONTH AFTER EMBANKMENT CONSTRUCTION HAS BEEN COMPLETE FOR 45 CALENDAR DAYS, REMAINING CONSTRUCTION, INCLUDING ANY NECESSARY CORRECTIVE MEASURES, MAY PROCEED ONLY AT THE DIRECTION OF THE ENGINEER.

**METHOD OF MEASUREMENT**

THE NUMBER OF SETTLEMENT PLATFORMS TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF SETTLEMENT PLATFORMS COMPLETED, MAINTAINED AND ACCEPTED BY THE ENGINEER.

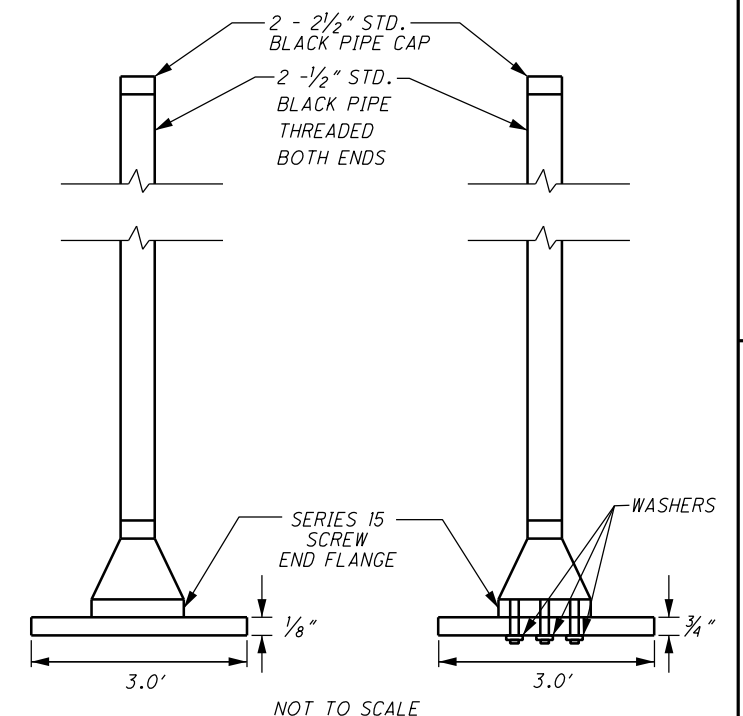
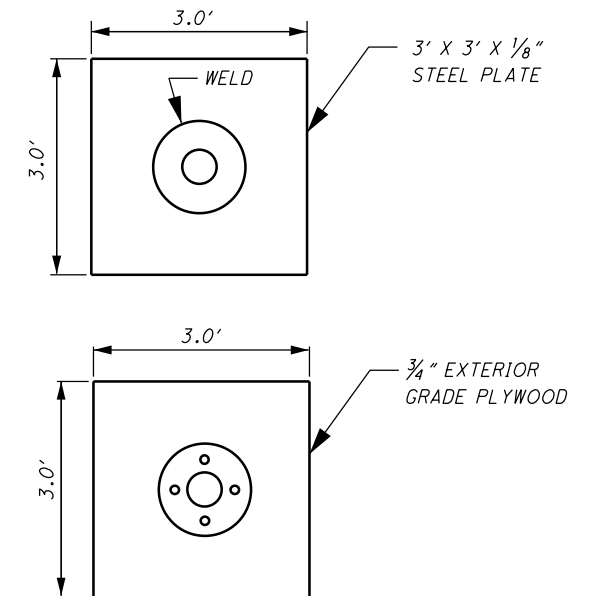
THE DEPARTMENT WILL CONSIDER VIBRATING WIRE SETTLEMENT MONITORING PLATFORMS IN LIEU OF THE CONVENTIONAL SETTLEMENT PLATFORMS. THE CONTRACTOR SHOULD PROVIDE DETAILS OF THE PROPOSED VIBRATING WIRE SETTLEMENT PLATFORMS AS WELL AS DESIGN DRAWINGS OF THE PROPOSED PLATFORM AND CABLING LAYOUT TO THE ENGINEER AT LEAST 30 DAYS PRIOR TO CONSTRUCTION. THE DEPARTMENT WILL REQUIRE 10 WORKING DAYS FOR REVIEW AND APPROVAL. THE DESIGN DRAWINGS SHOULD ILLUSTRATE THE PROPOSED SETTLEMENT VIBRATING WIRE SETTLEMENT PLATFORM LOCATIONS WILL ALL EXISTING AND PROPOSED SITE FEATURES TO VERIFY THE PROPOSED CABLING WILL NOT CONFLICT WITH EXISTING FACILITIES, PROPOSED FACILITIES OR UTILITIES. NO ADDITIONAL PAYMENT WILL BE PROVIDED IF THE CONTRACTOR ELECTS TO UTILIZE VIBRATING WIRE SETTLEMENT PLATFORMS.

**BASIS OF PAYMENT**

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH FOR ITEM SPECIAL - SETTLEMENT PLATFORM WHICH IS COMPENSATION FOR CONSTRUCTING, MAINTAINING, AND MONITORING THE SETTLEMENT PLATFORMS INCLUDING FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT SHALL NOT BE MADE FOR SETTLEMENT PLATFORMS WHICH BECOME USELESS DUE TO DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE TO COMPLETE THE WORK NOTED ABOVE:

ITEM 203 SPECIAL - SETTLEMENT PLATFORM 2 EACH



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**POST CONSTRUCTION STORM WATER TREATMENT**

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

**VEGETATED FILTER STRIP**

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

**REVIEW OF DRAINAGE FACILITIES**

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

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

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

**ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT**

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING 12 IN DIAMETER CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER. BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES. THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE. IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACKFILLED IN ACCORDANCE WITH THE PROVISIONS OF 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

**CATCH BASINS, AS PER PLAN**

THE CATCH BASINS, INLETS AND MANHOLES SHALL BE PRECAST OR CAST IN PLACE CONCRETE.

- CATCH BASIN, NO. 3, AS PER PLAN
- CATCH BASIN, NO. 3A, AS PER PLAN
- INLET No. 3, FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN
- CATCH BASIN, NO. 5, AS PER PLAN

**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.

**DRAINAGE DISCHARGE CONTINUANCE**

FURNISH A DRAINAGE DISCHARGE CONTINUANCE FOR ANY DRAINAGE DISCHARGE DISTURBED BY THE WORK AND NOT SHOWN IN THE PLANS. THE LOCATION, TYPE (CONDUIT OR SWALE), SIZE AND GRADE OF THE DRAINAGE DISCHARGE CONTINUANCE WILL BE AGREED TO BY THE ENGINEER

FURNISH AN INSPECTION WELL AT THE RIGHT OF WAY LINE IN ACCORDANCE WITH SCD DM-3.1 FOR EACH DRAINAGE DISCHARGE THAT OUTLETS THROUGH A CURB OPENING, OR INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST IS INCLUDED IN ITEM 611, INSPECTION WELL.

FURNISH A WELL GRADED TRANSITION BETWEEN THE DITCH AND THE SWALE WHEN OUTLETTING A SWALE TO A DITCH. THE COST FOR THE GRADED TRANSITION IS INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN.

FURNISH AN EROSION CONTROL PAD AS SHOWN IN SCD DM-1.1 WHEN OUTLETTING A CONDUIT TO A DITCH. THE COST FOR THE EROSION CONTROL PAD IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE \_ FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED HOLE OR A CURB SECTION WITH A HOLE WHEN OUTLETTING A CONDUIT THROUGH A CURB OPENING. THE COST OF DRILLING, OR FURNISHING THE CURB SECTION WITH HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE \_ FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED CORE HOLE WHEN OUTLETTING INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST OF THE DRILLED CORE HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC. TYPE \_ FOR DRAINAGE DISCHARGE CONTINUANCE.

**DOCUMENTATION**

THE CONTRACTOR SHALL FURNISH WRITTEN DOCUMENTATION TO THE ENGINEER AND TO THE DISTRICT R/W PERMIT OFFICE. THE DOCUMENTATION INCLUDES THE CONSTRUCTION PROJECT NUMBER, PID, COUNTY, ROUTE, SECTION, LATITUDE AND LONGITUDE OF THE DRAINAGE DISCHARGE AT THE R/W, THE NAME OF PROPERTY OWNER WITH ADDRESS, THE DATE THE DRAINAGE DISCHARGE WAS LOCATED, THE DATE THE DRAINAGE DISCHARGE CONTINUANCE WAS FURNISHED, A DETAILED DESCRIPTION OF THE WORK AND PICTURES OF THE DRAINAGE DISCHARGE CONTINUANCE (IN PDF OR JPEG FORMAT).

THE DOCUMENTATION IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE \_ FOR DRAINAGE DISCHARGE CONTINUANCE OR ITEM 203, EMBANKMENT AS PER PLAN.

DRAINAGE DISCHARGE CONTINUANCE REMOVAL THE ENGINEER MAY REQUIRE THE NEWLY INSTALLED DRAINAGE DISCHARGE CONTINUANCE TO BE REMOVED.

REMOVE THE NEWLY INSTALLED CONDUIT AND ANY EXISTING CONDUIT TO THE RIGHT OF WAY LINE. FOR CONDUIT THAT OUTLETS THROUGH THE CURB RESTORE THE CURB BY FILLING THE HOLE WITH CLASS OC 1 CONCRETE OR REPLACE THE CURB SECTION. FOR CONDUIT THAT OUTLETS TO A STORM SEWER OR DRAINAGE STRUCTURE LEAVE 6 INCHES PROTRUDING OUTSIDE OF THE CONDUIT . PLUG THE PROTRUDING CONDUIT WITH EITHER A MANUFACTURED CAP OR CLASS OC 1 CONCRETE. FOR CONDUIT THAT OUTLETS TO THE DITCH REMOVE THE EROSION CONTROL PAD. RESTORE ALL AREAS AS REQUIRED. PLUG THE EXISTING CONDUIT REGARDLESS OF SIZE AT THE RIGHT OF WAY LINE WITH CLASS OC 1 CONCRETE AND RESTORE ALL AREAS AS REQUIRED. ALL COSTS ARE INCLUDED IN ITEM 202, REMOVAL MISC. CONDUIT.

DAM THE SWALE THAT OUTLETS TO THE DITCH AT THE R/W AS DIRECTED BY THE ENGINEER. ALL COSTS ARE INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN.

REMOVE THE INSPECTION WELL AND RESTORE ALL AREAS AS REQUIRED. THE COST IS INCLUDED IN ITEM 202, REMOVAL MISC. INSPECTION WELL.

CONDUIT MATERIAL TYPES THE FOLLOWING CONDUIT MATERIAL TYPES MAY BE USED: 707.33, 707.41 NONPERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, AND 707.52 SDR35.

PAY ITEMS EACH OF THE PAY ITEMS LISTED BELOW FOR CONDUIT MISCELLANEOUS TYPES B, C, E AND F FOR DRAINAGE DISCHARGE CONTINUANCE INCLUDE CONDUIT SIZES 2 INCH TO 10 INCH. THERE IS NO COST DIFFERENTIATION FOR SIZE IN THESE PAY ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN MAKING THE ABOVE DRAINAGE DISCHARGE CONTINUANCE:

- ITEM 611, 1 EACH INSPECTION WELL
- ITEM 611, 10 FT. CONDUIT, MISC TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 10 FT. CONDUIT, MISC TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 10 FT. CONDUIT, MISC TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 10 FT. CONDUIT, MISC TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 202, 10 FT. REMOVAL MISC CONDUIT
- ITEM 202, 1 EACH REMOVAL MISC INSPECTION WELL
- ITEM 203, 5 CY EMBANKMENT AS PER PLAN

**ITEM 202 REMOVAL MISC.: CONCRETE DITCH LINING**

THE ITEM LISTED ABOVE SHALL BE REMOVED BY THE CONTRACTOR AS PER CMS 202. ALL ITEMS SHALL BE COMPLETELY REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AS PER CMS 202.

**ITEM 613 LOW STRENGTH MORTAR BACKFILL**

A ESTIMATED QUANTITY FOR LOW STRENGTH MORTAR BACKFILL HAS BEEN INCLUDED IN THE PLANS TO BE USED AS DIRECTED AND APPROVED BY THE PROJECT ENGINEER.

- ITEM 613 LOW STRENGTH MORTAR BACKFILL 30 CY

**ENDANGERED BAT HABITAT REMOVAL**

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED 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.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 9:30 PM AND 7 AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

IN ADDITION, LIMIT THE OPERATION OF HEAVY EQUIPMENT AND OTHER NOISY PROCEDURES TO DAYLIGHT HOURS WHENEVER POSSIBLE. MAINTAIN EFFECTIVE MUFFLERS ON EQUIPMENT. LOCATE EQUIPMENT AND VEHICLE STAGING AREAS AS FAR FROM NOISE SENSITIVE AREAS AS POSSIBLE. LIMIT UNNECESSARY IDLING OF EQUIPMENT.

**OEPA NOTIFICATION OF DEMOLITION AND RENOVATION**

ASBESTOS SURVEYS FOR THE LIC-661-0.02 BRIDGE SCHEDULED FOR DEMOLITION WORK WERE CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. A COPY OF THE ASBESTOS SURVEY REPORT FOR THE BRIDGE HAS BEEN INCLUDED IN THE PLAN PACKAGE FOR THIS PROJECT. THE ASBESTOS SURVEY REPORT IDENTIFIED THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS IN THE CAULKING AROUND THE ALUMINUM TUBULAR RAIL MOUNTING BRACKETS. BASED ON THE ASBESTOS INSPECTION AND LABORATORY ANALYSIS APPROXIMATELY 24 SQUARE FEET OF CATEGORY II NON-FRIABLE ASBESTOS IS PRESENT ON THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE (OAC) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHA) STANDARD FOR ASBESTOS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED BY THE ASBESTOS HAZARD EVALUATION SPECIALIST, HAS BEEN INCLUDED AT THE END OF THE ASBESTOS SURVEY REPORT. THE CONTRACTOR SHALL COMPLETE AND SIGN THE FORMS AND SUBMIT IT TO:

- ASBESTOS PROGRAM
- OHIO EPA, DAPC
- PO BOX 1049
- COLUMBUS OH 43216-1049

AT LEAST 10 WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION WORK. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED AND SIGNED FORMS TO THE ENGINEER. INFORMATION REQUIRED ON THE FORMS SHALL INCLUDE AT A MINIMUM: 1) THE ODOT PROJECT NUMBER, 2) THE CONTRACTORS NAME, ADDRESS AND TELEPHONE NUMBER, 3) THE SCHEDULED DATES FOR THE START AND COMPLETION OF BRIDGE DEMOLITIONS.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORMS. PAYMENTS FOR THIS WORK SHALL BE INCIDENTAL TO THE ITEM 202 STRUCTURE REMOVAL ITEM(S) IN THE PLAN.

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GENERAL NOTES

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**ITEM 614 MAINTAINING TRAFFIC**

TRAFFIC SHALL BE MAINTAINED AS PER THE DETAIL SHEETS AND SPECIFICATIONS AND AS OUTLINED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION. IN ADDITION, THE FOLLOWING REQUIREMENTS SHALL APPLY:

THE CONTRACTOR SHALL SUBMIT, IN WRITING A SCHEDULE OF OPERATIONS TO THE DISTRICT DEPUTY DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IMMEDIATELY, AS PER CMS 614.03.

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

DRUMS SHALL BE PROPERLY REFLECTORIZED (HIGH INTENSITY, FLORESCENT SHEETING) PLASTIC DRUMS AND WEIGHTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL INVOLVED IN PLACING AND REMOVING ITEM 622 PORTABLE CONCRETE BARRIER, 32".

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE ROADWAY UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.

TEMPORARY FEATHERS USING ITEM 441 WILL BE REQUIRED AT ANY LOCATION DESIGNATED BY THE PROJECT ENGINEER. THEY SHALL BE INSTALLED ACCORDING TO BP-3.1 AND REMOVED WHEN NO LONGER REQUIRED.

THE PLANS INDICATE THE MINIMUM SIGNAGE WHICH MUST BE INSTALLED AND/OR MAINTAINED DURING ALL PHASES OF CONSTRUCTION.

EXISTING SIGNS OR CONTRACTOR SUPPLIED SIGNS SHALL BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS SHOWN IN THE PLANS.

ANY CONFLICTING SIGNS AND PAVEMENT MARKINGS WHETHER INSIDE OR OUTSIDE THE WORK LIMITS SHALL BE REMOVED OR COVERED AND TEMPORARY SIGNS AND MARKINGS ERECTED AND PLACED WHEN APPLICABLE BY THE CONTRACTOR.

THE ENGINEER SHALL RECORD INSTALLATION, REMOVAL, COVERING, UNCOVERING OR REERECTION OF SIGNS IN THE PROJECT DIARY.

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

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) AS PER CMS 2019 501.05.B.2.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614 MAINTAINING TRAFFIC LS

**ITEM 614, MAINTAINING TRAFFIC (LANE CLOSURE/REDUCTION REQUIRED)**

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.

**ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)**

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

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

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

**ITEM 614 MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS)**

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES ON S.R. 16 SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

DAY OF HOLIDAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 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 ONLY)	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 DISCINCENTIVE IN THE AMOUNT OF \$150 FOR EACH MINUTE THE ABOVE DESCRIBED LANE RESTRICTIONS ARE VIOLATED.

**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 D5 PUBLIC INFORMATION OFFICER (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 AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVEABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
ROAD CLOSURES	>= 2 WEEKS	21 DAYS
	> 12 HOURS & < 2 WEEKS	14 DAYS
	<= 12 HOURS	4 DAYS
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 DAYS
	< 2 WEEKS	5 DAYS
START OF CONST. & TRAFFIC PATTERN CHANGE	N/A	14 DAYS

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

**ITEM 615 ROADS FOR MAINTAINING TRAFFIC**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED TO CONSTRUCT THE TEMPORARY PAVEMENT DURING PRE-PHASE AND PHASES IA AND IB. THE REMOVAL OF THE TEMPORARY PAVEMENT SHALL BE INCLUDED IN THIS ITEM. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THIS WORK AS PER ITEM 615.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SEE SHEET 36)  
ITEM 615 ROADS FOR MAINTAINING TRAFFIC LS

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

AS PER THE REQUIREMENTS OF ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, THE CONTRACTOR SHALL PREPARE THE SUBGRADE AS PER 615.05. THE SUBGRADE SHALL BE COMPACTED IN ACCORDANCE TO 204.03 AND MUST HAVE A COMPACTED SUBGRADE. PAYMENT FOR THE SUBGRADE COMPACTION SHALL BE INCLUDED IN THE UNIT BID PRICE PER SQ.YD. FOR PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN.

**EARTHWORK FOR MAINTAINING TRAFFIC**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLANS FOR INFORMATION ONLY:

EXCAVATION FOR MAINTAINING TRAFFIC 251 CY  
EMBANKMENT FOR MAINTAINING TRAFFIC 209 CY  
SEEDING & MULCHING FOR MAINTAINING TRAFFIC 1,858 SY

(SEE CROSS-SECTIONS SHEETS 38, 52, 53 & 63 FOR DETAILS)

**MAINTAINING EXISTING DRIVES**

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVES TO THE FULLEST EXTENT POSSIBLE. IT IS UNDERSTOOD THAT FOR SHORT PERIODS OF TIME, THE FULL ACCESS TO A DRIVEWAY MAY NOT BE POSSIBLE. THE CONTRACTOR SHALL MAKE ACCOMODATIONS TO THE RESIDENCE/ BUSINESS OWNER SO THAT DURING THESE SHORT INTERVALS, THE HOME OR BUSINESS OWNER CAN STILL HAVE ACCESS TO PARK NEAR THEIR RESIDENCE OR BUSINESS.

PROPERTIES WITH MULTIPLE ACCESS POINTS: WORK AT ONE DRIVE AT A TIME.  
PROPERTIES WITH A SINGLE ACCESS POINT: MAINTAIN ACCESS TO PROPERTY AT ALL TIMES USING ONE OF THE FOLLOWING METHODS: REPLACE DRIVEWAY USING PART WIDTH CONSTRUCTION, BACKFILL OPEN EXCAVATION WITH ITEM 304 AGGREGATE FOR TEMPORARY ACCESS, OR USE STEEL PLATES TO SPAN OVER OPEN EXCAVATIONS AND/OR CONCRETE NOT OUT OF CURE.

BEFORE ACCESS TO A DRIVEWAY IS INTERRUPTED, THE CONTRACTOR SHALL GIVE PRIOR NOTICE TO THE OCCUPANT OF THE PROPERTY 72 HOURS BEFORE THE WORK IS STARTED.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT U.S. MAIL OR ANY OTHER DELIVERY WITHIN THE PROJECT LIMITS IS NOT DISRUPTED BY CONSTRUCTION OPERATIONS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE A OR B 25 CY  
ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE C 25 CY  
ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 40 CY

**MAINTAINING APPROACH ACCESS**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED TO CONSTRUCT THE TEMPORARY PAVEMENT WEDGE DURING PHASE IB ON RAMP H. THE REMOVAL OF THE TEMPORARY PAVEMENT SHALL BE INCLUDED IN THIS ITEM. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THIS WORK AS PER ITEM 615.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 10 CY

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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**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 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.

**PLACEMENT OF ASPHALT CONCRETE**

DURING FINAL COURSE PLACEMENT, TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

**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 3 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.

**ITEM 614. LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE**

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 AS APPROVED BY THE ENGINEER.

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

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 AGENICES, AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEO'S 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 CMS 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 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 (CONTINUED)**

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 QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 24 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 A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

**ITEM 614. PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN**

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, 4 CHANGEABLE MESSAGE SIGNS. 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 CMS 614.03.

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

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

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

**ITEM 614. PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN (CONTINUED)**

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

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

(4 SIGNS x 16 MONTHS = 64 SNMT)

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 64 SNMT

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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

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

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

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

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

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

THE COST OF 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.

**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.

SEE SHEET 36 FOR ESTIMATED QUANTITIES.

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

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

**ITEM 614 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.

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

ITEM 614 REPLACEMENT DRUM 25 EACH

**ADVANCE SIGNING**

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE. ADVANCE SIGNING SHALL CONFORM TO THE MT SERIES OF STANDARD DRAWINGS. ADDITIONAL SIGNS MAY BE REQUIRED FOR MAJOR CLOSURES AT THE DISCRETION OF THE ENGINEER. THESE SIGNS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

**OVERLAYING EXISTING SIGNS**

MAINTENANCE OF TRAFFIC PLANS SHALL INCLUDE OVERLAYING EXISTING ROADWAY SIGNS THAT CONFLICT WITH MAINTENANCE OF TRAFFIC SIGNS IN WORK ZONES. DRAWINGS OF OVERLAYS SHALL BE SUBMITTED TO THE ENGINEER FOR APPORVAL.

PAYMENT FOR OVERLAYING EXISTING SIGNS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

**TEMPORARY SIGNS AND SIGN SUPPORTS**

TEMPORARY SIGN INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE PLANS AND CONFORM WITH NCHRP 350. TEMPORARY SIGN SUPPORTS SHALL BE IN ACCORDANCE WITH SCD MT-105.10.

PAYMENT FOR TEMPORARY SIGNS AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

**COVERING SIGNS**

WHERE THE PLANS CALL FOR OR AS DIRECTED BY THE PROJECT ENGINEER FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE IS STRICTLY PROHIBITED.

COST FOR THE WORK AS DESCRIBED ABOVE SHALL BE PAID WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

**WORK ZONE PAVEMENT MARKINGS**

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY AS CONTINGENCY QUANTITIES FOR ANY PAVEMENT MARKINGS NOT SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN SHEETS (E.G. MARKINGS BETWEEN PHASES, MARKINGS AFTER PAVEMENT PLANING AND BEFORE FINAL MARKINGS ARE INSTALLED, ETC.)

ITEM 614 WORK ZONE CENTER LINE, CLASS 1, 642 PAINT	1 MILE
ITEM 614 WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT	3 MILE
ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 642 PAINT	100 FT
ITEM 614 WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT	1000 FT
ITEM 614 WORK ZONE STOP LINE, CLASS 1, 642 PAINT	250 FT

**TRAIL CLOSURE SIGNS**

TWO TRAIL CLOSURE SIGNS, INCLUDING SUPPORTS, SHALL BE FURNISHED, ERECTED, MAINTAINED AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

FLOURESCENT ORANGE TYPE G SIGNING SHALL BE USED FOR ALL DETOUR AND CONSTRUCTION WARNING SIGNS.



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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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**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.

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.

**DETOUR SIGNING, AS PER PLAN**

THE CONTRACTOR SHALL ERECT, SUPPLY, MAINTAIN, AND REMOVE THE DETOUR SIGNING AS SHOWN ON SHEETS 31-34. ROUTE SIGNS DESIGNATED IN THIS PLAN AS ODOT SUPPLIED MAY BE PICKED UP BY THE CONTRACTOR FROM AND RETURNED TO THE ODOT DISTRICT 5 OFFICE LOCATED AT:

9600 JACKSONTOWN RD, JACKSONTOWN, OHIO 43030

THE CONTRACTOR SHALL NOTIFY THE DISTRICT 5 ROADWAY SERVICES MANAGER AT 740-323-4400 A MINIMUM OF SEVEN (7) DAYS PRIOR TO PICK UP OF ALL ROUTE SIGNS DESIGNATED IN THIS PLAN AS ODOT SUPPLIED.

PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 DETOUR SIGNING, AS PER PLAN.

**DESIGNATED LOCAL DETOUR ROUTE**

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A SECONDARY, UNSIGNED DETOUR ROUTE OR 'DESIGNATED LOCAL DETOUR' FOR THE CLOSURE OF RAMP F IN PHASES 1A & 1B HAS BEEN DETERMINED. THIS DETOUR IS TURNING RIGHT ONTO RIVER ROAD FROM S.R. 16 WB TO TRAVEL WEST ON RIVER ROAD TO S.R. 661 NB. DURING THIS TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST, AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC IS RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE(S):

ITEM 407 NON-TRACKING TACK COAT	10 GAL
ITEM 441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M	5 CY
ITEM 642 CENTER LINE	0.5 MILE

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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**MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION**

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

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

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

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION. IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

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

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

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

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED A REASONABLE AMOUNT OF TIME, AS APPROVED BY THE ENGINEER. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

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

THE CONTRACTOR SHALL MAINTAIN RECORDS OF MALFUNCTIONS INCLUDING:

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

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

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

**ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & RAMP B/WEAVER DR.)**

**ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & RAMP C)**

THE CONTRACTOR SHALL ERECT THE TEMPORARY SIGNALS AS SHOWN ON SHEETS 39-40 AND SHALL CONFORM TO C&MS SECTION 733.02 AS WELL AS SCD'S MT-96.20 AND MT-96.26. THESE SIGNALS SHALL BE IN PLACE AS SOON AS THE DETOUR IS IN PLACE FOR S.B. TRAFFIC ON S.R. 661, AND SHALL REMAIN IN OPERATION FOR THE DURATION OF THE PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING POWER TO THESE SIGNALS BY CONTACTING THE AEP SOLUTION CENTER AT 1-800-672-2231.

THE CONTRACTOR SHALL PREEMPT THESE SIGNALS IN ACCORDANCE WITH THE PREEMPTION NOTE ON SHEET 241. THE CONTRACTOR SHALL MAINTAIN THE PREEMPTION EQUIPMENT UNTIL THE SIGNALS ARE TO BE REMOVED, AND THE EQUIPMENT SHALL BE DELIVERED TO THE VILLAGE OF GRANVILLE MAINTENANCE DEPARTMENT.

THE CONTRACTOR SHALL ALSO DESIGN, FURNISH, INSTALL, AND MAINTAIN A TRAFFIC DETECTOR ON EACH APPROACH WHICH WILL RELIABLY DETECT ALL LEGAL TRAFFIC APPROACHING (BUT NOT LEAVING) THE SIGNAL AS IT PASSES OR WAITS AT THE APPROACH. THE DETECTOR SHALL BE A NON-INVASIVE TYPE (RADAR, VIDEO, OR MICROWAVE) THAT SHALL BE MOUNTED ON THE NEAREST SIGNAL SUPPORT AND CAPABLE TO DETECT VEHICLES A MINIMUM OF 20 FEET BACK FROM THE STOP LINE ON EACH APPROACH.

IF DETECTION AREAS CANNOT BE OBTAINED BY MOUNTING THE DETECTOR ON A SIGNAL SUPPORT, THEN A WOOD POLE SHALL BE INSTALLED FOR MOUNTING THE DETECTOR AND 1/4" MESSENGER WIRE SHALL BE RUN TO THE NEAREST SIGNAL SUPPORT. THE CONTRACTOR SHALL HAVE BACKUP UNITS ON HAND SO VEHICULAR DETECTION IS MAINTAINED AT ALL TIMES.

DETECTORS WHICH DO NOT PROVIDE RELIABLE DETECTION, FREE FROM FALSE CALLS, SHALL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.

ALL SIGNAL HEADS SHALL CONSIST OF 12" LED LENSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY MALFUNCTIONING SIGNAL HEADS AND LED'S.

PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE FOR EACH TEMPORARY SIGNAL LOCATION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND TRAINING REQUIRED TO PROVIDE THE SYSTEMS AS DETAILED ABOVE.

THE FOLLING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & RAMP B/WEAVER DR.) 1 EACH

ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & RAMP C) 1 EACH

**ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & GRANVIEW RD./KENDALL DR.)**

THE CONTRACTOR SHALL PREEMPT THIS SIGNAL IN ACCORDANCE WITH THE PREEMPTION NOTE ON SHEET 241. THIS PREEMPTION EQUIPMENT SHALL BE IN PLACE AND FULLY FUNCTIONAL WHEN THE DETOUR IS IN PLACE. THE PREEMPTION EQUIPMENT AT THIS INTERSECTION SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION. ALL DAMAGED OR MALFUNCTIONING PARTS SHALL BE REPLACED DURING THIS TIME BY THE CONTRACTOR. AFTER CONSTRUCTION IS COMPLETE AND THE DETOUR IS NO LONGER IN PLACE, THE PREEMPTION EQUIPMENT SHALL REMAIN IN PLACE PERMANENTLY AND THE VILLAGE OF GRANVILLE WILL BE RESPONSIBLE FOR THE EQUIPMENT.

PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE AND SHALL INCLUDE INSTALLATION, MAINTENANCE, AND TRAINING NECESSARY TO PREEMPT THIS INTERSECTION.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (COLUMBUS RD. & GRANVIEW RD./KENDALL DR.) 1 EACH

**ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (S.R. 37/ S.R. 661 THROUGH THE WORK ZONE)**

DURING PHASE 1 OF CONSTRUCTION WHEN S.B. TRAFFIC ON S.R. 661 IS DETOURED, A GPS-PREEMPTED TEMPORARY SIGNAL SHALL BE INSTALLED AS SHOWN ON SHEETS 41 AND 56 THAT WILL ALLOW A SOUTHBOUND EMERGENCY VEHICLE THROUGH THE WORK ZONE.

INSTALL GPS-BASED EVPE SYSTEM, WITH PHASE SELECTOR, RADIO TRANSCEIVER, AND OMNIDIRECTIONAL ANTENNA AT THE ODOT TRAFFIC SIGNAL CONTROLLER CABINET (CALTRANS 332 WITH 2070-IC CPU RUNNING ECONOLITE ASC/3 SOFTWARE) AT THE RAMP F/S.R. 661 INTERSECTION.

TEMPORARY PULL BOXES, TRENCHED CONDUIT, AND BORED CONDUIT SHALL BE INSTALLED AS SHOWN ON SHEETS 41 AND 56 TO POWER THE TEMPORARY SIGNAL SYSTEM.

PRIOR TO INSTALLATION, THE CONTRACTOR SHALL CONDUCT FIELD STUDIES WITH THE EQUIPMENT VENDOR TO VERIFY THAT THE SYSTEM RELIABLY ACHIEVES AT LEAST 2300 FEET OF RADIO RANGE FROM THE TRAFFIC SIGNAL CABINET. PROVIDE A BRIEF WRITTEN REPORT TO THE ENGINEER DESCRIBING THE RESULTS OF THE FIELD STUDIES. THE ENGINEER WILL REVIEW THE FIELDS STUDIES AND AUTHORIZE INSTALLATION OF THE PROPOSED EVPE SYSTEM IF IT MEETS THE REQUIREMENTS OF THESE PLANS.

PROVIDE CONFIGURATION SOFTWARE TO THE FIRE DEPARTMENT, INSTALLED ON ONE OR TWO COMPUTERS BELONGING TO THE FIRE DEPARTMENT.

PROVIDE A THOROUGH AMOUNT OF TRAINING TO THE FIRE DEPARTMENT ON THE USE OF THE SYSTEM. COORDINATE THE TRAINING WITH DISTRICT 5 SIGNAL OPERATIONS STAFF, WHO SHOULD BE IN ATTENDANCE.

NOTE CONTINUED ON NEXT SHEET...

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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**ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (S.R. 37/  
S.R. 661 THROUGH THE WORK ZONE) (CONTINUED)**

THE CONTRACTOR SHALL INSTALL A PUSHBUTTON IN THE EXISTING FIRE STATION LOCATED AT 133 N PROSPECT ST THAT WILL COMMUNICATE TO THE SIGNAL TO TRANSITION THROUGH A YELLOW CHANGE INTERVAL TO AN ALL-RED CONDITION. THE ALL-RED CONDITION OF THE WORK ZONE SIGNAL DURING PREEMPTION SHALL CONSIST OF TWO INTERVALS:

1. A GUARANTEED DUMMY-PHASE INTERNAL (TRACK) CLEARANCE INTERVAL OF 30 SECONDS FOR MOT PHASE 1A, AND 45 SECONDS FOR MOT PHASE 1B.
2. A DUMMY-PHASE DWELL INTERVAL THAT PERSISTS AS LONG AS A VALID PREEMPT IS BEING RECEIVED FROM AN EQUIPPED VEHICLE.

DURING THE ENTIRE PREEMPT INTERVAL, THE WORK ZONE ENTRY SIGNAL ON NORTHBOUND S.R. 37 AND ALL DRIVEWAY SIGNALS SHALL REMAIN RED.

PROVIDE A SPAN-WIRE MOUNTED DRIVEWAY SIGNAL AT EACH DRIVEWAY SHOWN ON SHEETS 41 AND 56. EACH DRIVEWAY SIGNAL APPROACH SHALL BE DRIVEN AS AN OVERLAP FROM A VEHICLE LOAD SWITCH POSITION, TO ENABLE APPROACH MONITORING WITH THE CMU.

EACH DRIVEWAY SIGNAL SHALL OPERATE SIMILARLY TO A FIRE SIGNAL (OMUTCD) AND SHALL CONSIST OF 2, THREE-SECTION HEADS WITH A RED SECTION ABOVE TWO YELLOW SECTIONS AND SHALL OPERATE BY TRANSITIONING FROM A BOTTOM FLASHING YELLOW ARROW THROUGH A 4-SECOND YELLOW CHANGE INTERVAL MIDDLE SECTION TO A SOLID RED BALL INDICATION DURING THE EVPE INTERVAL.

EACH DRIVEWAY SIGNAL SPAN SHALL INCLUDE AN R3-5L "LEFT TURN ONLY SIGN", AND A GROUND-MOUNTED R6-2 "ONE WAY" SIGN SHALL ALSO BE INSTALLED.

PROVIDE ONE PAR-38 BLUE LED CONFIRMATION LIGHT AS SHOWN IN THE PLANS AT THE TERMINUS OF THE WORK ZONE FOR THE USE OF SOUTHBOUND EMERGENCY VEHICLES. MOUNT THE LIGHT ON THE EXISTING SIGNAL SUPPORT WHERE THE POLE-MOUNTED CONTROLLER IS LOCATED. INSTALL THE LIGHT SO THAT IT IS ILLUMINATED ONLY DURING THE SECOND PHASE OF THE ALL-RED CONDITION (I.E. THE LAMP SHALL BE DARK AT ALL OTHER TIMES).

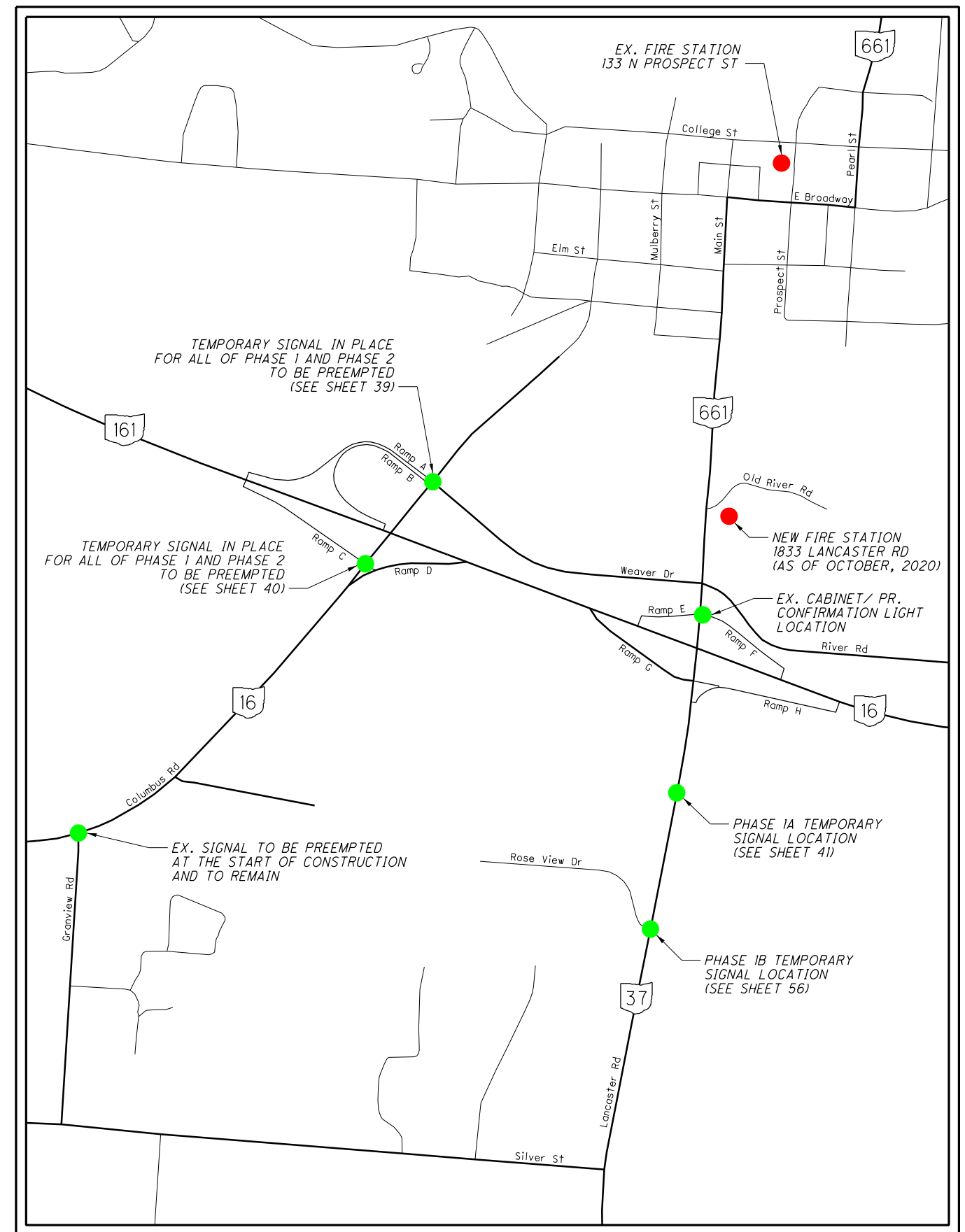
NOTE: A NEW FIRE STATION, LOCATED AT 1833 LANCASTER RD IS SCHEDULED TO BE IN OPERATION BEGINNING IN OCTOBER OF 2020. THE CONTRACTOR WILL BE RESPONSIBLE FOR RE-INSTALLING THE SOFTWARE, AND PUSHBUTTON IN THE NEW FIRE STATION AND ENSURE THAT THE WORK ZONE OPERATES RELIABLY.

ALL SIGNAL HEADS SHALL CONSIST OF 12" LED LENSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY MALFUNCTIONING SIGNAL HEADS AND LED'S.

PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND TRAINING REQUIRED TO PROVIDE THE WORK ZONE TRAFFIC SIGNAL AS DETAILED ABOVE.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614, SPECIAL - WORK ZONE TRAFFIC SIGNAL (S.R. 37/  
S.R. 661 THROUGH THE WORK ZONE) 1 EACH



**MOT SIGNALS & PREEMPTION**

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**MAINTENANCE OF TRAFFIC GENERAL NOTES**

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**SEQUENCE OF OPERATIONS**

**GENERAL:**

IT IS THE INTENT OF THIS SEQUENCE OF OPERATIONS TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELING PUBLIC.

**ALTERNATE METHODS:**

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

**PRE-PHASE**

**S.R. 16:**  
BUILD TEMPORARY PAVEMENT ON S.R. 16 WB FROM STA. 142+80 TO STA. 144+43 RT. FOR TEMPORARY RIGHT TURN LANE ONTO RIVER ROAD AS SHOWN ON SHEET 37.

INSTALL TEMPORARY SIGNALS AT THE S.R. 16/COLUMBUS ROAD INTERCHANGE APPROX. 0.5 MI WEST OF THE S.R. 37/661 INTERCHANGE AT THE WEAVER ROAD/RAMPS A & B INTERSECTION AND THE S.R. 16/RAMP C INTERSECTION AS SHOWN ON SHEETS 39 & 40.

INSTALL TEMPORARY SIGNALS ON S.R. 37 TO MAINTAIN ONE-WAY TRAFFIC NORTHBOUND DURING PHASES 1A & 1B CONSTRUCTION. PREEMPTION EQUIPMENT SHALL BE INSTALLED ON THESE SIGNALS AS DETAILED ON SHEET 41 TO ALLOW EMERGENCY SERVICES ACCESS TO S.R. 37 SOUTHBOUND DURING PHASES 1A & 1B.

**PHASE 1A**

**S.R. 37/661:**  
CONSTRUCT TEMPORARY PAVEMENT ON S.R. 37 FROM STA. 366+20 TO STA. 367+37.50 RT AS INDICATED ON SHEET 44. SHIFT TRAFFIC TO THE RIGHT SIDE OF S.R. 37/661 MAINTAINING ONE-WAY TRAFFIC IN THE NORTHBOUND DIRECTION. SOUTHBOUND TRAFFIC SHALL BE DETOURED AS INDICATED ON SHEET 31. CONSTRUCT PAVEMENT LEFT OF & S.R. 37/661 AS SHOWN ON SHEETS 43-46. CONSTRUCT TEMPORARY PAVEMENT ON S.R. 37 FROM STA. 355+00 TO STA. 363+75 LT. AS SHOWN ON SHEET 43.

EXISTING SIGNAL INSTALLATIONS SHALL NO LONGER BE OPERATED AND MAY BE REMOVED AT THIS TIME OR ANY TIME FORWARD, EXCEPT THAT THE POLE THAT HOLDS THE POLE-MOUNTED CABINET SHALL REMAIN IN PLACE TO OPERATE THE NECESSARY PREEMPTION REQUIRED DURING CONSTRUCTION. SEE SHEET 41 FOR TEMPORARY SIGNAL AND PREEMPTION DETAILS.

**S.R. 16:**  
TRAFFIC SHALL BE MAINTAINED IN ITS NORMAL TRAFFIC PATTERN FOR THE CONSTRUCTION OF THE BRIDGE MEDIAN PIER AND ABUTMENTS OF LIC-16-0003. INSTALLATION OF ALL APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE AS SHOWN ON SHEET 42.

**PHASE 1A CONTINUED**

**RAMPS:**  
RAMPS E, F & G SHALL BE CLOSED TO TRAFFIC. TRAFFIC SHALL BE DETOURED AS SHOWN ON SHEET 32. RAMP H SHALL REMAIN OPEN.

ROCK BARRIER WALL ALONG RAMP G AND S.R. 16 EB DECEL LANE SHALL BE CONSTRUCTED AS SHOWN ON SHEETS 54-55.

**RIVER ROAD & WEAVER DRIVE:**  
RIVER ROAD AND WEAVER DRIVE SHALL REMAIN OPEN TO TWO-WAY TRAFFIC. FLAGGING OPERATIONS MAY BE UTILIZED AS NEEDED AS PER SCD MT-97.12.

ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVES SHALL BE MAINTAINED AT ALL TIMES.

**PHASE 1B**

**S.R. 37/661:**  
SHIFT TRAFFIC TO THE LEFT SIDE OF S.R. 37/661 MAINTAINING ONE-WAY TRAFFIC IN THE NORTHBOUND DIRECTION. SOUTHBOUND TRAFFIC SHALL BE DETOURED AS INDICATED ON SHEET 31. CONSTRUCT PAVEMENT RIGHT OF & S.R. 37/661 AS SHOWN ON SHEETS 57-61.

SEE SHEET 56 FOR TEMPORARY SIGNALS AND PREEMPTION ADJUSTMENTS AND DETAILS.

**S.R. 16:**  
TRAFFIC SHALL BE MAINTAINED IN ITS NORMAL TRAFFIC PATTERN FOR THE CONSTRUCTION OF THE BRIDGE MEDIAN PIER AND ABUTMENTS OF LIC-16-0003. INSTALLATION OF ALL APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE AS SHOWN ON SHEET 42.

**RAMPS:**  
RAMPS F, G & H SHALL BE CLOSED TO TRAFFIC. RAMP H SHALL BE OPEN TO EMERGENCY PERSONNEL ONLY VIA SIGNAL PREEMPTION. TRAFFIC SHALL BE DETOURED AS SHOWN ON SHEET 33. RAMP E SHALL BE OPEN TO S.R. 37/661 NORTHBOUND TRAFFIC.

**RIVER ROAD & WEAVER DRIVE:**  
WEAVER DRIVE SHALL REMAIN OPEN TO TWO-WAY TRAFFIC. FLAGGING OPERATIONS MAY BE UTILIZED AS NEEDED AS PER SCD MT-97.12. CONSTRUCT TEMPORARY PAVEMENT ON RIVER ROAD FROM STA. 28+00 TO STA. 30+00 RT. AS SHOWN ON SHEET 62. SHIFT TRAFFIC TO LEFT SIDE OF RIVER ROAD TO MAINTAIN ONE-WAY TRAFFIC AS SHOWN ON SHEET 62. SEE DETOUR MAP SHEET 35. A+B BIDDING SHALL BE APPLIED TO THIS CLOSURE (SEE TABLE ON THIS SHEET).

ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVES SHALL BE MAINTAINED AT ALL TIMES.

**PHASE 2A**

**S.R. 37/661:**  
SHIFT TRAFFIC TO THE LEFT SIDE OF S.R. 37/661 MAINTAINING TWO-WAY TRAFFIC. CONSTRUCT PAVEMENT RIGHT OF & S.R. 37/661 AS SHOWN ON SHEETS 64-67.

**S.R. 16:**  
TRAFFIC SHALL BE MAINTAINED IN ITS NORMAL TRAFFIC PATTERN FOR THE CONSTRUCTION OF THE BRIDGE MEDIAN PIER AND ABUTMENTS OF LIC-16-0003. INSTALLATION OF ALL APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE AS SHOWN ON SHEET 42.

**PHASE 2A CONTINUED**

**RAMPS:**  
RAMP E SHALL BE OPEN TO S.R. 661 SOUTHBOUND TRAFFIC ONLY. RAMP F SHALL BE OPEN TO S.R. 661 NORTHBOUND TRAFFIC ONLY. RAMP G SHALL BE OPEN TO S.R. 37 EASTBOUND TRAFFIC ONLY. RAMP H SHALL BE OPEN TO S.R. 37 WESTBOUND TRAFFIC ONLY AND ONLY TO EMERGENCY PERSONNEL TRAVELING S.R. 37 EASTBOUND. RAMPS SHALL BE DETOURED AS SHOWN ON SHEET 34.

**RIVER ROAD & WEAVER DRIVE:**  
WEAVER DRIVE SHALL REMAIN OPEN TO TWO-WAY TRAFFIC. FLAGGING OPERATIONS MAY BE UTILIZED AS NEEDED AS PER SCD MT-97.12. SHIFT TRAFFIC TO THE RIGHT SIDE OF RIVER ROAD TO MAINTAIN TWO-WAY TRAFFIC AS SHOWN ON SHEET 68.

ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVES SHALL BE MAINTAINED AT ALL TIMES.

**PHASE 2B**

**S.R. 37/661:**  
INSTALL ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN TRAFFIC ON S.R. 37 EASTBOUND AND WESTBOUND TO PERFORM THE REMOVAL OF THE TEMPORARY PAVEMENT FROM STA. 355+00 TO STA. 365+75 LT., THE CONSTRUCTION OF THE PERMANENT EMBANKMENT AND DITCH PROTECTION AND THE FINAL SURFACE COURSE OPERATIONS. THE TEMPORARY PAVEMENT MUST BE REMOVED PRIOR TO COMMENCEMENT OF PLACING THE FINAL COURSE. FINAL PAVING WILL BE PERFORMED UNDER TRAFFIC AS PER SCD MT-97.12. PERMANENT SIGNAL INSTALLATIONS SHALL BE COMPLETE AND OPERATIONAL.

ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVES SHALL BE MAINTAINED AT ALL TIMES.

THE TEMPORARY PAVEMENT FOR THE TURN LANE ON S.R. 16 WB FROM STA. 142+80 TO STA. 144+43 RT. AT RIVER ROAD SHALL BE REMOVED.

THE CUL-DE-SAC AT THE END OF RIVER ROAD SHALL BE CONSTRUCTED AND THE PAVEMENT ADJOINING RIVER ROAD TO S.R. 16 SHALL BE REMOVED. ACCESS TO RACCOON VALLEY PARK SHALL BE MAINTAINED AT ALL TIMES.

**RIVER ROAD & WEAVER DRIVE:**  
INSTALL ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN TRAFFIC ON RIVER ROAD AND WEAVER DRIVE FOR THE FINAL SURFACE COURSE OPERATIONS AS PER SCD MT-97.12.

**A+B BIDDING WITH MULTIPLE SECTIONS CONTRACT TABLE:**

USE THE FOLLOWING INFORMATION IN COMBINATION WITH THE PROPOSAL NOTE 125 A+B BIDDING WITH MULTIPLE SECTIONS. THE CONTRACTOR WILL BID THE NUMBER OF CALENDAR DAYS TO COMPLETE EACH SEGMENT AS LISTED IN THE PROPOSAL.

CONTRACT SEGMENT LOCATION OF CRITICAL WORK	MIN. DAYS	MAX. DAYS	INCENTIVE/DISINCENTIVE PER DAY	MAXIMUM INCENTIVE
SEGMENT 1 - CONSTRUCTION OF RAMP PAVEMENT/INSTALLATION OF GUARDRAIL FOR S.R. 37 WB/S.R. 661 SB TO S.R. 16 EB (RAMP H) AND RE-OPENED TO TRAFFIC	21	28	\$1,500	\$10,500
SEGMENT 2 - CONSTRUCTION OF RIVER ROAD PAVEMENT WIDENING RIGHT FROM STA. 24+84.11 TO STA. 28+50 PLUS TEMPORARY PAVEMENT TO STA. 30+00 AND RE-OPENED TO TRAFFIC	14	21	\$500	\$3,000

**LANE VALUE - S.R. 16**

LANE CLOSURES WILL ONLY BE IMPLEMENTED AT THE TIMES LISTED ON THE OHIO DEPARTMENT OF TRANSPORTATION'S WEB SITE, "PERMITTED LANE CLOSURE TIMES" SECTION, LOCATED AT THE ADDRESS SHOWN BELOW:

<http://plcm.dot.state.oh.us/>

THE PERMITTED CLOSURE TIMES LISTED ON THE WEBSITE, 14 CALENDAR DAYS PRIOR TO THE BID LETTING DATE, WILL BE IN EFFECT FOR THIS PROJECT. NO WORK WITHIN ACTIVE TRAVEL LANES OR WHICH WILL SLOW TRAFFIC IS PERMITTED AT ANY OTHER TIMES. WHEN NECESSARY, LANE CLOSURES WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE STANDARD DRAWINGS.

THE CONTRACTOR MAY CLOSE ONE LANE IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS. THE TRAFFIC CLOSURES WILL BE BETWEEN THE HOURS INDICATED ON THE O.D.O.T. WEB SITE, SHOULD THE CONTRACTOR CLOSE THE LANES BEFORE THE ALLOWABLE TIME AND/OR FAIL TO RE-OPEN ALL LANES TO TRAFFIC, BY THE ALLOWABLE TIME. A DISINCENTIVE AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE AND PROPOSAL NOTE 127 WILL BE ASSESSED.

**LANE VALUE CONTRACT TABLE - S.R. 16**

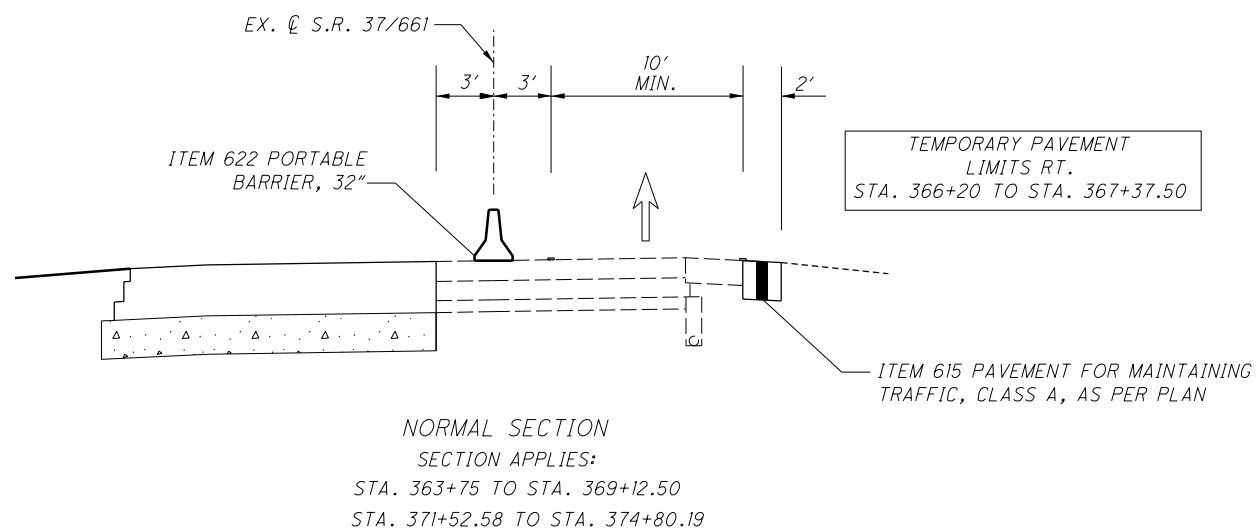
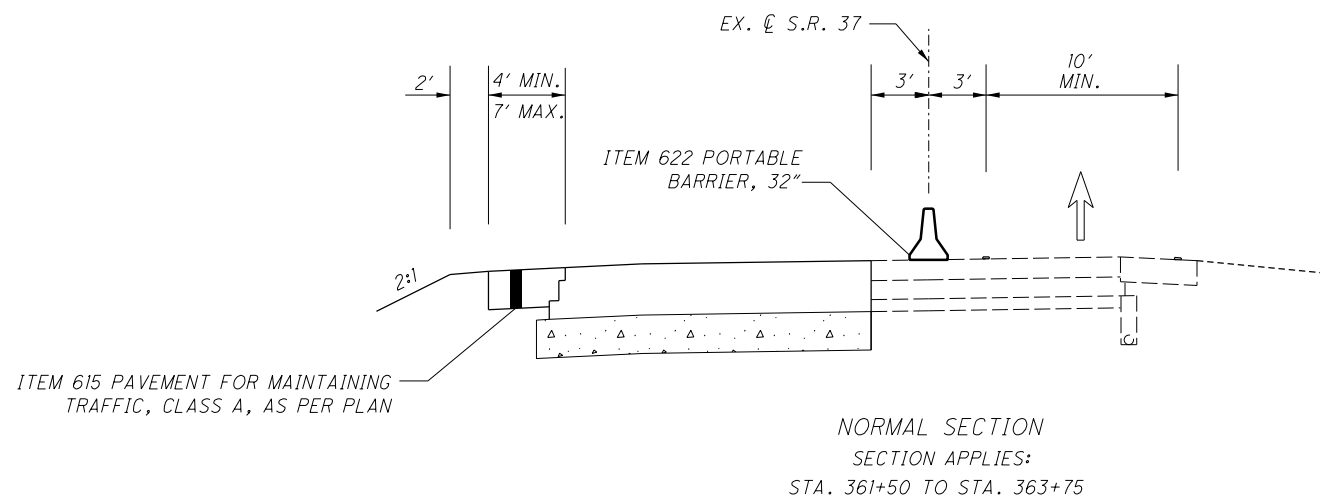
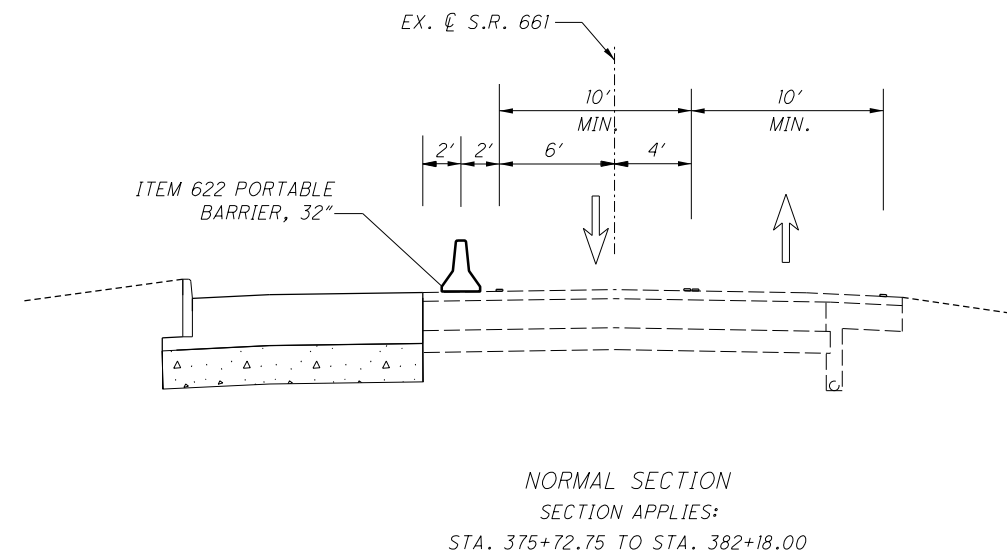
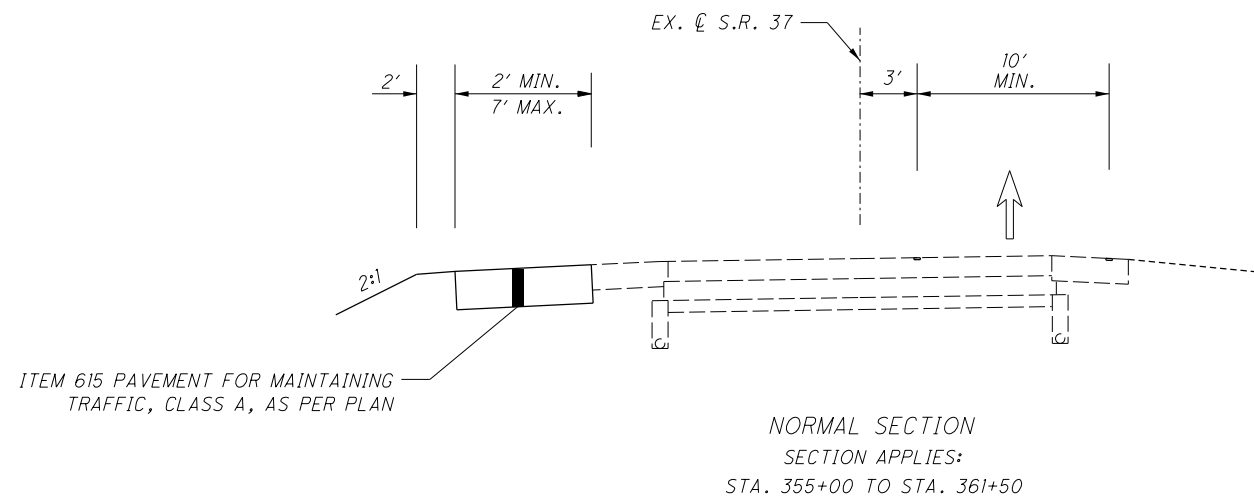
DESCRIPTION OF CRITICAL LANE TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE \$ PER TIME UNIT
1 LANE OF LIC S.R. 16 FROM MM 14.25 TO MM 15.00	O.D.O.T. WEB SITE: PERMITTED LANE CLOSURE TIMES	EACH HOUR	\$9,500

CALCULATED  
CHECKED

**MAINTENANCE OF TRAFFIC - SEQUENCE OF OPERATIONS**

**LIC-37 / 661-  
16.59 / 0.00**

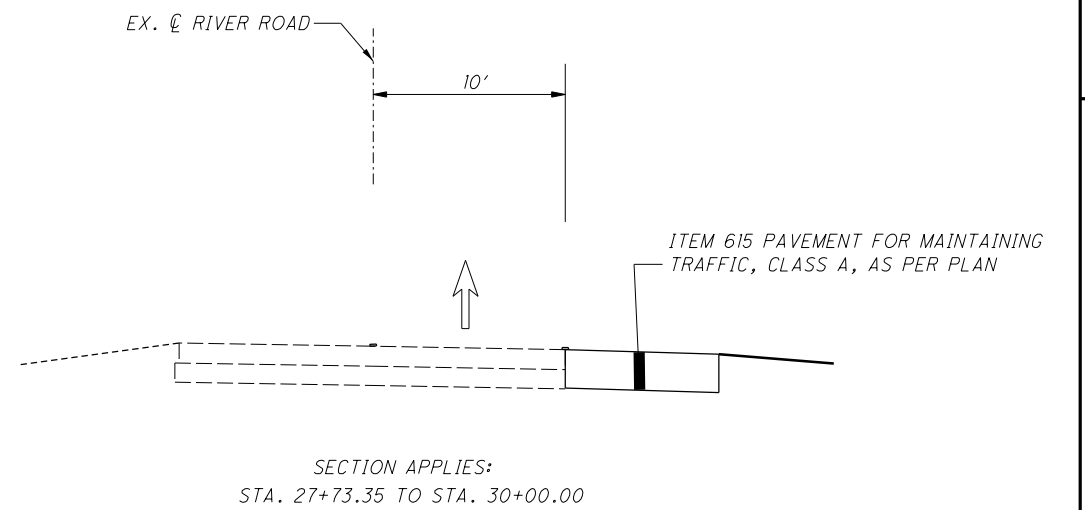
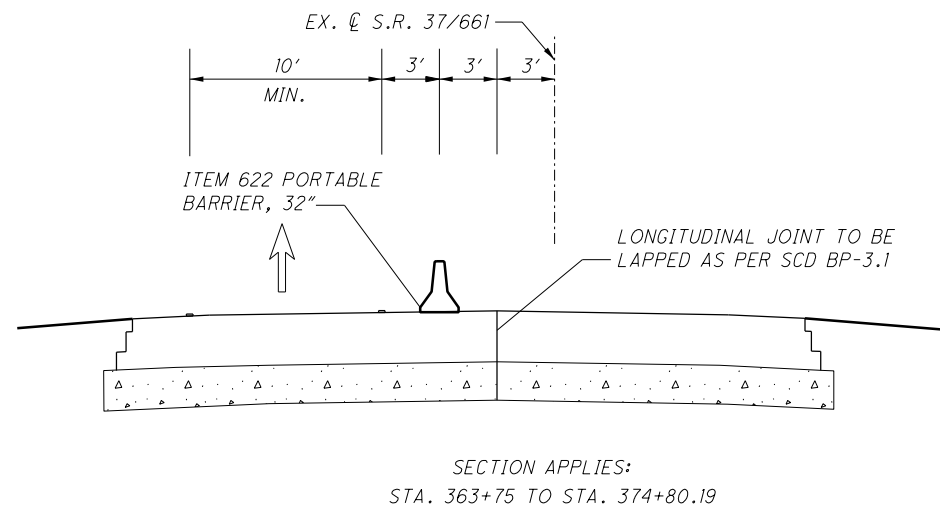
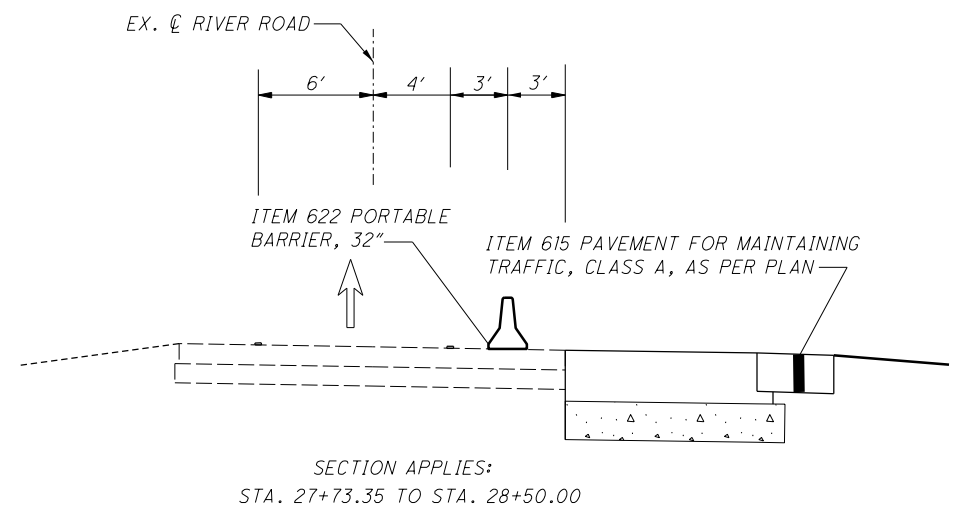
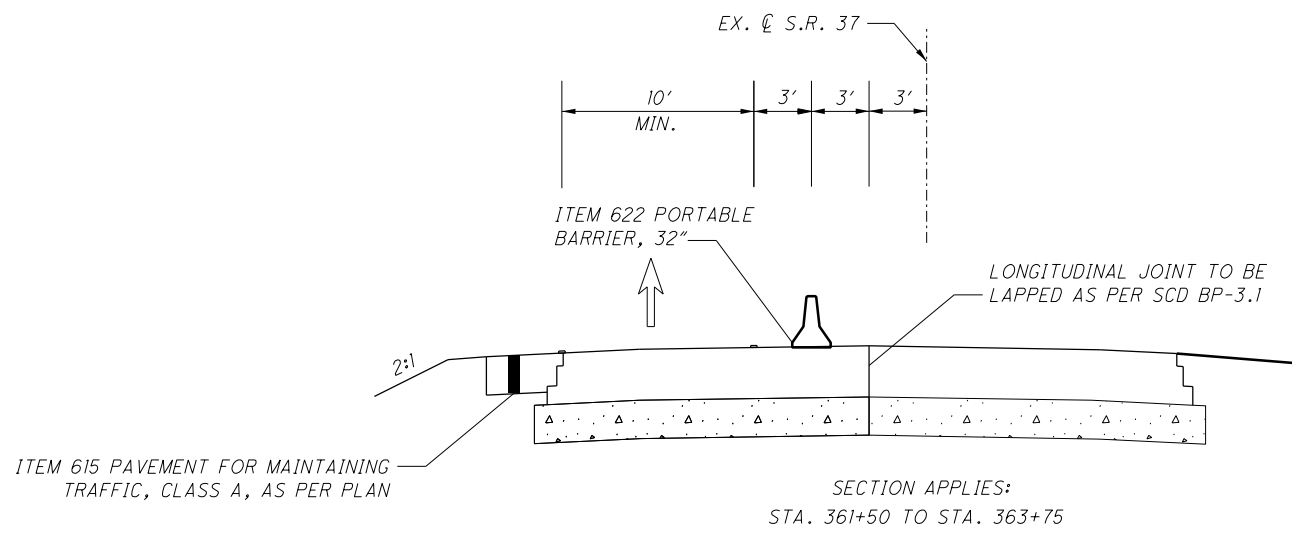
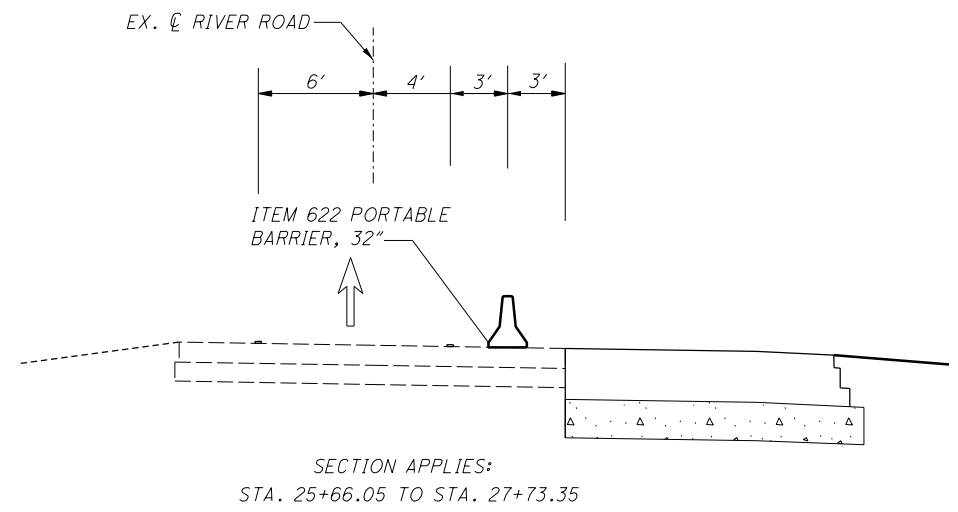
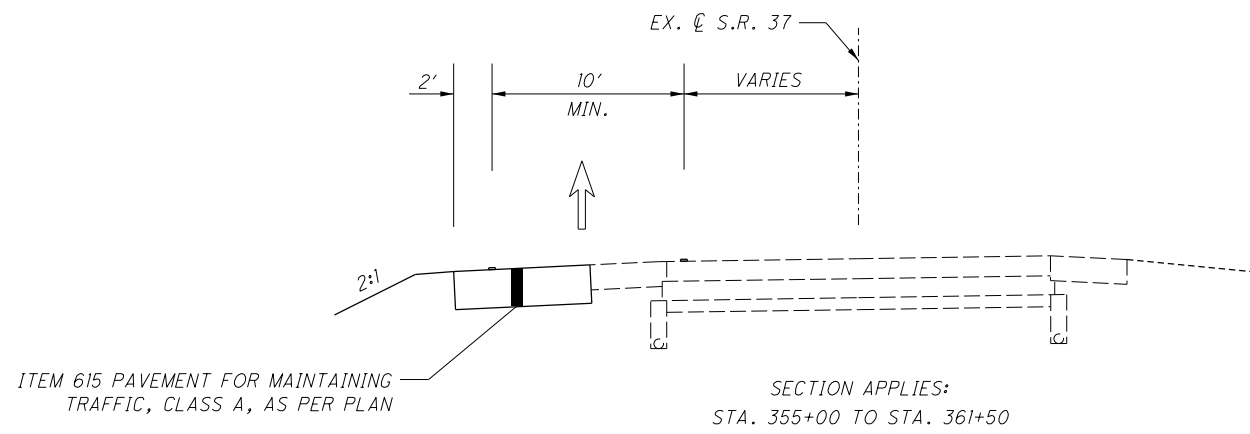
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TEMPORARY PAVEMENT LIMITS RT. STA. 366+20 TO STA. 367+37.50

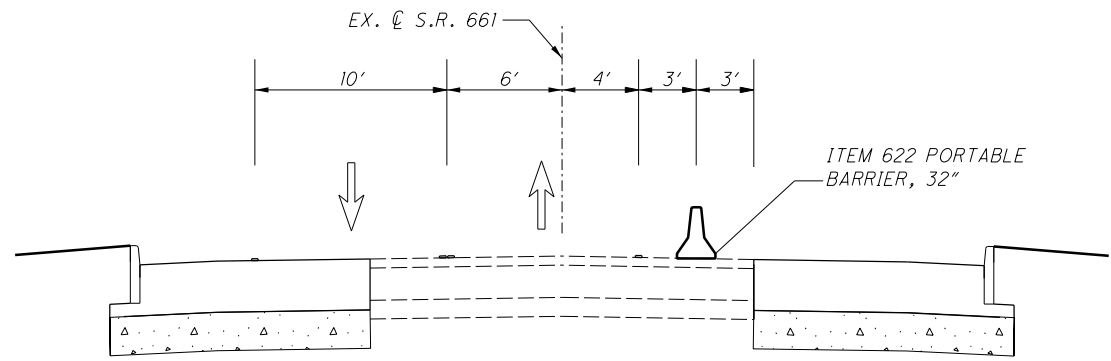
SEE BRIDGE MOT SHEET 276 FOR STA. 369+12.50 TO STA. 371+52.58

I:\Project+Data\LIC\924IL\Design\M0T\Sheets\924IL\_MY002.dgn Sheet 1/23/2020 8:00:32 AM hgliberl

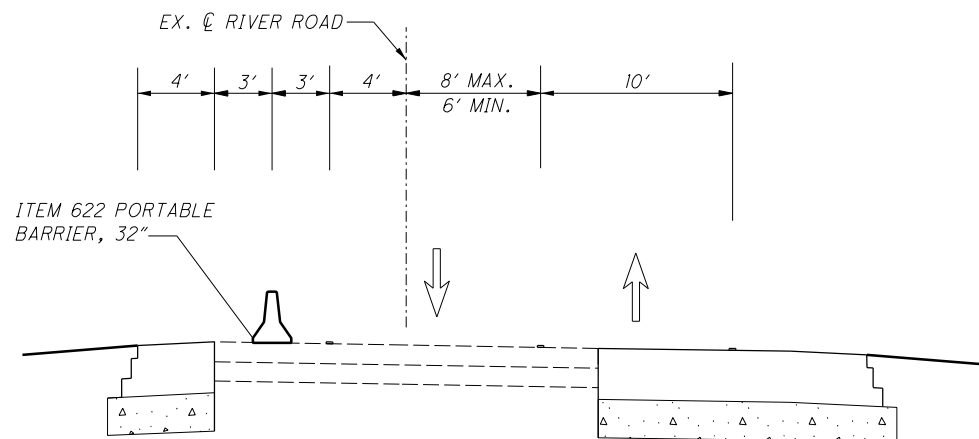


SEE BRIDGE MOT SHEETS 276 FOR STA. 369+12.50 TO STA. 371+52.58

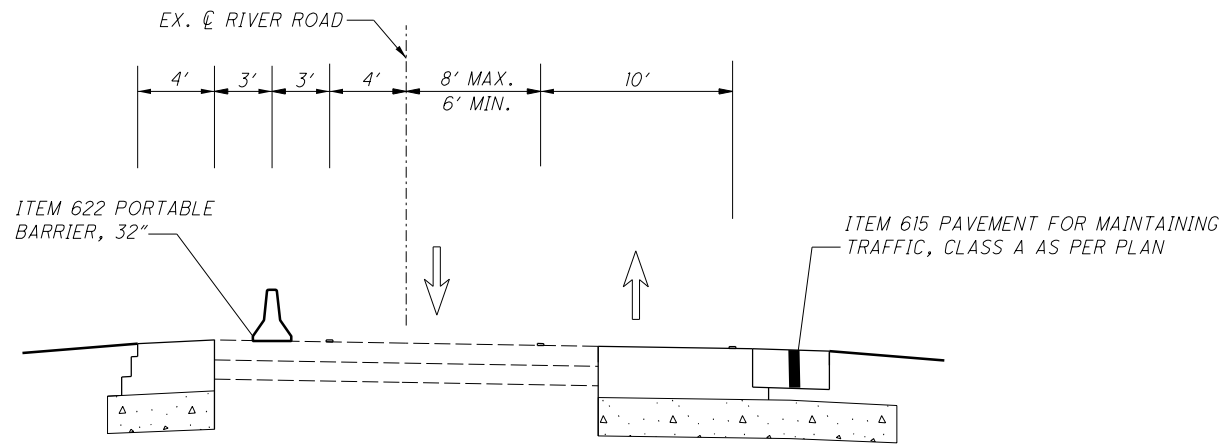
SEE BRIDGE MOT SHEET 277  
FOR STA. 369+12.50 TO STA. 371+52.58



SECTION APPLIES:  
STA. 375+76.25 TO STA. 382+18.00



SECTION APPLIES:  
STA. 25+07.20 TO STA. 27+73.35



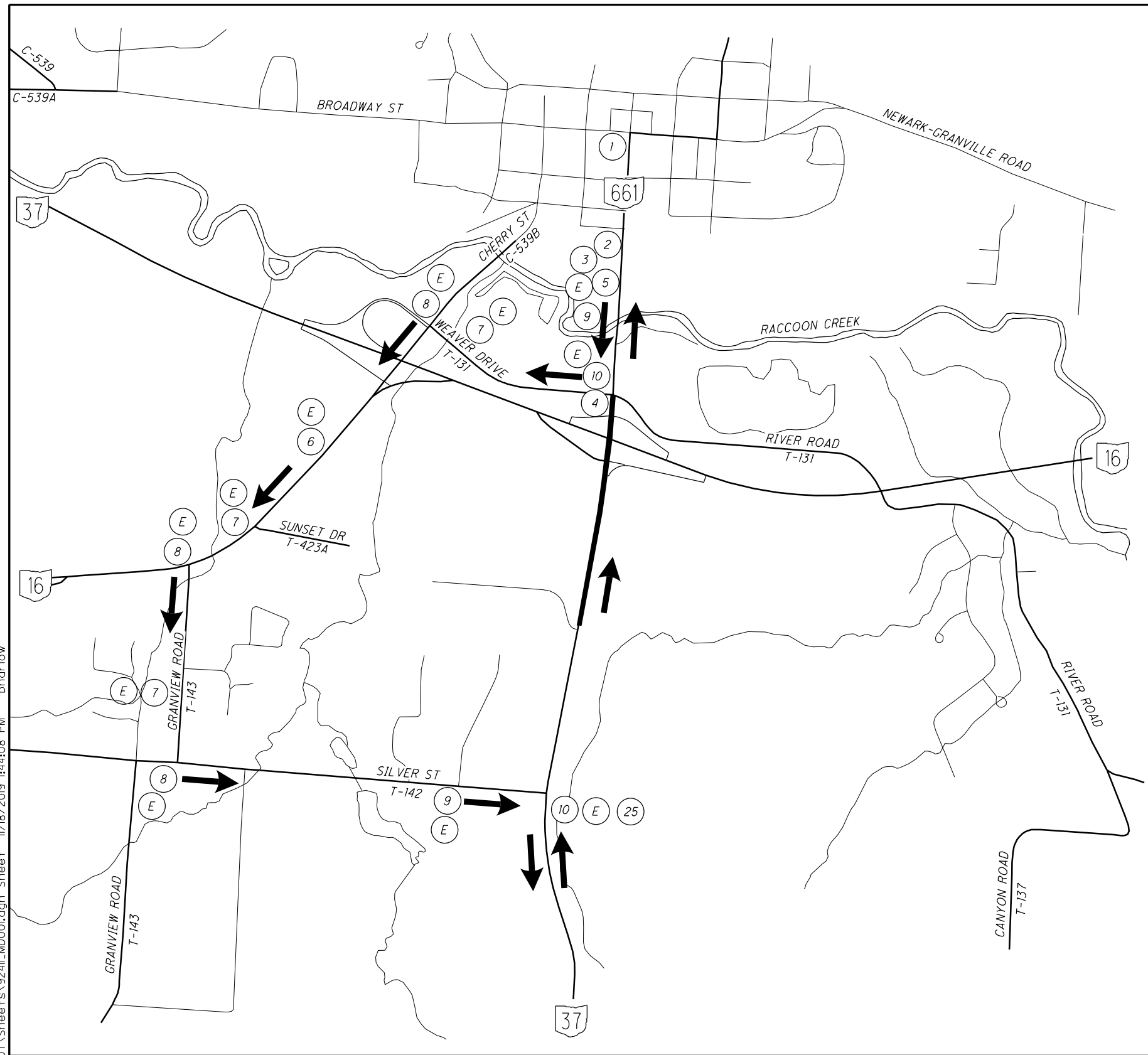
SECTION APPLIES:  
STA. 27+73.35 TO STA. 28+39.30

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MOT TYPICAL SECTIONS PHASE 2A - S.R. 37 / S.R. 661 / RIVER RD.

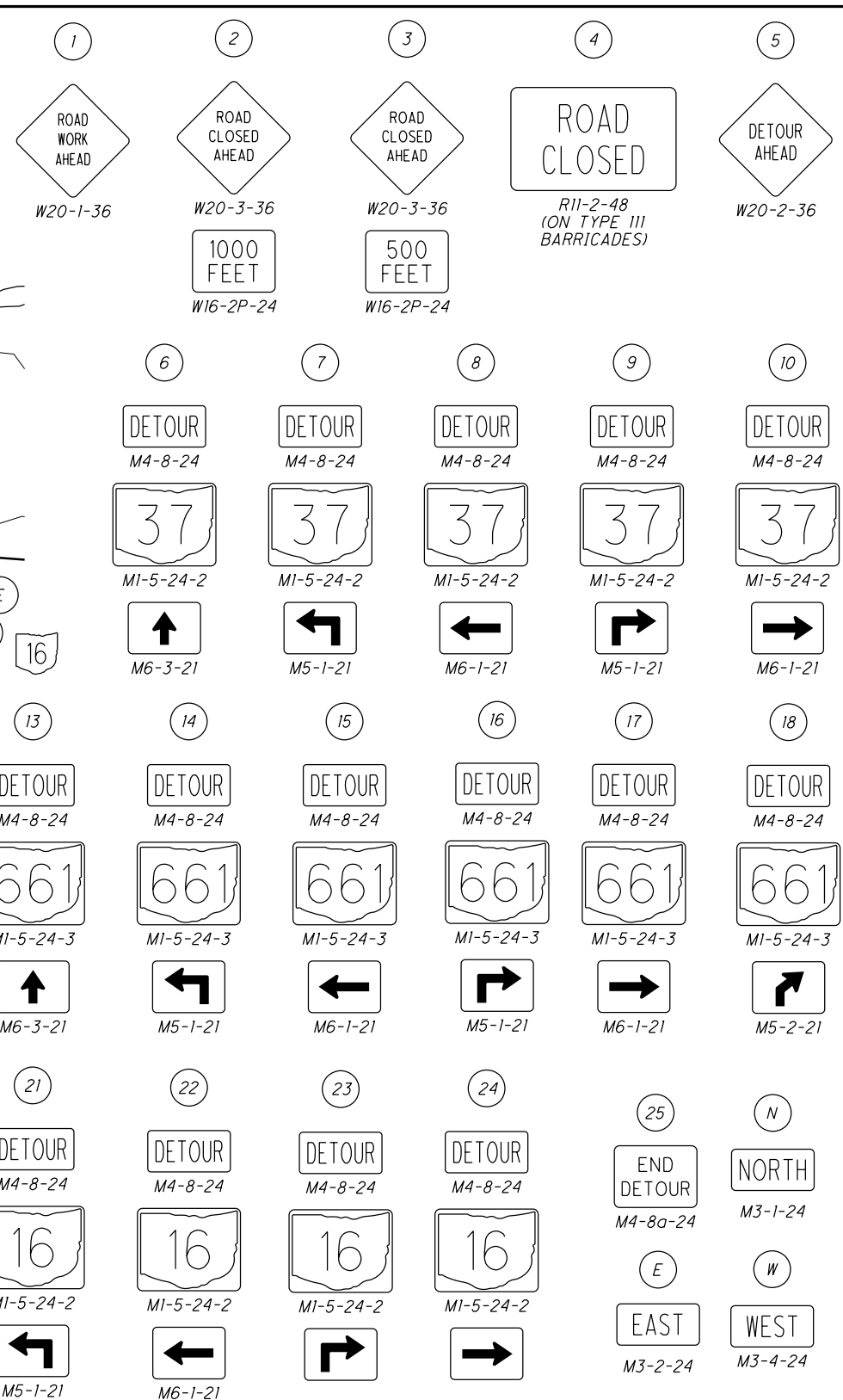
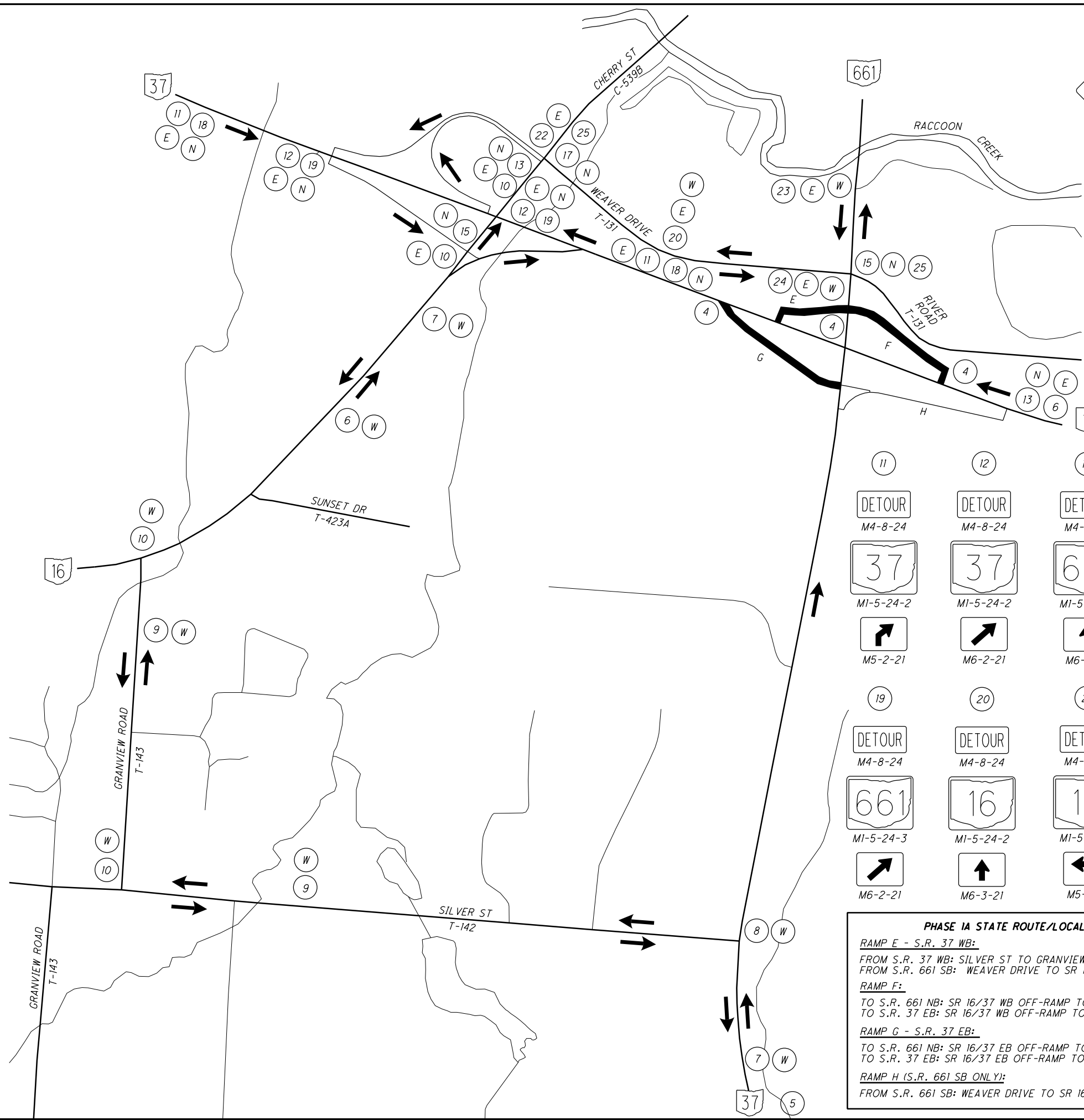
LIC-37 / 661-  
16.59 / 0.00

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**STATE ROUTE/LOCAL DETOUR, S.R. 37/661:**  
 S.R. 37 WB TO S.R. 661 NB: TRAFFIC WILL BE MAINTAINED  
 S.R. 661 SB TO S.R. 37 EB: S.R. 661 TO WEAVER DRIVE TO S.R. 16 TO GRANVIEW ROAD TO SILVER ST TO S.R. 37

1 ROAD WORK AHEAD W20-1-36	2 ROAD CLOSED AHEAD W20-3-36 1000 FEET W16-2P-24	3 ROAD CLOSED AHEAD W20-3-36 500 FEET W16-2P-24	4 ROAD CLOSED R11-2-48 (ON TYPE III BARRICADES)	5 DETOUR AHEAD W20-2-36
6 DETOUR M4-8-24 37 MI-5-24-2 M6-3-21	7 DETOUR M4-8-24 37 MI-5-24-2 M5-1-21	8 DETOUR M4-8-24 37 MI-5-24-2 M6-1-21	9 DETOUR M4-8-24 37 MI-5-24-2 M5-1-21	10 DETOUR M4-8-24 37 MI-5-24-2 M6-1-21
11 DETOUR M4-8-24 37 MI-5-24-2 M5-2-21	12 DETOUR M4-8-24 37 MI-5-24-2 M6-2-21	13 DETOUR M4-8-24 661 MI-5-24-3 M6-3-21	14 DETOUR M4-8-24 661 MI-5-24-3 M5-1-21	15 DETOUR M4-8-24 661 MI-5-24-3 M6-1-21
16 DETOUR M4-8-24 661 MI-5-24-3 M5-1-21	17 DETOUR M4-8-24 661 MI-5-24-3 M6-1-21	18 DETOUR M4-8-24 661 MI-5-24-3 M5-2-21	19 DETOUR M4-8-24 661 MI-5-24-3 M6-2-21	20 DETOUR M4-8-24 16 MI-5-24-2 M6-3-21
21 DETOUR M4-8-24 16 MI-5-24-2 M5-1-21	22 DETOUR M4-8-24 16 MI-5-24-2 M6-1-21	23 DETOUR M4-8-24 16 MI-5-24-2 M5-2-21	24 DETOUR M4-8-24 16 MI-5-24-2 M6-2-21	25 END DETOUR M4-8a-24
NORTH M3-1-24	EAST M3-2-24	WEST M3-4-24	<p>NOTE: ALL MI-5-24 SIGNS TO BE SUPPLIED BY ODOT. THE CONTRACTOR SHALL INSTALL THE ACCURATE MILEAGE NUMBERS ON THE R11-3A-60 SIGNS WHERE MARKED ON THE DETOUR.</p>	



**PHASE IA STATE ROUTE/LOCAL DETOUR, RAMPS E, F & G CLOSED:**

**RAMP E - S.R. 37 WB:**  
 FROM S.R. 37 WB: SILVER ST TO GRANVIEW ROAD TO SR 16 TO SR 16/37 WB ON-RAMP  
 FROM S.R. 661 SB: WEAVER DRIVE TO SR 16/37 WB ON-RAMP

**RAMP F:**  
 TO S.R. 661 NB: SR 16/37 WB OFF-RAMP TO WEAVER DRIVE TO SR 661  
 TO S.R. 37 EB: SR 16/37 WB OFF-RAMP TO SR 16 TO GRANVIEW ROAD TO SILVER ST TO SR 37

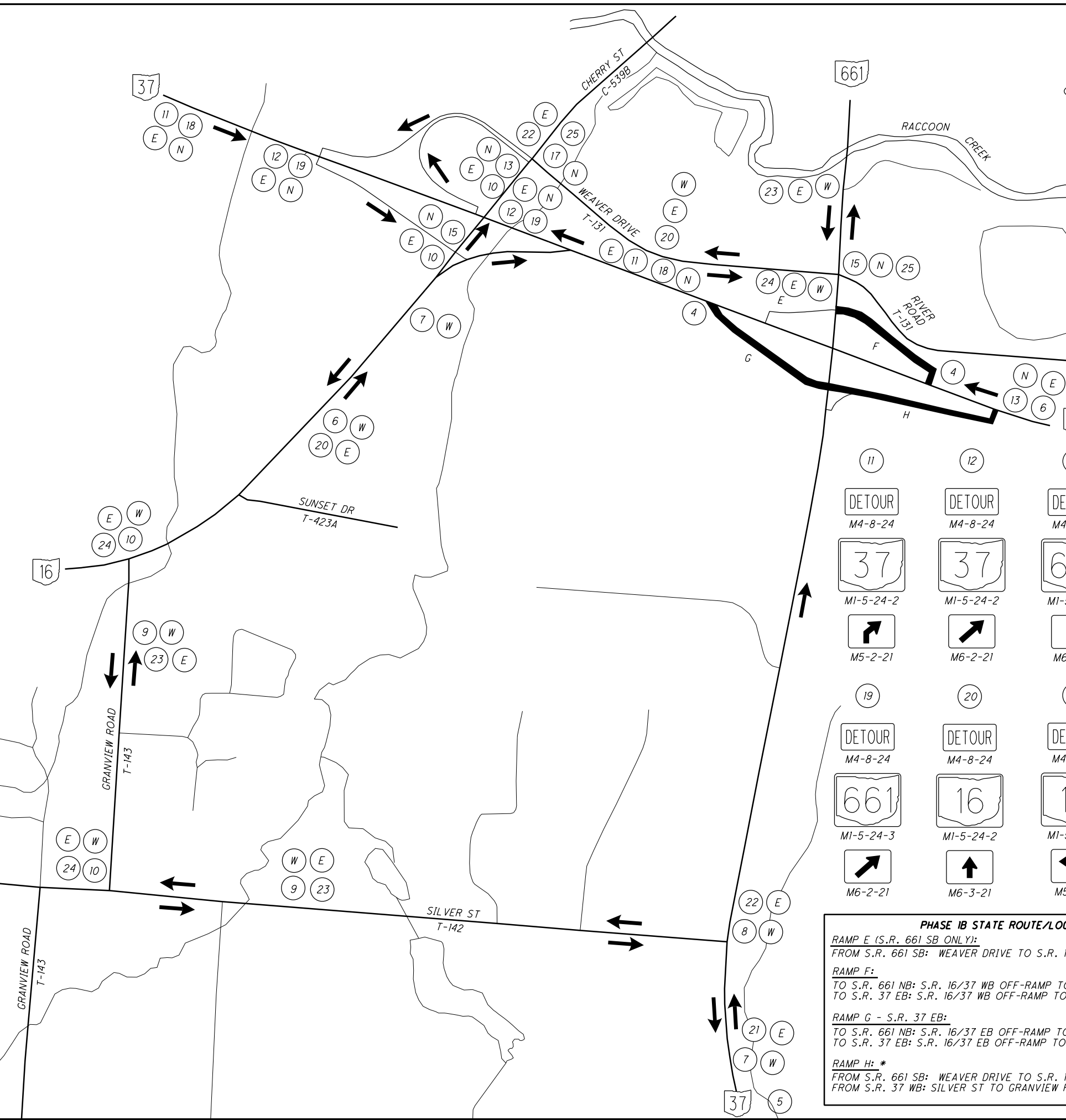
**RAMP G - S.R. 37 EB:**  
 TO S.R. 661 NB: SR 16/37 EB OFF-RAMP TO SR 16 TO WEAVER DRIVE TO SR 661  
 TO S.R. 37 EB: SR 16/37 EB OFF-RAMP TO SR 16 TO GRANVIEW ROAD TO SILVER ST TO SR 37

**RAMP H (S.R. 661 SB ONLY):**  
 FROM S.R. 661 SB: WEAVER DRIVE TO SR 16 TO SR 16/37 EB ON-RAMP

**NOTE:**  
 ALL MI-5-24 SIGNS TO BE SUPPLIED BY ODOT. THE CONTRACTOR SHALL INSTALL THE ACCURATE MILEAGE NUMBERS ON THE R11-3A-60 SIGNS WHERE MARKED ON THE DETOUR.



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1	2	3	4	5
ROAD WORK AHEAD W20-1-36	ROAD CLOSED AHEAD W20-3-36	ROAD CLOSED AHEAD W20-3-36	ROAD CLOSED R11-2-48 (ON TYPE III BARRICADES)	DETOUR AHEAD W20-2-36
	1000 FEET W16-2P-24	500 FEET W16-2P-24		
6	7	8	9	10
DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24
37	37	37	37	37
MI-5-24-2	MI-5-24-2	MI-5-24-2	MI-5-24-2	MI-5-24-2
↑	↙	←	↗	→
M6-3-21	M5-1-21	M6-1-21	M5-1-21	M6-1-21
11	12	13	14	15
DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24
37	37	661	661	661
MI-5-24-2	MI-5-24-2	MI-5-24-3	MI-5-24-3	MI-5-24-3
↗	↗	↑	↙	←
M5-2-21	M6-2-21	M6-3-21	M5-1-21	M6-1-21
19	20	21	22	23
DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24	DETOUR M4-8-24
661	16	16	16	16
MI-5-24-3	MI-5-24-2	MI-5-24-2	MI-5-24-2	MI-5-24-2
↗	↑	↙	←	↗
M6-2-21	M6-3-21	M5-1-21	M6-1-21	M5-1-21
				24
				DETOUR M4-8-24
				16
				MI-5-24-2
				↗
				M6-1-21
				25
				END DETOUR M4-8a-24
				NORTH M3-1-24
				E
				WEST
				M3-2-24
				W
				M3-4-24

**PHASE 1B STATE ROUTE/LOCAL DETOUR, RAMPS F, G & H CLOSED:**

**RAMP E (S.R. 661 SB ONLY):**  
FROM S.R. 661 SB: WEAVER DRIVE TO S.R. 16/37 WB ON-RAMP

**RAMP F:**  
TO S.R. 661 NB: S.R. 16/37 WB OFF-RAMP TO WEAVER DRIVE TO S.R. 661  
TO S.R. 37 EB: S.R. 16/37 WB OFF-RAMP TO S.R. 16 TO GRANVIEW ROAD TO SILVER ST TO S.R. 37

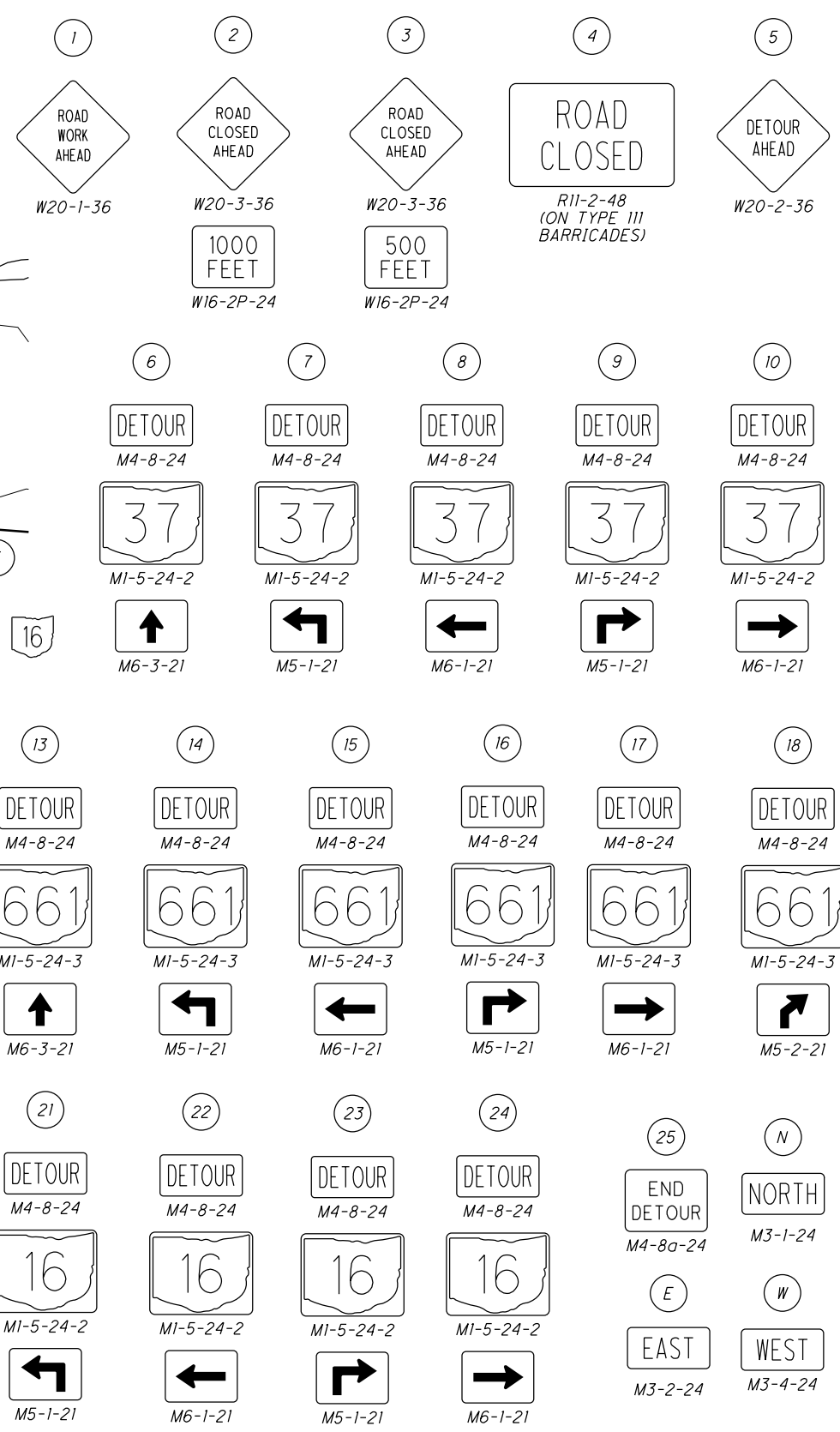
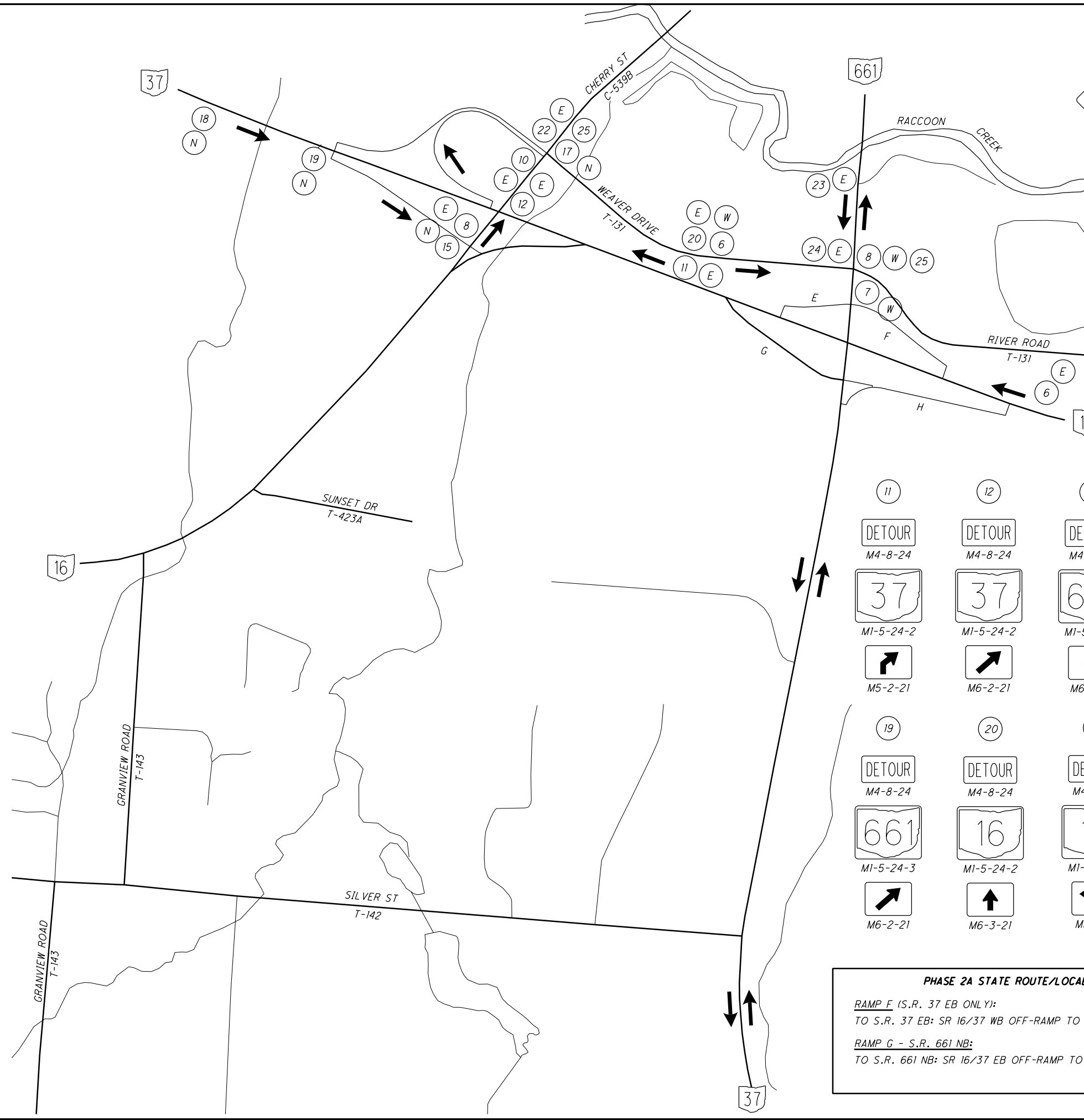
**RAMP G - S.R. 37 EB:**  
TO S.R. 661 NB: S.R. 16/37 EB OFF-RAMP TO S.R. 16 TO WEAVER DRIVE TO S.R. 661  
TO S.R. 37 EB: S.R. 16/37 EB OFF-RAMP TO S.R. 16 TO GRANVIEW ROAD TO SILVER ST TO S.R. 37

**RAMP H: \***  
FROM S.R. 661 SB: WEAVER DRIVE TO S.R. 16 TO S.R. 16/37 EB ON-RAMP  
FROM S.R. 37 WB: SILVER ST TO GRANVIEW ROAD TO S.R. 16 TO S.R. 16/37 EB ON-RAMP

**NOTE:**  
ALL MI-5-24 SIGNS TO BE SUPPLIED BY ODOT. THE CONTRACTOR SHALL INSTALL THE ACCURATE MILEAGE NUMBERS ON THE R11-3A-60 SIGNS WHERE MARKED ON THE DETOUR.

\* RAMP H SHALL BE CLOSED FOR NO MORE THAN 28 DAYS (SEE A+B BIDDING CONTRACT TABLE SHEET XX.)

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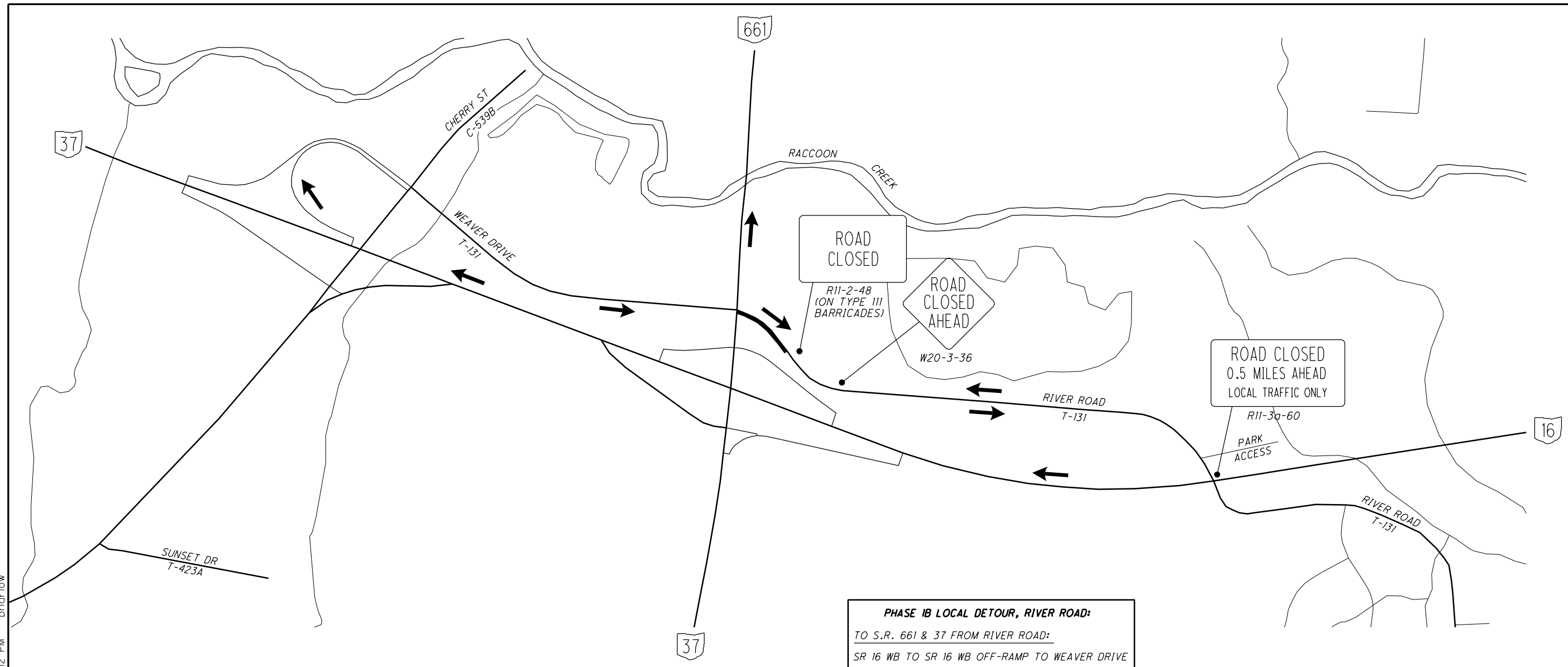
**PHASE 2A STATE ROUTE/LOCAL DETOUR, PARTIAL RAMP CLOSURES:**

**RAMP E (S.R. 37 EB ONLY):**  
 TO S.R. 37 EB: SR 16/37 WB OFF-RAMP TO SR 16 TO SR 16/37 EB ON-RAMP

**RAMP G - S.R. 661 NB:**  
 TO S.R. 661 NB: SR 16/37 EB OFF-RAMP TO SR 16 TO WEAVER DRIVE TO SR 661

**NOTE:**  
 ALL MI-5-24 SIGNS TO BE SUPPLIED BY ODOT. THE CONTRACTOR SHALL INSTALL THE ACCURATE MILEAGE NUMBERS ON THE R11-3A-60 SIGNS WHERE MARKED ON THE DETOUR.

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RIVER ROAD TO S.R. 661 & 37:

RIVER ROAD TO S.R. 661 & 37 SHALL BE CLOSED IN ONE DIRECTION FOR NO MORE THAN 21 DAYS (SEE A+B BIDDING CONTRACT TABLE SHEET 27) TO CONSTRUCT THE PAVEMENT WIDENING ON THE RIGHT SIDE OF RIVER ROAD AS PER SHEET 62 DURING PHASE 1B.

**PHASE 1B LOCAL DETOUR, RIVER ROAD:**  
 TO S.R. 661 & 37 FROM RIVER ROAD:  
 SR 16 WB TO SR 16 WB OFF-RAMP TO WEAVER DRIVE

CALCULATED
CHECKED

**DETOUR PLAN SHEET - RIVER ROAD - PHASE 1B**

LIC-37 / 661-  
16.59 / 0.00

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SHEET NO.	PHASING	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	615	622	622	670		
		WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 24"	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL), 24"	BARRIER REFLECTOR, TYPE 1 (UNIDIRECTIONAL)	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)	OBJECT MARKER, ONE WAY	OBJECT MARKER, TWO WAY	WORK ZONE CENTER LINE, CLASS 1, 642 PAINT (DOUBLE SOLID)	WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)	WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW)	WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT (WHITE)	WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 642 PAINT	WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)	WORK ZONE STOP LINE, CLASS 1, 642 PAINT	WORK ZONE ARROW, CLASS 1, 642 PAINT	WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	PORTABLE BARRIER, 32"	PORTABLE BARRIER, 32", BRIDGE MOUNTED	DITCH EROSION PROTECTION MAT TYPE E		
		EACH	EACH	EACH	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	FT	EACH	EACH	SY	FT	FT	SY		
	<b>PLAN SPLIT CODE 02/NHS/PV</b>																					
39	PRE-PHASE														36							
40	PRE-PHASE														24							
37	PRE-PHASE									0.041	108				1	1	51					
42	PHASE 1A, 1B & 2A	4		40		39												2000				
44	PHASE 1A				11		10		0.071	0.104							28	350	200			
45	PHASE 1A		1		8		7	0.065	0.121	0.072				9				313	50			
54	PHASE 1A											0.057			300							
55	PHASE 1A											0.073			320							
59	PHASE 1B	1			9		8		0.087	0.087								191	250			
60	PHASE 1B				6		5	0.035	0.153	0.040				87	18			280				
65	PHASE 2A		1		6		5	0.083	0.184						40			63	200			
66	PHASE 2A		1		3		2	0.068	0.176					427	70			77	50			
	<b>PLAN SPLIT CODE 02/NHS/PV TOTAL</b>	5	3	40	43	39	37	0.251	0.792	0.303	0.171	108	1134	197	1	1	79	3274	750			
	<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																					
43	PHASE 1A	2			8		7		0.106	0.133					12			543	394		72	
46	PHASE 1A								0.186	0.350												
57	PHASE 1B								0.116	0.116					12							
58	PHASE 1B	1			13		12		0.208	0.208								641				
61	PHASE 1B								0.010	0.11												
62	PHASE 1B								0.067	0.076							159					
64	PHASE 2A								0.114	0.227												
67	PHASE 2A								0.155	0.350					22							
68	PHASE 2A								0.097	0.180												
	<b>PLAN SPLIT CODE 03/S&lt;2/PV TOTAL</b>	3			21		19	0.562	1.714	0.533				46			702	1035		72		
	<b>TOTALS CARRIED TO GENERAL SUMMARY</b>	8	3	40	64	39	56	0.81	3.34	0.17	108	1134	243	1	1	781	4309	750	72			

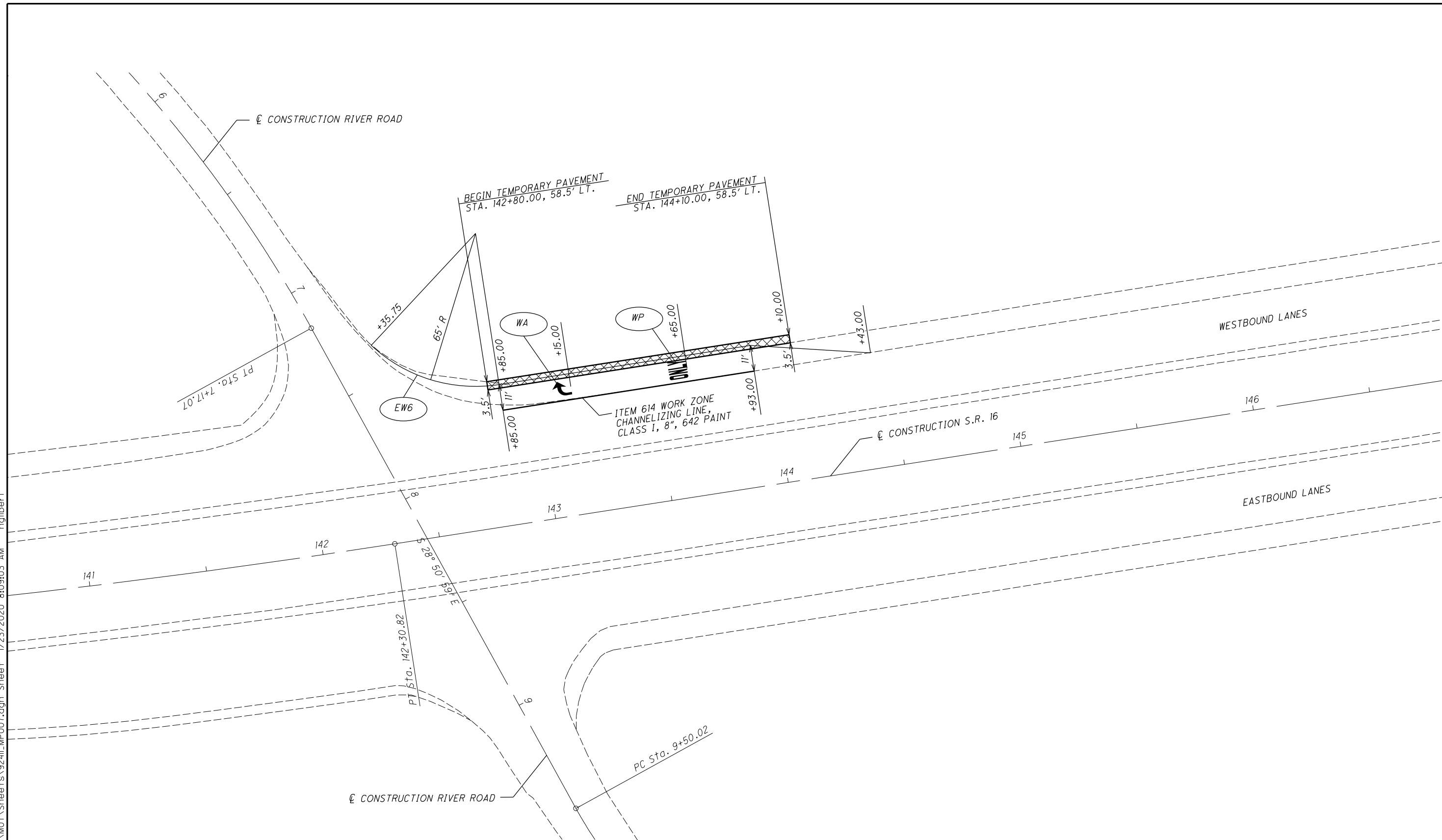
<b>MOT SUB-SUMMARY</b>	CALCULATED	36
	CHECKED	341

LIC-37 / 661-  
16.59 / 0.00

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CALCULATED  
BRH  
CHECKED  
HAG

0 10 20 40  
HORIZONTAL  
SCALE IN FEET
















MOT PRE-PHASE - S.R. 16 WB  
STA. 142+85 TO STA. 144+43

LIC-37 / 661-  
16.59 / 0.00

37  
341

**LEGEND**

	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT (WHITE)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)		CONSTRUCTION WORK AREA

 TYPE III BARRICADE AS PER MT-101.60

dgn XS\_SHEET\_Temporary\_mode\_L\_name\_1 11/18/2019 1:44:15 PM bharlow

STATION	BEGINNING		ENDING	
	CUT	FILL	CUT	FILL
0				
0	5	0	5	0
0				
0	5	0	5	0
0				
0	5	0	5	0
0				
0	5	0	5	0
0				
0	5	0	5	0

FOR INFORMATION ONLY  
SEEDING FOR MAINTAINING TRAFFIC

FOR INFORMATION ONLY  
EXCAVATION & EMBANKMENT FOR MAINTAINING TRAFFIC

END TEMPORARY PAVEMENT  
STA. 144+50.00

BEGIN TEMPORARY PAVEMENT  
STA. 142+50.00

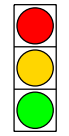
ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

STATION	END AREA		VOLUME		CALCULATED	CHECKED	HG
	CUT	FILL	CUT	FILL			
0							
0	5	0	9	0			
0							
0	5	0	9	0			
0							
0	5	0	9	0			
0							
0	5	0	9	0			
0							
0	5	0	9	0			

CROSS SECTIONS - MOT PRE-PHASE S.R. 16  
STA. 142+50.00 TO STA. 144+50.00

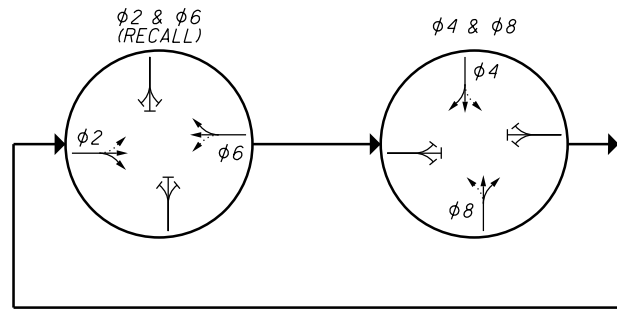
LIC-37 / 661-  
16.59 / 0.00

**SIGNAL HEAD INDICATIONS**



2A/2B  
4A/4B  
6A/6B  
8A/8B

**PHASING DIAGRAM**



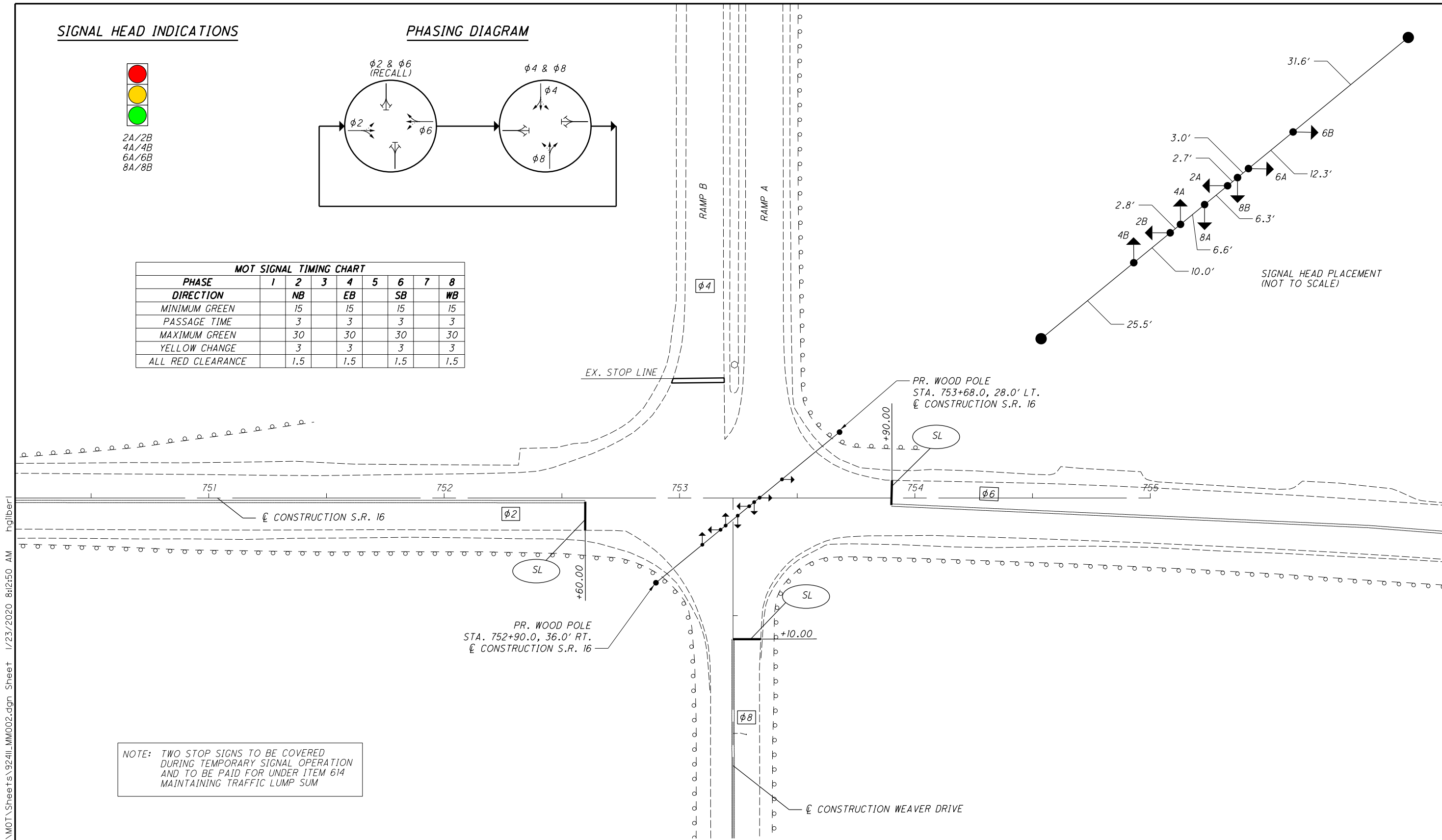
MOT SIGNAL TIMING CHART								
PHASE	1	2	3	4	5	6	7	8
DIRECTION		NB		EB		SB		WB
MINIMUM GREEN		15		15		15		15
PASSAGE TIME		3		3		3		3
MAXIMUM GREEN		30		30		30		30
YELLOW CHANGE		3		3		3		3
ALL RED CLEARANCE		1.5		1.5		1.5		1.5



CALCULATED BRH  
CHECKED HAG

**MOT PRE-PHASE TEMPORARY SIGNAL  
S.R. 16 & RAMPS A & B / WEAVER DRIVE**

**LIC-37 / 661-  
16.59 / 0.00**



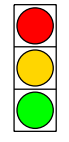
NOTE: TWO STOP SIGNS TO BE COVERED DURING TEMPORARY SIGNAL OPERATION AND TO BE PAID FOR UNDER ITEM 614 MAINTAINING TRAFFIC LUMP SUM

ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT	ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
ITEM 622, PORTABLE BARRIER, 32"	ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)	ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
DIRECTION OF TRAFFIC	ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)	ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		CONSTRUCTION WORK AREA

**LEGEND**

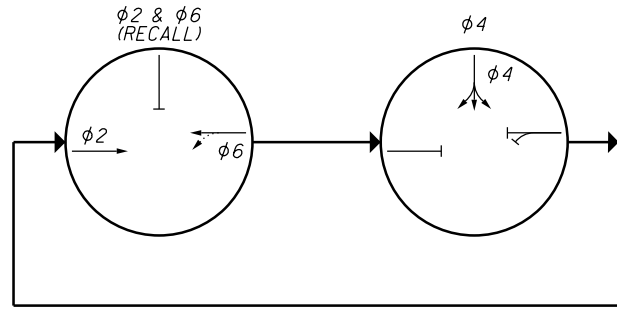
I:\ProjectData\LIC\924IL\Design\M0T\Sheets\924IL\_MM002.dgn Sheet 1/23/2020 8:21:50 AM ngilberl

**SIGNAL HEAD INDICATIONS**



2A/2B  
4A/4B  
6A/6B

**PHASING DIAGRAM**



PHASE	1	2	3	4	5	6	7	8
DIRECTION		NB		EB		SB		
MINIMUM GREEN		15		15		15		
PASSAGE TIME		3		3		3		
MAXIMUM GREEN		30		30		30		
YELLOW CHANGE		3		3		3		
ALL RED CLEARANCE		1.5		1.5		1.5		



0 20 40  
HORIZONTAL SCALE IN FEET

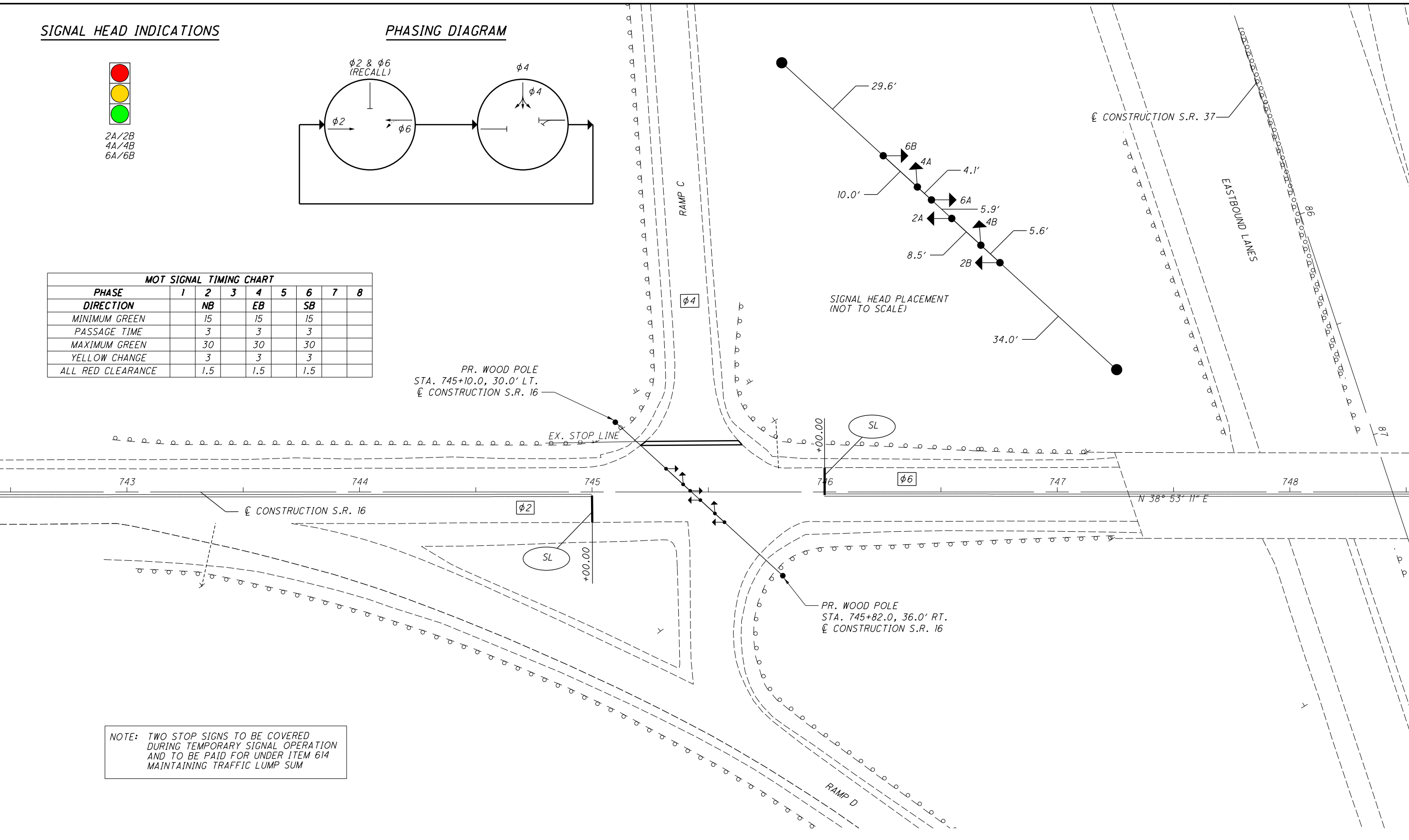
CALCULATED BRH  
CHECKED HAG

**MOT PRE-PHASE TEMPORARY SIGNAL  
S.R. 16 & RAMPS C & D**

**LIC-37 / 661-  
16.59 / 0.00**

40  
341

I:\ProjectData\LIC-924IL\Design\M0T\Sheets\924IL\M0001.dgn Sheet 1/23/2020 8:11:42 AM ngilber



NOTE: TWO STOP SIGNS TO BE COVERED DURING TEMPORARY SIGNAL OPERATION AND TO BE PAID FOR UNDER ITEM 614 MAINTAINING TRAFFIC LUMP SUM

ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		LEGEND		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)	
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT				

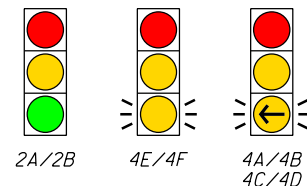
CONSTRUCTION WORK AREA



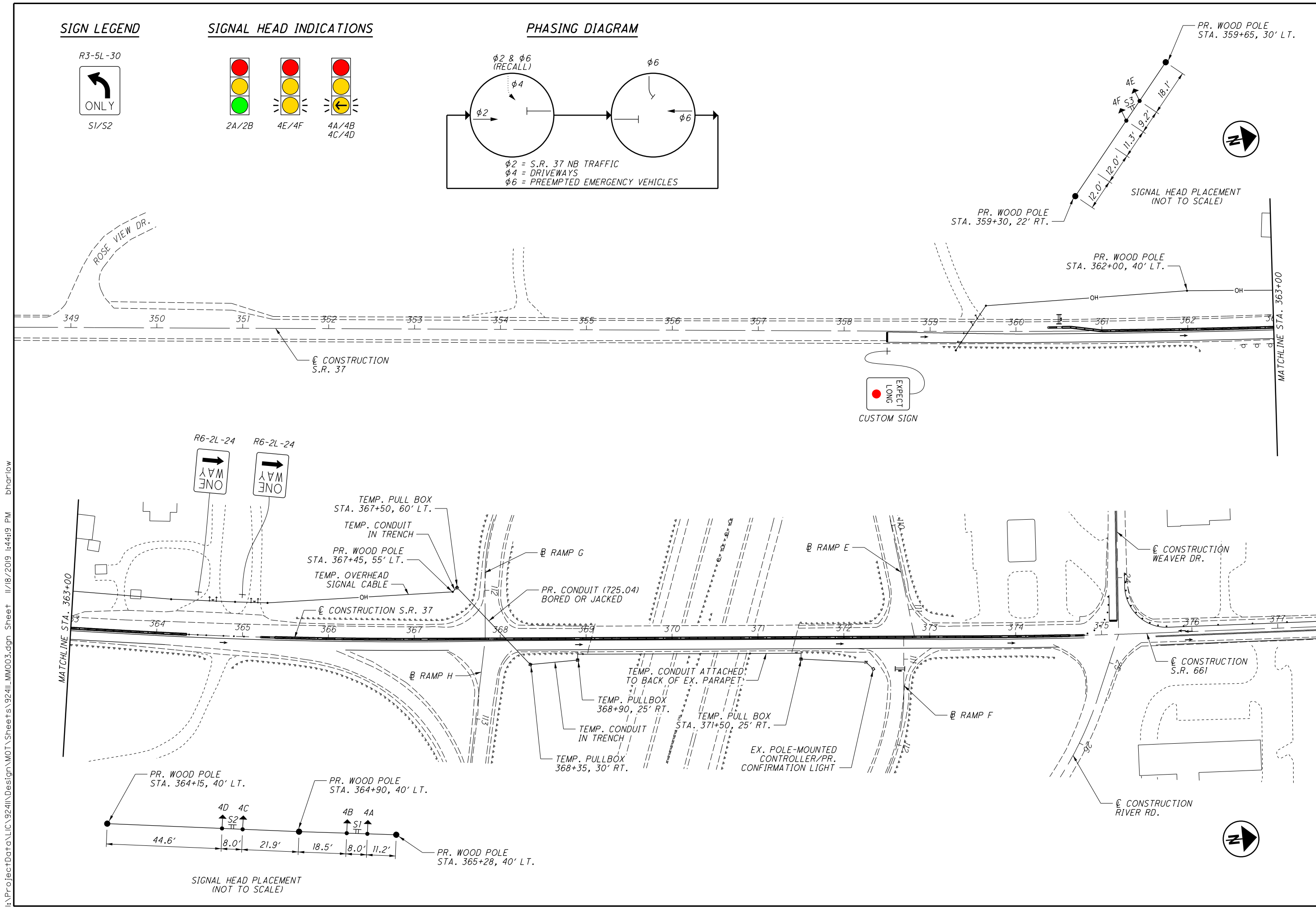
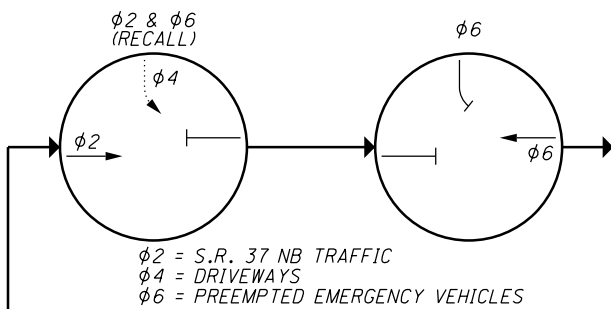
**SIGN LEGEND**



**SIGNAL HEAD INDICATIONS**



**PHASING DIAGRAM**

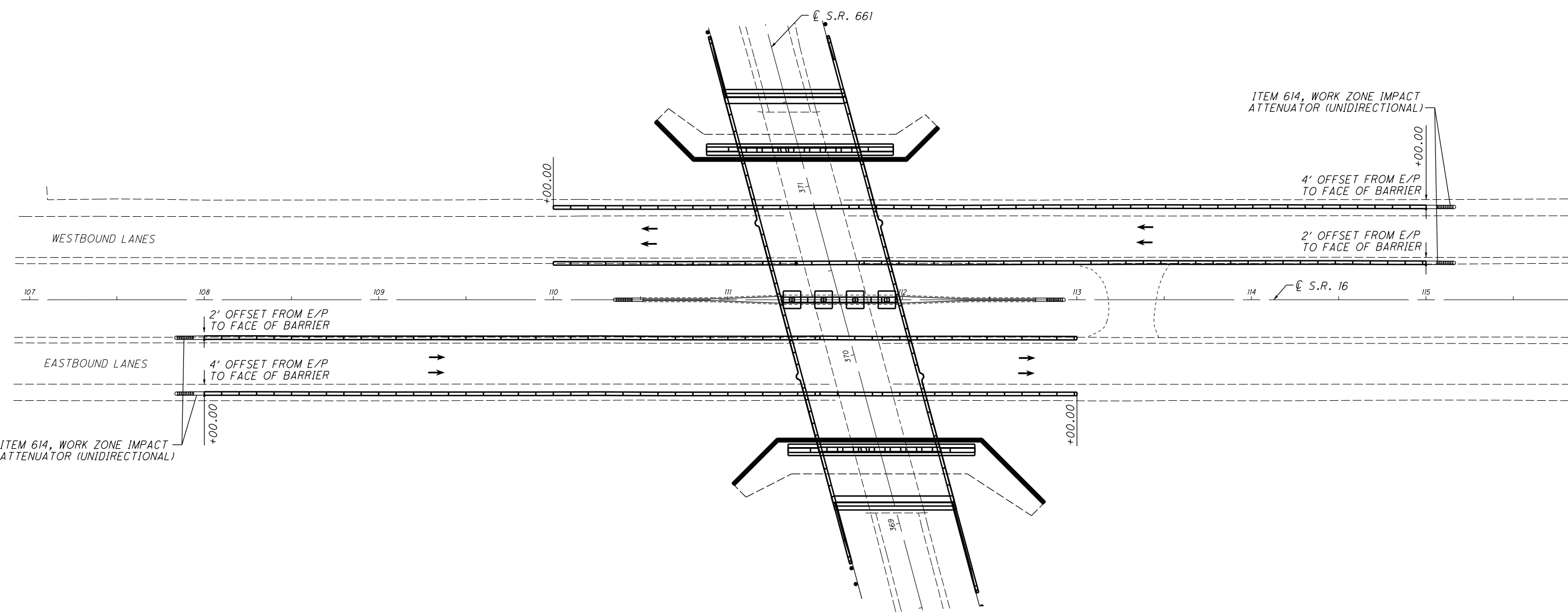


**MOT PHASE 1A TEMPORARY SIGNAL  
S.R. 37 / S.R. 661 THROUGH WORK ZONE**

**LIC-37 / 661-  
16.59 / 0.00**

I:\ProjectData\LIC\9241\Design\M0T\Sheets\9241L\M003.dgn Sheet 11/18/2019 1:44:19 PM bharlow

I:\ProjectData\LIC\_924IL\Design\M0T\Sheets\924IL\_MP000.dgn Sheet 1/23/2020 8:42:1AM ngilbert



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT

- TYPE III BARRICADE AS PER MT-101.60
- CONSTRUCTION WORK AREA

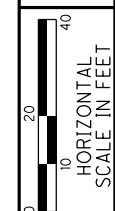
CALCULATED HG  
CHECKED HG

0 30 60  
15  
HORIZONTAL SCALE IN FEET

MOT PHASE 1A, 1B & 2A - S.R. 16  
STA. 108+00 TO STA. 115+00

LIC-37 / 661-  
16.59 / 0.00

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CALCULATED  
BRH  
CHECKED  
HAG

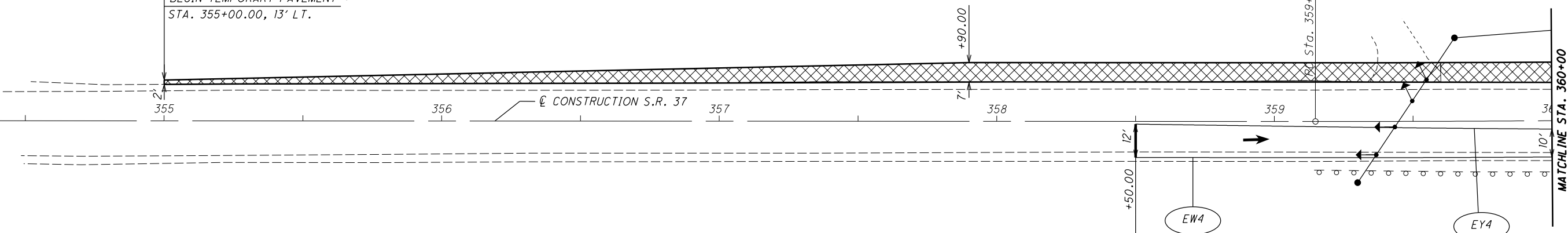
**MOT PHASE 1A - S.R. 37**  
**STA. 355+00 TO STA. 365+50**

**LIC-37 / 661-**  
**16.59 / 0.00**

43  
341

FOR TEMPORARY  
SIGNAL DETAILS,  
SEE SHEET 41

BEGIN TEMPORARY PAVEMENT \*  
STA. 355+00.00, 13' LT.



EXISTING CONCRETE DITCH LINING TO BE  
REMOVED AND ITEM 670 DITCH EROSION  
PROTECTION, TYPE E 6.5' WIDE TO BE  
PLACED IN TEMPORARY DITCH LINE  
(SEE MOT CROSS-SECTION SHEETS  
FOR MORE DETAILS)

BEGIN FULL-DEPTH PAVEMENT  
STA. 361+50.00

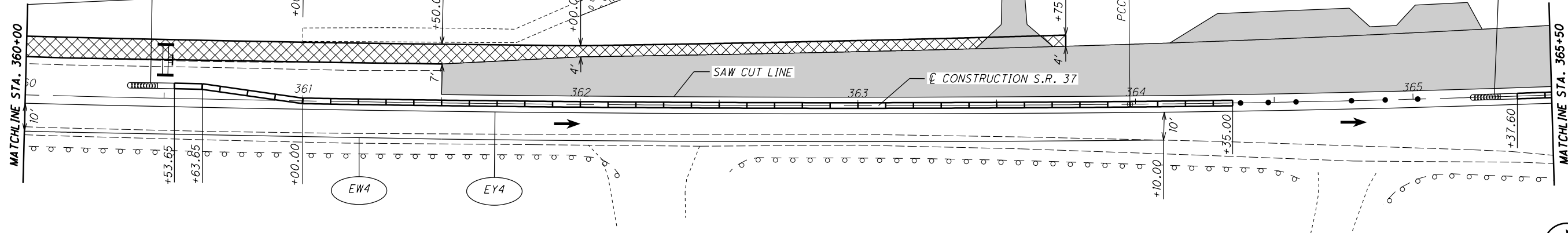
THIS PORTION OF EXISTING  
CONCRETE DITCH LINING TO  
REMAIN DURING CONSTRUCTION

\* END TEMPORARY PAVEMENT  
STA. 363+75.00, 21' LT.

\* SEE SHEETS 47-52 FOR TEMPORARY  
CROSS-SECTION INFORMATION & DETAILS

ITEM 614, WORK ZONE IMPACT  
ATTENUATOR (UNIDIRECTIONAL)

ITEM 614, WORK ZONE IMPACT  
ATTENUATOR (UNIDIRECTIONAL)



**LEGEND**

- |  |  |  |  |  |   |
|--|--|--|--|--|---|
|  | ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN |  | ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT            |  | ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)   |
|  | ITEM 622, PORTABLE BARRIER, 32"                                  |  | ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)  |  | ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT                 |
|  | DIRECTION OF TRAFFIC   |  | ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW) |  | ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT |
|  | ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT                |  |  |  | TYPE III BARRICADE AS PER MT-101.60                           |
|  |  |  |  |  | CONSTRUCTION WORK AREA  |



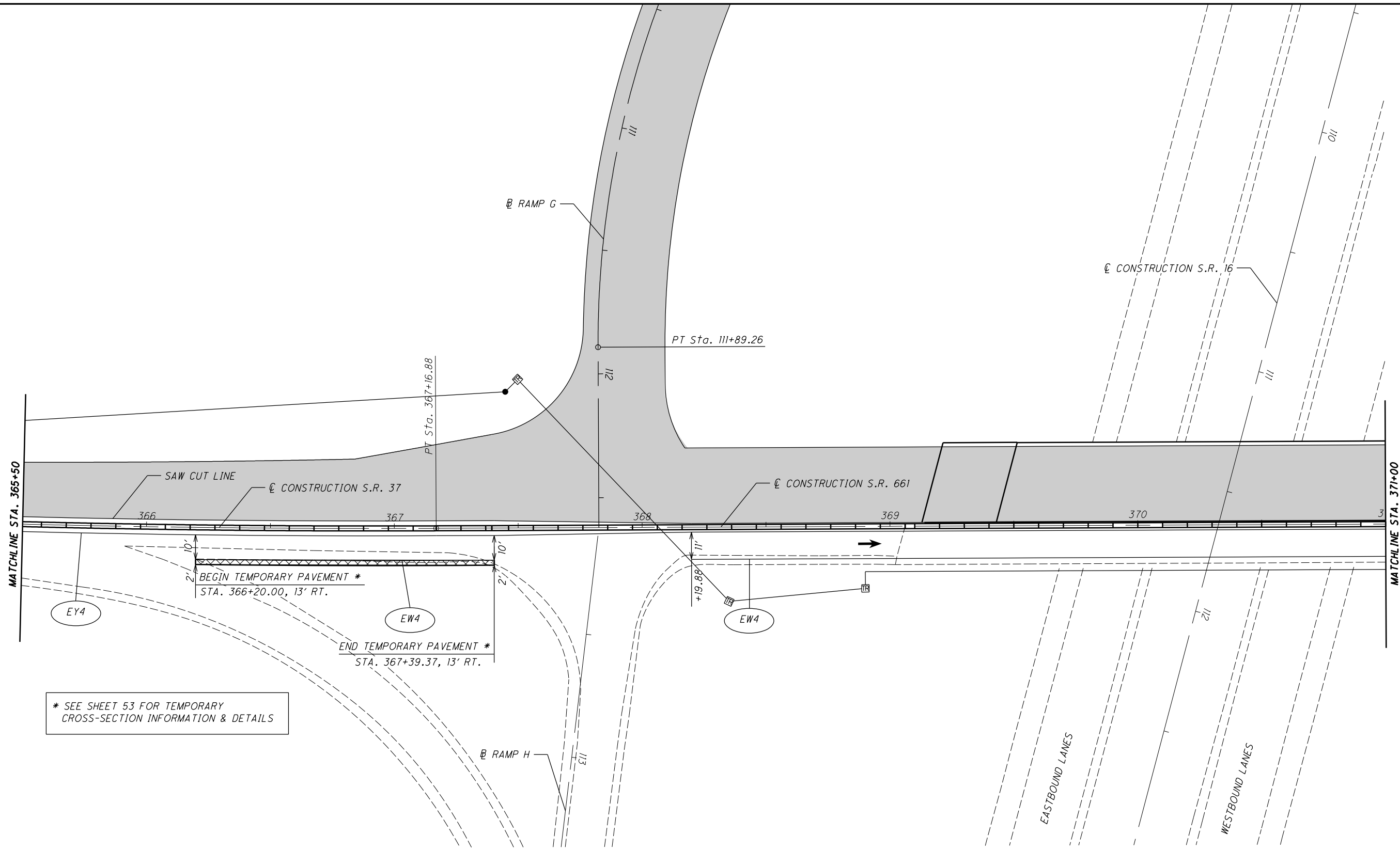
I:\ProjectData\LIC\924IL\Design\M01\Sheets\924IL\MP002.dgn\_Sheet 1/23/2020 8:18:59 AM hgilber1

CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
10  
HORIZONTAL  
SCALE IN FEET




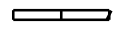








**MOT PHASE 1A - S.R. 37 / S.R.661  
STA. 365+50 TO STA. 371+00**

**LIC-37 / 661-  
16.59 / 0.00**





\* SEE SHEET 53 FOR TEMPORARY CROSS-SECTION INFORMATION & DETAILS

**LEGEND**

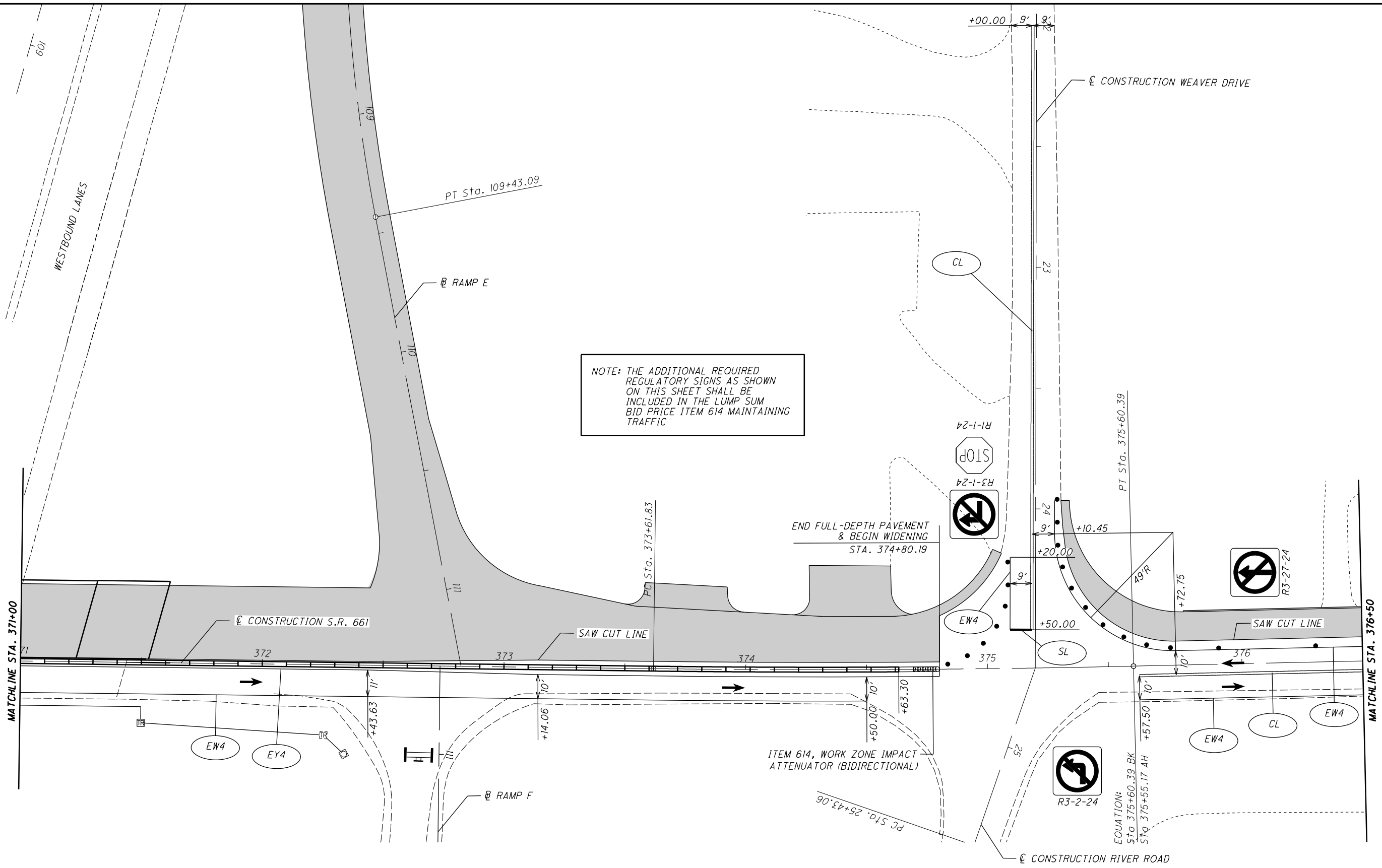
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT (YELLOW)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT				TYPE III BARRICADE AS PER MT-101.60
					CONSTRUCTION WORK AREA

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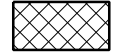

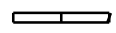
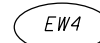
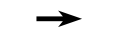
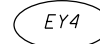







  

  
 CALCULATED: BRH
   
 CHECKED: HAG

**MOT PHASE 1A - S.R. 661**  
**STA. 371+00 TO STA. 376+50**

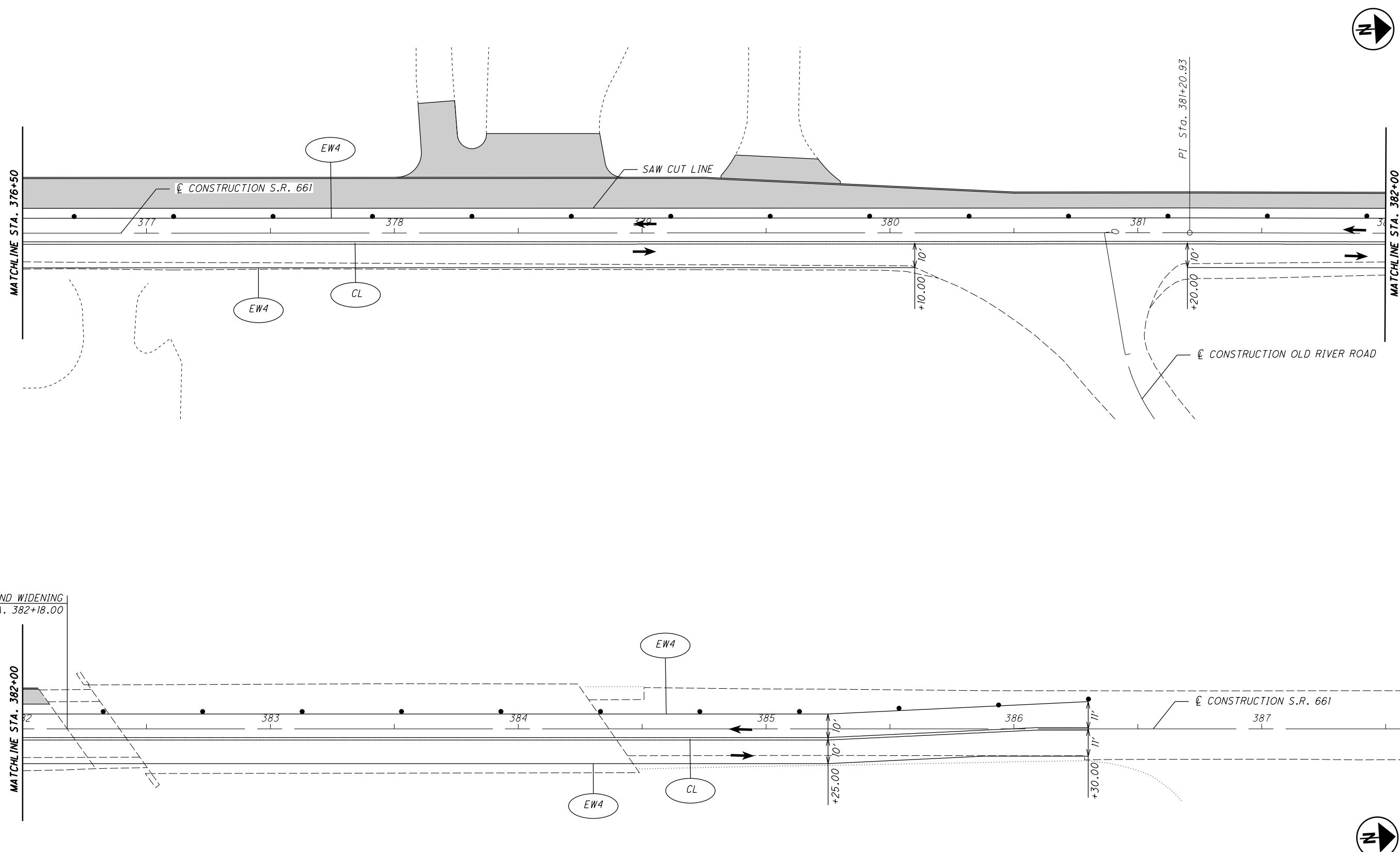
**LIC-37 / 661-**  
**16.59 / 0.00**



NOTE: THE ADDITIONAL REQUIRED REGULATORY SIGNS AS SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM BID PRICE ITEM 614 MAINTAINING TRAFFIC

LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

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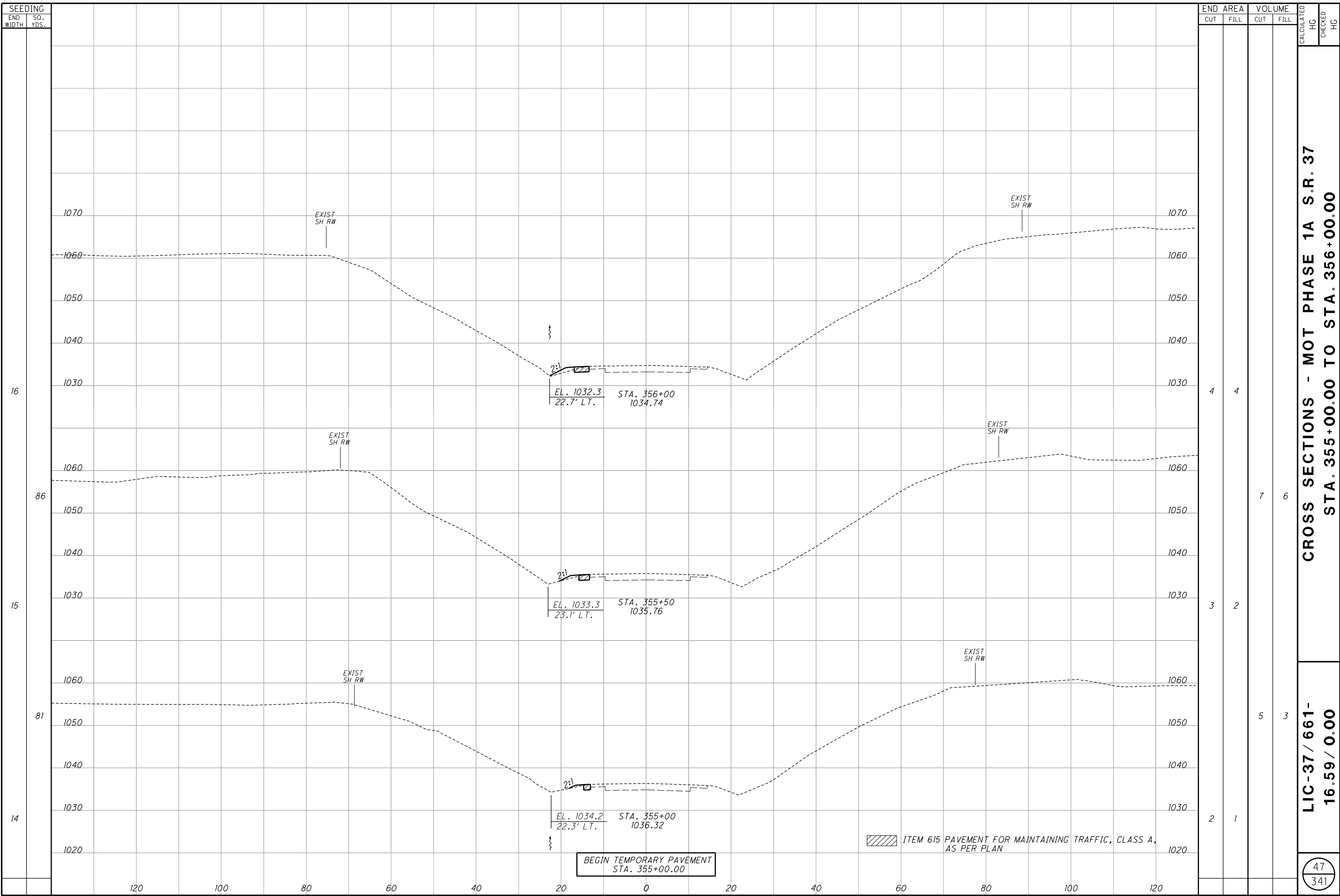
**MOT PHASE 1A - S.R. 661**  
**STA. 376+50 TO STA. 386+30**

**LIC-37 / 661-**  
**16.59 / 0.00**

46  
341

LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

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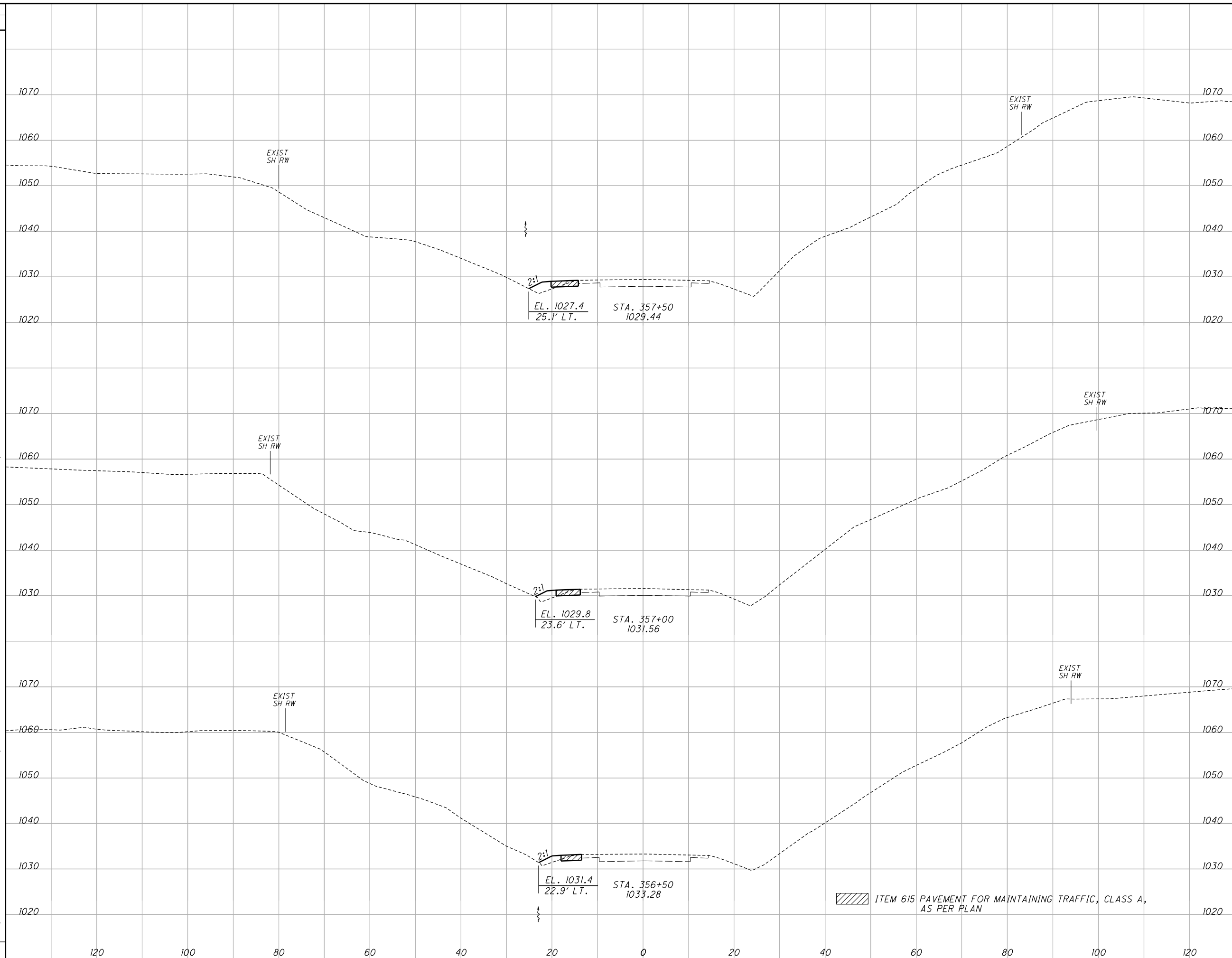


**CROSS SECTIONS - MOT PHASE 1A S.R. 37**  
**STA. 355+00.00 TO STA. 356+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

47  
341

SEEDING  
 END SO. WIDTH YDS.  
 15  
 83  
 83  
 15  
 86



END AREA		VOLUME		CALCULATED		CHECKED	
CUT	FILL	CUT	FILL	HC	HC	HC	HC
4	9	7	15				
4	7	8	12				
5	6	8	9				

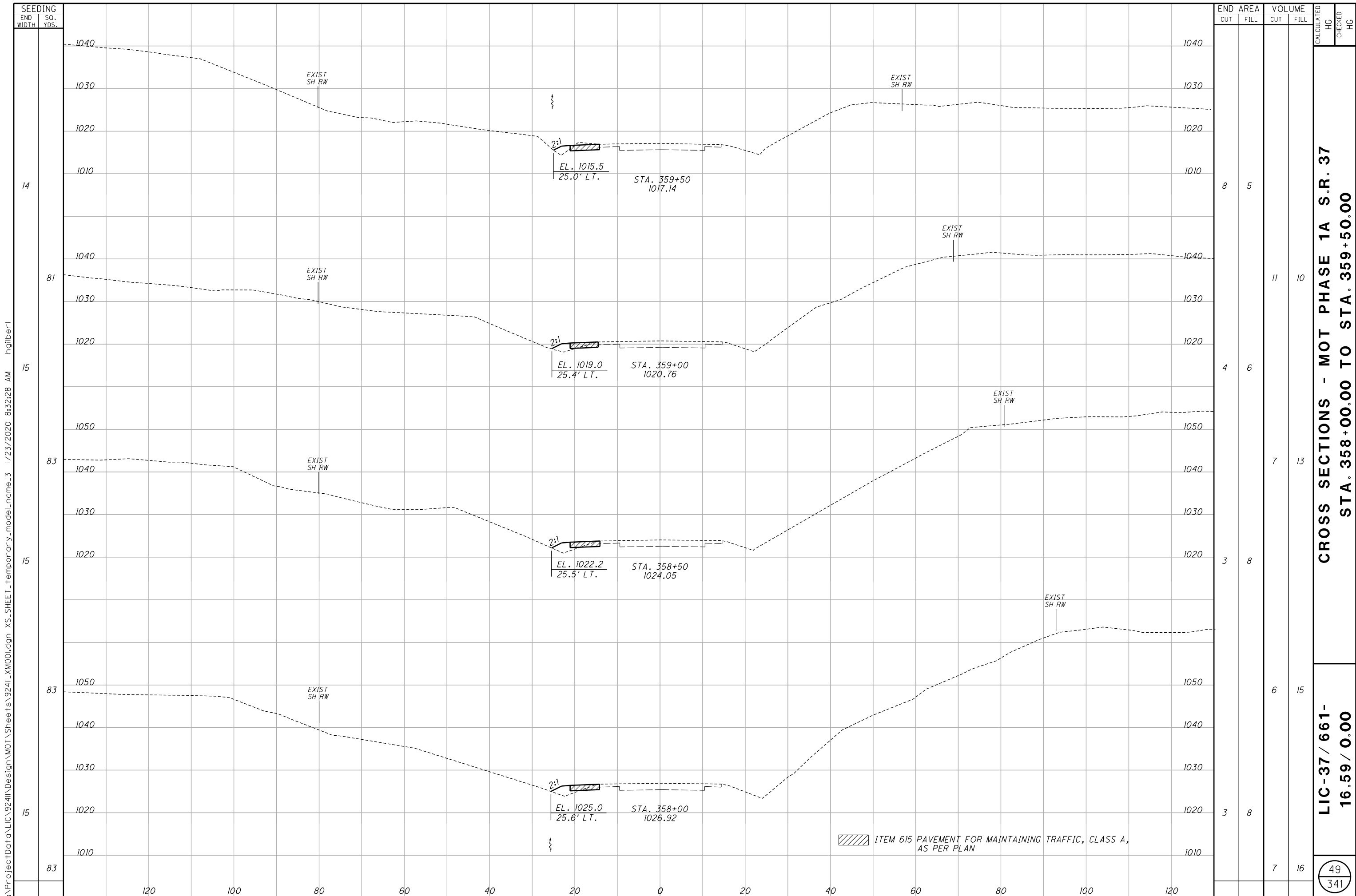
**CROSS SECTIONS - MOT PHASE 1A S.R. 37**  
**STA. 356+50.00 TO STA. 357+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

48  
 341

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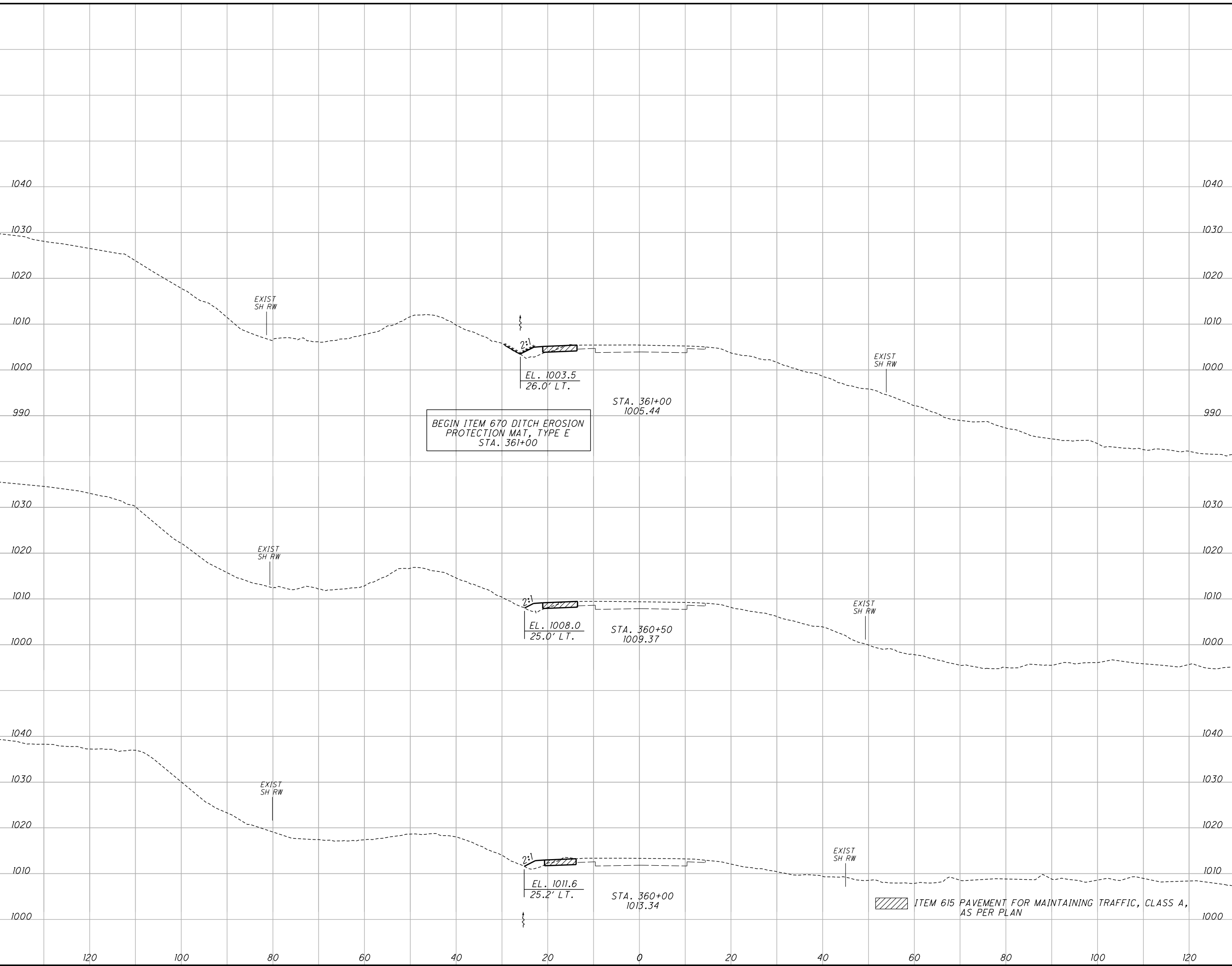
**CROSS SECTIONS - MOT PHASE 1A S.R. 37**  
**STA. 358+00.00 TO STA. 359+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

I:\ProjectData\LIC\9241\Design\M0T\Sheets\9241LXM001.dgn XS\_SHEET\_temporary\_model\_name\_3 1/23/2020 8:32:28 AM ngilber1

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SEEDING	
END WIDTH	SO. YDS.
81	
15	
14	
72	
12	



END AREA		VOLUME		CALCULATED		CHECKED	
CUT	FILL	CUT	FILL	HC	HC	HC	HC
6	8						
		11	13				
6	6						
		12	11				
7	6						
		14	10				

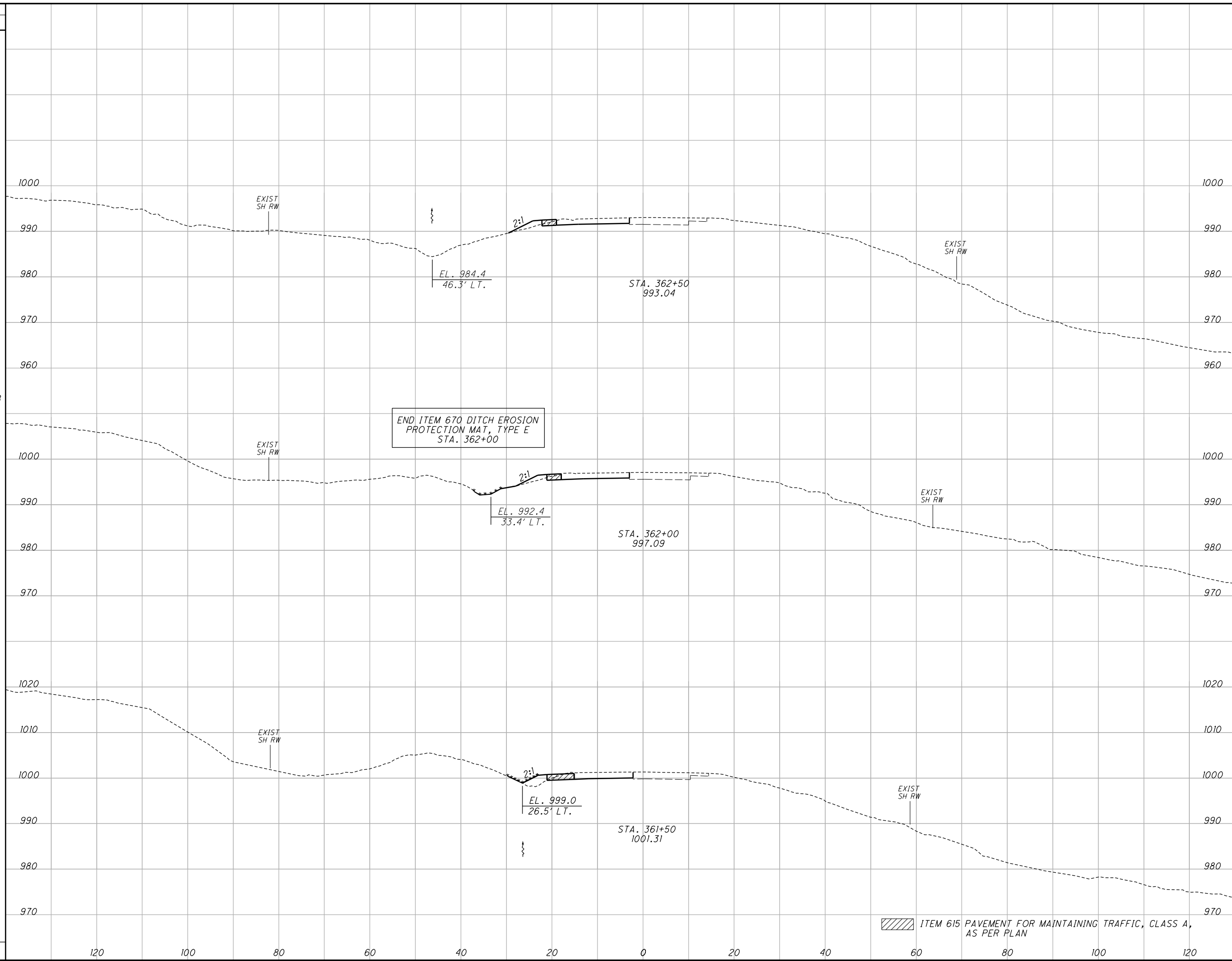
**CROSS SECTIONS - MOT PHASE 1A S.R. 37**  
**STA. 360+00.00 TO STA. 361+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

50  
341

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SEEDING	
END WIDTH	SO. YDS.
18	
21	
92	
12	
67	



END AREA		VOLUME		CALCULATED		CHECKED	
CUT	FILL	CUT	FILL	HC	HC	HC	HC
2	6						
		5	10				
3	5						
		8	13				
6	9						
		11	16				

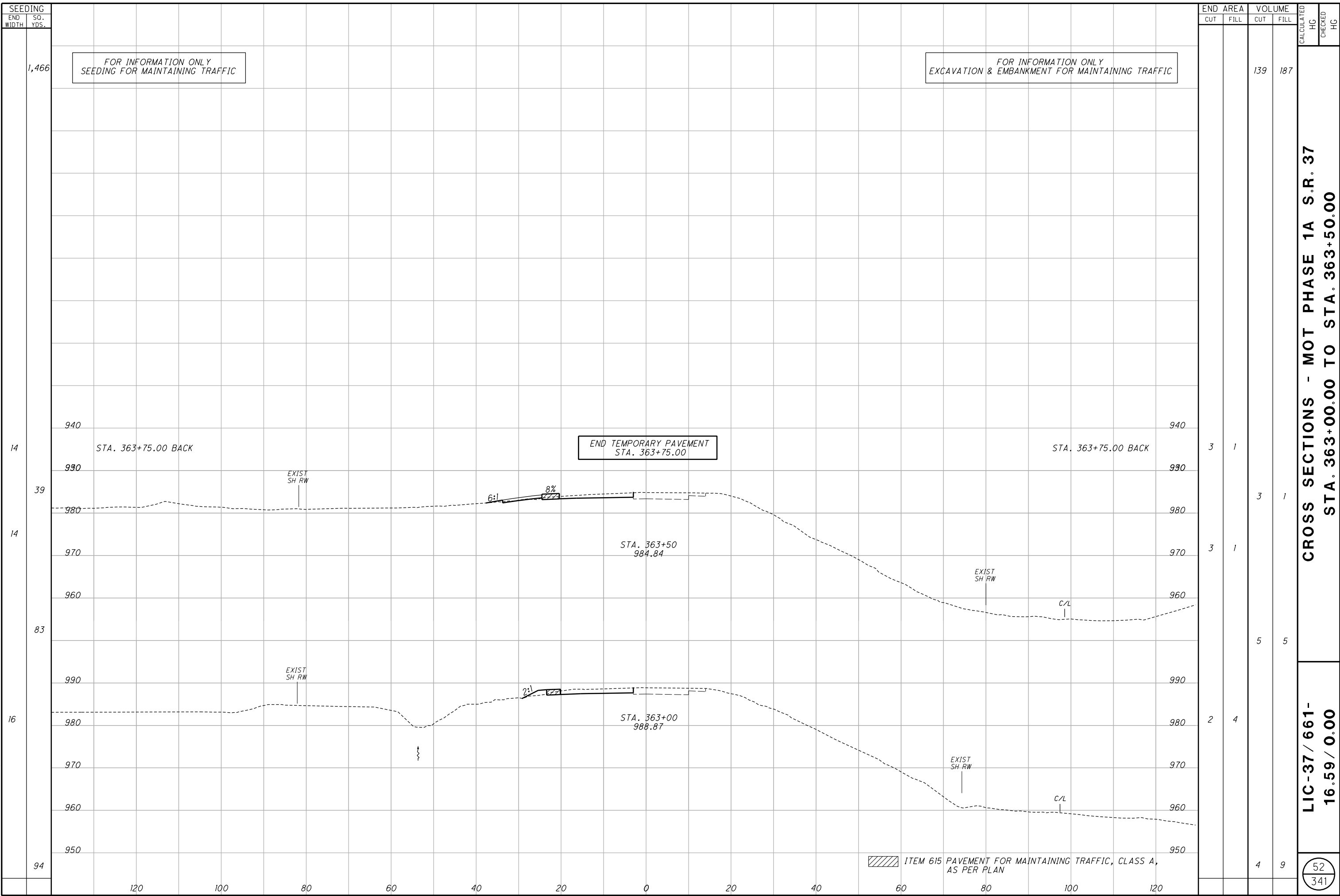
**CROSS SECTIONS - MOT PHASE 1A S.R. 37**  
**STA. 361+50.00 TO STA. 362+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

51  
341

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

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FOR INFORMATION ONLY  
SEEDING FOR MAINTAINING TRAFFIC

FOR INFORMATION ONLY  
EXCAVATION & EMBANKMENT FOR MAINTAINING TRAFFIC

END TEMPORARY PAVEMENT  
STA. 363+75.00

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

SEEDING		END AREA		VOLUME		CALCULATED		CHECKED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	HC	HC	HC	HC
1,466				139	187				
14		3	1						
39				3	1				
14		3	1						
83				5	5				
16		2	4						
94				4	9				

CROSS SECTIONS - MOT PHASE 1A S.R. 37  
STA. 363+00.00 TO STA. 363+50.00

LIC-37 / 661-  
16.59 / 0.00

52  
341



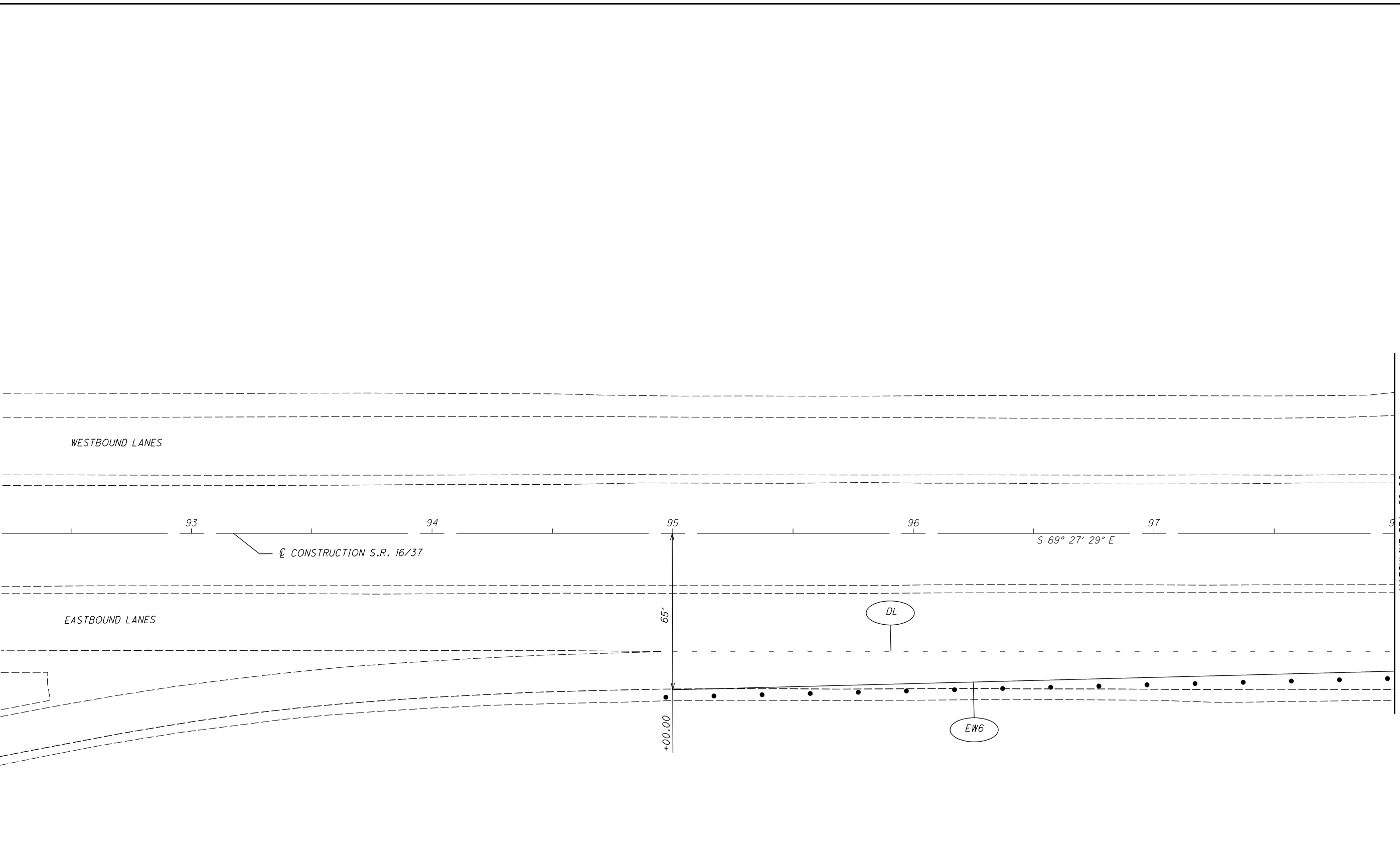
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CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 1A - RAMP G CLOSURE**  
**S.R. 16 - STA. 95+00 TO STA. 98+00**

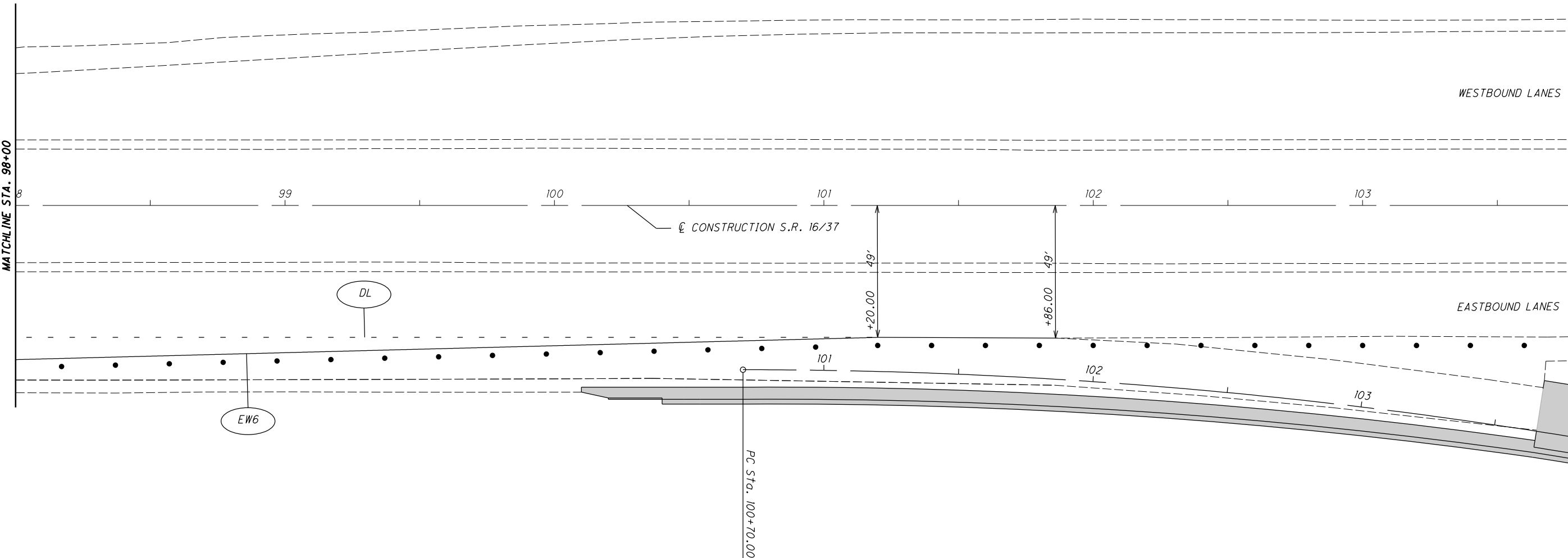
**LIC-37 / 661-**  
**16.59 / 0.00**



**LEGEND**

	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT (WHITE)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)		TYPE III BARRICADE AS PER MT-101.60
					CONSTRUCTION WORK AREA

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CALCULATED  
BRH  
CHECKED  
HAG













0 20 40  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 1A - RAMP G CLOSURE**  
**S.R. 16 - STA. 98+00 TO STA. 101+86**

**LIC-37 / 661-**  
**16.59 / 0.00**

55  
341

**LEGEND**

- |   |  |  |  |   |   |
|---|--|--|--|---|---|
|  | ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN |  | ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT            |  | ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)   |
|  | ITEM 622, PORTABLE BARRIER, 32"                                  |  | ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)  |  | ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT                 |
|  | DIRECTION OF TRAFFIC   |  | ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT (WHITE)  |  | ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT |
|  | ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT                |  | ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW) |  | CONSTRUCTION WORK AREA  |

 TYPE III BARRICADE AS PER MT-101.60

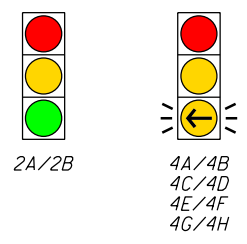
I:\ProjectData\LIC\924IL\Design\M0T\Sheets\924IL\MW004.dgn Sheet 11/18/2019 1:44:36 PM bharlow

PR. WOOD POLE STA. 349+90, 40' LT.

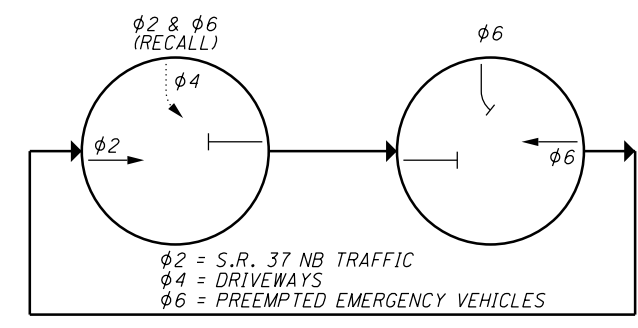
### SIGN LEGEND



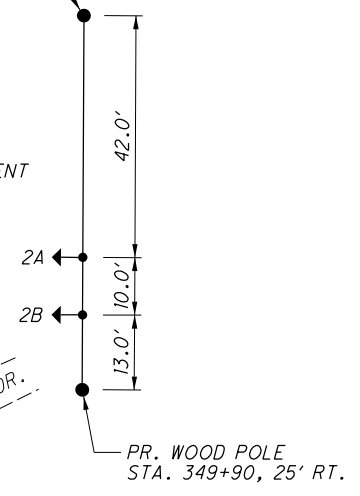
### SIGNAL HEAD INDICATIONS



### PHASING DIAGRAM



SIGNAL HEAD PLACEMENT (NOT TO SCALE)



PR. WOOD POLE STA. 359+65, 30' LT.

SIGNAL HEAD PLACEMENT (NOT TO SCALE)

PR. WOOD POLE STA. 359+30, 22' RT.

PR. WOOD POLE STA. 357+15, 35' LT.

PR. WOOD POLE STA. 354+65, 30' LT.

PR. WOOD POLE STA. 353+90, 30' LT.

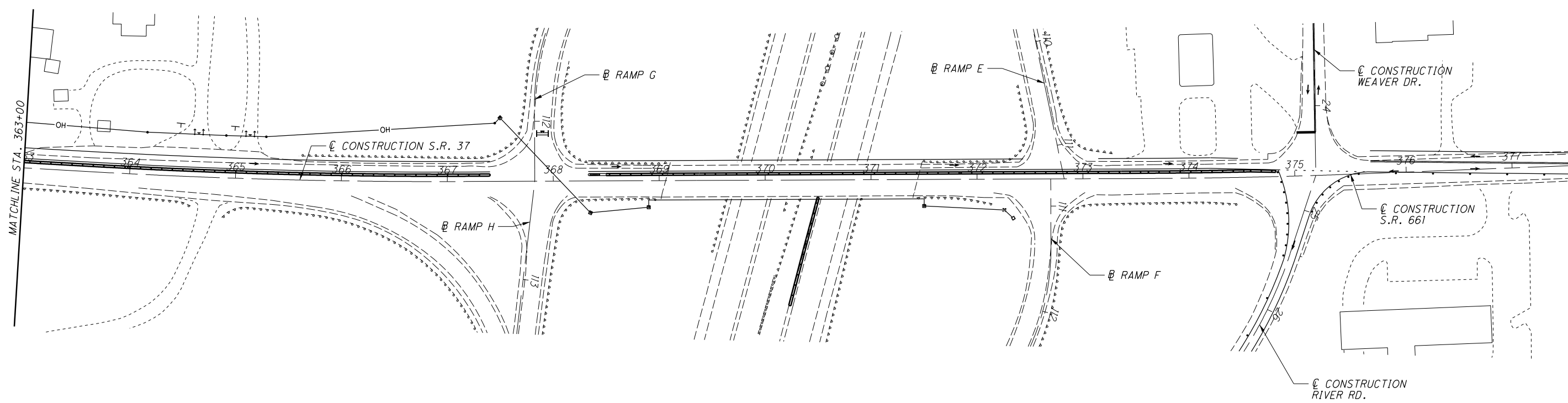
SIGNAL HEAD PLACEMENT (NOT TO SCALE)

CONSTRUCTION S.R. 37

EXPECT LONG CUSTOM SIGN

R6-2L-24

R6-2L-24



MOT PHASE 1B TEMPORARY SIGNAL  
S.R. 37 / S.R. 661 THROUGH WORK ZONE

LIC-37 / 661-  
16.59 / 0.00



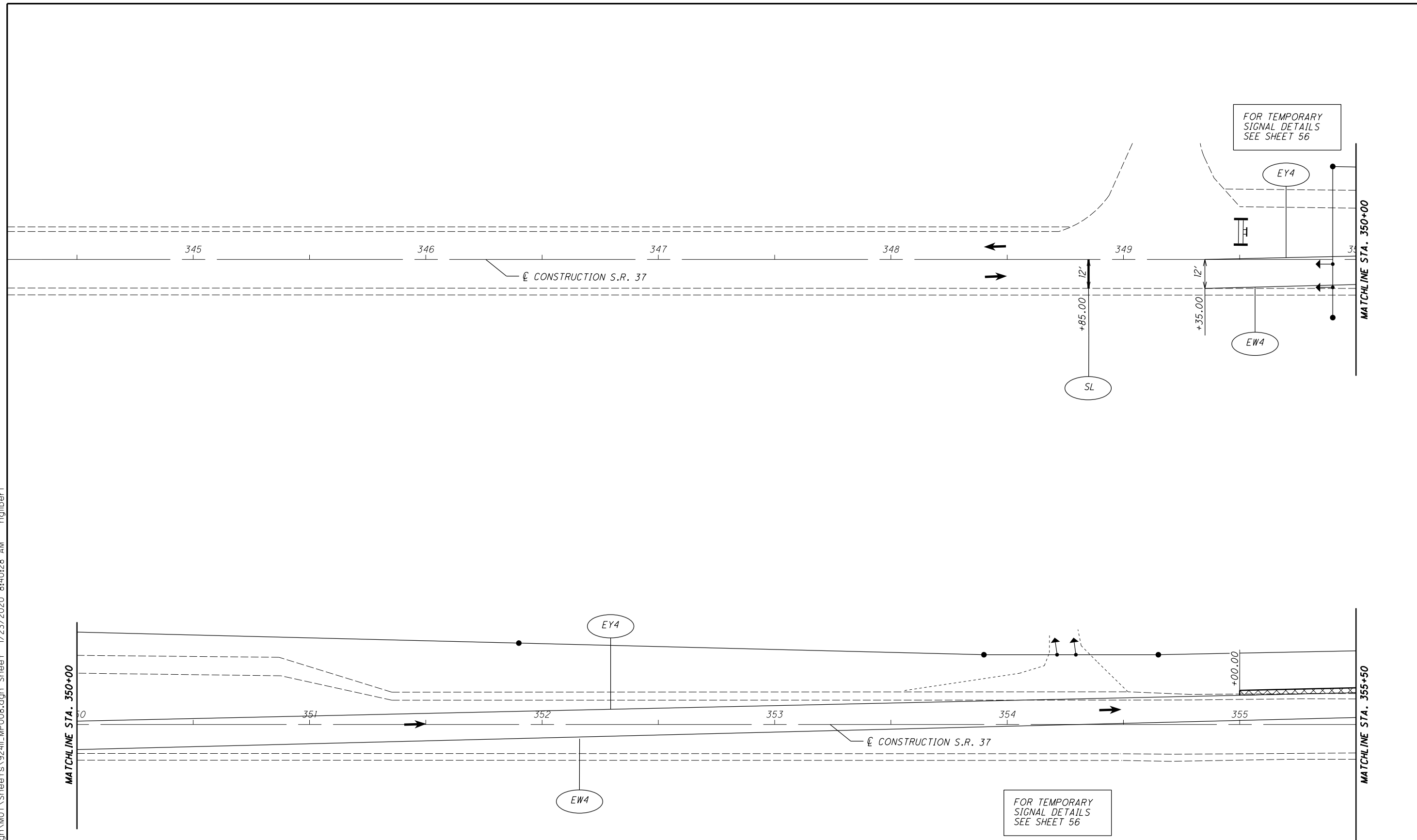
I:\ProjectData\LIC\_924IL\Design\M0T\_Sheets\924IL\_MP008.dgn\_Sheet 1/23/2020 8:40:28 AM hgliber1

CALCULATED  
BRH  
CHECKED  
HAG

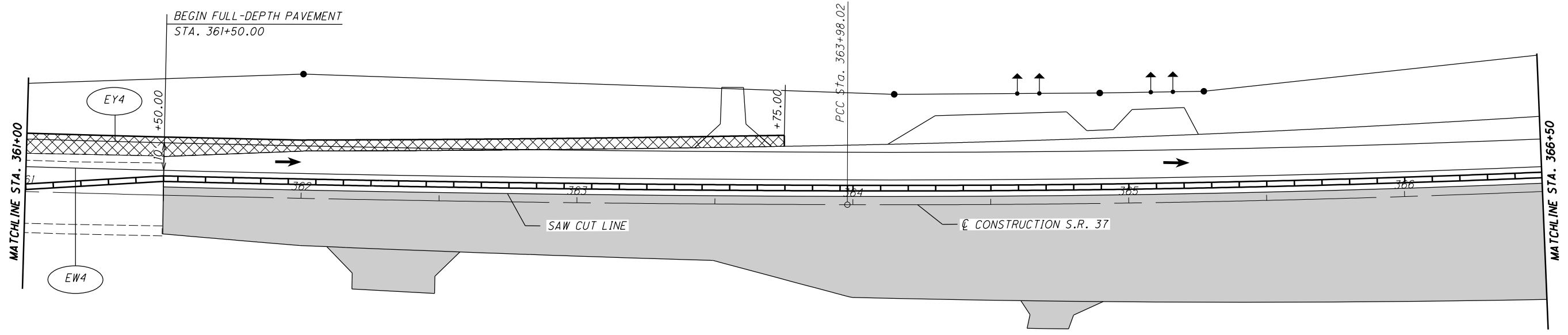
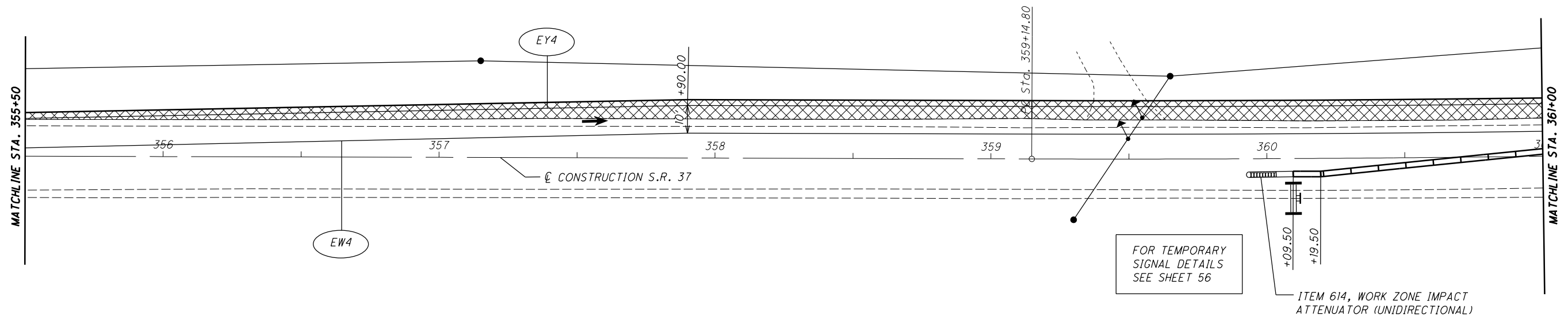
0 20 40  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 1B - S.R. 37**  
**STA. 348+85 TO STA. 355+50**

**LIC-37 / 661-**  
**16.59 / 0.00**



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	TYPE III BARRICADE AS PER MT-101.60		CONSTRUCTION WORK AREA

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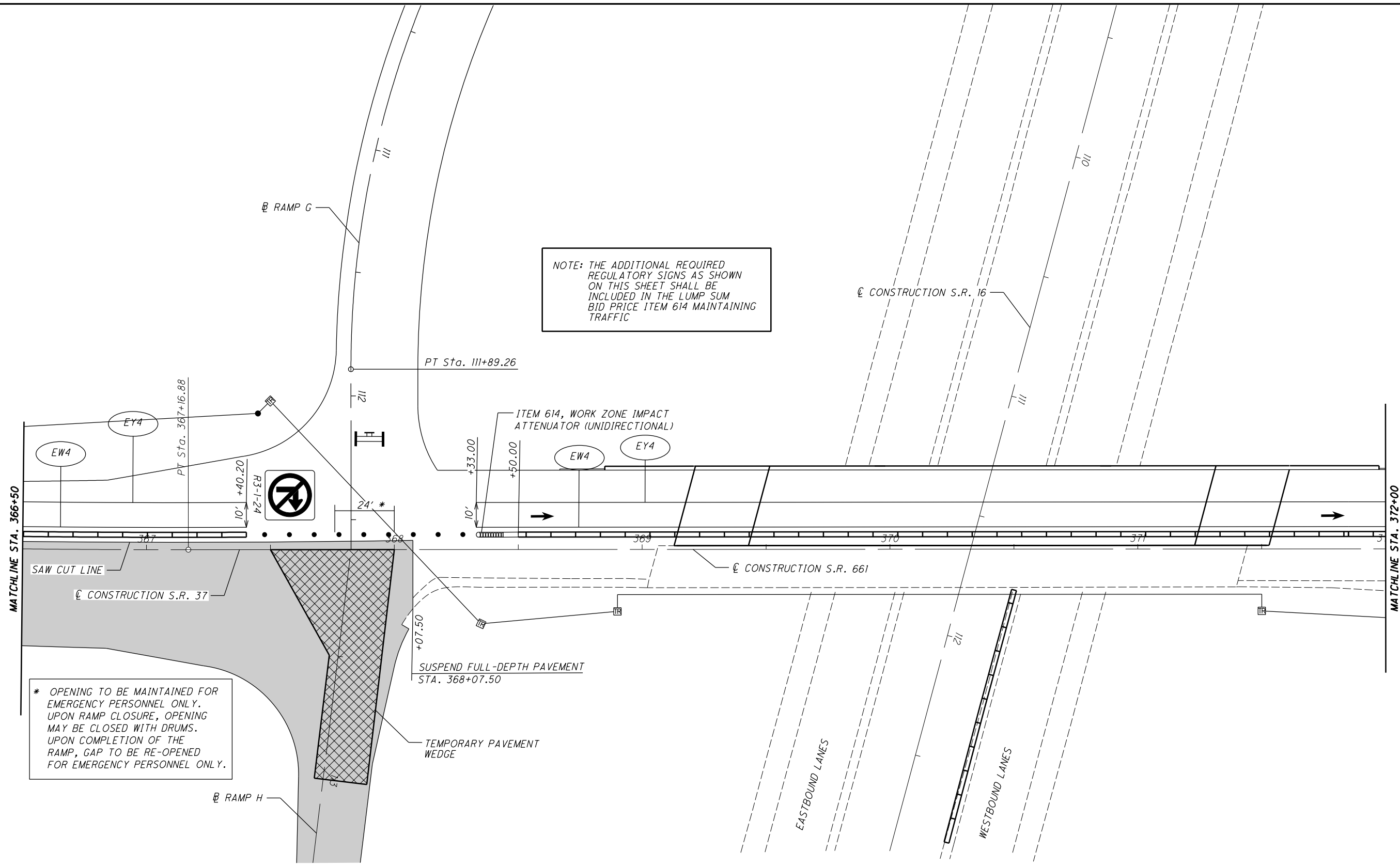
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CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 1B - S.R. 37 / S.R. 661**  
**STA. 366+50 TO STA. 372+00**

**LIC-37 / 661-**  
**16.59 / 0.00**



\* OPENING TO BE MAINTAINED FOR EMERGENCY PERSONNEL ONLY. UPON RAMP CLOSURE, OPENING MAY BE CLOSED WITH DRUMS. UPON COMPLETION OF THE RAMP, GAP TO BE RE-OPENED FOR EMERGENCY PERSONNEL ONLY.

NOTE: THE ADDITIONAL REQUIRED REGULATORY SIGNS AS SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM BID PRICE ITEM 614 MAINTAINING TRAFFIC

LEGEND	
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
	ITEM 622, PORTABLE BARRIER, 32"
	DIRECTION OF TRAFFIC
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT
	ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	TYPE III BARRICADE AS PER MT-101.60
	CONSTRUCTION WORK AREA

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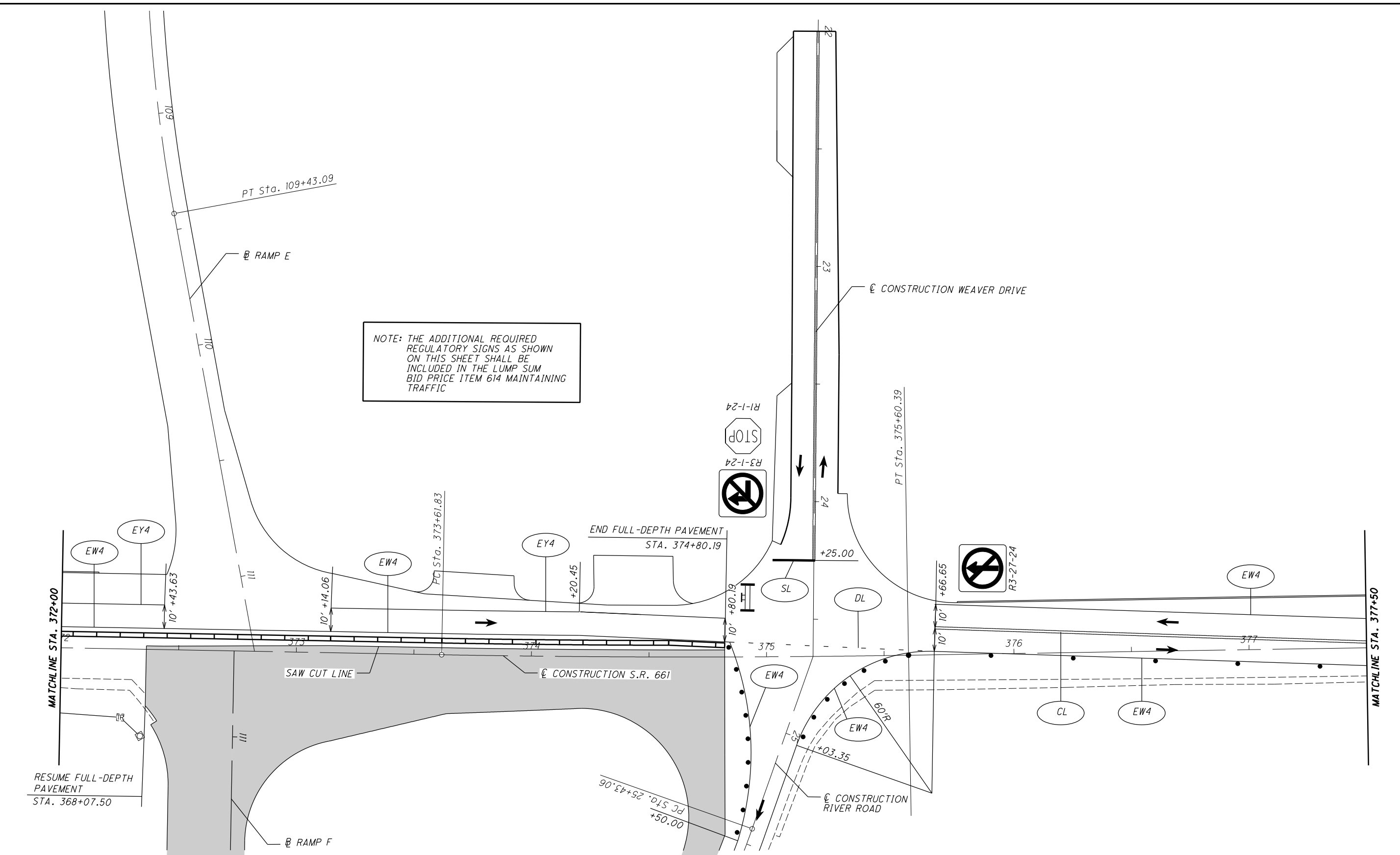
CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
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HORIZONTAL  
SCALE IN FEET

MOT PHASE 1B - S.R. 661  
STA. 372+00 TO STA. 377+50












LIC-37 / 661-  
16.59 / 0.00

60  
341



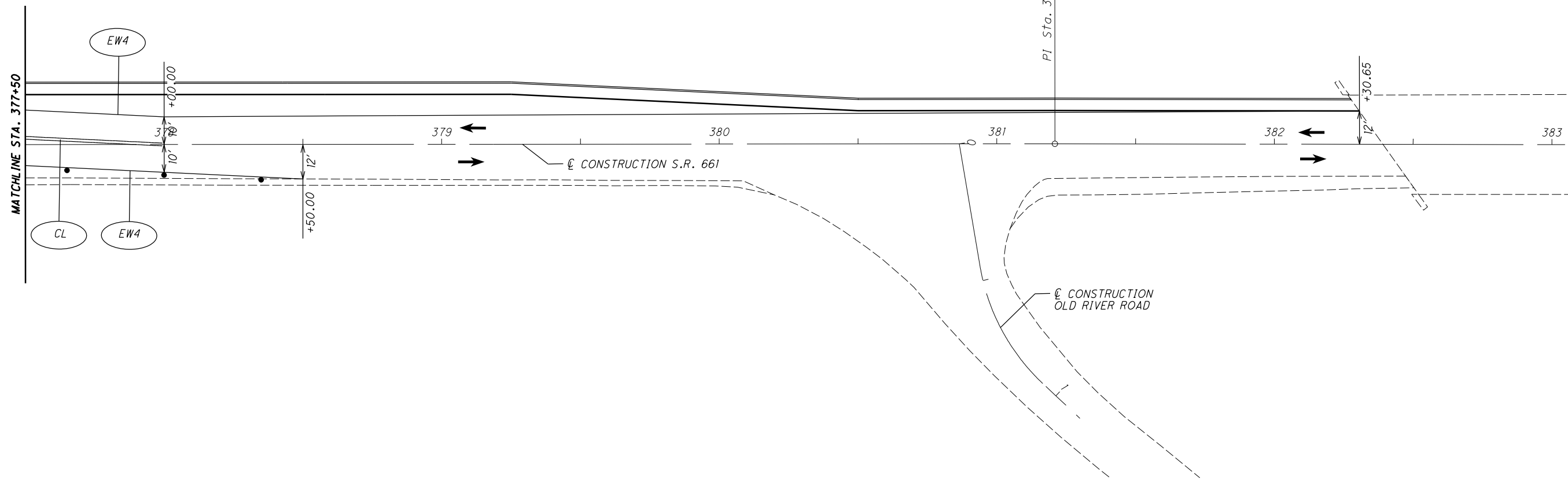
NOTE: THE ADDITIONAL REQUIRED REGULATORY SIGNS AS SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM BID PRICE ITEM 614 MAINTAINING TRAFFIC

LEGEND

	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT				CONSTRUCTION WORK AREA

 TYPE III BARRICADE AS PER MT-101.60

I:\ProjectData\LIC\_9241\Design\M0T\Sheets\9241L\MF012.dgn Sheet 1/23/2020 8:46:15 AM hgliber1



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

CALCULATED  
BRH  
CHECKED  
HAG

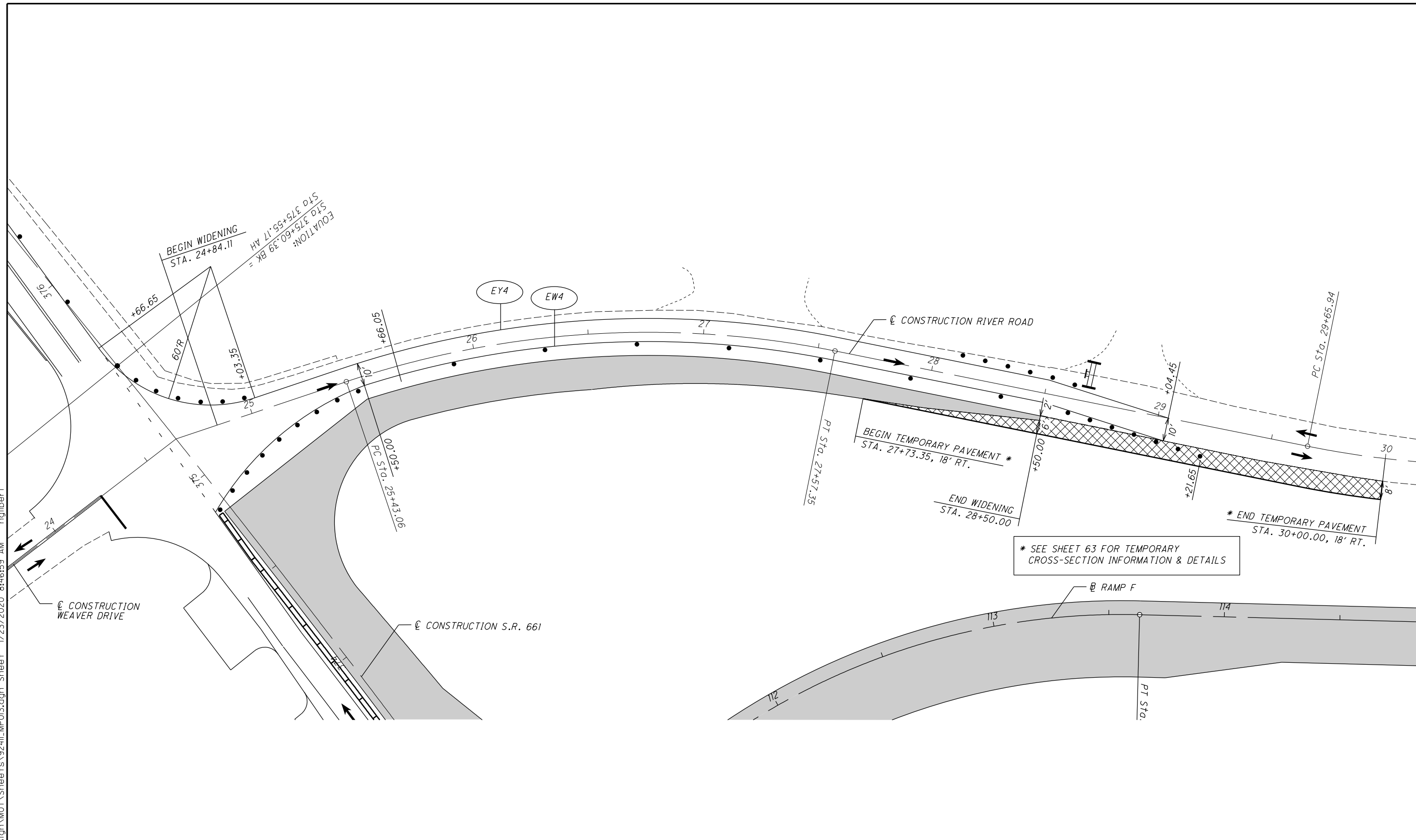
0 20 40  
HORIZONTAL  
SCALE IN FEET

**N**

**MOT PHASE 1B - S.R. 661  
STA. 377+50 TO STA. 378+50**

**LIC-37 / 661-  
16.59 / 0.00**

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CALCULATED  
BRH  
CHECKED  
HAG

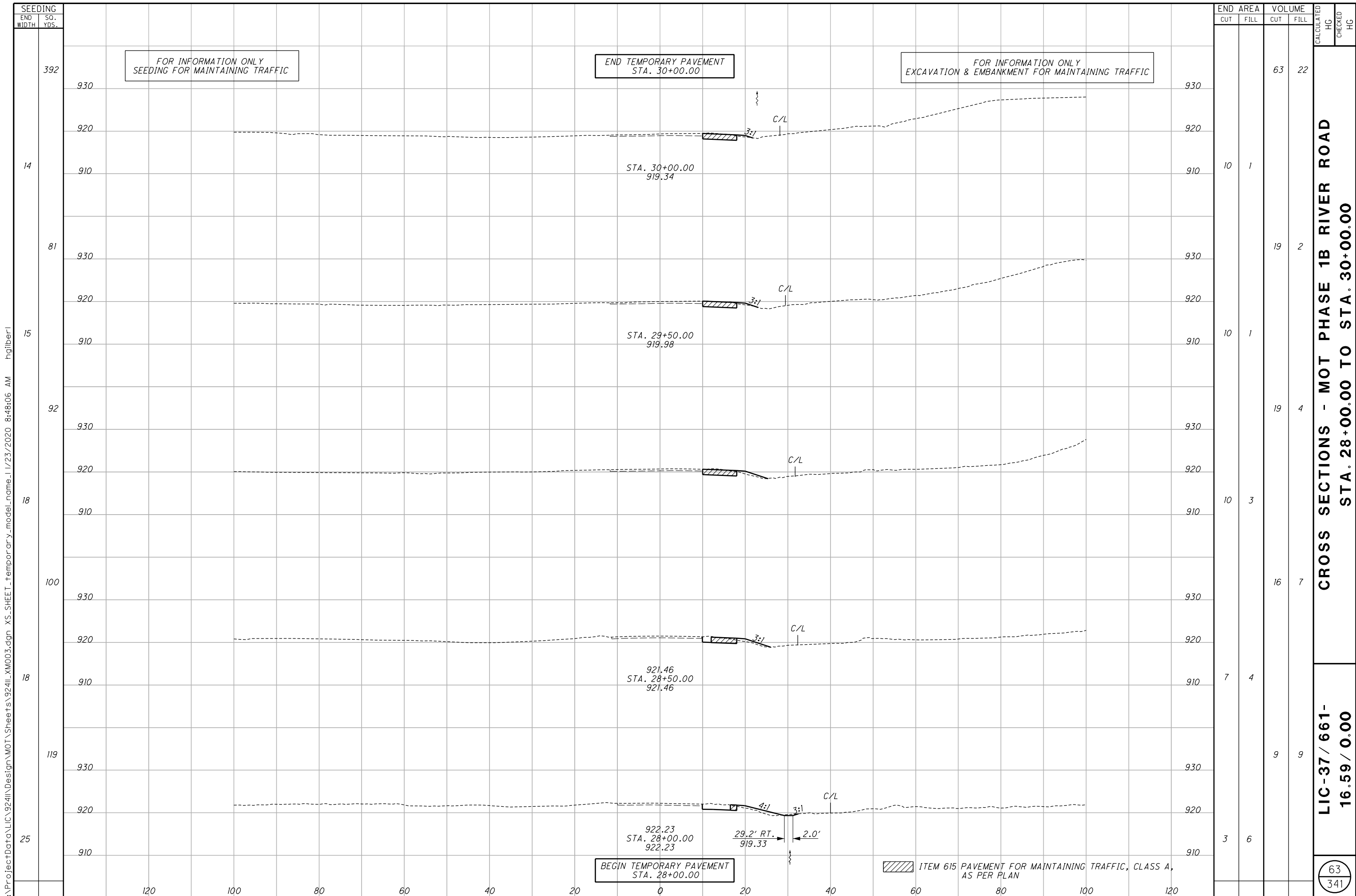
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10  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 1B - RIVER RD.  
STA. 24+84.11 TO STA. 30+00.00**

**LIC-37 / 661-  
16.59 / 0.00**

62  
341

LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT
	TYPE III BARRICADE AS PER MT-101.60		
	CONSTRUCTION WORK AREA		



SEEDING	
END WIDTH	SO. YDS.
14	392
81	14
15	81
92	15
18	92
100	18
18	100
119	18
25	119

END AREA		VOLUME		CALCULATED		CHECKED	
CUT	FILL	CUT	FILL	HC	HC	HC	HC
10	1	63	22				
10	1	19	2				
10	1	19	4				
10	3	16	7				
7	4	9	9				
3	6						

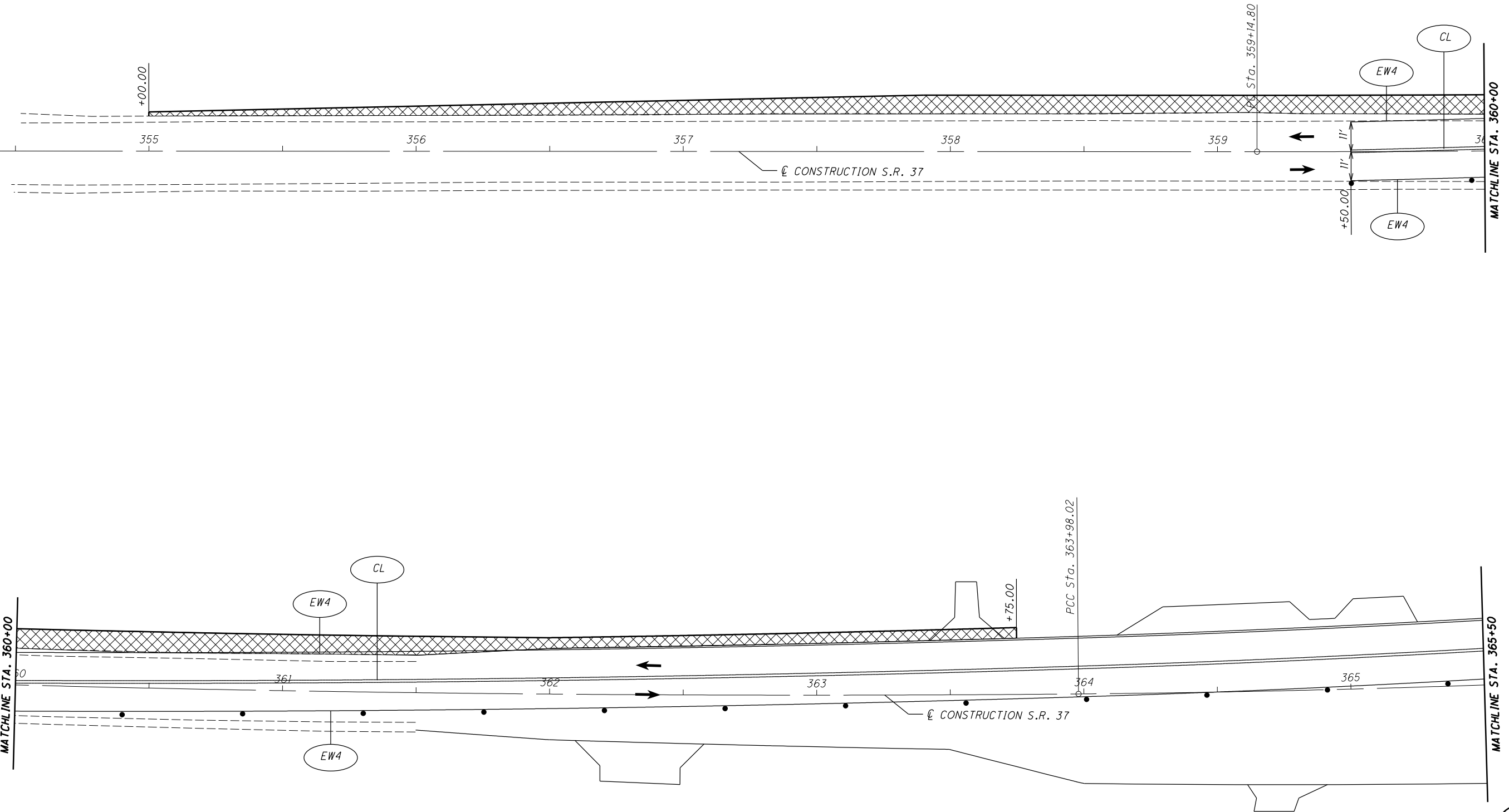
**CROSS SECTIONS - MOT PHASE 1B RIVER ROAD**  
**STA. 28+00.00 TO STA. 30+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

63  
 341

I:\ProjectData\LIC\9241\Design\M0T\Sheets\9241L\_XM003.dgn XS\_SHEET\_Temporary\_model\_name\_1/23/2020 8:48:06 AM hgliberl

I:\ProjectData\LIC\_924\Design\M0T\Sheets\924IL\MP014.dgn Sheet 1/23/2020 8:48:52 AM hgilber1



CALCULATED  
BRH  
CHECKED  
HAG

0 20  
10  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 2A - S.R. 37**  
**STA. 359+50 TO STA. 365+50**

**LIC-37 / 661-**  
**16.59 / 0.00**

64  
341

LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA



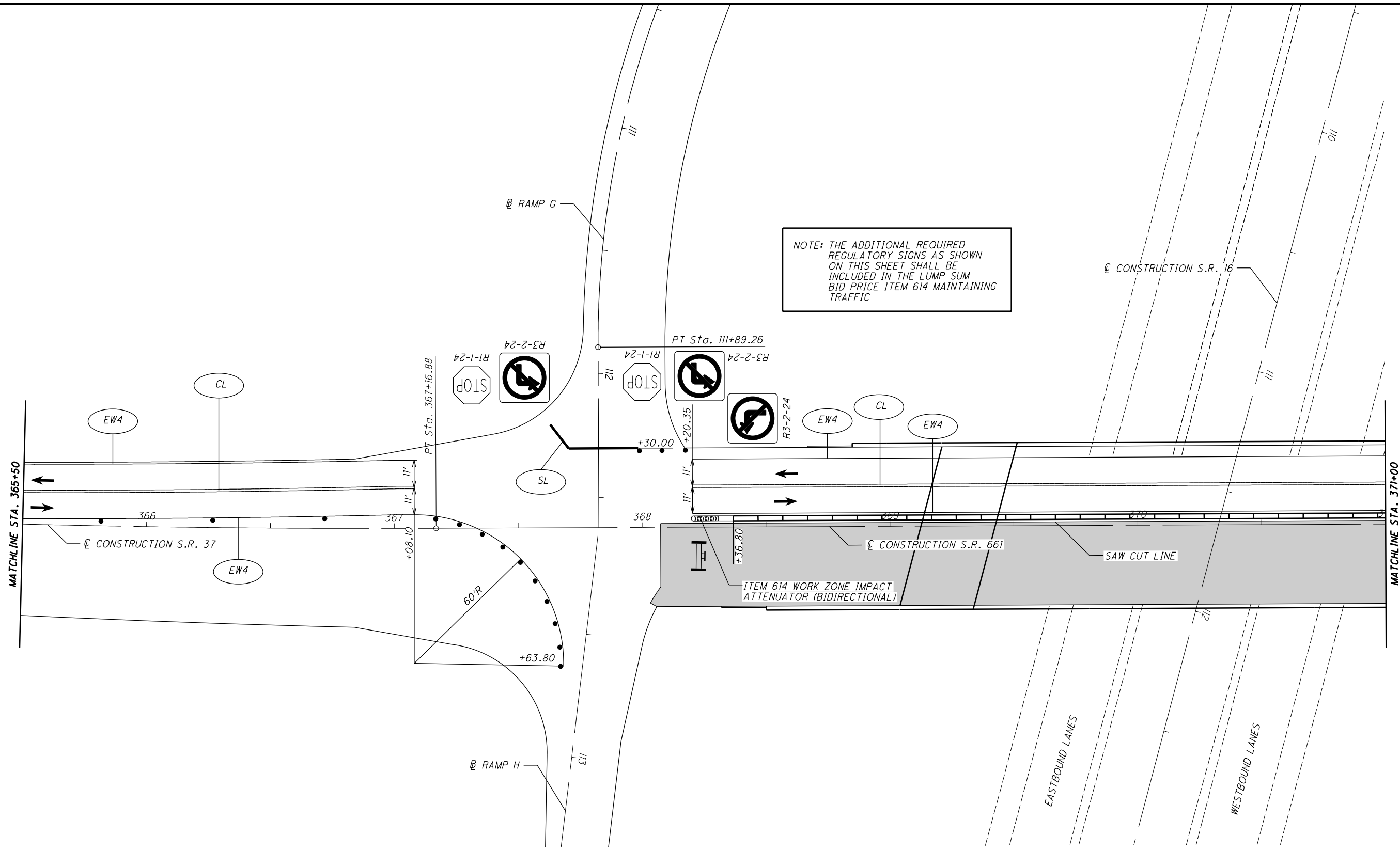
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CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
HORIZONTAL  
SCALE IN FEET

**MOT PHASE 2A - S.R. 37 / S.R.661  
STA. 365+50 TO STA. 371+00**

**LIC-37 / 661-  
16.59 / 0.00**





NOTE: THE ADDITIONAL REQUIRED REGULATORY SIGNS AS SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM BID PRICE ITEM 614 MAINTAINING TRAFFIC

**LEGEND**

	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)		ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)		ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		TYPE III BARRICADE AS PER MT-101.60		CONSTRUCTION WORK AREA

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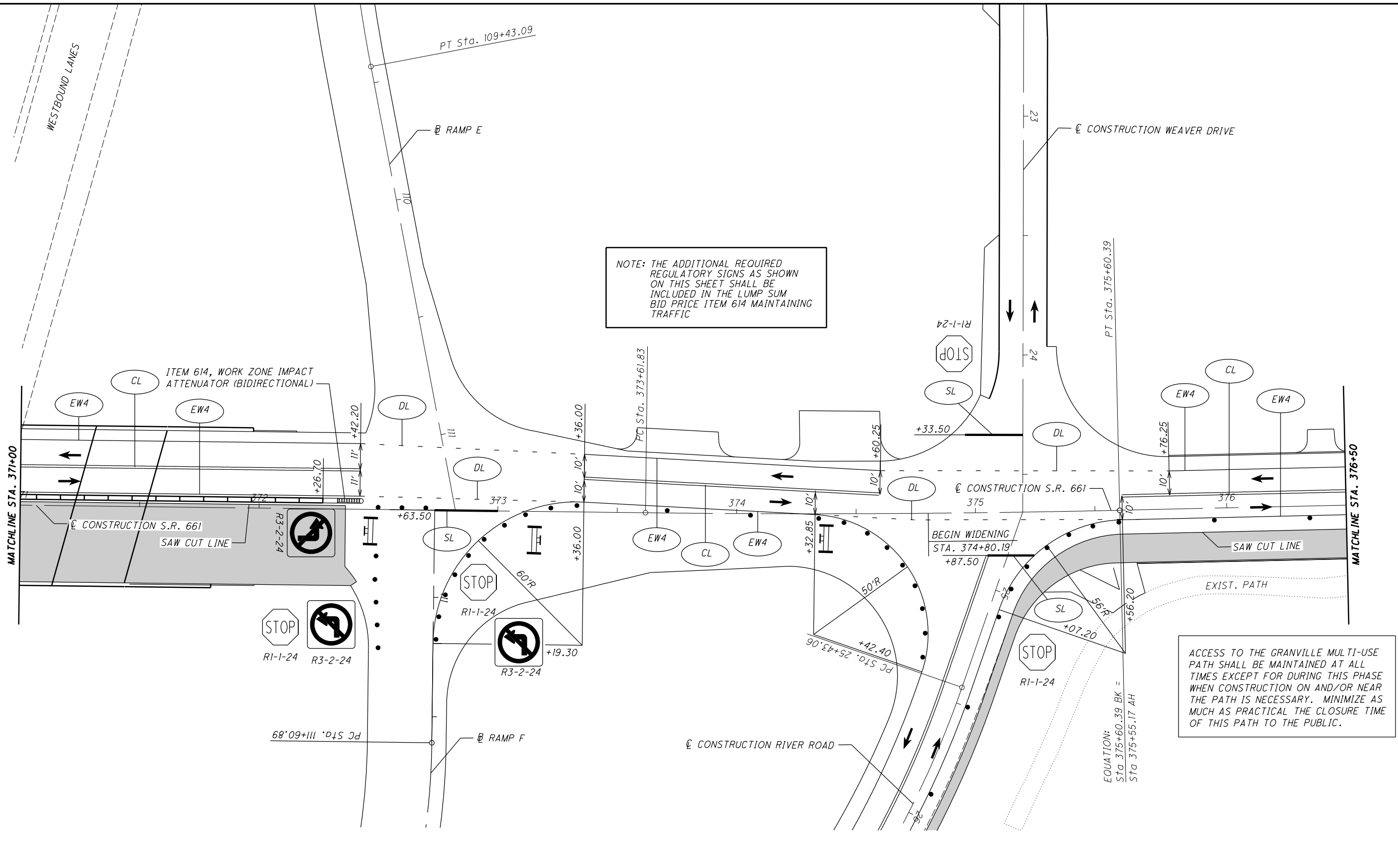

  

  
 HORIZONTAL SCALE IN FEET


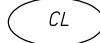

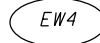
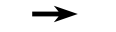







CALCULATED  
 BRH  
 CHECKED  
 HAG

**MOT PHASE 2A - S.R. 661**  
**STA. 371+00 TO STA. 376+50**

LIC-37 / 661-  
 16.59 / 0.00

66  
 341



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS I, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS I, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS I, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS I, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

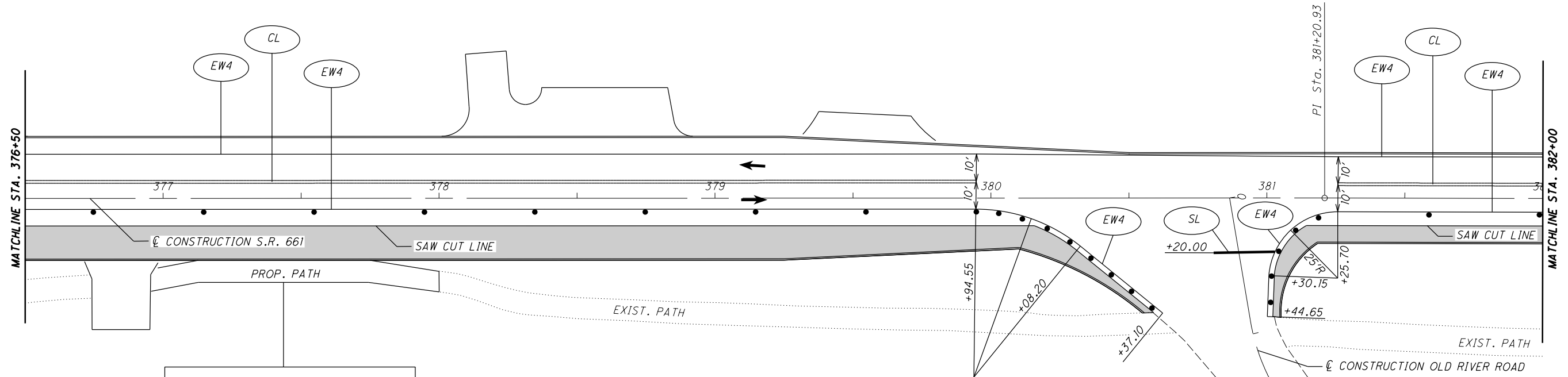


CALCULATED  
BRH  
CHECKED  
HAG

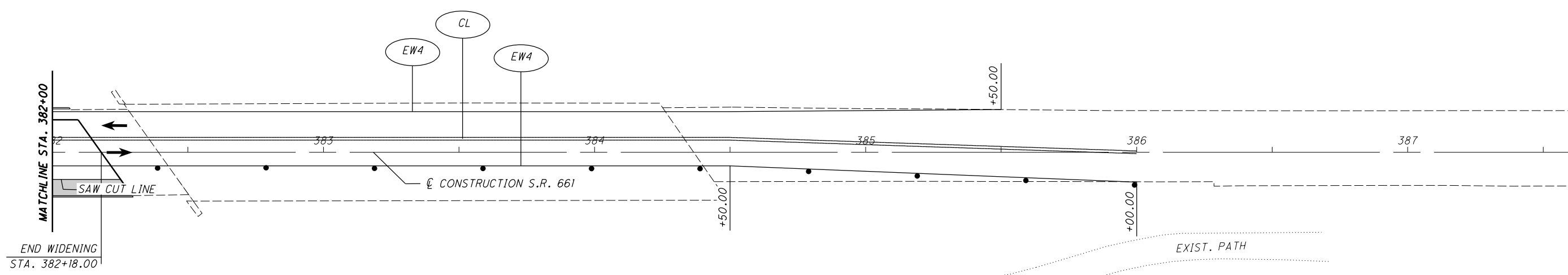
**MOT PHASE 2A - S.R. 661**  
**STA. 376+50 TO STA. 386+00**

**LIC-37 / 661-**  
**16.59 / 0.00**

67  
341



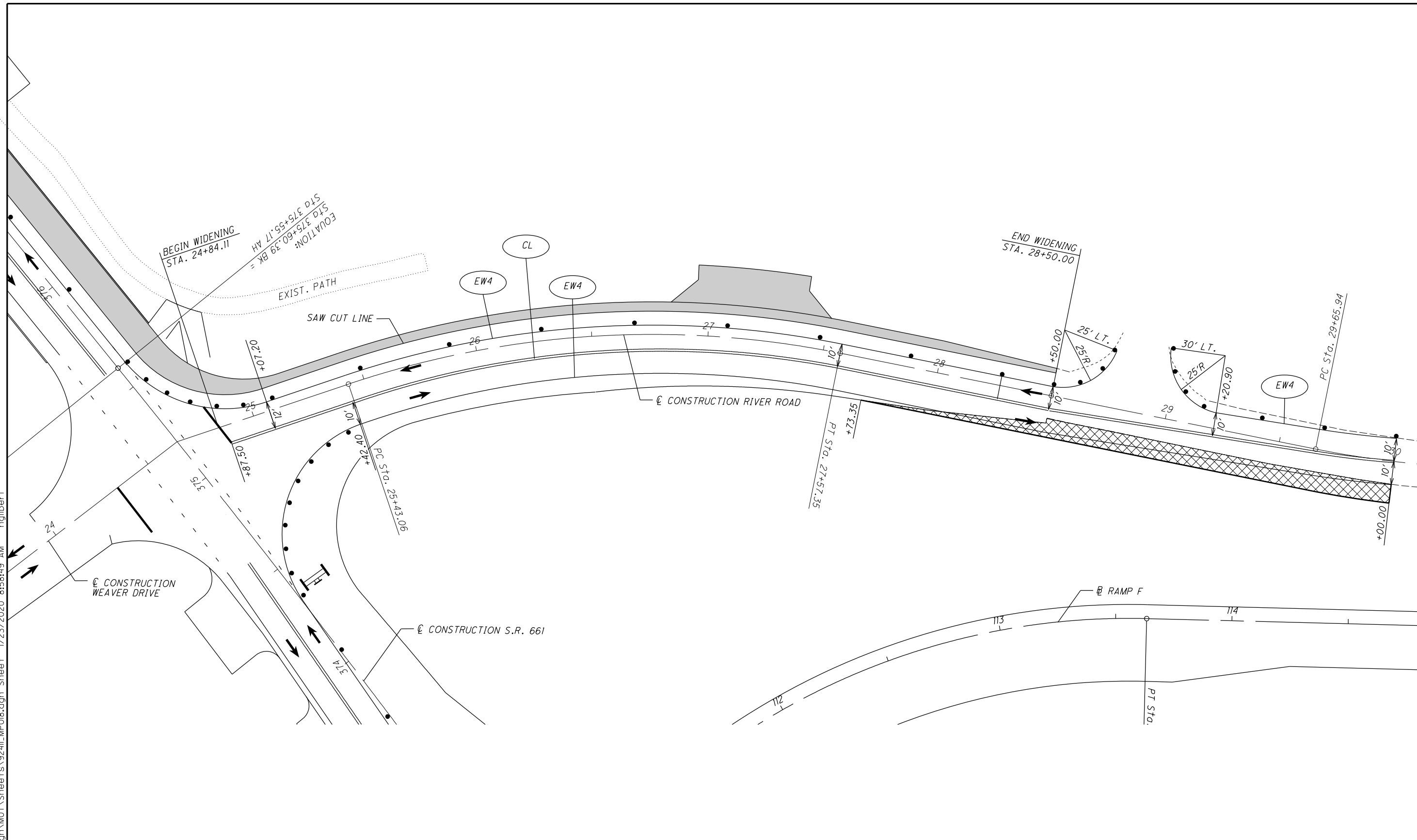
ACCESS TO THE GRANVILLE MULTI-USE PATH SHALL BE MAINTAINED AT ALL TIMES EXCEPT FOR DURING THIS PHASE WHEN CONSTRUCTION ON AND/OR NEAR THE PATH IS NECESSARY. MINIMIZE AS MUCH AS PRACTICAL THE CLOSURE TIME OF THIS PATH TO THE PUBLIC.



LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

I:\ProjectData\LIC\9241\Design\MOT\Sheets\9241L\MPO17.dgn Sheet 1/23/2020 8:51:38 AM hgilber1

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











CALCULATED  
 BRH  
 CHECKED  
 HAG

0 10 20 30 40  
 HORIZONTAL  
 SCALE IN FEET

**MOT PHASE 2A - RIVER RD.  
STA. 24+84.11 TO STA. 30+00.00**

**LIC-37 / 661-  
16.59 / 0.00**

68  
341

LEGEND			
	ITEM 615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN		ITEM 614, WORK ZONE CENTER LINE, CLASS 1, 642 PAINT
	ITEM 622, PORTABLE BARRIER, 32"		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (WHITE)
	DIRECTION OF TRAFFIC		ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT (YELLOW)
	ITEM 614, WORK ZONE STOP LINE, CLASS 1, 642 PAINT		ITEM 614, WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT (WHITE)
			ITEM 614, WORK ZONE ARROW, CLASS 1, 642 PAINT
			ITEM 614, WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 642 PAINT
			TYPE III BARRICADE AS PER MT-101.60
			CONSTRUCTION WORK AREA

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_G0001.dgn Sheet 2/4/2020 3:56:59 PM hgilberl

SHEET NUM.												PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
16	17	19	20	77	78	79	87	167	274	338	340	01/NHS/B R	02/NHS/P V	03/S<2/O T	04/NHS/O T							
<b>ROADWAY</b>																						
LS													LS	LS			201	11000	LS		CLEARING AND GRUBBING	
					14,229		136						11,186	3,179			202	23000	14,365	SY	PAVEMENT REMOVED	
							592							592			202	23010	592	SY	PAVEMENT REMOVED, ASPHALT	
									134					134			202	23500	134	SY	WEARING COURSE REMOVED	
				64									64				202	30700	64	FT	CONCRETE BARRIER REMOVED	
				4,900									4,066	834			202	38000	4,900	FT	GUARDRAIL REMOVED	
				8										8			202	53100	8	EACH	MAILBOX REMOVED	
				5									4	1			202	58100	5	EACH	CATCH BASIN REMOVED	
				163									105	58			SPECIAL	20270000	163	FT	FILL AND PLUG EXISTING CONDUIT	20
													1,250				202	75000	1,250	FT	FENCE REMOVED	
				LS										LS			202	98000	LS		REMOVAL MISC.: TWO SHEDS PLUS MISCELLANEOUS VEHICLES/ EQUIPMENT (2108 LANCASTER RD.)	18
				LS										LS			202	98000	LS		REMOVAL MISC.: WOOD FENCING (1844 LANCASTER RD.)	18
				LS										LS			202	98000	LS		REMOVAL MISC.: WOOD SIGN (1844 LANCASTER RD.)	18
				LS										LS			202	98000	LS		REMOVAL MISC.: SIGN INCLUDING LIGHTS (1919 LANCASTER RD.)	18
				3										3			202	98100	3	EACH	REMOVAL MISC.: BOLLARDS (1956 LANCASTER RD.)	18
														1			202	98100	1	EACH	REMOVAL MISC.: INSPECTION WELL	20
														10			202	98200	10	FT	REMOVAL MISC.: CONDUIT	20
														112			202	98300	112	SY	REMOVAL MISC.: CONCRETE DITCH LINING	20
	11,057													4,877	6,180		203	10000	11,057	CY	EXCAVATION	
	26,147													16,258	11,492		203	20000	27,750	CY	EMBANKMENT	20
															5		203	20001	5	CY	EMBANKMENT, AS PER PLAN	20
														2			SPECIAL	20365000	2	EACH	SETTLEMENT PLATFORM	19
														473	931		204	10000	1,404	SY	SUBGRADE COMPACTION	
	425													425			204	13000	425	CY	EXCAVATION OF SUBGRADE	
														5	3		204	45000	8	HOURL	PROOF ROLLING	
														351	183		206	10500	534	TON	CEMENT	
														13,537	7,058		206	11000	20,595	SY	CURING COAT	
														13,537	7,058		206	15010	20,595	SY	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	
															565	565	512	10050	565	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
														2,750	12.5		606	15050	2,762.5	FT	GUARDRAIL, TYPE MGS	
														4	1		606	26150	5	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350 OR MASH 2016)	
														5			606	26500	5	EACH	ANCHOR ASSEMBLY, TYPE T	
														4	1		606	35002	5	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
														2	1		606	35102	3	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
														2			606	60028	2	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL), 60 MPH, 24" WIDE	
														1,645			607	23000	1,645	FT	FENCE, TYPE CLT	
																	607	30000	745	FT	FENCE, SNOW	
														1,645			607	70000	1,645	FT	FENCELINE SEEDING AND MULCHING	
														482			608	10000	482	SF	4" CONCRETE WALK	
														165			622	10061	165	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN	18
															450		622	10161	450	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN A	167
																28	622	10161	28	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN B	273
														2			622	24841	2	EACH	CONCRETE BARRIER END SECTION, TYPE B, AS PER PLAN	18
															2		622	25011	2	EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN A	167
														4			622	25011	4	EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN B	273
																	623	40500	16	EACH	REFERENCE MONUMENT	
														1,308			653	10000	1,308	CY	TOPSOIL FURNISHED AND PLACED	
																	SPECIAL	69050100	8	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	19
																	SPECIAL	69050600	3	EACH	BOLLARD	18
														64			SPECIAL	69098200	64	SF	DETECTABLE WARNING	18
														LS	LS		878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	

**GENERAL SUMMARY**

**LIC-37 / 661-  
16.59 / 0.00**

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SHEET NUM.										PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
17	36	181	182	274						01/NHS/B R	02/NHS/P V	03/S<2/O T	04/NHS/O T						
		10.8	129.4								10.8	129.4		601	21050	140.2	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
			6.2									6.2		601	21060	6.2	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
		5.8									5.8			601	32200	5.8	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
25,701				1,000							16,298	10,403		659	00510	26,701	SY	SEEDING AND MULCHING, CLASS 2	
1,335.1											814.9	520.2		659	14000	1,335.1	SY	REPAIR SEEDING AND MULCHING	
1,335.1											814.9	520.2		659	15000	1,335.1	SY	INTER-SEEDING	
4.4											2.7	1.7		659	20000	4.4	TON	COMMERCIAL FERTILIZER	
5.5											3.4	2.1		659	31000	5.5	ACRE	LIME	
167.3											102.1	65.2		659	35000	167.3	MGAL	WATER	
721											440.1	280.9		659	40000	721	MSF	MOWING	
11,415											11,415			670	00500	11,415	SY	SLOPE EROSION PROTECTION	
	72											72		670	00750	72	SY	DITCH EROSION PROTECTION MAT, TYPE E	
				1,000							1,000			671	15000	1,000	SY	EROSION CONTROL MAT, TYPE A	
											LS	LS		832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
											LS	LS		832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
											LS	LS		832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
											60,000	40,000		832	30000	100,000	EACH	EROSION CONTROL	

CALCULATED BRH CHECKED HAG	<b>GENERAL SUMMARY</b>	<b>LIC-37 / 661-</b> <b>16.59 / 0.00</b>	70 341
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SHEET NUM.				PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
20	181	182	274	01/NHS/B R	02/NHS/P V	03/S<2/O T	04/NHS/O T						
											<b>DRAINAGE</b>		
	0.84	0.21				0.84	0.21	602	20000	1.05	CY	CONCRETE MASONRY	
	6,369	2,853				6,369	2,853	605	11100	9,222	FT	6" SHALLOW PIPE UNDERDRAINS	
	294	100				294	100	605	13300	394	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
	174	54				174	54	611	00510	228	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
	112	11				112	11	611	00900	123	FT	6" CONDUIT, TYPE B	
		50					50	611	01500	50	FT	6" CONDUIT, TYPE F	
		74					74	611	04600	74	FT	12" CONDUIT, TYPE C	
	204					204		611	05200	204	FT	12" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	
10							10	611	97400	10	FT	CONDUIT, MISC.: TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE	20
10							10	611	97400	10	FT	CONDUIT, MISC.: TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE	20
10							10	611	97400	10	FT	CONDUIT, MISC.: TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE	20
10							10	611	97400	10	FT	CONDUIT, MISC.: TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE	20
		2					2	611	98151	2	EACH	CATCH BASIN, NO. 3, AS PER PLAN	20
		2					2	611	98181	2	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	20
	4						4	611	98301	4	EACH	CATCH BASIN, NO. 5, AS PER PLAN	20
			4				4	611	99115	4	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN	20
	6	4				6	4	611	99710	10	EACH	PRECAST REINFORCED CONCRETE OUTLET	
1							1	611	99720	1	EACH	INSPECTION WELL	
30							30	613	41200	30	CY	LOW STRENGTH MORTAR BACKFILL	

**GENERAL SUMMARY**

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SHEET NUM.								PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED BRH	CHECKED HAG
250	274							01/NHS/BR	02/NHS/PV	03/S<2/OT	04/NHS/OT								
<b>LIGHTING</b>																			
16									12	4			625	00450	16	EACH	CONNECTION, FUSED PULL APART		
38									32	6			625	00480	38	EACH	CONNECTION, UNFUSED PERMANENT		
2									2				625	10481	2	EACH	LIGHT POLE, DECORATIVE, AS PER PLAN (GROUND MOUNTED)	244	
4									4				625	10481	4	EACH	LIGHT POLE, DECORATIVE, AS PER PLAN (BRIDGE MOUNTED)	244	
4									4				625	10615	4	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN	244	
2									2				625	14000	2	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP		
4,884									3,993	891			625	23302	4,884	FT	NO. 6 AWG 2400 VOLT DISTRIBUTION CABLE		
1,470									1,086	384			625	23400	1,470	FT	NO. 10 AWG POLE AND BRACKET CABLE		
	812								812				625	25400	812	FT	CONDUIT, 2", 725.04		
735									613	122			625	25402	735	FT	CONDUIT, 2", 725.05		
345									195	150			625	25902	345	FT	CONDUIT, JACKED OR DRILLED, 725.04 (2")		
6									4	2			625	26253	6	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN (160W, 240V, TYPE II)	244	
6									6				625	27403	6	EACH	LUMINAIRE, POST TOP, SOLID STATE (LED), AS PER PLAN (100W, 240V, TYPE III)	244	
735									613	122			625	29002	735	FT	TRENCH, 24" DEEP		
	4								4				625	29921	4	EACH	STRUCTURE JUNCTION BOX, AS PER PLAN	313	
13									10	3			625	30700	13	EACH	PULL BOX, 725.08, 18"		
2									2				625	32000	2	EACH	GROUND ROD		
	1								1				625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM		
<b>TRAFFIC SURVEILLANCE</b>																			
1									1				809	60001	1	EACH	CCTV IP-CAMERA SYSTEM, DOME-TYPE, AS PER PLAN	242	
101									101				809	64550	101	FT	ETHERNET CABLE, OUTDOOR-RATED		

**GENERAL SUMMARY**

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SHEET NUM.											PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
24	79	167	201	203	204	205	215	216	228	229	01/NHS/B R	02/NHS/P V	03/S<2/O T	04/NHS/O T						
<b>TRAFFIC CONTROL</b>																				
						183						111	72	621	00100	183	EACH	RPM		
						35						9	26	621	54000	35	EACH	RAISED PAVEMENT MARKER REMOVED		
									1			1		625	32000	1	EACH	GROUND ROD		
	4	6										4		6	626	00102	10	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)	
	21											21			626	00110	21	EACH	BARRIER REFLECTOR, TYPE 2 (UNIDIRECTIONAL)	
	43	3										24	19	3	626	00110	46	EACH	BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL)	
									363	267		363	267		630	03100	630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
									62	84		62	84		630	04100	146	FT	GROUND MOUNTED SUPPORT, NO. 4 POST	
									58			58			630	06100	58	FT	GROUND MOUNTED SUPPORT, NO. 6 POST	
									81	37		81	37		630	07600	118	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12	
									2			2			630	08200	2	EACH	GROUND MOUNTED SUPPORT, PIPE	
									13	1		13	1		630	08600	14	EACH	SIGN POST REFLECTOR	
									4	2		4	2		630	09000	6	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
									2			2			630	09050	2	EACH	TRIANGULAR SLIP BASE CONNECTION	
									1			1			630	20200	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 2	
			6									6			630	75000	6	EACH	SIGN ATTACHMENT ASSEMBLY	
									361	173		361	173		630	80100	534	SF	SIGN, FLAT SHEET	
									190	51		190	51		630	80200	241	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
			120						49			169			630	80224	169	SF	SIGN, OVERHEAD EXTRUSHEET	
									4	2		4	2		630	84500	6	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
									1			1			630	84510	1	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
									2			2			630	84600	2	EACH	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
							65	49				65	49		630	84900	114	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
							6	5				6	5		630	85100	11	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
								2					2		630	85200	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DELIVERY	
							8	1				8	1		630	85400	9	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
							44	40				44	40		630	86002	84	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
								1					1		630	86050	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DELIVERY	
							8	2				8	2		630	86103	10	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN	
							2					2			630	86272	2	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	
							1	1				1	1		630	87400	2	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
							8					8			630	87500	8	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
							1	1				1	1		630	89707	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30, AS PER PLAN	
										1			1		631	92001	1	EACH	SIGN FLASHER ASSEMBLY, AS PER PLAN	
0.5													0.5		642	00300	0.5	MILE	CENTER LINE, TYPE 1	
				0.19									0.19		644	00100	0.19	MILE	EDGE LINE, 4"	
				1.02									1.02		644	00104	1.02	MILE	EDGE LINE, 6"	
				0.8									0.8		644	00300	0.8	MILE	CENTER LINE	
				670									670		644	00400	670	FT	CHANNELIZING LINE, 8"	
				122									122		644	00500	122	FT	STOP LINE	
				276									276		644	00600	276	FT	CROSSWALK LINE	
				437									437		644	00700	437	FT	TRANSVERSE/DIAGONAL LINE	
				12									12		644	01300	12	EACH	LANE ARROW	
				4									4		644	01400	4	EACH	WORD ON PAVEMENT, 72"	
				0.18	1.26							1.44			646	10010	1.44	MILE	EDGE LINE, 6"	
				0.11								0.11			646	10200	0.11	MILE	CENTER LINE	
				776	810							1,586			646	10300	1,586	FT	CHANNELIZING LINE, 8"	
				108	114							222			646	10400	222	FT	STOP LINE	
				180								180			646	10600	180	FT	TRANSVERSE/DIAGONAL LINE	
				492								492			646	10800	492	SF	ISLAND MARKING	
				7	14							21			646	20300	21	EACH	LANE ARROW	
					2							2			646	20320	2	EACH	WRONG WAY ARROW	
				2	2							4			646	20400	4	EACH	WORD ON PAVEMENT, 72"	

**GENERAL SUMMARY**

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SHEET NUM.				PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
239	241	243	249	01/NHS/B R	02/NHS/P V	03/S<2/O T	04/NHS/O T						
											<b>TRAFFIC SIGNALS</b>		
			6			4	2	625	18401	6	EACH	BRACKET ARM, 20', AS PER PLAN	241
			974			758	216	625	25502	974	FT	CONDUIT, 3", 725.05	
			580			296	284	625	25902	580	FT	CONDUIT, JACKED OR DRILLED, 725.04 (3")	
			709			551	158	625	29002	709	FT	TRENCH, 24" DEEP	
			15			10	5	625	30706	15	EACH	PULL BOX, 725.08, 24"	
			9			6	3	625	32000	9	EACH	GROUND ROD	
	4						4	630	79200	4	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM	
	4						4	630	80511	4	EACH	SIGN, STREET NAME, AS PER PLAN	241
			16			10	6	632	05007	16	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	239
			4			2	2	632	05087	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	239
			4				4	632	20721	4	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, AS PER PLAN	240
			20			12	8	632	25000	20	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
			4				4	632	25010	4	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
			4				4	632	26000	4	EACH	PEDESTRIAN PUSHBUTTON	
			1,433				1,433	632	40200	1,433	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG	
			4,343			1,272	3,071	632	40700	4,343	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
			7			4	3	632	64010	7	EACH	SIGNAL SUPPORT FOUNDATION	
			3				3	632	64020	3	EACH	PEDESTAL FOUNDATION	
			650			650		632	68300	650	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
		1				1		632	70001	1	EACH	POWER SERVICE, AS PER PLAN	243
			1			1		632	77053	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.21 DESIGN 4 POLE, WITH MAST ARMS TC-81.21 DESIGN 3 AND DESIGN 3, AS PER PLAN	241
			1				1	632	77113	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.21 DESIGN 12 POLE, WITH MAST ARMS TC-81.21 DESIGN 11 AND DESIGN 3, AS PER PLAN	241
			1			1		632	77173	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 6 POLE, WITH MAST ARMS TC-81.21 DESIGN 11 AND DESIGN 11, AS PER PLAN	241
			1				1	632	80403	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	241
			3			2	1	632	81071	3	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	241
			3				3	632	89905	3	EACH	PEDESTAL, 10', TRANSFORMER BASE, AS PER PLAN	241
1						1		632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	239
			2			2		633	67101	2	EACH	CABINET FOUNDATION, AS PER PLAN	242
			2			2		633	67201	2	EACH	CONTROLLER WORK PAD, AS PER PLAN	242
			2			2		633	75001	2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	239
			2			2		633	99000	2	EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE COBALT, WITH CABINET, TYPE 332	239
			3			3		809	69000	3	EACH	ADVANCE RADAR DETECTION	
			8			4	4	809	69100	8	EACH	STOP LINE RADAR DETECTION	
												<b>TRAFFIC SIGNALS ALTERNATES</b>	
	1					1		633	67301	1	EACH	PREEMPTION, AS PER PLAN (GENERIC) (ALTERNATE 1)	241
	1					1		633	67301	1	EACH	PREEMPTION, AS PER PLAN (GTT OPTICOM) (ALTERNATE 2)	241
												<b>STRUCTURE OVER 20 FOOT SPAN (LIC-661-0003)</b> SEE SHEET 275	

**GENERAL SUMMARY**

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			452
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	9.00"
Station Equation: Sta. 375+60.39 (Back) = Sta. 375+55.17 (Ahead)	Lt./Rt.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	SY
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																		
<b>RESURFACING LANES</b>																		
349+50.00 to 361+50.00	LT.	1,200.00	12.0	1,600.0				1,600.0						144.0		66.7		
374+80.19 to 375+60.39	LT.	80.20	VARIES	158.5##				158.5						14.3		6.6		
375+55.17 to 375+76.24	LT.	21.07	VARIES	25.6##				25.6						2.3		1.1		
375+76.24 to 382+18.00	LT.	641.76	10.0	713.1				713.1						64.2		29.7		
384+58.50 to 386+28.50	LT.	170.00	16.0	302.3				302.3						27.2		12.6		
349+50.00 to 361+50.00	RT.	1,200.00	12.0	1,600.0				1,600.0						144.0		66.7		
374+80.19 to 375+58.47	RT.	78.28	VARIES	140.9##				140.9						12.7		5.9		
375+58.47 to 375+60.39	RT.	1.92	VARIES	2.2##				2.2						0.2		0.1		
375+55.17 to 382+18.00	RT.	662.83	10.0	736.5				736.5						66.3		30.7		
384+58.50 to 386+28.50	RT.	170.00	14.0 (AVG.)	264.5				264.5						23.8		11.0		
<b>RESURFACING SHOULDERS</b>																		
351+50.00 to 361+50.00	LT.	1,000.00	2.0	222.3				222.3						20.0		9.3		
349+50.00 to 361+50.00	RT.	1,200.00	2.0	266.7				266.7						24.0		11.1		
								6,032.6						542.9		251.3		

\* = 2 APPLICATIONS

# - Distance along radius  
## - Calculated Using CADD

Sub-Totals Carried to Sheet 86

CALCULATED CMY	CHECKED HG	<b>PAVEMENT CALCULATIONS (ASPHALT) - S.R. 37 &amp; S.R. 661</b>
		80 341



I:\ProjectData\LIC\9241\Design\Roadway\Sheet\9241\GC002.dgn\_Sheet 11/18/2019 4:45:07 PM bharlow

Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441		452	
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	9.00"
					ASPHALT CONCRETE BASE, PG64-22	ASPHALT CONCRETE BASE, PG64-22	AGGREGATE BASE	TACK COAT (@ 0.025 GAL./SQ. YD.) (VERTICAL FACE)	NON-TRACKING TACK COAT (@ 0.060 GAL./SQ. YD.)	NON-TRACKING TACK COAT (@ 0.090 GAL./SQ. YD.)	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC IP WITH OC/OA				
* = 2 APPLICATIONS	LT./RT.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	SY
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																		
<b>FULL DEPTH LANES</b>																		
361+50.00 to 366+84.00	LT.	534.00	18.0 (AVG.)	1,068.0	1068.0						178.0	178.0		128.2*		44.5	51.9	
366+84.00 to 373+14.06	LT.		See Concrete Pavement Calcs															
373+14.06 to 373+53.82	LT.	39.76	24.75 (AVG.)	109.4	109.4					18.2	18.2			13.1*		4.6	5.3	
373+53.82 to 374+32.11	LT.	78.29	19.90 (AVG.)	173.2	173.2					28.9	28.9			20.8*		7.2	8.4	
374+32.11 to 374+80.19	LT.	48.08	18.0	96.2	96.2					16.0	16.0			11.5*		4.0	4.7	
375+76.24 to 379+25.00	LT.	348.76	8.0	310.1	310.1	348.8				51.7	51.7	0.8		37.2*		12.9	15.1	
379+25.00 to 380+50.00	LT.	125.00	5.0 (AVG.)	69.5	69.5	125.0				11.6	11.6	0.3		8.3*		2.9	3.4	
380+50.00 to 382+18.00	LT.	168.00	2.0	37.4	37.4	168.0				6.2	6.2	0.4		4.5*		1.6	1.8	
361+50.00 to 363+50.00	RT.	200.00	14.2 (AVG.)	315.6	315.6						52.6	52.6		37.9*		13.1	15.3	
363+50.00 to 364+00.00	RT.	50.00	23.0 (AVG.)	127.8	127.8					21.3	21.3			15.3*		5.3	6.2	
364+00.00 to 366+84.00	RT.	284.00	32.75 (AVG.)	1,033.5	1033.5					172.2	172.2			124.0*		43.1	50.2	
366+84.00 to 373+14.06	RT.		See Concrete Pavement Calcs															
373+14.06 to 373+64.20	RT.	50.14	26.3 (AVG.)	146.6	146.6					24.4	24.4			17.6*		6.1	7.1	
373+64.20 to 374+21.45	RT.	57.25	19.5 (AVG.)	124.1	124.1					20.7	20.7			14.9*		5.2	6.0	
374+21.45 to 374+80.19	RT.	58.74	18.0	117.5	117.5					19.6	19.6			14.1*		4.9	5.7	
375+58.47 to 375+60.39	RT.	1.92	8.0	1.8	1.8	1.9				0.3	0.3	0.1		.2*		0.1	0.1	
375+55.17 to 379+25.00	RT.	369.83	8.0	328.8	328.8	369.8				54.8	54.8	0.8		39.5*		13.7	16.0	
379+25.00 to 380+10.08	RT.	85.08	6.0 (AVG.)	56.8	56.8	85.1				9.5	9.5	0.2		6.8*		2.4	2.8	
380+10.08 to 381+18.22	RT.	108.14	3.0	36.1	36.1	108.1				6.0	6.0	0.3		4.3*		1.5	1.8	
381+18.22 to 382+18.00	RT.	99.78	2.0	22.2	22.2	99.8				3.7	3.7	0.3		2.7*		0.9	1.1	
<b>FULL DEPTH SHOULDERS</b>																		
361+50.00 to 362+00.00	LT.	50.00	3.0 (AVG.)	16.7	25.0					3.1	3.5			2.0*		0.7	0.8	
362+00.00 to 366+84.00	LT.	484.00	4.0	215.2	295.8					38.8	43.3			25.8*		9.0	10.5	
366+84.00 to 373+14.06	LT.		See Concrete Pavement Calcs															
373+14.06 to 373+53.82	LT.	39.76	5.0 (AVG.)	22.1	28.7					3.9	4.3			2.7*		0.9	1.1	
373+53.82 to 374+60.25	LT.	106.43	4.0	47.4	65.0					8.5	9.5			5.7*		2.0	2.3	
374+60.25 to 375+60.39	LT.		Weaver Drive Intersection															
375+55.17 to 375+76.24	LT.																	
375+76.24 to 382+18.00	LT.	641.76	4.0	285.3	392.2					47.5	65.4			34.2*		11.9	13.9	
361+50.00 to 362+00.00	RT.	50.00	3.0 (AVG.)	16.7	25.0					3.1	3.5			2.0*		0.7	0.8	
362+00.00 to 366+84.00	RT.	484.00	4.0	215.2	295.8					38.8	43.3			25.8*		9.0	10.5	
366+84.00 to 373+14.06	RT.		See Concrete Pavement Calcs															
373+14.06 to 373+64.20	RT.	50.14	5.0 (AVG.)	27.9	36.2					5.0	5.4			3.3*		1.2	1.4	
373+64.20 to 374+21.45	RT.	57.25	4.0	25.5	35.0					4.6	5.1			3.1*		1.1	1.2	
374+21.45 to 375+58.47	RT.		River Road Intersection															
375+58.47 to 375+60.39	RT.	1.92	4.0	0.9	1.2					0.2	0.2			0.1*		0.0	0.0	
375+55.17 to 380+10.08	RT.	454.91	4.0	202.2	278.0					36.5	40.7			24.3*		8.4	9.8	
380+10.08 to 381+18.22	RT.		Old River Road Intersection															
381+18.22 to 382+18.00	RT.	99.78	4.0	44.4	61.0					7.4	10.2			5.3*		1.8	2.2	
# - Distance along radius																		
## - Calculated Using CADD																		
<b>Sub-Totals Carried to Sheet 86</b>					<b>5,713.4</b>	<b>1,306.5</b>				<b>893.1</b>	<b>930.1</b>	<b>3.2</b>	<b>635.3</b>			<b>220.5</b>	<b>257.3</b>	

CALCULATED CMY CHECKED HC  
**PAVEMENT CALCULATIONS (ASPHALT) - S.R. 37 & S.R. 661**  
**LIC-37 / 661 - 16.59 / 0.00**  
 81  
 341

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			452
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	9.00"
* = 2 APPLICATIONS	LT./RT.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	SY
<b>PLAN SPLIT CODE 02/NHS/PV</b>																		
<b>FULL DEPTH LANES</b>																		
366+84.00 to 367+40.29	LT.	56.29	27.9 (AVG.)	174.5	174.5						29.1							174.5
367+40.29 to 368+19.88	LT.	79.59	27.9 (AVG.)	246.8	246.8						41.1							246.8
368+19.88 to 369+12.50	LT.	92.62	24.0	247.0	247.0						41.2							247.0
369+12.50 to 371+52.58	LT.		Bridge No. LIC-661-0003															
371+52.58 to 372+43.63	LT.	91.05	24.0	242.8	242.8						40.5							242.8
372+43.63 to 373+14.06	LT.	70.43	25.85 (AVG.)	202.3	202.3						33.7							202.3
366+84.00 to 367+23.66	RT.	39.66	38.4 (AVG.)	169.3	169.3						28.2							169.3
367+23.66 to 368+07.48	RT.	83.82	32.45 (AVG.)	302.3	302.3						50.4							302.3
368+07.48 to 369+12.50	RT.	105.02	24.0	280.1	280.1						46.7							280.1
369+12.50 to 371+52.58	RT.		Bridge No. LIC-661-0003															
371+52.58 to 372+36.20	RT.	83.62	24.0	223.0	223.0						37.2							223.0
372+36.20 to 373+14.06	RT.	77.86	27.8 (AVG.)	240.6	240.6						40.1							240.6
<b>FULL DEPTH SHOULDERS</b>																		
366+84.00 to 367+40.29	LT.	56.29	5.0 (AVG.)	31.3	40.7						5.7							31.3
367+40.29 to 368+19.88	LT.		RAMP G INTERSECTION															
368+19.88 to 369+12.50	LT.	92.62	8.0	82.4	97.8						14.6							82.4
369+12.50 to 371+52.58	LT.		Bridge No. LIC-661-0003															
371+52.58 to 372+43.63	LT.	91.05	8.0	81.0	96.1						14.3							81.0
372+43.63 to 373+14.06	LT.		RAMP E INTERSECTION															
366+84.00 to 367+23.66	RT.	39.66	5.0 (AVG.)	22.1	28.6						4.0							22.1
367+23.66 to 368+07.48	RT.		RAMP H INTERSECTION															
368+07.48 to 369+12.50	RT.	105.02	8.0	93.4	110.9						16.5							93.4
369+12.50 to 371+52.58	RT.		Bridge No. LIC-661-0003															
371+52.58 to 372+36.20	RT.	83.62	8.0	74.4	88.3						13.2							74.4
372+36.20 to 373+14.06	RT.		RAMP F INTERSECTION															
* - Distance along radius																		
** - Calculated Using CADD																		
<b>Sub-Totals Carried to Sheet 86</b>					<b>2,791.0</b>						<b>456.4</b>							<b>2,713.3</b>

CALCULATED	CHECKED	CMY	HC
<b>PAVEMENT CALCULATIONS (CONCRETE) - S.R. 37 &amp; S.R. 661</b>			
<b>LIC-37 / 661 - 16.59 / 0.00</b>			
82 341			

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			452
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	9.00"
* = 2 APPLICATIONS	Lt./Rt.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	SY
<b>PLAN SPLIT CODE 02/NHS/PV</b>																		
<b>RAMP E</b>																		
<b>FULL DEPTH LANE</b>																		
110+29.49 to 110+69.49	LT.	40.00	2.0 (AVG.)	8.9	8.9						1.5							8.9
110+69.49 to 111+06.07	LT.	36.58	VARIES	53.1##	53.1						8.9							53.1
107+07.62 to 110+32.16	RT.	324.54	16.0	577.0	577.0						96.2							577.0
110+32.16 to 110+72.16	RT.	40.00	18.0 (AVG.)	80.0	80.0						13.3							80.0
110+72.16 to 111+06.07	RT.	33.91	VARIES	88.4##	88.4						14.7							88.4
<b>FULL DEPTH SHOULDERS</b>																		
107+07.62 to 107+58.00	LT.	50.38	5.0 (AVG.)	28.0	36.4						5.1							28.0
107+58.00 to 110+69.49	LT.	311.49	6.0	207.7	259.6						37.5							207.7
110+69.49 to 111+06.07	LT.	56.15#	6.0	37.5	46.8						6.8							37.5
107+07.62 to 110+72.16	RT.	364.54	3.0	121.6	182.3						23.6							121.6
110+72.16 to 111+06.07	RT.	32.37#	3.0	10.8	16.2						2.1							10.8
<b>RAMP F</b>																		
<b>FULL DEPTH LANE</b>																		
110+91.12 to 111+44.04	LT.	52.92	VARIES	64.1##	64.1						10.7							64.1
110+91.12 to 111+21.47	RT.	30.35	VARIES	98.9##	98.9						16.5							98.9
111+21.47 to 113+75.00	RT.	253.53	24.0	676.1	676.1						112.7							676.1
113+75.00 to 114+25.00	RT.	50.00	20.0 (AVG.)	111.2	111.2						18.5							111.2
114+25.00 to 118+42.89	RT.	417.89	16.0	743.0	743.0						123.8							743.0
<b>FULL DEPTH SHOULDERS</b>																		
110+91.12 to 111+44.04	LT.	68.87#	6.0	46.0	57.4						8.3							46.0
111+44.04 to 117+80.00	LT.	635.96	6.0	424.0	530.0						76.6							424.0
117+80.00 to 118+42.89	LT.	62.89	5.0 (AVG.)	35.0	45.4						6.4							35.0
110+91.12 to 111+21.47	RT.	37.39#	3.0	12.5	18.7						2.4							12.5
111+21.47 to 118+42.89	RT.	721.42	3.0	240.5	360.7						46.8							240.5
# - Distance along radius ## - Calculated Using CADD																		
<b>Sub-Totals Carried to Sheet 86</b>					<b>4,054.1</b>						<b>632.3</b>							<b>3,664.3</b>

CALCULATED	CHECKED	HC
<b>PAVEMENT CALCULATIONS - RAMPS E &amp; F</b>		
<b>LIC-37 / 661- 16.59 / 0.00</b>		
83		
341		

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			452
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	9.00"
* = 2 APPLICATIONS	LT./RT.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	SY
<b>PLAN SPLIT CODE 02/NHS/PV</b>																		
<b>RAMP G</b>																		
<b>FULL DEPTH LANE</b>																		
103+65.69 to 106+50.00	LT.	284.31	16.0	505.5	505.5						84.2							505.5
106+50.00 to 107+00.00	LT.	50.00	20.0 (AVG.)	111.2	111.2						18.5							111.2
107+00.00 to 112+04.07	LT.	504.07	24.0	1,344.2	1344.2						224.0							1,344.2
112+04.07 to 112+34.40	LT.	30.33	VARIES	98.8##	98.8						16.5							98.8
111+81.78 to 112+34.40	RT.	52.62	VARIES	65.8##	65.8						11.0							65.8
<b>FULL DEPTH SHOULDERS</b>																		
103+65.69 to 112+04.07	LT.	838.38	3.0	279.5	419.2						54.3							279.5
112+04.07 to 112+34.40	LT.	37.39#	3.0	12.5	18.7						2.4							12.5
103+65.69 to 111+81.78	RT.	816.09	6.0	544.1	544.1						90.7							544.1
111+81.78 to 112+34.40	RT.	69.89#	6.0	46.6	58.2						8.4							46.6
<b>RAMP H</b>																		
<b>FULL DEPTH LANE</b>																		
112+36.62 to 112+51.33	LT.	14.71	VARIES	46.6##	46.6						7.8							46.6
112+51.33 to 112+91.33	LT.	40.00	18.0 (AVG.)	80.0	80.0						13.3							80.0
112+91.33 to 123+13.14	LT.	1,021.81	16.0	1,816.6	1816.6						302.8							1,816.6
112+36.62 to 112+99.43	RT.	62.81	VARIES	131.0##	131.0						21.8							131.0
112+99.43 to 113+39.43	RT.	40.00	2.0 (AVG.)	8.9	8.9						1.5							8.9
<b>FULL DEPTH SHOULDERS</b>																		
112+36.62 to 112+51.33	LT.	25.30#	3.0	8.5	12.7						1.6							8.5
112+51.33 to 123+13.14	LT.	1,061.81	3.0	354.0	530.9						68.8							354.0
112+36.62 to 112+99.43	RT.	73.26#	6.0	48.9	61.1						8.8							48.9
112+99.43 to 122+50.00	RT.	950.57	6.0	633.8	792.1						114.4							633.8
122+50.00 to 123+13.14	RT.	63.14	5.0 (AVG.)	35.1	45.6						6.4							35.1
# - Distance along radius ## - Calculated Using CADD																		
<b>Sub-Totals Carried to Sheet 86</b>					<b>6,691.2</b>						<b>1,057.4</b>							<b>6,171.6</b>

CALCULATED	CHECKED	CMY	HC
<b>PAVEMENT CALCULATIONS - RAMPS G &amp; H</b>			
<b>LIC-37 / 661- 16.59 / 0.00</b>			
84 341			

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	VARIABLE
* = 2 APPLICATIONS	Lt./Rt.	Lin. Ft.	Ft.	Sq. Yd.	SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																		
<b>WEAVER DRIVE</b>																		
<b>RESURFACING LANES</b>																		
22+00.00 to 23+37.40	LT.	137.40	8.75 (AVG.)	133.6			133.6						2.2	12.0	4.6			1.7
23+37.40 to 23+96.48	LT.	59.08	10.0	65.7			65.7						3.9	5.9	2.3			3.3
23+96.48 to 24+47.52	LT.	51.04	VARIES	89.2##			89.2						5.4	8.0	3.1			3.4
22+00.00 to 23+37.40	RT.	137.40	10.25 (AVG.)	156.5			156.5						2.6	14.1	5.4			1.7
23+37.40 to 23+98.55	RT.	61.15	10.0	68.0			68.0						4.1	6.1	2.4			3.3
23+98.55 to 24+47.52	RT.	48.97	VARIES	95.5##			95.5						5.7	8.6	3.3			3.4
<b>FULL DEPTH LANES</b>																		
23+96.48 to 24+47.52	LT.	51.04	VARIES	28.8##	28.8	85.0			3.2		4.8	0.2	3.5*		1.0			1.4
24+18.34 to 24+47.52	RT.	29.18	VARIES	15.8##	15.8	43.6			1.8		2.6	0.1	1.9*		0.5			0.8
<b>FULL DEPTH SHOULDERS</b>																		
23+96.48 to 24+47.52	LT.	VARIES	4.0	34.0##	46.1				4.1		6.8		4.1*		1.3			1.8
24+18.34 to 24+47.52	RT.	VARIES	4.0	24.7##	33.4				3.0		4.9		3.0*		0.9			1.3
<b>RIVER ROAD</b>																		
<b>RESURFACING LANES</b>																		
24+84.11 to 25+15.75	LT.	31.64	VARIES	46.5##			46.5							4.2	1.6			
25+15.75 to 28+50.00	LT.	334.25	10.0	371.4			371.4							33.4	12.9			
24+84.11 to 25+66.47	RT.	82.36	VARIES	167.2##			167.2						10.0	15.0	5.8			5.4
25+66.47 to 28+50.00	RT.	283.53	10.0	315.1			315.1							28.4	10.9			
<b>FULL DEPTH LANES</b>																		
24+84.11 to 25+15.75	LT.	31.64	VARIES	16.0##	16.0	31.6			1.8		2.7	0.1	1.9*		0.6			0.8
24+84.11 to 25+66.47	RT.	82.36	VARIES	139.5##	139.5	82.4			15.5		23.3	0.2	16.7*		4.8			6.8
25+66.47 to 26+50.00	RT.	83.53	10.0	92.9	92.9	83.5			10.3		15.5	0.2	11.1*		3.2			4.5
26+50.00 to 28+50.00	RT.	200.00	5.0 (AVG.)	111.2	111.2	200.0			12.3		18.5	0.5	13.3*		3.9			5.4
<b>FULL DEPTH SHOULDERS</b>																		
24+84.11 to 25+15.75	LT.	VARIES	4.0	25.9##	35.6				3.1		5.2		3.1*		0.9			1.3
25+15.75 to 28+00.00	LT.	284.25	4.0	126.4	173.7				15.2		25.4		15.2*		4.4			6.1
28+00.00 to 28+50.00	LT.	50.00	3.0 (AVG.)	16.7	25.0				2.1		3.5		2.0*		0.6			0.8
24+84.11 to 25+66.47	RT.	VARIES	4.0	41.8##	57.5				5.0		8.3		5.0*		1.5			2.0
25+66.47 to 28+00.00	RT.	233.53	4.0	103.8	142.7				12.5		20.9		12.5*		3.6			5.0
28+00.00 to 28+50.00	RT.	50.00	3.0 (AVG.)	16.7	25.0				2.1		3.5		2.0*		0.6			0.8
# - Distance along radius ## - Calculated Using CADD																		
<b>Sub-Totals Carried to Sheet 86</b>					<b>943.2</b>	<b>526.1</b>	<b>1,508.7</b>		<b>91.9</b>		<b>146.0</b>	<b>1.3</b>	<b>129.2</b>	<b>135.8</b>	<b>80.1</b>		<b>38.8</b>	<b>22.2</b>

**PAVEMENT CALCULATIONS - SIDE ROADS**

**LIC-37 / 661 -  
16.59 / 0.00**

CALCULATED  
CMY  
CHECKED  
HG

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	206	252	254		301		304	407			441			452	
					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	6.00"	0.025	0.06	0.09	1.25"	1.50"	1.75"	VARIABLE	9.00"
					SY	FT	SY	SY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY	SY
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																			
<b>OLD RIVER ROAD</b>																			
<b>RESURFACING</b>																			
0+10.14 to 0+43.37	LT.	33.23	VARIABLE	62.2##			62.2							5.6	2.2				
0+10.14 to 0+43.37	RT.	33.23	VARIABLE	201.8##			201.8							18.2	7.0				
<b>FULL DEPTH LANES</b>																			
0+10.14 to 0+43.37	LT.	112.11	VARIABLE	8.3##	8.3	36.1			1.4		3.1		1.0*		0.3			0.4	
0+10.14 to 0+43.37	RT.	112.11	VARIABLE	13.5##	13.5	56.2			2.0		4.0		1.6*		0.5			0.7	
<b>RIVER ROAD CUL-DE-SAC</b>																			
<b>RESURFACING</b>																			
5+25.00 to 6+37.52	LT.	112.52	11.0	137.6			137.6							12.4	4.8				
5+25.00 to 6+37.52	RT.	112.52	9.0	112.6			112.6							10.1	3.9				
<b>FULL DEPTH LANES</b>																			
5+45.29 to 6+37.52	LT.	92.23	VARIABLE	161.2##	180.3	92.1			18.3		28.3		19.3*		5.6			7.8	
5+38.72 to 6+37.52	RT.	98.80	VARIABLE	179.5##	199.1	96.6			20.4		31.4		21.5*		6.2			8.7	
# - Distance along radius																			
## - Calculated Using CADD																			
PLAN SPLIT CODE TOTAL 02/NHS/PV					13536.3						2,146.1								12,549.2
PLAN SPLIT CODE TOTAL 03/S<2/PV					7057.9	2,113.6	2,022.9	6,032.6	1,027.0	1,142.9	4.5	1533.0			582.4		313.7	22.2	
Sub-Totals This Sheet (03/S<2/PV)					401.2	281.0	514.2		42.1		66.8			43.5	46.3	30.4		17.6	
Sub-Totals Carried From Sheet 80 (03/S<2/PV)								6032.6						542.9		251.3			
Sub-Totals Carried From Sheet 81 (03/S<2/PV)					5,713.4	1306.5				893.1	930.1	3.2	635.3			220.5	257.3		
Sub-Totals Carried From Sheet 82 (02/NHS/PV)					2791.0						456.4								2713.3
Sub-Totals Carried From Sheet 83 (02/NHS/PV)					4054.1						632.3								3664.3
Sub-Totals Carried From Sheet 84 (02/NHS/PV)					6691.2						1057.4								6171.6
Sub-Totals Carried From Sheet 85 (03/S<2/PV)					943.2	526.1	1508.7		91.9		146.0	1.3	129.2	135.8	80.1		38.8	22.2	
<b>Totals Carried to General Summary (* Carried to Sheet 17)</b>					<b>20,595*</b>	<b>2,114</b>	<b>2,023</b>	<b>6,033</b>	<b>1,027</b>	<b>3,289</b>	<b>5</b>	<b>1,533</b>			<b>582</b>		<b>314</b>	<b>23</b>	<b>12,550</b>

**PAVEMENT CALCULATIONS - SIDE ROADS & TOTALS**

**LIC-37 / 661-  
16.59 / 0.00**

CALCULATED  
CMY  
CHECKED  
HG

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Sheet No.	Reference No.	Station	Side	Drive Type	Length	Pavement Width	R1 (Left Side Radii of Drive Looking From CL)	R2 (Right Side Radii of Drive Looking From CL)	Pavement Area (Calculated Using CADD)	202	202	204	301	304		407	441	452	823	823	
										PAVEMENT REMOVED	PAVEMENT REMOVED, ASPHALT	SUBGRADE COMPACTION	5.00"	6.00"	8.00"	0.06	1.25"	8.00"	1.25"	1.75"	
										SY	SY	SY	CY	CY	CY	GAL	CY	SY	CY	CY	
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																					
<b>S.R. 37 &amp; S.R. 661</b>																					
90	1-D	362+33.98	RT.	FIELD/BITUM. COATED.	15.1	30			59.7	59.7	59.7										
91	2-D	363+56.30	LT.	RESIDENTIAL/GRAVEL	21.7	8			33.5		33.5	4.7				2.0	1.2				
91	3-D	364+53.89	LT.	RESIDENTIAL/GRAVEL	10.0	48			69.0		69.0	9.6				4.1	2.4				
91	4-D	364+83.79	RT.	RESIDENTIAL/BITUM. COATED	10.3	15			27.8	27.8	27.8	3.9				1.7	1.0				
91	5-D	365+11.17	LT.	RESIDENTIAL/ASPHALT	10.0	19			32.6	32.6	32.6	4.5				2.0	1.1				
92	6-D	373+75.08	LT.	COMMERCIAL/ASPHALT	10.0	34	7	7	40.8	40.8	40.8	5.7				2.4	1.4				
93	7-D	374+43.38	LT.	COMMERCIAL/ASPHALT	21.0	34	7	10	82.7	82.7	82.7	11.5				5.0	2.9				
93	8-D	376+40.06	LT.	RESIDENTIAL/ASPHALT	9.5	11	5	5	13.3	13.3	13.3	1.8				0.8	0.5				
93	9-D	376+85.00	RT.	COMMERCIAL/ASPHALT	23.9	21	10	10	62.9	62.9	62.9	8.7				3.8	2.2				
93	10-D	378+21.13	LT.	RESIDENTIAL/GRAVEL	30.5	15	10	6	60.4		60.4	8.4				3.6	2.1				
93	11-D	378+60.82	LT.	COMMERCIAL/ASPHALT	17.6	46	6	7	101.8	101.8	101.8	14.1				6.1	3.5				
94	12-D	379+54.34	LT.	COMMERCIAL/CONCRETE	9.5	35	40	40	43.4	43.4	43.4							43.4			
<b>WEAVER DRIVE</b>																					
151	13-D	22+32.29	RT.	COMMERCIAL/GRAVEL	6.9	46			40.5		40.5	5.6				2.4	1.4				
151	14-D	23+85.92	RT.	COMMERCIAL/ASPHALT	7.0	62			47.9	47.9	47.9	6.7				2.9	1.7				
<b>RIVER ROAD</b>																					
154	15-D	27+17.59	LT.	COMMERCIAL/ASPHALT	14.3	49			88.3	88.3	88.3	12.3				5.3	3.1				
<b>RIVER ROAD CUL-DE-SAC</b>																					
157	16-D	5+73.62	LT.	COMMERCIAL/ASPHALT	11.7	38		12.5	34.2	34.2	34.2	4.8				2.1	1.2				
<b>MULTI-USE PATH</b>																					
93	STA. 376+96.82 TO STA. 378+00		RT.		103.2	8			91.7	91.7	91.7		17.2						3.2	4.5	
<b>Sub-Totals This Sheet</b>										135.1	592.0	930.5	102.2	17.2	13.3	44.1	25.5	43.4	3.2	4.5	
<b>Totals Carried to General Summary</b>										136	592	931	103	31		45	26	44	4	5	

CALCULATED	CMY	CHECKED	HG
<b>DRIVE CALCULATIONS</b>			
LIC-37 / 661- 16.59 / 0.00			
87 341			

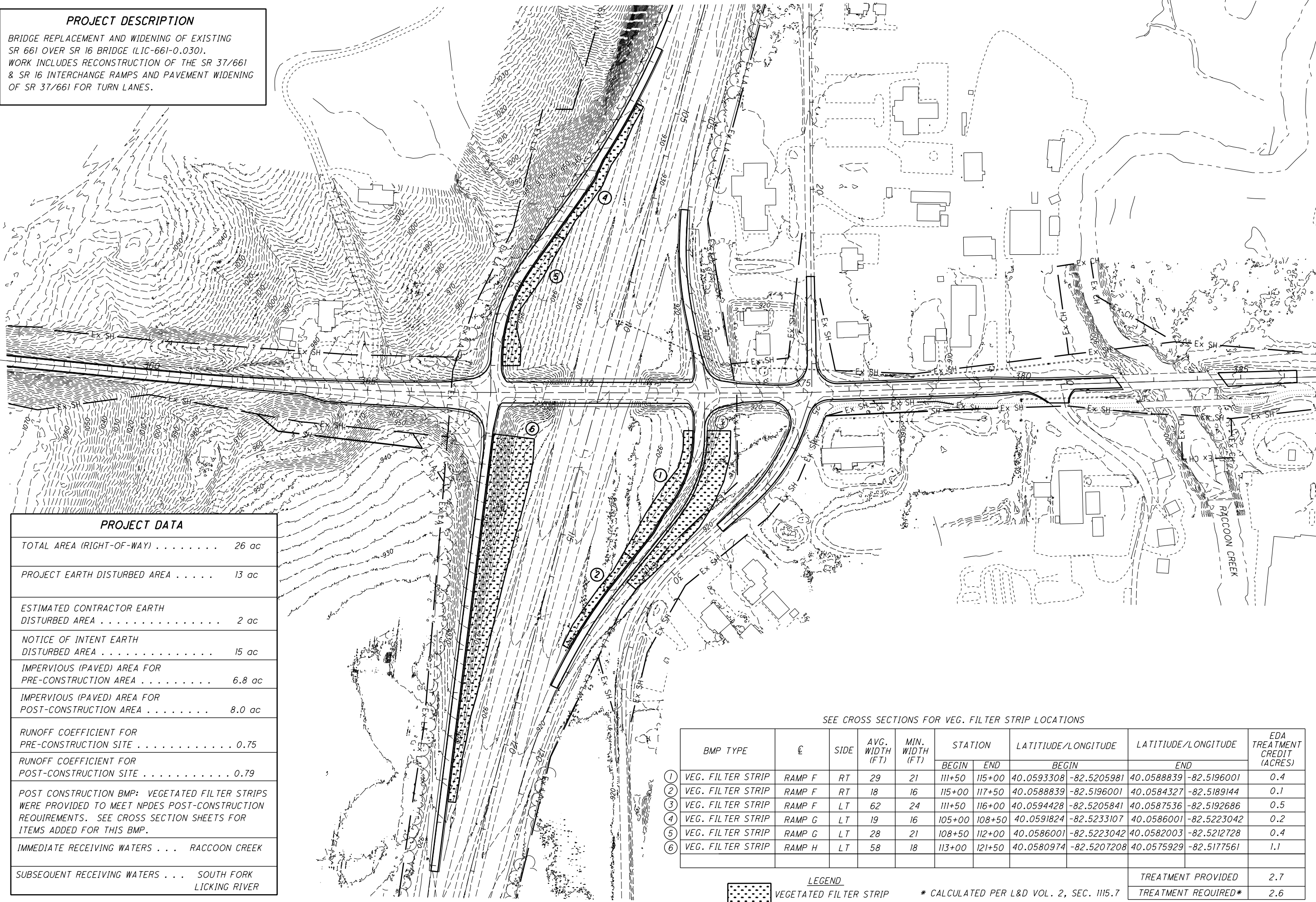
**PROJECT DESCRIPTION**

BRIDGE REPLACEMENT AND WIDENING OF EXISTING SR 661 OVER SR 16 BRIDGE (LIC-661-0.030).  
 WORK INCLUDES RECONSTRUCTION OF THE SR 37/661 & SR 16 INTERCHANGE RAMP AND PAVEMENT WIDENING OF SR 37/661 FOR TURN LANES.



CALCULATED BRH CHECKED HAG

**PROJECT SITE PLAN**



**PROJECT DATA**

TOTAL AREA (RIGHT-OF-WAY) . . . . .	26 ac
PROJECT EARTH DISTURBED AREA . . . . .	13 ac
ESTIMATED CONTRACTOR EARTH DISTURBED AREA . . . . .	2 ac
NOTICE OF INTENT EARTH DISTURBED AREA . . . . .	15 ac
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION AREA . . . . .	6.8 ac
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION AREA . . . . .	8.0 ac
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE . . . . .	0.75
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE . . . . .	0.79
POST CONSTRUCTION BMP: VEGETATED FILTER STRIPS WERE PROVIDED TO MEET NPDES POST-CONSTRUCTION REQUIREMENTS. SEE CROSS SECTION SHEETS FOR ITEMS ADDED FOR THIS BMP.	
IMMEDIATE RECEIVING WATERS . . .	RACCOON CREEK
SUBSEQUENT RECEIVING WATERS . . .	SOUTH FORK LICKING RIVER

SEE CROSS SECTIONS FOR VEG. FILTER STRIP LOCATIONS

BMP TYPE	C	SIDE	AVG. WIDTH (FT)	MIN. WIDTH (FT)	STATION		LATITUDE/LONGITUDE		LATITUDE/LONGITUDE		EDA TREATMENT CREDIT (ACRES)
					BEGIN	END	BEGIN	END	END		
① VEG. FILTER STRIP	RAMP F	RT	29	21	111+50	115+00	40.0593308	-82.5205981	40.0588839	-82.5196001	0.4
② VEG. FILTER STRIP	RAMP F	RT	18	16	115+00	117+50	40.0588839	-82.5196001	40.0584327	-82.5189144	0.1
③ VEG. FILTER STRIP	RAMP F	LT	62	24	111+50	116+00	40.0594428	-82.5205841	40.0587536	-82.5192686	0.5
④ VEG. FILTER STRIP	RAMP G	LT	19	16	105+00	108+50	40.0591824	-82.5233107	40.0586001	-82.5223042	0.2
⑤ VEG. FILTER STRIP	RAMP G	LT	28	21	108+50	112+00	40.0586001	-82.5223042	40.0582003	-82.5212728	0.4
⑥ VEG. FILTER STRIP	RAMP H	LT	58	18	113+00	121+50	40.0580974	-82.5207208	40.0575929	-82.5177561	1.1

**LEGEND**  
 VEGETATED FILTER STRIP

\* CALCULATED PER L&D VOL. 2, SEC. 1115.7

TREATMENT PROVIDED	2.7
TREATMENT REQUIRED*	2.6

LIC-37 / 661-  
 16.59 / 0.00

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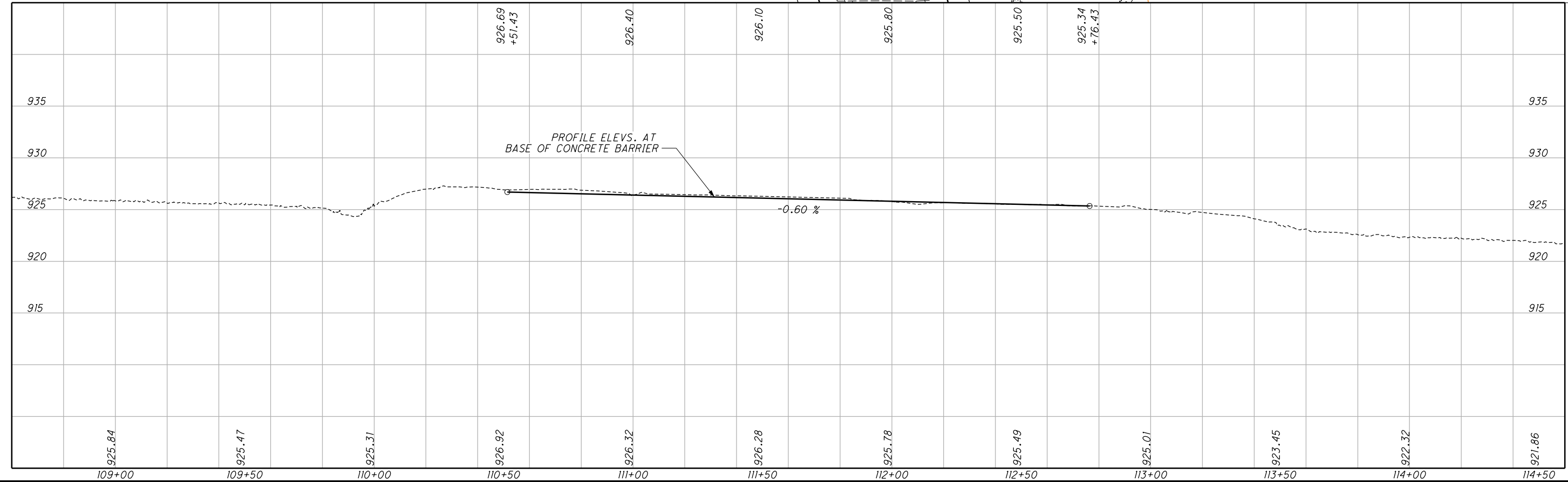
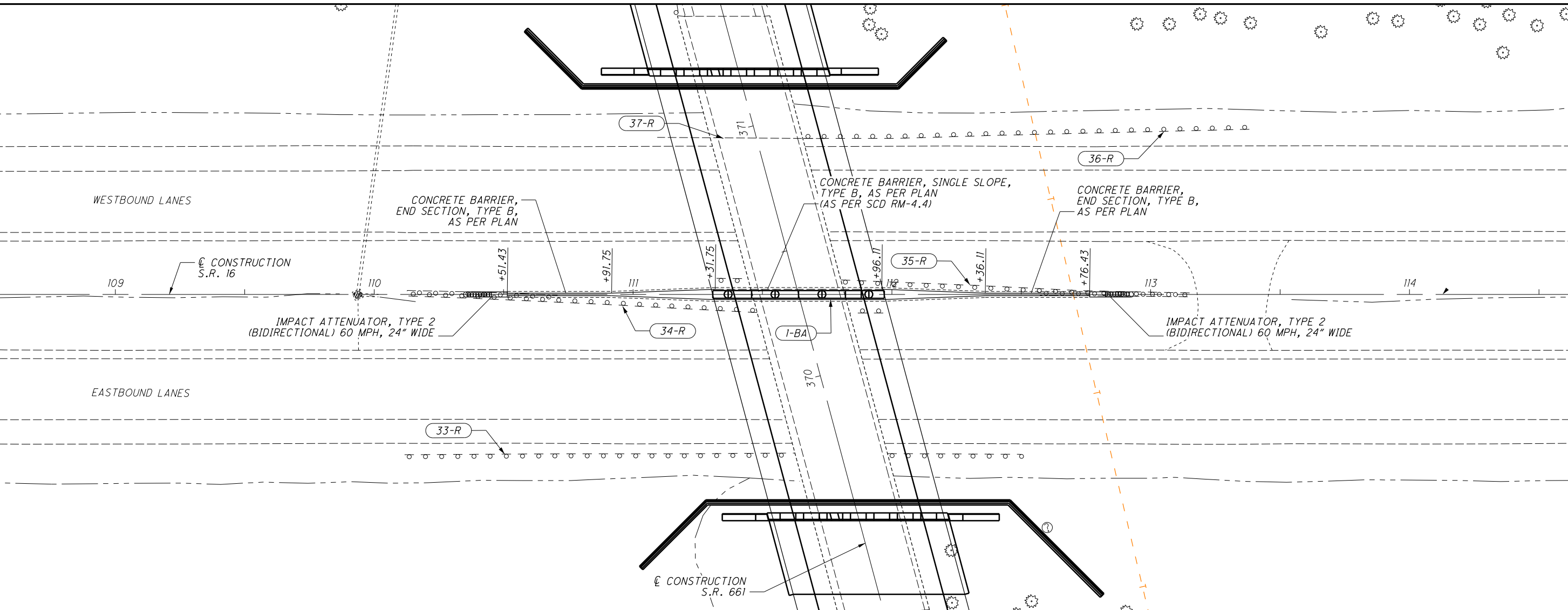


CALCULATED  
BRH  
CHECKED  
HAG

**PLAN AND PROFILE**  
**S.R. 16**

**LIC-37 / 661-**  
**16.59 / 0.00**

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341



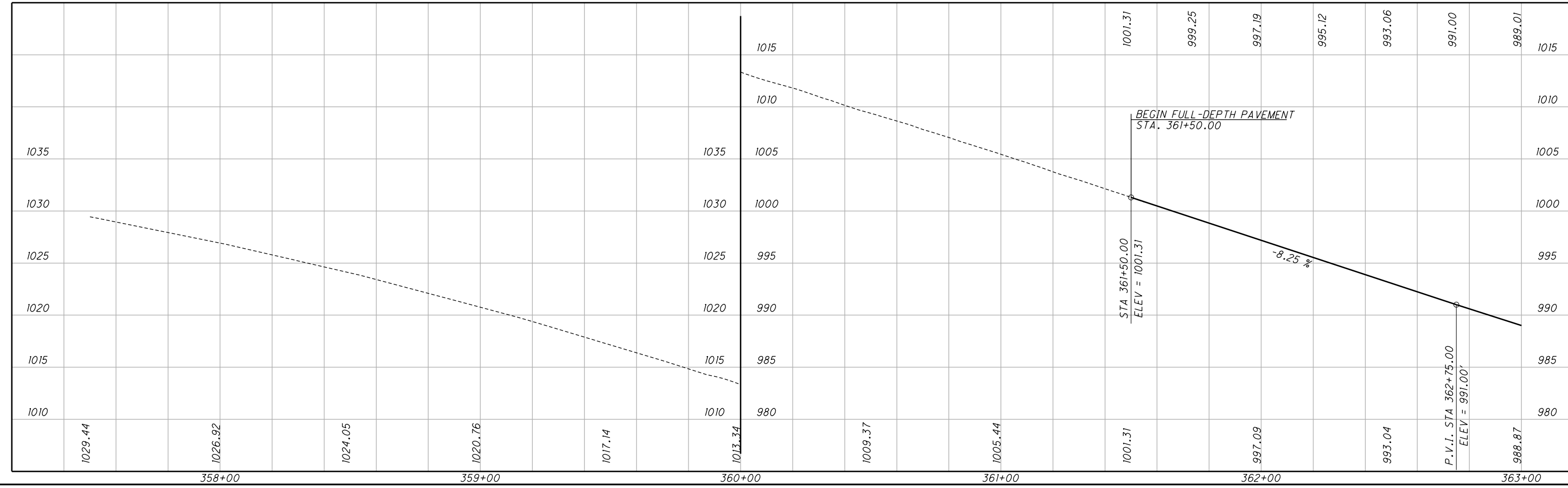
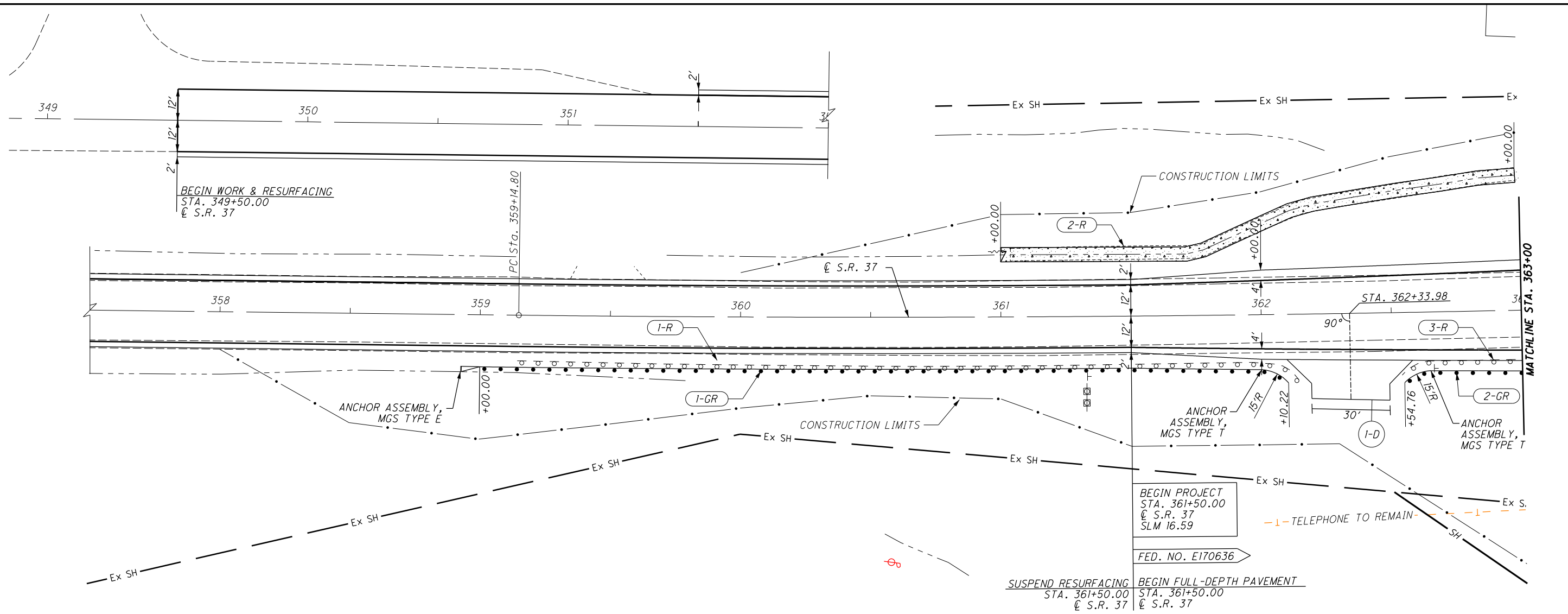


CALCULATED  
BRH  
CHECKED  
HAG

**PLAN AND PROFILE - S.R. 37**  
**STA. 349+50 TO STA. 363+00**

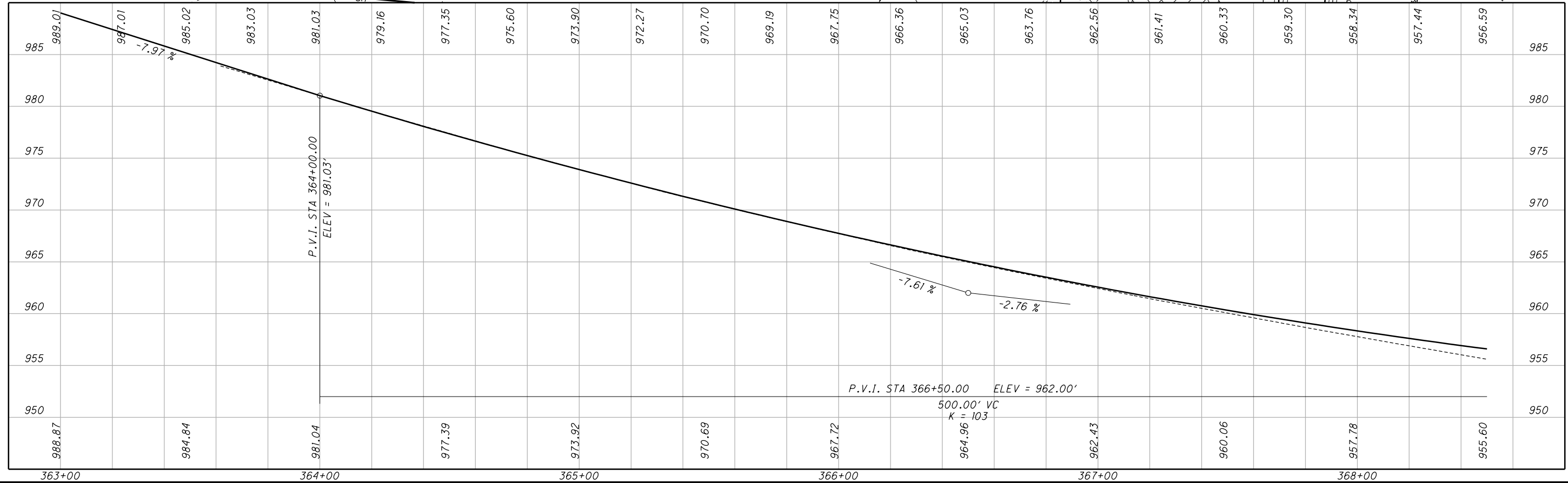
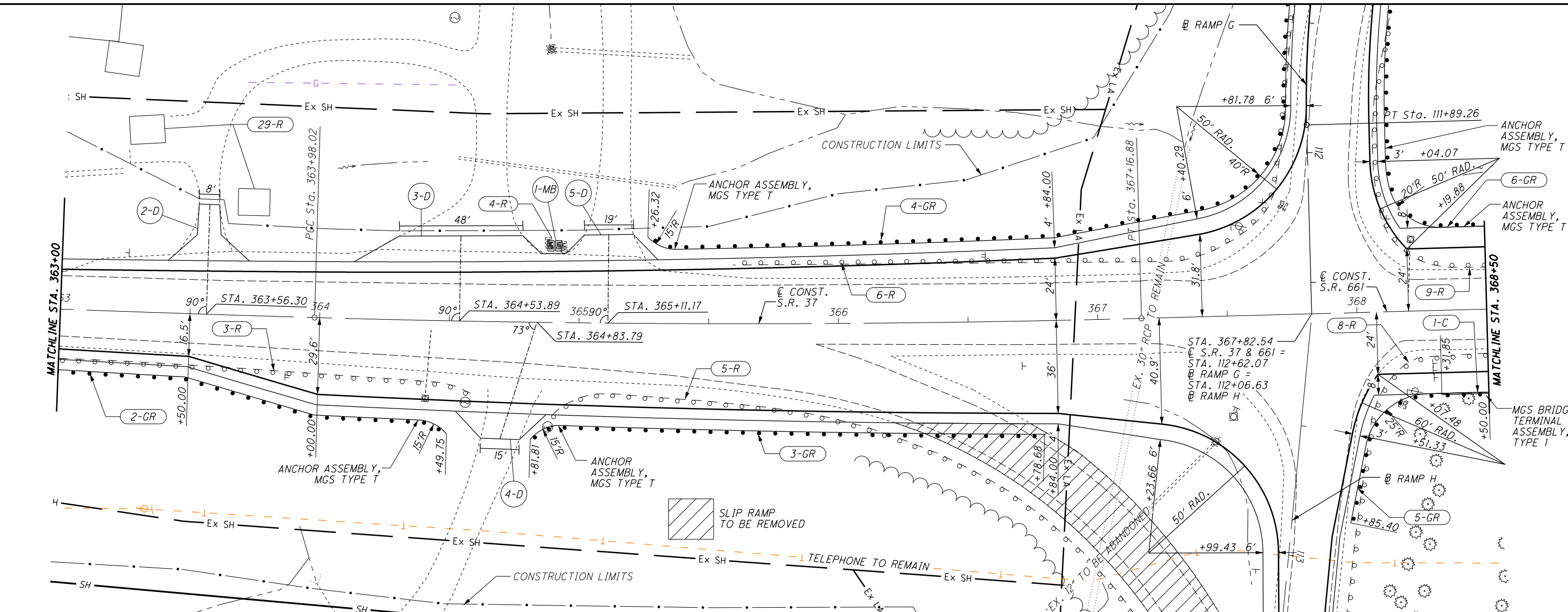
**LIC-37 / 661-**  
**16.59 / 0.00**

90  
341



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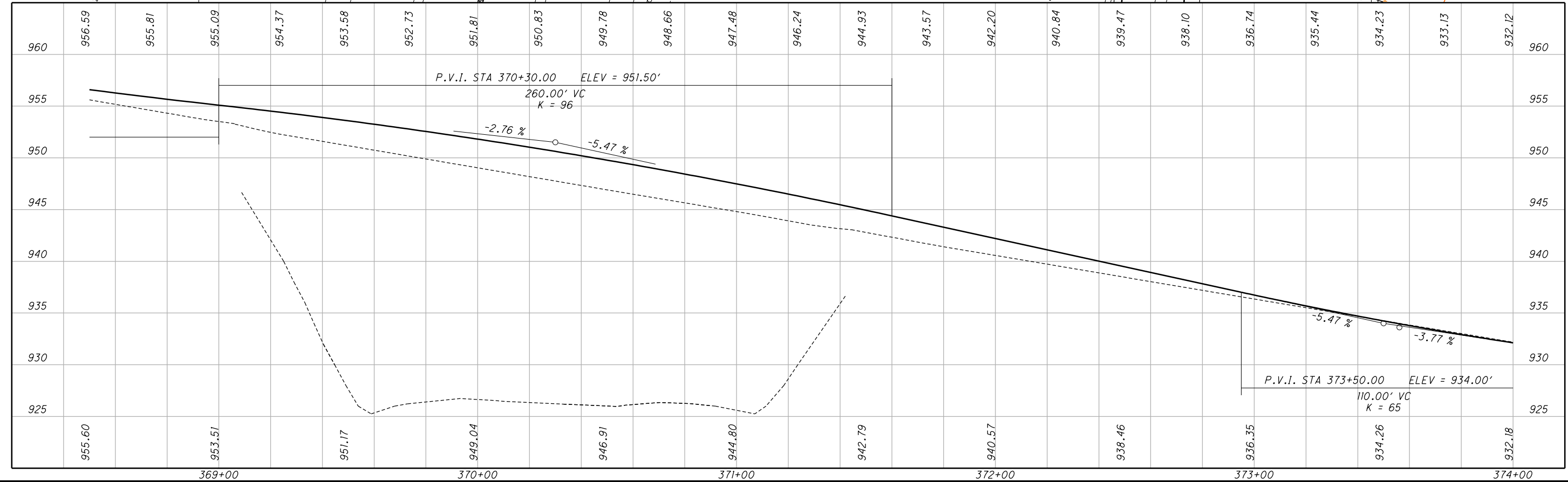
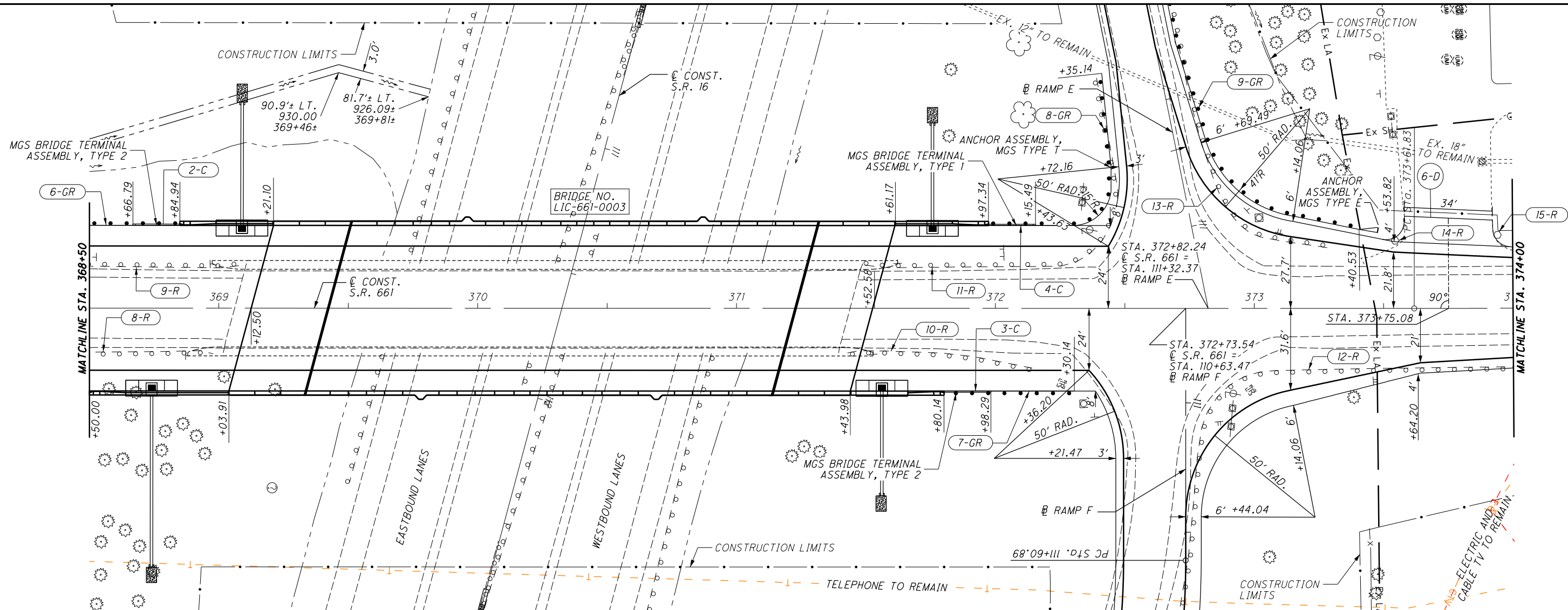
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PLAN AND PROFILE - S.R. 37 / S.R. 661  
 STA. 363+00 TO STA. 368+50

LIC-37 / 661-  
 16.59 / 0.00

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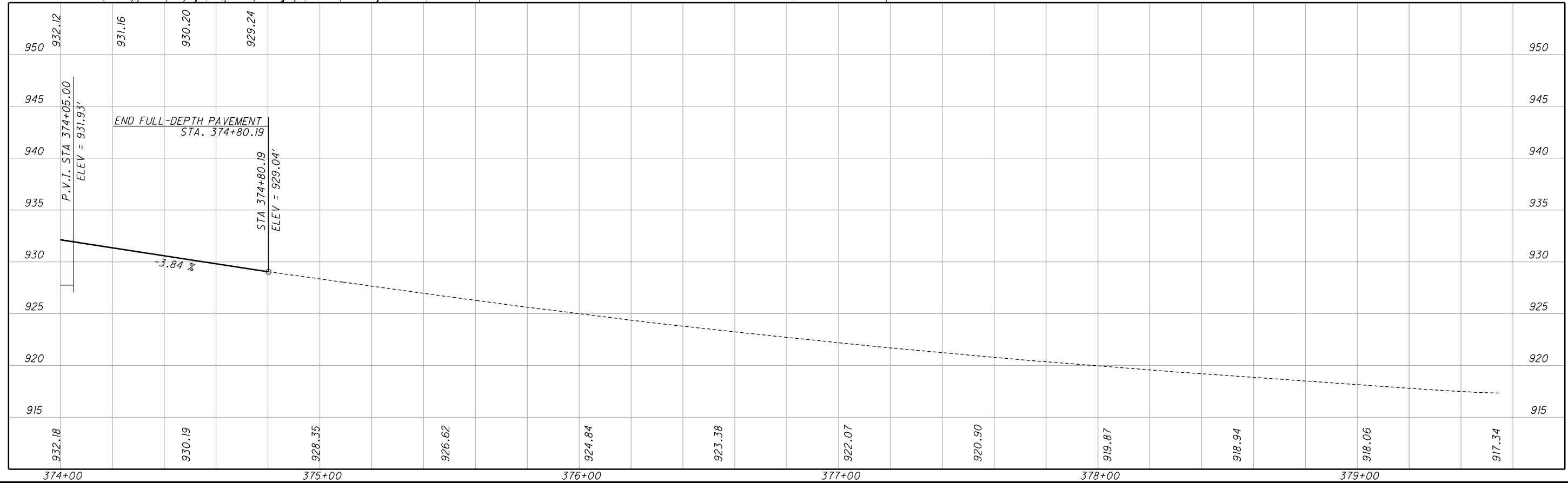
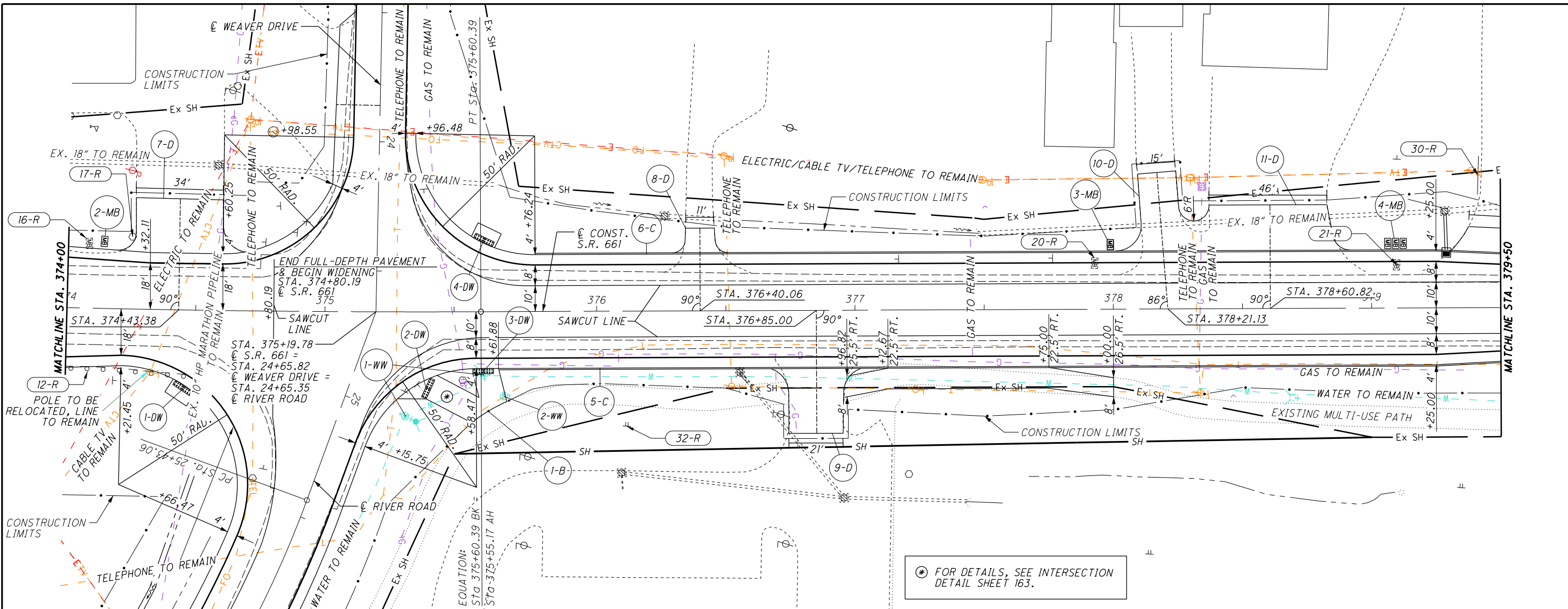
CALCULATED BRH  
CHECKED HAG

**PLAN AND PROFILE - S.R. 661  
STA. 368+50 TO STA. 374+00**

**LIC-37 / 661-  
16.59 / 0.00**

92  
341

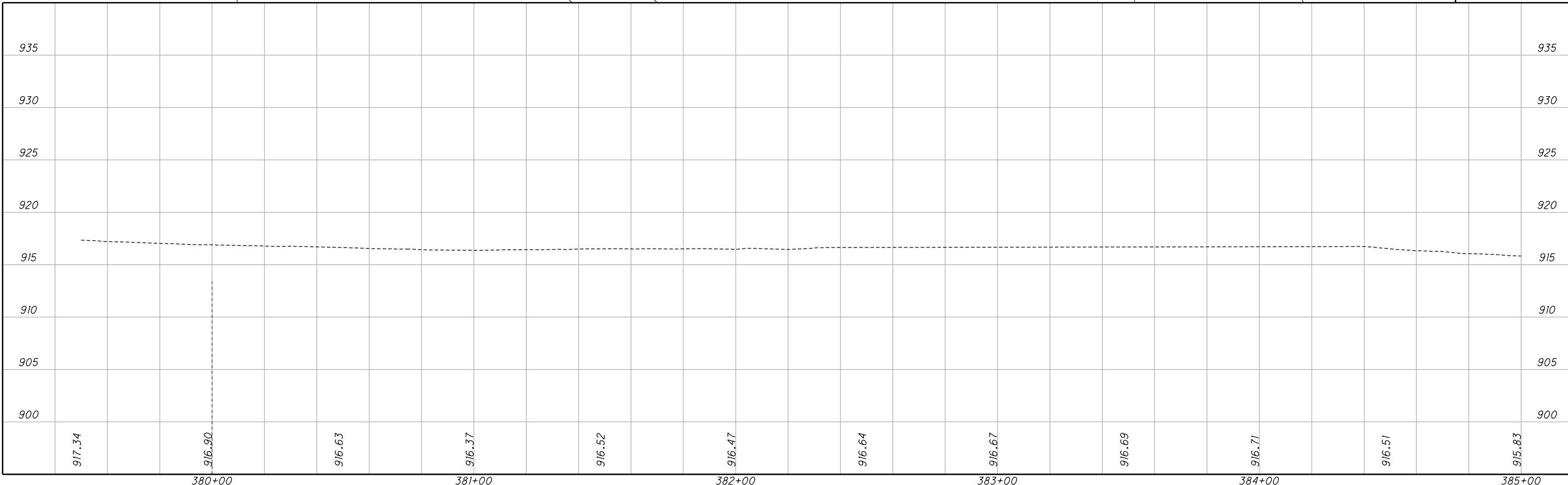
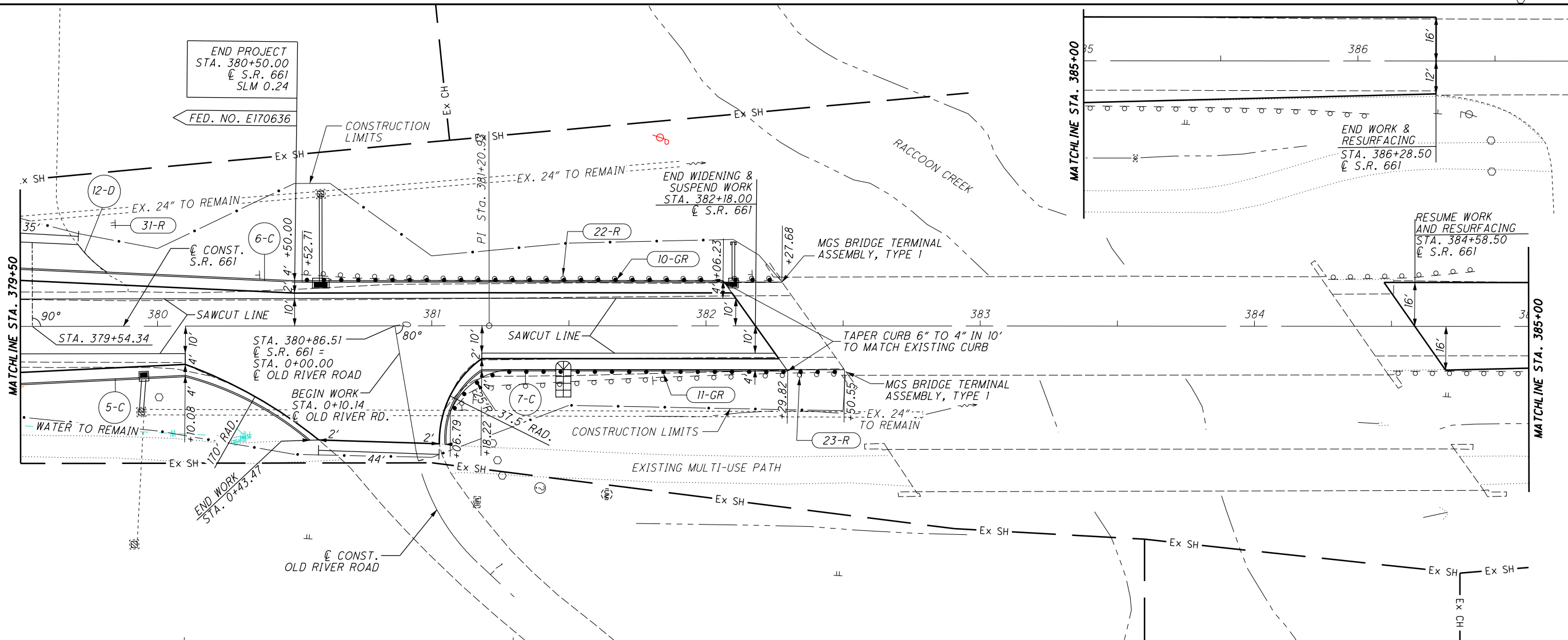
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**PLAN AND PROFILE - S.R. 661  
STA. 374+00 TO STA. 379+50**

**LIC-37 / 661-  
16.59 / 0.00**

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 HORIZONTAL SCALE IN FEET

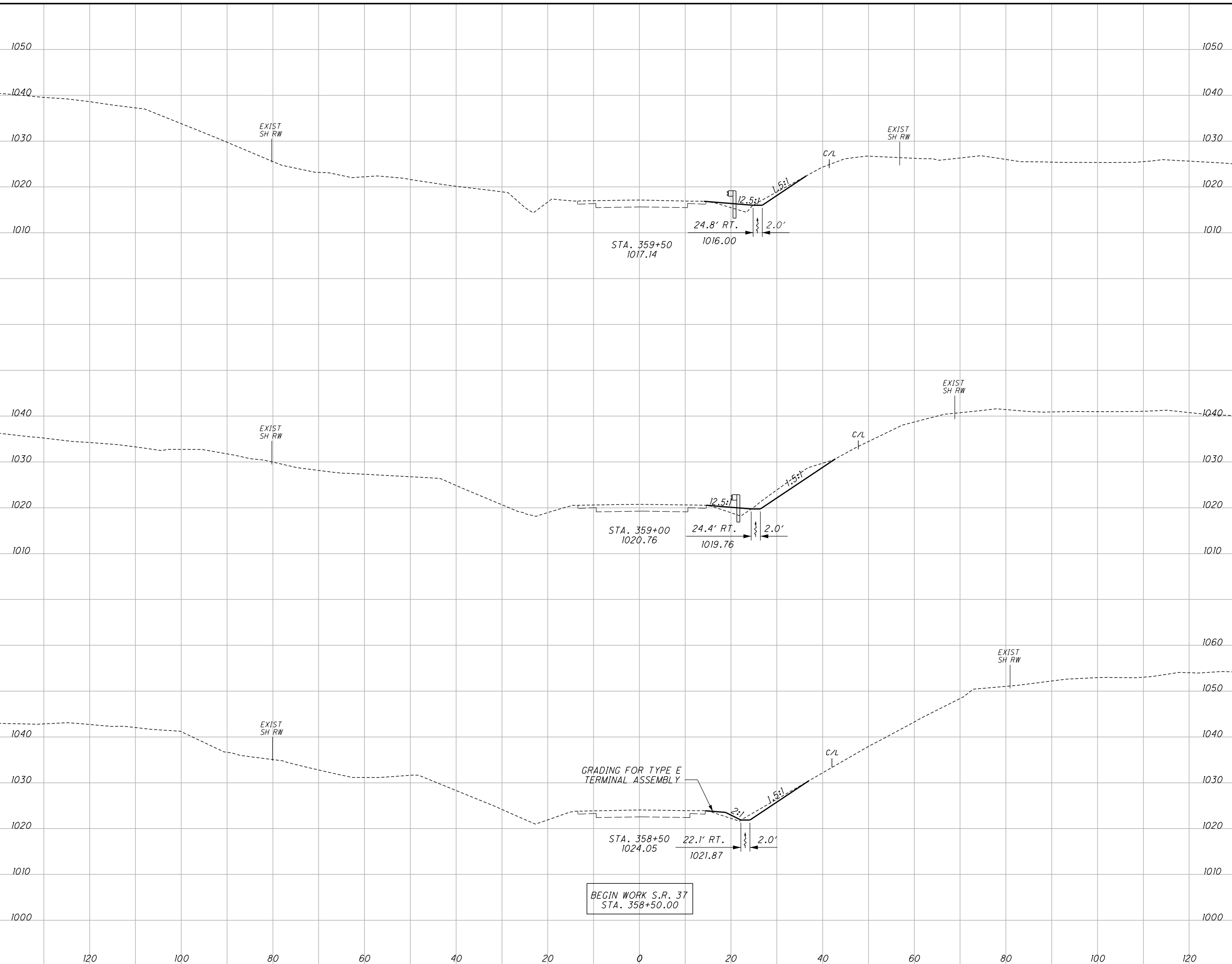
CALCULATED BRH  
 CHECKED HAG

**PLAN AND PROFILE - S.R. 661**  
**STA. 379+50 TO STA. 386+28.50**

**LIC-37 / 661-**  
**16.59 / 0.00**

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SEEDING	
END WIDTH	SO. YDS.
321	25
120	159
100	32
80	162
60	26



END AREA		VOLUME	
CUT	FILL	CUT	FILL
7	8	32	14
27	8	34	11
9	4		
		66	25

CALCULATED  
RUG  
CHECKED  
HAG

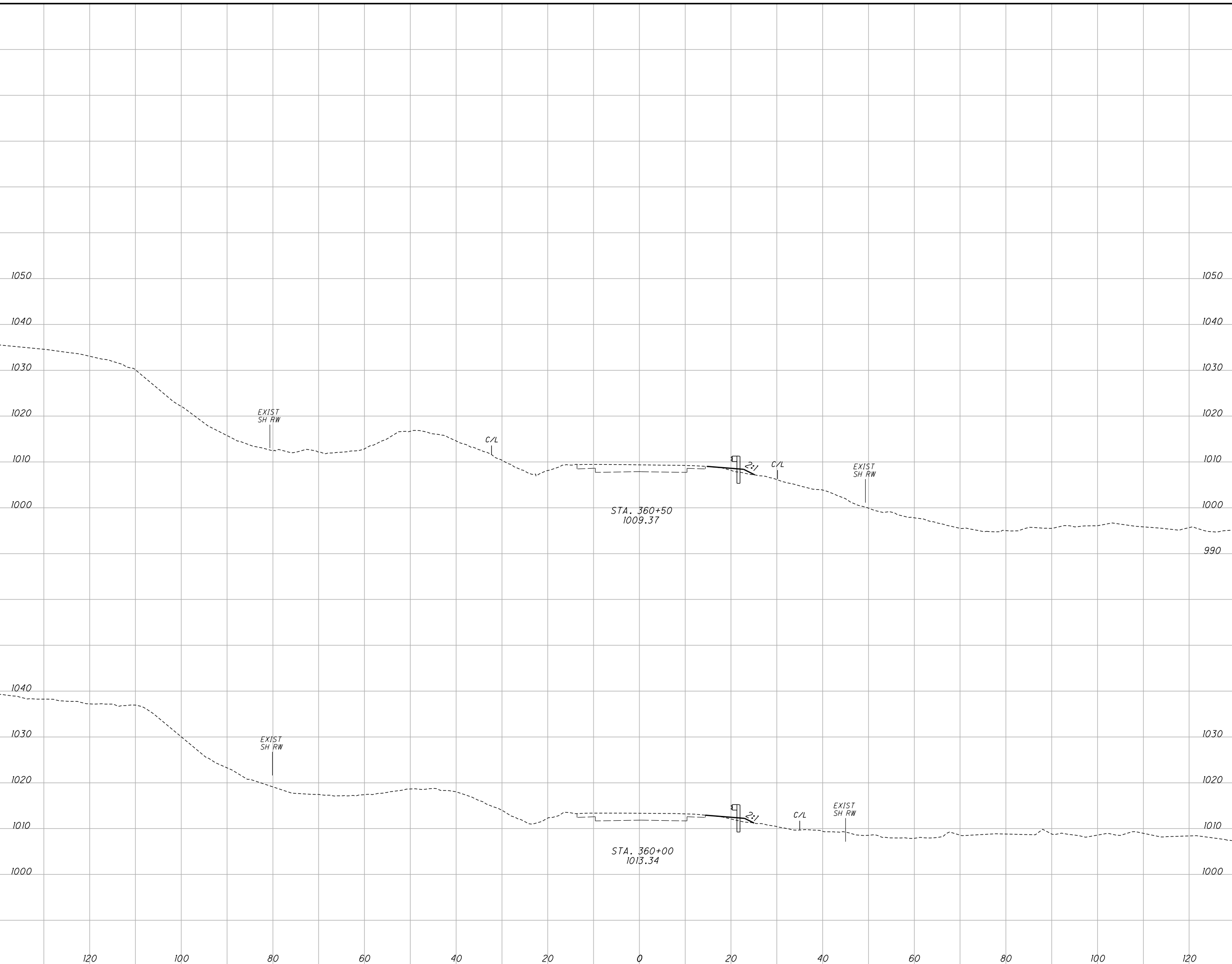
**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 358+50.00 TO STA. 359+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

95  
341

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SEEDING	
END WIDTH	SO. YDS.
125	
239	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	4	0	7
0	3	7	11
7		7	18

**CROSS SECTIONS S.R. 37 AND S.R. 661**  
**STA. 360+00.00 TO STA. 360+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

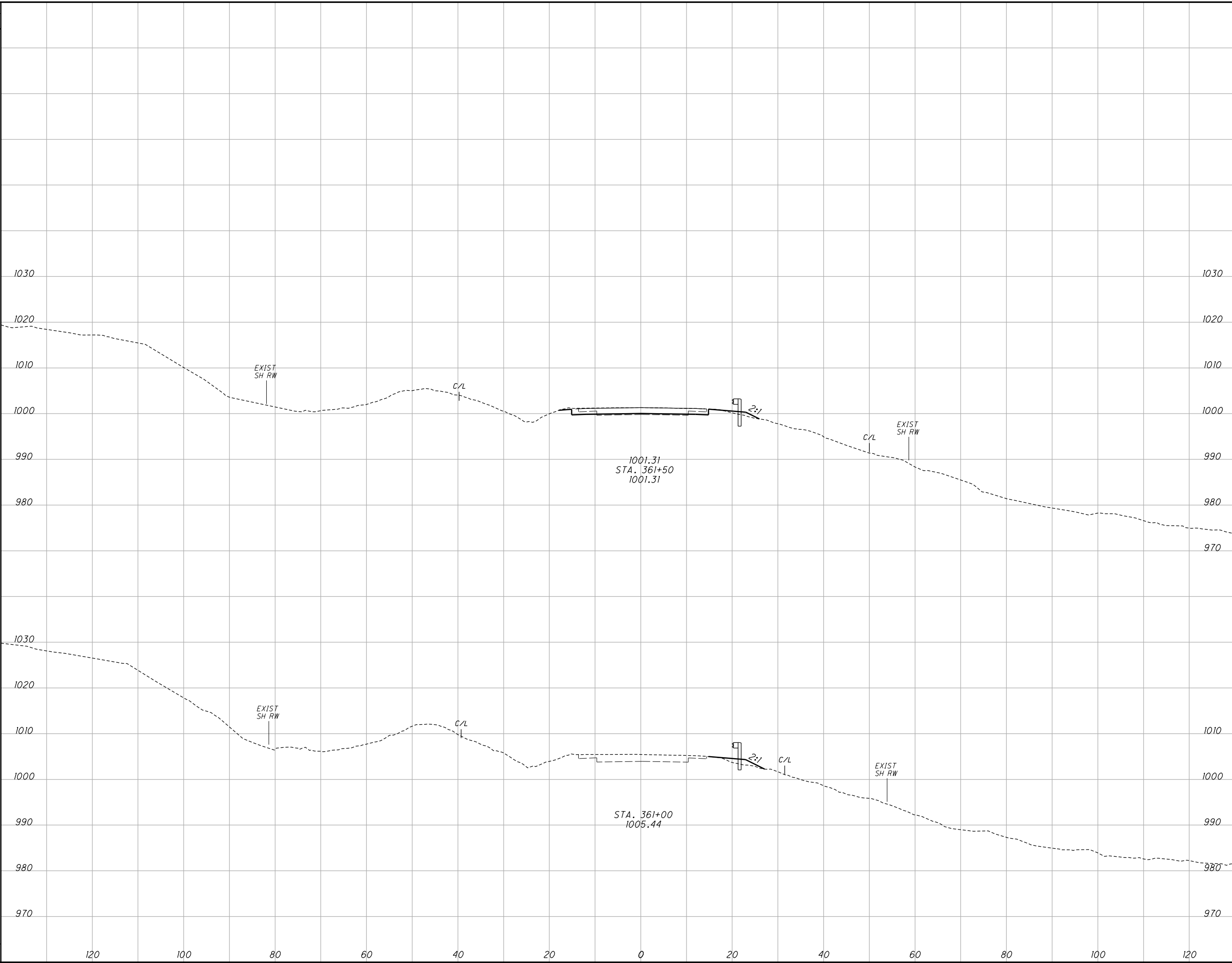
96  
341

CALCULATED  
RUG  
CHECKED  
HAG



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SEEDING	
END WIDTH	SO. YDS.
120	36
282	162
	22



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	9	10	15
0	7	0	11
		10	26

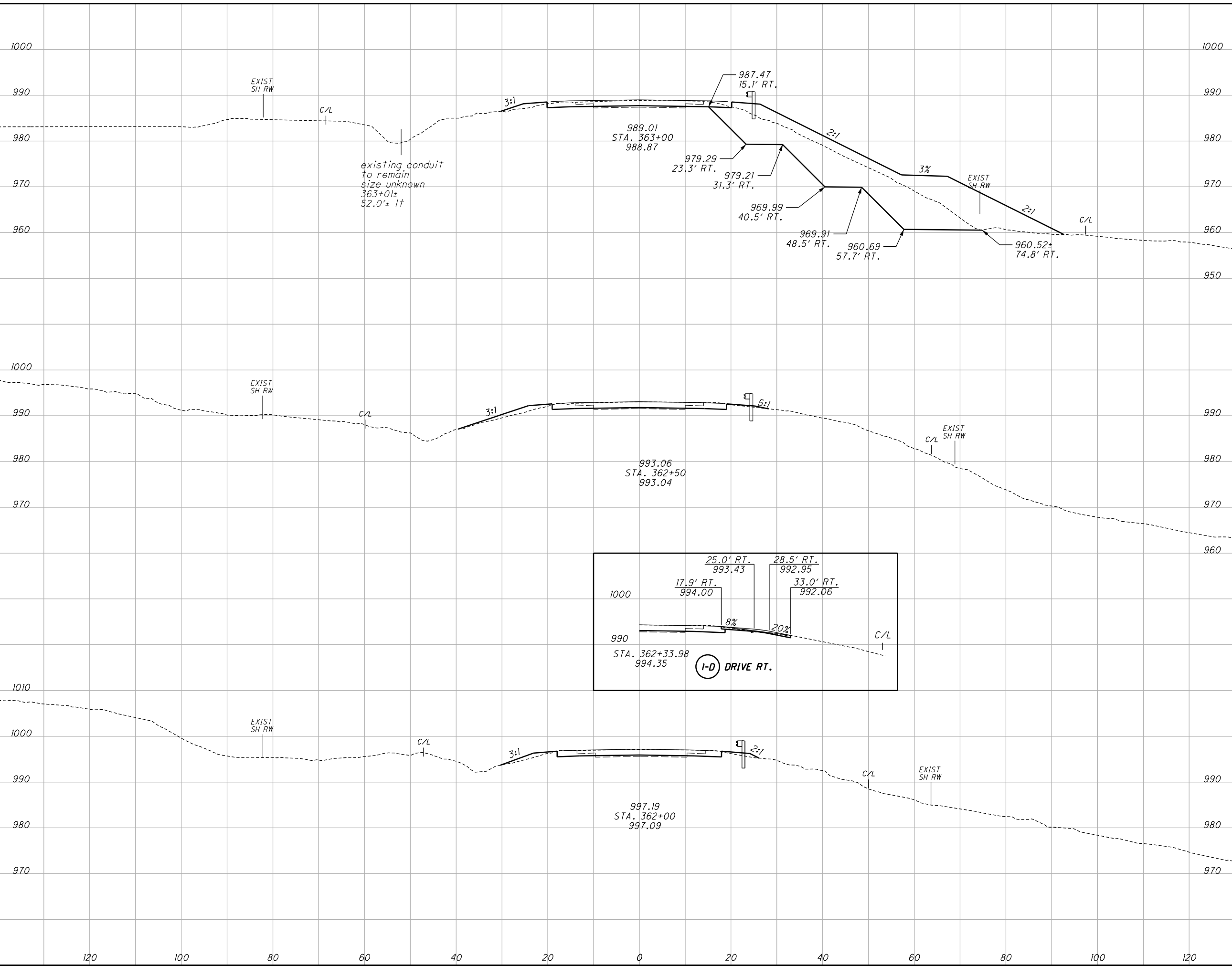
**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 361+00.00 TO STA. 361+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

97  
341

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SEEDING	
END WIDTH	SO. YDS.
120	1000
100	990
80	980
60	970
40	960
20	950
0	940
20	930
40	920
60	910
80	900
100	890
120	880

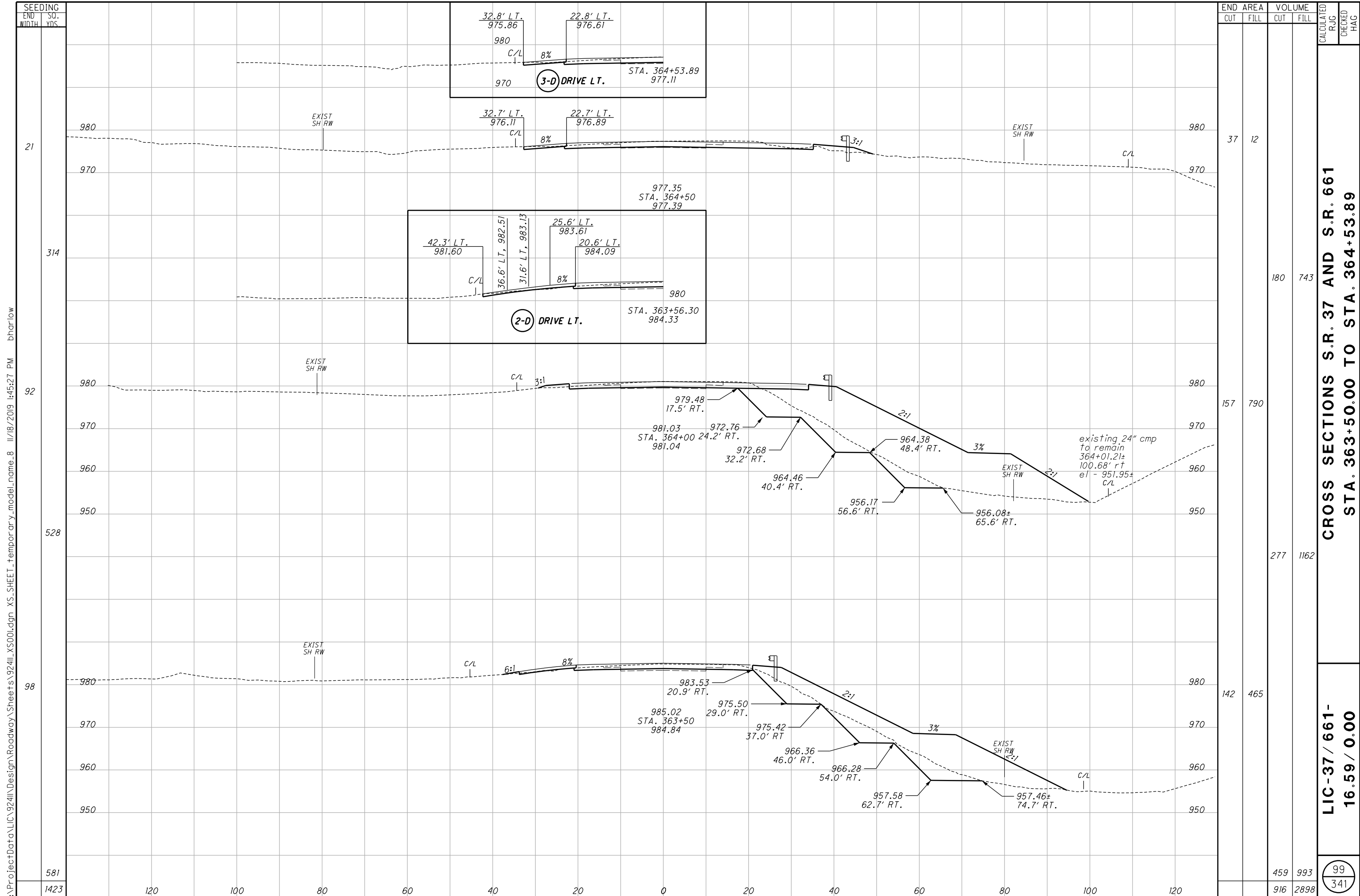


END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
353	607	345	581		
19	20	32	36		
15	18	24	25		
		401	642		

**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 362+00.00 TO STA. 363+00.00**

**LIC-37 / 661-  
16.59 / 0.00**

98  
341



SEEDING

END WIDTH	SO. YDS
21	
314	
92	
528	
98	
581	
1423	

END AREA		VOLUME		CALCULATED R/J	CHECKED H/G
CUT	FILL	CUT	FILL		
37	12	180	743		
157	790	277	1162		
142	465	459	993		
		916	2898		

**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 363+50.00 TO STA. 364+53.89**

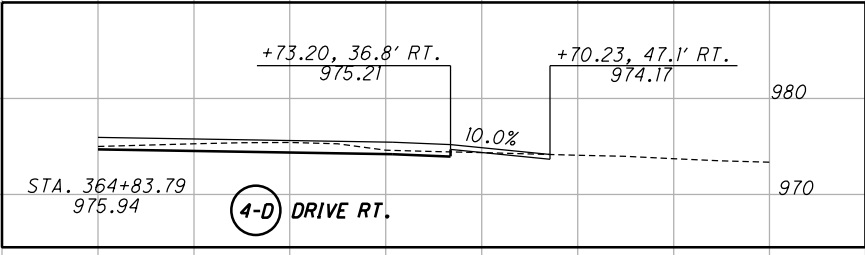
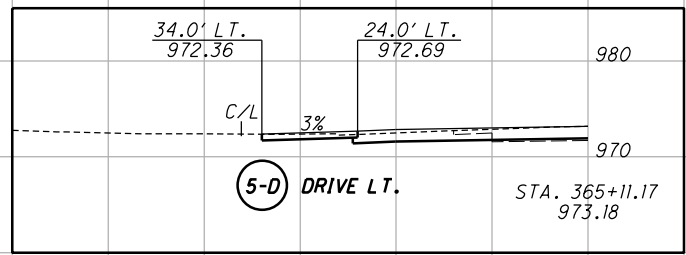
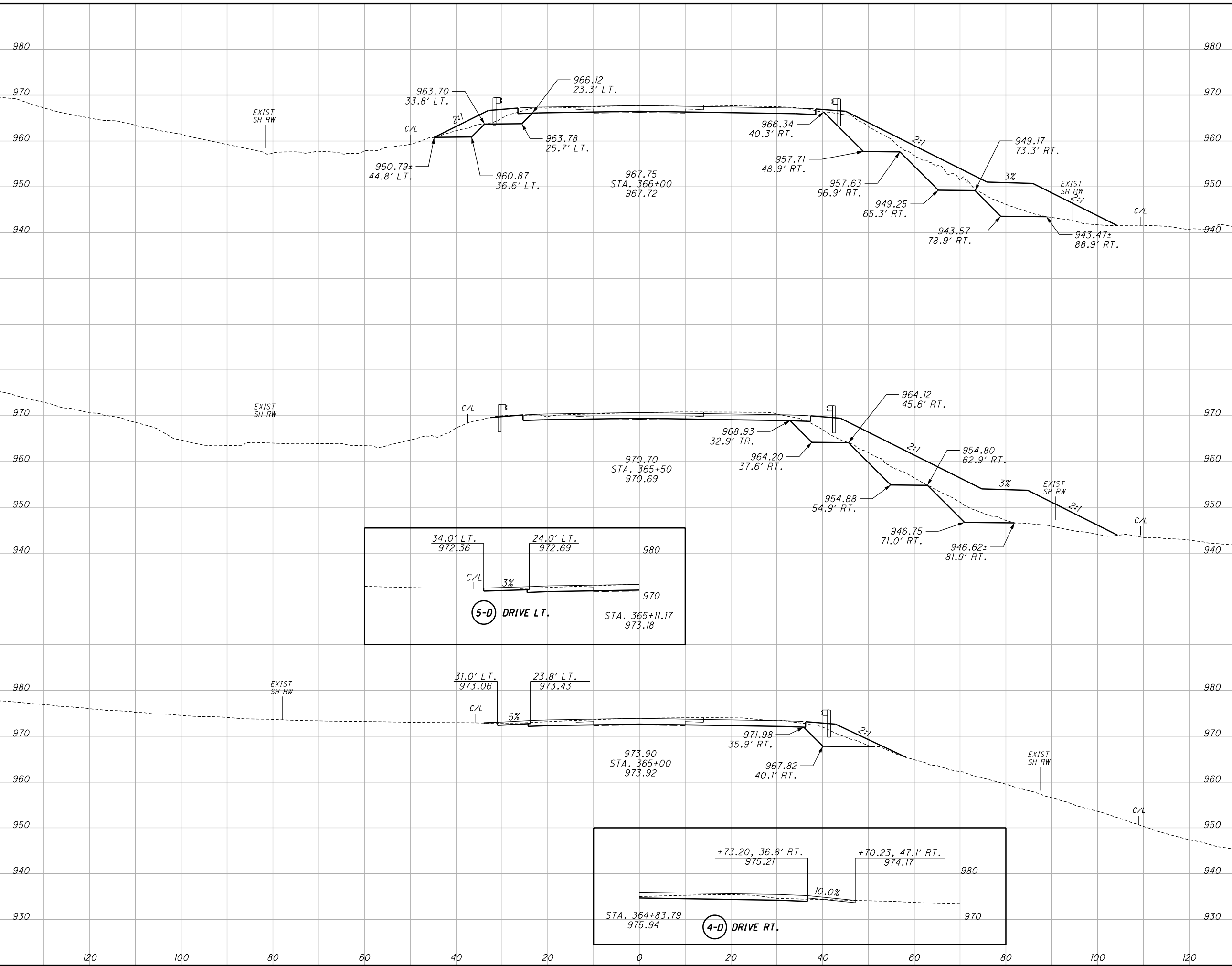
**LIC-37 / 661-  
16.59 / 0.00**

99  
341

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I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X500.dgn XS\_SHEET\_Temporary\_model\_name\_9 11/18/2019 1:45:29 PM bharlow

SEEDING	
END WIDTH	SO. YDS.
142	926
120	926
100	926
80	926
60	926
40	926
20	926
0	926
20	926
40	926
60	926
80	926
100	926
120	926



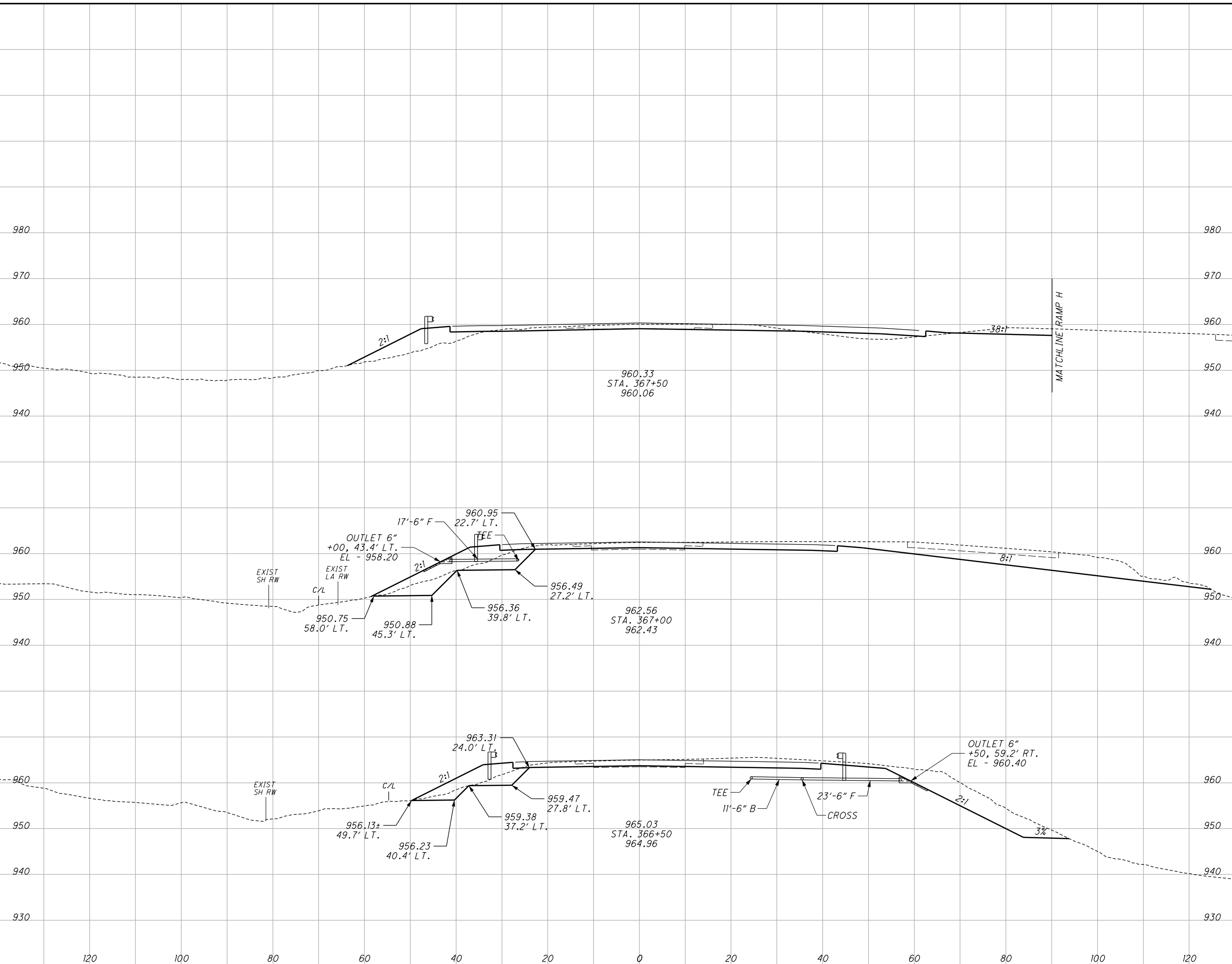
END AREA		VOLUME		CALCULATED		
CUT	FILL	CUT	FILL	R/J	CHECKED	HAG
209	363	328	712			
145	406	207	433			
78	61	107	68			
		642	1213			
						100
						341

**CROSS SECTIONS S.R. 37 AND S.R. 661 - STA. 364+83.79 TO STA. 366+00.00**

**LIC-37 / 661-16.59 / 0.00**

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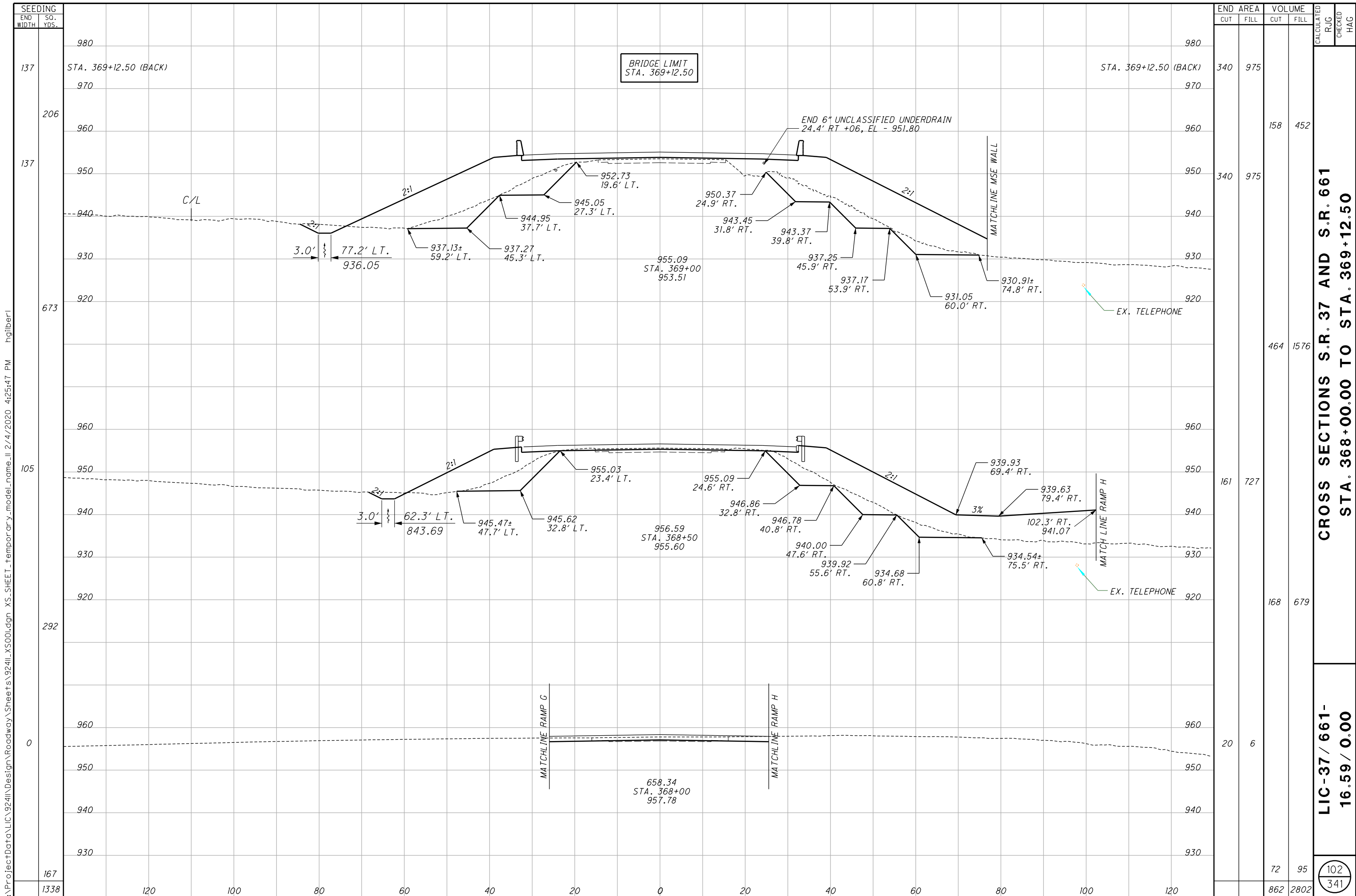
SEEDING	
END WIDTH	SO. YDS.
1257	417
120	417
100	92
80	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
57	96	333	192
302	111	512	185
250	88	425	418
		1270	795

**CROSS SECTIONS S.R. 37 AND S.R. 661**  
**STA. 366+50.00 TO STA. 367+50.00**  
**LIC-37 / 661-**  
**16.59 / 0.00**  
 CALCULATED RJG  
 CHECKED HAG

101  
341



BRIDGE LIMIT  
STA. 369+12.50

658.34  
STA. 368+00  
957.78

END 6" UNCLASSIFIED UNDERDRAIN  
24.4' RT +06, EL - 951.80

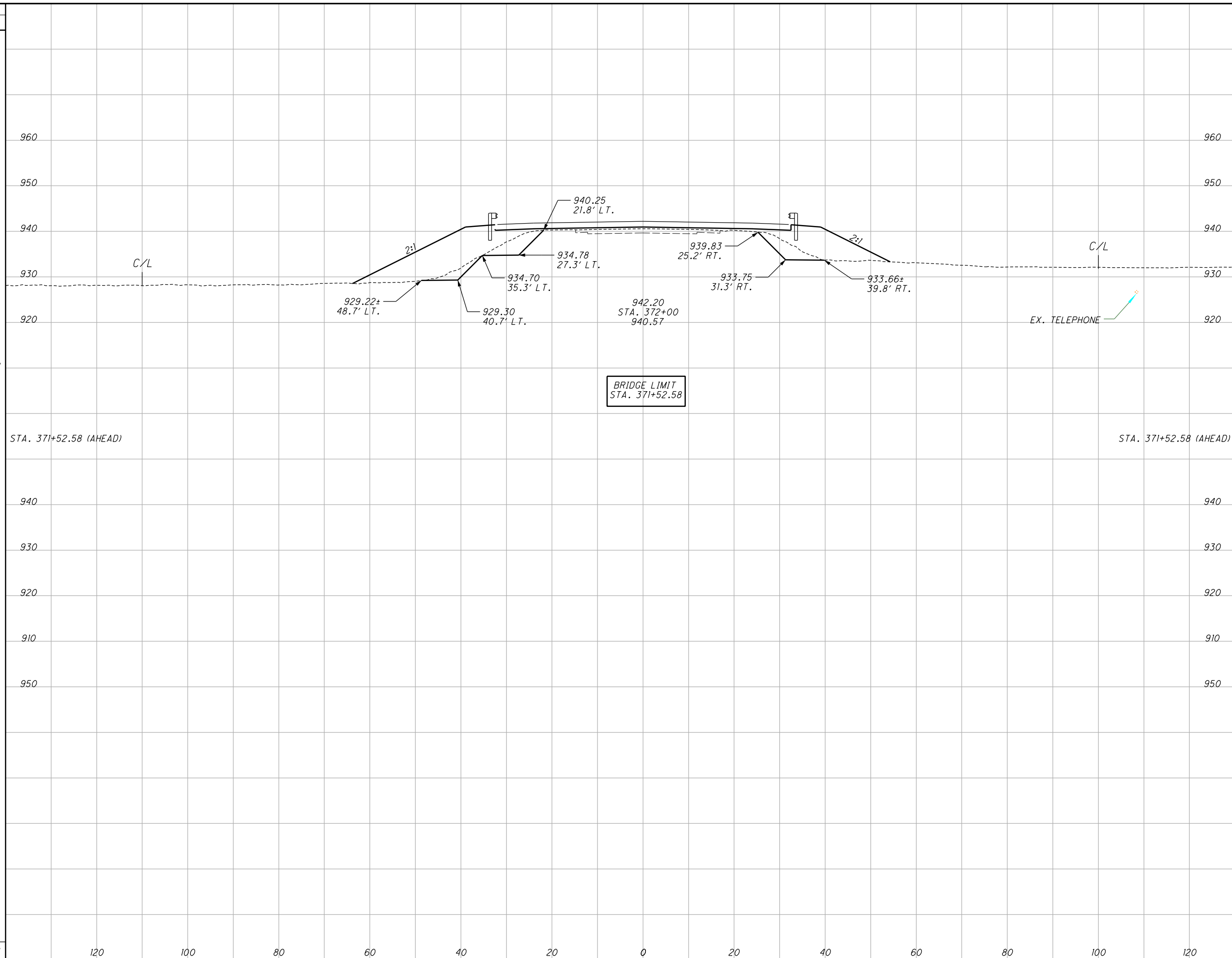
CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 368+00.00 TO STA. 369+12.50

LIC-37 / 661-  
16.59 / 0.00

102  
341

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SEEDING  
 END SO.  
 WIDTH YDS.  
 81  
 528  
 109  
 528



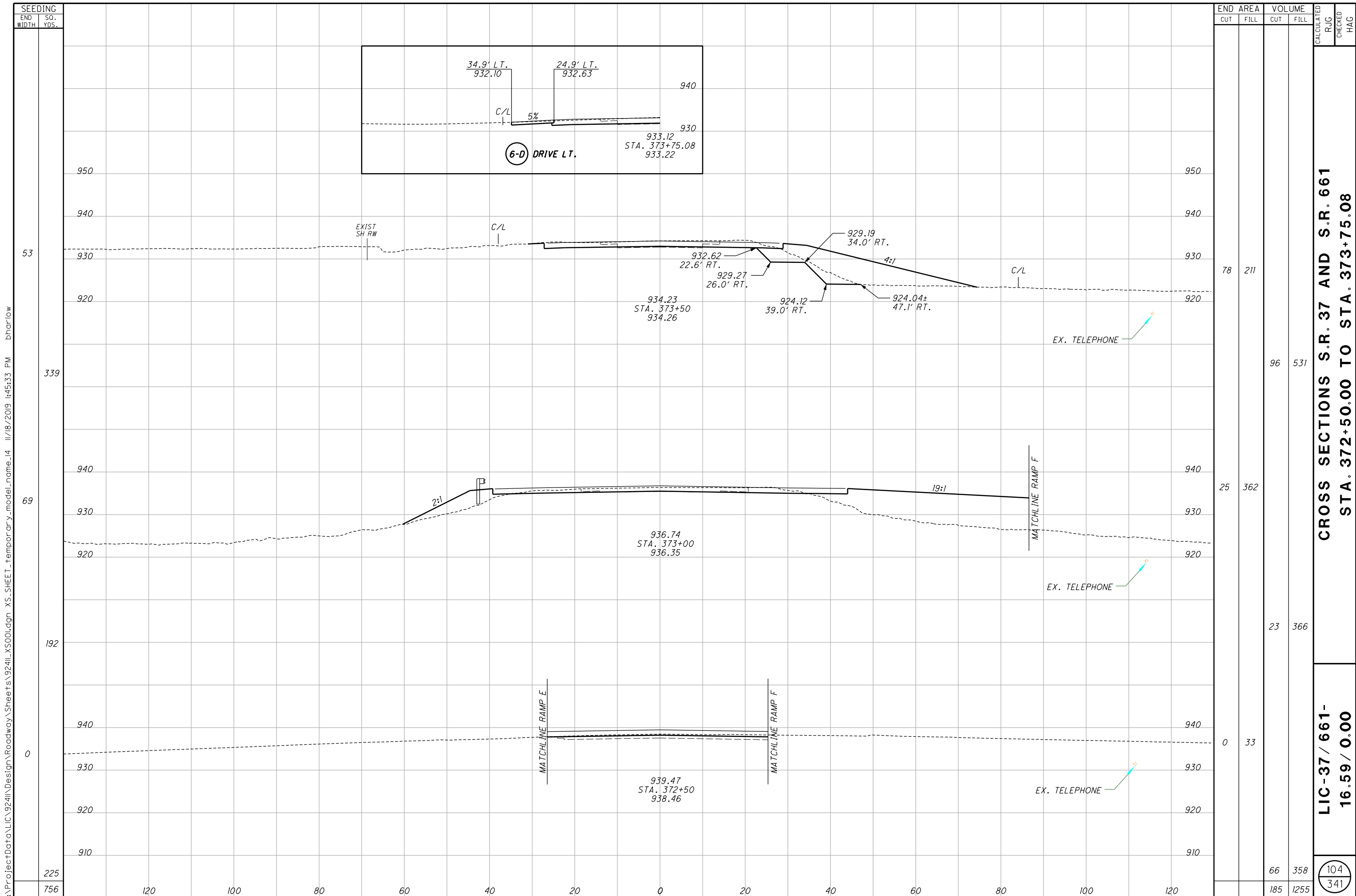
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
73	353	228	990		
186	774				
		228	990		

**CROSS SECTIONS S.R. 37 AND S.R. 661  
 STA. 371+52.58 TO STA. 372+00.00**

**LIC-37 / 661-  
 16.59 / 0.00**

103  
 341

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SEEDING	
END WIDTH	SO. YDS.
756	225
120	0
100	192
80	69
60	339
40	53

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
78	211	96	531		
25	362	23	366		
0	33				
66	358	185	1255		

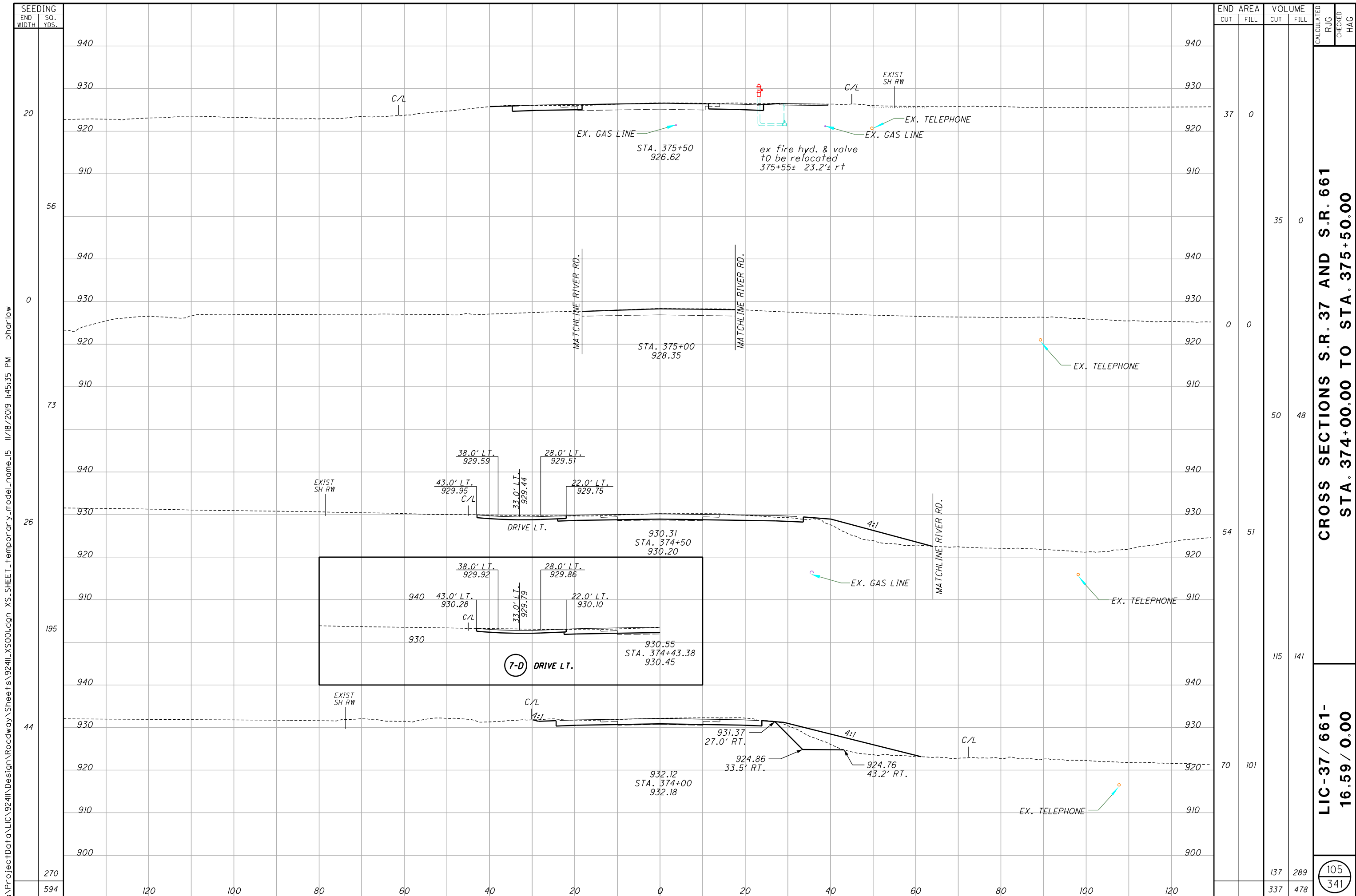
**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 372+50.00 TO STA. 373+75.08**

**LIC-37 / 661-  
16.59 / 0.00**

104  
341

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SEEDING	
END WIDTH	SO. YDS.
20	
56	
0	
73	
26	
195	
44	
270	
594	

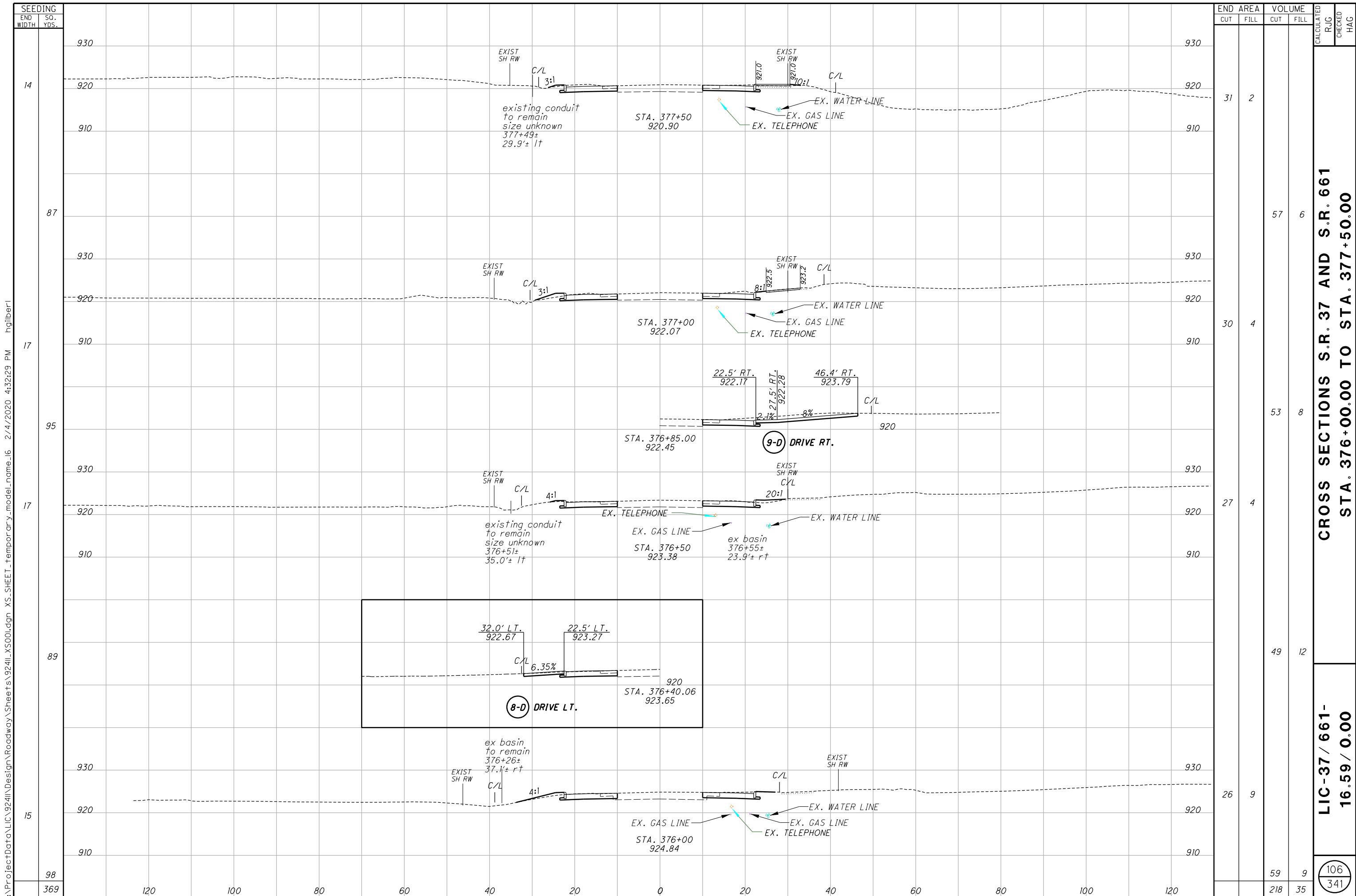
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
37	0				
0	0	35	0		
0	0	50	48		
54	51	115	141		
70	101				
		137	289		
		337	478		

**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 374+00.00 TO STA. 375+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

105  
341

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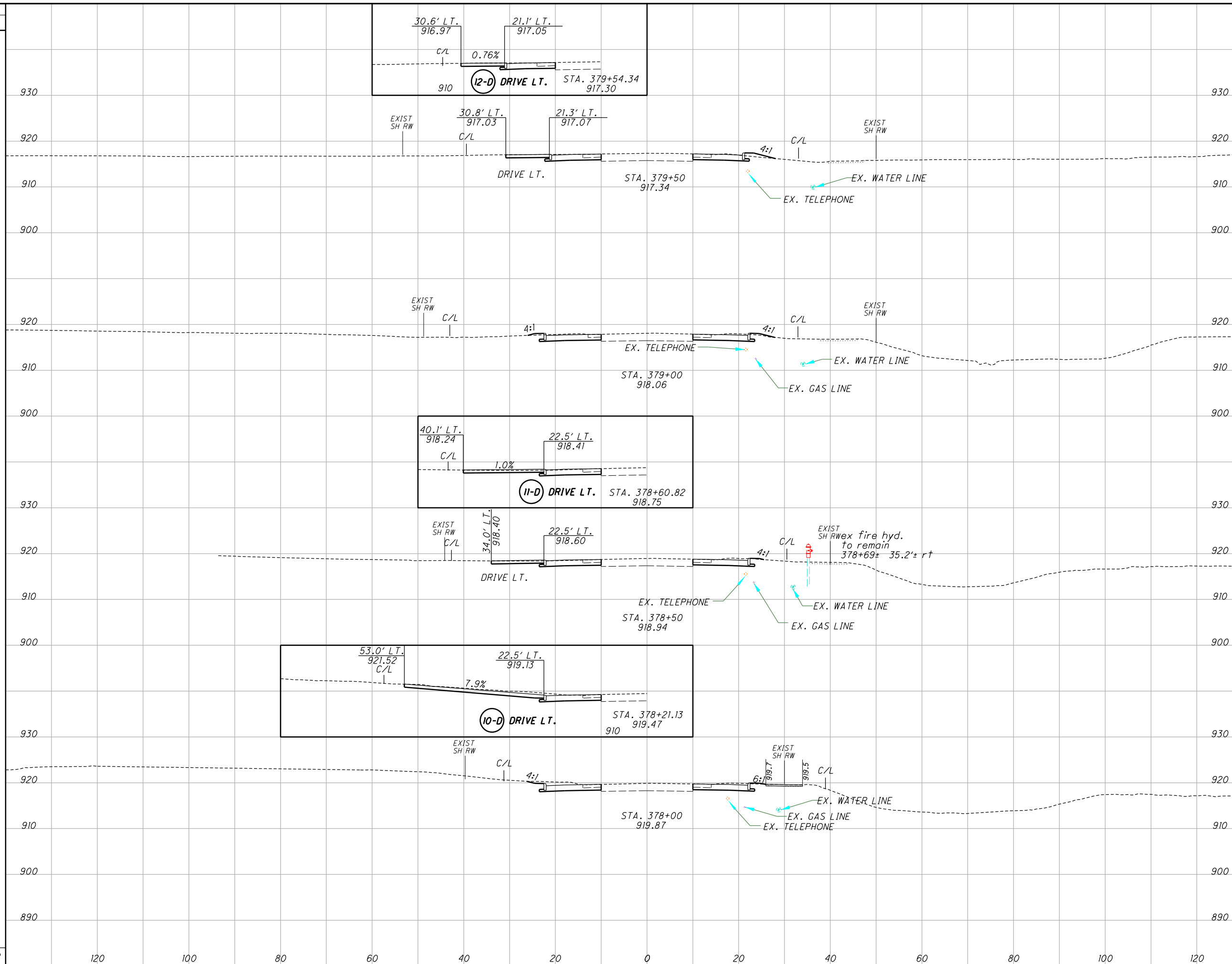
SEEDING		END AREA		VOLUME		CALCULATED		
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	R/J	CHECKED	HAG
14	930	31	2					
87	930			57	6			
17	930	30	4					
95	930			53	8			
17	930	27	4					
89	930			49	12			
15	930	26	9					
98	930			59	9			
369				218	35			

CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 376+00.00 TO STA. 377+50.00

LIC-37 / 661-  
16.59 / 0.00

106  
341

SEEDING  
END WIDTH SO. YDS.  
17  
92  
16  
84  
14  
78  
14  
78  
332



END AREA	VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL			
30		4			
30		2			
34		2			
34		1			
61		3			
240		14			

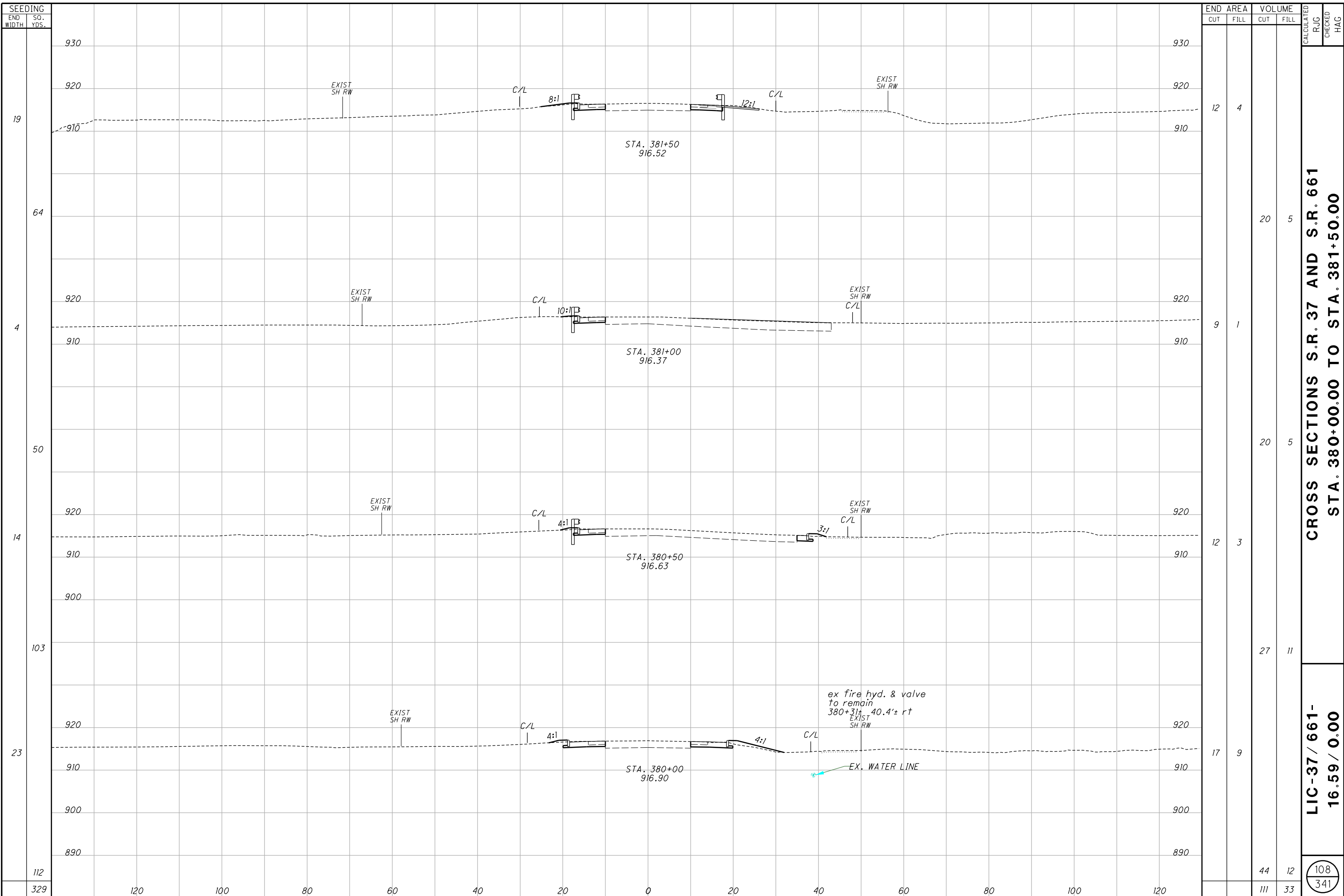
**LIC-37 / 661-16.59 / 0.00**

**CROSS SECTIONS S.R. 37 AND S.R. 661 STA. 378+00.00 TO STA. 379+54.34**

107  
341

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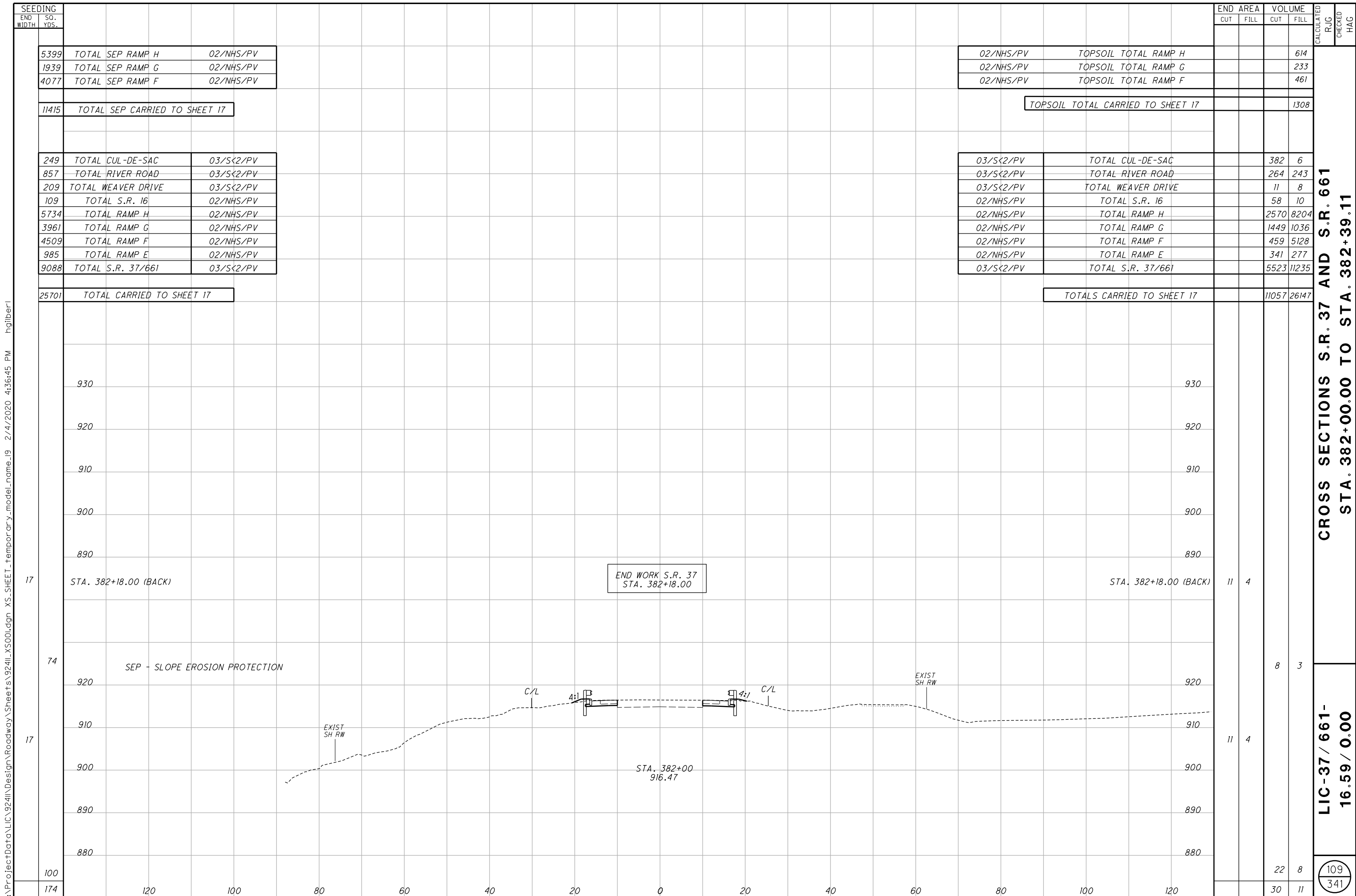
SEEDING	
END WIDTH	SO. YDS.
19	19
64	64
4	4
50	50
14	14
103	103
23	23
112	112
329	329

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
12	4				
		20	5		
9	1				
		20	5		
12	3				
		27	11		
17	9				
		44	12		
		111	33		

**CROSS SECTIONS S.R. 37 AND S.R. 661  
STA. 380+00.00 TO STA. 381+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

108  
341



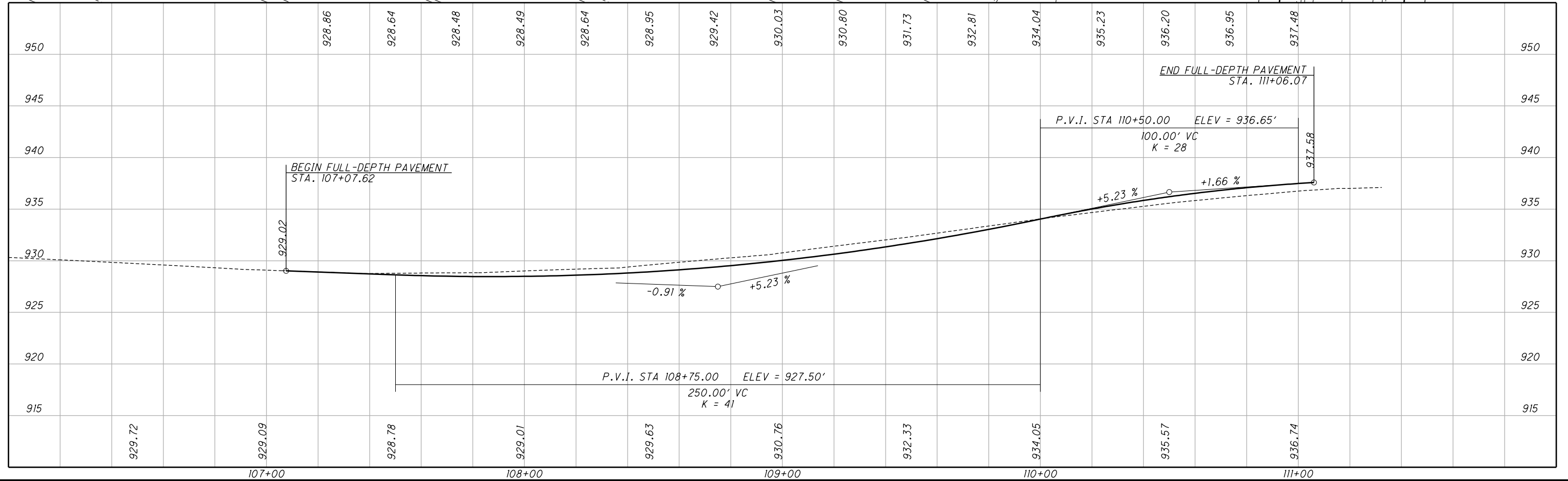
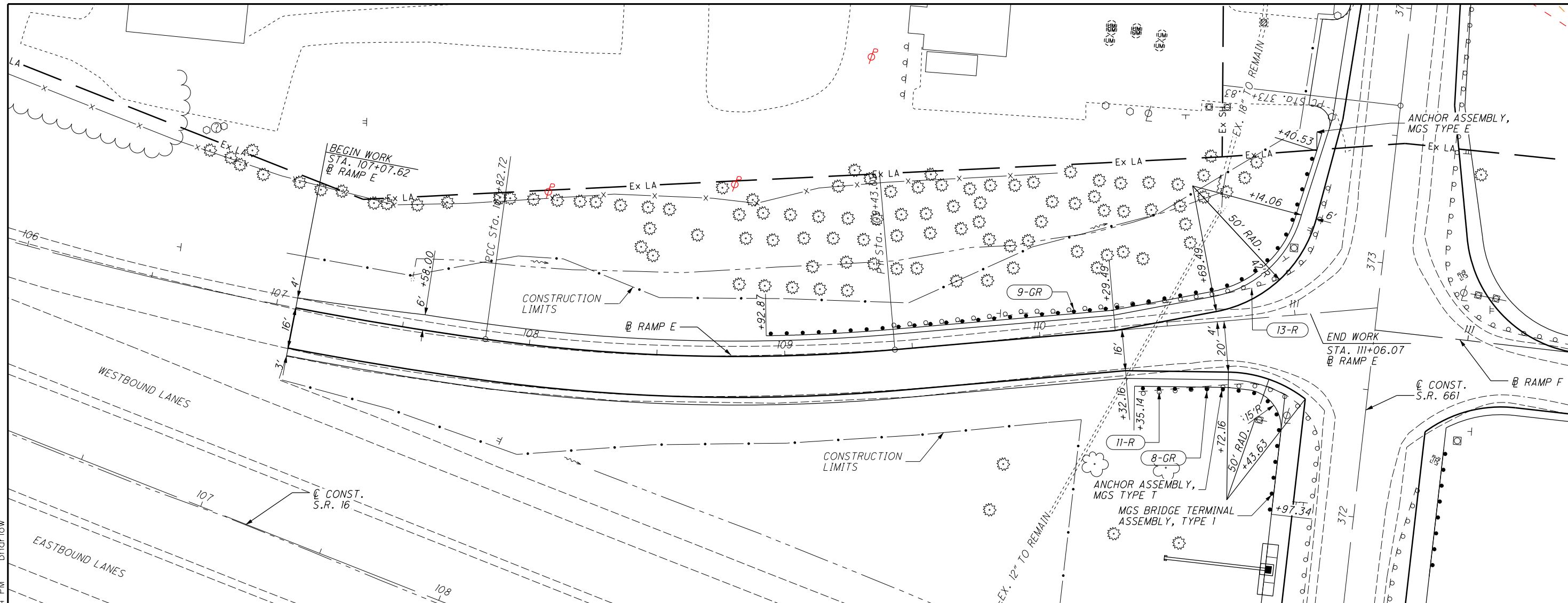
I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X500.dgn XS\_SHEET\_Temporary\_model\_name.19 2/4/2020 4:36:45 PM hgliber1

SEEDING				END AREA		VOLUME		CALCULATED RUG	CHECKED HAG
END WIDTH	SO. YDS.			CUT	FILL	CUT	FILL		
5399	TOTAL SEP RAMP H	02/NHS/PV						614	
1939	TOTAL SEP RAMP G	02/NHS/PV						233	
4077	TOTAL SEP RAMP F	02/NHS/PV						461	
11415 TOTAL SEP CARRIED TO SHEET 17								1308	
249	TOTAL CUL-DE-SAC	03/S<2/PV				382	6		
857	TOTAL RIVER ROAD	03/S<2/PV				264	243		
209	TOTAL WEAVER DRIVE	03/S<2/PV				11	8		
109	TOTAL S.R. 16	02/NHS/PV				58	10		
5734	TOTAL RAMP H	02/NHS/PV				2570	8204		
3961	TOTAL RAMP G	02/NHS/PV				1449	1036		
4509	TOTAL RAMP F	02/NHS/PV				459	5128		
985	TOTAL RAMP E	02/NHS/PV				341	277		
9088	TOTAL S.R. 37/661	03/S<2/PV				5523	11235		
25701 TOTAL CARRIED TO SHEET 17								11057	26147

02/NHS/PV	TOPSOIL TOTAL RAMP H			614	
02/NHS/PV	TOPSOIL TOTAL RAMP G			233	
02/NHS/PV	TOPSOIL TOTAL RAMP F			461	
TOPSOIL TOTAL CARRIED TO SHEET 17				1308	
03/S<2/PV	TOTAL CUL-DE-SAC			382	6
03/S<2/PV	TOTAL RIVER ROAD			264	243
03/S<2/PV	TOTAL WEAVER DRIVE			11	8
02/NHS/PV	TOTAL S.R. 16			58	10
02/NHS/PV	TOTAL RAMP H			2570	8204
02/NHS/PV	TOTAL RAMP G			1449	1036
02/NHS/PV	TOTAL RAMP F			459	5128
02/NHS/PV	TOTAL RAMP E			341	277
03/S<2/PV	TOTAL S.R. 37/661			5523	11235
TOTALS CARRIED TO SHEET 17				11057	26147

**CROSS SECTIONS S.R. 37 AND S.R. 661 - STA. 382+00.00 TO STA. 382+39.11**  
**LIC-37 / 661 - 16.59 / 0.00**  
 109 / 341

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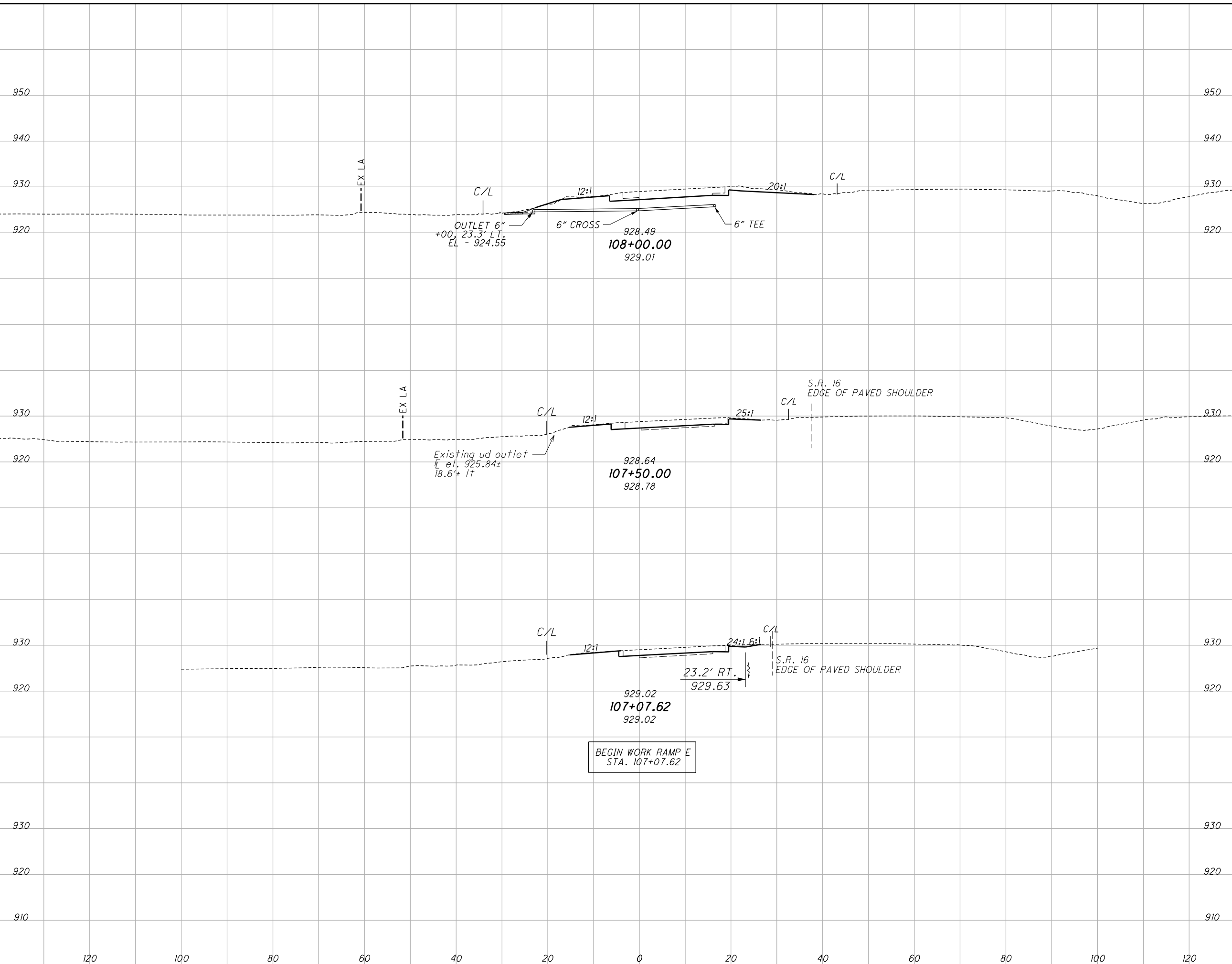
CALCULATED BRH CHECKED HAG

**PLAN AND PROFILE - RAMP E**  
**STA. 107+07.62 TO STA. 111+06.07**

**LIC-37 / 661-**  
**16.59 / 0.00**

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SEEDING	
END WIDTH	SO. YDS.
30	
131	
17	
80	
17	
211	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
22	0				
8	8	26	8		
7	8	12	13		
		38	21		

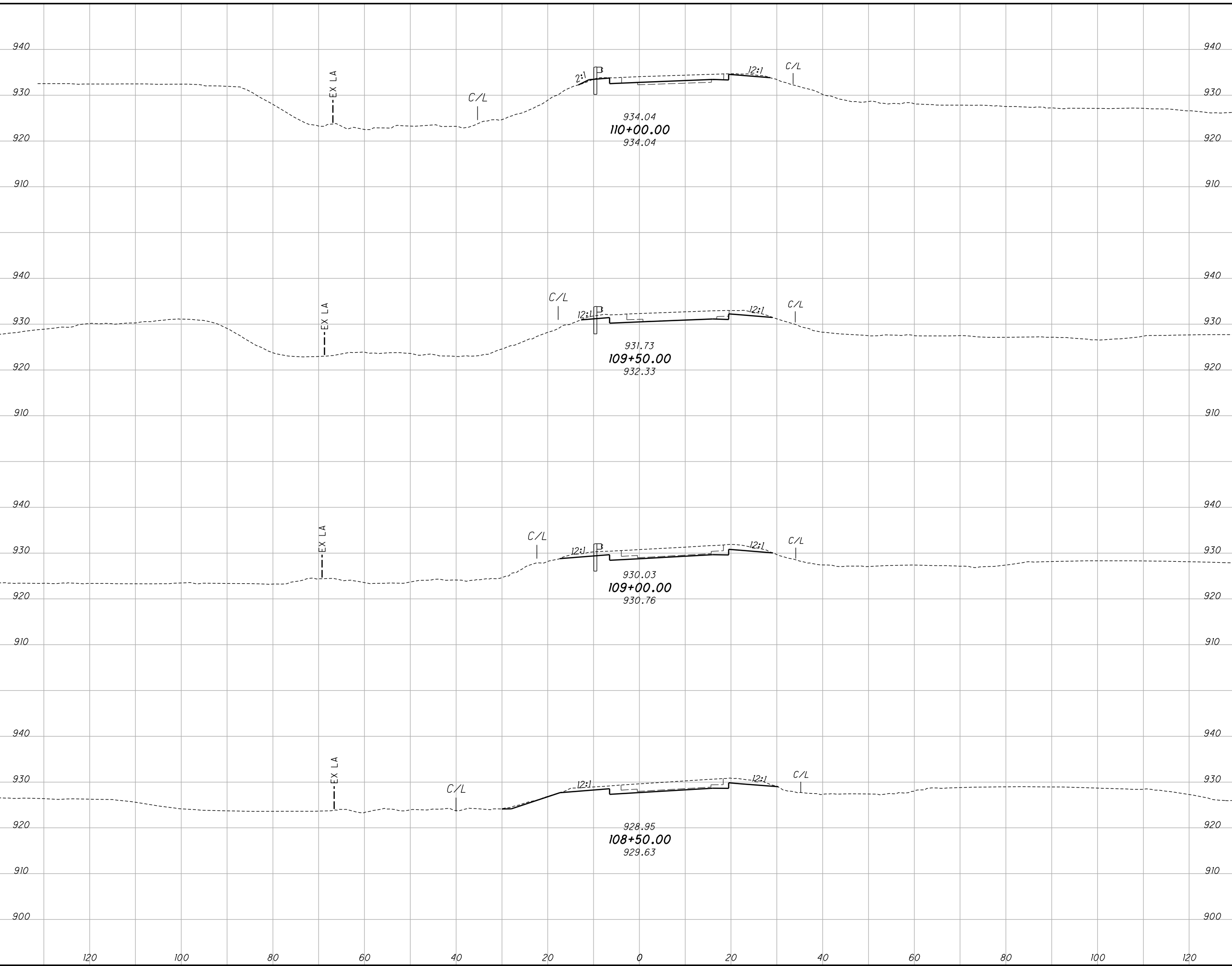
**CROSS SECTIONS RAMP E**  
**STA. 107+07.62 TO STA. 108+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

111  
341

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SEEDING	
END WIDTH	SO. YDS.
17	
92	
16	
134	
32	
150	
22	
145	



END AREA	VOLUME	CALCULATED	
		CUT	FILL
8	10	28	10
22	0	50	0
32	0	60	0
32	0	50	0
188	10		

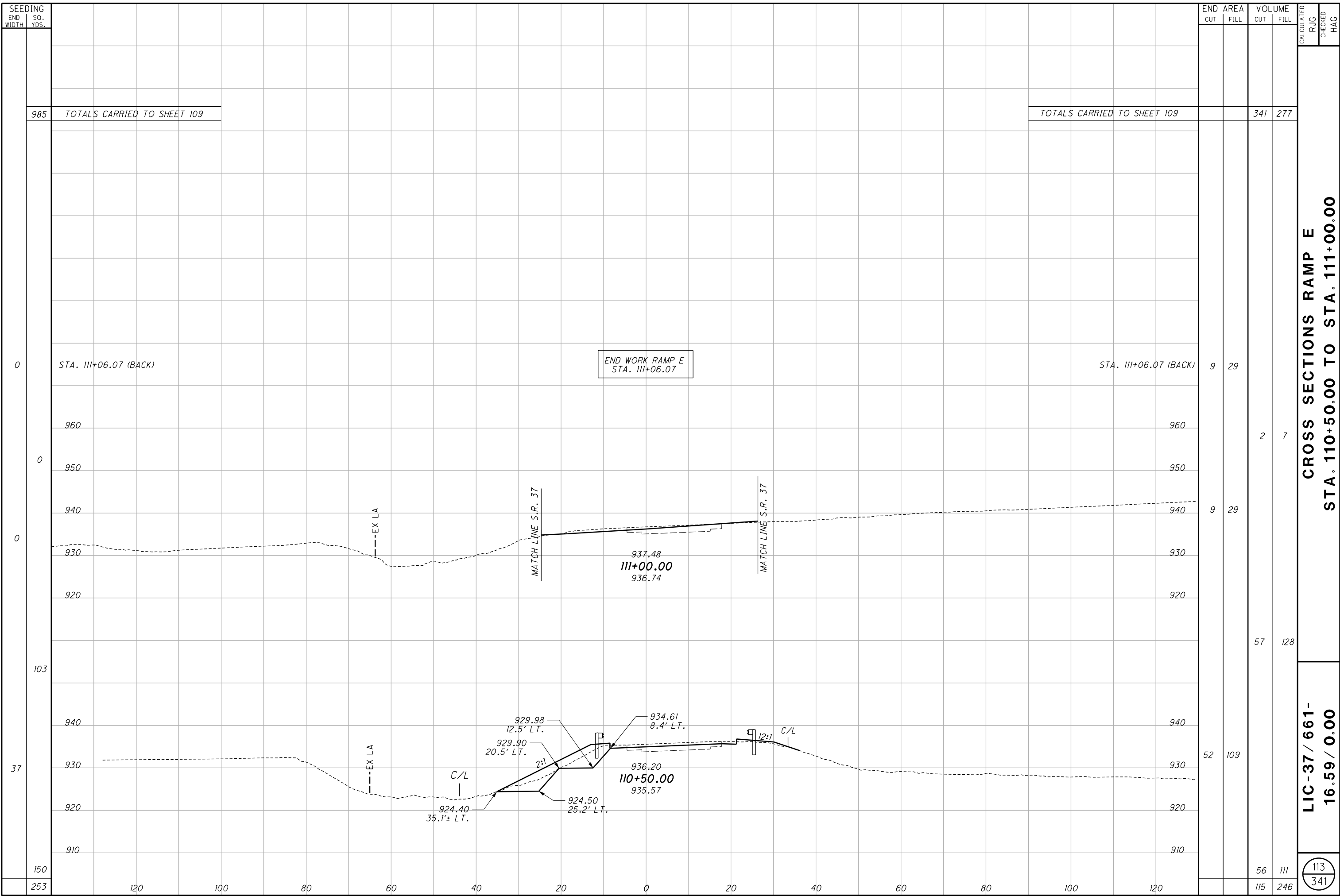
**CROSS SECTIONS RAMP E**  
**STA. 108+50.00 TO STA. 110+00.00**

LIC-37 / 661-  
 16.59 / 0.00

112  
 341



I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X5003.dgn XS\_SHEET\_temporary\_model\_name\_3 11/18/2019 1:45:49 PM bharlow

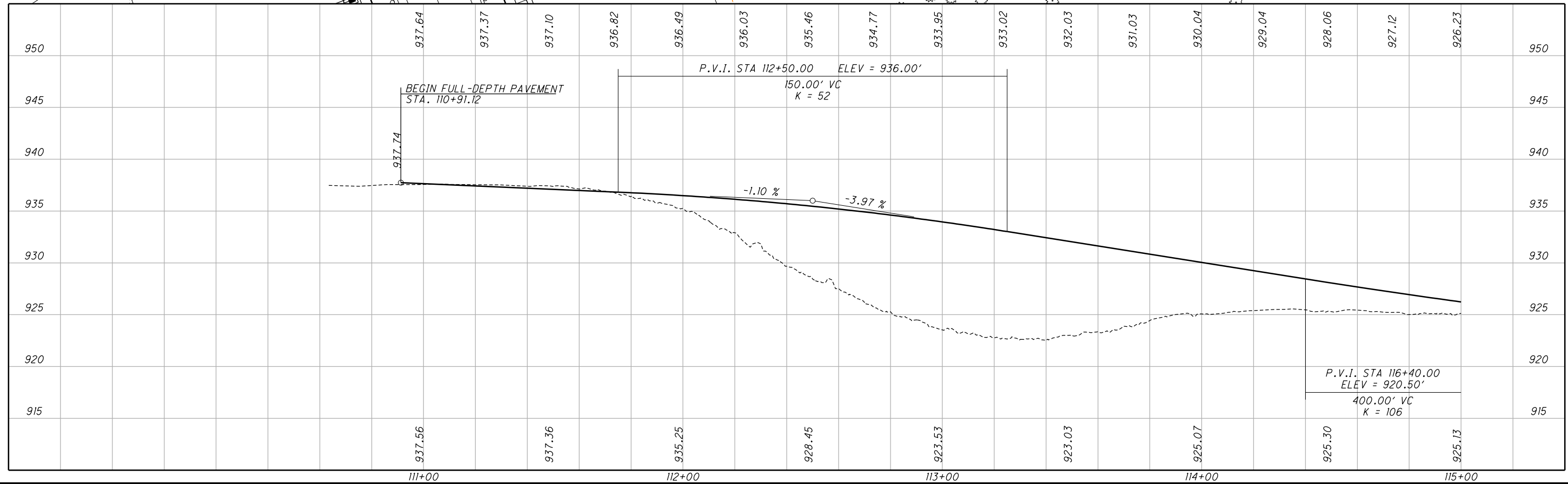
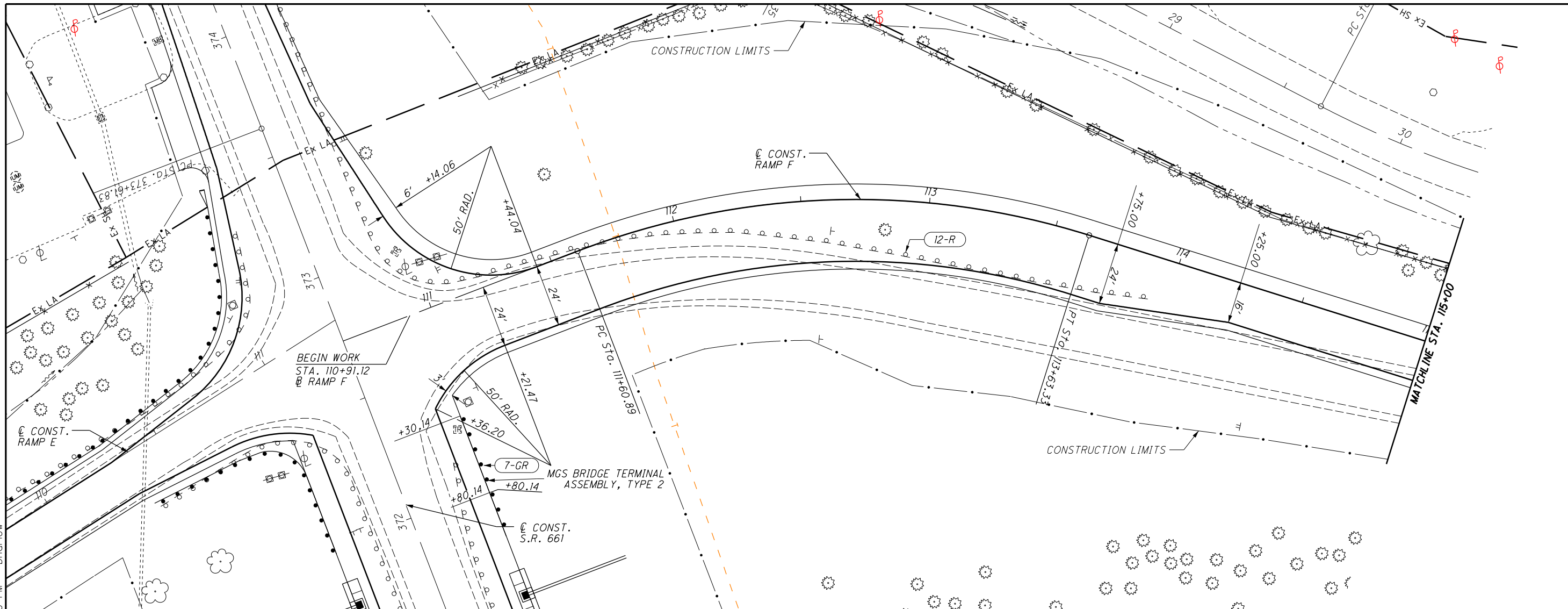


**CROSS SECTIONS RAMP E**  
**STA. 110+50.00 TO STA. 111+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

113  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\GP007.dgn\_Sheet 11/18/2019 14:55:50 PM bharlow

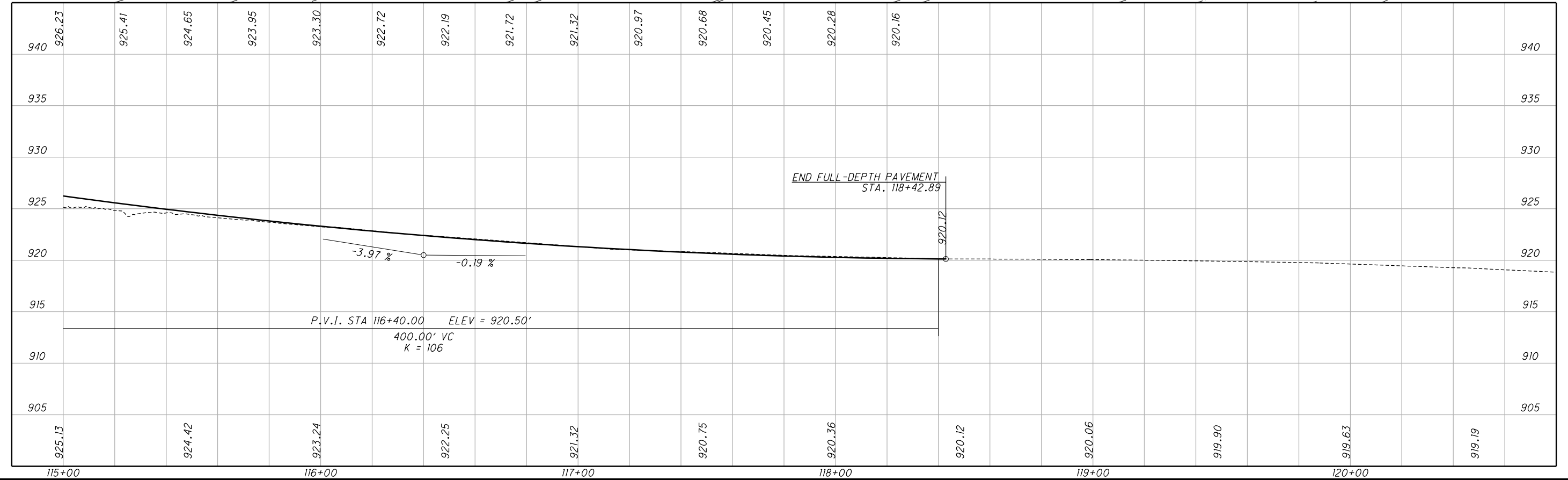
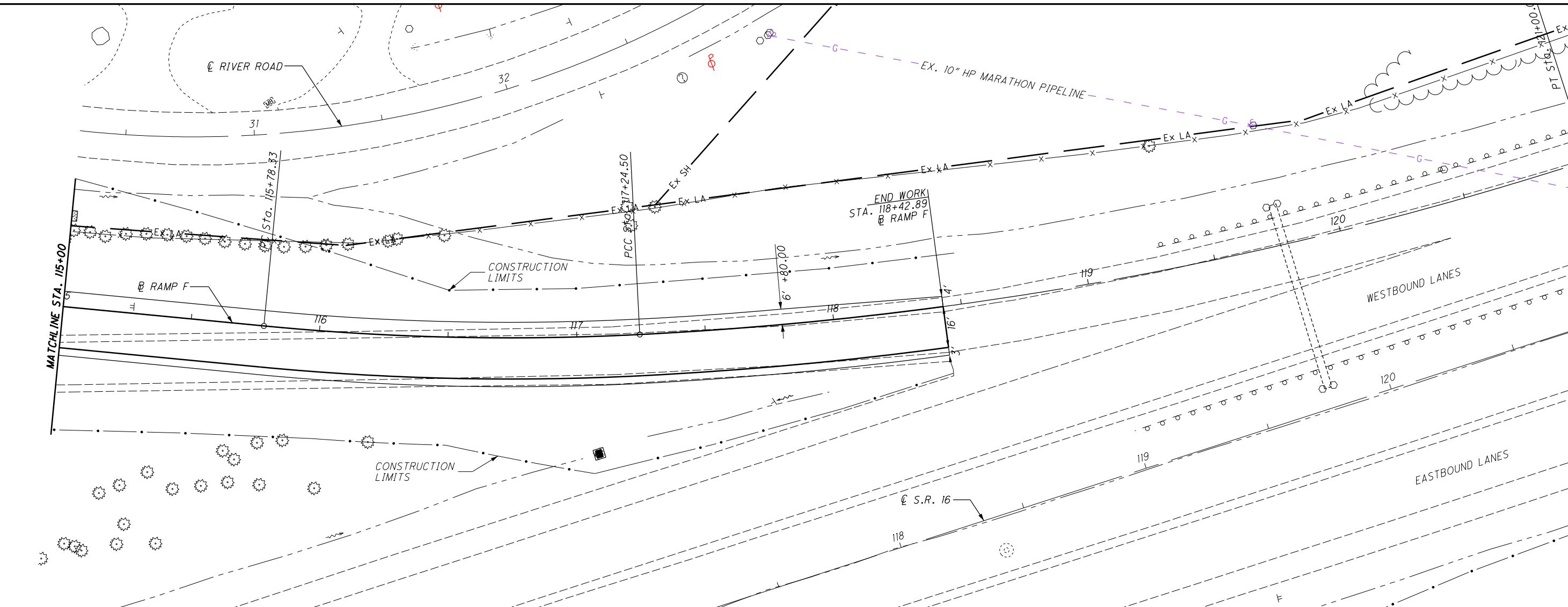


CALCULATED BRH CHECKED HAG

**PLAN AND PROFILE - RAMP F  
STA. 110+91.12 TO STA. 115+00**

**LIC-37 / 661-  
16.59 / 0.00**

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0 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED

BRH

CHECKED

HAG

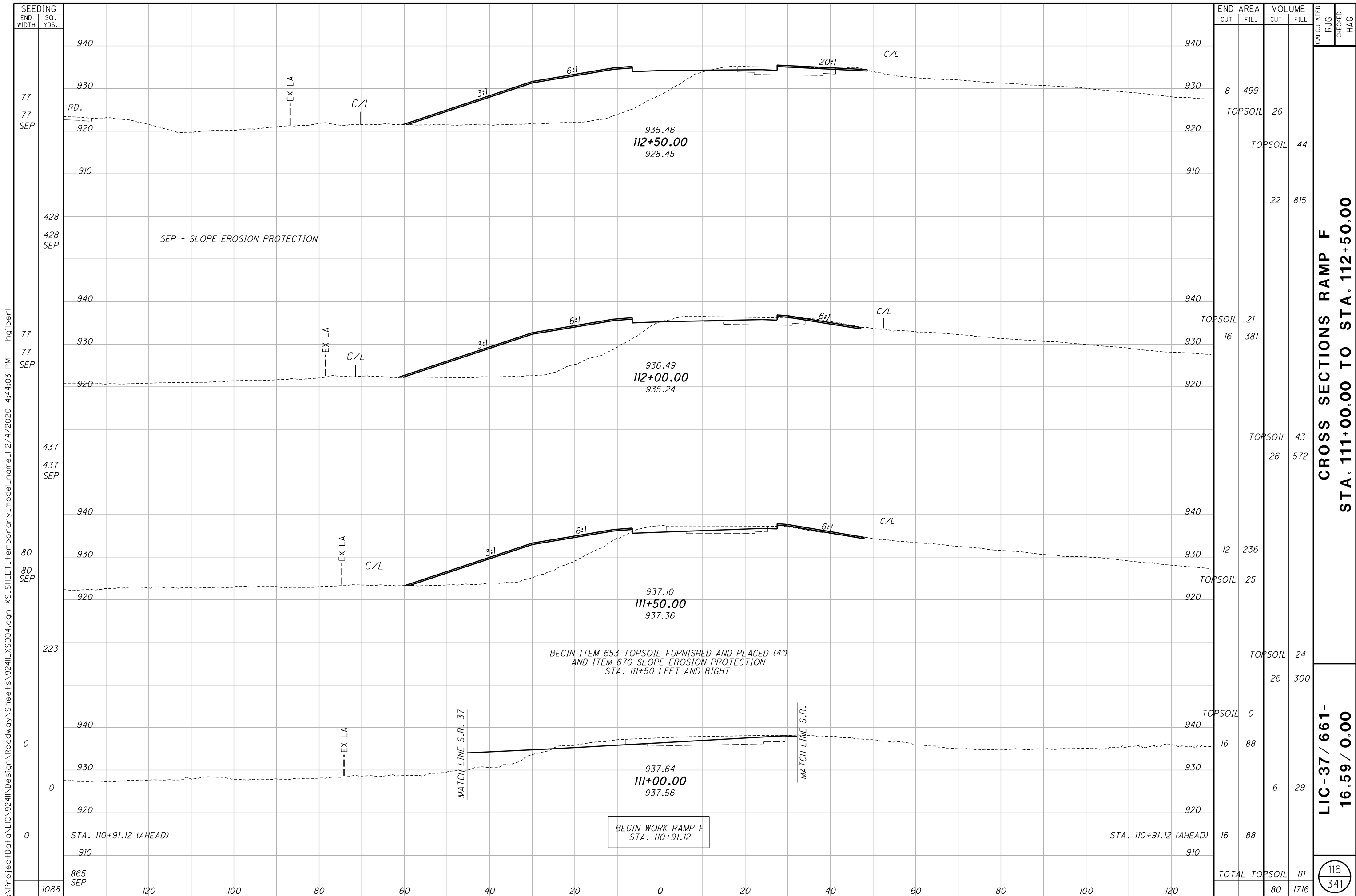
LIC-37 / 661-

PLAN AND PROFILE - RAMP F

16.59 / 0.00

STA. 115+00 TO STA. 118+42.89

115
341



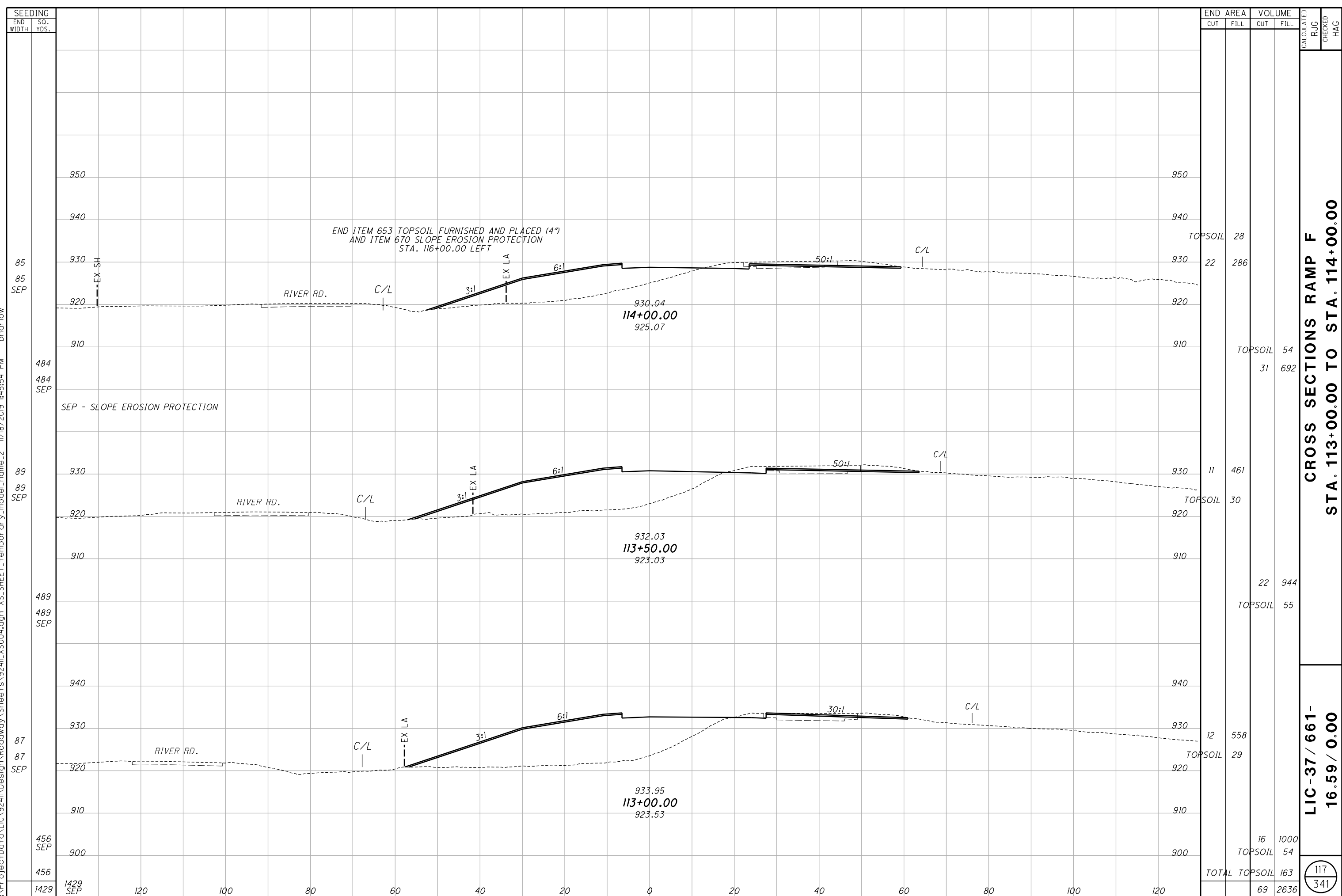
**CROSS SECTIONS RAMP F  
STA. 111+00.00 TO STA. 112+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

116  
341

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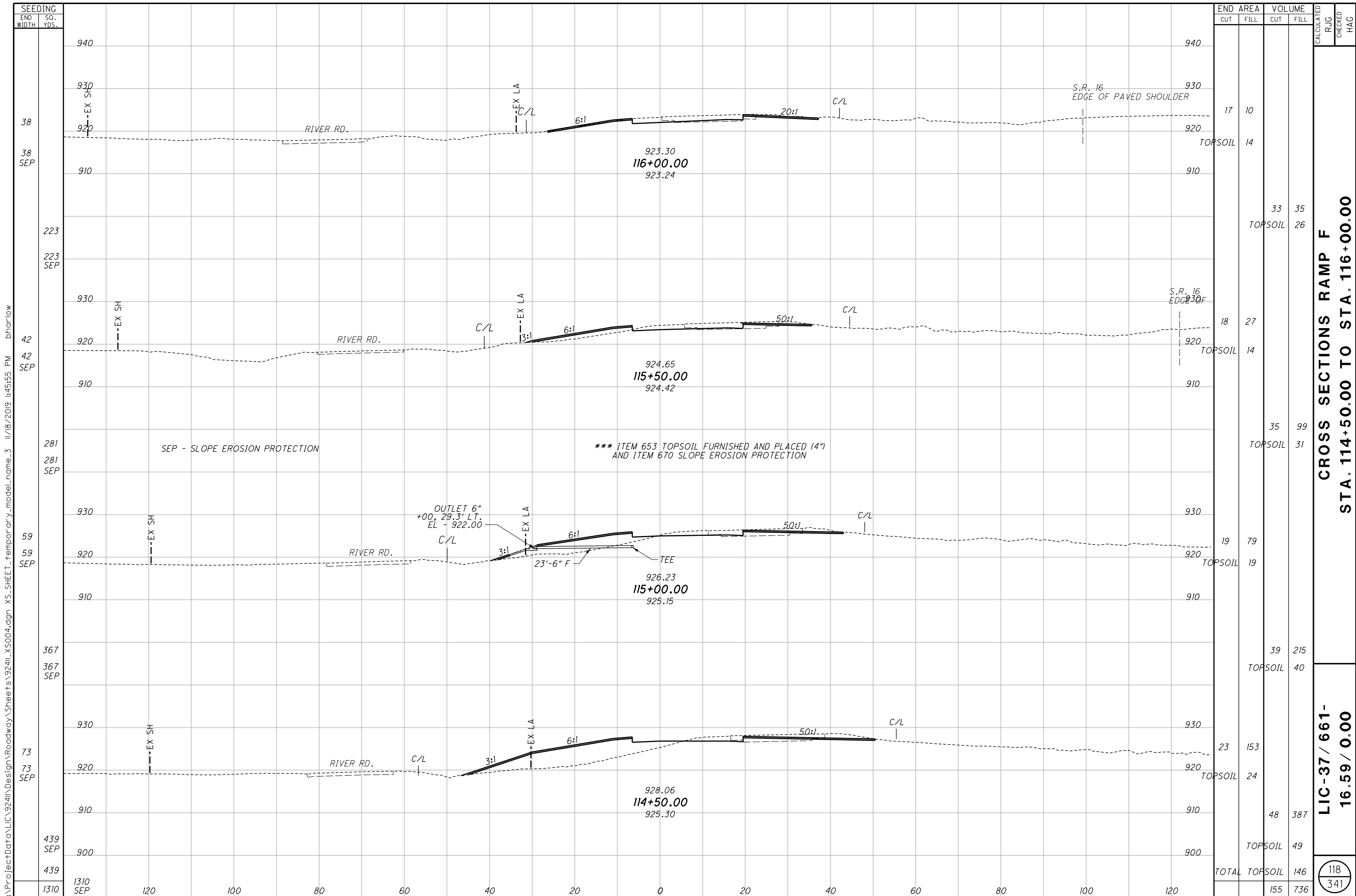


**CROSS SECTIONS RAMP F  
STA. 113+00.00 TO STA. 114+00.00**

**LIC-37 / 661-  
16.59 / 0.00**

CALCULATED  
R/JG  
CHECKED  
HAG

117  
341



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SEP - SLOPE EROSION PROTECTION

\*\*\* ITEM 653 TOPSOIL FURNISHED AND PLACED (4") AND ITEM 670 SLOPE EROSION PROTECTION

OUTLET 6" +00.29.3' LT. EL = 922.00

926.23  
115+00.00  
925.15

928.06  
114+50.00  
925.30

923.30  
116+00.00  
923.24

924.65  
115+50.00  
924.42

RIVER RD.

RIVER RD.

RIVER RD.

RIVER RD.

S.R. 16  
EDGE OF PAVED SHOULDER

S.R. 16  
EDGE OF PAVED SHOULDER

23'-6" F  
TEE

EX SH  
EX LA

EX SH  
EX LA

EX SH  
EX LA

EX SH  
EX LA

C/L  
6:1  
20:1

C/L  
3:1  
6:1  
50:1

C/L  
3:1  
6:1  
50:1

C/L  
3:1  
6:1  
50:1

TOPSOIL

TOPSOIL

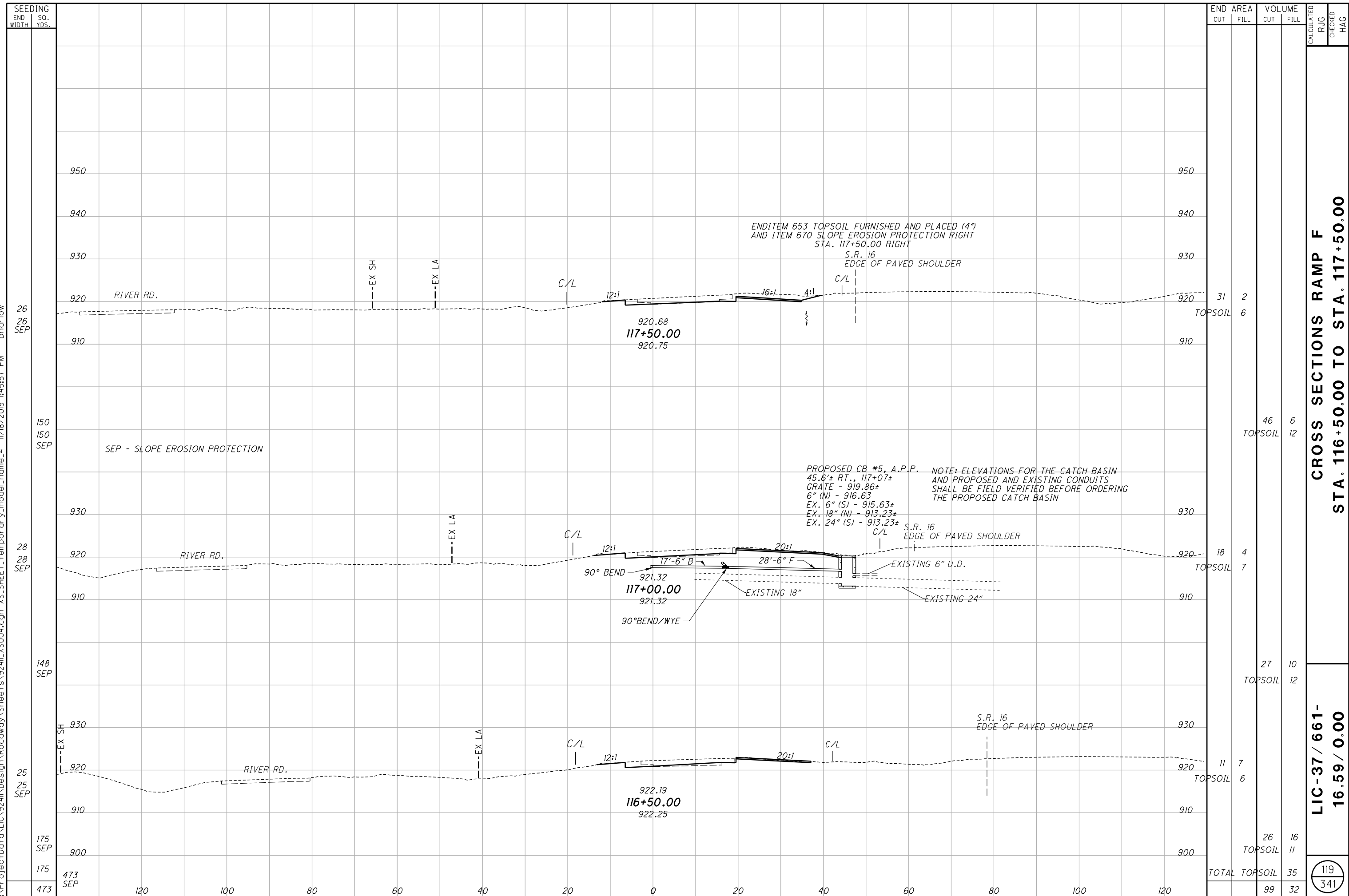
TOPSOIL

TOPSOIL

TOPSOIL

TOTAL

I:\ProjectData\LIC\9241\Roadway\Sheets\9241\_X5004.dgn XS\_SHEET\_temporary\_model\_name\_4 11/18/2019 1:45:57 PM bharlow



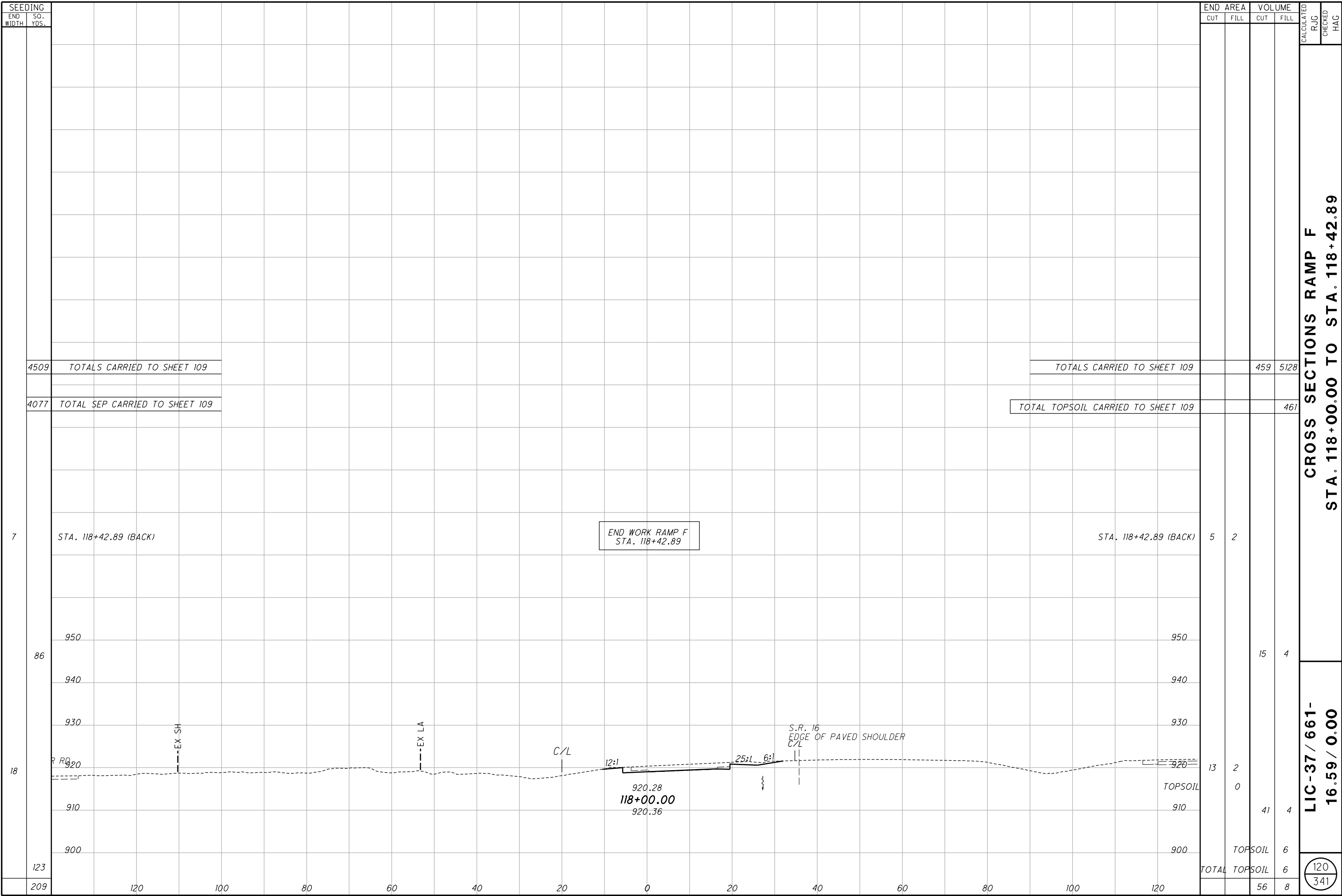
SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	R/JG	CHECKED
26	26	31	2	46	6		
26	26	31	2	46	6		
150	150						
28	28	18	4	27	10		
28	28	18	4	27	10		
148	148						
25	25	11	7				
25	25	11	7				
175	175			26	16		
175	175			26	16		
473	473	TOTAL		99	32		
473	473	TOTAL		99	32		

**CROSS SECTIONS RAMP F**  
**STA. 116+50.00 TO STA. 117+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

119  
 341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X5004.dgn XS\_SHEET\_temporary\_model\_name\_5 2/4/2020 4:46:29 PM hgilbert



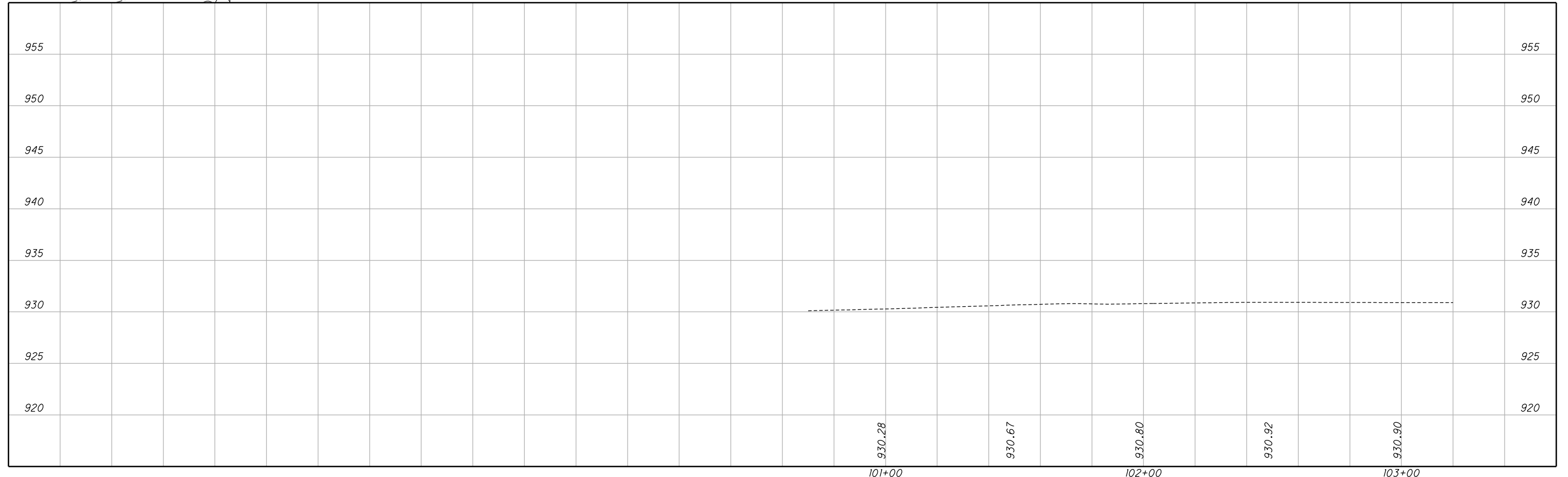
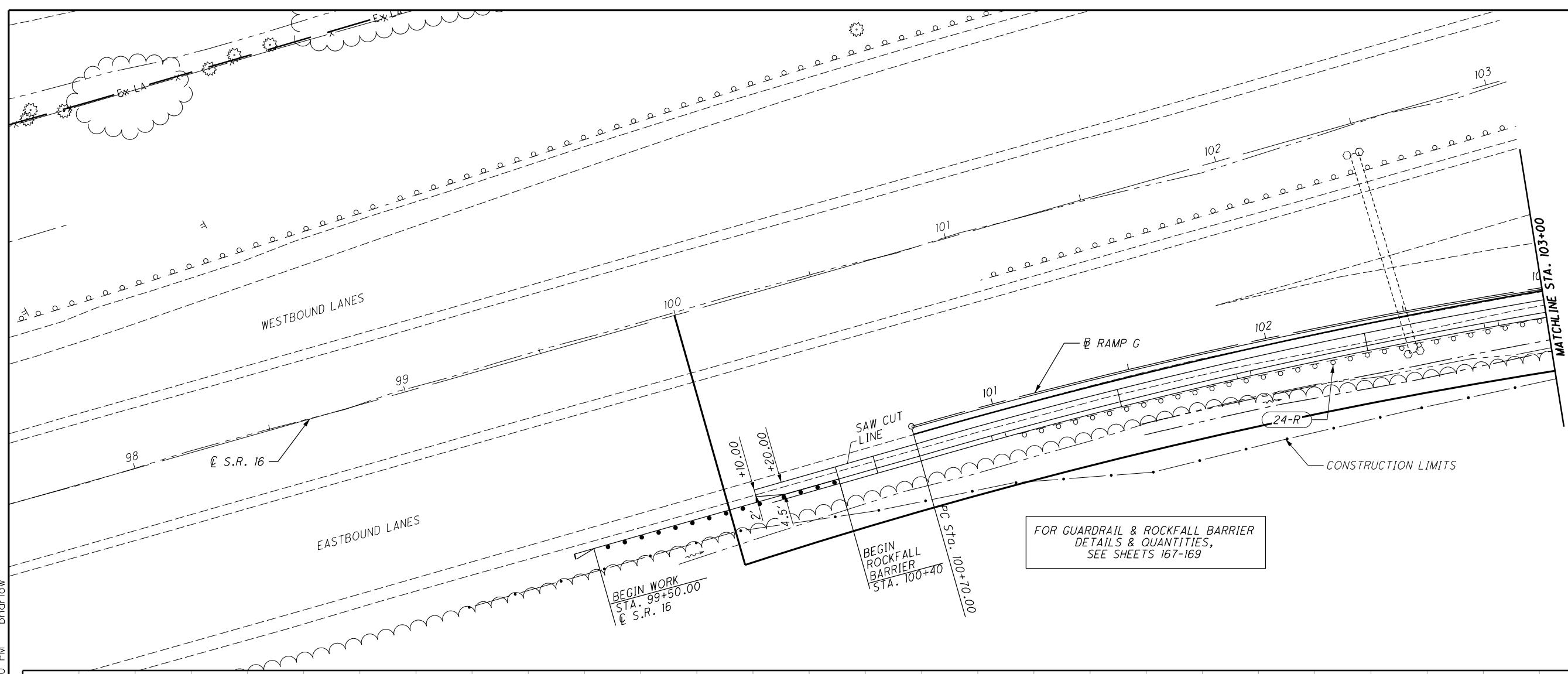
**CROSS SECTIONS RAMP F  
STA. 118+00.00 TO STA. 118+42.89**

**LIC-37 / 661-  
16.59 / 0.00**

120  
341



I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_LP016.dgn Sheet 11/18/2019 1:46:00 PM bharlow

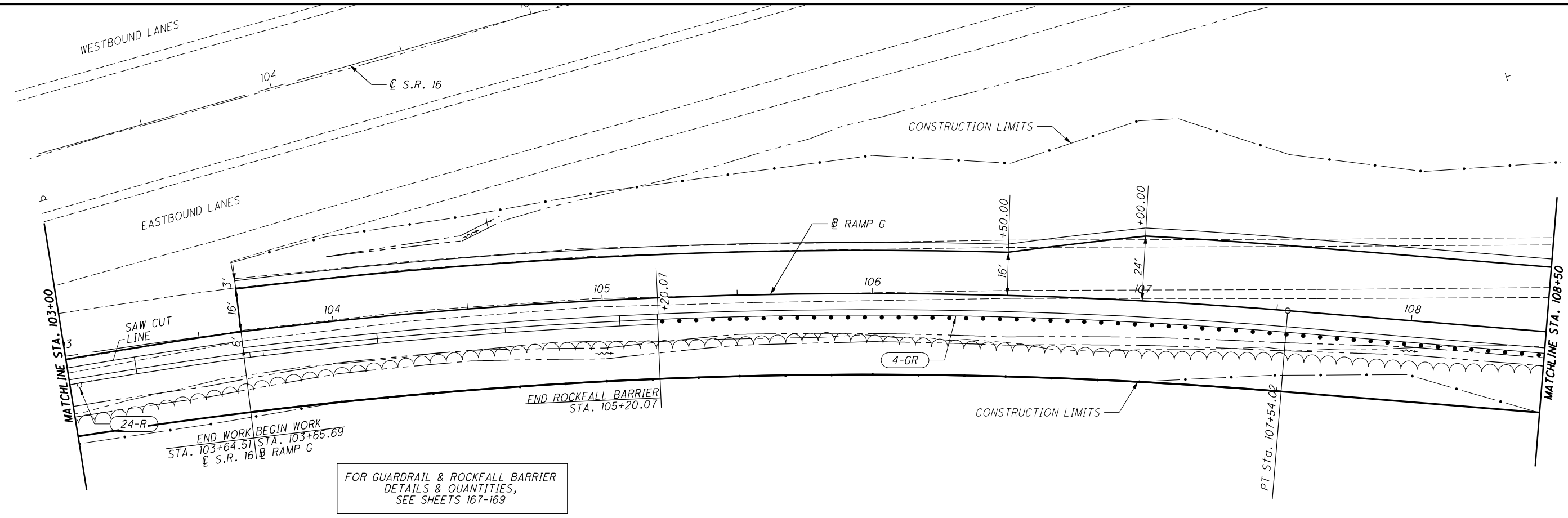


LIC-37 / 661-  
16.59 / 0.00

PLAN AND PROFILE - S.R. 16 (RAMP G)  
DECELERATION) STA. 99+50 TO STA. 103+00

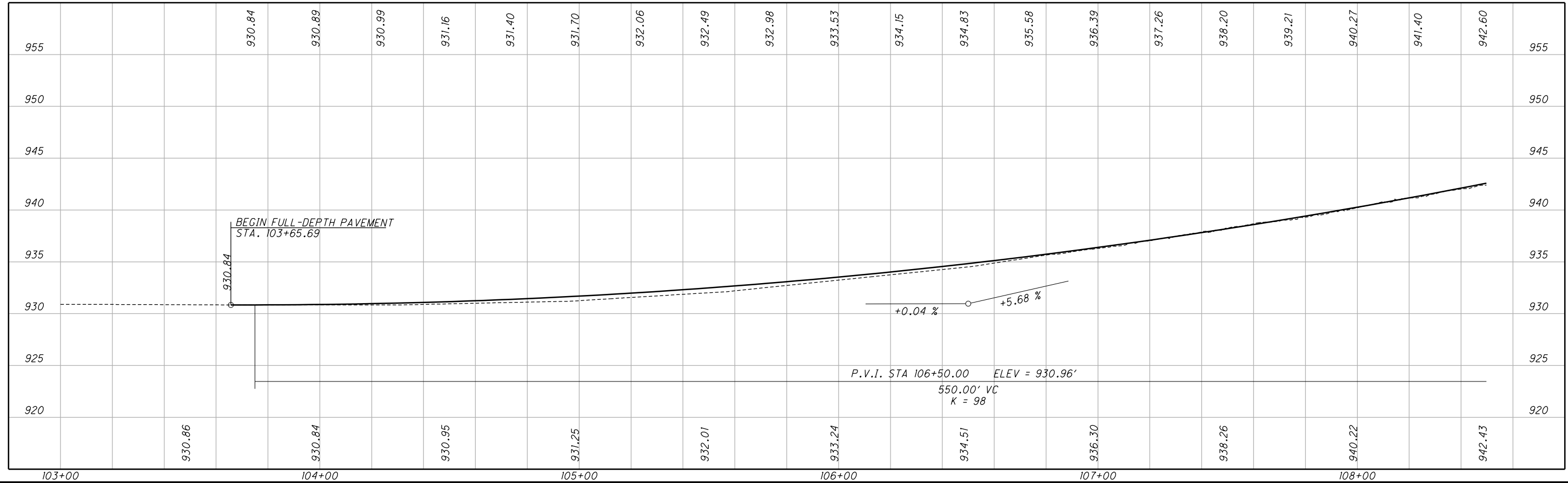
121  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_LP009.dgn\_Sheet 11/18/2019 4:46:01PM bharlow



END WORK STA. 103+64.51  
BEGIN WORK STA. 103+65.69  
S.R. 16 RAMP G

FOR GUARDRAIL & ROCKFALL BARRIER  
DETAILS & QUANTITIES,  
SEE SHEETS 167-169



PLAN AND PROFILE - S.R. 16 & RAMP G  
STA. 103+00 TO STA. 108+50

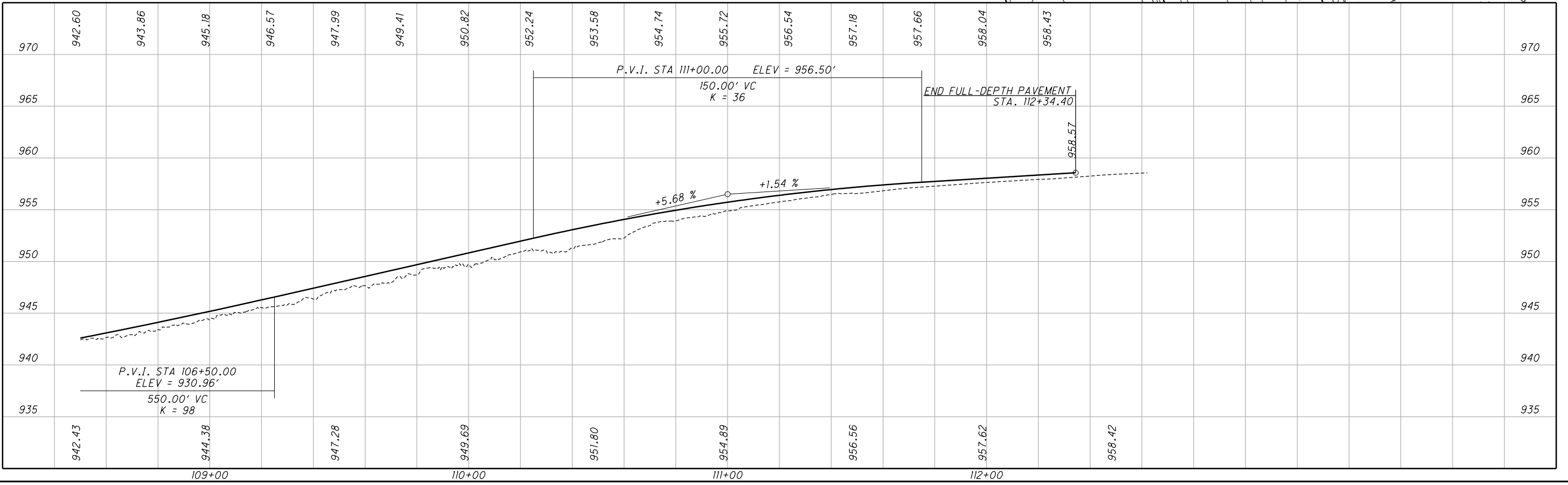
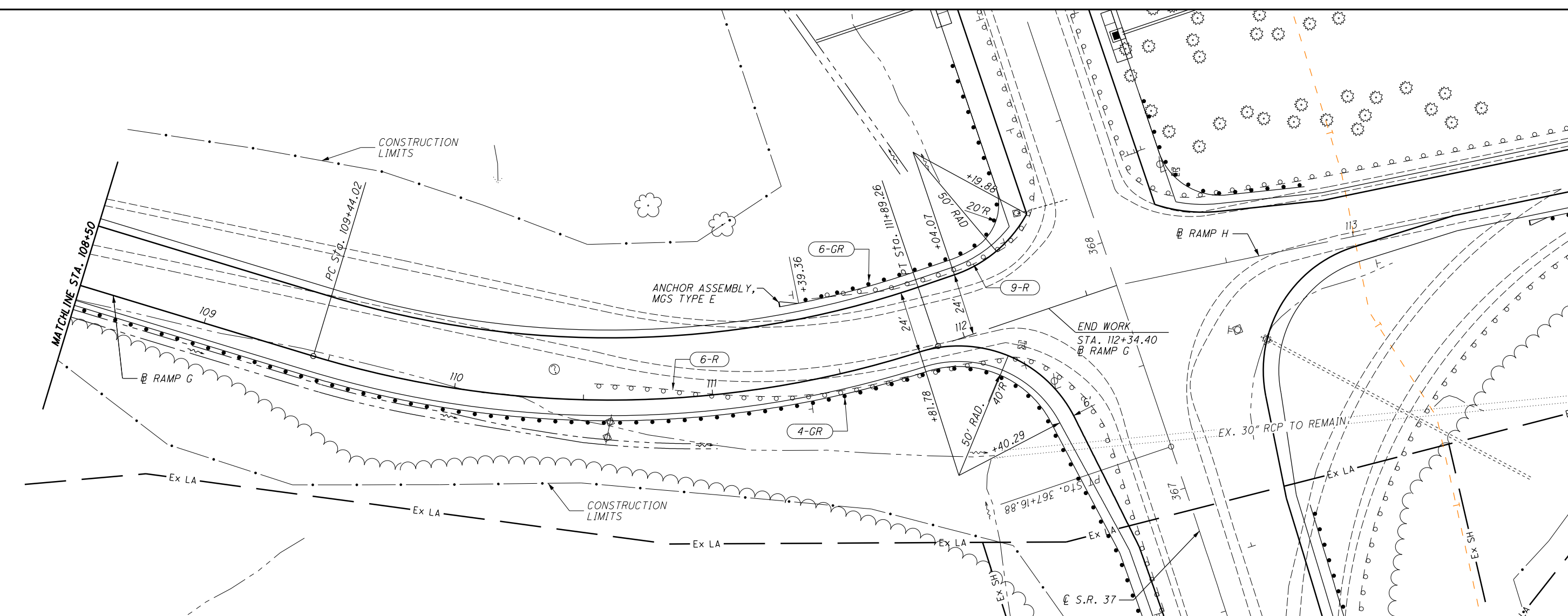
LIC-37 / 661-  
16.59 / 0.00

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 HORIZONTAL SCALE IN FEET

CALCULATED BRH  
 CHECKED HAG

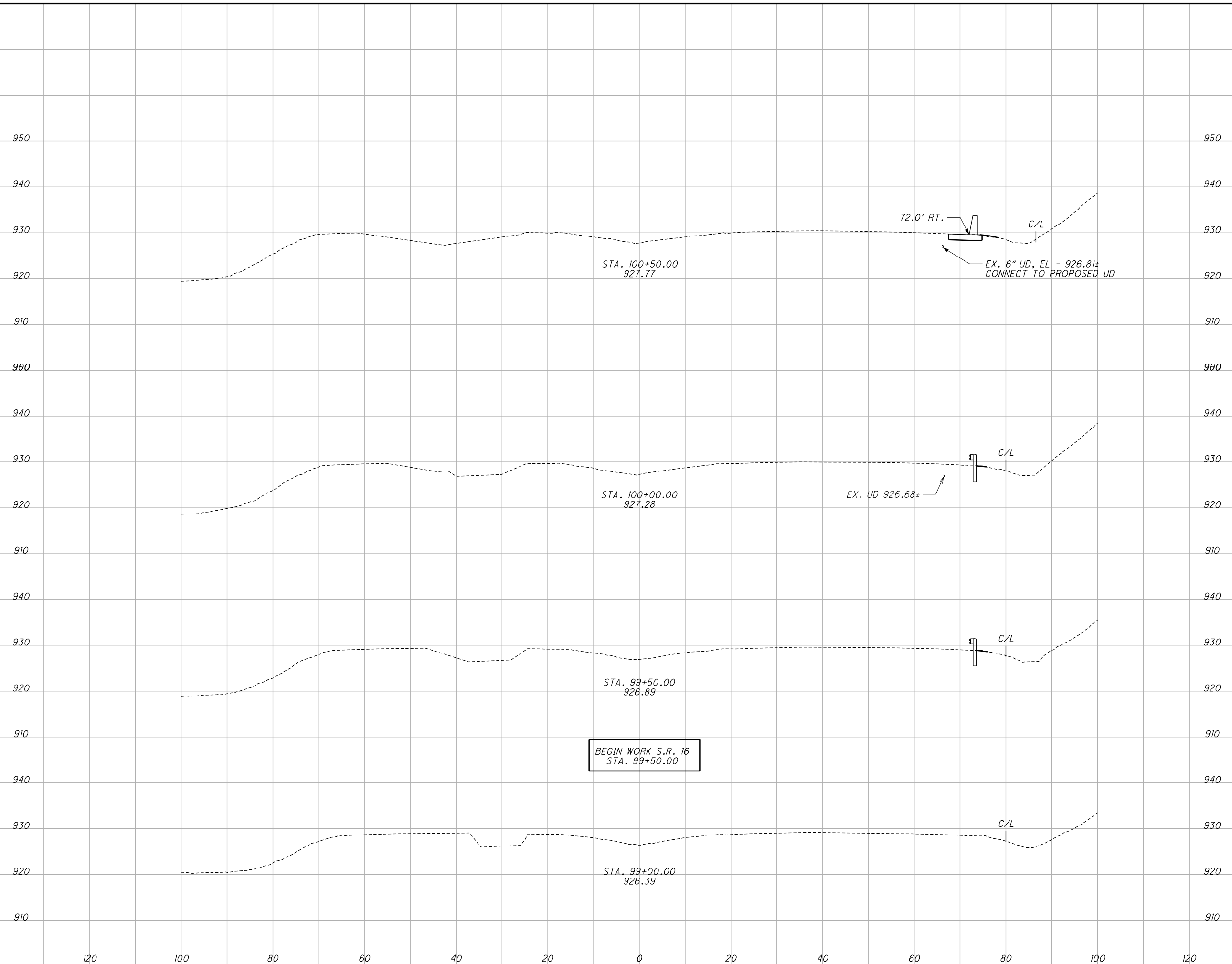


**PLAN AND PROFILE - RAMP G**  
**STA. 108+50 TO STA. 112+34.40**

**LIC-37 / 661-**  
**16.59 / 0.00**

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SEEDING	
END WIDTH	SO. YDS.
29	
120	
100	
80	
60	
40	
20	
0	
20	
40	
60	
80	
100	
120	

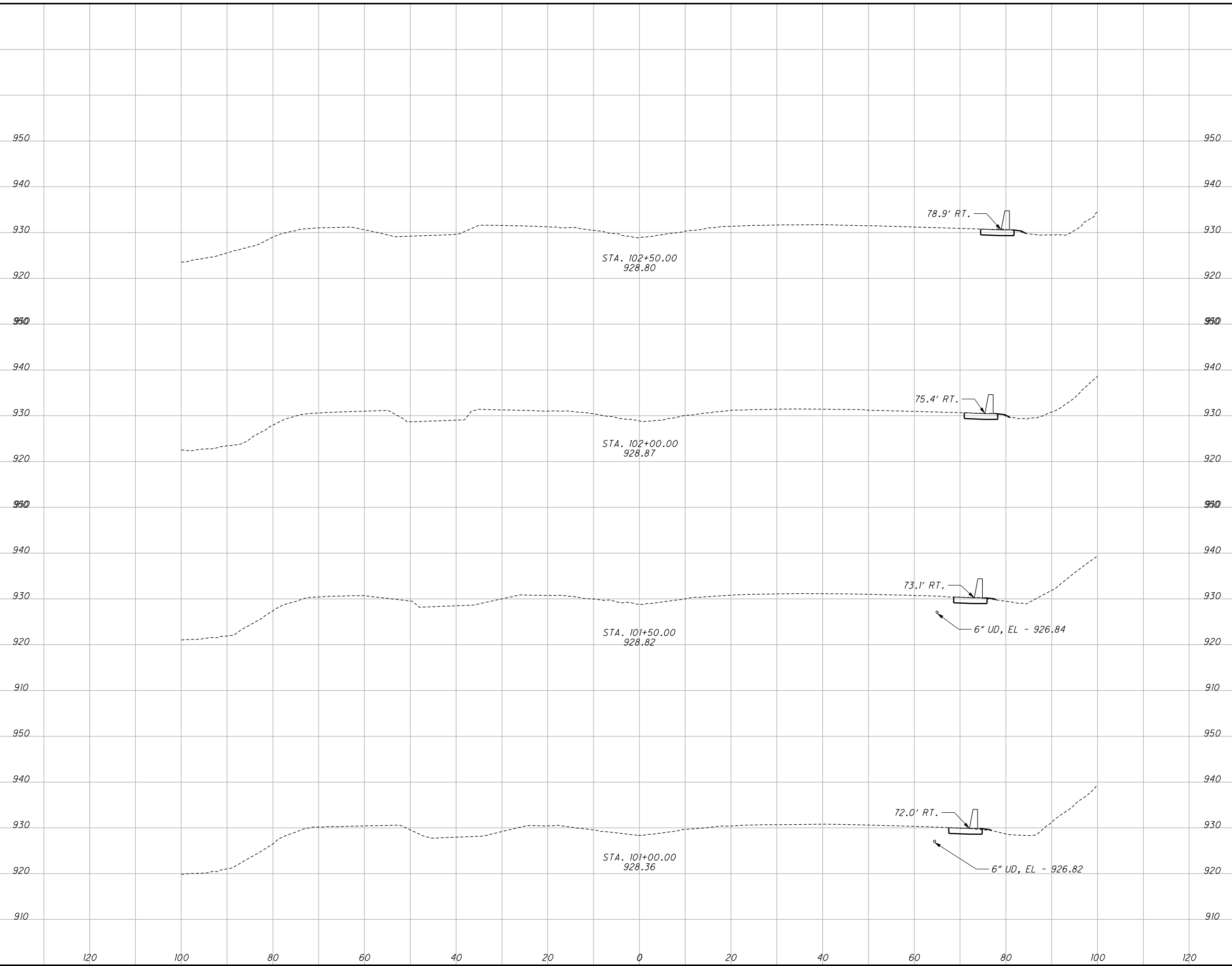


END AREA		VOLUME	
CUT	FILL	CUT	FILL
5	1	5	1
0	0	0	0
0	0	0	0
0	0	0	0

**CROSS SECTIONS S.R. 16**  
**STA. 99+00.00 TO STA. 100+50.00**  
**LIC-37 / 661-**  
**16.59 / 0.00**  
 CALCULATED RJG  
 CHECKED HAG  
 124  
 341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_XS002.dgn XS\_SHEET\_temporary\_model\_name\_2 2/4/2020 4:50:15 PM hglberl

SEEDING	
END WIDTH	SO. YDS.
53	17
2	2
2	2
2	2
12	12
2	2
2	2
2	2
12	12
2	2
2	2
2	2
17	17



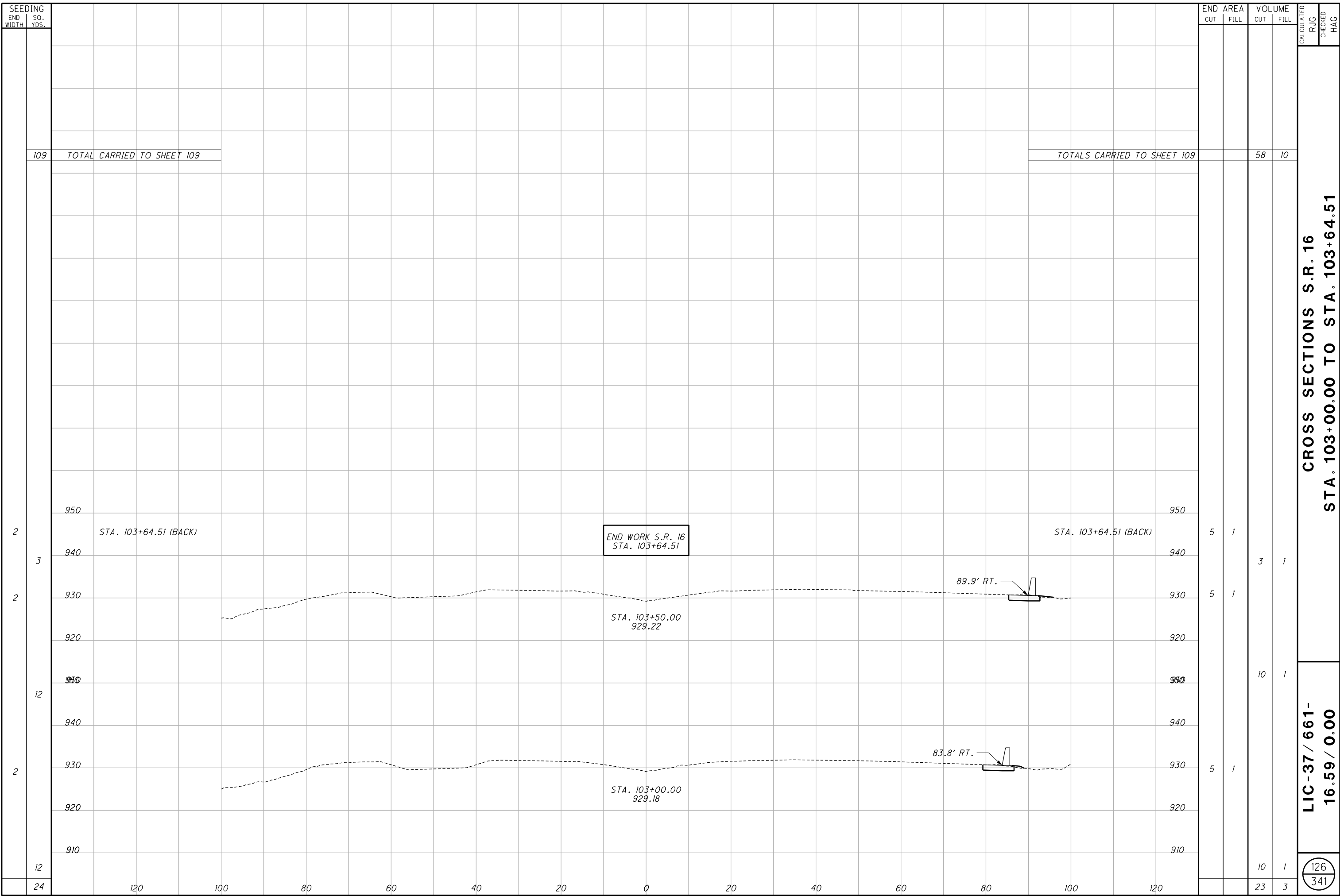
END AREA		VOLUME	
CUT	FILL	CUT	FILL
5	1	10	2
5	1	10	2
5	1	5	1
0	0	5	1
5	1	30	6

**CROSS SECTIONS S.R. 16**  
**STA. 101+00.00 TO STA. 102+50.00**

LIC-37 / 661-  
 16.59 / 0.00

125  
 341

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SEEDING	
END WIDTH	SO. YDS.
109	TOTAL CARRIED TO SHEET 109

TOTALS CARRIED TO SHEET 109	
58	10

END AREA		VOLUME		CALCULATED R/J	CHECKED H/G
CUT	FILL	CUT	FILL		
5	1	3	1		
5	1	10	1		
5	1	10	1		
		23	3		

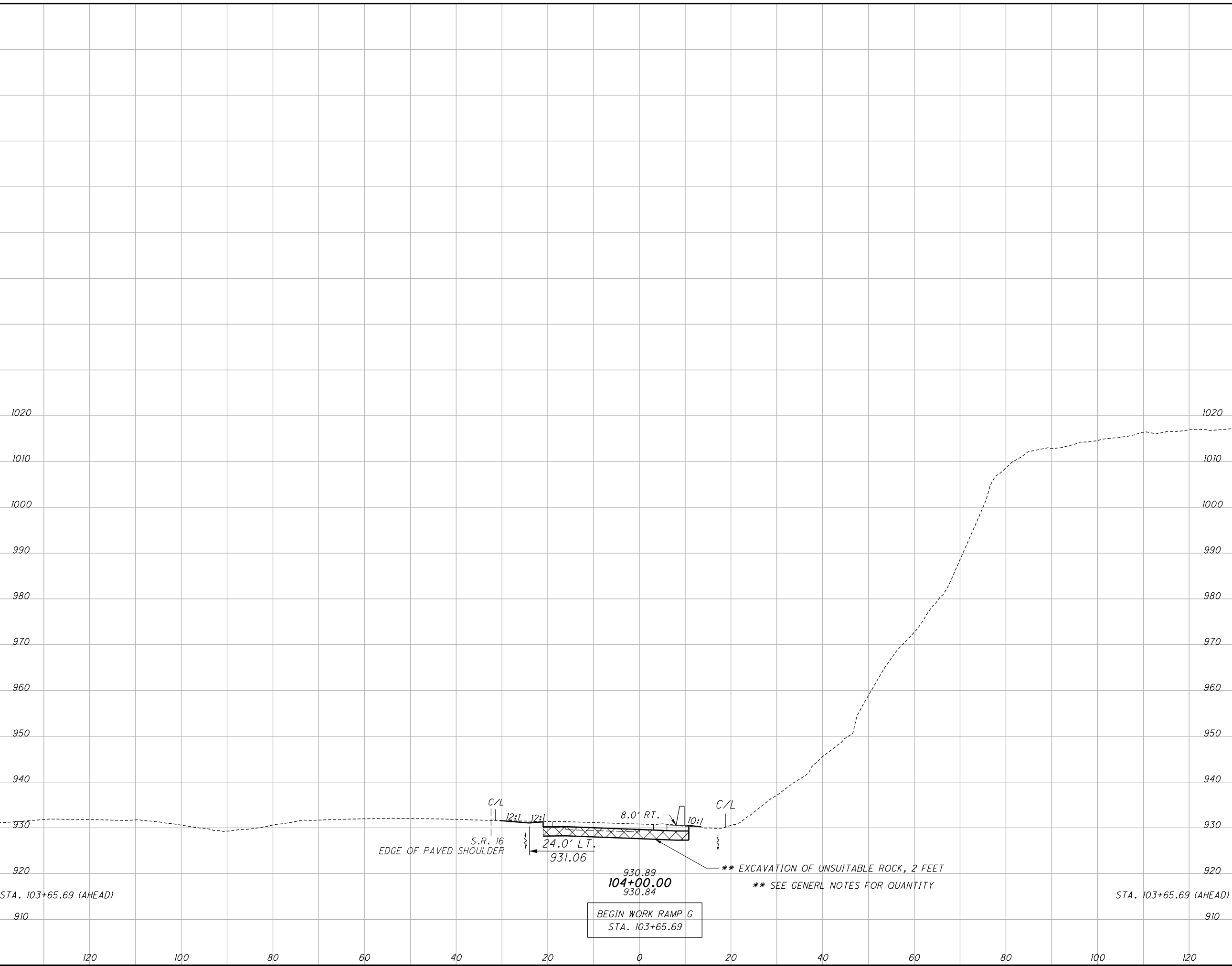
**CROSS SECTIONS S.R. 16**  
**STA. 103+00.00 TO STA. 103+64.51**

**LIC-37 / 661-**  
**16.59 / 0.00**

126  
341

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SEEDING	
END WIDTH	SO. YDS.
16	61
16	61
61	120
61	100
61	80
61	60
61	40
61	20
61	0
61	20
61	40
61	60
61	80
61	100
61	120



END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	69	15	87
11	68		
		15	87

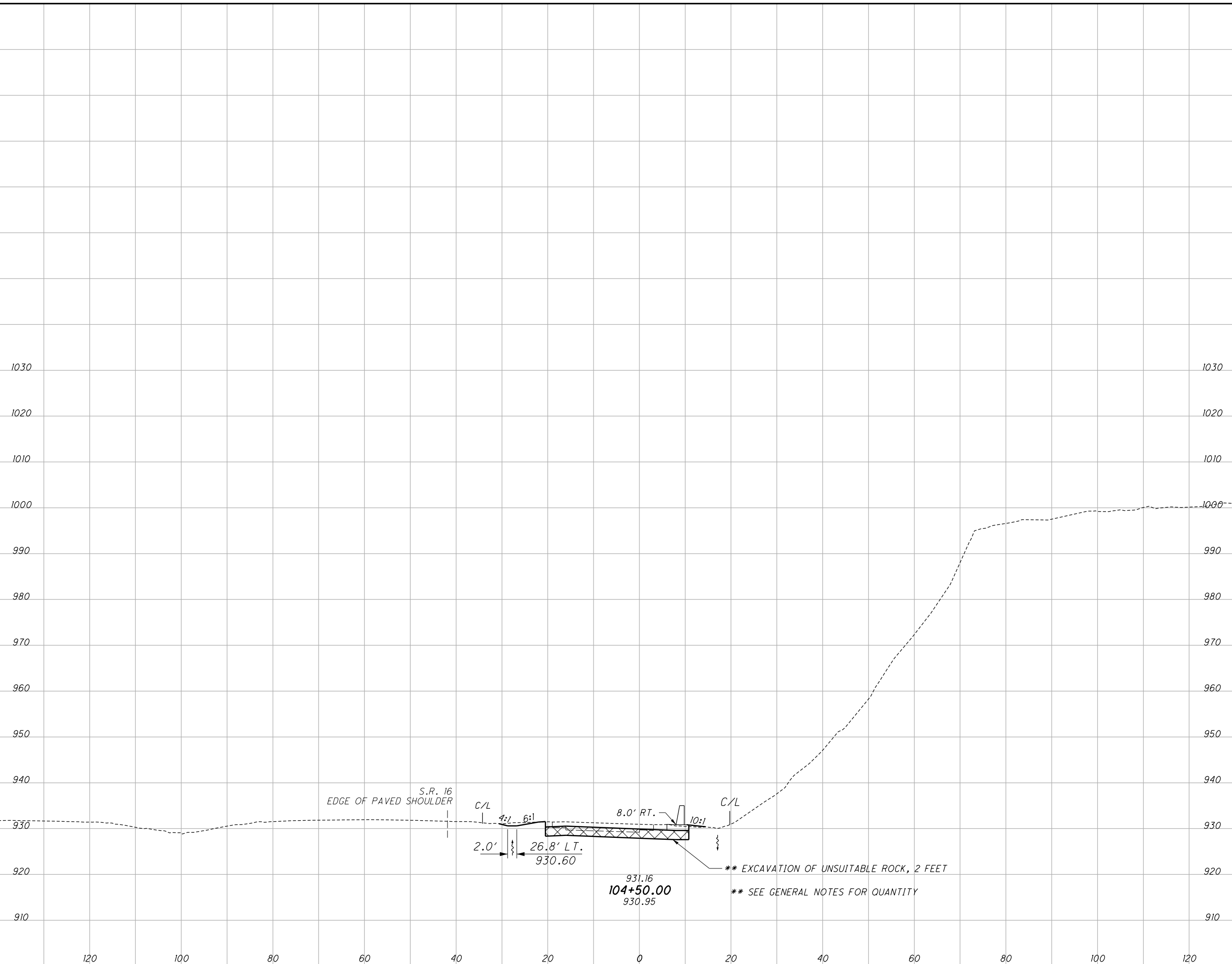
**CROSS SECTIONS RAMP G**  
**STA. 103+65.69 TO STA. 104+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

127  
341

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SEEDING	
END WIDTH	SO. YDS.
114	
114	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
9	68	20	127		
		20	127		

**CROSS SECTIONS RAMP G**  
**STA. 104+50.00**

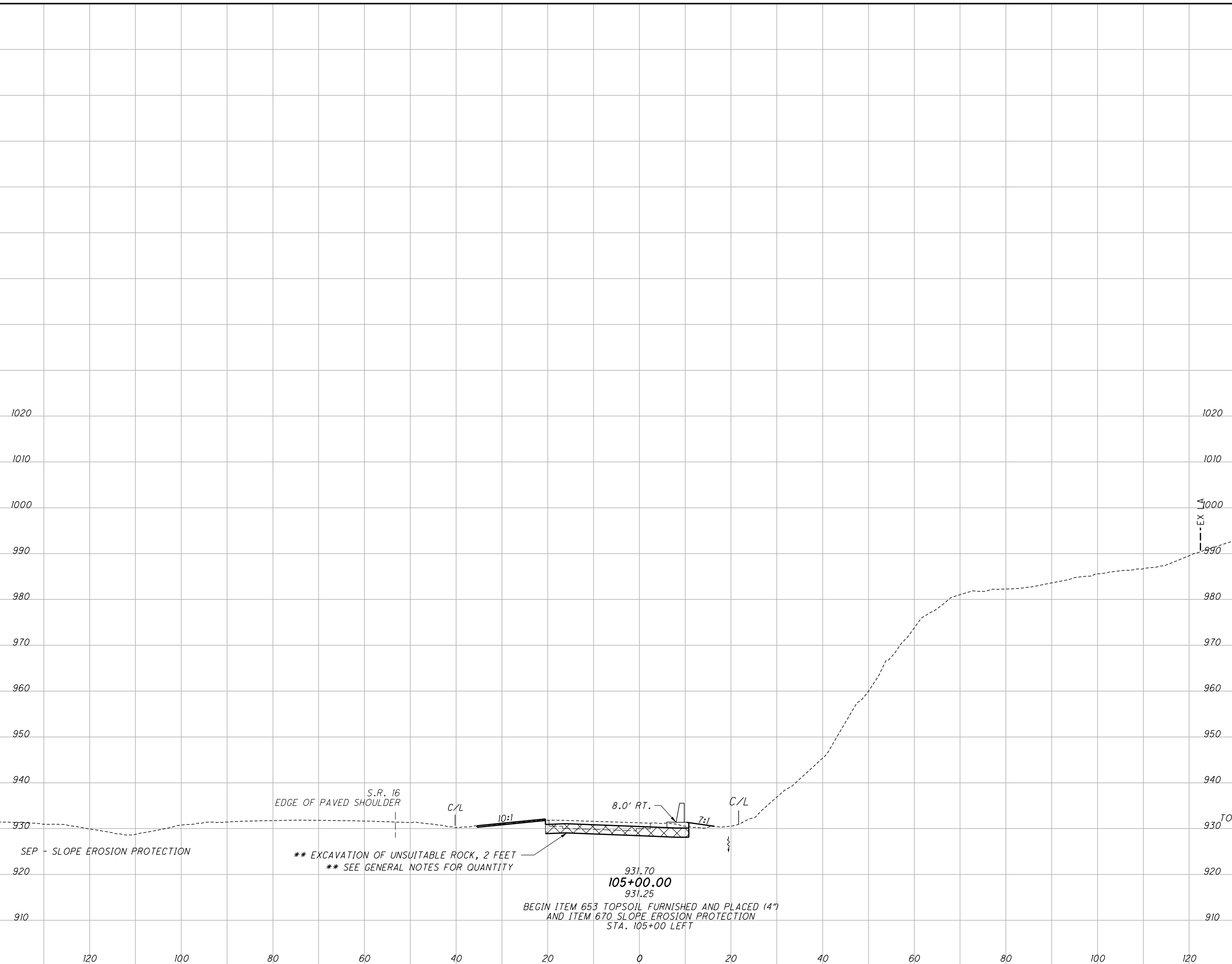
**LIC-37 / 661-**  
**16.59 / 0.00**

128  
341



I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X5005.dgn XS\_SHEET\_temporary\_model\_name\_3 11/18/2019 1:46:09 PM bncrlow

SEEDING	
END WIDTH	SO. YDS.
39	16
178	178



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
7	70	15	128		
TOPSOIL	5	TOPSOIL	5		
TOTAL TOPSOIL	5	TOTAL TOPSOIL	5		

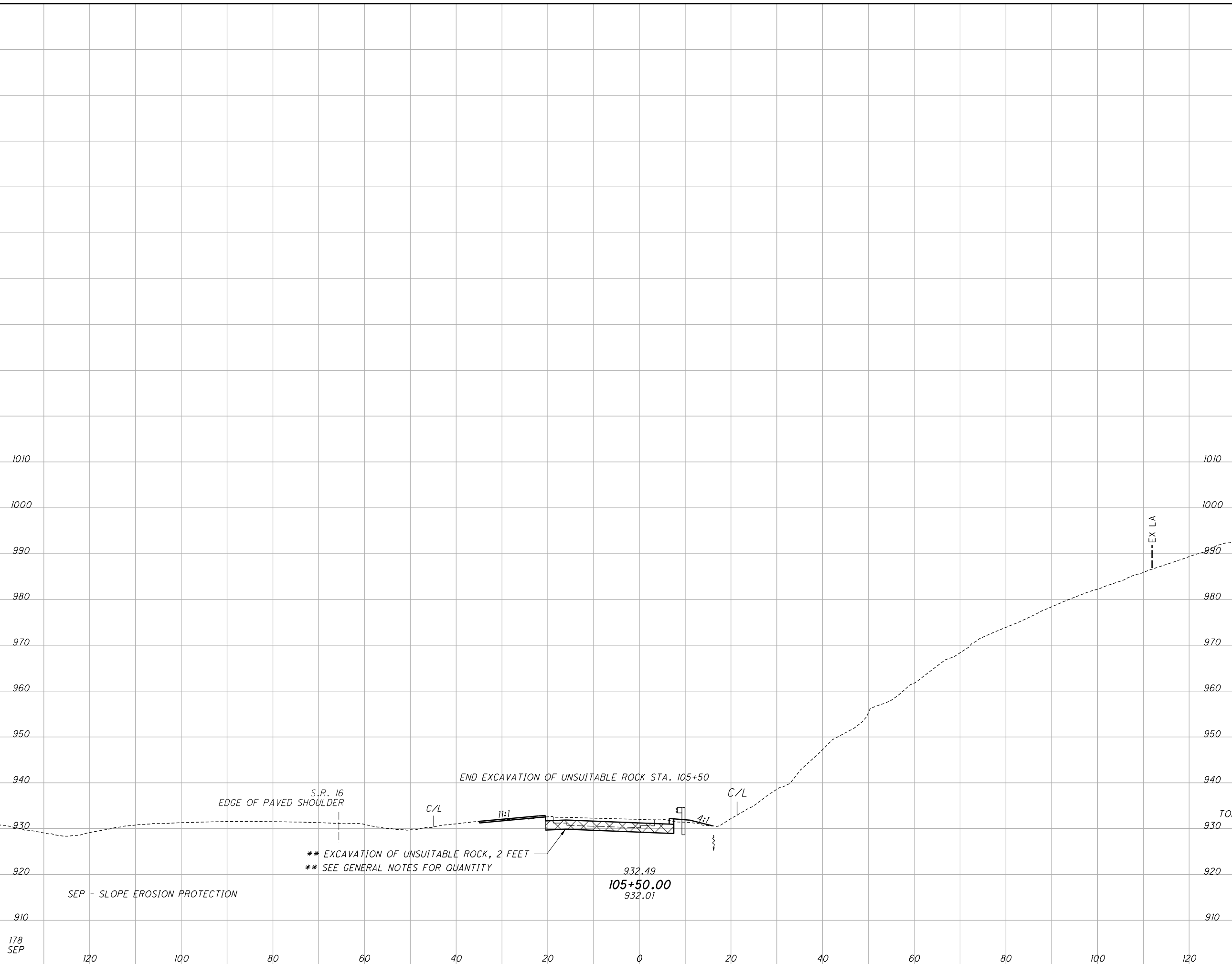
**LIC-37 / 661-  
16.59 / 0.00**

**CROSS SECTIONS RAMP G  
STA. 105+00.00**

129  
341

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SEEDING	
END WIDTH	SO. YDS.
38 16 SEP	
178 SEP	214
178 SEP	214
214	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
6	62		
TOPSOIL	5		
		12	123
		TOPSOIL	10
		TOPSOIL	10
TOTAL		12	123

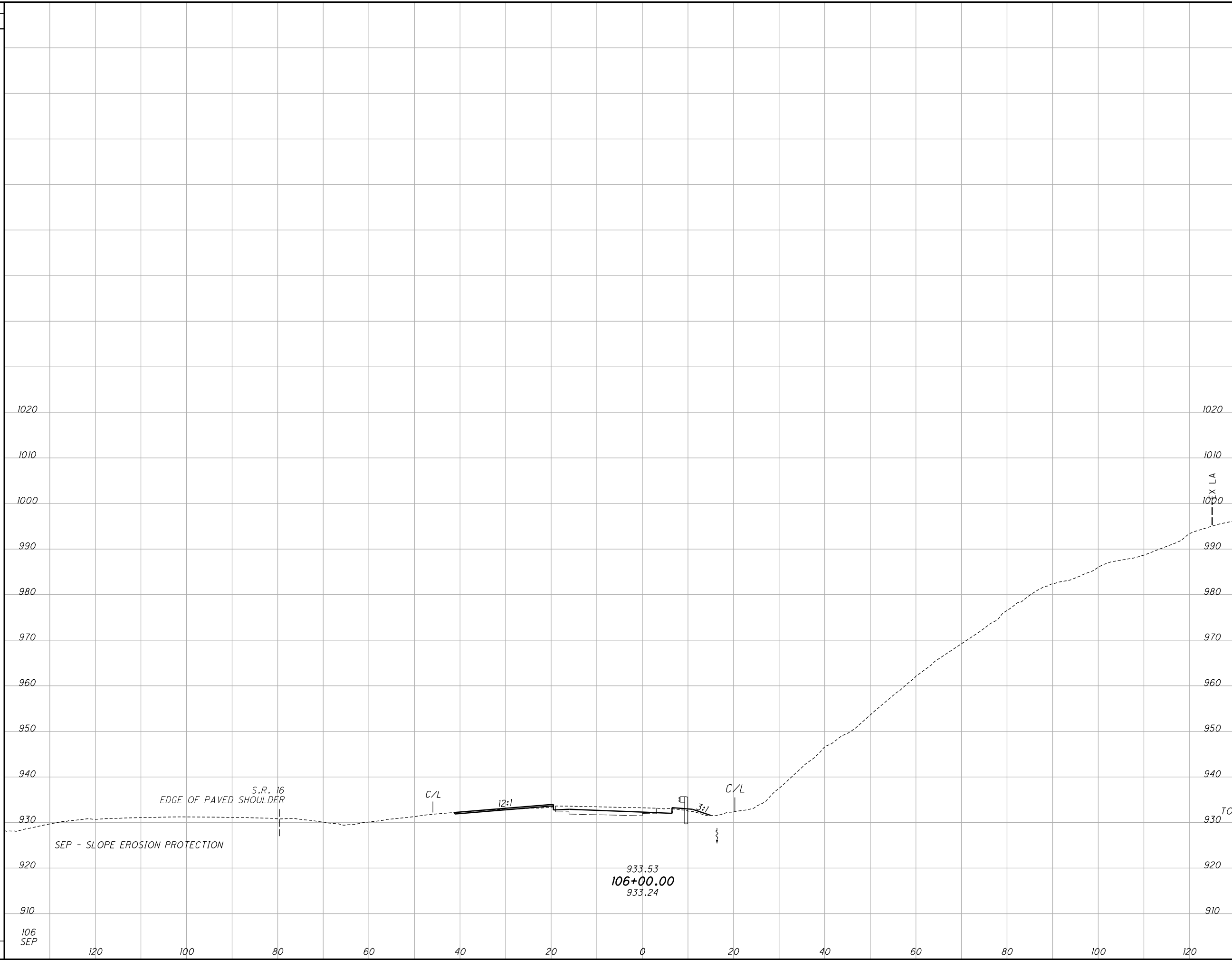
**CROSS SECTIONS RAMP G**  
**STA. 105+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

130  
341

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SEEDING	
END WIDTH	SO. YDS.
36	22
106	SEP
206	106
206	SEP



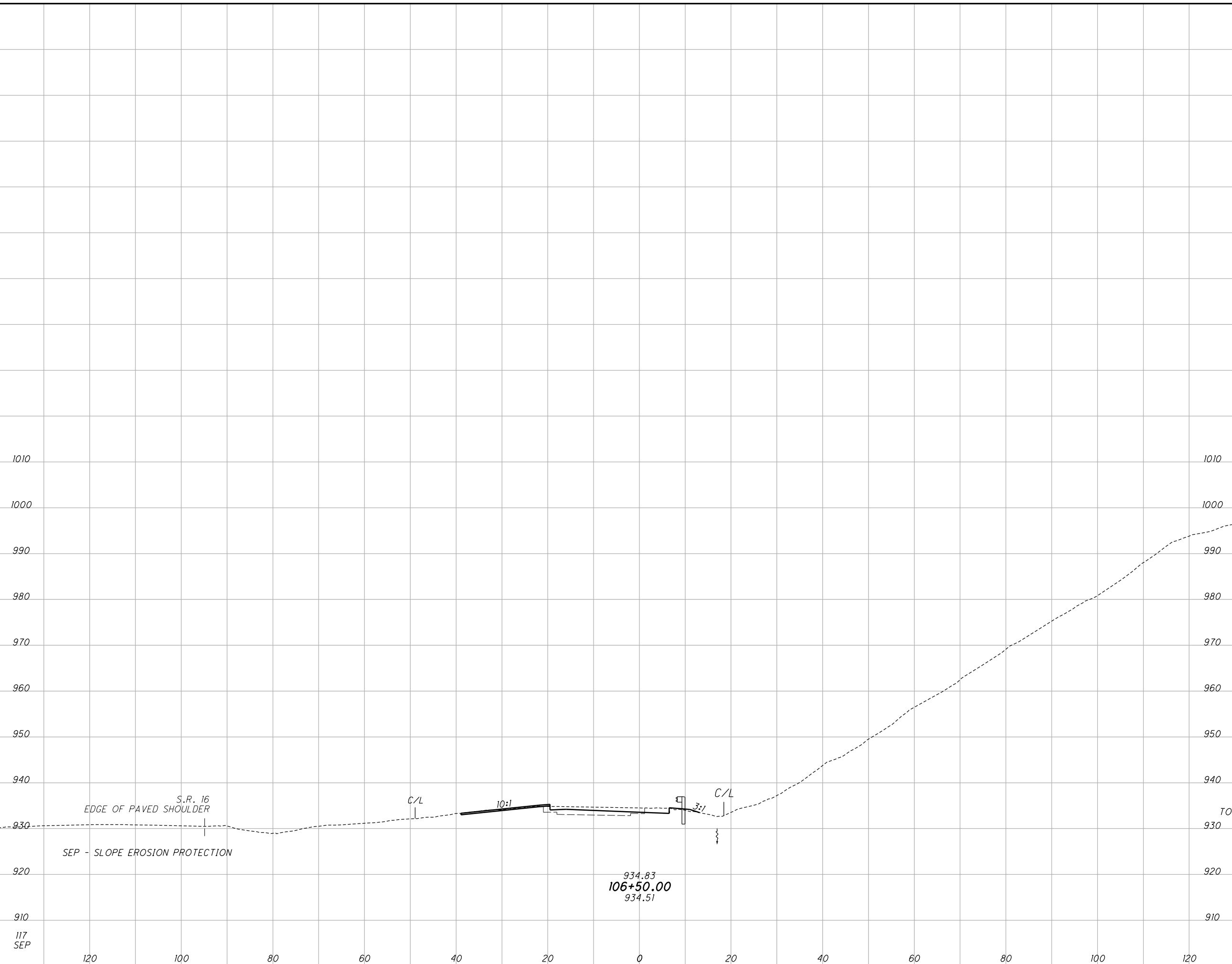
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
9	21	14	77		
TOPSOIL		TOPSOIL			
TOTAL TOPSOIL		TOTAL TOPSOIL			
				131	341

**CROSS SECTIONS RAMP G**  
**STA. 106+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

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SEEDING	
END WIDTH	SO. YDS.
36	20
200	117
200	117



END AREA		VOLUME	
CUT	FILL	CUT	FILL
11	22	19	40
TOPSOIL	7	TOPSOIL	13
		TOTAL TOPSOIL	13
		19	40

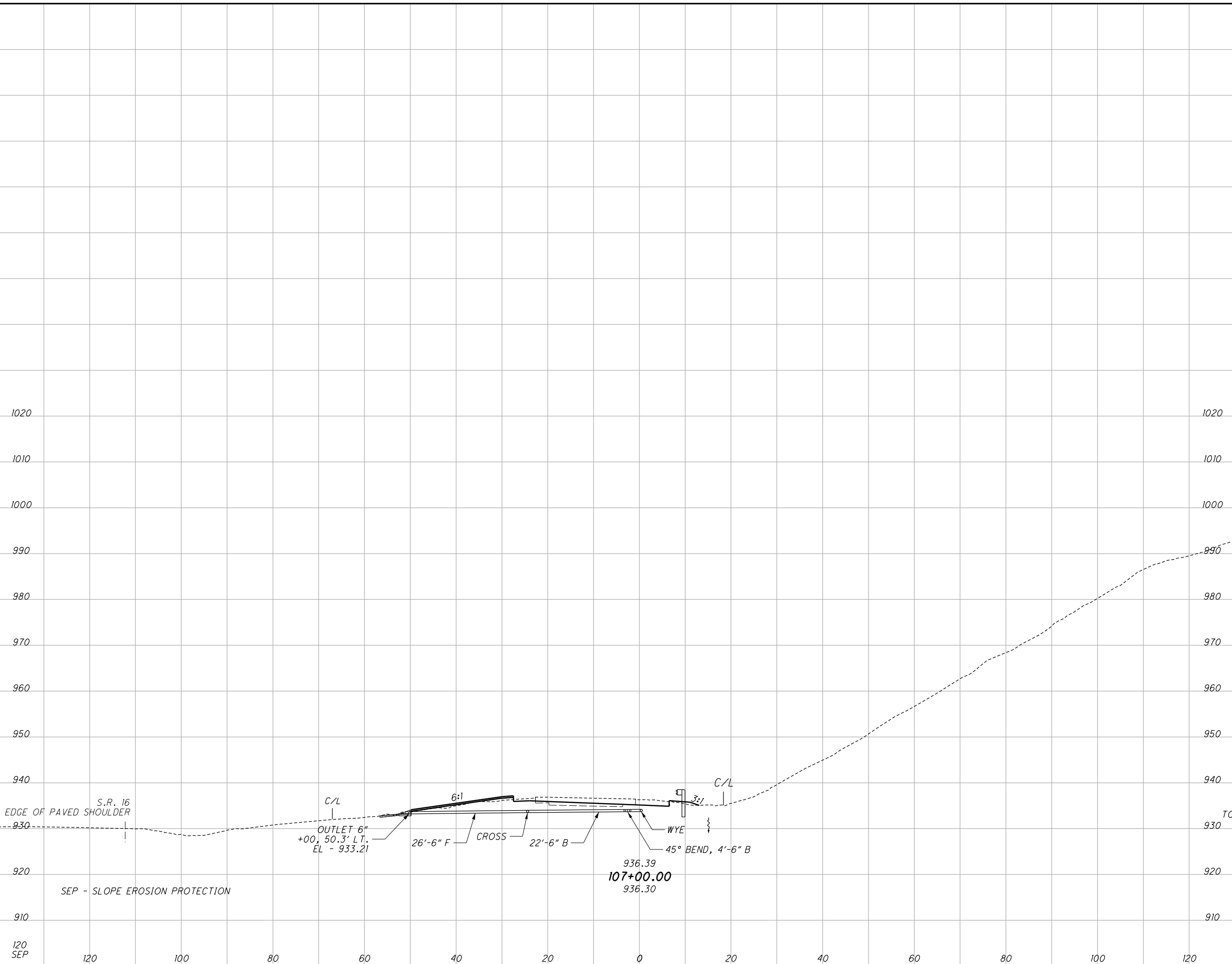
**CROSS SECTIONS RAMP G**  
**STA. 106 +50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

(132 / 341)

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SEEDING	
END WIDTH	SO. YDS.
31	
23 SEP	
120 SEP	
187	
187	120 SEP



END AREA		VOLUME	
CUT	FILL	CUT	FILL
16	18		
TOPSOIL	7		
		25	37
		TOPSOIL	13
		TOTAL TOPSOIL	13
		25	37

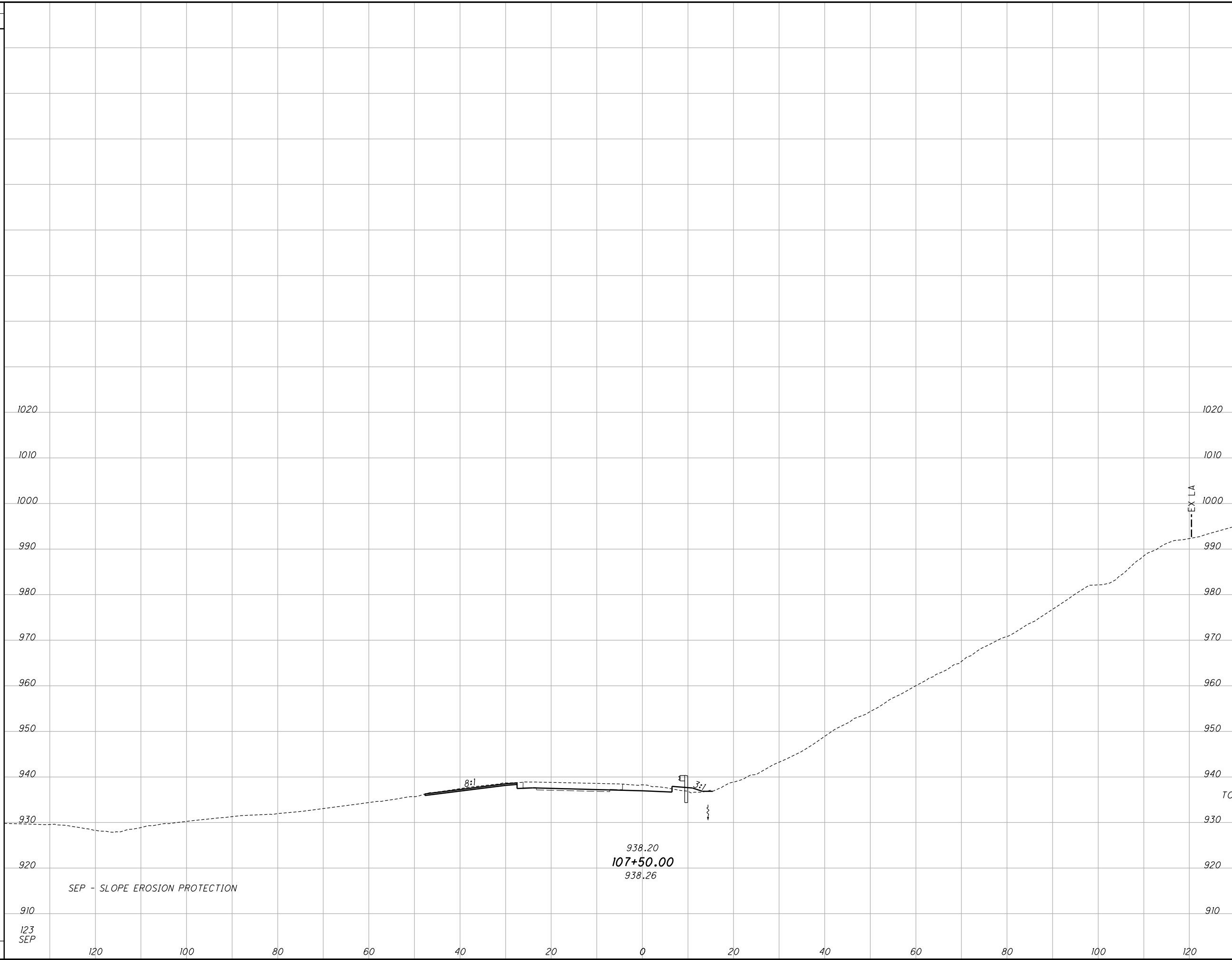
**CROSS SECTIONS RAMP G**  
**STA. 107+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

133  
341

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SEEDING	
END WIDTH	SO. YDS.
32	
21	SEP
123	SEP
179	123 SEP
179	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
31	11				
TOPSOIL	7				
		44	27		
		TOPSOIL	13		
		TOTAL TOPSOIL	13		
		44	27		

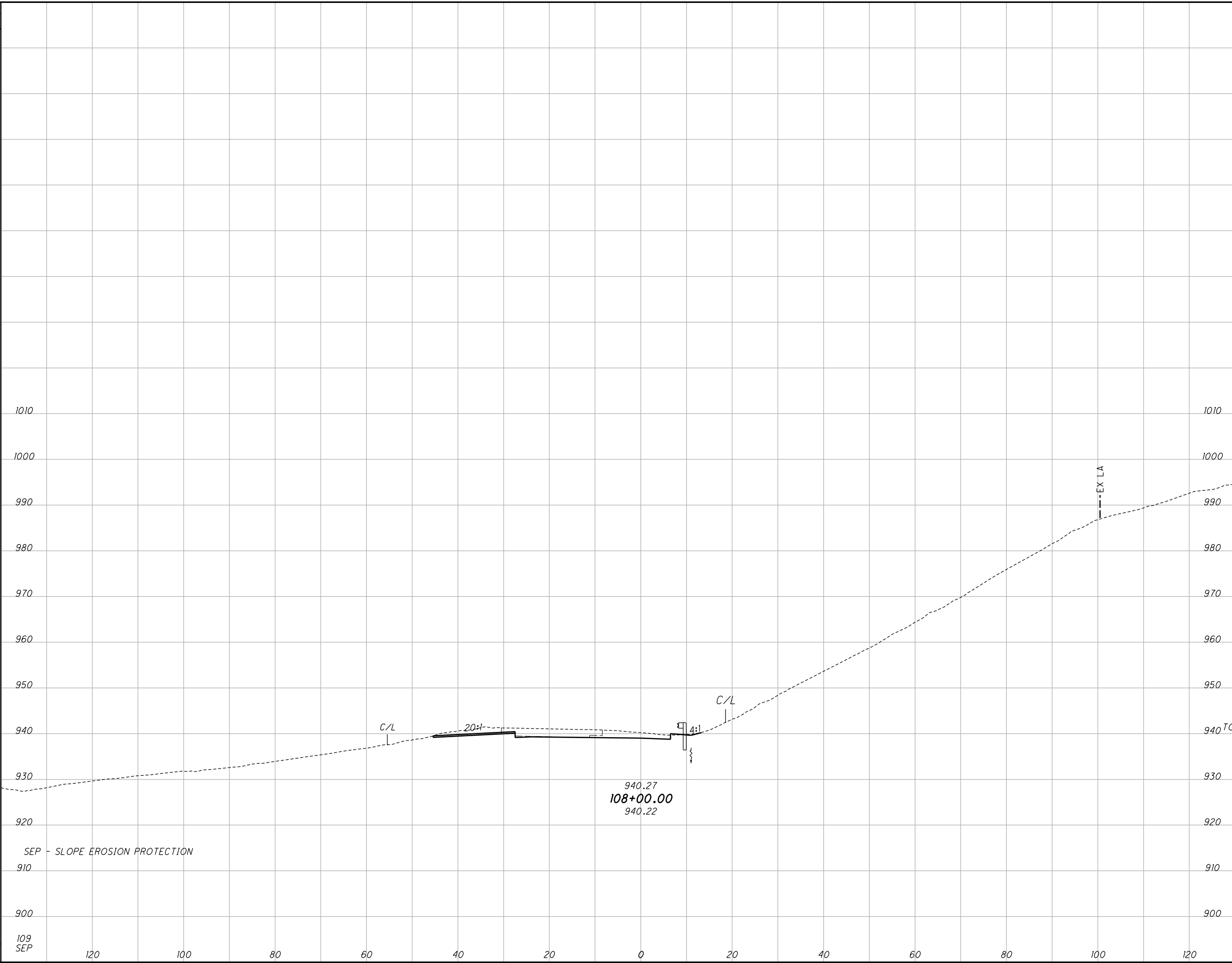
**CROSS SECTIONS RAMP G**  
**STA. 107+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

134  
341

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SEEDING	
END WIDTH	SO. YDS.
26	18 SEP
109	109 SEP
162	109 SEP
162	162



END AREA		VOLUME	
CUT	FILL	CUT	FILL
35	2		
62	6		
		62	12
		12	12
		12	12
		62	12

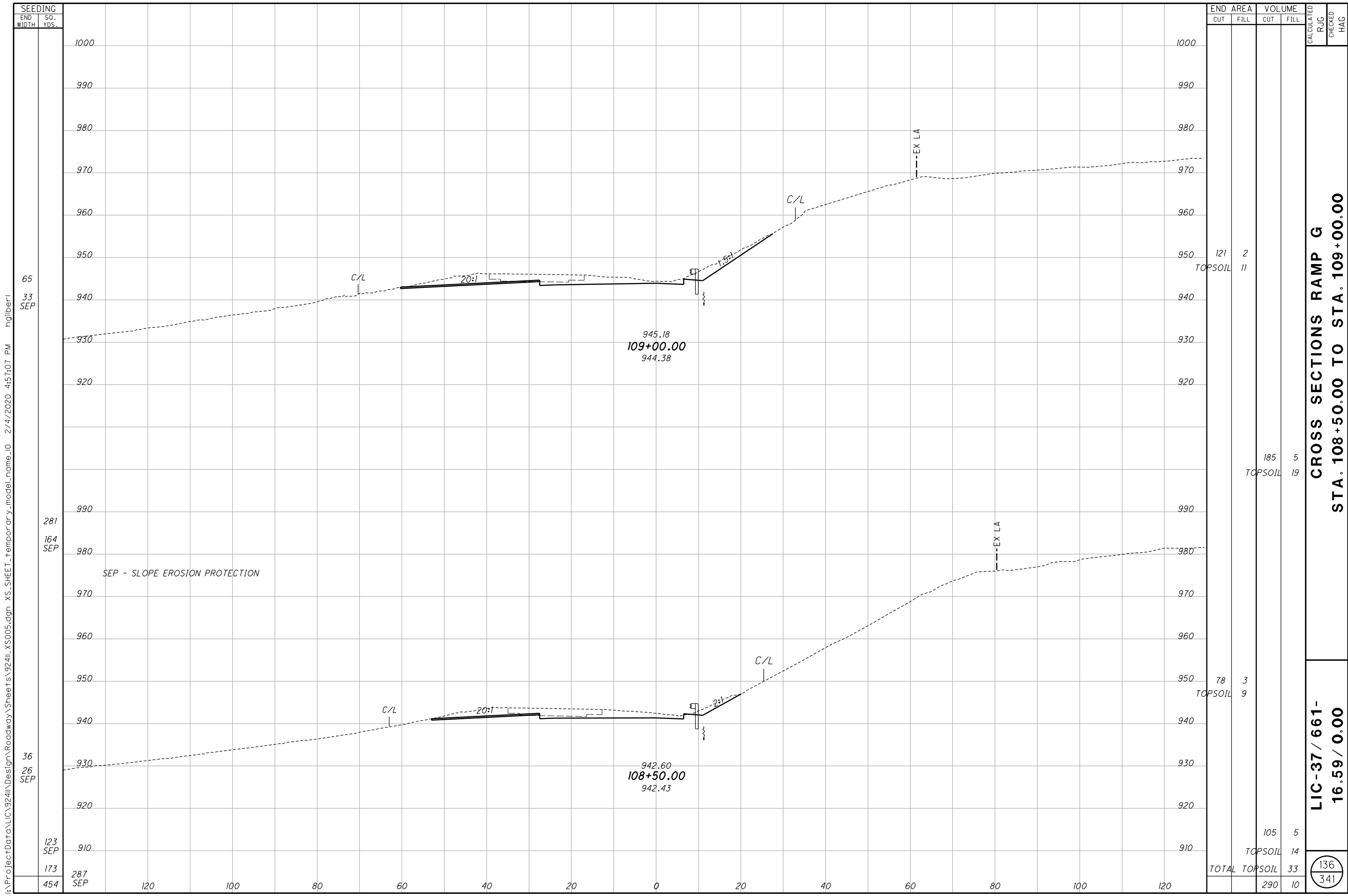
**CROSS SECTIONS RAMP G**  
**STA. 108+00.00**

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**LIC-37 / 661-**  
**16.59 / 0.00**

135
341

CALCULATED R/JG  
CHECKED H/G



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**CROSS SECTIONS RAMP G**  
**STA. 108+50.00 TO STA. 109+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

136  
341

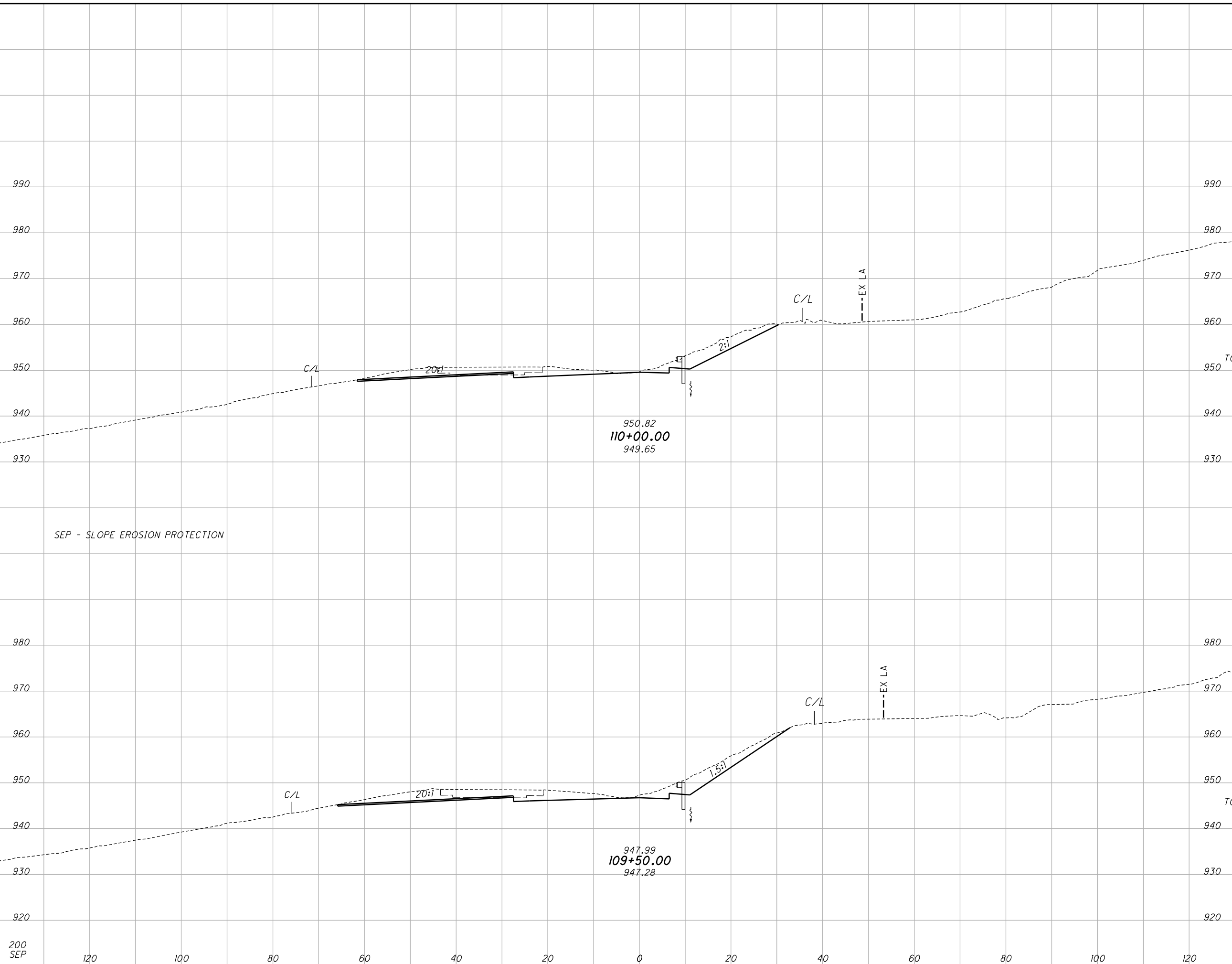
CALCULATED  
RUG  
CHECKED  
HAG

END AREA		VOLUME	
CUT	FILL	CUT	FILL
121	2	185	5
78	3	105	5
TOTAL TOPSOIL		33	10



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SEEDING	
END WIDTH	SO. YDS.
60	35
375	206
75	39
389	200
764	200



SEP - SLOPE EROSION PROTECTION

950.82  
110+00.00  
949.65

947.99  
109+50.00  
947.28

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
129	8	129	8		
TOPSOIL		315	12		
		211	4		
		TOPSOIL			
		308	6		
		TOPSOIL			
TOTAL TOPSOIL		22	22		
		623	18		

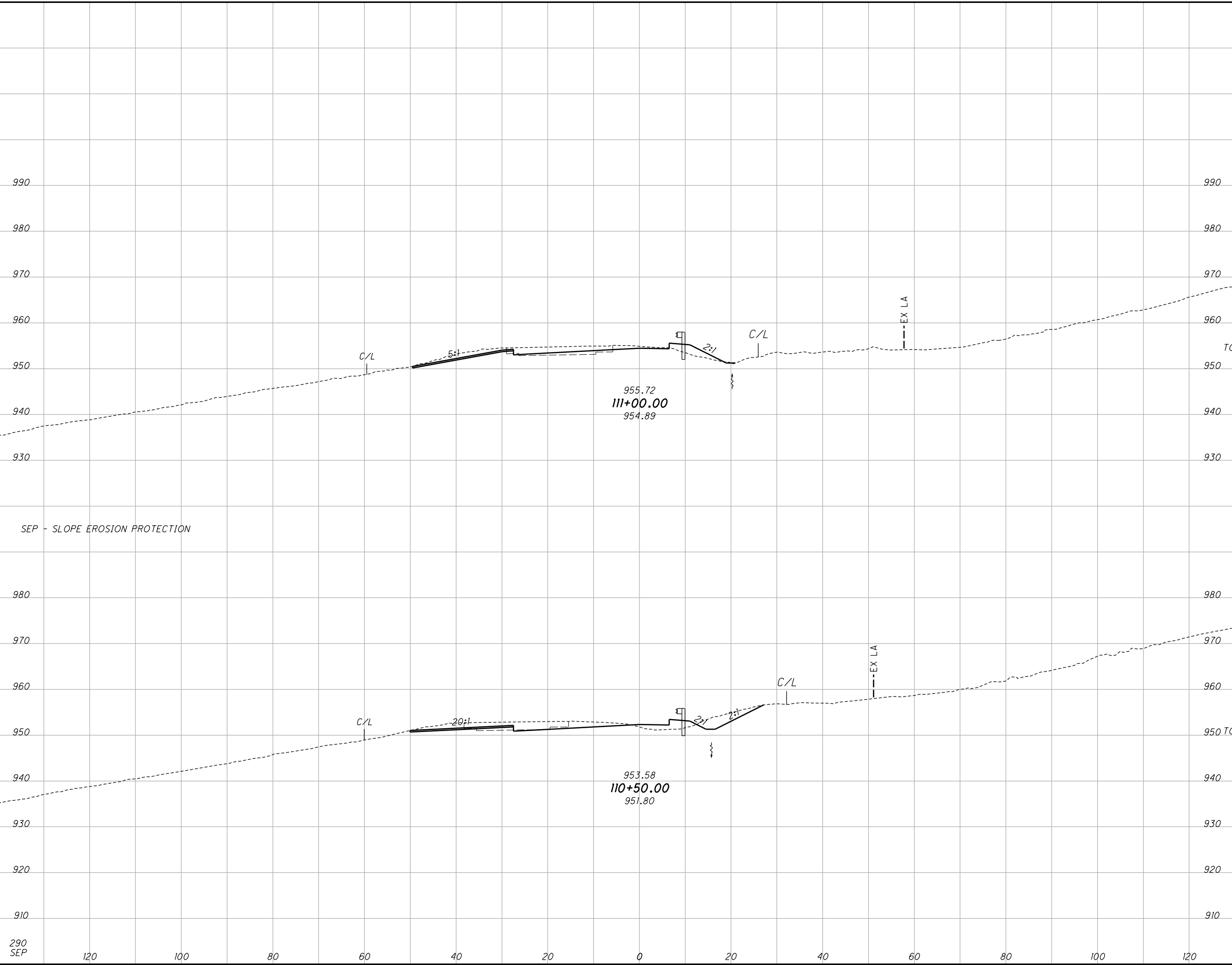
**CROSS SECTIONS RAMP G**  
**STA. 109+50.00 TO STA. 110+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

137  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_X5005.dgn XS\_SHEET\_temporary\_model\_name\_12 11/18/2019 1:46:15 PM bharlow

SEEDING	
END WIDTH	SO. YDS.
37	23
42	23
162	290
284	504



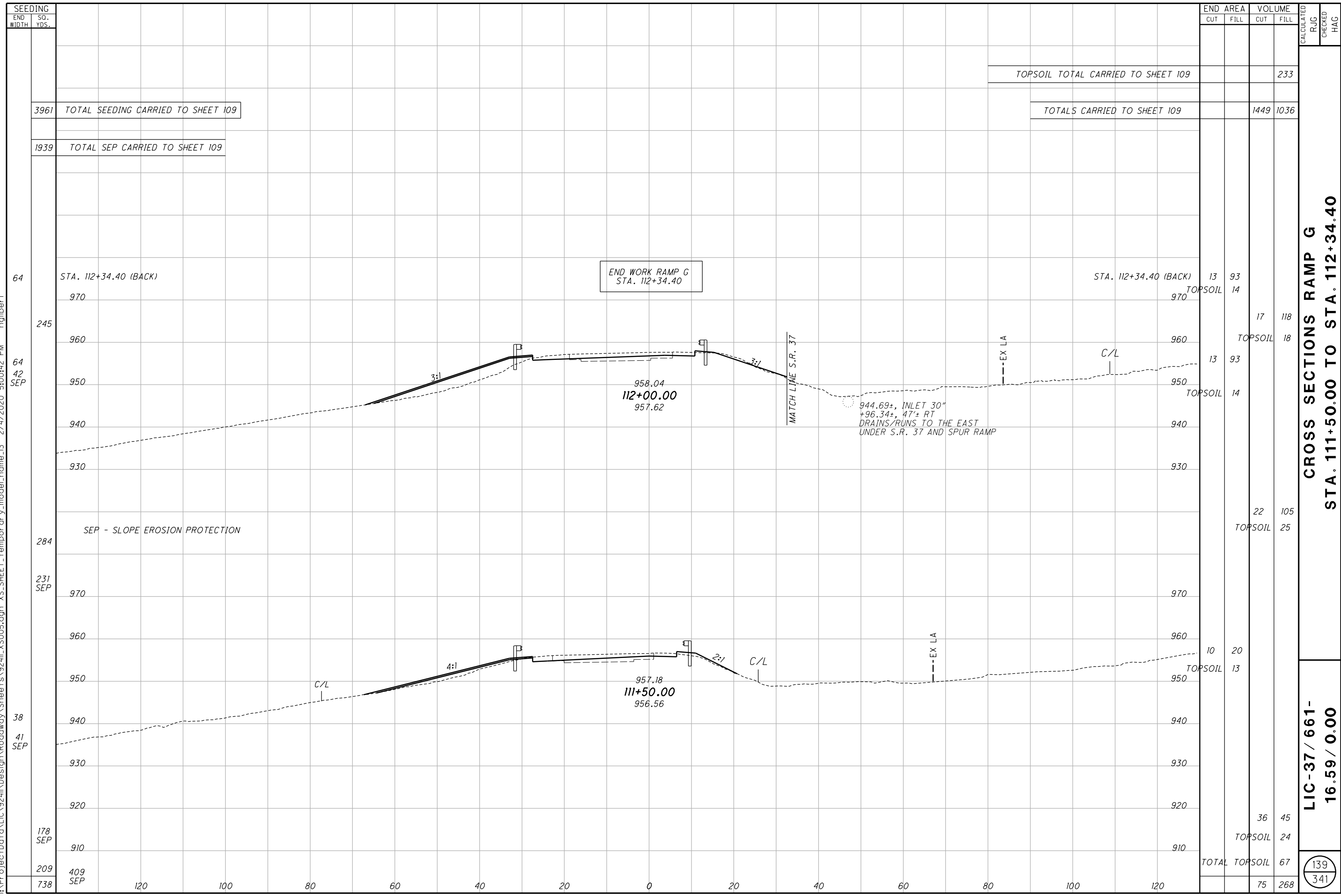
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
28	28	71	50		
	8	15	15		
		48	26		
	8	8	8		
		164	32		
		19	19		
		34	34		
		235	82		

**CROSS SECTIONS RAMP G**  
**STA. 110+50.00 TO STA. 111+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

138  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241L\_X5005.dgn XS\_SHEET\_temporary\_model\_name\_13 2/4/2020 5:09:42 PM hgliber1

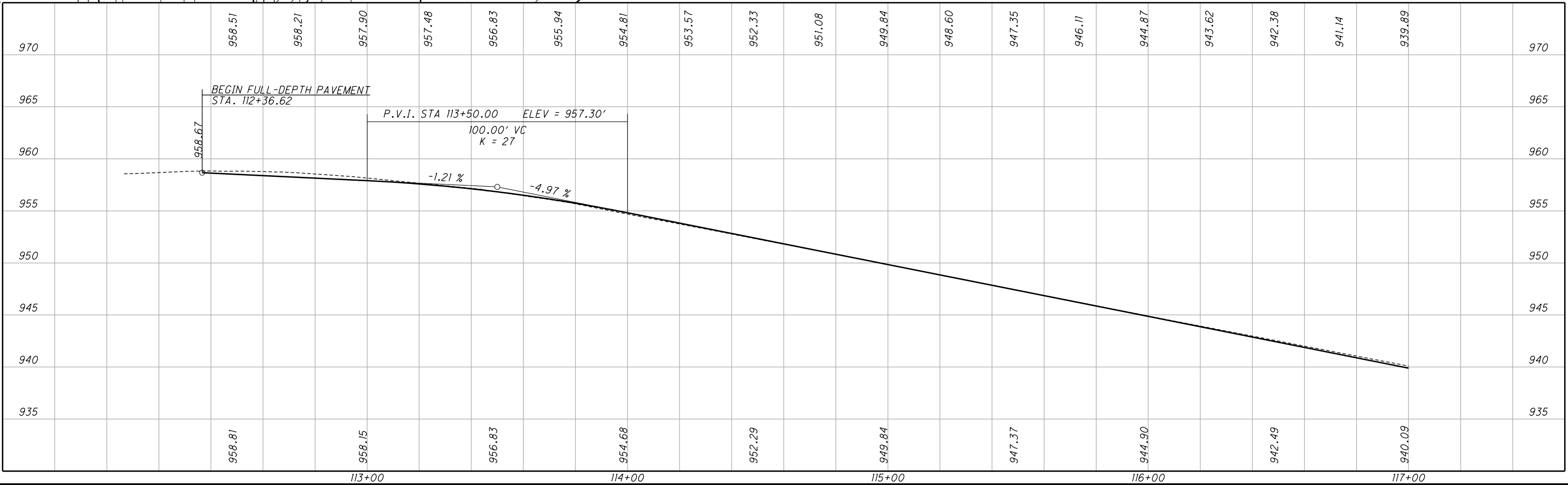
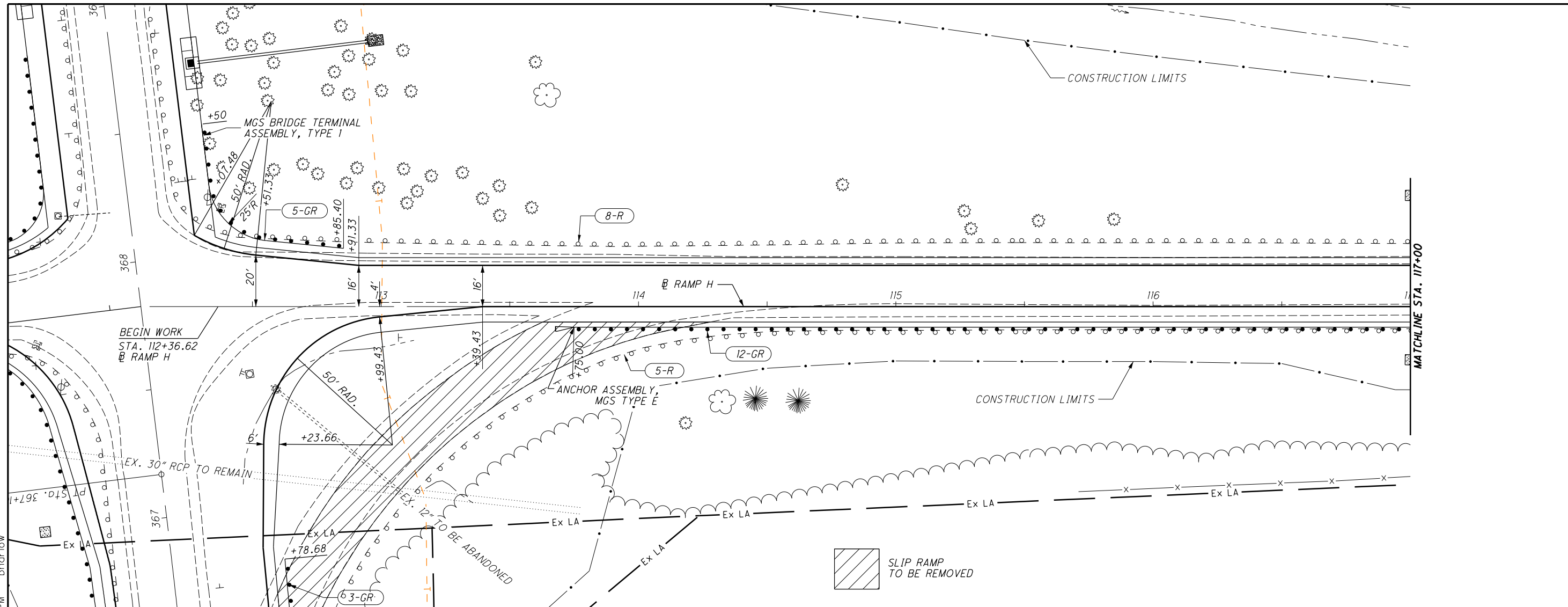


**CROSS SECTIONS RAMP G**  
**STA. 111+50.00 TO STA. 112+34.40**

**LIC-37 / 661-**  
**16.59 / 0.00**

139  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_GPO1.dgn\_Sheet 11/18/2019 14:46:19 PM bharlow

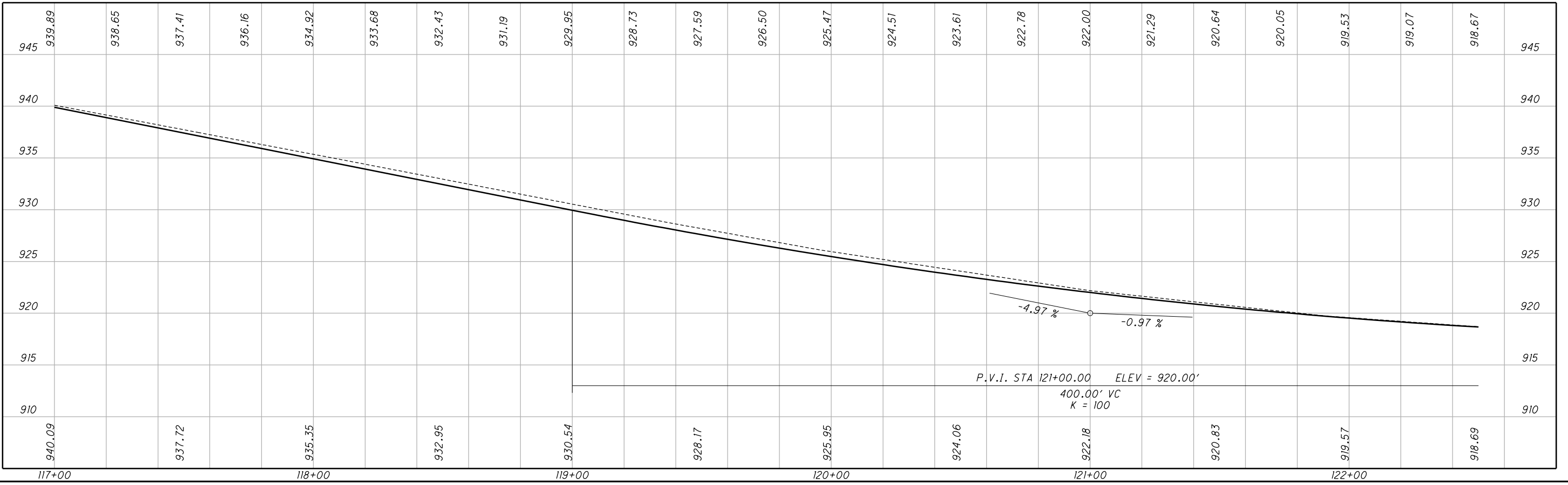
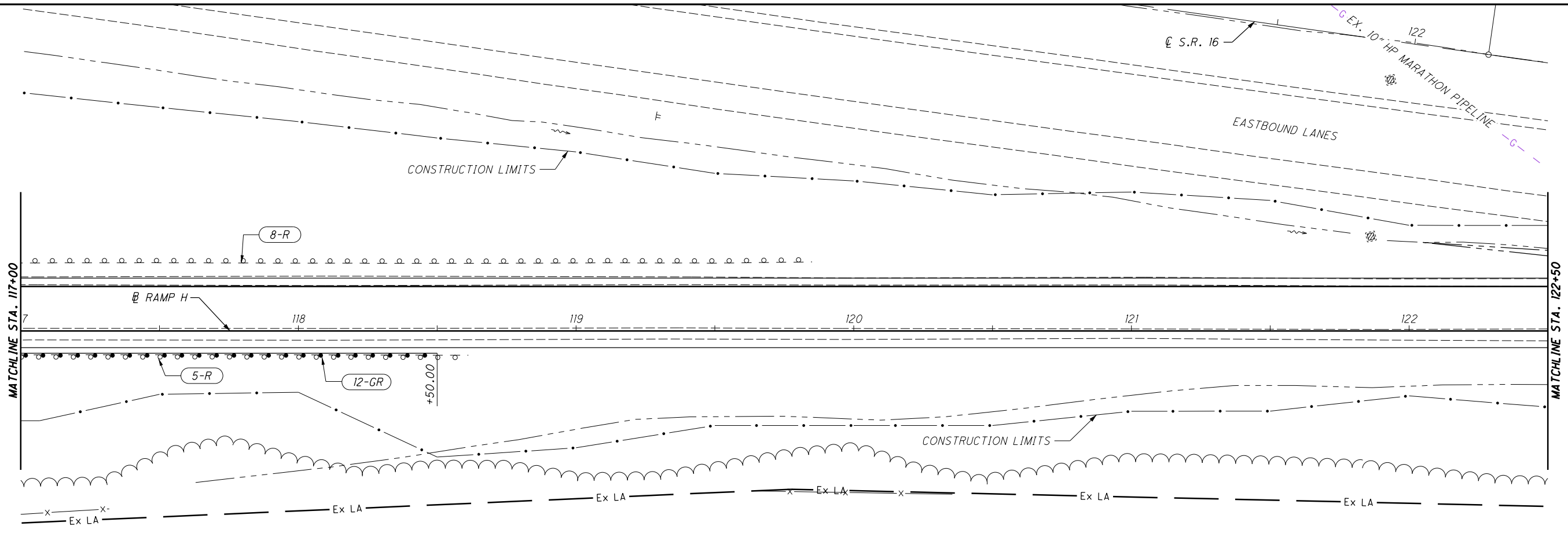


CALCULATED BRH CHECKED HAG

**PLAN AND PROFILE - RAMP H  
STA. 112+36.62 TO STA. 117+00**

**LIC-37 / 661-  
16.59 / 0.00**

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CALCULATED  
BRH  
CHECKED  
HAG

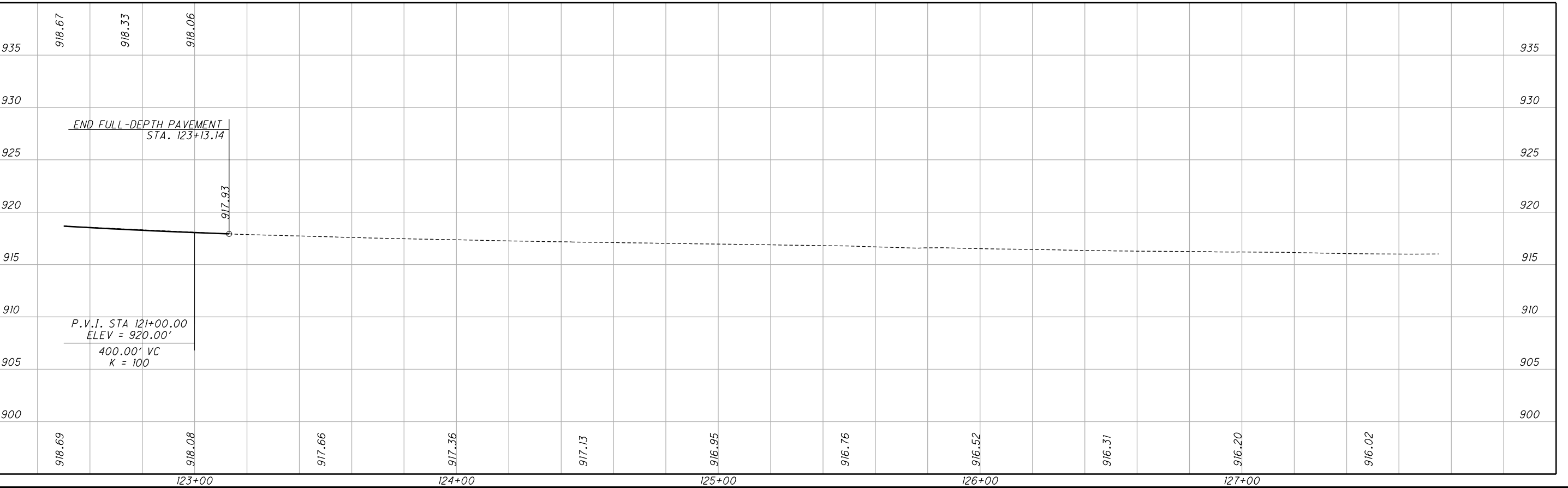
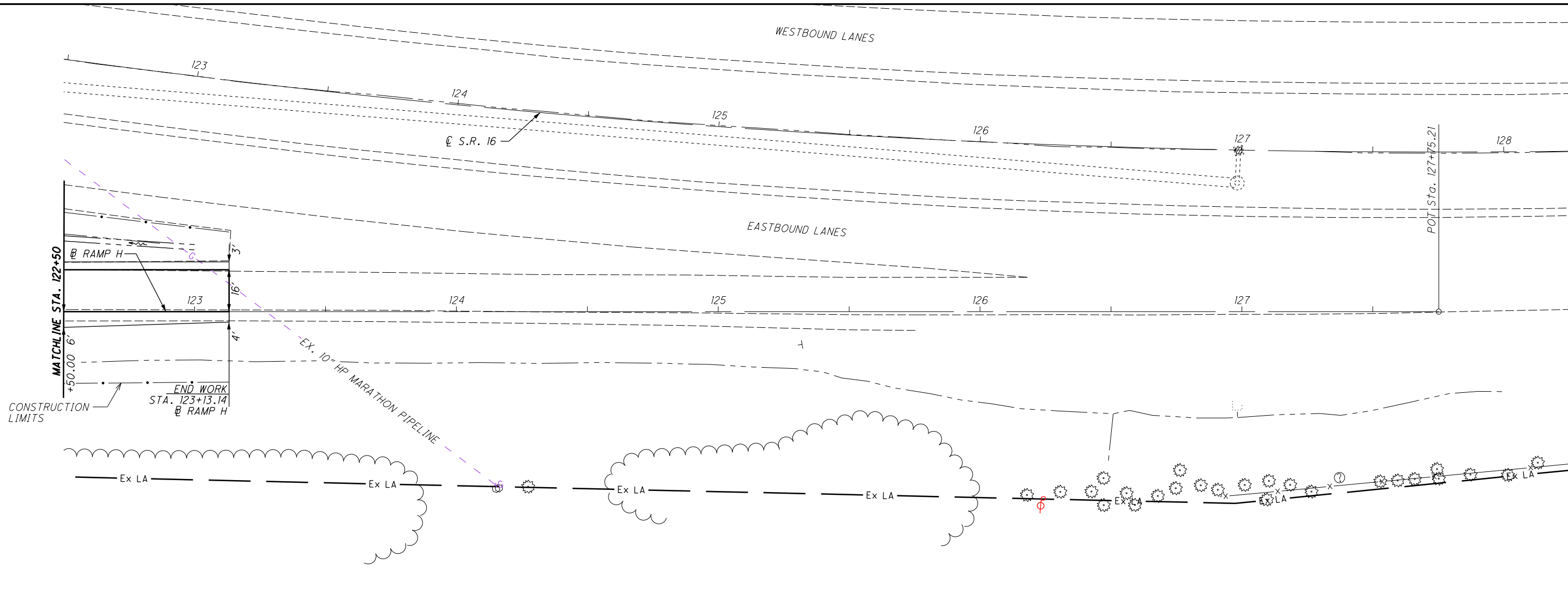
0 20 40  
HORIZONTAL  
SCALE IN FEET

**PLAN AND PROFILE - RAMP H**  
**STA. 117+00 TO STA. 122+50**

**LIC-37 / 661-**  
**16.59 / 0.00**

141  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_GP013.dgn Sheet 11/18/2019 1:46:21 PM bharlow



CALCULATED  
BRH  
CHECKED  
HAG

0 20 40  
HORIZONTAL  
SCALE IN FEET

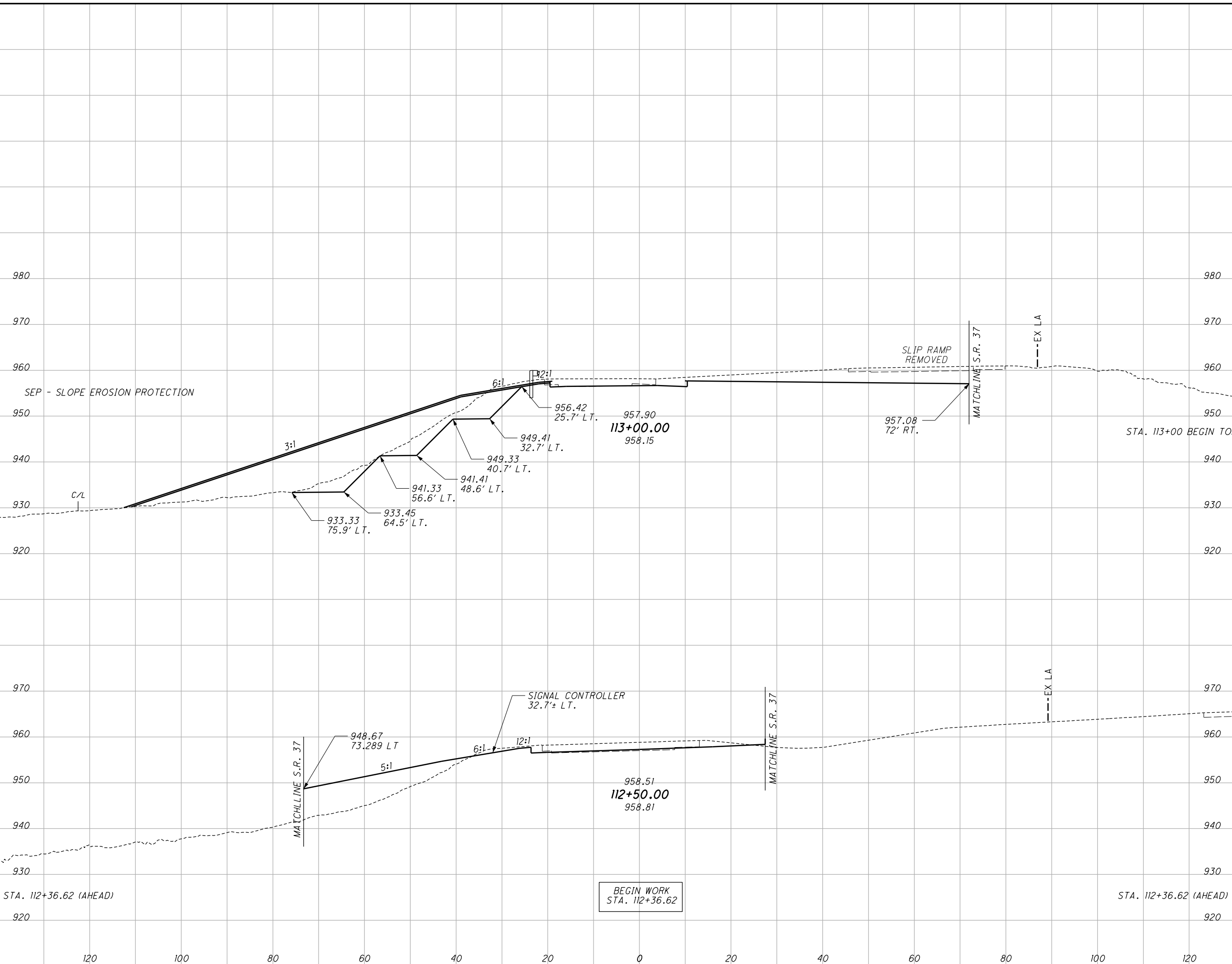
**PLAN AND PROFILE - RAMP H**  
**STA. 122+50 TO STA. 123+13.14**

**LIC-37 / 661-**  
**16.59 / 0.00**

142  
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241LX5006.dgn XS\_SHEET\_temporary\_model\_name\_L\_11/18/2019 1:46:22 PM bharlow

SEEDING	
END WIDTH	SO. YDS.
160	98
587	51
75	51
662	

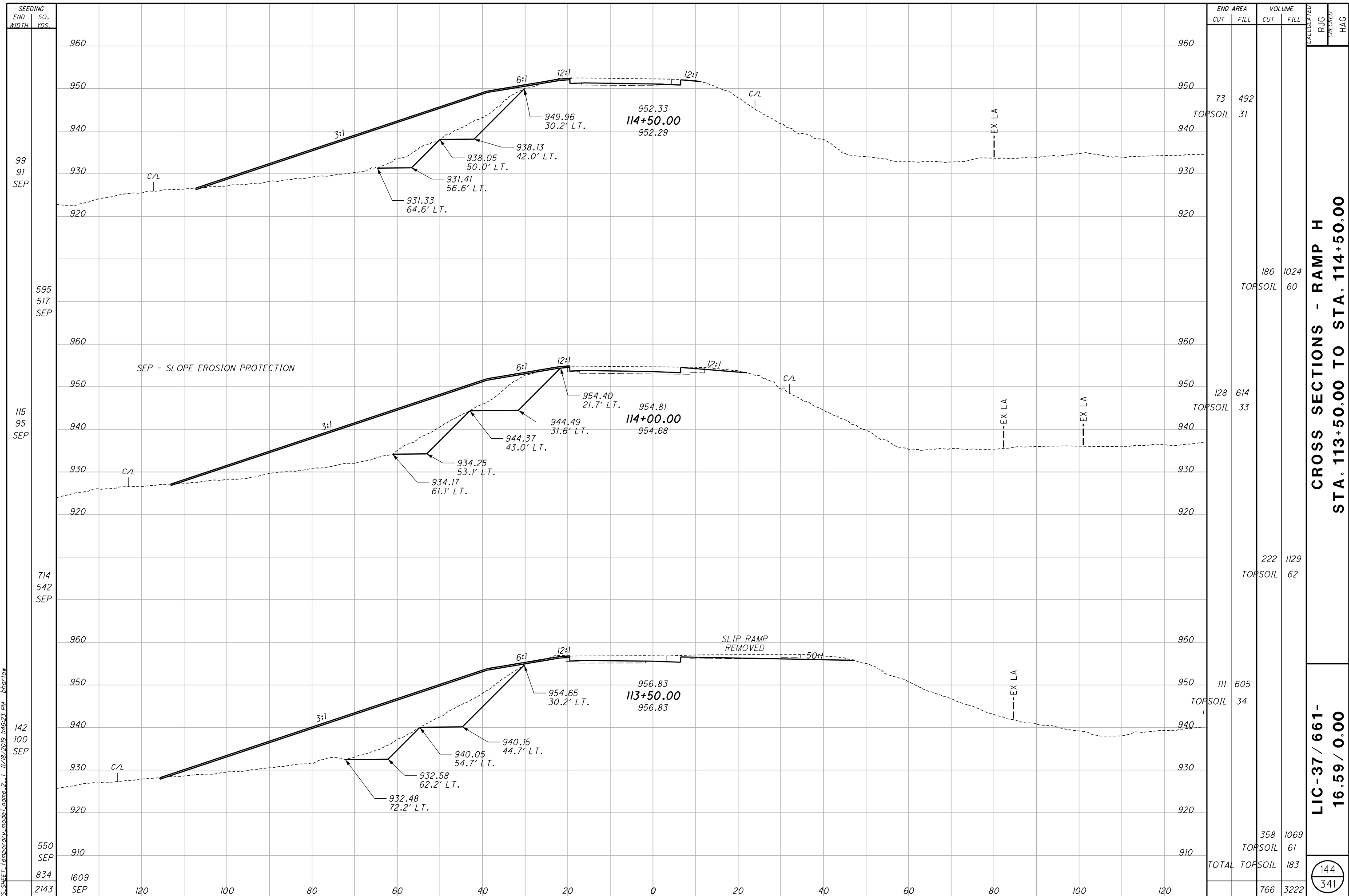


END AREA		VOLUME		CALCULATED		
CUT	FILL	CUT	FILL	R/J	CHECKED	HAG
275	549	275	675			
22	180	11	90			
22	180					
		286	765			

**CROSS SECTIONS RAMP H**  
**STA. 112+36.62 TO STA. 113+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

143  
341



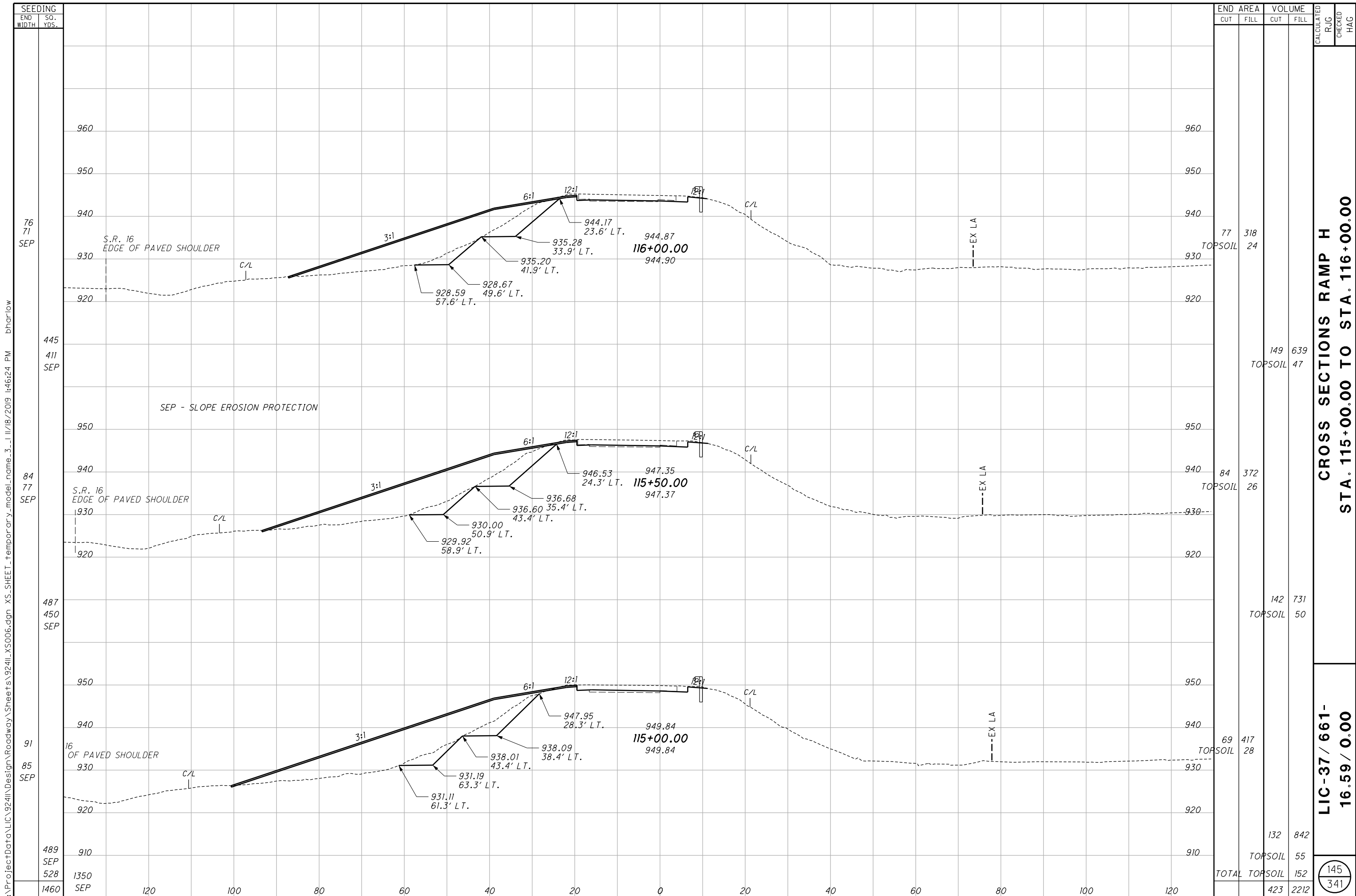
**CROSS SECTIONS - RAMP H**  
**STA. 113+50.00 TO STA. 114+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

144  
341

6.dgn VS SHEET temporary model name 2\_1 11/18/2019 1:46:23 PM bkr/lew





SEEDING  
 END SO.  
 WIDTH YDS.  
 76  
 71  
 SEP  
 445  
 411  
 SEP  
 84  
 77  
 SEP  
 487  
 450  
 SEP  
 91  
 85  
 SEP  
 489  
 528  
 SEP  
 1460

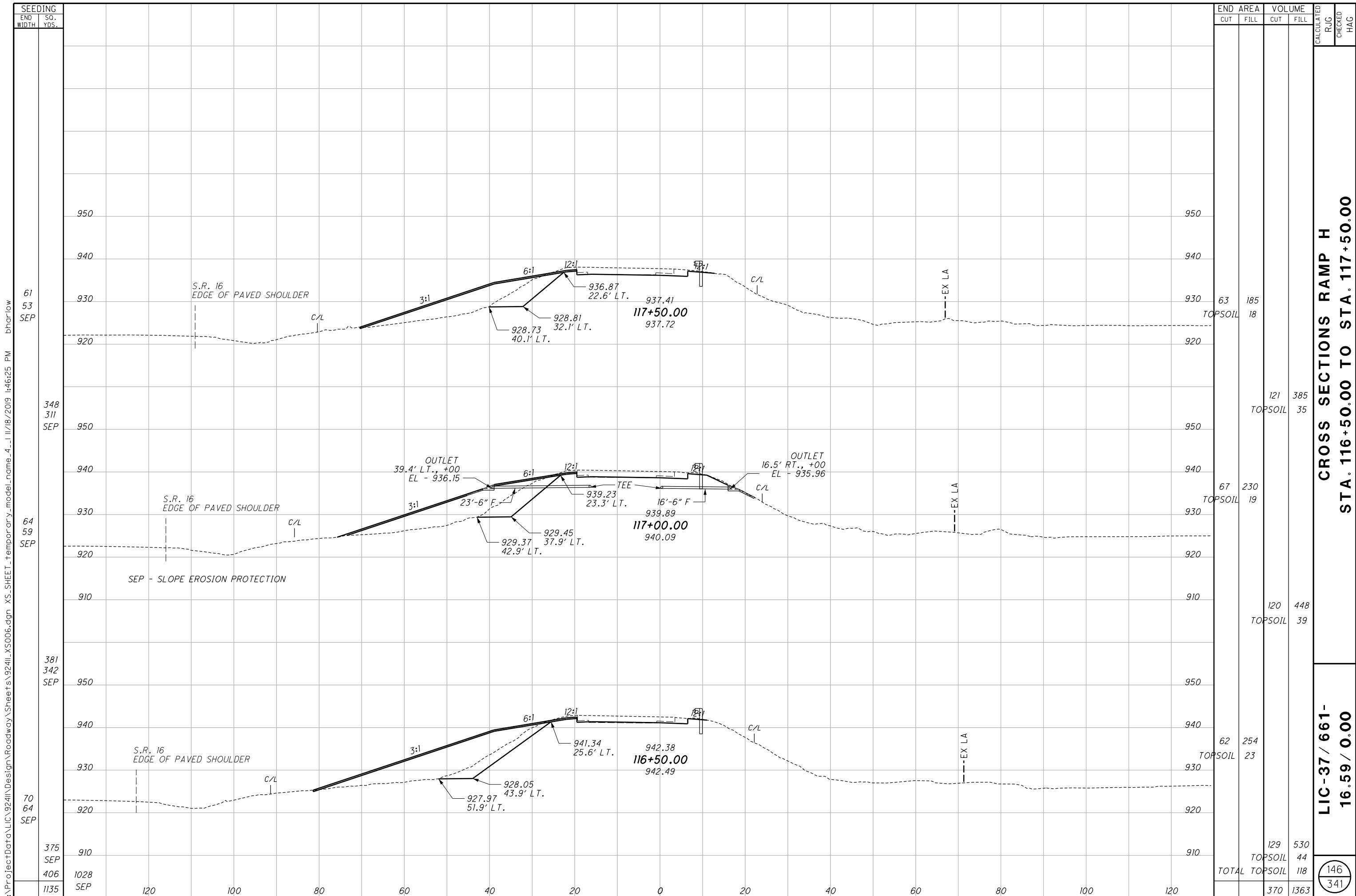
END AREA	VOLUME		CALCULATED RUG	CHECKED HAG
	CUT	FILL		
77	318	24		
TOPSOIL				
149	639	47		
TOPSOIL				
84	372	26		
TOPSOIL				
142	731	50		
TOPSOIL				
69	417	28		
TOPSOIL				
132	842	55		
TOPSOIL				
TOTAL	152	152		
TOTAL TOPSOIL		152		
423	2212			

**CROSS SECTIONS RAMP H**  
**STA. 115+00.00 TO STA. 116+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

145  
341

I:\ProjectData\LIC\9241\Roadway\Sheets\9241\_X5006.dgn XS\_SHEET\_temporary\_model\_name\_3\_11/18/2019 1:46:24 PM bharlow



SEEDING	
END WIDTH	SO. YDS.
61	53
348	311
64	59
381	342
70	64
375	530
406	1028
1135	1135

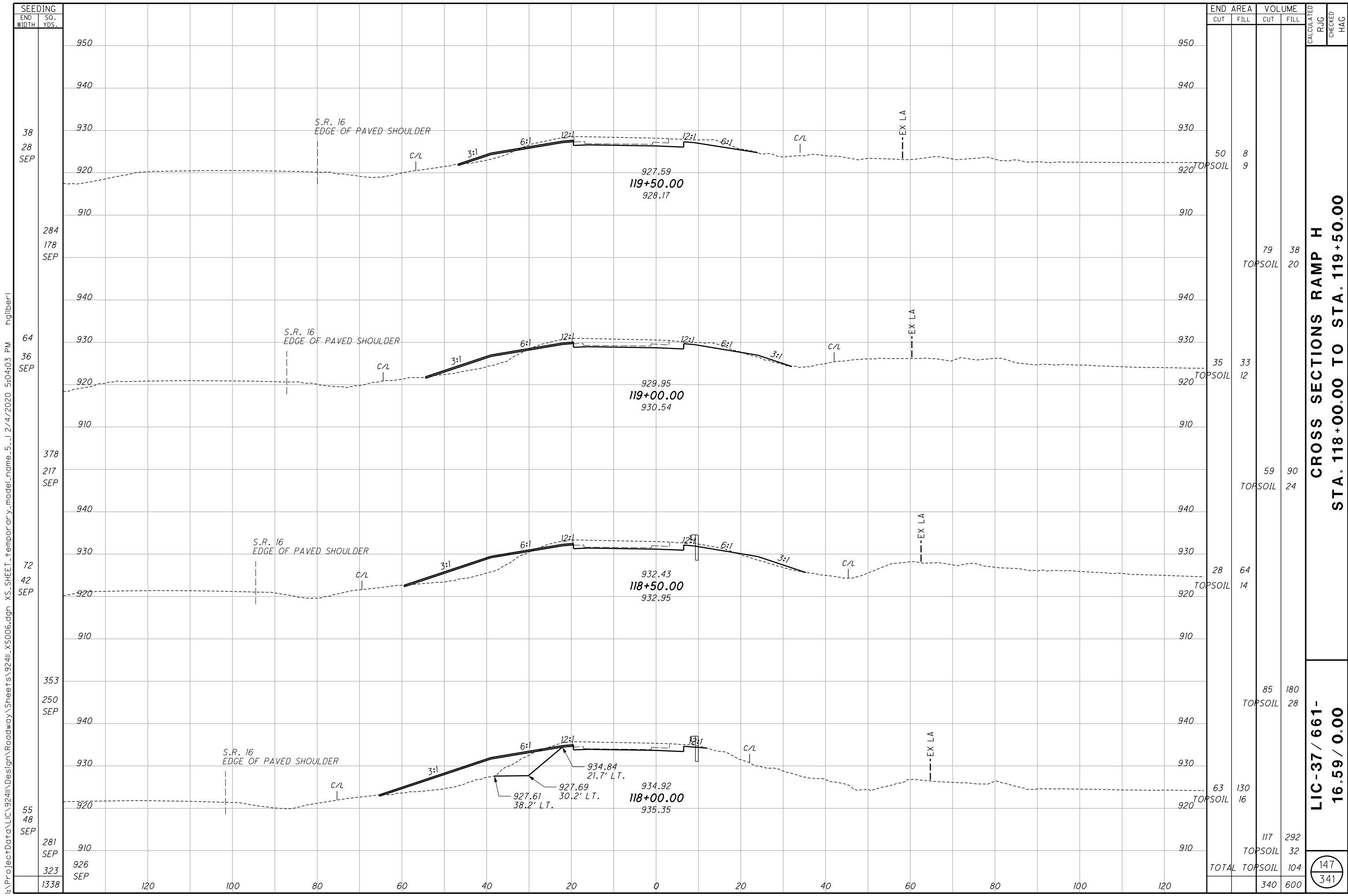
END AREA		VOLUME		CALCULATED RUG	CHECKED HAG
CUT	FILL	CUT	FILL		
63	185	18	185		
		121	385		
67	230	19	230		
		120	448		
62	254	23	254		
		129	530		
TOTAL TOPSOIL		118	118		
		370	1363		

**CROSS SECTIONS RAMP H**  
**STA. 116+50.00 TO STA. 117+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

146  
341

I:\ProjectData\LIC\9241\Roadway\Sheets\9241\_X5006.dgn XS\_SHEET\_temporary\_model\_name\_4\_11/18/2019 1:46:25 PM bharlow



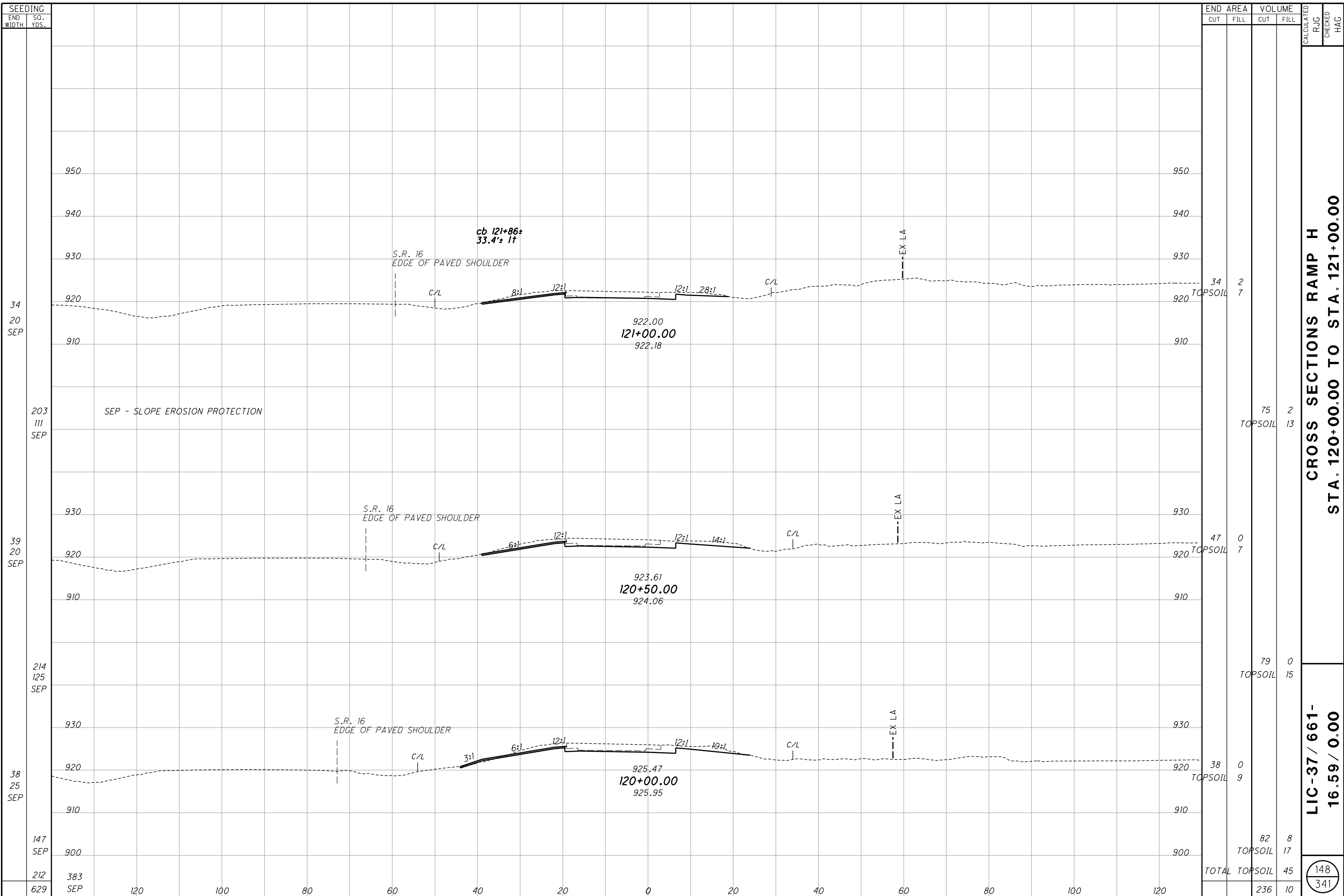
**CROSS SECTIONS RAMP H  
STA. 118+00.00 TO STA. 119+50.00**

**LIC-37 / 661-  
16.59 / 0.00**

147  
341

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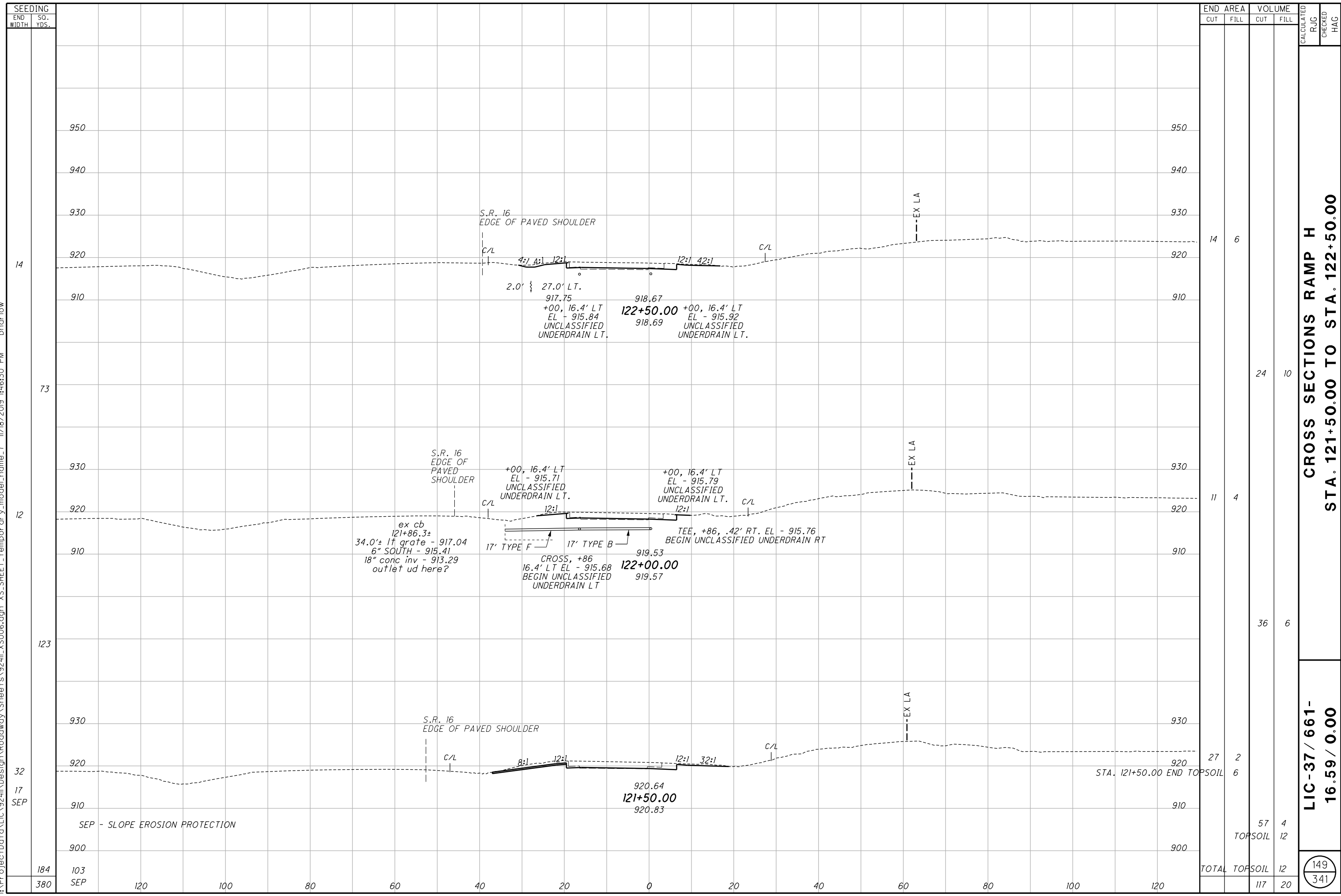


**CROSS SECTIONS RAMP H**  
**STA. 120+00.00 TO STA. 121+00.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

(148)  
341

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END AREA	VOLUME		CALCULATED RUG	CHECKED HAG
	CUT	FILL		
14		6		
11		4		
27		2		
TOTAL		12		
		117		
		20		
		57		
		4		
		12		
		12		
		20		

**CROSS SECTIONS RAMP H**  
**STA. 121+50.00 TO STA. 122+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

149  
341

184  
380

SEP - SLOPE EROSION PROTECTION

STA. 121+50.00 END TOPSOIL

SEEDING  
END SO.  
WIDTH YDS.

950  
940  
930  
920  
910  
930  
920  
910  
930  
920  
910  
930  
920  
910  
930  
920  
910

14  
73  
12  
123  
32  
17  
103  
120  
100  
80  
60  
40  
20  
0  
20  
40  
60  
80  
100  
120

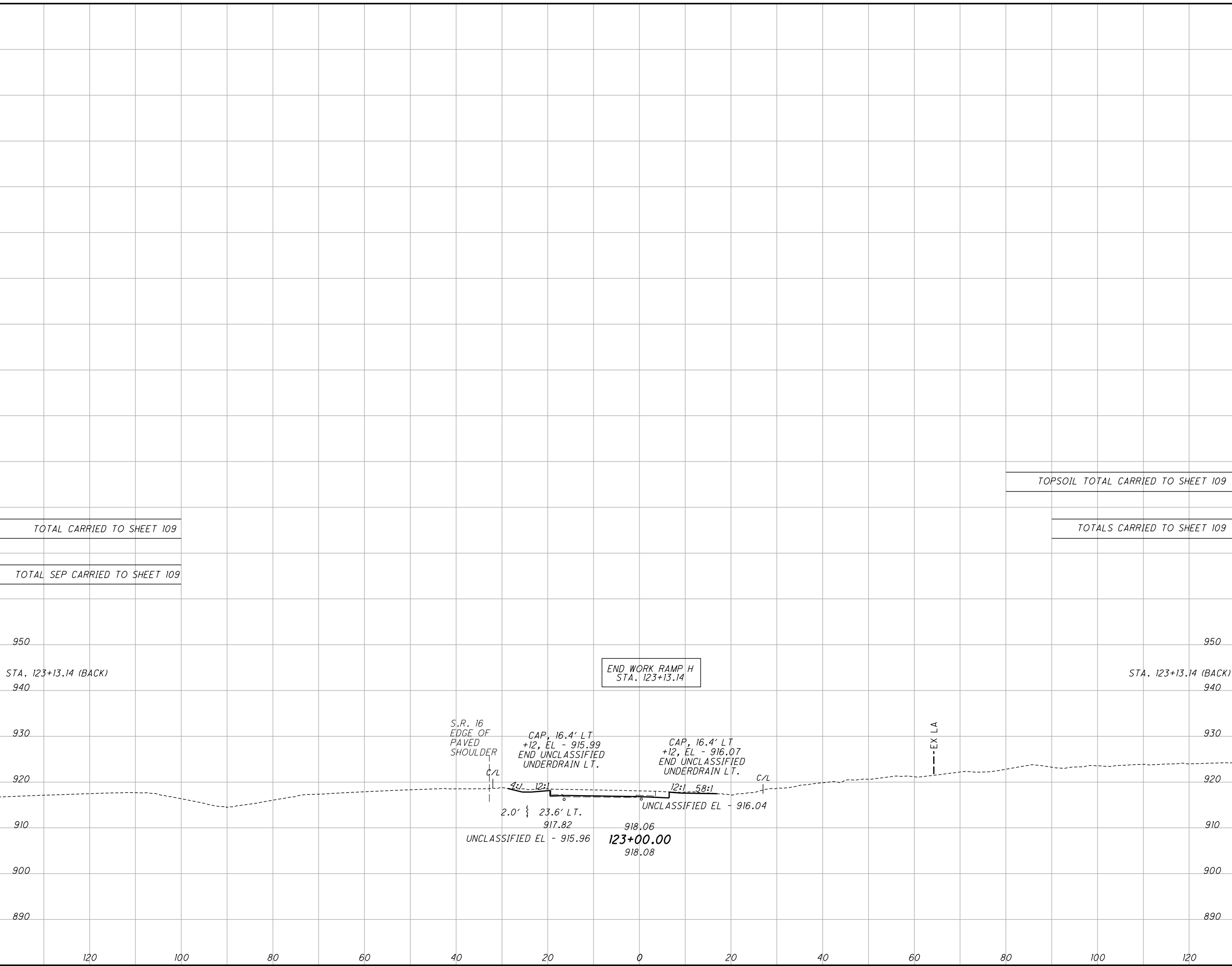
17  
SEP

103  
SEP

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

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SEEDING	
END WIDTH	SO. YDS.
130	
98	
21	
32	
21	
98	
130	



5734	TOTAL CARRIED TO SHEET 109
5399	TOTAL SEP CARRIED TO SHEET 109

TOPSOIL TOTAL CARRIED TO SHEET 109		614
TOTALS CARRIED TO SHEET 109		2570 8204

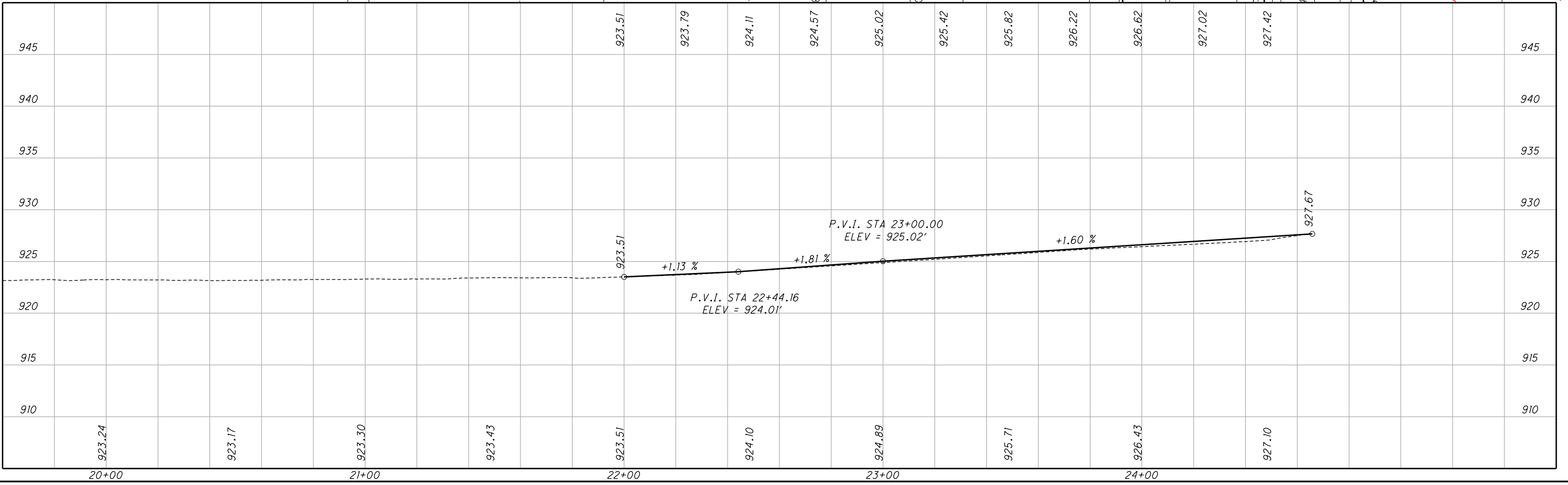
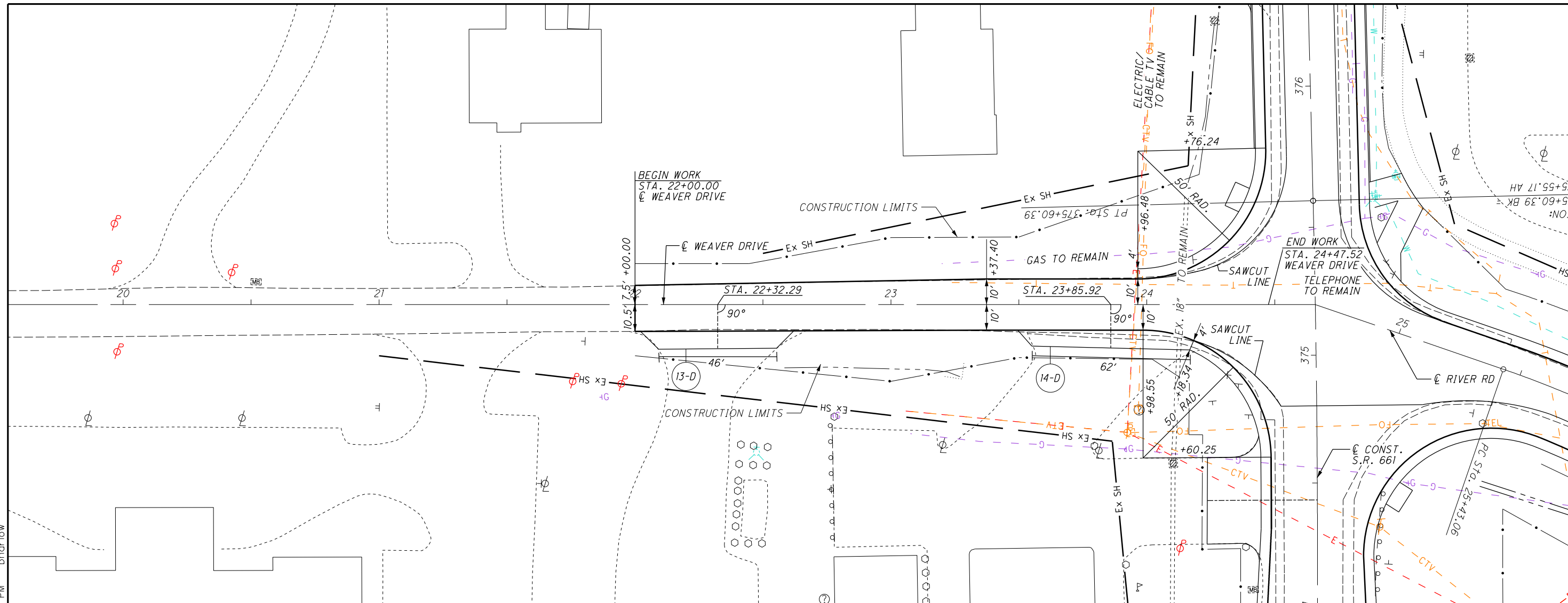
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
13	4				
		7	2		
13	4				
		25	10		
		32	12		

**CROSS SECTIONS RAMP H**  
**STA. 123+00.00 TO STA. 123+13.14**

**LIC-37 / 661-**  
**16.59 / 0.00**

150  
341

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**PLAN AND PROFILE - WEAVER DR.**  
**STA. 19+22.00 TO STA. 24+47.52**

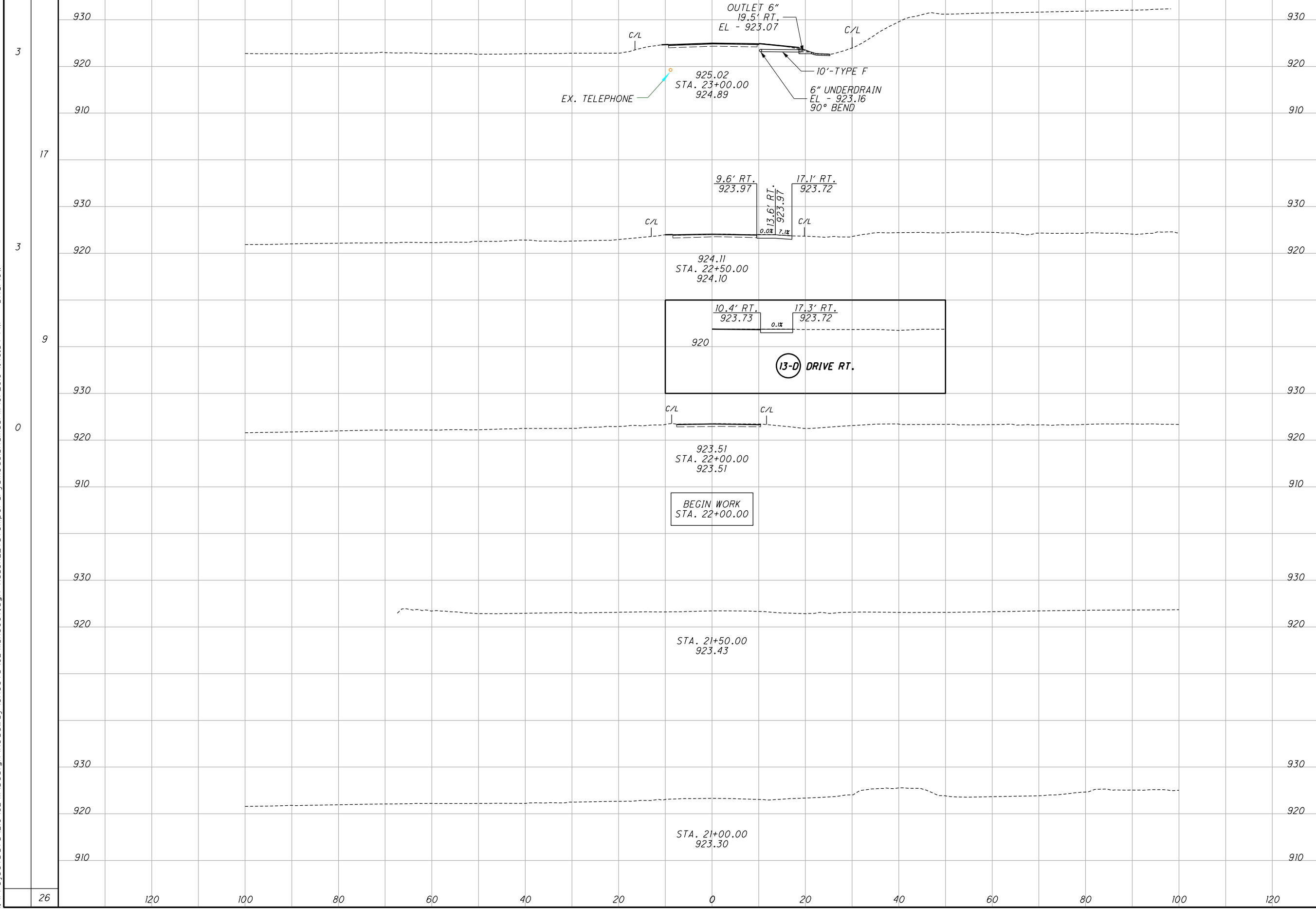
**LIC-37 / 661-**  
**16.59 / 0.00**

CALCULATED BRH  
 CHECKED HAG

151  
 341

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SEEDING	
END WIDTH	SO. YDS.
26	



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL	R/JG	HAG
0	2	0	3		
0	1	0	1		
0	0	0	0		
0	0	0	0		
0	0	0	0		
0	0	0	0		
0	0	0	0		
0	4	0	4		

CROSS SECTIONS WEAVER DRIVE  
STA. 22+00.00 TO STA. 23+00.00

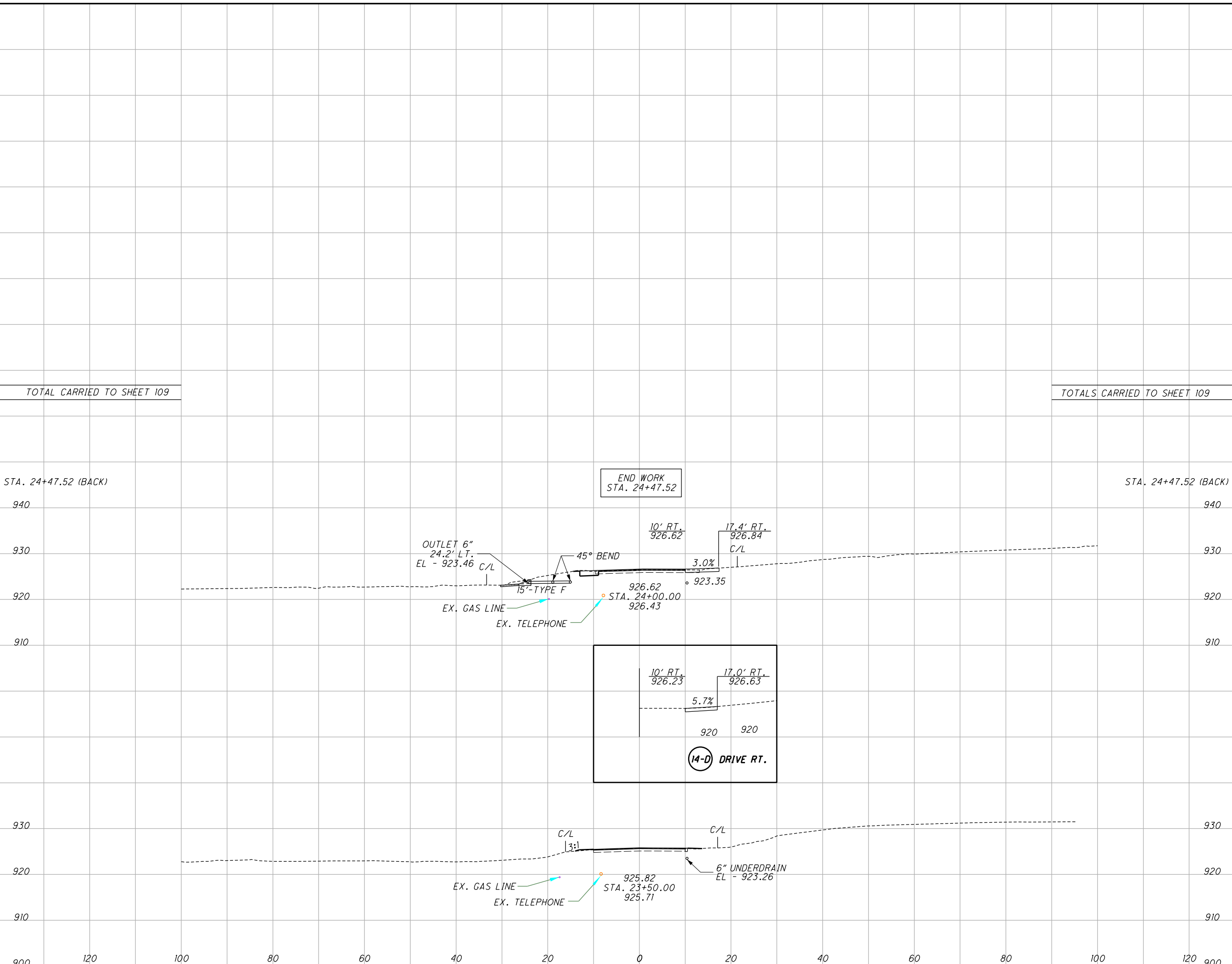
LIC-37 / 661-  
16.59 / 0.00

152  
341



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SEEDING	
END WIDTH	SO. YDS.
16	85
16	67
8	31
183	



209 TOTAL CARRIED TO SHEET 109

TOTALS CARRIED TO SHEET 109

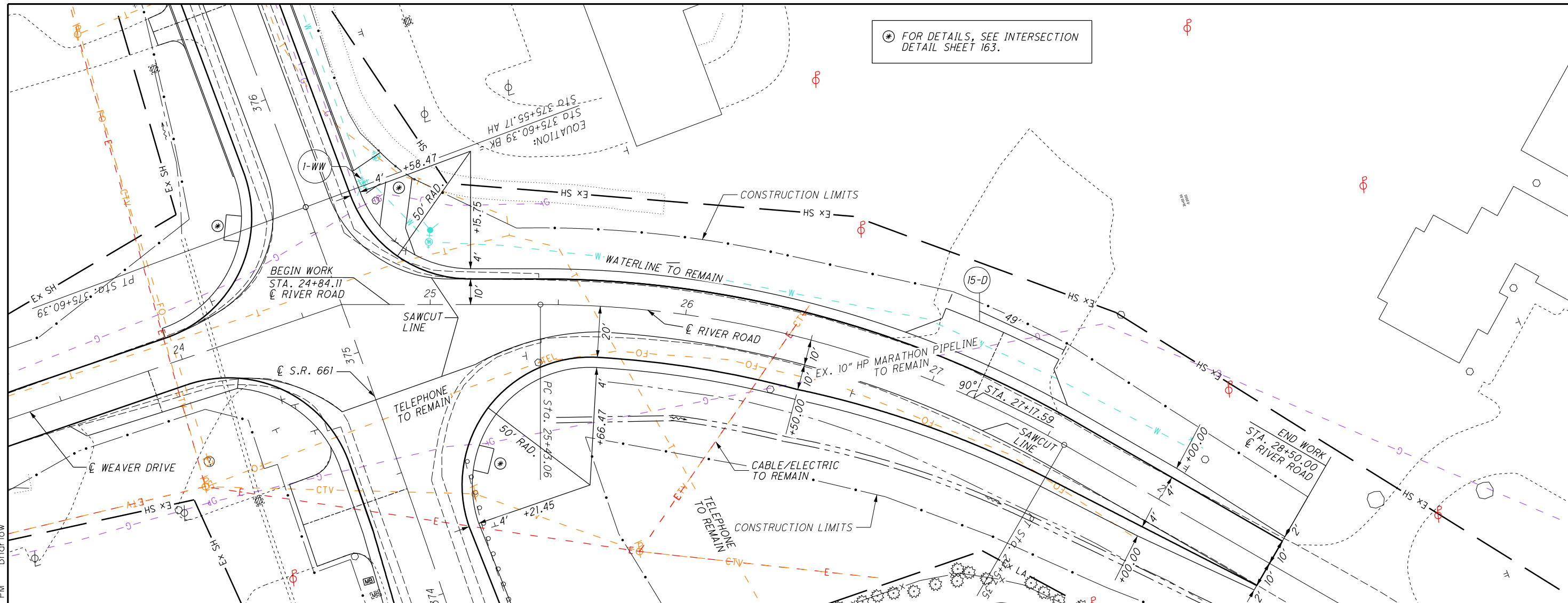
END AREA		VOLUME		CALCULATED R/J	CHECKED H/G
CUT	FILL	CUT	FILL		
4	0	7	0		
4	0	4	1		
0	1	0	3		
		11	4		

CROSS SECTIONS WEAVER DRIVE  
STA. 23+50.00 TO STA. 24+47.52

LIC-37 / 661-  
16.59 / 0.00

153  
341

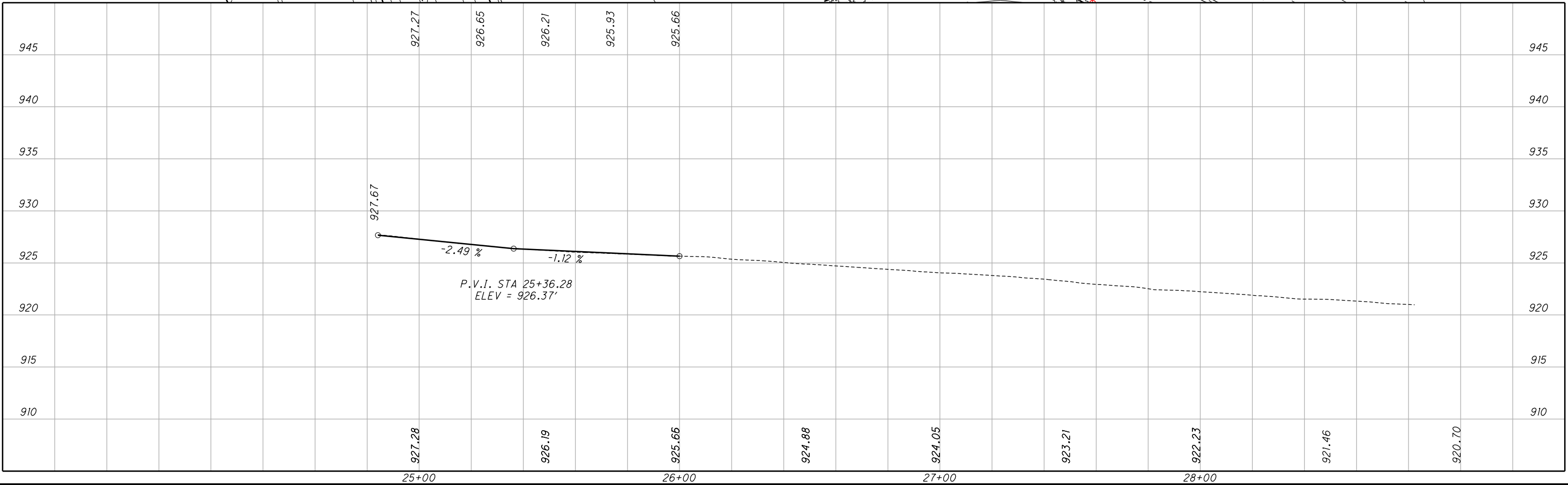
I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\GP015.dgn Sheet 11/18/2019 1:46:38 PM bharlow



⊗ FOR DETAILS, SEE INTERSECTION  
DETAIL SHEET 163.

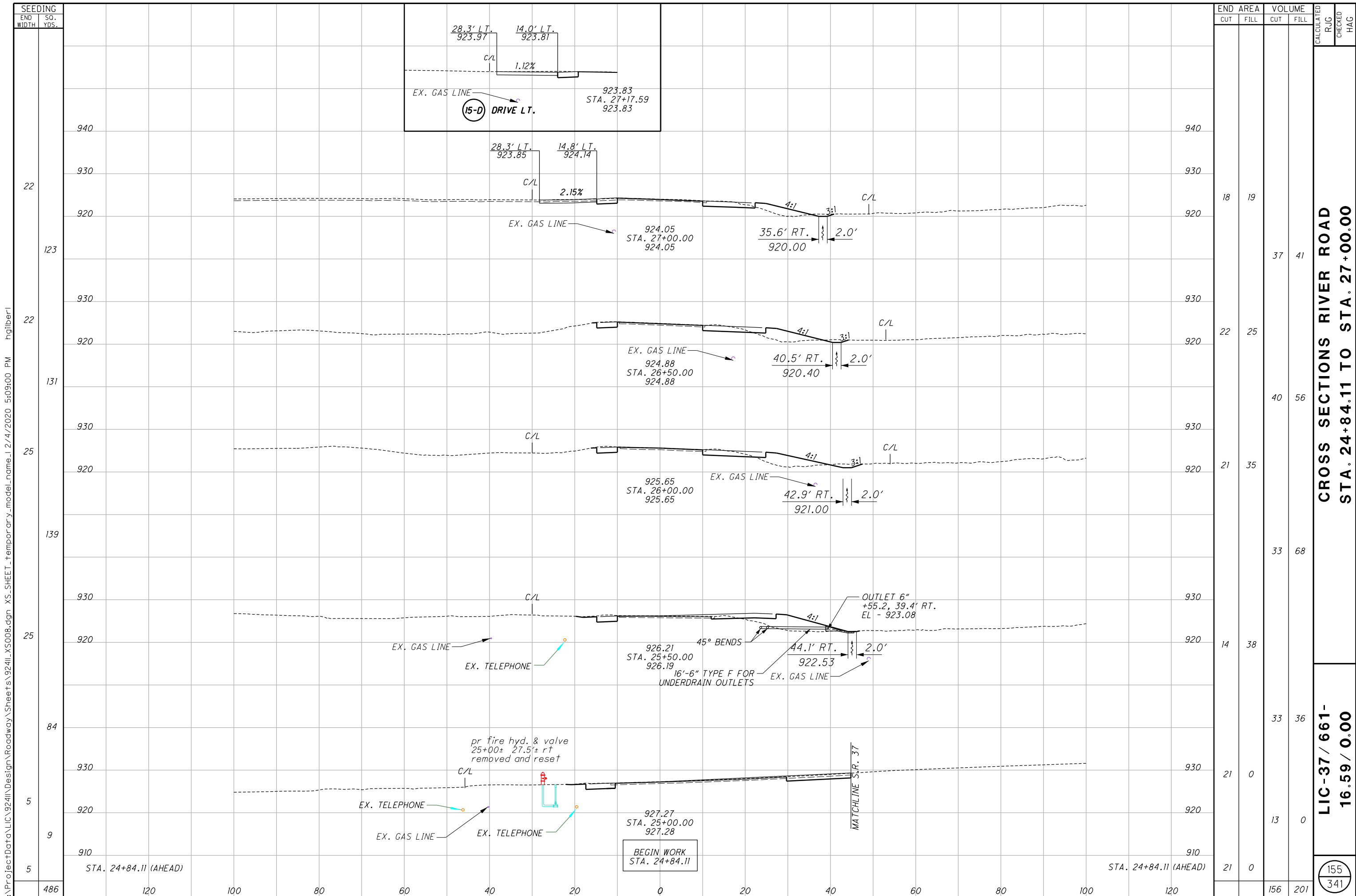
CALCULATED BRH CHECKED HAG

0 20 40  
10' HORIZONTAL  
SCALE IN FEET



**PLAN AND PROFILE - RIVER RD.**  
**STA. 24+84.11 TO STA. 28+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**



SEEDING	
END WIDTH	SO. YDS.
5	9
5	25
84	25
139	25
131	22
123	22
22	22
486	5

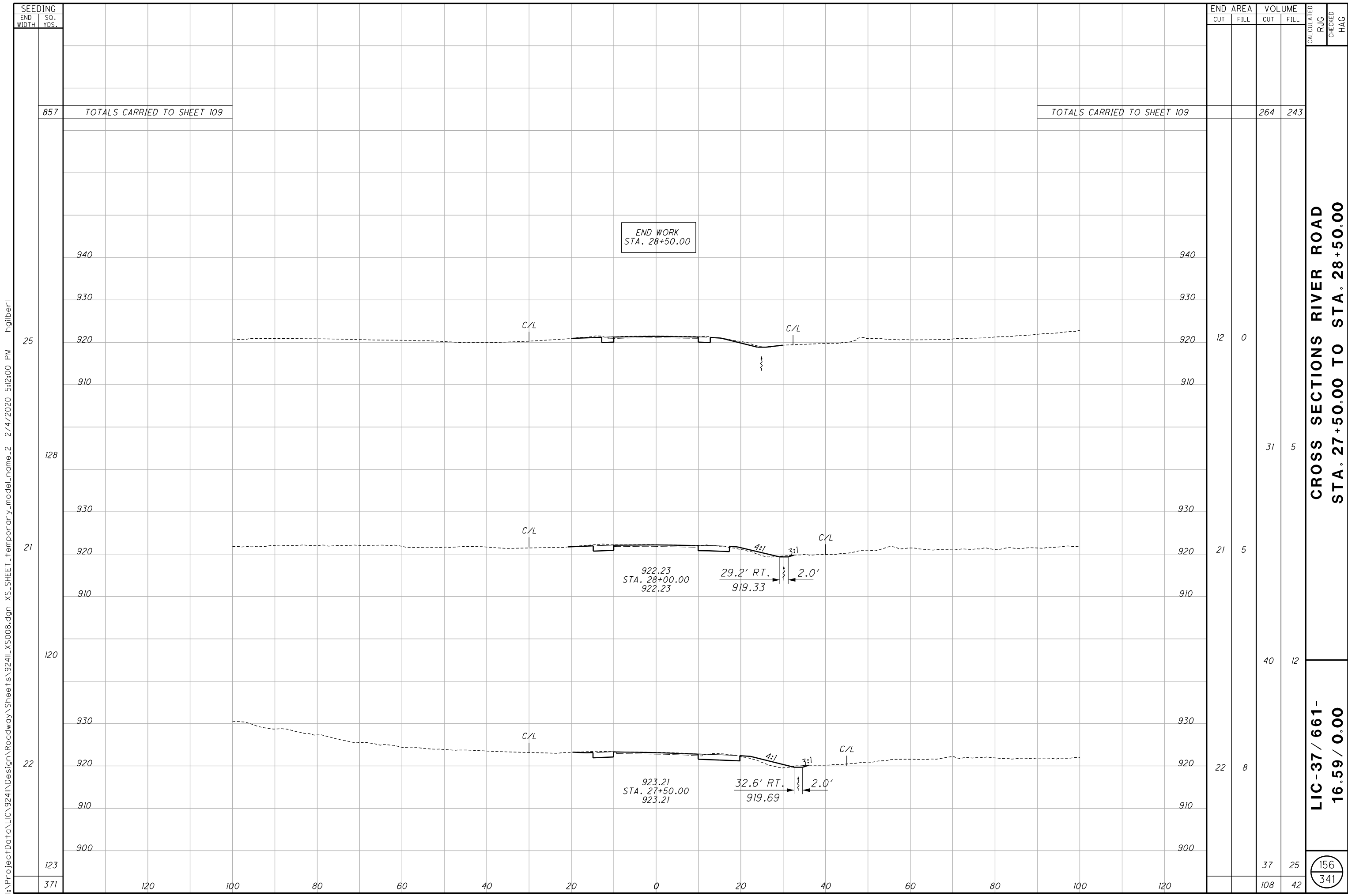
END AREA		VOLUME		CALCULATED RUG	CHECKED HAG
CUT	FILL	CUT	FILL		
21	0	13	0		
21	0	33	36		
14	38	33	68		
21	35	40	56		
22	25	37	41		
18	19				
21	0	156	201		

**CROSS SECTIONS RIVER ROAD  
STA. 24+84.11 TO STA. 27+00.00**

**LIC-37 / 661-  
16.59 / 0.00**

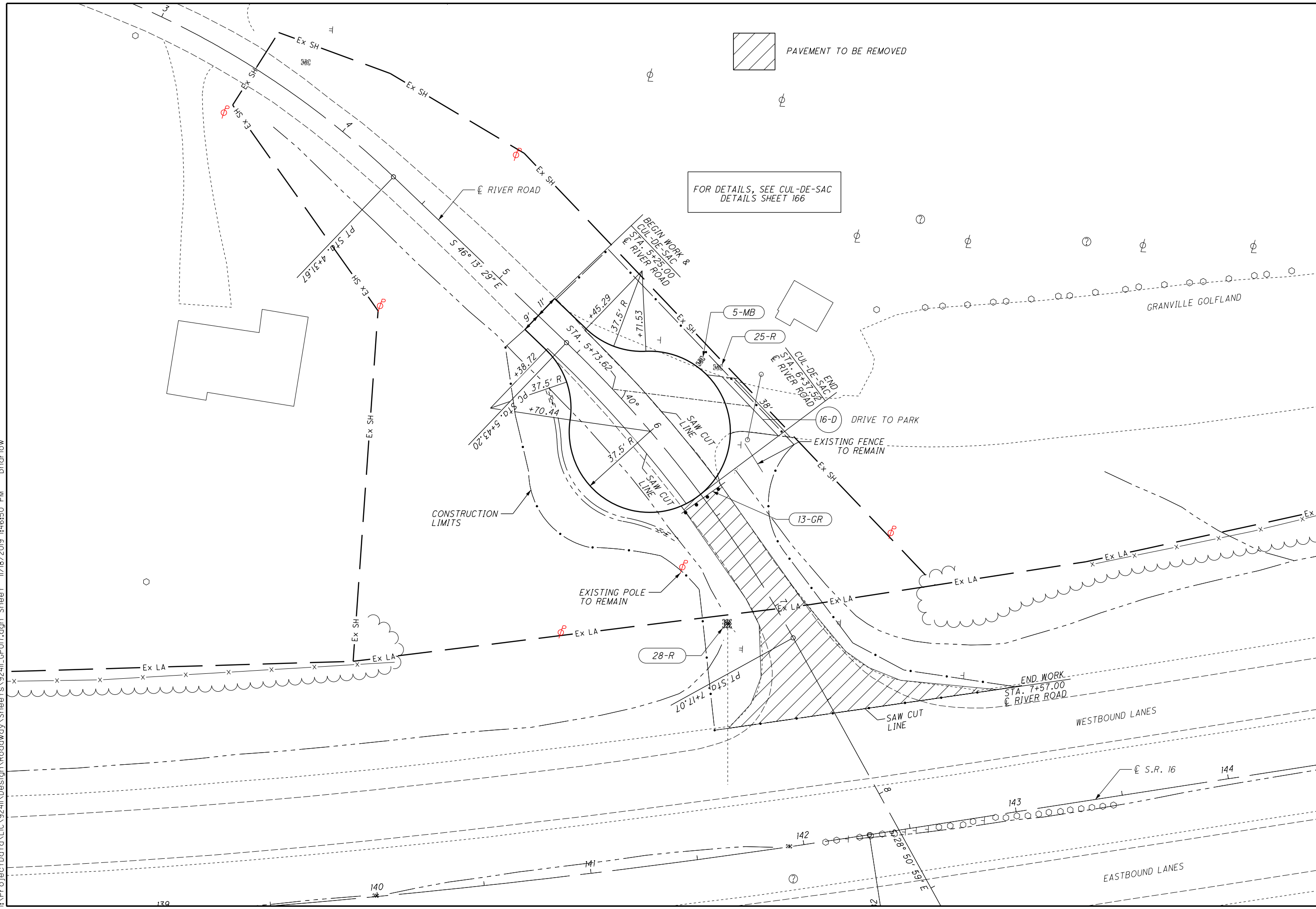
155  
341

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CALCULATED HG  
 CHECKED HG

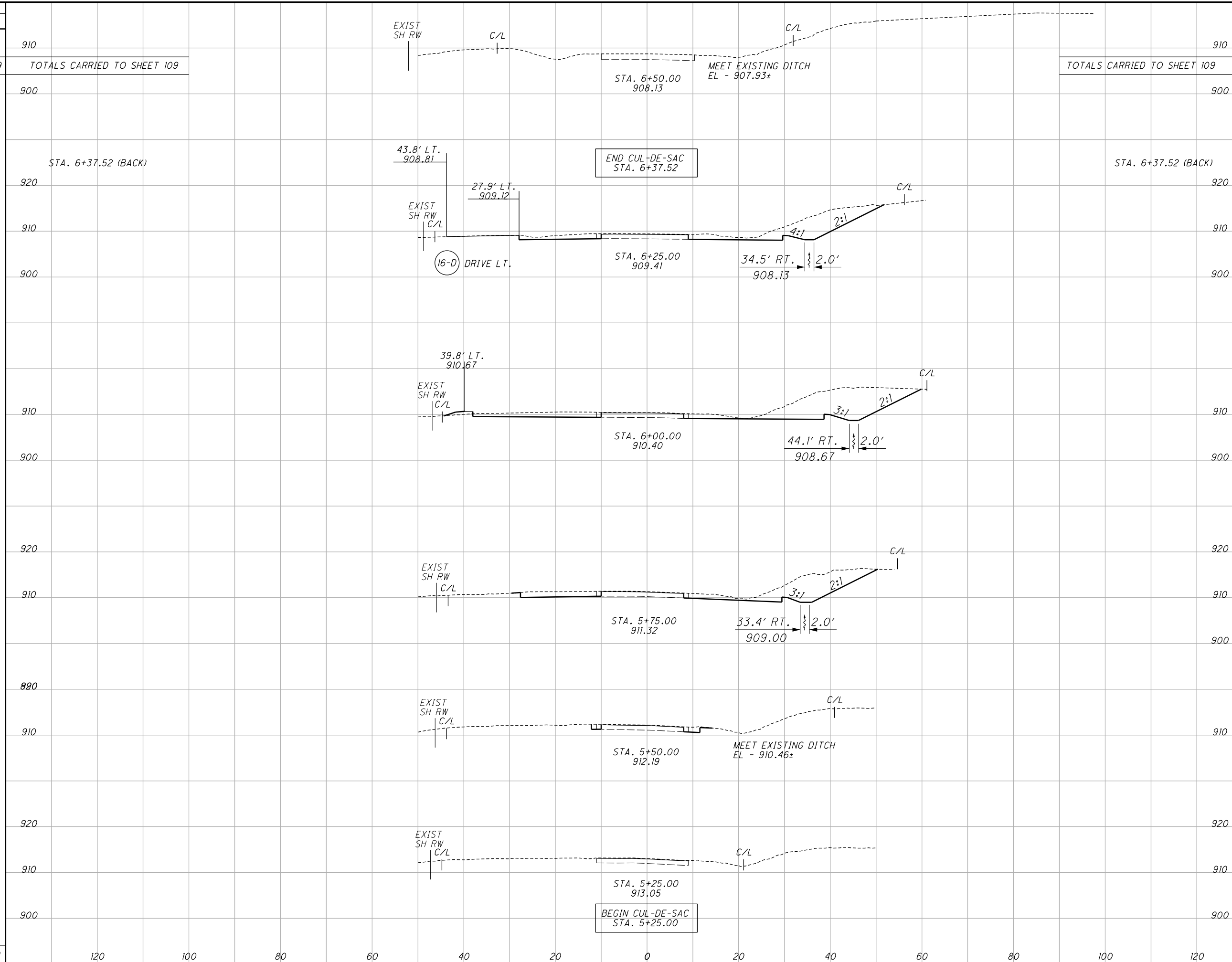
10' HORIZONTAL SCALE IN FEET

PLAN - RIVER ROAD CUL-DE-SAC

LIC-37 / 661-  
 16.59 / 0.00

157  
 341

10.dgn XS\_SHEET\_temporary\_model\_name\_12/4/2020\_5:58:11 PM hailberl



SEEDING	
END WIDTH	SO. YDS.
910	249
900	TOTALS CARRIED TO SHEET 109

TOTALS CARRIED TO SHEET 109	382	6
-----------------------------	-----	---

END AREA	VOLUME	CALCULATED	CHECKED	HAG
0	0			
122	0			
	150	0		
201	0			
	145	1		
112	2			
	55	3		
7	3			
	3	2		
0	0			
	382	6		

**CROSS SECTIONS CUL-DE-SAC  
 STA. 5+25.00 TO STA. 6+50.00**

**LIC-37 / 661-  
 16.59 / 0.00**

158  
 341





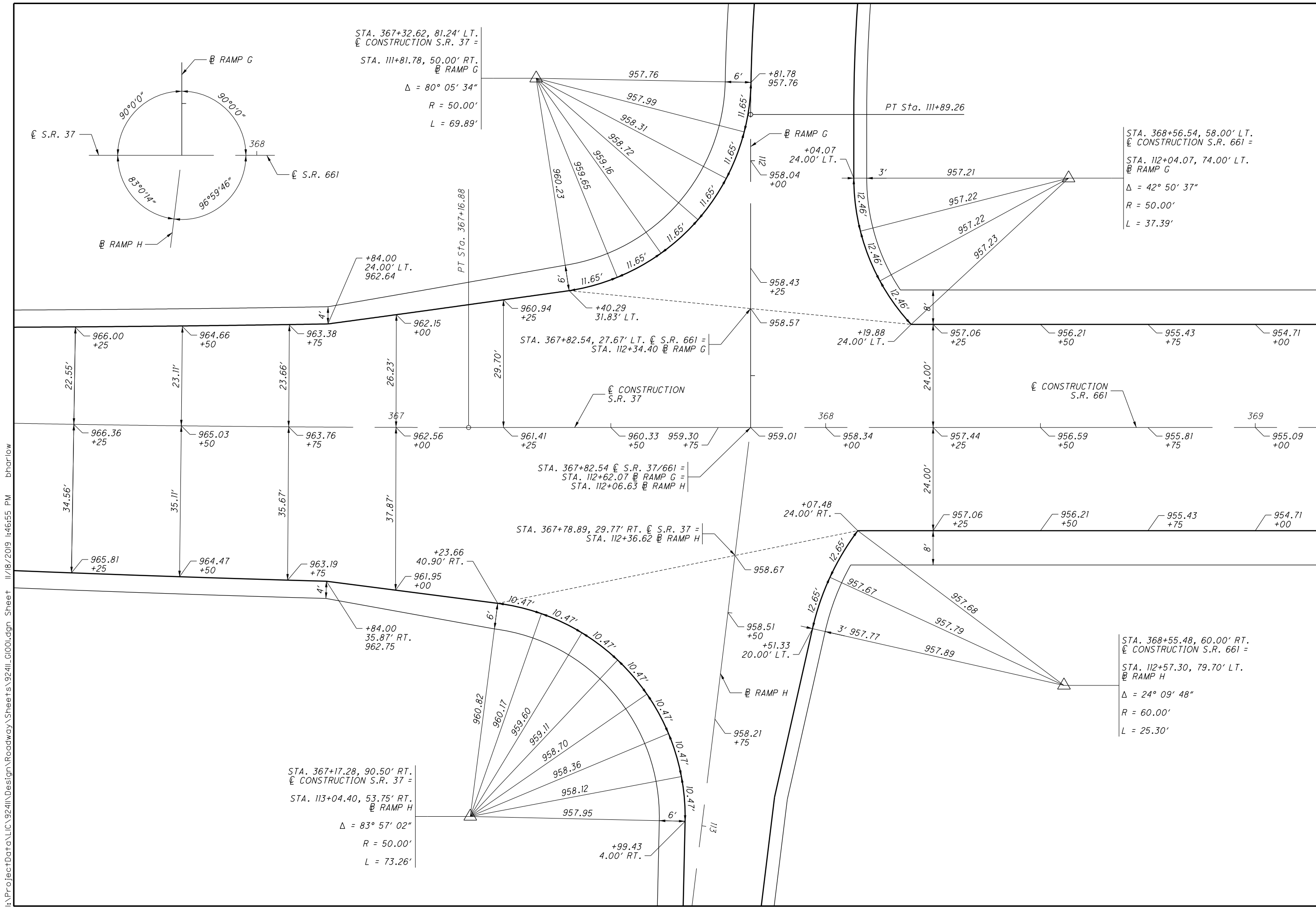




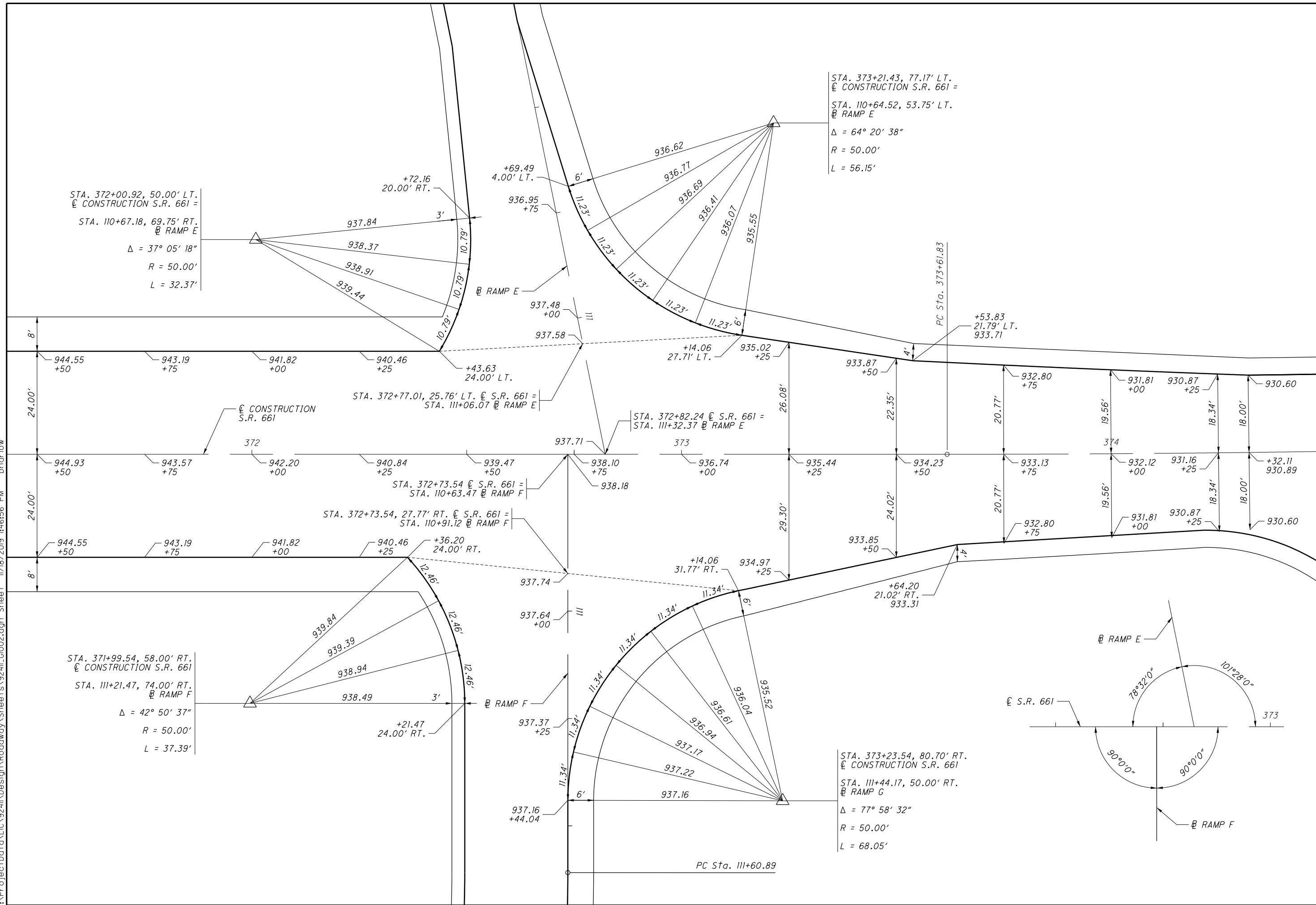
CALCULATED  
BRH  
CHECKED  
HAG

**INTERSECTION DETAILS**  
**S.R. 37 / S.R. 661 & RAMPS G, H**

**LIC-37 / 661-**  
**16.59 / 0.00**



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CALCULATED  
BRH  
CHECKED  
HAG

**INTERSECTION DETAILS  
S.R. 661 & RAMPS E, F**

**LIC-37 / 661-  
16.59 / 0.00**

162  
341

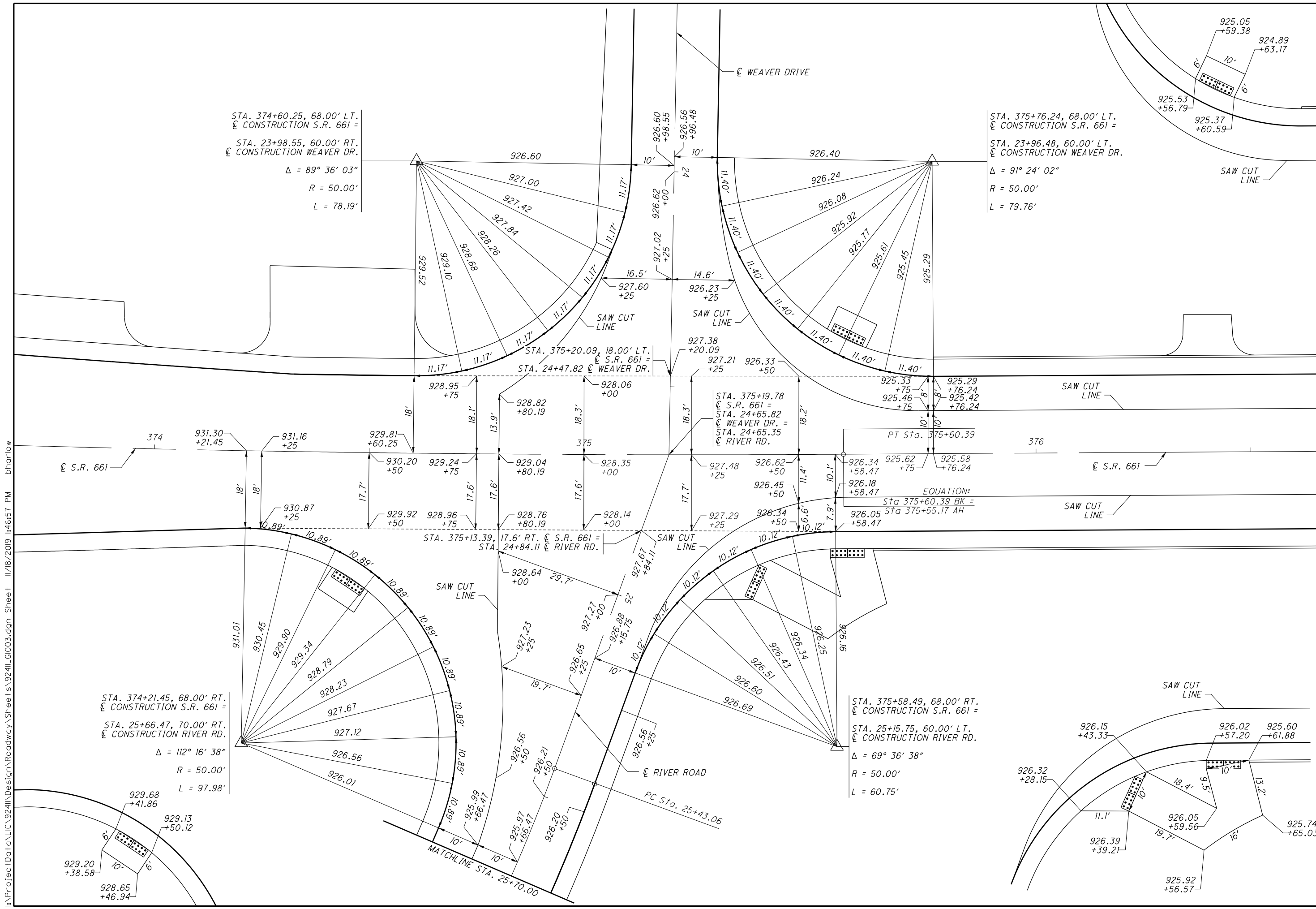
I:\ProjectData\LIC-37\661\Roadway\Sheets\924\11\003.dgn Sheet 11/18/2019 1:46:57 PM bharglow

STA. 374+60.25, 68.00' LT.  
CL CONSTRUCTION S.R. 661 =  
STA. 23+98.55, 60.00' RT.  
CL CONSTRUCTION WEAVER DR.  
 $\Delta = 89^\circ 36' 03''$   
 $R = 50.00'$   
 $L = 78.19'$

STA. 375+76.24, 68.00' LT.  
CL CONSTRUCTION S.R. 661 =  
STA. 23+96.48, 60.00' LT.  
CL CONSTRUCTION WEAVER DR.  
 $\Delta = 91^\circ 24' 02''$   
 $R = 50.00'$   
 $L = 79.76'$

STA. 374+21.45, 68.00' RT.  
CL CONSTRUCTION S.R. 661 =  
STA. 25+66.47, 70.00' RT.  
CL CONSTRUCTION RIVER RD.  
 $\Delta = 112^\circ 16' 38''$   
 $R = 50.00'$   
 $L = 97.98'$

STA. 375+58.49, 68.00' RT.  
CL CONSTRUCTION S.R. 661 =  
STA. 25+15.75, 60.00' LT.  
CL CONSTRUCTION RIVER RD.  
 $\Delta = 69^\circ 36' 38''$   
 $R = 50.00'$   
 $L = 60.75'$



10  
5  
0  
20  
HORIZONTAL SCALE IN FEET

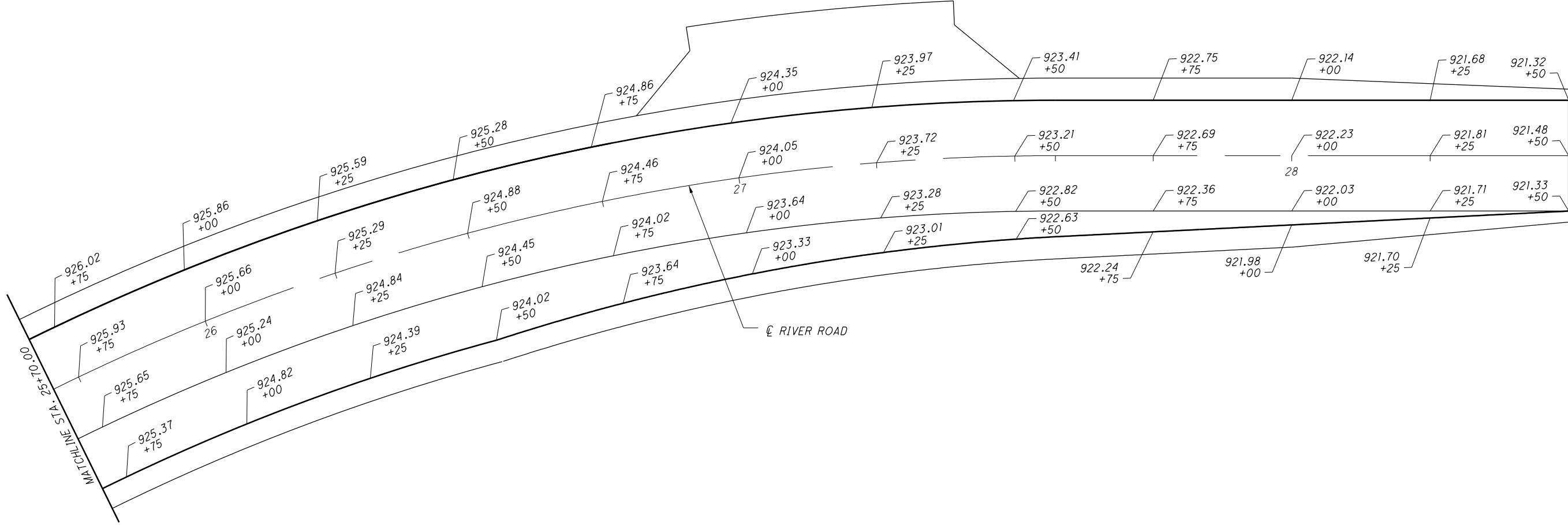
CALCULATED
BRH
CHECKED
HAG

**INTERSECTION DETAILS**  
**S.R. 661 / WEAVER DR. / RIVER RD.**

**LIC-37 / 661-**  
**16.59 / 0.00**

163
341

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\0005.dgn Sheet 11/18/2019 1:46:58 PM bharlow



CALCULATED  
HG

CHECKED  
HG

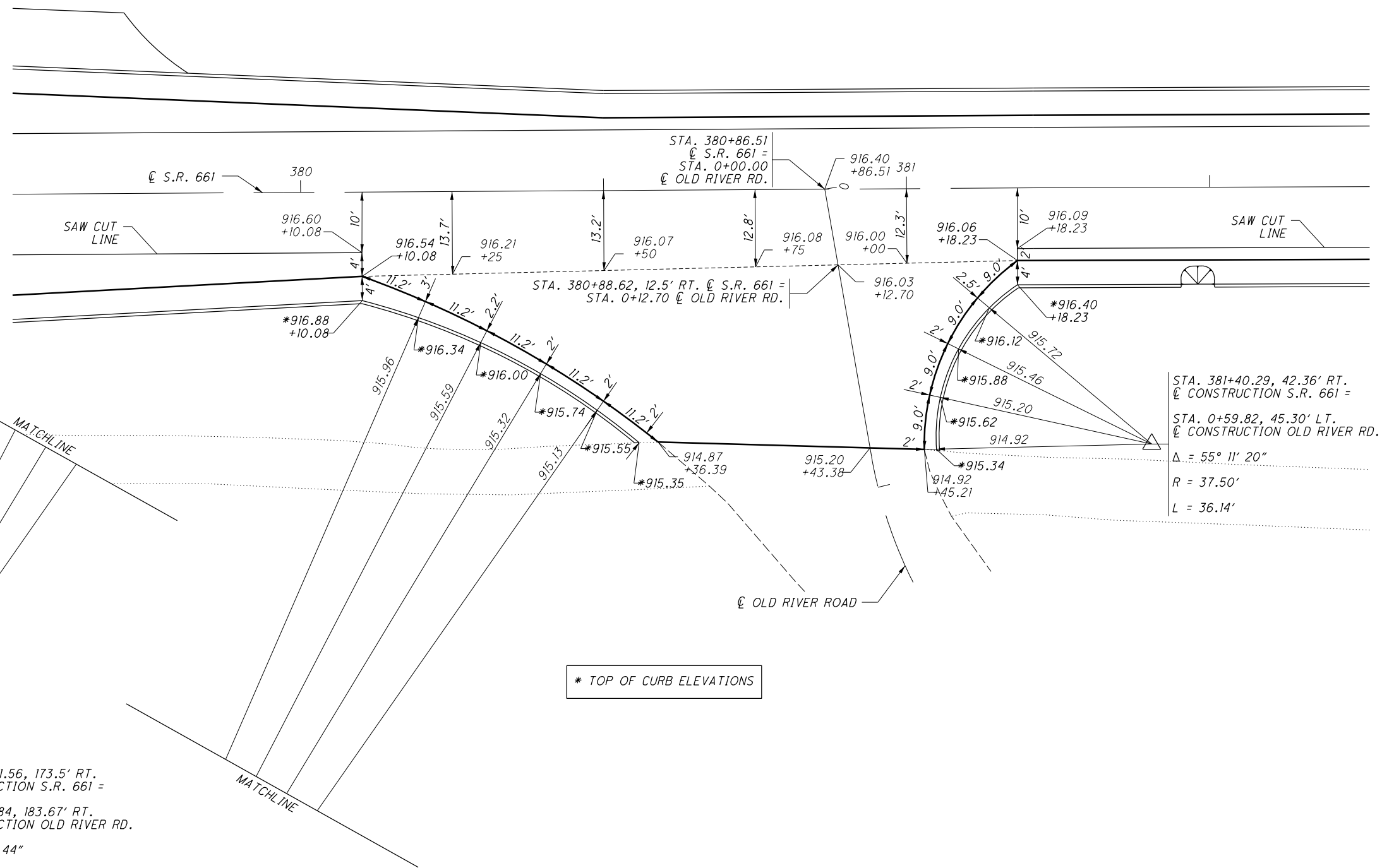
0 5 10 20  
HORIZONTAL  
SCALE IN FEET

**PAVEMENT DETAILS RIVER ROAD**  
**STA. 25+70.00 TO 28+50.00**

LIC-37 / 661-  
16.59 / 0.00

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STA. 379+51.56, 173.5' RT.  
 @ CONSTRUCTION S.R. 661 =  
 STA. 0+75.84, 183.67' RT.  
 @ CONSTRUCTION OLD RIVER RD.  
 $\Delta = 18^\circ 56' 44''$   
 $R = 170.00'$   
 $L = 56.21'$



\* TOP OF CURB ELEVATIONS

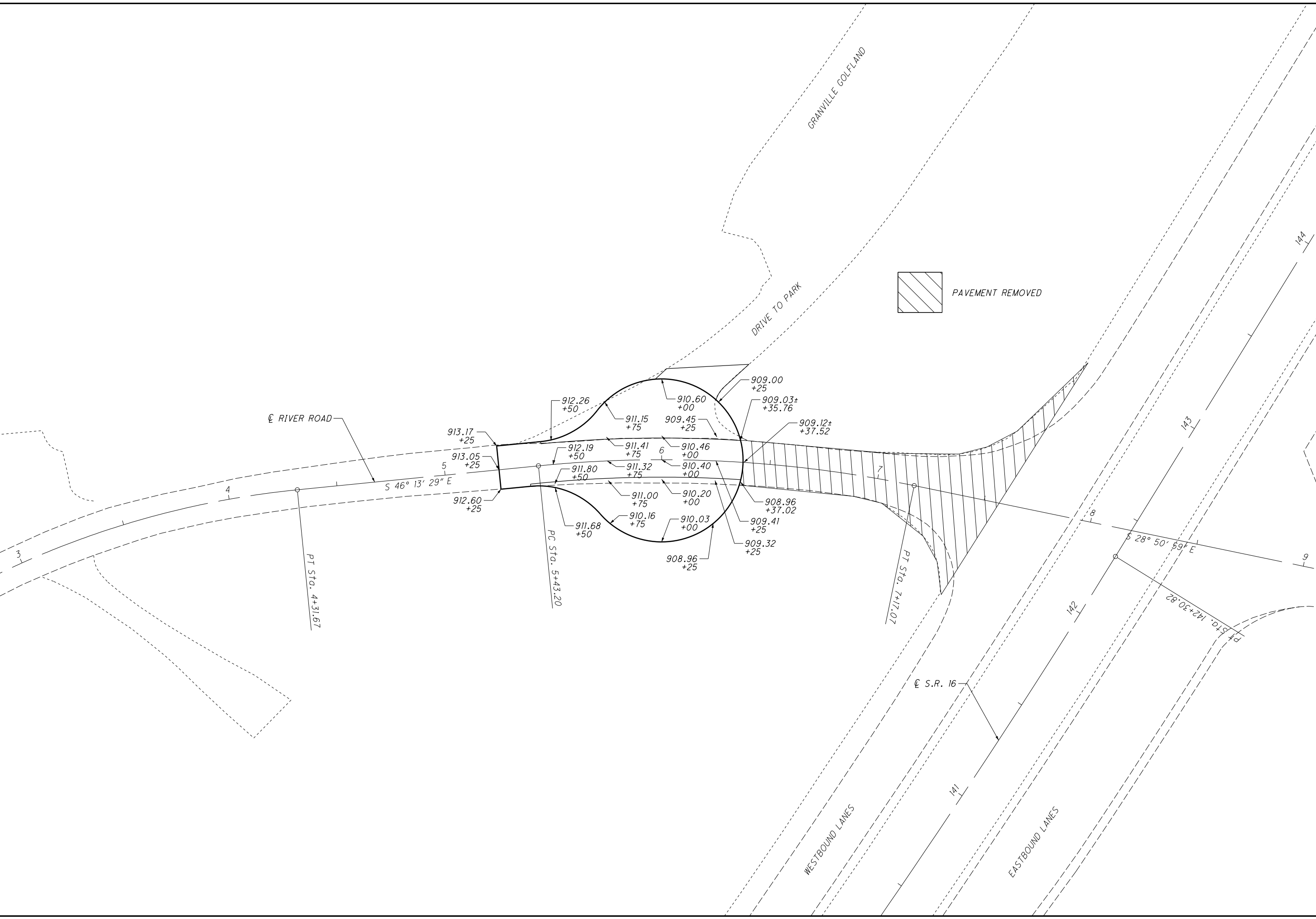
CALCULATED  
 HG  
 CHECKED  
 HG

0 5 10 20  
 HORIZONTAL  
 SCALE IN FEET

**INTERSECTION DETAILS**  
**S.R. 661 & OLD RIVER ROAD**

**LIC-37 / 661-**  
**16.59 / 0.00**

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CALCULATED	HC
CHECKED	HC

0 5 10 20  
HORIZONTAL SCALE IN FEET

**CUL-DE-SAC DETAILS**  
**RIVER ROAD**

**LIC-37 / 661-**  
**16.59 / 0.00**

**ITEM 609, CURB, TYPE 4-A, AS PER PLAN**

UNLESS ITEMIZED SEPARATELY, ALL ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, SUBGRADE COMPACTION, AGGREGATE BASE, FULL DEPTH PAVEMENT SAWING, ASPHALT REMOVED, CONCRETE PAVEMENT AND BACKFILL NECESSARY TO CONSTRUCT THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER FOOT FOR ITEM 609, CURB, TYPE 4-A, AS PER PLAN. TAPER THE NEW CONCRETE AT A RATE OF 5:1 TO TIE INTO THE EXISTING SHOULDER AS SHOWN ON SHEET 168. THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO PERFORM THE WORK.

**ITEM 622, CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN A**

THE BARRIER SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING RM-4.5 EXCEPT:

THE HEIGHT OF THE BARRIER SHALL BE 50".

THE ENTIRE LENGTH OF THE BARRIER SHALL BE REINFORCED AS DETAILED ON SHEET 169.

THE CONTRACTOR MAY USE STABILIZED CRUSHED AGGREGATE OR OTHER METHODS TO PROVIDE A STABLE AND LEVEL SURFACE FOR EQUIPMENT WHEN CONSTRUCTING THE BARRIER.

THE CONTRACTOR SHALL CONSTRUCT DRAINAGE SLOTS (OR WINDOWS) AT THE BASE OF THE BARRIER AT INTERVALS NOT EXCEEDING 90 FEET. THE SLOTS WILL BE LOCATED FLUSH WITH THE BASE OF THE BARRIER AND BE 4" IN HEIGHT AND 5 FEET IN LENGTH FOR THE FULL WIDTH OF THE BARRIER.

THE CONTRACTOR SHALL CONSTRUCT EXPANSION JOINTS AT A MAXIMUM SPACING OF 90 FEET.

AT THE APPROVAL OF THE PROJECT ENGINEER, MINOR ADJUSTMENTS CAN BE MADE TO THE LOCATIONS OF THE DRAINAGE WINDOWS AND/OR EXPANSION JOINTS TO AVOID CONFLICTS WITH REINFORCING STEEL.

UNLESS ITEMIZED SEPARATELY, ALL ACTIVITIES INCLUDING EXCAVATION, SUBGRADE COMPACTION, AGGREGATE BASE, REINFORCING STEEL, EXPANSION JOINTS, CONCRETE PAVEMENT, AND BACKFILL NECESSARY TO CONSTRUCT THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER FOOT FOR ITEM 622, CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN A. THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS TO PERFORM THE WORK.

**ITEM 622, CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN A**

THE CONCRETE END SECTION SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING RM-4.6 (SHEET 3/3) EXCEPT THAT THE SECTION SHALL TRANSITION FROM AN INITIAL HEIGHT OF 50" TO MATCH THE BARRIER. ANY ADDITIONAL STEEL REINFORCING AND CONCRETE NECESSARY TO CONSTRUCT THE END SECTION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622, CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN A.

UNLESS ITEMIZED SEPARATELY, ALL ACTIVITIES INCLUDING EXCAVATION, SUBGRADE COMPACTION, AGGREGATE BASE, REINFORCING STEEL, EXPANSION JOINTS, CONCRETE PAVEMENT, AND BACKFILL NECESSARY TO CONSTRUCT THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID FOR ITEM 622, CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN A. THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS TO PERFORM THE WORK.

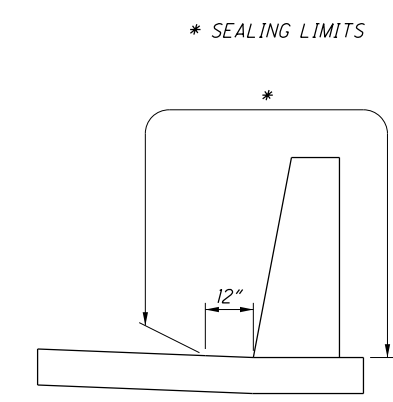
**ITEM 512, SEALING OF CONCRETE SURFACES (NON-EPOXY)**

CALCULATIONS:

END SECTION:  
 $32" \text{ SECTION} = [(0.5' + 2.7' + 1.4' + 2.7' + 1.0') \times 4'] \div 9 = 3.7 \text{ SY}$   
 $\text{TRANSITION} = [(0.5' + 3.5' + 1.2' + 3.5' + 1.0') \times 10'] \div 9 = 10.8 \text{ SY}$

BARRIER:  
 $[(0.5' + 4.2' + 1.0' + 4.3' + 1.0') \times 450] \div 9 = 550.0 \text{ SY}$

TOTAL = 3.7 + 10.8 + 550.0 = 565 SY



PLAN SPLIT CODE: 04/NHS/OT				
ITEM	EXT.	TOTAL	UNIT	DESCRIPTION
512	10050	565	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)
606	15050	12.50	EACH	GUARDRAIL, TYPE MGS
606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350 OR MASH 2016)
606	35002	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1
606	35102	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2
609	24001	44	FT	CURB, TYPE 4-A, AS PER PLAN
622	10161	450	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN A
622	25011	2	EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN A
626	00102	6	EACH	BARRIER REFLECTOR, TYPE 1 (BI-DIRECTIONAL)
626	00110	3	EACH	BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)

QUANTITIES CARRIED TO GENERAL SUMMARY

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\_GM001.dgn Sheet 11/18/2019 1:47:02 PM bharlow

POINT	ALIGNMENT	STATION	OFFSET
A*	S.R. 16	100+70.00	72.00' RT.
B*	S.R. 16	103+63.28	91.75' RT.
C*	RAMP G	105+06.07	8.00' RT.
D	S.R. 16	100+02.50	72.00' RT.
E	S.R. 16	100+15.00	72.00' RT.
F	S.R. 16	100+10.00	67.50' RT.
G	S.R. 16	100+40.00	72.00' RT.
H	S.R. 16	100+54.00	72.00' RT.
I	RAMP G	103+65.63	3.50' RT.
J	RAMP G	105+20.07	8.00' RT.

**DRAINAGE WINDOW LOCATIONS**

(AT CENTER OF WINDOW AT TOE OF ROCKFALL BARRIER.)

- DW1 = STA. 100+99.00, 72.03' RT. (☉ S.R. 16)
- DW2 = STA. 101+88.95, 74.79' RT. (☉ S.R. 16)
- DW3 = STA. 102+78.68, 81.59' RT. (☉ S.R. 16)
- DW4 = STA. 103+70.50, 8.00' RT. (☉ RAMP G)
- DW5 = STA. 104+60.88, 8.00' RT. (☉ RAMP G)

**EXPANSION JOINT LOCATIONS**

(AT TOE OF ROCKFALL BARRIER.)

- EJ1 = STA. 101+43.99, 72.90' RT. (☉ S.R. 16)
- EJ2 = STA. 102+33.86, 77.69' RT. (☉ S.R. 16)
- EJ3 = STA. 103+23.41, 86.51' RT. (☉ S.R. 16)
- EJ4 = STA. 104+60.88, 8.00' RT. (☉ RAMP G)

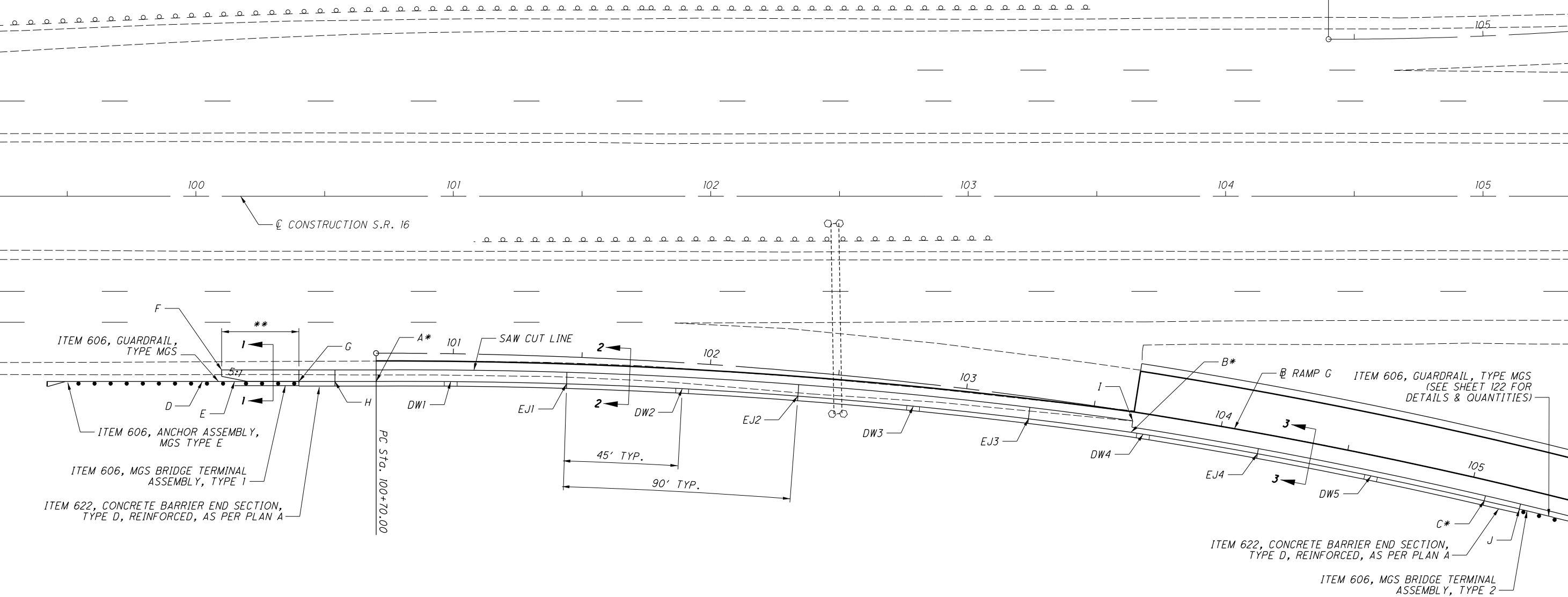


CALCULATED BRH  
CHECKED HAG

**ROCKFALL BARRIER PLAN  
S.R. 16 & RAMP G**

LIC-37 / 661-  
16.59 / 0.00

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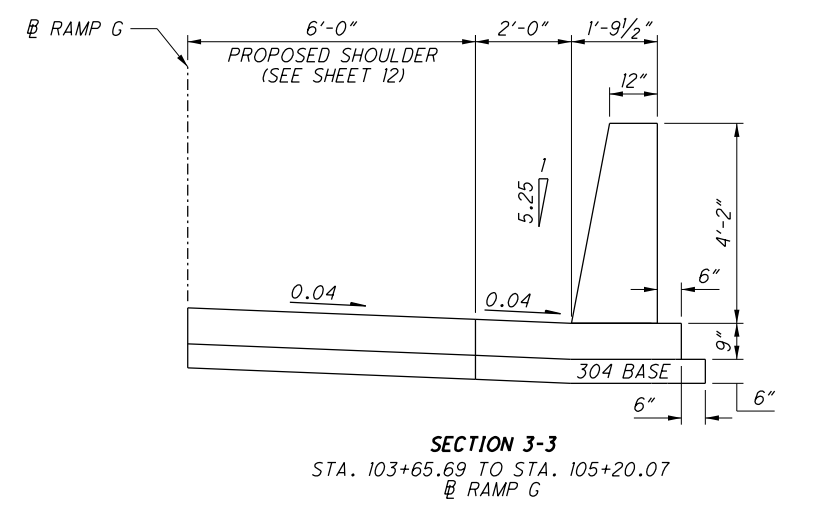
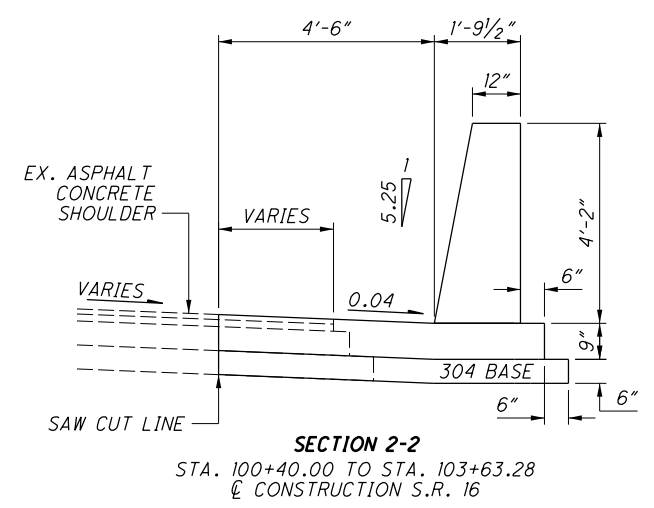
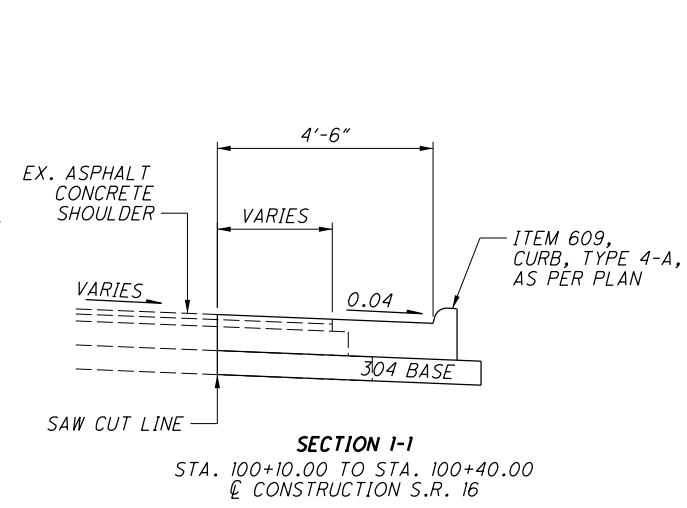


**\*NOTE:**  
CONSTRUCT ROCKFALL BARRIER FROM POINT A\* TO POINT B\* WITH A 2000 FT. RADIUS CURVE AT THE TOE OF THE ROCKFALL BARRIER.

MAINTAIN A 4'-6" OFFSET FROM THE TOE OF THE ROCKFALL BARRIER TO THE SAW CUT LINE. (SEE SECTION 2-2).

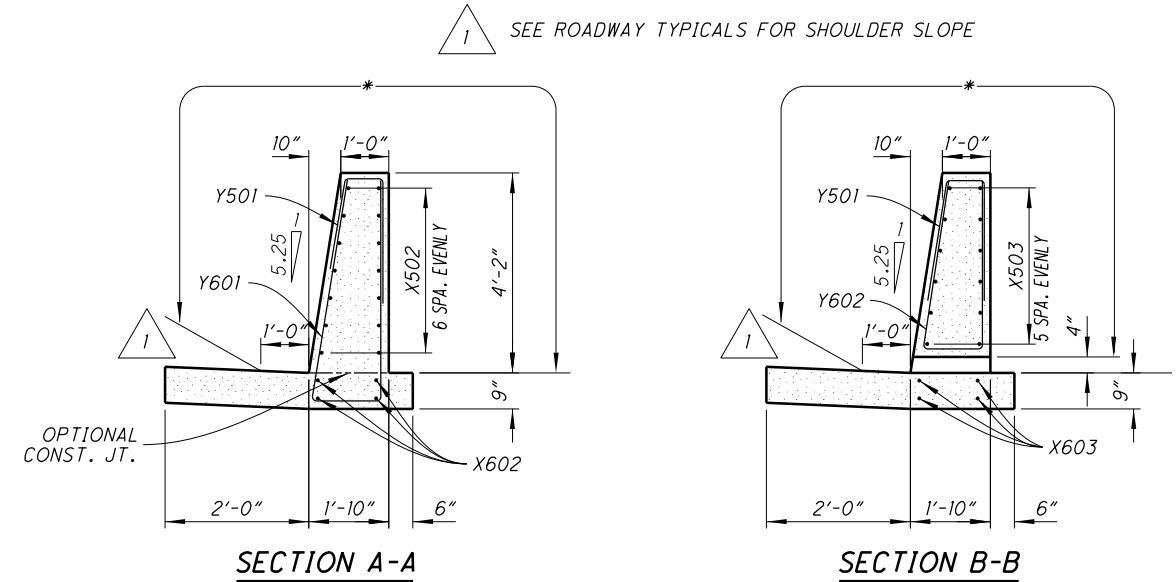
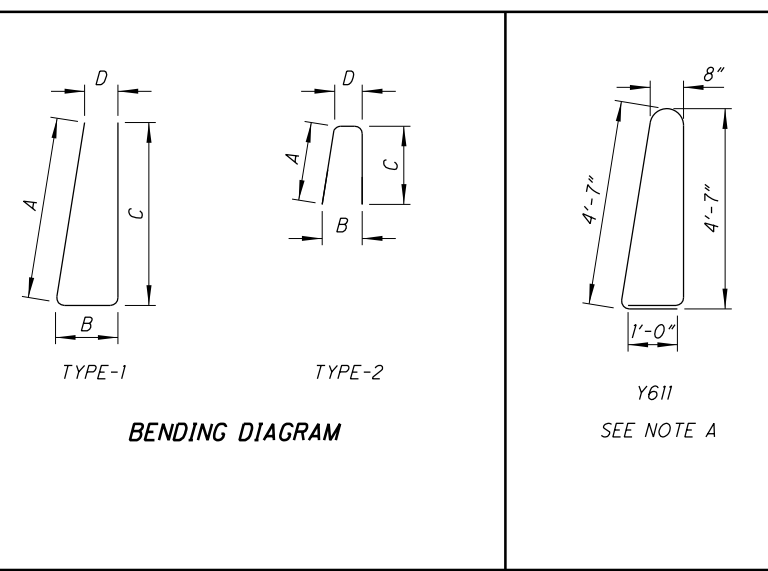
CONSTRUCT ROCKFALL BARRIER FROM POINT B\* TO POINT C\* WITH AN 8.00 FT. OFFSET OF ☉ RAMP G AT THE TOE OF THE ROCKFALL BARRIER. (SEE SECTION 3-3).

**\*\*NOTE:**  
CONCRETE PAVEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 609, CURB, TYPE 4-A, AS PER PLAN. TAPER CONCRETE AT 5:1 FROM THE EXISTING SHOULDER.





MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS			
					A	B	C	D
Y601	94	10'-6"	1483	1	4'-7"	1'-7"	4'-7"	8"
Y602	6	8'-2"	74	1	3'-6"	1'-5"	3'-6"	8"
Y501	100	4'-1"	426	2	1'-10"	1'-0"	1'-10"	8"
X501	28	14'-8"	428	STR				
X502	28	26'-5"	772	STR				
X503	14	19'-9"	289	STR				
X601	8	15'-8"	189	STR				
X602	8	26'-9"	322	STR				
X603	4	19'-9"	119	STR				
<b>SUB-TOTAL</b>			<b>4102**</b>					

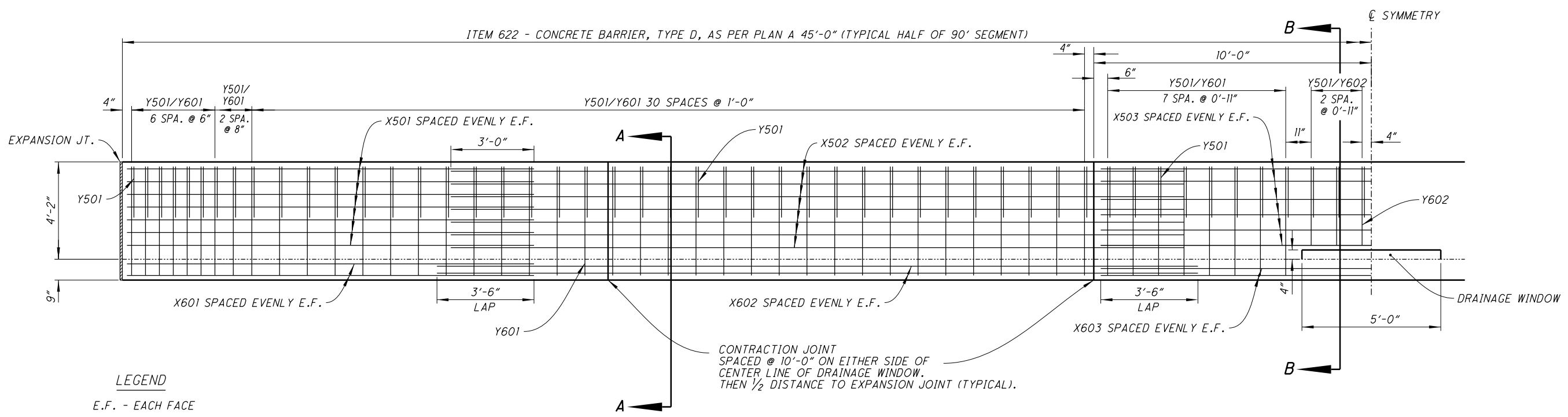
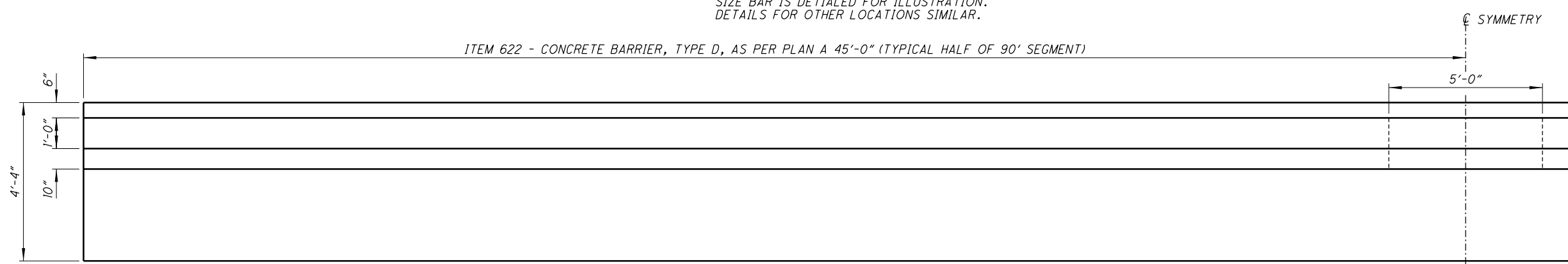


\*\* - STEEL WEIGHT IS FOR TYPICAL 90 FT BARRIER SEGMENT AND FOR INFORMATION ONLY.

**NOTES**

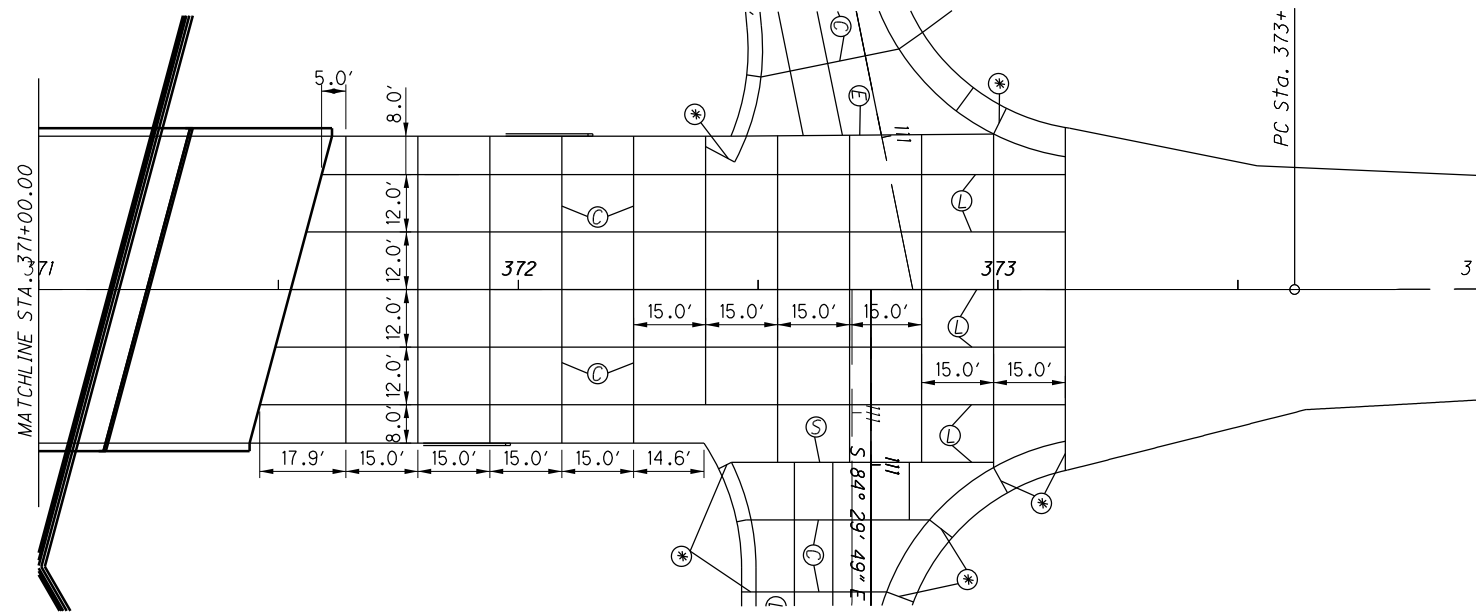
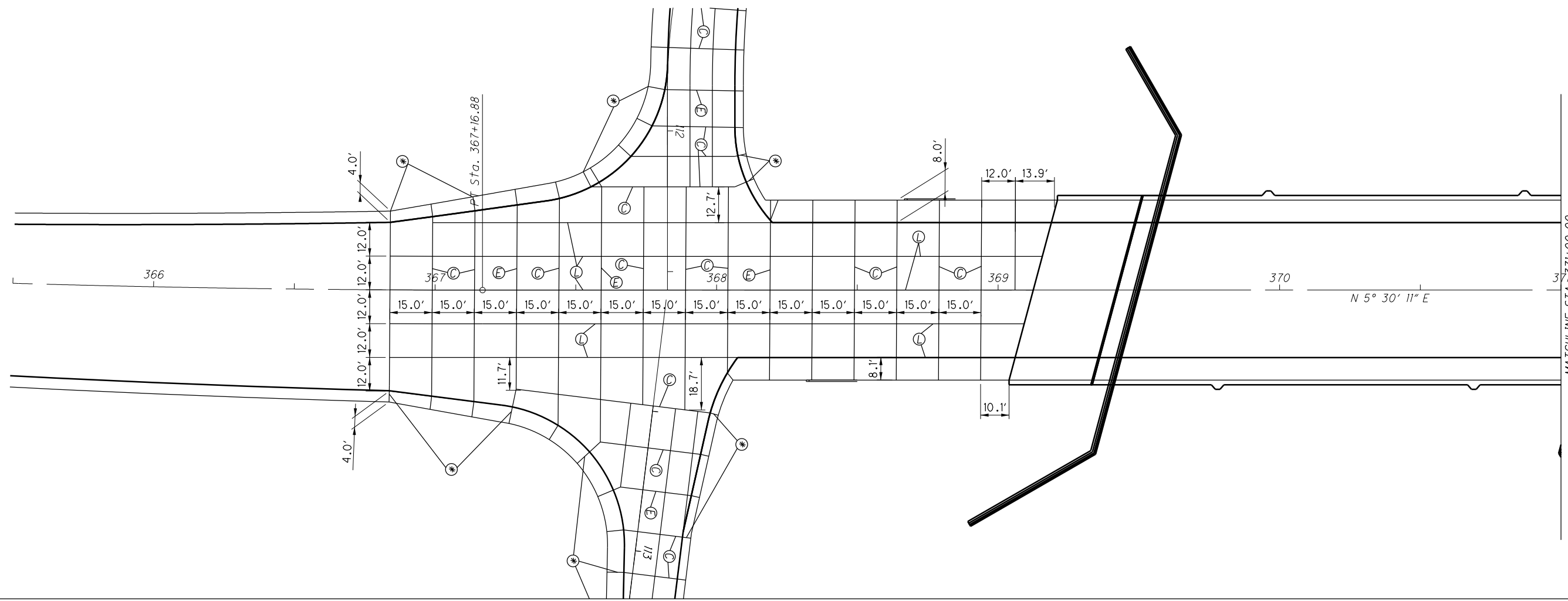
A: AT THE OPTION TO THE CONTRACTOR Y611 CAN BE USED IN LIEU OF OTHER VERTICAL REINFORCING. THE FULL SIZE BAR IS DETAILED FOR ILLUSTRATION. DETAILS FOR OTHER LOCATIONS SIMILAR.

\* - SEALING OF CONCRETE SURFACES



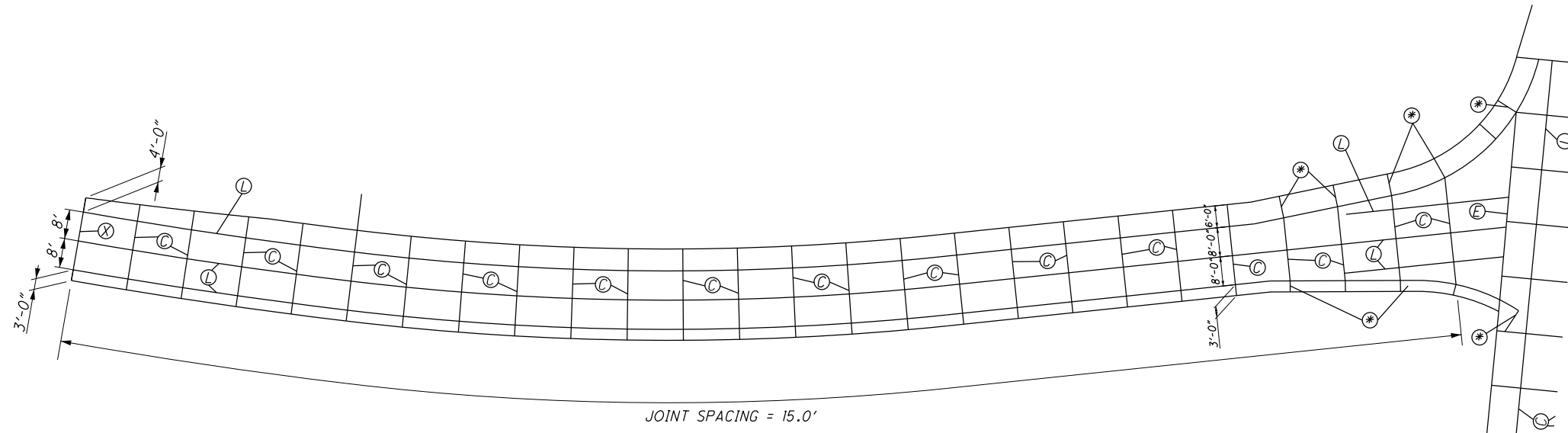
**LEGEND**  
E.F. - EACH FACE

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241\CM003.dgn\_Sheet 11/18/2019 4:47:04 PM bharlow



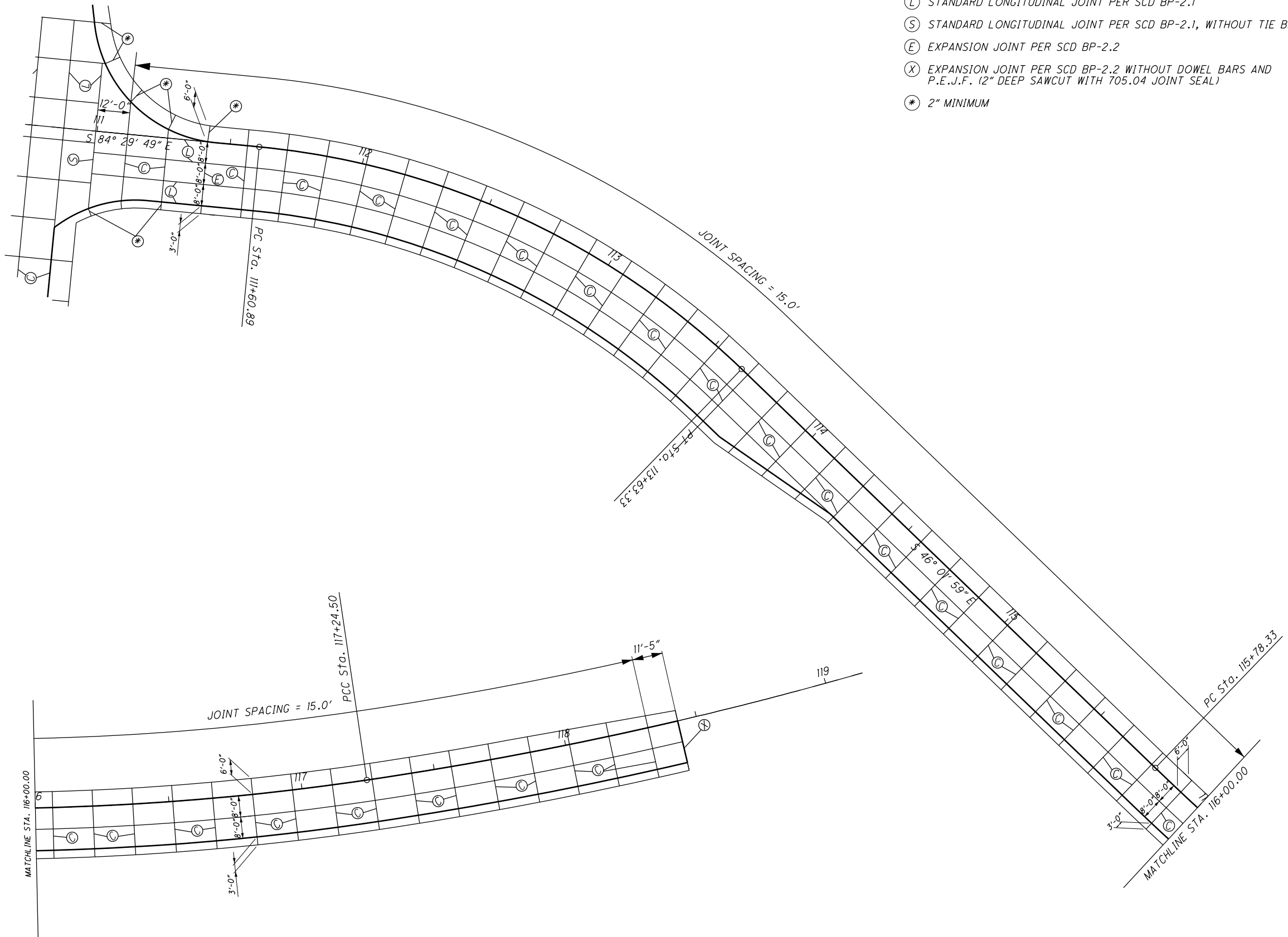
- LEGEND
- (C) CONTRACTION JOINT AS PER SCD BP-2.2
  - (L) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1
  - (S) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1, WITHOUT TIE BARS
  - (E) EXPANSION JOINT PER SCD BP-2.2
  - (X) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)
  - (\*) 2" MINIMUM





LEGEND

- (C) CONTRACTION JOINT AS PER SCD BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1
- (S) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1, WITHOUT TIE BARS
- (W) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS
- (X) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)
- (\*) 2" MINIMUM



LEGEND

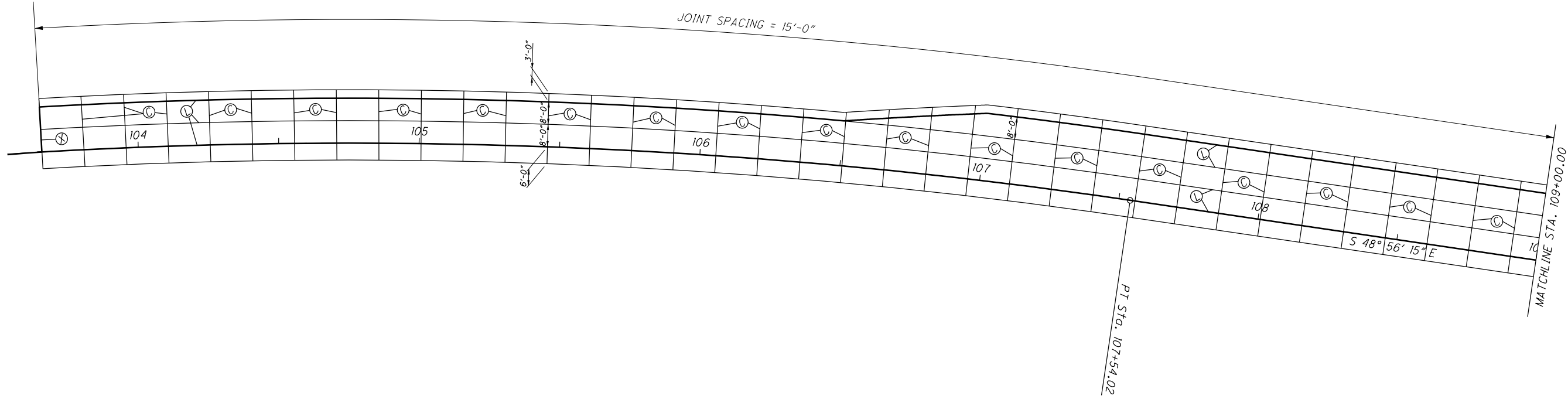
- (C) CONTRACTION JOINT AS PER SCD BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1
- (S) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1, WITHOUT TIE BARS
- (E) EXPANSION JOINT PER SCD BP-2.2
- (X) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)
- (\*) 2" MINIMUM

CALCULATED	RG	CHECKED	HG

0 20 40  
HORIZONTAL SCALE IN FEET

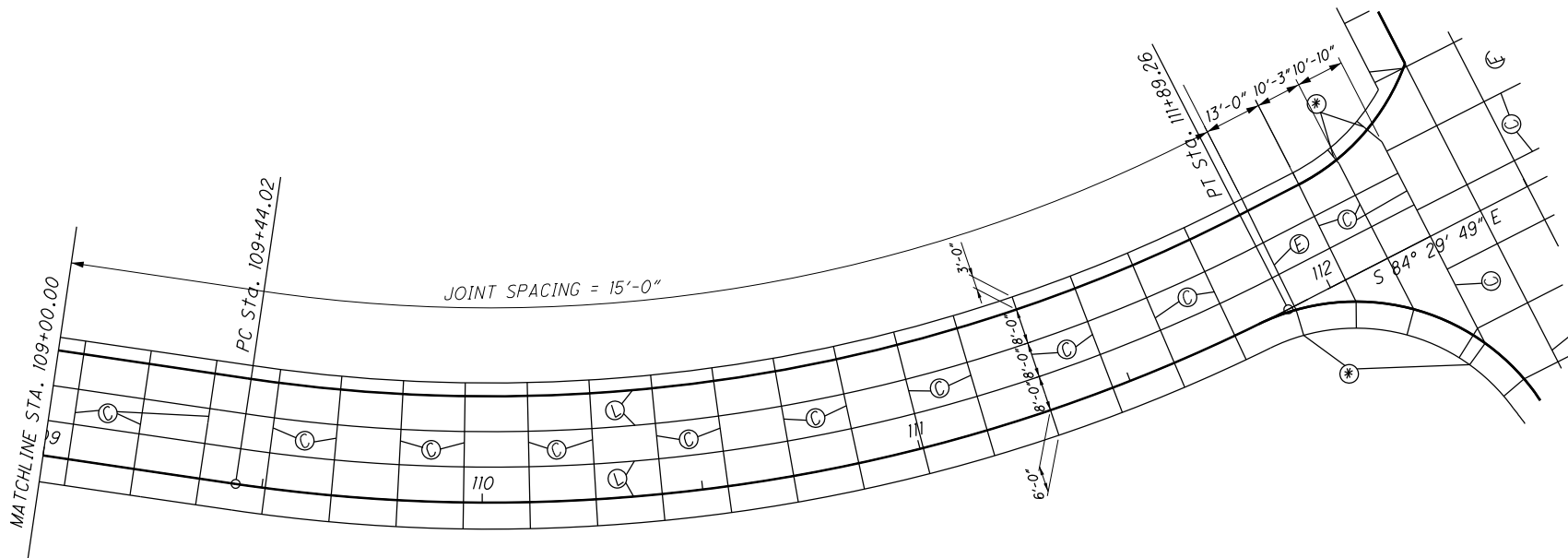
PAVEMENT JOINT DETAILS - RAMP F

LIC-37 / 661-  
16.59 / 0.00



LEGEND

- (C) CONTRACTION JOINT AS PER SCD BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1
- (S) STANDARD LONGITUDINAL JOINT PER SCD BP-2.1, WITHOUT TIE BARS
- (W) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS
- (X) EXPANSION JOINT PER SCD BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)
- (\*) 2" MINIMUM

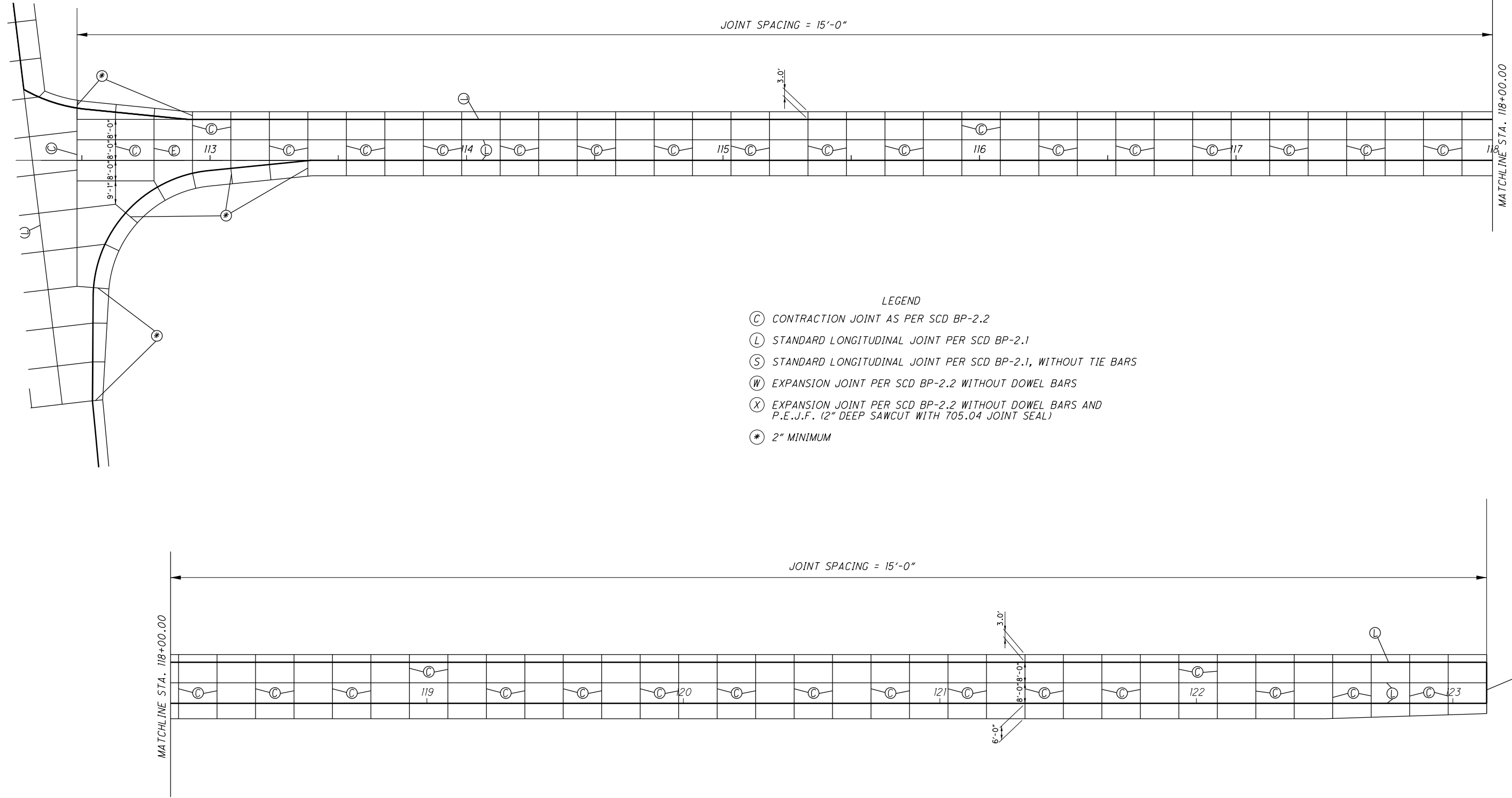


CALCULATED	RG
CHECKED	HG

PAVEMENT JOINT DETAILS - RAMP G

LIC-37 / 661-  
16.59 / 0.00

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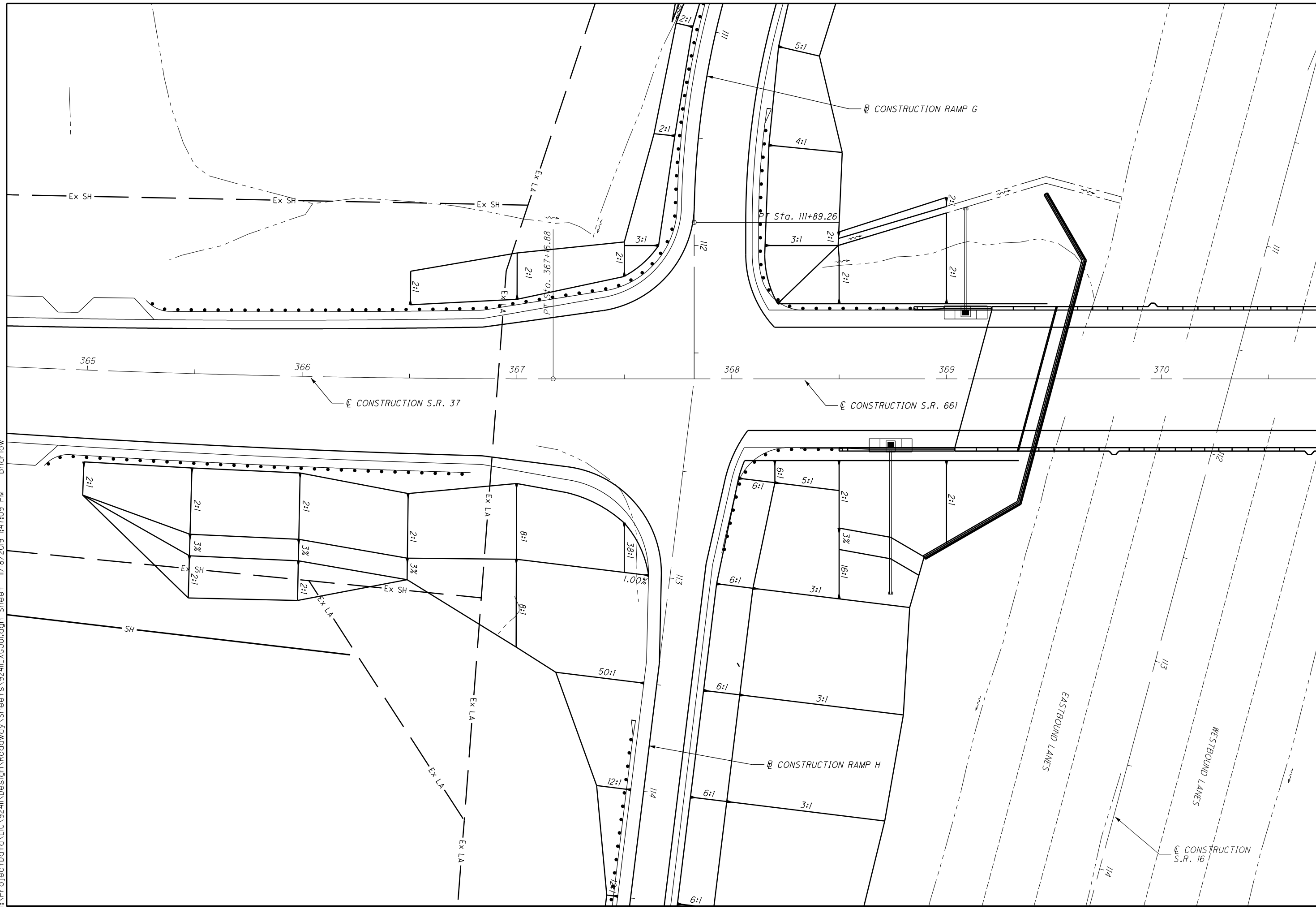
CALCULATED  
RG  
CHECKED  
HG

0 20 40  
HORIZONTAL  
SCALE IN FEET

PAVEMENT DETAIL SHEETS - RAMP H

LIC-37 / 661-  
16.59 / 0.00

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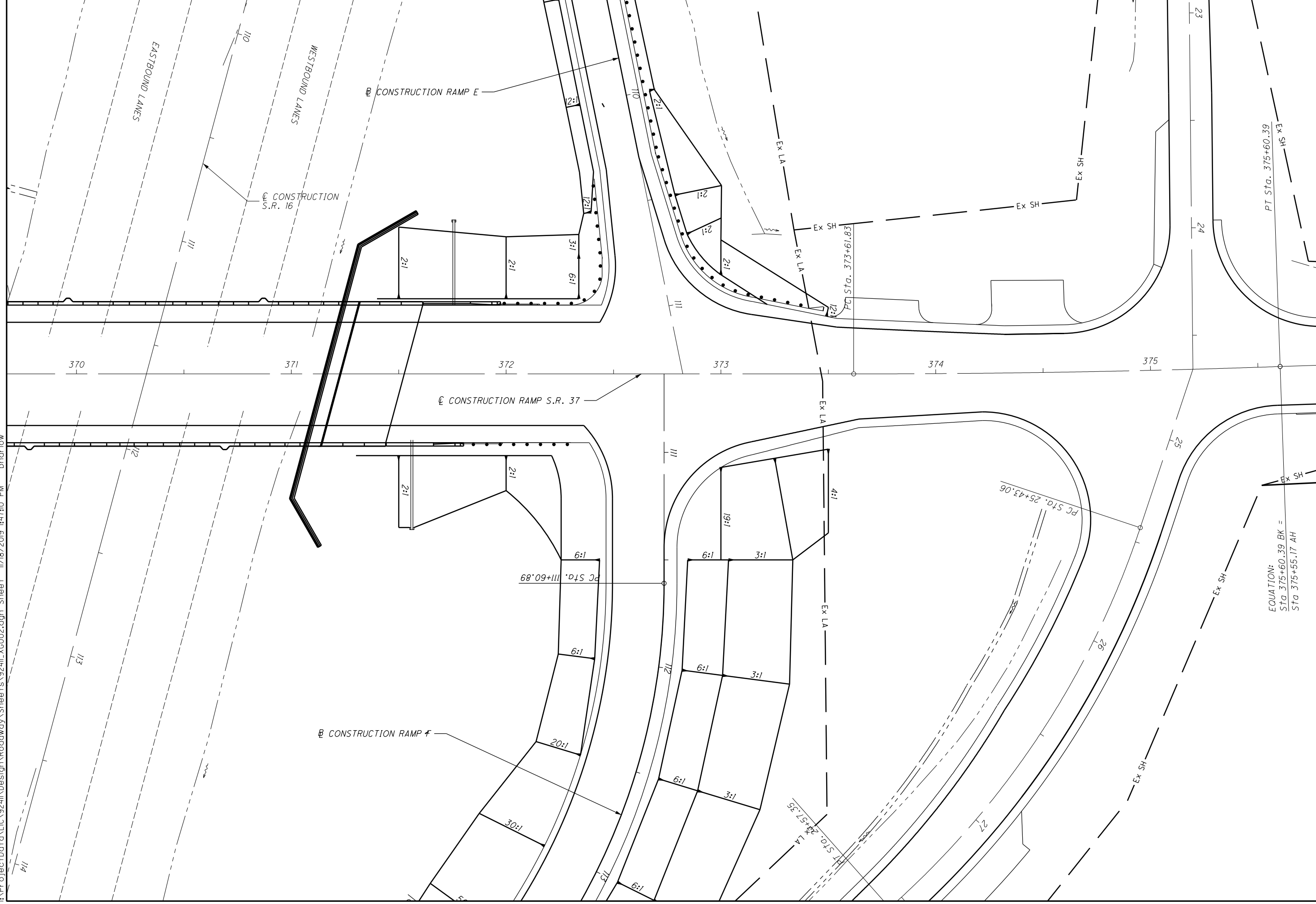
CALCULATED	RJG	CHECKED	HAG

0  
HORIZONTAL SCALE IN FEET

**INTERCHANGE GRADING PLAN  
S.R. 37 AT RAMPS G AND H**

**LIC-37 661-  
16.59 0.00**

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CALCULATED	RJG
CHECKED	HAG

0 0  
HORIZONTAL SCALE IN FEET

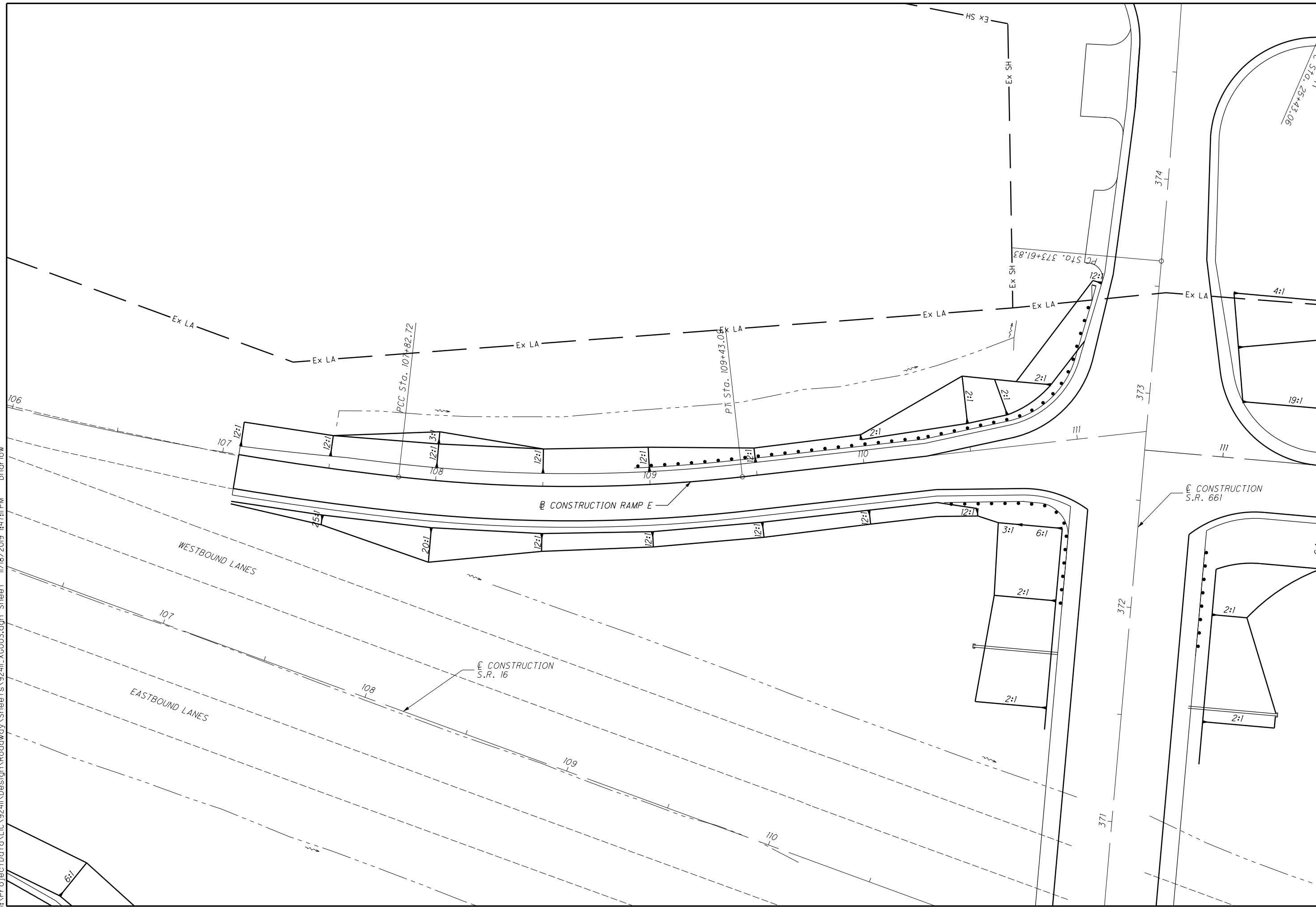
**INTERCHANGE GRADING PLAN**  
**S.R. 37 AT RAMPS E AND F**

**LIC-37 / 661-**  
**16.59 / 0.00**

EQUATION:  
Sta 375+60.39 BK =  
Sta 375+55.17 AH



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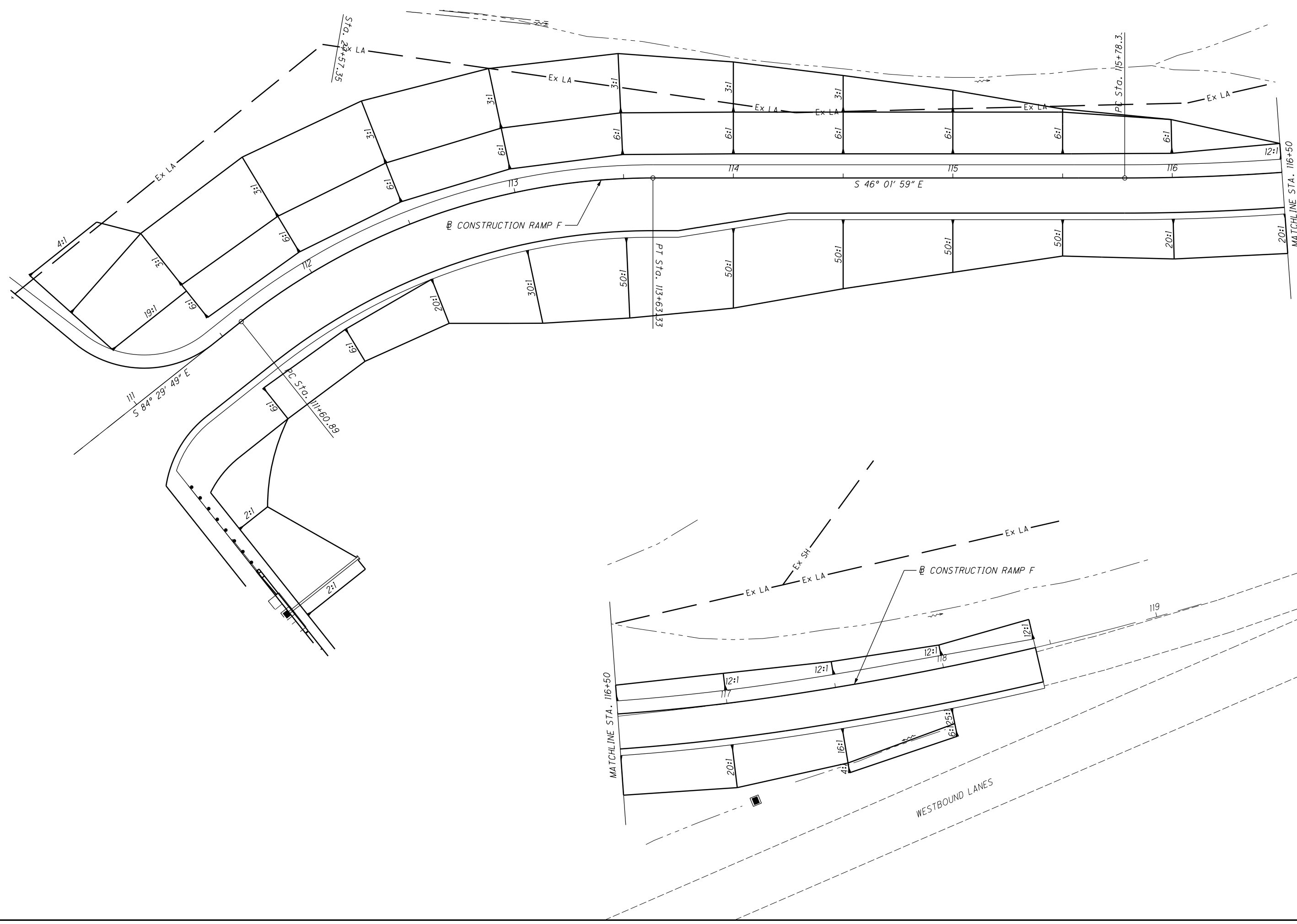


CALCULATED	RJG
CHECKED	HAG

HORIZONTAL SCALE IN FEET

**INTERCHANGE GRADING PLAN  
RAMP E**

**LIC-37 / 661-  
16.59 / 0.00**



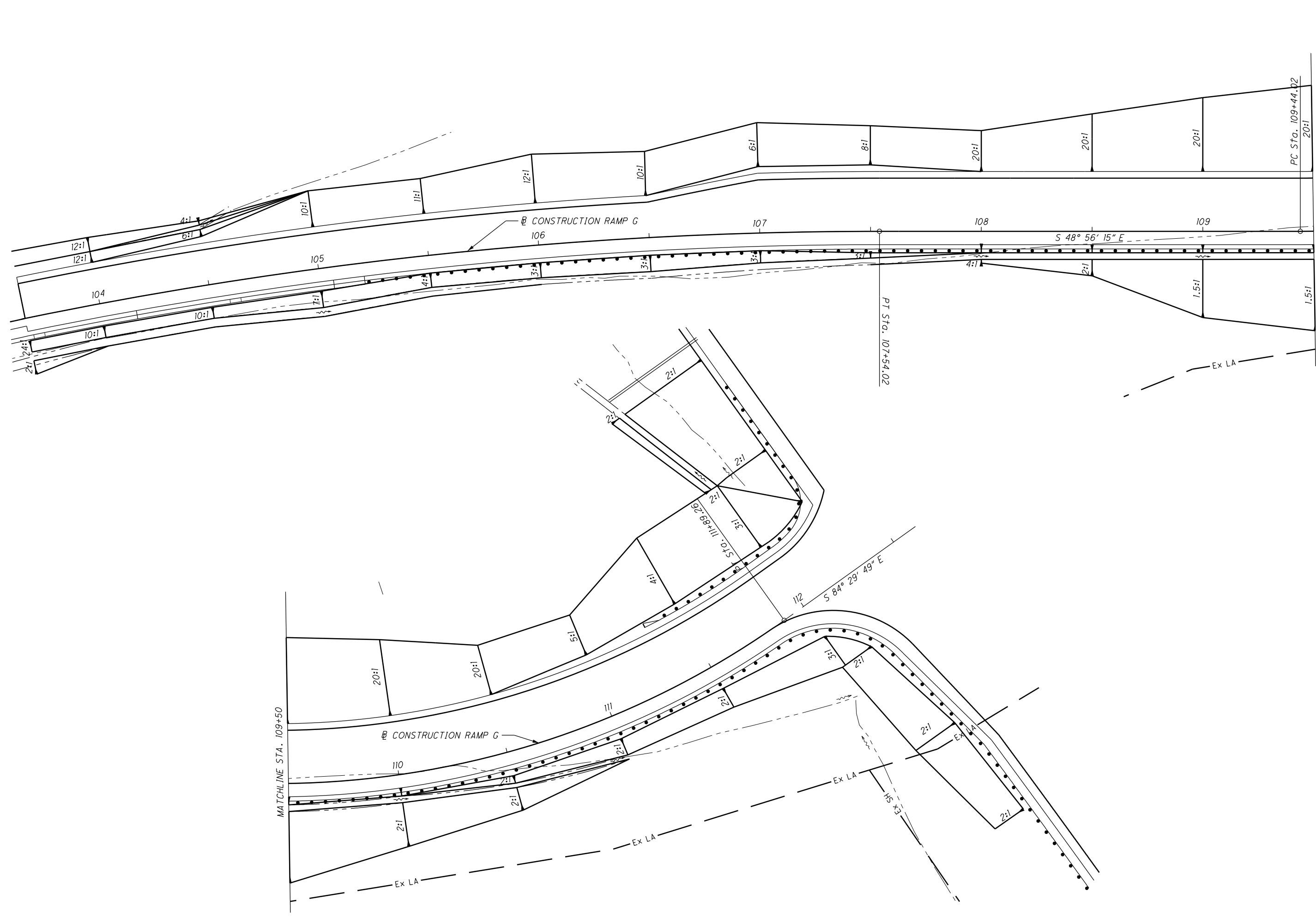
CALCULATED	RJG
CHECKED	HAG

0 40' HORIZONTAL SCALE IN FEET

### INTERCHANGE GRADING PLAN RAMP F

LIC-37 / 661-  
16.59 / 0.00

I:\ProjectData\LIC\9241\Design\Roadway\Sheets\9241L\_XG006.dgn\_Sheet 11/18/2019 1:47:22 PM bharlow



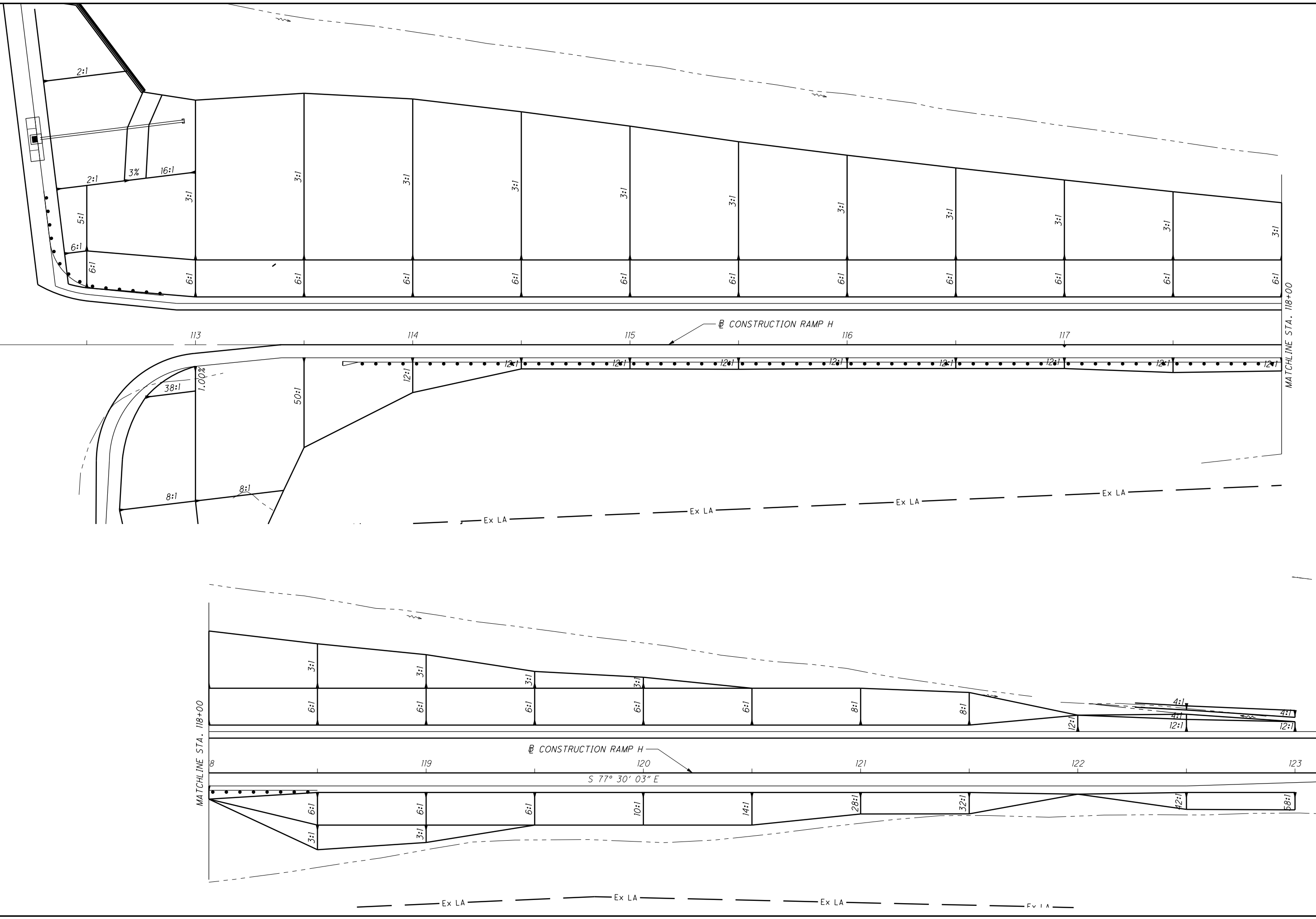
CALCULATED  
R/JG  
CHECKED  
HAG

0  
0  
0  
HORIZONTAL  
SCALE IN FEET

**INTERCHANGE GRADING PLAN  
RAMP G**

**LIC-37 / 661-  
16.59 / 0.00**

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CALCULATED  
RJK  
CHECKED  
HAG

0 0  
HORIZONTAL  
SCALE IN FEET

**INTERCHANGE GRADING PLAN**  
**RAMP H**

**LIC-37 / 661-**  
**16.59 / 0.00**

I:\ProjectData\LIC\9241\Design\Drainage\Sheets\9241L\_DS001.dgn Sheet 1/22/2020 5:03:32 PM ngilberl

REFERENCE	STATION TO STATION	SIDE	601	601	602	605	605	611	611	611	611	611	BENDS AND CONNECTORS FOR INFORMATION ONLY							
			TIED CONCRETE BLOCK MAT, TYPE 1	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY	6" SHALLOW PIPE UNDERDRAIN	6" UNCLASSIFIED PIPE UNDERDRAIN	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	6" CONDUIT, TYPE B	12" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	CATCH BASIN, NO. 5, AS PER PLAN	PRECAST REINFORCED CONCRETE OUTLET	CAP	CROSS	TEE	45° BEND	90° BEND	45° WYE		
PLAN SPLIT CODE 02/NHS/PV			SO. YD.	CU. YD.	CU. YD.	FT.	FT.	FT.	FT.	FT.	FT.	EA.	EA.							
<b>UNDERDRAINS</b>																				
1-UD	366+89 - 367+40	LT	1.8			51		17					1			1				
2-UD	366+89 - 367+24	RT				35														
3-UD	366+89 - 369+06	RT				185	32		8				1		1					
4-UD	367+00 - 369+19	LT				209	10		8				2		1					
6-UD	371+59 - 372+44	LT				85							1							
7-UD	371+46 - 372+36	RT				90							1							
15-UD	RAMP E 107+08 - 111+01	RT				405			17				1		1					
16-UD	RAMP E 107+08 - 111+11	LT	1.8			418		24					1		1					
17-UD	RAMP F 110+88 - 117+07	RT				597		28									1	1		
18-UD	RAMP F 110+95 - 117+07	LT	1.8			631		23	17				1		1		1	1		
19-UD	RAMP G 103+75 - 112+30	RT				884			26						1	1				
20-UD	RAMP G 103+75 - 112+37	LT	1.8			860		26	19				1	1	1		2			
21-UD	RAMP H 112+55-123+12	RT	1.8			960	126	16	17				1	1		2				
22-UD	RAMP H 112+98 - 123+12	LT	1.8			959	126	40					1	2	1	1				
<b>STORM SEWER</b>																				
5-SS	117+07+/- RAMP F	RT											1							
6-SS	121+92+/- S.R. 16	LT											1							
7-SS	6-95.7+/- RIVER ROAD	RT											1							
12-SS	116+86+/- RAMP F	LT											1							
8-SS	368+74.0	RT		1.4	0.21					70										
9-SS	369+09.0	LT		1.6	0.21					49										
10-SS	371+56.0	RT		1.4	0.21					41										
11-SS	371+75.7	LT		1.4	0.21					44										
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>			10.8	5.8	0.84	6369	294	174	112			204	4	6	10	3	9	3	2	2

**DRAINAGE SUBSUMMARY**

**LIC-37 / 661-  
16.59 / 0.00**

CALCULATED  
RUG  
CHECKED  
HAG

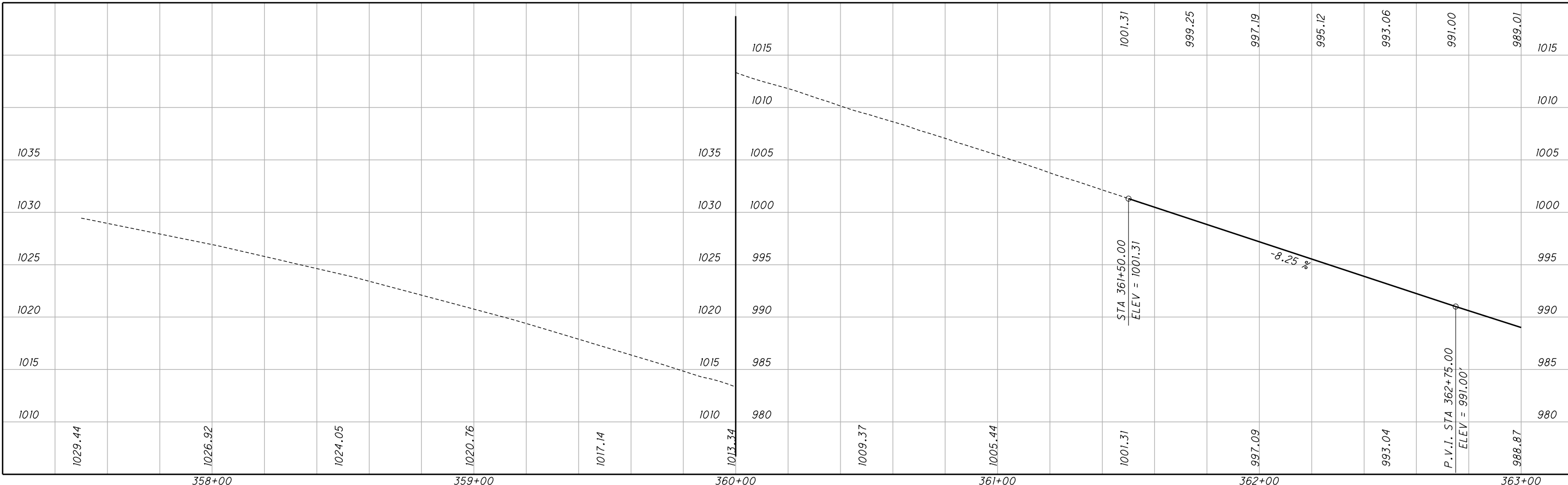
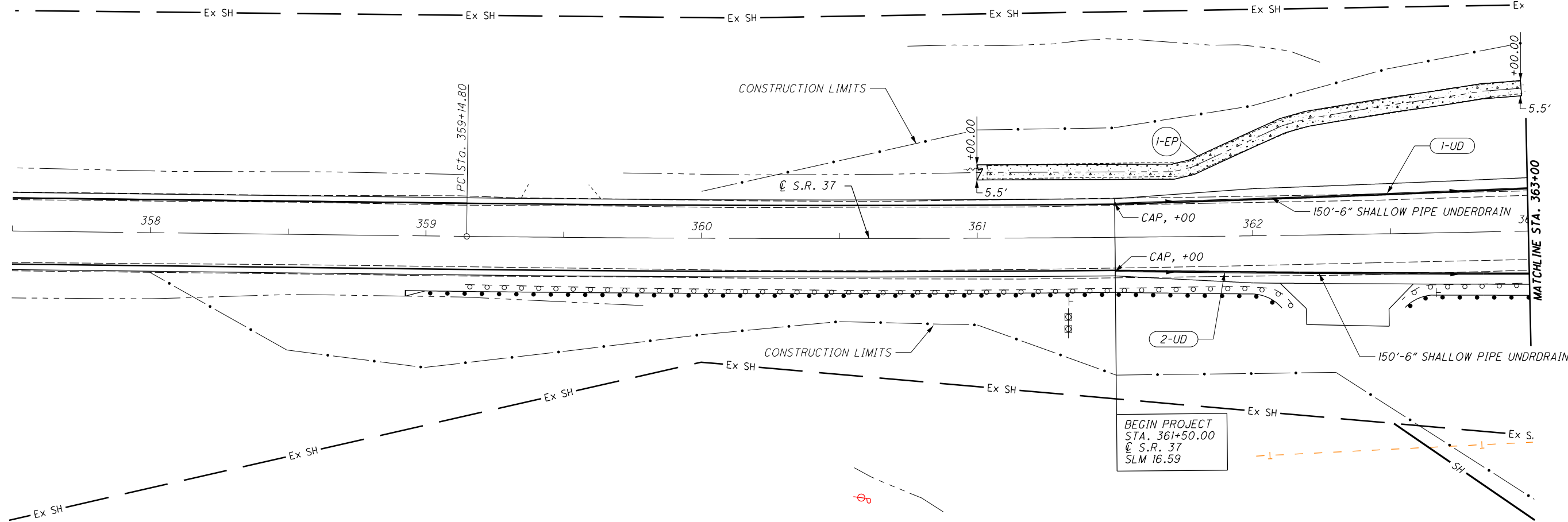
181  
341

I:\ProjectData\LIC\9241\Design\Drainage\Sheets\9241L\_DS002.dgn Sheet 11/18/2019 1:47:25 PM bharlow

REFERENCE	STATION TO STATION	SIDE	601	601		602	605	605		611	611	611	611		611	611			611	BENDS AND CONNECTORS FOR INFORMATION ONLY						
			TIED CONCRETE BLOCK MAT, TYPE 1	TIED CONCRETE BLOCK MAT, TYPE 2		CONCRETE MASONRY	6" SHALLOW PIPE UNDERDRAIN	6" UNCLASSIFIED PIPE UNDERDRAIN		6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	6" CONDUIT, TYPE B	6" CONDUIT, TYPE F	12" CONDUIT, TYPE C		CATCH BASIN, NO. 3A, AS PER PLAN	CATCH BASIN, NO. 3, AS PER PLAN			PRECAST REINFORCED CONCRETE OUTLET	CAP	CROSS	TEE	45° BEND	90° BEND	45° WYE	
			SO. YD.	SO. YD.		CU. YD.	FT.	FT.		FT.	FT.	FT.	FT.		EA.	EA.			EA.							
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>																										
<b>UNDERDRAINS</b>																										
1-UD	361+50 - 366+89	LT					539																			
2-UD	361+50 - 366+89	RT	1.8				543		23										1		1					
3-UD	364+00 - 366+89	RT					290			11									1		1					
9-UD	373+14 - 374+60	LT					121																			
10-UD	373+14 - 25+47(RIVER RD)	RT	1.8				188		16										1				2			
11-UD	24+04(WEAVER RD) - 379+25	LT	1.8				408		15		10								1				2			
12-UD	375+58 = 379+95	RT					432				10									1						
13-UD	379+32 - 380+60	LT					119				10									1						
14-UD	23+00(WEAVER RD) - 374+60	RT/LT	1.8				76	100			10								1					1		
23-UD	380+63 - 382+10	LT					137				10									1						
<b>STORM SEWER</b>																										
1-SS	379+29	LT									16					1										
2-SS	379+95	RT									13		1													
3-SS	380+59.6	LT									31				1											
4-SS	382+10	LT				0.21					14		1													
<b>EROSION PROTECTION</b>																										
1-EP	361+00 - 363+00	LT	122.2																							
2-EP	381+48	RT		6.2																						
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>			129.4	6.2		0.21	2853	100		54	11	50	74		2	2			4	6	1	1	4	1		

<b>DRAINAGE SUBSUMMARY</b>	CALCULATED
	RJG
<b>LIC-37 / 661- 16.59 / 0.00</b>	CHECKED
	HAG
182 341	

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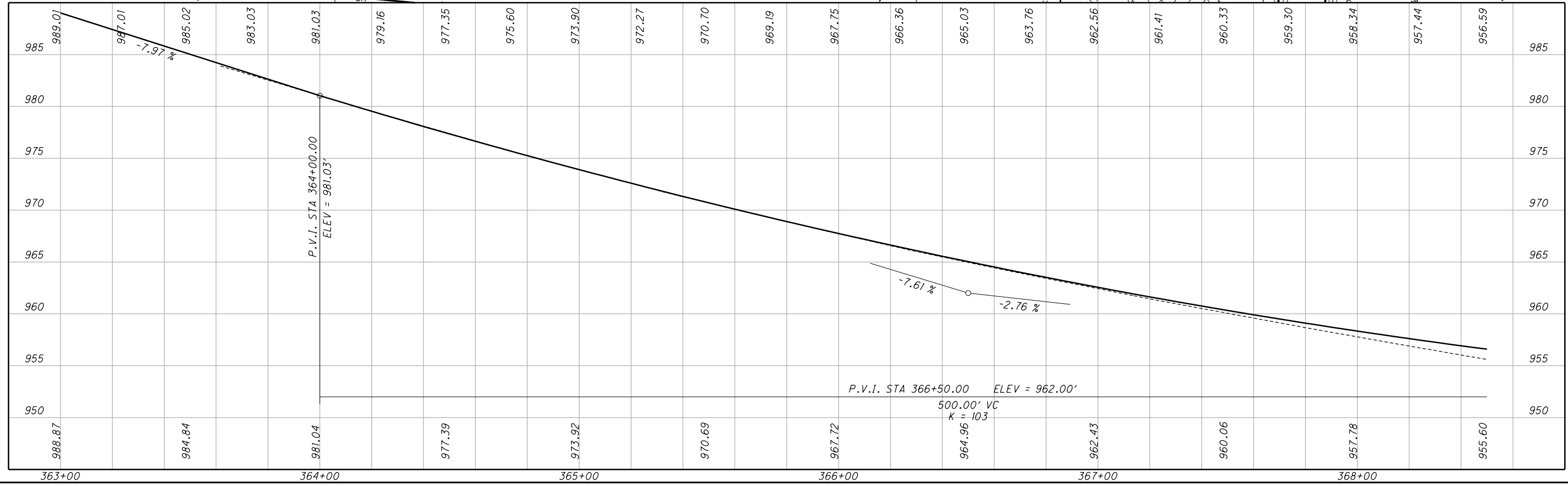
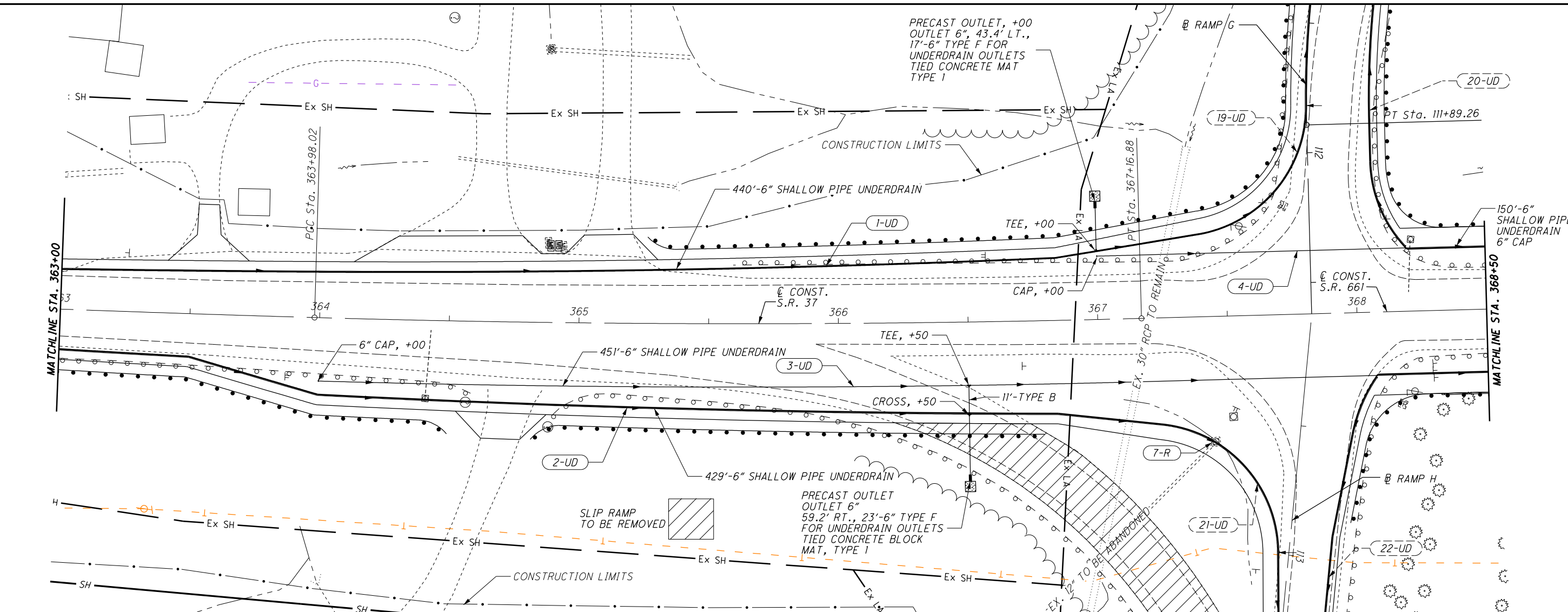
CALCULATED  
RG  
CHECKED  
HG

**DRAINAGE PLAN AND PROFILE - S.R. 37**  
**STA. 359+00 TO STA. 363+00**

**LIC-37 / 661-**  
**16.59 / 0.00**

183  
341

I:\ProjectData\LIC\924\Design\Drainage\Sheets\924\DP002.dgn Sheet 11/18/2019 1:47:27 PM bharlow



HORIZONTAL SCALE IN FEET

CALCULATED	RG	661
CHECKED	HG	

**LIC-37 / 661-**

**16.59 / 0.00**

**DRAINAGE PLAN AND PROFILE - S.R. 37 / S.R. 661**

**STA. 363+00 TO STA. 368+50**

184

341



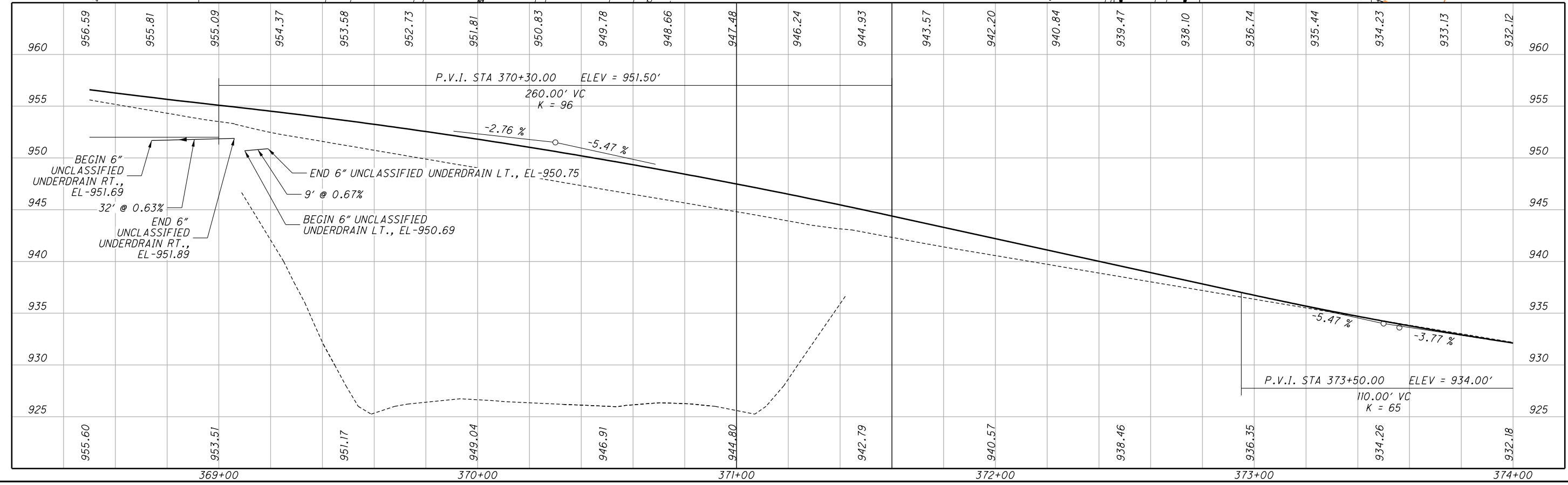
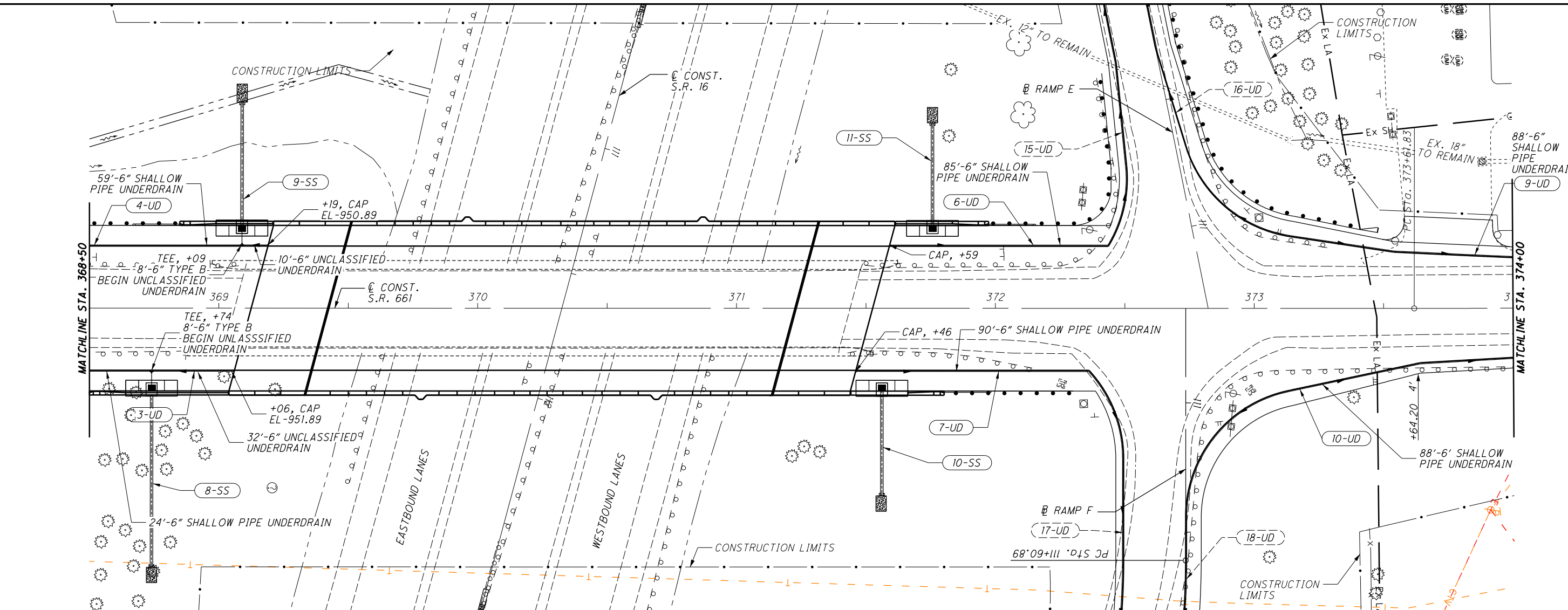
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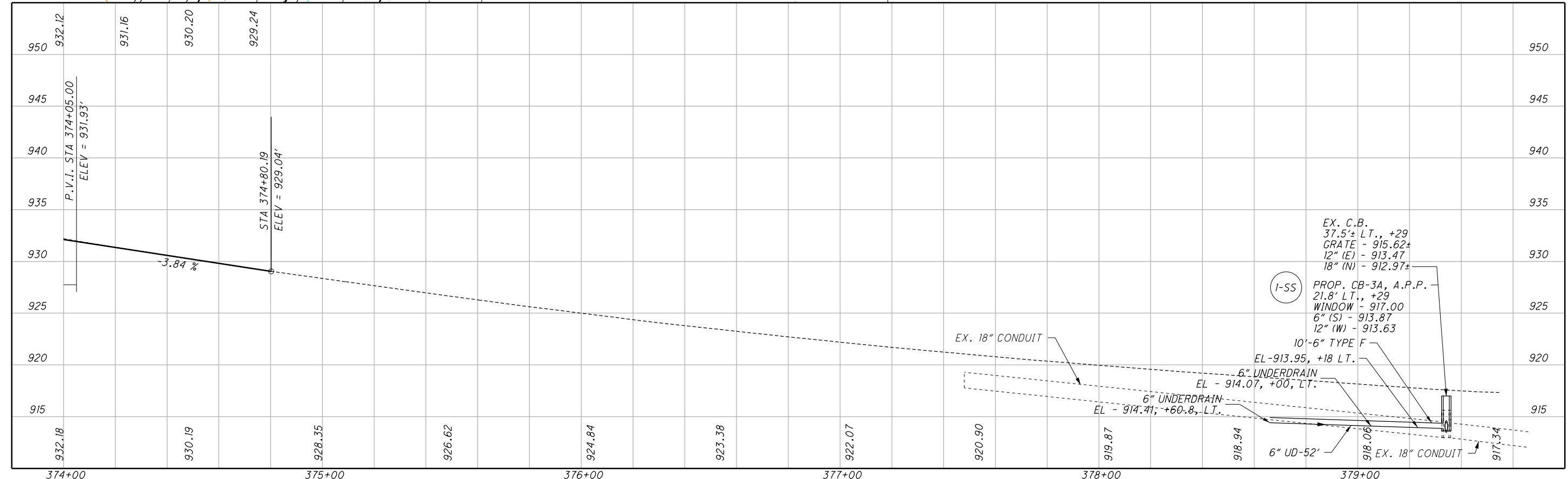
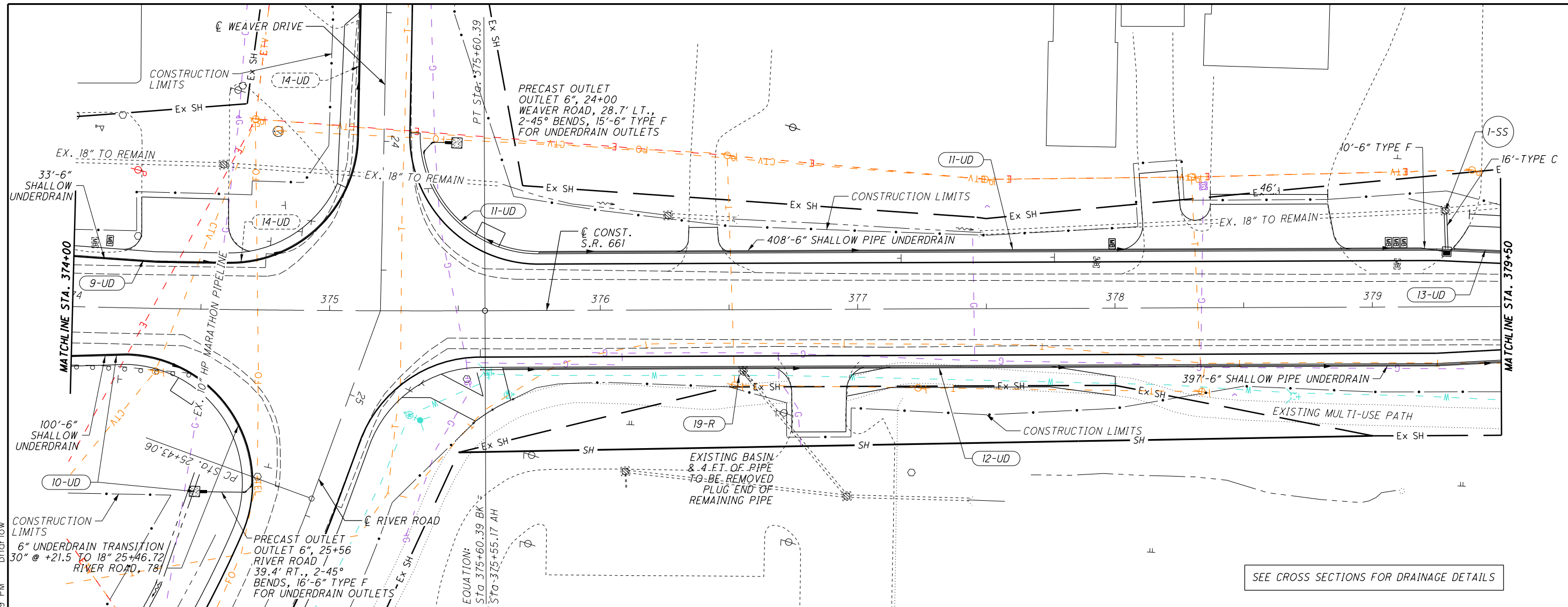
DRAINAGE PLAN AND PROFILE - S.R. 661  
STA. 368+50 TO STA. 374+00

LIC-37 / 661-  
16.59 / 0.00

185  
341



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SEE CROSS SECTIONS FOR DRAINAGE DETAILS



DRAINAGE PLAN AND PROFILE - S.R. 661  
STA. 374+00 TO STA. 379+50

LIC-37 / 661-  
16.59 / 0.00

186  
341

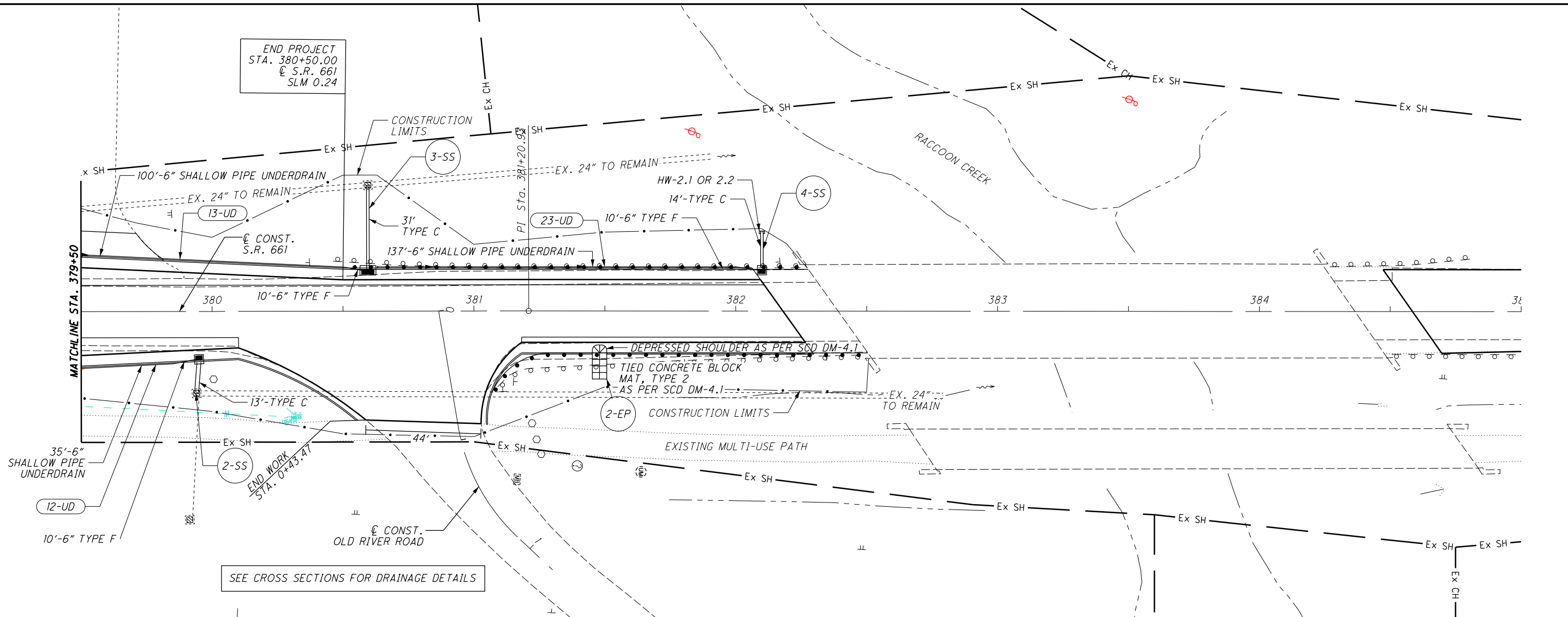


CALCULATED  
RG  
CHECKED  
HG

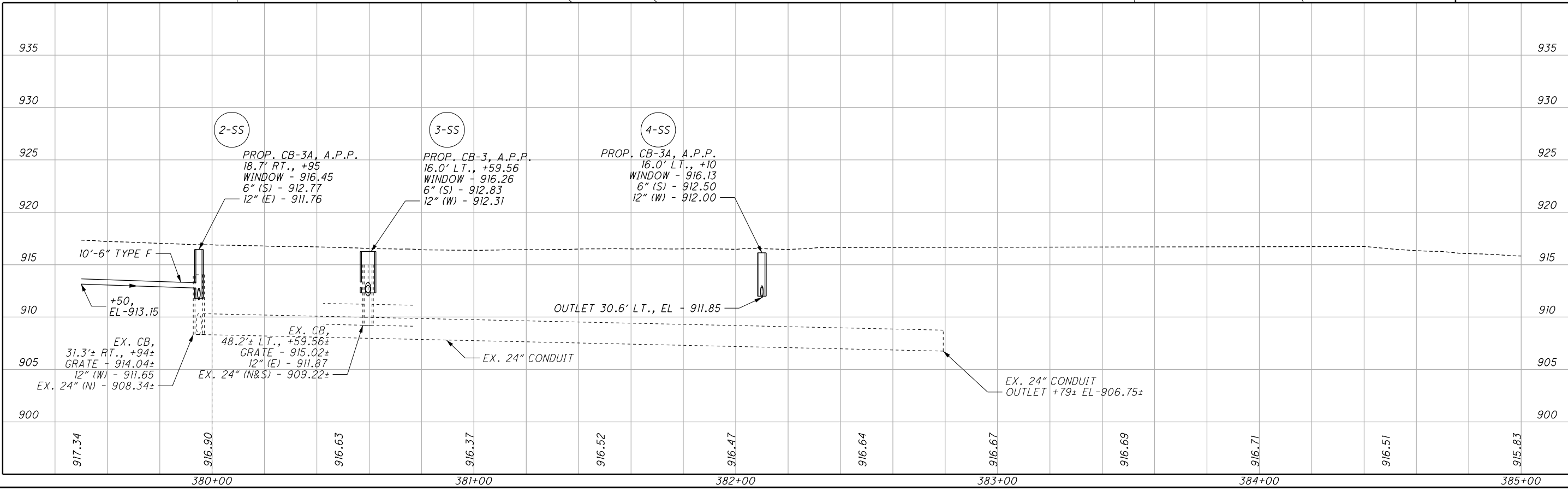
**DRAINAGE PLAN AND PROFILE - S.R. 661**  
**STA. 379+50 TO STA. 382+39.11**

**LIC-37 / 661-**  
**16.59 / 0.00**

187  
341

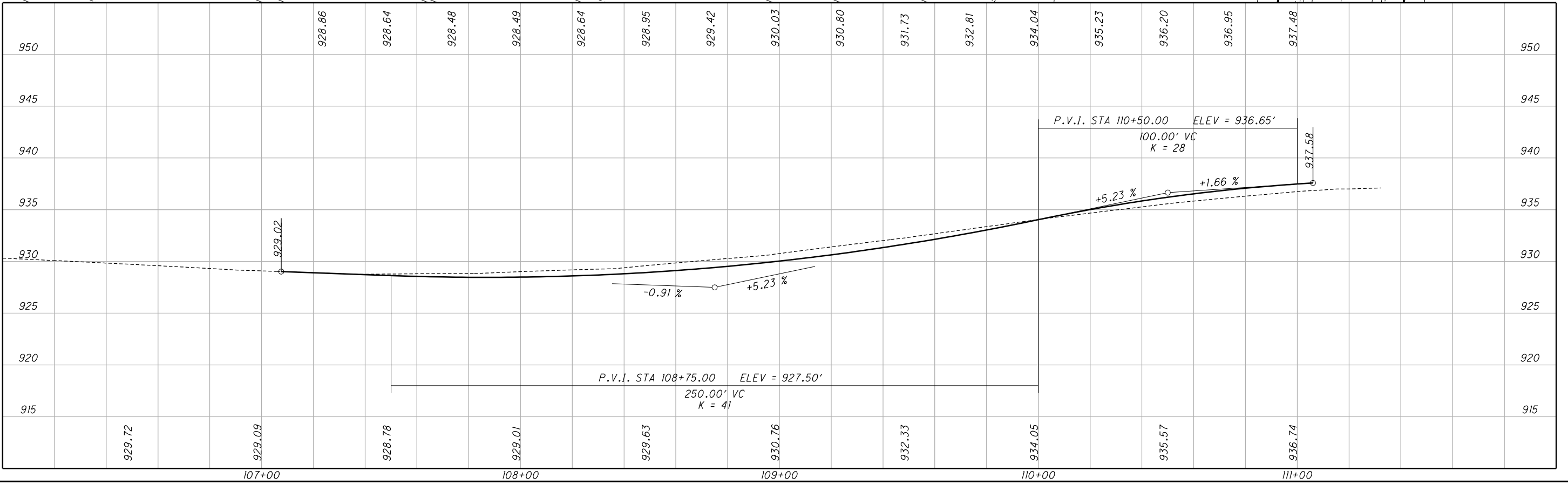
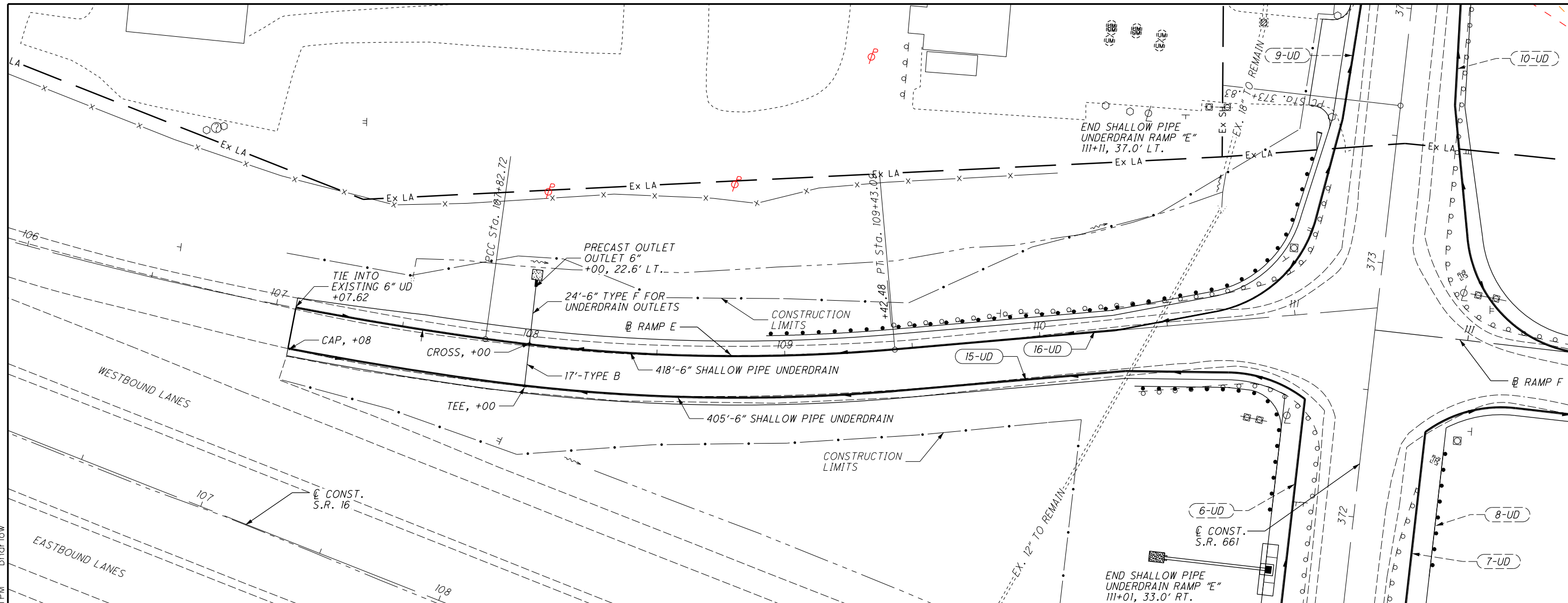


SEE CROSS SECTIONS FOR DRAINAGE DETAILS



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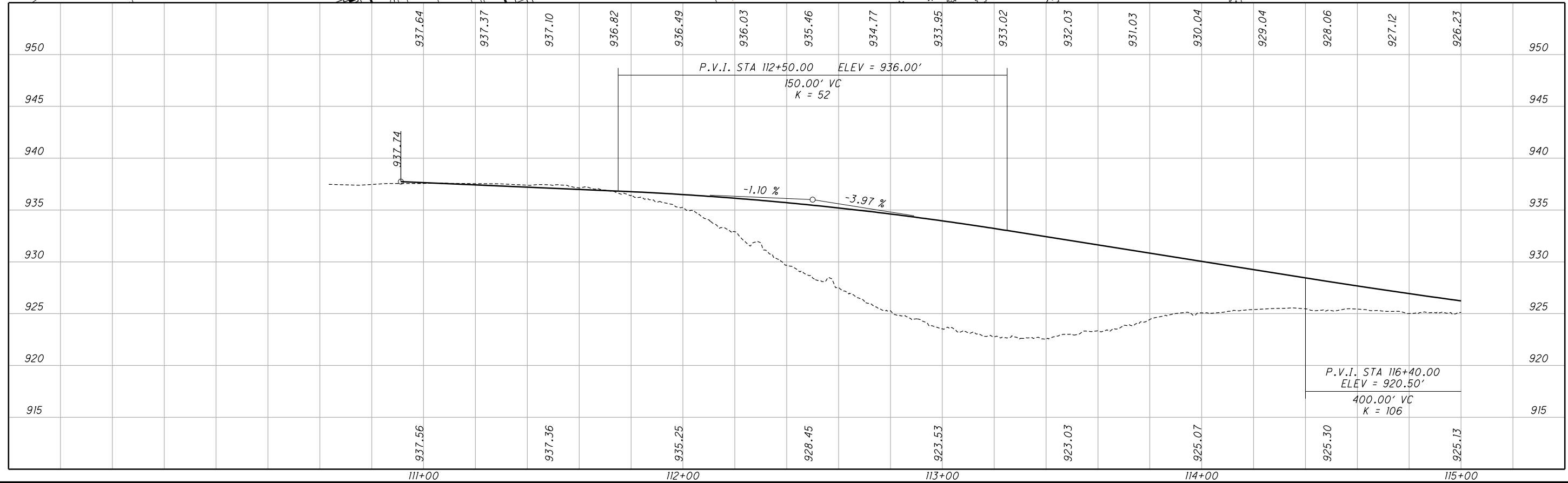
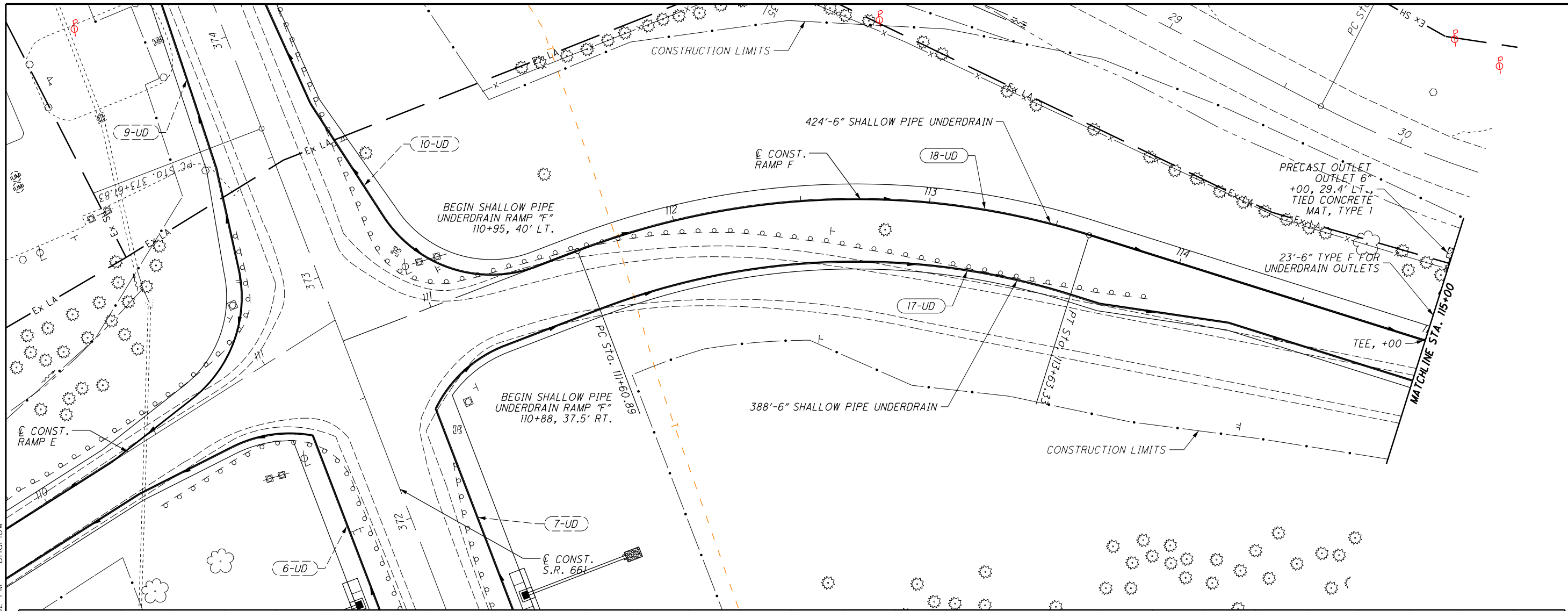
CALCULATED: RG  
 CHECKED: HG

0 20 40  
 HORIZONTAL SCALE IN FEET

**DRAINAGE PLAN AND PROFILE - RAMP E**  
**STA. 107+07.62 TO STA. 111+06.07**

**LIC-37 / 661-**  
**16.59 / 0.00**

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**LIC-37 / 661-**  
**16.59 / 0.00**

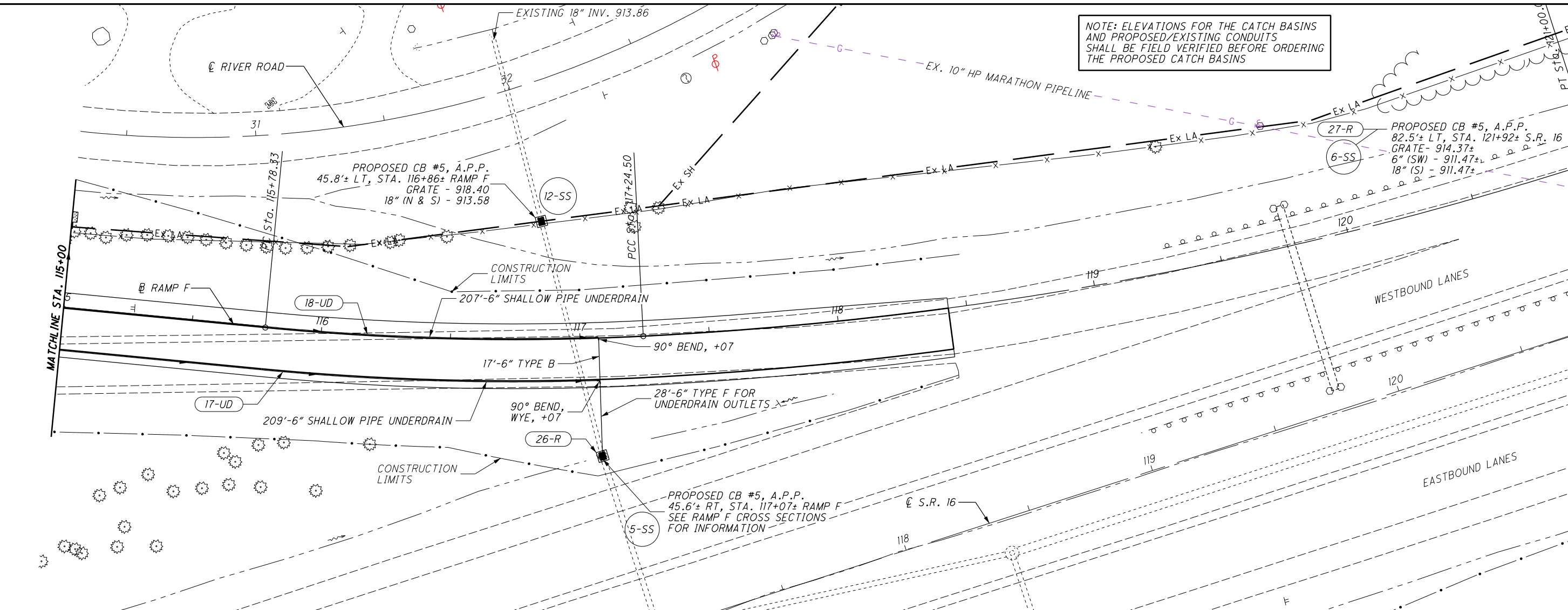
**DRAINAGE PLAN AND PROFILE - RAMP F**  
**STA. 110+91.24 TO STA. 115+00**

189  
341

SCALE IN FEET  
HORIZONTAL  
1" = 40'

CHECKED: HG  
CALCULATED: RG

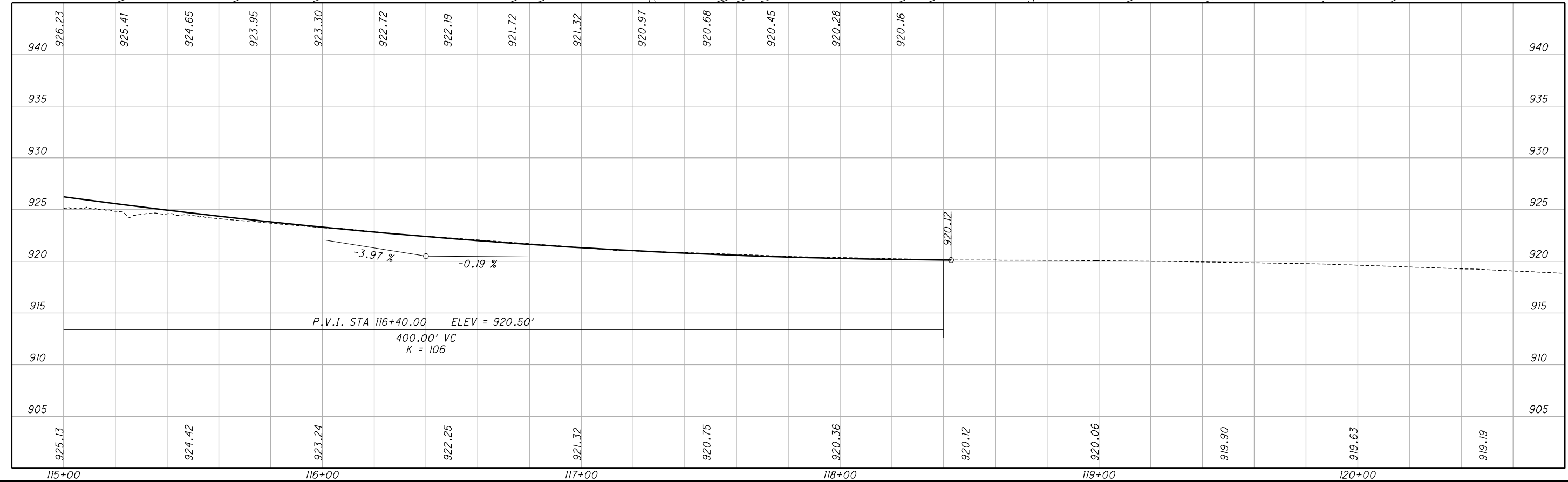
I:\Projec+Data\LIC\924\Design\Drainage\Sheets\924\DP008.dgn\_Sheet 1/23/2020 10:12:17 AM hgliber1



NOTE: ELEVATIONS FOR THE CATCH BASINS AND PROPOSED/EXISTING CONDUITS SHALL BE FIELD VERIFIED BEFORE ORDERING THE PROPOSED CATCH BASINS

CALCULATED  
RG  
CHECKED  
HG

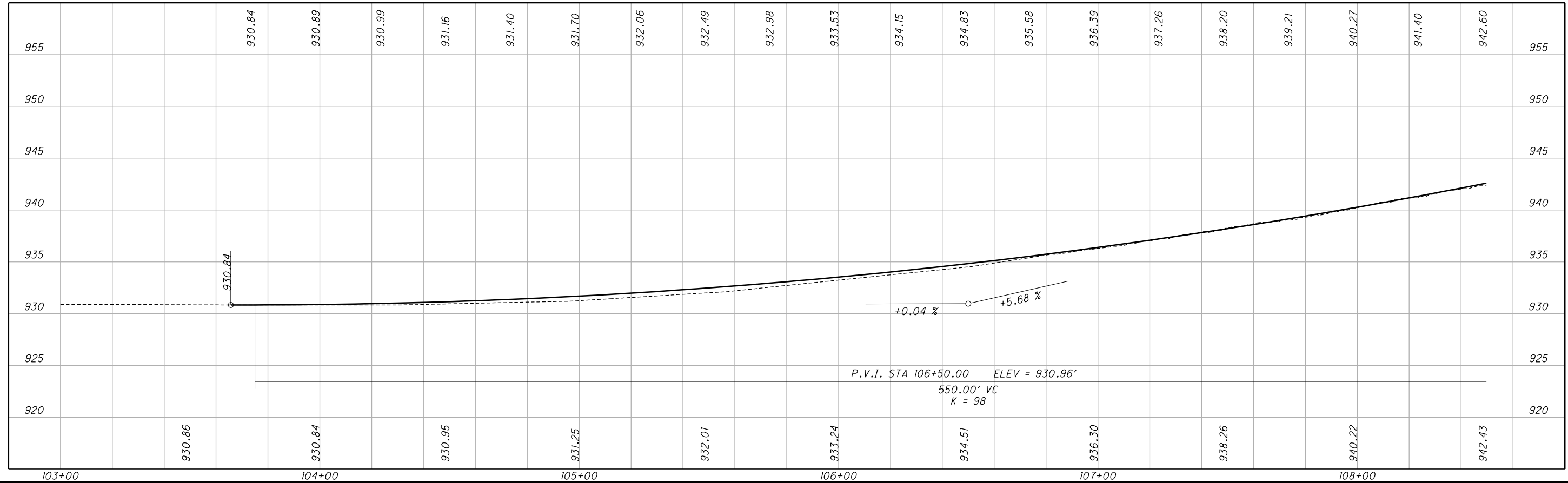
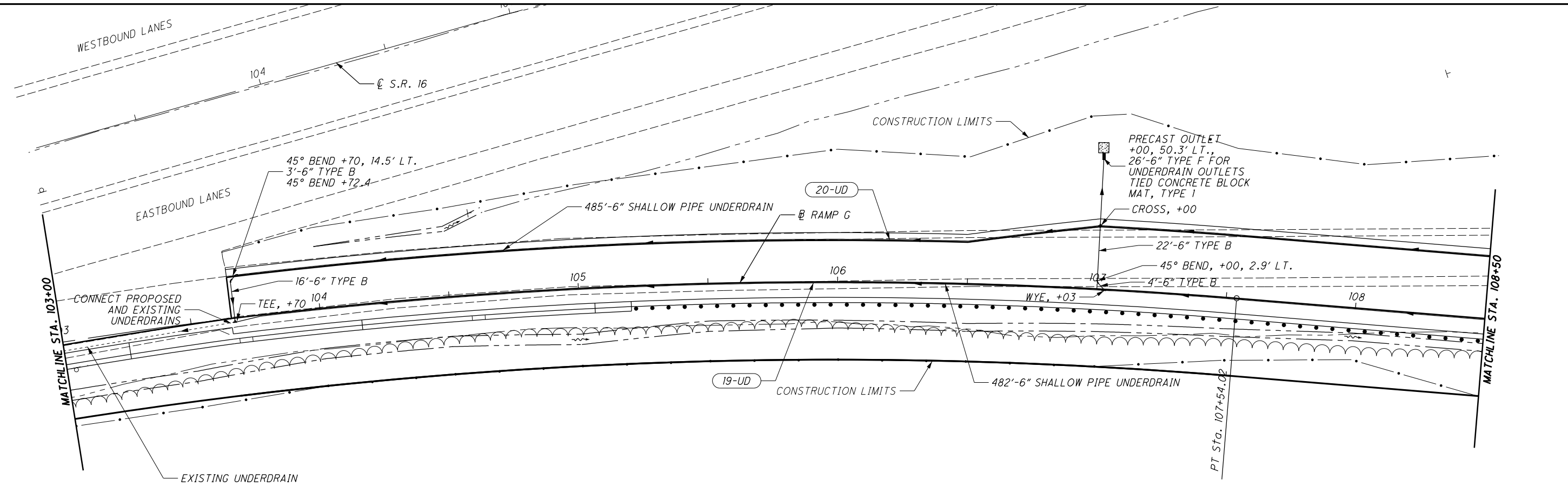
0 20 40  
HORIZONTAL SCALE IN FEET



**DRAINAGE PLAN AND PROFILE - RAMP F**  
**STA. 115+00 TO STA. 118+42.89**

LIC-37 / 661-  
 16.59 / 0.00

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0 20 40  
 HORIZONTAL  
 SCALE IN FEET

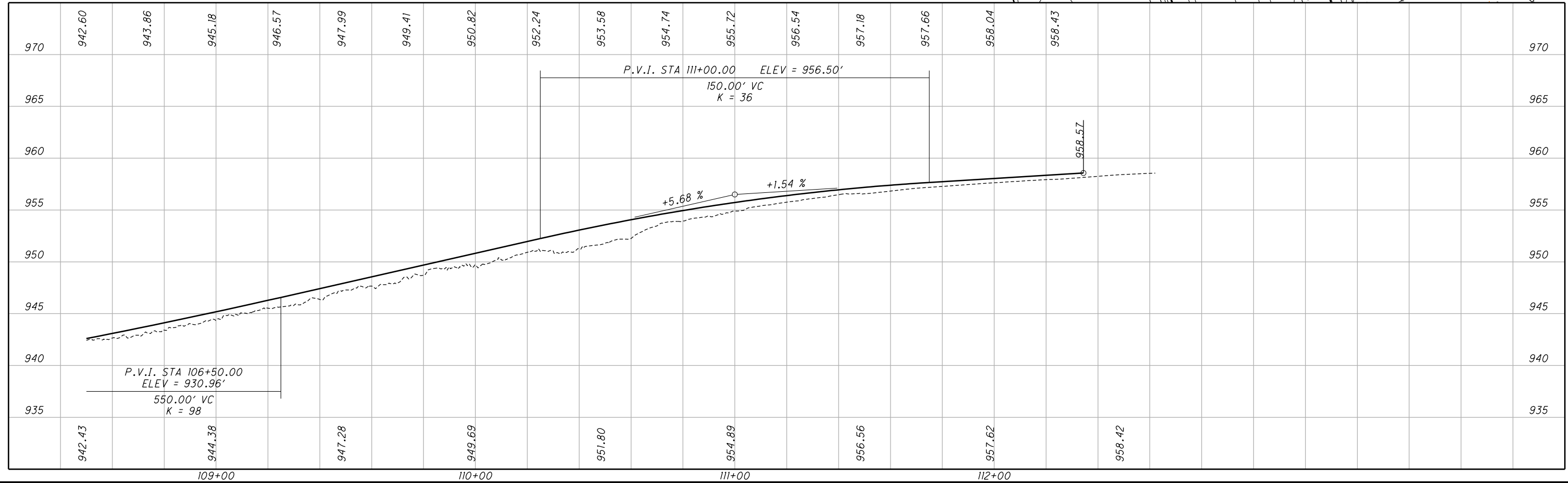
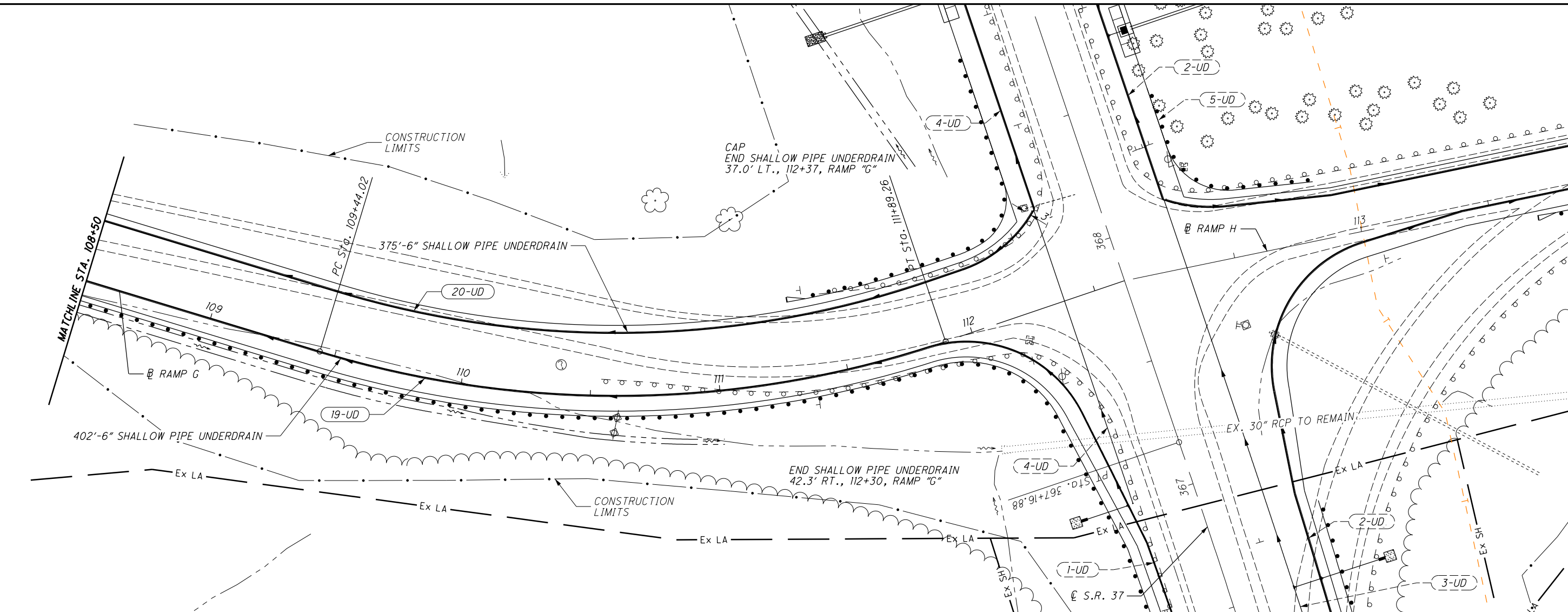
CALCULATED  
 RG  
 CHECKED  
 HG

LIC-37 / 661-  
 16.59 / 0.00

DRAINAGE PLAN AND PROFILE - RAMP G  
 STA. 103+00 TO STA. 108+50

191  
 341

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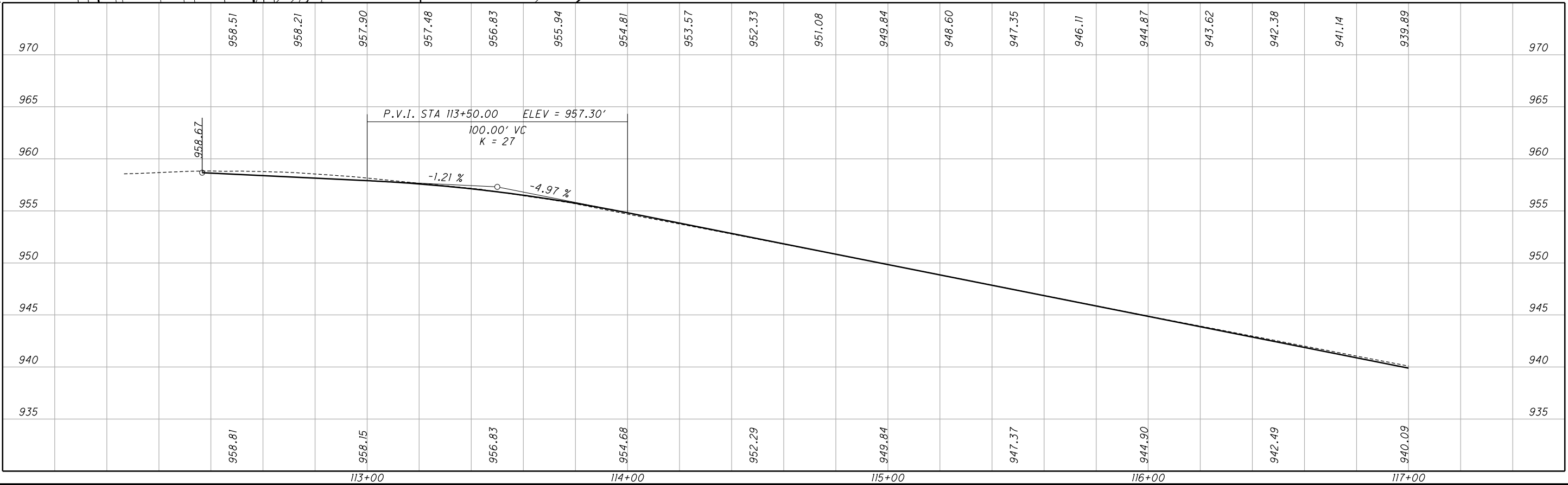
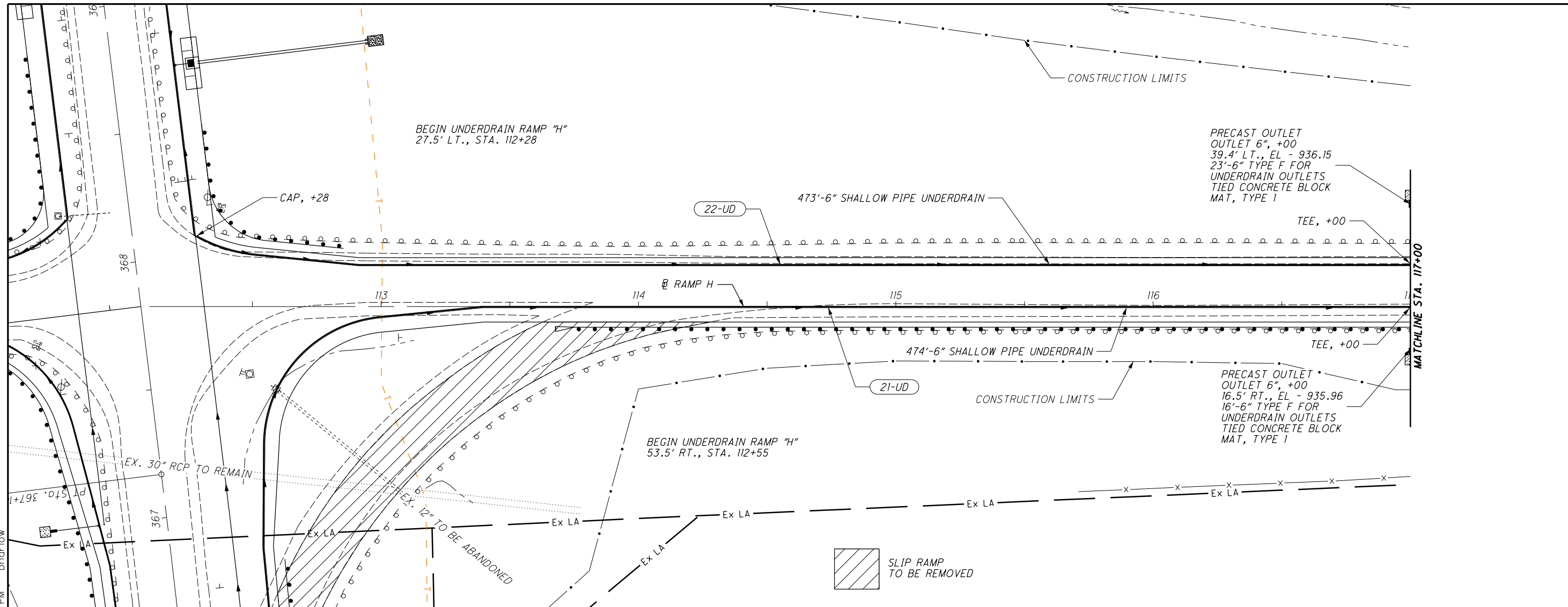
CALCULATED  
RG  
CHECKED  
HG

**DRAINAGE PLAN AND PROFILE - RAMP G**  
**STA. 108+50 TO STA. 112+34.40**

**LIC-37 / 661-**  
**16.59 / 0.00**



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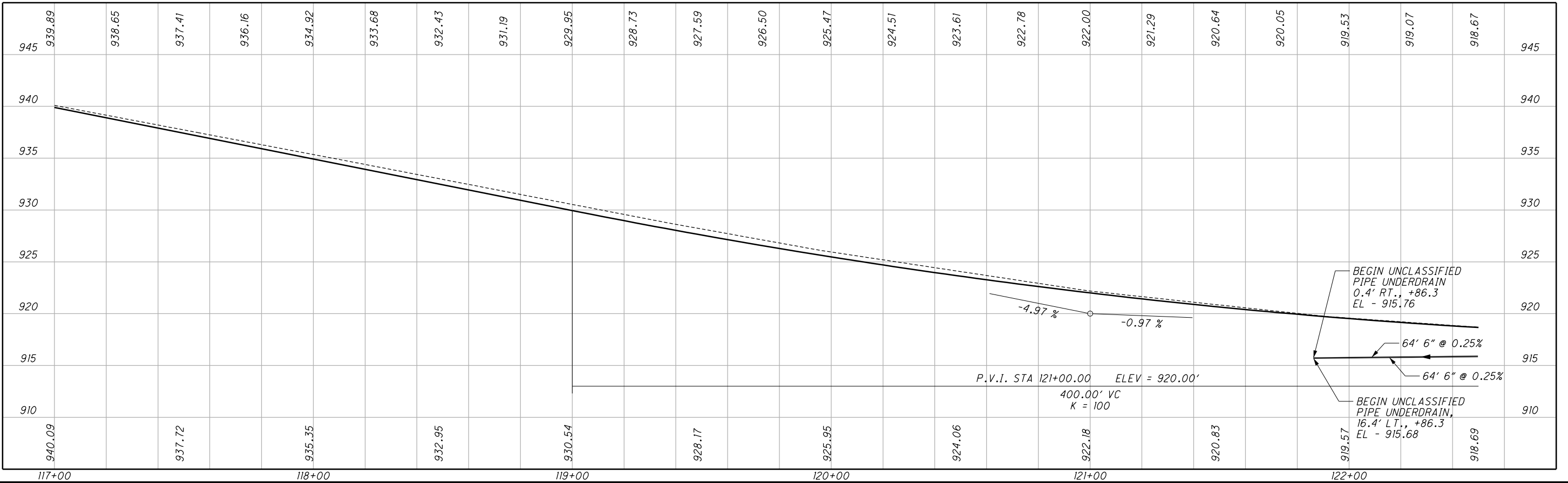
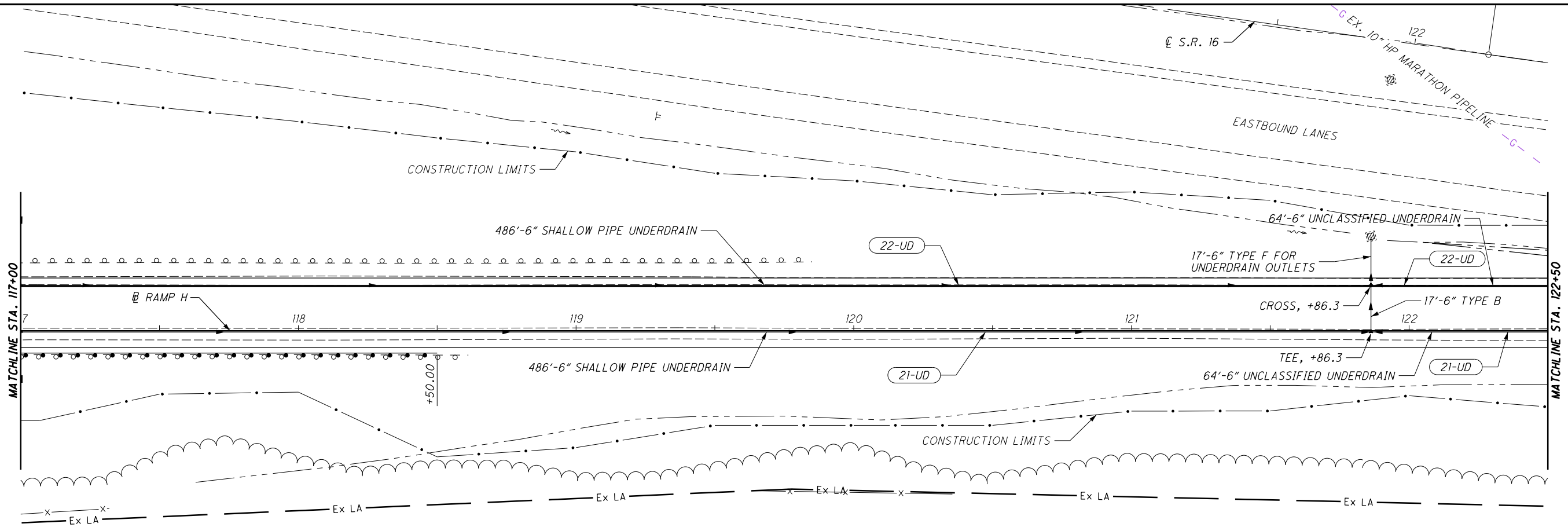


**DRAINAGE PLAN AND PROFILE - RAMP H**  
**STA. 112+36.62 TO STA. 117+00**

**LIC-37 / 661-**  
**16.59 / 0.00**

CALCULATED	RG
CHECKED	HG

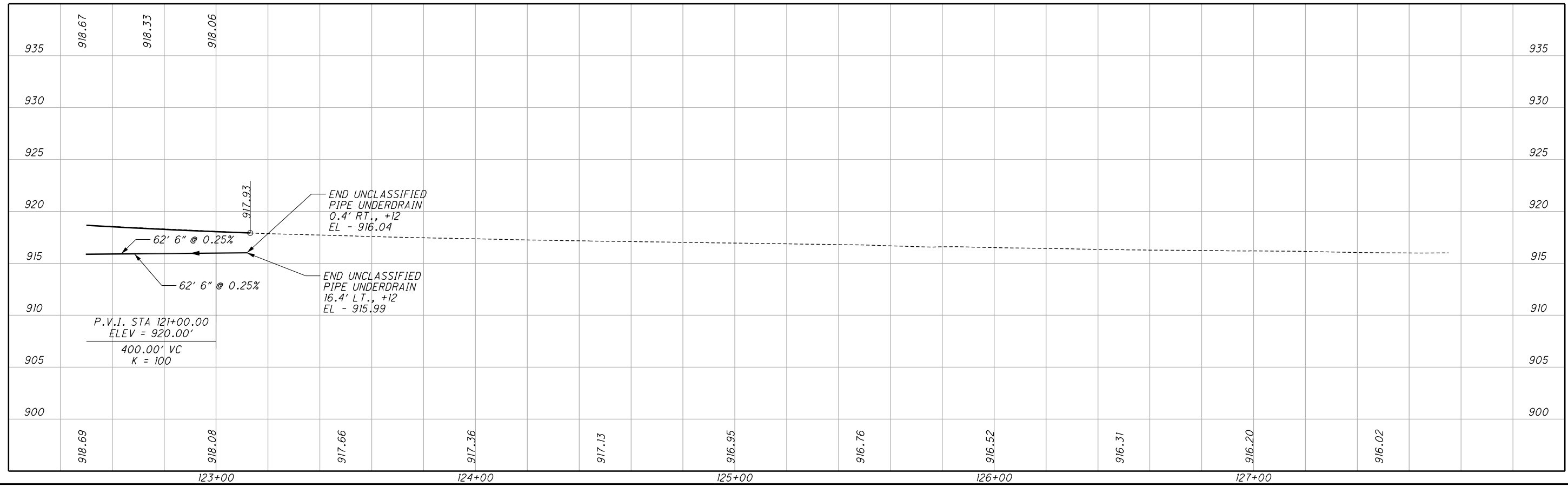
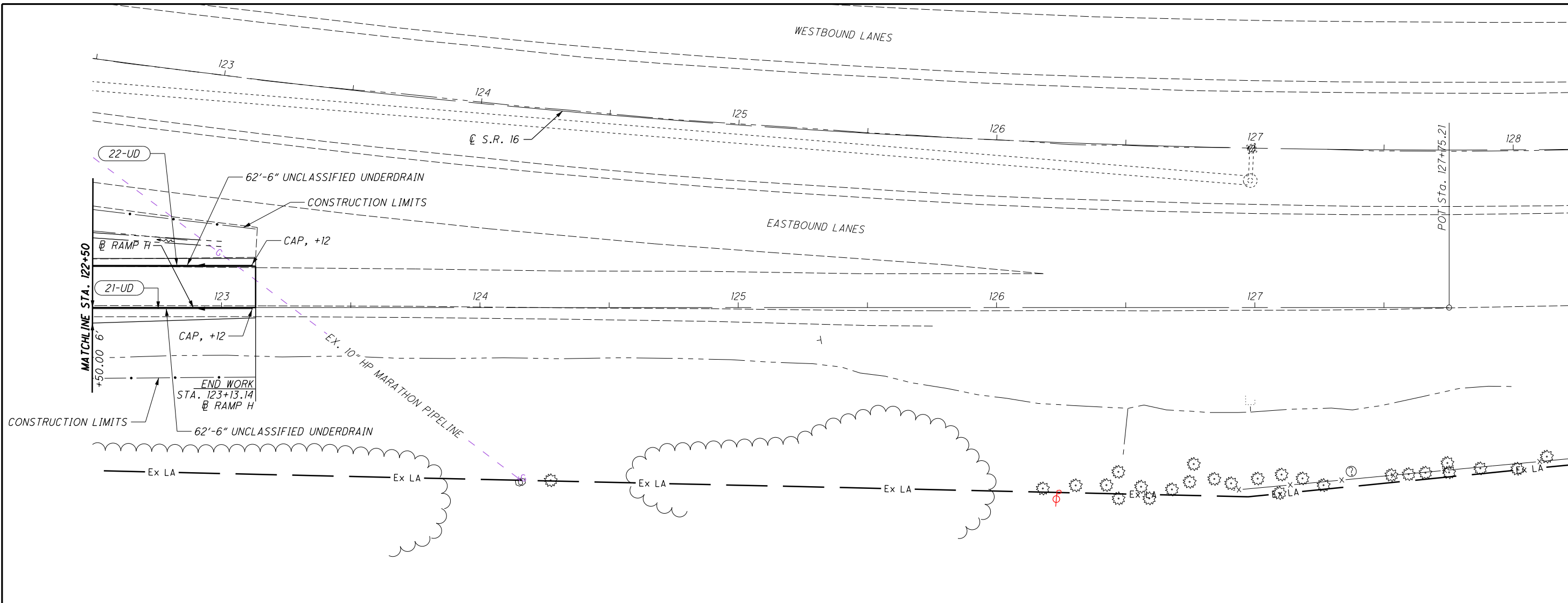
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**DRAINAGE PLAN AND PROFILE - RAMP H**  
**STA. 117+00 TO STA. 122+50**

**LIC-37 / 661-**  
**16.59 / 0.00**

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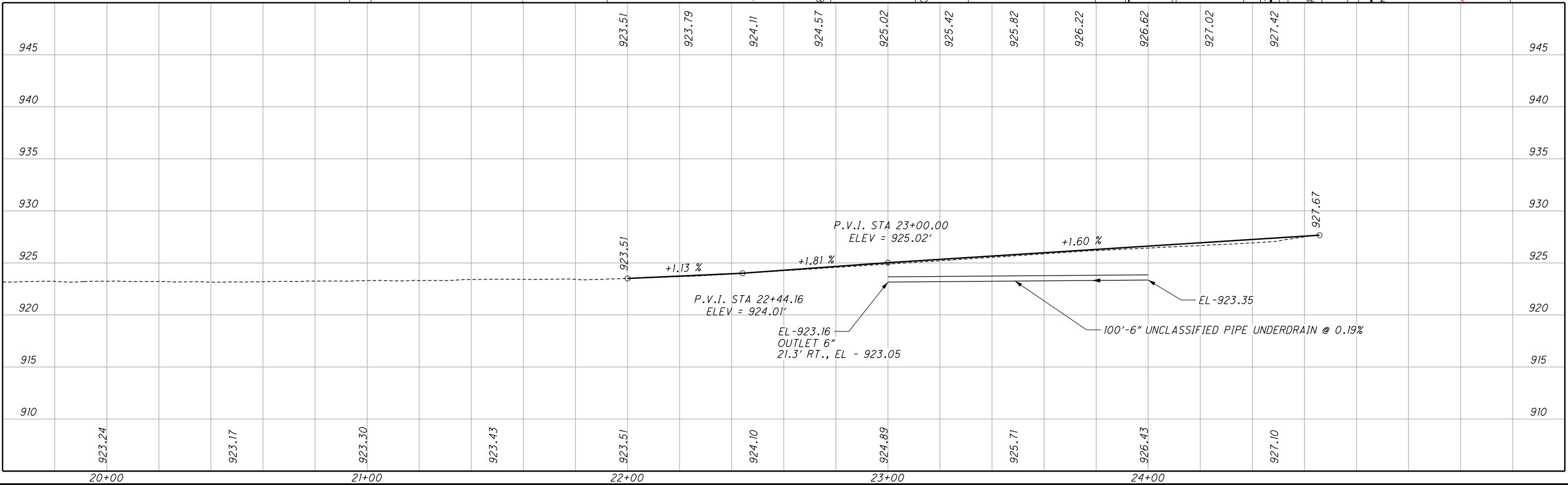
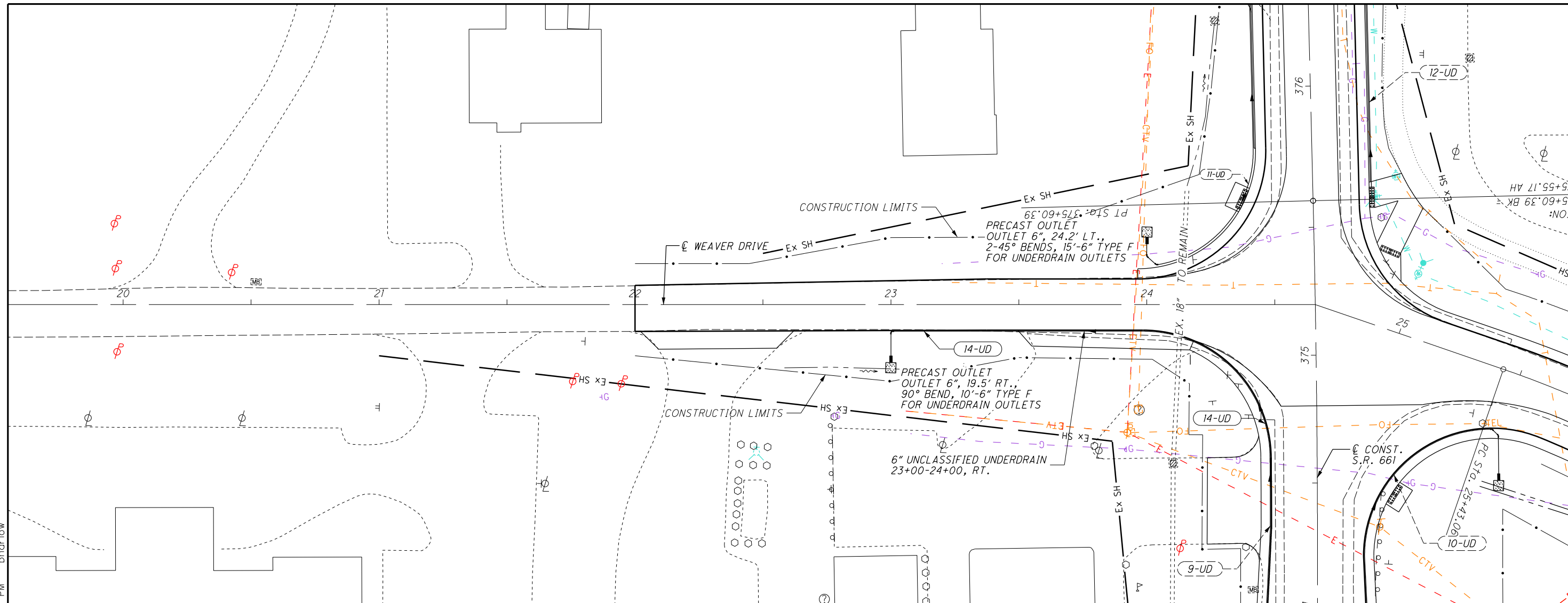
CALCULATED  
RG  
CHECKED  
HG

0 20 40  
HORIZONTAL  
SCALE IN FEET

**DRAINAGE PLAN AND PROFILE - RAMP H**  
**STA. 122+50 TO STA. 123+13.14**

**LIC-37 / 661-**  
**16.59 / 0.00**

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0 20 40  
HORIZONTAL  
SCALE IN FEET

CALCULATED

RG

CHECKED

HG

LIC-37 / 661-

DRAINAGE PLAN AND PROFILE - WEAVER DR.

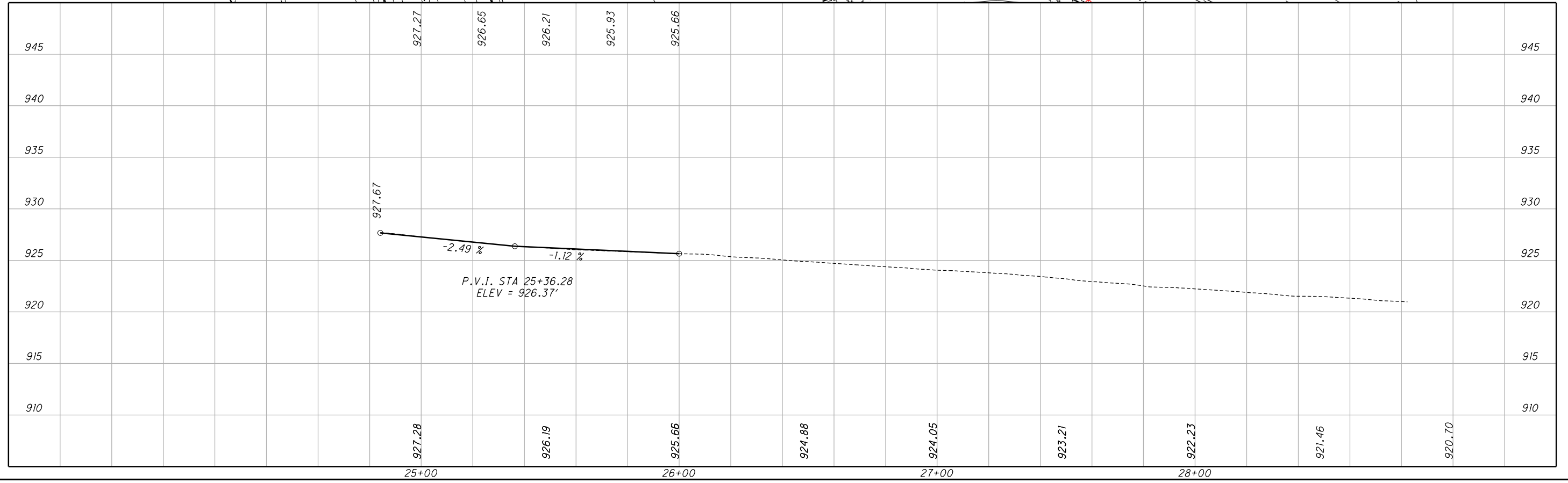
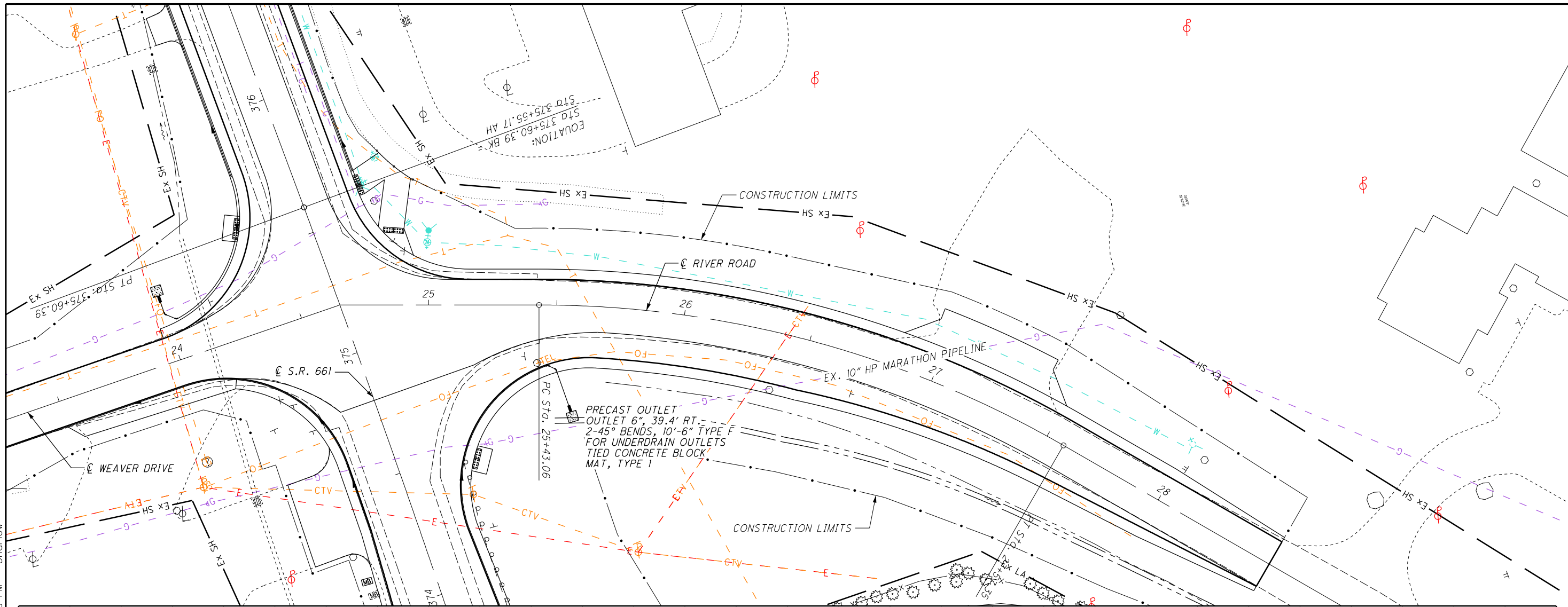
16.59 / 0.00

STA. 19+55.00 TO STA. 24+65.82

196

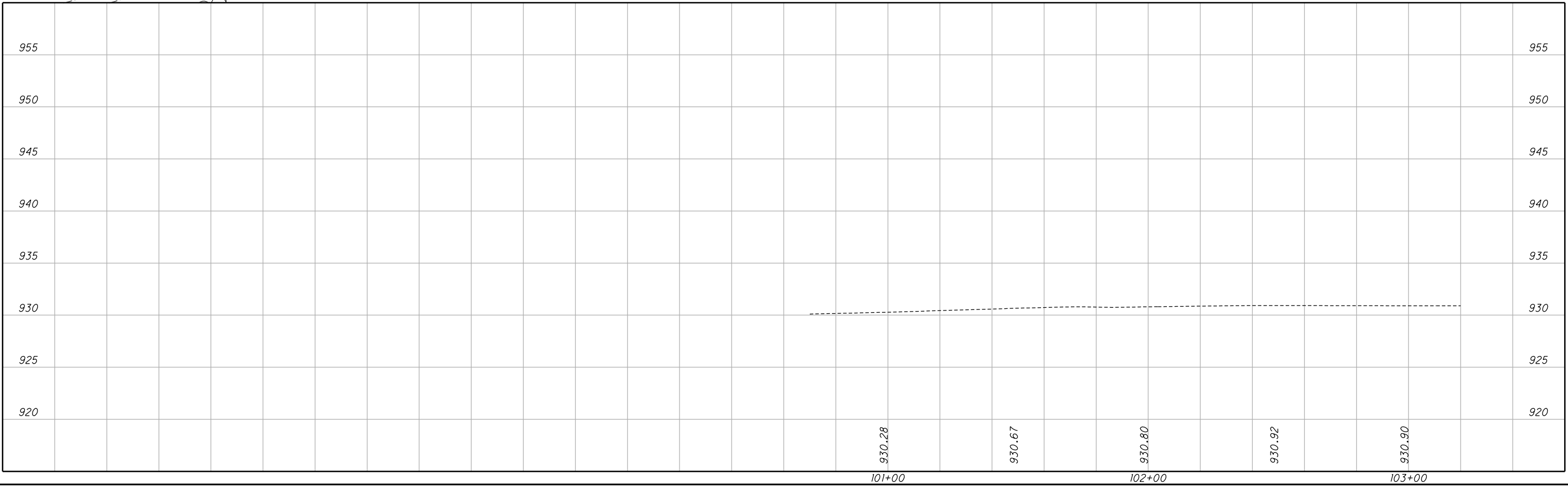
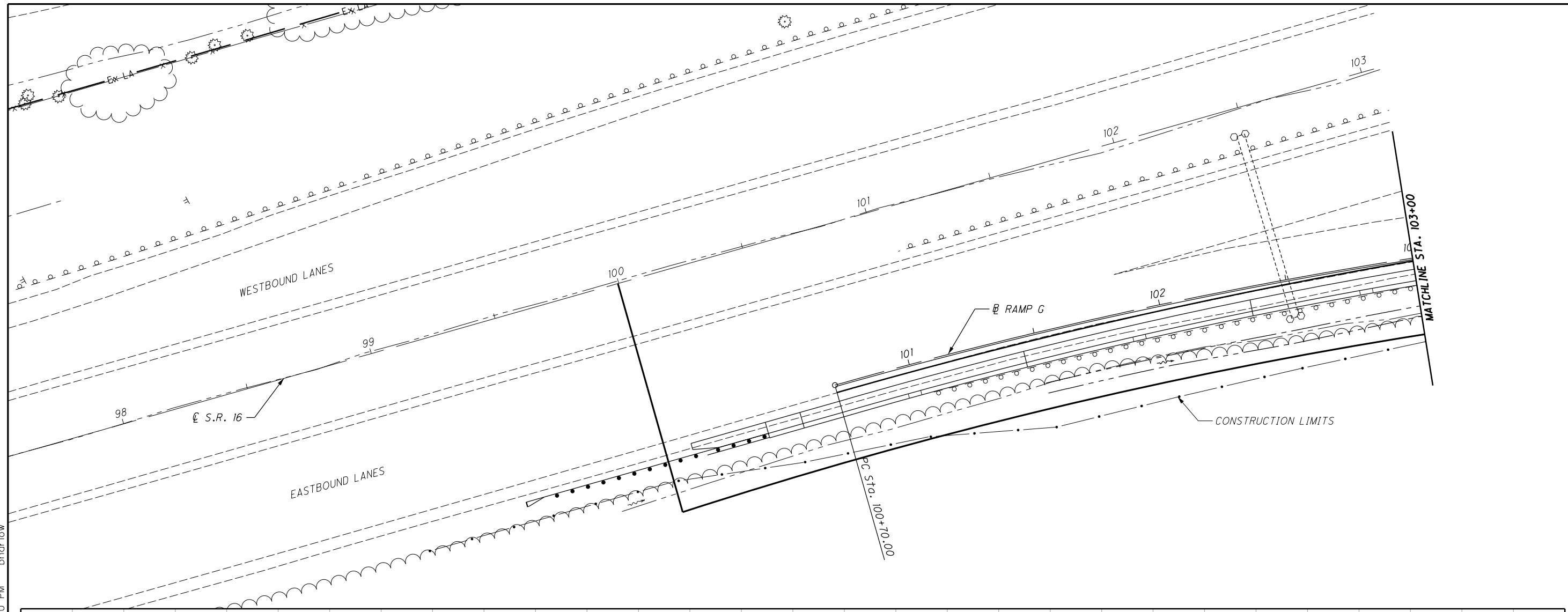
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CALCULATED: RG  
 CHECKED: HG  
**LIC-37 / 661 -**  
**16.59 / 0.00**  
**DRAINAGE PLAN AND PROFILE - RIVER RD.**  
**STA. 24+84.11 TO STA. 28+50.00**  
 197  
 341

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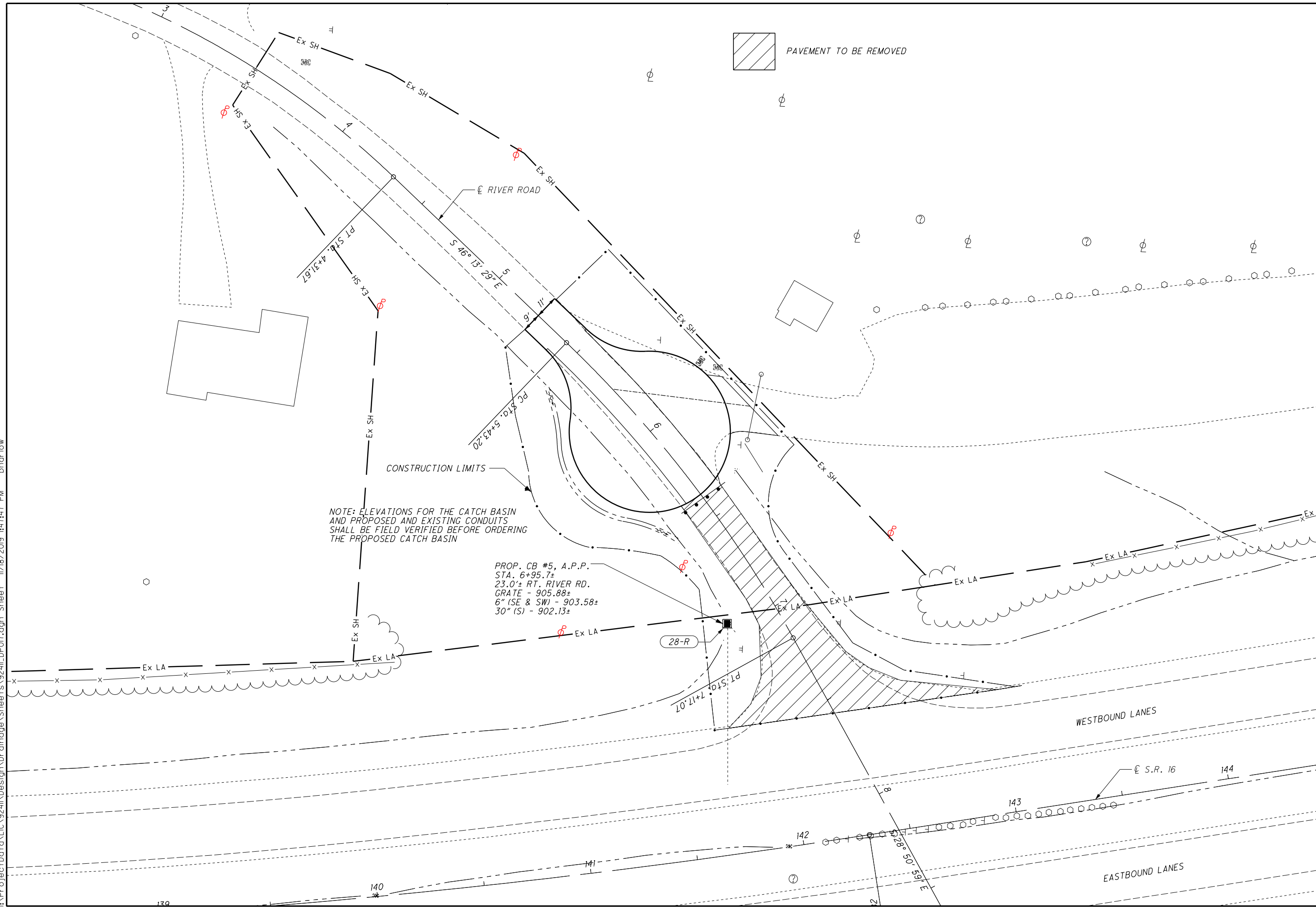
CALCULATED  
RG  
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HORIZONTAL  
SCALE IN FEET

**DRAINAGE PLAN AND PROFILE - S.R. 16**  
**STA. 99+50 TO STA. 103+00**

**LIC-37 / 661-**  
**16.59 / 0.00**

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NOTE: ELEVATIONS FOR THE CATCH BASIN AND PROPOSED AND EXISTING CONDUITS SHALL BE FIELD VERIFIED BEFORE ORDERING THE PROPOSED CATCH BASIN

PROP. CB #5, A.P.P.  
STA. 6+95.7±  
23.0'± RT. RIVER RD.  
GRATE - 905.88±  
6" (SE & SW) - 903.58±  
30" (S) - 902.13±

PAVEMENT TO BE REMOVED

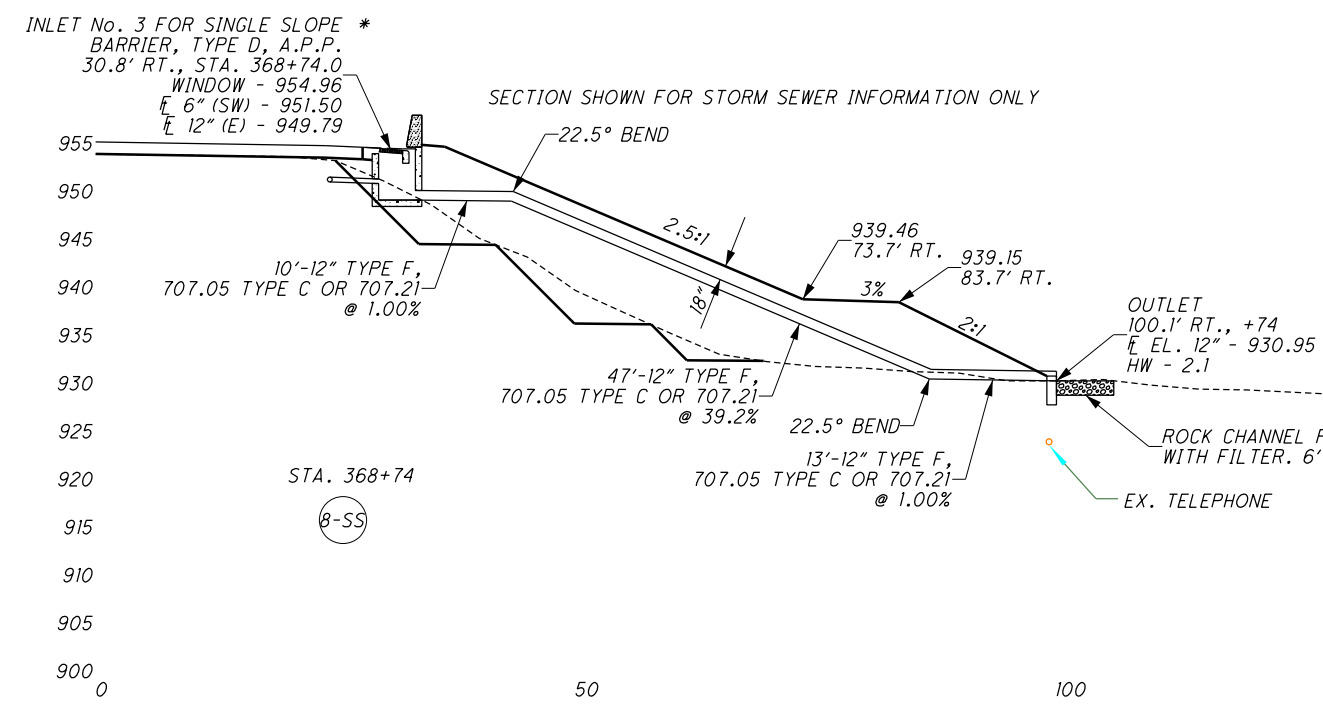
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HG

10  
HORIZONTAL  
SCALE IN FEET

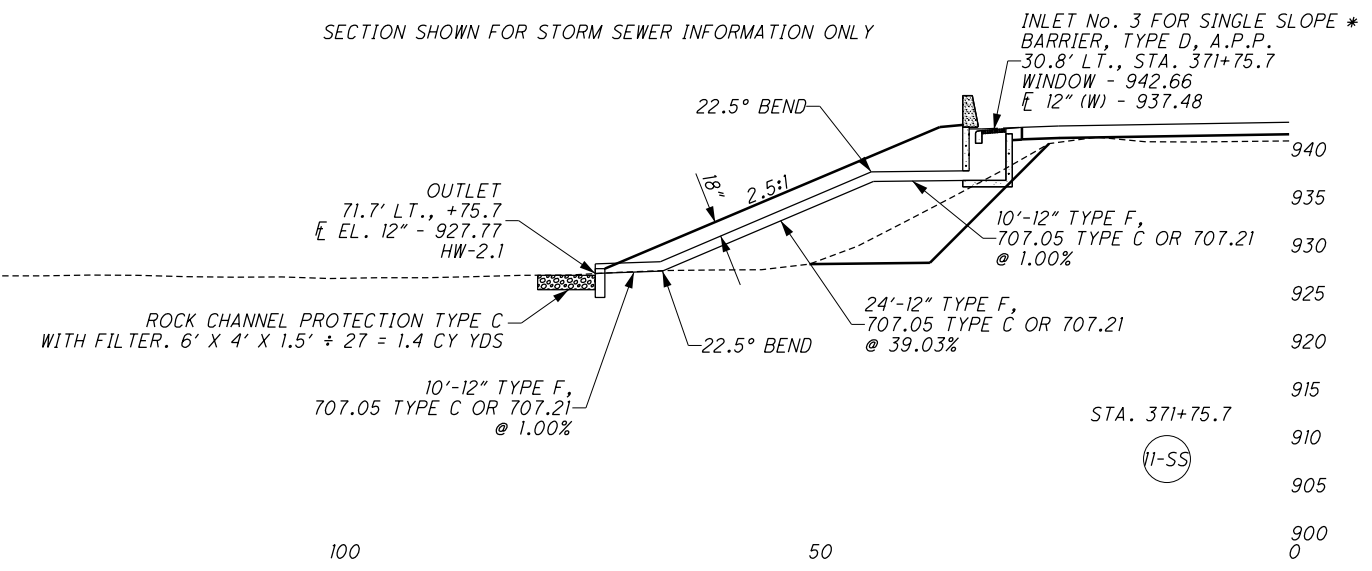
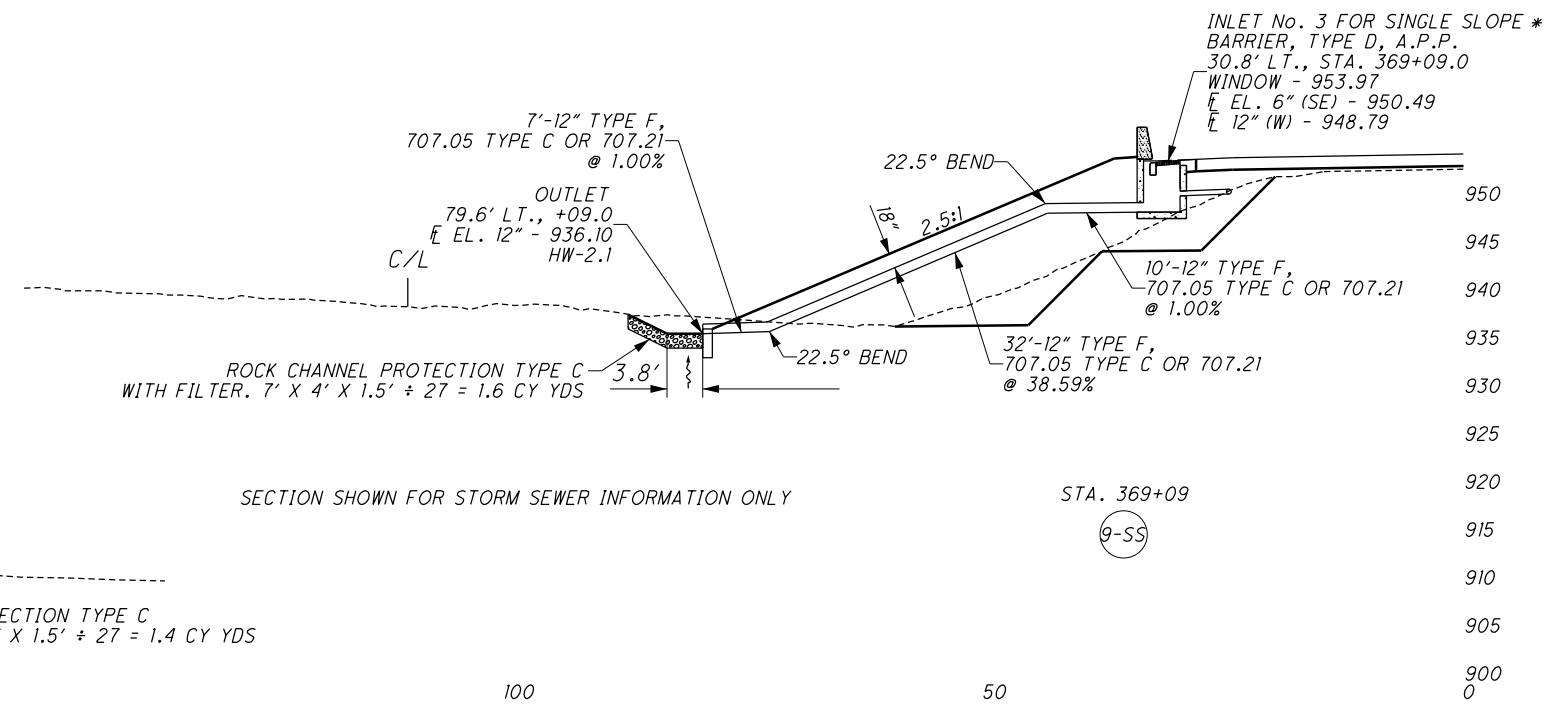
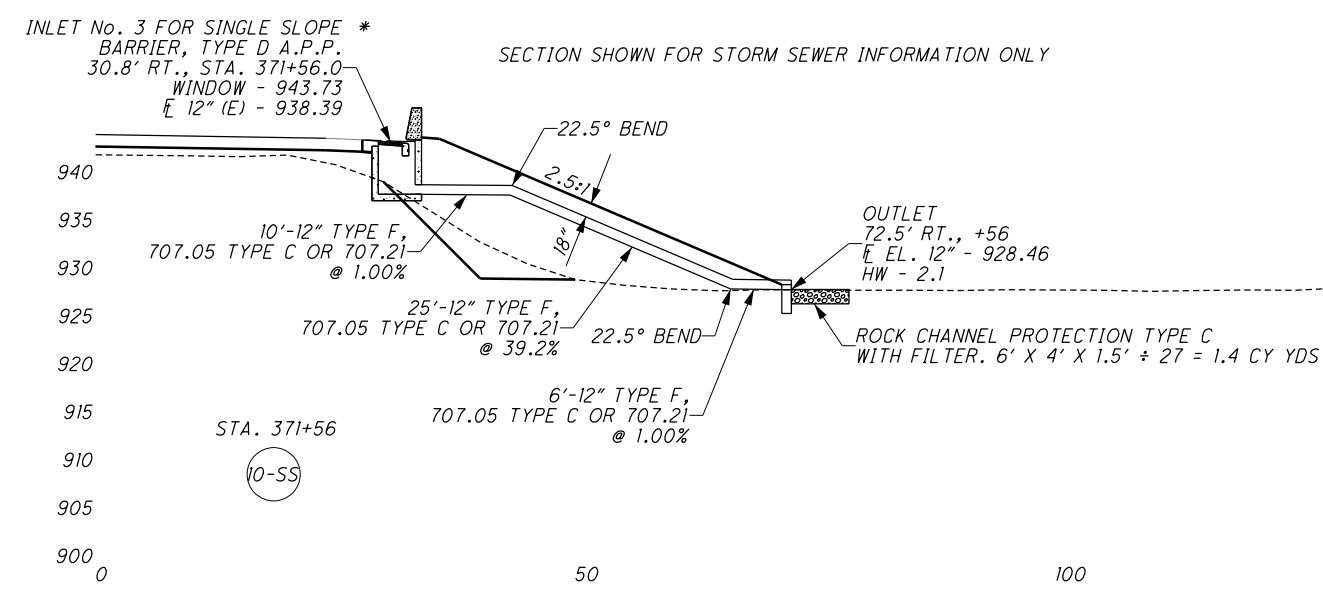
**DRAINAGE PLAN - RIVER ROAD CUL-DE-SAC**

**LIC-37 / 661-  
16.59 / 0.00**

199  
341



\* FOR DETAILS & QUANTITIES, SEE BRIDGE SHEET 267



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**ITEM 630, REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN**

ALL OF THE REQUIREMENTS OF C&MS 630.12 SHALL BE MET EXCEPT THAT THE ENTIRE SUPPORT FOUNDATION SHALL BE REMOVED. BACKFILL THE RESULTANT HOLE AND COMPACT THE SOIL AND RESTORE THE DISTURBED AREA.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM 630, REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN FOR EACH FOUNDATION TO BE REMOVED IN THE PLANS. ALL LABOR, MATERIALS, BACKFILL, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY MANNER SHALL BE INCLUDED IN THE UNIT BID PRICE.

**ITEM 630, REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TC-12.30, AS PER PLAN**

ALL OF THE REQUIREMENTS OF C&MS 630.12 SHALL BE MET EXCEPT THAT THE ENTIRE SUPPORT FOUNDATION SHALL BE REMOVED. BACKFILL THE RESULTANT HOLE AND COMPACT THE SOIL AND RESTORE THE DISTURBED AREA.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM 630, REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, AS PER PLAN FOR EACH FOUNDATION TO BE REMOVED IN THE PLANS. ALL LABOR, MATERIALS, BACKFILL, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY MANNER SHALL BE INCLUDED IN THE UNIT BID PRICE.

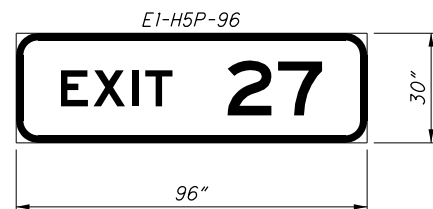
**INTERCHANGE SUPPLEMENTAL SIGNAGE**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO PROVIDE SIX (6) SUPPLEMENTAL EXIT NUMBER SIGNS AND ATTACH THEM TO THE EXISTING INTERCHANGE SIGNAGE ON S.R. 16. (SEE DETAILS BELOW.)

**ITEM 630, SIGN ATTACHMENT ASSEMBLY 6 EACH  
ITEM 630, SIGN, OVERHEAD EXTRUSHEET 120 SF**

APPROX. SIGN LOCATIONS:

1. LAT. = 40.062122, LONG. = -82.533022
2. LAT. = 40.061098, LONG. = -82.529935
3. LAT. = 40.059537, LONG. = -82.524087
4. LAT. = 40.057327, LONG. = -82.511989
5. LAT. = 40.057391, LONG. = -82.515270
6. LAT. = 40.058123, LONG. = -82.518212



**ITEM 631, SIGN FLASHER ASSEMBLY, AS PER PLAN**

THIS ITEM SHALL INCLUDE ONE SOLAR-POWERED FLASHER ASSEMBLY WHICH INCLUDES A SIGNAL AHEAD SIGN (W3-3-36) WITH CONTROLS AND A POLE WITH TWO FORWARD FACING 12" AMBER LED BEACONS MOUNTED OUTSIDE THE SIGN, PEDESTAL MOUNTING HARDWARE, 85 WATT SOLAR PANEL WITH TOP OF PEDESTAL HARDWARE AND CONTROL CABINET WITH FLASHER REGULATOR. (SEE DETAIL THIS SHEET.)

THE POLE SHALL CONSIST OF A 16' NATURAL ALUMINUM PEDESTAL POLE PER C&MS 725.21 WITH TRANSFORMER BASE PER SCD HL-10.13 WITH ONE END THREADED AND A SCREW-IN BASE FOUNDATION. THIS ITEM SHALL ALSO INCLUDE ALL INCIDENTALS AND MATERIALS TO INSTALL THE SCREW-IN FOUNDATION AND INSTALL THE POLE TO THE FOUNDATION.

ALL COMPONENTS SHALL BE MADE AVAILABLE TO THE PURCHASER FOR SERVICING FOR FIVE YEARS AFTER THE EXPIRATION OF THE MANUFACTURER'S WARRANTY, OR SHALL BE SO IDENTIFIED THAT THEY MAY BE PURCHASED FROM INDUSTRIAL ELECTRONICS SUPPLIERS. EACH UNIT SHALL BE WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWO YEARS FROM THE INSTALLATION DATE.

ANY WARRANTY SERVICE REQUIRED SHALL BE PROMPTLY PERFORMED AT THE MANUFACTURER'S FACILITY OR THE MANUFACTURER'S AUTHORIZED SERVICE AGENCY. THE PURCHASER WILL PAY TRANSPORTATION COSTS TO SUCH SERVICE POINT, AND THE MANUFACTURER WILL PAY COSTS TO RETURN THE UNIT BY NORMAL SURFACE TRANSPORTATION MEANS.

INCLUDE A GROUNDING ROD CONFORMING TO C&MS 725.16.

GENERAL SOLAR-POWER REQUIREMENTS:

RUN REQUIREMENTS OF THIS DEVICE ARE 24 HOURS PER DAY, 7 DAYS PER WEEK.

UTILIZE ENVIRONMENTALLY-SEALED, HIGH-EFFICIENCY LED LIGHT SOURCES FOR THIS SOLAR-POWERED APPLICATION.

HOUSE THE SOLAR POWER CONTROLLER AND BATTERY IN A STAINLESS STEEL OR ALUMINUM ENCLOSURE WITH A MINIMUM NEMA 3 OR 3X RATING.

IF THE EXTERIOR SIZE OF THE ENCLOSURE NECESSARY TO MEET THE REQUIREMENTS BELOW IS LESS THAN 1000 CUBIC INCHES, A SINGLE POLYMER ENCLOSURE RATED NEMA 4 AND LISTED AS SUNLIGHT-RESISTANT MAY BE INSTALLED, WITH APPROVAL OF THE ENGINEER.

SEAL ENCLOSURE CONDUIT ENTRIES TO PREVENT INSECT AND/OR RODENT ENTRY. PROVIDE METAL ENCLOSURES WITH AN EXTERIOR OF BARE OR POWDER-COATED ALUMINUM, OR STAINLESS STEEL.

PROVIDE A LOCKING ENCLOSURE USING EITHER AN INTEGRATED LOCKING MECHANISM OR A PADLOCK PER C&MS 631.06.

SMALL ENCLOSURES OF 300 CUBIC INCHES OR LESS (EXTERIOR) MAY BE PROVIDED WITH SECURITY FASTENERS IN LIEU OF A LOCKING MECHANISM OR PADLOCK.

SEPARATE THE CONTROL ELECTRONICS AND BATTERY, IF CONTAINED WITHIN A SINGLE ENCLOSURE, TO PREVENT DAMAGE TO THE CONTROL ELECTRONICS IF THE BATTERY ENVELOPE IS COMPROMISED.

PROVIDE SEALED GEL-CELL OR AGM (ABSORBED GLASS MAT) LEAD-ACID BATTERIES FOR ALL INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF 4 WATTS OR ABOVE, REGARDLESS OF DUTY CYCLE.

FOR INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF LESS THAN 4 WATTS, RECHARGEABLE NiCd, Li-ion, OR NiMH BATTERIES MAY BE USED INSTEAD OF AGM OR GEL-CELL, IF APPROVED BY THE ENGINEER.

PROVIDE SIGNED COPIES FROM THE SOLAR PANEL AND/OR CONTROLLER MANUFACTURER OF ALL CALCULATIONS USED TO SIZE THE SOLAR PANEL AND BATTERIES.

INCLUDE IN THESE CALCULATIONS THE INSOLATION VALUE USED AND ITS REFERENCE SOURCE, THE SOLAR PANEL EFFICIENCY, CHARGER/CONTROLLER EFFICIENCY, INVERTER EFFICIENCY, PROPOSED LED LAMP AND/OR EQUIPMENT LOAD, AND A FIGURE REPRESENTING ANTICIPATED MISCELLANEOUS LOSSES.

SHOW CALCULATIONS DOCUMENTING A RESERVE CAPACITY OF TWO WEEKS OPERATION UNDER CONTINUOUS WORST-CASE (MINIMUM) INSOLATION FIGURES (USUALLY DECEMBER) FOR THE PROPOSED GEOGRAPHIC LOCATION, USING A PANEL ELEVATION ANGLE APPROPRIATE TO THE SITE, AT A SUSTAINED TEMPERATURE OF 25 °F (-4°C).

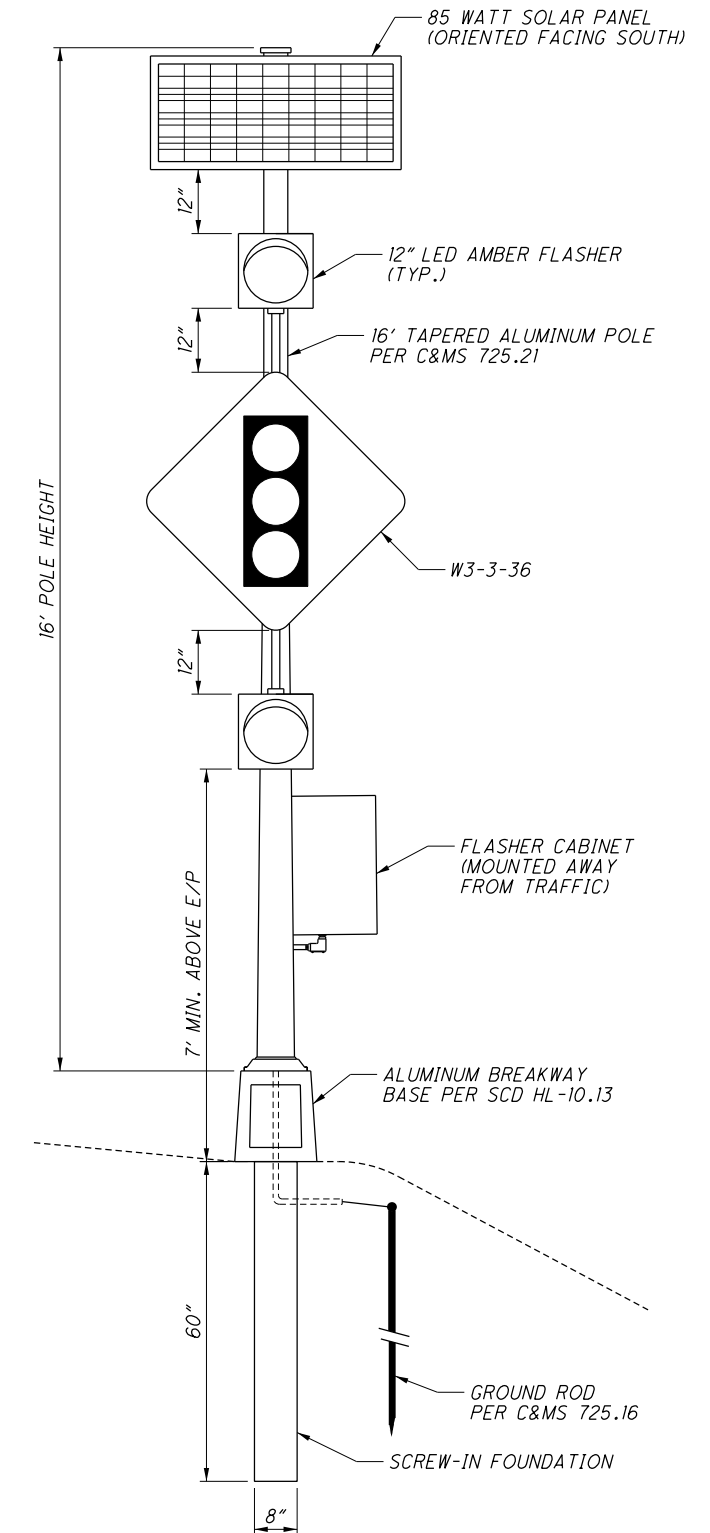
DELIVER A COPY OF THE CALCULATIONS TO THE ENGINEER AND ANOTHER COPY TO THE OFFICE OF ROADWAY ENGINEERING FOR APPROVAL.

PROVIDE DOCUMENTATION SHOWING THAT THE SOLAR PANEL MANUFACTURER TESTED THE PANEL ACCORDING TO IEC61215 OR EQUIVALENT APPROVED STANDARD.

PROVIDE DOCUMENTATION SHOWING THAT SOLAR MOUNTING IS RATED FOR 90 MPH DESIGN WIND AND DESIGNED TO RESIST VANDALISM.

ENSURE NEC GROUNDING AND BONDING REQUIREMENTS ARE MET IF VOLTAGES OVER 50V AC OR DC ARE PRESENT.

PAYMENT WILL BE MADE FOR A COMPLETE, AND IN PLACE SOLAR-POWERED ASSEMBLY, WITH FLASHING AMBER LED BEACONS, TESTED AND ACCEPTED AND SHALL INCLUDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, HARDWARE, AND INCIDENTALS NECESSARY TO FURNISH AND ERECT THE ASSEMBLY.



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TRAFFIC CONTROL NOTES

LIC-37 / 661-  
16.59 / 0.00

201  
341



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REF NO.	SHEET NO.	STATION TO STATION				644	644	644	644	644	644	644	644	646	646	646	646	646	646	646		
		EDGE LINE, 4" (WHITE)	EDGE LINE, 6" (WHITE)	CENTER LINE (DOUBLE SOLID)	CENTER LINE (PASSING PROHIBITED LT)	CENTER LINE (PASSING PROHIBITED RT)	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (YELLOW)	LANE ARROW	WORD ON PAVEMENT, 72"	EDGE LINE, 6" (WHITE)	CENTER LINE (DOUBLE SOLID)	CHANNELIZING LINE, 8"	STOP LINE	TRANSVERSE/DIAGONAL LINE (YELLOW)	ISLAND MARKING (YELLOW)	LANE ARROW	WORD ON PAVEMENT, 72"		
		MILE	MILE	MILE	MILE	MILE	FT	FT	FT	FT	EACH	EACH	MILE	MILE	FT	FT	FT	SF	EACH	EACH		
<b>PLAN SPLIT 02/NHS/PV</b>																						
SR 37 & SR 661																						
EW-1	207	366+84.00	TO	367+40.29									0.01									
EW-2	207	366+84.00	TO	367+23.66									0.01									
CL-1	207	366+84.00	TO	367+50.00										0.01								
CL-2	207	366+84.00	TO	367+50.00										0.01								
TY-1	207	366+84.00	TO	367+50.00												146						
CH-1	207	366+84.00	TO	367+50.00											66							
LA-3	207	367+40.00																	1			
SL-1	207	367+50.00														40						
IM-1	207	367+50.00															246					
EW-3	207-208	368+07.48	TO	372+36.20									0.08									
EW-4	207-208	368+19.88	TO	372+43.63									0.08									
SL-2	207	368+50.00														24						
CH-2	207-208	368+50.00	TO	372+05.00											355							
CL-3	207-208	368+50.00	TO	372+05.00										0.07								
CH-3	207-208	368+50.00	TO	372+05.00											355							
LA-4	207	368+60.00																	1			
LA-5	207	368+65.00																	1			
WD-2	207	369+26.00																			1	
LA-6	207	369+92.00																	1			
LA-7	207	370+63.00																	1			
WD-3	208	371+29.00																			1	
LA-8	208	371+90.00																	1			
LA-9	208	371+95.00																	1			
SL-3	208	372+05.00														24						
SL-4	208	373+00.00														20						
IM-2	208	373+00.00															246					
CL-4	208	373+00.00	TO	373+14.06															0.01			
CL-5	208	373+00.00	TO	373+14.06															0.01			
TY-2	208	373+00.00	TO	373+14.06																	34	
<b>SUB-TOTALS THIS SHEET</b>																						
<b>SUB-TOTALS CARRIED FROM SHEET 202</b>																						
		0.19	1.02	0.72	0.04	0.04	670	122	276	437	12	4	0.18	0.11	776	108	180	492	7	2		
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>																						
		0.19	1.02		0.80		670	122	276	437	12	4	0.18	0.11	776	108	180	492	7	2		

CALCULATED CMY	CHECKED XXX	<b>PAVEMENT MARKING SUBSUMMARY</b>
		203 341

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REF NO.	SHEET NO.	STATION TO STATION				646	646	646	646	646	646	646	646												
						EDGE LINE, 6" (WHITE)	EDGE LINE, 6" (YELLOW)	CHANNELIZING LINE, 8"	STOP LINE	LANE ARROW (LEFT ONLY)	LANE ARROW (THROUGH / RIGHT)	WORD ON PAVEMENT, 72"	WRONG WAY ARROW												
PLAN SPLIT 02/NHS/PV					MILE	MILE	FT	FT	EACH	EACH	EACH	EACH													
RAMP E																									
EW-10	210	107+07.62	TO	373+14.06 (661)	0.08																				
EY-1	210	107+07.62	TO	372+43.63 (661)		0.08																			
RAMP F																									
EW-11	211	373+14.06 (661)	TO	118+42.89	0.15																				
EY-2	211	372+36.20 (661)	TO	118+42.89		0.14																			
SL-8	211	110+95.50						57																	
CH-6	211	110+95.50	TO	113+75.00			280																		
LA-16	211	111+05.50							1																
LA-25	211	111+05.50								1															
WD-6	211	111+71.75									1														
LA-17	211	112+38							1																
LA-26	211	112+38								1															
LA-18	211	113+69							1																
LA-27	211	113+69								1															
LA-28	211	115+50									1														
RAMP G																									
EW-12	212	100+36.00 (16)	TO	367+40.29 (37)	0.23																				
EY-3	212	103+65.69	TO	368+19.88 (661)		0.16																			
CH-7	212	107+00.00		112+30.07			530																		
LA-29	212	105+50									1														
LA-19	212	107+06.00							1																
LA-30	212	107+06								1															
LA-20	212	108+95.00							1																
LA-31	212	108+95								1															
LA-21	212	110+88.07							1																
LA-32	212	110+88.07								1															
WD-7	212	111+54.07									1														
LA-22	212	112+20.07							1																
LA-33	212	112+20.07								1															
SL-9	212	112+30.07					57																		
RAMP H																									
EY-4	213	368+07.48 (661)	TO	123+13.14		0.21																			
EW-13	213	367+23.66 (37)	TO	123+13.14	0.21																				
SUB-TOTALS					0.67	0.59	810	114	7	7	2														
TOTALS CARRIED TO GENERAL SUMMARY					1.26		810	114	14	2	2														

CALCULATED CMY	CHECKED XXX	PAVEMENT MARKING SUBSUMMARY	LIC-37 / 661- 16.59 / 0.00	204
				341

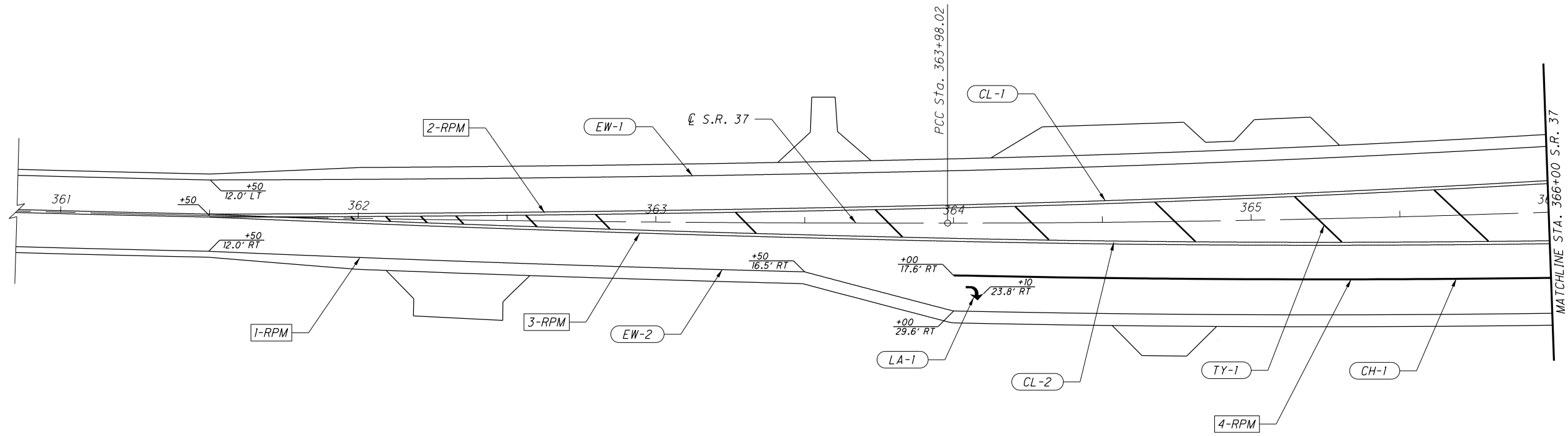
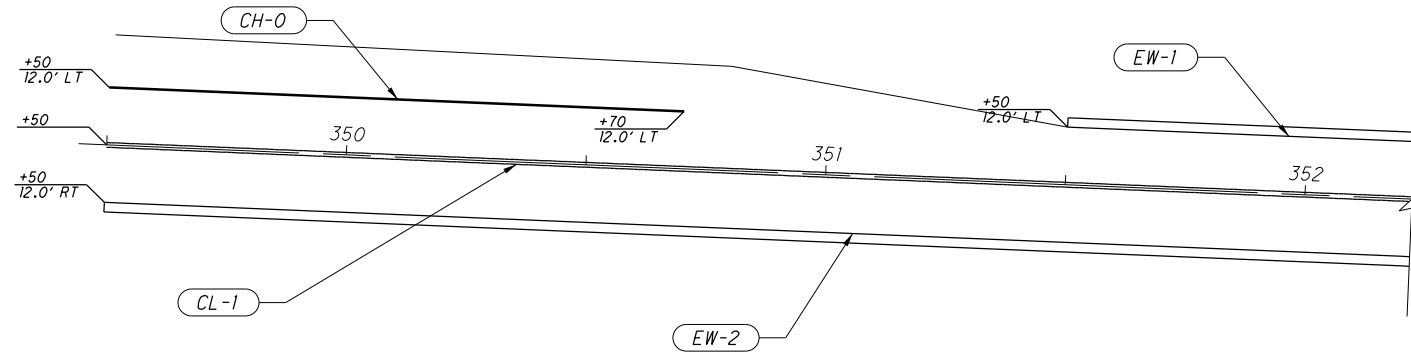
I:\ProjectData\LIC\9241\Design\Traffic\Sheets\9241\TS009.dgn Sheet 1/15/2020 8:07:57 AM bharlow

SHEET NO.	REFERENCE NO.	LOCATION	STATION		621				INFO ONLY	621	
			FROM	TO	RPM 1-WAY WHITE	RPM 2-WAY WHITE/RED	RPM 2-WAY YELLOW/RED	RPM 2-WAY YELLOW/YELLOW	RPM SPACING CENTER/CENTER SEE SCD'S TC-65.10 AND TC-65.11	RAISED PAVEMENT MARKER REMOVED	
					EACH	EACH	EACH	FEET	EACH		
<b>PLAN SPLIT CODE 03/S&lt;2/PV</b>											
206-207	1-RPM	S.R. 37 WHITE EDGE LINE (EW-2 )	360+30	367+50	16				40/80		
206-207	2-RPM	S.R. 37 YELLOW CENTER LINE (CL-1)	349+50	367+50				23	80	23	
206-207	3-RPM	S.R. 37 YELLOW CENTER LINE (CL-2)	361+50	367+50				8	80		
206-207	4-RPM	S.R. 37 CHANNELIZING LINE WHITE (CH-1)	364+00	367+50		9			40		
208	17-RPM	S.R. 661 WHITE EDGE LINE (EW-5)	373+00	374+60	4				40		
208	18-RPM	S.R. 661 YELLOW CENTER LINE (CL-4)	373+00	374+60				3	80	3	
208	19-RPM	S.R. 661 WHITE EDGE LINE (EW-6)	373+14	374+22	3				40		
208	20-RPM	S.R. 661 YELLOW CENTER LINE (CL-5)	373+00	374+32				3	80		
208	21-RPM	S.R. 661 CHANNELIZING LINE WHITE (CH-4)	373+75	374+60		3			40		
<b>PLAN SPLIT CODE 03/S&lt;2/PV TOTAL</b>							23	12	37		26
<b>PLAN SPLIT CODE 02/NHS/PV</b>											
210	5-RPM	WESTBOUND ON-RAMP YELLOW EDGE LINE (EY-1) RAMP E	107+07.62	111+00				6	80		
211	6-RPM	WESTBOUND OFF-RAMP YELLOW EDGE LINE (EY-2) RAMP F	111+00	118+42				10	80	3	
211	7-RPM	WESTBOUND OFF-RAMP WHITE CHANNELIZING LINE (CH-6) RAMP F	111+00	113+75		7			40		
211	22-RPM	WESTBOUND OFF-RAMP WHITE EDGE LINE (EW-11) RAMP F	111+00	119+40		16			40/80		
212	8-RPM	EASTBOUND OFF-RAMP YELLOW EDGE LINE (EY-3) RAMP G	103+65.69	112+25				11	80		
212	9-RPM	EASTBOUND OFF-RAMP WHITE CHANNELIZING LINE (CH-7) RAMP G	107+00	112+25		13			40		
212	23-RPM	EASTBOUND OFF-RAMP WHITE EDGE LINE (EW-12) RAMP G	103+60	112+20		16			40/80		
213	10-RPM	EASTBOUND ON-RAMP YELLOW EDGE LINE (EY-4) RAMP H	112+27	123+13				14	80	3	
207	11-RPM	S.R. 661 WHITE EDGE LINE (EW-4)	368+20	369+20	3				40		
207	12-RPM	S.R. 661 YELLOW CENTER LINE (CL-3)	368+50	369+10				3	80		
207	13-RPM	S.R. 661 CHANNELIZING LINE WHITE (CH-2)	368+50	369+15		3			40		
208	14-RPM	S.R. 661 WHITE EDGE LINE (EW-3)	371+46	372+36	3				40		
208	15-RPM	S.R. 661 YELLOW CENTER LINE (CL-3)	371+50	372+05				3	80	3	
208	16-RPM	S.R. 661 CHANNELIZING LINE WHITE (CH-3)	371+52	372+05		3			40		
<b>PLAN SPLIT CODE 02/NHS/PV TOTAL</b>							6	58	41		9
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>								183			35

CALCULATED RUG	CHECKED HAG		
RPM SUBSUMMARY			
LIC-37 / 661- 16.59 / 0.00			
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205			
341			

**LEGEND**

- EW - EDGE LINE (WHITE)
- EY - EDGE LINE (YELLOW)
- CL - CENTER LINE
- CH - CHANNELIZING LINE
- SL - STOP LINE
- CW - CROSSWALK LINE
- IM - ISLAND MARKING (YELLOW)
- TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
- LA - LANE ARROW
- WD - WORD ON PAVEMENT
- WA - WRONG WAY ARROW



CALCULATED  
CMY  
CHECKED  
XXX

**S.R. 37 PAVEMENT MARKING PLAN SHEET**  
**STA. 349+50 TO STA. 366+00**

**LIC-37 / 661-**  
**16.59 / 0.00**

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**LEGEND**

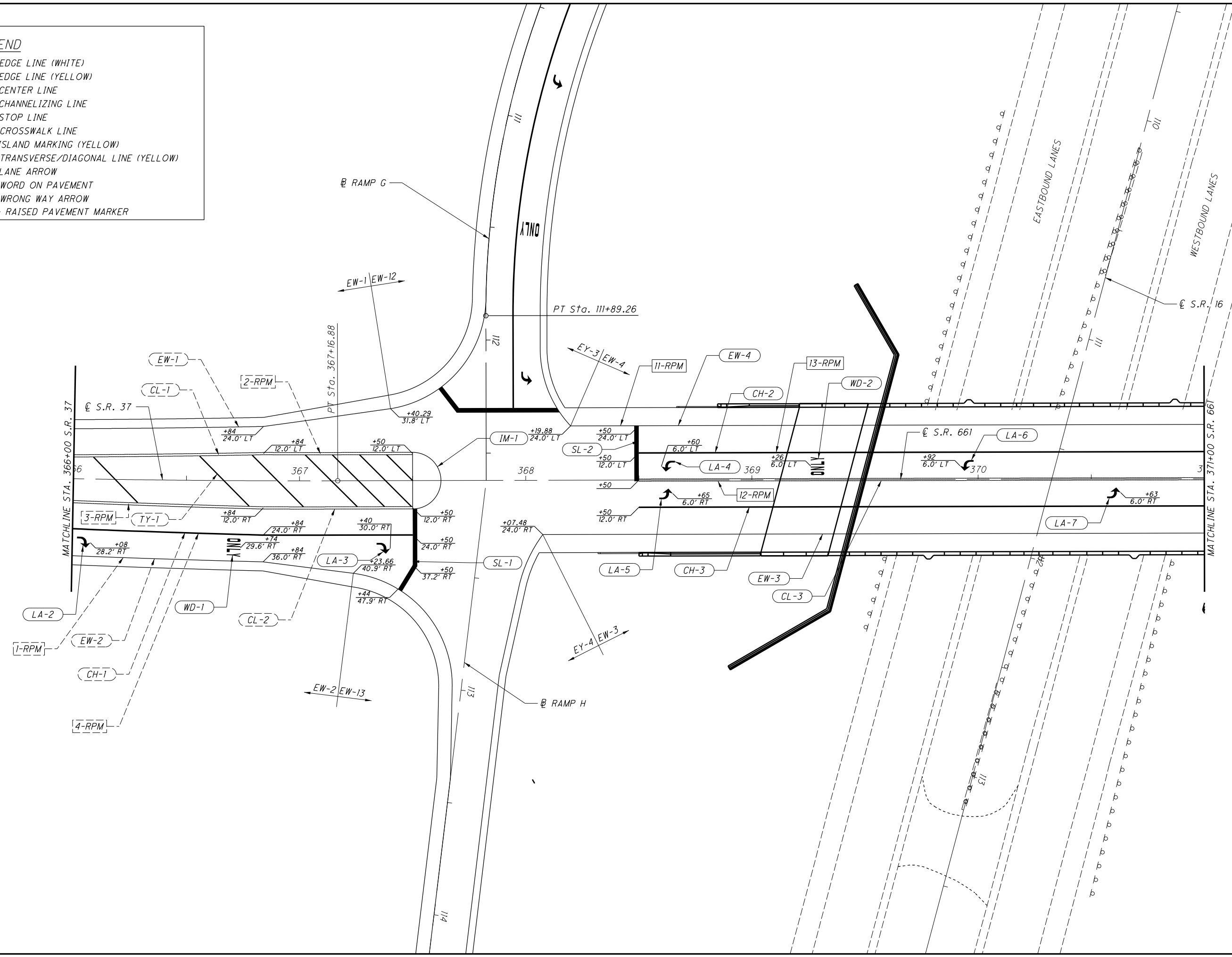
- EW - EDGE LINE (WHITE)
- EY - EDGE LINE (YELLOW)
- CL - CENTER LINE
- CH - CHANNELIZING LINE
- SL - STOP LINE
- CW - CROSSWALK LINE
- IM - ISLAND MARKING (YELLOW)
- TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
- LA - LANE ARROW
- WD - WORD ON PAVEMENT
- WA - WRONG WAY ARROW
- RPM - RAISED PAVEMENT MARKER



CALCULATED	CMY	CHECKED	XXX
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**S.R. 37 / 661 PAVEMENT MARKING PLAN SHEET**  
**STA. 366+00 TO STA. 371+00**

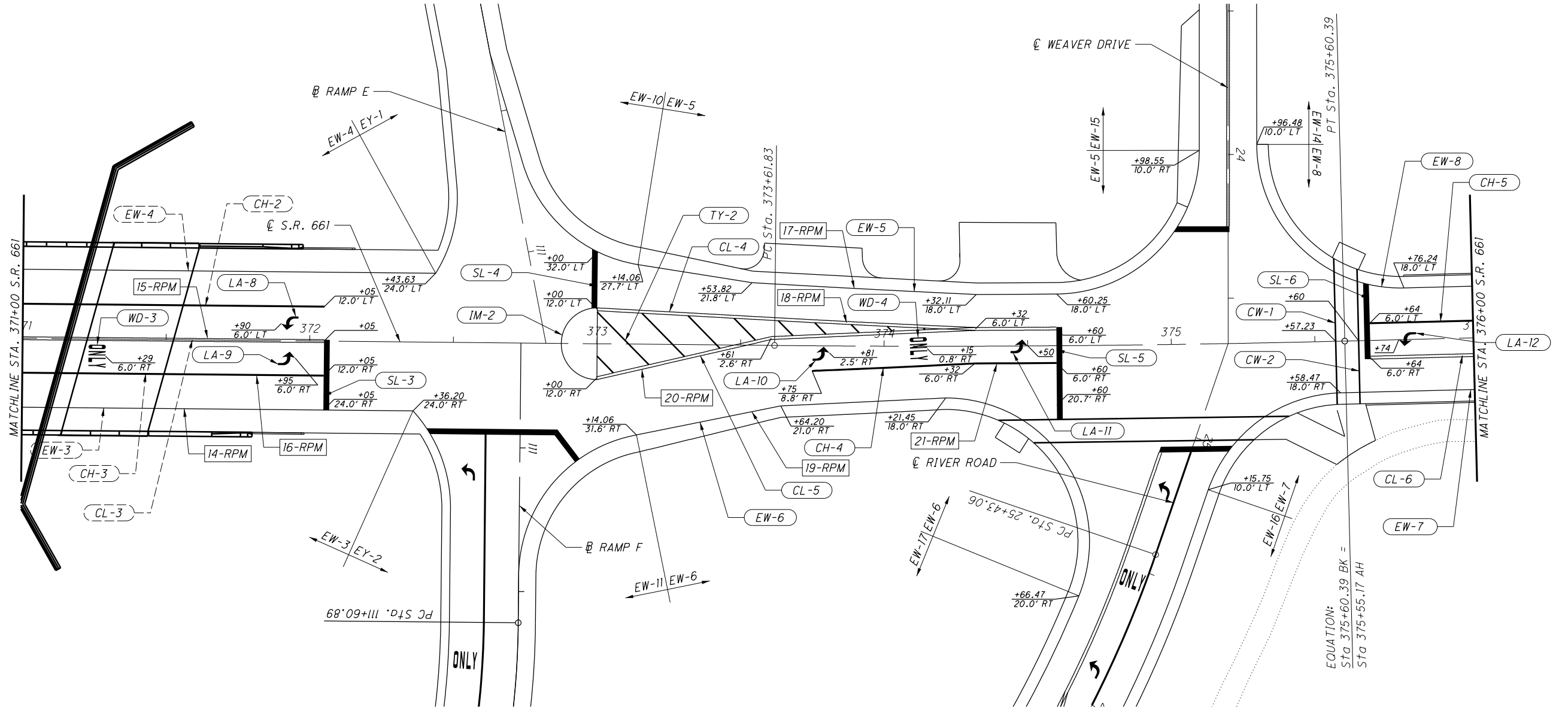
**LIC-37 / 661-**  
**16.59 / 0.00**



I:\ProjectData\LIC\9241\Design\Traffic\Sheets\9241L\_IP002.dgn Sheet 11/18/2019 1:47:55 PM bharlow

**LEGEND**

- EW - EDGE LINE (WHITE)
- EY - EDGE LINE (YELLOW)
- CL - CENTER LINE
- CH - CHANNELIZING LINE
- SL - STOP LINE
- CW - CROSSWALK LINE
- IM - ISLAND MARKING (YELLOW)
- TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
- LA - LANE ARROW
- WD - WORD ON PAVEMENT
- WA - WRONG WAY ARROW



CALCULATED  
CMY  
CHECKED  
XXX

**S.R. 661 PAVEMENT MARKING PLAN SHEET  
STA. 371+00 TO STA. 376+00**

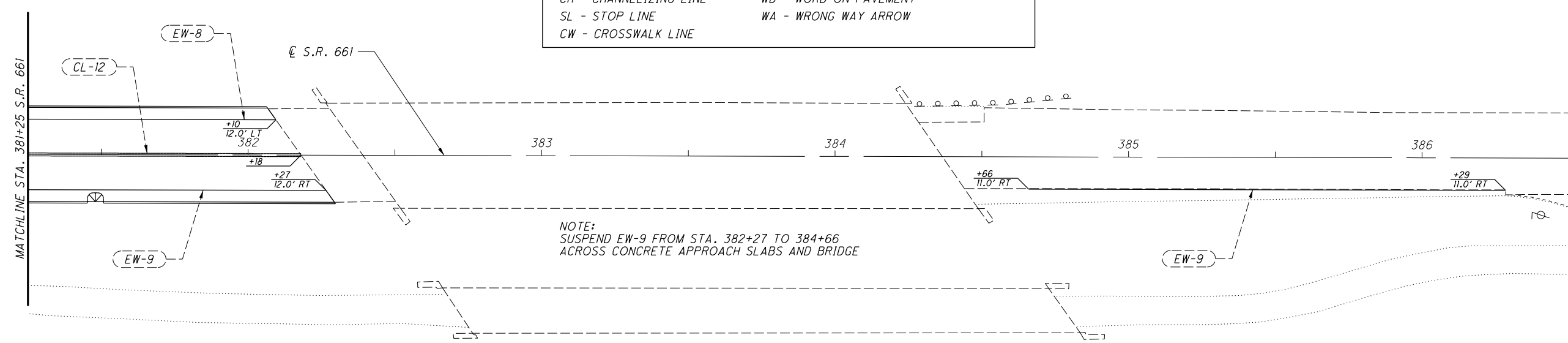
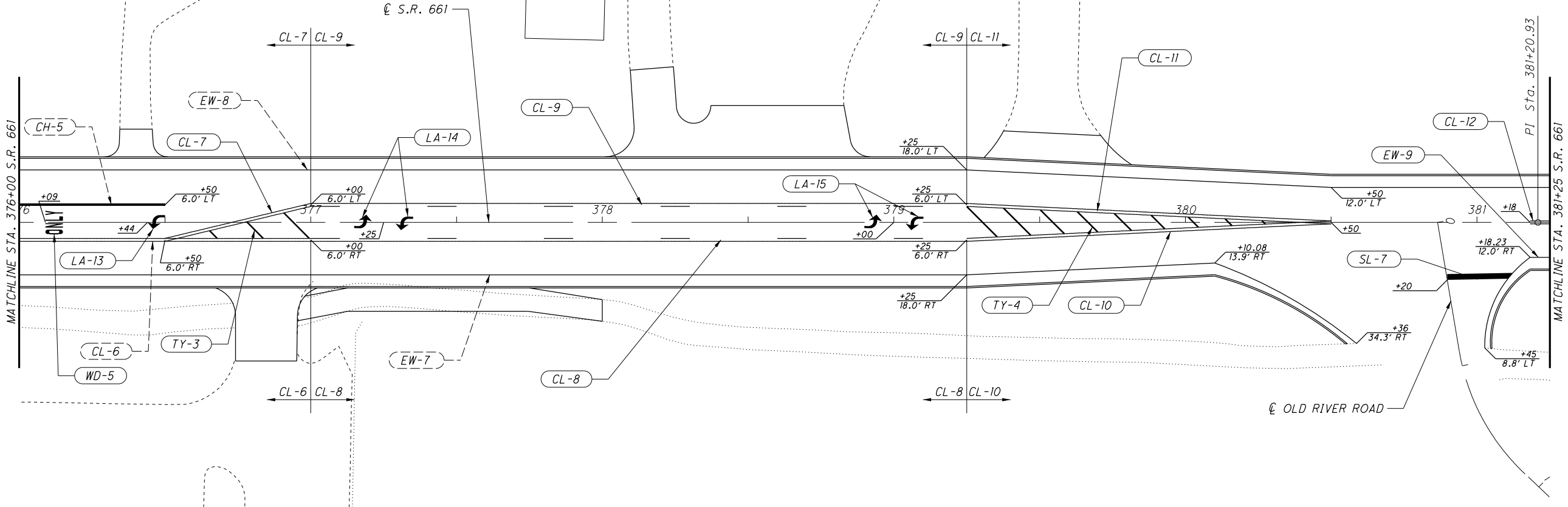
**LIC-37 / 661-  
16.59 / 0.00**

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EQUATION:  
Sta 375+60.39 BK =  
Sta 375+55.17 AH



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**LEGEND**

EW - EDGE LINE (WHITE)	IM - ISLAND MARKING (YELLOW)
EY - EDGE LINE (YELLOW)	TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
CL - CENTER LINE	LA - LANE ARROW
CH - CHANNELIZING LINE	WD - WORD ON PAVEMENT
SL - STOP LINE	WA - WRONG WAY ARROW
CW - CROSSWALK LINE	

CALCULATED  
CMY  
CHECKED  
XXX

HORIZONTAL SCALE IN FEET

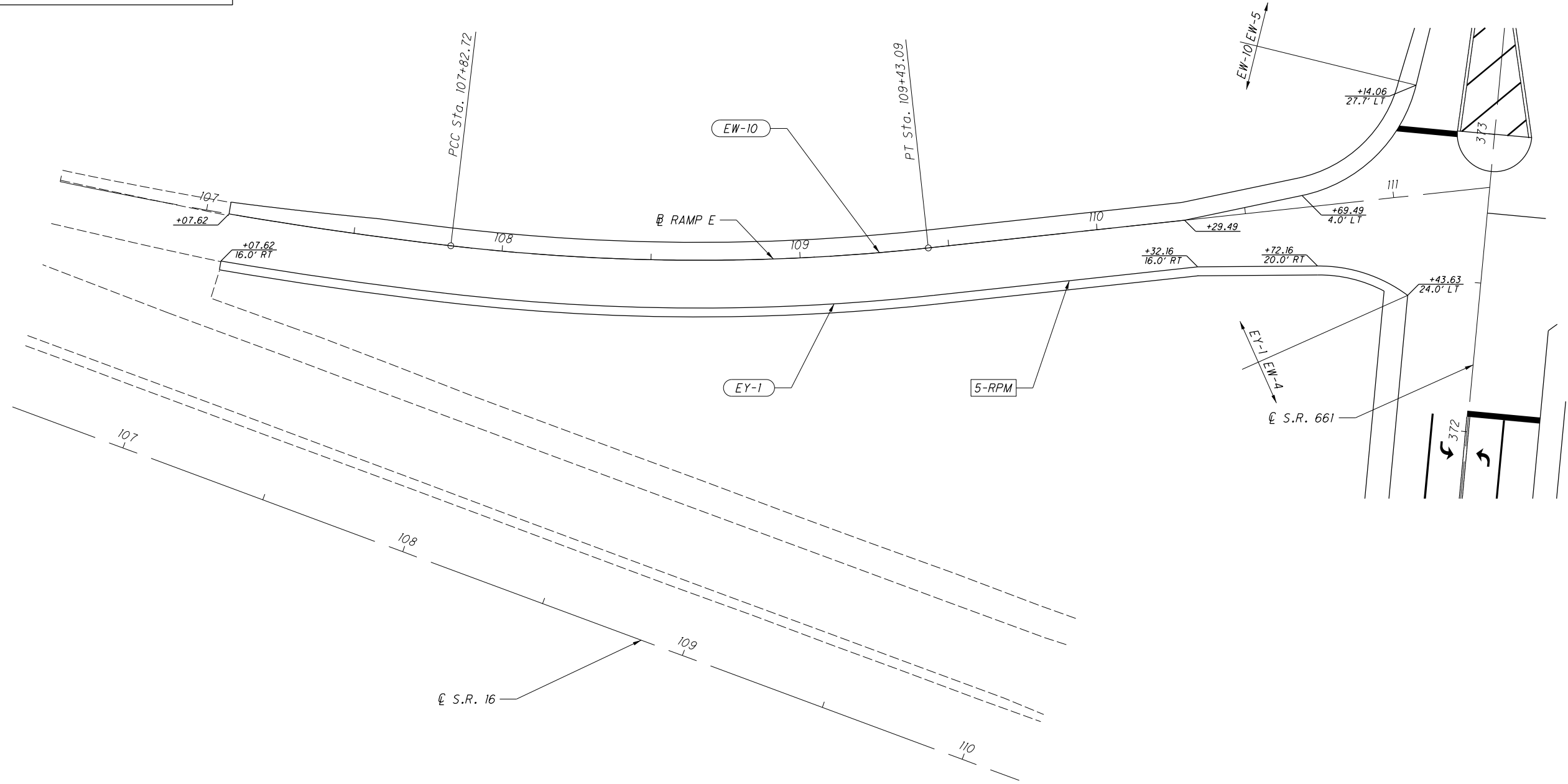
**S.R. 661 PAVEMENT MARKING PLAN SHEET**  
**STA. 376+00 TO STA. 386+29**

**LIC-37 / 661-**  
**16.59 / 0.00**

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**LEGEND**

- EW - EDGE LINE (WHITE)
- EY - EDGE LINE (YELLOW)
- CL - CENTER LINE
- CH - CHANNELIZING LINE
- SL - STOP LINE
- CW - CROSSWALK LINE
- IM - ISLAND MARKING (YELLOW)
- TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
- LA - LANE ARROW
- WD - WORD ON PAVEMENT
- WA - WRONG WAY ARROW
- RPM - RAISED PAVEMENT MARKER



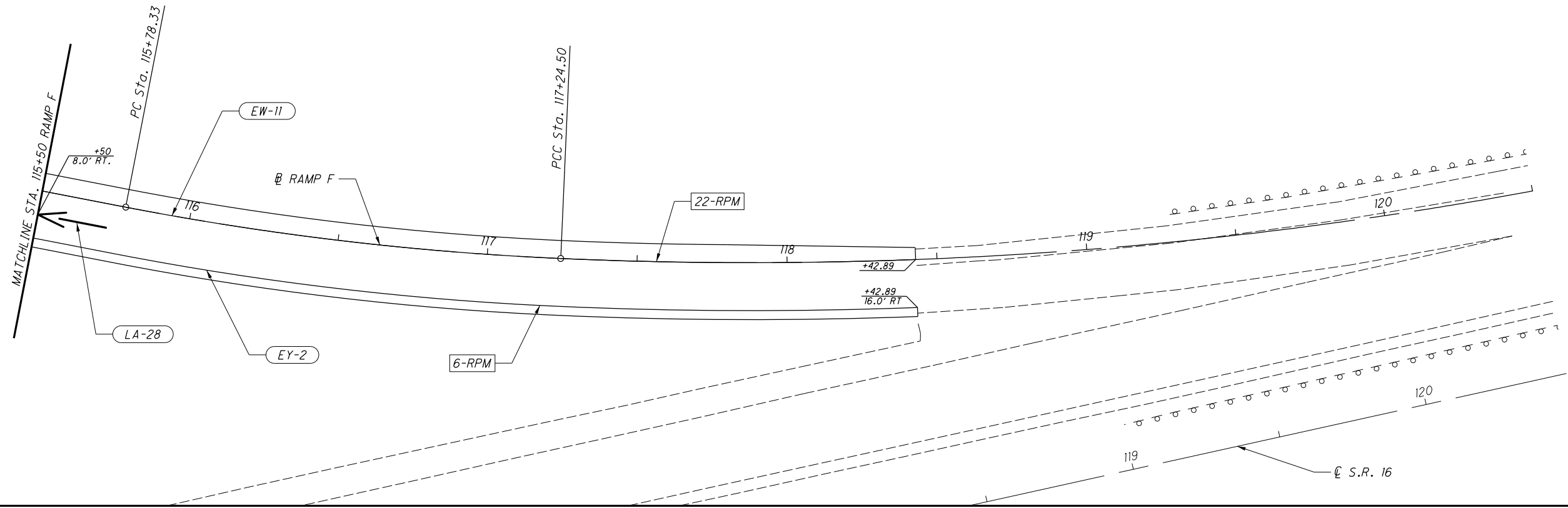
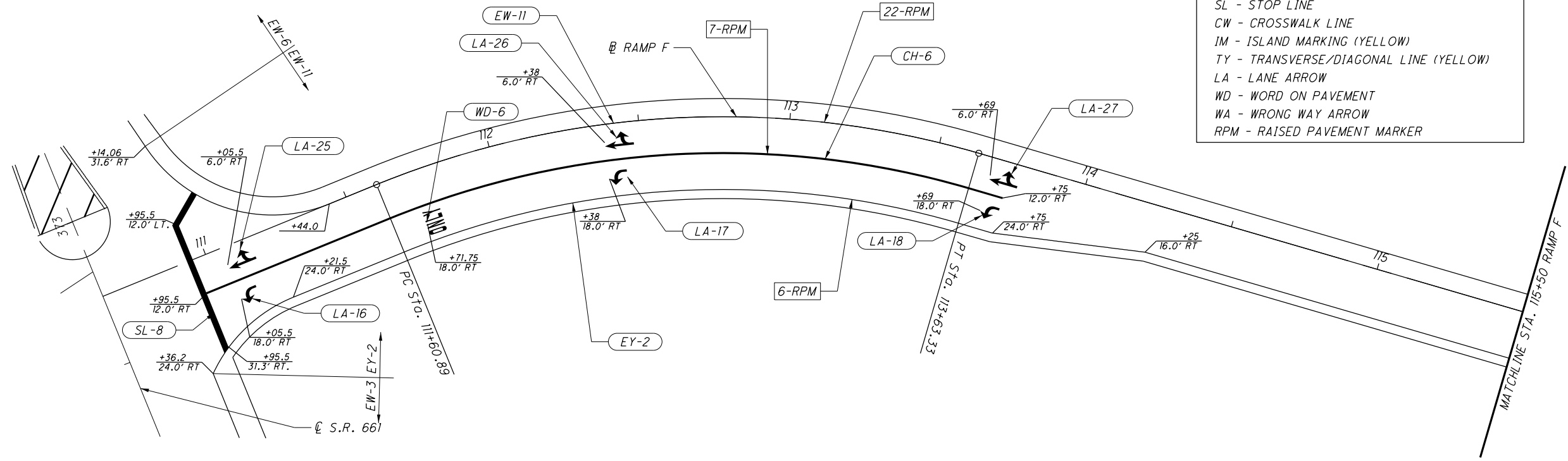
CALCULATED  
CMY  
CHECKED  
XXX

0 20 40  
HORIZONTAL  
SCALE IN FEET

**RAMP E PAVEMENT MARKING PLAN SHEET**  
**STA. 106+50 TO STA. 111+32**

**LIC-37 / 661-**  
**16.59 / 0.00**

I:\ProjectData\LIC\9244\Design\Traffic\Sheets\9244\_IP006.dgn Sheet 1/15/2020 8:07:58 AM bncrlow



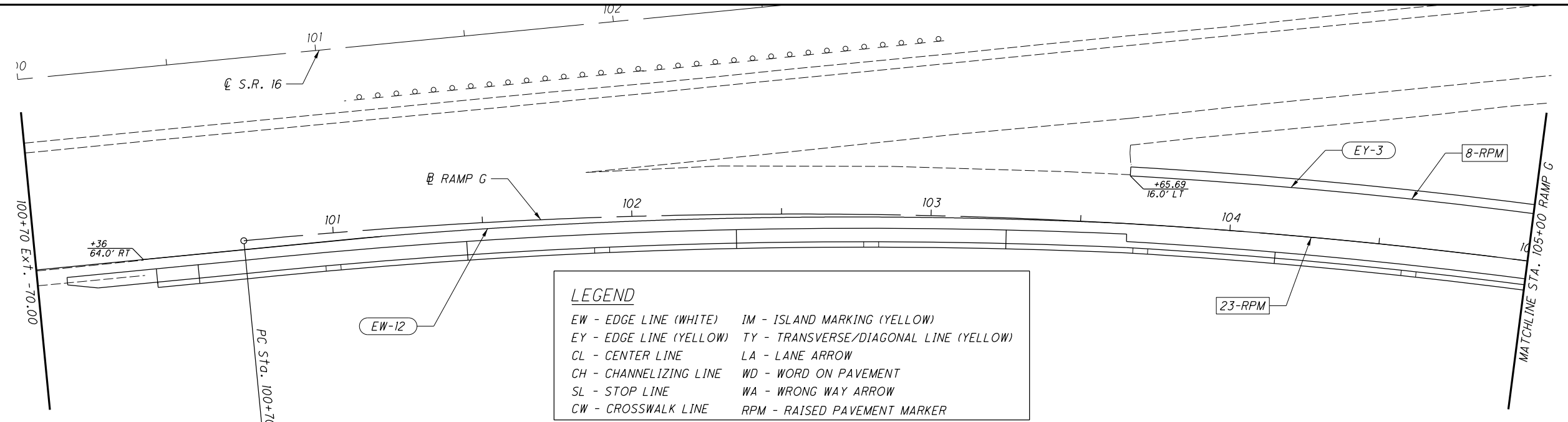
CALCULATED  
 CMY  
 CHECKED  
 XXX

0 20 40  
 HORIZONTAL  
 SCALE IN FEET

**RAMP F PAVEMENT MARKING PLAN SHEET**  
**STA. 110+63 TO STA. 120+50**

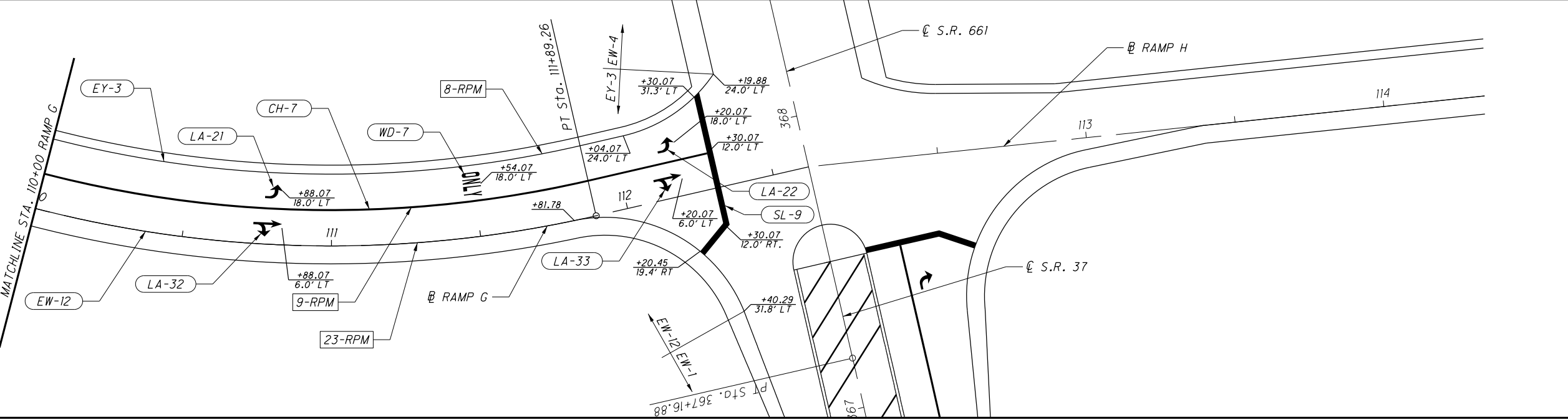
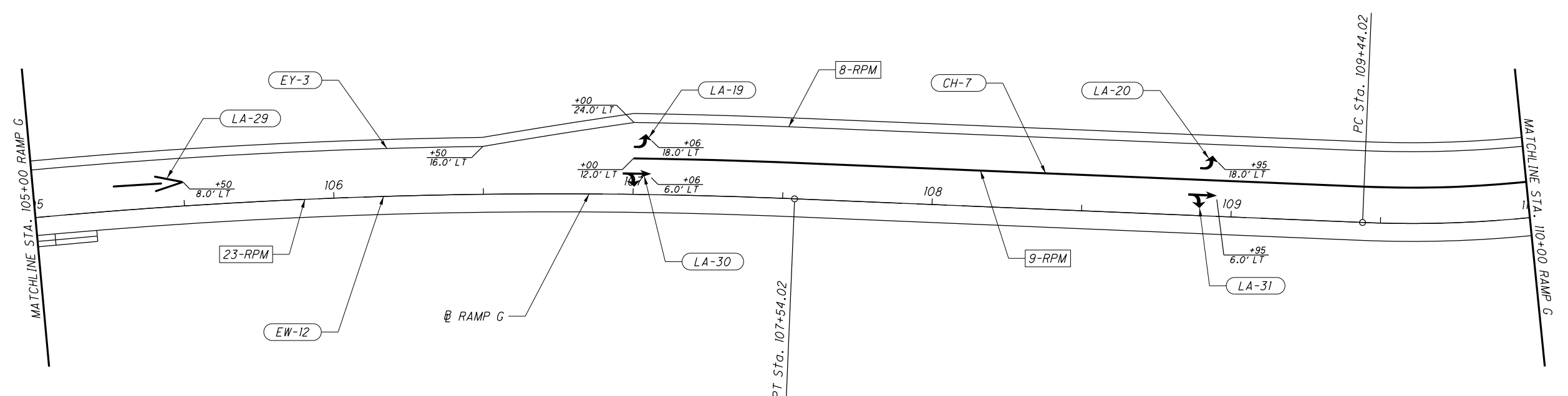
LIC-37 / 661-  
 16.59 / 0.00



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**LEGEND**

EW - EDGE LINE (WHITE)	IM - ISLAND MARKING (YELLOW)
EY - EDGE LINE (YELLOW)	TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
CL - CENTER LINE	LA - LANE ARROW
CH - CHANNELIZING LINE	WD - WORD ON PAVEMENT
SL - STOP LINE	WA - WRONG WAY ARROW
CW - CROSSWALK LINE	RPM - RAISED PAVEMENT MARKER



  
  
 CALCULATED CMY  
 CHECKED XXX

**RAMP G PAVEMENT MARKING PLAN SHEET**

**STA. 100+70 TO STA. 112+50**

LIC-37 / 661-  
 16.59 / 0.00

212  
 341

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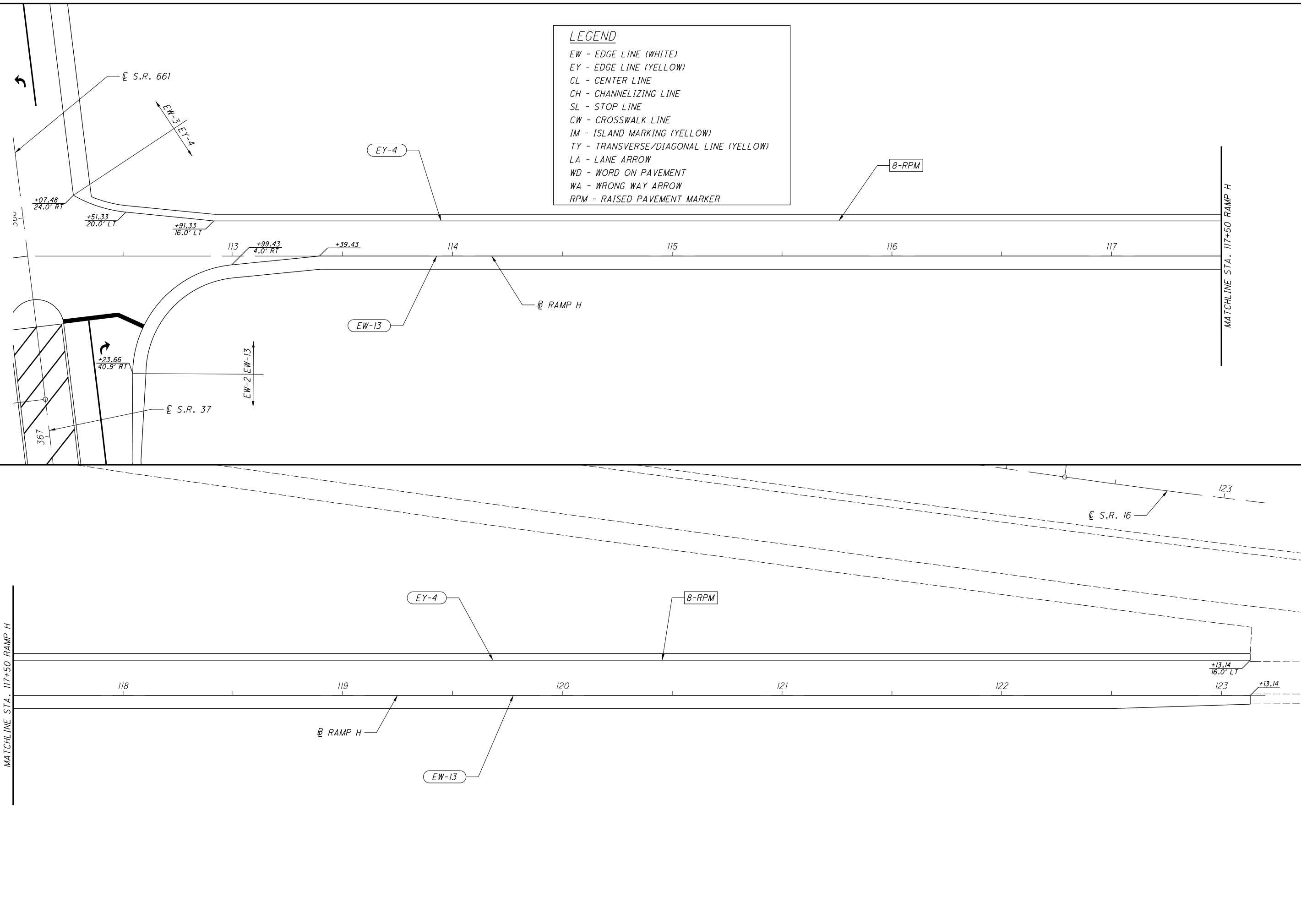
CALCULATED  
CMY  
CHECKED  
XXX

**RAMP H PAVEMENT MARKING PLAN SHEET**  
STA. 112+07 TO STA. 123+25

LIC-37 / 661-  
16.59 / 0.00

**LEGEND**

- EW - EDGE LINE (WHITE)
- EY - EDGE LINE (YELLOW)
- CL - CENTER LINE
- CH - CHANNELIZING LINE
- SL - STOP LINE
- CW - CROSSWALK LINE
- IM - ISLAND MARKING (YELLOW)
- TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
- LA - LANE ARROW
- WD - WORD ON PAVEMENT
- WA - WRONG WAY ARROW
- RPM - RAISED PAVEMENT MARKER





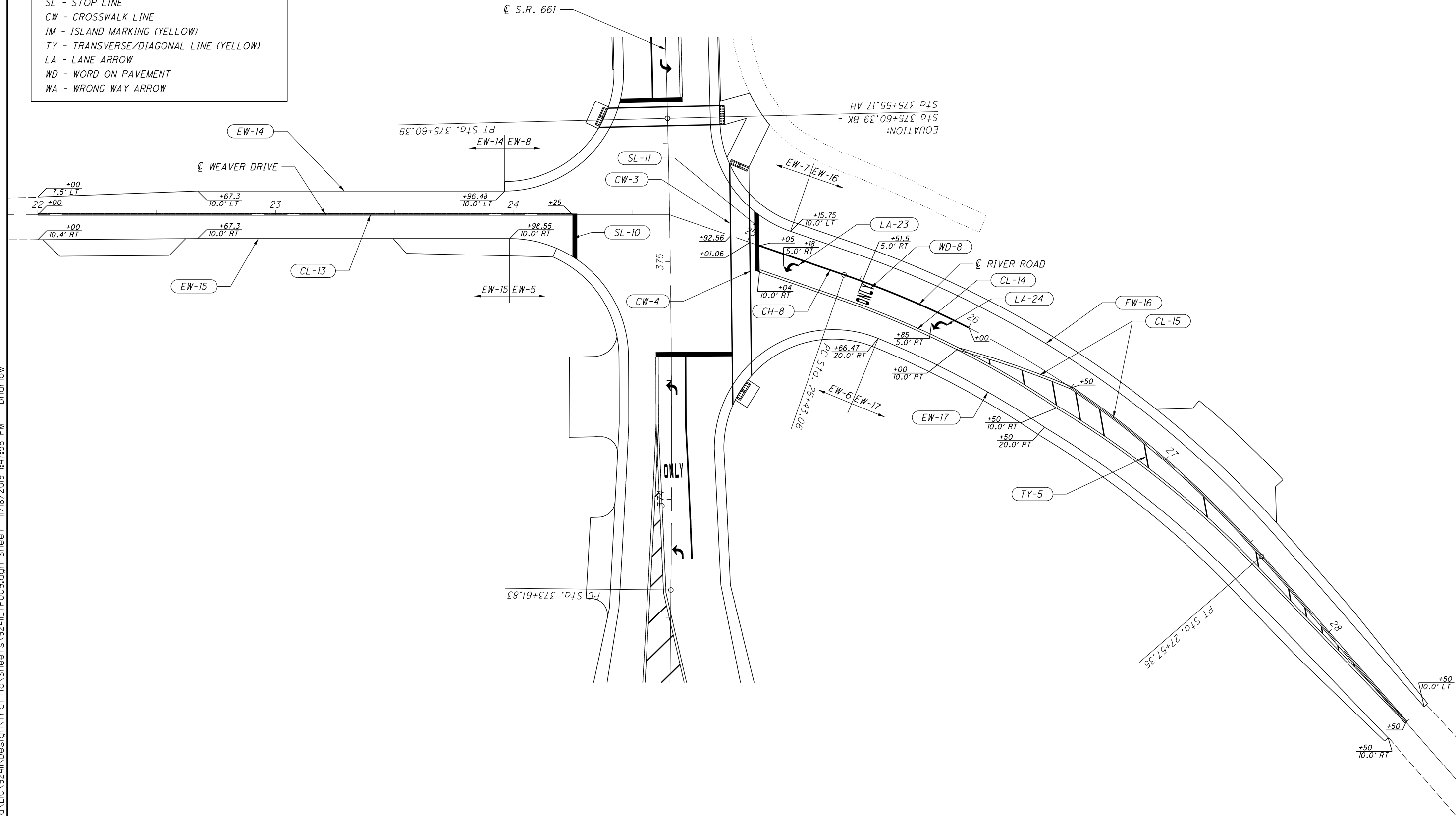
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HORIZONTAL  
SCALE IN FEET

CALCULATED  
CMY  
CHECKED  
XXX

**WEAVER DRIVE AND RIVER ROAD  
PAVEMENT MARKING PLAN SHEET**

**LIC-37 / 661-  
16.59 / 0.00**

- LEGEND**
- EW - EDGE LINE (WHITE)
  - EY - EDGE LINE (YELLOW)
  - CL - CENTER LINE
  - CH - CHANNELIZING LINE
  - SL - STOP LINE
  - CW - CROSSWALK LINE
  - IM - ISLAND MARKING (YELLOW)
  - TY - TRANSVERSE/DIAGONAL LINE (YELLOW)
  - LA - LANE ARROW
  - WD - WORD ON PAVEMENT
  - WA - WRONG WAY ARROW



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I:\ProjectData\LIC\924I\Design\Traffic\Sheets\924I\TS004.dgn Sheet 11/18/2019 4:47:59 PM bharlow

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	COMMENTS	630	630	630	630	630	630	630	630	630	630	630									
						REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED SIGN AND DELIVERY	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DELIVERY	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TC-12.30, AS PER PLAN	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
PLAN SPLIT CODE 02/NHS/PV																									
218	ES-9	S.R. 37	367+53	RT	REMOVE	1				2															
218	ES-10	S.R. 37	368+21	LT	REMOVE									1						1					
218	ES-11	S.R. 37	368+29	RT	REMOVE	3				1															
218	ES-12	S.R. 37	368+29	RT	REMOVE	3				1															
218	ES-13	S.R. 37	268+29	RT	REMOVE	4				1															
218	ES-14	S.R. 37	368+53	LT	REMOVE	2				1															
218	ES-15	S.R. 37	368+87	RT	REMOVE	1				1															
218	ES-16	S.R. 37	368+97	LT	REMOVE	1				1															
218	ES-17	S.R. 37	371+53	RT	REMOVE	1				1															
218	ES-18	S.R. 37	371+62	LT	REMOVE	1				1															
218	ES-19	S.R. 37	372+03	LT	REMOVE	3				1															
218	ES-20	S.R. 37	372+03	LT	RE MOVE	3				1															
218	ES-21	S.R. 37	372+36	LT	REMOVE														4						
218	ES-22	S.R. 37	372+34	LT	REMOVE	4			2	1		2													
219	ES-23	S.R. 37	372+92	RT	REMOVE				1			2													
219	ES-24	S.R. 37	372+97	LT	RE-ERECT			2		1															
219	ES-25	S.R. 37	373+01	LT	REMOVE														3						
219	ES-26	S.R. 37	373+10	LT	REMOVE	3				2															
219	ES-27	S.R. 37	373+46	RT	REMOVE	2				2															
221	ES-39	RAMP E	107+93	RT	REMOVE	1				2															
222	ES-40	RAMP F	111+06	RT	REMOVE	3				1															
222	ES-41	RAMP F	111+07	LT	REMOVE	1				2															
222	ES-42	RAMP F	112+61	RT	REMOVE	1				1															
222	ES-43	RAMP F	112+55	RT	REMOVE	1				1															
222	ES-44	RAMP F	114+41	RT	RE-ERECT			2		2															
222	ES-45	RAMP F	115+27	LT	RE-ERECT			2		2															
222	ES-46	RAMP F	117+75	RT	REMOVE				1				1												
223	ES-47	RAMP G	104+60	LT	REMOVE				1	1				1											
223	ES-48	RAMP G	110+60	RT	REMOVE	6			2	2		2													
223	ES-49	RAMP G	111+37	RT	REMOVE	1				1															
223	ES-50	RAMP G	111+38	LT	REMOVE	1				1															
223	ES-51	RAMP G	112+19	RT	REMOVE	3				1															
223	ES-52	RAMP G	112+26	LT	REMOVE	3				1															
224	ES-53	RAMP H	113+07	RT	REMOVE	1				1															
224	ES-54	RAMP H	113+07	LT	REMOVE	1				1															
224	ES-54A	RAMP H	112+45	RT	REMOVE														1						
226	ES-66	S.R. 16	142+21	MED	REMOVE	1																			
226	ES-67	S.R. 16	142+48	MED	REMOVE	1																			
226	ES-68	S.R. 16	142+53	MED	REMOVE	1																			
226	ES-69	S.R. 16	142+58	MED	REMOVE	1																			
226	ES-70	S.R. 16	142+85	MED	REMOVE	1																			
226	ES-71	S.R. 16	142+85	LT	REMOVE	1							1												
226	ES-72	S.R. 16	144+83	LT	REMOVE	1							1												
226	ES-73	S.R. 16	144+80	LT	REMOVE	1							1												
226	ES-74	S.R. 16	147+90	LT	REMOVE	1							2												
226	ES-75	S.R. 16	155+24	LT	REMOVE	1							1												
226	ES-83	S.R. 16	LIC-16-15.69	RT	REMOVE				1			2													
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						65	6		8	44		8	2	1	8	1									

**EXISTING SIGNING SUBSUMMARY**

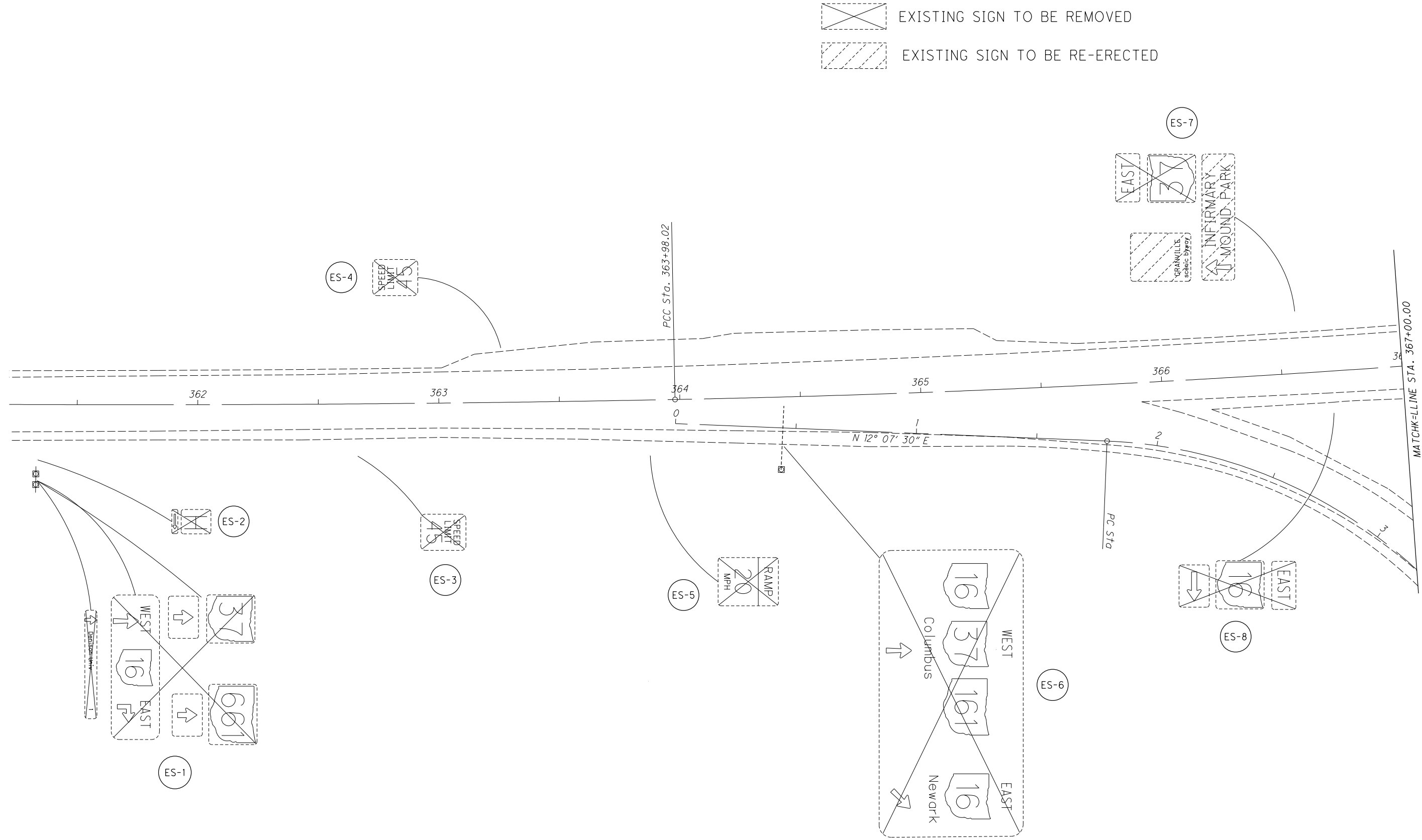
**LIC-37 / 661-  
16.59 / 0.00**

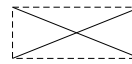
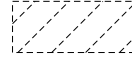
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CHECKED	HAG

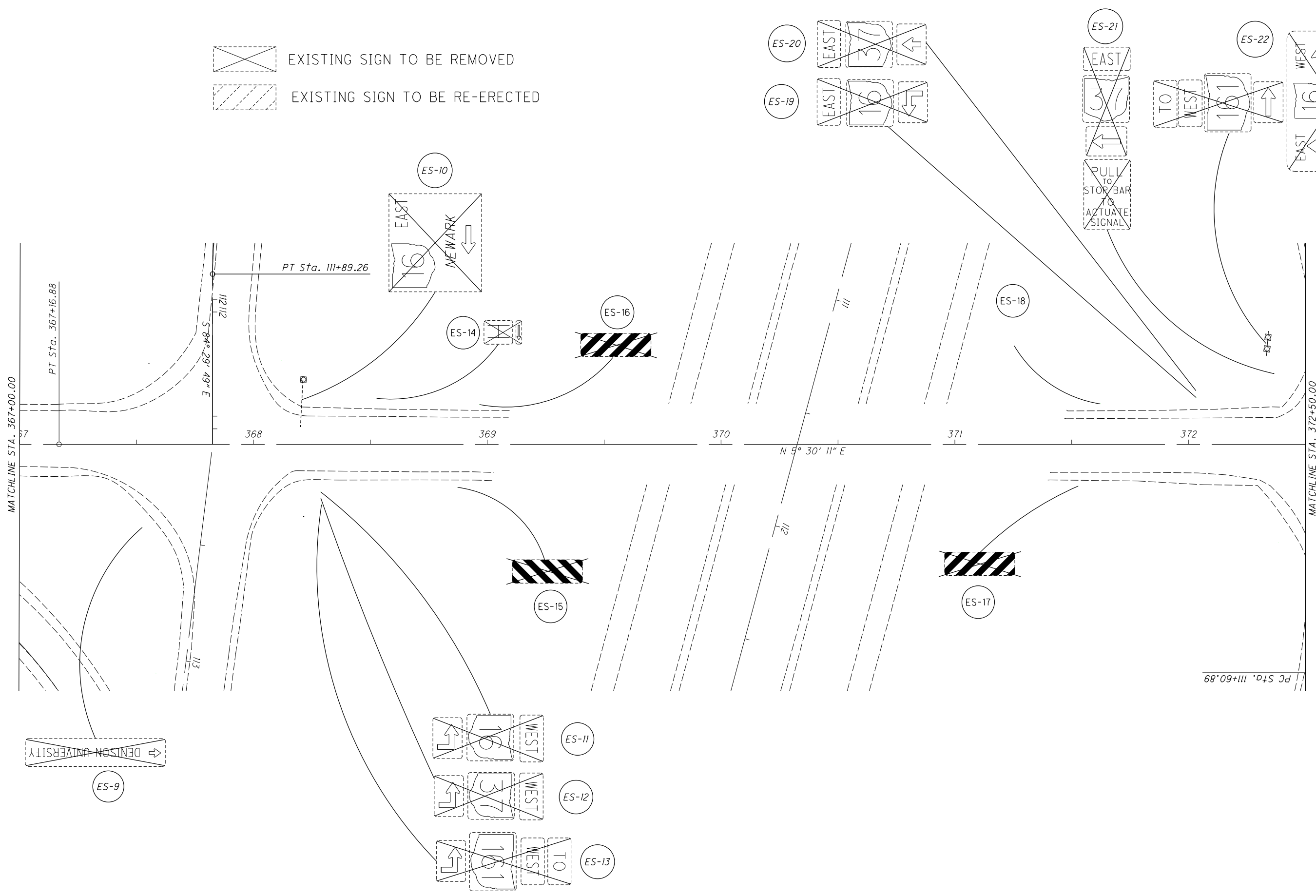
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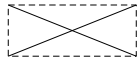

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	COMMENTS	630	630	630	630	630	630	630	630	630	630	630							
						REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED SIGN AND DELIVERY	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DELIVERY	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TC-12.30, AS PER PLAN	EACH	EACH	EACH	EACH	EACH	EACH	EACH
			PLAN SPLIT CODE 03/SK2/PV																				
217	ES-1	S.R. 37	361+33	RT	REMOVE	5			1	2		2											
217	ES-2	S.R. 37	361+33	RT	REMOVE	2				1													
217	ES-3	S.R. 37	362+66	RT	REMOVE	1				1													
217	ES-4	S.R. 37	363+26	LT	REMOVE	1				1													
217	ES-5	S.R. 37	363+87	RT	REMOVE	1				1													
217	ES-6	S.R. 37	364+41	RT	REMOVE											1				1			
217	ES-7	S.R. 37	366+57	LT	REMOVE/RE-ERECT	2	2			2													
217	ES-8	S.R. 37	366+71	RT	REMOVE	3				1													
219	ES-28	S.R. 37	374+19	RT	REMOVE/RE-ERECT	2	1			1													
219	ES-29	S.R. 37	374+77	LT	REMOVE	1				1													
219	ES-30	S.R. 37	374+89	LT	REMOVE	2				1													
219	ES-31	S.R. 37	375+36	RT	REMOVE	2				1													
219	ES-32	S.R. 37	377+17	LT	REMOVE	1				1													
220	ES-33	S.R. 37	380+37	LT	REMOVE	3				1													
220	ES-34	S.R. 37	381+11	RT	REMOVE	1				1													
220	ES-35	S.R. 37	381+15	RT	REMOVE	2				1													
220	ES-36	S.R. 37	381+81	RT	RE-ERECT	1				1													
220	ES-37	S.R. 37	381+17	LT	REMOVE	1				1													
220	ES-38	S.R. 37	382+35	RT	REMOVE	1				1													
226	ES-55	RIVER ROAD	24+91	LT	REMOVE	1				1													
226	ES-56	RIVER ROAD	25+38	RT	REMOVE	1				1													
226	ES-57	RIVER ROAD	26+71	RT	REMOVE	1				1													
226	ES-58	RIVER ROAD	28+04	LT	REMOVE	2				2													
226	ES-59	RIVER ROAD	32+33	LT	REMOVE	1				1													
226	ES-60	RIVER ROAD	32+33	RT	REMOVE	1				1													
226	ES-61	RIVER ROAD	1+73	RT	REMOVE	1				2													
226	ES-62	RIVER ROAD	5+72	LT	REMOVE	1				1													
226	ES-63	RIVER ROAD	6+31	LT	RE-ERECT		1			1													
226	ES-64	RIVER ROAD	7+10	RT	REMOVE	2				2													
226	ES-65	RIVER ROAD	7+22	LT	REMOVE	2				2													
225	ES-76	WEAVER DRIVE	22+87	LT	REMOVE	1				1													
225	ES-77	WEAVER DRIVE	24+18	LT	REMOVE	1				1													
225	ES-78	WEAVER DRIVE	24+32	RT	REMOVE	1				1													
225	ES-79	WEAVER DRIVE	24+26	RT	REMOVE			2			1	1											
225	ES-80	WEAVER DRIVE	21+84	RT	REMOVE	1				1													
	ES-81	NOT USED																					
219	ES-82	S.R. 37	377+18	RT	RE-ERECT		1			1													
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						<b>49</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>40</b>	<b>1</b>	<b>2</b>		<b>1</b>		<b>1</b>							





 EXISTING SIGN TO BE REMOVED  
 EXISTING SIGN TO BE RE-ERECTED



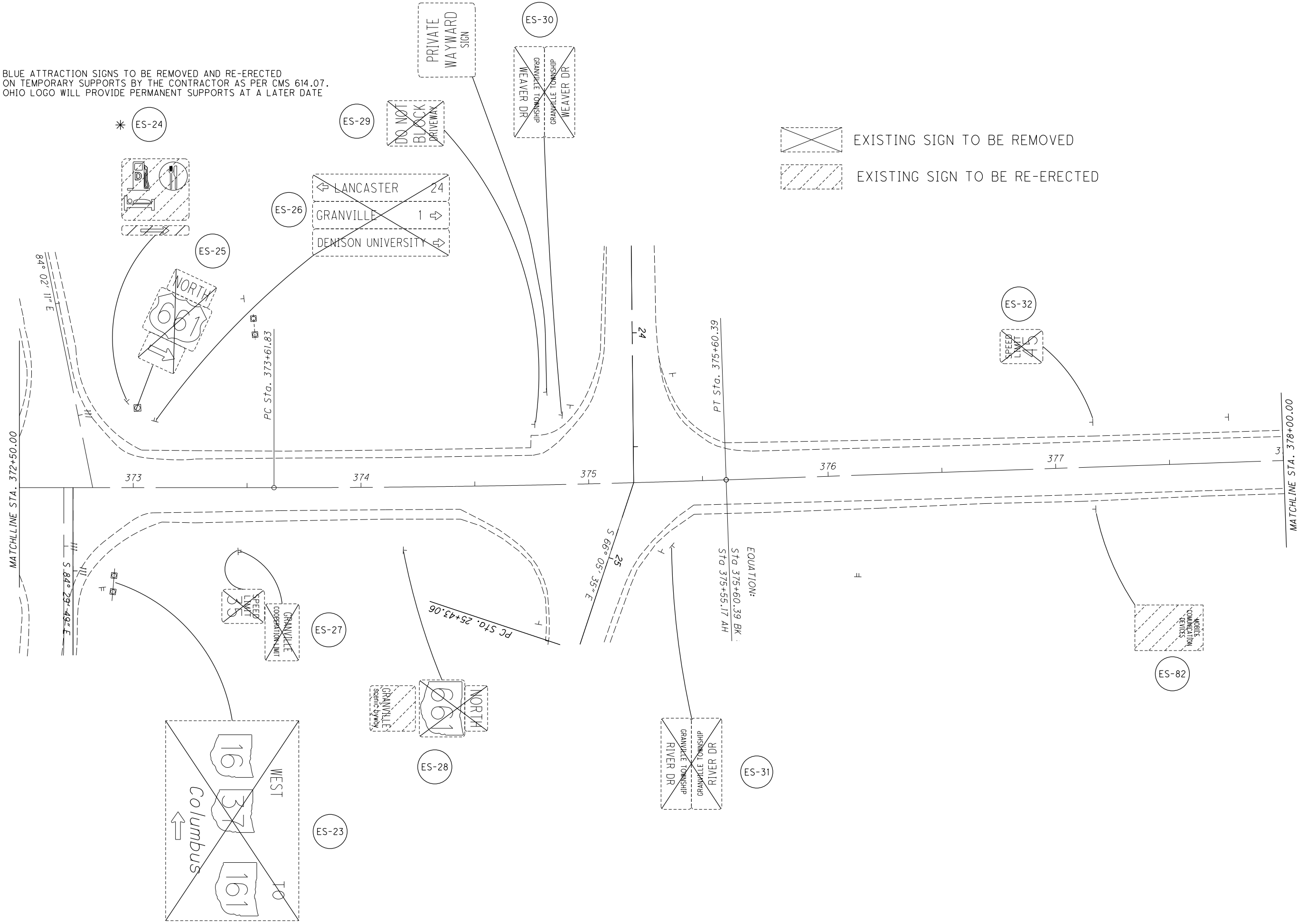
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 EXISTING SIGN TO BE RE-ERECTED



CALCULATED  
 RJC  
 CHECKED  
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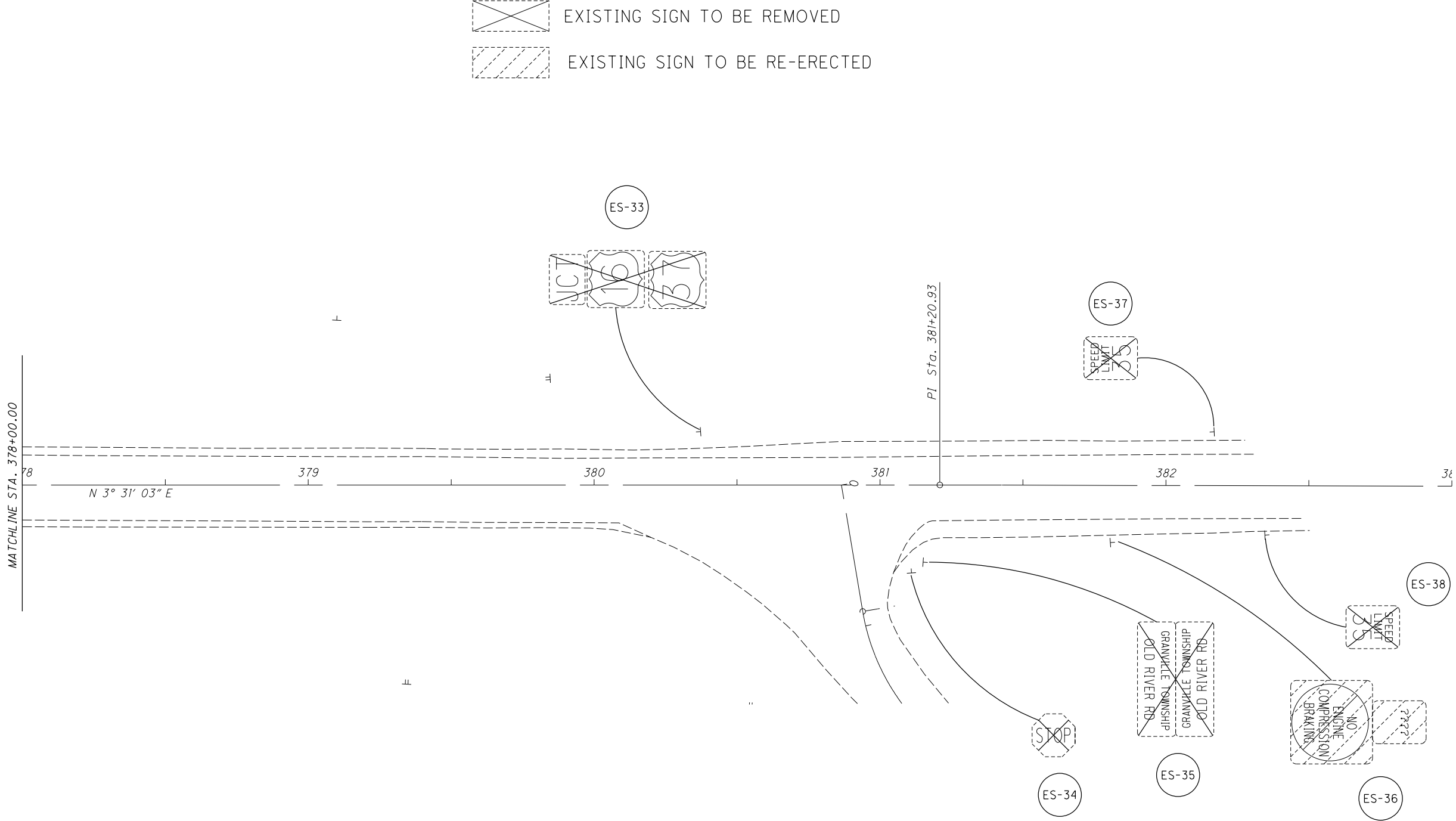
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**STA. 367+00.00 TO STA. 372+50.00**


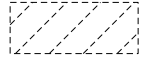
**LIC-37 / 661-**  
**16.59 / 0.00**

BLUE ATTRACTION SIGNS TO BE REMOVED AND RE-ERECTED  
 \* ON TEMPORARY SUPPORTS BY THE CONTRACTOR AS PER CMS 614.07.  
 OHIO LOGO WILL PROVIDE PERMANENT SUPPORTS AT A LATER DATE



 EXISTING SIGN TO BE REMOVED  
 EXISTING SIGN TO BE RE-ERECTED



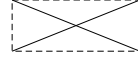
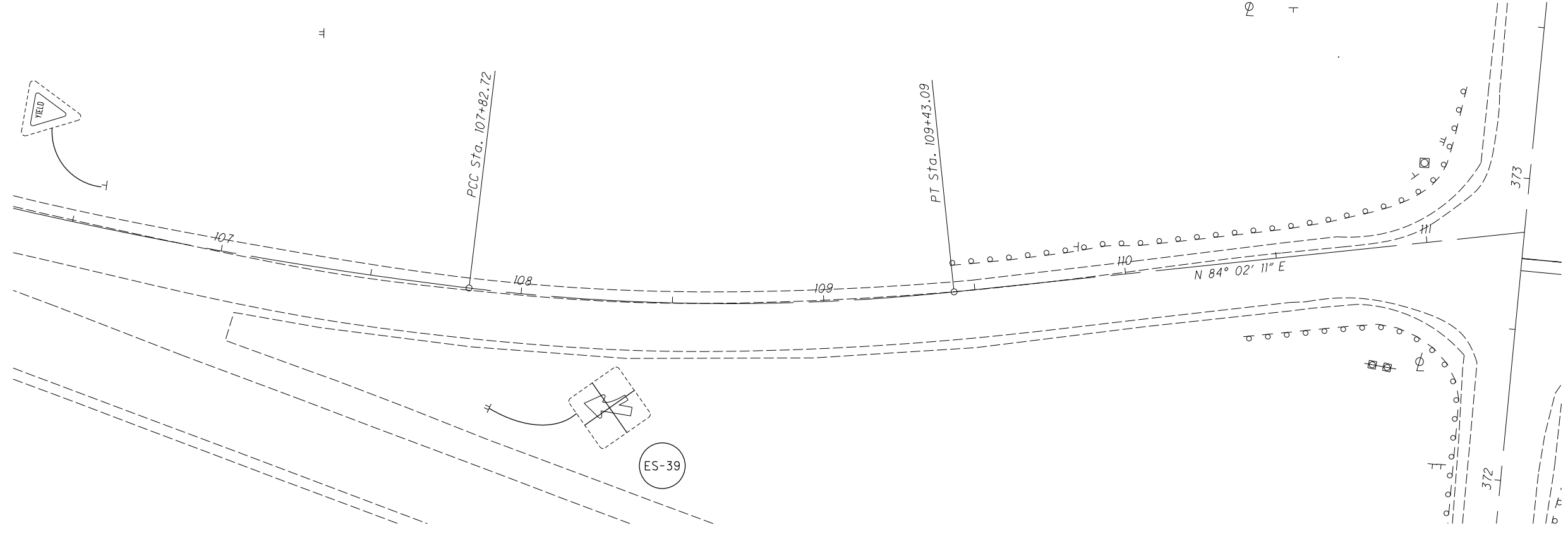
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-  EXISTING SIGN TO BE RE-ERECTED

CALCULATED	RJG
CHECKED	HAG

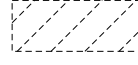
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HORIZONTAL SCALE IN FEET

**EXISTING SIGNS**  
**STA. 378+00.00 TO STA. 382+39.11**

**LIC-37 / 661-**  
**16.59 / 0.00**



EXISTING SIGN TO BE REMOVED



EXISTING SIGN TO BE RE-ERECTED



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 EXISTING SIGN TO BE REMOVED

 EXISTING SIGN TO BE RE-ERECTED

BLUE ATTRACTION SIGNS TO BE REMOVED AND RE-ERECTED  
\* ON TEMPORARY SUPPORTS BY THE CONTRACTOR AS PER CMS 614.07.  
OHIO LOGO WILL PROVIDE PERMANENT SUPPORTS AT A LATER DATE



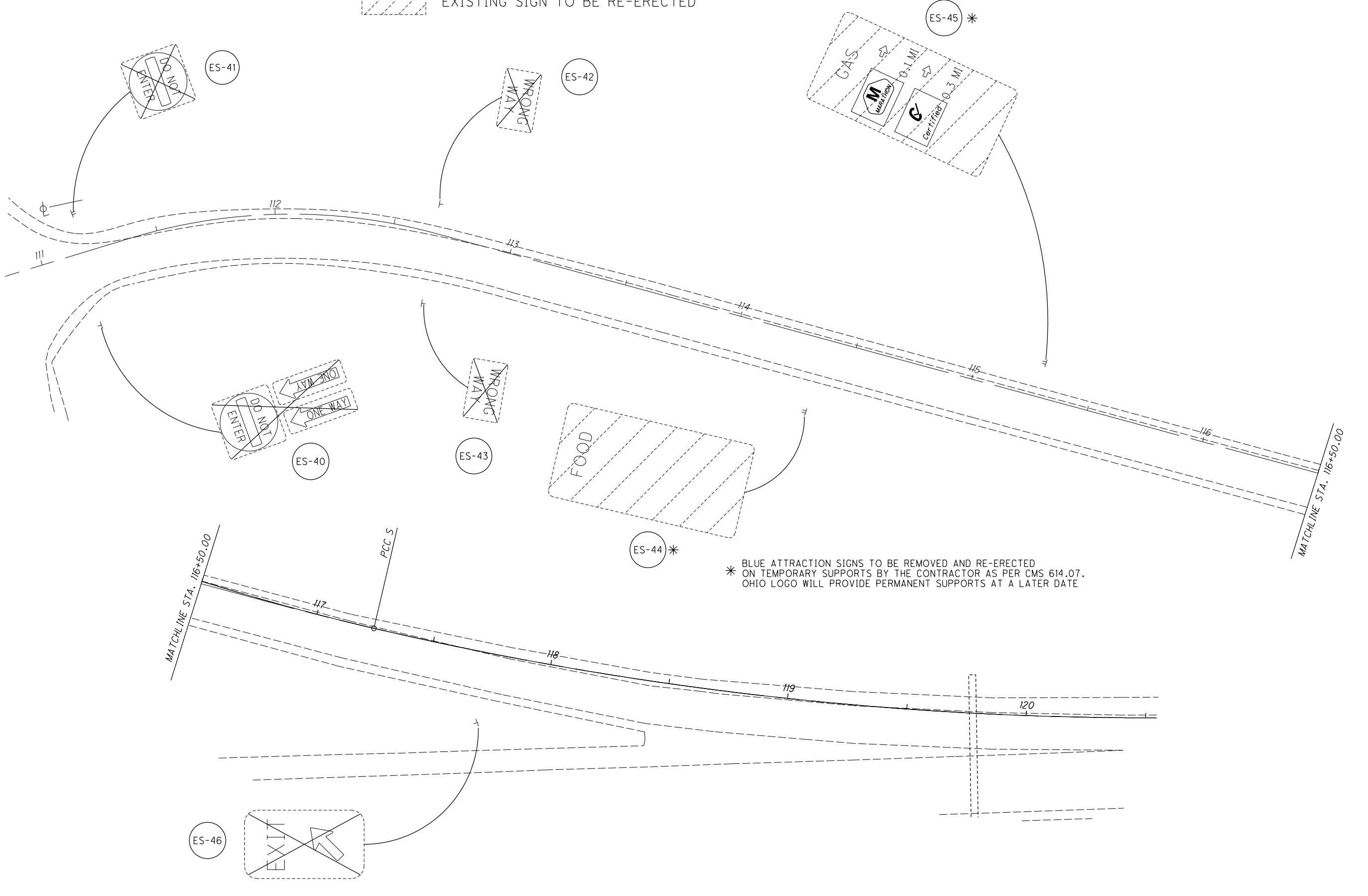
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HORIZONTAL  
SCALE IN FEET

CALCULATED  
RJC  
CHECKED  
HAG

EXISTING SIGNS  
RAMP F

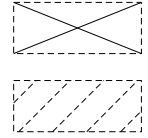
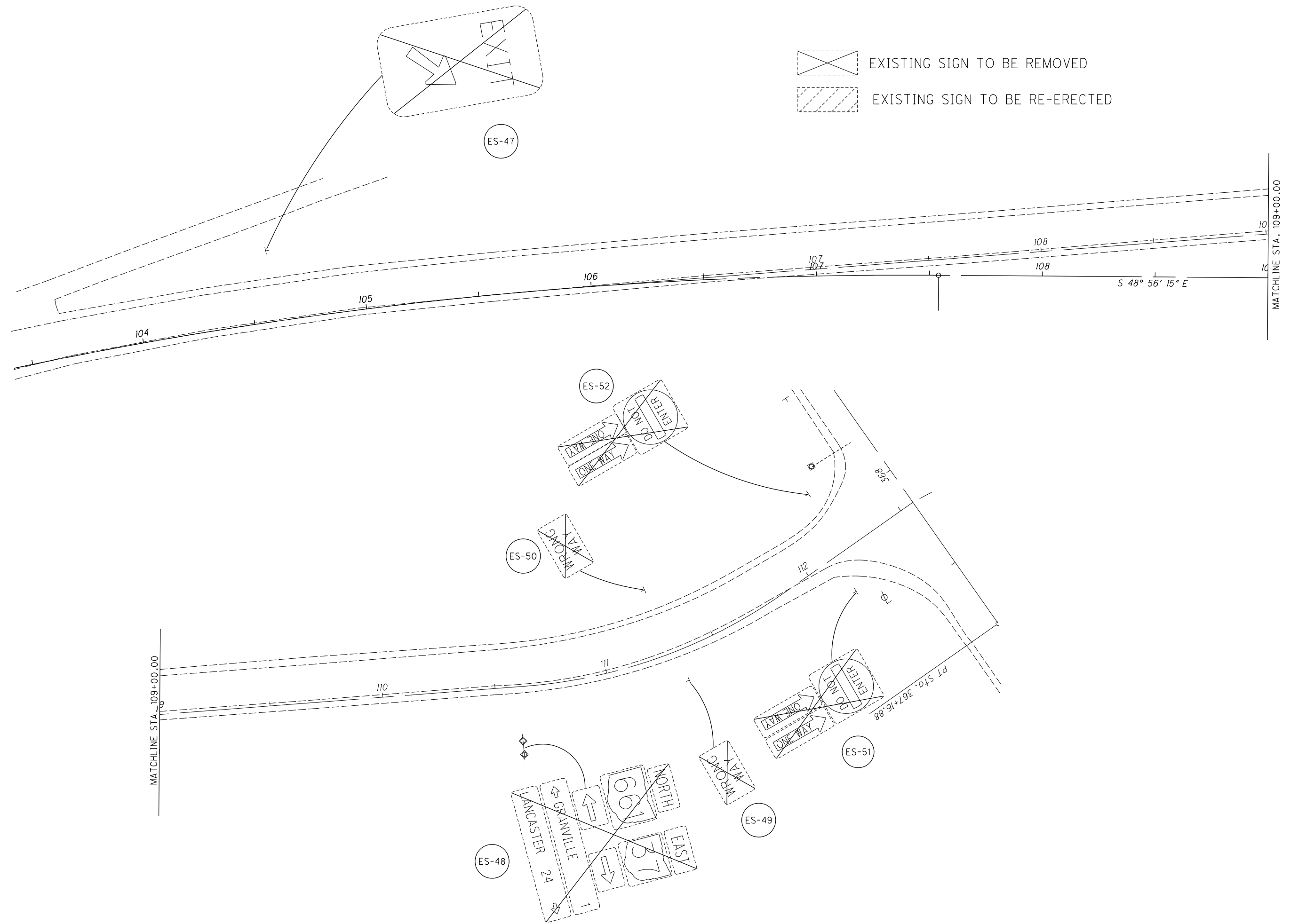
LIC-37 / 661-  
16.59 / 0.00

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341



BLUE ATTRACTION SIGNS TO BE REMOVED AND RE-ERECTED  
\* ON TEMPORARY SUPPORTS BY THE CONTRACTOR AS PER CMS 614.07.  
OHIO LOGO WILL PROVIDE PERMANENT SUPPORTS AT A LATER DATE

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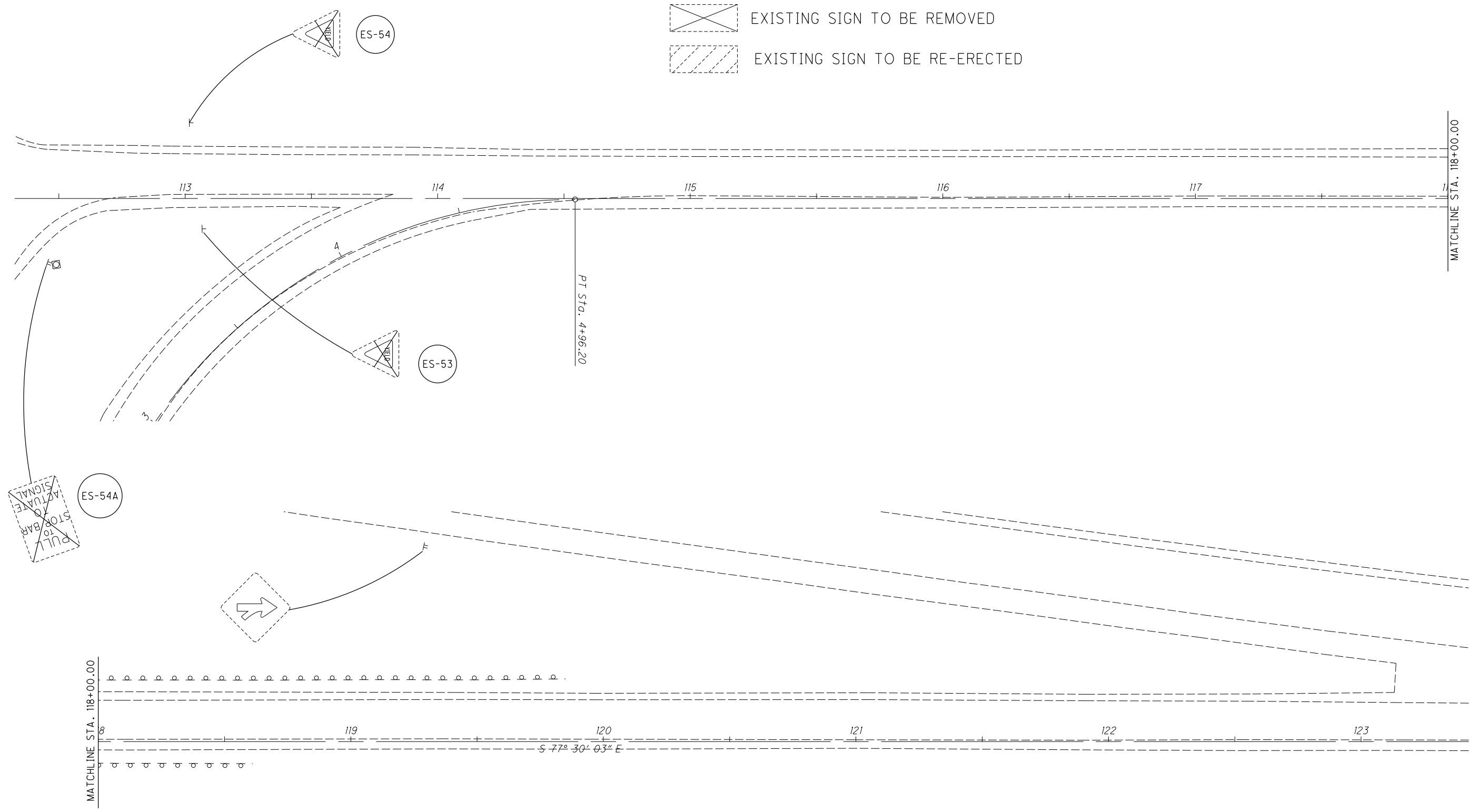
EXISTING SIGN TO BE REMOVED  
 EXISTING SIGN TO BE RE-ERECTED

CALCULATED  
 RJC  
 CHECKED  
 HAG

0 0 0  
 HORIZONTAL  
 SCALE IN FEET

**EXISTING SIGNS  
 RAMP G**

**LIC-37 / 661-  
 16.59 / 0.00**



CALCULATED RJG CHECKED HAG

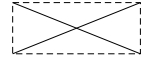
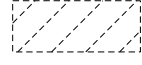
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HORIZONTAL SCALE IN FEET

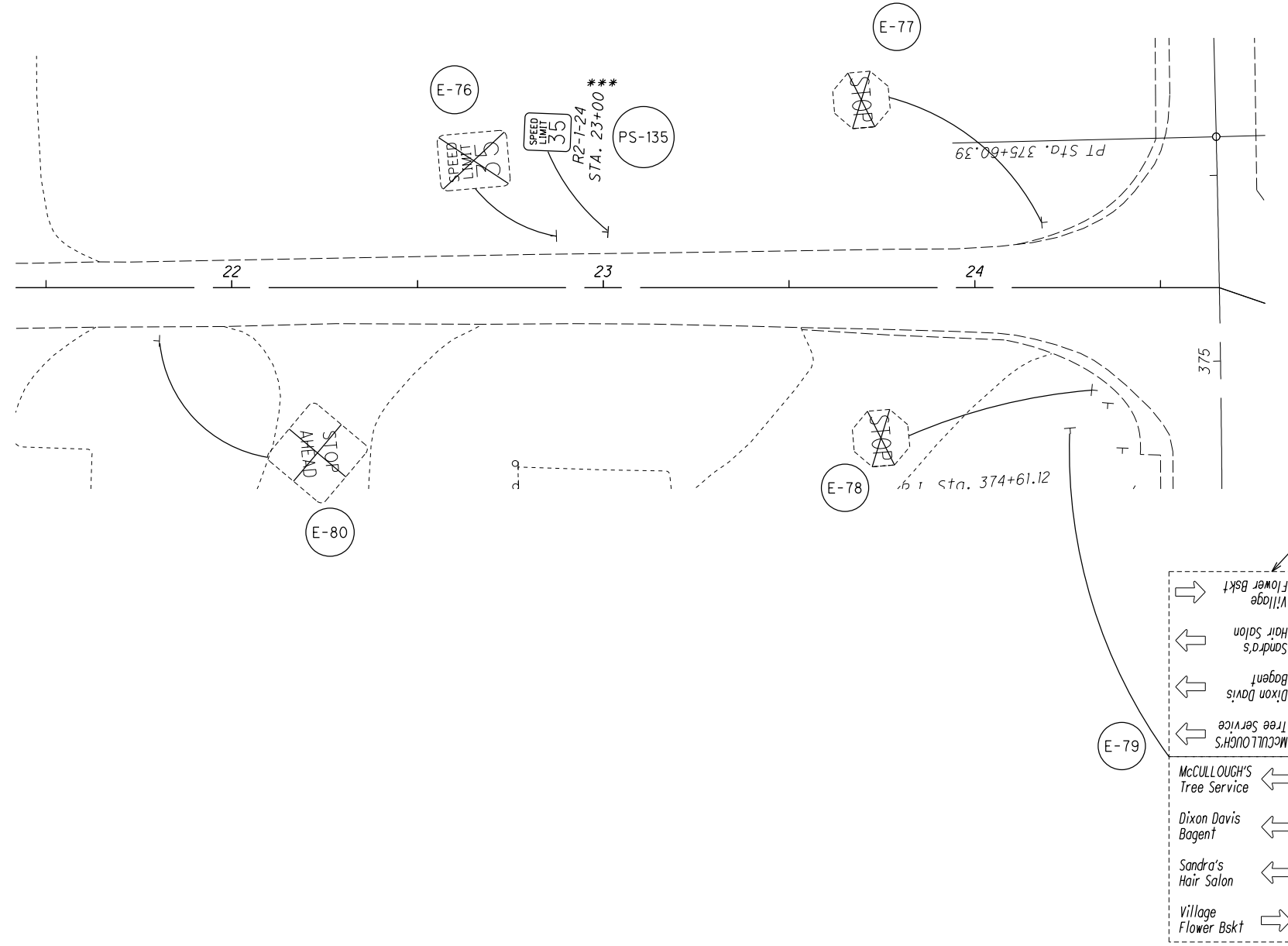
EXISTING SIGNS  
RAMP H

LIC-37 / 661-  
16.59 / 0.00



 EXISTING SIGN TO BE REMOVED  
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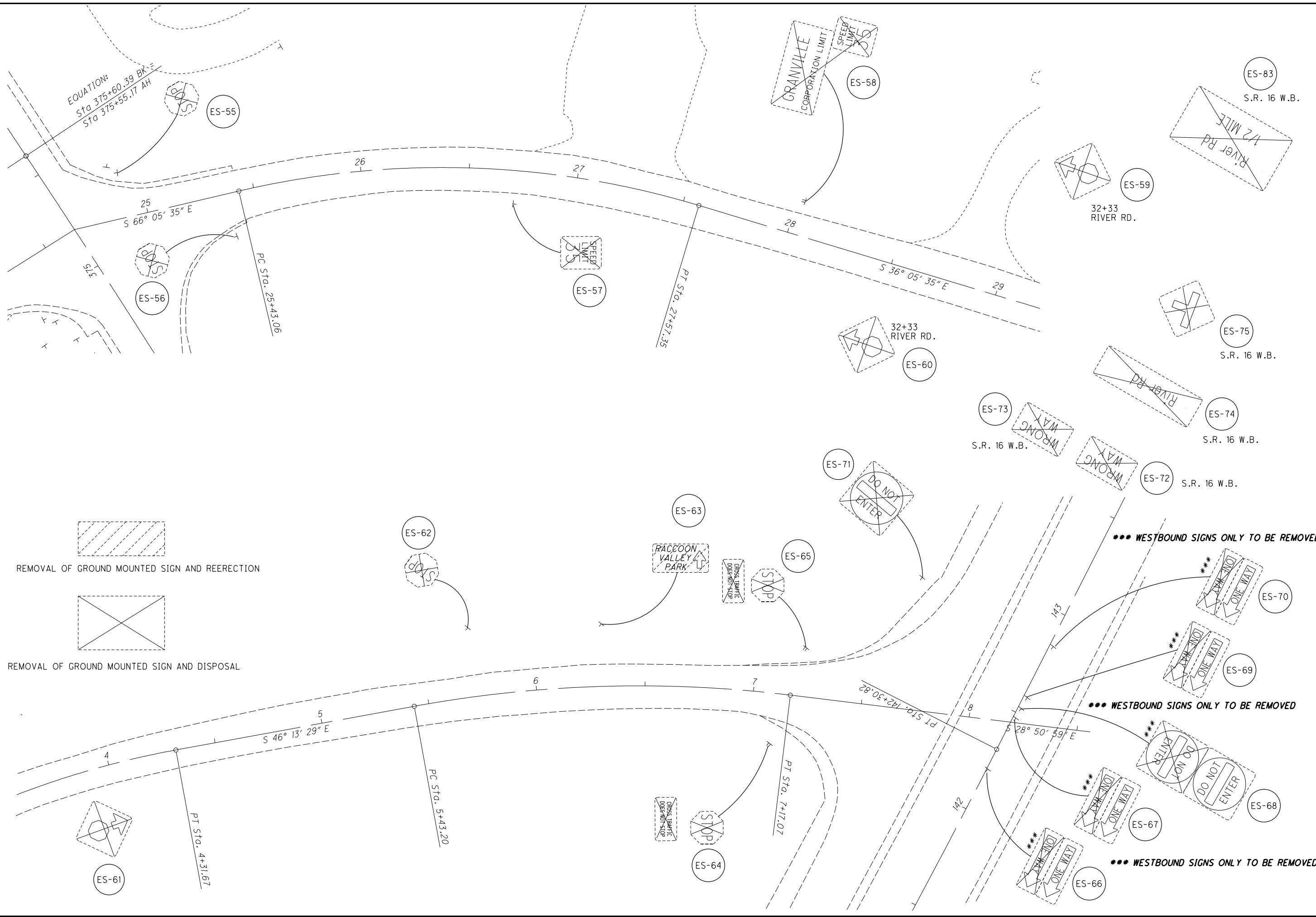
\*\*\* PROPOSED SIGN PLACEMENT



EX. SIGN AND SUPPORT TO BE REMOVED AND DELIVERED TO GRANVILLE TOWNSHIP.

- |   |                           |
|---|---------------------------|
| → | Village Flower Bskt       |
| ← | Sandra's Hair Salon       |
| ← | Dixon Davis Bagent        |
| ← | McCULLOUGH'S Tree Service |
| ← | McCULLOUGH'S Tree Service |
| ← | Dixon Davis Bagent        |
| ← | Sandra's Hair Salon       |
| → | Village Flower Bskt       |

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SCALE IN FEET

**EXISTING SIGNS  
RIVER RD. AND S.R. 16**

LIC-37 / 661-  
16.59 / 0.00



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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630	630	630	630	630	630	630	630	630	630	630	630	631							
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST	GROUND MOUNTED SUPPORT, NO. 6 POST	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12	GROUND MOUNTED SUPPORT, PIPE	SIGN POST REFLECTOR	BREAKAWAY STRUCTURAL BEAM CONNECTION	TRIANGULAR SLIP BASE CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-12.30 DESIGN 2	SIGN, FLAT SHEET	SIGN, GROUND MOUNTED EXTRUSHEET	SIGN, OVERHEAD EXTRUSHEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED PIPE SUPPORT FOUNDATION	SIGN FLASHER ASSEMBLY, AS PER PLAN				
PLAN SPLIT CODE 02/NHS/PV							EACH	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	SF	SF	SF	EACH	EACH	EACH	EACH				
234	PS-95	RAMP E	107+94	RT	W4-IR-36	36 X 36		15.7					1				9.00										
235	PS-96	RAMP F	111+42	LT	R6-IR-36	36 X 12		15.8					1				3.00										
235	PS-97	RAMP F	111+42	LT	R5-1-36	36 X 36											9.00										
235	PS-98	RAMP F	111+42	LT	R6-IR-36	36 X 12											3.00										
235	PS-99	RAMP F	111+42	LT	R3-H8ba-30	30 X 30											6.25										
235	PS-100	RAMP F	111+42	RT	R6-IR-36	36 X 12		16.2					1				3.00										
235	PS-101	RAMP F	111+42	RT	R5-1-36	36 X 36											9.00										
235	PS-102	RAMP F	111+42	RT	R6-IR-36	36 X 12											3.00										
235	PS-103	RAMP F	111+42	RT	R3-H8ba-30	30 X 30											6.25										
235	PS-104	RAMP F	112+63	LT	R5-1a-42	42 X 30		26.0					2				8.75										
235	PS-104A	RAMP F	112+63	LT	R5-1a-42	42 X 30											8.75										
235	PS-105	RAMP F	112+63	RT	R5-1a-42	42 X 30		26.0					2				8.75										
235	PS-105A	RAMP F	112+63	RT	R5-1a-42	42 X 30											8.75										
235	PS-106	RAMP F	114+15	LT	R3-H8ba-30	30 X 30		10.0									6.25										
235	PS-107	RAMP F	117+75	RT	E5-H1d-48	48 X 84						1			1			28				1					
236	PS-108	RAMP G	104+60	LT	E5-H1d-48	48 X 84						1			1			28				1					
236	PS-109	RAMP G	106+54	RT	R3-H8ba-30	30 X 30		14.5									6.25										
236	PS-110	RAMP G	109+18	LT	R5-1a-42	42 X 30		26.0					2				8.75										
236	PS-110A	RAMP G	109+18	LT	R5-1a-42	42 X 30											8.75										
236	PS-111	RAMP G	109+18	RT	R5-1a-42	42 X 30		26.0					2				8.75										
236	PS-111A	RAMP G	109+18	RT	R5-1a-42	42 X 30											8.75										
236	PS-112	RAMP G	110+58	RT	D1-H1a-72	72 X 1					28.9						6.00										
236	PS-113	RAMP G	110+58	RT	D1-H1a-72	72 X 1					28.9						6.00										
236	PS-114	RAMP G	110+58	RT	M6-1-21	21 X 15											2.19										
236	PS-115	RAMP G	110+58	RT	M1-5-30-3	30 X 24											5.00										
236	PS-116	RAMP G	110+58	RT	M3-1-24	24 X 12											2.00										
236	PS-117	RAMP G	110+58	RT	M6-1-21	21 X 15											2.19										
236	PS-118	RAMP G	110+58	RT	M1-5-24-2	24 X 24											4.00										
236	PS-119	RAMP G	110+58	RT	M3-2-24	24 X 12											2.00										
236	PS-120	RAMP G	111+94	LT	R3-H8ba-30	30 X 30					16.4			1			6.25										
236	PS-121	RAMP G	111+94	LT	R6-1L-36	36 X 12											3.00										
236	PS-122	RAMP G	111+94	LT	R5-1-36	36 X 36											9.00										
236	PS-123	RAMP G	111+94	LT	R6-IR-36	36 X 12											3.00										
236	PS-124	RAMP G	111+94	RT	R3-H8ba-30	30 X 30					15.8			1			6.25										
236	PS-125	RAMP G	111+94	RT	R6-1L-36	36 X 12											3.00										
236	PS-126	RAMP G	111+94	RT	R5-1-36	36 X 36											9.00										
236	PS-127	RAMP G	111+94	RT	R6-IR-36	36 X 12											3.00										
SUB-TOTALS								176.2	32.2	57.8		2	13		2		205.88	56					2				
TOTALS FROM SHEET 227 (PLAN SPLIT 02/NHS/PV)							1	185.9	29.0		80.9				4		1	154.625	134	49	4	1					
TOTALS CARRIED TO GENERAL SUMMARY							1	363	62	58	81	2	13	4	2	1	361	190	49	4	1	2					

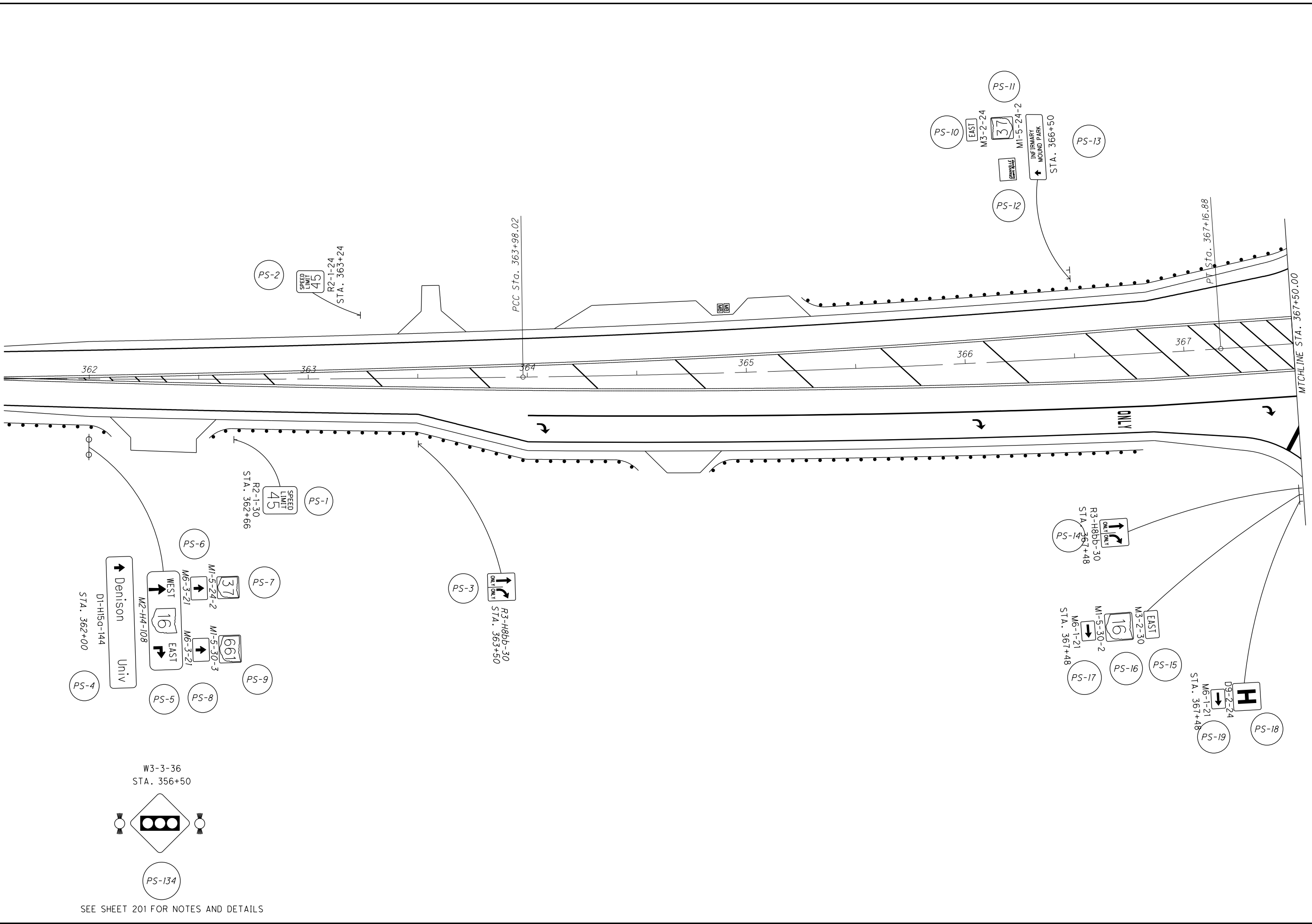
PROPOSED SIGNING SUBSUMMARY

LIC-37 / 661-  
16.59 / 0.00

CALCULATED  
R/JG  
CHECKED  
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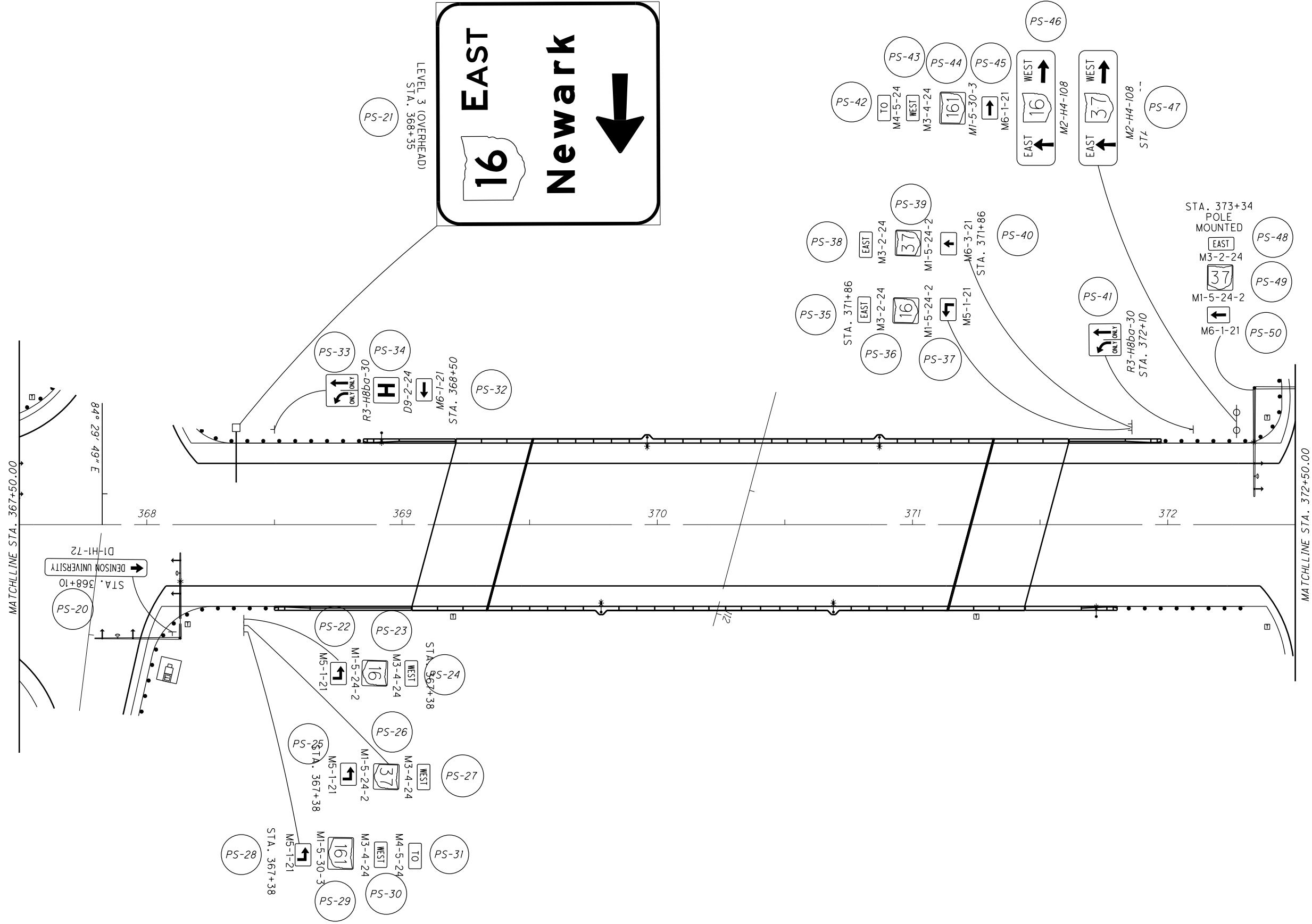


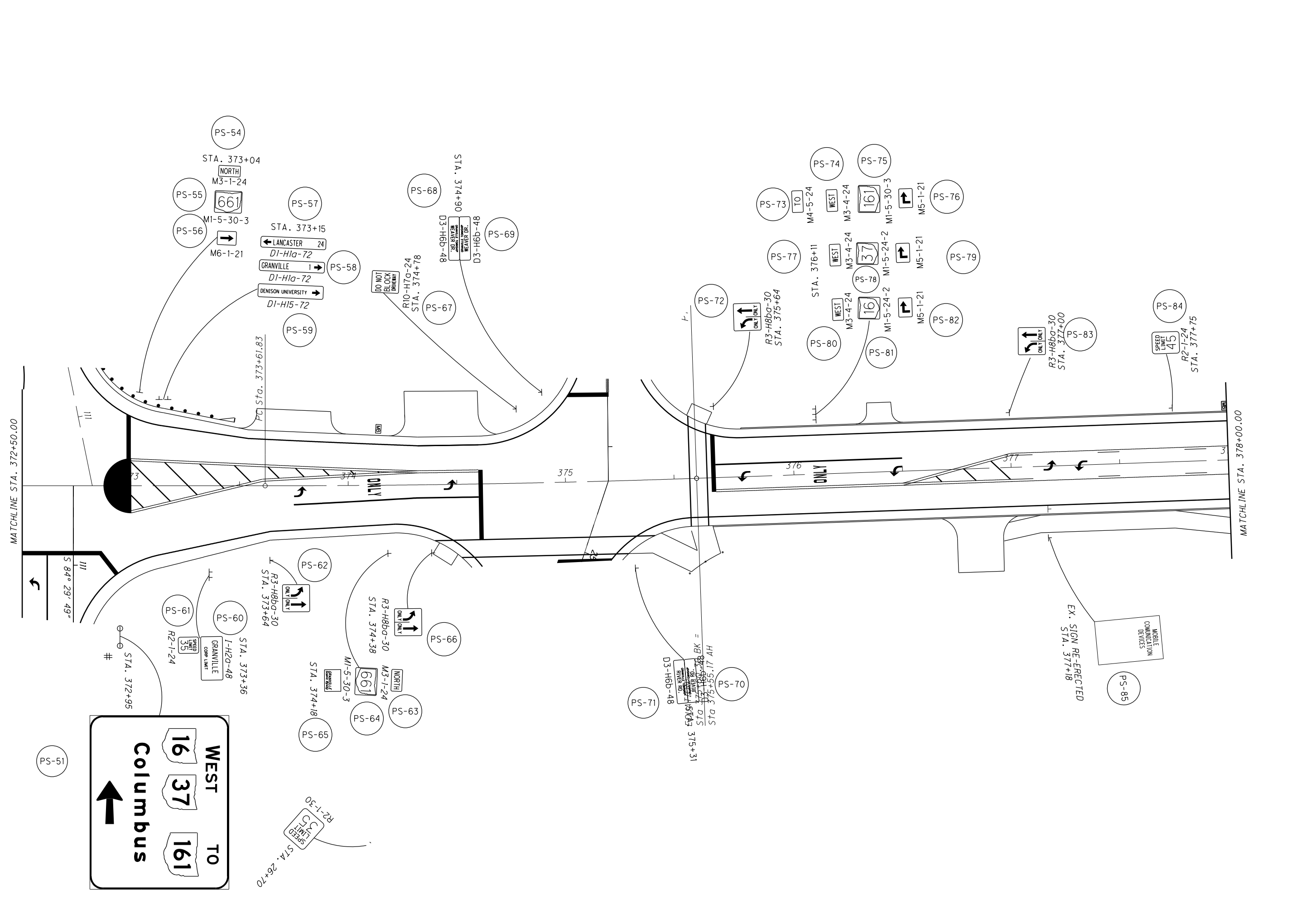
SEE SHEET 201 FOR NOTES AND DETAILS

CALCULATED	RJG
CHECKED	HAG

**PROPOSED SIGNS S.R. 37**  
**STA. 362+00.00 TO STA. 367+50.00**

**LIC-37 / 661-**  
**16.59 / 0.00**

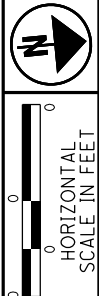




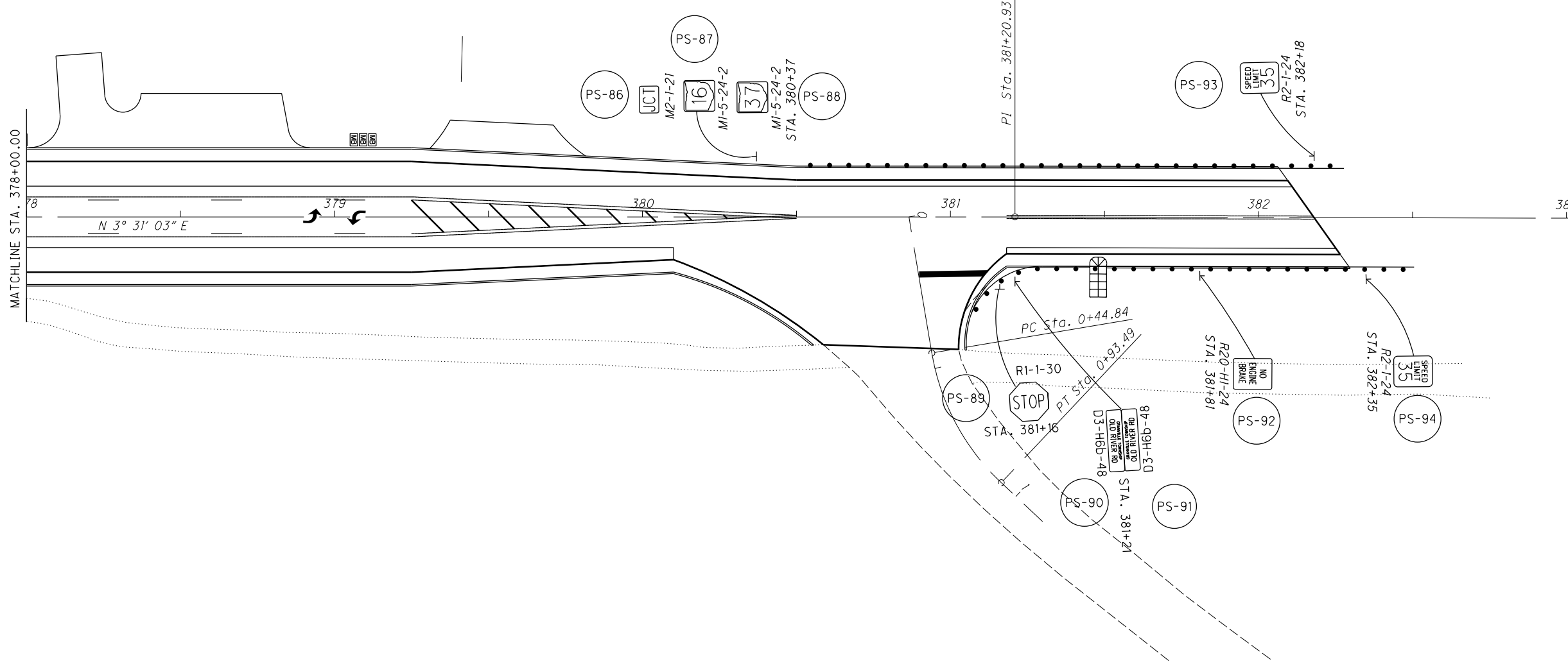
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CHECKED	HAG

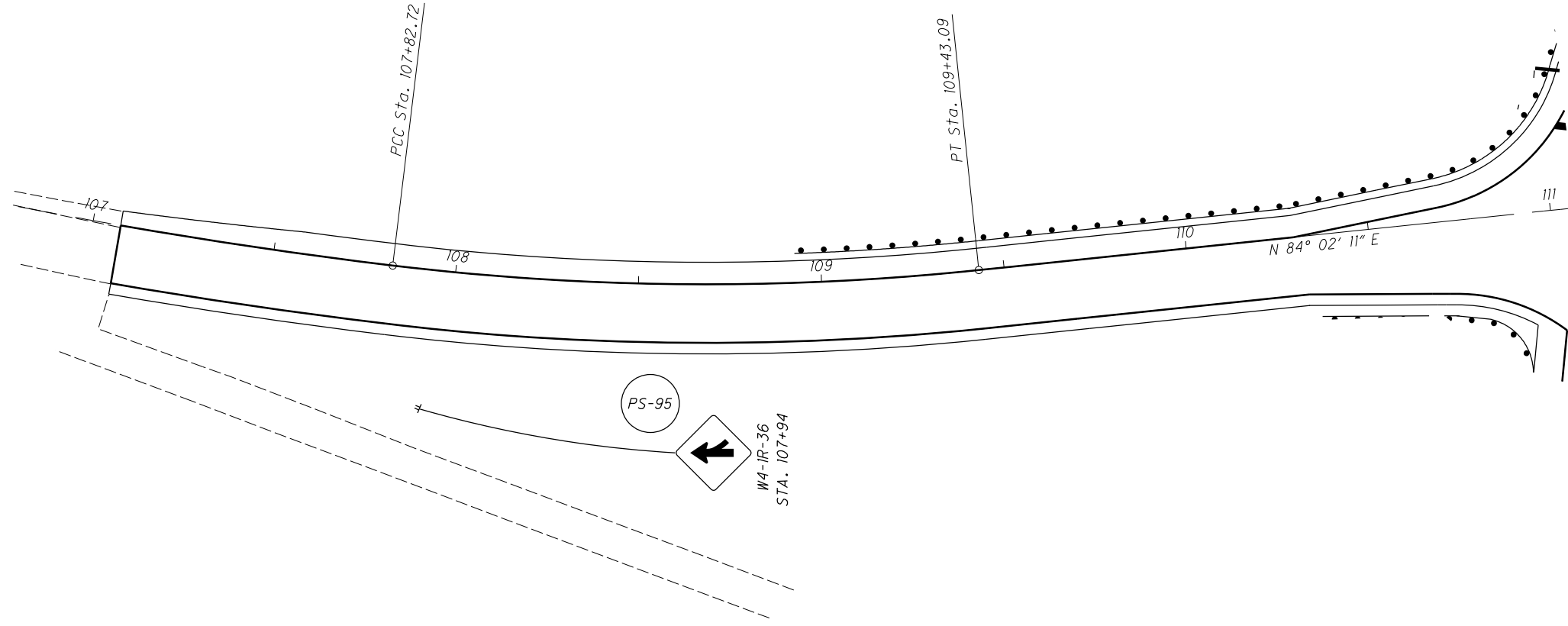
PROPOSED SIGNS S.R. 37  
 STA. 372+50.00 TO STA. 378+00.00

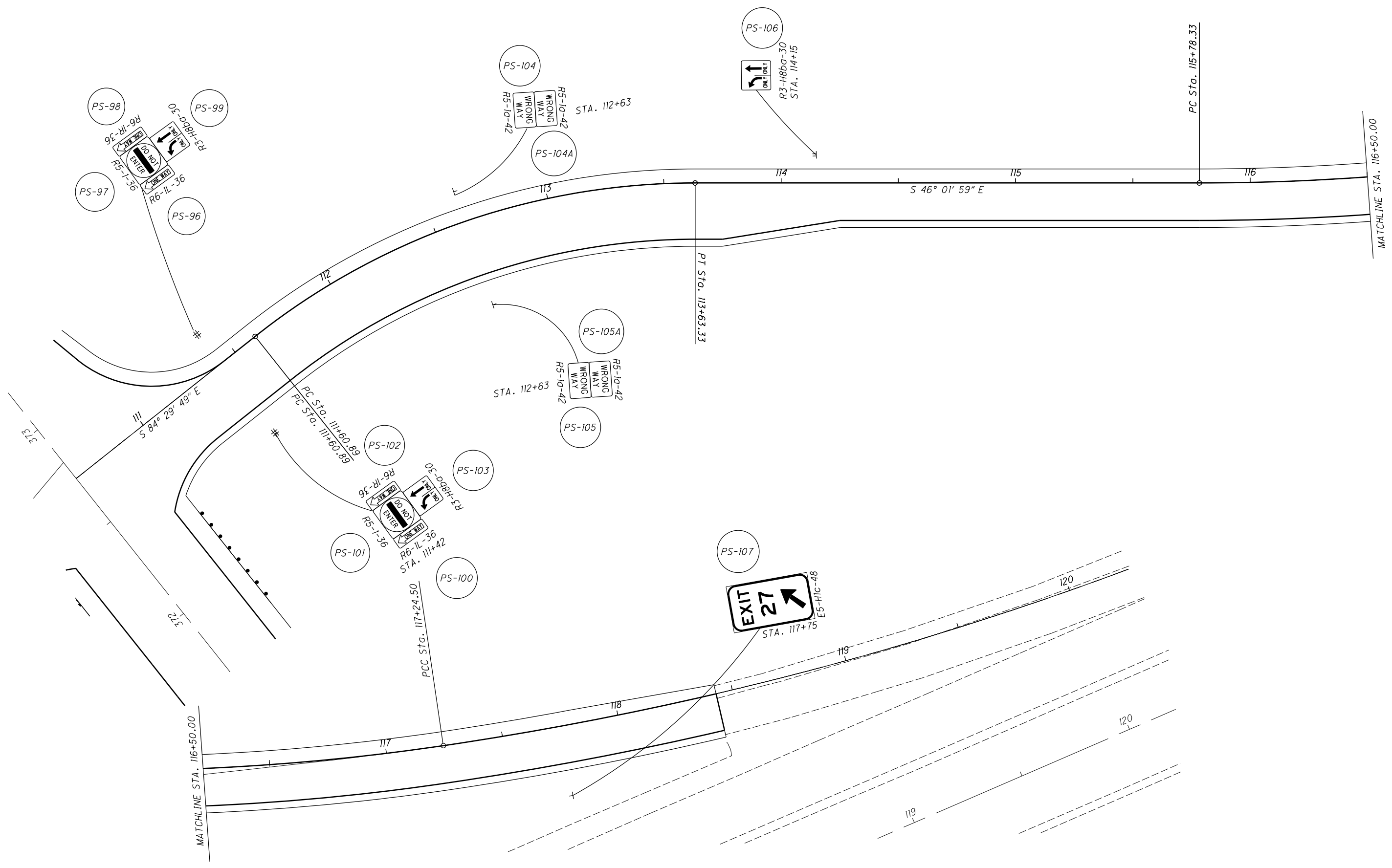
LIC-37 / 661-  
 16.59 / 0.00











CALCULATED	RJG	CHECKED	HAG
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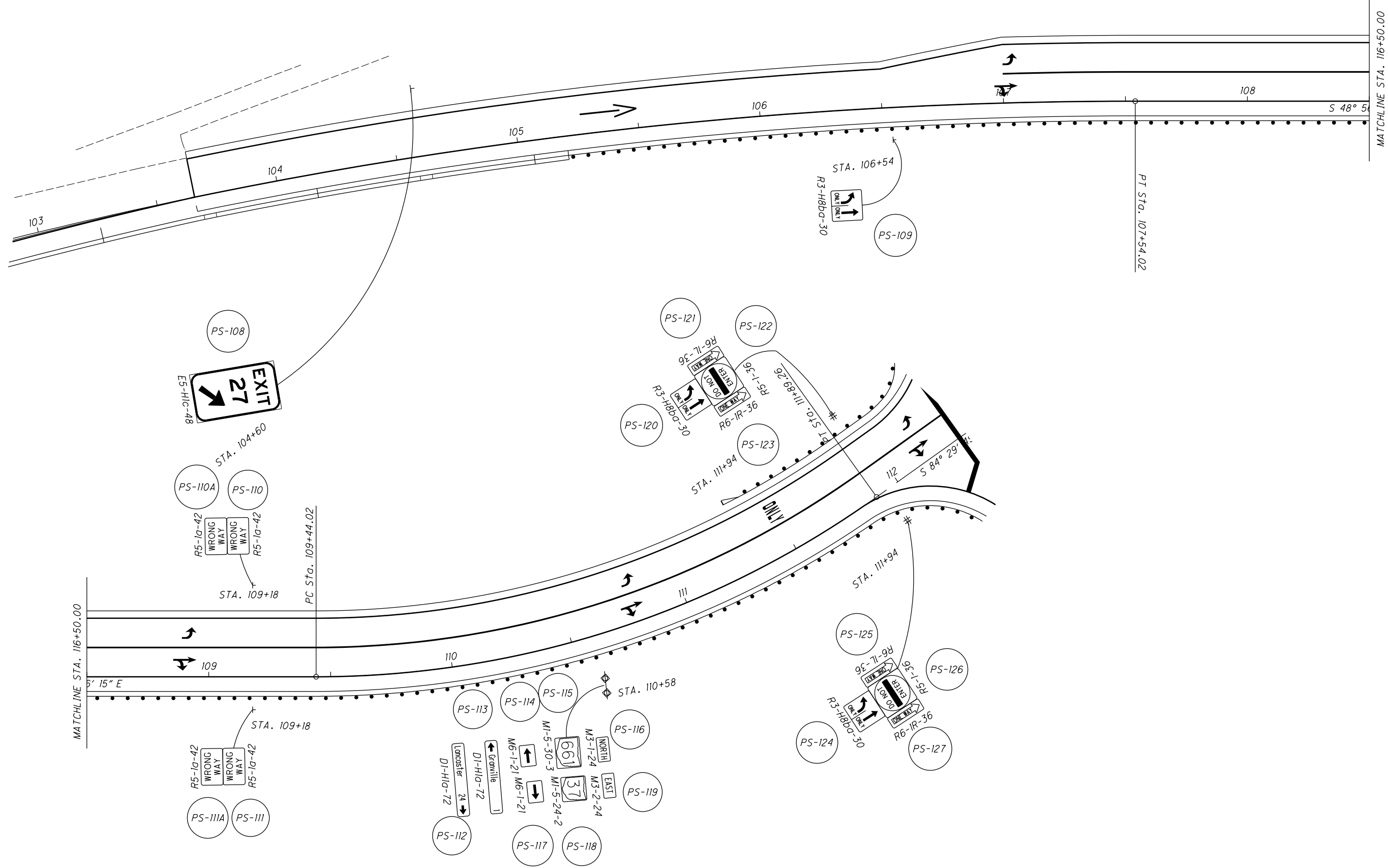


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HORIZONTAL  
SCALE IN FEET

**PROPOSED SIGNS  
RAMP F**

LIC-37 / 661-  
16.59 / 0.00

I:\ProjectData\LIC\_9241\Design\Traffic\Sheets\9241\_IP026.dgn Sheet 1/15/2020 8:08:01AM bharlow

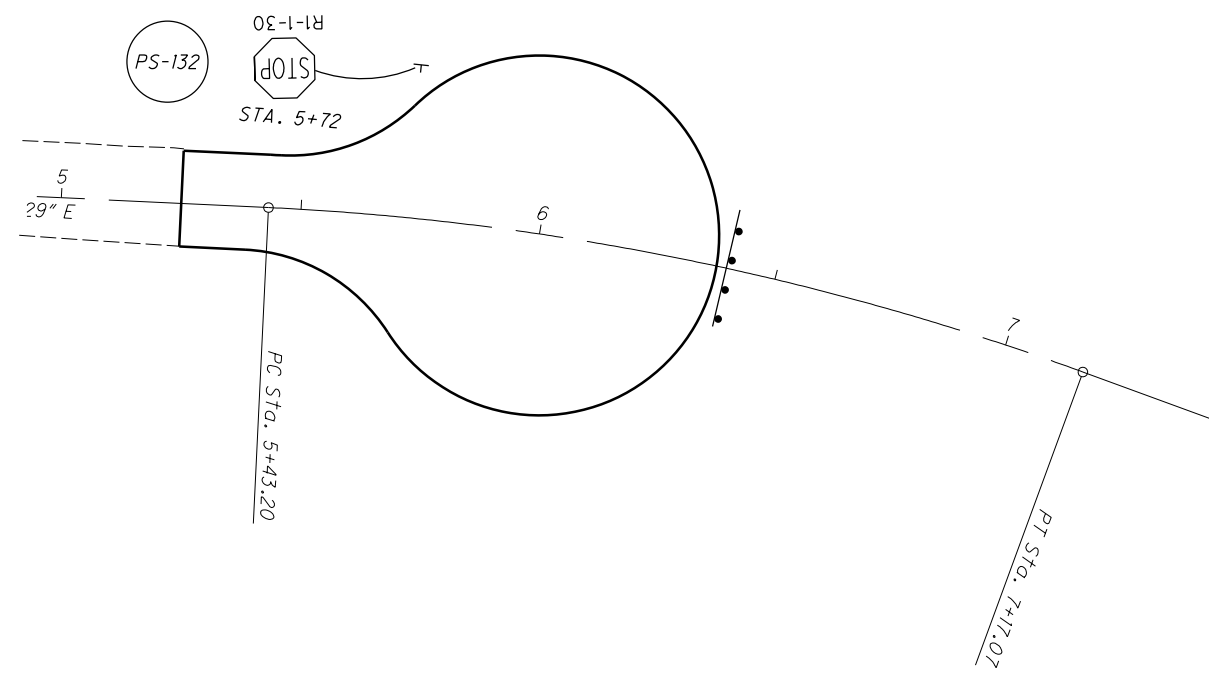
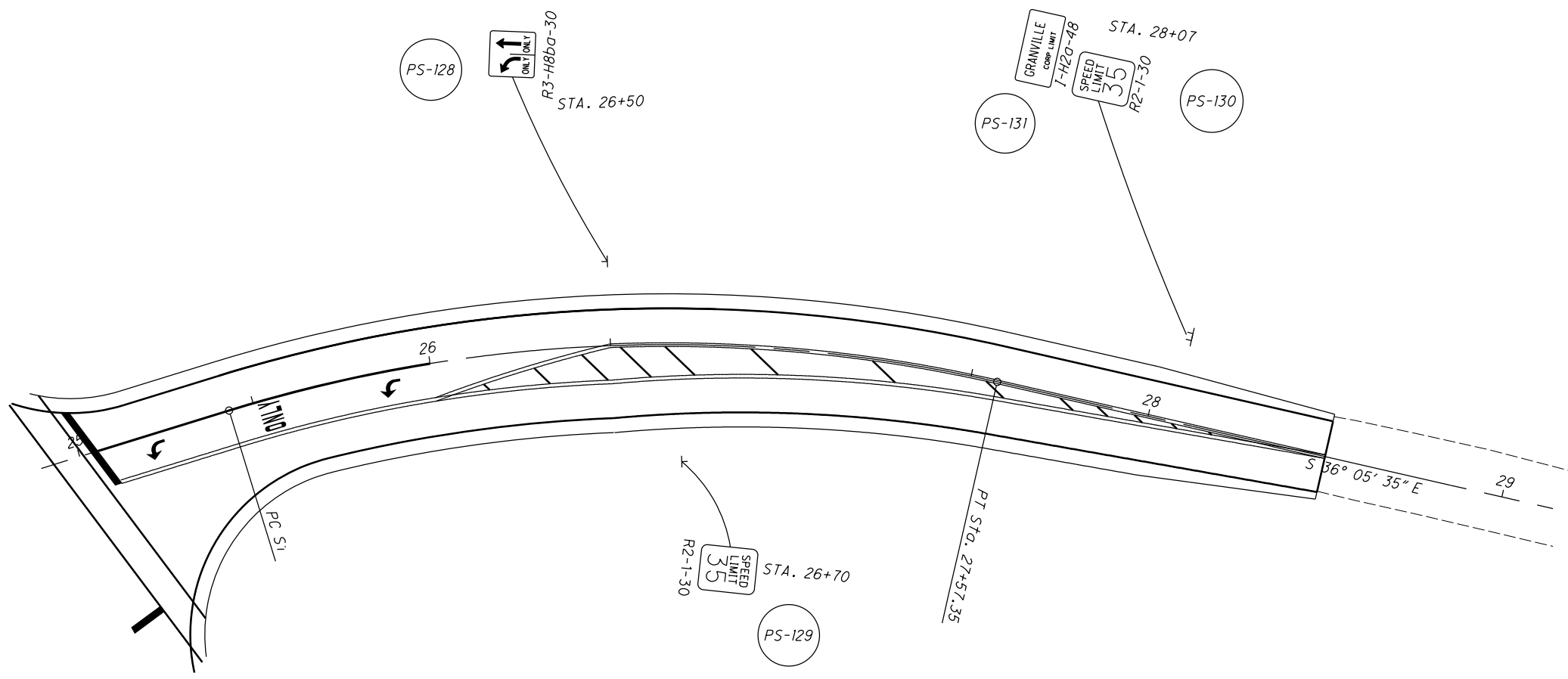


CALCULATED  
RJC  
CHECKED  
HAG

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HORIZONTAL  
SCALE IN FEET

**PROPOSED SIGNS  
RAMP G**

**LIC-37 / 661-  
16.59 / 0.00**



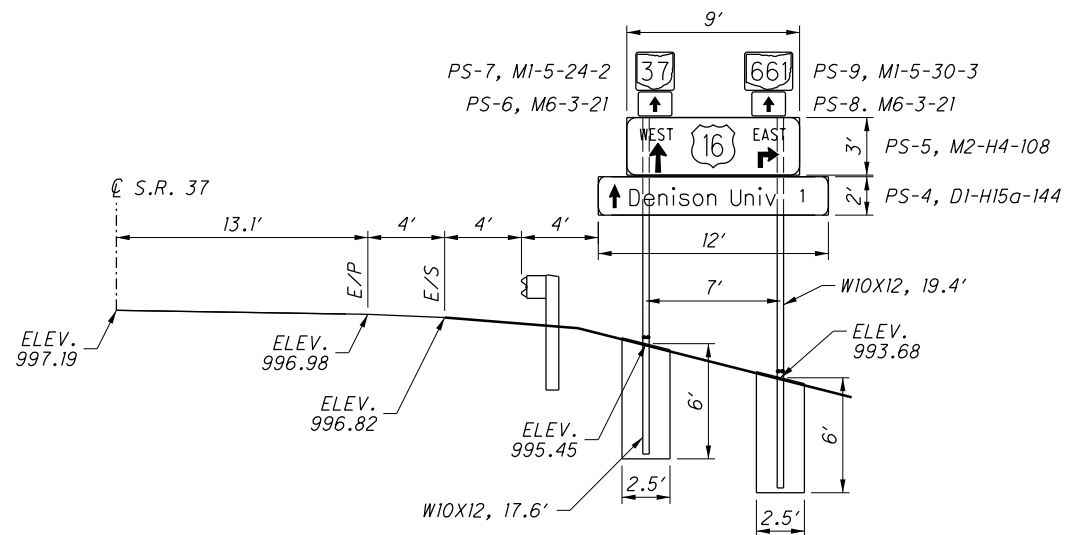
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RJC  
CHECKED  
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HORIZONTAL  
SCALE IN FEET

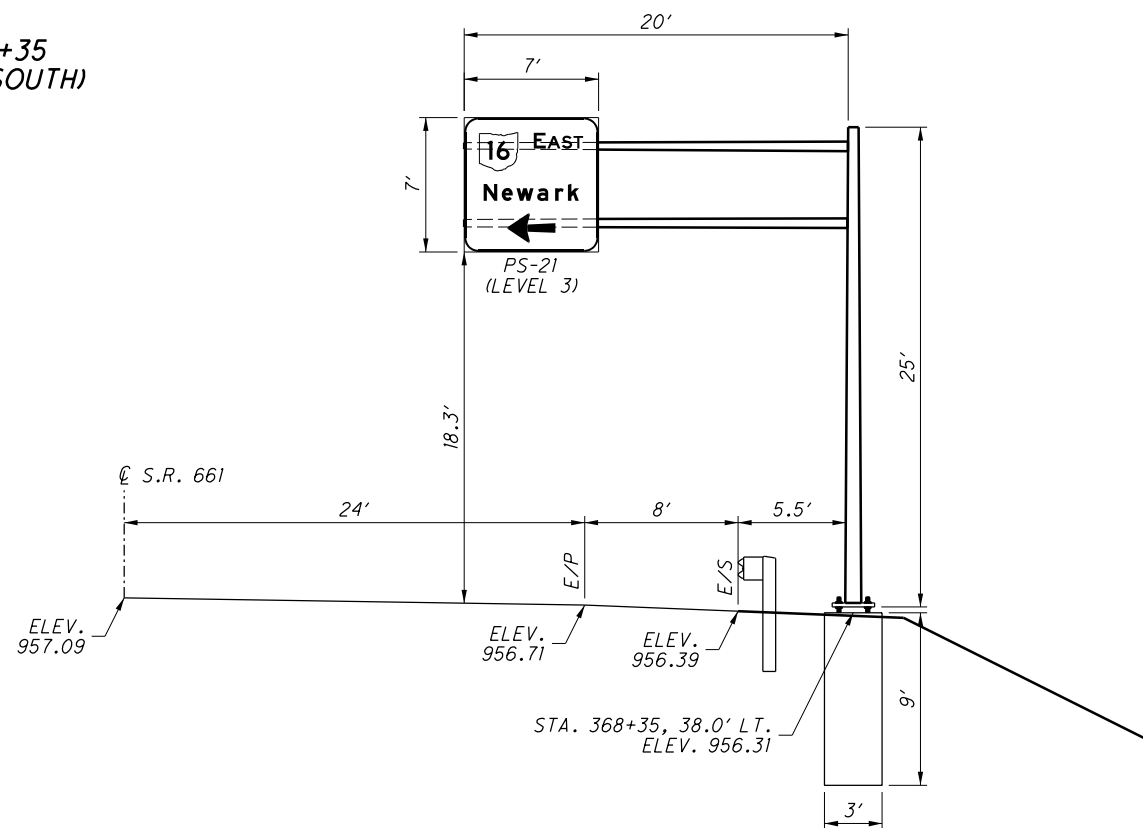
**PROPOSED SIGNS  
RIVER ROAD**

**LIC-37 / 661-  
16.59 / 0.00**

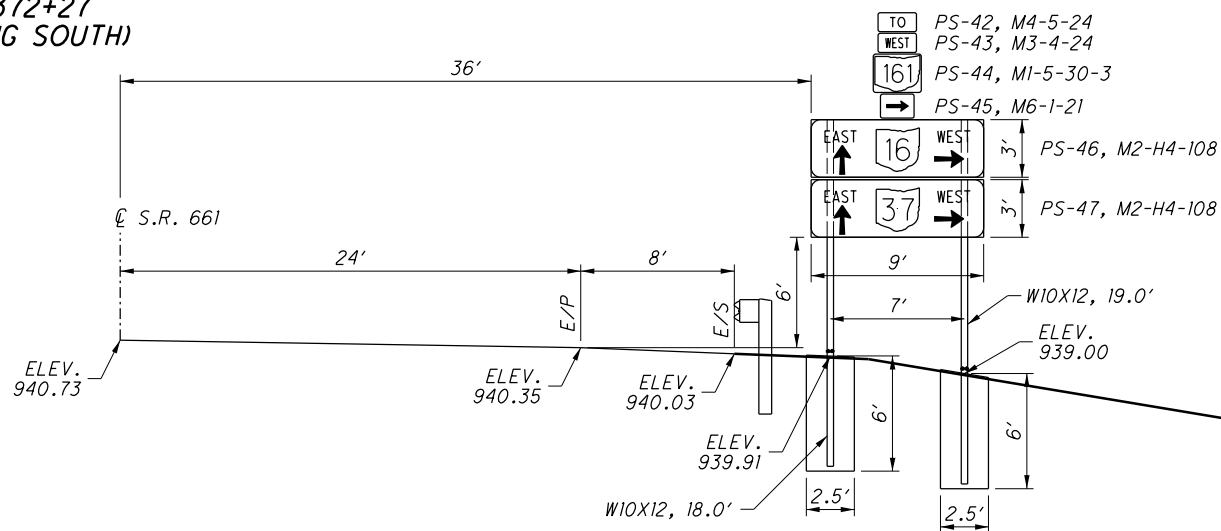
PS-4 - PS-9  
S.R. 37  
STA. 362+00  
(FACING NORTH)



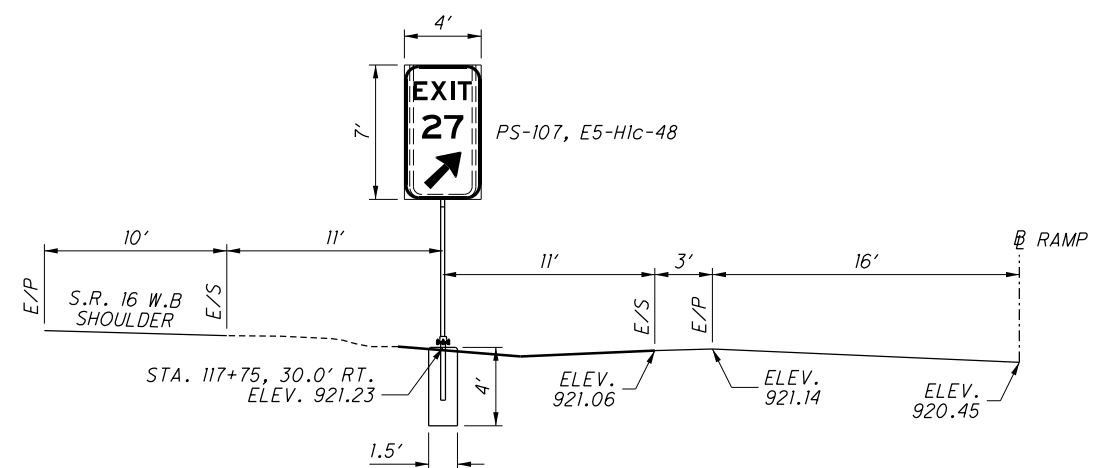
PS-21  
S.R. 661  
STA. 368+35  
(FACING SOUTH)



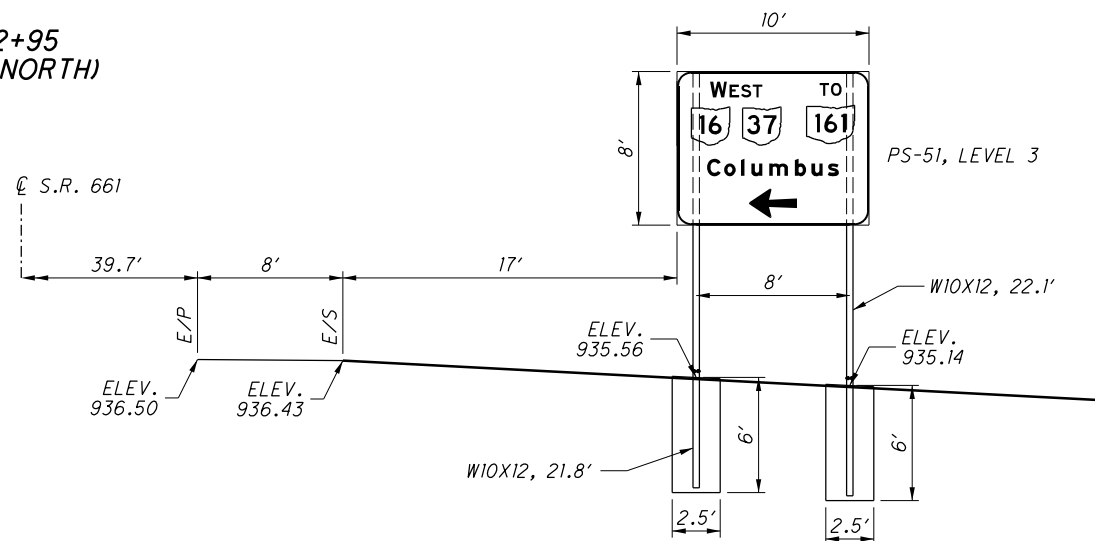
PS-42 - PS-47  
S.R. 661  
STA. 372+27  
(FACING SOUTH)



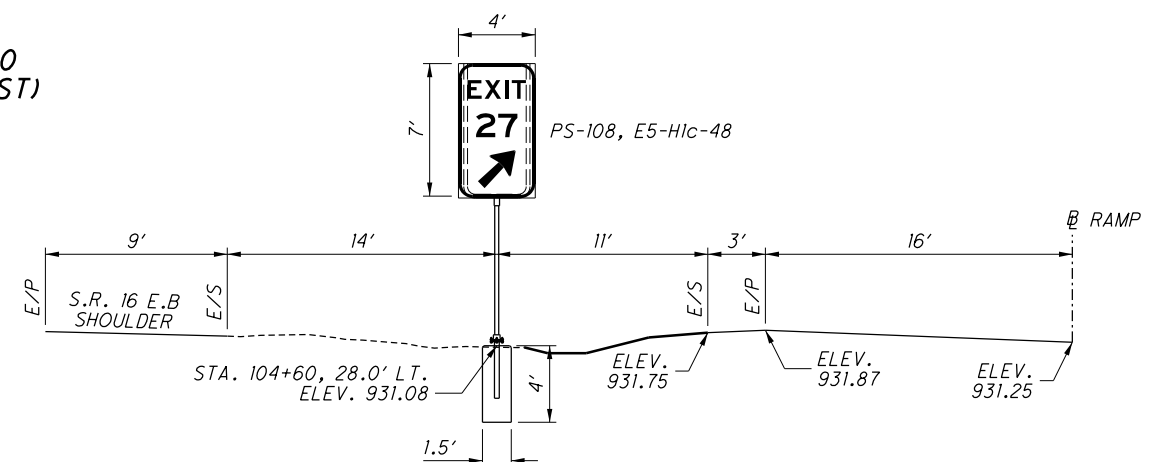
PS-107  
RAMP F  
STA. 117+75  
(FACING WEST)



PS-51  
S.R. 661  
STA. 372+95  
(FACING NORTH)



PS-108  
RAMP G  
STA. 104+60  
(FACING EAST)



CALCULATED  
R/JG  
CHECKED  
BRH

SIGN ELEVATION VIEW

LIC-37 / 661-  
16.59 / 0.00

238  
341

**GENERAL**

THE CONTRACTOR SHALL FURNISH AND INSTALL TRAFFIC CONTROL EQUIPMENT AND MATERIALS IN CONFORMANCE TO THESE PLANS AND SPECIFICATIONS, THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS), SUPPLEMENTAL SPECIFICATIONS (SS), STANDARD CONSTRUCTION DRAWINGS (SCD), AND PLAN INSERT SHEETS (PIS).

BEFORE ANY EQUIPMENT IS ORDERED OR INSTALLATION HAS BEGUN, THREE SETS OF A COMPLETE SCHEDULE OF EQUIPMENT INCLUDING CATALOG CUTS, DIAGRAMS, DRAWINGS, BROCHURES, OR OTHER DESCRIPTIVE DATA SHALL BE SUBMITTED TO THE ENGINEER. ONE COPY WILL BE RETURNED MARKED "APPROVED" IF FOUND SATISFACTORY. WORK MAY BEGIN WHEN THE APPROVED COPY IS RECEIVED BY THE CONTRACTOR.

THE CONTRACTOR SHALL SUBMIT, IN WRITING, A SCHEDULE OF WORK FOR THE PROJECT TO THE PROJECT ENGINEER FOR APPROVAL. THIS SCHEDULE SHALL BE SUBMITTED NOT LESS THAN TWO WEEKS IN ADVANCE OF STARTING WORK.

ANY EQUIPMENT OR MATERIAL NOT SPECIFICALLY CALLED FOR IN THESE SPECIFICATIONS BUT NECESSARY TO PROVIDE A COMPLETE AND SUCCESSFULLY OPERATING SYSTEM SHALL BE FURNISHED AS INCIDENTAL TO THE CONTRACT. PAYMENT FOR SUCH ITEMS WILL BE MADE UNDER THE APPROPRIATE RELATED ITEM AT THE CONTRACT BID PRICE, COMPLETE AND IN PLACE.

ALL NECESSARY PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE IN PLACE BEFORE ANY SIGNAL MAY BE PLACED IN OPERATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

**GUARANTEE**

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS, AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL, AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS, AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

**SIGNAL ACTIVATION**

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED (I.E. VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E. ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT AFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFECIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND RE-INSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

**ITEM 633, CONTROLLER ITEM MISC.: CONTROLLER UNIT, TYPE COBALT, WITH CABINET, TYPE 332**

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, THE FOLLOWING REQUIREMENTS SHALL APPLY:

CONTROLLER SHALL BE ECONOLITE COBALT RACKMOUNT AND SHALL HAVE AN ATC COMPLIANT ENGINE BOARD. THE CONTROLLER SHALL BE DESIGNED FOR USE IN CALTRANS CABINETS USING THE BACKSIDE CI CONNECTOR AS THE PRIMARY CONTROLLER-TO-CABINET INTERFACE.

THE CABINET SHALL BE FURNISHED WITH AN EDI MMU CONFLICT MONITOR AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED, BUT SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS.

THE TIMING PLAN SHALL BE INSTALLED MAKING THE CONTROLLER FULLY FUNCTIONAL AND READY FOR INSTALLATION.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH UNIT, COMPLETE IN PLACE, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, CABINET AND MOUNTING HARDWARE, AND ALL OTHER INCIDENTALS NECESSARY FOR A FULLY OPERATIONAL CONTROLLER CABINET, ALL CONNECTIONS TESTED AND ACCEPTED.

**ITEM 632, VEHICULAR SIGNAL HEAD, (LED), (BY SECTION), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
4. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE YELLOW MODULE LOCATED IN FRONT OF THE MAST ARM.
5. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET REQUIREMENTS OF C&MS 732.04C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
7. SIGNAL HEADS SHALL A MINIMUM WALL THICKNESS OF 0.117 INCHES.
8. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS.
9. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.
10. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS.

PAYMENT FOR ITEM 632, VEHICULAR SIGNAL HEAD, (LED), (BY SECTION), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN SHALL BE MADE FOR EACH COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

**WORK INSPECTION**

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITES SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

**SIGNAL COMMUNICATION**

THE PROPOSED SIGNAL LOCATIONS SHALL COMMUNICATE BY THE USE OF MODEMS, SUPPLIED AND PROGRAMMED BY ODOT. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE MODEMS WITH THE DISTRICT TRAFFIC ENGINEER PRIOR TO FINAL ACCEPTANCE.

**ITEM 633, UNINTERRUPTIBLE POWER SUPPLY (UPS), 100 WATT, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH AN LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY" WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

**ITEM 632, REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN**

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, LIGHT POLES, CONTROLLER, AND PULL BOXES SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED IN THE MAINTENANCE OF TRAFFIC PLANS. NO ITEMS ARE TO BE STORED OR REUSED.

REMOVE ENTIRE FOUNDATION OF EXISTING STRAIN POLES AND/OR LIGHT POLES. BACKFILL THE RESULTANT HOLE AND COMPACT THE SOIL AND RESTORE THE DISTURBED AREA.

REMOVE EXISTING SIGNAL AHEAD SIGN WITH FLASHING BEACONS. REMOVE FOUNDATION COMPLETELY, AS WELL AS ALL OVERHEAD POWER AND/OR PULL BOXES.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

**ITEM 632, REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN** **1 EACH**

CALCULATED  
BRH  
CHECKED  
JSL

TRAFFIC SIGNAL NOTES

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**STRAIN POLE AND PEDESTAL FOUNDATION ELEVATIONS**

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE AND PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.20 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.20 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF THE FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

**ITEM 632, SIGNAL SUPPORT FOUNDATIONS**

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY TO EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

**ITEM 632, PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS, AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OF ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632, PEDESTRIAN SIGN HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

**GROUNDING AND BONDING**

THE REQUIREMENTS OF C&MS AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

**1) GROUNDING**

- a. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
- b. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
- c. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
- d. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
- e. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
- f. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

**2) CONDUITS**

- a. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
- b. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
- c. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- d. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

**3) WIRE FOR GROUNDING AND BONDING**

- a. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZES SHALL BE AS FOLLOWS:
  - i. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
  - ii. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.a.i. ABOVE.
  - iii. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.a.i. ABOVE.
  - iv. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/ LABELS INSTALLED AT ALL ACCESS POINTS.
- b. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.

**4) GROUND ROD**

- a. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
- b. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

**5) 7-CONDUCTOR SIGNAL CABLE**

- a. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND.	COLOR	VEHICLE SIGNAL	PED. SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIP. GROUND	EQUIP. GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

**6) POWER SERVICE AND DISCONNECT SWITCH**

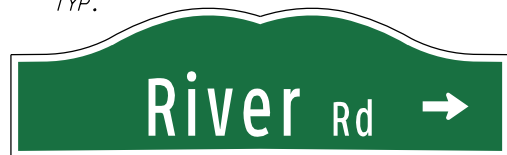
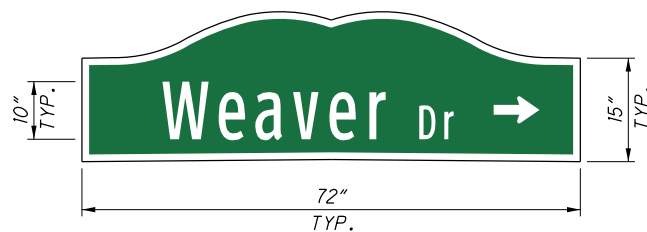
- a. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (A/C-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
- b. THE SERVICE NETRUAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT ENCLOSURE.
  - i. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
  - ii. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7) PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.



**ITEM 630, SIGN, STREET NAME, AS PER PLAN**

THIS ITEM SHALL CONSIST OF A STREET NAME SIGN THAT IS AN OPEN-BOOK STYLE. THE CONTRACTOR SHALL PROVIDE A GREEN SIGN WITH WHITE LETTERS AS DETAILED BELOW. APPROVAL MUST BE GIVEN BY THE VILLAGE OF GRANVILLE VILLAGE MANAGER BEFORE THE SIGNS ARE ORDERED AND INSTALLED. IF CHANGES ARE MADE TO THE SIGNS AS SHOWN IN THE PLANS, ENSURE THAT THE PROPOSED SIGNS CAN BE POSITIONED ON THE MAST ARM AS SHOWN IN THE PLANS.



1" BORDER (WHITE)  
ClearviewHwy-I-W 55% SPACING

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 630, SIGN, STREET NAME, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL THE SIGNS. THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

**ITEM 630, SIGN, STREET NAME, AS PER PLAN 4 EACH**

**ITEM 630, SIGN ATTACHMENT ASSEMBLY**

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO ATTACH THE STREET NAME SIGNS TO THE MAST ARMS.

**ITEM 630, SIGN ATTACHMENT ASSEMBLY 4 EACH**

**ITEM 632, SIGNAL SUPPORT, [BY TYPE], AS PER PLAN  
ITEM 632, COMBINATION SIGNAL SUPPORT, [BY TYPE], AS PER PLAN**

IN ADDITION TO PROVISIONS OF THE ODOT C&MS, FURNISH AND INSTALL SIGNAL POLES AS SPECIFIED IN THE PLANS.

THE SIGNAL SUPPORT DESIGNER SHALL PROVIDE DRAWINGS OF A SIGNAL SUPPORT WITH STRUCTURAL ASPECTS OF THE DESIGN AND MATERIALS IN COMPLIANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE SIGNAL SUPPORT SHALL BE ASTM A595 GRADE A OR APPROVED EQUAL WITH A MINIMUM YIELD STRENGTH OF 50 KSI. THE FOLLOWING DESIGN PARAMTERS SHALL BE USED:

1. BASIC WIND SPEED = 90 MPH
2. DESIGN LIFE = 25 YEARS
3. FATIGUE CATEGORY = III
4. GALLOPING: NO
5. TRUCK INDUCED WINDS: NO

SUBMIT TO THE ENGINEER PRIOR TO INCORPORATION, TWO COPIES OF THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGNAL SUPPORT AND SIGNAL SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY TWO OHIO REGISTERED PROFESSIONAL ENGINEERS.

ALL SIGNAL SUPPORTS SHALL BE PAINTED SEMI-GLOSS BLACK (FEDERAL COLOR FS 27038) IN ACCORDANCE WITH SS 916.

PAYMENT FOR ITEM 632, SIGNAL SUPPORT, [BY TYPE], AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH ITEM COMPLETE AND IN PLACE, AND SHALL INCLUDE ALL SIGNAL SUPPORT DESIGN, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

**ITEM 625, BRACKET ARM, 20', AS PER PLAN**

LUMINAIRE BRACKET ARMS SHALL BE PAINTED SEMI-GLOSS BLACK (FEDERAL COLOR FS 27038) IN ACCORDANCE WITH SS 916.

PAYMENT FOR PAINTING OF THE BRACKET ARMS SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR ITEM 625, BRACKET ARM, 20', AS PER PLAN.

**ITEM 632, PEDESTAL, 10', TRANSFORMER BASE, AS PER PLAN**

THIS ITEM INCLUDES FURNISHING AND INSTALLING AN ALUMINUM PEDESTAL AND TRANSFORMER BASE PER C&MS 732.15 AND SCD TC-83.20. THE ALUMINUM PEDESTAL AND TRANSFORMER BASE SHALL BE POWDER COATED SEMI-GLOSS BLACK TO MATCH THE SIGNAL SUPPORTS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO ERECT THE PEDESTAL.

**ITEM 633, PREEMPTION, AS PER PLAN (GENERIC)**

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION EQUIPMENT IN THE LOCATIONS AND LOCAL CONTROLLERS AS SHOWN IN THE PLANS.

THE PREEMPTION SHALL CONFORM TO ODOT SPECIFICATION 633 AND SHALL UTILIZE COMMUNICATIONS TO IDENTIFY THE PRESENCE OF AN EMERGENCY PRIORITY VEHICLE. IT SHALL CAUSE THE TRAFFIC CONTROLLER TO SELECT A PRE-PROGRAMMED PREEMPTION PLAN THAT WILL DISPLAY AND HOLD THE DESIRED SIGNAL PHASE FOR THE DIRECTION OF THE EMERGENCY VEHICLE.

THE COMMUNICATIONS MEDIUM SHALL EMPLOY A RADIO/GPS DETECTION TECHNIQUE TO DETERMINE AND LOG THE PRESENCE OF THE EMERGENCY VEHICLE BY DETECTING THE RF/GPS LOCATION OF THE APPROACHING VEHICLE. THE SYSTEM SHALL DETECT THE PRESENCE OF THE VEHICLE THROUGH AN EMITTING DEVICE LOCATED ON THE EMERGENCY VEHICLE. THE SYSTEM SHALL BE COMPLETELY COMPTAIBLE WITH THE CONTROLLER SPECIFIED IN THE PLANS.

THE EQUIPMENT SHALL BE SHELF OR RACK MOUNTED AND EASILY REMOVABLE AND REPLACEABLE WITHIN THE CABINET. SUPPLY EQUIPMENT COMPLETELY WIRED IN THE CONTROLLER CABINET AND TESTED. THE SYSTEM SHALL BE CAPABLE OF PREEMPTING AND RECEIVING PRIORITY FOR EACH APPROACH OF THE INTERSECTION. THE RADIO-ACTIVATED SYSTEM SHALL BE ABLE TO DETECT THE EMERGENCY VEHICLE AT LEAST 2,500 FEET FROM THE INTERSECTION.

THE CONTRACTOR SHALL SUPPLY THE VILLAGE OF GRANVILLE WITH FIVE (5) EMITTERS FOR THEIR PRIORITY EMERGENCY VEHICLES AT COST INCIDENTAL TO THE SYSTEM.

THE INTERSECTIONS SHALL BE EQUIPPED WITH THE FOLLOWING COMPONENTS:

1. PREEMPTION ANTENNA (RECEIVING UNIT)
2. PREEMPTION ANTENNA WIRING
3. 4-CHANNEL PHASE SELECTOR UNIT AND WIRING PANEL
4. LED CONFIRMATION LIGHT AND WIRING

THE DETECTION ANTENNA AND CONFIRMATION LIGHTS SHALL BE RIGID MOUNTED TO THE MAST ARMS WITH MOUNTING HARDWARE AS RECOMMENDED BY THE EQUIPMENT INSTALLER. THE SYSTEM SHALL BE CAPABLE OF DETECTING ALL EQUIPPED VEHICLES BY DIRECTION, ETA, SPEED, AND TURN SIGNAL STATUS.

THE PURPOSE OF THE CONFIRMATION LIGHT IS TO PROVIDE THE DRIVER OF THE EMERGENCY VEHICLE WITH A VISUAL INDICATION THAT THE TRAFFIC SIGNAL IS IN PREEMPT MODE. THE CONFIRMATION LIGHTS ON ALL APPROACHES SHALL BE A SOLID WHITE LIGHT DURING PREEMPTION. THE LIGHT FIXTURE SHALL BE A DUAL INDICATION, WEATHERPROOF FIXTURE UTILIZING A STANDARD OUTDOOR, PAR-38 LED SPOTLIGHT.

THE CONTRACTOR SHALL THOROUGHLY INSPECT THE INSTALLED SYSTEM. AT A MINIMUM, THE CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS ARE PROPERLY MADE TO THE CONTROLLER CABINET. THE CONTRACTOR SHALL CHECK THAT THE PHASE SELECTOR STATUS LIGHTS FOR RADIO AND GPS ARE CORRECT, AND THE CONTRACTOR SHALL ENSURE THAT THE PHASE SELECTOR IS SELECTING THE PROPER PHASE AND TIMING.

EMMITERS SHALL BE INSTALLED IN THE EMERGENCY VEHICLES BY A LICENSED RADIO INSTALLER.

A PUSHBUTTON SHALL BE INSTALLED IN THE FIRE STATION, THAT WILL ACTIVATE THE PREEMPTION SYSTEM.

INTERSECTIONS TO BE PERMANENTLY PREEMPTED:

1. S.R. 37/S.R. 661 & RAMP G
2. S.R. 661 & RAMP E / S.R. 661 & RIVER RD./WEAVER DR.\*
3. S.R. 16 (COLUMBUS RD.) & GRANVIEW RD./KENDALL DR.

\*NOTE:  
BOTH INTERSECTIONS WILL RUN OFF OF ONE CONTROLLER, AND ONLY ONE GPS ANTENNA AND ONE 4-CHANNEL PHASE SELECTOR IS NEEDED.

SEE SHEETS 25-26 FOR PREEMPTION ITEMS NEEDED FOR MAINTENANCE OF TRAFFIC PURPOSES. ALL LEFT-OVER PREEMPTION EQUIPMENT FROM CONSTRUCTION ACTIVITIES THAT IS NOT NEEDED TO PREEMPT THE PERMANENT INSTALLATIONS SHALL BE DELIVERED TO THE VILLAGE OF GRANVILLE.

THE FOLLOWING QUANTITIES ARE FOR INFORMATION ONLY:

PUSHBUTTON: 1 EACH

EMITTERS: 5 EACH

GPS ANTENNA RECEIVING UNITS: 4 EACH  
(4 FOR MOT, 3 PERMANENT INSTALLATIONS)

4-CHANNEL PHASE SELCTORS: 4 EACH  
(4 FOR MOT, 3 PERMANENT INSTALLATIONS)

CONFIRMATION LIGHTS: 12 EACH  
(7 FOR MOT, 12 PERMANENT INSTALLATIONS)

THE CONTRACTOR SHALL SUBMIT THE MANUFACTURER'S NAME OF THE GENERIC BID ITEM AT THE FOLLOWING LINK:

<http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Pages/Manufacturer.aspx>

PAYMENT SHALL INCLUDE CABLES, MOUNTING HARDWARE, LABOR, MATERIALS, TOOLS, EQUIPMENT, TRAINING, AND INCIDENTALS TO FURNISH AND INSTALL THE SYSTEM, TESTED AND ACCEPTED.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY:

**ITEM 633, PREEMPTION, AS PER PLAN (GENERIC) 1 EACH**

**ITEM 633, PREEMPTION, AS PER PLAN (GTT OPTICOM)**

THE GPS PREEMPTION SYSTEM PROVIDED SHALL BE OF THE OPTICOM RADIO/GPS MODEL AS PROVIDED BY GLOBAL TRAFFIC TECHNOLOGIES, LLC.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY:

**ITEM 633, PREEMPTION, AS PER PLAN (GTT OPTCOM) 1 EACH**

**ITEM 633, CABINET FOUNDATION, AS PER PLAN**

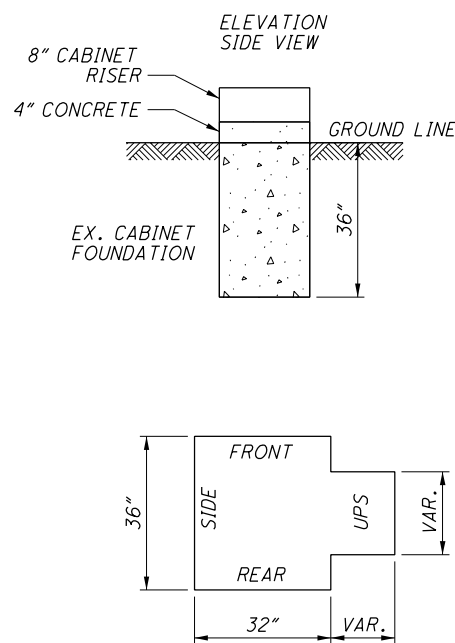
THIS ITEM SHALL INCLUDE THE ADDITIONAL EXCAVATION AND CONCRETE NECESSARY TO EXTEND THE CONTROLLER CABINET FOUNDATION IN ORDER TO SUPPORT THE UNINTERRUPTIBLE POWER SUPPLY (UPS) CABINET.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A FOUNDATION LARGE ENOUGH TO ACCOMODATE THE UPS BEING PROVIDED BY SEPARATE BID ITEM.

THE CONTROLLER AND UPS CABINET FOUNDATION SHALL BE IN ACCORDANCE WITH C&MS 633.10, SCD TC-83.20, AND PIS 208320.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO CONSTRUCT THE FOUNDATION, INCLUDING CONDUIT ELBOWS AND ANCHOR BOLTS, RESTORATION OF DISTURBED AREA, AND DISPOSAL OF SURPLUS MATERIAL AS PER C&MS 104.04.

**UPS FOUNDATION DETAIL**



**ITEM 633, CONTROLLER WORK PAD, AS PER PLAN**

THE CONTROLLER WORKPAD SHALL BE IN ACCORDANCE WITH C&MS 633.11, SCD TC-83.20, AND PIS 2082320.

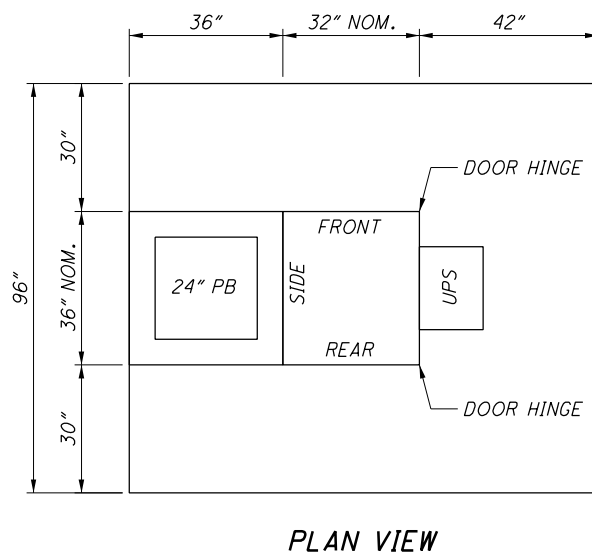
THIS ITEM SHALL INCLUDE THE ADDITIONAL EXCAVATION, EMBANKMENT, AND CONCRETE NECESSARY TO EXTEND THE CONTROLLER WORK PAD TO THE DIMENSIONS SHOWN BELOW AND PROVIDE A LEVEL WORK PAD.

THE CONTRACTOR SHALL CONSTRUCT THE WORK PAD AS FOLLOWS:

- EXCAVATE A MINIMUM OF 9" BELOW GRADE
- PLACE AND COMPACT 6" OF MATERIAL (AS PER 304.02)
- INSTALL A CAST-IN-PLACE WORK PAD THAT IS 4" THICK

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO CONSTRUCT THE WORK PAD.

**UPS WORK PAD DETAIL**



**ITEM 809, ADVANCE RADAR DETECTION  
ITEM 809, STOP LINE RADAR DETECTION**

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX UNIT (FOR STOP BAR DETECTION) OR ADVANCE DETECTION UNIT, MODEL SS-200E (FOR ADVANCE DETECTION). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
  2. ALL REQUIRED INPUT CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
  3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
  4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
  5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION, AND MAINTENANCE OF THE UNIT.
  6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
  7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
- PAYMENT FOR ITEM 809, ADVANCE RADAR DETECTION AND ITEM 809, STOP LINE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

**VARMINT GUARDS**

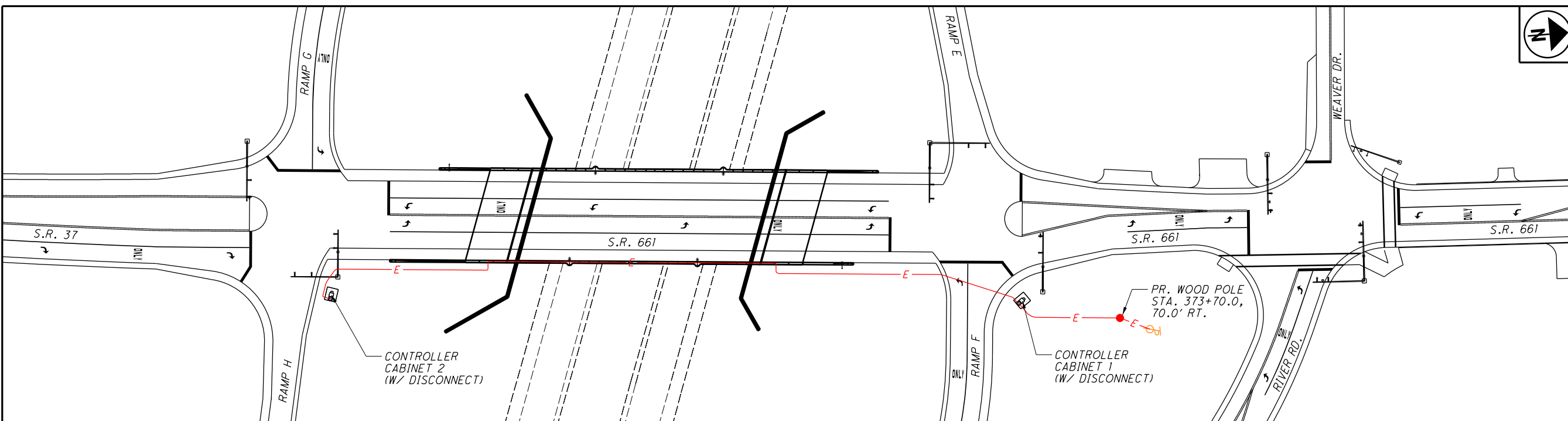
VARMINT GUARDS SHALL BE INSTALLED ON ALL SIGNAL SUPPORTS. ATTACH VARMINT SCREEN WITH STAINLESS STEEL BAND AND MINIMUM 2" OVERLAP. TIE OVERLAPPING SCREEN WITH STAINLESS STEEL WIRE TIES. SCREEN SHALL BE WELDED WIRE MESH OR EXPANDED METAL SHEET, STAINLESS STEEL OR GALVANIZED, WITH OPENINGS NO LARGER THAN 3/8", OR APPROVED EQUAL. SEE SCD HL-10.31 FOR DETAILS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SUPPORT.

**ITEM 809, CCTV IP-CAMERA SYSTEM, DOME-TYPE,  
AS PER PLAN**

THIS ITEM INCLUDES INSTALLING A DOME-TYPE CAMERA AT THE LOCATION SPECIFIED IN THE PLANS THAT SHALL CONFORM TO S.S. 809 AND SCD ITS-12.50 EXCEPT THE CAMERA SHALL BE MOUNTED ON AN EXTENSION POLE A MINIMUM OF 10' ABOVE THE TOP OF THE SIGNAL SUPPORT.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 809, CC TV IP-CAMERA SYSTEM, DOME-TYPE, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO FURNISH AND INSTALL THE CAMERA SYSTEM.

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**ITEM 632, POWER SERVICE, AS PER PLAN**

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

AMERICAN ELECTRIC POWER  
SOLUTION CENTER  
PHONE: 1-800-672-2231

THE CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. A MINIMUM OF THREE MONTHS NOTICE SHALL BE GIVEN TO THE POWER COMPANY FOR NEW INSTALLATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK-UP.

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE SERVICE CABLE INTO THE POWER COMPANY'S CIRCUITS.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES ASSOCIATED WITH THE SERVICE. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNALS AND LIGHTING SYSTEM IS ACCEPTED BY ODOT.

IF THE PROPOSED POWER SERVICE LOCATION SHOWN IN THE PLANS IS NOT FEASIBLE THEN THE CONTRACTOR SHALL MOVE THE POWER SERVICE LOCATION AT THE APPROVAL OF THE ENGINEER. ITEMIZED QUANTITIES SHALL BE ADJUSTED.

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND KEYING SHALL BE TO THE ODOT MASTER.

THE CONTRACTOR SHALL INSTALL A WOOD POLE AS SHOWN IN THE PLANS THAT WILL CONTAIN A GROUND-MOUNTED STRUT FRAME POWER SERVICE CONFORMING TO SCD HL-40.20. THE PHOTO-CELL SHALL BE MOUNTED 10 FEET ABOVE THE NEAREST EDGE OF PAVEMENT ELEVATION ON THE WOOD POLE. THE POWER SERVICE SHALL BE A MINIMUM OF 100 AMP SERVICE. PROVIDE SEPARATE DISCONNECTS FOR THE 120/240V LIGHTING CIRCUIT, AS WELL AS THE 120/240V TRAFFIC SIGNALS. SEPARATE SIGNAL DISCONNECTS SHALL ALSO BE INSTALLED ON THE SIDE OF THE TRAFFIC SIGNAL CONTROLLER CABINETS THAT WILL REMOVE POWER TO THAT INDIVIDUAL INTERSECTION'S SIGNAL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR THE POWER SERVICE, COMPLETE AND IN PLACE, INCLUDING, PHOTO-CELL, CONDUIT RISER, ALL CABLE, CONDUIT, CLAMPS, TRENCHING, POWER CABLE, FITTINGS, DISCONNECT SWITCH WITH ENCLOSURE, METER BASE, GROUND RODS, PADLOCK AND KEY, PULL BOX, WOOD POLE, AND ALL INCIDENTALS NECESSARY FOR COMPLETE SERVICE, ALL CONNECTIONS TESTED AND ACCEPTED.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

**ITEM 632, POWER SERVICE, AS PER PLAN 1 EACH**

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTS	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CONDUCTOR SIZE NO. (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
1	120/240V 1 PHASE 3-WIRE 3-COND. W/ GND. NETRUAL	5	1/0	100	A	7	20	6	ODOT DISTRICT 5
					SIGNAL RAMP G	7	30		
					SIGNAL RAMP F	8	30		

**POWER SERVICE NOTES**

**LIC-37 / 661-  
16.59 / 0.00**

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**ITEM 625, LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN (160W, 240V, TYPE II)**

THE CONVENTIONAL LUMINAIRE SPECIFIED ABOVE SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 813 AND 913 AND SELECTED FROM THE APPROVED PRODUCTS LIST OF LED LUMINAIRES:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Approved%20List/Solid.State.Luminaires.SS.813.pdf>

THE LUMINAIRE SHALL BE SEMI-GLOSS BLACK TO MATCH THE PAINTED SIGNAL SUPPORTS.

THE CONTRACTOR SHALL SUBMIT THE LUMINAIRE TO THE ENGINEER FOR ACCEPTANCE PRIOR TO ORDERING.

**ITEM 625, LUMINAIRE, POST TOP, SOLID STATE (LED), AS PER PLAN (100W, 240V, TYPE III)**

THIS ITEM CONSISTS OF SUPPLYING AND INSTALLING A DECORATIVE POST-TOP LED, ACORN-STYLE, REFRACTIVE GLASS, 3000K, BLACK FINISH LUMINAIRE FOR ROADWAY ILLUMINATION.

SCD HL-10.11 SHOWS AN ACORN-STYLE POST-TOP LUMINAIRE SCHEMATICALLY. THIS ITEM CONSISTS OF A BASE FITTER, GLASS (NOT ACRYLIC) GLOBE, AND A ROUNDED TOP. PROVIDE A LUMINAIRE WITH A B-U-G UP-LIGHTING RATING OF U4 OR LESS.

PROVIDE A LUMINAIRE COMPATIBLE WITH THE LIGHTING BRANCH CIRCUIT SHOWN IN THE PLANS. ASSURE THAT THE LUMINAIRE POST-FITTER HAS A HINGED OR CAPTIVE DOOR.

PROVIDE A LUMINAIRE WITH 3G VIBRATION RATING. PROTECT EACH LUMINAIRE USING A SURGE PROTECTIVE DEVICE (SPD) CONFORMING TO ODOT SUPPLEMENTAL SPEC 913.

ASSURE THAT THE LUMINAIRE HAS A NOMINAL COLOR TEMPERATURE (CCT) OF 3000K.

PROVIDE A LUMINAIRE WITH FACTORY-APPLIED BLACK FINISH MEETING SUPPLEMENTAL SPEC 916.

**ITEM 625, LIGHT POLE, DECORATIVE, AS PER PLAN (GROUND MOUNTED)**

**ITEM 625, LIGHT POLE, DECORATIVE, AS PER PLAN (BRIDGE MOUNTED)**

THIS ITEM INCLUDES FURNISHING AND INSTALLING A FLUTED DECORATIVE LIGHT POLE AS SHOWN IN THE DETAILS ON THIS SHEET. THE LIGHT POLE SHALL BE PAINTED SEMI-GLOSS BLACK (FEDERAL COLOR FS 27038) AS PER SS 916.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND ALL INCIDENTALS (EXCEPT ITEMS SEPARATELY ITEMIZED) NECESSARY TO ERECT THE LIGHT POLE.

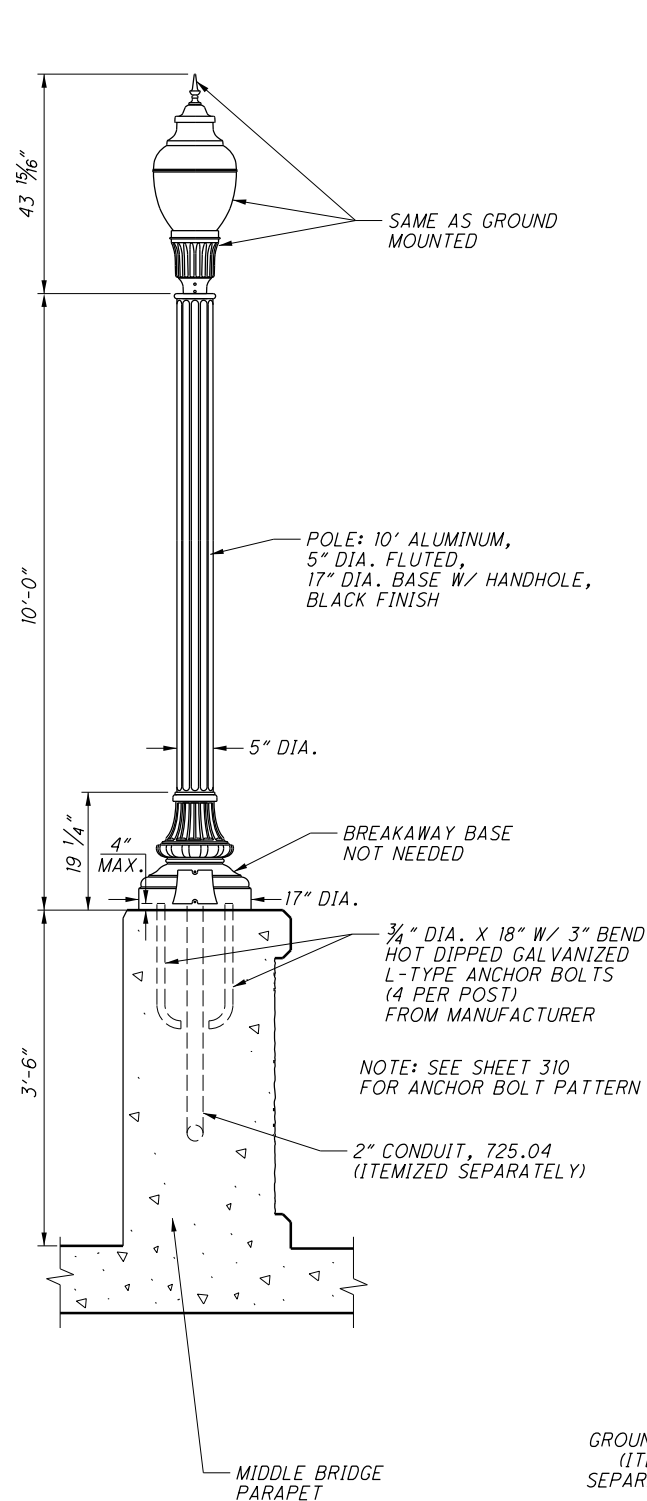
**ITEM 625, LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN**

THIS ITEM INCLUDES THE INSTALLATION OF FOUR (4) ANCHOR BOLTS FOR THE BRIDGE MOUNTED DECORATIVE LIGHT POLE. THE ANCHOR BOLTS SHALL BE SET IN THE BRIDGE PARAPET PRIOR TO POURING OF PARAPET CONCRETE. THE ANCHOR BOLTS MAY NEED SHIPPED TO JOB SITE FROM MANUFACTURER SEPARATE FROM REST OF LIGHTING ITEMS.

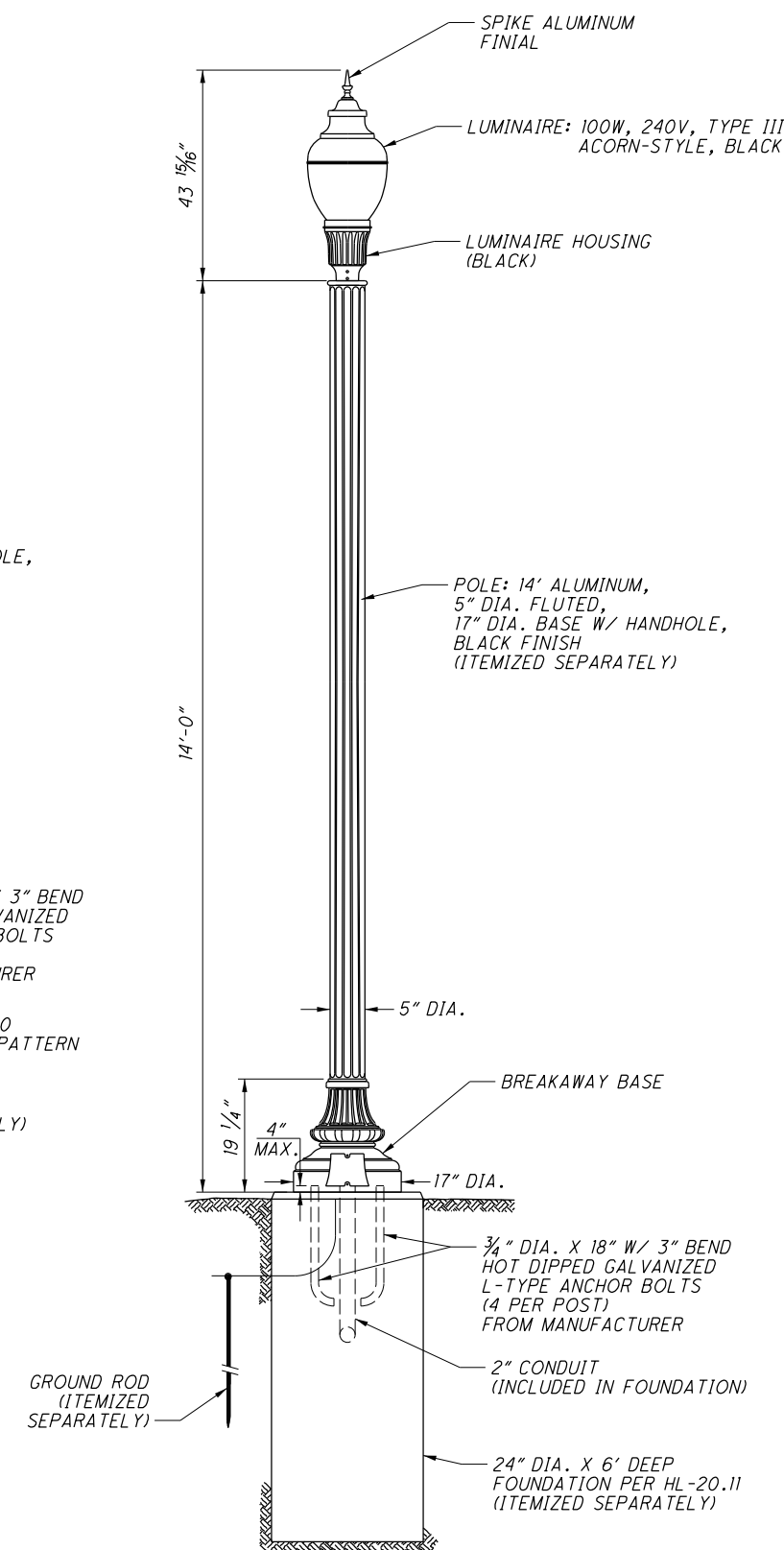
GROUNDING FOR THE BRIDGE MOUNTED DECORATIVE LIGHT POLE SHALL BE INCLUDED IN THE GROUNDING OF THE STRUCTURE.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND INCLUDE ALL INCIDENTALS NECESSARY TO INSTALL THE ANCHOR BOLTS.

**BRIDGE MOUNTED DECORATIVE LIGHT POLE**



**GROUND MOUNTED DECORATIVE LIGHT POLE**



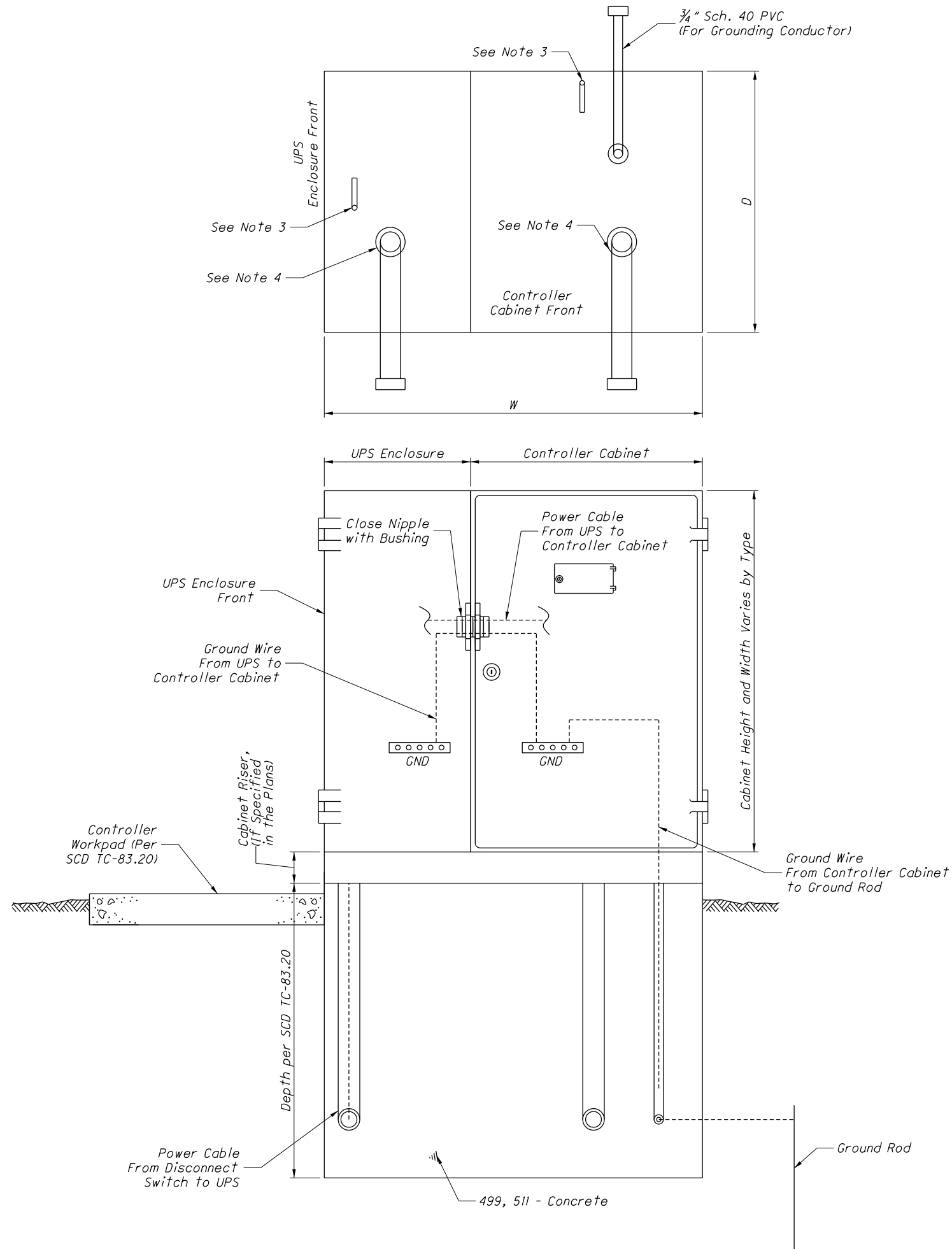
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CALCULATED  
BRH  
CHECKED  
JSL

LIGHTING NOTES

LIC-37 / 661-  
16.59 / 0.00

244  
341



**NOTES:**

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit ells shall be as shown in the plan, except that a 3/4" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCD TC-83.20 for further details.

TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

# MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

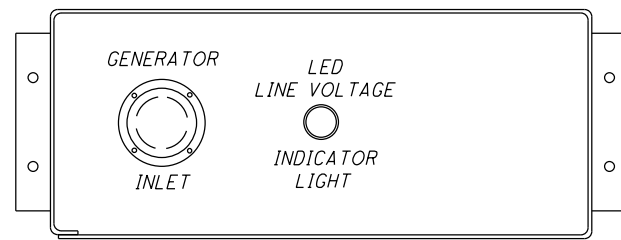
**GENERATOR INLET** - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NEMA configuration number L14-30-P 30A 125/250V specification. The inlet shall be a Hubbell catalog #2715.

**LINE VOLTAGE GENERATOR SWITCH** - The switch shall be 30 amp, 125/250V AC, two (2) pole, three (3) position (On, Off, On). The switch shall be a Hubbell catalog #1388.

**LINE VOLTAGE INDICATOR LIGHT** - The indicator light shall be 125V AC light emitting diode with a red lens.

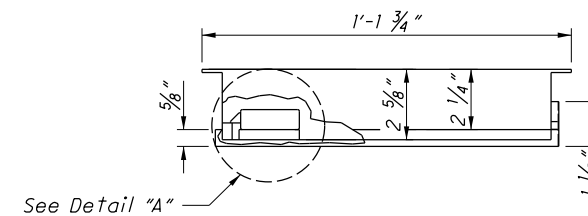
**LINE VOLTAGE CIRCUIT BREAKER** - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accommodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.

**EXTERNAL LINE VOLTAGE INDICATOR LIGHT** - The indicator light shall be a 1" waterproof NEMA 4X or IP66 LED lamp with a green lens.

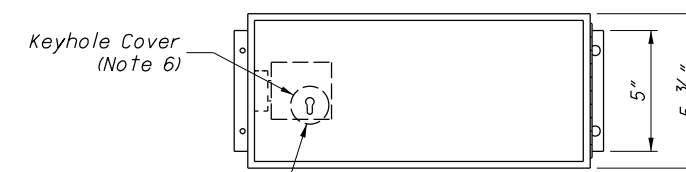


FRONT VIEW OF GENERATOR POWER PANEL

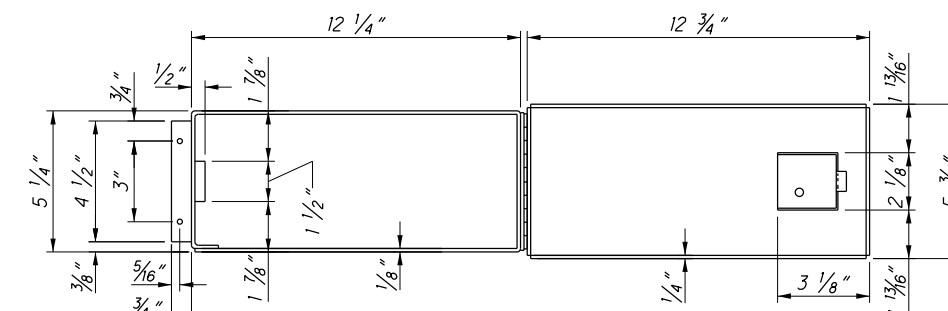
# GENERATOR POWER PANEL ENCLOSURE



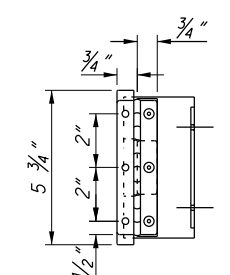
TOP VIEW



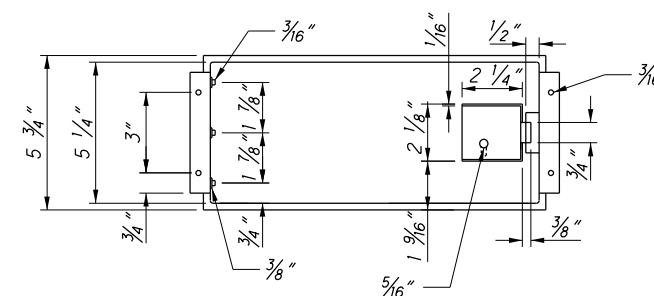
FRONT VIEW CLOSED DOOR



FRONT VIEW OPEN DOOR



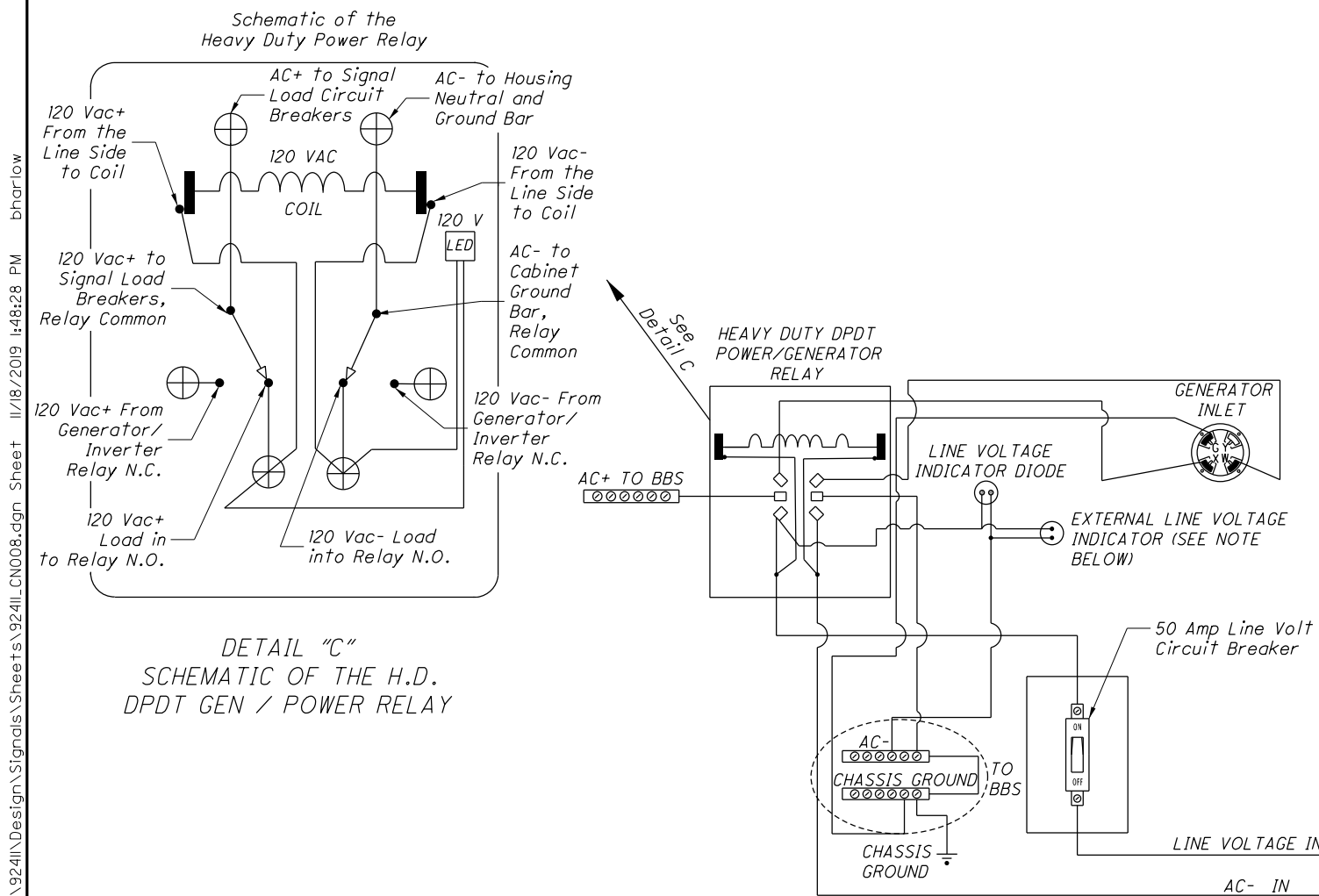
RIGHT SIDE VIEW CLOSED DOOR



BACK VIEW CLOSED DOOR

## NOTES:

1. The enclosure shall be constructed of 1/8" thick aluminum.
2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
4. The enclosure shall be mounted onto the outside of the controller cabinet with non-accessible bolts and sealed with a high quality silicon caulk at all surfaces touching the cabinet.
5. The hinge shall be of stainless steel or equivalent corrosive-resistant material.
6. Keyhole shall be covered with a movable circular aluminum or brass cover with top pivot pin.



# ELECTRICAL HOOKUP DETAIL FOR THE BBS GENERATOR POWER PANEL

**NOTE:** EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans.  
 EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet, and generator panel doors are closed.

REFERENCE NO.	SHEET NO.	LOCATION	625	625	625	625	625	625	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	633	633	633	633	809	809	
			EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		S.R. 37 / S.R. 661 / RAMP G (PLAN SPLIT 02/NHS/PV)																												
CC-1	251	CONTROLLER CABINET																												
P-1	251	COMBINATION SIGNAL SUPPORT	1																											
P-2	251	COMBINATION SIGNAL SUPPORT	1																											
TB-1	251	TRAFFIC PULL BOX																												
TB-2	251	TRAFFIC PULL BOX																												
TB-3	251	TRAFFIC PULL BOX																												
TB-4	251	TRAFFIC PULL BOX																												
RD-1	251	RADAR DETECTION																												
RD-2	251	RADAR DETECTION																												
RD-3	251	RADAR DETECTION																												
RD-4	251	RADAR DETECTION																												
SIGNAL CONDUIT	251	P-1 TO TB-1		8		8																								
	251	TB-1 TO TB-3			61																									
	251	TB-3 TO TB-4			89																									
	251	TB-4 TO P-2		7		7																								
	251	TB-4 TO TB-2 (2 CONDUITS)		64		32																								
	251-252	TB-4 TO TB-5		104		104																								
SIGNAL CABLE	251	CC-1 TO 1,6																												
	251	CC-1 TO 2A,2B																												
	251	CC-1 TO 4A,4B																												
TB-5	252	TRAFFIC PULL BOX																												
TB-6	252	TRAFFIC PULL BOX																												
	251-253	TB-2 TO TB-9 (POWER CABLE)																												
TOTALS CARRIED TO SHEET 249			2	183	150	151	6	3	5	1																				

CALCULATED BRH	CHECKED JSL	TRAFFIC SIGBAL SUBSUMMARY S.R. 37 / S.R. 661 / RAMP G	LIC-37 / 661- 16.59 / 0.00	247
				341





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REFERENCE NO.	SHEET NO.	LOCATION	625	625	625	625	625	625	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	633	633	633	633	809	809	
			EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	EACH	EACH	FT	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		S.R. 661 / RIVER RD. / WEAVER DR. (PLAN SPLIT 03/S<2/OT)																												
P-5	254	COMBINATION SIGNAL SUPPORT	1																											
P-6	254	COMBINATION SIGNAL SUPPORT																												
P-7	254	COMBINATION SIGNAL SUPPORT	1																											
TB-11	254	TRAFFIC PULL BOX																												
TB-12	254	TRAFFIC PULL BOX																												
TB-13	254	TRAFFIC PULL BOX																												
TB-14	254	TRAFFIC PULL BOX																												
TB-15	254	TRAFFIC PULL BOX																												
RD-8	254	RADAR DETECTION																												
RD-9	254	RADAR DETECTION																												
RD-10	254	RADAR DETECTION																												
RD-11	254	RADAR DETECTION																												
	254	TB-11 TO PD-1		23		23																								
	254	TB-11 TO TB-12			79																									
	254	TB-12 TO P-5		21		21																								
	254	TB-11 TO TB-13 (2 CONDUITS)			146																									
	254	TB-13 TO P-7		21		21																								
	254	TB-13 TO TB-15 (2 CONDUITS)		116		58																								
	254	TB-15 TO PD-2		17		17																								
	254	TB-15 TO TB-14			59																									
	254	TB-14 TO PD-3		9		9																								
	254	TB-14 TO P-6		9		9																								
	253-254	CC-2 TO 1,6A							1	1	2					388														
	253-254	CC-2 TO 2B,5B							1	1	2					382														
	253-254	CC-2 TO 8A,8B							2	2	2					376														
	253-254	CC-2 TO 8C,8D							2	2	2					492														
	253-254	CC-2 TO PD-1									1	1	243	243			1													
	253-254	CC-2 TO PD-2									2	2	756	756			1													
	253-254	CC-2 TO PD-3									1	1	434	434			1													
		TOTALS (PLAN SPLIT 03/S<2/OT)	2	216	284	158	5	3	6	2	4	8	4	4	1433	3071	3	3			1		1		3					4
		TOTALS FROM SHEET 247 (PLAN SPLIT 02/NHS/PV)	2	183	150	151	6	3	5	1		6				574	2		563	1				1		1	1	1	2	2
		TOTALS FROM SHEET 248 (PLAN SPLIT 02/NHS/PV)	2	575	146	400	4	3	5	1		6				698	2		87			1		1		1	1	1	1	2
		TOTALS (PLAN SPLIT 02/NHS/PV)	4	758	296	551	10	6	10	2		12				1272	4		650	1		1		2		2	2	2	3	4
		TOTALS CARRIED TO GENERAL SUMMARY	6	974	580	709	15	9	16	4	4	20	4	4	1433	4343	7	3	650	1	1	1	1	3	3	2	2	2	3	8

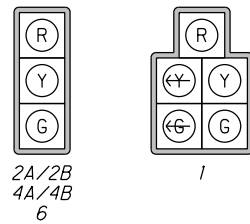
<p><b>TRAFFIC SIGNAL SUBSUMMARY</b>  <b>S.R. 661 / RIVER RD. / WEAVER DR.</b></p>	<p>CALCULATED BRH</p> <p>CHECKED JSL</p>
<p><b>LIC-37 / 661-</b>  <b>16.59 / 0.00</b></p>	<p>249 341</p>

SHEET NO.	LOCATION / REFERENCE	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	809	809																			
		CONNECTION, FUSED PULL APART	CONNECTION, UNFUSED PERMANENT	LIGHT POLE, DECORATIVE, AS PER PLAN (GROUND MOUNTED)	LIGHT POLE DECORATIVE, AS PER PLAN (BRIDGE MOUNTED)	LIGHT POLE ANCHOR BOLTS ON STRUCTURE, AS PER PLAN	LIGHT POLE FOUNDATION, 24" X 6' DEEP	NO. 6 AWG 2400 VOLT DISTRIBUCTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	CONDUIT, 2", 725.05	CONDUIT, JACKED OR DRILLED, 725.04 (2')	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN (160W, 240V, TYPE II)	LUMINAIRE, POST TOP, SOLID STATE (LED), AS PER PLAN (100W, 240V, TYPE III)	TRENCH, 24" DEEP	PULL BOX, 725.08, 18"	GROUND ROD	CCTV IP-CAMERA SYSTEM, DOME-TYPE, AS PER PLAN	ETHERNET CABLE, OUTDOOR RATED																			
		EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	FT	EACH	EACH	EACH	FT																			
	PLAN SPLIT 02/NHS/PV																																				
251	A-1 TO EB-1	2	2					39	201	14		1		14	1																						
251	EB-1 TO EB-2		2					258			81				1																						
251	EB-2 TO A-3	2	2	1			1	249	57	78			1	78		1																					
251-252	A-3 TO EB-5		2					165		50				50	1																						
251	A-2 TO EB-3	2	2					60	195	15		1		15	1																						
251-252	EB-3 TO EB-4		2					303		96				96	1																						
252	EB-4 TO A-4*		2		1	1		219	45				1																								
252	A-4 TO A-6*		2		1	1		288	45				1																								
252	A-6 TO EB-6*		2					216							1																						
252	EB-5 TO A-5*		2		1	1		195	45				1																								
252	A-5 TO A-7*		2		1	1		288	45				1																								
252	A-7 TO EB-7*		2					186							1																						
252-253	EB-6 TO A-8	2		1			1	141	57	42			1	42		1																					
252-253	EB-7 TO EB-8		2					261		82				82	1																						
253	EB-8 TO A-9	2						99	201	28		1		28																							
253	A-8 TO EB-9		2					171		52				52	1																						
253	EB-9 TO EB-10		2					357			114	1			1																						
253	EB-10 TO A-10	2						120	195	35				35																							
253	CC-2 TO CM-1																1	101																			
253-254	EB-10 TO EB-11		2					378		121				121																							
	TOTALS (PLAN SPLIT 02/NHS/PV)	12	32	2	4	4	2	3993	1086	613	195	4	6	613	10	2	1	101																			
	PLAN SPLIT 03/S<2/OT																																				
254	WOOD POLE TO EB-11		2					246		77				77	1																						
254	EB-11 TO EB-12		2					261			82				1																						
254	EB-12 TO A-11	2						69	192	18		1		18																							
254	EB-11 TO EB-13		2					219			68				1																						
254	EB-13 TO A-12	2						96	192	27		1		27																							
	TOTALS (PLAN SPLIT 03/S<2/OT)	4	6					891	384	122	150	2		122	3																						
	TOTALS CARRIED TO GENERAL SUMMARY	16	38	2	4	4	2	4884	1470	735	345	6	6	735	13	2	1	101																			

**LEGEND**

- SIGNAL HEAD, 3-SECTION
- SIGNAL HEAD, 5-SECTION
- ▭ TRAFFIC PULL BOX, 24"
- ▭ ELECTRIC PULL BOX, 18"
- RADAR DETECTOR UNIT
- ☀ CONVENTIONAL LED LUMINAIRE
- ☀ DECORATIVE LED LUMINAIRE
- GPS PREEMPTION RECEIVING UNIT
- ☑ LED PREEMPTION CONFIRMATION LIGHT

**SIGNAL HEAD INDICATIONS**



**REFERENCE LEGEND**

- P-X SIGNAL SUPPORT
- RD-X RADAR DETECTOR
- TB-X TRAFFIC PULL BOX
- EB-X ELECTRIC PULL BOX
- A-X LUMINAIRE IN CIRCUIT A
- CC-X CONTROLLER CABINET

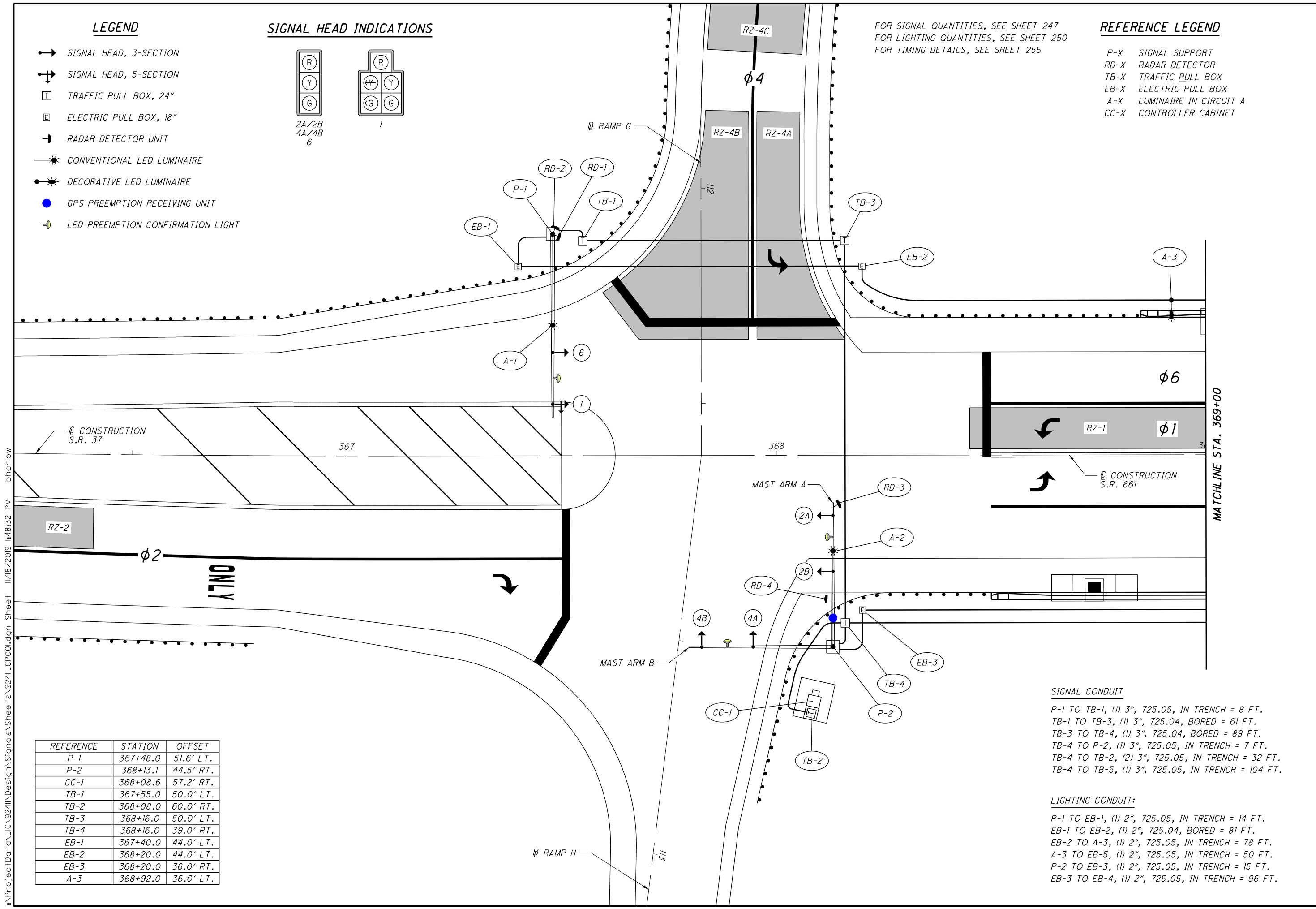
FOR SIGNAL QUANTITIES, SEE SHEET 247  
 FOR LIGHTING QUANTITIES, SEE SHEET 250  
 FOR TIMING DETAILS, SEE SHEET 255



**TRAFFIC SIGNALS & LIGHTING PLAN  
 S.R. 37 & RAMP G**

**LIC-37 / 661-  
 16.59 / 0.00**

251  
 341



REFERENCE	STATION	OFFSET
P-1	367+48.0	51.6' LT.
P-2	368+13.1	44.5' RT.
CC-1	368+08.6	57.2' RT.
TB-1	367+55.0	50.0' LT.
TB-2	368+08.0	60.0' RT.
TB-3	368+16.0	50.0' LT.
TB-4	368+16.0	39.0' RT.
EB-1	367+40.0	44.0' LT.
EB-2	368+20.0	44.0' LT.
EB-3	368+20.0	36.0' RT.
A-3	368+92.0	36.0' LT.

**SIGNAL CONDUIT**  
 P-1 TO TB-1, (1) 3", 725.05, IN TRENCH = 8 FT.  
 TB-1 TO TB-3, (1) 3", 725.04, BORED = 61 FT.  
 TB-3 TO TB-4, (1) 3", 725.04, BORED = 89 FT.  
 TB-4 TO P-2, (1) 3", 725.05, IN TRENCH = 7 FT.  
 TB-4 TO TB-2, (2) 3", 725.05, IN TRENCH = 32 FT.  
 TB-4 TO TB-5, (1) 3", 725.05, IN TRENCH = 104 FT.

**LIGHTING CONDUIT:**  
 P-1 TO EB-1, (1) 2", 725.05, IN TRENCH = 14 FT.  
 EB-1 TO EB-2, (1) 2", 725.04, BORED = 81 FT.  
 EB-2 TO A-3, (1) 2", 725.05, IN TRENCH = 78 FT.  
 A-3 TO EB-5, (1) 2", 725.05, IN TRENCH = 50 FT.  
 P-2 TO EB-3, (1) 2", 725.05, IN TRENCH = 15 FT.  
 EB-3 TO EB-4, (1) 2", 725.05, IN TRENCH = 96 FT.

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**LEGEND**

- T TRAFFIC PULL BOX, 24"
- E ELECTRIC PULL BOX, 18"
- DECORATIVE LED LUMINAIRE

**REFERENCE LEGEND**

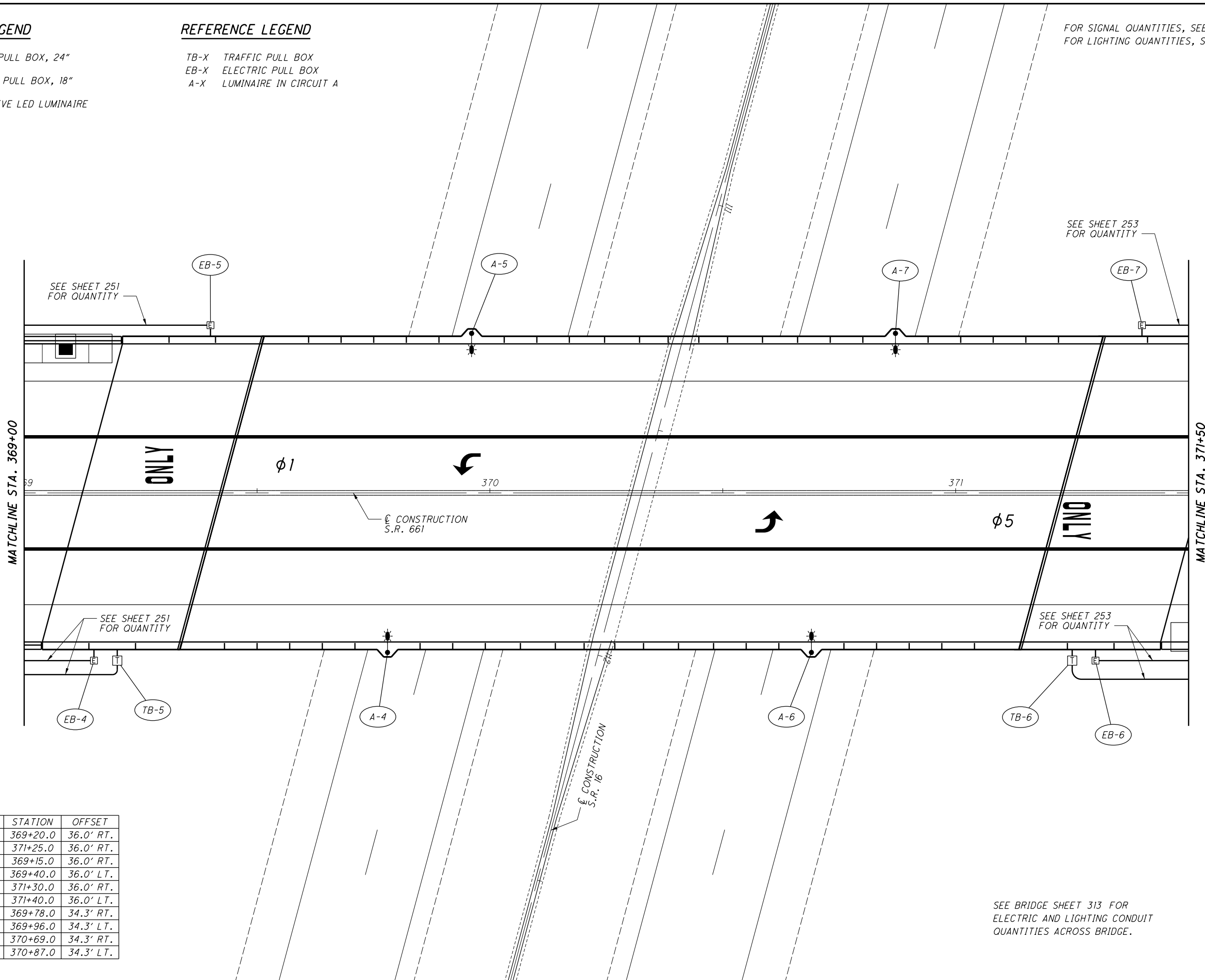
- TB-X TRAFFIC PULL BOX
- EB-X ELECTRIC PULL BOX
- A-X LUMINAIRE IN CIRCUIT A

FOR SIGNAL QUANTITIES, SEE SHEET 247  
FOR LIGHTING QUANTITIES, SEE SHEET 250

N

0 5 10 20  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
BRH  
CHECKED  
JSL



REFERENCE	STATION	OFFSET
TB-5	369+20.0	36.0' RT.
TB-6	371+25.0	36.0' RT.
EB-4	369+15.0	36.0' RT.
EB-5	369+40.0	36.0' LT.
EB-6	371+30.0	36.0' RT.
EB-7	371+40.0	36.0' LT.
A-4	369+78.0	34.3' RT.
A-5	369+96.0	34.3' LT.
A-6	370+69.0	34.3' RT.
A-7	370+87.0	34.3' LT.

SEE BRIDGE SHEET 313 FOR  
ELECTRIC AND LIGHTING CONDUIT  
QUANTITIES ACROSS BRIDGE.

**TRAFFIC SIGNALS & LIGHTING PLAN**  
**S.R. 661 ACROSS BRIDGE**

**LIC-37 / 661-**  
**16.59 / 0.00**

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CALCULATED  
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TRAFFIC SIGNALS & LIGHTING PLAN  
S.R. 661 & RAMP F

LIC-37 / 661-  
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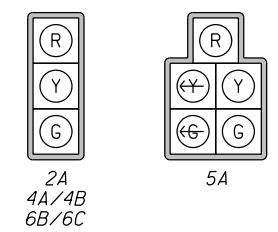
253  
341

**LEGEND**

- SIGNAL HEAD, 3-SECTION
- SIGNAL HEAD, 5-SECTION
- ▭ TRAFFIC PULL BOX, 24"
- ▭ ELECTRIC PULL BOX, 18"
- RADAR DETECTOR UNIT
- PZT CAMERA, DOME-TYPE
- GPS PREEMPTION RECEIVING UNIT
- LED PREEMPTION CONFIRMATION LIGHT
- CONVENTIONAL LED LUMINAIRE
- DECORATIVE LED LUMINAIRE
- PR. WOOD POLE (POWER SERVICE)

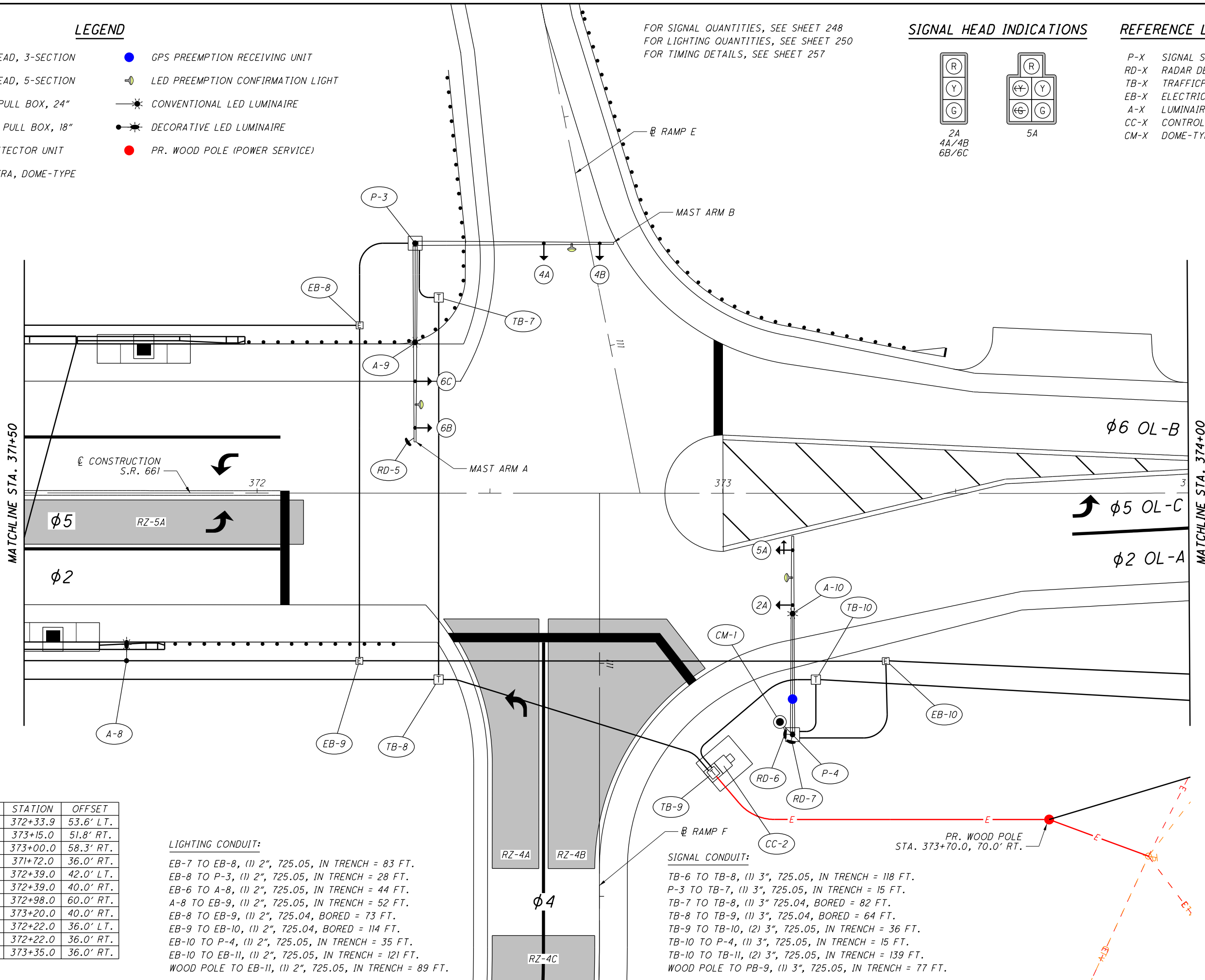
FOR SIGNAL QUANTITIES, SEE SHEET 248  
FOR LIGHTING QUANTITIES, SEE SHEET 250  
FOR TIMING DETAILS, SEE SHEET 257

**SIGNAL HEAD INDICATIONS**



**REFERENCE LEGEND**

- P-X SIGNAL SUPPORT
- RD-X RADAR DETECTOR
- TB-X TRAFFICPULL BOX
- EB-X ELECTRIC PULL BOX
- A-X LUMINAIRE IN CIRCUIT A
- CC-X CONTROLLER CABINET
- CM-X DOME-TYPE CAMERA



REFERENCE	STATION	OFFSET
P-3	372+33.9	53.6' LT.
P-4	373+15.0	51.8' RT.
CC-2	373+00.0	58.3' RT.
A-8	371+72.0	36.0' RT.
TB-7	372+39.0	42.0' LT.
TB-8	372+39.0	40.0' RT.
TB-9	372+98.0	60.0' RT.
TB-10	373+20.0	40.0' RT.
EB-8	372+22.0	36.0' LT.
EB-9	372+22.0	36.0' RT.
EB-10	373+35.0	36.0' RT.

**LIGHTING CONDUIT:**

- EB-7 TO EB-8, (1) 2", 725.05, IN TRENCH = 83 FT.
- EB-8 TO P-3, (1) 2", 725.05, IN TRENCH = 28 FT.
- EB-6 TO A-8, (1) 2", 725.05, IN TRENCH = 44 FT.
- A-8 TO EB-9, (1) 2", 725.05, IN TRENCH = 52 FT.
- EB-8 TO EB-9, (1) 2", 725.04, BORED = 73 FT.
- EB-9 TO EB-10, (1) 2", 725.04, BORED = 114 FT.
- EB-10 TO P-4, (1) 2", 725.05, IN TRENCH = 35 FT.
- EB-10 TO EB-11, (1) 2", 725.05, IN TRENCH = 121 FT.
- WOOD POLE TO EB-11, (1) 2", 725.05, IN TRENCH = 89 FT.

**SIGNAL CONDUIT:**

- TB-6 TO TB-8, (1) 3", 725.05, IN TRENCH = 118 FT.
- P-3 TO TB-7, (1) 3", 725.05, IN TRENCH = 15 FT.
- TB-7 TO TB-8, (1) 3" 725.04, BORED = 82 FT.
- TB-8 TO TB-9, (1) 3", 725.04, BORED = 64 FT.
- TB-9 TO TB-10, (2) 3", 725.05, IN TRENCH = 36 FT.
- TB-10 TO P-4, (1) 3", 725.05, IN TRENCH = 15 FT.
- TB-10 TO TB-11, (2) 3", 725.05, IN TRENCH = 139 FT.
- WOOD POLE TO PB-9, (1) 3", 725.05, IN TRENCH = 77 FT.

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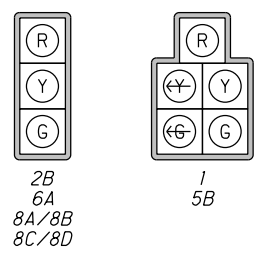
**LEGEND**

- SIGNAL HEAD, 3-SECTION
- SIGNAL HEAD, 5-SECTION
- TRAFFIC PULL BOX, 24"
- ELECTRIC PULL BOX, 18"
- RADAR DETECTOR UNIT
- ★ CONVENTIONAL LED LUMINAIRE
- PED. HEAD & PUSHBUTTON
- LED PREEMPTION CONFIRMATION LIGHT

**SIGNS**

- ← River Rd S1
- Weaver Dr. → S2
- ← Weaver Dr. S3
- River Rd S4

**SIGNAL HEAD INDICATIONS**

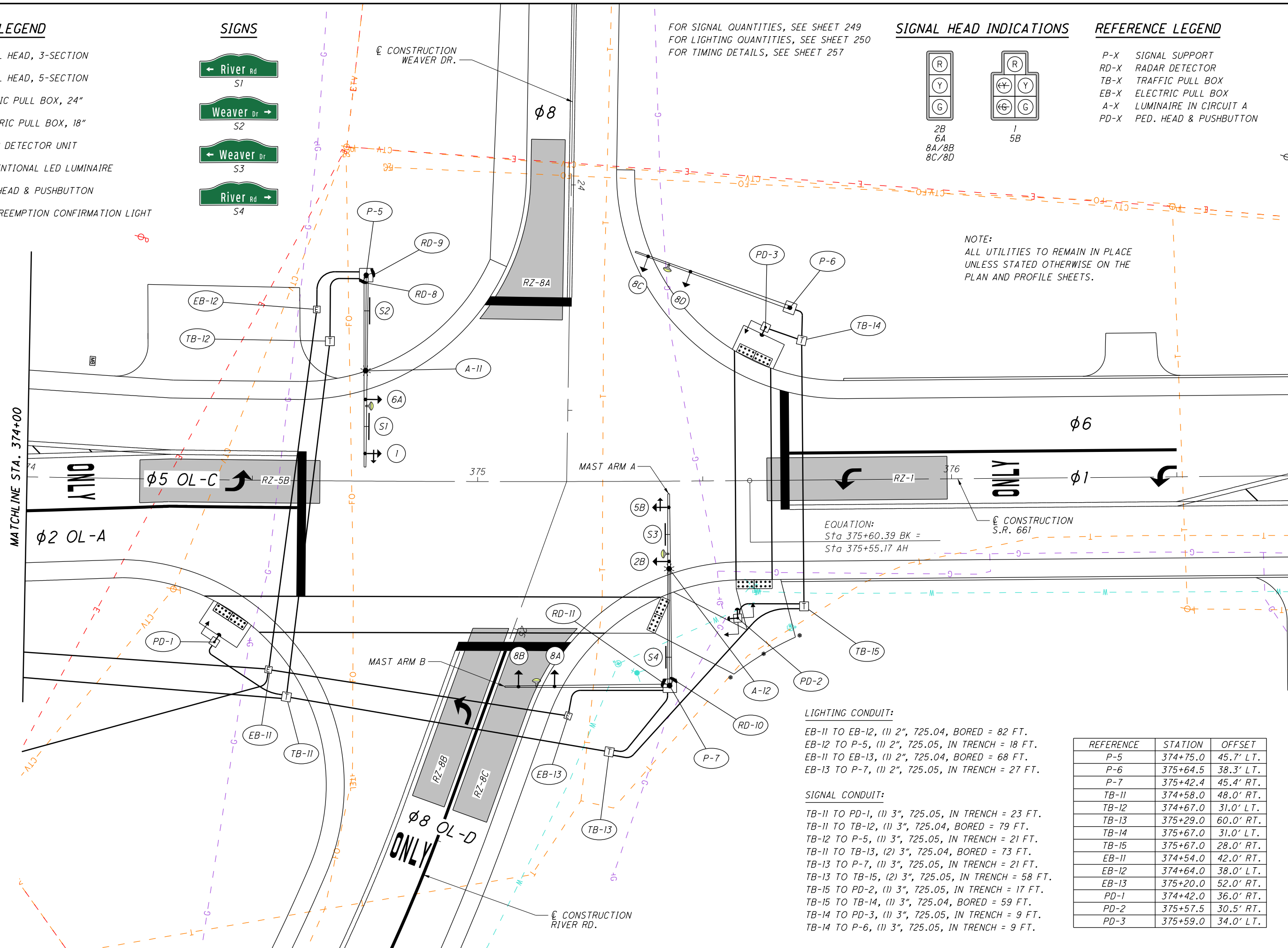


**REFERENCE LEGEND**

- P-X SIGNAL SUPPORT
- RD-X RADAR DETECTOR
- TB-X TRAFFIC PULL BOX
- EB-X ELECTRIC PULL BOX
- A-X LUMINAIRE IN CIRCUIT A
- PD-X PED. HEAD & PUSHBUTTON

FOR SIGNAL QUANTITIES, SEE SHEET 249  
 FOR LIGHTING QUANTITIES, SEE SHEET 250  
 FOR TIMING DETAILS, SEE SHEET 257

NOTE:  
 ALL UTILITIES TO REMAIN IN PLACE  
 UNLESS STATED OTHERWISE ON THE  
 PLAN AND PROFILE SHEETS.



**LIGHTING CONDUIT:**

- EB-11 TO EB-12, (1) 2", 725.04, BORED = 82 FT.
- EB-12 TO P-5, (1) 2", 725.05, IN TRENCH = 18 FT.
- EB-11 TO EB-13, (1) 2", 725.04, BORED = 68 FT.
- EB-13 TO P-7, (1) 2", 725.05, IN TRENCH = 27 FT.

**SIGNAL CONDUIT:**

- TB-11 TO PD-1, (1) 3", 725.05, IN TRENCH = 23 FT.
- TB-11 TO TB-12, (1) 3", 725.04, BORED = 79 FT.
- TB-12 TO P-5, (1) 3", 725.05, IN TRENCH = 21 FT.
- TB-11 TO TB-13, (2) 3", 725.04, BORED = 73 FT.
- TB-13 TO P-7, (1) 3", 725.05, IN TRENCH = 21 FT.
- TB-13 TO TB-15, (2) 3", 725.05, IN TRENCH = 58 FT.
- TB-15 TO PD-2, (1) 3", 725.05, IN TRENCH = 17 FT.
- TB-15 TO TB-14, (1) 3", 725.04, BORED = 59 FT.
- TB-14 TO PD-3, (1) 3", 725.05, IN TRENCH = 9 FT.
- TB-14 TO P-6, (1) 3", 725.05, IN TRENCH = 9 FT.

REFERENCE	STATION	OFFSET
P-5	374+75.0	45.7' LT.
P-6	375+64.5	38.3' LT.
P-7	375+42.4	45.4' RT.
TB-11	374+58.0	48.0' RT.
TB-12	374+67.0	31.0' LT.
TB-13	375+29.0	60.0' RT.
TB-14	375+67.0	31.0' LT.
TB-15	375+58.0	28.0' RT.
EB-11	374+54.0	42.0' RT.
EB-12	374+64.0	38.0' LT.
EB-13	375+20.0	52.0' RT.
PD-1	374+42.0	36.0' RT.
PD-2	375+57.5	30.5' RT.
PD-3	375+59.0	34.0' LT.



**TRAFFIC SIGNALS & LIGHTING PLAN**  
**S.R. 661 & RIVER RD. / WEAVER DR.**

**LIC-37 / 661-**  
**16.59 / 0.00**

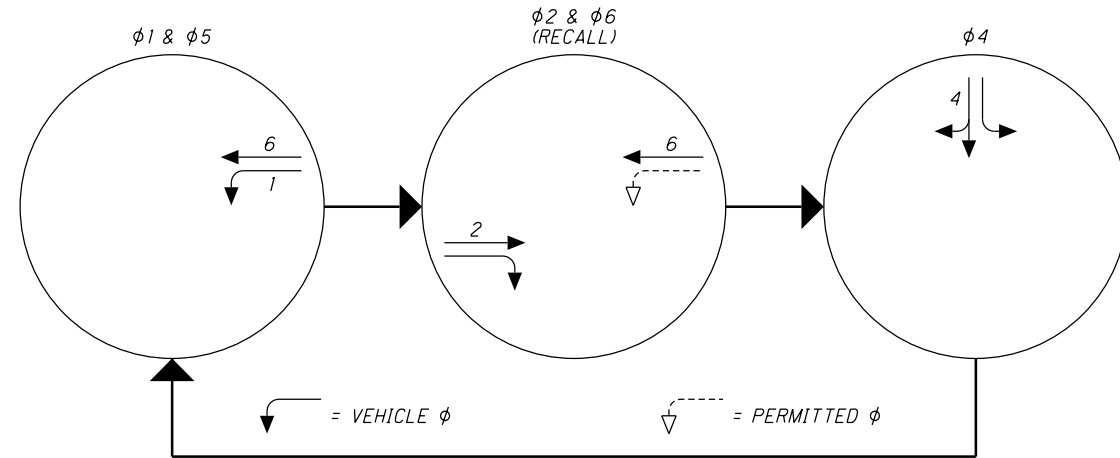
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**SIGNAL TIMING TABLE**

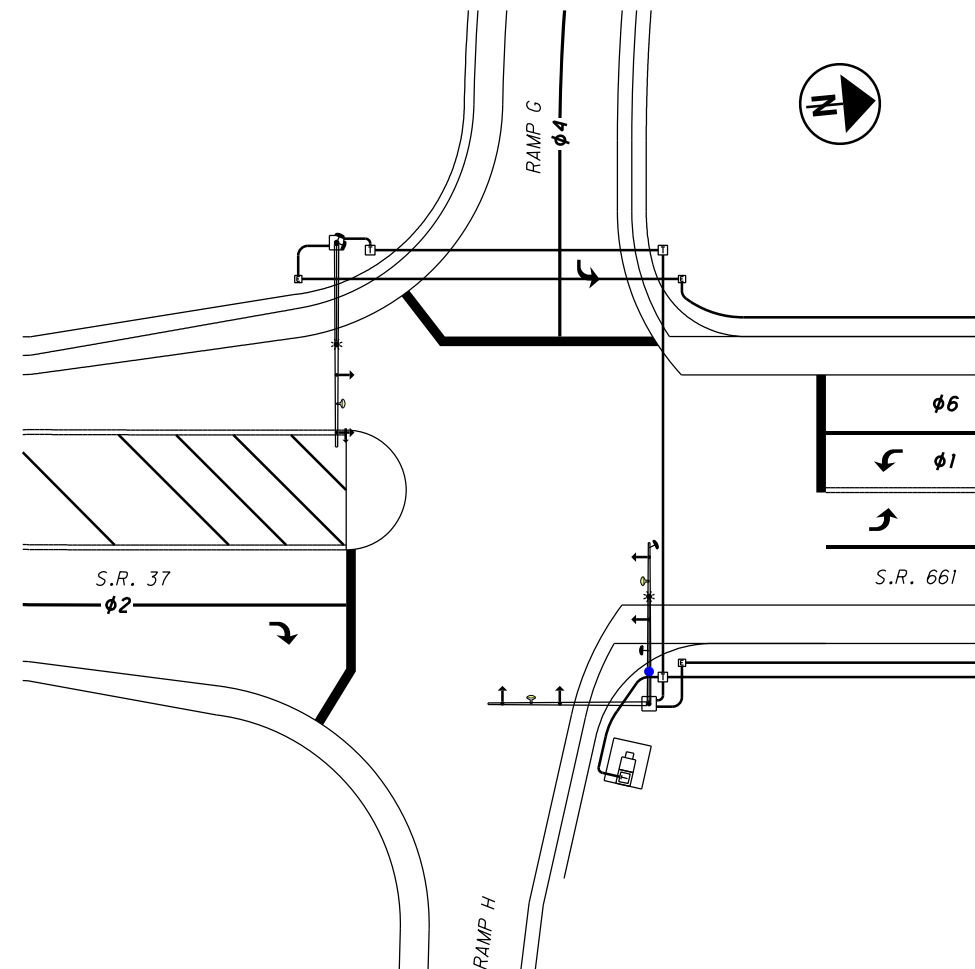
INTERSECTION: S.R. 37 / S.R. 661 / RAMP G / RAMP H								
MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION								
START UP	DUAL ENTRY: YES		PHASES: 2 & 6					
	REST IN RED:		RING 1		RING 2			
START IN:	ALL RED	OVERLAP		A	B	C	D	
TIME FOR FLASH OR ALL RED:	9, 6							
FIRST PHASE(S):	2 & 6							
COLOR DISPLAYED:	YELLOW							
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SB LT	NB		EB		SB		
MINIMUM GREEN (INITIAL) (SEC.)	7	10		10		10		
ADDED INITIAL (SEC./ACTUATION)								
MAXIMUM INITIAL (SEC.)								
PASSAGE TIME (PRESET GAP) (SEC.)	3	3		3		3		
TIME BEFORE REDUCTION (SEC.)								
MINIMUM GAP (SEC.)								
TIME TO REDUCE (SEC.)								
MAXIMUM GREEN I (SEC.)	30	60		40		60		
MAXIMUM GREEN II (SEC.)								
YELLOW CHANGE (SEC.)	3.7	5.6		4.4		5.6		
ALL RED CLEARANCE (SEC.)	1.9	1		1		1		
WALK (SEC.)								
PEDESTRIAN CLEARANCE (SEC.)								
RECALL	MAXIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	
	MINIMUM (ON/OFF)	OFF	ON	OFF	OFF	ON	OFF	
	PEDESTRIAN (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	
MEMORY (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	

**RADAR DETECTION TABLE**

DETECTOR REFERENCE	ASSOCIATED PHASE	DETECTOR TYPE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)
RD-1	RZ-4A RZ-4B	STOP BAR	8	
RD-2	RZ-4C	DILEMMA		2.5-6.5
RD-3	RZ-1	STOP BAR		
RD-4	RZ-2	DILEMMA		2.5-6.5



**PHASING DIAGRAM**



CALCULATED  
BRH  
CHECKED  
JSL

**TRAFFIC SIGNAL DETAILS**  
**S.R. 37 / S.R. 661 / RAMP G**

**LIC-37 / 661-**  
**16.59 / 0.00**

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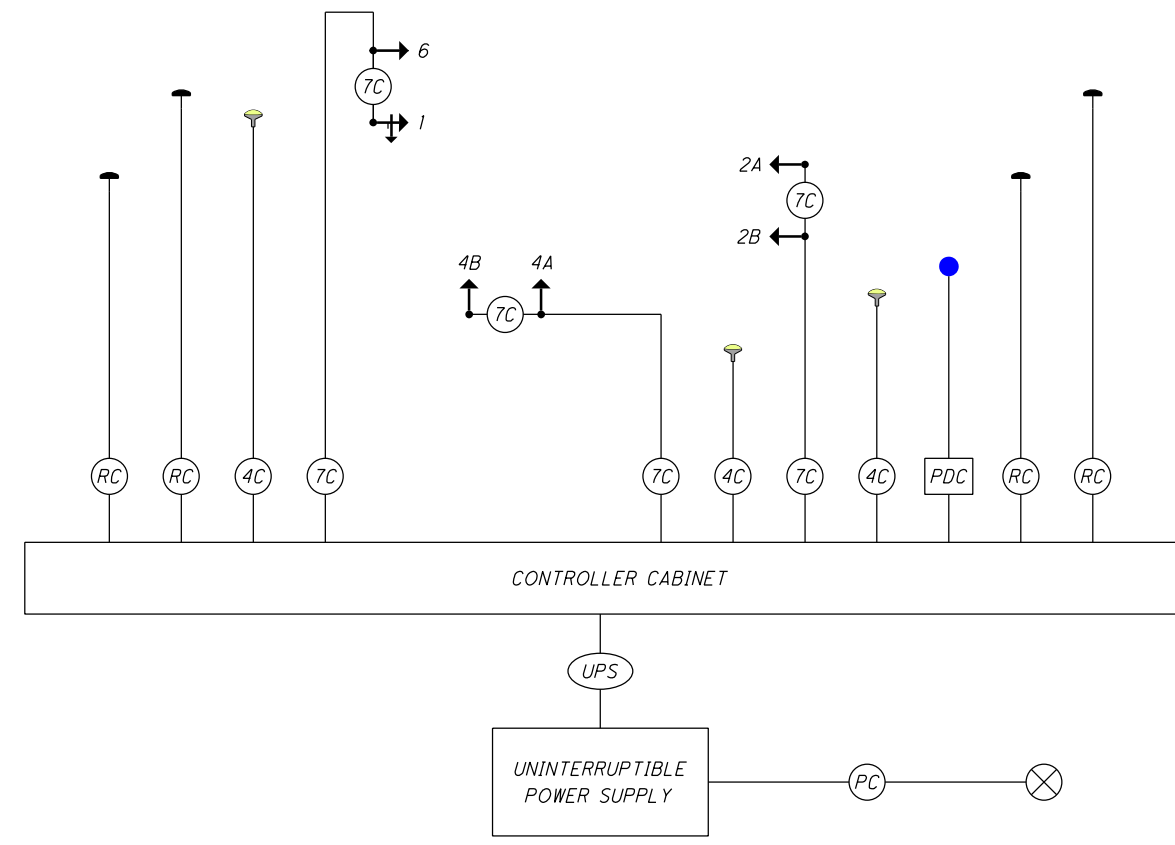
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**WIRING DIAGRAM LEGEND**

- ⊗ POWER SERVICE PEDESTAL
- Ⓞ(PC) POWER CABLE, 3 CONDUCTOR, NO. 4 AWG
- Ⓞ(UPS) UNINTERRUPTIBLE POWER SUPPLY CABLE
- Ⓞ(7C) SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- Ⓞ(4C) SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG
- Ⓞ(PDC) PREEMPTION DETECTOR CABLE
- Ⓞ(RC) RADAR DETECTOR CABLE
- ↑ RADAR DETECTOR UNIT
- 💡 LED PREEMPTION CONFIRMATION LIGHT
- 3-SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- ↕ 5-SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- GPS PREEMPTION RECEIVING UNIT

**FIELD WIRING HOOK-UP TABLE**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	φ1 R	R
	Y	φ1 Y	
	G	φ1 G	
	<---Y---	φ1 Y	
2A (NB)	R	φ2 R	R
	Y	φ2 Y	
	G	φ2 G	
2B (NB)	R	φ2 R	R
	Y	φ2 Y	
	G	φ2 G	
4A (EB)	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
4B (EB)	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
6 (SB)	R	φ6 R	R
	Y	φ6 Y	
	G	φ6 G	



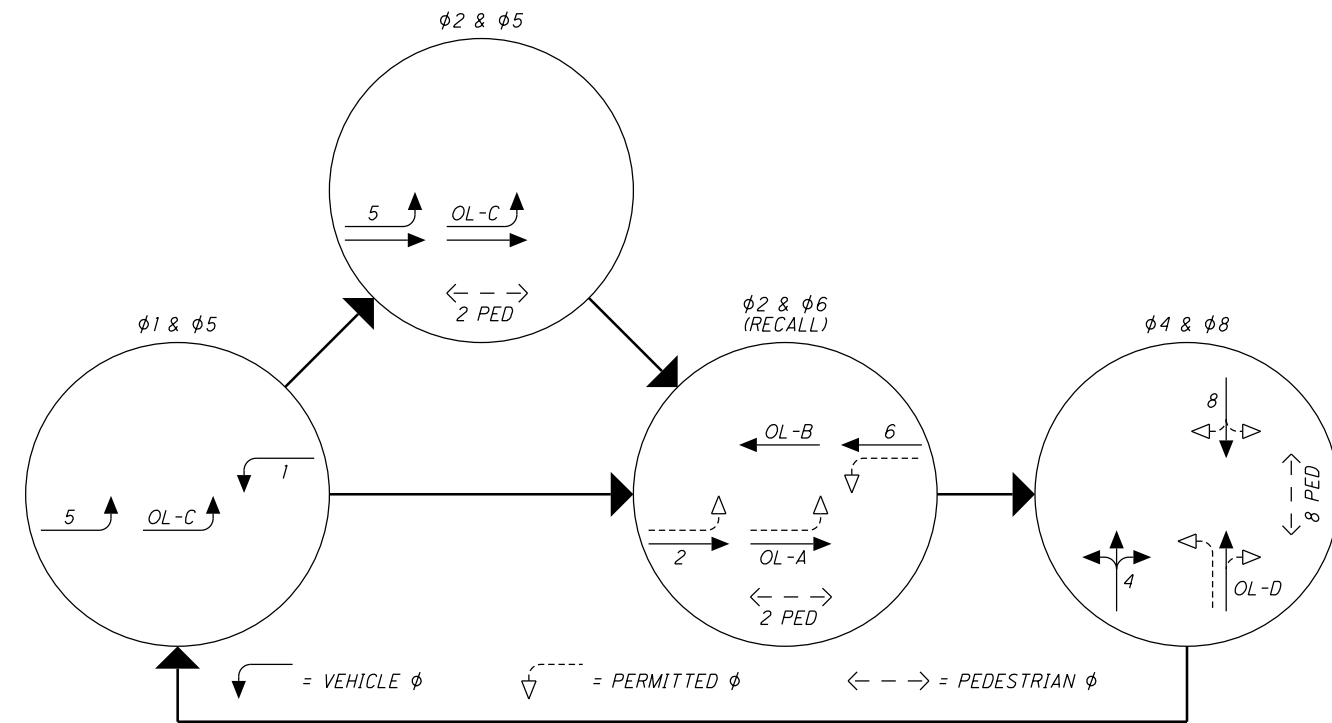
**PHASING DIAGRAM**

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**SIGNAL TIMING TABLE**

INTERSECTION: S.R. 661 / RAMP F + S.R. 661 / RIVER RD. / WEAVER DR.								
MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION								
START UP	DUAL ENTRY: YES	PHASES:				1,2,4,5,6,8		
		REST IN RED:	RING 1	NO	RING 2	YES		
START IN:	ALL RED	OVERLAP		A	B	C	D	
TIME FOR FLASH OR ALL RED:	9, 6	PHASES		2	6	5	8	
FIRST PHASE(S):	2 & 6							
COLOR DISPLAYED:	YELLOW							
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SB LT	NB		WB	NB LT	SB		EB
MINIMUM GREEN (INITIAL) (SEC.)	7	10		10	7	10		10
ADDED INITIAL *(SEC./ACTUATION)								
MAXIMUM INITIAL (SEC.)								
PASSAGE TIME (PRESET GAP) (SEC.)	3	3		3	3	3		3
TIME BEFORE REDUCTION (SEC.)								
MINIMUM GAP (SEC.)								
TIME TO REDUCE (SEC.)								
MAXIMUM GREEN I (SEC.)	30	60		40	30	60		40
MAXIMUM GREEN II (SEC.)								
YELLOW CHANGE (SEC.)	3	5.6		4.6	4.6	5.6		3.9
ALL RED CLEARANCE (SEC.)	1.9	1		1	1.7	1		1
WALK (SEC.)		10						8
PEDESTRIAN CLEARANCE (SEC.)		23						9
RECALL	MAXIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	MINIMUM (ON/OFF)	OFF	ON	OFF	OFF	ON	OFF	OFF
	PEDESTRIAN (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF



**PHASING DIAGRAM**

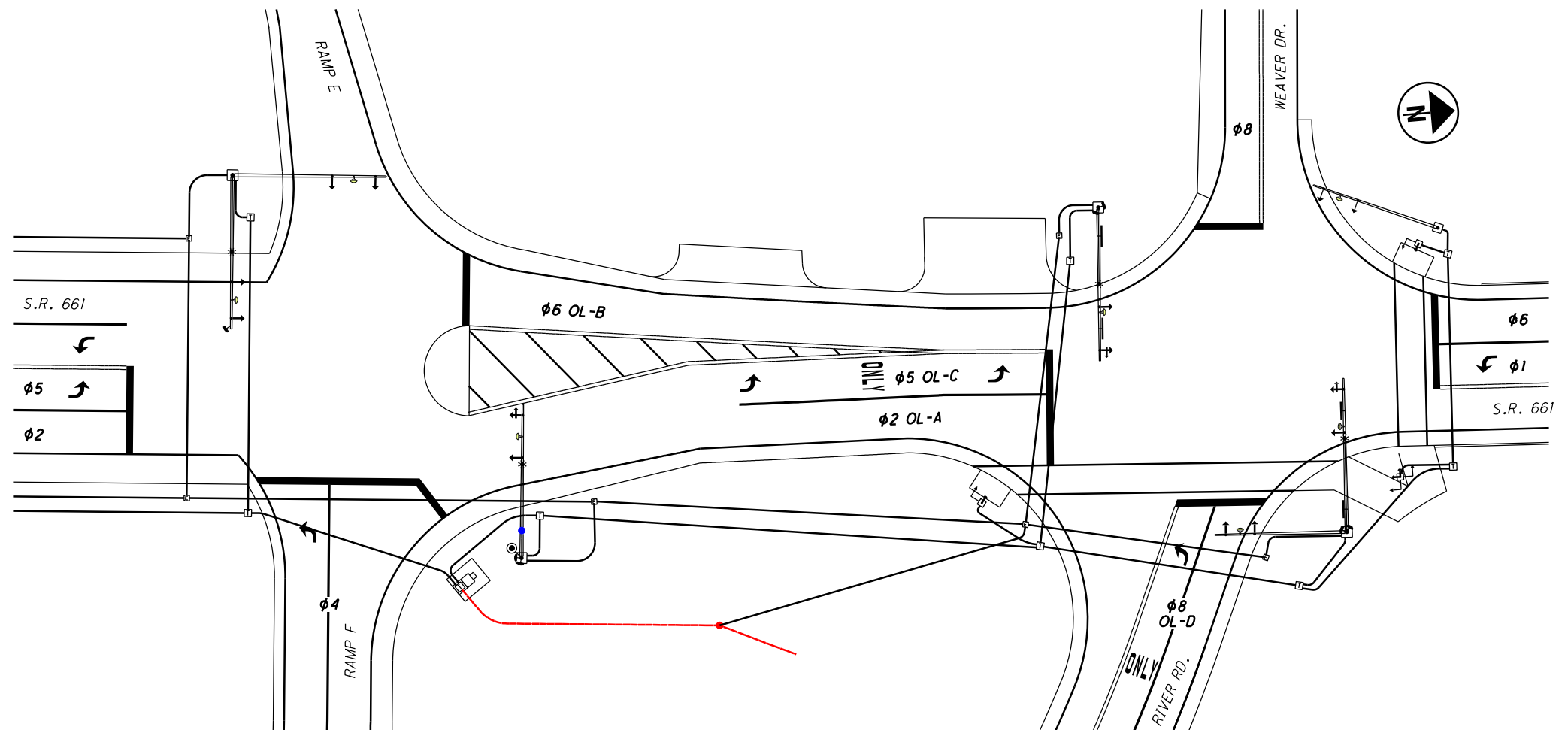
**NOTES:**

OVERLAP A RUNS WITH PHASE 2  
 OVERLAP B RUNS WITH PHASE 6  
 OVERLAP C RUNS WITH PHASE 5  
 OVERLAP D RUNS WITH PHASE 8

OVERLAP C DETECTION CALLS PHASE 5  
 OVERLAP D DETECTION CALLS PHASE 8  
 OMIT CALLS ON PHASE 5 WHEN PHASE 6 IS ACTIVE  
 SERVE PHASE 4 AFTER PHASE 6 HAS RAN

**RADAR DETECTION TABLE**

DETECTOR REFERENCE	ASSOCIATED PHASE	DETECTOR TYPE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)
RD-5	RZ-5A	STOP BAR		
RD-6	RZ-4A	STOP BAR	8	
	RZ-4B	STOP BAR		
RD-7	RZ-4C	DILEMMA		2.5-6.5
RD-8	RZ-5B	STOP BAR		
RD-9	RZ-8A	STOP BAR	8	
RD-10	RZ-1	STOP BAR		
RD-11	RZ-8B	STOP BAR		
	RZ-8C	STOP BAR	8	



CALCULATED  
BRH  
CHECKED  
JSL

TRAFFIC SIGNAL DETAILS  
 S.R. 661 / RAMP F & S.R. 661 / RIVER RD. / WEAVER DR.

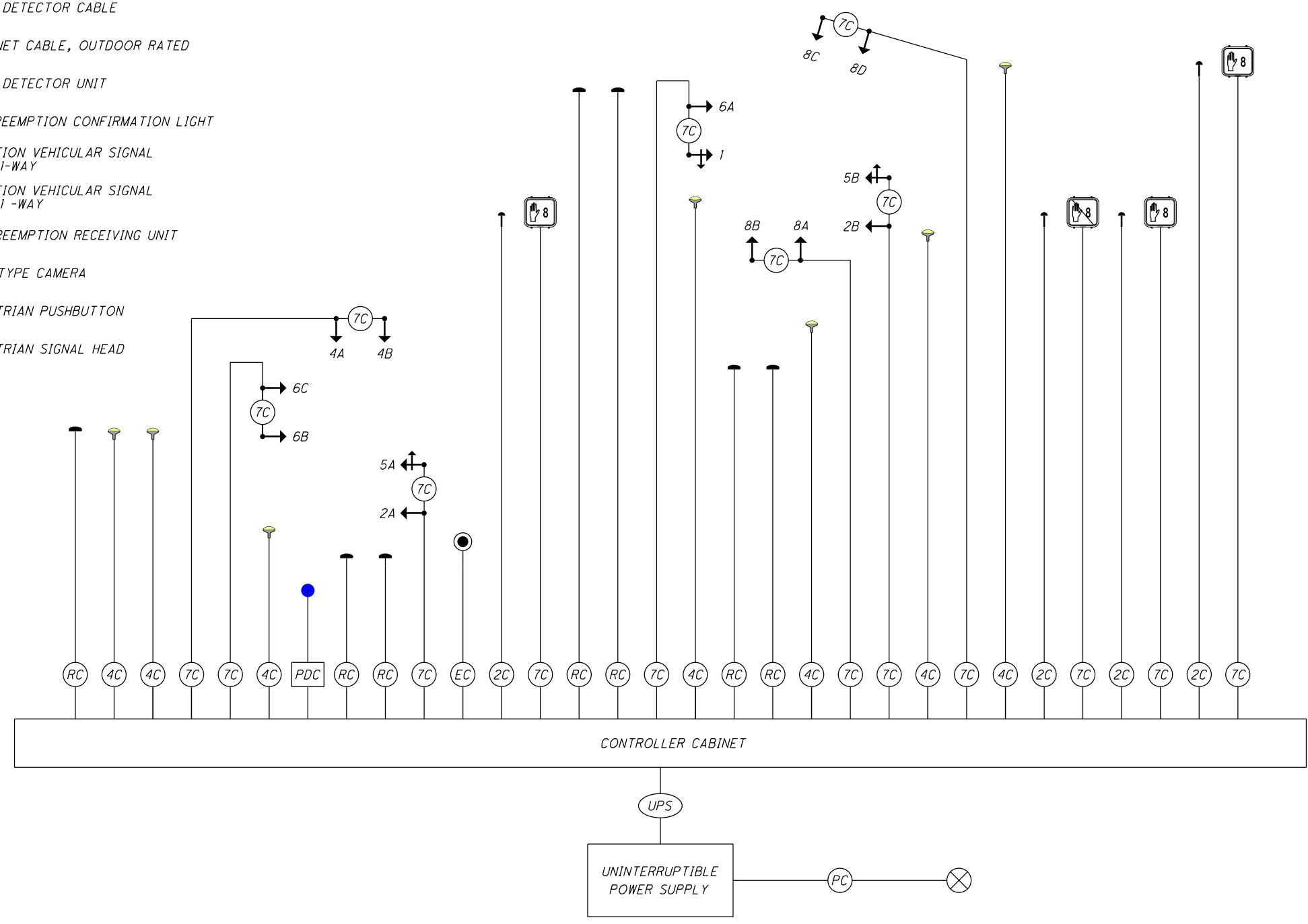
LIC-37 / 661-  
 16.59 / 0.00

257  
 341

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**WIRING DIAGRAM LEGEND**

- POWER SERVICE PEDESTAL
- POWER CABLE, 3 CONDUCTOR, NO. 4 AWG
- UNINTERRUPTIBLE POWER SUPPLY CABLE
- SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG
- SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
- PREEMPTION DETECTOR CABLE
- RADAR DETECTOR CABLE
- ETHERNET CABLE, OUTDOOR RATED
- RADAR DETECTOR UNIT
- LED PREEMPTION CONFIRMATION LIGHT
- 3-SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 5-SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- GPS PREEMPTION RECEIVING UNIT
- DOME-TYPE CAMERA
- PEDESTRIAN PUSHBUTTON
- PEDESTRIAN SIGNAL HEAD



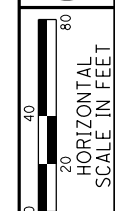
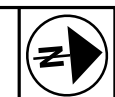
**PHASING DIAGRAM**

**FIELD WIRING HOOK-UP TABLE**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	φ1 R	R
	Y	φ1 Y	
	G	φ1 G	
	<--Y---	φ1 Y	
2A (NB)	R	φ2 R	R
	Y	φ2 Y	
	G	φ2 G	
2B (NB)	R	φ2 R	R
	Y	φ2 Y	
4A (WB)	R	φ4 R	R
	Y	φ4 Y	
4B (WB)	R	φ4 R	R
	Y	φ4 Y	
5A (NB LT)	R	φ5 R	R
	Y	φ5 Y	
	G	φ5 G	
	<--Y---	φ5 Y	
5B (NB LT)	R	φ5 R	R
	Y	φ5 Y	
	G	φ5 G	
	<--Y---	φ5 Y	
6A (SB)	R	φ6 R	R
	Y	φ6 Y	
	G	φ6 G	
6B (SB)	R	φ6 R	R
	Y	φ6 Y	
6C (SB)	R	φ6 R	R
	Y	φ6 Y	
8A (EB)	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
8B (EB)	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
8C (WB)	R	φ8 R	R
	Y	φ8 Y	
8D (WB)	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
PEDESTRIAN MOVEMENTS			
2 PED	W	LS 2P G	OUT
	DW	LS 2P R	
8 PED	W	LS 8P G	OUT
	DW	LS 8P R	
OVERLAPS			
OL-A	R	LS 9/φ2 R	R
	Y	LS 9/φ2 Y	
	G	LS 9/φ2 G	
OL-B	R	LS 10/φ2 R	R
	Y	LS 10/φ2 Y	
	G	LS 10/φ2 G	
OL-C	R	LS 11/φ5 R	R
	Y	LS 11/φ5 Y	
	G	LS 11/φ5 G	
	<--Y---	LS 11/φ5 Y	
OL-D	R	LS 12/φ8 R	R
	Y	LS 12/φ8 Y	
	G	LS 12/φ8 G	
	<--G---	LS 11/φ5 G	

CALCULATED BRH CHECKED JSL  
**TRAFFIC SIGNAL DETAILS**  
**S.R. 661 / RAMP F & S.R. 661 / RIVER RD. / WEAVER DR.**  
**LIC-37 / 661-16.59 / 0.00**  
 258  
 341

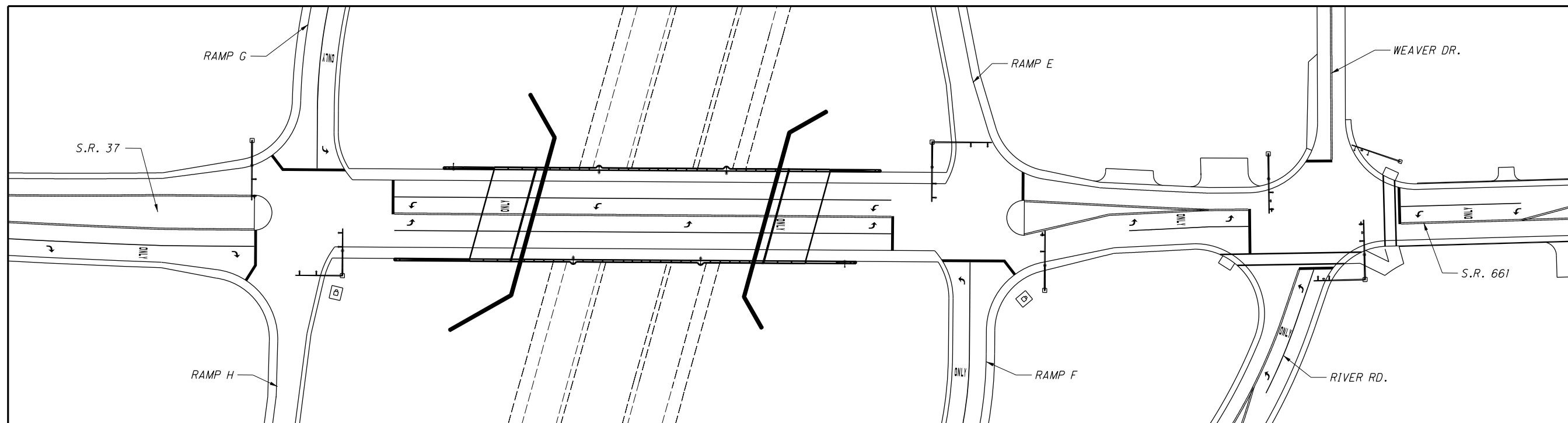
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CALCULATED  
BRH  
CHECKED  
JSL

**TRAFFIC SIGNAL DETAILS**  
**SIGNAL TIMING COORDINATION PLAN**

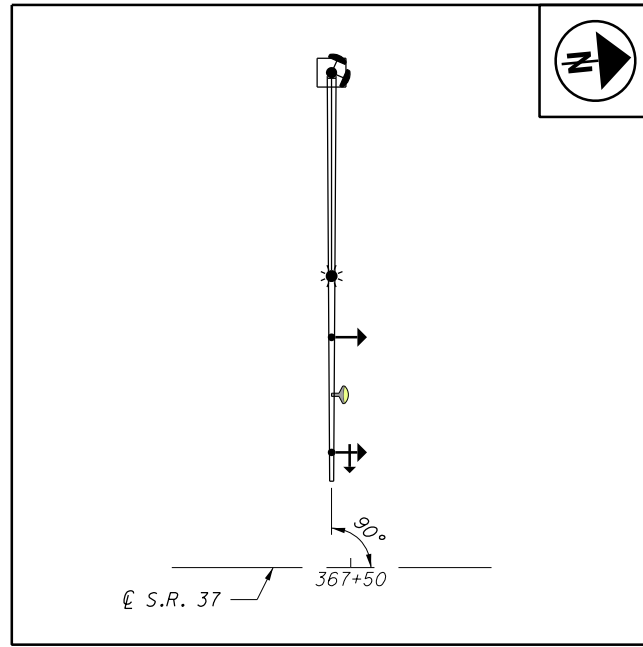
**LIC-37 / 661-**  
**16.59 / 0.00**



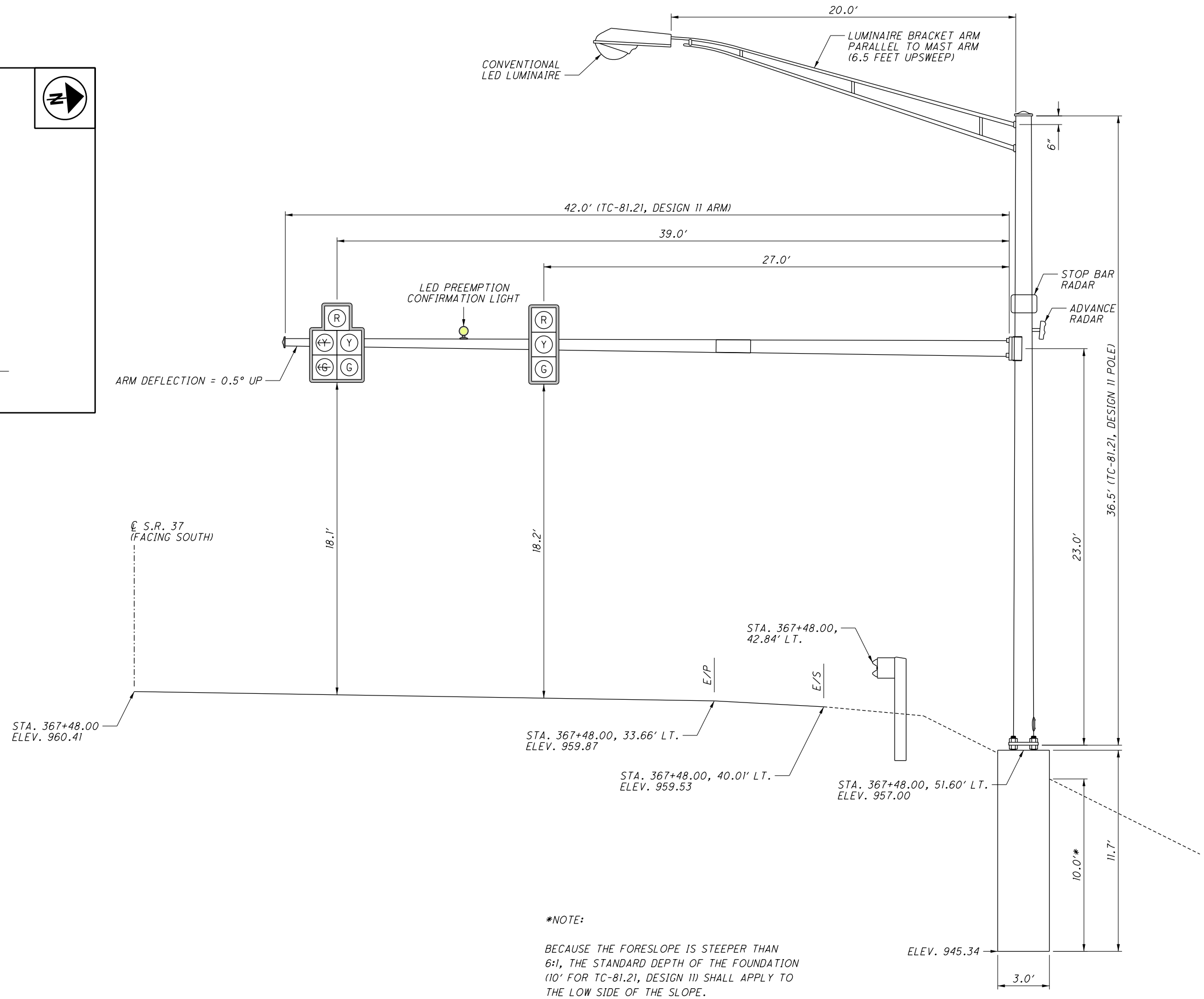
**SIGNAL TIMING COORDINATION PLAN**

COORDINATION TIMING PLANS										
DAY(S) OF WEEK	PLAN NAME	HOURS	PLAN NO. OR CYCLE/SPLIT/OFFSET					CYCLE LENGTH (SEC.)		
MON-FRI	FLASH	0000-0500	0/0/1							
MON-FRI	FREE	0500-0600	5/5/0							
MON-FRI	AM	0600-0900	1/1/1					80		
MON-FRI	FREE	0900-1500	5/5/0							
MON-FRI	PM	1500-1800	3/3/3					100		
MON-FRI	FREE	1800-2300	5/5/0							
MON-FRI	FLASH	2300-2400	0/0/1							
SAT-SUN	FLASH	0000-0500	0/0/1							
SAT-SUN	FREE	0500-2300	5/5/0							
SAT-SUN	FLASH	2300-2400	0/0/1							
<b>S.R. 37 / S.R. 661 / RAMP G</b>										
PHASE	1	2	3	4	5	6	7	8	OFFSET 1 (SEC.)	OFFSET 2 (SEC.)
DIRECTION	SB LT	NB		EB		SB				
PLAN NO. OR C/S/O	SPLITS (G+Y+AR) IN SECONDS									
1/1/1	15	49		16		64			51	
3/3/3	21	52		27		73			48	
<b>S.R. 661 / RAMP F + S.R. 661 / RIVER RD. / WEAVER DR.</b>										
PHASE	1	2	3	4	5	6	7	8	OFFSET 1 (SEC.)	OFFSET 2 (SEC.)
DIRECTION	SB LT	NB		WB	NB LT	SB		EB		
PLAN NO. OR C/S/O	SPLITS (G+Y+AR) IN SECONDS									
1/1/1	20	42		18	20	42		18	0	
3/3/3	16	58		26	16	58		26	0	

P-1  
TC-81.21, DESIGN 11



PLAN VIEW DETAIL  
(NOT TO SCALE)



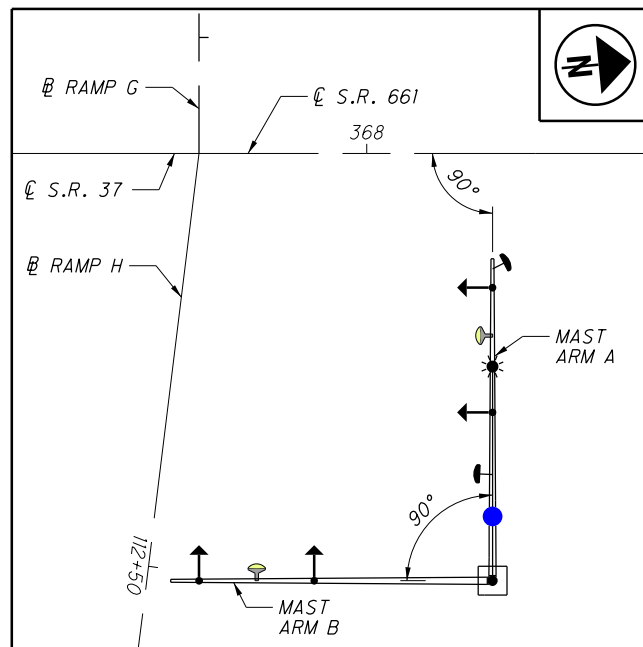
**\*NOTE:**

BECAUSE THE FORESLOPE IS STEEPER THAN 6:1, THE STANDARD DEPTH OF THE FOUNDATION (10' FOR TC-81.21, DESIGN 11) SHALL APPLY TO THE LOW SIDE OF THE SLOPE.

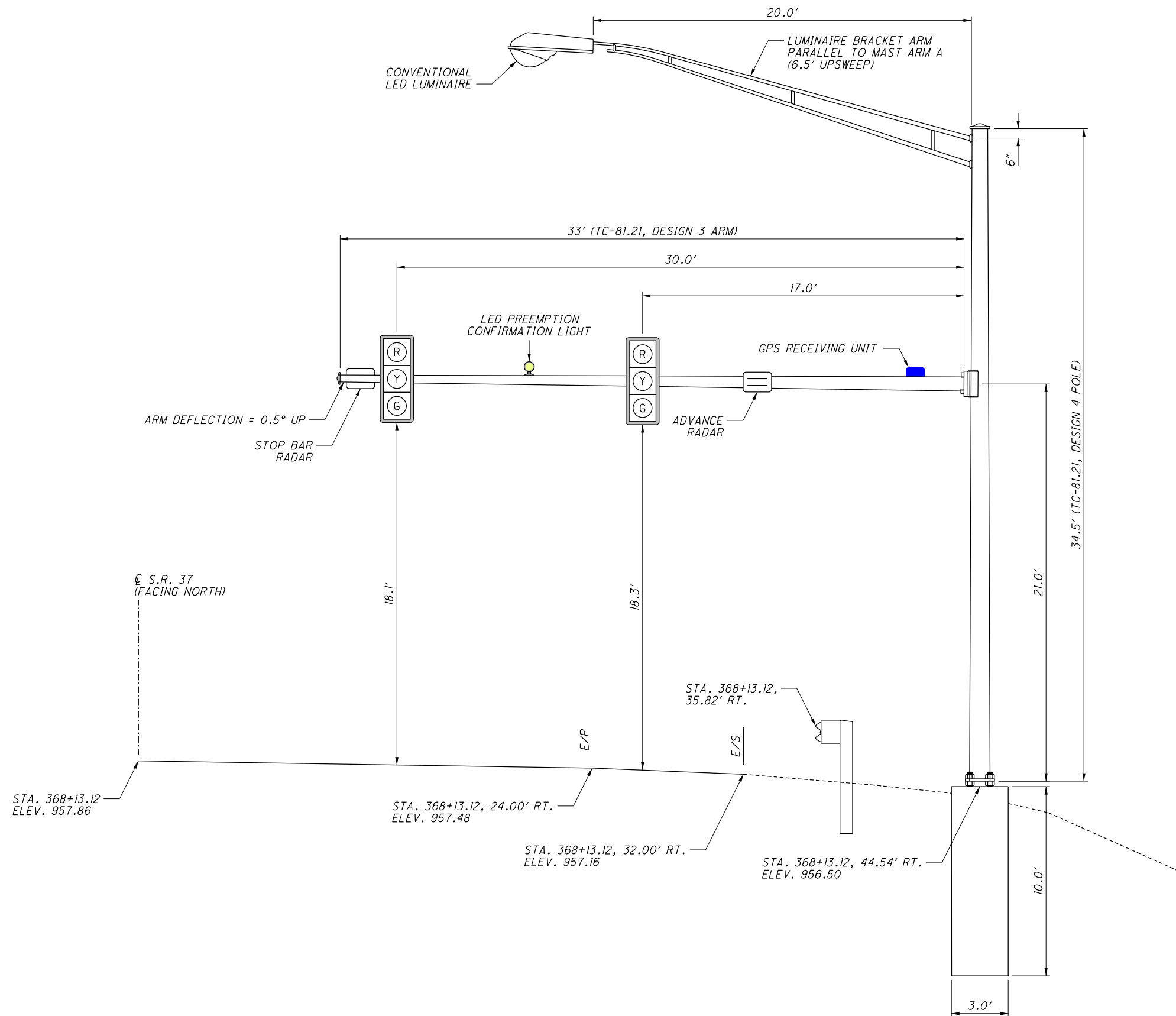
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CHECKED	JSL

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P-2, MAST ARM A  
 TC-81.21, DESIGN 4 POLE  
 TC-81.21, DESIGN 3 MAST ARM



PLAN VIEW DETAIL  
 (NOT TO SCALE)



CALCULATED  
 BRH  
 CHECKED  
 JSL

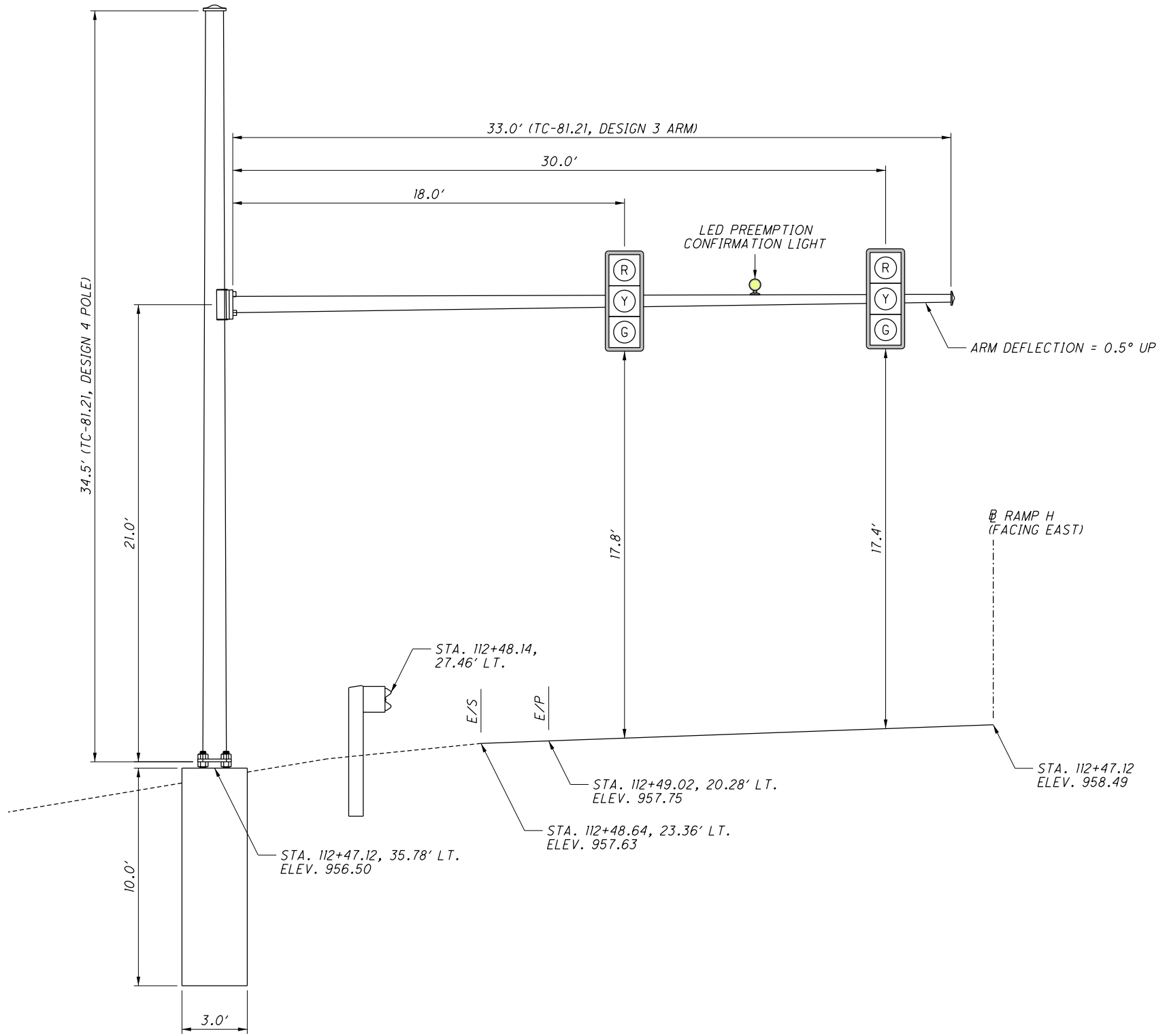
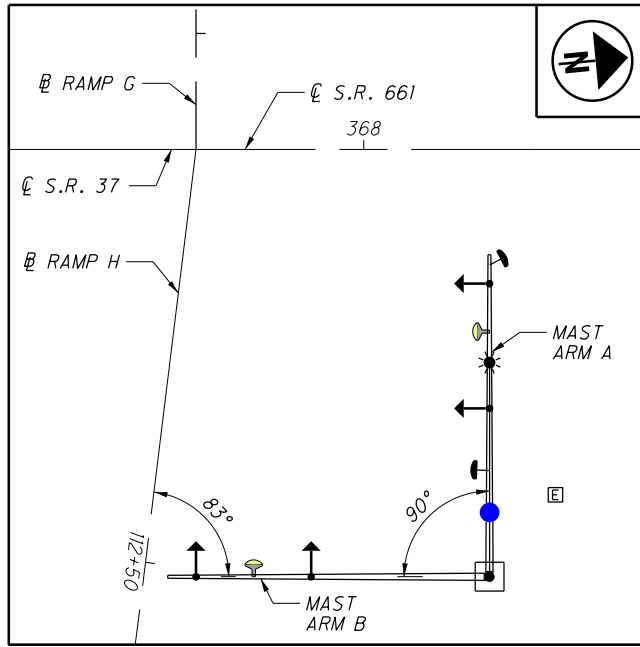
SIGNAL SUPPORT ELEVATION VIEW  
 P-2, MAST ARM A

LIC-37 / 661-  
 16.59 / 0.00

261  
 341

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P-2, MAST ARM B  
 TC-81.21, DESIGN 4 POLE  
 TC-81.21, DESIGN 3 MAST ARM



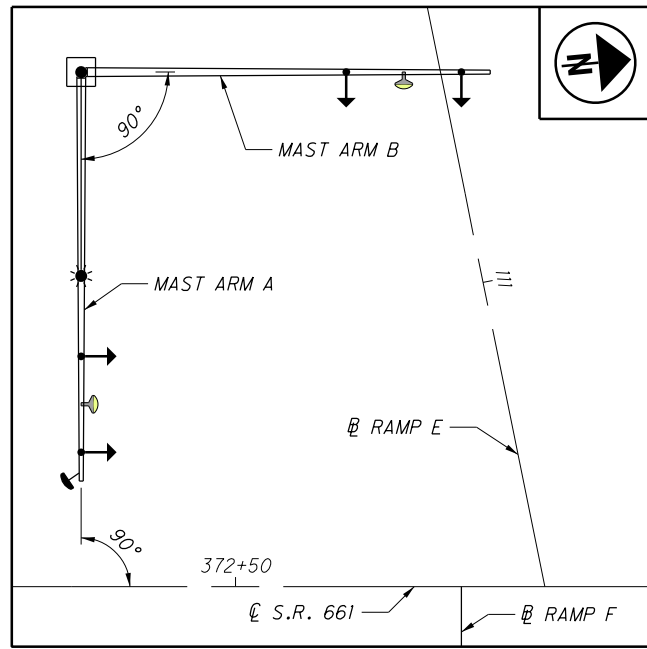
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CALCULATED  
 BRH  
 CHECKED  
 JSL

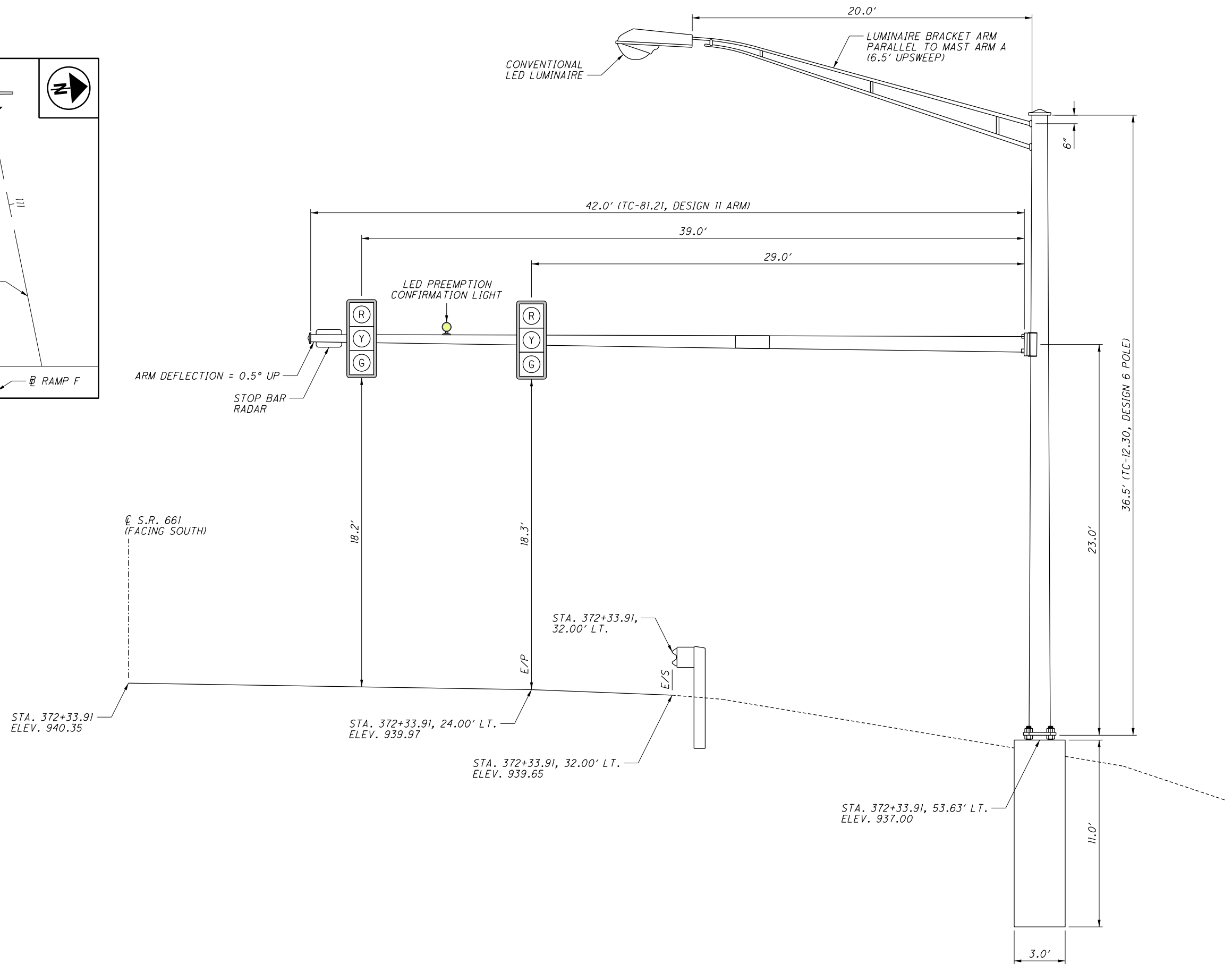
SIGNAL SUPPORT ELEVATION VIEW  
 P-2, MAST ARM B

LIC-37 / 661-  
 16.59 / 0.00

P-3, MAST ARM A  
 TC-12.30, DESIGN 6 POLE  
 TC-81.21, DESIGN 11 MAST ARM



PLAN VIEW DETAIL  
 (NOT TO SCALE)



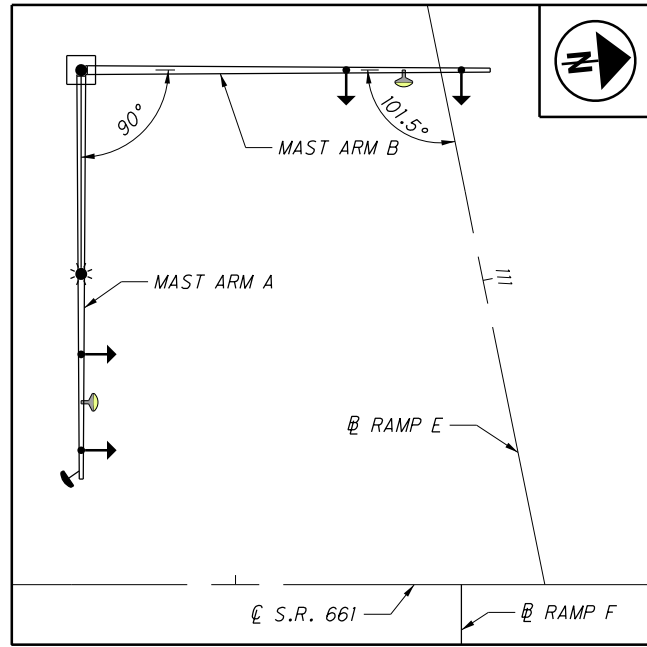
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 BRH  
 CHECKED  
 JSL

SIGNAL SUPPORT ELEVATION VIEW  
 P-3, MAST ARM A

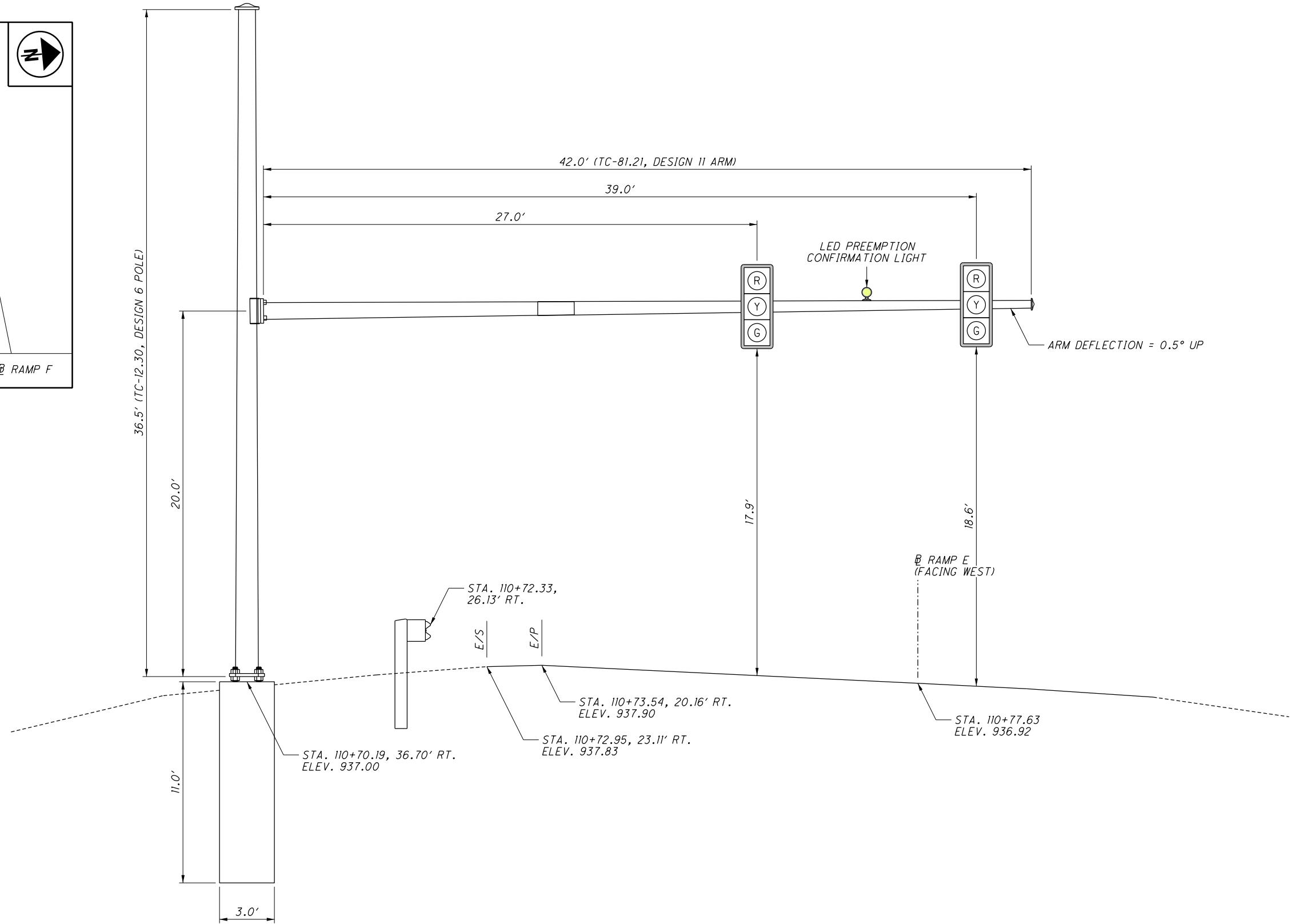
LIC-37 / 661-  
 16.59 / 0.00

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P-3, MAST ARM B  
 TC-12.30, DESIGN 6 POLE  
 TC-81.21, DESIGN 11 MAST ARM



PLAN VIEW DETAIL  
 (NOT TO SCALE)



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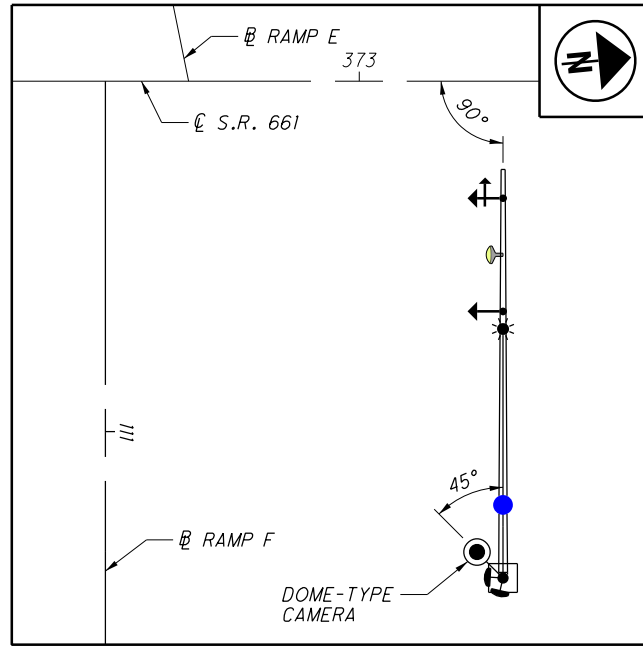
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CHECKED	JSL

SIGNAL SUPPORT ELEVATION VIEW  
 P-3, MAST ARM B

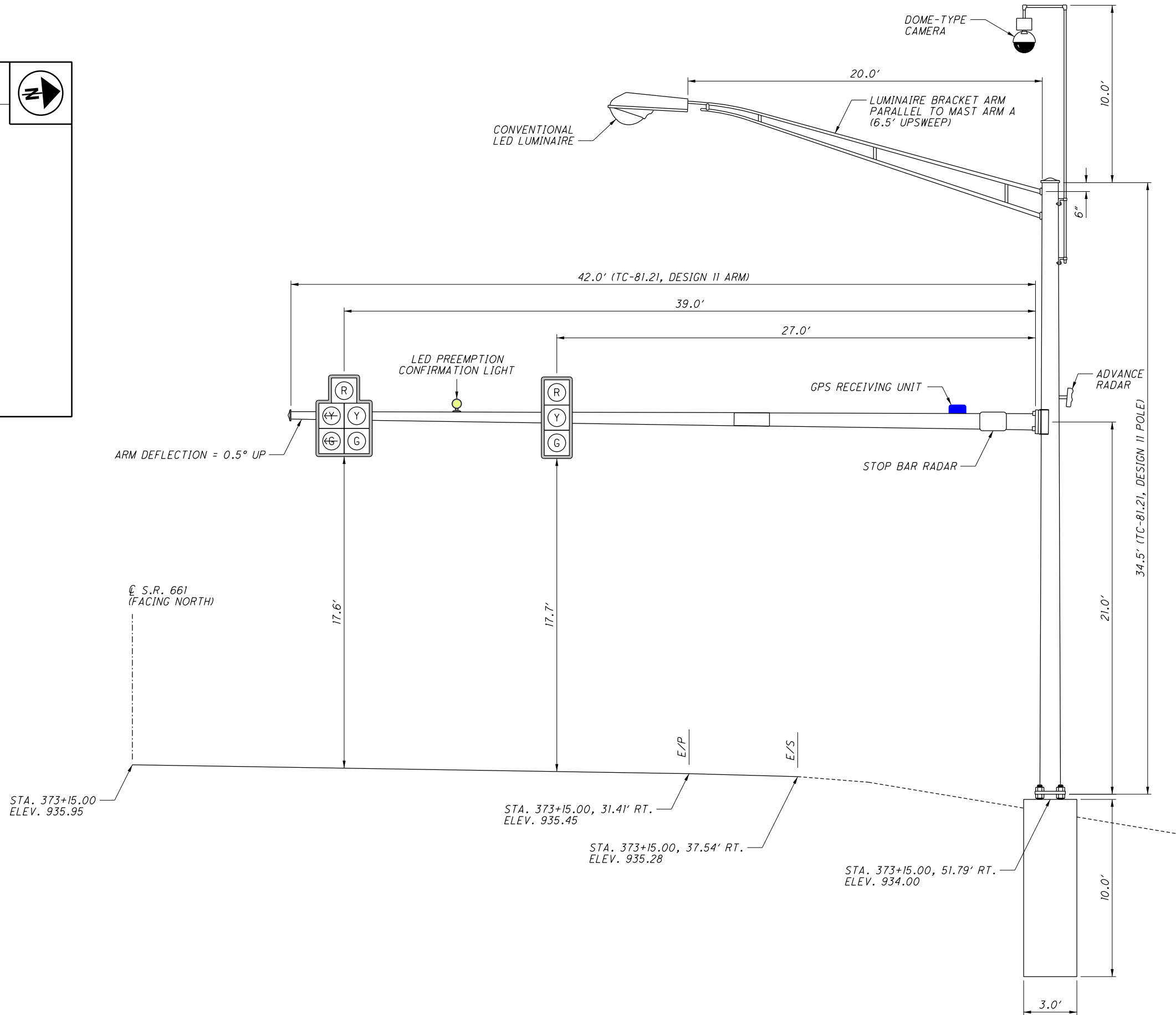
LIC-37 / 661-  
 16.59 / 0.00



P-4  
TC-81.21, DESIGN II



PLAN VIEW DETAIL  
(NOT TO SCALE)



SIGNAL SUPPORT ELEVATION VIEW

P-4

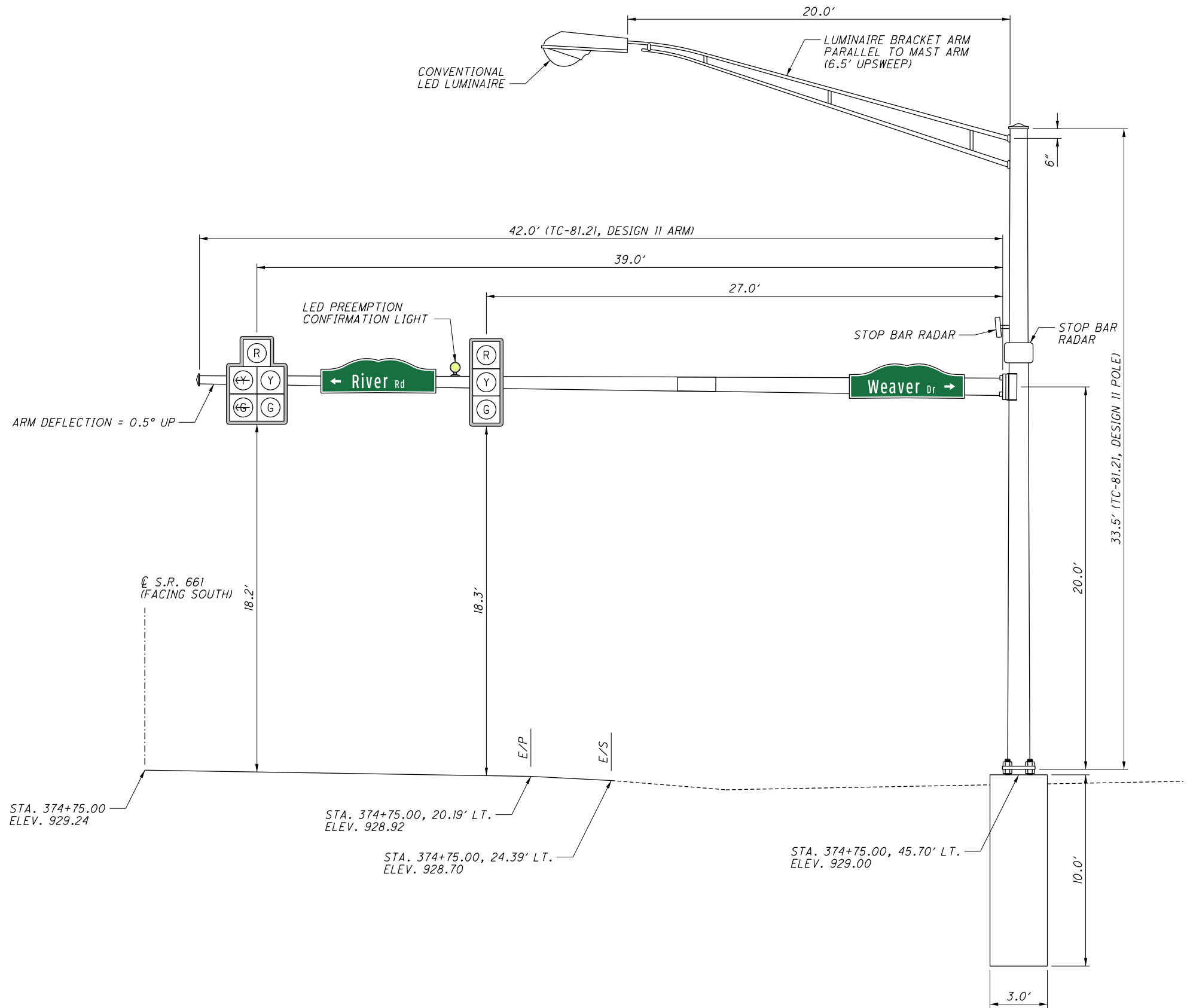
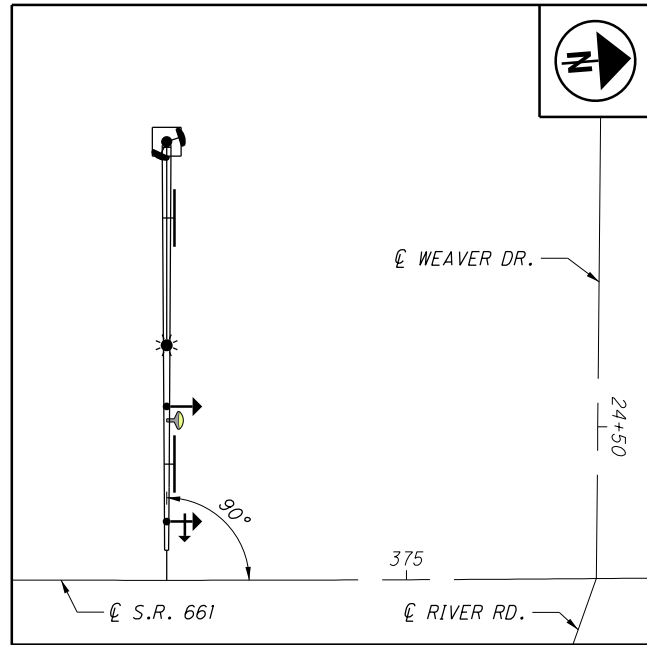
LIC-37 / 661-  
16.59 / 0.00

CALCULATED	BRH
CHECKED	JSL

265  
341

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P-5  
TC-81.21, DESIGN II



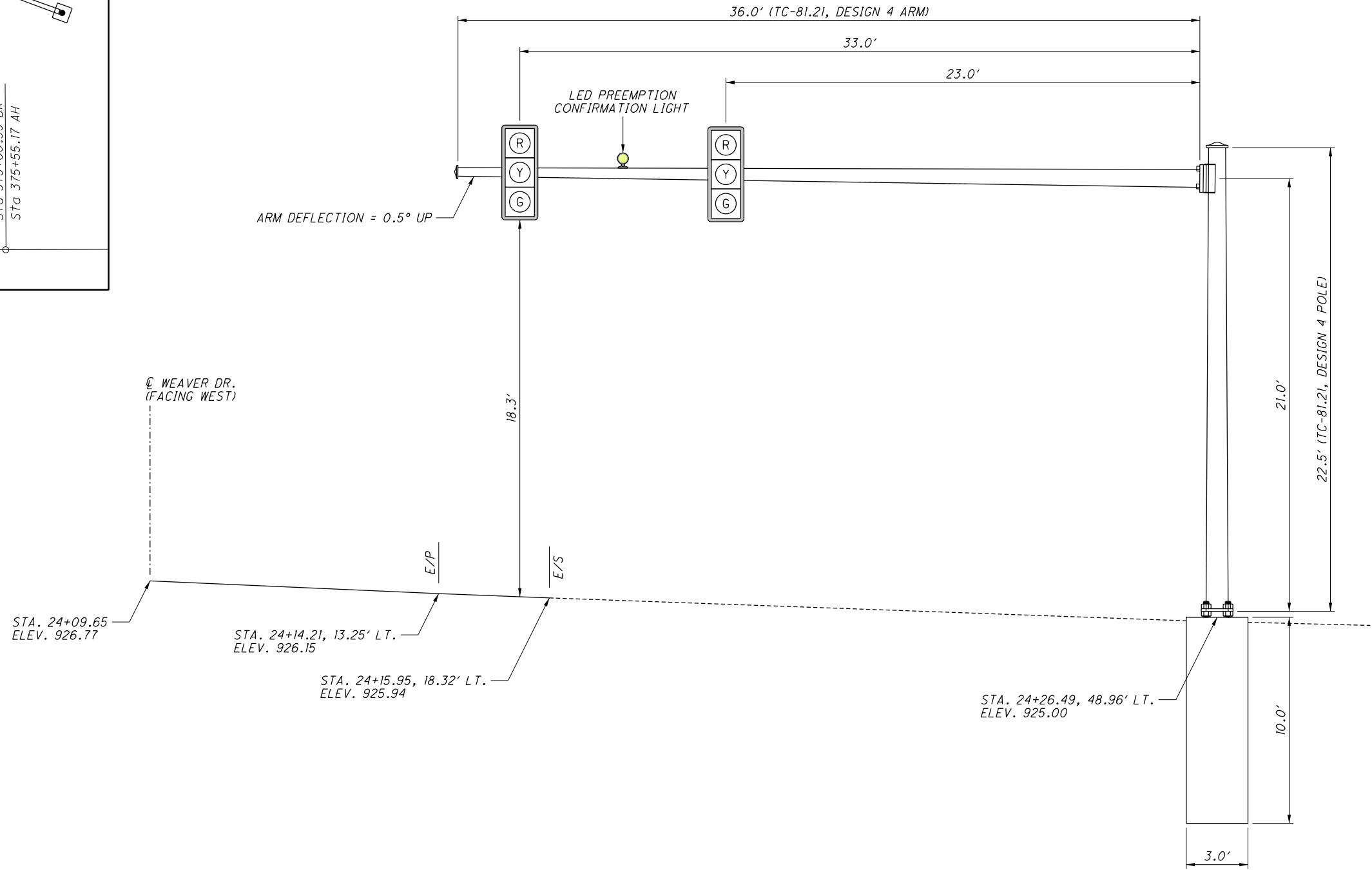
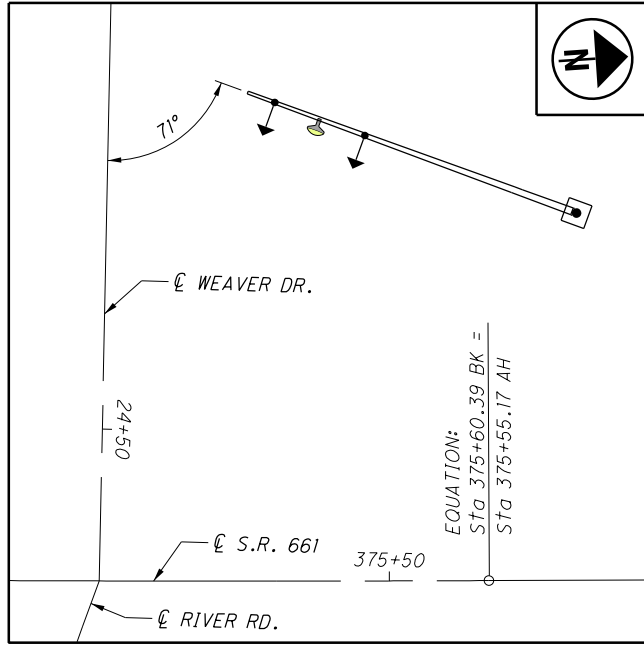
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BRH  
CHECKED  
JSL

SIGNAL SUPPORT ELEVATION VIEW  
P-5

LIC-37 / 661-  
16.59 / 0.00

266  
341

P-6  
TC-81.21, DESIGN 4



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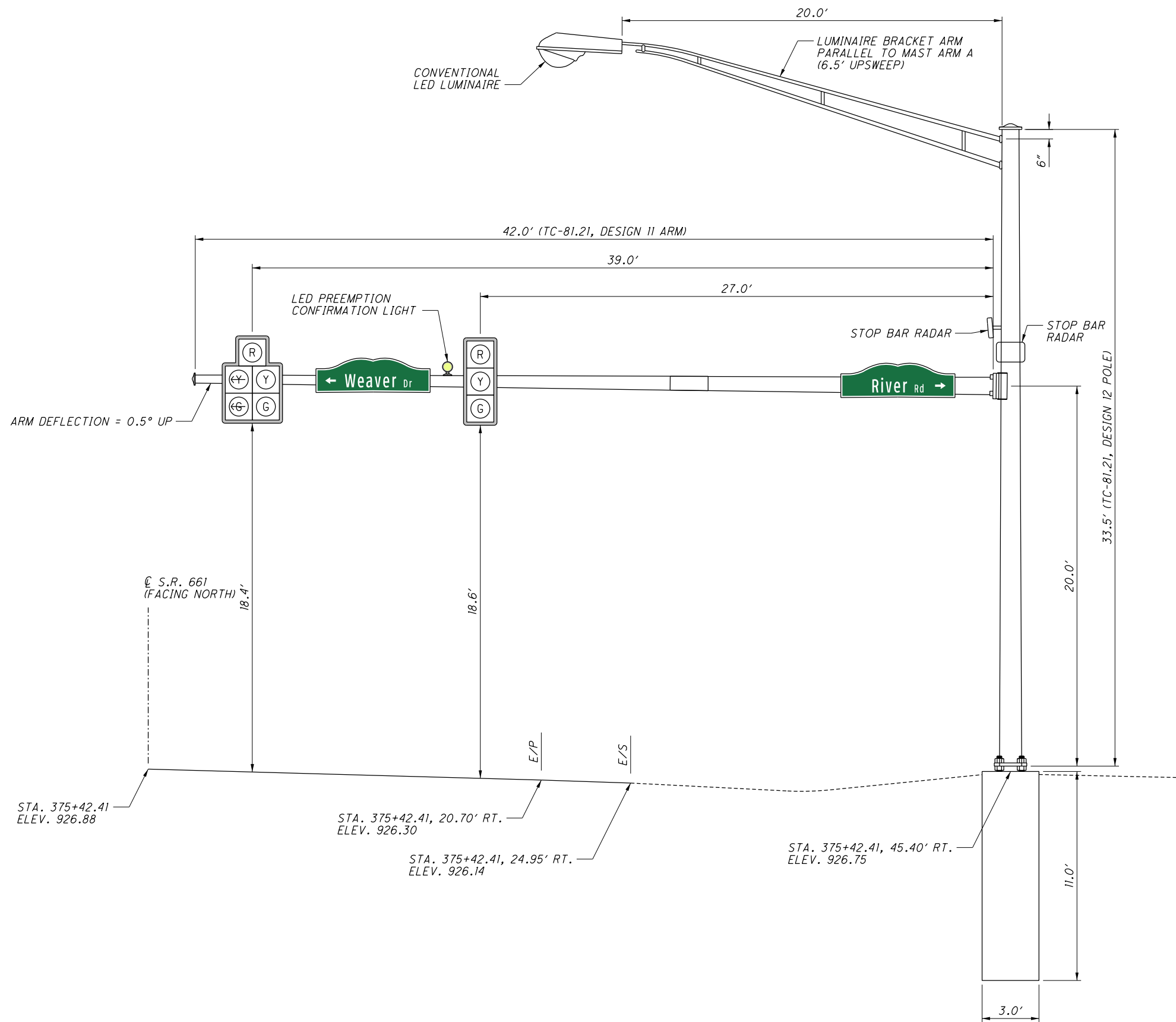
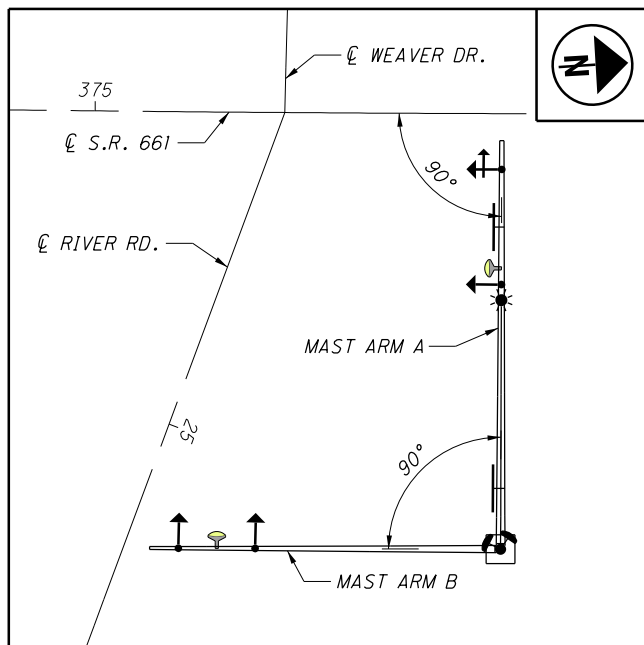
CALCULATED  
BRH  
CHECKED  
JSL

SIGNAL SUPPORT ELEVATION VIEW  
P-6

LIC-37 / 661-  
16.59 / 0.00

267  
341

P-7, MAST ARM A  
 TC-81.21, DESIGN 12 POLE  
 TC-81.21, DESIGN 11 MAST ARM



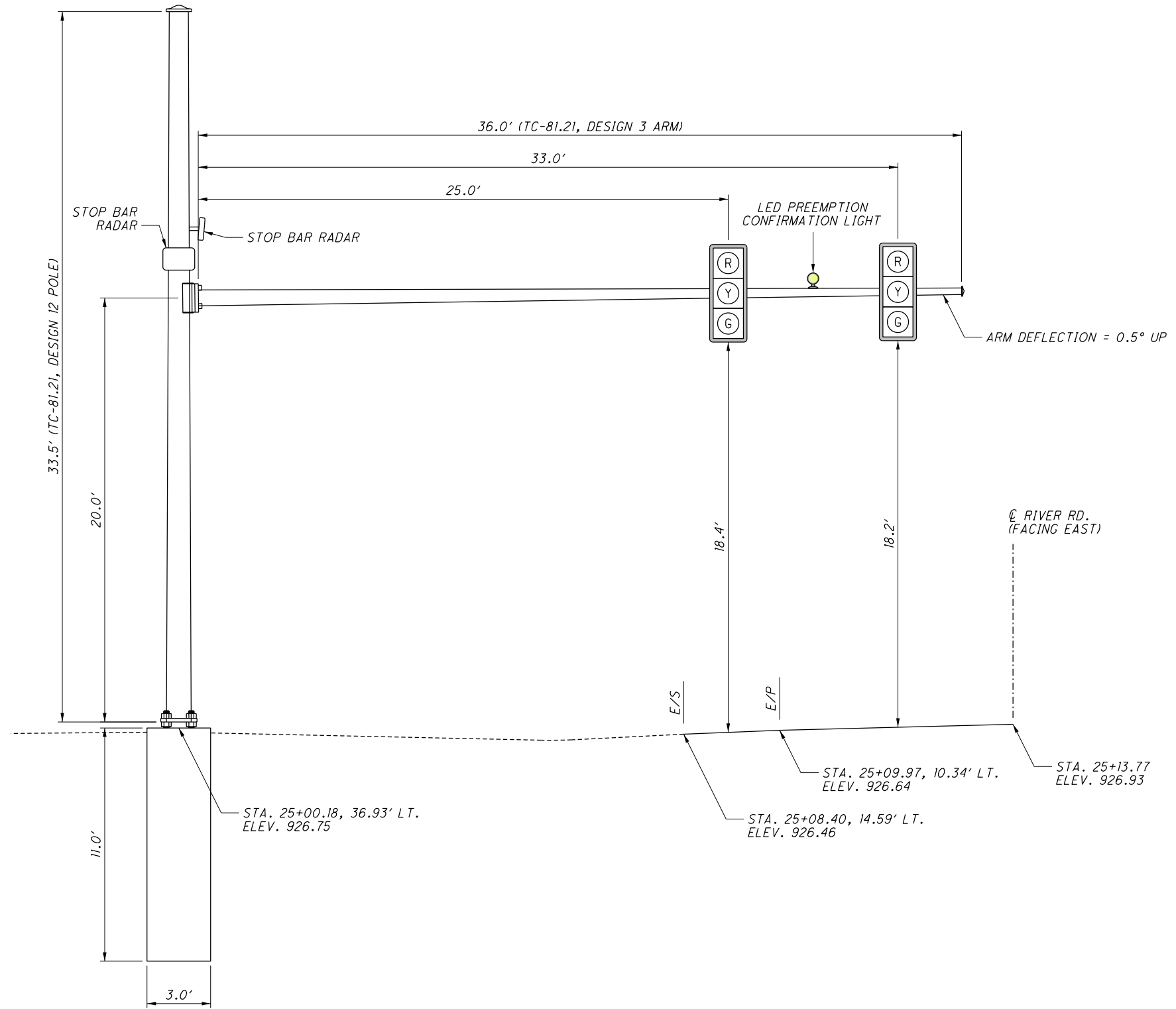
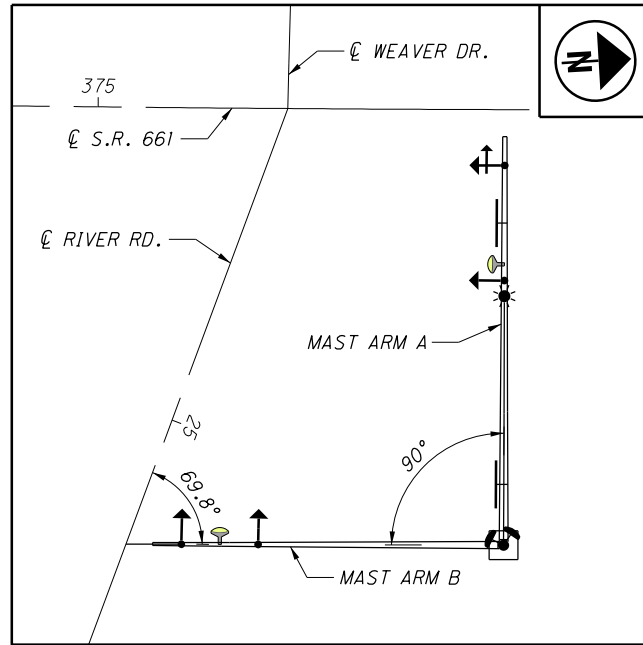
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 JSL

SIGNAL SUPPORT ELEVATION VIEW  
 P-7, MAST ARM A

LIC-37 / 661-  
 16.59 / 0.00

268  
 341

P-7, MAST ARM B  
 TC-81.21, DESIGN 12 POLE  
 TC-81.21, DESIGN 3 MAST ARM



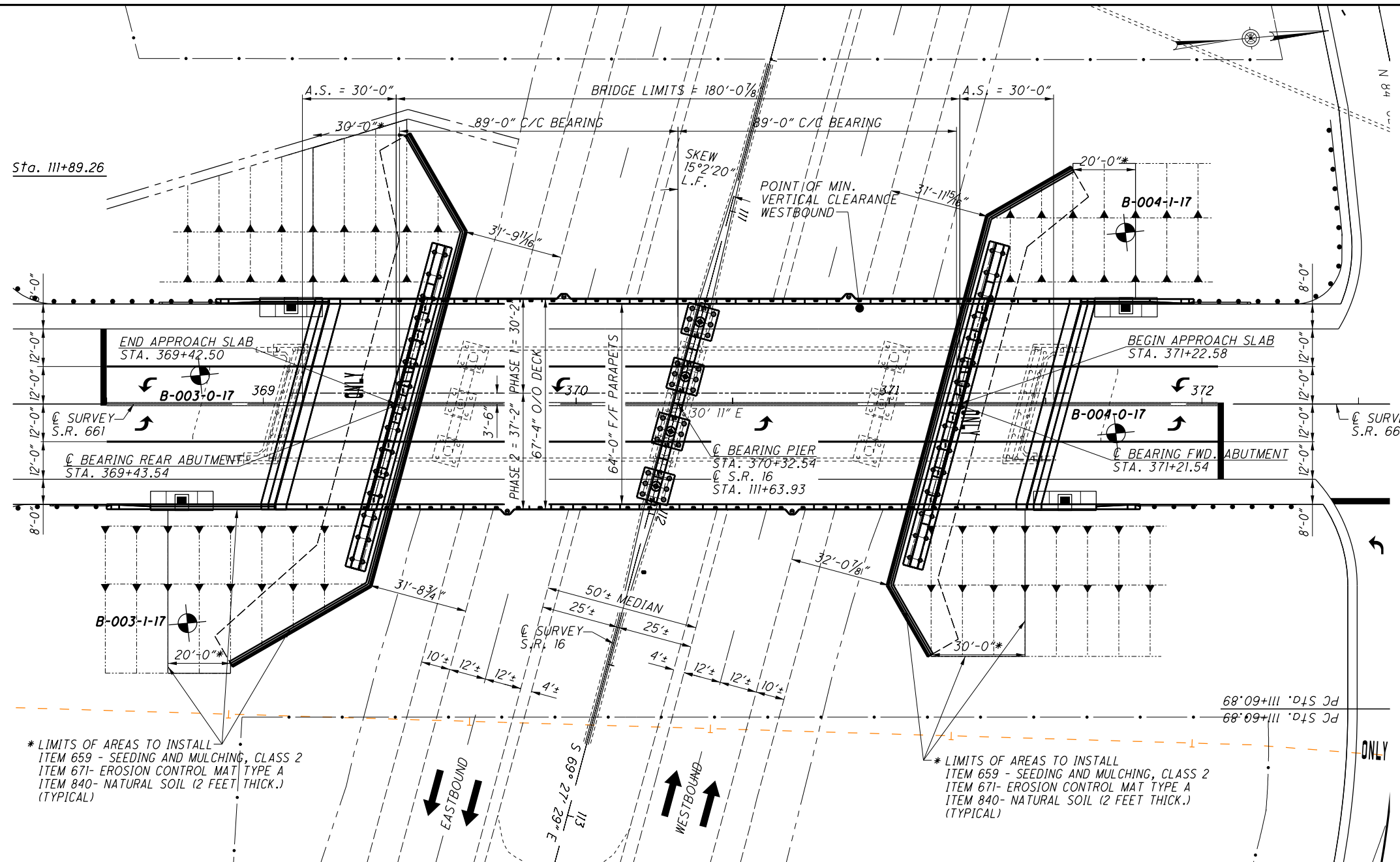
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SIGNAL SUPPORT ELEVATION VIEW  
 P-7, MAST ARM B

LIC-37 / 661-  
 16.59 / 0.00

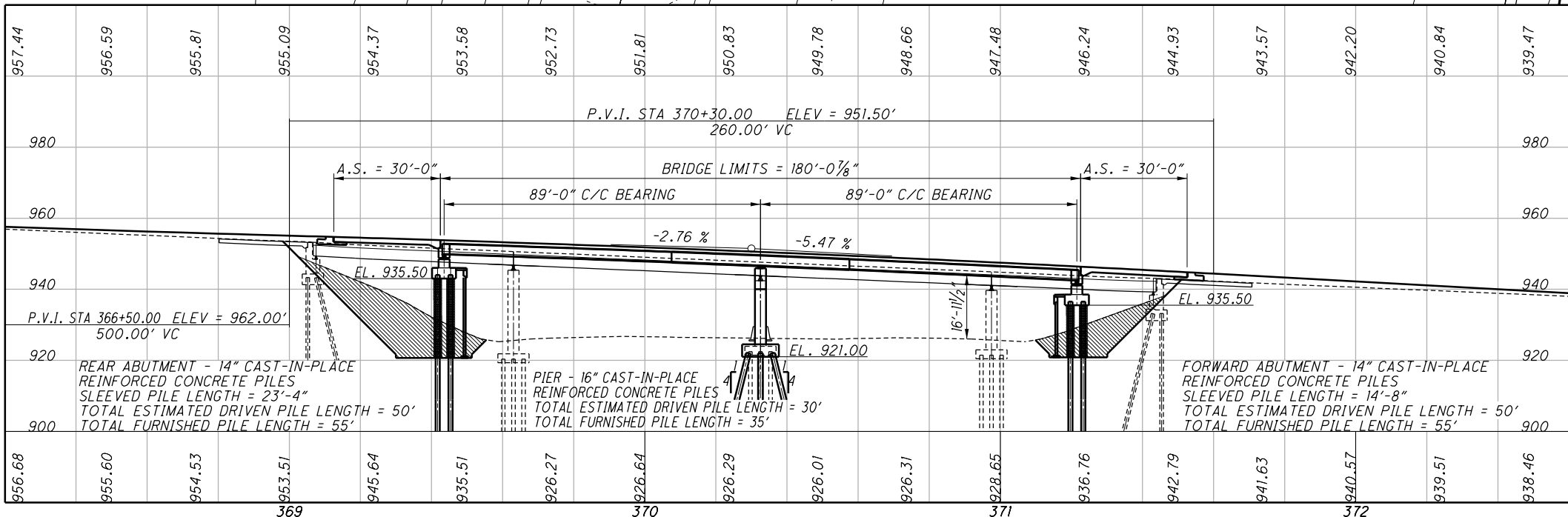
269  
 341

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\* LIMITS OF AREAS TO INSTALL  
 ITEM 659 - SEEDING AND MULCHING, CLASS 2  
 ITEM 671- EROSION CONTROL MAT TYPE A  
 ITEM 840- NATURAL SOIL (2 FEET THICK.)  
 (TYPICAL)

\* LIMITS OF AREAS TO INSTALL  
 ITEM 659 - SEEDING AND MULCHING, CLASS 2  
 ITEM 671- EROSION CONTROL MAT TYPE A  
 ITEM 840- NATURAL SOIL (2 FEET THICK.)  
 (TYPICAL)



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

DESIGN TRAFFIC:  
 2021 ADT = 7,370      2021 ADTT = 516  
 2041 ADT = 9,010      2041 ADTT = 631  
 DIRECTIONAL DISTRIBUTION = 53%

**LEGEND**  
 ◉ BORING LOCATION  
 [Hatched Box] - APPROXIMATE LIMITS OF MSE WALL EXCAVATION OPERATION

● 16'-6" REQUIRED MINIMUM VERTICAL CLEARANCE  
 16'-11 1/2" ACTUAL MINIMUM VERTICAL CLEARANCE

**EXISTING STRUCTURE**

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUB-STRUCTURES.

SPANS: 55'-6", 69'-6", 65'-0", 45'-6"

ROADWAY: 30'-0" F/F 2'-3" SAFETY CURB

LOADING: CF-400

SKEW: 15° 02' 20" L.F.

WEARING SURFACE: 1" MONOLITHIC CONCRETE + 1 3/4" SDC OVERLAY

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

ALIGNMENT: TANGENT

CROWN: NORMAL 0.0156 '/'

STRUCTURAL FILE NUMBER: 4506332

DATE BUILT: 1963

DISPOSITION: BRIDGE REPLACEMENT

**PROPOSED STRUCTURE**

TYPE: 2 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, SEMI-INTEGRAL ABUTMENTS AND CAP AND COLUMN PIER.

SPANS: 89'-0", 89'-0"

ROADWAY: 64'-0" TOE/TOE PARAPET

LOADING: HL-93

SKEW: 15° 02' 20" L.F.

FUTURE WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 30'-0" LONG (AS-1-81)

ALIGNMENT: TANGENT

CROWN: 0.0156 FT/FT

STRUCTURAL FILE NUMBER: 4506333

COORDINATES: LATITUDE 40° 3' 32" (40.0587810°)  
 LONGITUDE -82° 31' 15" (-82.5209620°)

DESIGN AGENCY: OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DATE: MM/DD/YY

REVIEWED: CPS MM/DD/YY  
 CPS MM/DD/YY  
 STRUCTURE FILE NUMBER: 4506333

DRAWN: CPS  
 CPS  
 REVISION: TAG

DESIGNED: CPS  
 CPS  
 CHECKED: TAG

COUNTY: STA. 368+40 TO STA. 372+40

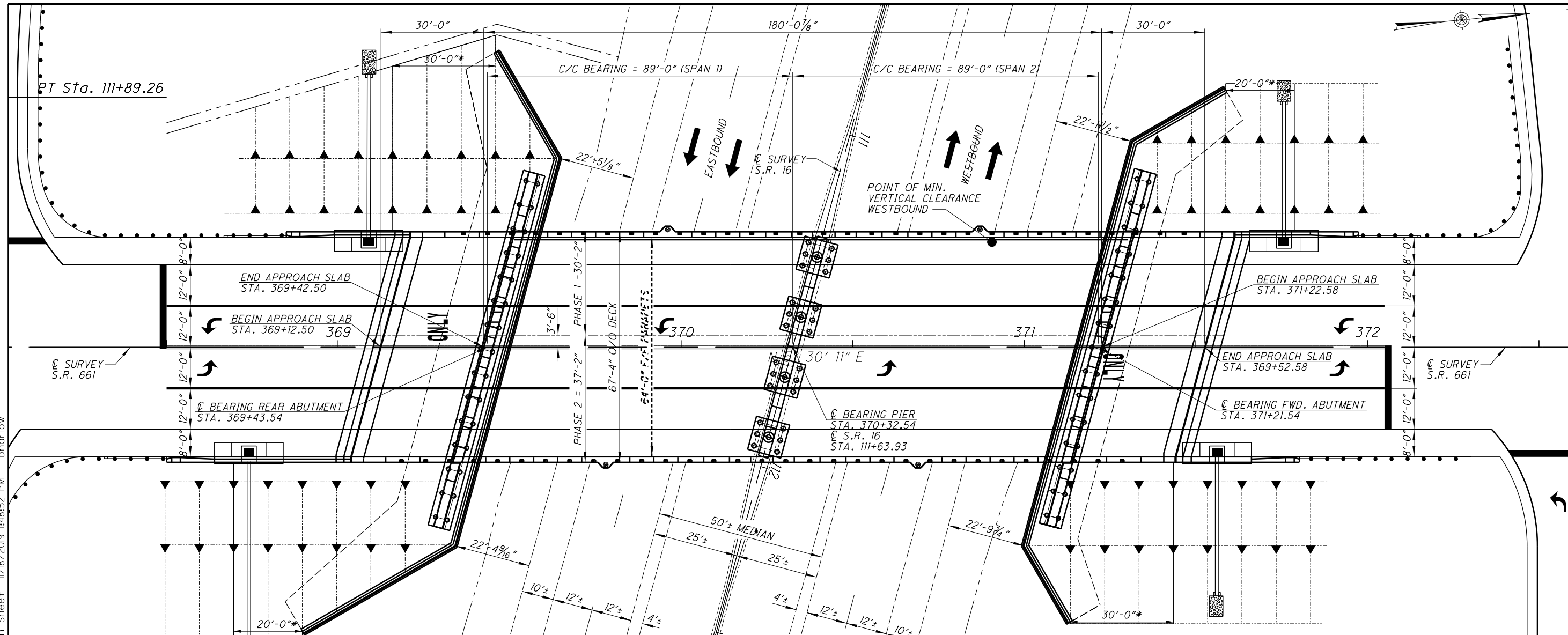
**SITE PLAN**  
 BRIDGE NO. LIC-661-0003  
 S.R. 661 OVER S.R. 16

LIC-37-661-16.59 / 0.00  
 PID No. 92411

1 / 65

270  
 341

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**EXISTING STRUCTURE**

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUB-STRUCTURES.

SPANS: 55'-6", 69'-6", 65'-0", 45'-6"

ROADWAY: 30'-0" F/F 2'-3" SAFETY CURB

LOADING: CF-400

SKEW: 15° 02' 20" L.F.

WEARING SURFACE: 1" MONOLITHIC CONCRETE + 1 3/4" SDC OVERLAY

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

ALIGNMENT: TANGENT

CROWN: NORMAL 0.0156 '"/'

STRUCTURAL FILE NUMBER: 4506332

DATE BUILT: 1963

DISPOSITION: BRIDGE REPLACEMENT

16'-6" REQUIRED MINIMUM VERTICAL CLEARANCE

● - 16'-11 1/2" PROPOSED MINIMUM VERTICAL CLEARANCE (WESTBOUND)

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

**PROPOSED STRUCTURE**

TYPE: 2 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, SEMI-INTEGRAL ABUTMENTS AND CAP AND COLUMN PIER.

SPANS: 89'-0", 89'-0"

ROADWAY: 64'-0" TOE/TOE PARAPET

LOADING: HL-93

SKEW: 15° 02' 20" L.F.

FUTURE WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 30'-0" LONG (AS-1-81)

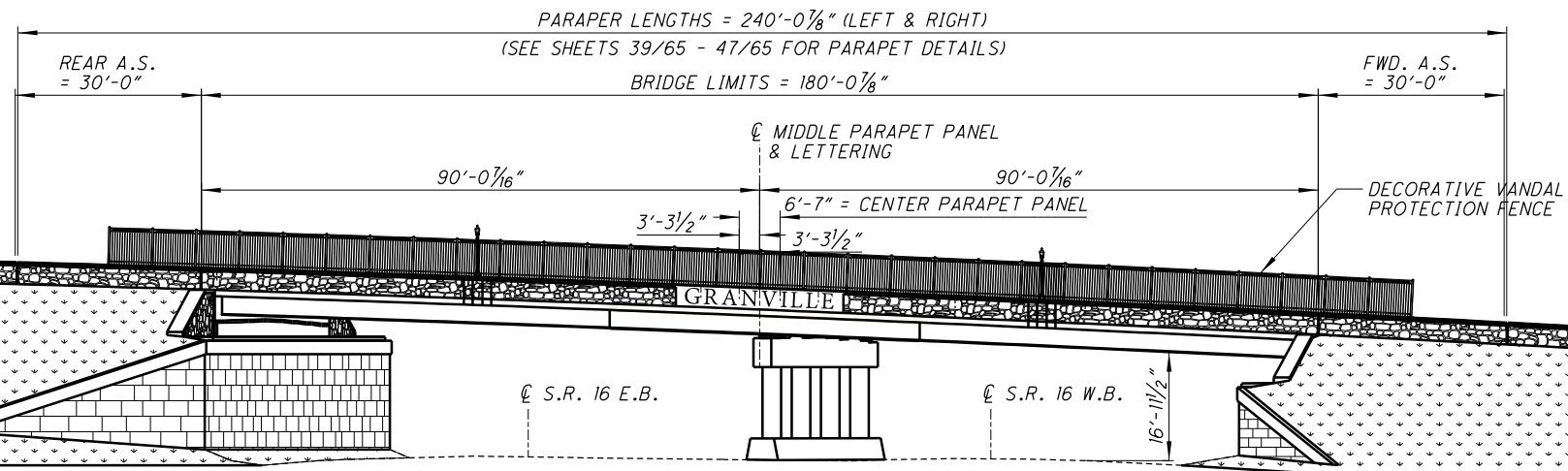
ALIGNMENT: TANGENT

CROWN: 0.0156 FT/FT

STRUCTURAL FILE NUMBER: 4506333

COORDINATES: LATITUDE 40° 3' 32" (40.0587810°)

LONGITUDE -82° 31' 15" (-82.5209620°)



ELEVATION OF S.R. 661 BRIDGE  
(LOOKING WEST EAST MIRRORED)

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS**

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-15	DATED/REVISED	7/17/15
AS-2-15	DATED/REVISED	1/18/19
GSD-1-19	DATED/REVISED	1/18/19
PCB-91	DATED/REVISED	1/18/13
SBR-1-13	DATED/REVISED	7/20/18
SICD-1-96	DATED/REVISED	7/18/14
SICD-2-14	DATED/REVISED	7/18/14
VFP-1-90	DATED/REVISED	7/20/18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

SS 840	DATED/REVISED	1/18/19
SS 867	DATED/REVISED	1/18/19
SS 878	DATED/REVISED	1/18/19

**DESIGN SPECIFICATIONS**

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, NOVEMBER 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2019 EXCEPT AS NOTED ELSEWHERE IN THE PLANS.

**LOAD MODIFIER FOR OPERATIONAL IMPORTANCE**

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

**DESIGN LOADING**

DESIGN LOADING: DESIGN LOADING: HL-93

FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT.

**DESIGN DATA**

DESIGN DATA:  
CONCRETE CLASS OQC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)  
CONCRETE CLASS OSCI - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 KSI  
STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

**DECK PROTECTION METHOD**

EPOXY COATED REINFORCING STEEL.  
2.5" CONCRETE COVER.  
PARAPETS.

**MONOLITHIC WEARING SURFACE**

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

**INSPECTION FOR BATS**

PRIOR TO THE START OF DEMOLITION ACTIVITIES THE CONTRACTOR SHALL INSPECT THE UNDERSIDE OF THE BRIDGE FOR THE PRESENCE OF BATS OR NESTING BIRDS. IF ANY BATS OR BIRD NESTS ARE OBSERVED THE CONTRACTOR SHALL NOTIFY NICOLE HAFFER-LIPSTREU IN THE DISTRICT 5 PLANNING DEPARTMENT @ (740) 323-5103 (NICOLE.HAFFERLIPSTREU@DOT.OHIO.GOV), OR, BRIAN TATMAN @ (740) 323-5191 (BRIAN.TATMAN@DOT.OHIO.GOV) PRIOR TO STARTING ANY DEMOLITION WORK.

**EXISTING STRUCTURE VERIFICATION**

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

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

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED IN THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED I.E. THE EXISTING STRUCTURE USED FOR MAINTAINING PHASE I TRAFFIC. THE USE OF EXPLOSIVES, HEADACHE BALLS, HOE-RAM TYPE EQUIPMENT, AND TRACK HOE PULVERIZER/Shear/Multi-processor ATTACHMENTS IS PROHIBITED FOR REMOVAL OF THE EXISTING ABUTMENT AND PIER FOOTINGS WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED I.E. EXISTING ABUTMENTS AND PIER FOOTING THAT IS TO REMAIN FOR MAINTAINING PHASE I TRAFFIC. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF TRAFFIC: THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) AS PER CMS 2010 501.05.B.2.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE THE EXISTING CONCRETE PIER FOOTINGS AND ABUTMENTS AT THE  $\frac{1}{2}$  OF CONSTRUCTION BY CUTTING AND BY MEANS OF APPROVED HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS IN THE AREA DESCRIBED ABOVE. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED.

ALL EXISTING ABUTMENT PILING SHALL BE REMOVED A MINIMUM OF 1 FOOT BELOW THE PROPOSED GROUND SURFACE AS PER CMS 202.03.

ALL EXISTING REINFORCED CONCRETE, REINFORCED CONCRETE BRIDGE DECK, STEEL BEAMS, END DAMS, CROSS FRAMES, BULB ANGLES, SCUPPERS, EXPANSION JOINTS, AND ALL OTHER ITEMS ENCOUNTERED WHILE REMOVING THE EXISTING BRIDGE, UNLESS ITEMIZED SEPARATELY, SHALL BE REMOVED AND INCLUDED PAYMENT FOR UNDER ITEM 202 STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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

**PILE DRIVING CONSTRAINTS**

PRIOR TO DRIVING ABUTMENT PILES TO THE ULTIMATE BEARING VALUE (UBV), CONSTRUCT THE MSE WALL AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENT UP TO THE BOTTOM OF THE FOOTING FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE CONTRACTOR MAY PRE-DRIVE ABUTMENT PILES BEFORE CONSTRUCTING MSE WALLS. PRE-DRIVING CONSISTS OF INSTALLING THE ABUTMENT PILES INTO THE SOIL ONLY AS FAR AS NECESSARY SO THAT THE PILE WILL REMAIN VERTICAL DURING MSE WALL CONSTRUCTION. IF PRE-DRIVING PILES, INSTALL PILE SLEEVES AROUND PILES BEFORE CONSTRUCTING THE MSE WALL. AT LEAST THREE FEET OF PILE MUST EXTEND ABOVE THE TOP OF THE PILE SLEEVE TO MEET THE REQUIREMENTS OF C&MS 507.09 REGARDING SPLICES. DO NOT DRIVE ABUTMENT PILES TO THE UBV UNTIL AFTER THE ABOVE REQUIRED MSE WALL AND EMBANKMENT HAVE BEEN CONSTRUCTED AND A 20 CALENDAR DAY WAITING PERIOD HAS ELAPSED. THE ENGINEER MAY ADJUST THE LENGTH OF THE WAITING PERIOD BASED ON SETTLEMENT PLATFORM READINGS. AFTER THE SPECIFIED WAITING PERIOD HAS ELAPSED, DRIVE ABUTMENT PILES TO THE UBV. IN ORDER TO REMOVE ANY NEGATIVE SKIN FRICTION THAT HAS DEVELOPED DURING THE WAITING PERIOD, DRIVE EACH ABUTMENT PILE A DISTANCE OF AT LEAST 0.5 INCH.

IF NOT PRE-DRIVING ABUTMENT PILES, INSTALL THE ABUTMENT PILES THROUGH PILE SLEEVES AFTER THE ABOVE REQUIRED MSE WALL AND EMBANKMENT HAVE BEEN CONSTRUCTED AND THE SPECIFIED WAITING PERIOD HAS ELAPSED.

**PILE DESIGN LOADS (ULTIMATE BEARING VALUE)**

THE ULTIMATE BEARING VALUE IS 232 KIPS PER PILE FOR THE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 313 KIPS PER PILE FOR THE PIER PILES.

**ABUTMENT PILES:**

60 - 14" CAST-IN-PLACE PILES 50 FEET LONG, ORDER LENGTH 55 FEET  
1 DYNAMIC LOAD TESTING ITEMS

**PIER PILES:**

28 - 16" CAST-IN-PLACE PILES 30 FEET LONG, ORDER LENGTH 35 FEET  
1 DYNAMIC LOAD TESTING ITEMS

**ITEM 507 - 14" CAST-IN-PLACE REINFORCED CONCRETE PILES FURNISHED, AS PER PLAN**

THE MINIMUM STEEL PILE WALL THICKNESS FOR THE REAR AND FORWARD ABUTMENTS PILES SHALL BE 0.344 INCH.

**ITEM 511 CLASS OC2 CONCRETE WITH OC/OA. BRIDGE DECK, AS PER PLAN**

IN ADDITION TO ALL OTHER REQUIREMENTS FOR ITEM 511, ALL VERTICAL HAUNCH BRACKETS DESIGNED TO STAY IN PLACE AFTER CONCRETE IS POURED SHALL BE GALVANIZED. SEE C&MS 711.02 FOR GALVANIZATION REQUIREMENTS.

**WELD ATTACHMENT**

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 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

**STEEL NOTCH TOUGHNESS REQUIREMENT (CHARPY V-NOTCH)**

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

**HIGH STRENGTH BOLTS**

HIGH STRENGTH BOLTS SHALL BE 1 1/8" DIAMETER A325, TYPE 1.

**ABUTMENT DIAPHRAGM CONCRETE**

PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS WITH THE DECK CONCRETE OR AT LEAST 48 HOURS BEFORE PLACEMENT OF THE DECK CONCRETE. IF PLACED SEPARATELY, LOCATE THE HORIZONTAL CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND DECK CONCRETE AT THE APPROACH SLAB SEAT.

**DECK SLAB CONCRETE QUANTITY**

DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES OVER THE MIDDLE BEAM SECTIONS, 2.69 INCHES OVER THE REAR BEAM SECTIONS, AND 2.69 INCHES OVER THE FORWARD BEAM SECTIONS. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE.

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

**DECK PLACEMENT DESIGN ASSUMPTIONS:**

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 1.66 KIPS FOR A TOTAL MACHINE LOAD OF 13.3 KIPS.

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

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

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

**PAINTING OF STRUCTURAL STEEL**

ALL STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SECTION 514 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE FINISH COAT COLOR SHALL BE BROWN FS-595C-10324 AND MATCH THE LIC-16-1718 BRIDGE, CHERRY VALLEY INTERCHANGE OVERPASS.

**ELASTOMERIC BEARINGS**

ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.5 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. PERFORM THE LONG-TERM COMPRESSION PROOF LOAD TEST IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6 AND 18.7.4.5.

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DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
	DATE	MM/DD/YY
REVIEWED	CPS	STRUCTURE FILE NUMBER
DRAWN	CPS	REVISED
DESIGNED	CPS	CHECKED
		TAG
BRIDGE NOTES		
BRIDGE NO. LIC-661-0003 OVER S.R. 16		
LIC-37/661-16.59/0.00		
PID No. 92411		
3/65		
272		
341		



**ITEM 511 - CLASS OC SCC CONCRETE WITH OC/OA, BRIDGE DECK (PARAPET), AS PER PLAN**

**ITEM 511 - CLASS OC SCC CONCRETE WITH OC/OA, ABUTMENT, AS PER PLAN (NOT INCLUDING FOOTING)**

**ITEM 611 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN**

**ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (B)**

**ITEM 622 - CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN (B)**

IN ADDITION TO THE WORK ITEMS REQUIRED IN 511 AND 622, THESE ITEMS WILL INCLUDE THE DEVELOPMENT, DELIVERY AND PLACEMENT OF A CLASS OC2 AND OC1 SELF CONSOLIDATING CONCRETE MIX DESIGN AS DESCRIBED IN THE FOLLOWING NOTE:

PROVIDE A CONCRETE MIX WITH THE FOLLOWING PROPERTIES:

SELF-CONSOLIDATING CONCRETE (SCC): WHEN REQUIRED IN THE DESIGN PLANS OR APPROVED BY THE ENGINEER, PROVIDE AN SCC MIX WITH AGGREGATE GRADATIONS WITHIN ZONE II OF THE COARSENESS FACTOR CHART THAT IS FLOWABLE, NON-SEGREGATING CONCRETE THAT CAN SPREAD INTO PLACE, FILL THE FORMWORK, AND ENCAPSULATE THE REINFORCEMENT WITHOUT MECHANICAL CONSOLIDATION. INCREASING THE AMOUNT OF AN APPROVED 705.12 (SCC) ADMIXTURE OF AN APPROVED JMF TO ACHIEVE THE DESIRED CONSISTENCY; RE-PROPORTIONING THE AGGREGATES WITHIN ZONE II; ADDING CEMENTITIOUS MATERIAL; AND INCLUDING A VISCOSITY MODIFYING ADMIXTURE (VMA) ARE ACCEPTABLE METHODS OF IMPROVING THE STABILITY OF THE MIX. A NEW MIX DESIGN IS NOT REQUIRED.

SLUMP REQUIREMENTS OF TABLE 499.04-1 DO NOT APPLY.

ESTABLISH QUALITY CONTROL PROCEDURES IN THE QUALITY CONTROL PLAN FOR SCC CONCRETE. SET THE TARGET SLUMP FLOW FOR THE MIX AND MAINTAIN THE FLOW WITHIN ± 2 INCHES. VISUALLY INSPECT THE STABILITY OF THE MIX TO ENSURE THAT THERE IS NO AGGREGATE PILE IN THE MIDDLE OF, NOR MORTAR HALO IN EXCESS OF 1/2 INCH ON THE LEADING EDGE OF THE SLUMP FLOW TEST PILE. TEST THE SLUMP FLOW ACCORDING TO ASTM C1611.

**GRADATION:**

PROVIDE A WELL-GRADED CONCRETE MIX BY MAINTAINING THE GRADATION OF THE COMBINATION OF AGGREGATES WITHIN ZONE II (OPTIMAL) OF THE COARSENESS FACTOR CHART (FIGURE 1) AS DEFINED IN THE COMPASS OR EQUAL SOFTWARE. USE A 1 INCH NOMINAL MAXIMUM SIZE AGGREGATE. ENSURE THAT THE DESIGN YIELD IS 27.0 CU. FT.

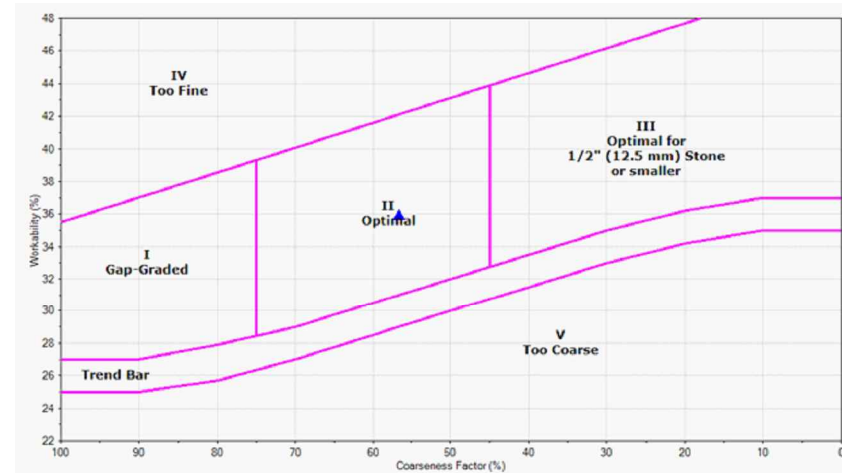


FIGURE 1- COARSENESS FACTOR CHART

USE THE FOLLOWING SIEVE SIZES TO DETERMINE THE GRADATION OF THE AGGREGATES:

- 1 1/2 INCH # 8
- 1 INCH # 16
- 3/4 INCH # 30
- 1/2 INCH # 50
- 3/8 INCH # 100
- #4 # 200

IN THE CHART: WORKABILITY FACTOR (%) REFERS TO THE PERCENT OF THE COMBINED AGGREGATE THAT PASSES THE NO. 8 SIEVE. COARSENESS FACTOR (%) REFERS TO THE PERCENT OF THE COMBINED AGGREGATE THAT IS RETAINED ON THE NO. 8 SIEVE THAT IS ALSO RETAINED ON THE 3/8 IN. SIEVE. THE CHART IS BASED ON A CEMENT CONTENT OF 564 LBS /CU.YD. ADJUST TO WORKABILITY PROPORTIONATELY AND DIRECTLY BY 2.5% PER 94 LBS. OF CEMENT WHEN USING EITHER LESS OR MORE. ENSURE THAT THE CONCRETE MIX DESIGN IS WORKABLE AND FINISHABLE DURING THE TRIAL PROCESS. WHEN THE MIX IS DETERMINED TO HAVE ISSUES RELATING TO WORKABILITY OR FINISHABILITY IN THE FIELD, THE DEPARTMENT MAY RESCIND THE MIX DESIGN ACCEPTANCE.

THIS S.C.C. CONCRETE IS BEING UTILIZED TO BEST FILL THE FORMLINED CONCRETE POURS WHERE SPECIFIED IN THIS PLAN.

**ITEM 511, 611, & 622 CONTINUED...**

ALL AESTHETIC TREATMENTS FOR THE BRIDGE SHALL MATCH THE EXISTING BRIDGE LOCATED AT LIC-16-1718, CHERRY VALLEY INTERCHANGE, IN COLOR AND PATTERN.

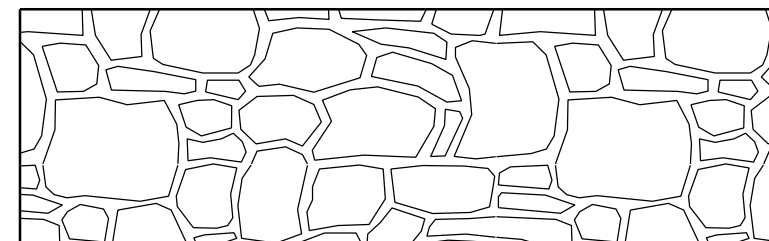
THE SURFACE FINISH SHALL BE ONE OF THE PATTERNS DESCRIBED BELOW IN THE ARCHITECTURAL SURFACE ELEVATION AND TABLE FROM AN APPROVED COMPANY MEETING THE DETAILS SHOWN ON THIS PAGE.

STAINING OF THE PATTERNED CONCRETE SURFACES SHALL BE DONE PRIOR TO APPLICATION OF ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY). THE STAIN COLORED CONCRETE, USING LITHOCHROME TINTURA STAIN, SHALL BE COLOR 2626 LIGHT GRAY AS PROVIDED BY L.M. SCOFIELD COMPANY, DOUGLASVILLE, GEORGIA (800) 800-9900 OR APPROVED EQUAL. THE STAIN SHALL BE APPLIED BY AN EVEN AND CONTROLLED METHOD AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. THE CONTRACTOR WILL NOT ALLOW OVERSPRAY OR RUNS TO RUIN THE APPEARANCE OF THE ADJACENT CONCRETE, WHICH SHALL REMAIN UNSTAINED.

TWO FULL SCALE, DIFFERENTLY PATTERNED, STAINED AND SEALED, PRECONSTRUCTION TEST PANELS SHALL BE PROVIDED FOR APPROVAL BY THE DIRECTOR. IF THE TEST PANELS DO NOT MEET THE APPROVAL OF THE DIRECTOR, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED PANEL SURFACE CHOSEN. THE TEST PANELS WILL BE PROVIDED REPEATEDLY, AS NECESSARY, UNTIL APPROVAL IS GRANTED. FIVE FEET BY FIVE FEET TEST PANELS SHALL BE PROVIDED. THE MOCK-UPS SHALL HAVE THE SAME ARCHITECTURAL RELIEF, THICKNESS, PATTERN, AND COLOR/SEALANT INTENDED TO BE USED ON THE PROJECT. THE PANELS SHALL BE OF THE SAME CEMENT, AGGREGATE SOURCE, AND CONCRETE SEALANT THAT WILL BE USED TO CONSTRUCT THE PROJECT. AFTER APPROVAL THE CONCRETE TEST PANELS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

PAYMENT WILL INCLUDE DEVELOPMENT AND PLACEMENT OF THE SELF CONSOLIDATING CONCRETE MIX, ALL AESTHETIC TREATMENT INCLUDING THE CONCRETE, SURFACE FINISH, STAIN, TEST PANELS, AND ALL OTHER MATERIALS REQUIRED TO COMPLETE THIS WORK SHALL BE INCLUDED WITH THE ITEMIZED PAYMENT FOR:

- ITEM 511 - CLASS OC SCC CONCRETE WITH OC/OA, BRIDGE DECK (PARAPET), AS PER PLAN
- ITEM 511 - CLASS OC SCC CONCRETE WITH OC/OA, ABUTMENT, AS PER PLAN (NOT INCLUDING FOOTING)
- ITEM 611 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN
- ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (B)
- ITEM 622 - CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN (B)



**ARCHITECTURAL SURFACE - ELEVATION**

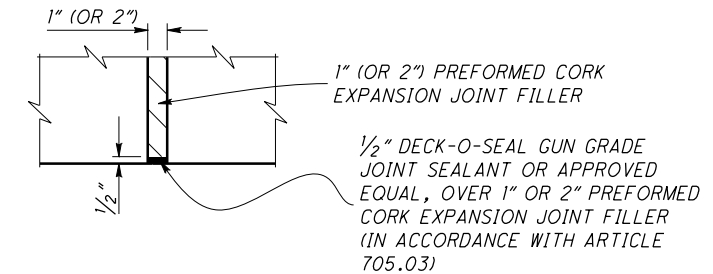
THE FOLLOWING SHALL BE USED:

COMPANY NAME:	PANEL SURFACE TREATMENT:	SPECIFICATIONS:
CUSTOM ROCK INTERNATIONAL	NEW ENGLAND DRYSTACK # 12003	MAX RELIEF 1 3/8" LINER THICKNESS 2 1/4" STONE SIZE 3" TO 24"
SPEC FORMLINERS, INC.	WASHINGTON DRYSTACK # 1581	MAX RELIEF 1/2" LINER THICKNESS 2 5/8" STONE SIZE 4" TO 24"
APPROVED EQUAL	APPROVED EQUAL	APPROVED EQUAL

**ITEM 516 - 1" (OR 2") PREFORMED EXPANSION JOINT FILLER, AS PER PLAN**

ALL 1" (OR 2") P.E.J.F. CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER 1/2" FOR ALL JOINTS (SEE DETAIL). SEAL ALL JOINTS THAT ARE ABOVE GRADE WITH DECK-O-SEAL GUN GRADE-JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVED MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.

DECK-O-SEAL  
P.O. BOX 397  
HAMPSHIRE, IL 60140  
PHONE: 800-542-7665



PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" (OR 2") PEJF, A.P.P., SQ.FT., AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DESCRIBED.

**ITEM 526 REINFORCED CONCRETE APPROACH SLABS WITH OC/OA (T=17"), AS PER PLAN**

FURNISH APPROACH SLABS CONFORMING TO CMS 526. THE ACCEPTED QUANTITIES SHALL INCLUDE: CONCRETE, REINFORCING STEEL, JOINT FILLERS, JOINT SEALERS, JOINT SEALS, WATERPROOFING, AND ANY OTHER INCIDENTALS SHOWN ON THE APPROACH SLAB DETAIL SHEETS. THE DEPARTMENT WILL MEASURE APPROACH SLABS BY THE NUMBER OF SQUARE YARDS.

**FILL UNDER APPROACH SLABS**

ITEM 304, AGGREGATE BASE SHALL BE USED TO BRING THE SUBBASE TO GRADE FOR THE NEW APPROACH SLABS AS DETAILED ON THE APPROACH SLAB DETAIL SHEETS AND SHALL EXTEND 1'-6" ON BOTH SIDES OF EACH APPROACH SLAB.

**ITEM 625 - STRUCTURE GROUNDING SYSTEM**

IN ORDER TO PROPERLY GROUND THIS STRUCTURE, A QUANTITY OF 1 EACH - STRUCTURE GROUNDING SYSTEM IS CARRIED IN THE GENERAL SUMMARY.

**SURFACE SMOOTHNESS FOR BRIDGES AND APPROACHES**

AT THE COMPLETION OF WORK FOR ALL PHASES OF CONSTRUCTION AND PRIOR TO OPENING THE BRIDGE TO TRAFFIC, THE CONTRACTOR SHALL PERFORM THE FOLLOWING AS PER PROPOSAL NOTE 555:

1. CLEAN, SWEEP, AND PREPARE THE FINAL DECK AND FINAL ROADWAY SURFACE.
2. MEASURE, GRIND, AND RE-MEASURE THE BRIDGE AND/OR ROADWAY AS NECESSARY.
3. GROOVING OF THE BRIDGE DECK.

**CONSTRUCTION SEQUENCE**

SEE GENERAL NOTES FOR MAINTENANCE OF TRAFFIC NOTES AND MAINTENANCE OF TRAFFIC DETAIL SHEETS TO PLAN SEQUENCE OF OPERATIONS.

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DESIGN AGENCY: OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5  
 DATE: MM/DD/YY  
 REVIEWED: CPS  
 STRUCTURE FILE NUMBER: 4506333  
 DRAIN: CPS  
 CHECKED: TAG  
 DESIGNED: CPS  
 BRIDGE NOTES  
 BRIDGE NO. LIC-661-0003  
 OVER S.R. 16  
 LIC-37/661-16.59/0.00  
 PID No. 92411  
 4/65  
 273  
 341

**CALCULATIONS**

**ITEM 202 - WEARING COURSE REMOVED**

REAR APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 368+80.21 TO STA 369+05.21  
 QUANTITY = (25' x 24')/9 = 66.67 S.Y.  
 FORWARD APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 371+45.37 TO STA 371+70.37  
 QUANTITY = (25' x 24')/9 = 66.67 S.Y.

GRAND TOTAL  
 66.7 S.Y. + 66.7 S.Y. = 134 S.Y.

**ITEM 204 - SUBGRADE COMPACTION**

REAR APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 369+07.84 TO STA 369+39.40  
 QUANTITY = (30.26' x 70.34')/9 = 236.5 S.Y.  
 FORWARD APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 371+25.68 TO STA 371+57.24  
 QUANTITY = (30.26' x 70.34')/9 = 236.5 S.Y.

GRAND TOTAL  
 236.5 S.Y. + 236.5 S.Y. = 473 S.Y.

**ITEM 204 - SUBGRADE COMPACTION**

REAR APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 369+07.84 TO STA 369+39.40  
 QUANTITY = (30.26' x 70.34' x 0.5')/27 = 39.4 C.Y.  
 FORWARD APPROACH SLAB ON BRIDGE NO. LIC-661-0002:  
 - STA 371+25.68 TO STA 371+57.24  
 QUANTITY = (30.26' x 70.34' x 0.5')/27 = 39.4 C.Y.

GRAND TOTAL  
 39.4 C.Y. + 39.4 C.Y. = 79 S.Y.

**ITEM 659 - SEEDING AND MULCHING, CLASS 2**

PLACE THIS ITEM AS SHOWN ON THE SITE PLAN (SHEET 1/66)  
 MSE WALL SE = 2,903.5 SQ.FT. AVG. ÷ 9 = 322.6 S.Y.  
 MSE WALL SW = 2,307.9 SQ.FT. AVG. ÷ 9 = 256.4 S.Y.  
 MSE WALL NW = 1,926.0 SQ.FT. AVG. ÷ 9 = 214.0 S.Y.  
 MSE WALL NE = 1,857.7 SQ.FT. AVG. ÷ 9 = 206.4 S.Y.

GRAND TOTAL = 999.4 S.Y. = 1,000 SQ. YD.

**ITEM 671 - EROSION CONTROL MAT, TYPE A**

PLACE THIS ITEM AS SHOWN ON THE SITE PLAN (SHEET 1/66)  
 MSE WALL SE = 2,903.5 SQ.FT. AVG. ÷ 9 = 322.6 S.Y.  
 MSE WALL SW = 2,307.9 SQ.FT. AVG. ÷ 9 = 256.4 S.Y.  
 MSE WALL NW = 1,926.0 SQ.FT. AVG. ÷ 9 = 214.0 S.Y.  
 MSE WALL NE = 1,857.7 SQ.FT. AVG. ÷ 9 = 206.4 S.Y.

GRAND TOTAL = 999.4 S.Y. = 1,000 SQ. YD.

ALL QUANTITIES SHOWN BELOW CARRIED TO THE GENERAL SUMMARY

APPROACH	BRIDGE	ITEM	ITEM EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
<b>ROADWAY</b>							
134		202	23500	134	SO.YD.	WEARING COURSE REMOVED	58
1,603		203	20000	1,603	CU.YD.	EMBANKMENT	64,65,58
473		204	10000	473	SO.YD.	SUBGRADE COMPACTION	58
28		622	24001	28	FEET	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (B)	4,42
4		622	25001	4	EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED, AS PER PLAN (B)	4,42
<b>EROSION CONTROL</b>							
1000		659	00510	1000	SO.YD.	SEEDING AND MULCHING, CLASS 2	1
1000		671	15000	1000	SO.YD.	EROSION CONTROL MAT, TYPE A	1
<b>DRAINAGE</b>							
4		611	99115	4	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN	4,42
<b>PAVEMENT</b>							
79		304	20000	79	CU.YD.	AGGREGATE BASE	58
<b>LIGHTING</b>							
	812	625	25400	812	FEET	CONDUIT, 2", 725.04	44
	4	625	29921	4	EACH	STRUCTURE JUNCTION BOX	44
	1	625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM, AS PER PLAN	4,44

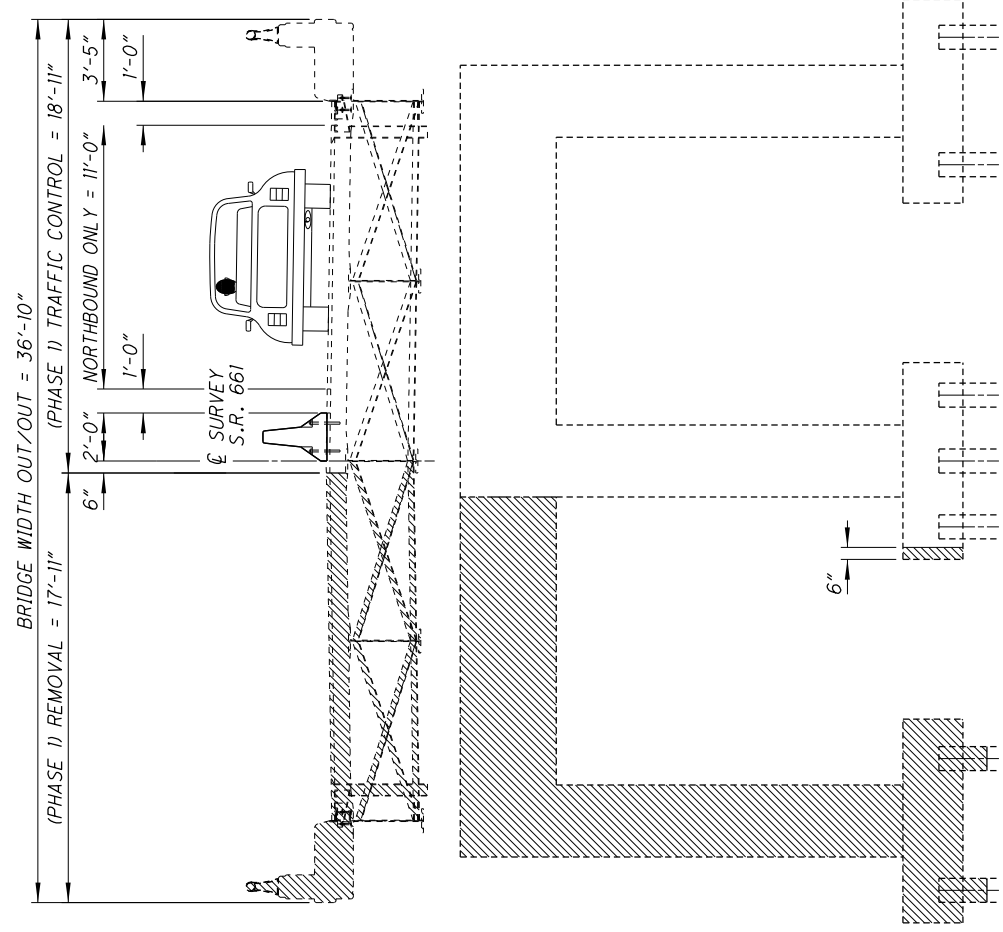
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<b>BRIDGE NOTES</b>					
BRIDGE NO. LIC-661-0003 OVER S.R. 16					
LIC-37 / 661-16.59 / 0.00 PID No. 92411					
5 / 65					
274 341					

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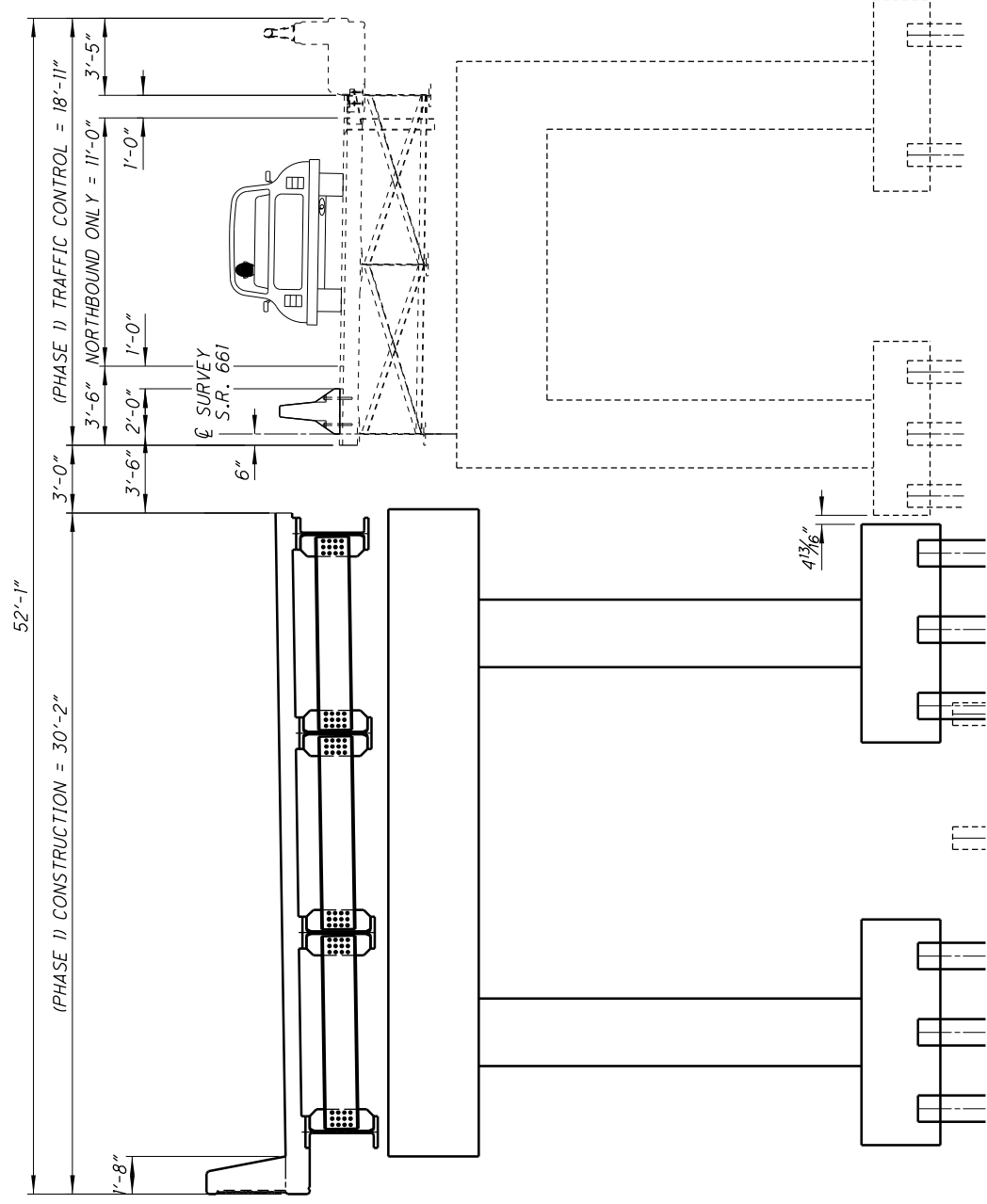
SUPER-STRUCTURE	ABUTMENT	PIER	MSE WALL	GENERAL	PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
					01/NHS/B R						
<b>STRUCTURE OVER 20 FOOT SPAN (LIC-661-0003)</b>											
					LS	202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	3
				133	133	202	22900	133	SY	APPROACH SLAB REMOVED	
528					528	202	38500	528	FT	BRIDGE RAILING REMOVED	
					LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
					LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
					LS	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
	3,000				3,000	507	00600	3,000	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	3
	3,300				3,300	507	00650	3,300	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	3
		840			840	507	00700	840	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	3
		980			980	507	00750	980	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	3
112,621	12,613	23,671			148,905	509	10000	148,905	LB	EPOXY COATED REINFORCING STEEL	55/56
406					406	511	34447	406	CY	CLASS OC2 CONCRETE WITH OC/OA, BRIDGE DECK, AS PER PLAN	3
81					81	511	34463	81	CY	CLASS OC SCC CONCRETE WITH OC/OA, BRIDGE DECK (PARAPET), AS PER PLAN	4
		51			51	511	41012	51	CY	CLASS OC1 CONCRETE WITH OC/OA, PIER ABOVE FOOTINGS	
	70				70	511	45723	70	CY	CLASS OC SCC CONCRETE WITH OC/OA, ABUTMENT, AS PER PLAN (NOT INCLUDING FOOTING)	4
	155	52			207	511	46512	207	CY	CLASS OC1 CONCRETE WITH OC/OA, FOOTING	
401	148	155	665	297	1,666	512	10050	1,666	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
	101				101	512	33000	101	SY	TYPE 2 WATERPROOFING	
LS					LS	513	10040	LS		STRUCTURAL STEEL MEMBERS, LEVEL 2	
3,984					3,984	513	20000	3,984	EACH	WELDED STUD SHEAR CONNECTORS	
17,361					17,361	514	00060	17,361	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
17,361					17,361	514	00066	17,361	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	3
14					14	514	10000	14	EACH	FINAL INSPECTION REPAIR	
18					18	516	13601	18	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	4
	55				55	516	13901	55	SF	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	4
	156				156	516	14020	156	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
				140	140	516	14600	140	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.:EMSEAL WITH SLEEPER SLAB	58
	16				16	516	44300	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1'-6" x 1'-2" x 4.1479")	
		8			8	516	44300	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1'-9" x 1'-8" x 4.1479")	
	92				92	518	21200	92	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	1	1			2	523	20000	2	EACH	DYNAMIC LOAD TESTING	
					449	526	30011	449	SY	REINFORCED CONCRETE APPROACH SLABS WITH OC/OA (T=17"), AS PER PLAN	57/59
			2,032		2,032	203	20000	2,032	CY	EMBANKMENT	
			681		681	203	35110	681	CY	GRANULAR MATERIAL, TYPE B	
			6,984		6,984	840	20001	6,984	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	59-65
			4,242		4,242	840	21000	4,242	CY	WALL EXCAVATION	
			713		713	840	22000	713	SY	FOUNDATION PREPARATION	
			3,941		3,941	840	23000	3,941	CY	SELECT GRANULAR BACKFILL	
			666		666	840	23050	666	CY	NATURAL SOIL	
			894		894	840	25010	894	FT	6" DRAINAGE PIPE, PERFORATED	
			18		18	840	25020	18	FT	6" DRAINAGE PIPE, NON-PERFORATED	
			391		391	840	26001	391	FT	CONCRETE COPING, AS PER PLAN	63
			6,984		6,984	840	26050	6,984	SF	AESTHETIC SURFACE TREATMENT	
			5		5	840	27000	5	DAY	ON-SITE ASSISTANCE	
			LS		LS	867	00100	LS		TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL	
<b>STRUCTURE OVER 20 FOOT SPAN (LIC-661-0003) ALTERNATES</b>											
				420	420	607	39901	420	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN (ALTERNATE 1)	49
				420	420	SPECIAL	60740000	420	FT	VANDAL PROTECTION FENCE (DECORATIVE) (ALTERNATE 2)	48-54

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
REVIEWED DATE CPS MM/DD/YY STRUCTURE FILE NUMBER 4506333
DRAIN CPS REVISED
DESIGNED CPS CHECKED TAG
<b>BRIDGE SUMMARY</b> BRIDGE NO. LIC-661-0003 OVER S.R. 16
LIC-37 / 661-16.59 / 0.00 PID No. 92411
6 / 65
275 341

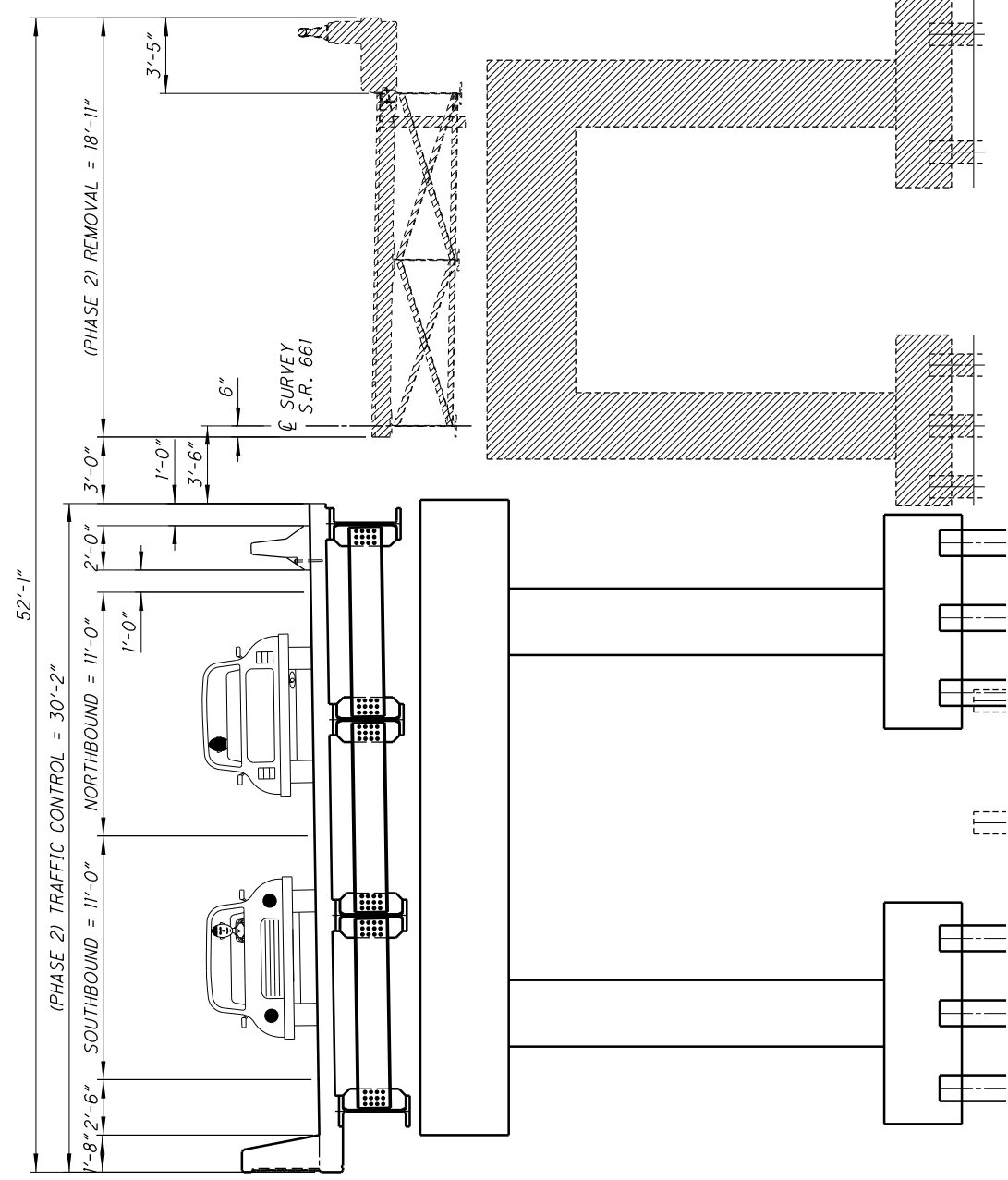


PHASE 1 REMOVAL AND TRAFFIC CONTROL

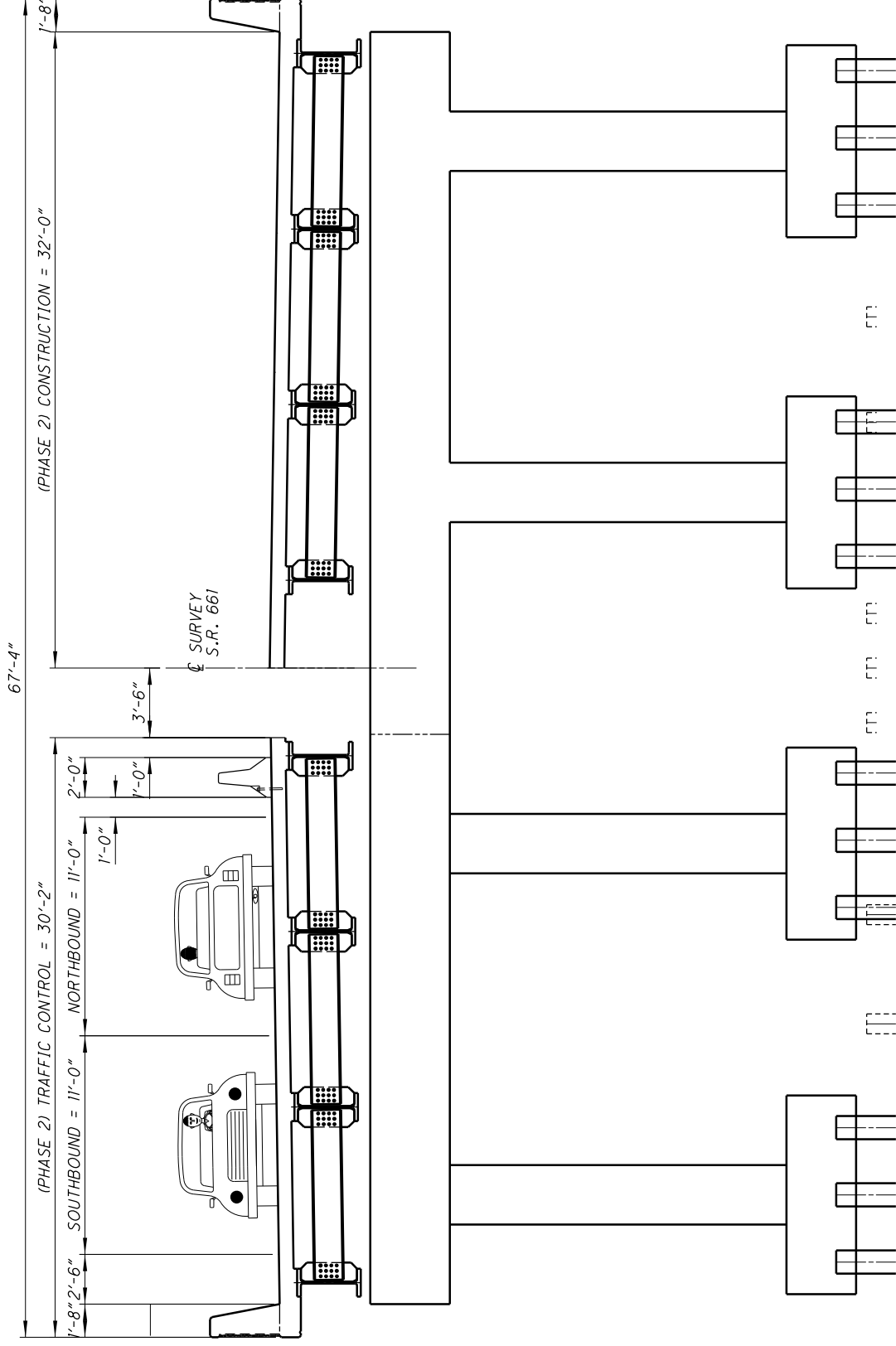
LEGEND  
 PHASE 1 REMOVAL - [Hatched Pattern]  
 PHASE 2 REMOVAL - [Hatched Pattern]



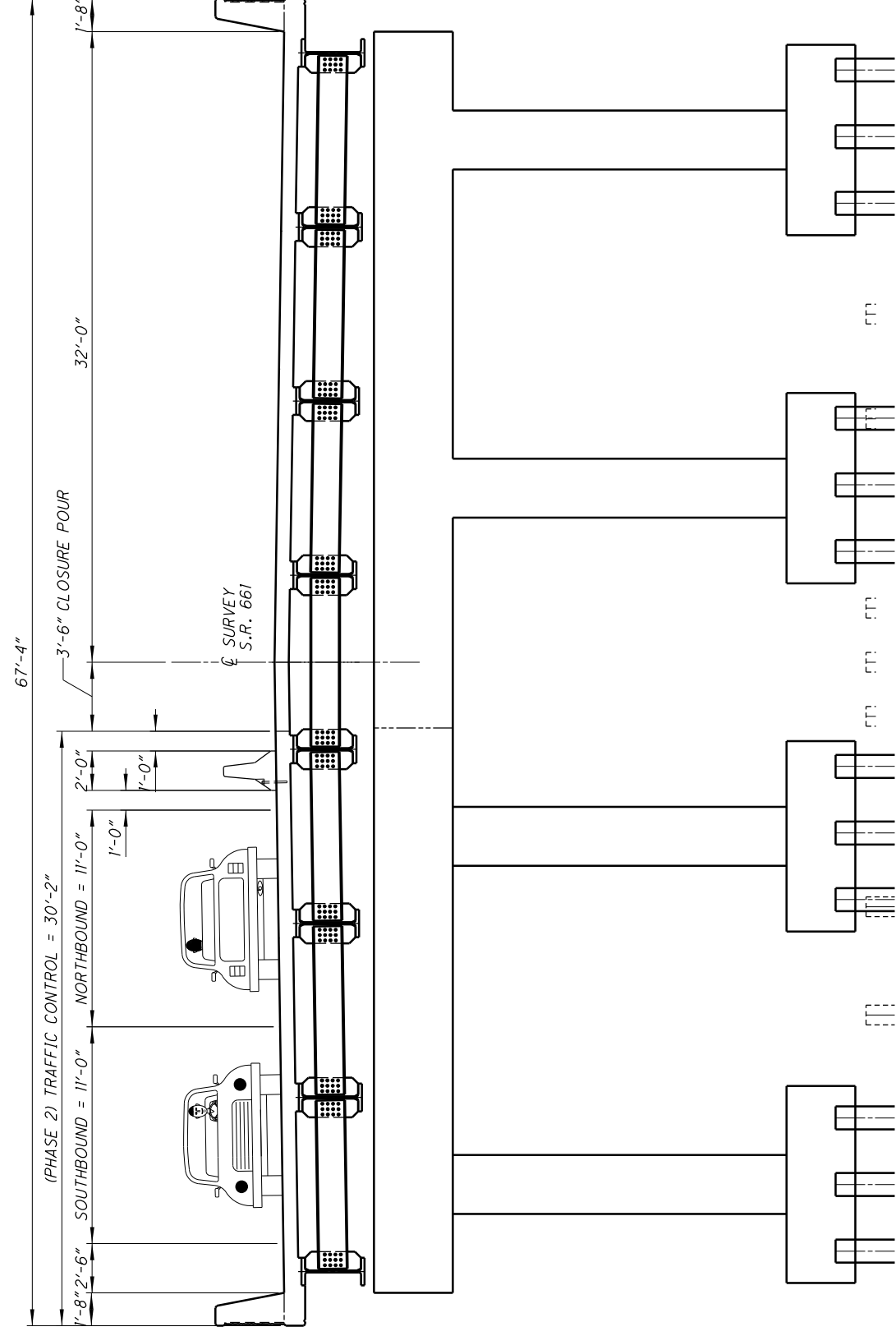
PHASE 1 CONSTRUCTION AND TRAFFIC CONTROL



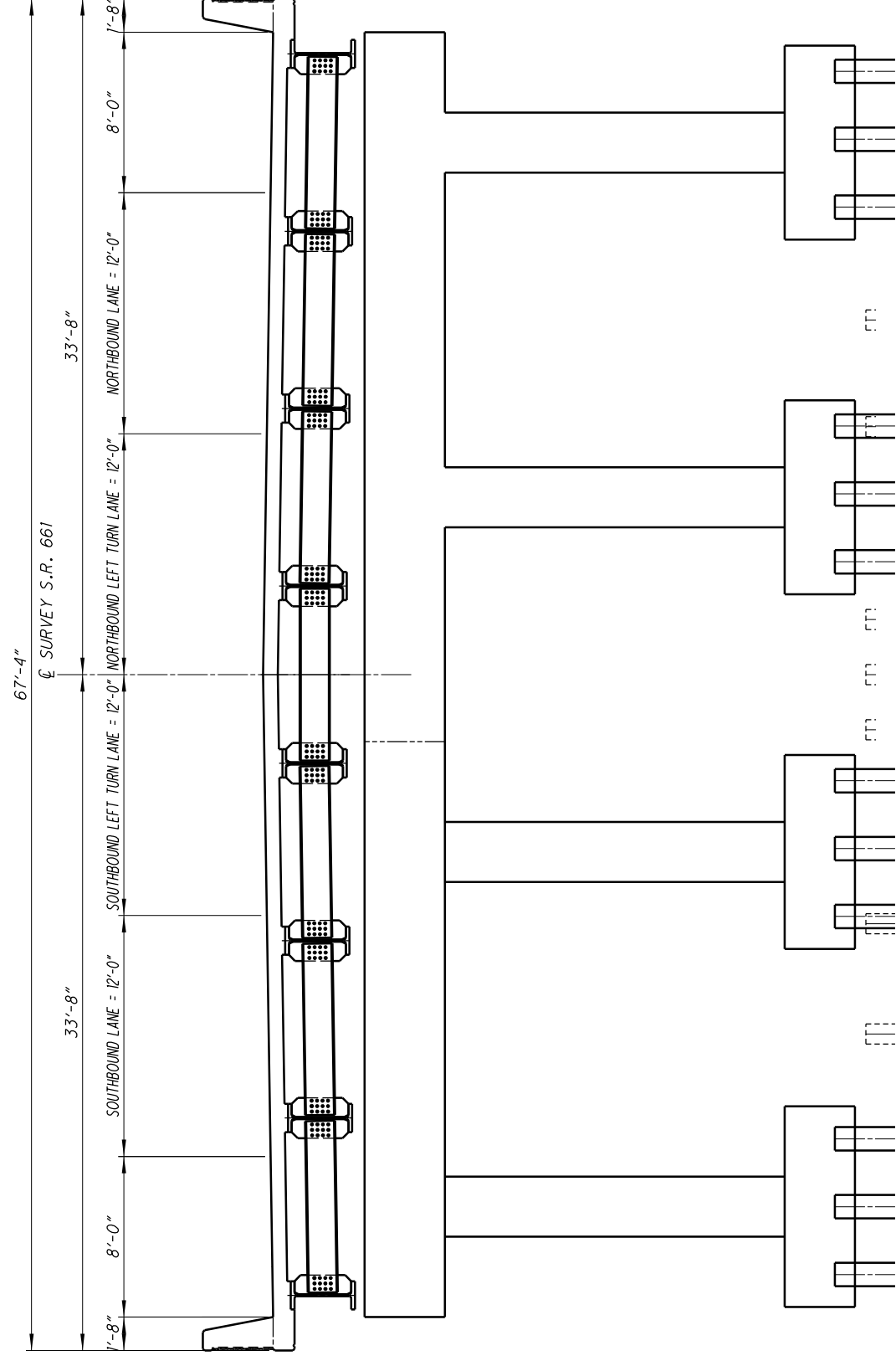
PHASE 2 TRAFFIC CONTROL AND REMOVAL



PHASE 2 TRAFFIC CONTROL AND CONSTRUCTION

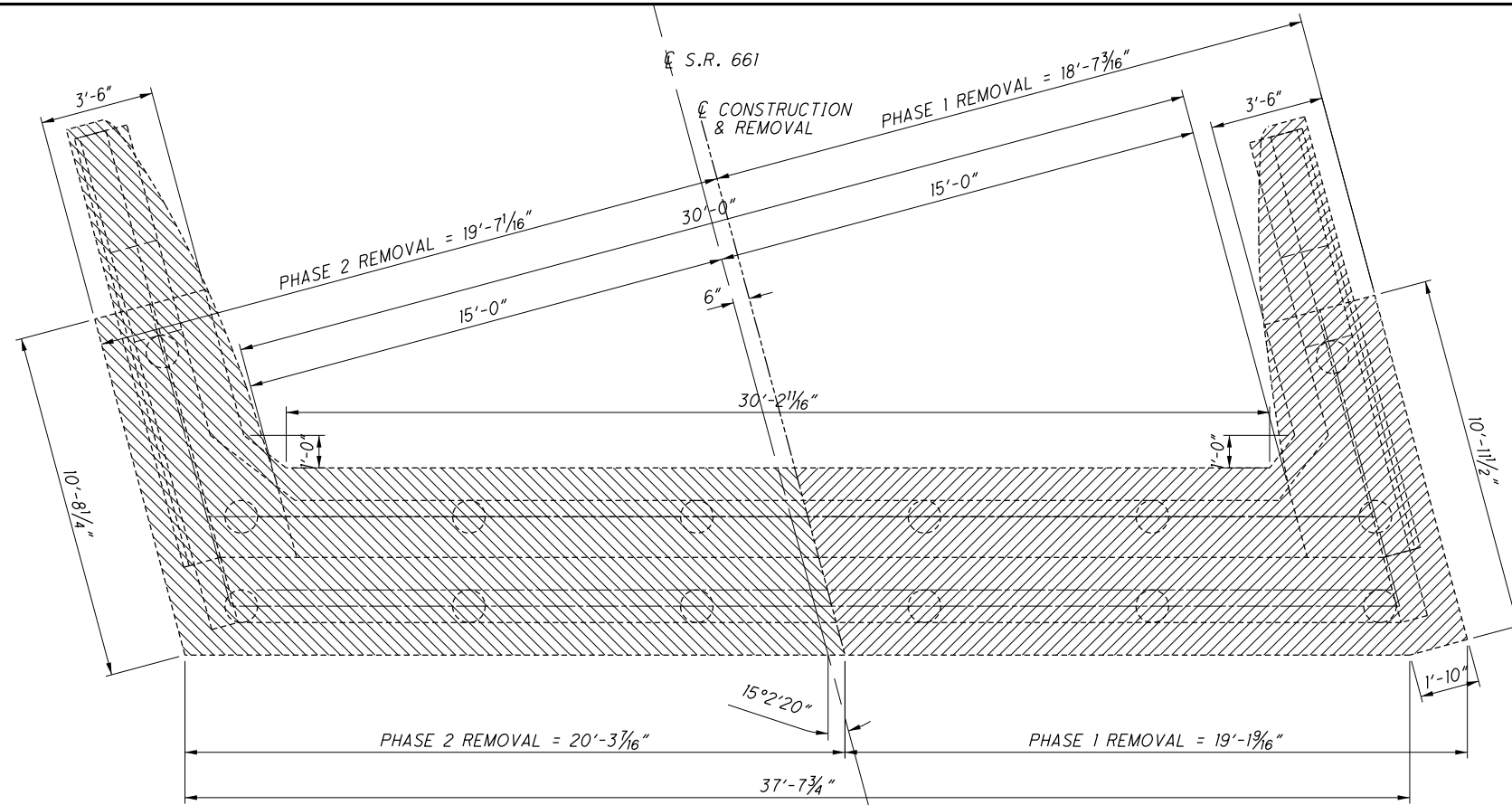


PHASE 3 (CLOSURE POUR) TRAFFIC CONTROL AND CONSTRUCTION

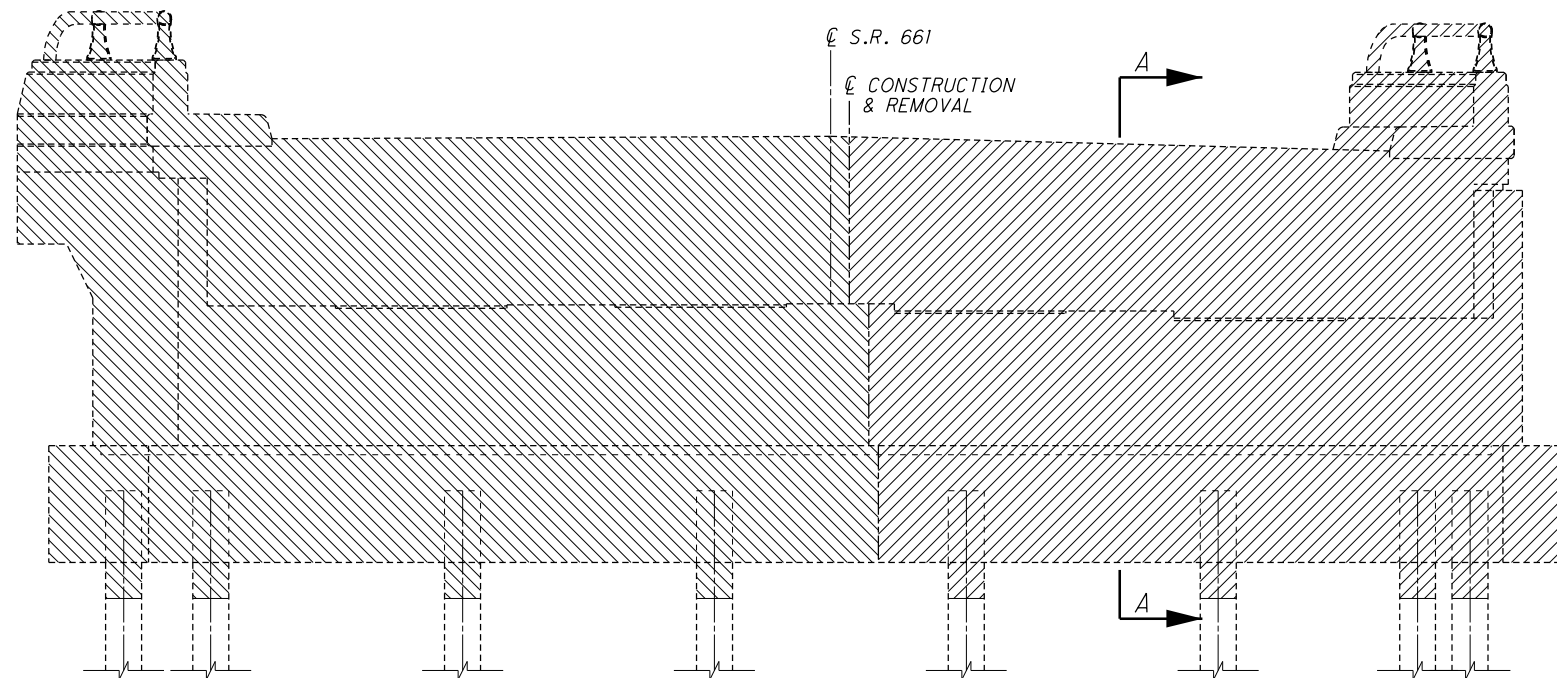


PROPOSED TRANSVERSE SECTION

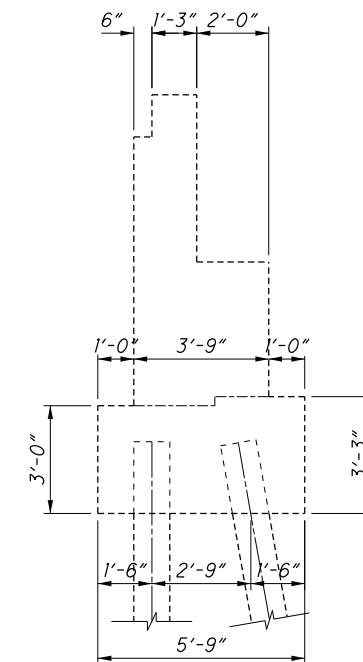
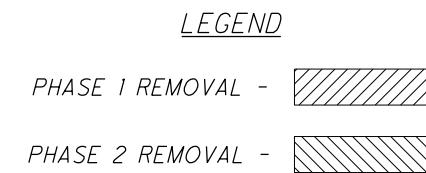
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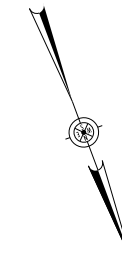
PLAN VIEW



ELEVATION VIEW

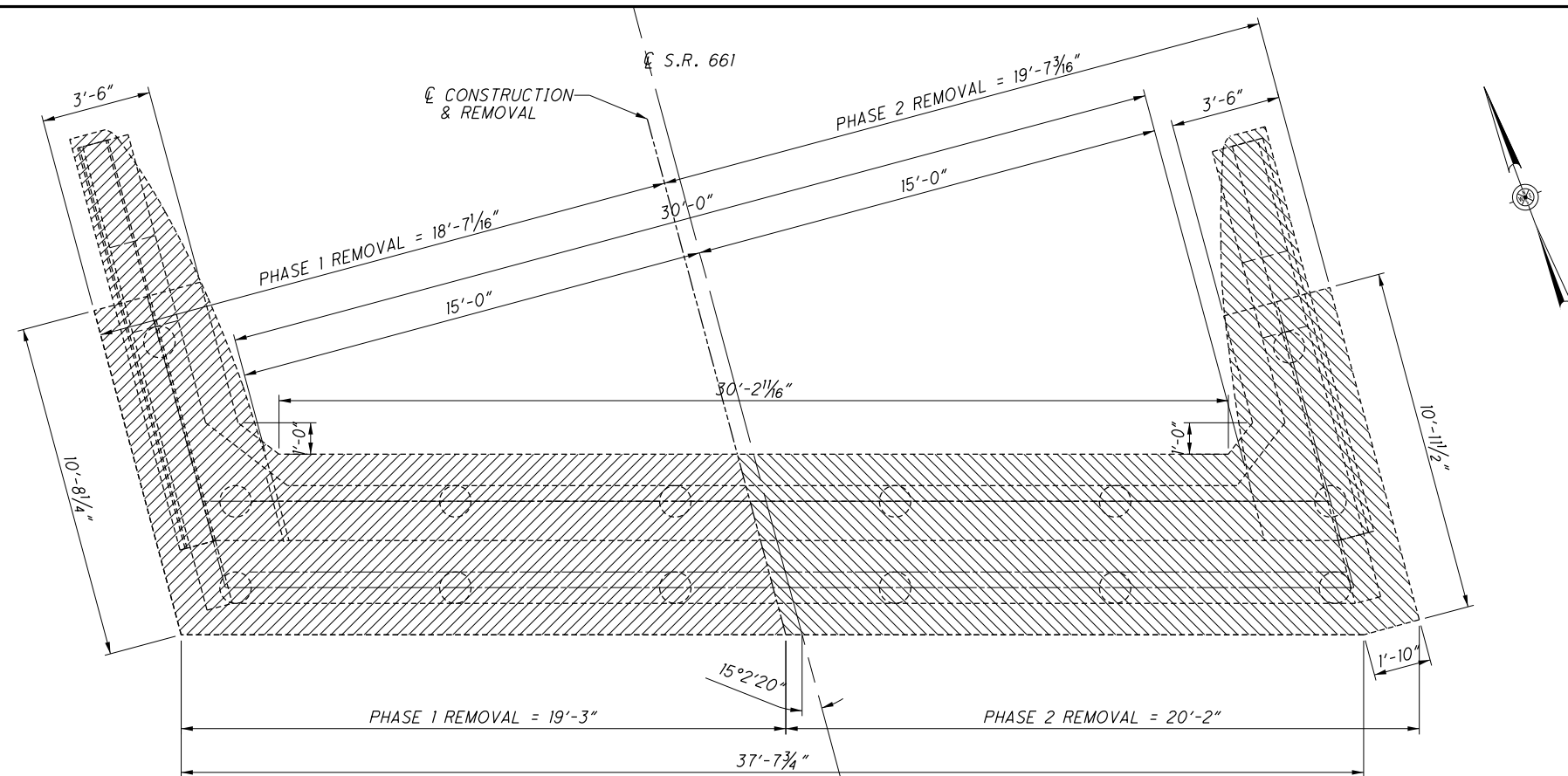


SECTION A-A

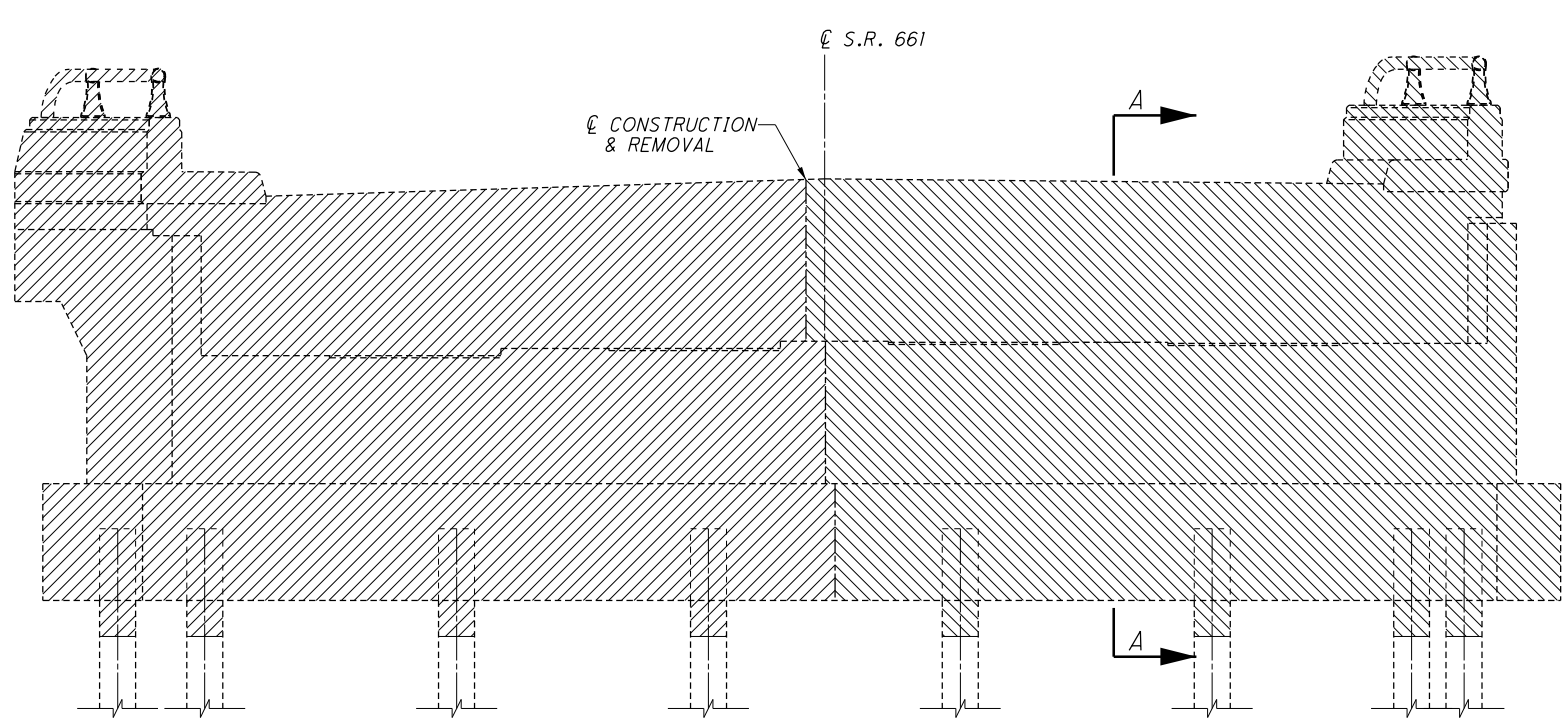
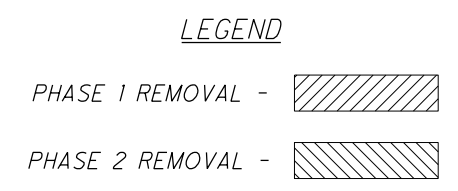


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								10 / 65	
								279 341	

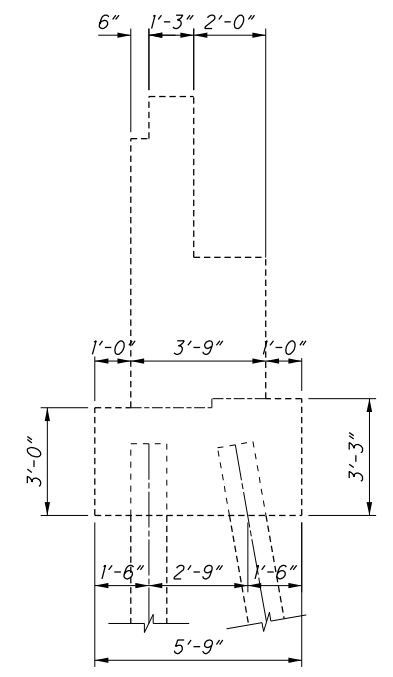
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PLAN VIEW



ELEVATION VIEW

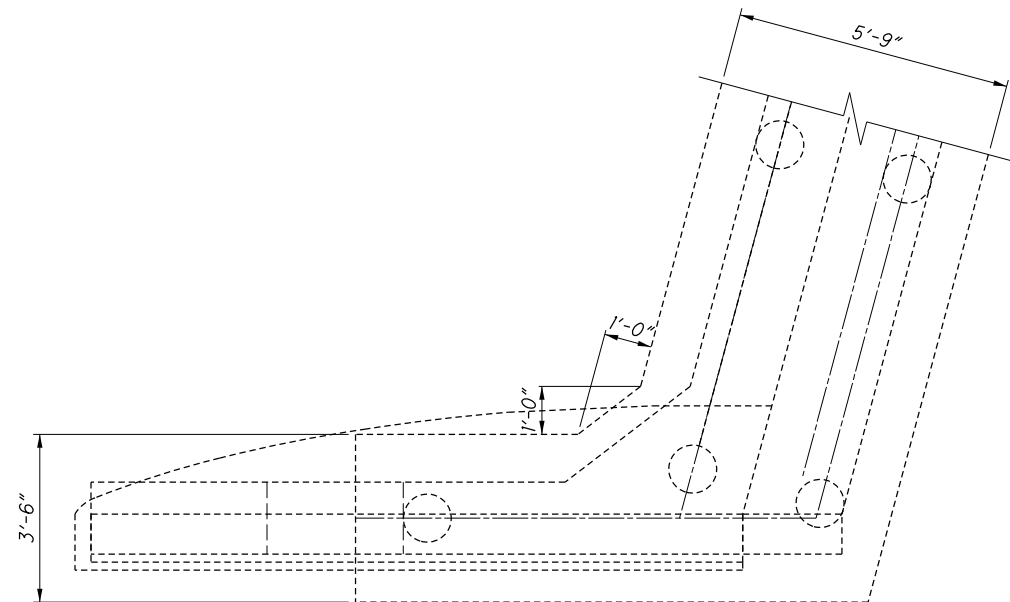


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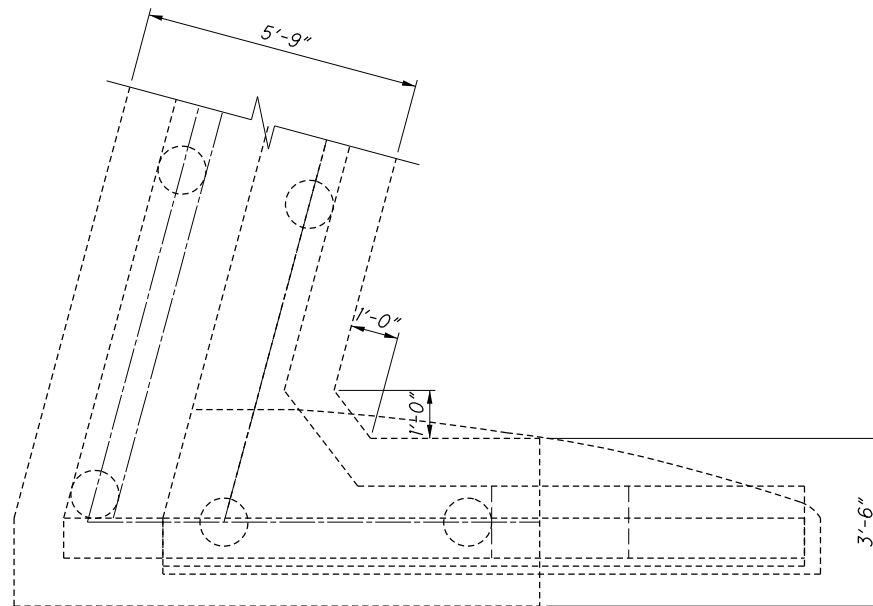
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EXISTING FORWARD ABUTMENT REMOVALS						
BRIDGE NO. LIC-661-0003						
OVER S.R. 16						
LIC-37/661-16.59/0.00		PID No. 92411				
11/65						
280						
341						



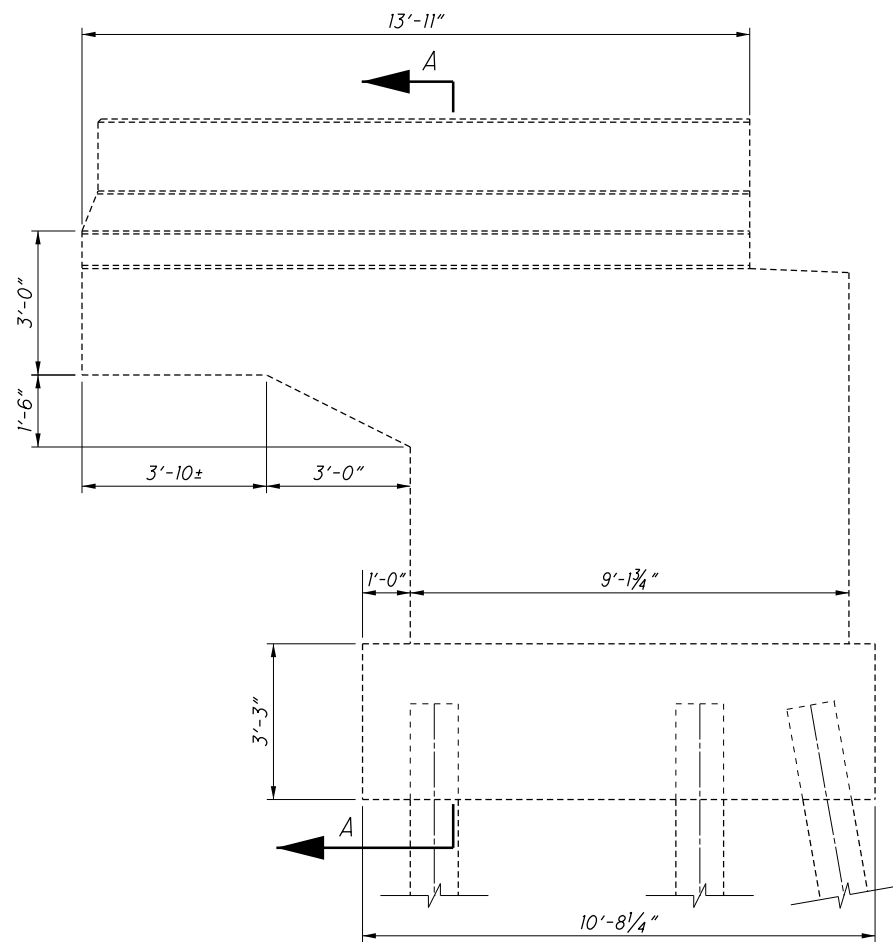
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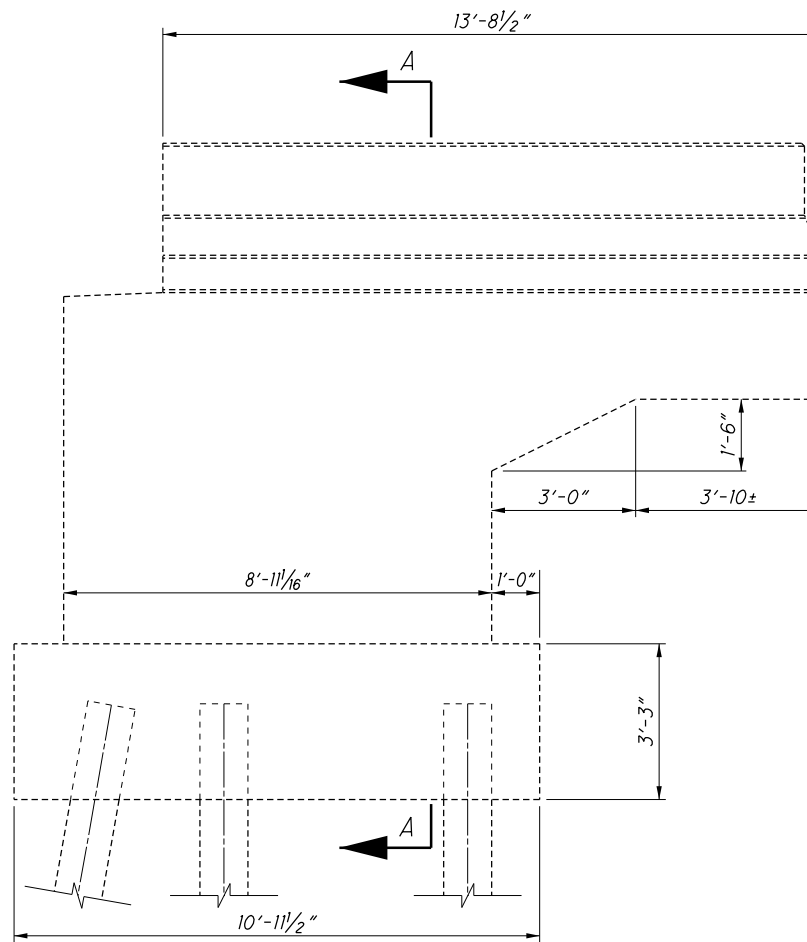
REAR ABUTMENT SE WING WALL  
FORWARD ABUTMENT NW WING WALL  
(PLAN VIEW)



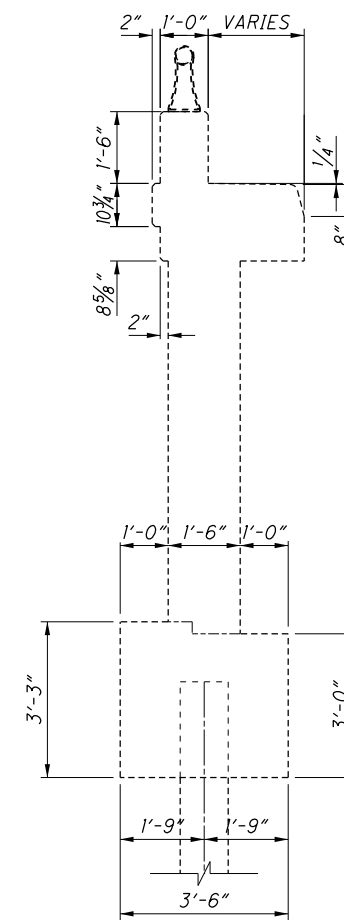
REAR ABUTMENT SW WING WALL  
FORWARD ABUTMENT NE WING WALL  
(PLAN VIEW)



REAR ABUTMENT SE WING WALL  
FORWARD ABUTMENT NW WING WALL  
(ELEVATION VIEW)



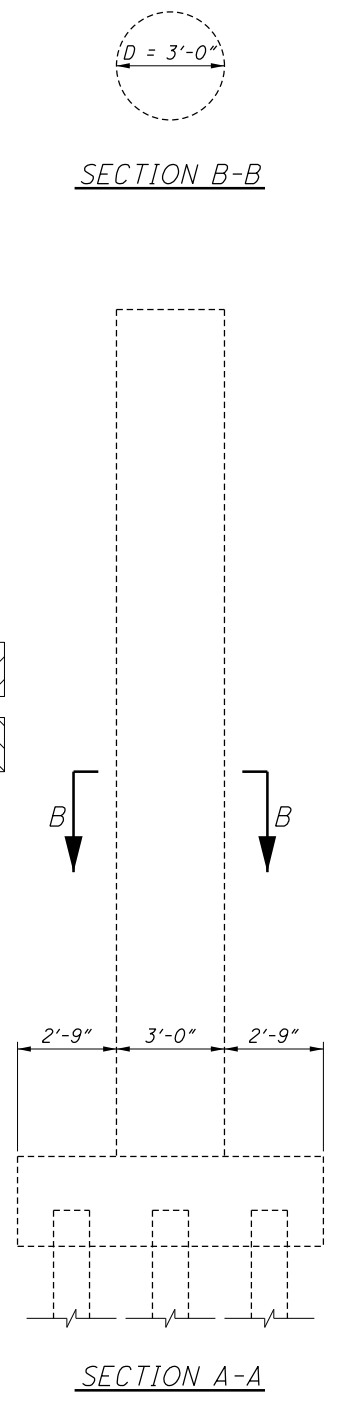
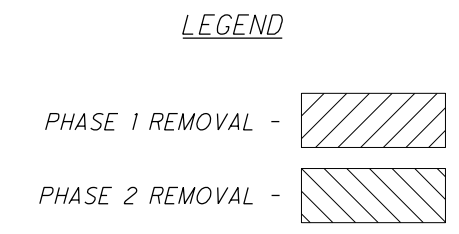
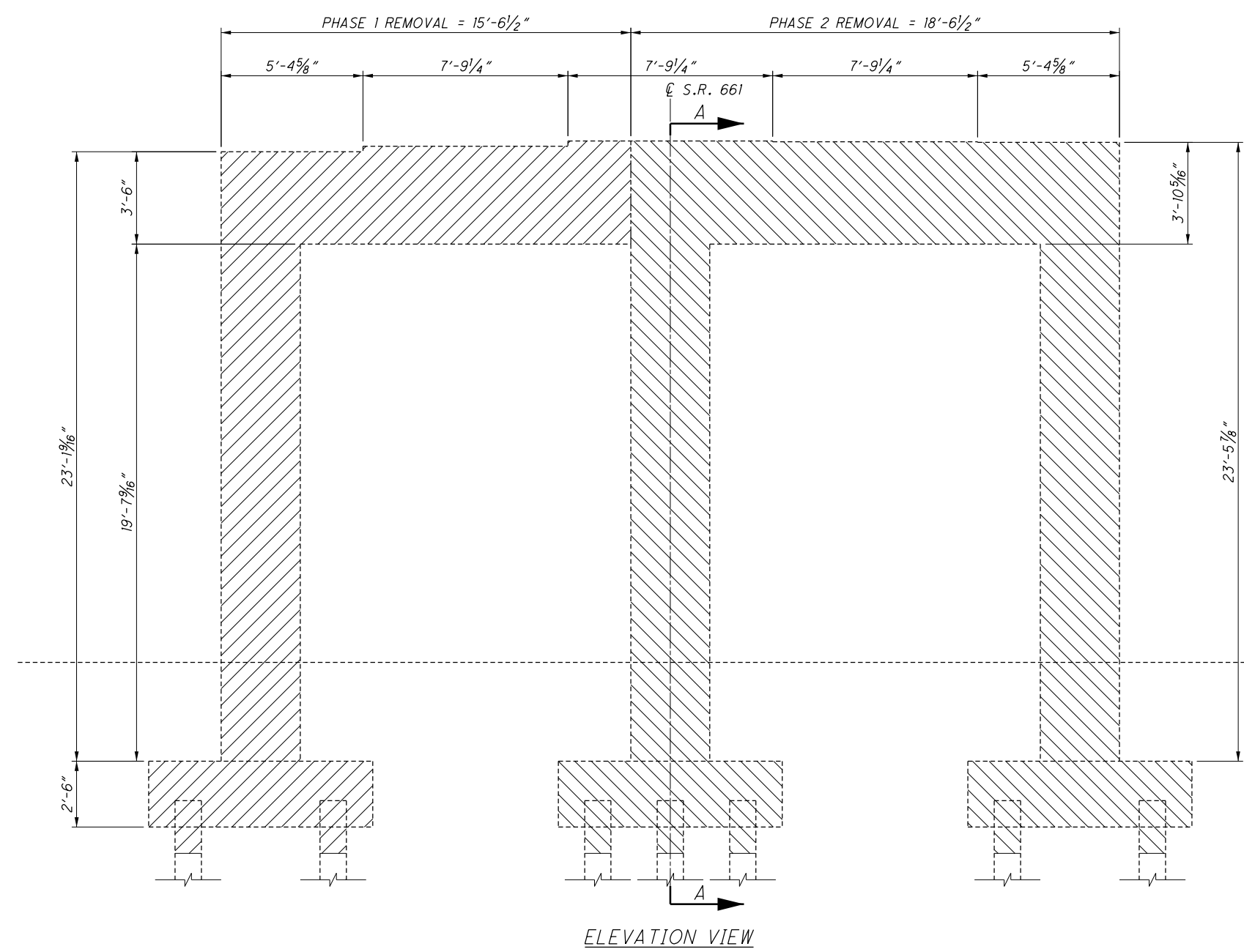
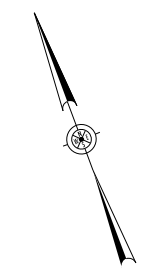
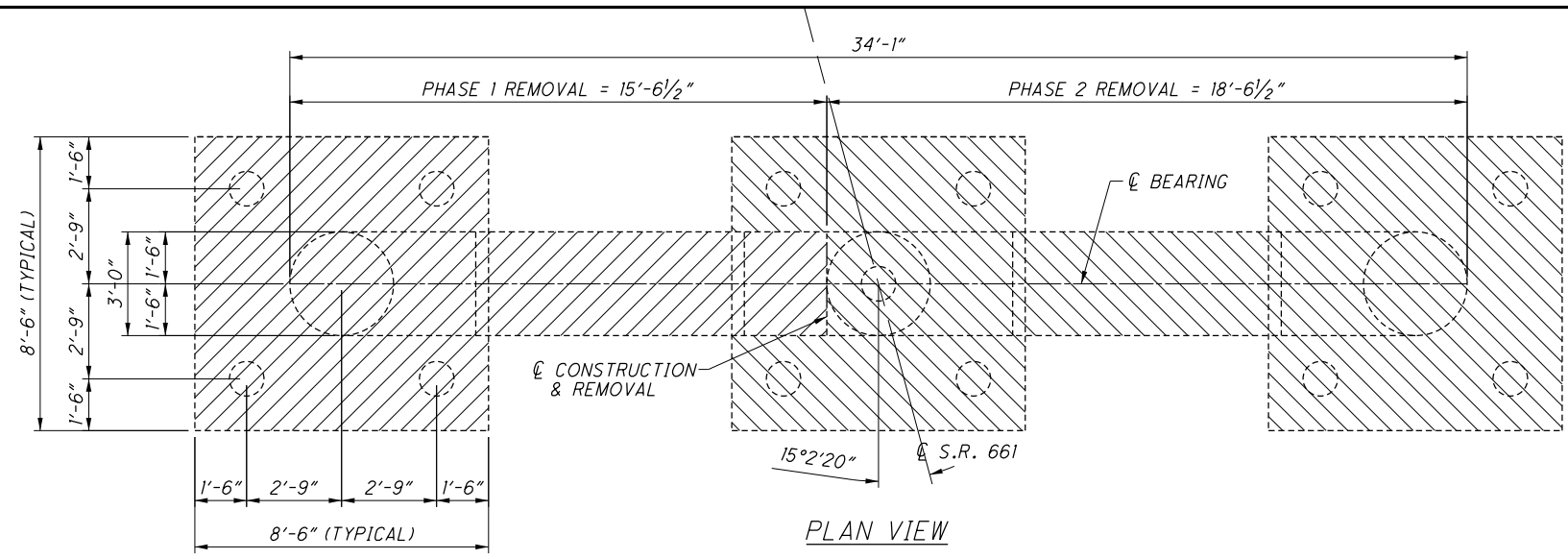
REAR ABUTMENT SW WING WALL  
FORWARD ABUTMENT NE WING WALL  
(ELEVATION VIEW)



SECTION A-A

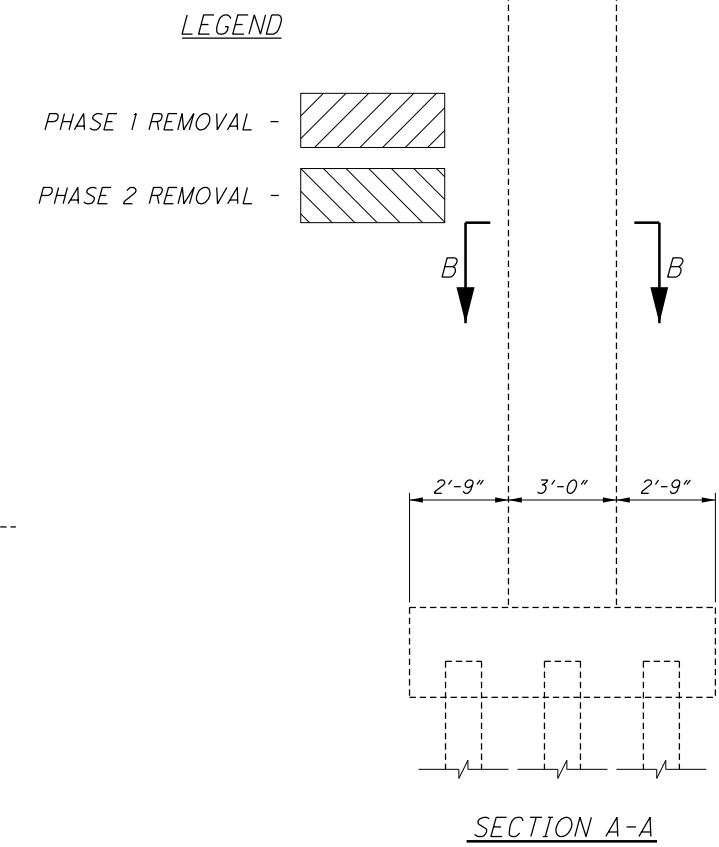
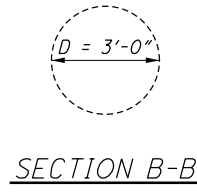
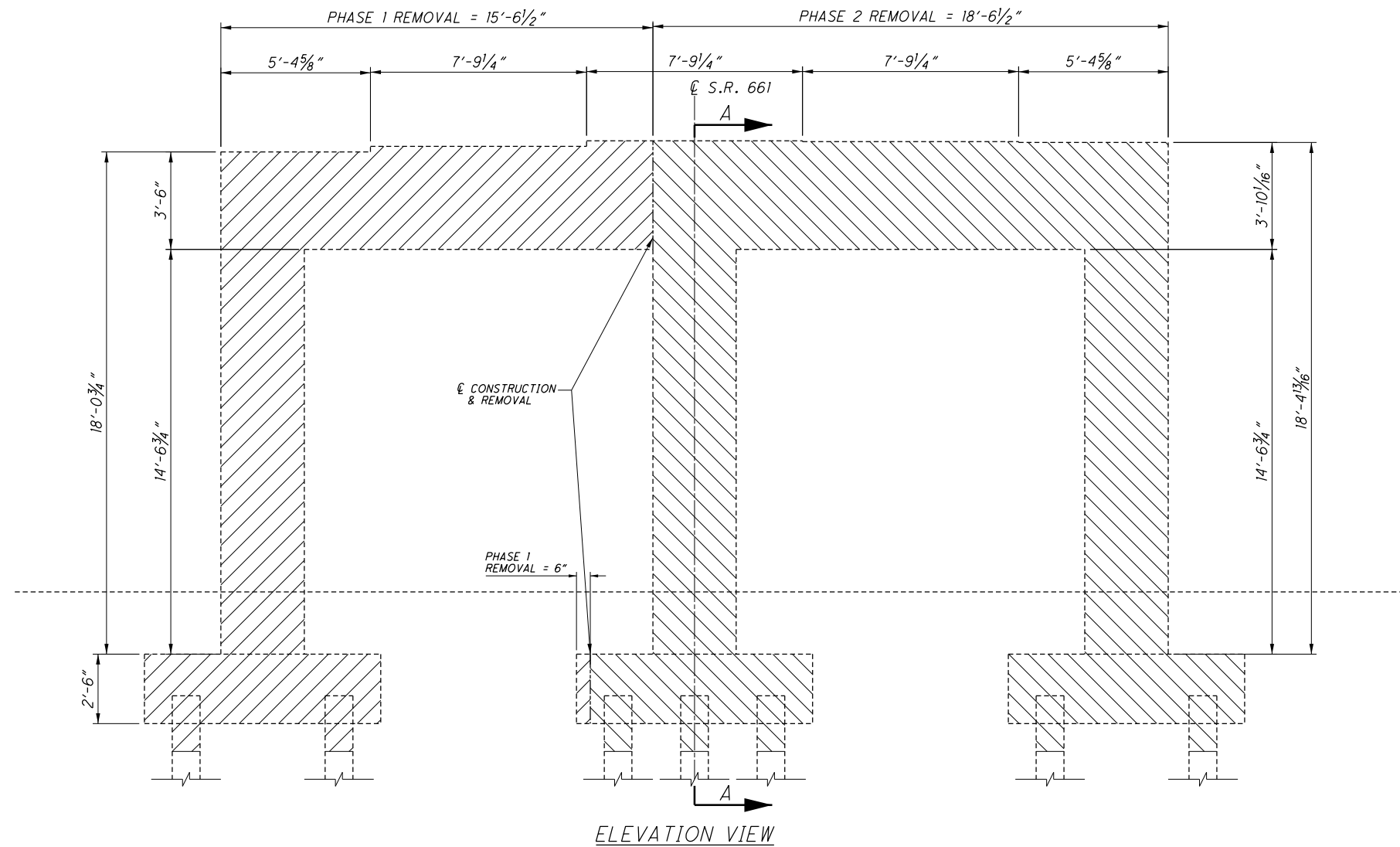
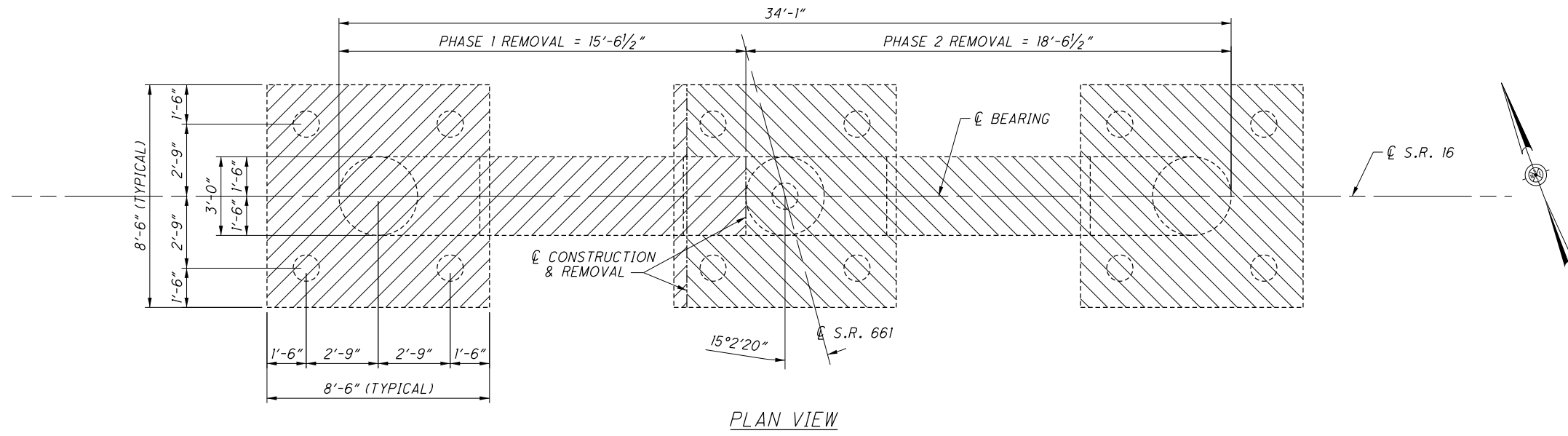
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EXISTING ABUTMENT DETAILS						BRIDGE NO. LIC-661-0003 OVER S.R. 16					
LIC-37/661-16.59/0.00						PID No. 92411					
12/65						281 341					

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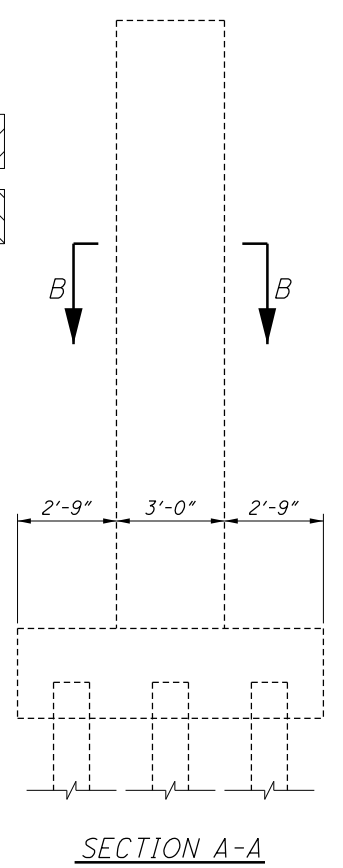
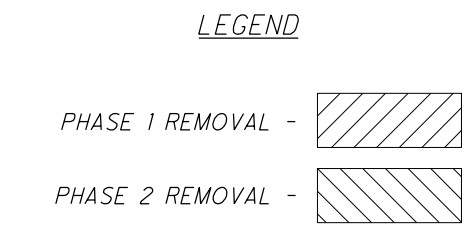
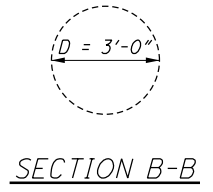
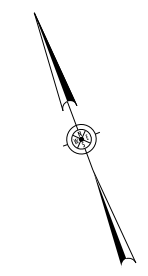
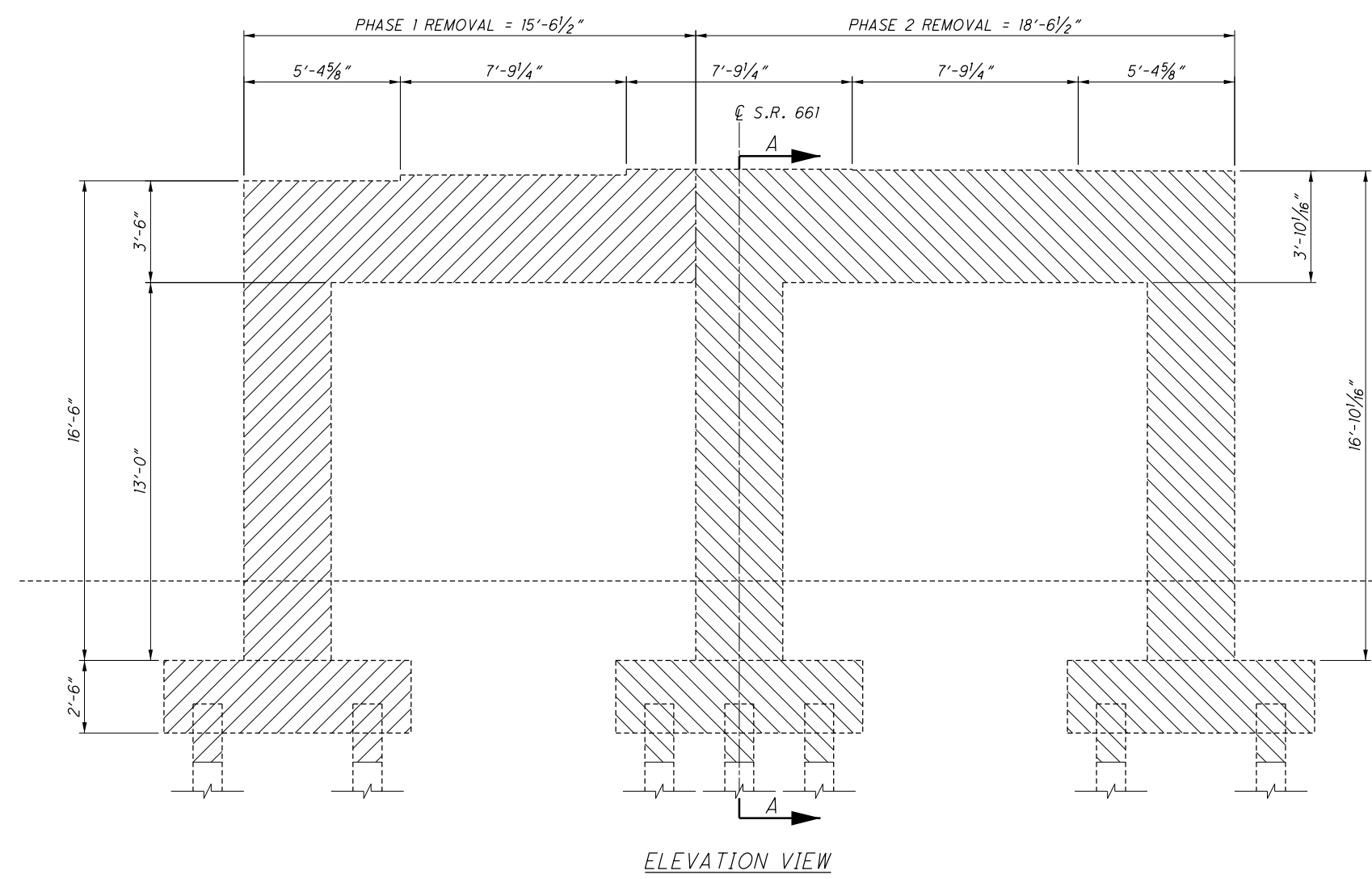
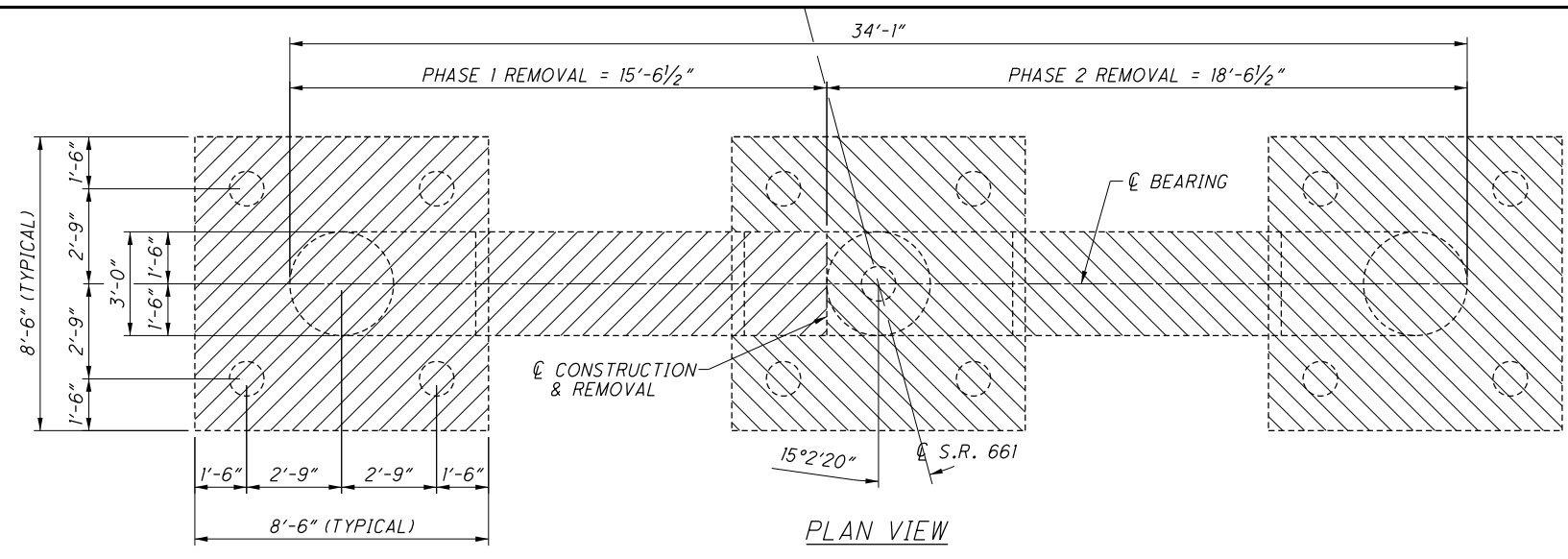
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					4506333			TRANSPORTATION, DISTRICT 5	
<b>EXISTING PIER 1 REMOVAL DETAILS</b> BRIDGE NO. LIC-661-0003 OVER S.R. 16									
LIC-37/661-16.59/0.00					PID No. 92411				
13/65									
282					341				

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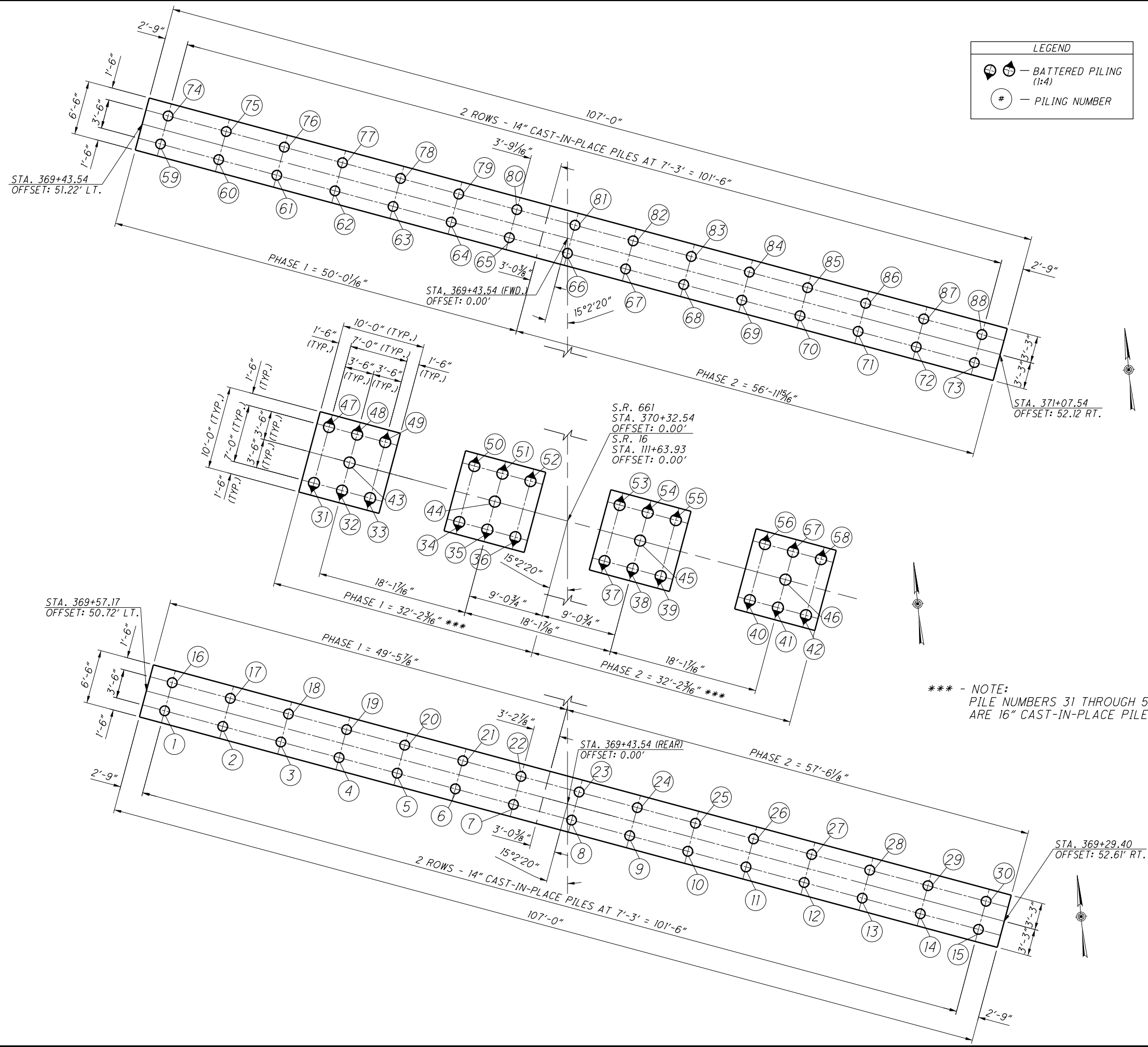
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EXISTING PIER 2 REMOVAL DETAILS										BRIDGE NO. LIC-661-0003	
LIC-37/661-16.59/0.00										OVER S.R. 16	
PID No. 92411										14/65	
										283	
										341	

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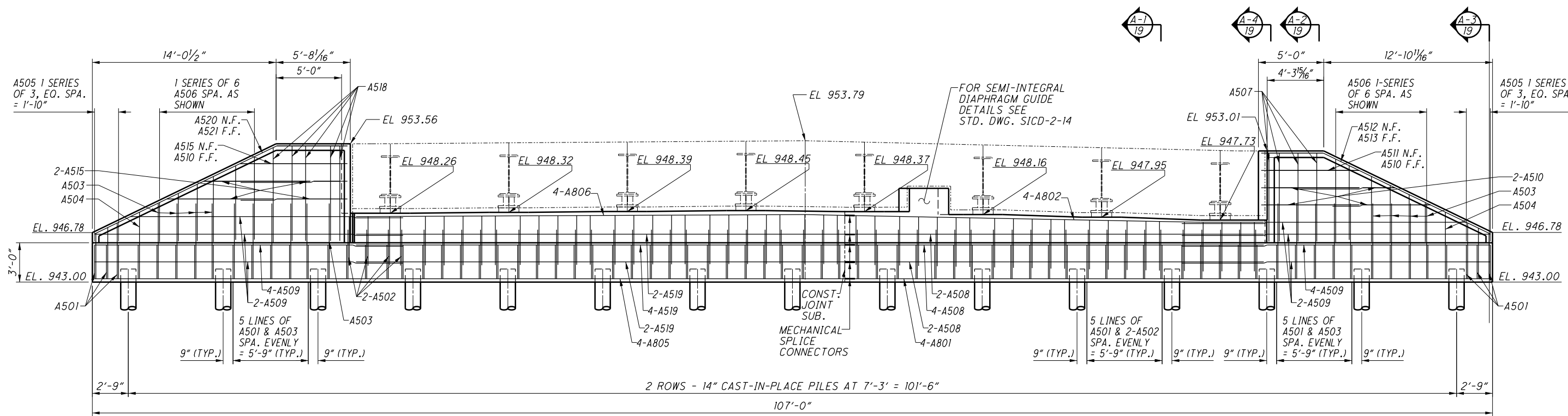
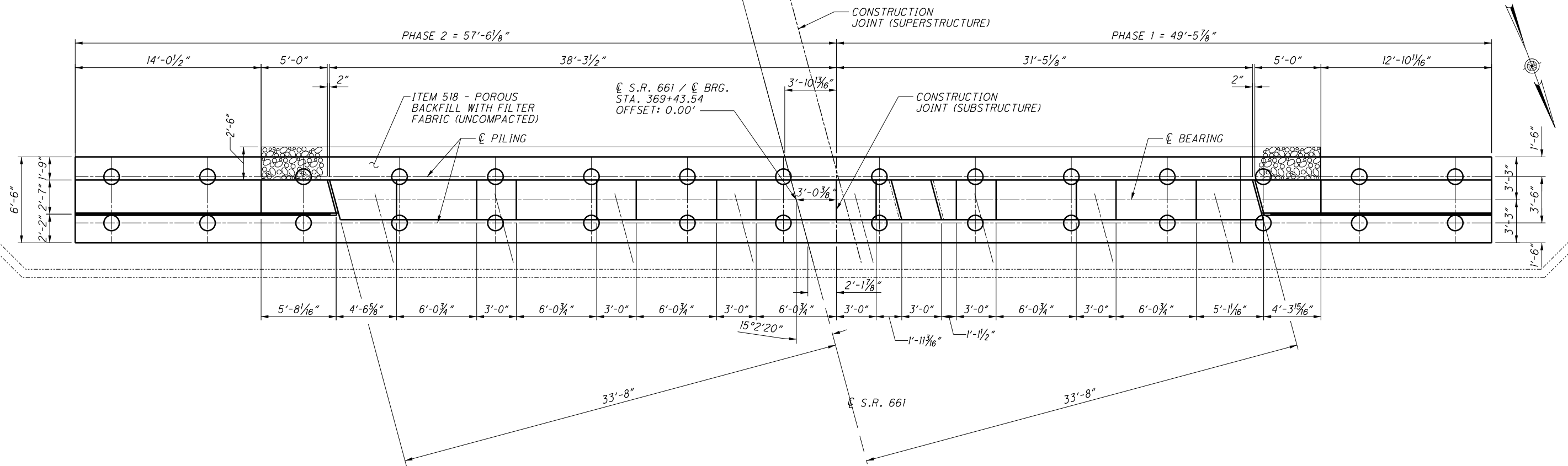
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LIC-37/661-16.59/0.00		PID No. 92411		15/65		284		341		STRUCTURE FILE NUMBER 4506333	

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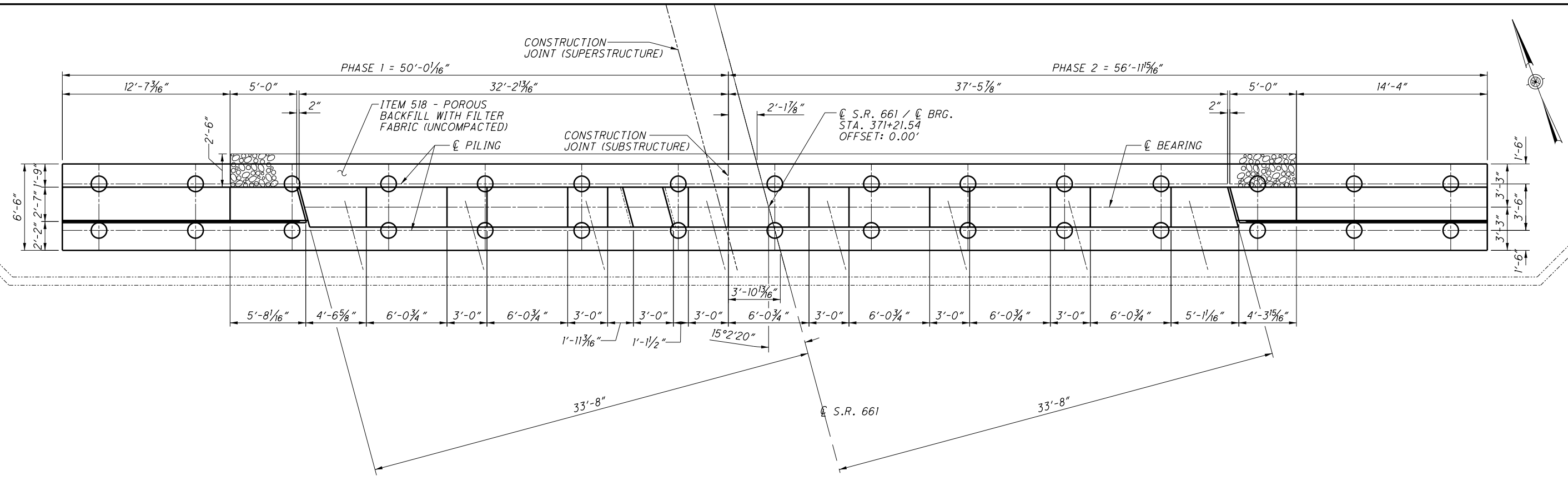
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DRAWN	CPS	REVIEWED	CPS
DATE	MM/DD/YY	DATE	MM/DD/YY
FILE NUMBER	4506333	FILE NUMBER	4506333
<b>PILING LAYOUT</b>			
BRIDGE NO. LIC-661-0003 OVER S.R. 16			
LIC-37/661-16.59/0.00		PID No. 92411	
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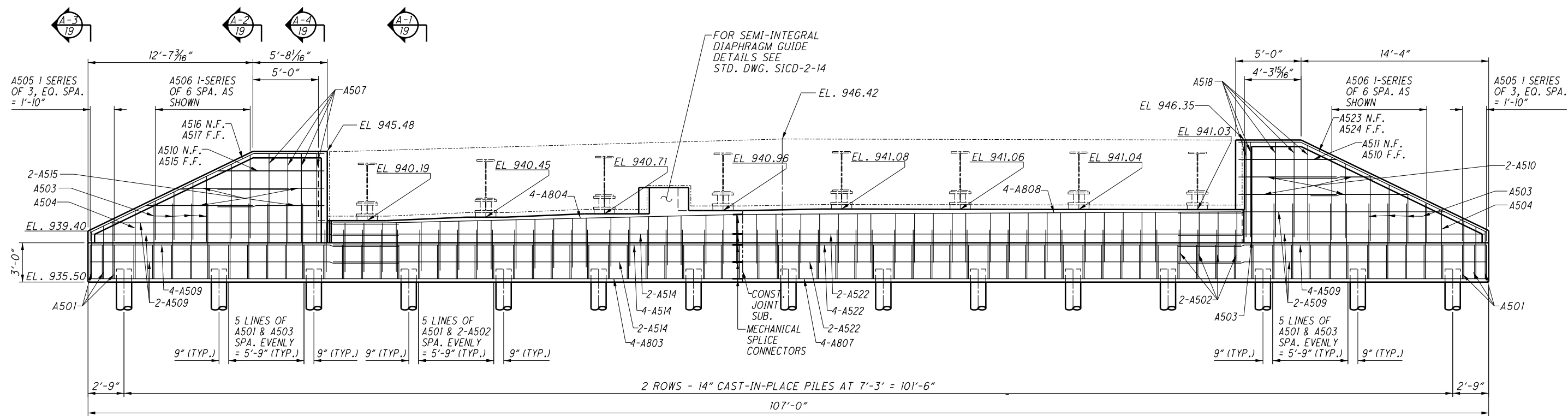


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DATE	MM/DD/YY
REVIEWED	CPS
DRAWN	CPS
DESIGNED	CPS
CHECKED	TAG
STRUCTURE FILE NUMBER	4506333
BRIDGE NO.	LIC-661-0003
OVER S.R.	16
LIC-37/661-16.59/0.00	PID No. 92411
17/65	286/341

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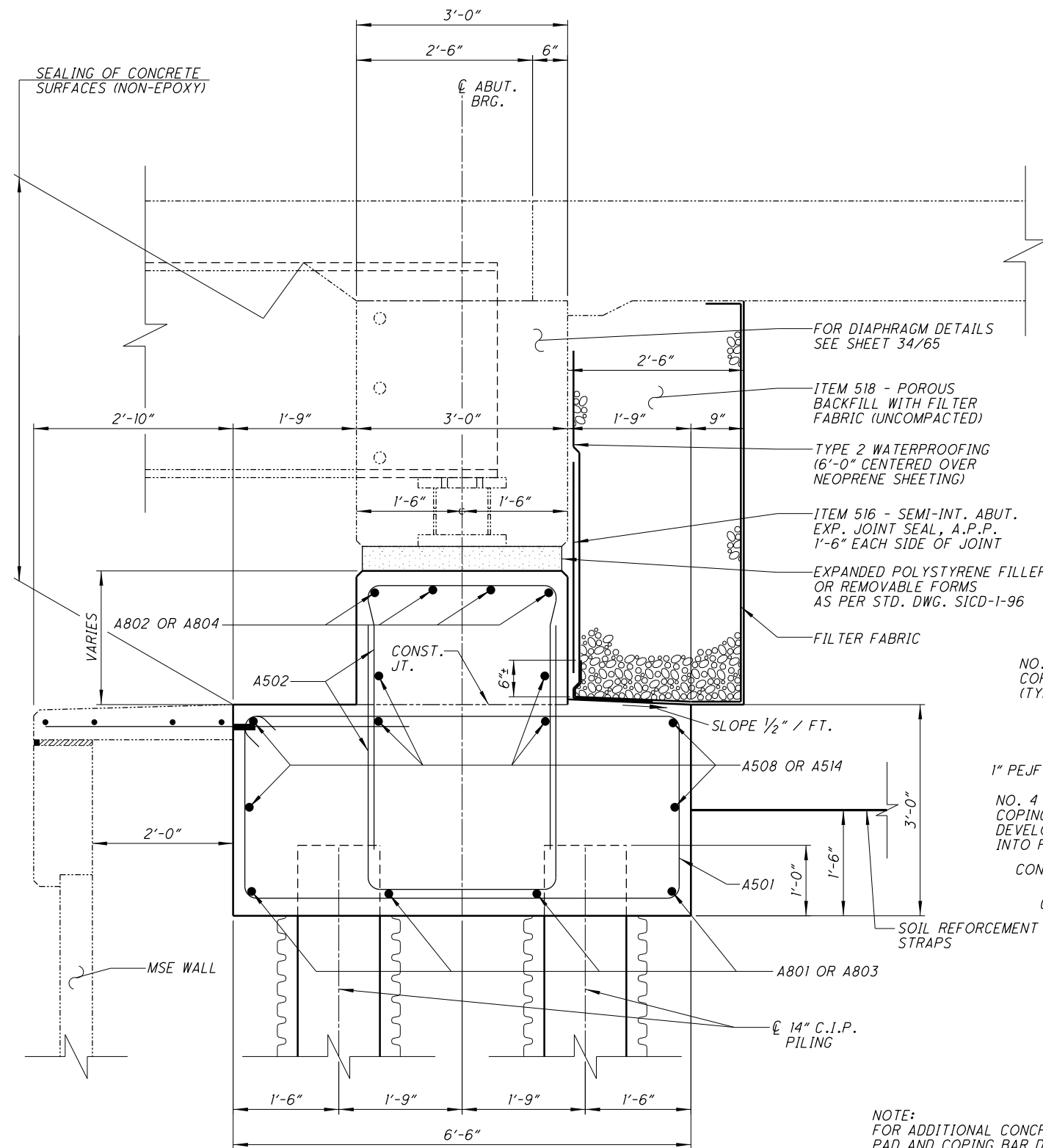
PLAN VIEW



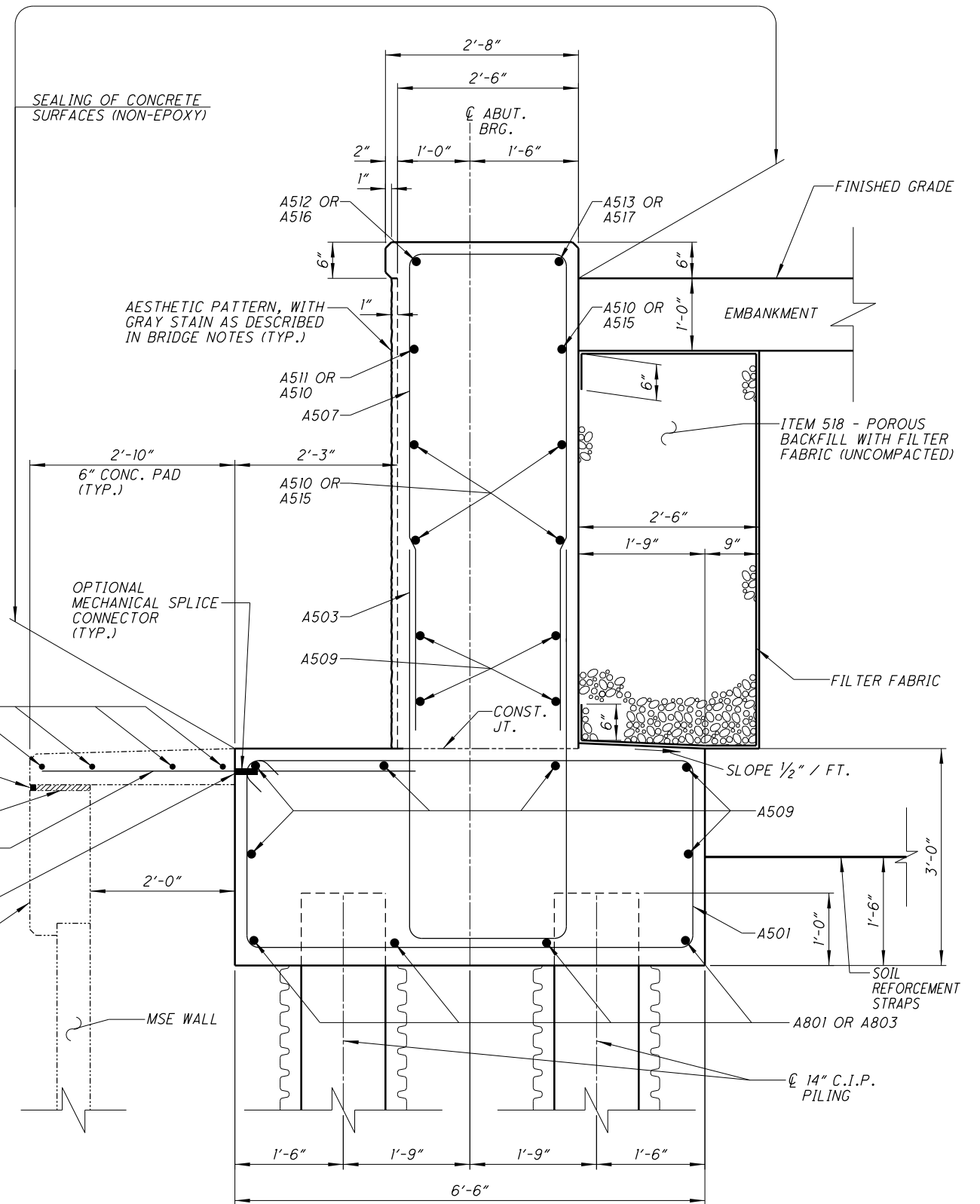
ELEVATION VIEW

DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED	DATE	DESIGNED	DATE
CPS	MM/DD/YY	CPS	MM/DD/YY
STRUCTURE FILE NUMBER	4506333	CHECKED	TAG
DRAIN	CPS	REVIS	
CPS			
<b>PROPOSED ABUTMENT DETAILS (FORWARD)</b>			
BRIDGE NO. LIC-661-0003		OVER S.R. 16	
LIC-37/661-16.59/0.00	PID No. 92411		
18	65		
287			
341			

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SECTION A-1  
17/18  
(BREASTWALL DETAIL)



SECTION A-2  
17/18  
(WINGWALL DETAIL)

NOTE:  
FOR ADDITIONAL CONCRETE  
PAD AND COPING BAR DETAILS,  
SEE SHEET MSE WALL DETAILS.

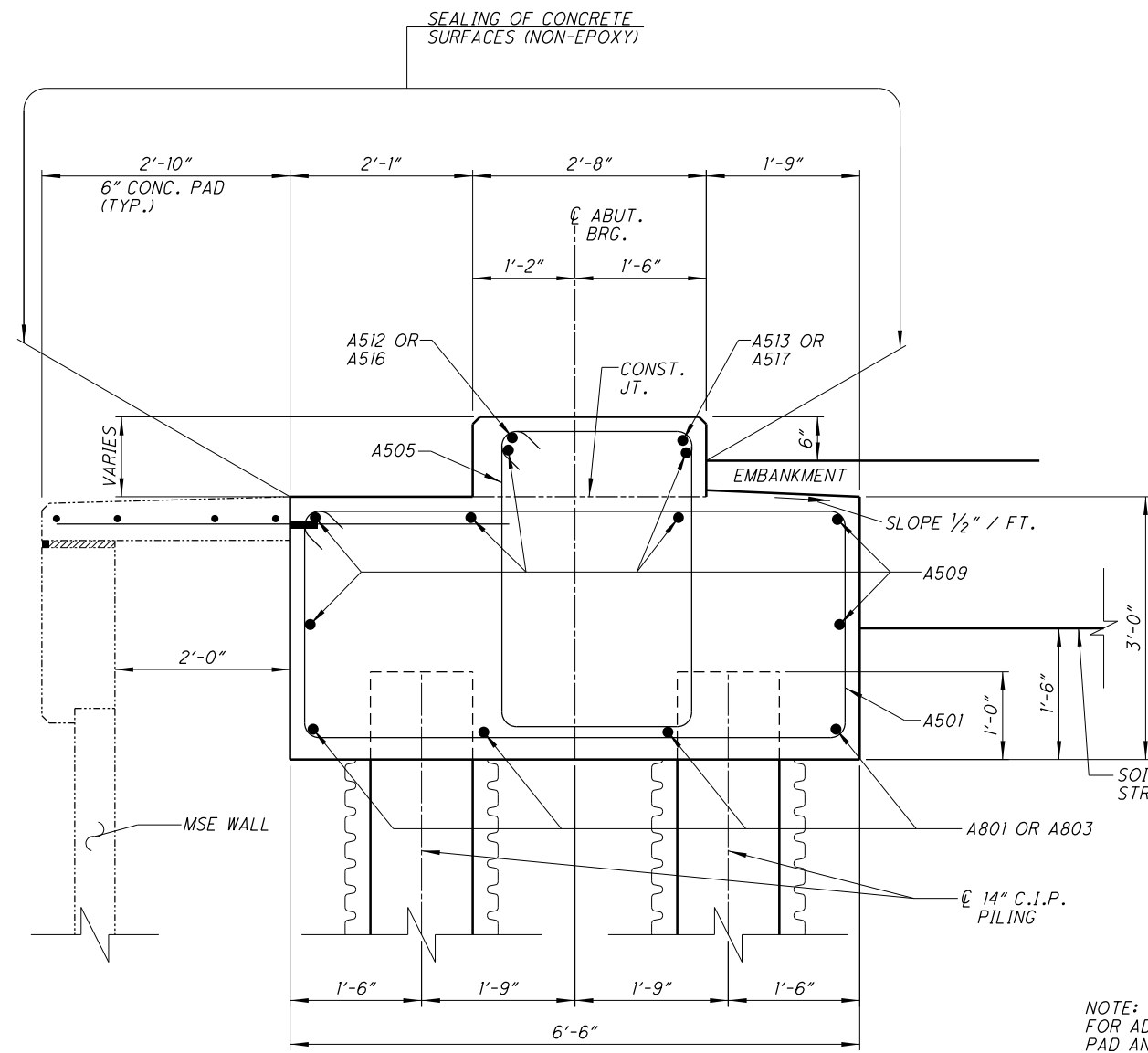
NOTE:  
CONTRACTOR SHALL DESIGN THE  
MECHANICAL ANCHOR STRIPS FOR  
THE UNFACTORED LOAD OF 2.0 KIPS  
PER FOOT OF WALL. PAYMENT FOR  
THE METAL ANCHOR STRIPS SHALL  
BE INCIDENTAL TO MSE WALL ITEM.

\* - SEALING COMPOUND AND 1" P.E.J.F.  
CARRIED WITH COPING FOR PAYMENT.

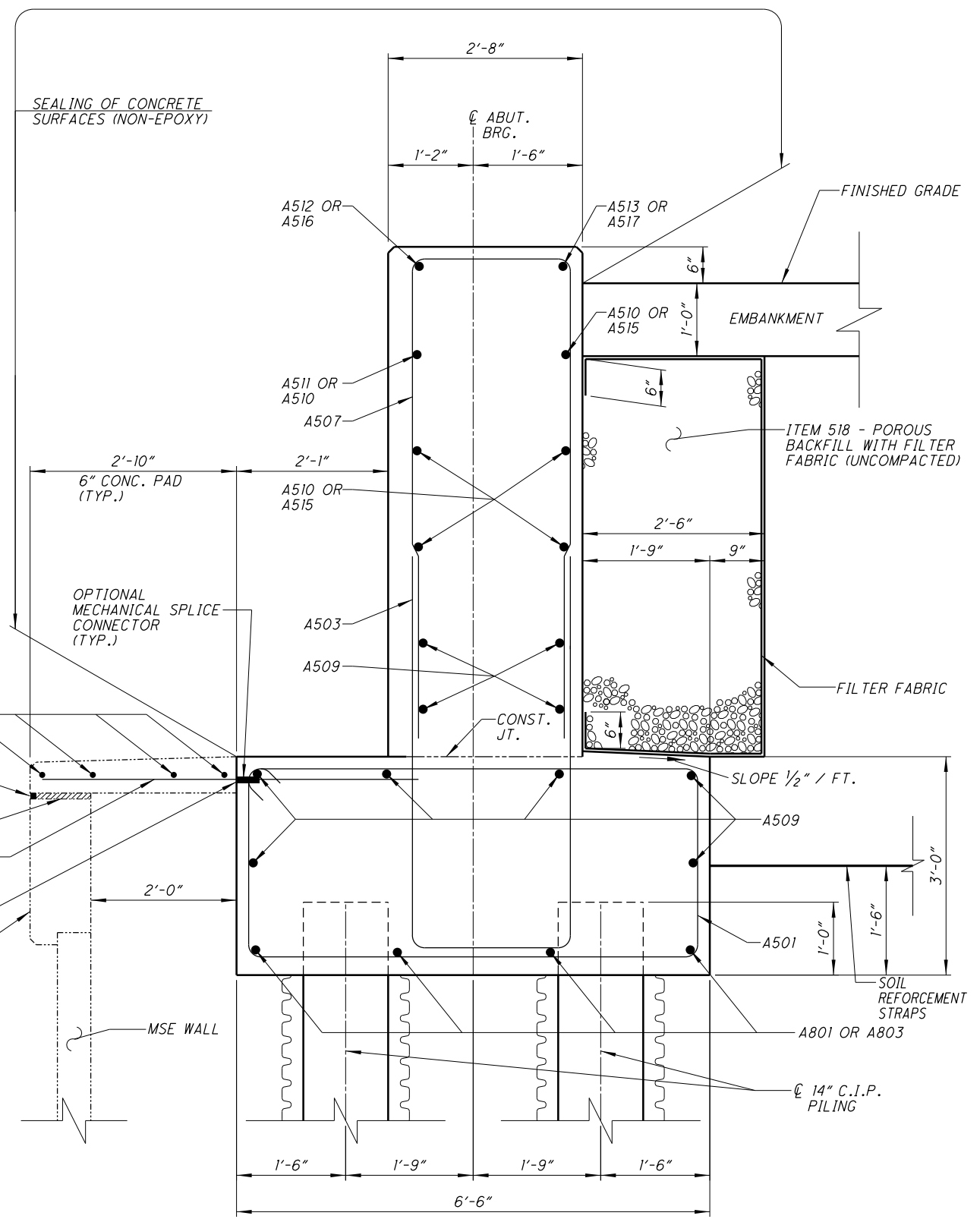
DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DATE	MM/DD/YY	REVIEWED	CPS
FILE NUMBER	4506333	STRUCTURE	FILE NUMBER
DESIGNED	CPS	CHECKED	TAG
DRAWN	CPS	REVISED	
<p>PROPOSED ABUTMENT DETAILS (REAR &amp; FORWARD)</p> <p>BRIDGE NO. LIC-661-0003 OVER S.R. 16</p> <p>LIC-37/661-16.59/0.00 PID No. 92411</p>			
19/65		288	
		341	



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SECTION **A-3**  
17/18  
(BREASTWALL DETAIL)



SECTION **A-4**  
17/18  
(WINGWALL DETAIL)

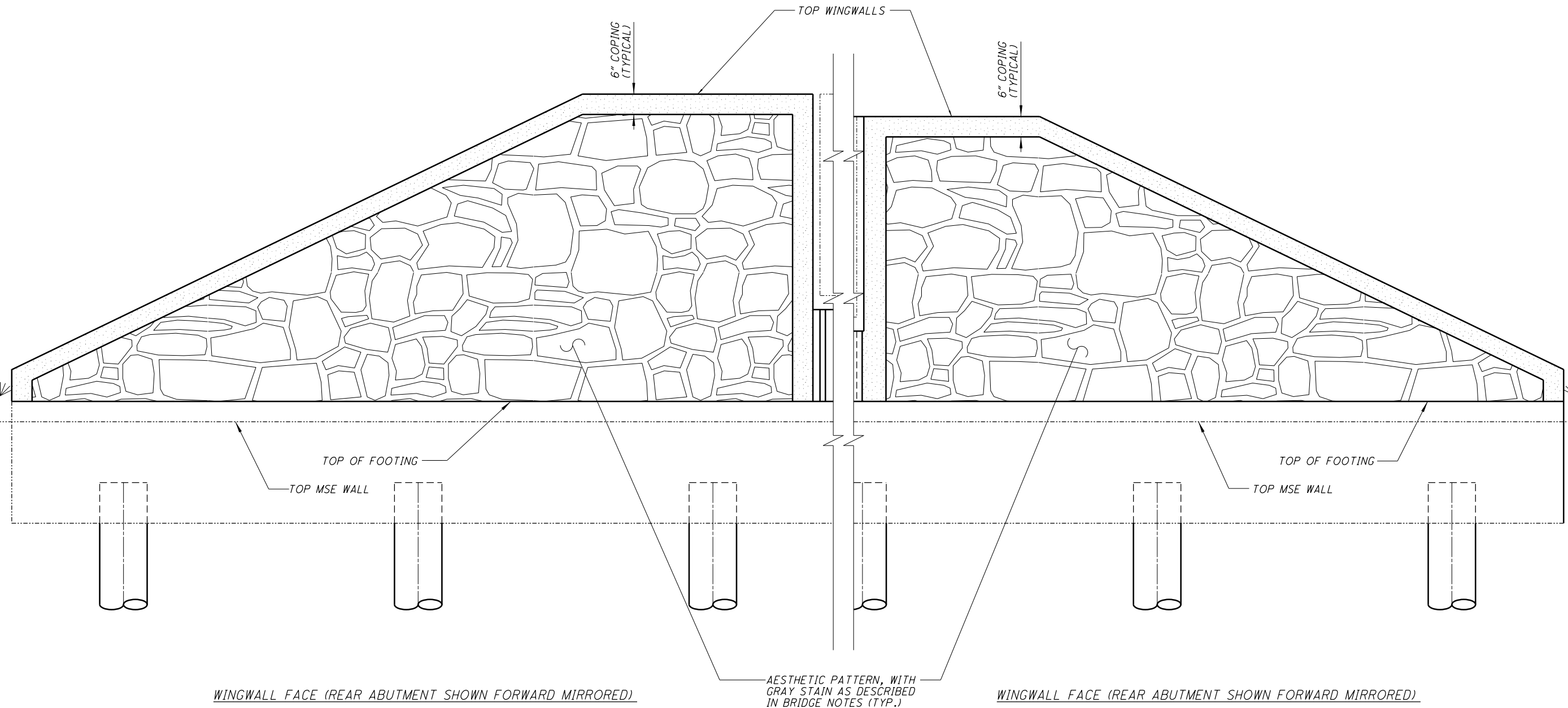
NOTE:  
FOR ADDITIONAL CONCRETE  
PAD AND COPING BAR DETAILS,  
SEE SHEET MSE WALL DETAILS.

NOTE:  
CONTRACTOR SHALL DESIGN THE  
MECHANICAL ANCHOR STRIPS FOR  
THE UNFACTORED LOAD OF 2.0 KIPS  
PER FOOT OF WALL. PAYMENT FOR  
THE METAL ANCHOR STRIPS SHALL  
BE INCIDENTAL TO MSE WALL ITEM.

\* - SEALING COMPOUND AND 1" P.E.J.F.  
CARRIED WITH COPING FOR PAYMENT.

DESIGNED		CHECKED		DRAWN		REVIEWED		DATE		DESIGN AGENCY	
CPS	TAG	CPS	TAG	CPS	REVISED	CPS	MM/DD/YY	MM/DD/YY	STRUCTURE FILE NUMBER	4506333	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
<p>PROPOSED ABUTMENT DETAILS (REAR &amp; FORWARD)</p> <p>BRIDGE NO. LIC-661-0003 OVER S.R. 16</p>											
LIC-37/661-16.59/0.00						PID No. 92411					
20/65						289/341					

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WINGWALL FACE (REAR ABUTMENT SHOWN FORWARD MIRRORED)

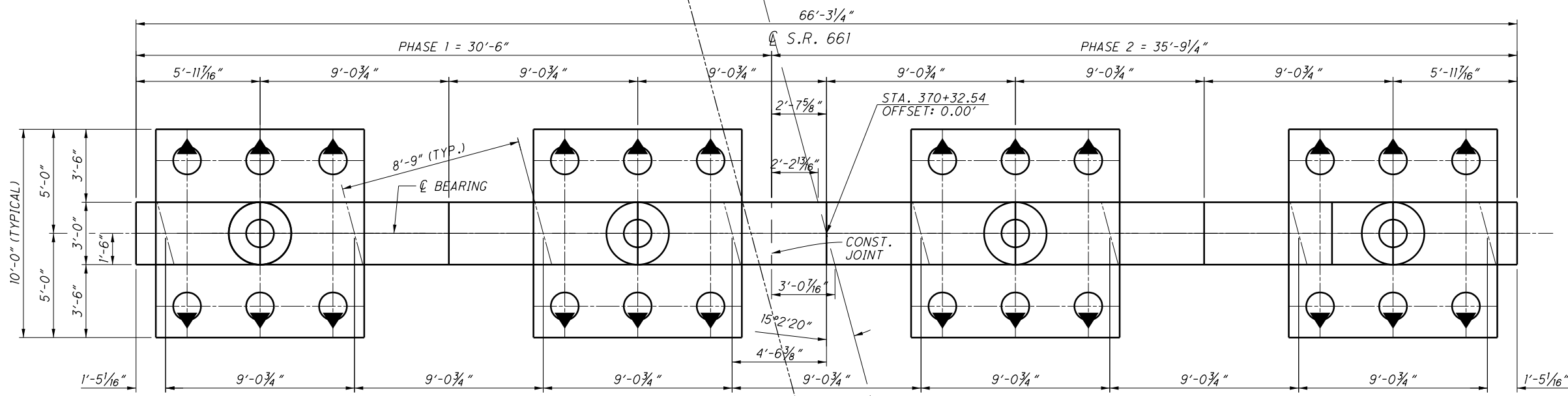
WINGWALL FACE (REAR ABUTMENT SHOWN FORWARD MIRRORED)

TYPICAL WINGWALL AESTHETIC TREATMENT

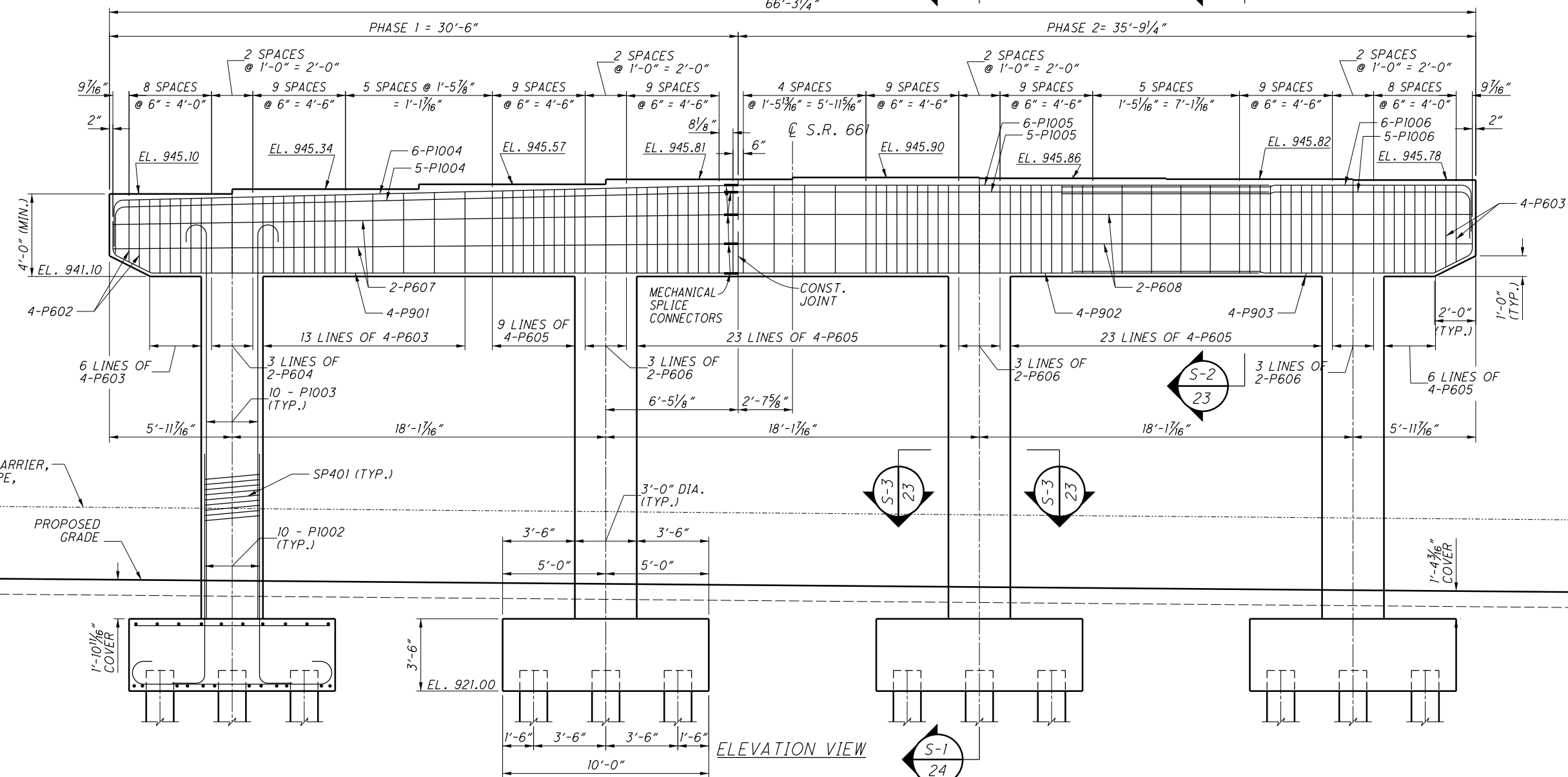
 - FLUSH CONCRETE SURFACES (NO STAIN)

LIC-37/661-16.59/0.00		PROPOSED ABUTMENT AESTHETIC DETAILS (REAR & FORWARD)		DESIGN AGENCY	
PID No. 92411		BRIDGE NO. LIC-661-0003		OHIO DEPARTMENT OF	
21/65		OVER S.R. 16		TRANSPORTATION, DISTRICT 5	
290		REVIEWED		DATE	
341		CPS		MM/DD/YY	
		CHECKED		STRUCTURE FILE NUMBER	
		TAG		4506333	
		DRAIN		REVISED	
		CPS		-	

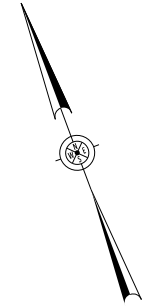
I:\ProjectData\LIC\9241\Design\Structures\661\_0003\_S1001.dgn Pier Details I 11/18/2019 4:49:19 PM bharlow



PLAN VIEW

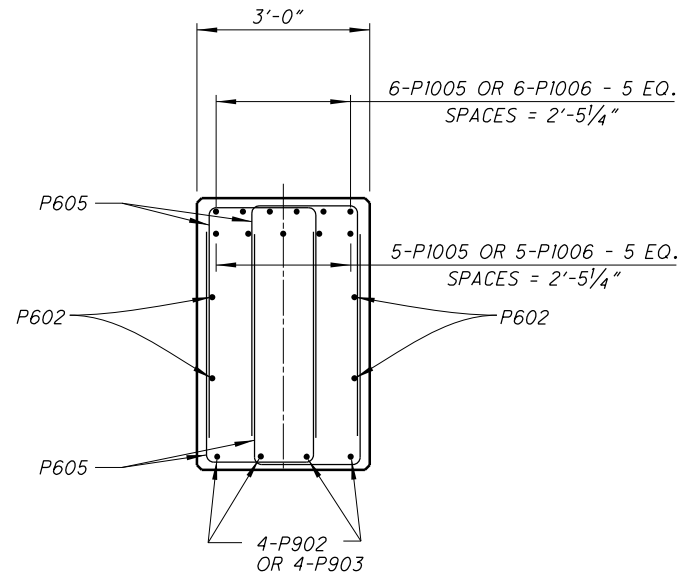
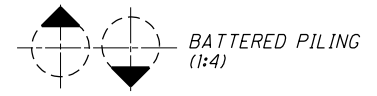


ELEVATION VIEW

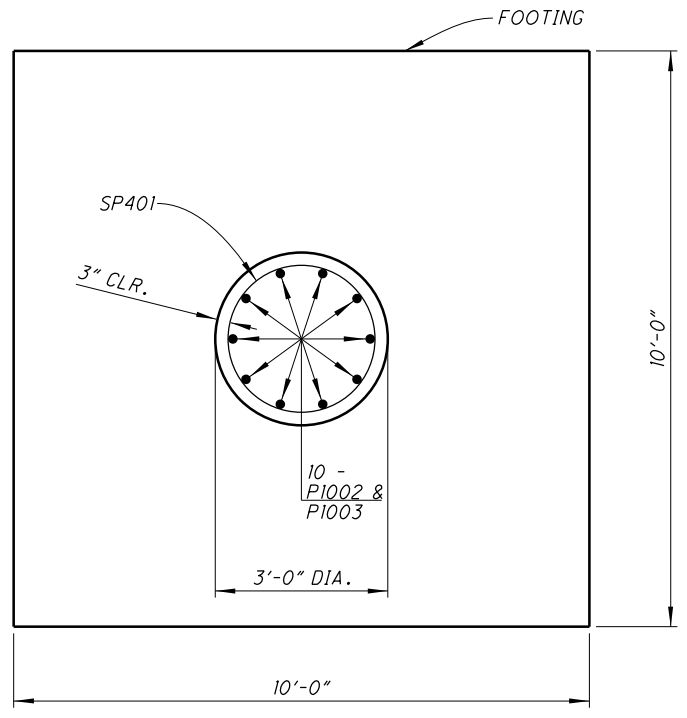


DESIGNED CPS	CHECKED TAG	DRAWN CPS	REVISED	REVIEWED CPS	DATE MM/DD/YY	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
					4506333	
LIC-37/661-16.59/0.00						PIER DETAILS BRIDGE NO. LIC-661-0003 OVER S.R. 16
PID No. 92411						
22/65						291 341

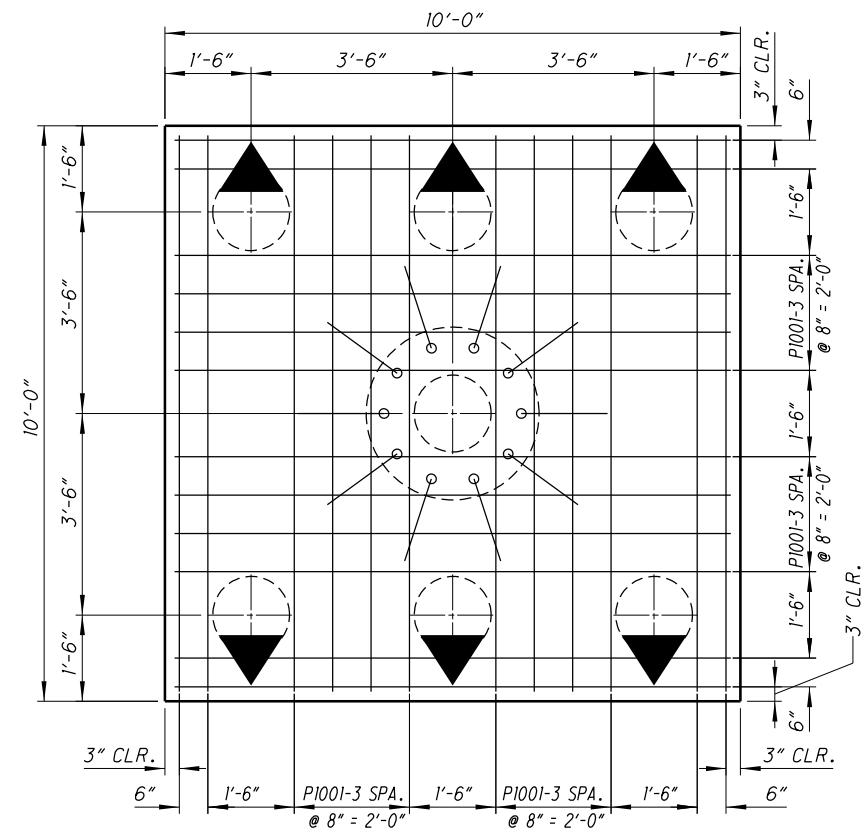
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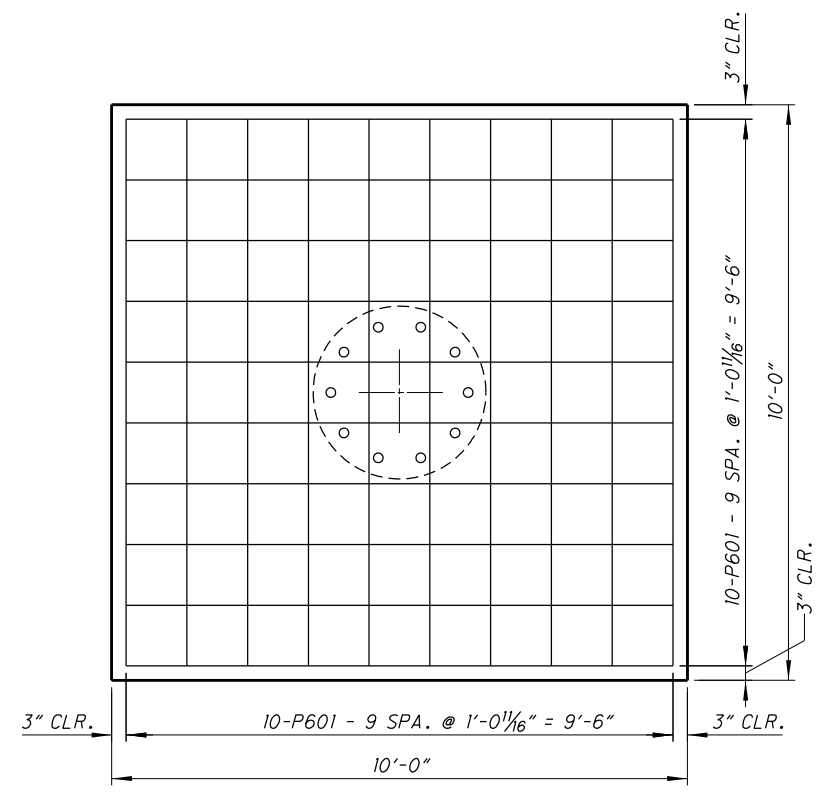
SECTION S-2  
22



SECTION S-3  
22

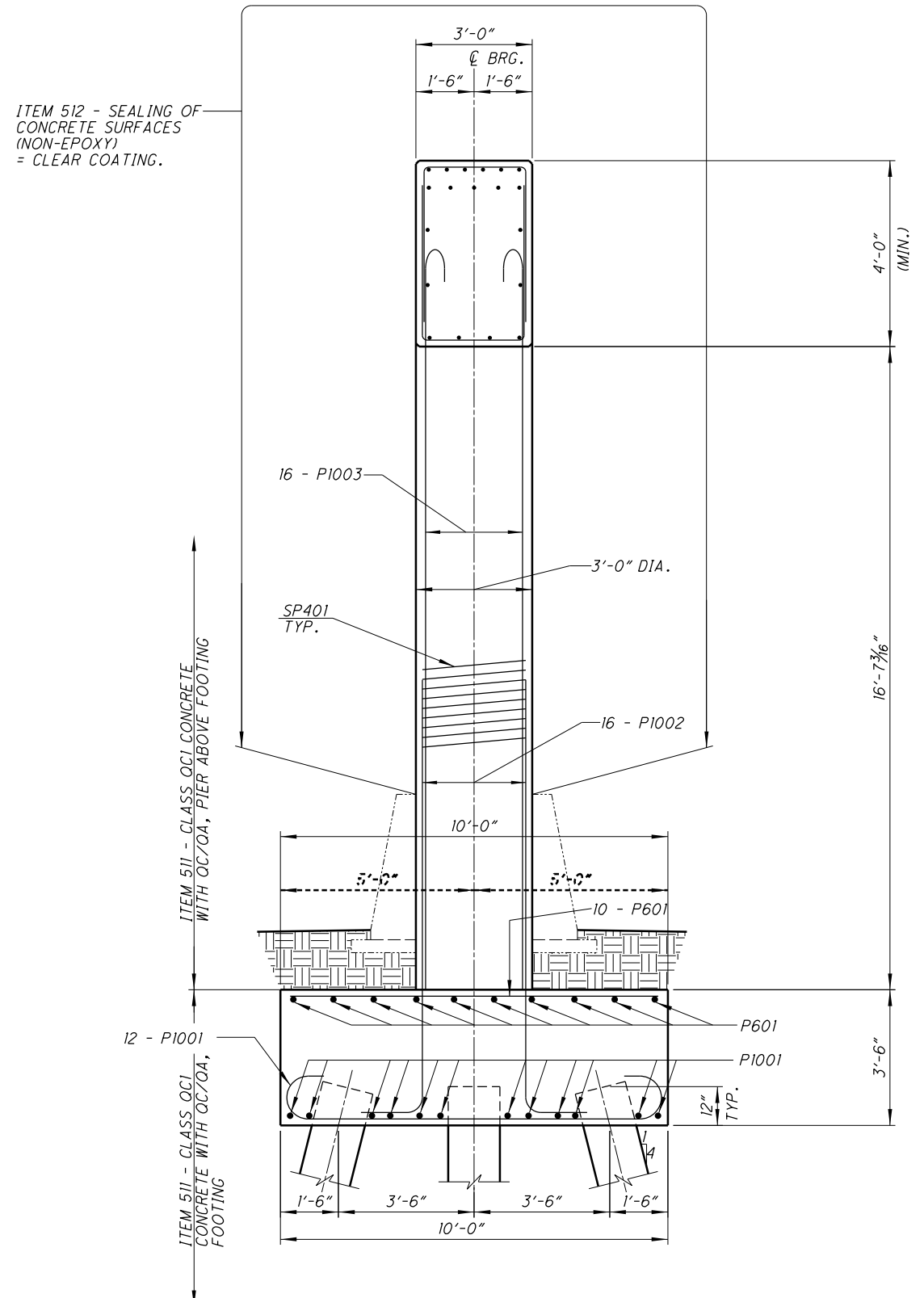


FOOTING PLAN (BOTTOM MAT)



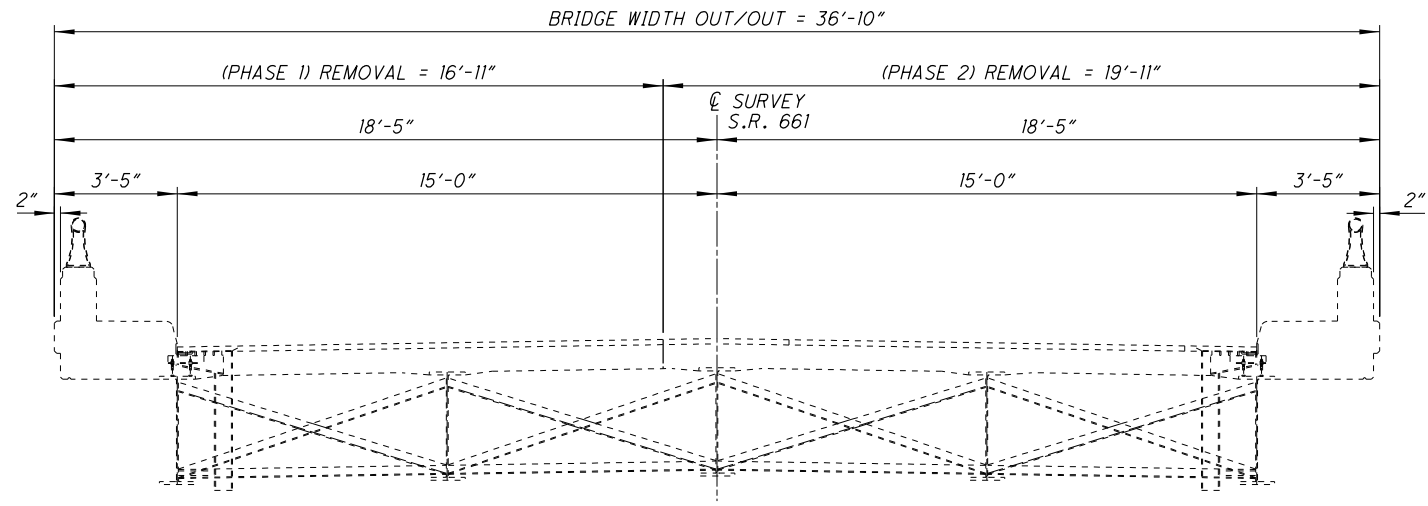
FOOTING PLAN (TOP MAT)

LIC-37 / 661-16.59 / 0.00 PID No. 92411	PIER DETAILS BRIDGE NO. LIC-661-0003 OVER S.R. 16	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	DATE MM/DD/YY STRUCTURE FILE NUMBER 4506333
DESIGNED CPS CHECKED TAG	DRAIN CPS REVISED -	REVIEWED CPS STRUCTURE FILE NUMBER 4506333	DATE MM/DD/YY STRUCTURE FILE NUMBER 4506333
23 / 65 <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">292 341</span>			

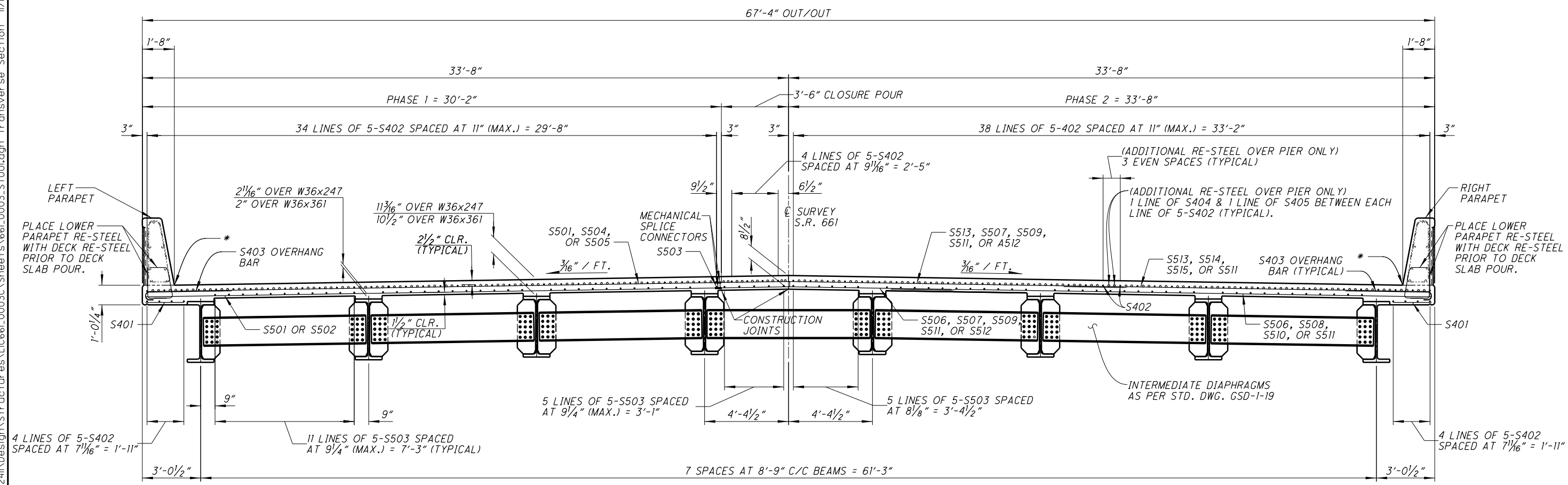


SECTION S-1  
22

LIC-37/661-16.59/0.00		BRIDGE NO. LIC-661-0003		DESIGN AGENCY	
PID No. 92411		OVER S.R. 16		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
24/65	293/341	DESIGNED	REVIEWED	DATE	STRUCTURE FILE NUMBER
		CPS	CPS	MM/DD/YY	4506333
		CHECKED	REVIS		
		TAG			



EXISTING TRANSVERSE SECTION



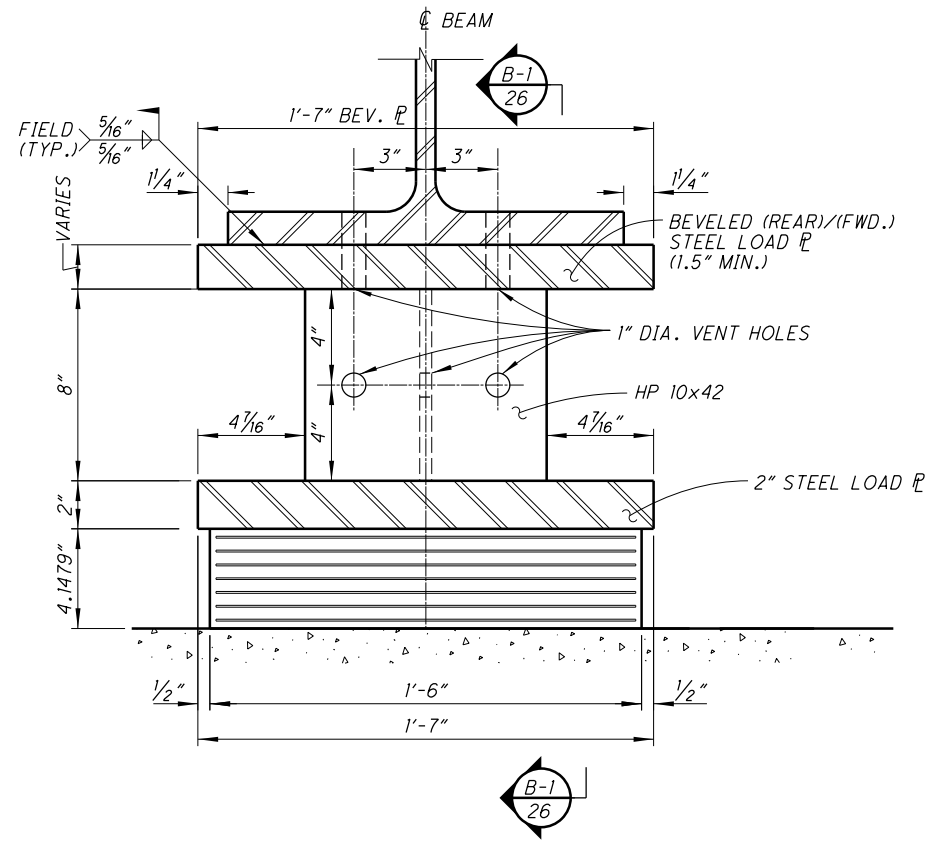
PROPOSED TRANSVERSE SECTION

\* SEALING OF CONSTRUCTION JOINTS WITH HMWM AS PER C.M.S. 511.22 IS INCIDENTAL TO ITEM 511 OC/OA CONCRETE, CLASS QSC2 SUPERSTRUCTURE (DECK), AS PER PLAN. PROVIDE A MINIMUM BAND WIDTH OF 1'-0" CENTERED ON EACH JOINT SEALED.

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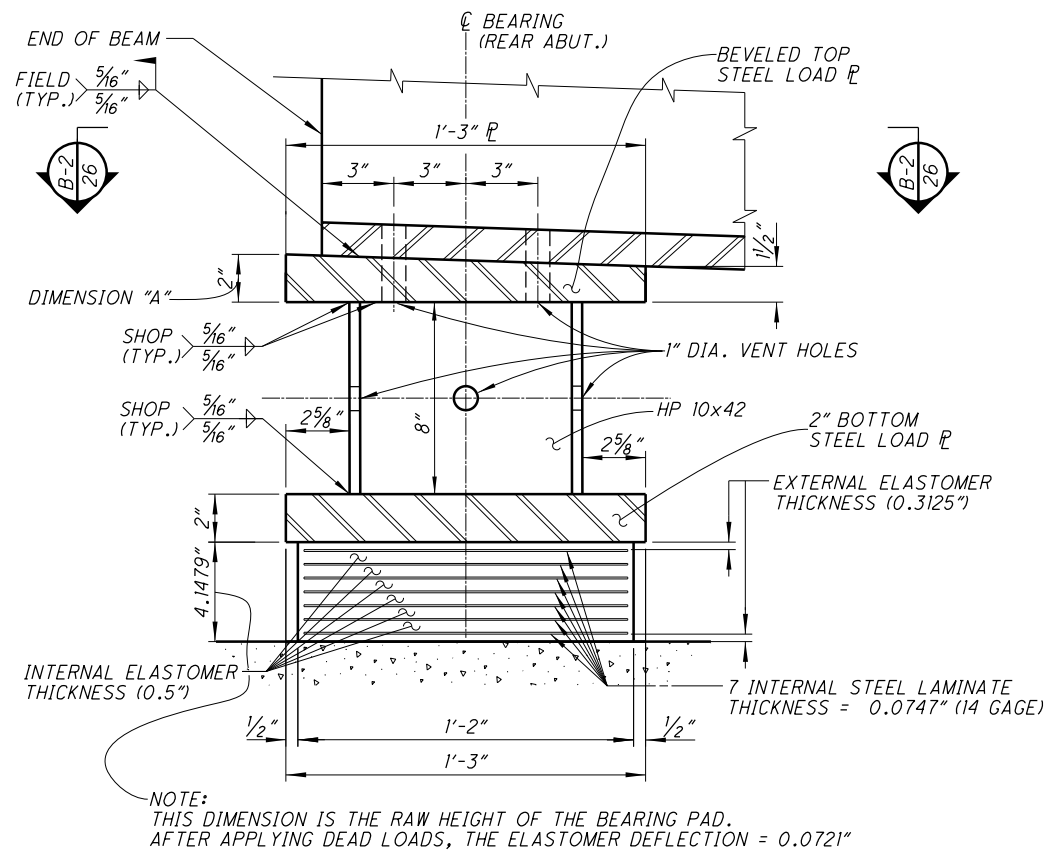
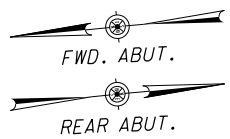
DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED CPS	DATE MM/DD/YY
DESIGNED CPS	STRUCTURE FILE NUMBER 4506333
DRAIN CPS	REVISED
CHECKED TAG	-
TRANSVERSE SECTION BRIDGE NO. LIC-661-0003 OVER S.R. 16	
LIC-37/661-16.59/0.00	PID No. 92411
25/65	294 341

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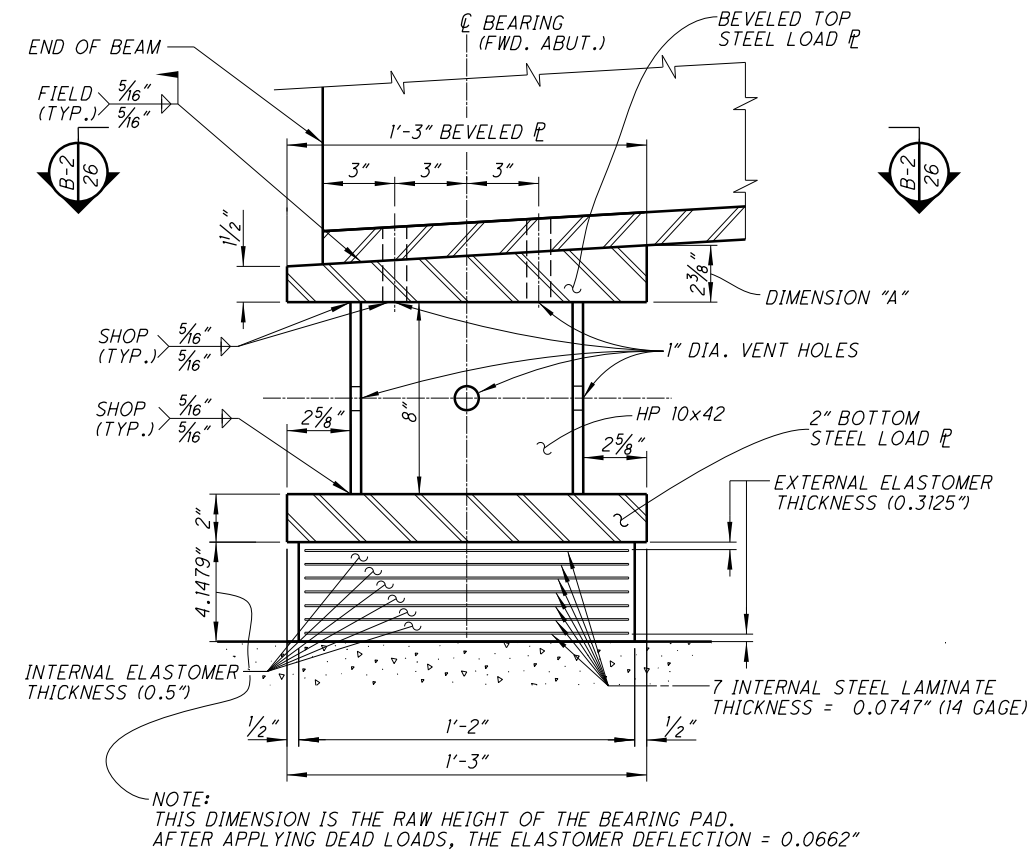
**LAMINATED ELASTOMERIC EXPANSION BEARINGS - BOTH ABUTMENTS**

BEVEL TABLE		
BEVEL OF STEEL LOAD PLATES AT EACH SUBSTRUCTURE UNIT:		
LOCATION	BEVEL %	DIM. "A"
REAR	3.216%	2.000"
FORWARD	5.069%	2.375"



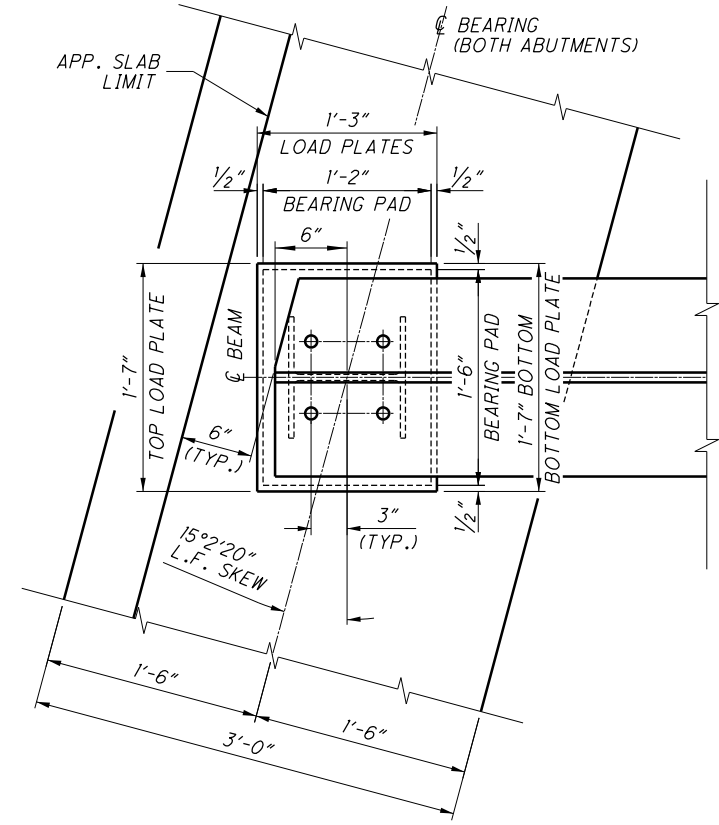
SECTION B-1  
26

UP-STATION (REAR ABUTMENT)



SECTION B-1  
26

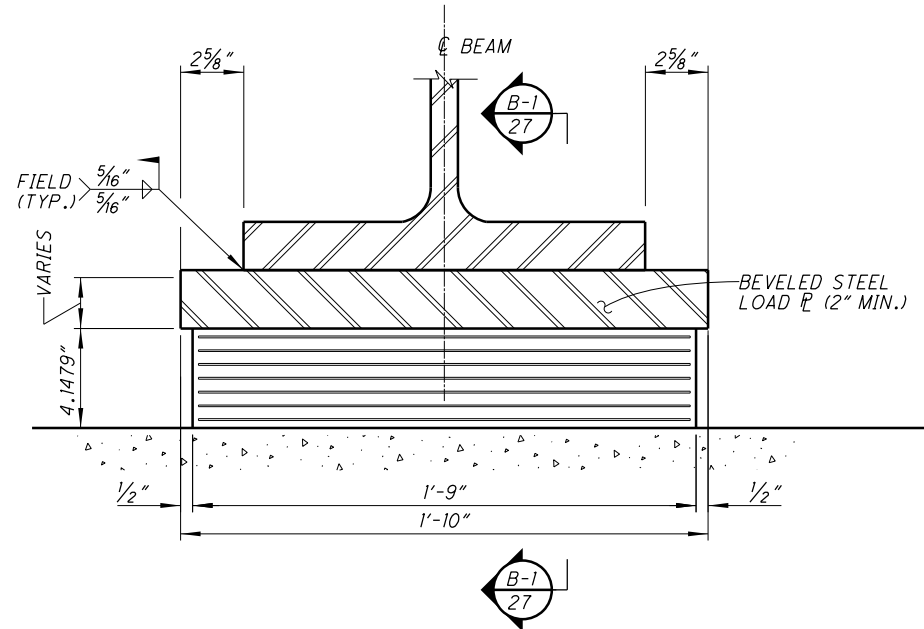
UP-STATION (FWD. ABUTMENT)



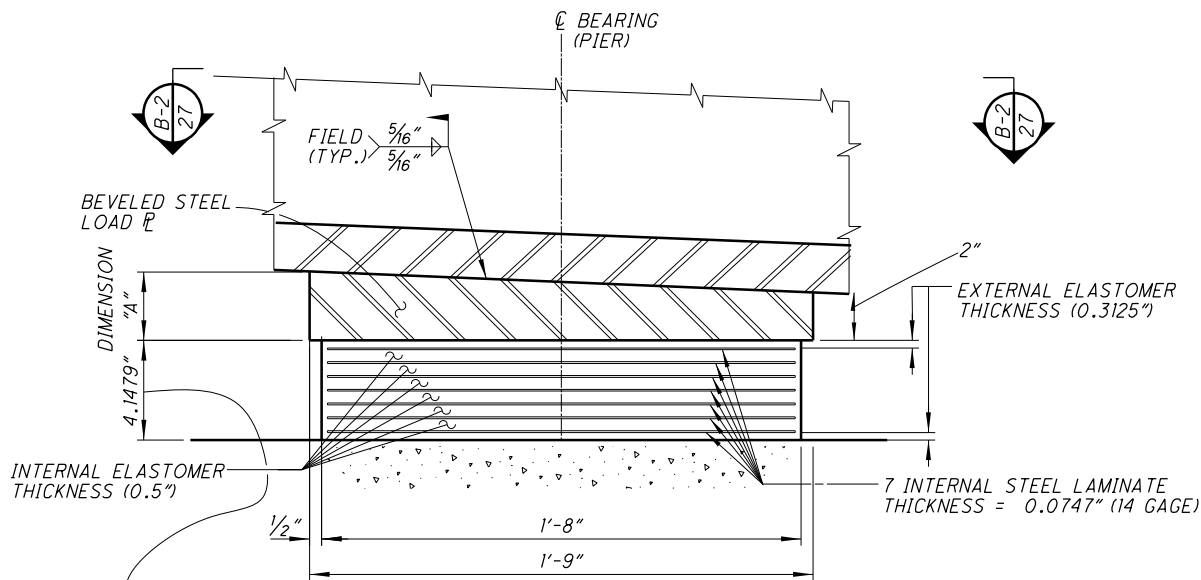
SECTION B-2  
26

(N.T.S.)

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**LAMINATED ELASTOMERIC EXPANSION BEARINGS - PIER**



NOTE: THIS DIMENSION IS THE RAW HEIGHT OF THE BEARING PAD. AFTER APPLYING DEAD LOADS, THE ELASTOMER DEFLECTION = 0.0893"

**SECTION B-1**  
27  
UP-STATION (PIER)

**LOAD PLATE:**  
THE STEEL LOAD PLATES SHALL BE MADE OF A709 STEEL. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

**WELDING:**  
WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

**BEARING REPOSITIONING:**  
IF THE LONGITUDINAL MOVEMENT OF THE BOTTOM BEAM FLANGES DUE TO CONSTRUCTION CAUSES BEARING SHEAR DEFLECTIONS TO EXCEED ONE-SIXTH OF THE BEARING HEIGHT AT 60°F +/- 10° OR THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS ONE-SIXTH OF THE BEARING HEIGHT AT 60°F +/- 10°F, THE BEAMS OR GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F +/- 10°F.

**NOTES:**  
ADDITIONAL UPPER LOAD PLATES AT THE ABUTMENTS AND ALL HP STEEL SHAPES SHALL BE INCLUDED WITH ITEM 516 ELASTOMERIC BEARING FOR PAYMENT.

FOR ADDITIONAL DETAILS, SEE STD. DWG. SICD-1-96

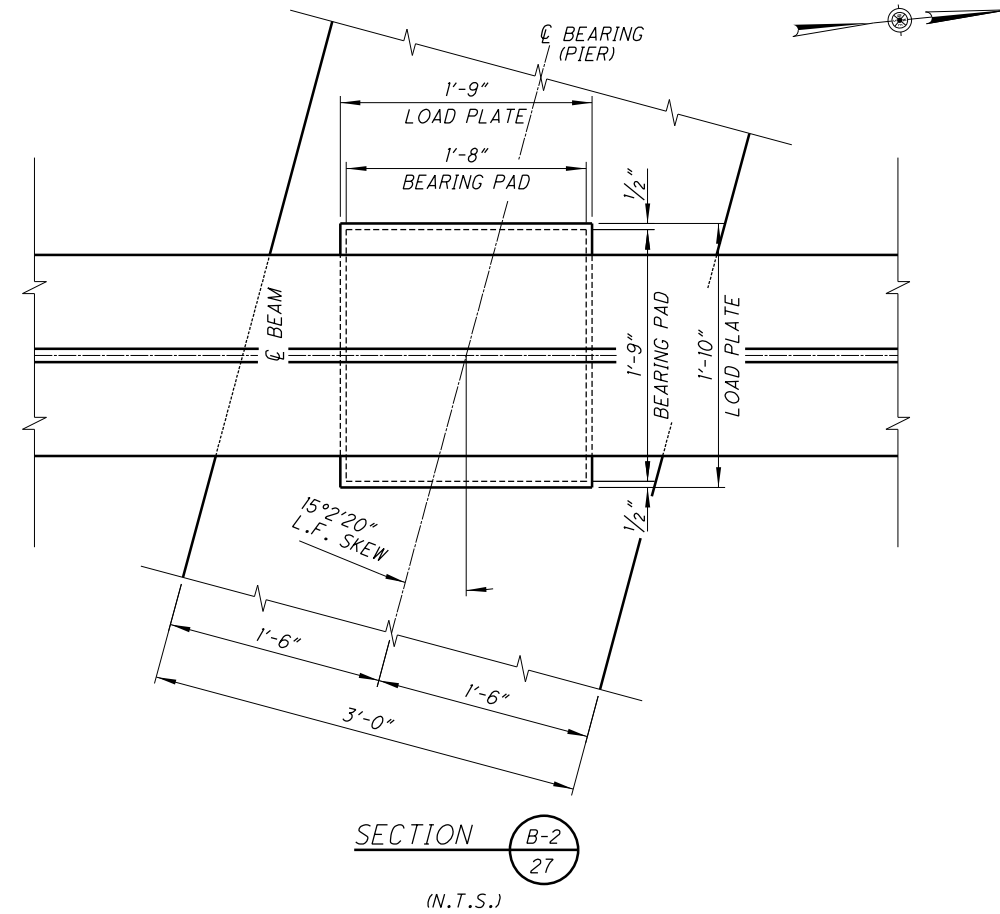
**MARKINGS:**  
ALL BEARINGS AND LOAD PLATES SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS, AND IS LABELED, UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

**BASIS OF PAYMENT:**  
THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).

REAR ABUTMENT BEARING PAD: 1'-6" x 1'-2" x 4.1479" (50 DUROMETER)  
LOAD PLATE (BOTTOM): 1'-7" x 1'-3" x 2"  
PIER BEARING PAD: 1'-9" x 1'-8" x 4.1479" (50 DUROMETER)  
LOAD PLATE: 1'-10" x 1'-9" x 2.000" min.  
FWD. ABUTMENT BEARING PAD: 1'-6" x 1'-2" x 4.1479" (50 DUROMETER)  
LOAD PLATE (BOTTOM): 1'-7" x 1'-3" x 2"

ELASTOMERIC BEARING PAD DESIGN DATA			
LOCATION	DL	LL	DL & LL
REAR ABUTMENT	109	76	185
PIER	253	143	396
FWD. ABUTMENT	109	76	185

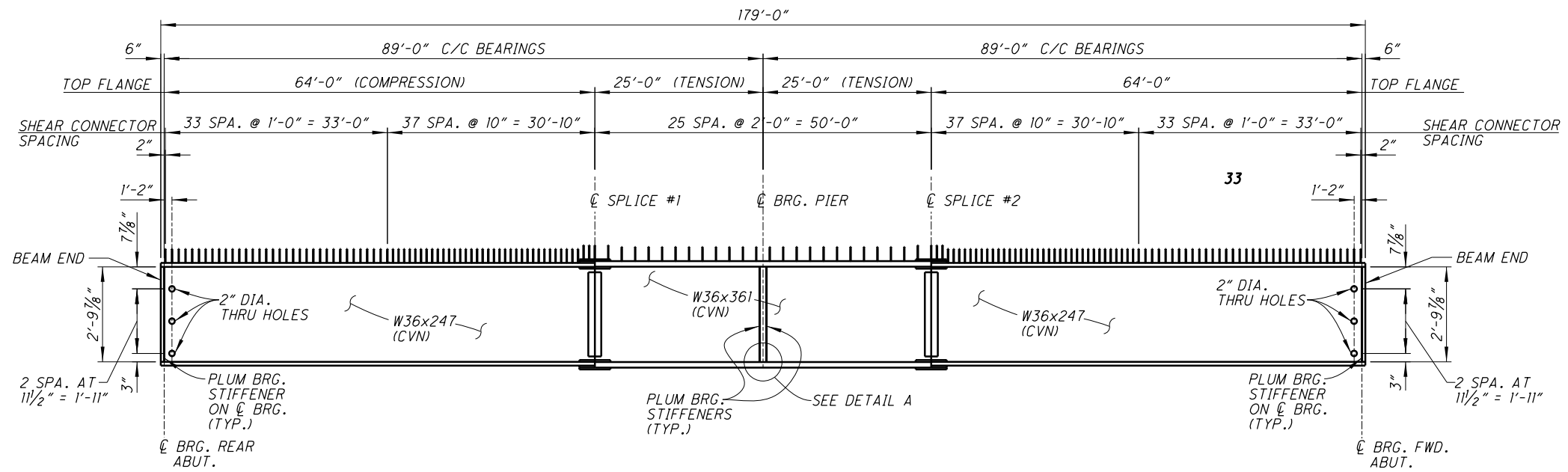
BEVEL TABLE		
BEVEL OF STEEL LOAD PLATES AT EACH SUBSTRUCTURE UNIT:		
LOCATION	BEVEL %	DIM. "A"
PIER	4.1424%	2.875"



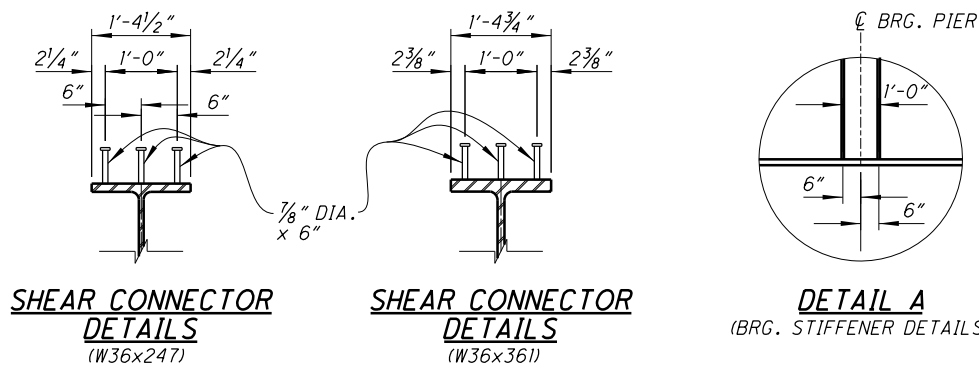
**SECTION B-2**  
27  
(N.T.S.)



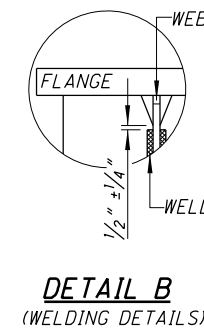
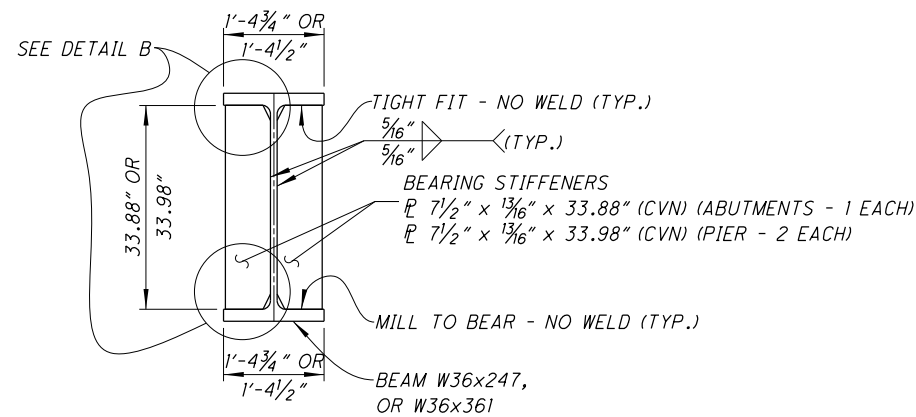
I:\ProjectData\LIC\9241\Design\Structures\LIC661\_0003\Sheets\661\_0003\_S5003.dgn Shear Connector Layout 11/18/2019 1:49:23 PM bharlow



**BEAM ELEVATION / SHEAR CONNECTOR SPACING**  
(NO CAMBER SHOWN & N.T.S.)



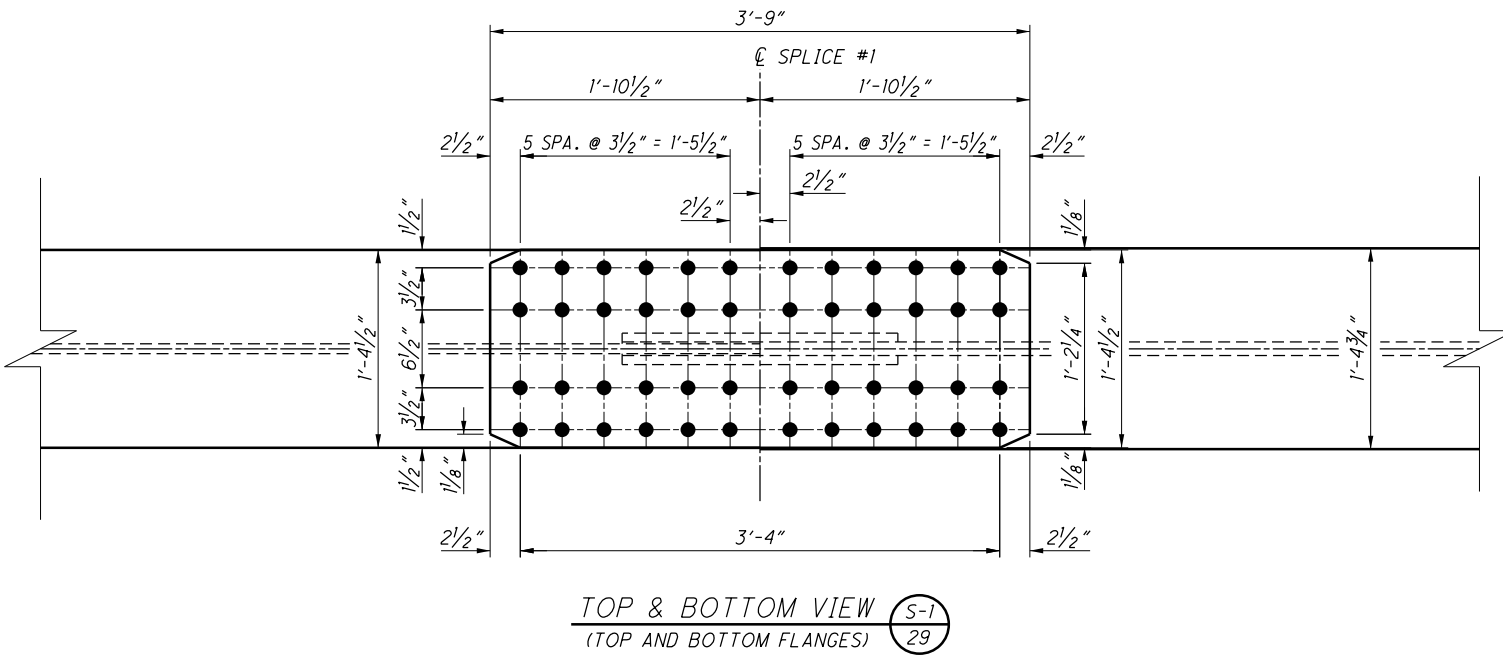
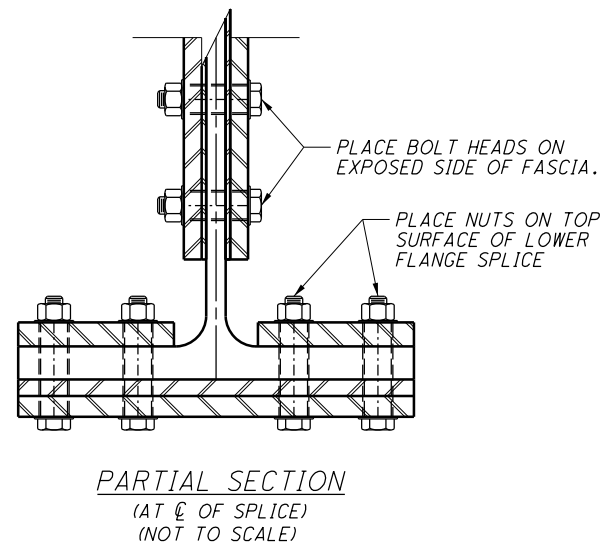
**NOTES:**  
WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.  
ALL SPLICE PLATES EXCEPT FILL PLATES SHALL BE CVN.  
FOR INTERMEDIATE DIAPHRAGM LOCATIONS, SEE SHEET 31/65.  
FOR ADDITIONAL DETAILS, SEE STANDARD DRAWING GSD-1-19.



\* - FOR WELD SIZES, SEE STD. DWG. GSD-1-96

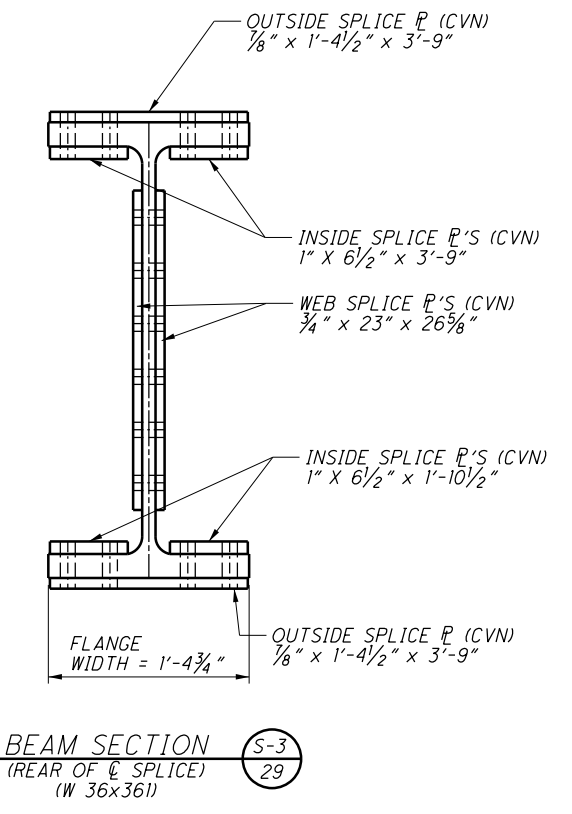
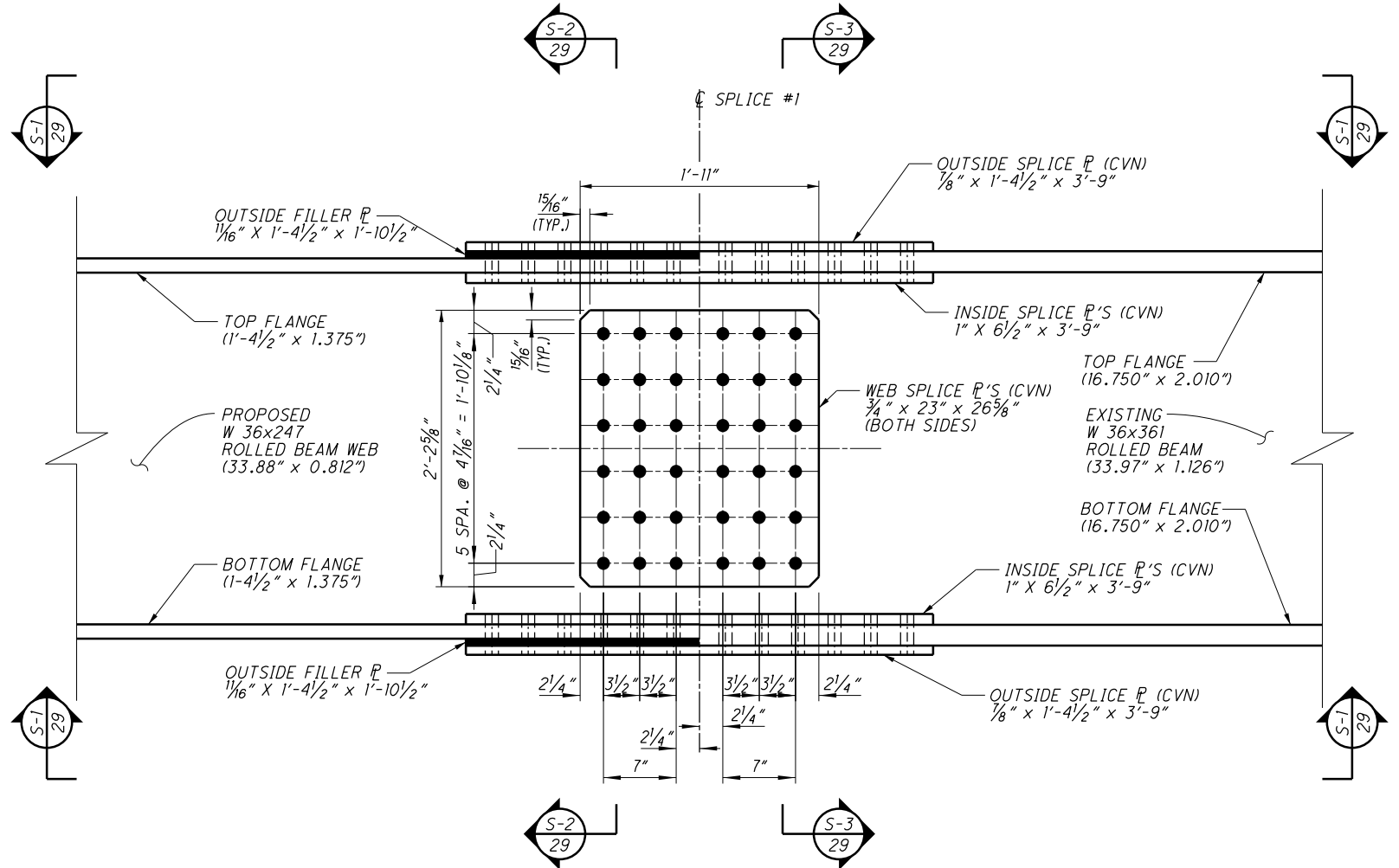
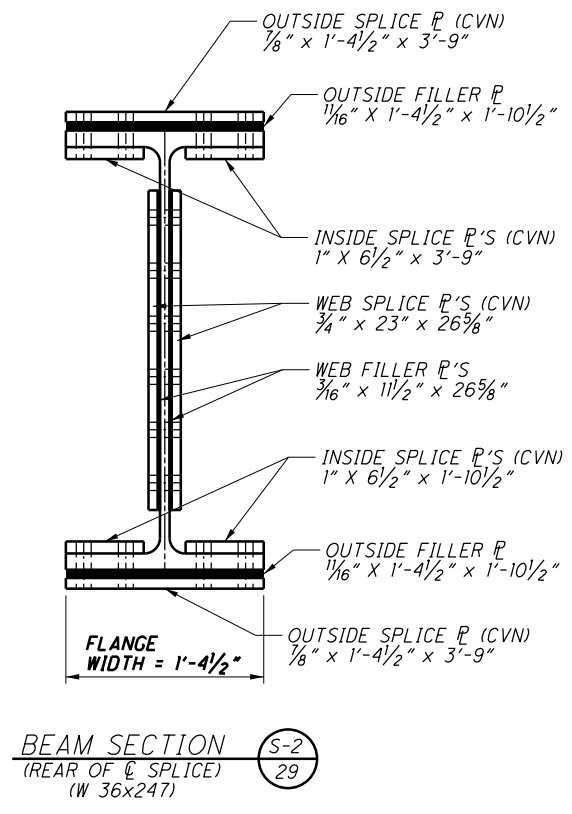
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DATE	MM/DD/YY
REVIEWED	CPS MM/DD/YY
STRUCTURE FILE NUMBER	4506333
DRAWN	CPS
REVISOR	
DESIGNED	CPS
CHECKED	TAG
<b>BEAM DETAILS</b>	
BRIDGE NO. LIC-661-0003 OVER S.R. 16	
LIC-37/661-16.59/0.00	PID No. 92411
28/65	
297	341

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NOTE:  
EXCLUDE THE BOLT THREADS FROM THE SHEAR PLANES. (THE BOLT SHEAR STRENGTH FOR THE FLANGE AND WEB SPLICES HAS BEEN DESIGNED ASSUMING THAT THE THREADS ARE EXCLUDED FROM THE SHEAR PLANES.)  
ALL BOLTS USED SHALL BE 1/8" DIAMETER.  
ALL BOLT HOLES SHALL BE 3/16" DIAMETER.  
BOLT SPECIFICATIONS SHALL CONFORM TO A325, TYPE 1.

(SEE FRAMING PLAN FOR LOCATION IN SPAN 1 AND 2)  
(SPLICE #1 SHOWN, SPLICE #2 MIRRORED)



\* - BOLT AND NUT LOCATIONS TO BE PLACED AND TIGHTENED LAST

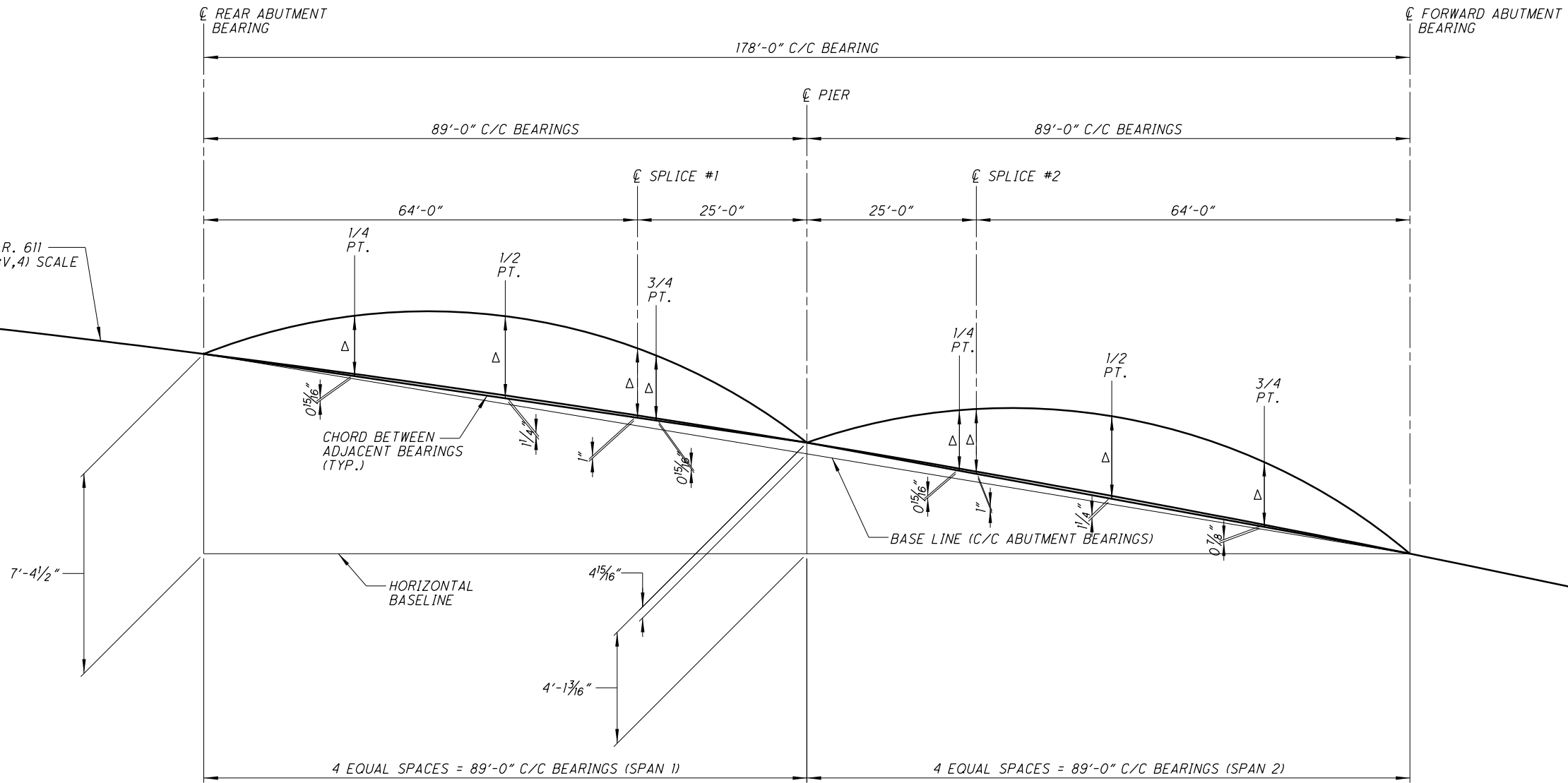
- WEB FILLER P BOTH SIDES OF WEB (SEE SECTION A-2)

DESIGNED	CPS	CHECKED	TAG	DRAWN	CPS	REVISED		REVIEWED	CPS	MM/DD/YY	DATE	DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

LIC-37/661-16.59/0.00  
PID No. 92411  
29/65  
928  
341

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PROFILE OF S.R. 611  
SHOWN AS (H,1:V,4) SCALE



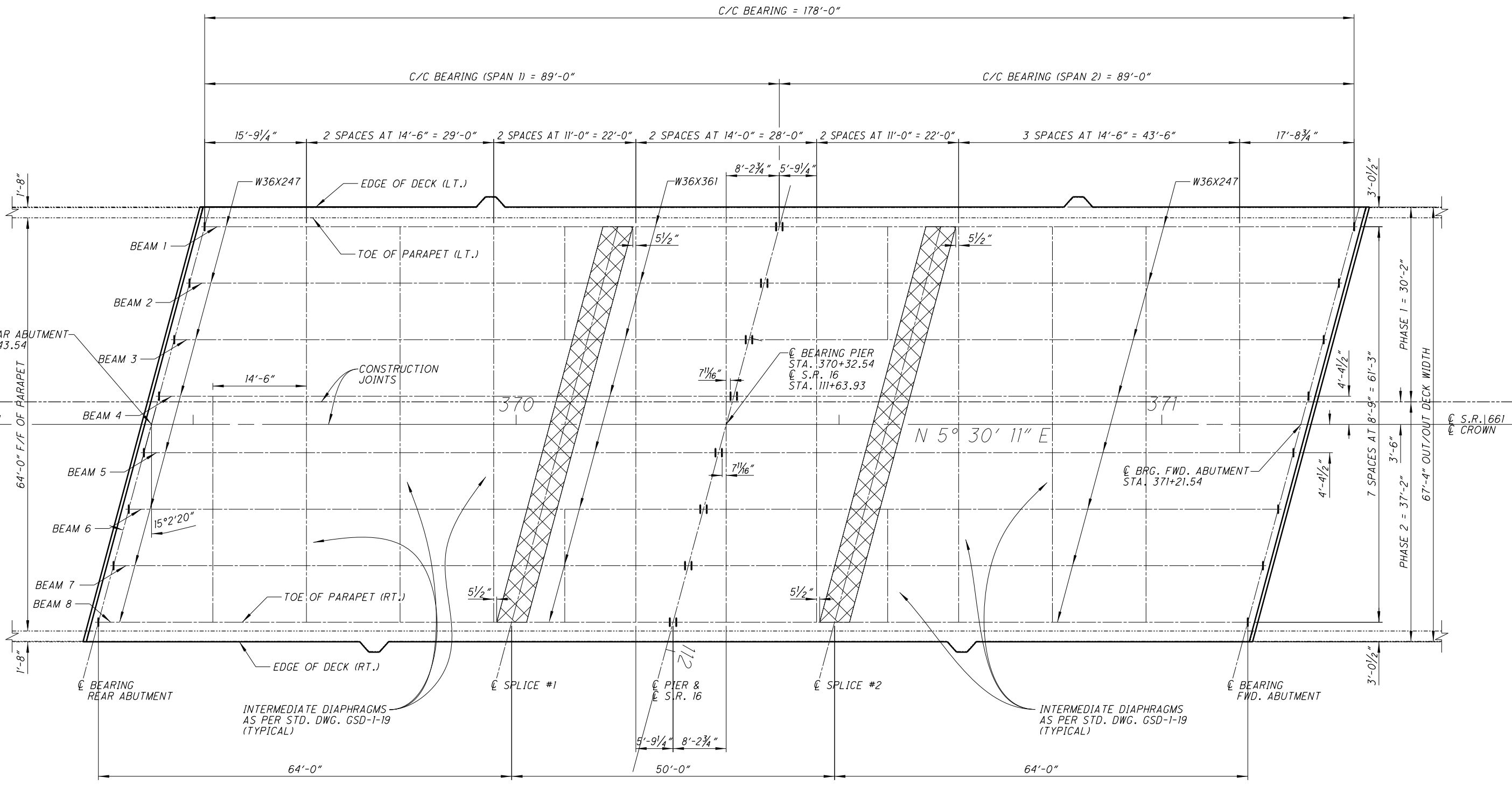
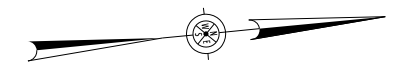
**CAMBER DIAGRAM**

(N.T.S.)

**DEFLECTIONS & CAMBER TABLE**

POINT	1/4	1/2	SPLICE #1	3/4	1/4	SPLICE #2	1/2	3/4
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	5/16"	3/16"	1/8"	1/8"	3/16"	5/16"	1/4"
DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/16"	1 3/16"	5/8"	1/2"	1/2"	5/8"	1 3/16"	1 1/16"
VERTICAL CURVE ADJUSTMENT	15/16"	1 1/4"	1"	15/16"	15/16"	1"	1 1/4"	7/8"
REQUIRED CAMBER = Δ	2 1/4"	2 3/4"	1 3/16"	1 9/16"	1 9/16"	1 3/16"	2 3/4"	2 3/16"
	<b>SPAN 1</b>				<b>SPAN 2</b>			

DESIGNED CPS	CHECKED TAG	DRAWN CPS	REVIEWED CPS	DATE MM/DD/YY	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
					STRUCTURE FILE NUMBER 4506333
<b>BEAM CAMBER DETAILS</b>					
BRIDGE NO. LIC-661-0003 OVER S.R. 16					
LIC-37/661-16.59/0.00 PID No. 92411					
30/65					
299 341					



FRAMING PLAN

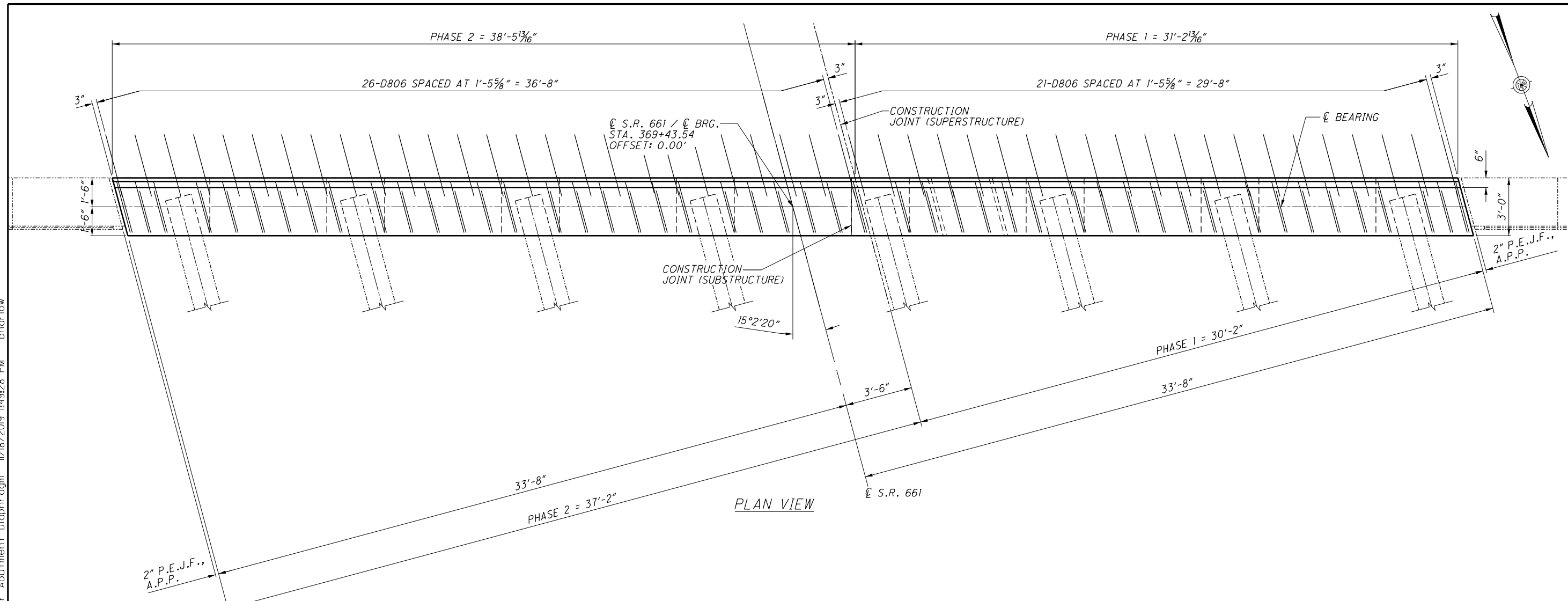
LEGEND



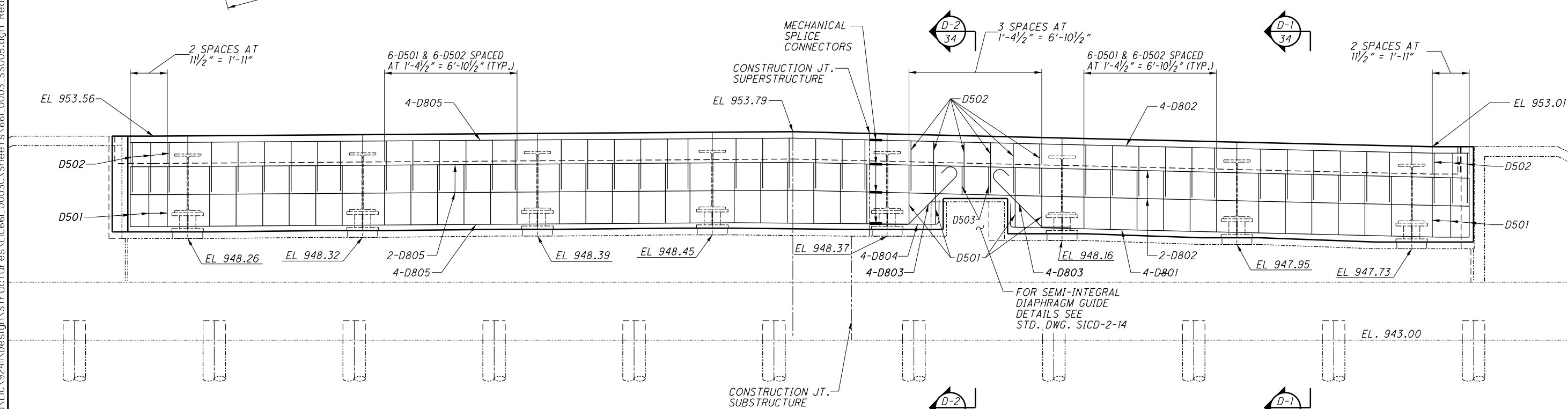
I:\ProjectData\LIC\9241\Design\Structures\661\_0003\SS001.dgn Framing Plan 11/18/2019 4:49:27 PM bharlow

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED CPS	DATE MM/DD/YY
DRAWN CPS	STRUCTURE FILE NUMBER 4506333
DESIGNED CPS	CHECKED TAG
FRAMING PLAN BRIDGE NO. LIC-661-0003 OVER S.R. 16	
LIC-37/661-16.59/0.00 PID No. 92411	
31/65	
300 341	

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PLAN VIEW

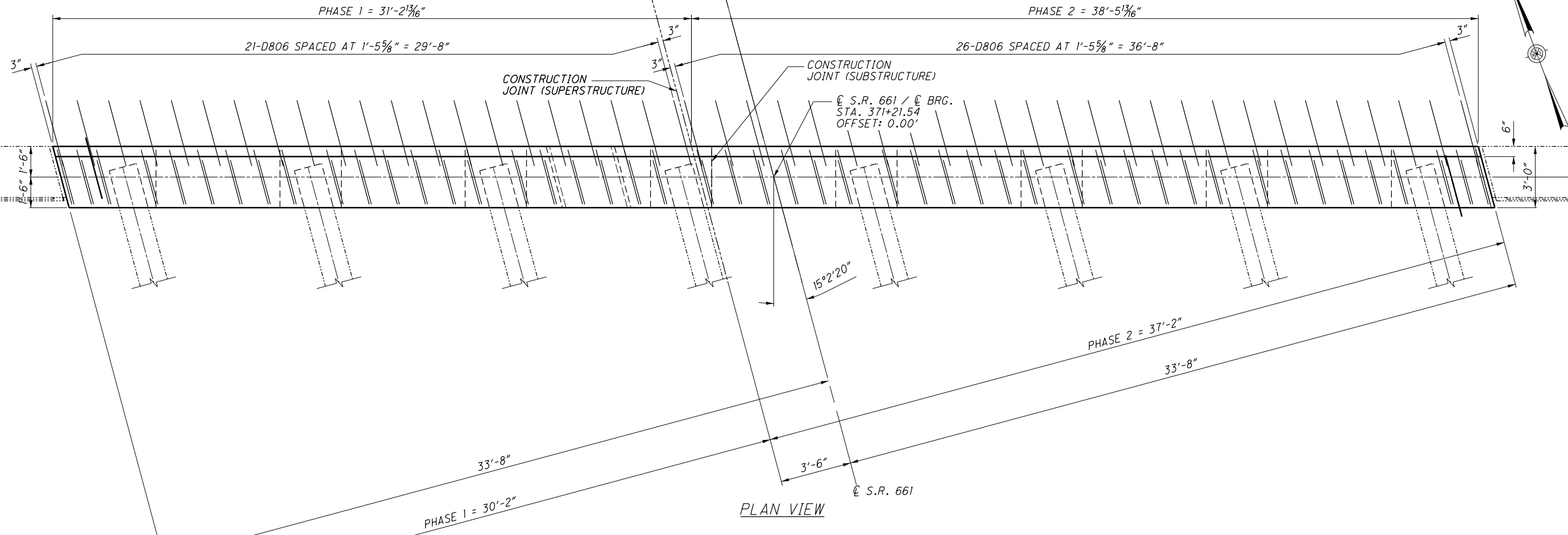


ELEVATION VIEW

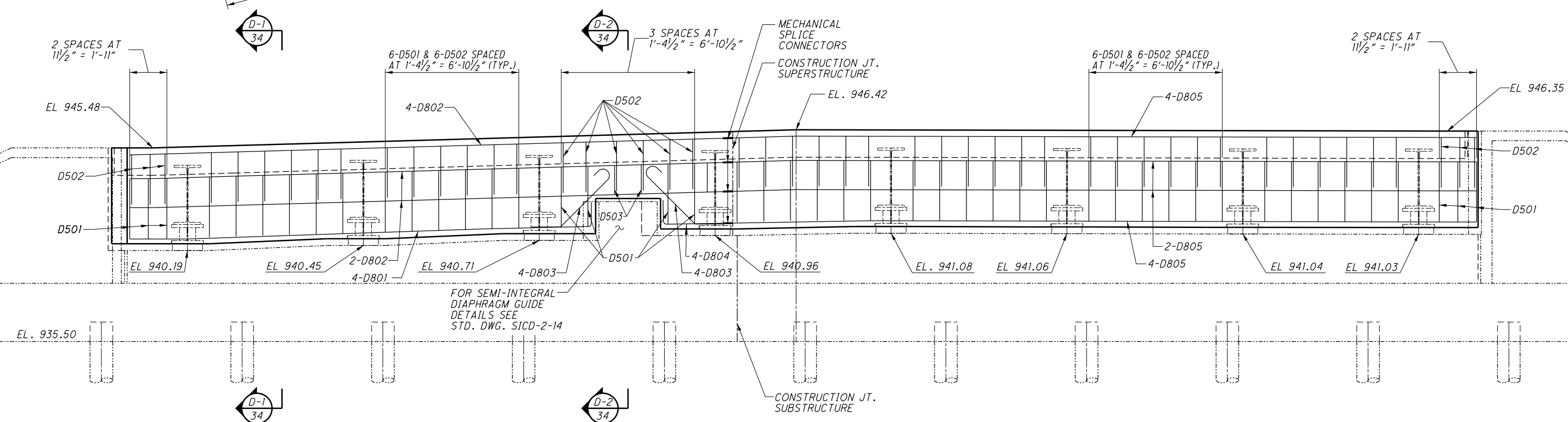
FOR SEMI-INTEGRAL DIAPHRAGM GUIDE DETAILS SEE STD. DWG. SICD-2-14

DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DATE	MM/DD/YY
REVIEWED	CPS
DRAWN	CPS
DESIGNED	CPS
CHECKED	TAG
STRUCTURE FILE NUMBER	4506333
BRIDGE NO.	LIC-661-0003
OVER S.R.	16
PID No.	92411
LIC-37/661-16.59/0.00	32/65
301	341

I:\ProjectData\lic\_9241\Design\Structures\661\_0003\_S5005.dgn Forward Abutment Diaphragm Details 11/18/2019 4:49:28 PM bharlow



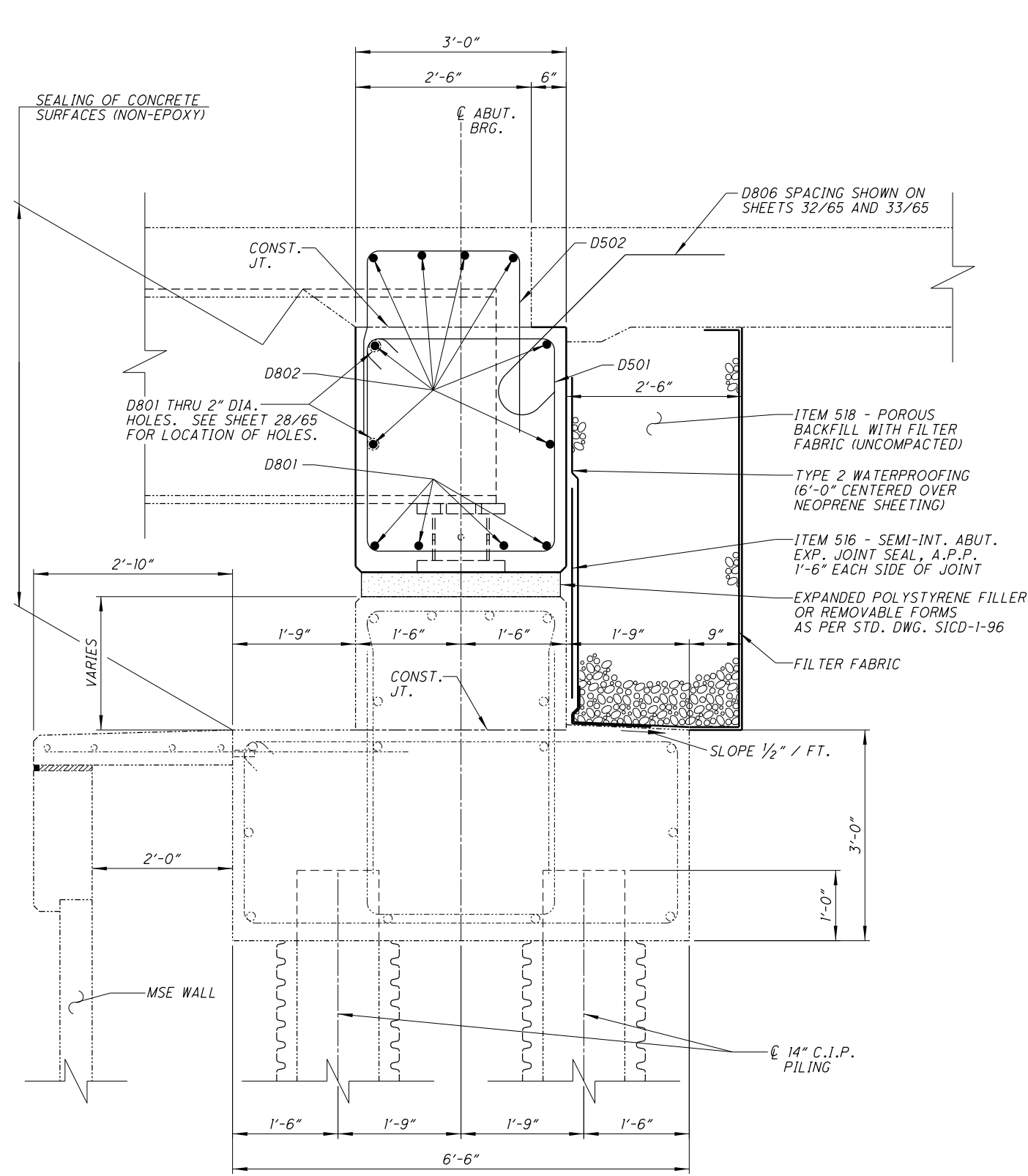
PLAN VIEW



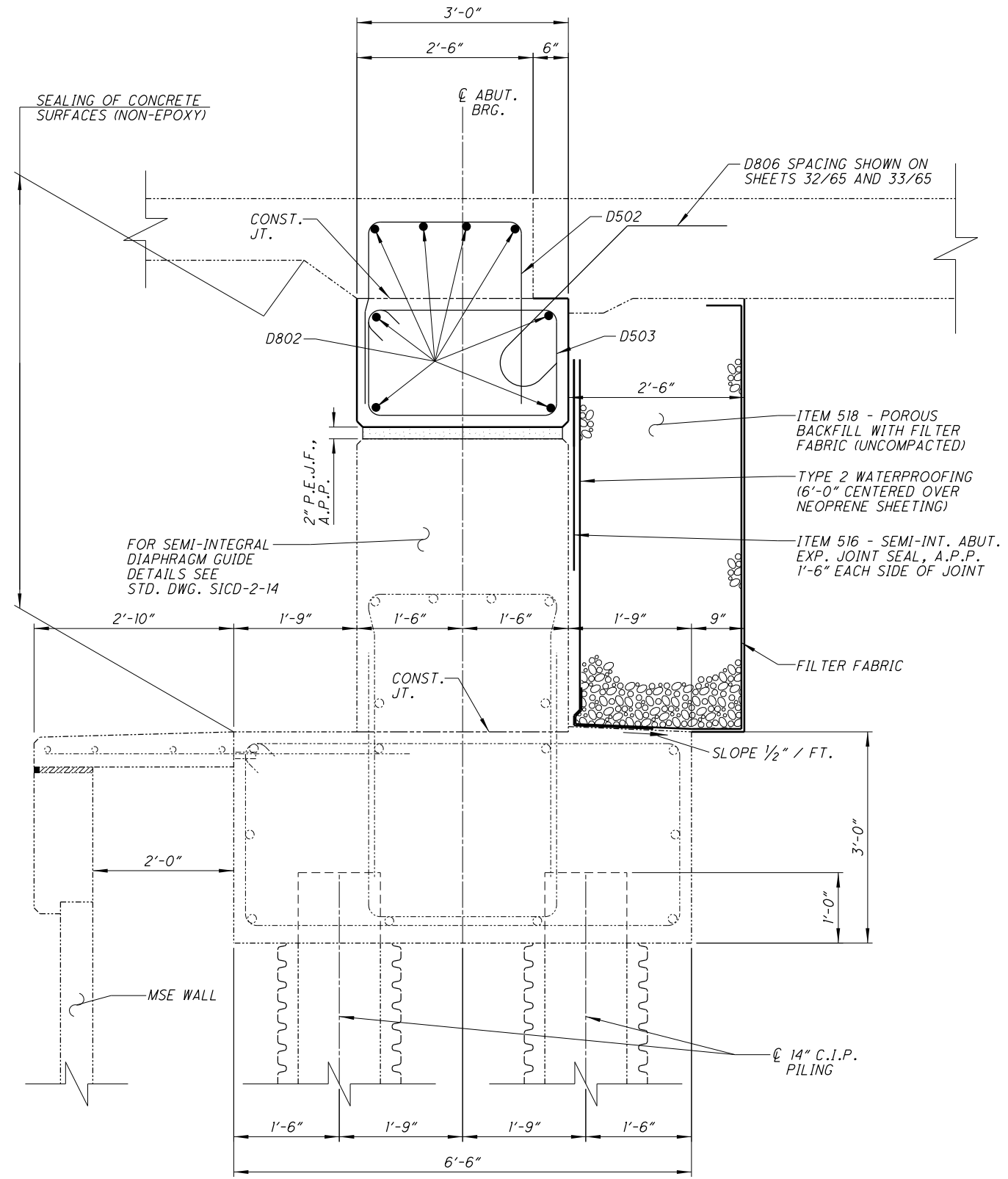
ELEVATION VIEW

DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED	DATE	DESIGNED	CHECKED
CPS	MM/DD/YY	CPS	CPS
STRUCTURE FILE NUMBER	4506333	TAG	TAG
PROPOSED ABUTMENT DIAPHRAGM DETAILS (FORWARD)			
BRIDGE NO. LIC-661-0003 OVER S.R. 16			
LIC-37/661-16.59/0.00		PID No. 92411	
33/65		302/341	

I:\ProjectData\LIC\9241\Design\Structures\661\_0003\_S5005.dgn Rear and Forward Diaphragm Details 11/18/2019 1:49:29 PM bharlow

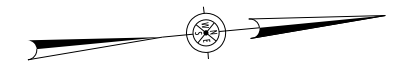


SECTION D-1  
32/33  
(DIAPHRAGM DETAIL)

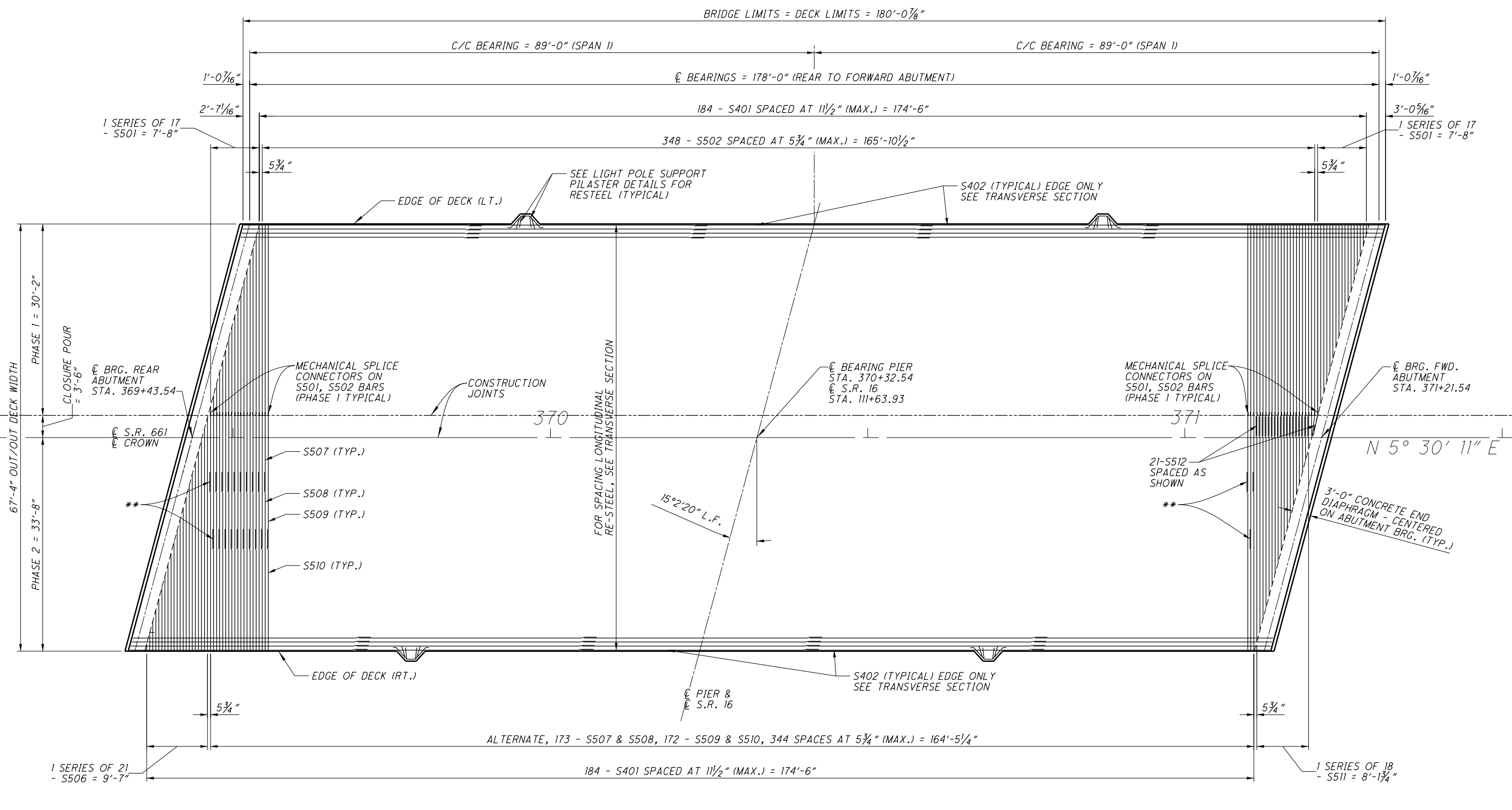


SECTION D-2  
32/33  
(DIAPHRAGM DETAIL)

DESIGNED		CHECKED		TAG	
DRAIN		CPS		REVISED	
REVIEWED		CPS		STRUCTURE FILE NUMBER	
DATE		MM/DD/YY		4506333	
DESIGN AGENCY					
OHIO DEPARTMENT OF					
TRANSPORTATION, DISTRICT 5					
BRIDGE NO. LIC-661-0003					
OVER S.R. 16					
PROPOSED ABUTMENT DETAILS (REAR & FORWARD)					
LIC-37/661-16.59/0.00					
PID No. 92411					
34/65					
303					
341					



I:\ProjectData\LIC\9241\Design\Structures\661\_0003\_Sheets\Bottom Mat\11/18/2019 1:49:30 PM bhariow



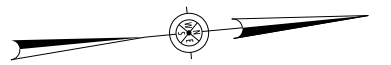
DECK REINFORCING PLAN (BOTTOM MAT)

\*\* - NOTE:  
ALTERNATE BAR PLACEMENT IN ADJACENT LONGITUDINAL  
AND TRANSVERSE ROWS IN ORDER TO STAGGER LAPS SHOWN  
OF REQUIRED (TYP.)

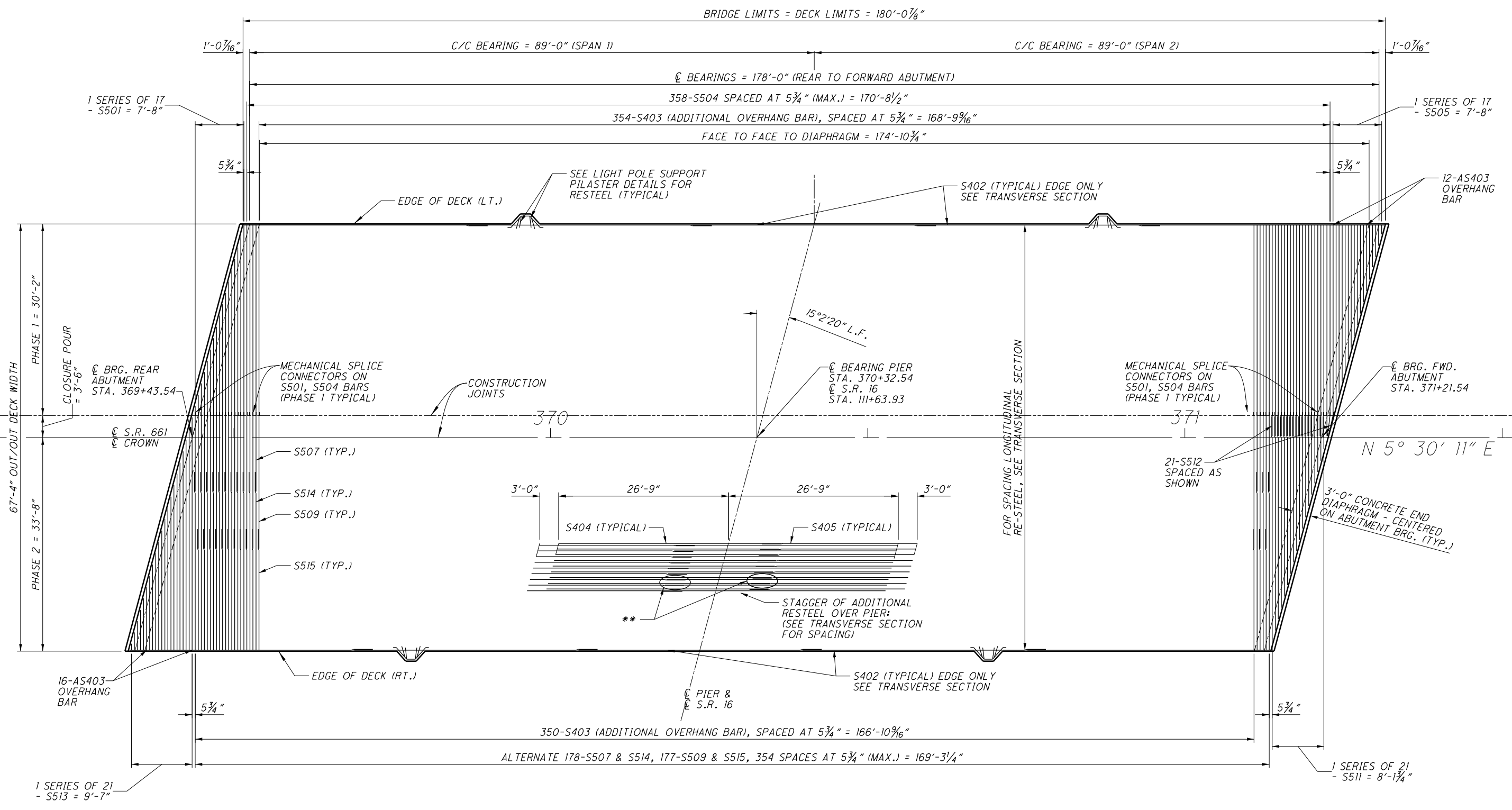
LAP LENGTH	
No. 4	= 1'-9"
No. 5	= 3'-0"

DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DATE	MM/DD/YY
REVIEWED	CPS STRUCTURE FILE NUMBER
DESIGNED	CPS TAG
DRAWN	CPS REVISED
BRIDGE NO. LIC-661-0002 OVER S.R. 16	
DECK REINFORCING STEEL LAYOUT (BOTTOM MAT)	
LIC-37/661-16.59/0.00	PID No. 92411
35/65	304 341





I:\ProjectData\LIC\9241\Design\Structures\661\_0003\_Sheets\661\_0003\_SDO01.dgn Deck Steel(Top Mat) 11/18/2019 1:49:30 PM bhariow

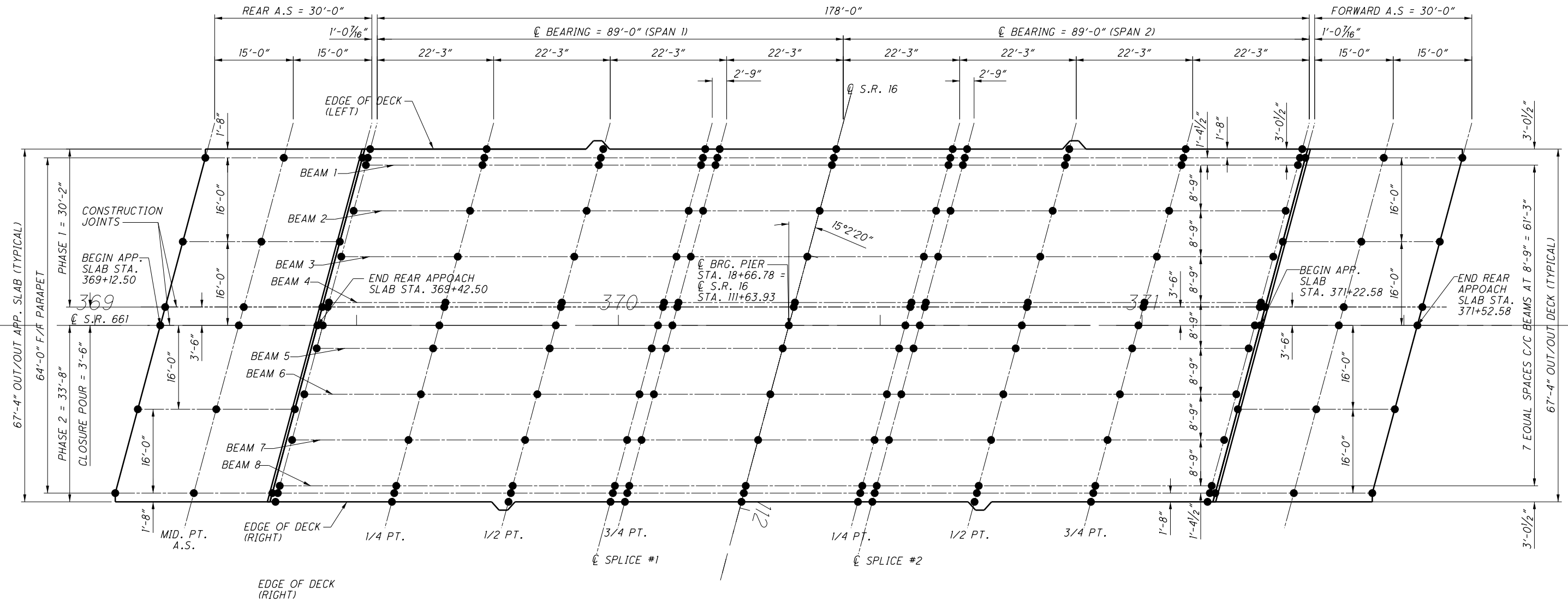


DECK REINFORCING PLAN (TOP MAT)

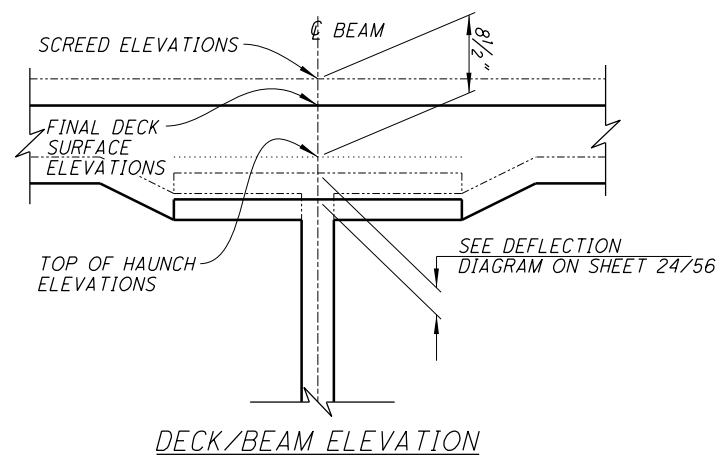
\*\* - NOTE:  
ALTERNATE BAR PLACEMENT IN ADJACENT LONGITUDINAL  
AND TRANSVERSE ROWS IN ORDER TO STAGGER LAPS SHOWN  
OF REQUIRED (TYP.)

LAP LENGTH	
No. 4	= 1'-9"
No. 5	= 3'-0"

DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DATE	MM/DD/YY
REVIEWED	CPS STRUCTURE FILE NUMBER 4506333
DESIGNED	CPS
CHECKED	TAG
DECK REINFORCING STEEL LAYOUT (TOP MAT)	
BRIDGE NO. LIC-661-0002 OVER S.R. 16	
LIC-37/661-16.59/0.00	PID No. 92411
36/65	305 341



ELEVATION LOCATIONS (PLAN VIEW)



**TOP OF HAUNCH ELEVATIONS**  
 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.

**SCREED ELEVATIONS**  
 SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

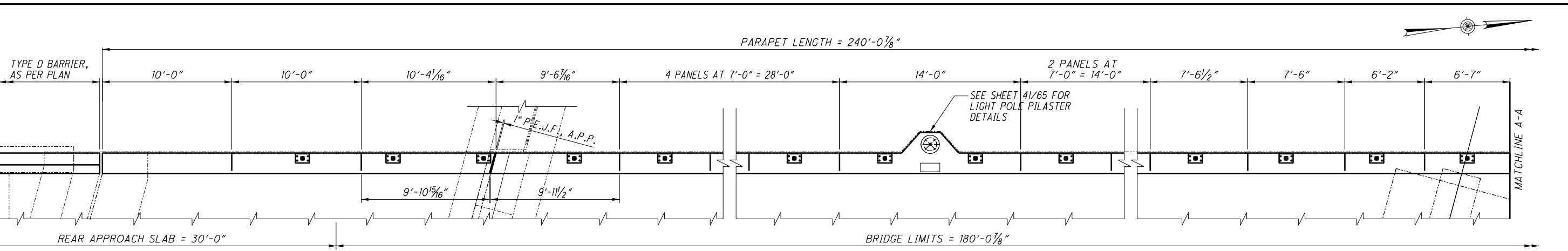
**FINAL DECK SURFACE ELEVATIONS**  
 FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

I:\ProjectData\LIC\924\Design\Structures\661\_0003\SS002.dgn Screened Location Layout 11/18/2019 14:49:31PM bharlow

<b>DECK AND APPROACH SLAB ELEVATION LOCATIONS</b> BRIDGE NO. LIC-661-0003 OVER S.R. 16	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DESIGNED CPS TAG	REVIEWED CPS STRUCTURE FILE NUMBER 4506333
LIC-37/661-16.59/0.00	PID No. 92411
37/65	306 341

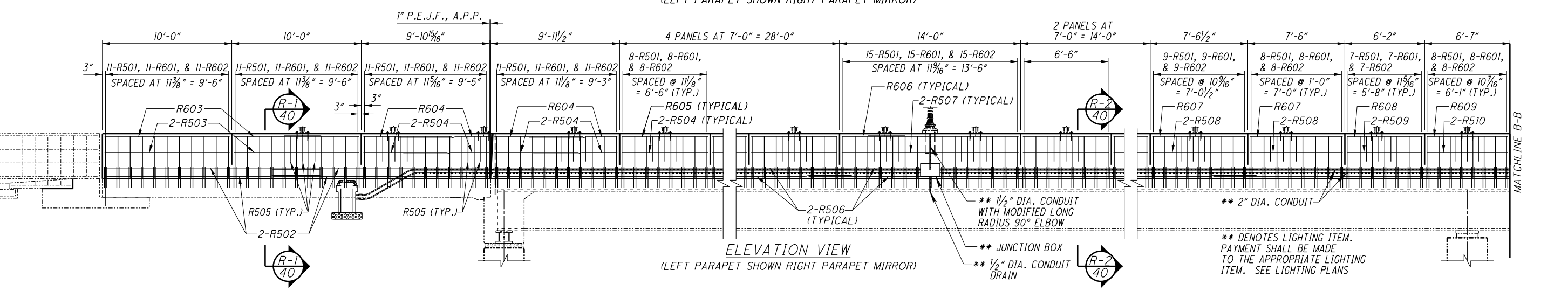


I:\ProjectData\LIC\9241\Design\Structures\661\_0003\S4001.dgn 1-Parapet Details 11/8/2019 4:49:36 PM bhariaw



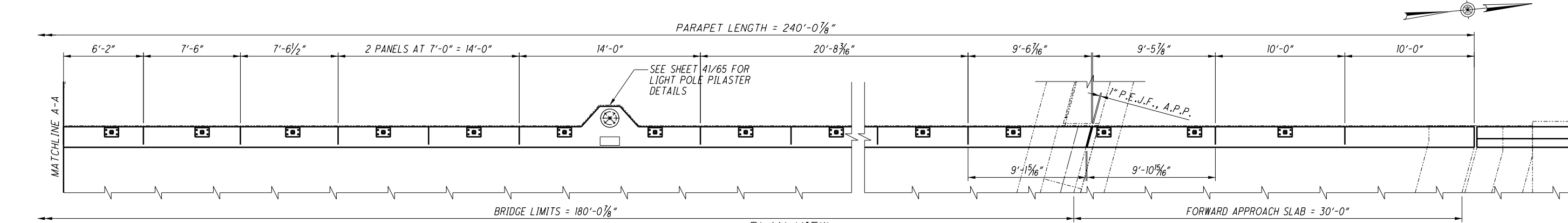
PLAN VIEW

(LEFT PARAPET SHOWN RIGHT PARAPET MIRROR)



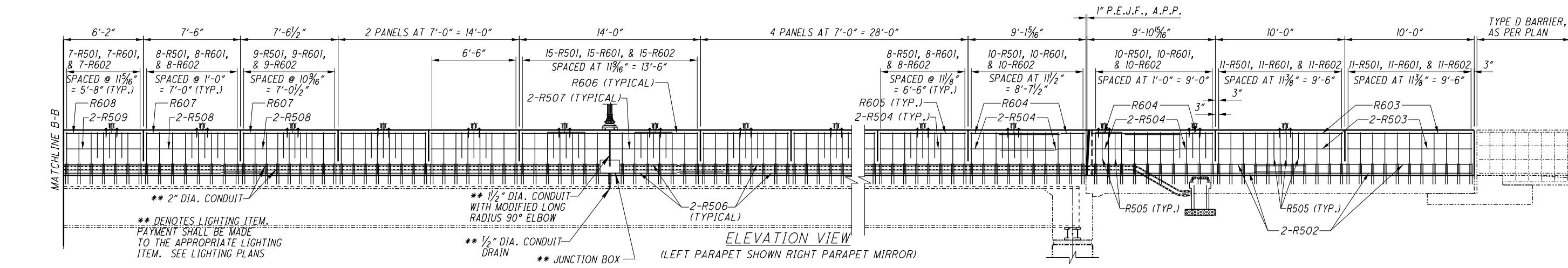
ELEVATION VIEW

(LEFT PARAPET SHOWN RIGHT PARAPET MIRROR)



PLAN VIEW

(LEFT PARAPET SHOWN RIGHT PARAPET MIRROR)

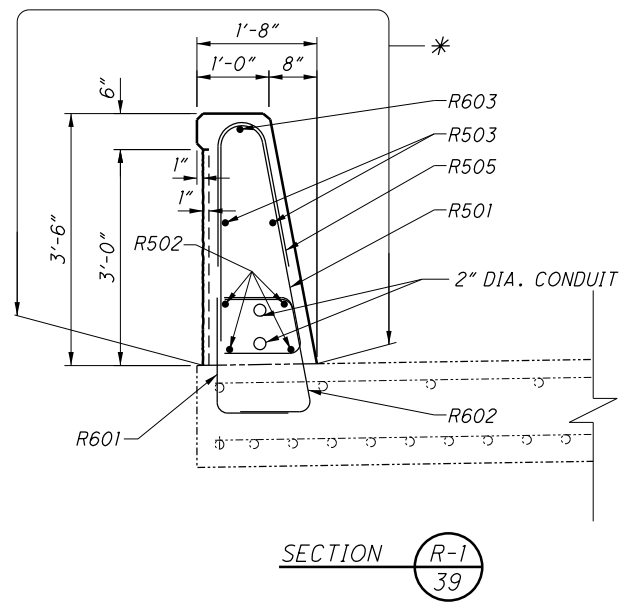


ELEVATION VIEW

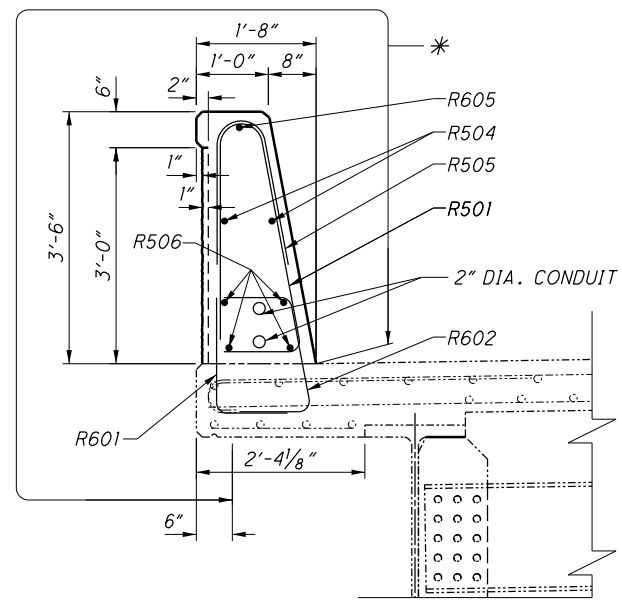
(LEFT PARAPET SHOWN RIGHT PARAPET MIRROR)

DESIGNED	CPS	CHECKED	TAG
DRAWN	CPS	REVISED	
REVIEWED	CPS	STRUCTURE FILE NUMBER	4506333
DATE	MM/DD/YY		
DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5		
PARAPET DETAILS			
BRIDGE NO. LIC-661-0003			
OVER S.R. 16			
LIC-37 661-16.59 / 0.00			
PID No. 92411			
39 / 65			
308			
341			

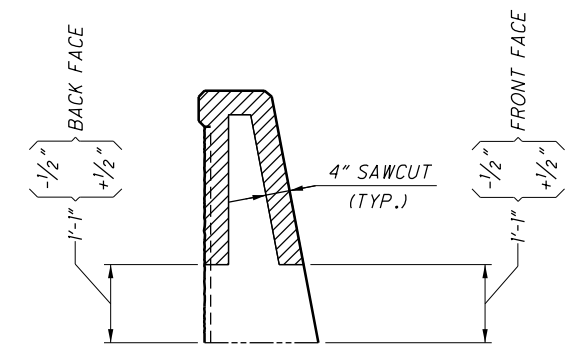
I:\ProjectData\LIC\_9241\Design\Structures\661\_0003\_S4001.dgn 2-Railing Sections 11/18/2019 1:49:41PM bharlow



SECTION R-1  
39



SECTION R-2  
39

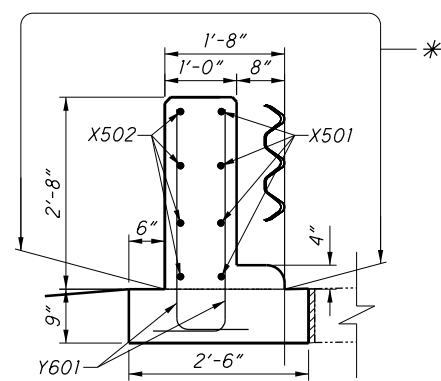


DETAIL A  
SECTION THROUGH SAWCUT  
SAWCUT PERIMETER = 6'-2"

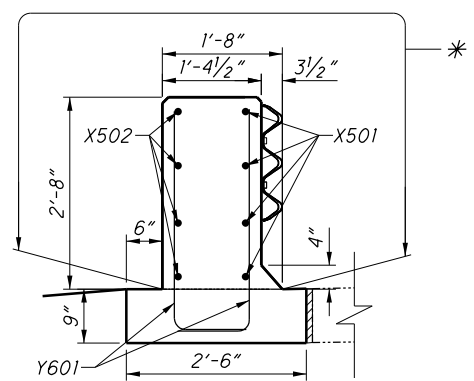
PARAPET LAP LENGTH
No. 5 = 2'-5"
No. 6 = 2'-11"

NOTE:  
-ALL REINFORCING STEEL TO BE EPOXY COATED.  
-FIELD BEND BARS WHERE NECESSARY  
-FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-13  
STD. DWG. RM-4.5  
STD. DWG. RM-4.6  
STD. DWG. I-2.3  
-USE OF (GFRP) REINFORCEMENT, AS DETAILED IN STD. DWG. SBR-1-13, IS NOT NECESSARY FOR TRADITIONALLY FORMED PARAPETS, AS SHOWN IN THIS PLAN.

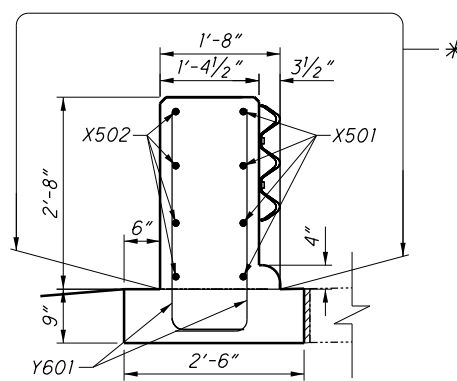
**LEGEND**  
\* ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY) = CLEAR COATING.



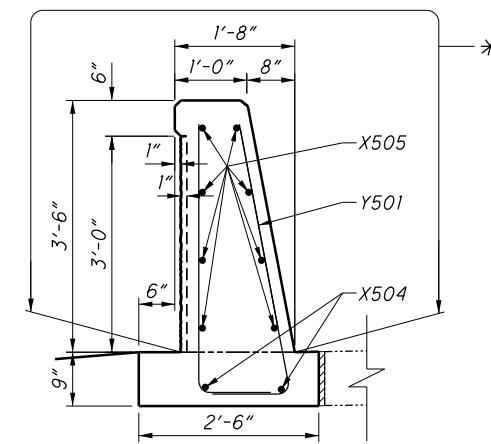
SECTION R-3  
42



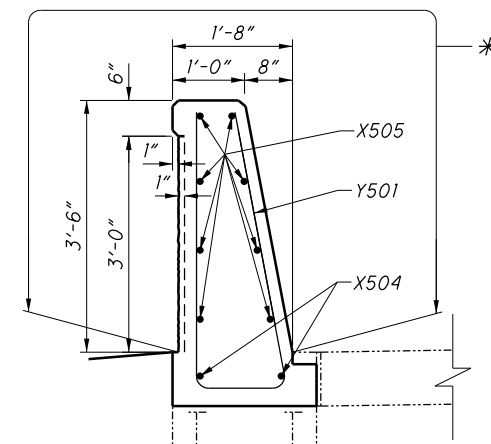
SECTION R-4  
42



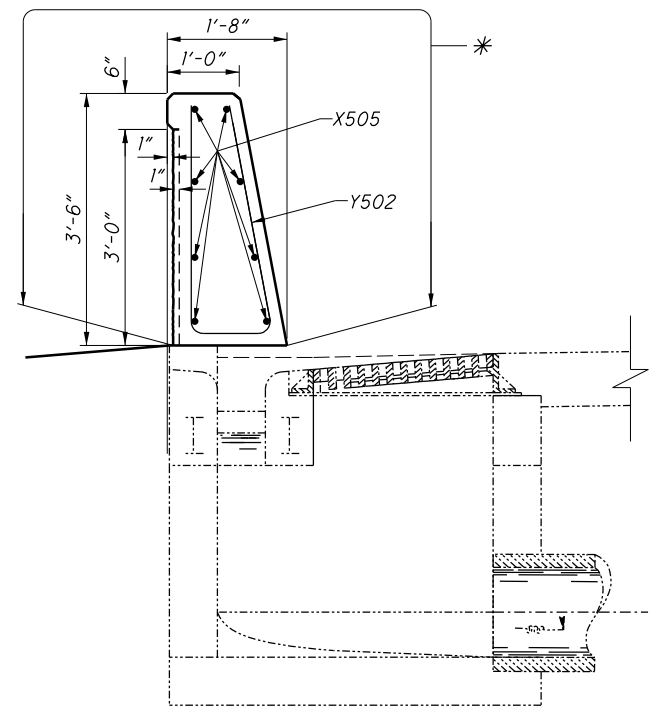
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42



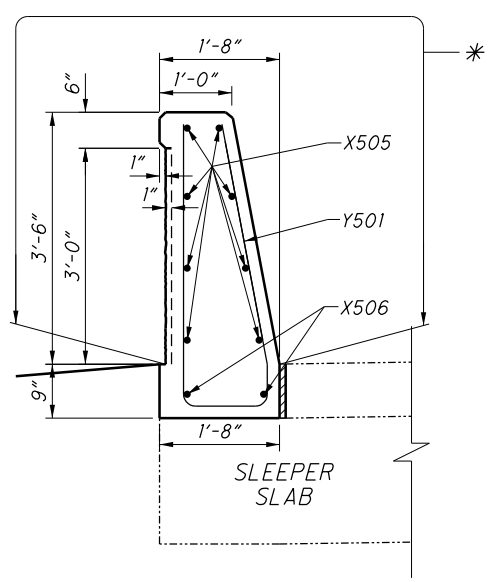
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42



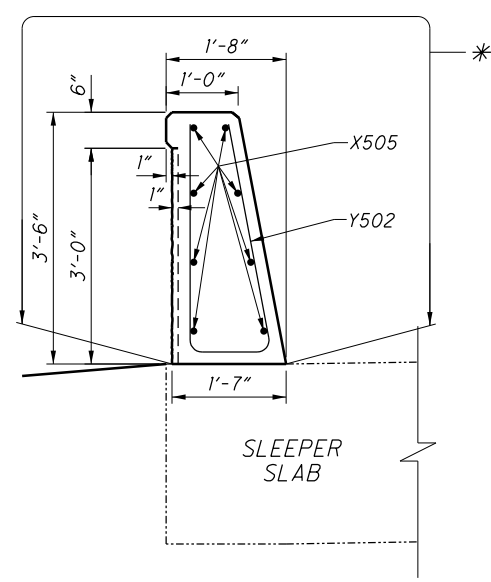
SECTION R-7  
42



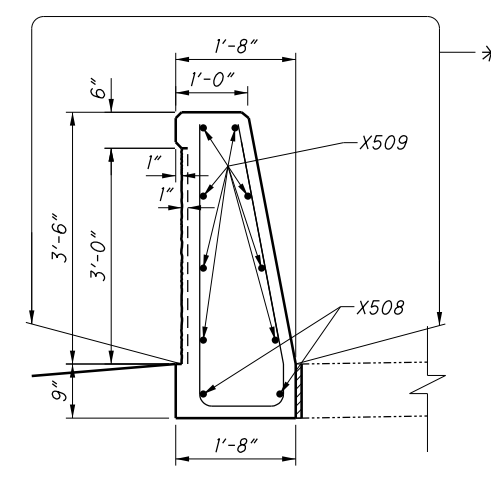
SECTION R-8  
42



SECTION R-9  
42

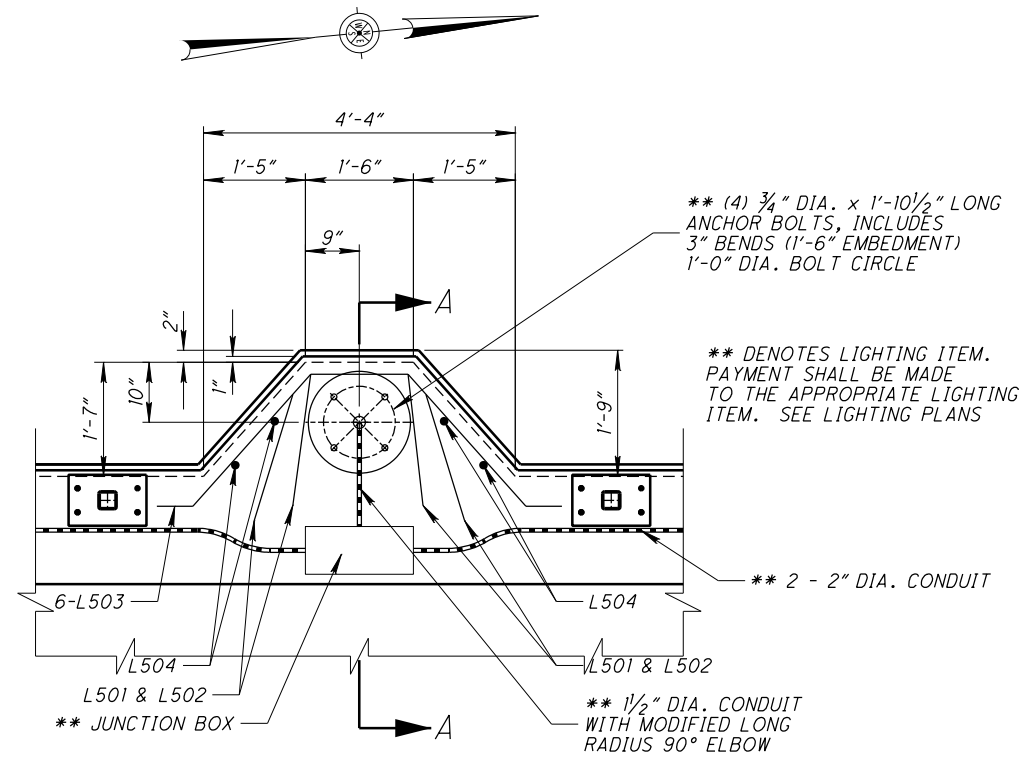


SECTION R-10  
42



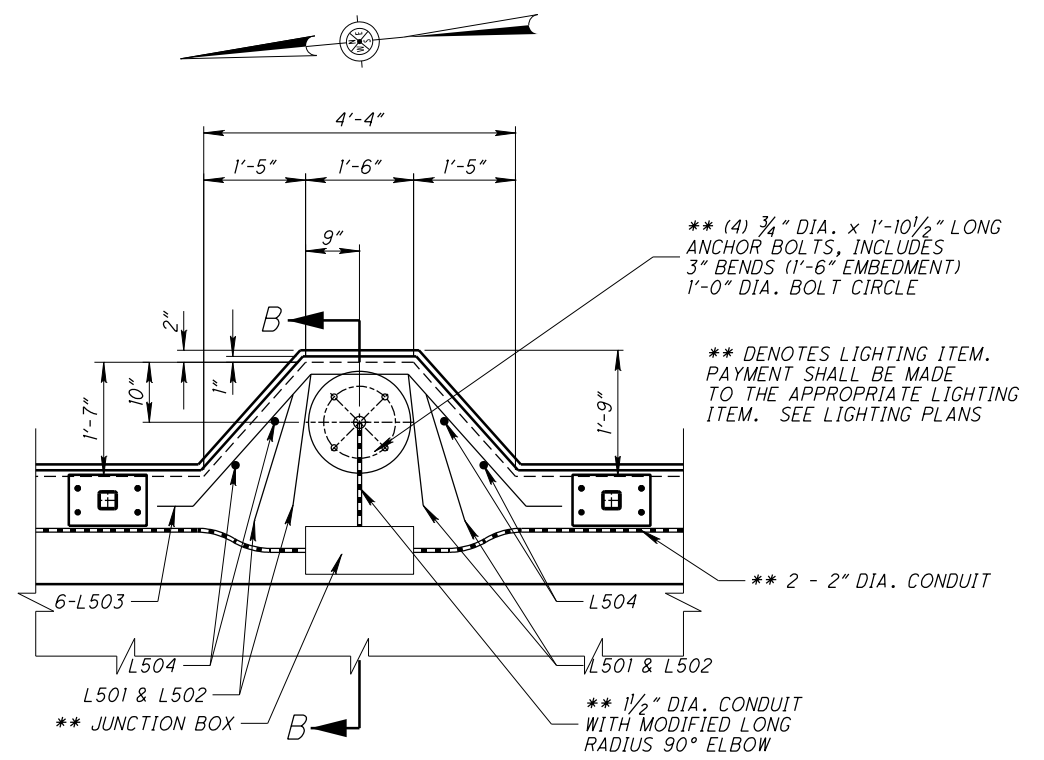
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42

I:\ProjectData\LIC\9241\Design\Structures\661\_0003\Sheets\661\_0003\_S4001.dgn 3-Light Pole Pilasters 11/18/2019 1:49:42 PM bharlow



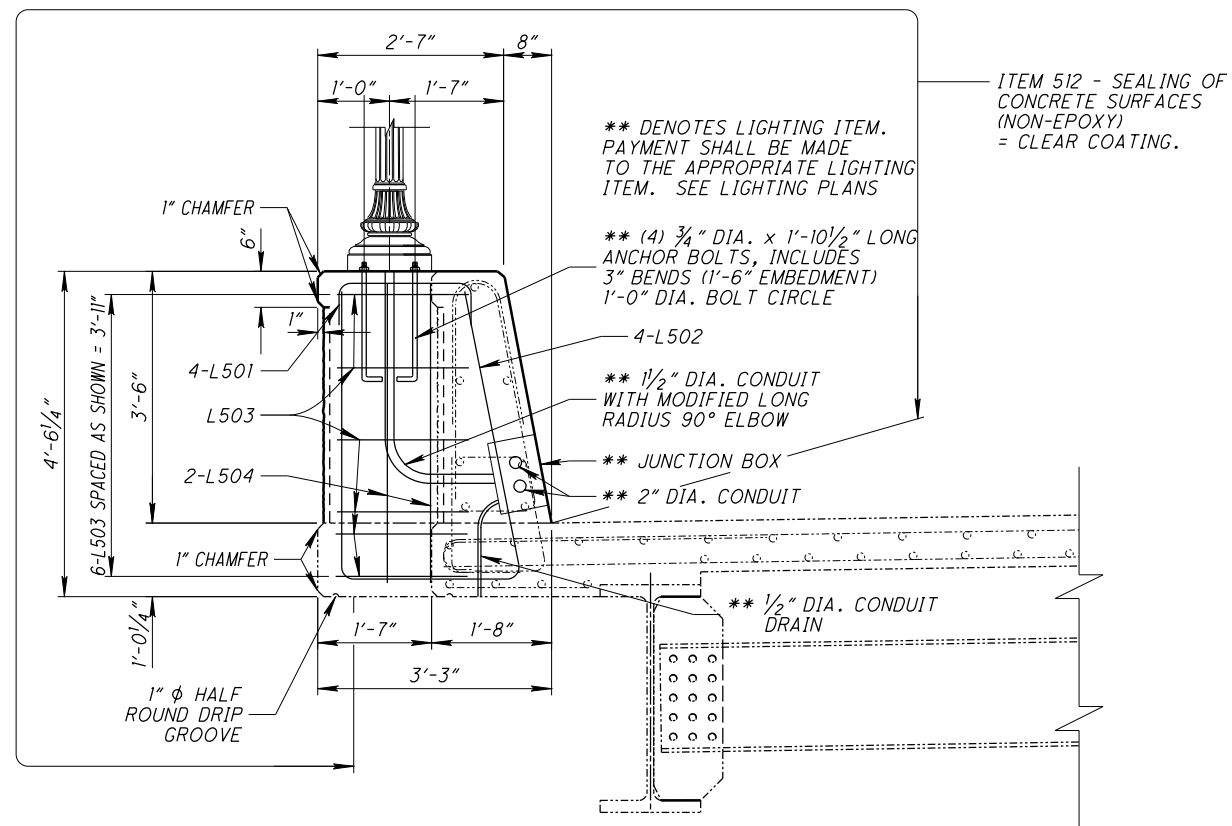
PLAN VIEW  
LIGHT POLE SUPPORT PILASTER  
(LEFT BRIDGE RAIL)

⊕ LIGHT SUPPORT (LOCATION)  
STA. 369+96.06, 34'-3" LT.  
STA. 370+87.06, 34'-3" LT.

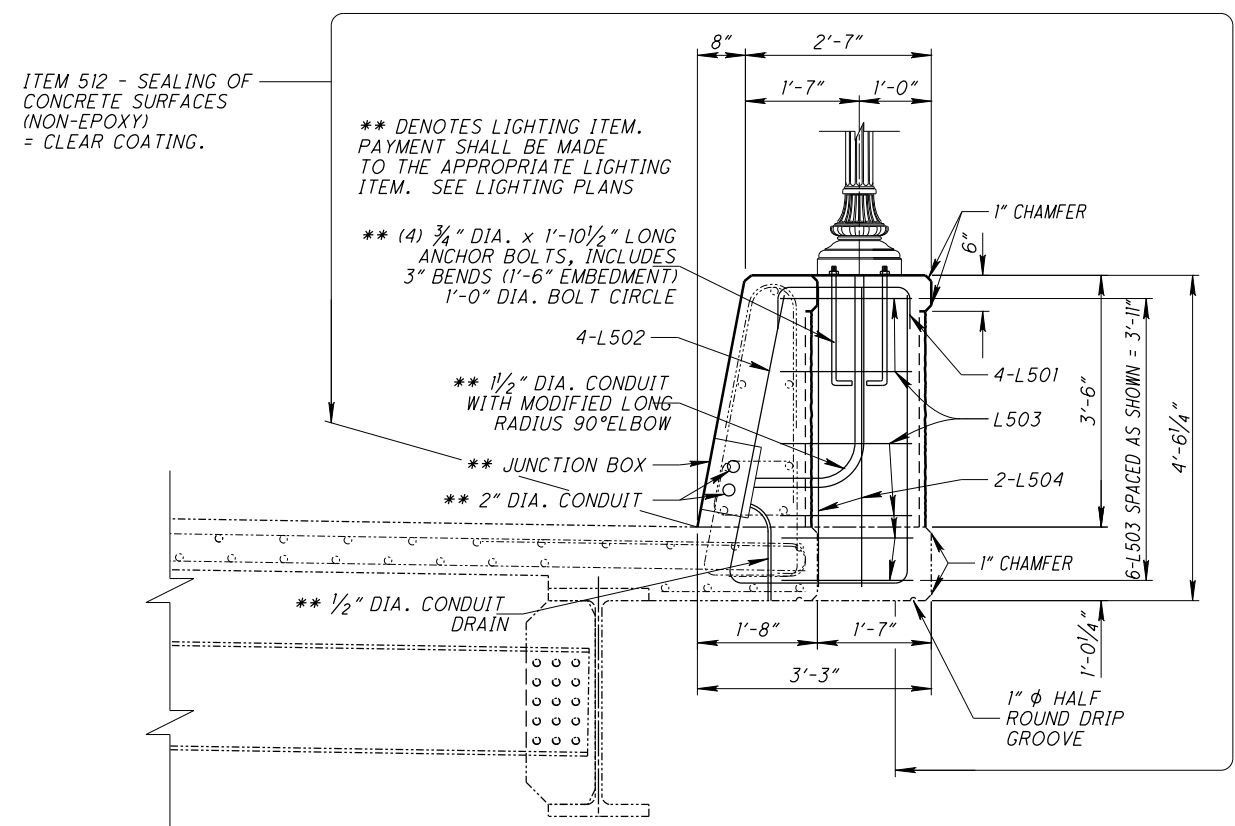


PLAN VIEW  
LIGHT POLE SUPPORT PILASTER  
(RIGHT BRIDGE RAIL)

⊕ LIGHT SUPPORT (LOCATION)  
STA. 369+78.02, 34'-3" RT.  
STA. 370+69.02, 34'-3" RT.



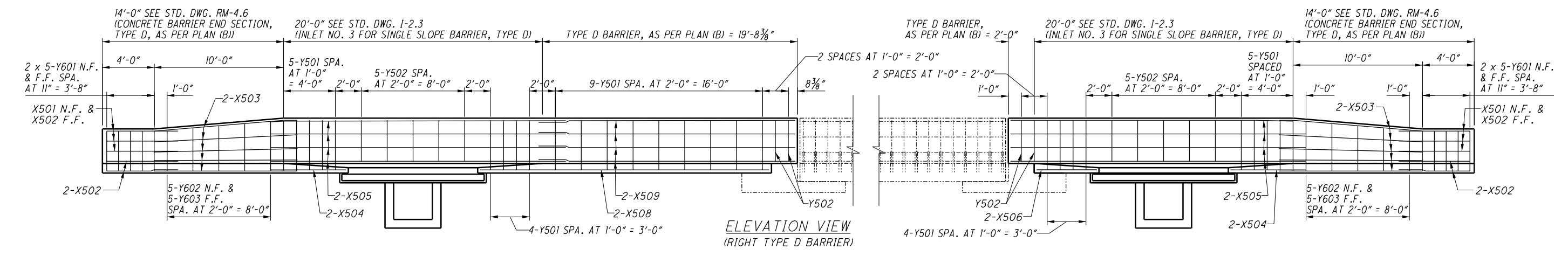
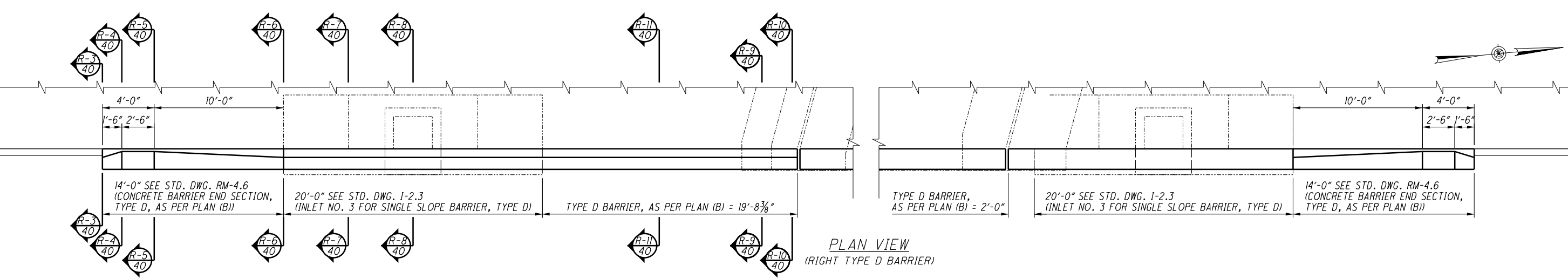
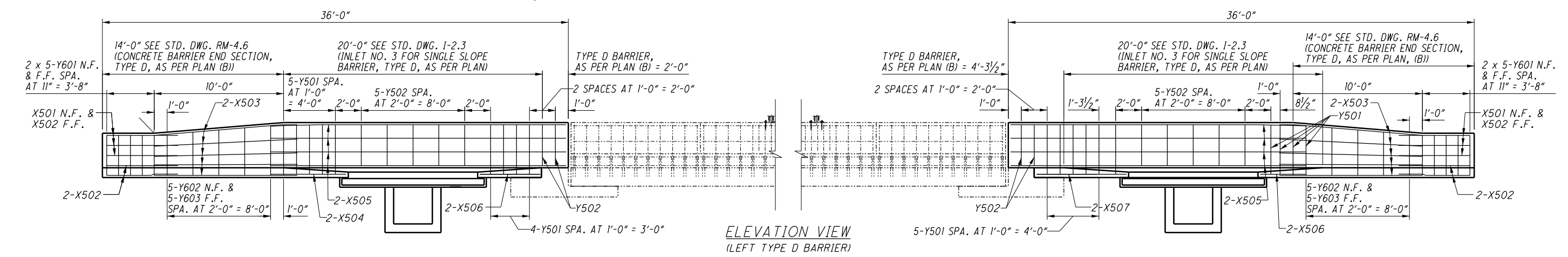
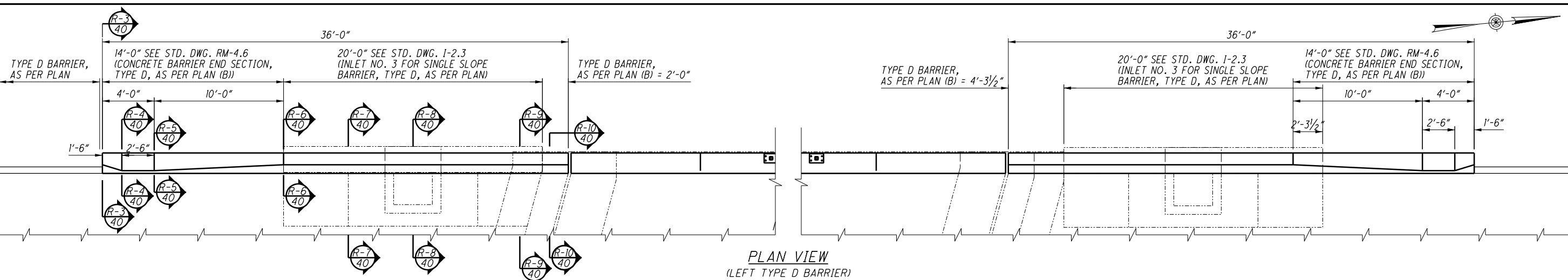
SECTION A-A



SECTION B-B

DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED	DATE	CPS	MM/DD/YY
DRAIN	CPS	REVIS	STRUCTURE FILE NUMBER
DESIGNED	CPS	CHECKED	TAG
LIC-37/661-16.59/0.00		PID No. 92411	
BRIDGE NO. LIC-661-0003		OVER S.R. 16	
LIC-37/661-16.59/0.00		PID No. 92411	
41/65		310	
		341	

I:\ProjectData\LIC\_9241\Design\Structures\661\_0003\Sheets\661\_0003\_SA001.dgn 4-Type D Barrier Details 11/8/2019 4:49:43 PM bharlow

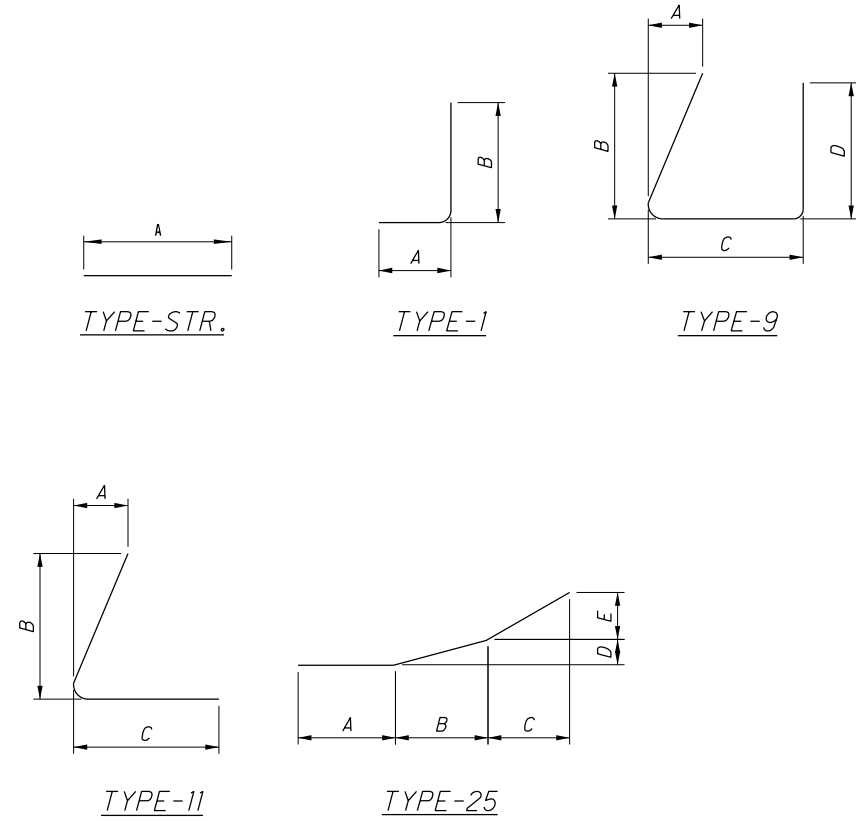


DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DATE	MM/DD/YY
REVIEWED	CPS MM/DD/YY STRUCTURE FILE NUMBER 4506333
DRAWN	CPS REVISED
DESIGNED	CPS CHECKED TAG
TYPE D BARRIER DETAILS	
BRIDGE NO. LIC-661-0003 OVER S.R. 16	
LIC-37-661-16.59 / 0.00	PID No. 92411
42 / 65	311 341

I:\ProjectData\LIC\9241\Design\Structures\LIC661\_0003\Sheets\661\_0003\_SA001.dgn 5-Type D Barrier\_Resteel 11/18/2019 1:49:47 PM bharlow

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL				A	B	C	D	E	R
TYPE D BARRIER										
X501	12	5'-6"	69	25	1'-8"	2'-5"	1'-3 1/2"	0'-1 1/2"	0'-6 1/2"	
X502	28	5'-6"	161	STR.	5'-6"					
X503	40	11'-1"	462	STR.	11'-1"					
X504	6	5'-10"	37	STR.	5'-10"					
X505	32	22'-10"	762	STR.	22'-10"					
X506	6	4'-8"	29	STR.	4'-8"					
X507	2	7'-0"	15	STR.	7'-0"					
X508	2	22'-4"	47	STR.	22'-4"					
X509	8	19'-10"	165	STR.	19'-10"					
Y501	36	8'-11"	335	9	0'-9"	3'-10"	1'-5"	3'-10"		
Y502	28	7'-0"	204	9	0'-7"	3'-0 1/2"	1'-3"	3'-0"		
Y601	40	3'-11"	235	1	1'-0"	3'-1"				
Y602	4	4'-0"			0'-11 1/6"	3'-2"				
	SERIES OF	TO	130	11	TO	TO	1'-0"			2"
	5	4'-8"			0'-8"	3'-9 1/2"				
Y603	4	4'-0"				3'-2"				
	SERIES OF	TO	130	1	1'-0"	TO				2"
	5	4'-8"				3'-10"				
TYPE D BARRIER SUB-TOTAL			** 2,781							

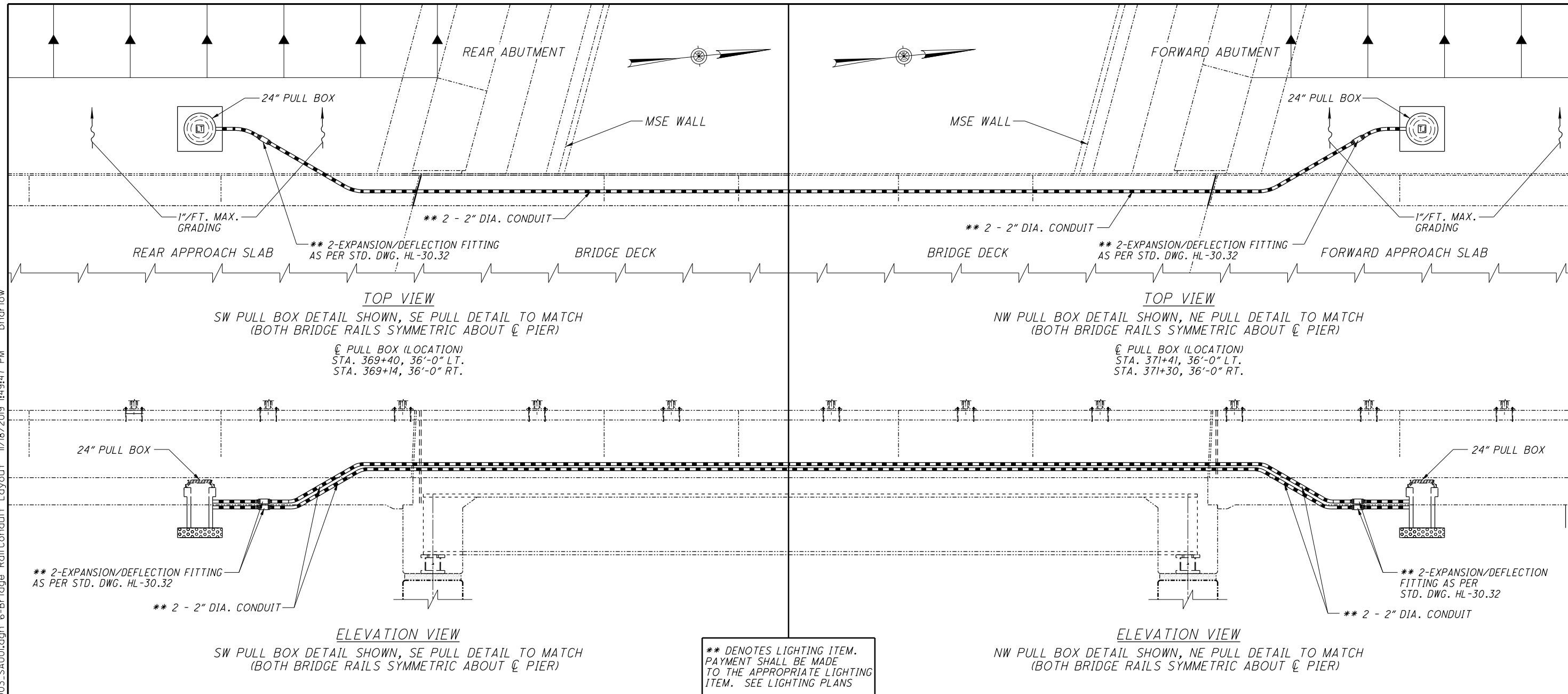
\*\* - FOR INFORMATIONAL PURPOSES ONLY, ALL RESTEEL QUANTITIES SHALL BE INCLUDED WITH THE COST OF THE FOLLOWING ITEMS:  
 ITEM 611 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN  
 ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN  
 ITEM 622 - CONCRETE BARRIER END SECTION, TYPE D, AS PER PLAN



<b>LIC-37 / 661-16.59 / 0.00</b> <b>PID No. 92411</b>	<b>TYPE D BARRIER REINFORCING STEEL SCHEDULE</b> BRIDGE NO. LIC-661-0003 OVER S.R. 16	DESIGNED CPS TAG	DRAIN CPS REVISED	REVIEWED CPS STRUCTURE FILE NUMBER 4506333	DATE MM/DD/YY	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
43 / 65	312 341					



I:\ProjectData\IC\9241\Design\Structures\661\_0003\Sheets\661\_0003\_S4001.dgn 6--Bridge RailConduit Layout 11/18/2019 1:49:47 PM bharlow

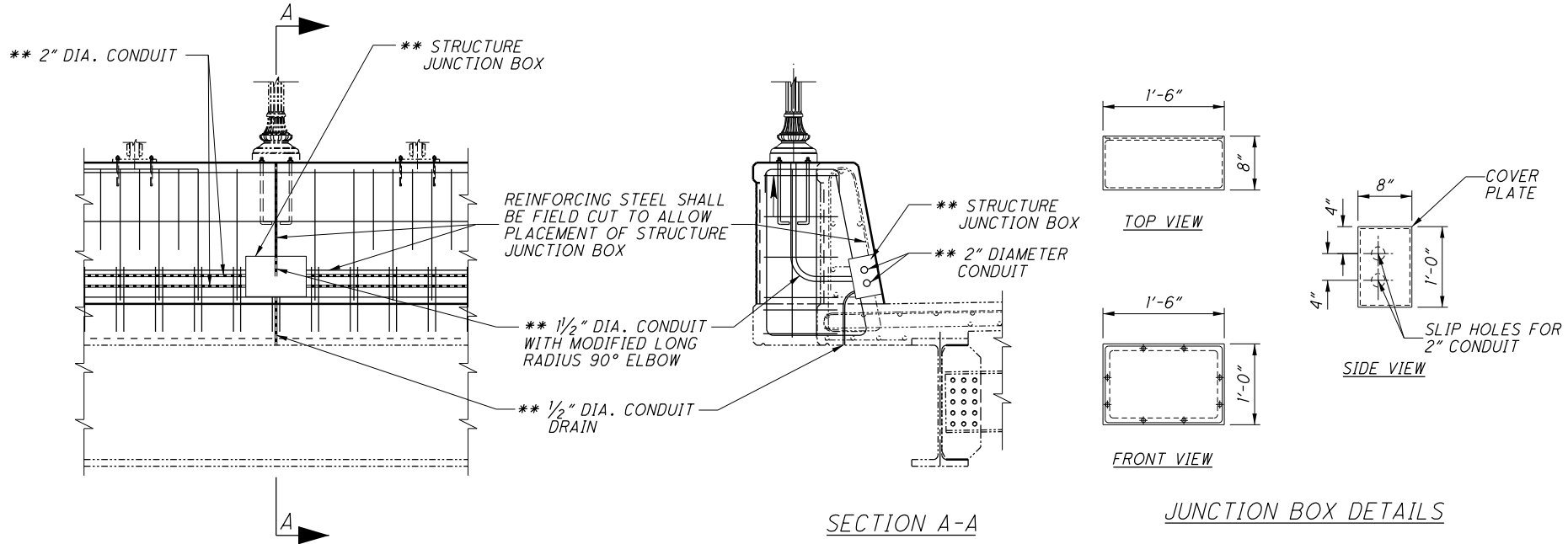


LIGHTING SUB-SUMMARY			
ITEM	QUANTITY	UNIT	DESCRIPTION
625	812	FT.	** CONDUIT, 2", 725.04
625	4	EACH	** STRUCTURE JUNCTION BOX
625	1	EACH	** STRUCTURE GROUNDING SYSTEM, AS PER PLAN

(QUANTITIES CARRIED TO SHEET 5/65)  
SEE STD. DWG. HL-20.14

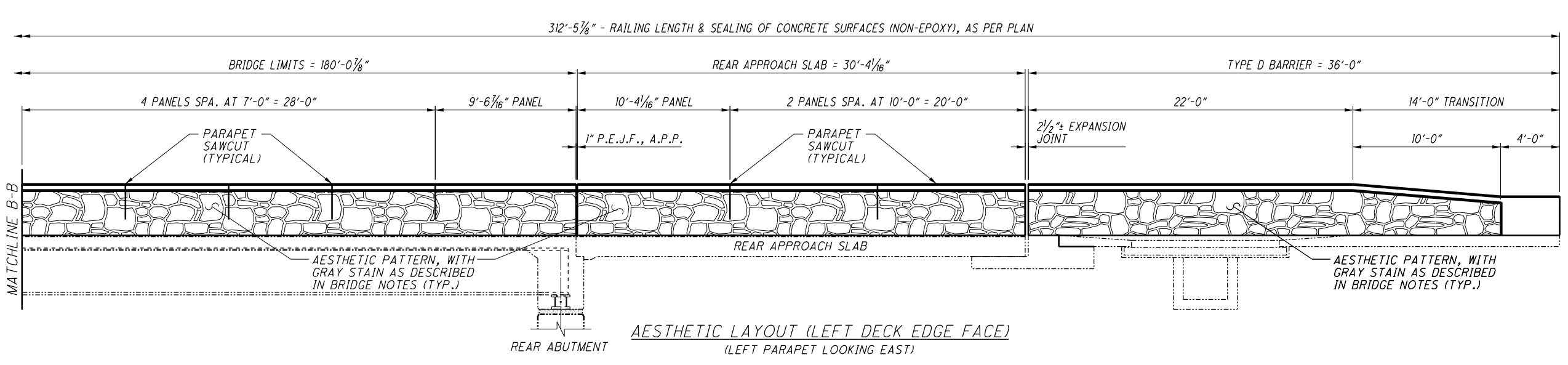
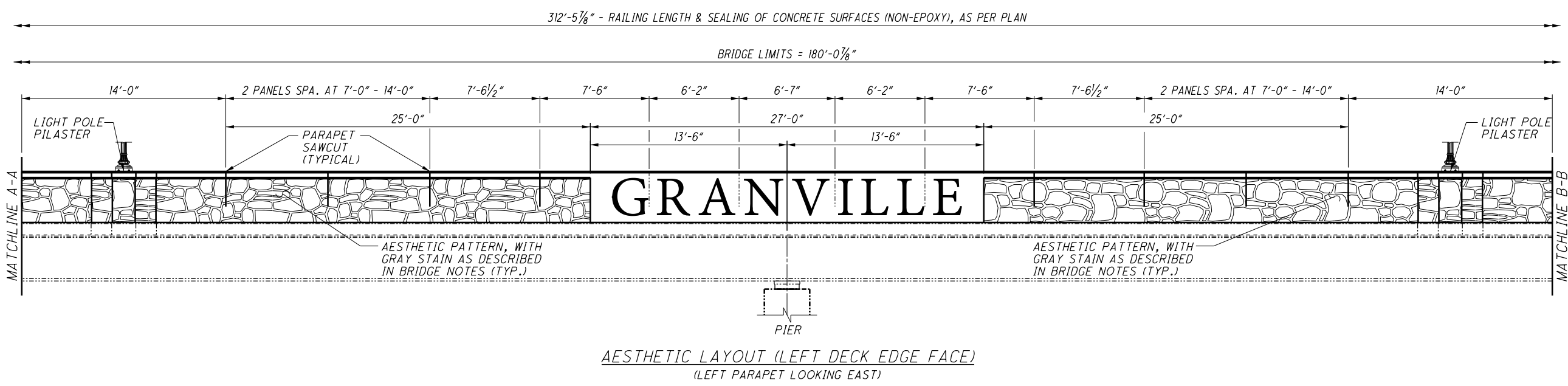
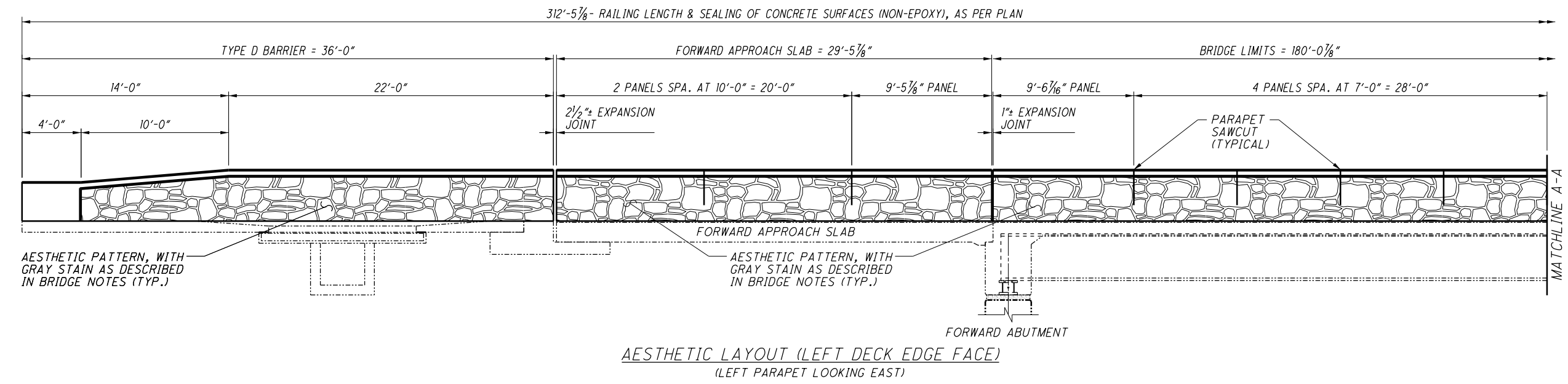
**ITEM 625 CONDUIT, 2" 725.04**  
AS PER CMS 625.12 AFTER INSTALLATION OF THE CONDUIT AND PRIOR TO INSTALLION OF THE CABLES, CHECK EACH CONDUIT RUN BY RODDING OR BY PUSHING A MANDREL THROUGH THE CONDUIT RUN AND REMOVING ANY OBSTRUCTION FOUND.  
IF A CONDUIT IS TO REMAIN EMPTY UPON COMPLETION OF THE PROJECT, LEAVE A NO. 10 AWG COPPER CLAD, ALUMINUM CLAD OR GALVANIZED PULL WIRE IN THE CONDUIT AND CAP THE ENDS IN AN APPROVED MANNER.

**ITEM 625 STRUCTURE GROUNDING SYSTEM, AS PER PLAN**  
THE STRUCTURE GROUNDING SYSTEM CONSISTS OF THE GROUNDING OF EACH STRUCTURE JUNCTION BOXES. GROUND EACH ITEM AS PER STD. DWG. HL-50.21



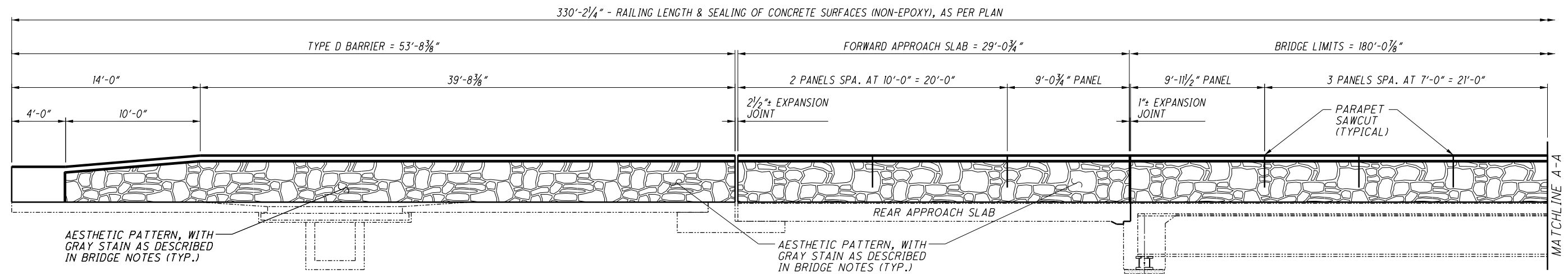
DESIGN AGENCY: OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5  
 DATE: MM/DD/YY  
 REVIEWED: CPS MM/DD/YY  
 DRAIN: CPS  
 DESIGNED: CPS  
 CHECKED: TAG  
 STRUCTURE FILE NUMBER: 4506333  
 PARAPET DETAILS (CONDUIT)  
 BRIDGE NO. LIC-661-0003  
 OVER S.R. 16  
 LIC-37/661-16.59/0.00  
 PID No. 92411  
 44/65  
 313  
 341

I:\ProjectData\LIC\9241\Design\Structures\661\_0003\Sheets\661\_0003\_SA001.dgn 7-Left Parapet (Aesthetic Details) 11/18/2019 1:49:49 PM bharlow

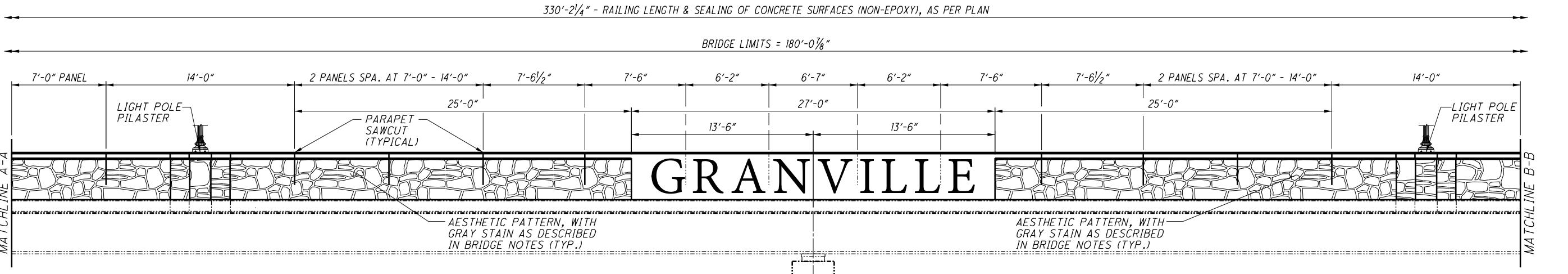


DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DATE	MM/DD/YY	REVIEWED	CPS
FILE NUMBER	4506333	STRUCTURE	FILE NUMBER
DESIGNED	CPS	DRAWN	CPS
CHECKED	TAG	REVISED	-
<b>LEFT PARAPET AESTHETIC DETAILS</b>			
BRIDGE NO. LIC-661-0003			
OVER S.R. 16			
LIC-37-661-16.59 / 0.00		PID No. 92411	
45 / 65			
314			
341			

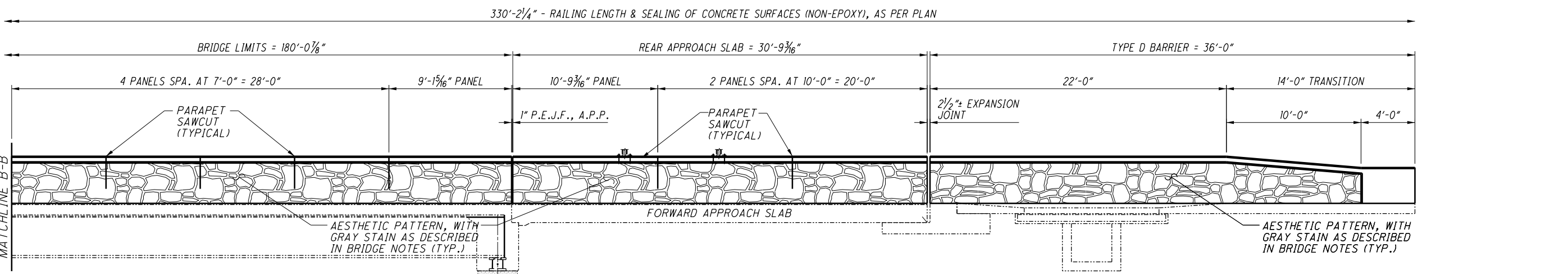
I:\ProjectData\LIC\_9241\Design\Structures\661\_0003\_Sheets\661\_0003\_S4001.dgn 8-Right Parapet (Aesthetic Details) 11/18/2019 1:49:51PM bharlow



AESTHETIC LAYOUT (RIGHT DECK EDGE FACE)  
(RIGHT PARAPET LOOKING WEST)



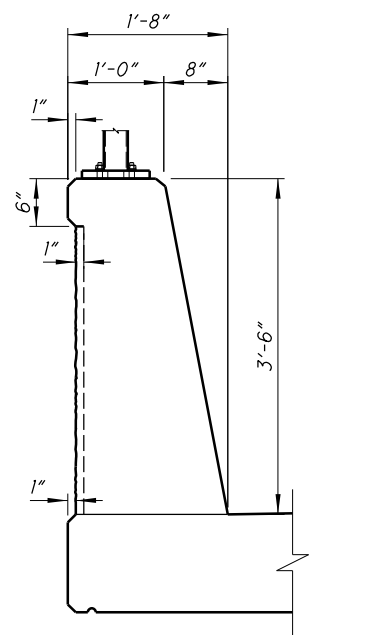
AESTHETIC LAYOUT (RIGHT DECK EDGE FACE)  
(RIGHT PARAPET LOOKING WEST)



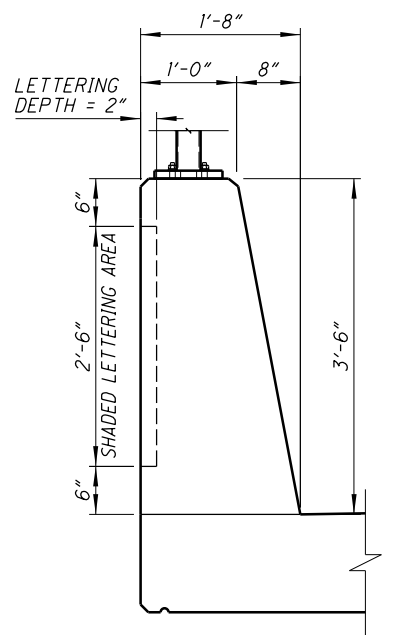
AESTHETIC LAYOUT (RIGHT DECK EDGE FACE)  
(RIGHT PARAPET LOOKING WEST)

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REVIEWED	CPS	MM/DD/YY	STRUCTURE FILE NUMBER
DATE			4506333
DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5		
RIGHT PARAPET AESTHETIC DETAILS			
BRIDGE NO. LIC-661-0003			
OVER S.R. 16			
LIC-37-661-16.59 / 0.00	PID No. 92411		
46 / 65			
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341			

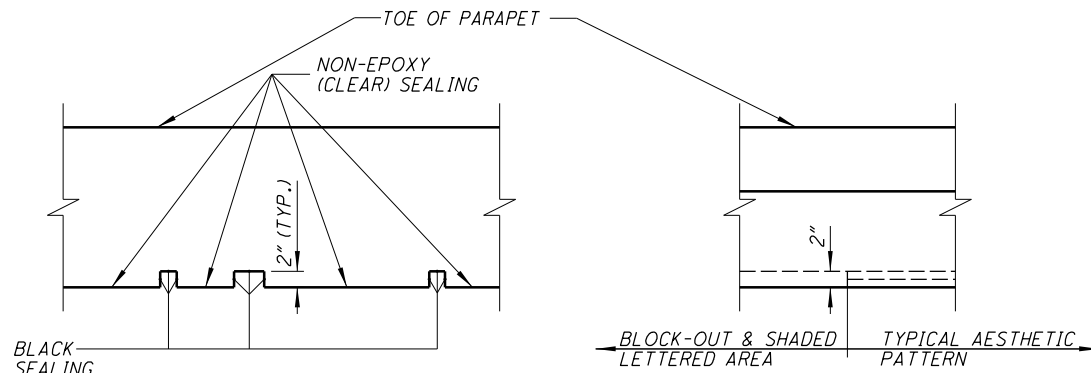
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SECTION A-A  
(STD. PARAPET SECTION)  
(20 SCALE)



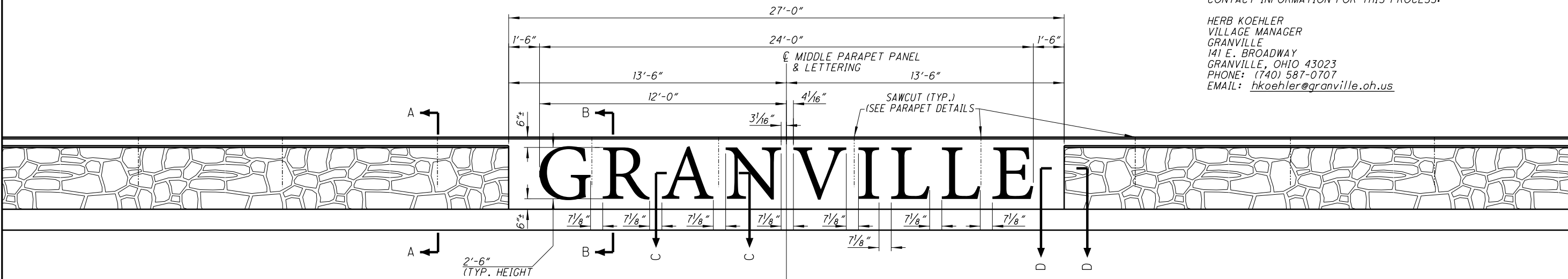
SECTION B-B  
(LETTERED SECTION)  
(20 SCALE)



SECTION C-C  
DEPRESSED LETTER DETAIL  
(20 SCALE)

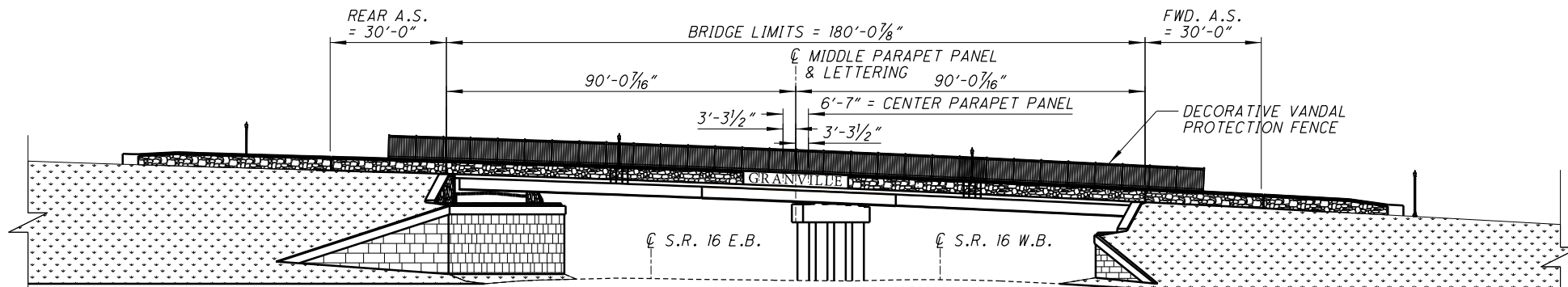
SECTION D-D  
THICKENED PARAPET DETAIL  
(20 SCALE)

GRANVILLE - ("ADOBE DEVANAGARI" FONT)



CAST LETTERING SHALL BE LAID OUT/PROJECTED AS "ADOBE DEVANAGARI" TYPE FONT WITH A SINGLE SPACE SEPARATING EACH LETTER.

TYPICAL LETTERING DETAILS  
(8 SCALE) - DECORATIVE FENCE NOT SHOWN FOR CLARITY



ELEVATION OF S.R. 661 BRIDGE  
(LOOKING WEST EAST MIRRORED)

NOTE:

ALL ADDITIONAL COSTS ASSOCIATED WITH THE LETTERING, SYMBOLS, PROVIDING AND DIFFERING TYPES AND COLORS OF CONCRETE SEALING IS TO BE INCLUDED WITH ITEM 511 - CLASS QC SCC CONCRETE WITH QC/OA, BRIDGE DECK (PARAPET), AS PER PLAN FOR PAYMENT. LOCATION OF SAWCUT JOINTS SHALL BE SO AS TO AVOID INTERSECTING DEPRESSED LETTERING. LETTERS SHALL BE CAST INTO PARAPET CONCRETE AT AN EMBEDMENT DEPTH OF 2 INCHES. THE MATERIAL USED TO FORM THE LETTERS INTO THE CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE SPECIFICATIONS OF ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), SHALL BE USED TO APPLY FEDERAL COLOR NUMBER FS-595C-17038 (BLACK) TO THE DEPRESSED SURFACES OF THE LETTERS. LASTLY, ALL REMAINING PARAPET SURFACES SHALL BE SEALED, AS DETAILED IN THE PLAN, WITH ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY), CLEAR SEALER. THE CONTRACTOR SHALL CREATE A MOCKUP TEST POUR OF THE PROPOSED LETTERING, AND SEALING PATTERN USING APPROVED FORMLINERS AND SEALING MATERIAL.

THE MOCKUP SHALL BE APPROVED BY THE DISTRICT 5 BRIDGE SECTION. IF THE TEST PANELS DO NOT MEET THE APPROVAL OF THE DISTRICT 5 BRIDGE SECTION, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED PANEL SURFACE CHOSEN. THE MOCKUP WILL BE PROVIDED REPEATEDLY, AS NECESSARY, UNTIL APPROVAL IS GRANTED. A MINIMUM OF ONE FULL SCALE LETTER WITH FLUSH FRAMING MOCKUP SHALL BE PROVIDED. THE MOCK-UPS SHALL HAVE THE SAME ARCHITECTURAL RELIEF, THICKNESS, PATTERN, AND COLOR/ SEALANT INTENDED TO BE USED ON THE PROJECT. THE MOCKUP SHALL BE OF THE SAME CEMENT, AGGREGATE SOURCE, AND CONCRETE SEALANT THAT WILL BE USED TO CONSTRUCT THE PROJECT. AFTER APPROVAL THE CONCRETE MOCKUP SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

IN ADDITION TO THE DISTRICT 5 BRIDGE SECTION, A GRANVILLE REPRESENTATIVE SHALL BE PRESENT FOR SPOT CONSULTATION WITH THE DISTRICT 5 BRIDGE SECTION. USE THE FOLLOWING CONTACT INFORMATION FOR THIS PROCESS:

HERB KOEHLER  
VILLAGE MANAGER  
GRANVILLE  
141 E. BROADWAY  
GRANVILLE, OHIO 43023  
PHONE: (740) 587-0707  
EMAIL: [hkoehler@granville.oh.us](mailto:hkoehler@granville.oh.us)

DESIGN AGENCY  
OHIO DEPARTMENT OF  
TRANSPORTATION, DISTRICT 5

DATE  
MM/DD/YY  
REVIEWED  
CPS  
STRUCTURE FILE NUMBER  
4506333

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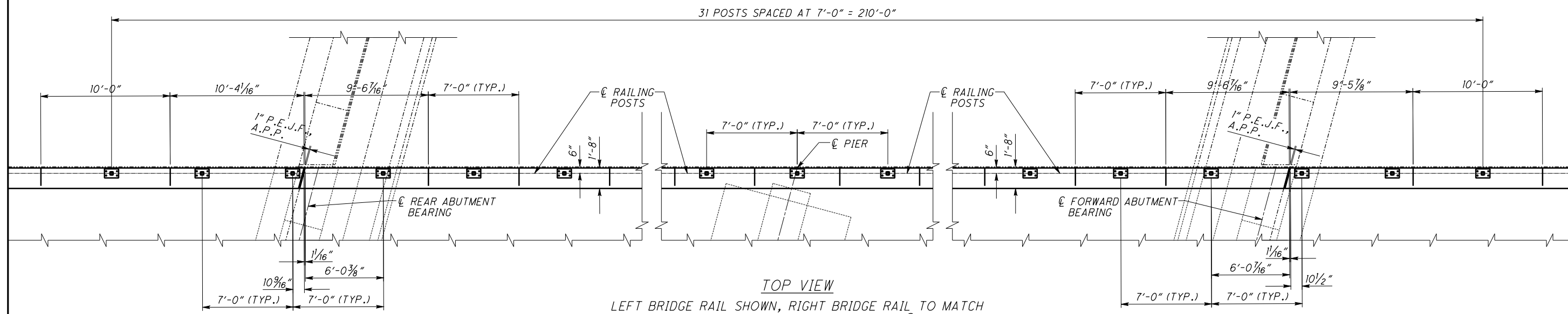
PARAPET LETTERING DETAILS  
BRIDGE NO. LIC-661-0003  
OVER S.R. 16

LIC-37-661-16.59 / 0.00  
PID No. 92411

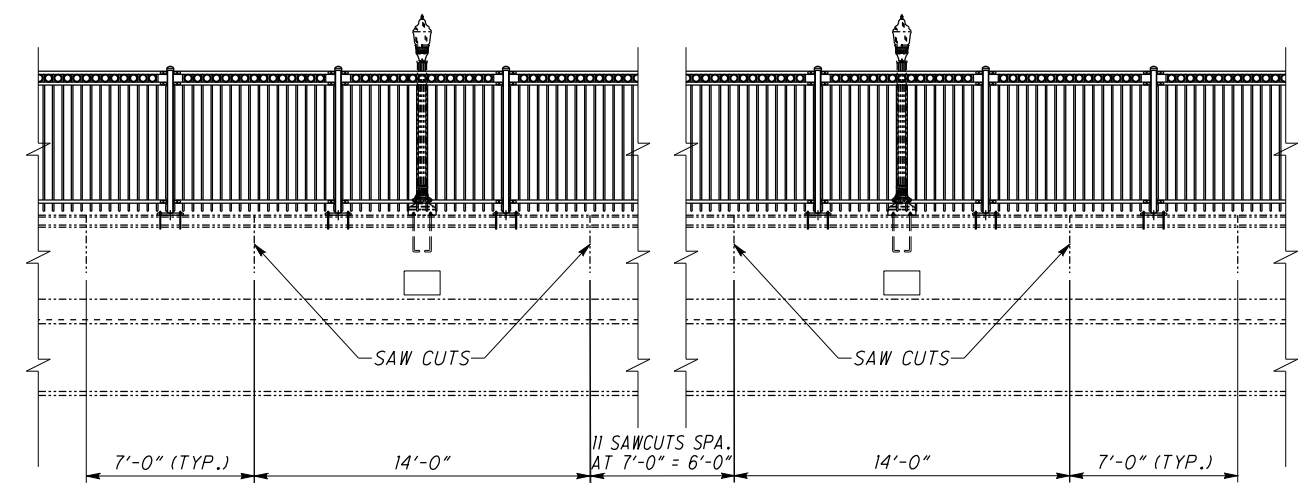
47/65

316  
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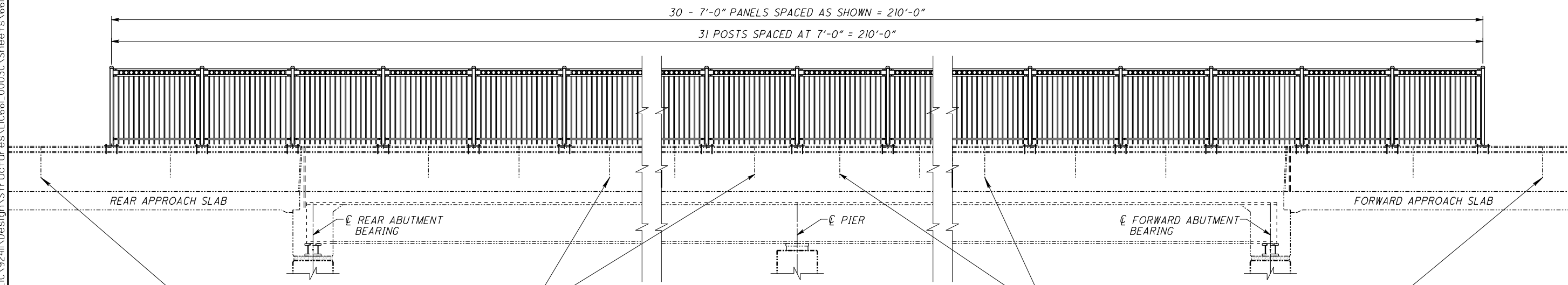
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**TOP VIEW**  
 LEFT BRIDGE RAIL SHOWN, RIGHT BRIDGE RAIL TO MATCH  
 (BOTH BRIDGE RAILS SYMMETRIC ABOUT  $\varnothing$  PIER)  
 (NOTE: RAILS, PICKETS, MESH, ETC. NOT SHOWN FOR CLARITY)



**SIDE VIEW LIGHT POLE PILASTER**



**SIDE VIEW**  
 LEFT BRIDGE RAIL SHOWN, RIGHT BRIDGE RAIL TO MATCH  
 (BOTH BRIDGE RAILS SYMMETRIC ABOUT  $\varnothing$  PIER)  
 (NOTE: EXPANDED METAL MESH NOT SHOWN FOR CLARITY)

DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DATE	MM/DD/YY	REVIEWED	CPS
FILE NUMBER	4506333	STRUCTURE FILE NUMBER	4506333
DESIGNED	CPS	DRAWN	CPS
CHECKED	TAG	REVISED	-
<b>VANDAL PROTECTION FENCE LAYOUT</b>			
BRIDGE NO. LIC-661-0003			
OVER S.R. 16			
LIC-37/661-16.59/0.00		PID No. 92411	
48/65			
317			
341			

**ITEM 607 VANDAL PROTECTION FENCE (DECORATIVE) (ALTERNATE 2)**

**DESCRIPTION:**

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING DECORATIVE VANDAL FENCING ON NEW OR EXISTING CONCRETE BRIDGE RAILINGS. CONSTRUCT IN A MANNER THAT PROVIDES A RIGID, TAUT FENCE CLOSELY CONFORMING TO THE TOP SURFACE OF THE CONCRETE PARAPET. THIS PAY ITEM SHALL INCLUDE ANY AND ALL WORK NECESSARY TO FABRICATE AND INSTALL THE DECORATIVE STEEL VANDAL PROTECTION FENCE DESCRIBED HEREIN. THIS WILL INCLUDE STRUCTURAL STEEL AS DETAILED IN THE PLANS, SUCH AS POSTS, RAIL ELEMENTS, PICKETS, POST CAPS, DECORATIVE ORNAMENTS, BOLTS, WASHERS, NUTS, CONNECTIONS TO THE BARRIER, BASE PLATES, ANCHOR BOLTS, SHIMS, CAULKING, EXPANDED METAL, CLIPS, MISC. STEEL, LETTERING/HARDWARE, AND ALL OTHER COMPONENTS AS DETAILED IN THIS PLAN. ALL FABRICATION AND WORK OF THIS ITEM SHALL BE SHOP PERFORMED.

**MATERIALS:**

ALL MATERIALS USED FOR THIS ITEM SHALL, AT A MINIMUM, MEET THE REQUIREMENTS OF STD. DWG. VPF-1-90. TUBE STEEL POSTS SHALL MEET ASTM A500, GRADE B (MINIMUM YIELD STRENGTH = 46,000 PSI). IF NOT OTHERWISE SPECIFIED, STEEL MATERIAL SHALL BE ASTM A36.

**STEEL COATING:**

ALL STEEL COMPONENTS OF THIS ITEM, EXCEPT AS OTHERWISE NOTED IN THIS PLAN, SHALL BE GALVANIZED AS PER STD. DWG. VPF-1-90 AND MODIFIED FOR A BLACK SHOP PAINT SYSTEM DESCRIBED AS FOLLOWS. PROPER SURFACE PREPARATION PRIOR TO GALVANIZING AND PAINTING IS MANDATORY. VENT HOLES MAY BE ADDED AS NEEDED FOR PROPER GALVANIZING. ALL MATERIAL SHALL BE FREE OF PAINT MARKS. AFTER GALVANIZING, THE STEEL SHALL NOT BE QUENCHED. THE GALVANIZING SURFACE SHALL BE FREE FROM ALL CONTAMINANTS AND THE SURFACE ADEQUATELY ROUGHENED BEFORE PAINTING. PRIOR TO PAINTING, THE GALVANIZED SURFACE SHALL BE GIVEN AN ACID WASH WITH A CLEAN, WARM WATER RINSE, THEN A LIGHT SWEEP BLAST IN THE SHOP AND SHALL BE PAINTED WITHIN 12 HOURS OF SWEEP BLASTING. THE SWEEP BLAST SHOULD BE SOFT (FRIABLE) MATERIAL SIMILAR TO MAGNESIUM/ALUMINUM SILICATE ABRASIVE. THE SWEEP BLAST SHALL BE TO SUCH AN EXTENT TO SUFFICIENTLY ROUGHEN THE SURFACE TO AID IN PAINT ADHESION BUT NOT REMOVING MORE THAN 10 MICRONS OF ZINC. FIELD CONNECTION AREAS SHALL HAVE A UNIFORM GALVANIZED COATING FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT THE FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT. ALL DAMAGED GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

THE PAINT SHALL BE SHOP APPLIED. (IF PAINTED WITHIN 48 HOURS AFTER GALVANIZING, AN ACID WASH WILL NOT BE NECESSARY, ONLY THE LIGHT SWEEP BLAST.) THE PAINT SYSTEM SHALL BE PER C.M.S. 514, IZEU, A TIE COAT OF EPOXY PAINT, AND TOP COAT OF URETHANE PAINT. THE INORGANIC ZINC PRIMER SHALL BE NON-PERFORMED. ALL EXPOSED AREAS OF THE FENCING SHALL BE PAINTED, EXCEPT AS FOLLOWS. THE BASE PLATE ANCHORS, NUTS, AND WASHERS SHALL NOT BE PAINTED BUT REMAIN GALVANIZED ONLY. TOUCH UP OF ANY DAMAGED PAINT DURING HANDLING AND ERECTION IS REQUIRED AND SHALL BE AS DIRECTED BY THE PROJECT ENGINEER. THE COLOR OF THE FINISHED FENCING SHALL BE GLOSS BLACK. THE COLOR SHALL BE COORDINATED THROUGH THE DISTRICT AND SHALL MATCH THE COLOR OF ANY DECORATIVE LIGHTING POSTS ON THE PROJECT.

**POSTS:**

POSTS SHALL BE AS DETAILED IN THIS PLAN WITH A WELD ATTACHED PRESSED STEEL CAP.

**HORIZONTAL MEMBERS:**

HORIZONTAL MEMBERS SHALL BE 1/2"x1/2" SQUARE CHANNEL WITH 3/16" WALL THICKNESS.

**PICKETS:**

PICKETS SHALL BE 3/4" SQUARE SOLID STEEL.

**BASE PLATES:**

BASE PLATES SHALL BE AS DETAILED IN THIS PLAN.

**BASE PLATE ANCHORS:**

USE 1/2" ANCHORS AS PER STD. DWG. VPF-1-90. CAST-IN-PLACE MECHANICAL ANCHORS SHALL NOT BE USED. ANCHORS SHALL BE GALVANIZED ONLY.

**FILLET WELDS:**

FILLET WELDS SHALL CONFORM TO CMS 513.

**SHIM PLATES:**

SHIM PLATES SHALL BE AS PER STD. DWG. VPF-1-90 AND AS DETAILED IN THIS PLAN. USE SHIMS AS REQUIRED TO ERECT THE POSTS PERPENDICULAR TO THE ROADWAY PROFILE.

**TRAFFIC MAINTENANCE:**

MAINTAIN TRAFFIC ACCORDING TO THE PROJECT PLANS.

**VANDAL PROTECTION MESH:**

WHERE DETAILED IN THE PLAN, PROVIDE THE FOLLOWING MATERIAL AS VANDAL PROTECTION MESH (3/4" #9 FLATTENED EXPANDED METAL AS SPECIFIED BY):

McNICHOLS -  
3470 EAST KEMPER ROAD  
CINCINNATI, OH 45241-2007  
http://www.mcnichols.com  
PHONE: 1-877-884-4653

DIRECT METALS -  
3380 GRAND AVENUE  
WAUKEGAN, IL 60085  
http://www.directmetals.com  
PHONE: 1-800-711-4939

OR

APPROVED EQUAL

EACH MESH ASSEMBLY PANEL, AS DETAILED, SHALL BE ONE UNIT OF SEAMLESS EXPANDED METAL. THE PROTECTIVE COATING OF THE ENTIRE MESH ASSEMBLY, FOR EACH TYPICAL PANEL DETAILED IN THE PLAN, SHALL BE GALVANIZED AND PAINTED BLACK, ACCORDING TO THE STEEL COATING NOTE ON THIS SHEET, TO MATCH FENCE.

**MESH EDGE COLLAR:**

VANDAL PROTECTION MESH COLLAR SHALL BE SHOP ATTACHED, BY INTERMITTENT WELDING, TO ALL FOUR EDGES OF EACH TYPICAL FENCE PANEL MESH.

**MESH ATTACHMENT:**

USE INTERMITTENT SPOT WELDING, AS SHOWN IN THE PLAN, TO RIGIDLY ATTACH THE VANDAL PROTECTION MESH FLUSH TO THE PICKETS AND HORIZONTAL MEMEBERS. PROVIDE A SHOP WELD ASSEMBLY PATTERN WHICH WILL KEEP ALL AREAS OF THE PROPOSED MESH SNUG TO THE PICKETS AND ELIMINATE ANY VIBRATING OR CHATTERING ONCE IN SERVICE.

**APPROVAL OF PRODUCT:**

TWO COMPLETE POST ASSEMBLIES AND ONE COMPLETE PANEL ASSEMBLY SHALL BE PROVIDED AND MOCK ASSEMBLED FOR APPROVAL BY THE DIRECTOR. IF THE TYPICAL TEST FENCE SECTION DOES NOT MEET THE APPROVAL OF THE DIRECTOR, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED TYPICAL FENCE SECTION. THE TEST FENCE SECTION WILL BE PROVIDED REPEATEDLY, AS NECESSARY, UNTIL APPROVAL IS GRANTED. AN UNREINFORCED, ONE FOOT THICK, PLAIN CONCRETE LEVELING PAD SHALL BE USED AS A DEMONSTRATION PLATFORM AT A LOCATION SUITABLE TO THE PROJECT ENGINEER. THE MOCK-UPS SHALL UTILIZE ALL OF THE MATERIALS, ANCHORAGES, AND HARDWARE INTENDED TO BE USED ON THE PROJECT TO DEMONSTRATE OVERALL FITUP AS WELL AS AESTHETIC QUALITIES. AFTER APPROVAL IS GRANTED, THE STEEL FENCE TEST SECTION MAY BE USED ON THE PROJECT.

**CONSTRUCTION PROCEDURE:**

1. FIELD VERIFY THE PLAN LOCATIONS OF ALL BASE PLATES AND MARK PARAPETS ACCORDINGLY.
2. MARK AND DRILL HOLES FOR THE 1/2" BASE PLATE ANCHORS USING A BASE PLATE TEMPLATE.
3. INSTALL 1/2" DIAMETER BASE PLATE ANCHORS.
4. INSTALL BASE PLATE AND POST ASSEMBLY AND SHIM WHERE REQUIRED. FULLY TIGHTEN ANCHORS TO BASE PLATES AND CHECK PLUMBNESS OF POSTS.
5. CAULK EDGES OF BASE PLATES, SHIMS AND SLEEVES.
6. CONTINUE INSTALLATION OF FENCE BY INSERTING FENCE PANELS AS DETAILED IN THE PLAN.
7. COMPLETE INSTALLATION OF THE FENCE BY FULLY SECURING AND TIGHTENING ALL HARDWARE.

NOTE: VANDAL PROTECTION FENCE (DECORATIVE) MUST BE INSTALLED AFTER THE COMPLETION OF EACH PHASE. CONSTRUCTION ON PHASE 2 SHALL NOT BEGIN UNTIL THE VANDAL PROTECTION FENCE (DECORATIVE) IS INSTALLED ON PHASE 1.

**METHOD OF MEASUREMENT:**

THE DEPARTMENT WILL MEASURE THE QUANTITY BY THE FOOT. THE DEPARTMENT WILL MEASURE, ALONG THE BOTTOM OF THE FENCE, FROM CENTER TO CENTER OF END POSTS.

**BASIS OF PAYMENT:**

THE DEPARTMENT WILL MAKE PAYMENT FOR THE COMPLETED AND ACCEPTED QUANTITIES OF VANDAL FENCE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
607	FOOT	SPECIAL - VANDAL PROTECTION FENCE (DECORATIVE)

**ITEM 607 VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN (ALTERNATE 1)**

FABRICATE AND INSTALL THE VANDAL PROTECTION FENCE AS DETAILED IN THIS PLAN AND STANDARD DRAWING VPF-1-90. THE VANDAL PROTECTION FENCE SHALL BE 6'-0" STRAIGHT FENCE. THE COATING SYSTEM USED FOR THIS FENCE SHALL BE MODIFIED AS FOLLOWS. IF NOT ALREADY SPECIFIED IN VPF-1-90, ALL STEEL COMPONENTS SHALL RECEIVE PVC COATING IN ADDITION TO THE STANDARD SURFACE TREATMENTS. ALL THREADED ASSEMBLY COMPONENTS (IE. THREAD LENGTH OF BOLTS, NUTS, AND WASHERS) WILL BE EXCEPTED FROM THIS ADDITIONAL COATING REQUIREMENT. PVC COATINGS SHALL CONFORM TO EITHER ASTM F668 CLASS 2A OR 2B (MESH, WIRE, ETC.), ASTM F626-14 (FENCE FITTINGS, ETC.), OR ASTM F1043-16 (FRAMEWORK, POSTS, RAILS, ETC.).

DUE TO THE ADDITIONAL THICKNESS OF THIS COATING SYSTEM, THE POTENTIAL EXISTS THAT TYPICAL FITTINGS MAY REQUIRE THEIR SIZES INCREASED ABOVE THE STANDARD SIZES SHOWN IN STD. DWG. VPF-1-90. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/ FABRICATOR TO TEST ALL FENCE COMPONENTS FOR FIT-UP, AT THE FABRICATION STAGE, AND TO INCORPORATE ANY SIZE-UP ADJUSTMENTS TO ENSURE EASE OF FIELD INSTALLATION AND ERECTION. THE FINAL COLOR FOR ALL PVC COATED FENCE COMPONENTS SHALL BE (BLACK - CLOSELY APPROACHING FEDERAL STANDARD NO. 595C-17038). HANDLE ALL PVC COATED MATERIALS WITH CARE. IF THE PVC COATING IS DAMAGED, REPLACE THE DAMAGED FENCE COMPONENT(S) AT NO COST TO THE DEPARTMENT.

THE CONSTRUCTION PROCEDURE SHALL MATCH THAT OF ITEM 607 VANDAL PROTECTION FENCE (DECORATIVE) (ALTERNATE 2)

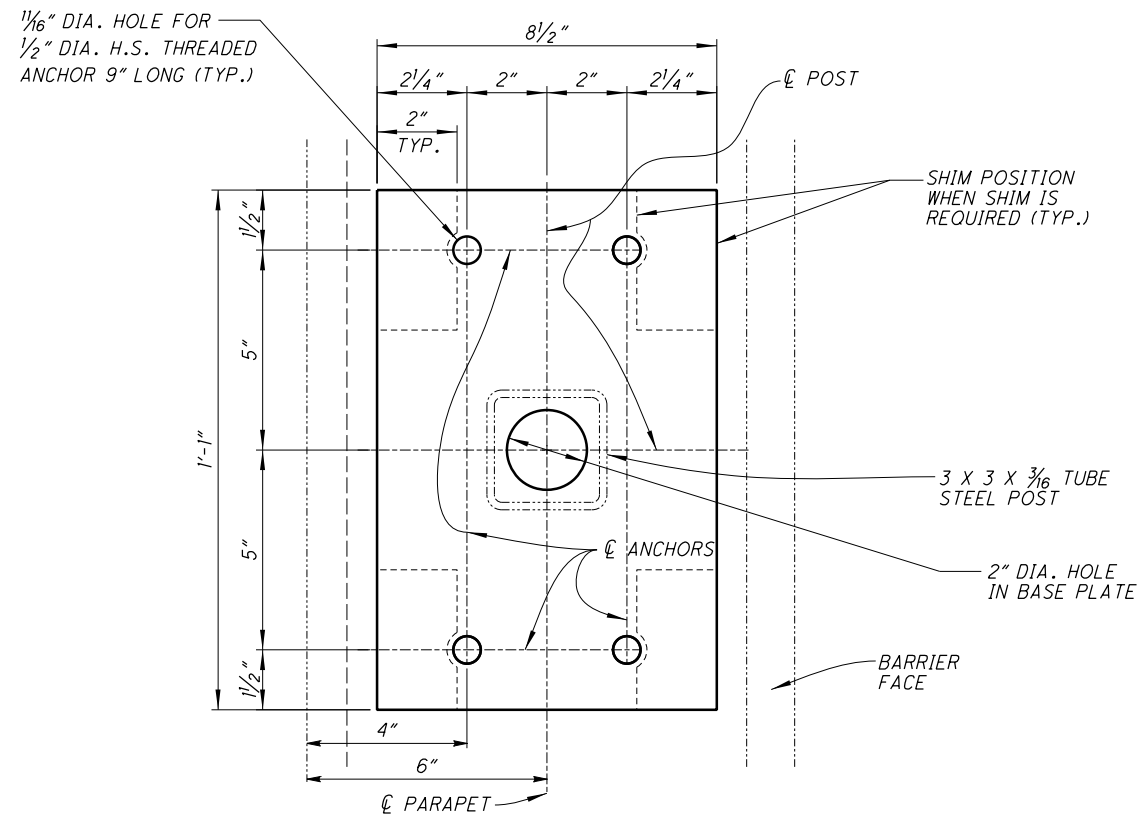
THE DEPARTMENT WILL MEASURE THIS WORK ON A LINEAR FEET BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN (ALTERNATE 1).

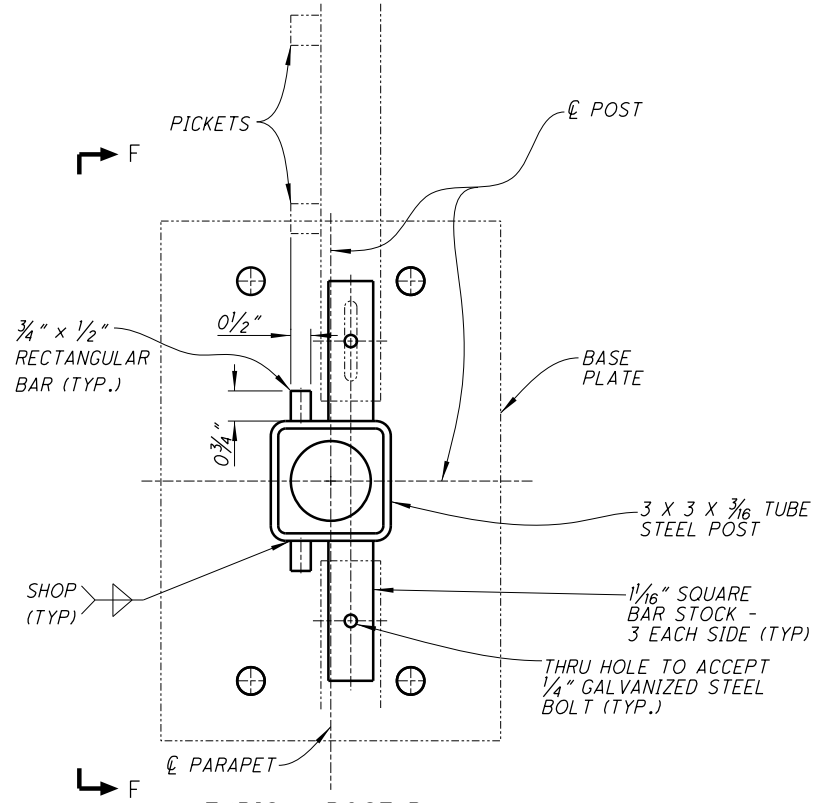
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STRUCTURE FILE NUMBER: 4506333  
REVISED: 1  
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BRIDGE NO. LIC-661-0003  
OVER S.R. 16  
LIC-37/661-16.59/0.00  
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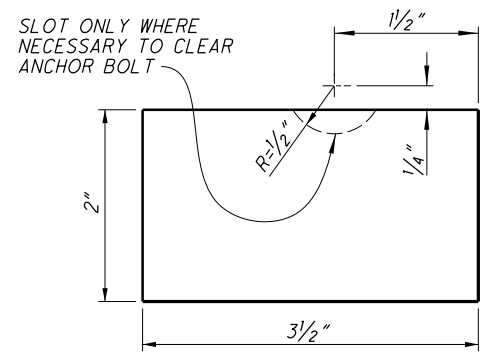
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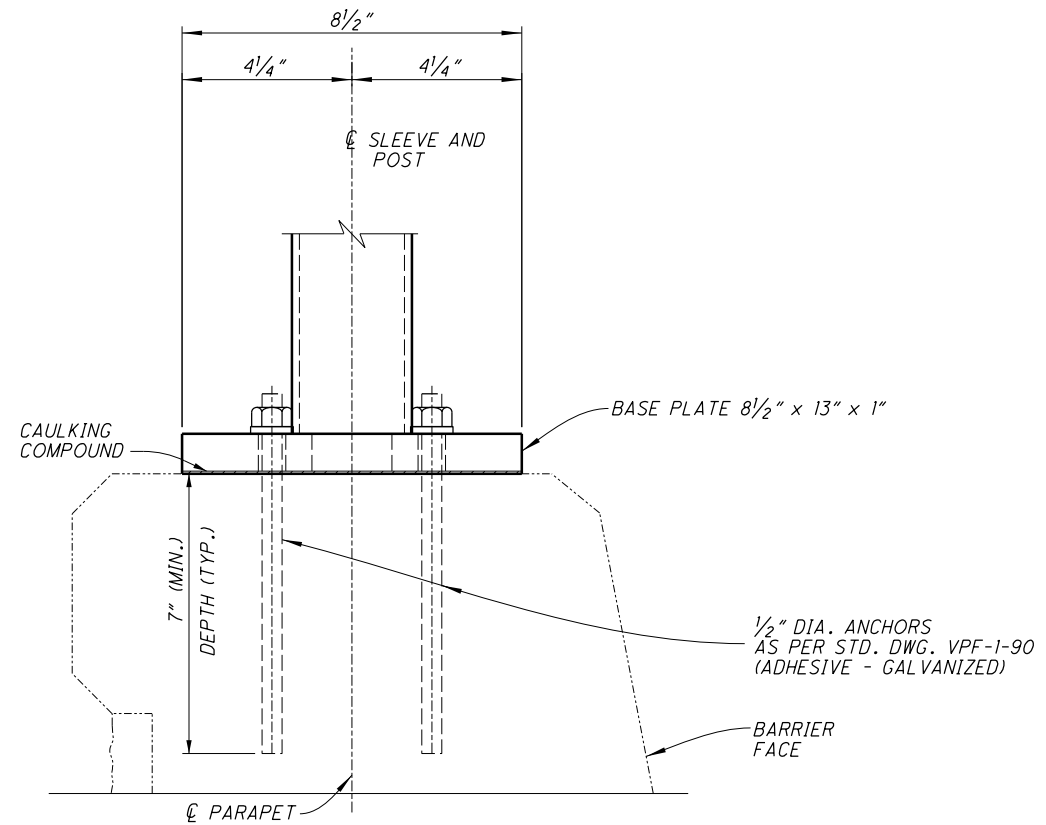
**TYPICAL BASE P PLAN**  
SHIM POSITIONS ARE SHOWN



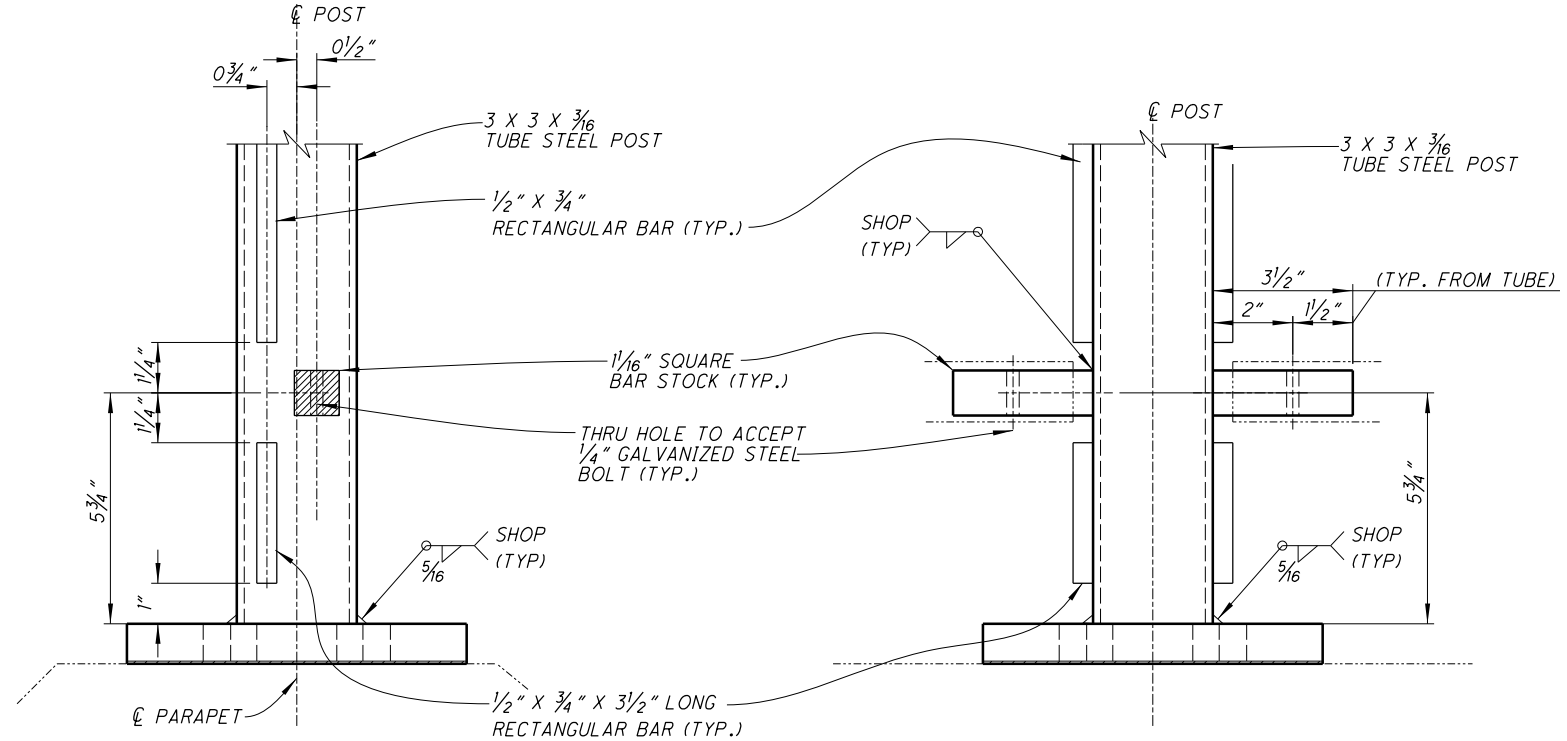
**TYPICAL POST PLAN**  
SHIMS NOT SHOWN



**BASE PLATE SHIMS**  
PROVIDE 1/16", 1/8" AND 1/4" THICK, WHERE NECESSARY, TO SET ALL POSTS PLUMB.



**TYPICAL BASE P END ELEVATION**



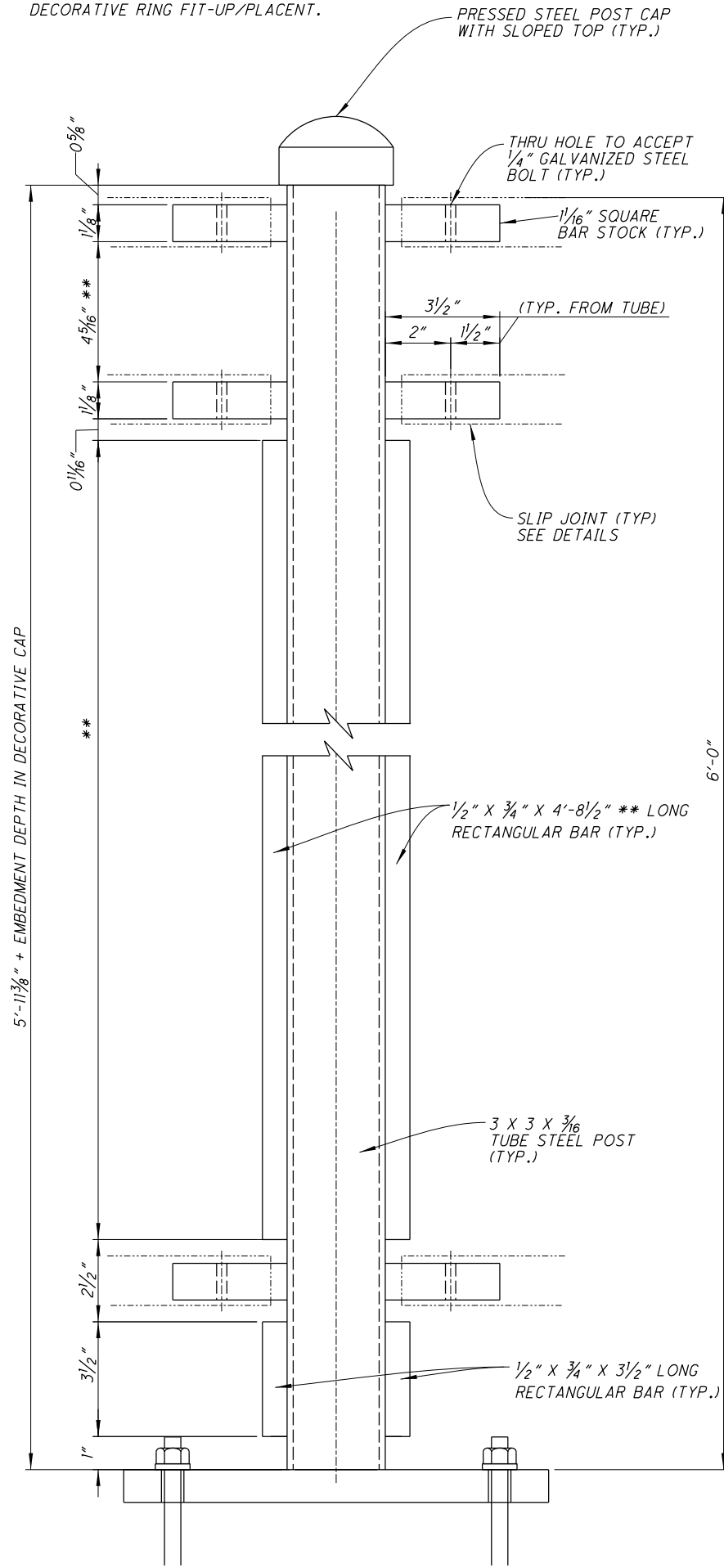
**TYPICAL POST TO BASE P ELEVATION**

**ELEVATION VIEW F-F**

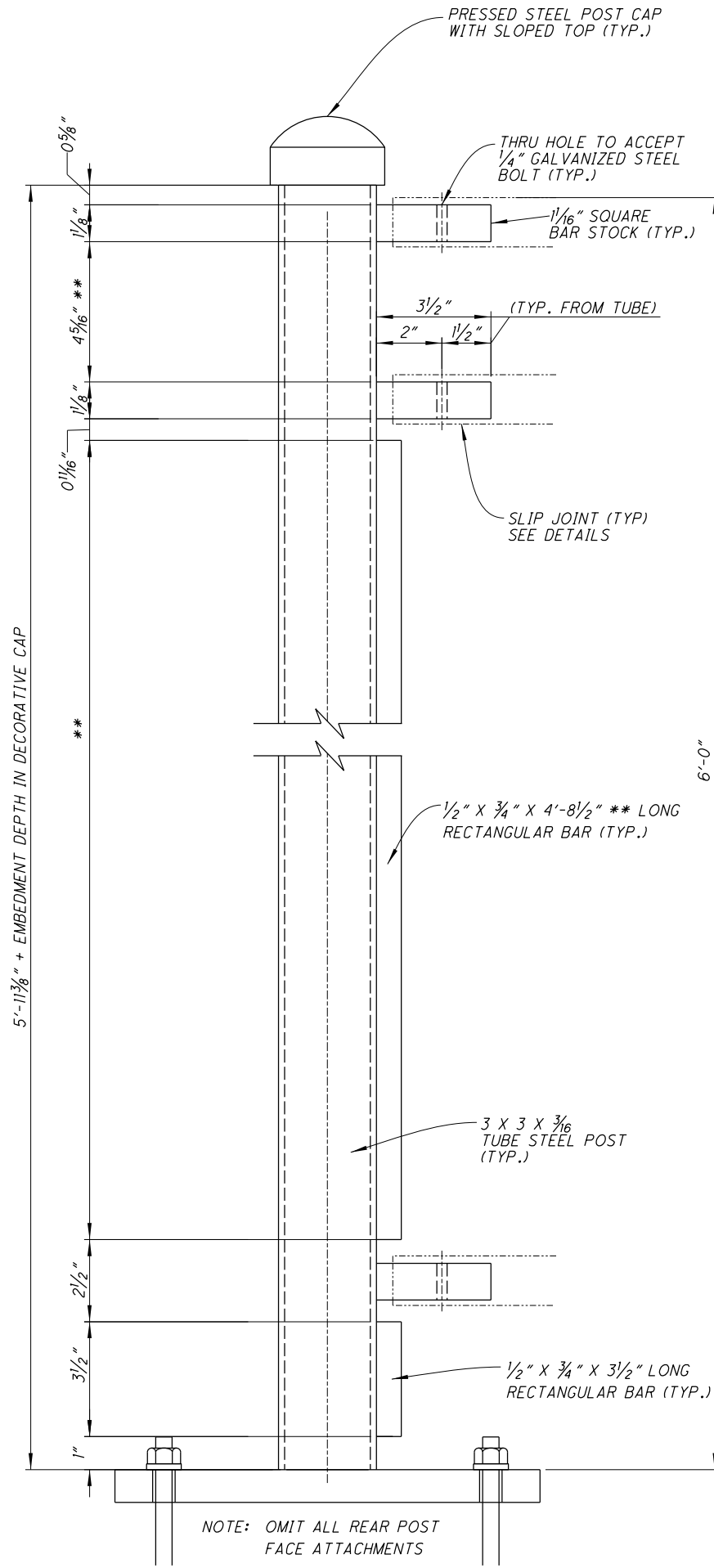
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BRIDGE NO. LIC-661-0003 OVER S.R. 16				
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LIC-37/661-16.59/0.00				
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\*\* - ADJUST THESE DIMENSIONS FOR DECORATIVE RING FIT-UP/PLACENT.

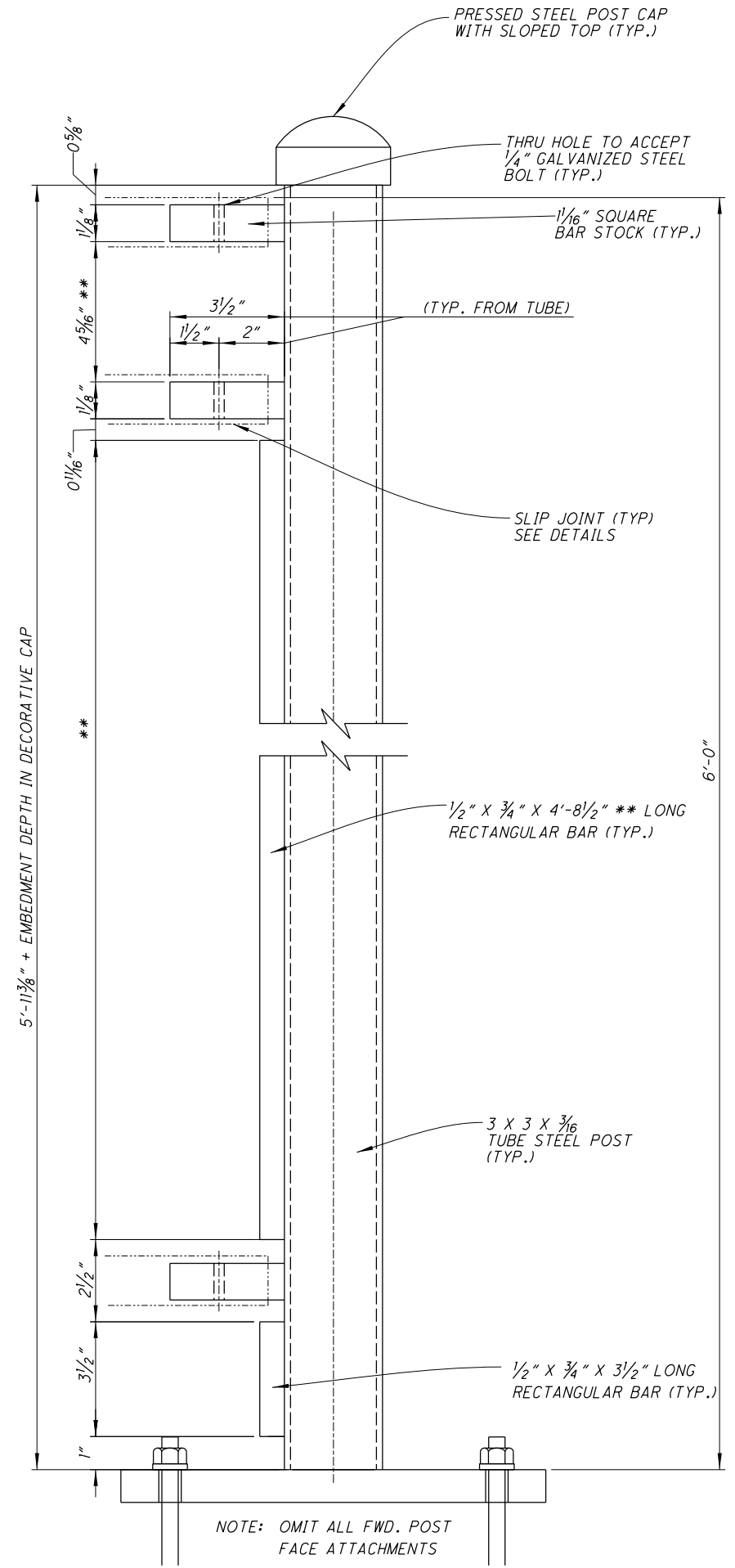


TYPICAL FULL POST ASSEMBLY ELEVATION (90 POSTS)



FULL REAR END POST ASSEMBLY ELEVATION (2 POST)

NOTE: OMIT ALL REAR POST FACE ATTACHMENTS



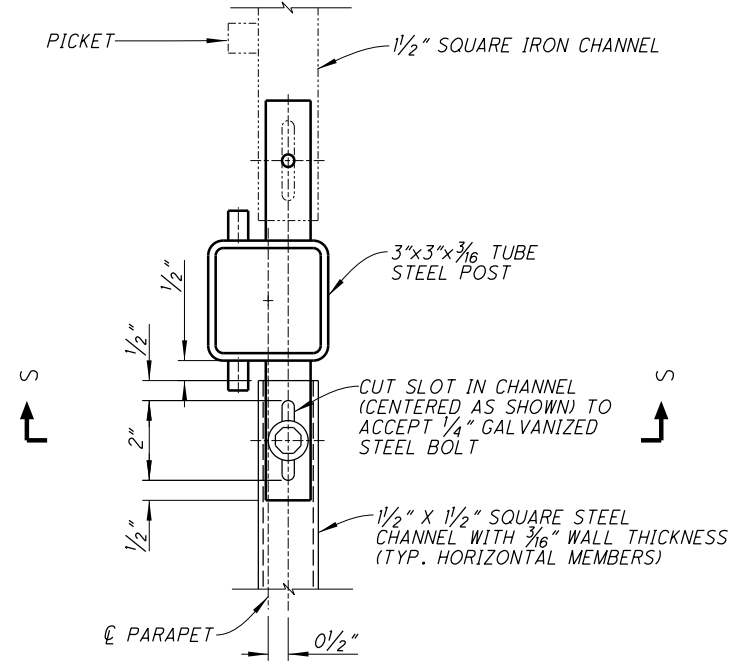
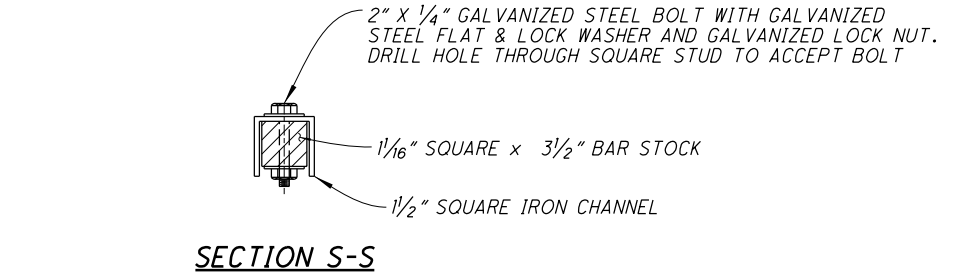
FULL FWD. END POST ASSEMBLY ELEVATION (2 POST)

NOTE: OMIT ALL FWD. POST FACE ATTACHMENTS

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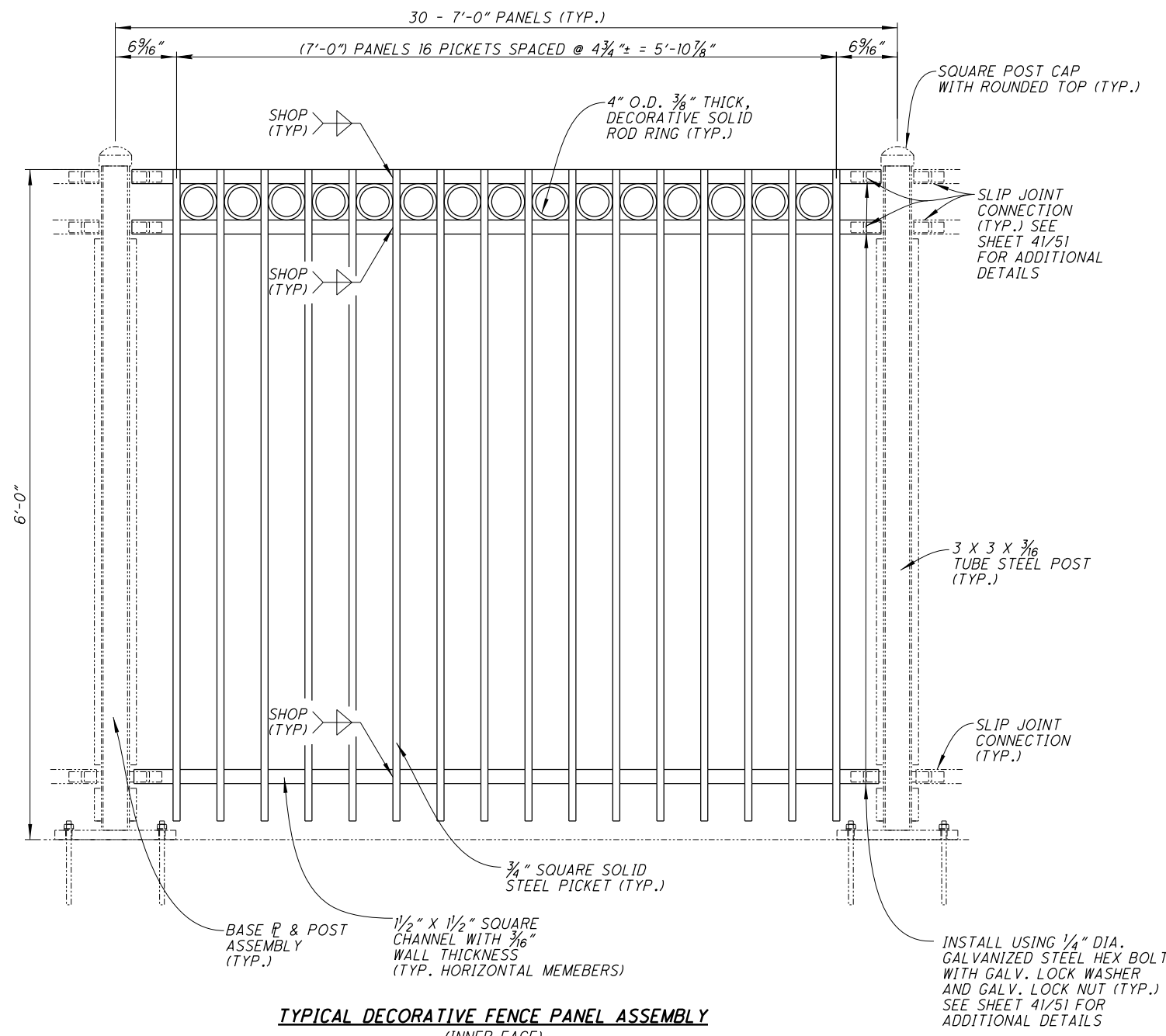


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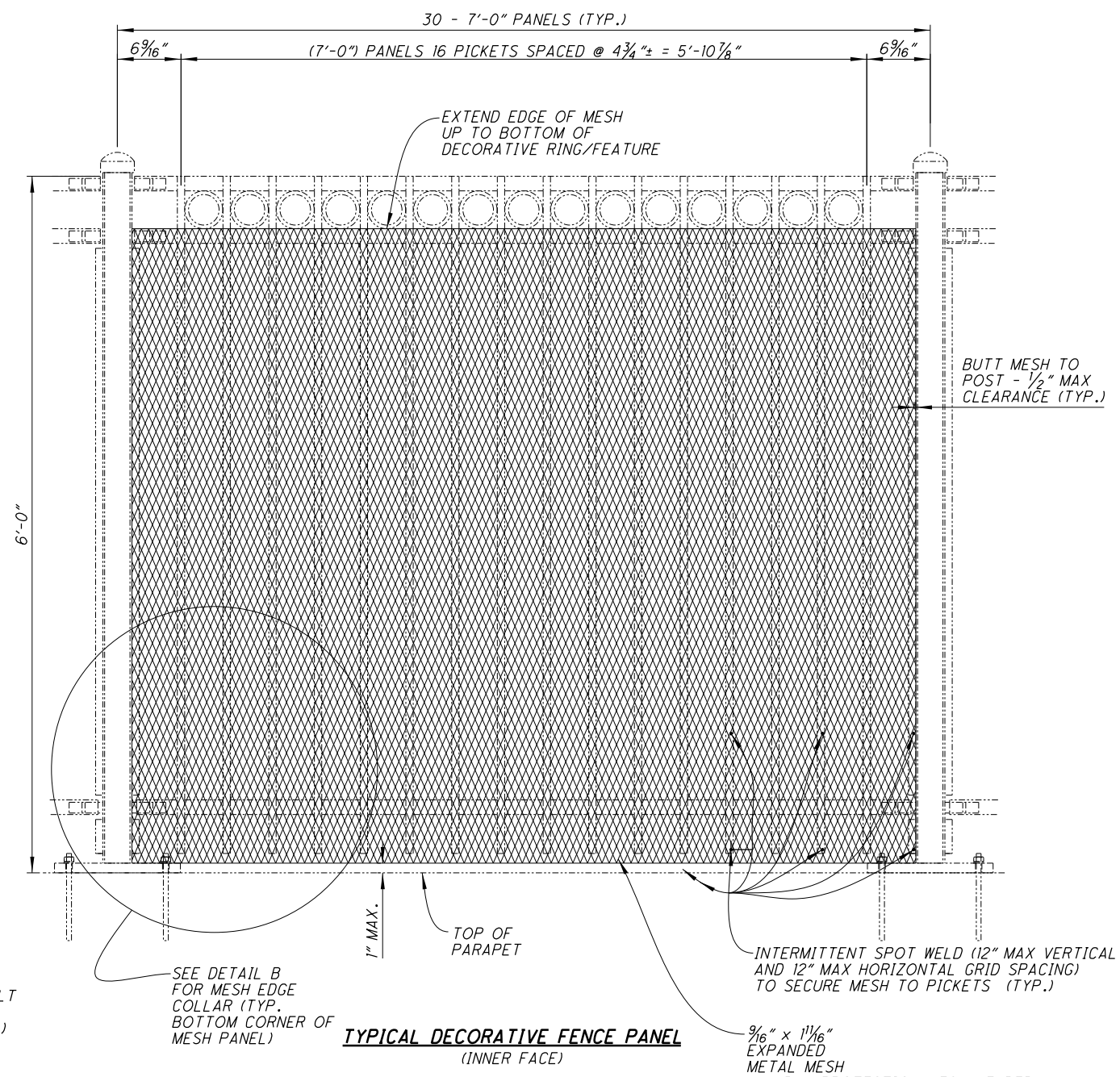


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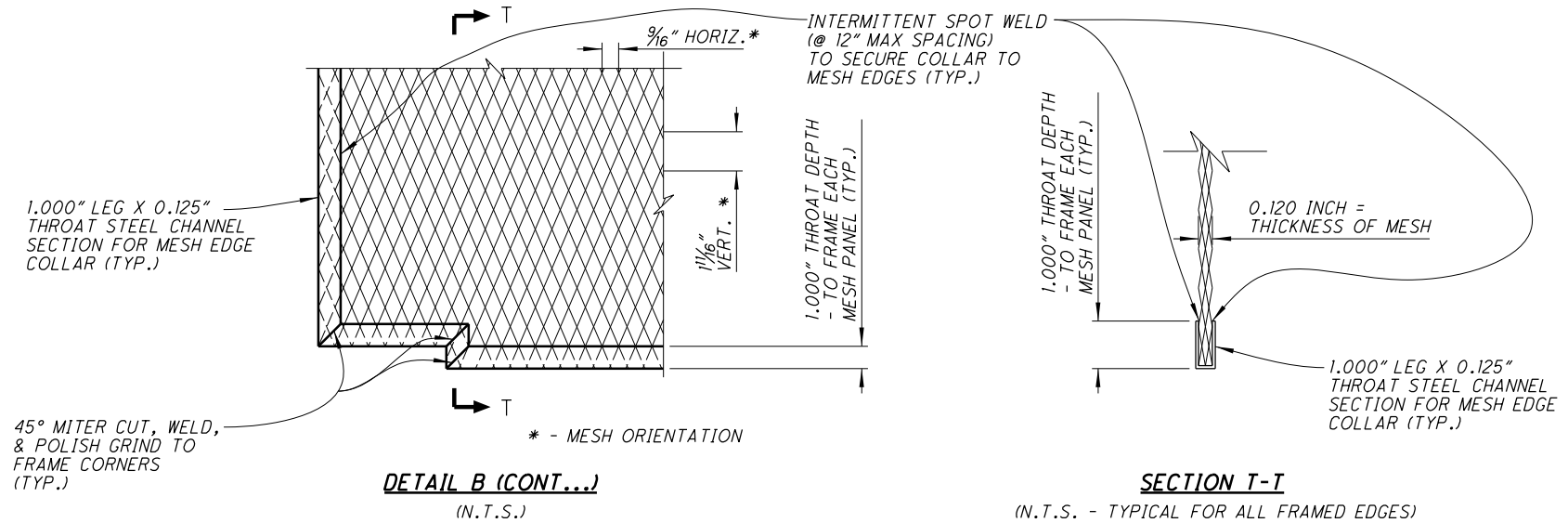
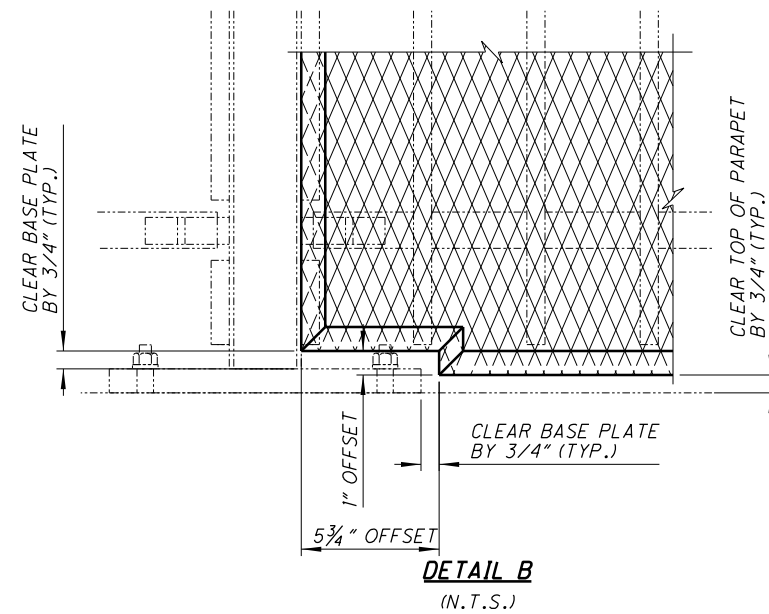
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**TYPICAL DECORATIVE FENCE PANEL ASSEMBLY**  
(INNER FACE)

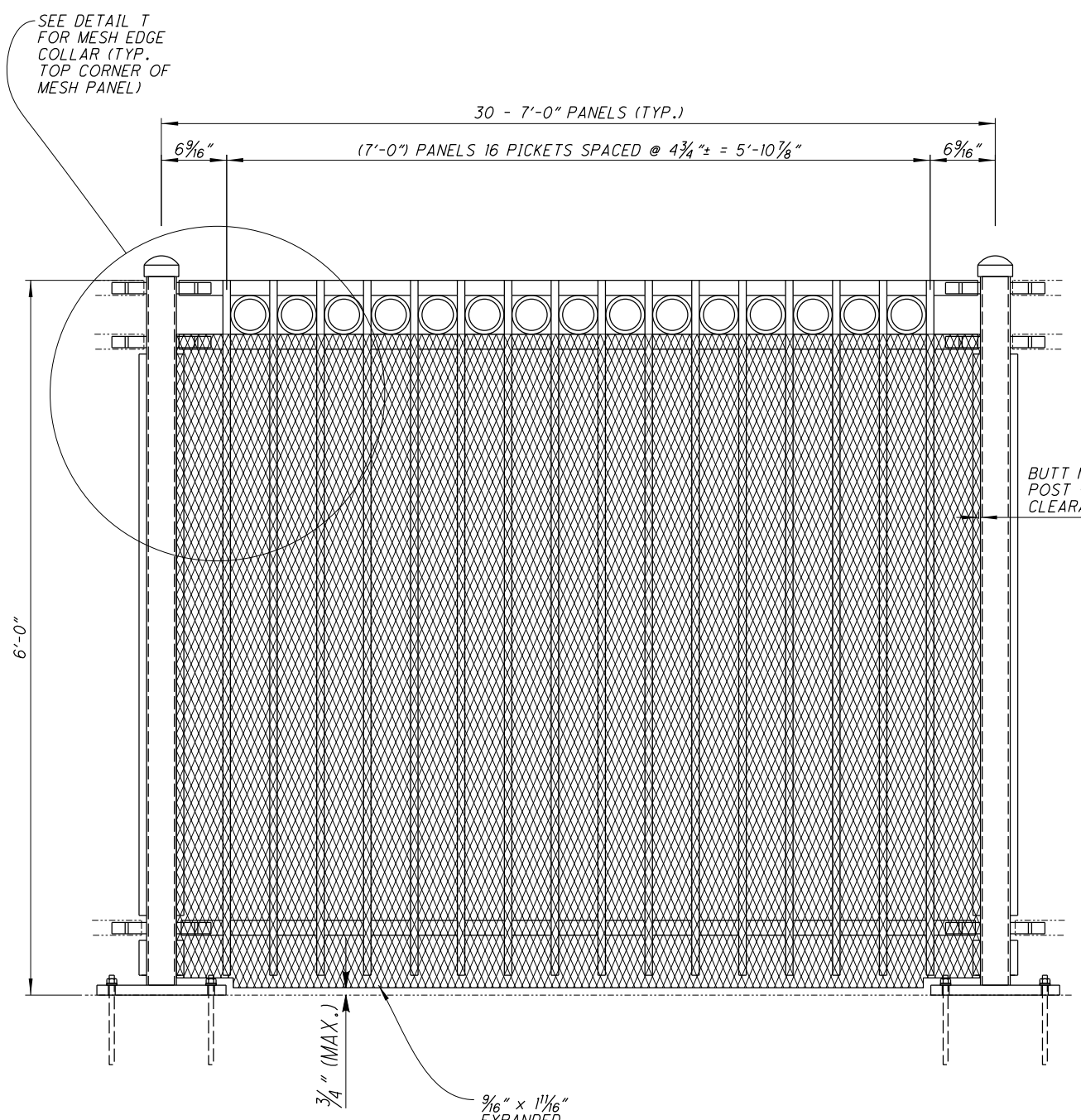


**TYPICAL DECORATIVE FENCE PANEL**  
(INNER FACE)

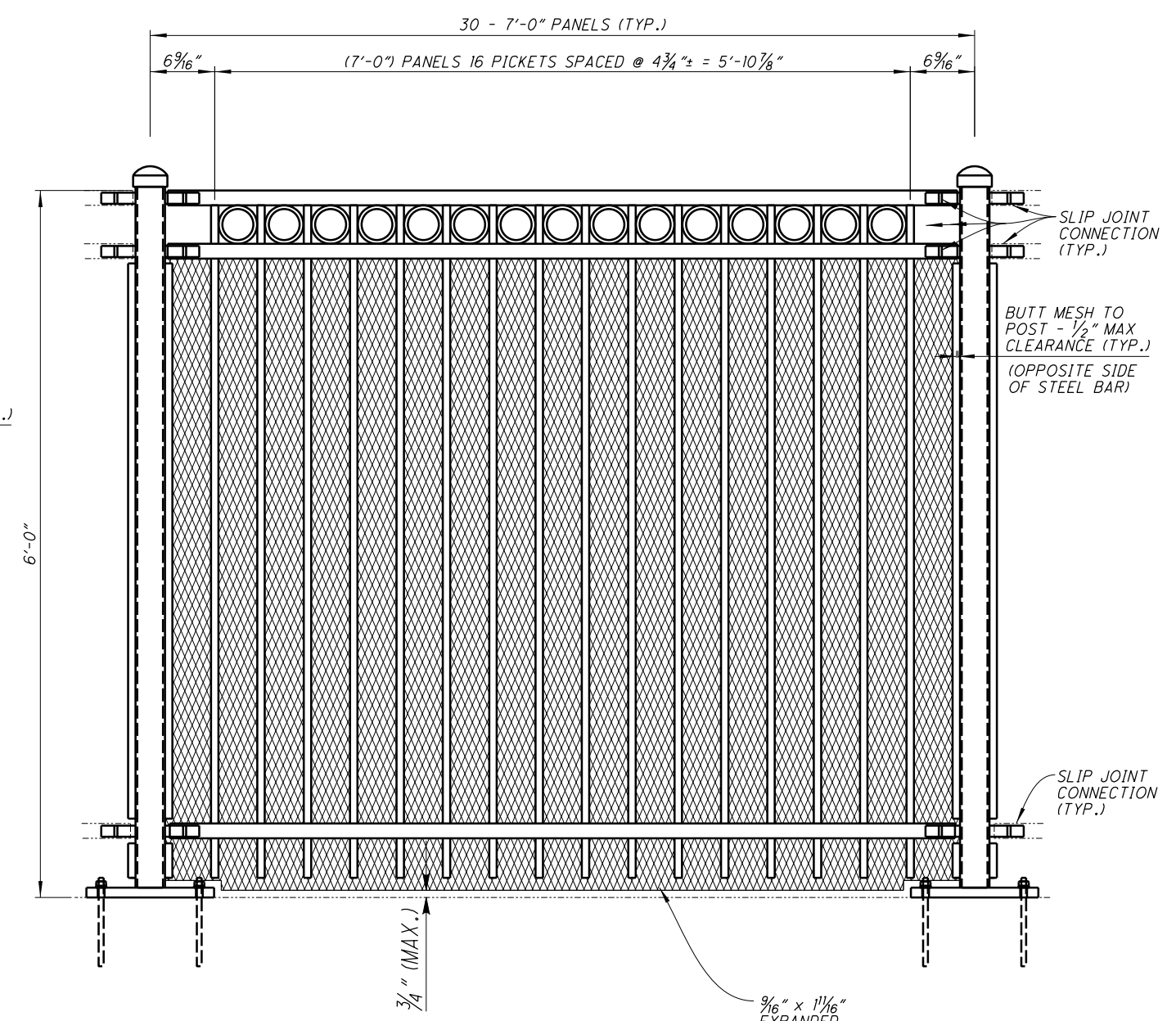


DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DATE	MM/DD/YY	REVIEWED	CPS
DESIGNED	CPS	DRAWN	CPS
CHECKED	TAG	REVISED	
BRIDGE NO. LIC-661-0003		STRUCTURE FILE NUMBER 4506333	
OVER S.R. 16			
<b>VANDAL PROTECTION FENCE PANEL DETAILS</b>			
LIC-37/661-16.59/0.00		PID No. 92411	
53/65			
322			
341			

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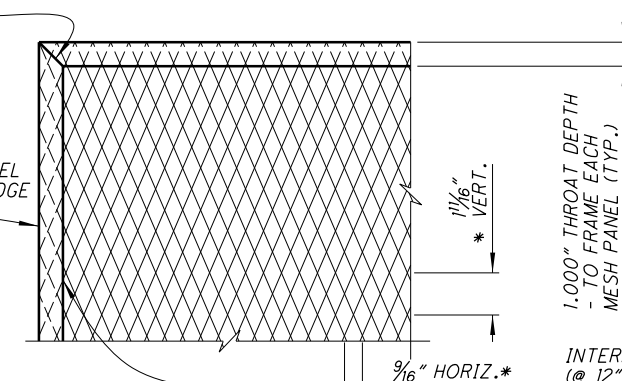
**TYPICAL DECORATIVE FENCE PANEL**  
(INNER FACE)



**TYPICAL DECORATIVE FENCE PANEL**  
(OUTER FACE)

45° MITER CUT, WELD,  
& POLISH GRIND TO  
FRAME CORNERS  
(TYP.)

1,000" LEG X 0.125"  
THROAT STEEL CHANNEL  
SECTION FOR MESH EDGE  
COLLAR (TYP.)



**DETAIL T**  
(N.T.S.)

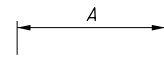
\* - MESH ORIENTATION

INTERMITTENT SPOT WELD  
(@ 12" MAX SPACING)  
TO SECURE COLLAR TO  
MESH EDGES (TYP.)

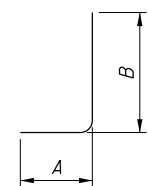
DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED	DATE	MM/DD/YY	STRUCTURE FILE NUMBER
CPS			4506333
DRAWN	CPS	REVIS	
CPS		TAG	
<b>VANDAL PROTECTION FENCE PANEL DETAILS</b>			
BRIDGE NO. LIC-661-0003			
OVER S.R. 16			
LIC-37/661-16.59/0.00		PID No. 92411	
54/65		323	
		341	

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
REAR & FORWARD ABUTMENTS											
A501	152	18'-1"	2,867	3	6'-2"	2'-7"					
A502	196	9'-11"	2,027	2	3'-9"	2'-8"	3'-9"				
A503	38	13'-5"	532	2	5'-9"	2'-2"	5'-9"				
A504	4	15'-1"	63	3	2'-2"	5'-1"					
A505	4	11'-9"				3'-5"					
A505	SERIES OF	TO	157	3	2'-2"	TO					0'-5"
	3	13'-5"				4'-3"					
	4	7'-11"			3'-0"		3'-0"				
A506	SERIES OF	TO	282	2	TO	2'-2"	TO				0'-8"
	6	14'-7"			6'-4"		6'-4"				
A507	8	15'-5"	129	2	6'-9"	2'-2"	6'-9"				
A508	8	32'-0"	267	STR.	32'-0"						
A509	40	23'-7"	984	STR.	23'-7"						
A510	20	7'-6"	156	STR.	7'-6"						
A511	2	6'-10"	14	STR.	6'-10"						
A512	1	18'-4"	19	19	14'-2"	3'-9"	1'-9/2"				
A513	1	18'-11"	20	19	14'-2"	4'-3"	2'-1"				
A514	8	31'-3"	261	STR.	31'-3"						
A515	18	8'-2"	153	STR.	8'-2"						
A516	1	19'-3"	20	19		4'-10/2"	2'-4"				
A517	1	18'-8"	19	19	13'-10"	4'-4"	2'-1"				
A518	10	16'-5"	171	2	7'-3"	2'-2"	7'-3"				
A519	8	37'-4"	312	STR.	37'-4"						
A520	1	20'-10"	22	19	15'-5"	4'-10/2"	2'-4"				
A521	1	20'-3"	21	19	15'-5"	4'-4"	2'-1"				
A522	8	38'-0"	317	STR.	38'-0"						
A523	1	19'-11"	21	19	15'-9"	3'-9"	1'-9/2"				
A524	1	20'-6"	21	19	15'-9"	4'-3"	2'-1"				
A801	4	49'-3"	526	STR.	49'-3"						
A802	4	32'-0"	342	STR.	32'-0"						
A803	4	49'-10"	532	STR.	49'-10"						
A804	4	31'-3"	334	STR.	31'-3"						
A805	4	57'-4"	612	STR.	57'-4"						
A806	4	37'-4"	399	STR.	37'-4"						
A807	4	56'-10"	607	STR.	56'-10"						
A808	4	38'-0"	406	STR.	38'-0"						
ABUTMENTS SUB-TOTAL			12,613								
REAR & FORWARD ABUTMENT DIAPHRAGMS											
D501	92	12'-3"	1,175	3	2'-9"	3'-1"					
D502	96	7'-2"	718	2	2'-7"	2'-3"	2'-7"				
D503	4	9'-1"	38	3	2'-9"	1'-6"					
D801	8	24'-10"	530	1	23'-9"	1'-3"					
D802	16	31'-0"	1,324	STR.	31'-0"						
D803	16	6'-2"	263	18	3'-9"	1'-1"	1'-1"				
D804	8	4'-8"	100	1	3'-7"	1'-3"					
D805	24	38'-3"	2,451	STR.	38'-3"						
D806	94	5'-1"	1,276	18	2'-9"	1'-0"	1'-0"				
DIAPHRAGMS SUB-TOTAL			7,875								

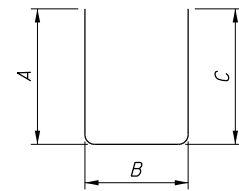
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
PIER 1											
SP401	4	547'-10"	1,464	27	0'-3"	2'-6"	16'-8"				
P601	80	9'-6"	1,142	STR.	9'-6"						
P602	8	7'-6"	90	2	3'-0"	1'-10"	3'-0"				
P603	84	8'-6"	1,072	2	3'-6"	1'-10"	3'-6"				
P604	6	9'-4"	84	2	3'-6"	2'-8"	3'-6"				
P605	244	9'-6"	3,482	2	4'-0"	1'-10"	4'-0"				
P606	18	10'-4"	279	2	4'-0"	2'-8"	4'-0"				
P607	4	30'-4"	182	STR.	30'-4"						
P608	4	35'-6"	213	STR.	35'-6"						
P901	4	32'-1"	436	13	28'-6"	1'-10"	0'-11"	1'-7"			
P902	4	25'-3"	343	STR.	25'-3"						
P903	4	21'-1"	287	13	17'-6"	1'-10"	0'-11"	1'-7"			
P1001	96	12'-4"	5,095	17	9'-6"						
P1002	40	12'-8"	2,180	1	11'-2"	1'-10"					
P1003	40	20'-7"	3,543	16	19'-2"						
P1004	11	32'-2"	1,523	1	30'-3"	2'-3"					
P1005	11	25'-9"	1,219	STR.	25'-9"						
P1006	11	21'-11"	1,037	1	20'-0"	2'-3"					
PIER SUB-TOTAL			23,671								



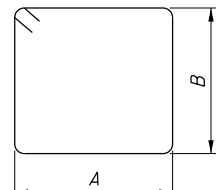
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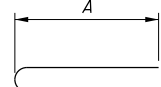
TYPE-1



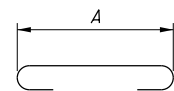
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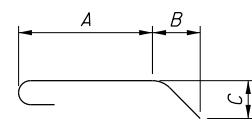
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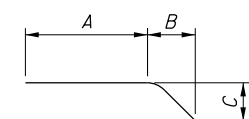
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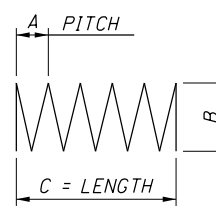
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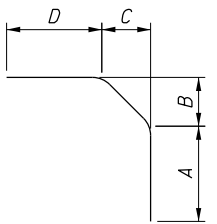
TYPE-18



TYPE-19



TYPE-27

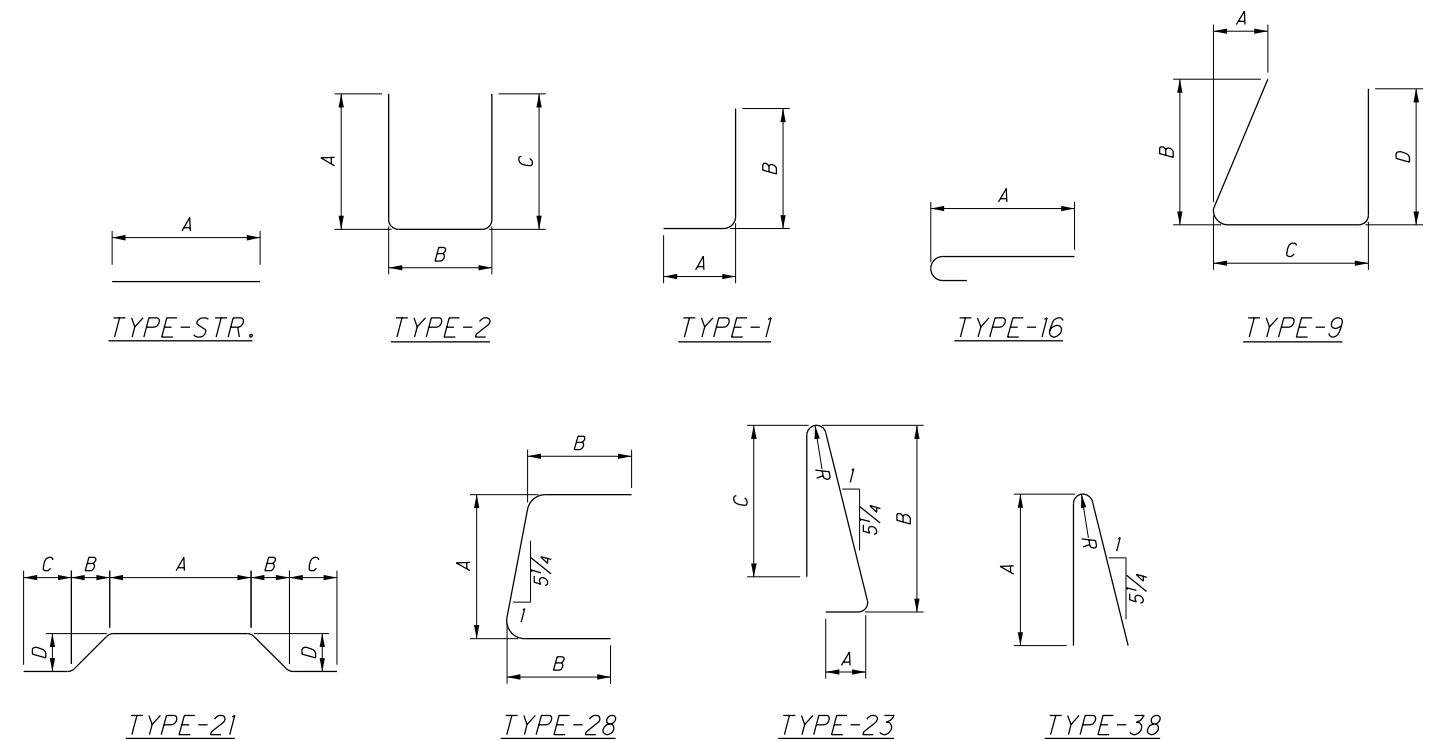


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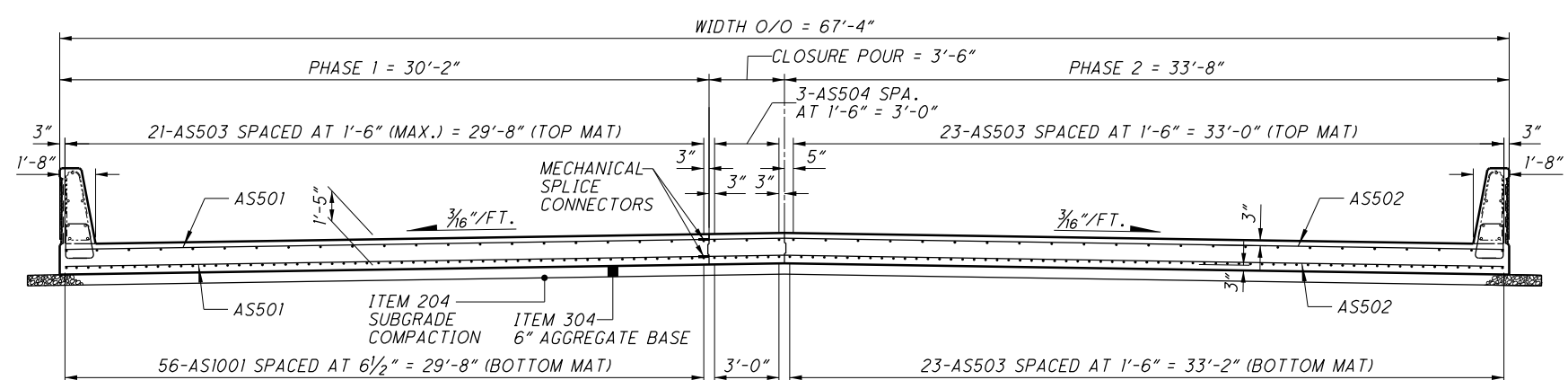
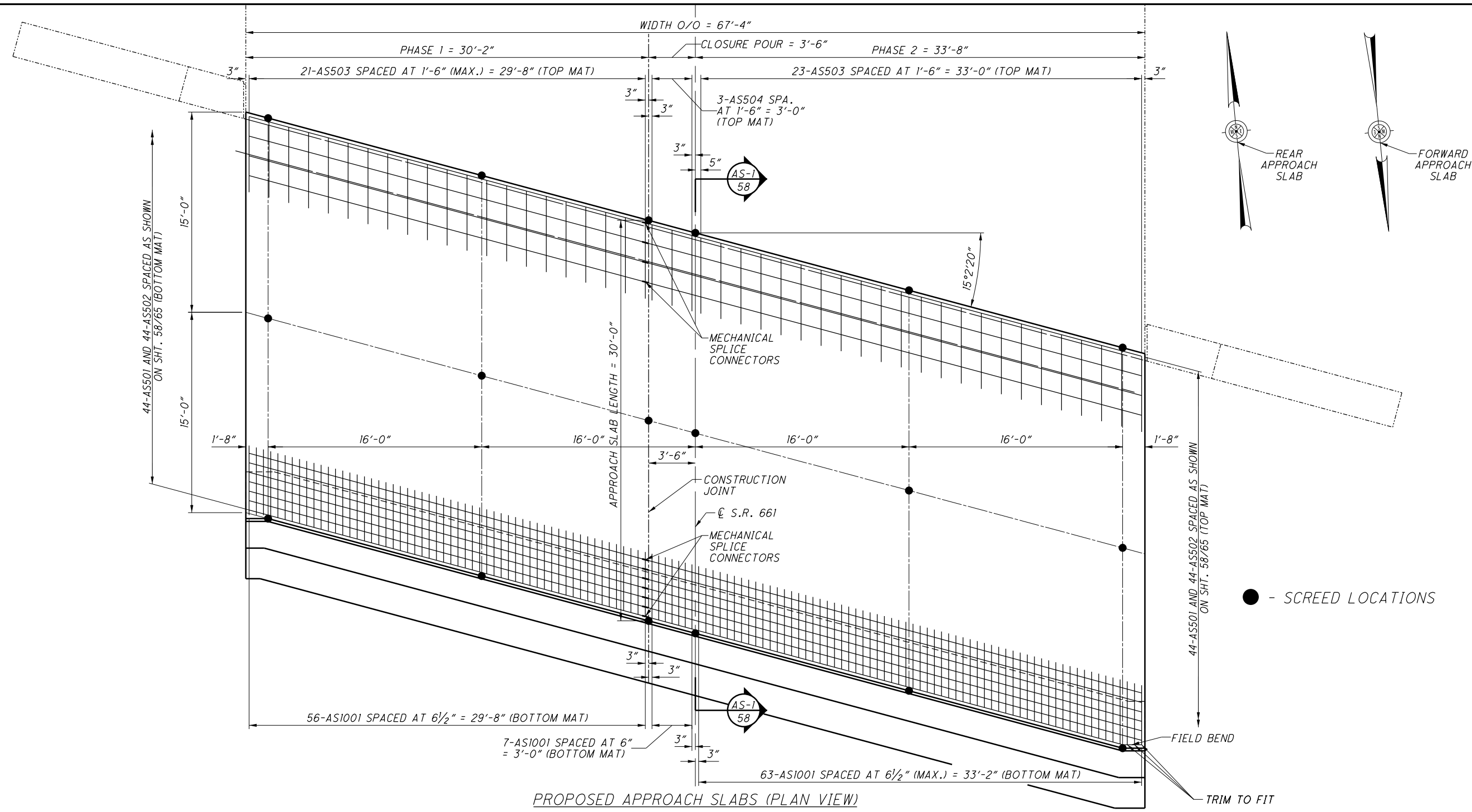
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MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
DECK											
S401	368	2'-0"	492	STR.	2'-0"						
S402	420	37'-6"	10,521	STR.	37'-6"						
S403	732	5'-0"	2,445	16	4'-6"						
S404	150	35'-0"	3,507	STR.	35'-0"						
S405	150	24'-6"	2,455	STR.	24'-6"						
	3	1'-4"			1'-4"						
S501	SERIES OF 17	TO 30'-0"	833	STR.	TO 30'-0"						1'-9 1/2"
S502	348	30'-0"	10,889	STR.	30'-0"						
S503	380	38'-6"	15,325	STR.	38'-6"						
S504	358	30'-7"	11,420	16	30'-0"						
	1	1'-11"			1'-4"						
S505	SERIES OF 17	TO 30'-7"	288	16	TO 30'-0"						1'-9 1/2"
	1	1'-0"			1'-0"						
S506	SERIES OF 21	TO 36'-10"	414	STR.	TO 36'-10"						1'-9 1/2"
S507	351	12'-0"	4,393	STR.	12'-0"						
S508	173	28'-1"	5,067	STR.	28'-1"						
S509	349	21'-0"	7,644	STR.	21'-0"						
S510	172	19'-1"	3,423	STR.	19'-1"						
	2	5'-0"			5'-0"						
S511	SERIES OF 18	TO 35'-6"	760	STR.	TO 35'-6"						1'-9 1/2"
S512	42	3'-3"	142	STR.	3'-3"						
	1	1'-7"			1'-0"						
S513	SERIES OF 21	TO 37'-5"	427	16	TO 36'-10"						1'-9 1/2"
S514	178	28'-8"	5,322	16	28'-1"						
S515	177	19'-8"	3,631	16	19'-1"						
DECK SUB-TOTAL			89,398								
BRIDGE RAILING											
R501	536	10'-0"	5,590	23	0'-11"	3'-3"	3'-0"				0'-2 3/4"
R502	32	16'-8"	556	STR.	16'-8"						
R503	16	9'-8"	161	STR.	9'-8"						
R504	80	6'-8"	556	STR.	6'-8"						
R505	182	4'-5"	838	38	2'-0"						0'-2 3/4"
R506	40	38'-8"	1,613	STR.	38'-8"						
R507	8	13'-8"	114	STR.	13'-8"						
R508	16	7'-2"	120	STR.	7'-2"						
R509	8	5'-10"	49	STR.	5'-10"						
R510	4	6'-3"	26	STR.	6'-3"						
R601	536	2'-5"	1,946	1	1'-0"	1'-7"					
R602	536	3'-2"	2,549	28	1'-7"	0'-11"	1'-0"				
R603	8	9'-8"	116	STR.	9'-8"						
R604	16	6'-10"	164	STR.	6'-10"						
R605	24	6'-8"	240	STR.	6'-8"						
R606	4	13'-8"	82	STR.	13'-8"						
R607	8	7'-2"	86	STR.	7'-2"						
R608	4	5'-10"	35	STR.	5'-10"						
R609	2	6'-3"	19	STR.	6'-3"						
BRIDGE RAILING SUB-TOTAL			14,860								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
LIGHT POLE SUPPORT PILASTERS											
L501	16	3'-11"	65	2	1'-2"	1'-10"	1'-2"				
L502	16	10'-4"	172	9	0'-9 1/2"	4'-0"	2'-6"	4'-0"			
L503	24	7'-3"	181	21	1'-4"	1'-8"	0'-6"	1'-10"			
L504	16	4'-2"	70	STR.	4'-2"						
PILASTERS SUB-TOTAL			488								
ABUTMENTS SUB-TOTAL			12,613								
PIERS SUB-TOTAL			23,671								
DIAPHRAGMS SUB-TOTAL			7,875								
DECK SUB-TOTAL			89,398								
BRIDGE RAILING SUB-TOTAL			14,860								
PILASTERS SUB-TOTAL			488								
GRAND TOTAL			148,905								



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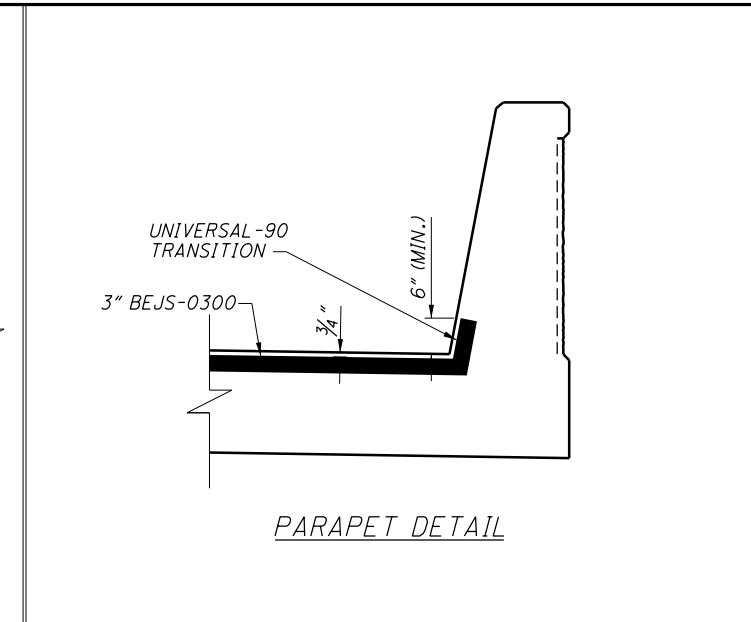
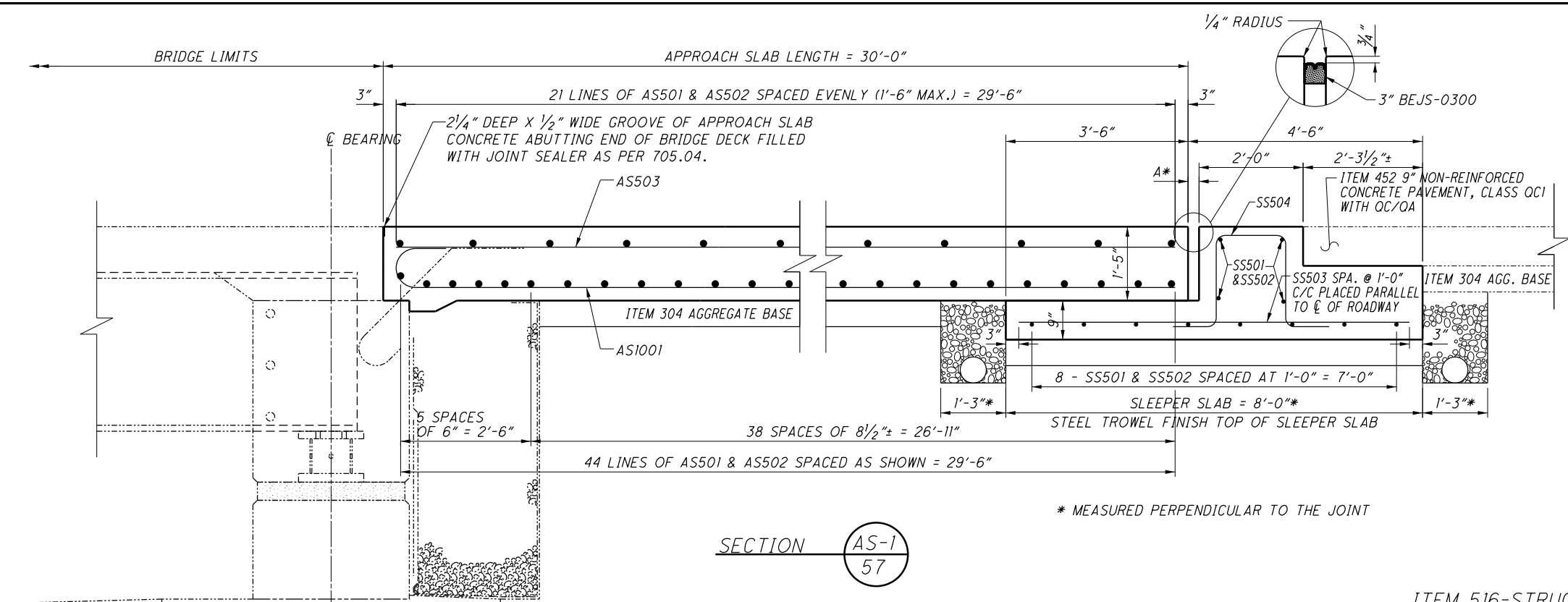
REAR APPROACH SLAB: STA. 369+12.50 TO STA. 369+42.50 = 30.00'

FORWARD APPROACH SLAB: STA. 371+22.58 TO STA. 371+52.58 = 30.00'

60.00'

DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DESIGNED	CPS	CHECKED	TAG
DRAWN	CPS	REVIEWED	CPS
DATE	MM/DD/YY	STRUCTURE FILE NUMBER	4506333
LIC-37/661-16.59/0.00		PID No. 92411	
57/65		326 341	

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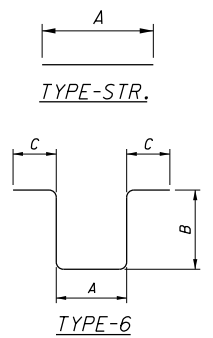
SECTION AS-1  
57

\* MEASURED PERPENDICULAR TO THE JOINT

MARK	NUMBER REQ'D.	LENGTH	WEIGHT	TYPE	DIMENSIONS		
					A	B	C
<b>SLEEPER SLABS (INFORMATIONAL PURPOSES ONLY)</b>							
SS501	24	34'-0"	851	STR.	34'-0"		
SS502	24	38'-2"	955	STR.	38'-2"		
SS503	70	7'-9"	566	STR.	7'-9"		
SS504	70	4'-4"	316	6	1'-5"	1'-9"	0'-10"
SLEEPER SLABS TOTAL			2,688 ##				

## ALL SLEEPER SLAB REINFORCING STEEL TO BE INCLUDED FOR PAYMENT WITH ITEM 516-STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLAB

SLEEPER SLAB BENDING DIAGRAMS



ITEM 516-STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLAB:

ITEM 516-STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLAB: FURNISH MATERIAL CONFORMING TO 705.11. THE SEAL CONFIGURATION SHOULD BE SIMILAR TO THE DETAILS SHOWN HERIN. ACCEPTED MANUFACTURES ARE: EMSEAL JOINT SYSTEMS, LTD. (3" BEJS-0300) OR AN APPROVED EQUIVALENT. INSTALL THE SEAL ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS AND UNDER THE SUPERVISION OF THE MANUFACTURER'S DESIGNATED REPRESENTATIVE. FURNISH SEALS IN ONE CONTINUOUS PIECE UNLESS APPROVED BY THE ENGINEER.

BOND BREAKER: A BOND BREAKER CONSISTING OF TWO 4 FOOT SHEETS OF CLEAR OR OPAQUE POLYETHYLENE FILM, ITEM 705.06, SHALL BE CENTERED ABOVE THE JOINT BETWEEN THE SUBBASE AND THE SLEEPER SLAB. CARE SHALL BE TAKEN IN THE AREA BENEATH THE POLYETHYLENE FILM TO ENSURE THE SURFACE OF THE SUBBASE IS FINISHED SMOOTH AND IS FLUSH WITH OR SLIGHTLY HIGHER THAN THE SURFACE OF THE SLEEPER SLAB. THE FILM SHALL HAVE A NOMINAL THICKNESS OF 4 MILS.

PAYMENT: MEASUREMENT OF THE EXPANSION JOINT FOR PAYMENT PURPOSES SHALL BE ALONG THE CENTERLINE OF THE SLEEPER SLAB AND BETWEEN THE BACKS OF CURB. PAYMENT SHALL BE PER FOOT OF ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: JEENE SEAL WITH SLEEPER SLAB AND SHALL INCLUDE 3" BEJS-0300 AS PROVIDED BY EMSEAL, WESTBOROUGH, MASSACHUSETTS (508) 836-0280 OR AN APPROVED EQUAL, CONCRETE SLEEPER SLAB, RESTEEL AND ALL LABOR, MATERIALS AND INCIDENTALS NEEDED TO CONSTRUCT THE JOINT AS SHOWN EXCEPT FOR THE PIPE UNDERDRAIN. THE UNDERDRAINS SHALL BE PAID FOR PER FOOT OF ITEM 605- 6" SHALLOW PIPE UNDERDRAIN, ITEM 707.32 TYPE CP, OR 707.41.

NOTE:  
TYPE "A" WATERPROOFING SHALL NOT EXTEND ABOVE THE BOTTOM OF THE CUT GROOVE IN WHICH THE HOT APPLIED JOINT SEALER IS TO BE PLACED. IT SHALL BE APPLIED TO THE ENTIRE AREA OF THE ABUTMENT OR SUPERSTRUCTURE WHICH COMES INTO CONTACT WITH THE APPROACH SLAB.

NOTE:  
FOR ADDITIONAL DETAILS SEE STANDARD DRAWING AS-1-15 & AS-2-15.  
NOTE:  
FOR APPROACH SLAB FINISH ELEVATIONS, SEE SHEET 38/65.

AMBIENT TEMP. (°F)	DIMENSION "A"
	REAR & FWD. APPR. SLABS (3" BEJS)
90°	2"
80°	2 1/8"
70°	2 1/4"
60°	2 3/8"
50°	2 1/2"
40°	2 1/2"

NOTE:  
THE MAXIMUM "A" DIMENSION AT TIME OF INSTALLATION IS 2.5"

ITEM	DESCRIPTION	QUANT'Y	UNIT
202	** WEARING COURSE REMOVED	134	SQ. YD.
203	** EMBANKMENT	1,603	CU. YD.
204	** SUBGRADE COMPACTION	473	SQ. YD.
304	** AGGREGATE BASE	79	CU. YD.
516	* STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLAB	139	FT.
526	* REINFORCED CONCRETE APPROACH SLABS WITH OC/QA (T=17"), AS PER PLAN	449	SQ. YD.

CARRIED TO (\*) BRIDGE SUMMARY or (\*\*) SHEET 5/65

NOTE: ALL QUANTITIES SHOWN ARE FOR REAR AND FORWARD APPROACH SLABS.

MARK	NUMBER REQ'D.	LENGTH	WEIGHT	TYPE	DIMENSIONS			
					A	B	R	INC.
<b>APPROACH SLABS</b>								
AS501	130	31'-0"	4,203	STR.	31'-0"			
AS502	130	38'-2"	5,175	STR.	38'-2"			
AS503	56	29'-6"	1,723	STR.	29'-6"			
AS1001	252	30'-11"	33,525	19	29'-6"			
APPROACH SLABS TOTAL			44,626					



BENDING DIAGRAMS

DESIGNED CPS TAG	REVIEWED CPS STRUCTURE FILE NUMBER 4506333	DATE MM/DD/YY	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
APPROACH SLAB DETAILS BRIDGE NO. LIC-661-0003 OVER S.R. 16			
LIC-37/661-16.59/0.00		PID No. 92411	
58/65		327 341	

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, NOVEMBER 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2019 EXCEPT AS NOTED ELSEWHERE IN THE PLANS.

**REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:**

SUPPLEMENT SPECIFICATION 840 DATED: 1/18/2019

**DESIGN LOADING:**

HL-93 LOADING  
FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT

**DESIGN DATA:**

CONCRETE: LEVELING PAD/COPING - CLASS OC-1 CONCRETE,  
COMPRESSIVE STRENGTH 4000 PSI

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

**DESIGN SUBMITTALS:**

THE CONTRACTOR IS HEREBY NOTIFIED THAT THE MSE RETAINING WALL SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN SUPPLEMENTAL SPECIFICATION 840. AFTER THE AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT MSE RETAINING WALL DETAIL DESIGN PLANS (4 SETS), DESIGN CALCULATIONS (2 SETS), AND SHOP DRAWINGS PER 501.04 TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL BY THE DIRECTOR. THE PLANS FOR RETAINING WALLS SHALL BE PREPARED BY AN APPROVED MSE WALL SUPPLIER LISTED IN SUPPLEMENTAL SPECIFICATION 840. THE PLANS SHALL BE SUBMITTED EIGHT WEEKS PRIOR TO THE BEGINNING OF CONSTRUCTION OF THE WALLS AND THE CONTRACTOR SHALL ALLOW FOUR WEEKS FOR THE REVIEW BY ODOT.

**PROPRIETARY RETAINING WALL DATA:**

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE OF 2.0 K/FT APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

**UNDERCUT AND BACKFILL:**

PRIOR TO CONSTRUCTION OF THE MSE WALLS, THE EXISTING IN-SITU SOILS, WHERE SPECIFIED IN THE PLANS, SHALL BE REMOVED AND THE RESULTING EXCAVATION SHALL BE BACKFILLED WITH GRANULAR MATERIAL TYPE C, TO THE ELEVATION OF THE BOTTOM OF THE MSE WALL LEVELING PAD. THE SOIL SHOULD BE OVEREXCAVATED TO AT LEAST ELEVATION 919.92 AS SHOWN AT MSE WALL 1 AND TO AT LEAST 919.92 AS SHOWN AT THE AT MSE WALL 2. IF SOFT OR LOOSE SOILS ARE ENCOUNTERED BELOW THESE ELEVATIONS, THE OVEREXCAVATION MAY NEED TO EXTEND DEEPER. THE LIMITS SHOULD BE VERIFIED AND ADJUSTED AFTER RECEIVING THE FINAL MSE WALL DRAWINGS.

**MINIMUM SOIL REINFORCEMENT LENGTH**

THE MINIMUM SOIL REINFORCEMENT LENGTH AT MSE WALL 1 & 2 IS 70% OF THE WALL HEIGHT.

**SEALING OF CONCRETE SURFACES (NON-EPOXY (CLEAR)):**

SURFACES OF THE MSE WALL PANELS AND ASSOCIATED COMPONENTS AS DETAILED IN THE PLANS, SHALL BE SEALED WITH A NON-EPOXY CLEAR SEALER AS PER CMS 512.

**REINFORCING STEEL:**

UPON THE WALL MANUFACTURER'S MSE WALL DESIGN, AND AS DESCRIBED IN THE PLAN AND SS 840, FURNISH AND INSTALL EPOXY COATED REINFORCING STEEL ACCORDING TO CMS 509 AND INCIDENTAL TO ITEM 840 MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN.

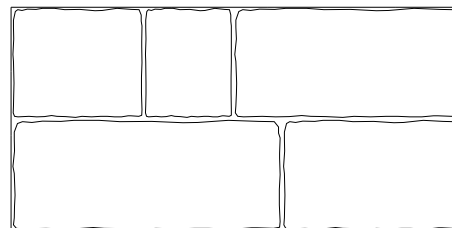
**ARCHITECTURAL FINISH: (MSE WALL/CORNER ELEMENTS):**

ALL AESTHETIC TREATMENTS FOR THE MSE WALLS SHALL MATCH THE EXISTING MSE WALLS LOCATED AT LIC-16-1718, CHERRY VALLEY INTERCHANGE, IN COLOR AND PATTERN.

AN AESTHETIC TREATMENT SYSTEM SHALL BE SUCH TO DUPLICATE CLOSELY THE APPEARANCE OF INDIGENOUS SANDSTONE. THE SURFACE FINISH SHALL BE PATTERN #1102-R2 FROM CUSTOM ROCK INTERNATIONAL OR AN APPROVED EQUAL MEETING THE DETAILS SHOWN ON THIS PAGE. THE INTEGRALLY COLORED CONCRETE USING CHROMIX ADMIXTURES SHALL BE COLOR C-21 ADOBE TAN OR 1010 BROWNSTONE AS PROVIDED BY L.M. SCOFIELD COMPANY, DOUGLASVILLE, GEORGIA (800) 800-9900 OR APPROVED EQUAL. TWO PRECONSTRUCTION PANELS WILL BE REQUIRED, ONE WITH C-21 ADOBE TAN AND ONE WITH 1010 BROWNSTONE. THE DIRECTOR WILL DECIDE THE COLOR FROM THE TEST SAMPLES.

TWO PRECONSTRUCTION TEST SAMPLES SHALL BE PROVIDED FOR APPROVAL BY THE DIRECTOR. IF THE TEST SAMPLES DO NOT MEET THE APPROVAL OF THE DIRECTOR, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED MSE WALL PANELS OR INTEGRALLY COLORED CONCRETE. THE TEST SAMPLE MUST PASS APPROVAL. FAILURE WILL CONSTITUTE PLACEMENT OF ANOTHER TEST SAMPLE. A FIVE FOOT BY FIVE FOOT TEST SAMPLE SHOULD BE MADE (OR THE SIZE AS THE TYPICAL MSE WALL PANELS). THE MOCK-UP SHALL HAVE THE SAME ARCHITECTURAL RELIEF, THICKNESS AND PATTERN AS USED ON THE PROJECT. THE SAMPLE SHOULD BE OF THE SAME CEMENT, AGGREGATE SOURCE, AND INTEGRALLY COLORED CONCRETE THAT WILL BE USED TO MAKE THE MSE WALL PANELS. AFTER APPROVAL THE CONCRETE TEST SAMPLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ALL AESTHETIC TREATMENT INCLUDING THE INTEGRALLY COLORED, CONCRETE, SURFACE FINISH, TEST SAMPLES AND ALL OTHER MATERIALS REQUIRED TO COMPLETE THIS WORK SHALL BE INCLUDED WITH THE SQ. FT. PAYMENT FOR ITEM 840 - AESTHETIC SURFACE TREATMENT.



CUSTOM ROCK INTERNATIONAL (C.R.I.)  
PATTERN # 1102-R2 OR APPROVED EQUAL

RECTANGULAR CUT STONE (EVEN COURSING):  
NUMBER OF COURSES PER 5 FT. TALL PANEL = 2  
MAX RELIEF = 2"  
AVERAGE RELIEF = 1/2"  
STONE SIZES (LENGTH) = 2' TO 6'

**ARCHITECTURAL  
WALL ELEVATION**

NOTE: CORNER ELEMENTS SHALL HAVE THE SAME AESTHETIC TREATMENT AS THE WALL PANELS.

**MSE WALL PHASED CONSTRUCTION**

INDIVIDUAL MSE WALLS, AS SHOWN IN THIS PLAN, ARE TO BE CONSTRUCTED IN SINGLE PHASES FOR EACH WALL NUMBER.

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DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
REVIEWED CPS	DATE MM/DD/YY 4506333
DRAIN CPS	STRUCTURE FILE NUMBER
DESIGNED CPS	REVISOR
CHECKED TAG	REVISED
MSE WALL NOTES BRIDGE NO. LIC-661-0003 OVER S.R. 16	
LIC-37/661-16.59/0.00	PID No. 92411
59/65	
328	341



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LOCATION	MSE WALL 1
A	MSE WALL 1 STA. 1+00.00 OFFSET 10.63' LT. = STA. 368+84.57 S.R. 661 OFFSET 74.18' RT.
B	MSE WALL 1 STA. 1+42.87 OFFSET 19.63' LT. = STA. 369+17.22 S.R. 661 OFFSET 44.97' RT.
C	MSE WALL 1 STA. 2+05.69 OFFSET 19.63' LT. = STA. 369+29.30 S.R. 661 OFFSET 0.00'
D	MSE WALL 1 STA. 2+06.73 OFFSET 19.63' LT. = STA. 369+29.57 S.R. 661 OFFSET 1.00' LT.
E	MSE WALL 1 STA. 2+59.87 OFFSET 19.63' LT. = STA. 369+43.36 S.R. 661 OFFSET 52.32' LT.
F	MSE WALL 1 STA. 3+04.00 OFFSET 10.63' LT. = STA. 369+37.24 S.R. 661 OFFSET 80.96' LT.

DESIGNED	DRAWN	REVIEWED	DATE
CPS	CPS	CPS	MM/DD/YY
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TAG		4506333	

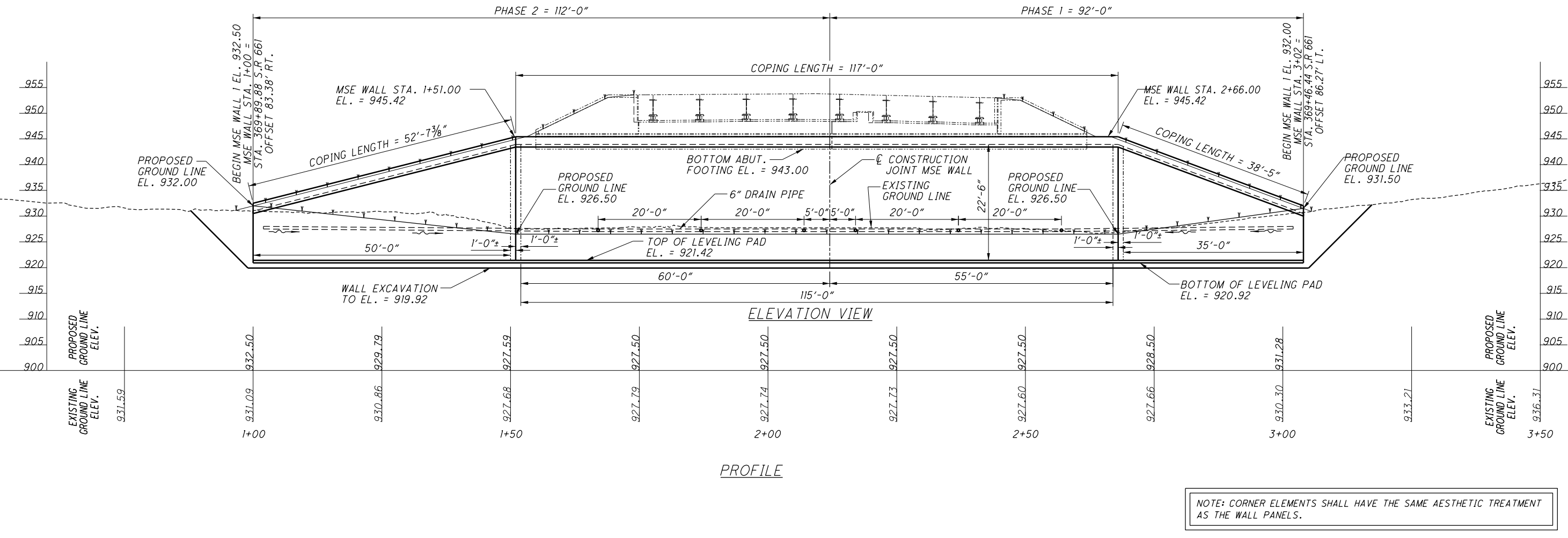
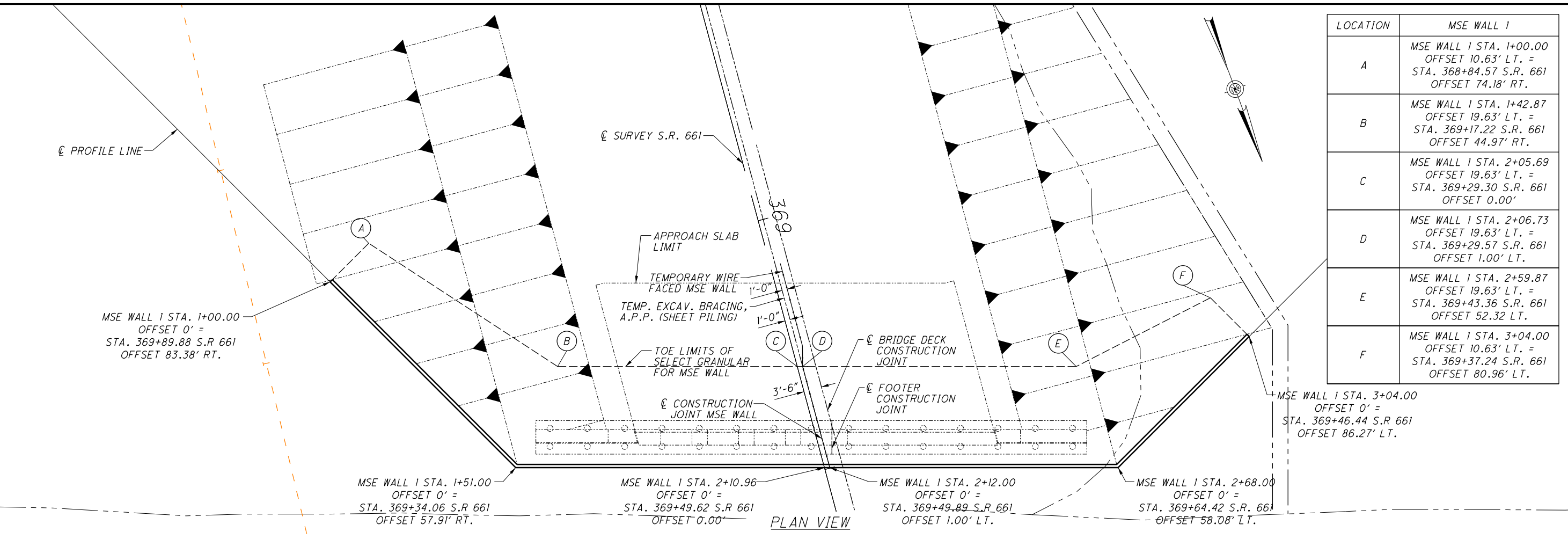
DESIGN AGENCY  
OHIO DEPARTMENT OF  
TRANSPORTATION, DISTRICT 5

MSE WALL 1 DETAILS  
BRIDGE NO. LIC-661-0003  
OVER S.R. 16

LIC-37/661-16.59/0.00  
PID No. 92411

60/65

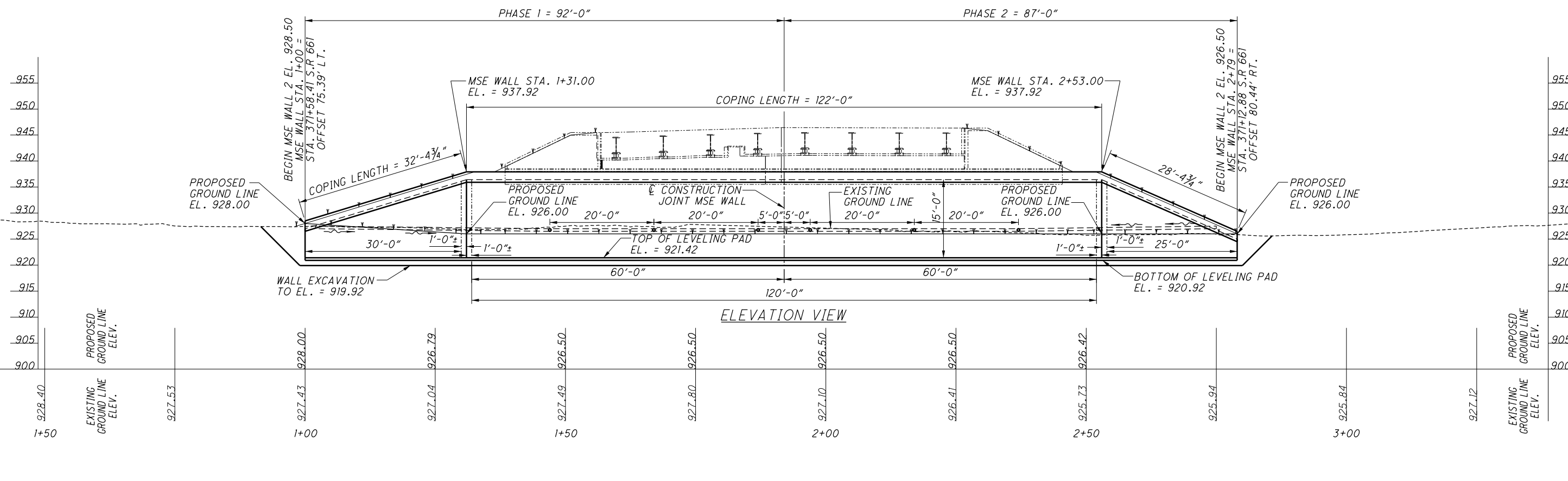
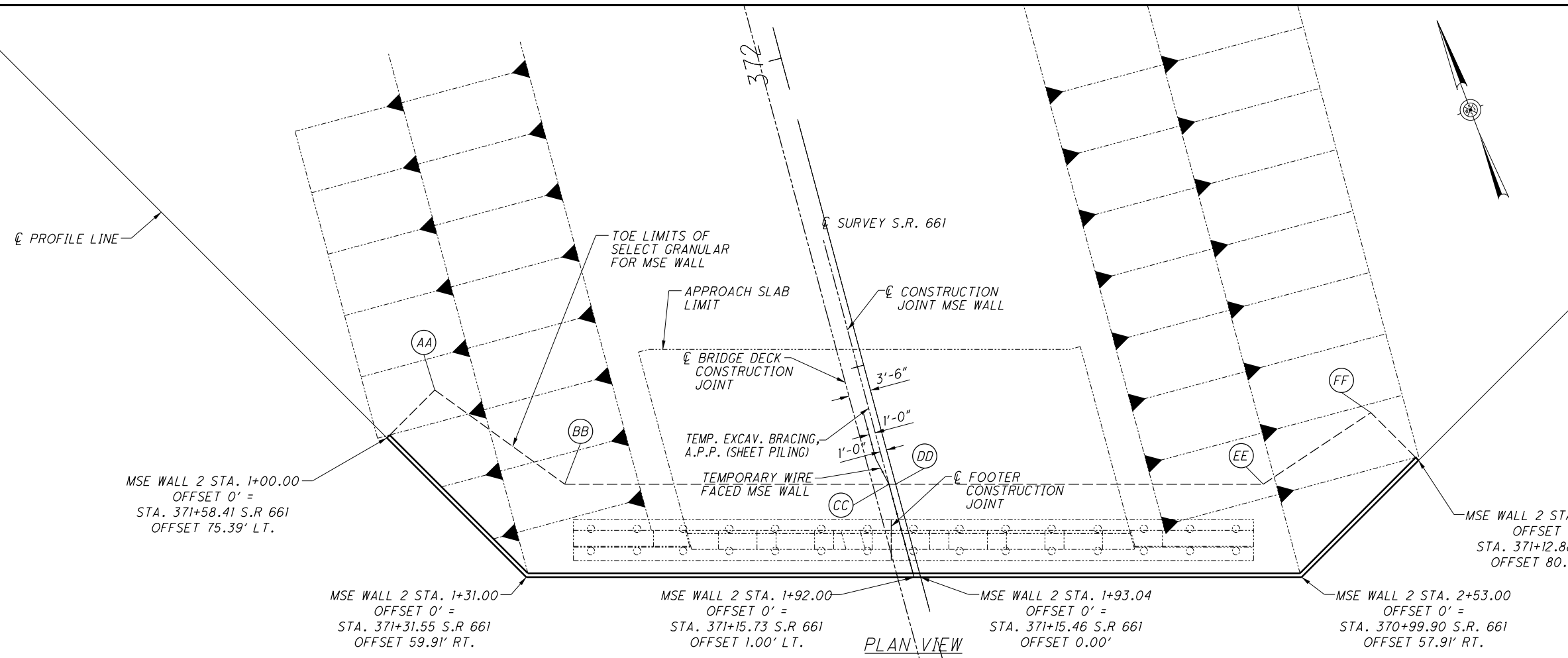
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NOTE: CORNER ELEMENTS SHALL HAVE THE SAME AESTHETIC TREATMENT AS THE WALL PANELS.

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LOCATION	MSE WALL 2
AA	MSE WALL 2 STA. 1+00.00 OFFSET 10.63' LT. = STA. 371+63.72 S.R. 661 OFFSET 66.19' LT.
BB	MSE WALL 2 STA. 1+24.94 OFFSET 14.63' LT. = STA. 371+44.11 S.R. 661 OFFSET 50.27' LT.
CC	MSE WALL 2 STA. 1+88.07 OFFSET 14.63' LT. = STA. 371+30.87 S.R. 661 OFFSET 1.00' LT.
DD	MSE WALL 2 STA. 1+89.11 OFFSET 14.63' LT. = STA. 371+30.60 S.R. 661 OFFSET 0.00'
EE	MSE WALL 2 STA. 2+59.06 OFFSET 14.63' LT. = STA. 371+15.59 S.R. 661 OFFSET 55.86 RT.
FF	MSE WALL 2 STA. 2+79.00 OFFSET 10.63' LT. = STA. 371+22.09 S.R. 661 OFFSET 75.13 RT.



NOTE: CORNER ELEMENTS SHALL HAVE THE SAME AESTHETIC TREATMENT AS THE WALL PANELS.

DESIGN AGENCY: OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DATE: MM/DD/YY

REVIEWED: CPS MM/DD/YY

STRUCTURE FILE NUMBER: 4506333

DESIGNED: CPS

CHECKED: TAG

DRAWN: CPS

REVISED: 1

MSE WALL 2 DETAILS

BRIDGE NO. LIC-661-0003

OVER S.R. 16

LIC-37/661-16.59/0.00

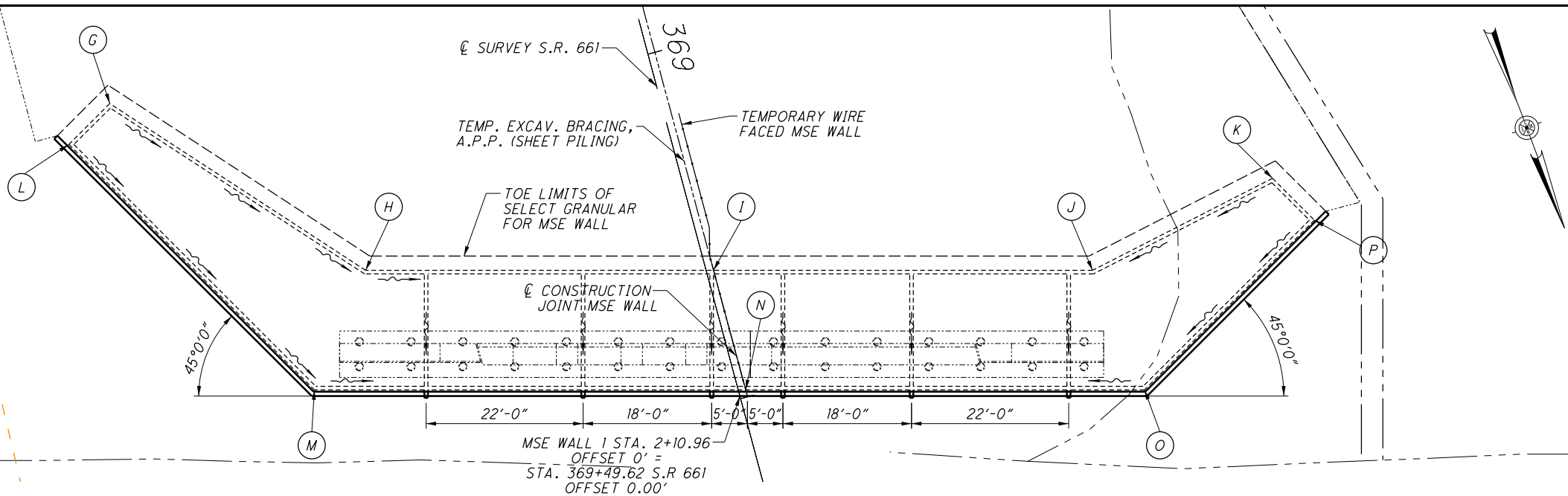
PID No. 92411

61/65

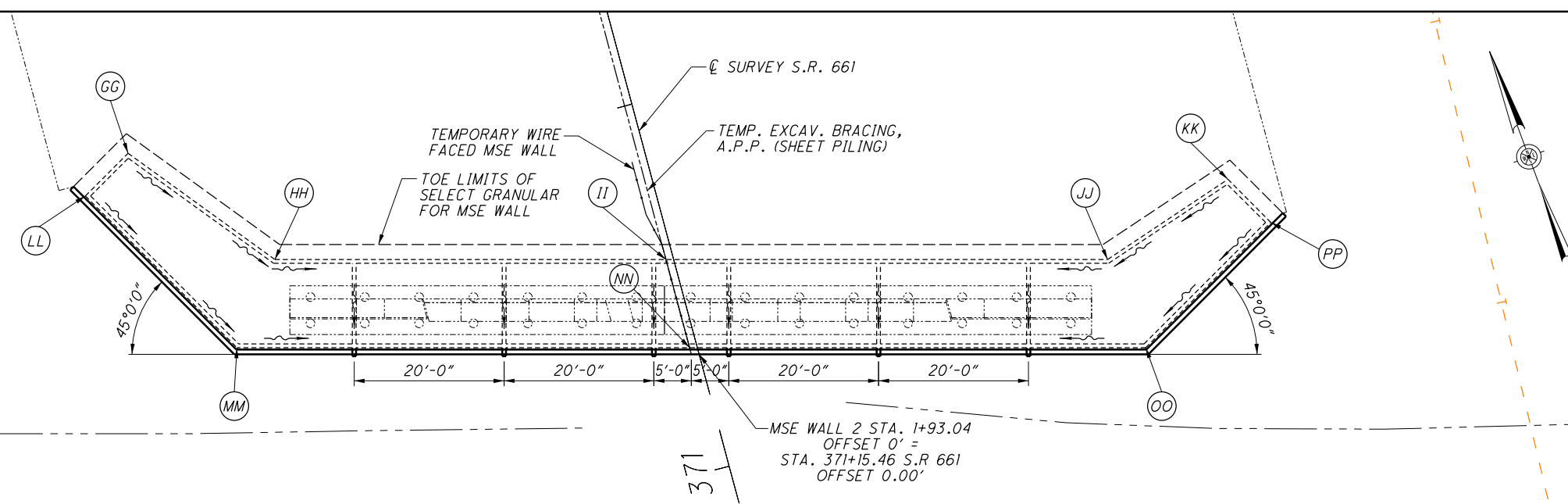
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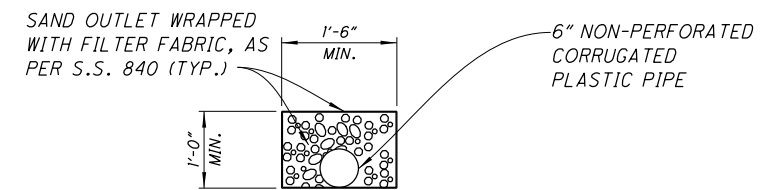
MSE WALL 1 DRAINAGE SCHEMATIC



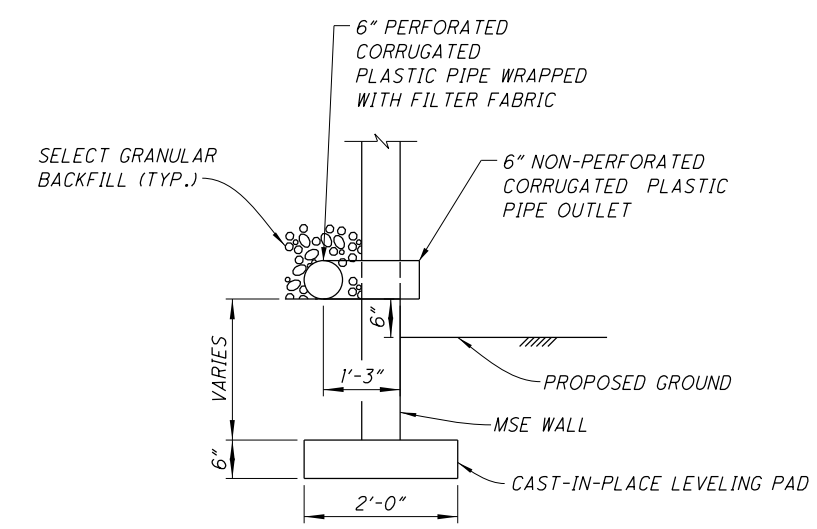
MSE WALL 2 DRAINAGE SCHEMATIC

MSE WALL 1	
LOCATION	ELEVATION
G	928.00
H	928.75
I	927.50
J	927.75
K	928.00
L	927.50
M	927.25
N	927.00
O	927.25
P	927.50

MSE WALL 2	
LOCATION	ELEVATION
GG	927.50
HH	927.25
II	927.00
JJ	927.25
KK	927.50
LL	927.00
MM	926.75
NN	926.50
OO	926.75
PP	927.00



PIPE SECTION DETAIL  
(OUTSIDE SELECT GRANULAR BACKFILL)

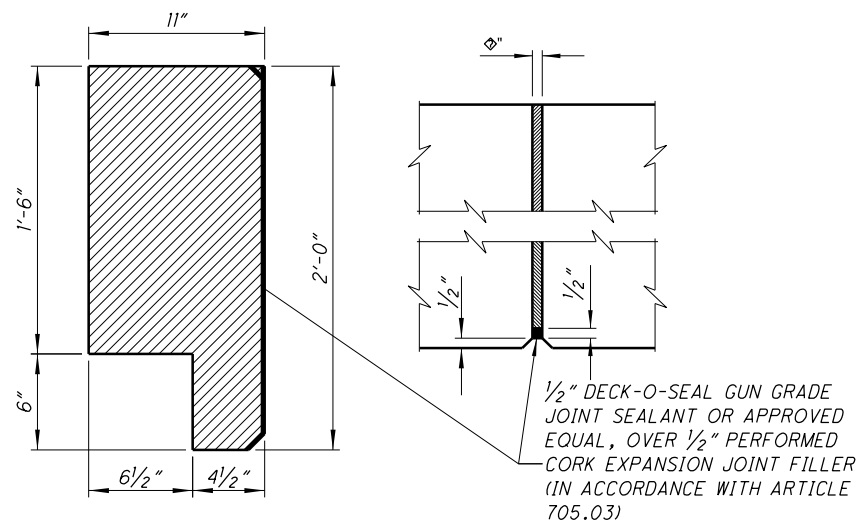


PIPE SECTION DETAIL  
(WITHIN SELECT GRANULAR BACKFILL)

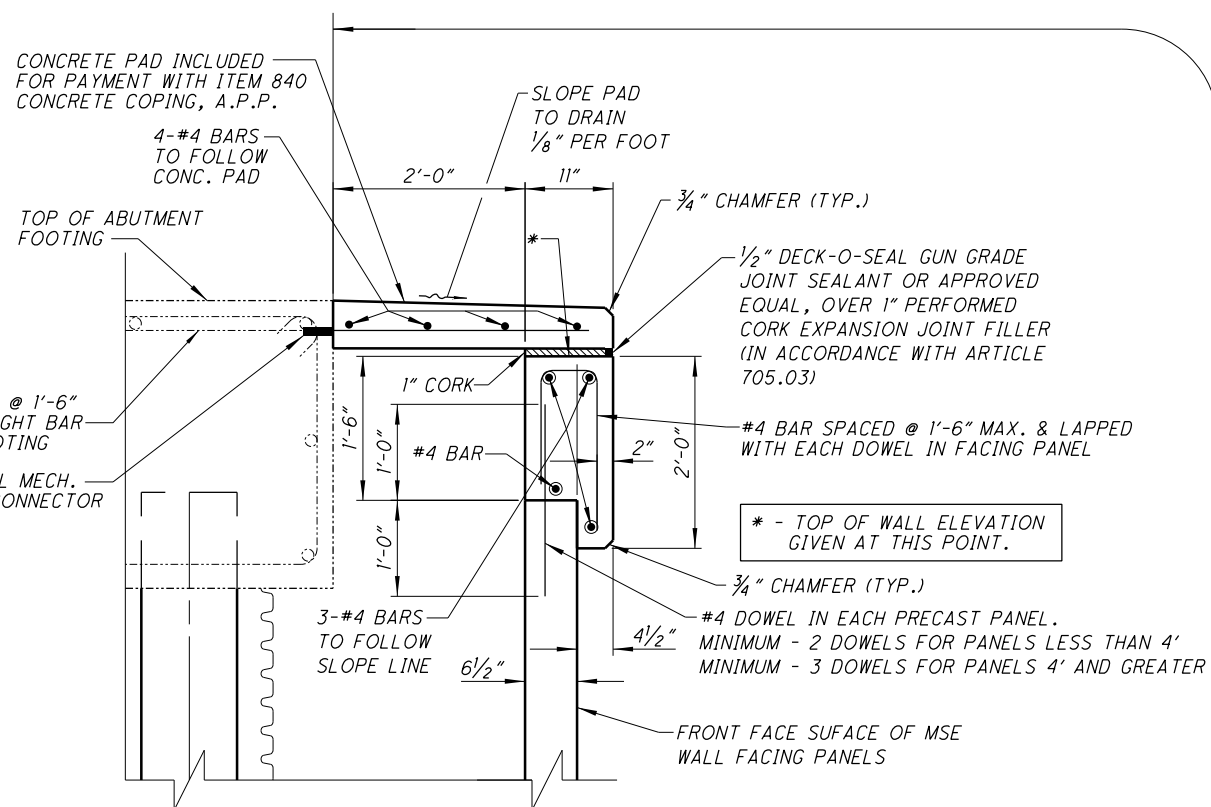
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				4506333	
MSE WALL DRAINAGE DETAILS					
BRIDGE NO. LIC-661-0003					
OVER S.R. 16					
LIC-37/661-16.59/0.00					
PID No. 92411					
62/65					
331					
341					

NOTES:

1. JOINTS IN COPING SHALL COINCIDE WITH  $\frac{1}{2}$  OF PANEL JOINT. REINFORCING STEEL SHALL BE STOPPED 2" SHORT OF EACH SIDE OF THE JOINTS.
2. PROVIDE  $\frac{1}{2}$ " EXPANSION JOINTS AT MAXIMUM SPACING OF 20'-0" TO COINCIDE WITH PANEL JOINTS.
3. VERTICAL STEEL SHALL CLEAR EITHER SIDE OF PANEL JOINTS BY 2" MINIMUM.



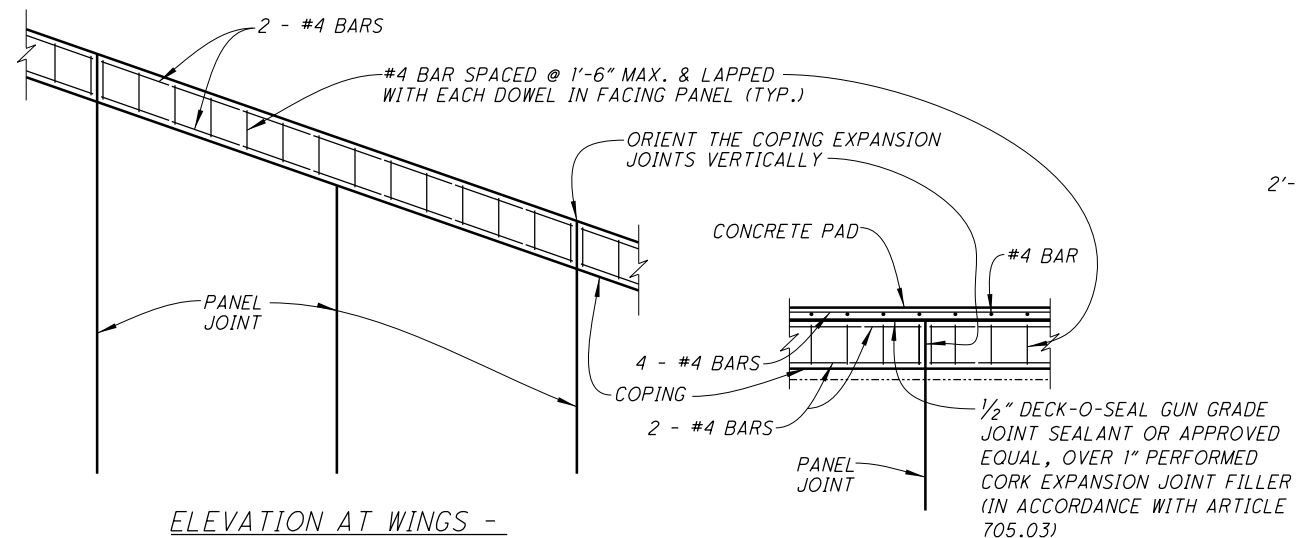
MSE WALL COPING PANEL JOINT  
ALL P.E.J.F AND SEALANT SHOWN INCLUDED FOR PAYMENT WITH ITEM 840 CONCRETE COPING, A.P.P.



SECTION AT ABUTMENT -  
TYPICAL MSE WALL COPING

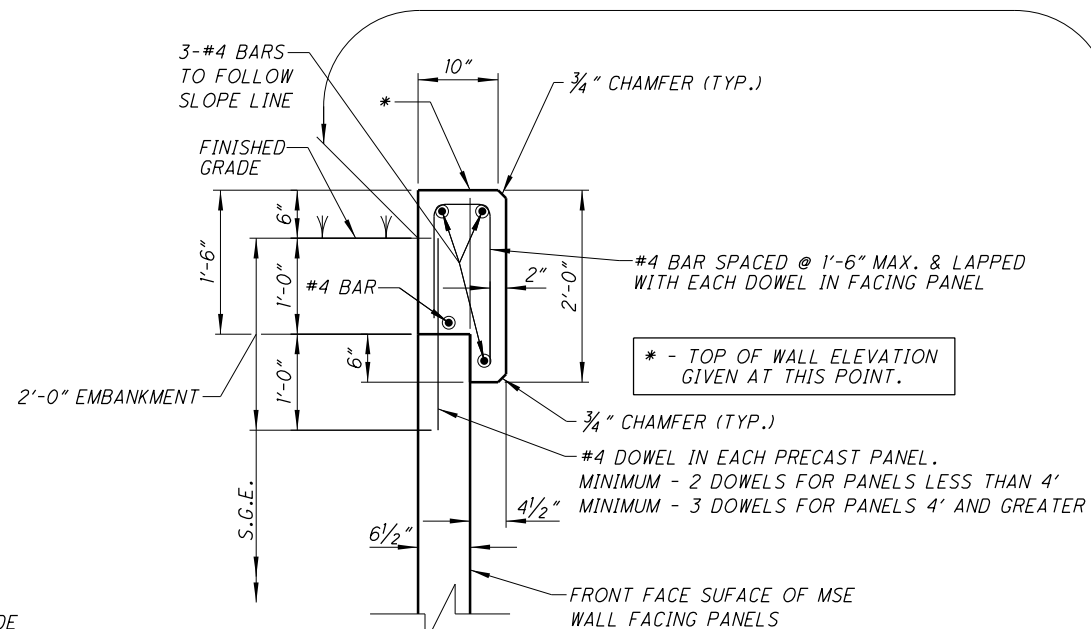
SEE NOTES 1 THROUGH 3

SEALING OF CONCRETE SURFACES (NON-EPOXY (CLEAR)) - SEAL ALL EXPOSED MSE WALL PANELS, COPINGS, & CONCRETE PADS AND EXTEND DOWN TO FINISHED GRADE.



ELEVATION AT WINGS -  
TYPICAL MSE WALL COPING

ELEVATION AT ABUTMENT -  
TYPICAL MSE WALL COPING



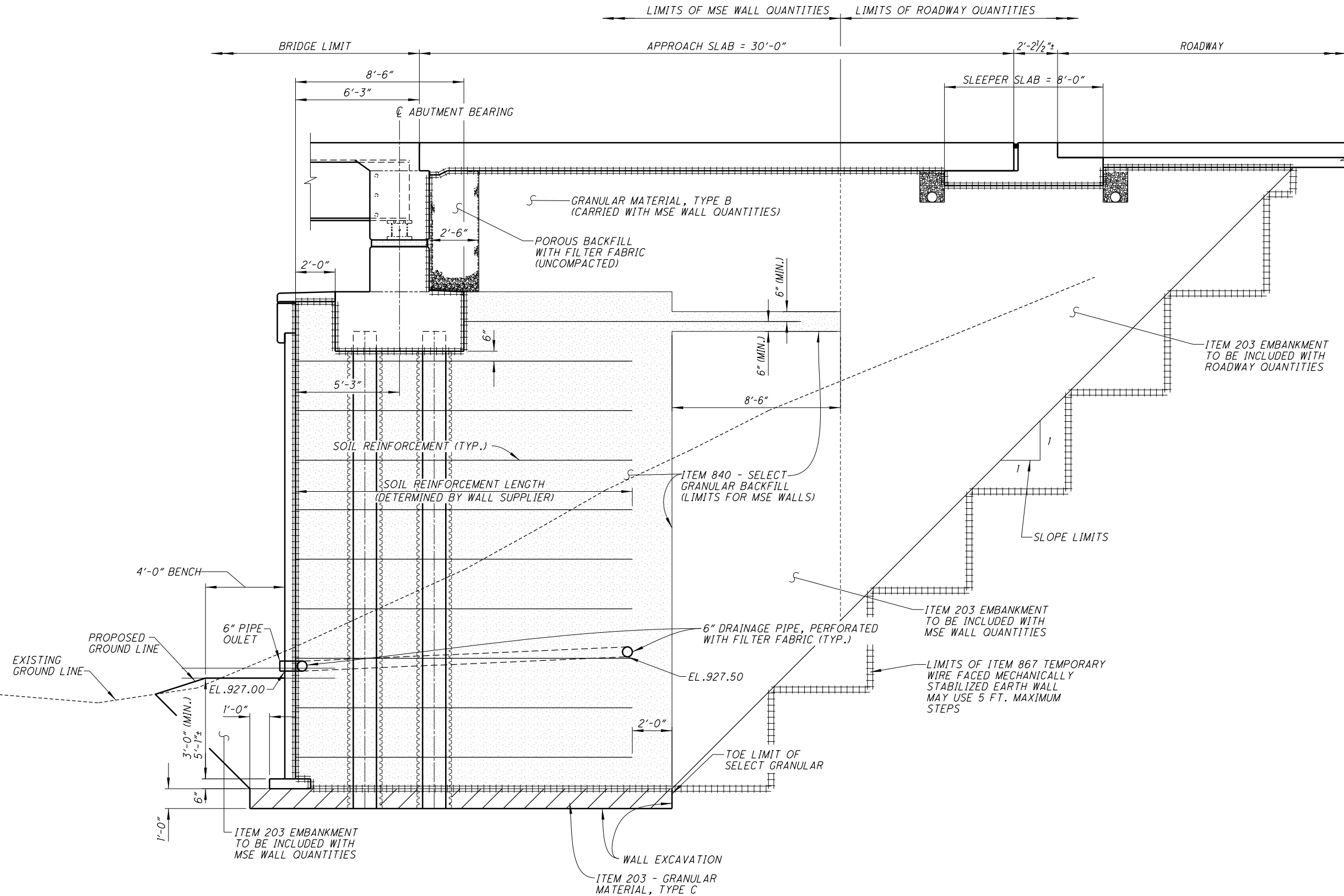
SECTION AT WINGS -  
TYPICAL MSE WALL COPING

SEE NOTES 1 THROUGH 3

NOTE: EXPANSION JOINT SPACING SHALL BE MODIFIED AS PER THE MANUFACTURER'S MSE WALL PANEL DESIGN. ALL COST ASSOCIATED WITH THIS SHALL BE PAID FOR IN ITEM 840 - COPING, AS PER PLAN.

SEALING OF CONCRETE SURFACES (NON-EPOXY (CLEAR)) - SEAL ALL EXPOSED MSE WALL PANELS, COPINGS, & CONCRETE PADS AND EXTEND DOWN TO FINISHED GRADE.

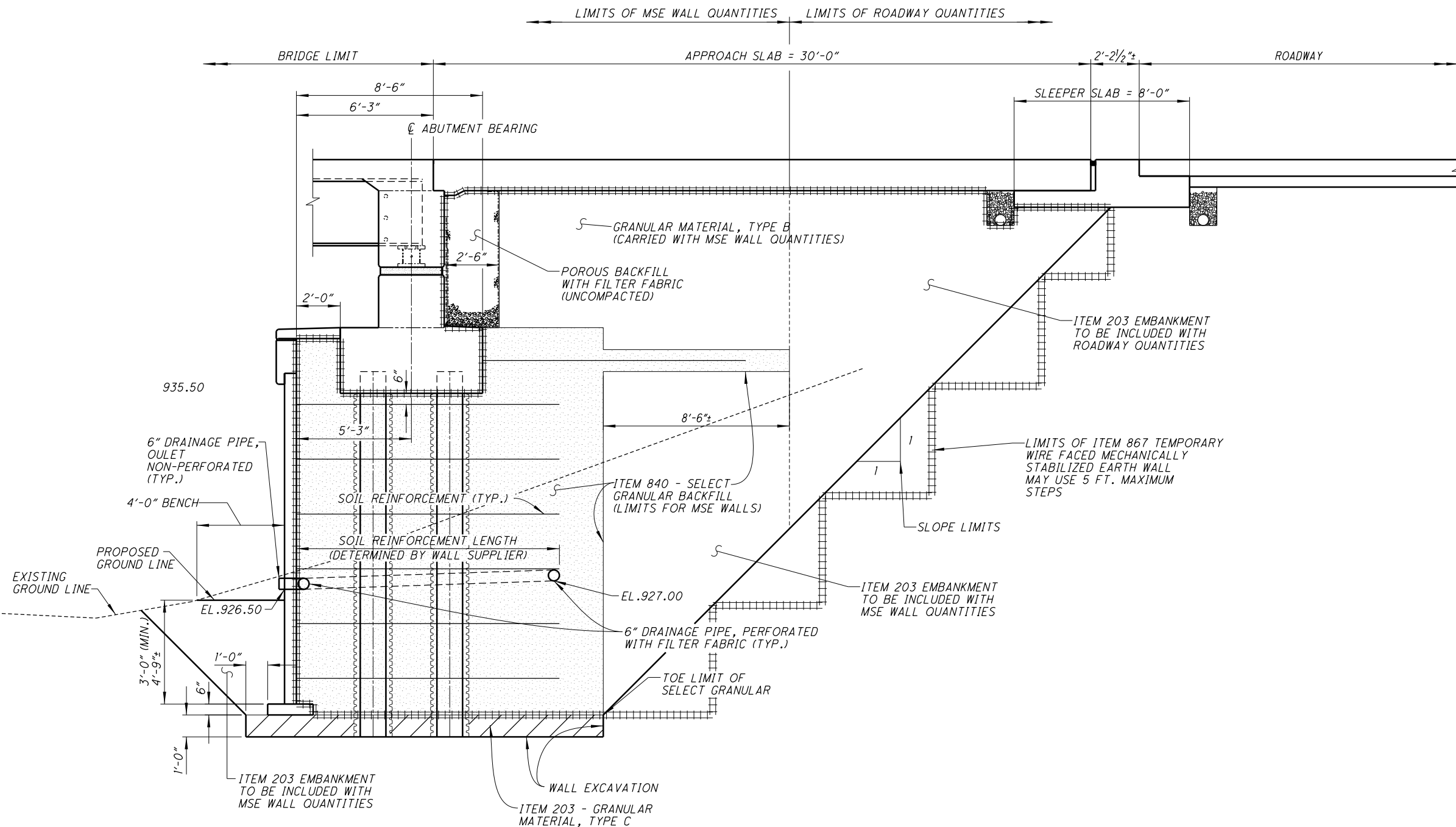
I:\ProjectData\LIC\9241\Design\Structures\661\_0003\Sheets\661\_0003\_WD002.dgn MSE Wall Details 11/18/2019 1:50:07 PM bncarlo



**MSE WALL SECTION AT CENTERLINE  
 ABUTMENT BEARINGS - FILL CONDITION**  
 (ALL DIMENSIONS PERPENDICULAR TO MSE WALL)  
 (NOT TO SCALE)

DESIGNED		CPS	CHECKED	TAG
REVIEWED		CPS	REVISED	
DATE		MM/DD/YY	STRUCTURE FILE NUMBER	
DESIGN AGENCY		OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5		
<b>MSE WALL 1 DETAILS</b>				
BRIDGE NO. LIC-661-0003 OVER S.R. 16				
LIC-37 / 661-16.59 / 0.00		PID No. 92411		
64 / 65		333 341		

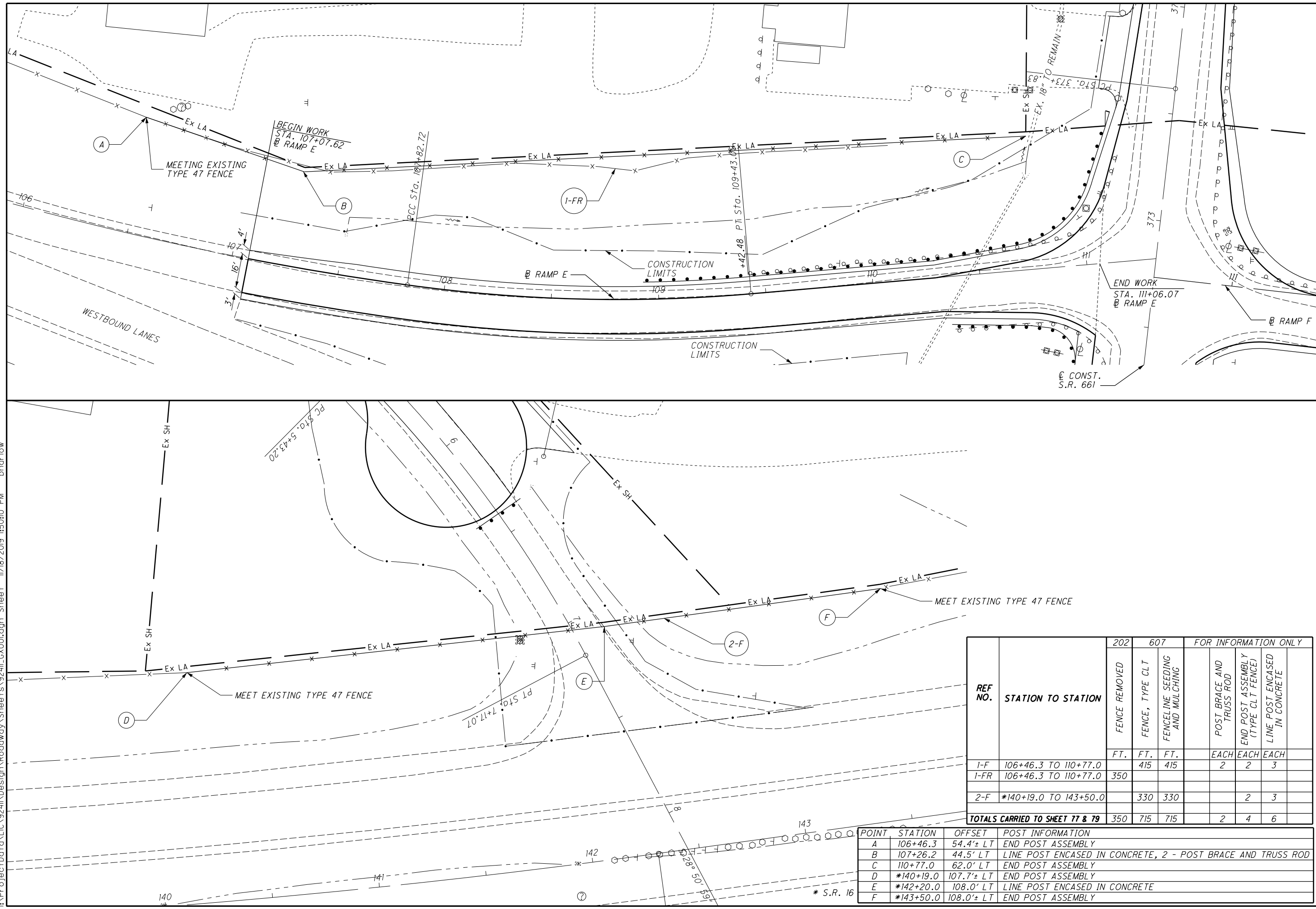
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MSE WALL SECTION AT CENTERLINE  
 ABUTMENT BEARINGS - FILL CONDITION  
 (ALL DIMENSIONS PERPENDICULAR TO MSE WALL)  
 (NOT TO SCALE)

DESIGNED		CHECKED		TAG	
DRAIN		CPS		REVISED	
REVIEWED		DATE		STRUCTURE FILE NUMBER	
CPS		MM/DD/YY		4506333	
DESIGN AGENCY					
OHIO DEPARTMENT OF					
TRANSPORTATION, DISTRICT 5					
MSE WALL 2 DETAILS					
BRIDGE NO. LIC-661-0003					
OVER S.R. 16					
LIC-37 / 661-16.59 / 0.00					
PID No. 92411					
65 / 65					
334					
341					

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CALCULATED  
RJK  
CHECKED  
HAG

HORIZONTAL  
SCALE IN FEET

**FENCE PLAN  
RAMP E & CUL-DE-SAC**

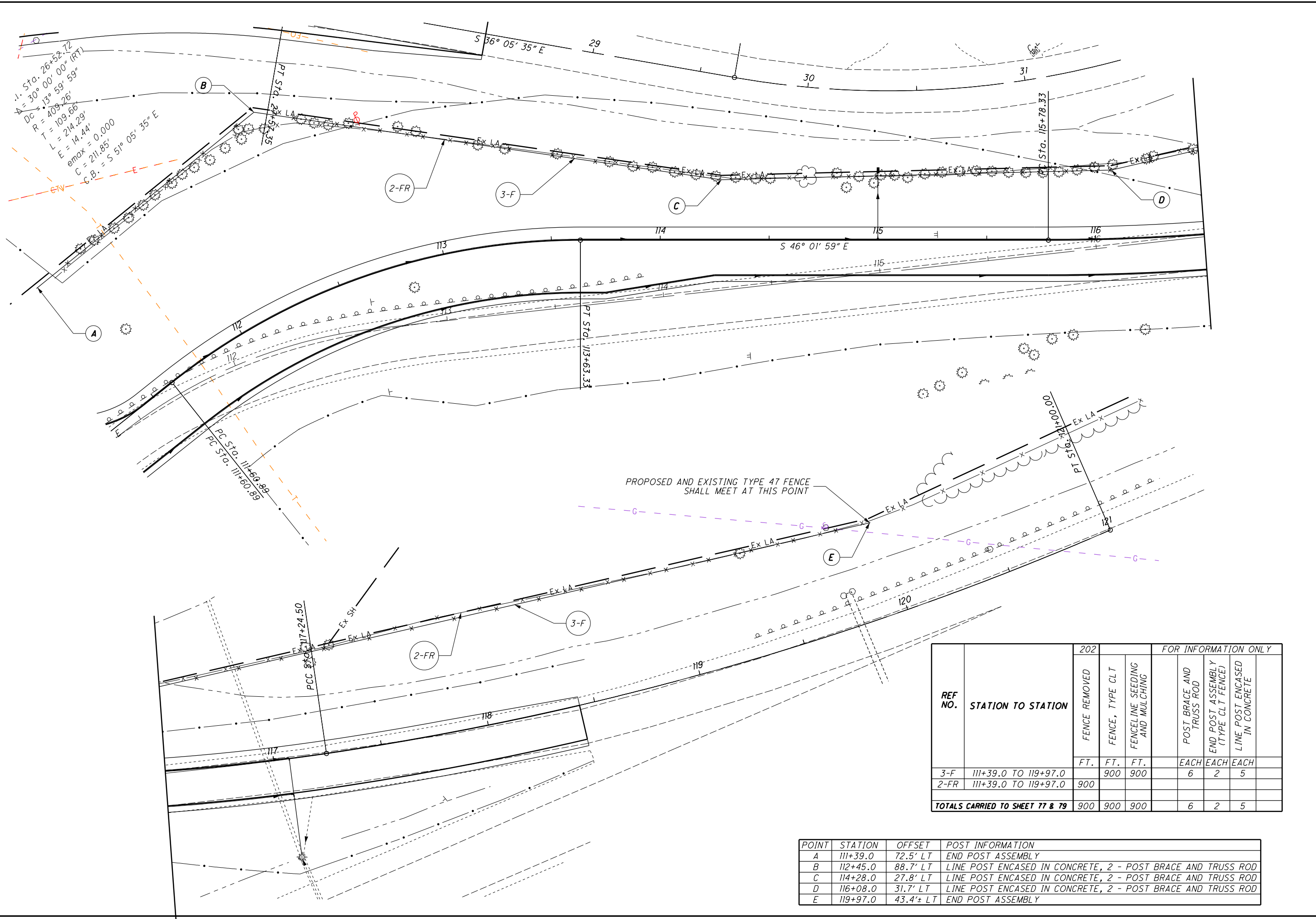
**LIC-661 / 37 -  
16.59 / 0.00**

335  
341

REF NO.	STATION TO STATION	202	607	FOR INFORMATION ONLY			
		FENCE REMOVED FT.	FENCE, TYPE CLT FT.	FENCELINE SEEDING AND MULCHING FT.	POST BRACE AND TRUSS ROD EACH	END POST ASSEMBLY (TYPE CLT FENCE) EACH	LINE POST ENCASED IN CONCRETE EACH
1-F	106+46.3 TO 110+77.0		415	415	2	2	3
1-FR	106+46.3 TO 110+77.0	350					
2-F	*140+19.0 TO 143+50.0		330	330		2	3
<b>TOTALS CARRIED TO SHEET 77 &amp; 79</b>		<b>350</b>	<b>715</b>	<b>715</b>	<b>2</b>	<b>4</b>	<b>6</b>

POINT	STATION	OFFSET	POST INFORMATION
A	106+46.3	54.4'± LT	END POST ASSEMBLY
B	107+26.2	44.5' LT	LINE POST ENCASED IN CONCRETE, 2 - POST BRACE AND TRUSS ROD
C	110+77.0	62.0' LT	END POST ASSEMBLY
D	*140+19.0	107.7'± LT	END POST ASSEMBLY
E	*142+20.0	108.0' LT	LINE POST ENCASED IN CONCRETE
F	*143+50.0	108.0'± LT	END POST ASSEMBLY

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CALCULATED  
RG  
CHECKED  
HG

0 10 20  
HORIZONTAL  
SCALE IN FEET

FENCE PLAN  
RAMP F

LIC-37 / 661-  
16.59 / 0.00

PROPOSED AND EXISTING TYPE 47 FENCE SHALL MEET AT THIS POINT

REF NO.	STATION TO STATION	FOR INFORMATION ONLY					
		FENCE REMOVED	FENCE, TYPE CLT	FENCE LINE SEEDING AND MULCHING	POST BRACE AND TRUSS ROD	END POST ASSEMBLY (TYPE CLT FENCE)	LINE POST ENCASED IN CONCRETE
		FT.	FT.	FT.	EACH	EACH	EACH
3-F	111+39.0 TO 119+97.0	900	900	900	6	2	5
2-FR	111+39.0 TO 119+97.0	900					
<b>TOTALS CARRIED TO SHEET 77 &amp; 79</b>		900	900	900	6	2	5

POINT	STATION	OFFSET	POST INFORMATION
A	111+39.0	72.5' LT	END POST ASSEMBLY
B	112+45.0	88.7' LT	LINE POST ENCASED IN CONCRETE, 2 - POST BRACE AND TRUSS ROD
C	114+28.0	27.8' LT	LINE POST ENCASED IN CONCRETE, 2 - POST BRACE AND TRUSS ROD
D	116+08.0	31.7' LT	LINE POST ENCASED IN CONCRETE, 2 - POST BRACE AND TRUSS ROD
E	119+97.0	43.4'± LT	END POST ASSEMBLY



# RIGHT OF WAY LEGEND SHEET LIC-661-0.02

## PROJECT DESCRIPTION

BRIDGE REPLACEMENT AND WIDENING OF THE EXISTING SR 661 OVER SR 16 BRIDGE (LIC-661-0.030). WORK INCLUDES RECONSTRUCTION OF THE SR 37/661 & SR 16 INTERCHANGE RAMP AND PAVEMENT WIDENING OF SR 37/661 FOR TURN LANES.

## LIMITED ACCESS

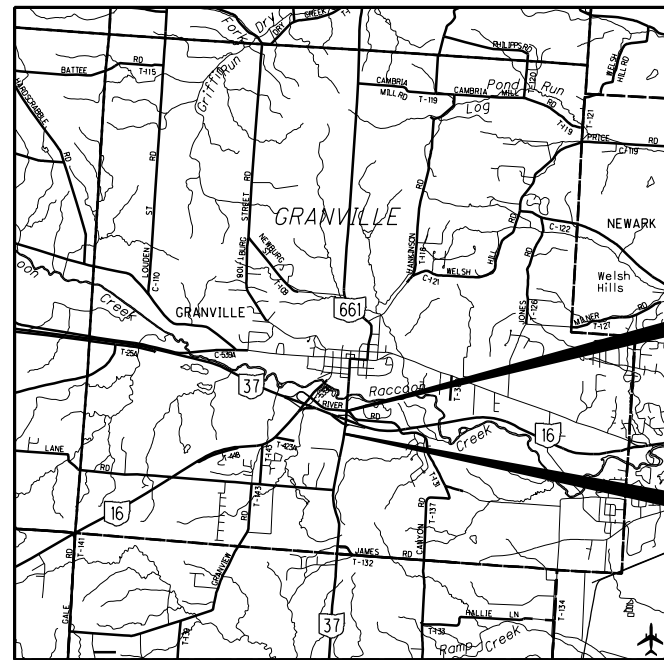
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

## PROJECT CONTROL

GEOMETRY AS OBSERVED IN 2018 ARE BASED ON NAD83(2011) STATE PLANE COORDINATE SYSTEM, GRID, OHIO SOUTH ZONE 3402, ORTHOMETRIC ELEVATIONS ARE BASED ON NAVD88, GEOID12A

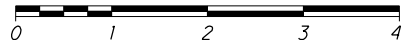
## PLAN PREPARED BY:

FIRM NAME: ODOT, DISTRICT 5  
PLANS PREPARED BY: CANDY SHOEMAKER & CRAIG S. WOLFE  
FIELD REVIEW BY: CANDY SHOEMAKER  
OWNERSHIP VERIFIED BY: LUKE WALKER  
DATE COMPLETED: 9/10/18



LOCATION MAP

LATITUDE: 40° 03' 32" LONGITUDE: -82° 31' 16"  
SCALE IN MILES



NOTE:  
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.

### UTILITY OWNERS

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

American Electric Power Company 850 Tech Center Drive Gahanna, Ohio 43230 Attn: Paul Paxton 614-883-6831 ptpaxton@aep.com	Columbia Gas of Ohio 3550 Johnny Appleseed Ct. Columbus, Ohio 43231 Attn: Maya Barrett MBarrett@nisource.com	Marathon Ashland Pipe Line LLC 20-C Industriail Dr. Lexington, Ohio 44904 Attn: Greg Newman 419-884-0800 gcneman@marathonpetroleum.com
Granville Water/Waste Water 141 East Broadway PO Box 514 Granville, Ohio 43023 Attn: Pete Klass 740-587-0165 waterdist@granville.oh.us	Spectrum Cable 3760 Interchange Road Columbus, Ohio 43204 Attn: Anthony Adams 614-827-7971 Anthony.Adams@charter.com	Windstream Communications 11101 Anderson Drive Suite 100 Little Rock, Az 72212 Attn: Barbra Graves 510-748-4590 Barbara.graves@windstream.com

### CONVENTIONAL SYMBOLS

County Line	Edge of Shoulder (Ex)
Township Line	Edge of Shoulder (Pr)
Section Line	Ditch / Creek (Ex)
Corporation Line	Ditch / Creek (Pr)
Fence Line (Ex)	Tree Line (Ex)
Center Line	Ownership Hook Symbol
Right of Way (Ex)	Property Line Symbol
Right of Way (Pr)	Break Line Symbol
Standard Highway Ease.(Ex)	Tree (Pr)
Standard Highway Ease.(Pr)	Tree (Remove)
Slope Ease.(Ex)	Shrub (Remove)
Slope Ease.(Pr)	Evergreen (Ex)
Temporary Right of Way	Evergreen (Remove)
Channel Ease. (Pr)	Stump (Remove)
Utility Ease. (Ex)	Wetland (Pr)
Railroad	Grass (Pr)
Guardrail (Ex)	Aerial Target
Construction Limits	Post (Ex)
Edge of Pavement (Ex)	Mailbox (Ex)
Edge of Pavement (Pr)	Mailbox (Pr)
	Light (Ex)
	Telephone Marker (Ex)
	Fire Hydrant (Ex)
	Water Meter (Ex)
	Water Valve (Ex)
	Utility Valve Unknown (Ex)
	Telephone Pole (Ex)
	Power Pole (Ex)
	Light Pole (Ex)

### INDEX OF SHEETS:

- LEGEND SHEET. . . . . 1
- CENTERLINE PLAT. . . . . 2
- PROPERTY MAP. . . . . 3
- ROW DETAIL SHEETS. . . . . 4-5

### STRUCTURE KEY

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

- LEGEND:  
SH = STANDARD HIGHWAY EASEMENT  
SHV = STANDARD HIGHWAY EASEMENT ACQUISITION IN THE NAME OF ANOTHER STATE AGENCY OR LOCAL PUBLIC AGENCY  
T = TEMPORARY EASEMENT  
CH = CHANNEL EASEMENT

**UNDERGROUND UTILITIES**  
CONTACT BOTH SERVICES  
CALL TWO WORKING DAYS  
**BEFORE YOU DIG**  
CALL  
**1-800-362-2764**  
(TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY  
OIL & GAS PRODUCERS PROTECTIVE  
SERVICE CALL: **1-800-925-0988**

I, Luke Walker P.S., have conducted a survey of the existing conditions for the Ohio Department of Transportation in August 20, 2018. The results of that survey are contained herein.

Underground utility locations are shown for informational purposes only. Though they are believed to be accurate, their location is as marked on the ground by the utility company per OUPS Confirmation Number A726900353-00A and A726900364-00A & OGPUPS #147611 and those markings subsequently being surveyed as a part of this project.

Basis of bearings and geometry as observed in 2018 are based on NAD83(2011) State Plane Coordinate System, Grid, Ohio South Zone 3402, Orthometric Elevations based on NAVD88, GEOID12A

As a part of this project I have reestablished the locations of the existing property lines and centerline of existing Right of Way for property takes contained herein.

As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein.

As a part of this work I have set monuments at the proposed property corners, and other points shown herein. The iron pins and caps will be 3/4" x 30" rebar with aluminum cap stamped "ODOT R/W District 5". All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "A Minimum Standards for Boundary Surveys in the State of Ohio" unless so noted.

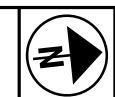
The words I and my as used herein are to mean that either myself or someone working under my direct supervision.

Luke Walker P.S. #8701

Date: \_\_\_\_\_

**SURVEYORS SEAL**  
STATE OF OHIO  
LUKE C. WALKER  
S-8701  
REGISTERED PROFESSIONAL SURVEYOR  
SIGNED: \_\_\_\_\_  
DATE: \_\_\_\_\_

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P.D. NO. **92411**

R/W DESIGNER CS  
R/W REVIEWER LW

**CENTERLINE PLAT**

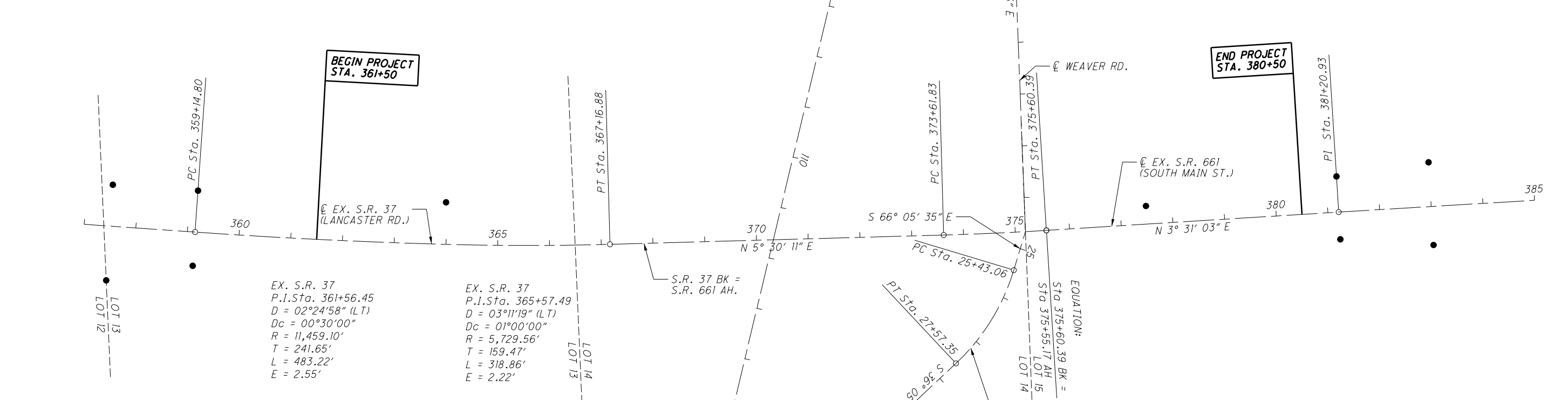
**LIC-661-0.02**

2 / 5

338  
341

# LOTS 13 & 15 OF THE 2ND RANGE, GRANVILLE TOWNSHIP, 3RD QUARTER, T2N, R13W, U.S.M.L. VILLAGE OF GRANVILLE, GRANVILLE TOWNSHIP LICKING COUNTY, OHIO

MONUMENT TABLE						
S.R. 37		PROJECT COORDINATES SEE SURVEY CERTIFICATION		MONUMENTS TO BE SET DURING CONSTRUCTION	R/W MON. EXPECTED TO BE DISTURBED	
STATION	OFFSET	NORTH (Y)	EAST (X)	REFERENCE MONUMENT	R/W MON.	ITEM 623.05
STA. 357+50	80' LT.	748,612.5243	1,962,364.7776	1		TYPE A, RM 1.1
STA. 357+50	105' RT.	748,576.8827	1,962,546.3135	1		TYPE A, RM 1.1
PC STA. 359+14.80	80.27' LT.	748,774.2882	1,962,396.2663	1		TYPE A, RM 1.1
PC STA. 359+14.80	65.29' RT.	748,746.2455	1,962,539.0983	1		TYPE A, RM 1.1
PCC STA. 363+98.02	81.20' LT.	749,247.0850	1,962,477.8314	1		TYPE A, RM 1.1
<b>S.R. 661</b>						
STA. 377+50	35' LT.	750,587.7128	1,962,651.9762	1		TYPE A, RM 1.1
PI STA. 381+20.93	68.97' LT.	750,960.0282	1,962,640.8289	1		TYPE A, RM 1.1
PI STA. 381+20.93	52.67' RT.	750,952.5649	1,962,762.2430	1		TYPE A, RM 1.1
STA. 383+00	85.41' LT.	751,139.9474	1,962,635.8445	1		TYPE A, RM 1.1
STA. 383+00	74.44' RT.	751,129.7569	1,962,795.3740	1		TYPE A, RM 1.1
TOTAL CARRIED TO GENERAL SUMMARY SHEET				10		



EX. S.R. 37  
P.I. Sta. 361+56.45  
D = 02°24'58" (LT)  
Dc = 00°30'00"  
R = 11,459.10'  
T = 241.65'  
L = 483.22'  
E = 2.55'

EX. S.R. 37  
P.I. Sta. 365+57.49  
D = 03°11'19" (LT)  
Dc = 01°00'00"  
R = 5,729.56'  
T = 159.47'  
L = 318.86'  
E = 2.22'

I, Luke Walker, P. S. have conducted a survey of the existing conditions for the Ohio Department of Transportation in November, 2017. The results of that survey are contained herein.

Basis of bearings and geometry as observed in 2018 are based on NAD83 (2011) State Plane Coordinate System Grid, Ohio South Zone 3402 Orthometric elevations are based on NAVD88, Geoid12A.

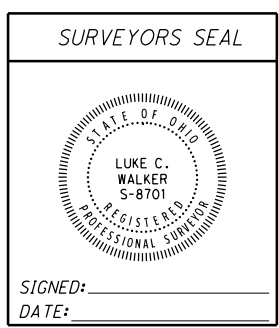
As a part of this project I have reestablished the locations of the existing property lines and centerline of existing Right of Way for property takes contained herein.

As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein.

As a part of this work I have set monuments at the proposed property corners, and other points shown herein. The iron pins and caps will be 3/4" x 30" rebar with aluminum cap stamped "ODOT R/W District 5". All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "A Minimum Standards for Boundary Surveys in the State of Ohio" unless so noted.

The words I and my as used herein are to mean that either myself or someone working under my direct supervision.

\_\_\_\_\_  
Luke Walker, Professional Surveyor #8701  
Date: \_\_\_\_\_



RECEIVED \_\_\_\_\_, 20\_\_\_\_  
RECORDED \_\_\_\_\_, 20\_\_\_\_  
BOOK \_\_\_\_\_ PAGE \_\_\_\_\_  
\_\_\_\_\_  
COUNTY RECORDER

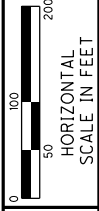
- MONUMENT LEGEND**
- ☐ EXISTING R/W MONUMENT BOX
  - ▣ PROPOSED R/W MONUMENT BOX
  - ⊙ EXISTING CONCRETE MONUMENT
  - PROPOSED CONCRETE MONUMENT
  - ⊗ RAILROAD SPIKE FOUND
  - ✦ RAILROAD SPIKE SET
  - I.R.F. IRON PIN FOUND
  - ⊙ I.R.F. IRON PIN FOUND W/ ID CAP
  - I.R.S. IRON PIN SET W/ ID CAP
  - ⊙ I.R.F. IRON PIPE FOUND
  - ⊙ I.R.S. IRON PIPE SET
  - P.K.F. P.K. NAIL FOUND
  - P.K.S. P.K. NAIL SET

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.

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**LIC-661-0.02**  
**LOTS 13 & 15 OF THE 2ND RANGE,**  
**GRANVILLE TOWNSHIP,**  
**3RD QUARTER T2N, R13W, U.S.M.L.**  
**VILLAGE OF GRANVILLE,**  
**GRANVILLE TOWNSHIP,**  
**LICKING COUNTY, OHIO**



P.D. NO. **92411**

R/W DESIGNER CS/CW R/W REVIEWER LW

**PROPERTY MAP**

**LIC-661-0.02**

3 / 5  
 339  
 341

**OWNERSHIP NAME AND NUMBER**

1 - O'NEILL INVESTMENTS LLC, AN OHIO LIMITED LIABILITY COMPANY -  
 A - P.N. 019-042954-00.001, B - 019-042720-00.000,  
 C - 019-042726-00.000, D - 019-042732-00.000,  
 E - 019-042714-00.000, F - 019-042708-00.000,  
 G - 019-041784-00.001

2 - ROBERT E. O'NEILL & ALEXA M. ROBINSON-O'NEILL -  
 P.N. 019-042702-00.000

3 - 1919 LANCASTER ROAD, LLC, AN OHIO LIMITED LIABILITY COMPANY  
 P.N. 020-043698-00.000

4 - WILLIAM DOUGLAS ROBERTSON, MICHAEL ERIC ROBERTSON,  
 JOEL DAVID ROBERTSON, RANDALL BRUCE ROBERTSON  
 P.N. 019-049146-00.000

5 - MILL DISTRICT, LLC, AN OHIO LIMITED LIABILITY COMPANY  
 P.N. 020-049782-00.000

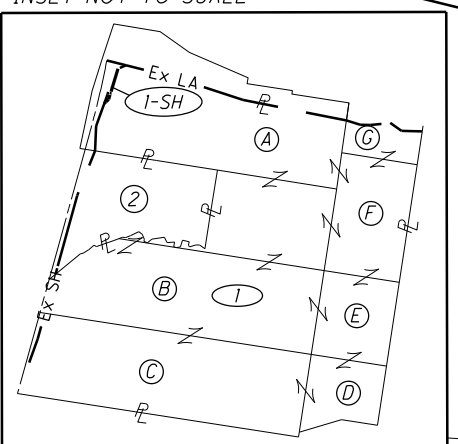
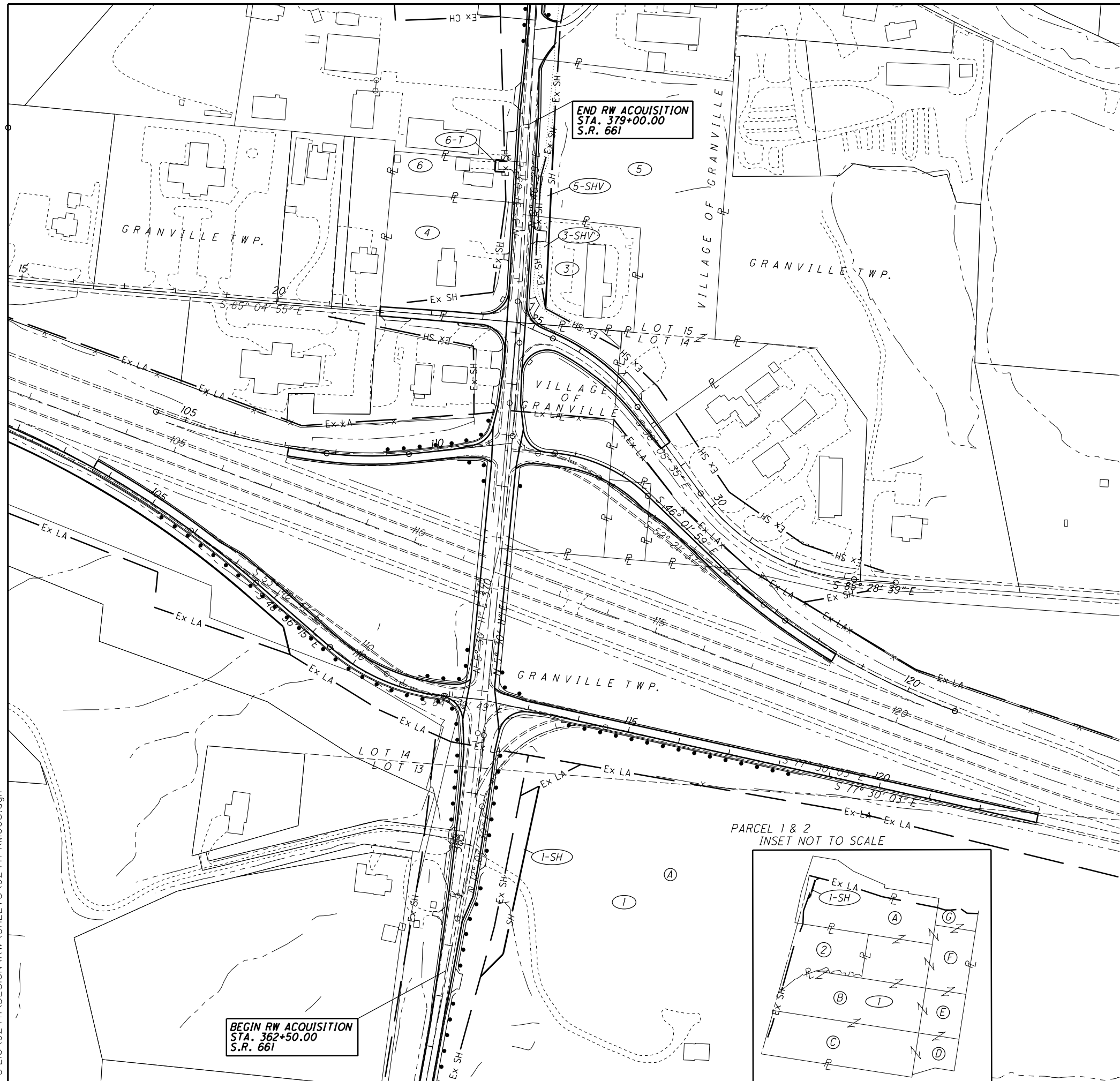
6 - LANCASTER ROAD PROPERTIES, LLC, AN OHIO LIMITED LIABILITY COMPANY  
 P.N. 019-046824-00.000

**STRUCTURE KEY**

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

REV. BY	DATE	DESCRIPTION

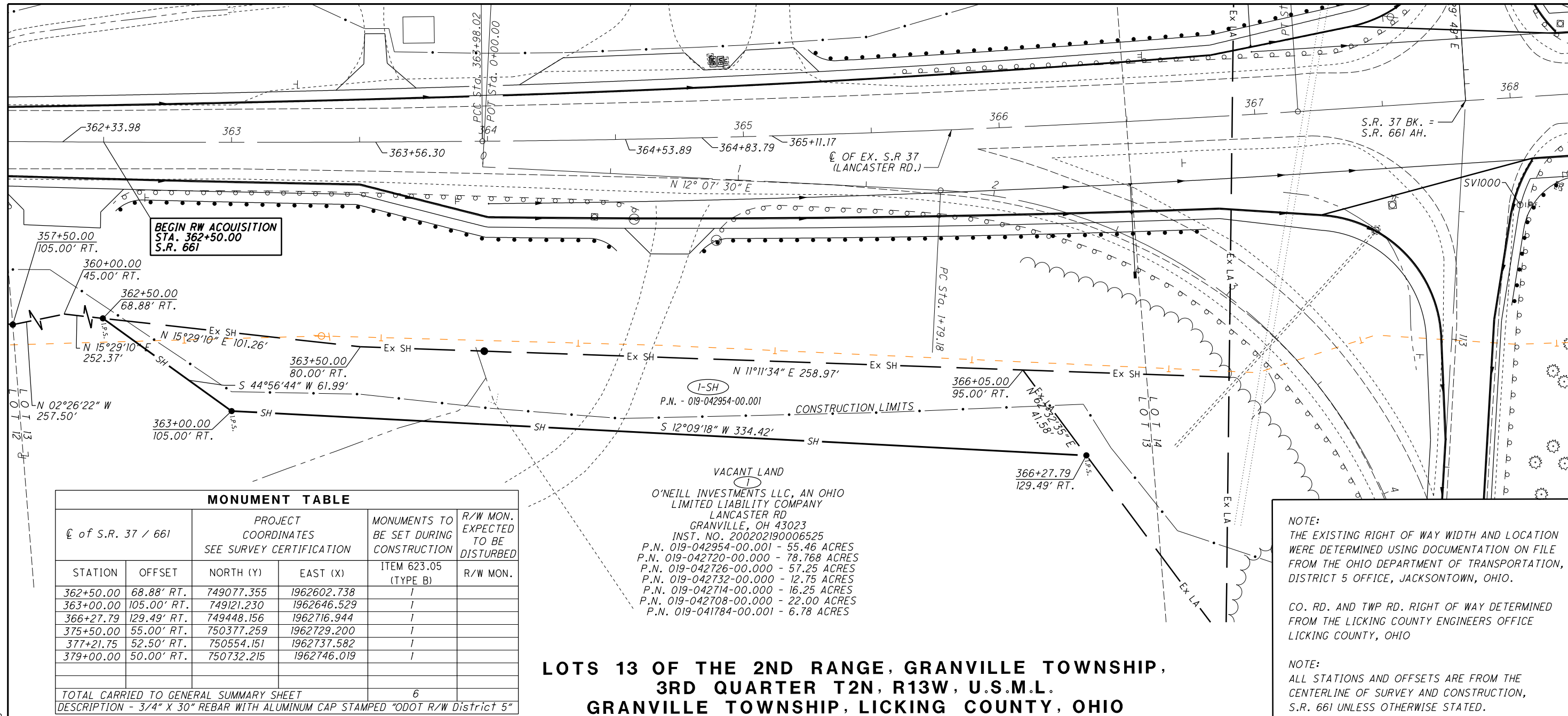
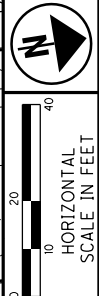
DATE COMPLETED : 9/11/18



BEGIN RW ACQUISITION  
 STA. 362+50.00  
 S.R. 661

END RW ACQUISITION  
 STA. 379+00.00  
 S.R. 661

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**BEGIN RW ACQUISITION  
STA. 362+50.00  
S.R. 661**

MONUMENT TABLE					
€ of S.R. 37 / 661		PROJECT COORDINATES SEE SURVEY CERTIFICATION		MONUMENTS TO BE SET DURING CONSTRUCTION	R/W MON. EXPECTED TO BE DISTURBED
STATION	OFFSET	NORTH (Y)	EAST (X)	ITEM 623.05 (TYPE B)	R/W MON.
362+50.00	68.88' RT.	749077.355	1962602.738	1	
363+00.00	105.00' RT.	749121.230	1962646.529	1	
366+27.79	129.49' RT.	749448.156	1962716.944	1	
375+50.00	55.00' RT.	750377.259	1962729.200	1	
377+21.75	52.50' RT.	750554.151	1962737.582	1	
379+00.00	50.00' RT.	750732.215	1962746.019	1	
TOTAL CARRIED TO GENERAL SUMMARY SHEET				6	
DESCRIPTION - 3/4" X 30" REBAR WITH ALUMINUM CAP STAMPED "ODOT R/W District 5"					

VACANT LAND  
O'NEILL INVESTMENTS LLC, AN OHIO LIMITED LIABILITY COMPANY  
LANCASTER RD  
GRANVILLE, OH 43023  
INST. NO. 200202190006525  
P.N. 019-042954-00.001 - 55.46 ACRES  
P.N. 019-042720-00.000 - 78.768 ACRES  
P.N. 019-042726-00.000 - 57.25 ACRES  
P.N. 019-042732-00.000 - 12.75 ACRES  
P.N. 019-042714-00.000 - 16.25 ACRES  
P.N. 019-042708-00.000 - 22.00 ACRES  
P.N. 019-041784-00.001 - 6.78 ACRES

NOTE:  
THE EXISTING RIGHT OF WAY WIDTH AND LOCATION WERE DETERMINED USING DOCUMENTATION ON FILE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5 OFFICE, JACKSONTOWN, OHIO.

CO. RD. AND TWP RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEERS OFFICE LICKING COUNTY, OHIO

NOTE:  
ALL STATIONS AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 661 UNLESS OTHERWISE STATED.

**LOTS 13 OF THE 2ND RANGE, GRANVILLE TOWNSHIP,  
3RD QUARTER T2N, R13W, U.S.M.L.  
GRANVILLE TOWNSHIP, LICKING COUNTY, OHIO**

**TOTAL NUMBER OF :**  
4 OWNERSHIPS 0 TOTAL TAKES  
4 PARCELS 0 OWNERSHIPS W/ STRUCTURES INVOLVED

RECORD AREA - TOTAL PRO - NET TAKE = NET RESIDUE

\* DENOTES RIGHT OF WAY ENCROACHMENT

**ALL AREAS IN ACRES**

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED	
											LEFT	RIGHT			INSTRUMENT NUMBER	
1-SH	O'NEILL INVESTMENTS LLC, AN OHIO LIMITED LIABILITY COMPANY	2	200202190006525	019-042954-00.001	55.46	19.45	0.238	0.000	0.238	NO			STATE	LOTS 13 & 14		
					78.768	0.443	0.000	0.000	0.000	NO			LOTS 11 & 12; NO RW REQUIRED			
					57.25	0.791	0.000	0.000	0.000	NO			NO RW REQUIRED			
					12.75	0.000	0.000	0.000	0.000	NO			LOT 9; NO RW REQUIRED			
					16.25	0.000	0.000	0.000	0.000	NO			LOT 9; NO RW REQUIRED			
					22.00	0.000	0.000	0.000	0.000	NO			LOT 9; NO RW REQUIRED			
					6.78	0.500	0.000	0.000	0.000	NO			LOT 9; NO RW REQUIRED			
TOTAL				249.258	21.184	0.238	0.000	0.238	NO		227.836					
2	ROBERT E. O'NEILL & ALEXA M. ROBINSON-O'NEILL	2	201703030004206	019-042702-00.000	28.703	1.894	0.000	0.000	0.000	NO			STATE	NO TAKE		

- 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.P.F. IRON PIN FOUND
  - I.P.F. IRON PIN FOUND W/ ID CAP
  - I.P.S. IRON PIN SET W/ ID CAP
  - I.P.F. IRON PIPE FOUND
  - I.P.S. IRON PIPE SET
  - P.K.F. P.K. NAIL FOUND
  - P.K.S. P.K. NAIL SET

**PROJECT GRID COORDINATES - US SURVEY FEET**

C/L OF ROW U.S.R 661

NAME	STATION	OFFSET (ft)	RT/LT	NORTH (ft)	EAST (ft)	ELEVATION (ft)	DESCRIPTION
SV1	371+90.12	265.24'	LT	750047.684	1962378.854	927.236	1" REBAR WITH ALUM. ODOT CAP
SV2	368+76.69	18.61'	LT	749712.046	1962594.299	953.975	1" REBAR WITH ALUM. ODOT CAP
SV3	369+22.46	450.94'	RT	749712.575	1963066.069	921.861	1" REBAR WITH ALUM. ODOT CAP
SV1000	368+01.16	41.94'	RT	749631.061	1962647.321	957.992	5/8" REBAR WITH ODOT CAP
SV1001	371+65.16	21.71'	RT	749995.325	1962662.098	941.714	5/8" REBAR WITH ODOT CAP

NOTE: ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

LEGEND:  
SH = STANDARD HIGHWAY EASEMENT  
LA = LIMITED ACCESS  
T = TEMPORARY EASEMENT

**GRANTEE:**  
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION UNLESS OTHERWISE SHOWN.

REV. BY	DATE	DESCRIPTION

DATE COMPLETED : 9/11/18

PID NO. 92411

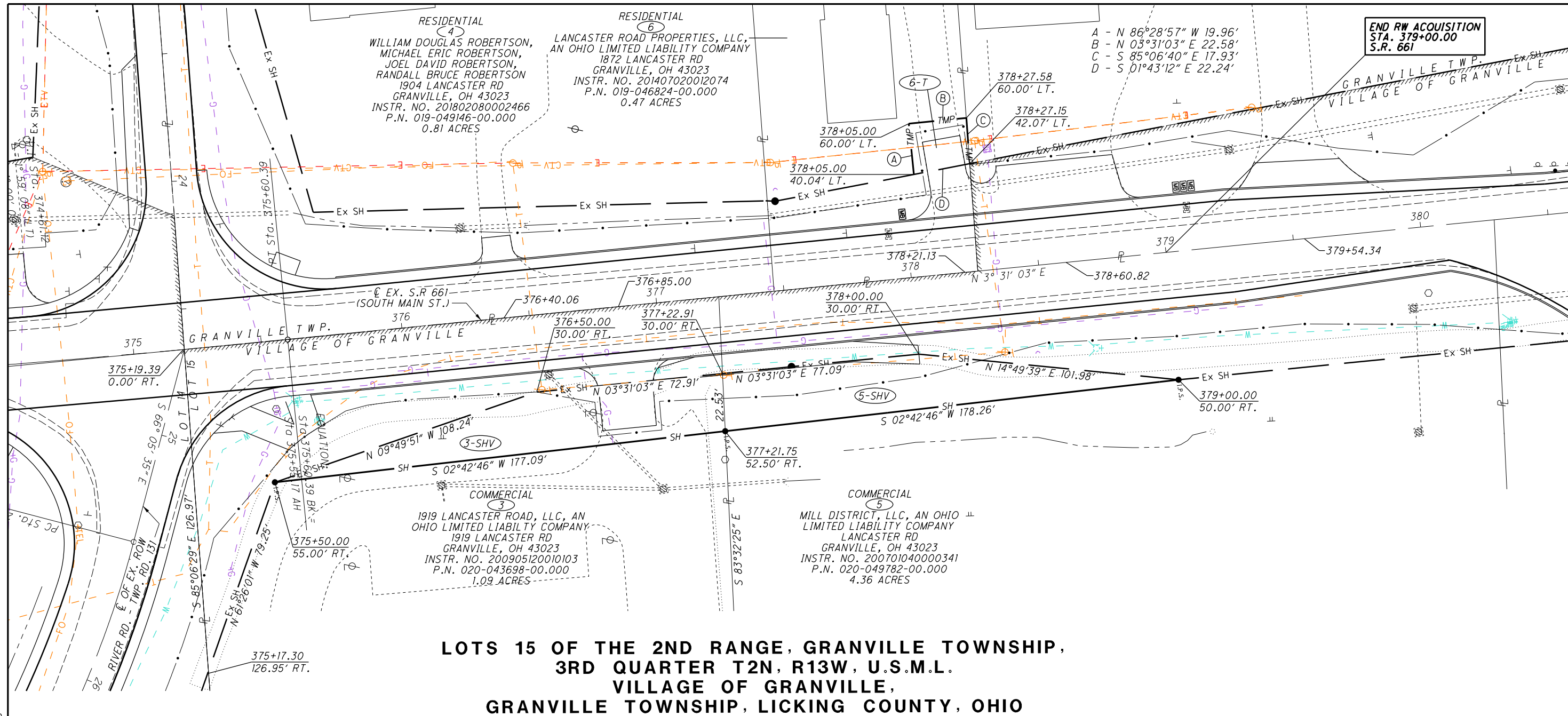
**RIGHT OF WAY DETAIL SHEET  
STA. 362+00 TO STA. 368+00**

LIC-661-0.02

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341

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**LOTS 15 OF THE 2ND RANGE, GRANVILLE TOWNSHIP,  
3RD QUARTER T2N, R13W, U.S.M.L.  
VILLAGE OF GRANVILLE,  
GRANVILLE TOWNSHIP, LICKING COUNTY, OHIO**

**TOTAL NUMBER OF :** RECORD AREA - TOTAL PRO - NET TAKE = NET RESIDUE \* DENOTES RIGHT OF WAY ENCROACHMENT  
SEE SHEET 4

**ALL AREAS IN ACRES**

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED	
											LEFT	RIGHT			INSTRUMENT NUMBER	
3-SHV	1919 LANCASTER ROAD, LLC, AN OHIO LIMITED LIABILITY COMPANY	3	200905120010103	020-043698-00.000	1.09	0.219	0.067	0.000	0.067	NO		0.804	STATE	ACQUIRED IN THE NAME OF THE VILLAGE OF GRANVILLE		
4	ROBERT E. O'NEILL & MICHAEL ERIC ROBERTSON & JOEL DAVID ROBERTSON & RANDALL BRUCE ROBERTSON	3	201802080002466	019-049146-00.000	0.81	0.000	0.000	0.000	0.000	NO			STATE	NO TAKE		
5-SHV	MILL DISTRICT, LLC, AN OHIO LIMITED LIABILITY COMPANY	3	200701040000341	020-049782-00.000	4.36	0.290	0.064	0.000	0.064	NO		4.006	STATE	ACQUIRED IN THE NAME OF THE VILLAGE OF GRANVILLE		
6-T	LANCASTER ROAD PROPERTIES, LLC, AN OHIO LIMITED LIABILITY COMPANY	3	201407020012074	019-046824-00.000	0.47	0.070	0.010	0.000	0.010	NO			STATE	TO CONSTRUCT DRIVE AND COMPLETE GRADING		

- MONUMENT LEGEND**
- ☐ EXISTING R/W MONUMENT BOX
  - ▣ PROPOSED R/W MONUMENT BOX
  - ⊙ EXISTING CONCRETE MONUMENT
  - PROPOSED CONCRETE MONUMENT
  - ⚡ RAILROAD SPIKE FOUND
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CO. RD. AND TWP RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEERS OFFICE LICKING COUNTY, OHIO

**NOTE:**  
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**NOTE:** ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

**LEGEND:**  
SH = STANDARD HIGHWAY EASEMENT  
LA = LIMITED ACCESS  
T = TEMPORARY EASEMENT

**GRANTEE:**  
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION UNLESS OTHERWISE SHOWN.

REV. BY	DATE	DESCRIPTION

DATE COMPLETED : 9/11/18

  
 HORIZONTAL SCALE IN FEET  
 0 10 20  
 PID NO. **92411**  
 CALCULATED CS/CW CHECKED LW  
**RIGHT OF WAY DETAIL SHEET**  
**STA. 375+00 TO STA. 380+00**  
 LIC-661-0.02  
 5 / 5  
 341  
 341

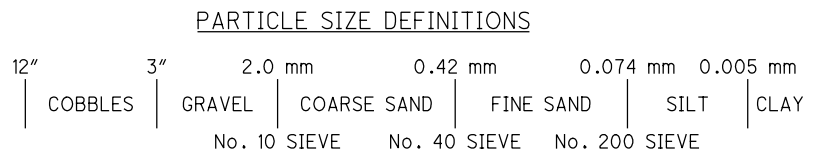
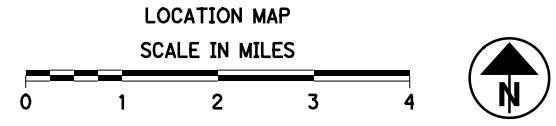
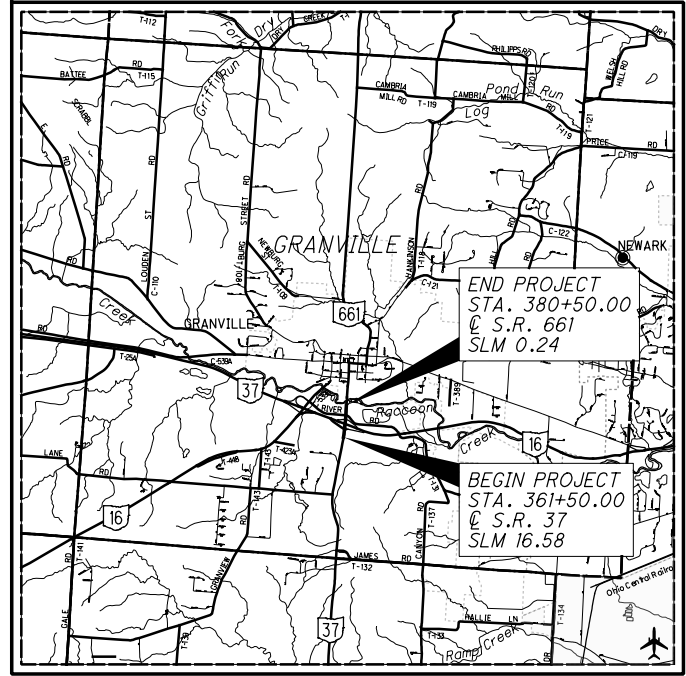
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LEGEND		ODOT CLASS	CLASSIFIED MECH./VISUAL	
DESCRIPTION				
	GRAVEL AND/OR STONE FRAGMENTS	A-1-a	2	2
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	18	22
	COARSE AND FINE SAND	A-3a	1	2
	GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4	11	10
	GR. AND/OR ST. FRAGS. WITH SAND, SILT & CLAY	A-2-6	6	3
	SANDY SILT	A-4a	27	43
	SILT	A-4b	2	-
	SILT AND CLAY	A-6a	11	15
	SILTY CLAY	A-6b	4	6
	CLAY	A-7-6	1	1
	<b>TOTAL</b>		<b>83</b>	<b>104</b>
	BOULDERY ZONE	VISUAL		
	SHALE	VISUAL		
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
	PROJECT 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.			
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
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.			
X/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X/D" = NUMBER OF BLOWS FOR D" OF PENETRATION AT REFUSAL.			
W	INDICATES FREE WATER ELEVATION.			
W	INDICATES STATIC WATER ELEVATION.			
●	INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.			
⊖	INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.			
LOI	INDICATES ORGANIC CONTENT BY LOSS ON IGNITION, AASHTO T267.			
NP	INDICATES A NON-PLASTIC SAMPLE.			
NQ	"N" SERIES ROCK CORE BARREL OF "Q" WIRELINE BIT SIZE.			
SO	INDICATES SULFATE CONTENT IN PARTS PER MILLION.			
SS	INDICATES A SPLIT SPOON SAMPLE.			
TR	INDICATES TOP OF ROCK ELEVATION.			

LEGEND (CONT.)		ODOT CLASS	CLASSIFIED MECH./VISUAL	
HISTORIC BORING DESCRIPTION				
	GRAVEL AND/OR STONE FRAGMENTS	A-1-a	12	1
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	11	-
	GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4	6	1
	SANDY SILT	A-4a	24	-
	SILT	A-4b	7	1
	SILT AND CLAY	A-6a	4	-
	<b>TOTAL</b>		<b>64</b>	<b>3</b>
	HISTORIC BORING LOCATION - PLAN VIEW.			
N	INDICATES STANDARD PENETRATION RESISTANCE.			
Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): Y = NUMBER OF BLOWS FOR FIRST 6 INCHES (UNCORRECTED). Z = NUMBER OF BLOWS FOR SECOND AND THIRD 6 INCHES (UNCORRECTED).			
*	INDICATES BORING REFUSAL.			
HA	INDICATES A HAND AUGER SAMPLE.			

INDEX OF SHEETS								
GENERAL INFORMATION (CONT.), SHEET 2								
SUMMARY OF SOIL TEST DATA, SHEETS 3 & 4								
LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE VIEW SHEET	CROSS-SECTION SHEET(S)	CUT MAX.	FILL EMB. MAX.	STRUCTURES INCLUDED		
						BRIDGE NO.	SFN	
S.R. 37 360+00 368+50 362+50 & 365+50 367+00	5	5	-	<1 FT	1 FT			
S.R. 661 368+50 372+50 372+50 383+00 373+50 & 375+50 377+50 & 381+00	6	7	-	-	3 FT	LIC-661-0003	4506333 (P)	
RAMP E 104+60 111+32 107+50	9	9	-	<1 FT	<1 FT			
RAMP F 110+63 120+80 114+50 & 118+42.89	10	10	-	<1 FT	10 FT			
RAMP G 102+40 112+62 104+00 108+50 & 110+50	11	11	-	<1 FT	2 FT			
RAMP H 112+07 123+40 115+00 & 119+00 123+00	12	12	-	<1 FT	<1 FT			
WEAVER DR. 14+80 24+65 23+00	13	13	-	-	<1 FT			
RIVER RD. 24+65 30+00 26+50	14	14	-	<1 FT	<1 FT			

BORING LOGS, SHEETS 24-34



RECON. - AAG, AMJ 12/05/17  
 DRILLING - KAM 12/13/17 - 01/29/18  
 CEM 02/05-06/18  
 KPJ 02/07-08/18  
 DRAWN - ARR 10/19  
 REVIEWED - AAG 10/19

DESIGN AGENCY  
 OHIO DEPARTMENT OF TRANSPORTATION  
 OFFICE OF GEOTECHNICAL ENGINEERING  
 1980 W. BROAD ST. COLUMBUS, OH 43223

PID NO.  
**92411**

**SOIL PROFILE**

LIC-37 / 661 -  
 16.59 / 0.00

1 / 34









SUMMARY OF SOIL TEST DATA

EXPLOR. ID	FROM - TO	SAMPLE ID	N60	RAMP G							% WC	PI	PL	LL	CLAY %	SILT %	FS %	CS %	GR %	HP %	tsf	ODOT CLASS (GI)	ppm SO4				
				REC %	CS %	FS %	SILT %	CLAY %	LL	PI														PL			
B-009-0-17	1.00 - 2.50	SS-1A	33	67	54	11	10	18	7	24	19	5	14									A-1-b (0)	<100				
STA. 103+99, 2' RT.	2.50 - 4.00	SS-2A	94	100	- SHALE, GRAY, HIGHLY TO MODERATELY WEATHERED, VERY WEAK													14								Rock (VISUAL)	-
LATITUDE = 40.059281	4.00 - 4.10	SS-3A	-	83	- SHALE, GRAY, HIGHLY TO MODERATELY WEATHERED, VERY WEAK													9								Rock (VISUAL)	-
LONGITUDE = -82.523659																											
B-010-0-17	1.00 - 2.50	SS-1A	17	67	45	13	12	20	10	30	23	7	16									A-2-4 (0)	140				
STA. 108+34, 5' RT.	2.50 - 4.00	SS-2A	33	78	55	12	11	14	8	23	20	3	14									A-1-b (0)	<100				
LATITUDE = 40.058563	4.00 - 5.50	SS-3A	33	78	SAME AS SS-2A													9								A-1-b (VISUAL)	-
LONGITUDE = -82.522421	5.50 - 7.00	SS-4A	68	22	SAME AS SS-2A													10								A-1-b (VISUAL)	-
B-011-0-17	1.50 - 3.00	SS-1A	12	50	10	8	9	40	33	34	19	15	20									A-6a (10)	120				
STA. 110+38, 7' RT.	3.00 - 4.50	SS-2A	18	56	SAME AS SS-1A													17								A-6a (VISUAL)	-
LATITUDE = 40.058214	4.50 - 6.00	SS-3A	18	11	SAME AS SS-1A													20								A-6a (VISUAL)	-
LONGITUDE = -82.521849	6.00 - 7.50	SS-4A	13	100	32	15	22	17	14	23	16	7	17									A-2-4 (0)	110				

FOR BORINGS B-010-0-17 & B-011-0-17, SEE BORING LOGS ON SHEETS 33 & 34.

SUMMARY OF SOIL TEST DATA

EXPLOR. ID	FROM - TO	SAMPLE ID	N60	RAMP H							% WC	PI	PL	LL	CLAY %	SILT %	FS %	CS %	GR %	HP %	tsf	ODOT CLASS (GI)	ppm SO4				
				REC %	CS %	FS %	SILT %	CLAY %	LL	PI														PL			
B-012-0-17	1.00 - 2.50	SS-1A	18	78	44	17	13	18	8	NP	NP	10	10									A-2-4 (0)	<100				
STA. 115+00, 2' RT.	2.50 - 4.00	SS-2A	10	100	2.50	35	11	14	22	18	30	16	14									A-6a (2)	140				
LATITUDE = 40.057915	4.00 - 5.50	SS-3A	30	100	4.00																	A-6a (VISUAL)	-				
LONGITUDE = -82.520041	5.50 - 7.00	SS-4A	32	100	4.50																	A-6a (VISUAL)	-				
B-013-0-17	1.00 - 2.50	SS-1A	17	44	59	13	8	12	8	23	17	6	13									A-1-b (0)	<100				
STA. 119+00, 18' LT.	2.50 - 4.00	SS-2A	33	100	43	13	11	17	16	29	16	13	12									A-2-6 (1)	190				
LATITUDE = 40.057731	4.00 - 5.50	SS-3A	35	100	SAME AS SS-2A													13								A-2-6 (VISUAL)	-
LONGITUDE = -82.518629	5.50 - 7.00	SS-4A	28	100	SAME AS SS-2A													19								A-2-6 (VISUAL)	-
B-014-0-17	1.00 - 2.50	SS-1A	17	78	58	6	6	18	12	29	17	12	14									A-2-6 (0)	160				
STA. 123+04, 8' RT.	2.50 - 4.00	SS-2A	22	100	3.00	16	0	3	44	37	39	19	23									A-6b (12)	200				
LATITUDE = 40.057420	4.00 - 5.50	SS-3A	15	100	SAME AS SS-4A													15								A-2-6 (VISUAL)	-
LONGITUDE = -82.517244	5.50 - 7.00	SS-4A	9	100	41	10	17	15	17	28	16	12	22									A-2-6 (0)	<100				

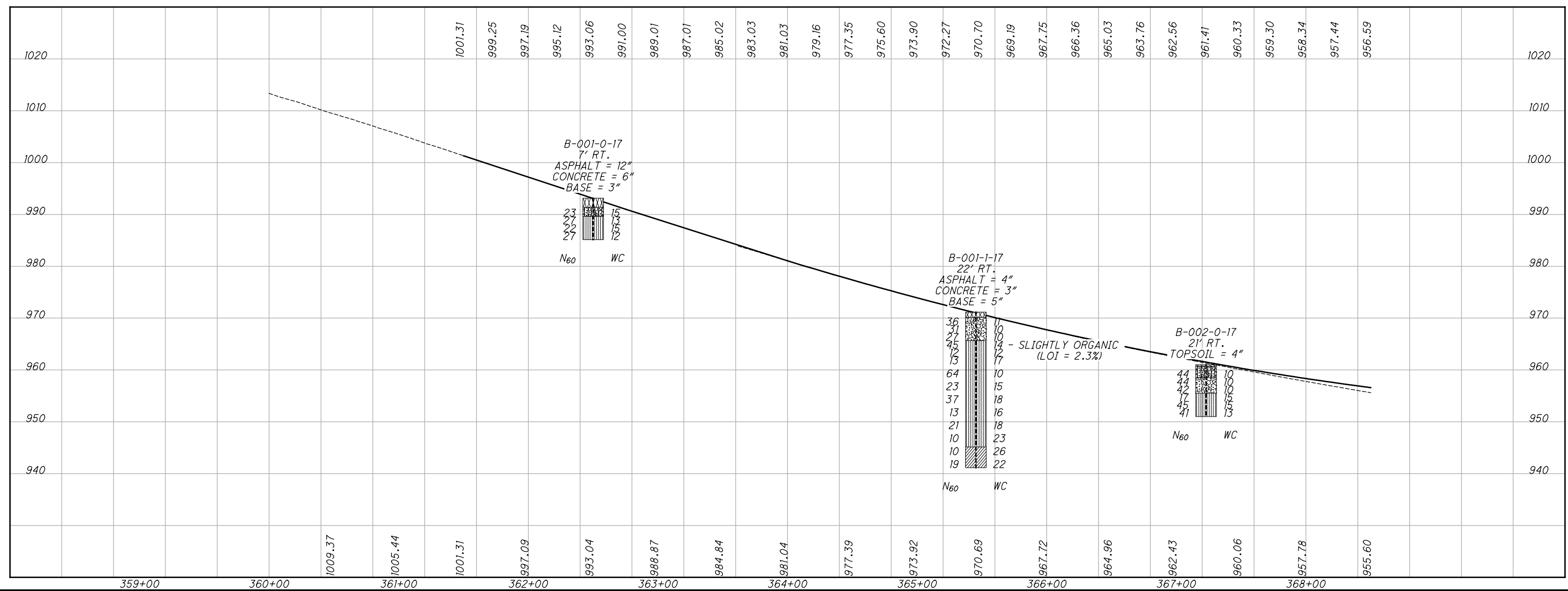
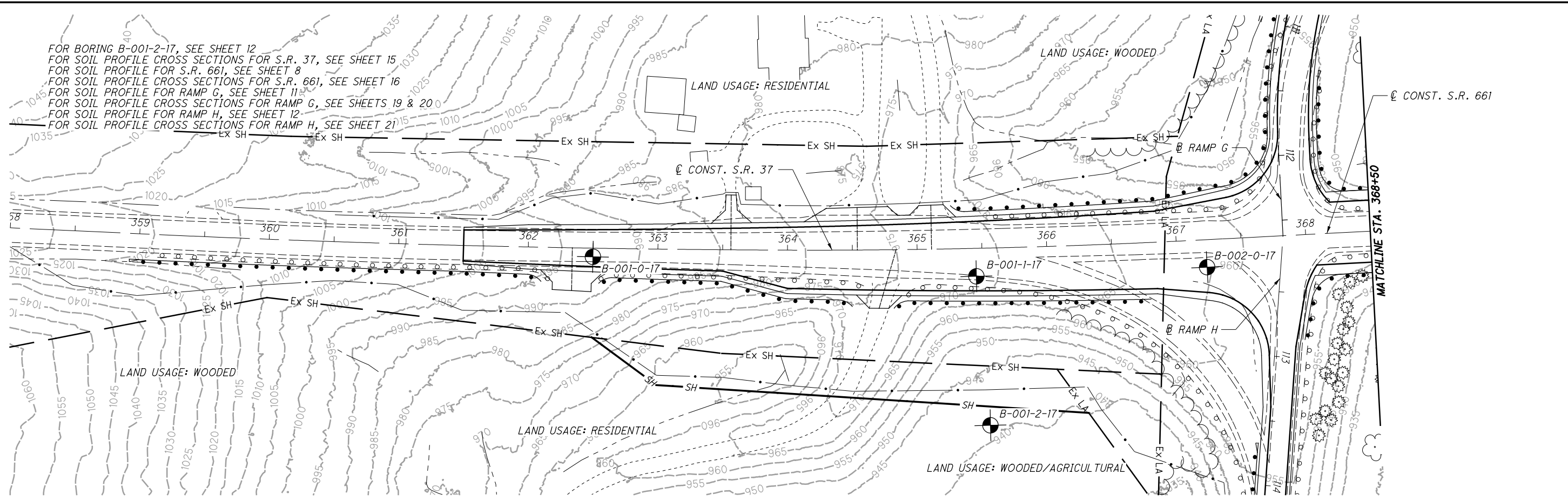
SUMMARY OF SOIL TEST DATA

EXPLOR. ID	FROM - TO	SAMPLE ID	N60	RAMP E							% WC	PI	PL	LL	CLAY %	SILT %	FS %	CS %	GR %	HP %	tsf	ODOT CLASS (GI)	ppm SO4
				REC %	CS %	FS %	SILT %	CLAY %	LL	PI													
B-015-0-17	1.00 - 2.50	SS-1A	19	100	4.00	26	5	5	41	23	30	11	20									A-6a (6)	210
STA. 107+45, 8' LT.	2.50 - 4.00	SS-2A	15	100	2.50	23	2	3	45	27	36	17	25									A-6b (10)	350
LATITUDE = 40.059444	4.00 - 5.50	SS-3A	9	100	2.00																	A-6b (VISUAL)	-
LONGITUDE = -82.522265	5.50 - 7.00	SS-4A	8	100	1.00																	A-6b (VISUAL)	-
B-016-0-17	1.00 - 2.50	SS-1A	19	22	1.50																	A-6a (VISUAL)	-
STA. 114+52, 10' RT.	2.50 - 4.00	SS-2A	28	67	4.50	39	11	11	21	18	30	12	12									A-6a (1)	170
LATITUDE = 40.058993	4.00 - 5.50	SS-3A	36	89	4.50	39	9	10	24	18	28	11	13									A-6a (2)	190
LONGITUDE = -82.519702	5.50 - 7.00	SS-4A	40	100	4.50																	A-6a (VISUAL)	-
B-017-0-17	1.00 - 2.50	SS-1A	18	56	3.50																	A-4a (0)	-
STA. 118+36, 14' RT.	2.50 - 4.00	SS-2A	21	67	49	14	10	17	10	22	17	5	11									A-2-4 (0)	160
LATITUDE = 40.058316	4.00 - 5.50	SS-3A	22	100	3.50	15	4	22	39	20	25	18	19									A-2-4 (VISUAL)	-
LONGITUDE = -82.518645	5.50 - 7.00	SS-4A	26	78	62	10	8	14	6	NP	NP	10	10									A-4a (5)	310

SUMMARY OF SOIL TEST DATA

EXPLOR. ID	FROM - TO	SAMPLE ID	N60	WEAVER DR. RIVER RD.							% WC	PI	PL	LL	CLAY %	SILT %	FS %	CS %	GR %	HP %	tsf	ODOT CLASS (GI)	ppm SO4
				REC %	CS %	FS %	SILT %	CLAY %	LL	PI													
B-018-0-17	1.50 - 3.00	SS-1A	37	100	48	10	11	18	13	26	17	9	13									A-2-4 (0)	160
STA. 22+96, 5' LT.	3.00 - 4.50	SS-2A	17	100	2.50	33	8	12	30	17	25	8	14									A-4a (2)	<100
LATITUDE = 40.060163	4.50 - 6.00	SS-3A	13	89	3.00																	A-4a (VISUAL)	-
LONGITUDE = -82.521423	6.00 - 7.50	SS-4A	8	28	2.00																	A-4a (VISUAL)	-
B-019-0-17	1.00 - 2.50	SS-1B	24	78	42	17	10	17	14	29	16	13	13									A-2-6 (0)	<100
STA. 26+57, 5' LT.	2.50 - 4.00	SS-2A	21	56	4.00																	A-4a (VISUAL)	-
LATITUDE = 40.059869	4.00 - 5.50	SS-3A	14	100	3.00	30	6	11	32	21	27	10	17									A-4a (4)	140
LONGITUDE = -82.520209	5.50 - 7.00	SS-4A	10	44	3.50																	A-4a (VISUAL)	-

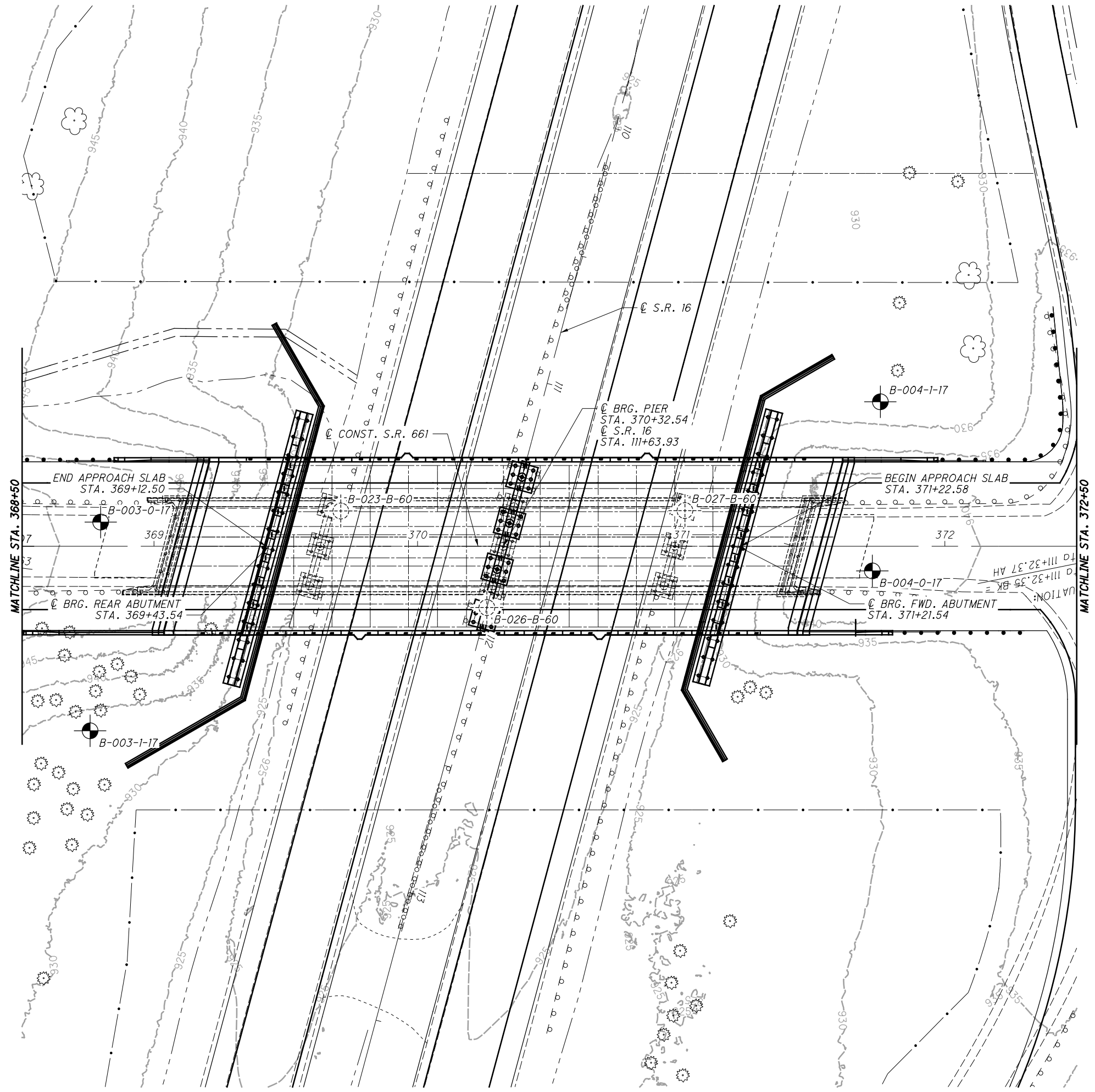
FOR BORING B-001-2-17, SEE SHEET 12  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 37, SEE SHEET 15  
 FOR SOIL PROFILE FOR S.R. 661, SEE SHEET 8  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE FOR RAMP G, SEE SHEET 11  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP G, SEE SHEETS 19 & 20  
 FOR SOIL PROFILE FOR RAMP H, SEE SHEET 12  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP H, SEE SHEET 21



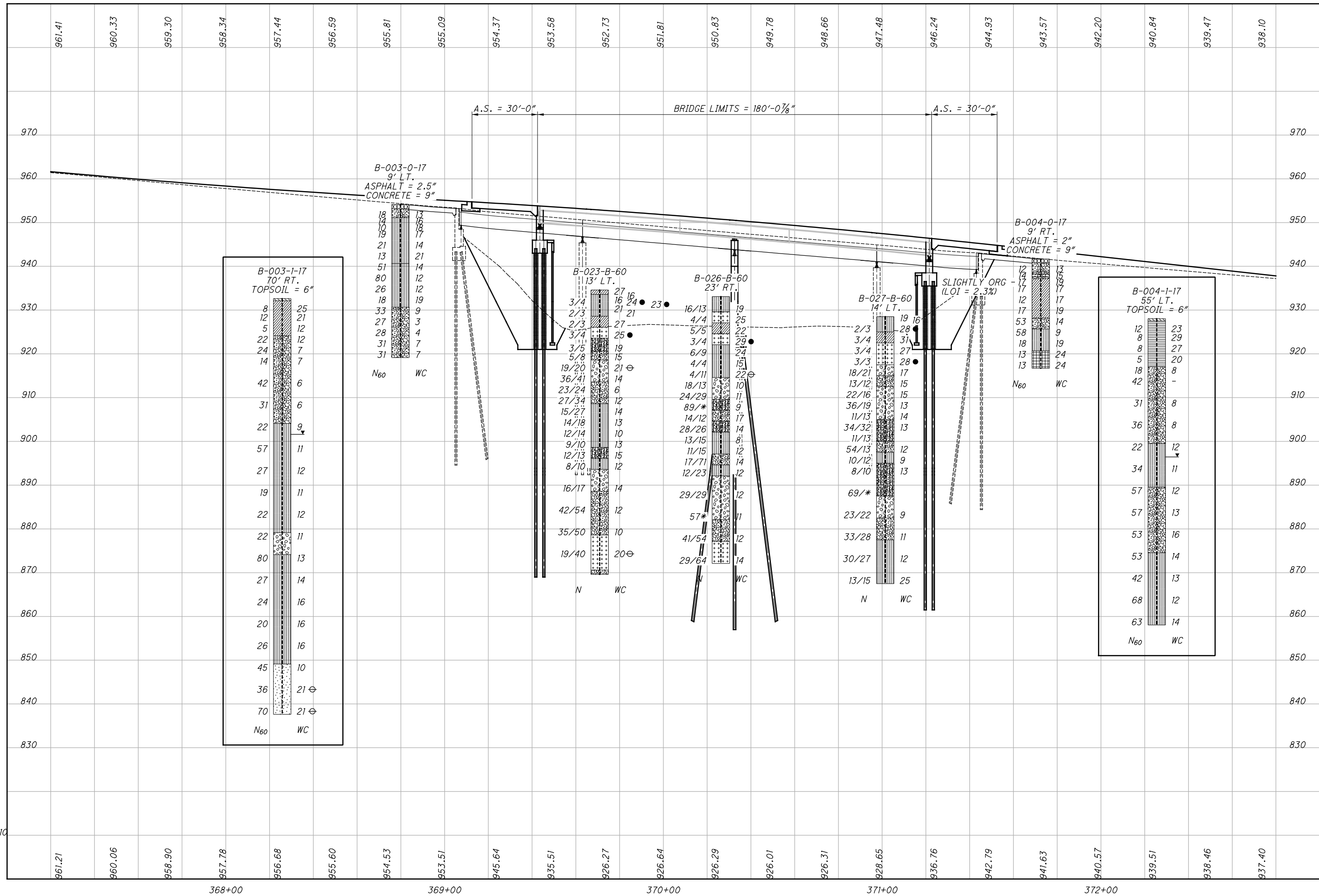
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 CHECKED: AAG

**SOIL PROFILE**  
**STA. 360+00 TO STA. 368+50 S.R. 37**  
 LIC-37 / 661-  
 16.59 / 0.00  
 5 / 34

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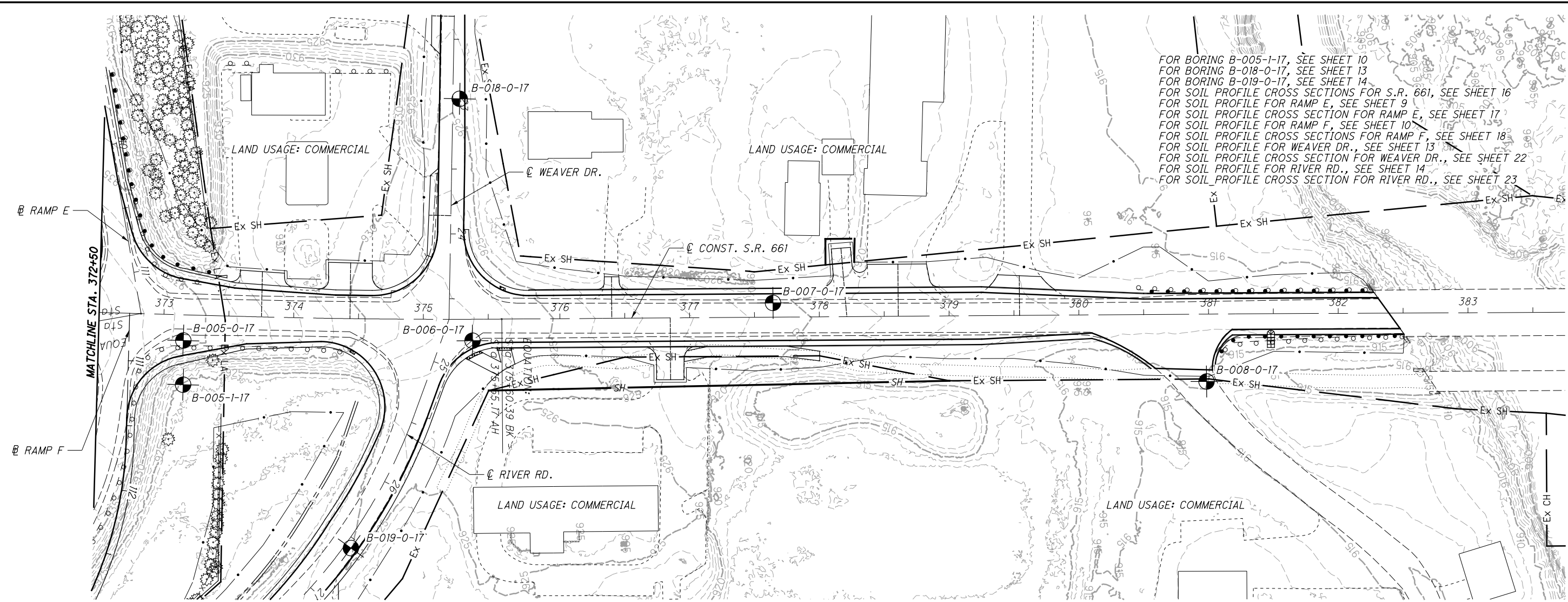
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CHECKED: AAG

**STRUCTURE FOUNDATION EXPLORATION**  
**BRIDGE NO. LIC-661-003 OVER S.R. 16**

**LIC-37 / 661-**  
**16.59 / 0.00**



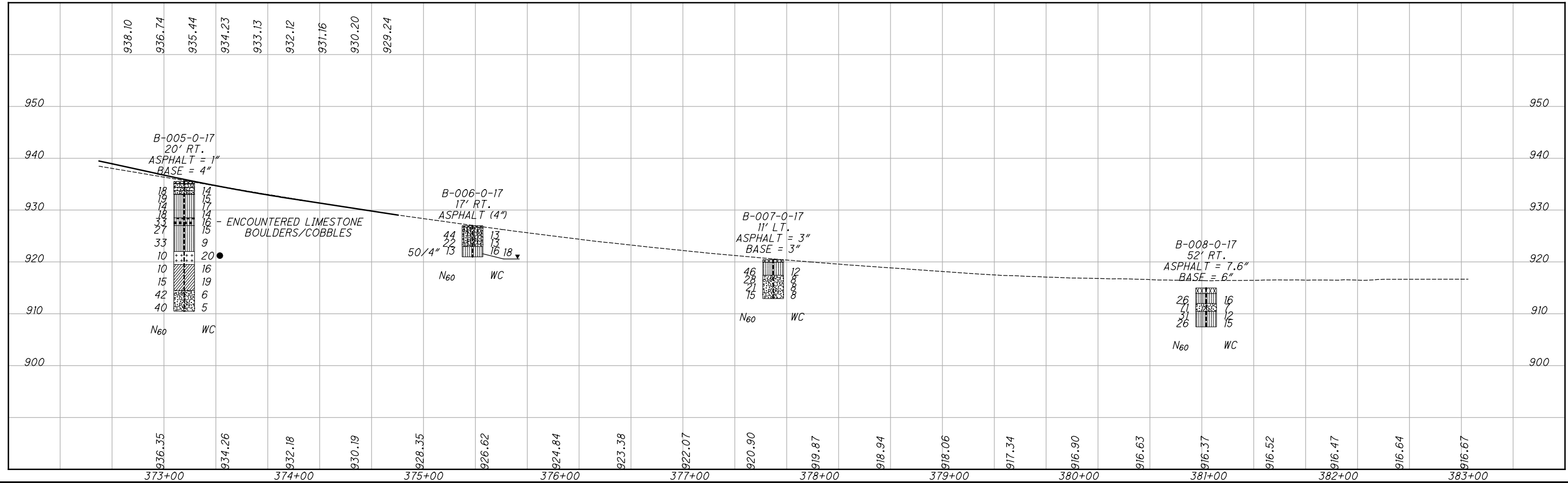
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FOR BORING B-005-1-17, SEE SHEET 10  
 FOR BORING B-018-0-17, SEE SHEET 13  
 FOR BORING B-019-0-17, SEE SHEET 14  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE CROSS SECTION FOR RAMP E, SEE SHEET 9  
 FOR SOIL PROFILE CROSS SECTION FOR RAMP F, SEE SHEET 17  
 FOR SOIL PROFILE FOR RAMP F, SEE SHEET 10  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP F, SEE SHEET 18  
 FOR SOIL PROFILE FOR WEAVER DR., SEE SHEET 13  
 FOR SOIL PROFILE CROSS SECTION FOR WEAVER DR., SEE SHEET 22  
 FOR SOIL PROFILE FOR RIVER RD., SEE SHEET 14  
 FOR SOIL PROFILE CROSS SECTION FOR RIVER RD., SEE SHEET 23



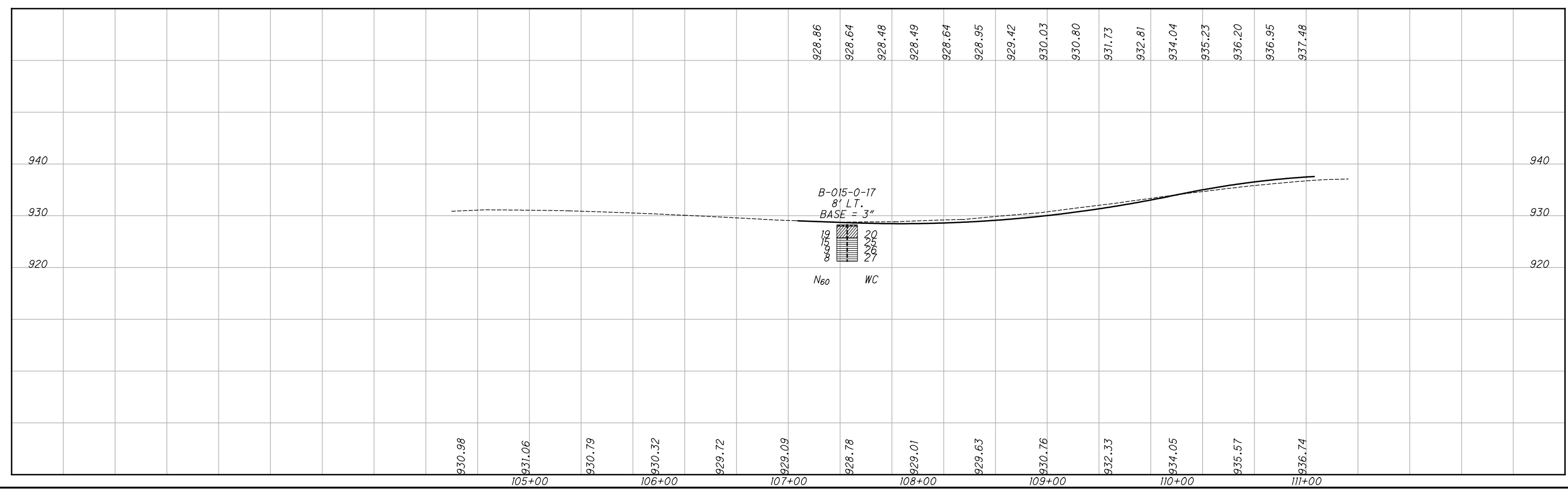
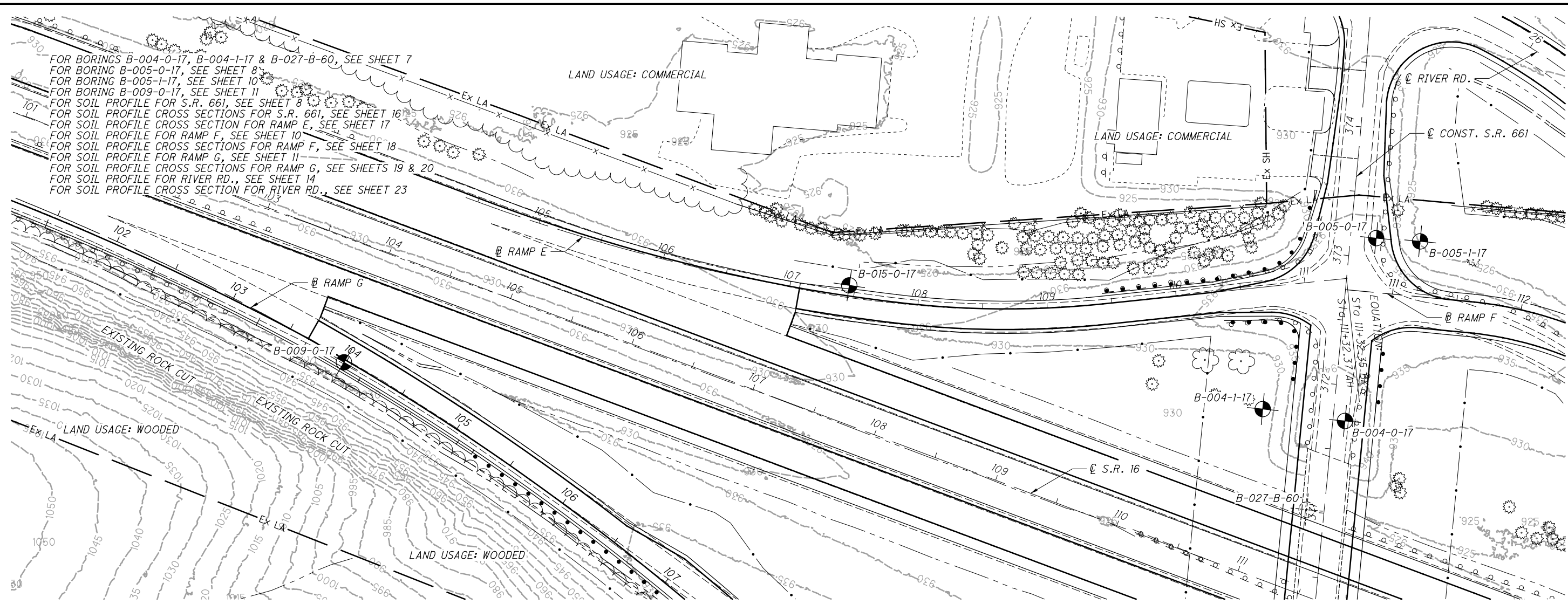
SOIL PROFILE  
 STA. 372+00 TO STA. 383+00 S.R. 661



LIC-37 / 661 -  
 16.59 / 0.00



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FOR BORINGS B-004-0-17, B-004-1-17 & B-027-B-60, SEE SHEET 7  
 FOR BORING B-005-0-17, SEE SHEET 8  
 FOR BORING B-005-1-17, SEE SHEET 10  
 FOR BORING B-009-0-17, SEE SHEET 11  
 FOR SOIL PROFILE FOR S.R. 661, SEE SHEET 8  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE CROSS SECTION FOR RAMP E, SEE SHEET 17  
 FOR SOIL PROFILE FOR RAMP F, SEE SHEET 10  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP F, SEE SHEET 18  
 FOR SOIL PROFILE FOR RAMP G, SEE SHEET 11  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP G, SEE SHEETS 19 & 20  
 FOR SOIL PROFILE FOR RIVER RD., SEE SHEET 14  
 FOR SOIL PROFILE CROSS SECTION FOR RIVER RD., SEE SHEET 23

HORIZONTAL SCALE IN FEET

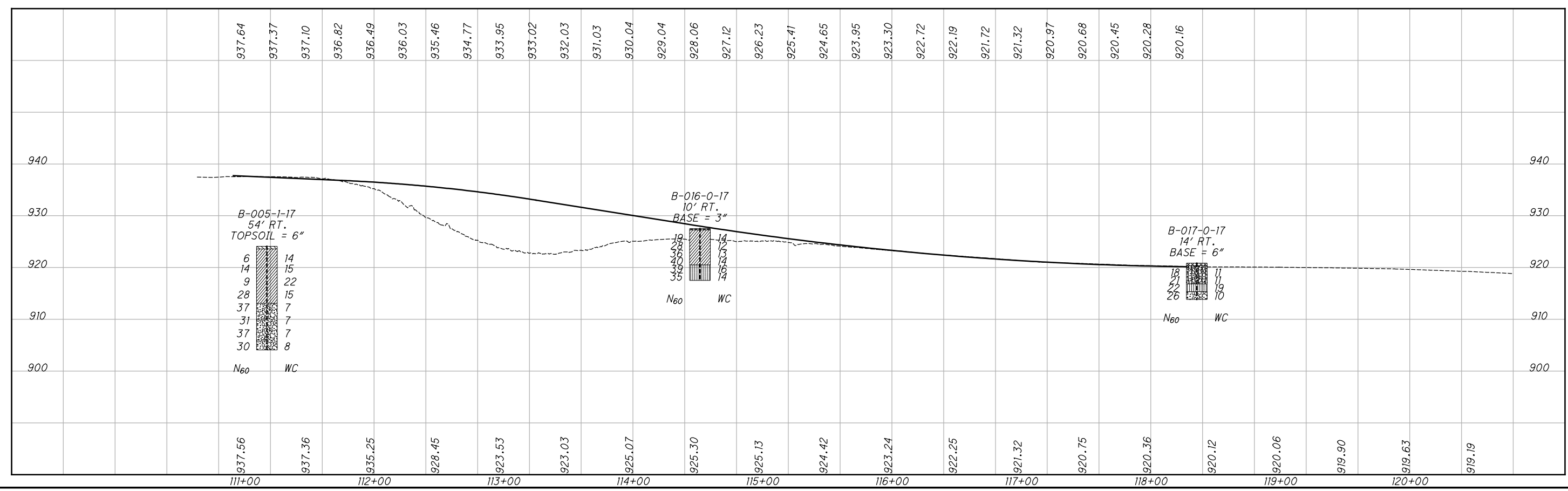
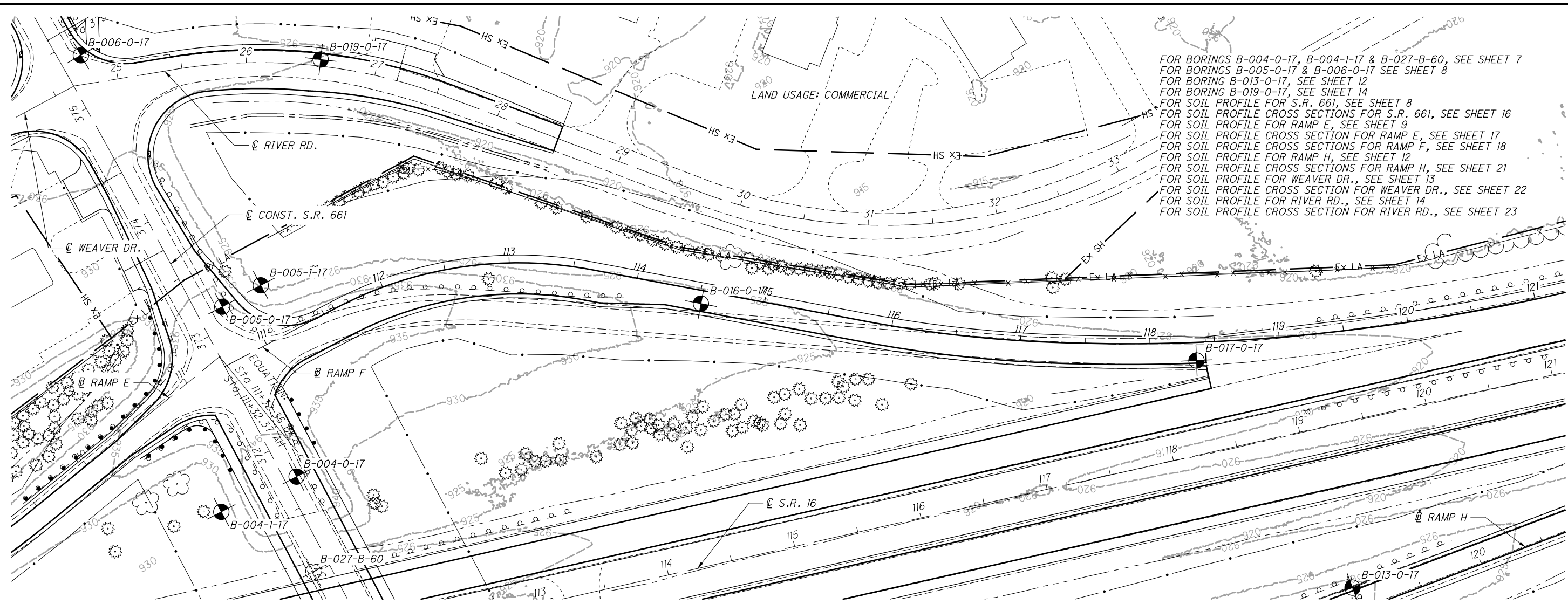
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**SOIL PROFILE**  
**STA. 104+60 TO STA. 111+32 RAMP E**

LIC-37 / 661-  
 16.59 / 0.00

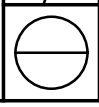
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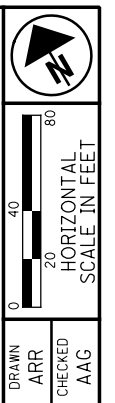


SOIL PROFILE  
 STA. 110+63 TO STA. 120+80 RAMP F

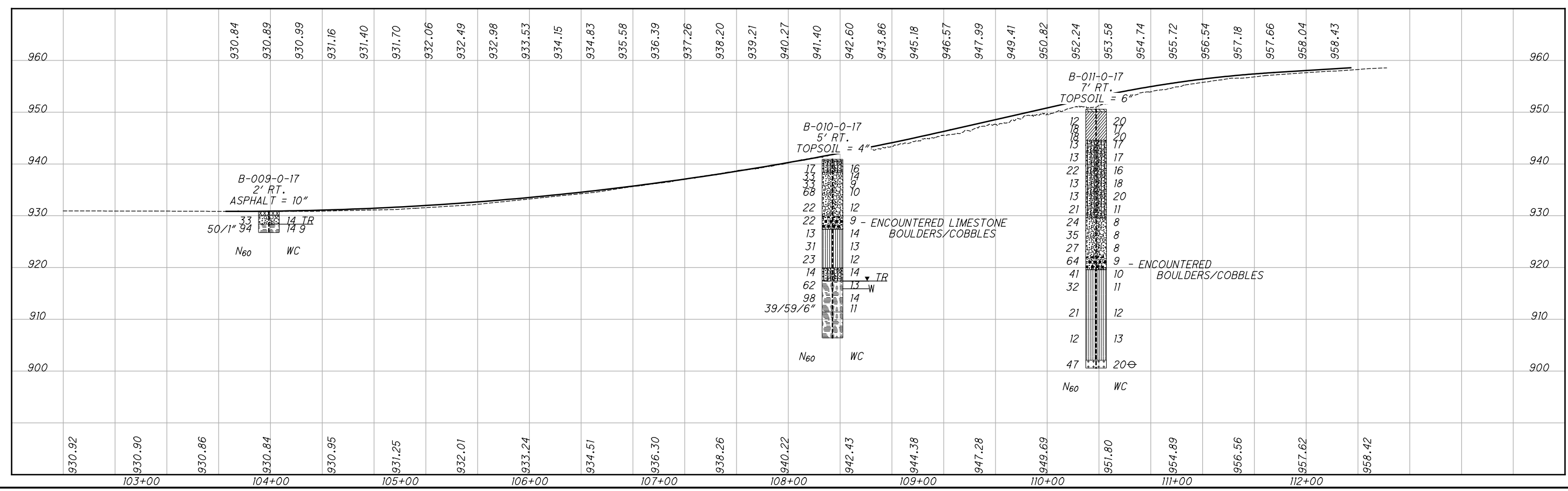
LIC-37 / 661-  
 16.59 / 0.00



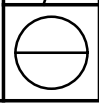
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**SOIL PROFILE**  
**STA. 102+40 TO STA. 112+62 RAMP G**

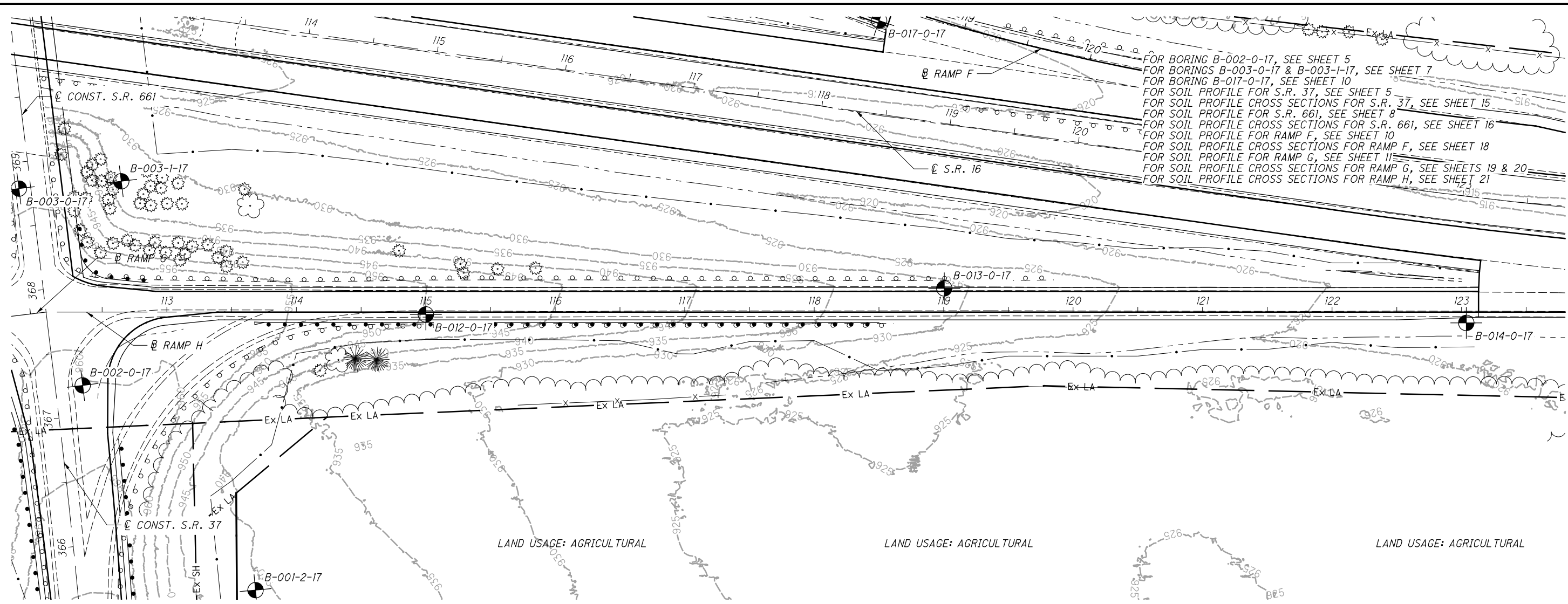


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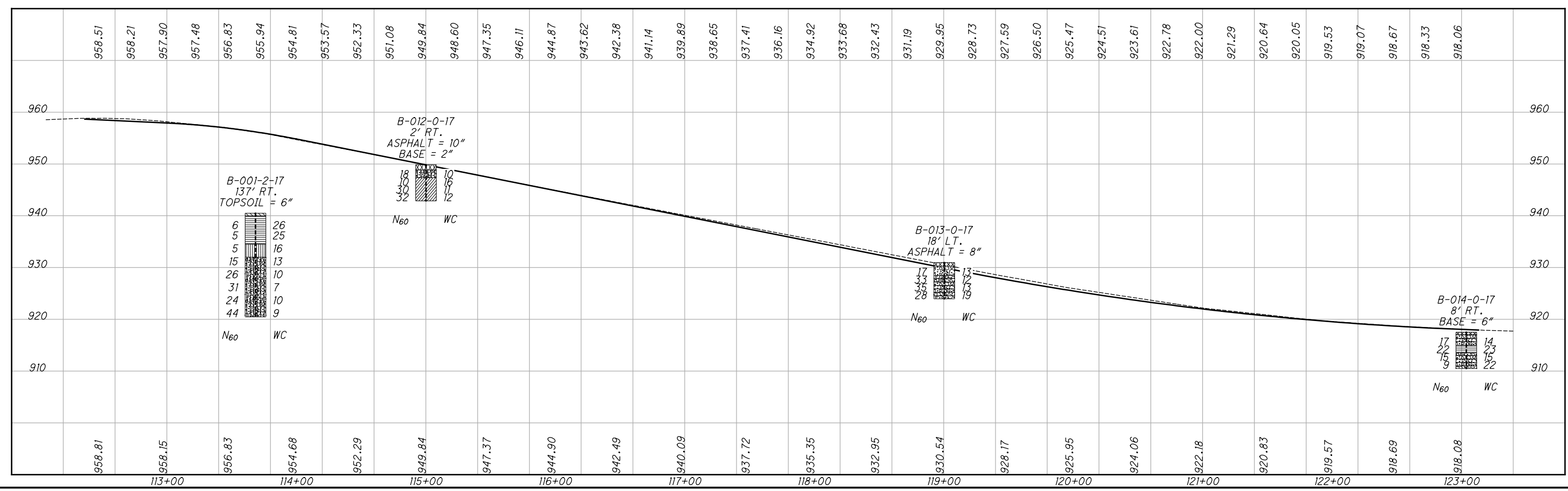
FOR BORING B-002-0-17, SEE SHEET 5  
 FOR BORINGS B-003-0-17 & B-003-1-17, SEE SHEET 7  
 FOR BORING B-017-0-17, SEE SHEET 10  
 FOR SOIL PROFILE FOR S.R. 37, SEE SHEET 15  
 FOR SOIL PROFILE FOR S.R. 661, SEE SHEET 8  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE FOR RAMP F, SEE SHEET 10  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP F, SEE SHEET 18  
 FOR SOIL PROFILE FOR RAMP G, SEE SHEET 11  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP G, SEE SHEETS 19 & 20  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP H, SEE SHEET 21



SOIL PROFILE  
 STA. 112+07 TO STA. 123+40 RAMP H

LIC-37 / 661-  
 16.59 / 0.00

12 / 34



B-001-2-17  
 137' RT.  
 TOPSOIL = 6"

6	26
5	25
5	16
15	13
26	10
31	7
24	10
44	9

N60 WC

B-012-0-17  
 2' RT.  
 ASPHALT = 10"  
 BASE = 2"

18	10
10	16
30	11
32	12

N60 WC

B-013-0-17  
 18' LT.  
 ASPHALT = 8"

17	13
32	17
28	18

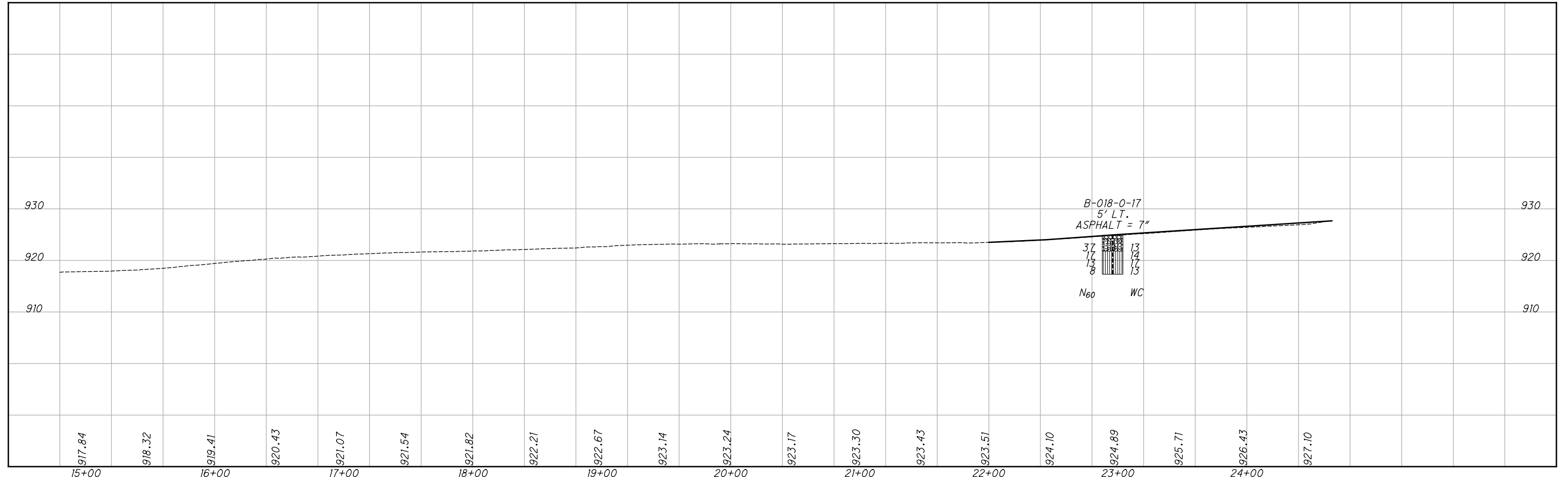
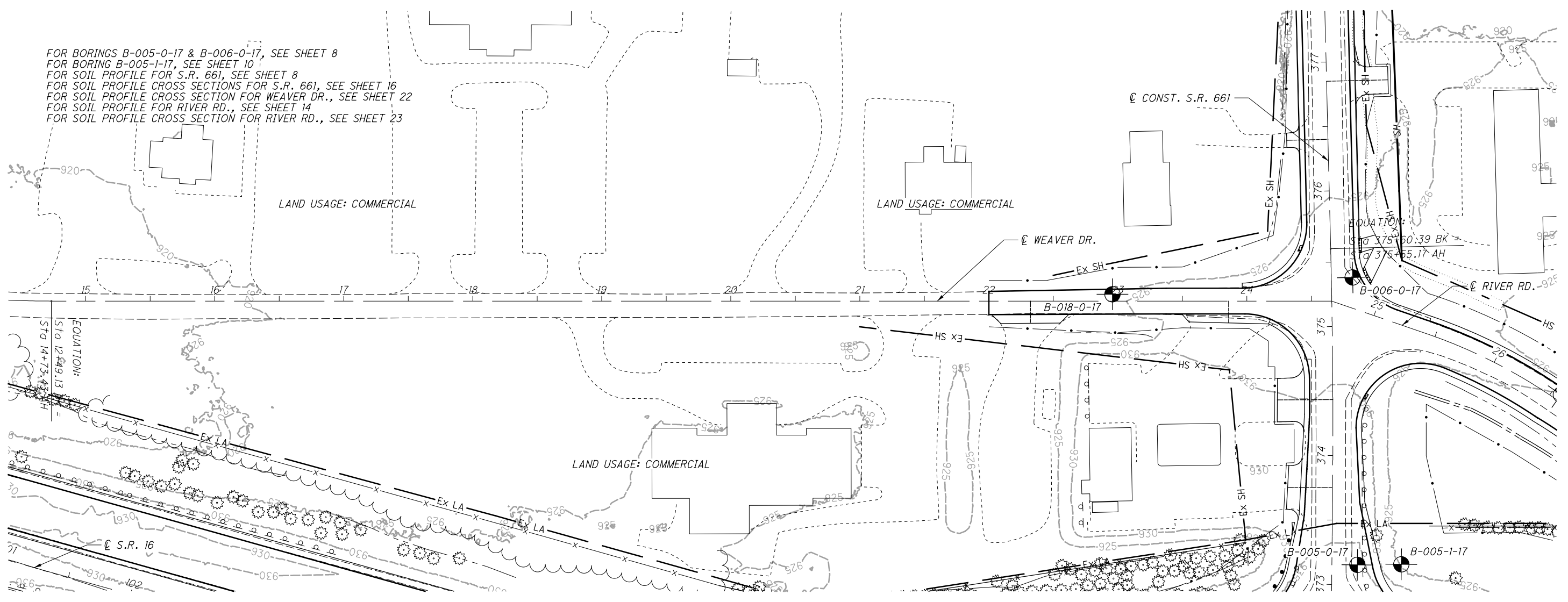
N60 WC

B-014-0-17  
 8' RT.  
 BASE = 6"

17	14
22	23
15	15
9	22

N60 WC

FOR BORINGS B-005-0-17 & B-006-0-17, SEE SHEET 8  
 FOR BORING B-005-1-17, SEE SHEET 10  
 FOR SOIL PROFILE FOR S.R. 661, SEE SHEET 8  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE CROSS SECTION FOR WEAVER DR., SEE SHEET 22  
 FOR SOIL PROFILE FOR RIVER RD., SEE SHEET 14  
 FOR SOIL PROFILE CROSS SECTION FOR RIVER RD., SEE SHEET 23



B-018-0-17  
 5' LT.  
 ASPHALT = 7"  

37	13
17	14
13	17
8	13

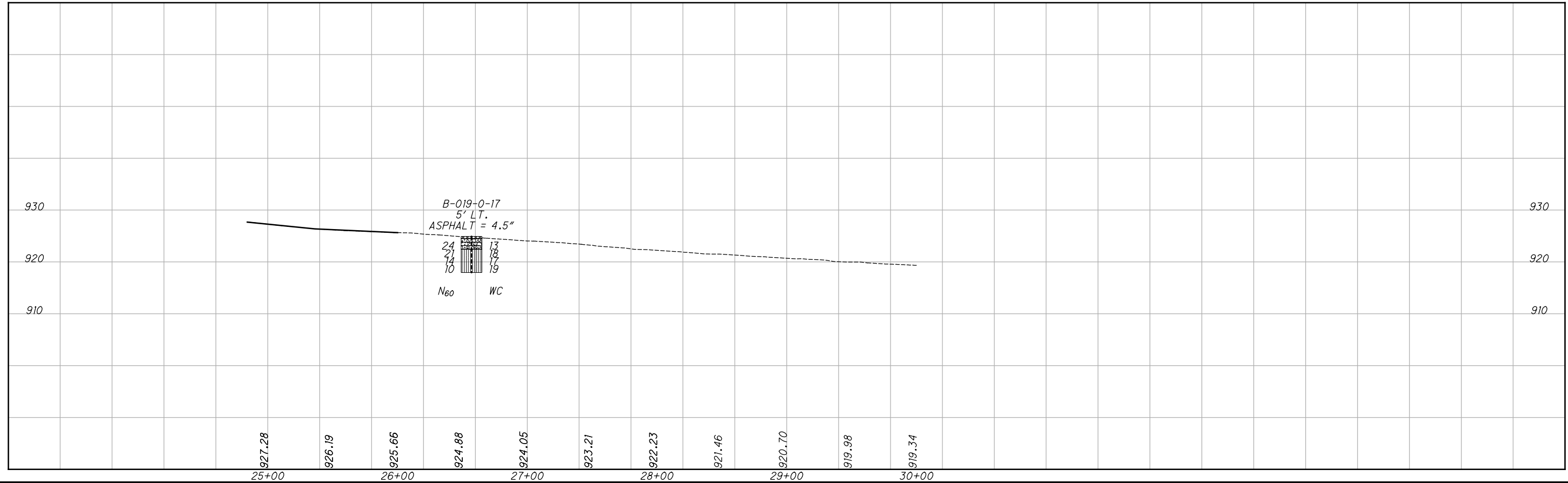
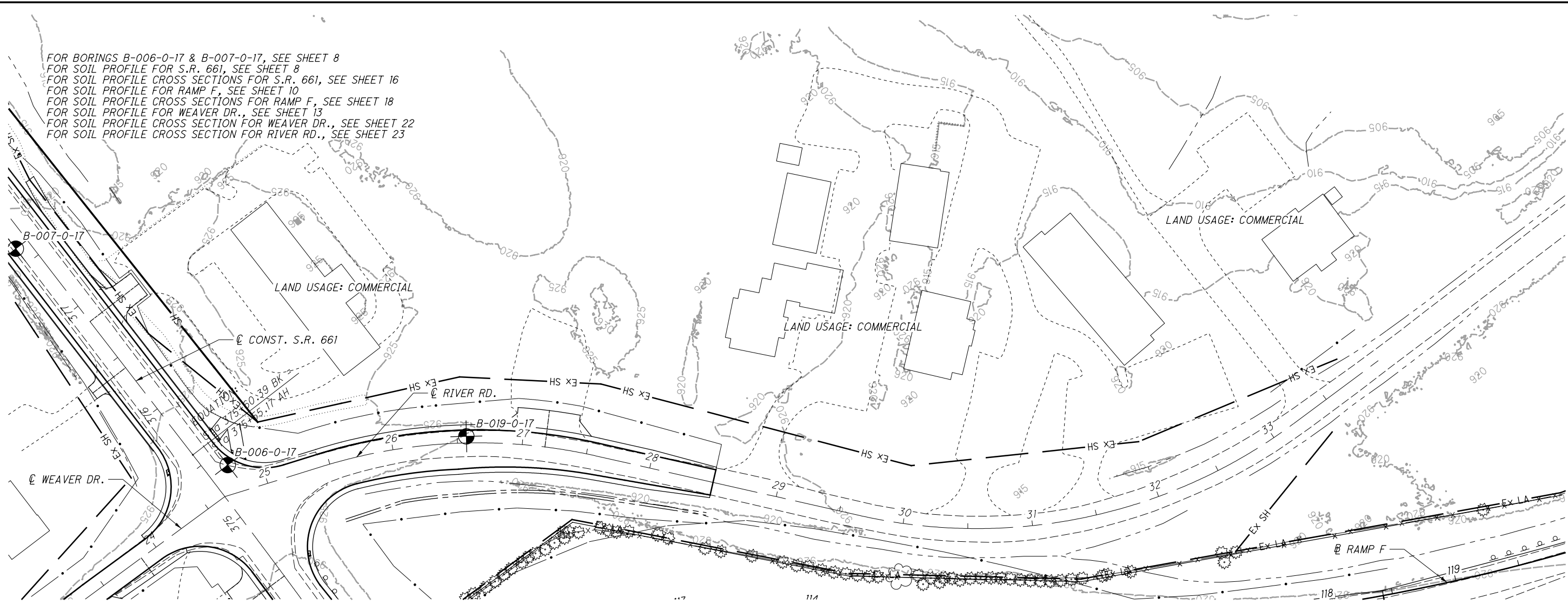
 N60 WC



DRAWN: ARR  
 CHECKED: AAG  
**SOIL PROFILE**  
**STA. 14+80 TO STA. 24+65 WEAVER DR.**

LIC-37 / 661 -  
 16.59 / 0.00  
 13 / 34

FOR BORINGS B-006-0-17 & B-007-0-17, SEE SHEET 8  
 FOR SOIL PROFILE FOR S.R. 661, SEE SHEET 8  
 FOR SOIL PROFILE CROSS SECTIONS FOR S.R. 661, SEE SHEET 16  
 FOR SOIL PROFILE FOR RAMP F, SEE SHEET 10  
 FOR SOIL PROFILE CROSS SECTIONS FOR RAMP F, SEE SHEET 18  
 FOR SOIL PROFILE FOR WEAVER DR., SEE SHEET 13  
 FOR SOIL PROFILE CROSS SECTION FOR WEAVER DR., SEE SHEET 22  
 FOR SOIL PROFILE CROSS SECTION FOR RIVER RD., SEE SHEET 23



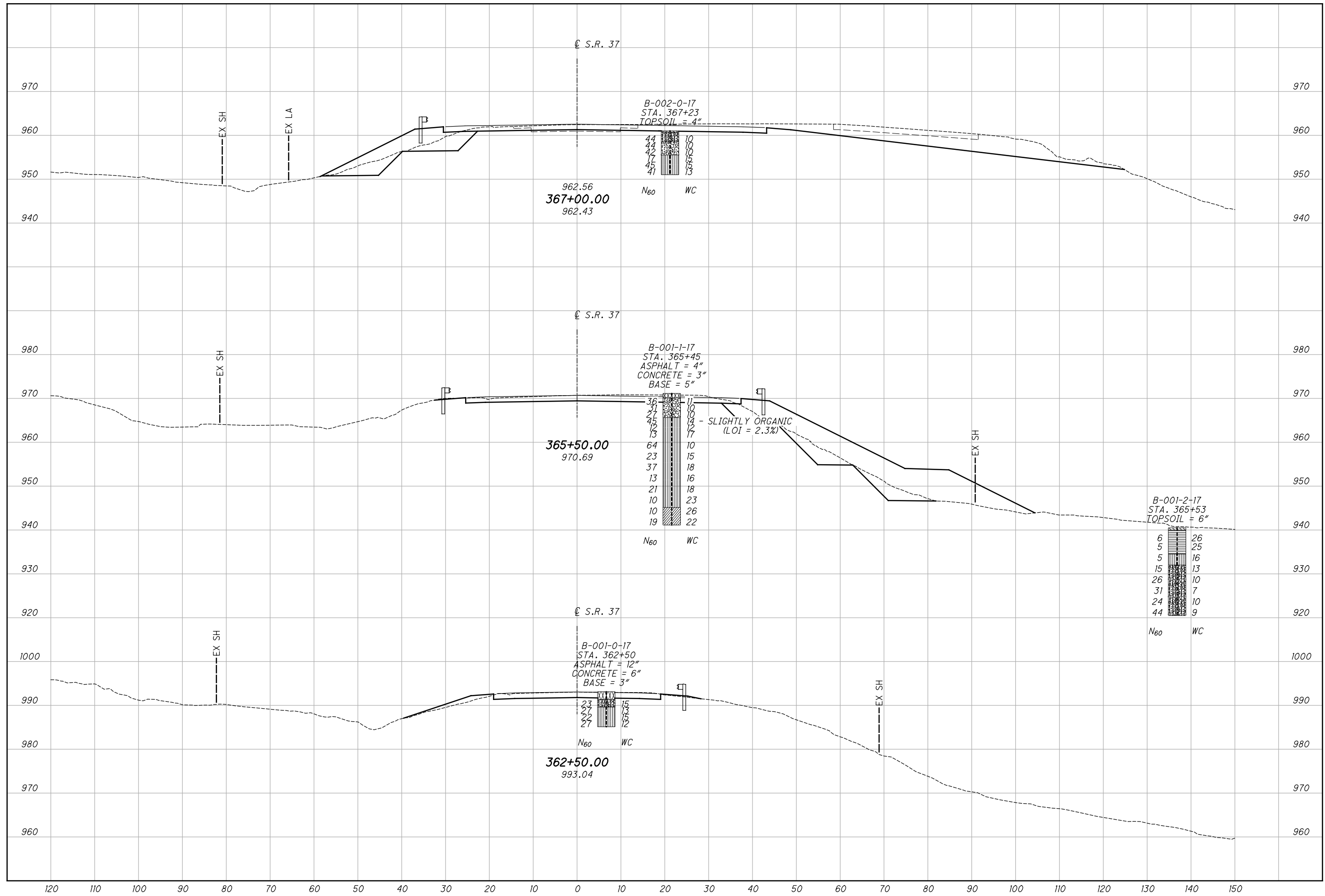
**SOIL PROFILE**  
**STA. 24+65 TO STA. 30+00 RIVER RD.**

**LIC-37 / 661-**  
**16.59 / 0.00**



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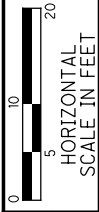
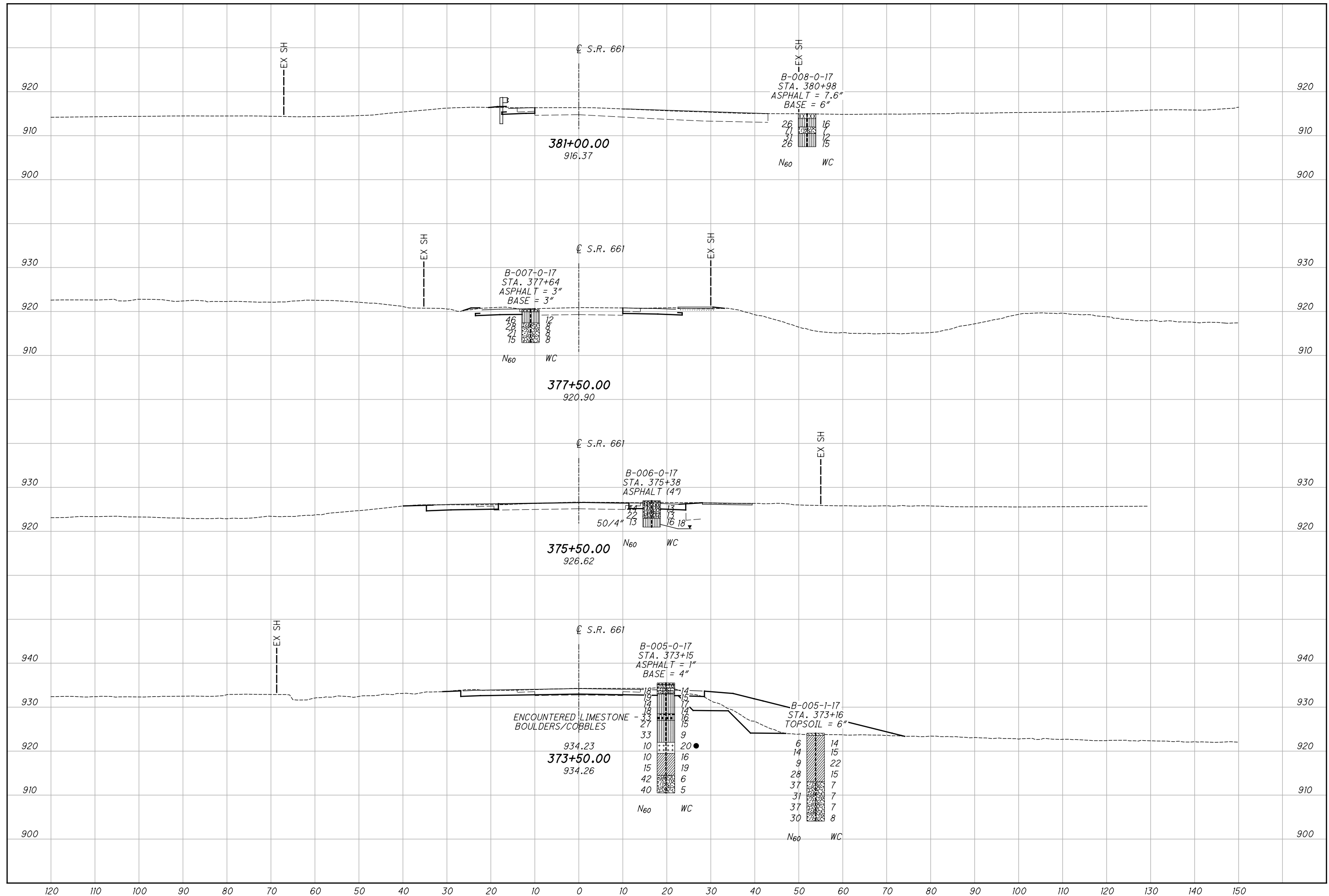
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**SOIL PROFILE - CROSS SECTIONS S.R. 37**  
**STA. 362+50, STA. 365+50 & STA. 367+00**

**LIC-37 / 661-**  
**16.59 / 0.00**



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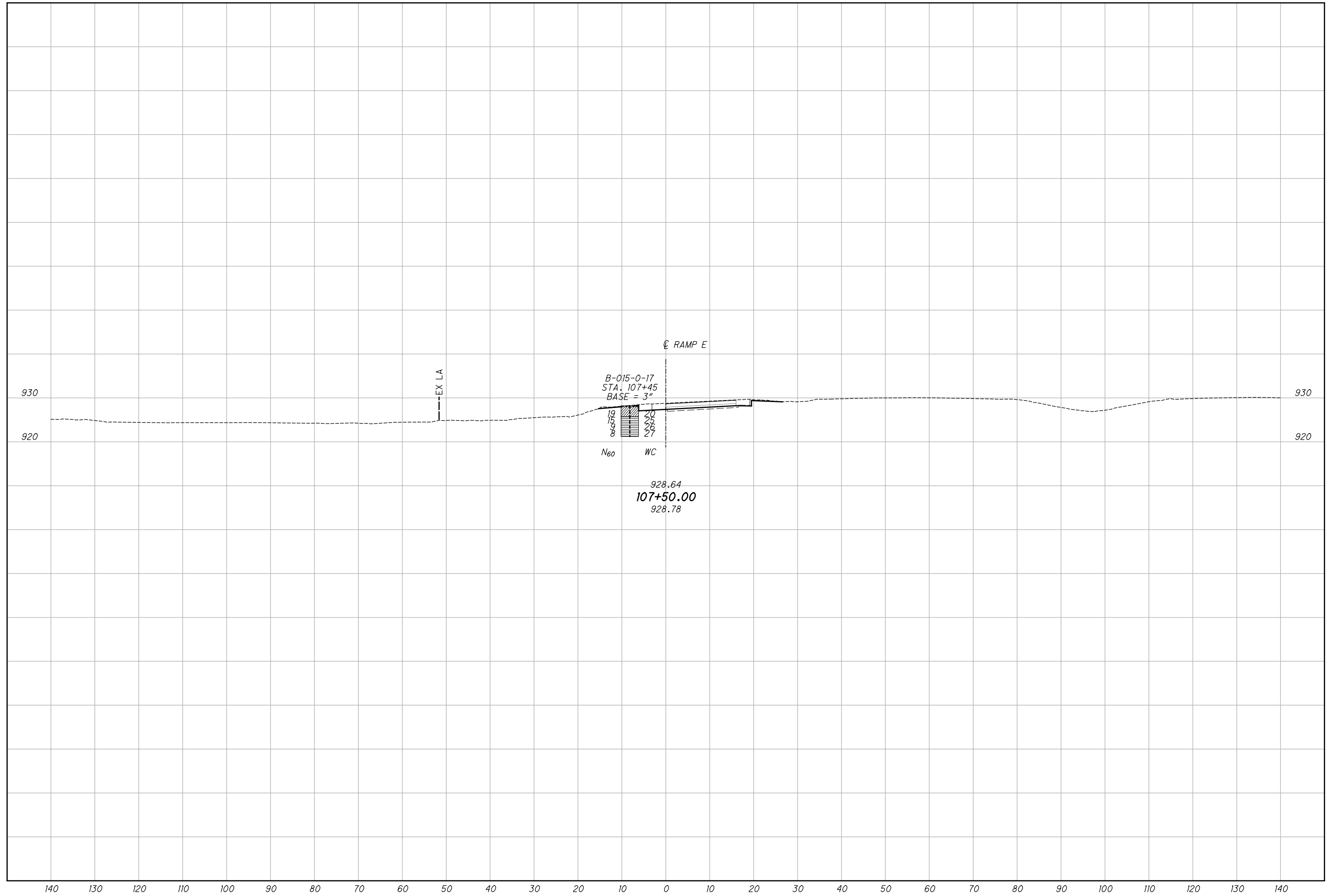


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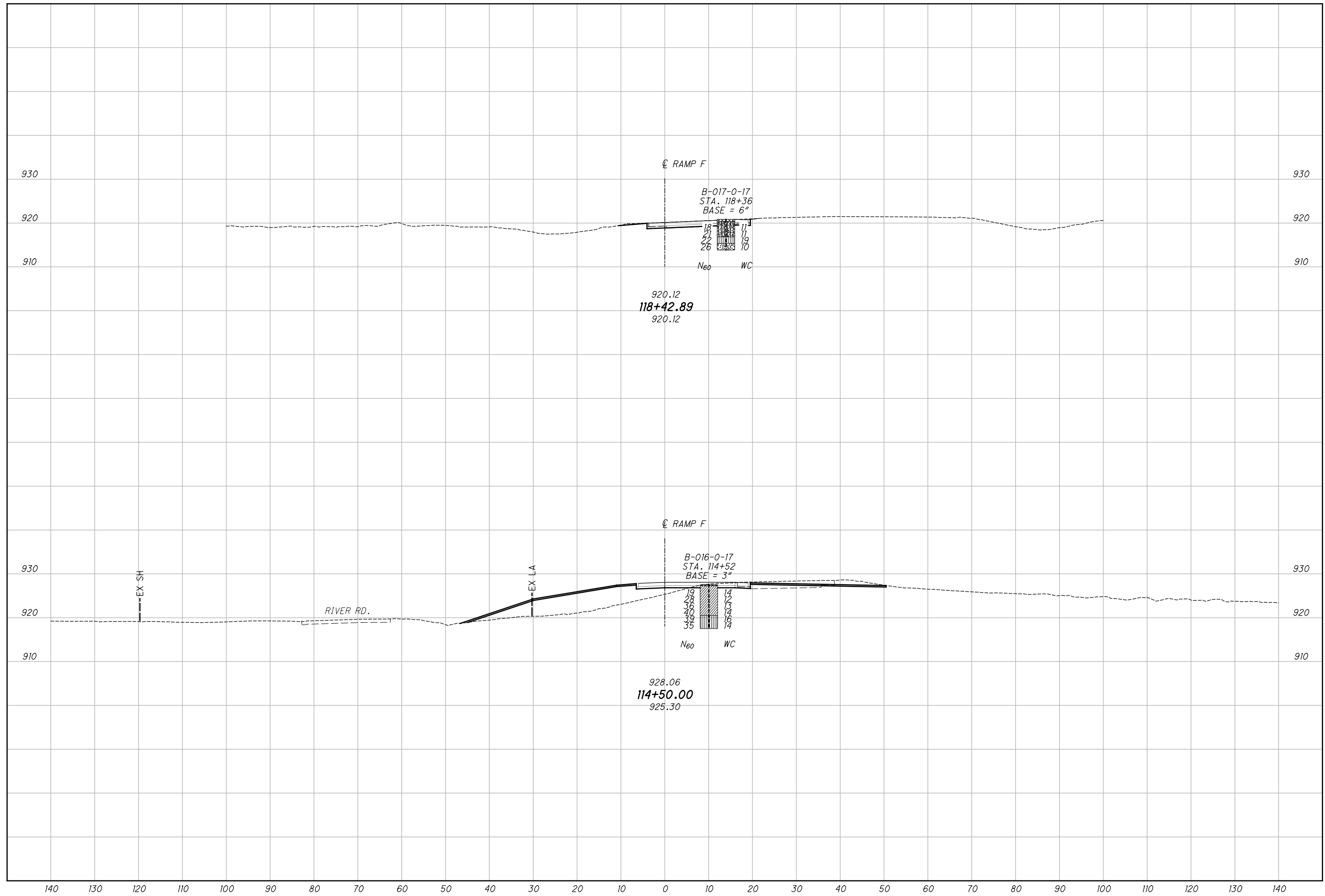
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 STA. 373+50, STA. 375+50, STA. 377+50 & STA. 381+00**

**16.59 / 0.00**





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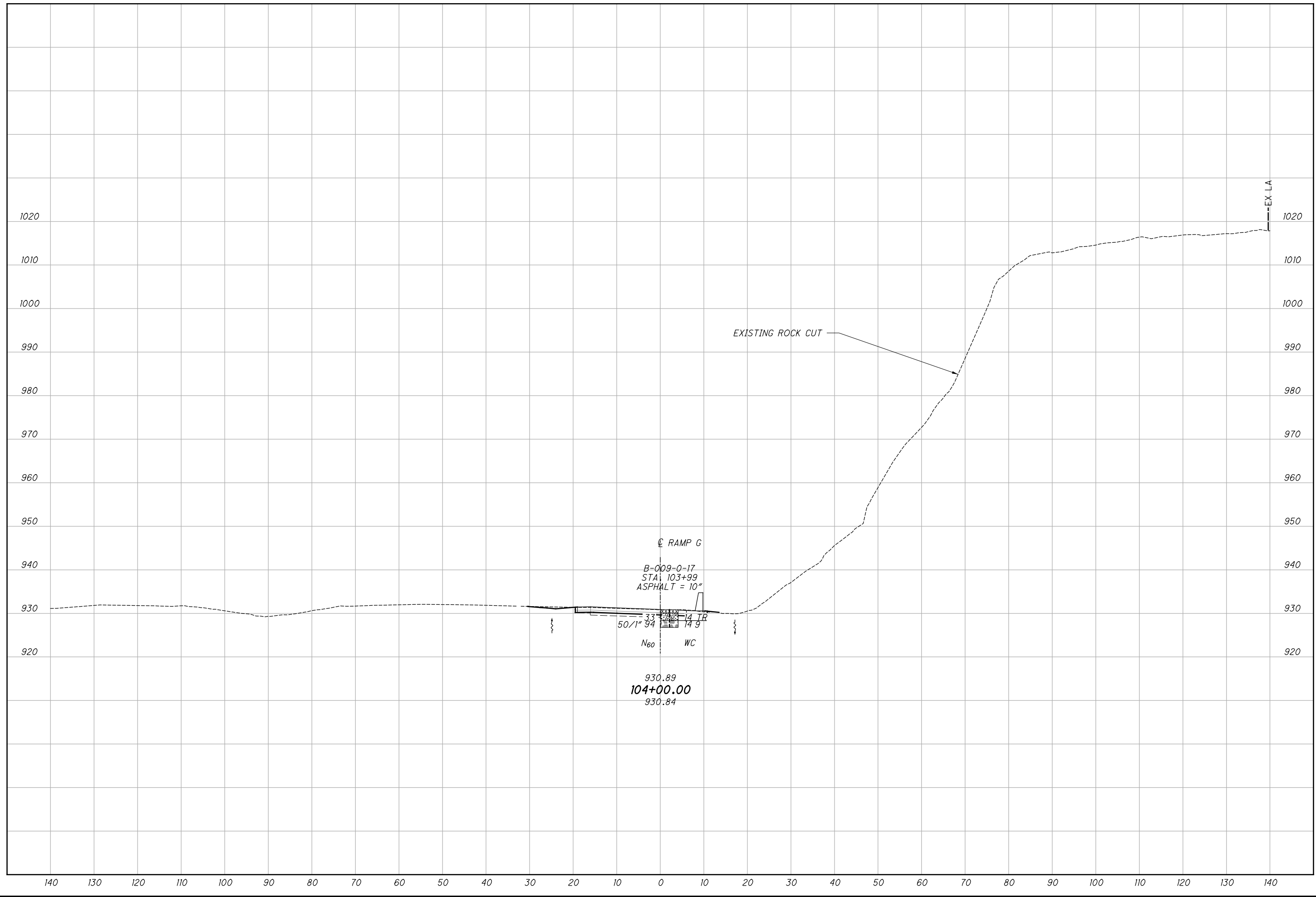
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**STA. 114+50 & STA. 118+42.89**

**LIC-37 / 661-**  
**16.59 / 0.00**

DRAWN	ARR	CHECKED	AAG
HORIZONTAL SCALE IN FEET			0 5 10 20



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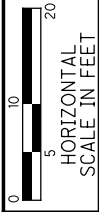
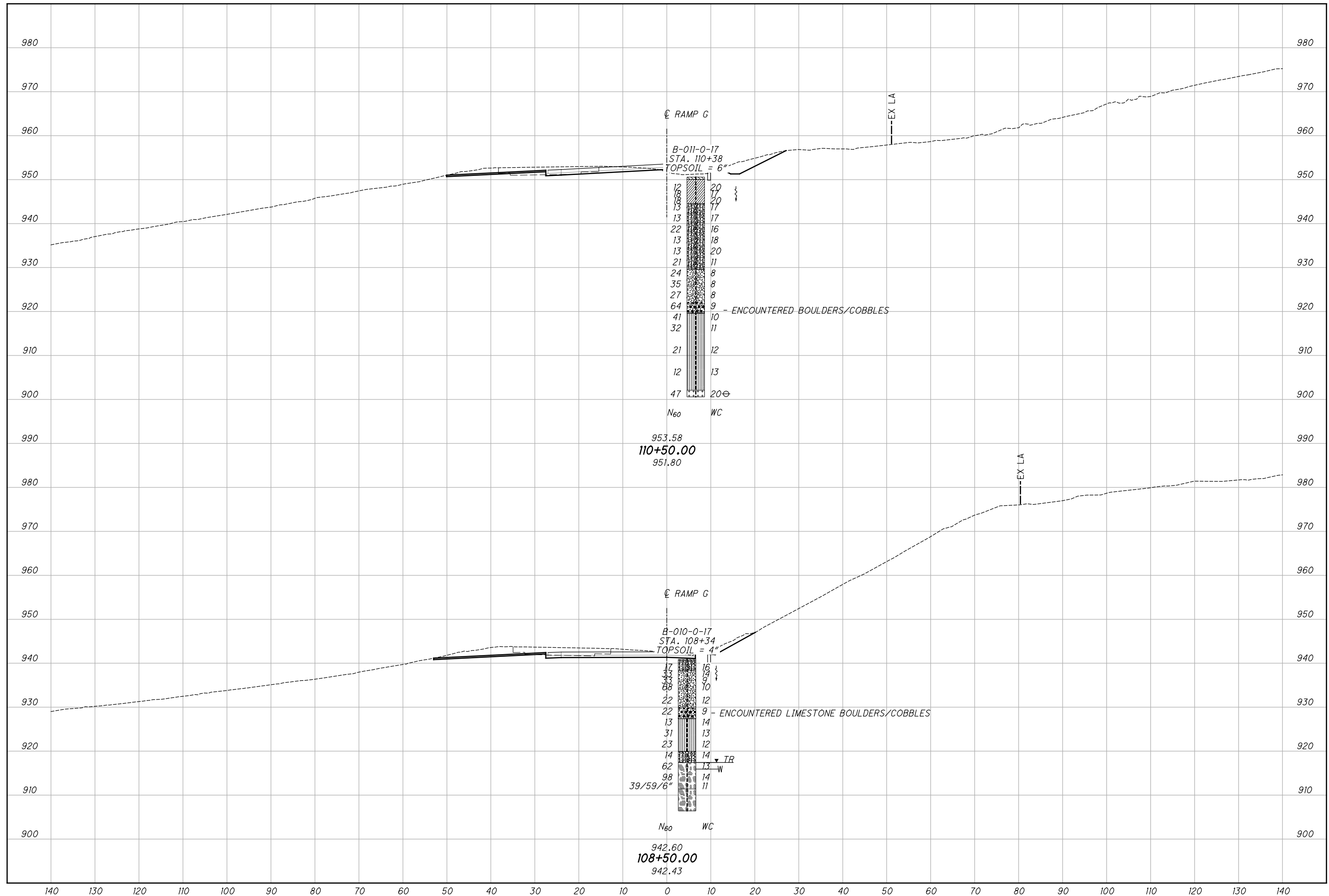
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**SOIL PROFILE - CROSS SECTION RAMP G**  
**STA. 104+00**

**LIC-37 / 661-**  
**16.59 / 0.00**



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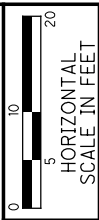
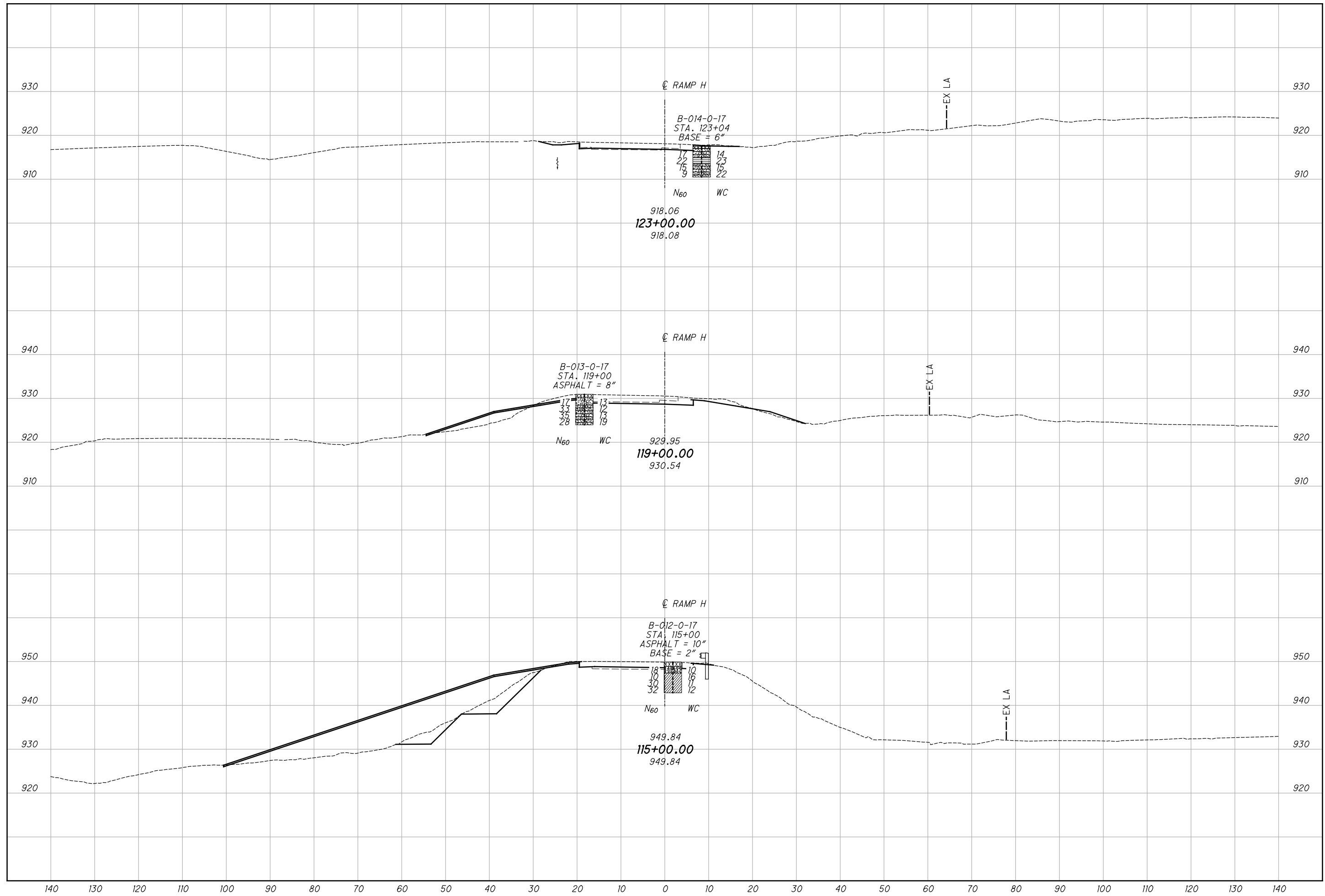
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**SOIL PROFILE - CROSS SECTIONS RAMP G**  
**STA. 108+50 & STA. 110+50**

**LIC-37 / 661-**  
**16.59 / 0.00**



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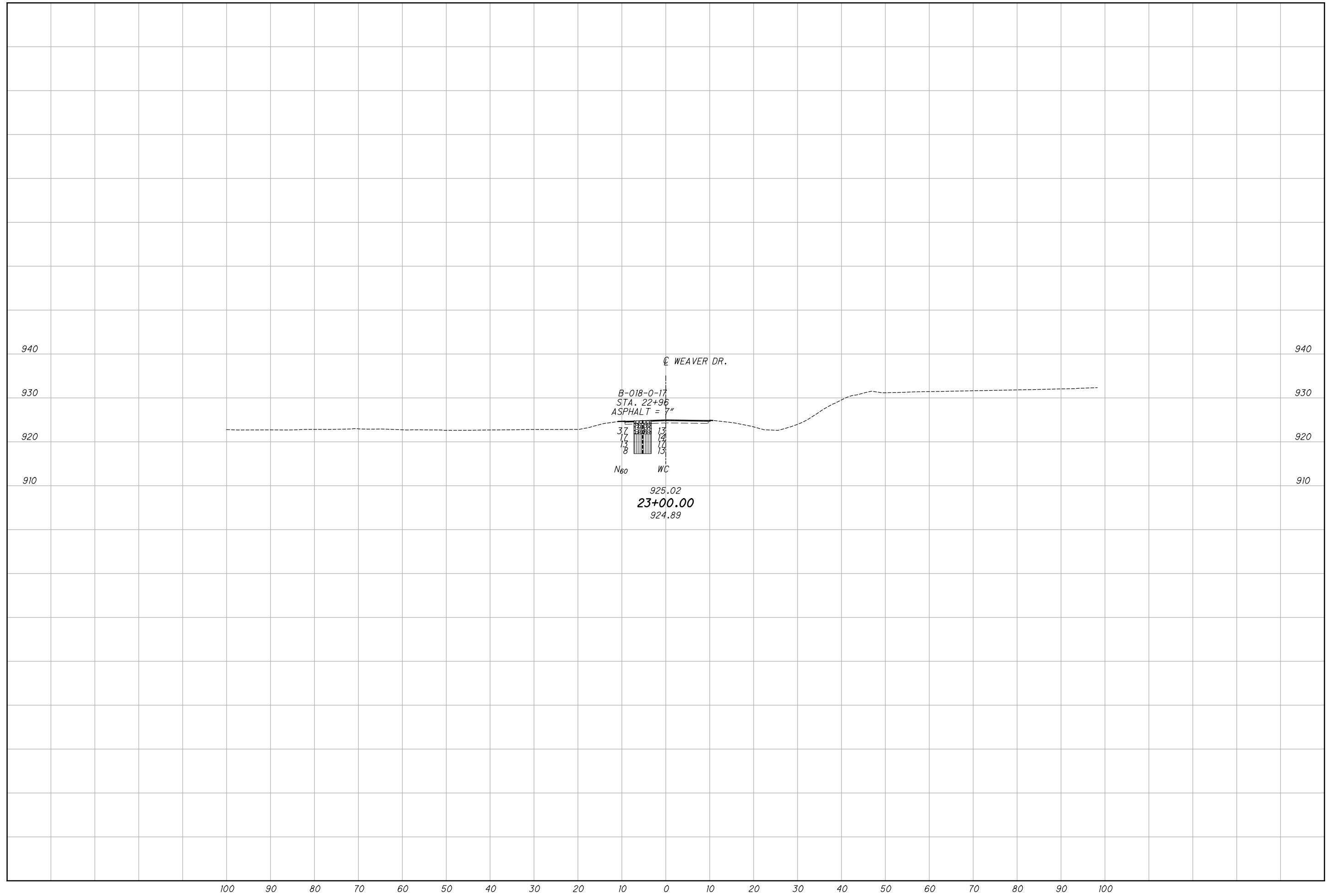
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**SOIL PROFILE - CROSS SECTIONS RAMP H**  
**STA. 115+00, STA. 119+00 & STA. 123+00**

**LIC-37 / 661-**  
**16.59 / 0.00**



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DRAWN  
ARR

CHECKED  
AAG

0 5 10 20  
HORIZONTAL  
SCALE IN FEET

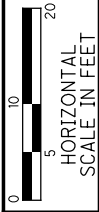
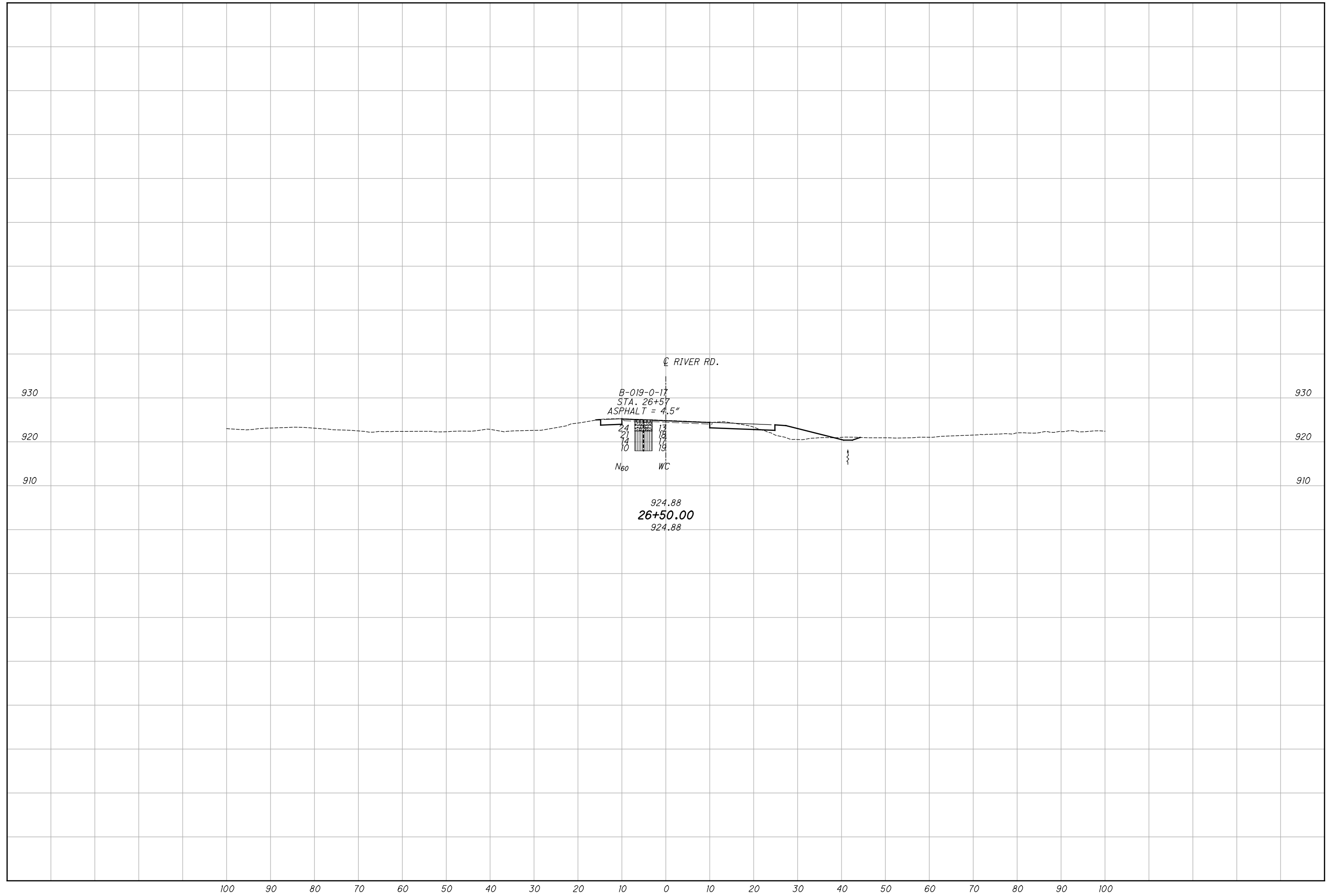
SOIL PROFILE - CROSS SECTION WEAVER DR.  
STA. 23+00

LIC-37 / 661-  
16.59 / 0.00

22 / 34



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DRAWN: ARR  
CHECKED: AAG

**SOIL PROFILE - CROSS SECTION RIVER RD.**  
**STA. 26+50**

**LIC-37 / 661-**  
**16.59 / 0.00**



PROJECT: LIC-37/661-16.59/0.00 BRIDGE  
 TYPE: 92411 SFN: 4506333 (P)  
 START: 1/24/18 END: 1/24/18  
 DRILLING FIRM / OPERATOR: ODOT / CAREY  
 SAMPLING FIRM / LOGGER: ODOT / MCLEISH  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT  
 DRILL RIG: CME 55  
 HAMMER: CME AUTOMATIC  
 CALIBRATION DATE: 6/1/17  
 ENERGY RATIO (%): 77  
 STATION / OFFSET: 368+80.9' LT.  
 ALIGNMENT: CL SR 661  
 ELEVATION: 954.1 (ft) EOB: 35.0 ft.  
 LAT / LONG: 40.058362, -82.521063  
 EXPLORATION ID: B-003-0-17  
 PAGE: 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	SPT / RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG				ODOT CLASS (GI)	S04 ppm	BACK FILL
							GR	CS	FS	SI	CL	LL	PL			
ASPHALT (2.5') & CONCRETE (9')	954.1															
DENSE BROWN, STONE FRAGMENTS WITH SAND, LITTLE SILT TRACE CLAY, (FILL), DAMP	953.1	6	18	44	SS-1A	-	49	21	12	11	7	NP	NP	13	A-1-b (0)	<100
STIFF TO VERY STIFF, BROWN, SANDY SILT, "AND" STONE FRAGMENTS, LITTLE CLAY, (FILL), DAMP TO MOIST @4.5'; BROWN AND GRAY	951.1	3	14	67	SS-2A	2.00	39	11	12	23	15	16	9	16	A-4a (1)	140
		4	10	78	SS-3A	1.00	-	-	-	-	-	-	-	-	18	A-4a (V)
@11.0'; BROWN AND GRAY MOTTLED	940.6	5	19	89	SS-4A	3.00	-	-	-	-	-	-	-	17	A-4a (V)	-
		6	21	89	SS-5A	2.50	33	11	19	21	16	23	15	8	14	A-4a (0)
VERY DENSE, BROWN AND GRAY, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP	940.6	7	13	100	SS-6A	2.00	-	-	-	-	-	-	-	21	A-4a (V)	-
		8	51	100	SS-7A	-	-	-	-	-	-	-	-	14	A-4a (V)	-
@18.5'; MEDIUM DENSE, YELLOWISH BROWN	930.6	9	80	100	SS-8A	-	33	11	13	30	13	NP	NP	12	A-4a (2)	-
		10	26	100	SS-9A	-	-	-	-	-	-	-	-	-	12	A-4a (V)
@21.0'; REDDISH BROWN	930.6	11	18	44	SS-10A	-	-	-	-	-	-	-	-	19	A-4a (V)	-
		12	5	4	10											
MEDIUM DENSE TO DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP	919.1	13	33	56	SS-11A	-	63	11	10	11	5	NP	NP	9	A-1-b (0)	-
		14	27	11	SS-12A	-	-	-	-	-	-	-	-	-	3	A-1-b (V)
	919.1	15	28	33	SS-13A	-	-	-	-	-	-	-	-	4	A-1-b (V)	-
		16	31	67	SS-14A	-	43	20	13	14	10	20	17	3	7	A-1-b (0)
		17	31	67	SS-15A	-	-	-	-	-	-	-	-	7	A-1-b (V)	-

NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATE (11 X 17) - OH DOT.GDT - 9/25/19 14:37 - X:\GINT\PROJECTS\2018 COMPLETE\600460.GPJ

24 / 34	LIC-37 / 661 - 16.59 / 0.00	STRUCTURE FOUNDATION EXPLORATION		DRAWN
		BRIDGE NO. LIC-661-0003 OVER S.R. 16		ARR
		BORING LOG B-003-0-17		CHECKED
				AAG

PROJECT: LIC-37/661-16.59/0.00	DRILLING FIRM / OPERATOR: ODOT / LEWIS	STATION / OFFSET: 368+76.70' RT.	EXPLORATION ID: B-003-1-17
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: ODOT / MCINTOSH	ALIGNMENT: CL SR 661	
PID: 92411 SFN: 4506333 (P)	DRILLING METHOD: 3.75" HSA	ELEVATION: 932.6 (ft) EOB: 95.0 ft.	PAGE: 1 OF 2
START: 2/5/18 END: 2/6/18	SAMPLING METHOD: SPT	LAT / LONG: 40.058330, -82.520783	
DRILL RIG: CME 850R TRACKED		HAMMER: CME AUTOMATIC	
CALIBRATION DATE: 6/1/17		ENERGY RATIO (%): 81	

DEPTH (ft)	SPT / RQD	REC (%)	N <sub>60</sub>	SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (G)	S04 ppm	HOLE SEALED
						GR	CS	FS	SI	CL	LL	PL	PI				
1																	
2	1	78	8	SS-1A	1.50	1	2	7	52	38	35	20	15	25	A-6a (10)	-	
3	3																
4	2	78	12	SS-2A	1.50	-	-	-	-	-	-	-	-	21	A-6a (V)	-	
5	4																
6	5																
7	2	33	5	SS-3A	1.50	-	-	-	-	-	-	-	-	12	A-6a (V)	-	
8	2																
9	4	33	22	SS-4A	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	-	
10	7																
11	9																
12	8	78	24	SS-5A	-	54	16	11	12	7	NP	NP	NP	7	A-1-b (0)	-	
13	10																
14	3	56	14	SS-6A	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	-	
15	4																
16	6																
17	4																
18	3																
19	12	78	42	SS-7A	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	-	
20	13																
21	18																
22																	
23																	
24	7	67	31	SS-8A	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	-	
25	12																
26	11																
27																	
28																	
29	4	22	22	SS-9A	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	-	
30	8																
31	8																
32																	
33																	
34	3	78	57	SS-10A	4.50	36	9	13	25	17	20	15	5	11	A-4a (1)	-	
35	11																
36	31																
37																	
38																	
39	4	89	27	SS-11A	3.50	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
40	8																
41	12																
42																	
43																	
44	3	89	19	SS-12A	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
45	6																
46	8																
47																	
48																	
49	4	100	22	SS-13A	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
50	7																
51	9																
52																	
53																	
54	5	44	22	SS-14A	-	61	23	7	6	3	NP	NP	NP	11	A-1-a (0)	-	
55	8																
56	8																
57																	
58																	
59	10	56	80	SS-15A	4.50	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
60	28																
61	31																

TOPSOIL (6")  
 STIFF, BROWN, SILT AND CLAY, TRACE SAND,  
 TRACE STONE FRAGMENTS, MOIST

MEDIUM DENSE BROWN, GRAVEL AND STONE  
 FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY,  
 DAMP

@18.5'; DENSE

HARD, GRAYISH BROWN, SANDY SILT, "AND" STONE  
 FRAGMENTS, LITTLE CLAY, DAMP

@38.5'; VERY STIFF

MEDIUM DENSE GRAY, GRAVEL AND STONE  
 FRAGMENTS, SOME SAND, TRACE SILT, TRACE  
 CLAY, WET

HARD GRAY, SANDY SILT, SOME CLAY, LITTLE  
 STONE FRAGMENTS, DAMP

25 / 34	<b>LIC-37 / 661-16.59 / 0.00</b> <b>STRUCTURE FOUNDATION EXPLORATION</b> <b>BRIDGE NO. LIC-661-0003 OVER S.R. 16</b> <b>BORING LOG B-003-1-17</b>	DRAWN: ARR CHECKED: AAG
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PID: 92411	SFN: 4506333 (P)	PROJECT: LIC-37/661-16.59/0.00	STATION / OFFSET: 368+76.70' RT.	START: 2/5/18			END: 2/6/18			PG 2 OF 2	B-003-1-17									
				GRADATION (%)			ATTERBERG													
<b>MATERIAL DESCRIPTION AND NOTES</b>																				
HARD, GRAY, SANDY SILT, SOME CLAY, LITTLE STONE FRAGMENTS, DAMP (continued)			SPT/ RQD	REC (%)	HP (tsf)	SAMPLE ID	GR	CS	FS	SI	CL	LL			WC	S04 ppm	HOLE SEALED			
												PL	PI	PL				PI	WC	
@63.5': VERY STIFF  @68.5': MOIST			61																	
			62																	
			63																	
			64			7	89		SS-16A	-	-	-	-	-	-	-	14	A-4a (V)		
			65			10														
			66																	
			67																	
			68																	
			69			3	100		SS-17A	19	6	13	35	27	22	15	7	A-4a (5)		
			70			11														
DENSE, GRAY, COARSE AND FINE SAND, TRACE SILT, TRACE CLAY, TRACE STONE FRAGMENTS, DAMP  @88.5': WET  @93.5': VERY DENSE			71																	
			72																	
			73																	
			74			3	100		SS-18A	20	-	-	-	-	-	-	16	A-4a (V)		
			75			6														
			76			9														
			77			10														
			78																	
			79			4	100		SS-19A	20	-	-	-	-	-	-	16	A-4a (V)		
			80			10														
DENSE, GRAY, COARSE AND FINE SAND, TRACE SILT, TRACE CLAY, TRACE STONE FRAGMENTS, DAMP  @88.5': WET  @93.5': VERY DENSE			81																	
			82																	
			83																	
			84			4	22		SS-20A	-	-	-	-	-	-	-	10	A-3a (V)		
			85			8														
			86			25														
			87																	
			88																	
			89			4	89		SS-21A	6	38	41	8	7	NP	NP	21	A-3a (0)		
			90			18														
@93.5': VERY DENSE			91																	
			92																	
			93																	
			94			23	89		SS-22A	-	-	-	-	-	-	-	21	A-3a (V)		
			95			24														
			28																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 50 LB. BENTONITE CHIPS; MIXED 150 LB. BENTONITE GROUT; 90 GAL. WATER

PROJECT: LIC-37/661-16.59/0.00	DRILLING FIRM / OPERATOR: ODOT / CAREY	STATION / OFFSET: 371+72.9' RT.	EXPLORATION ID
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: ODOT / MCLEISH	ALIGNMENT: CL SR 661	B-004-0-17
PID: 92411 SFN: 4506333 (P)	DRILLING METHOD: 3.25" HSA	ELEVATION: 941.7 (ft) EOB: 25.0 ft.	PAGE
START: 1/25/18 END: 1/25/18	SAMPLING METHOD: SPT	LAT / LONG: 40.059157, -82.520897	1 OF 1
DRILL RIG: CME 55		HAMMER: CME AUTOMATIC	
CALIBRATION DATE: 6/1/17		ENERGY RATIO (%): 77	

MATERIAL DESCRIPTION AND NOTES	ELEV.	SPT/ RQD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	GRADATION (%)						ATTERBERG						WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
						GR	CS	FS	SI	CL	LL	PL	PI	LL	PL	PI					
ASPHALT (2") & CONCRETE (9")	941.7																				
MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, LITTLE CLAY, (FILL), AUGER SAMPLE TAKEN, DAMP	940.8	3	12	0	SS-1A	49	18	10	13	10	21	16	5	13					120		
MEDIUM DENSE BROWN, STONE FRAGMENTS WITH SAND, SILT, AND CLAY, (FILL), DAMP	938.7	4	14	78	SS-2A	44	15	11	14	16	31	17	14	15					140		
VERY STIFF, BROWN AND GRAY, SILT AND CLAY, SOME STONE FRAGMENTS, SOME SAND, SLIGHTLY ORGANIC (LOI = 2.3%), (FILL), MOIST	937.2	4	17	100	SS-3A	25	12	13	28	22	30	18	12	19					<100		
		4	17	100	SS-4A	2.00	-	-	-	-	-	-	-	17					-		
		4	12	78	SS-5A	2.00	-	-	-	-	-	-	-	17					-		
@11.0'; "AND" STONE FRAGMENTS		4	17	67	SS-6A	2.00	42	4	5	29	31	18	13	19					-		
	928.2	16	53	89	SS-7A	-	63	9	7	13	8	27	21	6					-		
VERY DENSE, GRAYISH BROWN, STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP	925.7	22	58	78	SS-8A	-	35	10	18	27	10	NP	NP	9					-		
VERY DENSE, REDDISH BROWN, SANDY SILT, SOME STONE FRAGMENTS, TRACE CLAY, DAMP		23	18	100	SS-9A	-	-	-	-	-	-	-	-	19					-		
@18.5'; MOIST		11	13	100	SS-10A	1.50	5	1	1	49	44	19	22	24					-		
STIFF, BROWN, CLAY, "AND" SILT, TRACE STONE FRAGMENTS, TRACE SAND, MOIST	920.7	4	13	100	SS-11A	2.00	-	-	-	-	-	-	-	24					-		
	916.7	3	13	100	SS-11A	2.00	-	-	-	-	-	-	-	24					-		

NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS



PROJECT: LIC-37/661-16.59/0.00  
 TYPE: BRIDGE  
 PID: 92411 SFN: 4506333 (P)  
 START: 2/7/18 END: 2/8/18  
 DRILLING FIRM / OPERATOR: ODOT / LEWIS  
 SAMPLING FIRM / LOGGER: ODOT / JOY  
 DRILLING METHOD: 3.75" HSA  
 SAMPLING METHOD: SPT  
 DRILL RIG: CME 850R TRACKED  
 HAMMER: CME AUTOMATIC  
 CALIBRATION DATE: 6/1/17  
 ENERGY RATIO (%): 81  
 STATION / OFFSET: 371+76.55' LT.  
 ALIGNMENT: CL SR 661  
 ELEVATION: 928.0 (ft) EOB: 70.0 ft.  
 LAT / LONG: 40.059182, -82.521124  
 EXPLORATION ID: B-004-1-17  
 PAGE: 1 OF 2

DEPTH (ft)	SPT / RQD	REC (%)	N <sub>60</sub>	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			WC	ODOT CLASS (G)	SO <sub>4</sub> ppm	HOLE SEALED
						GR	CS	FS	SI	CL	LL				
1															
2	4	44	12	SS-1A	1.50	-	-	-	-	-	-	-	A-6b (V)	-	
3															
4	1	72	8	SS-2A	1.50	0	4	4	56	36	19	19	A-6b (12)	-	
5	3														
6	2														
7	3	94	8	SS-3A	1.50	-	-	-	-	-	-	-	A-6b (V)	-	
8															
9	1	44	5	SS-4A	2.00	-	-	-	-	-	-	-	A-6b (V)	-	
10	2														
11															
12	7	67	18	SS-5A	-	54	16	8	16	6	NP	NP	A-1-b (0)	-	
13	6														
14	15	0	42	SS-6A	-	-	-	-	-	-	-	-	A-1-b (V)	-	
15	15														
16	16														
17															
18															
19	10	89	31	SS-7A	-	-	-	-	-	-	-	-	A-1-b (V)	-	
20	13														
21	10														
22															
23															
24	8	50	36	SS-8A	-	-	-	-	-	-	-	-	A-1-b (V)	-	
25	11														
26	16														
27															
28															
29	2	89	22	SS-9A	4.50	25	9	15	30	21	20	14	A-4a (3)	-	
30	6														
31	10														
32															
33															
34	8	89	34	SS-10A	4.50	-	-	-	-	-	-	-	A-4a (V)	-	
35	10														
36	15														
37															
38															
39	7	89	57	SS-11A	-	61	15	9	10	5	NP	NP	A-1-a (0)	-	
40	16														
41	26														
42															
43															
44	17	89	57	SS-12A	-	-	-	-	-	-	-	-	A-1-a (V)	-	
45	19														
46	23														
47															
48															
49	12	94	53	SS-13A	-	-	-	-	-	-	-	-	A-1-a (V)	-	
50	19														
51	20														
52															
53															
54	7	89	53	SS-14A	4.00	-	-	-	-	-	-	-	A-4a (V)	-	
55	17														
56	22														
57															
58															
59	7	94	42	SS-15A	4.50	32	6	14	30	18	20	15	A-4a (3)	-	
60	12														
61	19														

TOPSOIL (6")  
 STIFF, BROWN, SILTY CLAY, TRACE SAND, MOIST

@8.5'; LITTLE STONE FRAGMENTS

MEDIUM DENSE TO DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP

@13.5' - 15.0'; NO RECOVERY

HARD, GRAY, SANDY SILT, SOME GRAVEL AND STONE FRAGMENTS, SOME CLAY, DAMP

VERY DENSE, GRAY, GRAVEL AND STONE FRAGMENTS, SOME SAND, LITTLE SILT, TRACE CLAY, MOIST TO WET

HARD, GRAYISH BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP

PID: 92411	SFN: 4506333 (P)	PROJECT: LIC-37/661-16.59/0.00	STATION / OFFSET: 371+76.55 LT.	START: 2/7/18	END: 2/8/18	PG 2 OF 2	B-004-1-17								
<b>MATERIAL DESCRIPTION AND NOTES</b>		ELEV. 868.0	SPT/ RQD	GRADATION (%)		ODOT CLASS (GI)	HOLE SEALED								
HARD, GRAYISH BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP (continued)		DEPTHS	N <sub>60</sub>	GR	CS	FS	SI	CL	LL	PL	PI	WC	S04 ppm		
		61												<V>	
		62													<V>
		63													<V>
		64	19	68	100	SS-16A	4.50	-	-	-	-	-	12	A-4a (V)	<V>
		65	23	27											<V>
		66													<V>
		67													<V>
		68													<V>
		69	12	63	100	SS-17A	4.50	-	-	-	-	-	14	A-4a (V)	<V>
858.0		EOB	25											<V>	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 50 LB. BENTONITE CHIPS, MIXED 100 LB. BENTONITE GROUT, 60 GAL. WATER

State of Ohio  
Department of Highways  
Testing Laboratory

LOG OF BORING

Date Started 5-11-60 Sampler Type SS Dia. 3 3/8" Water Elev: immediate  
Date Completed 5-17-60 Casing Length 55' Dia. 3 1/2" After Hours

Project Identification: LICKING  
LIC-16-

UNDER SR 37

Boring No. 23B Station & Offset 111+67.63' RT. (REAR PIER) Surface Elev. 935.2

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics							SHTL Class.
						% Agt	% C.S.	% F.S.	% Silt	% Clay	LL	PI	
935.2	0			1	57363	19	13	14	23	31	36	15	27
934.2	2	H.A.	Brown & Gray Gravelly Sandy Clay	2	57364	18	10	14	48	24	NP	NP	16
933.2	4	H.A.	Brown Gravelly Sandy Silt	3	57365	10	12	12	41	25	27	5	24
932.7	6	H.A.	Gray Sandy Silt w/Brick Fragments	4	57242	17	7	14	48	24	26	8	21
931.7	8	H.A.	Brown Gravelly Sandy Silt w/Brick Fragments	5	57366	26	13	10	43	22	28	8	21
930.2	10	2/3	Gray Gravelly Silt	6	57243	0	1	2	65	32	32	12	27
927.7	12	3/4	Brown & Gray Silt & Clay	7	57244	0	2	3	69	26	26	5	25
925.2	14	3/5	Brown Silty Sandy Gravel	8	57245	44	18	11	17	10	23	7	19
922.7	16	5/8	Brown Silty Gravelly Sand	9	57246	39	26	10	19	6	NP	NP	15
917.7	18	19/20	Brown Silty Sandy Gravel	10	57247	50	20	18	9	3	NP	NP	21
915.2	20	36/41	Brown Sandy Gravel	11	57248	74	17	4	-5-		NP	NP	14
912.7	22	23/24	Brown Silty Sandy Gravel	12	57249	55	17	11	13	4	NP	NP	6
910.2	24	27/34	Brown Silty Sandy Gravel	13	57250	55	17	9	15	4	NP	NP	12
907.7	26	15/27	Brown Silty Sandy Gravel	14	57251	24	11	18	32	15	20	7	14
905.2	28	14/18	Gray Sandy Gravelly Silt	15	57252	32	9	16	26	17	19	6	13
902.7	30	12/14	Gray Gravelly Sandy Silt	16	57253	22	13	16	29	20	18	5	10
900.2	32	9/10	Gray Gravelly Sandy Silt	17	57254	28	9	15	30	18	20	7	13
	34			18	57255								

Particle Sizes: Agg. > 200mm, Coarse Sand = 2.00 - 0.42 mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = < 0.005 mm  
H.A. = Hand-Auger

Boring No. 23B Station & Offset 111+67.63' RT. Surface Elev. 935.2

Project: LIC-16-1461

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics							SHTL Class.
						% Agt	% C.S.	% F.S.	% Silt	% Clay	LL	PI	
897.7	38	12/13	Gray Silty Sandy Gravel	15	57256	51	11	10	18	10	18	5	15
895.2	40	8/10	Gray Sandy Gravelly Silt	16	57257	26	11	14	32	17	18	3	12
890.2	42	16/17	Gray Silty Sandy Gravel	17	57258	54	22	11	11	2	NP	NP	14
885.2	44	42/54	Gray Silty Sandy Gravel	18	57259	40	23	13	17	7	NP	NP	12
880.2	46	35/50	Gray Silty Gravelly Sand	19	57260	31	35	12	17	5	NP	NP	10
875.2	48	19/40	Gray Gravelly Silt	20	57261	21	4	3	54	18	NP	NP	20
870.2	50	-----	Gray Sand & Large Gravel BOTTOM OF BORING				V	I	S	U	L		
	52												
	54												
	56												
	58												
	60												
	62												
	64												
	66												
	68												
	70												
	72												
	74												
	76												
	78												
	80												

State of Ohio  
Department of Highways  
Testing Laboratory

LOG OF BORING

Date Started 5-11-60 Sampler Type SS Dia. 1 3/8" Water Elev. Immediate  
Date Completed 5-17-60 Casing Length 60' Dia. 3 1/2" After \_\_\_\_\_ Hours

Project Identification: LICKING  
LIC-16-  
UNDER SR 37

Boring No. 26B Station & Offset 111+88, C.L. (CENTER P.I.E.) Surface Elev. 933.7

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics						SHTL Class.		
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL		PI	W.C.
933.7	0													
931.2	2	16/13	Brown and Gray Sandy Silt	1	57174	12	6	12	45	25	25	5	19	
928.7	4	4/4	Gray Sandy Silt	2	57175	8	8	9	50	25	29	5	25	
926.2	6	5/5	Brown Silt and Clay	3	57176	2	3	5	55	35	32	11	22	
923.7	8	3/4	Brown Clayey Silt	4	57177	0	1	1	66	32	32	10	29	
921.2	10	6/9	Brown Sandy Gravelly Silt	5	57178	30	5	10	37	18	28	9	24	
918.7	12	4/4	Brown Sandy Gravelly Silt	6	57179	30	13	11	33	13	NP	NP	15	
916.2	14	4/11	Brown Gravelly Sandy Silt	7	57180	17	16	13	36	18	NP	NP	22	
913.7	16	18/13	Brown Silty Sandy Gravel	8	57181	61	15	13	5	6	NP	NP	10	
911.2	18	24/29	Brown Silty Sandy Gravel	9	57182	62	17	7	10	4	NP	NP	11	
908.7	20	89/*	Brown Silty Sandy Gravel	10	57183	48	9	11	20	12	NP	NP	9	
906.2	22	14/12	Brown Silty Sandy Gravel	11	57184	42	24	9	19	6	NP	NP	17	
903.7	24	28/26	Brown Silty Sandy Gravel	12	57185	36	21	10	24	9	NP	NP	14	
901.2	26	13/15	Gray Silty Gravelly Sand	13	57186	28	8	15	32	17	19	3	8	
898.7	28	11/15	Gray Gravelly Sandy Silt	14	57187	23	12	16	31	18	21	5	12	

Particle Sizes: Agg. > 200mm, Coarse Sand = 200 - 0.42mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = < 0.005mm  
\*Refusal

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics						SHTL Class.		
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL		PI	W.C.
896.2	38	17/71	Brown Silty Sandy Gravel	15	57188	67	8	8	8	9	NP	NP	14	
893.7	40	12/23	Gray Silty Sandy Gravel	16	57189	35	11	14	20	20	21	4	12	
888.7	42	29/29	Brown Sandy Gravel	17	57190	57	21	12	-10	-	NP	NP	12	
883.7	44	57*	Brown Silty Sandy Gravel	18	57191	66	13	7	-	14	-	NP	NP	11
878.7	46	41/54	Brown Silty Sandy Gravel	19	57192	51	21	10	12	6	NP	NP	12	
873.7	48	29/64	Brown Gravelly Silt	20	57193	13	4	4	74	5	21	5	14	
872.7	50		BOTTOM OF BORING											

Boring No. 26B Station & Offset 111+88, C.L. Surface Elev. 933.7 Project: LIC-16-1461

\*Refusal

LIC-37 / 661 -  
16.59 / 0.00

STRUCTURE FOUNDATION EXPLORATION  
BRIDGE NO. LIC-661-0003 OVER S.R. 16  
HISTORIC BORING LOG B-026-B-60

DRAWN  
ARR  
CHECKED  
AAG

State of Ohio  
Department of Highways  
Testing Laboratory

LOG OF BORING

Date Started 5-17-60 Sampler Type SS Dia. 1 3/8" Water Elev: Immediate  
Date Completed 5-18-60 Casing Length 55' Dia. 2 1/2" After \_\_\_\_\_ Hours \_\_\_\_\_  
Project Identification: LICKING  
LIC-16-1461  
UNDER SR 37

Boring No. 27B Station & Offset 111+33, 63' LT. (FORWARD PIER) Surface Elev. 929.1

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics							SHTL Class.
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	
929.1	0			1	57153	23	4	7	42	24	31	10	19
928.1	2		Brown Gravelly Silt	2	57154	7	5	8	49	31	28	6	16
926.6	4		Brown Silt	3	57155	6	10	13	43	28	30	5	28
924.1	6		Brown Silt & Clay	4	57156	0	0	0	58	42	35	15	31
921.6	8		Brown & Gray Clayey Silt	5	57157	0	1	1	56	42	32	8	27
919.1	10		Brown Silt	6	57158	0	0	3	64	33	26	5	28
916.6	12		Gravel	7	57159	87	6	3	-4	-	NP	NP	17
914.1	14	18/21	Brown Silty Gravelly Sand	8	57160	52	20	7	15	6	NP	NP	15
911.6	18	22/16	Brown Silty Sandy Gravel	9	57161	67	14	5	9	5	NP	NP	15
909.1	20	36/19	Brown Silty Gravel	10	57162	72	8	5	10	5	NP	NP	13
906.6	22	11/13	Brown Silty Sandy Gravel	11	57163	61	19	9	-11	-	NP	NP	14
904.1	24	34/32	Brown Silty Sandy Gravel	12	57164	40	18	9	21	12	NP	NP	13
901.6	28	11/13	Gravel	13	57165	V	I	S	U	A	L		
899.1	30	54/13	Gray Silty Gravel	14	57166	67	6	7	12	8	21	6	12
896.6	32	10/12	Gray Gravelly Sandy Silt	15	57167	17	12	17	29	25	20	4	9
894.1	34	8/10	Brown & Gray Silty Sandy Gravel	16	57168	35	8	30	16	11	NP	NP	13

Particle Sizes: Agg. = >200mm, Coarse Sand= 2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay = <0.005mm  
H.A. = Hand-Auger

Boring No. 27B Station & Offset 111+33, 63' LT. Surface Elev. 929.1 Project: LIC-16-1461

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics							SHTL Class.
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	
889.1	38		Gray Gravel	17	57169								
884.1	40	69/*	Brown Silty Sandy Gravel	18	57170	63	16	7	9	5	NP	NP	9
879.1	42	23/22	Brown Silty Sandy Gravel	19	57171	54	13	11	12	10	NP	NP	11
874.1	44	33/28	Gray Sandy Gravelly Silt	20	57172	38	8	12	29	13	20	4	12
869.1	46	30/27	Gray Gravelly Silt	21	57173	14	4	6	24	48	30	10	25
868.1	48	13/15	BOTTOM OF BORING										

#Refusal

LIC-37 / 661 -  
16.59 / 0.00

STRUCTURE FOUNDATION EXPLORATION  
BRIDGE NO. LIC-661-0003 OVER S.R. 16  
HISTORIC BORING LOG B-027-B-60

PROJECT: LIC-37/661-16.59/0.00 DRILLING FIRM / OPERATOR: ODOT / CAREY STATION / OFFSET: 108+34.5' RT. EXPLORATION ID: B-010-0-17  
 TYPE: RETAINING WALL SAMPLING FIRM / LOGGER: ODOT / MCLEISH HAMMER: CME AUTOMATIC CL RAMP G (P)  
 PID: 92411 SFN: 4506333 (P) DRILLING METHOD: 3.25" HSA / NQ2 CALIBRATION DATE: 6/1/17 ELEVATION: 940.9 (ft) EOB: 34.5 ft. PAGE: 1 OF 1  
 START: 12/26/17 END: 12/27/17 SAMPLING METHOD: SPT / NQ2 SPT / NQ2 ENERGY RATIO (%): 77 LAT / LONG: 40.058563, -82.522421

DEPTH (ft)	SPT / RQD	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			ODOT CLASS	WC	S04 ppm	BACK FILL
					GR	CS	FS	SI	CL	LL				
1	4													
2	5	67	SS-1A	-	45	13	12	20	10	30	7	16	A-2-4 (0)	140
3	12	78	SS-2A	-	55	12	11	14	8	23	3	14	A-1-b (0)	<100
4	15	78	SS-3A	-	-	-	-	-	-	-	-	9	A-1-b (V)	-
5	12	78	SS-3A	-	-	-	-	-	-	-	-	10	A-1-b (V)	-
6	28	22	SS-4A	-	-	-	-	-	-	-	-	-	-	-
7	25													
8														
9	7	100	SS-5A	-	-	-	-	-	-	-	-	12	A-1-b (V)	-
10	10													
11	14	22	SS-6A	-	-	-	-	-	-	-	-	9	A-1-b (V)	-
12	10													
13														
14	1	78	SS-7A	2.50	23	6	14	32	25	22	15	7	A-4a (4)	-
15	3													
16	8	100	SS-8A	3.50	21	8	15	33	23	21	14	7	A-4a (4)	-
17	10													
18	14													
19	10	67	SS-9A	3.50	-	-	-	-	-	-	-	12	A-4a (V)	-
20	9													
21														
22	4	89	SS-10A	2.00	44	8	16	20	12	22	17	5	A-2-4 (0)	-
23	7													
24	10	62	SS-11A	4.50	-	-	-	-	-	-	-	13	Rock (V)	-
25	17													
26	19													
27	33	100	SS-12A	-	-	-	-	-	-	-	-	14	Rock (V)	-
28	43													
29	39													
30	59	100	SS-13A	-	-	-	-	-	-	-	-	11	Rock (V)	-
31														
32	0	100	NQ2-1										CORE	
33														
34														

TOPSOIL (4")  
 MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, LITTLE CLAY, (FILL), DAMP  
 DENSE BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WITH CERAMIC FRAGMENTS, (FILL), DAMP  
 @5.5'; VERY DENSE  
 @8.5'; MEDIUM DENSE  
 @11.0' - 13.5'; ENCOUNTERED LIMESTONE BOULDERS/COBBLES  
 VERY STIFF, BROWN, SANDY SILT, SOME CLAY, SOME GRAVEL AND STONE FRAGMENTS, DAMP  
 MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, LITTLE CLAY, DAMP  
 SHALE, BROWN AND REDDISH BROWN, HIGHLY WEATHERED, WEAK, VERY THIN BEDDED.  
 @26.0'; GRAY WITH REDDISH BROWN.  
 SHALE, BROWNISH GRAY, HIGHLY WEATHERED, WEAK, VERY THIN BEDDED, ARENACEOUS, POORLY FISSILE; VERY BLOCKY, POOR; RQD 0%, REC 100%.

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 10 LB. BENTONITE CHIPS

PROJECT: LIC-37/661-16.59/0.00 DRILLING FIRM / OPERATOR: ODOT / CAREY STATION / OFFSET: 110+38.7 RT. EXPLORATION ID B-011-0-17  
 TYPE: RETAINING WALL SAMPLING FIRM / LOGGER: ODOT / MCLEISH HAMMER: CME 55 CL RAMP G (P)  
 PID: 92411 SFN: 4506333 (P) DRILLING METHOD: 3.25" HSA CALIBRATION DATE: 6/1/17 ELEVATION: 950.6 (ft) EOB: 50.0 ft. PAGE 1 OF 1  
 START: 12/27/17 END: 12/28/17 SAMPLING METHOD: SPT ENERGY RATIO (%): 77 LAT / LONG: 40.058214, -82.521849

DEPTH (ft)	SPT / RQD	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			ODOT CLASS (G)	S04 ppm	BACK FILL			
					GR	CS	FS	SI	CL	LL				PL	PI	WC
1																
2	3	50	SS-1A	2.00	10	8	9	40	33	34	19	15	20	A-6a (10)	120	
3	4															
4	6	56	SS-2A	2.00	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
5	7															
6	7	11	SS-3A	-	-	-	-	-	-	-	-	-	20	A-6a (V)	-	
7	4	100	SS-4A	-	32	15	22	17	14	23	16	7	17	A-2-4 (0)	110	
8																
9	2	100	SS-5A	-	-	-	-	-	-	-	-	-	17	A-2-4 (V)	-	
10	4															
11	7															
12	9	0	SS-6A	-	-	-	-	-	-	-	-	-	16	A-2-4 (V)	-	
13																
14	6	56	SS-7A	-	63	10	8	10	9	29	19	10	18	A-2-4 (0)	-	
15	4															
16	5	100	SS-8A	-	-	-	-	-	-	-	-	-	20	A-2-4 (V)	-	
17	4															
18																
19	4	67	SS-9A	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	-	
20	7															
21	9	100	SS-10A	-	48	15	13	17	7	NP	NP	NP	8	A-1-b (0)	-	
22	10															
23																
24	8	89	SS-11A	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	-	
25	12															
26	15															
27	12	100	SS-12A	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	-	
28																
29	40	11	SS-13A	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	-	
30	24															
31	12															
32	17	100	SS-14A	3.00	32	9	14	26	19	21	14	7	10	A-4a (2)	-	
33																
34	7	56	SS-15A	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
35	11															
36	14															
37																
38																
39	4	67	SS-16A	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
40	7															
41																
42																
43																
44	3	78	SS-17A	2.00	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
45	4															
46	5															
47																
48																
49	8	100	SS-18A	-	18	3	7	60	12	NP	NP	NP	20	A-4b (7)	-	
50	15															
	22															

TOPSOIL (6") STIFF TO VERY STIFF BROWN, SILT AND CLAY LITTLE SAND, LITTLE STONE FRAGMENTS, DAMP TO MOIST  
 @13.5'; TRACE CLAY  
 MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, LITTLE CLAY, DAMP TO MOIST  
 @23.5'; DENSE  
 @26.0'; MEDIUM DENSE  
 @28.5'; VERY DENSE  
 @28.5' - 31.0'; ENCOUNTERED BOULDERS/COBBLERES  
 VERY STIFF, GRAY, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP  
 @33.5' - 35.0'; HARD  
 @43.5'; STIFF  
 DENSE, BROWN AND GRAY, SILT, LITTLE STONE FRAGMENTS, LITTLE CLAY, LITTLE SAND, MOIST TO WET

NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS

# SPECIAL PROVISIONS

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## ASBESTOS SURVEY REPORT

C-R-S: LIC-37/661-  
16.59/0.00

PID: 92411

DATE: 06/07/18

### Asbestos Survey Report LIC-661-0.02 SFN 4506332

As asbestos survey of the subject bridge structures was conducted on June 7, 2018 by Chris Yoder, Certified Asbestos Hazard Evaluation Specialist #35081. The inspection was conducted in accordance with NESHAP Guidelines, EPA Regulation 40 CFR, Subpart M, part 61. All accessible areas of the LIC-661-0.02 bridge structure were inspected for the presence of suspected ACM's. A site location map and bridge information summary are included in Appendix A. Select plan sheets from the original bridge construction plans and photos are included in Appendix B.

#### Bridge History

The LIC-661-0.02 bridge structure is a 4 span steel beam with reinforced concrete deck. The bridge was constructed in 1963. No major rehabilitation work has been completed on the bridge since it was constructed. A concrete overlay was placed on the bridge deck in 1986. The project will replace the existing bridge with a new structure.

#### Structure plan review

A review of the original 1963 bridge construction plans found no suspect asbestos containing materials in the materials list and specifications. The plans did specify aluminum hand rails atop of concrete parapets. Past experience has found that the rail support brackets often were caulked at the concrete interface. The caulking material is a suspect ACM.

#### Asbestos Survey Summary

A visual inspection of the bridge was conducted on June 7, 2018. One suspect material was identified on the bridge structure, the caulking material around the aluminum handrail bracket bases. Bulk samples were collected and submitted for PLM laboratory analysis. The results of the PLM analysis found the caulking material tested positive for asbestos. All ACBM locations where caulking material is present contain less than 160 sq ft, 260 lin ft or 50 lin ft. Based on the asbestos inspection and laboratory analysis approximately 24 square feet of Category II non-friable asbestos is present on the bridge structure.





**Laboratory Analytical Report**

ODOT District 5  
9600 Jacksontown Rd., SE  
Jacksontown, OH 43030  
Chris Yoder

**ODOT District 5**  
9600 Jacksontown Rd., SE  
Jacksontown, OH 43030

Attention:  
Chris Yoder

Client Project: PID 92411  
EA Group Workorder Number: 180600162  
Received on June 11, 2018

**Project Identification**  
PID 92411

The following analytical report contains results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data has been found to be compliant with accepted laboratory protocol, except as noted in the QC narrative. Industrial hygiene reports, air and/or surface concentrations results are based upon sampling information provided by the client. Industrial hygiene results will not be blank corrected. Analyst initials of REF indicate analysis performed at a subcontract facility.

**Purchase Order:**

If you have questions, comments or require further assistance regarding this report, please contact your client services representative or one of the individuals listed below.

Data or reporting:

Debbie Lauer - Lab Manager  
dlauer@eagroupohio.com

Mike Herbert - General Manager  
mherbert@eagroupohio.com

**EA Group**  
**Order Number**  
**1806-00162**

Sample tracking, supplies:

Linetta Brown - Sample Control  
sreceiving@eagroupohio.com

Invoice Related:

Bonnie Renbarger - Office Manager  
brenbarger@eagroupohio.com

Carl R. Eggebraaten  
Microscopist

Deborah Lauer  
Laboratory Manager

Reproduction of this report is prohibited except in its entirety . Unless noted, soil, sludge and sediment results are reported on dry weight basis. The "Sample Reporting Limit" is based on the method used for analysis and does not refer to any regulatory limit. These results relate only to the items tested.

June 15, 2018

**Project Summary**

The following analytical report contains the results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data have been found to be compliant with accepted laboratory protocol. Exceptions, if any, are noted below.

**Sample Summary**

Sample Receive Date: 6/11/2018

EAG	Client	EAG	Client
<u>Sample Identification</u>	<u>Sample Identification</u>	<u>Sample Identification</u>	<u>Sample Identification</u>
180600162-01A	002-1	180600162-02A	002-2
180600162-03A	002-3		

**Quality Control Narrative**

Reproduction of this report is prohibited except in its entirety. Unless noted, soil, sludge, and sediment results are reported on dry weight basis. The "Sample Reporting Limit" is based on the method used for analysis and does not refer to any regulatory limit.

Workorder: 1806-00162

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EAG ID:	Client ID:	Date Analyzed:	Matrix:
1806-00162-01A	002-1	06/15/2018	Bulk
<b>Date Sampled:</b> 06/07/2018	<b>Date Received:</b> 06/11/2018		<b>Analyst:</b> CRE
<u>Parameter</u>	<u>Result</u>	<u>Description</u>	
Bulk Asbestos Analysis			
% Chrysotile Asbestos	3		
% Amosite Asbestos	ND		
% Crocidolite Asbestos	ND		
% Other Asbestos Fibers	ND		
% Fibrous Glass	ND		
% Other Non-Asbestos Fibers	ND		
% Gravimetrically Reduced	25		
% Other Non-Asbestos Mat'ls	72		
Analysis Comments	*	see note on last page	
<b>Sample Physical Description:</b>	Silver-gray material		

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EAG ID:	Client ID:	Date Analyzed:	Matrix:
1806-00162-02A	002-2	06/15/2018	Bulk
<b>Date Sampled:</b> 06/07/2018	<b>Date Received:</b> 06/11/2018		<b>Analyst:</b> CRE
<u>Parameter</u>	<u>Result</u>	<u>Description</u>	
Bulk Asbestos Analysis			
% Chrysotile Asbestos	4		
% Amosite Asbestos	ND		
% Crocidolite Asbestos	ND		
% Other Asbestos Fibers	ND		
% Fibrous Glass	ND		
% Other Non-Asbestos Fibers	ND		
% Gravimetrically Reduced	26		
% Other Non-Asbestos Mat'ls	70		
Analysis Comments	*		
<b>Sample Physical Description:</b>	Silver-gray material		

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EAG ID:	Client ID:	Date Analyzed:	Matrix:
1806-00162-03A	002-3	06/15/2018	Bulk
<b>Date Sampled:</b> 06/07/2018	<b>Date Received:</b> 06/11/2018		<b>Analyst:</b> CRE
<u>Parameter</u>	<u>Result</u>	<u>Description</u>	
Bulk Asbestos Analysis			
% Chrysotile Asbestos	3		
% Amosite Asbestos	ND		
% Crocidolite Asbestos	ND		
% Other Asbestos Fibers	ND		
% Fibrous Glass	ND		
% Other Non-Asbestos Fibers	ND		
% Gravimetrically Reduced	25		
% Other Non-Asbestos Mat'ls	72		
Analysis Comments	*		
<b>Sample Physical Description:</b>	Silver-gray material		



Workorder: 180600162

These bulk samples were analyzed as received for percentage composition of Asbestos and Non-Asbestos materials by Method(s) EPA-600/M4-82-020, December 1982 and/or EPA/600/R-93/116 July 1993, which have Detection Limits of less than 1% Asbestos.

Asbestos Containing Materials (ACM) and Presumed Asbestos Containing Materials (PACM) are regulated by several different governmental regulatory agencies.

EPA NESHAP regulations cover certain buildings that are to be renovated or demolished. NESHAP regulations require that when a sample (or layer of a multi-layered sample) is analyzed and found to contain asbestos at a concentration of less than 10% by a method other than point counting by Polarized Light Microscopy (PLM), the owner/operator has the option of:

- 1) Assuming the amount to be greater than 1% and treating the material as regulated ACM.
- OR
- 2) Requesting verification of the amount by point counting.

Building owners/operators covered by NESHAP should review the following for the full and specific regulations:

- 1) Federal Register, Vol. 55, No. 224, Tuesday, November 20, 1990
- 2) Clarification of NESHAP requirement to perform point counting, May 8, 1991
- 3) Federal Register, Vol. 59, No. 3, Wednesday, January 5, 1994
- 4) Federal Register, Vol. 59, No. 146, Monday, August 1, 1994
- 5) Federal Register, Vol. 60, No. 243, Tuesday, December 19, 1995

Building owners/operators and employers covered by OSHA regulations also have specific requirements regarding ACM and PACM. Those who may be covered by these regulations should review 29 CFR 1910.1001 and 29 CFR 1926.1101 for specific requirements.

FLOOR TILES: PLM should only be considered a screening method for floor tile analysis. Any floor tile with a result of one percent or less asbestos by PLM should be assumed positive for asbestos until the sample is re-analyzed by Analytical Electron Microscopy.

Other difficult matrices (such as bituminous, organically bound, and cementitious materials) may obscure very small asbestos fibers. Some samples may also contain asbestos fibers with diameters below the limit of resolution of the optical microscopes used in typical PLM analysis. Therefore, negative results by PLM on these materials should be confirmed by Analytical Electron Microscopy.

EA Group has a sample retention policy of at least 30 days. After that time, the samples will be disposed of unless the client has requested that they be returned. The client will be charged a shipping and handling fee associated with returned samples only.

Key to analysis comments (if noted on samples):

- \* Asbestos content in this sample has been verified by the Chalkley point counting procedure.
- \*\* The client has the option of requesting verification of this analytical result by point counting as specified by the NESHAP standards.
- \*\*\* Insufficient sample amount for quantitation and/or performing Quality Control functions.
- \*\*\*\* Due to the nature of the sample (dust, debris, or vacuum), percentages for the constituents could not be assigned.
- + After gravimetric reduction, the residue has been visually estimated as at least 10% asbestos. Therefore, point counting is not required to satisfy NESHAP requirements.
- ++ Contains fibers that may be an asbestos mineral but could not be positively identified by PLM. Analysis by Transmission Electron Microscopy (TEM) is recommended.
- +++ See additional comment on conclusions page.

ND	None Detected
Trace	Observed but less than 1%
NH	Non-Homogeneous sample, the result reflects the average.
Und. non-asb	Undetermined non-asbestos fibers

This report applies only to sample(s) analyzed and may not be used by the client to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

NVLAP Lab Code 101019-0

Ohio VAP Certification # CL0015

AVOID DELAYS - FILL OUT COMPLETELY  
RUSH TURNAROUND TIMES MUST BE CONFIRMED BY EAG



**CHAIN OF CUSTODY**  
BULK ASBESTOS ONLY  
PLEASE DO NOT SEPARATE FORMS

EAG WORK ORDER # 162

PAGE \_\_\_\_\_ OF \_\_\_\_\_

7118 INDUSTRIAL PARK BLVD. MENTOR, OHIO 44060-5314  
(440) 951-3514 FAX (440) 951-3774 (800) 875-3514  
websites: www.eagroup-ohio.com customerservice@eagroup-ohio.com

Company Name <u>Ohio Department of Transportation</u>		TURNAROUND (X)		LABORATORY PROCEDURE	
Report Address <u>P.O. Box 306</u>		RUSH <input checked="" type="checkbox"/>		ASBESTOS COMPOSITE	
Billing Address		NORMAL <input type="checkbox"/>		ASBESTOS LAYERED	
City <u>Jacksontown</u>	State <u>OH</u>	Zip <u>43030</u>	FULL ANALYSIS: ASBESTOS / NON-ASBESTOS POINT COUNT APPROVED		
Phone <u>(740) 323-5193</u>	Fax <u>(740) 323-5189</u>				
Report Attention <u>Chris Yoder</u>					
Project Name <u>PID 92411</u>					
P.O. #					

SAMPLE IDENTIFICATION	MATRIX	COLLECTION DATE	ASBESTOS COMPOSITE	ASBESTOS LAYERED	FULL ANALYSIS: ASBESTOS / NON-ASBESTOS	POINT COUNT APPROVED
<u>002-1, 002-2, 002-3</u>		<u>6/7/18</u>			X	X
<b>ALL SERVICES WILL BE PERFORMED IN ACCORDANCE WITH EA GROUP STANDARD TERMS AND CONDITIONS</b>						

Fax Results  Email Results (to) Chris.yoder@dot.state.oh.us

Method of Shipment: EAG Client FedEx UPS Other U.S. Mail

**Explanation of Laboratory Procedures:**

EA Group employs EPA Method 600/R-93/116 in the analysis of bulk materials for asbestos content by polarized light microscopy (PLM).

**Composite Analysis** - Sample will be composited and a single result will be reported for asbestos content. Point Count is NOT applicable to this analysis.

**Layered Analysis** - Individual layers will be analyzed separately. The report will not include non-asbestos components.

**Full Analysis** - Individual layers will be analyzed separately. The report will include asbestos and non-asbestos components.

**Point Count** - The point count procedure is typically used to quantify asbestos in samples previously quantified by the Visual Estimation Method. A separate charge applies for each sample that is point counted. This method is NOT applicable to Composite Analysis.

Relinquished by (sign) <u>[Signature]</u>	Date/Time <u>6/7/18 12:45PM</u>	Received by (sign) <u>[Signature]</u>	Date/Time <u>6/11/18 10:00</u>
Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time
Relinquished by (sign)	Date/Time	Received by (sign)	Date/Time

(203) Bridge (Dedicated) Name:		BRIDGE INVENTORY AND APPRAISAL		Report Date: 6/7/2018
Structure File Number: 4506332		Inventory Bridge Number: LIC 00661 00020		Bridge Status: Active
Sufficiency Rating: 060.1		SR 661 OVER SR 16		
(2) District: 05	(3) County: 45-LICKING	(9) Location: At Jct Of Sr 16	(7) Facility Carried: Sr 661	
(4) FIPS Code: LIC-T-31416-GRANVILLE TWP	Owner: OHIO DEPT OF TRANSPORTATION	(208) Route On Bridge: State (Odor) (Toll Free)	(207) Route Under Bridge: State (Odor) (Toll Free)	
(102) Direction of Traffic: 2 - 2-Way Traffic	(103) Temporary Structure:	(110) Designated National Network: Not National Network	(101) Parallel: N	
		(42A) Type Serv: (On): Highway	(42B) Type Serv (Under): Highway, With Or W/Out Pedestrian	
INVENTORY ROUTE DATA		(45) Main Spans Number: 4	(43) Type: Steel/Beam/Continuous	
(5A) Route On/Under: 1 - Route Carried "On" The Structure		(46) Approach Spans Nbr: 0	(44) Type: None/None/None	
(5B) Hwy Sys: 3 - State Highway		(307) Total Spans: 4	(48) Max Span: 70.0 Ft	(49) Overall Leng: 238.0 Ft
(5D) Route No: 00661	(5E) Dir: Not Applic	(5C) Des: Mainline		
(6) Feature Int: Sr 661 Over Sr 16				
(200) CL: 00020	(201) Spec Des:	(209) Interstate Mile:		
(29) Avg. Daily Traffic(ADT): 9,419	(30) ADT Year: 2015			
(235) Truck Traf: 1,032	(210) Corridor: N	(104) NHS: non-nhs bridge - 0		
(26) Functional Class: rural - major collector	(100) Strahnt: Not Strahnt			
INTERSECTED ROUTE DATA				
(370A) Record Type: 2 Single Route Goes "U"	(370B) Hwy Sys: State Highway			
(370D) Route No: 00016	(370E) Dir:	(370C) Des: 1 MAINLINE		
(373) Feature Int: Sr16 Under Sr 661				
(382) CL: 1460	(371) Interstate Mile:	(387) Special Desig:		
(379) Avg. Daily Traffic(ADT): 34,181	(380) ADT Year: 2015			
(381) Truck Traf: 1910	(384) Corridor: N	(378) NHS: Nhs Bridge - 1		
(375) Functional Class: Rural - Principal	(386) Strahnt: Not Strahnt			
CLEARANCE ON THE BRIDGE				
Min. Horiz on Bridge: (335) NC: 0.0 Ft	(47) Card: 30.0 Ft			
(53) Prac Max Vert On Brg: 9999.9 Ft				
Min Vert Clr On Brg: (336) NC: 0.0 Ft	(10) Card: 9999.9 Ft			
Min Latl Clr: (338) Right NC: 0.0 Ft	(337) Right Card: 2.1 Ft			
(340) Left NC: 0.0 Ft	(339) Left Card: 2.1 Ft			
STRUCTURE INFORMATION				
(19) Bypass Length: 8.0 Miles				
(16) Latitude: 40 Deg 03 Min 31.67 Sec	(17) Longitude: 82 Deg 31 Min 15.57 Sec			
(20) Toll: On Free Road, The Structure Is Toll Free				
(263) Date Built: 7/1/1963	(264) Major Reconstruction Date:			
(28A) No. Lanes On: 2	(28B) No. Lanes Under: 4			
(301) Horiz Curve:	(34) Skew: 15 Deg			
(32) App. Rdw Width: 40 Ft	(51) Brg. Rdw Width: 30.0 Ft			
(52) Deck Width: 36.8 Ft	(424) Deck Area: 8766 Sq. Ft			
(406) Median Type: /Non Barrier/No Joint				
(33) Bridge Median: No Median				
Sidewalks: (50A) Left 2.1 Ft	(50B) Right 2.1 Ft			
Type Curb or Sidewalk:				
(427) Left Matl: Concrete	(428) Type: Safety Curb (2' Or Less Width)			
(429) Right Matl: Concrete	(430) Type: Safety Curb (2' Or Less Width)			
(35) Flared: 0	(408) Composite: N - Non-Composite			
(407) Railing: Reinforced Concrete Safety Curb And Para				
(409) Deck Drainage: Scuppers And Downspouts				
LOAD RATING INFORMATION				
(31) Design Load: H20	(71) Waterway Adequacy: N Not Applicable			
(64) Opr Rat Fact/Ton: 1.250	(72) Approach Alignment: 8 Equal to present desirable criteria			
(66) Inv Rat Fact/Ton: 1.000	(67) Calc Str Appraisal: 5 - Somewhat better than minimum adequacy			
(734) Ohio Percent of Legal Load: 150	(68) Calc Deck Geometry: 4 - Meets minimum tolerable limits			
(704) Year of Rating: 1973	(708) Rate Soft: Bars			
(63) Opr Rat Method: Allowable Stress (As) Rating Reported By	(69) Calc Underclearance: 5 - Somewhat better than minimum			
(65) Inv Rat Method: Allowable Stress (As) Rating Reported By				
Load Rater: (705) (706) (707) PE#: 0				
APPROACH INFORMATION				
(401) Approach Guardrail: Steel Beam	(402) Grade: Good			
(403) Approach Pavement: Bituminous				
CULVERT INFORMATION				
(575) Culvert Type: Not A Culvert Or Rigid Frame	(578) Length: 0.0 Ft			
(580) Depth of Fill: 0.0 Ft	(582) Headwalls: None Or Not Applicable (Not A Culvert)			
GENERAL INFORMATION				
(475) Main Member: Rolled Steel	(477) Moment Plate: Moment Plates (Welded)			
(414) Expansion Joint: Elastomeric Strip Seal				
(453) Bearing Devices: Rockers & Bolsters				
(38) Navigation: N	(39) Nav Vert Clr: 0.0 Ft	(40) Nav Horiz Clear: 0.0 Ft		

(203) Bridge (Dedicated) Name:		BRIDGE INVENTORY AND APPRAISAL		Report Date: 6/7/2018
Structure File Number: 4506332		Inventory Bridge Number: LIC 00661 00020		Bridge Status: Active
Sufficiency Rating: 060.1		SR 661 OVER SR 16		
(107) Deck Type: Reinforced Concrete	(92C) Spec Insp: N	Freq: 0	(93C) Special Inspection Date:	
Deck Protection: (108B) External: Not Applicable (Only For Bridges For No	(92A) Fracture Critical Insp: N	Freq: 0	(93A) Fracture Critical Feature Inspection Date:	
(108C) Internal: Not Applicable (Applies Only To Bridges	(474) Main Structure System: Not Applicable (I.E. Culvert, Beam, Slab	(488) Hinges: Not Applicable (Structures With No Hinge	(465) Framing: Straight Beams/Girders	
(108A) Wearing Surface: Super-Plasticized Dense Concrete (Sdc) -	(487) Structural Steel Memb: Unknown	(482) Paint: Red Lead	(426) Bridge Railing Steel: U	
(423) Thickness: 2.5 in	(422) Date of Wearing Surface: 1/1/1987	(483) PCS Date: 1/1/1977		
(547) Slope Protection: Stone (No. 1 Aggregate)				
GENERAL INFORMATION (CONTINUED)		ORIGINAL PLANS INFORMATION		
(37) Hist Significance: Not Eligible For National Register Of Hi	(250) Fabricator: FORT PITT BR			
(112) NBIS: Y	(249) Contractor: V N HOLDERMAN			
(842) Hist/Designer: None N/A	(248) Ohio Original Construction Project No: 034661			
(827) Hist Build Year:	(252) Microfilm Reel: LIC013			
(828) Hist Type:	(251) Standard Drawing: CSB-2-56			
(98A) Border Bridge State:	Aperture Cards:			
(98B) Border Bridge Resp:	(246) Orig: N			
(99) Border Bridge SFN:	(247) Repair: N			
	(245) Fabr: N			
PROPOSED IMPROVEMENTS		(709) Rating Source: 1 Plan Information Available For Load Rati		
(114) Future ADT (On Bridge): 13074	(115) Year of Future ADT: 2038			
INSPECTION SUMMARY		SURVEY ITEMS		SPECIAL FEATURES
(58) Deck: 5	(36A) Railings: Does Not Meet Acceptable Standards/Safet	(265) Electric Line: N	(283) Lighting: N	
(59) Superstructure: 5	(36B) Transitions: Does Not Meet Acceptable Standards/Safet	(266) Gas Line: N	(431) Fence: N	
(60) Substructure: 5	(36C) Guardrail: Meets Acceptable Standards	(269) Sanitary Sewer: N	(433) Glare-Screen: N	
(62) Culvert: N	(36D) Guardrail Ends: Meets Acceptable Standards	(267) Telephone Line: N	(436) Splash-Guard: N	
(61) Channel: N	(219) Temporary Barrier: N	(268) TV Cable: N	(459) Catwalks: N	
(C6) Approaches: 5	(223) Temporary Shoring: N	(270) Water Line: N	(271) Other-Feat: N	
General Appraisal: 5	(224) Temporary Sub Decking: N	(271) Other Utilities: N	(279) Signs-On: N	
(41) Operational Status: A				
(90) Inspection date: 6/26/2017				
(91) Desig Insp Freq: 12 Mos				
(253) SFNs Replacing this retired bridge:	Insp 1st: 1 - Ohio State Transportation Department			
(255) SFNs That were replaced by this bridge:	2nd:			
	3rd:			
	(21) Major Maint 1st: 1 - Ohio State Transportation Department			
	2nd:			
	3rd:			
	(225) Routine Maint 1st: 1 - Ohio State Transportation Department			
	2nd:			
	3rd:			



**OHIO ENVIRONMENTAL PROTECTION AGENCY  
INSTRUCTIONS FOR COMPLETING  
NOTIFICATION OF DEMOLITION AND RENOVATION FORM**

**General Information**

**Who must submit this notification?** [OAC 3745-20-03 and 40 CFR 61.145(b)]

- The owner or operator means any person who leases, operates, controls, or supervises the facility being demolished or renovated, or any person who owns, leases, operates, controls or supervises the demolition or renovation (activity), or both.

The Ohio EPA notification of demolition and renovation form is required for:

- Every demolition of a facility, regardless of whether asbestos is involved. This includes all structures that will be intentionally burned for fire training purposes.
- A renovation when the amount of regulated asbestos-containing material (RACM) stripped, removed, dislodged, cut, drilled, or similarly disturbed exceeds 260 linear feet on pipes or 160 square feet on other facility components or 35 cubic feet off facility components.

**When must I submit this notification?**

ORIGINAL: The original notification must be postmarked or hand delivered to the Ohio EPA district office or local air agency with jurisdiction in the county where the operations will occur at least 10 working days (Monday-Friday excluding weekends) before operations begin. Please see example table below to help determine when to submit the original notification.

**E-mail or FAX notification is not acceptable for original notification.**

July

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 day 1	4 day 2	5 day 3	6
7	8 day 4	9 day 5	10 day 6	11 day 7	12 day 8	13
14	15 day 9	16 day 10	17 *	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Post mark date (and Day 1 of 10-day clock): July 3<sup>rd</sup>.

Note: Holidays are counted when they fall on a working day.

Completion of 10-day prior notification period: July 16<sup>th</sup>.

\* First day work can commence (day following the 10<sup>th</sup> working day): July 17<sup>th</sup>.

REVISIONS: The notification must be updated if the amount of RACM changes by at least 20 percent, any changes in work schedules (dates or hours), any change in owner or operator, or any change in the name or location of selected waste disposal site. A revised notification may be provided by phone, email, or fax, followed in writing.

EMERGENCY DEMOLITION OR RENOVATIONS: The notification must be submitted as early as possible before, but not later than, the following working day from start of renovation or demolition activities. The notification must include the supplemental information required in Sections 14 or 15.

**Where do I send my notification?**

Send the notification directly to the Ohio EPA district office or local air agency with jurisdiction in the county where the operations will occur. A list of the counties and a jurisdiction map is available online at [www.epa.ohio.gov/dapc/atu/asbestos.aspx](http://www.epa.ohio.gov/dapc/atu/asbestos.aspx)

**How does Ohio EPA assess fees?** [ORC 3745.11(G)]

An owner or operator who is responsible for an asbestos demolition or renovation project shall pay the fees set forth in the following schedule. This applies when thresholds are greater than or equal to: 260 linear feet; 160 square feet; or 35 cubic feet.



- Each notification \$75 plus,
- Asbestos removal \$3/unit (1 unit = any combination of linear feet or square feet equal to fifty) and/or
- Asbestos cleanup \$4/cubic yard

The Ohio EPA will bill the facility owner or operator on a quarterly basis. Please be aware that some local air agencies may have additional fees.

### Who can help answer questions about completing this notification?

Contact the Ohio EPA district office or local air agency with jurisdiction in the county where the operations will occur. A list of these jurisdictions and the appropriate contacts is available at [www.epa.ohio.gov/dapc/atu/asbestos.aspx](http://www.epa.ohio.gov/dapc/atu/asbestos.aspx)

### Line-by-line Instructions

**Operator Project #** -- this is an optional space provided for the person submitting the notice to indicate their project or job number.

**1.** Check the type of notification:

- "Original" is the first notification submitted for a project; hard copy is required to be post-marked or hand-delivered 10 working-days prior to start of work.
- "Revision" is any notification submitted after the original due to any change in the information on the form; required if the amount of RACM changes by at least 20 percent, any changes in work schedules (dates or hours), any change in owner or operator, or any change in the name or location of selected waste disposal site. Revisions shall be numbered chronologically with Revision #1 being the first time any items on the notification form were changed. If revision is marked, please include the Revision # and specify the Sections of the form in which items were revised.
- "Cancellation" is submitted to indicate a project has been cancelled and work will not be completed.

**2.** Describe the building(s) or structure(s) affected by the operations. If the project includes more than one structure, be sure to complete and include the Multi-Structure Attachment Form with your Ohio EPA notification form. Include building size in square feet, specific site location, number of floors, and age in years. Also include the present and prior use (i.e., industrial, commercial, institutional, residential, vacant, etc.) of the building(s).

**3.** Identify the type of operation. Definitions of these terms can be found in OAC 3745-20-01. Please note emergency demolitions and renovations require additional information, see Sections 14 and 15.

- "Demolition" means the wrecking, or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- "Emergency demolition" means any demolition operation conducted under a written order issued by a state or local governmental agency because a facility is structurally unsound and in danger of imminent collapse.
- "Renovation" means altering a facility or one or more facility components in any way, including the stripping or removal of regulated asbestos-containing material from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.
- "Emergency renovation operation" means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by non-routine failures of equipment.
- "Fire Training" refers to the demolition of a facility by intentional burning. All asbestos containing material, including Category I and Category II nonfriable ACM, must be removed in accordance with OAC 3745-20 before burning. Additional requirements also apply; please contact the DO/LAA with jurisdiction for additional information. <http://epa.ohio.gov/portals/41/sb/publications/BurningHouse.pdf>
- "Courtesy" means you are submitting the notification of a demolition/renovation of a non-facility or abatement project below regulatory thresholds.

- "Annual" refers to planned renovation operations over a calendar year involving a series of non-scheduled operations that are collectively greater than the threshold limits; these notifications must be submitted in the month prior to the beginning of the calendar year.

**4.** Declare whether or not asbestos is present in any quantity. This includes assumed asbestos containing materials such as roofing and flooring. Also specify if the facility was previously abated and year when previous asbestos abatement occurred (if applicable).

**5.** Provide all owner/operator contact information.

- Specify if this project is part of a larger project or urban demolition (installation).
  - If Yes, list contact information for Entity Coordinating Larger Project in next line (Owner/Coordinating Entity).
  - If No, list the property owner information in next line (Owner/Entity Coordinator)
- Specify if this notification include more than one structure.
  - If Yes, ensure the Multi-Structure Attachment Form has been completed per Section 2; attach this to your notification form.
- In the "Owner/Coordinating Entity" line, list the property owner [individual(s) who own(s) the property at the time of demolition/renovation (Note, this may be a government or private entity)] if answered No above; or list the Coordinating Entity (i.e., land bank, municipality, etc.) for the larger project if answered Yes above. Include address, contact name, phone, fax, and email for the listed Owner/Coordinating Entity.
- Specify the name, address, contact name, phone, fax, email, and Ohio Department of Health license number (ACXXXX) for the "Asbestos Abatement Contractor" (if regulated asbestos containing material(s) is being abated).
- Specify the name, address, contact name, phone, fax, email, for the "Onsite Demolition Contactor" (if demolition is taking place) or "Fire Department" (if demolition of a facility is by intentional burning).

**6.** Include the Asbestos Hazard "Evaluation Specialist Name", "License # (ESXXXX)", and "procedure used to detect and analyze asbestos". Analytical methods could include the collection of samples and sample analyses by polarized light microscopy (PLM) with dispersion staining. For samples that test under 10% asbestos content: An owner or operator may (a) elect to assume material to be greater than 1% asbestos, or, (b) require verification by point counting in which the point counting result will supercede the PLM estimation; Both choice and result should be stated on the notification. Explain any other method(s) used. All owners/operators should have the records of the asbestos assessment and analyses (inspection/survey report) on-site during active operations for reference and inspection. Such records would include a list of materials assessed, locations sampled and the sample results; this information can be found within the asbestos inspection report.

**7.** Specify the amount of regulated asbestos-containing material (RACM) to be removed as follows: linear feet on pipes, square feet (surface area) on facility components, and total cubic feet or cubic yards (volume) on or off all facility components. Asbestos containing demolition debris and related materials shall be quantified in cubic feet/yards (volume). Estimate the approximate amount of Category I and Category II non-friable asbestos-containing material in the affected part of the facility that will be removed before demolition. Estimate the approximate amount of Category I and Category II non-friable asbestos-containing material in good condition in the affected part of the facility that will not be removed before demolition. If multiple addresses per notification, the combined total of all sites shall be listed in this table and individual quantities for each site shall be provided in the Multi-Structure Attachment Form.

**8.** Specify the starting and ending dates for demolition or renovation even when no asbestos containing materials are present. Should the demolition or renovation not begin on the start date listed, a revised notification form shall be submitted prior to the listed start date. Please note, start date must be at least 10 working-days after postmark or hand-deliver date.

**9.** Specify the scheduled dates for asbestos removal, the hours of operation, and the days of the week that asbestos removal operations will be active onsite. Please note, start date must be at least 10 working-days after postmark or hand-deliver date.

**10.** Describe the demolition or renovation which will occur and the methods or operations that will be employed. Briefly describe the methods to be used to conduct the demolition or renovation. For renovations, these methods may include glove bag removal, hand stripping or scraping of asbestos containing materials. For demolitions, methods may include a wrecking ball, bulldozer, implosion, or unbolting panels or sections and carefully lowering to the ground. Examples of affected facility components may include pipe wrap, floor tile, sprayed-on insulation, transite, etc.

11. Describe the work practices and engineering controls to be used for abating (removing) each type of material listed in Section 7. Examples of work practices and engineering controls to prevent asbestos emissions at the site could include: the use of water or wetting agents, negative pressure enclosure, glove bag removal; placing into leak-tight containers or wrapping with twelve (12) mil thick polyethylene plastic sheeting which is properly labeled prior to disposal, etc. Examples of removal and waste handling procedures to prevent non-friable material from becoming friable would include: removing by sections or units taking care not to crumble, pulverize, or reduce to powder, using water to prevent any emissions, placing into leak-tight containers or wrapping with twelve (12) mil thick plastic which is properly labeled prior to disposal (including name or waste generator and location at which the waste was generated), etc.

**Examples:**

- A. *Wet methods to be used before, during and after removal of 2500 sq. ft. of acoustical plaster. Material will be placed into double 6-mil poly bags, properly labeled, and taken to an approved landfill.*
- B. *Full containment, negative air, adequately wet, proper PPE, double bagging when removing 600 sq. ft. of boiler breeching, 4 boiler door gaskets, and 35 flange gaskets. Bagged material will be properly labeled and taken to an EPA-approved landfill.*

12. Provide the names, addresses, and contact information of any asbestos waste transporters. Note you must also complete a Waste Shipment Record prior to consigning any asbestos containing waste materials (ACWM).
13. Provide the name, physical address, and contact information for the asbestos waste disposal site. Note it may be different from the mailing address. Check Ohio EPA website listed below for an updated list of approved asbestos accepting waste disposal sites. [www.epa.ohio.gov/dapc/atu/asbestos.aspx](http://www.epa.ohio.gov/dapc/atu/asbestos.aspx)
14. This section must be completed for emergency demolitions that meet the definitions and requirements of the regulation. **If a facility is not in imminent danger of collapse, it is not an emergency demolition even though it may be ordered to be demolished due to hazardous conditions.** Provide the name, title and agency of the state or local governmental representative who has ordered the demolition. The Authority of Order is the applicable state or local regulation under which the demolition order has been issued. You **MUST ATTACH** a copy of the demolition order to the notification.
15. This section shall be completed for emergency renovations that meet criteria described at 40 CFR 61.141 and OAC 3745-20-01. You **MUST ATTACH** a separate sheet including the four items listed on the notification form.
16. Describe the procedures to be followed in the event unexpected regulated asbestos containing (RACM) is found or nonfriable asbestos becomes material (RACM).
- Examples:**
- A. *Stop work, evacuate area, and demarcate the area.*
- B. *Wetting of ACM with amended water and using wet cleaning methods.*
- Should the discovery of unexpected RACM change the original amount of asbestos to be abated by 20 percent or more, you must submit a revised notification pursuant to OAC 3745-20-03. A revised demolition/renovation notification must reflect the change in the amount of affected asbestos-containing material. The revised notification must also reflect the new asbestos removal start date, if applicable.
17. If asbestos is being removed or abated, you must certify a NESHAP trained person will be available during normal business hours at the demolition or renovation site. Signature must be by an authorized representative of the owner or operator.
18. In accordance with OAC 3745-20-03(E), all notifications (original and revised) shall identify the name, title, and organization of the person submitting the notification, and shall be signed and dated by the person submitting the notification.

The asbestos regulations, notification forms, guidance, local contacts, and other information can be found on Ohio EPA's asbestos program web site at [www.epa.ohio.gov/dapc/atu/asbestos.aspx](http://www.epa.ohio.gov/dapc/atu/asbestos.aspx)



**Notification of Demolition and Renovation Form**  
**Single & Multi-Structure**  
Division of Air Pollution Control

Operator Project # :		<i>For Official Use Only</i>					
		<input type="checkbox"/> Hand-Delivered	Postmark : / /	Received by Office : / /	Notification # :		
<b>1 Notification Type (check one)</b>							
<input checked="" type="checkbox"/> Original		<input type="checkbox"/> Revision # : Section #s Revised:		Offsite/Hold : <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cancellation			
<b>2 Facility Description (include building name, number and floor or room number). If more than one structure, use Multi-Structure Attachment form</b>							
Building Name (if applicable) : Highway Bridge			Site Location : LIC-661-0.02				
Address : SR661 Bridge Over State Route 16			County : Licking				
City :			State : OH	Zip :			
Building Size (ft <sup>2</sup> ) :			No. of Floors :	Age (years) : 56			
Present Use : Miscellaneous			Prior Use : Miscellaneous				
<b>3 Type of Operation (check one)</b>							
<input checked="" type="checkbox"/> Demolition <input type="checkbox"/> Emergency Demolition <input type="checkbox"/> Renovation <input type="checkbox"/> Emergency Renovation <input type="checkbox"/> Fire Training <input type="checkbox"/> Annual <input type="checkbox"/> Courtesy							
<b>4 Is Asbestos Present? (check one)</b>							
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No, previously abated Year Abated (if applicable)							
<b>5 Owner/Coordinating Entity, Asbestos Abatement Contractor and Onsite Demolition Contractor Information</b>							
Is this project part of a larger project or urban demolition (installation)?			Does this notification include more than one structure?				
<input type="checkbox"/> Yes (list contact information for coordinating entity below)			<input type="checkbox"/> Yes (complete the Multi-Structure Attachment Form)				
<input checked="" type="checkbox"/> No (list contact information for property owner below)			<input checked="" type="checkbox"/> No				
Owner/Coordinating Entity : ODOT District 5							
Address : 9600 Jacksontown Road			Email : Brian Tatman@Dot.Ohio.Gov				
City : Jacksontown			State : OH	Zip : 43030			
Contact : Brian Tatman			Phone : ( 740 ) 323 - 5191	Fax : ( 740 ) 323 - 5191			
<b>Asbestos Abatement Contractor (if applicable)</b>			<b>On-site Demolition Contractor or Fire Department (if applicable)</b>				
Name :			Name :				
Address :			Address :				
City :	State :	Zip :	City :	State :	Zip :		
Contact :			Contact :				
Phone : ( ) -	License # : AC		Phone : ( ) -	Fax : ( ) -			
Email :			Email :				
<b>6 Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure</b>							
Evaluation Specialist : Chris Yoder			License # : ES 35081	Expiration Date : 4 / 22 / 2020			
Procedure, including analytical methods, employed to detect the presence of and to estimate the quantity of regulated asbestos-containing material (RACM) and Category I and Category II nonfriable asbestos-containing material: <input checked="" type="checkbox"/> PLM <input type="checkbox"/> Point Count <input type="checkbox"/> TEM <input type="checkbox"/> Other Method (Explain Below) :							
<b>7 Approximate Amount of Asbestos-Containing Materials (complete table below and Section 11 if asbestos is present)</b>							
	Material to be Removed			Material NOT to be Removed			
	RACM	Nonfriable Asbestos-Containing Material		Nonfriable Asbestos-Containing Material			
		Category I	Category II	Category I	Category II		
Pipes (linear feet)							
Surface Area (ft <sup>2</sup> )	24						
Facility Components							
	<input type="checkbox"/> ft <sup>3</sup> <input type="checkbox"/> yd <sup>3</sup>						
<b>8 Scheduled Dates of Demolition or Renovation (original notification is required 10 working days prior to the start of work)</b>							
Start : / /			Complete : / /				
<b>9 Asbestos Removal Dates and Work Hours (if applicable, for asbestos removal only)</b>							
Start : / /			Complete : / /				
Hours Onsite	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	—	—	—	—	—	—	—



<b>10</b>	<b>Planned Demolition or Renovation Work (check all that apply)</b>	
Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used :		
<input type="checkbox"/> Implosion <input type="checkbox"/> Fire Training <input type="checkbox"/> Wet Methods <input type="checkbox"/> Manual Demolition <input type="checkbox"/> Mechanical Demolition <input checked="" type="checkbox"/> Other (Explain Below) :		
Replacement of a deficient highway bridge using standard construction techniques. Equipment will include track hoes, saws and jackhammers		
Description of affected facility components (include attachment if necessary) :		
Caulking Material under Aluminum handrail bracket bases on bridge structure.		
<b>11</b>	<b>Asbestos Description and Engineering Controls (if asbestos is being abated)</b>	
For the amount of each material listed in Section 7, describe the type(s) of ACM to be abated as well as engineering controls and work practices to be used to minimize emissions and ensure proper waste handling :		
Caulking Material under handrail bracket to be kept wet during removal		
<b>12</b>	<b>Asbestos Waste Transporters (if applicable)</b>	
Asbestos Waste Transporter #1		Asbestos Waste Transporter #2
Name :		Name :
Address :		Address :
City :	State :	Zip :
Contact :		Contact :
Phone : (   ) -	Fax : (   ) -	Phone : (   ) -   Fax : (   ) -
Email :		Email :
<b>13</b>	<b>Asbestos Waste Disposal (if applicable)</b>	
Asbestos Waste Disposal Site :		Contact :
Address :		Email :
City :	State :	Zip :
Phone : (   ) -		Fax : (   ) -
<b>14</b>	<b>Emergency Demolition (complete this section if you checked Emergency Demolition in Section 3)</b>	
A copy of the issued order, including the following information, <b>must be attached</b> to this notification		
Government Official Issuing Order		Title :
Agency :		Authority of Order (Citation of Code) :
Date of Order :   /   /		Demolition Date :   /   /
<b>15</b>	<b>Emergency Renovation (complete this section if you checked Emergency Renovation in Section 3)</b>	
A separate sheet with the following information <b>must be attached</b> to this notification		
Date of Emergency :   /   /		Time of Emergency :
Description of Sudden, Unexpected Event :		
Explanation of how the event caused unsafe conditions or equipment damage :		
<b>16</b>	<b>Procedures to be followed should unexpected RACM be discovered (check all that apply)</b>	
<input checked="" type="checkbox"/> Stop work and keep wet		<input type="checkbox"/> Evacuate area
<input checked="" type="checkbox"/> Contact district office/local air authority		<input type="checkbox"/> Demarcate area
		<input checked="" type="checkbox"/> Contact licensed abatement contractor
		<input type="checkbox"/> Other (Explain Below) :
<b>17</b>	<b>Asbestos Abatement Signature (only sign below if asbestos is being removed)</b>	
In accordance with Ohio Administrative Code rule 3745-20-03(A)(4)(p), I certify that at least one person trained as required by paragraph (B) of rule 3745-20-04 of the Administrative Code will supervise the stripping and removal described by this notification.		
Signature :		Date :   /   /
Name, Title and Organization (please print)		
<b>18</b>	<b>Demolition and Renovation Signature (required for all original and revised notifications)</b>	
I acknowledge the existence of laws prohibiting the submission of false or misleading statements and I certify that facts contained in this notification are true, accurate, and complete.		
Signature :		Date :   /   /
Name, Title and Organization (please print)		
Original notification must be mailed or hand-delivered at least 10 working days (Monday – Friday excluding weekends) before demolition or renovation begins, except emergency demolitions and emergency renovations which must be submitted as soon as possible before operations begin, but no later than the following work day.		



**Notification of Demolition and Renovation  
Multi-Structure Attachment Form**  
Division of Air Pollution Control

Note: This form to be completed and attached to Notification Form when project involves more than one structure

Project Name:		Date					Revision #:					
Project Details		Structure 1	Structure 2	Structure 3	Structure 4	Structure 5	Project Name:		Date		Revision #:	
Structure Details	Site Address (include street, city, and zip)											
	Building Name											
	Present Use											
	Past Use											
Asbestos Quantities	RACM	Sf	Sf	Sf	Sf	Sf						
		Lf	Lf	Lf	Lf	Lf						
		Cf	Cf	Cf	Cf	Cf						
	Cat. I NF to be Removed	Sf	Sf	Sf	Sf	Sf						
	Cat. II NF to be Removed	Sf	Sf	Sf	Sf	Sf						
	Cat. I NF to Remain	Sf	Sf	Sf	Sf	Sf						
Cat. II NF to Remain	Sf	Sf	Sf	Sf	Sf							
Work Schedule	Asbestos Removal Start Date	/ /	/ /	/ /	/ /	/ /						
	Asbestos Removal Complete Date	/ /	/ /	/ /	/ /	/ /						
	Demolition/Renovation Start Date	/ /	/ /	/ /	/ /	/ /						
	Demolition/Renovation Complete Date	/ /	/ /	/ /	/ /	/ /						
Revised	Check box if details were revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						