

168030 Conformed Set
Dist 5

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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LIC-161-1.83
CITY OF NEW ALBANY
JERSEY TOWNSHIP

PROJECT DESCRIPTION

CONSTRUCTION OF INTERCHANGE FACILITY ALONG S.R. 161 AT THE MINK STREET OVERPASS. THE PROJECT WILL INCLUDE THE INSTALLATION OF THREE SIGNALIZED INTERSECTIONS.

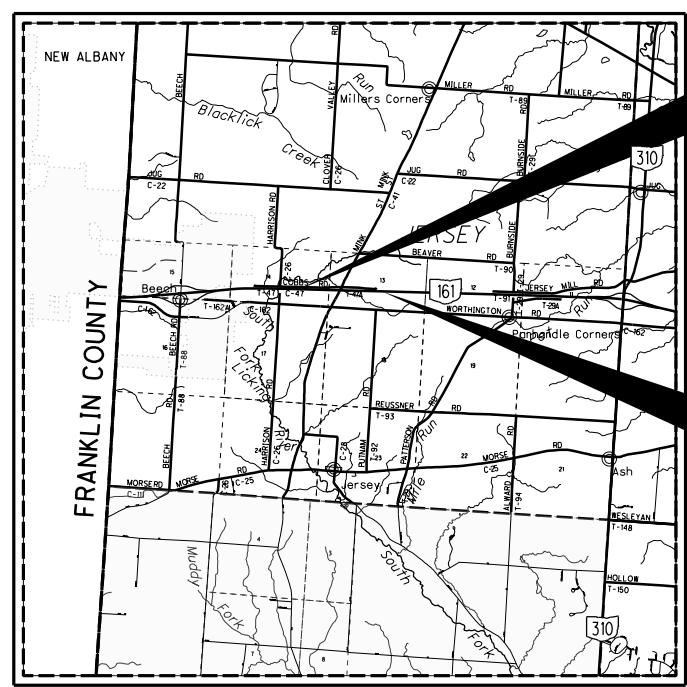
PROJECT EARTH DISTURBED AREA: 30 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 3 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 33 ACRES

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.

2016 SPECIFICATIONS

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



LOCATION MAP

LATITUDE: 40°04'50" LONGITUDE: 82°43'52"



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

DESIGN DESIGNATION	S.R. 161	MINK ST.	COBBS RD.
CURRENT ADT (2016)	32,620	7,150	200
DESIGN YEAR ADT (2036)	43,620	9,900	250
DESIGN HOURLY VOLUME (2036)	5,110	930	25
DIRECTIONAL DISTRIBUTION	60%	60%	50%
TRUCKS (24 HOUR B&C)	3%	3%	3%
DESIGN SPEED	70	35	55
LEGAL SPEED	70	35	55
DESIGN FUNCTIONAL CLASSIFICATION:	RURAL FREEWAY & EXPRESSWAY	URBAN LOCAL	RURAL LOCAL
NHS PROJECT	YES		

DESIGN EXCEPTIONS: NONE

INDEX OF SHEETS:
(SEE SHEET 2)

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

Call Before You Dig
1-800-362-2764

(Non-members must be called directly)
OIL & GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
1-800-925-0988

ENGINEERS SEAL:

SIGNED: *Heather Ann Gilbert*
DATE: 6/06/16

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS			
BP-2.1	7/17/15	DM-1.1	1/15/16	MH-1.2	1/15/16	MT-101.90	7/17/15	TC-21.20	1/15/16	TC-81.10	1/15/16	800	7/15/16	WATERWAY PERMITS
BP-2.2	7/18/08	DM-1.2	1/18/16			MT-102.30	7/18/14	TC-41.10	7/19/13	TC-81.21	1/15/16	804	1/15/16	CONDITIONS
BP-3.1	7/18/14	DM-4.3	1/15/16	MGS-1.1	7/19/13	MT-103.10	10/16/15	TC-41.15	10/18/13	TC-83.20	1/15/16	808	1/29/16	DATED:8/05/2016
BP-4.1	7/19/13	DM-4.4	1/15/16	MGS-2.1	7/19/13	MT-104.10	10/16/15	TC-41.20	10/18/13	TC-84.20	10/18/13	809	4/15/16	ASBESTOS TESTING
BP-5.1	7/19/13			MGS-3.1	7/18/14	MT-105.10	7/19/13	TC-41.30	10/18/13	TC-84.21	10/18/13	823	7/18/14	REPORTS
BP-9.1	7/19/13	HL-10.31	7/17/15	MGS-4.2	7/19/13	MT-120.00	7/19/13	TC-41.41	10/18/13	TC-85.20	1/15/16	832	1/17/14	DATED:7/11/2016
		HL-30.11	1/15/16	MGS-4.3	1/18/13			TC-41.50	10/18/13	TC-85.21	1/16/15	878	10/18/13	
CB-1.1	1/15/16			MGS-5.2	7/19/13			TC-42.10	10/18/13	TC-85.22	1/16/15	902	12/31/12	
CB-1.2	1/15/16	HW-2.1	1/15/16	MGS-5.3	7/19/13	RM-1.1	7/18/14	TC-42.20	10/18/13			904	1/15/16	
CB-2.1	1/15/16	HW-2.2	1/15/16			RM-4.2	4/18/14	TC-51.11	1/15/16			908	1/29/16	
CB-2.2	1/15/16			MT-95.50	10/16/15	RM-4.3	7/18/14	TC-52.20	7/18/14			940	4/17/15	
CB-3.2	1/15/16	ITS-14.11	7/17/15	MT-97.11	7/18/14	RM-4.4	7/18/14	TC-61.30	7/18/14					
				MT-99.20	7/19/13	RM-4.5	7/18/14	TC-65.10	1/17/14	CITY OF COLUMBUS				
F-1.1	7/19/13	I-2.1	1/15/16	MT-99.30	1/16/15	RM-4.6	7/19/13	TC-65.11	7/18/14	2319	6/01/13			
F-3.3	7/19/13	I-2.2	1/15/16	MT-101.60	7/19/13	RM-7.1	7/18/14	TC-71.10	1/17/14					
F-3.4	7/19/13			MT-101.70	1/17/14			TC-72.20	7/18/14					

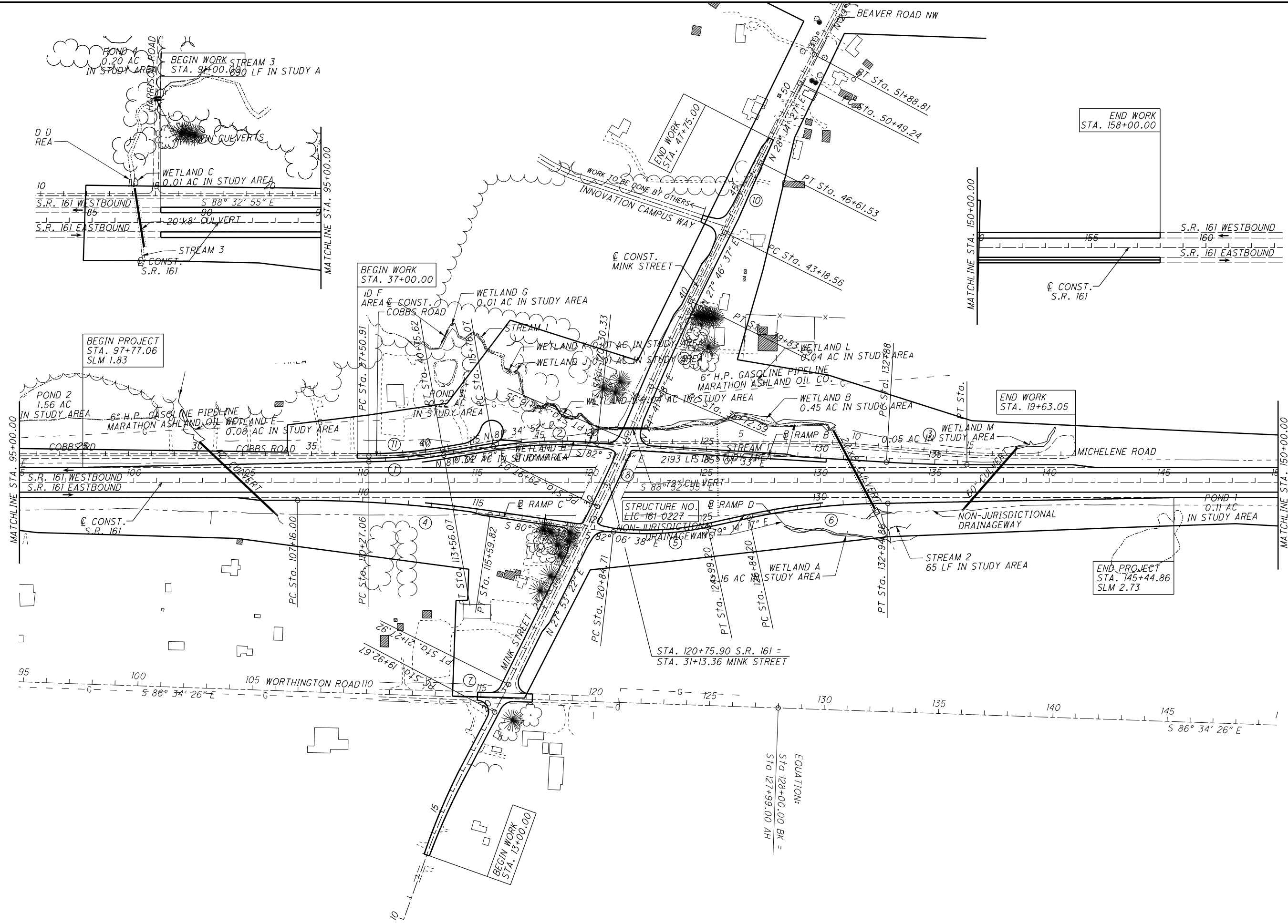
APPROVED: *[Signature]*
DATE: 6/8/16 DISTRICT DEPUTY DIRECTOR

APPROVED: _____
DATE: _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NON-FEDERAL
CONSTRUCTION PROJECT NO. 97879
RAILROAD INVOLVEMENT NONE
LIC-161-1.83
1/336

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SCHEMATIC PLAN SHEET

LIC-161-1.83

RAMP A

<p>CURVE ① P.I. Sta. 111+91.98 $\Delta = 9^\circ 52' 13''$ (LT) Dc = 3° 00' 00" R = 1,909.86' T = 164.91' L = 329.01' E = 7.11' C = 328.60' C.B. = N 86° 30' 58" E emax = 0.068</p>	<p>CURVE ② P.I. Sta. 118+04.67 $\Delta = 15^\circ 53' 57''$ (RT) Dc = 3° 30' 00" R = 1,637.02' T = 228.60' L = 454.26' E = 15.88' C = 452.80' C.B. = N 89° 31' 50" E emax = 0.032</p>
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RAMP B

CURVE ③
P.I. Sta. 134+64.34
 $\Delta = 3^\circ 31' 22''$ (LT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 176.20'
L = 352.29'
E = 2.71'
C = 352.23'
C.B. = S 86° 47' 14" E
emax = NC

RAMP C

CURVE ④
P.I. Sta. 111+38.67
 $\Delta = 8^\circ 26' 18''$ (RT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 422.68'
L = 843.83'
E = 15.57'
C = 843.06'
C.B. = S 84° 19' 46" E
emax = 0.029

RAMP D

<p>CURVE ⑤ P.I. Sta. 122+93.80 $\Delta = 18^\circ 39' 06''$ (LT) Dc = 4° 30' 00" R = 1,273.24' T = 209.09' L = 414.48' E = 17.05' C = 412.65' C.B. = N 88° 33' 50" E emax = 0.037</p>	<p>CURVE ⑥ P.I. Sta. 129+90.69 $\Delta = 12^\circ 12' 48''$ (RT) Dc = 2° 00' 00" R = 2,864.79' T = 306.50' L = 610.67' E = 16.35' C = 609.51' C.B. = N 85° 20' 41" E emax = 0.051</p>
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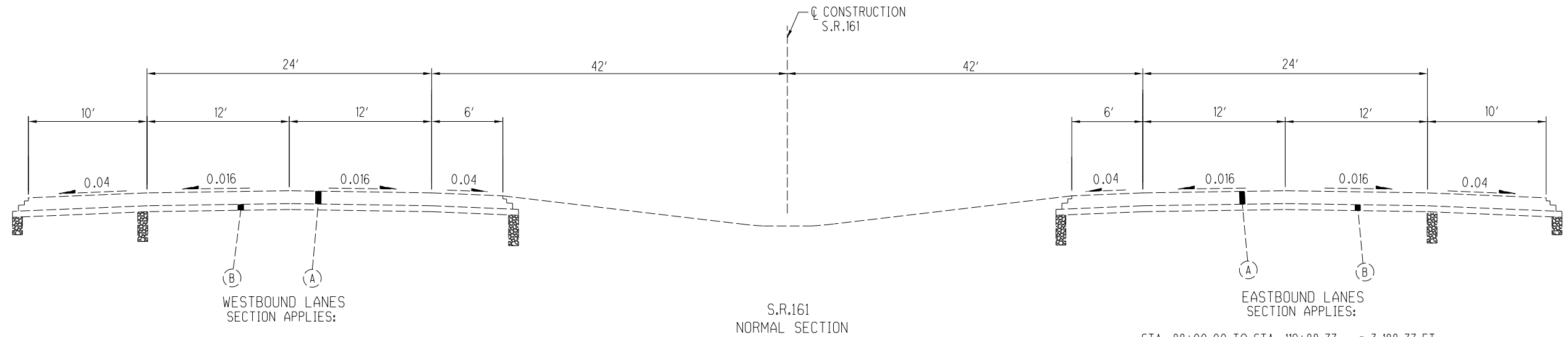
MINK STREET

<p>CURVE ⑦ P.I. Sta. 20+60.30 $\Delta = 1^\circ 21' 09''$ (LT) Dc = 1° 00' 00" R = 5,730.00' T = 67.63' L = 135.25' E = 0.40' C = 135.25' C.B. = N 28° 33' 57" E emax = NC</p>	<p>CURVE ⑧ P.I. Sta. 31+56.73 $\Delta = 3^\circ 11' 35''$ (LT) Dc = 1° 00' 00" R = 5,730.00' T = 159.70' L = 319.32' E = 2.23' C = 319.28' C.B. = N 26° 17' 35" E emax = NC</p>
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<p>CURVE ⑨ P.I. Sta. 37+77.99 $\Delta = 3^\circ 04' 49''$ (RT) Dc = 0° 45' 00" R = 7,639.00' T = 205.40' L = 410.69' E = 2.76' C = 410.64' C.B. = N 26° 14' 12" E emax = NC</p>	<p>CURVE ⑩ P.I. Sta. 44+90.04 $\Delta = 0^\circ 27' 50''$ (RT) Dc = 0° 08' 07" R = 42,362.49' T = 171.48' L = 342.96' E = 0.35' C = 342.96' C.B. = N 28° 00' 32" E emax = NC</p>
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COBB ROAD

CURVE ⑪
P.I. Sta. 39+13.67
 $\Delta = 9^\circ 52' 13''$ (LT)
Dc = 3° 02' 23"
R = 1,884.86'
T = 162.75'
L = 324.70'
E = 7.01'
C = 324.30'
C.B. = N 86° 31' 01" E
emax = 0.031

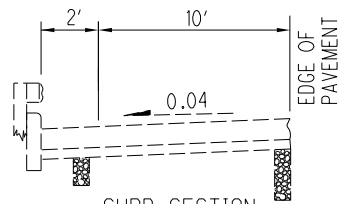


WESTBOUND LANES
SECTION APPLIES:
 STA. 88+00.00 TO STA. 119+88.77 = 3,188.77 FT.
 STA. 121+63.98 TO STA. 158+00.00 = 3,636.02 FT.
 TOTAL = 6,824.79 FT.

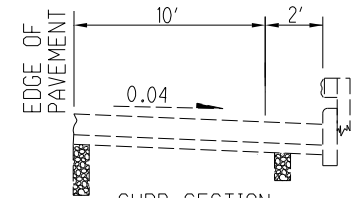
S.R.161
NORMAL SECTION

EASTBOUND LANES
SECTION APPLIES:
 STA. 88+00.00 TO STA. 119+88.77 = 3,188.77 FT.
 STA. 121+63.98 TO STA. 158+00.00 = 3,636.02 FT.
 TOTAL = 6,824.79 FT.

BRIDGE LIMITS INCLUDING APPROACH SLABS
 BRIDGE NO. LIC-161-0227 L/R
 STA. 119+88.77 TO STA. 121+63.98 = 175.21 FT.



CURB SECTION
SECTION APPLIES:
 STA. 119+97.72 - STA. 120+25.72 = 28.00 FT.
 STA. 122+00.93 - STA. 122+20.93 = 20.00 FT.



CURB SECTION
SECTION APPLIES:
 STA. 119+31.83 - STA. 119+51.83 = 20.00 FT.
 STA. 121+27.04 - STA. 121+47.04 = 20.00 FT.

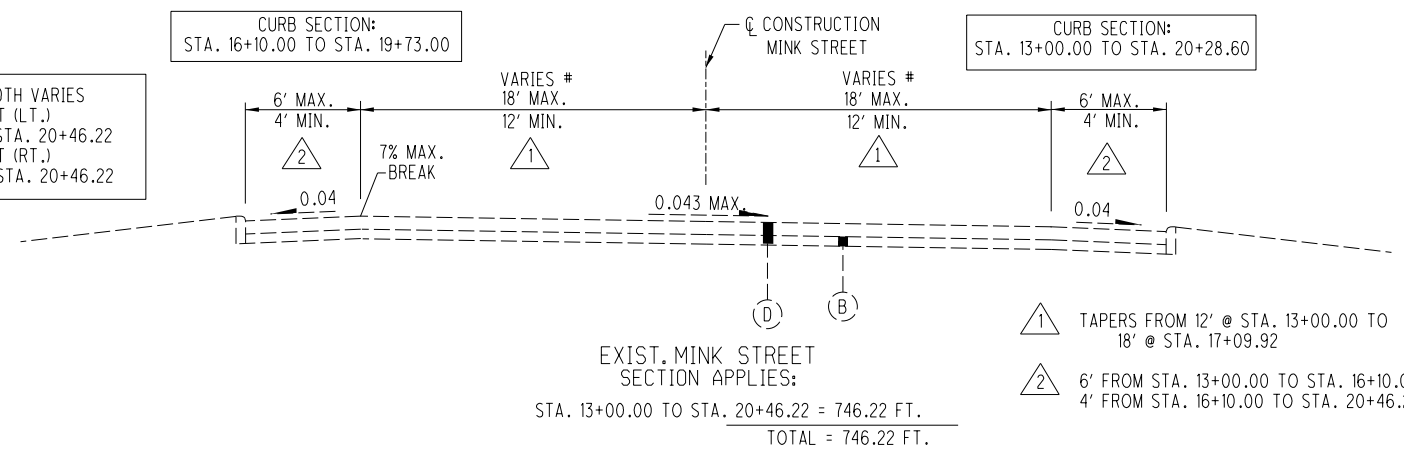
- (A) EXISTING 10" ASPHALT CONCRETE PAVEMENT
- (D) EXISTING 9" ASPHALT CONCRETE PAVEMENT
- (B) EXISTING 6" SUBBASE
- (E) EXISTING 6" ASPHALT CONCRETE PAVEMENT
- (C) EXISTING 12" ASPHALT CONCRETE PAVEMENT
- (F) EXISTING 8" AGGREGATE BASE

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PAVEMENT WIDTH VARIES
MINK STREET (LT.)
STA. 19+57.83 TO STA. 20+46.22
MINK STREET (RT.)
STA. 20+17.00 TO STA. 20+46.22

CURB SECTION:
STA. 16+10.00 TO STA. 19+73.00

CURB SECTION:
STA. 13+00.00 TO STA. 20+28.60

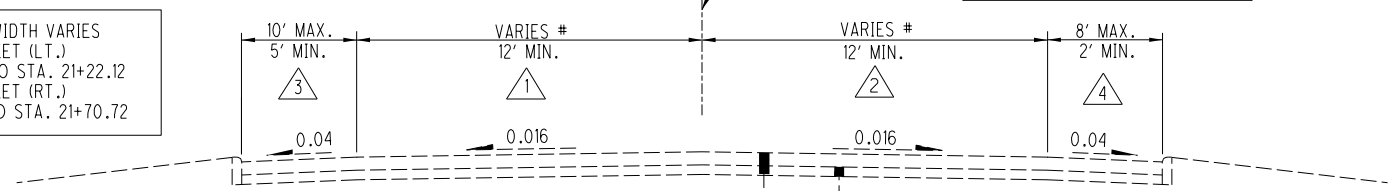


- 1 TAPERS FROM 12' @ STA. 13+00.00 TO 18' @ STA. 17+09.92
- 2 6' FROM STA. 13+00.00 TO STA. 16+10.00
4' FROM STA. 16+10.00 TO STA. 20+46.22

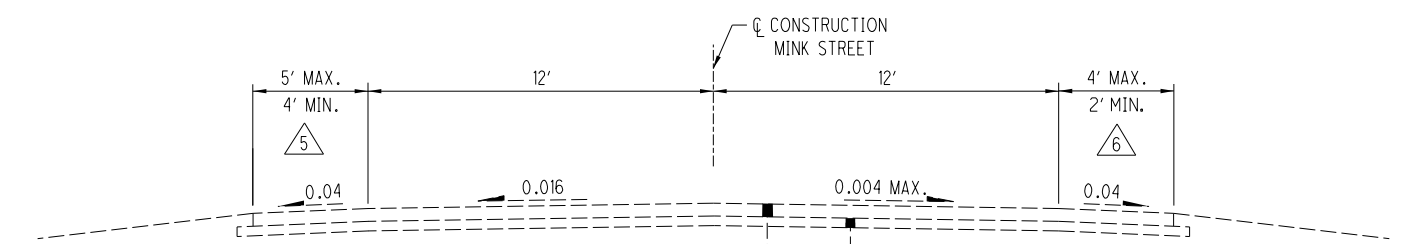
PAVEMENT WIDTH VARIES
MINK STREET (LT.)
STA. 20+86.62 TO STA. 21+22.12
MINK STREET (RT.)
STA. 20+86.62 TO STA. 21+70.72

CURB SECTION:
STA. 21+09.75 TO STA. 25+50.95

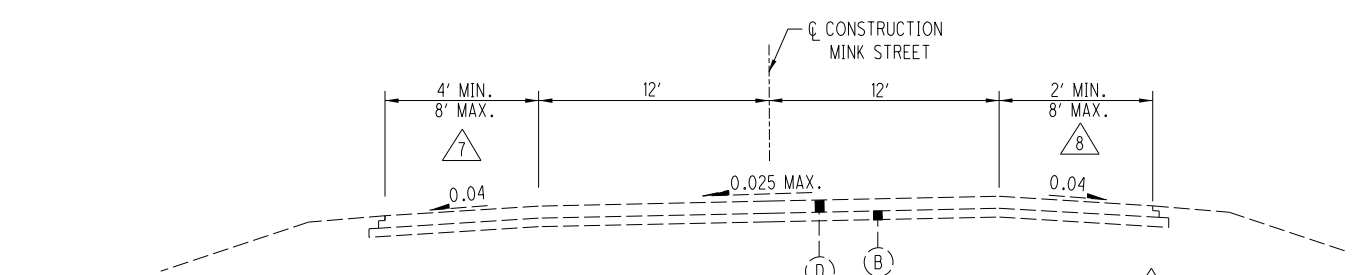
CURB SECTION:
STA. 21+71.05 TO STA. 25+36.75



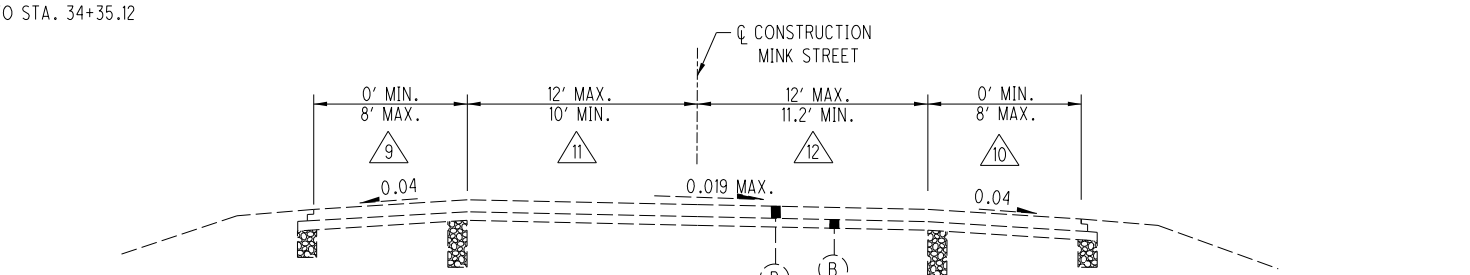
- 1 12' FROM STA. 21+22.12 TO STA. 28+70.60
- 2 TAPERS FROM 19' @ STA. 21+70.72 TO 12' @ STA. 24+15.62
12' @ STA. 24+15.62 TO STA. 28+70.60
- 3 8' FROM STA. 21+22.12 TO STA. 25+50.95
10' FROM STA. 25+50.95 TO STA. 26+78.25
TAPERS FROM 10' @ STA. 26+78.25 TO 5' @ STA. 28+70.60
- 4 TAPERS FROM 2' @ STA. 21+70.72 TO 8' @ STA. 24+15.62
8' FROM STA. 24+15.62 TO STA. 25+36.75
TAPERS FROM 10' @ STA. 25+36.75 TO 4' @ STA. 28+70.60



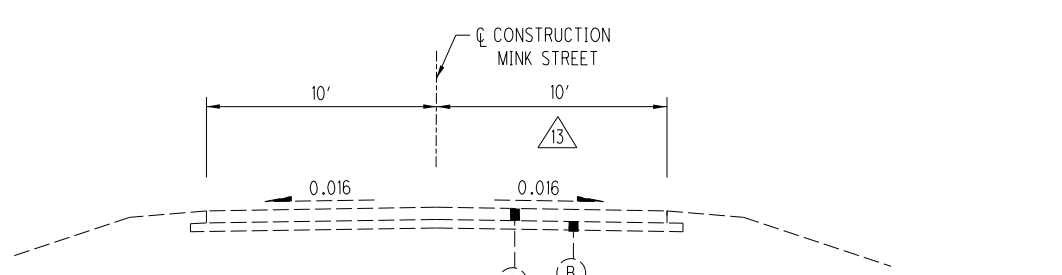
- 5 TAPERS FROM 5' @ STA. 28+70.60 TO 4' @ STA. 29+18.35
- 6 TAPERS FROM 4' @ STA. 28+70.60 TO 2' @ STA. 29+18.35



- 7 4' FROM STA. 28+18.35 TO STA. 29+97.05
TAPERS FROM 4' @ STA. 29+97.05 TO 8' @ STA. 30+97.35
8' FROM STA. 30+97.35 TO STA. 34+35.12
- 8 TAPERS FROM 2' @ STA. 29+18.35 TO 8' @ STA. 30+50.00
8' FROM STA. 30+50.00 TO STA. 34+35.12

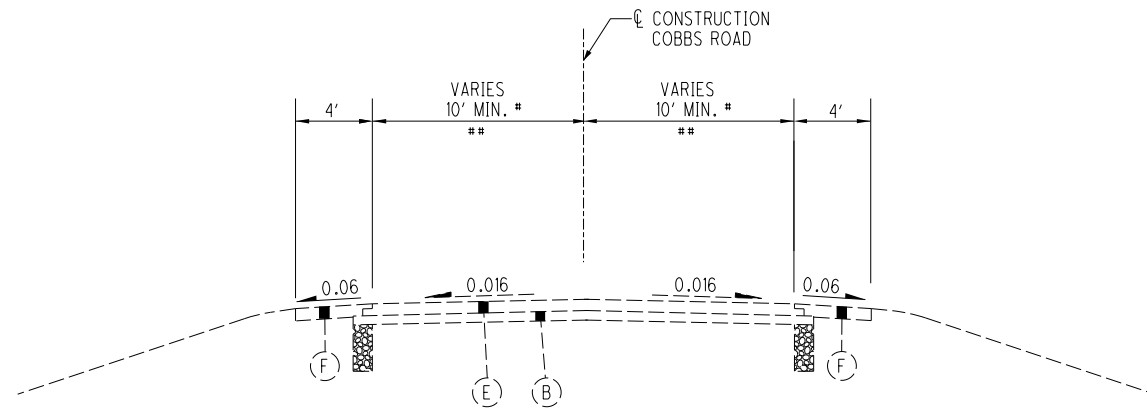


- 9 8' FROM STA. 34+35.12 TO STA. 38+00.00
TAPERS FROM 8' @ STA. 38+00.00 TO 0' @ STA. 39+50.00
- 10 8' FROM STA. 34+35.12 TO STA. 38+00.00
TAPERS FROM 8' @ STA. 38+00.00 TO 0' @ STA. 39+50.00
- 11 TAPERS FROM 12' @ STA. 37+73.50 TO 10' @ STA. 39+11.25
- 12 TAPERS FROM 12' @ STA. 38+84.50 TO 11.2' @ STA. 39+56.79



- 13 TAPERS FROM 11.2' @ STA. 39+56.79 TO 10' @ STA. 39+11.25

- (A) EXISTING 10" ASPHALT CONCRETE PAVEMENT
- (B) EXISTING 6" SUBBASE
- (C) EXISTING 12" ASPHALT CONCRETE PAVEMENT
- (D) EXISTING 9" ASPHALT CONCRETE PAVEMENT
- (E) EXISTING 6" ASPHALT CONCRETE PAVEMENT
- (F) EXISTING 8" AGGREGATE BASE

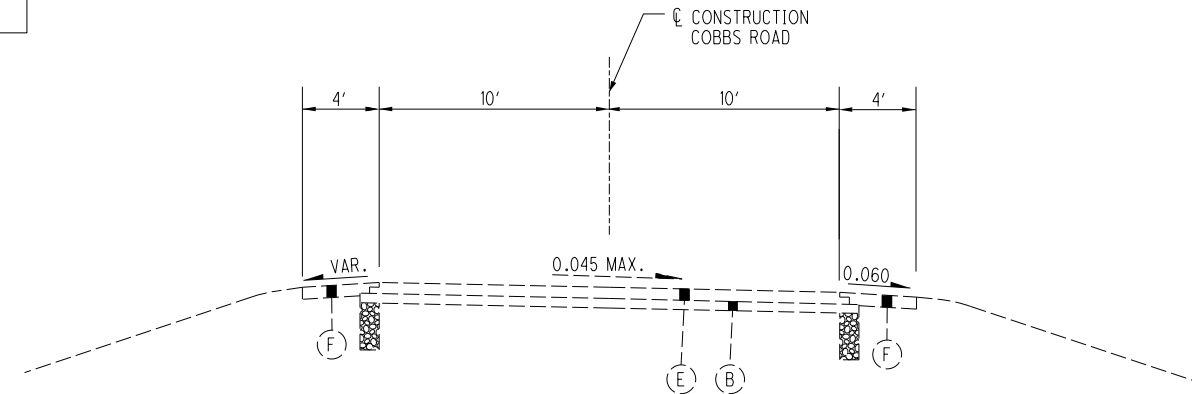


NORMAL SECTION
SECTION APPLIES:

STA. 37+00.00 TO STA. 37+23.94 = 23.94 FT.
 STA. 40+65.09 TO STA. 44+00.64 = 335.55 FT.
 STA. 47+41.79 TO STA. 48+78.96 = 137.17 FT.
 TOTAL 496.66 FT.

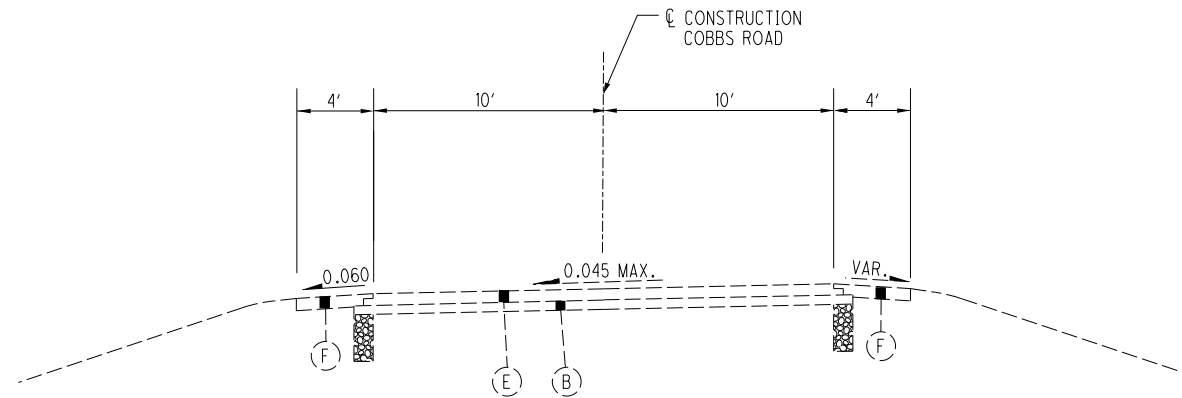
PAVEMENT WIDTH AND SLOPE VARIES

PAVEMENT WIDTH VARIES
 SERVICE RD. 2 (LT.)
 STA. 48+47.19 TO STA. 48+66.96
 SERVICE RD. 2 (RT.)
 STA. 48+07.69 TO STA. 48+66.96



SUPERELEVATED SECTION
SECTION APPLIES:

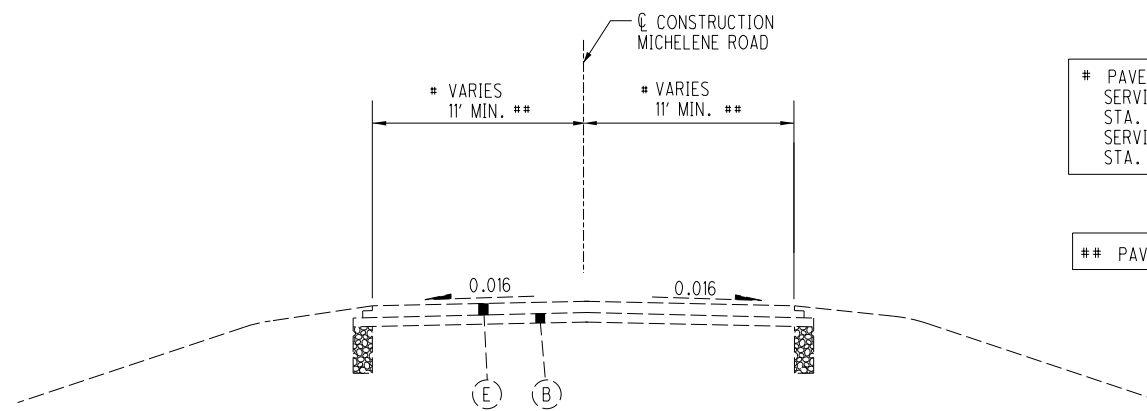
STA. 44+00.64 TO STA. 47+41.79 = 341.15 FT. (e max. 0.045)
 TOTAL 341.15 FT.



SUPERELEVATED SECTION
SECTION APPLIES:

STA. 37+23.94 TO STA. 40+65.09 = 341.15 FT. (e max. 0.045)
 TOTAL 341.15 FT.

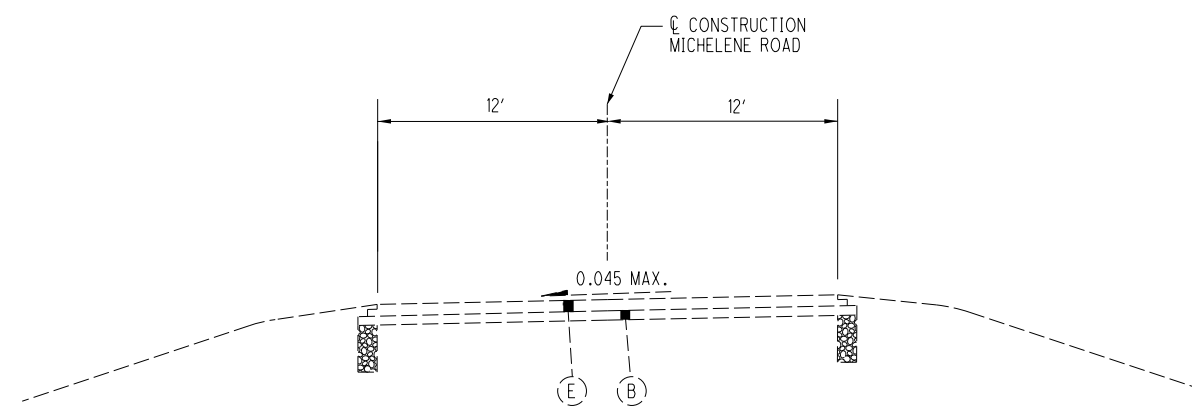
- (A) EXISTING 10" ASPHALT CONCRETE PAVEMENT
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- (F) EXISTING 8" AGGREGATE BASE



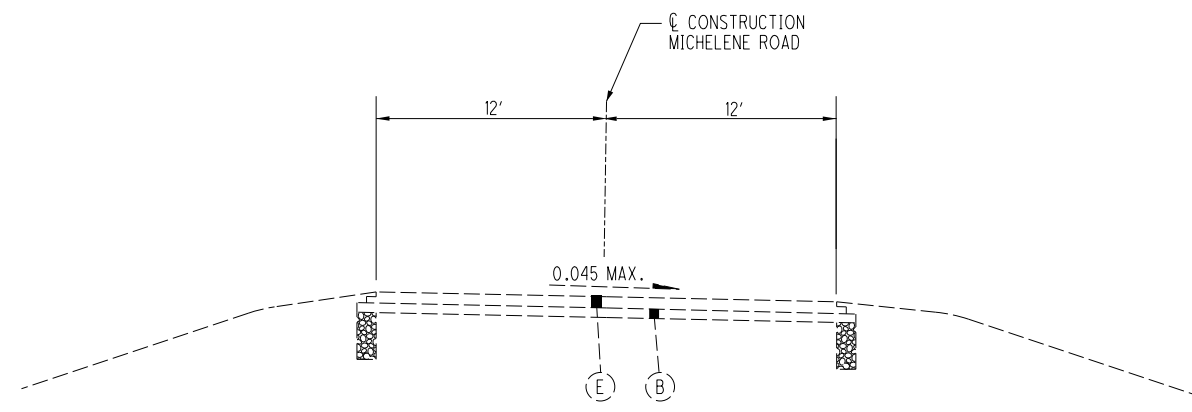
PAVEMENT WIDTH VARIES
 SERVICE RD. 3 (LT.)
 STA. 0+13.08 TO STA. 0+70.77
 SERVICE RD. 3 (RT.)
 STA. 0+13.08 TO STA. 0+31.17

** PAVEMENT WIDTH AND SLOPE VARIES

NORMAL SECTION
 SECTION APPLIES:
 STA. 0+13.08 TO STA. 6+96.29 = 696.29 FT.
 STA. 10+37.07 TO STA. 13+61.34 = 324.27 FT.
 STA. 17+02.07 TO STA. 19+63.05 = 260.98 FT.
 TOTAL 1,281.54 FT.

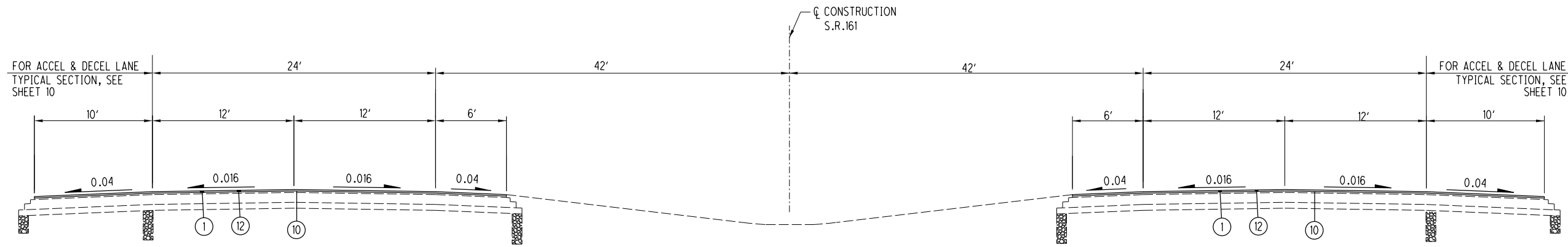


SUPERELEVATED SECTION
 SECTION APPLIES:
 STA. 13+61.34 TO STA. 17+02.07 = 340.73 FT. (e max. 0.045)
 TOTAL 340.73 FT.



SUPERELEVATED SECTION
 SECTION APPLIES:
 STA. 6+96.29 TO STA. 10+37.07 = 340.78 FT. (e max. 0.045)
 TOTAL 340.78 FT.

- (A) EXISTING 10" ASPHALT CONCRETE PAVEMENT
- (B) EXISTING 6" SUBBASE
- (C) EXISTING 12" ASPHALT CONCRETE PAVEMENT
- (D) EXISTING 9" ASPHALT CONCRETE PAVEMENT
- (E) EXISTING 6" ASPHALT CONCRETE PAVEMENT
- (F) EXISTING 8" AGGREGATE BASE



WESTBOUND LANES
SECTION APPLIES:

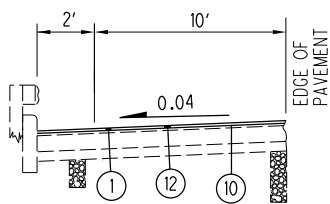
STA. 88+00.00 TO STA. 119+88.77 = 3,188.77 FT.
 STA. 121+63.98 TO STA. 158+00.00 = 3,636.02 FT.
 TOTAL 6,824.79 FT.

S.R.161
NORMAL SECTION

EASTBOUND LANES
SECTION APPLIES:

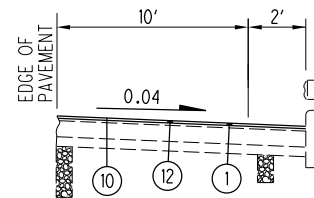
STA. 88+00.00 TO STA. 119+88.77 = 3,188.77 FT.
 STA. 121+63.98 TO STA. 158+00.00 = 3,636.02 FT.
 TOTAL 6,824.79 FT.

BRIDGE LIMITS INCLUDING APPROACH SLABS
 BRIDGE NO. LIC-161-0227 L/R
 STA. 119+88.77 TO STA. 121+63.98 = 175.21 FT.



CURB SECTION
SECTION APPLIES:

STA. 119+97.72 - STA. 120+25.72 = 28.00 FT.
 STA. 122+00.93 - STA. 122+20.93 = 20.00 FT.



CURB SECTION
SECTION APPLIES:

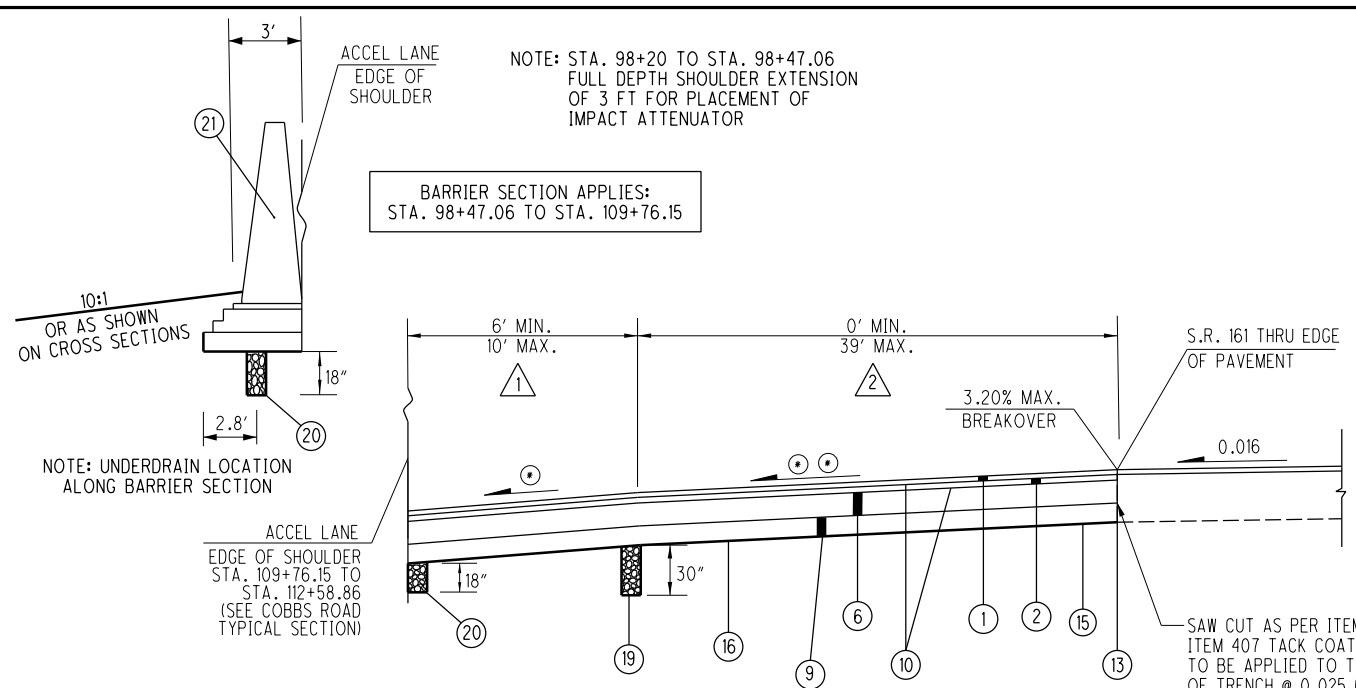
STA. 119+31.83 - STA. 119+51.83 = 20.00 FT.
 STA. 121+27.04 - STA. 121+47.04 = 20.00 FT.

- ① ITEM 442 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 442 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ③ ITEM 441 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ ITEM 441 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/OA
- ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- ⑨ ITEM 304 6" AGGREGATE BASE

- ⑩ ITEM 407 NON-TRACKING TACK COAT
- ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ FULL DEPTH PAVEMENT SAWING
- ⑭ STANDARD LONGITUDINAL JOINT
- ⑮ ITEM 204 PROOF ROLLING
- ⑯ ITEM 204 SUBGRADE COMPACTION
- ⑰ ITEM 606 GUARDRAIL, TYPE MGS
- ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2

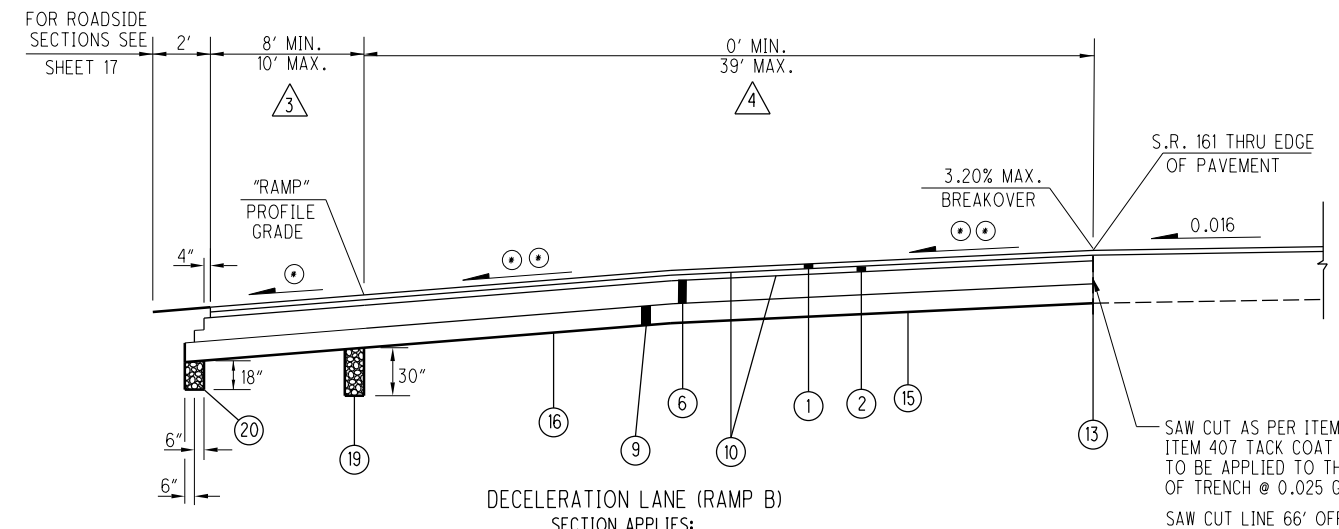
- ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS
- ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- ㉓ ITEM 304 8" AGGREGATE BASE
- ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- ㉕ ITEM 609 CURB, TYPE 6
- ㉖ ITEM 608 4" CONCRETE WALK

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- 1 TAPERS FROM 10' @ STA. 97+77.06 TO 8' @ STA. 98+77.06
8' FROM STA. 98+77.06 TO STA. 110+27.06
TAPERS FROM 8' @ STA. 110+27.06
6' @ STA. 110+77.06
6' FROM STA. 110+77.06 TO STA. 112+58.86
- 2 TAPERS FROM 0' @ STA. 97+77.06 TO 39' @ STA. 112+58.86

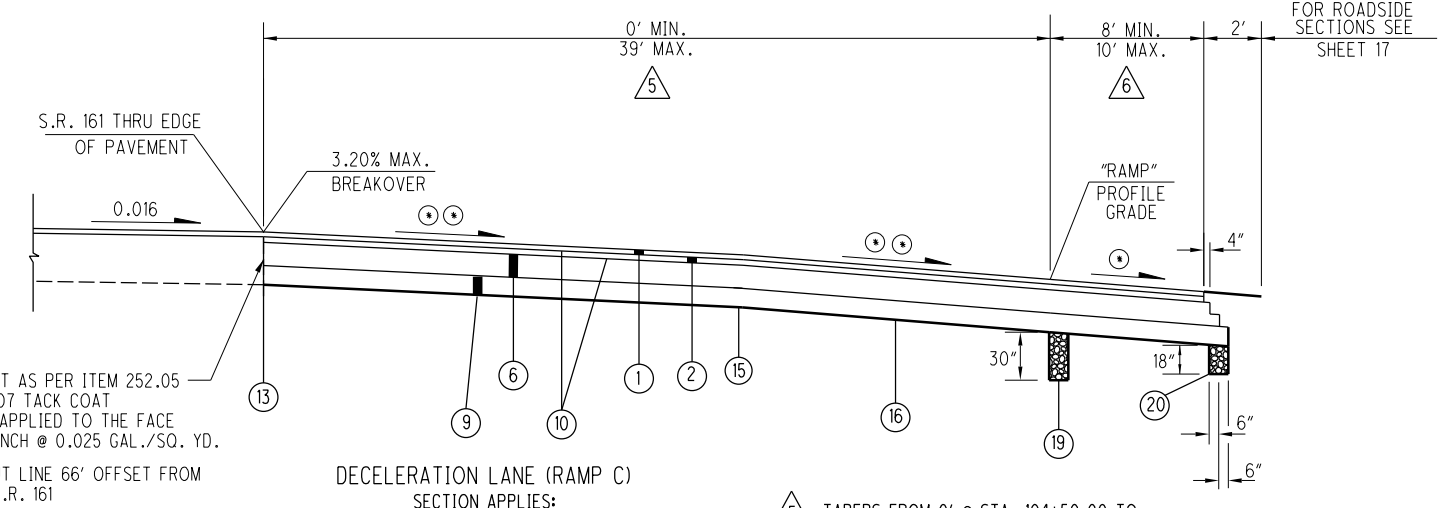
ACCELERATION LANE (RAMP A)
SECTION APPLIES:
STA. 97+77.06 TO STA. 112+58.86 = 1,481.80 FT.
TOTAL 1,481.80 FT.



- ⊙ - 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER.
- ⊙* - SLOPES VARY, SEE PAVEMENT DETAIL SHEETS

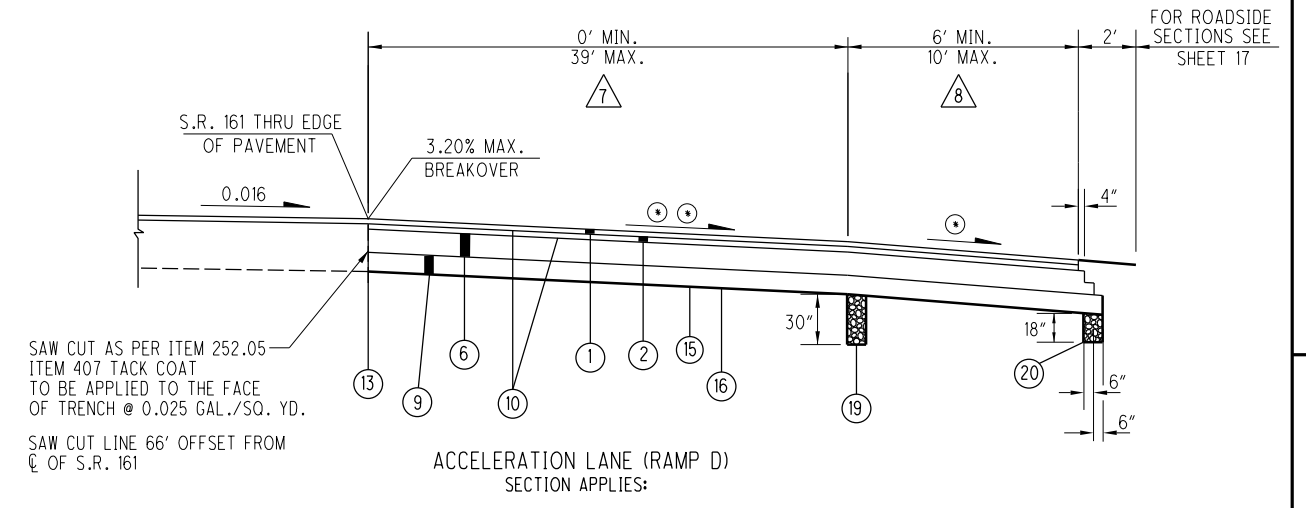
- 3 TAPERS FROM 8' @ STA. 141+00.00 TO 10' @ STA. 142+00.00
- 4 TAPERS FROM 39' @ STA. 130+25.17 TO 12' @ STA. 136+40.43
12' FROM STA. 136+40.43 TO STA. 141+00.00
TAPERS FROM 12' @ STA. 141+00.00 TO 0' @ STA. 142+00.00

DECELERATION LANE (RAMP B)
SECTION APPLIES:
STA. 130+25.17 TO STA. 142+00.00 = 1,174.83 FT.
TOTAL 1,174.83 FT.



- 5 TAPERS FROM 0' @ STA. 104+50.00 TO 12' @ STA. 105+50.00
12' FROM STA. 105+50.00 TO STA. 107+16.00
TAPERS FROM 12' @ STA. 107+16.00 TO 39' @ STA. 112+72.35
- 6 TAPERS FROM 10' @ STA. 104+50.00 TO 8' @ STA. 105+50.00

DECELERATION LANE (RAMP C)
SECTION APPLIES:
STA. 104+50.00 TO STA. 112+72.35 = 822.35 FT.
TOTAL 822.35 FT.



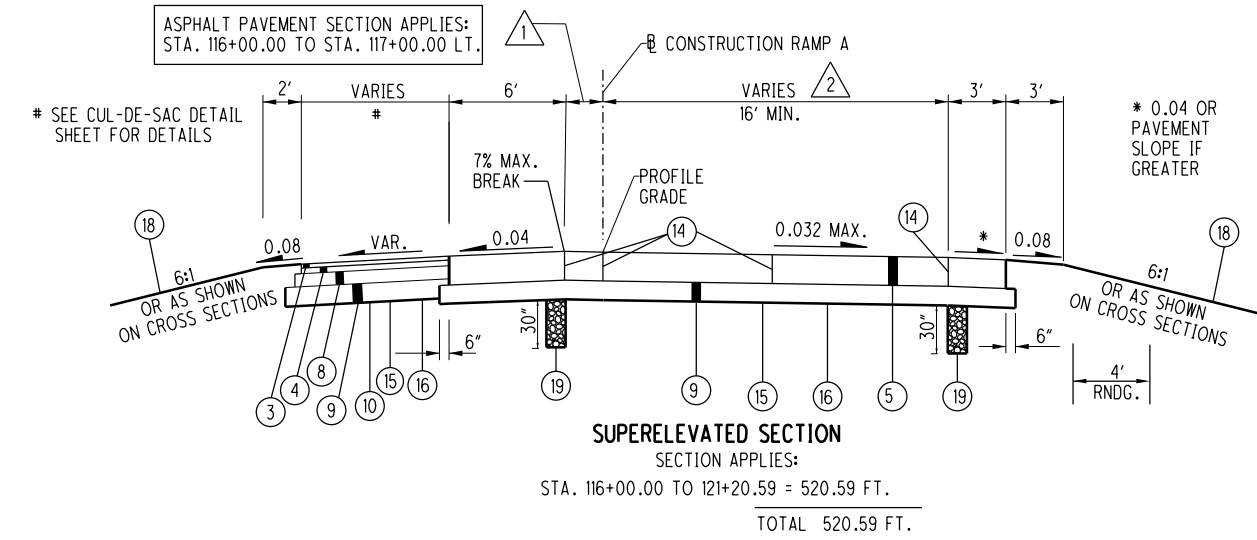
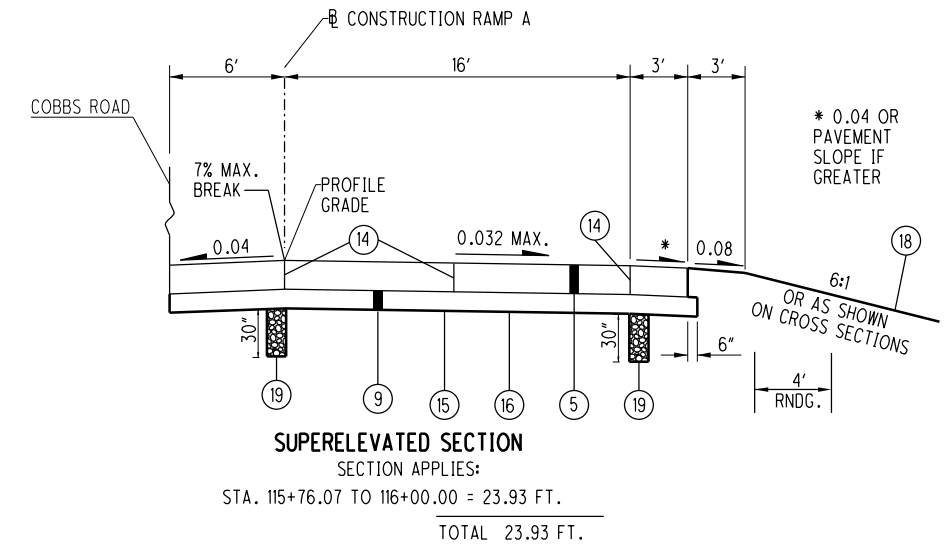
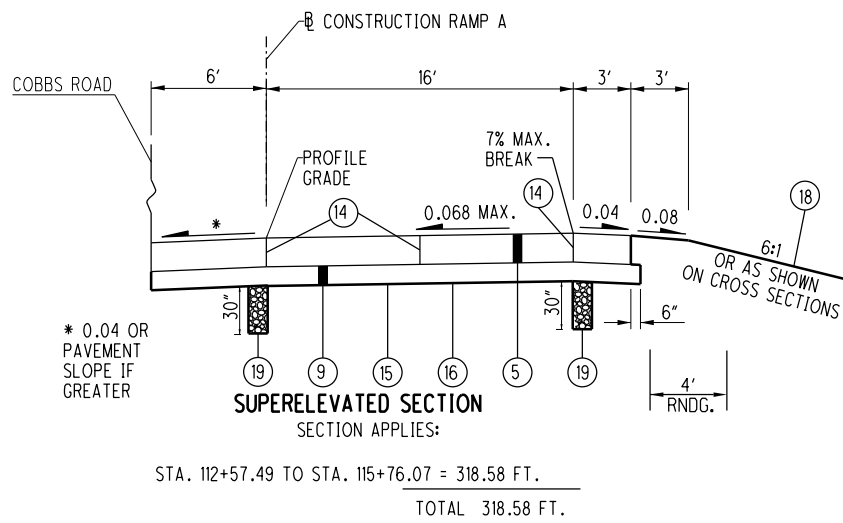
- 19 ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- 20 ITEM 605 6" BASE PIPE UNDERDRAINS
- 21 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- 22 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- 23 ITEM 304 8" AGGREGATE BASE
- 24 ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- 25 ITEM 609 CURB, TYPE 6
- 26 ITEM 608 4" CONCRETE WALK

- 7 TAPERS FROM 39' @ STA. 130+11.20 TO 0' @ STA. 145+44.86
- 8 6' FROM STA. 130+11.20 TO STA. 132+44.86
TAPERS FROM 6' @ STA. 132+44.86 TO 8' @ STA. 132+94.86
8' FROM STA. 132+94.86 TO STA. 144+44.86
TAPERS FROM 8' @ STA. 144+44.86 TO 10' @ STA. 145+44.86

ACCELERATION LANE (RAMP D)
SECTION APPLIES:
STA. 130+11.20 TO STA. 145+44.86 = 1,533.66 FT.
TOTAL 1,533.66 FT.

- 1 ITEM 442 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- 2 ITEM 442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- 3 ITEM 441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- 4 ITEM 441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- 5 ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH QC/OA
- 6 ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- 7 ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- 8 ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- 9 ITEM 304 6" AGGREGATE BASE
- 10 ITEM 407 NON-TRACKING TACK COAT
- 11 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- 12 ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- 13 FULL DEPTH PAVEMENT SAWING
- 14 STANDARD LONGITUDINAL JOINT
- 15 ITEM 204 PROOF ROLLING
- 16 ITEM 204 SUBGRADE COMPACTION
- 17 ITEM 606 GUARDRAIL, TYPE MGS
- 18 ITEM 659 SEEDING AND MULCHING, CLASS 2

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PAVEMENT WIDTH VARIES
SEE PAVEMENT DETAIL SHEETS

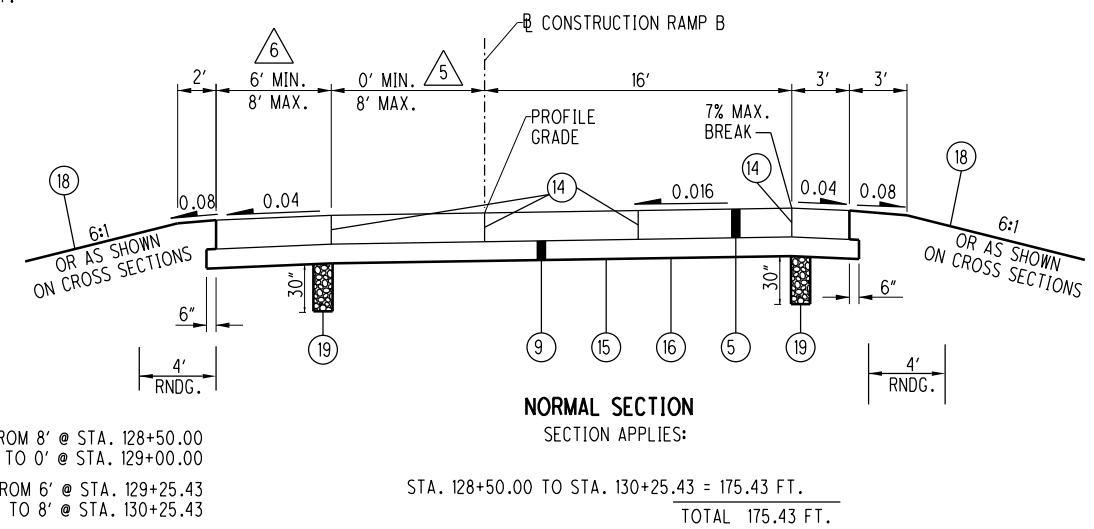
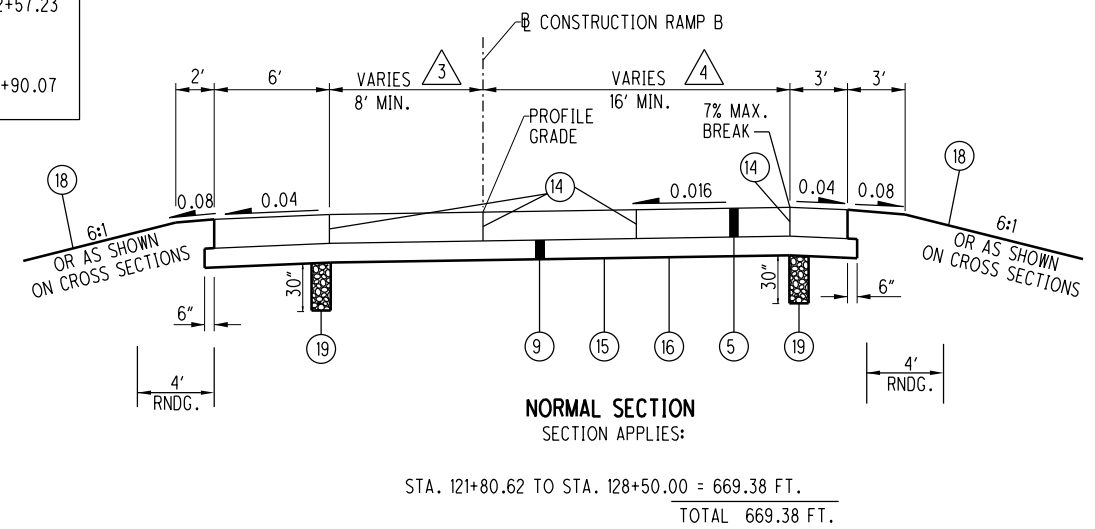
1 RAMP A (L.T.)
STA. 120+33.59 TO STA. 121+20.59

2 RAMP A (RT.)
STA. 120+45.15 TO STA. 121+20.59

PAVEMENT WIDTH VARIES
SEE PAVEMENT DETAIL SHEETS

3 RAMP B (L.T.)
STA. 121+80.62 TO STA. 122+57.23

4 RAMP B (RT.)
STA. 121+80.62 TO STA. 121+90.07



5 TAPERS FROM 8' @ STA. 128+50.00
TO 0' @ STA. 129+00.00

6 TAPERS FROM 6' @ STA. 129+25.43
TO 8' @ STA. 130+25.43

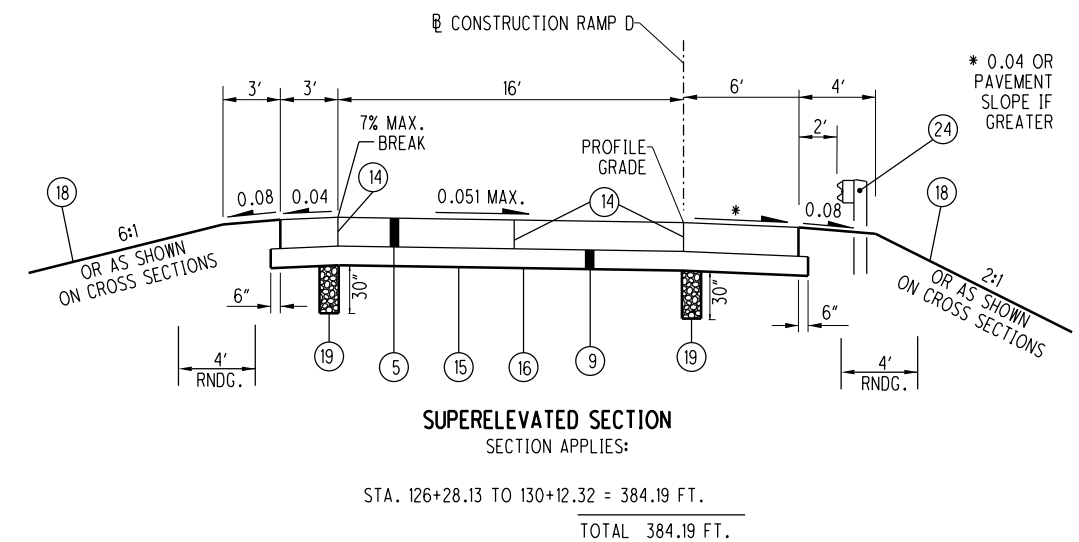
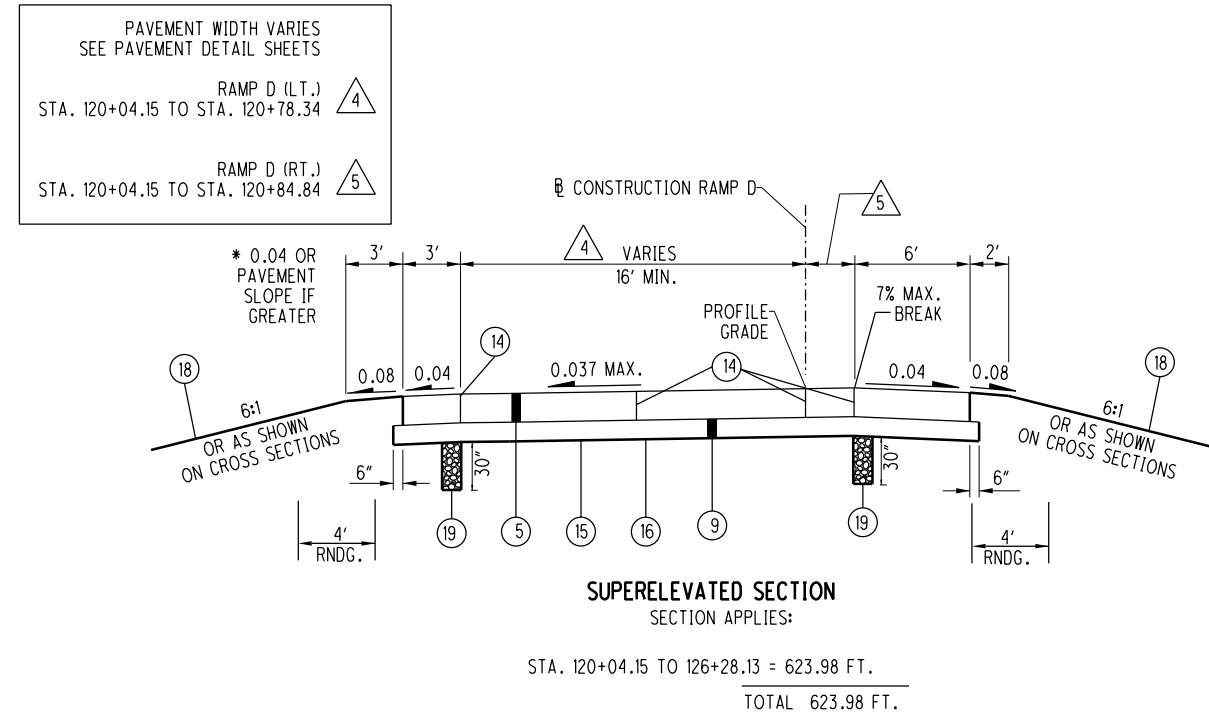
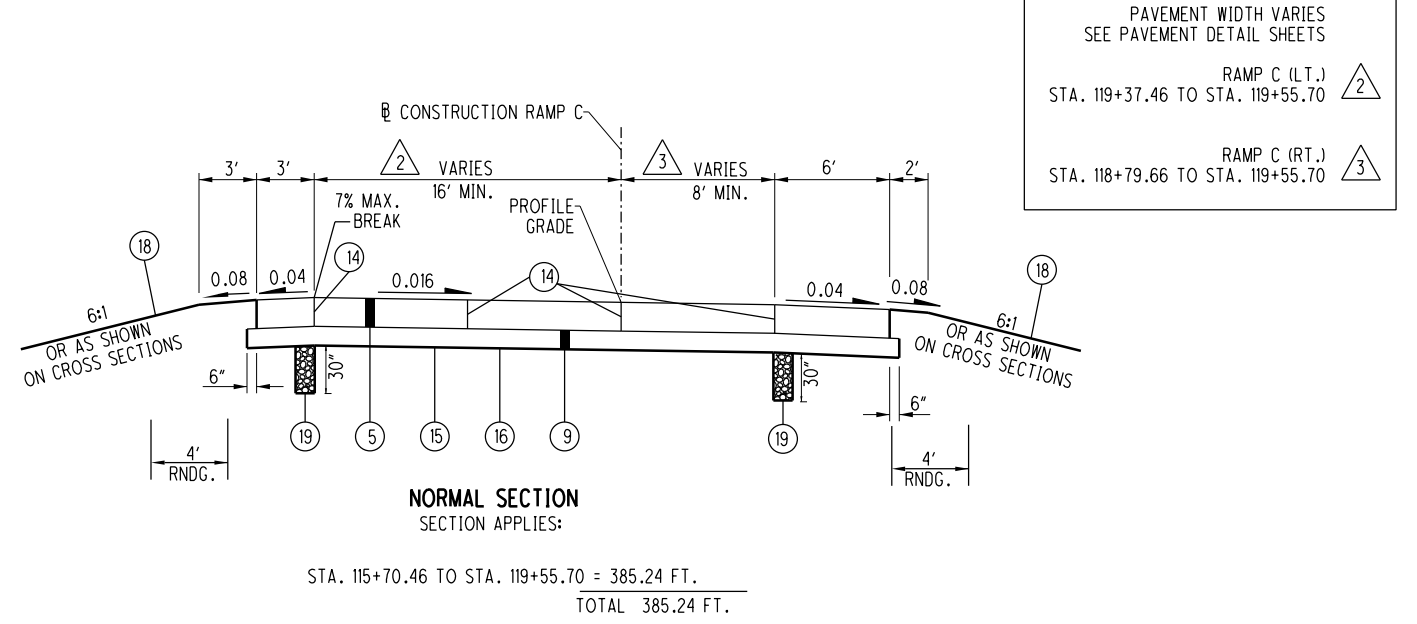
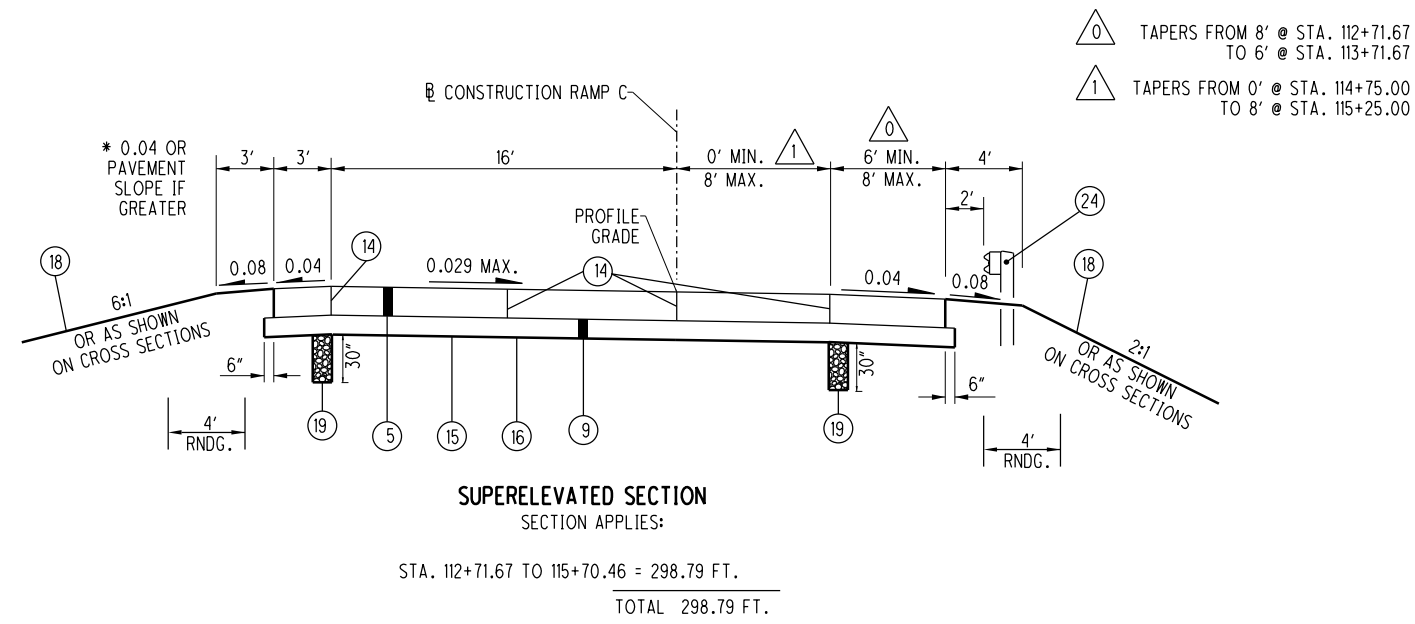
- ① ITEM 442 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ③ ITEM 441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ ITEM 441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/OA
- ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- ⑨ ITEM 304 6" AGGREGATE BASE
- ⑩ ITEM 407 NON-TRACKING TACK COAT
- ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ FULL DEPTH PAVEMENT SAWING
- ⑭ STANDARD LONGITUDINAL JOINT
- ⑮ ITEM 204 PROOF ROLLING
- ⑯ ITEM 204 SUBGRADE COMPACTION
- ⑰ ITEM 606 GUARDRAIL, TYPE MGS
- ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2
- ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS
- ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- ㉓ ITEM 304 8" AGGREGATE BASE
- ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- ㉕ ITEM 609 CURB, TYPE 6
- ㉖ ITEM 608 4" CONCRETE WALK

PROPOSED RAMPS A & B TYPICAL SECTIONS

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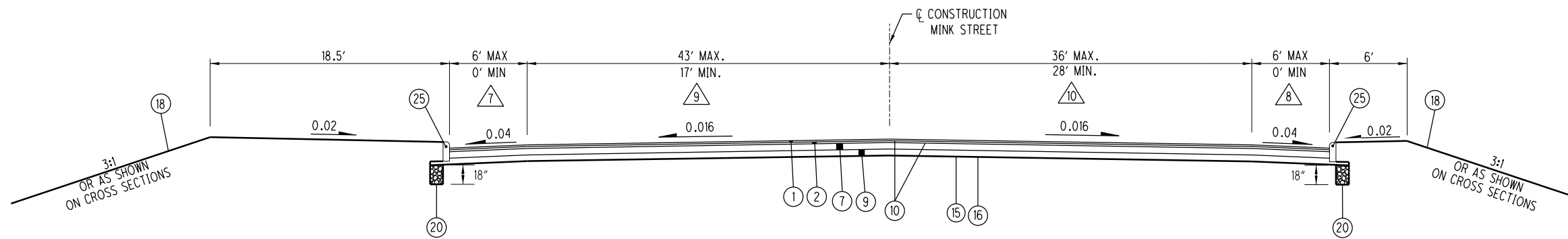
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- ① ITEM 442 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ③ ITEM 441 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ ITEM 441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/OA
- ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- ⑨ ITEM 304 6" AGGREGATE BASE
- ⑩ ITEM 407 NON-TRACKING TACK COAT
- ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ FULL DEPTH PAVEMENT SAWING
- ⑭ STANDARD LONGITUDINAL JOINT
- ⑮ ITEM 204 PROOF ROLLING
- ⑯ ITEM 204 SUBGRADE COMPACTION
- ⑰ ITEM 606 GUARDRAIL, TYPE MGS
- ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2
- ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS
- ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- ㉓ ITEM 304 8" AGGREGATE BASE
- ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- ㉕ ITEM 609 CURB, TYPE 6
- ㉖ ITEM 608 4" CONCRETE WALK

PROPOSED RAMPS C & D TYPICAL SECTIONS

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NORMAL SECTION
SECTION APPLIES:

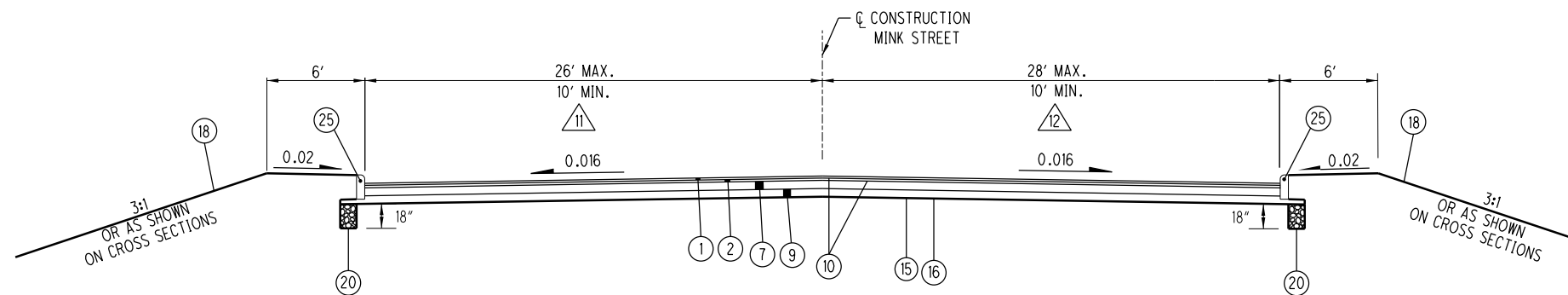
STA. 32+57.88 TO STA. 42+68.93 = 1,011.05 FT.
TOTAL = 1,011.05 FT.

△7 TAPERS FROM 6' @ STA. 33+16.92 TO 0' @ STA. 33+40.92

△9 TAPERS FROM 24' @ STA. 32+41.08 TO 43' @ STA. 33+16.92
TAPERS FROM 43' @ STA. 33+16.92 TO 39' @ STA. 33+56.92
39' FROM STA. 33+56.92 TO STA. 39+00.00
TAPERS FROM 39' @ STA. 39+00.00 TO 28' @ STA. 39+50.00
28' FROM STA. 39+50.00 TO STA. 41+50.00
TAPERS FROM 28' @ STA. 41+50.00 TO 17' @ STA. 42+00.00
17' FROM STA. 42+00.00 TO STA. 42+28.93
TAPERS FROM 17' @ STA. 42+28.93 TO 21' @ STA. 42+68.93

△8 TAPERS FROM 6' @ STA. 33+72.35 TO 0' @ STA. 33+96.35

△10 TAPERS FROM 32' @ STA. 32+80.02 TO 36' @ STA. 33+72.35
TAPERS FROM 36' @ STA. 33+72.35 TO 28' @ STA. 34+22.35
28' FROM STA. 34+22.35 TO STA. 42+68.93



NORMAL SECTION
SECTION APPLIES:

STA. 42+68.93 TO STA. 47+75.00 = 506.07 FT.
TOTAL = 506.07 FT.

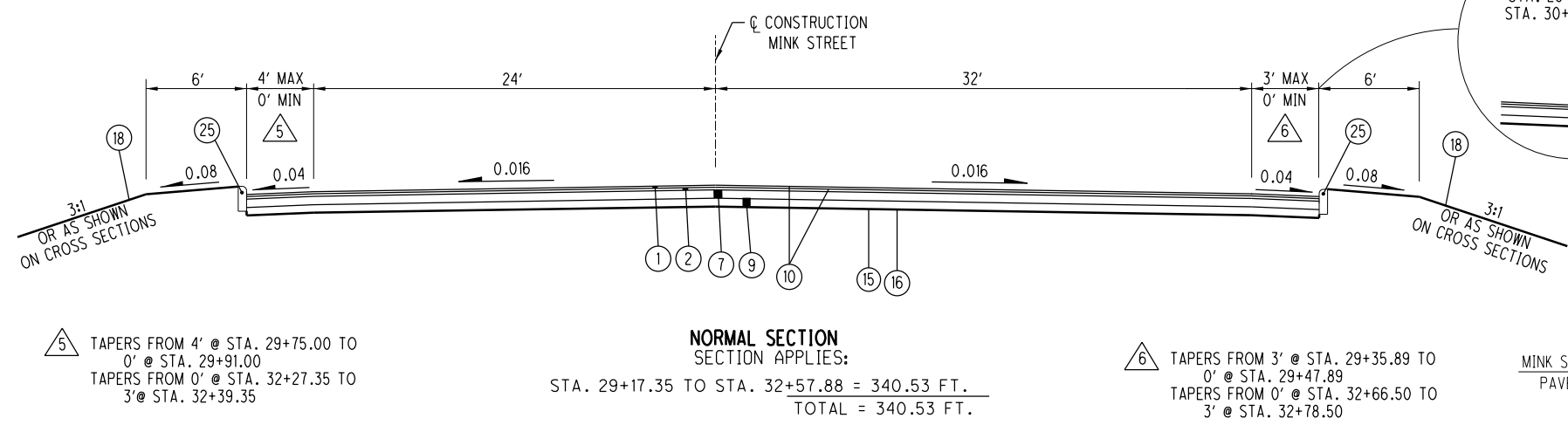
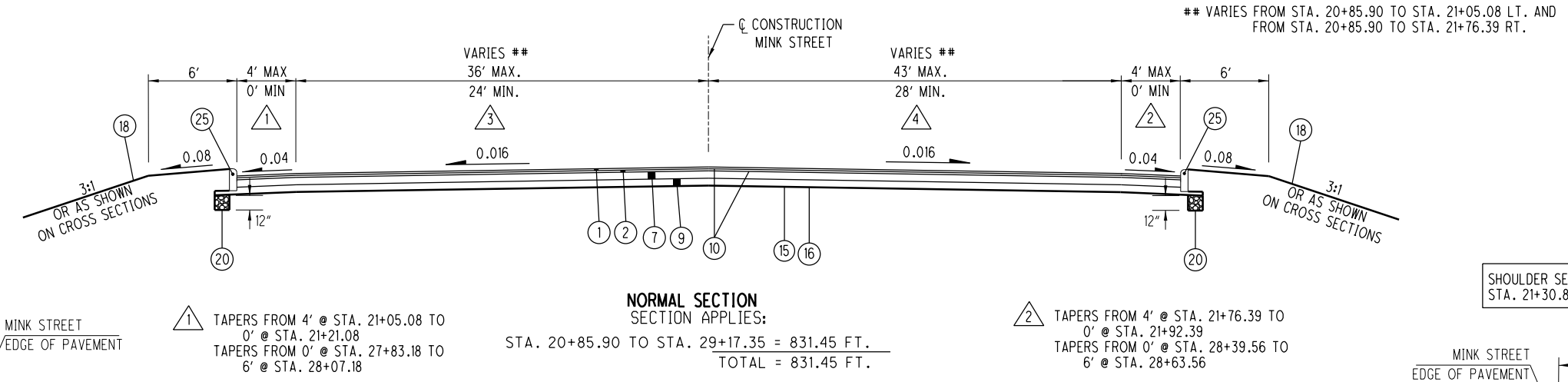
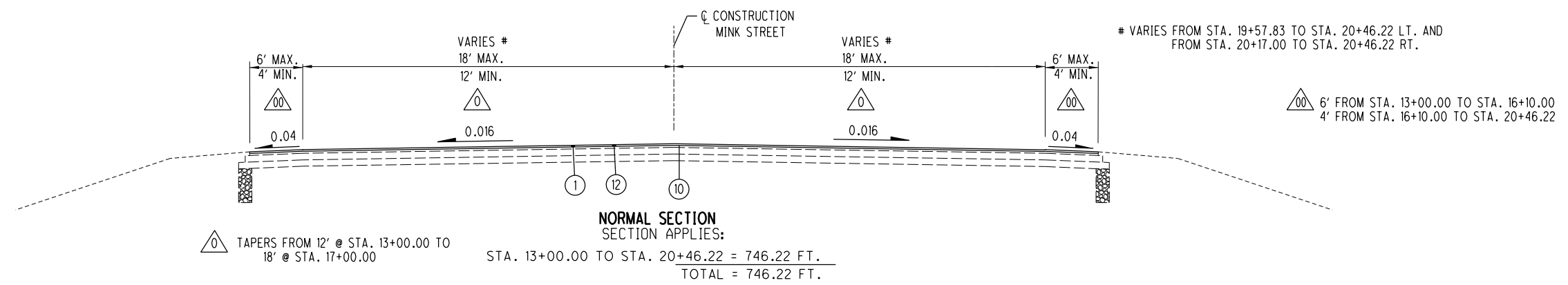
△11 TAPERS FROM 21' @ STA. 42+68.93 TO 26' @ STA. 43+98.92
TAPERS FROM 26' @ STA. 43+98.92 TO 22' @ STA. 44+38.92
22' FROM STA. 44+38.92 TO STA. 47+25.00
TAPERS FROM 22' @ STA. 47+25.00 TO 10' @ STA. 47+75.00

△12 28' FROM STA. 42+68.93 TO STA. 44+00.00
TAPERS FROM 28' @ STA. 44+00.00 TO 10' @ STA. 47+75.00

- ① ITEM 442 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 442 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ③ ITEM 441 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ ITEM 441 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/OA
- ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- ⑨ ITEM 304 6" AGGREGATE BASE

- ⑩ ITEM 407 NON-TRACKING TACK COAT
- ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ FULL DEPTH PAVEMENT SAWING
- ⑭ STANDARD LONGITUDINAL JOINT
- ⑮ ITEM 204 PROOF ROLLING
- ⑯ ITEM 204 SUBGRADE COMPACTION
- ⑰ ITEM 606 GUARDRAIL, TYPE MGS
- ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2

- ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS
- ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- ㉓ ITEM 304 8" AGGREGATE BASE
- ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- ㉕ ITEM 609 CURB, TYPE 6
- ㉖ ITEM 608 4" CONCRETE WALK

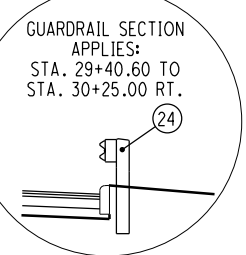


SHOULDER SECTION APPLIES:
STA. 20+59.20 TO STA. 21+05.08 LT.
STA. 29+05.03 TO STA. 29+75.00 LT.

SHOULDER SECTION APPLIES:
STA. 21+30.88 TO STA. 21+76.39 RT.

BARRIER SECTION APPLIES:
STA. 30+00.00 TO STA. 32+04.00 LT.

BARRIER SECTION APPLIES:
STA. 30+25.00 TO STA. 32+25.00 RT.

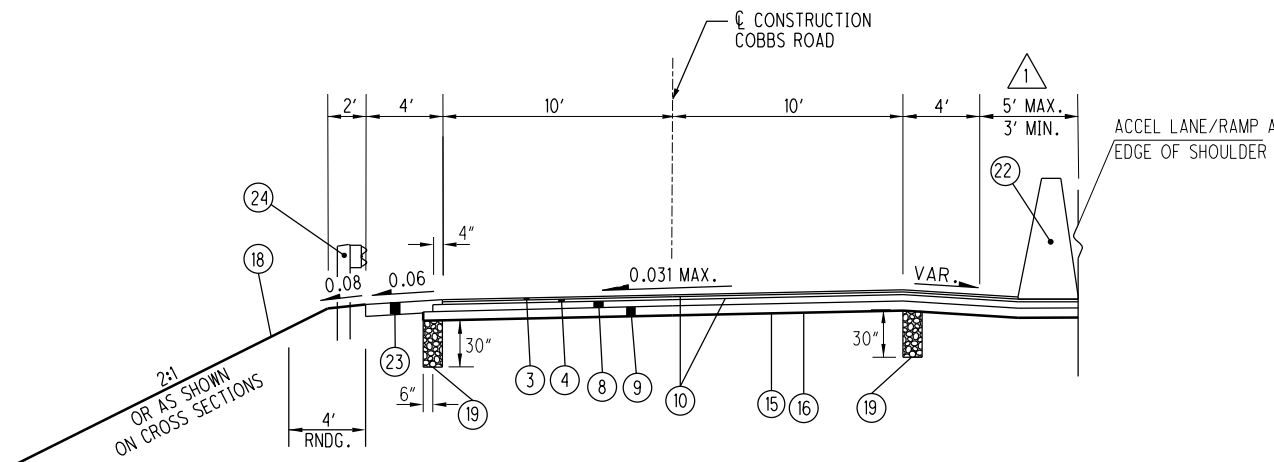


- ① ITEM 442 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 442 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ③ ITEM 441 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- ④ ITEM 441 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
- ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OCI WITH QC/QA
- ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- ⑨ ITEM 304 6" AGGREGATE BASE
- ⑩ ITEM 407 NON-TRACKING TACK COAT
- ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ FULL DEPTH PAVEMENT SAWING
- ⑭ STANDARD LONGITUDINAL JOINT
- ⑮ ITEM 204 PROOF ROLLING
- ⑯ ITEM 204 SUBGRADE COMPACTION
- ⑰ ITEM 606 GUARDRAIL, TYPE MGS
- ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2

- ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS
- ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- ㉓ ITEM 304 8" AGGREGATE BASE
- ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- ㉕ ITEM 609 CURB, TYPE 6
- ㉖ ITEM 608 4" CONCRETE WALK

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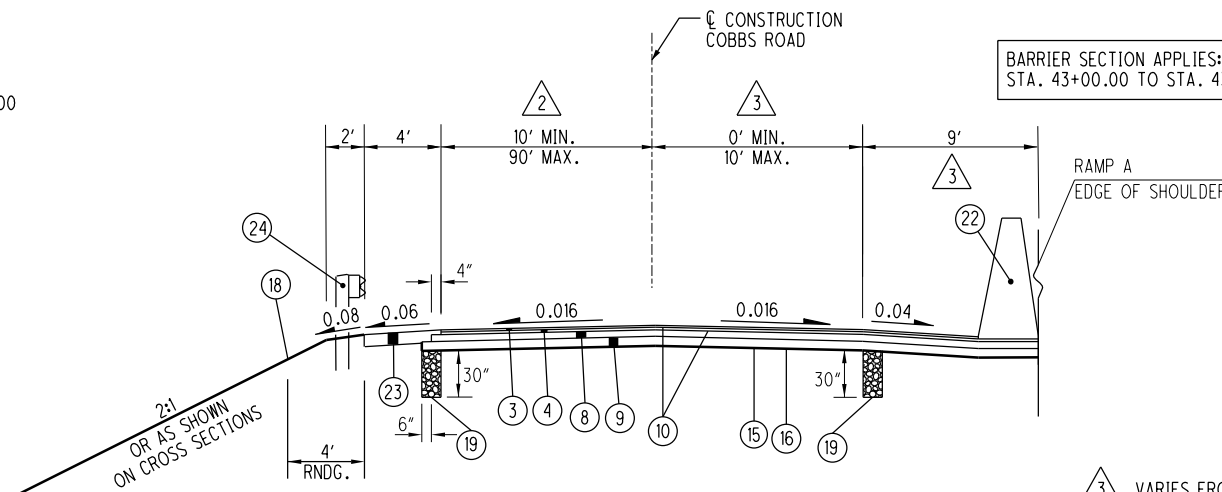


1 TAPERS FROM 4' @ STA. 37+00.00 TO 3' @ STA. 37+50.91
TAPERS FROM 3' @ STA. 37+50.91 TO 5' @ STA. 38+00.26
5' FROM STA. 38+00.26 TO STA. 41+27.14

SUPERELEVATED SECTION
SECTION APPLIES:

STA. 37+00.00 TO STA. 41+27.14 = 427.14 FT. (e max. 0.031)
TOTAL 427.14 FT.

2 VARIES FROM STA. 41+67.34 TO STA. 43+50.00
SEE CUL-DE-SAC PAVEMENT DETAIL SHEET



BARRIER SECTION APPLIES:
STA. 43+00.00 TO STA. 43+19.70 RT.

NORMAL SECTION
SECTION APPLIES:

STA. 41+27.14 TO STA. 43+50.00 = 222.86 FT.
TOTAL 222.86 FT.

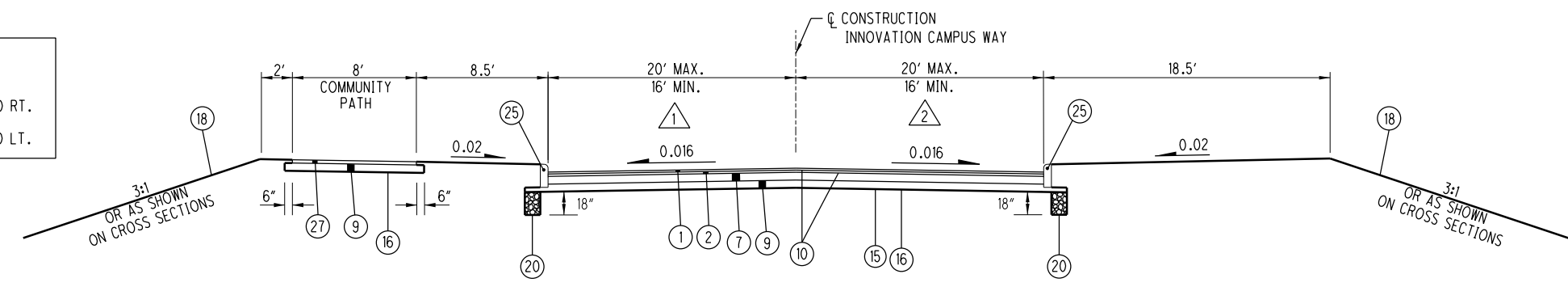
3 VARIES FROM STA. 43+00.00 TO STA. 43+50.00
SEE CUL-DE-SAC PAVEMENT DETAIL SHEET

- 1 ITEM 442 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- 2 ITEM 442 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- 3 ITEM 441 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
- 4 ITEM 441 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
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- 7 ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
- 8 ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
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- 10 ITEM 407 NON-TRACKING TACK COAT
- 11 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- 12 ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE
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- 16 ITEM 204 SUBGRADE COMPACTION
- 17 ITEM 606 GUARDRAIL, TYPE MGS
- 18 ITEM 659 SEEDING AND MULCHING, CLASS 2

- 19 ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH)
- 20 ITEM 605 6" BASE PIPE UNDERDRAINS
- 21 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- 22 ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- 23 ITEM 304 8" AGGREGATE BASE
- 24 ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS
- 25 ITEM 609 CURB, TYPE 6
- 26 ITEM 608 4" CONCRETE WALK

PAVEMENT WIDTH VARIES
SEE PAVEMENT DETAIL SHEETS
STA. 104+31.98 TO STA. 104+69.80 RT.
STA. 104+17.64 TO STA. 104+69.80 LT.



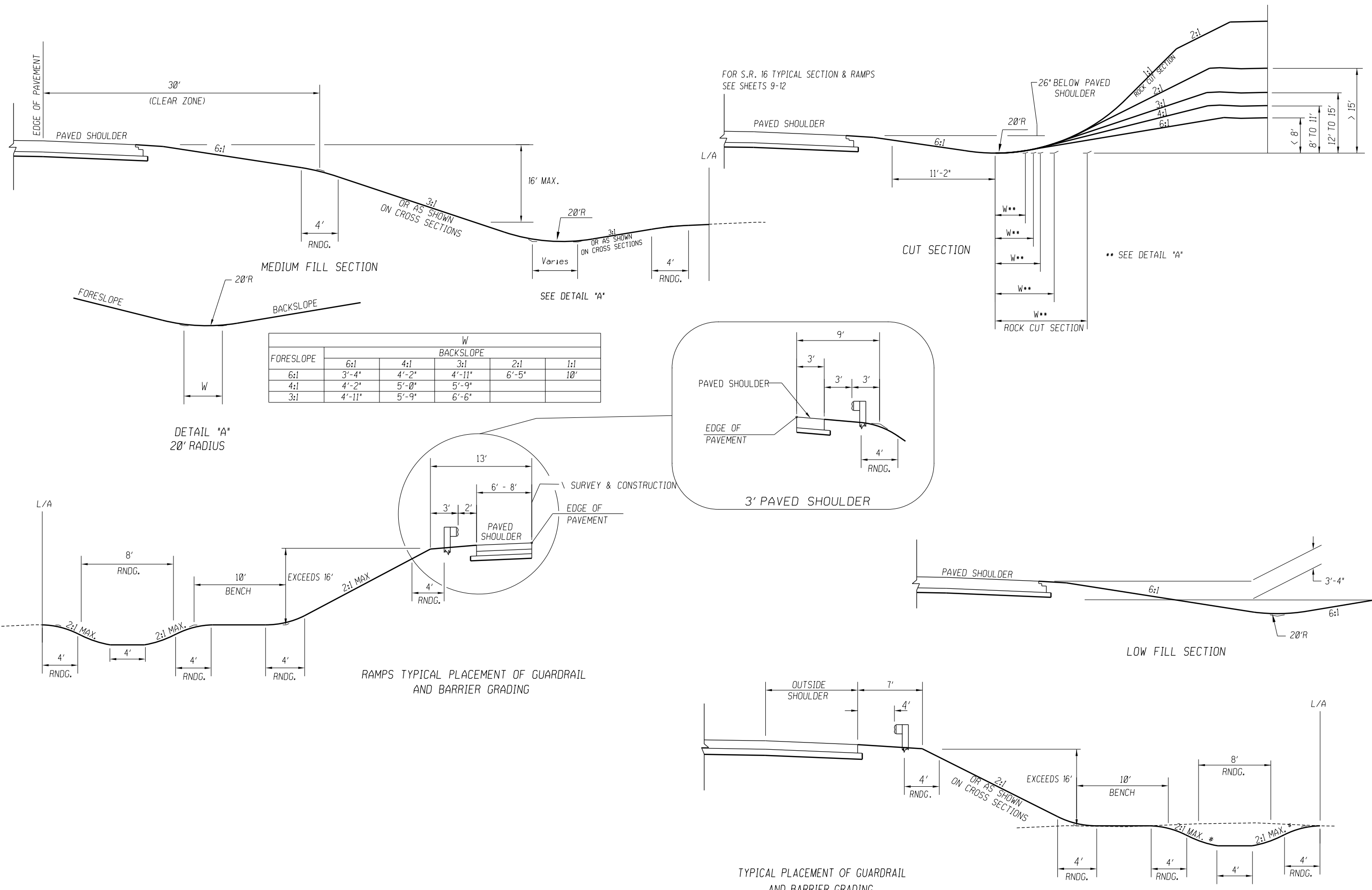
① TAPERS FROM 16' @ STA. 103+91.98 TO 20' @ STA. 104+31.98

NORMAL SECTION
SECTION APPLIES:
STA. 103+77.64 TO STA. 104+69.80 = 92.16 FT.
TOTAL = 92.16 FT.

② TAPERS FROM 16' @ STA. 103+77.64 TO 20' @ STA. 104+17.64

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> ① ITEM 442 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446) ② ITEM 442 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446) ③ ITEM 441 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M ④ ITEM 441 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446) ⑤ ITEM 452 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/QA ⑥ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22 ⑦ ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22 ⑧ ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22 ⑨ ITEM 304 6" AGGREGATE BASE | <ul style="list-style-type: none"> ⑩ ITEM 407 NON-TRACKING TACK COAT ⑪ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D ⑫ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE ⑬ FULL DEPTH PAVEMENT SAWING ⑭ STANDARD LONGITUDINAL JOINT ⑮ ITEM 204 PROOF ROLLING ⑯ ITEM 204 SUBGRADE COMPACTION ⑰ ITEM 606 GUARDRAIL, TYPE MGS ⑱ ITEM 659 SEEDING AND MULCHING, CLASS 2 | <ul style="list-style-type: none"> ⑲ ITEM 605 6" SHALLOW PIPE UNDERDRAINS (30" DEPTH) ⑳ ITEM 605 6" BASE PIPE UNDERDRAINS ㉑ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1 ㉒ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C1 ㉓ ITEM 304 8" AGGREGATE BASE ㉔ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS ㉕ ITEM 609 CURB, TYPE 6 ㉖ ITEM 608 4" CONCRETE WALK ㉗ ITEM 823 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) |
|--|--|--|

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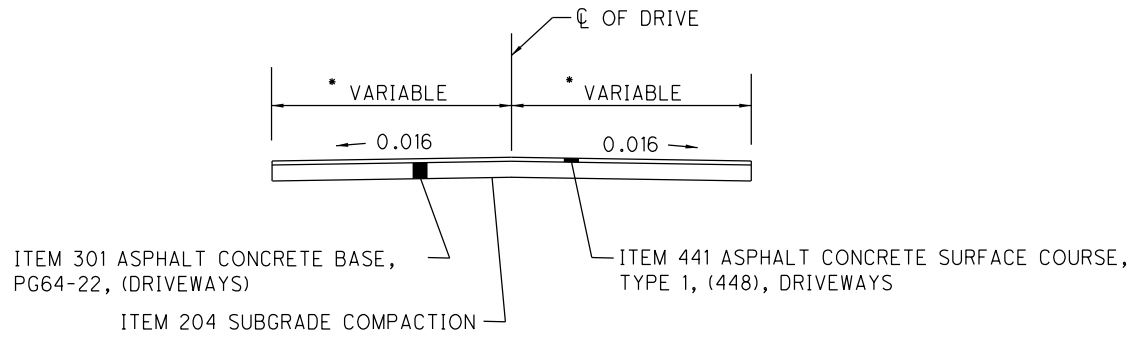
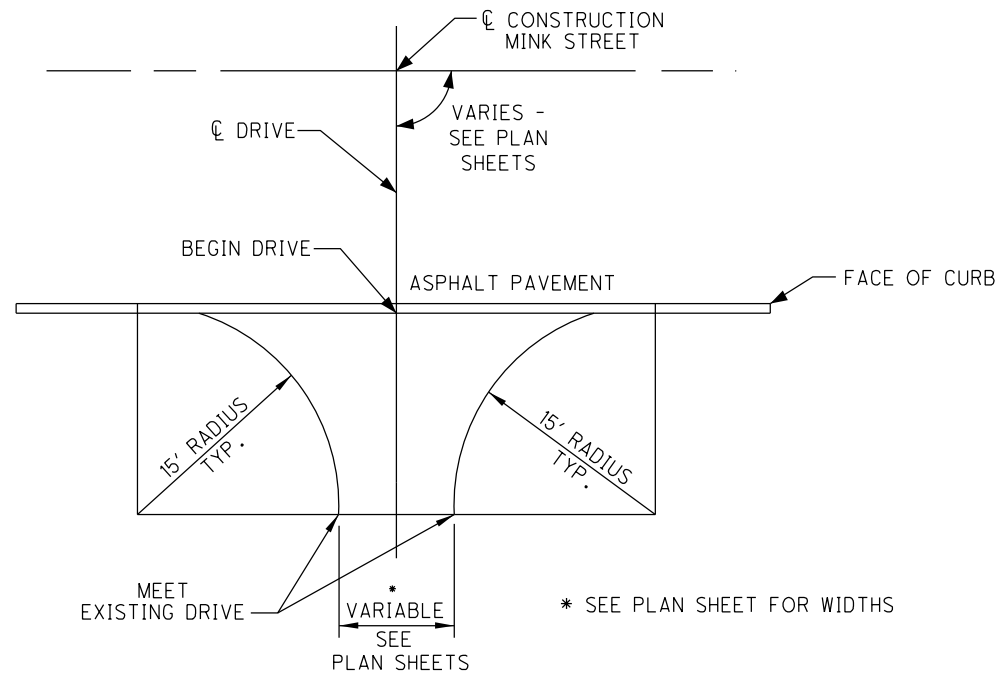


FORESLOPE	W				
	BACKSLOPE				
6:1	3'-4"	4'-2"	4'-11"	6'-5"	10'
4:1	4'-2"	5'-0"	5'-9"		
3:1	4'-11"	5'-9"	6'-6"		

DETAIL "A"
20' RADIUS

* OR AS SHOWN ON THE CROSS SECTIONS.

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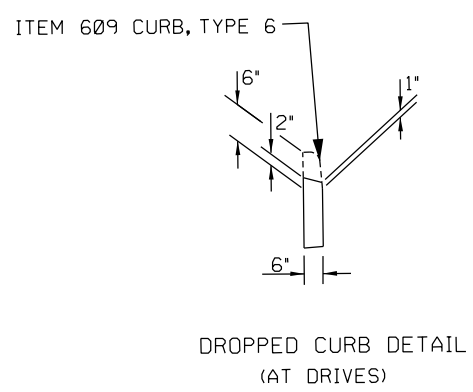
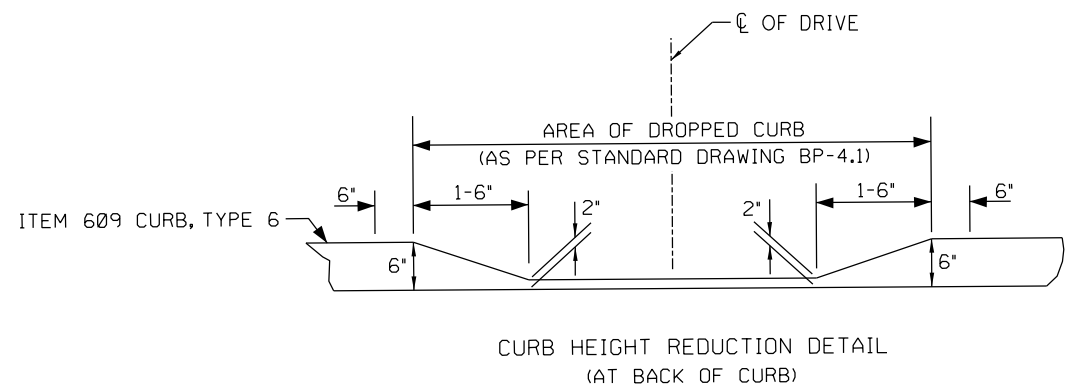


RESIDENTIAL DRIVES

- ITEM 441 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), DRIVEWAYS
- ITEM 301 3-1/2" ASPHALT CONCRETE BASE, PG64-22, (DRIVEWAYS)
- ITEM 204 SUBGRADE COMPACTION

COMMERCIAL DRIVES

- ITEM 441 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), DRIVEWAYS
- ITEM 301 5" ASPHALT CONCRETE BASE, PG64-22, (DRIVEWAYS)
- ITEM 204 SUBGRADE COMPACTION



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:

AEP DISTRIBUTION
850 TECH CENTER DRIVE
GAHANNA, OHIO 43230
ATTN: PAUL PAXTON
614-883-6831

CENTURYLINK TELEPHONE COMPANY
401 WEST BROAD STREET
PATASKALA, OHIO 43062
ATTN: DEE REED
740-927-8282

LICKING RURAL ELECTRIC
11339 MT. VERNON RD.
P.O. BOX 455
UTICA, OHIO 43080
ATTN: JOHN STRATHMAN
740-348-1149

MARATHON ASHLAND PIPELINE
539 SOUTH MAIN STREET
FINDLAY, OHIO 45840
ATTN: GREG NEWMAN
419-884-0800 EXT. 236

NATIONAL GAS AND OIL CORP.
1500 GRANVILLE ROAD
P.O. BOX 4970
NEWARK, OHIO 43058-4970
ATTN: GREG WILSON
740-348-1254

WORK LIMITS

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

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 7 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.

ELEVATION DATUM

CONTROL MONUMENTS FOR LIC-161-1.83
PID 97879

PROJECT CONTROL:
THE HORIZONTAL COORDINATES EXPRESSED HEREIN ARE BASED ON THE OHIO STATE PLANE COORDINATES SYSTEM, GROUND COORDINATES, NAD83 (2011), ELLIPSOID GR80, SOUTH ZONE (3402). THE VERTICAL DATUM NAVD 88, GEOID12A. THE PROJECT COORDINATES (US SURVEY FEET) ARE RELATIVE TO STATE PLANE GRID COORDINATES, (METERS OR US FEET) BY DIVIDING BY A PROJECT ADJUSTMENT FACTOR OF 1.0000372218.

POINT #	NORTHING	EASTING	ELEVATION	STATION	OFFSET
217	STATION AND OFFSET FROM CHAIN: CLX_S161 758,183.1142 1,901,653.0990 FEATURE: MAG NAIL SET		1150.988	73+31.08	115.1385' LT.
234	STATION AND OFFSET FROM CHAIN: CLX_S161 758,173.1102 1,903,123.6410 FEATURE: IRON PIN SET		1149.828	87+97.65	134.6366' LT.
286	STATION AND OFFSET FROM CHAIN: CLP_MINK 758,648.8840 1,906,705.7610 FEATURE: IRON PIPE SET		1182.530	38+71.54	19.0452' LT.
288	STATION AND OFFSET FROM CHAIN: CLP_MINK 757,302.3350 1,906,089.4290 FEATURE: IRON PIPE SET		1174.260	23+91.99	32.1110' RT.
290	STATION AND OFFSET FROM CHAIN: CLP_MINK 760,315.3910 1,907,608.7960 FEATURE: IRON PIPE SET		1193.590	57+66.21	21.9956' LT.

EXISTING 6" MARATHON HP GASLINE CONSTRUCTION NOTIFICATION

THE PLANS INDICATE THE LOCATION OF AN EXISTING 6" MARATHON HP GASLINE. THE LOCATION AND DEPTH OF THE EXISTING GASLINE ARE APPROXIMATE. THERE SHOULD BE NO IMPACTS TO THE GASLINE WITH THE INTENDED CONSTRUCTION OF THIS PROJECT. THE USE OF VIBRATORY EQUIPMENT WITHIN 10 FT. OF EACH SIDE OF THE GASLINE SHALL BE PROHIBITED.

REGARDLESS, MARATHON PETROLEUM SHALL BE NOTIFIED 5 DAYS PRIOR TO ANY WORK THAT WILL OCCUR WITHIN 50 FT. OF THE GASLINE. CONTACT GREG NEWMAN AT MARATHON PIPE LINE LLC. (419-884-0800 EXT. 236).

COOPERATION BETWEEN CONTRACTORS

THE CITY OF NEW ALBANY HAS CONTRACTED:

PROJECT NO.20151327 INNOVATION CAMPUS WAY 2016

WHICH MAY BE CONSTRUCTED CONCURRENTLY WITH THIS PROJECT. IT IS IMPERATIVE THAT THE CONTRACTORS COOPERATE FULLY WITH EACH OTHER AS OUTLINED IN SECTION 105.08 OF THE CMS MANUAL. ALL MAINTENANCE OF TRAFFIC SHALL BE COORDINATED BETWEEN PROJECTS AND NOT CONFLICT WITH ONE ANOTHER.

BORROW AND WASTE AREAS

THE CONTRACTOR SHALL COMPLY WITH CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 107.10 FOR ALL STAGING, MATERIAL AND EQUIPMENT STORAGE, BORROW AND WASTE AREAS.

STREAM IMPACT MINIMIZATION

THE CONTRACTOR SHALL FOLLOW ODOT SUPPLEMENTAL SPECIFICATION 832 TO MINIMIZE IMPACTS TO EXISTING RIPARIAN HABITAT ZONES.

WATERWAY PERMITS (401/404)

NOTE REMOVED

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 PUBLIC INFORMATION OFFICER (PIO)
BY FAX: (614) 887-4510 OR
BY EMAIL: D05.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION
BY FAX: (614) 887-4525 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 A MINIMUM OF 14 DAYS PRIOR TO THE ABOVE MENTIONED WORK.

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.

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.

ITEM SPECIAL-DRILLED WATER WELL ABANDONED

THE EXISTING DRILLED WATER WELLS MARKED TO BE ABANDONED SHALL BE ABANDONED AS PER STANDARD CONSTRUCTION DRAWING RM-7.1

CALCULATED
XXX
CHECKED
HAG

GENERAL NOTES

LIC-161-1.83

19
336

CLEARING AND GRUBBING

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

ITEM 201 CLEARING AND GRUBBING LUMP

SEEDING AND MULCHING

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

SEEDING TOTAL CARRIED FROM SHEET 111.
ITEM 659 SEEDING AND MULCHING, CLASS 2 86,354 SQ YD

ITEM 659 COMMERCIAL FERTILIZER 12.0 TON
1 TON PER 7,410 SQ. YD. OF THE PERMANENT SEEDER AREA
86,354 SQ.YD. ÷ 7,410 = 11.7 TON

ITEM 659 LIME 18.0 ACRES
86,354 SQ.YD. ÷ 4,840 = 17.8 ACRES

ITEM 659 WATER 467.0 M. GAL.
0.0054 M. GAL PER SQ. YD. OF THE PERMANENT SEEDER AREA
86,354 SQ.YD. x 0.0054 = 466.3 GAL.

ITEM 659 MOWING 1555.0 MSF
0.009 MSF PER SQ.YD.
86,354 SQ.YD. x 0.009 = 777.2 MSF
777.2 MSF x 2 MOWINGS = 1554.4 MSF

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 4,318.0 SQ. YD.
5% OF THE PERMANENT SEEDER AREA
.05 x 86,354 SQ.YD. = 4,317.8 SQ. YD.

ITEM 659 INTER-SEEDING 4,318.0 SQ. YD.
5% OF THE PERMANENT SEEDER AREA
.05 x 86,354 SQ.YD. = 4,317.8 SQ. YD.

ITEM 659 COMMERCIAL FERTILIZER 3.0 TON
1 TON PER 29,940 SQ. YD. OF THE PERMANENT SEEDER AREA
86,354 SQ.YD. ÷ 29,940 = 2.9 TON

ITEM 659 WATER 75.0 M. GAL.
0.00216 M. GAL. PER 40% OF THE SEEDER AREA
86,354 SQ.YD. x 0.40 x 0.00216 = 74.6 M. GAL.

QUANTITIES CARRIED TO GENERAL SUMMARY

**ITEM 653 TOPSOIL FURNISHED AND PLACED
ITEM 670 SLOPE EROSION PROTECTION**

THE FOLLOWING QUANTITY OF TOPSOIL FURNISHED AND PLACED, 6", AND SLOPE EROSION PROTECTION HAVE BEEN INCLUDED IN THE GENERAL SUMMARY. SEE S.R. 161, RAMP B, RAMP C AND RAMP D CROSS SECTION SHEETS FOR LOCATIONS.

	SLOPE EROSION PROTECTION	TOP SOIL FURNISHED AND PLACED
S.R. 161	13,439	2,281
RAMP B	5,631	959
RAMP C	1,485	249
RAMP D	1,528	260
	<u>22,083 SY</u>	<u>3,749 CY</u>

ITEM 653 TOPSOIL FURNISHED AND PLACED 3,749.0 C.Y.
ITEM 670 SLOPE EROSION PROTECTION 22,083.0 S.Y.

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:

EARTHWORK QUANTITIES CARRIED FROM SHEET 111.

ITEM 616, WATER 458 M. GAL
0.004 M. GAL. PER CU. YD. OF THE TOTAL EARTHWORK
50,161 (EXCAVATION) + 64,310 (EMBANKMENT) = 114,471 CU. YD. (TOTAL)
114,471 x 0.004 = 457.9 M. GAL.

QUANTITY CARRIED TO 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 FOR UNDER ITEM 204 EXCAVATION OF SUBGRADE.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE MENTIONED WORK.

LOCATION	EXCAVATION OF SUBGRADE	GRANULAR MATERIAL, TYPE C	GEOTEXTILE FABRIC
S.R. 161 STA. 107+50 - 112+58.86 STA. 130+50 - 138+00	1,622.0	1,790.0	4,229.0
RAMP A STA. 112+57.49 - 115+50	419.0	371.0	776.0
MINK ROAD STA. 21+00 - 27+00	2,066.0	2,066.0	1,473.0
TOTALS	4,107.0	4,227.0	6,478.0

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.

REMOVAL MISC.: LANDSCAPE ROCKS
REMOVAL MISC.: GATES
REMOVAL MISC.: PRIVATE SIGN
REMOVAL MISC.: TV ANTENNA
REMOVAL MISC.: FLOWER BED
REMOVAL MISC.: PROPANE TANK

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 ITEMS SHALL BE COMPLETELY REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AS PER CMS 202 BID LUMP SUM FOR EACH TYPE OF ITEM.

ITEM 202 PAVEMENT REMOVED, ASPHALT

THE FOLLOWING QUANTITY HAS BEEN PROVIDED TO REMOVE THE EXISTING ASPHALT PAVEMENT ON S.R. 161, MINK STREET, COBBS ROAD, AND MICHAELENE WAY AS SHOWN AND DETAILED IN THE PLANS.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 202 PAVEMENT REMOVED, ASPHALT 24,195 SQ YD

AREAS CALCULATED BY COMPUTER:

WESTBOUND S.R. 161
STA. 97+77.06 TO STA. 112+58.86 = 1646.4 SQ YD
STA. 130+25.17 TO STA. 142+00.00 = 1305.4 SQ YD

EASTBOUND S.R. 161
STA. 104+50.00 TO STA. 112+72.35 = 913.7 SQ YD
STA. 130+11.20 TO STA. 145+44.86 = 1704.1 SQ YD

MINK STREET
STA. 20+85.90 TO STA. 47+75.00 = 10,289.2 SQ YD

COBBS ROAD
STA. 37+00.00 TO STA. 48+57.86 = 2596.6 SQ YD

MICHAELENE WAY
STA. 0+22.28 TO STA. 19+63.05 = 5739.0 SQ YD

TOTAL:
1646.4 + 1305.4 + 913.7 + 1704.1 + 10,289.2 + 2596.6 + 5739.0 = 24,194.4

ITEM 618 RUMBLE STRIPS, (ASPHALT CONCRETE)

THE FOLLOWING QUANTITY IS PROVIDED TO INSTALL RUMBLE STRIPS ON THE INSIDE AND OUTSIDE SHOULDERS OF THE WESTBOUND AND EASTBOUND LANES OF S.R. 161, AS PER STANDARD CONSTRUCTION DRAWING BP-9.1.

ITEM 618 RUMBLE STRIPS, (ASPHALT CONCRETE) 5.2 MILE
QUANTITY CARRIED TO GENERAL SUMMARY

EASTBOUND:

INSIDE SHOULDER
STA. 88+00.00 TO STA. 119+68.92 = 3168.92 FT.
STA. 121+44.1 TO STA. 158+00.00 = 3655.89 FT.

OUTSIDE SHOULDER
STA. 88+00.00 TO STA. 11+72.83 (RAMP C) = 2373.43 FT.
STA. 111+70.56 TO STA. 119+57.60 = 787.04 FT.
STA. 121+32.76 TO STA. 135+75.00 = 1442.24 FT.
STA. 135+75.00 TO STA. 158+00.00 = 2225.00 FT.

WESTBOUND:

INSIDE SHOULDER
STA. 88+00.00 TO STA. 120+08.58 = 3208.58 FT.
STA. 121+83.81 TO STA. 158+00.00 = 3616.19 FT.

OUTSIDE SHOULDER
STA. 88+00.00 TO STA. 107+20.00 = 1920.00 FT.
STA. 107+20.00 TO STA. 120+19.92 = 1299.92 FT.
STA. 121+95.15 TO STA. 131+25.00 = 929.85 FT.
STA. 131+25.00 (RAMP B) TO STA. 158+00.00 = 2675.63 FT.

TOTAL
(3168.92+3655.89+2373.43+787.04+1442.24+2225.00+3208.58+3616.19+1920.00+1299.92+929.85+2375.63)/5280 = 5.2 MILES

EXCAVATION AND EMBANKMENT QUANTITIES

QUANTITIES CARRIED FROM SHEET 111

ITEM 203 EXCAVATION - 50,161 CY
ITEM 203 EMBANKMENT - 64,310 CY

QUANTITIES CARRIED TO GENERAL SUMMARY

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.

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ITEM 608 WALKWAY MISC.: CURB RAMP (TYPE C)
ITEM 608 WALKWAY MISC.: DETECTABLE WARNING

CURB RAMPS AND DETECTABLE WARNINGS CONSTRUCTED AT THE PROPOSED INTERSECTION OF MINK STREET AND INNOVATION CAMPUS WAY SHALL FOLLOW CITY OF COLUMBUS, OHIO STANDARD CONSTRUCTION DRAWING 2319 AND REQUIREMENTS OF CMS ITEM 608. FULL COMPENSATION FOR THESE ITEMS AS REQUIRED ABOVE AND INCLUDES ANY INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION AS SPECIFIED BY THE SPECIFICATION WILL BE PAID FOR PER EACH INSTALLATION.

ITEM 608 WALKWAY MISC.: CURB RAMP (TYPE C) EACH
ITEM 608 WALKWAY MISC.: DETECTABLE WARNING EACH

ITEM SPECIAL ASBESTOS ABATEMENT

AN INSPECTION FOR ASBESTOS CONTAINING MATERIALS WAS COMPLETED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST ON JULY 11TH, 2016 FOR THE BUILDINGS LOCATED AT 1519, 1547, 1693, AND 1786 MINK STREET, JOHNSTOWN, OHIO.

THE RESULTS OF THE ASBESTOS INSPECTION AND POLARIZED LIGHT MICROSCOPY TESTING OF BULK SAMPLES INDICATE REGULATED ASBESTOS CONTAINING MATERIAL (RACM) IS PRESENT IN THE BUILDINGS AT 1693 AND 1786 AND THE LABORATORY TEST RESULTS HAVE BEEN PROVIDED AS A SPECIAL PROVISION TO THE PLANS.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL PERTINENT ASBESTOS REMOVAL, HANDLING AND DISPOSAL REQUIREMENTS OF THE OHIO ADMINISTRATIVE CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS REGULATIONS, AS THE QUANTITY OF THE REGULATED ASBESTOS CONTAINING MATERIAL TO BE REMOVED ON THE PROJECT IS MORE THAN 50 SQ. FT., AN OHIO DEPARTMENT OF HEALTH NOTIFICATION WILL BE REQUIRED.

IN ACCORDANCE WITH SECTION XVII OF THE OHIO EPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM THE CONTRACTOR SHALL ENSURE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAP WILL BE ONSITE DURING THE DEMOLITION ACTIVITIES. IN ADDITION, THE CONTRACTOR MUST COMPLETE SECTIONS VIII, IX, X, XI, XII, XIII, XVI, XVII AND XVIII OF THE ATTACHED OHIO EPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM AND SUBMIT IT TO:

OHIO EPA
CENTRAL DISTRICT OFFICE
50 W. TOWN STREET, SUITE 700
COLUMBUS, OH 43215
ATTN: RICHARD FOWLER

THE FORM MUST BE SUBMITTED TO OEPA AT LEAST 10 DAYS PRIOR TO THE START OF DEMOLITION ACTIVITIES. THE CONTRACTOR SHALL ALSO PROVIDE A COPY OF THE COMPLETED FORM TO THE PROJECT ENGINEER AND THE DISTRICT 5 ENVIRONMENTAL COORDINATOR.

ATTACHED FOR THE CONTRACTORS USE IN COMPLETING THE ASBESTOS RELATED WORK ARE THE FOLLOWING ITEMS FOR THE BUILDINGS:

- ASBESTOS INSPECTION REPORT
- PARTIALLY COMPLETED OEPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM
- LABORATORY ANALYSIS OF THE ASBESTOS CONTAINING MATERIALS

THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE, SUBMIT AND COMPLY WITH THE OEPA NOTIFICATION REQUIREMENTS AND TO REMOVE, TRANSPORT AND DISPOSE OF ASBESTOS CONTAINING MATERIALS IN A LICENSED (BY THE LOCAL HEALTH DEPARTMENT) AND PERMITTED (BY THE OEPA) SOLID WASTE FACILITY. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 690 - SPECIAL, ASBESTOS ABATEMENT: 1693 MINK STREET, JOHNSTOWN, OHIO LUMP SUM
ITEM 690 - SPECIAL, ASBESTOS ABATEMENT: 1786 MINK STREET, JOHNSTOWN, OHIO LUMP SUM

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.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

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.

ITEM 606 ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS 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 27.75 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, 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.

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 - IMPACT ATTENUATOR, TYPE 2, (UNIDIRECTIONAL)

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)), (UNIDIRECTIONAL)], 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.

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611 OR 522.

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM ALL OF THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS TO BE EXTENDED. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEANOUT OUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM SPECIAL-PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST OF MATERIAL, EQUIPMENT, LABOR AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE MENTIONED WORK:

SPECIAL, PIPE CLEANOUT, 24" AND UNDER 20 FT.
SPECIAL, PIPE CLEANOUT, 27" TO 48" 40 FT.
SPECIAL, PIPE CLEANOUT, OVER 48" 50 FT.

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UNRECORDED UNTREATED NON-STORMWATER DRAINAGE

FURNISH NO CONTINUANCE FOR ANY UNRECORDED UNTREATED NON-STORMWATER DRAINAGE SUCH AS UNTREATED SEPTIC, UNTREATED WASTEWATER, UNTREATED CURTAIN/GRADIENT DRAINS, AND UNTREATED FOUNDATION FLOOR DRAINS DISTURBED BY THE WORK. PLUG ANY UNRECORDED UNTREATED NON-STORMWATER DRAINAGE WITH CLASS C CONCRETE AT THE RIGHT OF WAY LINE. PAYMENT FOR PLUGGING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 OR 203 ITEM.

UNRECORDED TREATED NON-STORMWATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED TREATED NON-STORMWATER DRAINAGE, SUCH AS TREATED SEPTIC, TREATED WASTEWATER, TREATED CURTAIN/GRADIENT DRAINS, AND TREATED FOUNDATION FLOOR DRAINS DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT. A CONTINUANCE MAY ALSO REQUIRE A NPDES PERMIT FROM THE OHIO ENVIRONMENTAL PROTECTION AGENCY. REPORT ALL CONTINUANCE TO THE LOCAL HEALTH DEPARTMENT.

WHERE MAKING A CONNECTION INTO A HIGHWAY DRAINAGE CONDUIT, AN INSPECTION WELL SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING DM-3.1.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN MAKING THE ABOVE CONTINUANCE:

611, 6" CONDUIT, TYPE C 100 FT.

UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION 100 FT.
611, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION 100 FT.
611, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION 100 FT.
611, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION 100 FT.

UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS

FURNISH A CONTINUANCE FOR ALL UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS SUCH AS SANITARY, WASTEWATER, CURTAIN/GRADIENT DRAINS, AND FOUNDATION FLOOR DRAINS DISTURBED BY THE WORK. FURNISH AN UNOBSTRUCTED CONTINUANCE OF THE UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS TO THE SATISFACTION OF THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT. ALL SANITARY AND SANITARY WASTEWATER CONTINUANCE MAY ALSO REQUIRE A NPDES PERMIT FROM THE OHIO ENVIRONMENTAL PROTECTION AGENCY. REPORT ALL CONTINUANCE TO THE LOCAL HEALTH DEPARTMENT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.42, 707.43, 707.44, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35, 706.01, 706.02, OR 706.08 WITH JOINTS AS PER 706.11 OR 706.12.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, 6" CONDUIT, TYPE B, FOR SANITARY 100 FT.
611, 6" CONDUIT, TYPE C, FOR SANITARY 100 FT.

POST CONSTRUCTION STORM WATER TREATMENT

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

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.

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 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.

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

611 6" CONDUIT, TYPE B 100 FT.
611 6" CONDUIT, TYPE E 100 FT.
611 6" CONDUIT, TYPE F 100 FT.
601 ROCK CHANNEL PROTECTION TYPE C WITH GEOTEXTILE FILTER 5 C.Y.

SPRING DRAINS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR DRAINING ANY SPRINGS SHOWN IN THE PLAN OR ENCOUNTERED DURING CONSTRUCTION. THE FOLLOWING TYPES OF PIPES MAY BE USED: 707.33, 707.41, 707.42 OR 707.45 PERFORATED PER 707.31.

SPRING DRAINS SHALL BE CONSTRUCTED AS SHOWN ON STANDARD CONSTRUCTION DRAWING DM-1.1 AND PAID FOR AT THE CONTRACT PRICE FOR:

605, 6" UNCLASSIFIED PIPE UNDERDRAIN FOR SPRINGS 200 FT.
605, AGGREGATE DRAIN, FOR SPRINGS 200 FT.

EXISTING UNDERDRAINS

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

601, TIED CONCRETE BLOCK MAT, TYPE 1 10 SQ.YD.
611, 6" CONDUIT, TYPE F 100 FT.
611, PRECAST REINFORCED CONCRETE OUTLET 4 EACH

CONDUIT END TREATMENT

IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET END.

CATCH BASINS, INLETS AND MANHOLES, AS PER PLAN

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

CATCH BASIN, NO. 3A, AS PER PLAN
CATCH BASIN, NO. 3, AS PER PLAN
CATCH BASIN, NO. 2-2B, AS PER PLAN
CATCH BASIN, NO. 2-3, AS PER PLAN
CATCH BASIN, NO. 2-4, AS PER PLAN
CATCH BASIN, NO. 5, AS PER PLAN
MANHOLE, NO. 3, AS PER PLAN
INLET 3, FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN
INLET 3, FOR SINGLE SLOPE BARRIER, TYPE C1, AS PER PLAN

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOR THE INSTALLATION AND REMOVAL OF THE PIPES BETWEEN STA. 116+50 TO STA. 117+00 WORTHINGTON ROAD.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22 75 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 9" INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH WITH A SLOPE OF 2:1 FROM INVERT TO PAVEMENT SURFACE.

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

QUANTITY CARRIED TO GENERAL SUMMARY.

ITEM 511 WINGWALLS OR HEADWALLS FOR 611 ITEMS

FOR ITEMS 706.05, 706.051, 706.052 AND 706.053 WITH A CAST-IN-PLACE WINGWALL OR HEADWALL A PRECAST ALTERNATIVE MAY BE FURNISHED PER 602.03. THE PRECAST ALTERNATIVE WILL MEET THE CAST-IN-PLACE STRUCTURAL DESIGN LOADINGS, DESIGN HEIGHT, AND DESIGN LENGTH DIMENSIONS.

FULL COMPENSATION FOR THE PRECAST WINGWALL OR HEADWALL IS THE NUMBER OF CUBIC YARDS OF ITEM 511 AND POUNDS OF ITEM 509 FOR THE CORRESPONDING CAST-IN-PLACE STRUCTURE.

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ITEM SPECIAL - MAILBOX SUPPORT

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 LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181. ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

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

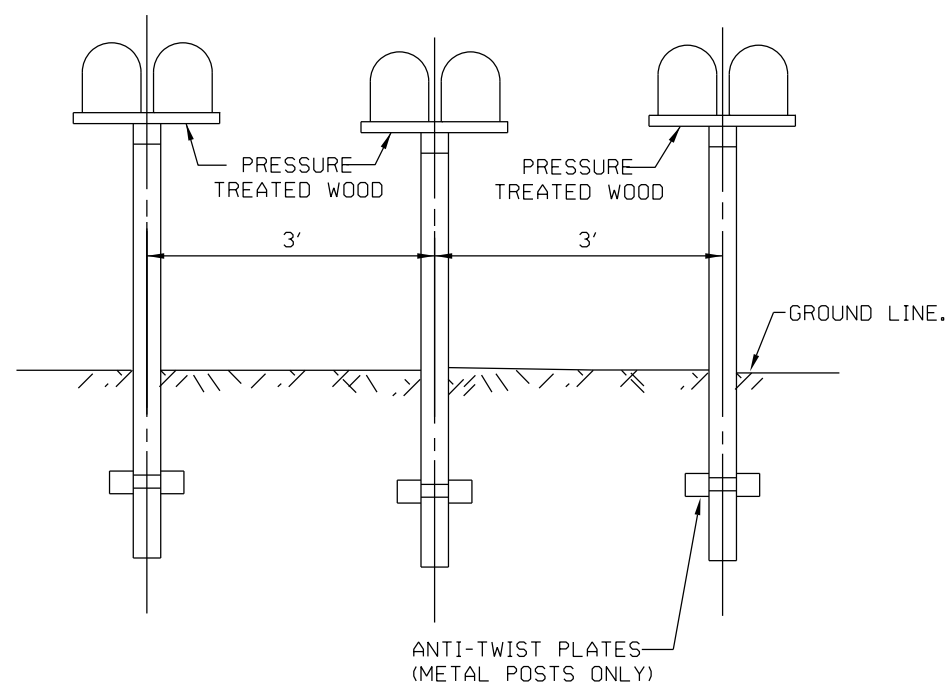
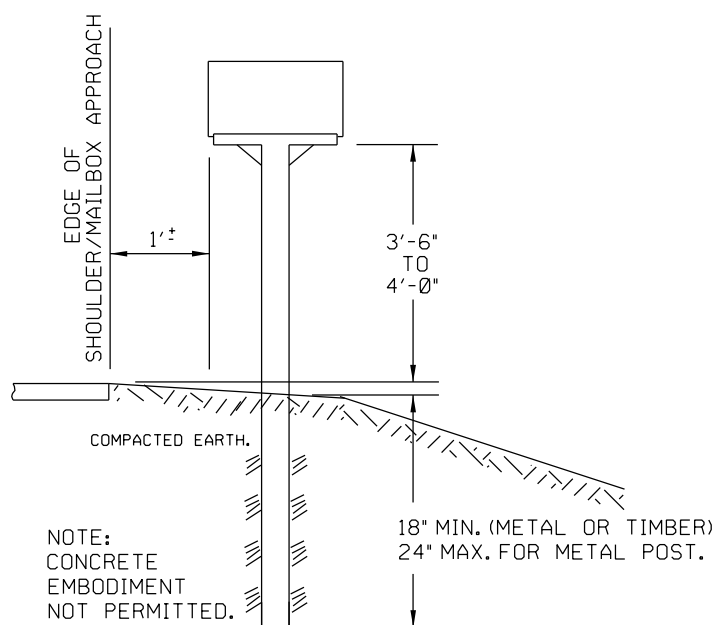
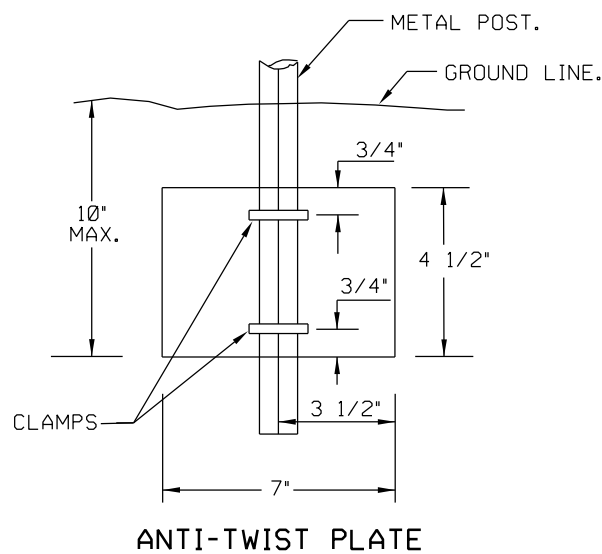
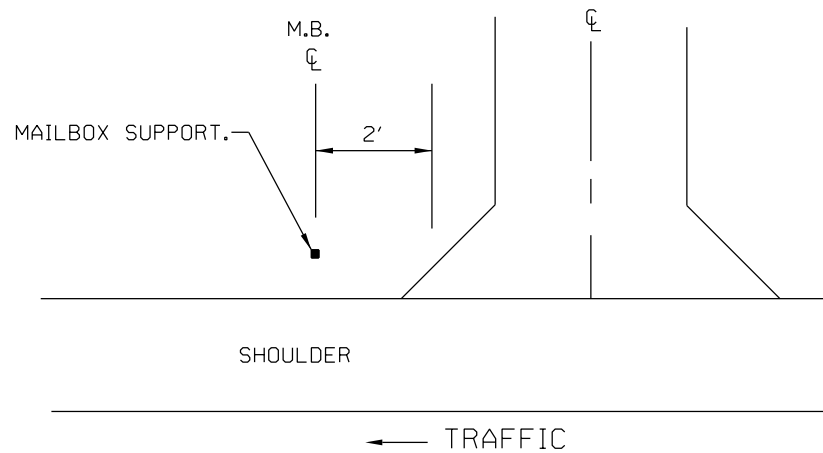
SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST. THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, 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 ANY 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.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).



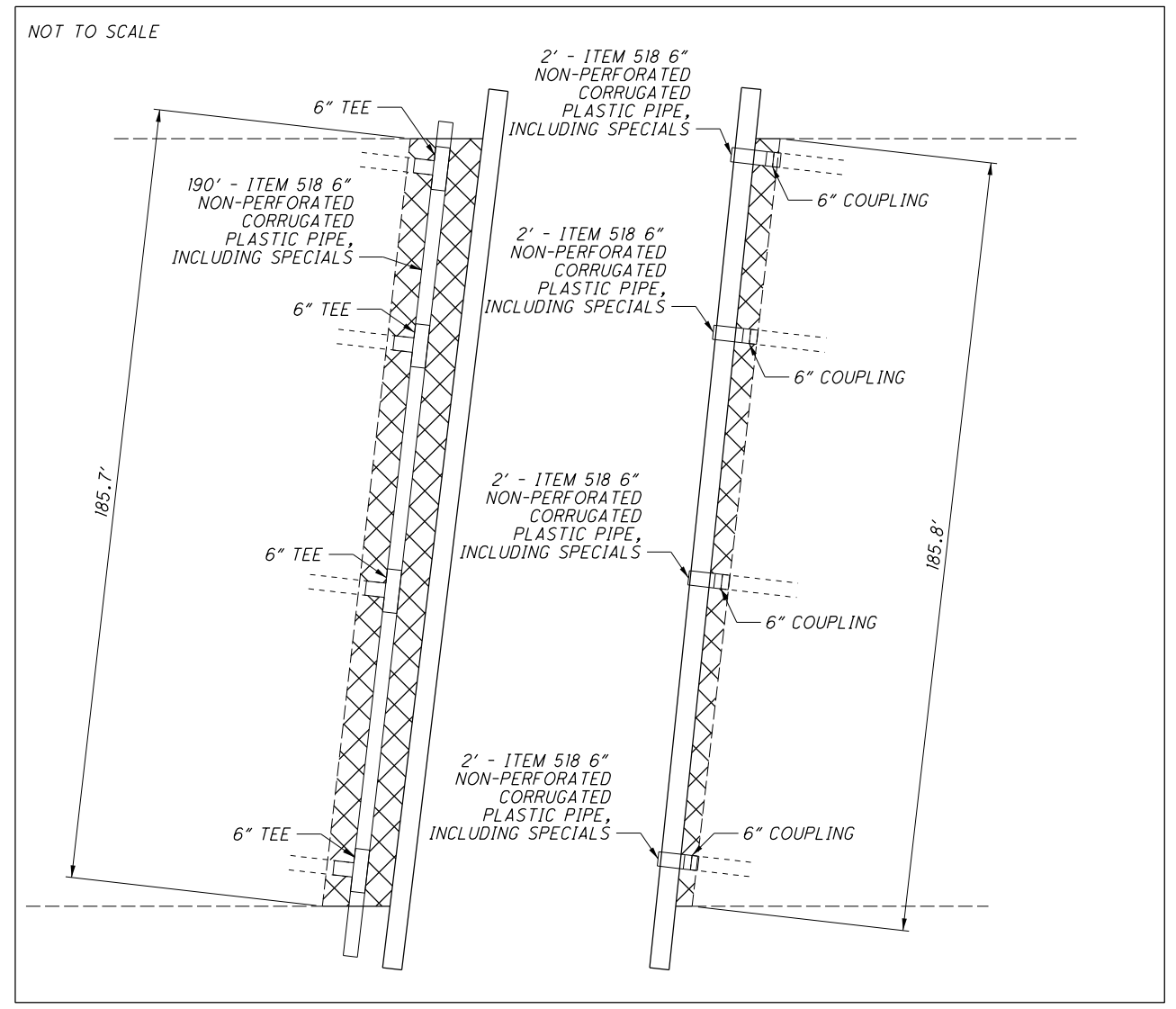
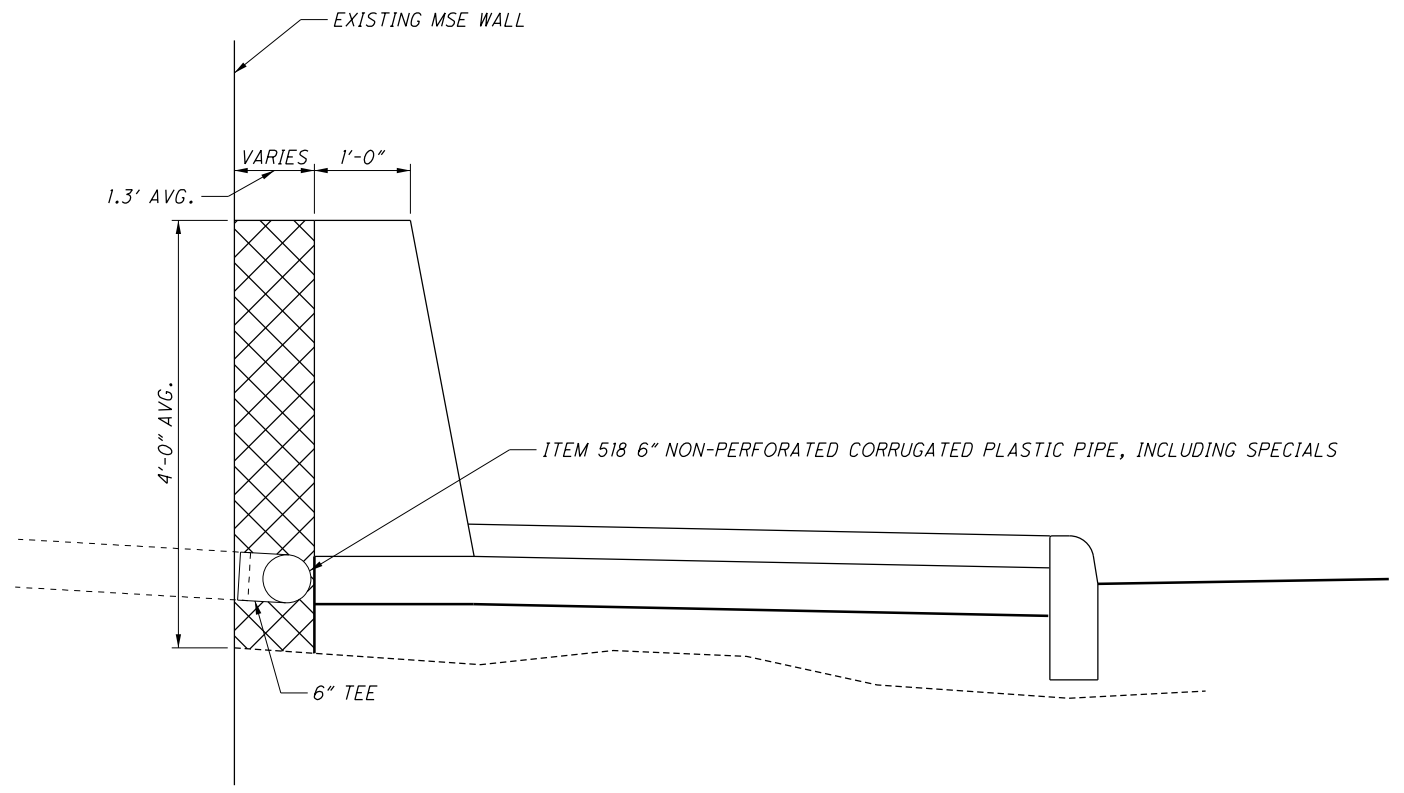
GROUP MAILBOX INSTALLATION

REFERENCE NO.	SHEET NO.	CENTERLINE CONSTRUCTION (STATION)	SIDE	SPECIAL
				MAILBOX SUPPORT SYSTEM, SINGLE
		MINK STREET		EACH
1-MB	143	STA. 39+85	LT.	1
2-MB	143	STA. 42+70	LT.	1
3-MB	144	STA. 45+15	LT.	1
TOTAL CARRIED TO GENERAL SUMMARY				3

GENERAL NOTES

LIC-161-1.83

 - ITEM 613 LOW STRENGTH MORTAR BACKFILL

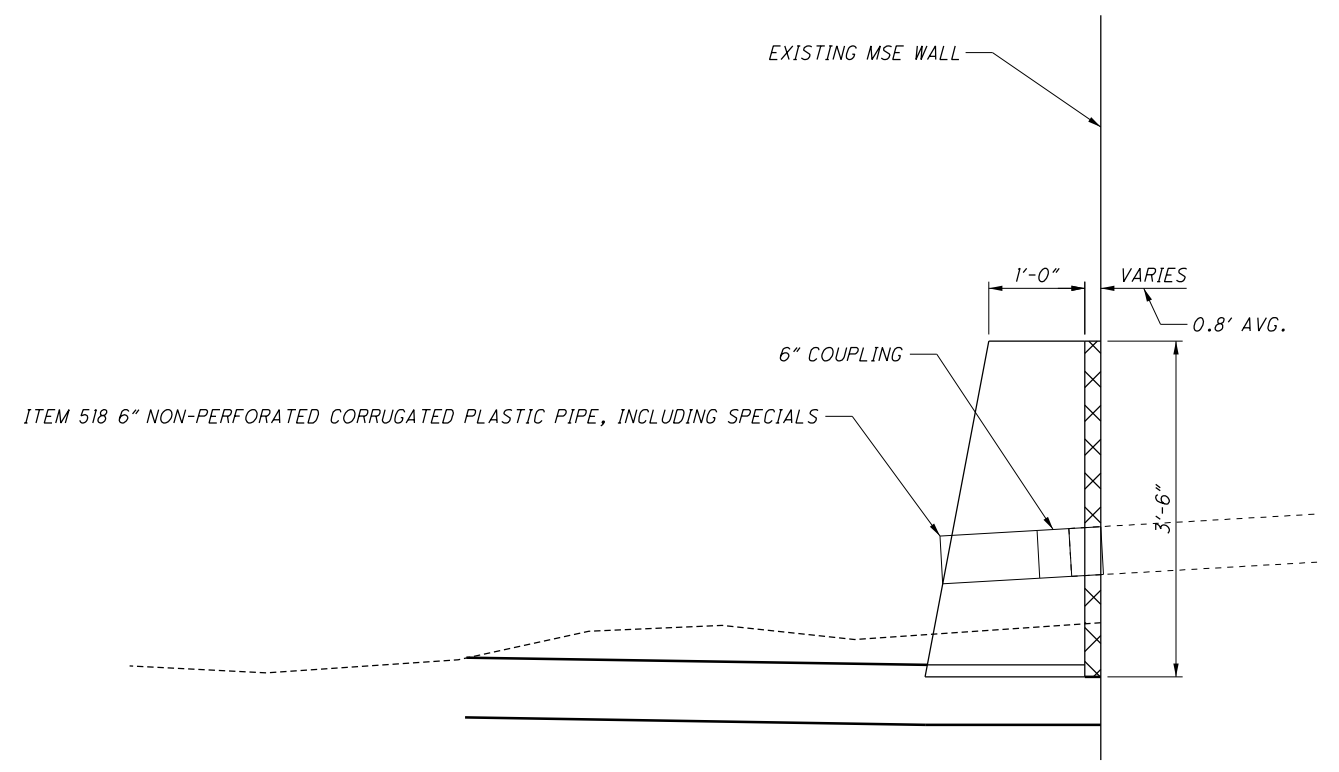


ITEM 613 LOW STRENGTH MORTAR BACKFILL CALCULATION:

LEFT SIDE
 $(1.3' \times 185.7' \times 4.0') / 27 = 35.8 \text{ CY}$

RIGHT SIDE
 $(0.8' \times 185.8' \times 3.5') / 27 = 19.7 \text{ CY}$

TOTAL:
 $35.8 + 19.7 = 55.5 \text{ CY}$



QUANTITIES CARRIED TO THE GENERAL SUMMARY
 ITEM 518 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS - 198 FT
 ITEM 613 LOW STRENGTH MORTAR BACKFILL - 56 CU YD

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DESIGNED	XXX
REVIEWED	XXX
CHECKED	XXX
REVISION DATE	XXX

NOTES

APPLICATION: Use Type T Anchor Assemblies on the trailing end of guardrail runs, located outside of the clear zone of opposing traffic. The assembly is 12'-6" long, none of which can be considered the Length of Need for the guardrail run.

For termination requirements at driveways, see DRIVEWAY OPENING Detail on Sheet 2. For side road approaches and Terminals at Structures, see Location & Design Manual, Volume 1, Figure 603-3.

ANCHORING OPTIONS: Contractor may choose either the foundation tube (shown on this Sheet) or the concrete footing option (Sheet 2) to construct this anchor assembly.

If the foundation tube option is chosen, the contractor will take proper care to insure that the Soil Plate fasteners are not broken during the driving process.

Concrete footings may be cast-in-place or precast. Compact fill after placing precast unit.

MATERIALS: See SCD GR-1.1 for parts used on this anchor, including the CRT Breakaway Posts, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly.

Bearing Plate and Soil Plate is ASTM A709 Grade 36. Steel Ground Tube shall be ASTM A500, Grade B, and meet CMS 707.10. All angles, channels and plates shall meet CMS 711.01. All structural steel shall be galvanized as specified in CMS 711.02. All bolt washers indicated are standard galvanized steel of the appropriate size.

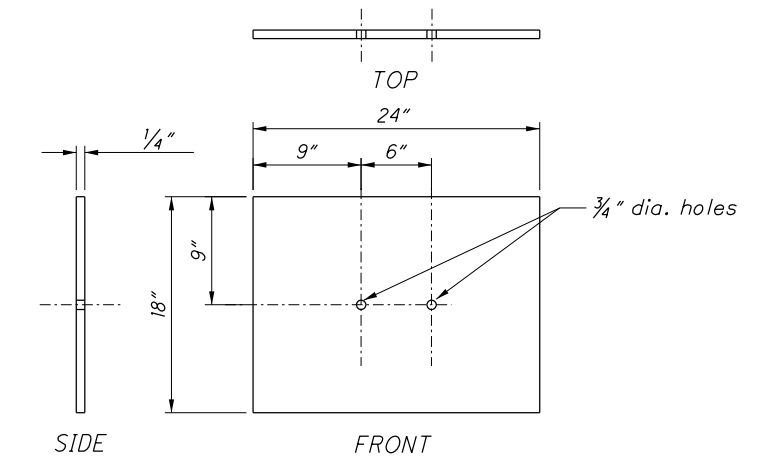
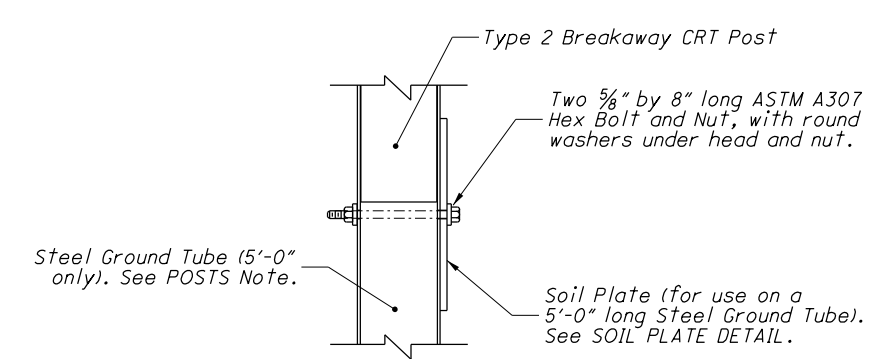
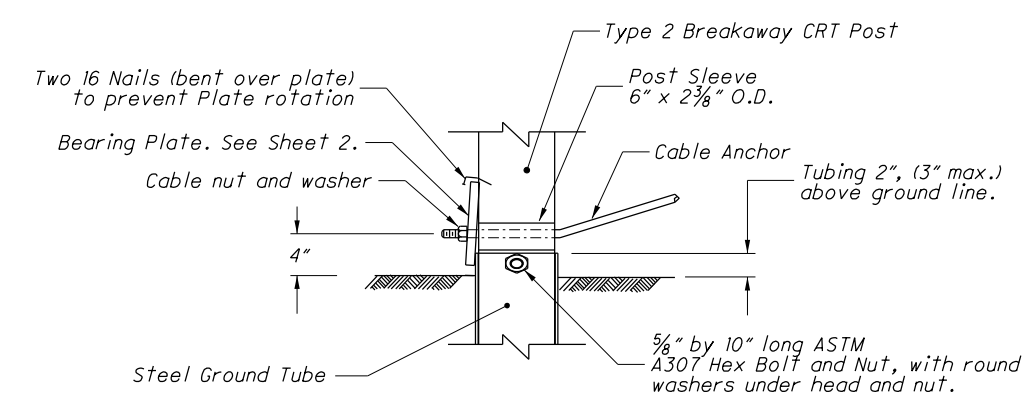
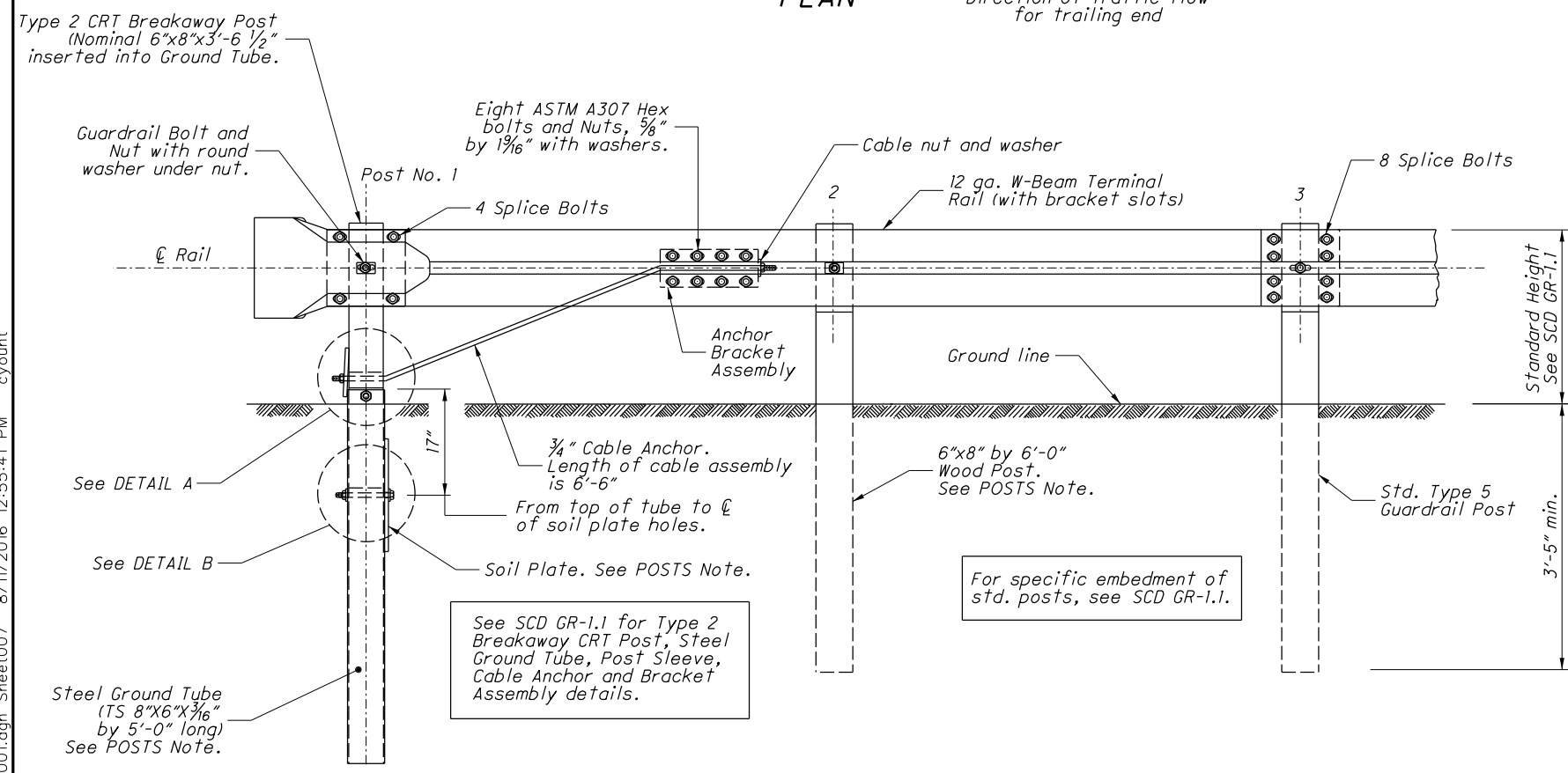
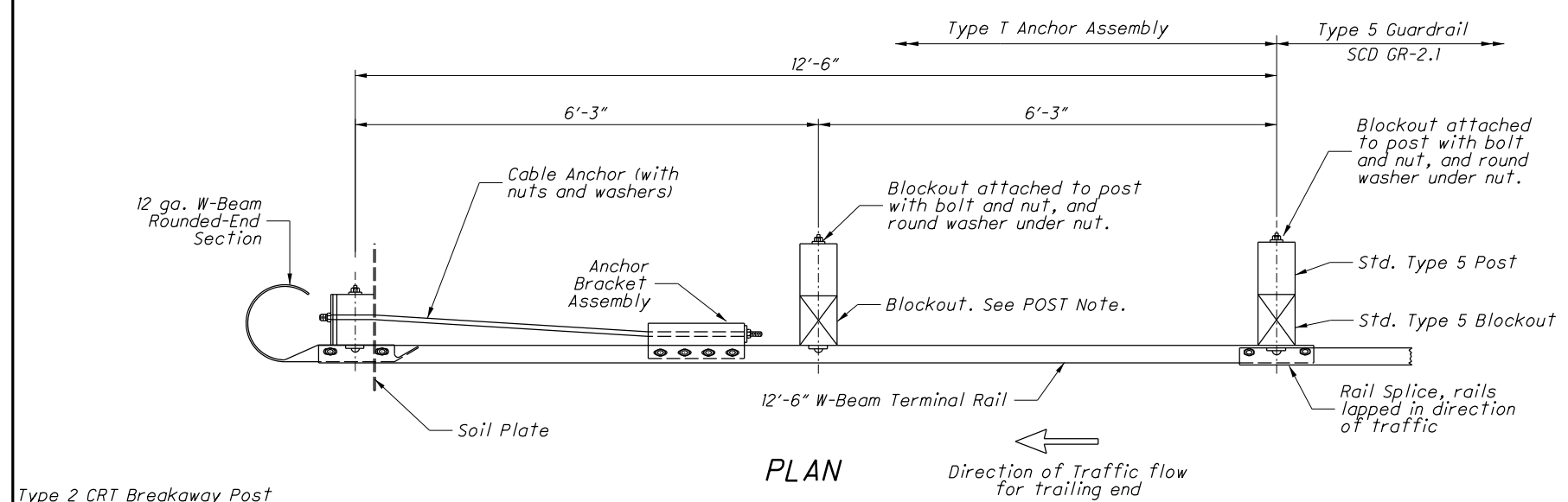
Concrete shall be class C.

Components on this anchor that are not detailed on SCD GR-1.1 include: 1) 12'-6" W-Beam Terminal Rail (standard part RWM14a), and 2) W-Beam Rounded End Section (RWE03a). For complete details and specifications, see part descriptions in the AASHTO/AGC/ARTBA Standardized Hardware Guide.

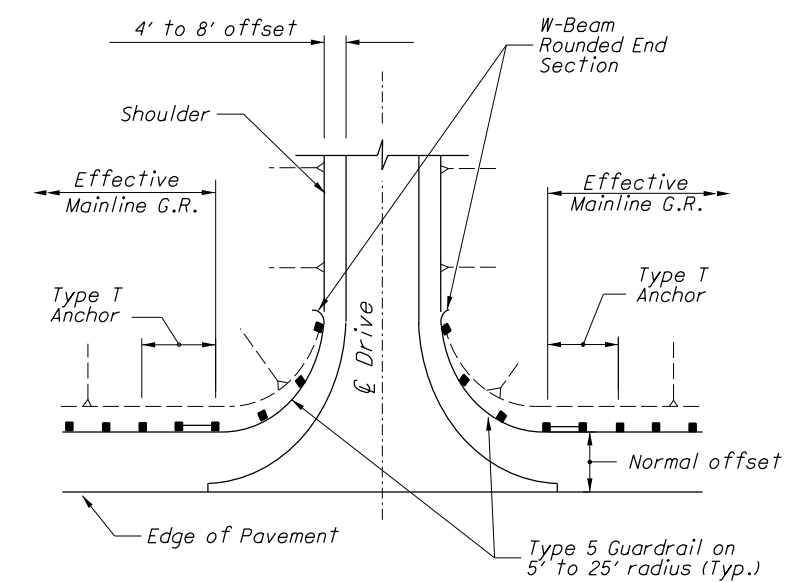
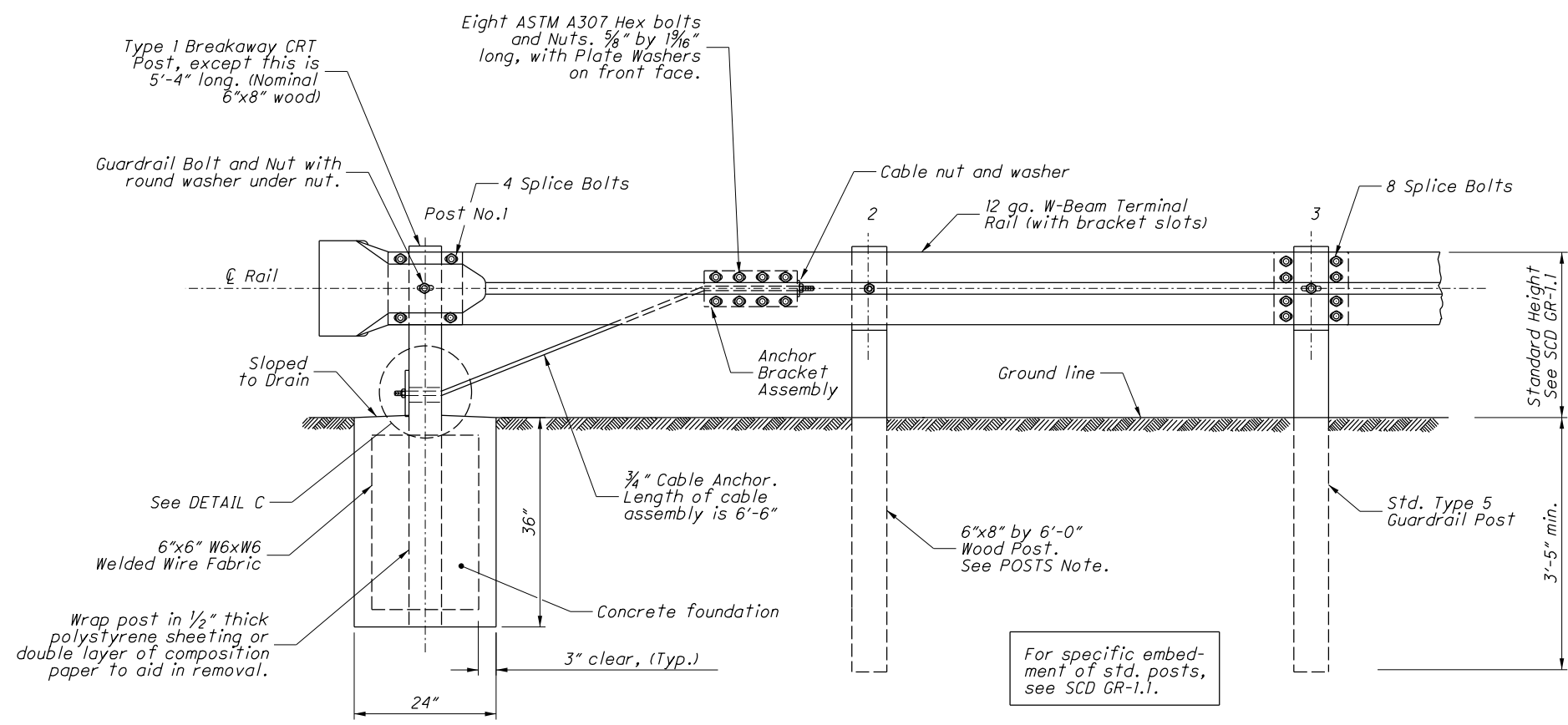
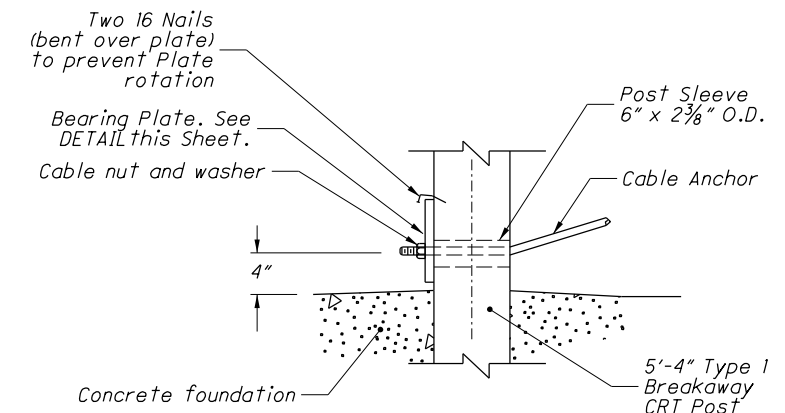
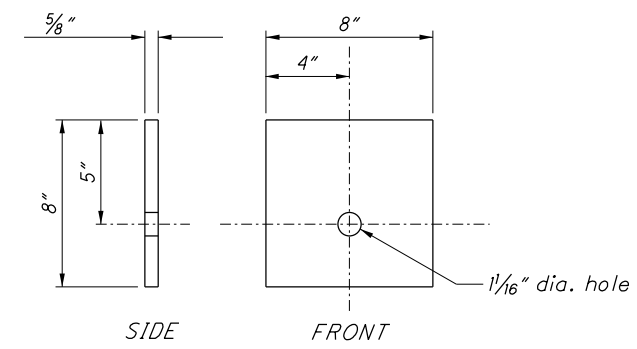
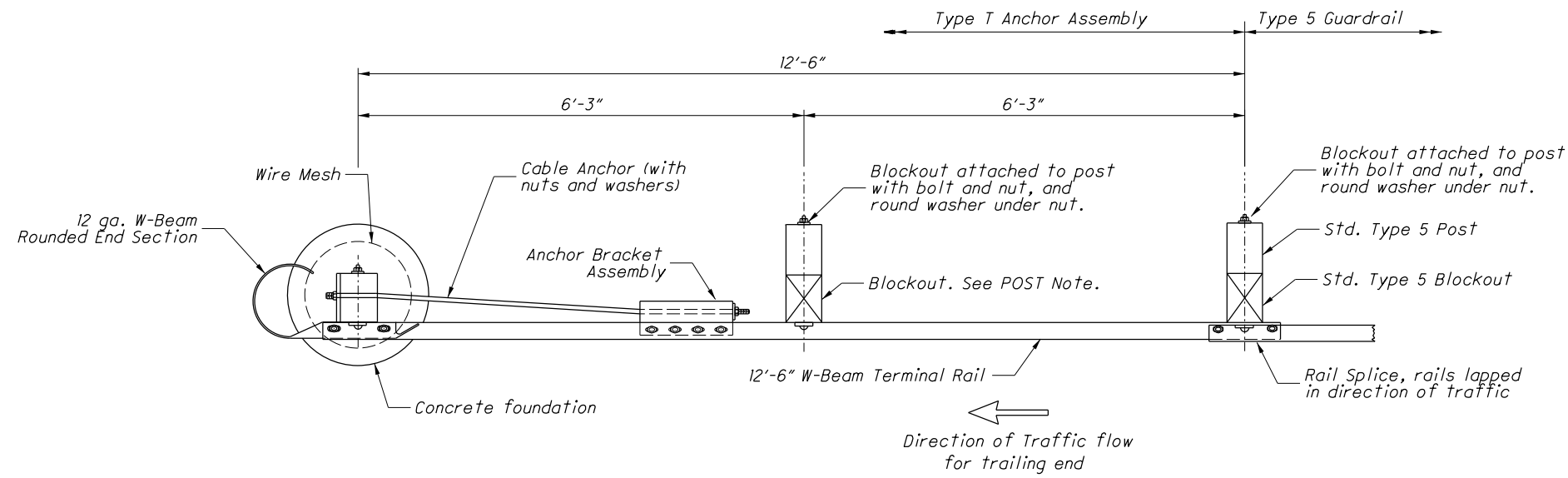
POSTS: Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

Post No. 2 can be W6x9 (or W6x8.5) with notched wood blockouts or a standard Type 5 post and blockout. Recycled plastic blockouts are permitted.

PAYMENT: All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for Item 606 - Anchor Assembly, Type T, Each.



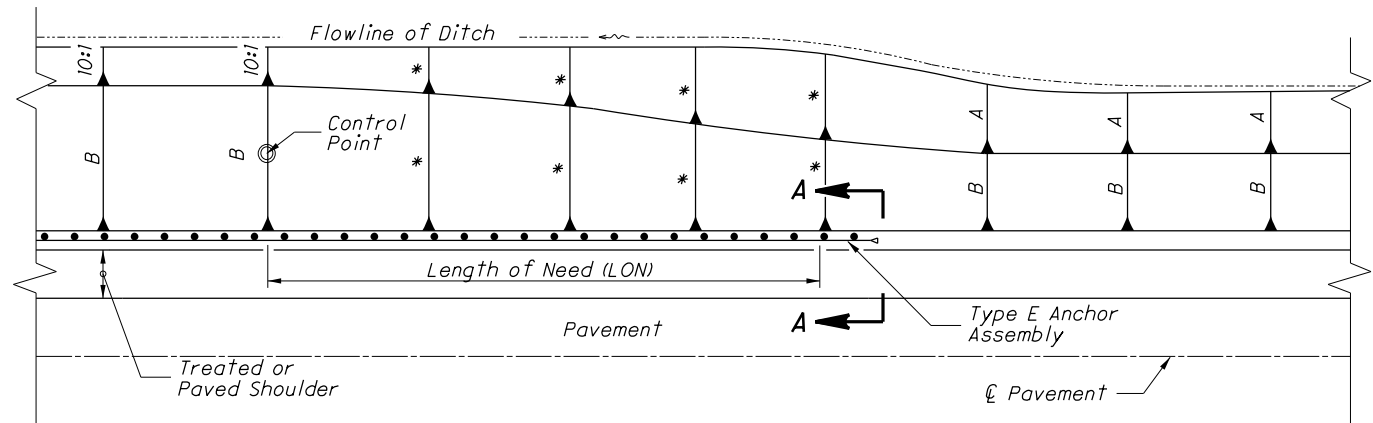
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See SCD GR-1.1 for Type 1 Breakaway CRT Post, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly details.

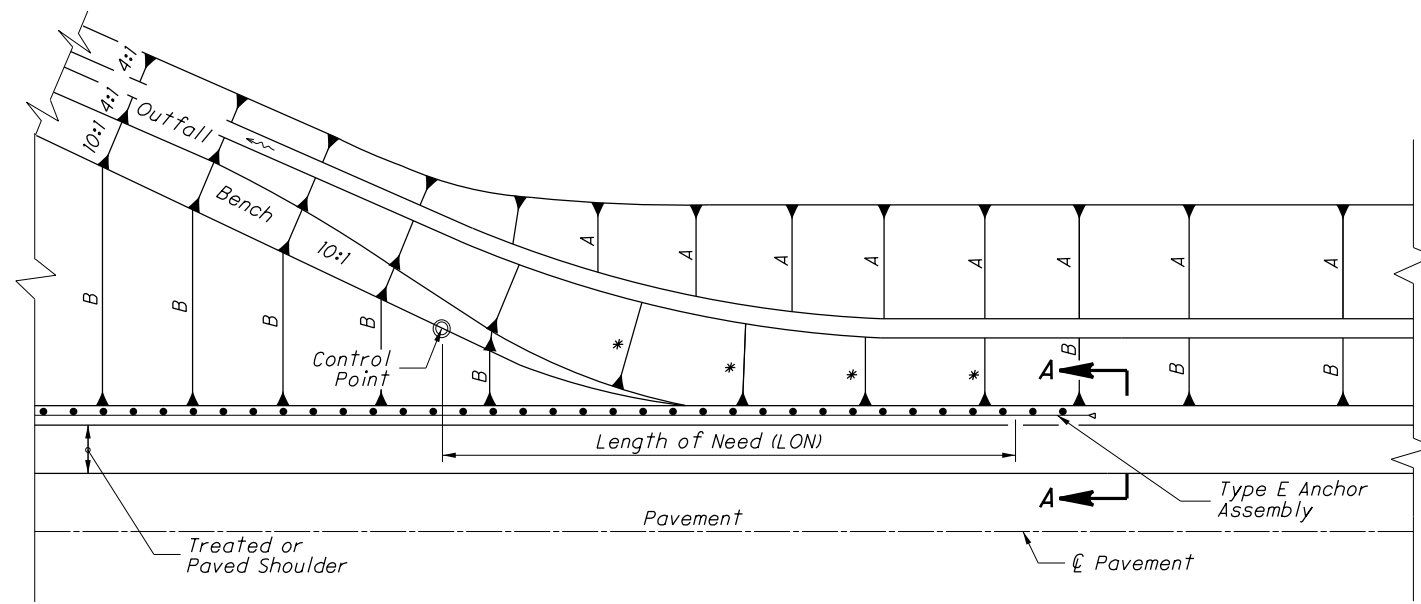
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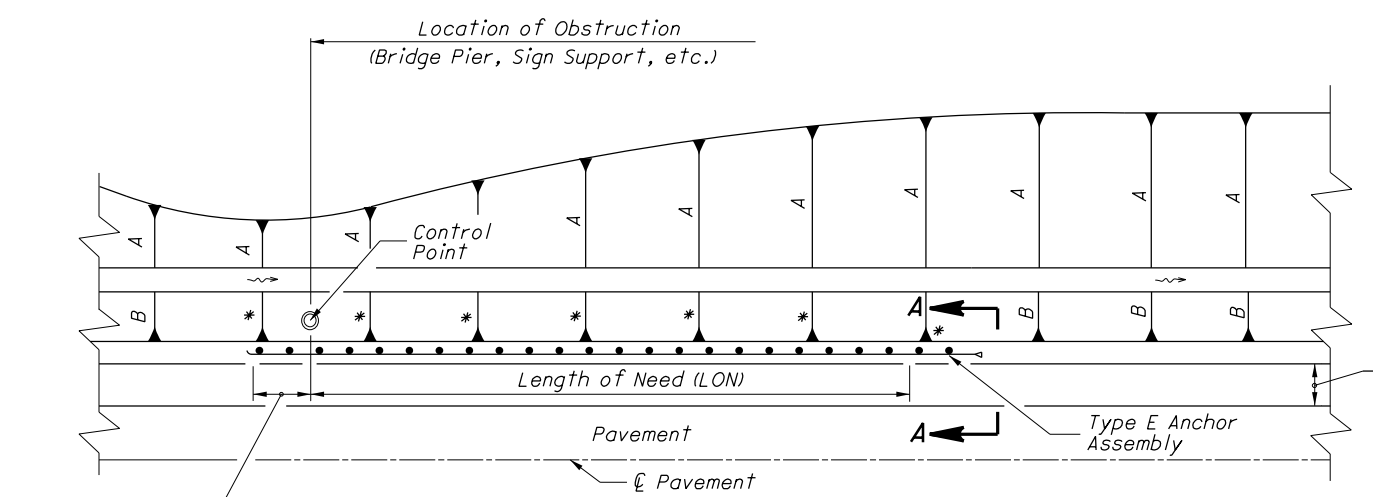


FILL TO FILL

* 3:1 or Flatter

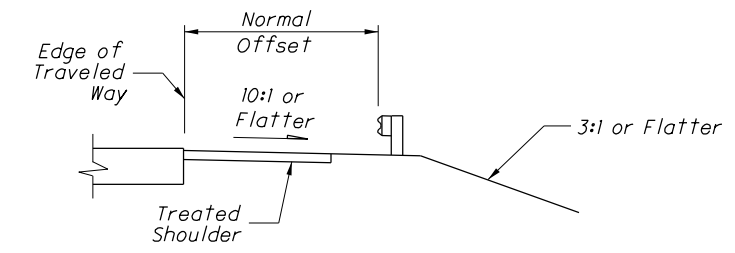


CUT TO FILL



OBSTRUCTION

Type T Anchor Assembly. See SCD GR-4.2.



SECTION A-A

NOTES

APPLICATION: Utilize details shown here only where approach foreslopes are steeper than 6:1, but not steeper than 3:1.

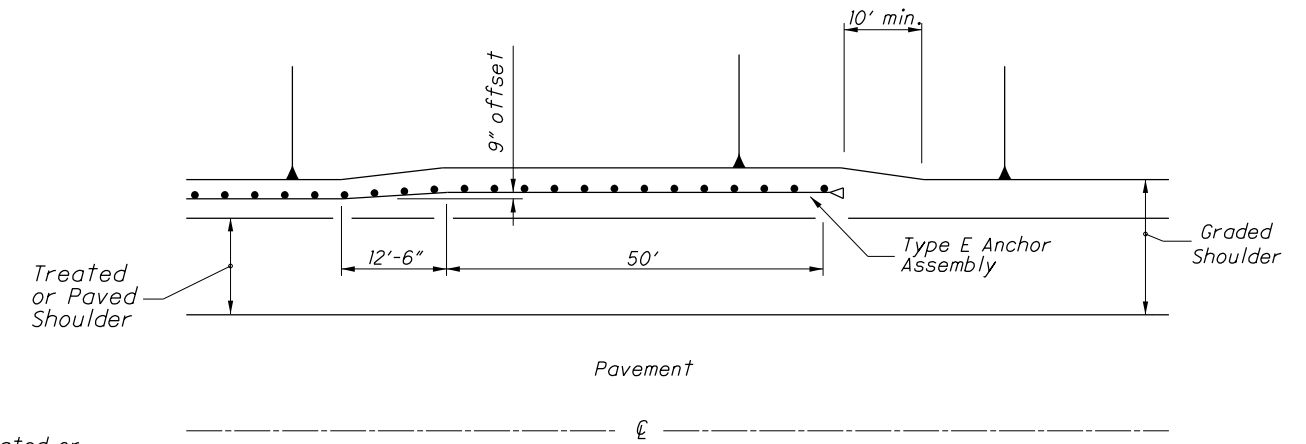
SLOPES: Slopes designated by * shall be 3:1 or flatter. Slopes labeled "A" and "B" shall be constructed as specified in the plans.

"LON" DISTANCE: The Length of Need, LON, represents the distance from the control point to the beginning of the end treatment. The control point shown designates the extent of the hazard being shielded and is shown for design use only. See **Location & Design Manual, Volume 1, Section 602.**

GUARDRAIL END TERMINALS: Terminals utilized for the situations shown here shall be Type E Anchor Assemblies unless otherwise specified in the plans.

OBSTRUCTION INSTALLATION: Use this installation for one-directional roadways only.

OFFSET DESIGN: The design shown may be specified on the plans where it is deemed detrimental to lose effective shoulder width due to the dimensions of the Type E Anchor Assembly. The Type E which represents the final 50' of guardrail is to be offset an additional 9" from the normal guardrail offset by tapering within the 12'-6" shown below. The graded shoulder width shall be increased 9" and tapered back to the normal width to 10' as shown.



OFFSET DESIGN
(Plan View)

DESIGNED	XXX	REVIEWED	XXX
CHECKED	XXX	REVIEWED	XXX

PLAN INSERT SHEET
INTRODUCTION OF GUARDRAIL RUNS FORESLOPE STEEPER THAN 6:1

ITEM 614, MAINTAINING TRAFFIC

TRAFFIC SHALL BE MAINTAINED AS PER THE DETAIL SHEETS AND SPECIFICATIONS AND AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST REVISION. 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 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 ALL 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 TIME TO ONE SIDE OF THE PAVEMENT 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.

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 AND REMOVAL OF PROPOSED SIGNS, COVERED OR REMOVED AND UNCOVERED OR REERECTED 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 SEPARATELY ITEMIZED IN THE PLAN.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614, MAINTAINING TRAFFIC LUMP

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

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 PUBLIC INFORMATION OFFICER (PIO)
BY FAX: (614) 887-4510 OR
BY EMAIL: D05.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION
BY FAX: (614) 887-4525 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.

MAINTAINING EXISTING DRIVES

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENCE 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 ACCOMMODATIONS TO THE RESIDENT/BUSINESS OWNER SO THAT DURING THESE SHORT INTERVALS, THE HOME/BUSINESS OWNER CAN STILL HAVE ACCESS TO PARK NEAR THEIR RESIDENCE/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 FOR THE MAINTENANCE OF TRAFFIC.

ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE A OR B 100 CU. YD.
ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE C 100 CU. YD.
ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 150 CU. YD.

**ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B
ITEM 615 ROADS FOR MAINTAINING TRAFFIC**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLAN TO CONSTRUCT THE TEMPORARY SHOULDER AT THE SOUTHWEST CORNER OF THE INTERSECTION OF COBBS ROAD AND MINK STREET, AS DETAILED IN THE PLANS. THE REMOVAL OF THE TEMPORARY SHOULDER ONCE IT IS NO LONGER NEEDED SHALL BE INCLUDED IN THIS ITEM.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THIS WORK AS PER ITEM 615.

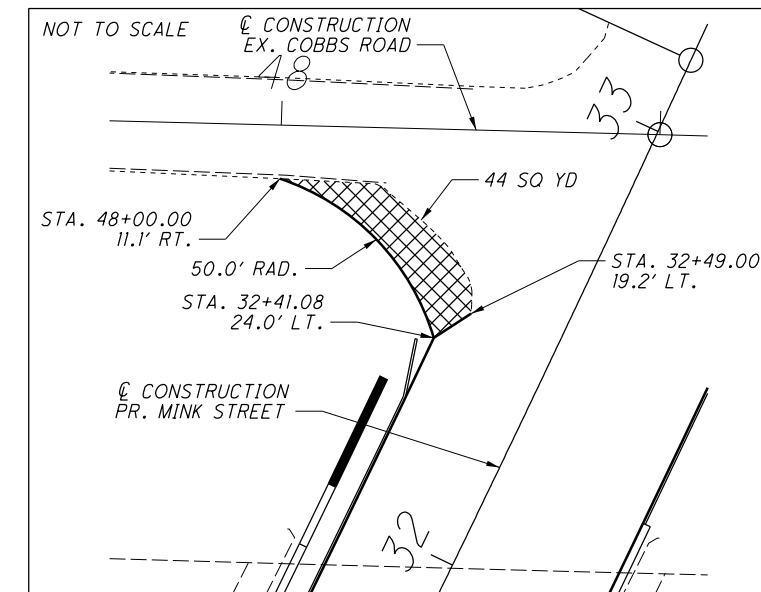
THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B
PHASE 2 - 44 SQ.YD.
ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B 44 SQ.YD.
ITEM 615 ROADS FOR MAINTAINING TRAFFIC LUMP

EARTHWORK FOR MAINTAINING TRAFFIC

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

EXCAVATION FOR MAINTAINING TRAFFIC 15 CU. YD.



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CALCULATED
CMY
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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

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

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

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

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

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

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

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

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

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

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 60 SIGN MONTH ASSUMING 4 PCMS SIGNS FOR 15 MONTHS

ITEM 614 WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

- 1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).
2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0500.
3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-800-229-1388.
4. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTSS CERTIFICATION AND 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 WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A WTS CERTIFICATION CONTAINING THE DATE OF ISSUE AND SHALL BE FROM ANY OF THE APPROVED ORGANIZATIONS. AT THE TIME OF THE PRECONSTRUCTION, THE WTS CERTIFICATION DATE OF ISSUE SHALL BE WITHIN 5 YEARS PRIOR TO THE ORIGINAL COMPLETION DATE OF THE PROJECT.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE DUTIES OF THE WTS ARE AS FOLLOWS:

- 1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.
2. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.
3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.
4. COORDINATE A TRAFFIC INCIDENT MANAGEMENT MEETING EACH YEAR BEFORE CONSTRUCTION WORK BEGINS WITH ODOT AND THE SAFETY FORCES THAT WILL RESPOND TO INCIDENTS ON THE PROJECT. ITEMS TO BE DISCUSSED WILL BE THE:
A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);
B. EMERGENCY RESPONSE AND NOTIFICATION;
C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND
D. RESPONDERS CONCERNS.
5. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.
6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.
7. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.
8. ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.
9. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS.
10. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A 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 TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.
11. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN #10 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL 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 CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CURRENT REVISION OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL.

ITEM 614 WORKSITE TRAFFIC SUPERVISOR CONTINUED

- 12. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.
14. IDENTIFY AND CONTACT ALL POSSIBLE RESPONSE PERSONNEL; PREPLAN AND KEEP AN UPDATED ROSTER WITH PHONE NUMBERS:
A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);
B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND
C. TOWING AND RECOVERY PROVIDERS.
15. COMPLY WITH THE PROVISIONS OF ODOT CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS.
16. PROPOSE A RESPONSE/ACTION PLAN TO:
A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;
B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAYS;
C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;
D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);
E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND
F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT FOR ACCEPTANCE BEFORE THE CONTRACTOR'S FIRST DAY OF WORK.

- 17. PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS IN INCIDENT DETECTION AND VERIFICATION:
A. CALL 911/ NOTIFY TRAFFIC MANAGEMENT CENTER AND PROVIDE THE FOLLOWING:
I. LOCATION - INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL.
II. NUMBER AND TYPE OF VEHICLES INVOLVED.
III. ESTIMATED EXTENT OF DAMAGE OR INJURY.
IV. ESTIMATED NUMBER OF PATIENTS INVOLVED.
V. ANY POTENTIAL HAZARDOUS CONDITIONS.
VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.
B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.
C. ASSIST MOTORIST WITH DISABLED VEHICLES.
D. RECOMMEND ROADWAY REPAIR NEEDS.
E. PROVIDE REPAIR RESOURCES.
18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED.

THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT OF THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORKSITE TRAFFIC SUPERVISOR:

ITEM 614 WORKSITE TRAFFIC SUPERVISOR 15 MONTHS

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

DRUMS, CONES, GATES, 42" WEIGHTED CHANNELIZER, AND BARRICADES

DRUMS SHALL BE IN ACCORDANCE WITH CMS ITEM 614, MT SERIES OF THE STANDARD CONSTRUCTION DRAWINGS, AND OMUTCD. CHANNELIZING DEVICES SHALL BE USED TO DELINEATE THE WORK ZONE FROM TRAVELED LANES ACCORDING TO CURRENT STANDARDS.

USE OF WEIGHTED CHANNELIZERS ON FREEWAYS AND MULTI LANE HIGHWAYS SHALL BE LIMITED TO SHORT-TERM OPERATION, GENERALLY 12 HOURS OR LESS, FOR EITHER DAY OR NIGHT. UPON COMPLETION OF WORK WITHIN THE ABOVE NOTED TIME PERIOD, THE WEIGHTED CHANNELIZERS SHALL BE REMOVED. THE WEIGHTED CHANNELIZERS MAY AGAIN BE PLACED ON THE HIGHWAY WHEN THE WORK IS TO RESUME ON THE FOLLOWING DAY OR NIGHT. ANY LANE CLOSURE USING CHANNELIZATION DEVICES, EXPECTED TO REMAIN FOR MORE THAN 12 HOURS, SHALL REQUIRE THE USE OF DRUMS OR BARRIERS. WHEN USED AT NIGHT, WEIGHTED CHANNELIZERS SHALL ONLY BE PLACED IN THE "TANGENT AREA." THE "TANGENT AREA" IS DEFINED AS THE AREA AFTER THE TRANSITION TAPER WHERE THE WORK TAKES PLACE. DRUMS SHALL BE USED IN THE TRANSITION TAPERS FOR NIGHT OPERATIONS. WEIGHTED CHANNELIZERS SHALL HAVE A MAXIMUM SPACING OF 40 FEET.

THE CONTRACTOR SHALL REPLACE ALL DAMAGED CHANNELIZING DEVICES. ALL DRUMS, CONES, GATES, BARRICADES, AND WEIGHTED CHANNELIZERS SHALL BE IN ACCORDANCE WITH ITEM 614 MAINTAINING TRAFFIC:

CONFORMANCE OF WORK ZONE DEVICES TO NCHRP 350. DRUMS, CONES, GATES, BARRICADES, AND WEIGHTED CHANNELIZERS SHALL CONFORM WITH MT-101.60 AND MT-102.20. REPLACEMENT OF CHANNELIZING DEVICES SHALL ALSO BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING, AND REMOVING DRUMS, CONES, GATES, 42" WEIGHTED CHANNELIZERS AND BARRICADES SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

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. ADVANCED SIGNING SHALL CONFORM TO 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 APPROVAL.

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

SIGNS/SIGN SUPPORTS

TEMPORARY SIGN INSTALLATIONS SHALL BE IN ACCORDANCE WITH PLAN: CONFORMANCE OF WORK ZONE DEVICES TO NCHRP 350. TEMPORARY SIGN SUPPORTS SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-105.10.

PAYMENT FOR THE SIGNS/SIGN SUPPORT SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

DRUM REQUIREMENTS

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

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

COVERING OF 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 APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED.

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

BARRIER DELINEATION

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PERMANENT CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. BARRIER REFLECTOR AND OBJECT MARKER SPACING SHALL BE AS PER MT-101.70.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING BARRIER REFLECTORS AND OBJECT MARKERS.

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 APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS. THE APPROVED LIST IS AVAILABLE AT THE "ROADWAY STANDARDS: PROPRIETARY ROADSIDE SAFETY DEVICES" WEB PAGE ON THE OFFICE OF ROADWAY ENGINEERING WEBSITE.

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

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

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

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

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

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

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED. IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

ROUTINE PATROLLING THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) AS SPECIFIED IN THE PLANS.

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

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

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

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

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 400 HOURS

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

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

ITEM 614 REPLACEMENT SIGN

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

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

ITEM 614 REPLACEMENT SIGN 10 EACH
QUANTITY CARRIED TO THE GENERAL SUMMARY

ITEM 614 REPLACEMENT DRUM

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

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE BID 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.

ITEM 614 REPLACEMENT DRUM 50 EACH
QUANTITY CARRIED TO THE GENERAL SUMMARY

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

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**ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)
ITEM 407 TACK COAT
ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

THIS ITEM OF WORK IS TO MILL AND FILL IN THE EXISTING RUMBLE STRIPS ON THE INSIDE SHOULDERS OF S.R. 161 FOR PHASE 1 TRAFFIC PATTERN. FOR CALCULATION PURPOSES THE THICKNESS IS 1 1/4" AND 2" WIDE.

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP) 2563 SQ.YD.
ITEM 407 TACK COAT 255 GALLONS
ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 89 CU. YD.

CALCULATIONS:

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)

EASTBOUND LANES: INSIDE SHOULDER
STA. 91+40.00 TO STA. 119+71.87 = 2831.87 FT. =
(2831.87 FT. x 2.00 FT.) ÷ 9 = 629.3 SQ. YD.
STA. 119+71.87 TO STA. 121+47.08 = 175.21 FT. (BRIDGE NO. LIC-161-0227R)
STA. 121+47.08 TO STA. 148+60.00 = 2712.92 FT. =
(2712.92 FT. x 2.00 FT.) ÷ 9 = 602.9 SQ. YD.

WESTBOUND LANES: INSIDE SHOULDER
STA. 93+40.00 TO STA. 120+08.29 = 2668.29 FT. =
(2668.29 FT. x 2.00 FT.) ÷ 9 = 593.0 SQ. YD.
STA. 120+08.29 TO STA. 121+83.50 = 175.21 FT. (BRIDGE NO. LIC-161-0227L)
STA. 121+83.50 TO STA. 155+00.00 = 3316.50 FT. =
(3316.50 FT. x 2.00 FT.) ÷ 9 = 737.0 SQ. YD.

TOTAL:
629.3 + 602.9 + 593.0 + 737.0 = 2562.2 SQ. YD.

ITEM 407 TACK COAT

EASTBOUND LANES: INSIDE SHOULDER
STA. 91+40.00 TO STA. 119+71.87 = 2831.87 FT. =
((2831.87 FT. x (2.00 FT. + 0.1042 FT. + 0.1042 FT.) ÷ 9) x 0.09 GAL./SQ.YD = 62.5 GALLONS
STA. 119+71.87 TO STA. 121+47.08 = 175.21 FT. (BRIDGE NO. LIC-161-0227R)
STA. 121+47.08 TO STA. 148+60.00 = 2712.92 FT. =
(2712.92 FT. x (2.00 FT. + 0.1042 FT. + 0.1042 FT.) ÷ 9) x 0.09 GAL./SQ.YD = 59.9 GALLONS

WESTBOUND LANES: INSIDE SHOULDER
STA. 93+40.00 TO STA. 120+08.29 = 2668.29 FT. =
(2668.29 FT. x (2.00 FT. + 0.1042 FT. + 0.1042 FT.) ÷ 9) x 0.09 GAL./SQ.YD = 58.9 GALLONS
STA. 120+08.29 TO STA. 121+83.50 = 175.21 FT. (BRIDGE NO. LIC-161-0227L)
STA. 121+83.50 TO STA. 155+00.00 = 3316.50 FT. =
(3316.50 FT. x (2.00 FT. + 0.1042 FT. + 0.1042 FT.) ÷ 9) x 0.09 GAL./SQ.YD = 73.2 GALLONS

TOTAL:
62.5 GALLONS + 59.9 GALLONS + 58.9 GALLONS + 73.2 GALLONS = 254.5 GALLONS

ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22

EASTBOUND LANES: INSIDE SHOULDER
STA. 91+40.00 TO STA. 119+71.87 = 2831.87 FT. =
(2831.87 FT. x 2.00 FT. x 0.1042 FT.) ÷ 27 = 21.9 CU. YD.
STA. 119+71.87 TO STA. 121+47.08 = 175.21 FT. (BRIDGE NO. LIC-161-0227R)
STA. 121+47.08 TO STA. 148+60.00 = 2712.92 FT. =
(2712.92 FT. x 2.00 FT. x 0.1042 FT.) ÷ 27 = 20.9 CU. YD.

WESTBOUND LANES: INSIDE SHOULDER
STA. 93+40.00 TO STA. 120+08.29 = 2668.29 FT. =
(2668.29 FT. x 2.00 FT. x 0.1042 FT.) ÷ 27 = 20.6 CU. YD.
STA. 120+08.29 TO STA. 121+83.50 = 175.21 FT. (BRIDGE NO. LIC-161-0227L)
STA. 121+83.50 TO STA. 155+00.00 = 3316.50 FT. =
(3316.50 FT. x 2.00 FT. x 0.1042 FT.) ÷ 27 = 25.6 CU. YD.

TOTAL:
21.9 + 20.9 + 20.6 + 25.6 = 89.0 CU. YD.

ITEM 614 WORK ZONE SPEED ZONES (WZSZS)

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

WZSZ REVISION NUMBER	COUNTY & ROUTE	DIRECTION
WZ-30539	LIC-161-(1.72 TO 2.93)	EASTBOUND AND WESTBOUND

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

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

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

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ. THE PRIMARY SIGNING STRATEGY USES DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLIES. THE SECONDARY STRATEGY USES TEMPORARY FLATSHEET SPEED LIMIT SIGNS (R2-1) FOR WHEN THERE ARE NO DSL SIGN ASSEMBLIES ON THE APPROVED LIST, OR DSL SIGN ASSEMBLIES ARE NOT AVAILABLE.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, SUPPLEMENTAL SPECIFICATION (SS) 808, AND TRAFFIC SCD MT-104.10. WZSZS USING TEMPORARY FLATSHEET SPEED LIMIT SIGNS SHALL BE IN ACCORDANCE WITH THIS NOTE AND SCD MT-104.10. ADDITIONALLY PAYMENT MAY BE REMOVED, OR A DISINCENTIVE APPLIED, FOR WZSZS USING TEMPORARY FLATSHEET SPEED LIMIT SIGNS THE SAME AS DESCRIBED IN THE MOST RECENT PUBLICATION OF SS 808 IN REGARDS TO WZSZS USING DSL SIGN ASSEMBLIES (SEE SS 808.06 PARAGRAPHS 4 THROUGH 7, INCLUDING TABLE 1).

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

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRE-CONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZONE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

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

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

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

ITEM 614, DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY 24 SIGN MNTH

ASSUMING 4 DSL SIGN ASSEMBLIES FOR 6 MONTHS

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

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

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

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

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

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

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

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 4 EACH

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

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

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

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

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

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

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

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

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

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

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

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

- TIME OF NOTIFICATION OF MALFUNCTION;
- TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
- ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
- A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
- 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.

TEMPORARY PAVEMENT MARKINGS

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

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED TO MAINTAIN TRAFFIC BEFORE THE SURFACE COURSE OF PAVEMENT HAS BEEN PLACED. SEE SHEETS 229-256 FOR THE PROPOSED LAYOUT. NO TEMPORARY PAVEMENT MARKINGS SHALL BE APPLIED TO THE CONCRETE RAMPS.

- ITEM 614 WORK ZONE LANE LINE, CLASS I, 642 PAINT - 2.86 MILE
- ITEM 614 WORK ZONE CENTER LINE, CLASS I, 642 PAINT - 1.07 MILE
- ITEM 614 WORK ZONE EDGE LINE, CLASS I, 642 PAINT - 6.68 MILE (4.04 MILE WHITE, 2.64 MILE YELLOW)
- ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT - 6321 FT
- ITEM 614 WORK ZONE DOTTED LINE, CLASS I, 642 PAINT - 3592 FT
- ITEM 614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT - 819 FT
- ITEM 614 WORK ZONE STOP LINE, CLASS I, 642 PAINT - 248 FT
- ITEM 614 WORK ZONE ARROW, CLASS I, 642 PAINT - 33 EACH
- ITEM 614 WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT - 10 EACH
- ITEM 614 WORK ZONE ISLAND MARKING, CLASS I - 191 SQ FT

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

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.

LANE VALUE - S.R. 161

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/>

NO LANE CLOSURES SHALL BE PERMITTED ON S.R. 161 BETWEEN THE HOURS OF 6:00AM TO 9:00AM AND FROM 3:00PM TO 6:00PM.

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.

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. 161

DESCRIPTION OF CRITICAL LANE TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE \$ PER TIME UNIT
S.R. 161	O.D.O.T. WEB SITE: PERMITTED LANE CLOSURE TIMES AND 6:00AM TO 9:00AM & 3:00PM TO 6:00PM	EACH HOUR	\$10,000

ITEM 614, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

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

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

DAY OF HOLIDAY OR EVENT	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 DISINCENTIVE IN THE AMOUNT OF \$50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

PN 129 - FLEXIBLE START WINDOW CONTRACT

THE CONTRACTOR HAS THE NUMBER OF CALENDAR DAYS DESIGNATED IN THE WINDOW CONTRACT TABLE IN WHICH TO COMPLETE ALL ITEMS OF CRITICAL WORK. THE WINDOW CONTRACT TABLE IS LOCATED BELOW. THE CONTRACTOR MAY BEGIN ANY TIME AFTER THE NOTICE TO PROCEED DATE AND MUST COMPLETE THE CRITICAL WORK WITHIN THE CALENDAR DAYS DESIGNATED IN THE WINDOW CONTRACT TABLE OR BY THE COMPLETEION DATE LISTED IN THE PROPOSAL, WHICHEVER COMES FIRST.

CRITICAL WORK IS SHOWN IN THE WINDOW CONTRACT TABLE.

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

UNRESTRICTED TRAFFIC IS DEFINED AS ALL TRAFFIC LANES BEING AVAILABLE FOR USE AT THEIR FINAL DESIGN WITH WITH ALL MARKINGS, RPM'S AND SAFETY DEVICES INSTALLED, ALONG WITH NO RESTRICTIONS WITHIN 2 FEET OF THE EDGE LINE ON THE SHOULDERS.

EXTENSIONS OF TIME WILL BE FOR CALENDAR DAYS AND CALCULATED IN ACCORDANCE WITH C&MS 108.06.

IF THE WORK IS NOT COMPLETED WITHIN THE CALENDAR DAYS DESIGNATED IN THE WINDOW CONTRACT TABLE. THE CONTRACTOR WILL BE SUBJECT TO LIQUIDATED DAMAGES IN ACCORDANCE WITH THE SCHEDULE SET FORTH IN C&MS 108.07.

WINDOW CONTRACT TABLE - PN 129

DESCRIPTION OF WORK	CALENDAR DAYS TO COMPLETE
REMOVE EXISTING PIPE AND INSTALL PROPOSED PIPE BETWEEN STA. 116+50 TO STA. 117+00 WORTHINGTON ROAD AND PAVEMENT RESTORATION CONSTRUCTED TO GRADE	3

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

SEQUENCE OF OPERATIONS:

**PHASE 1:
MINK STREET, RAMP C, AND RAMP D**

CONSTRUCT PROPOSED MINK STREET FROM STA. 20+85.90 TO STA. 32+41.08 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. CONSTRUCT RAMP C FROM STA. 112+71.67 TO STA. 119+55.70 AND RAMP D FROM STA. 120+04.15 TO STA. 130+12.32 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER.

MINK STREET SHALL BE COMPLETED UP TO THE INTERMEDIATE ASPHALT PAVEMENT COURSE, INCLUDING THE PROPOSED CURB AND ALL DRAINAGE ITEMS. RAMP C AND RAMP D SHALL BE COMPLETED UP TO THE PROPOSED SUBGRADE.

TWO LANES OF TRAFFIC IN EACH DIRECTION ON S.R. 161 SHALL BE MAINTAINED AT ALL TIMES. THE INTERSECTION OF MINK STREET AND COBBS ROAD SHALL BE MAINTAINED AT ALL TIMES. MINK STREET SHALL BE DETOURED AS SHOWN IN THE PLANS. SEE SHEET 36 FOR DETAILS. ACCESS TO THE JERSEY TOWNSHIP BUILDING DRIVE ON MINK STREET SHALL BE MAINTAINED USING TEMPORARY PAVEMENT.

MINK STREET SHALL BE CLOSED FOR NO MORE THAN 45 DAYS DURING PHASE 1. IF MINK STREET IS NOT OPEN TO TRAFFIC WITHIN 45 DAYS, THE CONTRACTOR SHALL INCUR LIQUIDATED DAMAGES AS SPECIFIED IN SECTION 108.07 OF THE 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS.

INTERIM COMPLETION REQUIREMENTS:

NOVEMBER 30, 2016 WILL CONSTITUTE AN INTERIM COMPLETION DATE. AT A MINIMUM THE CONTRACTOR WILL HAVE TO COMPLETE ALL EMBANKMENT CONSTRUCTION TO SUBGRADE ON RAMP C FROM STA. 112+71.67 TO STA. 119+55.70 AND RAMP D FROM STA. 120+04.15 TO STA. 130+12.32. S.R. 161 MUST BE OPEN TO UNRESTRICTED AND UNSHIFTED TRAFFIC IN BOTH DIRECTIONS IN BOTH TRAVELLING LANES FROM NOVEMBER 30, 2016 THROUGH MARCH 15, 2017.

IF THE CONTRACTOR FAILS TO HAVE THE EMBANKMENT CONSTRUCTED AND/OR S.R. 16 OPEN TO TRAFFIC AS DESCRIBED ABOVE, LIQUIDATED DAMAGES AS PER CMS 108.07 WILL BE ASSESSED TO THE CONTRACTOR.

**PHASE 2:
MINK STREET, MICHAELENE WAY, INNOVATION CAMPUS WAY, AND RAMP B**

CONSTRUCT MINK STREET FROM STA. 32+41.08 TO STA. 47+75.00 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. REMOVE THE EXISTING PAVEMENT ON MICHAELENE WAY AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. CONSTRUCT INNOVATION CAMPUS WAY FROM STA. 103+77.64 TO STA. 104+69.80 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. CONSTRUCT RAMP B FROM STA. 121+80.62 TO STA. 130+25.43 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER.

MINK STREET SHALL BE COMPLETED UP TO THE INTERMEDIATE ASPHALT PAVEMENT COURSE, INCLUDING THE PROPOSED CURB AND ALL DRAINAGE ITEMS. INNOVATION CAMPUS WAY SHALL BE COMPLETED UP TO THE INTERMEDIATE ASPHALT PAVEMENT COURSE, INCLUDING THE PROPOSED CURB AND ALL DRAINAGE ITEMS. RAMP B SHALL BE COMPLETED UP TO THE PROPOSED SUBGRADE.

TWO LANES OF TRAFFIC IN EACH DIRECTION ON S.R. 161 SHALL BE MAINTAINED AT ALL TIMES. THE INTERSECTION OF MINK STREET AND COBBS ROAD SHALL BE MAINTAINED AT ALL TIMES USING THE TEMPORARY PAVEMENT. MINK STREET SHALL BE DETOURED AS SHOWN IN THE PLANS. SEE SHEET 36 FOR DETAILS.

MINK STREET SHALL BE CLOSED FOR NO MORE THAN 45 DAYS DURING PHASE 2. IF MINK STREET IS NOT OPEN TO TRAFFIC WITHIN 45 DAYS, THE CONTRACTOR SHALL INCUR LIQUIDATED DAMAGES AS SPECIFIED IN SECTION 108.07 OF THE 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS.

**PHASE 3:
S.R. 161, COBBS ROAD, RAMP A, ACCEL/DECEL LANES**

CONSTRUCT COBBS ROAD FROM STA. 37+00.00 TO STA. 43+50.00 DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. CONSTRUCT RAMP A FROM STA. 112+87.49 TO STA. 121+20.59 AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER. CONSTRUCT THE ACCEL AND DECEL LANES AS DETAILED IN THE PLANS AND AS DIRECTED BY THE PROJECT ENGINEER.

COBBS ROAD SHALL BE COMPLETED UP TO THE INTERMEDIATE ASPHALT PAVEMENT COURSE. THE PROPOSED GUARDRAIL ALONG COBBS ROAD SHALL ALSO BE INSTALLED. THE ACCEL AND DECEL LANES SHALL BE COMPLETED UP TO THE INTERMEDIATE ASPHALT PAVEMENT COURSE. PRIOR TO TRAFFIC BEING SHIFTED ON S.R. 161, MILL AND FILL THE EXISTING OUTSIDE RUMBLE STRIPS.

TWO LANES OF TRAFFIC IN EACH DIRECTION ON S.R. 161 SHALL BE MAINTAINED AT ALL TIMES. S.R. 161 SHALL BE TAKEN DOWN TO ONE LANE OF TRAFFIC TO PERFORM THE MILL AND FILL ON THE OUTSIDE RUMBLE STRIP AND TO INSTALL THE PORTABLE CONCRETE BARRIER AS PER THE LANE VALUE NOTE ON SHEET 33. TWO WAY TRAFFIC ON MINK STREET SHALL BE MAINTAINED AT ALL TIMES. ANY WORK THAT WILL INHIBIT TRAFFIC FLOW ON COBBS ROAD FROM HARRISON ROAD TO MINK STREET SHALL NOT BE ALLOWED UNTIL INNOVATION CAMPUS WAY IS OPEN TO TRAFFIC BETWEEN HARRISON ROAD AND MINK STREET.

COBBS ROAD SHALL BE PERMANENTLY CLOSED AT THE INTERSECTION OF MINK ST. AND COBBS ROAD. THE CLOSURE SHALL NOT OCCUR UNTIL INNOVATION CAMPUS WAY IS OPENED TO TRAFFIC BY OTHERS. ACCESS TO DRIVES ALONG COBBS ROAD SHALL BE MAINTAINED AT ALL TIMES.

**PHASE 4:
S.R. 161, MINK STREET, COBBS ROAD, RAMP A, RAMP B, RAMP C, RAMP D, INNOVATION CAMPUS WAY, AND ACCEL/DECEL LANES**

INSTALL ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN TRAFFIC ON S.R. 161 EASTBOUND AND WESTBOUND TO PERFORM THE FINAL PAVEMENT PLANING AND RESURFACING OPERATIONS. THE S.R. 161 RESURFACING OPERATIONS WILL BE PERFORMED AS PER THE LANE VALUE CONTRACT TABLE AND AS DIRECTED BY THE PROJECT ENGINEER.

INSTALL ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN TRAFFIC ON MINK STREET, COBBS ROAD, RAMP A, RAMP B, RAMP C, RAMP D, INNOVATION CAMPUS WAY, AND THE ACCEL & DECEL LANES TO PERFORM THE FINAL PAVEMENT OPERATIONS.

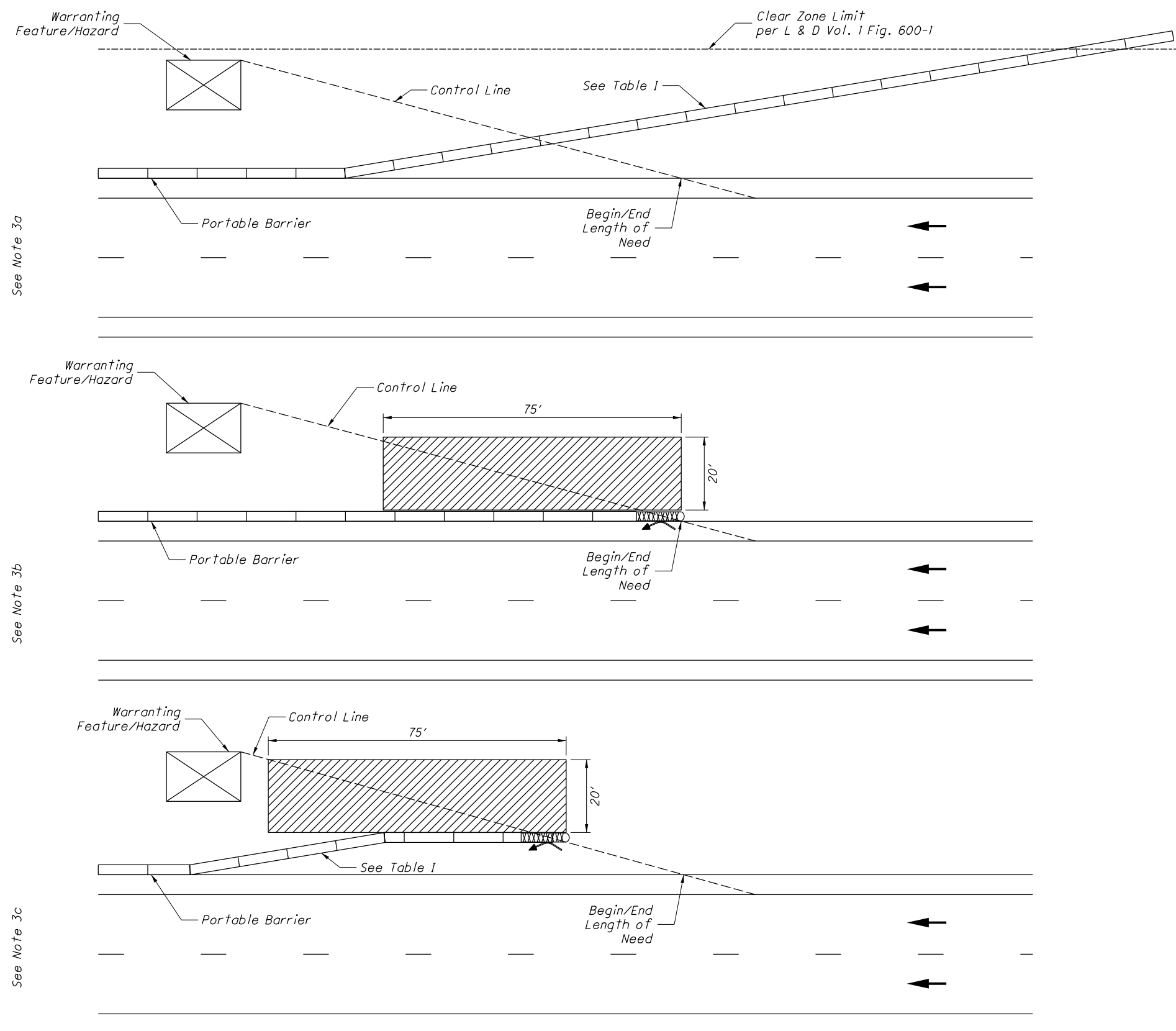
FINAL PAVING WILL BE PERFORMED UNDER TRAFFIC AS PER MT-95.30

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MAINTENANCE OF TRAFFIC GENERAL NOTES

LIC-161-1.83

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NOTES:

1. Attenuators shall be installed per the manufacturer's specifications.
2. Recovery area shall have slopes 3:1 or flatter and be free of workers, hazards, equipment, drop-offs, and material storage.
3. The Contractor shall select one of the three acceptable options for terminating portable barrier:
 - a) Terminate flared section of portable barrier outside clear zone with tapered end only where cross slopes are 10:1 or flatter.
 - b) Terminate portable barrier with an impact attenuator. A non-gating attenuator may be included in the length of need measurement.
 - c) Flare a section of portable barrier to the length of need control line and terminate with an impact attenuator. A non-gating impact attenuator may be included in the flared section of portable barrier.
4. The Contractor shall submit documentation to the Engineer, 2 weeks prior to implementation, for acceptance when:
 - a) Deviating from the three acceptable options for terminating portable barrier.

Documentation shall explain any deviations and verify that the recovery area fulfills the manufacturer's specifications and Note 2.
 - b) Using a gating impact attenuator in lieu of a non-gating impact attenuator.

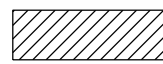
The gating impact attenuator length shall not be included as part of the length of need or recovery area requirements. Additional portable barrier will need to be added. The additional cost for the additional barrier required for a gating impact attenuator shall be included in the cost of the gating impact attenuator.

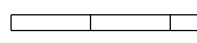
Documentation shall verify that the extended recovery area fulfills the manufacturer's specifications and Note 2.
5. Gating impact attenuators shall not be used in gore locations or within the clear zone between bi-directional traffic.


TABLE 1


SPEED LIMIT (MPH)	PB FLARE RATE MINIMUM
25	8:1
30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

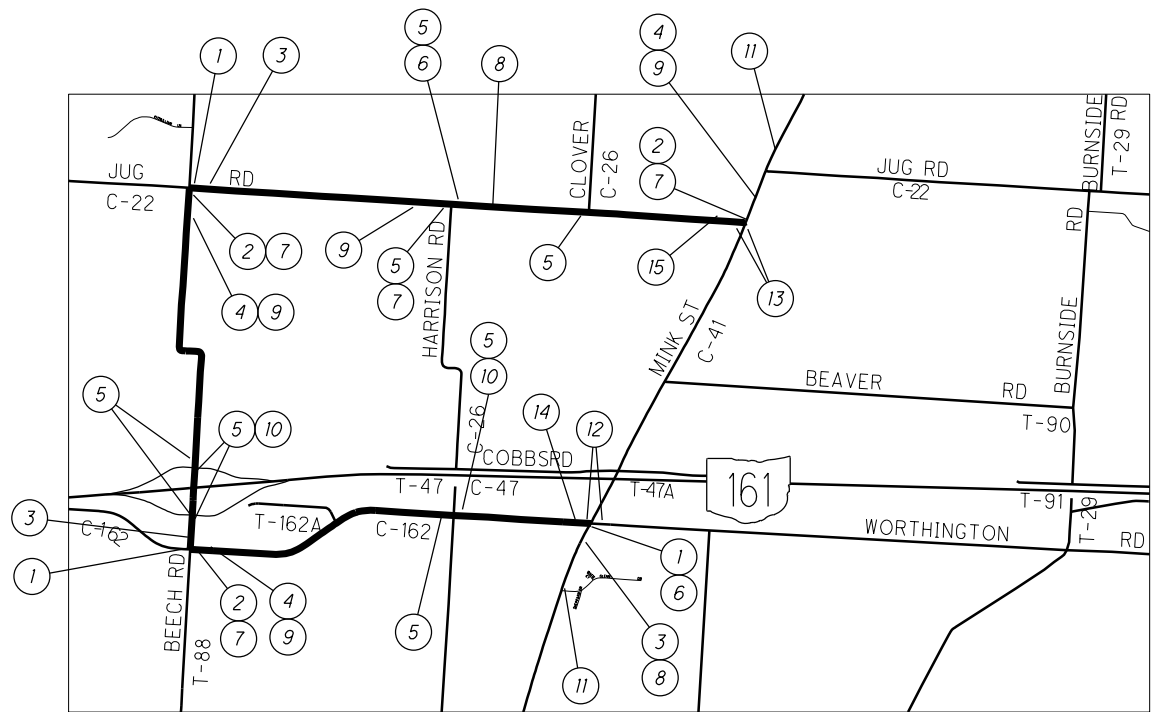
LEGEND

RECOVERY AREA 

PORTABLE BARRIER 

NON-GATING IMPACT ATTENUATOR 

DIRECTION OF TRAVEL 



DESIGNATED LOCAL DETOUR ROUTE

DESIGNATED LOCAL DETOUR ROUTE:

NORTHBOUND C.R. 41 (MINK ST) DETOUR ROUTE:
WEST ON WORTHINGTON RD., NORTH ON BEECH RD., EAST ON JUG RD.

SOUTHBOUND C.R. 41 (MINK ST) DETOUR ROUTE:
WEST ON JUG RD., SOUTH ON BEECH RD., EAST ON WORTHINGTON RD.

N/A	—
STATE DETOUR	LOCAL DETOUR

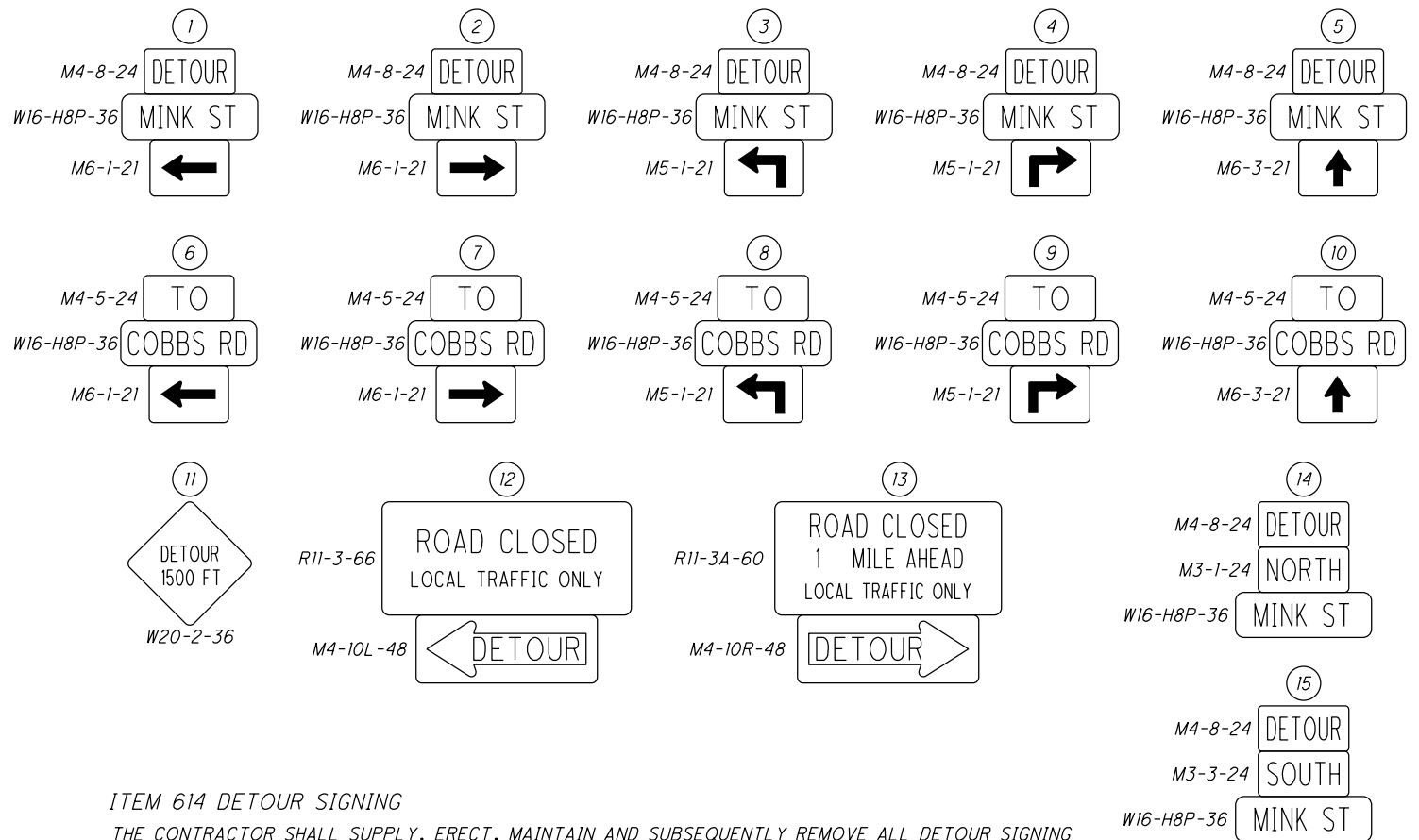
MAINTAINING EXISTING DRIVES:

THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENCES TO THE FULLEST EXTENT POSSIBLE. IT IS UNDERSTOOD THAT FOR SHORT PERIODS OF TIME, THE FULL ACCESS TO DRIVEWAYS MAY NOT BE POSSIBLE. THE CONTRACTOR SHALL MAKE ACCOMMODATIONS TO THE RESIDENT SO THAT DURING THE SHORT INTERVALS, THE HOME OWNER CAN STILL HAVE ACCESS TO PARK NEAR THE RESIDENCE.

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 ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

ITEM 301, ASPHALT CONCRETE BASE PG64-22	5 CU. YDS.
ITEM 407, TACK COAT	5 GAL.
ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22	10 CU. YDS.

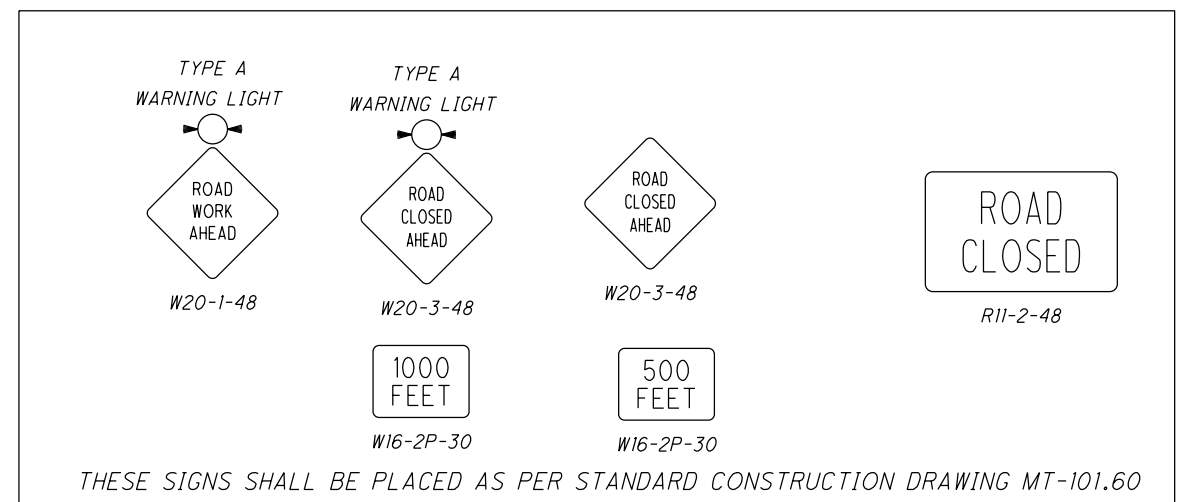


ITEM 614 DETOUR SIGNING

THE CONTRACTOR SHALL SUPPLY, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL DETOUR SIGNING AND SUPPORTS AS SHOWN ON THIS SHEET AND ON STANDARD CONSTRUCTION DRAWING MT-101.60. PAYMENT FOR ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 DETOUR SIGNING.

DESIGNATED LOCAL DETOUR ROUTE

THE OFFICIAL SIGNED LOCAL DETOUR ROUTE HAS BEEN DETERMINED TO BE THE PRIMARY DETOUR ROUTE AND "DESIGNATED LOCAL DETOUR ROUTE". THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE 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 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 DIRECTED BY THE ENGINEER.

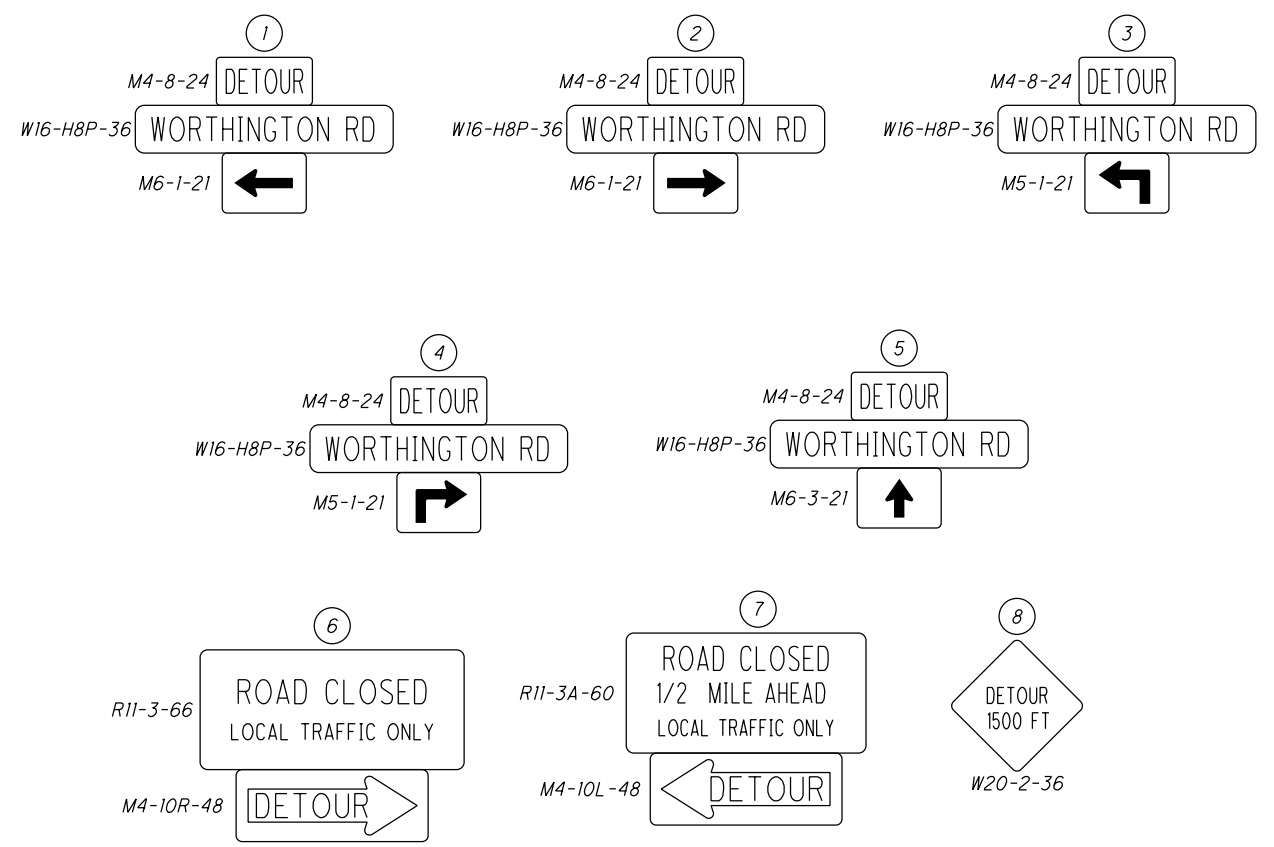
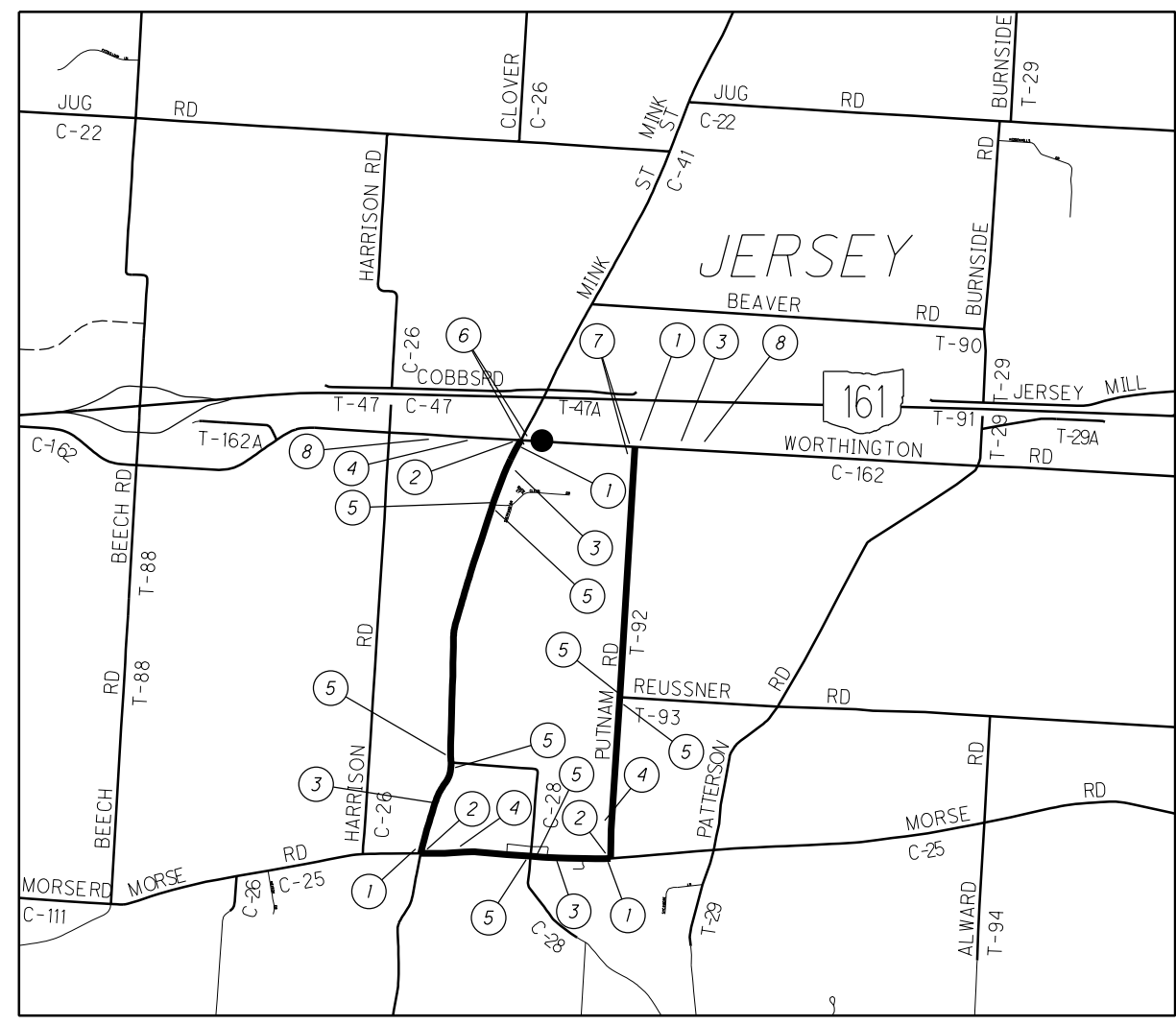


THESE SIGNS SHALL BE PLACED AS PER STANDARD CONSTRUCTION DRAWING MT-101.60



MINK STREET
DETOUR SHEET

LIC-161-1.83



ITEM 614 DETOUR SIGNING

THE CONTRACTOR SHALL SUPPLY, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL DETOUR SIGNING AND SUPPORTS AS SHOWN ON THIS SHEET AND ON STANDARD CONSTRUCTION DRAWING MT-101.60. PAYMENT FOR ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 DETOUR SIGNING.

DESIGNATED LOCAL DETOUR ROUTE

THE OFFICIAL SIGNED LOCAL DETOUR ROUTE HAS BEEN DETERMINED TO BE THE PRIMARY DETOUR ROUTE AND "DESIGNATED LOCAL DETOUR ROUTE". THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE 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 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 DIRECTED BY THE ENGINEER.

DESIGNATED LOCAL DETOUR ROUTE

DESIGNATED LOCAL DETOUR ROUTE:

EASTBOUND C.R. 162 (WORTHINGTON RD) DETOUR ROUTE:
SOUTH ON MINK ST, EAST ON MORSE RD, NORTH ON PUTNAM RD

WESTBOUND C.R. 162 (WORTHINGTON RD) DETOUR ROUTE:
SOUTH ON PUTNAM RD, WEST ON MORSE RD, NORTH ON MINK ST

N/A	—
STATE DETOUR	LOCAL DETOUR

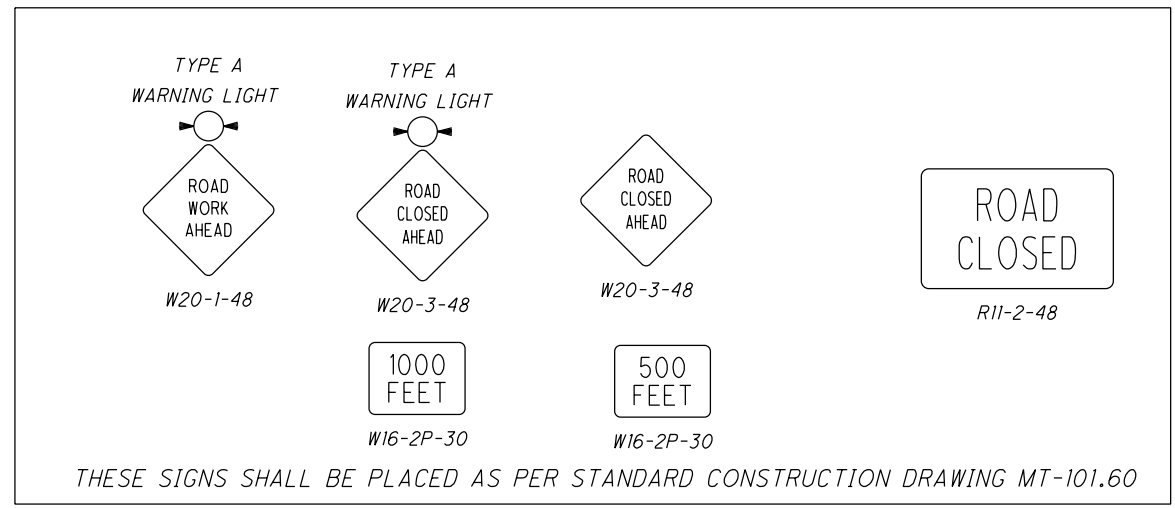
MAINTAINING EXISTING DRIVES:

THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENCES TO THE FULLEST EXTENT POSSIBLE. IT IS UNDERSTOOD THAT FOR SHORT PERIODS OF TIME, THE FULL ACCESS TO DRIVEWAYS MAY NOT BE POSSIBLE. THE CONTRACTOR SHALL MAKE ACCOMODATIONS TO THE RESIDENT SO THAT DURING THE SHORT INTERVALS, THE HOME OWNER CAN STILL HAVE ACCESS TO PARK NEAR THE RESIDENCE.

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.

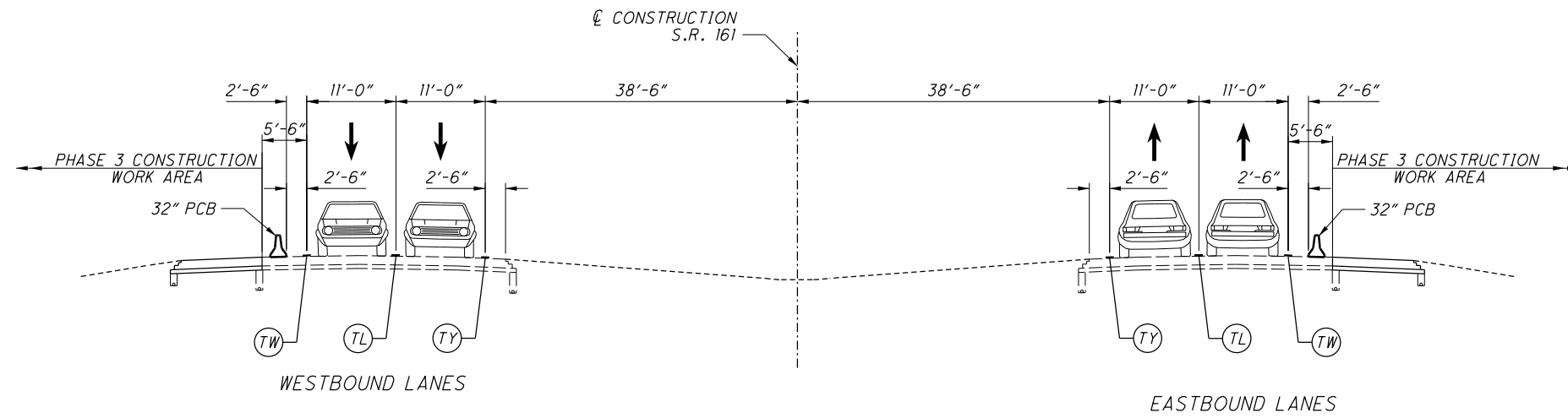
THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

ITEM 301, ASPHALT CONCRETE BASE PG64-22	5 CU. YDS.
ITEM 407, TACK COAT	5 GAL.
ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22	10 CU. YDS.

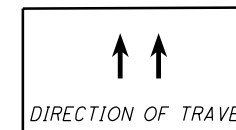


THESE SIGNS SHALL BE PLACED AS PER STANDARD CONSTRUCTION DRAWING MT-101.60

PHASE 3






① SEE TYPICALS FOR PERMANENT PAVEMENT BUILDUP

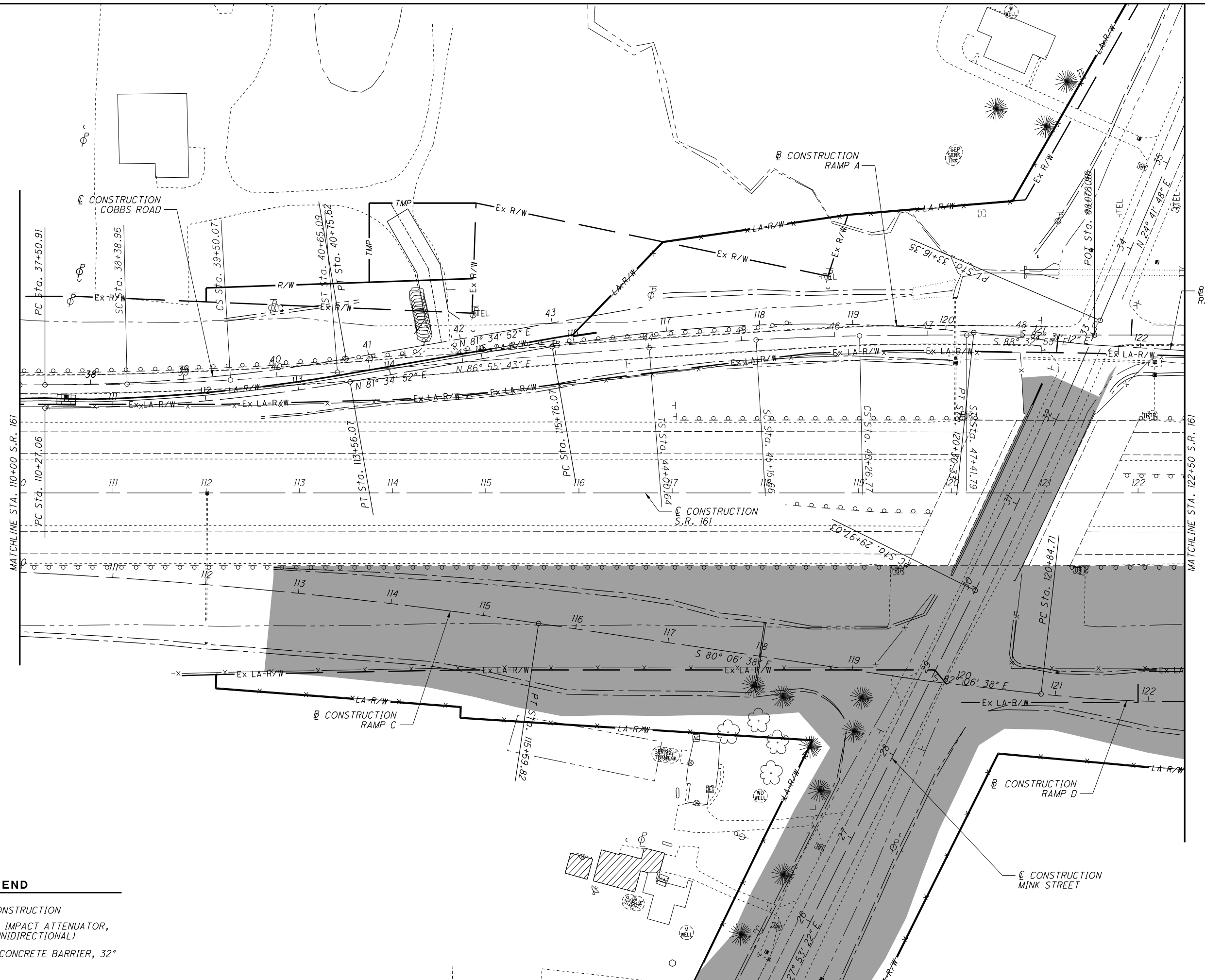


- ⓉW - ITEM 614 WORK ZONE EDGE LINE, CLASS 1, 642 PAINT, (WHITE)
- ⓉY - ITEM 614 WORK ZONE EDGE LINE CLASS 1, 642 PAINT, (YELLOW)
- ⓉL - ITEM 614 WORK ZONE LANE LINE, CLASS 1, 642 PAINT

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LEGEND

-  PHASE 1 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"



CALCULATED
CMY
CHECKED
HAG

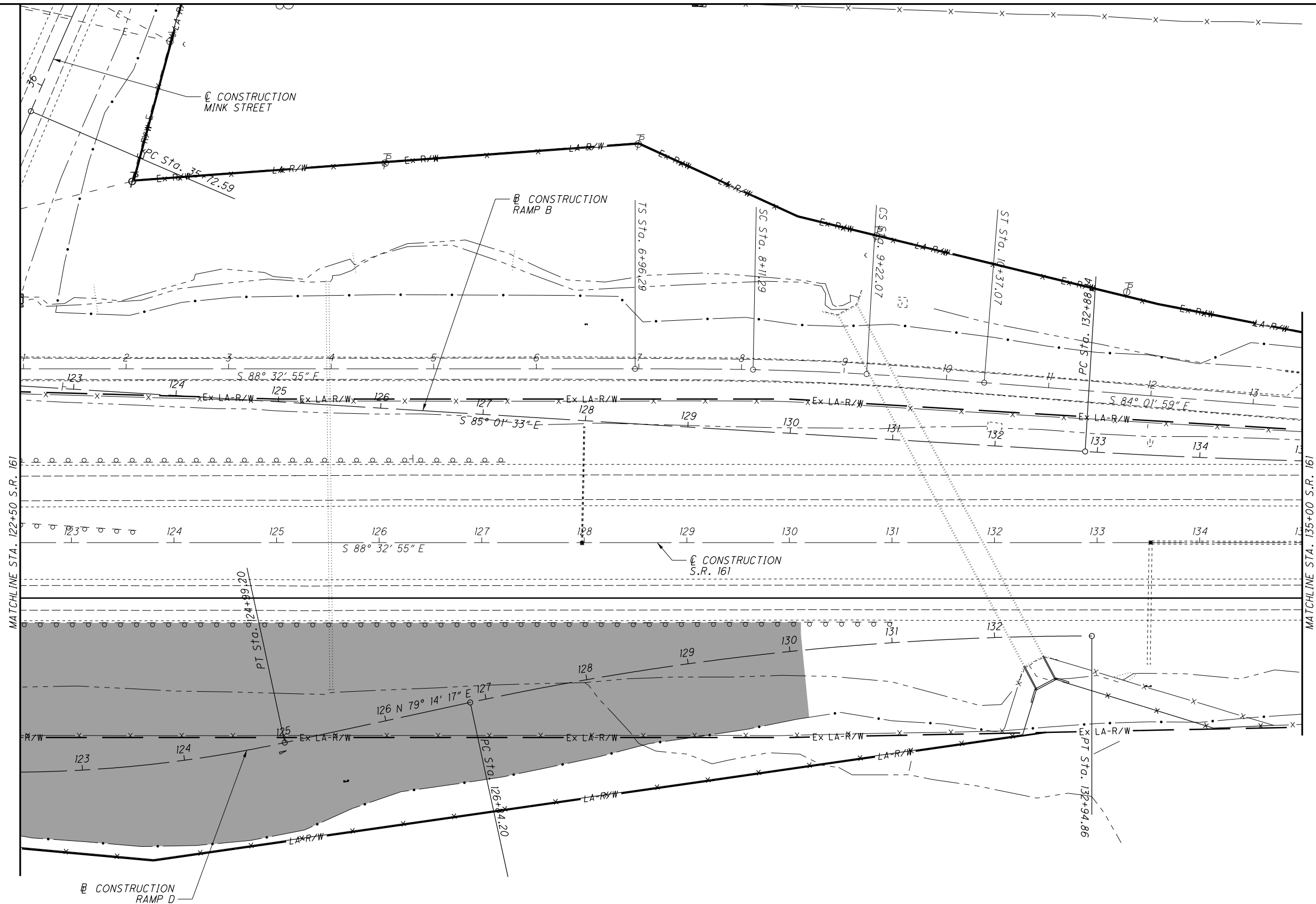



HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC - PHASE 1
S.R. 161 STA. 110+00 TO STA. 112+50

LIC-161-1.83

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CALCULATED
CMY
CHECKED
HAG

0 50 100
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC - PHASE 1
S.R. 161 STA. 122+50 TO STA. 135+00

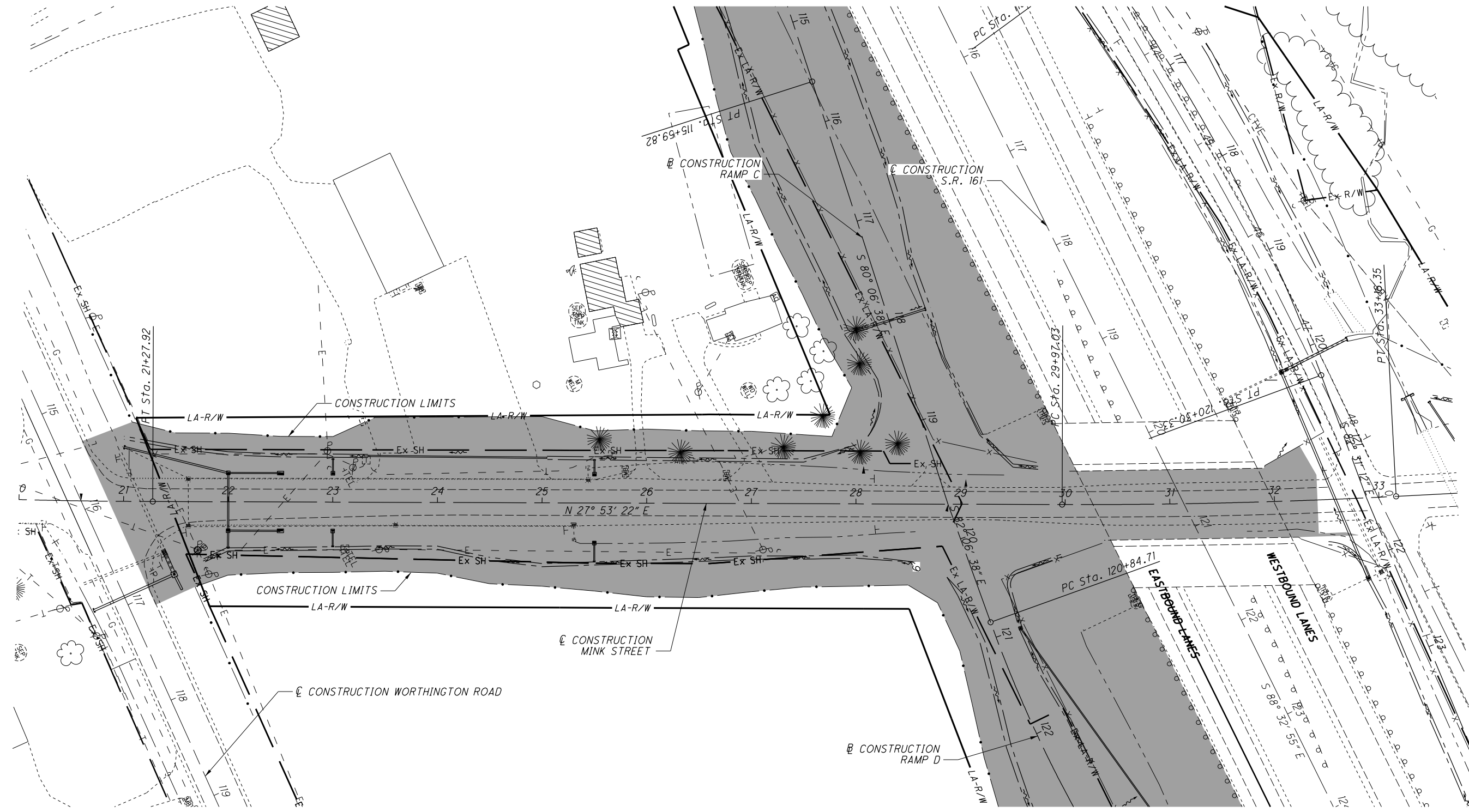
LIC-161-1.83

40
336

LEGEND

- PHASE I CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

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LEGEND

- PHASE 1 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

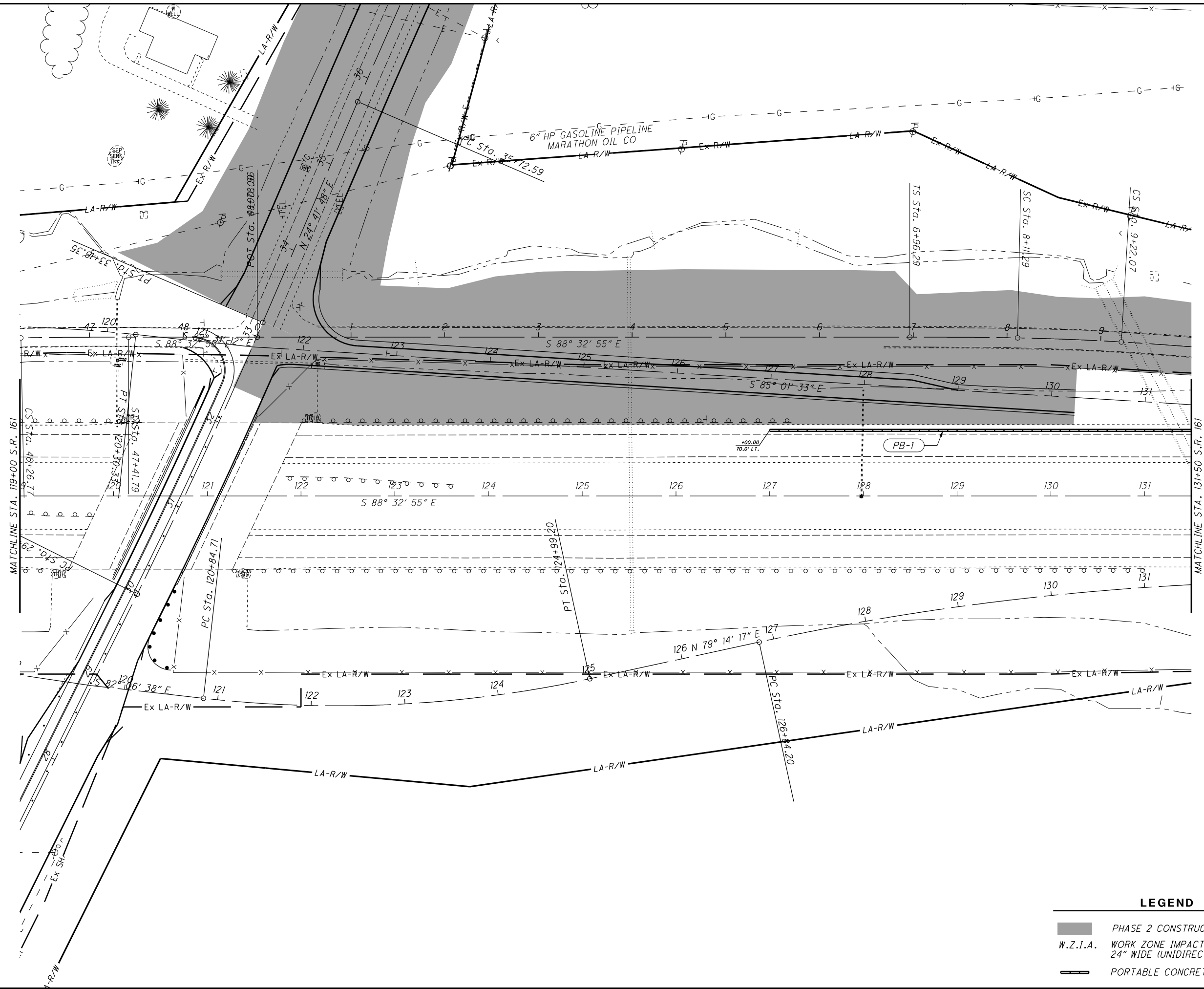


CALCULATED	CMY
CHECKED	HAG

MAINTENANCE OF TRAFFIC - PHASE 1
MINK STREET STA. 20+00 TO STA. 33+75

LIC-161-1.83

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

CALCULATED
CMY
CHECKED
HAG

0 50 100
HORIZONTAL
SCALE IN FEET

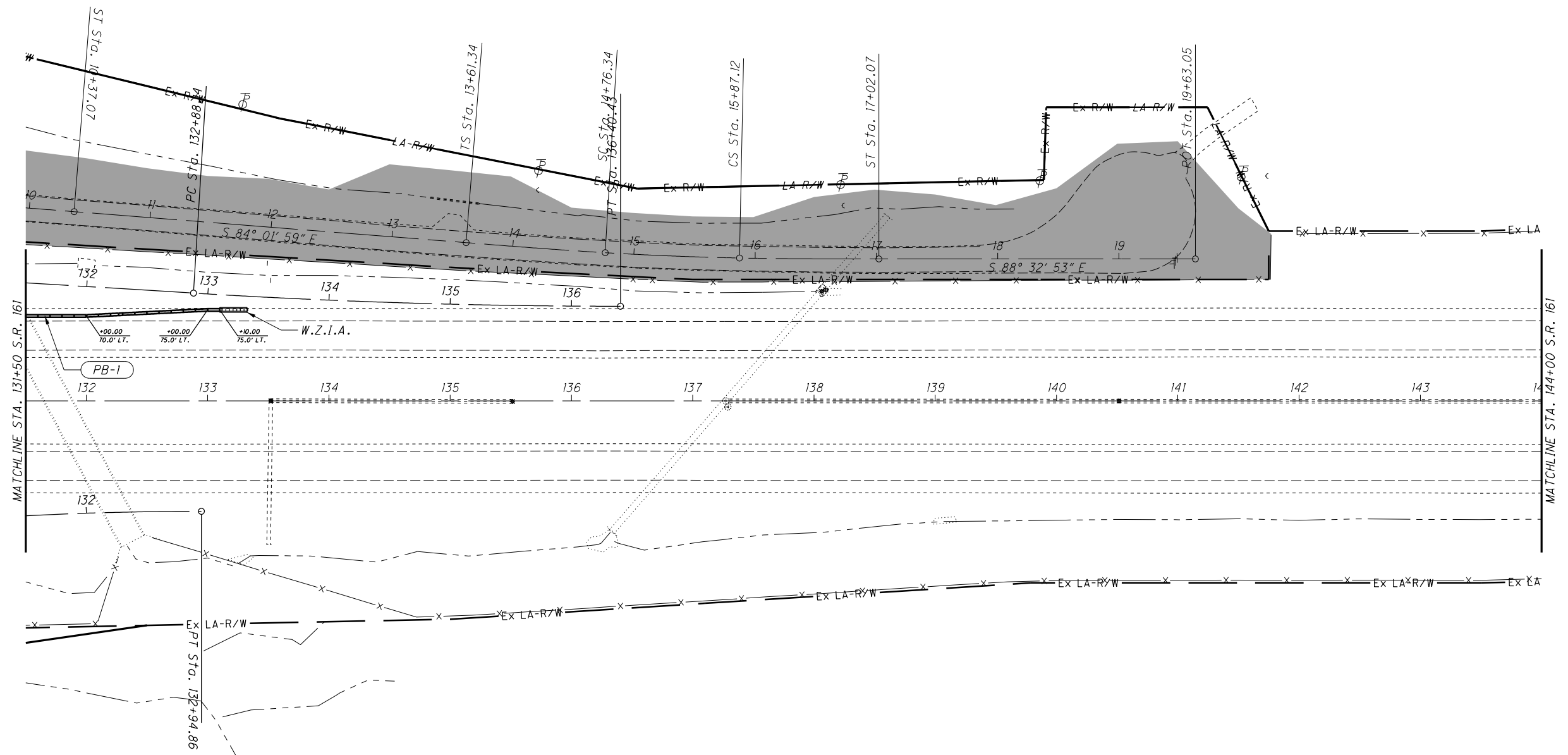
MAINTENANCE OF TRAFFIC - PHASE 2
S.R. 161 STA. 119+00 TO STA. 131+50

LIC-161-1.83

LEGEND

-  PHASE 2 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"

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LEGEND

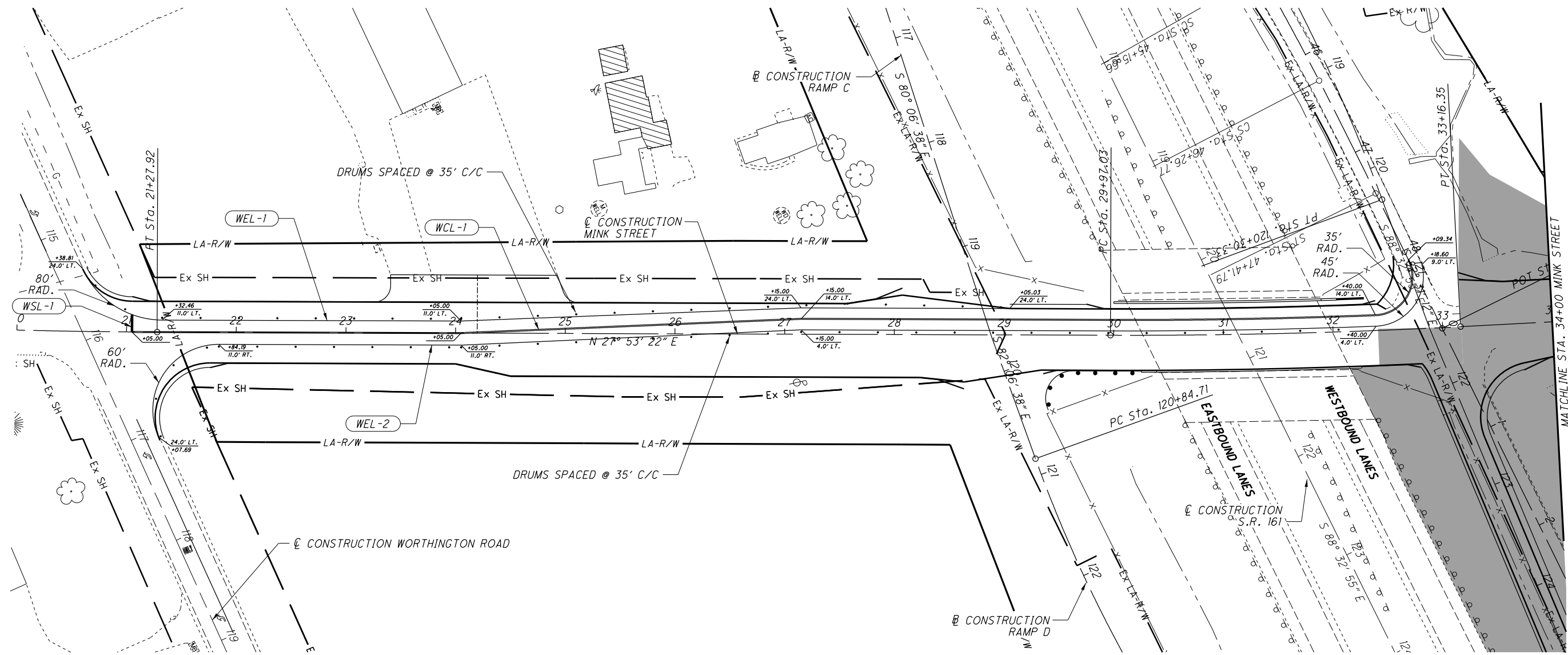
- PHASE 2 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

0 50 100
 HORIZONTAL SCALE IN FEET
 CALCULATED
 CMY
 CHECKED
 HAG

MAINTENANCE OF TRAFFIC - PHASE 2
S.R. 161 STA. 131+50 TO STA. 144+00

LIC-161-1.83

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LEGEND

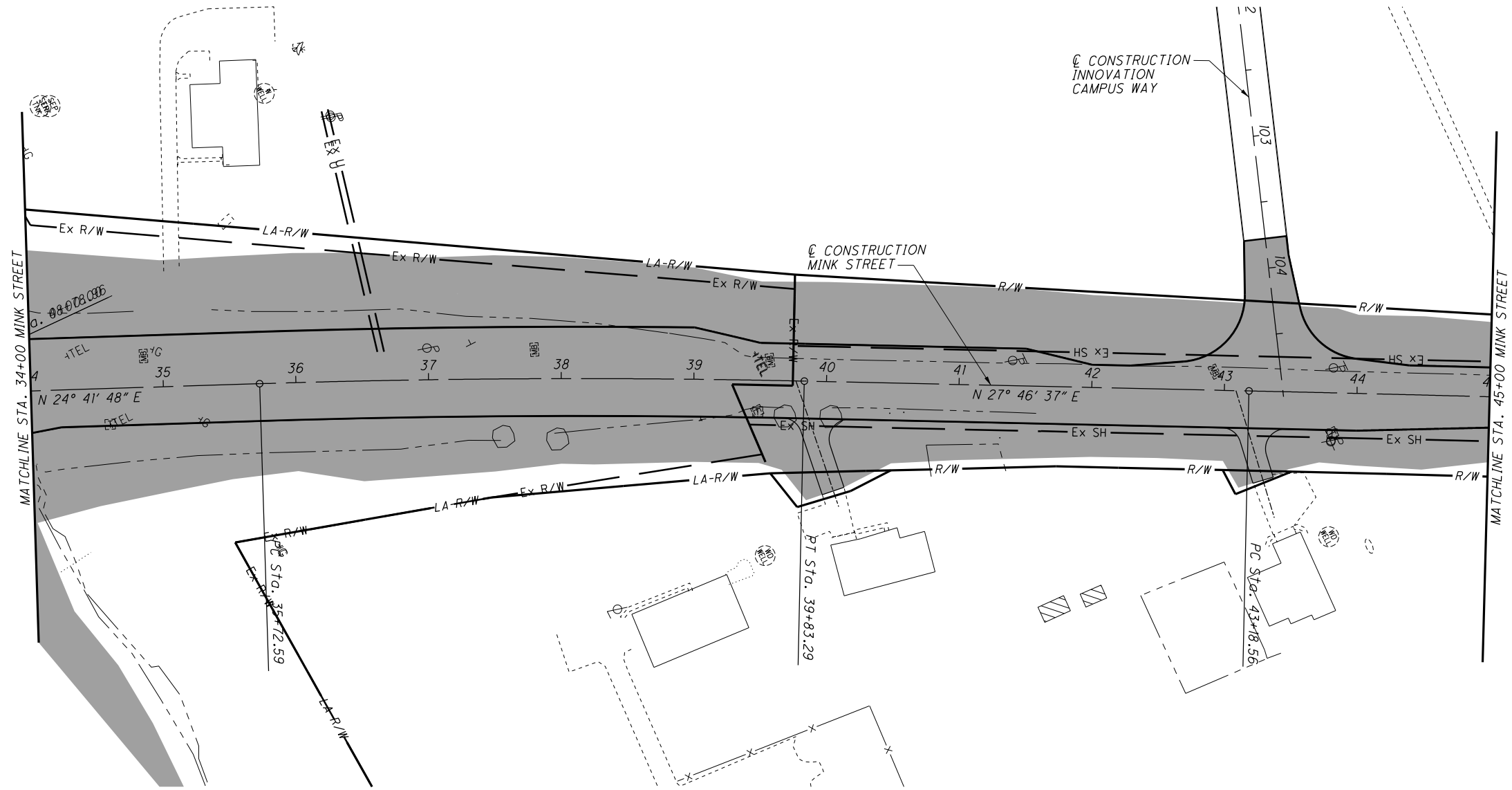
- PHASE 2 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

0 50 100

 HORIZONTAL SCALE IN FEET

CALCULATED	CMY
CHECKED	HAG

MAINTENANCE OF TRAFFIC - PHASE 2
MINK STREET STA. 20+00 TO STA. 34+00



LEGEND

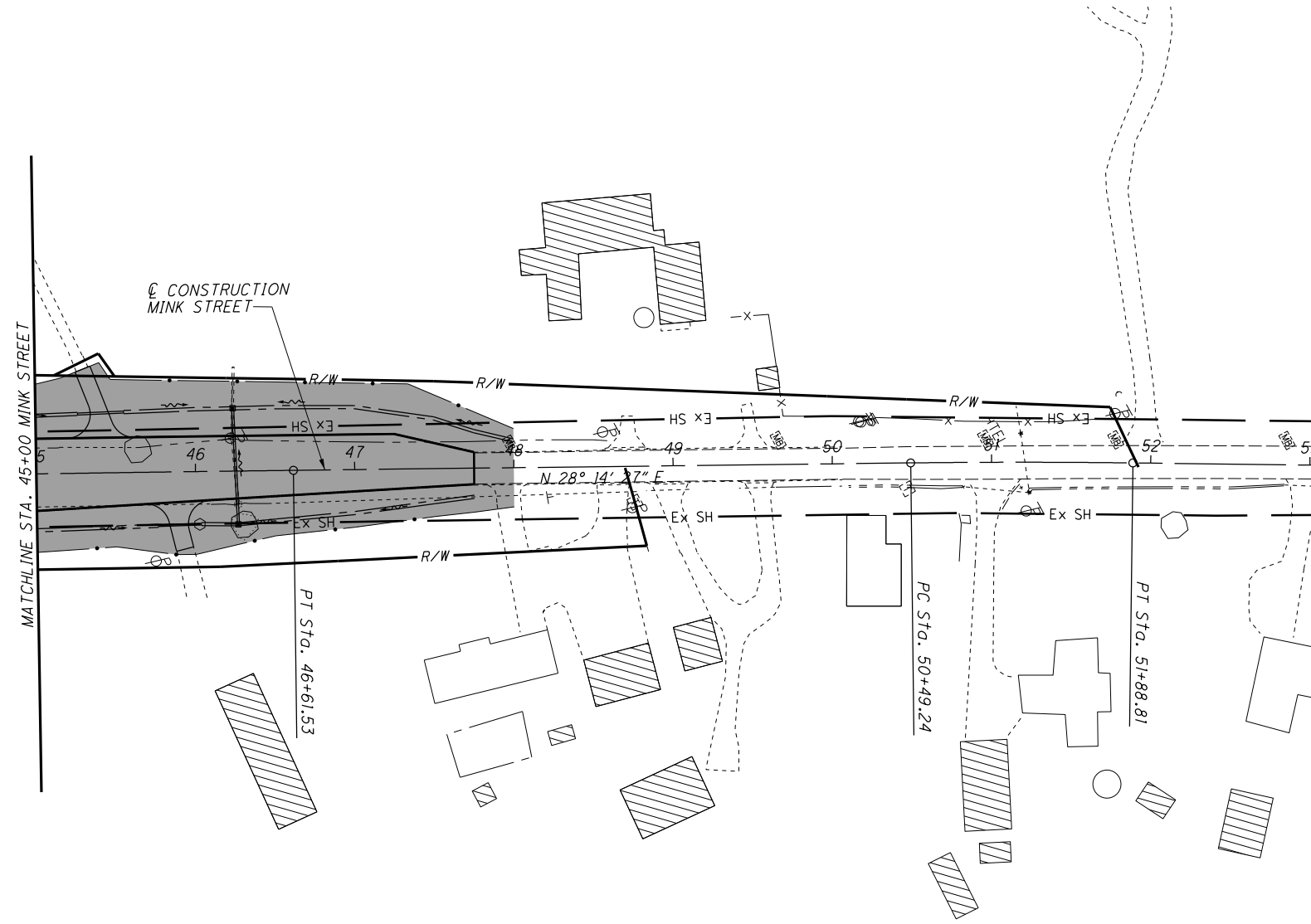
- PHASE 2 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

CALCULATED
CMY
CHECKED
HAG




0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC - PHASE 2
MINK STREET STA. 34+00 TO STA. 45+00**

LIC-161-1.83



LEGEND

-  PHASE 2 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"

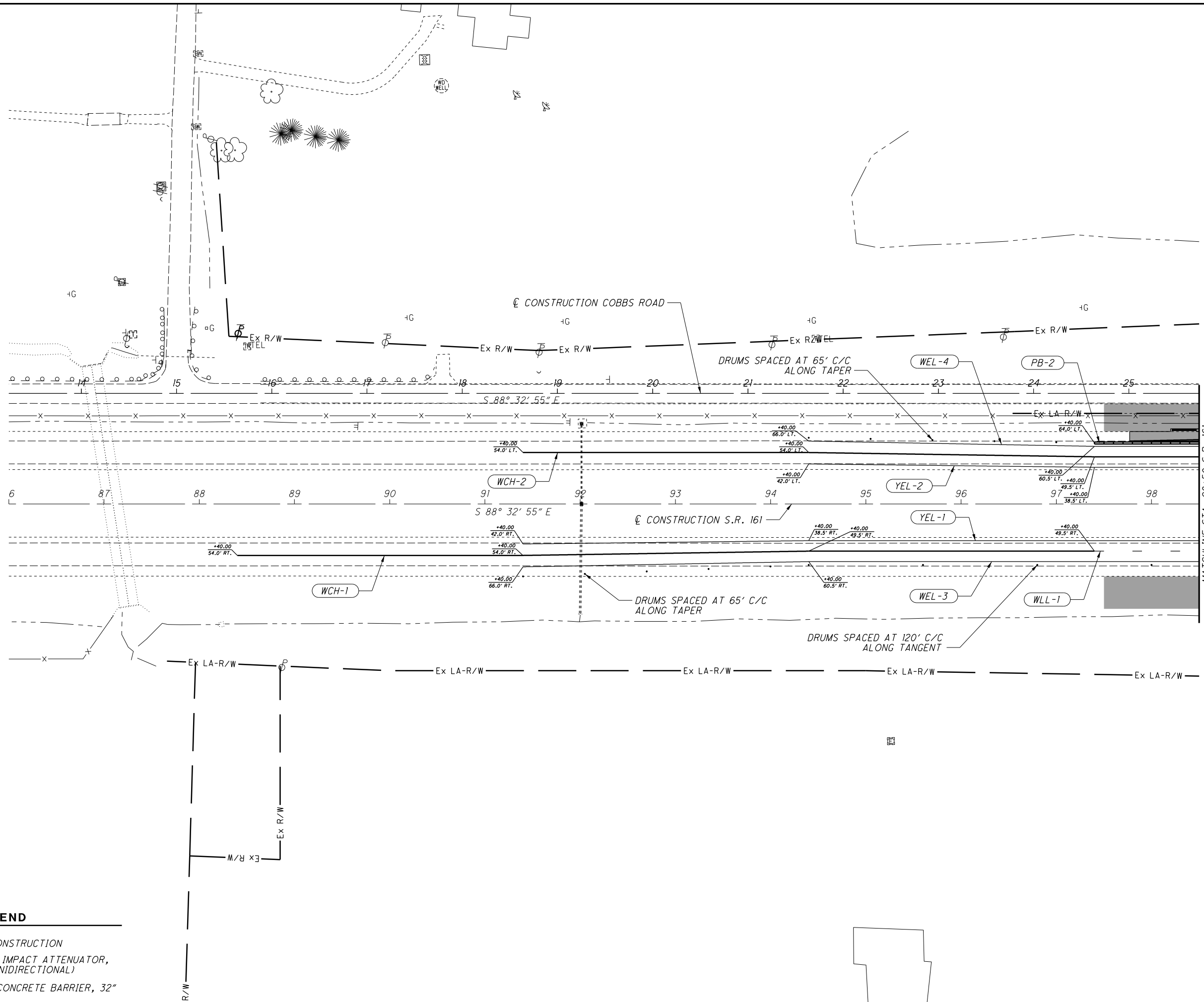


CALCULATED
 CMY
 CHECKED
 HAG




**MAINTENANCE OF TRAFFIC - PHASE 2
 MINK STREET STA. 45+00 TO STA. 57+50**

LIC-161-1.83

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LEGEND

-  PHASE 3 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"

CALCULATED
CMY
CHECKED
HAG

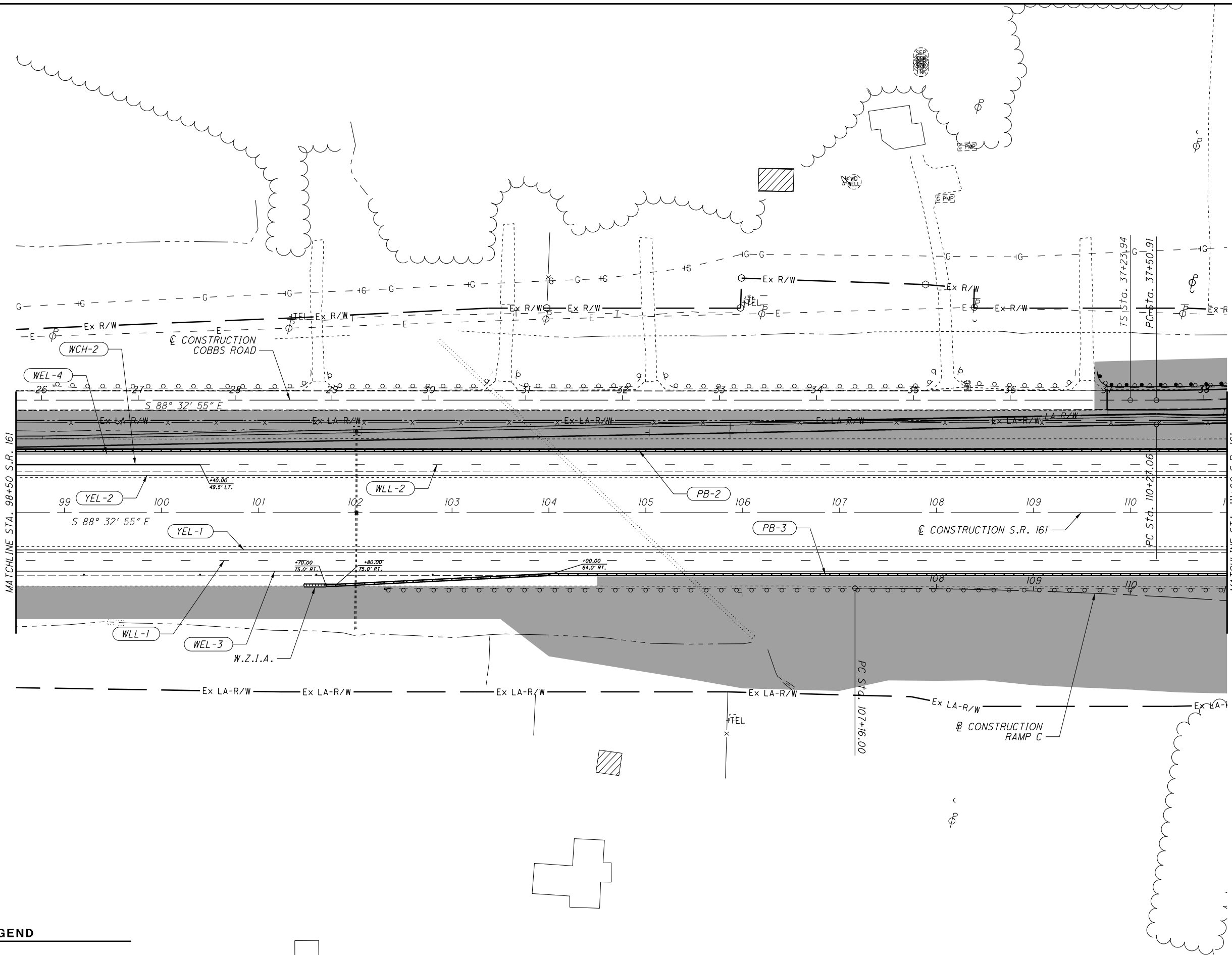



25
50
100
HORIZONTAL
SCALE IN FEET




MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 86+00 TO STA. 98+50

LIC-161-1.83



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LEGEND

-  PHASE 3 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"

CALCULATED
CMY
CHECKED
HAG

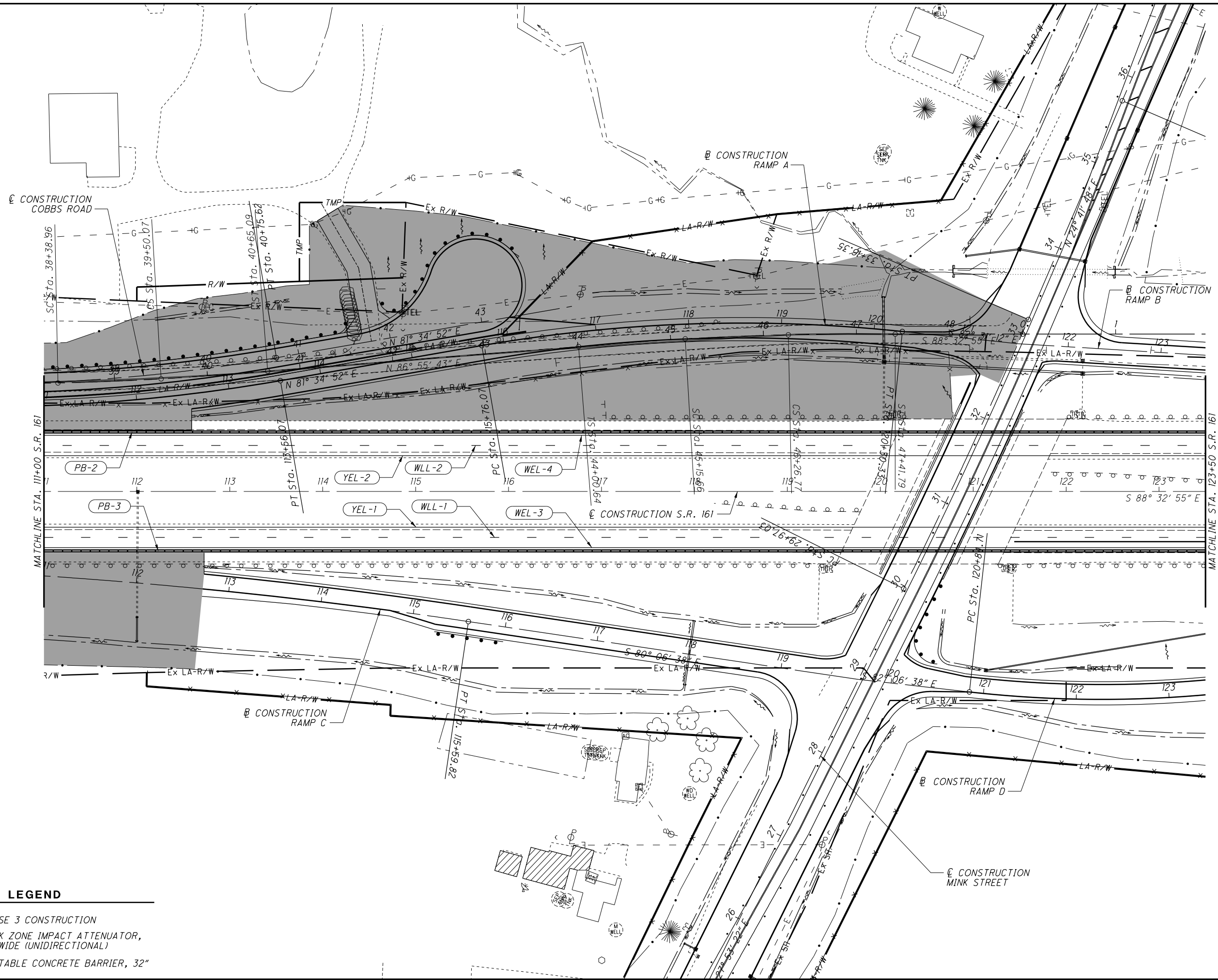



HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 98+50 TO STA. 111+00

LIC-161-1.83

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LEGEND

- PHASE 3 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

0 50 100

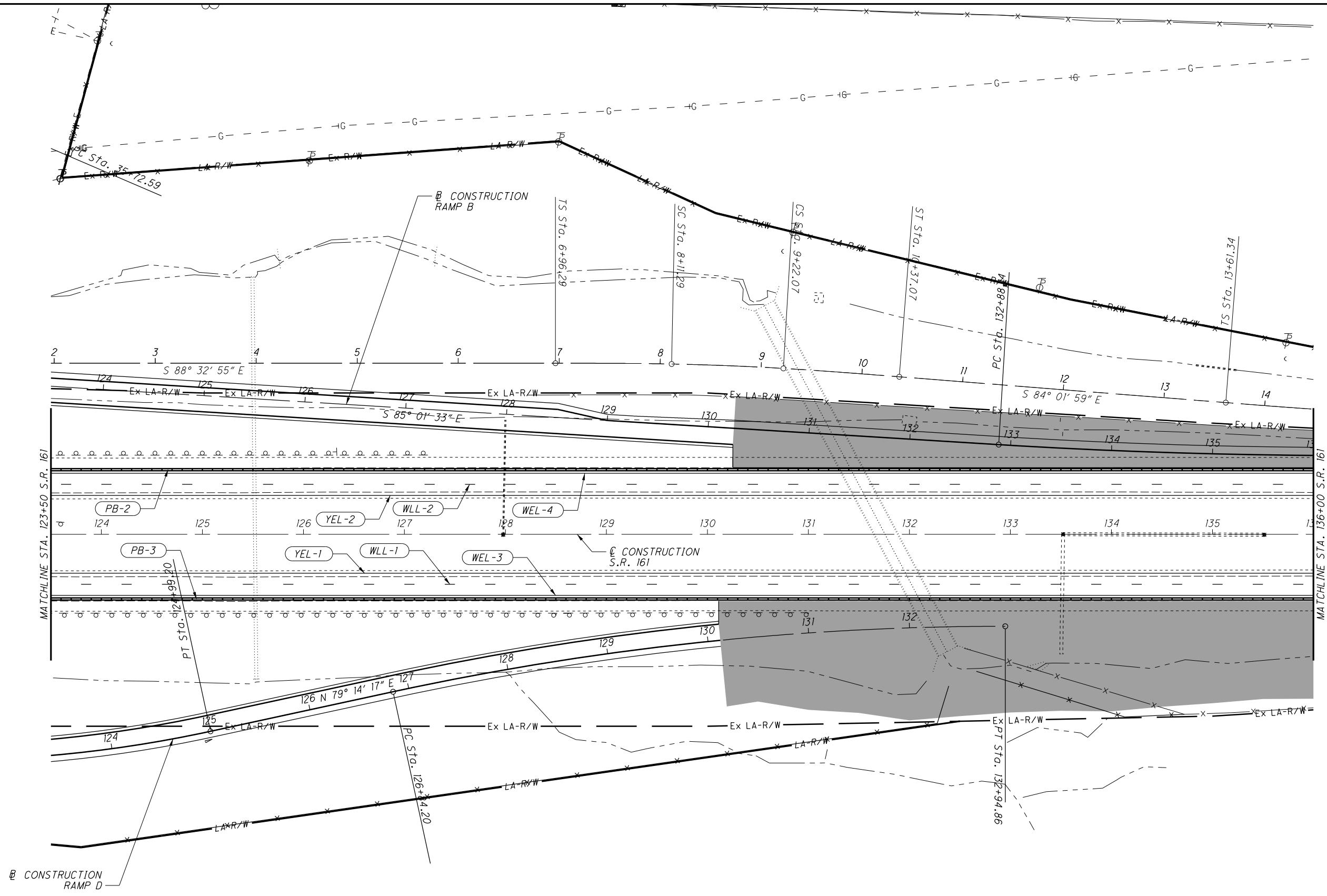
 HORIZONTAL

 SCALE IN FEET

MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 111+00 TO STA. 123+50

LIC-161-1.83

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LEGEND

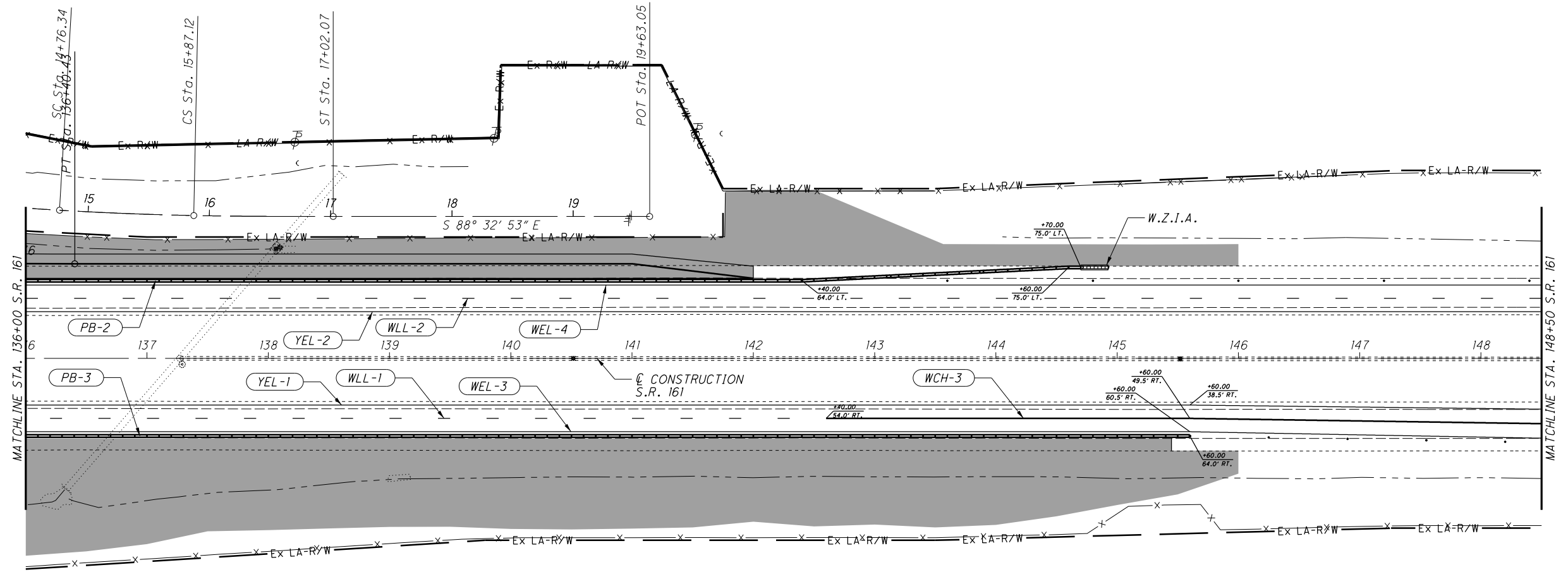
- PHASE 3 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

0 50 100
 HORIZONTAL SCALE IN FEET
 CALCULATED CMY CHECKED HAG

MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 123+50 TO STA. 136+00

LIC-161-1.83

50
336



LEGEND

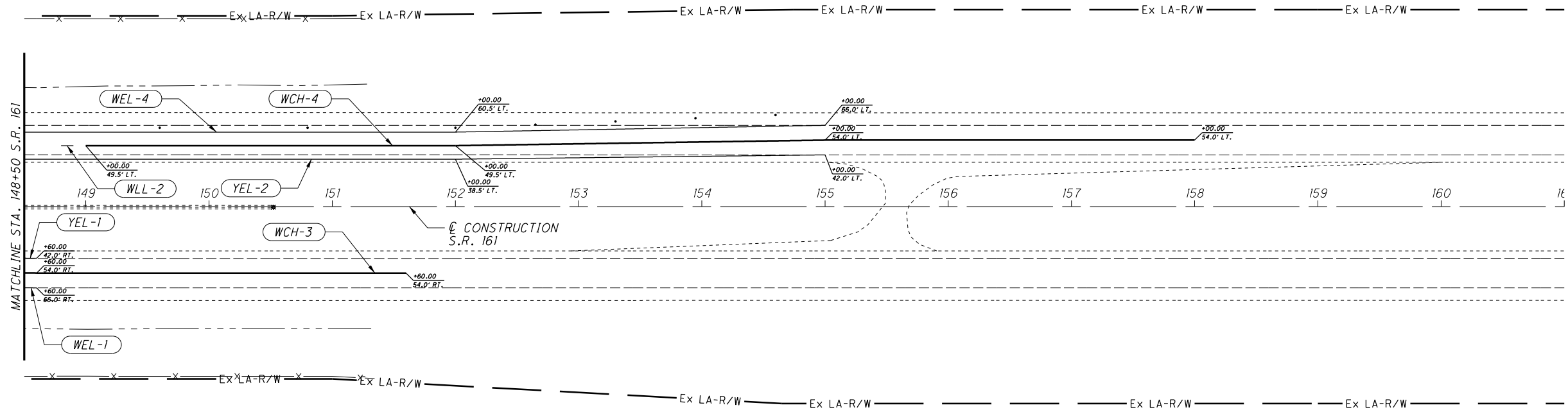
- PHASE 3 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

0 50 100
 HORIZONTAL SCALE IN FEET
 CALCULATED
 CMY
 CHECKED
 HAG

**MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 136+00 TO STA. 148+50**

LIC-161-1.83

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LEGEND

- PHASE 3 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"




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 HORIZONTAL SCALE IN FEET
 CALCULATED
 CMY
 CHECKED
 HAG

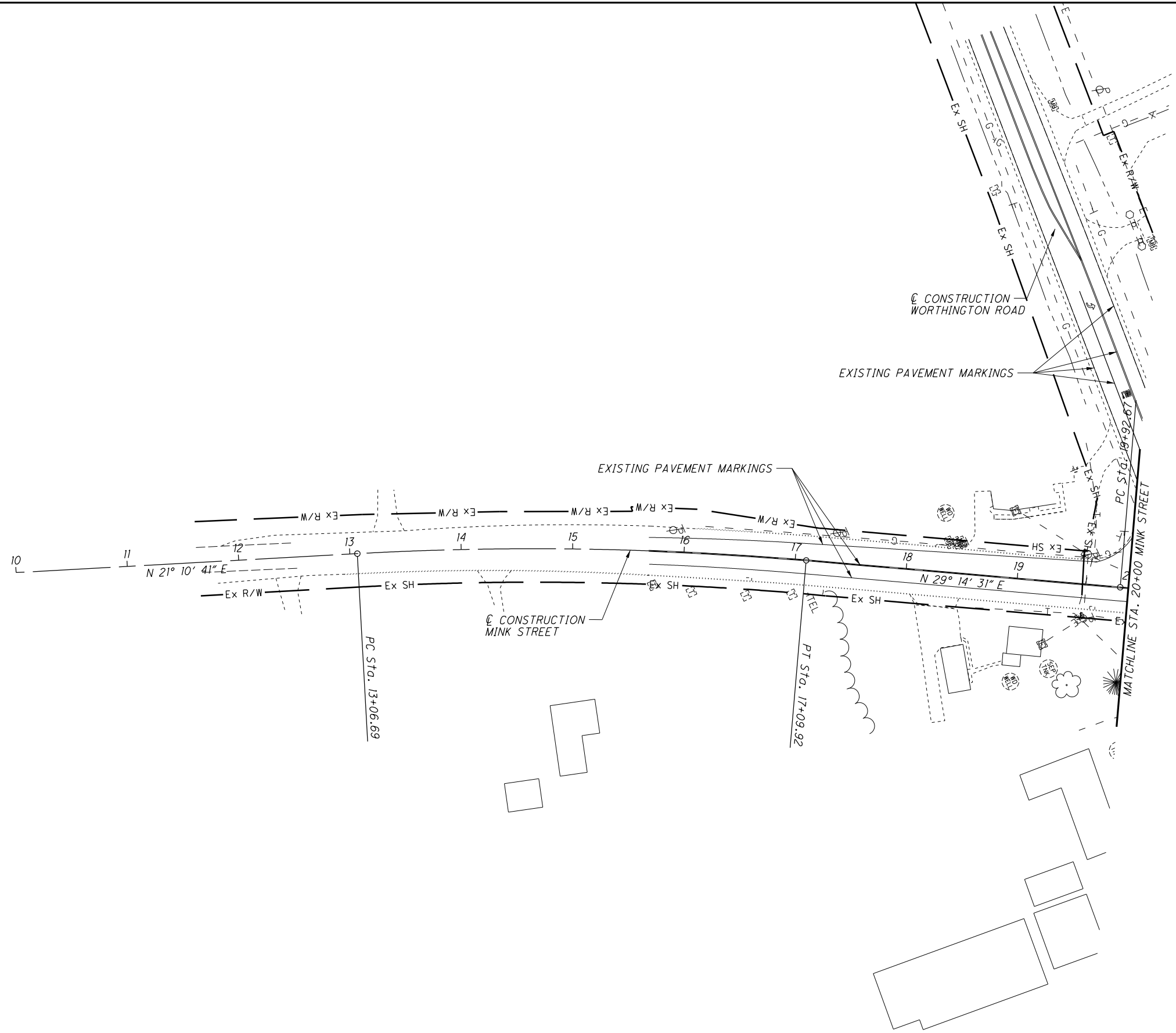
MAINTENANCE OF TRAFFIC - PHASE 3
S.R. 161 STA. 148+50 TO STA. 161+00

LIC-161-1.83

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LEGEND

-  PHASE 3 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"

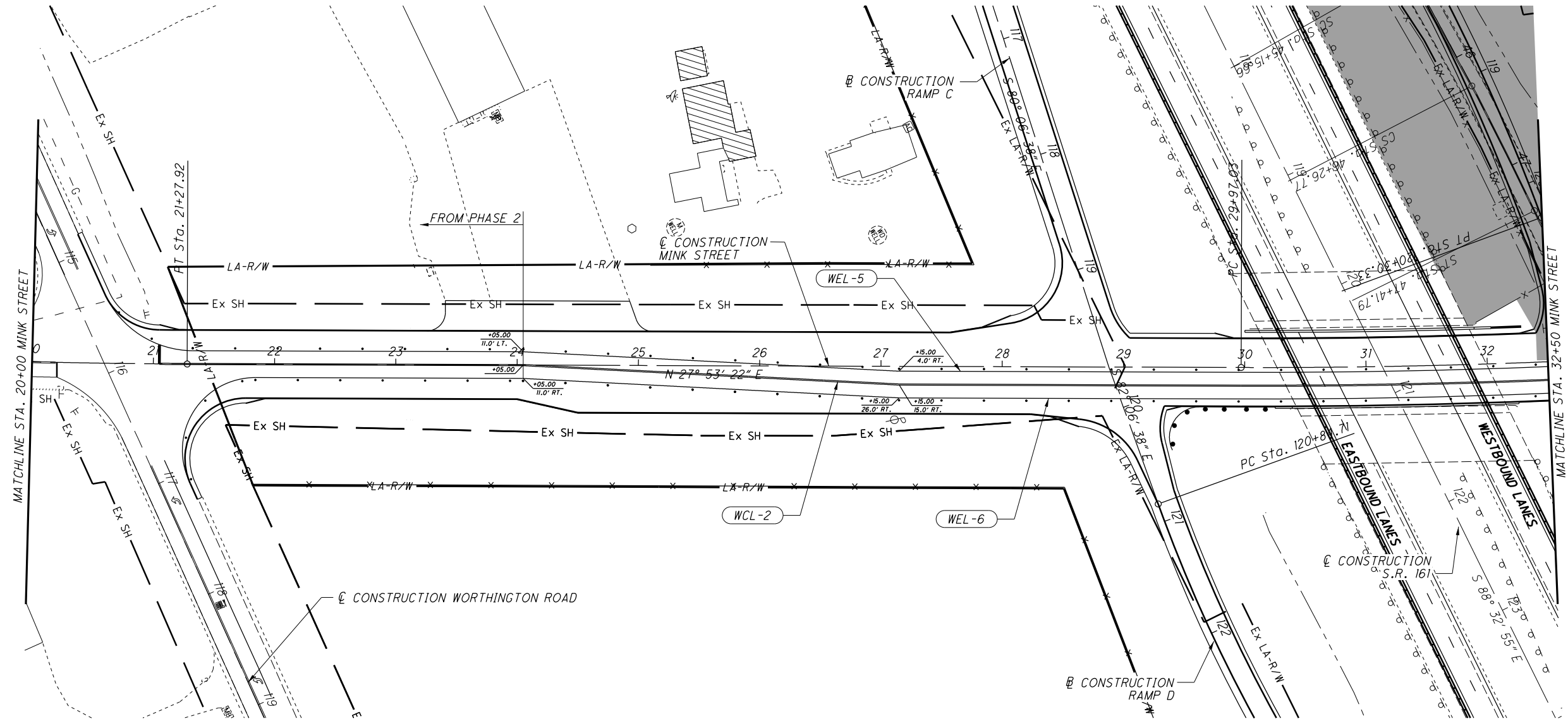


CALCULATED	
CMY	
CHECKED	HAG

MAINTENANCE OF TRAFFIC - PHASE 3
MINK STREET STA. 10+00 TO STA. 20+00

LIC-161-1.83

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LEGEND

- PHASE 3 CONSTRUCTION
- W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
- PORTABLE CONCRETE BARRIER, 32"

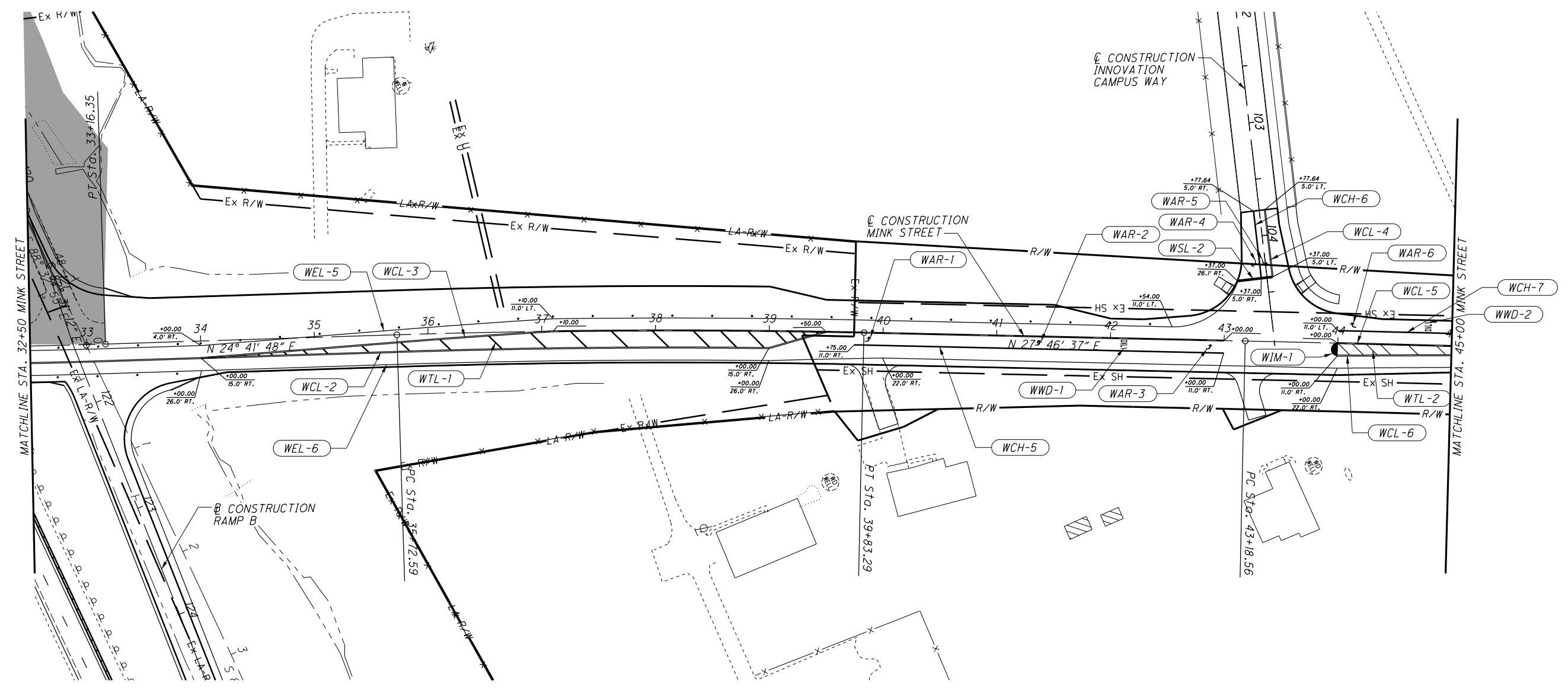


CALCULATED	CMY
CHECKED	HAG




MAINTENANCE OF TRAFFIC - PHASE 3
MINK STREET STA. 20+00 TO STA. 32+50

LIC-161-1.83

REFERENCE	STATION	OFFSET
WAR-1	39+90.00	5.5' RT.
WAR-2	41+40.00	5.5' RT.
WWD-1	42+15.00	5.5' RT.
WAR-3	42+90.00	5.5' RT.
WAR-4	104+27.00	10.5' RT.
WAR-5	104+27.00	CENTERLINE
WAR-6	44+10.00	16.5' LT.
WWD-2	44+76.00	16.5' LT.



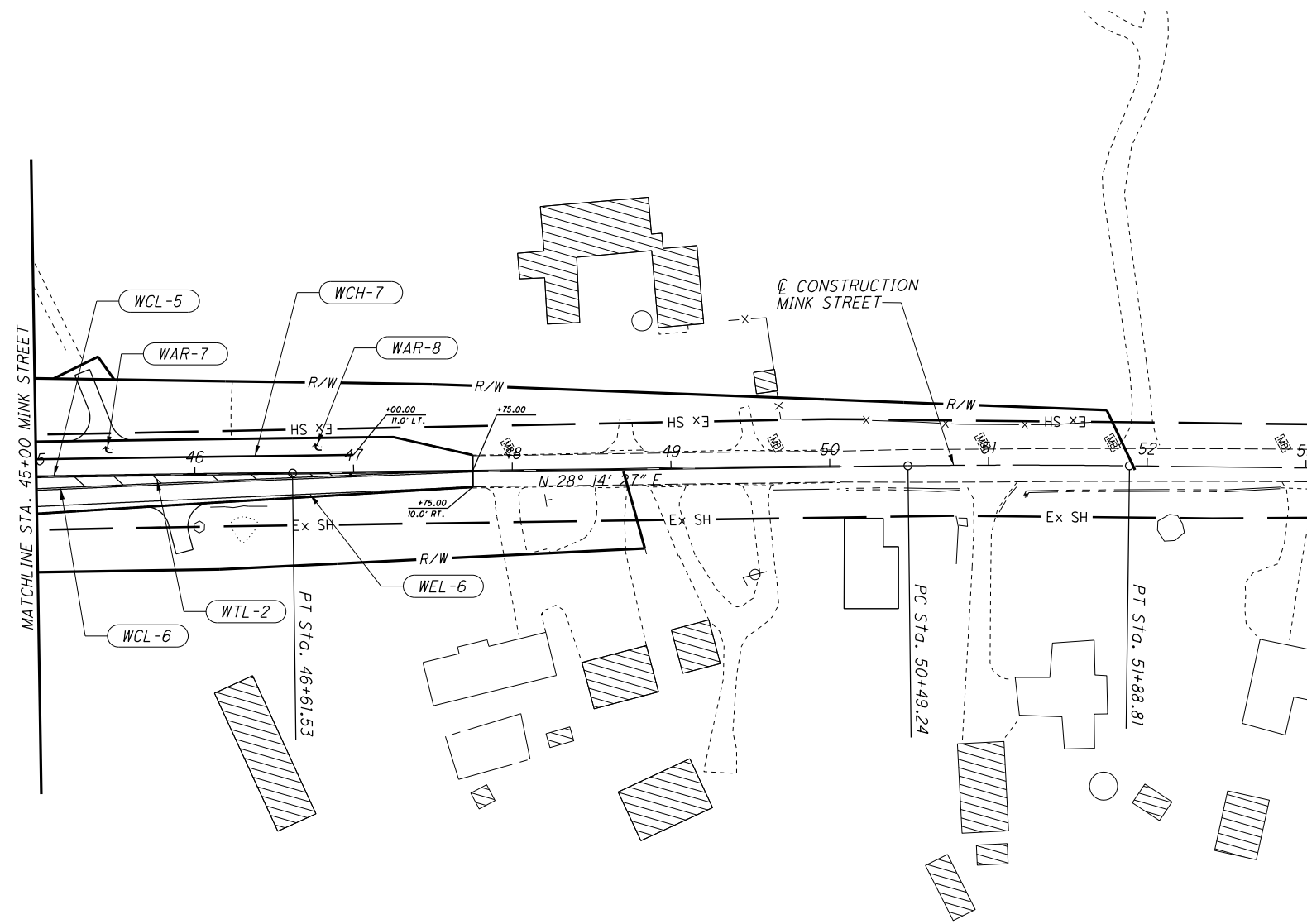
LEGEND

-  PHASE 3 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"




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REFERENCE	STATION	OFFSET
WAR-7	45+42.00	16.5' LT.
WAR-8	46+74.00	16.5' LT.



LEGEND

-  PHASE 3 CONSTRUCTION
-  W.Z.I.A. WORK ZONE IMPACT ATTENUATOR, 24" WIDE (UNIDIRECTIONAL)
-  PORTABLE CONCRETE BARRIER, 32"



CALCULATED
 CMY
 CHECKED
 HAG

**MAINTENANCE OF TRAFFIC - PHASE 3
 MINK STREET STA. 45+00 TO STA. 57+50**

LIC-161-1.83

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REF NO.	SHEET NO.	LOCATION (STATION TO STATION)	WORK ZONE IMPACT ATTENUATOR, 24", (UNIDIRECTIONAL)	WORK ZONE RAISED PAVEMENT MARKER (1-WAY WHITE)	WORK ZONE RAISED PAVEMENT MARKER (1-WAY YELLOW)	BARRIER REFLECTOR, TYPE B (1-WAY WHITE)	OBJECT MARKER, ONE WAY	WORK ZONE LANE LINE, CLASS 1, 642 PAINT	614 WORK ZONE CENTER LINE, CLASS 1, 642 PAINT	WORK ZONE EDGE LINE, CLASS 1, 642 PAINT (WHITE)	WORK ZONE EDGE LINE, CLASS 1, 642 PAINT (YELLOW)	WORK ZONE CHANNELIZING LINE, CLASS 1, 642 PAINT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 642 PAINT	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	WORK ZONE ISLAND MARKING, CLASS 1	621 RAISED PAVEMENT MARKER REMOVED	622 PORTABLE BARRIER, 32"
			EACH	EACH	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FEET	FEET	FEET	EACH	EACH	SO FT	EACH	FEET
PHASE 2																			
		S.R. 161																	
PB-1	42, 43	127+00.00 TO 133+10.00	1			13	13												610
MINK STREET																			
WEL-1	44	115+38.81 TO 29+05.03								0.16									
WCL-1	44	21+05.00 TO 48+09.34						0.23											
WSL-1	44	21+05.00 TO												16					
WEL-2	44	117+07.69 TO 48+18.60								0.24									
SUB-TOTALS			1	0	0	13	13	0	0.23	0.4	0	0	0	16	0	0	0	0	610
TOTALS CARRIED TO GENERAL SUMMARY			1	0		13	13	0	0.23	0.4	0	0	0	16	0	0	0	0	610

CALCULATED CMY	CHECKED HAG	PHASE 2 MAINTENANCE OF TRAFFIC SUBSUMMARY
		57 336

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REF NO.	SHEET NO.	LOCATION (STATION TO STATION)	WORK ZONE IMPACT ATTENUATOR, 24" (UNIDIRECTIONAL)	WORK ZONE RAISED PAVEMENT MARKER (1-WAY WHITE)	WORK ZONE RAISED PAVEMENT MARKER (1-WAY YELLOW)	BARRIER REFLECTOR, TYPE B (1-WAY WHITE)	OBJECT MARKER, ONE WAY	WORK ZONE LANE LINE, CLASS 1, 642 PAINT	614	WORK ZONE CENTER LINE, CLASS 1, 642 PAINT	WORK ZONE EDGE LINE, CLASS 1, 642 PAINT (WHITE)	WORK ZONE EDGE LINE, CLASS 1, 642 PAINT (YELLOW)	WORK ZONE CHANNELIZING LINE, CLASS 1, 642 PAINT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 642 PAINT	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	WORK ZONE ISLAND MARKING, CLASS 1	621	622			
			EACH	EACH	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FEET	FEET	FEET	EACH	EACH	SO FT	EACH	FEET				
PHASE 3																							
S.R. 161																							
WCH-1	47	88+40.00 TO 97+40.00		46									900							46			
WCH-2	47, 48	91+40.00 TO 100+40.00		46									900							46			
YEL-1	47-52	91+40.00 TO 148+60.00			92						1.08	1.08								92			
WEL-3	47-52	91+40.00 TO 148+60.00		92							1.08									92			
YEL-2	47-52	94+40.00 TO 155+00.00			92						1.15	1.15								92			
WEL-4	47-52	94+40.00 TO 155+00.00		92							1.15									92			
WLL-1	47-51	97+40.00 TO 142+60.00		39				0.86												39			
PB-2	47-51	97+40.00 TO 144+70.00	1			96	96														4730		
WLL-2	48-52	100+40.00 TO 149+00.00		42				0.92												42			
PB-3	48-51	101+70.00 TO 145+60.00	1			89	89														4390		
WCH-3	51, 52	142+60.00 TO 151+60.00		46									900							46			
WCH-4	52	149+00.00 TO 158+00.00		46									900							46			
MINK STREET																							
WEL-5	54, 55	24+05.00 TO 104+37.00									0.36												
WCL-2	54, 55	24+05.00 TO 39+50.00							0.29														
WEL-6	54-56	24+05.00 TO 47+75.00									0.49												
WCL-3	55	34+00.00 TO 43+00.00							0.17														
WTL-1	55	34+00.00 TO 39+50.00												236									
WCH-5	55	39+75.00 TO 43+00.00											325										
WAR-1	55	39+90.00 TO													1								
WAR-2	55	41+40.00 TO													1								
WWD-1	55	42+15.00 TO														1							
WAR-3	55	42+90.00 TO													1								
WIM-1	55	44+00.00 TO															57						
WCH-7	55, 56	44+00.00 TO 47+00.00											300										
WCL-5	55, 56	44+00.00 TO 47+75.00							0.07														
WCL-6	55, 56	44+00.00 TO 47+75.00							0.07														
WTL-2	55, 56	44+00.00 TO 47+75.00												120									
WAR-6	55	44+10.00 TO													1								
WWD-2	55	44+76.00 TO														1							
WAR-7	56	45+42.00 TO														1							
WAR-8	56	46+74.00 TO														1							
INNOVATION CAMPUS WAY																							
WSL-2	55	104+37.00 TO														31							
WCH-6	55	103+77.64 TO 104+37.00											60										
WCL-4	55	103+77.64 TO 104+37.00							0.01														
WAR-4	55	104+27.00 TO														1							
WAR-5	55	104+27.00 TO														1							
SUB-TOTALS			2	449	184	185	185	1.78	0.61	3.08	2.23	4285	356	31	8	2	57	633	9120				
TOTALS CARRIED TO GENERAL SUMMARY			2	633	185	185	1.78	0.61	5.31	4285	356	31	8	2	57	633	9120						

CALCULATED CMY CHECKED HAG	PHASE 3 MAINTENANCE OF TRAFFIC SUBSUMMARY	LIC-161-1.83
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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
20	21	23	69	70	71	72	80	81	216	219	317	01/NHS/PV							
																		ROADWAY	
	LS											LS	201	11000	LS		CLEARING AND GRUBBING		
									18			18	202	20010	18	EACH	HEADWALL REMOVED		
						683						683	202	23000	683	SY	PAVEMENT REMOVED		
24,195						413		580				25,188	202	23010	25,188	SY	PAVEMENT REMOVED, ASPHALT		
						705						705	202	30000	705	SF	WALK REMOVED		
						LS						LS	202	30204	LS		STEPS REMOVED		
												810	202	32000	810	FT	CURB REMOVED		
												2,470	202	35100	7,781	FT	PIPE REMOVED, 24" AND UNDER		
												136	202	35200	136	FT	PIPE REMOVED, OVER 24"		
						2,148						2,148	202	38000	2,148	FT	GUARDRAIL REMOVED		
						7						7	202	53100	7	EACH	MAILBOX REMOVED		
												16	202	58100	16	EACH	CATCH BASIN REMOVED		
												4	202	62700	4	EACH	SEPTIC TANK REMOVED		
						4						4	SPECIAL	20266000	4	EACH	DRILLED WATER WELL ABANDONED	19	
	20											20	SPECIAL	20270110	20	FT	PIPE CLEANOUT, 24" AND UNDER	21	
	40											40	SPECIAL	20270120	40	FT	PIPE CLEANOUT, 27" TO 48"	21	
												50	SPECIAL	20270130	50	FT	PIPE CLEANOUT OVER 48"	21	
	50											10,084	202	75000	10,084	FT	FENCE REMOVED		
						5						5	202	75250	5	EACH	GATE REMOVED		
						LS						LS	202	98000	LS		REMOVAL MISC.:LANDSCAPE ROCKS	20	
						LS						LS	202	98000	LS		REMOVAL MISC.:DRIVEWAY GATE	20	
												LS	202	98000	LS		REMOVAL MISC.:PRIVATE SIGN	20	
						LS						LS	202	98000	LS		REMOVAL MISC.:TV ANTENNA	20	
						LS						LS	202	98000	LS		REMOVAL MISC.:FLOWER BED	20	
						LS						LS	202	98000	LS		REMOVAL MISC.:PROPANE TANK	20	
50,161												134	203	10000	50,295	CY	EXCAVATION		
64,310													203	20000	64,310	CY	EMBANKMENT		
												48,158	204	10000	49,307	SY	SUBGRADE COMPACTION		
4,107												1,149	204	13000	4,107	CY	EXCAVATION OF SUBGRADE		
4,227													204	30020	4,227	CY	GRANULAR MATERIAL, TYPE C		
												17	204	45000	17	hour	PROOF ROLLING		
6,478													204	50000	6,478	SY	GEOTEXTILE FABRIC		
						2,138						2,138	606	15050	2,138	FT	GUARDRAIL, TYPE MGS		
						538						538	606	15100	538	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS		
						1						1	606	26100	1	EACH	ANCHOR ASSEMBLY, TYPE E		
						3						3	606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E		
						1						1	606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T		
												6	606	26550	6	EACH	ANCHOR ASSEMBLY, MGS TYPE T		
						6						1	606	35002	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
						1						1	606	60022	1	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL)		
						1						1	606	60028	1	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL), 60 MPH, 24" WIDE		
						1						1	606	60028	1	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL), 70 MPH, 24" WIDE		
						6,693						6,693	607	23000	6,693	FT	FENCE, TYPE CLT		
						1						1	607	61200	1	EACH	GATE, TYPE CLT		
						6,693						6,693	607	70000	6,693	FT	FENCELINE SEEDING AND MULCHING		
						918						918	608	10000	918	SF	4" CONCRETE WALK		
						2						2	608	98200	2	EACH	WALKWAY, MISC.:CURB RAMP	21	
						2						2	608	98200	2	EACH	WALKWAY, MISC.:DETECTABLE WARNING	21	
						899						899	622	10100	899	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1		
						544						544	622	10140	544	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C1		
						346						346	622	10160	346	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D		
						1						1	622	24850	1	EACH	CONCRETE BARRIER END SECTION, TYPE B1		
						1						1	622	24860	1	EACH	CONCRETE BARRIER END SECTION, TYPE C1		
						2						2	622	25000	2	EACH	CONCRETE BARRIER END SECTION, TYPE D		
						8						8	622	25006	8	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1		
						2						2	622	25014	2	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1		
						2						2	622	25050	2	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D		

GENERAL SUMMARY

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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
20	22	70	72	216	219						01/NHS/PV							
				73.5								73.5	601	11000	73.5	SY	RIPRAP, TYPE D	
	10											10	601	21050	10	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
		14		49.3	55							118.3	601	32104	118.3	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC	
	5			21.4								26.4	601	32204	26.4	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
86,354				14,625								100,979	659	00510	100,979	SY	SEEDING AND MULCHING, CLASS 2	
4,318												4,318	659	14000	4,318	SY	REPAIR SEEDING AND MULCHING	
4,318												4,318	659	15000	4,318	SY	INTER-SEEDING	
15												15	659	20000	15	TON	COMMERCIAL FERTILIZER	
18												18	659	31000	18	ACRE	LIME	
542												542	659	35000	542	MGAL	WATER	
1,555												1,555	659	40000	1,555	MSF	MOWING	
22,083												22,083	670	00500	22,083	SY	SLOPE EROSION PROTECTION	
					2,584							2,584	670	00700	2,584	SY	DITCH EROSION PROTECTION	
												LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
												400,000	832	30000	400,000	EACH	EROSION CONTROL	

CALCULATED R.J.G. CHECKED HAG	GENERAL SUMMARY	LIC-161-1.83	61 336
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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
22	24	216	219	227							01/NHS/PV							
	198											198	518	40010	198	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
		17										17	602	20000	17	CY	CONCRETE MASONRY	
200			11,002									11,002	605	11100	11,002	FT	6" SHALLOW PIPE UNDERDRAINS	
			421									621	605	13300	621	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
			7,826									7,826	605	14000	7,826	FT	6" BASE PIPE UNDERDRAINS	
200												200	605	32200	200	FT	AGGREGATE DRAINS FOR SPRINGS	
300												300	611	00900	300	FT	6" CONDUIT, TYPE B	
			182									182	611	00900	182	FT	6" CONDUIT, TYPE B, 707.33, 707.42, OR 707.45	
300												300	611	01100	300	FT	6" CONDUIT, TYPE C	
200												200	611	01400	200	FT	6" CONDUIT, TYPE E	
300			881									1,181	611	01500	1,181	FT	6" CONDUIT, TYPE F	
		2,504										2,504	611	04400	2,504	FT	12" CONDUIT, TYPE B	
		353										353	611	04600	353	FT	12" CONDUIT, TYPE C	
		27										27	611	04900	27	FT	12" CONDUIT, TYPE D	
		1,082										1,082	611	05900	1,082	FT	15" CONDUIT, TYPE B	
		74										74	611	06100	74	FT	15" CONDUIT, TYPE C	
		232										232	611	06400	232	FT	15" CONDUIT, TYPE D	
		70										70	611	07400	70	FT	18" CONDUIT, TYPE B	
		253										253	611	07600	253	FT	18" CONDUIT, TYPE C	
		369										369	611	10400	369	FT	24" CONDUIT, TYPE B	
		16										16	611	10600	16	FT	24" CONDUIT, TYPE C	
		90										90	611	13400	90	FT	30" CONDUIT, TYPE B	
		23										23	611	16400	23	FT	36" CONDUIT, TYPE B	
		25										25	611	19200	25	FT	42" CONDUIT, TYPE A, 706.02	
		131										131	611	23800	131	FT	60" CONDUIT, TYPE B	
		44										44	611	26000	44	FT	72" CONDUIT, TYPE A , 706.02	
		22										22	611	52502	22	FT	24" X 38" CONDUIT, TYPE B, 706.04	
				26								26	611	96499	26	FT	20' X 8' CONDUIT, TYPE A, 706.05, AS PER PLAN, DESIGN COVER 9 FT	220
		85										85	611	96600	85	FT	CONDUIT, BORED OR JACKED, 15" TYPE B	
		3										3	611	98151	3	EACH	CATCH BASIN, NO. 3, AS PER PLAN	22
		19										19	611	98181	19	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	22
		3										3	611	98301	3	EACH	CATCH BASIN, NO. 5, AS PER PLAN	22
		2										2	611	98471	2	EACH	CATCH BASIN, NO. 2-2B, AS PER PLAN	22
		2										2	611	98511	2	EACH	CATCH BASIN, NO. 2-3, AS PER PLAN	22
		1										1	611	98541	1	EACH	CATCH BASIN, NO. 2-4, AS PER PLAN	22
		4										4	611	99101	4	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN	22
		1										1	611	99111	1	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE C1, AS PER PLAN	22
		1										1	611	99575	1	EACH	MANHOLE, NO. 3, AS PER PLAN	22
4			16									20	611	99710	20	EACH	PRECAST REINFORCED CONCRETE OUTLET	
	56											56	613	41200	56	CY	LOW STRENGTH MORTAR BACKFILL	

CALCULATED	R.J.G.	CHECKED	HAG
GENERAL SUMMARY			
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SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
20	22	31	36	37	80	81					01/NHS/P V		EXT	TOTAL			
					5,033						5,033		252	01500	5,033	FT	FULL DEPTH PAVEMENT SAWING
					58,847						58,847		254	01000	58,847	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)
		2,563			1,028						3,591		254	01000	3,591	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)
	75		5	5	6,281						6,366		301	46000	6,366	CY	ASPHALT CONCRETE BASE, PG64-22
						147					147		301	48000	147	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)
					8,156						8,156		304	20000	8,156	CY	AGGREGATE BASE
		255	5	5	190	46					501		407	10000	501	GAL	TACK COAT
					9,576						9,576		407	20000	9,576	GAL	NON-TRACKING TACK COAT
					104						104		441	10100	104	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M
					146						146		441	10200	146	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
		89	10	10							109		441	50000	109	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
						40					40		441	50400	40	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS)
					3,814						3,814		442	10000	3,814	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
					1,562						1,562		442	10100	1,562	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
					11,020						11,020		452	13020	11,020	SY	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC1 WITH OC/QA
					4,759						4,759		609	26000	4,759	FT	CURB, TYPE 6
5.2											5.2		618	40600	5.2	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE)
					7						7		823	10000	7	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448)

GENERAL SUMMARY

LIC-161-1.83

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SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
70	71	259	260	261	280	281	282				01/NHS/P V	EXT	TOTAL				
				293							293	621	00100	293	EACH	TRAFFIC CONTROL	
				118							118	621	54000	118	EACH	RAISED PAVEMENT MARKER REMOVED	
36	44										80	626	00100	80	EACH	BARRIER REFLECTOR	
						454	565				1,019	630	03100	1,019	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
							116				116	630	06400	116	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7	
						428					428	630	07500	428	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X22	
							153				153	630	07600	153	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12	
						2					2	630	08200	2	EACH	GROUND MOUNTED SUPPORT, PIPE	
						16	4				20	630	08600	20	EACH	SIGN POST REFLECTOR	
						16	16				32	630	09000	32	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
						2					2	630	09050	2	EACH	TRIANGULAR SLIP BASE CONNECTION	
							2				2	630	79101	2	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	229
											2	630	79611	2	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	229
						284	26				310	630	80100	310	SF	SIGN, FLAT SHEET	
							173				173	630	80101	173	SF	SIGN, FLAT SHEET, AS PER PLAN	229
						1,051	348				1,399	630	80200	1,399	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
						16	16				32	630	84500	32	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
						2					2	630	84600	2	EACH	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
						33					33	630	84900	33	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
						1					1	630	85400	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
						1					1	630	85600	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND REERECTION	
						29					29	630	86002	29	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
						4					4	630	86102	4	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
							2	6			8	630	97700	8	EACH	SIGNING, MISC.: STREET NAME SIGN, GROUND MOUNTED	229
								2			2	630	97700	2	EACH	SIGNING, MISC.: STREET NAME SIGN, MAST ARM	229
		248									248	644	00500	248	FT	STOP LINE	
		819									819	644	00700	819	FT	TRANSVERSE/DIAGONAL LINE	
		191									191	644	00900	191	SF	ISLAND MARKING	
		33									33	644	01300	33	EACH	LANE ARROW	
		10									10	644	01400	10	EACH	WORD ON PAVEMENT, 72"	
			1.4								1.4	646	10010	1.4	MILE	EDGE LINE, 6"	
			0.06								0.06	646	10110	0.06	MILE	LANE LINE, 6"	
			1,020								1,020	646	10310	1,020	FT	CHANNELIZING LINE, 12"	
			104								104	646	10400	104	FT	STOP LINE	
			14								14	646	20300	14	EACH	LANE ARROW	
			2								2	646	20400	2	EACH	WORD ON PAVEMENT, 72"	
		1.38									1.38	648	00100	1.38	MILE	EDGE LINE, 4"	
		5.18									5.18	648	00104	5.18	MILE	EDGE LINE, 6"	
		0.22									0.22	648	00200	0.22	MILE	LANE LINE, 4"	
		2.58									2.58	648	00204	2.58	MILE	LANE LINE, 6"	
		1.07									1.07	648	00300	1.07	MILE	CENTER LINE	
		3,025									3,025	648	00400	3,025	FT	CHANNELIZING LINE, 8"	
		3,296									3,296	648	00404	3,296	FT	CHANNELIZING LINE, 12"	
		225									225	648	01500	225	FT	DOTTED LINE, 4"	
		3,367									3,367	648	01510	3,367	FT	DOTTED LINE, 6"	

GENERAL SUMMARY

LIC-161-1.83

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SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
310	311	312	313							01/NHS/P V	EXT	TOTAL		SHEET			
TRAFFIC SIGNALS																	
	2									2	625	18201	2	EACH	BRACKET ARM, 15', AS PER PLAN	287	
	36	394	510							940	625	23001	940	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	283	
		228	367	481						1,076	625	25500	1,076	FT	CONDUIT, 3", 725.04		
		58	60	904						1,022	625	25502	1,022	FT	CONDUIT, 3", 725.05		
	26	83	38							147	625	25602	147	FT	CONDUIT, 4", 725.05		
				1,457						1,457	625	25752	1,457	FT	CONDUIT, 4", MULTICELL, 725.20 , EPC-80 FOR INTERCONNECT		
				145						145	625	25900	145	FT	CONDUIT, JACKED OR DRILLED, 4", MULTICELL, 725.20, EPC-80		
	26	369	465							860	625	29002	860	FT	TRENCH, 24" DEEP		
				1,457						1,457	625	29100	1,457	FT	TRENCH, 36" DEEP		
		3	6							9	625	30706	9	EACH	PULL BOX, 725.08, 24"		
				10						10	625	30711	10	EACH	PULL BOX, 725.08, 32", AS PER PLAN	287	
	5	4	4							13	625	32000	13	EACH	GROUND ROD		
	4	5	5							14	632	05007	14	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	285	
	4	1	1							6	632	05087	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	285	
	8	6	6							20	632	25000	20	EACH	COVERING OF VEHICULAR SIGNAL HEAD		
	475									475	632	30300	475	FT	MESSENGER WIRE, 7 STRAND, 7/16" DIAMETER WITH ACCESSORIES		
	475									475	632	30600	475	FT	TETHER WIRE, WITH ACCESSORIES		
	715	580	600							1,895	632	40700	1,895	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		
	4									4	632	64000	4	EACH	STRAIN POLE FOUNDATION		
		3	3							6	632	64010	6	EACH	SIGNAL SUPPORT FOUNDATION		
	40	60	60							160	632	67300	160	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG		
	1	1	1							3	632	70001	3	EACH	POWER SERVICE, AS PER PLAN	283	
			1							1	632	80303	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 3, AS PER PLAN	287	
			1							1	632	80403	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	287	
		2	1							3	632	80503	3	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	287	
		1								1	632	80621	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13, AS PER PLAN	287	
	2									2	632	83001	2	EACH	STRAIN POLE, TYPE TC-81.10, DESIGN 10, AS PER PLAN	287	
	2									2	632	85001	2	EACH	COMBINATION STRAIN POLE, TYPE TC-81.10, DESIGN 10, AS PER PLAN	287	
	1	1	1							3	633	67100	3	EACH	CABINET FOUNDATION		
	1	1	1							3	633	67201	3	EACH	CONTROLLER WORK PAD, AS PER PLAN	285	
	1	1	1							3	633	75001	3	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	286	
	1	1	1							3	633	99000	3	EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE P44	284-285	
			6							6	633	99000	6	EACH	CONTROLLER ITEM, MISC.: ETHERNET TRANSCEIVER, SHORT RANGE	288	
			3							3	633	99000	3	EACH	CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH	288	
			1,530							1,530	804	15040	1,530	FT	FIBER OPTIC CABLE, 144 FIBER		
			4							4	804	30010	4	EACH	FAN-OUT KIT, 12 FIBER		
			102							102	804	32060	102	FT	DROP CABLE, 24 FIBER		
			10							10	804	32990	10	EACH	FIBER OPTIC PATCH CORD, 2 FIBER		
			3							3	804	34022	3	EACH	FIBER TERMINATION PANEL, 24 FIBER		
			96							96	804	35000	96	EACH	FUSION SPLICE		
			3							3	804	36000	3	EACH	SLACK INSTALLATION		
			3							3	804	37000	3	EACH	SPLICE ENCLOSURE		
	3									3	809	69000	3	EACH	ADVANCE RADAR DETECTION		
	4	2	2							8	809	69100	8	EACH	STOP-BAR RADAR DETECTION		

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SHEET NUM.											PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
21	72										01/NHS/P V		EXT	TOTAL				
	LS										LS		202	56000	LS	BUILDING DEMOLITION BUILDING DEMOLISHED, PARCEL 25, 1 STORY FRAME RESIDENCE BUILDING DEMOLISHED, PARCEL 26, 1 STORY FRAME RESIDENCE AND TWO 1 STORY OUTBUILDINGS BUILDING DEMOLISHED, PARCEL 29, 1 STORY FRAME RESIDENCE BUILDING DEMOLISHED, PARCEL 31, 1 STORY WOOD & BRICK RESIDENCE AND TWO 1 STORY OUTBUILDINGS		
	LS										LS		202	56000	LS			
	LS										LS		202	56000	LS			
	LS										LS		202	56000	LS			
	LS										LS		SPECIAL	69071000	LS			
	LS										LS		SPECIAL	69071000	LS			

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SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
227											01/NHS/P V		EXT	TOTAL			
STRUCTURE UNDER 20 FOOT SPAN (SFN 4505565)																	
LS											LS	202	11000	LS		STRUCTURE REMOVED	
LUMP											LUMP	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
LUMP											LUMP	503	21300	LS		UNCLASSIFIED EXCAVATION	
3,097											3,097	509	10000	3,097	LB	EPOXY COATED REINFORCING STEEL	
10.25											10.25	511	46010	10.25	CY	CLASS QC1 CONCRETE	
33											33	511	46510	33	CY	CLASS QC1 CONCRETE, FOOTING	
1											1	511	46610	1	CY	CLASS QC1 CONCRETE, HEADWALL	
100											100	512	33000	100	SY	TYPE 2 WATERPROOFING	
27											27	516	13601	27	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	227
LUMP											LUMP	518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	

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GENERAL SUMMARY					
LIC-161-1.83					
<table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">67</td> </tr> <tr> <td style="padding: 2px;">336</td> </tr> </table>				67	336
67					
336					

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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
20	28	29	30	31	32	36	37	57	58		01/NHS/P V							
	100											100	410	12000	100	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
	100											100	410	13000	100	CY	TRAFFIC COMPACTED SURFACE, TYPE C	
			400									400	614	11110	400	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
		15										15	614	11500	15	MNTH	WORKSITE TRAFFIC SUPERVISOR	
								1	2			3	614	12346	3	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) (24" WIDE)	
						LS	LS					LS	614	12420	LS		DETOUR SIGNING	
				4								4	614	12484	4	EACH	WORK ZONE INCREASED PENALTIES SIGN	
			10									10	614	12500	10	EACH	REPLACEMENT SIGN	
			50									50	614	12600	50	EACH	REPLACEMENT DRUM	
									633			633	614	12800	633	EACH	WORK ZONE RAISED PAVEMENT MARKER	
	150											150	614	13000	150	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
								13	185			198	614	13300	198	EACH	BARRIER REFLECTOR, TYPE B	
								13	185			198	614	13350	198	EACH	OBJECT MARKER, ONE WAY	
		60										60	614	18601	60	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	29
				24								24	614	18700	24	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
					2.86				1.78			4.64	614	20100	4.64	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT	
					1.07			0.23	0.61			1.91	614	21100	1.91	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
					6.68			0.4	5.31			12.39	614	22100	12.39	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT	
					6,321				4,285			10,606	614	23200	10,606	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	
					3,592							3,592	614	24200	3,592	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT	
					819				356			1,175	614	25200	1,175	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
					248			16	31			295	614	26200	295	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
					33				8			41	614	30200	41	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
					10				2			12	614	31200	12	EACH	WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 642 PAINT	
					191				57			248	614	32700	248	SF	WORK ZONE ISLAND MARKING, CLASS I	
		LS										LS	615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
		44										44	615	25000	44	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B	
	458											458	616	10000	458	MGAL	WATER	
									633			633	621	54000	633	EACH	RAISED PAVEMENT MARKER REMOVED	
								610	9,120			9,730	622	41000	9,730	FT	PORTABLE BARRIER, 32"	
												LS	108	10000	LS		INCIDENTALS CPM PROGRESS SCHEDULE	
		LS										LS	614	11000	LS		MAINTAINING TRAFFIC	
												15	619	16020	15	MNTH	FIELD OFFICE, TYPE C	
	LS											LS	623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	20
												LS	624	10000	LS		MOBILIZATION	

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GENERAL SUMMARY			
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336			

97879_GS001.dgn 5/11/2016

REF. NO.	SHEET NO.	STATION TO STATION	202																
			CURB REMOVED	GUARDRAIL REMOVED	MAILBOX REMOVED	FENCE REMOVED	REMOVAL MISC.: LANDSCAPE ROCKS	REMOVAL MISC.: GATES	REMOVAL MISC.: PRIVATE SIGN										
			FT	FT	EACH	FT	LUMP	LUMP	LUMP										
1-R	84-85	STA. 102+37.5 TO STA. 113+00 EB		1,062.5															
2-R	86	STA. 128+50 TO STA. 131+00 EB		250															
3-R	164	STA. 36+90 TO STA. 41+65 LT. (COBBS)		475															
4-R	164	STA. 41+60 LT. (COBBS)						LUMP											
5-R	164	STA. 41+60 LT. AND STA. 42+00 LT. (COBBS)							LUMP										
6-R	164	STA. 41+90 TO STA. 45+50 LT. (EX. COBBS)		360															
7-R	142	STA. 21+10 TO STA. 25+50 LT. (MINK)	440																
8-R	142	STA. 21+70 TO STA. 25+40 RT. (MINK)	370																
9-R	142	STA. 23+15 LT. (MINK)								LUMP									
10-R	143	STA. 39+85 RT. (MINK)							LUMP										
11-R	144	STA. 45+55 LT. (MINK)							LUMP										
12-R	144	STA. 45+80 RT. (MINK)				10													
13-R	144	STA. 46+50 RT. (MINK)							LUMP										
1-MR	142	STA. 25+80 LT.			1														
2-MR	142	STA. 26+75 LT.			1														
3-MR	143	STA. 34+85 LT.			1														
4-MR	143	STA. 37+80 LT.			1														
5-MR	143	STA. 39+60 LT.			1														
6-MR	143	STA. 42+90 LT.			1														
7-MR	144	STA. 45+30 LT.			1														
TOTALS CARRIED TO GENERAL SUMMARY			810	2147.5	7	10	LUMP	LUMP	LUMP										

REMOVAL SUBSUMMARY

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REF. NO.	SHEET NO.	STATION TO STATION	202	601	607			625	FOR INFORMATION ONLY								
			FENCE REMOVED FT	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC CU YD	FENCE, TYPE CLT FT	GATE, TYPE CLT EACH	FENCELINE SEEDING AND MULCHING FT	GROUND ROD EACH	CORNER POST ASSEMBLY EACH	END POST ASSEMBLY EACH	INTERMEDIATE ANCHOR POST ASSEMBLY EACH	TERMINAL POST ASSEMBLY EACH	LINE POST ENCASED IN CONCRETE EACH	FENCE TERMINAL, TYPE D EACH	FENCE CROSSING, TYPE 2 EACH		
1-F	314	STA. 98+50			14		14		1	1							
2-F	314	STA. 98+50 TO STA. 31+92 (MINK)	3109						5		1						
3-F	314	STA. 112+12 TO STA. 25+10 (MINK)			938		938	1									
4-F	314	STA. 112+12 TO STA. 29+76 (MINK)	808														
5-F	314	STA. 116+11 TO STA. 39+75 (MINK)			1077	1	1077	2	2	2		1	1				
6-F	315	STA. 30+35 (MINK) TO STA. 132+26	1306														
7-F	315	STA. 32+24 (MINK) TO STA. 143+50	2460														
8-F	315	STA. 21+83 (MINK) TO STA. 132+39		6.7	1897		1897	1	2			3	1		1	1	
9-F	315	STA. 39+59 (MINK) TO STA. 143+50			2554		2554	2	5			4	1	2			
10-F	315	STA. 132+66 TO STA. 134+72		6.7	213		213					1		1	1	1	
11-F	315	STA. 132+54 TO STA. 134+72	228														
SUB-TOTALS			7911	13.4	6693	1	6693	6	15	3	8	4	4	2	2		
TOTALS CARRIED TO GENERAL SUMMARY			7911	14	6693	1	6693	6									

REF. NO.	SHEET NO.	STATION TO STATION	606							608			626						
			GUARDRAIL, TYPE MGS FT	GUARDRAIL, TYPE MGS WITH LONG POSTS FT	ANCHOR ASSEMBLY, TYPE E EACH	ANCHOR ASSEMBLY, TYPE T EACH	ANCHOR ASSEMBLY, MGS TYPE E EACH	ANCHOR ASSEMBLY, MGS TYPE T EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE I EACH	4" CONCRETE WALK SF	WALKWAY, MISC.: CURB RAMP (TYPE C) EACH	WALKWAY, MISC.: DETECTABLE WARNING EACH	BARRIER REFLECTOR, TYPE A EACH	BARRIER REFLECTOR, TYPE A2 EACH					
1-GR	84-85	STA. 102+37.50 TO STA. 112+72.35 EB	984.5					1						11					
2-GR	86	STA. 130+11.20 TO STA. 133+25.00 EB	300						1					4					
3-GR	127	STA. 112+71.67 TO STA. 116+00.00 RT. (RAMP C)	315.5						1					5					
4-GR	133	STA. 125+00.00 TO STA. 130+12.32 RT. (RAMP D)	462.5					1						6					
5-GR	142	STA. 29+40.61 TO STA. 30+25.00 RT. (MINK)	75						1	1						2			
6-GR	164	STA. 36+89.97 TO STA. 41+58.37 LT. (COBBS)		450					2							6			
7-GR	164	STA. 41+95.36 TO STA. 43+46.22 LT. (COBBS)		87.5				1	1							2			
1-R	84-85	STA. 113+00.00 EB			1														
2-R	86	STA. 128+50.00 EB				1													
1-CR	143	STA. 104+44.60, 32.2' RT. (INNOVATION CAMPUS WAY)									1	1							
2-CR	143	STA. 104+50.60, 26.3' LT. (INNOVATION CAMPUS WAY)									1	1							
1-W	142	STA. 30+00.00 TO STA. 32+04.00 LT. (MINK) WIDTH = 4.5'									918								
TOTALS CARRIED TO GENERAL SUMMARY			2,137.50	537.5	1	1	3	6	1	918	2	2		36					

FENCE / GUARDRAIL / ROADWAY SUBSUMMARY

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REF. NO.	SHEET NO.	STATION TO STATION	606			622							626		FOR INFORMATION ONLY			
			IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL) 60 MPH, 24" WIDE EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL) 70 MPH, 24" WIDE EACH	CONCRETE BARRIER, SINGLE SLOPE, TYPE BI FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE CI FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D FT	CONCRETE BARRIER END SECTION, TYPE BI EACH	CONCRETE BARRIER END SECTION, TYPE CI EACH	CONCRETE BARRIER END SECTION, TYPE D EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE BI EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE CI EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D EACH	BARRIER REFLECTOR, TYPE B EACH	BARRIER REFLECTOR, TYPE B2 EACH		
		S.R. 161/RAMP A BARRIER																
		STA. 98+47.06 TO STA. 98+77.06			1				1									
		STA. 98+77.06 TO STA. 98+92.00											1					1
		STA. 98+92.00 TO STA. 99+12.00																
		STA. 99+12.00 TO STA. 99+27.00											1					
		STA. 99+27.00 TO STA. 101+25.00				198												
		STA. 101+25.00 TO STA. 101+40.00											1					
		STA. 101+40.00 TO STA. 101+60.00											1					1
		STA. 101+60.00 TO STA. 101+75.00											1					
		STA. 101+75.00 TO STA. 104+25.00				250												
		STA. 104+25.00 TO STA. 104+40.00											1					
		STA. 104+40.00 TO STA. 104+60.00											1					1
		STA. 104+60.00 TO STA. 104+75.00											1					
		STA. 104+75.00 TO STA. 107+25.00				250												
		STA. 107+25.00 TO STA. 107+40.00											1					
		STA. 107+40.00 TO STA. 107+60.00											1					1
		STA. 107+60.00 TO STA. 107+75.00											1					
		STA. 107+75.00 TO STA. 109+76.00				201												
		STA. 109+76.00 TO STA. 110+27.00					51											
		STA. 110+27.00 TO STA. 110+42.00											1					
		STA. 110+42.00 TO STA. 110+62.00											1					1
		STA. 110+62.00 TO STA. 110+77.00																
		STA. 110+77.00 TO STA. 115+70.00						493										
		STA. 115+70.00 TO STA. 116+00.00		1							1							
		S.R. 161/RAMP A SIDE - STA. 98+47.00 TO STA. 116+00.00													19			
		COBBS ROAD SIDE - STA. 98+47.00 TO STA. 116+00.00														19		
		MINK STREET LEFT SIDE																
		STA. 30+00.00 TO STA. 30+15.00												1				
		STA. 30+15.00 TO STA. 31+90.00							175									
		STA. 31+90.00 TO STA. 32+04.00	1									1						
		STA. 30+00.00 TO STA. 32+04.00															3	
		MINK STREET RIGHT SIDE																
		STA. 30+25.00 TO STA. 30+39.00																
		STA. 30+39.00 TO STA. 32+10.00							171			1						
		STA. 32+10.00 TO STA. 32+25.00											1					
		STA. 30+25.00 TO STA. 32+25.00															3	
TOTALS CARRIED TO GENERAL SUMMARY			1	1	1	899	544	346	1	1	2	8	2	2	44			

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CONCRETE BARRIER SUBSUMMARY	
LIC-161-1.83	
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REF. NO.	SHEET NO.	LOCATION	202													203	653	659
			PAVEMENT REMOVED SY	PAVEMENT REMOVED, ASPHALT SY	WALK REMOVED SF	STEPS REMOVED LS	BUILDING DEMOLISHED LS	SEPTIC TANK REMOVED EACH	SPECIAL - DRILLED WATER WELL - ABANDONED EACH	FENCE REMOVED FT	GATE REMOVED EACH	REMOVAL MISC.: TV ANTENNA LS	REMOVAL MISC.: FLOWER BED LS	REMOVAL MISC.: PROPANE TANK LS	REMOVAL MISC.: LANDSCAPE ROCKS LS	EXCAVATION CY	TOPSOIL FURNISHED AND PLACED CY	SEEDING AND MULCHING, CLASS 2 SY
		PARCEL 26																
1-BR																		
2-BR																		
3-BR																		
4-BR																		
5-BR																		
		PARCEL 25																
6-BR																		
7-BR																		
8-BR																		
9-BR																		
10-BR																		
11-BR																		
12-BR																		
13-BR																		
14-BR																		
15-BR																		
		PARCEL 29																
16-BR																		
17-BR																		
18-BR																		
19-BR																		
20-BR																		
21-BR																		
22-BR																		
23-BR																		
24-BR																		
		PARCEL 31																
25-BR																		
26-BR																		
27-BR																		
28-BR																		
29-BR																		
30-BR																		
31-BR																		
32-BR																		
33-BR																		
TOTALS CARRIED TO GENERAL SUMMARY			683	413	705	LS	LS	4	4	2163	5	LS	LS	LS	LS	134	245	14625

CALCULATED	CMY
	CHECKED
HAG	
BUILDING DEMO SUBSUMMARY	
LIC-161-1.83	
72 336	

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6	2.50"	
										SY	HOUR	FT													SY
S.R. 161 WESTBOUND LANES																									
88+00.00 to 119+88.77		3,188.77	24.0	8,503.4					8503.4																
119+88.77 to 121+63.98		175.21	BRIDGE LIMITS																						
121+63.98 to 158+00.00		3,636.02	24.0	9,696.1					9696.1																
S.R. 161 WESTBOUND SHOULDERS																									
88+00.00 to 97+77.06	LT.	977.06	10.0	1,085.7					1085.7																
97+77.06 to 112+58.86	LT.	1,481.80	ACCELERATION LANE																						
112+58.86 to 119+97.72	LT.	738.86	10.0	821.0					821.0																
119+97.72 to 120+25.72	LT.	28.00	12.0	37.4					37.4																
120+25.72 to 122+00.93	LT.	175.21	BRIDGE LIMITS																						
122+00.93 to 122+20.93	LT.	20.00	12.0	26.7					26.7																
122+20.93 to 130+25.17	LT.	804.24	10.0	893.6					893.6																
130+25.17 to 142+00.00	LT.	1,174.83	DECELERATION LANE																						
142+00.00 to 158+00.00	LT.	1,600.00	10.0	1,777.8					1777.8																
88+00.00 to 119+88.77	MEDIAN	3,188.77	6.0	2,125.9					2125.9																
119+88.77 to 121+63.98	MEDIAN	175.21	BRIDGE LIMITS																						
121+63.98 to 158+00.00	MEDIAN	3,636.02	6.0	2,424.1					2424.1																
Sub-Totals Carried to Sheet 80									27391.7								2465.3				1141.3				

CALCULATED	CMY
	CHECKED
HAG	
S.R. 161 WESTBOUND PAVEMENT CALCULATIONS	
LIC-161-1.83	
73	
336	

Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6	2.50"	
										SY	HOUR	FT													SY
S.R. 161 EASTBOUND LANES																									
88+00.00 to 119+88.77		3,188.77	24.0	8,503.4					8503.4																
119+88.77 to 121+63.98		175.21	BRIDGE LIMITS																						
121+63.98 to 158+00.00		3,636.02	24.0	9,696.1					9696.1																
S.R. 16 EASTBOUND SHOULDERS																									
88+00.00 to 104+50.00	RT.	1,650.00	10.0	1,833.4					1833.4																
104+50.00 to 112+72.35	RT.	822.35	DECELERATION LANE																						
112+72.35 to 119+31.83	RT.	659.48	10.0	732.8					732.8																
119+31.83 to 119+51.83	RT.	20.00	12.0	26.7					26.7																
119+51.83 to 121+27.04	RT.	175.21	BRIDGE LIMITS																						
121+27.04 to 121+47.04	RT.	20.00	12.0	26.7					26.7																
121+47.04 to 130+11.20	RT.	864.16	10.0	960.2					960.2																
130+11.20 to 145+44.86	RT.	1,533.66	ACCELERATION LANE																						
145+44.86 to 158+00.00	RT.	1,255.14	10.0	1,394.6					1394.6																
88+00.00 to 119+88.77	MEDIAN	3,188.77	6.0	2,125.9					2125.9																
119+88.77 to 121+63.98	MEDIAN	175.21	BRIDGE LIMITS																						
121+63.98 to 158+00.00	MEDIAN	3,636.02	6.0	2,424.1					2424.1																
Sub-Totals Carried to Sheet 80									27723.9								2495.2				1155.2				

CALCULATED CMY	CHECKED HAG	S.R. 161 EASTBOUND PAVEMENT CALCULATIONS

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6	2.50"
										ASPHALT CONCRETE BASE, PG64-22	ASPHALT CONCRETE BASE, PG64-22	ASPHALT CONCRETE BASE, PG64-22												
LT./RT.	Lin. Ft.	Ft.	Sq. Yd.	SY	HOUR	FT	SY	CY	CY	CY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY	SY	FT	CY		
WESTBOUND ONRAMP (RAMP A)																								
97+77.06 to 110+27.06		1,250.00	12.50 (AVG.)	1,736.2	1736.2	0.58	1250.0					337.6	289.4		47.0	208.3				72.3	84.4			
110+27.06 to 112+58.86		231.80	VARIES	764.8	764.8	0.26	231.8					148.7	127.5		8.7	91.8				31.9	37.2			
SHOULDER																								
97+77.06 to 98+77.06		LT.	100.00	9.00 (AVG.)	100.0	116.7	0.04					20.7	19.1			12.0				4.2	4.9			
98+77.06 to 110+27.06		LT.	1,150.00	8.0	1,022.3	1022.3	0.35					198.8	170.4			122.7				42.6	49.7			
110+27.06 to 110+77.06		LT.	50.00	7.00 (AVG.)	38.9	38.9	0.02					7.6	6.5			4.7				1.6	1.9			
110+77.06 to 112+58.86		LT.	181.80	6.0	121.3	121.3	0.05					23.6	20.2			14.6				5.1	5.9			
PAVEMENT UNDER BARRIER																								
98+20.00 to 109+76.15		LT.	1,156.15	3.3	425.6	618.2	0.21					101.5	103.0			25.5					20.7			
WESTBOUND OFFRAMP (RAMP B)																								
130+25.17 to 136+40.43			615.26	VARIES	1,514.8	1514.8	0.51	515.3				294.5	252.5		23.1	181.8				63.1	73.6			
136+40.43 to 141+00.00			459.57	12.0	612.8	612.8	0.21	459.6				119.2	102.1		17.3	73.5				25.5	29.8			
141+00.00 to 142+00.00			100.00	6.00 (AVG.)	66.7	66.7	0.03	100.0				13.0	11.1		3.8	8.0				2.8	3.2			
SHOULDER																								
130+25.17 to 141+00.00		LT.	1,074.83	8.0	955.5	1134.5	0.38					199.3	185.8			114.7				39.8	46.4			
141+00.00 to 142+00.00		LT.	100.00	9.00 (AVG.)	100.0	116.7	0.04					20.7	19.1			12.0				4.2	4.9			
EASTBOUND OFFRAMP (RAMP C)																								
104+50.00 to 105+50.00			100.00	6.00 (AVG.)	66.7	66.7	0.03	100.0				13.0	11.1		3.8	8.0				2.8	3.2			
105+50.00 to 107+16.00			166.00	12.0	221.4	221.4	0.08	166.0				43.1	36.9		6.2	26.6				9.2	10.8			
107+16.00 to 112+72.35			556.35	VARIES	1,299.1	1299.1	0.44	556.4				252.6	216.5		20.9	155.9				54.1	63.2			
SHOULDER																								
104+50.00 to 105+50.00		RT.	100.00	9.00 (AVG.)	100.0	116.7	0.04					20.7	19.1			12.0				4.2	4.9			
105+50.00 to 112+72.35		RT.	722.35	8.0	642.1	762.5	0.26					134.0	124.9			77.1				26.8	31.2			
EASTBOUND ONRAMP (RAMP D)																								
130+11.20 to 132+94.86			283.66	VARIES	935.6	935.6	0.32	283.7				181.9	155.9		10.7	112.3				39.0	45.5			
132+94.86 to 145+44.86			1,250.00	12.50 (AVG.)	1,736.2	1736.2	0.58	1250.0				337.6	289.4		47.0	208.3				72.3	84.4			
SHOULDER																								
130+11.20 to 132+44.86		RT.	233.66	6.0	155.8	194.7	0.07					33.2	31.7			18.7				6.5	7.6			
132+44.86 to 132+94.86		RT.	50.00	7.00 (AVG.)	38.9	47.2	0.02					8.2	7.7			4.7				1.6	1.9			
132+94.86 to 144+44.86		RT.	1,150.00	8.0	1,022.3	1213.9	0.41					213.3	198.8			122.7				42.6	49.7			
144+44.86 to 145+44.86		RT.	100.00	9.00 (AVG.)	100.0	116.7	0.04					20.7	19.1			12.0				4.2	4.9			
Sub-Totals Carried to Sheet 80					14574.5	5.0	5012.6					2743.3	2417.9		188.6	1627.7				556.3	669.7			

CALCULATED
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ONRAMP & OFFRAMP PAVEMENT CALCULATIONS
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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	AGGREGATE BASE	AGGREGATE BASE	TACK COAT (@ 0.25 GAL./SQ. YD.)(VERTICAL FACE)	NON-TRACKING TACK COAT (@ 0.06 GAL./SQ. YD.)	NON-TRACKING TACK COAT (@ 0.09 GAL./SQ. YD.)	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/QA	CURB, TYPE 6	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448)	
										SY	HOUR	FT													SY
RAMP A																									
112+57.49 to 120+33.59		776.10	16.0	1,379.8	1379.8	0.46								230.0										1,379.8	
120+33.59 to 120+45.15	RT.	11.56	16.0	20.6	20.6	0.01								3.5										20.6	
120+45.15 to 120+85.15	RT.	40.00	18.00 (AVG.)	80.0	80.0	0.03								13.4										80.0	
120+85.15 to 121+20.45	RT.	35.30	VARIES	100.2	100.2	0.04								16.7										100.2	
120+33.59 to 120+73.59	LT.	40.00	2.00 (AVG.)	8.9	8.9	0.01								1.5										8.9	
120+73.59 to 121+20.45	LT.	46.86	VARIES	77.7	77.7	0.03								13.0										77.7	
SHOULDERS																									
112+57.49 to 120+85.15	RT.	827.66	3.0	275.9	413.9	0.10								53.7										275.9	
120+85.15 to 32+41.08 (MINK)	RT.	*38.23	3.0	12.8	19.2	0.01								2.5										12.8	
* = Distance along radius																									
112+57.49 to 120+73.59	LT.	816.10	6.0	544.1	544.1	0.19								98.3										544.1	
120+73.59 to 33+16.92 (MINK)	LT.	*64.26	6.0	42.9	42.9	0.02								7.8										42.9	
* = Distance along radius																									
Additional Area																									
116+00.00 to 117+00.00			VARIES	110.8	126.2	0.05					138.8			211.1		13.3		3.8	5.4						
RAMP B																									
121+80.55 to 121+90.07	RT.	9.52	VARIES	24.1	24.1	0.01								4.1										24.1	
121+90.07 to 129+00.00	RT.	709.93	16.0	1,262.1	1262.1	0.43								210.4										1,262.1	
121+80.55 to 122+57.23	LT.	76.68	VARIES	200.4	200.4	0.07								33.4										200.4	
122+57.23 to 128+50.00	LT.	592.77	8.0	527.0	527.0	0.18								87.9										527.0	
128+50.00 to 129+00.00	LT.	50.00	4.00 (AVG.)	22.3	22.3	0.01								3.8										22.3	
129+00.00 to 130+25.43		125.43	16.0	223.0	223.0	0.08								37.2										223.0	
SHOULDERS																									
32+80.02 (MINK) to 121+90.07	RT.	*17.33	3.0	5.8	8.7	0.01								1.2										5.8	
121+90.07 to 130+25.43	RT.	835.36	3.0	278.5	417.7	0.10								54.2										278.5	
* = Distance along radius																									
33+72.35 (MINK) to 122+57.23	LT.	*87.82	6.0	58.6	73.2	0.02								10.6										58.6	
122+57.23 to 129+25.43	LT.	668.20	6.0	445.5	556.9	0.15								80.5										445.5	
129+25.43 to 130+25.43	LT.	100.00	7.00 (AVG.)	77.8	94.5	0.03								13.9										77.8	
* = Distance along radius																									
Sub-Totals Carried to Sheet 80					6223.4	2.0				138.8				1188.7		13.3		3.8	5.4				5668.0		

CALCULATED	CMY	CHECKED	HAG
RAMP'S A & B PAVEMENT CALCULATIONS			
LIC-161-1.83			
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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	609	823	
										SY	HOUR	FT													SY
RAMP C																									
112+71.67 to 114+75.00		203.33	16.0	361.5	361.5	0.13								60.3										361.5	
114+75.00 to 115+25.00	RT.	50.00	4.00 (AVG.)	22.3	22.3	0.01								3.8										22.3	
115+25.00 to 118+75.66	RT.	350.66	8.0	311.7	311.7	0.11								52.0										311.7	
118+75.66 to 119+55.70	RT.	80.04	VARIES	211.8	211.8	0.08								35.3										211.8	
114+75.00 to 119+37.46	LT.	462.46	16.0	822.2	822.2	0.28								137.1										822.2	
119+37.46 to 119+55.70	LT.	18.24	VARIES	45.6	45.6	0.02								7.6										45.6	
SHOULDERS																									
112+71.67 to 113+71.67	RT.	100.00	7.00 (AVG.)	77.8	94.5	0.03								13.9										77.8	
113+71.67 to 118+75.66	RT.	503.99	6.0	336.0	420.0	0.12								60.7										336.0	
118+75.66 to 28+07.18 (MINK)	RT.	*86.32	6.0	57.6	72.0	0.02								10.4										57.6	
* = Distance along radius																									
112+71.67 to 119+37.46	LT.	665.79	3.0	222.0	332.9	0.08								43.2										222.0	
119+37.46 to 29+05.03 (MINK)	LT.	*30.54	3.0	10.2	15.3	0.01								2.0										10.2	
* = Distance along radius																									
RAMP D																									
120+04.15 to 120+44.84	RT.	40.69	VARIES	62.1	62.1	0.03								10.4										62.1	
120+44.84 to 120+84.84	RT.	40.00	2.00 (AVG.)	8.9	8.9	0.01								1.5										8.9	
120+04.15 to 120+38.34	LT.	34.19	VARIES	86.6	86.6	0.03								14.5										86.6	
120+38.34 to 120+78.34	LT.	40.00	18.00 (AVG.)	80.0	80.0	0.03								13.4										80.0	
120+78.34 to 120+84.84	LT.	6.50	16.0	11.6	11.6	0.01								2.0										11.6	
120+84.84 to 130+12.32		927.48	16.0	1,648.9	1648.9	0.55								274.9										1,648.9	
SHOULDERS																									
28+63.56 (MINK) to 120+44.84	RT.	*61.34	6.0	40.9	51.2	0.02								7.4										40.9	
120+44.84 to 130+12.32	RT.	967.48	6.0	645.0	806.3	0.22								116.5										645.0	
* = Distance along radius																									
29+33.78 (MINK) to 120+38.34	LT.	*30.88	3.0	10.3	15.5	0.01								2.1										10.3	
120+38.34 to 130+12.32	LT.	834.09	3.0	278.1	417.1	0.10								54.1										278.1	
* = Distance along radius																									
Sub-Totals Carried to Sheet 80					5898.0	1.9								923.1										5351.1	

CALCULATED
 CMY
 CHECKED
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RAMP'S C&D PAVEMENT CALCULATIONS
LIC-161-1.83
 77
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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6	2.50"	
										SY	HOUR	FT													SY
MINK STREET																									
13+00.00 to 17+00.00	RT.	400.00	15.00 (AVG.)	666.7					666.7																
17+00.00 to 20+17.00	RT.	317.00	18.0	634.0					634.0																
20+17.00 to 20+46.15	RT.	29.15	VARIES	94.1					94.1																
20+46.15 to 20+85.90	RT.	39.75	Worthington Rd Intersection																						
20+85.90 to 21+76.39	RT.	90.49	VARIES	415.6	415.6	0.14			69.3	69.3					49.9						17.3	20.2			
21+76.39 to 24+00.00	RT.	223.61	28.0	695.7	695.7	0.24			116.0	116.0					83.5						29.0	33.8			
24+00.00 to 24+50.00	RT.	50.00	33.50 (AVG.)	186.2	186.2	0.07			31.0	31.0					22.3						7.8	9.1			
24+50.00 to 28+23.56	RT.	373.56	39.0	1,618.8	1618.8	0.54			269.8	269.8					194.3						67.5	78.7			
28+23.56 to 28+63.56	RT.	40.00	41.00 (AVG.)	182.3	182.3	0.07			30.4	30.4					21.9						7.6	8.9			
28+63.56 to 29+33.78	RT.	70.22	37.50 (AVG.)	292.6	292.6	0.10			48.8	48.8					35.1						12.2	14.2			
29+33.78 to 30+26.80	RT.	93.02	32.0	330.8	330.8	0.12			55.1	55.1					39.7						13.8	16.1			
30+26.80 to 32+55.00	RT.	228.20	32.0	811.4	811.4	0.28			143.0	143.0					102.9						33.8	41.7			
32+55.00 to 32+80.02	RT.	25.02	32.0	89.0	89.0	0.03			14.8	14.8					10.7						3.7	4.3			
32+80.02 to 33+72.35	RT.	92.33	34.00 (AVG.)	348.9	348.9	0.12			58.2	58.2					41.9						14.5	17.0			
33+72.35 to 34+22.35	RT.	50.00	32.00 (AVG.)	177.8	177.8	0.06			29.6	29.6					21.3						7.4	8.6			
34+22.35 to 44+00.00	RT.	977.65	28.0	3,041.6	3041.6	1.02			506.9	506.9					365.0						126.7	147.9			
44+00.00 to 47+75.00	RT.	375.00	19.00 (AVG.)	791.7	791.7	0.27			132.0	132.0					95.0						33.0	38.5			
SHOULDER																									
13+00.00 to 16+10.00	RT.	310.00	6.0	206.7					206.7						18.6						8.6				
16+10.00 to 20+17.00	RT.	407.00	4.0	180.9					180.9						16.3						7.5				
20+17.00 to 116+43.21 (WORTH)	RT.	*67.47	4.0	30.0					30.0						2.7						1.3				
* = Distance along radius																									
117+10.83 (WORTH) to 21+76.39	RT.	*99.89	4.0	44.4	61.0	0.03			8.0	8.9					5.3						1.9	2.2			
21+76.39 to 21+92.39	RT.	16.00	2.00 (AVG.)	3.6	6.2	0.01			0.6	0.6					0.4						0.2	0.2		16.0	
21+92.39 to 28+39.56	RT.	647.17	NO SHOULDER																				647.2		
28+39.56 to 28+63.56	RT.	24.00	3.00 (AVG.)	8.0	12.0	0.01			1.3	1.3					1.0						0.3	0.4		24.0	
28+63.56 to 29+33.78	RT.	70.22	RAMP D INTERSECTION																						
29+33.78 to 29+35.89	RT.	2.11	3.0	0.8	1.1	0.01			0.1	0.1					0.1						0.1	0.1			
29+35.89 to 29+47.89	RT.	12.00	1.50 (AVG.)	2.0	4.0	0.01			0.3	0.3					0.2						0.1	0.1		12.0	
29+47.89 to 30+25.00	RT.	77.11	NO SHOULDER																				77.1		
30+25.00 to 32+25.00	RT.	200.00	NO SHOULDER																						
32+25.00 to 32+66.50	RT.	41.50	NO SHOULDER																					41.5	
32+66.50 to 32+78.50	RT.	12.00	1.50 (AVG.)	2.0	4.0	0.01			0.3	0.3					0.2						0.1	0.1		12.0	
32+78.50 to 32+80.02	RT.	1.52	3.0	0.6	0.8	0.01			0.1	0.1					0.1						0.1	0.1			
32+80.02 to 33+72.35	RT.	92.33	RAMP B INTERSECTION																						
33+72.35 to 33+96.35	RT.	24.00	3.00 (AVG.)	8.0	12.0	0.01			1.3	1.3					1.0						0.3	0.4		24.0	
33+96.35 to 47+75.00	RT.	1,378.65	NO SHOULDER																					1,378.7	
Sub-Totals Carried to Sheet 80					9083.5	3.2		1812.4	1517.0	1517.9				1091.8	163.1						452.8	442.4		2232.4	

CALCULATED
 CMY
 CHECKED
 HAG
MINK STREET RIGHT SIDE PAVEMENT CALCULATIONS
LIC-161-1.83
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Location (Station to Station)	Side	Length Lin. Ft.	Pavement Width Ft.	Pavement Area Sq. Yd.	204		252	254		301			304		407			441		442		452	609	823
					SUBGRADE COMPACTION SY	PROOF ROLLING HOUR	FULL DEPTH PAVEMENT SAWING FT	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP) SY	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP) SY	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6 FT	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) CY
										ASPHALT CONCRETE BASE, PG64-22 CY	ASPHALT CONCRETE BASE, PG64-22 CY	ASPHALT CONCRETE BASE, PG64-22 CY	AGGREGATE BASE CY	AGGREGATE BASE CY	TACK COAT (@ 0.25 GAL/SQ. YD.)(VERTICAL FACE) GAL	NON-TRACKING TACK COAT (@ 0.06 GAL/SQ. YD.) GAL	NON-TRACKING TACK COAT (@ 0.09 GAL/SQ. YD.) GAL	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446) CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446) CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446) CY	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/QA SY		
MINK STREET																								
13+00.00 to 17+00.00	LT.	400.00	15.00 (AVG.)	666.7					666.7															
17+00.00 to 19+57.83	LT.	257.83	18.0	515.7					515.7															
19+57.83 to 20+46.15	LT.	88.32	VARIABLES	329.7					329.7															
20+46.15 to 20+85.90	LT.	39.75	Worthington Rd Intersection																					
20+85.90 to 21+05.08	LT.	19.18	VARIABLES	99.3	99.3	0.04				16.6		16.6			11.9					4.1	4.8			
21+05.08 to 27+57.18	LT.	652.10	28.0	2,028.8	2028.8	0.68				338.1		338.1			243.5					84.5	98.6			
27+57.18 to 28+07.18	LT.	50.00	32.00 (AVG.)	177.8	177.8	0.06				29.6		29.6			21.3					7.4	8.6			
28+07.18 to 29+05.03	LT.	97.85	30.00 (AVG.)	326.2	326.2	0.11				54.4		54.4			39.1					13.6	15.9			
29+05.03 to 32+41.08	LT.	336.05	24.0	896.2	896.2	0.30				149.4		149.4			107.5					37.3	43.6			
32+41.08 to 33+16.92	LT.	75.84	33.50 (AVG.)	282.3	282.3	0.10				47.1		47.1			33.9					11.8	13.7			
33+16.92 to 33+56.92	LT.	40.00	41.00 (AVG.)	182.3	182.3	0.07				30.4		30.4			21.9					7.6	8.9			
33+56.92 to 39+00.00	LT.	543.08	39.0	2,353.4	2353.4	0.79				392.2		392.2			282.4					98.1	114.4			
39+00.00 to 39+50.00	LT.	50.00	33.50 (AVG.)	186.2	186.2	0.07				31.0		31.0			22.3					7.8	9.1			
39+50.00 to 41+50.00	LT.	200.00	28.0	622.3	622.3	0.21				103.7		103.7			74.7					25.9	30.3			
41+50.00 to 42+00.00	LT.	50.00	22.50 (AVG.)	125.0	125.0	0.05				20.8		20.8			15.0					5.2	6.1			
42+00.00 to 42+28.93	LT.	28.93	17.0	54.7	54.7	0.02				9.1		9.1			6.6					2.3	2.7			
42+28.93 to 42+68.93	LT.	40.00	19.00 (AVG.)	84.5	84.5	0.03				14.1		14.1			10.1					3.5	4.1			
42+68.93 to 43+98.92	LT.	129.99	23.50 (AVG.)	339.5	339.5	0.12				56.6		56.6			40.7					14.1	16.5			
43+98.92 to 44+38.92	LT.	40.00	24.00 (AVG.)	106.7	106.7	0.04				17.8		17.8			12.8					4.4	5.2			
44+38.92 to 47+25.00	LT.	286.08	22.0	699.4	699.4	0.24				116.6		116.6			83.9					29.1	34.0			
47+25.00 to 47+75.00	LT.	50.00	16.00 (AVG.)	88.9	88.9	0.03				14.8		14.8			10.7					3.7	4.3			
SHOULDER																								
13+00.00 to 16+10.00	LT.	310.00	6.0	206.7					206.7															
16+10.00 to 19+57.83	LT.	347.83	4.0	154.6					154.6															
19+57.83 to 114+85.92 (WORTH)	LT.	*101.07	4.0	45.0					45.0															
* = Distance along radius																								
115+39.40 (WORTH) to 21+05.08	LT.	*56.99	4.0	25.4	34.8	0.02				4.6		5.1			3.0					1.1	1.2			
21+05.08 to 21+21.08	LT.	16.00	2.00 (AVG.)	3.6	6.2	0.01				0.6		0.6			0.4					0.2	0.2		16.0	
21+21.08 to 27+83.18	LT.	662.10	NO SHOULDER																				662.1	
27+83.18 to 28+07.18	LT.	24.00	3.00 (AVG.)	8.0	12.0	0.01				1.3		1.3			1.0					0.3	0.4		24.0	
28+07.18 to 29+05.03	LT.	97.85	RAMP C INTERSECTION																					
29+05.03 to 29+75.00	LT.	69.97	4.0	31.1	42.8	0.02				5.6		6.3			3.7					1.3	1.5			
29+75.00 to 29+91.00	LT.	16.00	2.00 (AVG.)	3.6	6.2	0.01				0.6		0.6			0.4					0.2	0.2		16.0	
29+91.00 to 32+27.35	LT.	236.35	NO SHOULDER																				236.4	
32+27.35 to 32+39.35	LT.	12.00	1.50 (AVG.)	2.0	4.0	0.01				0.3		0.3			0.2					0.1	0.1		12.0	
32+39.35 to 32+41.08	LT.	1.73	3.0	0.6	0.9	0.01				0.1		0.1			0.1					0.1	0.1			
32+41.08 to 33+16.92	LT.	75.84	RAMP A INTERSECTION																					
33+16.92 to 33+40.92	LT.	24.00	3.00 (AVG.)	8.0	12.0	0.01				1.3		1.3			1.0					0.3	0.4		24.0	
33+40.92 to 42+68.93	LT.	928.01	NO SHOULDER																				928.0	
42+68.93 to 43+98.92	LT.	129.99	INNOVATION CAMPUS WAY INTERSECTION																					
43+98.92 to 47+75.00	LT.	376.08	NO SHOULDER																				376.1	
Sub-Totals Carried to Sheet 80																								
					8772.4	3.1			1918.4	1456.7		1457.9			1048.3	172.7				444.0	424.7		2294.5	

CALCULATED
CMY
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MINK STREET LEFT SIDE PAVEMENT CALCULATIONS

LIC-161-1.83

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Location (Station to Station)	Side	Length	Pavement Width	Pavement Area	204		252	254		301			304		407			441		442		452	609	823	
					SUBGRADE COMPACTION	PROOF ROLLING	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" DEEP)	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/2" DEEP)	4.00"	6.00"	7.00"	6.00"	8.00"	0.25	0.06	0.09	1.25"	1.75"	1.50"	1.75"	9.00"	CURB, TYPE 6	2.50"	
										SY	HOUR	FT													SY
COBBS ROAD																									
37+00.00 to 41+67.34		467.34	20.0	1,038.6	1116.4	0.38	20.0			117.3				180.3		0.6	124.6		36.1	50.5					
41+67.34 to 43+50.00		182.66	VARIES	1,237.1	1291.0	0.44				138.8				211.1			148.5		43.0	60.1					
SHOULDER																									
37+00.00 to 37+50.91	RT.	50.91	7.50 (AVG.)	42.5	42.5	0.02				4.7				7.1			5.1		1.5	2.1					
37+50.91 to 38+00.26	RT.	49.35	8.00 (AVG.)	43.9	43.9	0.02				4.9				7.3			5.3		1.5	2.1					
38+00.26 to 43+00.00	RT.	499.74	9.00	499.8	499.8	0.17				55.5				83.3			60.0		17.4	24.3					
43+00.00 to 43+20.00	RT.	20.00	VARIES	16.7	16.7	0.01				1.9				2.8			2.0		0.6	0.8					
37+00.00 to 41+67.34	LT.	467.34	4.0	207.8										46.2											
41+67.34 to 43+30.00 (RT)	LT.	*287.70	4.0	127.9										28.4											
* = Distance along cul-de-sac radius																									
COBBS ROAD SUB-TOTALS					3010.3	1.0	20.0			323.1				491.9	74.6	0.6	345.4		100.0	139.9					
INNOVATION CAMPUS WAY																									
103+77.64 to 104+17.64	RT.	40.00	18.00 (AVG.)	80.0	80.0	0.03					13.3			13.3			9.6				3.3	3.9		40.0	
104+17.64 to 104+69.80	RT.	52.16	VARIES	186.6	186.6	0.07					31.1			31.1			22.4				7.8	9.1		#75.5	
# = Distance along radius																									
103+77.64 to 103+91.98	LT.	14.34	16.00	25.5	25.5	0.01					4.3			4.3			3.1				1.1	1.2		14.3	
103+91.98 to 104+31.98	LT.	40.00	18.00 (AVG.)	80.0	80.0	0.03					13.3			13.3			9.6				3.3	3.9		40.0	
104+31.98 to 104+69.80	LT.	37.82	VARIES	130.0	130.0	0.05					21.7			21.7			15.6				5.4	6.3		#61.5	
COMMUNITY PATH																									
103+77.64 to 43+98.92 (MINK)		104.78	8.00	93.2	93.2						17.5													6.5	
# = Distance along radius																									
INNOVATION CAMPUS WAY SUB-TOTALS					595.3	0.2				101.1				83.7			60.3				20.9	24.4		231.3	6.5
WORTHINGTON ROAD																									
114+85.00 to 117+25.00	RT.	240.00	12.00	320.0																					
114+85.00 to 117+25.00	LT.	240.00	24.00	640.0																					
SHOULDER																									
114+85.00 to 114+85.92	RT.	0.92	4.00	0.5																					
114+85.92 to 116+43.21	RT.	157.29	MINK STREET INTERSECTION																						
116+43.21 to 117+25.00	RT.	81.79	4.00	36.4																					
114+85.00 to 115+39.40	LT.	54.40	4.00	24.2																					
115+39.40 to 117+10.83	LT.	171.43	MINK STREET INTERSECTION																						
117+10.83 to 117+25.00	LT.	14.17	4.00	6.3																					
WORTHINGTON ROAD SUB-TOTALS																									
S.R. 161 WESTBOUND SUB-TOTALS CARRIED FROM SHEET 73										27391.7															
S.R. 161 EASTBOUND SUB-TOTALS CARRIED FROM SHEET 74										27723.9															
ACCEL & DECEL LANES SUB-TOTALS CARRIED FROM SHEET 75					14574.5	5.0	5012.6					2743.3	2417.9		188.6	1627.7				556.3	669.7				
RAMP A & B SUB-TOTALS CARRIED FROM SHEET 76					6223.4	2.0				138.8				1188.7			13.3		3.8	5.4			5668.0		
RAMP C & D SUB-TOTALS CARRIED FROM SHEET 77					5898.0	1.9								923.1								5351.1			
MINK STREET RIGHT SIDE SUB-TOTALS CARRIED FROM SHEET 78					9083.5	3.2					1812.4	1517.0		1517.9			1091.8	163.1			452.8	442.4		2232.4	
MINK STREET LEFT SIDE SUB-TOTALS CARRIED FROM SHEET 79					8772.4	3.1					1918.4	1456.7		1457.9			1048.3	172.7			444.0	424.7		2294.5	
COBBS ROAD SUB-TOTALS CARRIED FROM THIS SHEET					3010.3	1.0	20.0			323.1				491.9	74.6	0.6	345.4		100.0	139.9					
INNOVATION CAMPUS WAY SUB-TOTALS CARRIED FROM THIS SHEET					595.3	0.2					101.1			83.7			60.3				20.9	24.4		231.3	6.5
WORTHINGTON ROAD SUB-TOTALS CARRIED FROM THIS SHEET											1027.4														
TOTALS CARRIED TO GENERAL SUMMARY					48158	17	5033	1028	58847		6281			8156		190	9576		104	146	3814	1562	11020	4759	7

SIDE ROAD PAVEMENT CALCULATIONS & TOTALS

LIC-161-1.83

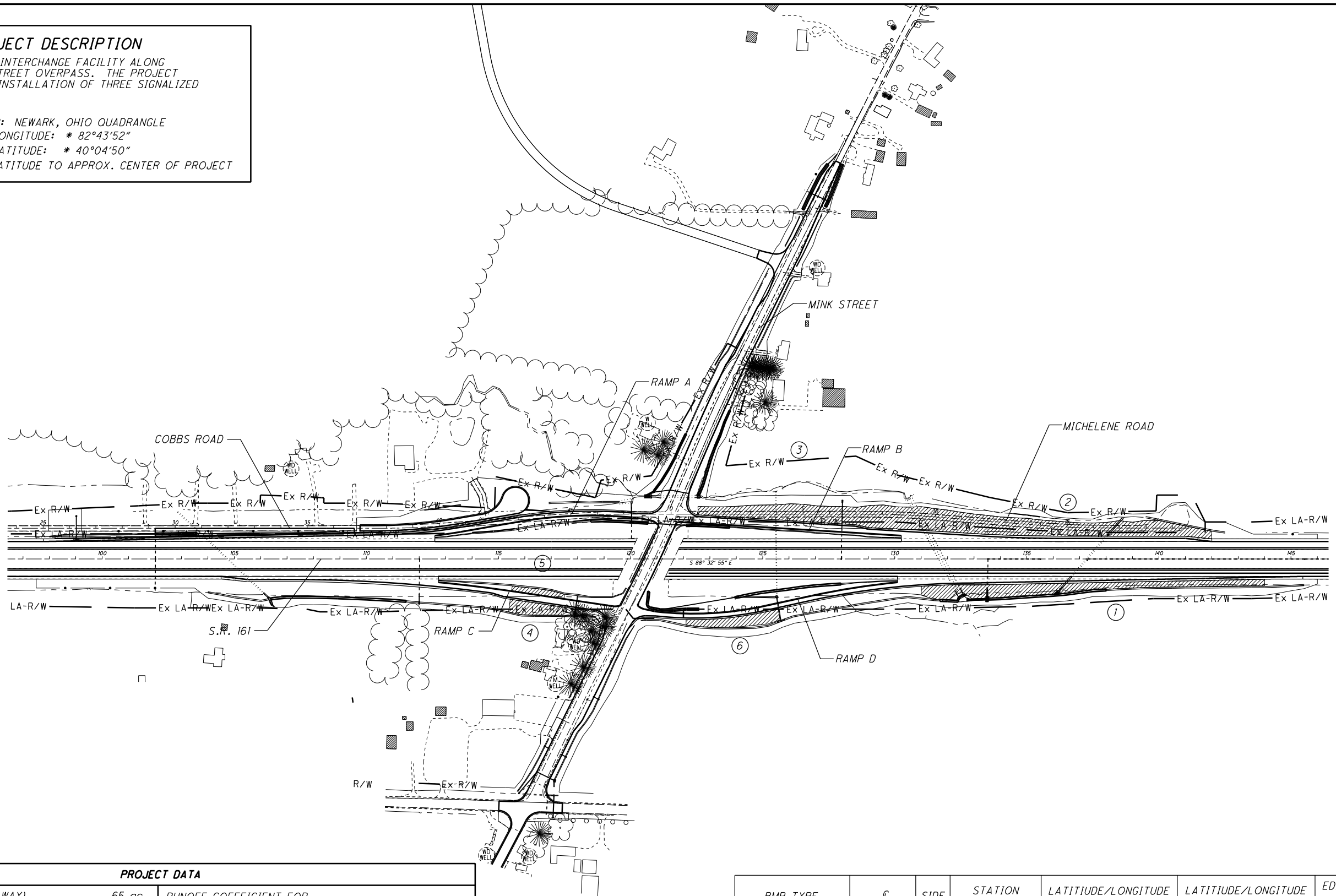
CALCULATED
CMY
CHECKED
HAG

PROJECT DESCRIPTION

CONSTRUCTION OF INTERCHANGE FACILITY ALONG S.R. 161 AT MINK STREET OVERPASS. THE PROJECT WILL INCLUDE THE INSTALLATION OF THREE SIGNALIZED INTERSECTIONS.

USGS MAP: NEWARK, OHIO QUADRANGLE
 LONGITUDE: * 82°43'52"
 LATITUDE: * 40°04'50"

* LONGITUDE AND LATITUDE TO APPROX. CENTER OF PROJECT



PROJECT SITE PLAN

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PROJECT DATA

TOTAL AREA (RIGHT-OF-WAY) 65 ac	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE 0.62
PROJECT EARTH DISTURBED AREA 30 ac	RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE 0.65
ESTIMATED CONTRACTOR EARTH DISTURBED AREA 3 ac	POST CONSTRUCTION BMP: VEGETATED FILTER STRIPS WERE PROVIDED TO MEET NPDES POST-CONSTRUCTION REQUIREMENTS. SEE THIS SHEET AND CROSS-SECTION SHEETS FOR LOCATIONS.
NOTICE OF INTENT EARTH DISTURBED AREA 33 ac	
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION AREA 13 ac	IMMEDIATE RECEIVING WATERS TRIBUTARY TO SOUTH FORK LICKING RIVER
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION AREA 18 ac	SUBSEQUENT RECEIVING WATERS SOUTH FORK LICKING RIVER

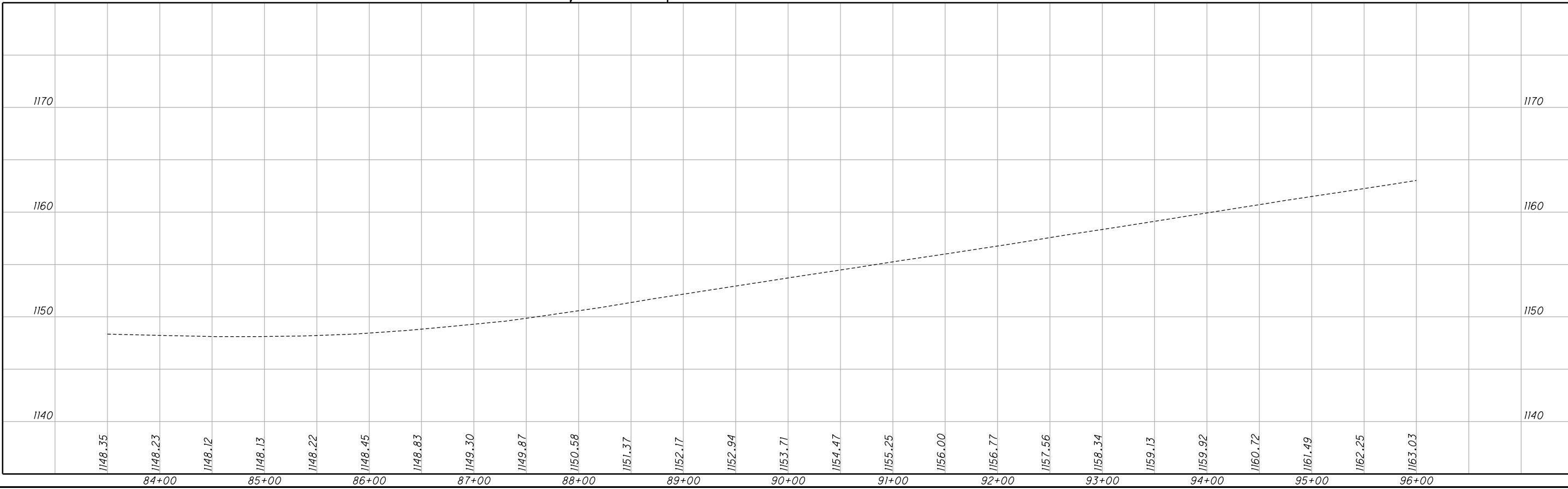
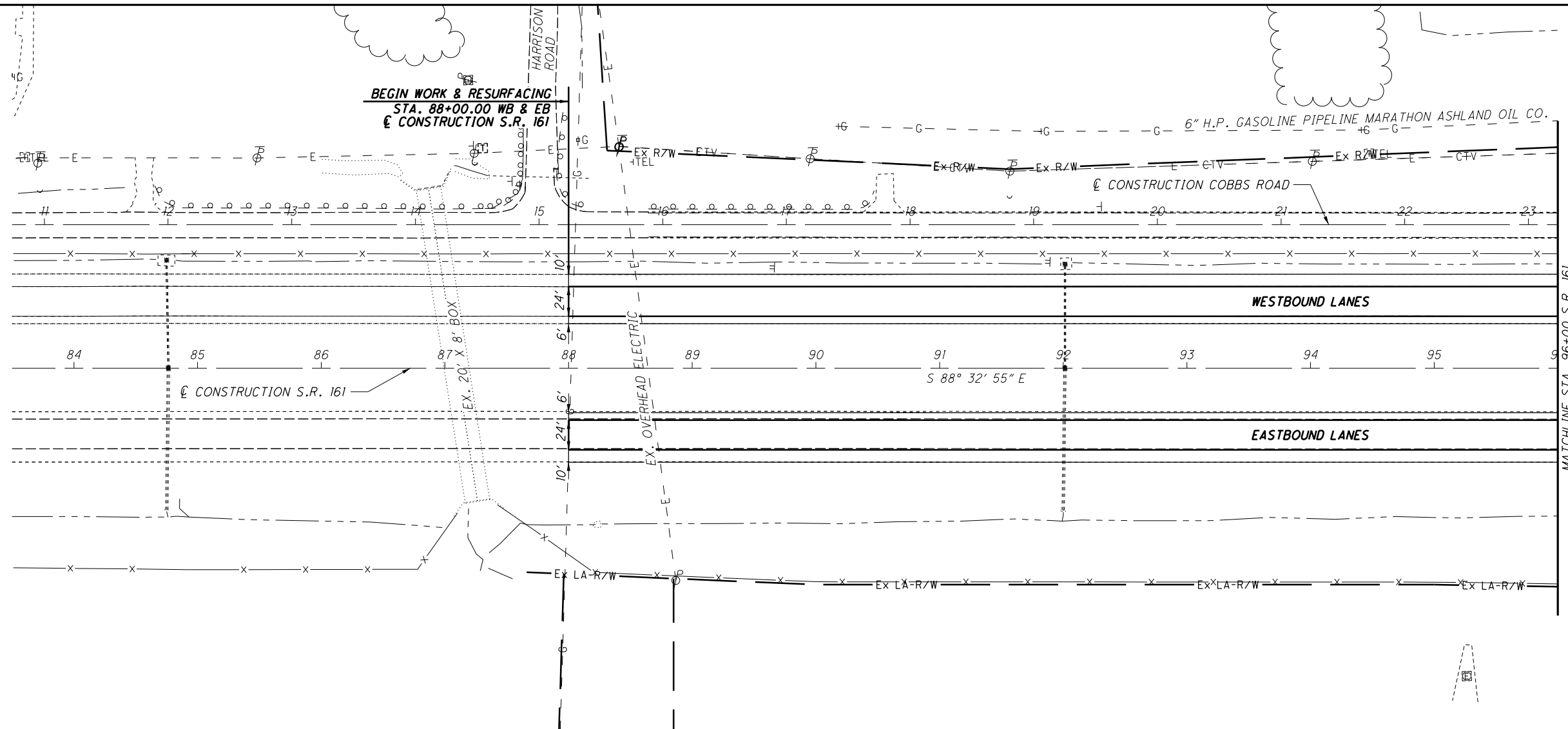
BMP TYPE	C	SIDE	STATION		LATITUDE/LONGITUDE		LATITUDE/LONGITUDE		EDA TREATMENT CREDIT (ACRES)
			BEGIN	END	BEGIN	END			
① VEG. FILTER STRIP	S.R. 161	RT	131+50	144+00	41.7464943	-82.7236411	41.7464868	-82.7190597	2.0
② VEG. FILTER STRIP	S.R. 161	LT	130+50	142+00	41.7470442	-82.7239909	41.7468694	-82.7197811	2.6
③ VEG. FILTER STRIP	RAMP B	LT	122+50	130+00	41.7472509	-82.7269071	41.7470556	-82.7241710	0.8
④ VEG. FILTER STRIP	RAMP C	RT	115+50	117+50	41.7464853	-82.7297001	41.7463593	-82.7287997	0.4
⑤ VEG. FILTER STRIP	RAMP C	LT	115+50	117+50	41.7465171	-82.7295072	41.7464242	-82.7287848	0.1
⑥ VEG. FILTER STRIP	RAMP D	RT	122+00	125+50	41.7461995	-82.7270923	41.7462856	-82.7258186	0.3
TREATMENT PROVIDED									6.2
TREATMENT REQUIRED*									6.0

LEGEND

▨ VEGETATED FILTER STRIP

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

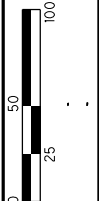
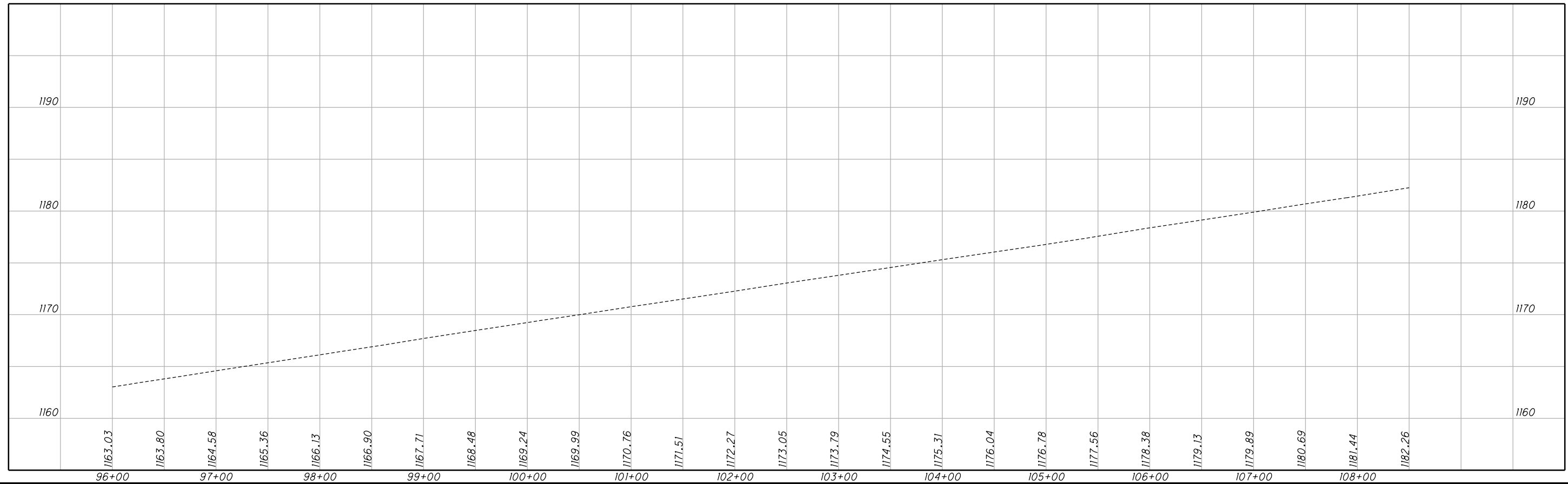
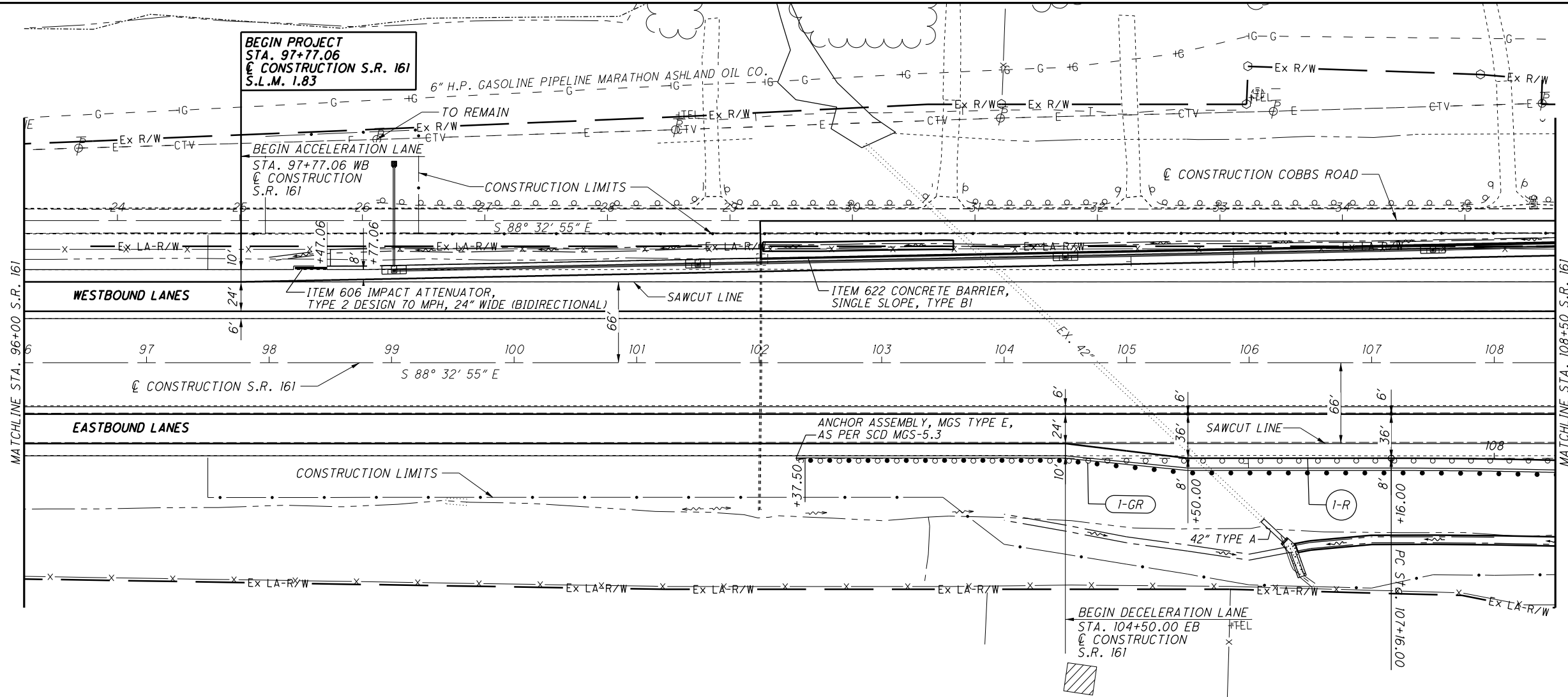
97879_DE001.dgn 11/18/15



CALCULATED CMY CHECKED HAG

S.R. 161 PLAN AND PROFILE
STA. 88+00 TO STA. 96+00

LIC-161-1.83

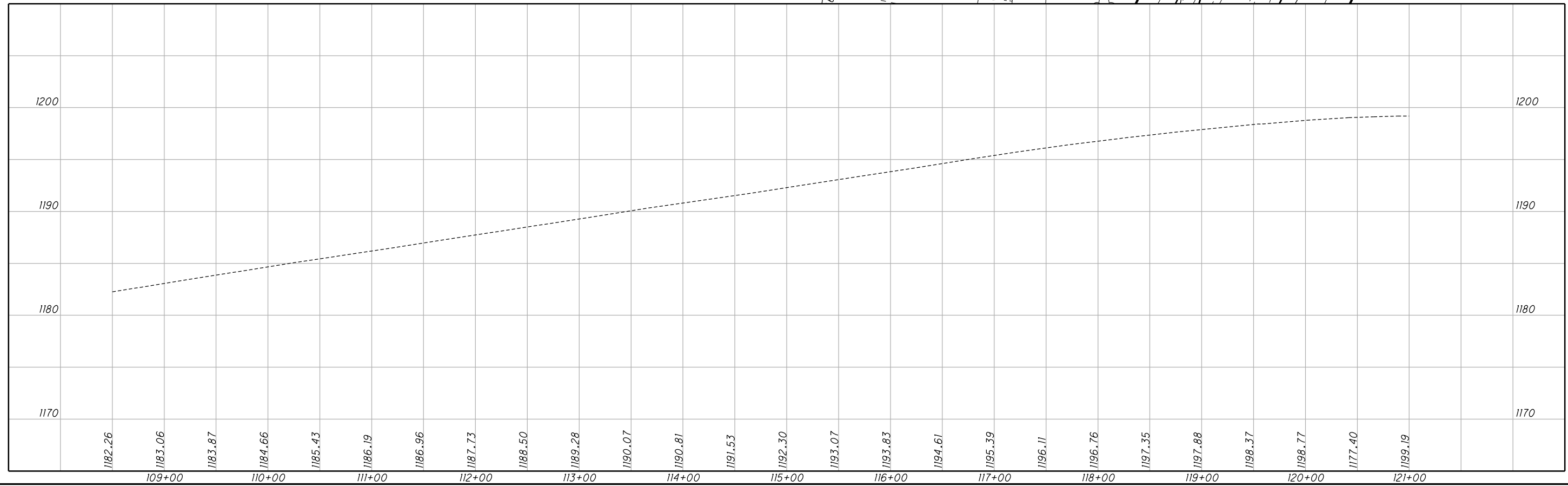
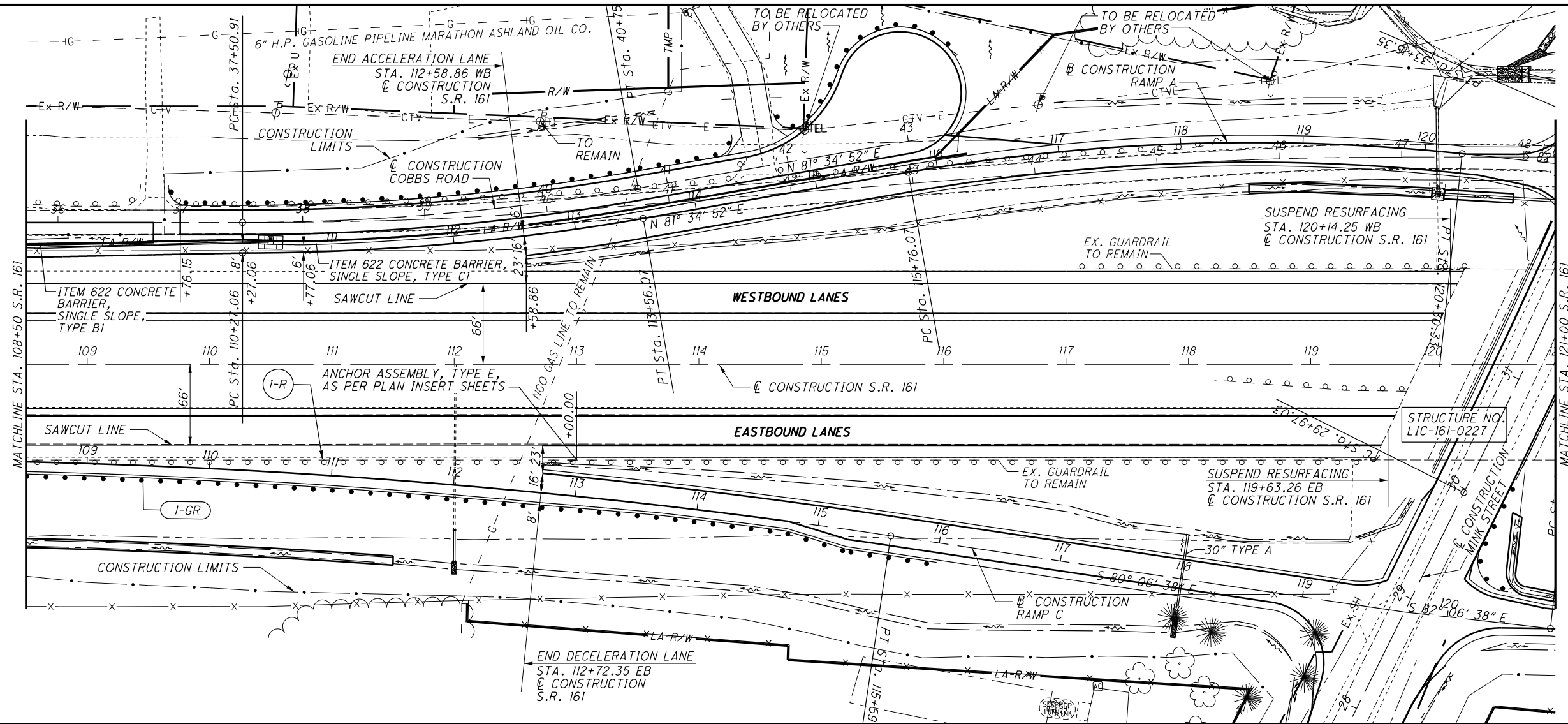


CMY
HAG

S.R. 161 PLAN AND PROFILE
STA. 96+00 TO STA. 108+50

LIC-161-1.83

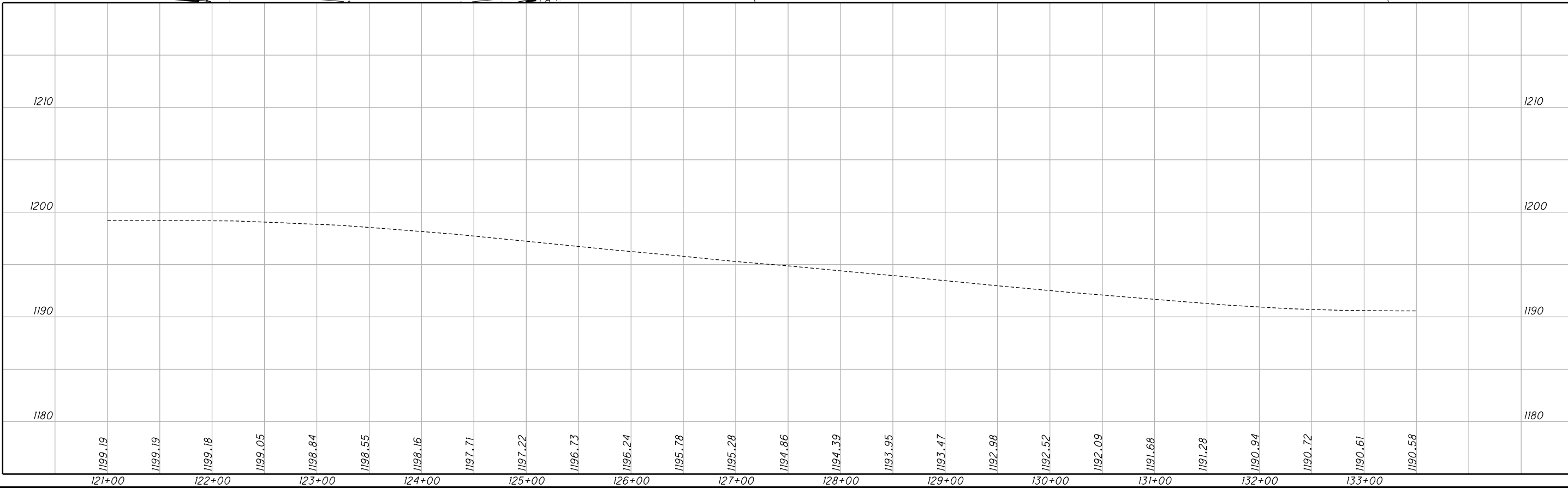
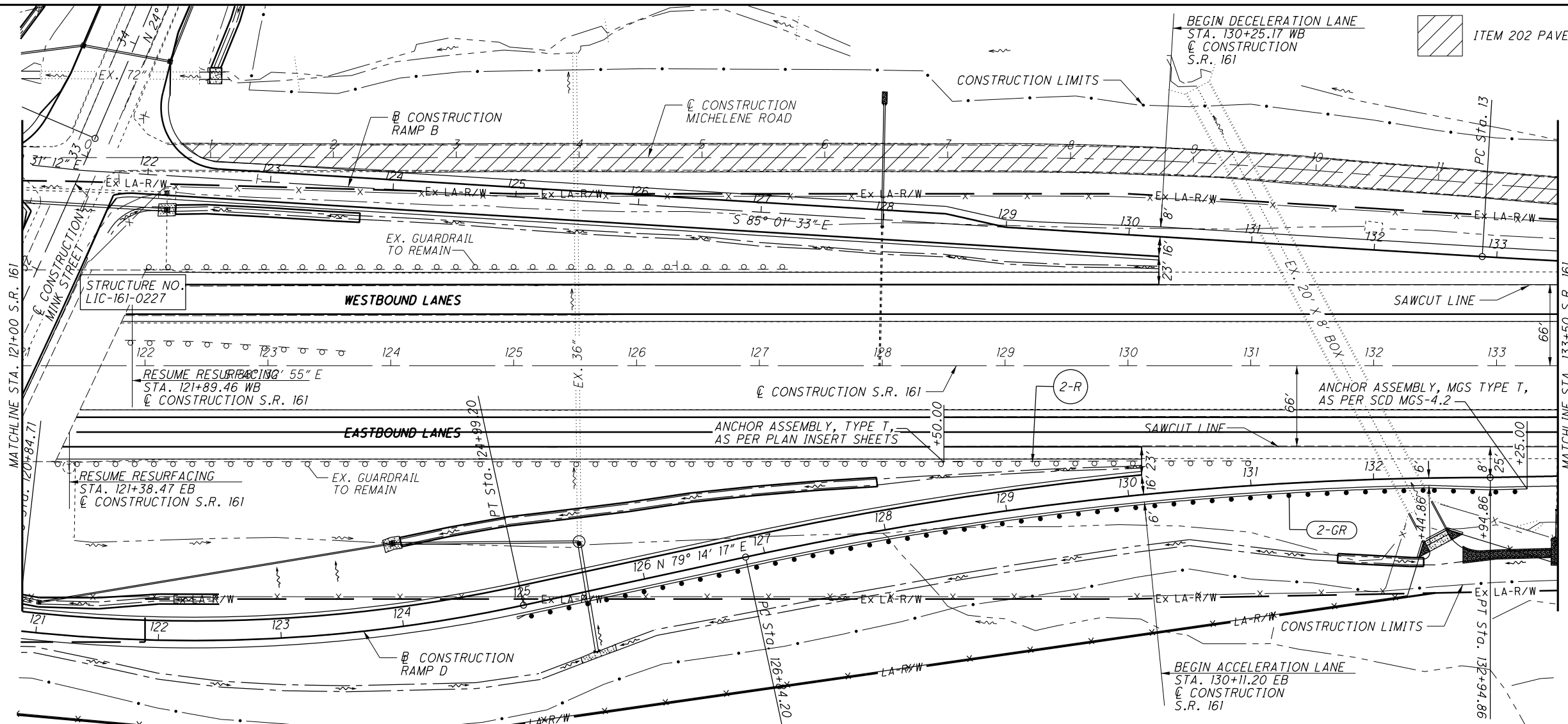
84
336



S.R. 161 PLAN AND PROFILE
STA. 108+50 TO STA. 121+00

LIC-161-1.83

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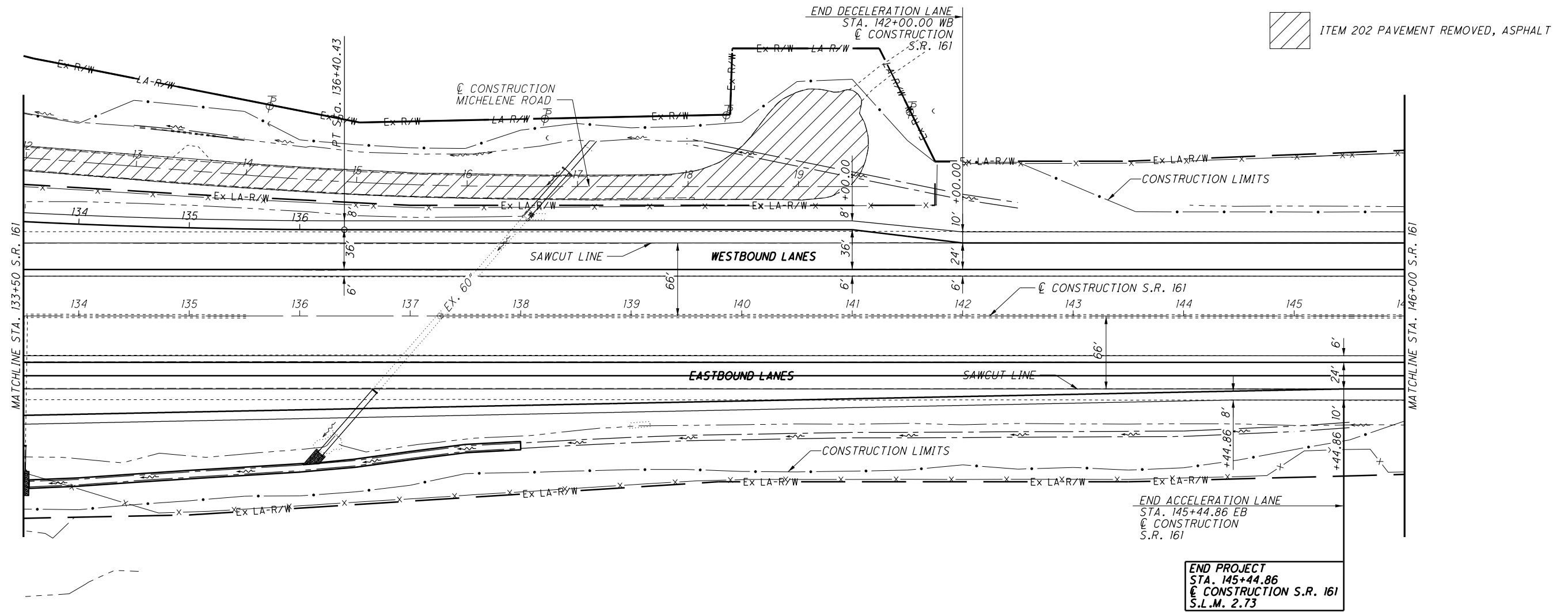
ITEM 202 PAVEMENT REMOVED, ASPHALT



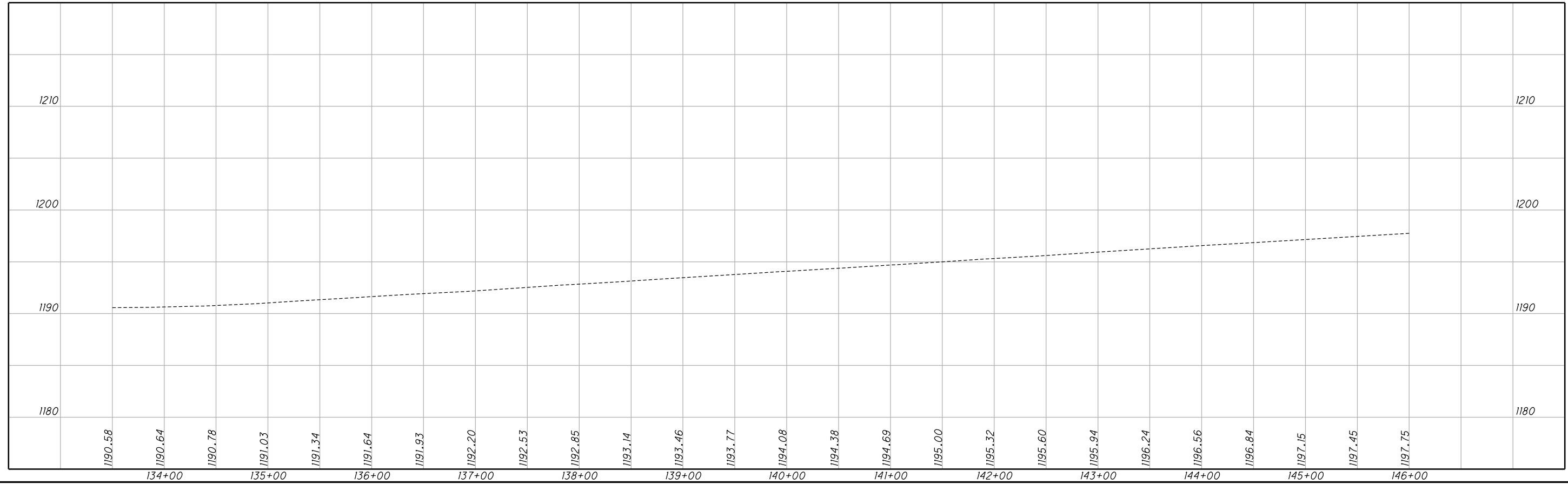
CALCULATED
CMY
CHECKED
HAG

**S.R. 161 PLAN AND PROFILE
STA. 121+00 TO STA. 133+50**

LIC-161-1.83



END PROJECT
STA. 145+44.86
CONSTRUCTION S.R. 161
S.L.M. 2.73

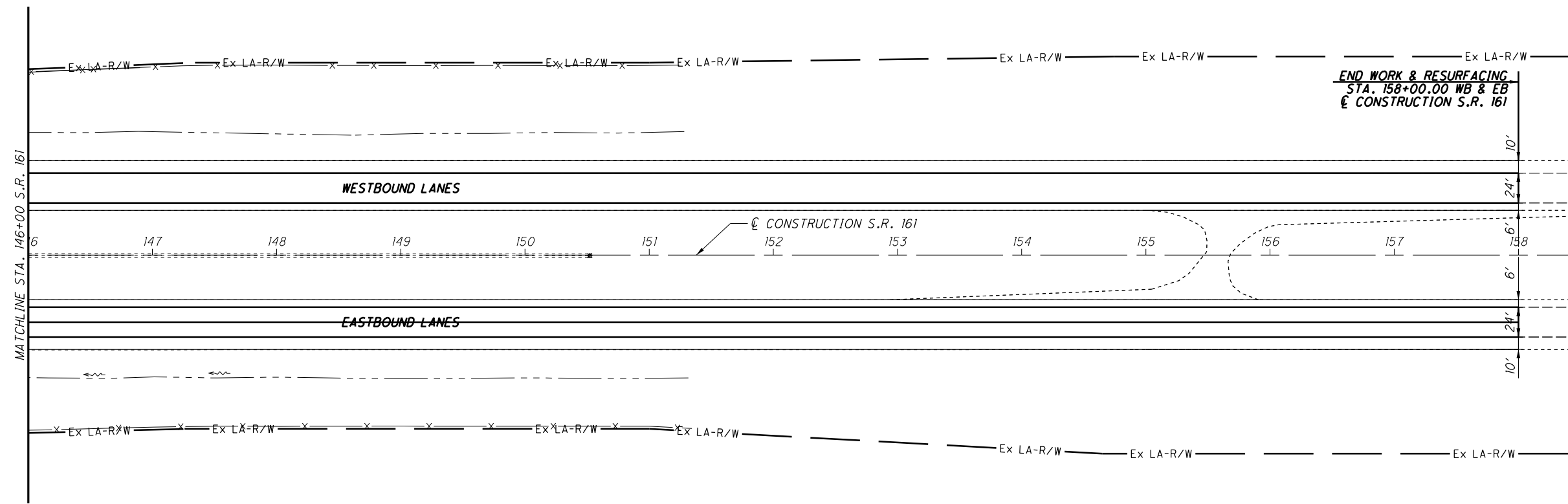


CALCULATED
CMY
CHECKED
HAG

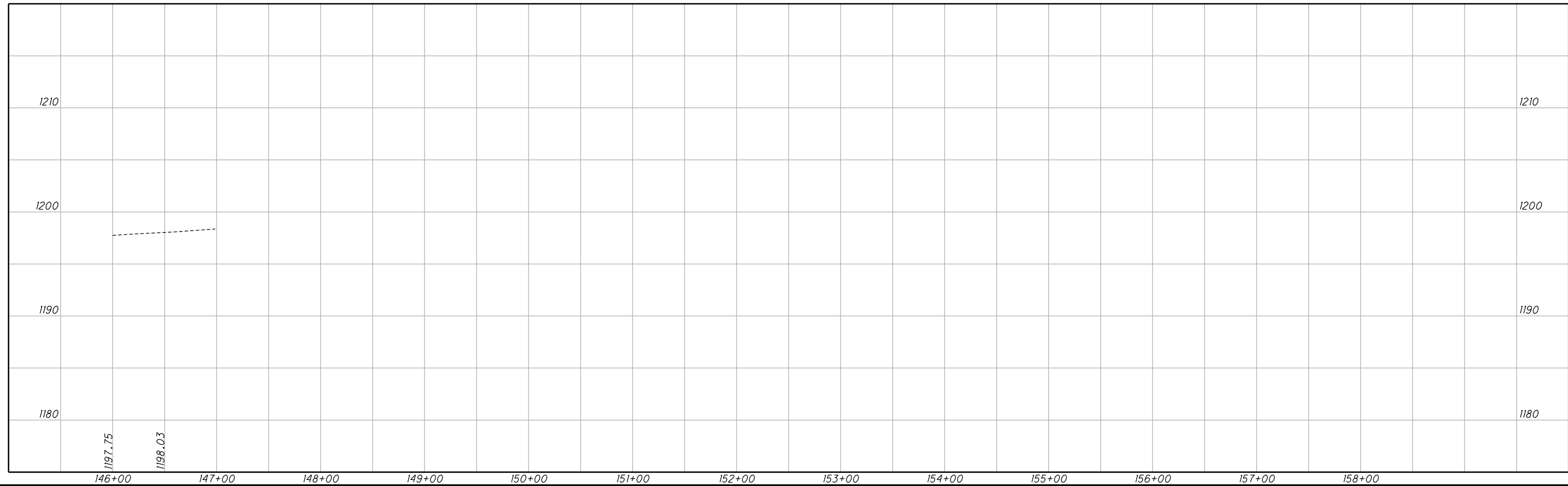
S.R. 161 PLAN AND PROFILE
STA. 133+50 TO STA. 146+00

LIC-161-1.83

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END WORK & RESURFACING
STA. 158+00.00 WB & EB
CONSTRUCTION S.R. 161



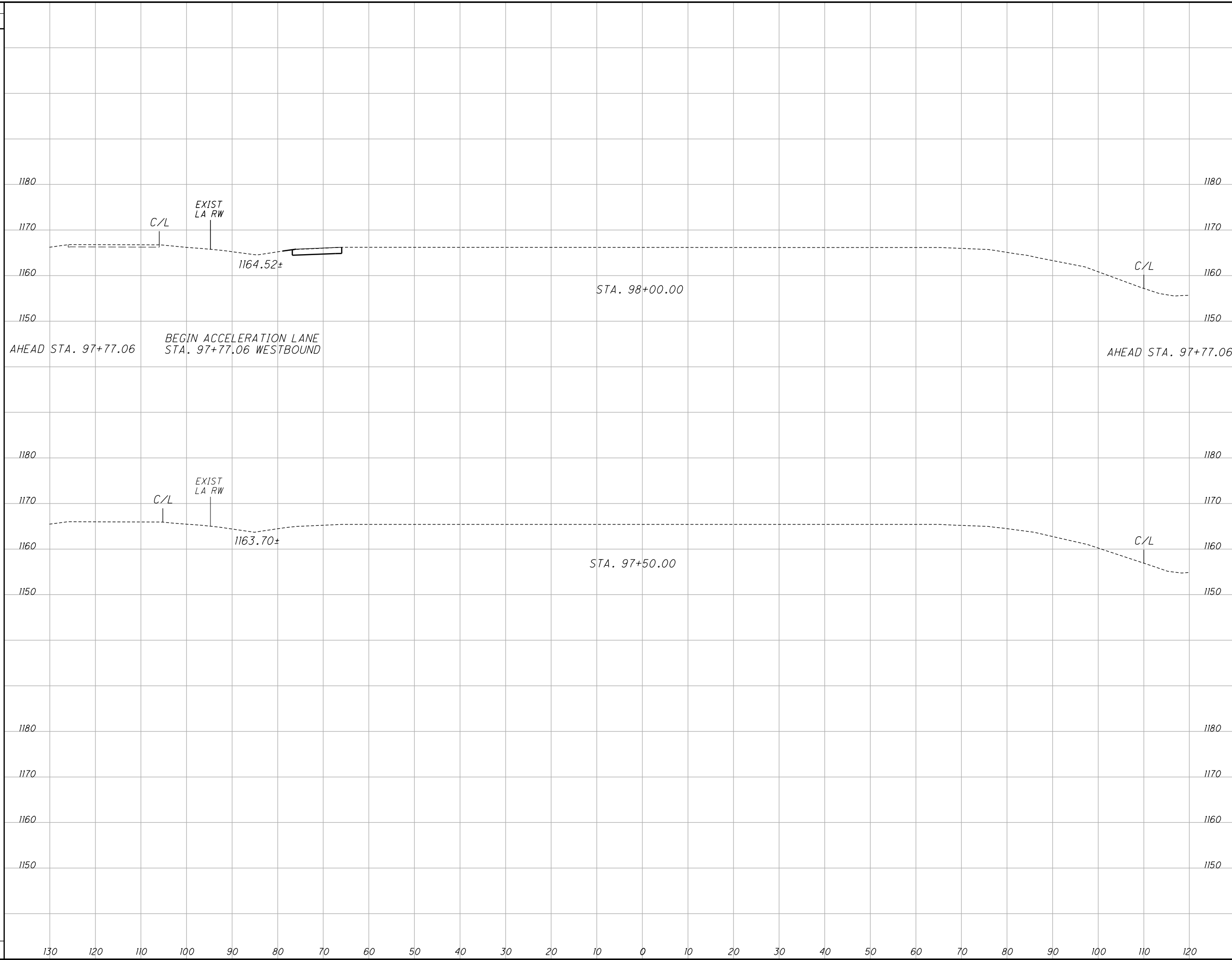
CALCULATED
 CMY
 CHECKED
 HAG

S.R. 161 PLAN AND PROFILE
STA. 146+00 TO STA. 158+00

LIC-161-1.83

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SEEDING	
END WIDTH	SO. YDS.
17	0
13	17



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
14	0	6	0		
0	0				

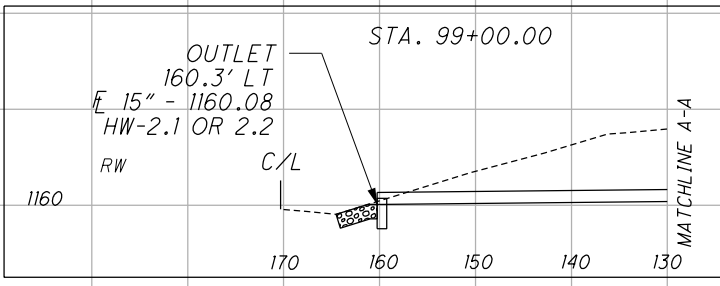
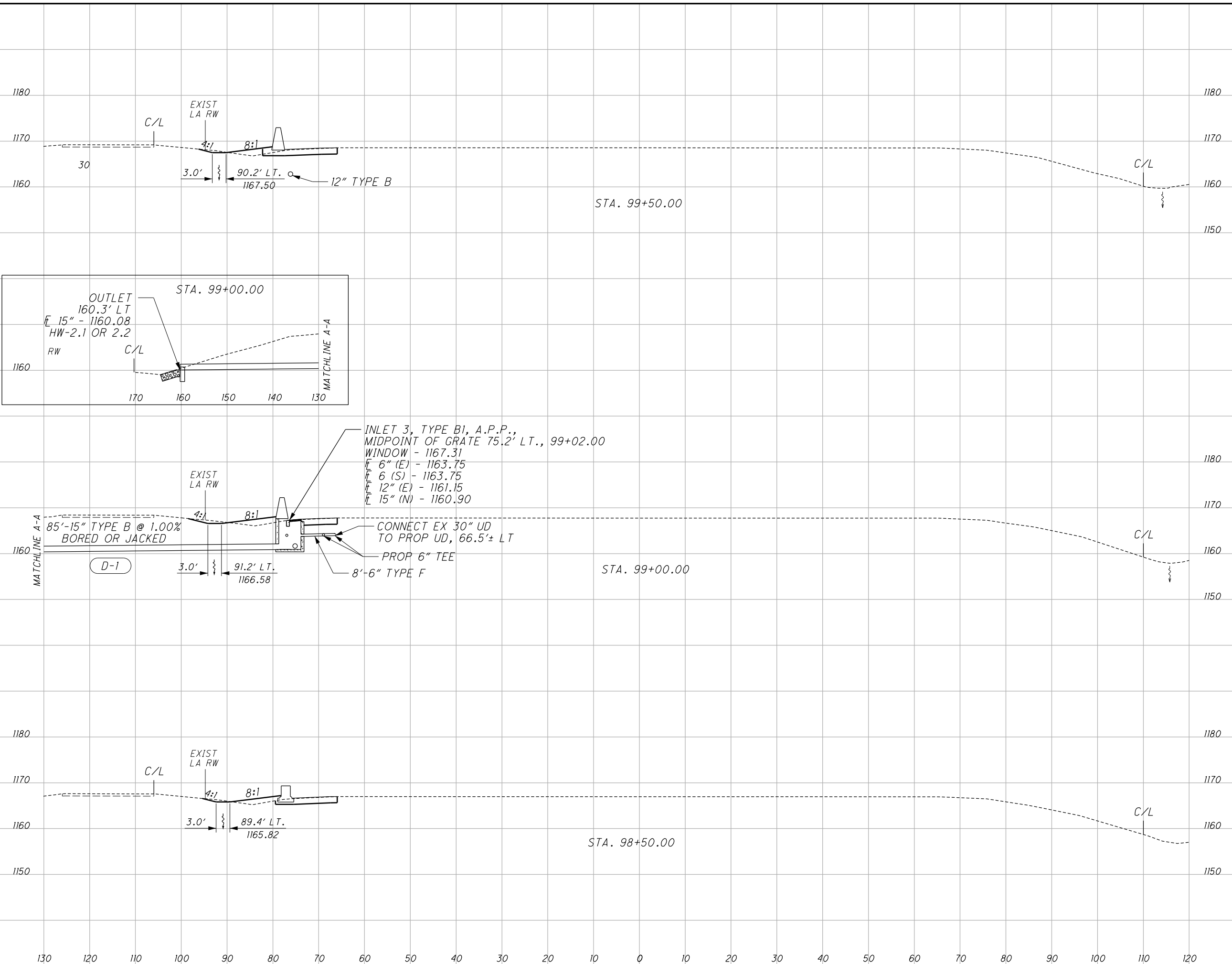
**CROSS SECTIONS S.R. 161
STA. 97+00.00 TO STA. 98+00.00**

LIC-161-1.83

89
336

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SEEDING	
END WIDTH	SO. YDS.
112	430
27	130
30	120
159	110
27	100
159	90
30	80
27	70
159	60
30	50
159	40
30	30
159	20
30	10
159	0
30	10
159	20
30	30
159	40
30	50
159	60
30	70
159	80
30	90
159	100
30	110
159	120



INLET 3, TYPE B1, A.P.P.,
 MIDPOINT OF GRATE 75.2' LT., 99+02.00
 WINDOW - 1167.31
 E 6" (E) - 1163.75
 E 6" (S) - 1163.75
 E 12" (E) - 1161.15
 E 15" (N) - 1160.90

CONNECT EX 30" UD
 TO PROP UD, 66.5'± LT
 PROP 6" TEE
 8'-6" TYPE F

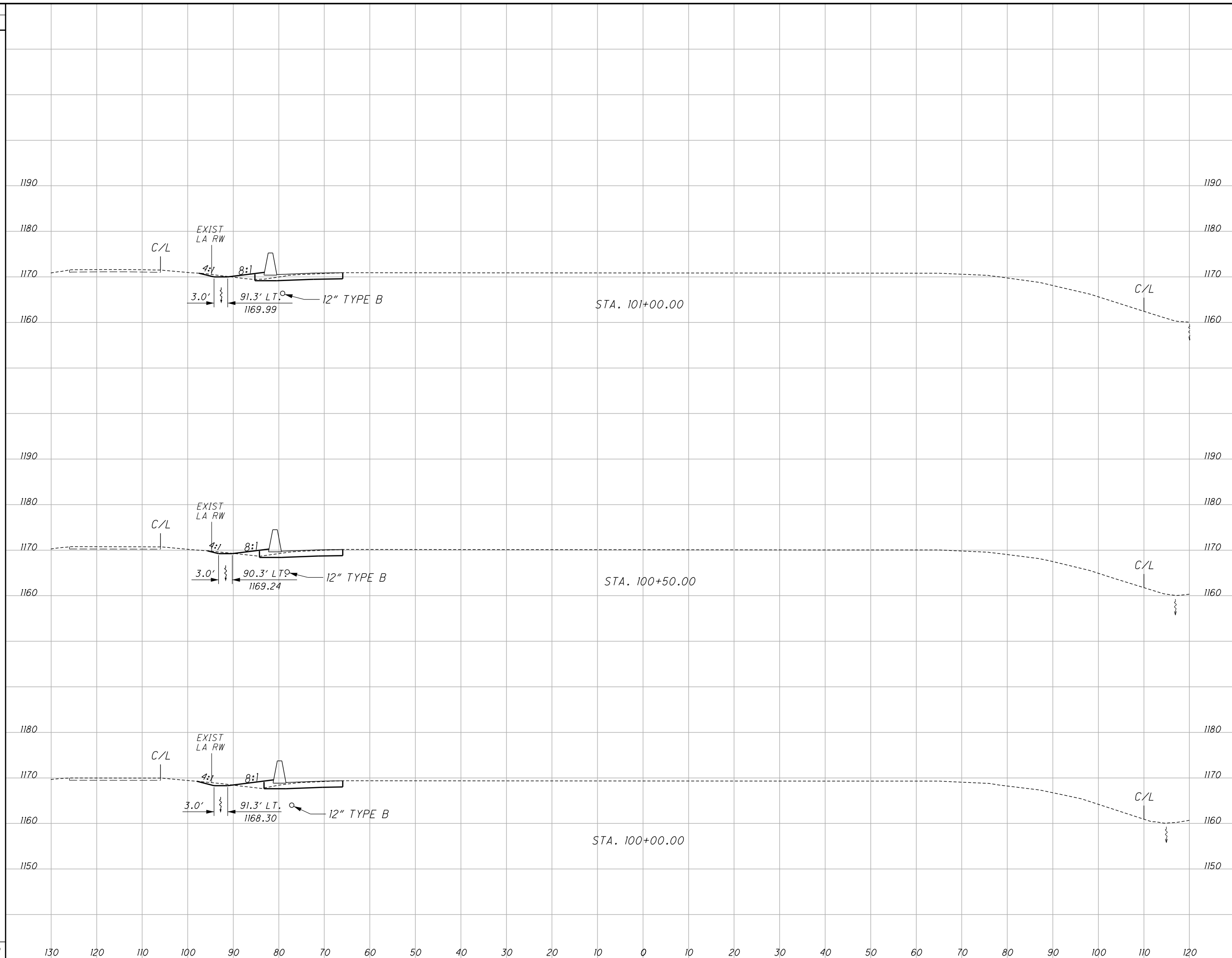
END AREA		VOLUME		CALCULATED R.J.G.	CHECKED H.A.G.
CUT	FILL	CUT	FILL		
20	10	32	18	90	336
14	9	29	14		
17	6	29	6		
		90	38		

CROSS SECTIONS S.R. 161
 STA. 98+50.00 TO STA. 99+50.00

LIC-161-1.83

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SEEDING	
END WIDTH	SO. YDS.
25	
137	
24	
142	
27	
150	
429	

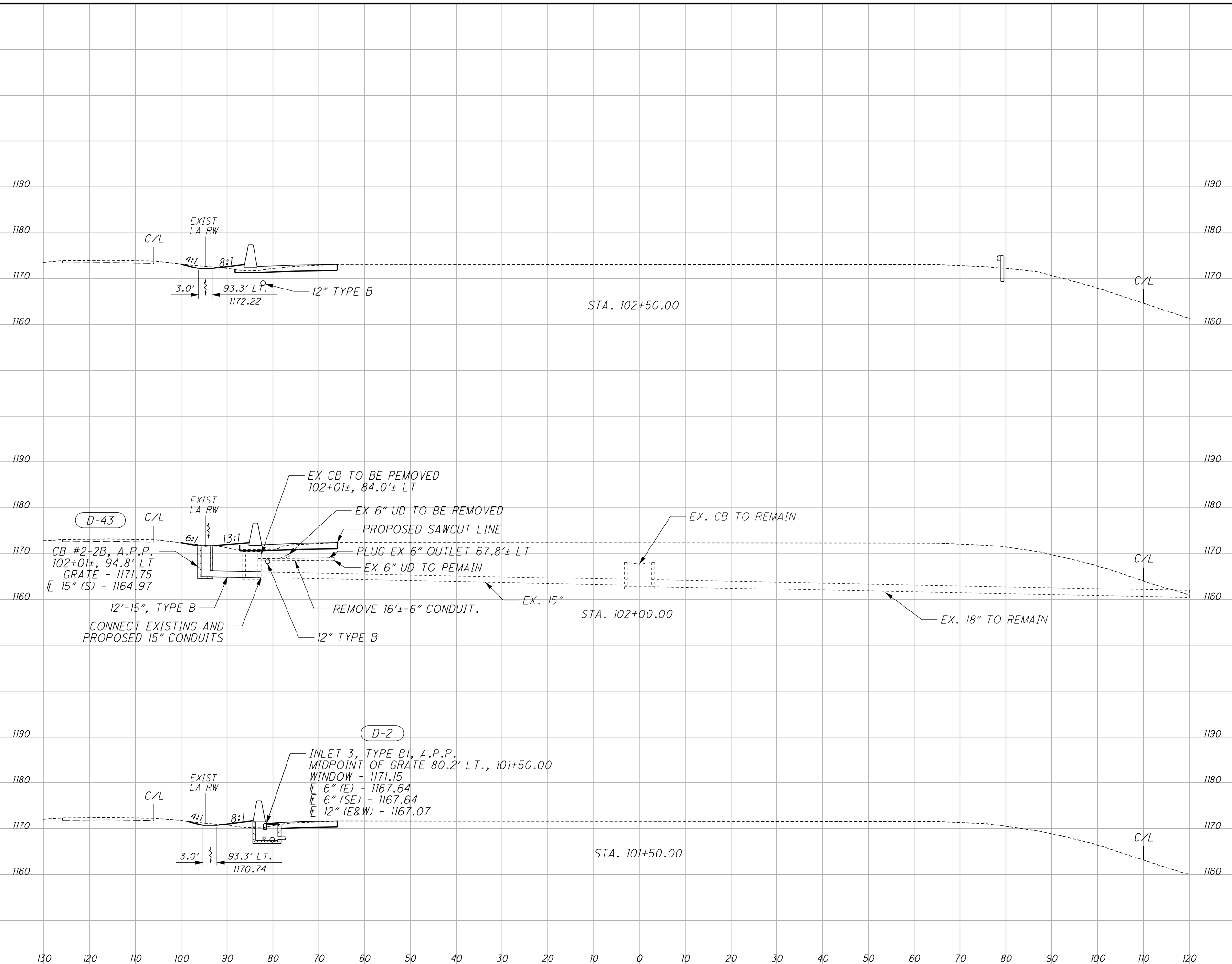


END AREA	VOLUME	
	CUT	FILL
21	8	
20	7	
21	9	
38	18	
114	47	

CROSS SECTIONS S.R. 161
STA. 100+00.00 TO STA. 101+00.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 91
 336

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SEEDING	
END WIDTH	SO. YDS.
24	
25	
25	
139	
139	
415	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	5	39	12
19	7	35	12
18	5	37	13
		111	37

CROSS SECTIONS S.R. 161
STA. 101+50.00 TO STA. 102+50.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 92
 336

SEEDING
END / SO.
WIDTH / YDS.

20

117

22

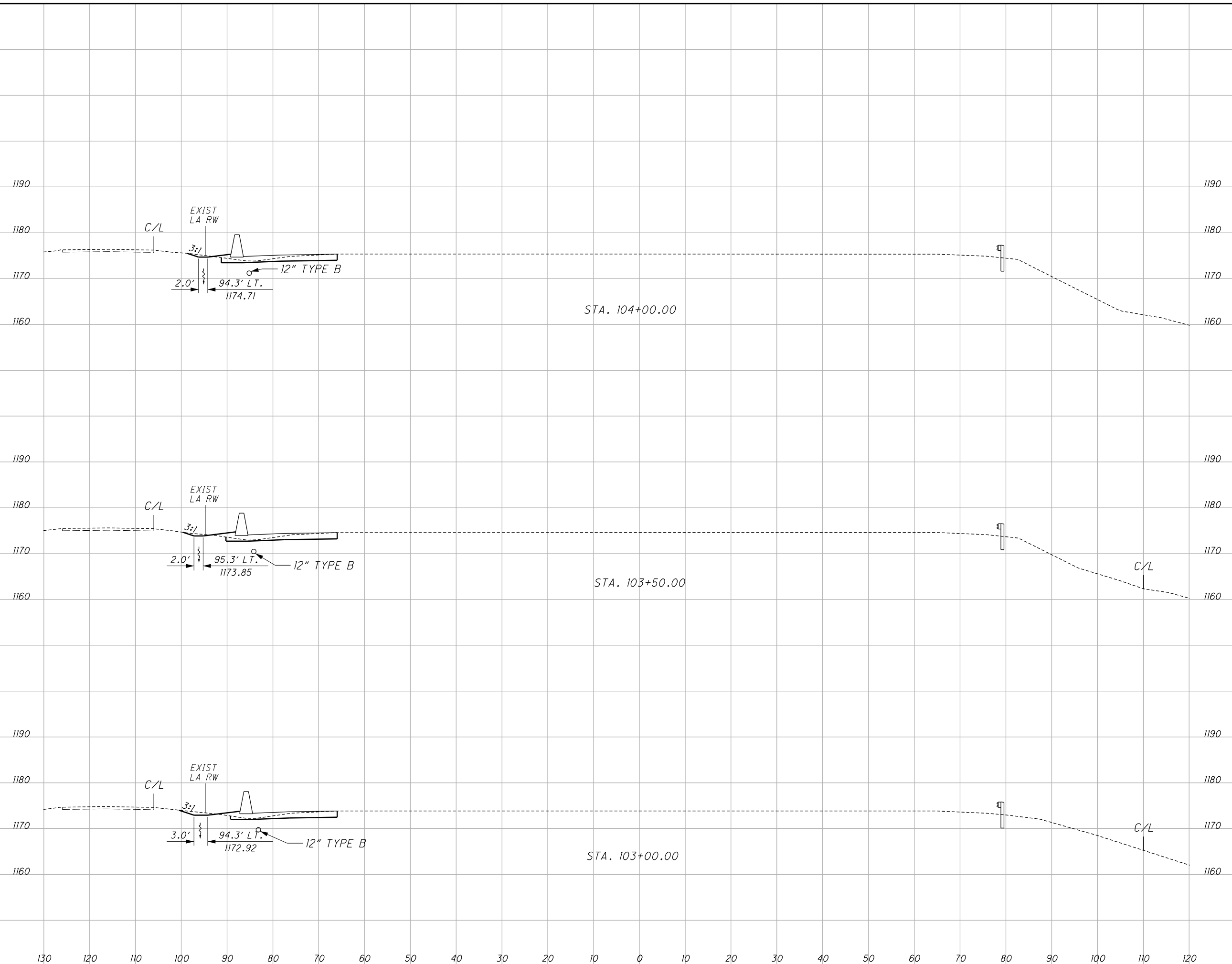
128

24

134

379

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120



END AREA		VOLUME	
CUT	FILL	CUT	FILL
22	4	41	10
22	6	42	12
23	6	43	11
		126	33

CALCULATED
R/J
CHECKED
HAG

CROSS SECTIONS S.R. 161
STA. 103+00.00 TO STA. 104+00.00

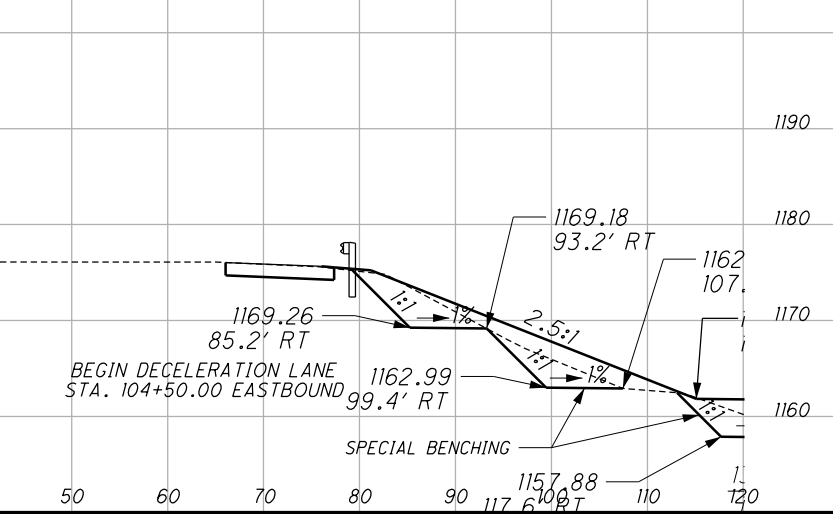
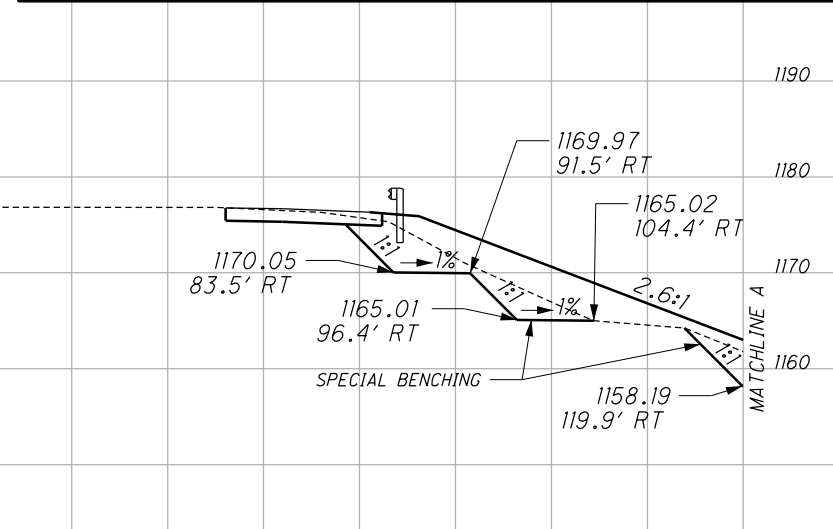
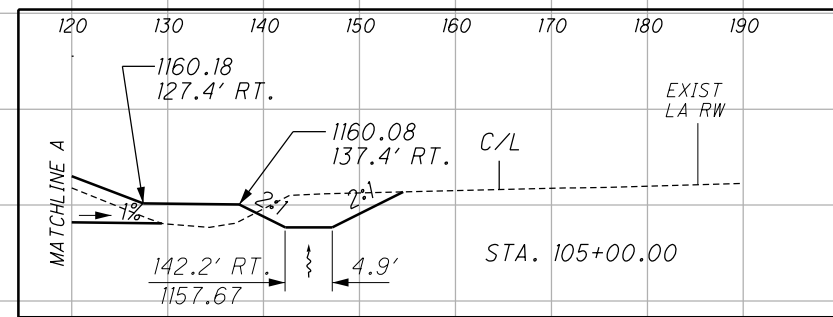
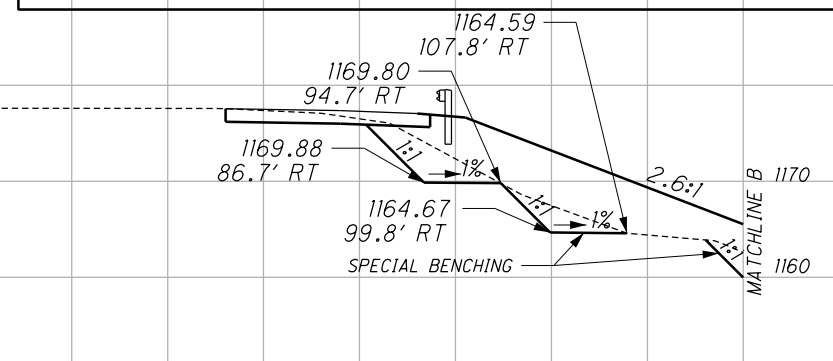
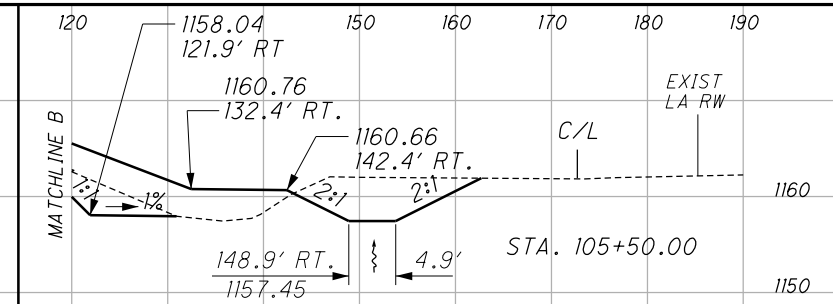
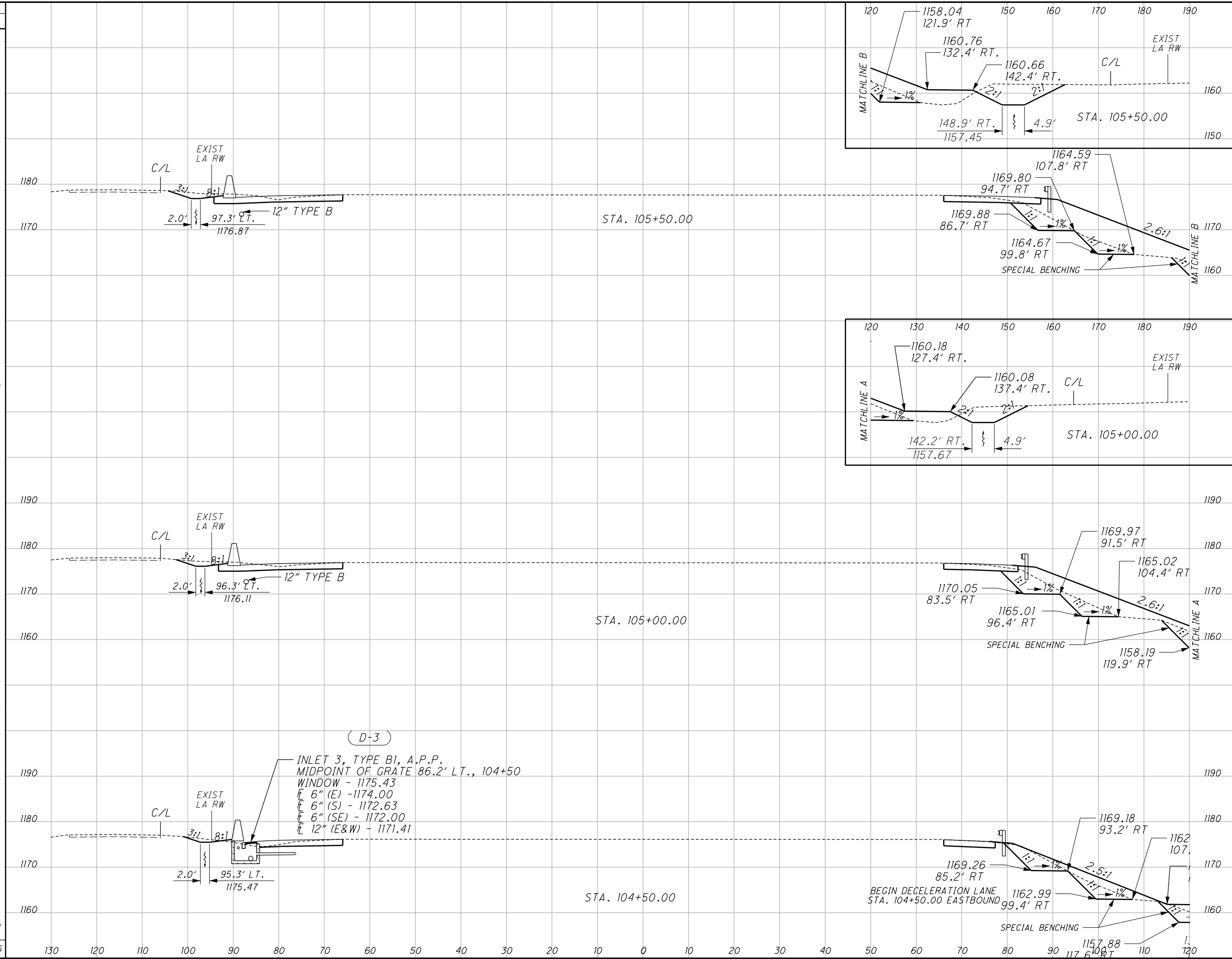
LIC-161-1.83

93
336

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SEEDING	END	
	WIDTH	SO. YDS.
	130	1476
	120	
	110	
	100	
	90	
	80	
	70	
	60	
	50	
	40	
	30	
	20	
	10	
	0	
	10	
	20	
	30	
	40	
	50	
	60	
	70	
	80	
	90	
	100	
	110	
	120	
	130	



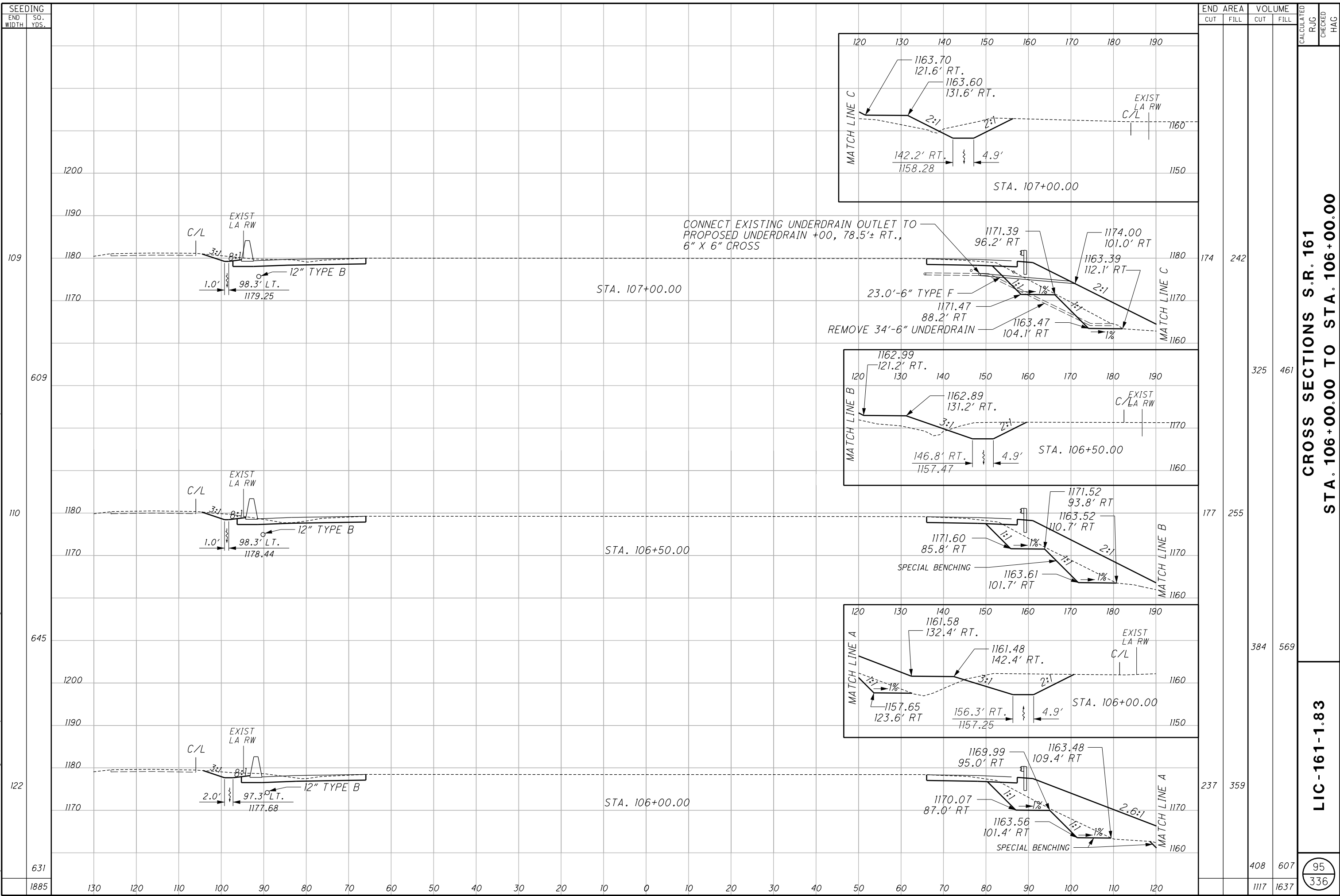
END	AREA		VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL	CUT	FILL			
105			203	296			
570			340	471			
100			164	215			
564			268	331			
103			125	145			
342			137	138			
1476			745	940			

CROSS SECTIONS S.R. 161
STA. 104+50.00 TO STA. 105+00.00

LIC-161-1.83

94
336

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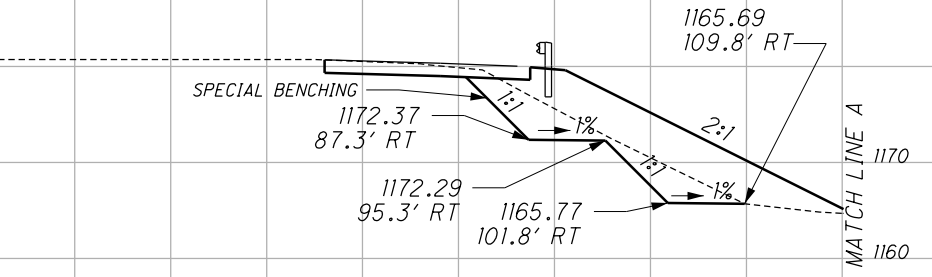
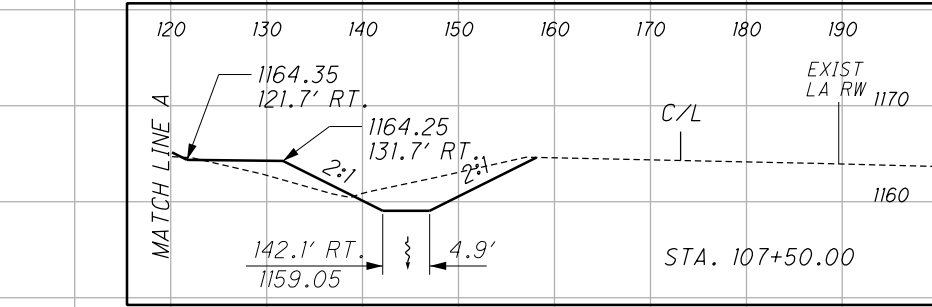
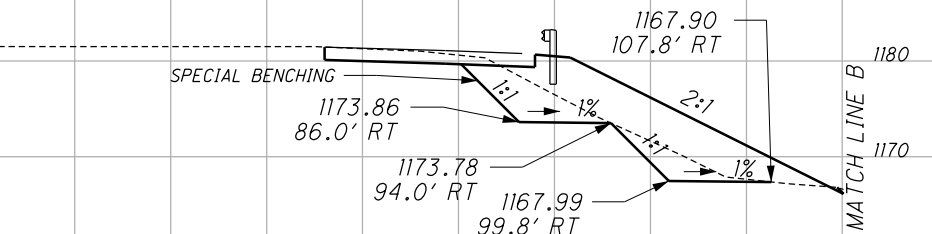
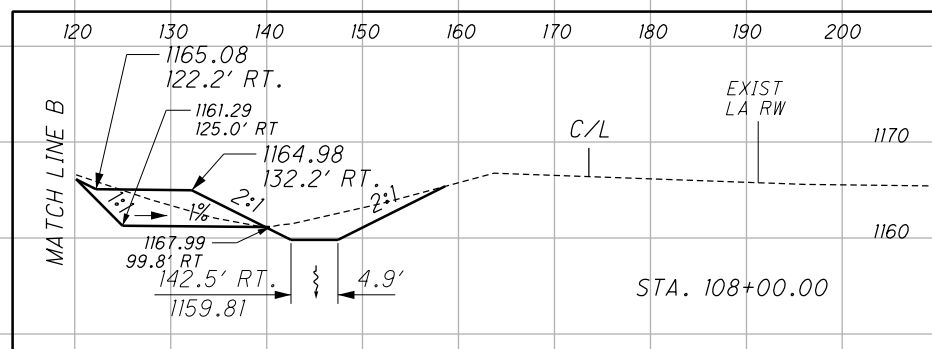
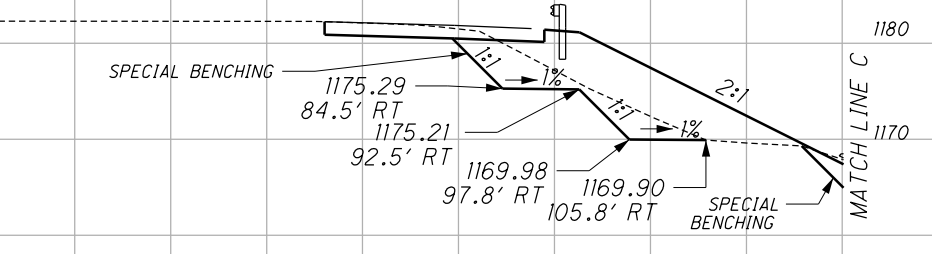
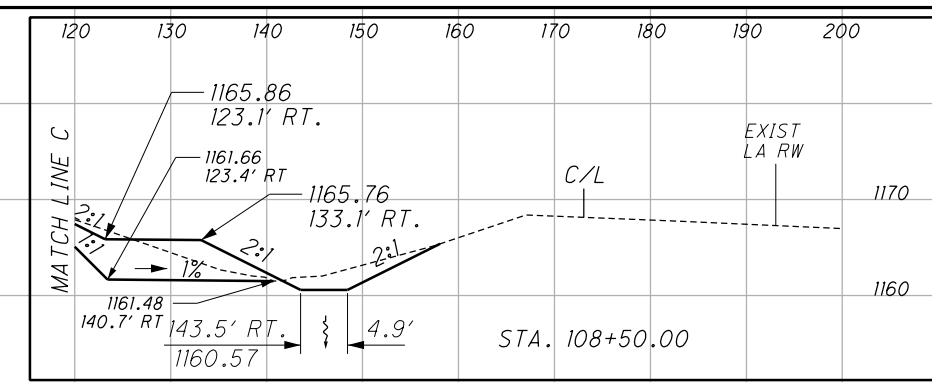
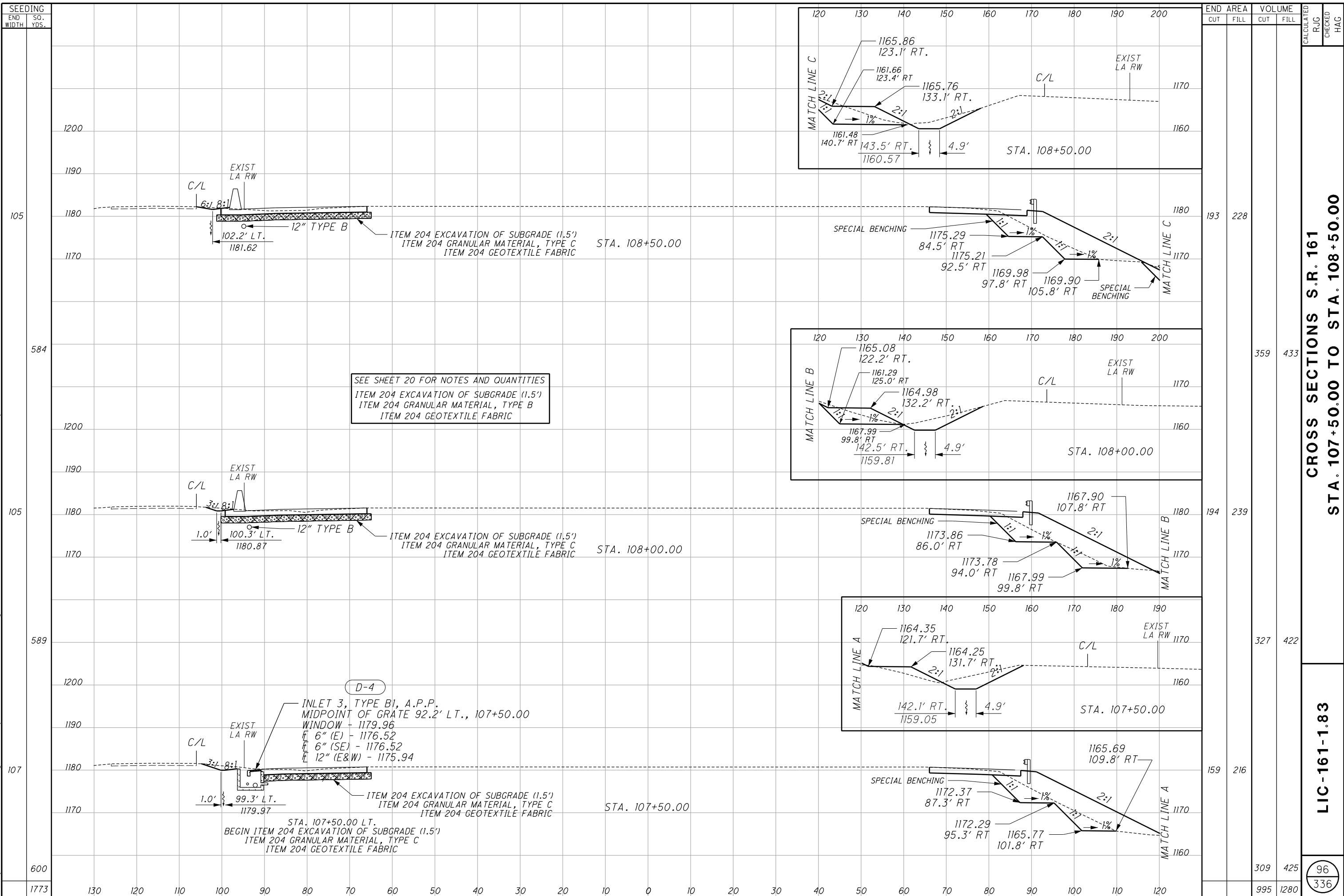


CROSS SECTIONS S.R. 161
STA. 106+00.00 TO STA. 106+00.00

LIC-161-1.83

95
336

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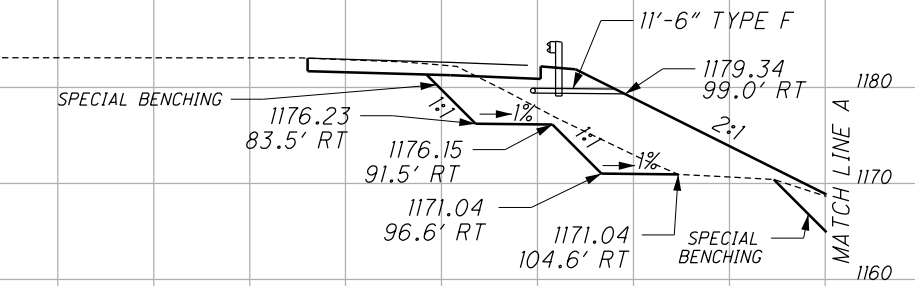
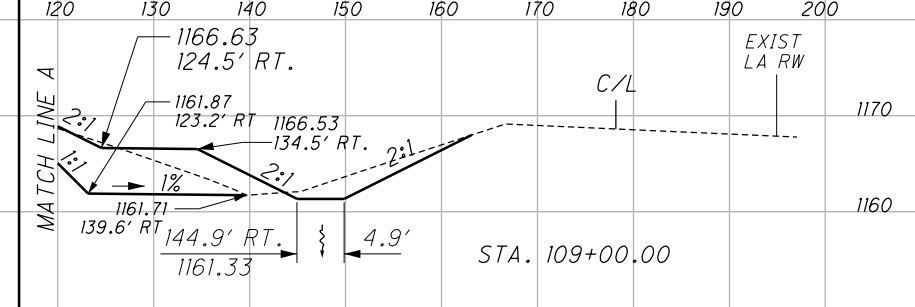
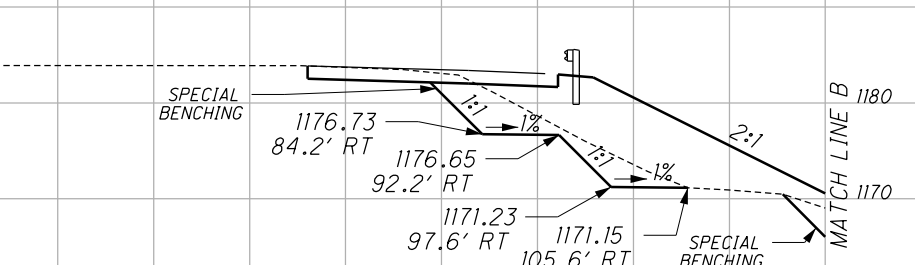
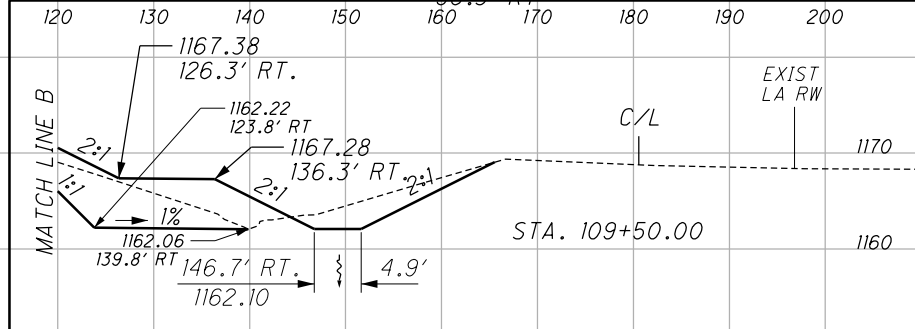
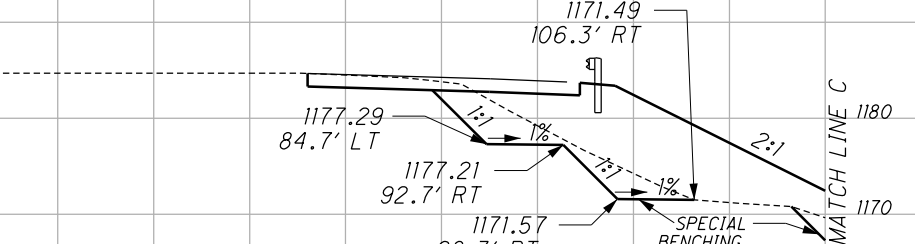
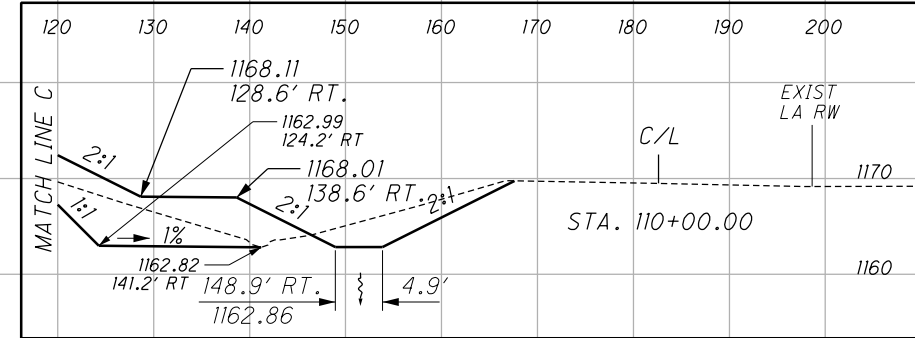
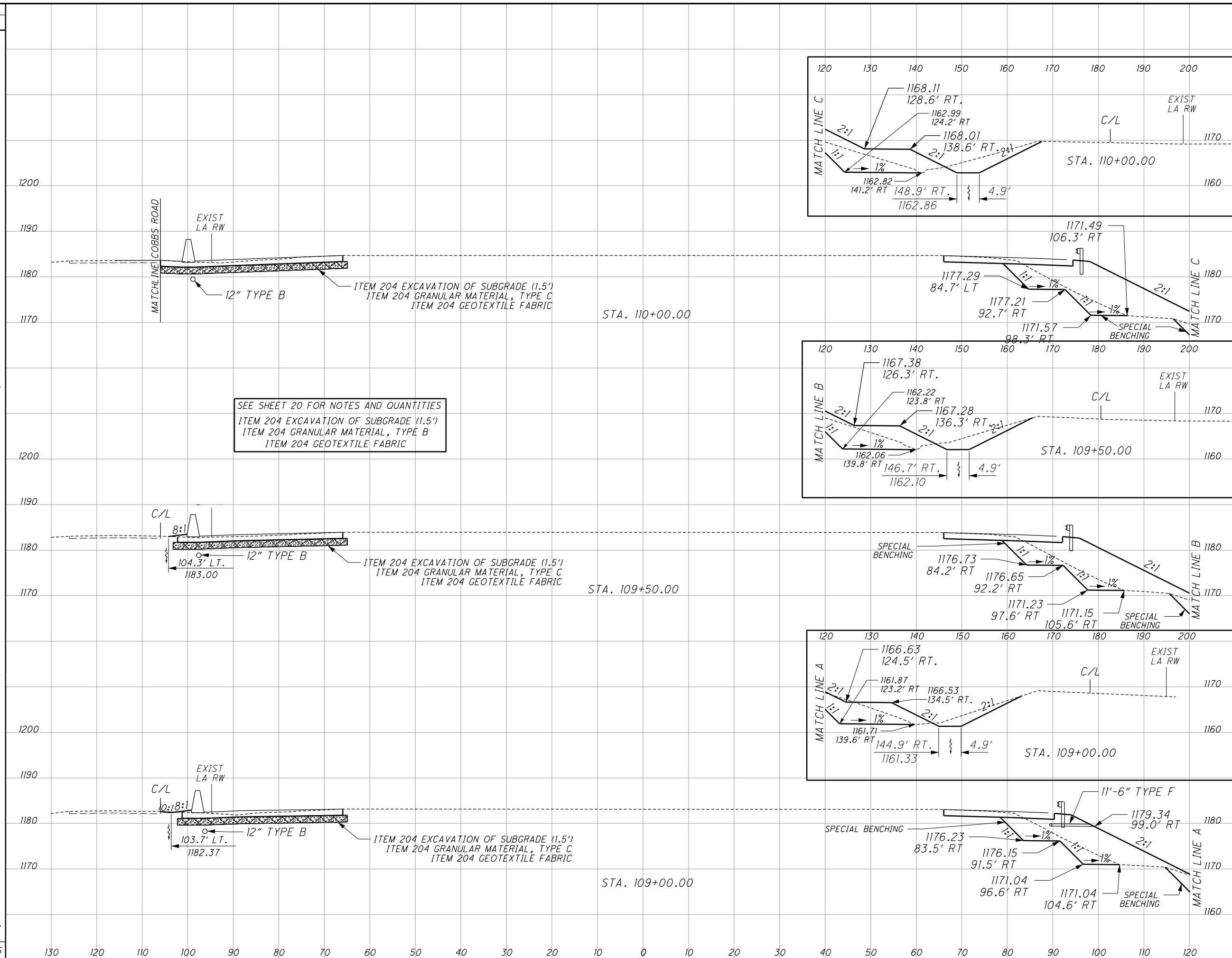
END AREA	VOLUME	CALCULATED	R/JG	CHECKED	HAG
193	228				
359	433				
194	239				
327	422				
159	216				
309	425				
995	1280				

CROSS SECTIONS S.R. 161
STA. 107+50.00 TO STA. 108+50.00

LIC-161-1.83

96
336

SEEDING
END SO. WIDTH YDS.
91
548
106
595
108
592
1735



END AREA	VOLUME	CALCULATED	CHECKED	HAG
245	386			
		453	674	
244	341			
		471	552	
264	255			
424	448			
1348	1674			

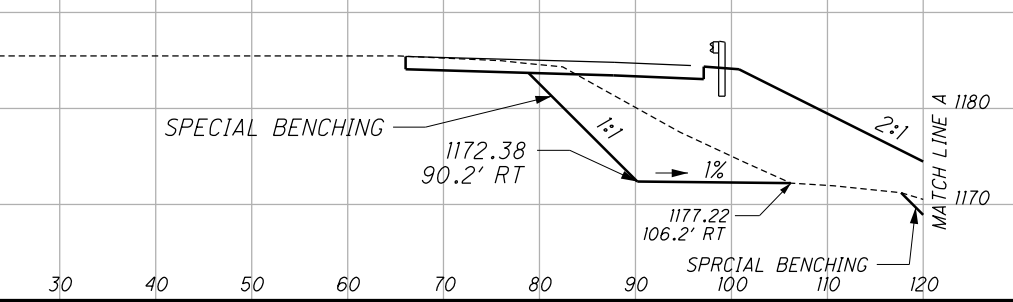
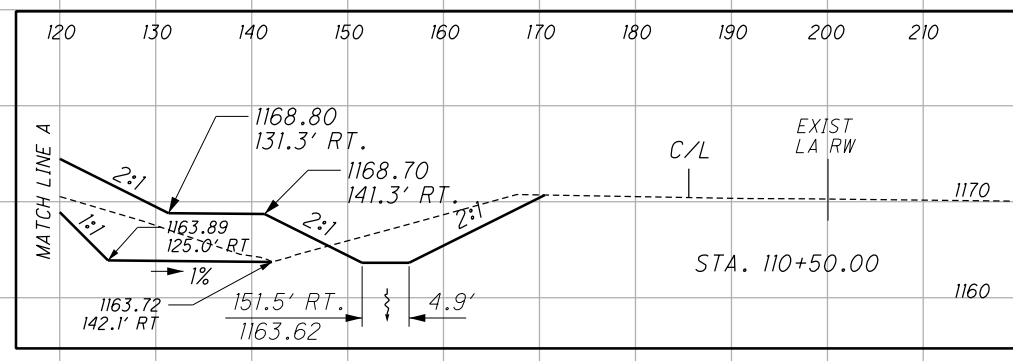
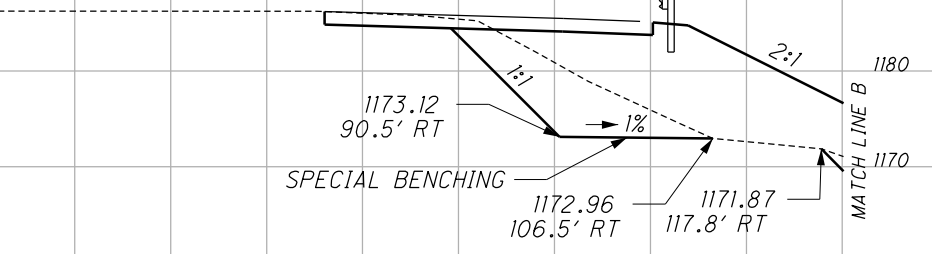
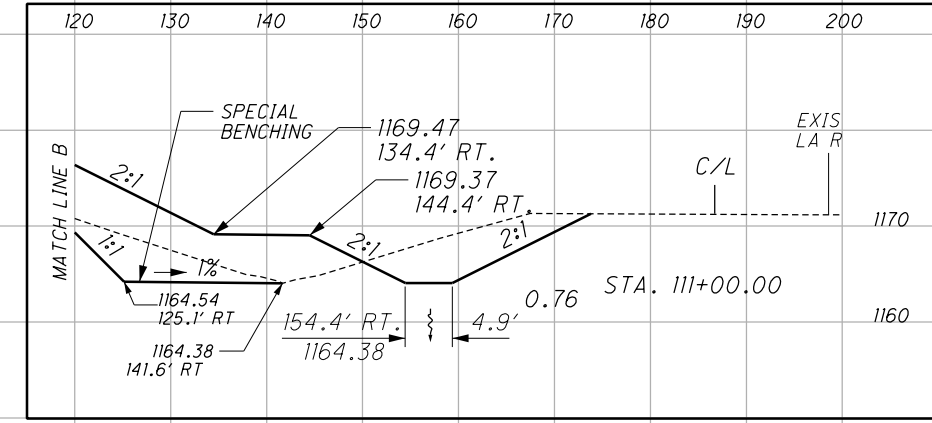
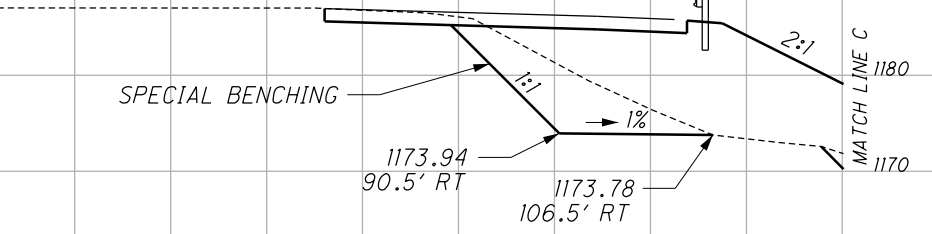
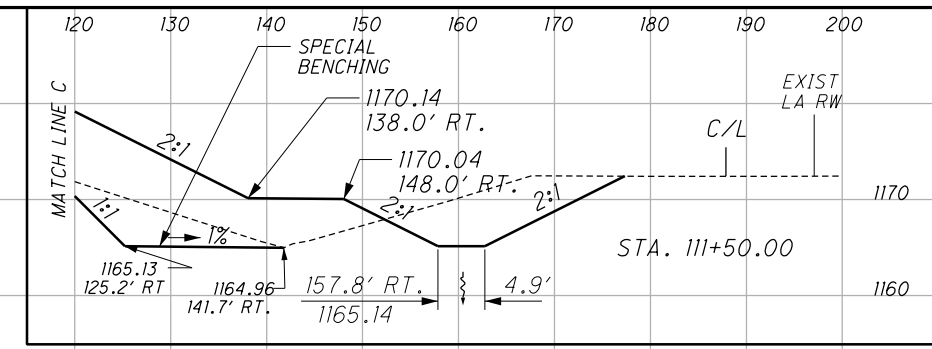
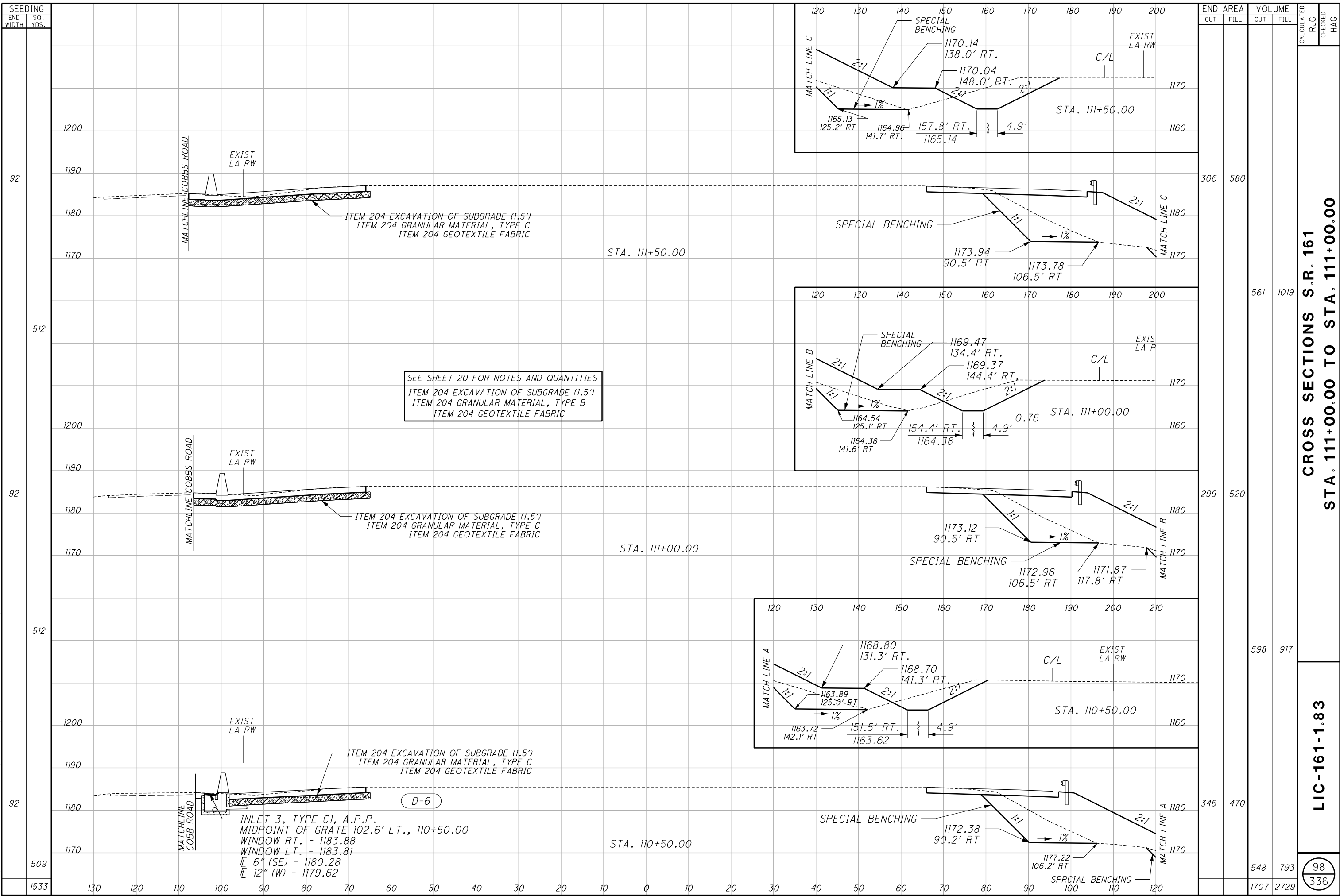
CROSS SECTIONS S.R.161
STA. 109+00.00 TO STA. 109+00.00

LIC-161-1.83

97
336

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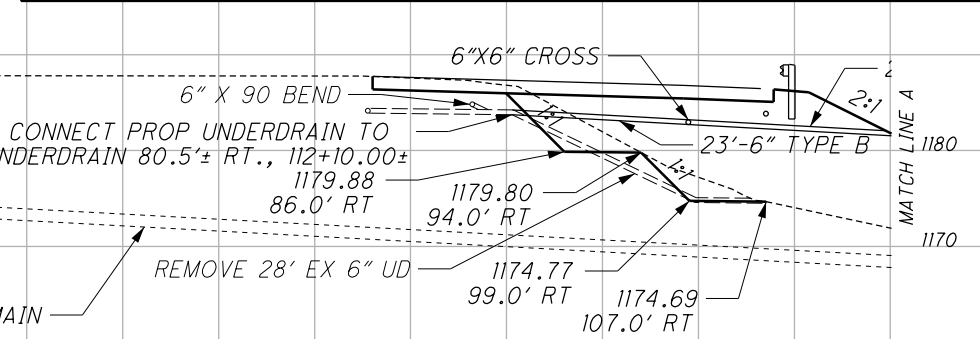
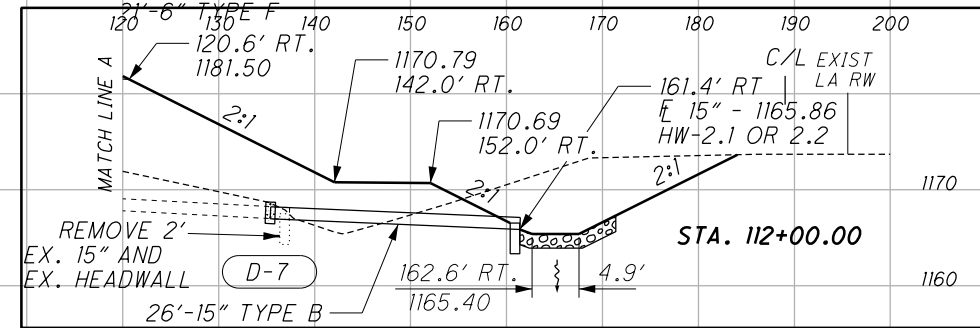
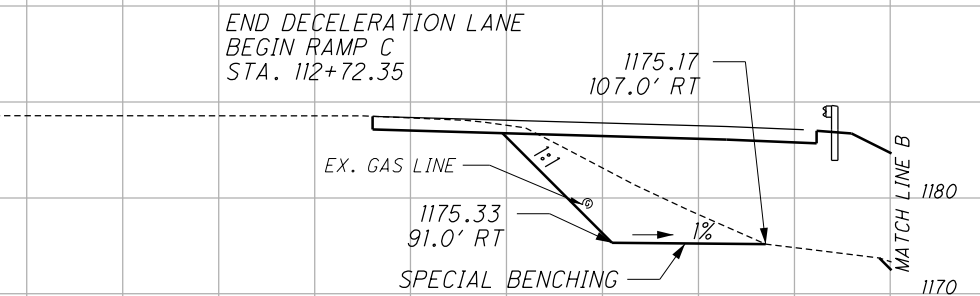
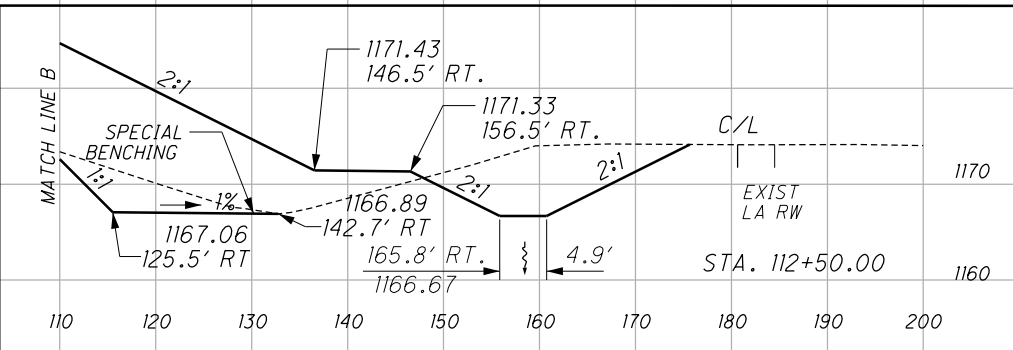
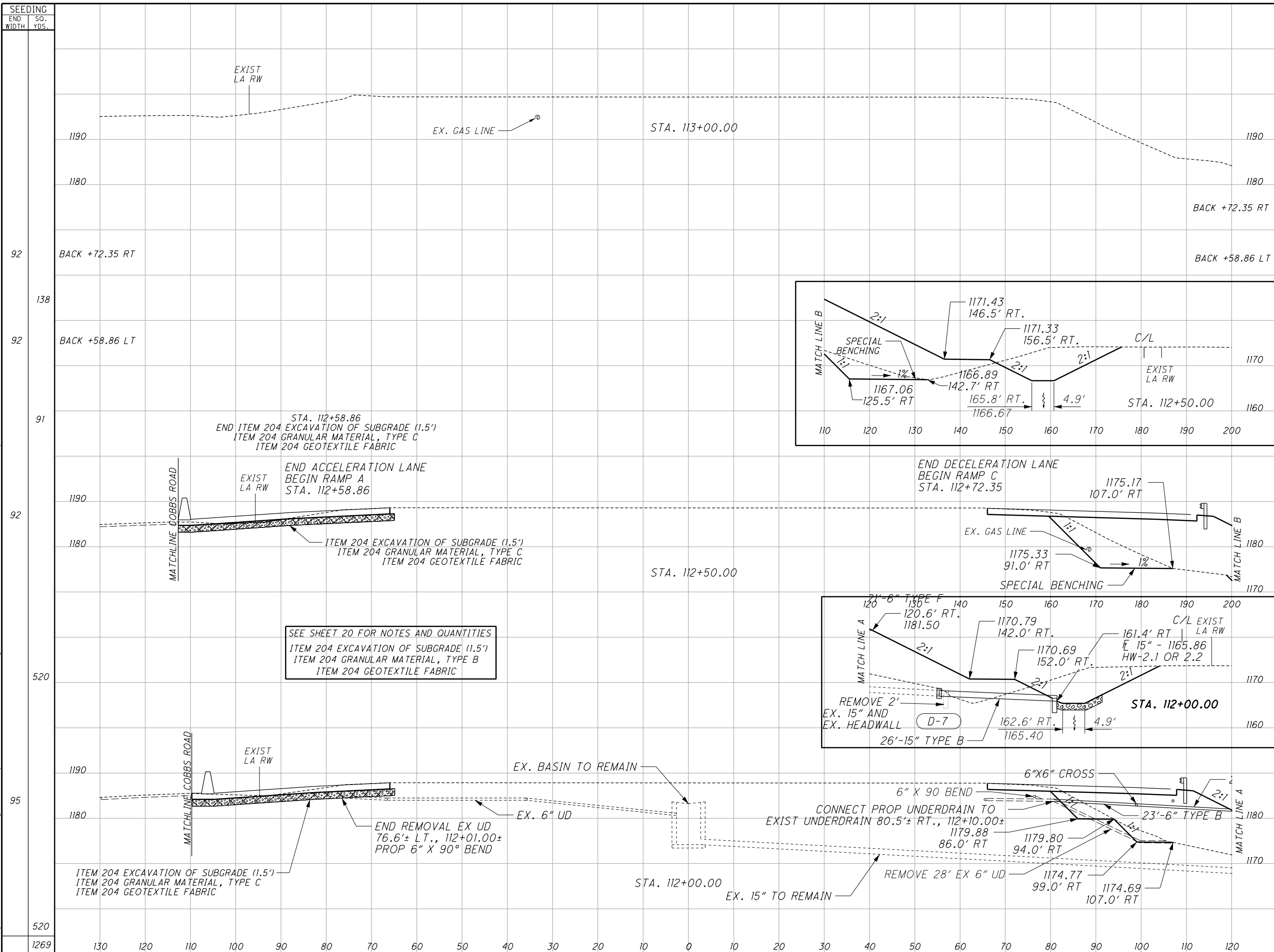
END AREA	VOLUME	CALCULATED	CHECKED	HAG
306	580			
299	520			
346	470			
548	793			
1707	2729			

CROSS SECTIONS S.R. 161
STA. 111+00.00 TO STA. 111+00.00

LIC-161-1.83

98
336

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SEEDING		END AREA		VOLUME		CALCULATED	CHECKED	HAG
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL			
1190								
1180								
92		287	694	151	348			
138								
92		315	698	104	230			
91								
92		315	698					
520				496	1127			
95		220	519					
520		488	1018					
1269		1239	2723					

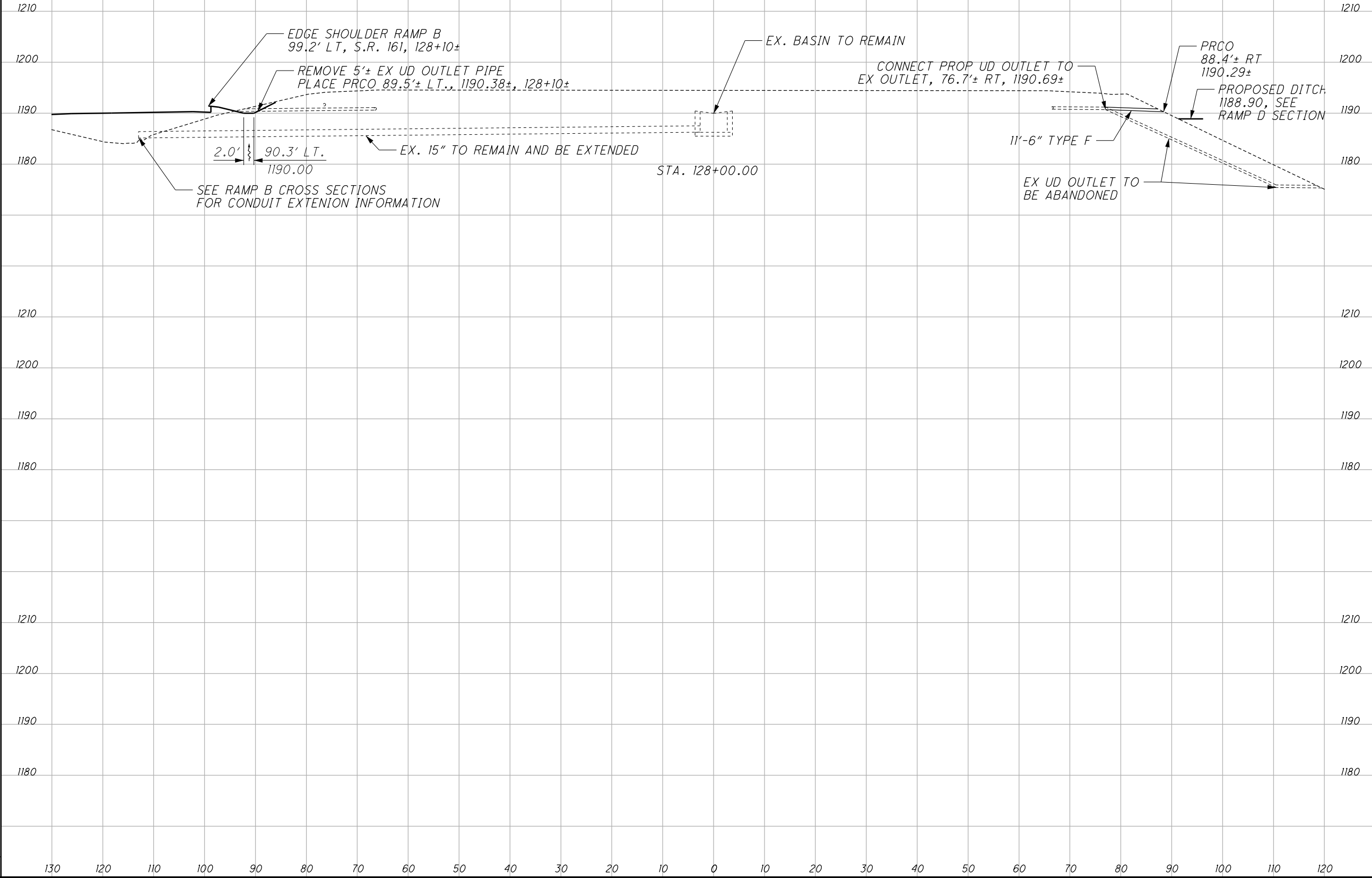
CROSS SECTIONS S.R. 161
STA. 112+00.00 TO STA. 112+50.00

LIC-161-1.83

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SEEDING
END SO.
WIDTH YDS.

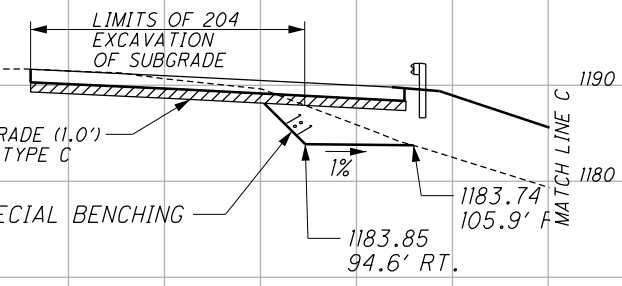
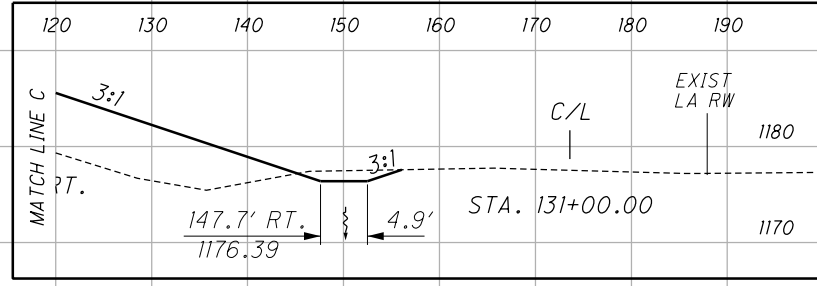
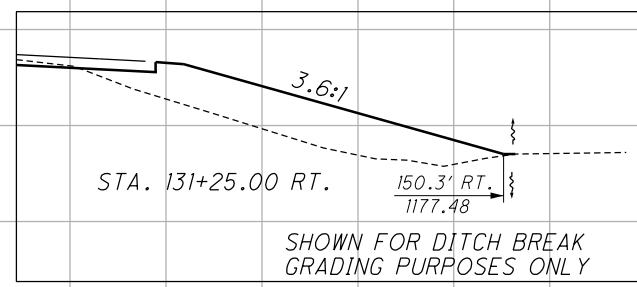
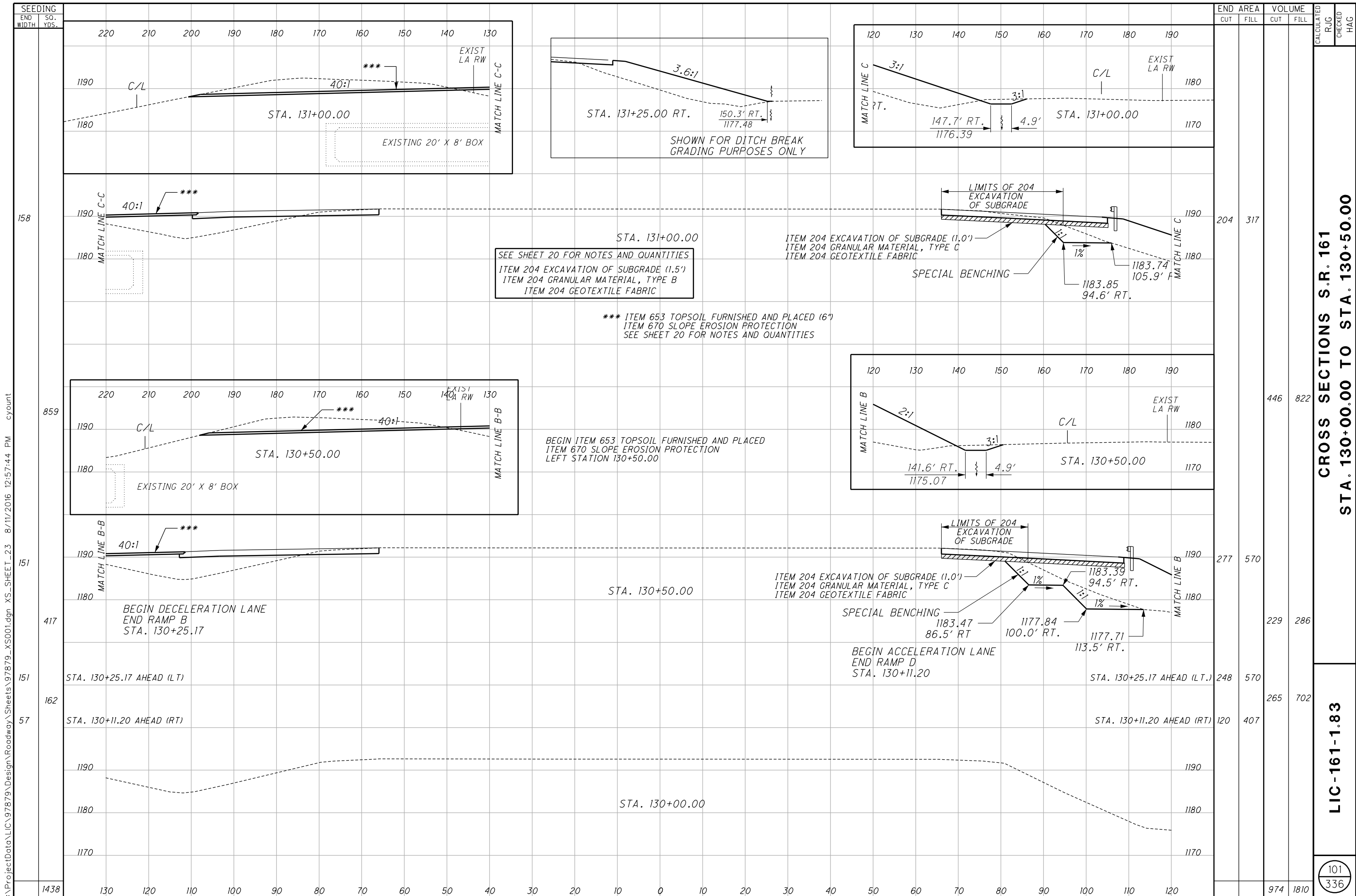
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		



CROSS SECTIONS S.R. 161
STA. 127+00.00 TO STA. 128+00.00

LIC-161-1.83

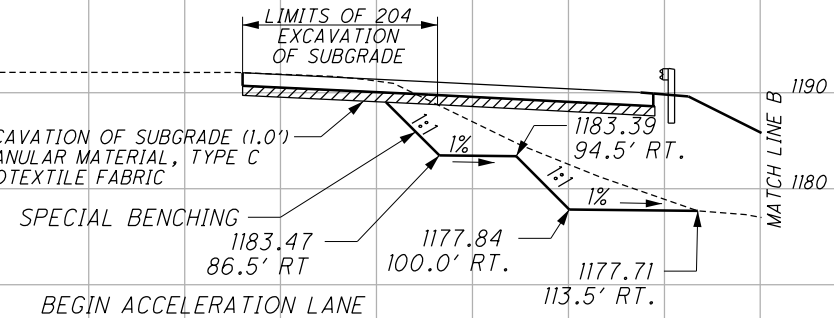
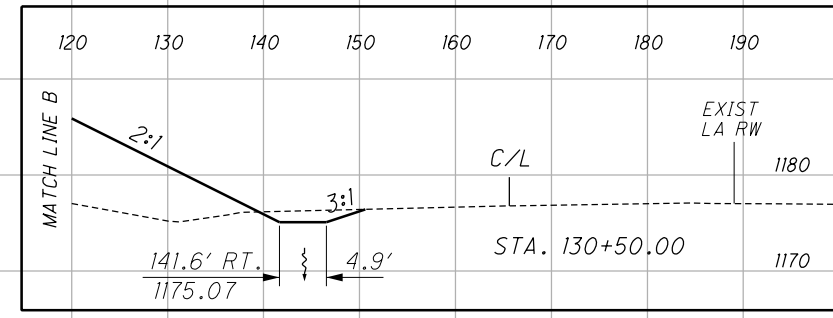
100
336



SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

BEGIN ITEM 653 TOPSOIL FURNISHED AND PLACED
 ITEM 670 SLOPE EROSION PROTECTION
 LEFT STATION 130+50.00



ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

BEGIN ACCELERATION LANE
 END RAMP D
 STA. 130+11.20

STA. 130+25.17 AHEAD (LT.)

STA. 130+11.20 AHEAD (RT)

STA. 130+50.00

STA. 130+00.00

BEGIN DECELERATION LANE
 END RAMP B
 STA. 130+25.17

STA. 130+25.17 AHEAD (LT)

STA. 130+11.20 AHEAD (RT)

SEEDING		END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL		
158				204	317		
859				446	822		
151				277	570		
417				229	286		
151				248	570		
162				265	702		
57				120	407		
1438				974	1810		

CROSS SECTIONS S.R.161
 STA. 130+00.00 TO STA. 130+50.00

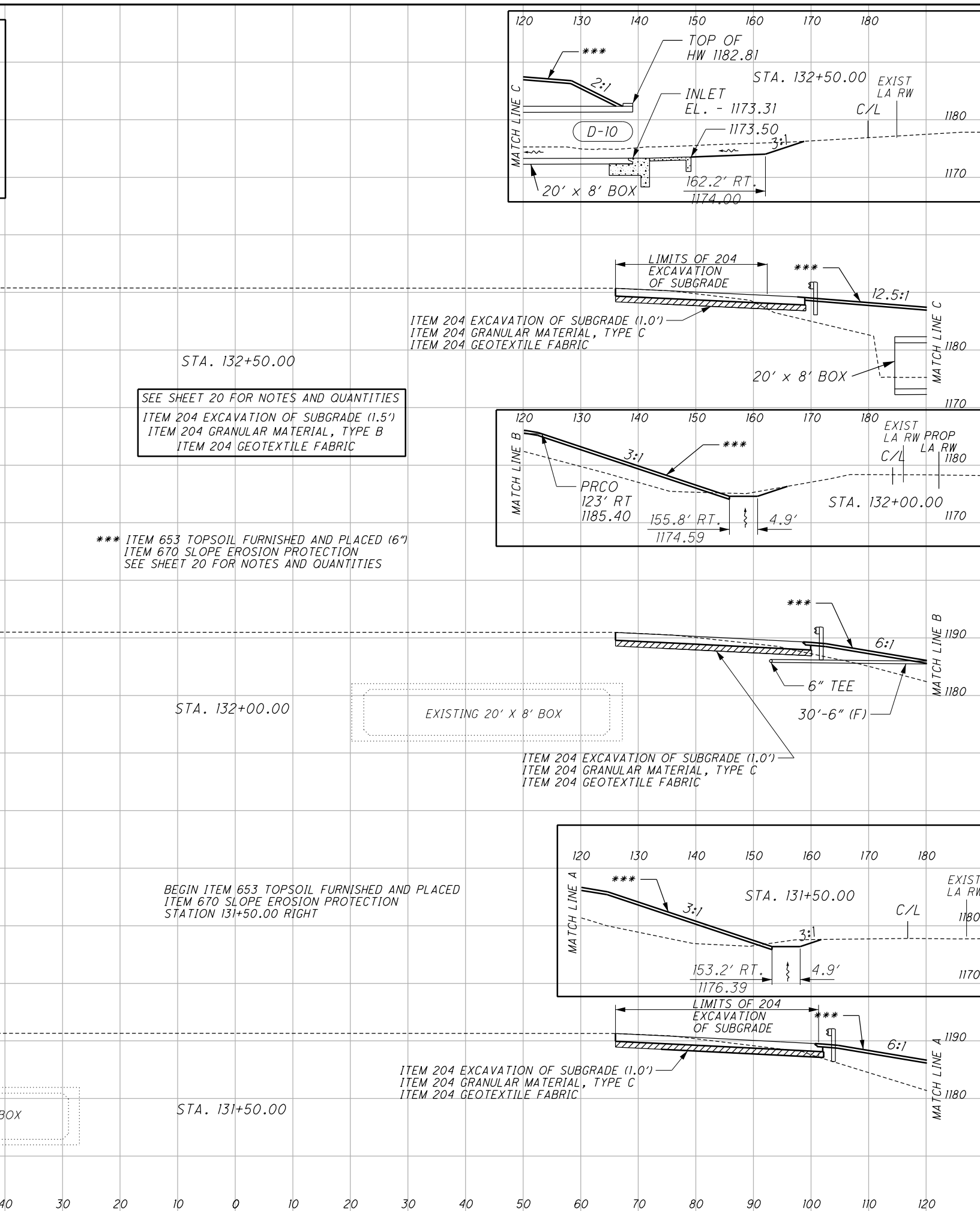
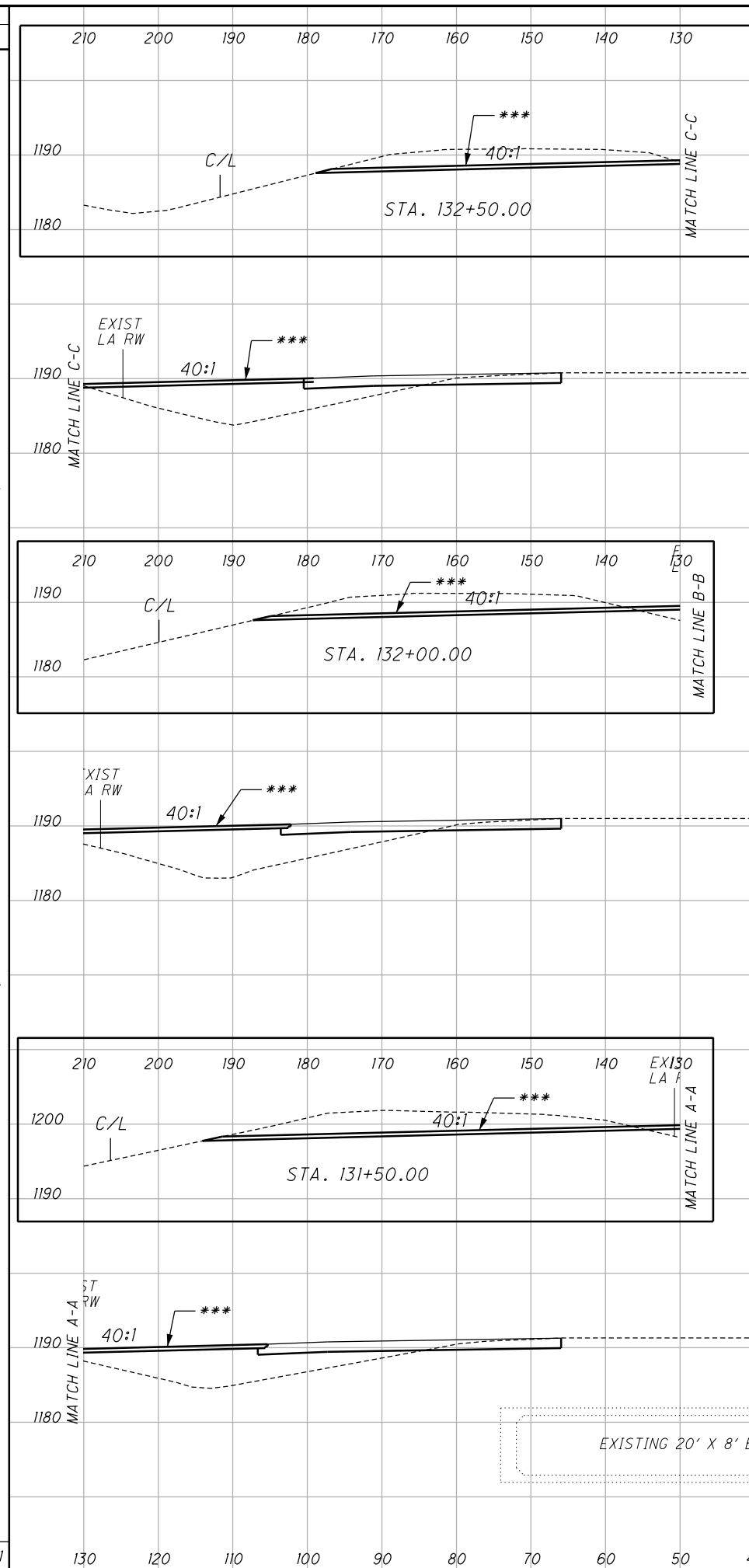
LIC-161-1.83

101
 336

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I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS_SHEET_24 8/11/2016 12:57:44 PM cyount

SEEDING	END SO.	
	WIDTH	YDS.
	130	120
	110	100
	90	80
	70	60
	50	40
	30	20
	10	0
	10	20
	30	40
	50	60
	70	80
	90	100
	110	120
	130	120



SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

BEGIN ITEM 653 TOPSOIL FURNISHED AND PLACED
 ITEM 670 SLOPE EROSION PROTECTION
 STATION 131+50.00 RIGHT

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

END AREA	VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL			
244	233				
		352			
		290			
		275			
		305			
338	576				
965	1612				

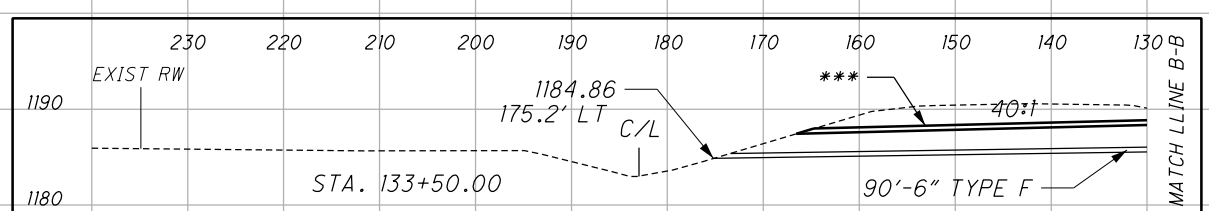
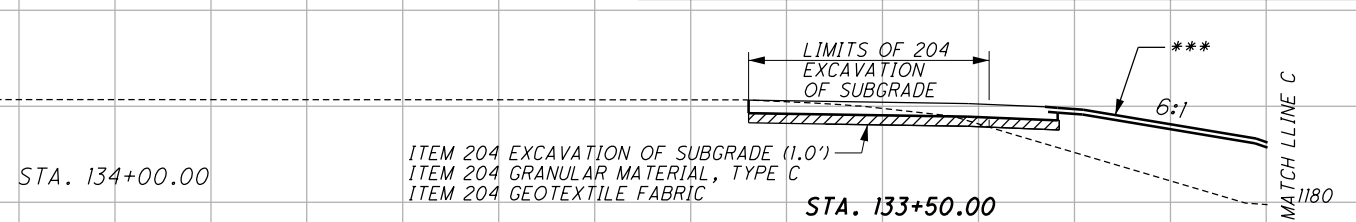
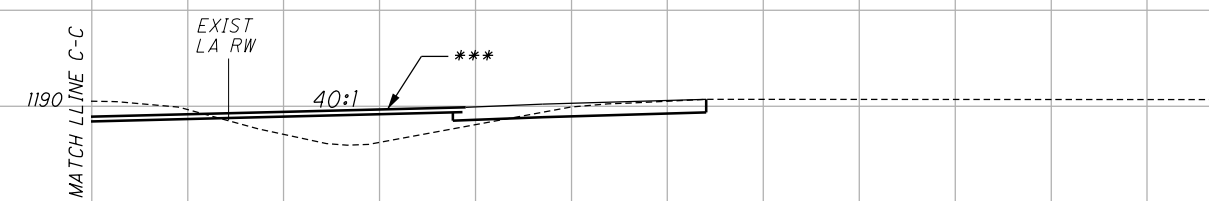
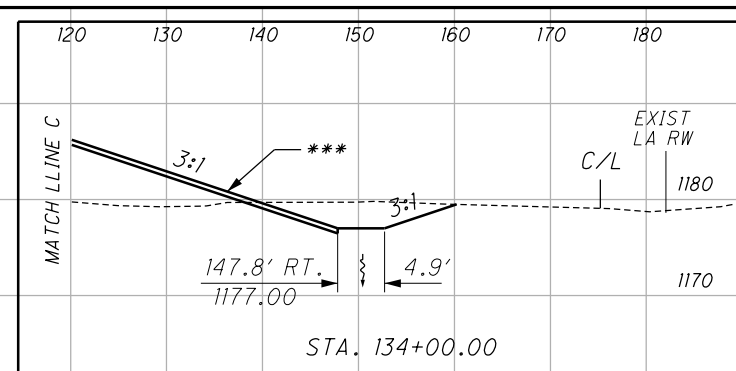
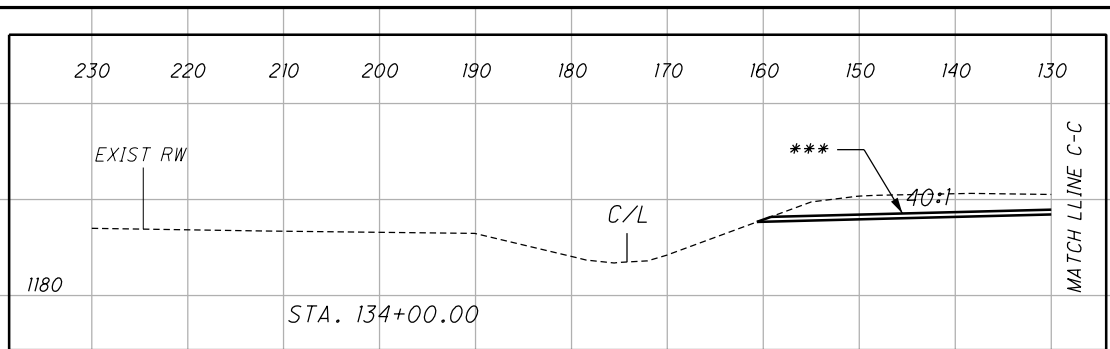
CROSS SECTIONS S.R. 161
 STA. 131+50.00 TO STA. 132+50.00

LIC-161-1.83

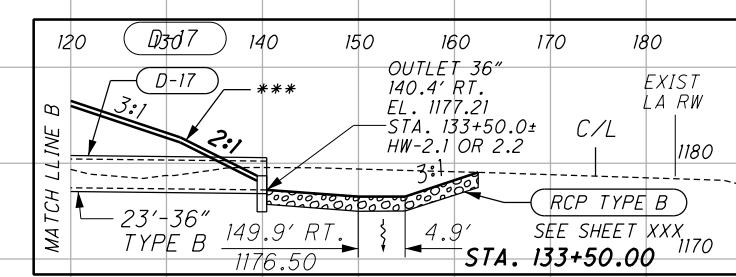
102
 336

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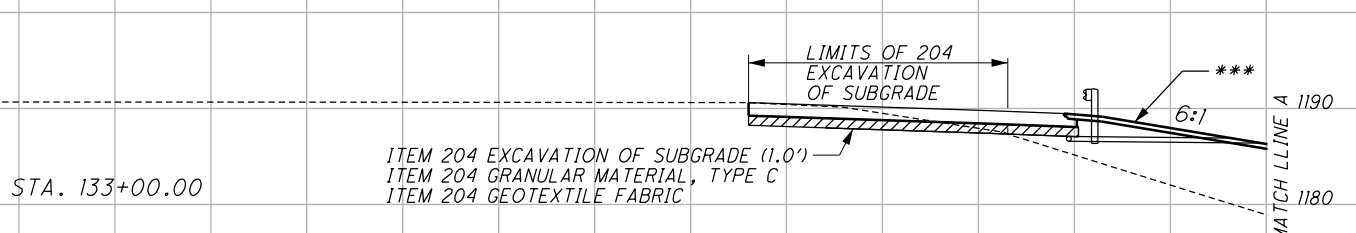
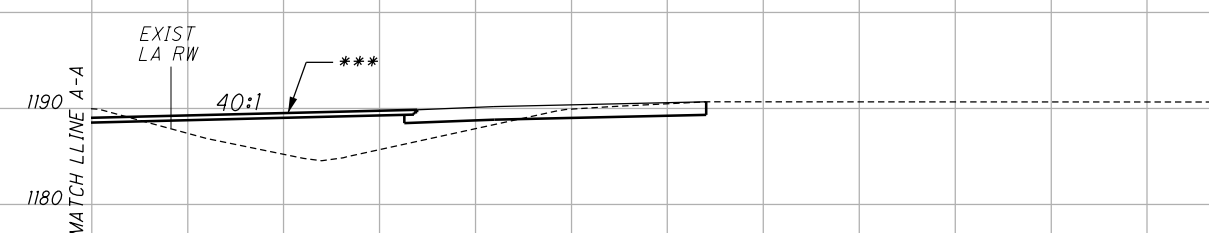
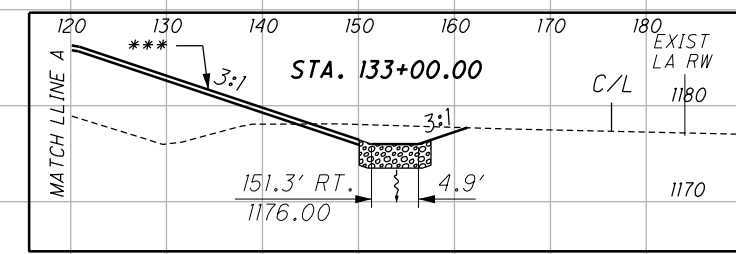
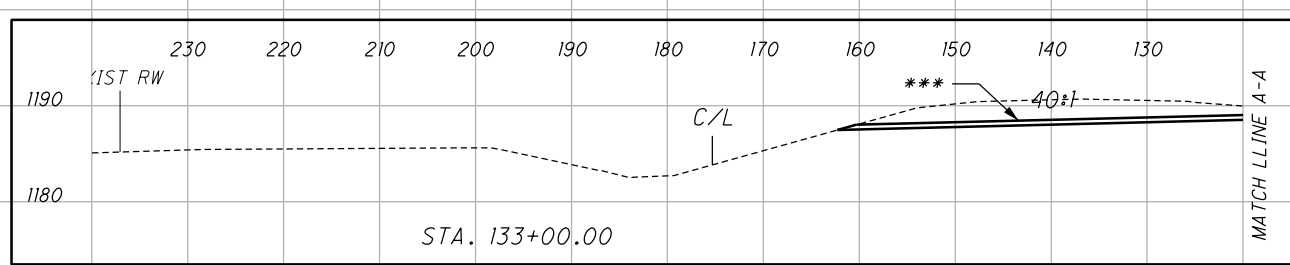
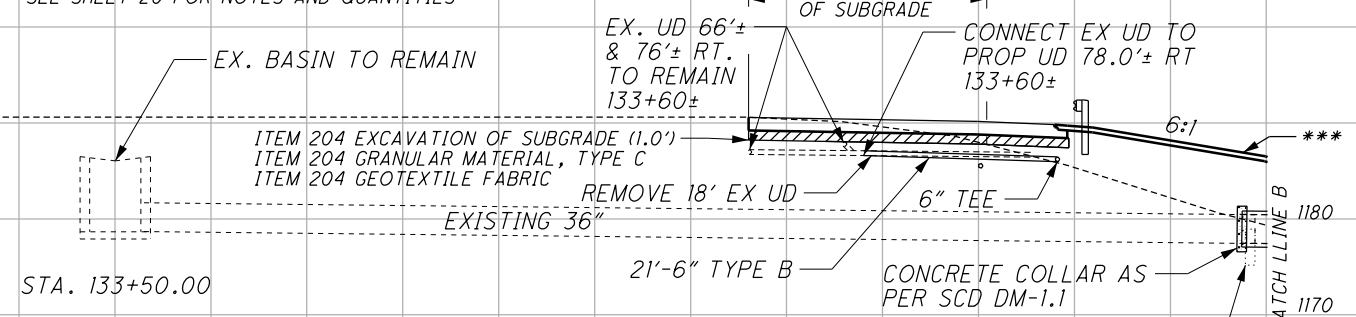
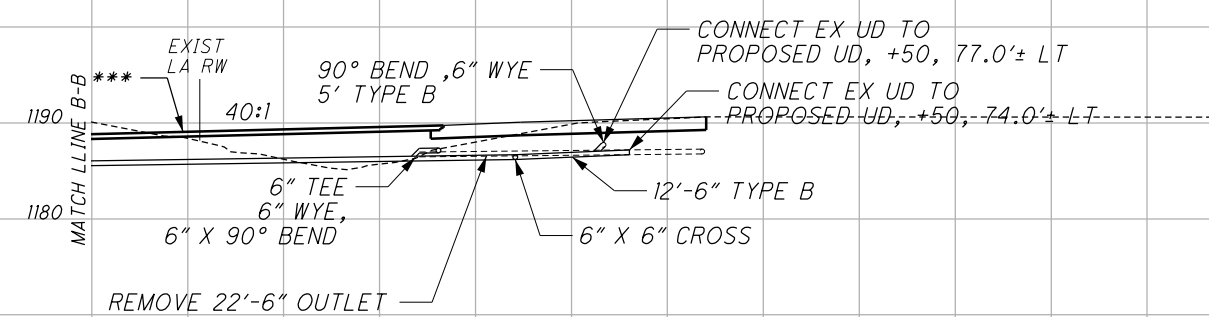
SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	HAG
	END WIDTH	SO. YDS.	CUT	FILL			
	154			235			
	770			428			
	159			227			
	887			504			
	160			317			
	878			510			
	2635		952	1442			



SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC



*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES



SEEDING	END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL
	130		952	1442		

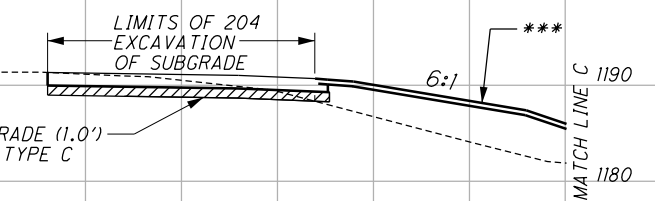
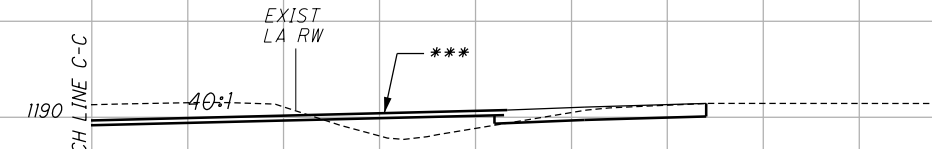
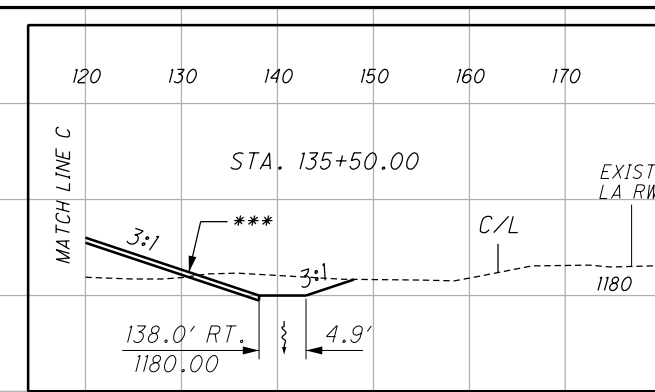
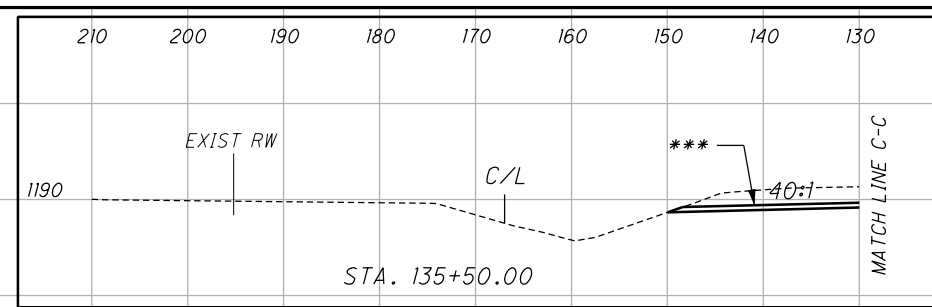
CROSS SECTIONS S.R.161
 STA. 133+50.00 TO STA. 134+00.00

LIC-161-1.83

103
 336

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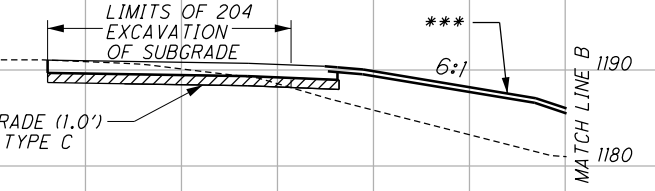
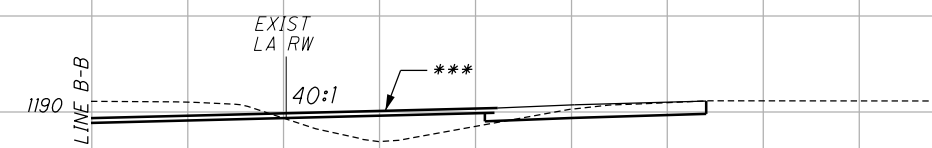
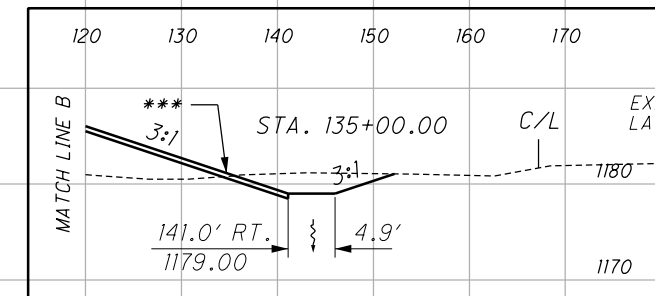
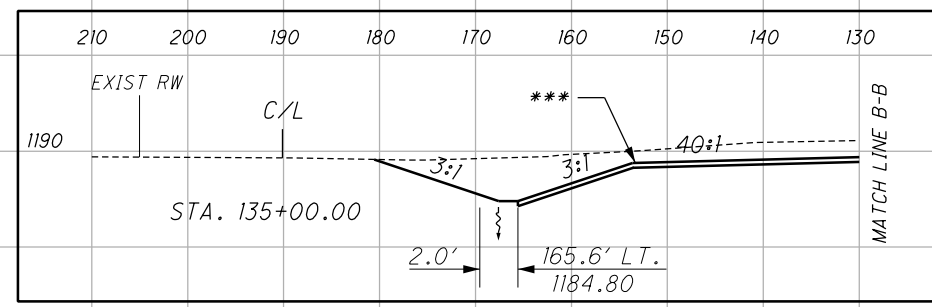
SEEDING	END AREA		VOLUME		CALCULATED	R/J	CHECKED	HAG
	CUT	FILL	CUT	FILL				
END WIDTH								
SO. YDS.								
137								
867								
175								
903								
150								
845								
2615			273	415	104			
			916	1067	336			



EX. BASIN TO REMAIN

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

STA. 135+50.00

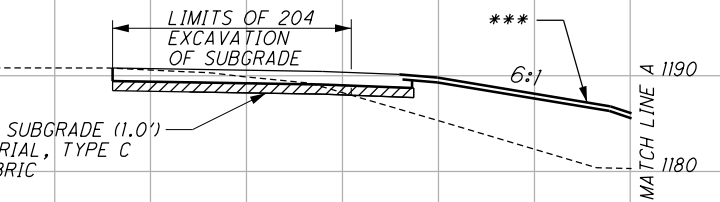
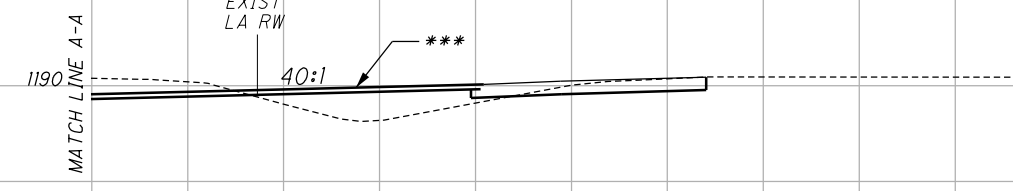
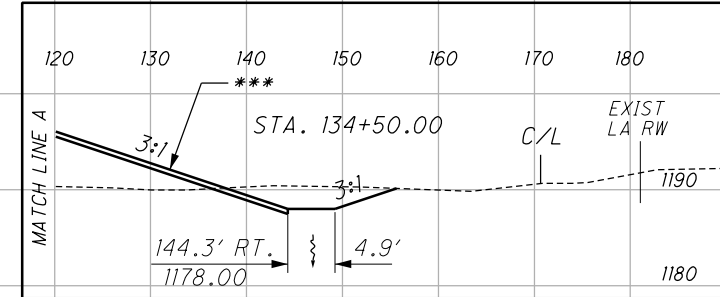
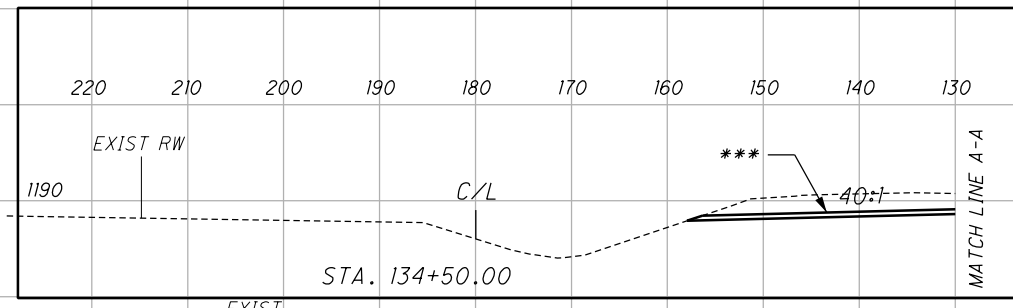


SEE SHEET 20 FOR NOTES AND QUANTITIES

ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

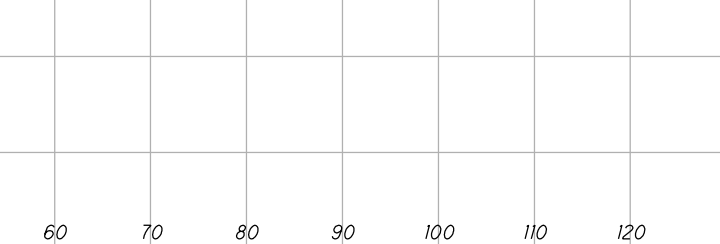
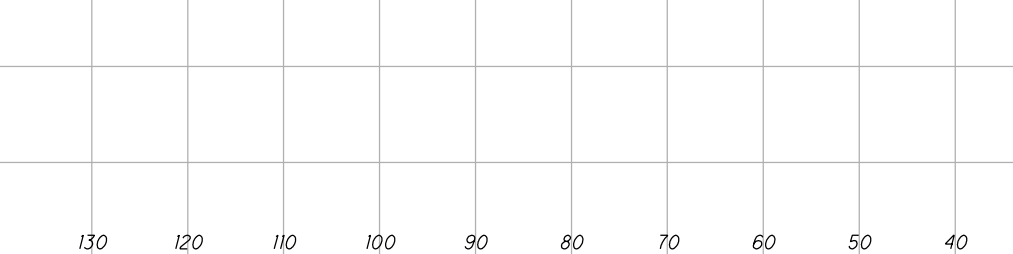
*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

STA. 135+00.00



ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

STA. 134+50.00



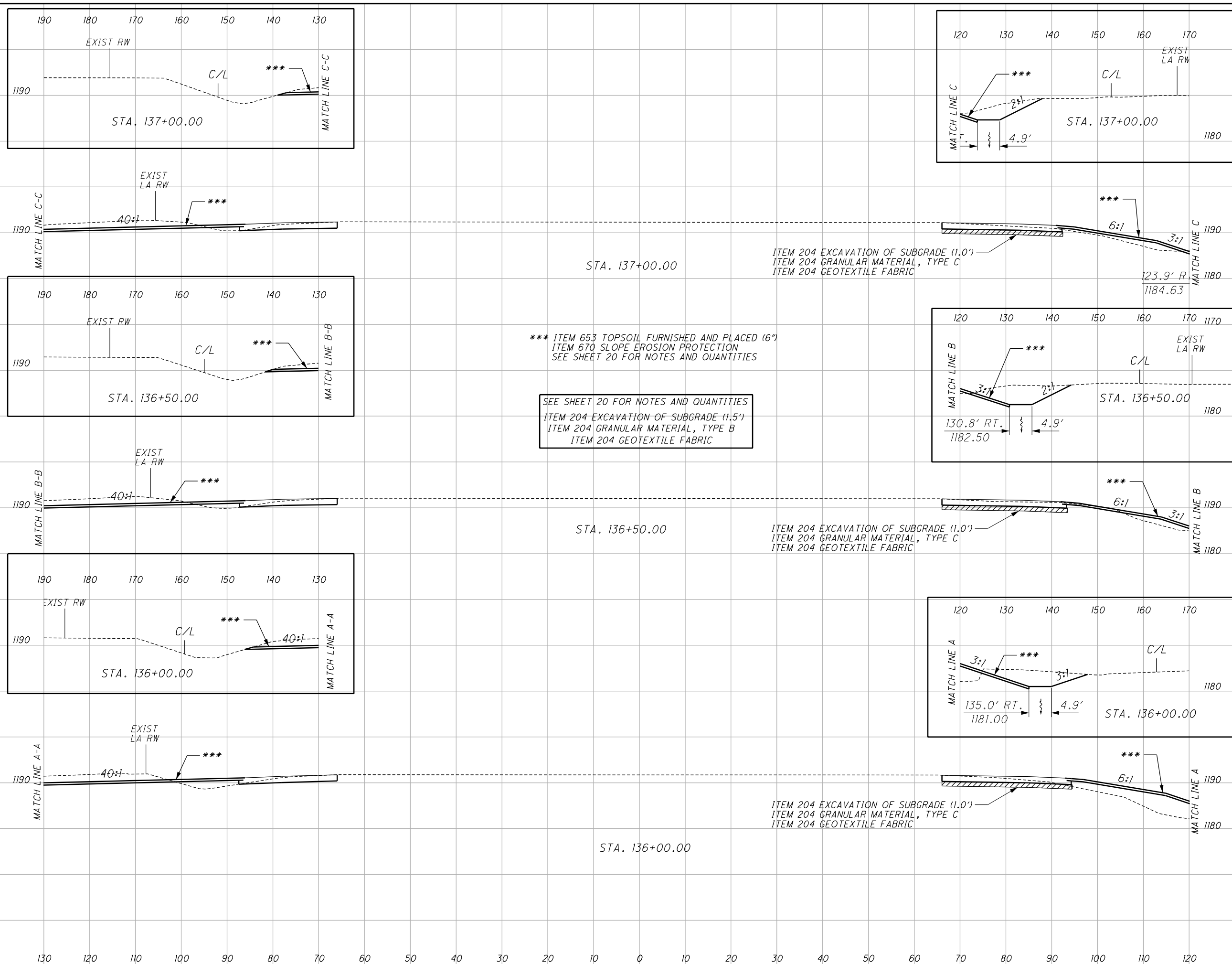
CROSS SECTIONS S.R. 161
 STA. 134+50.00 TO STA. 135+50.00

LIC-161-1.83

104
 336

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SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	HAG
	END WIDTH	SO. YDS.	CUT	FILL			
85			145	25			
595			300	45			
129			179	23			
737			327	111			
136			174	96			
759			295	213			
2091			922	369			

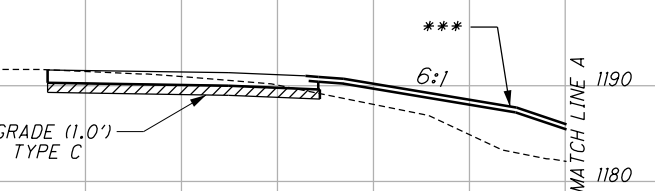
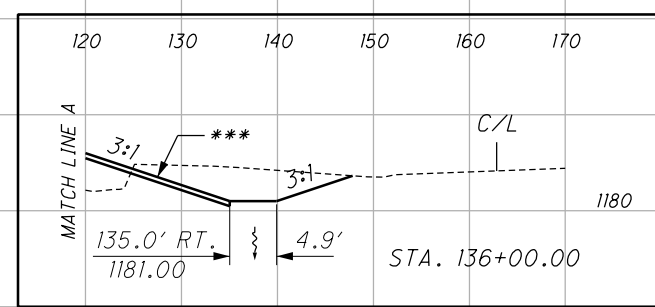
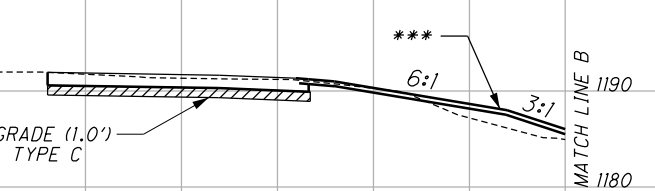
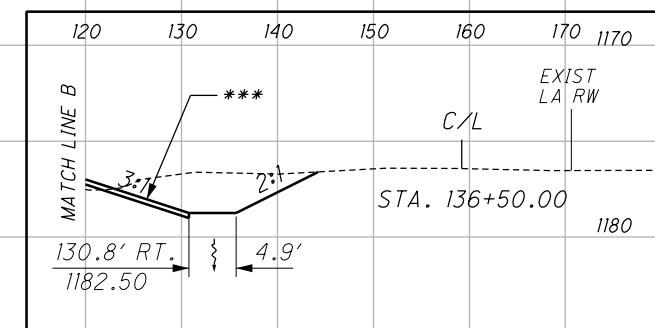
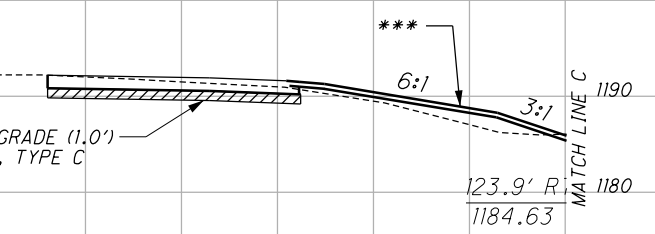
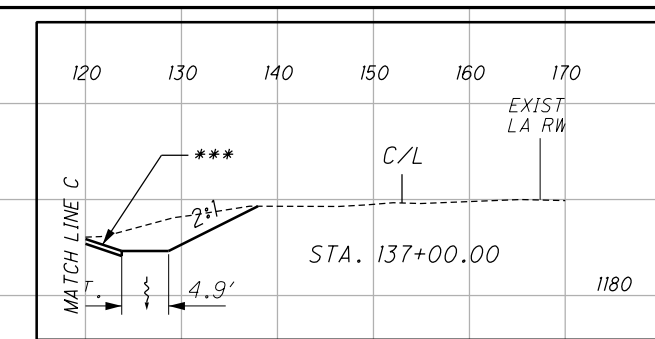


SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1:5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC



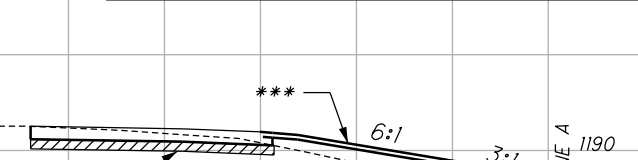
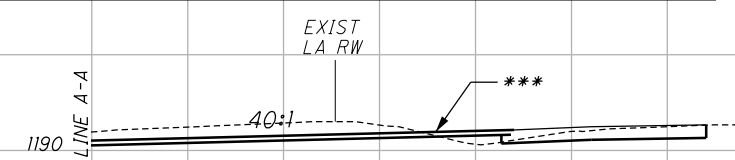
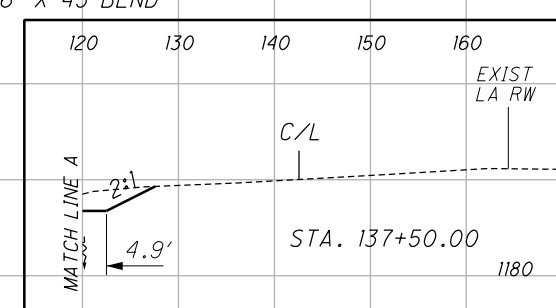
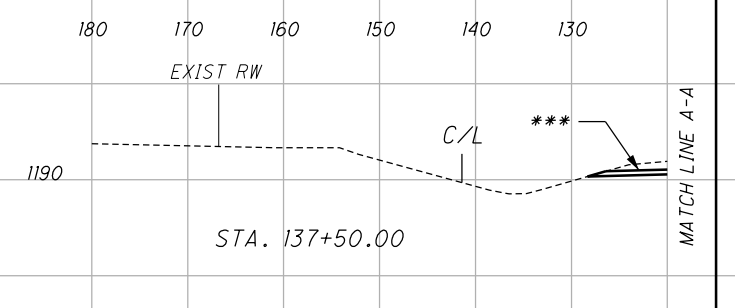
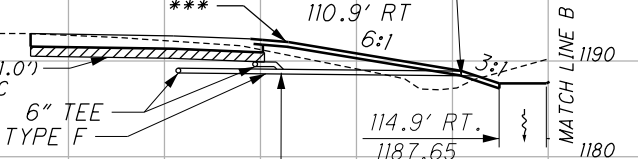
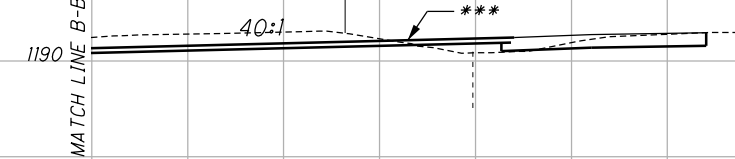
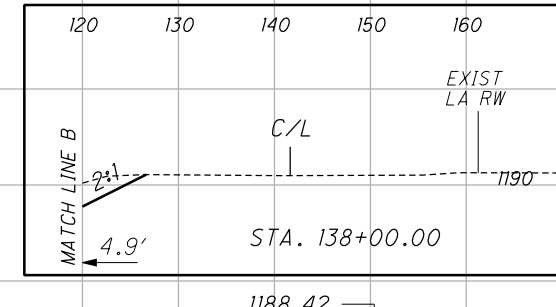
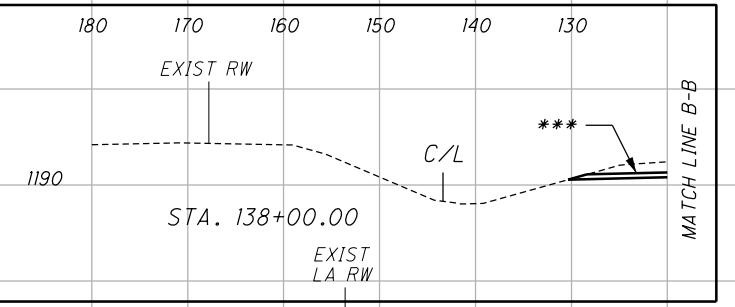
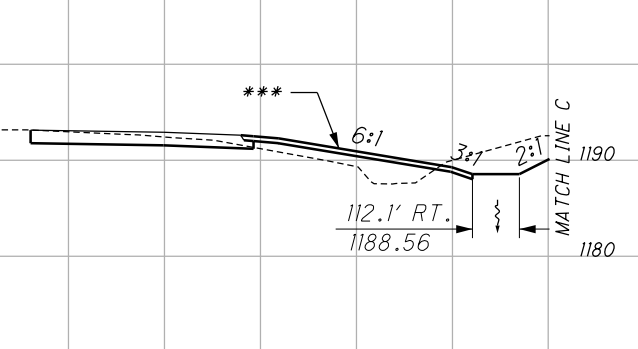
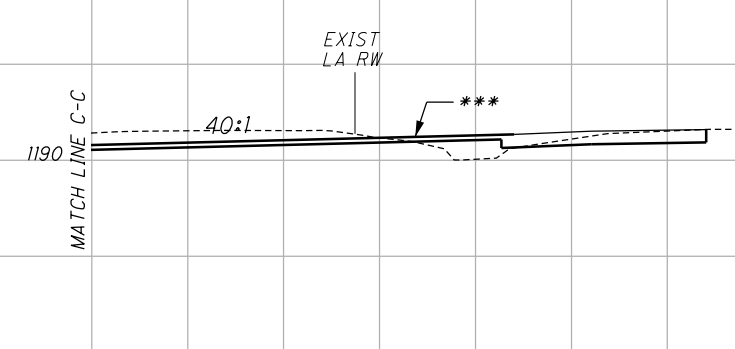
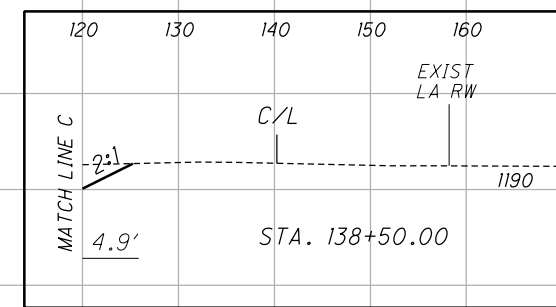
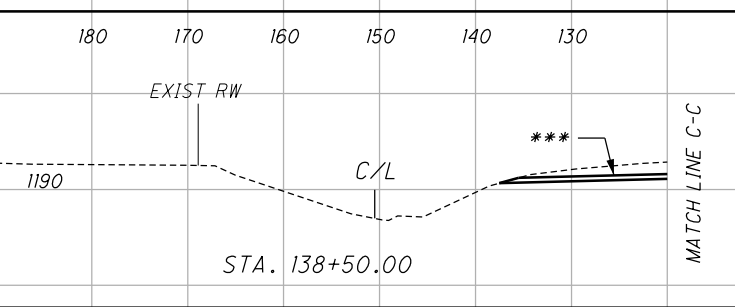
CROSS SECTIONS S.R. 161
 STA. 136+00.00 TO STA. 137+00.00

LIC-161-1.83

105
 336

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SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL	CUT	FILL			
END WIDTH							
SO. YDS.							
1801							
542			248	60			
110			122	39			
617			226	67			
112			122	33			
642			245	66			
119			142	38			
542			248	60			
1801			719	193			



END ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC
 STATION 138+00.00

*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC
 6" TEE
 30'-6" TYPE F
 6" WYE, 6" X 45 BEND

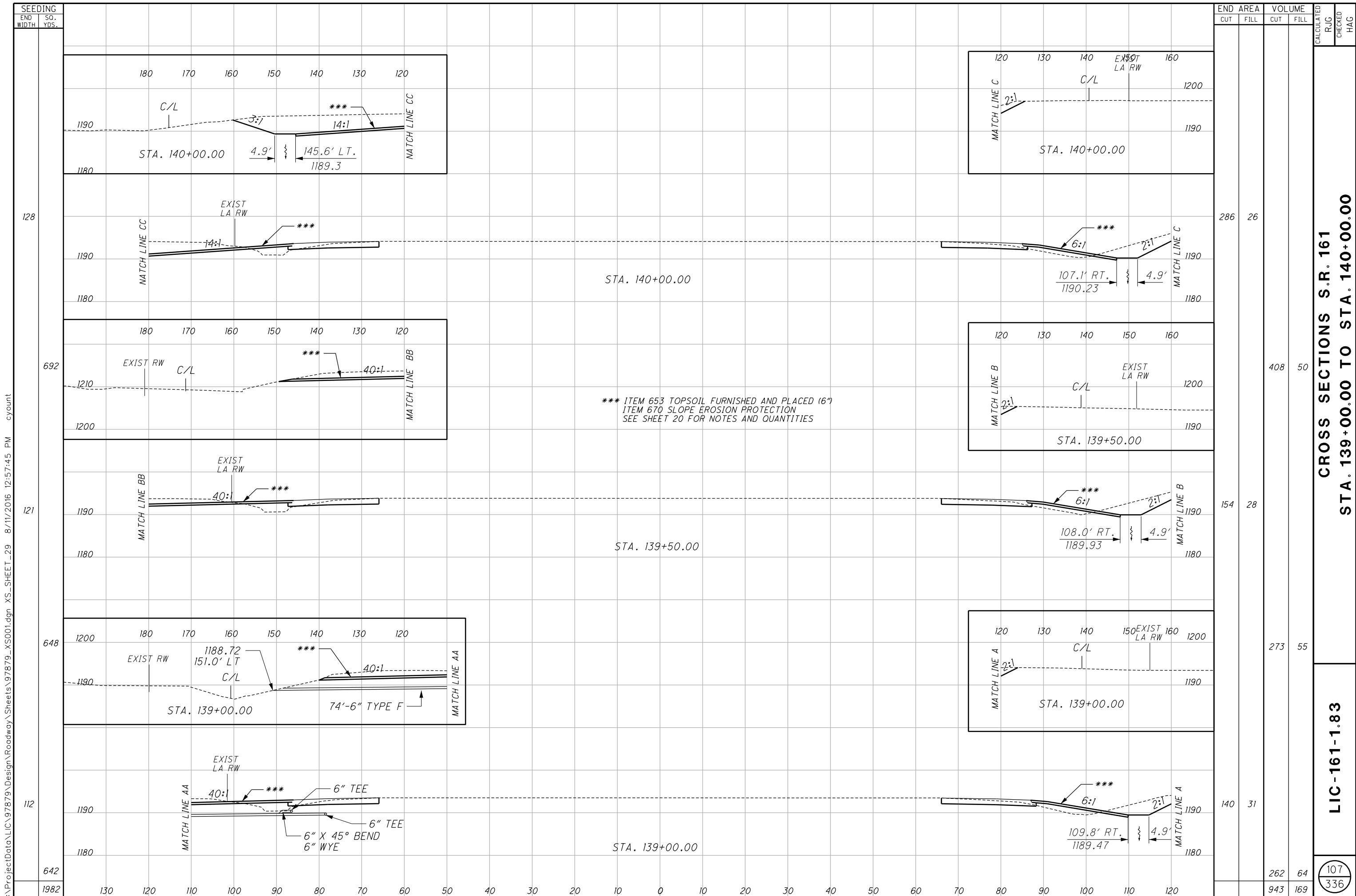
SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

ITEM 204 EXCAVATION OF SUBGRADE (1.0')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

CROSS SECTIONS S.R. 161
 STA. 137+50.00 TO STA. 138+50.00

LIC-161-1.83

106
 336



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SEEDING	
END WIDTH	SO. YDS.
182	130
128	120
692	110
121	100
648	90
112	80
642	70
1982	60

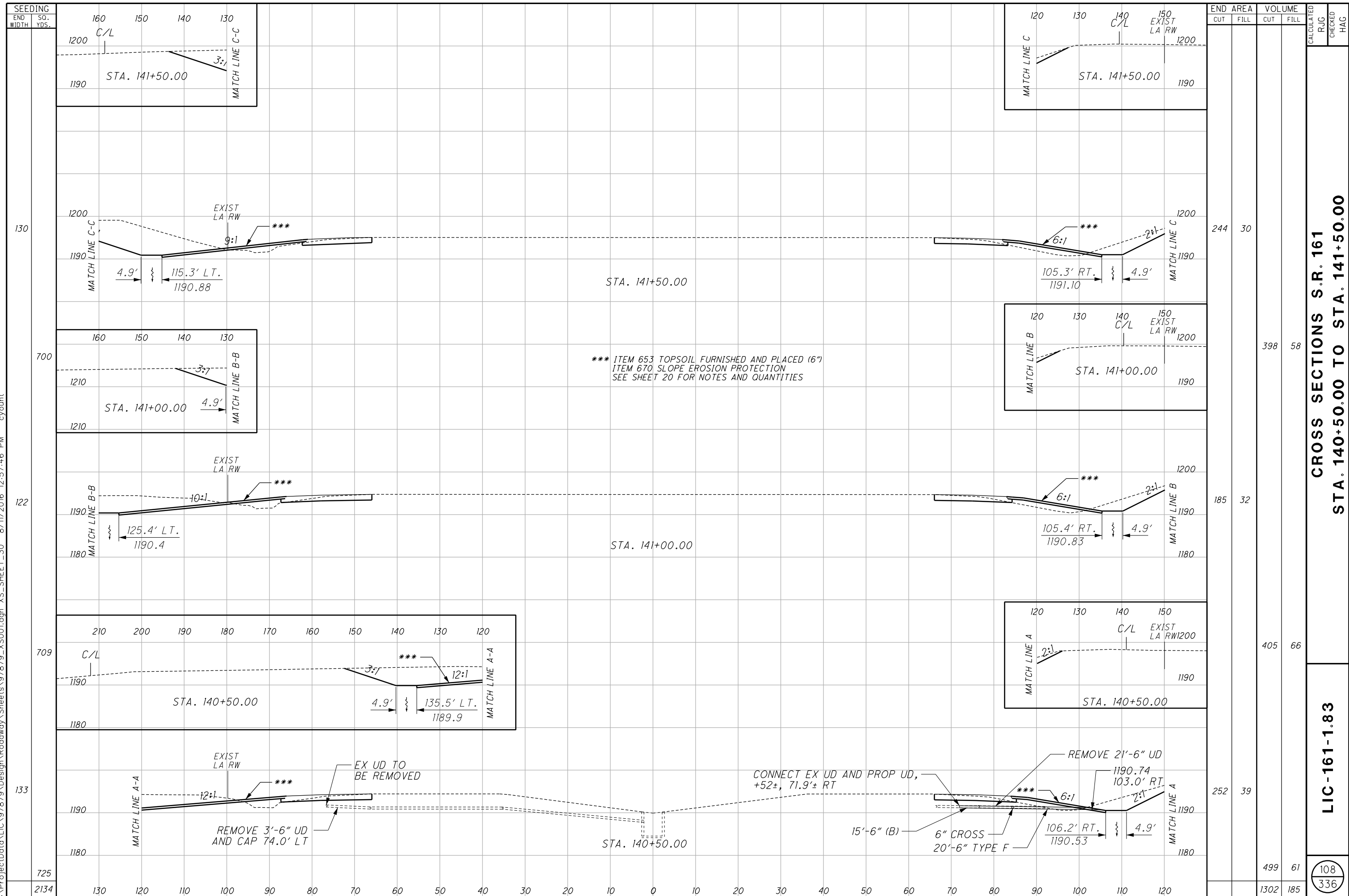
END AREA		VOLUME		CALCULATED RUG	CHECKED HAG
CUT	FILL	CUT	FILL		
		286	26		
		408	50		
		154	28		
		273	55		
		140	31		
		262	64		
		943	169		

CROSS SECTIONS S.R. 161
STA. 139+00.00 TO STA. 140+00.00

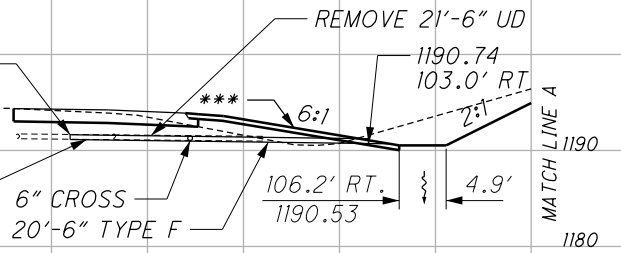
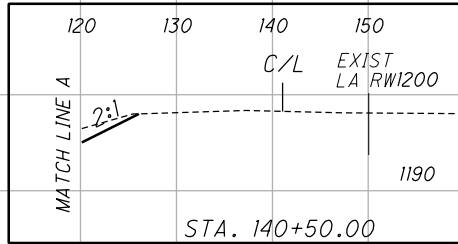
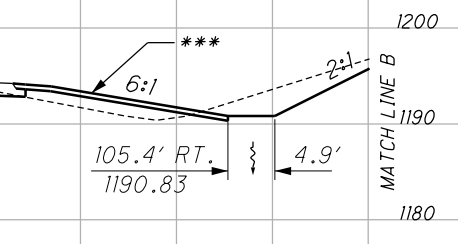
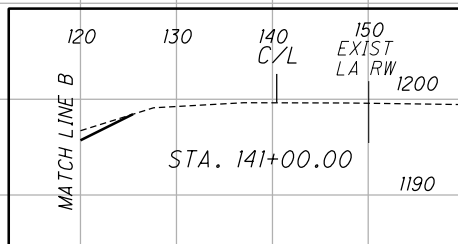
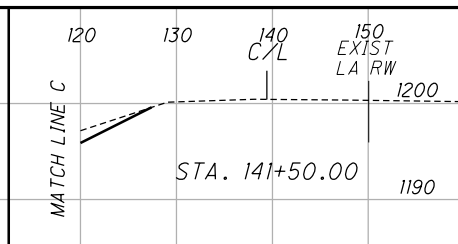
LIC-161-1.83

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*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES



END STA.	AREA		VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL	CUT	FILL			
141+50.00	244	30					
141+00.00	398	58					
140+50.00	405	66					
133	252	39					
725	499	61					
2134	1302	185					

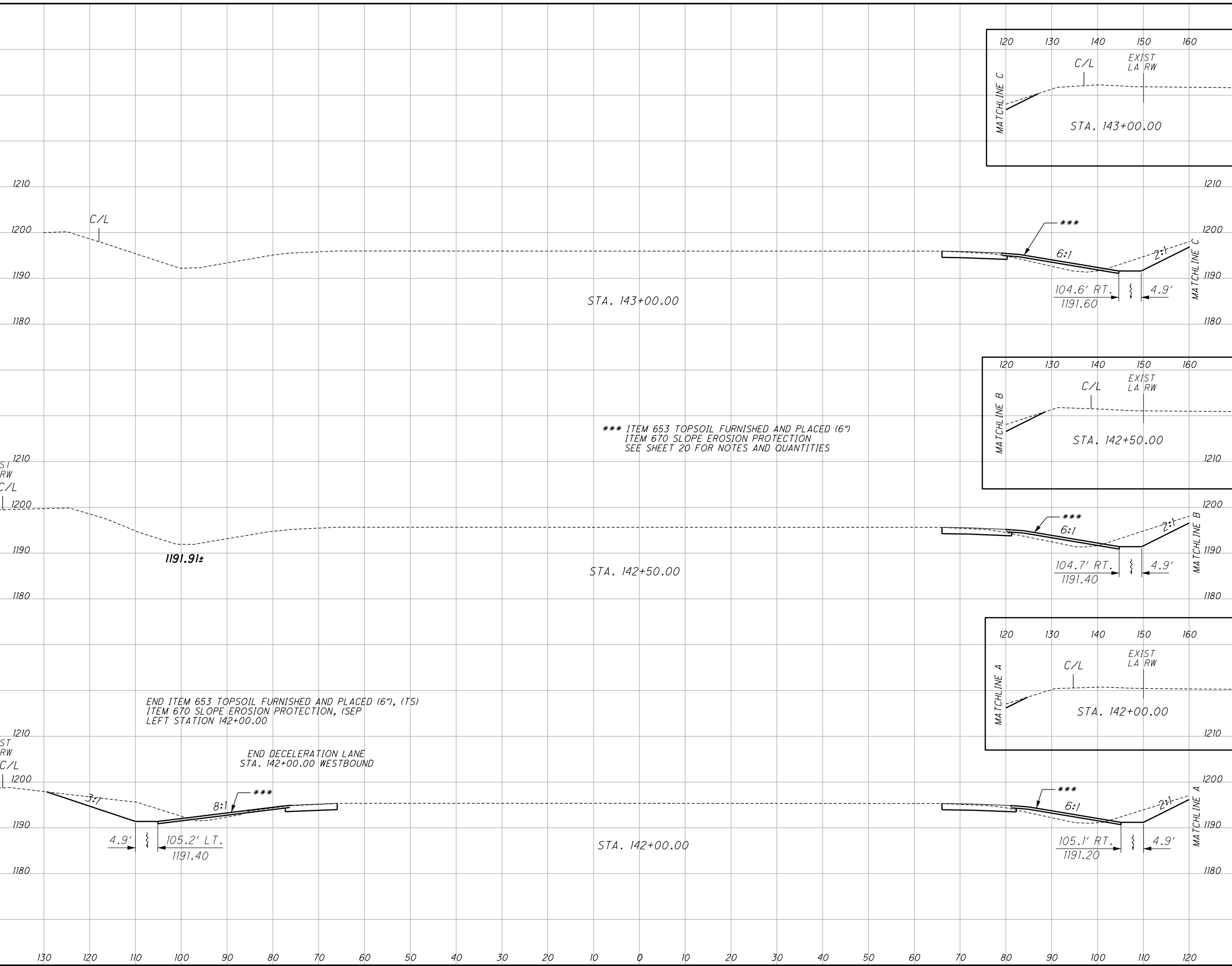
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STA. 140+50.00 TO STA. 141+50.00

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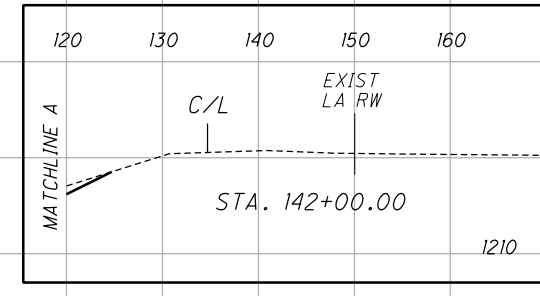
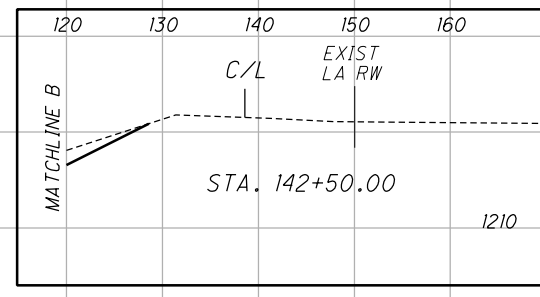
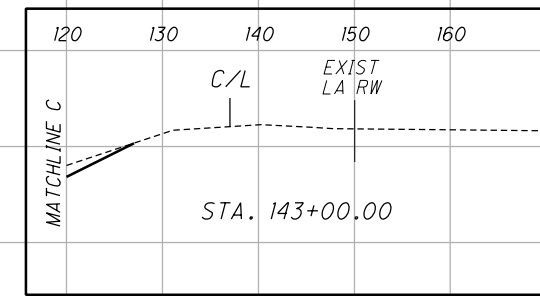
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SEEDING	
END WIDTH	SO. YDS.
1435	
684	
116	
467	
52	
284	
50	



*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

END ITEM 653 TOPSOIL FURNISHED AND PLACED (6"), (TS)
 ITEM 670 SLOPE EROSION PROTECTION, (SEP)
 LEFT STATION 142+00.00



END AREA		VOLUME	
CUT	FILL	CUT	FILL
58	15	115	28
66	15	190	35
139	22	355	49
		660	112

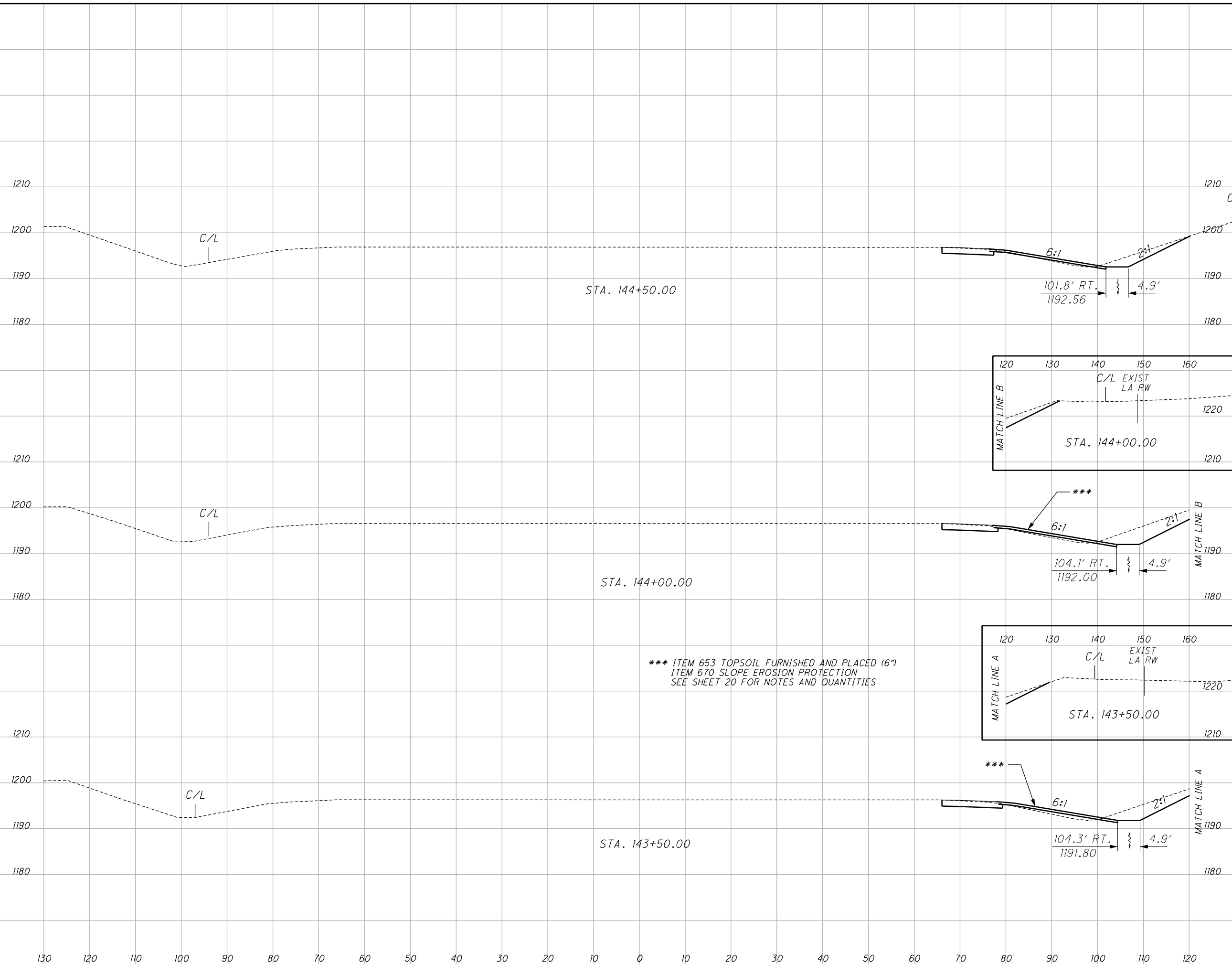
CALCULATED	CHECKED
RJG	HAG

CROSS SECTIONS S.R. 161
STA. 142+00.00 TO STA. 143+00.00

LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS001.dgn_XS_SHEET_32 8/11/2016 12:57:46 PM c:\count

SEEDING	
END WIDTH	SO. YDS.
30	
245	
58	
300	
50	
278	
823	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
40	3	112	11
80	8	135	16
65	9	114	23
		361	50

CALCULATED	CHECKED
RJG	HAG

**CROSS SECTIONS S.R. 161
STA. 143+50.00 TO STA. 144+50.00**

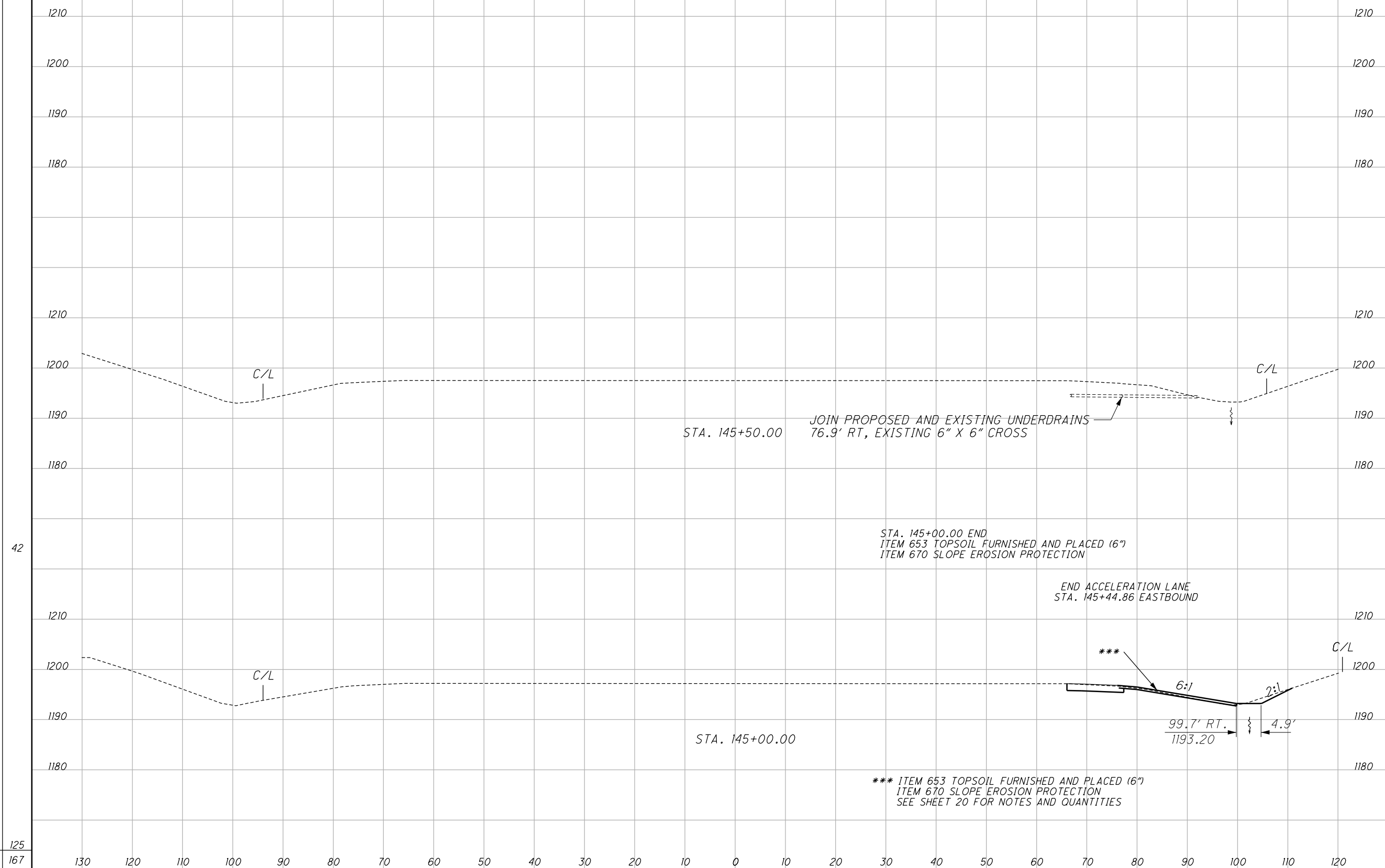
LIC-161-1.83

110
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS001.dgn_XS_SHEET_33 8/11/2016 12:57:46 PM c:\count

SEEDING	
END WIDTH	SO. YDS.
528	COBBS ROAD DRIVE CARRIED FROM SHEET 189
5,283	RAMP A TOTAL CARRIED FROM SHEET 118
9,908	RAMP B TOTAL CARRIED FROM SHEET 126
6,561	RAMP C TOTAL CARRIED FROM SHEET 132
11,327	RAMP D TOTAL CARRIED FROM SHEET 140
18,460	MINK RD TOTAL CARRIED FROM SHEET 163
3,024	COBBS RD TOTAL CARRIED FROM SHEET 170
31,263	S.R. 16 TOTAL
86,354	TOTAL CARRIED TO SHEET 20

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
		8	479		
		895	1,903		
		8,375	2,731		
		2,967	12,669		
		4,492	19,701		
		16,297	4,180		
		734	4,497		
		16,393	18,150		
		50,161	64,310		

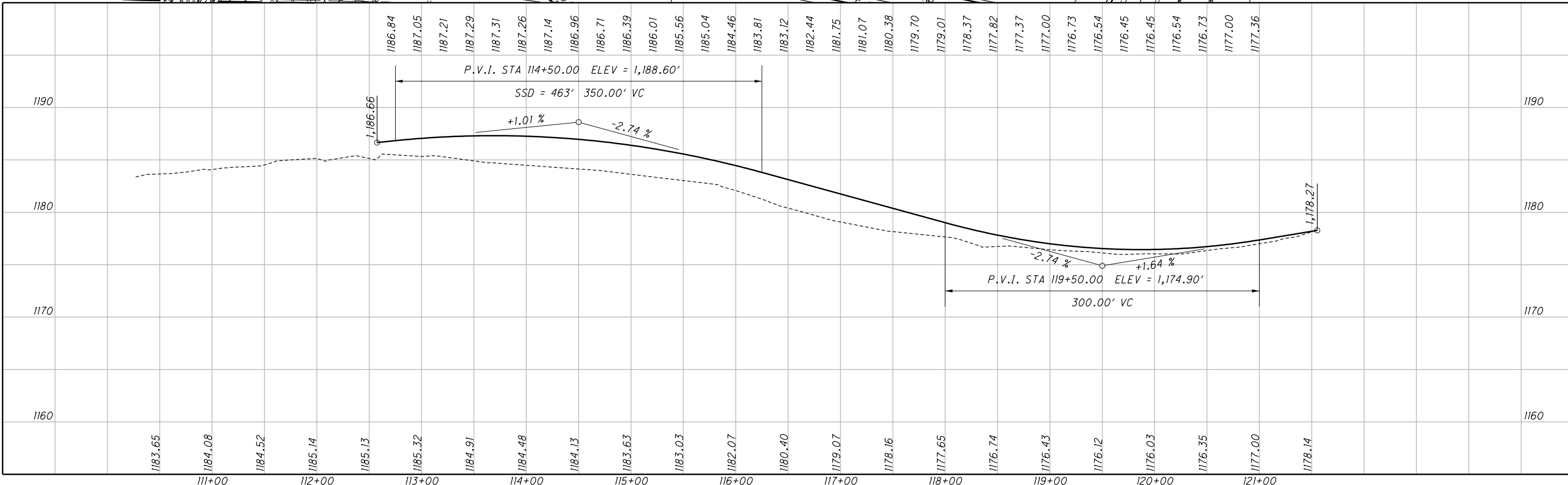
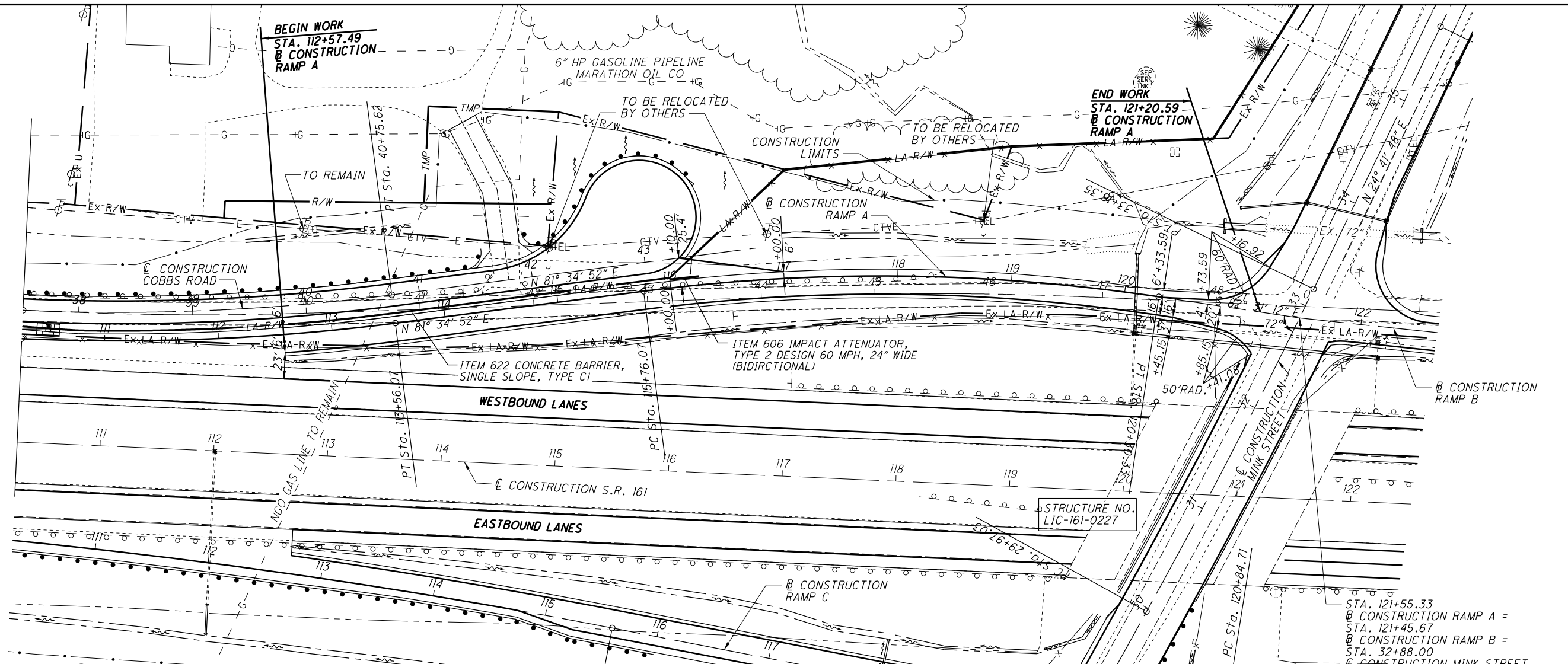


CROSS SECTIONS S.R. 161
STA. 145+00.00 TO STA. 146+00.00

LIC-161-1.83

111
336

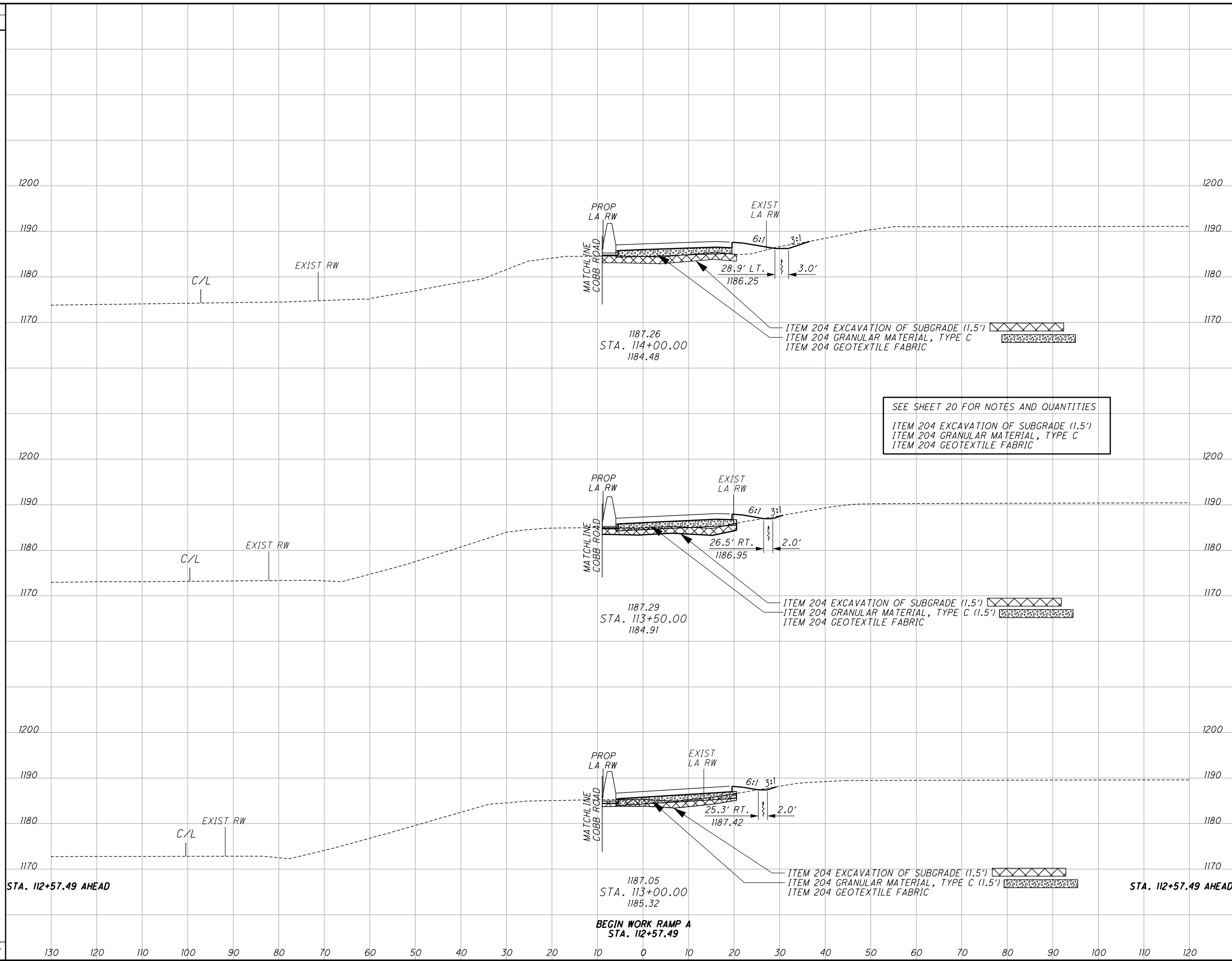
0	0	0	0
42	22	0	
15	23	0	
125	59	3	
167	81	3	



RAMP A PLAN AND PROFILE
STA. 112+57.49 TO STA. 121+20.59

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SEEDING	
END WIDTH	SO. YDS.
359	
28	
139	
22	
120	
21	
21	



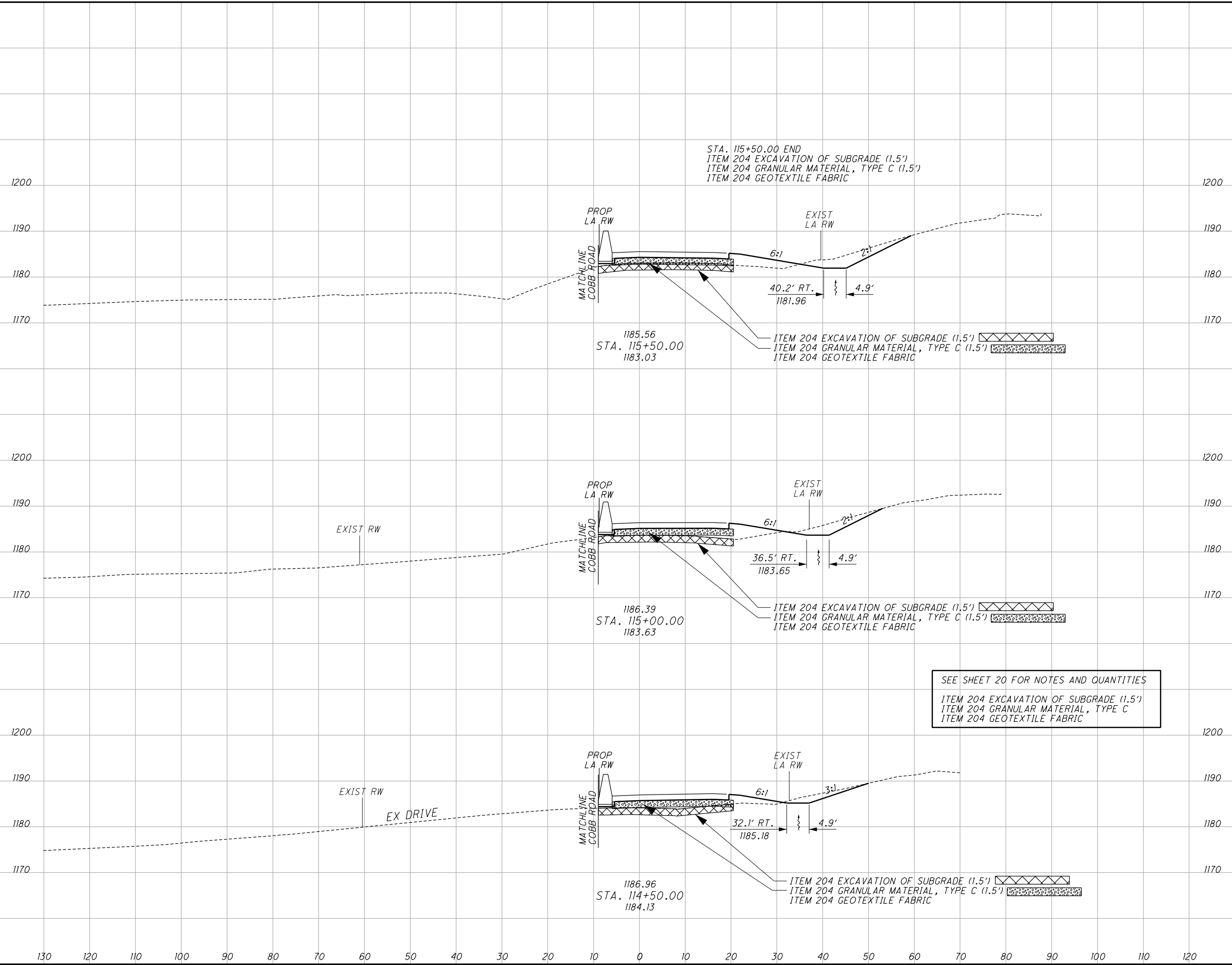
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
3	57				
		4	94		
1	44				
		2	68		
1	29				
		2	46		
1	29				
		8	208		

CROSS SECTIONS RAMP A
STA. 113+00.00 TO STA. 114+00.00

LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS002.dgn XS_SHEET_2 8/18/2016 12:36:54 PM ccount

SEEDING	
END WIDTH	SO. YDS.
42	
28	
139	
22	
139	
473	



SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE C
 ITEM 204 GEOTEXTILE FABRIC

END AREA		VOLUME		CALCULATED		
CUT	FILL	CUT	FILL	R/J	CHECKED	HAG
37	63					
		60	125			
27	71					
		39	118			
15	56					
		17	105			
		116	348			

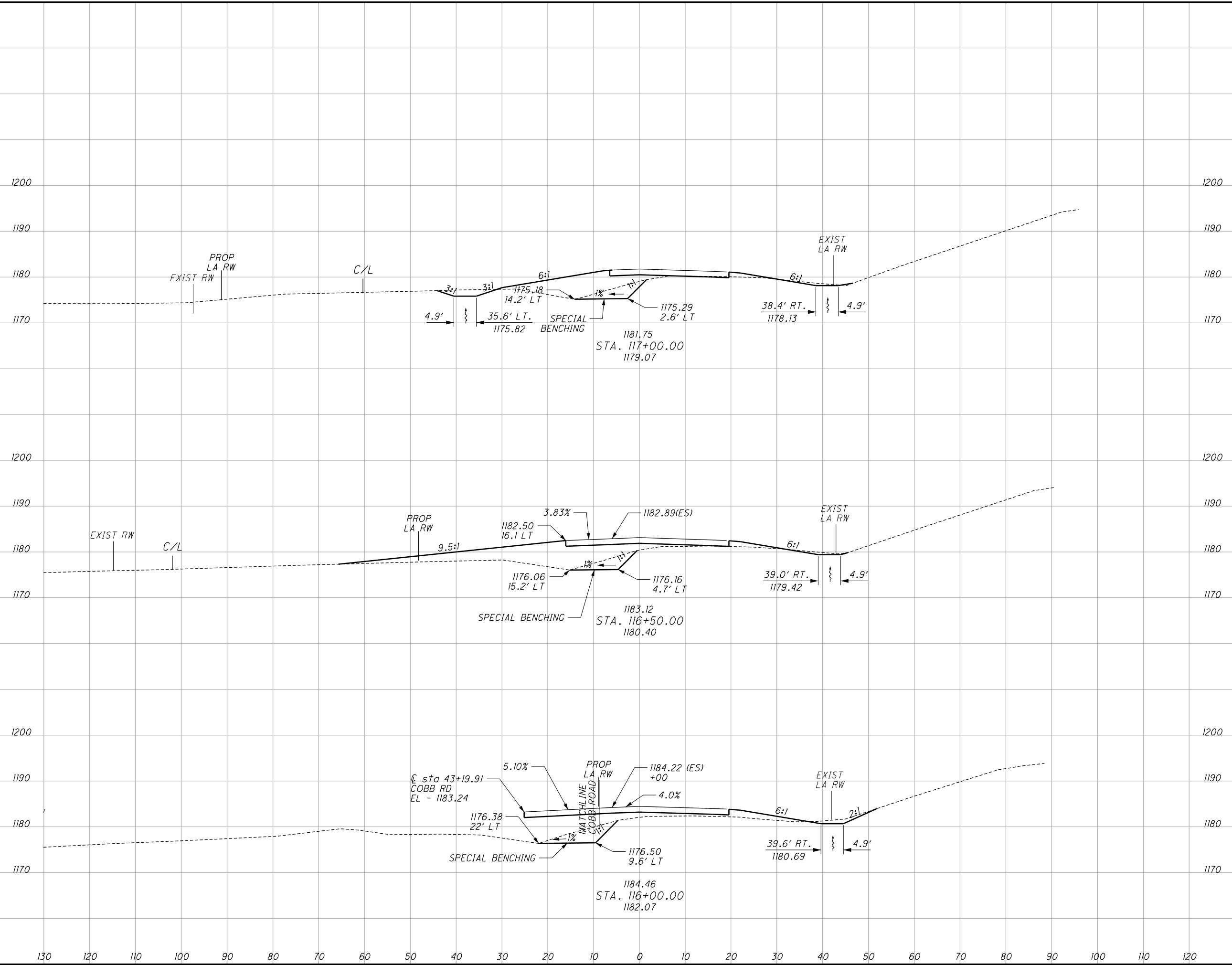
CROSS SECTIONS RAMP A
STA. 114+50.00 TO STA. 115+50.00

LIC-161-1.83

114
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS002.dgn XS_SHEET_3 8/11/2016 12:57:50 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1032	239
130	44
120	337
110	77
100	456
90	87



END AREA		VOLUME	
CUT	FILL	CUT	FILL
43	124	43	264
39	161	39	231
40	88	40	140
222	635		

CALCULATED
 R/JG
 CHECKED
 HAG

CROSS SECTIONS RAMP A
STA. 116+00.00 TO STA. 117+00.00

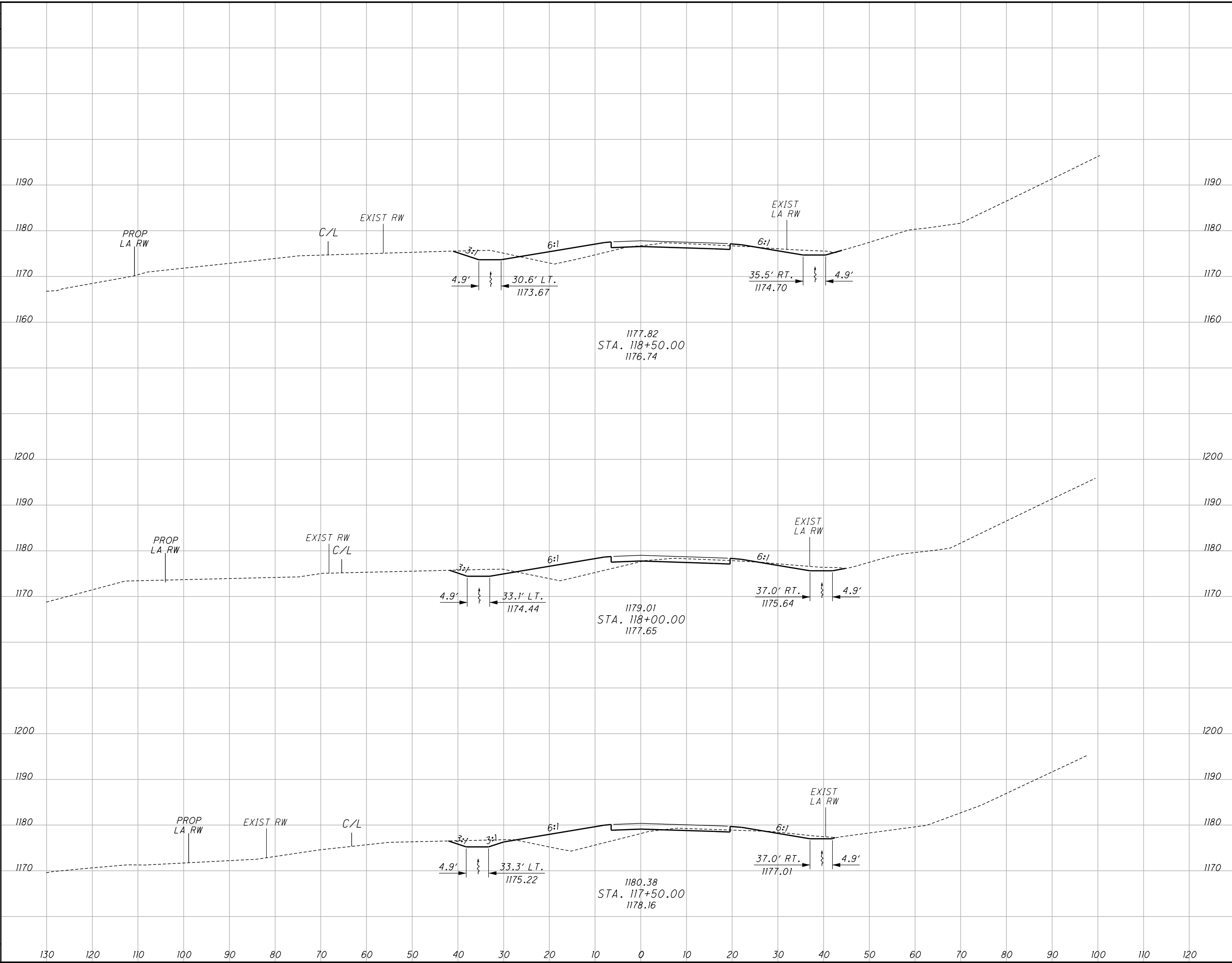
LIC-161-1.83

115
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS002.dgn XS_SHEET_4 8/11/2016 12:57:50 PM ccount

SEEDING

END WIDTH	SO. YDS.
1398	82
470	85
1398	82



END AREA		VOLUME		CALCULATED	CHECKED	HAG
CUT	FILL	CUT	FILL			
45	46	78	99			
39	60	62	131			
27	81	65	190			
		205	420			

CROSS SECTIONS RAMP A
STA. 117+50.00 TO STA. 118+50.00

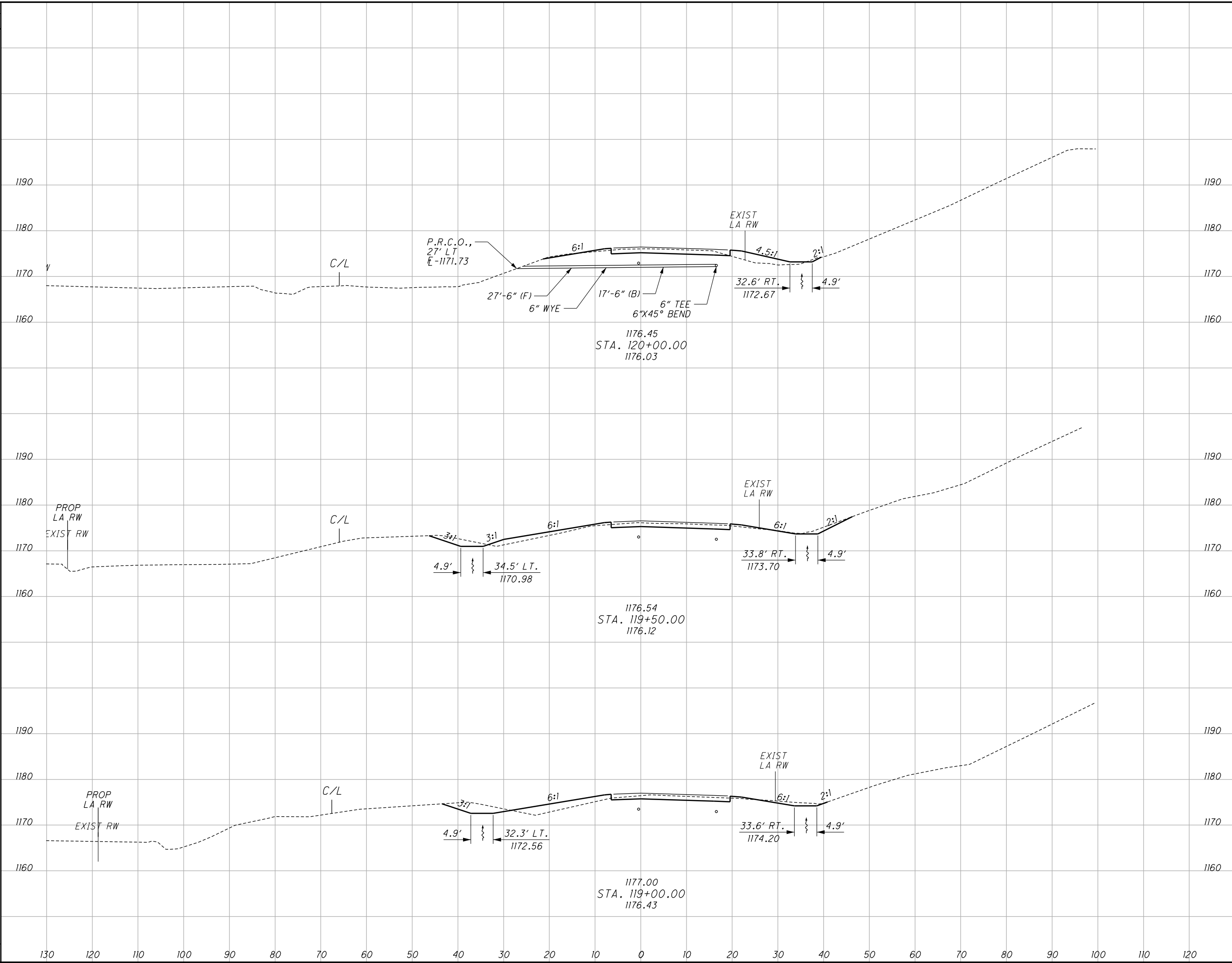
LIC-161-1.83

116
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS002.dgn XS_SHEET_5 8/11/2016 12:57:50 PM ccount

SEEDING
END SO.
WIDTH YDS.

57	
409	
90	
475	
81	
453	
1337	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
24	23	62	43		
42	23	83	50		
47	31	86	72		
		231	165		

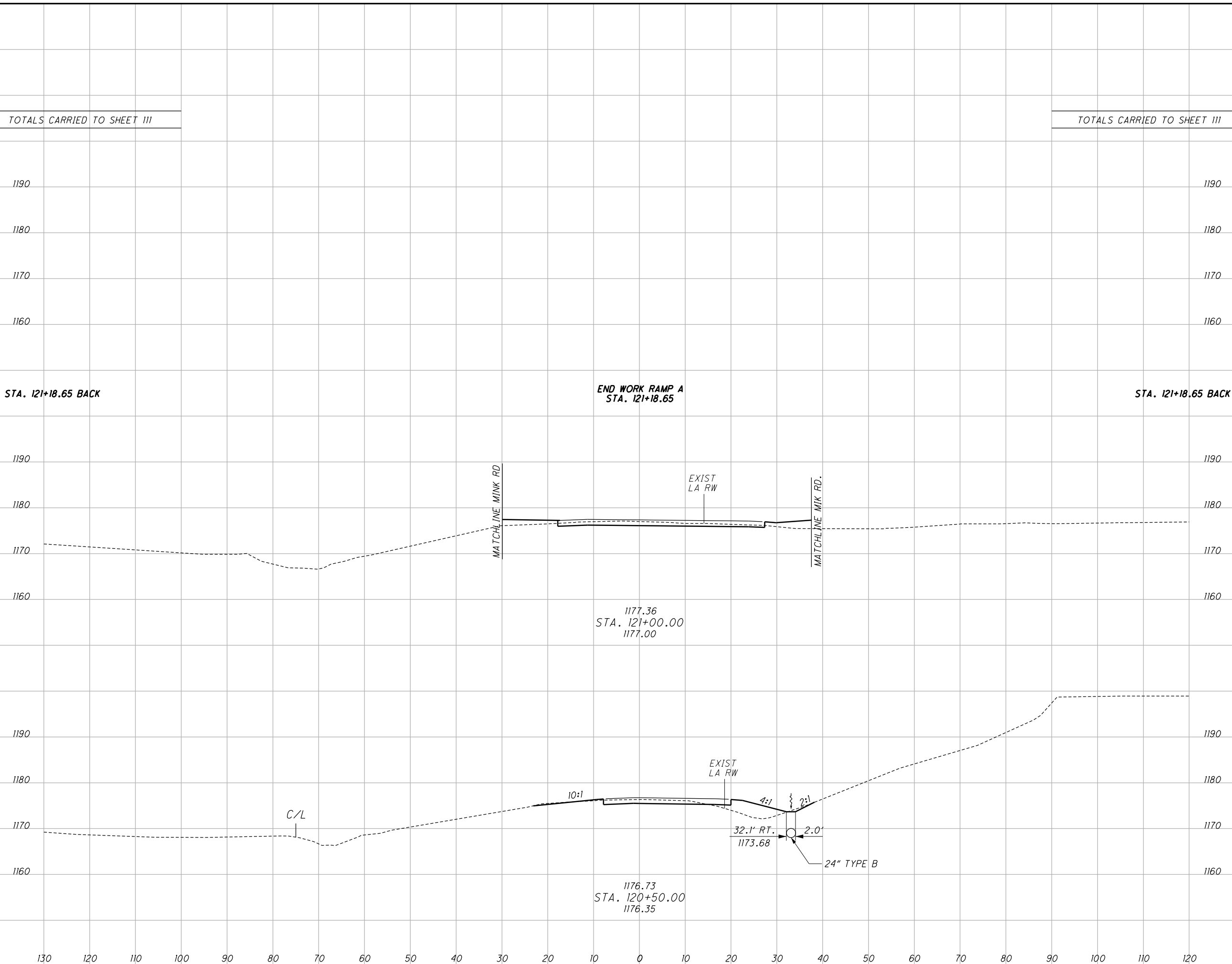
CROSS SECTIONS RAMP A
STA. 119+00.00 TO STA. 120+00.00

LIC-161-1.83

117
336

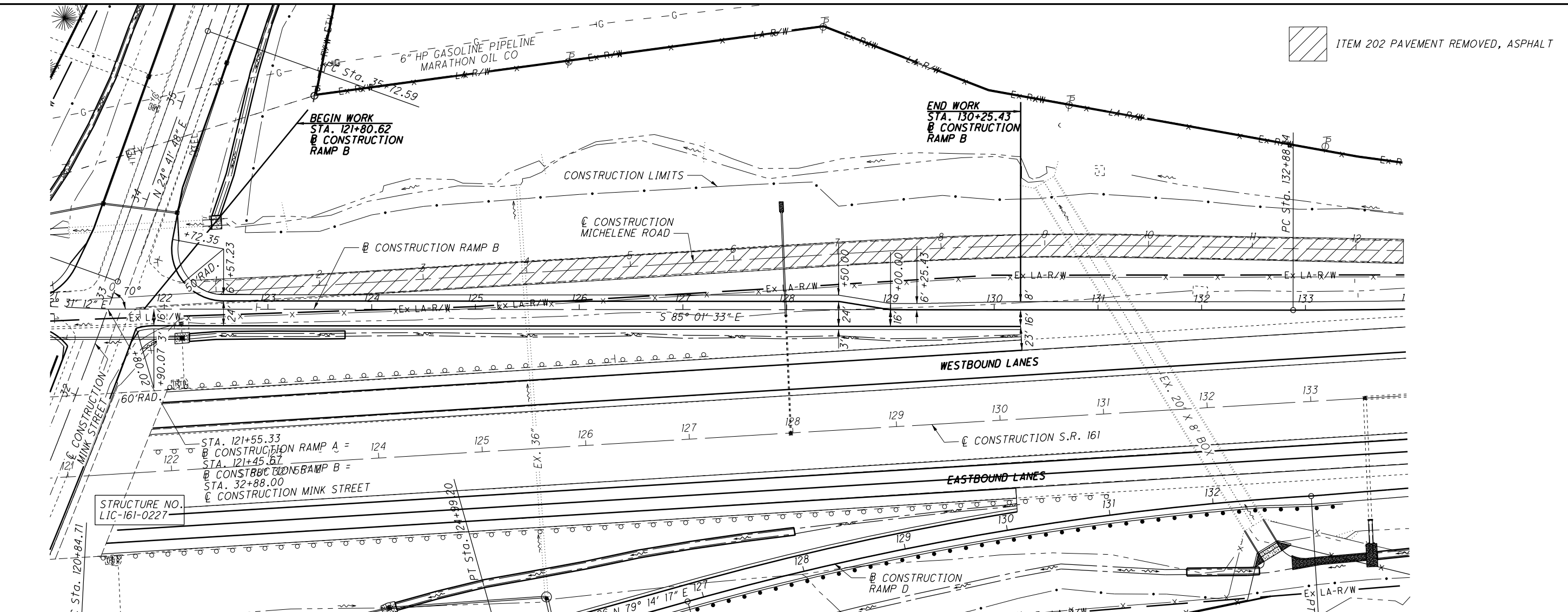
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SEEDING	
END WIDTH	SO. YDS.
5283	TOTALS CARRIED TO SHEET III
44	STA. 121+18.65 BACK
92	
44	
278	
56	
314	
684	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		895	1903
31	28		
		22	20
31	28		
		49	56
21	32		
		42	51
		113	127

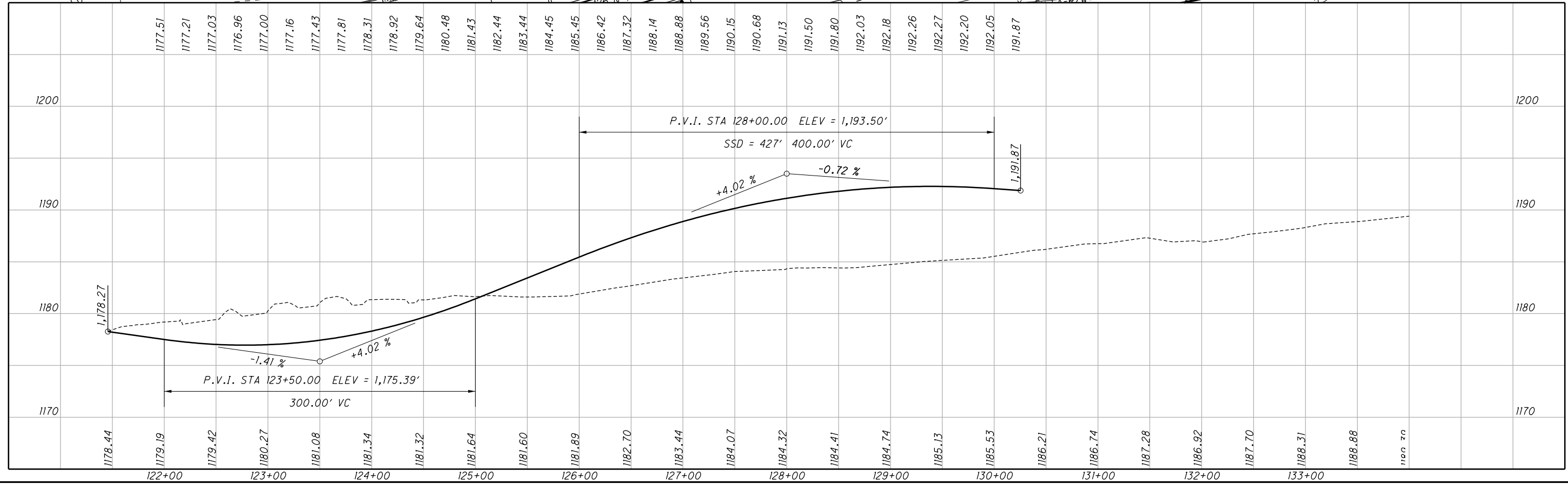
CROSS SECTIONS RAMP A
STA. 120+50.00 TO STA. 121+50.00
LIC-161-1.83
 CALCULATED RJG
 CHECKED HAG
 118
 336



ITEM 202 PAVEMENT REMOVED, ASPHALT



CALCULATED CMY CHECKED HAG

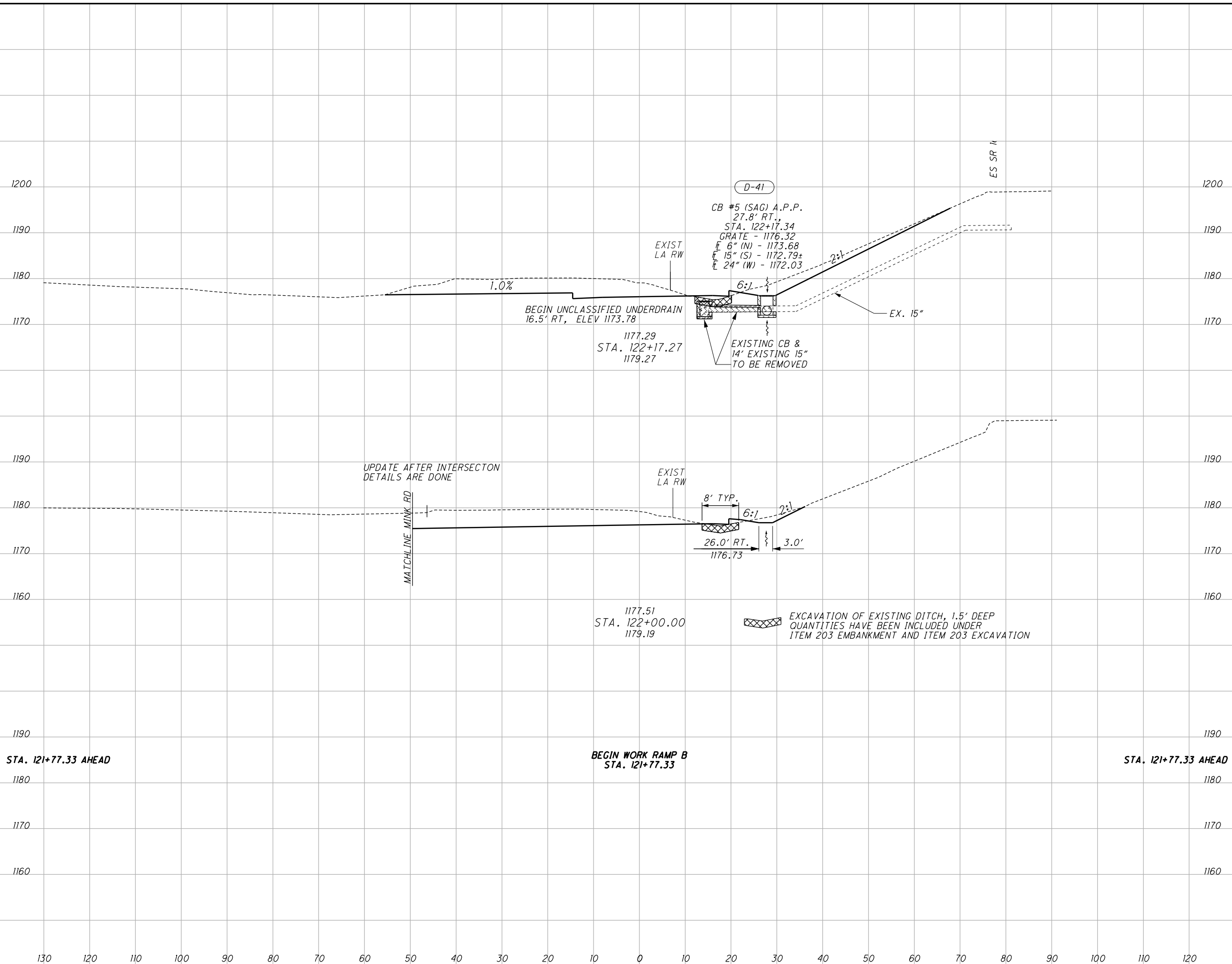


RAMP B PLAN AND PROFILE
STA. 121+80.62 TO STA. 130+25.43

LIC-161-1.83

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SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	HAG																											
	CUT	FILL	CUT	FILL																														
84	130	120	110	100	90	80	70	60	50	40	30	20	10	0	10	20	30	40	50	60	70	80	90	100	110	120	223	16	223	16	224	16	224	16

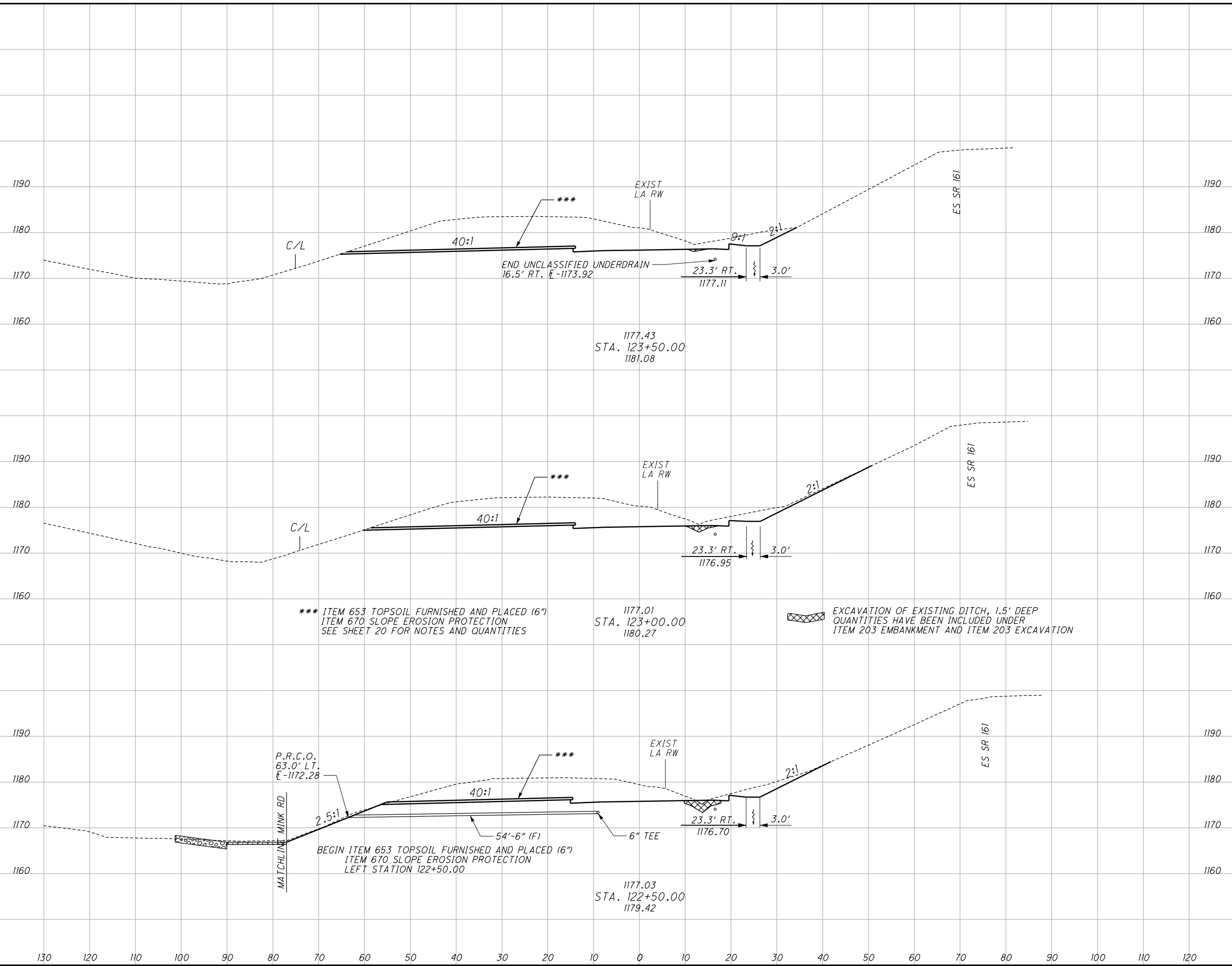


END AREA	VOLUME		CALCULATED	CHECKED	HAG
	CUT	FILL			
224	16	223	16	224	16

CROSS SECTIONS RAMP B
STA. 122+00.00 TO STA. 122+17.27
LIC-161-1.83
 120
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS003.dgn XS_SHEET_2 8/11/2016 12:57:52 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1515	91
130	542
120	104
110	592
100	109
90	381



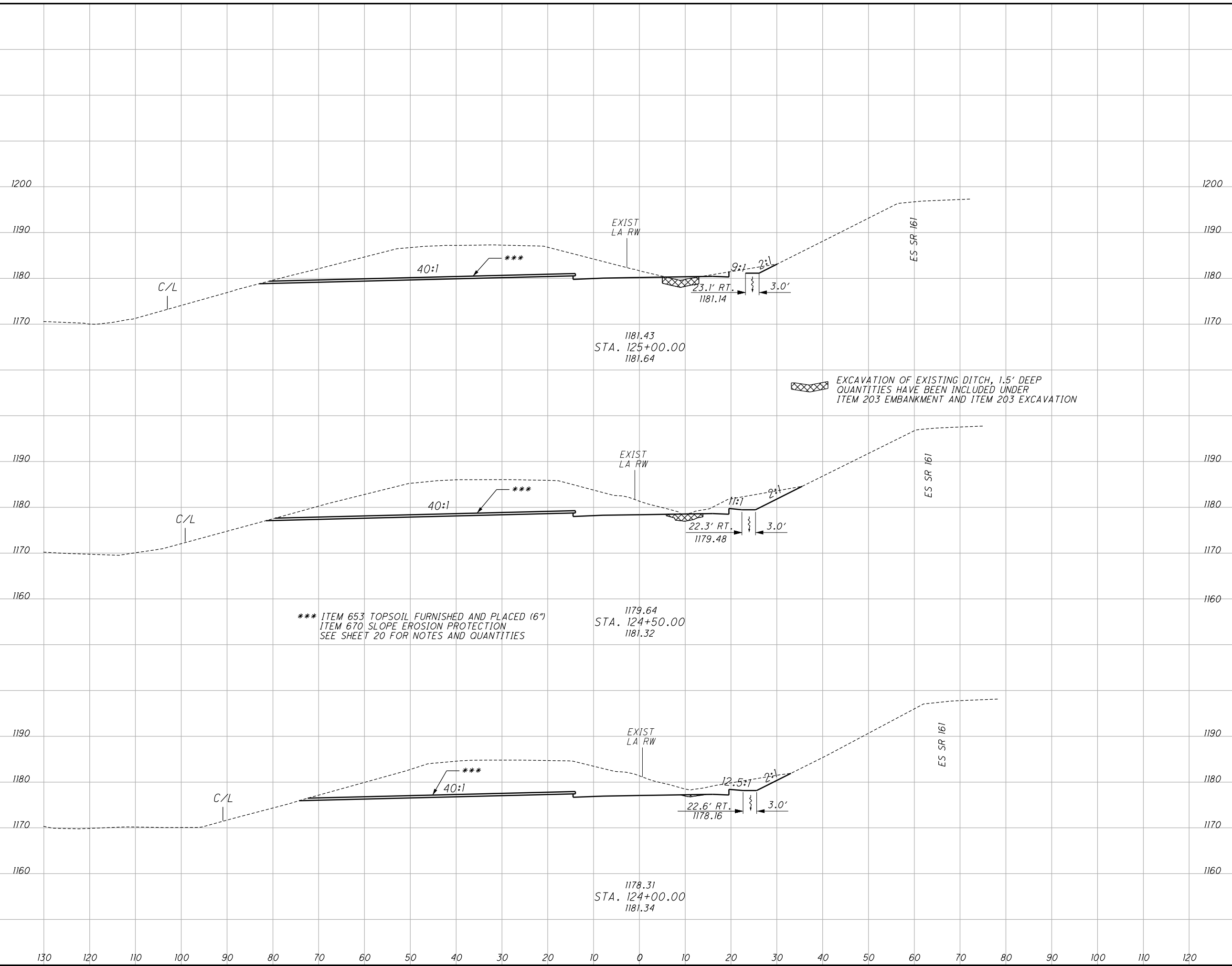
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
378	1	639	6		
312	5	535	16		
265	12	453	26		
		1627	48		

CROSS SECTIONS RAMP B
STA. 122+50.00 TO STA. 123+50.00
LIC-161-1.83

121
336

I:\ProjectData\LIC\97879\Roadway\Sheets\97879_XS003.dgn XS_SHEET_3 8/11/2016 12:57:53 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1724	531
130	100
120	100
110	100
100	100
90	100
80	100
70	100
60	100
50	100
40	100
30	100
20	100
10	100
0	100
10	100
20	100
30	100
40	100
50	100
60	100
70	100
80	100
90	100
100	100
110	100
120	100
130	100



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
424	15	856	23		
500	9	860	11		
428	2	747	3		
		2463	37		

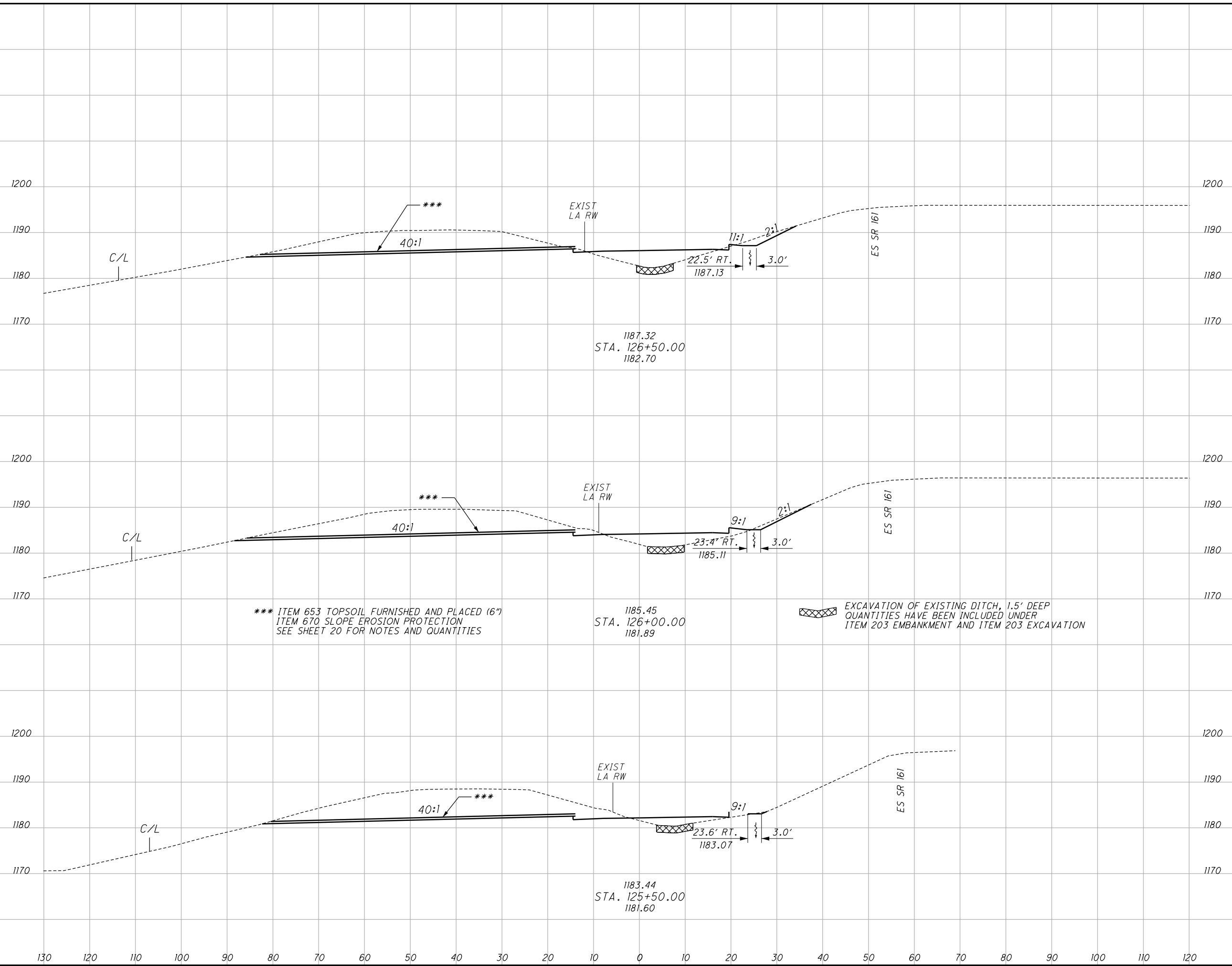
CROSS SECTIONS RAMP B
STA. 124+00.00 TO STA. 125+00.00

LIC-161-1.83

122
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS003.dgn XS_SHEET_4 8/11/2016 12:57:53 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1899	587
130	104
120	634
110	124
100	678
90	120
80	1170
70	1180
60	1190
50	1200



*** ITEM 653 TOPSOIL FURNISHED AND PLACED (6")
 ITEM 670 SLOPE EROSION PROTECTION
 SEE SHEET 20 FOR NOTES AND QUANTITIES

EXCAVATION OF EXISTING DITCH, 1.5' DEEP
 QUANTITIES HAVE BEEN INCLUDED UNDER
 ITEM 203 EMBANKMENT AND ITEM 203 EXCAVATION

END AREA		VOLUME	
CUT	FILL	CUT	FILL
260	75	529	135
311	70	616	102
354	40	721	51
1866	288		

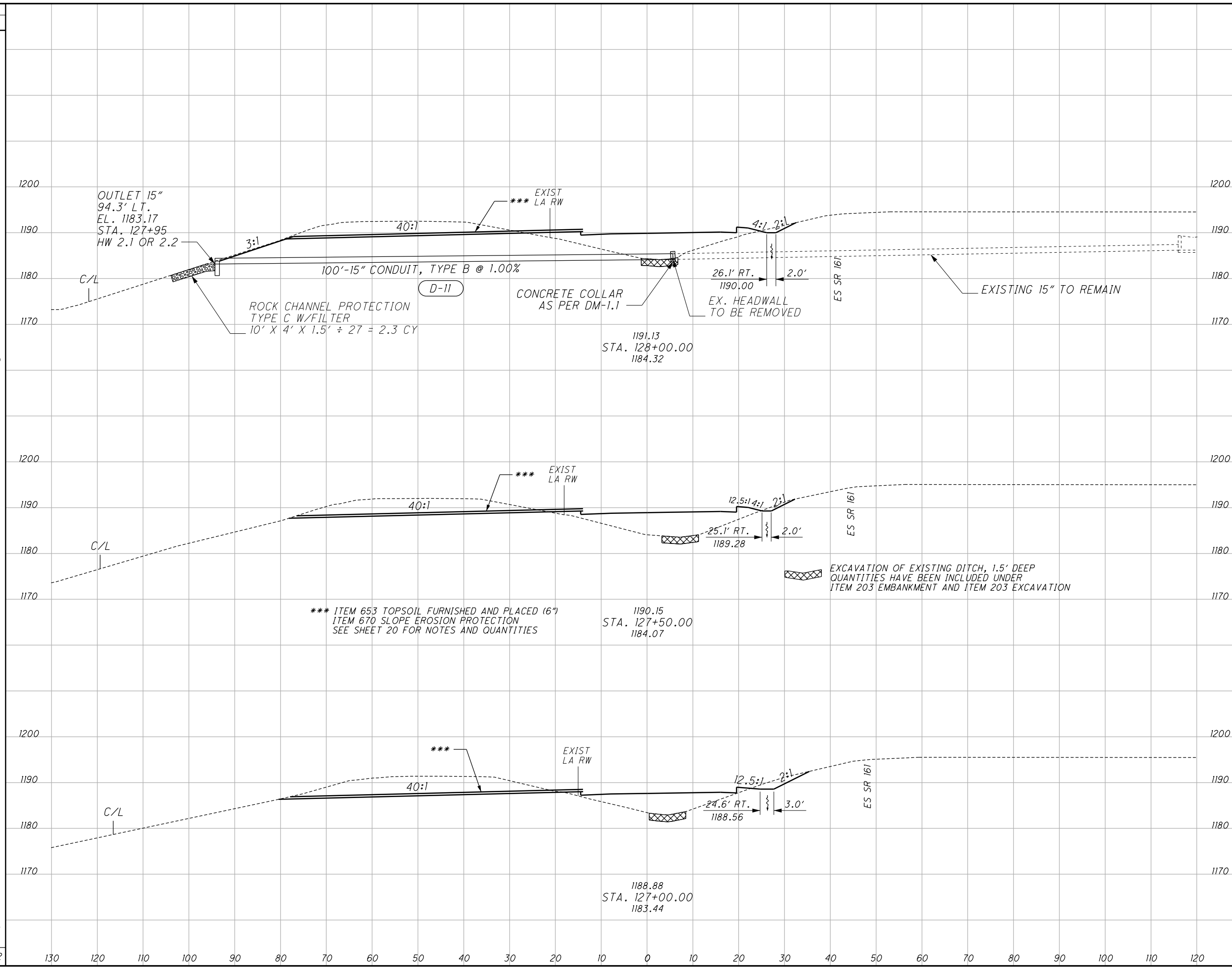
CALCULATED
 RUG
 CHECKED
 HAG

CROSS SECTIONS RAMP B
STA. 125+50.00 TO STA. 126+50.00

LIC-161-1.83

123
 336

SEEDING
 END WIDTH SO. YDS.
 1852 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120
 645 112 587 99 620 124



END AREA		VOLUME		CHECKED	
CUT	FILL	CUT	FILL	RJG	HAG
147	153	286	286		
161	155	341	247		
207	111	433	173		
		1060	706		

CROSS SECTIONS RAMP B
STA. 127+00.00 TO STA. 128+00.00

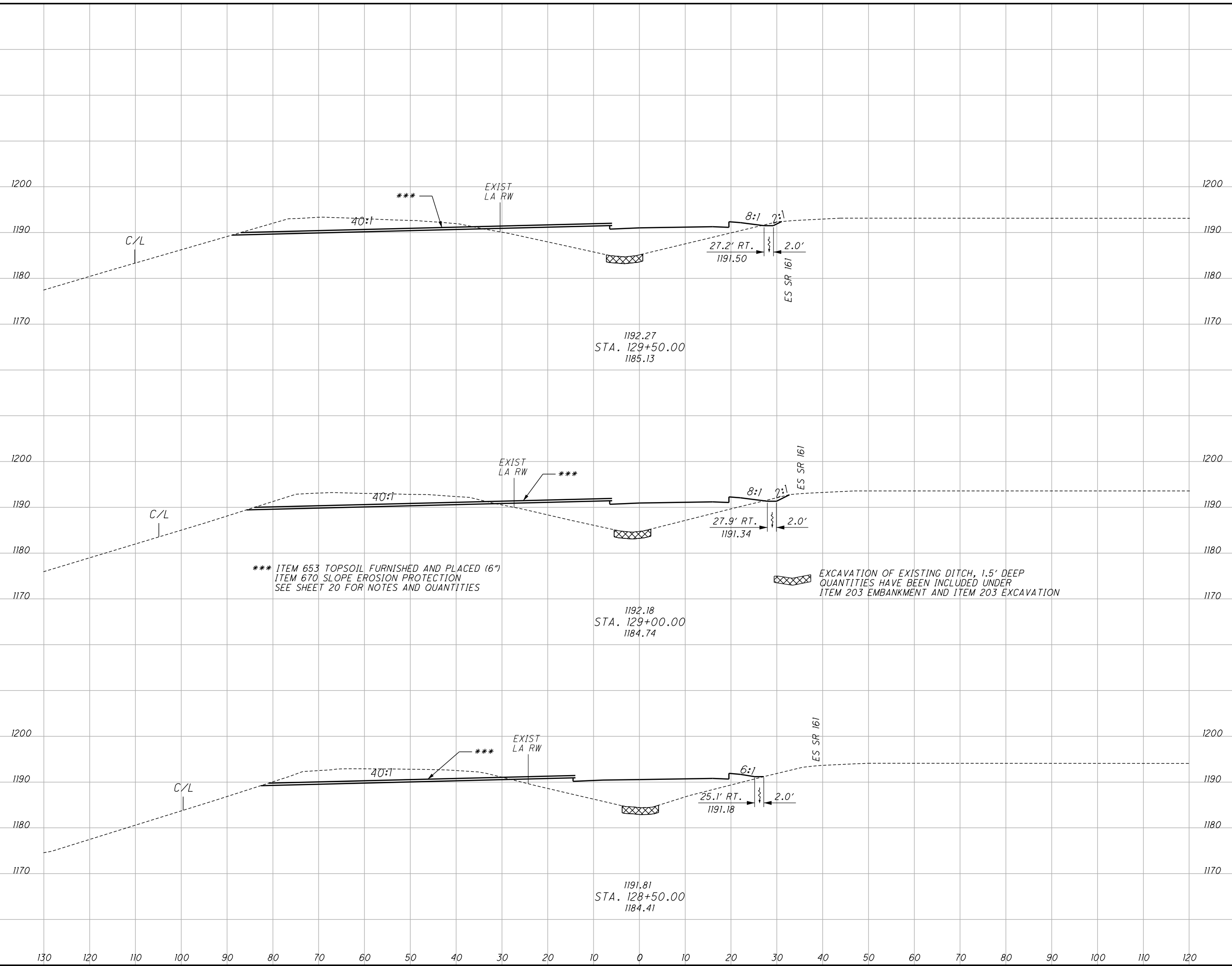
LIC-161-1.83

124
 336

8/11/2016 12:57:53 PM c:\count

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS003.dgn XS_SHEET_6 8/11/2016 12:57:53 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1920	628
130	102
120	617
110	120
100	675
90	123
80	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	



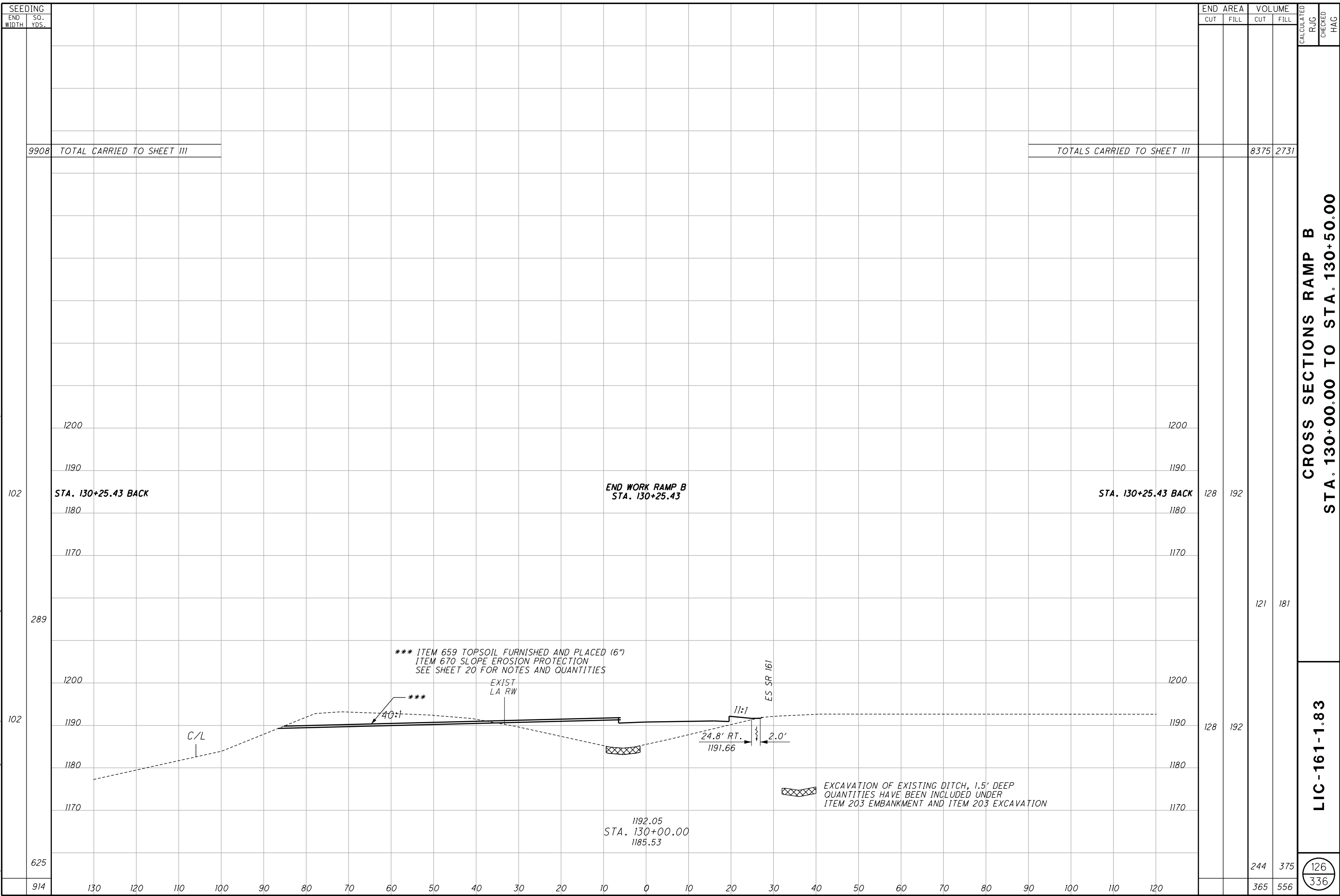
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
135	212	252	389		
137	208	255	371		
138	192	264	320		
		771	1080		

CROSS SECTIONS RAMP B
STA. 128+50.00 TO STA. 129+50.00

LIC-161-1.83

125
336

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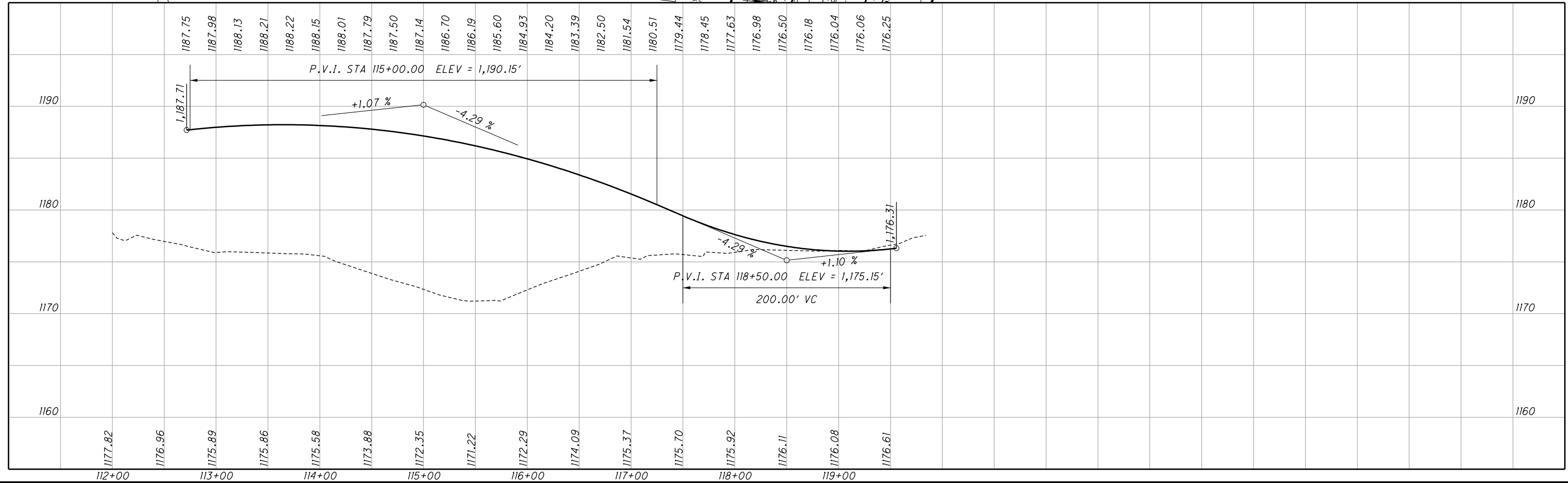
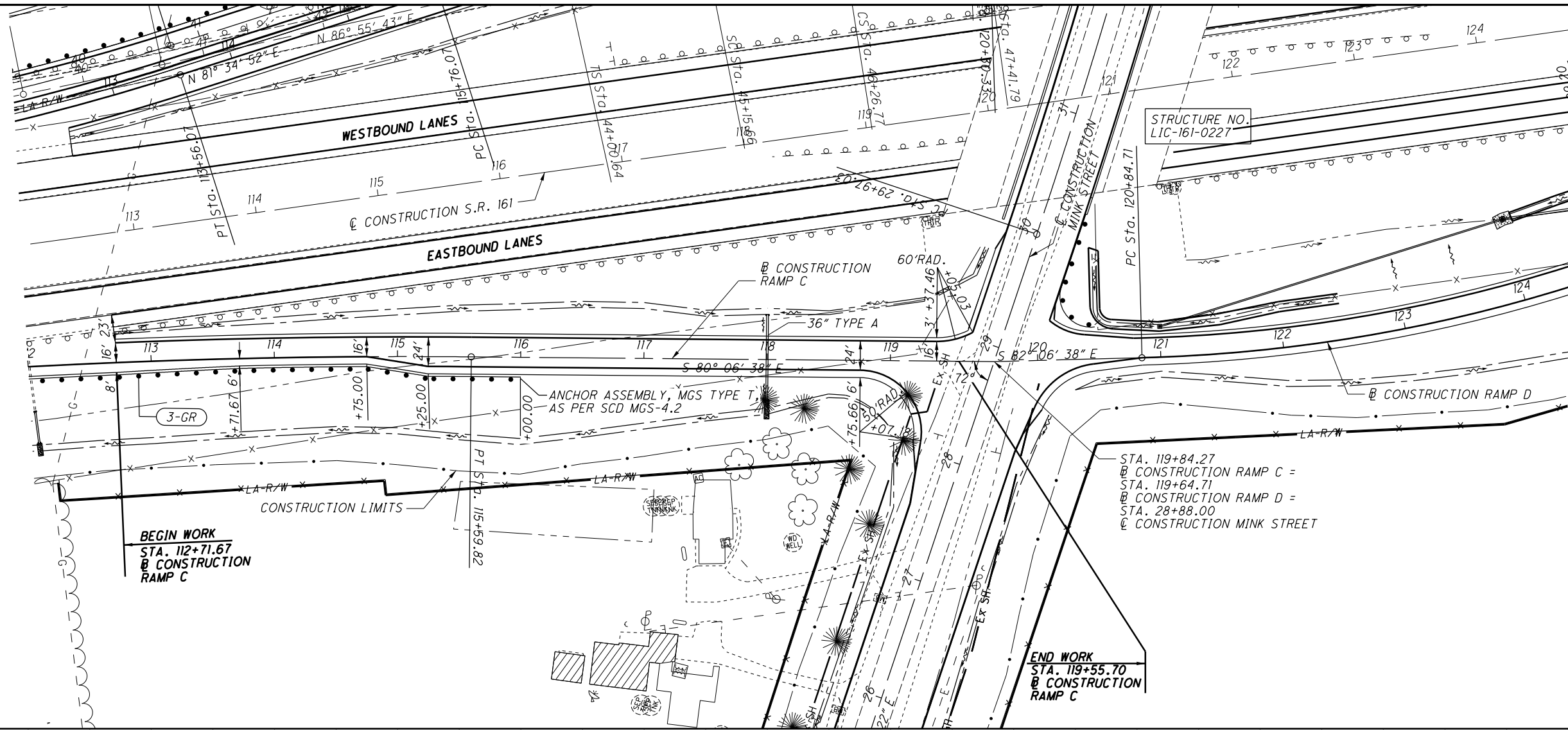


SEEDING	
END WIDTH	SO. YDS.
9908	TOTAL CARRIED TO SHEET III

END AREA		VOLUME	
CUT	FILL	CUT	FILL
128	192	8375	2731

CROSS SECTIONS RAMP B
STA. 130+00.00 TO STA. 130+50.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 126
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GPO09.dgn Sheet 8/11/2016 12:57:55 PM cyount

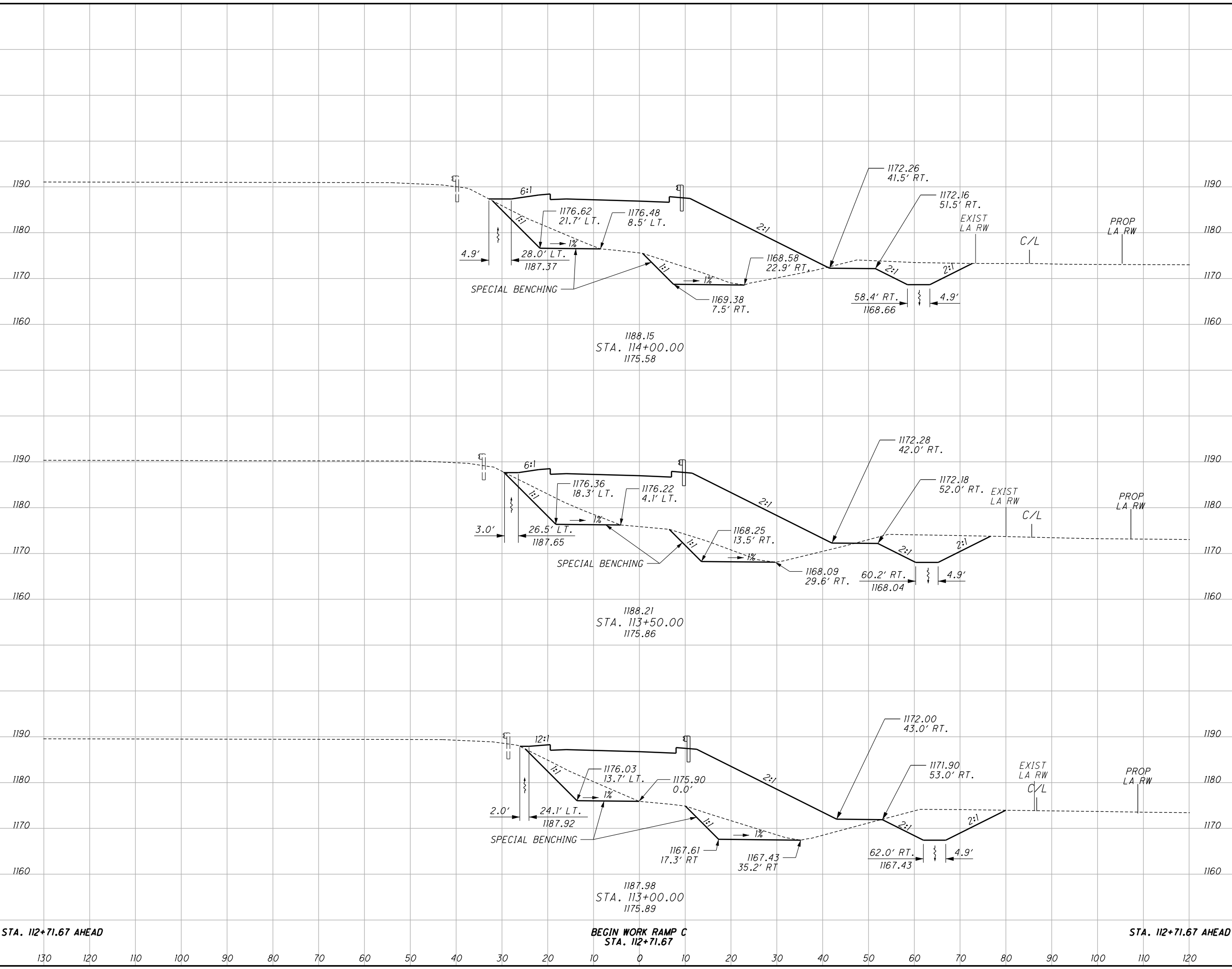


RAMP C PLAN AND PROFILE
STA. 112+71.67 TO STA. 119+56.81

LIC-161-1.83
 CALCULATED CMY CHECKED HAG
 127
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sub\97879_XS004.dgn XS_SHEET_1 8/11/2016 12:57:55 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1341	93
130	93
120	93
110	93
100	93
90	93
80	93
70	93
60	93
50	93
40	93
30	93
20	93
10	93
0	93
10	93
20	93
30	93
40	93
50	93
60	93
70	93
80	93
90	93
100	93
110	93
120	93



END AREA		VOLUME	
CUT	FILL	CUT	FILL
249	741	203	791
249	741	405	1446
249	741	448	1400
249	741	262	778
249	741	115	3624

LIC-161-1.83

CROSS SECTIONS RAMP C

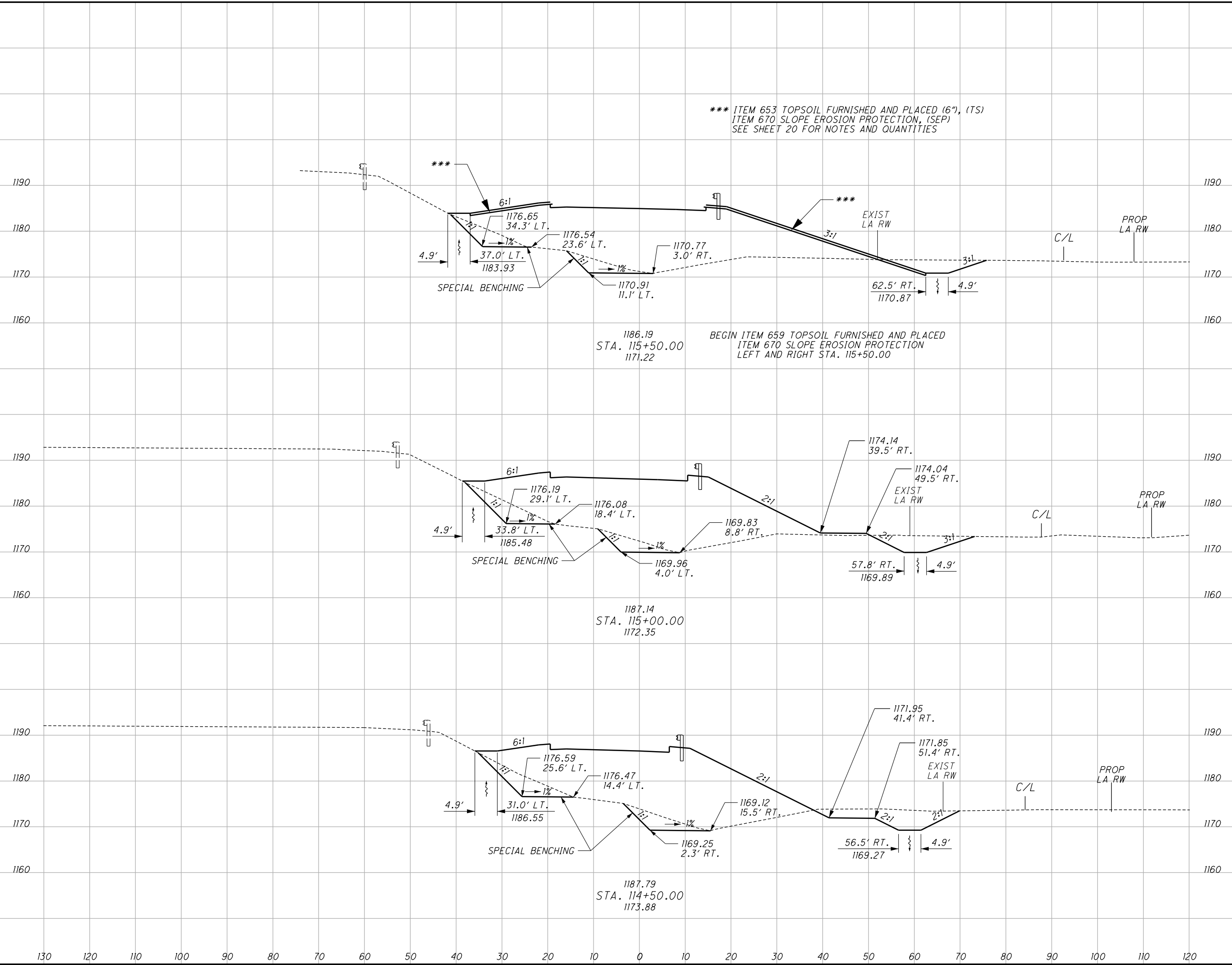
STA. 113+50.00 TO STA. 113+00.00

CALCULATED
RUG
CHECKED
HAG

128
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS004.dgn XS_SHEET_2 8/11/2016 12:57:56 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1604	95
130	95
120	97
110	97
100	99
90	99
80	99
70	99
60	99
50	99
40	99
30	99
20	99
10	99
0	99
10	99
20	99
30	99
40	99
50	99
60	99
70	99
80	99
90	99
100	99
110	99
120	99



END AREA		VOLUME	
CUT	FILL	CUT	FILL
118	824	253	1539
155	838	304	1512
173	794	349	1468
		906	4519

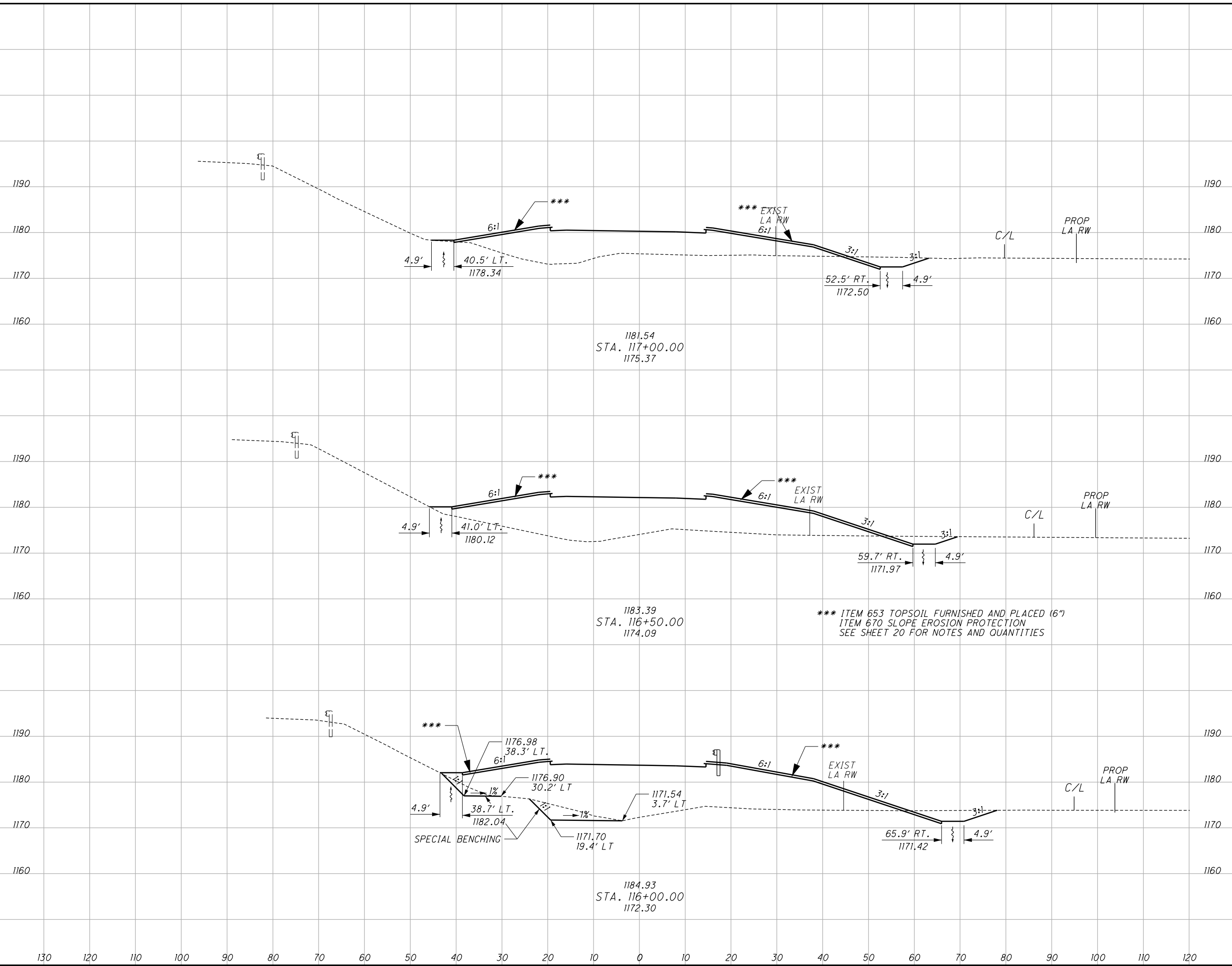
CROSS SECTIONS RAMP C
 STA. 114+50.00 TO STA. 115+50.00

LIC-161-1.83

129
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS004.dgn XS_SHEET_3 8/11/2016 12:57:56 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1649	567
130	105
120	97
110	90



END AREA		VOLUME	
CUT	FILL	CUT	FILL
40	382	67	913
32	603	114	1289
91	789	194	1494
		375	3696

CALCULATED
R/JG
CHECKED
HAG

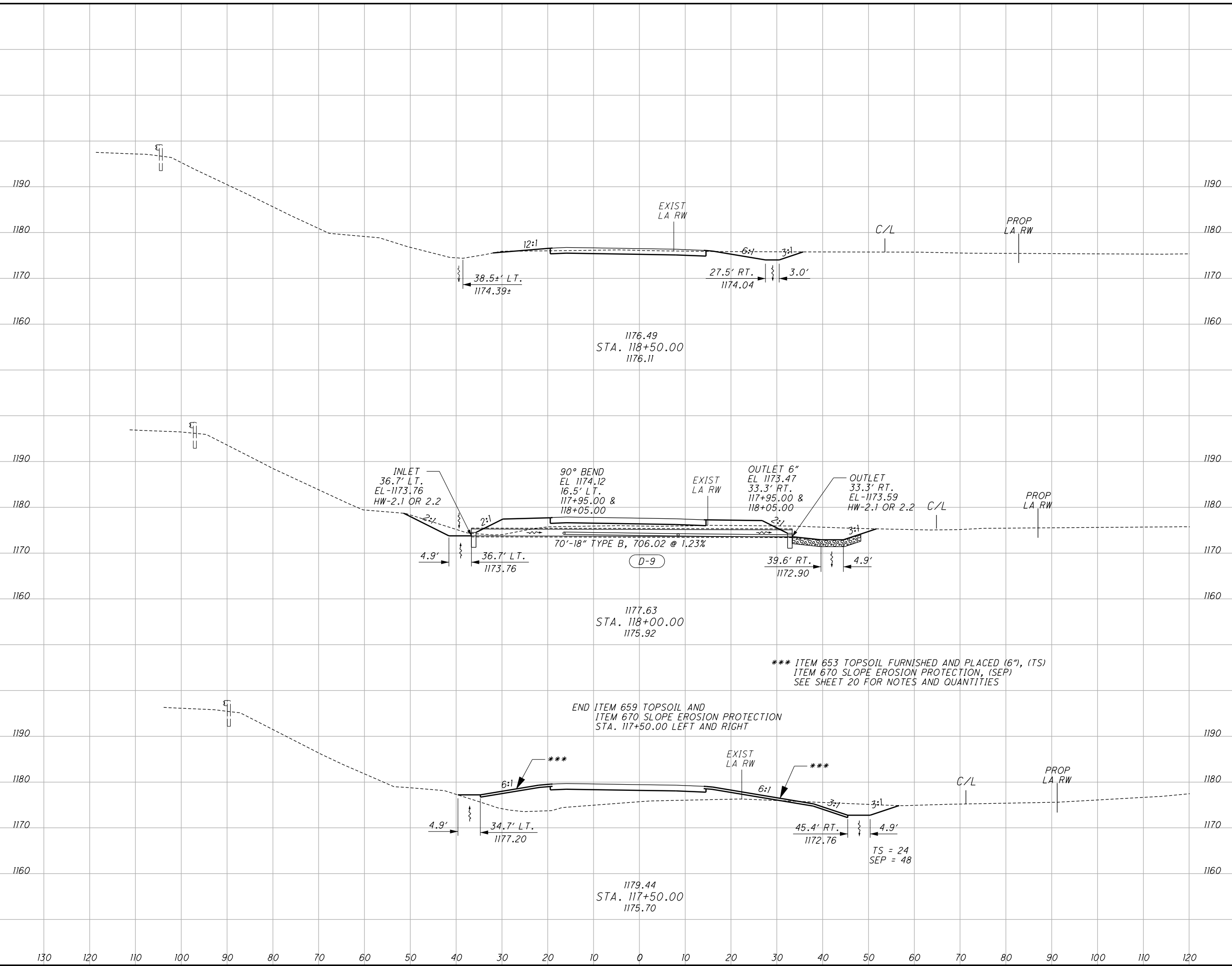
CROSS SECTIONS RAMP C
STA. 116+00.00 TO STA. 117+00.00

LIC-161-1.83

130
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS004.dgn XS_SHEET_4 8/11/2016 12:57:56 PM ccount

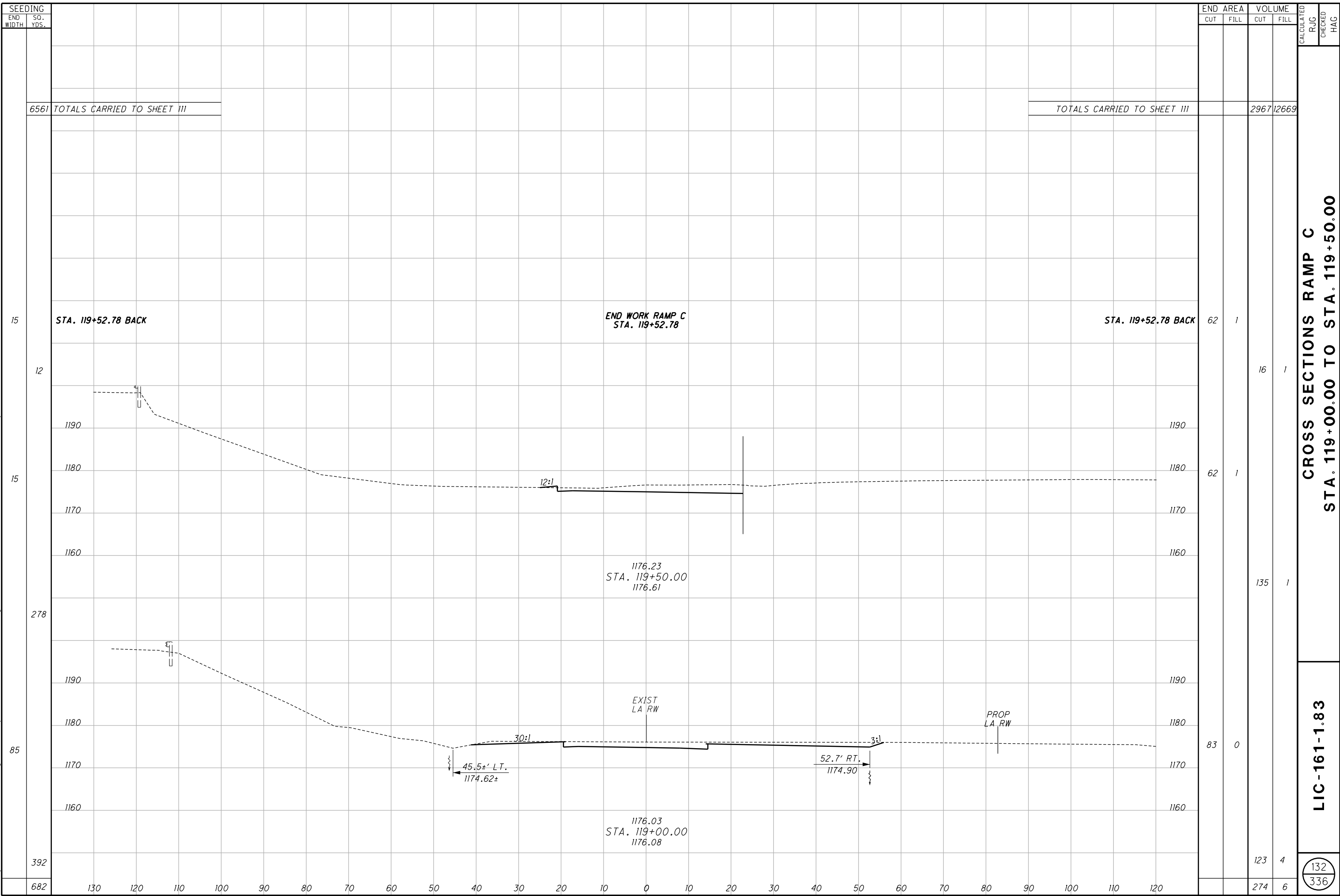
SEEDING	
END WIDTH	SO. YDS.
56	
73	
439	
85	
487	
1285	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
49	4	106	61
65	61	107	233
50	190	84	530
		297	824

CROSS SECTIONS RAMP C
STA. 117+50.00 TO STA. 118+50.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 131
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS004.dgn XS_SHEET_5 8/11/2016 12:57:56 PM ccount

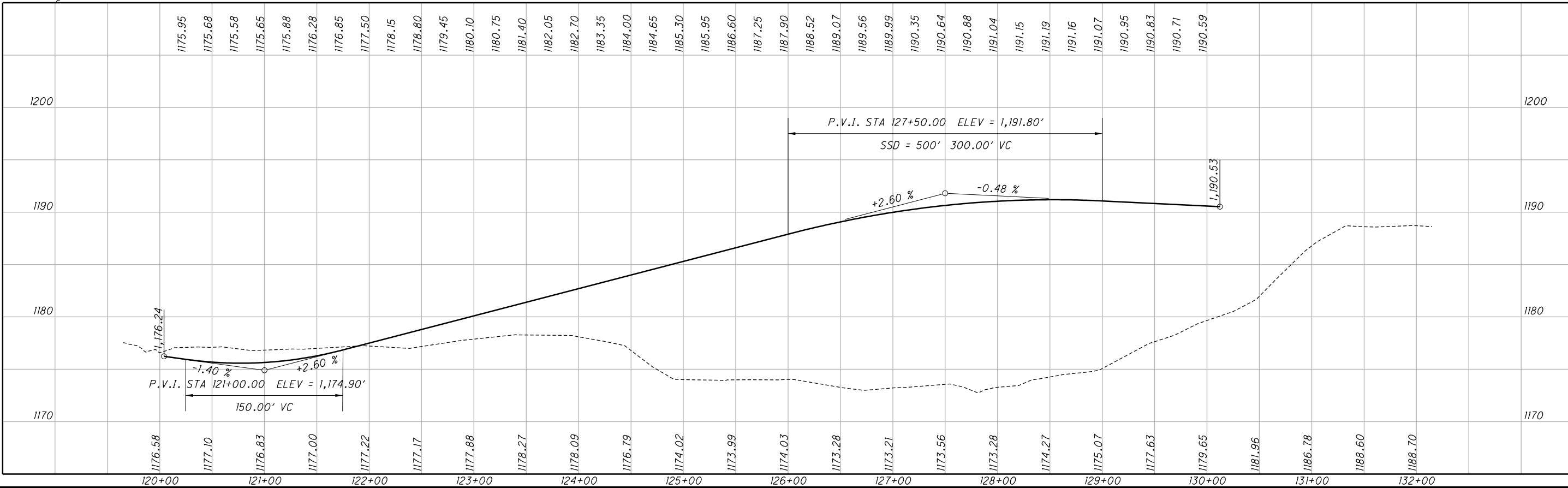
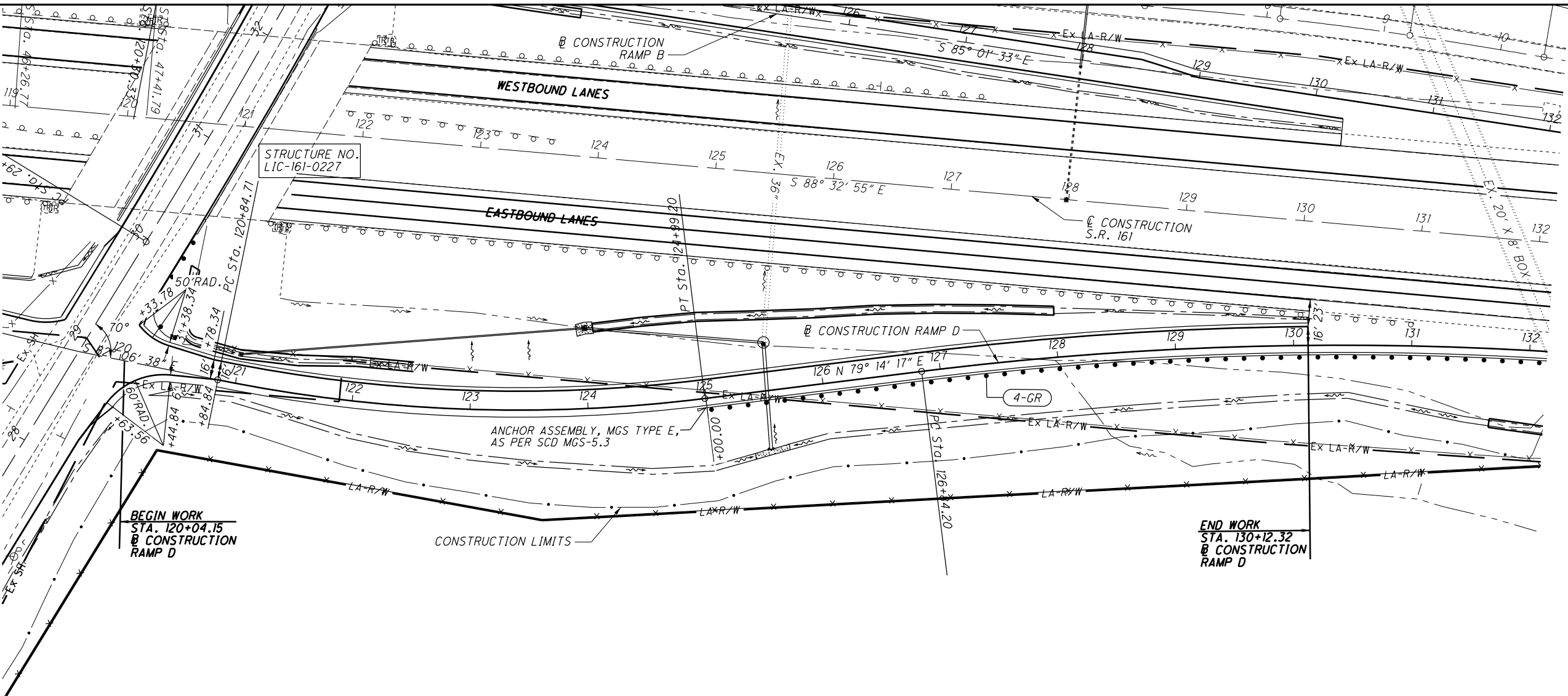


**CROSS SECTIONS RAMP C
STA. 119+00.00 TO STA. 119+50.00**

LIC-161-1.83

132
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GPO10.dgn Sheet 8/11/2016 12:57:58 PM cyount



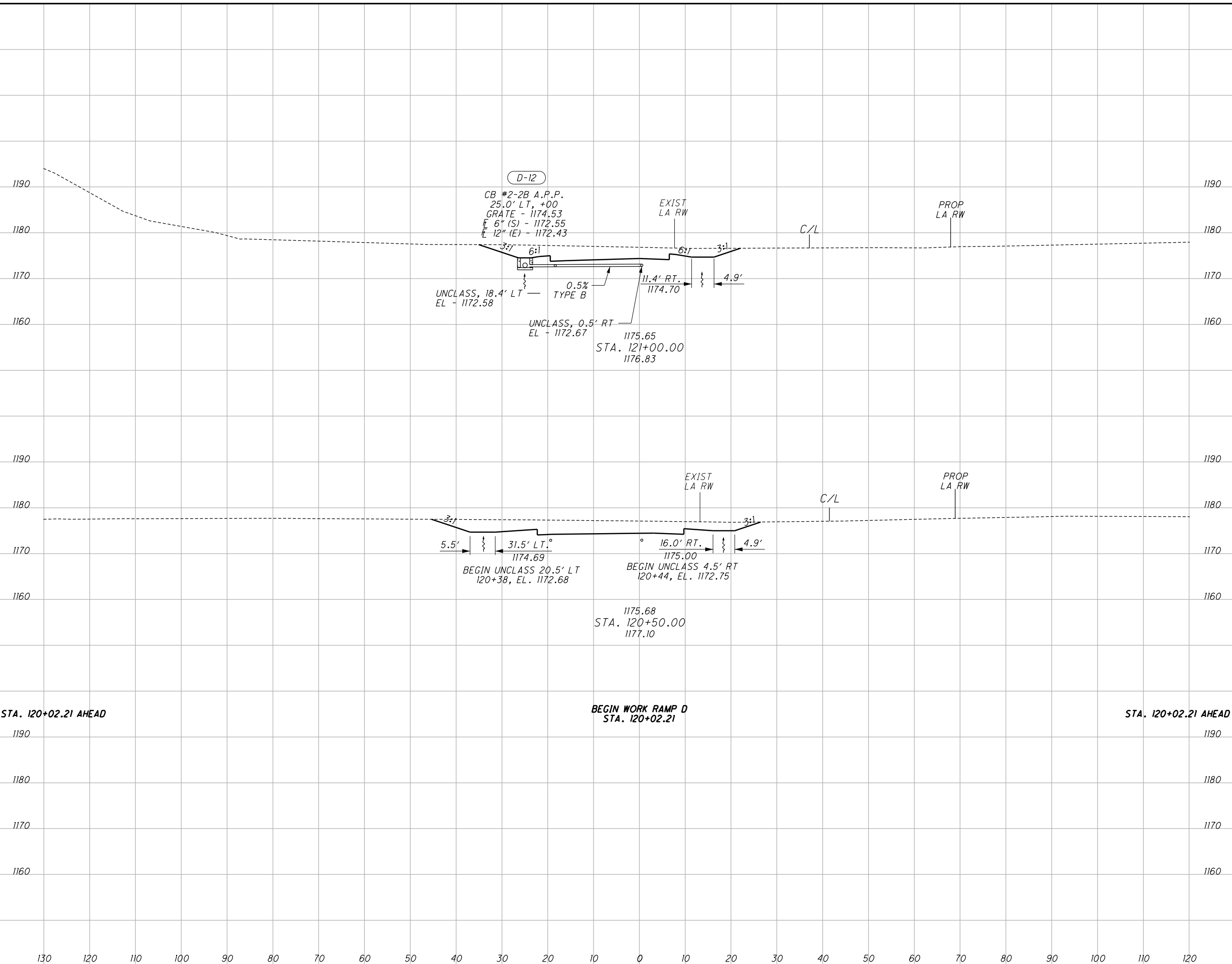
RAMP D PLAN AND PROFILE

STA. 119+94.63 TO STA. 130+12.32

LIC-161-1.83

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SEEDING	
END WIDTH	SO. YDS.
642	
50	
312	
62	
330	
62	
130	
120	
110	
100	
90	
80	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	

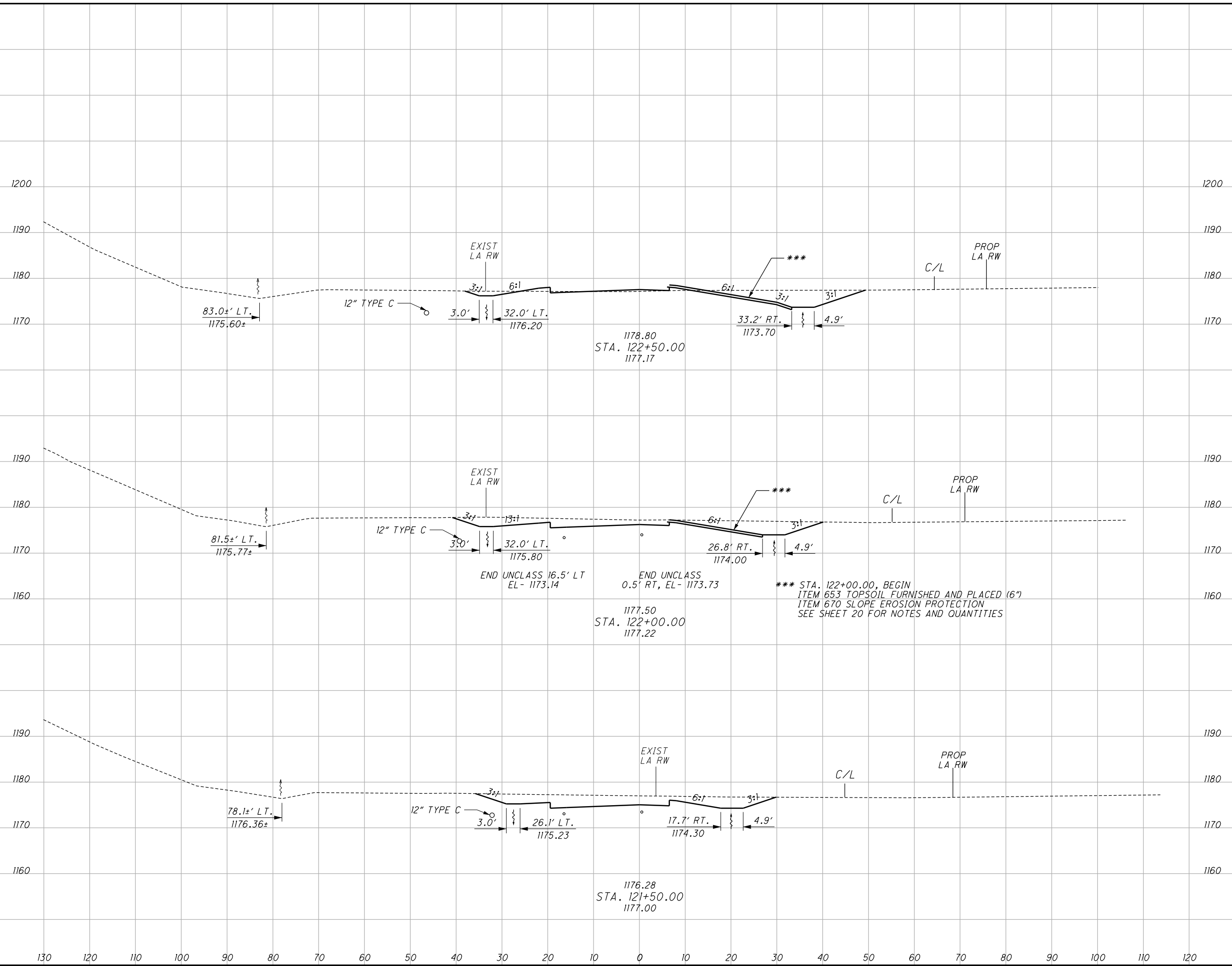


END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
126	0	270	0		
165	0	293	0		
165	0				
		563	0		

CROSS SECTIONS RAMP D
STA. 120+00.00 TO STA. 121+00.00
LIC-161-1.83
 134
 336

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SEEDING	
END WIDTH	SO. YDS.
62	
442	
50	
364	
60	
306	
112	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
114	10	241	10
146	0	249	0
122	0	230	0
		720	10

CALCULATED
 R/JG
 CHECKED
 HAG

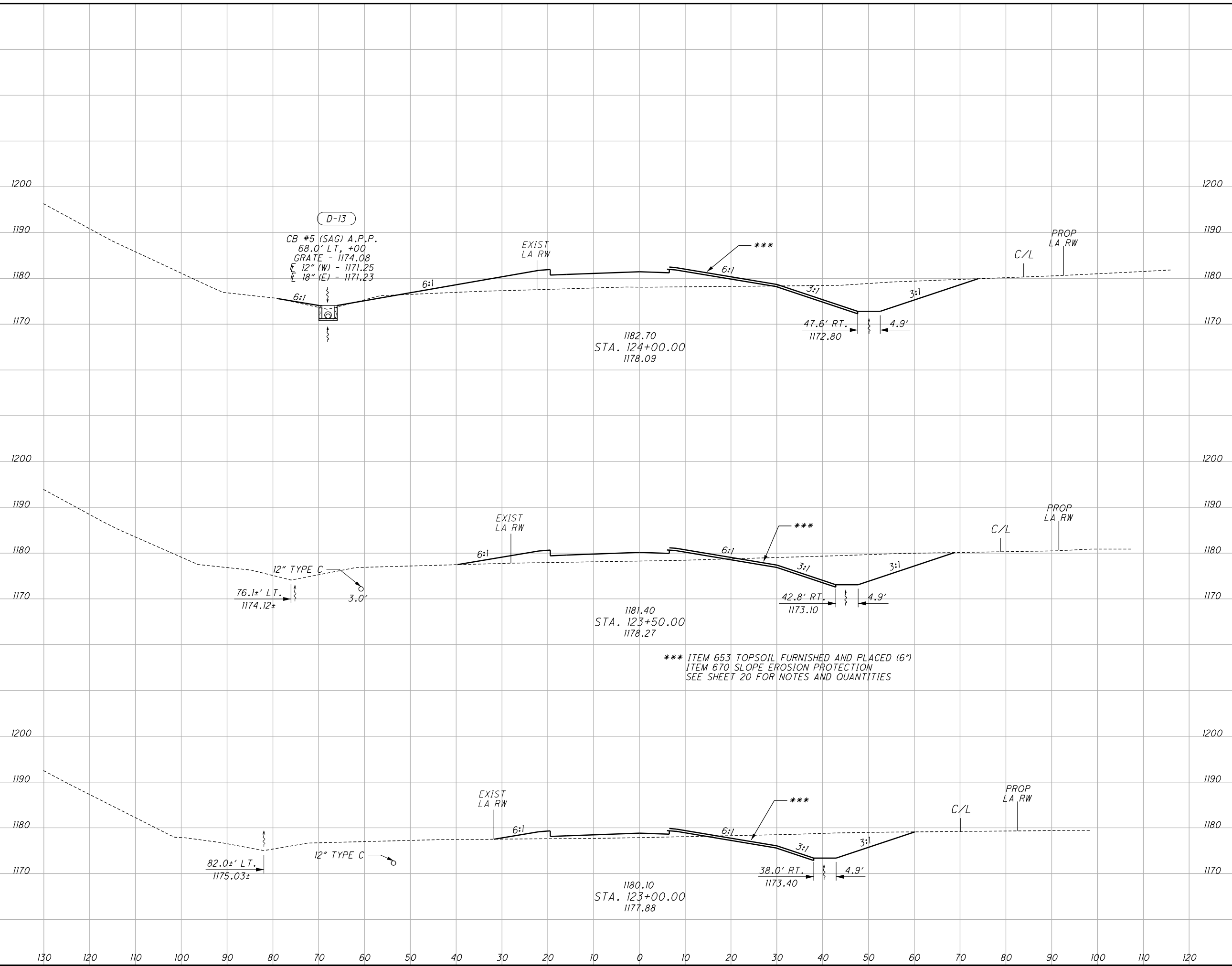
CROSS SECTIONS RAMP D
STA. 121+50.00 TO STA. 122+50.00

LIC-161-1.83

135
 336

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SEEDING	
END WIDTH	SO. YDS.
1859	531
130	103
120	603
110	114
100	725
90	147
80	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	



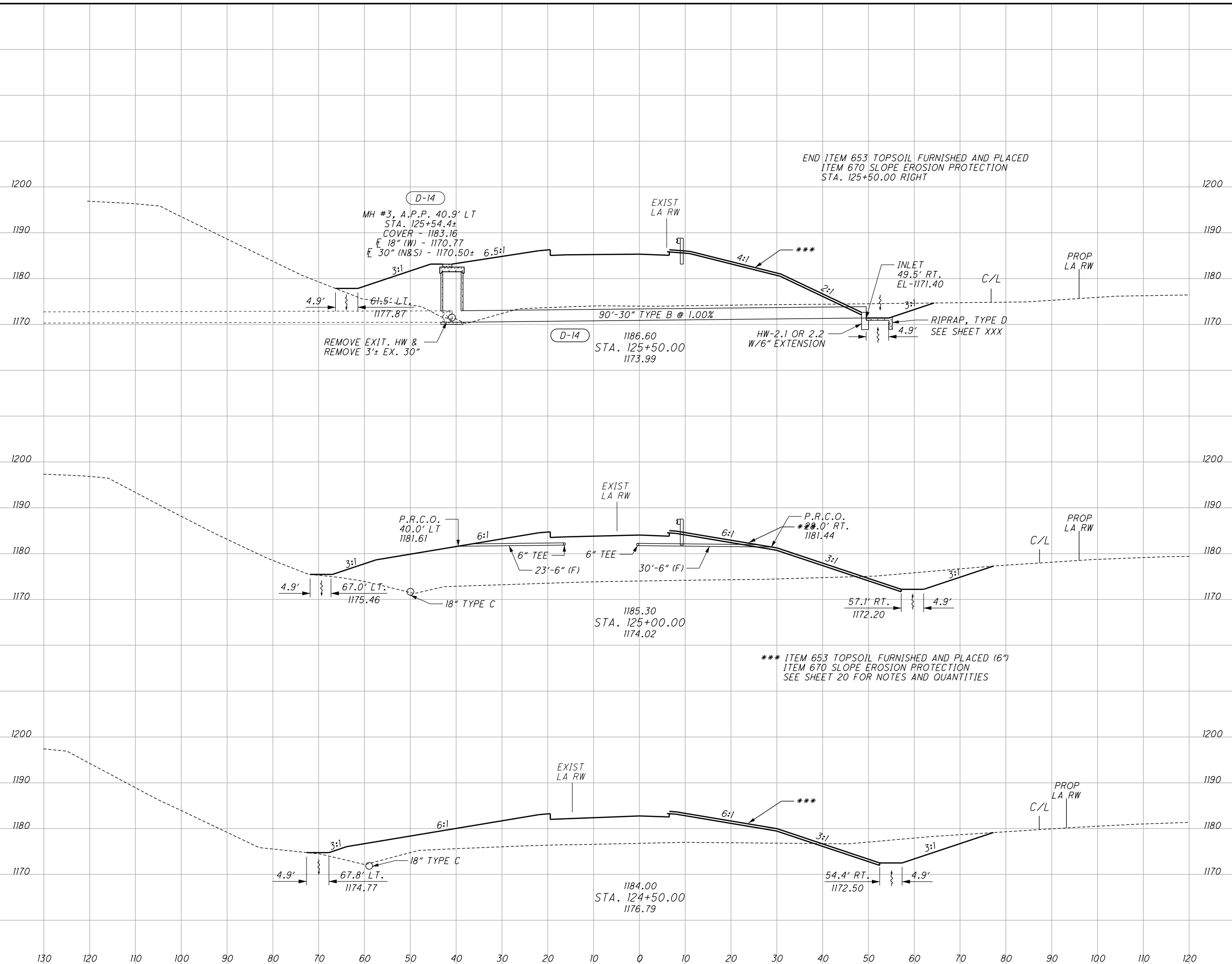
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
158	204	338	271		
206	88	350	117		
171	38	264	45		
		952	433		

LIC-161-1.83
CROSS SECTIONS RAMP D
STA. 123+00.00 TO STA. 124+00.00

136
336

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SEEDING	
END WIDTH	SO. YDS.
130	124
120	756
110	148
100	820
90	147
80	817
70	2393

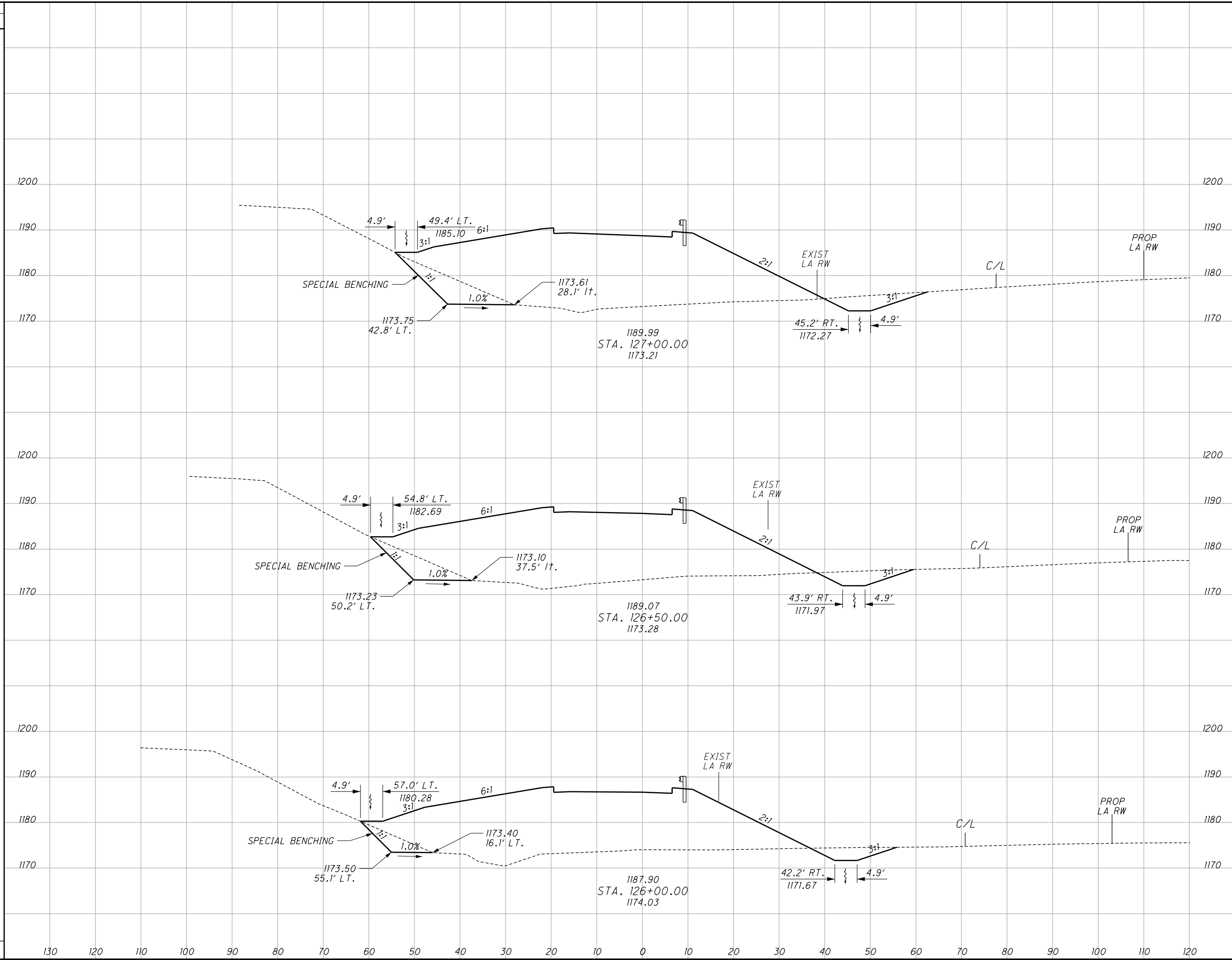


END AREA		VOLUME		CALCULATED	RUG	CHECKED	HAG
CUT	FILL	CUT	FILL				
32	902	90	1640				
65	869	165	1242				
113	472	251	626				
		506	3508				

CROSS SECTIONS RAMP D
STA. 124+50.00 TO STA. 125+50.00
LIC-161-1.83
 137
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS005.dgn XS_SHEET_5 8/11/2016 12:57:59 PM ccount

SEEDING	
END WIDTH	SO. YDS.
130	1997
120	
110	
100	
90	
80	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	



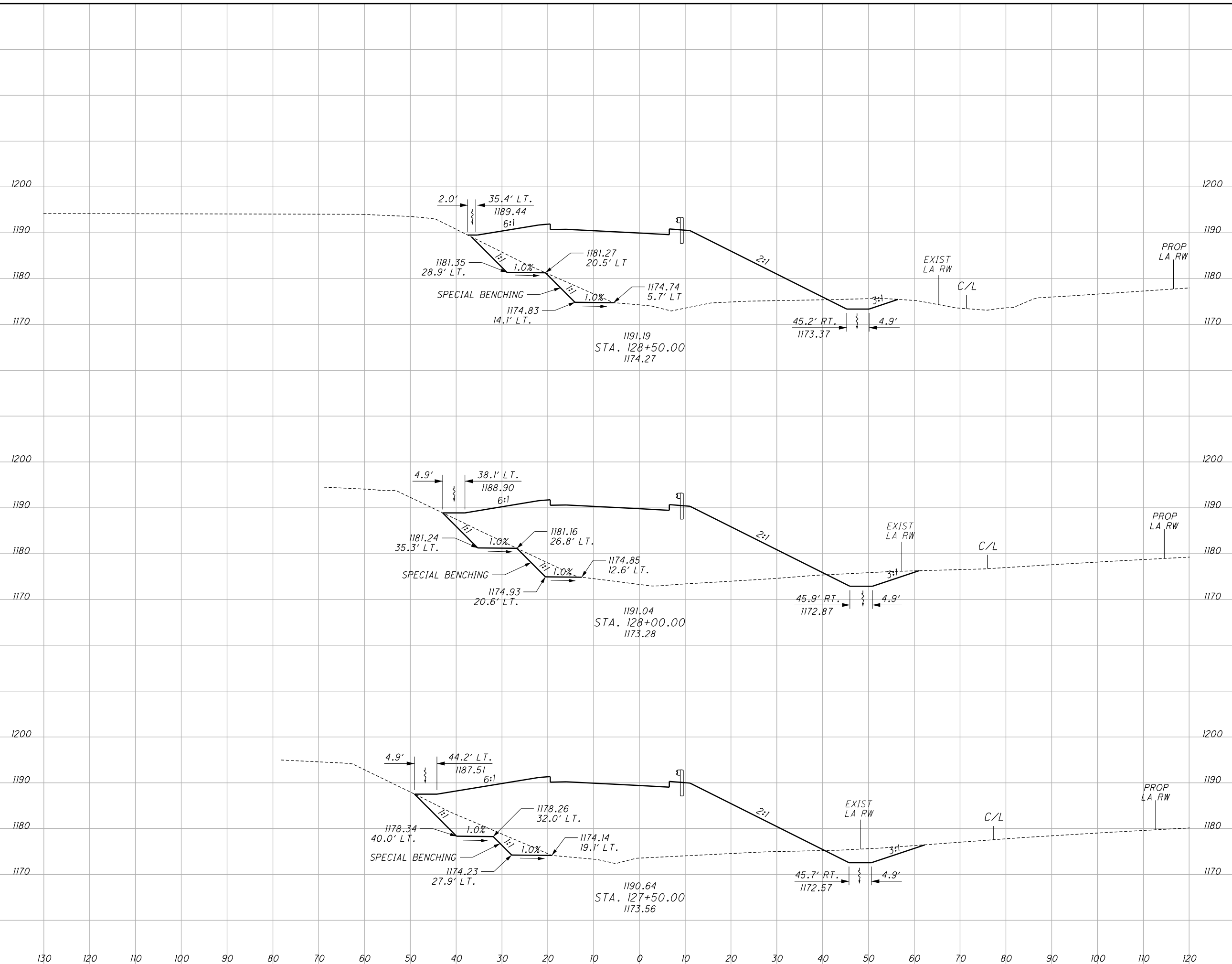
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
138	1155	240	2150		
121	1167	187	2059		
80	1056	104	1813	138	336
		531	6022		

**CROSS SECTIONS RAMP D
STA. 126+00.00 TO STA. 127+00.00**

LIC-161-1.83

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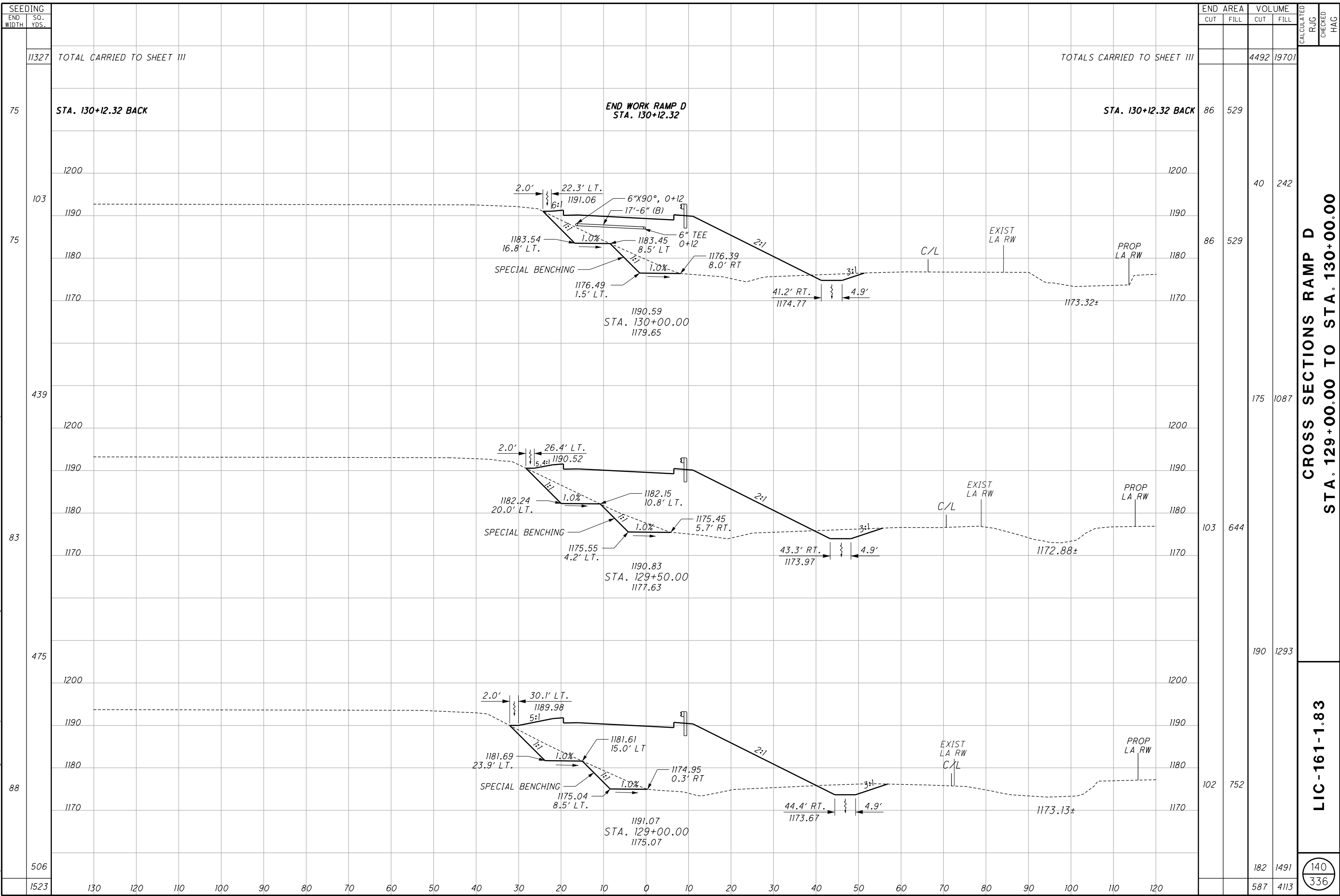
SEEDING	
END WIDTH	SO. YDS.
94	550
104	606
114	645
1801	



END AREA	VOLUME	CALCULATED	CHECKED	HAG
94	858			
100	963			
125	1062			
		244	2053	
		633	5615	

CROSS SECTIONS RAMP D
STA. 127+50.00 TO STA. 128+50.00
LIC-161-1.83
 139
 336

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11327 TOTAL CARRIED TO SHEET III

75

103

75

439

83

475

88

506

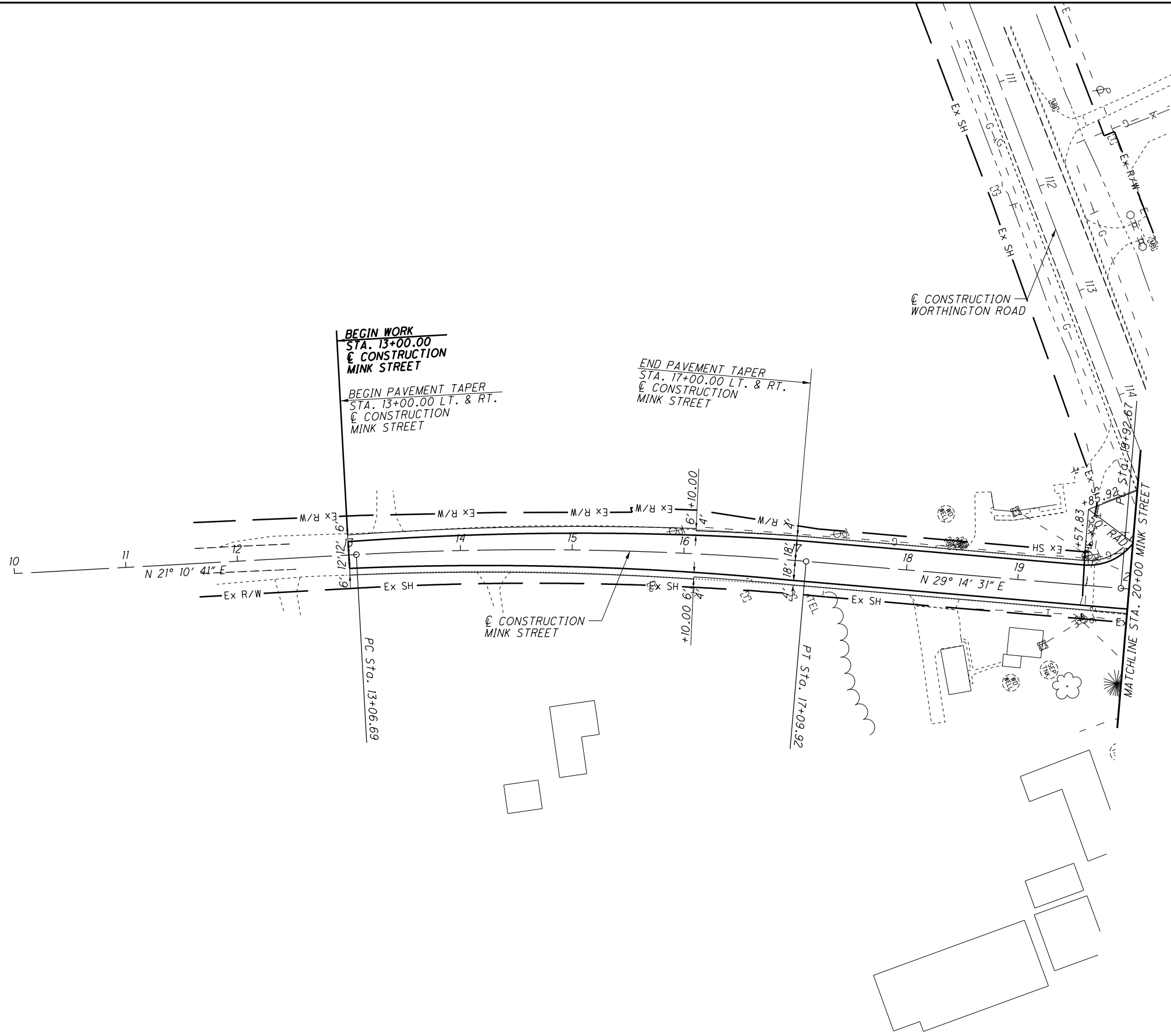
1523

SEEDING		END AREA		VOLUME		CALCULATED		
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	R/JG	CHECKED	HAG
				4492	19701			
86	529							
86	529							
103	644							
190	1293							
102	752							
182	1491							
587	4113							

**CROSS SECTIONS RAMP D
STA. 129+00.00 TO STA. 130+00.00**

LIC-161-1.83

140
336

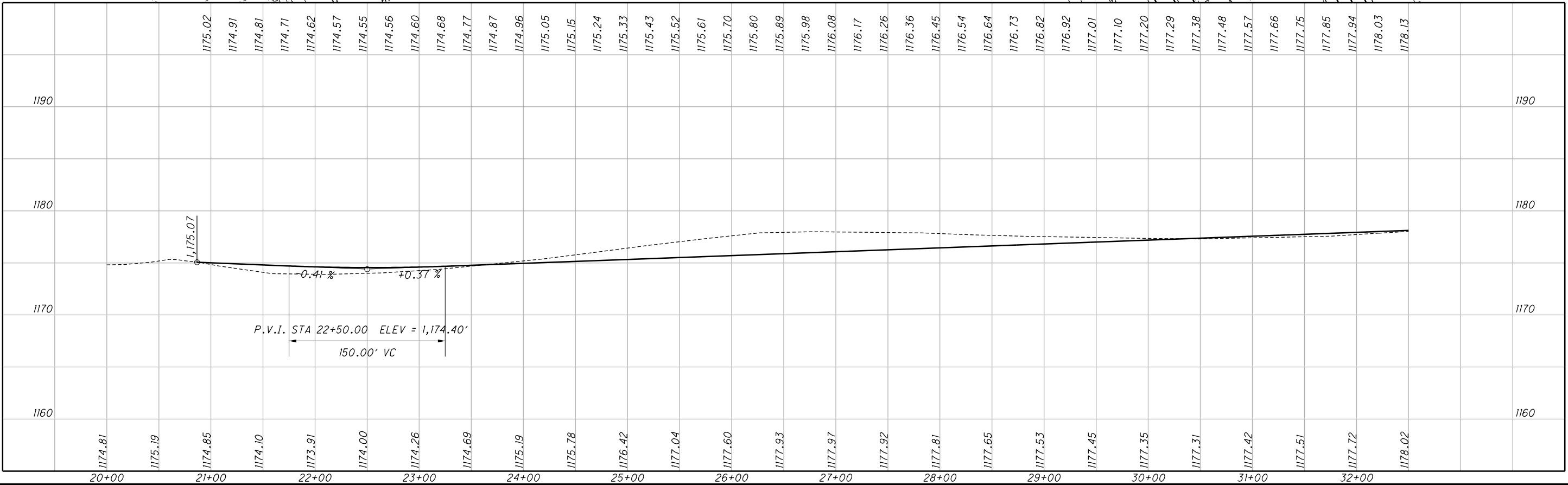
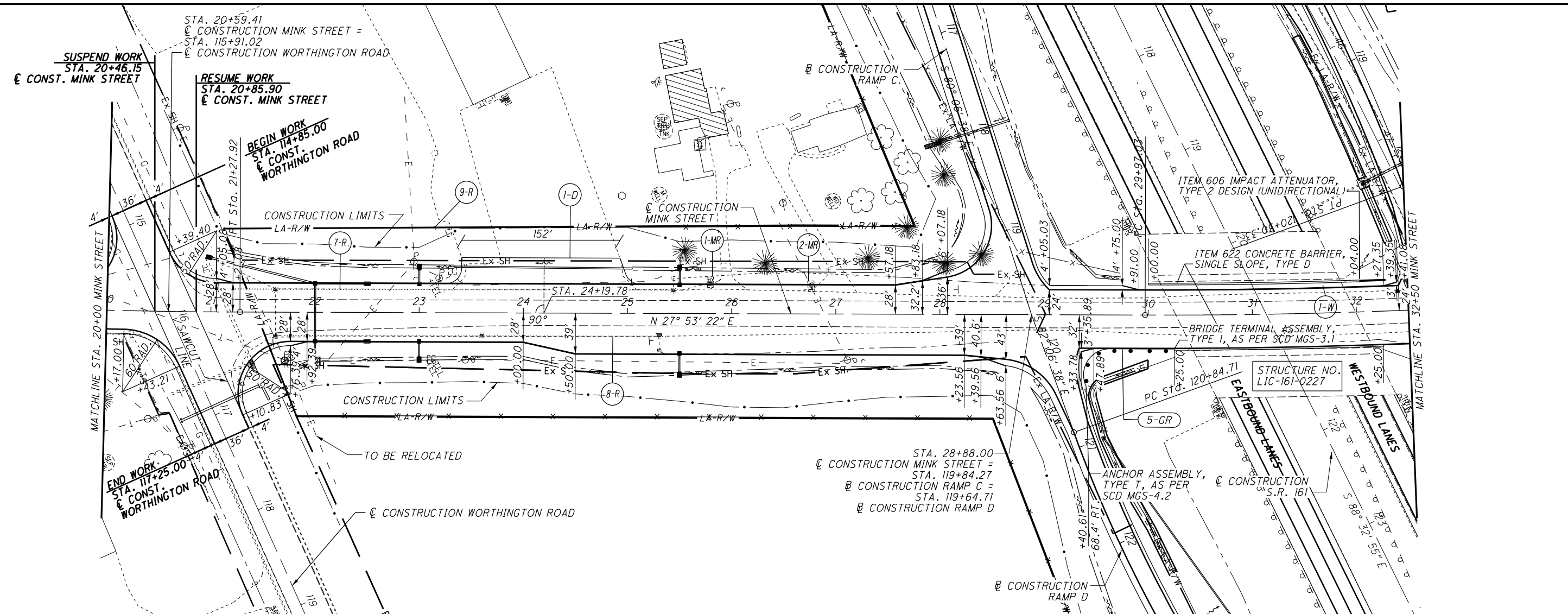


0	50	100
HORIZONTAL SCALE IN FEET		
CALCULATED	CMY	CHECKED
		HAG

MINK STREET PLAN SHEET
STA. 10+00 TO STA. 20+00

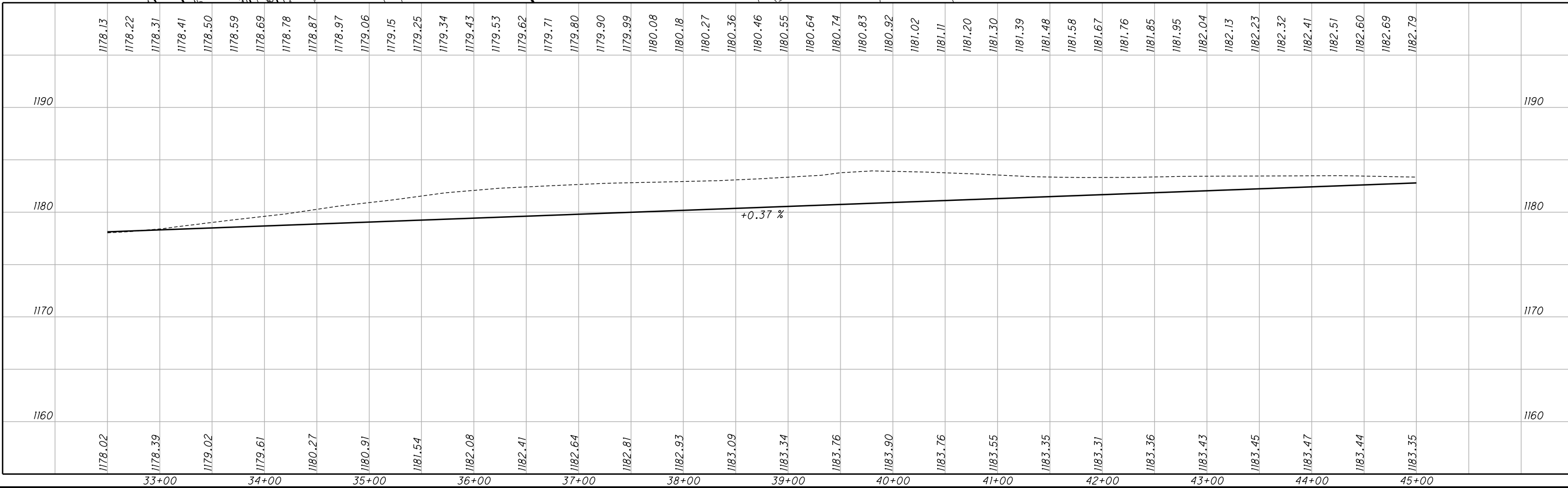
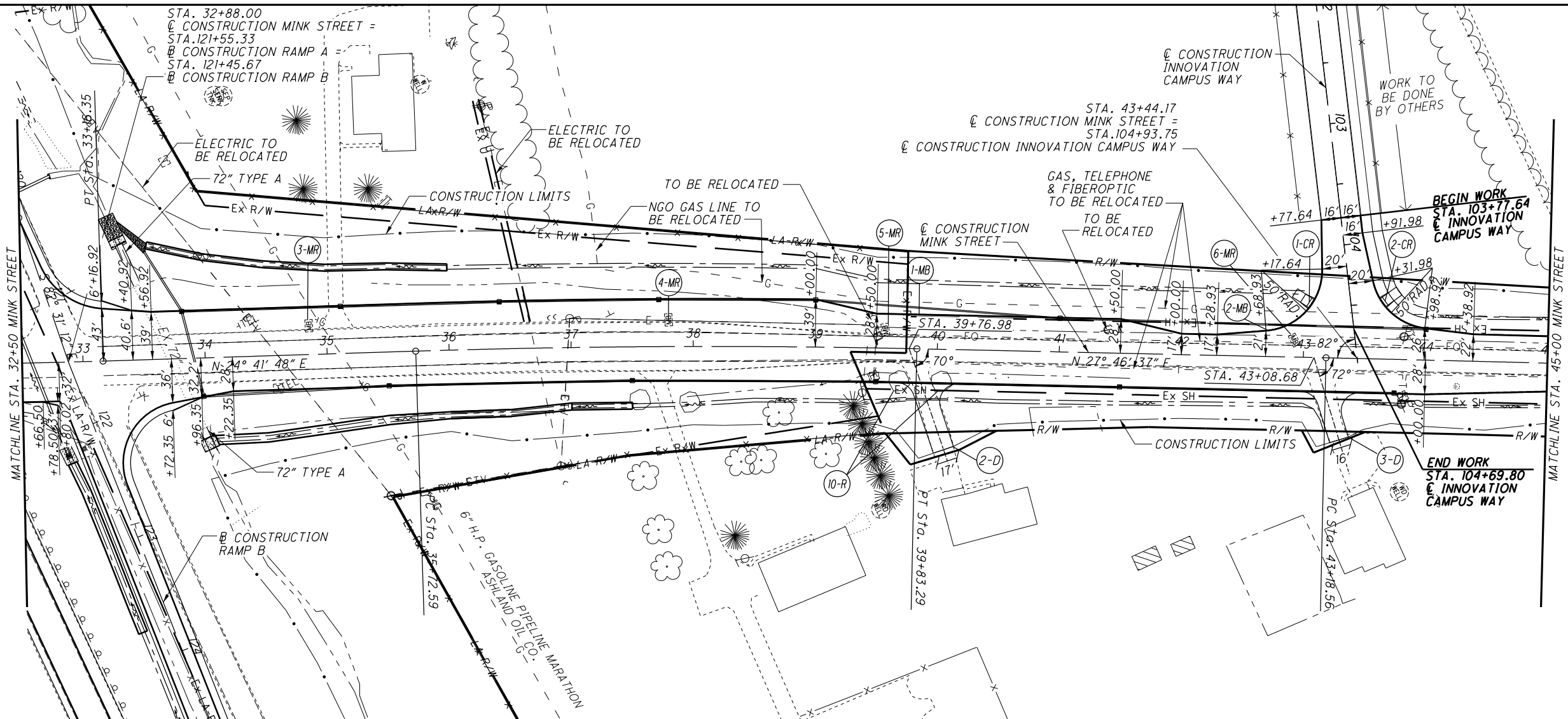
LIC-161-1.83

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**MINK STREET PLAN AND PROFILE
STA. 20+00 TO STA. 32+50**

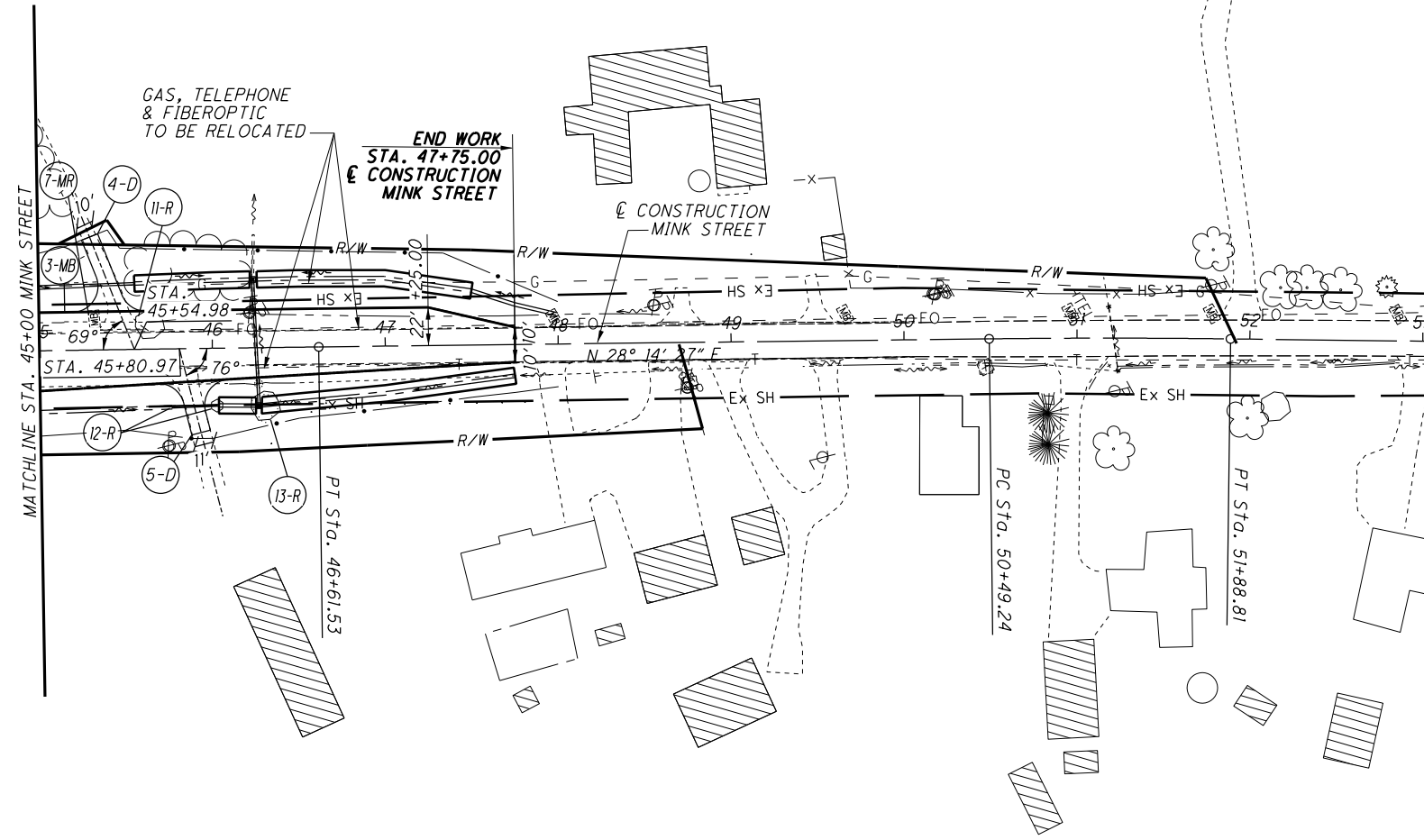
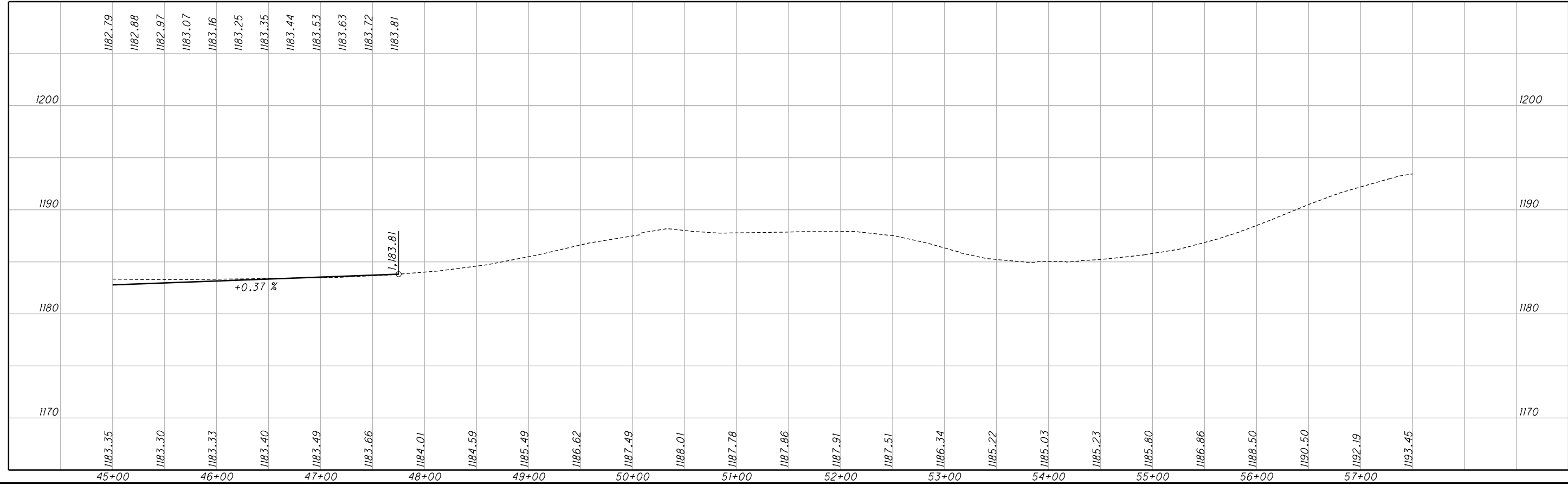
I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GPO13.dgn Sheet 8/11/2016 12:58:04 PM cyount



MINK STREET PLAN AND PROFILE
STA. 32+50 TO STA. 45+00

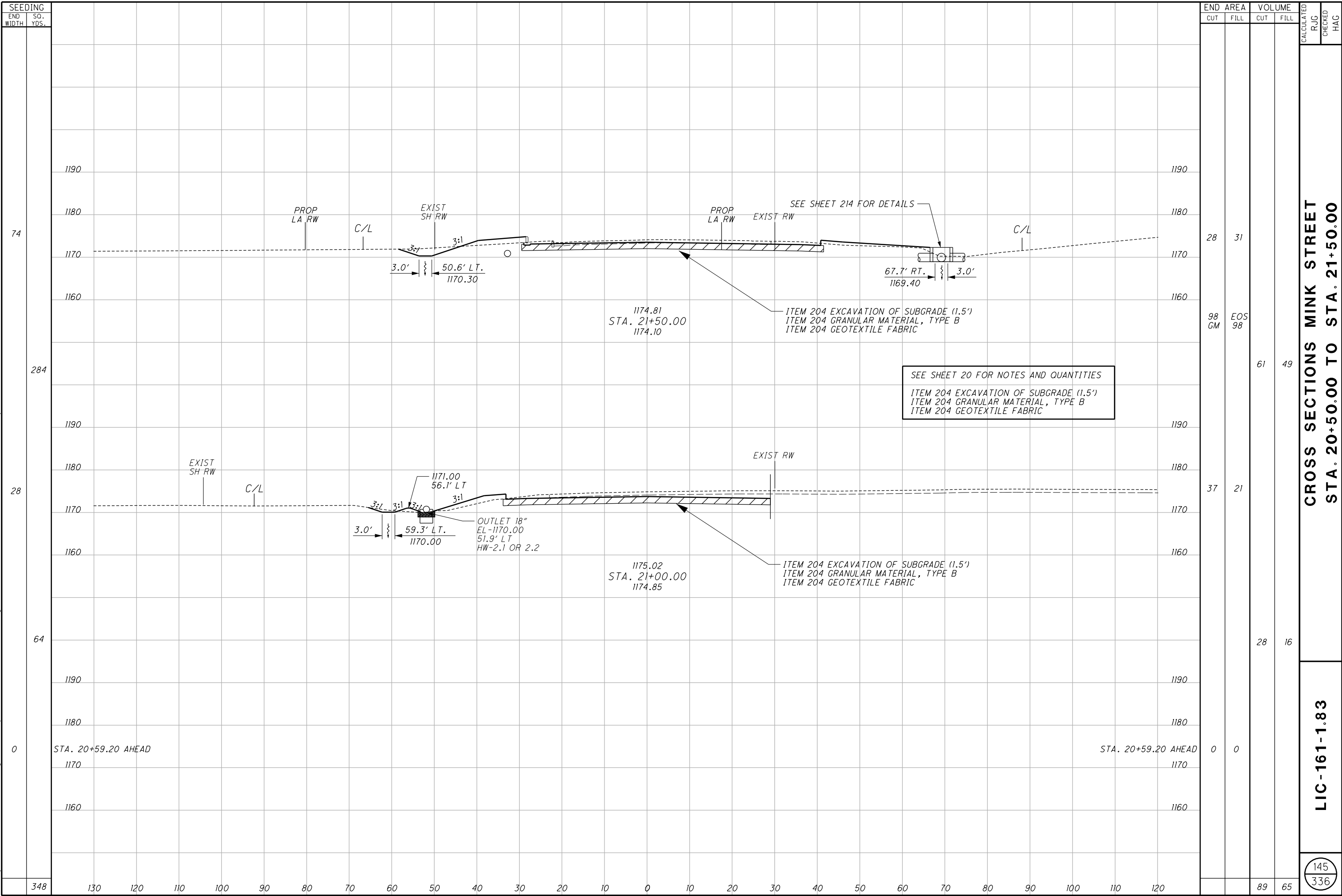
LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GPO14.dgn Sheet 8/11/2016 12:58:06 PM cyount



MINK STREET PLAN AND PROFILE
STA. 45+00 TO STA. 47+75

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SEEDING	
END WIDTH	SO. YDS.
74	
284	
28	
64	
0	
348	

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
28	31				
98 GM	EOS 98	61	49		
37	21				
		28	16		
0	0				
		89	65		

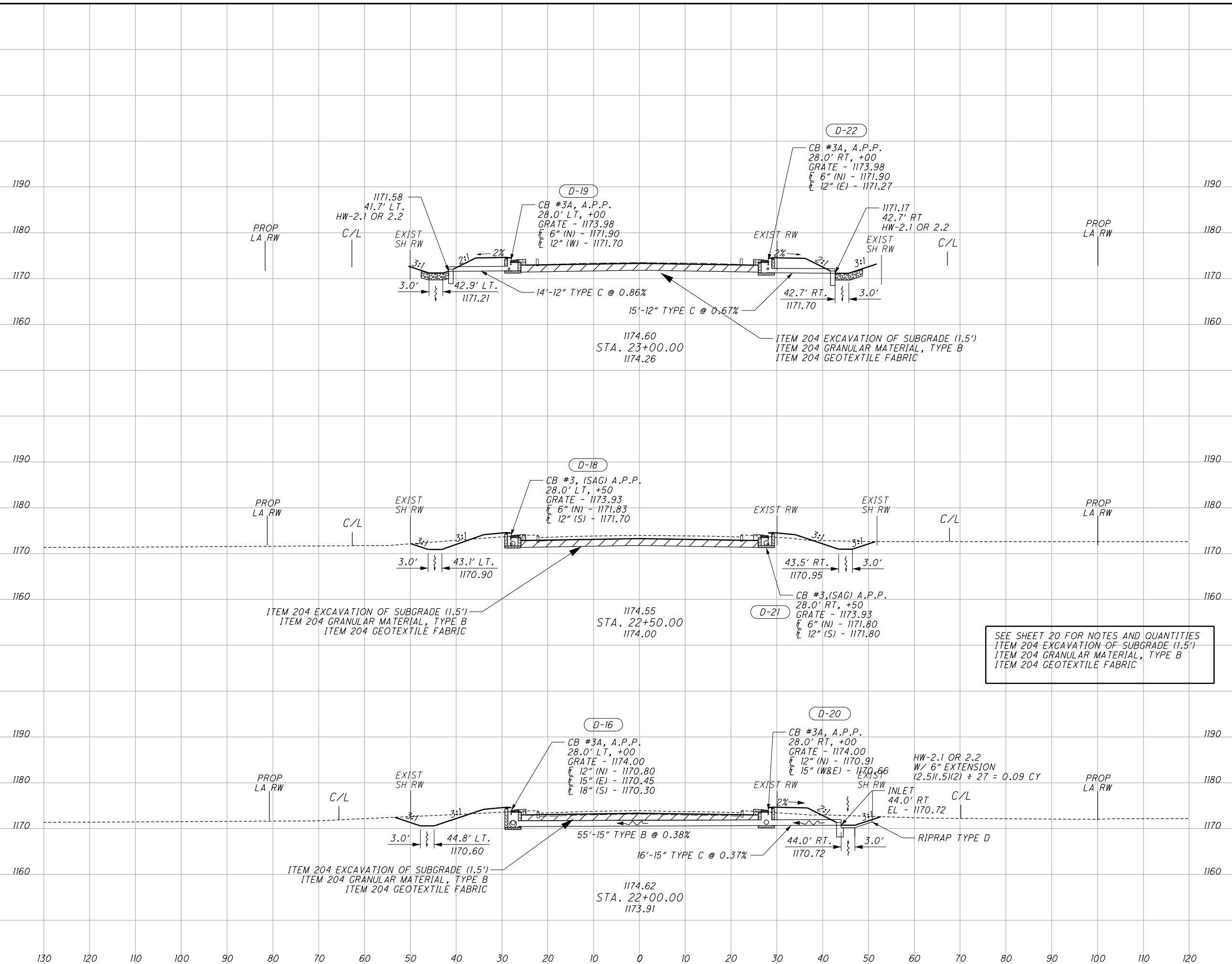
**CROSS SECTIONS MINK STREET
STA. 20+50.00 TO STA. 21+50.00**

LIC-161-1.83

145
336

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SEEDING	END	
	WIDTH	SO. YDS.
	55	309
	56	337
	65	387
	1033	



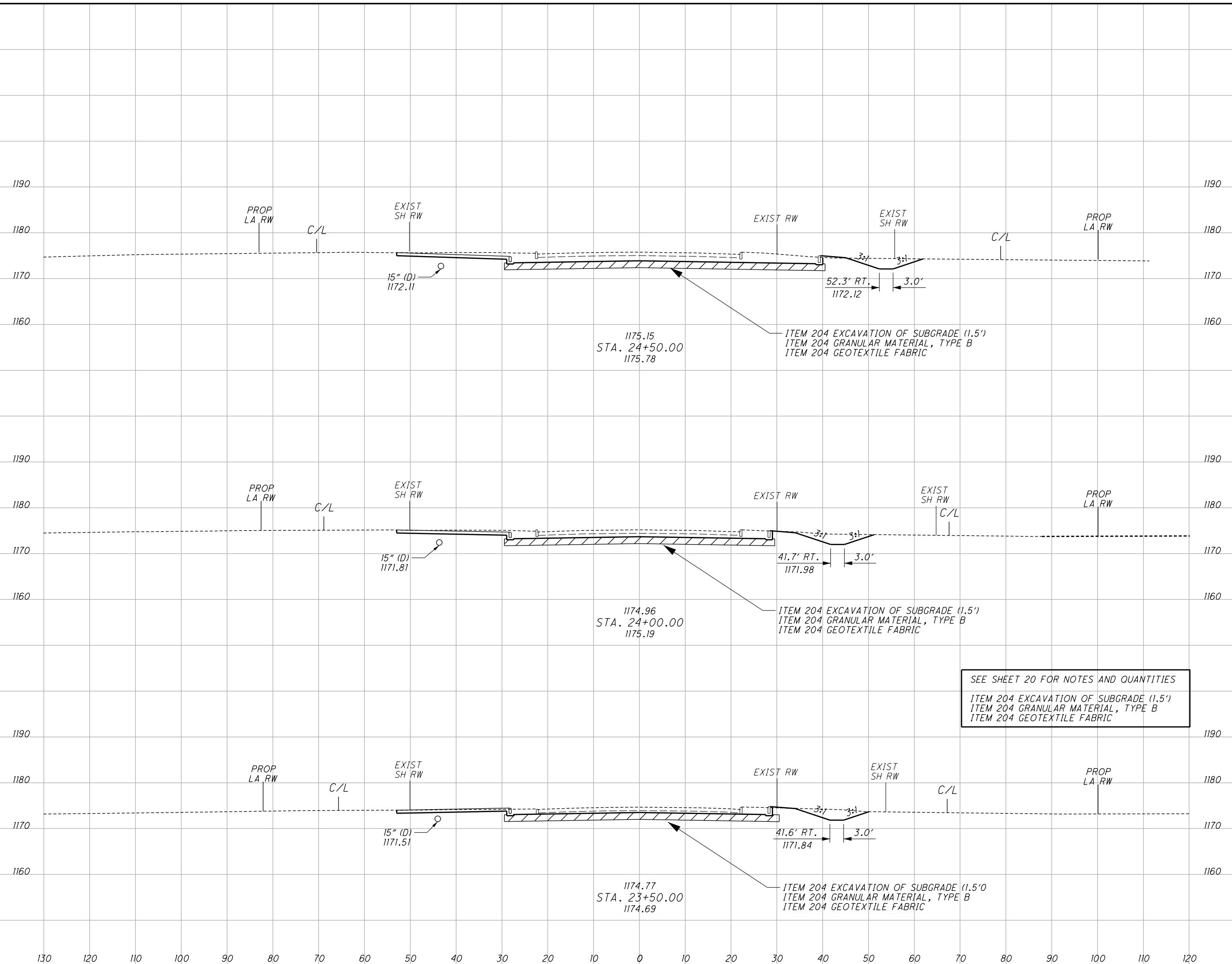
SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

END AREA	VOLUME	
	CUT	FILL
	40	14
	28	11
	40	18
	63	46
	189	97

CROSS SECTIONS MINK STREET
 STA. 22+00.00 TO STA. 23+00.00
 LIC-161-1.83
 146
 336

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SEEDING	
END WIDTH	SO. YDS.
33	
187	
34	
187	
33	
245	
619	



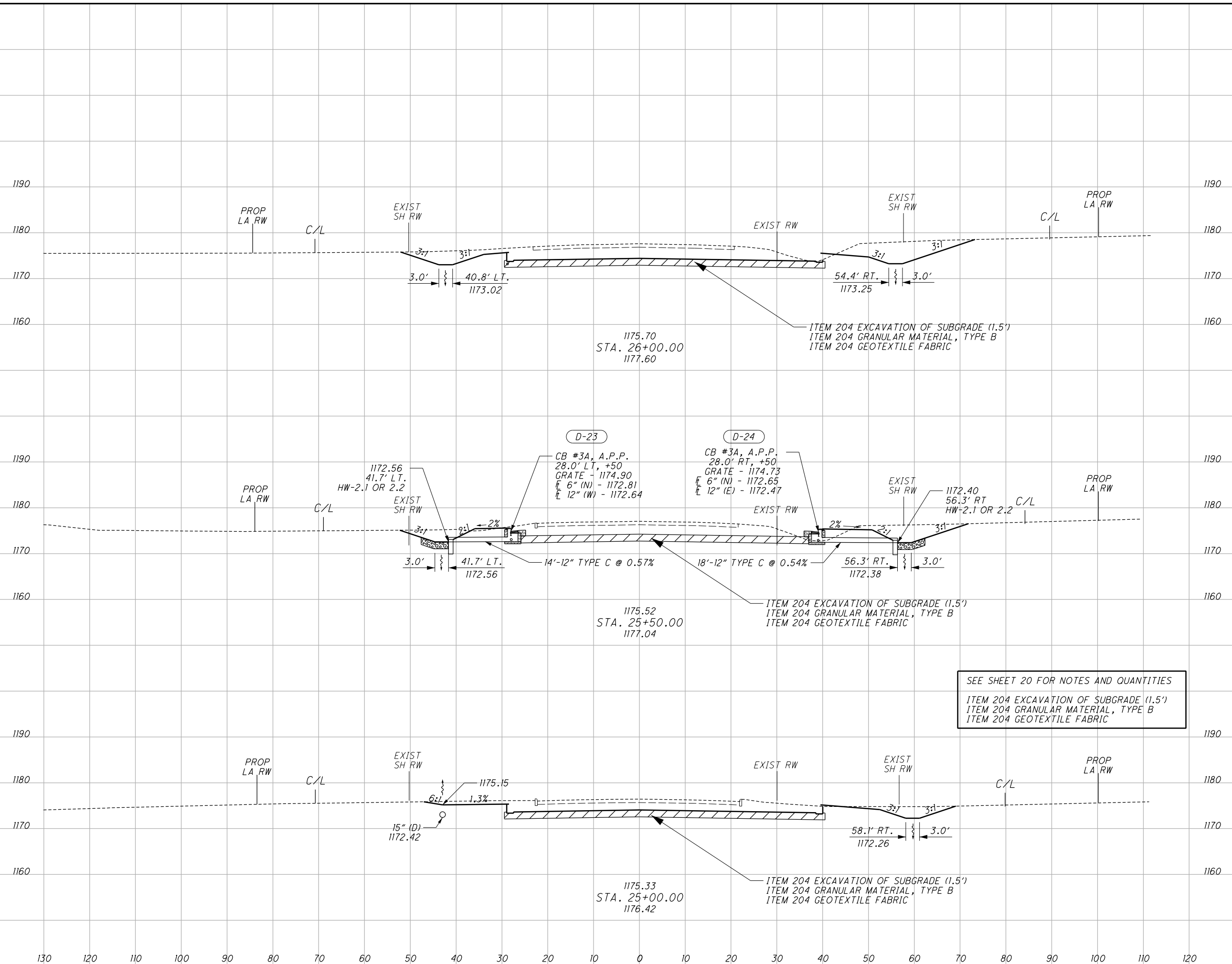
SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

END AREA		VOLUME	
CUT	FILL	CUT	FILL
131	2		
		200	2
85	0		
		134	0
59	0		
		92	13
		426	15

CROSS SECTIONS MINK STREET
 STA. 24+00.00 TO STA. 23+50.00
 LIC-161-1.83
 147
 336

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SEEDING	
END WIDTH	SO. YDS.
76	
60	
364	
71	
289	
1031	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
279	3	447	38		
203	37				
		375	36		
201	1				
		308	3		
		1130	77		

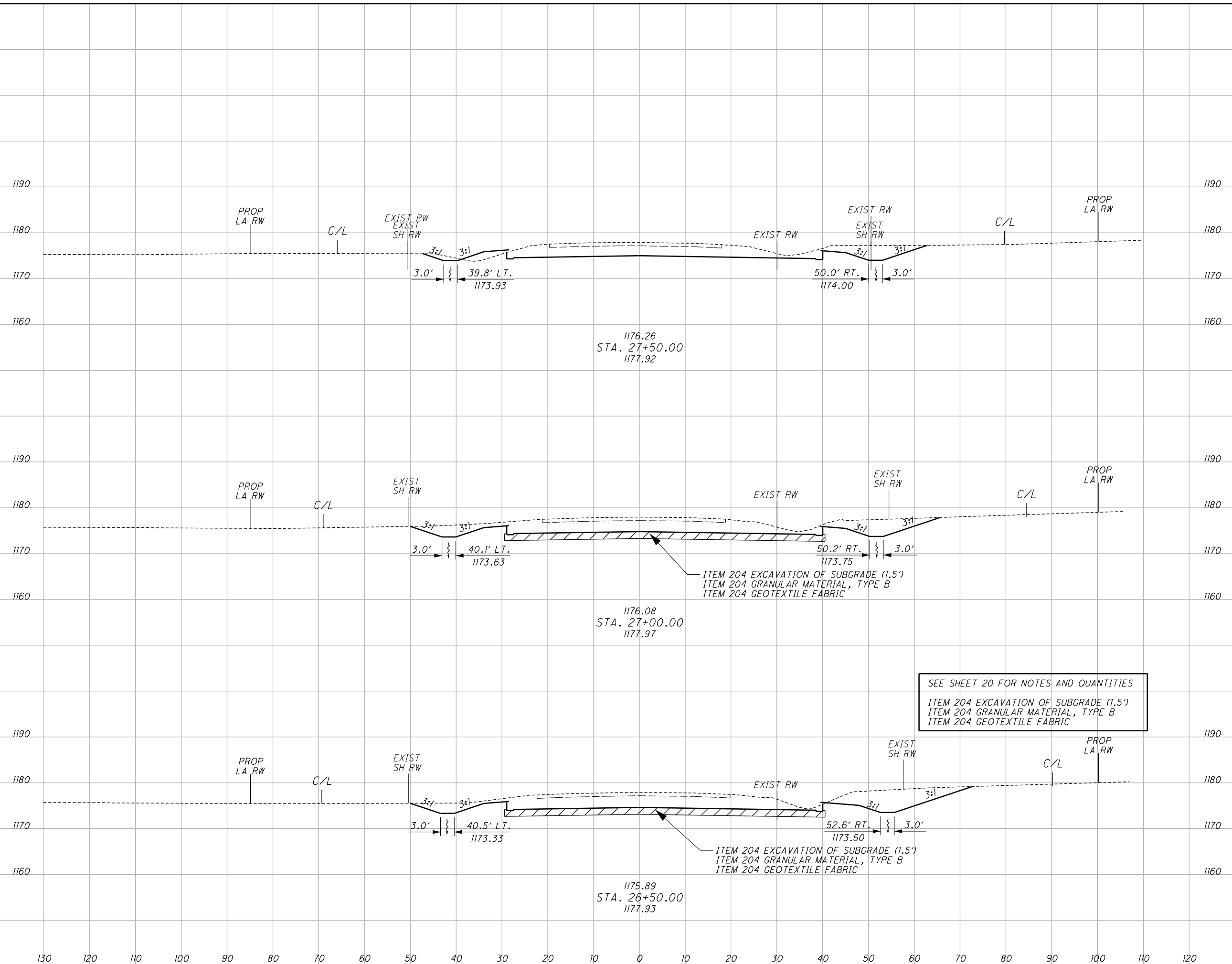
SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

**CROSS SECTIONS MINK STREET
 STA. 25+00.00 TO STA. 26+00.00**

LIC-161-1.83

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SEEDING	
END WIDTH	SO. YDS.
64	
70	
75	
420	
1196	



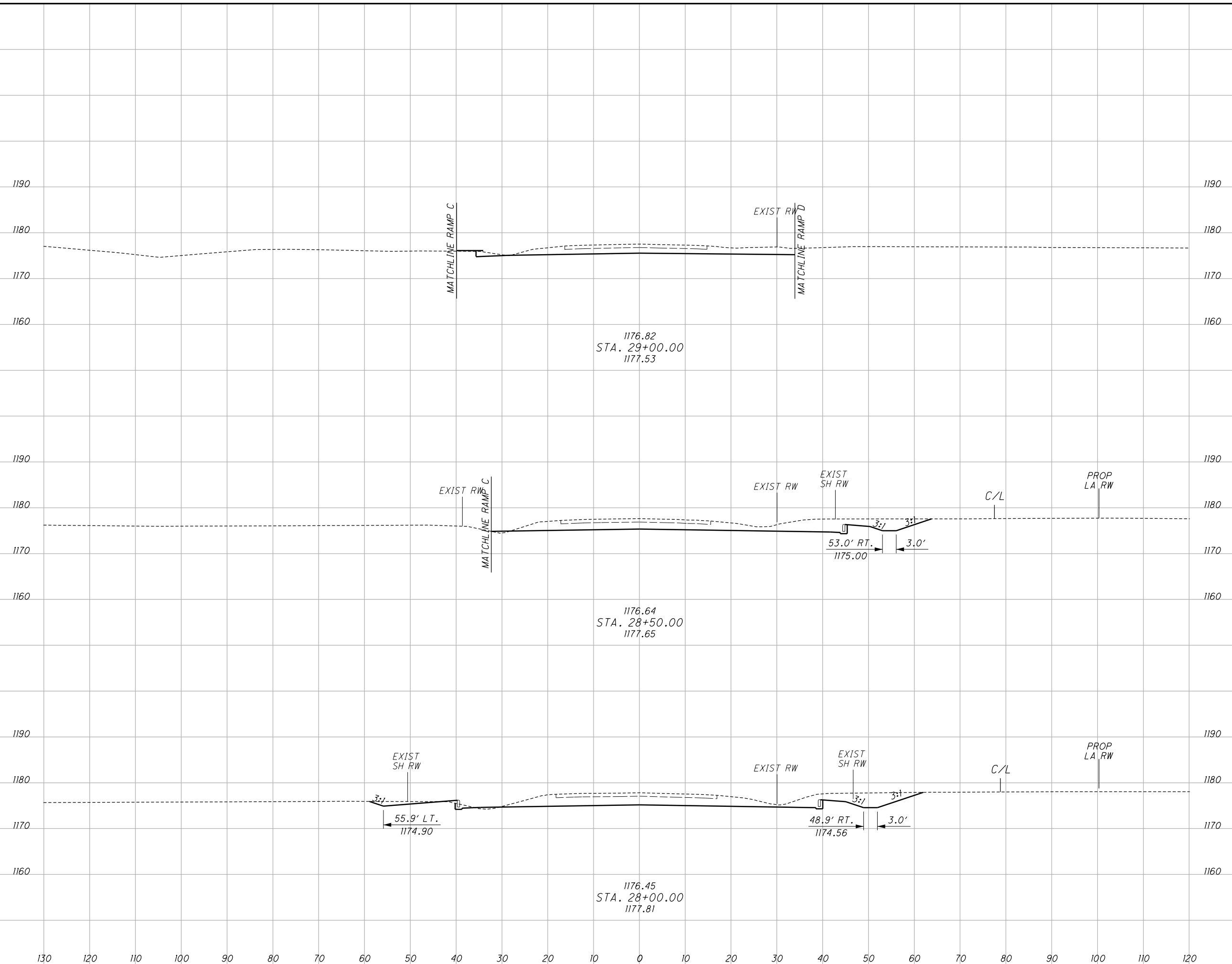
SEE SHEET 20 FOR NOTES AND QUANTITIES
 ITEM 204 EXCAVATION OF SUBGRADE (1.5')
 ITEM 204 GRANULAR MATERIAL, TYPE B
 ITEM 204 GEOTEXTILE FABRIC

END AREA		VOLUME	
CUT	FILL	CUT	FILL
203	26	411	25
240	0	516	3
279	3	496	3
		1407	28

CROSS SECTIONS MINK STREET
 STA. 26+50.00 TO STA. 27+50.00
 LIC-161-1.83
 149
 336

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SEEDING	
END WIDTH	SO. YDS.
39	
189	
29	
256	
63	
353	
798	

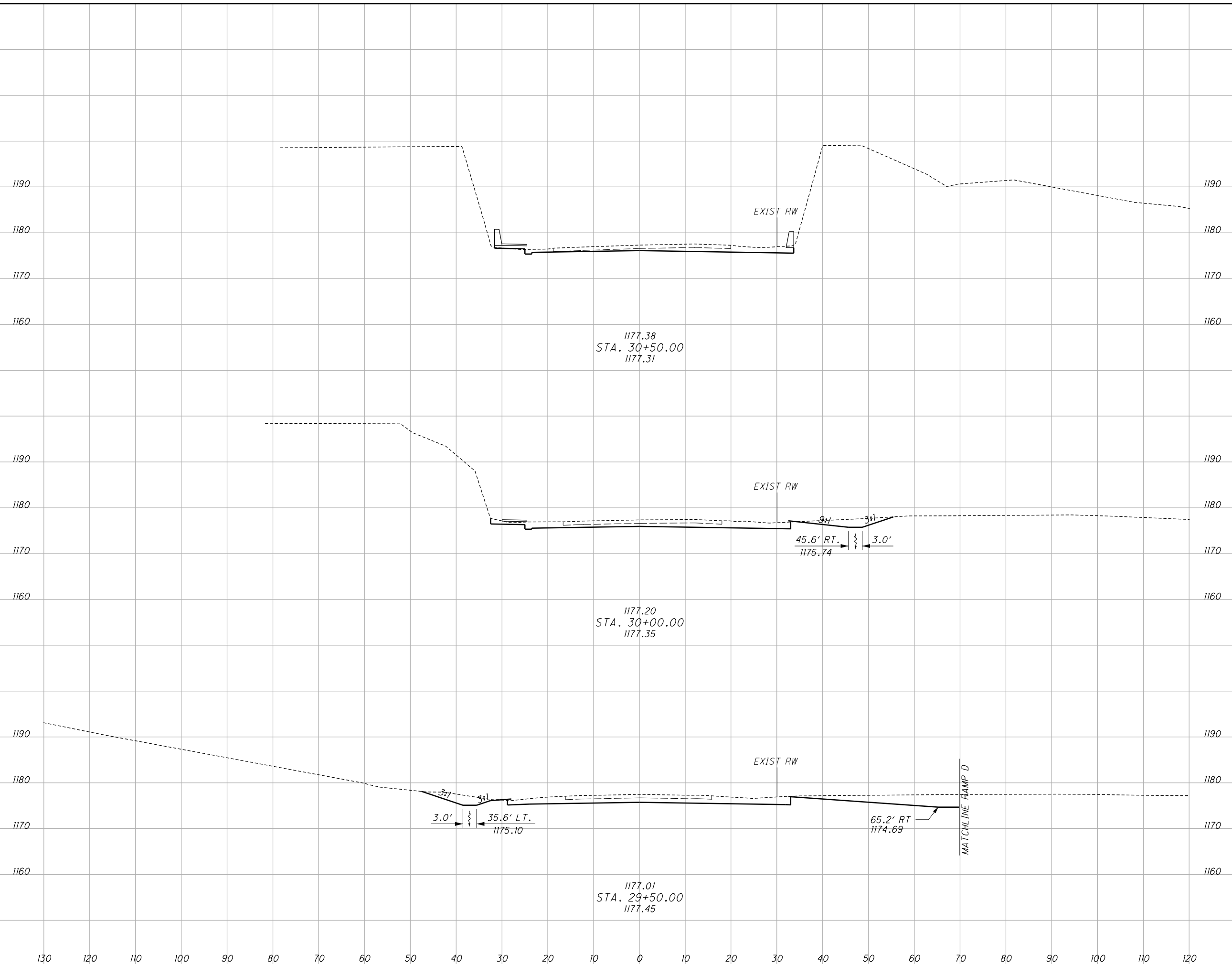


END AREA		VOLUME	
CUT	FILL	CUT	FILL
171	1	312	13
165	12	327	38
188	28	363	50
		1002	101

CROSS SECTIONS MINK STREET
 STA. 28+00.00 TO STA. 29+00.00
 LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 150
 336

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SEEDING	
END WIDTH	SO. YDS.
704	342
84	298
23	64
0	0



END AREA		VOLUME	
CUT	FILL	CUT	FILL
41	0	110	1
77	1	240	5
182	4	327	5
		677	11

CALCULATED
 R/JG
 CHECKED
 HAG

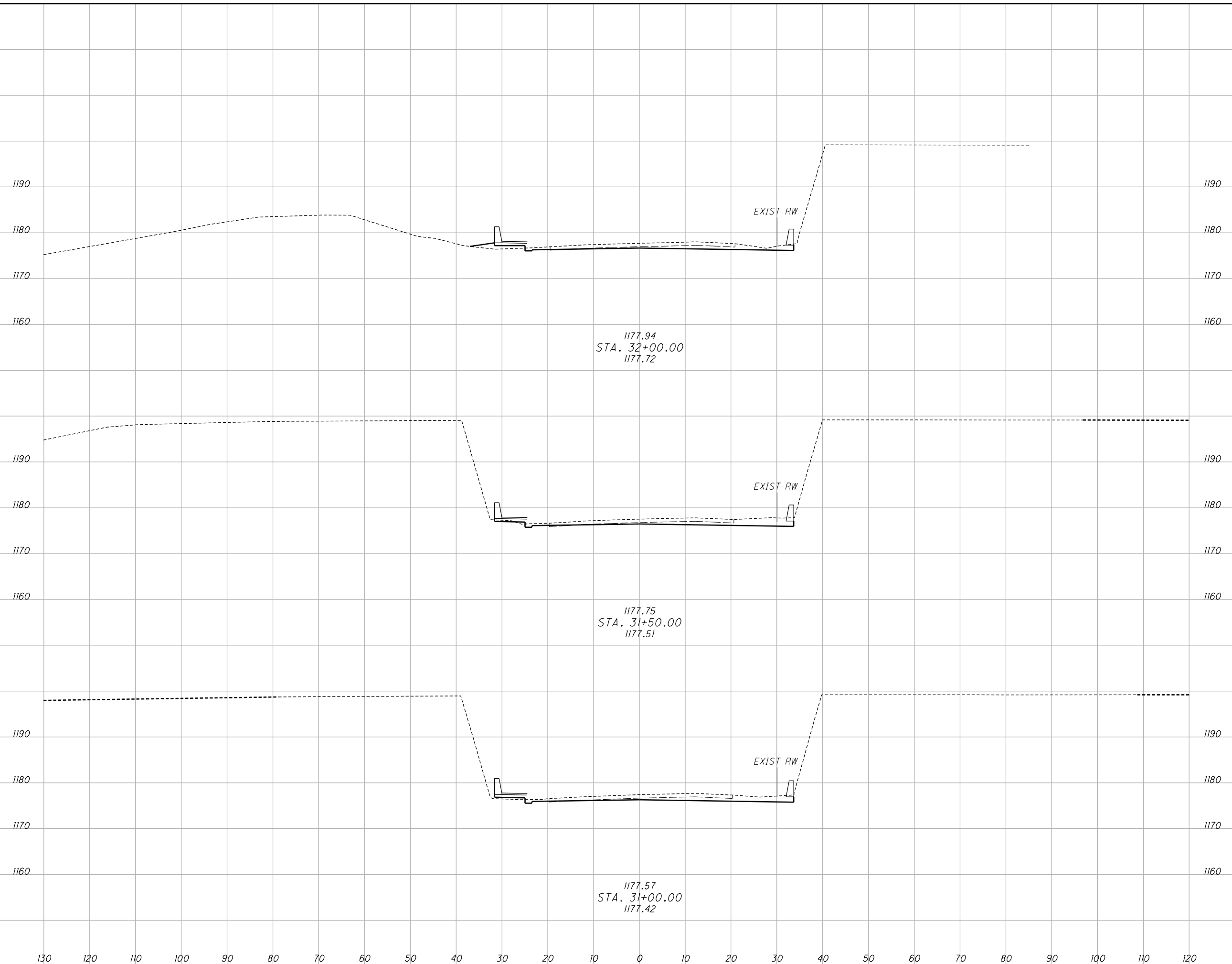
**CROSS SECTIONS MINK STREET
 STA. 29+50.00 TO STA. 30+50.00**

LIC-161-1.83

151
 336

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SEEDING	
END WIDTH	SO. YDS.
56	0
0	56



END AREA		VOLUME	
CUT	FILL	CUT	FILL
34	10	67	11
38	1	66	3
33	2	69	2
		202	16

CALCULATED	CHECKED	HAG

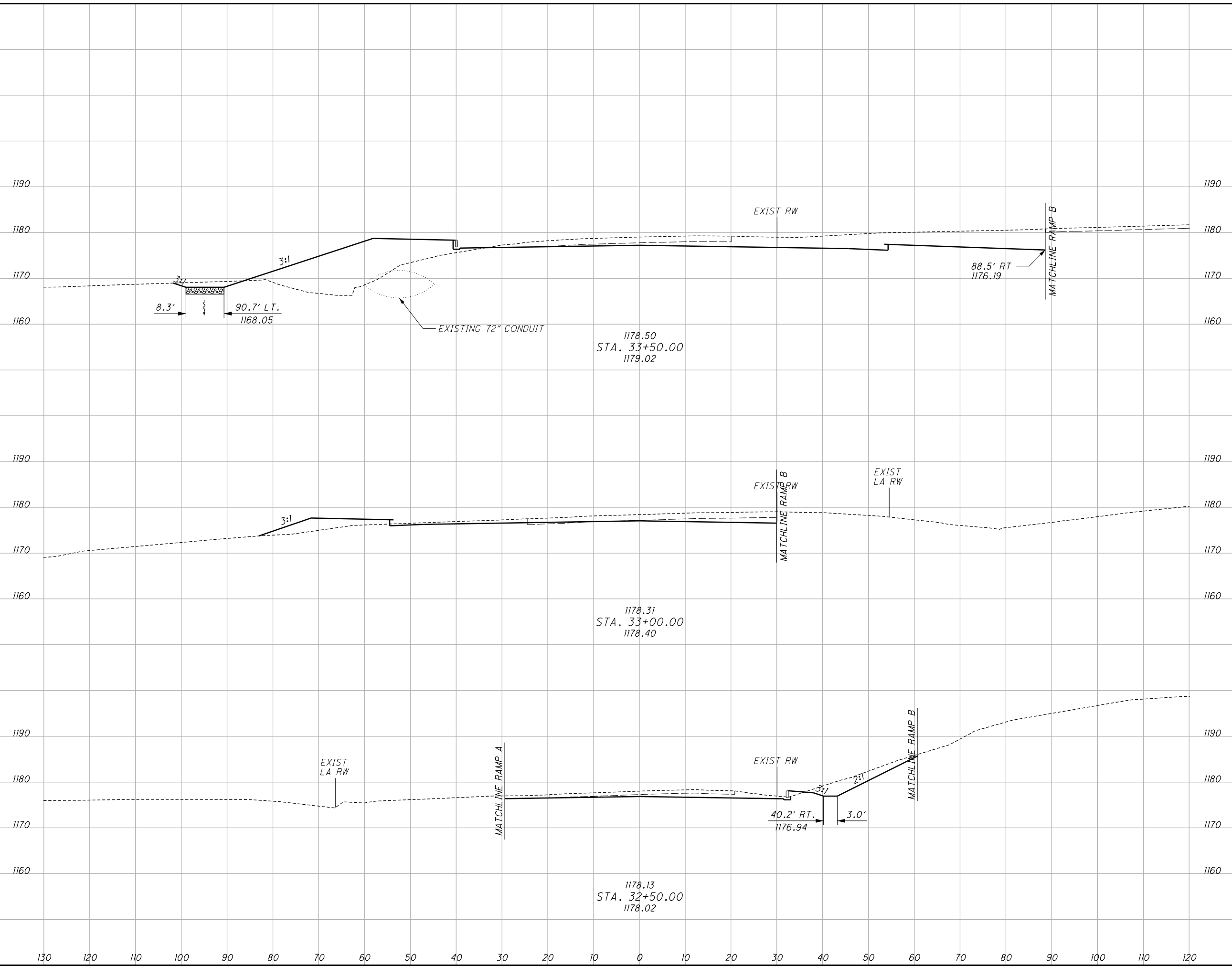
**CROSS SECTIONS MINK STREET
STA. 31+00.00 TO STA. 32+00.00**

LIC-161-1.83

152
336

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SEEDING	
END WIDTH	SO. YDS.
130	110
120	356
110	18
100	142
90	33
80	148
70	646

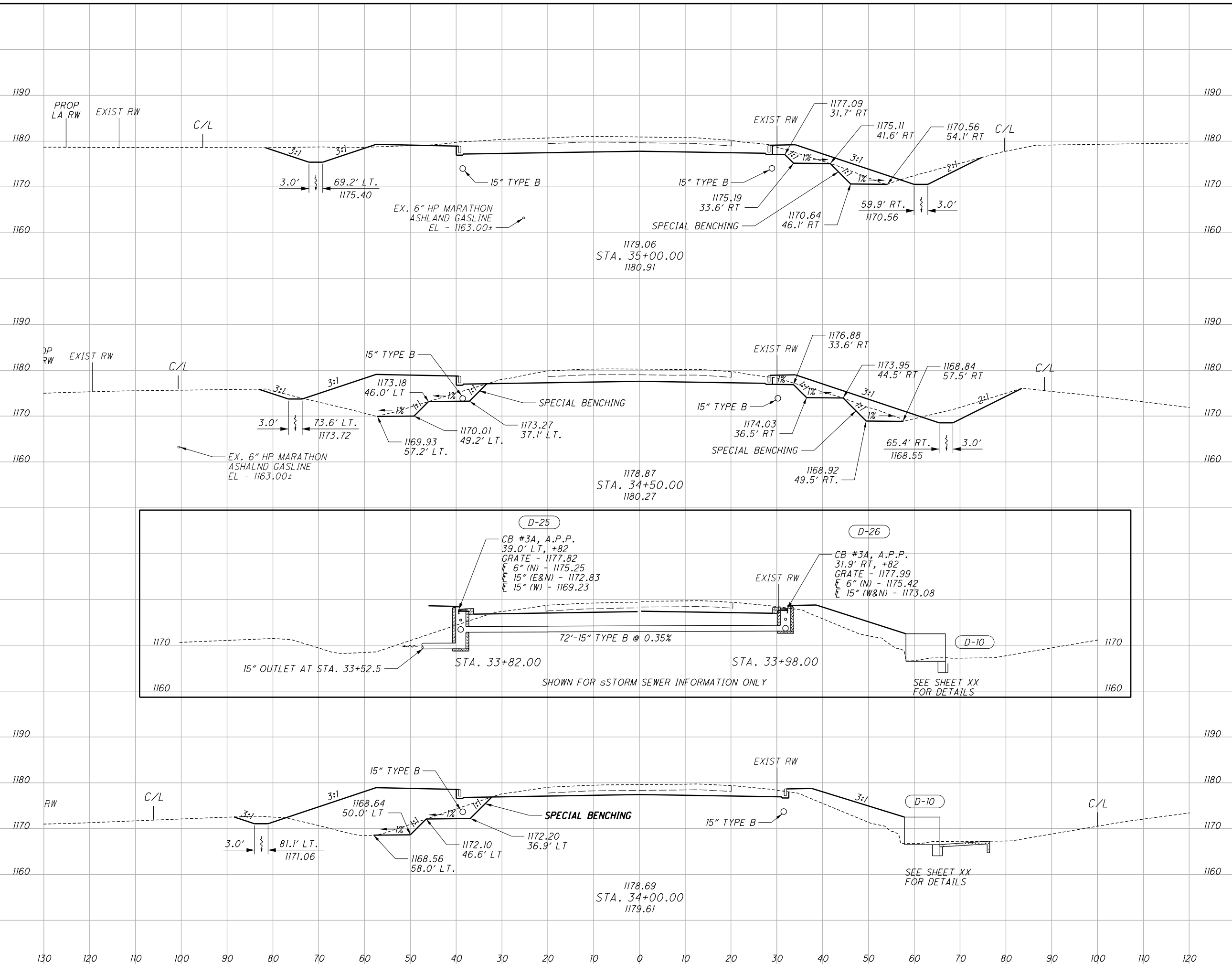


END AREA		VOLUME	
CUT	FILL	CUT	FILL
283	269	320	288
62	42	113	53
59	15	87	24
		520	365

CROSS SECTIONS MINK STREET
 STA. 32+50.00 TO STA. 33+50.00
 LIC-161-1.83
 153
 336

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SEEDING	
END WIDTH	SO. YDS.
1809	575
130	97
120	121
110	628
100	105
90	
80	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	



END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
282	80	446	374		
199	323	317	630		
143	357	395	580		
		1158	1584		

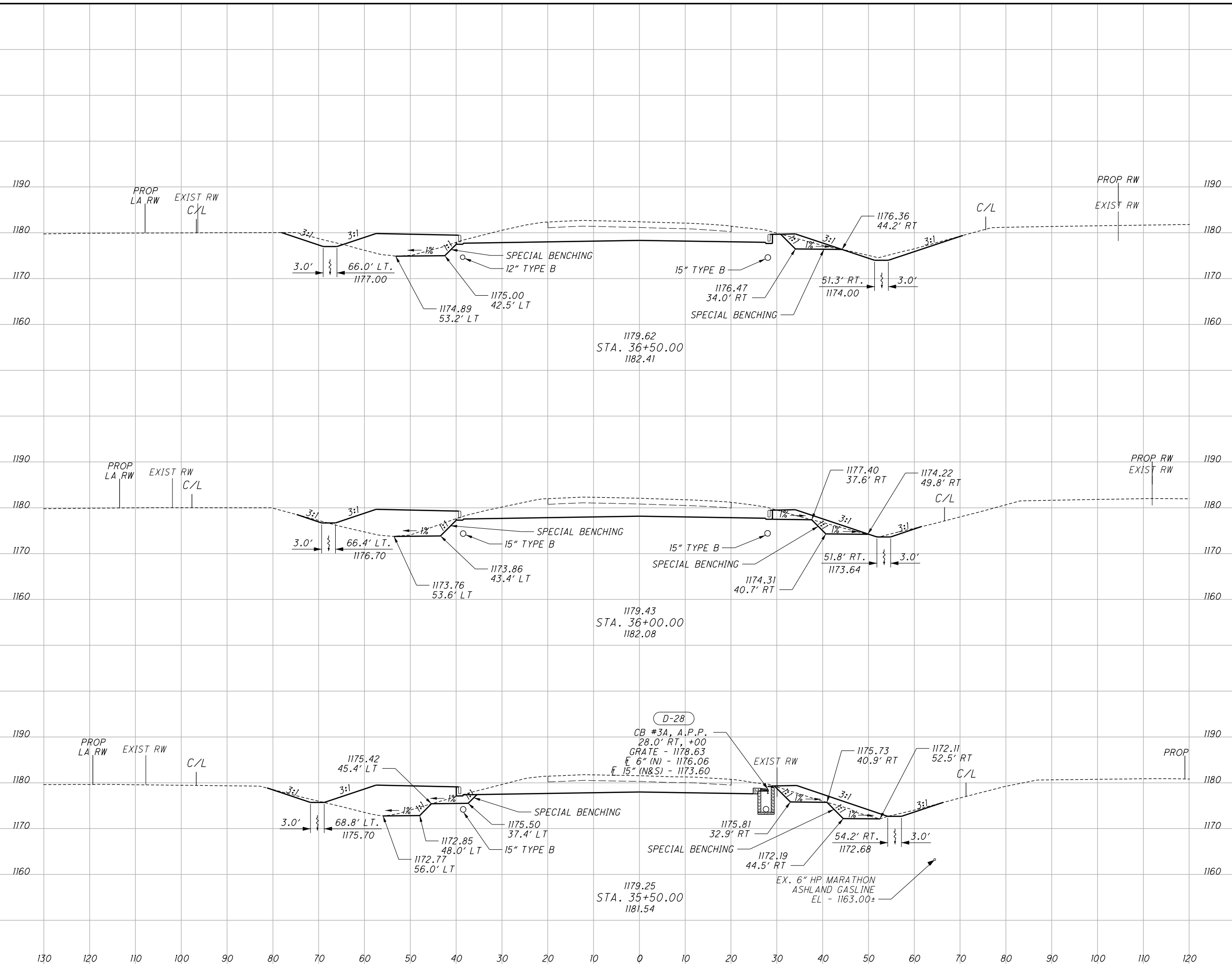
**CROSS SECTIONS MINK STREET
STA. 34+00.00 TO STA. 35+00.00**

LIC-161-1.83

154
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS006.dgn XS_SHEET_11 8/11/2016 12:58:09 PM ccount

SEEDING	
END WIDTH	SO. YDS.
84	
548	
113	
523	
75	
500	
1571	



END AREA	VOLUME	CALCULATED	CHECKED	HAG
267	118			
243	136			
224	197			
469	257			
1375	802			

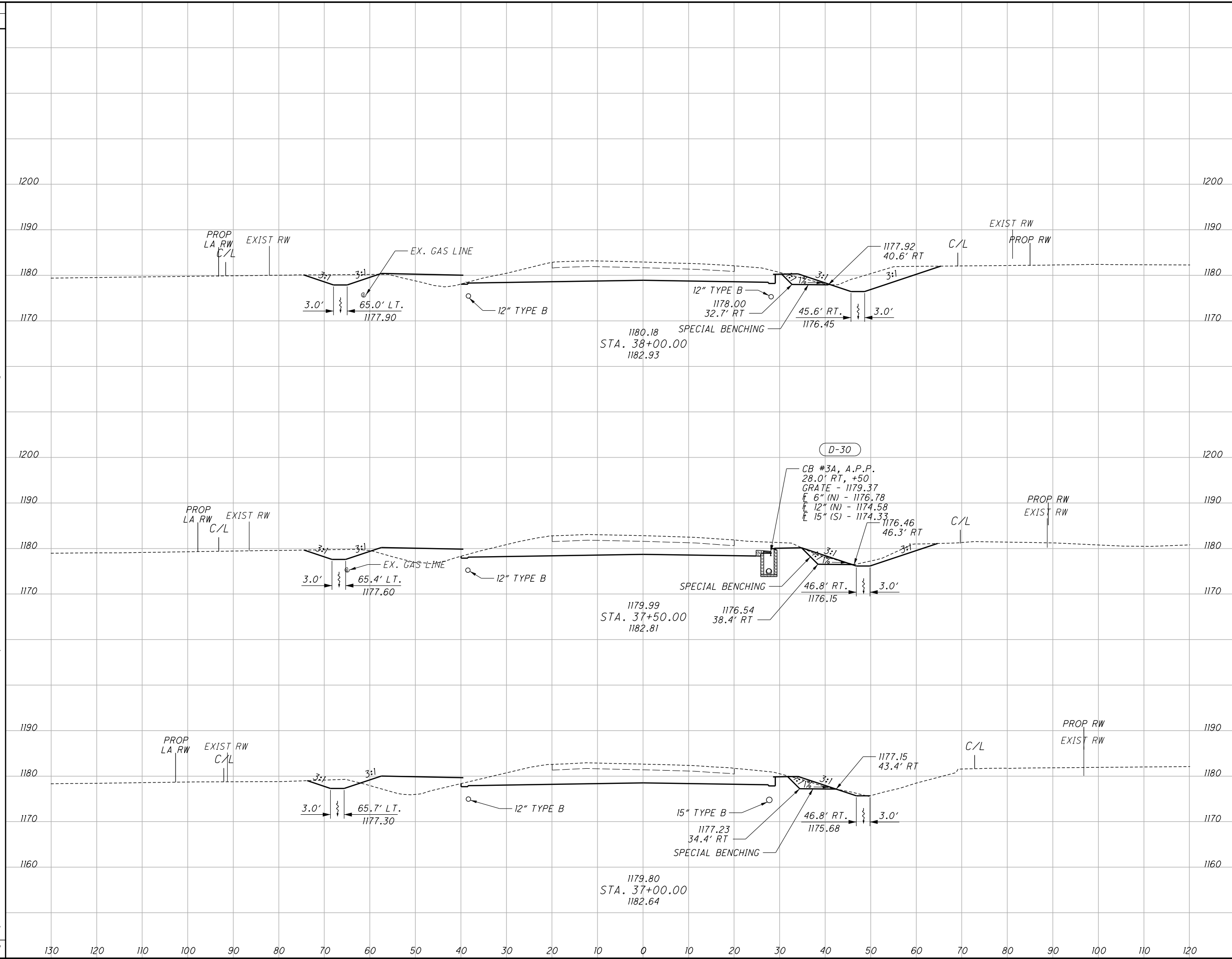
**CROSS SECTIONS MINK STREET
STA. 35+50.00 TO STA. 36+50.00**

LIC-161-1.83

155
336

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SEEDING	
END WIDTH	SO. YDS.
1441	448
130	77
120	473
110	93
100	520
90	94

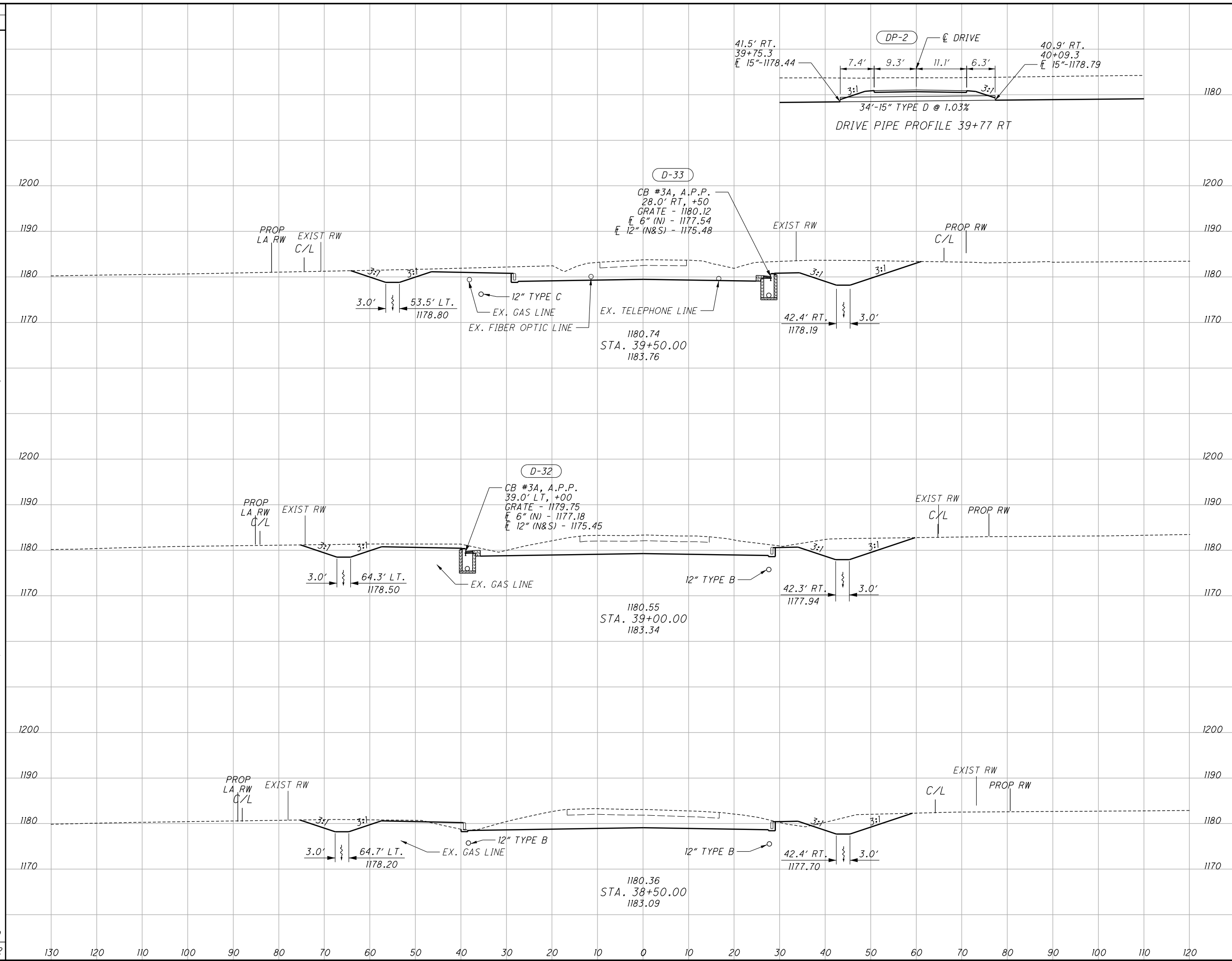


END AREA		VOLUME	
CUT	FILL	CUT	FILL
299	52	532	105
275	61	484	124
247	72	476	176
		1492	405

CROSS SECTIONS MINK STREET
STA. 37+00.00 TO STA. 38+00.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 156
 336

I:\ProjectData\LIC-161-1.83\Roadway\Sheets\97879_XS006.dgn XS_SHEET_13 8/11/2016 12:58:10 PM ccount

SEEDING	
END WIDTH	SO. YDS.
1502	509
130	89
120	495
110	89
100	498
90	90
80	1200
70	1190
60	1180
50	1170
40	1200
30	1190
20	1180
10	1170
0	1200
10	1190
20	1180
30	1170
40	1200
50	1190
60	1180
70	1170
80	1200
90	1190
100	1180
110	1170
120	1200

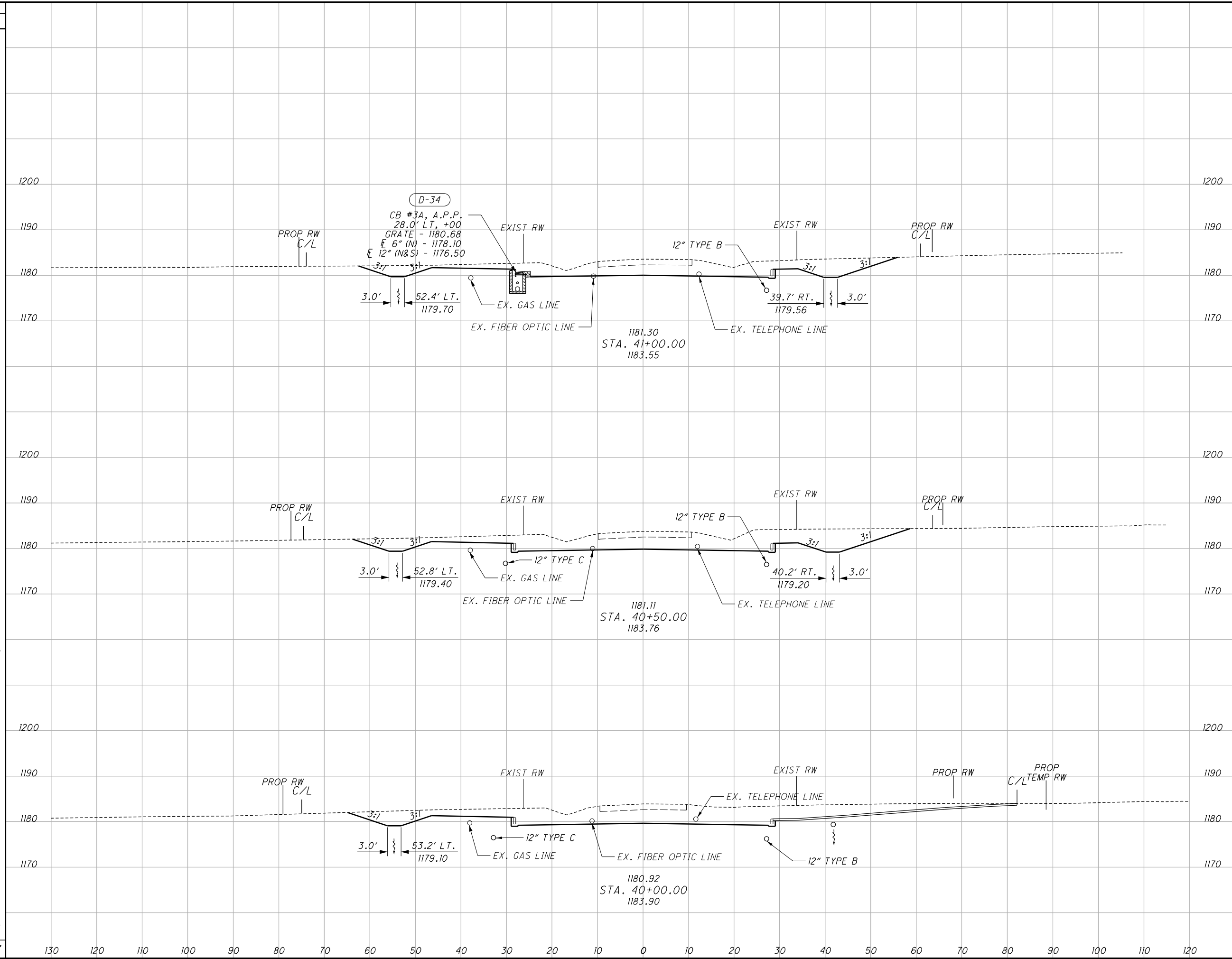


END AREA	VOLUME	CALCULATED	
		CUT	FILL
348	0	348	0
318	15	563	41
290	29	546	75
		1726	130

CROSS SECTIONS MINK STREET
 STA. 38+50.00 TO STA. 39+50.00
 LIC-161-1.83
 157
 336

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SEEDING	
END WIDTH	SO. YDS.
1237	83
1200	475
1190	88
1180	378
1170	48
1160	384

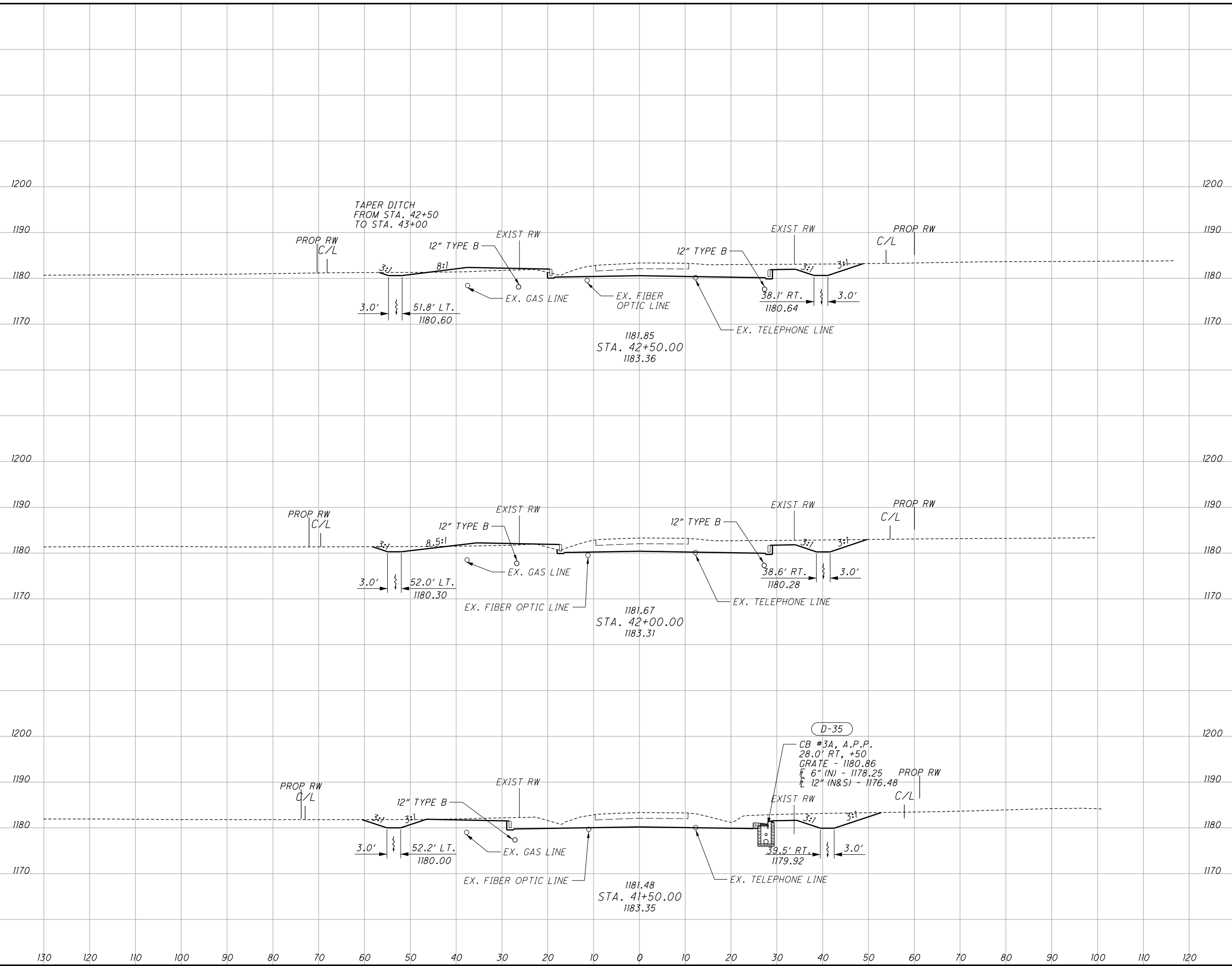


END AREA		VOLUME	
CUT	FILL	CUT	FILL
259	0	552	0
337	0	657	0
372	0	667	0
1876	0		

CROSS SECTIONS MINK STREET
 STA. 40+00.00 TO STA. 41+00.00
 LIC-161-1.83
 158
 336

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SEEDING	
END WIDTH	SO. YDS.
75	
425	
78	
434	
78	
448	
1307	

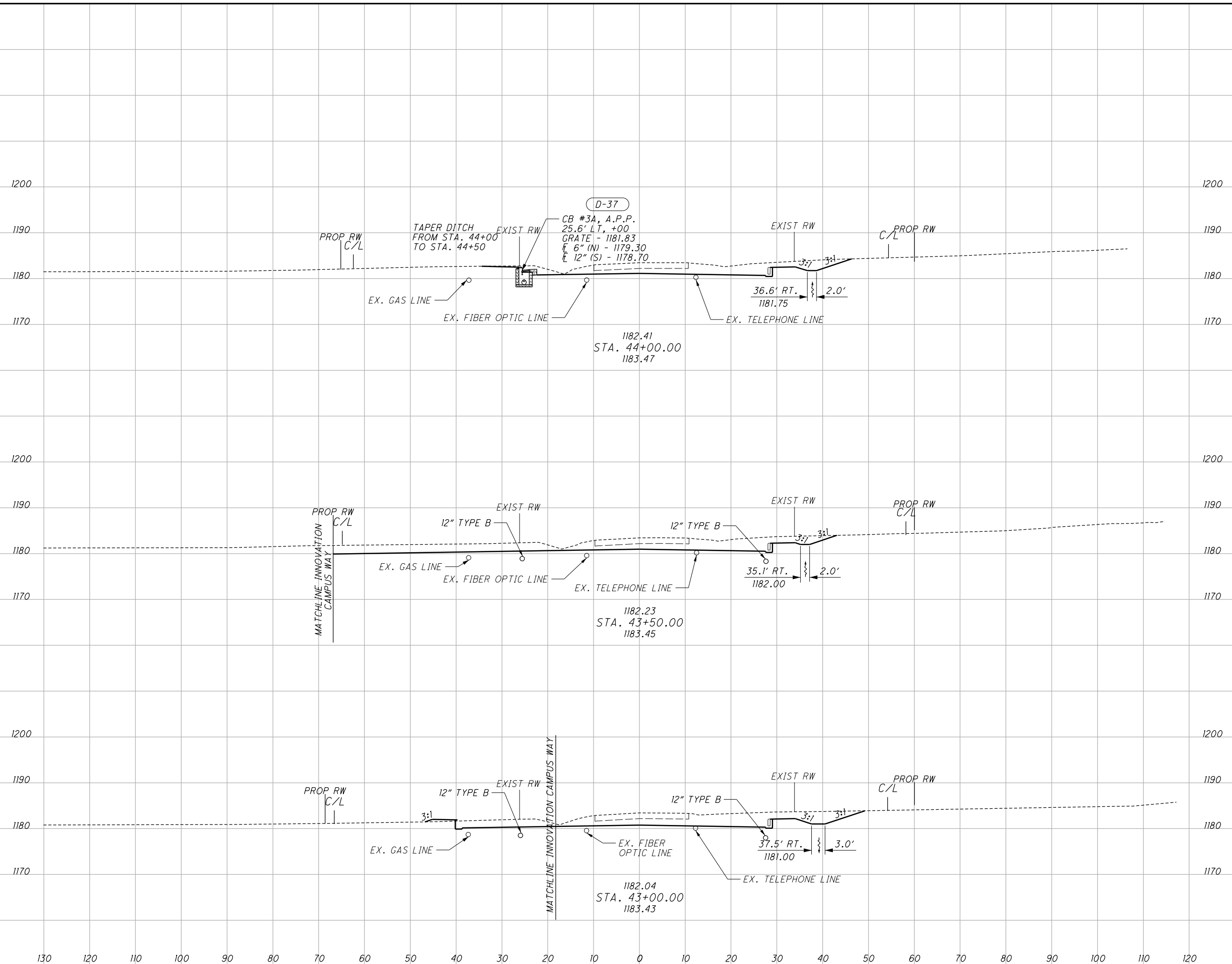


END AREA		VOLUME	
CUT	FILL	CUT	FILL
145	22	278	37
155	17	325	18
196	2	422	2
		1025	57

CROSS SECTIONS MINK STREET
 STA. 41+50.00 TO STA. 42+50.00
 LIC-161-1.83
 159
 336

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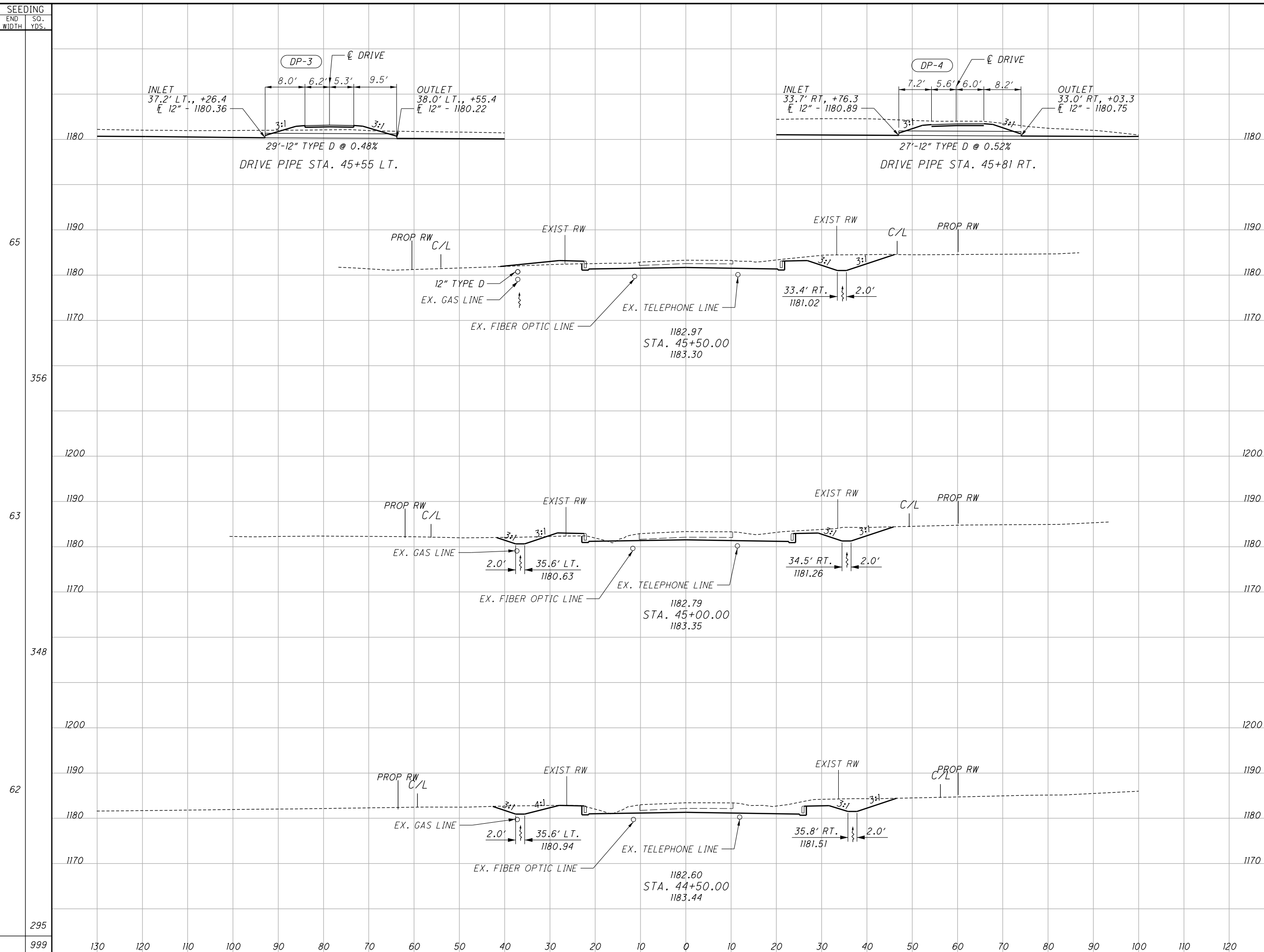
SEEDING	
END WIDTH	SO. YDS.
44	
175	
164	
40	
320	
659	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
130	6	307	12
201	6	349	14
175	9	297	29
		953	55

CROSS SECTIONS MINK STREET
 STA. 43+00.00 TO STA. 44+00.00
 LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 160
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS006.dgn XS_SHEET_17 8/11/2016 12:58:11 PM ccount



SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	RJG	HAG

65	1180	111	11	201	23		
63	1180	106	13	213	19		
62	1180	123	7	235	13		
295	1170			649	55		

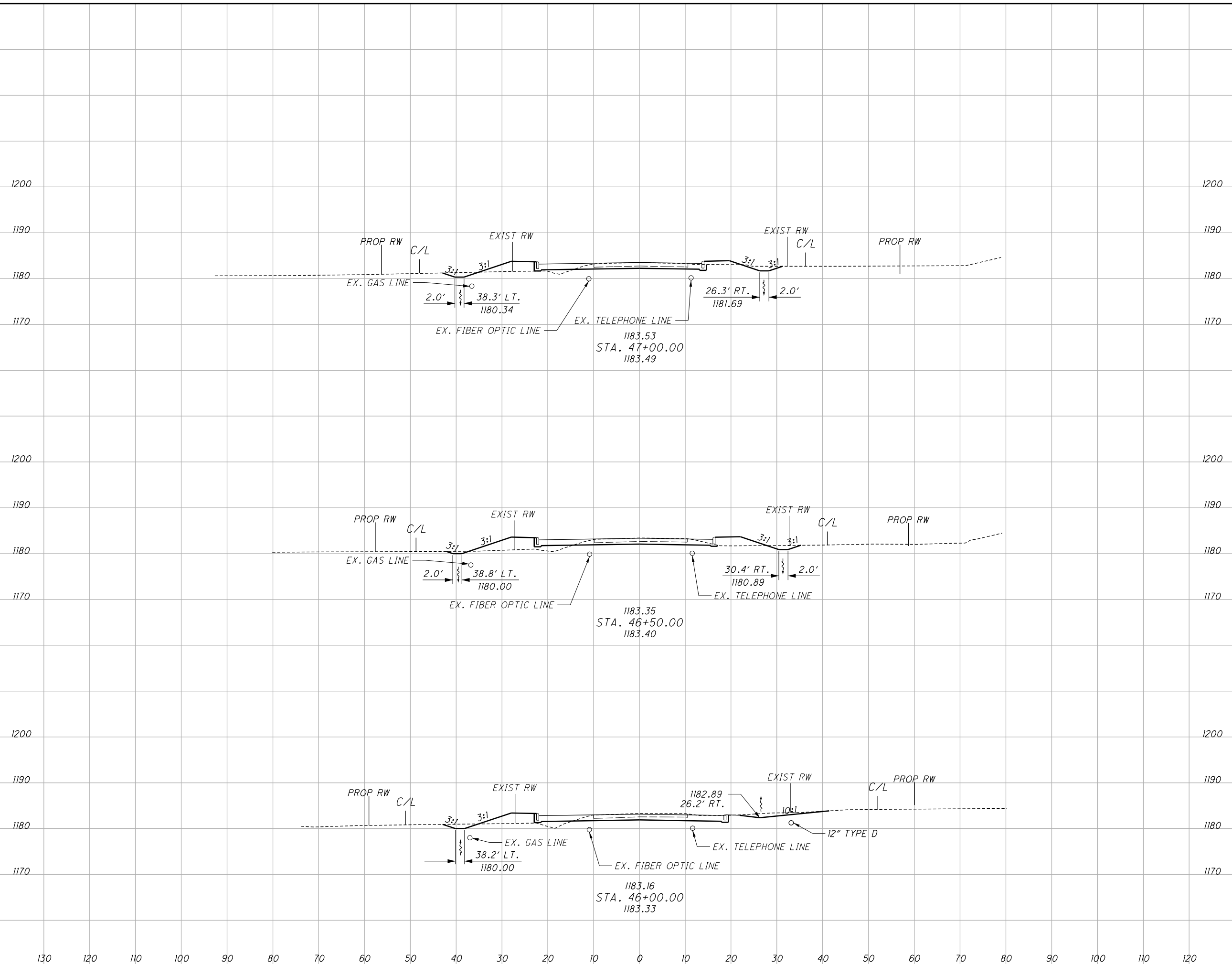
**CROSS SECTIONS MINK STREET
 STA. 44+50.00 TO STA. 45+50.00**

LIC-161-1.83

161
 336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS006.dgn XS_SHEET_18 8/11/2016 12:58:11 PM ccount

SEEDING	
END WIDTH	SO. YDS.
59	
328	
348	
66	
364	
1040	



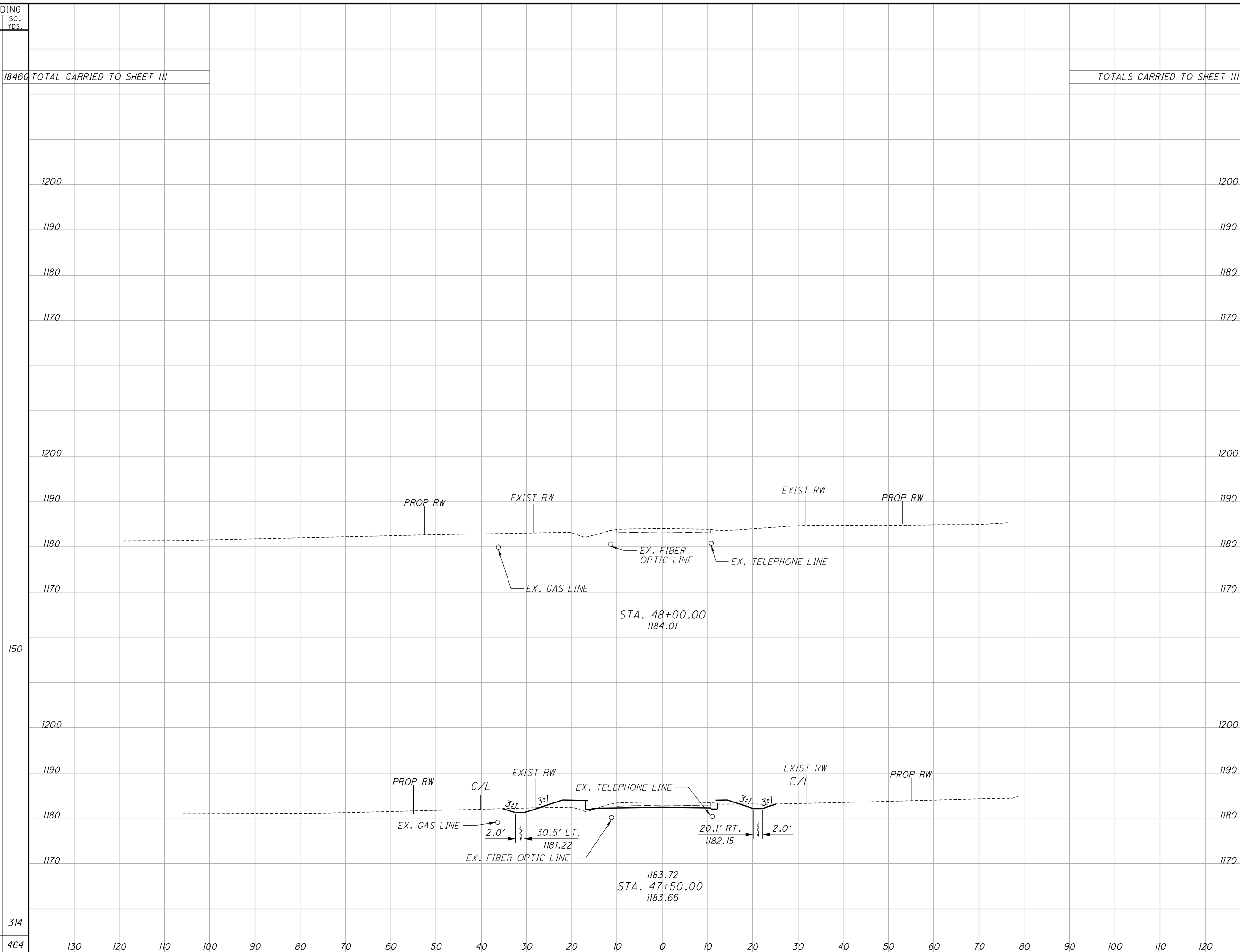
END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
37	39	67	92		
35	60	83	89		
54	36	153	44		
		303	225	162	336

**CROSS SECTIONS MINK STREET
STA. 46+00.00 TO STA. 47+00.00**

LIC-161-1.83

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SEEDING		END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED RJG	CHECKED HAG
CUT	FILL			CUT	FILL				
18460	TOTAL CARRIED TO SHEET III					16297	4180		
314						66	64		
464						98	92		



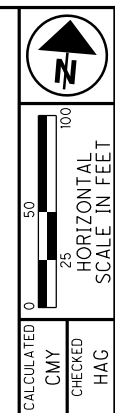
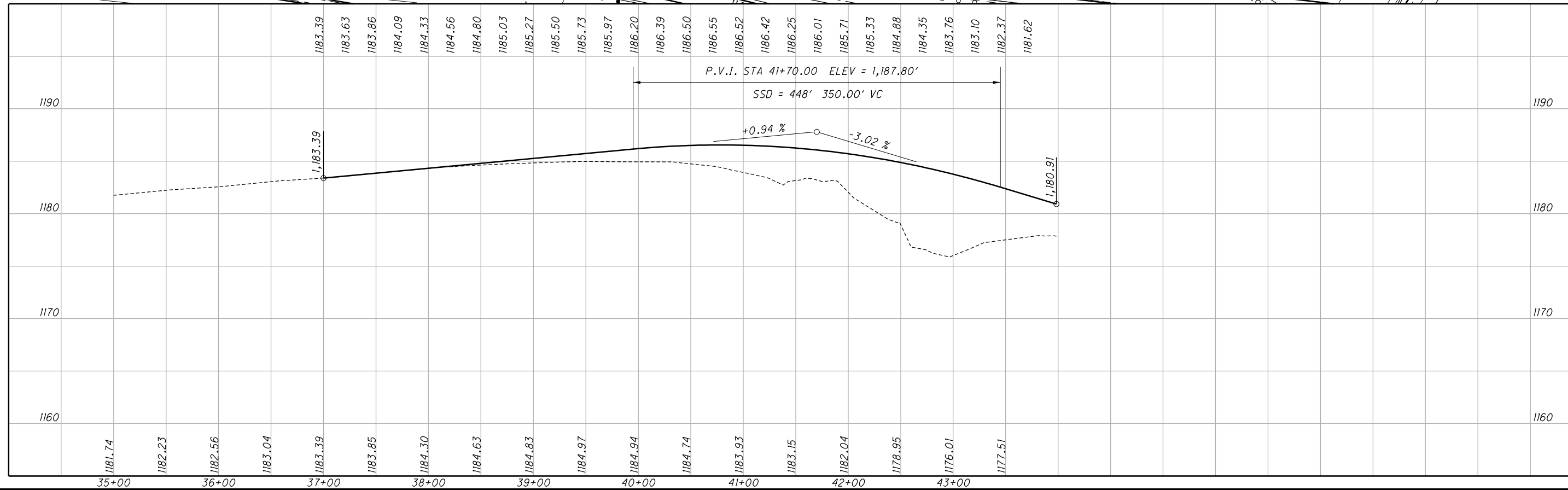
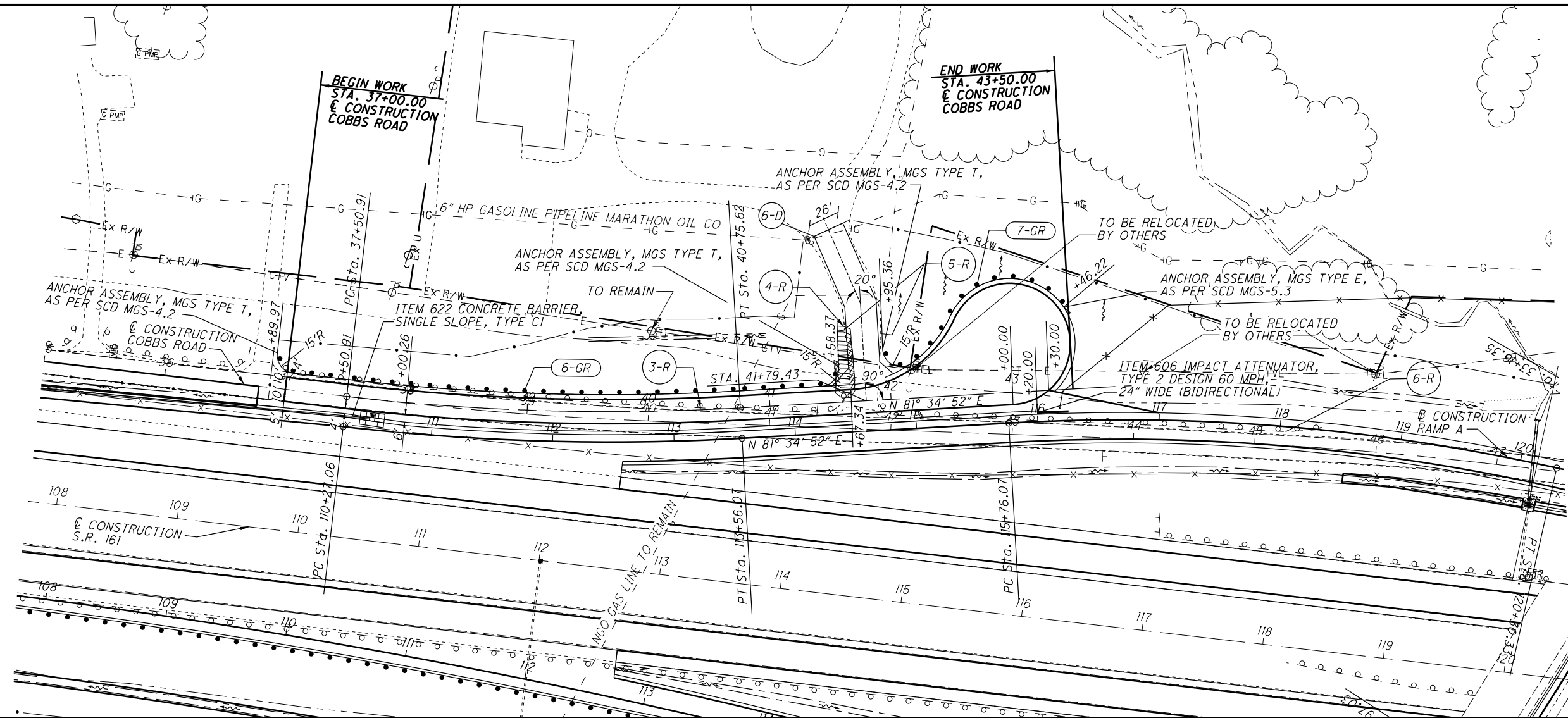
SEEDING		END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED RJG	CHECKED HAG
CUT	FILL			CUT	FILL				
0	0					32	28		
34	30					66	64		

CROSS SECTIONS MINK STREET
 STA. 47+50.00 TO STA. 48+25.00

LIC-161-1.83

163
 336

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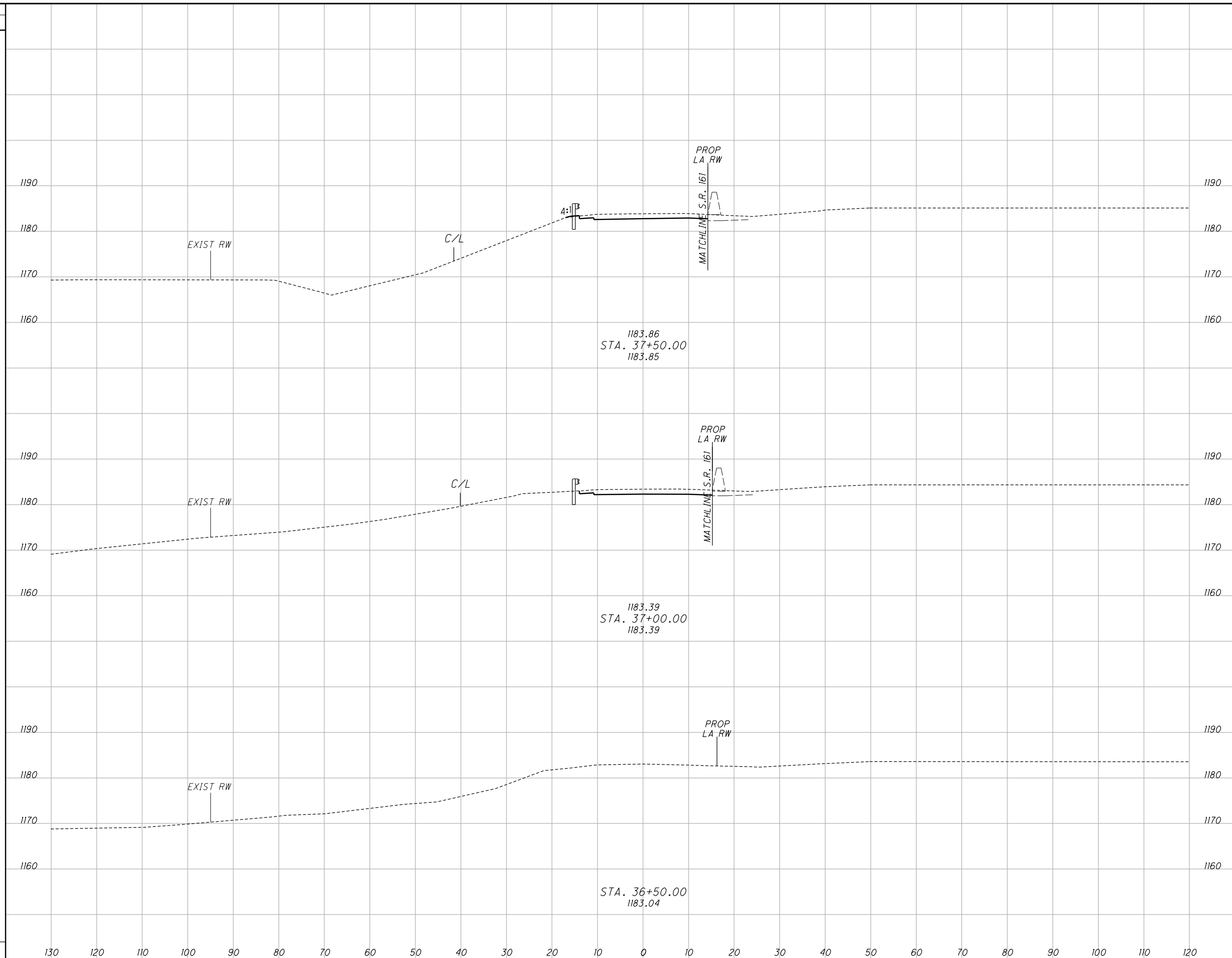


COBBS ROAD PLAN AND PROFILE
STA. 35+00 TO STA. 43+98.40

LIC-161-1.83

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SEEDING	
END WIDTH	SO. YDS.
13	
37	
0	
37	



END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	R/JG	HAG
29	1				
		58	1		
33	0				
		58	1		

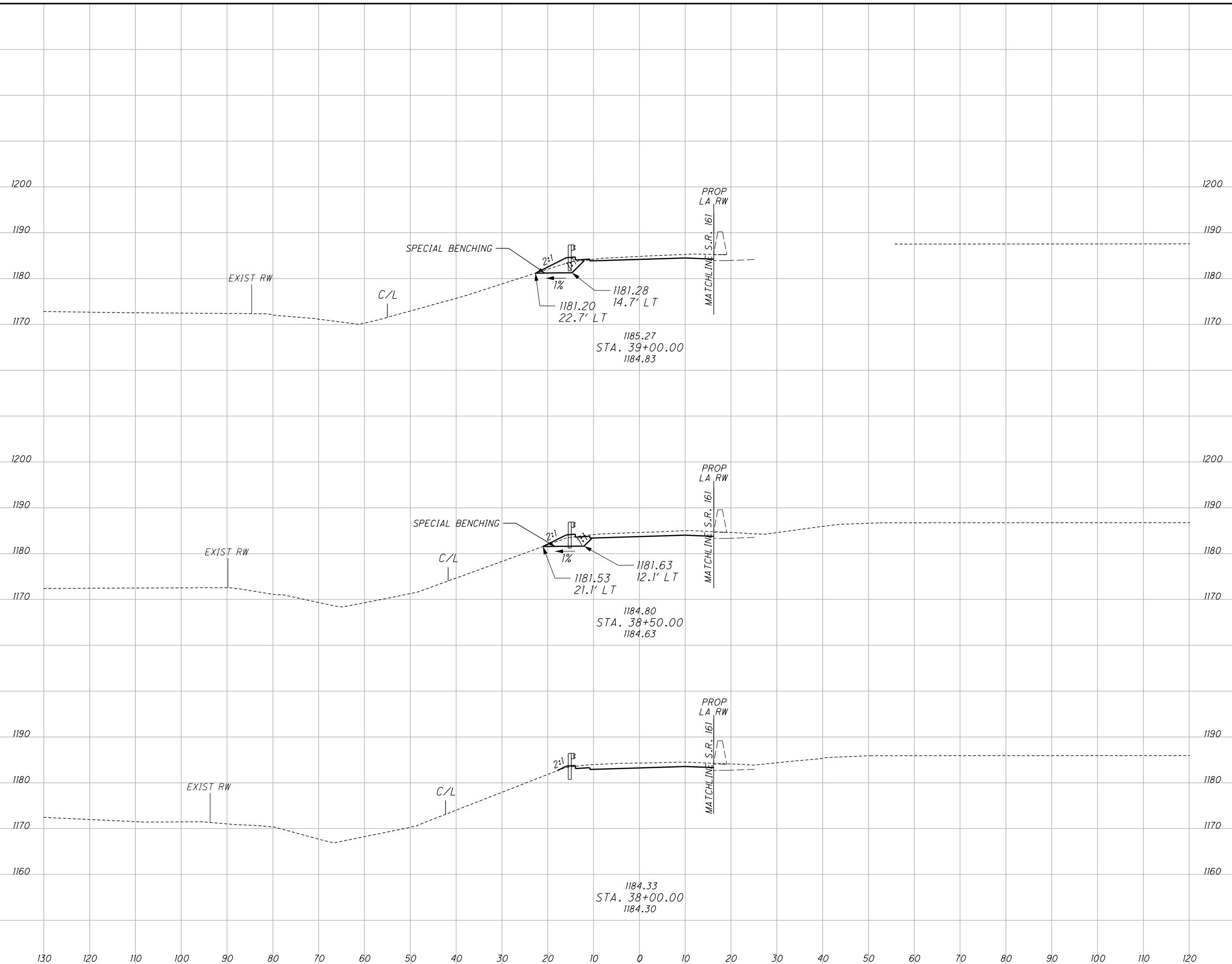
**CROSS SECTIONS COBBS ROAD
STA. 36+50.00 TO STA. 37+50.00**

LIC-161-1.83

165
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS007.dgn XS_SHEET_2 8/11/2016 12:58:13 PM ccount

SEEDING	
END WIDTH	SO. YDS.
78	276
15	130
92	120
18	110
106	100
20	90



END AREA	VOLUME	
	CUT	FILL
23	21	21
41	18	18
30	1	1
55	2	2
181	57	57

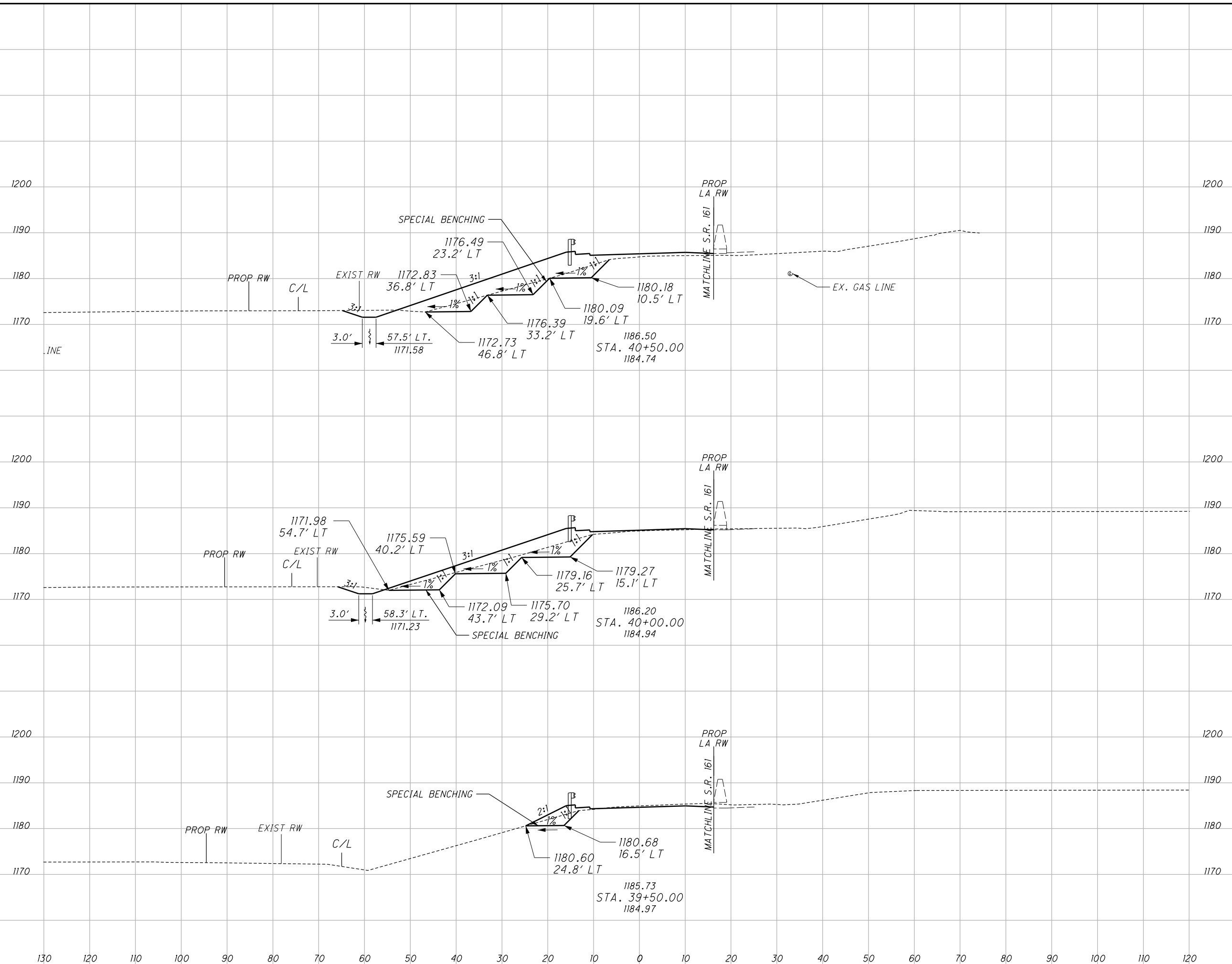
**CROSS SECTIONS COBBS ROAD
 STA. 38+00.00 TO STA. 39+00.00**

LIC-161-1.83

166
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS007.dgn XS_SHEET_3 8/11/2016 12:58:14 PM ccount

SEEDING	
END WIDTH	SO. YDS.
64	
356	
64	
239	
22	
117	
712	

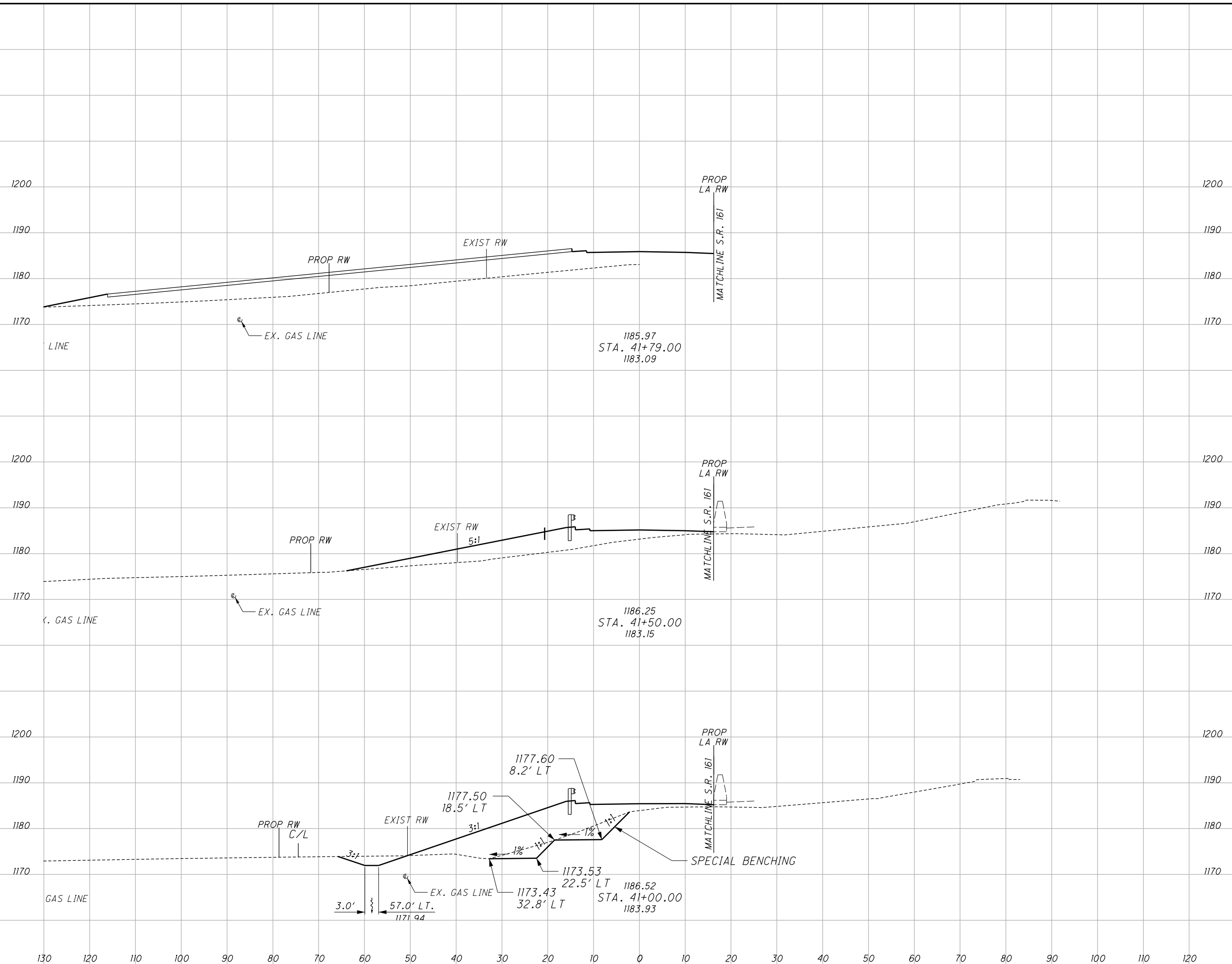


END AREA		VOLUME	
CUT	FILL	CUT	FILL
65	214	140	350
86	163	101	177
23	28	43	46
		284	573

CROSS SECTIONS COBBS ROAD
 STA. 39+50.00 TO STA. 40+50.00
 LIC-161-1.83
 167
 336

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SEEDING	
END WIDTH	SO. YDS.
645	130
356	120
64	110
289	100
40	90
64	80
289	70
40	60
64	50
289	40
40	30
64	20
289	10
40	0
64	10
289	20
40	30
64	40
289	50
40	60
64	70
289	80
40	90
64	100
289	110
40	120
64	130



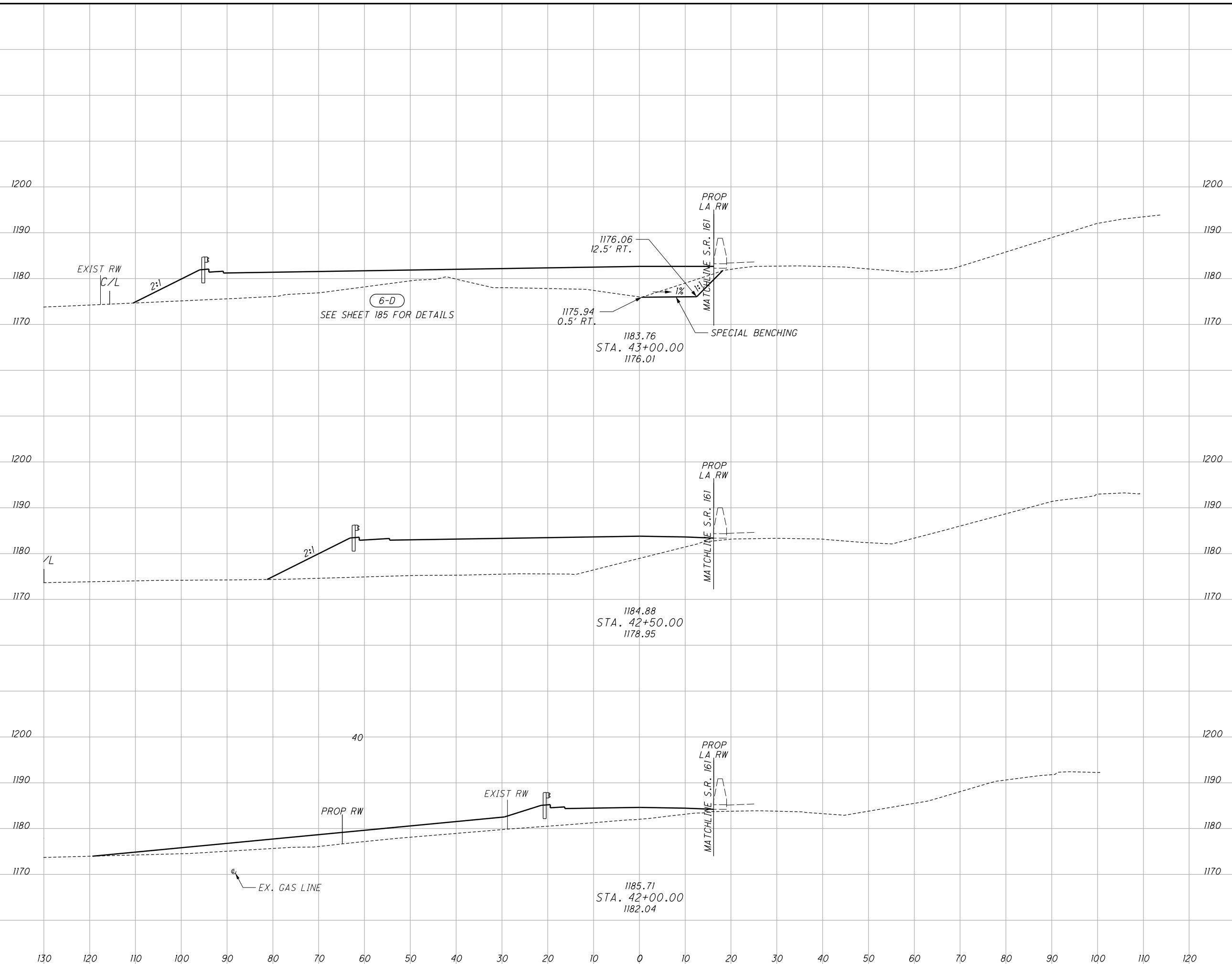
END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	136	56	396
60	291	116	468
		172	864

CROSS SECTIONS COBBS ROAD
STA. 41+00.00 TO STA. 41+79.00
LIC-161-1.83
 CALCULATED RJG
 CHECKED HAG

168
336

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SEEDING	
END WIDTH	SO. YDS.
39	
231	
44	
428	
110	
417	
1076	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	529	19	1025
10	577	10	812
0	299	0	403
		29	2240

CROSS SECTIONS COBBS ROAD
STA. 42+00.00 TO STA. 43+00.00
LIC-161-1.83
 CALCULATED R/JG
 CHECKED HAG
 169
 336

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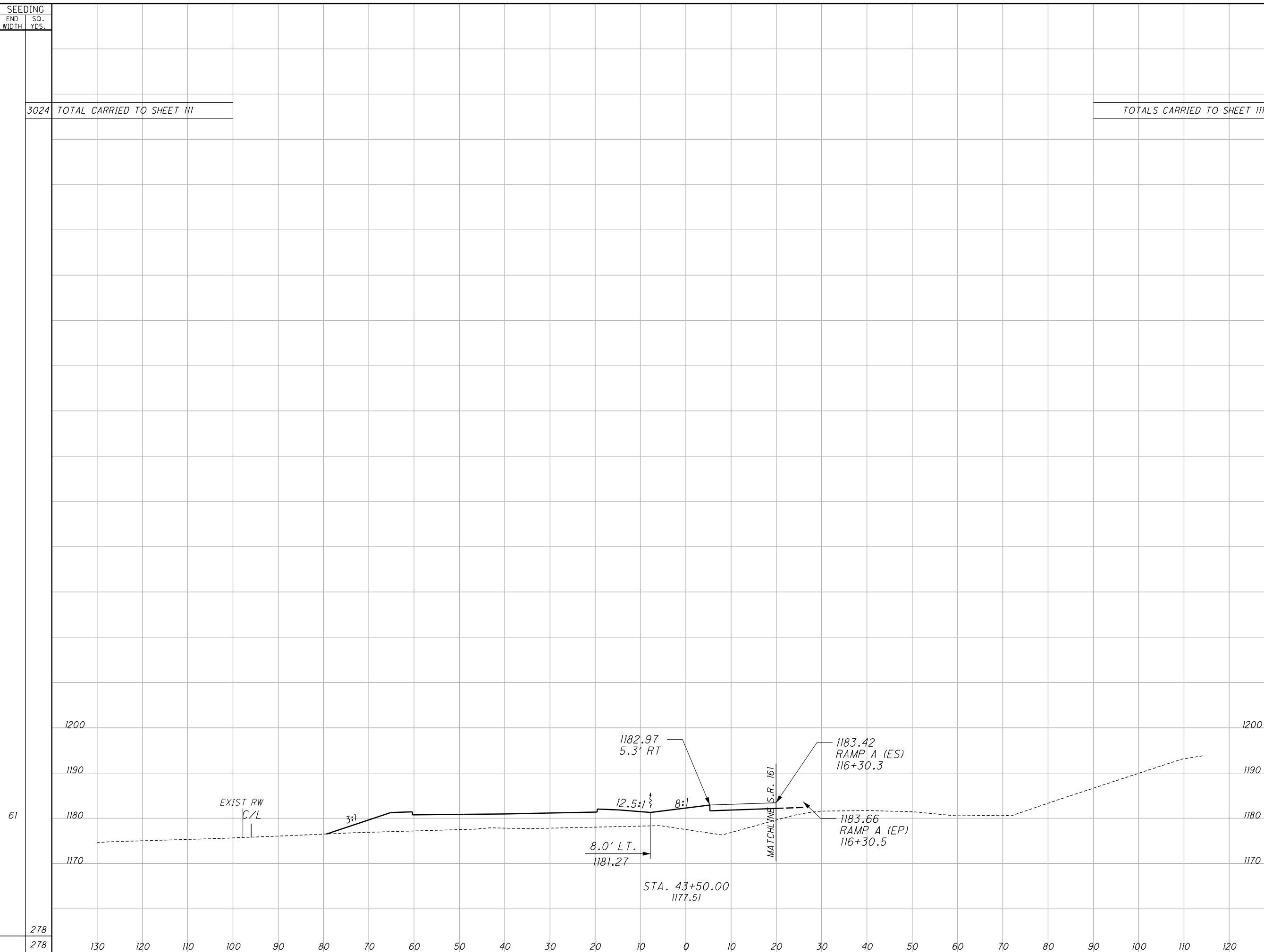
SEEDING	
END WIDTH	SO. YDS.
3024	TOTAL CARRIED TO SHEET III
278	278

END AREA		VOLUME		CALCULATED R/JG	CHECKED HAG
CUT	FILL	CUT	FILL		
0	293	734	4497		
10	762	10	762		

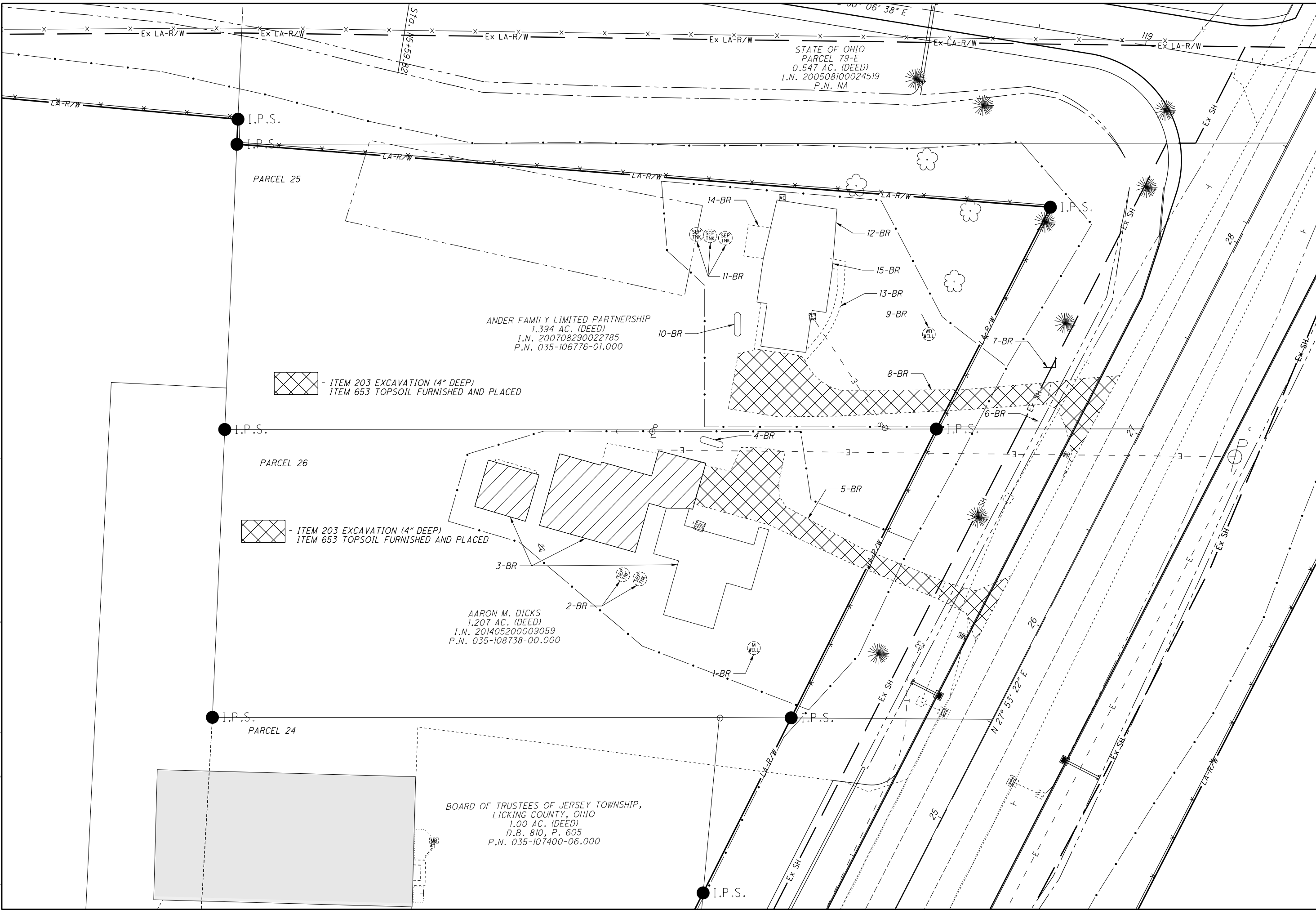
**CROSS SECTIONS COBBS ROAD
STA. 43+50.00**

LIC-161-1.83

170
336



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0 20 40
10
HORIZONTAL
SCALE IN FEET

CALCULATED
CMY
CHECKED
HAG

HOUSE DEMOLITION PLAN SHEET
PARCEL 25 & PARCEL 26

LIC-161-1.83

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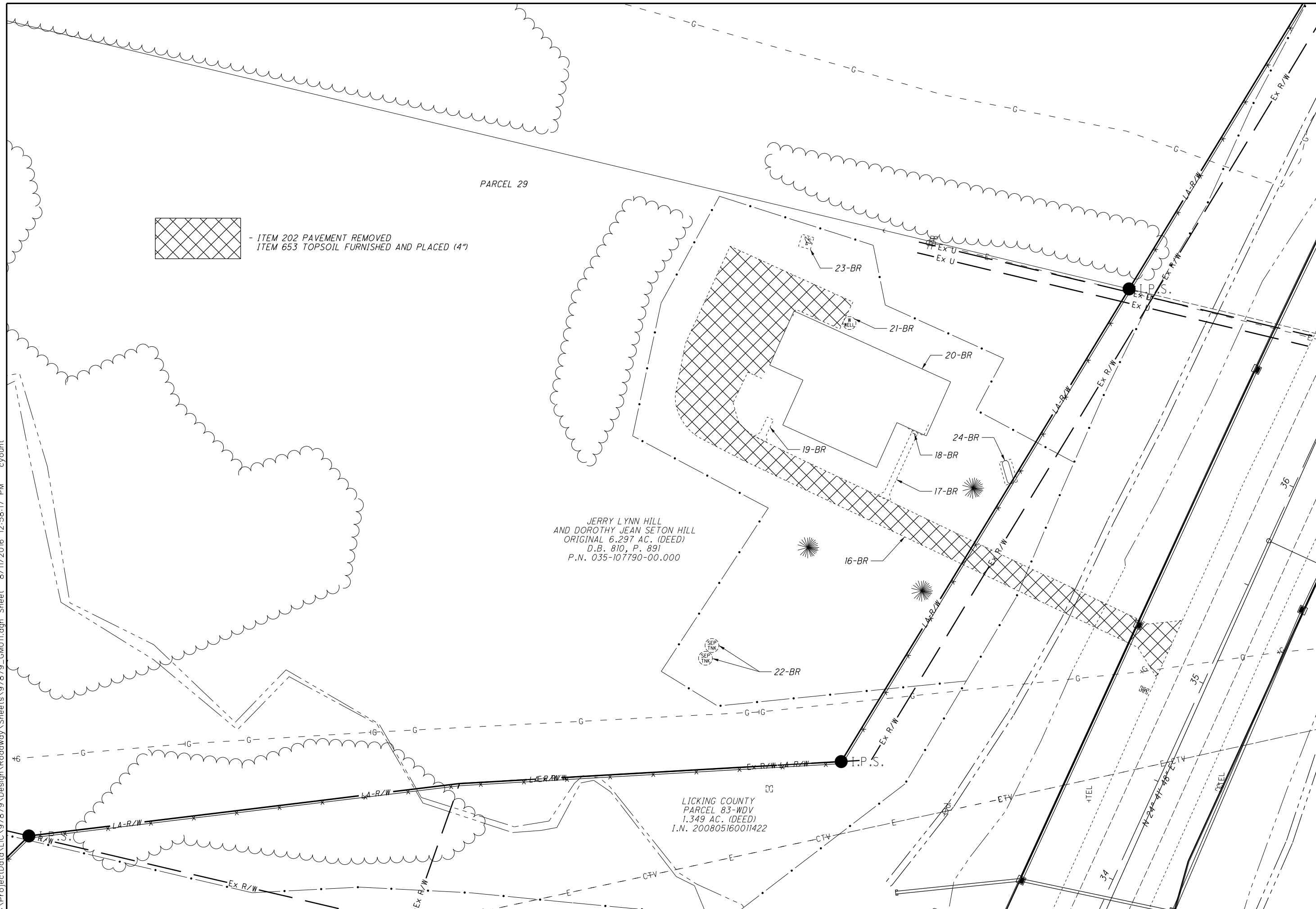
CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

HOUSE DEMOLITION PLAN SHEET
PARCEL 29

LIC-161-1.83

172
336



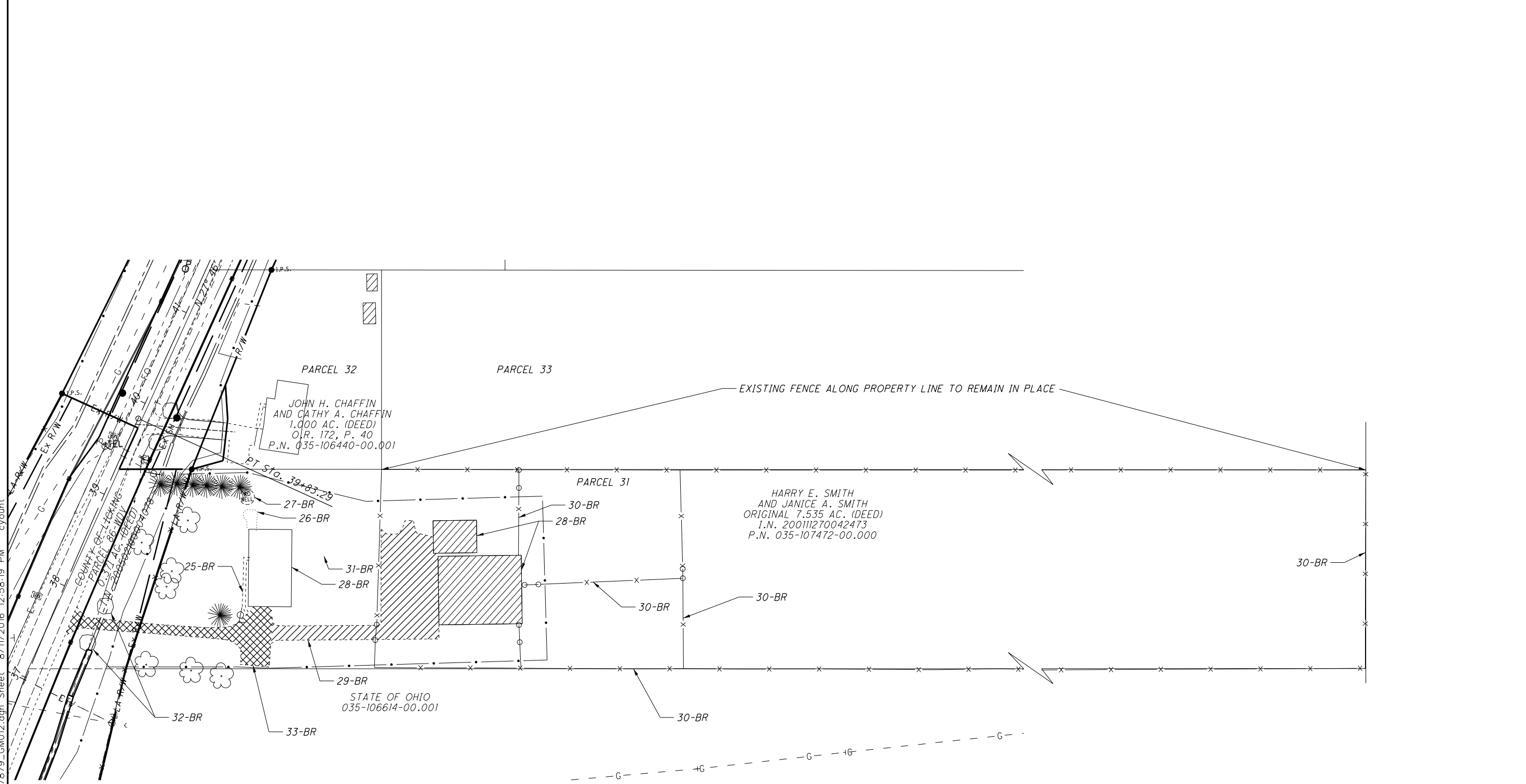
PARCEL 29

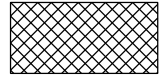
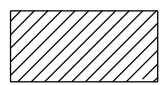
 - ITEM 202 PAVEMENT REMOVED
ITEM 653 TOPSOIL FURNISHED AND PLACED (4")

JERRY LYNN HILL
AND DOROTHY JEAN SETON HILL
ORIGINAL 6.297 AC. (DEED)
D.B. 810, P. 891
P.N. 035-107790-00.000

LICKING COUNTY
PARCEL 83-WDV
1.349 AC. (DEED)
I.N. 200805160011422

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-  -ITEM 202 PAVEMENT REMOVED, ASPHALT
ITEM 653 TOPSOIL FURNISHED AND PLACE (3" THICK)
-  -ITEM 203 EXCAVATION (3" THICK)
ITEM 653 TOPSOIL FURNISHED AND PLACE (3" THICK)

CALCULATED
CMY
CHECKED
HAG




25
50
100
HORIZONTAL
SCALE IN FEET

HOUSE DEMOLITION PLAN SHEET
PARCEL 31

LIC-161-1.83

Ramp A

LEFT EDGE OF SHOULDER	LEFT SHOULDER WIDTH	LEFT SHOULDER SLOPE	LEFT EDGE OF PAVEMENT	PAVEMENT WIDENING WIDTH	PAVEMENT SLOPE	BASELINE SURVEY & CONSTRUCTION	PROFILE GRADE	PAVEMENT SLOPE	PAVEMENT WIDTH	RIGHT EDGE OF PAVEMENT	RIGHT SHOULDER SLOPE	RIGHT SHOULDER WIDTH	RIGHT EDGE OF SHOULDER	COMMENTS
1186.25	6.0	-0.068	NO PAVEMENT WIDENING			112+57.49	1186.66	0.068	16.00	1187.75	0.068	3.0	1187.95	Begin Ramp A Superelevation Table
1186.42	6.0	-0.068				112+74.51	1186.83	0.068	16.00	1187.92	0.068	3.0	1188.12	
1186.43	6.0	-0.068				112+75.00	1186.84	0.068	16.00	1187.93	0.068	3.0	1188.13	
1186.69	6.0	-0.061				113+00.00	1187.05	0.061	16.00	1188.02	0.061	3.0	1188.21	
1186.89	6.0	-0.054				113+25.00	1187.21	0.054	16.00	1188.07	-0.016	3.0	1188.02	
1187.01	6.0	-0.047				113+50.00	1187.29	0.047	16.00	1188.04	-0.023	3.0	1187.97	
1187.03	6.0	-0.045				113+56.07	1187.30	0.045	16.00	1188.02	-0.025	3.0	1187.95	PT Station
1187.07	6.0	-0.040				113+75.00	1187.31	0.039	16.00	1187.94	-0.031	3.0	1187.85	
1187.02	6.0	-0.040				114+00.00	1187.26	0.032	16.00	1187.77	-0.038	3.0	1187.65	
1186.90	6.0	-0.040				114+25.00	1187.14	0.024	16.00	1187.53	-0.040	3.0	1187.41	
1186.72	6.0	-0.040				114+50.00	1186.96	0.017	16.00	1187.23	-0.040	3.0	1187.11	
1186.47	6.0	-0.040				114+75.00	1186.71	0.009	16.00	1186.86	-0.040	3.0	1186.74	
1186.15	6.0	-0.040				115+00.00	1186.39	0.002	16.00	1186.42	-0.040	3.0	1186.30	
1185.77	6.0	-0.040				115+25.00	1186.01	-0.006	16.00	1185.92	-0.040	3.0	1185.80	
1185.32	6.0	-0.040				115+50.00	1185.56	-0.013	16.00	1185.35	-0.040	3.0	1185.23	
1184.80	6.0	-0.040				115+75.00	1185.04	-0.021	16.00	1184.71	-0.040	3.0	1184.59	
1184.78	6.0	-0.040				115+76.07	1185.02	-0.021	16.00	1184.68	-0.040	3.0	1184.56	PC Station
1184.22	6.0	-0.040				116+00.00	1184.46	-0.030	16.00	1183.98	-0.040	3.0	1183.86	
1184.12	6.0	-0.038				116+04.42	1184.35	-0.032	16.00	1183.84	-0.040	3.0	1183.72	
1183.58	6.0	-0.038				116+25.00	1183.81	-0.032	16.00	1183.30	-0.040	3.0	1183.18	
1182.89	6.0	-0.038				116+50.00	1183.12	-0.032	16.00	1182.61	-0.040	3.0	1182.49	
1182.21	6.0	-0.038				116+75.00	1182.44	-0.032	16.00	1181.93	-0.040	3.0	1181.81	
1181.52	6.0	-0.038				117+00.00	1181.75	-0.032	16.00	1181.24	-0.040	3.0	1181.12	
1180.84	6.0	-0.038				117+25.00	1181.07	-0.032	16.00	1180.56	-0.040	3.0	1180.44	
1180.15	6.0	-0.038				117+50.00	1180.38	-0.032	16.00	1179.87	-0.040	3.0	1179.75	
1179.47	6.0	-0.038				117+75.00	1179.70	-0.032	16.00	1179.19	-0.040	3.0	1179.07	
1178.78	6.0	-0.038				118+00.00	1179.01	-0.032	16.00	1178.50	-0.040	3.0	1178.38	
1178.14	6.0	-0.038				118+25.00	1178.37	-0.032	16.00	1177.86	-0.040	3.0	1177.74	
1177.59	6.0	-0.038				118+50.00	1177.82	-0.032	16.00	1177.31	-0.040	3.0	1177.19	
1177.14	6.0	-0.038				118+75.00	1177.37	-0.032	16.00	1176.86	-0.040	3.0	1176.74	
1176.77	6.0	-0.038				119+00.00	1177.00	-0.032	16.00	1176.49	-0.040	3.0	1176.37	
1176.50	6.0	-0.038				119+25.00	1176.73	-0.032	16.00	1176.22	-0.040	3.0	1176.10	
1176.31	6.0	-0.038	119+50.00	1176.54	-0.032	16.00	1176.03	-0.040	3.0	1175.91				
1176.22	6.0	-0.038	119+75.00	1176.45	-0.032	16.00	1175.94	-0.040	3.0	1175.82				
1176.22	6.0	-0.038	120+00.00	1176.45	-0.032	16.00	1175.94	-0.040	3.0	1175.82				
1176.23	6.0	-0.038	120+01.98	1176.46	-0.032	16.00	1175.95	-0.040	3.0	1175.83				
1176.30	6.0	-0.040	120+25.00	1176.54	-0.023	16.00	1176.17	-0.040	3.0	1176.05				
1176.33	6.0	-0.040	120+30.33	1176.57	-0.021	16.00	1176.23	-0.040	3.0	1176.11	PT Station			
1176.36	6.0	-0.040	1176.60	0.00	0.020	120+33.59	1176.60	-0.020	16.00	1176.28	-0.040	3.0	1176.16	Begin Pavement Taper Left
1176.46	6.0	-0.040	1176.70	1.16	0.015	120+45.15	1176.68	-0.015	16.00	1176.43	-0.040	3.0	1176.31	Begin Pavement Taper Right
1176.51	6.0	-0.040	1176.75	1.64	0.014	120+50.00	1176.73	-0.014	16.49	1176.51	-0.040	3.0	1176.39	
1176.58	6.0	-0.040	1176.82	2.31	0.011	120+56.65	1176.79	-0.011	17.15	1176.60	-0.040	3.0	1176.48	
1176.78	6.0	-0.040	1177.02	4.00	0.011	120+73.59	1176.98	-0.011	18.84	1176.77	-0.040	3.0	1176.65	End Pavement Taper Left
SEE PAVEMENT DETAIL SHEET						120+75.00	1177.00	-0.011	18.99	1176.79	-0.040	3.0	1176.67	
						120+85.15	1177.14	-0.011	20.00	1176.92	-0.040	3.0	1176.80	End Pavement Taper Right
						121+00.00	1177.36	SEE PAVEMENT DETAIL SHEET						
121+20.45	1177.70	Match Mink Street												

CALCULATED	CMY	CHECKED	HAG
SUPERELEVATION TABLE			
RAMP A			
LIC-161-1.83			
174			
336			

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Ramp C

LEFT EDGE OF SHOULDER	LEFT SHOULDER WIDTH	LEFT SHOULDER SLOPE	LEFT EDGE OF PAVEMENT	PAVEMENT SLOPE	PAVEMENT WIDTH	PROFILE GRADE	BASILINE SURVEY & CONSTRUCTION	PAVEMENT WIDENING WIDTH	PAVEMENT SLOPE	RIGHT EDGE OF PAVEMENT	RIGHT SHOULDER SLOPE	RIGHT SHOULDER WIDTH	RIGHT EDGE OF SHOULDER	COMMENTS
1188.05	3.0	-0.040	1188.17	0.029	16.0	1187.71	112+71.67	NO PAVEMENT WIDENING			-0.040	8.0	1187.39	Begin Ramp C Superelevation Table
1188.09	3.0	-0.040	1188.21	0.029	16.0	1187.75	112+75.00				-0.040	7.9	1187.43	
1188.32	3.0	-0.040	1188.44	0.029	16.0	1187.98	113+00.00				-0.040	7.4	1187.68	
1188.47	3.0	-0.040	1188.59	0.029	16.0	1188.13	113+25.00				-0.040	6.9	1187.85	
1188.55	3.0	-0.040	1188.67	0.029	16.0	1188.21	113+50.00				-0.040	6.4	1187.95	
1188.56	3.0	-0.040	1188.68	0.029	16.0	1188.22	113+71.67				-0.040	6.0	1187.98	End Shoulder Taper Right
1188.56	3.0	-0.040	1188.68	0.029	16.0	1188.22	113+75.00				-0.040	6.0	1187.98	
1188.49	3.0	-0.040	1188.61	0.029	16.0	1188.15	114+00.00				-0.040	6.0	1187.91	
1188.35	3.0	-0.040	1188.47	0.029	16.0	1188.01	114+25.00				-0.040	6.0	1187.77	
1188.13	3.0	-0.040	1188.25	0.029	16.0	1187.79	114+50.00				-0.040	6.0	1187.55	
1187.84	3.0	-0.040	1187.96	0.029	16.0	1187.50	114+75.00		0.00	-0.029	1187.50	-0.040	6.0	1187.26
1187.48	3.0	-0.040	1187.60	0.029	16.0	1187.14	115+00.00	4.00	-0.029	1187.02	-0.040	6.0	1186.78	
1187.05	3.0	-0.040	1187.17	0.029	16.0	1186.71	115+24.36	7.90	-0.029	1186.48	-0.040	6.0	1186.24	End Full Superelevation
1187.04	3.0	-0.040	1187.16	0.029	16.0	1186.70	115+25.00	8.00	-0.029	1186.47	-0.040	6.0	1186.23	End Pavement Taper Right
1186.42	3.0	-0.040	1186.54	0.022	16.0	1186.19	115+50.00	8.00	-0.022	1186.02	-0.040	6.0	1185.78	
1186.14	3.0	-0.040	1186.26	0.019	16.0	1185.96	115+59.82	8.00	-0.019	1185.81	-0.040	6.0	1185.57	PT Station
1185.85	3.0	-0.040	1185.97	0.016	16.0	1185.71	115+70.46	8.00	-0.016	1185.58	-0.040	6.0	1185.34	Begin Normal Crown

CALCULATED
CMY
CHECKED
HAG

SUPERELEVATION TABLE
RAMP C

LIC-161-1.83

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Ramp D

LEFT EDGE OF SHOULDER	LEFT SHOULDER WIDTH	LEFT SHOULDER SLOPE	LEFT EDGE OF PAVEMENT	PAVEMENT SLOPE	PAVEMENT WIDTH	PROFILE GRADE	BASILINE SURVEY & CONSTRUCTION	PAVEMENT WIDENING WIDTH	PAVEMENT SLOPE	RIGHT EDGE OF PAVEMENT	RIGHT SHOULDER SLOPE	RIGHT SHOULDER WIDTH	RIGHT EDGE OF SHOULDER	COMMENTS			
See Intersection Detail Sheet						1176.24	120+04.15	See Intersection Detail Sheet						Match Mink St. Edge of Pavement			
						1175.95	120+25.00										
1175.53	3.0	-0.040	1175.65	-0.007	20.00	1175.79	120+38.34							Begin Pavement Taper Left			
1175.43	3.0	-0.040	1175.55	-0.010	19.35	1175.73	120+44.84	4.00	0.010	1175.77	-0.040	6.0	1175.53	Begin Pavement Taper Right			
1175.34	3.0	-0.040	1175.46	-0.012	18.83	1175.68	120+50.00	3.48	0.012	1175.72	-0.040	6.0	1175.48				
1175.11	3.0	-0.040	1175.23	-0.021	16.33	1175.58	120+75.00	0.98	0.021	1175.60	-0.040	6.0	1175.36				
1175.10	3.0	-0.040	1175.22	-0.023	16.00	1175.58	120+78.34	0.65	0.023	1175.59	-0.040	6.0	1175.35	End Pavement Taper Left			
1175.07	3.0	-0.040	1175.19	-0.025	16.00	1175.59	120+84.71	0.01	0.025	1175.59	-0.040	6.0	1175.35	PC Sta. 120+84.71			
1175.07	3.0	-0.040	1175.19	-0.025	16.00	1175.59	120+84.84	0.00	0.025	1175.59	-0.040	6.0	1175.35	End Pavement Taper Right			
1175.04	3.0	-0.040	1175.16	-0.031	16.00	1175.65	121+00.00	NO PAVEMENT WIDENING									
1175.07	3.0	-0.040	1175.19	-0.037	16.00	1175.78	121+15.64							-0.039	6.0	1175.42	
1175.17	3.0	-0.040	1175.29	-0.037	16.00	1175.88	121+25.00							-0.033	6.0	1175.58	Begin Full Superelevation
1175.57	3.0	-0.040	1175.69	-0.037	16.00	1176.28	121+50.00							-0.033	6.0	1175.68	
1176.14	3.0	-0.040	1176.26	-0.037	16.00	1176.85	121+75.00							-0.033	6.0	1176.08	
1176.79	3.0	-0.040	1176.91	-0.037	16.00	1177.50	122+00.00							-0.033	6.0	1176.65	
1177.44	3.0	-0.040	1177.56	-0.037	16.00	1178.15	122+25.00							-0.033	6.0	1177.30	
1178.09	3.0	-0.040	1178.21	-0.037	16.00	1178.80	122+50.00							-0.033	6.0	1177.95	
1178.74	3.0	-0.040	1178.86	-0.037	16.00	1179.45	122+75.00							-0.033	6.0	1178.60	
1179.39	3.0	-0.040	1179.51	-0.037	16.00	1180.10	123+00.00							-0.033	6.0	1179.25	
1180.04	3.0	-0.040	1180.16	-0.037	16.00	1180.75	123+25.00							-0.033	6.0	1179.90	
1180.69	3.0	-0.040	1180.81	-0.037	16.00	1181.40	123+50.00							-0.033	6.0	1180.55	
1181.34	3.0	-0.040	1181.46	-0.037	16.00	1182.05	123+75.00							-0.033	6.0	1181.20	
1181.99	3.0	-0.040	1182.11	-0.037	16.00	1182.70	124+00.00							-0.033	6.0	1181.85	
1182.64	3.0	-0.040	1182.76	-0.037	16.00	1183.35	124+25.00							-0.033	6.0	1182.50	
1183.29	3.0	-0.040	1183.41	-0.037	16.00	1184.00	124+50.00							-0.033	6.0	1183.15	
1183.77	3.0	-0.040	1183.89	-0.037	16.00	1184.48	124+68.27							-0.033	6.0	1183.80	
1183.98	3.0	-0.040	1184.10	-0.034	16.00	1184.65	124+75.00							-0.033	6.0	1184.28	End Full Superelevation
1184.76	3.0	-0.040	1184.88	-0.025	16.00	1185.28	124+99.20							-0.036	6.0	1184.44	
1184.78	3.0	-0.040	1184.90	-0.025	16.00	1185.30	125+00.00							-0.040	6.0	1185.04	PT Sta. 124+99.20
1185.56	3.0	-0.040	1185.68	-0.017	16.00	1185.95	125+25.00	-0.040	6.0	1185.06							
1186.34	3.0	-0.040	1186.46	-0.009	16.00	1186.60	125+50.00	-0.040	6.0	1185.71							
1187.12	3.0	-0.040	1187.24	-0.001	16.00	1187.25	125+75.00	-0.040	6.0	1186.36							
1187.89	3.0	-0.040	1188.01	0.007	16.00	1187.90	126+00.00	-0.040	6.0	1187.01							
1188.64	3.0	-0.040	1188.76	0.015	16.00	1188.52	126+25.00	-0.040	6.0	1187.66							
1189.32	3.0	-0.040	1189.44	0.023	16.00	1189.07	126+50.00	-0.040	6.0	1188.28							
1189.94	3.0	-0.039	1190.06	0.031	16.00	1189.56	126+75.00	-0.040	6.0	1188.83							
1190.16	3.0	-0.036	1190.26	0.034	16.00	1189.72	126+84.20	-0.040	6.0	1189.32							
1190.51	3.0	-0.032	1190.61	0.038	16.00	1189.99	127+00.00	-0.040	6.0	1189.48	PC Sta. 126+84.20						
1191.00	3.0	-0.024	1191.08	0.046	16.00	1190.35	127+25.00	-0.040	6.0	1189.75							
1191.34	3.0	-0.019	1191.40	0.051	16.00	1190.58	127+44.48	-0.046	6.0	1190.08							
1191.40	3.0	-0.019	1191.46	0.051	16.00	1190.64	127+50.00	-0.051	6.0	1190.27	Begin Full Superelevation						
1191.64	3.0	-0.019	1191.70	0.051	16.00	1190.88	127+75.00	-0.051	6.0	1190.33							
1191.80	3.0	-0.019	1191.86	0.051	16.00	1191.04	128+00.00	-0.051	6.0	1190.57							
1191.91	3.0	-0.019	1191.97	0.051	16.00	1191.15	128+25.00	-0.051	6.0	1190.73							
1191.95	3.0	-0.019	1192.01	0.051	16.00	1191.19	128+50.00	-0.051	6.0	1190.84							
1191.92	3.0	-0.019	1191.98	0.051	16.00	1191.16	128+75.00	-0.051	6.0	1190.88							
1191.83	3.0	-0.019	1191.89	0.051	16.00	1191.07	129+00.00	-0.051	6.0	1190.85							
1191.71	3.0	-0.019	1191.77	0.051	16.00	1190.95	129+25.00	-0.051	6.0	1190.76							
1191.59	3.0	-0.019	1191.65	0.051	16.00	1190.83	129+50.00	-0.051	6.0	1190.64							
1191.47	3.0	-0.019	1191.53	0.051	16.00	1190.71	129+75.00	-0.051	6.0	1190.52							
1191.35	3.0	-0.019	1191.41	0.051	16.00	1190.59	130+00.00	-0.051	6.0	1190.40							
1191.29	3.0	-0.019	1191.35	0.051	16.00	1190.53	130+12.32	-0.051	6.0	1190.28							
													End Ramp D Superelevation Table				

CALCULATED
CMY
CHECKED
HAG

SUPERELEVATION TABLE
RAMP D

LIC-161-1.83

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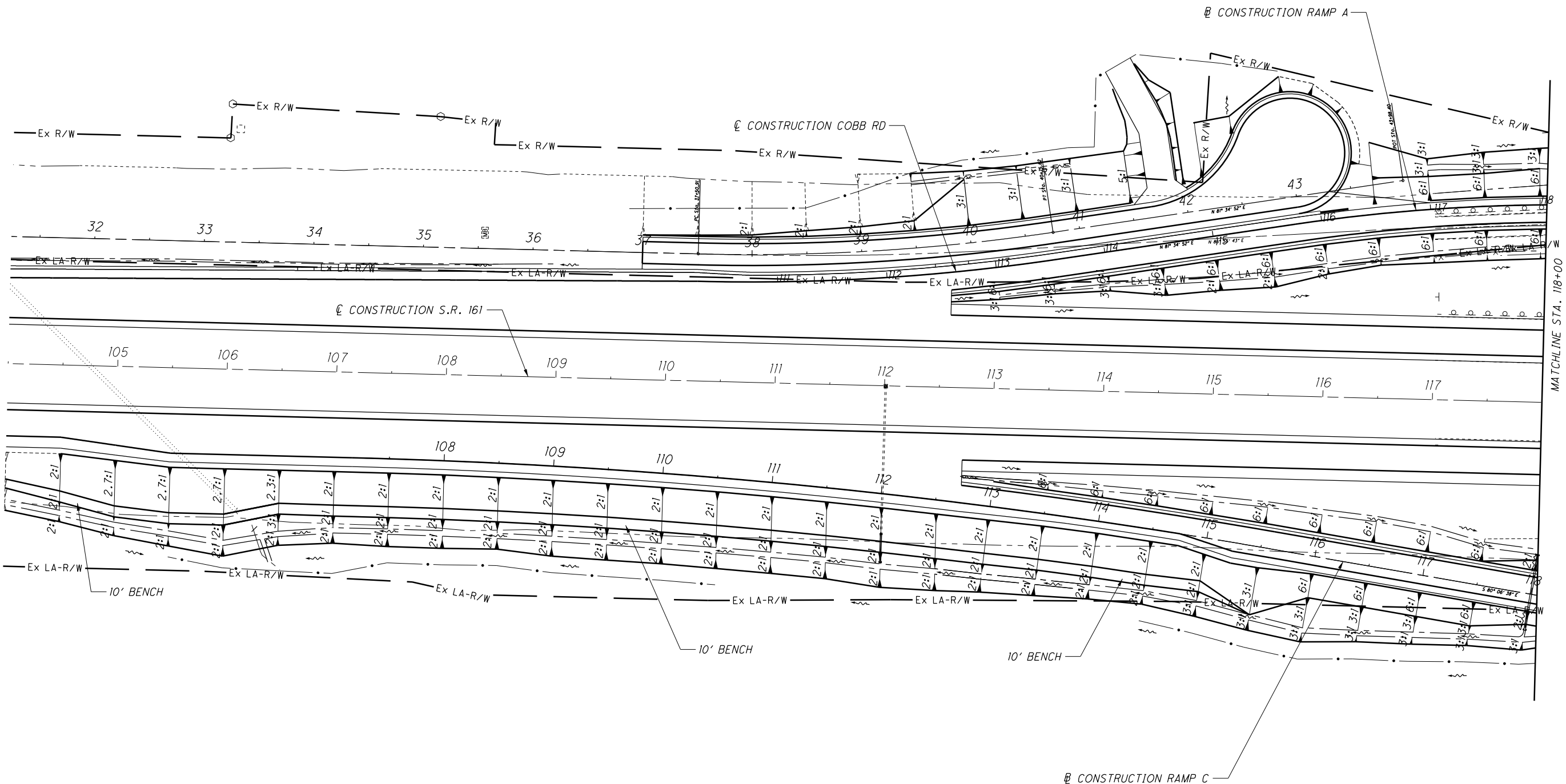
Cobbs Road

LEFT EDGE OF SHOULDER	LEFT SHOULDER WIDTH	LEFT SHOULDER SLOPE	LEFT EDGE OF PAVEMENT	LEFT PAVEMENT WIDTH	LEFT PAVEMENT SLOPE	BASELINE SURVEY & CONSTRUCTION	PROFILE GRADE	RIGHT PAVEMENT SLOPE	RIGHT PAVEMENT WIDTH	RIGHT EDGE OF PAVEMENT	RIGHT SHOULDER SLOPE	RIGHT SHOULDER WIDTH	RIGHT EDGE OF SHOULDER	COMMENTS
1183.05	4.00	-0.060	1183.29	10.00	-0.010	37+00.00	1183.39	0.002	10.00	1183.41	-0.040	5.21	1183.20	Match existing Cobbs Road
1183.23	4.00	-0.060	1183.47	10.00	-0.016	37+25.00	1183.63	0.000	10.00	1183.63	-0.040	4.71	1183.44	
1183.23	4.00	-0.060	1183.47	10.00	-0.016	37+25.46	1183.63	0.000	10.00	1183.63	-0.040	4.70	1183.44	
1183.46	4.00	-0.060	1183.70	10.00	-0.016	37+50.00	1183.86	0.015	10.00	1184.01	-0.040	4.21	1183.85	
1183.47	4.00	-0.060	1183.71	10.00	-0.016	37+50.91	1183.87	0.016	10.00	1184.03	-0.040	4.20	1183.86	PC Station 37+50.91
1183.54	4.00	-0.060	1183.78	10.00	-0.031	37+75.00	1184.09	0.031	10.00	1184.40	-0.039	5.17	1184.20	
1183.54	4.00	-0.060	1183.78	10.00	-0.031	37+75.06	1184.09	0.031	10.00	1184.40	-0.039	5.17	1184.20	Begin Full Superelevation
1183.78	4.00	-0.060	1184.02	10.00	-0.031	38+00.00	1184.33	0.031	10.00	1184.64	-0.039	6.19	1184.40	
1184.01	4.00	-0.060	1184.25	10.00	-0.031	38+25.00	1184.56	0.031	10.00	1184.87	-0.039	6.19	1184.63	
1184.25	4.00	-0.060	1184.49	10.00	-0.031	38+50.00	1184.80	0.031	10.00	1185.11	-0.039	6.19	1184.87	
1184.48	4.00	-0.060	1184.72	10.00	-0.031	38+75.00	1185.03	0.031	10.00	1185.34	-0.039	6.19	1185.10	
1184.72	4.00	-0.060	1184.96	10.00	-0.031	39+00.00	1185.27	0.031	10.00	1185.58	-0.039	6.19	1185.34	
1184.95	4.00	-0.060	1185.19	10.00	-0.031	39+25.00	1185.50	0.031	10.00	1185.81	-0.039	6.19	1185.57	
1185.18	4.00	-0.060	1185.42	10.00	-0.031	39+50.00	1185.73	0.031	10.00	1186.04	-0.039	6.19	1185.80	
1185.42	4.00	-0.060	1185.66	10.00	-0.031	39+75.00	1185.97	0.031	10.00	1186.28	-0.039	6.19	1186.04	
1185.65	4.00	-0.060	1185.89	10.00	-0.031	40+00.00	1186.20	0.031	10.00	1186.51	-0.039	6.19	1186.27	
1185.84	4.00	-0.060	1186.08	10.00	-0.031	40+25.00	1186.39	0.031	10.00	1186.70	-0.039	6.19	1186.46	
1185.95	4.00	-0.060	1186.19	10.00	-0.031	40+50.00	1186.50	0.031	10.00	1186.81	-0.039	6.19	1186.57	
1185.96	4.00	-0.060	1186.20	10.00	-0.031	40+51.47	1186.51	0.031	10.00	1186.82	-0.039	6.19	1186.58	End Full superelevation
1186.15	4.00	-0.060	1186.39	10.00	-0.016	40+75.00	1186.55	0.016	10.00	1186.71	-0.040	6.19	1186.47	
1186.15	4.00	-0.060	1186.39	10.00	-0.016	40+75.62	1186.55	0.016	10.00	1186.71	-0.040	6.19	1186.46	PT Station 40+75.62
1186.12	4.00	-0.060	1186.36	10.00	-0.016	41+00.00	1186.52	0.001	10.00	1186.53	-0.040	6.19	1186.28	
1186.11	4.00	-0.060	1186.35	10.00	-0.016	41+01.38	1186.51	0.000	10.00	1186.51	-0.040	6.19	1186.26	
1186.02	4.00	-0.060	1186.26	10.00	-0.016	41+25.00	1186.42	-0.015	10.00	1186.27	-0.040	6.19	1186.03	
1186.01	4.00	-0.060	1186.25	10.00	-0.016	41+27.14	1186.41	-0.016	10.00	1186.25	-0.040	6.19	1186.00	Begin Normal Crown

SUPERELEVATION TABLE
COBBS ROAD

CALCULATED
CMY
CHECKED
HAG

LIC-161-1.83



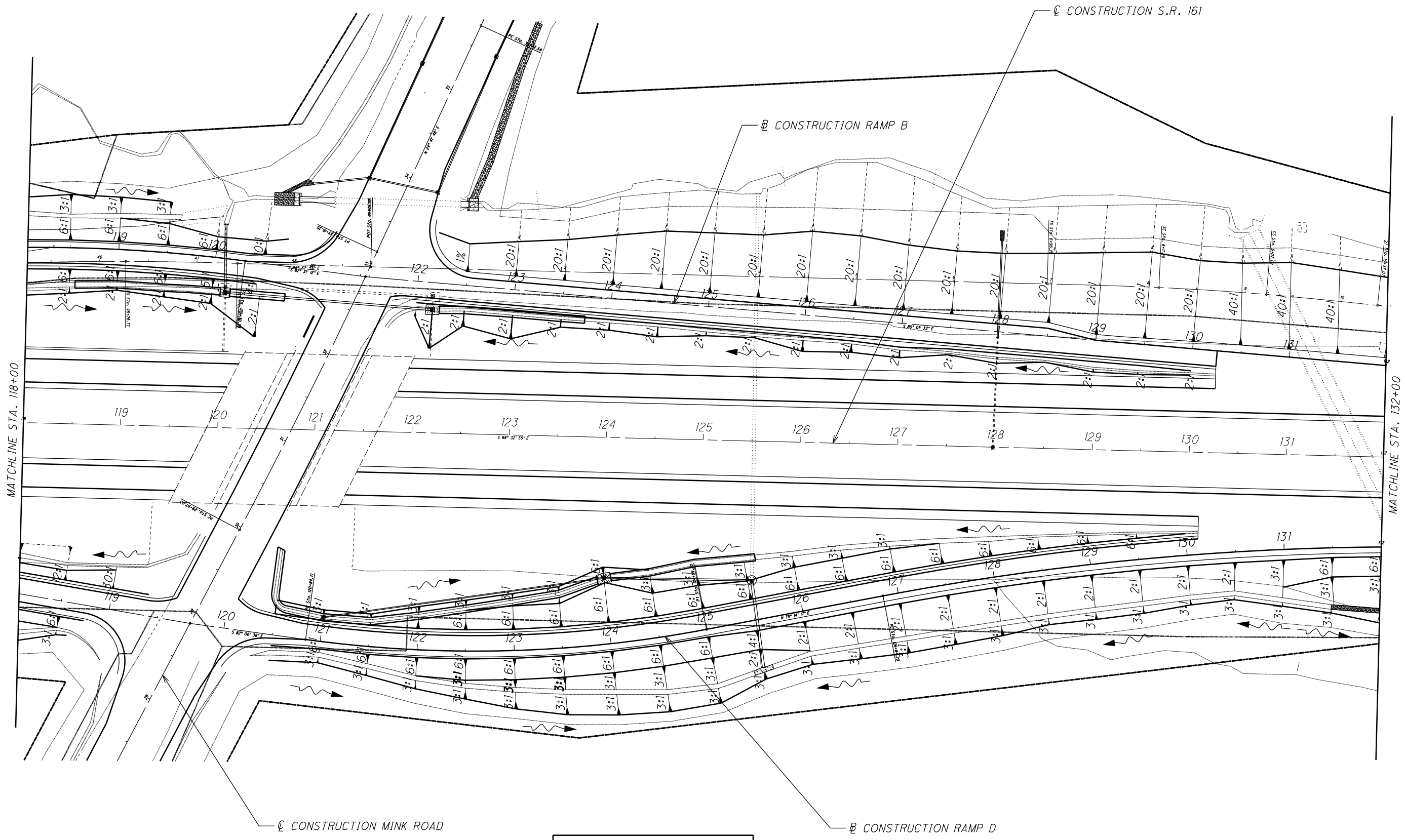

 DIRECTION OF DITCH FLOW

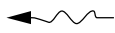
CALCULATED
 RJC
 CHECKED
 HAG

0 50 100
 HORIZONTAL
 SCALE IN FEET

INTERCHANGE GRADING PLAN
STA. 104+00 TO STA. 118+00

LIC-161-1.83



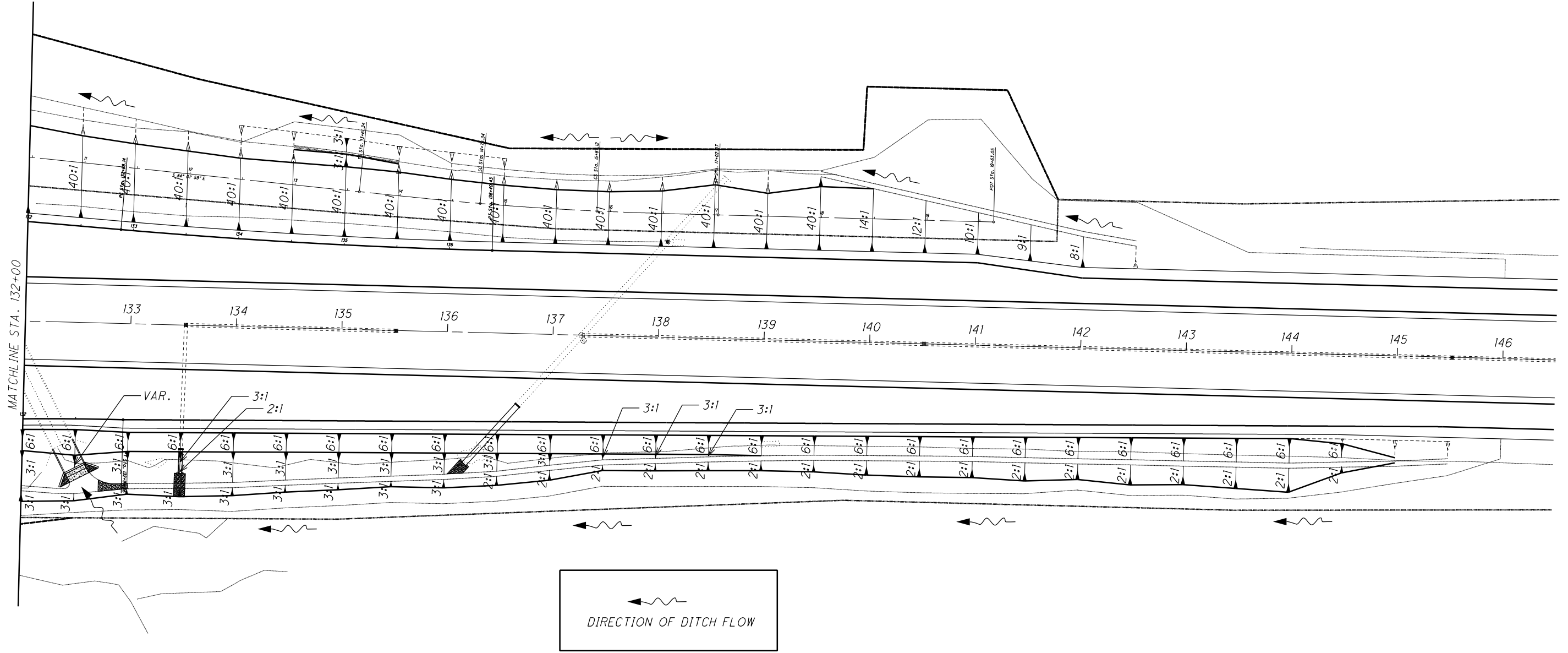

 DIRECTION OF DITCH FLOW

CALCULATED
 RJC
 CHECKED
 HAG

0 50 100
 HORIZONTAL
 SCALE IN FEET

INTERCHANGE GRADING PLAN
STA. 118+00 TO STA. 132+00

LIC-161-1.83




CALCULATED
RJC
CHECKED
HAG


0 50 100
HORIZONTAL
SCALE IN FEET

INTERCHANGE GRADING PLAN
STA. 132+00 TO STA. 147+00

LIC-161-1.83

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 HORIZONTAL SCALE IN FEET

INTERSECTION DETAIL SHEET
WORTHINGTON ROAD & MINK STREET

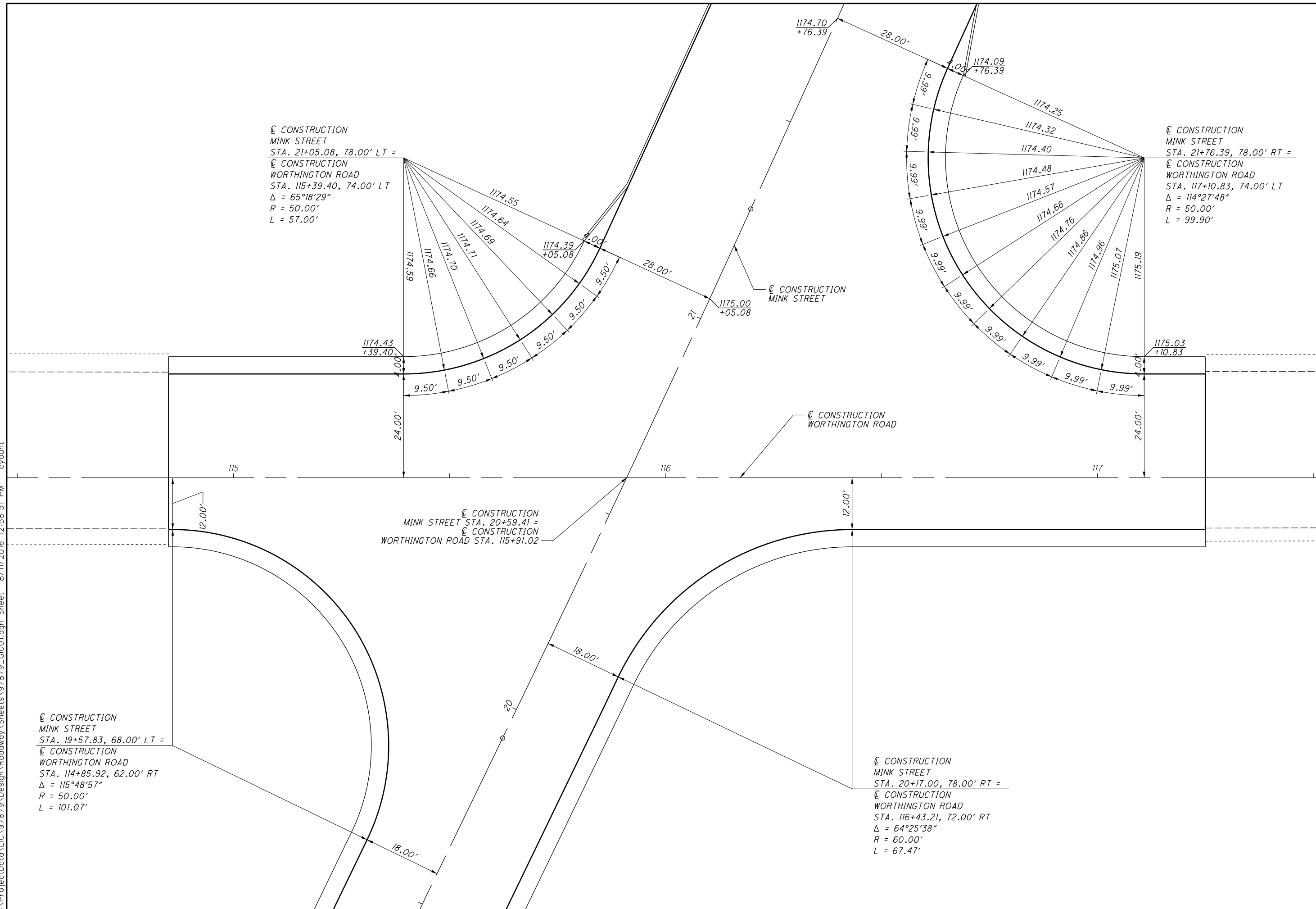
LIC-161-1.83

@ CONSTRUCTION
 MINK STREET
 STA. 21+05.08, 78.00' LT =
 @ CONSTRUCTION
 WORTHINGTON ROAD
 STA. 115+39.40, 74.00' LT
 $\Delta = 65^\circ 18' 29''$
 $R = 50.00'$
 $L = 57.00'$

@ CONSTRUCTION
 MINK STREET
 STA. 21+76.39, 78.00' RT =
 @ CONSTRUCTION
 WORTHINGTON ROAD
 STA. 117+10.83, 74.00' LT
 $\Delta = 114^\circ 27' 48''$
 $R = 50.00'$
 $L = 99.90'$

@ CONSTRUCTION
 MINK STREET
 STA. 19+57.83, 68.00' LT =
 @ CONSTRUCTION
 WORTHINGTON ROAD
 STA. 114+85.92, 62.00' RT
 $\Delta = 115^\circ 48' 57''$
 $R = 50.00'$
 $L = 101.07'$

@ CONSTRUCTION
 MINK STREET
 STA. 20+17.00, 78.00' RT =
 @ CONSTRUCTION
 WORTHINGTON ROAD
 STA. 116+43.21, 72.00' RT
 $\Delta = 64^\circ 25' 38''$
 $R = 60.00'$
 $L = 67.47'$





CALCULATED
CMY
CHECKED
HAG

INTERSECTION DETAIL SHEET
MINK STREET, RAMP C, RAMP D

LIC-161-1.83

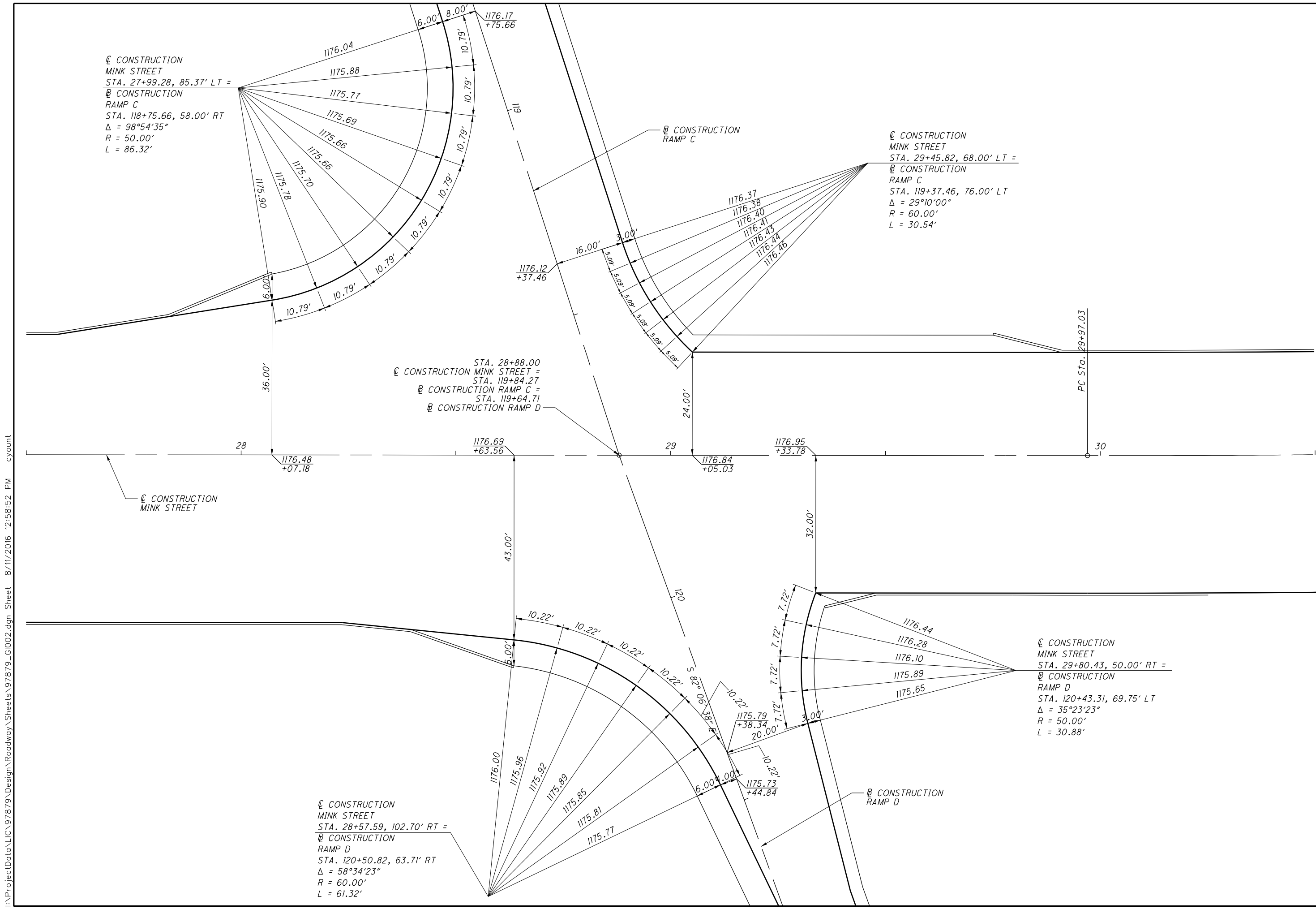
⊕ CONSTRUCTION
MINK STREET
STA. 27+99.28, 85.37' LT =
⊕ CONSTRUCTION
RAMP C
STA. 118+75.66, 58.00' RT
Δ = 98°54'35"
R = 50.00'
L = 86.32'

⊕ CONSTRUCTION
MINK STREET
STA. 29+45.82, 68.00' LT =
⊕ CONSTRUCTION
RAMP C
STA. 119+37.46, 76.00' LT =
Δ = 29°10'00"
R = 60.00'
L = 30.54'

⊕ CONSTRUCTION
MINK STREET =
STA. 28+88.00
⊕ CONSTRUCTION
RAMP C =
STA. 119+84.27
⊕ CONSTRUCTION
RAMP D =
STA. 119+64.71

⊕ CONSTRUCTION
MINK STREET
STA. 29+80.43, 50.00' RT =
⊕ CONSTRUCTION
RAMP D
STA. 120+43.31, 69.75' LT
Δ = 35°23'23"
R = 50.00'
L = 30.88'

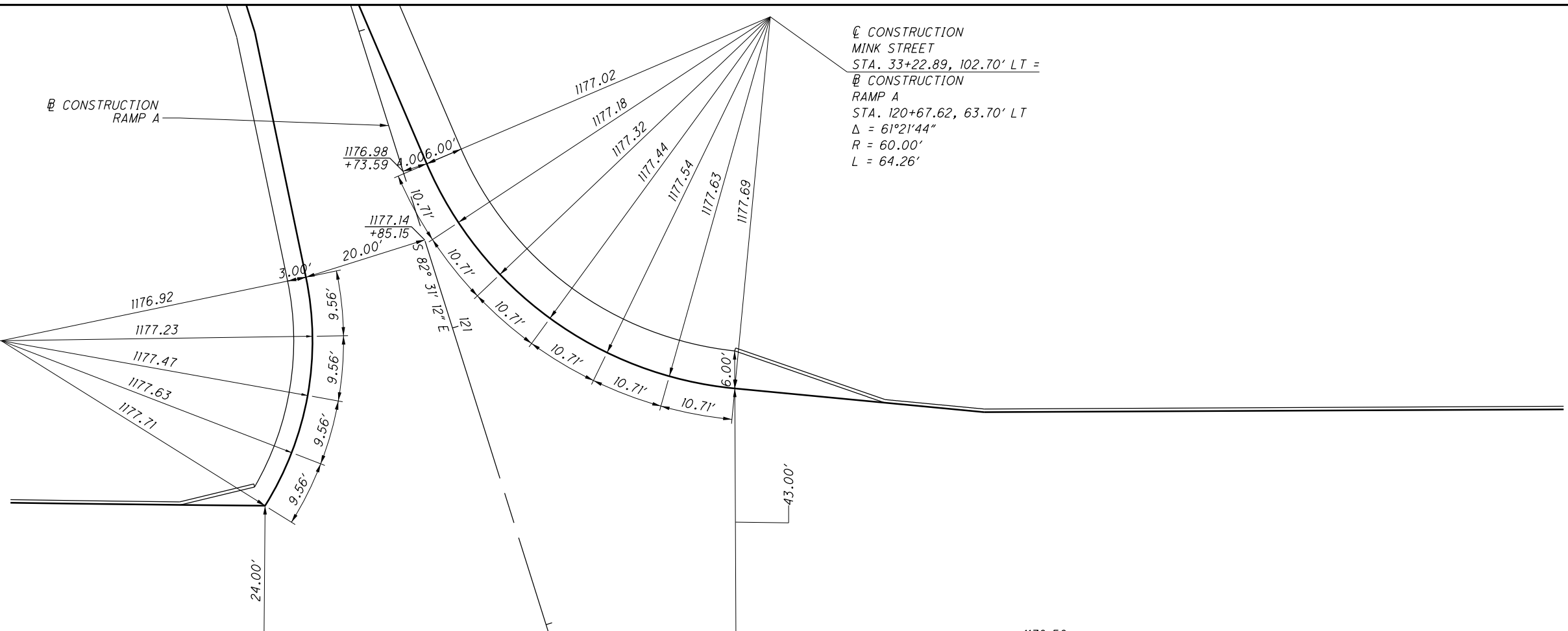
⊕ CONSTRUCTION
MINK STREET
STA. 28+57.59, 102.70' RT =
⊕ CONSTRUCTION
RAMP D
STA. 120+50.82, 63.71' RT
Δ = 58°34'23"
R = 60.00'
L = 61.32'



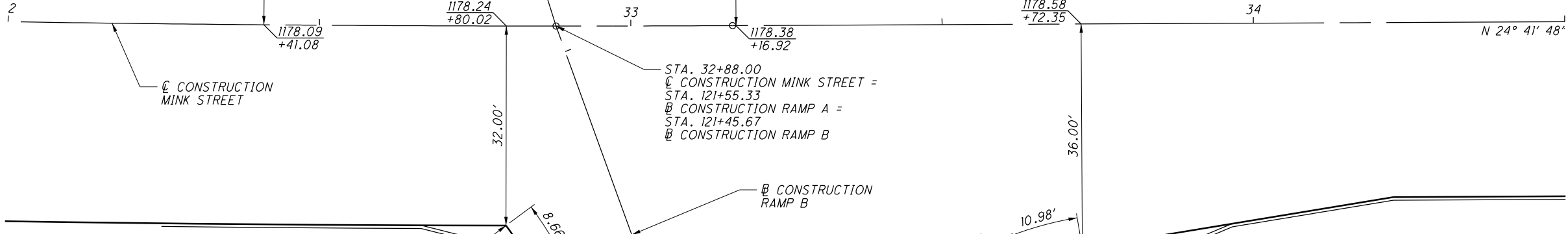
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Ⓞ CONSTRUCTION
MINK STREET
STA. 31+98.09, 50.00' LT =
Ⓞ CONSTRUCTION
RAMP A
STA. 120+80.18, 69.75' RT
Δ = 43°48'20"
R = 50.00'
L = 38.24'

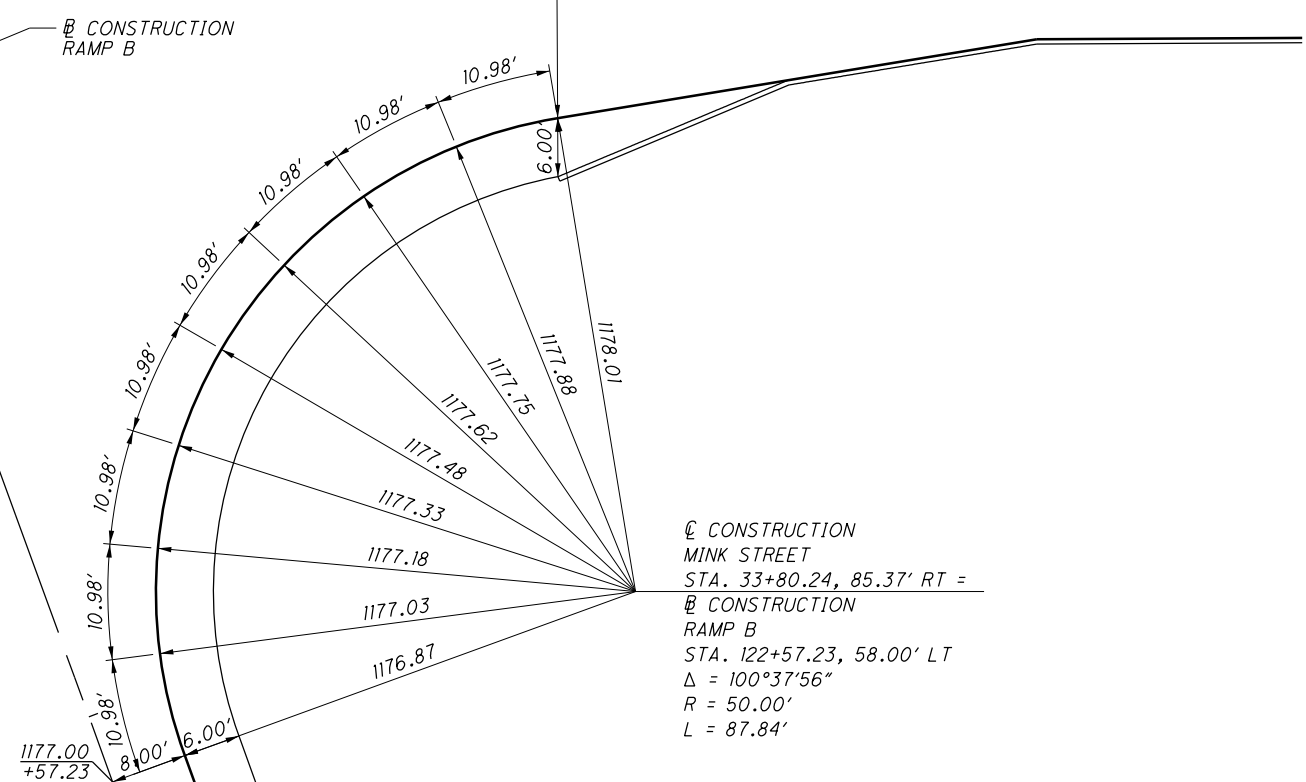


Ⓞ CONSTRUCTION
MINK STREET
STA. 33+22.89, 102.70' LT =
Ⓞ CONSTRUCTION
RAMP A
STA. 120+67.62, 63.70' LT
Δ = 61°21'44"
R = 60.00'
L = 64.26'



Ⓞ CONSTRUCTION
MINK STREET
STA. 32+32.44, 68.00' RT =
Ⓞ CONSTRUCTION
RAMP B
STA. 121+90.07, 76.00' RT
Δ = 16°32'45"
R = 60.00'
L = 17.32'

STA. 32+88.00
Ⓞ CONSTRUCTION MINK STREET =
STA. 121+55.33
Ⓞ CONSTRUCTION RAMP A =
STA. 121+45.67
Ⓞ CONSTRUCTION RAMP B



Ⓞ CONSTRUCTION
MINK STREET
STA. 33+80.24, 85.37' RT =
Ⓞ CONSTRUCTION
RAMP B
STA. 122+57.23, 58.00' LT
Δ = 100°37'56"
R = 50.00'
L = 87.84'



CALCULATED
CMY
CHECKED
HAG

INTERSECTION DETAIL SHEET
MINK STREET, RAMP A, RAMP B

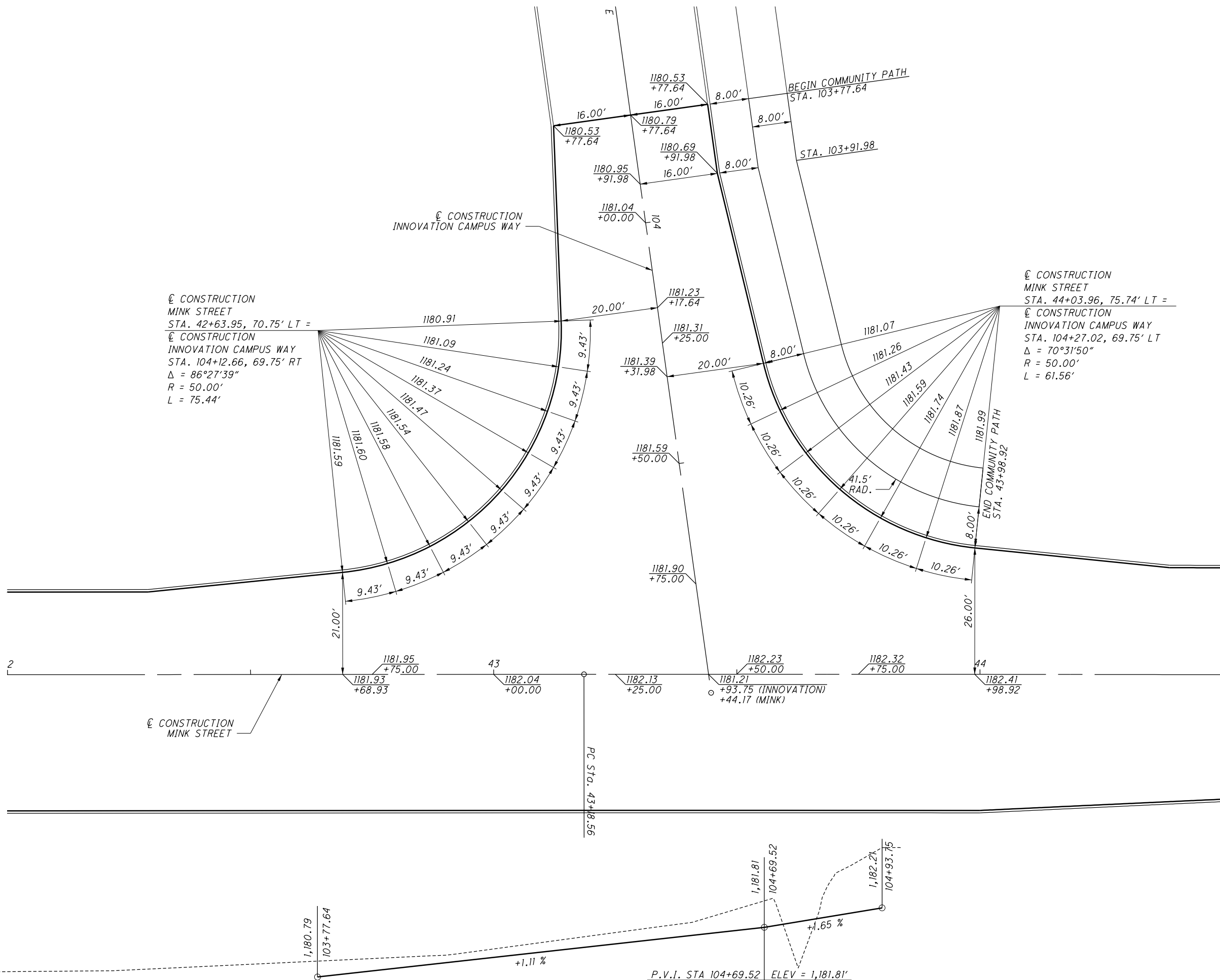
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103

104

105



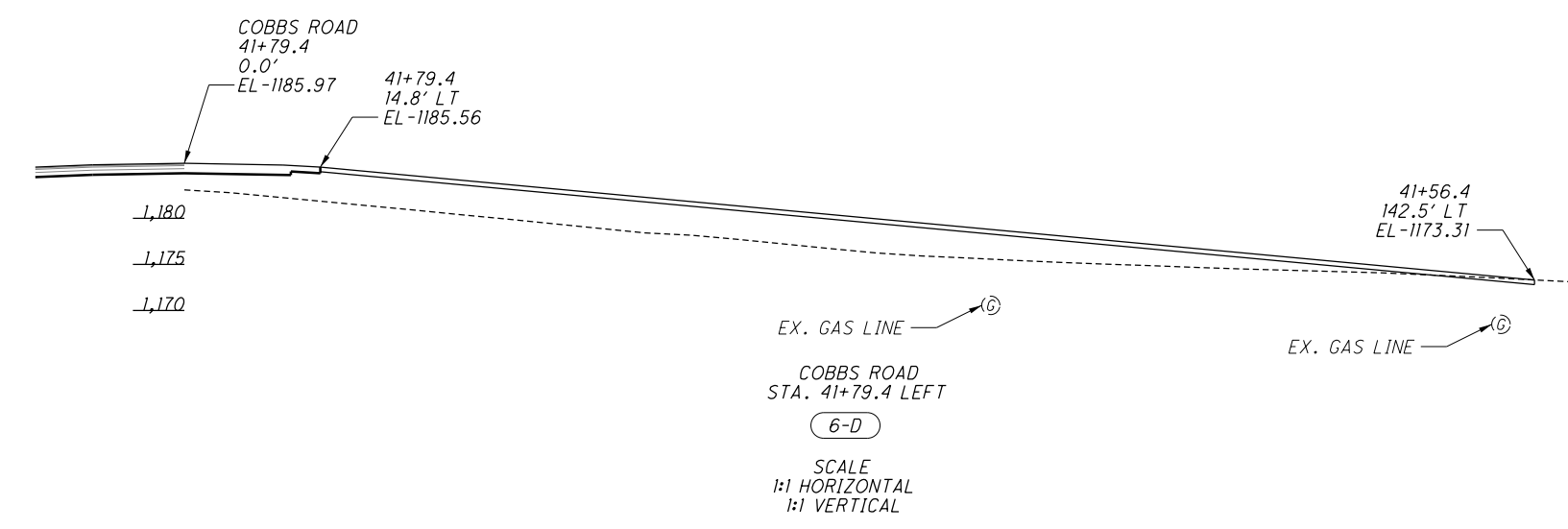
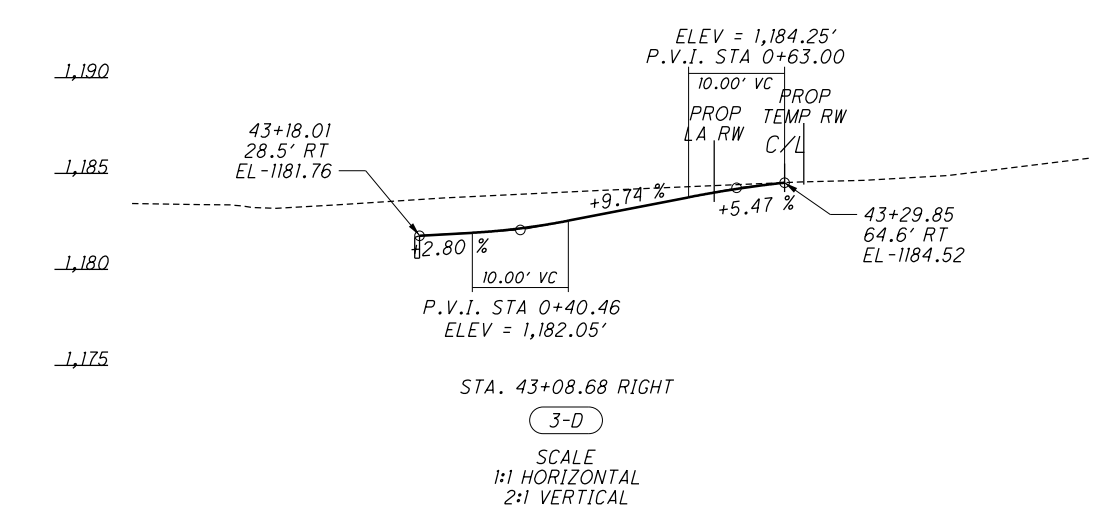
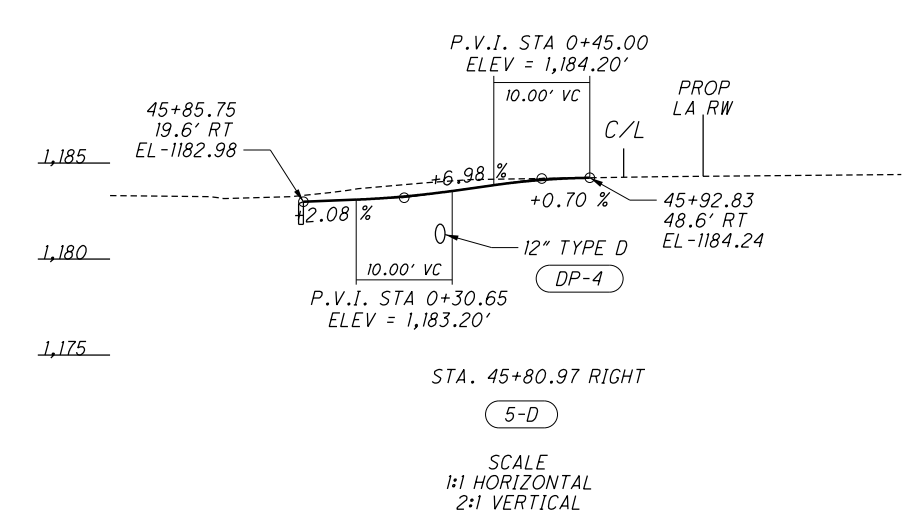
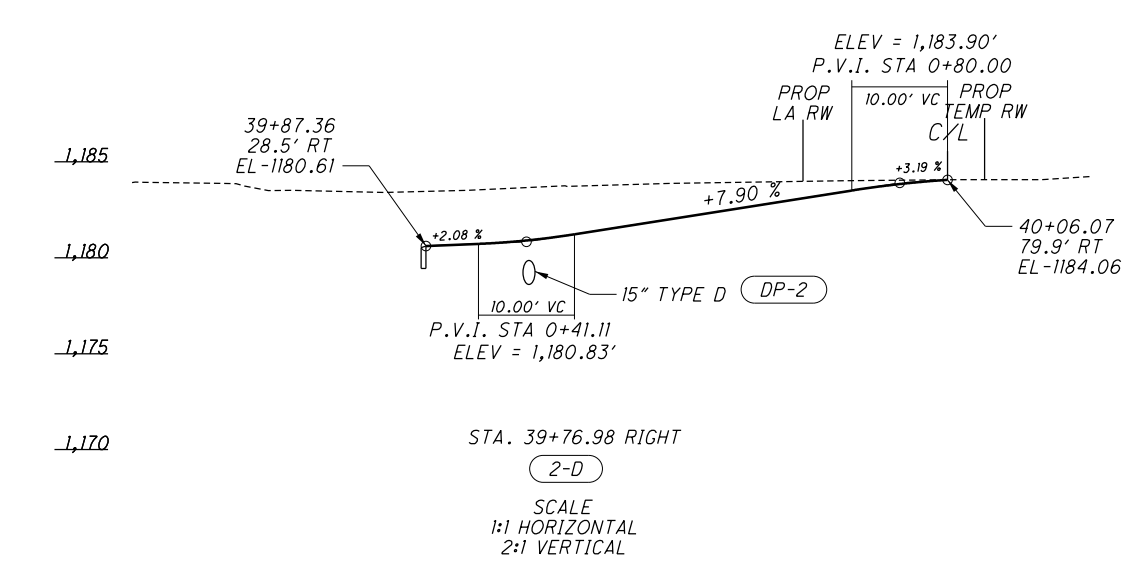
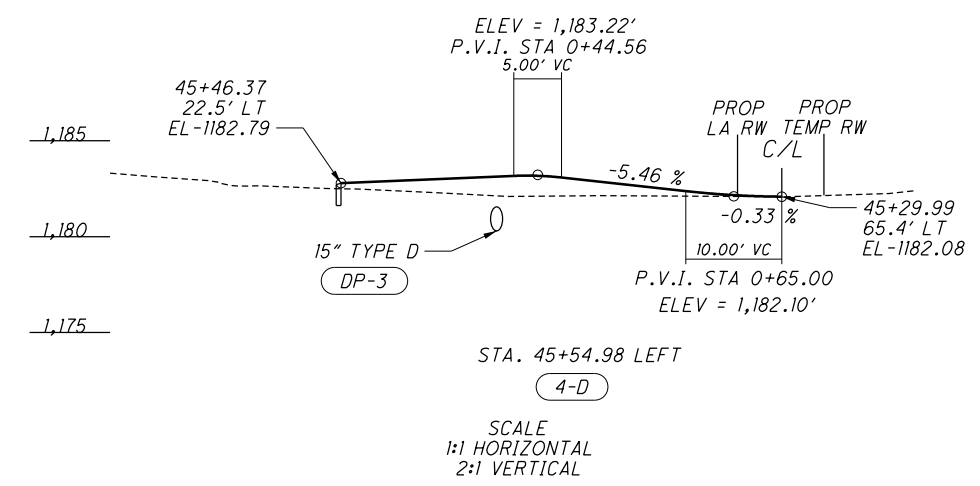
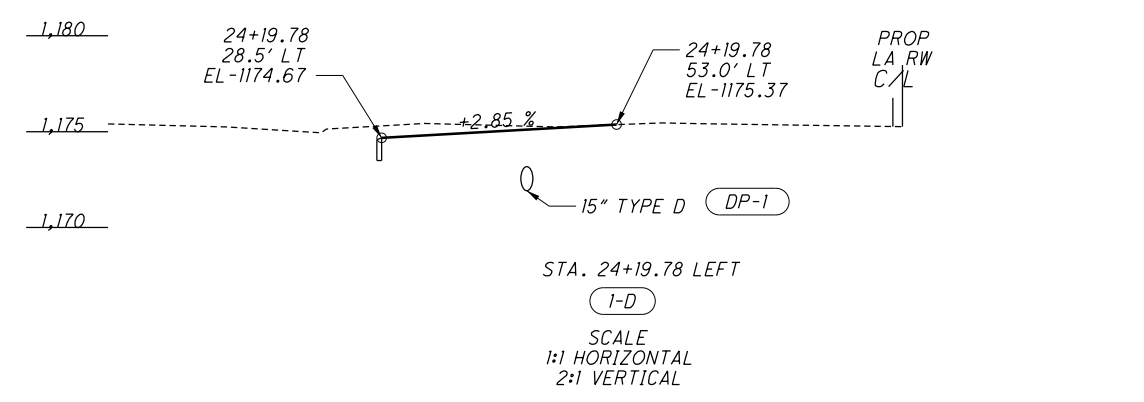
0 5 10 20
 HORIZONTAL SCALE IN FEET

CALCULATED
 CMY
 CHECKED
 HAG

INTERSECTION DETAIL SHEET
 MINK STREET & INNOVATION CAMPUS

LIC-161-1.83

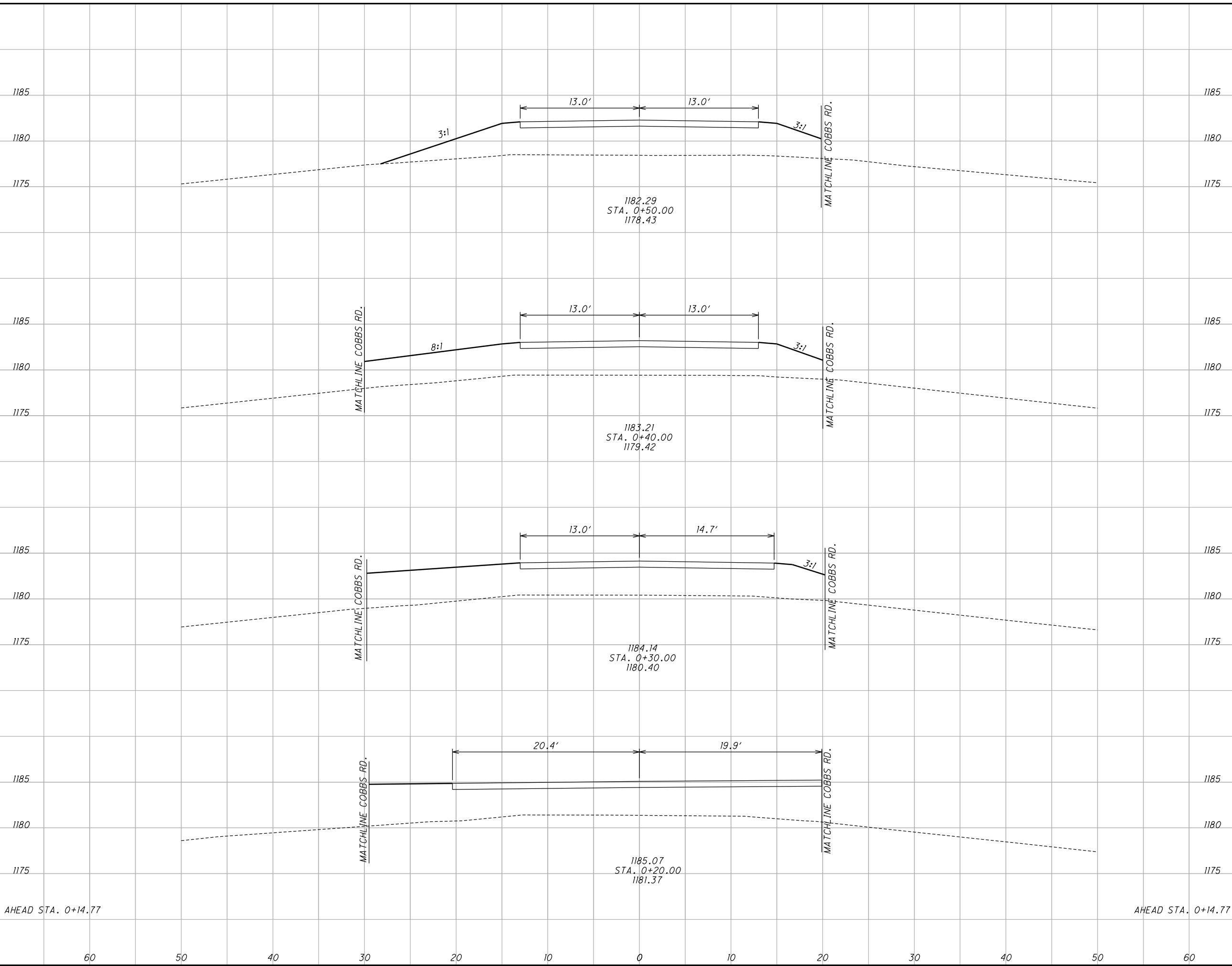
184
 336



I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GD001.dgn Sheet 8/11/2016 12:58:56 PM cyount

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS008.dgn XS_SHEET_temporary_model_name_1 8/11/2016 12:58:56 PM ccount

SEEDING	
END WIDTH	SO. YDS.
44	
50	
45	
49	
42	
34	
19	
12	
19	
145	



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL	XXX	XXX
0	134	0	54		
0	156	0	60		
0	164	0	62		
0	168	0	33		
0	168	0	209		

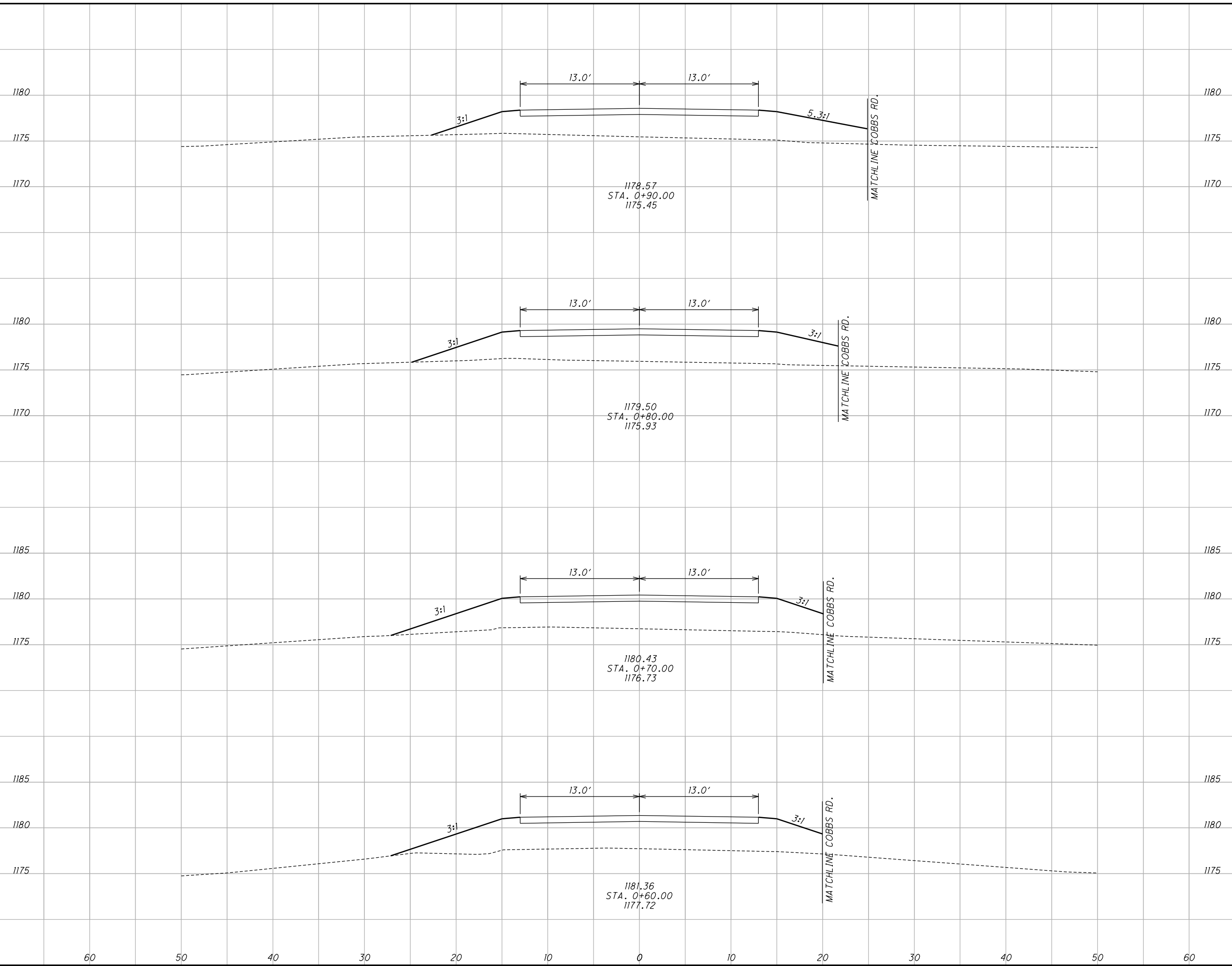
**CROSS SECTIONS COBBS ROAD DRIVE
 STA. 0+20.00 TO STA. 0+50.00**

LIC-161-1.83

186
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS008.dgn XS_SHEET_temporary_model_name_2 8/11/2016 12:58:56 PM ccount

SEEDING	
END WIDTH	SO. YDS.
43	
47	
40	
47	
43	
48	
43	
49	
191	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	103	0	42
0	119	0	46
0	127	0	48
0	129	0	49
0	185	0	185

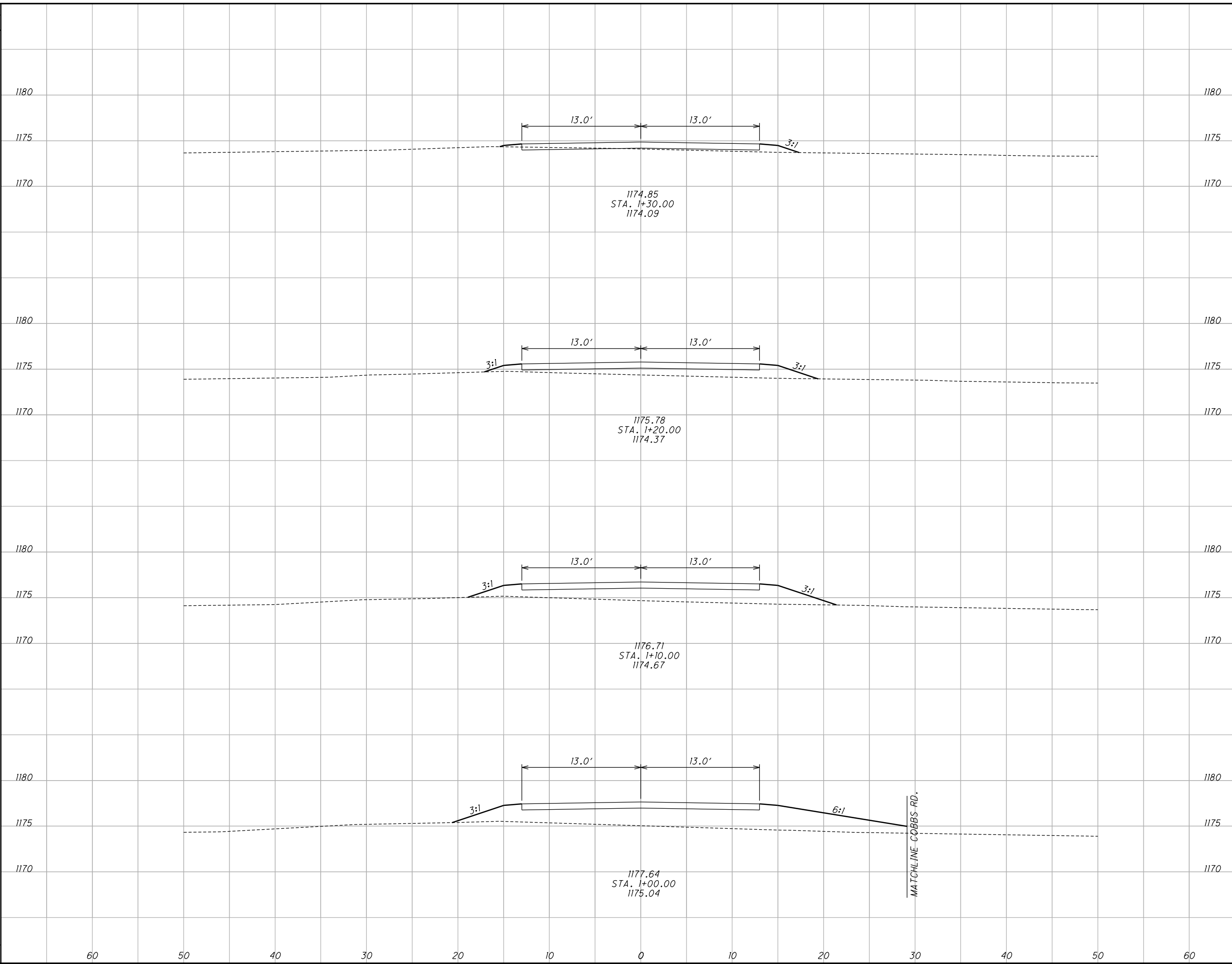
CROSS SECTIONS COBBS ROAD DRIVE
STA. 0+60.00 TO STA. 0+90.00

LIC-161-1.83

(187)
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS008.dgn XS_SHEET_temporary_model_name_3 8/11/2016 12:58:56 PM ccount

SEEDING	
END WIDTH	SO. YDS.
164	49
	45
	35
	37
	31
	33
	28



END AREA		VOLUME	
CUT	FILL	CUT	FILL
2	5		
0	25	1	6
0	49	0	14
0	87	0	26
0	35	0	35
1	82	1	82

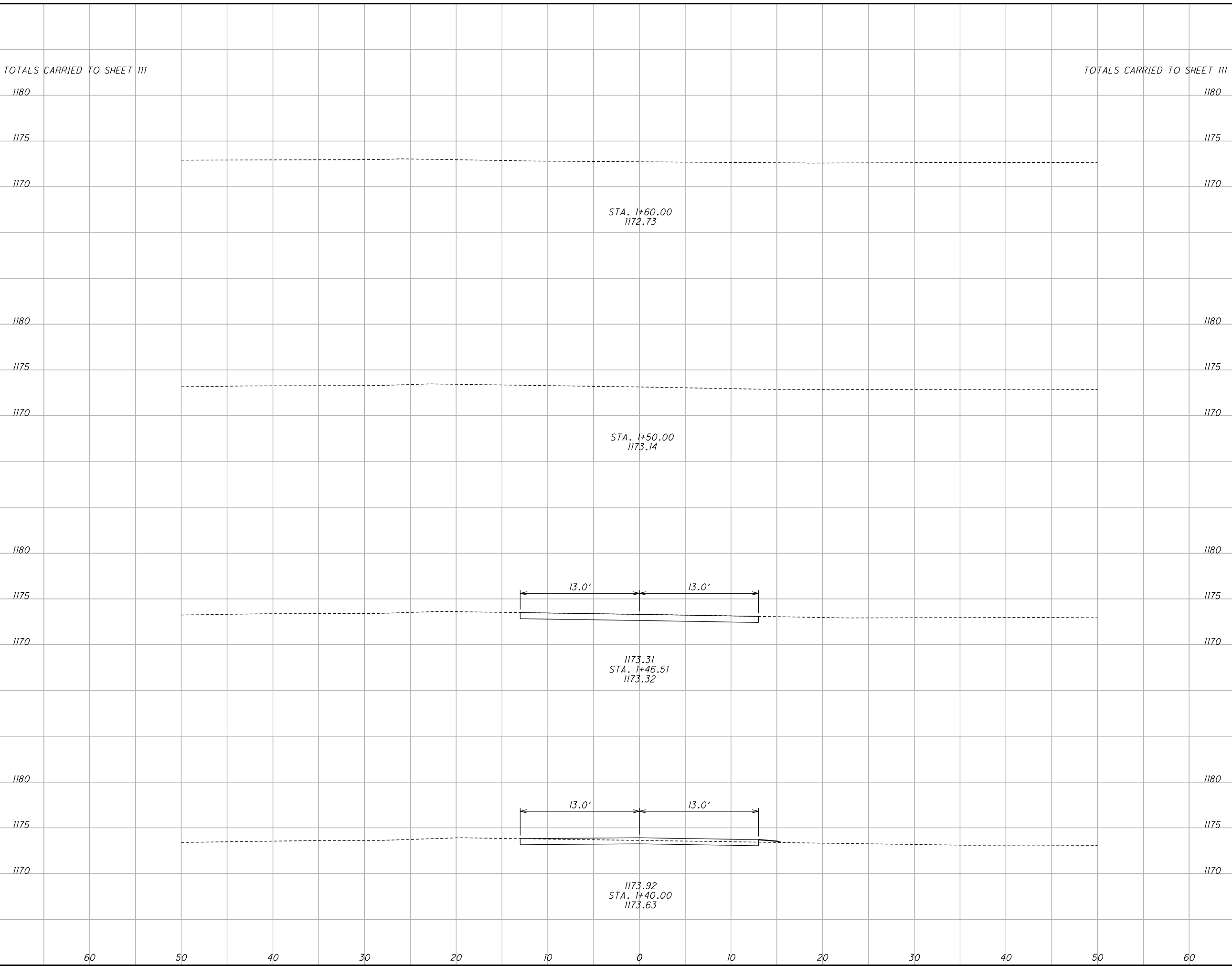
CROSS SECTIONS COBBS ROAD DRIVE
STA. 1+00.00 TO STA. 1+30.00

LIC-161-1.83

188
336

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_XS008.dgn XS_SHEET_temporary_model_name_4 8/11/2016 12:58:57 PM ccount

SEEDING	
END WIDTH	SO. YDS.
528	TOTALS CARRIED TO SHEET III
1180	
1175	
1170	
1180	
1175	
1170	
1180	
1175	
1170	
1180	
1175	
1170	
1180	
1175	
1170	
23	
28	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		8	479
18	0		
		4	1
12	1		
		3	2
		7	3

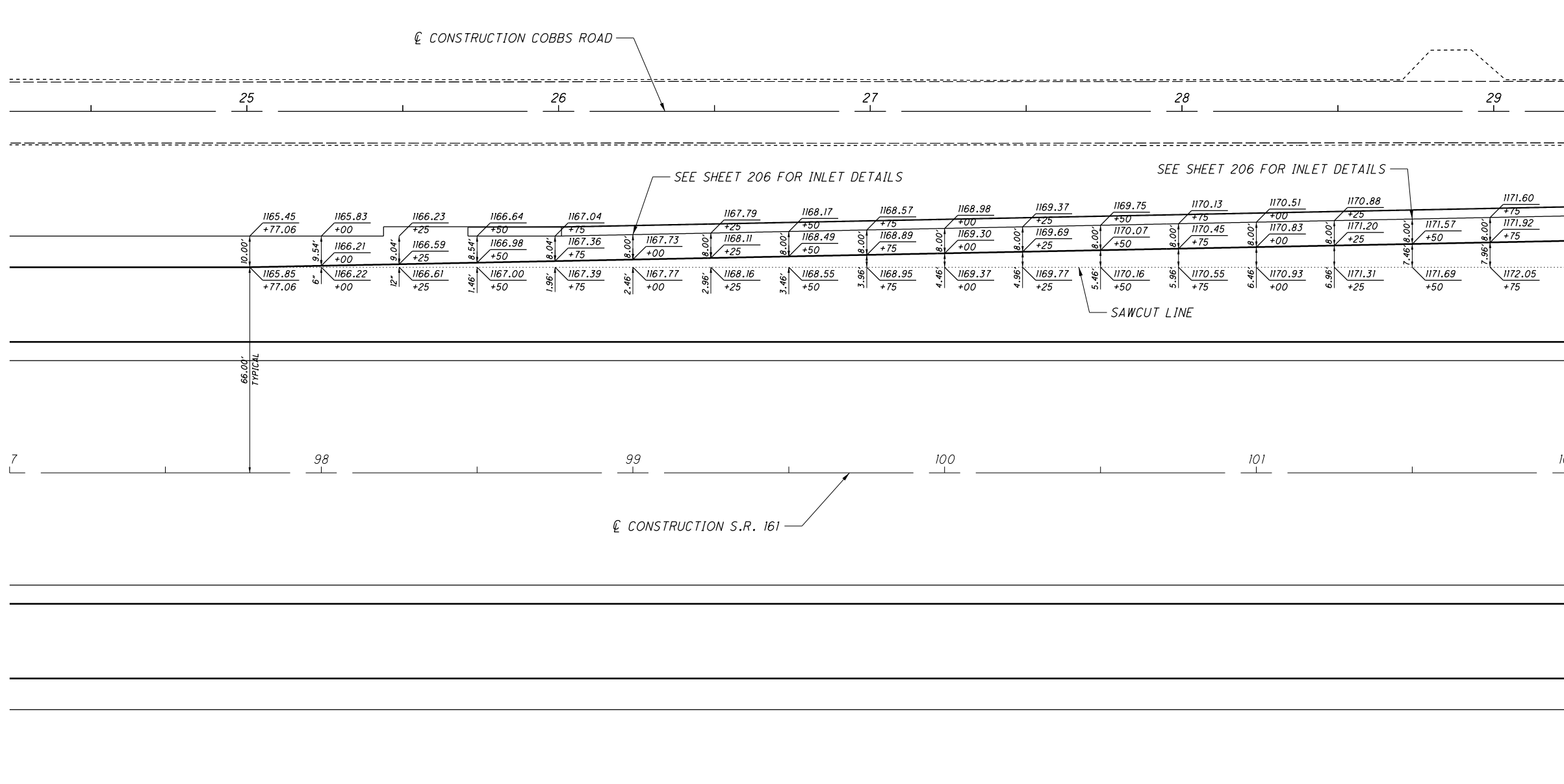
CROSS SECTIONS COBBS ROAD DRIVE
STA. 1+40.00 TO STA. 1+60.00

LIC-161-1.83

(189)
336

CALCULATED
XXX
CHECKED
XXX

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GA001.dgn_Sheet 8/11/2016 12:58:58 PM cyount

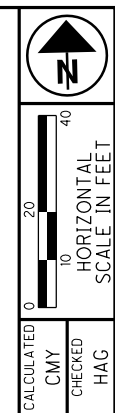
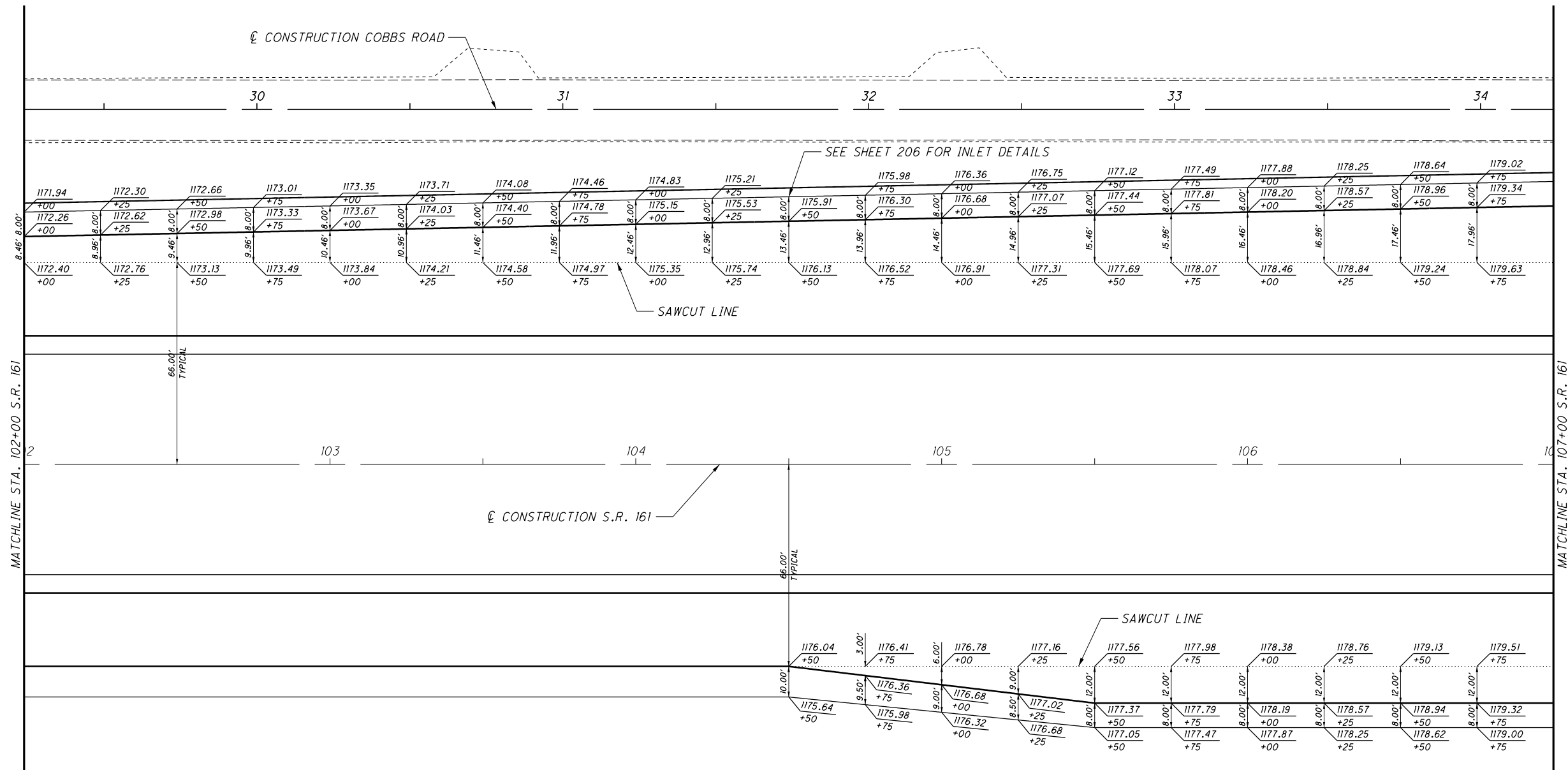


CALCULATED
 CMY
 CHECKED
 HAG

0 20 40
 HORIZONTAL
 SCALE IN FEET

PAVEMENT DETAIL SHEET
STA. 97+00 TO STA. 102+00

LIC-161-1.83

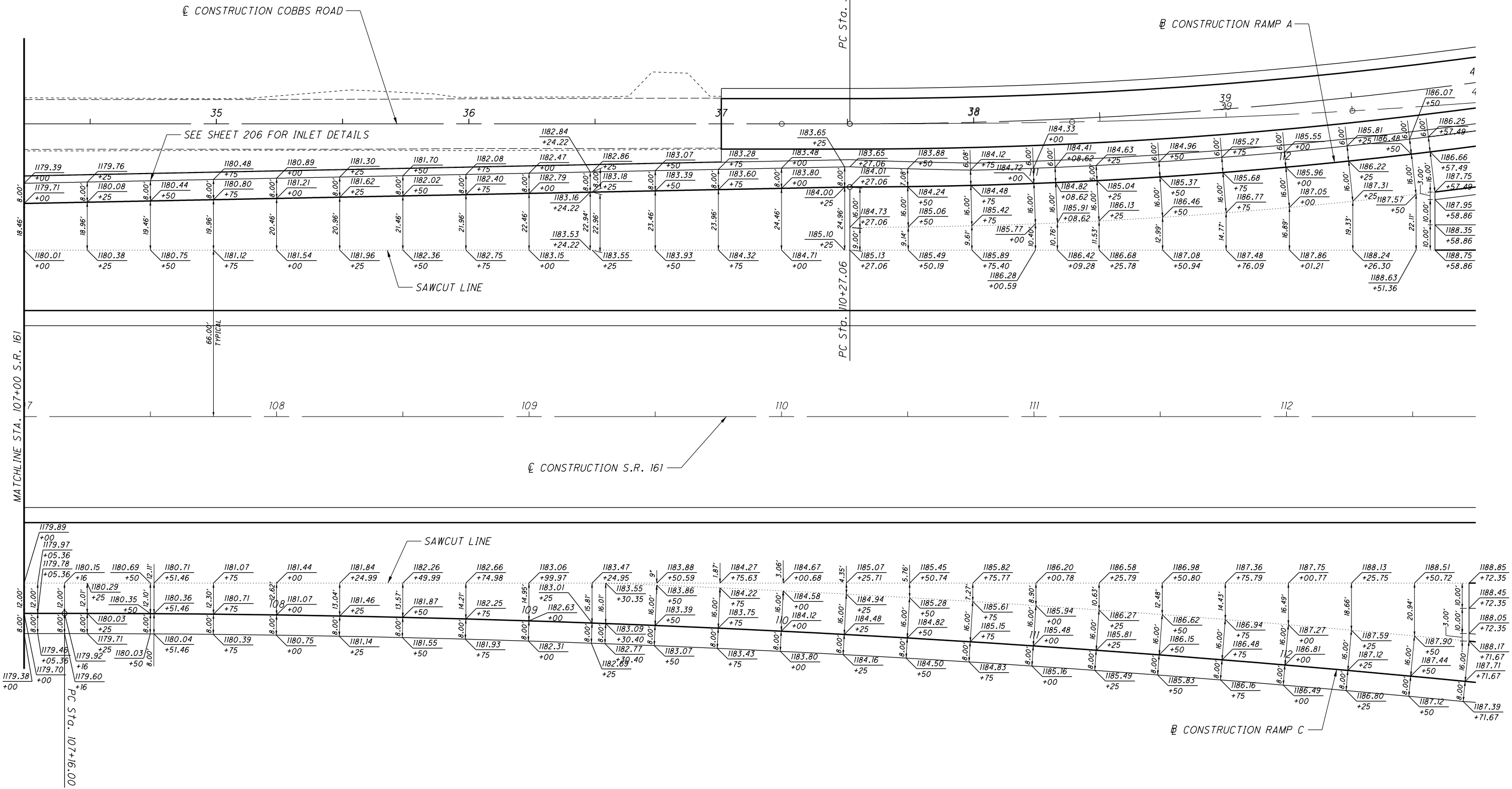


CALCULATED
 CMY
 CHECKED
 HAG

PAVEMENT DETAIL SHEET
STA. 102+00 TO STA. 107+00

LIC-161-1.83

TRANSITION PAVEMENT SLOPE FROM
 -0.016 @ STA. 109+24.22 (S.R. 161)
 TO -0.068 @ STA. 111+08.62 (RAMP A)
 BEGIN DOUBLE GRADE BREAK @ STA. 110+27.06 (RAMP A)



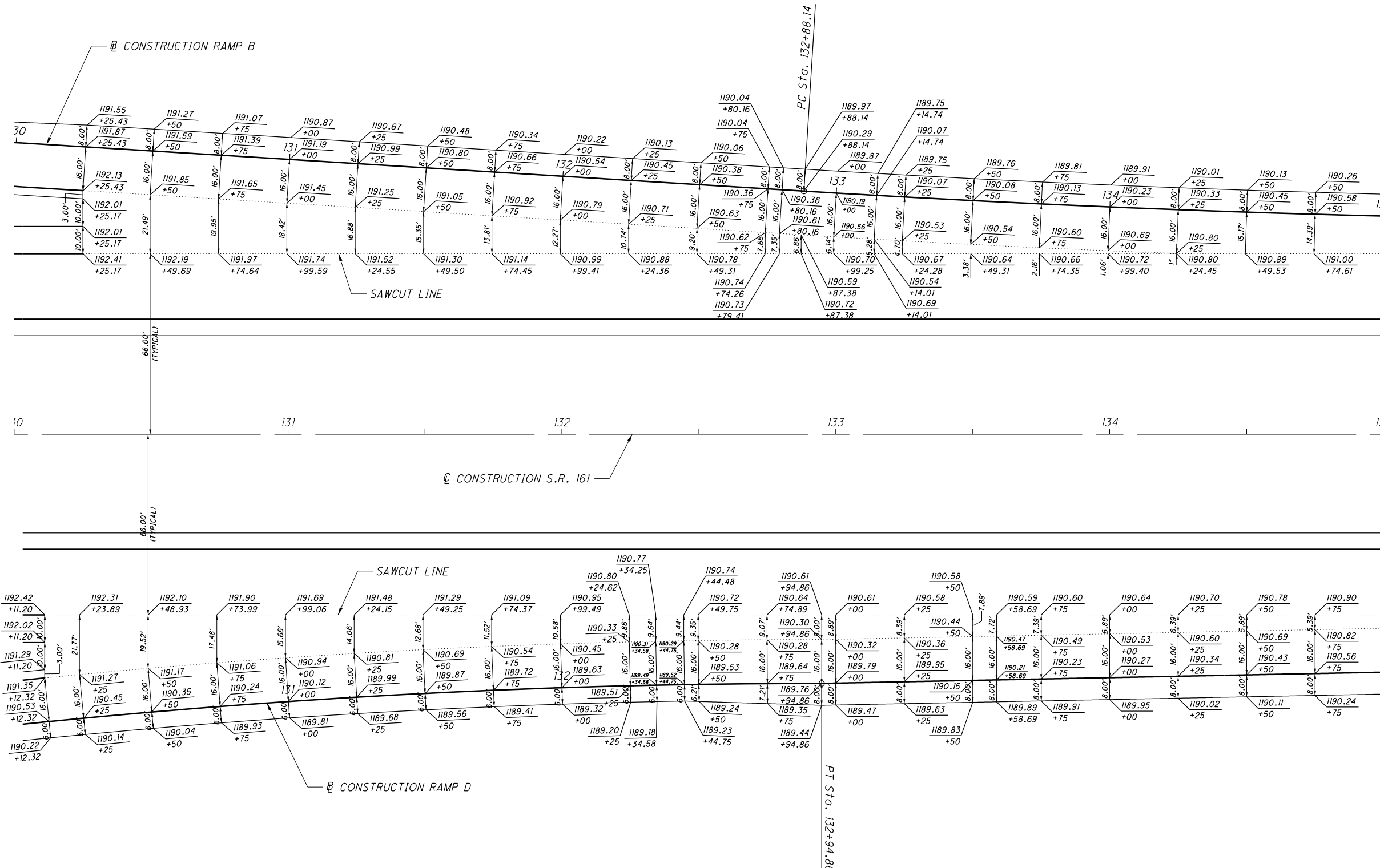
PAVEMENT DETAIL SHEET
STA. 107+00 TO STA. 112+75

LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GA003.dgn Sheet_8/11/2016 12:59:01 PM cyount

TRANSITION PAVEMENT SLOPE FROM
 -0.016 @ STA. 107+05.36 (S.R. 161)
 TO -0.029 @ STA. 107+51.46 (RAMP C)

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GA004.dgn_Sheet_8/11/2016 12:59:03 PM ccount

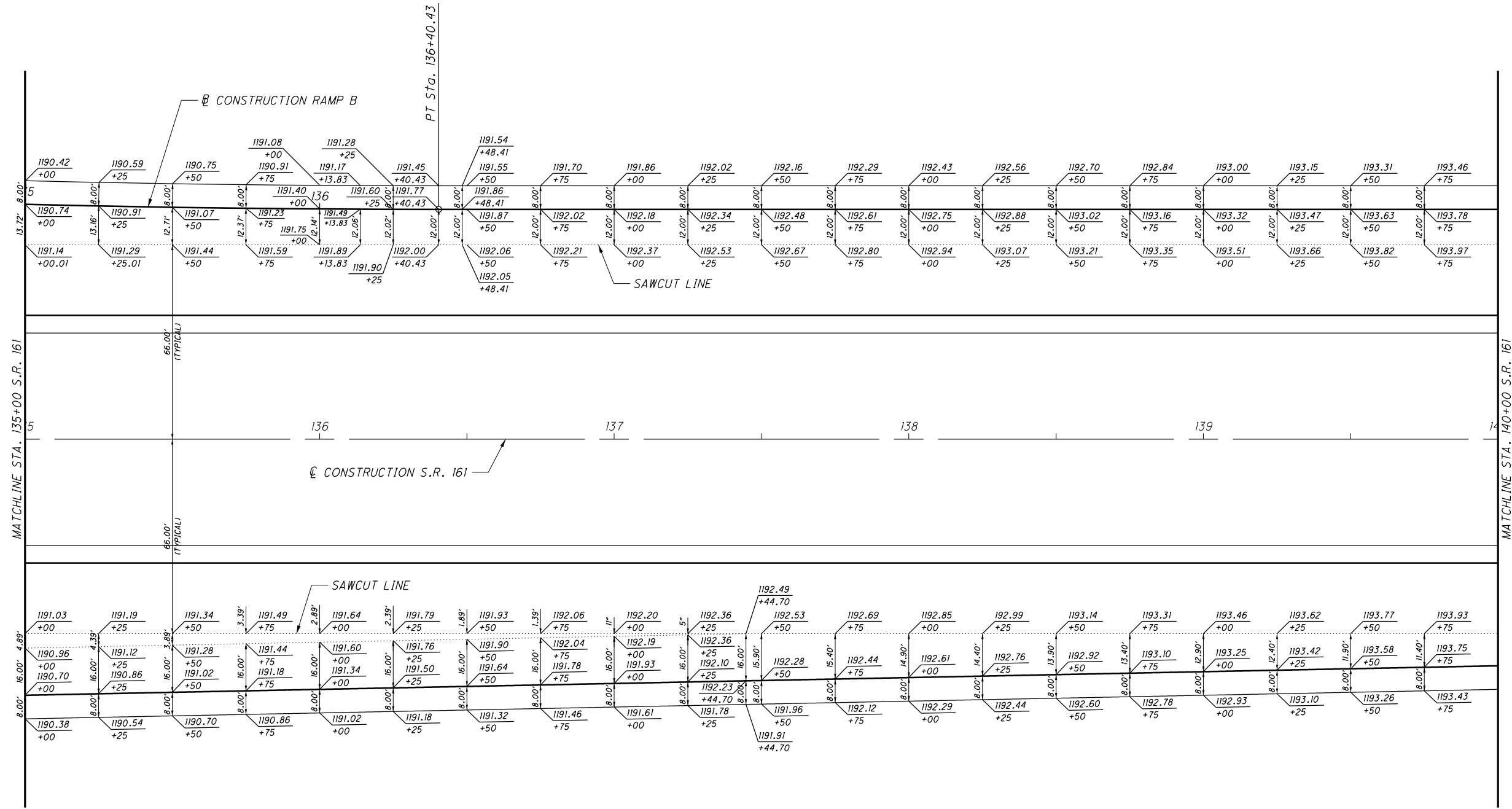


TRANSITION PAVEMENT SLOPE FROM
 -0.0051 @ STA. 132+34.58 (RAMP D)
 TO -0.016 @ STA. 133+58.69 (S.R. 161)
 END DOUBLE GRADE BREAK STA. 132+44.75 (RAMP D)

CALCULATED
 CMY
 CHECKED
 HAG

0 20 40
 HORIZONTAL
 SCALE IN FEET

PAVEMENT DETAIL SHEET
STA. 130+00 TO STA. 135+00

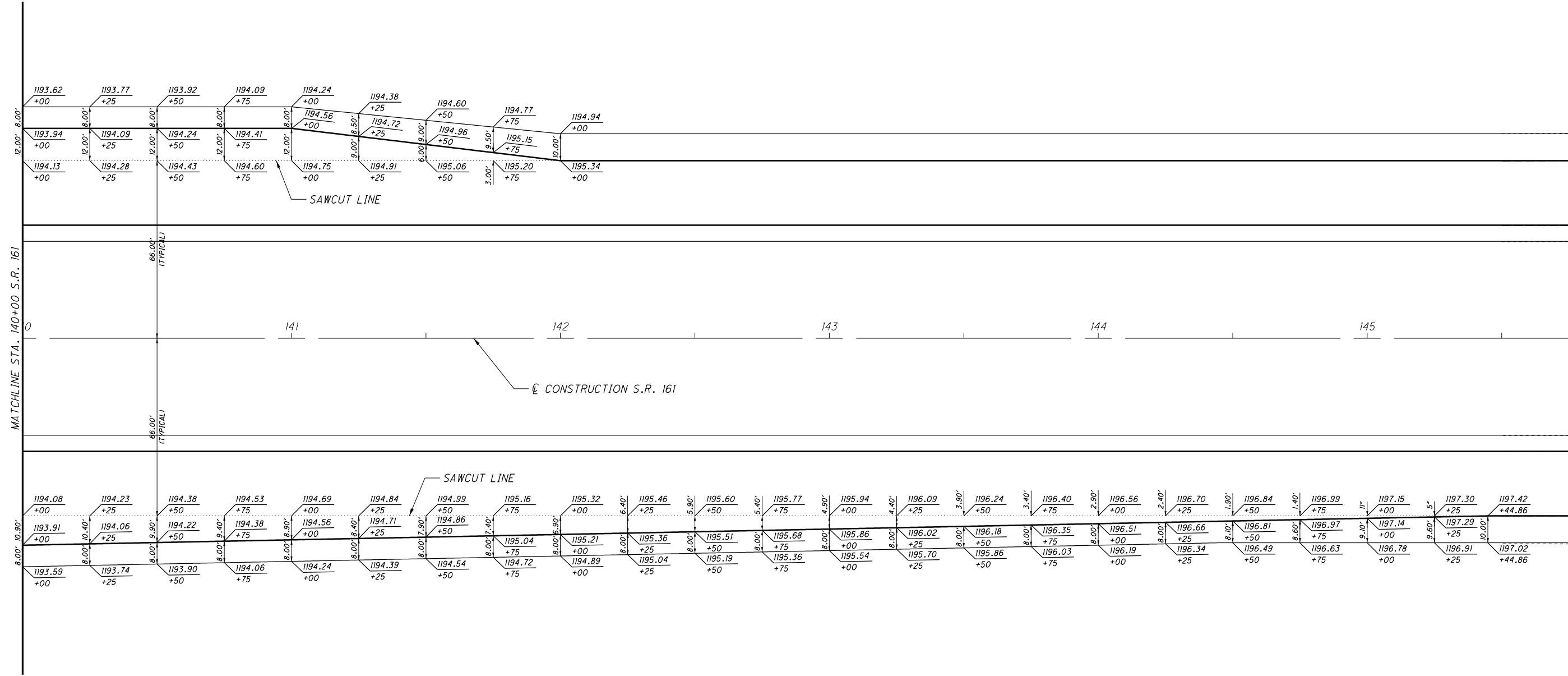


CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

PAVEMENT DETAIL SHEET
STA. 135+00 TO STA. 140+00

LIC-161-1.83



CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

PAVEMENT DETAIL SHEET
STA. 140+00 TO STA. 145+75

LIC-161-1.83

@ SURVEY & CONSTRUCTION
 COBBS ROAD
 STA. 41+67.34, 110.00' LT.
 $\Delta = 62^{\circ}10'55''$
 $L = 108.53'$



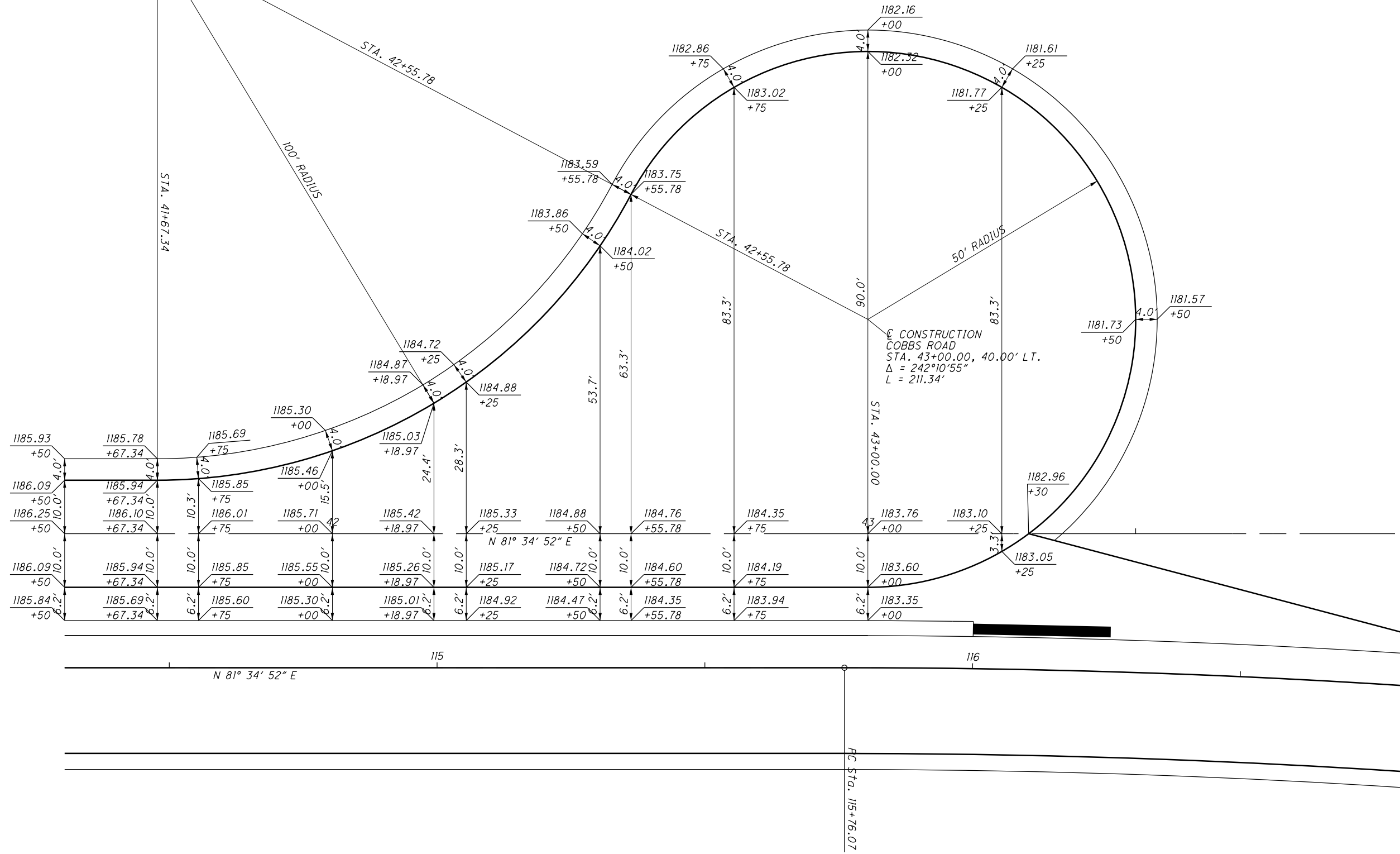
0 5 10 20
 HORIZONTAL
 SCALE IN FEET

CALCULATED
 CMY
 CHECKED
 HAG

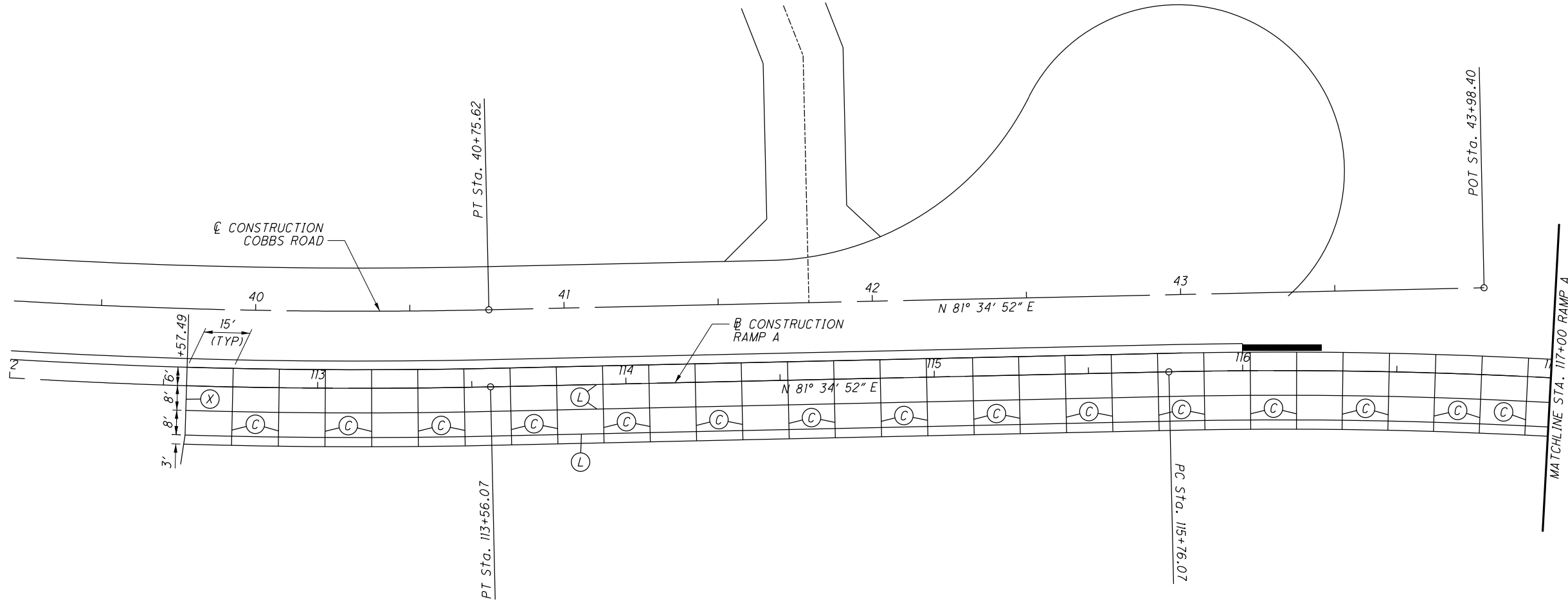
COBBS ROAD
 CUL-DE-SAC DETAIL SHEET

LIC-161-1.83

196
336



I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GA007.dgn Sheet 8/11/2016 12:59:07 PM ccount



LEGEND

- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

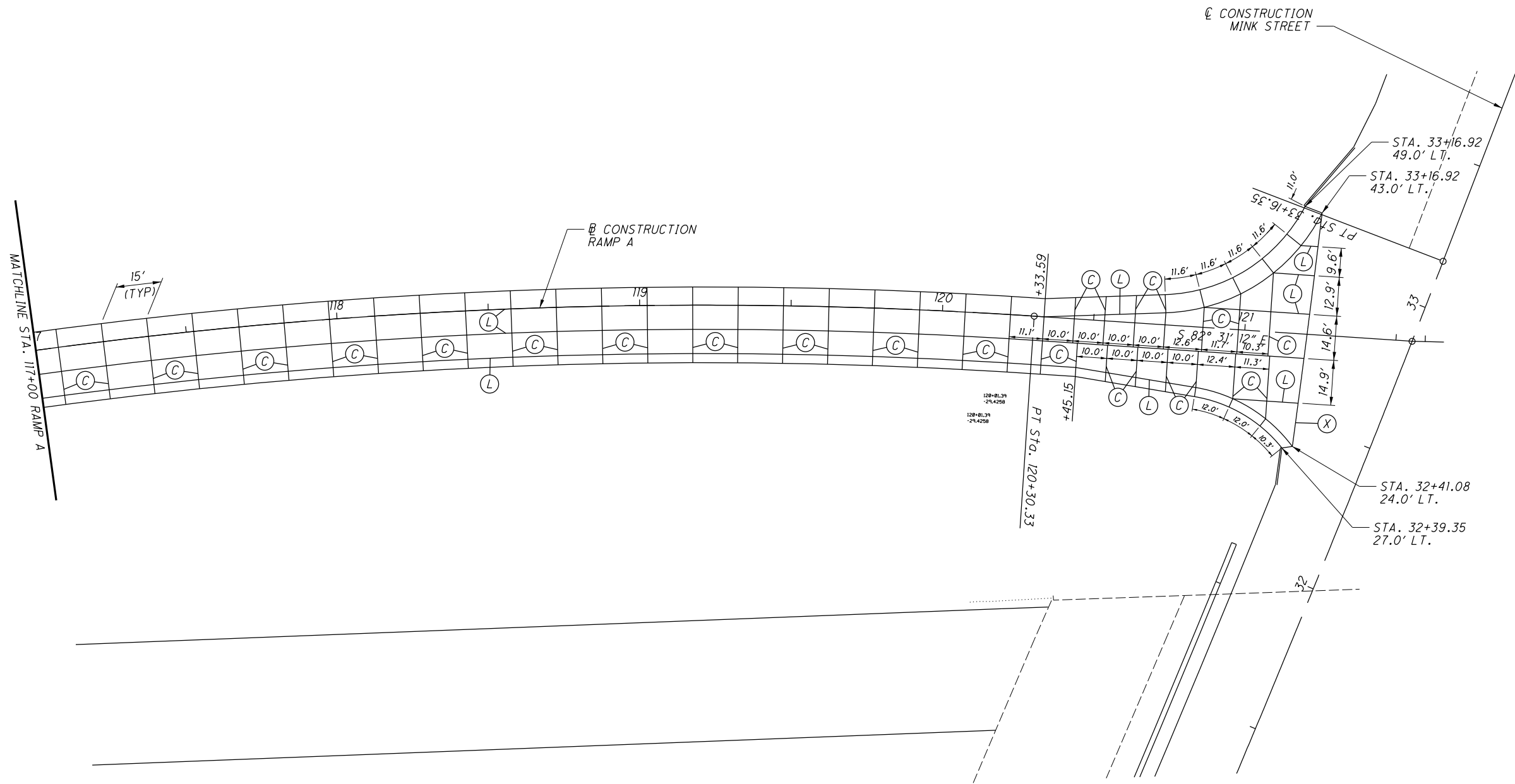
CALCULATED
CMY

CHECKED
HAG

0 20 40
HORIZONTAL SCALE IN FEET

RAMP A JOINT DETAILS SHEET
STA. 112+57.49 TO STA. 117+00

LIC-161-1.83



LEGEND

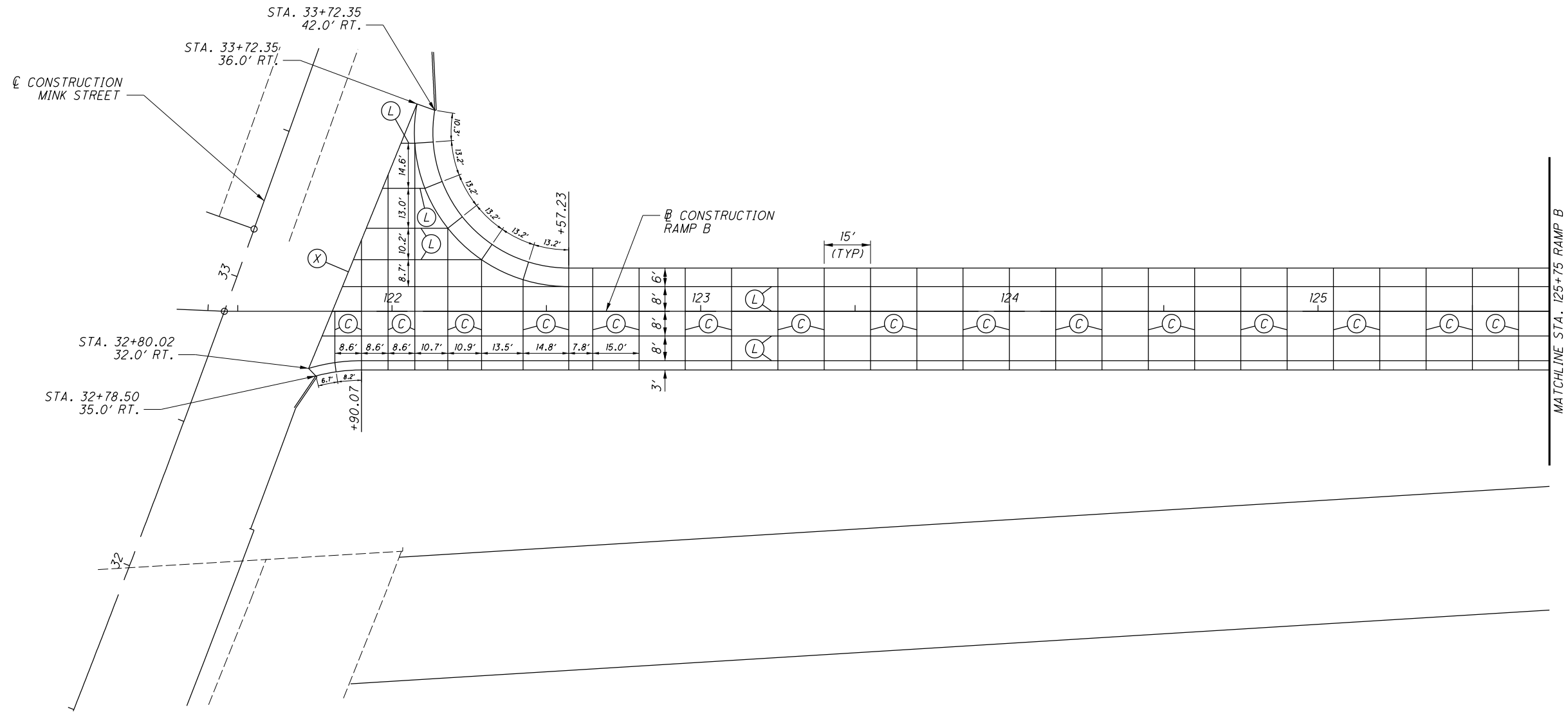
- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP A JOINT DETAILS SHEET
STA. 117+00 TO STA. 121+21.96

LIC-161-1.83



LEGEND

- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

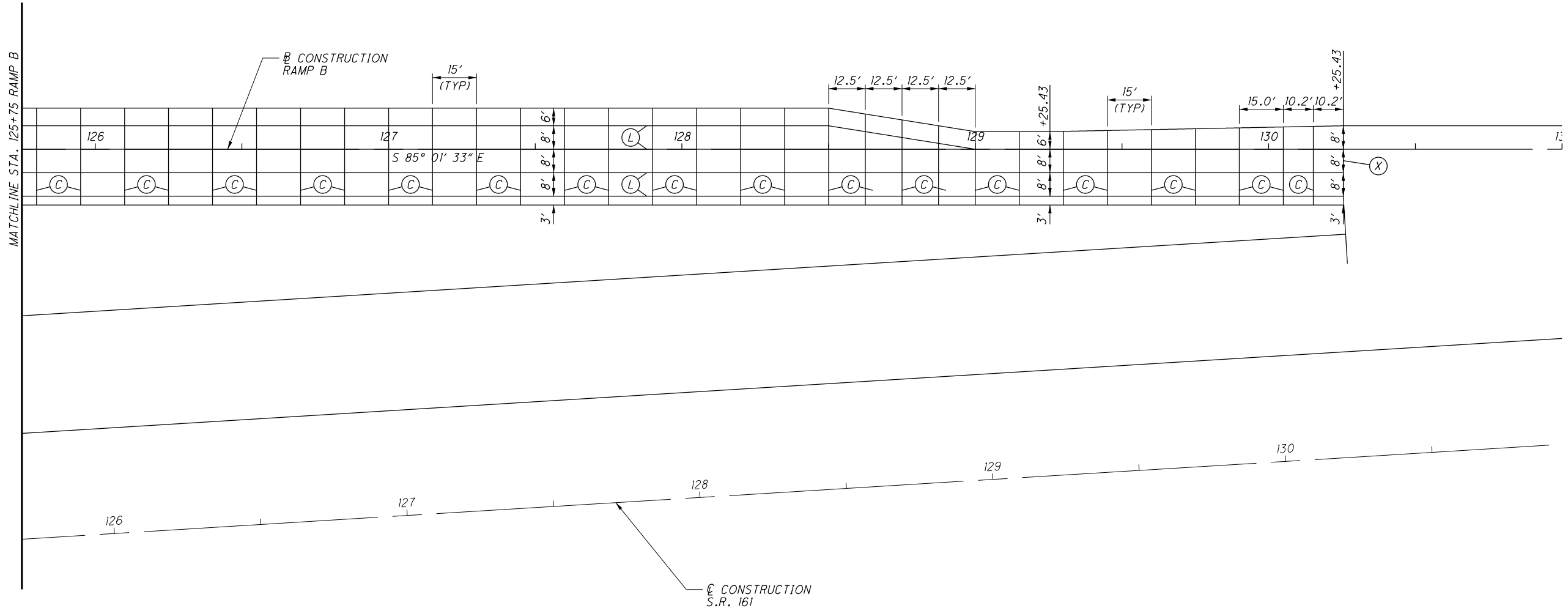
CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL SCALE IN FEET

199
336

RAMP B JOINT DETAILS SHEET
STA. 121+73.23 TO STA. 125+75

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LEGEND

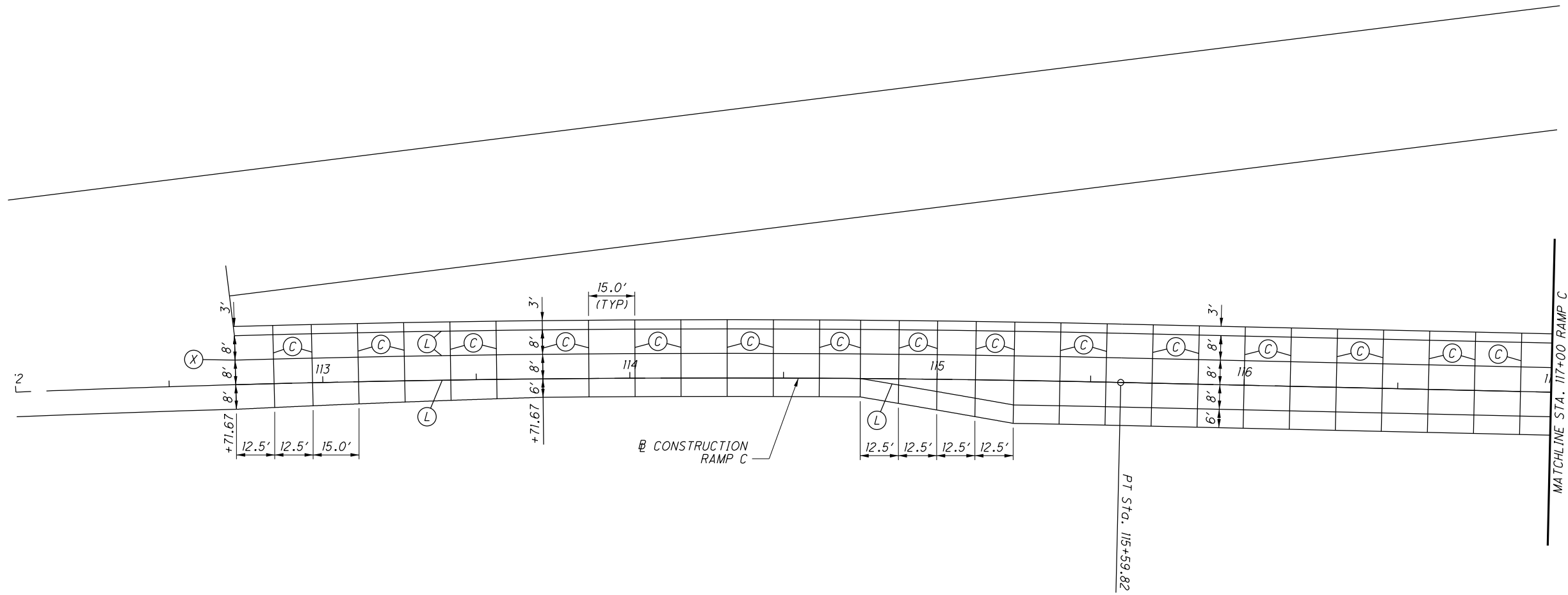
- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP B JOINT DETAILS SHEET
STA. 125+75 TO STA. 130+25.43

LIC-161-1.83



LEGEND

- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

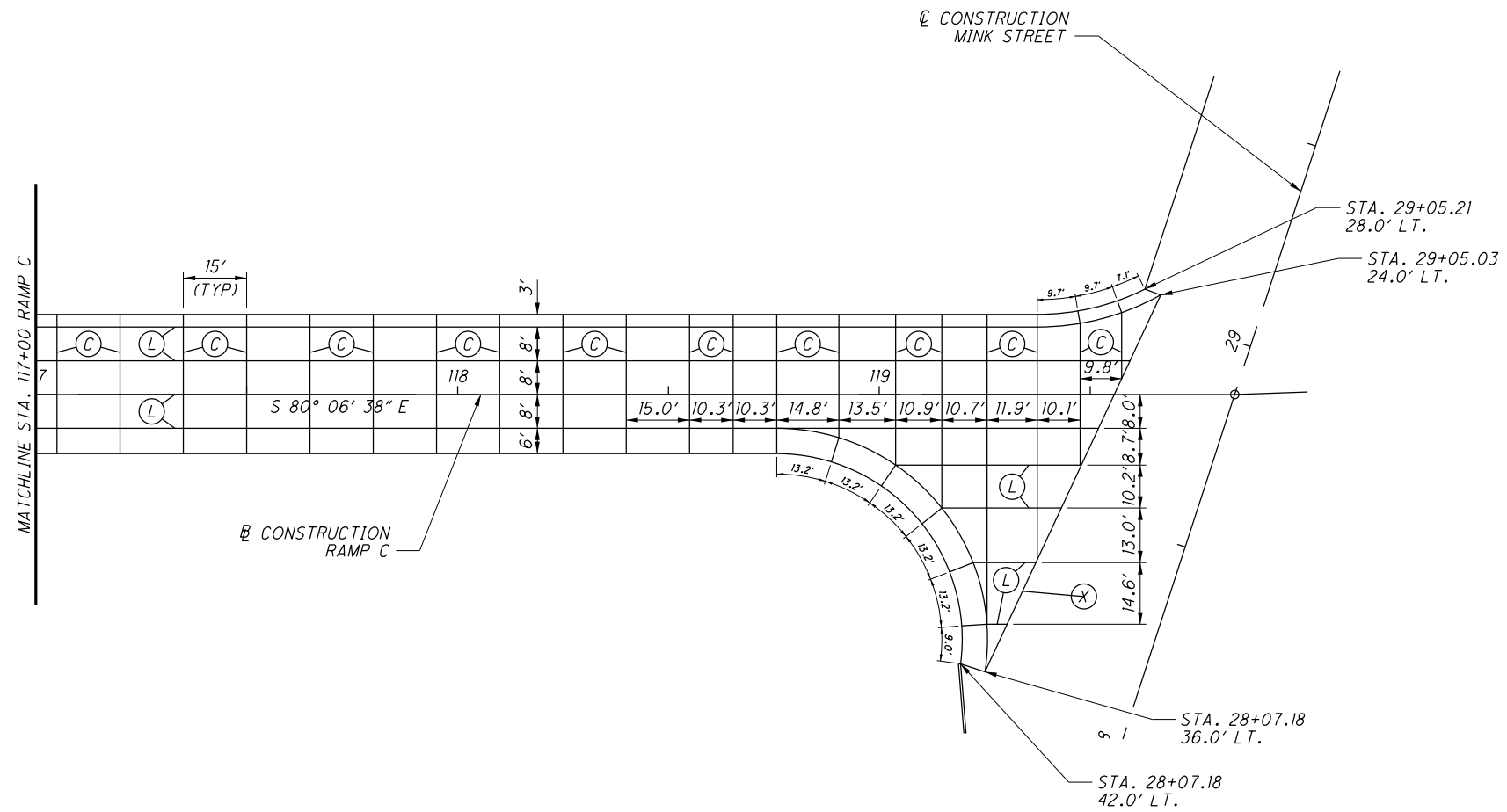
CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP C JOINT DETAILS SHEET
STA. 112+71.67 TO STA. 117+00

LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GM006.dgn Sheet 8/11/2016 12:59:19 PM cyount



LEGEND

- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

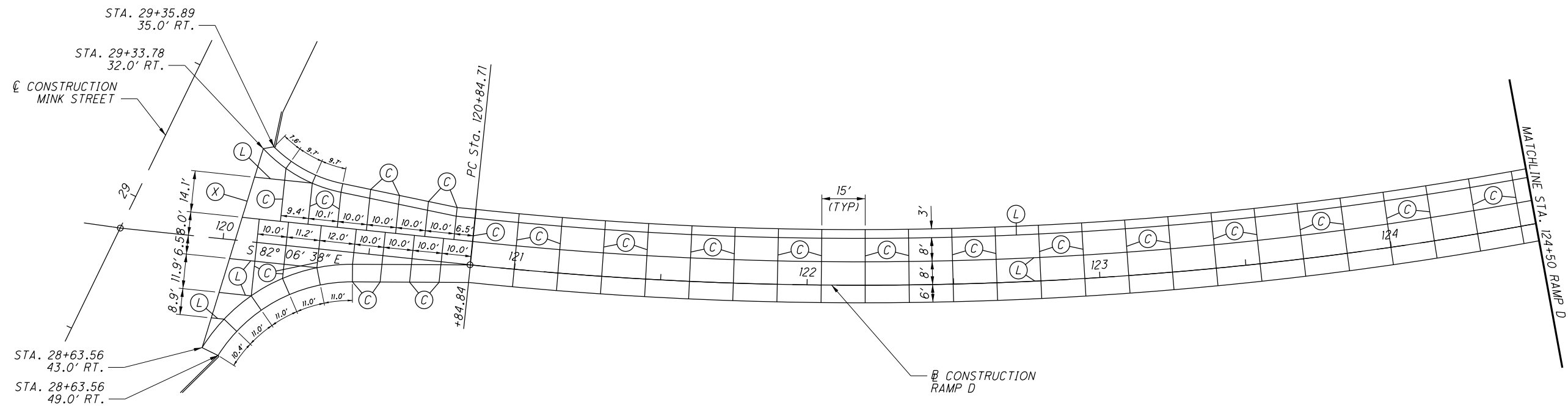
CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP C JOINT DETAILS SHEET
STA. 117+00 TO STA. 119+56.81

LIC-161-1.83

I:\ProjectData\LIC\97879\Design\Roadway\Sheets\97879_GM007.dgn Sheet 8/11/2016 12:59:20 PM ccount



LEGEND

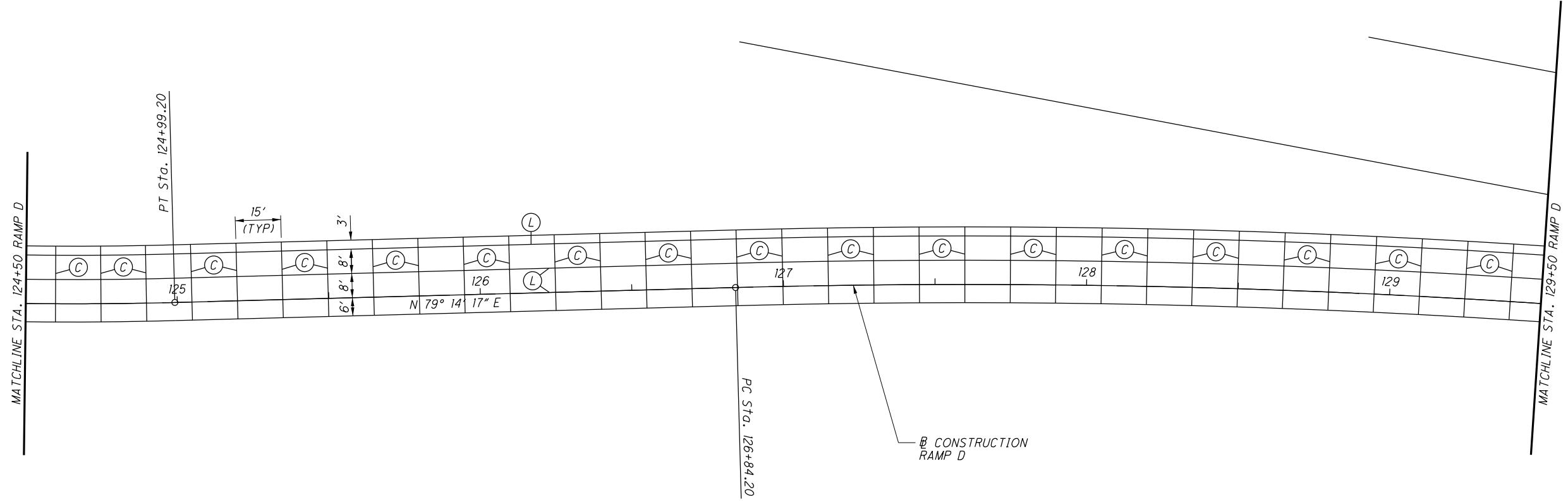
- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP D JOINT DETAILS SHEET
STA. 119+94.63 TO STA. 124+50

LIC-161-1.83



LEGEND

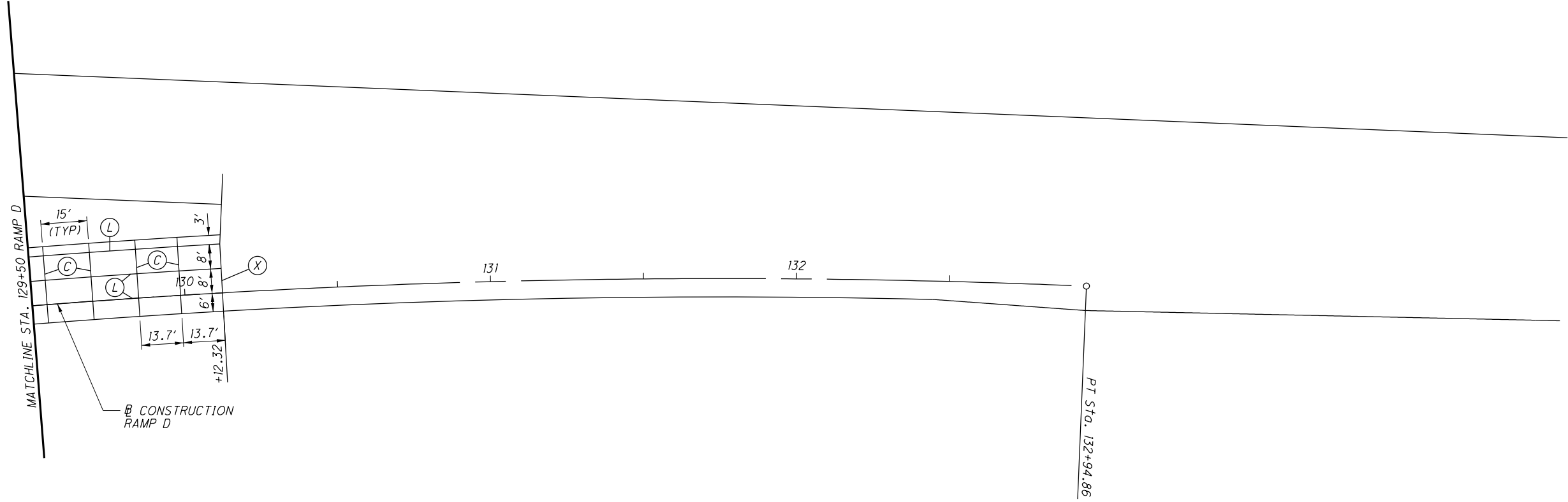
- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

RAMP D JOINT DETAILS SHEET
STA. 124+50 TO STA. 129+50

LIC-161-1.83



LEGEND

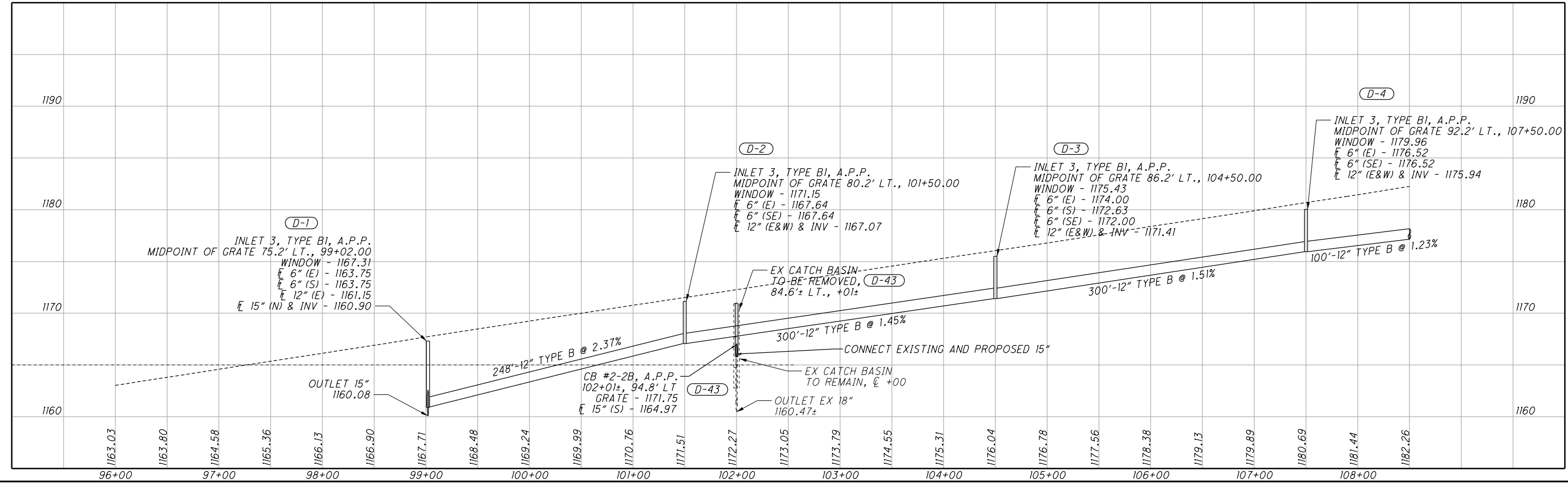
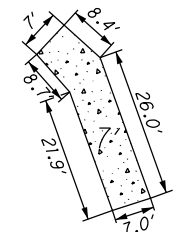
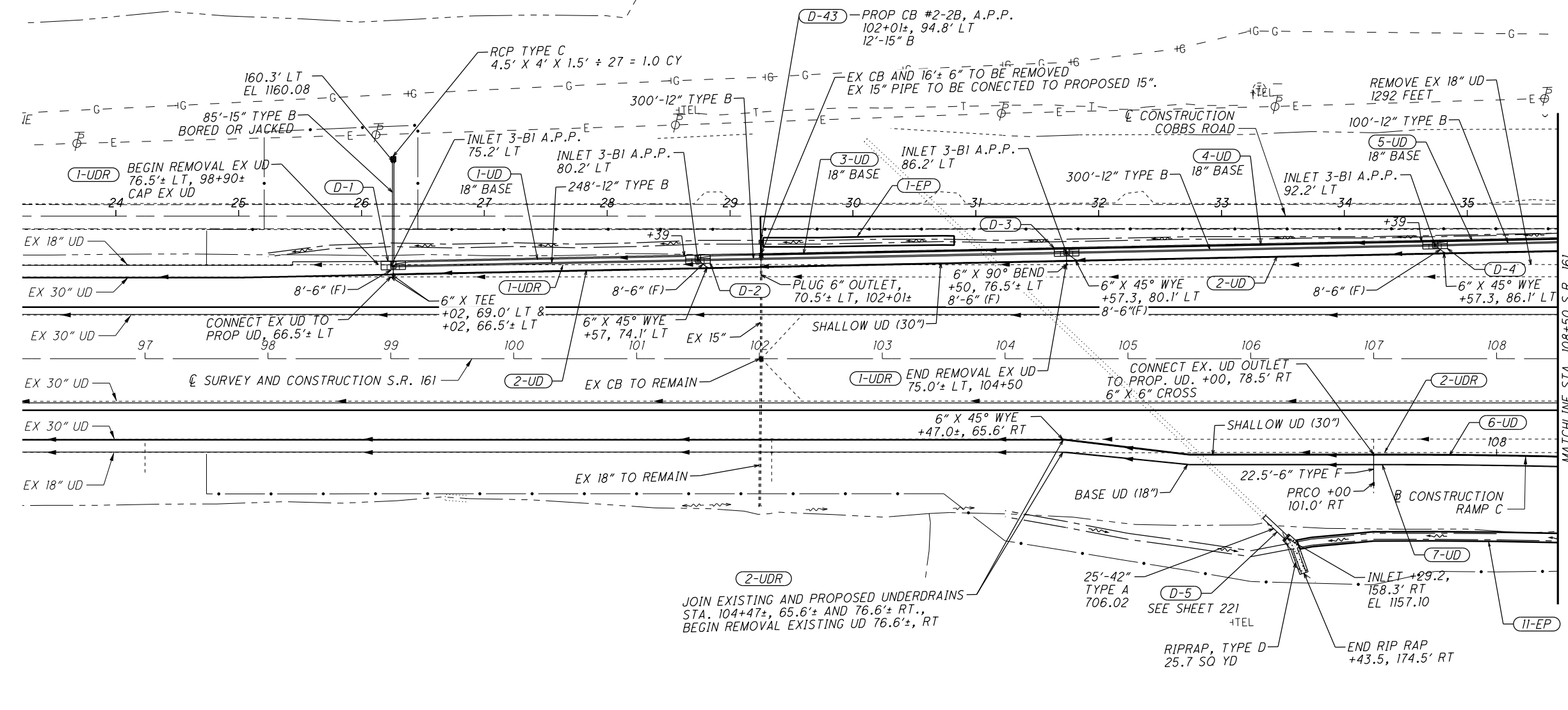
- (C) CONTRACTION JOINT PER BP-2.2
- (L) STANDARD LONGITUDINAL JOINT PER BP-2.1
- (X) EXPANSION JOINT PER BP-2.2 WITHOUT DOWEL BARS AND P.E.J.F. (2" DEEP SAWCUT WITH 705.04 JOINT SEAL)

CALCULATED
CMY
CHECKED
HAG

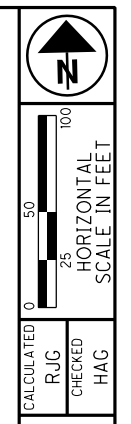
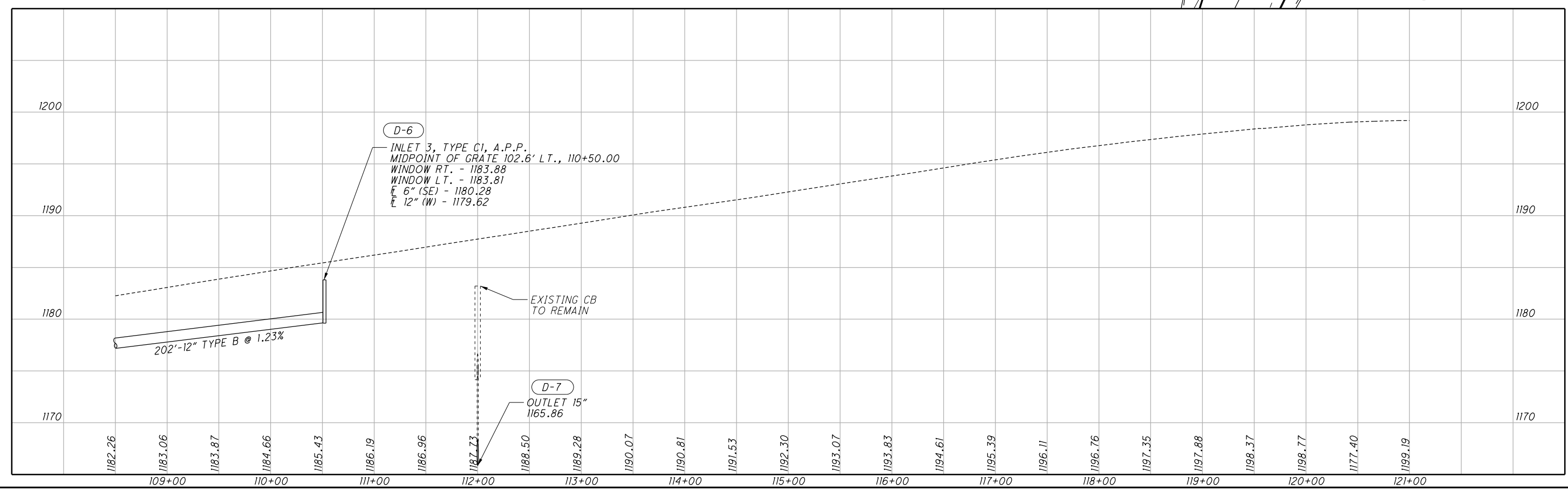
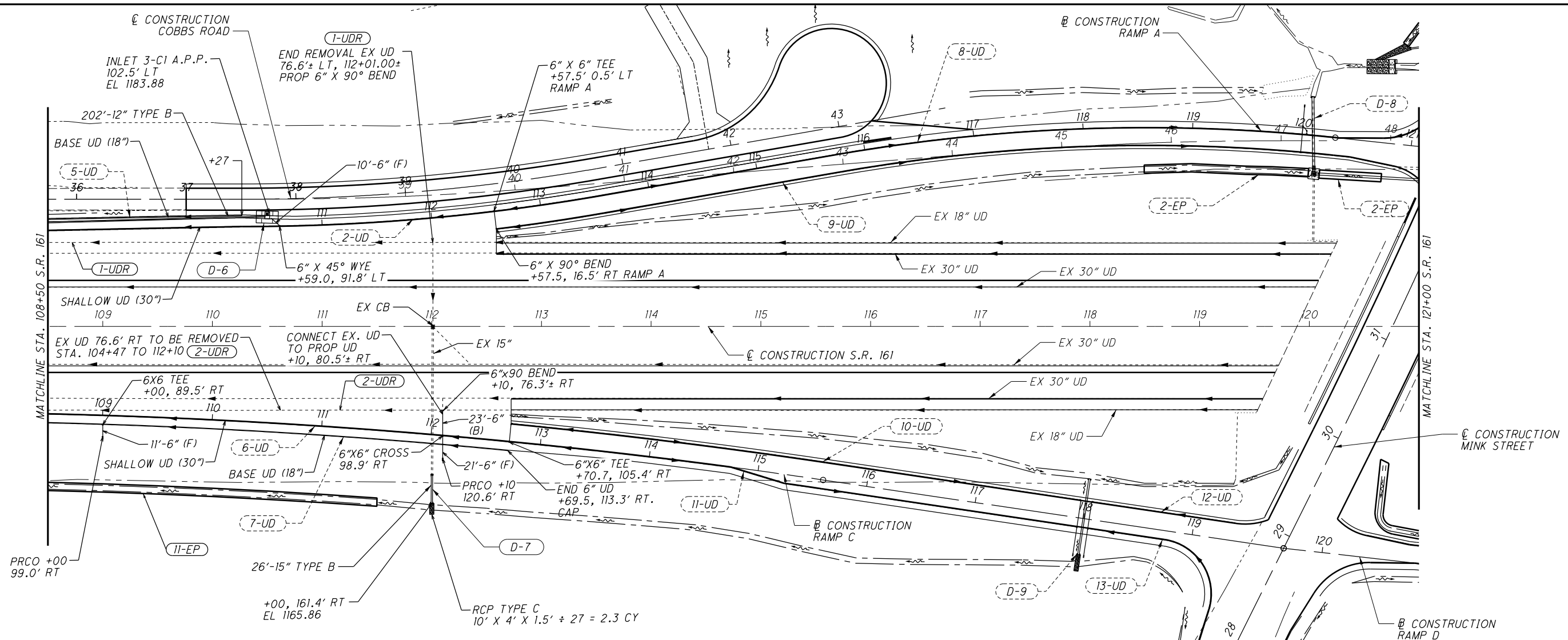
0 20 40
HORIZONTAL
SCALE IN FEET

RAMP D JOINT DETAILS SHEET
STA. 129+50 TO STA. 130+12.32

LIC-161-1.83



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**S.R. 161 DRAINAGE PLAN AND PROFILE
STA. 108+50 TO STA. 121+00**

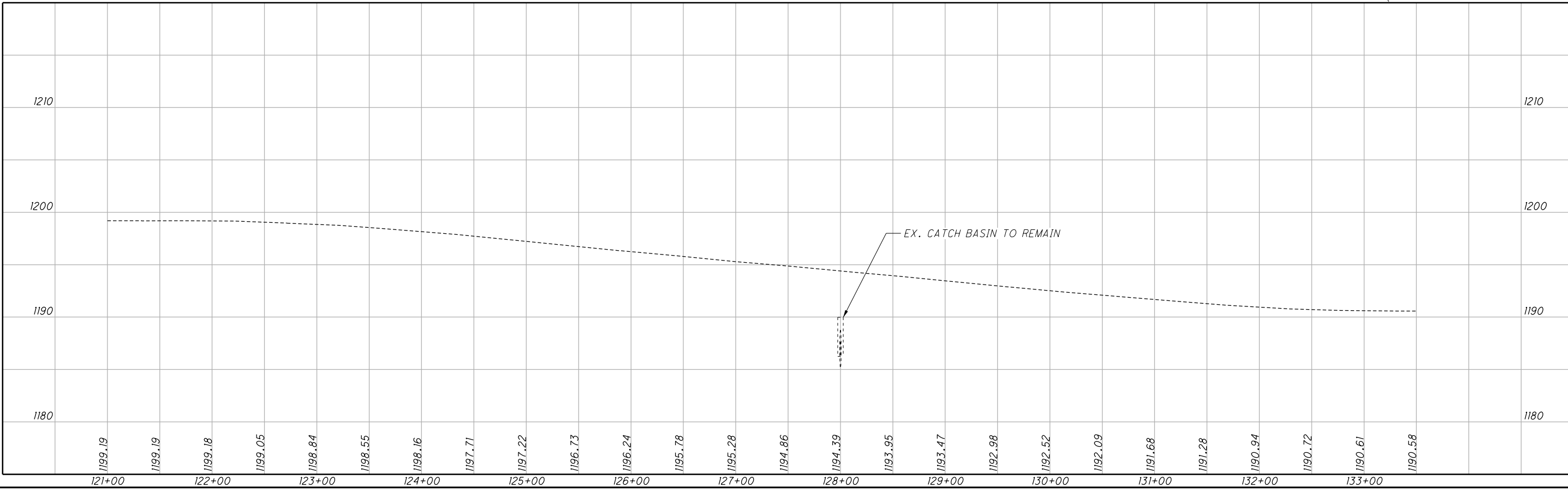
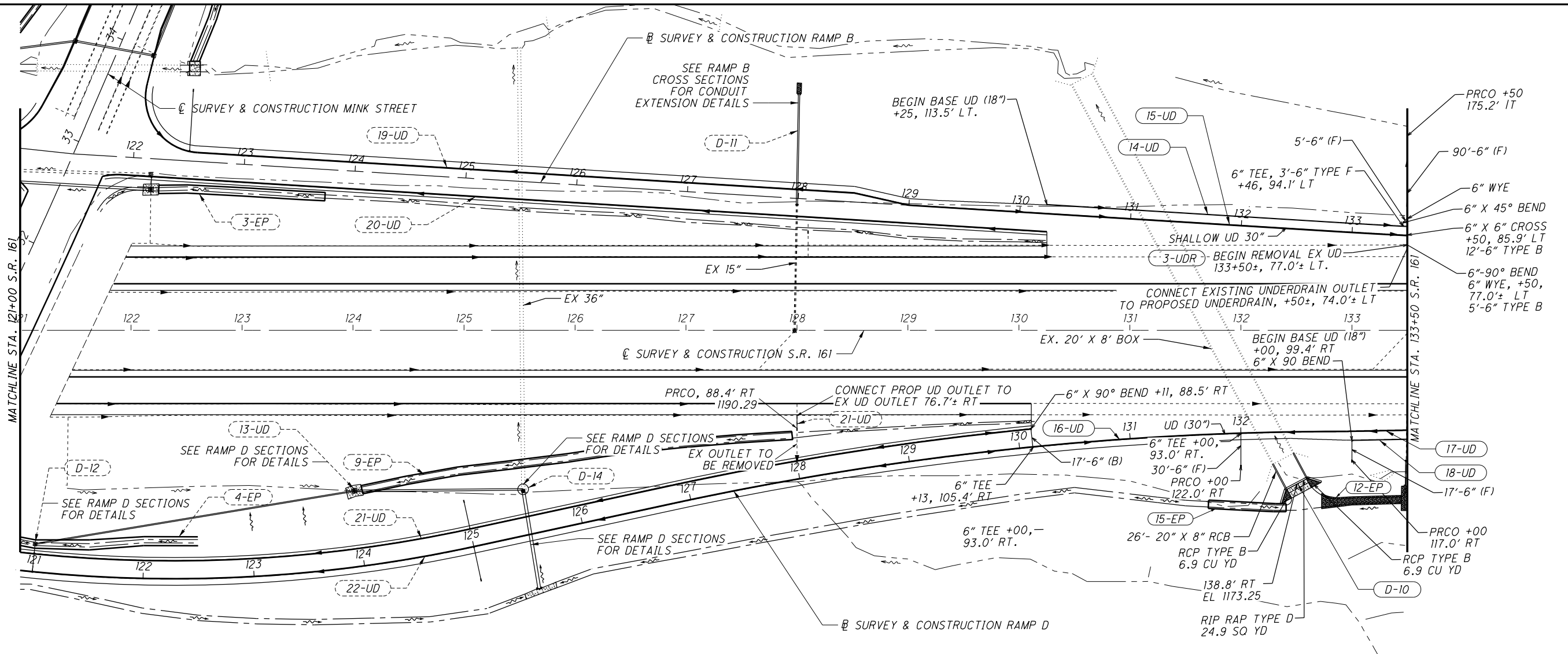


CALCULATED
RJC
CHECKED
HAG

**S.R. 161 DRAINAGE PLAN AND PROFILE
STA. 121+00 TO STA. 133+50**

LIC-161-1.83

208
336



I:\ProjectData\LIC\97879\Design\Drainage\Sheets\97879_DP003.dgn 9 APR 2016

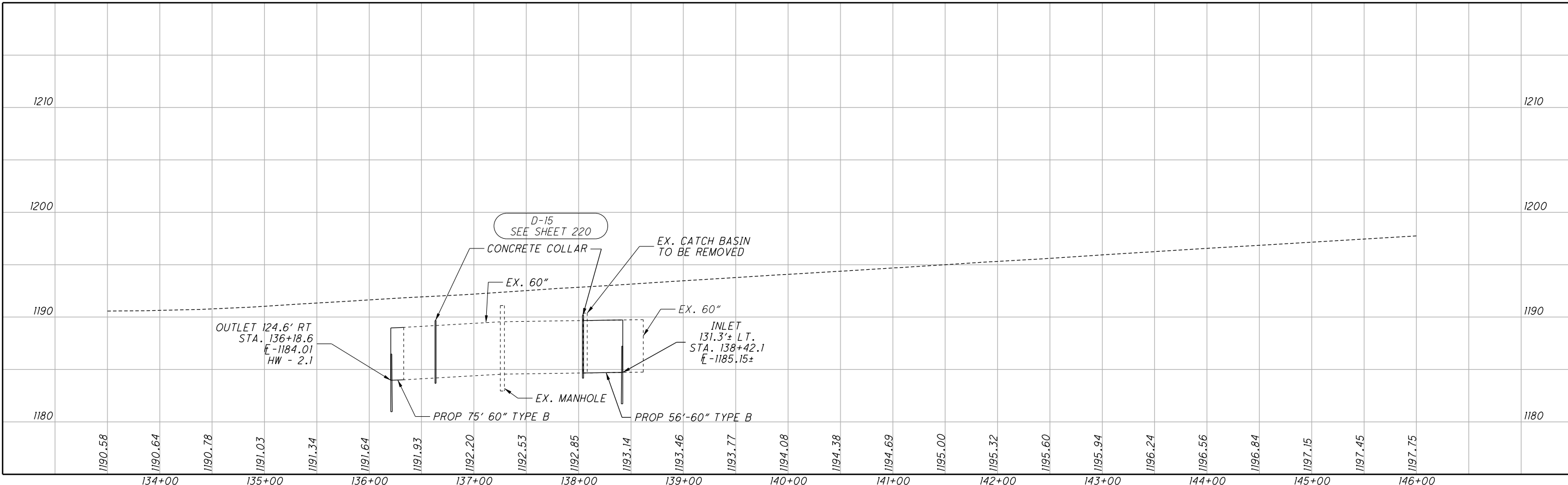
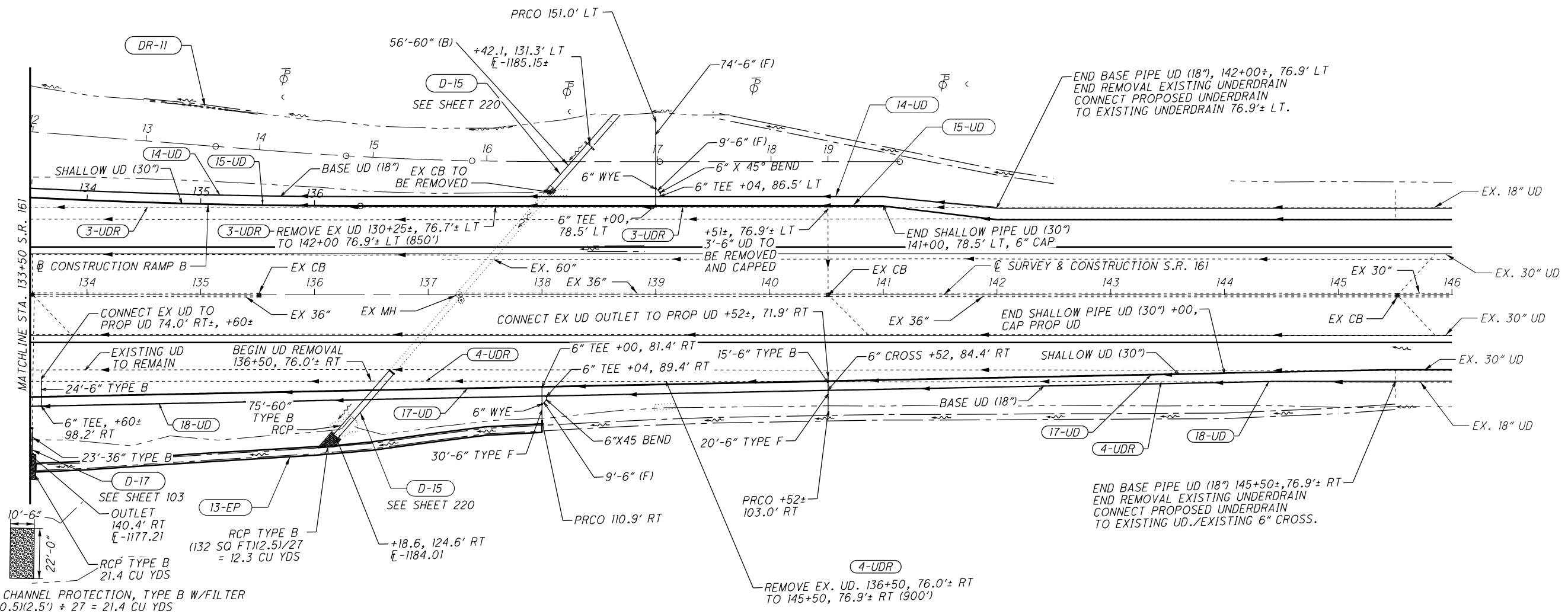


CALCULATED
RJC
CHECKED
HAG

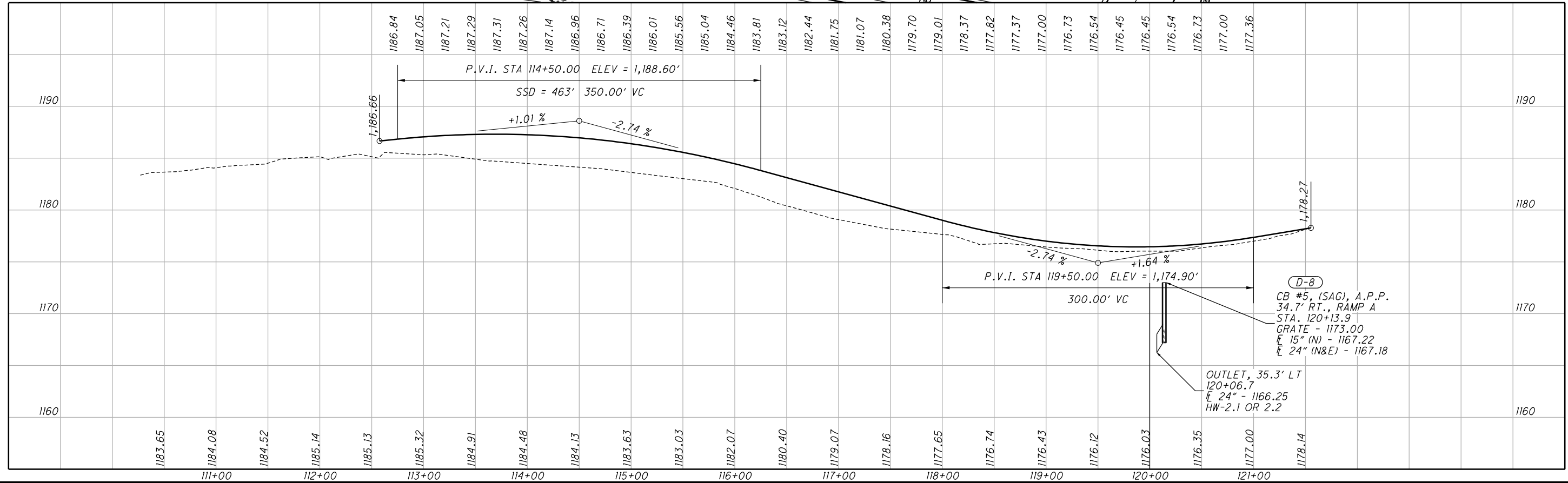
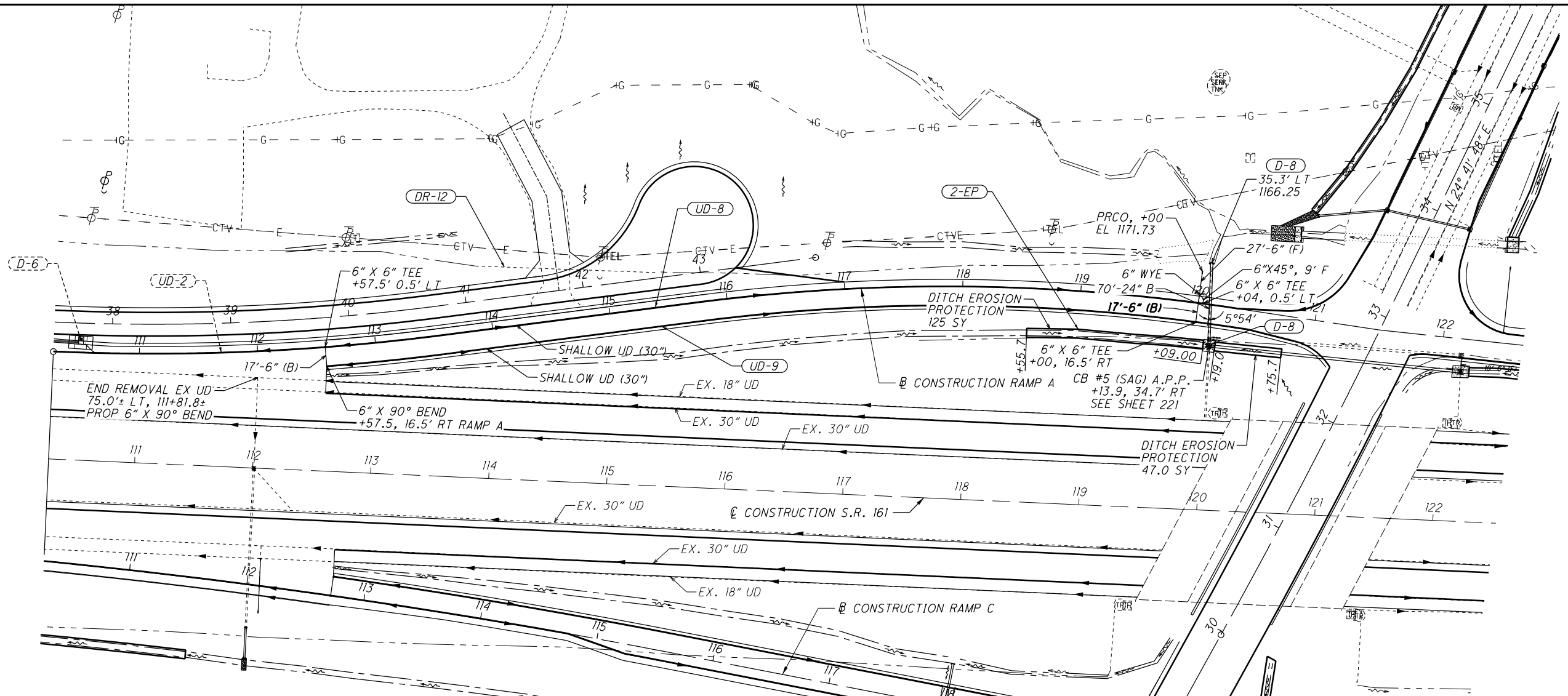
S.R. 161 DRAINAGE PLAN AND PROFILE
STA. 133+50 TO STA. 146+00

LIC-161-1.83

209
336



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RAMP A DRAINAGE PLAN AND PROFILE
STA. 112+57.49 TO STA. 121+21.96

LIC-161-1.83

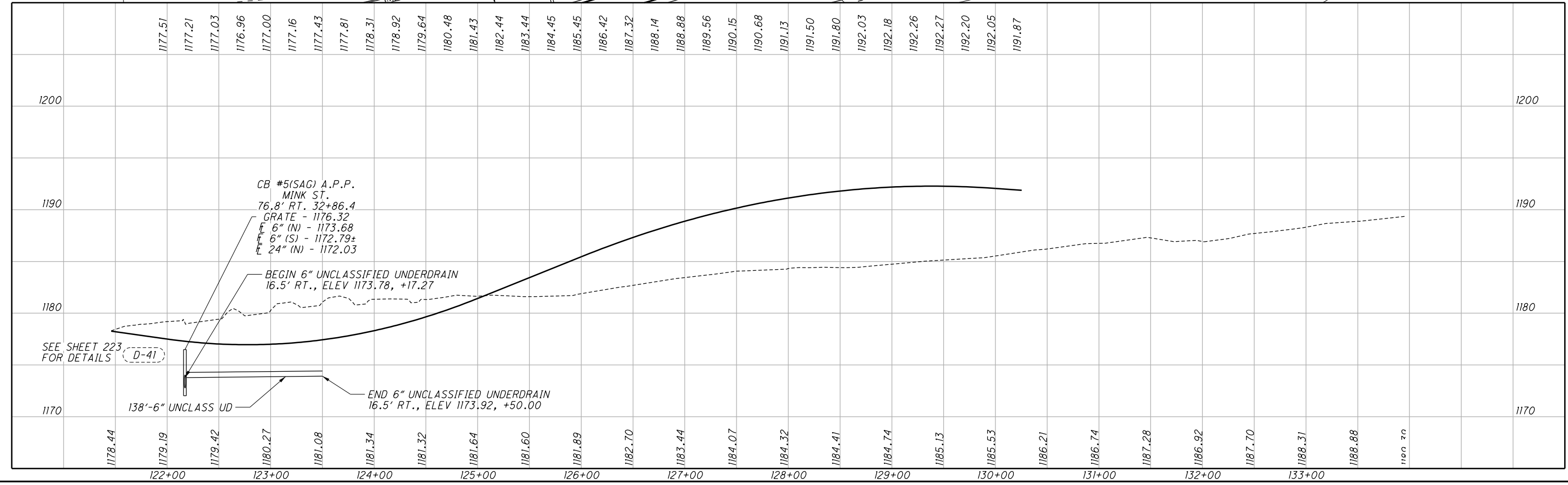
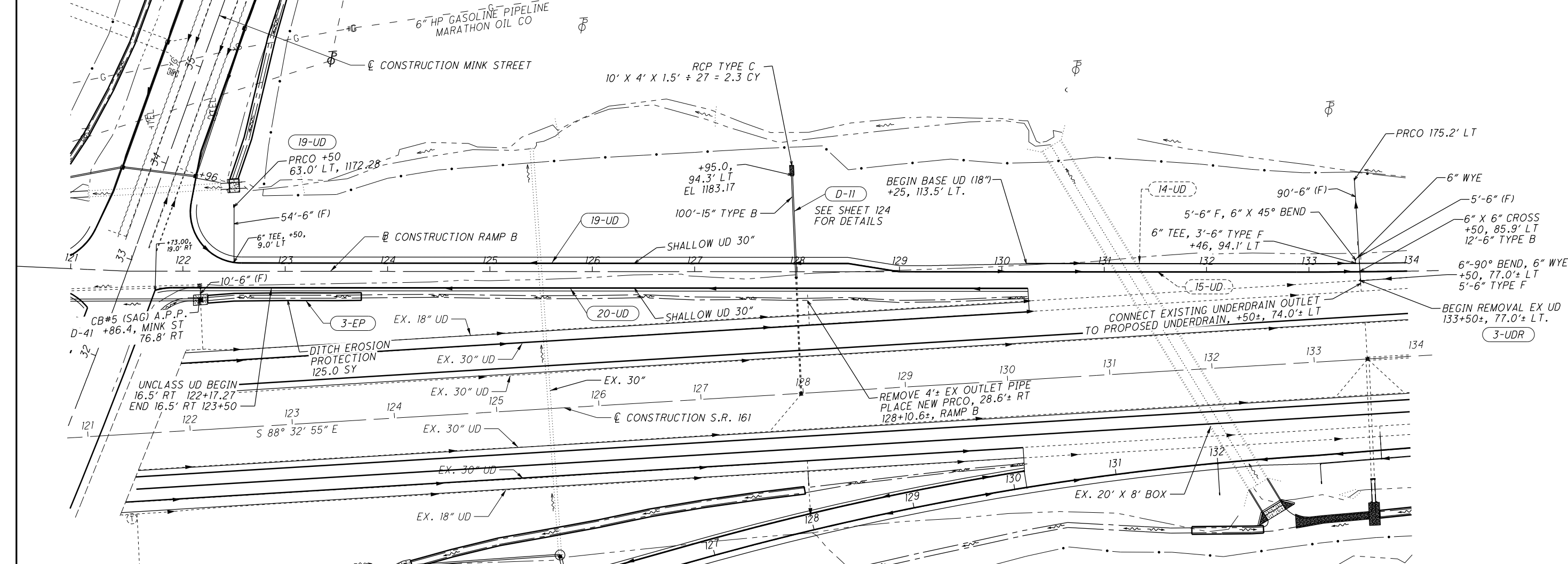
CALCULATED	RJG
CHECKED	HAG



CALCULATED
R/JG
CHECKED
HAG

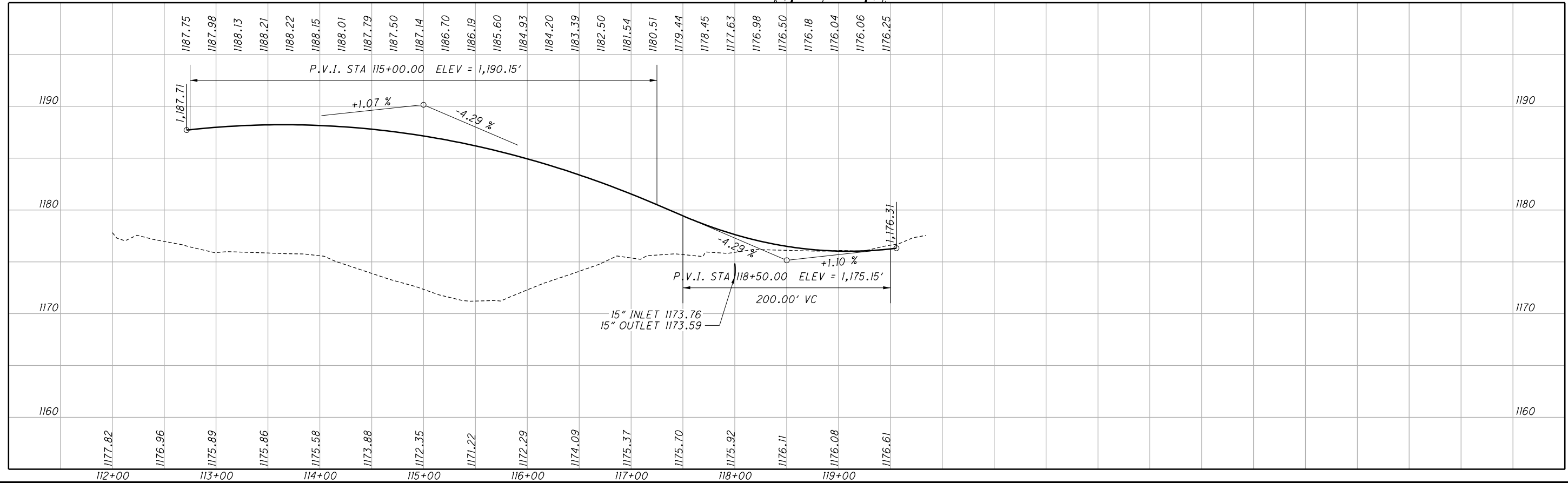
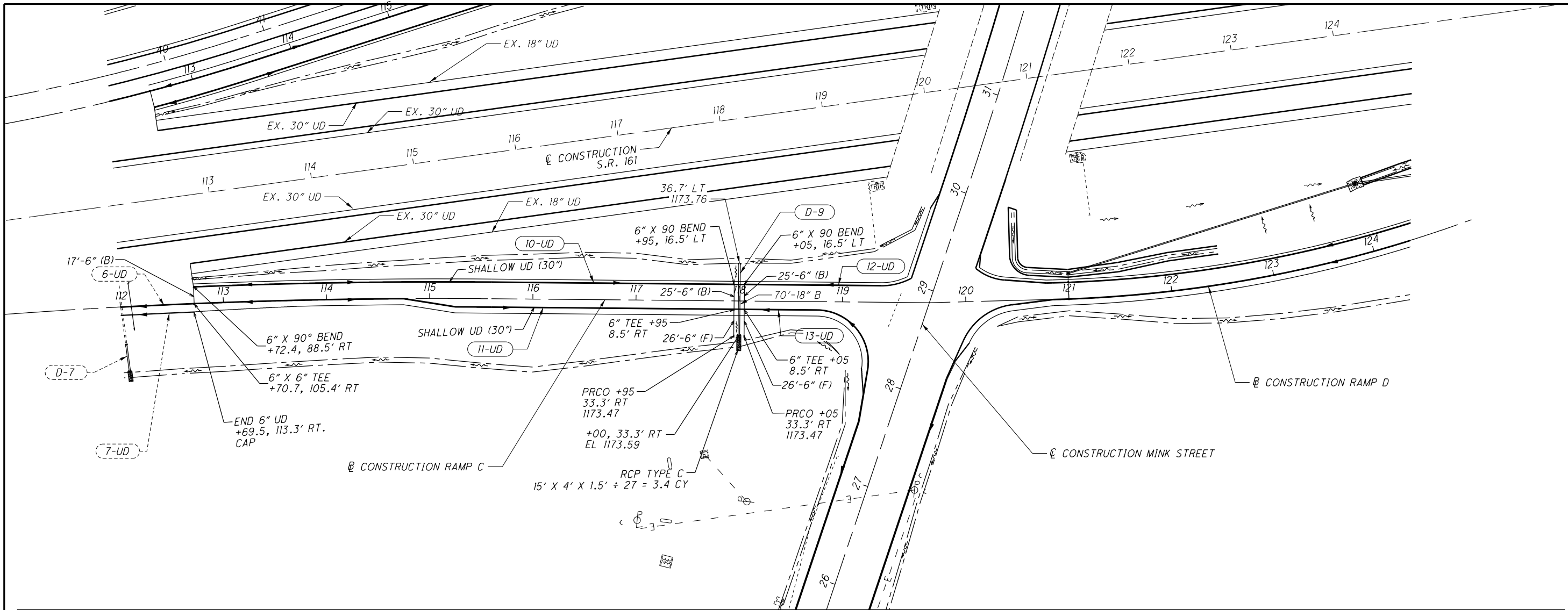
RAMP B DRAINAGE PLAN AND PROFILE
STA. 121+73.23 TO STA. 130+25.43

LIC-161-1.83



I:\Projectdata\LIC\97879\design\Drainage\Sheets\97879_DP006.dgn 9 APR 2016

I:\ProjectData\LIC\97879\Drainage\Sheets\97879_DP007.dgn 9 APR 2016



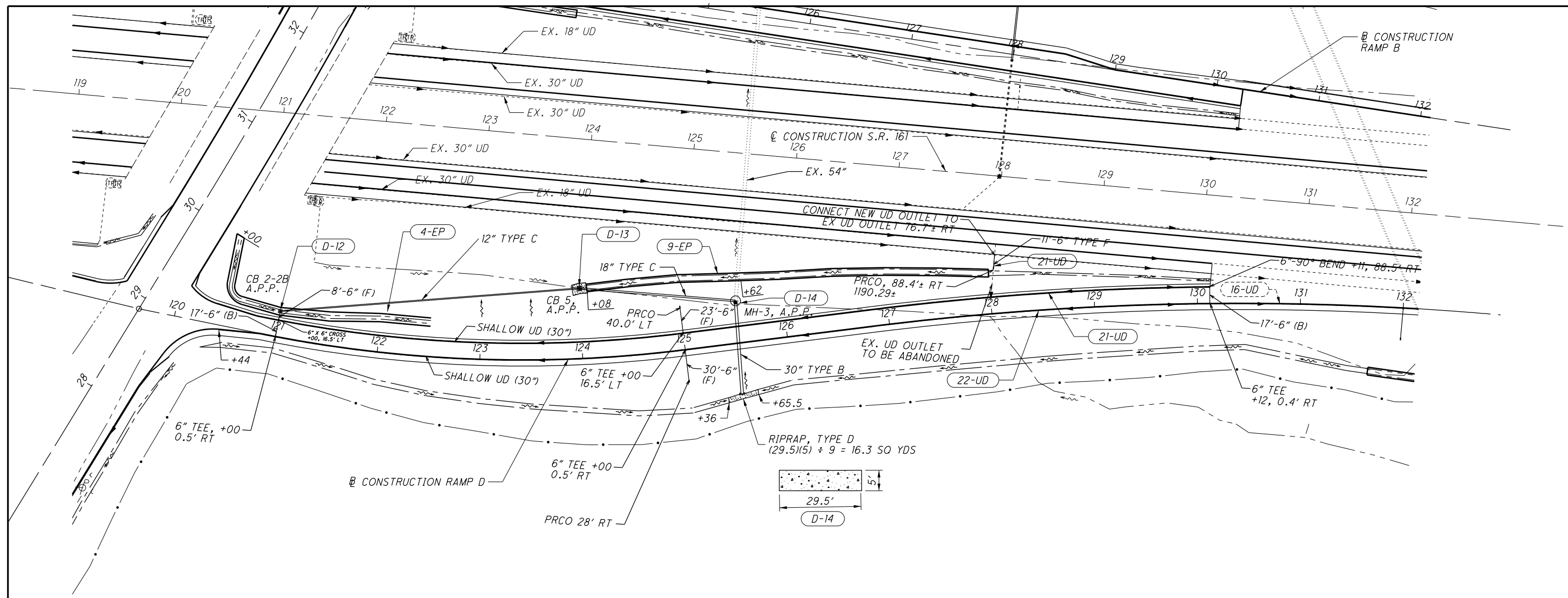
CALCULATED
R/JG
CHECKED
HAG

0 50 100
HORIZONTAL
SCALE IN FEET

RAMP C DRAINAGE PLAN AND PROFILE
STA. 112+71.67 TO STA. 119+56.81

LIC-161-1.83

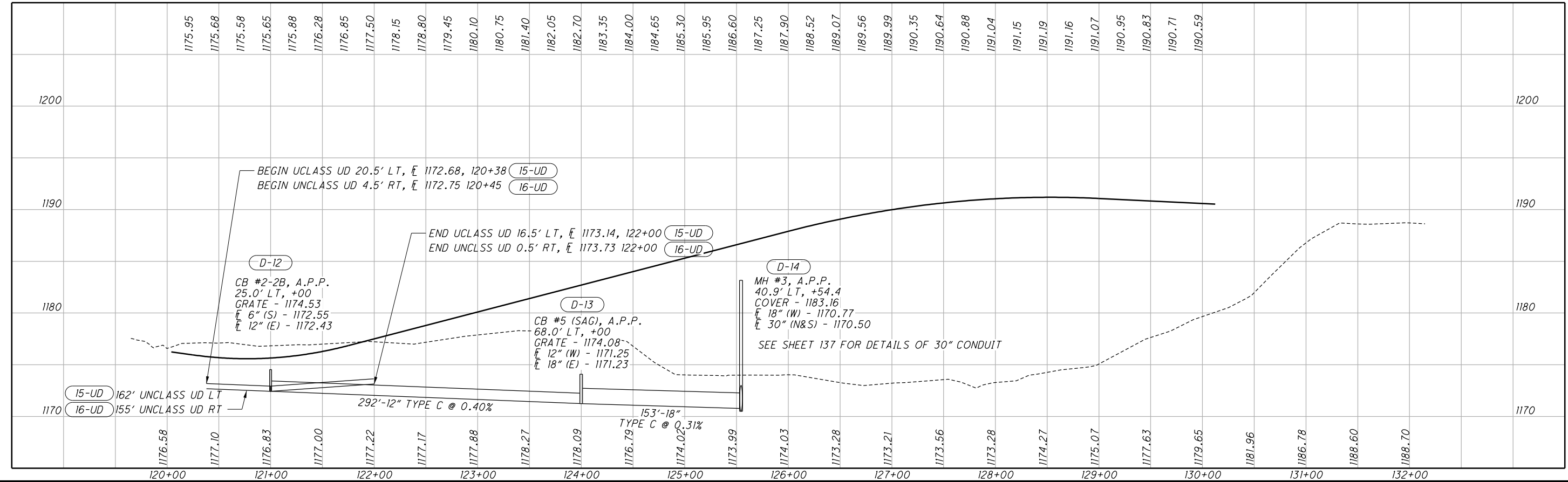
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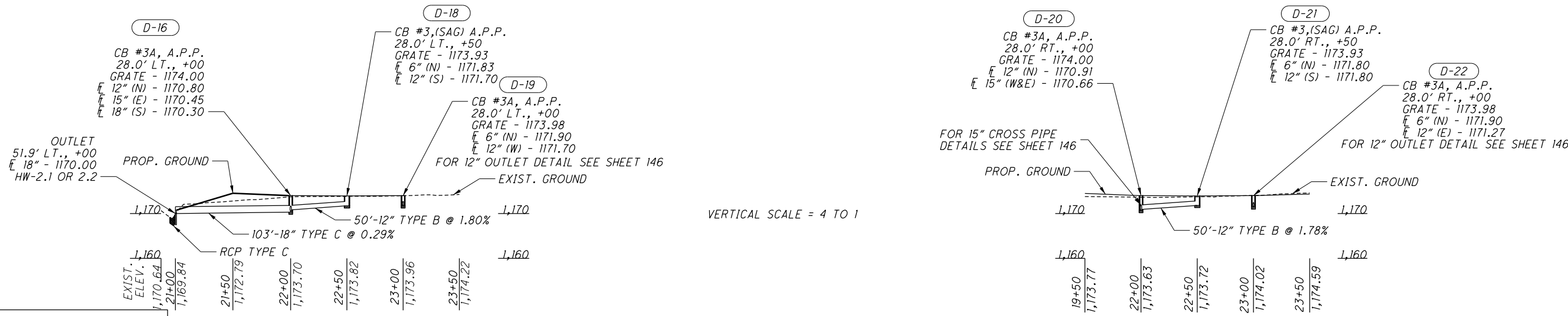
CALCULATED
RJC
CHECKED
HAG

0 50 100
HORIZONTAL
SCALE IN FEET

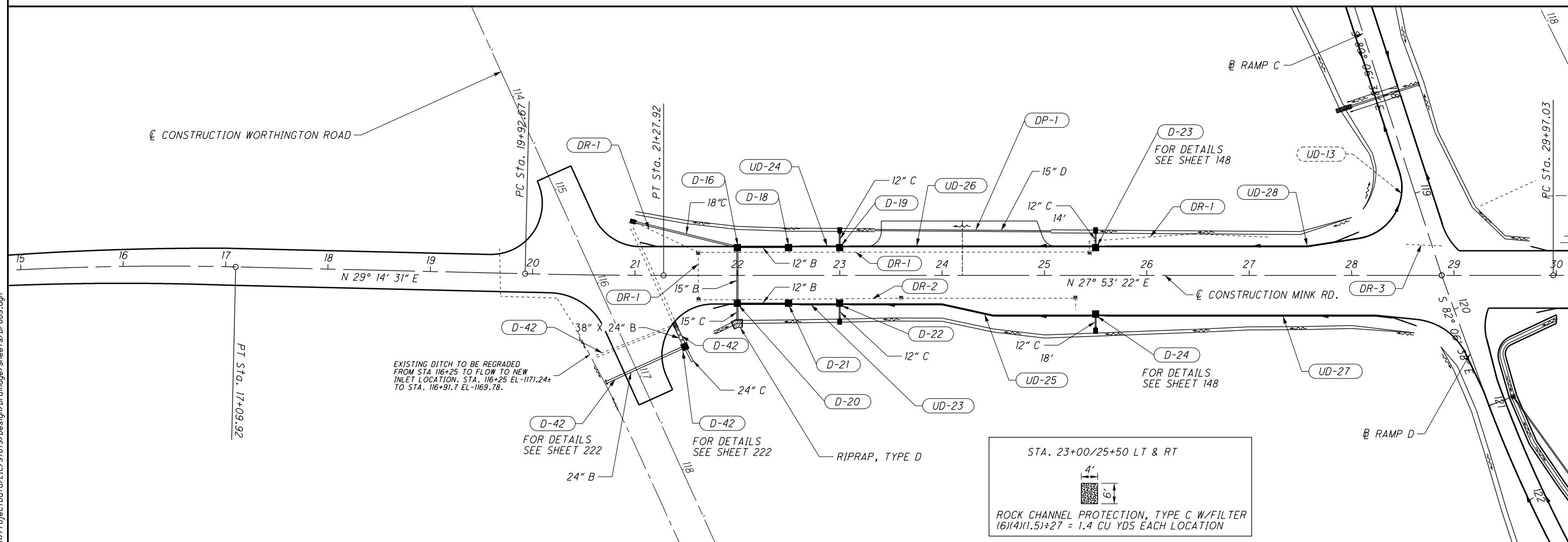
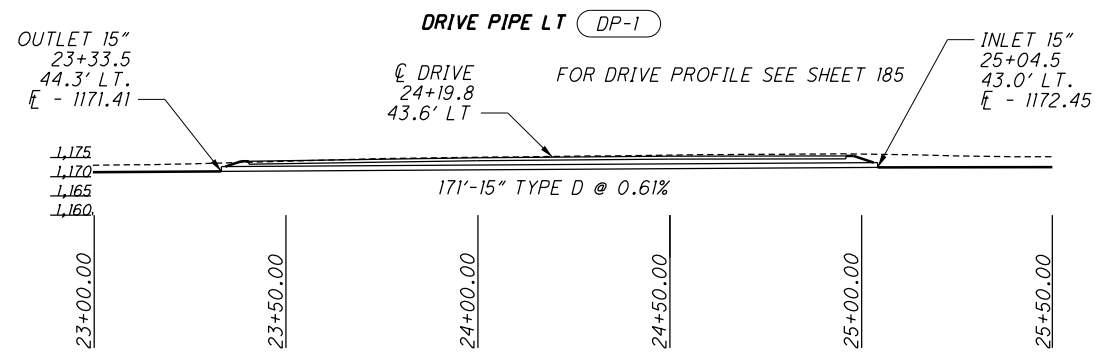
RAMP D DRAINAGE PLAN AND PROFILE
STA. 119+94.63 TO STA. 130+12.32



LIC-161-1.83



STA. 21+00 LT
 4'
 5'
 ROCK CHANNEL PROTECTION, TYPE C W/FILTER
 (5)(4)(1.5)+27 = 1.1 CU YDS



STA. 23+00/25+50 LT & RT
 4'
 6'
 ROCK CHANNEL PROTECTION, TYPE C W/FILTER
 (6)(4)(1.5)+27 = 1.4 CU YDS EACH LOCATION

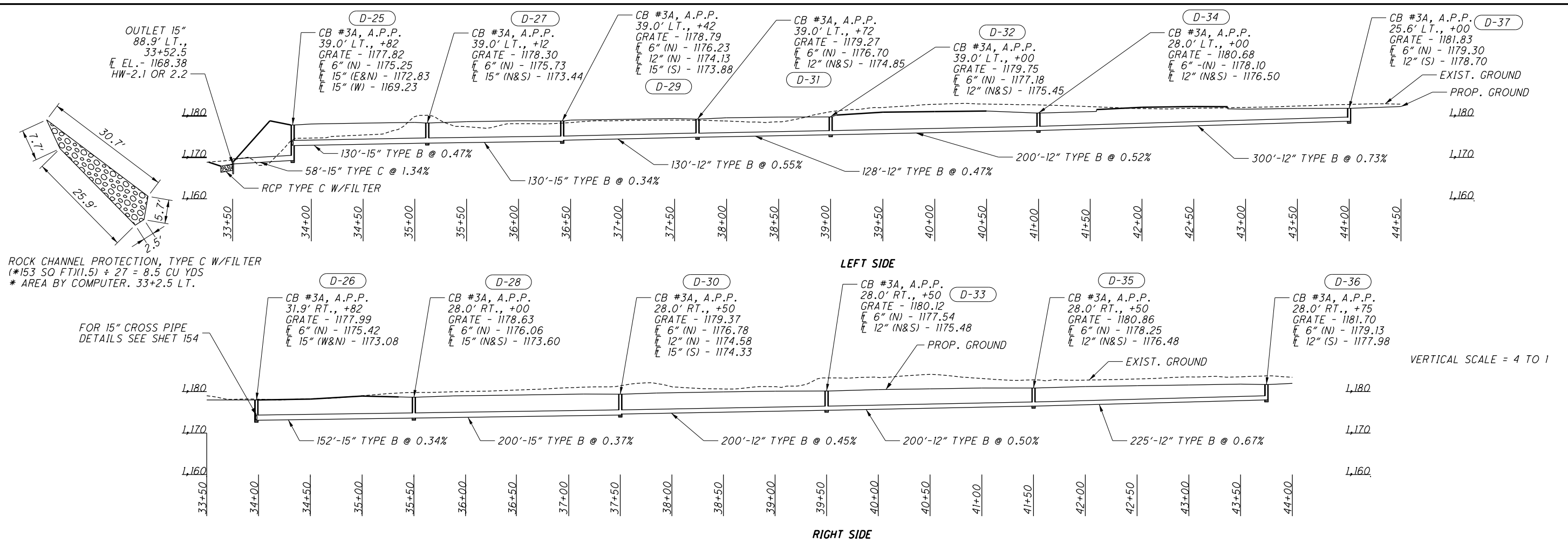
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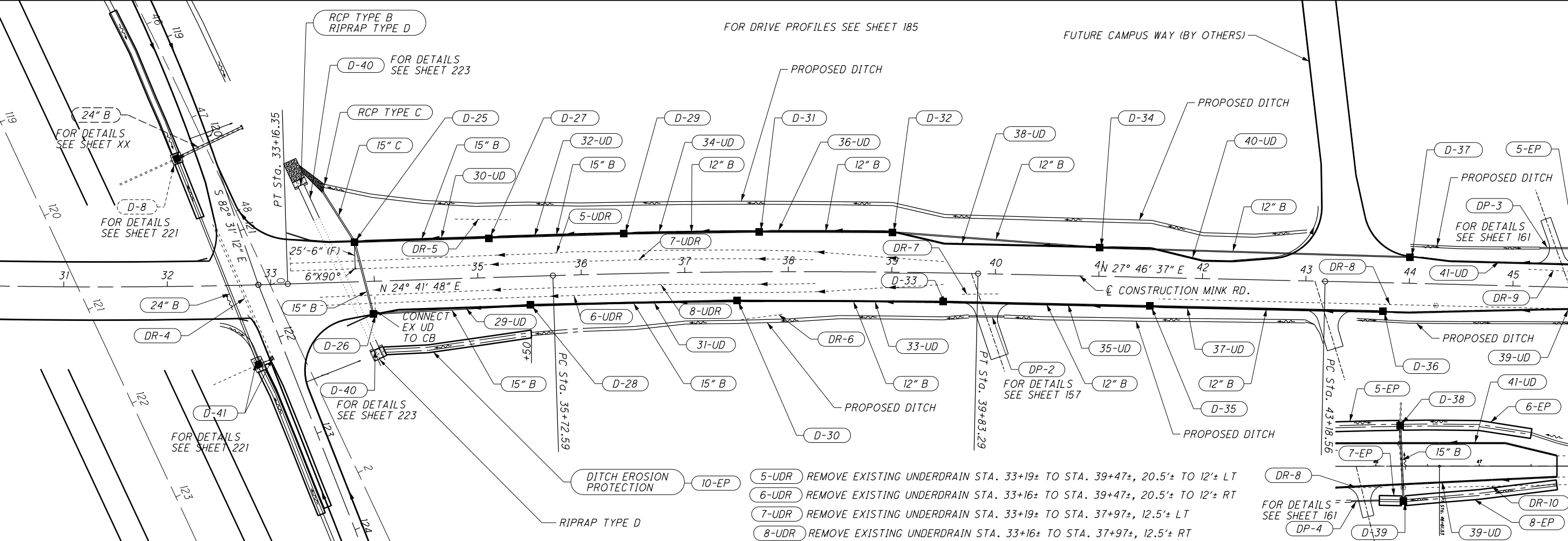
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MINK ROAD DRAINAGE PROFILE

LIC-161-1.83



ROCK CHANNEL PROTECTION, TYPE C W/FILTER
 (*153 SQ FT)(1.5) ÷ 27 = 8.5 CU YDS
 * AREA BY COMPUTER. 33+2.5 LT.



- 5-UDR REMOVE EXISTING UNDERDRAIN STA. 33+19± TO STA. 39+47±, 20.5'± TO 12'± LT
- 6-UDR REMOVE EXISTING UNDERDRAIN STA. 33+16± TO STA. 39+47±, 20.5'± TO 12'± RT
- 7-UDR REMOVE EXISTING UNDERDRAIN STA. 33+19± TO STA. 37+97±, 12.5'± LT
- 8-UDR REMOVE EXISTING UNDERDRAIN STA. 33+16± TO STA. 37+97±, 12.5'± RT

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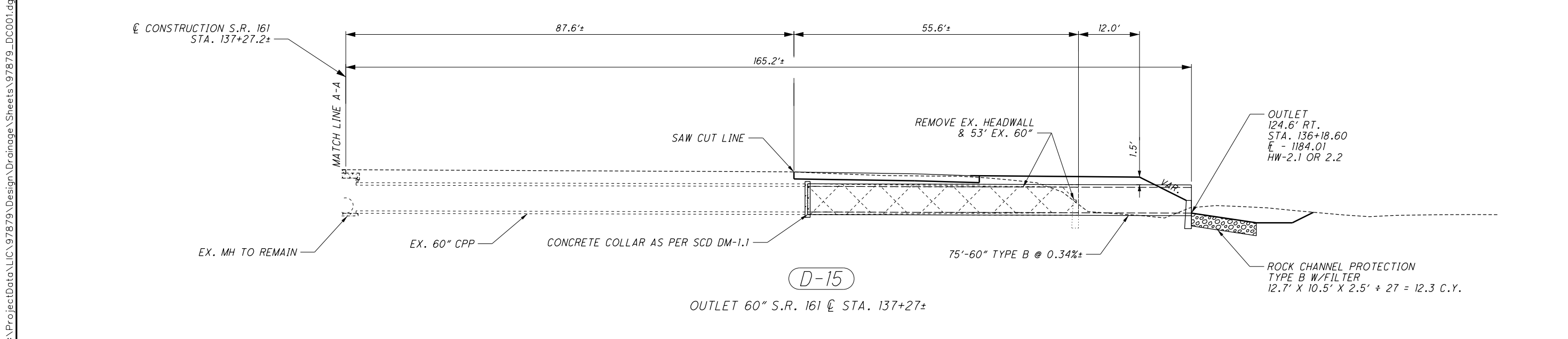
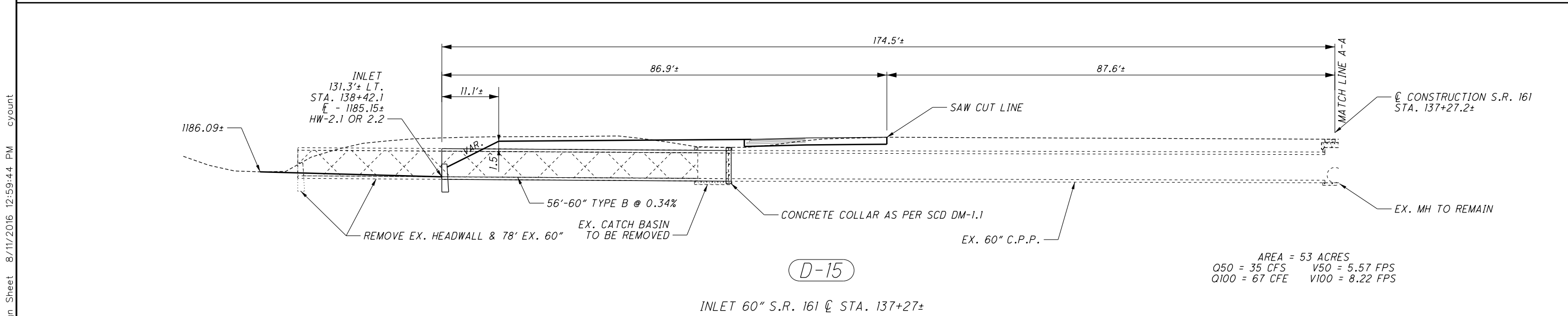
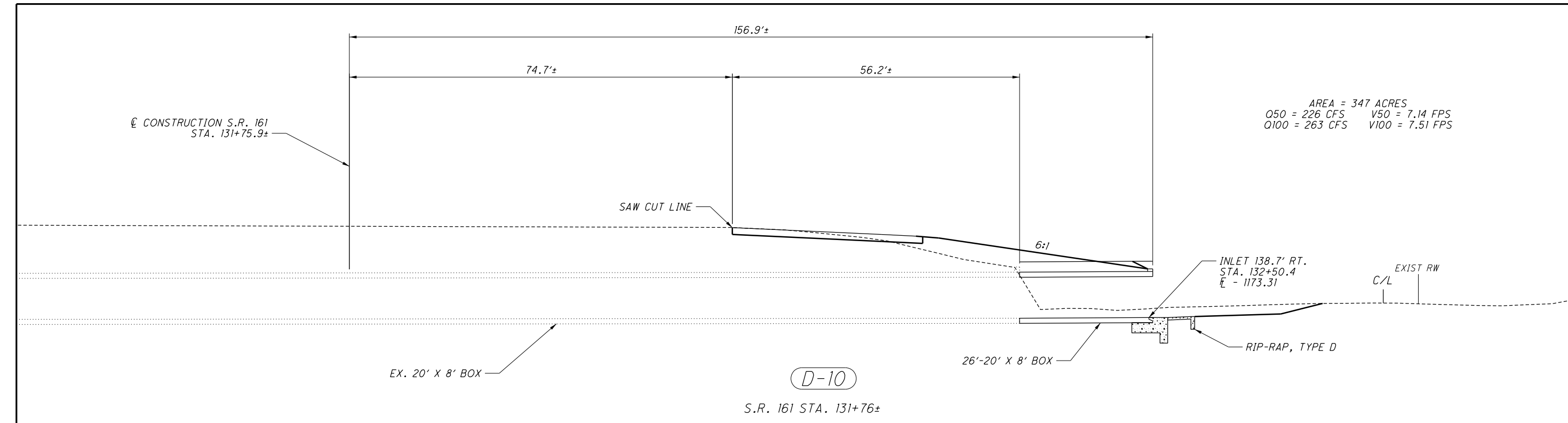
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MARK	SEE SHEET	STATION TO STATION & CONSTRUCTION	SIDE	202				601				602				611																										
				HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CATCH BASIN REMOVED	RIPRAP, TYPE D	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FILTER	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FILTER	CONCRETE MASONRY	12" CONDUIT, TYPE B	12" CONDUIT, TYPE C	12" CONDUIT, TYPE D	15" CONDUIT, TYPE B	CONDUIT, BORED OR JACKED: 15" TYPE B	15" CONDUIT, TYPE C	15" CONDUIT, TYPE D	18" CONDUIT, TYPE B	18" CONDUIT, TYPE C	24" CONDUIT, TYPE B	24" CONDUIT, TYPE C	30" CONDUIT, TYPE B	36" CONDUIT, TYPE B	24" X 38" CONDUIT, TYPE B, 706.04	42" CONDUIT, TYPE A 706.02	60" CONDUIT, TYPE B	72" CONDUIT, TYPE A, 706.02	CATCH BASIN, NO. 3, AS PER PLAN	CATCH BASIN, NO. 3A, AS PER PLAN	CATCH BASIN, NO. 5, AS PER PLAN	CATCH BASIN, NO. 2-2B, AS PER PLAN	CATCH BASIN, NO. 2-3, AS PER PLAN	CATCH BASIN, NO. 2-4, AS PER PLAN	INLET NO. 3 FOR SINGLE SLOPE BARRIER, TYPE BI, AS PER PLAN	INLET NO. 3 FOR SINGLE SLOPE BARRIER, TYPE CI, AS PER PLAN	MANHOLE, NO. 3, AS PER PLAN					
				EACH	FOOT	FOOT	EACH	S.Y.	C.Y.	C.Y.	C.Y.	FOOT	FOOT	FOOT	FT	FT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	
		S.R. 161																																								
D-1	206	99+02	LT											85																												
D-2	206	99+02 TO 101+50	LT																																							
D-3	206	101+50 TO 104+50	LT																																							
D-4	206	104+50 TO 107+50	LT																																							
D-5	206	104+75±	CL/RT	1			25.7				1.1												25																			
D-6	206-207	107+50 TO 110+50	LT																																							
D-7	207	112+00	RT	1							2.3	0.27		26																								1				
D-10		131+75±	RT	20' X 8' BOX CULVERT, SEE SHEETS 208, 225-227 FOR DETAILS																																						
D-17	103	133+50	RT	1		2			21.4	0.76												23																				
D-15	220	137+27±	LT/RT	2		131	1		12.3	3.86															131																	
D-43	206	102+01	LT		16		1							12																												
DR-11	209	134+84± TO 135+24±	LT	1	40																																					
RAMP A																																										
D-8	210	120+10.2	LT/RT	1	79		1			0.46																																
DR-12	210	41+12± TO 42+64±(COBBS RD)	LT		153																																					
RAMP B																																										
D-11	211	128+00±	LT/RT	1					2.3	0.27			100																													
RAMP C																																										
D-9	212	118+00	LT/RT						3.4	0.66																																
RAMP D																																										
D-12	213	121+00 TO 124+00	LT													292																										
D-13	213	124+00 TO 125+54.4	LT																																							
D-14	213	125+54.4 TO 125+50	LT/RT	1		3		16.3		0.79																																
TOTALS THIS SHEET				9.0	288	136.0	3.0	42.0	33.7	9.0	8.4	1,150.0	292.0		138	85																										
TOTALS FROM SHEET 217				9.0	2,182.0		13.0	31.5	11.1	12.4	8.6	1,354.0	61.0	27.0	944																											
TOTALS CARRIED TO GENERAL SUMMARY				18.0	2,470.0	136.0	16.0	73.5	49.3	21.4	17.0	2,504.0	353.0	27.0	1082	85																										

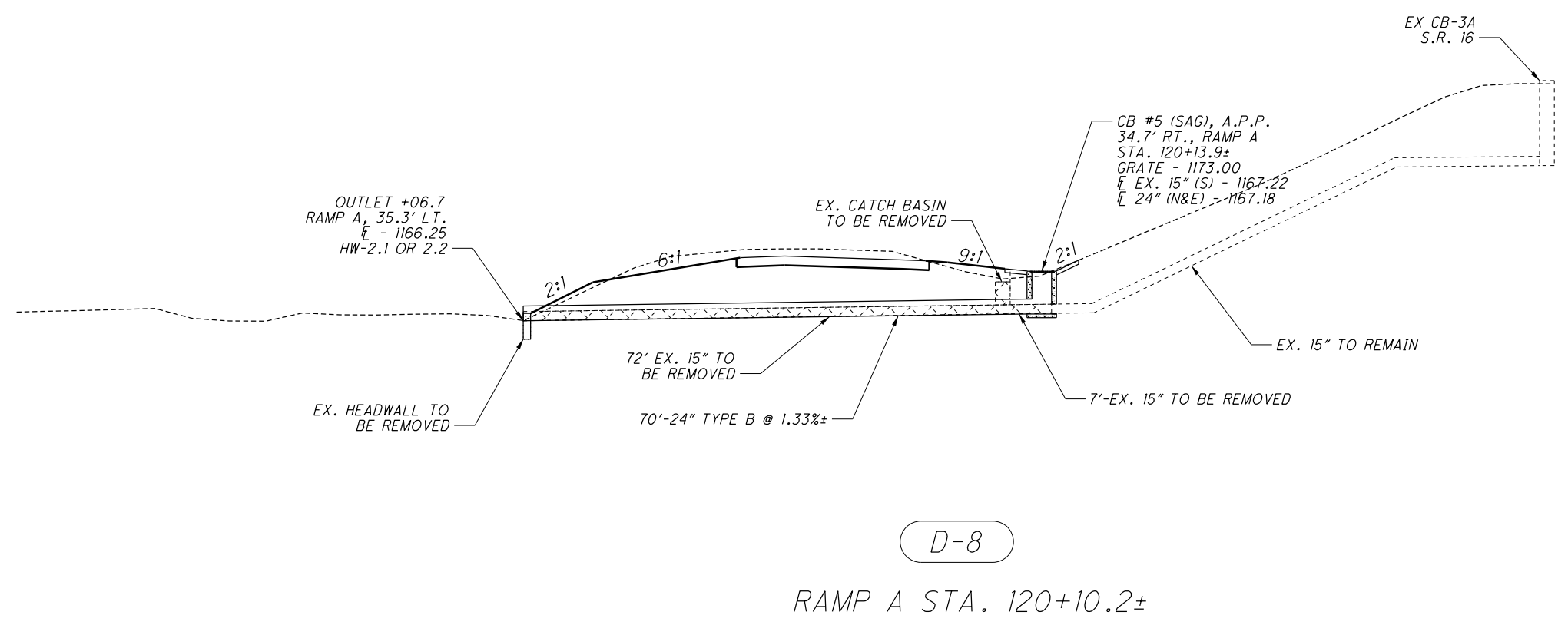
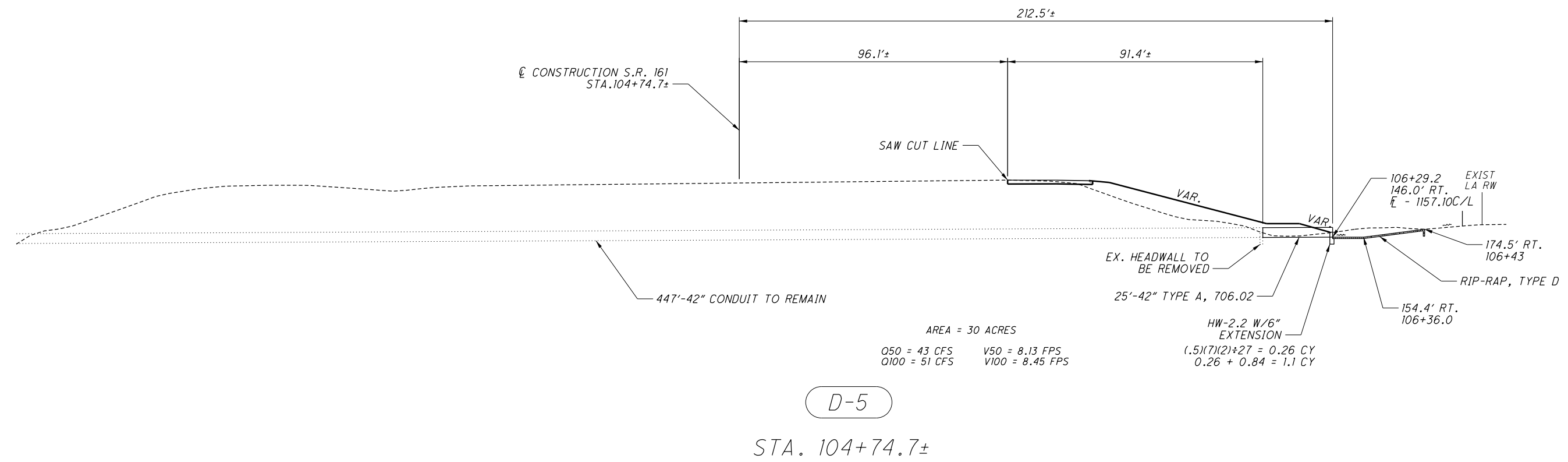
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DRAINAGE SUB - SUMMARY

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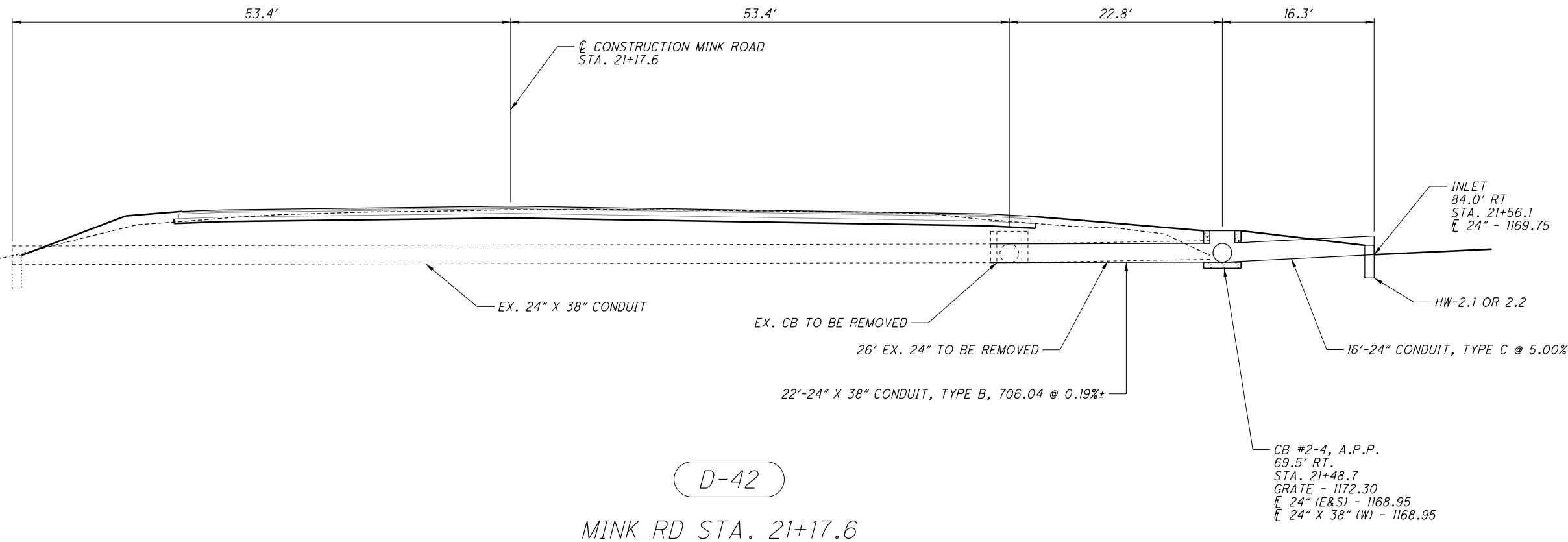


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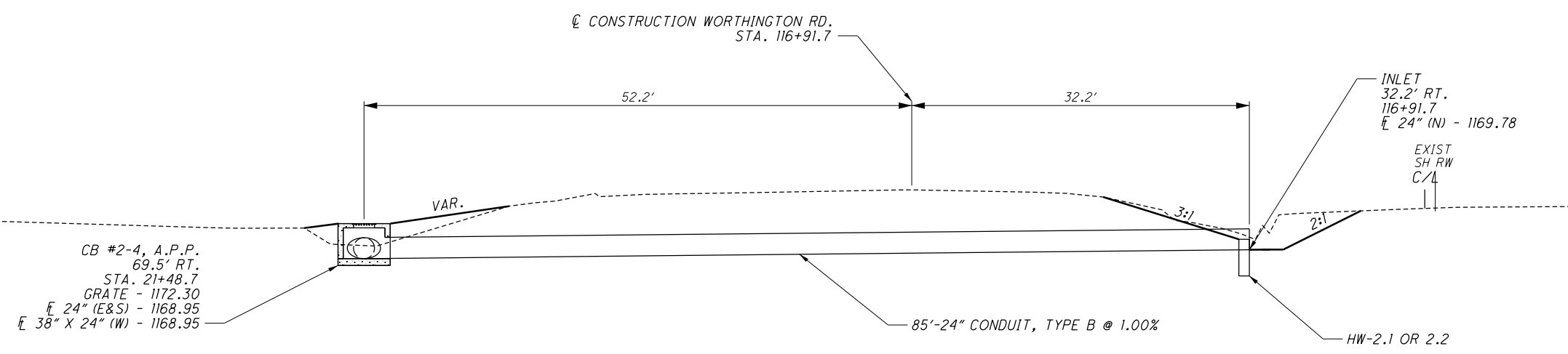
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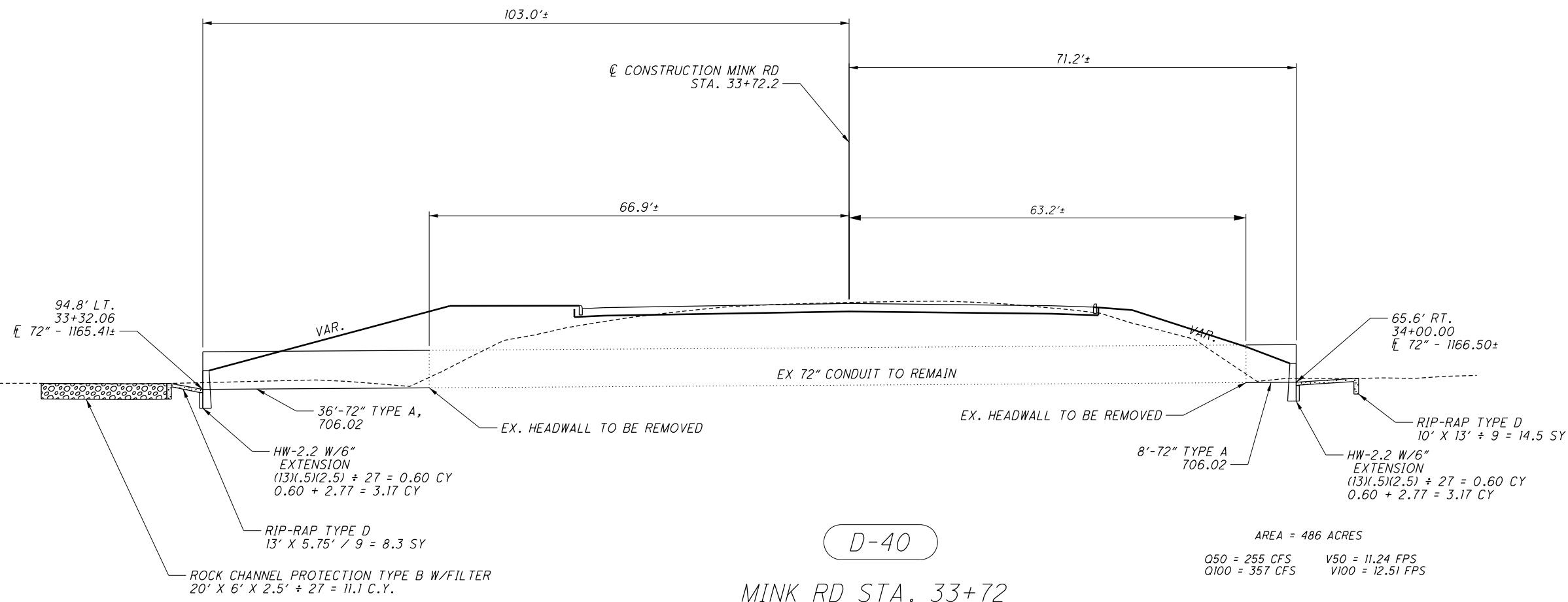
D-42

MINK RD STA. 21+17.6

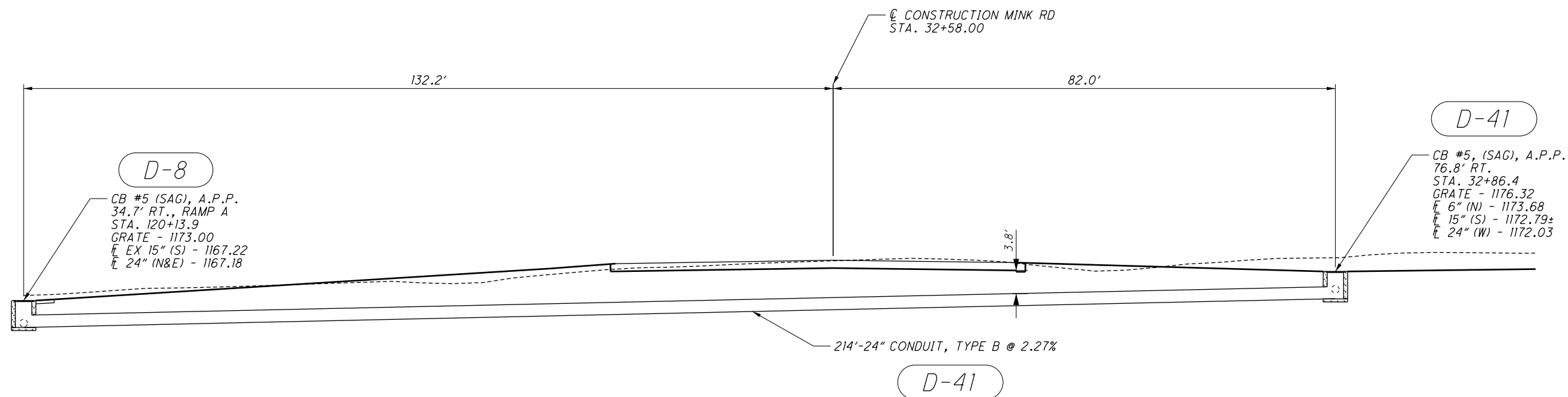


D-42

WORTHINGTON ROAD AT MINK RD
STA. 116+91.7



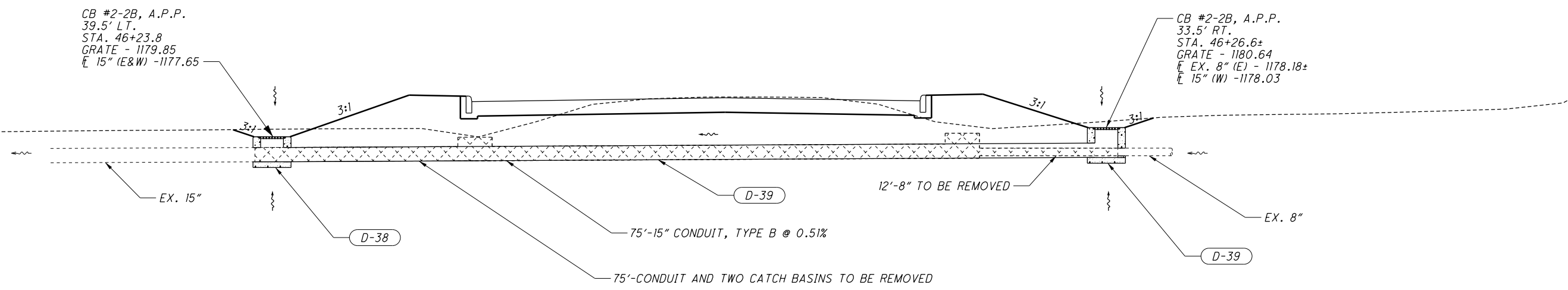
MINK RD STA. 33+72



MINK RD STA. 32+58.00

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MINK RD STA. 46+26.6

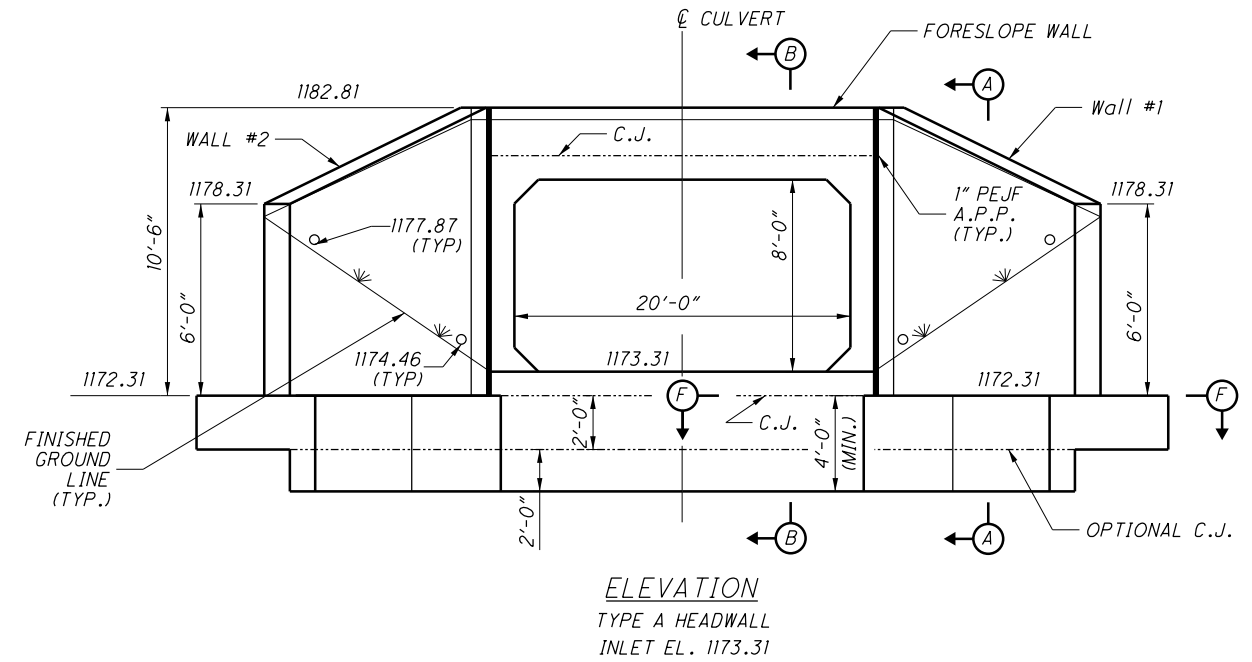
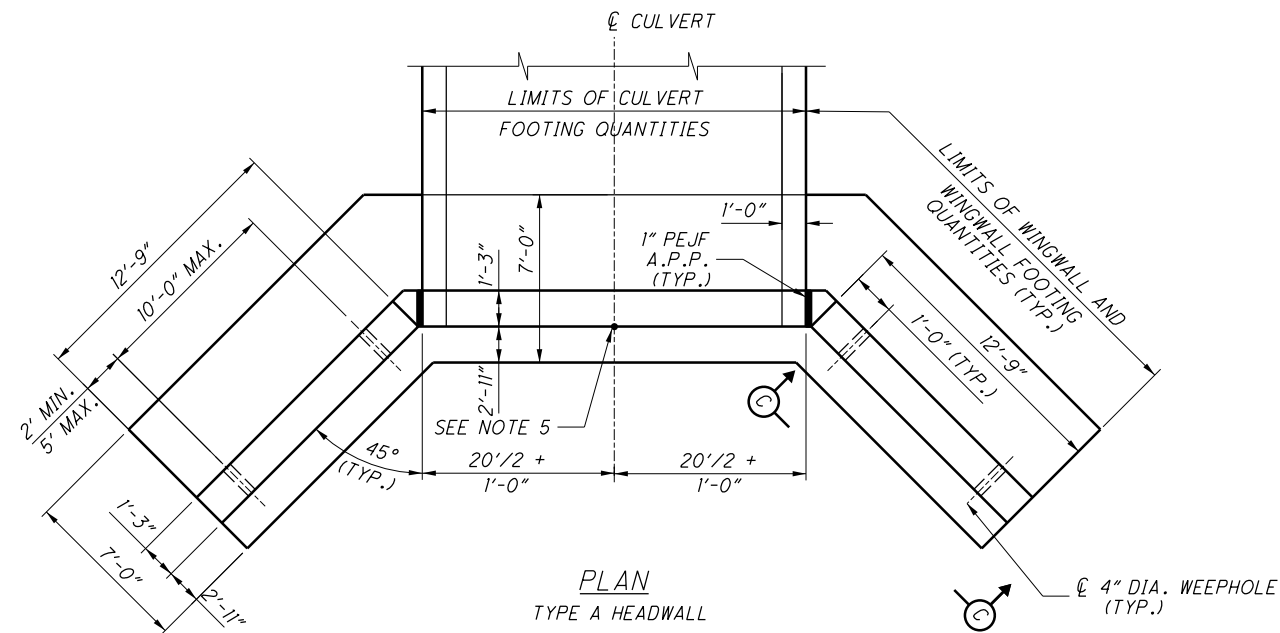
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DRAINAGE DETAILS MINK ROAD

LIC-161-1.83

224
336

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NOTES

1. FOR SECTIONS A-A, B-B AND F-F AND VIEW C-C, SEE SHEET 226.
2. FOR FOOTING DESIGNS, SEE SHEET 226.
3. FOR FORESLOPE WALL REINFORCING AND QUANTITIES, SEE SHEET 226.
4. POROUS BACKFILL NOT SHOWN FOR CLARITY.
5. THE STATION AND OFFSET WITH RESPECT TO THE CENTERLINE OF SURVEY IS SHOWN ON SHEET 220.

LEGEND

- PEJF, A.P.P. - PREFORMED EXPANSION JOINT FILLER, AS PER PLAN
 C.J. - CONSTRUCTION JOINT

GENERAL NOTES

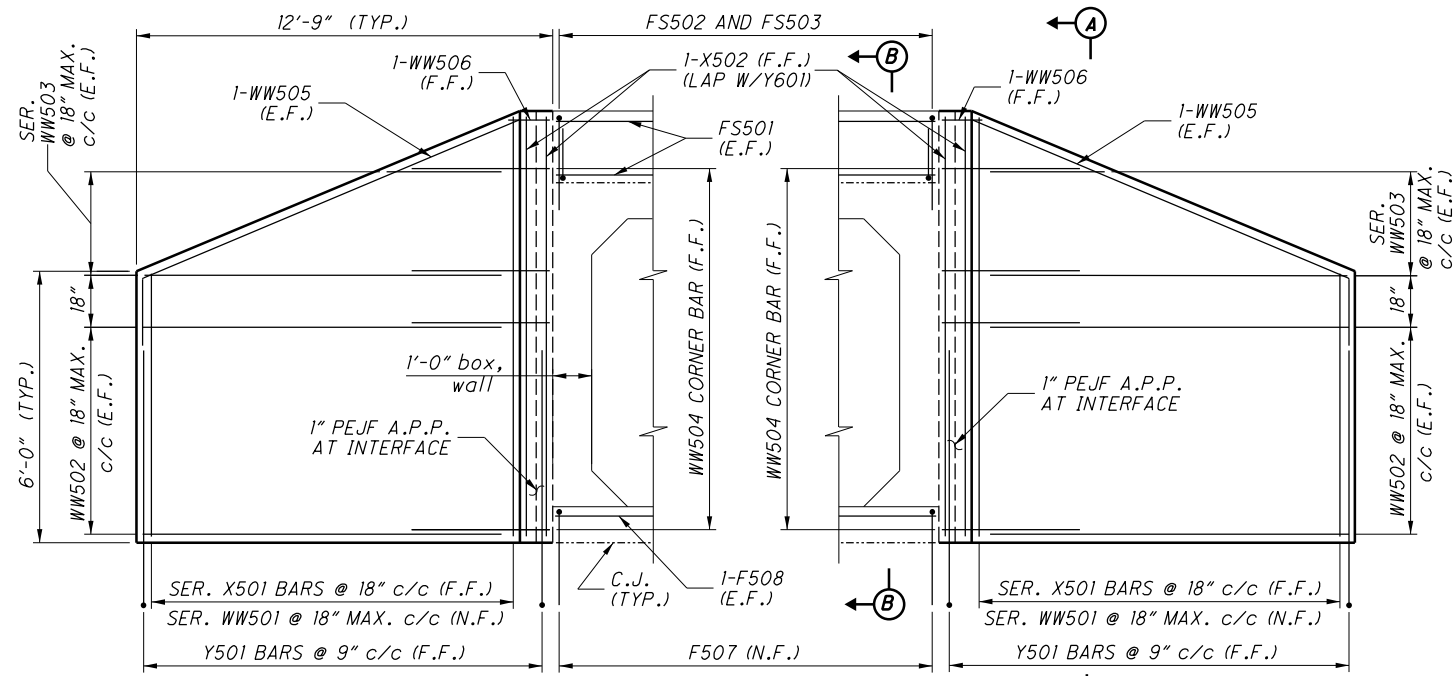
POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE. WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

NOTES

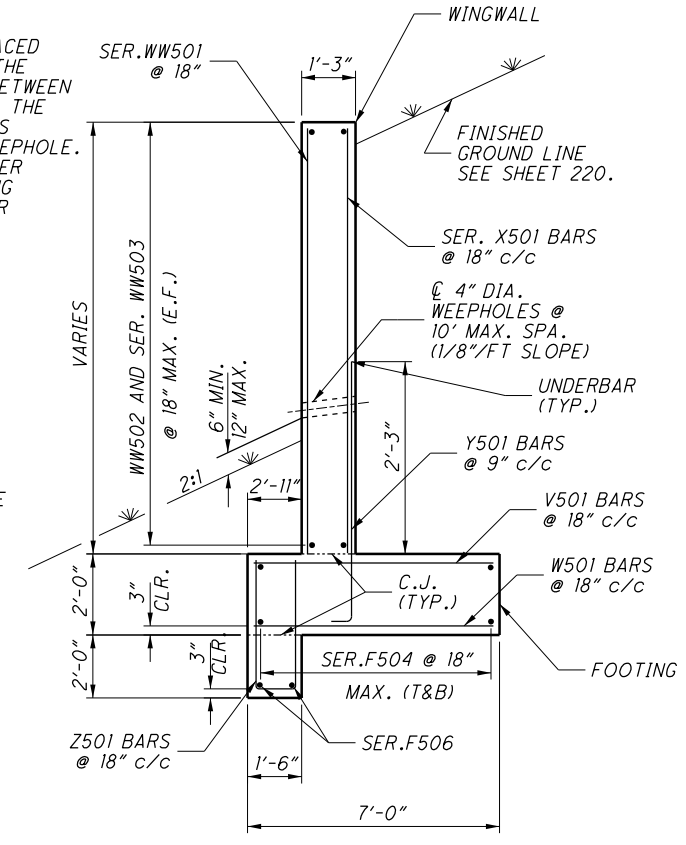
- FOR CULVERT LOCATION PLAN, SEE SHEETS 86,220.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- THE LAP SPLICE LENGTHS USED IN THESE DETAILS ARE AS FOLLOWS: 2'-5" FOR #5 BARS.
- THE INTERFACE BETWEEN THE TOP OF FOOTING AND BASE OF WINGWALL STEM SHALL BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" BY MEANS OF A SERRATED TROWEL.

LEGEND:

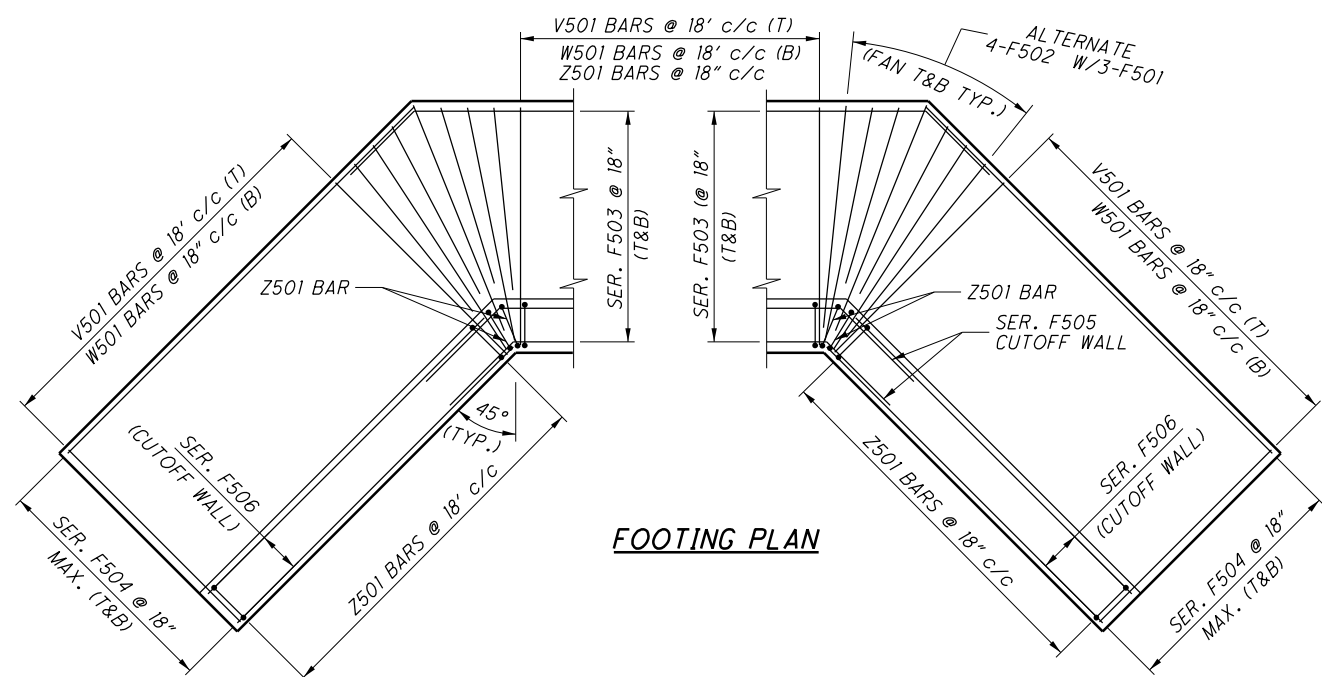
C.J.	CONSTRUCTION JOINT	N.F.	NEAR FACE
CLR.	CLEAR	SER.	SERIES
DIA.	DIAMETER	STR.	STRAIGHT
E.F.	EACH FACE	(T)	TOP
F.F.	FAR FACE	(B)	BOTTOM
MAX.	MAXIMUM	T&B	TOP AND BOTTOM
MIN.	MINIMUM	TYP.	TYPICAL
PEJF	PERFORMED EXPANSION JOINT FILLER	INC.	INCREMENT



WINGWALL ELEVATION
(FOOTING NOT SHOWN)
VIEW C-C



SECTION A-A
(POROUS BACKFILL NOT SHOWN FOR CLARITY)

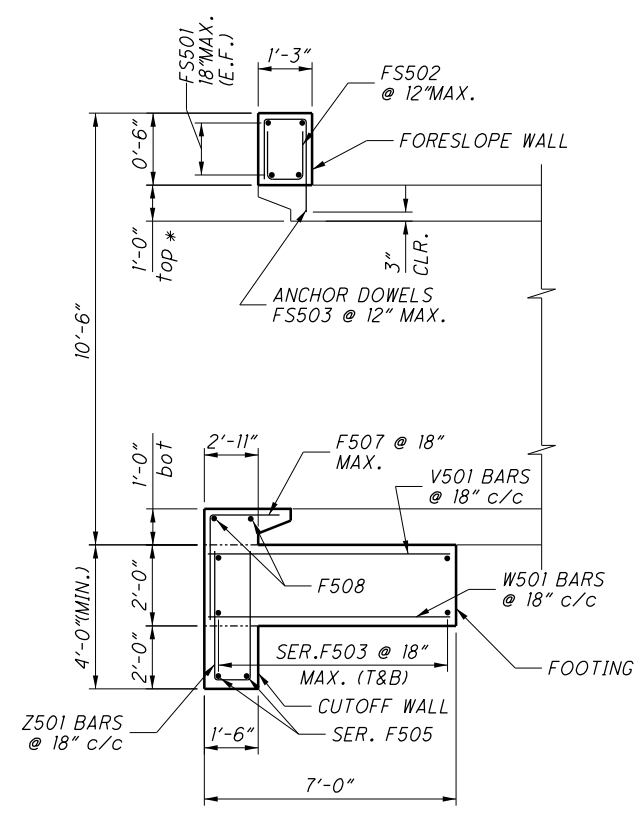


FOOTING PLAN
SECTION F-F

FOOTING REINFORCING				
FOOTING DESIGN	"v" BAR	MAX. SPA. (in)	"w", "z" BARS	MAX. SPA. (in)
	SIZE	v	SIZE	w, z
1	5	18	5	18

FORESLOPE WALL QUANTITIES			
WIDTH b >	HEIGHT OF FORESLOPE WALL (ft)	FORESLOPE WALL REINF. QTY.*	FORESLOPE WALL CONC. QTY. (cy/ft)*
1'-3"	6"	7.22	0.03
		7.22(22)	0.03(22)
TOTALS CARRIED TO SHEET 227		158.84	0.67

* INCLUDES FORESLOPE WALL CONCRETE AND REINFORCING WITHIN THE LIMITS OF THE BOX CULVERT PER LINEAR FOOT. TO OBTAIN THE TOTAL QUANTITY, MULTIPLY THIS VALUE/FOOT BY [20 + (2)] = 22 FT. [BOX SPAN + 2x (BOX WALL THICKNESS)].



SECTION B-B
(CULVERT INLET BEVEL SHOWN)

TYPE A HEADWALL																				
DESIGN HEIGHT H	FOOTING DESIGN	WINGWALL LENGTH L	WINGWALL HEIGHT h	FOOTING DIM.		CUTOFF WALL HT. hcw	DIMENSIONS			WINGWALL REINFORCING					WINGWALL CONC. QTY. (cy)	WINGWALL REINF. QTY. (lbs)	WINGWALL FOOTING CONC. QTY. (cy)	WINGWALL FOOTING REINF. QTY. (lbs)	CULVERT FOOTING CONC. QTY. (cy/ft)**	CULVERT FOOTING REINF. QTY. (lbs/ft)**
				Wf	hf		a	b	"x" BAR SIZE	MAX. SPA. (in) x	"y" BAR SIZE	MAX. SPA. (in) y	EXTEN. LENGTH c							
10'-6"	1	12'-9"	6'-0"	7'-0"	2'-0"	2'-0"	2'-11"	1'-3"	5	18	5	9	4'-2"	10.25	16.19	16.19	1087	0.74	33.95	
TOTALS CARRIED TO SHEET 227.														10.25	1104	16.19	1087	16.28	746.9	

**INCLUDES FOOTING AND CUTOFF WALL CONCRETE WITHIN THE LIMITS OF THE BOX CULVERT PER LINEAR FOOT. TO OBTAIN THE TOTAL QUANTITY, MULTIPLY THIS VALUE/FOOT BY [20 + (2)] = 22 FT. [BOX SPAN + 2x (BOX WALL THICKNESS)].

TOTALS CARRIED TO SHEET 227.

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DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2012, INCLUDING THE 2012 ERRATA AND THE ODOT BRIDGE DESIGN MANUAL, 2007. EXCEPT AS NOTED ELSEWHERE IN THE PLANS.

DESIGN DATA: THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION (ϕ) = 30 DEGREES
 COEFFICIENT OF FRICTION (μ) = 0.30
 UNIT WEIGHT OF SOIL = 120 PCF
 UNIT WEIGHT OF CONCRETE = 150 PCF
 SLOPE OF BACKFILL = 2:1
 HEIGHT OF LIVE LOAD SURCHARGE = 2 FT (TYPE C HEADWALLS ONLY)
 MAXIMUM FOUNDATION BEARING PRESSURE = 2000 P.S.F.

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617
 GRADE 60 MINIMUM YIELD STRENGTH
 60,000 PSI (ALL REINFORCING SHALL BE EPOXY COATED)

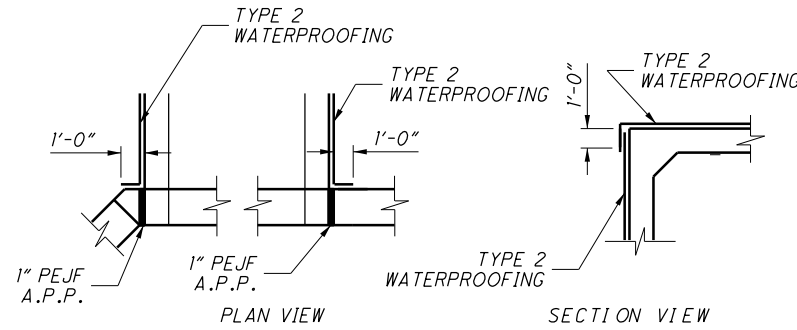
FORESLOPE WALL ANCHOR DOWELS: ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH OF 5". PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

AS AN ALTERNATIVE TO RESIN BONDING, THREADED INSERTS OR NONPROTRUDING MECHANICAL CONNECTORS CAST INTO THE CULVERT BY THE MANUFACTURER MAY BE USED PROVIDED THEY CAN RESIST AN ULTIMATE PULL-OUT STRENGTH OF 12 KIPS AND MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS MUST PROVIDE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM 611.

BACKFILL LIMITATION: WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FT, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

WATERPROOFING: TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.



WATERPROOFING DETAILS

CALCULATIONS

EPOXY COATED REINFORCING STEEL
 $1104.0 + 1087 + 746.9 + 158.84 = 3096.74$ LBS USE 3097.0

CLASS QC1 CONCRETE, RETAINING WALL OR WINGWALL
 10.25 CY

CLASS QC1 CONCRETE, FOOTING
 $16.19 + 16.28 = 32.47$ USE 33.0 CY

CLASS QC1 CONCRETE, HEADWALLS
 0.67 CY USE 1.0 C.Y.

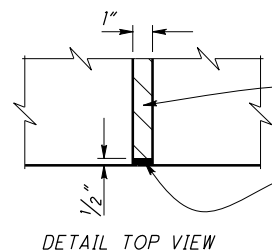
TYPE 2 WATERPROOFING
 $(25.0 \times 24) / 9 = 66.7$
 $((26 \times 10) / 9) \times 2 = 28.9$
 $66.7 + 28.9 = 95.6$ USE 100.0 SY

1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN
 $(10.5 \times 1.25) \times 2 = 26.3$ SF USE 27.0 SF

ITEM 516 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

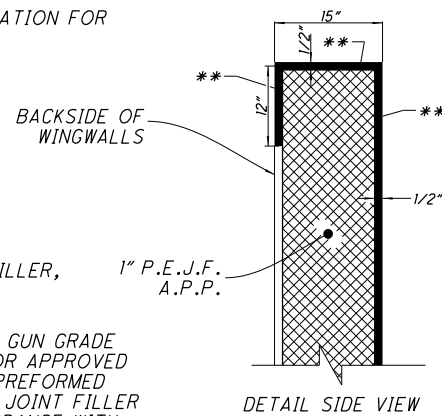
ALL 1" P.E.J.F. A.P.P. CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER 1/2" FOR ALL JOINTS (SEE DETAILS). SEAL ALL JOINTS THAT ARE ABOVE GRADE WITH DECK-O-SEAL GUN GRADE-JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE 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



1" PREFORMED CORK EXPANSION JOINT FILLER, A.P.P.

1/2" DECK-O-SEAL GUN GRADE JOINT SEALANT OR APPROVED EQUAL, OVER 1" PREFORMED CORK EXPANSION JOINT FILLER A.P.P. (IN ACCORDANCE WITH ARTICLE 705.03)



DETAIL SIDE VIEW (WINGWALL AND CULVERT INTERFACE)

**ALL EXPOSED SURFACES OF THE 1" P.E.J.F. A.P.P. AS SHOWN, SHALL BE FILLED AS PER ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" PEJF, A.P.P., SQ.FT., AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DISCRIBED.

QUANTITIES CARRIED TO GENERAL SUMMARY

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION
202	11000	LUMP		STRUCTURE REMOVED
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING
503	21300	LUMP		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)
509	10000	3097	LB.	EPOXY COATED REINFORCING STEEL
511	46010	10.25	CU. YD.	CLASS QC1 CONCRETE, RETAINING WALL OR WINGWALL
511	46510	33.0	CU. YD.	CLASS QC1 CONCRETE, FOOTING
511	46610	1.0	CU. YD.	CLASS QC1 CONCRETE, HEADWALLS
512	33000	100.0	SO. YD.	TYPE 2 WATERPROOFING
516	13601	27.0	SO. FT.	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN
518	21230	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC
611	96499	26.0	FT.	20' X 8' CONDUIT, TYPE A, 706.05, AS PER PLAN, DESIGN COVER 9 FT

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ITEM 630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN

STREET NAME SIGNS SHALL BE SUSPENDED FROM THE MAST ARMS AS SHOWN ON THE PLANS. THE HANGER ASSEMBLIES SHALL BE PAINTED 'ESSEX GREEN' IN ACCORDANCE WITH THE PAINTING REQUIREMENTS ON SHEET 283. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE.

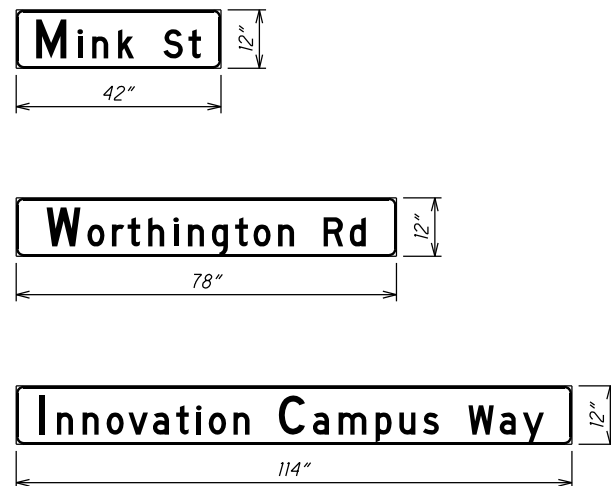
ITEM 630 SIGN, FLAT SHEET, AS PER PLAN

ALL FLAT SHEET SIGNS ALONG MINK ST SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF C&MS 630 EXCEPT THAT THE BACK OF THE SIGNS SHALL BE COVERED WITH BLACK VINYL.

ITEM 630 SIGNING, MISC.: STREET NAME SIGN, GROUND MOUNTED

STREET NAME SIGNS SHALL BE SINGLE FACED ON 1/4" ALUMINUM SIGN PANEL, AND SHALL BE GROUND MOUNTED AT WORTHINGTON RD AS SHOWN ON THE PLANS. THE SIGNS SHALL BE BLACK LETTERS ON WHITE BACKGROUND, AND SHALL INCLUDE A BLACK BORDER. THE BLACK LEGEND AND BORDERS SHALL BE ACRYLIC FILM (EC 'ELECTRO CUT' FILM OR APPROVED EQUAL). THE WHITE SHEET SHALL BE 3M BRAND DG3, OR APPROVED EQUAL, MEETING OR OTHERWISE EXCEEDING ALL ASTM TYPE XI PERFORMANCE REQUIREMENTS, AND AS APPROVED AS ODOT TYPE J MATERIAL. THE BACKS OF THE SIGN SHALL BE COVERED WITH BLACK VINYL AND CORNERS OF THE SIGNS SHALL BE SQUARED. SIGN LETTERING TO BE FHWA HIGHWAY GOTHIC 'D'. PROVIDE A MINIMUM OF 3" GAP BETWEEN THE EDGE OF THE SIGN AND WORDS. SIGN LETTER SIZE FOR STREET NAMES TO BE 8" UC/6" LC. THE ABBREVIATIONS 'ST' OR 'RD' TO BE 6" UC/LC.

THE CONTRACTOR SHALL SUBMIT CUT SHEETS OF SIGNS AND SIGNING MATERIAL FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURE, AND SHALL INCLUDE SIGNING AND LETTER DIMENSIONS. PAYMENT WILL BE MADE AT THE UNIT PRICE BID OF ITEM 630 SIGN, STREET NAME, AS PER PLAN FOR EACH SIGN COMPLETE AND IN PLACE.



NOTE: SIGNS SHALL USE FHWA HIGHWAY GOTHIC 'D'

ITEM 630 SIGNING, MISC.: STREET NAME SIGN, MAST ARM

STREET NAME SIGNS SHALL BE SINGLE FACED ON 1/4" ALUMINUM SIGN PANEL, AND SUSPENDED FROM THE MAST ARMS AT RAMP C AND RAMP B AS SHOWN ON THE PLANS. THE SIGNS SHALL BE BLACK LETTERS ON WHITE BACKGROUND, AND SHALL INCLUDE A BLACK BORDER. THE BLACK LEGEND AND BORDERS SHALL BE ACRYLIC FILM (EC 'ELECTRO CUT' FILM OR APPROVED EQUAL). THE WHITE SHEET SHALL BE 3M BRAND DG3, OR APPROVED EQUAL, MEETING OR OTHERWISE EXCEEDING ALL ASTM TYPE XI PERFORMANCE REQUIREMENTS, AND AS APPROVED AS ODOT TYPE J MATERIAL. THE BACKS OF THE SIGN SHALL BE COVERED WITH BLACK VINYL AND CORNERS OF THE SIGNS SHALL BE SQUARED. SIGN LETTERING TO BE FHWA HIGHWAY GOTHIC 'D'. PROVIDE A MINIMUM OF 6" GAP BETWEEN THE EDGE OF THE SIGN AND WORDS. SIGN LETTER SIZE FOR STREET NAMES TO BE 12" UC/9" LC. THE ABBREVIATIONS 'ST' OR 'RD' TO BE 8" UC/LC.

THE FRAME SHALL BE PAINTED POWDER COAT BLACK FINISH AND BE REINFORCED ON THE CORNERS.

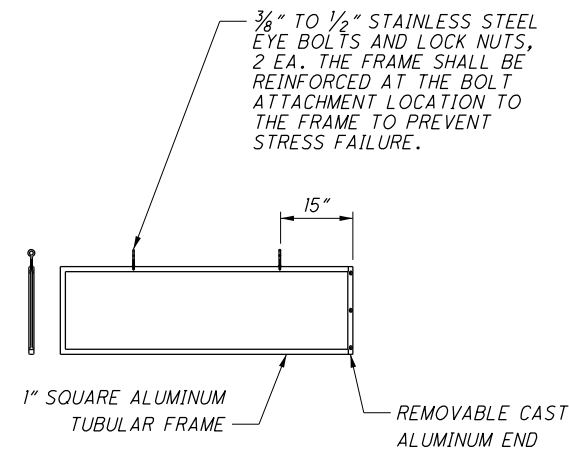
THE CONTRACTOR SHALL SUBMIT CUT SHEETS OF SIGNS AND SIGNING MATERIAL FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURE, AND SHALL INCLUDE SIGNING AND LETTER DIMENSIONS. PAYMENT WILL BE MADE AT THE UNIT PRICE BID OF ITEM 630 SIGNING, MISC.: STREET NAME SIGN, MAST ARM, COMPLETE AND IN PLACE.

ITEM 630, SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN

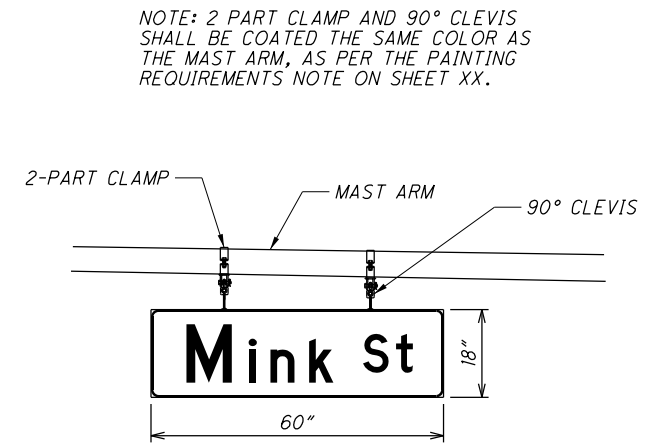
THIS ITEM SHALL CONSIST OF BARRIER MOUNTING SIGN(S) AS SHOWN IN THE DETAILS BELOW AT THE LOCATIONS SHOWN IN THE PLANS.

NOTES:

1. THE C7 X 9.8 GALVANIZED STEEL CHANNEL SHALL BE WELDED TO THE C15 X 50 GALVANIZED STEEL CHANNEL.
2. THE NO. 3 POST SHALL BE ATTACHED TO THE C7 X 9.8 GALVANIZED STEEL CHANNEL WITH TWO 5/16" STEEL HEX HEAD BOLTS. THE HOLES IN THE C7 X 9.8 STEEL CHANNEL SHALL BE DRILLED BEFORE GALVANIZING. THE HOLES SHALL BE 9" CENTER TO CENTER.
3. THE 5/8" THREADED STEEL BOLTS SHALL BE ATTACHED TO THE CONCRETE BARRIER WITH GROUT MEETING THE REQUIREMENTS OF CMS 255.02.

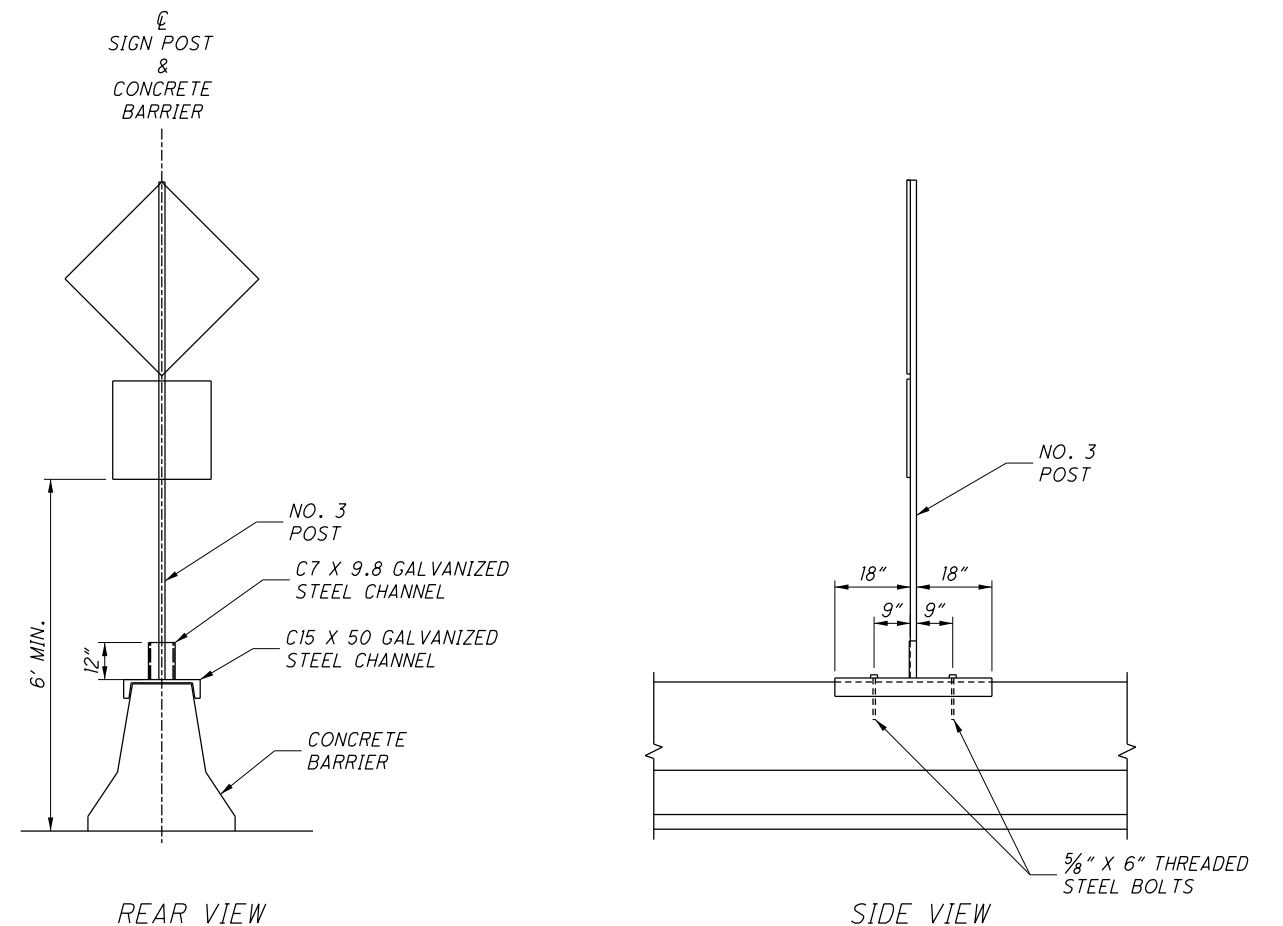


FRAME DETAILS



MAST ARM SIGN HANGER DETAILS

SIGNAL MAST ARM MOUNTED STREET NAME DETAILS



BARRIER MOUNTED SIGN SUPPORT DETAILS

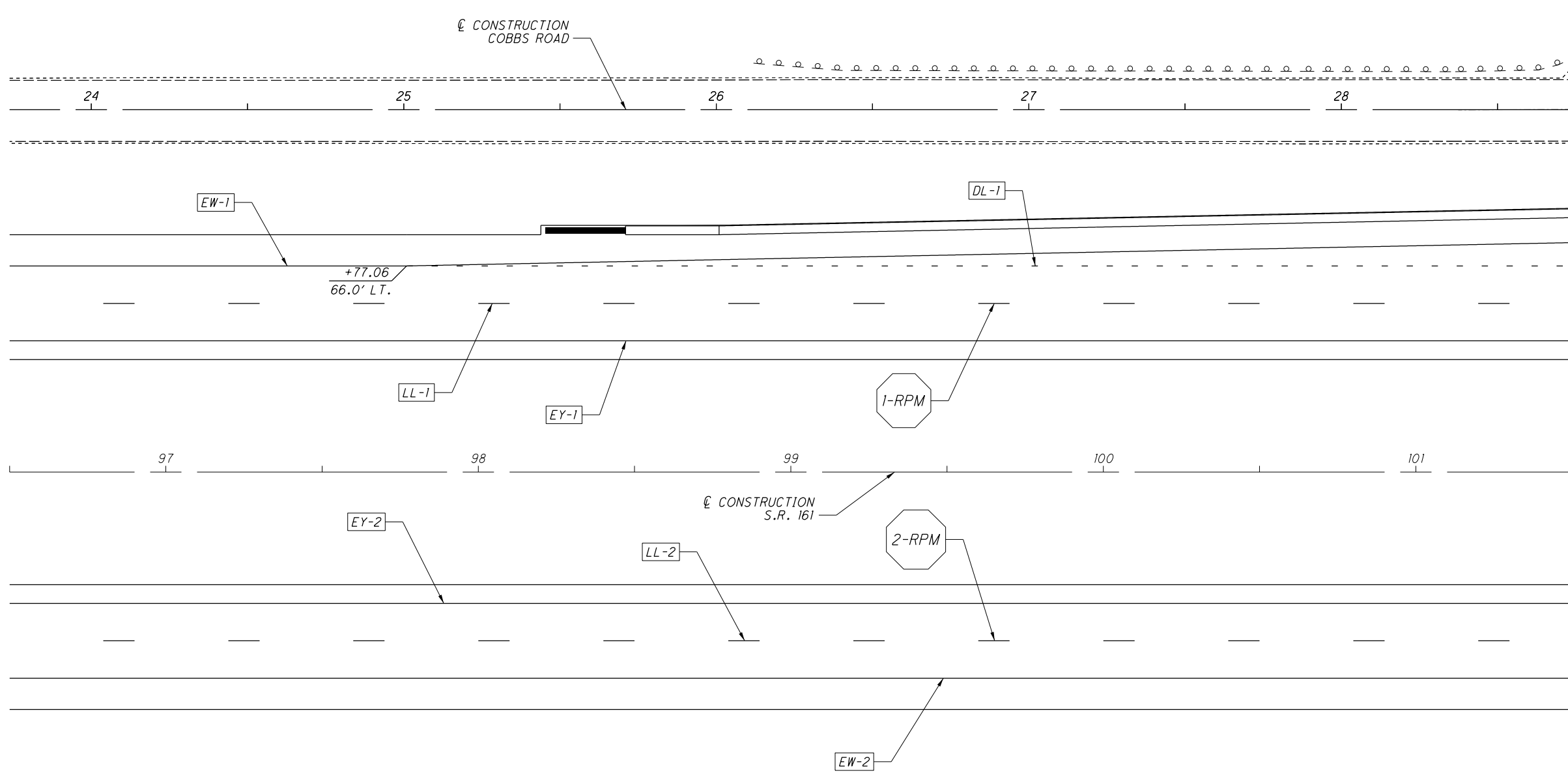
NOTE: 2 PART CLAMP AND 90° CLEVIS SHALL BE COATED THE SAME COLOR AS THE MAST ARM, AS PER THE PAINTING REQUIREMENTS NOTE ON SHEET XX.

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NOTE:
 EW-1, LL-1, EY-1, EY-2, LL-2, AND EW-2
 BEGIN AT STA. 88+00.00



CALCULATED
 CMY
 CHECKED
 HAG



S.R. 161 PAVEMENT MARKING SHEET
STA. 96+50 TO STA. 101+50

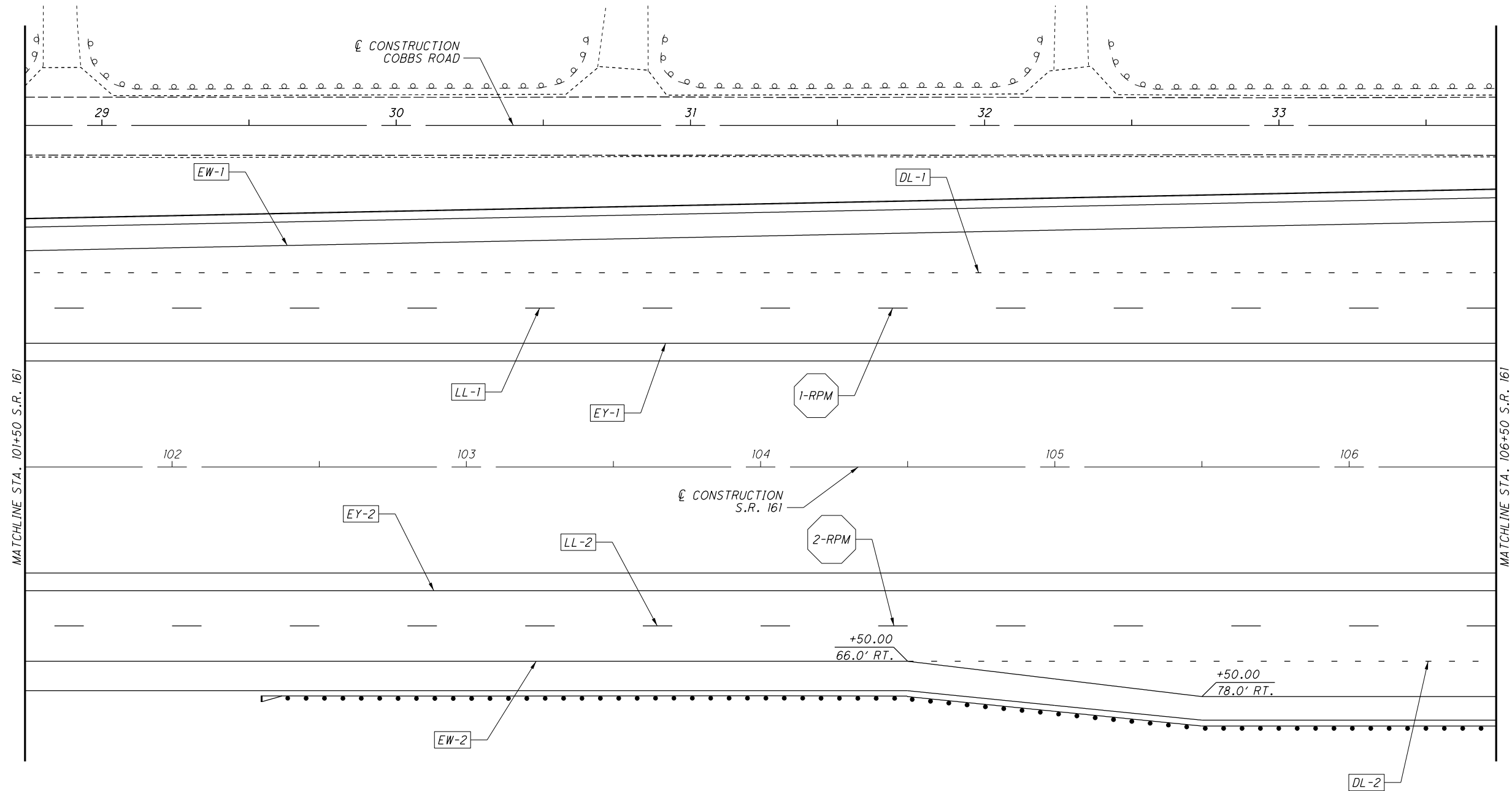
LIC-161-1.83

229
 336

LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

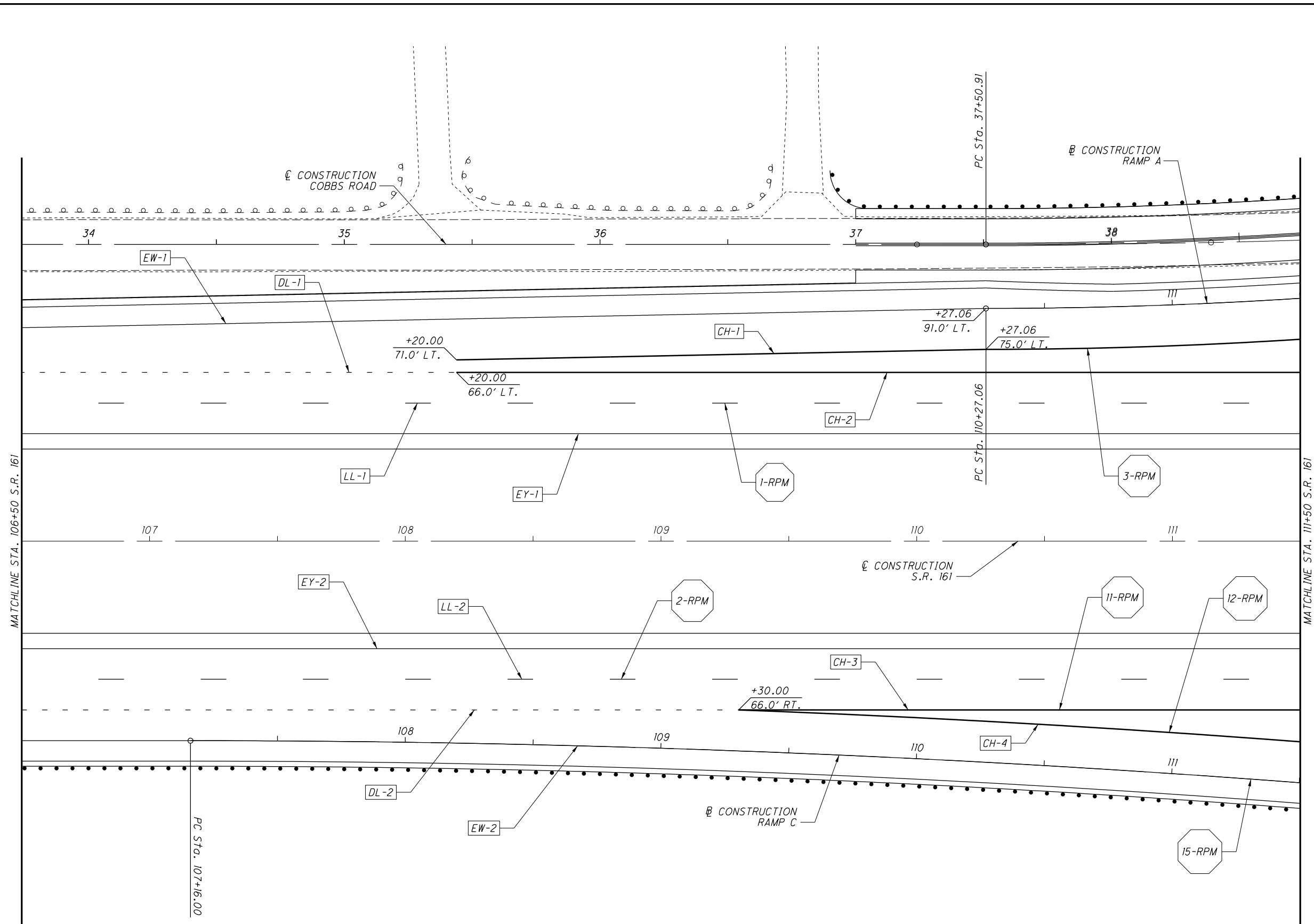
S.R. 161 PAVEMENT MARKING SHEET
STA. 101+50 TO STA. 106+50

LIC-161-1.83

230
336

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CALCULATED
CMY
CHECKED
HAG



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

S.R. 161 PAVEMENT MARKING SHEET
STA. 106+50 TO STA. 111+50

LIC-161-1.83

231
336

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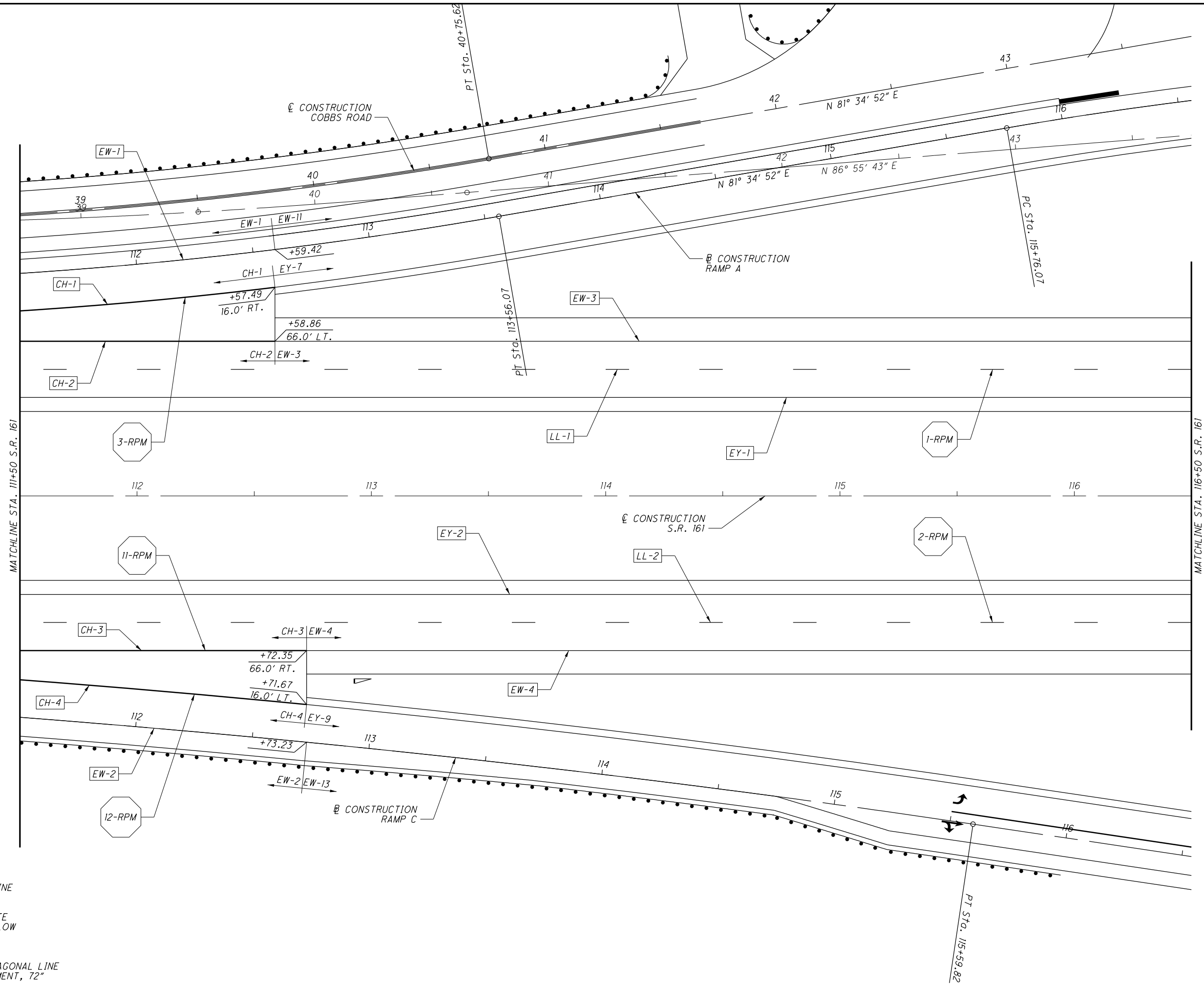
CALCULATED
CMY
CHECKED
HAG

HORIZONTAL SCALE IN FEET

S.R. 161 PAVEMENT MARKING SHEET
STA. 111+50 TO STA. 116+50

LIC-161-1.83

232
336

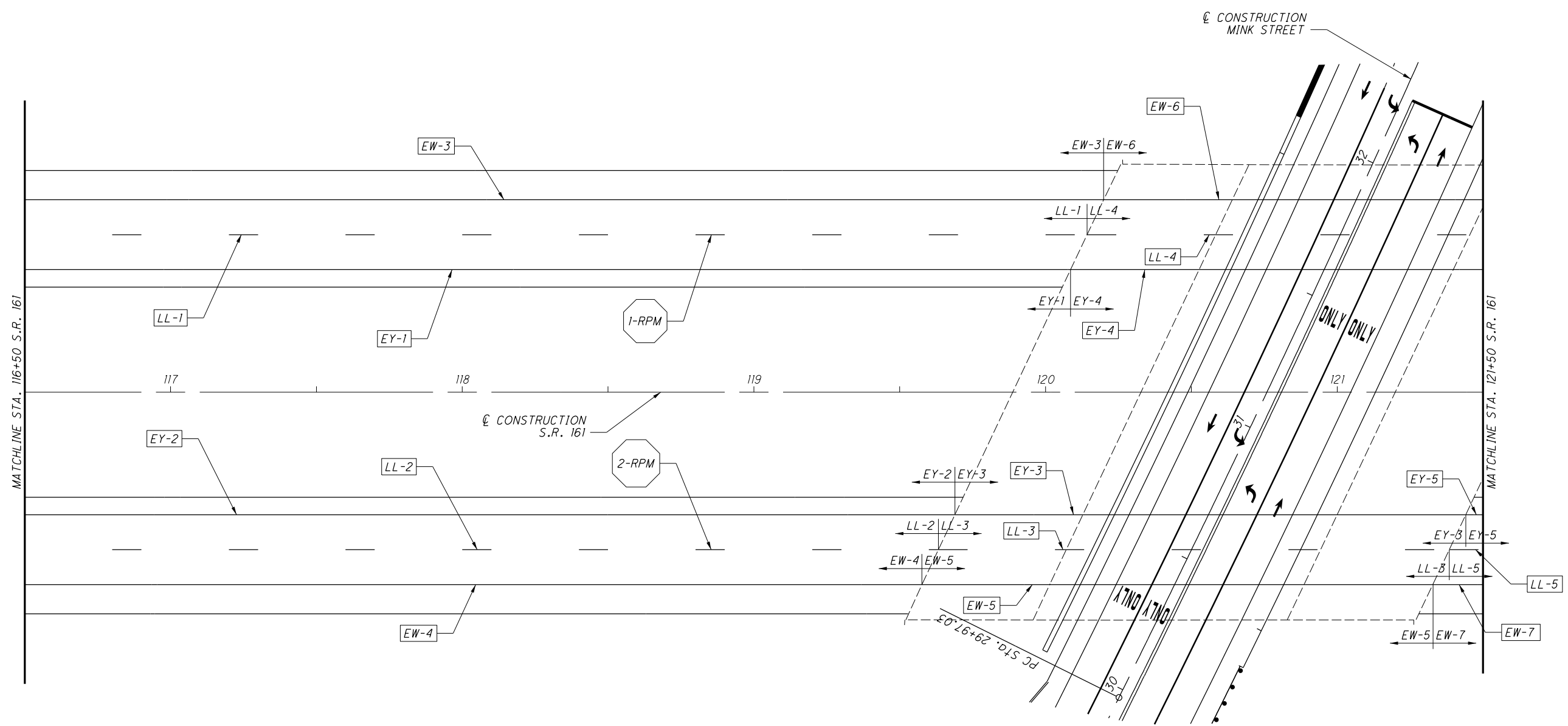


LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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CALCULATED
CMY
CHECKED
HAG



LEGEND

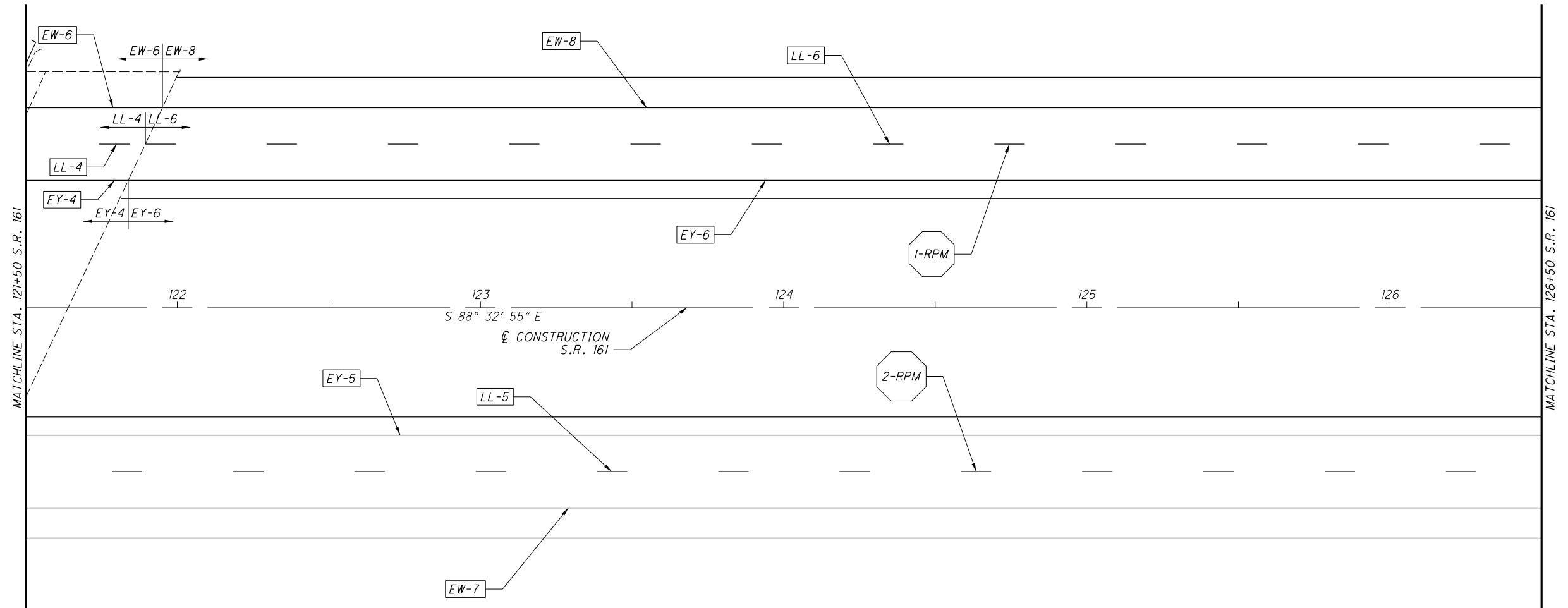
- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

S.R. 161 PAVEMENT MARKING SHEET
STA. 116+50 TO STA. 121+50

LIC-161-1.83

233
336

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"



CALCULATED	
CMY	
CHECKED	HAG

S.R. 161 PAVEMENT MARKING SHEET
STA. 121+50 TO STA. 126+50

LIC-161-1.83

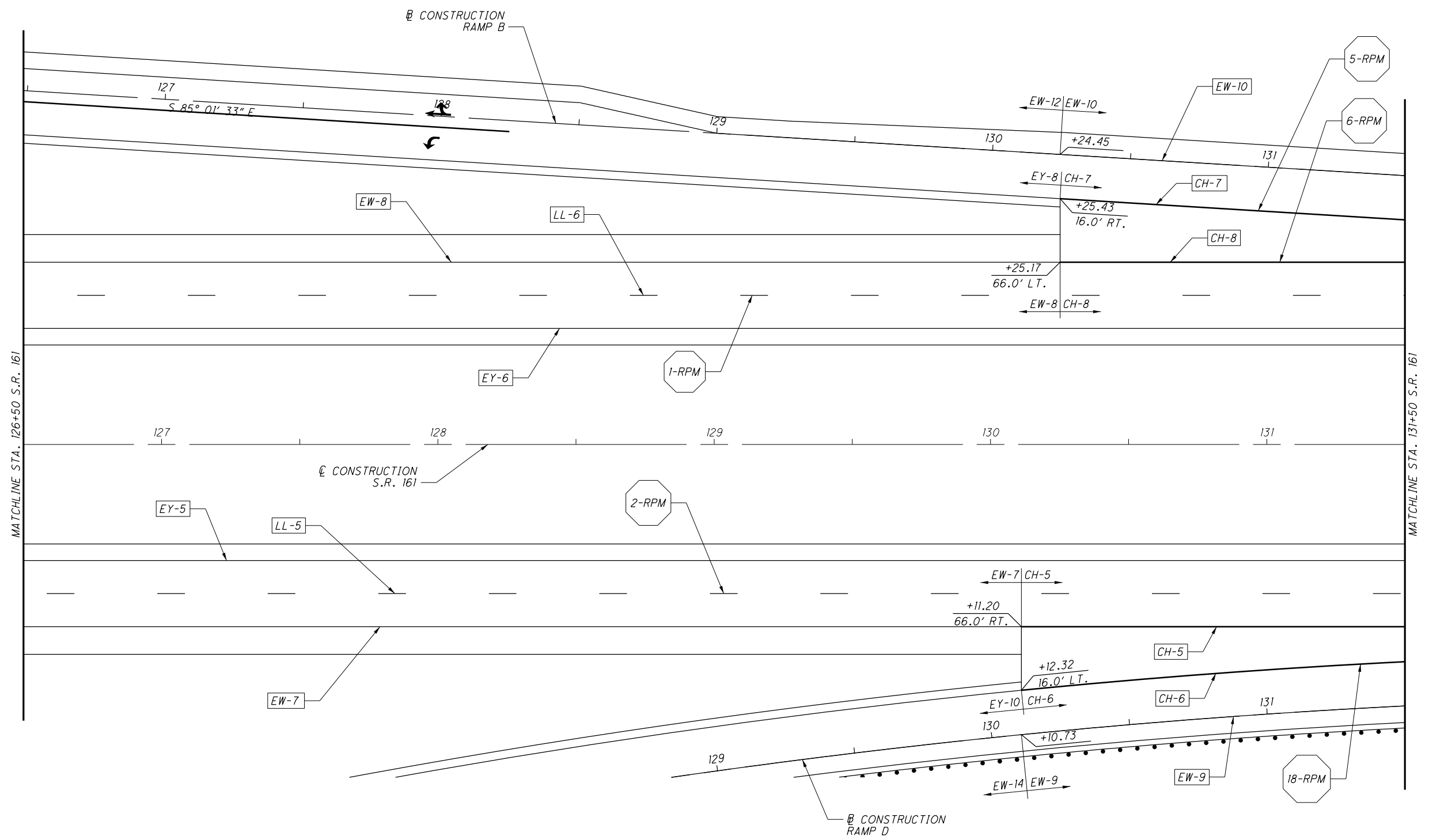


CALCULATED
CMY
CHECKED
HAG

S.R. 161 PAVEMENT MARKING SHEET
STA. 126+50 TO STA. 131+50

LIC-161-1.83

235
336



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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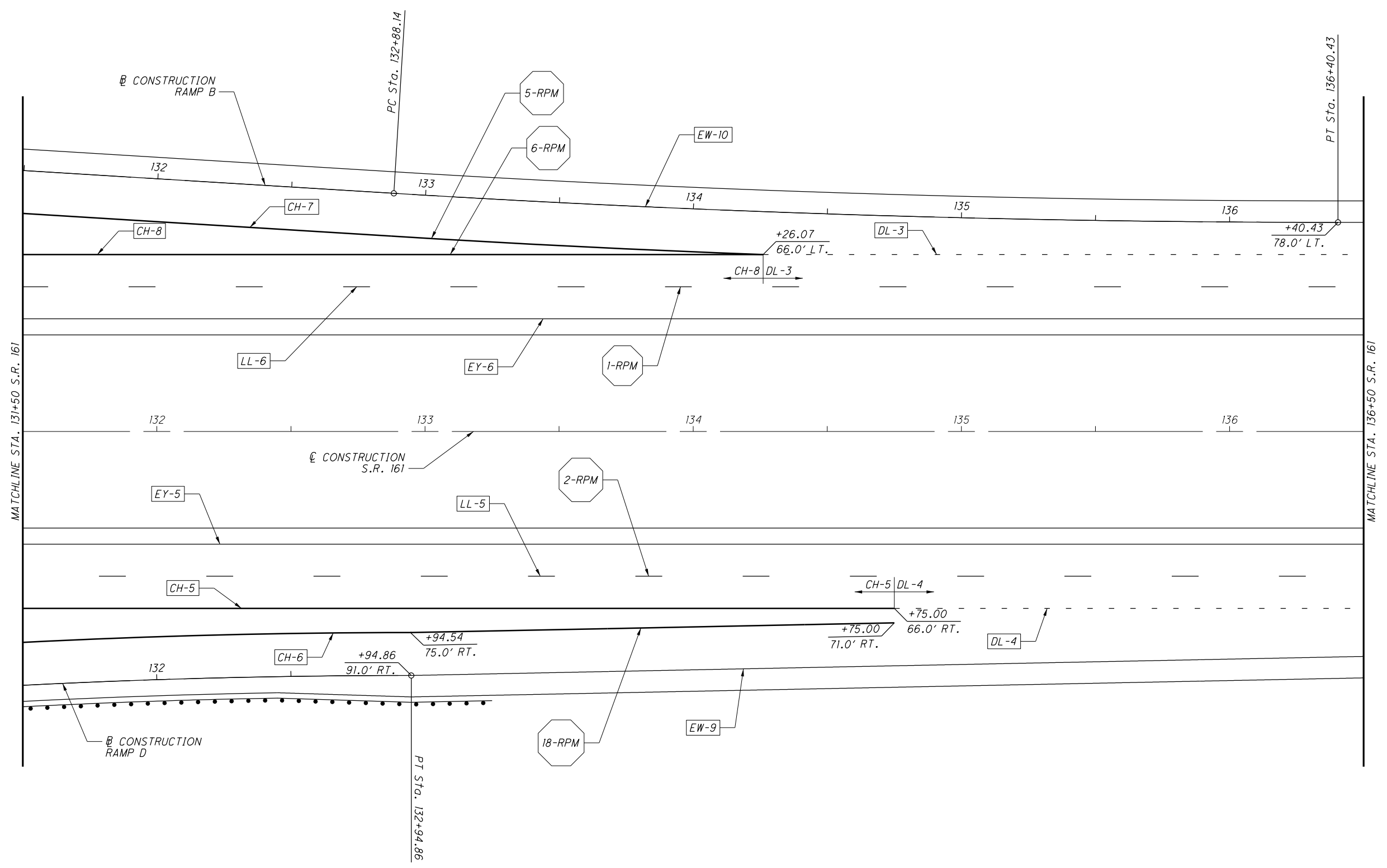
CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

S.R. 161 PAVEMENT MARKING SHEET
STA. 131+50 TO STA. 136+50

LIC-161-1.83

236
336



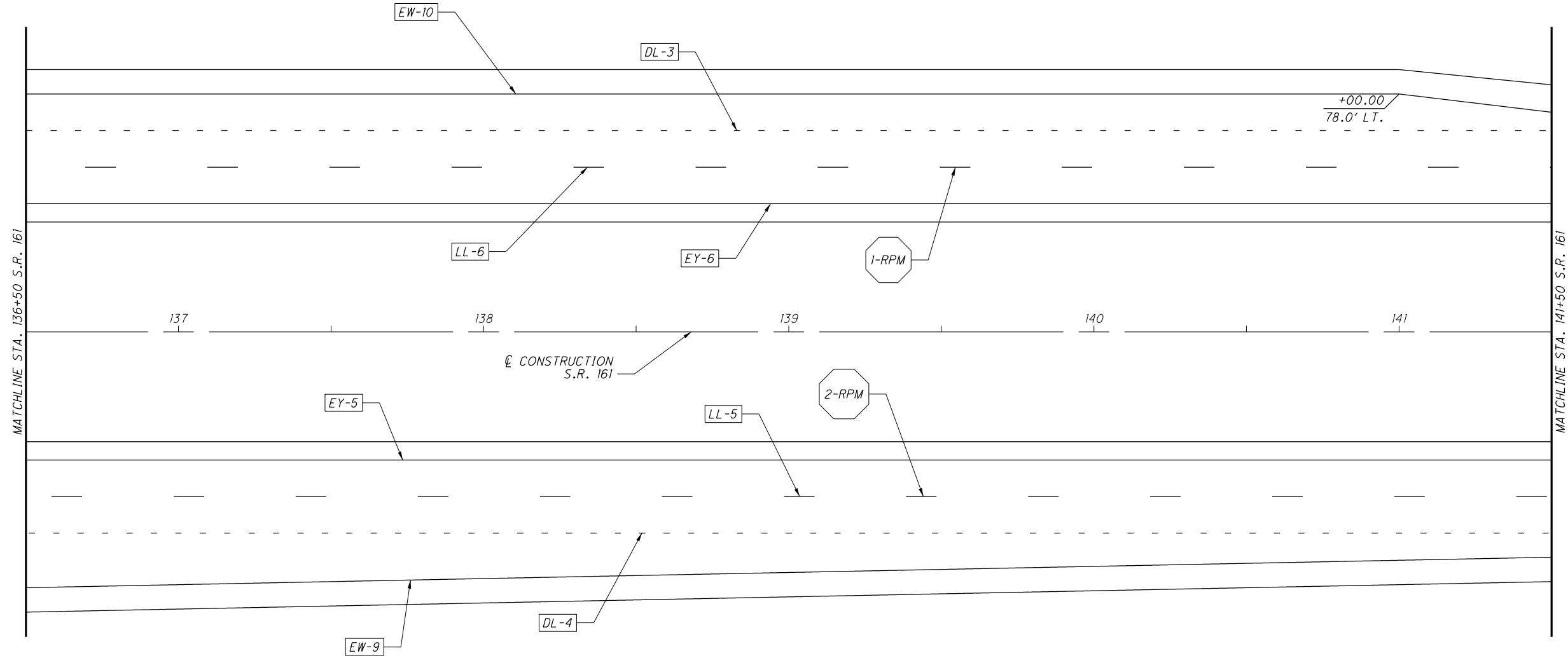
LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"



CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

S.R. 161 PAVEMENT MARKING SHEET
STA. 136+50 TO STA. 141+50

LIC-161-1.83

NOTE:
 EW-9, LL-5, EY-5, EW-10, LL-6, AND EY-6
 END AT STA. 158+00.00

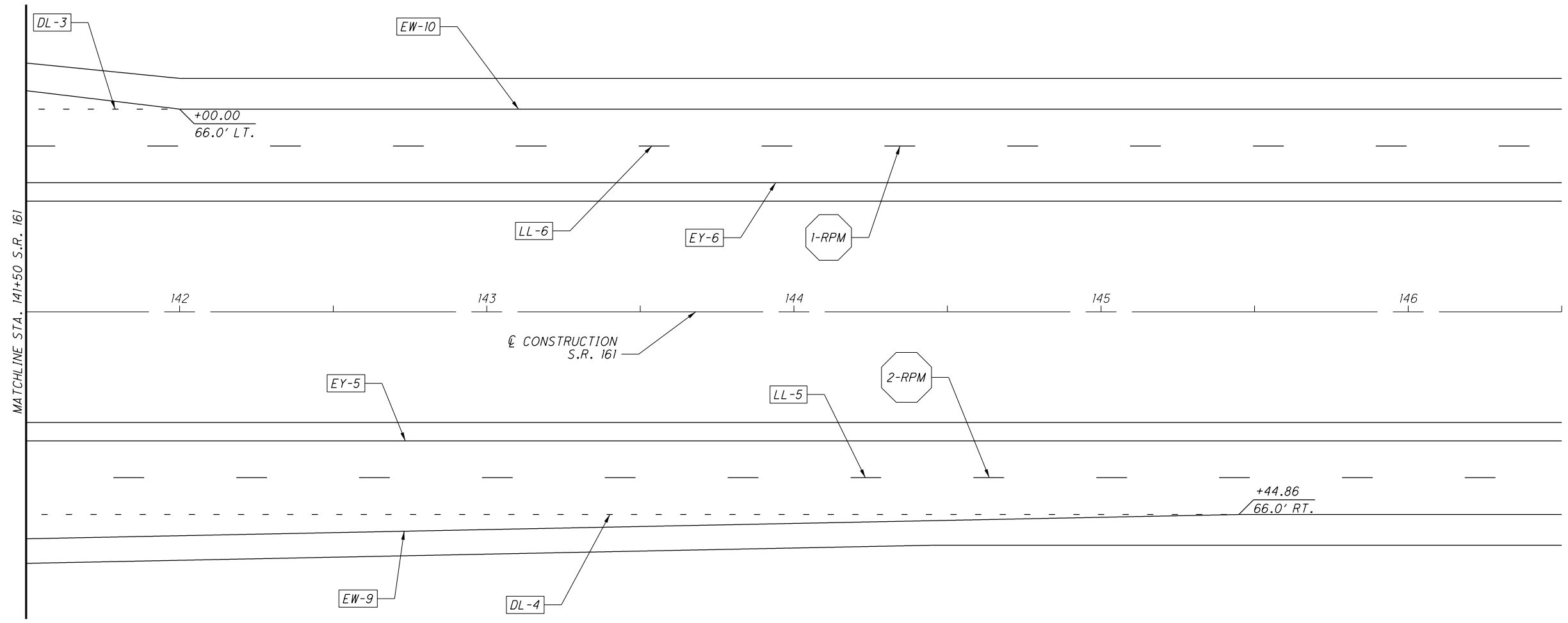


CALCULATED
 CMY
 CHECKED
 HAG

S.R. 161 PAVEMENT MARKING SHEET
STA. 141+50 TO STA. 146+50

LIC-161-1.83

238
 336



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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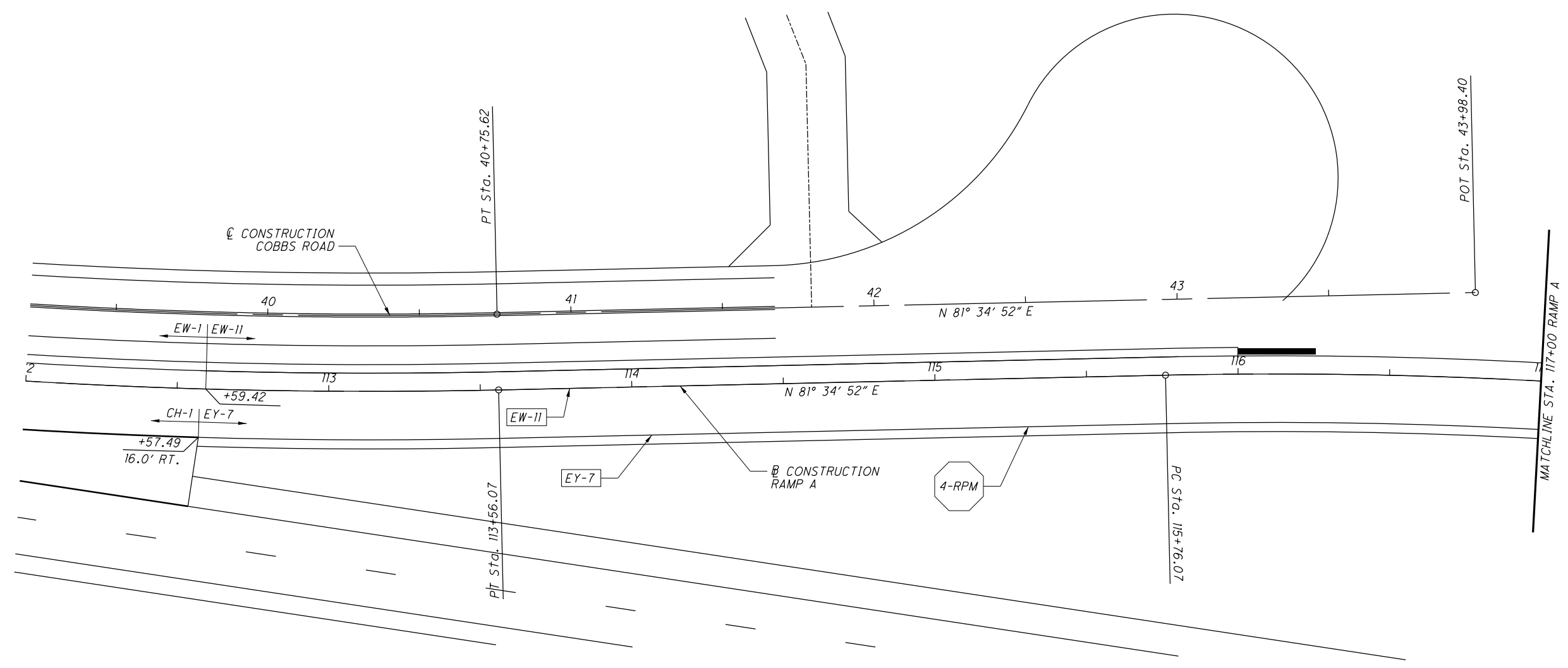
CALCULATED
 CMY
 CHECKED
 HAG

0 20 40
 HORIZONTAL
 SCALE IN FEET

RAMP A PAVEMENT MARKING SHEET
STA. 112+57.49 TO STA. 117+00

LIC-161-1.83

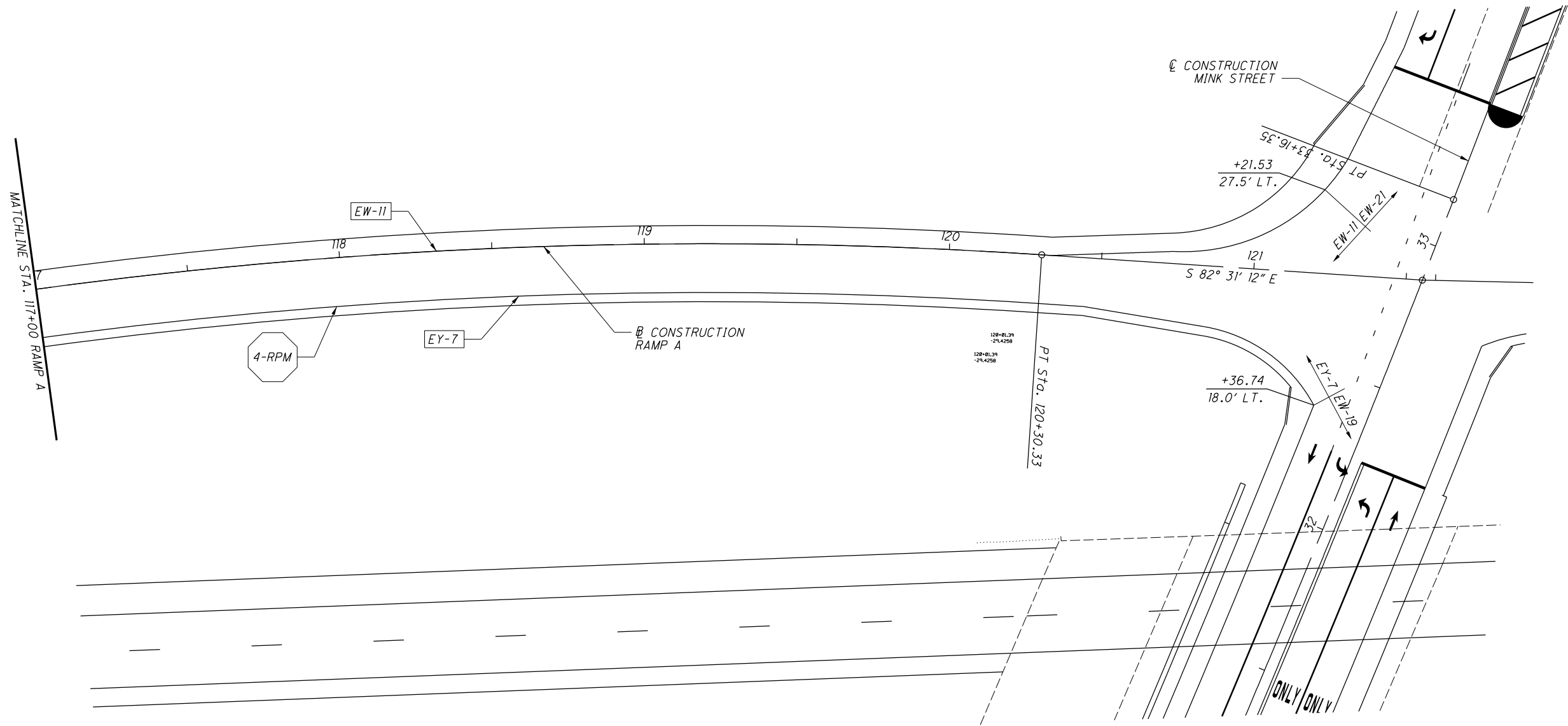
239
 336



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"



CALCULATED	
CMY	
CHECKED	HAG

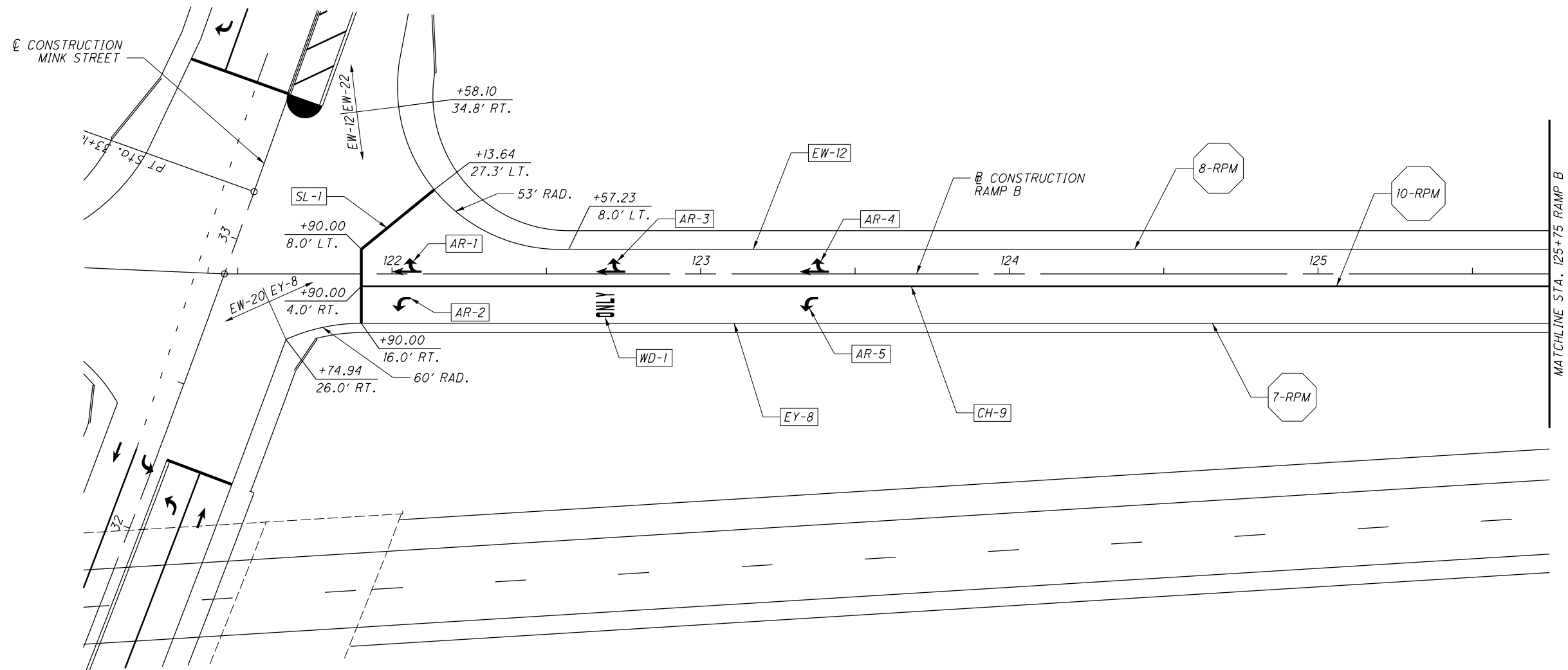
RAMP A PAVEMENT MARKING SHEET
STA. 117+00 TO STA. 121+21.96

LIC-161-1.83

REFERENCE	STATION	OFFSET
AR-1	122+00.00	2.0' LT.
AR-2	122+00.00	10.0' RT.
AR-3	122+66.00	2.0' LT.
WD-1	122+66.00	10.0' RT.
AR-4	123+32.00	2.0' LT.
AR-5	123+32.00	10.0' RT.
AR-6	NOT USED	
WD-2	NOT USED	
AR-7	NOT USED	
AR-8	NOT USED	
AR-9	NOT USED	
WD-3	NOT USED	

CALCULATED
CMY
CHECKED
HAG

HORIZONTAL SCALE IN FEET



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
AR-6, WD-2, AR-7, AR-8, AR-9, AND WD-3 NOT USED

RAMP B PAVEMENT MARKING SHEET
STA. 121+73.23 TO STA. 125+75

LIC-161-1.83

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REFERENCE	STATION	OFFSET
AR-10	NOT USED	
AR-11	NOT USED	
AR-12	NOT USED	
WD-4	NOT USED	
AR-13	NOT USED	
AR-14	NOT USED	
AR-15	127+94.00	2.0' LT.
AR-16	127+94.00	10.0' RT.

CALCULATED
CMY
CHECKED
HAG

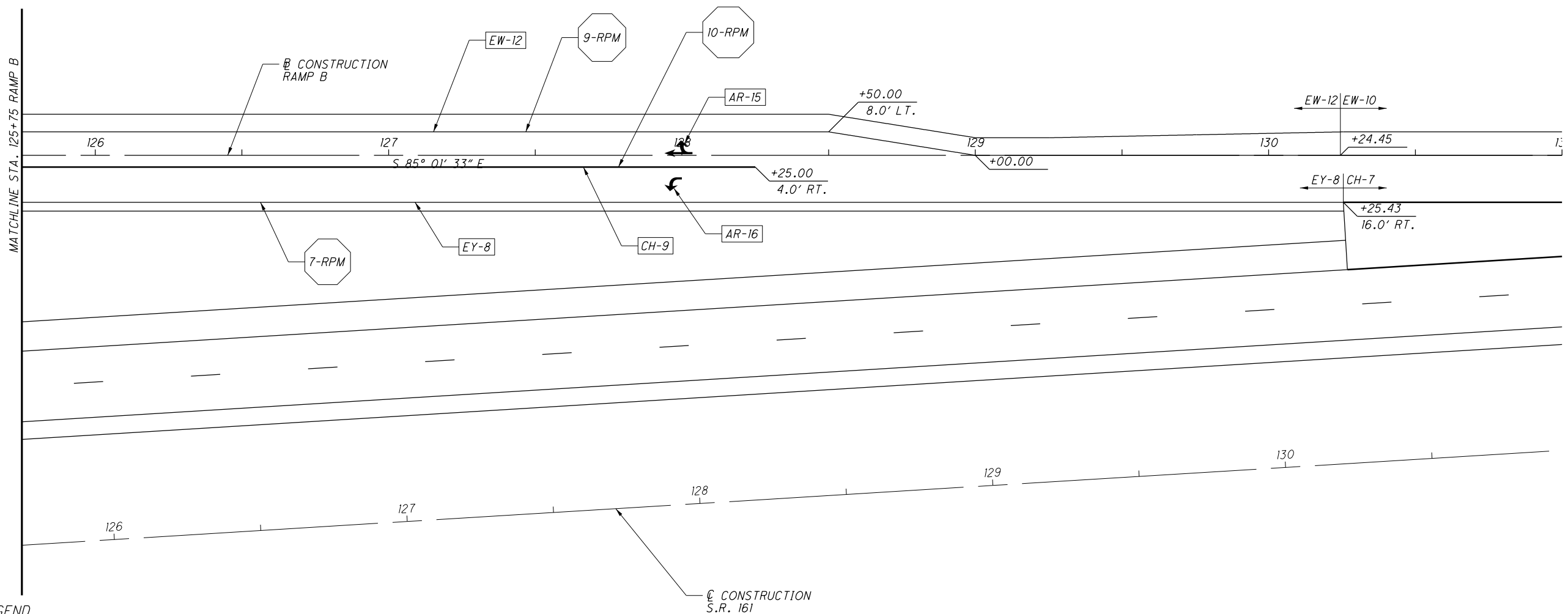
HORIZONTAL SCALE IN FEET

RAMP B PAVEMENT MARKING SHEET
STA. 125+75 TO STA. 130+25.43

LIC-161-1.83

242
336

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LEGEND

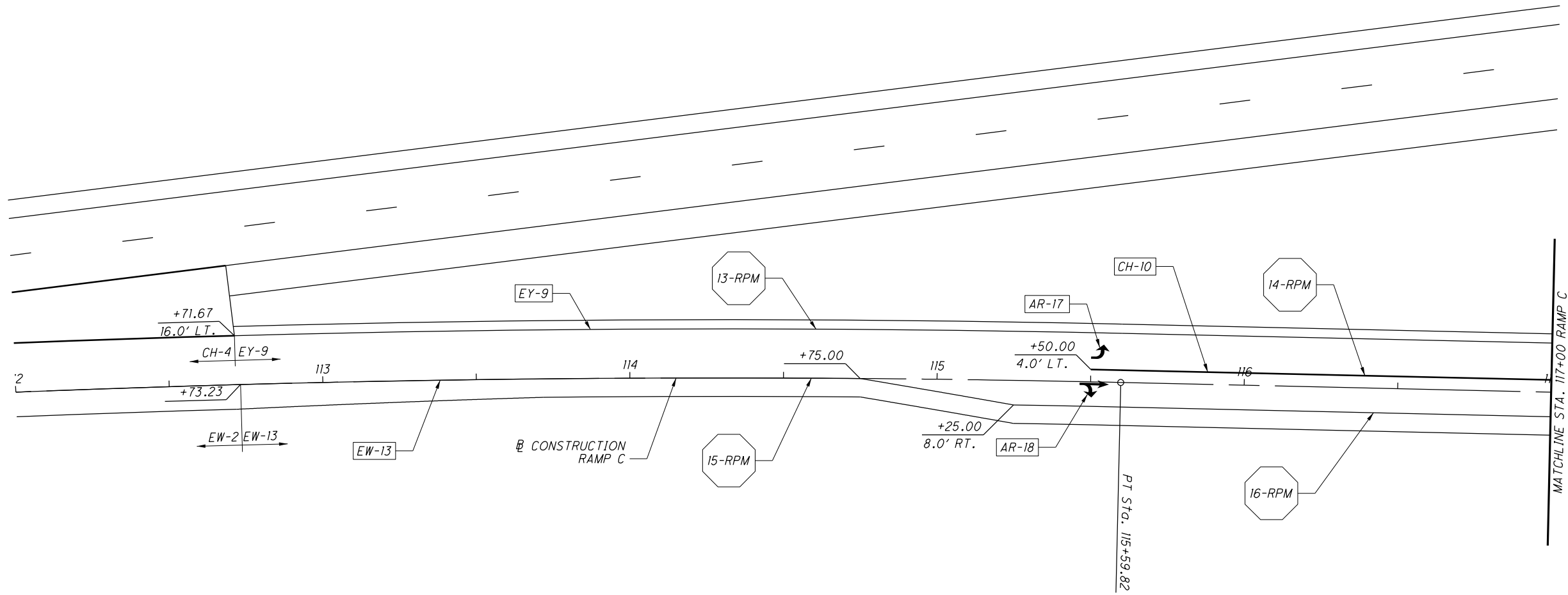
- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
AR-10, AR-11, AR-12, WD-4, AR-13, AND AR-14 NOT USED

REFERENCE	STATION	OFFSET
AR-17	115+56.00	10.0' LT.
AR-18	115+56.00	2.0' RT.
WD-5	NOT USED	
AR-19	NOT USED	
AR-20	NOT USED	
AR-21	NOT USED	



 10 HORIZONTAL SCALE IN FEET
 CALCULATED
 CMY
 CHECKED
 HAG



RAMP C PAVEMENT MARKING SHEET
STA. 112+71.67 TO STA. 117+00

LIC-161-1.83

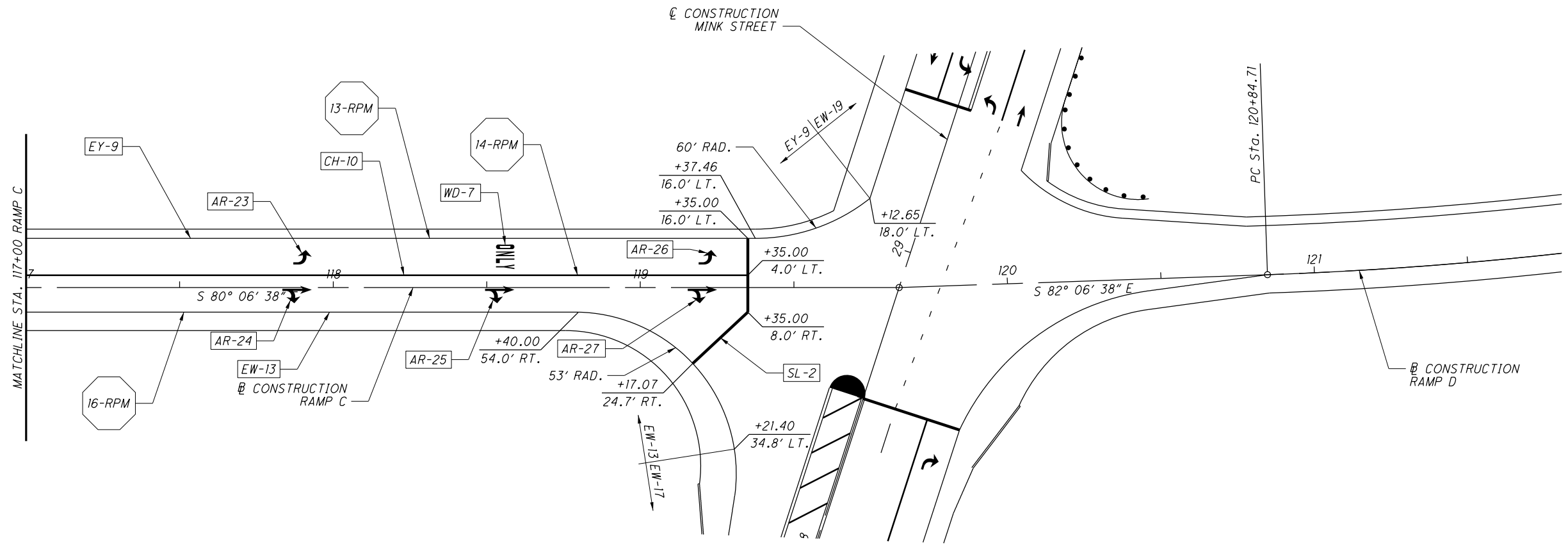
LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
WD-5, AR-19, AR-20, AND AR-21 NOT USED

REFERENCE	STATION	OFFSET
WD-6	NOT USED	
AR-22	NOT USED	
AR-23	117+93.00	10.0' LT.
AR-24	117+93.00	2.0' RT.
WD-7	118+59.00	10.0' LT.
AR-25	118+59.00	2.0' RT.
AR-26	119+25.00	2.0' RT.
AR-27	119+25.00	2.0' RT.


 0 20 40
 HORIZONTAL SCALE IN FEET
 CALCULATED
 CMY
 CHECKED
 HAG



RAMP C PAVEMENT MARKING SHEET
STA. 117+00 TO STA. 119+56.81

LIC-161-1.83

244
 336

LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
WD-6 AND AR-22 NOT USED

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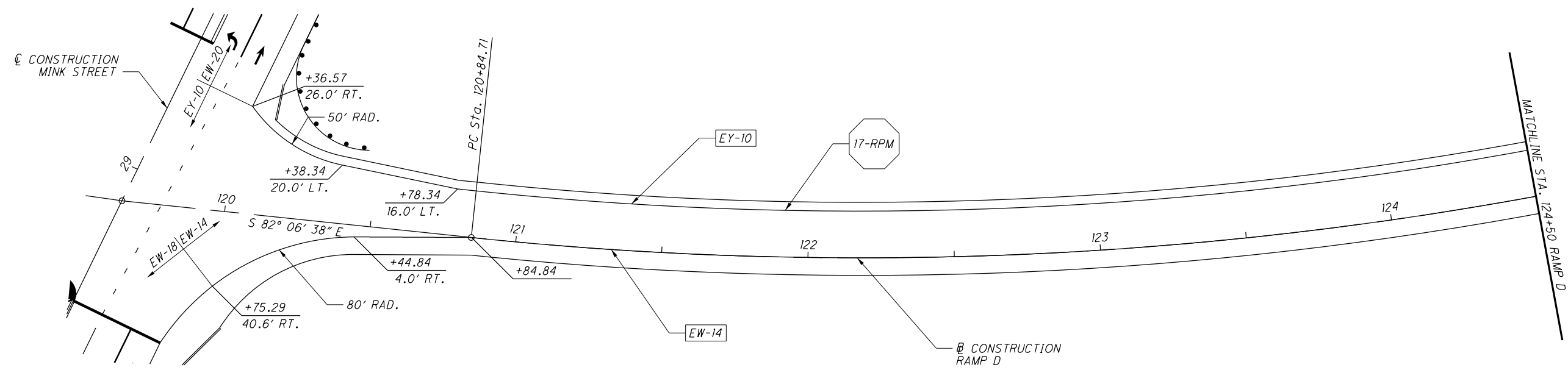
CALCULATED
 CMY
 CHECKED
 HAG

0 20 40
 HORIZONTAL
 SCALE IN FEET

RAMP D PAVEMENT MARKING SHEET
STA. 119+94.63 TO STA. 124+50

LIC-161-1.83

245
 336

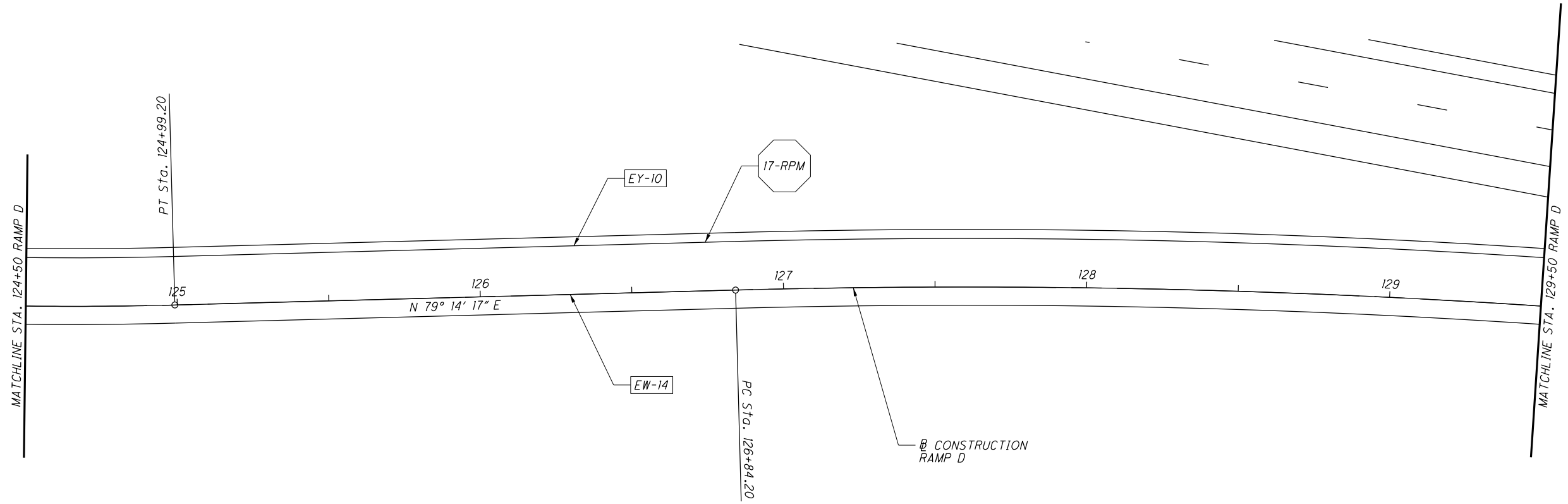


LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

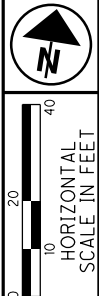


RAMP D PAVEMENT MARKING SHEET
STA. 124+50 TO STA. 129+50

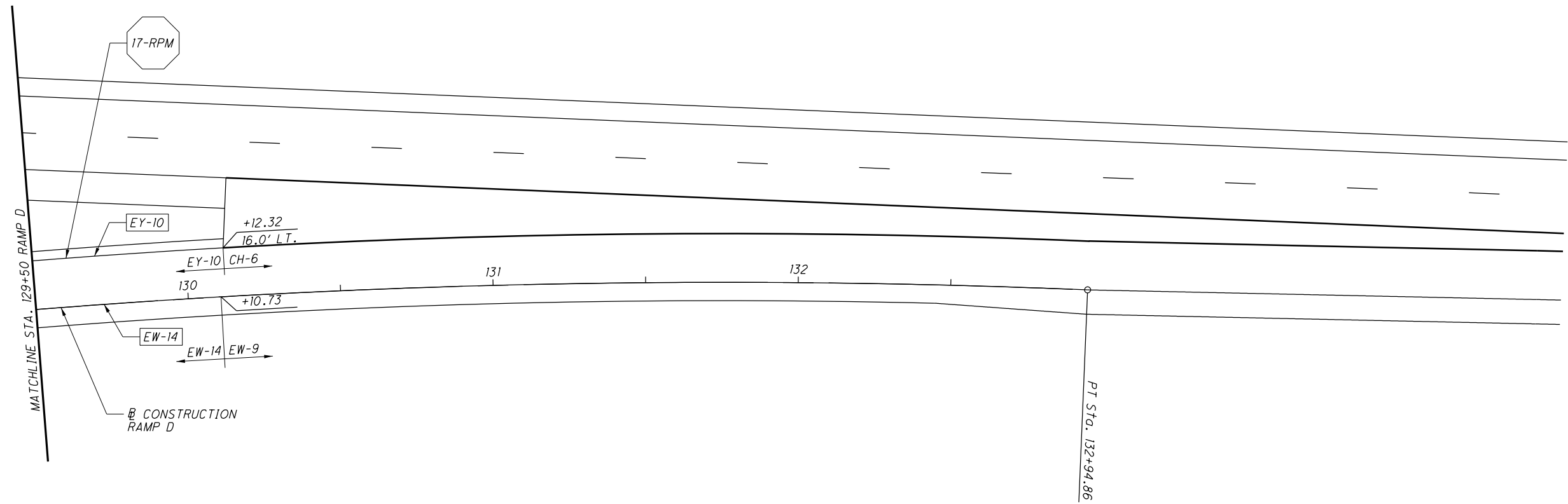
LIC-161-1.83

246
336

CALCULATED
 CMY
 CHECKED
 HAG



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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"



CALCULATED
CMY
CHECKED
HAG

RAMP D PAVEMENT MARKING SHEET
STA. 129+50 TO STA. 130+12.32

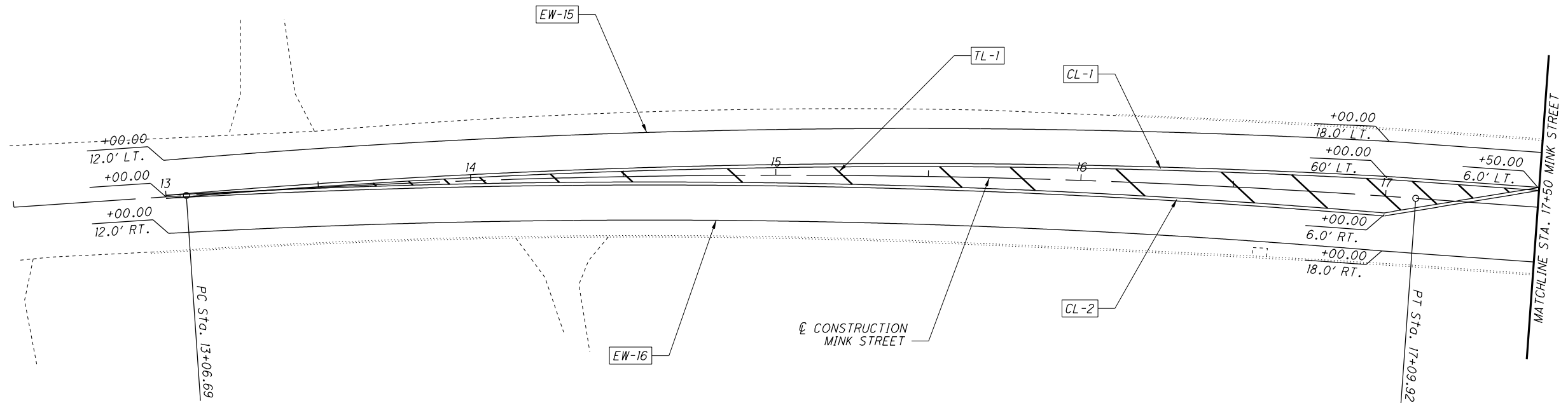
LIC-161-1.83

247
336

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"



CALCULATED	
CMY	
CHECKED	HAG

MINK STREET PAVEMENT MARKING SHEET
STA. 12+50 TO STA. 17+50

LIC-161-1.83

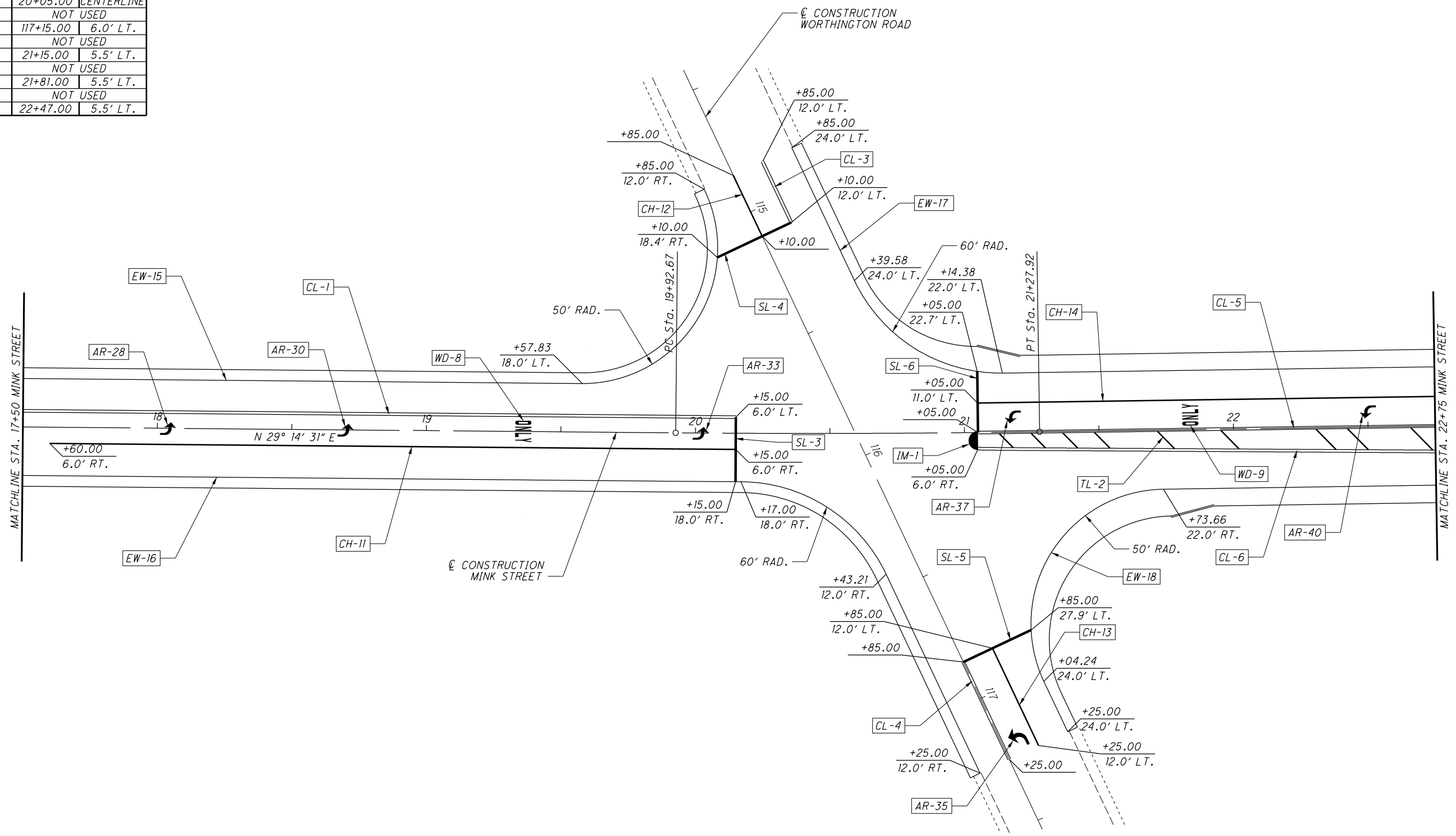
REFERENCE	STATION	OFFSET
AR-28	18+07.00	CENTERLINE
AR-29	NOT USED	
AR-30	18+73.00	CENTERLINE
AR-31	NOT USED	
WD-8	19+39.00	CENTERLINE
AR-32	NOT USED	
AR-33	20+05.00	CENTERLINE
AR-34	NOT USED	
AR-35	117+15.00	6.0' LT.
AR-36	NOT USED	
AR-37	21+15.00	5.5' LT.
AR-38	NOT USED	
WD-9	21+81.00	5.5' LT.
AR-39	NOT USED	
AR-40	22+47.00	5.5' LT.



CALCULATED
CMY
CHECKED
HAG

MINK STREET PAVEMENT MARKING SHEET
STA. 17+50 TO STA. 22+75

LIC-161-1.83



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
AR-29, AR-31, AR-32, AR-34, AR-38, AND AR-39 NOT USED

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REFERENCE	STATION	OFFSET
AR-41	NOT USED	
WD-10	NOT USED	
AR-42	NOT USED	
AR-43	NOT USED	
AR-44	NOT USED	
WD-11	NOT USED	
AR-45	24+81.00	27.5' RT.
AR-46	NOT USED	
AR-47	NOT USED	
WD-12	NOT USED	
AR-48	NOT USED	
AR-49	NOT USED	
WD-13	NOT USED	
WD-14	NOT USED	
AR-50	NOT USED	
AR-51	26+43.00	5.5' LT.
AR-52	27+08.00	27.5' RT.

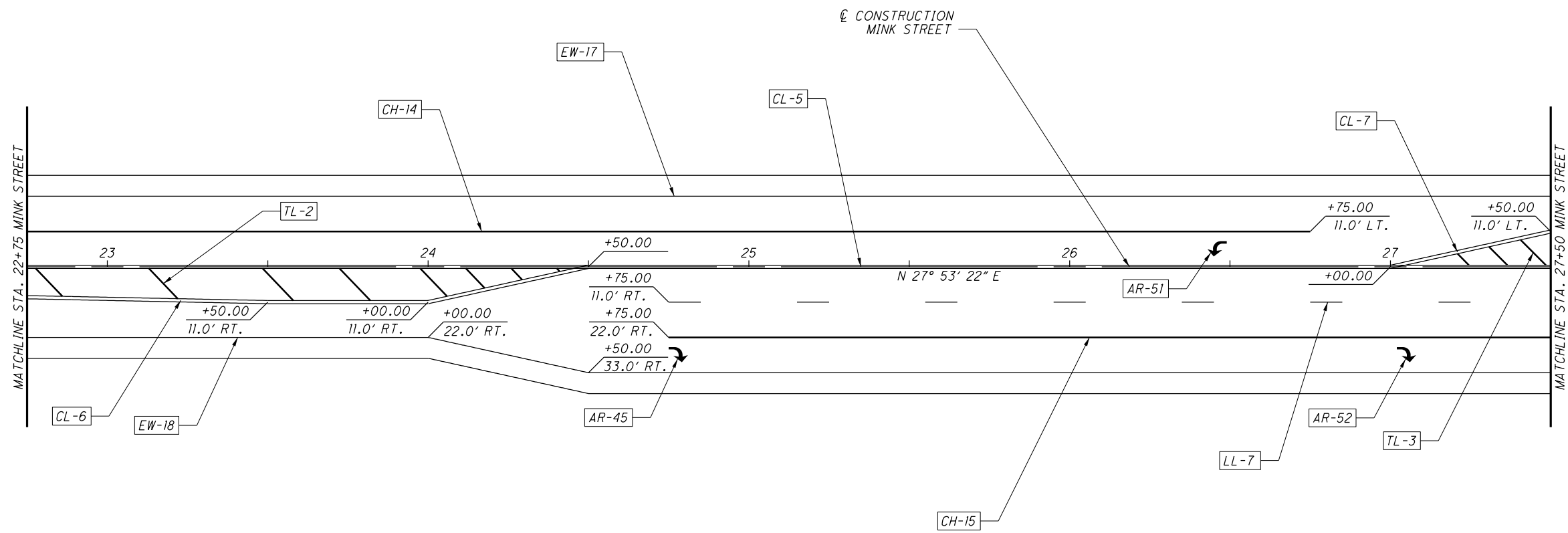


CALCULATED
CMY
CHECKED
HAG

MINK STREET PAVEMENT MARKING SHEET
STA. 22+75 TO STA. 27+50

LIC-161-1.83

250
336



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

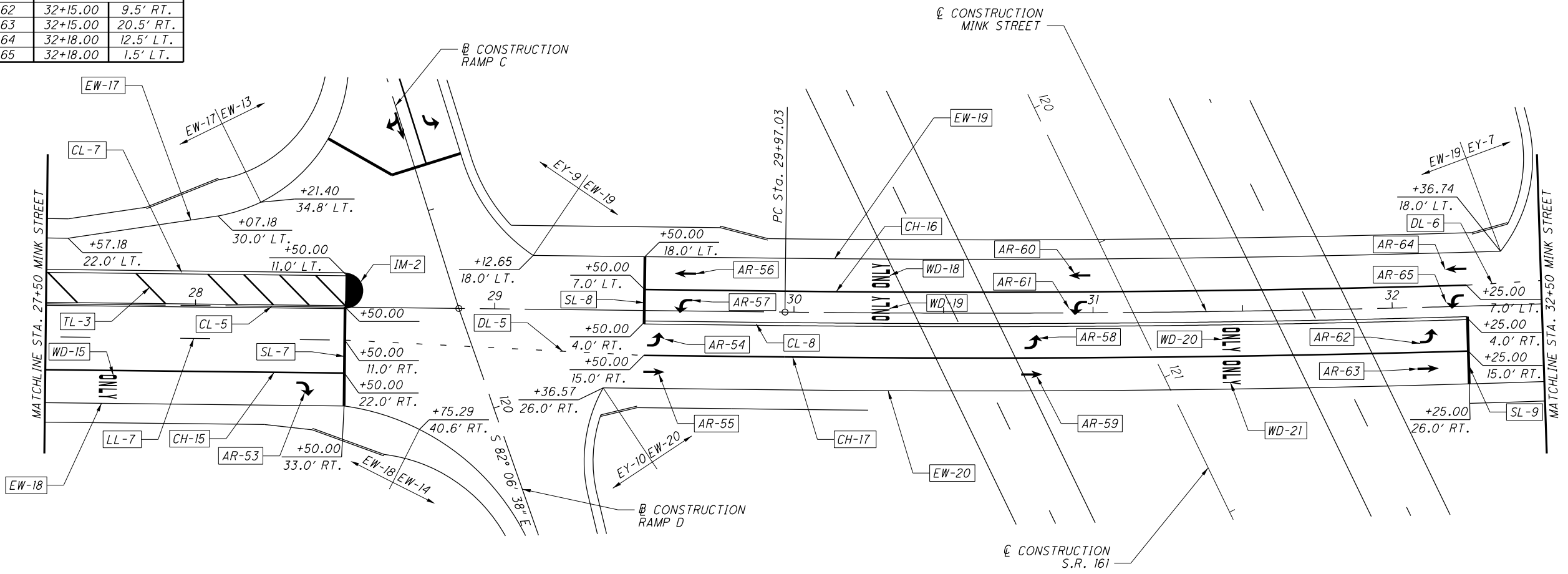
NOTE:
AR-41, WD-10, AR-42, AR-43, AR-44, WD-11,
AR-46, AR-47, WD-12, AR-458, AR-49, WD-13,
WD-14, AND AR-50 NOT USED

REFERENCE	STATION	OFFSET
WD-15	27+74.00	27.5' RT.
AR-53	28+40.00	27.5' RT.
AR-54	29+57.00	9.5' RT.
AR-55	29+57.00	20.5' RT.
AR-56	29+60.00	12.5' LT.
AR-57	29+60.00	1.5' LT.
WD-16	NOT USED	
WD-17	NOT USED	
WD-18	30+26.00	12.5' LT.
WD-19	30+26.00	1.5' LT.
AR-58	30+83.00	9.5' RT.
AR-59	30+83.00	20.5' RT.
AR-60	30+92.00	12.5' LT.
AR-61	30+92.00	1.5' LT.
WD-20	31+49.00	9.5' RT.
WD-21	31+49.00	20.5' RT.
WD-22	NOT USED	
WD-23	NOT USED	
WD-62	32+15.00	9.5' RT.
WD-63	32+15.00	20.5' RT.
WD-64	32+18.00	12.5' LT.
WD-65	32+18.00	1.5' LT.

CALCULATED
CMY
CHECKED
HAG

MINK STREET PAVEMENT MARKING SHEET
STA. 27+50 TO STA. 32+50

LIC-161-1.83



LEGEND

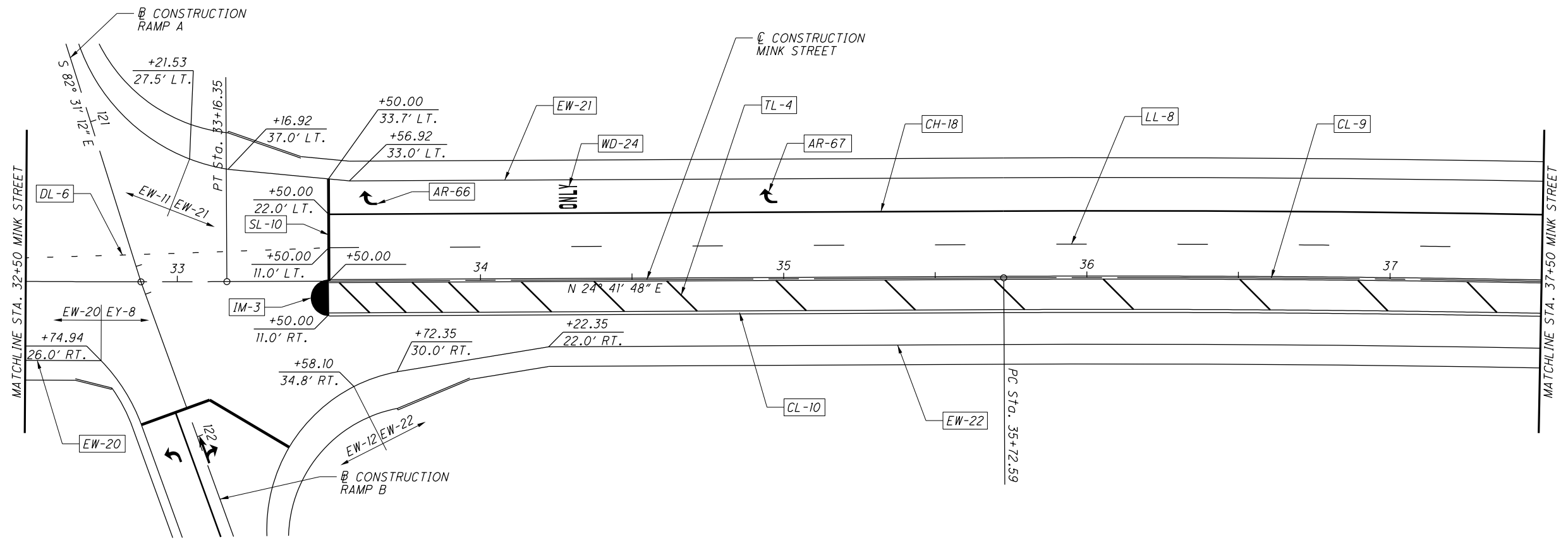
- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
WD-16, WD-17, WD-22, AND WD-23 NOT USED

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REFERENCE	STATION	OFFSET
AR-66	33+60.00	27.5' LT.
WD-24	34+26.00	27.5' LT.
AR-67	34+92.00	27.5' LT.
WD-25	NOT USED	
AR-68	NOT USED	
WD-26	NOT USED	

CALCULATED
CMY
CHECKED
HAG



MINK STREET PAVEMENT MARKING SHEET
STA. 32+50 TO STA. 37+50

LIC-161-1.83

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LEGEND

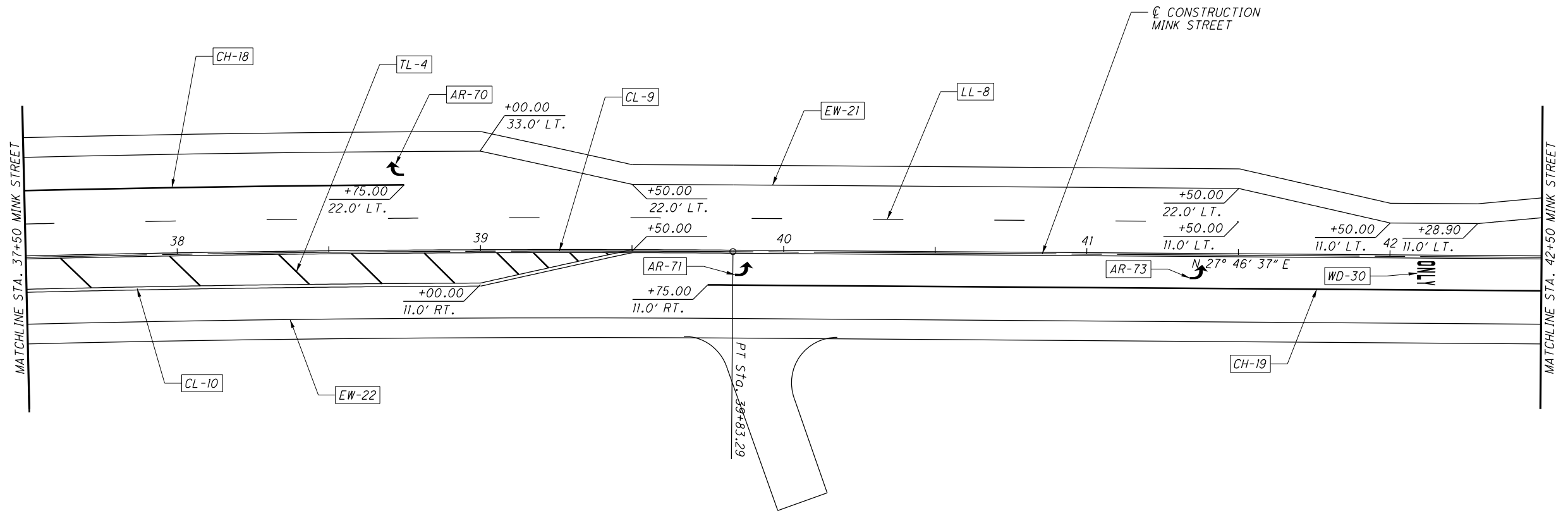
- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
WD-25, AR-68, AND WD-26 NOT USED

REFERENCE	STATION	OFFSET
AR-69	NOT USED	
WD-27	NOT USED	
AR-70	38+69.00	27.5' LT.
AR-71	39+90.00	5.5' RT.
AR-72	NOT USED	
WD-28	NOT USED	
WD-29	NOT USED	
AR-73	41+40.00	5.5' RT.
AR-74	NOT USED	
WD-30	42+15.00	5.5' RT.
WD-31	NOT USED	

CALCULATED
CMY
CHECKED
HAG

HORIZONTAL SCALE IN FEET



MINK STREET PAVEMENT MARKING SHEET
STA. 37+50 TO STA. 42+50

LIC-161-1.83

253
336

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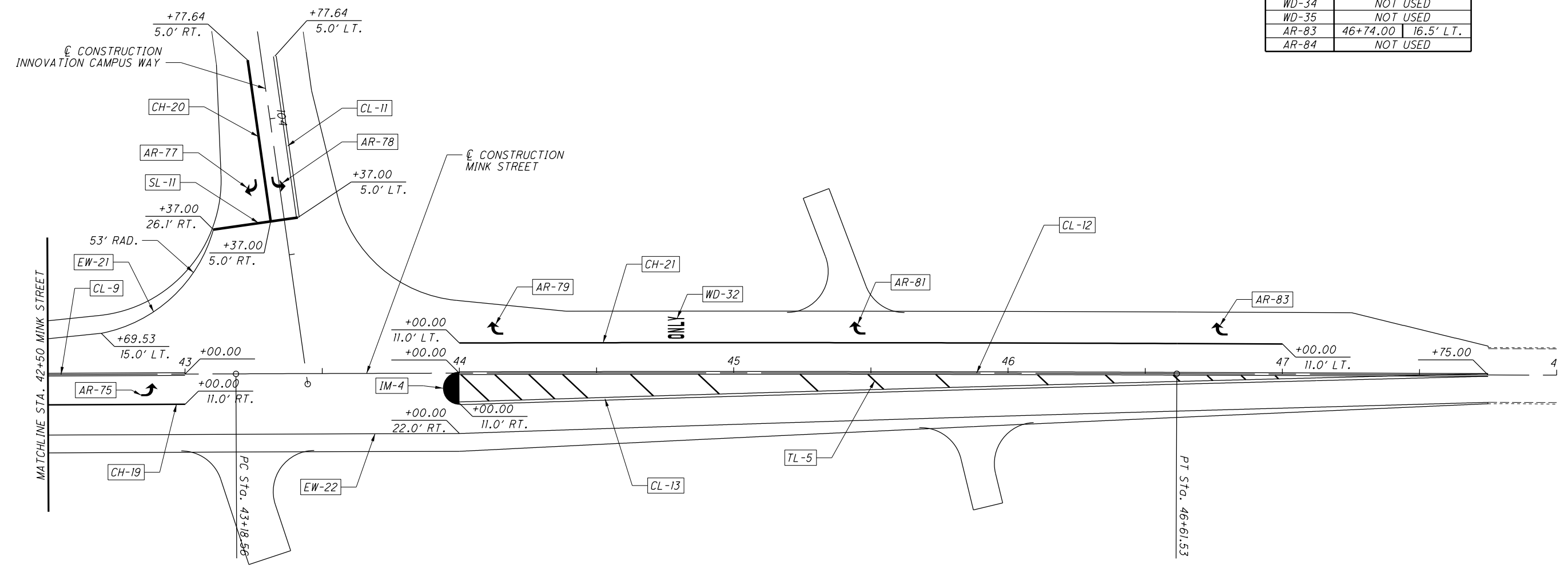
LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
AR-69, WD-27, AR-72, WD-28,
WD-29, AR-74, AND WD-31 NOT USED

10' HORIZONTAL SCALE IN FEET

REFERENCE	STATION	OFFSET
AR-75	42+90.00	5.5' RT.
AR-76	NOT USED	
AR-77	104+27.00	10.5' RT.
AR-78	104+27.00	CENTERLINE
AR-79	44+10.00	16.5' LT.
AR-80	NOT USED	
WD-32	44+76.00	16.5' LT.
WD-33	NOT USED	
AR-81	45+42.00	16.5' LT.
AR-82	NOT USED	
WD-34	NOT USED	
WD-35	NOT USED	
AR-83	46+74.00	16.5' LT.
AR-84	NOT USED	



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

NOTE:
AR-76, AR-80, WD-33, AR-82,
WD-34, WD-35, AND AR-84 NOT USED

MINK STREET PAVEMENT MARKING SHEET
STA. 42+50 TO STA. 48+00

LIC-161-1.83

254
 336

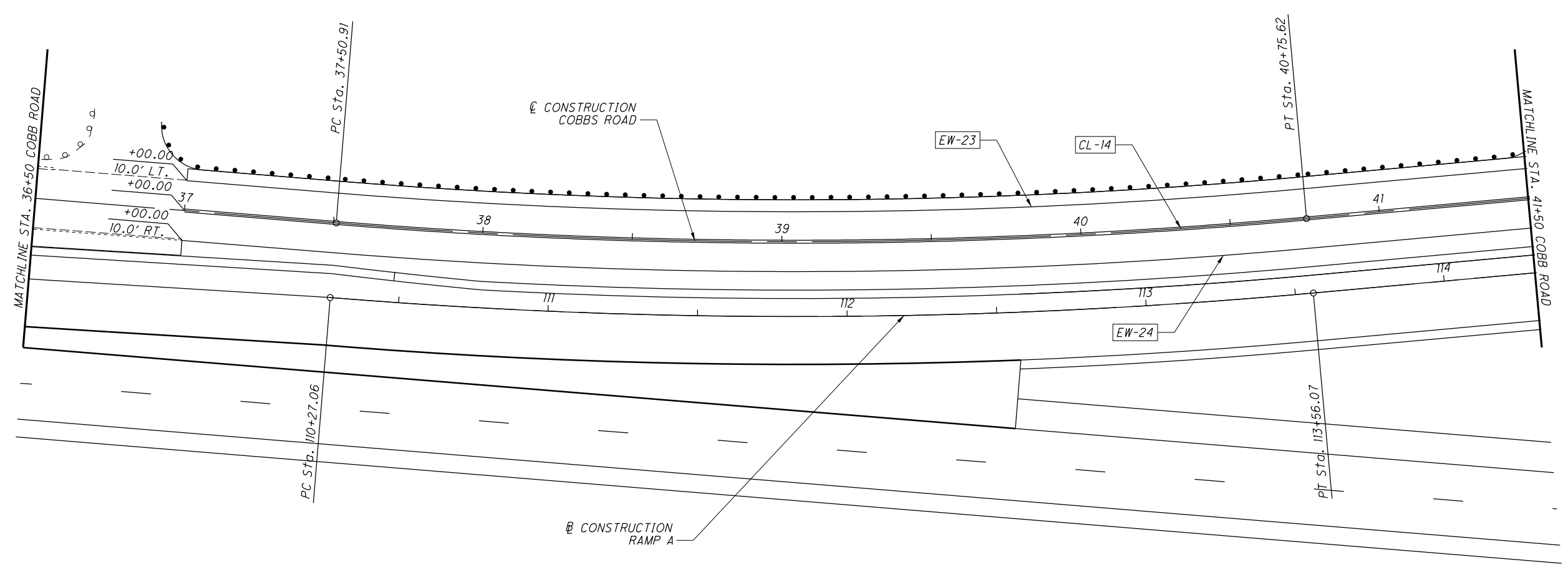
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CALCULATED	
CMY	
CHECKED	HAG

COBBS ROAD PAVEMENT MARKING SHEET
STA. 36+50 TO STA. 41+50

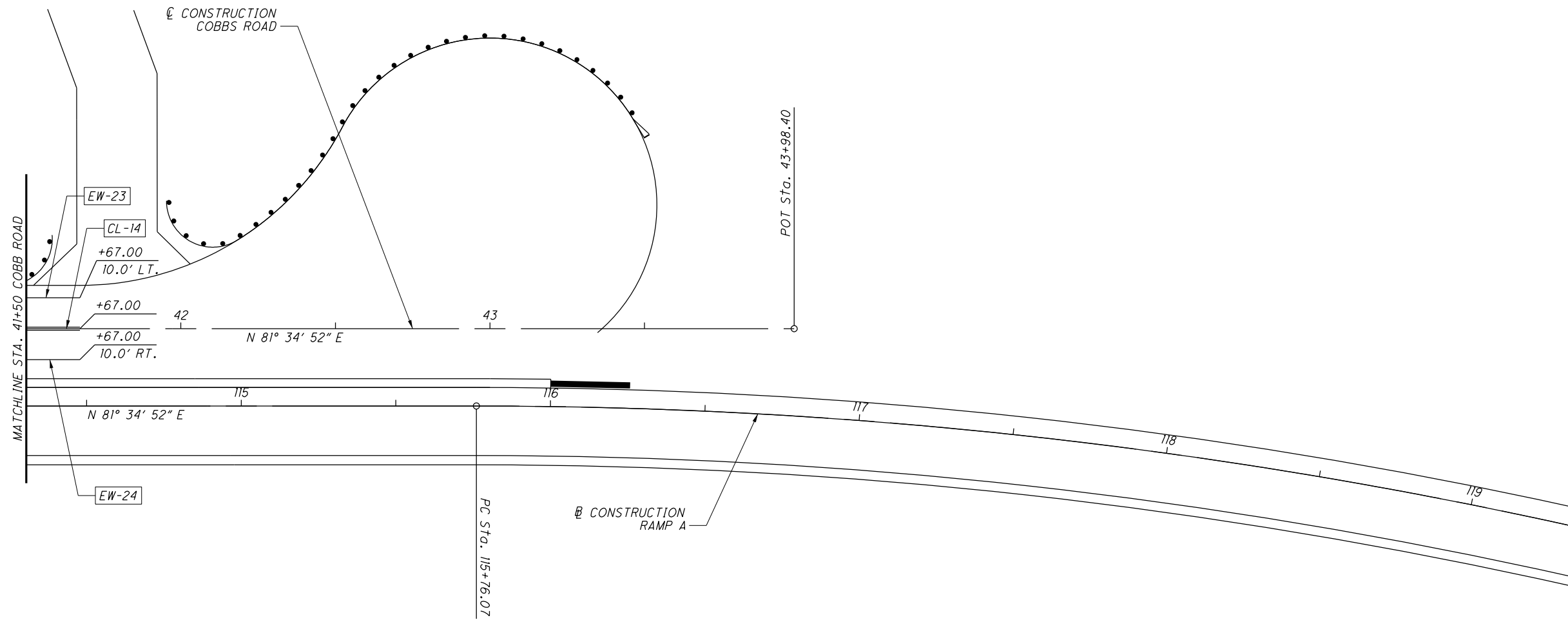
LIC-161-1.83



LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

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LEGEND

- AR - LANE ARROW
- CH - CHANNELIZING LINE
- CL - CENTER LINE
- DL - DOTTED LINE
- EW - EDGE LINE, WHITE
- EY - EDGE LINE, YELLOW
- IM - ISLAND MARKING
- LL - LANE LINE
- SL - STOP LINE
- TL - TRANSVERSE/DIAGONAL LINE
- WD - WORD ON PAVEMENT, 72"

CALCULATED
CMY
CHECKED
HAG

0 20 40
HORIZONTAL
SCALE IN FEET

COBBS ROAD PAVEMENT MARKING SHEET
STA. 41+50 TO STA. 43+98.40

LIC-161-1.83

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		644					648											CALCULATED C/MY CHECKED HAG
			FROM	TO	STOP LINE FT	TRANSVERSE/DIAGONAL LINE (YELLOW) FT	ISLAND MARKING SQ FT	LANE ARROW EACH	WORD ON PAVEMENT, 72" EACH	EDGE LINE, 4" (WHITE) MILE	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 4" MILE	LANE LINE, 6" MILE	CENTER LINE (DOUBLE SOLID) MILE	CHANNELIZING LINE, 8" FT	CHANNELIZING LINE, 12" FT	DOTTED LINE, 4" FT	DOTTED LINE, 6" FT		
229-232	EW-1	S.R. 161	88+00.00	112+59.42 (A)							0.47										
229-233	LL-1	S.R. 161	88+00.00	120+14.25										0.61							
229-233	EY-1	S.R. 161	88+00.00	120+08.58									0.61								
229-233	EY-2	S.R. 161	88+00.00	119+68.92									0.60								
229-233	LL-2	S.R. 161	88+00.00	119+63.26										0.60							
229-232	EW-2	S.R. 161	88+00.00	112+73.23 (B)							0.47										
229-231	DL-1	S.R. 161	97+77.06	108+20.00														1043			
230, 231	DL-2	S.R. 161	104+50.00	109+30.00														480			
231, 232	CH-1	S.R. 161	108+20.00	112+57.49 (A)												440					
231, 232	CH-2	S.R. 161	108+20.00	112+58.86												439					
231, 232	CH-3	S.R. 161	109+30.00	112+72.35												342					
231, 232	CH-4	S.R. 161	109+30.00	112+71.67 (C)												343					
232, 233	EW-3	S.R. 161	112+58.86	120+19.91							0.14										
232, 233	EW-4	S.R. 161	112+72.35	119+57.60							0.13										
233-235	EW-7	S.R. 161	121+32.76	130+11.20							0.17										
233-238	LL-5	S.R. 161	121+38.43	158+00.00										0.69							
233-238	EY-5	S.R. 161	121+44.11	158+00.00									0.69								
234-238	EY-6	S.R. 161	121+83.81	158+00.00									0.68								
234-238	LL-6	S.R. 161	121+89.48	158+00.00										0.68							
234, 235	EW-8	S.R. 161	121+95.15	130+25.17							0.16										
235, 236	CH-5	S.R. 161	130+11.20	134+75.00												464					
235, 236	CH-6	S.R. 161	130+12.32 (D)	134+75.00												465					
235-238	EW-9	S.R. 161	130+10.73 (D)	158+00.00							0.53										
235-238	EW-10	S.R. 161	130+24.45 (B)	158+00.00							0.53										
235, 236	CH-7	S.R. 161	130+25.43 (B)	134+26.07												402					
235, 236	CH-8	S.R. 161	130+25.17	134+26.07												401					
236-238	DL-3	S.R. 161	134+26.07	142+00.00														774			
236-238	DL-4	S.R. 161	134+75.00	145+44.86														1070			
248, 249	EW-15	MINK STREET	13+00.00	14+85.00 (W)						0.14											
248, 249	EW-16	MINK STREET	13+00.00	117+25.00 (W)						0.16											
248, 249	CL-1	MINK STREET	13+00.00	20+15.00										0.14							
248	CL-2	MINK STREET	13+00.00	17+50.00										0.09							
248	TL-1	MINK STREET	13+00.00	17+50.00		134															
249	CH-11	MINK STREET	17+60.00	20+15.00											255						
249	AR-28	MINK STREET	18+07.00								1										
	AR-29	NOT USED																			
249	AR-30	MINK STREET	18+73.00								1										
	AR-31	NOT USED																			
249	WD-8	MINK STREET	19+39.00								1										
	AR-32	NOT USED																			
249	AR-33	MINK STREET	20+05.00								1										
	AR-34	NOT USED																			
249	SL-3	MINK STREET	20+15.00		24																
249	CH-12	WORTHINGTON ROAD	114+85.00	115+10.00											25						
249	CL-3	WORTHINGTON ROAD	114+85.00	115+10.00										0.01							
249	SL-4	WORTHINGTON ROAD	115+10.00		31																
249	SL-5	WORTHINGTON ROAD	116+85.00		28																
249	CL-4	WORTHINGTON ROAD	116+85.00	117+25.00										0.01							
249	CH-13	WORTHINGTON ROAD	116+85.00	117+25.00											40						
249	AR-35	WORTHINGTON ROAD	117+15.00								1										
249-251	EW-17	MINK STREET	114+85.00 (W)	28+21.40						0.16											
249-251	EW-18	MINK STREET	117+25.00 (W)	28+75.29						0.16											
249	IM-1	MINK STREET	21+05.00			20															
249	SL-6	MINK STREET	21+05.00		23																
249, 250	CH-14	MINK STREET	21+05.00	26+75.00											570						
249-251	CL-5	MINK STREET	21+05.00	28+50.00										0.14							
249, 250	CL-6	MINK STREET	21+05.00	24+50.00										0.07							
249, 250	TL-2	MINK STREET	21+05.00	24+50.00		163															
	AR-36	NOT USED																			
249	AR-37	MINK STREET	21+15.00								1										

PAVEMENT MARKING SUBSUMMARY

LIC-161-1.83

257
336

SUB-TOTALS CARRIED TO SHEET 259

106 297 20 5 1 0.62 2.6 2.58 0 2.58 0.46 890 3296 0 3367

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		644						648										
					STOP LINE FT	TRANSVERSE/DIAGONAL LINE (YELLOW) FT	ISLAND MARKING SQ FT	LANE ARROW EACH	WORD ON PAVEMENT, 72" EACH	EDGE LINE, 4" (WHITE) MILE	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 4" MILE	LANE LINE, 6" MILE	CENTER LINE (DOUBLE SOLID) MILE	CHANNELIZING LINE, 8" FT	CHANNELIZING LINE, 12" FT	DOTTED LINE, 4" FT	DOTTED LINE, 6" FT		
FROM	TO																				
249	AR-38	NOT USED																			
	WD-9	MINK STREET	21+81.00						1												
249	AR-40	MINK STREET	22+47.00						1												
	AR-41	NOT USED																			
	WD-10	NOT USED																			
	AR-42	NOT USED																			
	AR-43	NOT USED																			
	AR-44	NOT USED																			
	WD-11	NOT USED																			
250, 251	LL-7	MINK STREET	24+75.00	28+50.00									0.07								
250, 251	CH-15	MINK STREET	24+75.00	28+50.00											375						
250	AR-45	MINK STREET	24+81.00						1												
	AR-46	NOT USED																			
	AR-47	NOT USED																			
	WD-12	NOT USED																			
	AR-48	NOT USED																			
	AR-49	NOT USED																			
	WD-13	NOT USED																			
	WD-14	NOT USED																			
	AR-50	NOT USED																			
250	AR-51	MINK STREET	26+43.00						1												
250, 251	CL-7	MINK STREET	27+00.00	28+50.00										0.03							
250, 251	TL-3	MINK STREET	27+00.00	28+50.00		110															
250	AR-52	MINK STREET	27+08.00						1												
251	WD-15	MINK STREET	27+74.00						1												
251	AR-53	MINK STREET	28+40.00						1												
251	SL-7	MINK STREET	28+50.00			33															
251	IM-2	MINK STREET	28+50.00				57														
251	DL-5	MINK STREET	28+50.00	29+50.00													100				
251	EW-19	MINK STREET	29+12.65	32+36.74						0.06											
251, 252	EW-20	MINK STREET	29+36.57	32+74.94						0.06											
251	SL-8	MINK STREET	29+50.00			22															
251	CH-16	MINK STREET	29+50.00	32+25.00											275						
251	CL-8	MINK STREET	29+50.00	32+25.00										0.05							
251	CH-17	MINK STREET	29+50.00	32+25.00											275						
251	AR-54	MINK STREET	29+57.00						1												
251	AR-55	MINK STREET	29+57.00						1												
251	AR-56	MINK STREET	29+60.00						1												
251	AR-57	MINK STREET	29+60.00						1												
	WD-16	NOT USED																			
	WD-17	NOT USED																			
251	WD-18	MINK STREET	30+26.00						1												
251	WD-19	MINK STREET	30+26.00						1												
251	AR-58	MINK STREET	30+83.00						1												
251	AR-59	MINK STREET	30+83.00						1												
251	AR-60	MINK STREET	30+92.00						1												
251	AR-61	MINK STREET	30+92.00						1												
251	WD-20	MINK STREET	31+49.00						1												
251	WD-21	MINK STREET	31+49.00						1												
	WD-22	NOT USED																			
	WD-23	NOT USED																			
251	AR-62	MINK STREET	32+15.00						1												
251	AR-63	MINK STREET	32+15.00						1												
251	AR-64	MINK STREET	32+18.00						1												
251	AR-65	MINK STREET	32+18.00						1												
251	SL-9	MINK STREET	32+25.00			22															
251, 252	DL-6	MINK STREET	32+25.00	33+50.00													125				
SUB-TOTALS CARRIED TO SHEET 259																					
						77	110	57	17	6	0.12	0	0	0.07	0	0.08	925	0	225	0	

CALCULATED	
CMY	HAG
CHECKED	
PAVEMENT MARKING SUBSUMMARY	
LIC-161-1.83	
258	336

SHEET NO.	REFERENCE NO.	LOCATION	STATION		644							648										
			FROM	TO	STOP LINE FT	TRANSVERSE/DIAGONAL LINE (YELLOW) FT	ISLAND MARKING SQ FT	LANE ARROW EACH	WORD ON PAVEMENT, 72" EACH	EDGE LINE, 4" (WHITE) MILE	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 4" MILE	LANE LINE, 6" MILE	CENTER LINE (DOUBLE SOLID) MILE	CHANNELIZING LINE, 8" FT	CHANNELIZING LINE, 12" FT	DOTTED LINE, 4" FT				
252-254	EW-21	MINK STREET	121+21.53 (A)	104+37.19 (I)						0.19												
252	SL-10	MINK STREET	33+50.00		34																	
252	IM-3	MINK STREET	33+50.00			57																
252, 253	CH-18	MINK STREET	33+50.00	38+75.00												525						
252, 253	LL-8	MINK STREET	33+50.00	41+50.00								0.15										
252-254	CL-9	MINK STREET	33+50.00	43+00.00										0.18								
252, 253	CL-10	MINK STREET	33+50.00	39+50.00										0.11								
252, 253	TL-4	MINK STREET	33+50.00	39+50.00		292				0.27												
252-254	EW-22	MINK STREET	33+58.10	47+75.00																		
252	AR-66	MINK STREET	33+60.00						1													
252	WD-24	MINK STREET	34+26.00							1												
25	AR-67	MINK STREET	34+92.00						1													
	WD-25	NOT USED																				
	AR-68	NOT USED																				
	WD-26	NOT USED																				
	AR-69	NOT USED																				
	WD-27	NOT USED																				
253	AR-70	MINK STREET	38+69.00						1													
253, 254	CH-19	MINK STREET	39+75.00	43+00.00												325						
253	AR-71	MINK STREET	39+90.00						1													
	AR-72	NOT USED																				
	WD-28	NOT USED																				
	WD-29	NOT USED																				
253	AR-73	MINK STREET	41+40.00						1													
	AR-74	NOT USED																				
253	WD-30	MINK STREET	42+15.00							1												
	WD-31	NOT USED																				
254	AR-75	MINK STREET	42+90.00						1													
	AR-76	NOT USED																				
254	SL-11	INNOVATION CAMPUS WAY	104+37.00		31																	
254	CH-20	INNOVATION CAMPUS WAY	103+77.64	104+37.00												60						
254	CL-11	INNOVATION CAMPUS WAY	103+77.64	104+37.00										0.01								
254	AR-77	INNOVATION CAMPUS WAY	104+27.00						1													
254	AR-78	INNOVATION CAMPUS WAY	104+27.00						1													
254	CH-21	MINK STREET	44+00.00	47+00.00												300						
254	CL-12	MINK STREET	44+00.00	47+75.00										0.07								
254	CL-13	MINK STREET	44+00.00	47+75.00										0.07								
254	IM-4	MINK STREET	44+00.00				57															
254	TL-5	MINK STREET	44+00.00	47+75.00		120																
254	AR-79	MINK STREET	44+10.00						1													
	AR-80	NOT USED																				
254	WD-32	MINK STREET	44+76.00							1												
	WD-33	NOT USED																				
254	AR-81	MINK STREET	45+42.00						1													
	AR-82	NOT USED																				
	WD-34	NOT USED																				
	WD-35	NOT USED																				
254	AR-83	MINK STREET	46+74.00						1													
	AR-84	NOT USED																				
255, 256	EW-23	COBBS ROAD	37+00.00	41+67.00						0.09												
255, 256	EW-24	COBBS ROAD	37+00.00	41+67.00						0.09												
255, 256	CL-14	COBBS ROAD	37+00.00	41+67.00										0.09								
SUB-TOTALS THIS SHEET					65	412	114	11	3	0.64	0	0	0.15	0	0.53	1210	0	0	0			
SUB-TOTALS CARRIED FROM SHEET 257					106	297	20	5	1	0.62	2.60	2.58	0	2.58	0.46	890	3296	0	3367			
SUB-TOTALS CARRIED FROM SHEET 258					77	110	57	17	6	0.12	0	0	0.07	0	0.08	925	0	225	0			
TOTALS CARRIED TO GENERAL SUMMARY					248	819	191	33	10	1.38		5.18		0.22	2.58	1.07	3025	3296	225	3367		

PAVEMENT MARKING SUBSUMMARY

LIC-161-1.83

CALCULATED
CMY
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259
336

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		EDGE LINE, 6" (WHITE)	EDGE LINE, 6" (YELLOW)	LANE LINE, 6"	646		STOP LINE	LANE ARROW	WORD ON PAVEMENT, 72"																													
			FROM	TO				MILE	FT				FT	EACH	EACH																										
233	EW-5	S.R. 161	119+57.60	121+32.76	0.03																																				
233	LL-3	S.R. 161	119+63.26	121+38.43			0.03																																		
233	EY-3	S.R. 161	119+68.92	121+44.11		0.03																																			
233, 234	EY-4	S.R. 161	120+08.58	121+83.81		0.03																																			
233, 234	LL-4	S.R. 161	120+14.25	121+89.48			0.03																																		
233, 234	EW-6	S.R. 161	120+19.92	121+95.15	0.03																																				
239, 240	EW-11	RAMP A	112+59.42	121+21.53	0.16																																				
239, 240	EY-7	RAMP A	112+57.49	32+36.74 (M)			0.16																																		
241, 242	EY-8	RAMP B	32+74.94 (M)	130+25.43			0.16																																		
241, 242	EW-12	RAMP B	33+58.10 (M)	130+24.45	0.16																																				
241	SL-1	RAMP B	121+90.00							55																															
241, 242	CH-9	RAMP B	121+90.00	128+25.00						635																															
241	AR-1	RAMP B	122+00.00								1																														
241	AR-2	RAMP B	122+00.00								1																														
241	AR-3	RAMP B	122+66.00								1																														
241	WD-1	RAMP B	122+66.00									1																													
241	AR-4	RAMP B	123+32.00								1																														
241	AR-5	RAMP B	123+32.00								1																														
	AR-6	NOT USED																																							
	WD-2	NOT USED																																							
	AR-7	NOT USED																																							
	AR-8	NOT USED																																							
	AR-9	NOT USED																																							
	WD-3	NOT USED																																							
	AR-10	NOT USED																																							
	AR-11	NOT USED																																							
	AR-12	NOT USED																																							
	WD-4	NOT USED																																							
	AR-13	NOT USED																																							
	AR-14	NOT USED																																							
242	AR-15	RAMP B	127+94.00								1																														
242	AR-16	RAMP B	127+94.00								1																														
243, 244	EY-9	RAMP C	112+71.67	29+12.65 (M)			0.13																																		
243, 244	EW-13	RAMP C	112+73.23	28+21.40 (M)	0.13																																				
243, 244	CH-10	RAMP C	115+50.00	119+35.00						385																															
243	AR-17	RAMP C	115+56.00								1																														
243	AR-18	RAMP C	115+56.00								1																														
	WD-5	NOT USED																																							
	AR-19	NOT USED																																							
	AR-20	NOT USED																																							
	AR-21	NOT USED																																							
	WD-6	NOT USED																																							
	AR-22	NOT USED																																							
244	AR-23	RAMP C	117+93.00								1																														
244	AR-24	RAMP C	117+93.00								1																														
244	WD-7	RAMP C	118+59.00									1																													
244	AR-25	RAMP C	118+59.00									1																													
244	AR-26	RAMP C	119+25.00									1																													
244	AR-27	RAMP C	119+25.00									1																													
244	SL-2	RAMP C	119+35.00							49																															
245-247	EY-10	RAMP D	29+36.57 (M)	130+12.32			0.19																																		
245-247	EW-14	RAMP D	119+98.48	130+10.73	0.19																																				
TOTALS CARRIED TO GENERAL SUMMARY						1.40	0.06	1020	104		14	2																													

CALCULATED
CMY
CHECKED
HAG

PAVEMENT MARKING SUBSUMMARY

LIC-161-1.83

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		621				INFO ONLY	621
			FROM	TO	RPM 1-WAY WHITE EACH	RPM 2-WAY WHITE/RED EACH	RPM 2-WAY YELLOW/RED EACH	RPM 2-WAY YELLOW/YELLOW EACH	RPM SPACING CENTER/CENTER FEET	RAISED PAVEMENT MARKER REMOVED EACH
229-238	1-RPM	S.R. 161 WESTBOUND LANE LINE (LL-1, LL-4, LL-6)	88+00.00	158+00.00	59				120	59
229-238	2-RPM	S.R. 161 EASTBOUND LANE LINE (LL-2, LL-3, LL-5)	88+00.00	158+00.00	59				120	59
231, 232	3-RPM	WESTBOUND ONRAMP CHANNELIZING LINE (CH-1)	108+20.00	112+57.49		12			40	
239, 240	4-RPM	WESTBOUND ONRAMP YELLOW EDGE LINE (EY-7)	112+57.49	32+36.74			12		80	
235, 236	5-RPM	WESTBOUND OFFRAMP CHANNELIZING LINE (CH-7)	130+25.43	134+26.07		11			80	
235, 236	6-RPM	WESTBOUND OFFRAMP CHANNELIZING LINE (CH-8)	130+25.17	134+26.07		11			40	
241, 242	7-RPM	WESTBOUND OFFRAMP YELLOW EDGE LINE (EY-8)	32+74.94	130+25.43			12		80	
241	8-RPM	WESTBOUND OFFRAMP WHITE EDGE LINE (EW-12)	122+13.64	125+90.00	11				40	
242	9-RPM	WESTBOUND OFFRAMP WHITE EDGE LINE (EW-12)	125+90.00	129+90.00	5				80	
241, 242	10-RPM	WESTBOUND OFFRAMP CHANNELIZING LINE (CH-9)	121+90.00	128+25.00		17			40	
231, 232	11-RPM	EASTBOUND OFFRAMP CHANNELIZING LINE (CH-3)	109+30.00	112+72.35		10			40	
231, 232	12-RPM	EASTBOUND OFFRAMP CHANNELIZING LINE (CH-4)	109+30.00	112+71.67		10			40	
243, 244	13-RPM	EASTBOUND OFFRAMP YELLOW EDGE LINE (EY-9)	112+71.67	29+12.65			10		80	
243, 244	14-RPM	EASTBOUND OFFRAMP CHANNELIZING LINE (CH-10)	115+50.00	119+35.00		11			40	
231, 243	15-RPM	EASTBOUND OFFRAMP WHITE EDGE LINE (EW-13)	111+21.75	115+27.75	5				80	
243, 244	16-RPM	EASTBOUND OFFRAMP WHITE EDGE LINE (EW-13)	115+21.75	119+21.75	11				40	
245-247	17-RPM	EASTBOUND ONRAMP YELLOW EDGE LINE (EY-10)	29+36.57	130+12.32			14		80	
235, 236	18-RPM	EASTBOUND ONRAMP CHANNELIZING LINE (CH-6)	130+12.32	134+75.00		13			40	
SUB-TOTALS					150	95	48	0		118
TOTALS CARRIED TO GENERAL SUMMARY					293					118

RPM SUBSUMMARY

CALCULATED
CMY
CHECKED
HAG

LIC-161-1.83

LEGEND

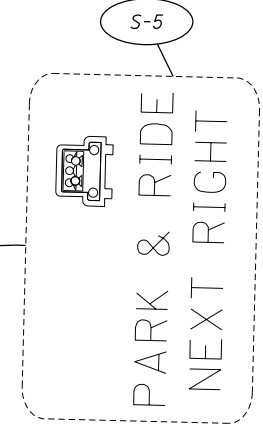
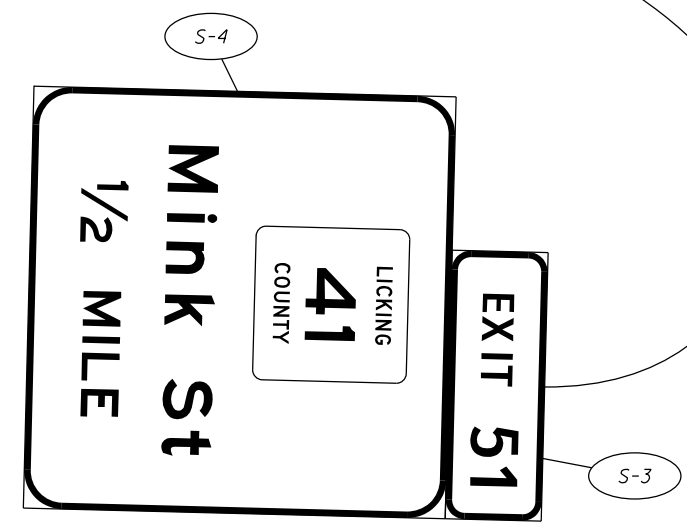
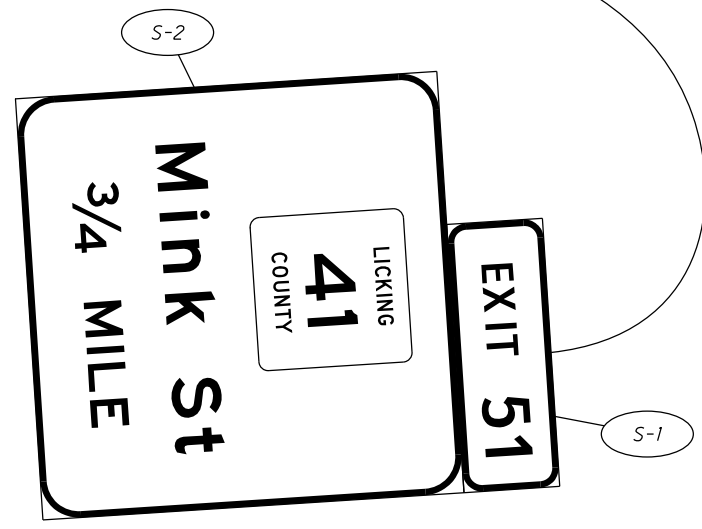
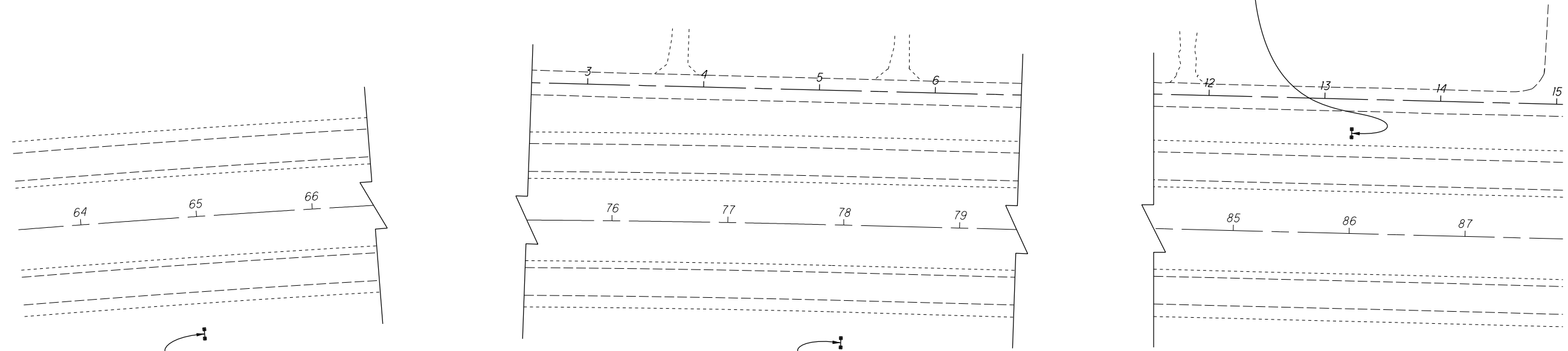
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-  EXISTING SIGN TO BE REMOVED
-  EXISTING SIGN TO BE REERECTED
-  PROPOSED SIGN

CROSS REFERENCES	
SHEETS	DESCRIPTION
271	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES

CALCULATED
BRH
CHECKED
HAG




HORIZONTAL SCALE IN FEET







SIGNING PLAN - S.R. 161
STA. 64+00 TO STA. 87+00

LIC-161-1.83

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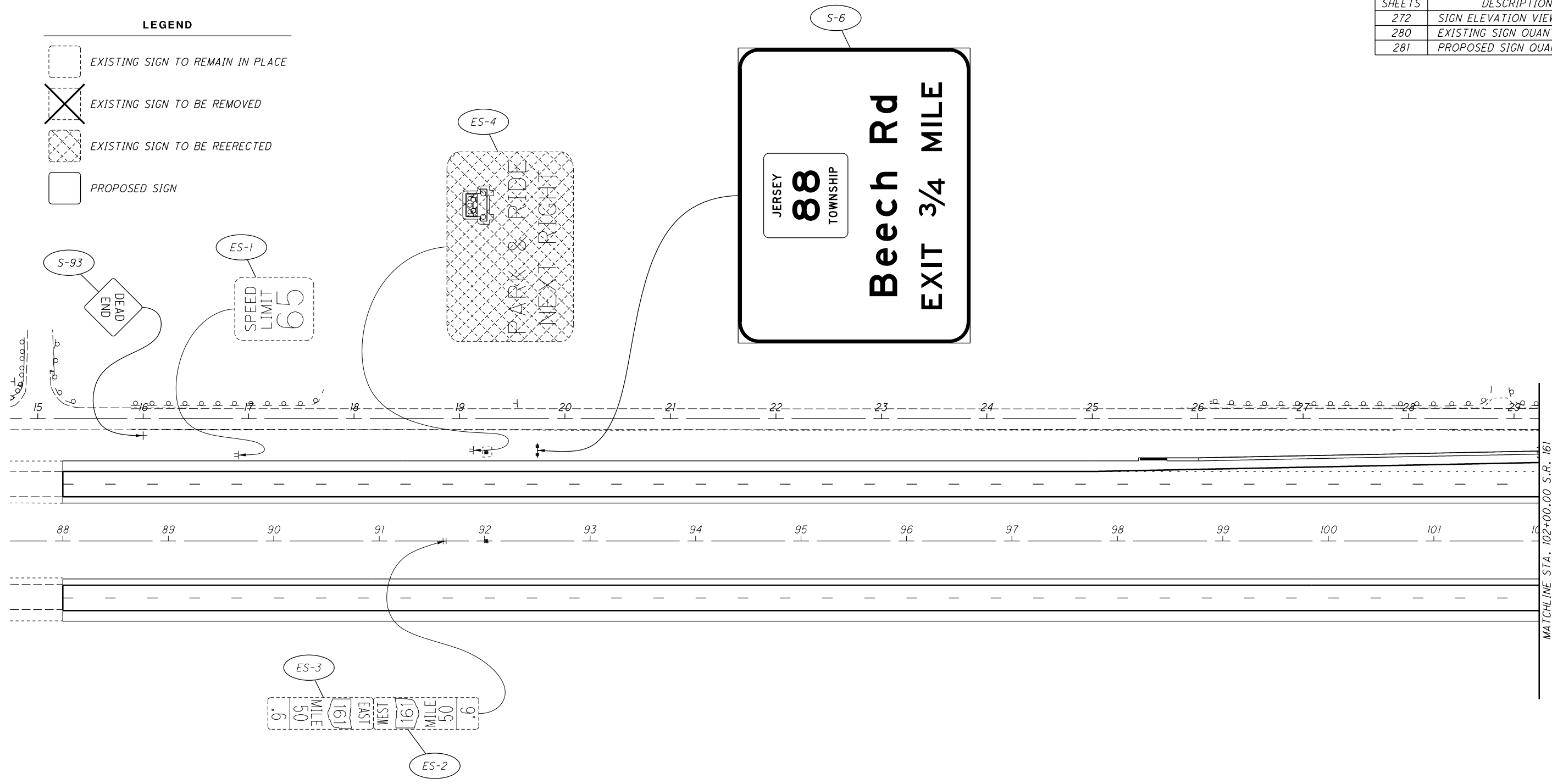
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-  EXISTING SIGN TO BE REMOVED
-  EXISTING SIGN TO BE REERECTED
-  PROPOSED SIGN

CROSS REFERENCES	
SHEETS	DESCRIPTION
272	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES





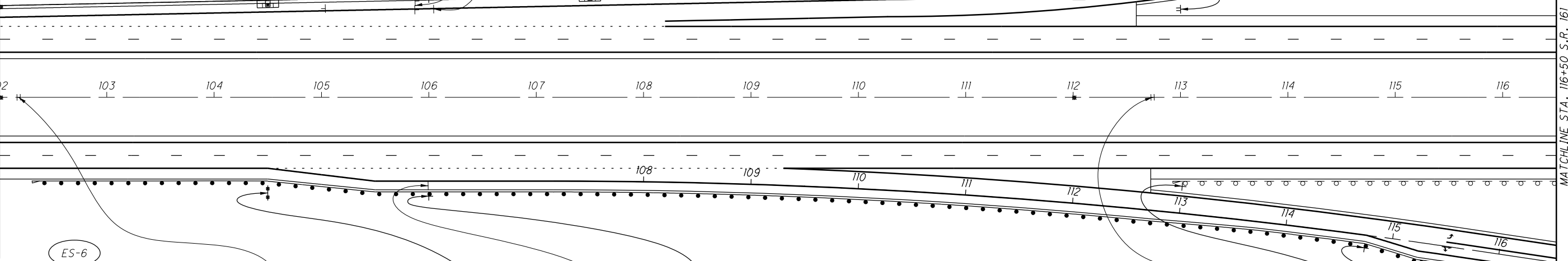
 HORIZONTAL SCALE IN FEET



SIGNING PLAN - S.R. 161
STA. 87+50 TO STA. 102+00

LIC-161-1.83

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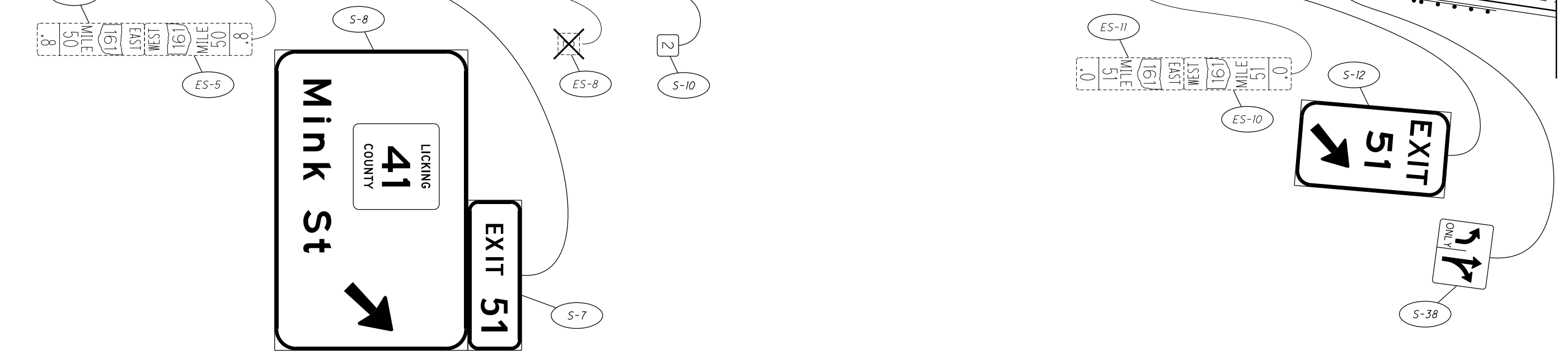


LEGEND

	EXISTING SIGN TO REMAIN IN PLACE
	EXISTING SIGN TO BE REMOVED
	EXISTING SIGN TO BE REERECTED
	PROPOSED SIGN

CROSS REFERENCES

SHEETS	DESCRIPTION
273	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES



CALCULATED BRH CHECKED HAG

SIGNING PLAN - S.R. 161
STA. 102+00 TO STA. 116+50

LIC-161-1.83

264
336

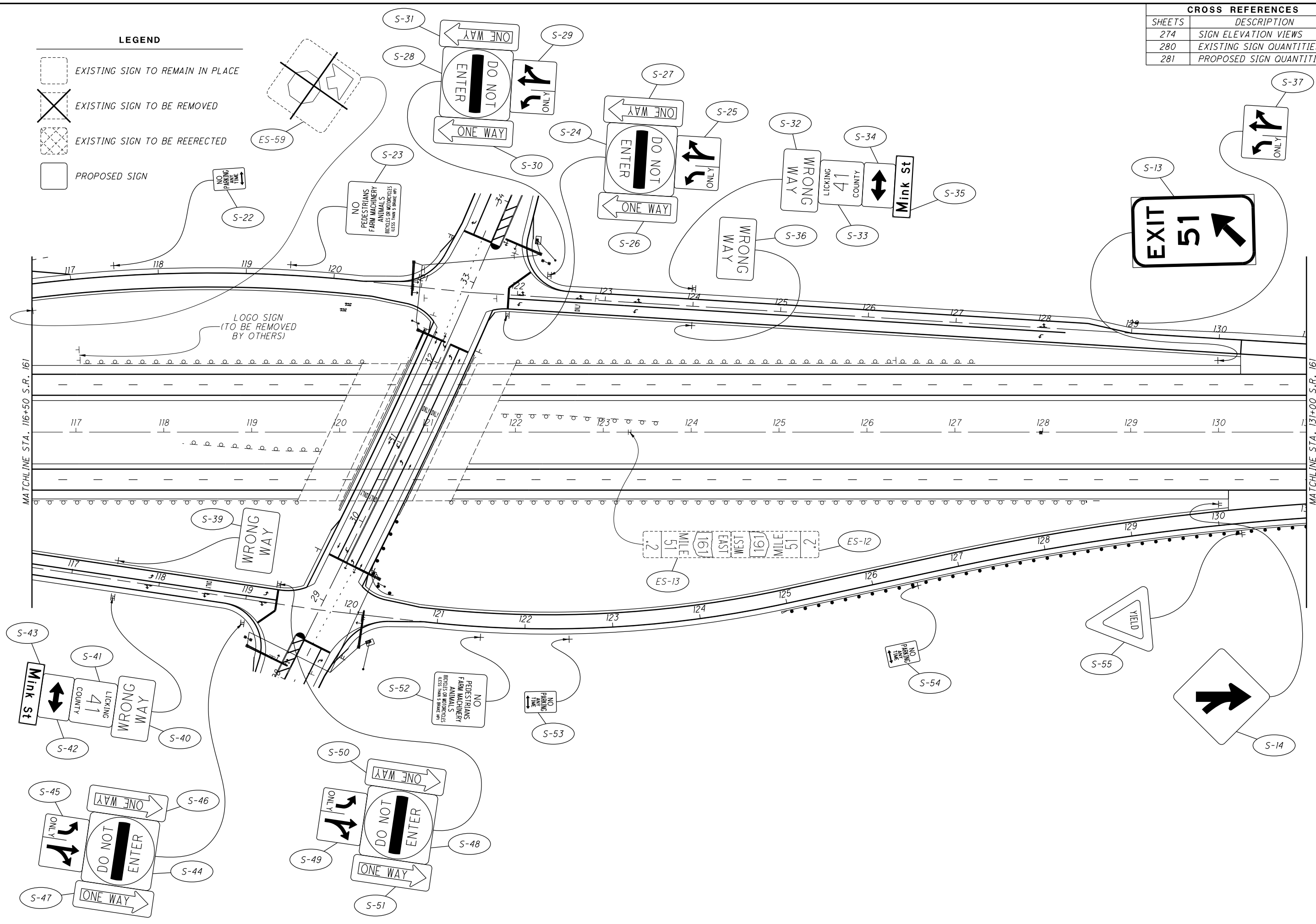
CROSS REFERENCES	
SHEETS	DESCRIPTION
274	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES

CALCULATED BRH CHECKED HAG

HORIZONTAL SCALE IN FEET

LEGEND





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- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REERECTED
- PROPOSED SIGN



SIGNING PLAN - S.R. 161
STA. 116+50 TO STA. 131+00

LIC-161-1.83

LEGEND

	EXISTING SIGN TO REMAIN IN PLACE
	EXISTING SIGN TO BE REMOVED
	EXISTING SIGN TO BE REERECTED
	PROPOSED SIGN

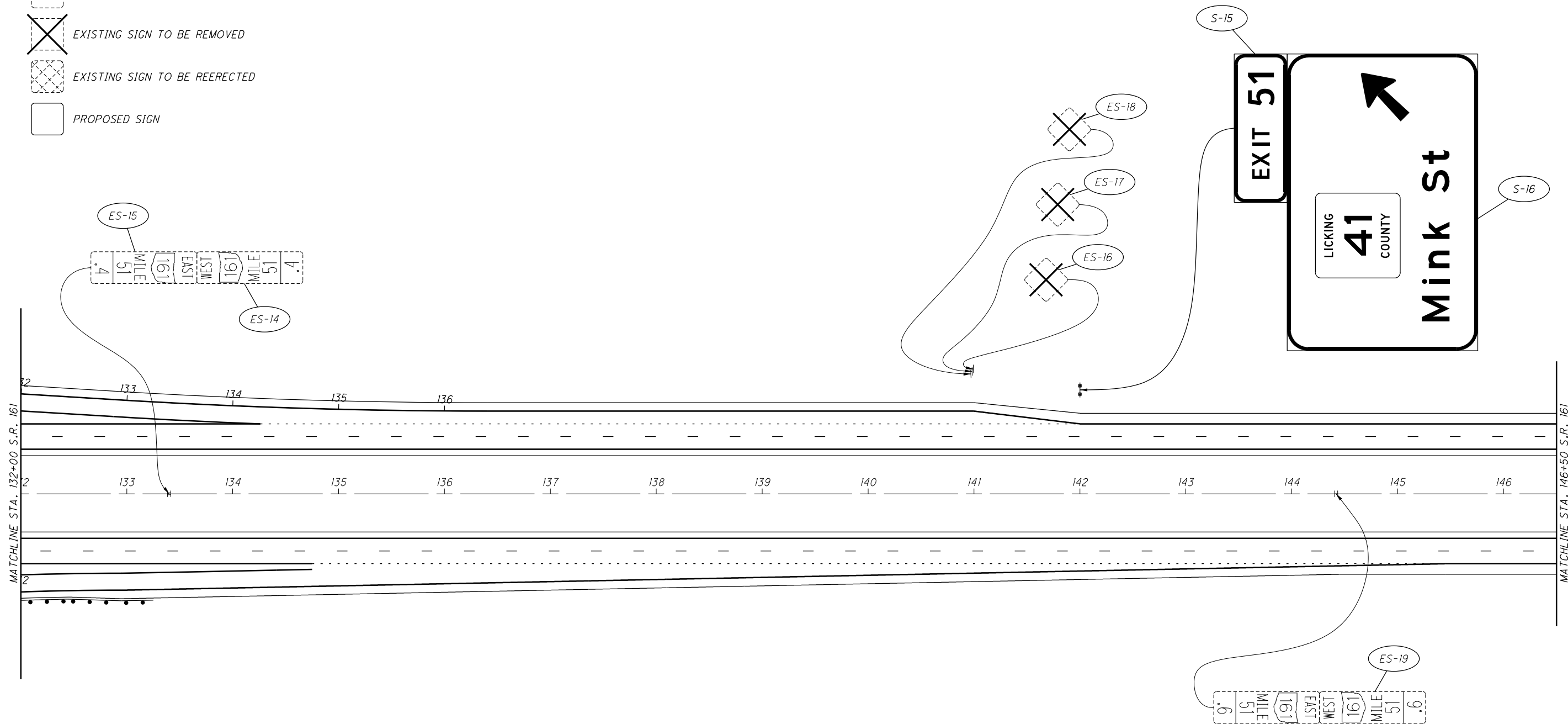
CROSS REFERENCES

SHEETS	DESCRIPTION
274	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES

CALCULATED
BRH
CHECKED
HAG




HORIZONTAL SCALE IN FEET







SIGNING PLAN - S.R. 161
STA. 132+00 TO STA. 146+50

LIC-161-1.83

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LEGEND

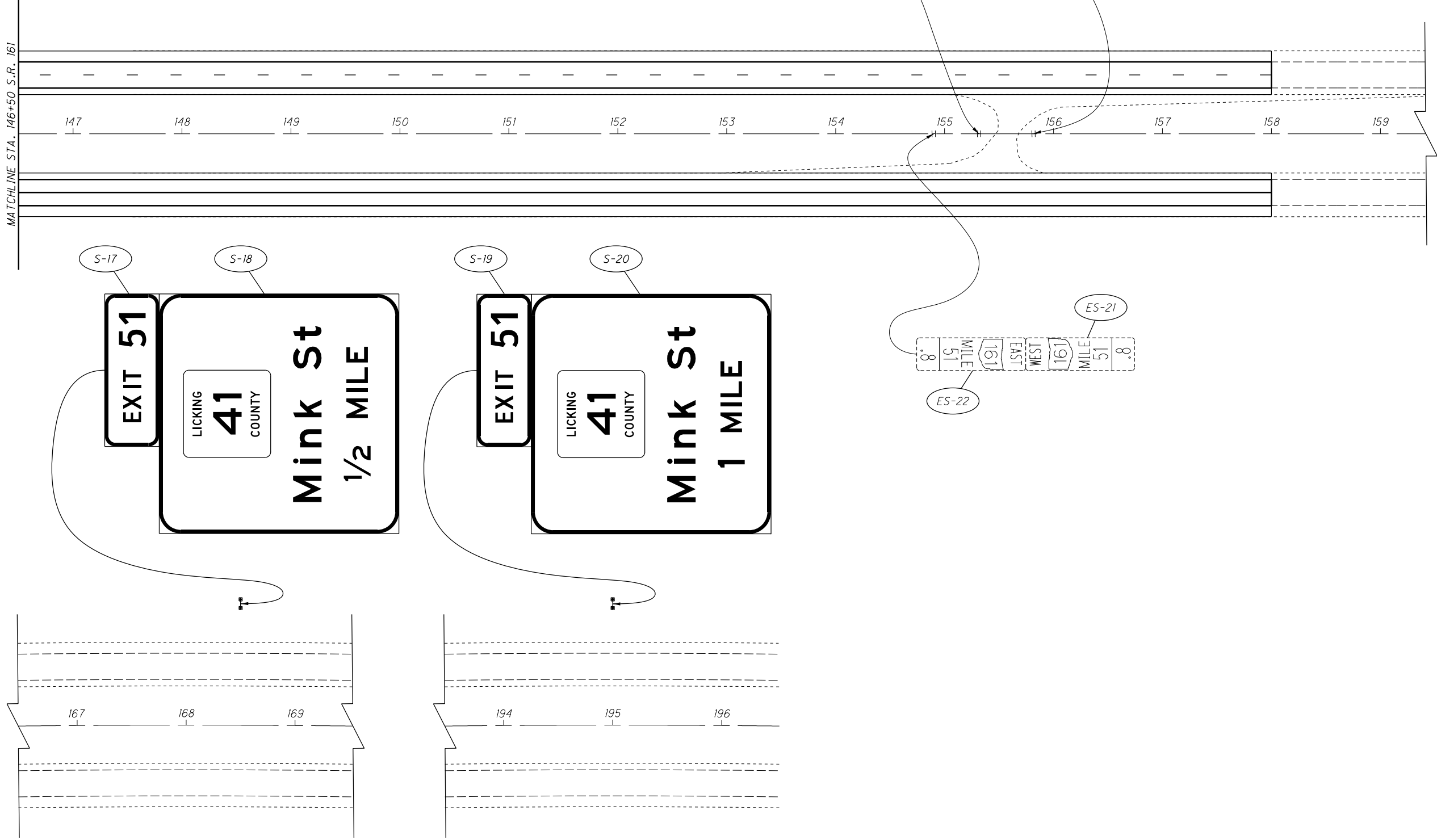
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-  EXISTING SIGN TO BE REMOVED
-  EXISTING SIGN TO BE REERECTED
-  PROPOSED SIGN

CROSS REFERENCES	
SHEETS	DESCRIPTION
275	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
281	PROPOSED SIGN QUANTITIES





 HORIZONTAL SCALE IN FEET







SIGNING PLAN - S.R. 161
STA. 146+50 TO STA. 161+00

LIC-161-1.83

267
336

LEGEND

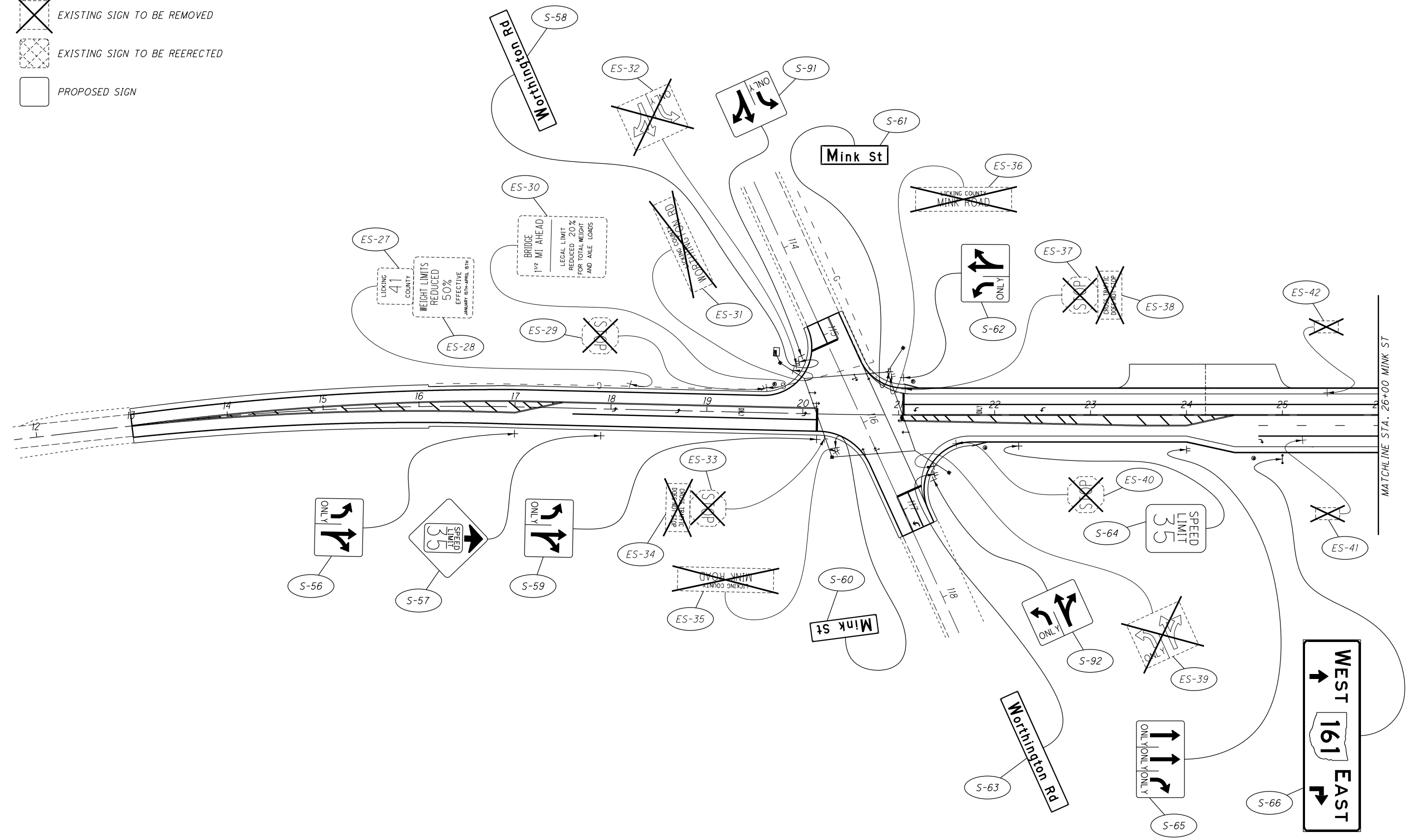
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-  EXISTING SIGN TO BE REMOVED
-  EXISTING SIGN TO BE REERECTED
-  PROPOSED SIGN

CROSS REFERENCES	
SHEETS	DESCRIPTION
276	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
282	PROPOSED SIGN QUANTITIES

CALCULATED
BRH
CHECKED
HAG




HORIZONTAL SCALE IN FEET



**SIGNING PLAN - MINK ST
STA. 12+00 TO STA. 26+00**

LIC-161-1.83

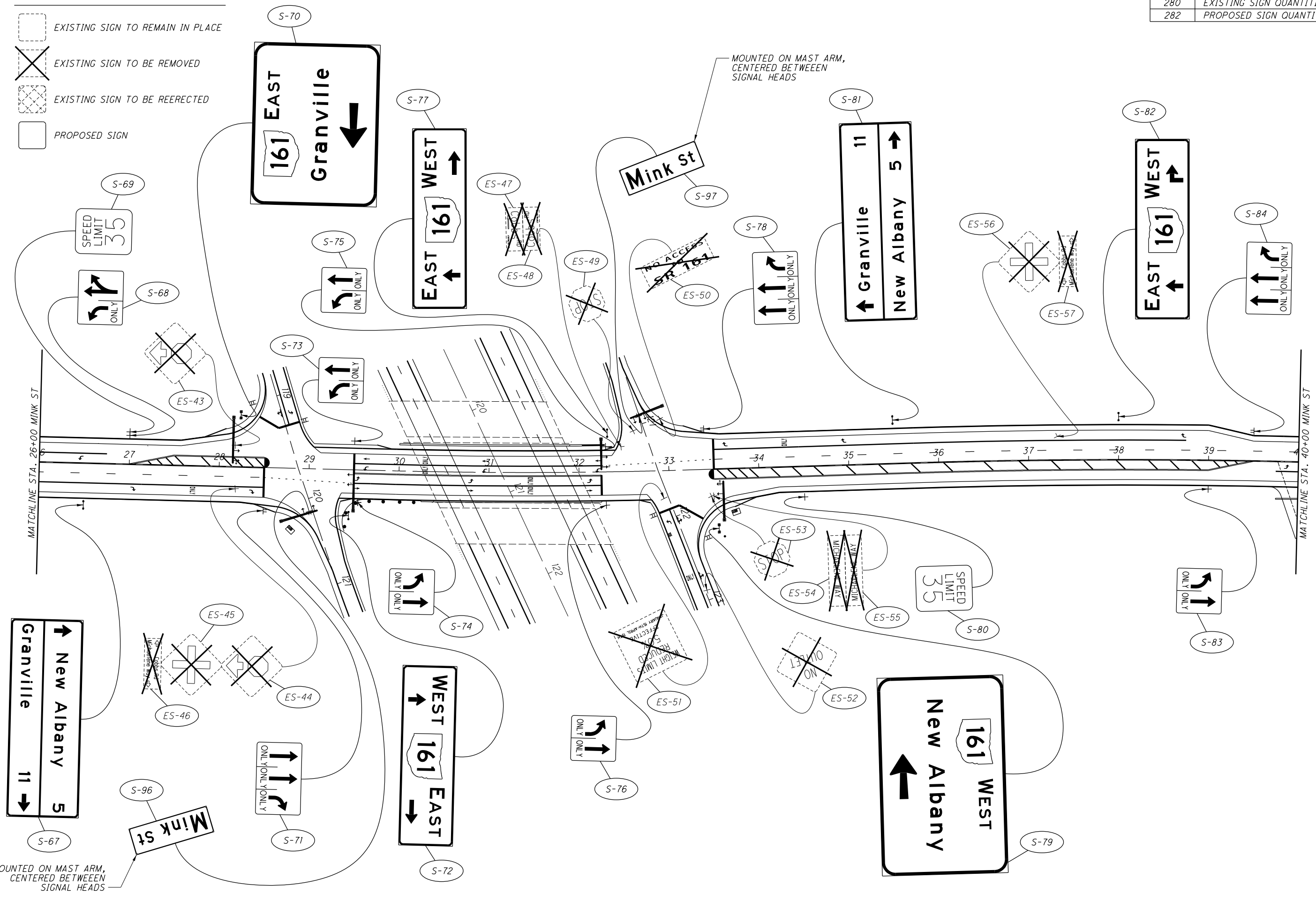
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CROSS REFERENCES	
SHEETS	DESCRIPTION
276-279	SIGN ELEVATION VIEWS
280	EXISTING SIGN QUANTITIES
282	PROPOSED SIGN QUANTITIES

CALCULATED
BRH
CHECKED
HAG

LEGEND

- EXISTING SIGN TO REMAIN IN PLACE
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REERECTED
- PROPOSED SIGN



SIGNING PLAN - MINK ST
STA. 26+00 TO STA. 40+00

LIC-161-1.83





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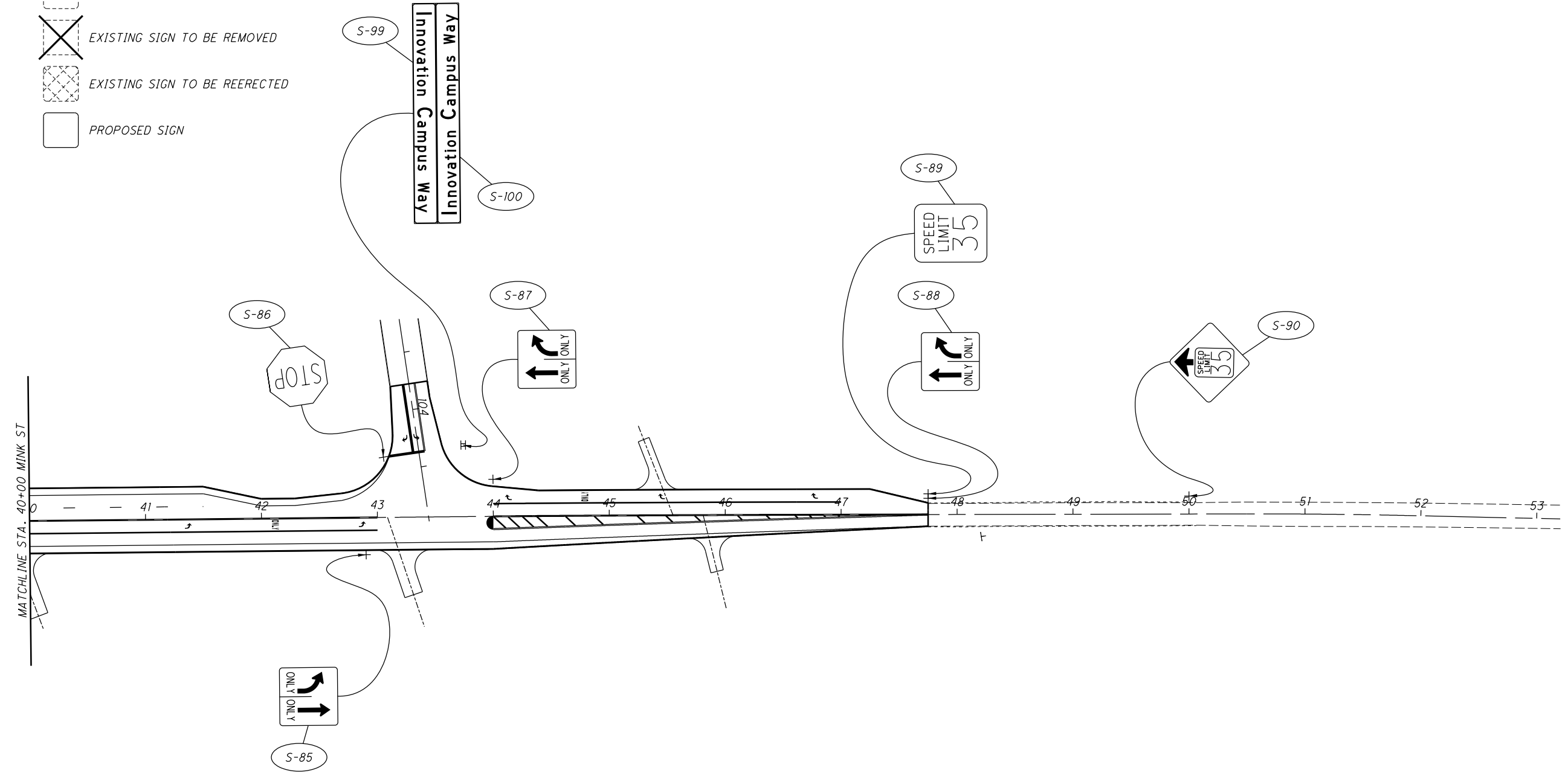
CROSS REFERENCES	
SHEETS	DESCRIPTION
280	EXISTING SIGN QUANTITIES
282	PROPOSED SIGN QUANTITIES

CALCULATED
BRH
CHECKED
HAG

HORIZONTAL SCALE IN FEET

LEGEND

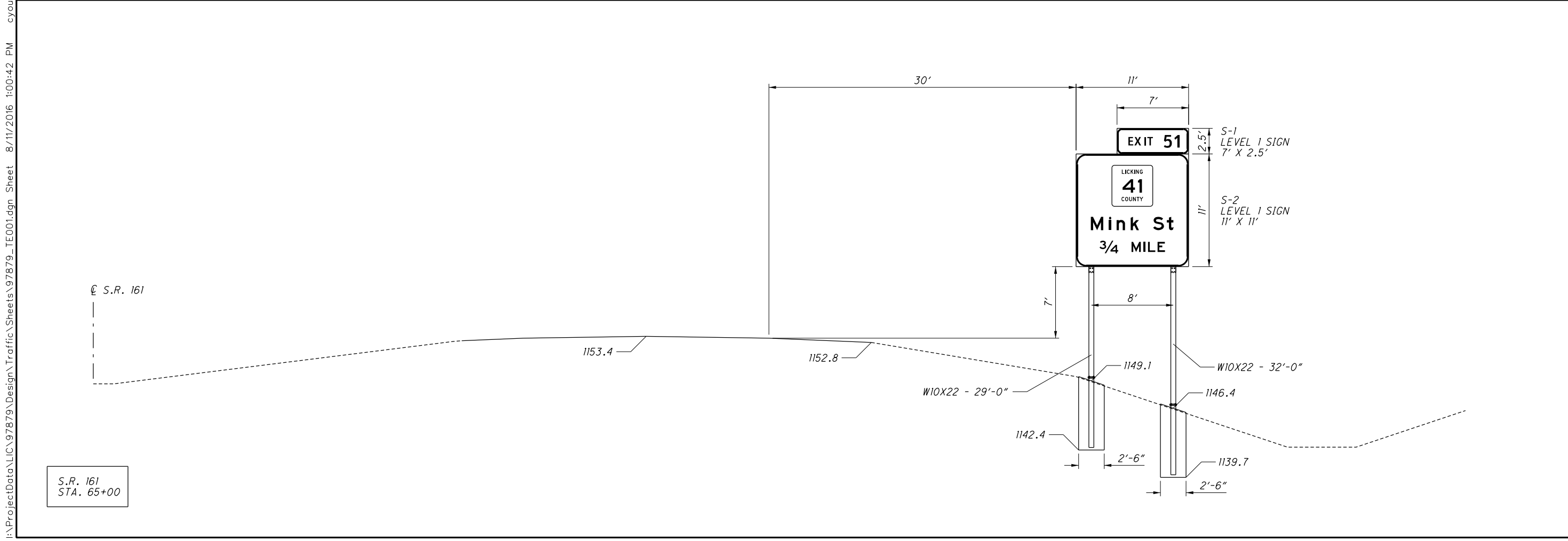
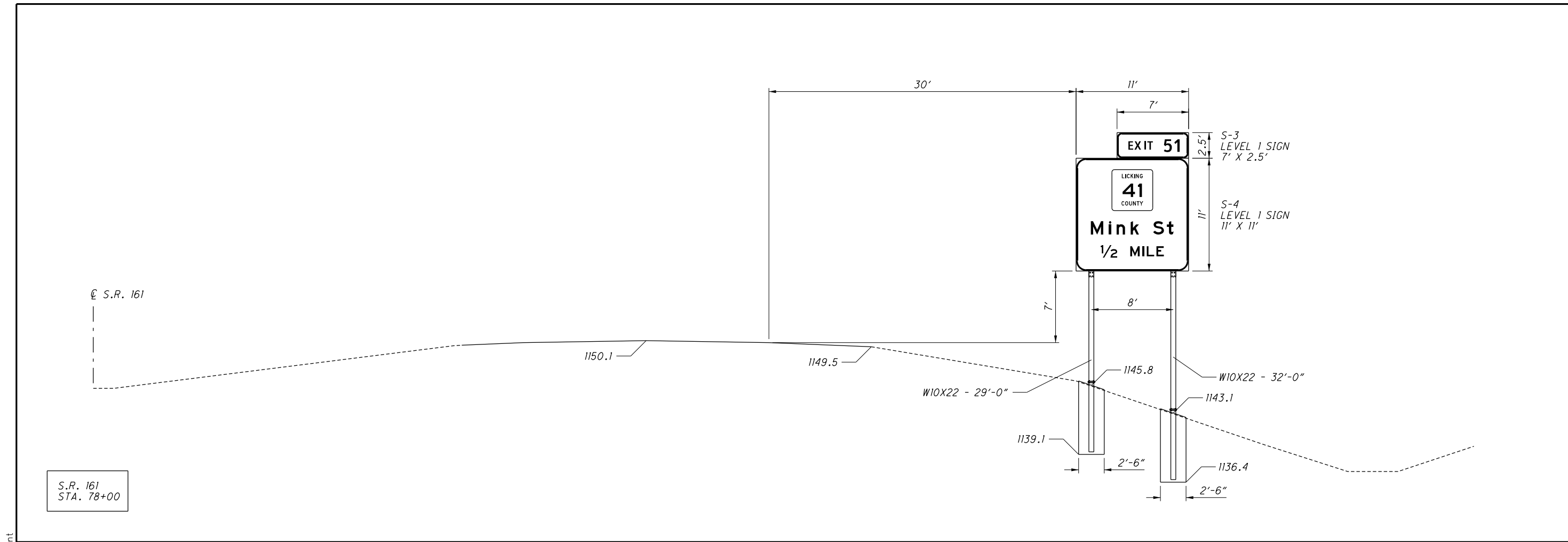
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-  EXISTING SIGN TO BE REMOVED
-  EXISTING SIGN TO BE REERECTED
-  PROPOSED SIGN



SIGNING PLAN - MINK ST
STA. 40+00 TO STA. 53+00

LIC-161-1.83

270
336

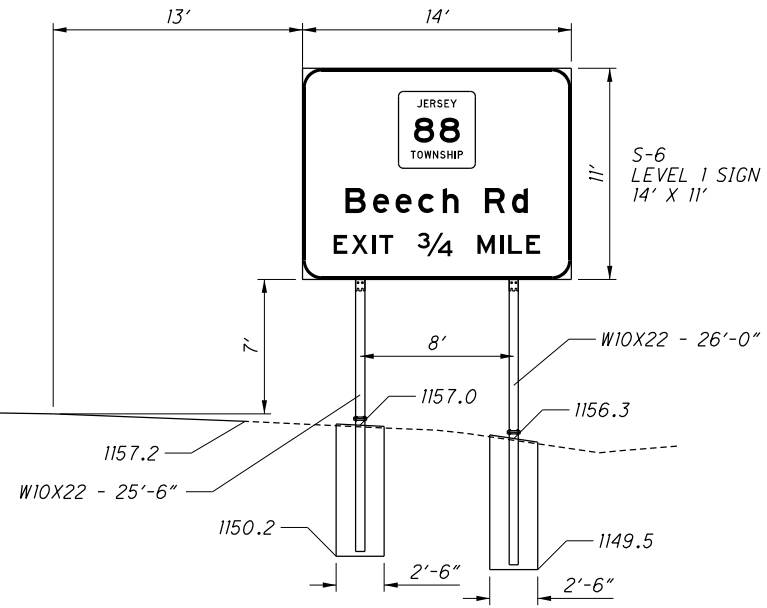


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VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC

CL S.R. 161

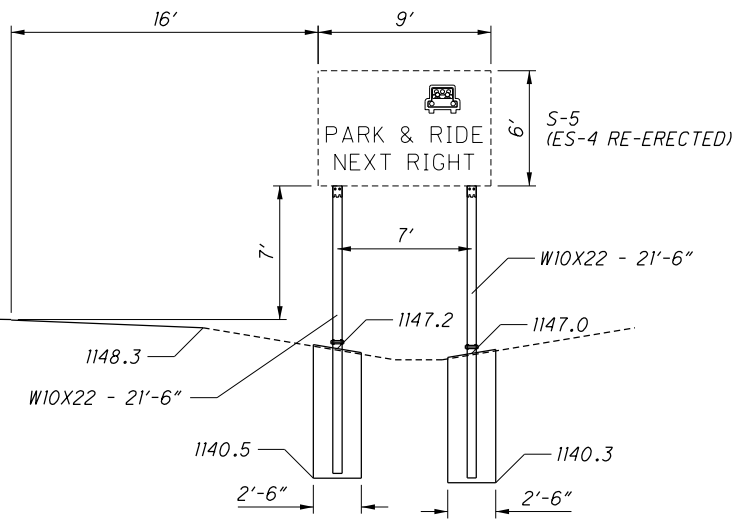
S.R. 161
STA. 92+50



VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC

CL S.R. 161

S.R. 161
STA. 86+00



CALCULATED
BRH
CHECKED
HAG

SIGN ELEVATION VIEWS
ES-5, S-6

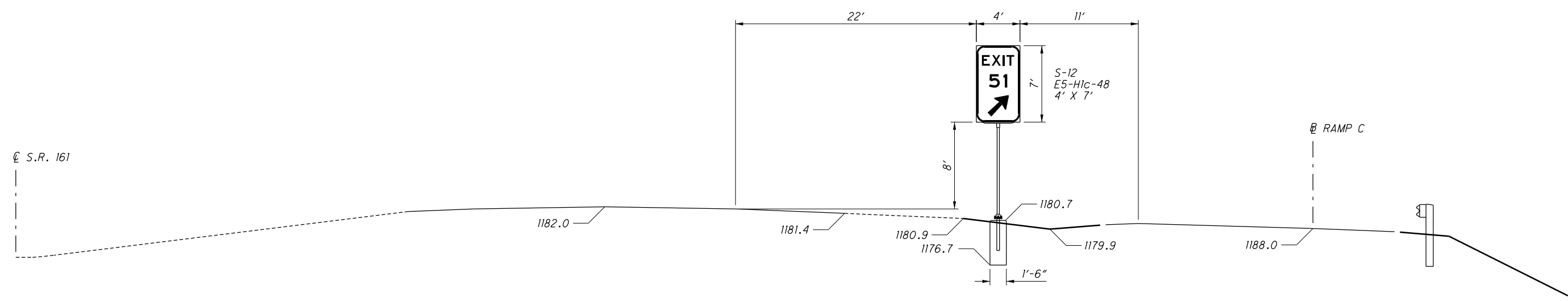
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272
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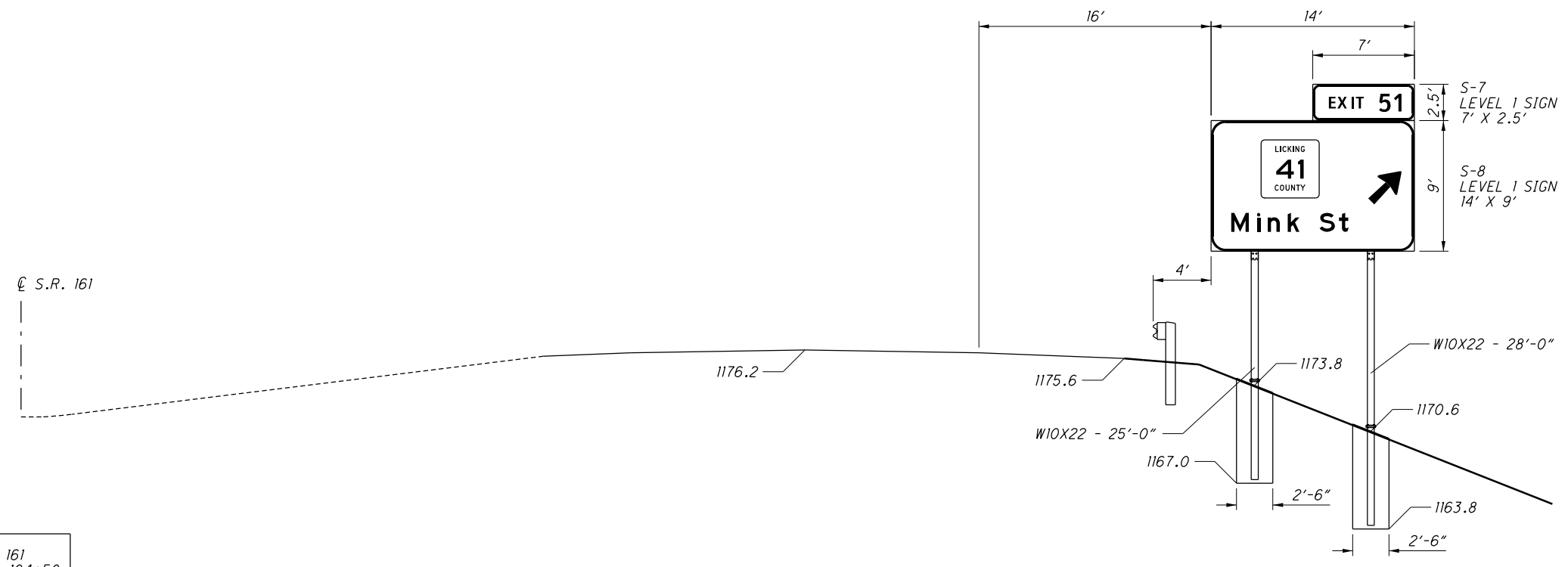
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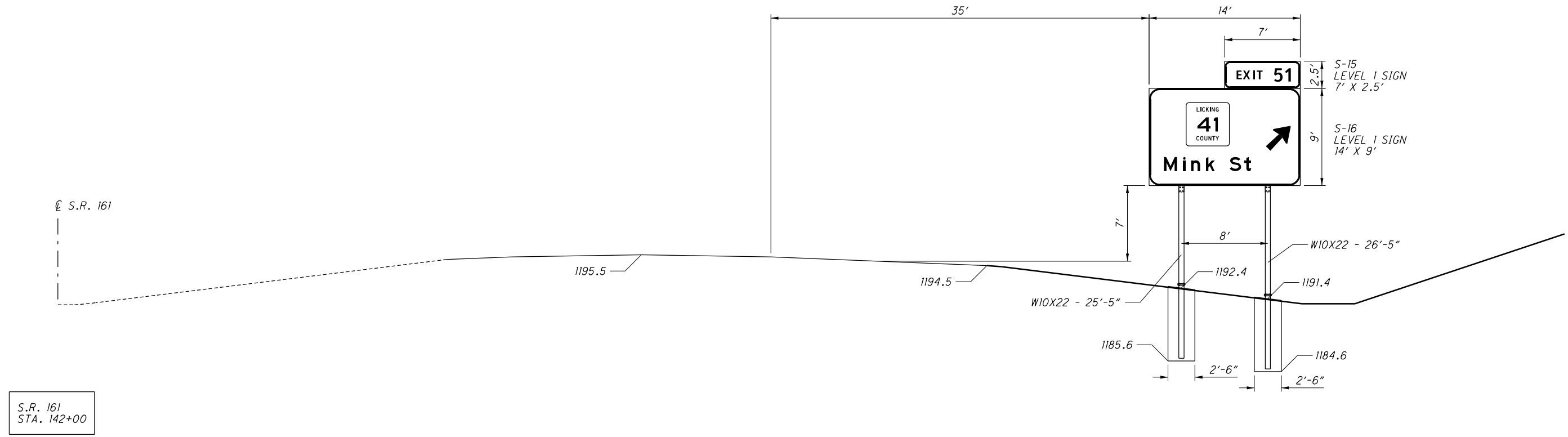
S.R. 161
STA. 113+00



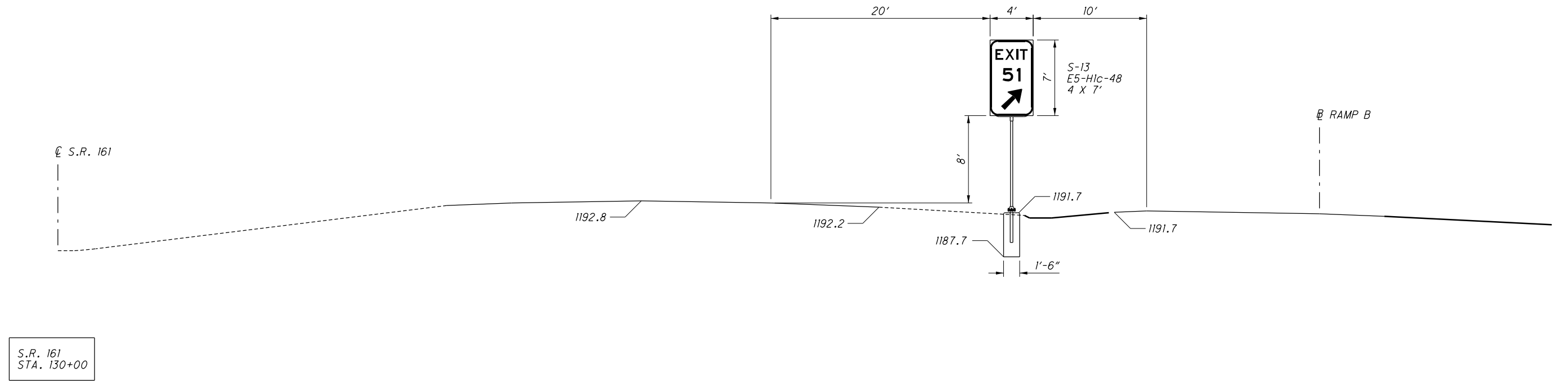
S.R. 161
STA. 104+50



VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



CALCULATED	BRH
CHECKED	HAG

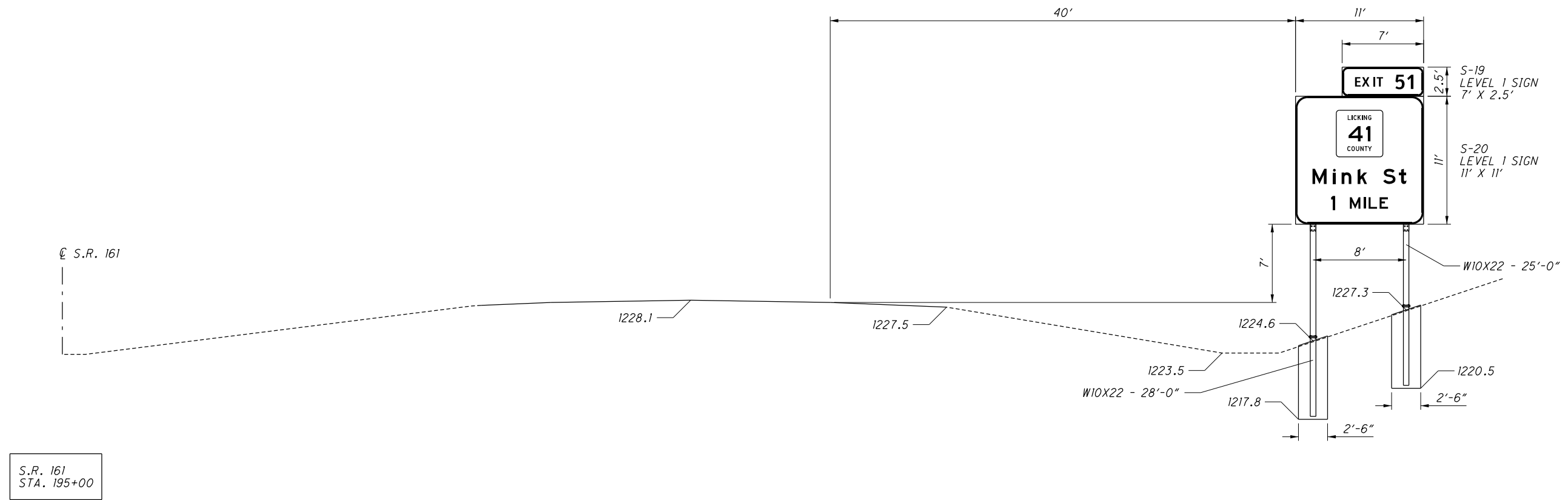
SIGN ELEVATION VIEWS
S-13, S-15, S-16

LIC-161-1.83

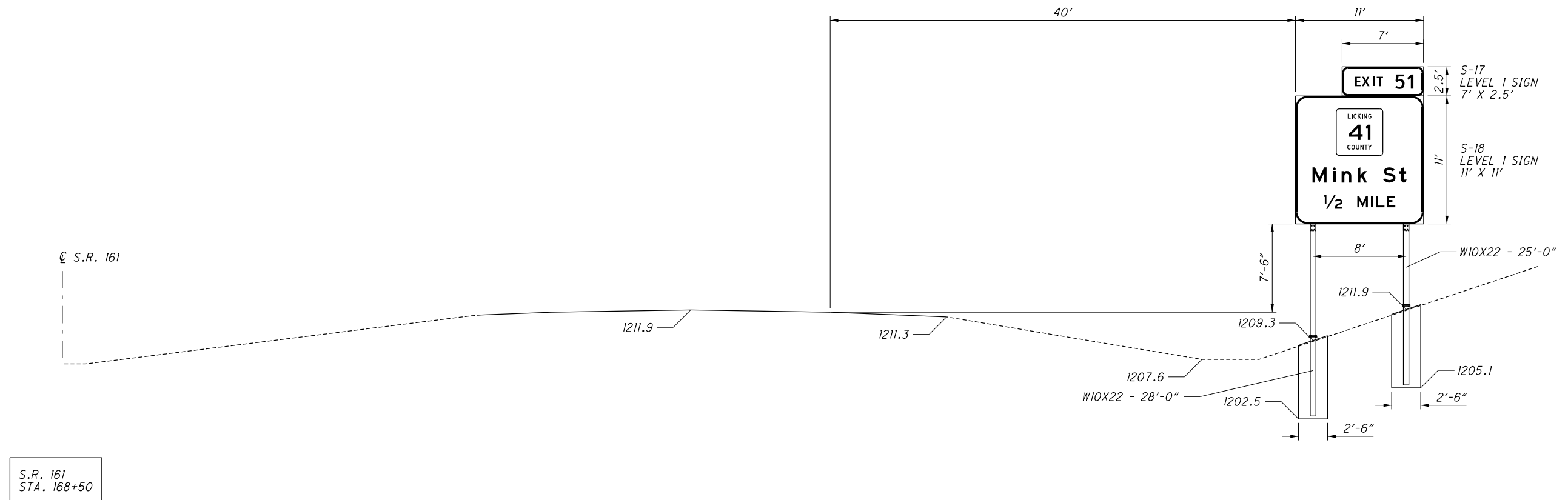
274
336

I:\ProjectData\LIC\97879\Design\Traffic\Sheets\97879_TE004.dgn Sheet 8/11/2016 1:00:43 PM ccount

VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



CALCULATED
BRH
CHECKED
HAG

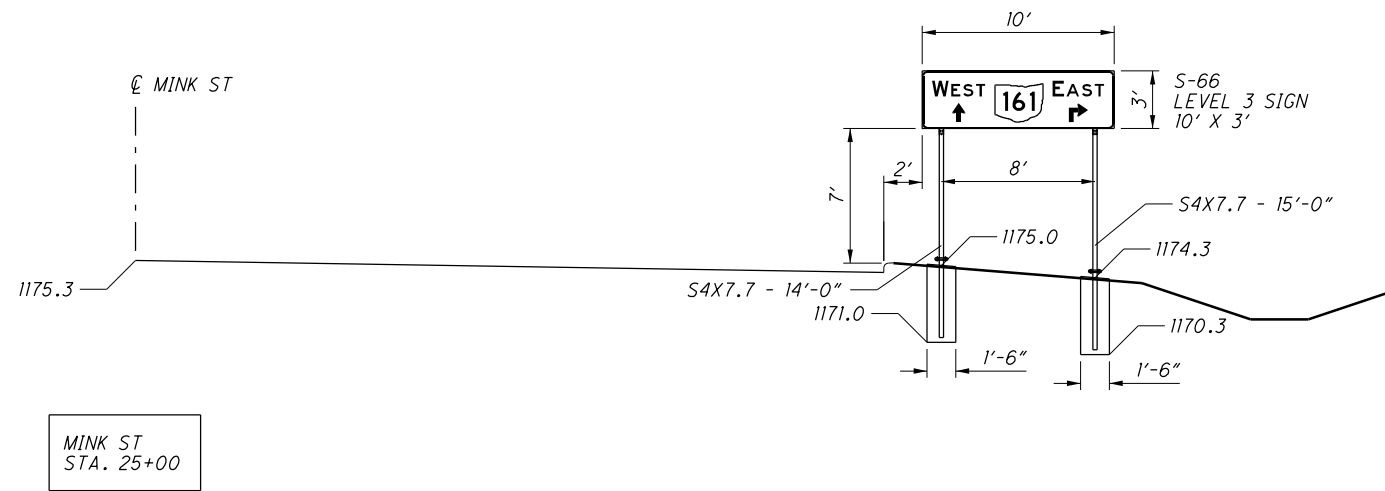
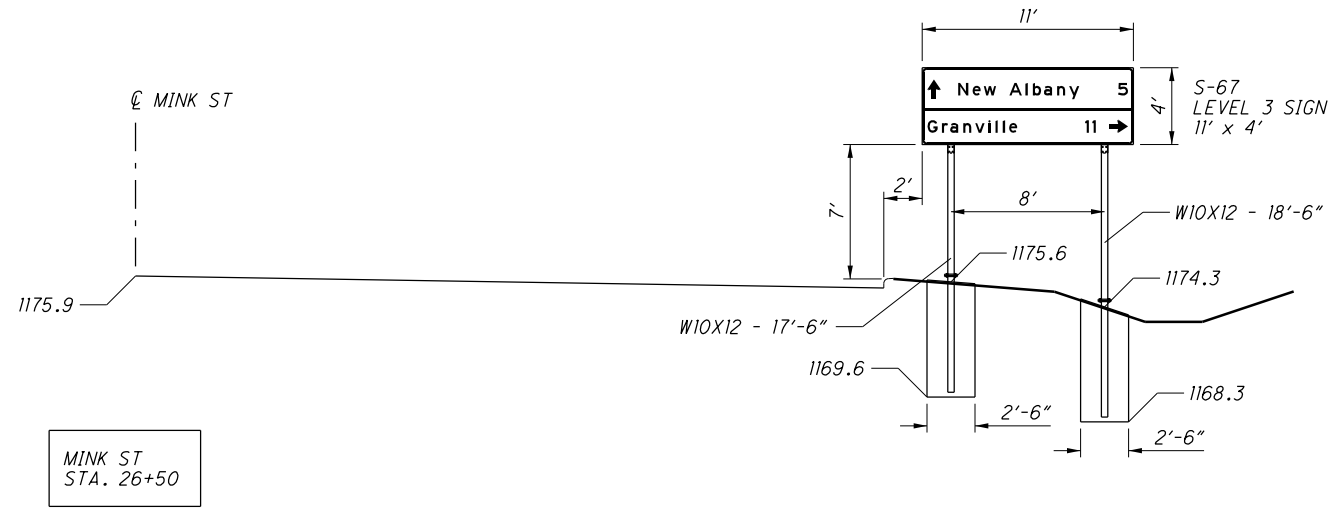
SIGN ELEVATION VIEWS
S-17, S-18, S-19, S-20

LIC-161-1.83

275
336

I:\ProjectData\LIC\97879\Design\Traffic\Sheets\97879_TE005.dgn Sheet 8/11/2016 1:00:43 PM ccount

I:\ProjectData\LIC\97879\Design\Traffic\Sheets\97879_TE006.dgn Sheet 8/11/2016 1:00:43 PM ccount

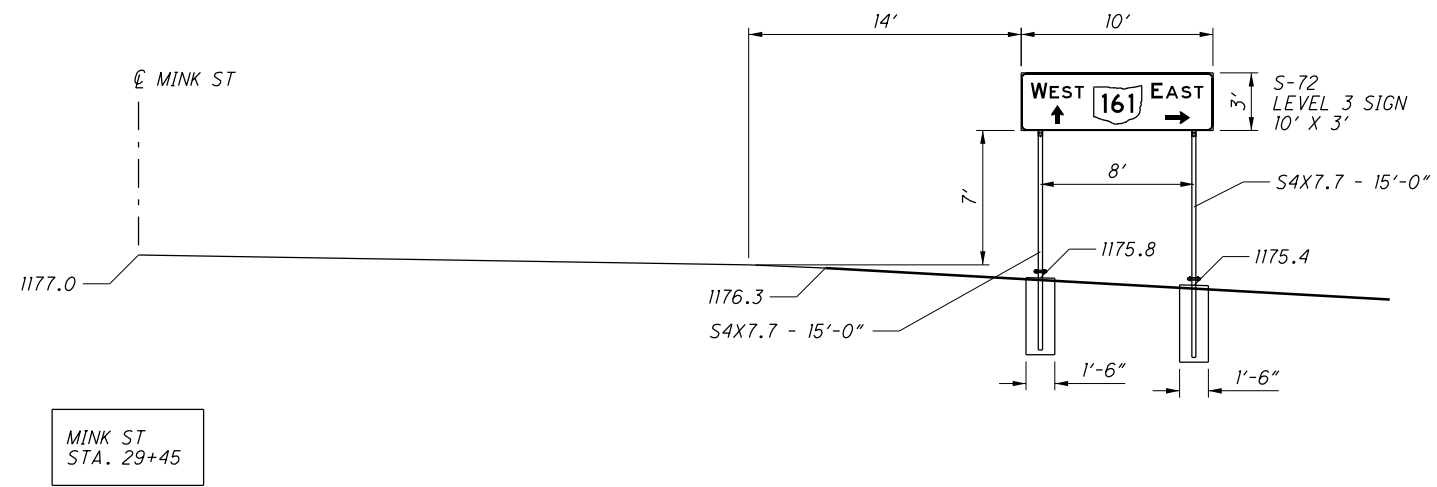


SIGN ELEVATION VIEWS
S-65, S-66

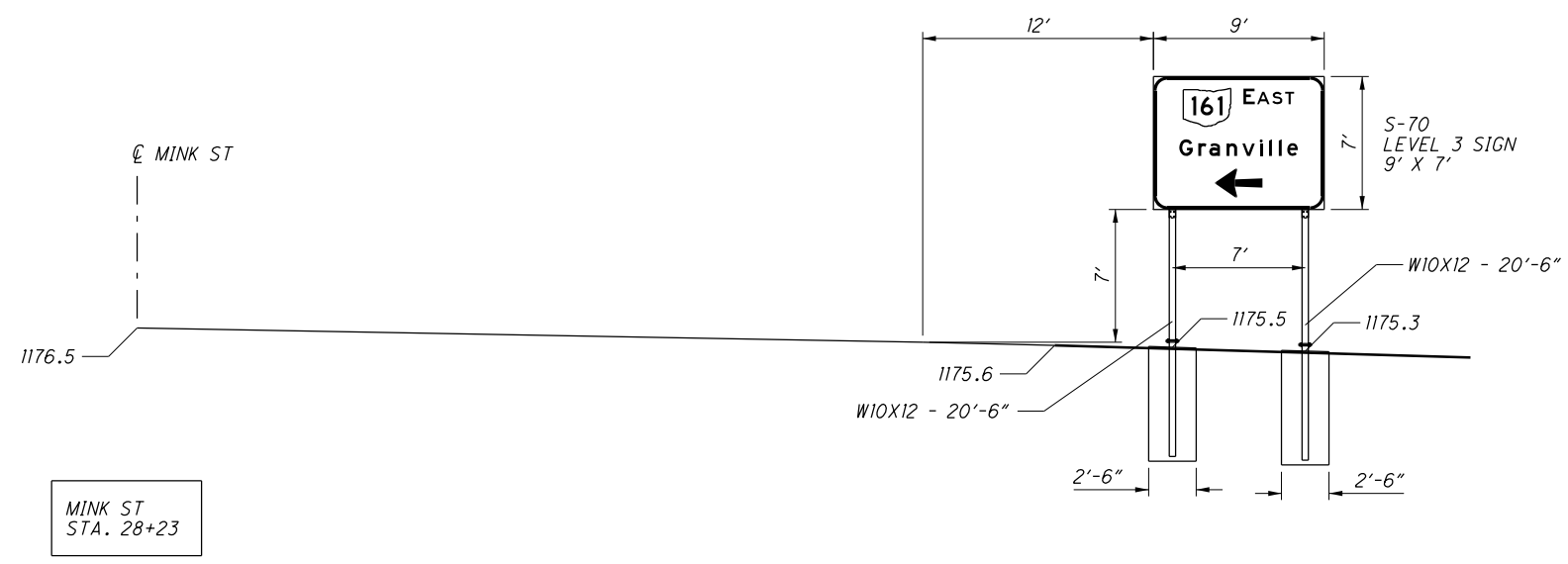
CALCULATED
BRH
CHECKED
HAG

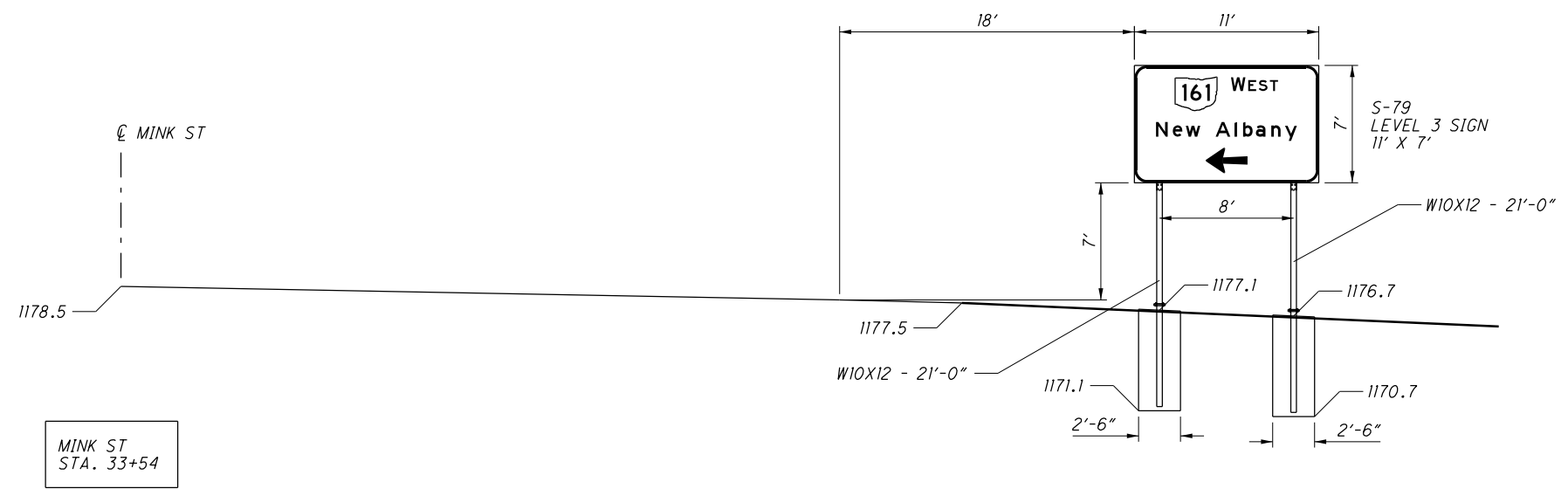
LIC-161-1.83

276
336



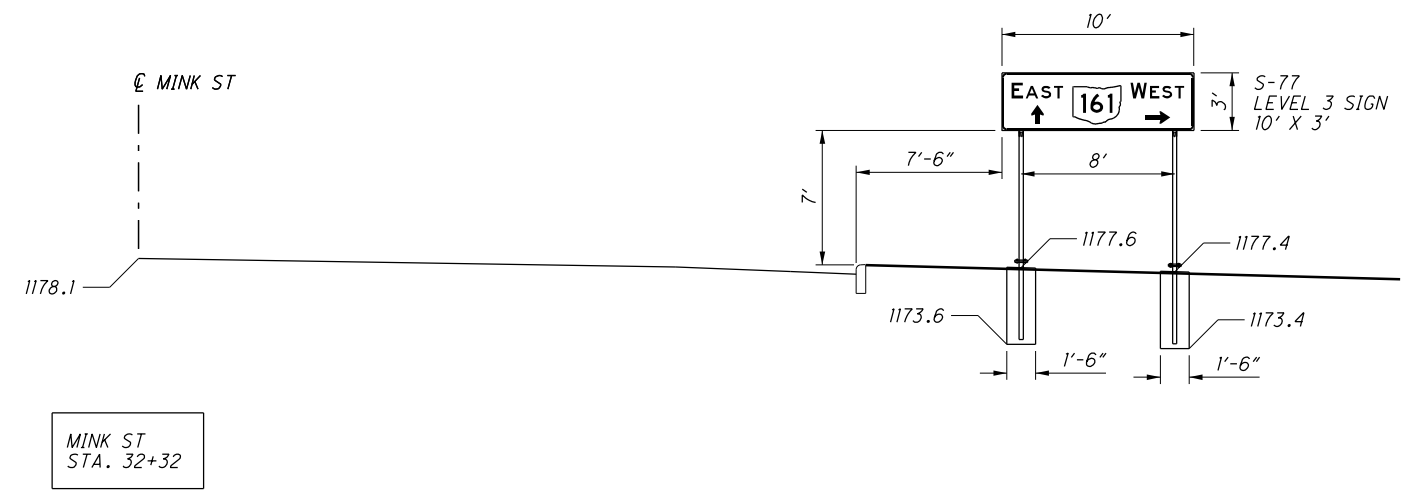
VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC





MINK ST
STA. 33+54

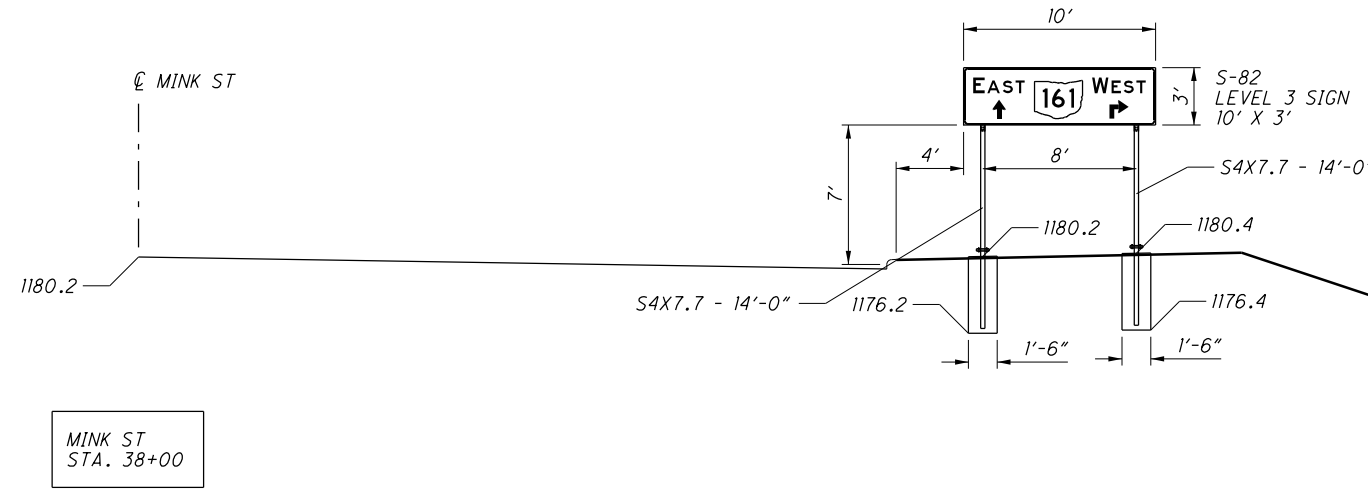
VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



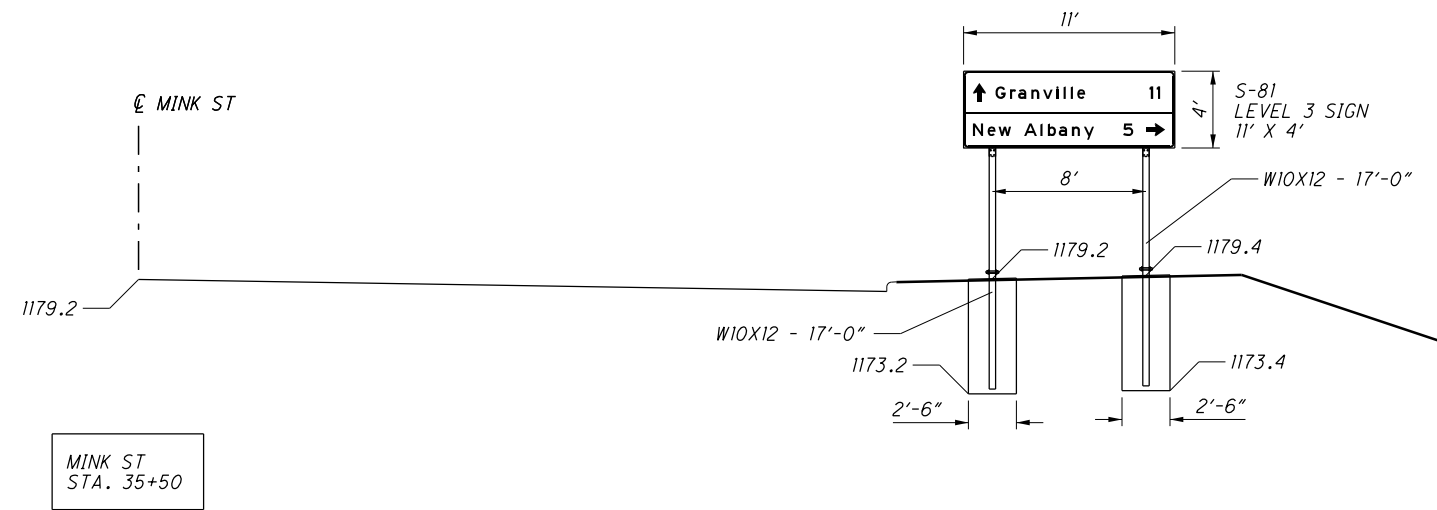
MINK ST
STA. 32+32

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VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



VIEW HAS BEEN MIRRORED TO SHOW SIGN FACES IN THE DIRECTION OF TRAFFIC



CALCULATED	BRH
CHECKED	HAG

SIGN ELEVATION VIEWS
S-81, S-82

LIC-161-1.83

279
336

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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	COMMENTS	630														
						REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND REERECTION EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL, AS PER PLAN EACH										
263	ES-1	S.R. 161	89+66	LT	REMAIN IN PLACE															
263	ES-2	S.R. 161	91+62	CL	REMAIN IN PLACE															
263	ES-3	S.R. 161	91+62	CL	REMAIN IN PLACE															
263	ES-4	S.R. 161	91+89	LT	RE-ERECTED @ STA. 86+00			1		2										
264	ES-5	S.R. 161	102+18	CL	REMAIN IN PLACE															
264	ES-6	S.R. 161	102+18	CL	REMAIN IN PLACE															
264	ES-7	S.R. 161	105+87	LT	REMOVED		1			2										
264	ES-8	S.R. 161	105+99	RT	REMAIN IN PLACE															
264	ES-9	S.R. 161	106+04	LT	REMAIN IN PLACE															
264	ES-10	S.R. 161	112+74	CL	REMAIN IN PLACE															
264	ES-11	S.R. 161	112+74	CL	REMAIN IN PLACE															
265	ES-12	S.R. 161	123+30	CL	REMAIN IN PLACE															
265	ES-13	S.R. 161	123+30	CL	REMAIN IN PLACE															
266	ES-14	S.R. 161	133+40	CL	REMAIN IN PLACE															
266	ES-15	S.R. 161	133+40	CL	REMAIN IN PLACE															
266	ES-16	S.R. 161	140+97	LT	REMOVED	1			1											
266	ES-17	S.R. 161	140+98	LT	REMOVED	1			1											
266	ES-18	S.R. 161	140+99	LT	REMOVED	1			1											
266	ES-19	S.R. 161	144+42	CL	REMAIN IN PLACE															
266	ES-20	S.R. 161	144+42	CL	REMAIN IN PLACE															
267	ES-21	S.R. 161	154+90	CL	REMAIN IN PLACE															
267	ES-22	S.R. 161	154+90	CL	REMAIN IN PLACE															
267	ES-23	S.R. 161	155+32	CL	REMAIN IN PLACE															
267	ES-24	S.R. 161	155+32	CL	REMAIN IN PLACE															
267	ES-25	S.R. 161	155+82	CL	REMAIN IN PLACE															
267	ES-26	S.R. 161	155+82	CL	REMAIN IN PLACE															
268	ES-27	MINK ST	18+20	LT	REMAIN IN PLACE															
268	ES-28	MINK ST	18+20	LT	REMAIN IN PLACE															
268	ES-29	MINK ST	19+59	LT	REMOVED	1			1											
268	ES-30	MINK ST	19+62	LT	REMAIN IN PLACE															
268	ES-31	MINK ST	19+89	LT	REMOVED	1			1											
268	ES-32	MINK ST	19+92	LT	REMOVED	1			1											
268	ES-33	MINK ST	20+23	RT	REMOVED	1			1											
268	ES-34	MINK ST	20+23	RT	REMOVED	1			1											
268	ES-35	MINK ST	20+36	RT	REMOVED	1			2											
268	ES-36	MINK ST	20+92	LT	REMOVED	1			2											
268	ES-37	MINK ST	21+07	LT	REMOVED	1			1											
268	ES-38	MINK ST	21+07	LT	REMOVED	1			1											
268	ES-39	MINK ST	21+36	RT	REMOVED	1			1											
268	ES-40	MINK ST	21+60	RT	REMOVED	1			1											
268	ES-41	MINK ST	25+21	RT	REMOVED	1			1											
268	ES-42	MINK ST	25+47	LT	REMOVED	1			1											
269	ES-43	MINK ST	28+17	LT	REMOVED	1			1											
269	ES-44	MINK ST	28+18	RT	REMOVED	1			1											
269	ES-45	MINK ST	28+18	RT	REMOVED	1														
269	ES-46	MINK ST	28+18	RT	REMOVED	1														
269	ES-47	MINK ST	32+47	LT	REMOVED	1			1											
269	ES-48	MINK ST	32+47	LT	REMOVED	1														
269	ES-49	MINK ST	32+61	LT	REMOVED	1			1											
269	ES-50	MINK ST	32+91	LT	REMOVED	1			2											
269	ES-51	MINK ST	32+94	RT	REMOVED	1			1											
269	ES-52	MINK ST	33+38	RT	REMOVED	1			1											
269	ES-53	MINK ST	33+47	RT	REMOVED	1			1											
269	ES-54	MINK ST	33+49	RT	REMOVED	1			1											
269	ES-55	MINK ST	33+49	RT	REMOVED	1														
269	ES-56	MINK ST	37+32	LT	REMOVED	1			1											
269	ES-57	MINK ST	37+32	LT	REMOVED	1														
264	ES-58	COBBS RD	41+39	LT	REMOVED	1			1											
265	ES-59	COBBS RD	43+71	RT	REMOVED	1			1											
TOTALS CARRIED TO GENERAL SUMMARY						33	1	1	29	4										

EXISTING SIGNING SUBSUMMARY

CALCULATED
BRH
CHECKED
HAG

LIC-161-1.83

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336

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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630													
							GROUND MOUNTED SUPPORT, NO. 3 POST FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, WIDX22 FT	GROUND MOUNTED SUPPORT, PIPE EACH	SIGN POST REFLECTOR EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION EACH	TRIANGULAR SLIP BASE CONNECTION EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN EACH	SIGN, FLAT SHEET SF	SIGN, GROUND MOUNTED EXTRUSHEET SF	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION EACH	GROUND MOUNTED PIPE SUPPORT FOUNDATION EACH	SIGNING, MISC.: STREET NAME SIGN, GROUND MOUNTED EACH		
262	S-1	S.R. 161	65+00	RT	LEVEL 1	84 X 30									17.5					
262	S-2	S.R. 161	65+00	RT	LEVEL 1	132 X 132		61			2				121	2				
262	S-3	S.R. 161	78+00	RT	LEVEL 1	84 X 30									17.5					
262	S-4	S.R. 161	78+00	RT	LEVEL 1	132 X 132		61			2				121	2				
262	S-5	S.R. 161	86+00	LT	ES-4 RE-ERECTED			43			2					2				
263	S-6	S.R. 161	92+50	LT	LEVEL 1	168 X 132		52			2				154	2				
264	S-7	S.R. 161	104+50	RT	LEVEL 1	84 X 30									17.5					
264	S-8	S.R. 161	104+50	RT	LEVEL 1	168 X 108		53			2				126	2				
264	S-9	S.R. 161	106+00	LT	D10-H8-12	12 X 12							1	1.00						
264	S-10	S.R. 161	106+00	RT	D10-H8-12	12 X 12	12							1.00						
264	S-11	S.R. 161	113+00	LT	W4-IR-48	48 X 48	32			2				16.00						
264	S-12	S.R. 161	113+00	RT	E5-H1c-48	48 X 84					1				28		1			
265	S-13	S.R. 161	130+00	LT	E5-H1c-48	48 X 84					1				28		1			
265	S-14	S.R. 161	130+00	RT	W4-IL-48	48 X 48	32			2				16.00						
266	S-15	S.R. 161	142+00	LT	LEVEL 1	84 X 30									17.5					
266	S-16	S.R. 161	142+00	LT	LEVEL 1	168 X 108		52			2				126	2				
267	S-17	S.R. 161	168+50	LT	LEVEL 1	84 X 30									17.5					
267	S-18	S.R. 161	168+50	LT	LEVEL 1	132 X 132		53			2				121	2				
267	S-19	S.R. 161	195+00	LT	LEVEL 1	84 X 30									17.5					
267	S-20	S.R. 161	195+00	LT	LEVEL 1	132 X 132		53			2				121	2				
264	S-21	RAMP A	112+90	LT	R1-2-48	48 X 48				2			1	6.93						
265	S-22	RAMP A	117+50	LT	R7-1-12	12 X 18	13							1.50						
265	S-23	RAMP A	119+50	LT	R5-H10d-36	36 X 36	15							9.00						
265	S-24	RAMP B	121+90	RT	R5-1-48	48 X 48	34							16.00						
265	S-25	RAMP B	121+90	RT	R3-H8bh-36	36 X 30								7.50						
265	S-26	RAMP B	121+90	RT	R6-IL-54	54 X 18								6.75						
265	S-27	RAMP B	121+90	RT	R6-IR-54	54 X 18								6.75						
265	S-28	RAMP B	122+35	LT	R5-1-48	48 X 48	34							16.00						
265	S-29	RAMP B	122+35	LT	R3-H8bh-36	36 X 30								7.50						
265	S-30	RAMP B	122+35	LT	R6-IL-54	54 X 18								6.75						
265	S-31	RAMP B	122+35	LT	R6-IR-54	54 X 18								6.75						
265	S-32	RAMP B	124+00	LT	R5-1a-42	42 X 30	28			2				8.75						
265	S-33	RAMP B	124+00	LT	M1-H6a-30	30 X 30								6.25						
265	S-34	RAMP B	124+00	LT	M6-4-30	30 X 21								4.38						
265	S-35	RAMP B	124+00	LT	D3-1-42	42 X 12												1		
265	S-36	RAMP B	124+00	RT	R5-1a-42	42 X 30	28			2				6.75						
265	S-37	RAMP B	129+00	LT	R3-H8bh-36	36 X 30	13							7.50						
264	S-38	RAMP C	114+75	RT	R3-H8bh-36	36 X 30	14							7.50						
265	S-39	RAMP C	117+50	LT	R5-1a-42	42 X 30	28			2				6.75						
265	S-40	RAMP C	117+50	RT	R5-1a-42	42 X 30	28			2				6.75						
265	S-41	RAMP C	117+50	RT	M1-H6a-30	30 X 30								6.25						
265	S-42	RAMP C	117+50	RT	M6-4-30	30 X 21								4.38						
265	S-43	RAMP C	117+50	RT	D3-1-42	42 X 12												1		
265	S-44	RAMP C	119+00	RT	R5-1-48	48 X 48	34							16.00						
265	S-45	RAMP C	119+00	RT	R3-H8bh-36	36 X 30								7.50						
265	S-46	RAMP C	119+00	RT	R6-IL-54	54 X 18								6.75						
265	S-47	RAMP C	119+00	RT	R6-IR-54	54 X 18								6.75						
265	S-48	RAMP C	119+35	LT	R5-1-48	48 X 48	34							16.00						
265	S-49	RAMP C	119+35	LT	R3-H8bh-36	36 X 30								7.50						
265	S-50	RAMP C	119+35	LT	R6-IL-54	54 X 18								6.75						
265	S-51	RAMP C	119+35	LT	R6-IR-54	54 X 18								6.75						
265	S-52	RAMP D	121+50	RT	R5-H10d-36	36 X 36	15							9.00						
265	S-53	RAMP D	122+50	RT	R7-1-12	12 X 18	13							1.50						
265	S-54	RAMP D	126+50	RT	R7-1-12	12 X 18	14							1.50						
265	S-55	RAMP D	130+25	RT	R1-2-48	48 X 48	33			2				6.93						

TOTALS CARRIED TO GENERAL SUMMARY

454 428 2 16 16 2 2 284 1051 16 2 2

PROPOSED SIGNING SUBSUMMARY

LIC-161-1.83

CALCULATED
BRH
CHECKED
HAG

281
336

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630											SIGNING, MISC.: STREET NAME SIGN, GROUND MOUNTED	SIGNING MISC.: STREET NAME SIGN, MAST ARM
							GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, 54X7.7	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12	SIGN POST REFLECTOR	BREAKAWAY STRUCTURAL BEAM CONNECTION	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	SIGN, FLAT SHEET	SIGN, FLAT SHEET, AS PER PLAN	SIGN, GROUND MOUNTED EXTRUSHEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION			
							FT	FT	FT	EACH	EACH	EACH	SF	SF	SF	EACH	EACH	EACH	
268	S-56	MINK ST	17+00	RT	R3-88bh-36	36 X 30	13							7.50					
268	S-57	MINK ST	17+90	RT	W3-5-36	36 X 36	14				1			9.00					
268	S-58	MINK ST	19+95	LT	D3-1-12	78 X 12	24											1	
268	S-59	MINK ST	20+15	RT	R3-H8bh-36	36 X 30	13							7.50					
268	S-60	MINK ST	20+35	RT	D3-1-12	42 X 12	24											1	
268	S-61	MINK ST	20+90	LT	D3-1-12	42 X 12	24											1	
268	S-62	MINK ST	21+05	LT	R3-H8bh-36	36 X 30	14							7.50					
268	S-63	MINK ST	21+37	RT	D3-1-12	78 X 12	24											1	
268	S-64	MINK ST	22+25	RT	R2-1-30	30 X 36	14							7.50					
268	S-65	MINK ST	24+00	RT	R3-H8cb-48	48 X 30	27							10.00					
268	S-66	MINK ST	25+00	RT	LEVEL 3	120 X 36			29			2			30	2			
269	S-67	MINK ST	26+50	RT	LEVEL 3	132 X 48				36		2			44	2			
269	S-68	MINK ST	27+00	LT	R3-H8bh-36	36 X 30	14							7.50					
269	S-69	MINK ST	27+00	LT	R2-1-30	30 X 36	15							7.50					
269	S-70	MINK ST	28+23	LT	LEVEL 3	108 X 84					41	2			63	2			
269	S-71	MINK ST	28+50	RT	R3-H8cb-48	48 X 30	24							10.00					
269	S-72	MINK ST	29+45	RT	LEVEL 3	120 X 36			30			2			30	2			
269	S-73	MINK ST	29+50	LT	R3-H8ba-30	30 X 30	13							6.25					
269	S-74	MINK ST	29+55	RT	R3-H8ba-30	30 X 30	13							6.25					
269	S-75	MINK ST	32+30	LT	R3-H8ba-30	30 X 30	13							6.25					
269	S-76	MINK ST	32+30	RT	R3-H8ba-30	30 X 30	13							6.25					
269	S-77	MINK ST	32+32	LT	LEVEL 3	120 X 36			29			2			30	2			
269	S-78	MINK ST	33+40	LT	R3-H8cb-48	48 X 30	28							10.00					
269	S-79	MINK ST	33+54	RT	LEVEL 3	132 X 84					42	2			77	2			
269	S-80	MINK ST	34+50	RT	R2-1-30	30 X 36	14							7.50					
269	S-81	MINK ST	35+50	LT	LEVEL 3	132 X 48						2			44	2			
269	S-82	MINK ST	38+00	LT	LEVEL 3	120 X 36			28			2			30	2			
269	S-83	MINK ST	39+00	RT	R3-H8ba-30	30 X 30	14							6.25					
269	S-84	MINK ST	39+50	LT	R3-H8cb-48	48 X 30	27							10.00					
270	S-85	MINK ST	42+90	RT	R3-H8ba-30	30 X 30	13							6.25					
270	S-86	MINK ST	43+06	LT	R1-1-30	30 X 30	14							5.13					
270	S-87	MINK ST	44+00	LT	R3-H8bb-30	30 X 30	13							6.25					
270	S-88	MINK ST	47+75	LT	R3-H8bb-30	30 X 30	13							6.25					
270	S-89	MINK ST	49+50	LT	R2-1-30	30 X 36	14							7.50					
270	S-90	MINK ST	52+00	LT	W3-5-36	36 X 36	14							9.00					
268	S-91	WORTHINGTON RD	115+10	RT	R3-H8bh-36	36 X 30	14							7.50					
268	S-92	WORTHINGTON RD	116+85	LT	R3-H8bh-36	36 X 30	14							7.50					
263	S-93	COBBS RD	16+00	LT	W14-1-24	24 X 24	13							4.00					
264	S-94	COBBS RD	43+45	LT	OM4-3-18	18 X 18	12							2.25					
264	S-95	COBBS RD	43+47	LT	OM4-3-18	18 X 18	12							2.25					
264	S-96	COBBS RD	43+49	LT	OM4-3-18	18 X 18	12							2.25					
269	S-97	MINK ST	29+01	RT	D3-1-18	54 X 18												1	
269	S-98	MINK ST	32+68	LT	D3-1-18	54 X 18												1	
270	S-99	MINK ST	43+75	LT	D3-1-12	114 X 12	28											1	
270	S-100	MINK ST	43+75	LT	D3-1-12	114 X 12												1	
TOTALS CARRIED TO GENERAL SUMMARY							565	116	153	4	16	2	26	173	348	16	6	2	

CALCULATED BRH CHECKED HAG	PROPOSED SIGNING SUBSUMMARY
LIC-161-1.83	
282 336	

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 (CMS-2016 SPEC), 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.

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

A POLE MOUNTED POWER SERVICE SHALL BE INSTALLED AS SPECIFIED IN C&MS 632.24, 732.20, AND SCD TC-83.10 AT EACH LOCATION SHOWN IN THE PLANS.

ALL POWER SERVICES SHALL BE POLE MOUNTED AS SHOWN IN THE PLANS AND SHALL BE AS PER CMS 632.24, 732.20, & SCD TC-83.10 WITH THE FOLLOWING EXCEPTIONS:

1. THE CONTRACTOR SHALL SUPPLY THE NECESSARY METER BASE. THE METER BASE MOUNTING HEIGHT SHALL BE NO MORE THAN 5 FEET HIGH TO THE CENTER OF THE METER BASE FROM THE GROUND. THE METER SHALL HAVE A LEVER OPERATED BYPASS.
2. THE CONTRACTOR SHALL SUPPLY 120 VOLT, SINGLE PHASE, 3-WIRE POWER SERVICE FOR EACH TRAFFIC SIGNAL SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL SUPPLY, AT A MINIMUM, ONE (1) 30 AMP WATER-ROOF DISCONNECT SWITCH FOR EACH TRAFFIC SIGNAL LOCATION. SEE TRAFFIC SIGNAL PLAN SHEETS FOR DETAILS.
4. POWER CABLE AND CONDUIT QUANTITIES FOR UNDERGROUND SERVICE HAVE BEEN ITEMIZED SEPARATELY IN THE PLANS FOR THE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE CONTROLLER CABINET.

DISCONNECT SWITCH ENCLOSURES SHALL BE PER CMS 732.21 AND INCLUDE A PADLOCK EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660, WITH LOCK BODY OF BRONZE OR BRASS AND KEYING SHALL BE TO THE STATE MASTER. EACH ENCLOSURE SHALL HAVE A SAFETY SWITCH DISCONNECT.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER 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 SIGNAL IS ACCEPTED BY THE MAINTAINING AGENCY.

CONDUIT RISERS SHALL INCLUDE STANDOFF BRACKETS MADE BY ALUMA-FORM OR APPROVED EQUAL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH POWER SERVICE, COMPLETE IN PLACE, INCLUDING WEATHER-HEAD, CONDUIT RISER, FITTINGS, CLAMPS, DISCONNECT SWITCH WITH ENCLOSURE, METER BASE, SERVICE CABLE AND FITTINGS, AND ALL OTHER INCIDENTALS NECESSARY FOR COMPLETE SERVICE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN

A GREEN COLORED WITH TWO YELLOW STRIPES/TRACERS, INSULATED CABLE SHALL BE USED FOR THE GROUND WIRE (GRD) WHERE INDICATED IN THE SIGNAL PLANS. THIS GRD CABLE SHALL BE SEPARATE FROM THE GROUND ROD WIRE, BUT SHALL BE CONNECTED TO THE SAME GROUNDING BOLT USED FOR THE GROUND ROD WIRE ATTACHMENT AT THE POLE. THE GRD CABLE SHALL BE TAGGED AS 'GRD SYS' AT ALL POLE LOCATIONS, PULL BOXES AND CONTROL CABINETS. ALL CONNECTIONS/SPLICING OF THE GRD CABLE IN PULL BOXES SHALL BE INCIDENTAL TO THE UNIT COST BID FOR THIS ITEM.

PAINTING REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF CMS 514 & 708, ALL ITEMS TO BE PAINTED SHALL BE PAINTED WITH 'ESSEX GREEN', SHERWIN WILLIAMS P.M.S. NUMBER 5535.

ALL EXTERIOR SURFACES OF THE MAST ARM POLE SHAFT ASSEMBLY, ARM ASSEMBLY, ALL BOLT COVERS, ALL CLAMPS, ALL WIRE ENTRANCES, ALL CLEVIS HANGERS, ALL HANDHOLE COVERS, BRACKETS, POLE CAP, AND ARM CAPS SHALL HAVE AN ESSEX GREEN COATING APPLIED TO THEM. EXTERIOR SURFACES OF ALL BOLT AND SCREW FASTENERS, WASHERS, NUTS AND OTHER ATTACHMENT HARDWARE SHALL HAVE A COATING APPLIED TO THEM. FASTENER THREADS SHALL NOT BE CLOGGED WITH COATING MATERIAL. THE EXTERIOR COATING FOR ALL ITEMS ABOVE SHALL BE WARRANTED TO YIELD A LIFE EXPECTANCY OF A MINIMUM OF 5 YEARS WITHOUT PEELING OR FADING.

ALL ITEMS TO BE PAINTED WITH THIS COLOR SHALL BE PAINTED IN A CONTROLLED ENVIRONMENT PRIOR TO SHIPPING TO THE FIELD. THE PAINTING SHALL BE A FIVE-PART PROCESS CONSISTING OF A TWO PART SURFACE PREPARATION FOLLOWED BY A THREE-COAT PAINT SYSTEM. NEW, UNWEATHERED GALVANIZED STEEL SHALL BE PREPARED FOR COATING BY A SOLVENT CLEANING FOLLOWED BY A BRUSH-OFF BLAST CLEANING. THE THREE-COAT PAINT SYSTEM SHALL CONSIST OF AN ORGANIC ZINC PRIME COAT, AN EPOXY INTERMEDIATE COAT, AND A URETHANE FINISH COAT.

ALL COATED ITEMS SHALL BE SHIPPED IN A MANNER TO MINIMIZE DAMAGE IN TRANSIT. SURFACES SHOULD BE PROTECTED BY A METHOD APPROVED BY THE ENGINEER TO GUARANTEE DELIVERY OF UNDAMAGED MATERIALS. MATERIALS DAMAGED IN TRANSIT SHALL BE REPAIRED OR REPLACED AT THE DIRECTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH CORRECTING DAMAGED MATERIAL SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL SUBMIT TO THE VILLAGE OF NEW ALBANY ENGINEER TWO (2) COLOR COATING SAMPLES FROM EACH MANUFACTURER THAT WILL SUPPLY PRODUCT THAT HAS THE NEW ALBANY GREEN COATING APPLIED TO IT. EACH SAMPLE SHALL HAVE THE PRODUCT DESCRIPTION AND THE PRODUCT MANUFACTURERS NAME PRINTED ON IT. SUBMITTED SAMPLES MAY NOT BE RETURNED.

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 TO 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 EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED 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.

SIGNAL SUPPORT/STRAIN POLE FOUNDATION DETAILS

STRAIN POLE FOUNDATIONS SHALL INCLUDE A MINIMUM OF ONE CAPPED CONDUIT ELL AS PER SCD TC-21.20. INSTALL P-K NAIL FOR FUTURE LOCATION CONSIDERATIONS. PAYMENT FOR CAPPED CONDUIT ELL AND P-K NAIL SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE STRAIN POLE FOUNDATION.

SIGNAL SUPPORT/STRAIN POLE FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE 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 FOUNDATION, AS SHOWN IN 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 FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

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TRAFFIC SIGNAL NOTES

LIC-161-1.83

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336

ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TSI, AS PER PLAN

IN ADDITION TO THE OTHER REQUIREMENTS OF ODOT 633 & 733, THE CONTROLLER (TS2, TYPE 2/TS1 COMPATIBLE) SHALL BE ECONOLITE ASC/3-2100 WITH AN ETHERNET MODULE. THE TSI CABINET ASSEMBLY SHALL BE COMPLETELY WIRED (INCLUDES ALL PANELS & HARNESSSES) FOR THE PHASE OPERATION, DETECTION AND ALL ADDITIONAL DEVICES AS CALLED FOR IN THE PLANS. THE COLUMBUS MUTCD FLASH CIRCUITRY SHALL BE INSTALLED AS A PANEL MOUNTED, CABINET ASSEMBLY ITEM. THE CABINET ASSEMBLY SHALL MEET ALL CITY STANDARDS AS SET FORTH BETWEEN THE SUPPLIERS AND THIS DIVISION. CONTACT THE TRANSPORTATION DIVISION'S ELECTRONIC SYSTEMS SUPERVISOR FOR DETAILS (614-645-7933).

IN ADDITION TO THE OTHER SPECIFICATION DOCUMENTS, THE CABINET ASSEMBLY SHALL MEET THE FOLLOWING SPECS:

(A) ALL LABELS SHALL BE PERMANENTLY SECURED TO THE CABINET. PLASTIC LABEL MAKER TAPE IS NOT CONSIDERED TO BE PERMANENT. CROY TYPE LABELS ARE ACCEPTABLE.

(B) IN LIEU OF A LAMP ASSEMBLY, A DOOR MOUNTED FLEX LIGHT THAT ILLUMINATES THE ENTIRE BACK PANEL SHALL BE INSTALLED. THE 120 VAC, CONVENIENCE OUTLET ASSEMBLY (GFI TYPE) SHALL BE MOUNTED ON THE RIGHT CABINET SIDE PANEL NEAR THE DOOR HINGE AREA AND FACE THE DOOR OR THE CENTER INTERIOR PORTION OF THE CABINET. THE OUTLET & FLEX LIGHT ASSEMBLIES SHALL NOT INTERFERE WITH THE REMOVAL OR INSTALLATION OF ANY EQUIPMENT.

(C) LOAD SWITCHED SHALL BE EDI MODEL 510 WITH LIGHTS PERMANENTLY LABELLED AS R, Y, G OR A, B, C. A LOAD SWITCH SHALL BE PROVIDED FOR EACH BACK PANEL LOAD SWITCH SOCKET POSITION WHETHER USED OR UNUSED. ALL LOAD SWITCHES SHALL REST IN A SUPPORT RACK. LOAD SWITCH POSITIONS 5-8 (4PH) OR 9-12 (8PH) SHALL BE USED FOR EITHER A PEDESTRIAN OR OVERLAP LOAD SWITCH UNLESS SPECIFIED OTHERWISE.

(D) LIGHTING PROTECTION DEVICES SUCH AS ITT, SURRESTOR, GENERAL ELECTRIC, OR APPROVED EQUAL (AS DETERMINED BY THE COLUMBUS TRANSPORTATION DIVISION) SHALL BE PROVIDED.

(E) THE MAIN CABINET DOOR LOCK (CCL ENCLOSURE LOCK 1548IRS) SHALL HAVE A LOCK KEYHOLE COVER AND SHALL BE KEYPED TO THE STATE MASTER. THE POLICE PANEL DOOR LOCK (CCL ENCLOSURE LOCK # R357SGS) SHALL HAVE A LOCK KEYHOLE COVER AND SHALL BE SUPPLIED WITH A R2466 KEY.

(F) THE NEMA 3R CABINET SHALL AN ECONOLITE SUPER P44 CABINET. IT SHALL BE OF STANDARD SIZE AND SHALL BE SUPPLIED WITH A COMPLETE BACK PANEL AS PER PLAN. THE CABINET MATERIAL SHALL BE 5052 MARINE GRADE, .125 INCH THICK ALUMINUM SHEETING WITH A 32 HARDNESS IN ITS NATURAL COLOR AND BE PAINTED WHITE ON THE INSIDE. THE INSIDE OF THE CABINET SHALL BE TREATED WITH A THREE (3) STAGE IRON PHOSPHATE COATING AND A ZINC CHROMATE PRIMER COATING. A BAKED WHITE ALKALI ENAMEL FINISH SHALL THEN BE APPLIED. ALL COATINGS SHALL BE PROPERLY DRIED AND APPLIED SUCH THAT THE INSIDE WHITE PAINT WILL NOT PEEL FOR A GUARANTEED PERIOD OF TWO (2) YEARS. ALL EXTERIOR SEAMS SHALL BE EITHER CONTINUOUSLY WELDED, TACK WELDED, SEALED WITH A 15 TO 20 YEAR SILICONE SEALER, AND/OR OVERLAPPED SUCH THAT WATER DOES NOT ENTER THE CABINET. ALL CABINET EDGES SHALL BE SMOOTH (FREE OF ANY SHARP EDGES). THE CABINET DOOR FRAME OPENING SHALL BE DOUBLE-FLANGED ON ALL FOUR SIDES.

THE CABINET DOOR SHALL BE HINGED USING A HEAVY GAUGE CONTINUOUS HINGE THAT HAS A STAINLESS STEEL HINGE PIN. THE HINGE SHALL BE BOLTED TO THE CABINET SO THE DOOR CAN BE REMOVED. THE BOLTS AND NUTS SHALL BE MADE OF STAINLESS STEEL, TAMPERPROOF AND SECURELY FASTENED TO PREVENT VIBRATIONS FROM LOOSENING THE NUTS. THE DOOR, SEALED WITH NEOPRENE GASKET, SHALL BE EQUIPPED WITH A THREE (3) POINT LATCHING MECHANISM AND A HANDLE WHICH CAN BE PADLOCKED. THE DOOR SHALL BE DESIGNED SUCH THAT THE DOOR CAN BE LOCKED IN AN OPEN POSITION AT 90, 135, AND 180 DEGREES TO THE CABINET (NOMINAL VALUES). THE POLICE DOOR SHALL HAVE A KEYHOLE COVER. BOLT PATTERN SHALL CONSIST OF AN ANCHOR BOLT POSITIONED IN EACH CABINET CORNER.
P44 CABINET SIZE: 55" H X 44" W X 26" D
DOOR OPENING - 44" H X 41.5" W

(G) A THYRECTOR SURGE PROTECTOR WITH A RMS INPUT OF 150 VOLTS AND INPUT PEAK OF 210 VOLTS SHALL BE PROVIDED IN ADDITION TO ANY LIGHTING PROTECTION DEVICE. THE THYRECTOR SHALL BE PLACED ACROSS THE INPUT AC POWER LINE.

(H) A 35 AMP LINE FILTER SHALL BE SUPPLIED AND SHALL BE MOUNTED ON THE POWER DISTRIBUTION PANEL.

(I) TWO (2) CIRCUIT SOLID STATE FLASHER, EDI MODEL 810, RATED AT 15 AMPS (MINIMUM) PER CIRCUIT SHALL BE PROVIDED (NEMA TYPE 3). CIRCUIT 1 SHALL CONTROL THE MAINLINE FLASHING SIGNAL INDICATIONS, CIRCUIT 2 SHALL CONTROL THE SIDE STREET FLASHING SIGNAL INDICATIONS.

(J) ONE (1) 30 AMP CIRCUIT BREAKER, LABELED AS "MAIN", SHALL BE WIRED AS THE MAIN POWER DISTRIBUTION BEAKER. A SECOND CIRCUIT BREAKER, LABELED AS "PED" AND RATED AT 10 AMPS, SHALL BE SUPPLIED FOR THE PEDESTRIAN SIGNAL LOAD ONLY. THE PEDESTRIAN SIGNAL BREAKER SHALL BE WIRED IN SERIES WITH BUT AFTER THE MAIN POWER BREAKER. A THIRD CIRCUIT BREAKER, LABELED AS "AUX" AND RATED AT 15 AMPS, SHALL SUPPLY A SEPARATE BRANCH OF AC+ POWER TO THE VENTILATING FAN, CONVENIENCE 'GFI' OUTLET AND LIGHT SO THAT THEY MAY OPERATE INDEPENDENTLY OF THE MAIN POWER BREAKER. THE POWER TO THE FAN AND LIGHT SHALL ALSO BE INTERRUPTED BY THE 'GFI' OUTLET. ALL BREAKERS SHALL BE MOUNTED SIDE-BY-SIDE ON THE POWER DISTRIBUTION PANEL.

(K) ALL CONTROLLER MS CONNECTOR HARNESSSES SHALL HAVE A CONDUCTOR FOR EACH PLUG PIN EXCEPT THE REMOTE RE-SET FUNCTION FOR THE CONFLICT MONITOR. THE CONTROLLER AND CONFLICT MONITOR MS HARNESS CONDUCTORS SHALL BE CONNECTED TO A BACK PANEL TERMINAL STRIP WHICH IS ACCESSIBLE FROM THE FRONT OF THE PANEL. DETECTOR UNIT HARNESS CONDUCTORS SHALL BE CONNECTED TO A LEFT SIDE CABINET MOUNTED TERMINAL STRIP. OTHER EQUIPMENT SHALL BE CONNECTED AS APPROPRIATE.

(L) THE CABINET ASSEMBLY SHALL CONTAIN ALL PEDESTRIAN SIGNAL CIRCUITRY FOR EACH NEMA DEFINED THROUGH PHASE.

(M) A POLICE DOOR MOUNTED SIGNAL SHUTDOWN SWITCH WITH POSITIONS LABELED AS "SIG ON" AND "SIG OFF" SHALL BE INSTALLED.

(N) A POLICE DOOR MOUNTED SIGNAL-FLASH SWITCH WITH SWITCH POSITIONS LABELED AS "ON SIG" AND "ON FLASH" SHALL NOT ONLY PLACE THE SIGNALS ON FLASH BUT ALSO STOP-TIME THE CONTROLLER UNIT.

A RUN/STOP-TIME SWITCH WITH SWITCH POSITIONS LABELED AS "CONT. RUN" AND "STOP-TIME" SHALL BE INSTALLED ON THE INSIDE OF THE CABINET DOOR. THE RUN/STOP-TIME SWITCH SHALL ALLOW THE CONTROLLER UNIT TO TIME NORMALLY BUT KEEP THE SIGNALS ON FLASH. THE SIGNAL-FLASH SWITCH SHALL NOT RETURN THE SIGNALS TO NORMAL OPERATION UNLESS THE RUN/STOP-TIME SWITCH IS RESET TO THE STOP-TIME POSITION SO THE SIGNAL-FLASH SWITCH CAN AGAIN STOP-TIME THE CONTROLLER UNIT. THE SIGNAL-FLASH SWITCH SHALL NOT REMOVE POWER TO THE CONTROLLER UNIT OR ITS AUXILLARY EQUIPMENT.

(O) A POLICE DOOR MOUNTED AUTO-MANUAL TRANSFER SWITCH WITH SWITCH POSITIONS LABELED AS "AUTO" AND "MANUAL" SHALL BE INSTALLED. A MANUAL PUSH BUTTON CONTROL SHALL NOT BE INSTALLED UNLESS SPECIFIED, BUT WIRING FOR A PUSH BUTTON CONTROL SHALL BE PROVIDED UP TO THE POINT WHERE THE PUSH BUTTON WOULD HAVE BEEN CONNECTED.

(P) A CONTROLLER SHUTDOWN SWITCH WITH SWITCH POSITIONS LABELED AS "CONT ON" AND "CONT OFF" AND A COORDINATED/FREE SWITCH WITH SWITCH POSITIONS LABELED AS "COORD" AND "FREE" SHALL BE INSTALLED INSIDE THE CABINET NEXT TO THE RUN/STOP-TIME SWITCH. A COORDINATED/FREE SWITCH SHALL NOT BE REQUIRED IF THE CONTROLLER HAS A BUILT-IN COORD/FREE SWITCH.

(Q) AFTER A NEMA DEFINED POWER INTERRUPTION THE CONFLICT MONITOR SHALL CAUSE THE INTERSECTION SIGNALS TO FLASH AS PER PLAN FOR 10 SECONDS BEFORE THE INITIALIZED CONTROLLER UNIT TAKES CONTROL OF THE INTERSECTION SIGNALS. THE CONFLICT MONITOR SHALL BE EDI MODEL SERIES SSM LE AND SHALL CONTAIN SUFFICIENT CHANNELS AS CALLED FOR IN THESE PLANS.

(R) THE CONFLICT MONITOR SHALL BE CONNECTED DIRECTLY TO THE FIELD TERMINALS. USING JUMPERS OR LINKS ON THE BACK PANEL TO FORM A CIRCUIT FOR THE CONFLICT MONITOR SHALL NOT BE ACCEPTABLE.

(S) THE CONFLICT MONITOR SETTINGS FOR MINIMUM YELLOW TIMING ON ALL CHANNELS SHALL BE SET AT THREE AND ONE HALF (3.5) SECONDS.

(T) THE WATCH DOG TIMER SHALL CAUSE THE CONTROLLER TO GO INTO A FLASH OPERATION IF A MICROPROCESSOR FAILURE IS DETECTED.

(U) ALL BACK PANEL HARDWARE SHALL BE MOUNTED WITH SCREWS. ALL SCREWS SHALL BE COMPLETELY SCREWED DOWN. RIVETS OR OTHER NON-REMOVABLE FASTENERS ARE NOT ACCEPTABLE.

(V) WIRE CONNECTIONS ON THE BACK PANEL SHALL BE MADE WITH CRIMP TERMINALS AND THREADED FASTENERS. TELEPHONE TYPE KNIFE CONNECTORS (SOLDERED OR OTHERWISE) ARE NOT ACCEPTABLE.

(W) ALL WIRES FASTENED TO THE LOAD SWITCH AND FLASHER PLUGS SHALL BE SOLDERED IN PLACE.

(X) THE BACK PANEL AND POWER DISTRIBUTION PANEL SHALL HAVE SILK SCREENED TERMINAL/SOCKET FUNCTION IDENTIFICATION LABELS SUCH AS AC COM, PHASE 3 GREEN, 115 VAC, SIGNAL BUS, ETC. REFERENCE NUMBERS SHALL NOT BE ACCEPTABLE IN LIEU OF FUNCTION LABELS BUT THEY CAN SUPPLEMENT THEM. ADDITIONAL TERMINAL BLOCKS AND AUXILIARY PANELS SHALL USE SILK SCREENED REFERENCE NUMBERS TO IDENTIFY TERMINAL CONNECTIONS.

(Y) ALL TERMINAL STRIPS IN CLOSE PROXIMITY OF SHELF MOUNTED CONTROL DEVICE EQUIPMENT SHALL BE COVERED WITH NON-CONDUCTIVE MATERIAL TO PREVENT ACCIDENTAL CONTACT WITH THE DEVICES. ALL TERMINAL STRIPS SHALL BE READILY ACCESSIBLE WITHOUT REMOVAL OF ANY EQUIPMENT.

(Z) THE CABINET SHALL HAVE TWO (2) NON-VENTED (SOLID) SHELVES SPACED AT LEAST 9" APART. BOTH SHELVES SHALL HAVE A WIDTH OF 13" AND THE BACK EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING UP. THE FRONT EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING DOWN. ALL LIP EDGES SHALL BE ROUNDED. THE SHELVES SHALL BE ATTACHED TO THE CABINET SIDE PANELS. THE SHELF ARRANGEMENT SHALL BE DESIGNED SO ALL SHELF DEVICES FIT ON THEM.

(AA) THERE SHALL BE A MINIMUM OF ONE (1) INCH EMPTY SPACE BETWEEN ALL ITEMS ATTACHED TO THE DOOR AND ALL SHELF-MOUNTED DEVICES INCLUDING ITS CONNECTING HARNESS(ES), ALL LOAD SWITCHES, FLASHER AND ALL SIDE-PANEL-MOUNTED ITEMS.

(BB) "P" AND "M" SIZED CABINETS SHALL HAVE TWO VENTILATION FANS. THE THERMOSTAT CONTROLLING THE VENTILATING FAN CIRCUIT SHALL BE SET AT 95 DEGREES FAHRENHEIT.

(CC) ALL FLASH TRANSFER RELAYS SHALL BE WIRED FOR FAIL-SAFE OPERATION (ENERGIZED DURING NORMAL OPERATION AND WIRED WITH A MAXIMUM OF TWO PHASES PER RELAY.

(DD) THE CONTROLLER ASSEMBLY, WHEN PLACED IN OR COMING OUT OF AN AUTOMATIC FLASHING MODE, SHALL CONFORM TO THE AUTOMATIC FLASHING CRITERIA SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, SECTION 4D.29-4D.31, INCLUDING THE FOLLOWING ADDITIONS:

1) A VEHICULAR CALL SHALL BE PLACED ON ALL PHASES IMMEDIATELY PRIOR TO ENTERING THE "FLASH" MODE SO THE CONTROLLER WILL CYCLE TO THE "FLASH" POINT. IT IS OPTIONAL TO HAVE IMMEDIATELY ON ALL PHASES WHEN THE "FLASH" MODE TERMINATES. THE CONTROLLER SHALL OPERATE NORMALLY ONCE THE "FLASH" MODE SEQUENCE IS TERMINATED.

2) THE CONTROLLER SHALL ENTER THE "FLASH" MODE AT THE END OF THE THROUGH SIDE STREET PHASE(S) YELLOW (OR DURING THE SIDESTREET PHASE(S) RED CLEARANCE INTERVAL) BUT JUST PRIOR TO ANY MAIN STREET GREEN.

THE FLASH TRANSFER LOGIC DEVICE SHALL TRIGGER THE "FLASH" OPERATION, SHALL BE SOLID STATE, SHALL BE EXTERNAL TO THE CONTROLLER (A CABINET ASSEMBLY DEVICE), AND SHALL FUNCTION WITH ANY NEMA CONTROLLER. THIS CIRCUITRY SHALL BE SUPPLIED IN ADDITION TO ANY INTERNAL CONTROLLER FLASH LOGIC PROVIDED BY THE CONTROLLER.

EXCEPTION: FOR ON-STREET MASTER ARTERIAL CONTROLLERS ONLY, INTERNAL IC LOGIC CAN BE USED IN LIEU OF AN EXTERNAL DEVICE AS LONG AS THE INTERNAL IC LOGIC MEETS THE STANDARDS SET FORTH ABOVE.

NOTE CONTINUED NEXT SHEET.

ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TSI, AS PER PLAN

(EE) THE POWER CABLE SHALL BE CONNECTED TO AN ACCESSIBLE TERMINAL STRIP THAT SHALL BE LOCATED NEAR THE BOTTOM OF THE CABINET AND SHALL BE OF SUFFICIENT SIZE TO ACCEPT A SUPPLIED #8 WIRE LUG. THE TERMINAL STRIP SHALL BE COVERED OR SHIELDED TO MINIMIZE ACCIDENTAL CONTACT DURING NORMAL SERVICING OPERATIONS. THE COVER SHALL BE SNAPPED ON/OFF OR SECURED BY STANDARD SCREWS. THE POWER CABLE LUG TERMINAL CONNECTION SHALL BE LOCATED IMMEDIATELY BELOW THE MAIN POWER DISTRIBUTION BREAKER. THE POWER DISTRIBUTION PANEL SHALL BE LOCATED IN THE BOTTOM RIGHT SIDE OF THE CABINET OR IT SHALL BE AN INTEGRAL PART OF THE RIGHT SIDE OF THE BACK PANEL. THERE SHALL BE A MINIMUM OF TWO (2) INCHES CLEARANCE BETWEEN THE POWER TERMINAL AND THE BOTTOM OF THE CABINET.

(FF) A #4 WIRE LUG SHALL BE PROVIDED FOR ATTACHING A GROUNDING WIRE FROM A GROUND ROD. THE GROUNDING WIRE LUG SHALL BE ATTACHED TO THE POWER DISTRIBUTION PANEL (LOWER LEFT CORNER), OR IF NONE, TO THE BACK PANEL (BOTTOM MIDDLE). IT SHALL BE DIRECTLY GROUNDED TO THE CABINET.

(GG) A SINGLE POLE MERCURY PLUNGER RELAY SHALL BE INSTALLED WHICH WILL ALLOW POWER TO BE REMOVED FROM THE VEHICULAR AND PEDESTRIAN POWER BUSES. THE MERCURY RELAY SHALL BE RATED AT 35 AMPS AND THE RELAY COIL WIRED WITH A NOISE SUPPRESSION DEVICE.

(HH) ALL EXTERNAL RELAY COILS SHALL HAVE NOISE SUPPRESSION DEVICES.

(II) THE DOOR FILTER (U.L. LISTED CLASS 2, STANDARD 900) SHALL CONSIST OF THREE DISTINCT LAYERS OF FILTERING MEDIA. THE FIRST AIR ENTERING LAYER SHALL BE COMPOSED OF A DUAL FIBER BLEND OF 100% NON-WOVEN POLYESTER TO TRAP LARGER SIZED PARTICLES. THE NEXT LAYER SHALL BE DUAL PLY, DUAL DENIER, 100% NON-WOVEN POLYESTER OF SMALLER SIZE TO TRAP FINER PARTICLES PASSING THROUGH THE FIRST LAYER. A NON-TOXIC, NON-MIGRATORY, ODORLESS TACKIFIER SHALL BE APPLIED TO THESE LAYERS. ADHESIVES SPRAYED ON THE LAYERS ARE NOT ACCEPTABLE. THE TACKIFIER SHALL BE INCORPORATED INTO THE LAYER MEDIA DURING THE MANUFACTURING PROCESS OF THE RAW MATERIAL. A 10 GAUGE MESH SHALL BE INCORPORATED IN THE FILTER DESIGN FOR RIGIDITY. SUFFICIENT MEDIA OVERLAP SHALL BE PRESENT ABOUT THE WIRE PERIMETER TO INSURE POSITIVE SELF SEAL. THE DOOR FILTER HOLDER SHALL BE DESIGNED SO THE FILTER MAKES POSITIVE CONTACT WITH THE CABINET DOOR AT ALL TIMES AND UNDER ALL CONDITIONS AND SITUATIONS.

FOUR (4) SETS OF CABINET WIRING SCHEMATICS, TWO (2) SERVICE MANUALS AND TWO (2) INSTRUCTIONAL MANUALS SHALL BE PROVIDED PER CABINET. DELIVERY OF THESE DIAGRAMS & MANUALS SHALL ACCOMPANY THE CABINET. THE CONTRACTOR SHALL CLEARLY NOTE ANY DEVIATIONS, CHANGES, ADDITIONS OR OTHER MODIFICATIONS ON THE DIAGRAMS AND MANUAL THAT ARE APPROPRIATE TO REFLECT THE EXACT EQUIPMENT TO BE PROVIDED. THE COST FOR THIS MATERIAL SHALL BE INCIDENTAL TO THE COST OF THE SIGNAL EQUIPMENT. THE COPIES OF DIAGRAMS AND MANUALS SHALL BE STORED IN A PLASTIC ENVELOPE MOUNTED HORIZONTALLY AND SECURELY FASTENED TO THE INSIDE OF THE MAIN CABINET DOOR. THE ENVELOPE OPENING SHALL BE TO THE RIGHT OR LEFT. THE ENVELOPE OPENING SHALL BE TO THE RIGHT OR LEFT. THE ENVELOPE SHALL NOT BLOCK ANY PART OF THE AIR FILTER OR THE AIR INTAKE LOCATED IN THE DOOR.

SERVICE & INSTRUCTIONAL MANUALS SHALL INCLUDE SECTIONS COVERING THE GENERAL DESCRIPTION OF EQUIPMENT, EQUIPMENT INSTALLATION PROCEDURES, EQUIPMENT PROGRAMMING PROCEDURES, THEORY OF OPERATION WITH SYSTEM DESCRIPTION INCLUDING BLOCK DIAGRAMS AND DETAILED CIRCUIT DIAGRAMS, PREVENTATIVE MAINTENANCE, FIELD TROUBLE ANALYSIS, BENCH TROUBLE ANALYSIS, TROUBLESHOOTING ANALYSIS CHART, WAVE FORMS, VOLTAGE MEASUREMENTS, VOLTAGE MEASUREMENT CHARTS, PARTS LIST, ELECTRICAL INTERCONNECTION DRAWINGS, SCHEMATIC AND LOGIC DIAGRAMS, ASSEMBLY DRAWINGS WITH PICTORIAL DIAGRAMS SHOWING PHYSICAL LOCATIONS AND IDENTIFICATION OF EACH COMPONENT.

THE CONTROLLER AT THE INTERSECTION OF MINK ST & RAMP B SHALL BE THE MASTER CONTROLLER.

ITEM 633 CONTROLLER WORK PAD, AS PER PLAN

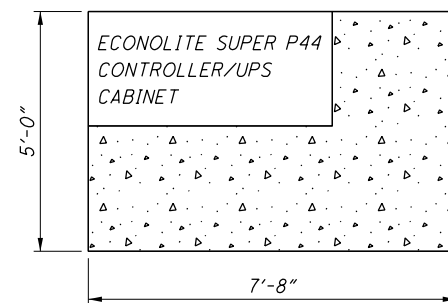
THE CONTROLLER WORK PAD SHALL BE IN ACCORDANCE WITH CMS 633.11, SCD TC-83.20, AND PIS 208320.

THIS ITEM SHALL INCLUDE THE ADDITIONAL EXCAVATION, EMBANKMENT, AND CONCRETE NECESSARY TO EXTEND THE CONTROLLER WORK PAD TO THE DIMENSIONS 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 CONFORMING TO 304.02
- INSTALL A CAST-IN-PLACE WORK PAD THAT IS A MINIMUM OF 4" THICK

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE AND INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO CONSTRUCT THE CONCRETE WORK PAD.



ECONOLITE SUPER P44 CABINET

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 SHALL APPLY:

(1) ALL VEHICULAR SIGNAL HEAD TYPES SHALL BE LIGHT EMITTING DIODE (LED) AND THE OUTPUT SHALL EMULATE AN INCANDESCENT TYPE OF UNIFORMITY ACROSS THE FRONT SURFACE. TURN ARROWS SHALL HAVE THREE (3) ROWS OF LEDS TO DEFINE THE ARROW. ALL MODULES SHALL HAVE SPADE TYPE TERMINALS SECURELY ATTACHED TO THE UNITS LEAD WIRES.

(2) THE LED SIGNAL LAMP UNITS 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.

(3) THE SIGNAL FACE, INCLUDING THE DOOR, SHALL BE FEDERAL YELLOW IN ACCORDANCE WITH ITEM 632.

(4) THE VISOR AND BACK OF HOUSING SHALL BE 'ESSEX GREEN' IN ACCORDANCE WITH THE PAINT REQUIREMENTS NOTE ON SHEET 283.

THE HOUSING SHALL BE SUPPLIED WITH FIVE PAIR (FOR 3 SECTION HEADS) OR SIX PAIR (FOR 5 SECTION HEADS), BARRIER TYPE TERMINAL BLOCK (NO QUICK-DISCONNECT SLIP-ON CONNECTORS ARE ACCEPTABLE) THAT IS SCREW-MOUNTED AT EACH END & LOCATED IN THE RED SECTION. THE TERMINAL BLOCK SHALL MEET UL E62622, CSA LR15364, BE IEC COMPLIANT, CONTAIN #10-32 x 1/4" (MIN.) ZINC-PLATED STEEL PHILSLOT SCREWS THAT ARE INSTALLED BETWEEN BARRIERS WHOSE WIDTH OPENING IS A NOMINAL .41" & HEIGHT IS A NOMINAL .45" ABOVE THE TERMINAL PLATE, BE RATED FOR 30 AMPS, & SHALL HAVE A BREAKDOWN VOLTAGE OF 7500V RMS. ALL BOLTS AND WASHERS FOR SECURING SECTIONS TOGETHER, ALL LENS MOUNTING HARDWARE, ALL DOOR LATCHING BOLTS AND ALL HINGE PINS SHALL BE STAINLESS STEEL. DOOR LATCHING BOLTS SHALL FIT THROUGH A SLOT IN THE DOOR. IF USED, THE GREEN AND/OR YELLOW INDICATION DOORS ON ALL 5 SECTION HEADS SHALL OPEN IN A BOOK-LIKE FASHION.

AN ALUMINUM, WEATHERPROOF TRI-STUD SINGLE WIRE ENTRANCE WITH THREE (3) 5/16" x 1-7/16" STAINLESS STEEL STUDS, LOCK WASHERS, AND HEX NUTS SHALL BE PROVIDED WITH EACH SIGNAL HEAD. THE WEATHER HEAD ENTRANCE SHALL HAVE A MINIMUM INSIDE DIAMETER OPENING OF 1-1/2", INCLUDING ANY RUBBER OR PLASTIC GROMMET THAT PROTECTS THE CABLE. THE OPENING AT THE TRI-STUD END MAY BE IRREGULARLY SHAPED, BUT IT MUST HAVE A MINIMUM OPENING OF 1-1/2" AT ITS WIDEST POINT AND A MINIMUM OPENING OF 11/16" AT ITS NARROWEST POINT. THE TRI-STUD WASHER MUST HAVE THE SAME OPENING AT THE ENTRANCE. THE TOP OF THE ENTRANCE SHALL HAVE ONLY ONE (1) CLEVIS HOLE AND IT MUST ACCOMODATE A 5/8" STAINLESS STEEL CLEVIS PIN. THE CLEVIS ATTACHMENT, MEASURED AT THE CENTER OF THE CLEVIS HOLE, SHALL BE NO GREATER THAN 5/8" THICK OR GREATER THAN 1-3/4" IN WIDTH. FOR USE ON MAST ARMS THE WIRE ENTRANCE SHALL BE COATED THE SAME COLOR AS THE MAST ARM STRUCTURE.

FOR MAST ARM STRUCTURES A 90 DEGREE 3/4" CLEVIS HANGER WITH PINS SIMILAR TO PELCO PART SE-0467 OR ENGINEERING CASTINGS PART EC-65 OR APPROVED EQUAL SHALL BE USED TO ALLOW THE SIGNAL HEAD TO FREELY SWING ON THE ARM. THE CLEVIS HANGER SHALL BE COATED THE SAME COLOR AS THE MAST ARM STRUCTURE. THE BUSHING SHALL BE STAINLESS STEEL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, AND ATTACHMENT HARDWARE, AND ACCEPTANCE BY THE ENGINEER.

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.

632 COVERING OF VEHICULAR SIGNAL HEAD

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACKPLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

GROUNDING AND BOUNDING

IN ADDITION TO THE REQUIREMENTS OF CMS 625& 725, THE FOLLOWING SHALL APPLY:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 - A. 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 ALL 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 SIZE 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 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. 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 IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT 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 (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
 - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
 - 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 633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, THE CONTRACTOR SHALL PROVIDE AN UNINTERRUPTIBLE POWER SUPPLY (UPS), SPECIFICALLY CLARY CORP. BATTERY BACKUP UPS SYSTEM MODEL SPI250LX WITH SPD-302A POWER INTERFACE MODULE, SNMP ETHERNET ADAPTER AND OUTPOST BATTERIES.

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 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.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH UNIT, COMPLETE IN PLACE, INCLUDING WIRE FOR THE ALARM OUTPUT TO THE CONTROLLER AND ALL OTHER INCIDENTALS NECESSARY FOR A FULLY OPERATIONAL UPS SYSTEM, ALL CONNECTIONS TESTED AND ACCEPTED.

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 SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

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TRAFFIC SIGNAL NOTES

LIC-161-1.83

ITEM 625 PULL BOX, 32", AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 625.11, 725.08, ALL PULL BOXES SHALL HAVE "TRAFFIC" EMBOSSED ON THE LID, SEPARATE OR BONDED TAGS WILL NOT BE PERMITTED.

FRAMES AND LIDS SHALL BE NEENAL R-1792-HL. THE FRAME SHALL BE 5900-0013 AND THE LID SHALL BE 5900-5004.

THE PULL BOXES SHALL BE OF PRE-CAST CONSTRUCTION. IN HIGH TRAFFIC AREAS WORK AND RESTORATION SHALL BE PLANNED TO MINIMIZE ROADWAY/SIDEWALK CLOSURE DURATION AND EXPEDITE STEEL PLATE REMOVAL.

ONE COAT OF HYDROZO ENVIROSEAL 40, RAINSTOPPER 140, OR CHEMTRETE BSM40 SHALL BE APPLIED TO THE INSIDE AND OUTSIDE OF THE PULL BOX. THE LID SHALL HAVE A LIP FOR LIFTING.

ALL CONDUITS THAT CONNECTS A PULL BOX DIRECTLY TO ANY EQUIPMENT CABINET SHALL BE SEALED USING LAYERS OF ALTERNATING STEEL WOOL AND DUCT SEAL AT BOTH ENDS, WITHIN THE PULL BOX AND THE CABINET.

ANY SLACK OR EXCESS CABLE TO BE COILED IN THE PULL BOX SHALL BE PLACED AROUND THE INSIDE BOX PERIMETER.

ALL COILED CABLES SHALL BE TIE WRAPPED AND CLEARLY IDENTIFIED WITHIN THE PULL BOX.

THE WORK AS DESCRIBED WILL BE MEASURED AS THE NUMBER OF PULL BOXES FURNISHED AND INSTALLED, COMPLETE IN PLACE.

TRACER WIRE

TRACER WIRE SHALL BE INSTALLED IN ONE OF THE MULTI-CELL INNERDUCTS IN ALL CONDUIT RUNS. TRACER WIRE SHALL BE NO SMALLER THAN #12 AWG WIRE. THE WIRE SHALL BE HDPE INSULATED, ORANGE IN COLOR, AND CONSTRUCTED OF COPPER CLAD STEEL. APPROXIMATELY 10 FEET OF SLACK OF THE TRACER WIRE SHALL BE LEFT INSIDE THE ADJACENT PULL BOXES CONNECTING THE CONDUIT RUNS. IN SITUATIONS WHERE A TYPE 2 FIBER OPTIC CABLE MARKER IS TO BE INSTALLED IN CONJUNCTION WITH THE TRACER WIRE, THE TRACER WIRE SHALL BE RUN THROUGH THE MARKER AND CONNECTED TO TERMINALS AT THE TOP OF THE MARKER.

PAYMENT FOR ALL TRACER WIRE SHALL BE INCLUDED IN THE BID FOR ITEM 804 FIBER OPTIC CABLE, 144 FIBER.

FIBER OPTIC CABLE MARKER

FIBER OPTIC CABLE MARKERS SHALL BE INSTALLED AS DIRECTED BY THE ODOT ENGINEER AND/OR AT EVERY PULL BOX CONTAINING FIBER OPTIC CABLE AND SHALL BE ONE OF TWO TYPES:

TYPE 1 - COTTMARK 511, FRICK FLEXPOST, OR CARSONITE CURV-FLEX MARKER

TYPE 2 - COTT BIGFINK, FRICK TESTPOST, OR RHINODOME TEST STATION

THE FIBER OPTIC CABLE MARKERS SHALL BE 6 FEET IN LENGTH AND SHALL BE SECURELY PLACED IN THE GROUND AT A DEPTH OF 2 FEET. CARE SHALL BE TAKEN DURING INSTALLATION NOT TO DAMAGE ANY UNDERGROUND CONDUIT IN THE VICINITY. THE CONTRACTOR SHALL USE TYPE 2 MARKER WHEN THE PATH OF THE FIBER CROSSES UNDERNEATH A ROADWAY AND WHEN CAPABLE SHALL PLACE A MARKER ON BOTH SIDES OF THE ROADWAY AT CROSSING.

THE CONTRACTOR SHALL CONNECT TRACER WIRE TO TERMINAL AT TOP OF TYPE 2 MARKER. TYPE 1 MARKERS SHALL ONLY BE PLACED ON STRAIGHT FIBER RUNS BETWEEN PULL BOXES IN THE SHOULDER, AND THE CONTRACTOR SHALL BE LIMITED TO THE USE OF TYPE 1 MARKERS SO THAT A TYPE 2 MARKER SHALL BE PLACED BETWEEN ANY TWO TYPE 1 MARKERS. TYPE 1 MARKERS SHALL NOT BE PLACED IN SUCCESSION DOWN A FIBER PATH. THE MARKERS SHALL BE ORANGE IN COLOR AND SHALL HAVE THE FOLLOWING INFORMATION LOCATED ON THE UPPER PORTION OF THE MARKER IN A READABLE FORMAT:

WARNING
CONTACT OUPS 48 HRS BEFORE DIGGING
(NAME OF OWNING AGENCY) FIBER OPTIC CABLE
(OWNING AGENCY CONTACT #)

PAYMENT FOR ALL FIBER OPTIC CABLE MARKERS SHALL BE INCLUDED IN THE BID FOR ITEM 804 FIBER OPTIC CABLE, 144 FIBER.

ITEM 632 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.

ALL SIGNAL SUPPORTS, STRAIN POLES, MAST ARMS, AND BRACKET ARMS, SHALL BE PAINTED 'ESSEX GREEN' AS PER THE STEEL PAINTING REQUIREMENTS PLAN NOTE ON SHEET 283.

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 WITH A MINIMUM YIELD STRENGTH OF 50 KSI. THE FOLLOWING DESIGN PARAMETERS SHALL BE USED:

1. BASIC WIND SPEED = 90 mph
2. DESIGN LIFE = 25 YEARS
3. FATIGUE CATEGORY = III
4. GALLOPING: NO
5. TRUCK INDUCED GUST: 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.

PAYMENT FOR ITEM 632 "SIGNAL SUPPORT, (BY TYPE), AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE, AND SHALL INCLUDE ALL SIGNAL SUPPORT DESIGN, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

- ITEM 625 BRACKET ARM, 15', AS PER PLAN
- ITEM 632 STRAIN POLE, TYPE TC-81.21, DESIGN 10, AS PER PLAN
- ITEM 632 COMBINATION STRAIN POLE, TYPE TC-81.21, DESIGN 10, AS PER PLAN

BRACKET ARMS, STRAIN POLES, AND COMBINATION STRAIN POLES SHALL BE PAINTED 'ESSEX GREEN' AS PER THE STEEL PAINTING REQUIREMENTS PLAN NOTE ON SHEET 283.

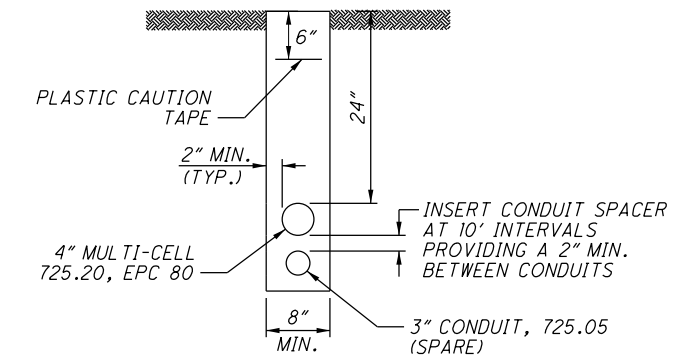
ITEM 625 CONDUIT, 4", MULTI-CELL, 725.20, EPC-80

FIBER OPTIC CABLE SHALL BE ROUTED IN A FACTORY-ASSEMBLED SYSTEM OF FOUR (4) INNERDUCTS ASSEMBLED WITHIN A PROTECTIVE OUTER DUCT. THE INNERDUCTS SHALL BE NOMINAL 1.25 INCH INSIDE DIAMETER, TYPE DB PVC PER NEMA TC-8 WITH A BELL INSERTION DEPTH OF 1.75 INCHES MINIMUM. THE OUTERDUCT SHALL BE NOMINAL 4 INCH (INSIDE DIAMETER), TYPE SCHEDULE 80 PVC. CARLON TYPE SCHEDULE 80 OR APPROVED EQUIVALENT.

THE COUPLING SHALL BE DESIGNED IN A MANNER TO PERMIT EASY ASSEMBLY. THE COUPLING SHALL BE MARKED OR KEYED IN A MANNER TO ENSURE THE INNERDUCTS ARE PROPERLY ALIGNED, ANY COLOR CODES ARE CONTINUED AND THE ADJOINING SECTION IS INSERTED TO THE PROPER DEPTH IN THE BELL. ALL KEYS AND/OR MARKINGS SHALL BE VISIBLE AFTER ASSEMBLY, TO ALLOW THE INSPECTION OF EACH JOINT FOR PROPER ASSEMBLY BEFORE BURIAL. THE SEALING SYSTEM SHALL BE DESIGNED TO ASSURE AIR INTEGRITY OF EACH INDIVIDUAL INNERDUCT AND WATER INTEGRITY OF THE ENTIRE SYSTEM.

WHERE INNERDUCT(S) WITHIN A MULTI-CELL DUCT ARE TO REMAIN EMPTY, ONE (1) 0.25" NYLON ROPE SHALL BE INSTALLED IN EACH OF THE OPEN INNERDUCTS, THE ROPE WILL REMAIN TO BE USED FOR A FUTURE CABLE INSTALLATION. ALSO EACH INNERDUCT SHALL BE PLUGGED TO MAINTAIN THE AIR AND WATER INTEGRITY. IN ADDITION THE OUTER DUCT SHALL BE CAPPED TO MAINTAIN THE AIR AND WATER INTEGRITY OF THE ENTIRE SYSTEM.

CONDUIT SPACERS SHALL BE CONSIDERED INCIDENTAL TO THE CONUIT.



TRENCH WITH TWO CONDUITS

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ITEM 633 CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET, TRANSCEIVER, SHORT RANGE

THE CONTRACTOR SHALL FURNISH AND INSTALL SINGLE MODE FIBER (SMF), SMALL FORM FACTOR PLUGGABLE (SFP) GIGABIT INTERFACE CONNECTOR (GBIC) MODULES AT LOCATIONS AS SHOWN ON THE PLANS.

MATERIALS

THE FIBER OPTIC ETHERNET TRANSCEIVERS SHALL TRANSMIT AND RECEIVE 10/100/1000BASEFX TO 100 BASEFT DATA OVER THE DESIGNATED FIBER TYPE AS PER THE PLANS. EACH TRANSCEIVER SHALL OPERATE AT 1310 NM AND HAVE A RANGE OF 10KM UNLESS A GREATER RANGE IS REQUIRED TO REACH THE ADJACENT SWITCH ON THE SAME RING. FIBER OPTIC MEDIA CONVERTER (SFP MODULES) SHALL BE COMPATIBLE WITH THE EXISTING ETHERNET SWITCHES AS SHOWN ON THE PLANS. THE FIBER OPTIC MEDIA CONVERTERS SHALL MEET THE FOLLOWING REQUIREMENTS:

-MULTI-SOURCE PACKAGE WITH DUPLEX LC CONNECTOR (FOR OPTICAL GBIC MODULES)

OPTICAL PATCH CABLES SHALL BE COMPLIANT WITH GR-326 (SINGLE MODE)

SAFETY - LASER CLASS I 2ICFR1040

LASER CLASS I IEC 60825-1

HOT-SWAPPABLE

4.75VDC INPUT VOLTAGE

OPERATING TEMPERATURE -40 TO +85 C

STORAGE TEMPERATURE -40 TO +85 C

COMPATIBLE WITH GBIC STANDARD AS SPECIFIED IN IEEE 802.3Z

COMPLIANT WITH GBIC SPECIFICATION REVISION 5.4

GR-20-CORE: GENERIC REQUIREMENTS FOR OPTICAL FIBER AND OPTICAL FIBER CABLE

GR-326-CORE: GENERIC REQUIREMENTS FOR SINGLE MODE OPTICAL CONNECTORS AND JUMPER ASSEMBLIES.

ALL SFP MODULES PROVIDED BY THE CONTRACTOR FOR INSTALLATION SHALL BE 100% COMPATIBLE WITH THE APPROVED LAYER 2 NETWORK SWITCHES.

THE CONTRACTOR WILL NOT RECEIVE ANY EXTENSION TO THE SCHEDULE TO COMPENSATE FOR DELAYS DUE TO PRODUCT RESUBMITTALS.

CONSTRUCTION

- 1. INSTALL THE SFP MODULE IN THE ETHERNET SWITCH SLOT
- 2. CONFIGURE AS NECESSARY

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE, FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY CABLES AND CONNECTORS IN ACCORDANCE TO THE SPECIFICATION AND AS SPECIFIED ON THE PLANS. ALL MISCELLANEOUS PATCH AND INTERCONNECT CABLES SHALL MEET THE PROPOSED EQUIPMENT SPECIFICATION REQUIREMENTS AND SHALL MEET EIA/TIA TELECOMMUNICATIONS STANDARDS.

METHOD OF MEASUREMENT

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED, AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND INCIDENTALS, COMPLETE IN PLACE. TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

BASIS OF PAYMENT

COMMUNICATION MUST BE COMPLETED AND ACCEPTED PRIOR TO FINAL PAYMENT OF THIS ITEM. FIBER OPTIC ETHERNET TRANSCEIVER WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR:

ITEM 633 CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE

ITEM 633 CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH

THE CONTRACTOR SHALL PURCHASE AND INSTALL ENVIRONMENTALLY HARDENED LAYER 2 ETHERNET SWITCHES AS SHOWN ON THE PLANS. LAYER 2 ETHERNET SWITCHES SHALL BE MANUFACTURED BY COMNET, COMTROL, ETHERWAN, OR APPROVED EQUAL. THIS WORK IS THE FURNISHING AND INSTALLATION OF AN (8) PORT MANAGED ETHERNET SWITCH WITH SINGLE MODE FIBER-BASED SFP UPLINK PORTS AND MODULES FOR CONNECTION TO THE FIBER NETWORK.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE FURNISHED LAYER 2 ETHERNET SWITCHES ARE FULLY COMPATIBLE WITH SFP MODULES AS DESCRIBED IN THE PLANS.

ALL LAYER 2 ETHERNET SWITCHES SHALL BE OF THE SAME MANUFACTURER. ALL EQUIPMENT SHALL BE NEW AND IN STRICT ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND THE SPECIFICATIONS.

LAYER 2 ETHERNET SWITCHES SHALL SUPPORT DIRECT CONNECTIVITY TO PROPOSED AND EXISTING NETWORKS CONFIGURED IN RING AND MESH FAULT TOLERANT TOPOLOGIES ENABLING APPLICATIONS TO OPERATE RELIABLY, AND WITH LOW LATENCY.

ALL EQUIPMENT SHALL INCLUDE LICENSES, WHERE REQUIRED, FOR ANY SOFTWARE OR HARDWARE IN THE SYSTEM.

PERFORMANCE REQUIREMENTS

LAYER 2 ETHERNET SWITCHES SHALL COMPLY WITH THE FOLLOWING INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) STANDARD SPECIFICATIONS:

- IEEE 802.1ab-2009 LLDP
- IEEE 802.1d-2004: RAPID SPANNING TREE PROTOCOL
- IEEE 802.1q-2011: VLAN TAGGING
- IEEE 802.1x-2010 USER AUTHENTICATION (RADIUS)
- IEEE 802.3i: 10BASE-T
- IEEE 802.3ab: 1000BASE-T
- IEEE 802.3ax PORT TRUNK WITH LACP
- IEEE 802.3af CLASS 1 - 3 POWER OVER ETHERNET
- IEEE 802.3d: MAX BRIDGES
- IEEE 802.3u: 100BASE-TX, 100BASE-FX
- IEEE 802.3x: FULL DUPLEX AND FLOW CONTROL
- IEEE 802.3z: 1000 BASE-XRFC768: UDP
- RFC783: TFTP
- RFC791: IP
- RFC792: ICMP
- RFC793: TCP
- RFC826: ARP
- RFC854: TELNET
- RFC894: IP OVER ETHERNET
- RFC1112: IGMP v1
- RFC1493: BRIDGE MIB
- RFC1519: CIDR
- RFC1541: DHCP (CLIENT)
- RFC1907: SNMP v2
- RFC2012: TCP MIB
- RFC2013: UDP MIB
- RFC2030: SNTP
- RFC2068: HTTP
- RFC2236: IGMP v2
- RFC2578: SNMP v2
- RFC2579: SNMP v2 TC
- RFC2819: RMON MIB
- RFC2863: IF MIB

MATERIALS

LAYER 2 ETHERNET SWITCHES SHALL HAVE A PHYSICAL DESIGN THAT CONFORMS TO THE FOLLOWING REQUIREMENTS:

- 1) FOUR GIGABIT ETHERNET FULL-DUPLEX SWITCHED SFP PORTS
- 2) FOUR SWITCHED 10/100 MB COPPER ETHERNET (8P8C) PORTS
- 3) BE CONFIGURABLE IN POINT-TO-POINT, DAISY-CHAIN, RING, AND MESH TOPOLOGIES FOR CONNECTIVITY INTO NEW AND EXISTING FIBER OPTIC AND COPPER BASED ETHERNET NETWORKS.

- 4) DESIGNED WITH AN OPERATING SYSTEM THAT ALLOWS INDIVIDUAL PORTS TO BE CONFIGURED FOR PORT MIRRORING, SPEED, DUPLEX, AUTO-NEGOTIATION, AND FLOW CONTROL. THE OPERATING SYSTEM SHALL ALSO PROVIDE FOR BROADCAST STORM FRAME FILTERING WITH USER DEFINED THRESHOLDS.
- 5) DESIGNED WITH AN OPERATING SYSTEM THAT ALLOWS FOR THE COLLECTION OF STATISTICS ON A PER PORT BASIS AND PROVIDES FOR FULL SUPPORT OF REMOTE MONITORING (RMON) STATISTICS, HISTORY, ALARMS, AND EVENT GROUPS.
- 6) DESIGNED WITH AN OPERATING SYSTEM THAT PROVIDES PORT SECURITY TO PREVENT UNKNOWN DEVICES FROM GAINING ACCESS TO THE NETWORK. UNAUTHORIZED ATTEMPTS TO ACCESS THE NETWORK SHALL RESULT IN THE PORT BEING SHUT DOWN FOR A PERIOD OF TIME ALONG WITH SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP) TRAP AND ALARM GENERATION.
- 7) HAVE HIGH-STRENGTH 18-GAUGE GALVANIZED STEEL ENCLOSURE TO SEAL OUT INSECTS, DIRT, SMOKE, AND OTHER CONTAMINANTS.
- 8) CLEARLY IDENTIFY ALL MODULES AND ASSEMBLIES WITH NAME, MODEL NUMBER, SERIAL NUMBER, OR ANY OTHER PERTINENT INFORMATION REQUIRED TO FACILITATE EQUIPMENT MAINTENANCE.
- 9) MEETS NEMA TS-2 (TRAFFIC CONTROL EQUIPMENT)
- 10) -40°C TO +75°C OPERATING TEMPERATURE
- 11) -40°C TO +75°C STORAGE TEMPERATURE
- 12) EXTERNAL 120VAC TO DC POWER ADAPTER

CONSTRUCTION

- 1. CONFIGURE
- 2. INSTALL POWER ADAPTER, POWER CABLES, CATEGORY 5e OR CATEGORY 6 PATCH CORDS, AND SINGLE MODE PATCH CABLES AS REQUIRED AND DEPICTED ON COMMUNICATIONS DIAGRAMS.
- 3. SECURELY MOUNT THE SWITCH AND POWER SUPPLY IN THE CABINET.
- 4. MAKE POWER AND COMMUNICATIONS CONNECTIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE, FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY CABLES AND CONNECTORS IN ACCORDANCE TO THE SPECIFICATIONS AND AS SPECIFIED ON THE PLANS. ALL MISCELLANEOUS PATCH AND INTERCONNECT CABLES SHALL MEET THE PROPOSED EQUIPMENT SPECIFICATION REQUIREMENTS AND SHALL MEET EIA/TIA TELECOMMUNICATIONS STANDARDS.

METHOD OF MEASUREMENT

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED, AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND INCIDENTALS, COMPLETE IN PLACE. INSTALLATION OF POWER OUTLET AND SURGE PROTECTION SHALL BE INCLUDED WITH THIS PAY ITEM. TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

BASIS OF PAYMENT

NETWORK COMMUNICATION MUST BE ESTABLISHED AND ACCEPTED PRIOR TO FINAL PAYMENT OF THIS ITEM. LAYER 2 SWITCHES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR:

ITEM 633 CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH

MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

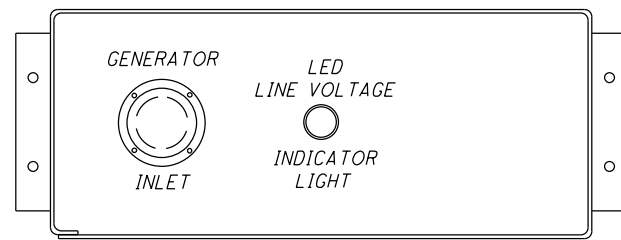
GENERATOR INLET - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NEMA configuration number L14-30-P 30A 125/250V specification. The inlet shall be a Hubbell catalog #2715.

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.

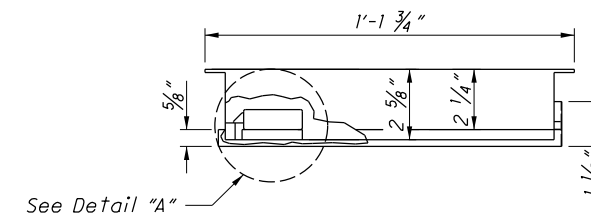
LINE VOLTAGE CIRCUIT BREAKER - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accommodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.

EXTERNAL LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be a 1" waterproof NEMA 4X or IP66 LED lamp with a green lens.

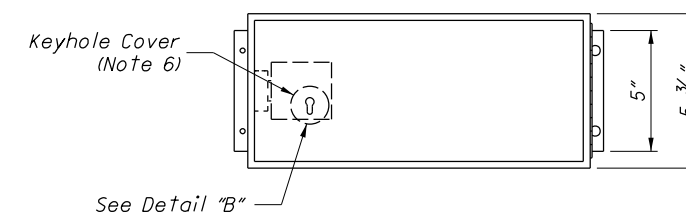


FRONT VIEW OF GENERATOR POWER PANEL

GENERATOR POWER PANEL ENCLOSURE



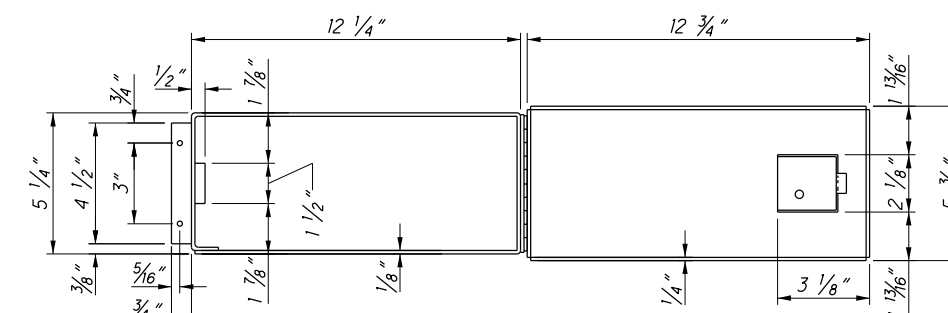
TOP VIEW



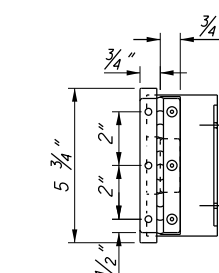
FRONT VIEW CLOSED DOOR

NOTES:

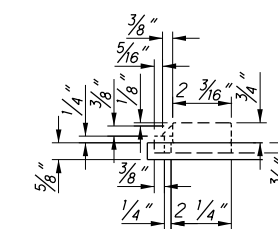
1. The enclosure shall be constructed of 1/8" thick aluminum.
2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
4. The enclosure shall be mounted 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.



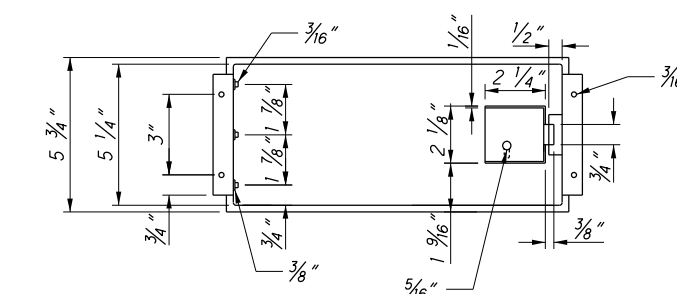
FRONT VIEW OPEN DOOR



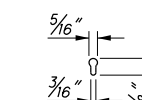
RIGHT SIDE VIEW CLOSED DOOR



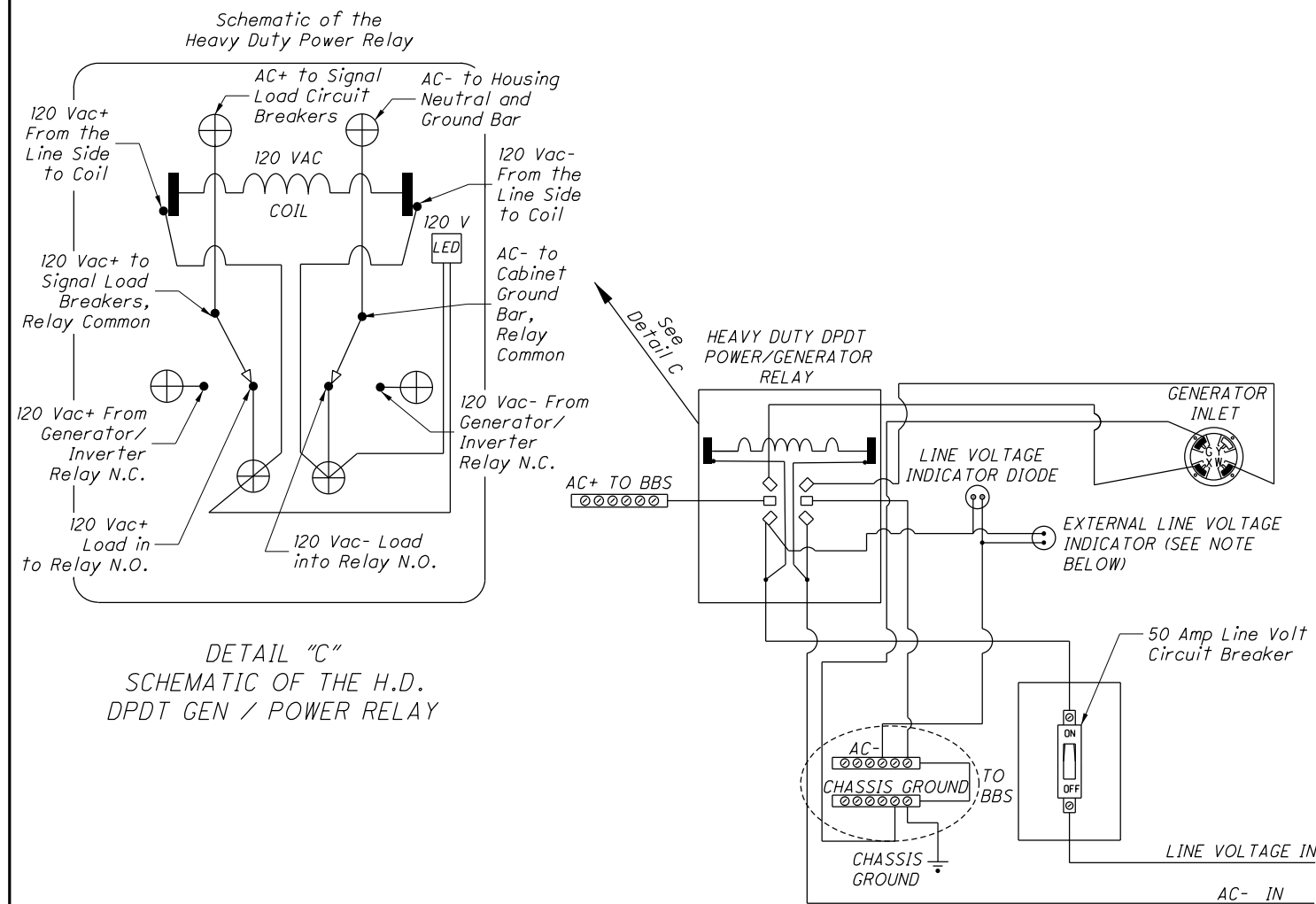
DETAIL "A"



BACK VIEW CLOSED DOOR



DETAIL "B"



DETAIL "C"
SCHEMATIC OF THE H.D.
DPDT GEN / POWER RELAY

ELECTRICAL HOOKUP DETAIL FOR THE BBS GENERATOR POWER PANEL

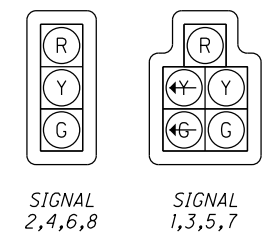
NOTE: EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans.
EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet, and generator panel doors are closed.

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LEGEND

- 3 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- 4/5 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- ⊙ STOP BAR RADAR DETECTION UNIT
- ⊙ DILEMMA ZONE RADAR DETECTION UNIT
- ⊥ MESSENGER WIRE SIGN
- ▭ RADAR DETECTION ZONE
- ⊠ 24" PULL BOX
- ⊠ 32" PULL BOX

SIGNAL INDICATIONS

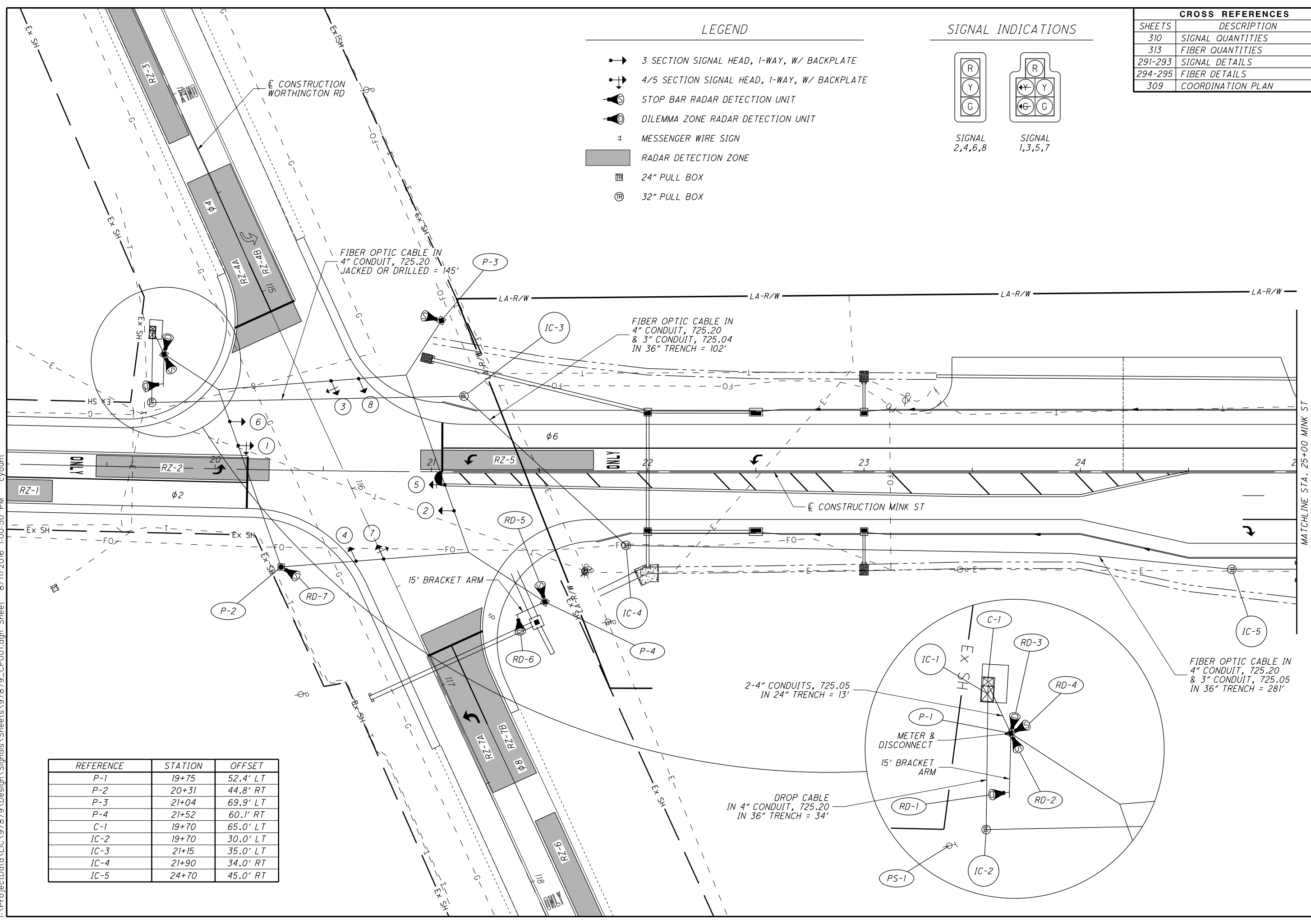


CROSS REFERENCES	
SHEETS	DESCRIPTION
310	SIGNAL QUANTITIES
313	FIBER QUANTITIES
291-293	SIGNAL DETAILS
294-295	FIBER DETAILS
309	COORDINATION PLAN

CALCULATED BRH CHECKED HAG

HORIZONTAL SCALE IN FEET

REFERENCE	STATION	OFFSET
P-1	19+75	52.4' LT
P-2	20+31	44.8' RT
P-3	21+04	69.9' LT
P-4	21+52	60.1' RT
C-1	19+70	65.0' LT
IC-2	19+70	30.0' LT
IC-3	21+15	35.0' LT
IC-4	21+90	34.0' RT
IC-5	24+70	45.0' RT



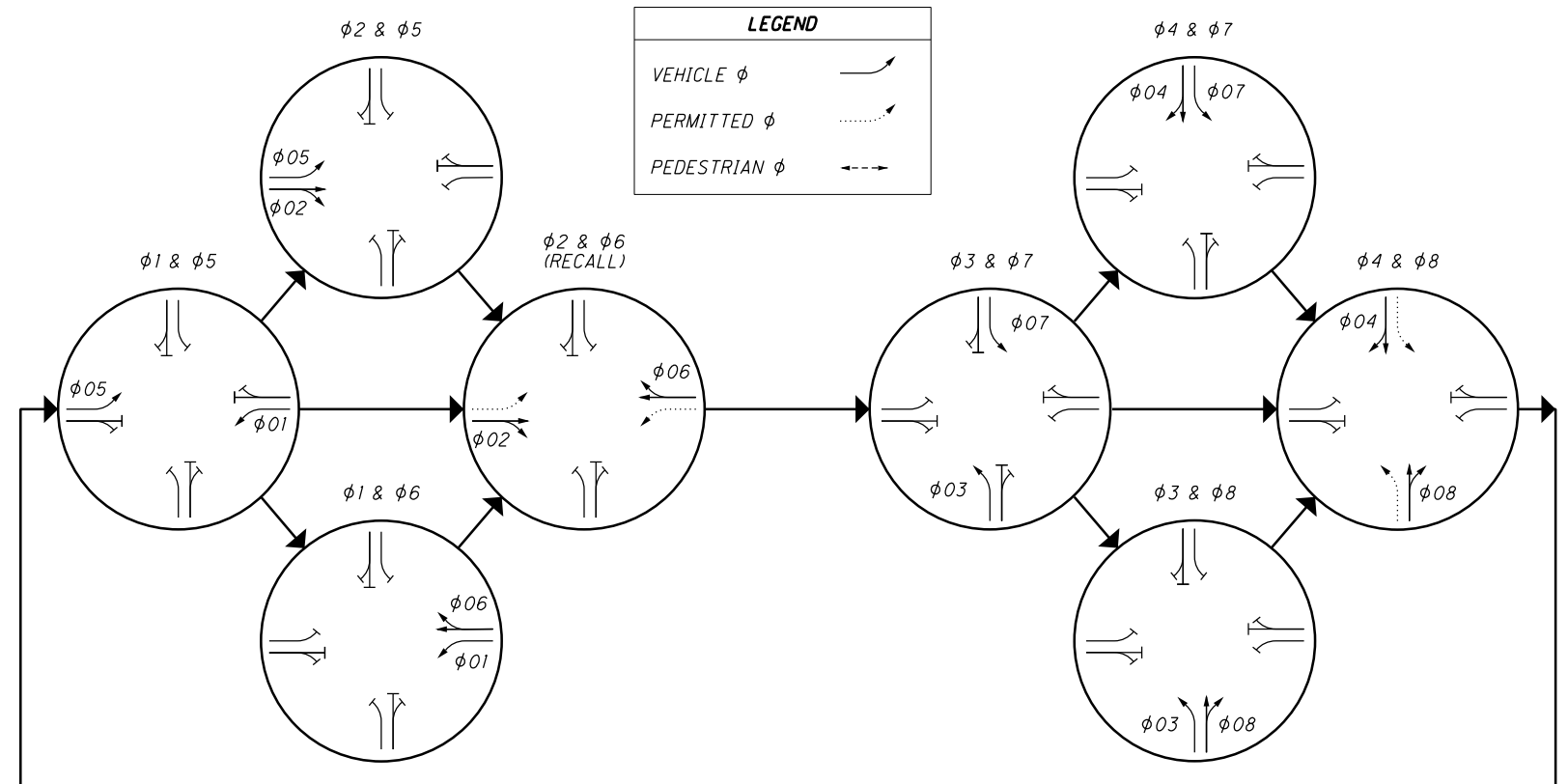
TRAFFIC SIGNAL PLAN
MINK ST / WORTHINGTON RD

LIC-161-1.83

SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: MINK ST & WORTHINGTON RD MAINTAINING AGENCY: CITY OF NEW ALBANY									
START UP		DUAL ENTRY: $\phi 2$ & $\phi 6$							
START IN	Y/R FLASH								
TIME FOR FLASH OR ALL RED	5 (SEC.)								
FIRST PHASES	2 & 6	OVERLAP				A	B	C	D
COLOR DISPLAYED	GREEN	PHASE							
INTERVAL OR FEATURE		$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$	$\phi 8$
INTERSECTION MOVEMENT	(SEC)	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB
MINIMUM GREEN (INITIAL)	(SEC)	7	20	7	10	7	20	7	10
ADDED INITIAL	(SEC/ACTUATION)								
MAXIMUM INITIAL	(SEC)								
PASSAGE TIME	(SEC)	5	5	5	5	5	5	5	5
TIME BEFORE REDUCTION	(SEC)								
MINIMUM GAP	(SEC)								
TIME TO REDUCE	(SEC)								
MAXIMUM GREEN I	(SEC)	7.5	23	7.5	16.5	7.5	23	7.5	16.5
MAXIMUM GREEN II	(SEC)								
YELLOW CHANGE	(SEC)	3	5	3.5	5	3	5	3.5	5
ALL RED CLEARANCE	(SEC)	2.5	2	3.5	1.5	2.5	2	3.5	1.5
WALK	(SEC)								
PEDESTRIAN CLEARANCE	(SEC)								
RECALL	MAXIMUM (ON/OFF)								
	MINIMUM (ON/OFF)		X				X		
	PEDESTRIAN (ON/OFF)								
MEMORY	(ON/OFF)								

PHASING DIAGRAM (TYPICAL)



NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- FOR PROTECTED/PERMISSIVE PHASES, IMPLEMENT CALL OMITTS TO AVOID YELLOW BALL TRAP.
- ENABLE $\phi 3$ & $\phi 7$ DETECTOR SWITCHING TO ALLOW $\phi 3$ & $\phi 7$ TO EXTEND $\phi 4$ & $\phi 8$ WHEN ALLOCATED GREEN TIME FOR LEFT TURN PHASES ARE EXHAUSTED.
- RADAR DETECTION UNITS FOR DILEMMA ZONE DETECTION SHALL PLACE A CONSTANT CALL TO THE CONTROLLER WHEN VEHICLES TRAVEL TIMES TO THE STOP BAR ARE BETWEEN 2.5 AND 6 SECONDS. SPEED TRIGGER SHALL BE SET FOR VEHICLES TRAVELING 35 MPH AND GREATER.
- RADAR SHALL HAVE QUEUE DETECTION CONFIGURED AND A ZONE PLACED AT 100-200 FEET FROM STOP BAR FOR SLOW MOVING VEHICLE EXTENSIONS. SPEED TRIGGER SHALL BE SET AT 1-35 MPH.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

RADAR DETECTION CHART

RADAR DETECTION UNIT	RADAR DETECTION ZONE	RADAR TYPE	DELAY (SEC.)	MIN. EXTENSION (SEC.)	ASSOCIATED CONTROLLER PHASE
RD-1	RZ-1	DILEMMA		2.0-7.5	$\phi 2$
RD-2	RZ-2	STOP BAR			$\phi 5$
RD-3	RZ-3	DILEMMA		2.0-7.5	$\phi 4$
RD-4	RZ-4A	STOP BAR	8		$\phi 4$
	RZ-4B	STOP BAR			$\phi 7$
RD-5	RZ-5	STOP BAR			$\phi 1$
RD-6	RZ-6	DILEMMA		2.0-7.5	$\phi 8$
RD-7	RZ-7A	STOP BAR			$\phi 3$
	RZ-7B	STOP BAR	8		$\phi 8$

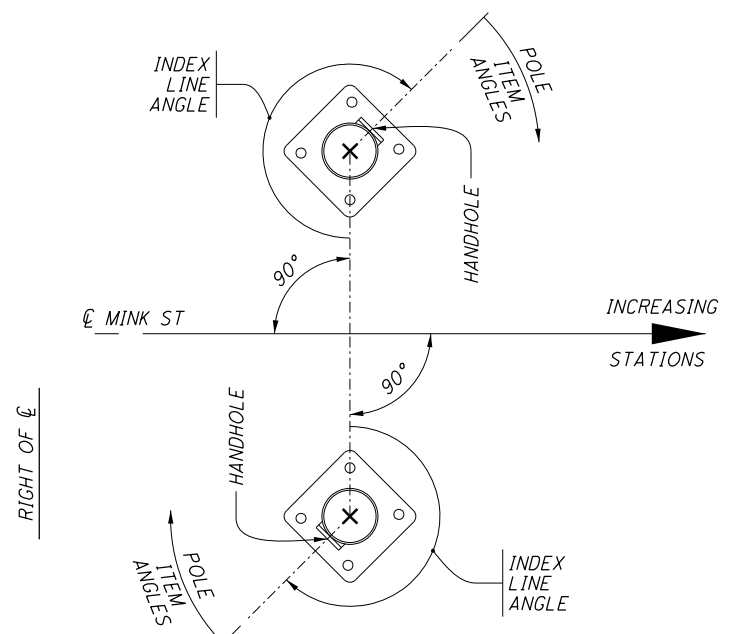
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TRAFFIC SIGNAL DETAILS
MINK ST & WORTHINGTON RD

LIC-161-1.83

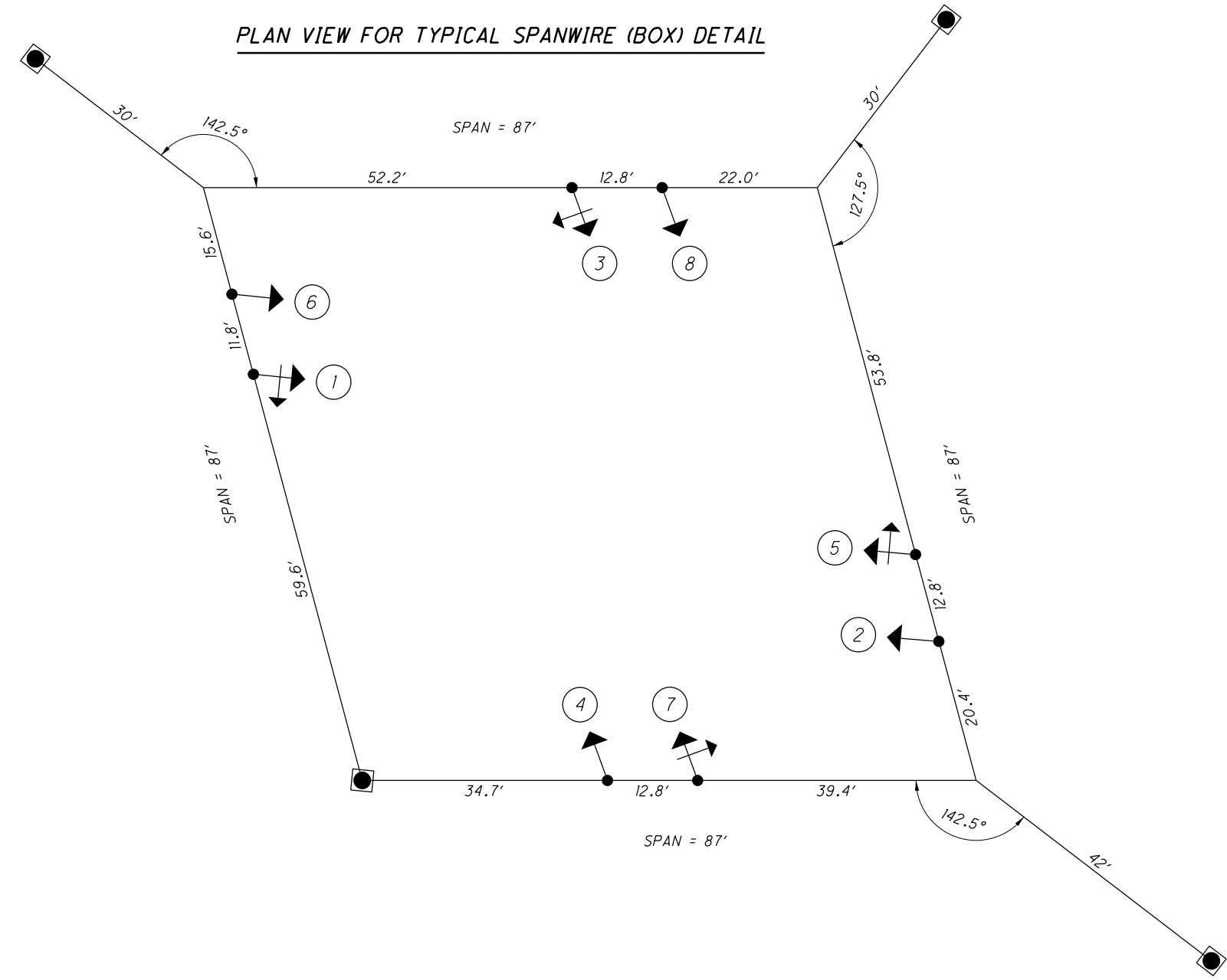
PLAN DETAILS FOR STRAIN POLES

INTERSECTION	STATION & OFFSET	POLE NO.	DESIGN NO.	POLE HEIGHT	FOUND. ELEV.	PVMT. ELEV.	INDEX ANGLE (CL HANDHOLE)	ANGLE FROM INDEX LINE					
								MESSENGER WIRE ATTACHMENT	SERVICE CABLE ENTRANCE	SIGNAL CABLE ENTRANCE	METER & DISCONNECT	15' BRACKET ARM	
								DEGREES					
MINK ST & WORTHINGTON RD	STA. 19+75, 52.4' LT	1	10	32	1172.5	1175.8	122	180	267	32	32	238	
	STA. 20+31, 44.8' RT	2	10	32	1174.0		180						
	STA. 21+04, 69.9' LT	3	10	32	1172.5		213	180					213
	STA. 21+52, 60.1' RT	4	10	32	1173.5		123	180					123



- NOTES:
- ALL ANGLES ARE MEASURED CLOCKWISE.
 - THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.

POLE DIAGRAM



PLAN VIEW FOR TYPICAL SPANWIRE (BOX) DETAIL

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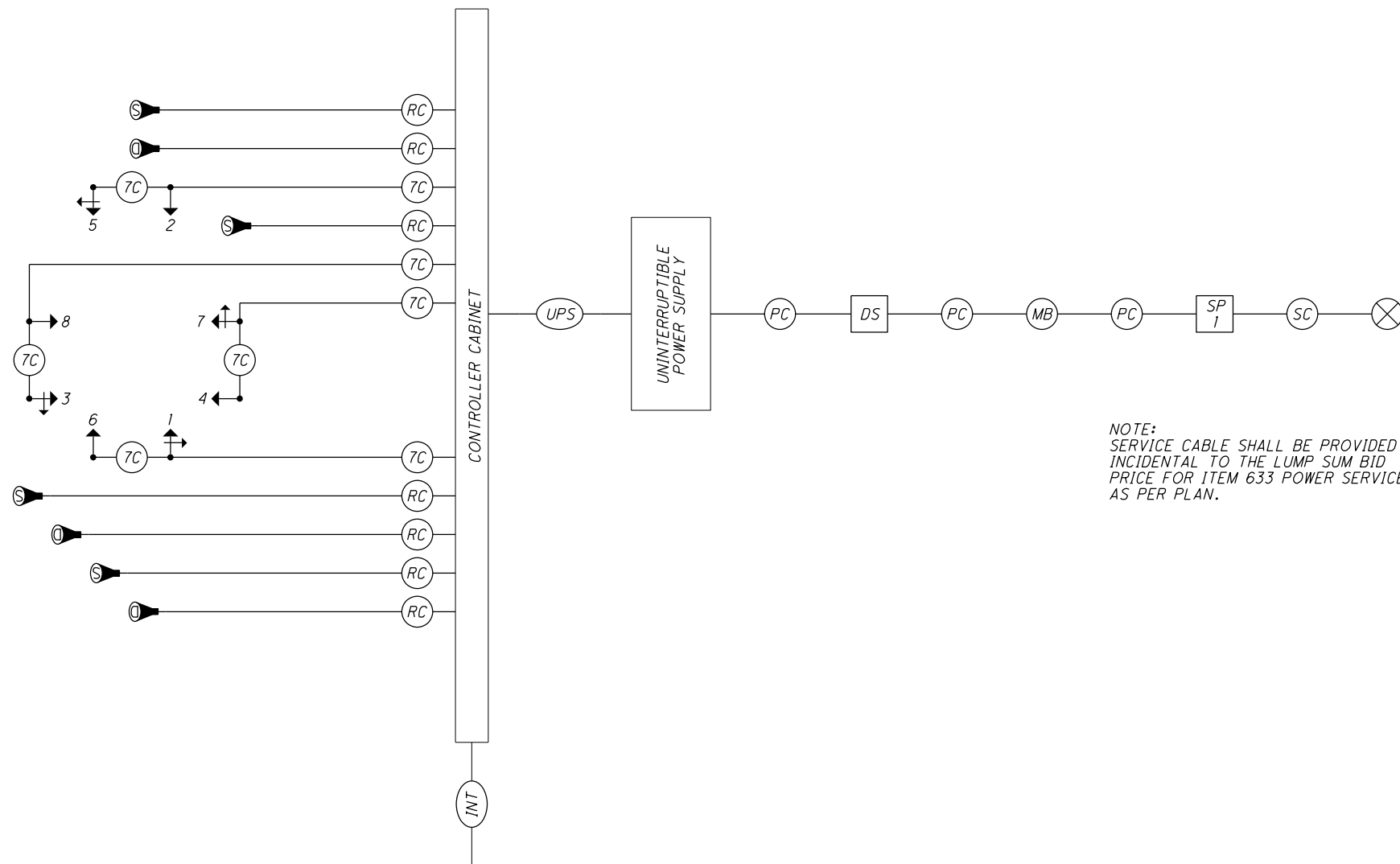
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TRAFFIC SIGNAL DETAILS
MINK ST & WORTHINGTON RD

LIC-161-1.83

292
336

WIRING DIAGRAM (TYPICAL)



NOTE:
SERVICE CABLE SHALL BE PROVIDED
INCIDENTAL TO THE LUMP SUM BID
PRICE FOR ITEM 633 POWER SERVICE,
AS PER PLAN.

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1	R	φ6 R	Y
	Y	φ6 Y	
	G	φ6 G	
	<--Y---	φ1 Y	
6	<--G---	φ1 G	Y
	R	φ6 R	
	Y	φ6 Y	
	G	φ6 G	
3	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
	<--Y---	φ3 Y	
8	<--G---	φ3 G	R
	R	φ8 R	
	Y	φ8 Y	
	G	φ8 G	
5	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
	<--Y---	φ5 Y	
2	<--G---	φ5 G	Y
	R	φ2 R	
	Y	φ2 Y	
	G	φ2 G	
7	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
	<--Y---	φ7 Y	
4	<--G---	φ7 G	R
	R	φ4 R	
	Y	φ4 Y	
	G	φ4 G	

LEGEND

	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		POWER SOURCE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
	STOP BAR RADAR DETECTION UNIT		SIGNAL SUPPORT POLE NO. 1
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		METER BASE
	RADAR DETECTION CABLE		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	INTERCONNECT CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE

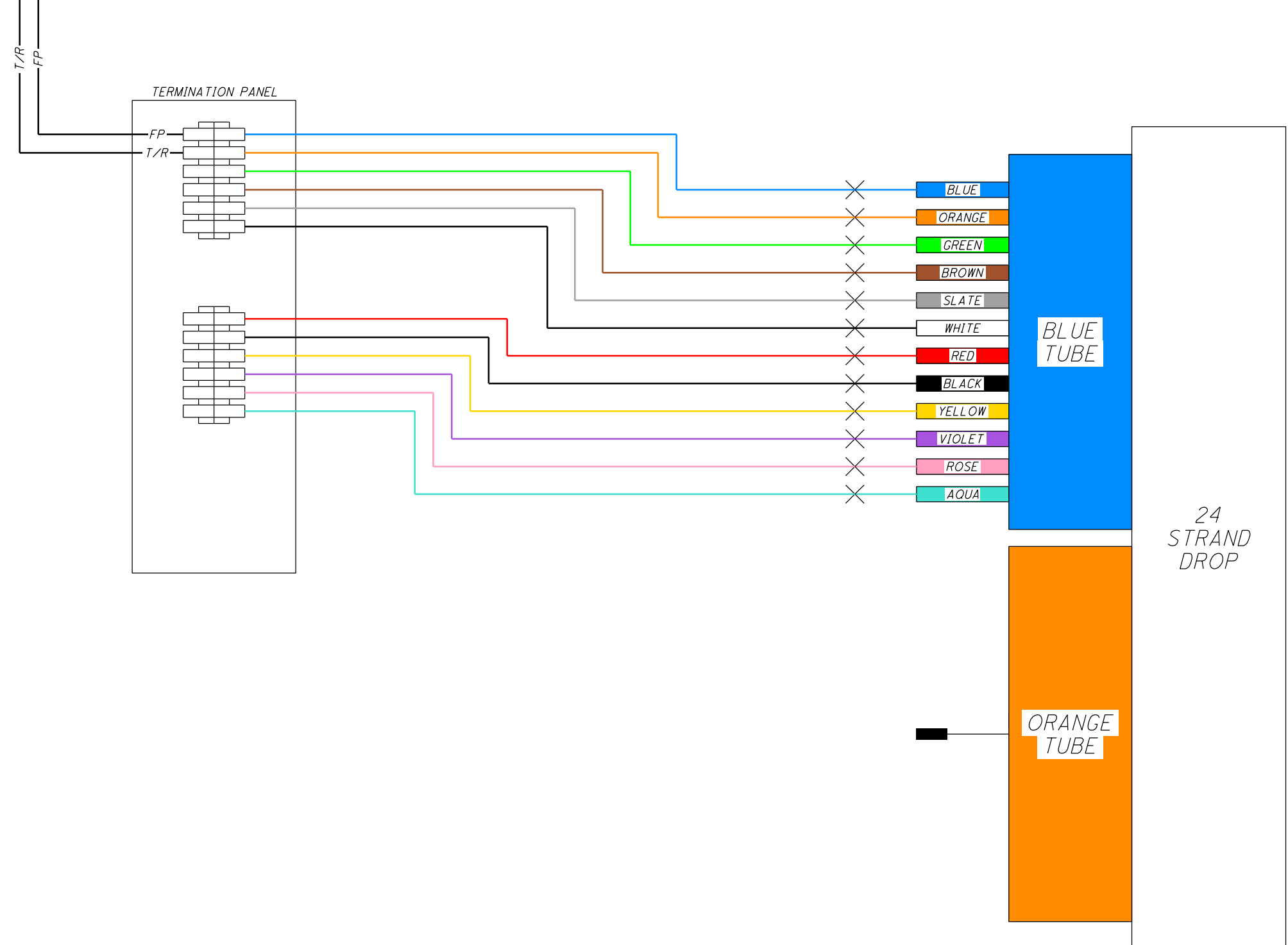
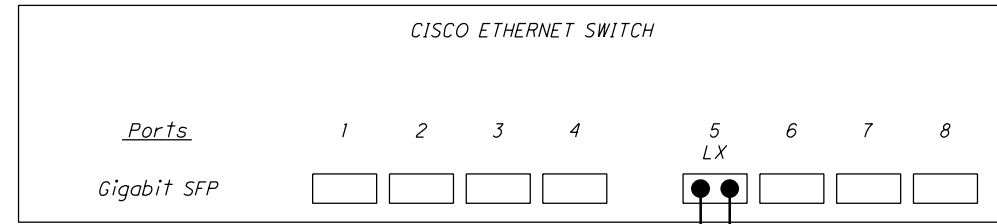
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TRAFFIC SIGNAL DETAILS
MINK ST & WORTHINGTON RD

LIC-161-1.83

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336

CABINET ASSEMBLY TERMINATION DRAWING



LEGEND

- ✕ FUSION SPLICE
- TERMINATION PANEL
- LX TRANSCEIVER MODULE
- FP- FIBER PATCH CABLES
- T/R- T/R STANDARD
- BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE

CALCULATED
BRH
CHECKED
HAG

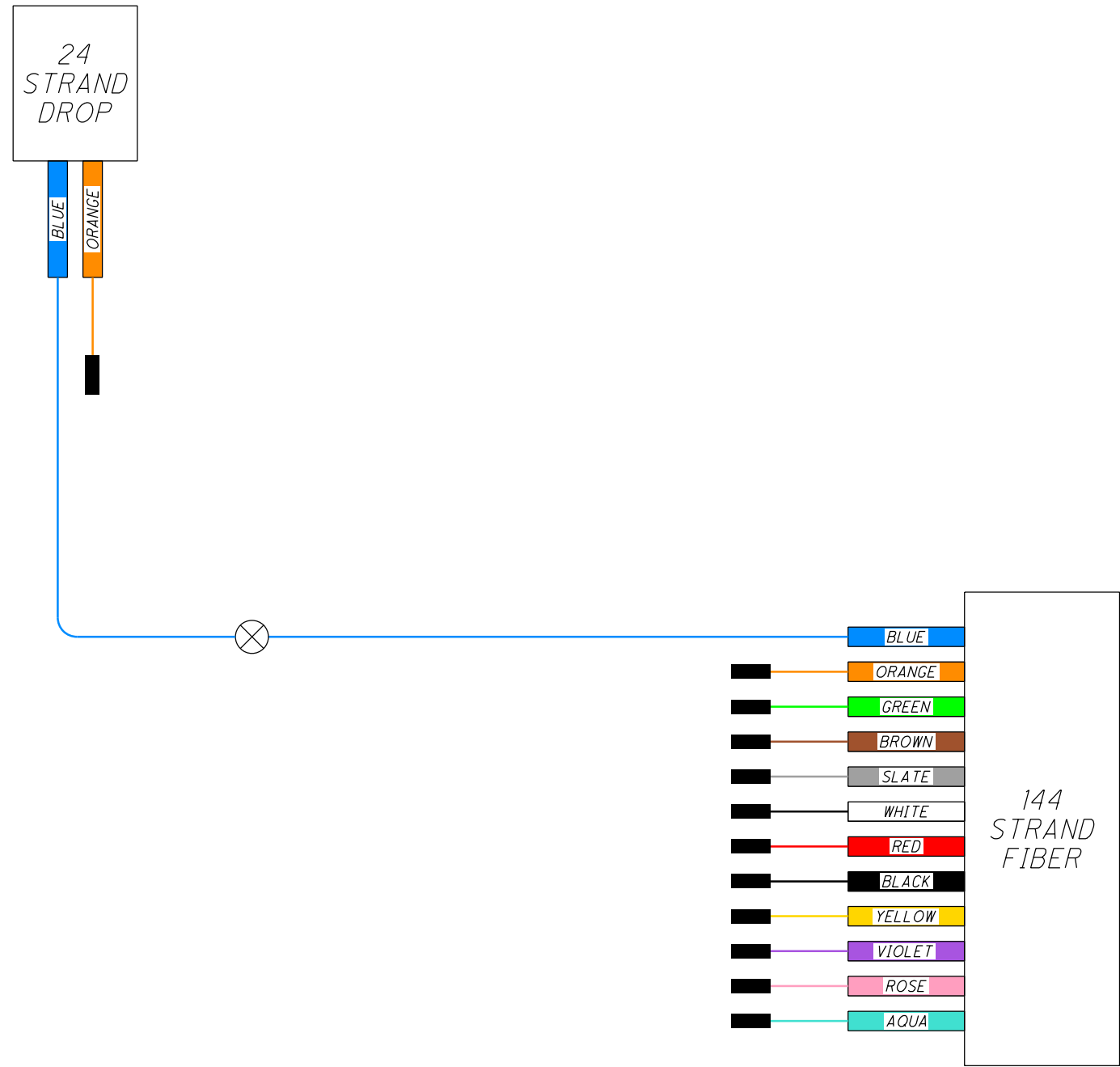
FIBER OPTICS TERMINATION DIAGRAM
MINK ST & WORTHINGTON RD

LIC-161-1.83

294
336

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SPLICE ENCLOSURE TERMINATION DRAWING



LEGEND

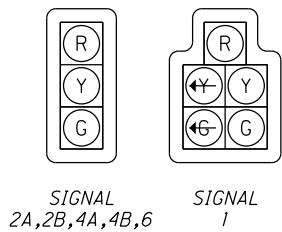
⊗ FUSION SPLICE - 12 FIBER BUFFER TUBE

■ BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE

LEGEND

- 3 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- 4/5 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- STOP BAR RADAR DETECTION UNIT
- DILEMMA ZONE RADAR DETECTION UNIT
- MESSENGER WIRE SIGN
- RADAR DETECTION ZONE
- 24" PULL BOX
- 32" PULL BOX

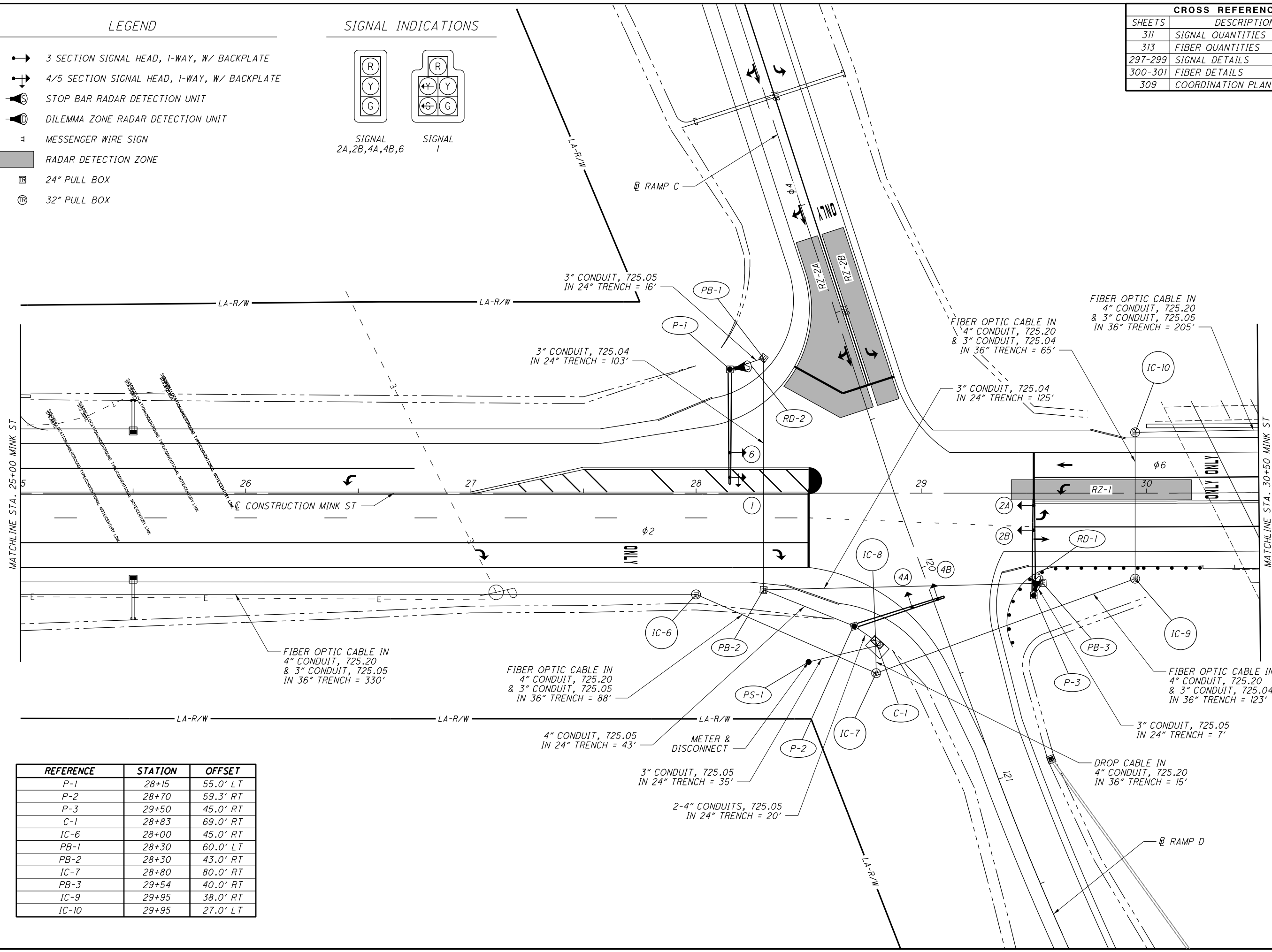
SIGNAL INDICATIONS



CROSS REFERENCES	
SHEETS	DESCRIPTION
311	SIGNAL QUANTITIES
313	FIBER QUANTITIES
297-299	SIGNAL DETAILS
300-301	FIBER DETAILS
309	COORDINATION PLAN

HORIZONTAL SCALE IN FEET
0 20 40

CALCULATED BRH CHECKED HAG



REFERENCE	STATION	OFFSET
P-1	28+15	55.0' LT
P-2	28+70	59.3' RT
P-3	29+50	45.0' RT
C-1	28+83	69.0' RT
IC-6	28+00	45.0' RT
PB-1	28+30	60.0' LT
PB-2	28+30	43.0' RT
IC-7	28+80	80.0' RT
PB-3	29+54	40.0' RT
IC-9	29+95	38.0' RT
IC-10	29+95	27.0' LT

**TRAFFIC SIGNAL PLAN
MINK ST / RAMP C**

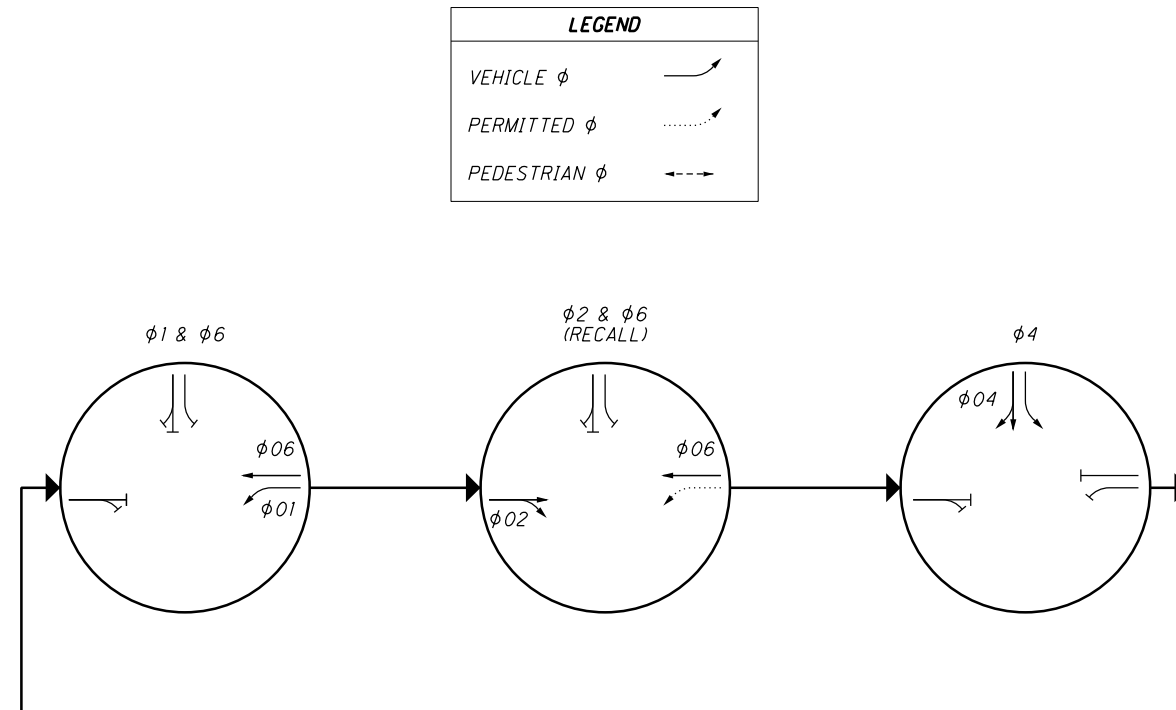
LIC-161-1.83

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SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: MINK ST & RAMP C MAINTAINING AGENCY: CITY OF NEW ALBANY							
START UP		DUAL ENTRY: $\phi 2$ & $\phi 6$					
START IN	Y/R FLASH						
TIME FOR FLASH OR ALL RED	5 (SEC.)						
FIRST PHASES	2 & 6	OVERLAP		A	B	C	D
COLOR DISPLAYED	GREEN	PHASE					
INTERVAL OR FEATURE		$\phi 1$	$\phi 2$	$\phi 4$	$\phi 6$		
INTERSECTION MOVEMENT	(SEC)	SBLT	NB	EB	SB		
MINIMUM GREEN (INITIAL)	(SEC)	7	20	10	20		
ADDED INITIAL	(SEC/ACTUATION)						
MAXIMUM INITIAL	(SEC)						
PASSAGE TIME	(SEC)	5	5	5	5		
TIME BEFORE REDUCTION	(SEC)						
MINIMUM GAP	(SEC)						
TIME TO REDUCE	(SEC)						
MAXIMUM GREEN I	(SEC)	16	24.5	23.5	45.5		
MAXIMUM GREEN II	(SEC)						
YELLOW CHANGE	(SEC)	3	3.5	3.5	3.5		
ALL RED CLEARANCE	(SEC)	2	2	2	2		
WALK	(SEC)						
PEDESTRIAN CLEARANCE	(SEC)						
RECALL	MAXIMUM (ON/OFF)						
	MINIMUM (ON/OFF)		X			X	
	PEDESTRIAN (ON/OFF)						
MEMORY	(ON/OFF)						

PHASING DIAGRAM (TYPICAL)



NOTES:

- THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

RADAR DETECTION CHART

RADAR DETECTION UNIT	RADAR DETECTION ZONE	RADAR TYPE	DELAY (SEC.)	MIN. EXTENSION (SEC.)	ASSOCIATED CONTROLLER PHASE
RD-1	RZ-1	STOP BAR	8		$\phi 1$
RD-2	RZ-2A	STOP BAR	8		$\phi 4$
	RZ-2B	STOP BAR	8		$\phi 4$

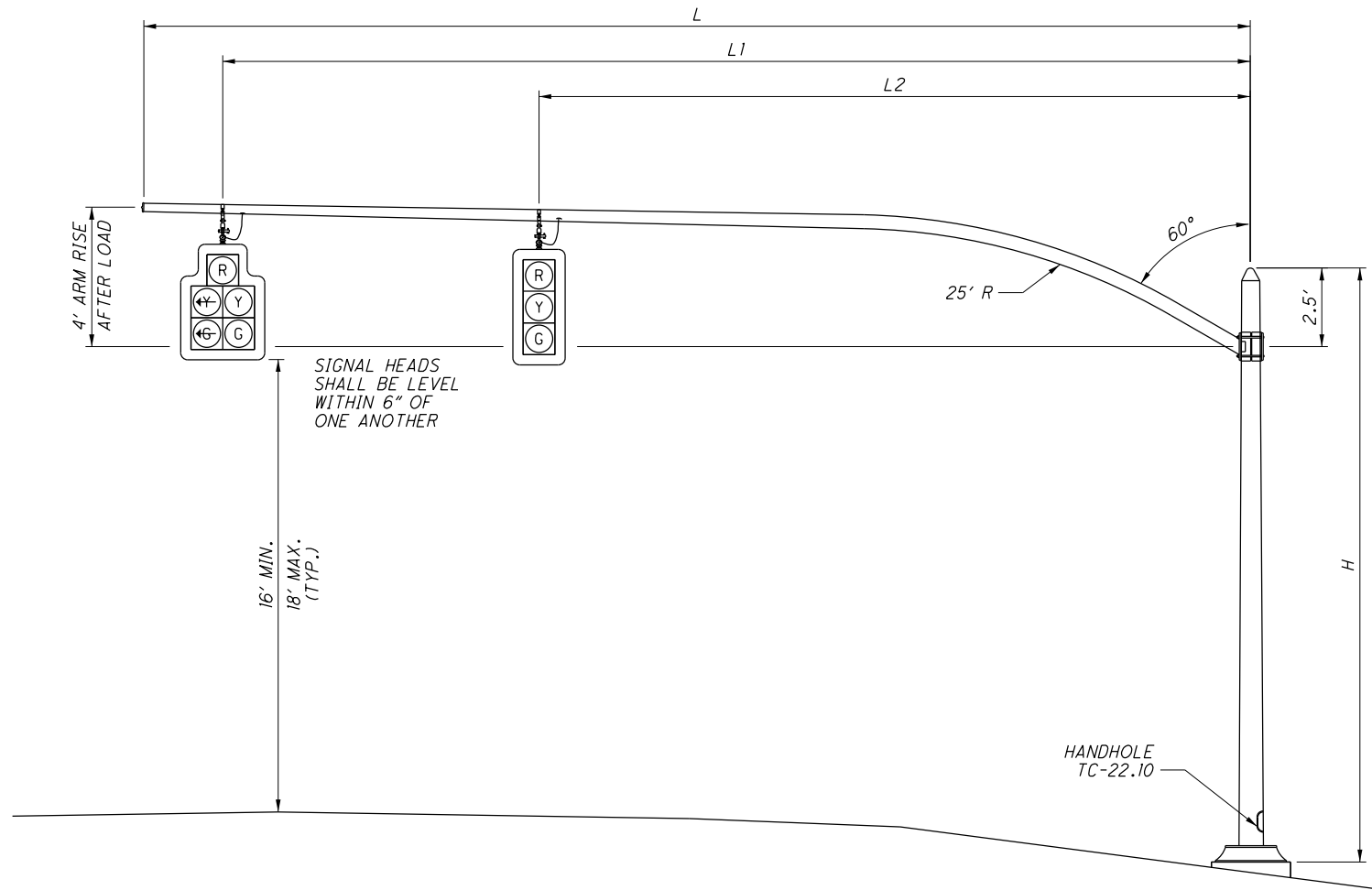
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CALCULATED
BRH
CHECKED
HAG

TRAFFIC SIGNAL DETAILS
MINK ST & RAMP C

LIC-161-1.83

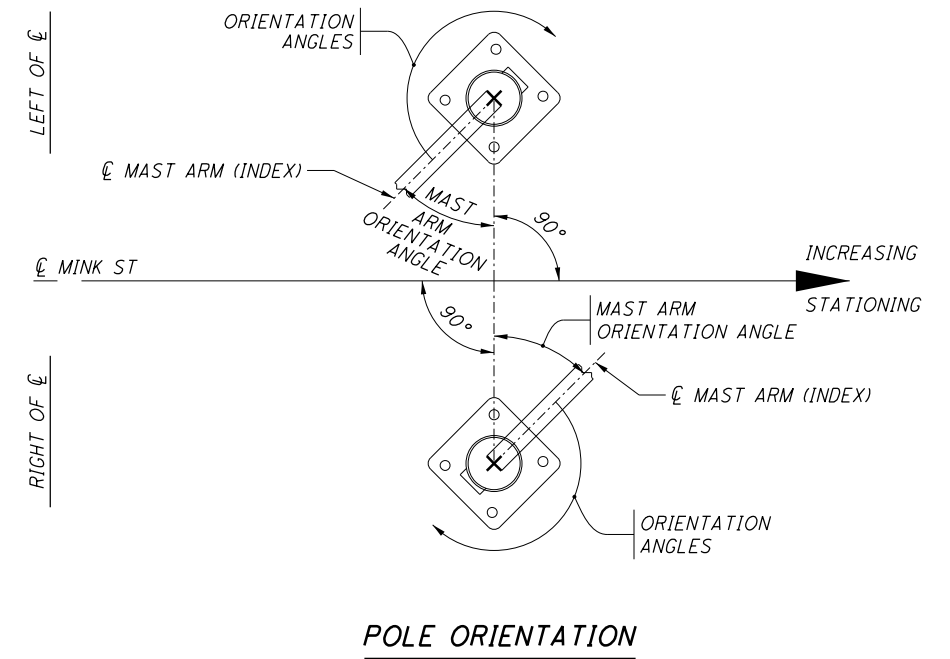
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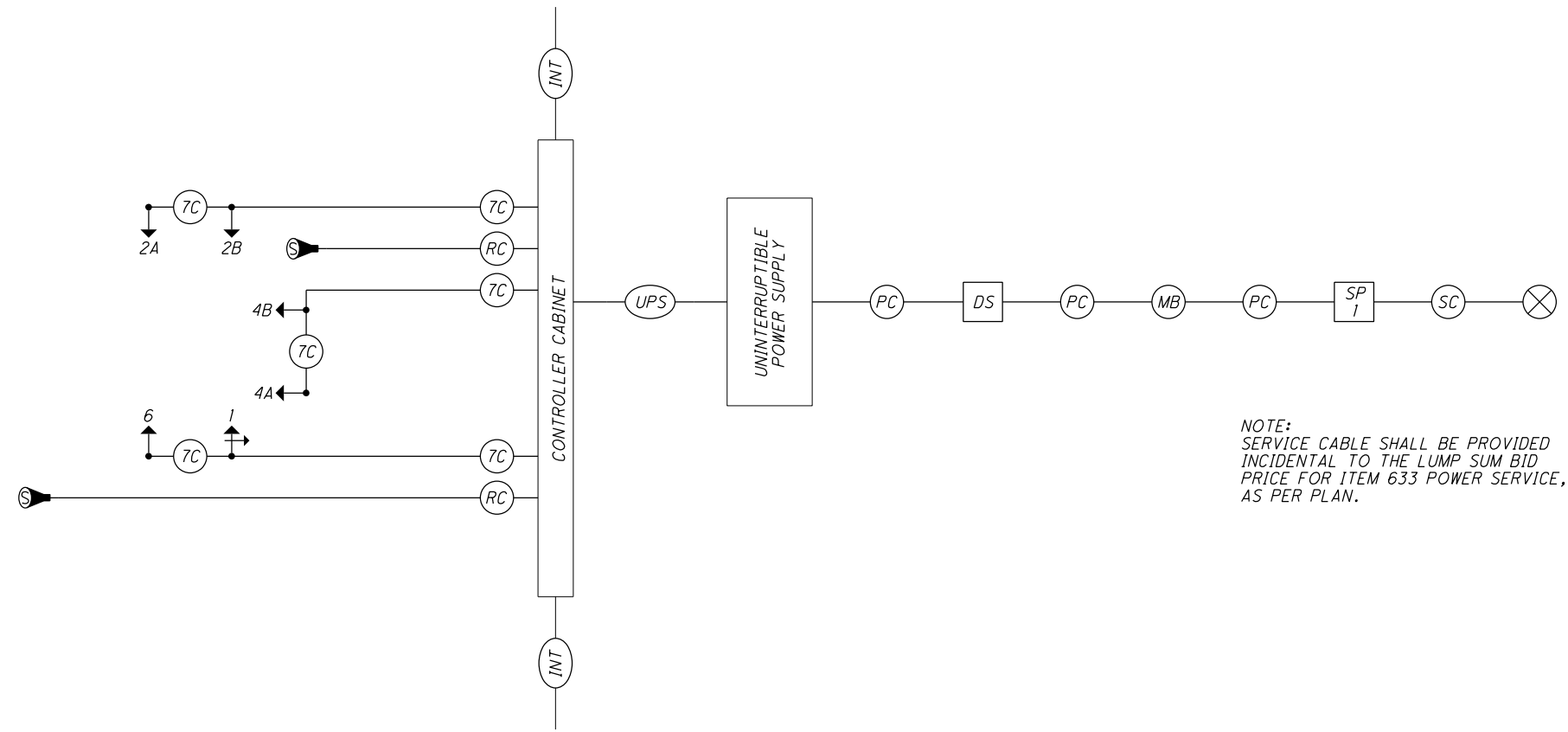
**SIGNAL SUPPORT ELEVATION
(TYPICAL)**

MAST ARM TABLE

INTERSECTION	STATION & OFFSET	SUPPORT NO.	DESIGN NO.	FOUNDATION ELEVATION	PAVEMENT ELEVATION	H	L	L1	L2	MAST ARM ORIENTATION ANGLE DEGREES	INDEX ANGLE (CL HANDHOLE) DEGREES
						FT	FT	FT	FT		
MINK ST & RAMP C	STA. 28+15, 55.0' LT	1	13	1175.2	1176.5	20	51	48	37	0	180
	STA. 28+70, 59.1' RT	2	11	1175.7	1176.2	20	42	39	27	72	180
	STA. 29+50, 45.5' RT	3	11	1176.0	1177.0	19	43	40	29	0	180



WIRING DIAGRAM (TYPICAL)



NOTE:
SERVICE CABLE SHALL BE PROVIDED
INCIDENTAL TO THE LUMP SUM BID
PRICE FOR ITEM 633 POWER SERVICE,
AS PER PLAN.

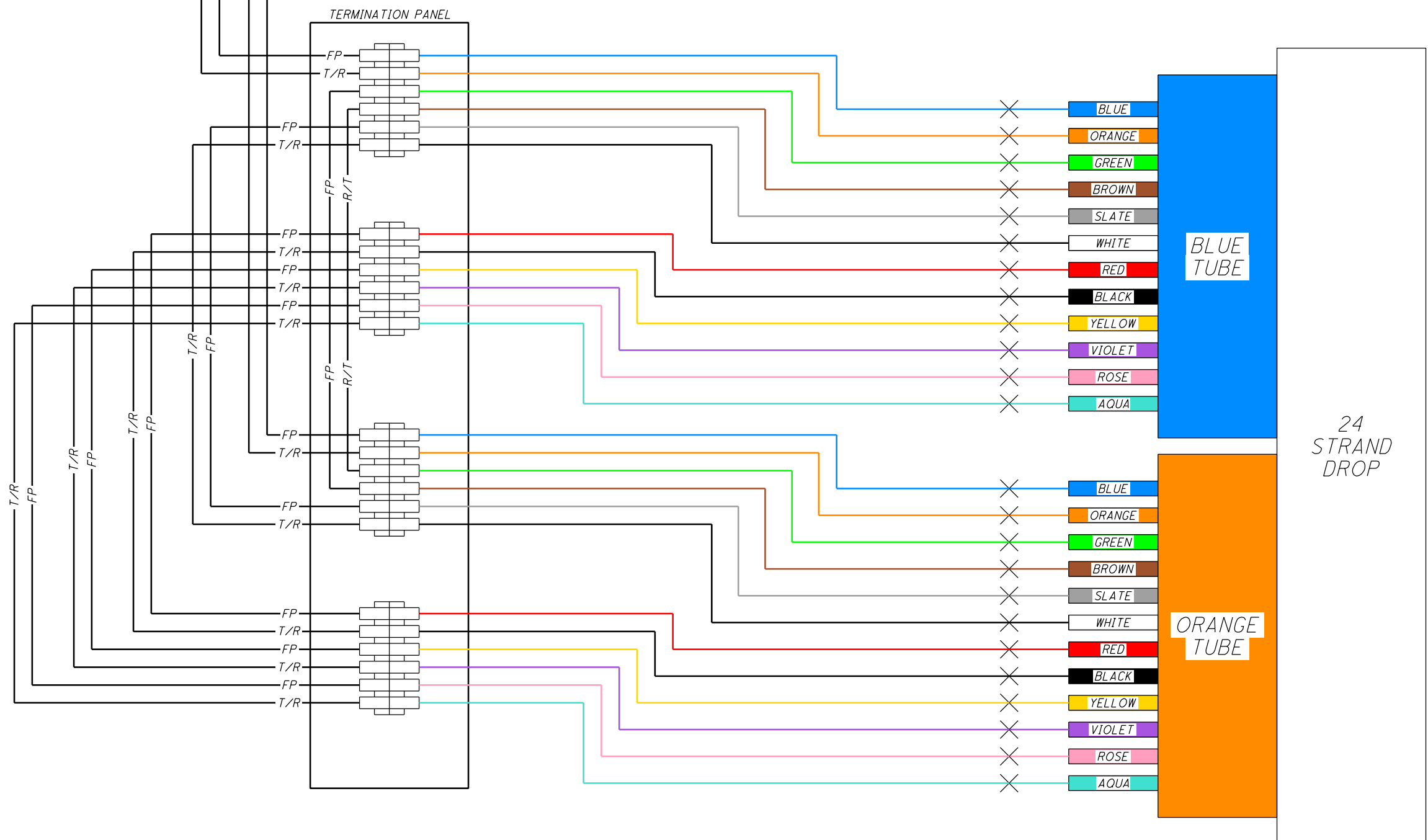
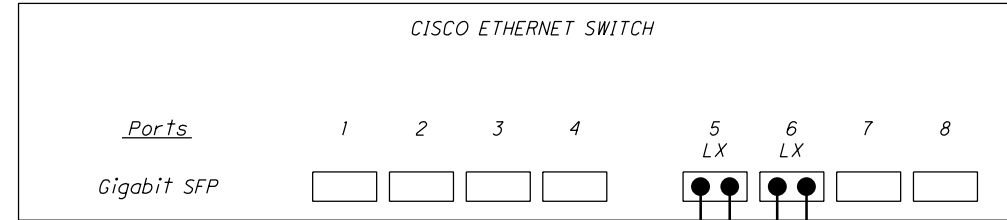
FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1	R	φ6 R	Y
	Y	φ6 Y	
	G	φ6 G	
	<--Y---	φ1 Y	
6	<--G---	φ1 G	Y
	R	φ6 R	
	Y	φ6 Y	
2A	G	φ6 G	Y
	R	φ2 R	
	Y	φ2 Y	
2B	G	φ2 G	Y
	R	φ2 R	
	Y	φ2 Y	
4A	G	φ4 G	R
	R	φ4 R	
	Y	φ4 Y	
4B	G	φ4 G	R
	R	φ4 R	
	Y	φ4 Y	

LEGEND

	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		POWER SOURCE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
	STOP BAR RADAR DETECTION UNIT		SIGNAL SUPPORT POLE NO. 1
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		METER BASE
	RADAR DETECTION CABLE		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	INTERCONNECT CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE

CABINET ASSEMBLY TERMINATION DRAWING



LEGEND

- ✕ FUSION SPLICE
- TERMINATION PANEL
- LX TRANSCEIVER MODULE
- FP- FIBER PATCH CABLES
- T/R- T/R STANDARD
- R/T- R/T CROSSOVER

CALCULATED
BRH
CHECKED
HAG

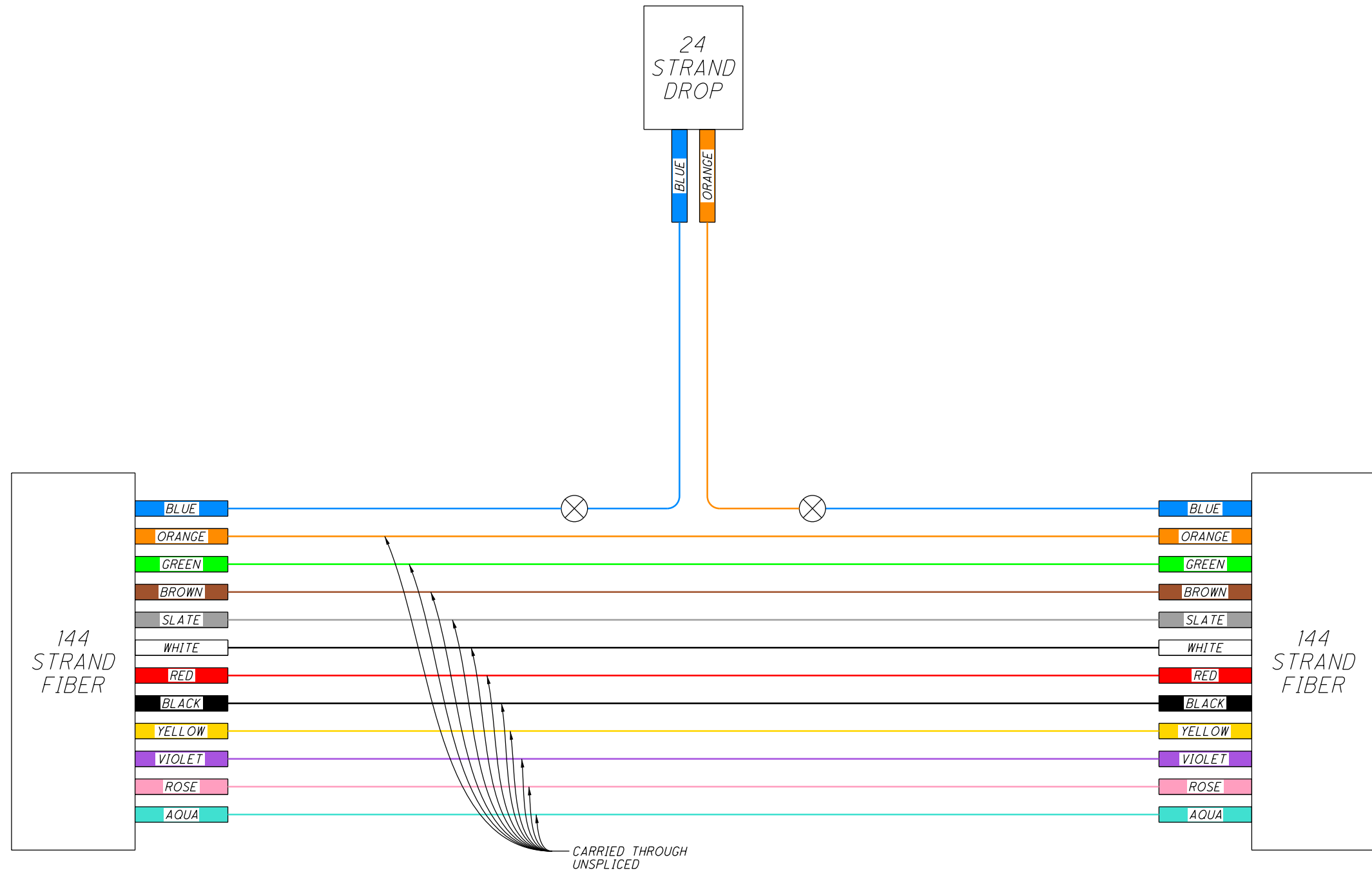
FIBER OPTICS TERMINATION DIAGRAM
MINK ST & RAMP C

LIC-161-1.83

300
336

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SPLICE ENCLOSURE TERMINATION DRAWING



LEGEND

⊗ FUSION SPLICE - 12 FIBER BUFFER TUBE

—■— BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE

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CALCULATED	BRH
CHECKED	HAG

**FIBER OPTICS TERMINATION DIAGRAM
MINK ST & RAMP C**

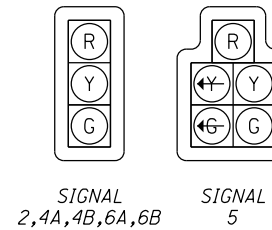
LIC-161-1.83

301
336

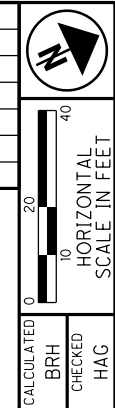
LEGEND

- 3 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- 4/5 SECTION SIGNAL HEAD, 1-WAY, W/ BACKPLATE
- ⊙ STOP BAR RADAR DETECTION UNIT
- ⊙ DILEMMA ZONE RADAR DETECTION UNIT
- ⊥ MESSENGER WIRE SIGN
- ▭ RADAR DETECTION ZONE
- ⊠ 24" PULL BOX
- ⊕ 32" PULL BOX

SIGNAL INDICATIONS

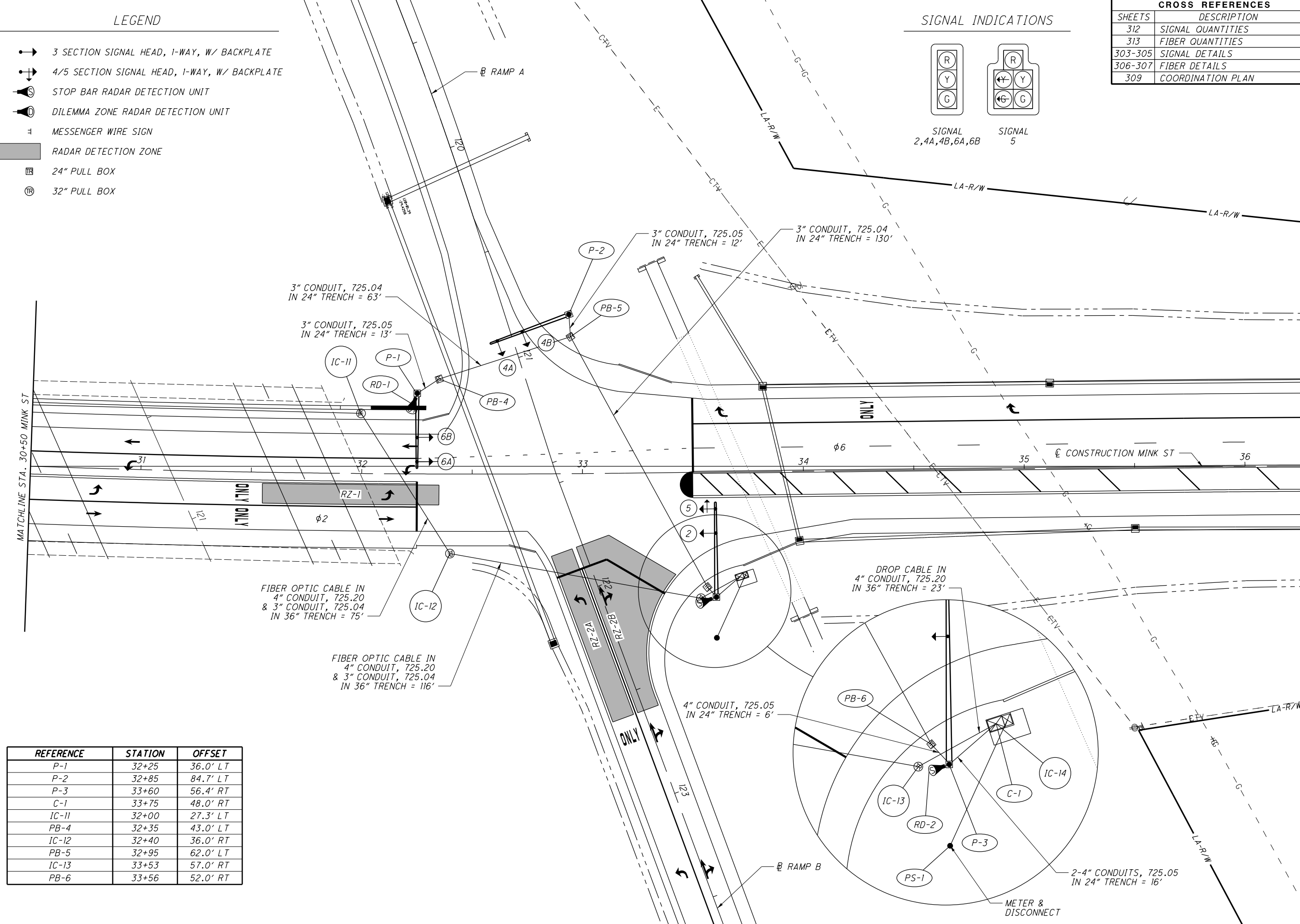


CROSS REFERENCES	
SHEETS	DESCRIPTION
312	SIGNAL QUANTITIES
313	FIBER QUANTITIES
303-305	SIGNAL DETAILS
306-307	FIBER DETAILS
309	COORDINATION PLAN



TRAFFIC SIGNAL PLAN
MINK ST / RAMP B

LIC-161-1.83
302
336



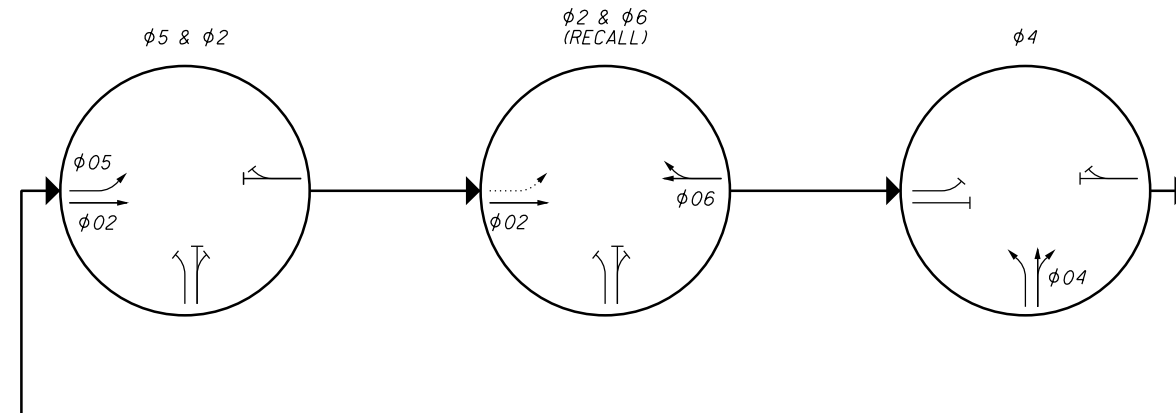
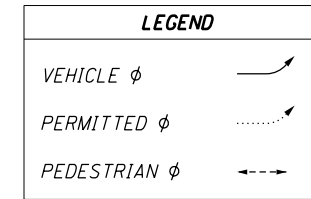
REFERENCE	STATION	OFFSET
P-1	32+25	36.0' LT
P-2	32+85	84.7' LT
P-3	33+60	56.4' RT
C-1	33+75	48.0' RT
IC-11	32+00	27.3' LT
PB-4	32+35	43.0' LT
IC-12	32+40	36.0' RT
PB-5	32+95	62.0' LT
IC-13	33+53	57.0' RT
PB-6	33+56	52.0' RT

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SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: MINK ST & RAMP B MAINTAINING AGENCY: CITY OF NEW ALBANY							
START UP		DUAL ENTRY: $\phi 2$ & $\phi 6$					
START IN	Y/R FLASH						
TIME FOR FLASH OR ALL RED	5 (SEC.)						
FIRST PHASES	2 & 6	OVERLAP		A	B	C	D
COLOR DISPLAYED	GREEN	PHASE					
INTERVAL OR FEATURE		$\phi 2$	$\phi 4$	$\phi 5$	$\phi 6$		
INTERSECTION MOVEMENT (SEC)		NB	WB	NBLT	SB		
MINIMUM GREEN (INITIAL) (SEC)		20	10	7	20		
ADDED INITIAL (SEC/ACTUATION)							
MAXIMUM INITIAL (SEC)							
PASSAGE TIME (SEC)		5	5	5	5		
TIME BEFORE REDUCTION (SEC)							
MINIMUM GAP (SEC)							
TIME TO REDUCE (SEC)							
MAXIMUM GREEN I (SEC)		49.5	19.5	9	35.5		
MAXIMUM GREEN II (SEC)							
YELLOW CHANGE (SEC)		3.5	3.5	3	3.5		
ALL RED CLEARANCE (SEC)		2	2	2	2		
WALK (SEC)							
PEDESTRIAN CLEARANCE (SEC)							
RECALL	MAXIMUM (ON/OFF)						
	MINIMUM (ON/OFF)	X				X	
	PEDESTRIAN (ON/OFF)						
MEMORY (ON/OFF)							

PHASING DIAGRAM (TYPICAL)



NOTES:

- THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

RADAR DETECTION CHART

RADAR DETECTION UNIT	RADAR DETECTION ZONE	RADAR TYPE	DELAY (SEC.)	MIN. EXTENSION (SEC.)	ASSOCIATED CONTROLLER PHASE
RD-1	RZ-1	STOP BAR	8		$\phi 5$
RD-2	RZ-2A	STOP BAR	8		$\phi 4$
	RZ-2B	STOP BAR	8		$\phi 4$

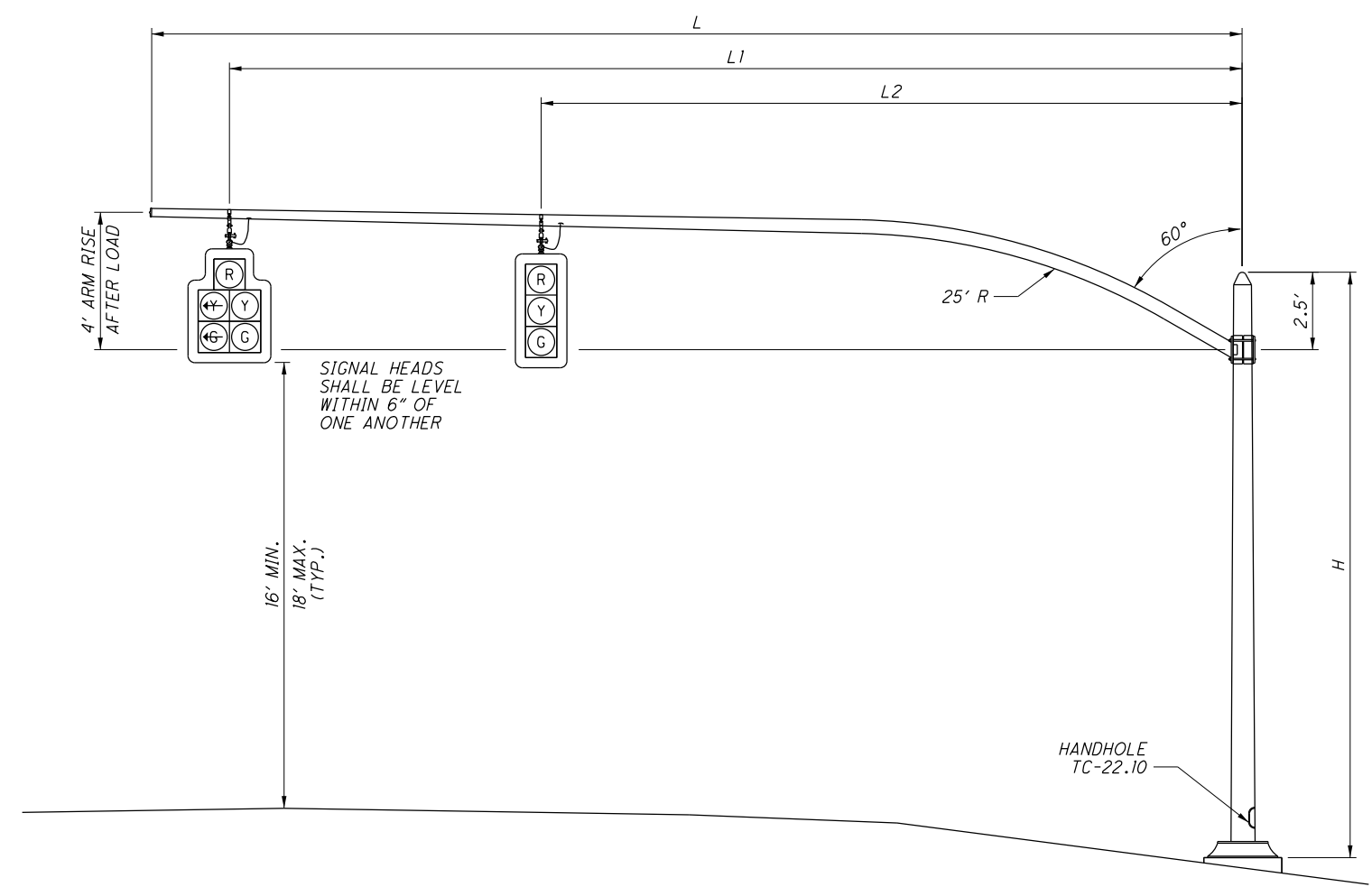
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TRAFFIC SIGNAL DETAILS
MINK ST & RAMP B

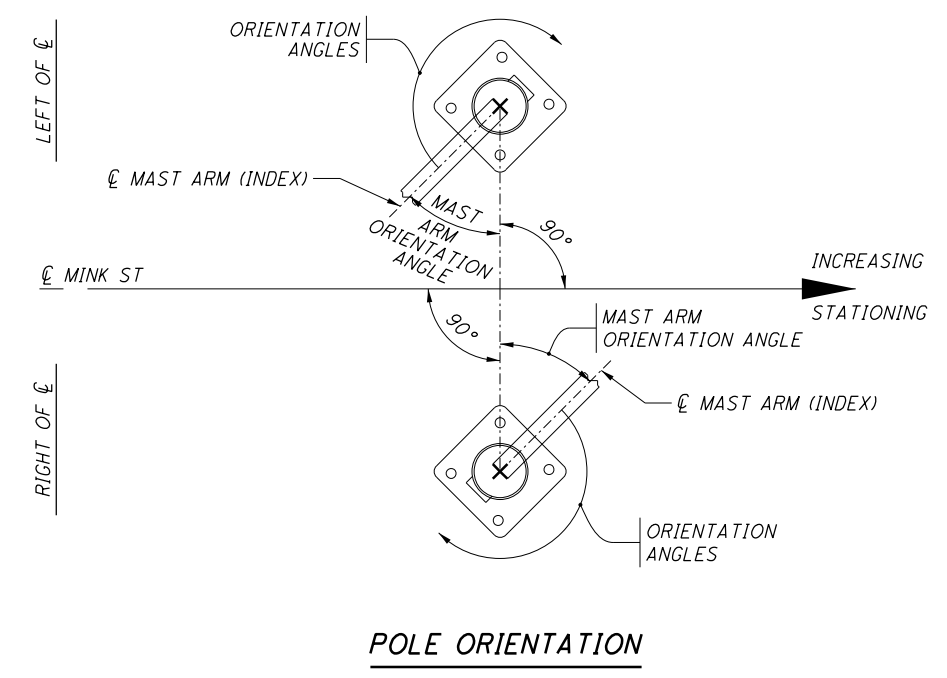
LIC-161-1.83

303
336

CALCULATED
BRH
CHECKED
HAG



**SIGNAL SUPPORT ELEVATION
(TYPICAL)**



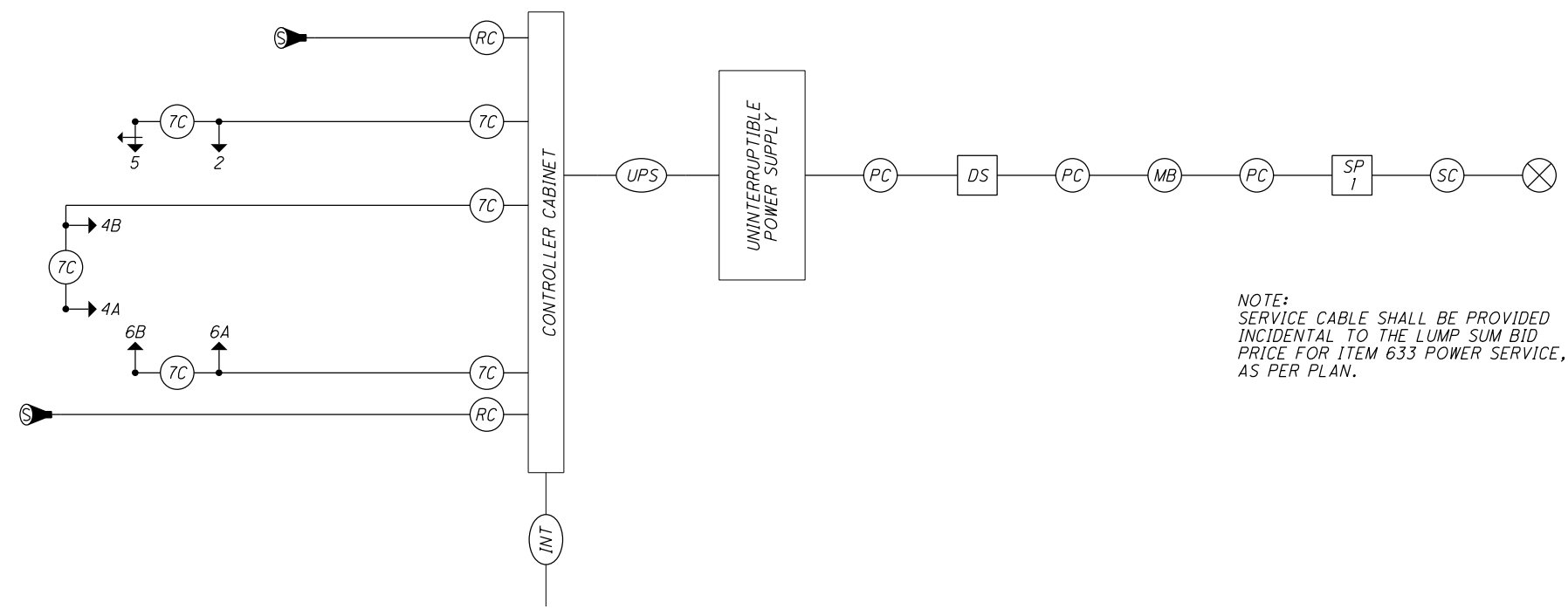
POLE ORIENTATION

MAST ARM TABLE

INTERSECTION	STATION & OFFSET	SUPPORT NO.	DESIGN NO.	FOUNDATION ELEVATION	PAVEMENT ELEVATION	H	L	L1	L2	MAST ARM ORIENTATION ANGLE	INDEX ANGLE (CL HANDHOLE)
						FT	FT	FT	FT	DEGREES	DEGREES
MINK ST & RAMP B	STA. 32+25, 36.5' LT	1	3	1177.2	1178.0	20	34	31	20	0	180
	STA. 32+94, 72.1' LT	2	4	1176.7	1177.0	21	38	35	23	70	180
	STA. 33+60, 56.6' RT	3	11	1177.2	1178.5	21	43	40	29	0	180

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WIRING DIAGRAM (TYPICAL)



NOTE:
SERVICE CABLE SHALL BE PROVIDED
INCIDENTAL TO THE LUMP SUM BID
PRICE FOR ITEM 633 POWER SERVICE,
AS PER PLAN.

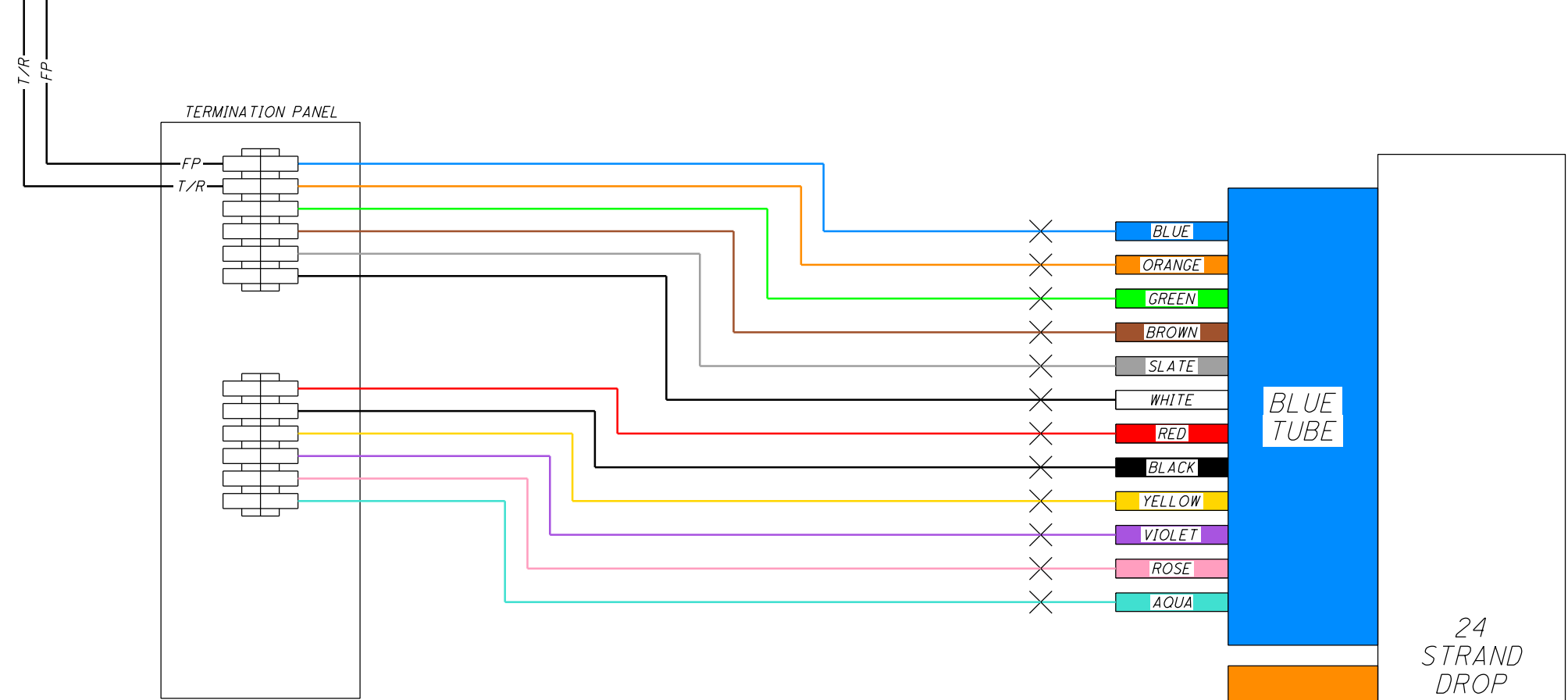
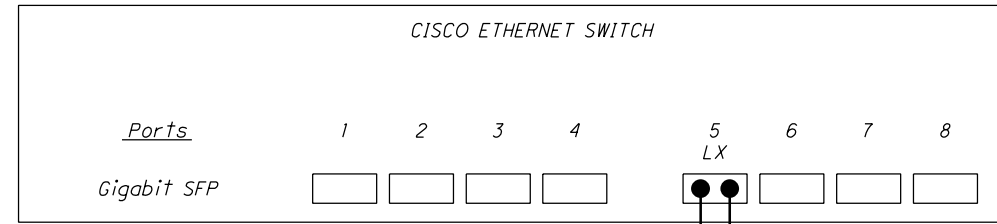
FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
5	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
	<--Y---	φ5 Y	
2	<--G---	φ5 G	Y
	R	φ2 R	
	Y	φ2 Y	
4A	G	φ2 G	Y
	R	φ4 R	
	Y	φ4 Y	
4B	G	φ4 G	Y
	R	φ4 R	
	Y	φ4 Y	
6A	G	φ4 G	Y
	R	φ6 R	
	Y	φ6 Y	
6B	G	φ6 G	Y
	R	φ6 R	
	Y	φ6 Y	

LEGEND

	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		POWER SOURCE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
	STOP BAR RADAR DETECTION UNIT		SIGNAL SUPPORT POLE NO. 1
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		METER BASE
	RADAR DETECTION CABLE		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	INTERCONNECT CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE

CABINET ASSEMBLY TERMINATION DRAWING



LEGEND

- ✕ FUSION SPLICE
- TERMINATION PANEL
- LX TRANSCEIVER MODULE
- FP- FIBER PATCH CABLES
- T/R- T/R STANDARD
- BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE

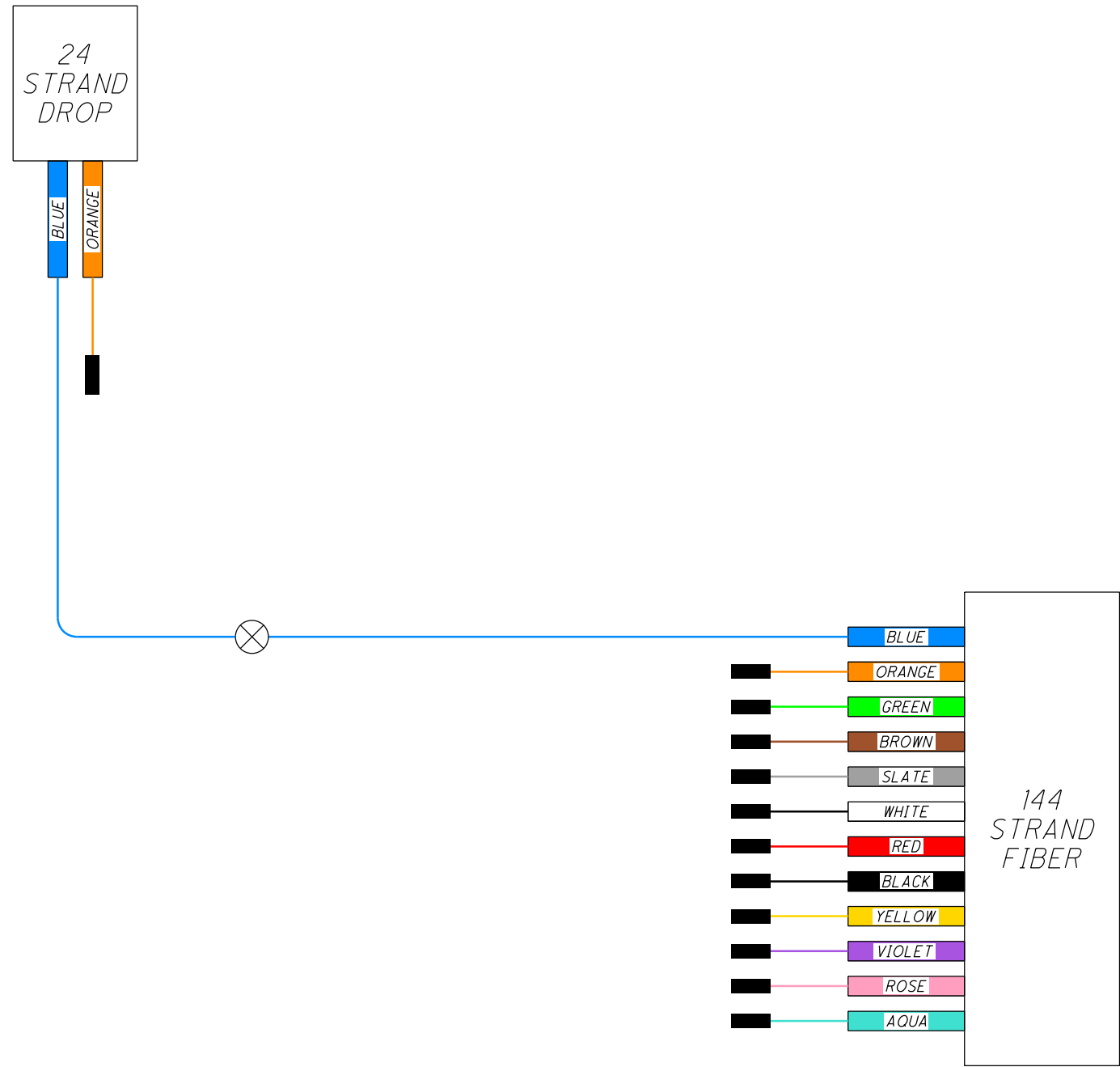
CALCULATED
BRH
CHECKED
HAG

FIBER OPTICS TERMINATION DIAGRAM
MINK ST & RAMP B

LIC-161-1.83

306
336

SPLICE ENCLOSURE TERMINATION DRAWING



LEGEND

FUSION SPLICE - 12 FIBER BUFFER TUBE

BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE

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CALCULATED	BRH
	CHECKED
	HAG

FIBER OPTICS TERMINATION DIAGRAM
MINK ST & RAMP B

LIC-161-1.83

307
336

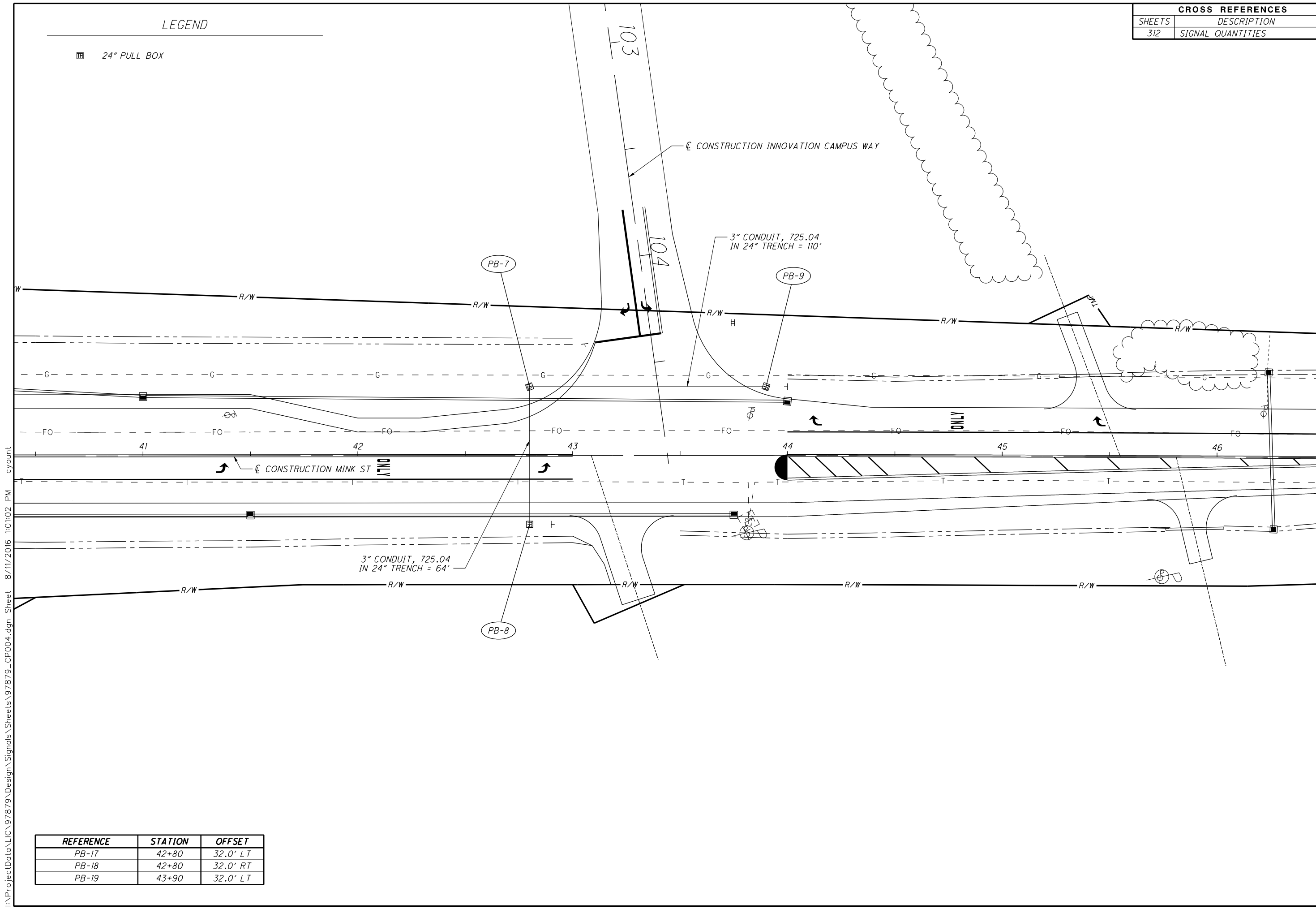
LEGEND

▣ 24" PULL BOX

CROSS REFERENCES	
SHEETS	DESCRIPTION
312	SIGNAL QUANTITIES



CALCULATED
BRH
CHECKED
HAG



TRAFFIC SIGNAL PLAN
MINK ST / INNOVATION CAMPUS WAY

LIC-161-1.83

308
336

REFERENCE	STATION	OFFSET
PB-17	42+80	32.0' LT
PB-18	42+80	32.0' RT
PB-19	43+90	32.0' LT

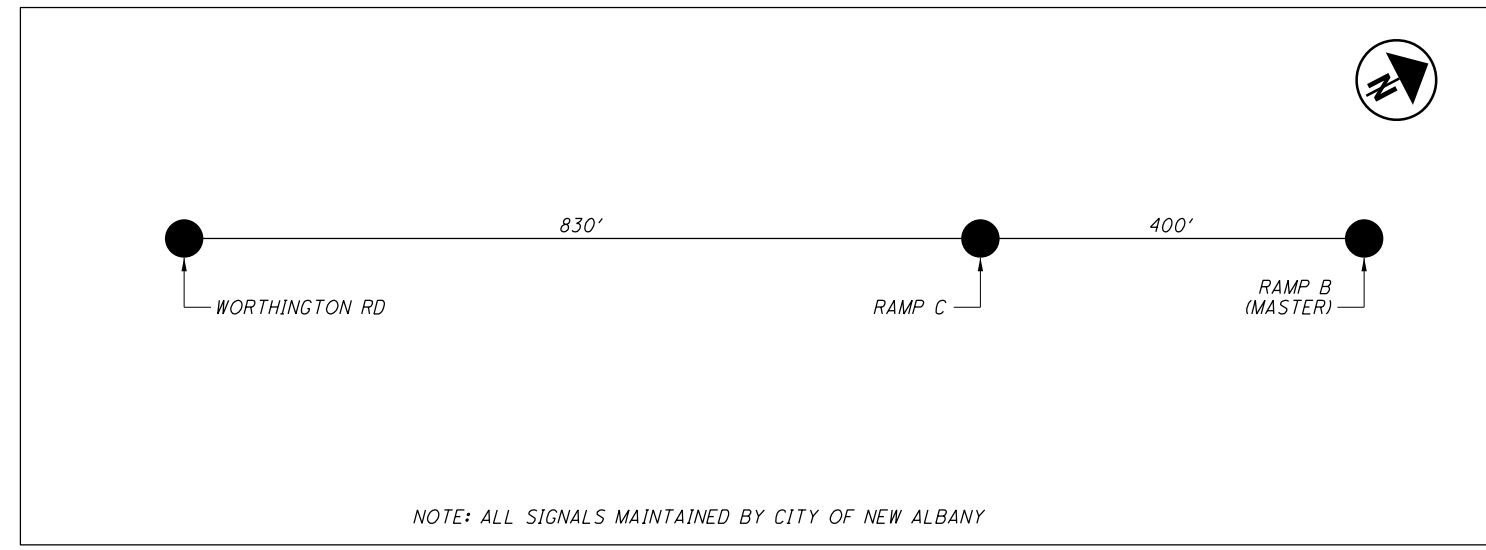
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COORDINATION TIMING CHART (TEM FORM 496-5)

CORRIDOR LAYOUT

CALCULATED
BRH
CHECKED
HAG

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB		
CYCLE/SPLIT	MINK ST & WORTHINGTON RD									
1/1	13	40	14	23	13	40	14	23	36	
1/2	13	30	14	23	13	30	14	23	26	



PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	SBLT	NB		EB		SB				
CYCLE/SPLIT	MINK ST & RAMP C									
1/1	23	40		27		63			70	
1/2	21	30		29		51			42	

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION		NB		WB	NBLT	SB				
CYCLE/SPLIT										
1/1	55		35	14	41				0	
1/2	55		25	14	41				0	

COORDINATION TIMING PLANS

DAY(S) OF WEEK	PLAN NAME	HOURS	CYCLE/SPLIT/OFFSET	CYCLE LENGTH (SEC)
M-F	FREE	00:00 - 06:00	FREE	
M-F	AM PEAK	06:00 - 09:00	1/1/1	90
M-F	FREE	09:00 - 14:00	FREE	
M-F	PM PEAK	14:00 - 19:00	1/2/1	80
M-F	FREE	19:00 - 00:00	FREE	
S-S	FREE	00:00 - 24:00	FREE	

**TRAFFIC SIGNAL DETAILS
COORDINATION PLAN**

LIC-161-1.83

309
336

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SHEET NO.	LOCATION	625							632								633					809	
		NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN FT	CONDUIT, 3", 725.04 FT	CONDUIT, 3", 725.05 FT	CONDUIT, 4", 725.05 FT	TRENCH, 24" DEEP FT	PULL BOX, 725.08, 24" EACH	GROUND ROD EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	COVERING OF VEHICULAR SIGNAL HEAD EACH	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG FT	SIGNAL SUPPORT FOUNDATION EACH	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG FT	POWER SERVICE, AS PER PLAN EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13, AS PER PLAN EACH	CABINET FOUNDATION EACH	CONTROLLER WORK PAD, AS PER PLAN EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE P44 EACH	STOP-BAR RADAR DETECTION EACH	
	MINK ST & RAMP C																						
296	GROUND MOUNTED CABINET: C-1						1											1					
296	POWER SERVICE: PS-1												1					1					
296	SIGNAL SUPPORT: P-1						1				1												
296	SIGNAL SUPPORT: P-2, P-3						2				2				2		1						
296	SIGNAL HEAD: 2A, 2B, 4A, 4B, 6							5		5													
296	SIGNAL HEAD: 1								1	1													
296	RADAR DETECTION: RD-1, RD-2																					2	
296	PS-1 TO C-1			35		35							60										
296	C-1 TO P-2	50			40	40																	
296	P-2 TO PB-2	53			43	43	1																
296	PB-2 TO PB-1	113	103			103	1																
296	PB-2 TO PB-3	135	125			125	1																
296	PB-1 TO P-1	26		16		16																	
296	PB-3 TO P-3	17		7		7																	
296	1, 6 TO C-1										250												
296	2A, 2B TO C-1										250												
296	4A, 4B TO C-1										80												
TOTALS CARRIED TO GENERAL SUMMARY		394	228	58	83	369	3	4	5	1	6	580	3	60	1	2	1	1	1	1	1	2	

LIC-161-1.83	CALCULATED BRH
	CHECKED HAG
TRAFFIC SIGNAL SUBSUMMARY MINK ST & RAMP C	

SHEET NO.	LOCATION	625							632										633				809
		NO.4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	CONDUIT, 3", 725.04	CONDUIT, 3", 725.05	CONDUIT, 4", 725.05	TRENCH, 24" DEEP	PULL BOX, 725.08, 24"	GROUND ROD	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	SIGNAL SUPPORT FOUNDATION	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	POWER SERVICE, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 3, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	CABINET FOUNDATION	CONTROLLER WORK PAD, AS PER PLAN	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE P44	STOP-BAR RADAR DETECTION
		FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
	MINK ST & RAMP C																						
302	GROUND MOUNTED CABINET: C-1						1											1	1	1	1		
302	POWER SERVICE: PS-1												1										
302	SIGNAL SUPPORT: P-1										1				1								
302	SIGNAL SUPPORT: P-2										1					1							
302	SIGNAL SUPPORT: P-3										1												
302	SIGNAL HEAD: 2, 4A, 4B, 6A, 6B							5		5													
302	SIGNAL HEAD: 5								1	1													
302	RADAR DETECTION: RD-1, RD-2																						2
302	PS-1 TO C-1			35									60										
302	C-1 TO P-3	42			32	32																	
302	P-3 TO PB-6	16			6	6	1																
302	PB-6 TO PB-5	140	130			130	1																
302	PB-5 TO P-2	22		12		12																	
302	PB-5 TO PB-4	73	63			63	1																
302	PB-4 TO P-1	23		13		13																	
302	2, 5 TO C-1										80												
302	4A, 4B TO C-1										235												
302	6A, 6B TO C-1										285												
	INNOVATION CAMPUS WAY & MINK ST																						
308	PB-7 TO PB-8	74	64			64	2																
308	PB-7 TO PB-9	120	110			110	1																
TOTALS CARRIED TO GENERAL SUMMARY		510	367	60	38	465	6	4	5	1	6	600	3	60	1	1	1	1	1	1	1	1	

CALCULATED BRH	CHECKED HAG	TRAFFIC SIGNAL SUBSUMMARY MINK ST & RAMP B	LIC-161-1.83
			312 336

SHEET NO.	LOCATION	625					633			804								
		CONDUIT, 3", 725.04 FT	CONDUIT, 3", 725.05 FT	CONDUIT, 4", MULTICELL, 725.20, EPC-80, FOR FIBER OPTIC CABLE FT	CONDUIT, JACKED OR DRILLED, 4", MULTICELL, 725.20, EPC-80 FT	TRENCH, 36" DEEP FT	PULL BOX, 725.08, 32", AS PER PLAN EACH	CONTROLLER ITEM, MISC.: ETHERNET TRANSCEIVER, SHORT RANGE EACH	CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH EACH	FIBER OPTIC CABLE, 144 FIBER FT	FAN-OUT KIT, 12 FIBER EACH	DROP CABLE, 24 FIBER FT	FIBER OPTIC PATCH CORD, 2 FIBER EACH	FIBER TERMINATION PANEL, 24 FIBER EACH				
	MINK ST & WORTHINGTON RD																	
290	IC-1						2	1		1			1					
290	IC-2			34		34					44							
290	IC-3				145													
290	IC-4	102		102		102												
290	IC-5		281	281		281												
	MINK ST & RAMP C																	
296	IC-6		330	330		330												
296	IC-7		88	88		88												
296	IC-8			15		15	2	1		2	25	10	1	1	1			
296	IC-9	123		123		123												
296	IC-10	65		65		65												
	MINK ST & RAMP B																	
302	IC-11		205	205		205												
302	IC-12	75		75		75												
302	IC-13	116		116		116												
302	IC-14			23		23	2	1		1	33		1	1	1			
TOTALS CARRIED TO GENERAL SUMMARY		481	904	1457	145	1457	10	6	3	1530	4	102	10	3	3	3		

CALCULATED BRH	CHECKED HAG	TRAFFIC SIGNAL SUBSUMMARY MINK ST INTERCONNECT	LIC-161-1.83	313
				336

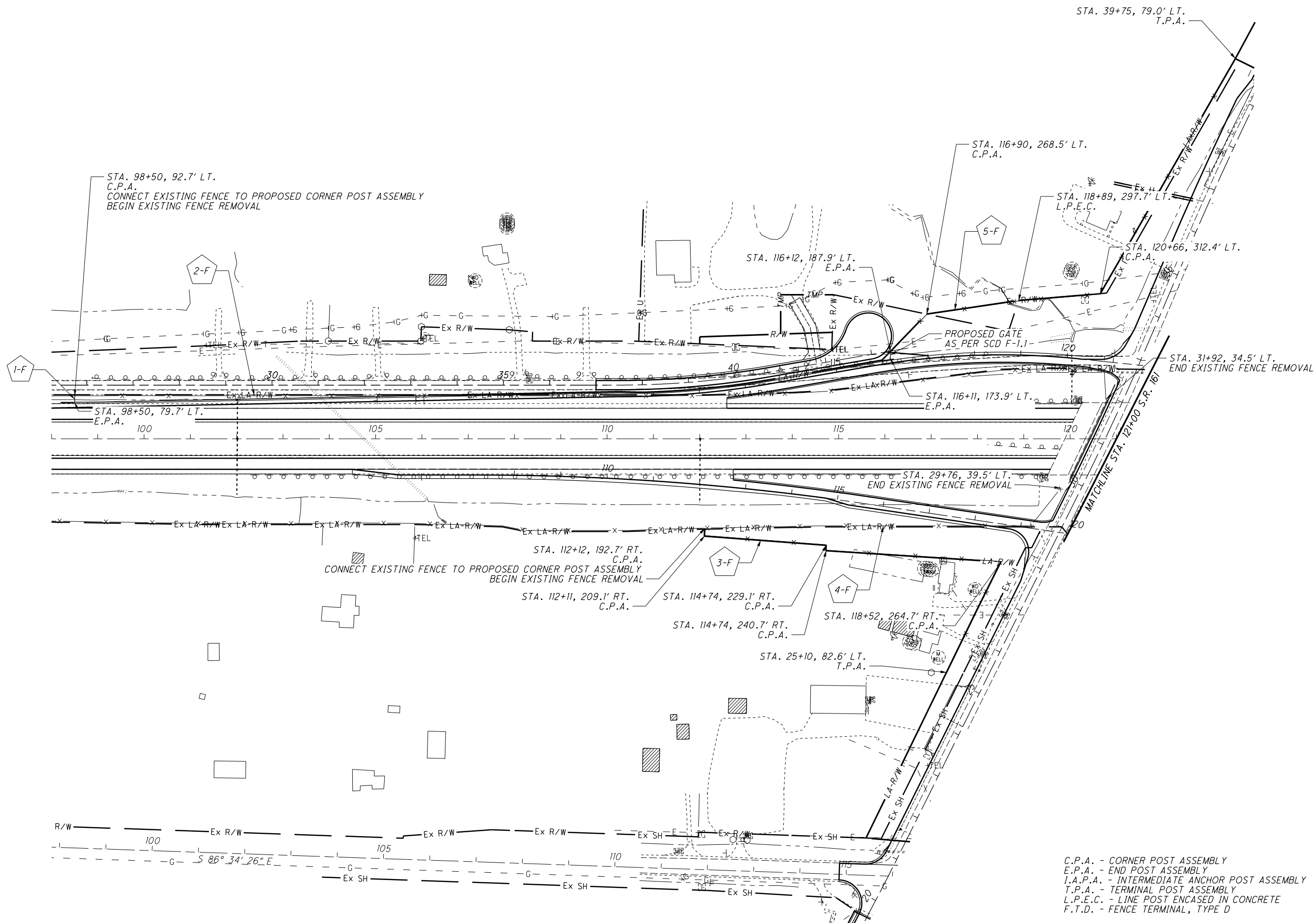


CALCULATED	CMY	CHECKED	HAG
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FENCE PLAN
STA. 98+00 TO STA. 121+00

LIC-161-1.83

314
336



STA. 98+50, 92.7' LT.
 C.P.A.
 CONNECT EXISTING FENCE TO PROPOSED CORNER POST ASSEMBLY
 BEGIN EXISTING FENCE REMOVAL

STA. 98+50, 79.7' LT.
 E.P.A.

STA. 112+12, 192.7' RT.
 C.P.A.
 CONNECT EXISTING FENCE TO PROPOSED CORNER POST ASSEMBLY
 BEGIN EXISTING FENCE REMOVAL

STA. 112+11, 209.1' RT.
 C.P.A.

STA. 114+74, 229.1' RT.
 C.P.A.

STA. 114+74, 240.7' RT.
 C.P.A.

STA. 25+10, 82.6' LT.
 T.P.A.

STA. 116+12, 187.9' LT.
 E.P.A.

STA. 116+90, 268.5' LT.
 C.P.A.

STA. 118+89, 297.7' LT.
 L.P.E.C.

STA. 120+66, 312.4' LT.
 C.P.A.

STA. 31+92, 34.5' LT.
 END EXISTING FENCE REMOVAL

STA. 116+11, 173.9' LT.
 E.P.A.

STA. 29+76, 39.5' LT.
 END EXISTING FENCE REMOVAL

C.P.A. - CORNER POST ASSEMBLY
 E.P.A. - END POST ASSEMBLY
 I.A.P.A. - INTERMEDIATE ANCHOR POST ASSEMBLY
 T.P.A. - TERMINAL POST ASSEMBLY
 L.P.E.C. - LINE POST ENCASED IN CONCRETE
 F.T.D. - FENCE TERMINAL, TYPE D

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C.P.A. - CORNER POST ASSEMBLY
 E.P.A. - END POST ASSEMBLY
 I.A.P.A. - INTERMEDIATE ANCHOR POST ASSEMBLY
 T.P.A. - TERMINAL POST ASSEMBLY
 L.P.E.C. - LINE POST ENCASED IN CONCRETE
 F.T.D. - FENCE TERMINAL, TYPE D

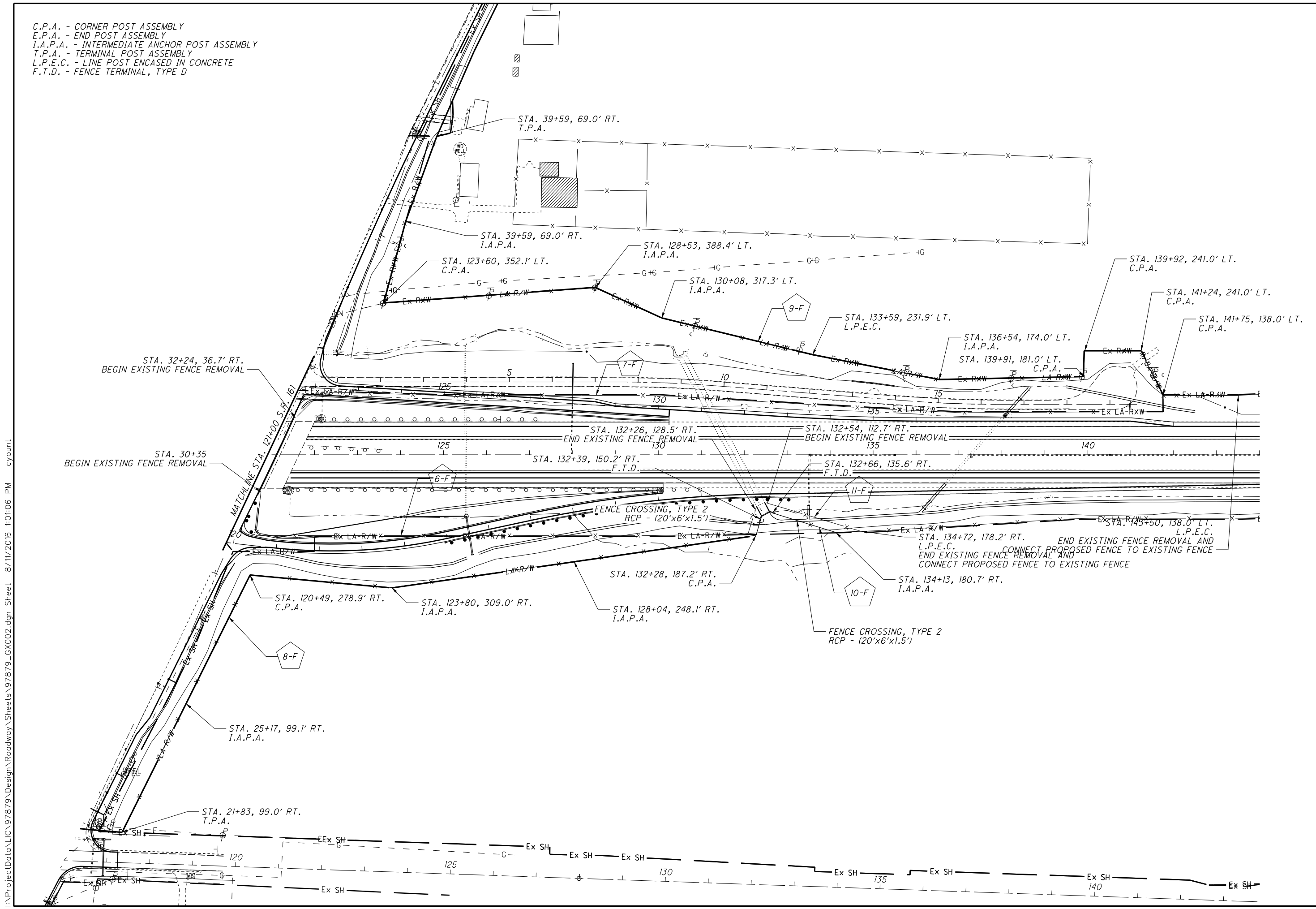
CALCULATED
 CMY
 CHECKED
 HAG

0 100 200
 HORIZONTAL
 SCALE IN FEET

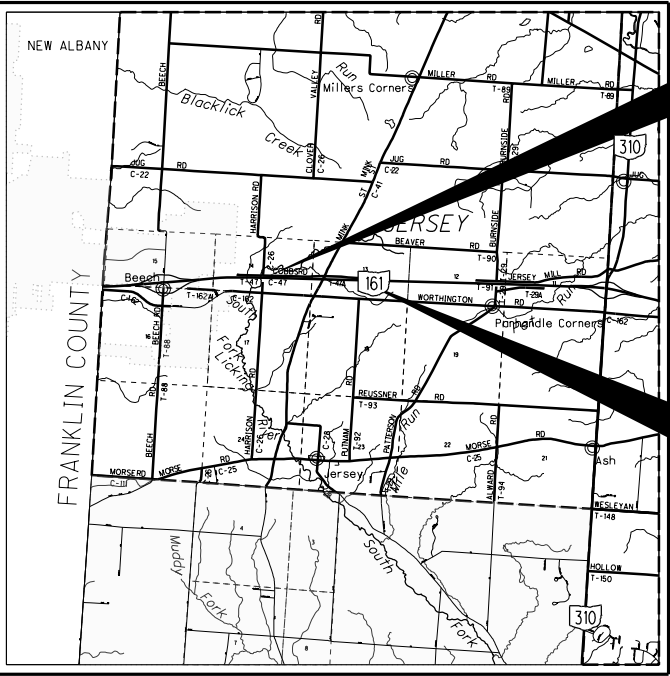
FENCE PLAN
 STA. 121+00 TO STA. 144+00

LIC-161-1.83

315
 336

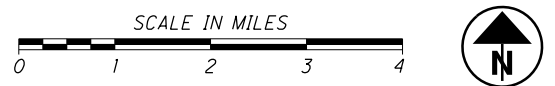


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LOCATION MAP

LATITUDE: 40°04'50.48" N LONGITUDE: 82°43'19.91" W



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

RIGHT OF WAY LEGEND SHEET LIC-161-1.83

SECTIONS 13 & 14, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

PROJECT DESCRIPTION
 CONSTRUCTION OF INTERCHANGE FACILITY
 ALONG S.R. 161 NEAR THE MINK ROAD OVERPASS.

PROJECT CONTROL
 OHIO STATE PLANE (SOUTH ZONE 3402)
 GROUND COORDINATES
 COMBINED SCALE FACTOR: GROUND TO GRID
 DIVIDE BY PROJECT ADJUSTMENT FACTOR OF 1.0000372218
 NAD 83 (2011), ELLIPSOID GRS80
 VERTICAL DATUM IS NAVD88, GEOID 12A

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.

PLANS PREPARED BY:
 R/W DESIGNER: Candy Shoemaker
 R/W REVIEWER: Chuck Price
 FIELD REVIEWER: Candy Shoemaker & Chuck Price
 OWNERSHIP UPDATED BY: Chuck Price
 PLAN COMPLETION DATE: 12/21/15

INDEX OF SHEETS:

LEGEND SHEET	1
CENTERLINE PLAT	2
PROPERTY MAP	3
SUMMARY OF ADDITIONAL RW	4-5
RIGHT OF WAY PLAN SHEETS	6-21

TYPES OF TITLE LEGEND:

- WL = FEE SIMPLE WITH LIMITATION OF ACCESS
- WD = WARRANTY DEED
- PRW = PROPERTY RIGHT FEE SIMPLE
- SH = STANDARD HIGHWAY EASEMENT
- LA = LIMITED ACCESS EASEMENT
- T = TEMPORARY EASEMENT
- CH = CHANNEL EASEMENT
- A = AERIAL EASEMENT
- SL = SLOPE EASEMENT
- PRE = PROPERTY RIGHT EASEMENT

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS
BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764

(Non-members must be called directly)

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

UTILITY OWNERS

<p>AEP DISTRIBUTION 850 TECH CENTER DRIVE GAHANNA, OHIO 43230 ATTN: PAUL PAXTON 614-883-6831</p>	<p>CENTURYLINK TELEPHONE COMPANY 401 WEST BROAD STREET PATASKALA, OHIO 43062 ATTN: DEE REED 740-927-8282</p>	<p>LICKING RURAL ELECTRIC 11339 MT. VERNON RD. P.O. BOX 455 UTICA, OHIO 43080 ATTN: JOHN STRATHMAN 740-348-1149</p>
<p>MARATHON ASHLAND PIPELAND 20-C GRANVILLE DRIVE LEXINGTON, OHIO 44904 ATTN: GREG NUMAN 419-884-0800</p>	<p>NATIONAL GAS AND OIL CORP. 1500 GRANVILLE ROAD P.O. BOX 4970 NEWARK, OHIO 43058-4970 ATTN: GREG WILSON 740-348-1254</p>	

CONVENTIONAL SYMBOLS

<p>County Line ————</p> <p>Township Line - - - - -</p> <p>Section Line - - - - -</p> <p>Corporation Line ———— or ————</p> <p>Fence Line (Ex) — x — x — (Pr) — x — x —</p> <p>Center Line ————</p> <p>LA Right of Way (Ex) ———— Ex LA-R/W</p> <p>LA Right of Way (Pr) ———— LA</p> <p>LA Ease. (Ex) ———— Ex LA</p> <p>LA Ease. (Pr) ———— LA-R/W</p> <p>Right of Way (Ex) ———— Ex R/W</p> <p>Right of Way (Pr) ———— R/W</p> <p>Standard Highway Ease.(Ex) ———— Ex SH</p> <p>Standard Highway Ease.(Pr) ———— SH</p> <p>Temporary Right of Way ———— TMP</p> <p>Channel Ease. (Pr) ———— CH</p> <p>Utility Ease. (Ex) ———— Ex U</p> <p>Railroad ———— or ————</p> <p>Guardrail (Ex) — o — o — o — o — (Pr) — o — o — o — o —</p> <p>Construction Limits —</p>	<p>Edge of Pavement (Ex) - - - - -</p> <p>Edge of Pavement (Pr) ————</p> <p>Edge of Shoulder (Ex) - - - - -</p> <p>Edge of Shoulder (Pr) ————</p> <p>Ditch / Creek (Ex) ————</p> <p>Ditch / Creek (Pr) ————</p> <p>Tree Line (Ex) ————</p> <p>Ownership Hook Symbol \angle, Example \angle</p> <p>Property Line Symbol \perp, Example \perp</p> <p>Break Line Symbol ∇, Example ∇</p> <p>Tree (Pr) \odot, Tree (Ex) \odot, Shrub (Ex) \odot</p> <p>Tree (Remove) \otimes, Shrub (Remove) \otimes</p> <p>Evergreen (Ex) \star, Stump \star</p> <p>Evergreen (Remove) \star, Stump (Remove) \star</p> <p>Wetland (Pr) ∇, Grass (Pr) ∇, Aerial Target ∇</p> <p>Post (Ex) \odot, Mailbox (Ex) \boxtimes, Mailbox (Pr) \boxtimes</p> <p>Light (Ex) \odot, Telephone Marker (Ex) \odot</p> <p>Fire Hydrant (Ex) \odot, Water Meter (Ex) \odot</p> <p>Water Valve (Ex) \odot, Utility Valve Unknown (Ex) \odot</p> <p>Telephone Pole (Ex) \odot, Power Pole (Ex) \odot</p> <p>Light Pole (Ex) \odot</p>
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STRUCTURE KEY

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

MONUMENT LEGEND

- \square EXISTING R/W MONUMENT BOX
- \square PROPOSED R/W MONUMENT BOX
- \odot EXISTING CONCRETE MONUMENT
- \bullet PROPOSED CONCRETE MONUMENT
- \times RAILROAD SPIKE FOUND
- \star RAILROAD SPIKE SET
- \odot IRON PIN FOUND
- \odot IRON PIN FOUND W/ ID CAP
- \bullet IRON PIN SET W/ ID CAP
- \odot IRON PIPE FOUND
- \odot IRON PIPE SET
- \odot P.K. NAIL FOUND
- \odot P.K. NAIL SET

I, hereby certify that this plat is prepared under the direction and supervision of Charles W. Price, Jr., P.S. #7825 for the Ohio Department of Transportation, and is based on a survey performed in 2015 by EMH&T under the supervision of Joshua Meyer, P.S. # 8485.

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 Numbers A522303213, A522303220, A522303229 & A532800062 & OGPUPS # 122723 and those markings subsequently being surveyed as a part of this project.

The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System, Ground Coordinates, NAD 83 (2011), Ellipsoid GRS80, South Zone (3402). The vertical Datum NAVD 88, Geoid12A. The project coordinates (US Survey Feet) are relative to State Plane Grid Coordinates, (Meters or US Survey Feet) by Dividing by a Project Adjustment Factor of 1.0000372218.

As a part of this work I have set monuments at the proposed property corners, Section corners and other points as shown herein. However, Item 623 Monument Assemblies, Item 623 Reference Monuments and Centerline Monuments shall be installed by the construction contractor as specified in the plans. All Centerline Monuments, Reference Monuments and Right of Way Monuments set and/or rest by the contractor's surveyor will include a cap as per Standard Construction Drawing RM-1.1 and bear the surveyor's Ohio registration number and/or name or company name. This work will be done in accordance with OAC 4733-37 as cited below.

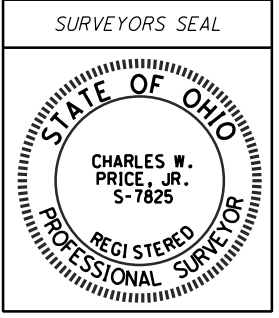
The iron pins and caps will be 3/4" x 30" rebar with aluminum cap stamped "Odor R/W District 5".

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 noted.

The words I and my as used herein are to mean either myself or someone working under my direct supervision.

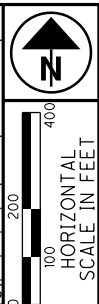
Charles W. Price Jr., Professional Land Surveyor No. 7825

Date: 12/21/15



SECTION 14. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

MONUMENT TABLE					
S.R. 161		PROJECT COORDINATES SEE SURVEY CERTIFICATION		MONUMENTS TO BE SET DURING CONSTRUCTION	R/W MON. EXPECTED TO BE DISTURBED
STATION	OFFSET	NORTH (Y)	EAST (X)	REF. MON.	R/W MON.
116+39	802.79' RT.	757,164.0145	1,905,940.3433	1	
117+06.18	836.15' RT.	757,128.9706	1,906,006.6527	1	
124+17.59	819.38' LT.	758,765.9455	1,906,759.7639	1	
124+71.36	792.77' LT.	758,737.9837	1,906,812.8500	1	
141+75	140.00' LT.	758,042.2170	1,908,499.4670		1
TOTAL CARRIED TO GENERAL SUMMARY SHEET				4	1



PID NO. 97879
 R/W DESIGNER CS
 R/W REVIEWER CP

CENTERLINE PLAT

LIC-161-1.83

2/21
 317
 336

BASIS FOR BEARINGS:

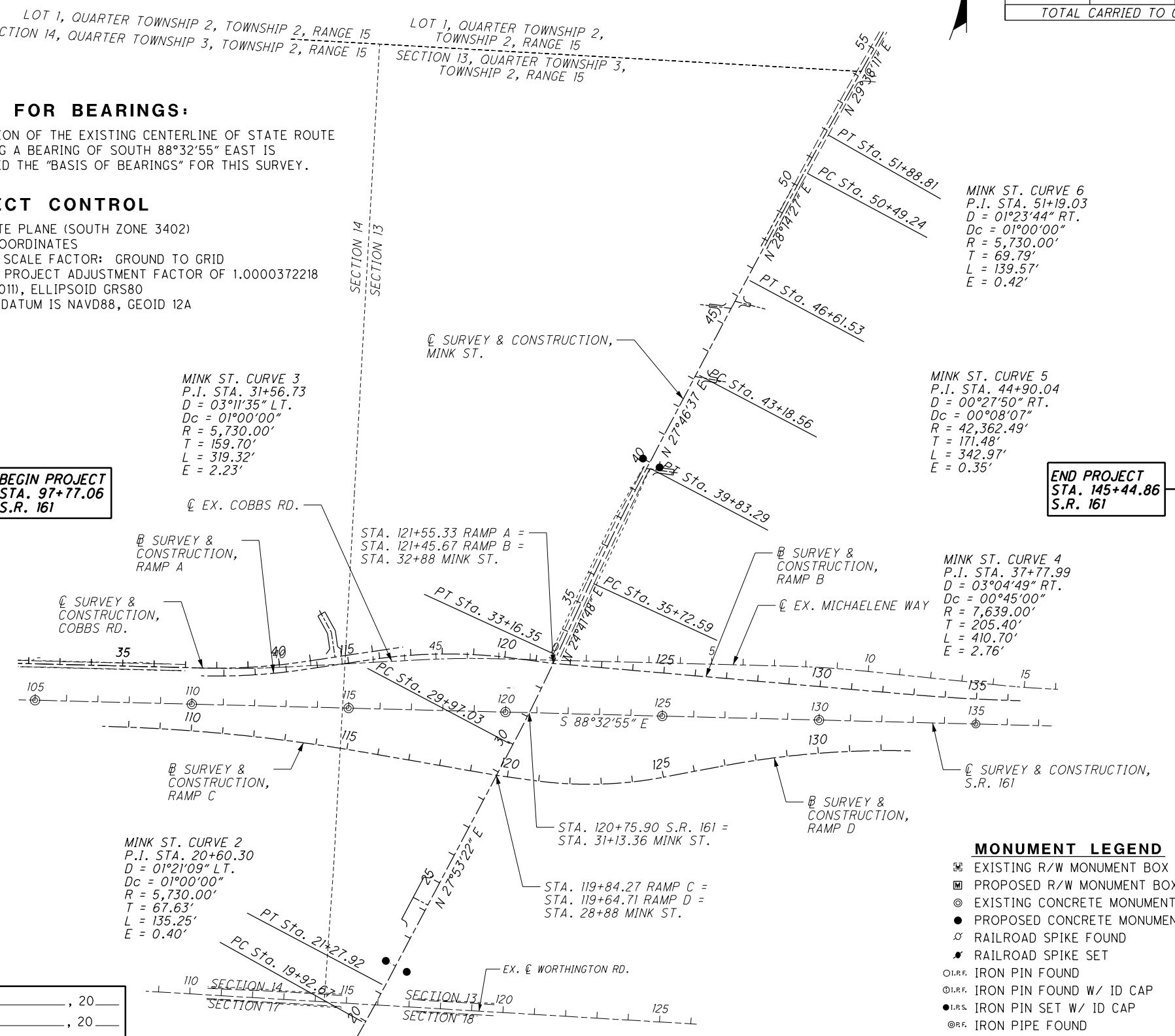
THE PORTION OF THE EXISTING CENTERLINE OF STATE ROUTE 161, HAVING A BEARING OF SOUTH 88°32'55" EAST IS DESIGNATED THE "BASIS OF BEARINGS" FOR THIS SURVEY.

PROJECT CONTROL

OHIO STATE PLANE (SOUTH ZONE 3402)
 GROUND COORDINATES
 COMBINED SCALE FACTOR: GROUND TO GRID
 DIVIDE BY PROJECT ADJUSTMENT FACTOR OF 1.0000372218
 NAD 83 (2011), ELLIPSOID GRS80
 VERTICAL DATUM IS NAVD88, GEOID 12A

BEGIN PROJECT
 STA. 97+77.06
 S.R. 161

END PROJECT
 STA. 145+44.86
 S.R. 161



MINK ST. CURVE 6
 P.I. STA. 51+19.03
 D = 01°23'44" RT.
 Dc = 01°00'00"
 R = 5,730.00'
 T = 69.79'
 L = 139.57'
 E = 0.42'

MINK ST. CURVE 5
 P.I. STA. 44+90.04
 D = 00°27'50" RT.
 Dc = 00°08'07"
 R = 42,362.49'
 T = 171.48'
 L = 342.97'
 E = 0.35'

MINK ST. CURVE 4
 P.I. STA. 37+77.99
 D = 03°04'49" RT.
 Dc = 00°45'00"
 R = 7,639.00'
 T = 205.40'
 L = 410.70'
 E = 2.76'

MINK ST. CURVE 2
 P.I. STA. 20+60.30
 D = 01°21'09" LT.
 Dc = 01°00'00"
 R = 5,730.00'
 T = 67.63'
 L = 135.25'
 E = 0.40'

MINK ST. CURVE 3
 P.I. STA. 31+56.73
 D = 03°11'35" LT.
 Dc = 01°00'00"
 R = 5,730.00'
 T = 159.70'
 L = 319.32'
 E = 2.23'

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

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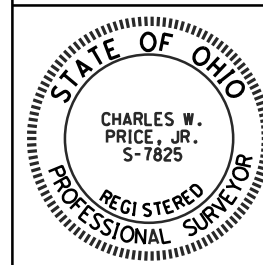
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Charles W. Price Jr.
 Charles W. Price Jr., Professional Land Surveyor No. 7825

Date: 12/21/15

SURVEYORS SEAL



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RECEIVED _____, 20____
 RECORDED _____, 20____
 BOOK _____ PAGE _____
 COUNTY RECORDER

SECTION 14, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

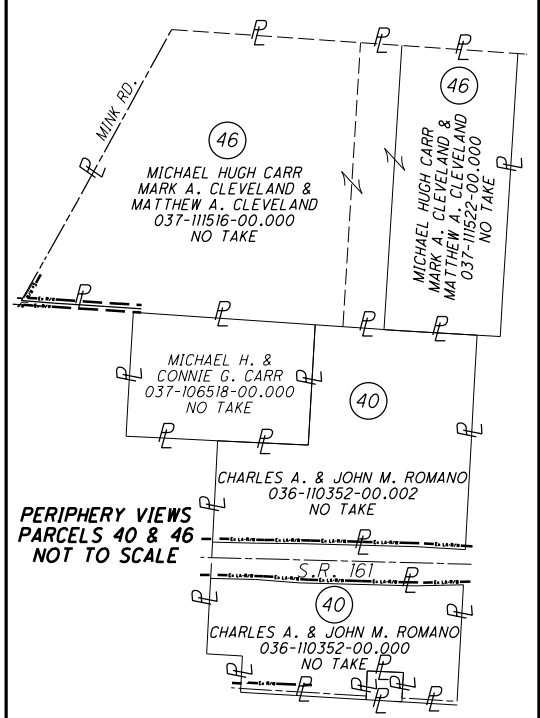
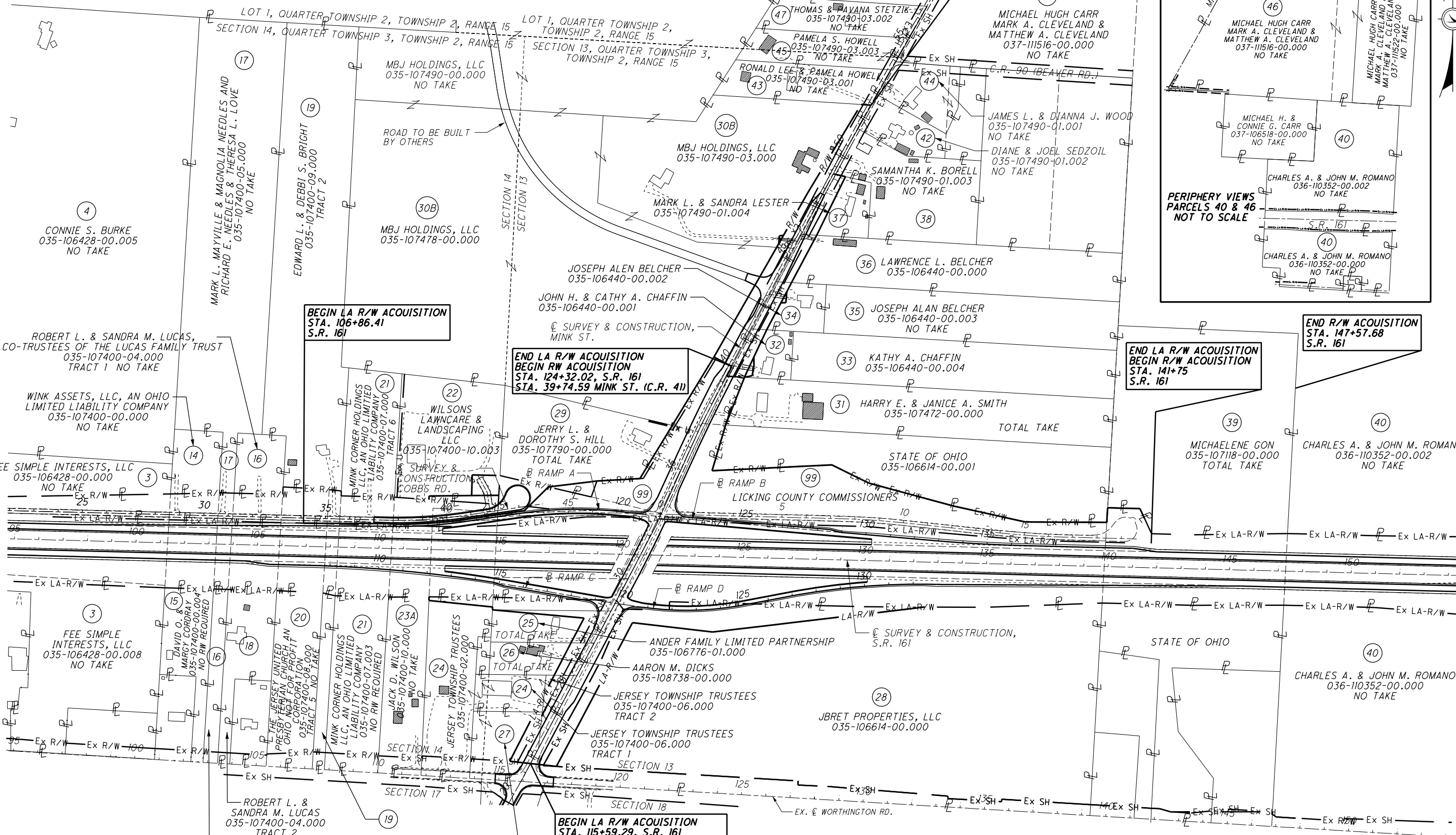
END R/W ACQUISITION
 STA. 51+92.39
 MINK ST. (C.R. 41)

BEGIN LA R/W ACQUISITION
 STA. 106+86.41
 S.R. 161

END LA R/W ACQUISITION
 BEGIN R/W ACQUISITION
 STA. 124+32.02, S.R. 161
 STA. 39+74.59 MINK ST. (C.R. 41)

END LA R/W ACQUISITION
 BEGIN R/W ACQUISITION
 STA. 141+75
 S.R. 161

END R/W ACQUISITION
 STA. 147+57.68
 S.R. 161



STRUCTURE KEY

	RESIDENTIAL
	COMMERCIAL
	OUT-BUILDING

REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	03/14/16	DELETED PARCEL 23A-WL PER REAL ESTATE
CS	01/22/16	ADDED PARCELS 30-T, 32-T, 34-T
CS	01/13/16	REVISED 22-WDV & 22-T PER REAL ESTATE
CS	12/28/15	REVISED AUD. NO. PARCEL 2 OF PARCEL 30

DATE COMPLETED: 12/21/15

PROPERTY MAP

PID NO. **97879**

R/W DESIGNER CS R/W REVIEWER CP

LIC-161-1.83

3 / 21

318
336

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TOTAL NUMBER OF :
 36 OWNERSHIPS 5 TOTAL TAKES 8 PARCELS WITH PERSONALTY ITEMS (P)
 26 PARCELS 0 OWNERSHIPS W/ STRUCTURES INVOLVED

NET TAKE = GROSS TAKE - PRO IN TAKE
 NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

GRANTEE :
 ALL RIGHT OF WAY ACQUIRED IN THE NAME OF STATE OF OHIO UNLESS OTHERWISE SHOWN. ** = CALCULATED AREA
 * 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			BOOK	PAGE
1-2	NOT USED									NO			STATE			
3	FEE SIMPLE INTERESTS LLC		201405080008311	035-106428-00.000 035-106428-00.008	5.274 14.90									NO TAKE NO TAKE		
4	CONNIE S. BURKE		200311250056485	035-106428-00.005	8.023									NO TAKE		
5-13	NOT USED															
14	WINK ASSETS, LLC, AN OHIO LIMITED LIABILITY COMPANY		200702060003149	035-107400-00.000	1.187									NO TAKE		
15	DAVID O. & MARGY CORDRAY		200607170020706 200208280032101	035-107400-00.004 035-107400-01.000	2.052 1.21									NO TAKE NO TAKE		
16	ROBERT L. & SANDRA M. LUCAS, CO-TRUSTEES OF THE LUCAS FAMILY TRUST		201207130015619 201207130015618	035-107400-05.003 035-107400-04.000	0.99 3.22									NO TAKE NO TAKE		
17	MARK L. MAYVILLE & MAGNOLIA NEEDLES AND RICHARD E. NEEDLES & THERESA L. LOVE		OR 417, PG. 537	035-107400-05.000	14.353									NO TAKE		
18	ROBERT L. & SANDRA M. LUCAS		OR 188, PG. 277	035-107400-04.000	3.22									NO TAKE		
19	EDWARD L. & DEBBI S. BRIGHT		OR 318, PG. 627	035-107400-09.000	14.013									NO TAKE; TRACT 2; LEFT RESIDUE NO TAKE; TRACT 1; RIGHT RESIDUE		
20	THE JERSEY UNITED PRESBYTERIAN CHURCH AN OHIO NOT FOR PROFIT CORPORATION		DB 62, PG. 54	035-107400-08.000	3.16									NO TAKE; TRACT 5		
21	MINK CORNER HOLDINGS LLC, AN OHIO LIMITED LIABILITY COMPANY		201406090010252	035-107400-07.000 035-107400-07.003	2.486 3.769									NO TAKE NO TAKE		
22-WDV 22-T	WILSONS LAWCARE & LANDSCAPING LLC	8-9 8-9	201206060012508	035-107400-10.003	4.882	0.000	0.171 0.215	0.000 0.000	0.171 0.215	P NO	4.711			TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS; EXISTING GATE & ROCKS TO BE REMOVED FOR DRIVE CONSTRUCTION		
23	THOMAS LEROY WILSON (SOLD TO 23A)		201407150013227													
23A	JACK D. WILSON	8-9	201410150020139	035-107400-10.000	2.887									NO TAKE; TRACT 7		
24-WL1 24-WL2	JERSEY TOWNSHIP TRUSTEES	8-9 16-17	200004240012681 DB 810 PG. 605	035-107400-02.000 035-107400-06.000	3.695 1.000	0.000	0.166 0.024 0.438	0.000 0.000 0.302	0.166 0.024 0.106	P NO	3.529 0.976 0.030			TRACT 1 TRACT 2		
25-WL 25-WD	ANDER FAMILY LIMITED PARTNERSHIP	16-17 16-17	200708290022785	035-106776-01.000	**1.386	0.171	0.422 0.964	0.171 0.000	0.251 0.964	P NO	0.000			TOTAL TAKE; EX. FENCE TO BE REMOVED; ** 1.394 RECORD AREA, 1.386 CALCULATED AREA		
26-WL 26-WD	AARON M. DICKS	16-17 16-17	201405200009059	035-108738-00.000	**1.209	0.174	0.291 0.918	0.174 0.000	0.117 0.918	NO NO	0.000			TOTAL TAKE; **1.207 RECORD AREA, 1.209 CALCULATED AREA		
27-WL	MINK CORNER HOLDINGS LLC, AN OHIO LIMITED LIABILITY COMPANY	16-17	201404220007024	035-107400-00.001	1.705	0.164	0.326	0.164	0.162	P	1.379			PRIVATE SIGN TO BE REMOVED		
28-WL	JBRET PROPERTIES, LLC	10-13	201201090000553	035-106614-00.000	39.886	0.900	3.510	0.900	2.610	NO	36.376					
29-WL1 29-WL2 29-WD	JERRY L. & DOROTHY S. HILL	8-9 18-19 8-9	DB 810 PG. 891	035-107790-00.000	**4.897	0.000	0.144 0.067 4.686	0.000 0.000 0.000	0.144 0.067 4.686		0.000			TOTAL TAKE; **4.951 RECORD AREA, 4.897 CALCULATED AREA		
										NO			STATE			

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FEDERAL PROJECT NO. NON-FED. PID NO. 97879 STATE JOB NO. 0000 R/W DESIGNER CS R/W REVIEWER CP

SUMMARY OF ADDITIONAL RIGHT OF WAY

LIC-161-1.83

TYPES OF TITLE LEGEND:
 WL = FEE SIMPLE WITH LIMITATION OF ACCESS
 WD = WARRANTY DEED
 PRW = PROPERTY RIGHT FEE SIMPLE
 SH = STANDARD HIGHWAY EASEMENT
 LA = LIMITED ACCESS EASEMENT
 T = TEMPORARY EASEMENT
 CH = CHANNEL EASEMENT
 A = AERIAL EASEMENT
 SL = SLOPE EASEMENT
 PRE = PROPERTY RIGHT EASEMENT

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

CS	03/14/16	DELETED PARCEL 23A-WL PER REAL ESTATE
CS	01/13/16	REVISED 22-WDV & 22-T PER REAL ESTATE
CS	01/05/16	REVISED TOTAL NO. OF PARCELS
REV. BY	DATE	DESCRIPTION
FIELD REVIEW BY: CS, CP, JA, SA		DATE: 12/16/15
OWNERSHIP VERIFIED BY: CP		DATE: 12/16/15
DATE COMPLETED: 12/21/15		

NET TAKE = GROSS TAKE - PRO IN TAKE
 NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

GRANTEE:
 ALL RIGHT OF WAY ACQUIRED IN THE NAME OF
 STATE OF OHIO UNLESS OTHERWISE SHOWN.

** = CALCULATED AREA
 * 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			BOOK	PAGE	
30	LOIS J. SMITH (TRANSFERRED TO 30A)		201211160027245										STATE				
30A	LISA A. MURPHY, TRUSTEE OF THE LOIS J. SMITH LIVING TRUST, DATED DECEMBER 22, 2015 (TRANSFERRED TO 30B)		201601050000147														
30B-WL	MBJ HOLDINGS, LLC	18-19	201603300006016	035-107478-00.000	37.498	0.373	0.084	0.000	0.084	NO	36.501			PARCEL 1 PARCEL 1; TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS; EX. ROCK TO BE REMOVED PARCEL 2; TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS TO CONSTRUCT DRIVE			
30B-WDV		18-21		035-107478-00.000	37.498			0.913	0.373	0.540	P						
30B-T		20-21		035-107490-03.000	11.620	0.461	0.792	0.461	0.331	NO	10.828						
				035-107490-03.000			0.006	0.000	0.006	NO							
31-WL	HARRY E. & JANICE A. SMITH	18-19	200111270042473	035-107472-00.000	**7.173	0.000	0.036	0.000	0.036	P	0.000			TOTAL TAKE; EX. ROCKS TO BE REMOVED; **7.169 RECORD AREA, 7.173 CALCULATED AREA			
31-WD		18-19									7.137	0.000	7.137		NO		
32-WDV	JOHN H. & CATHY A. CHAFFIN	18-19	OR 172 PG. 40	035-106440-00.001	1.000	0.151	0.310	0.151	0.159	P	0.690			TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS; ROCKS TO BE REMOVED TO CONSTRUCT DRIVE			
32-T		18-19									0.030	0.000	0.030		NO		
33	KATHY A. CHAFFIN		201212120029389	035-106440-00.004	6.117									NO TAKE			
34-WDV	JOSEPH ALAN BELCHER	18-21	OR 556 PG. 514	035-106440-00.002	1.140	0.151	0.284	0.151	0.133	NO	0.856			TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS TO CONSTRUCT DRIVE			
34-T		20-21									0.011	0.000	0.011		NO		
35	JOSEPH ALAN BELCHER		201212120029390	035-106440-00.003	5.559									NO TAKE			
36-WDV	LAWRENCE L. BELCHER	20-21	201212120029388	035-106440-00.000	6.280	0.151	0.286	0.151	0.135	P	5.994			TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS; EX. FENCE TO BE REMOVED			
37-WDV	MARK L. & SANDRA LESTER	20-21	OR 439 PG. 22	035-107490-01.004	1.22	0.192	0.337	0.192	0.145	P	0.883			TO BE ACQUIRED IN THE NAME OF THE LICKING COUNTY COMMISSIONERS; EX. FENCE, FLOWER BED & ROCKS TO BE REMOVED			
38	SAMANTHA K. BORELL		201001070000311	035-107490-01.003										NO TAKE			
39-WD	MICHAELENE GON	14-15	200707170018512	035-107118-00.000	**13.993	0.000	13.993	0.000	13.993	NO	0.000			TOTAL TAKE; **14.249 RECORD AREA, 13.993 CALCULATED AREA			
40	CHARLES A. & JOHN M. ROMANO		201303290008091	036-110352-00.000	27.626									NO TAKE			
41		NOT USED			036-110352-00.002	54.247										NO TAKE	
42	DIANE & JOEL SEDZIOL		201503200005197	035-107490-01.002										NO TAKE			
43	RONALD LEE & PAMELA HOWELL		DB 532 PG. 258	035-107490-03.001										NO TAKE			
44	JAMES L. & DIANNA J. WOOD		201508110016935	035-107490-01.001										NO TAKE			
45	PAMELA S. HOWELL		200906180013304	035-107490-03.003										NO TAKE			
46	MICHAEL HUGH CARR (1/2 INTEREST) MARK A. CLEVELAND (1/4 INTEREST) MATTHEW A. CLEVELAND (1/4 INTEREST)		DB 541 PG. 662	037-111516-00.000										NO TAKE			
				037-111522-00.000											NO TAKE		
47		THOMAS & PAVANA STETZIK			201302040003023	035-107490-03.002										NO TAKE	
48-98	NOT USED																
99-WL	LICKING COUNTY COMMISSIONERS	6-15,18,19	200608010022414				11.319	11.319	0.000								
			200703150006591														
			200805160011426														
			200604260011637														
			200511100036018														
			200511210037111														
			200805160011422														
			200503230008436														
			200603200007700														
			200502100004078														
			200703220007214														

FEDERAL PROJECT NO. NON-FED.
 PID NO. 97879
 STATE JOB NO. 0000
 R/W DESIGNER CS
 R/W REVIEWER CP
SUMMARY OF ADDITIONAL RIGHT OF WAY
 LIC-161-1.83
 5 / 21
 320
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TYPES OF TITLE LEGEND:
 WL = FEE SIMPLE WITH LIMITATION OF ACCESS
 WD = WARRANTY DEED
 PRW = PROPERTY RIGHT FEE SIMPLE
 SH = STANDARD HIGHWAY EASEMENT
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NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

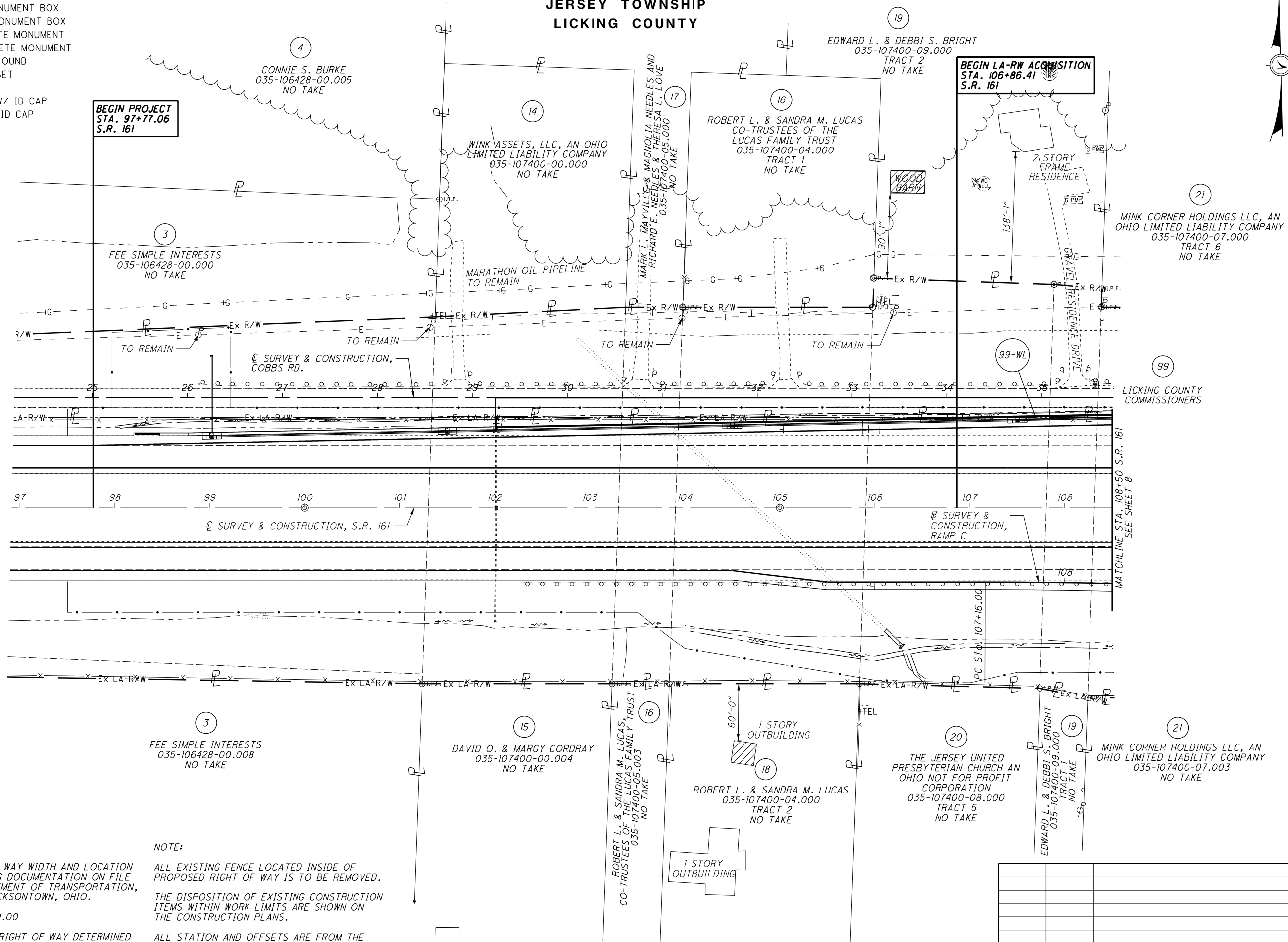
REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	03/02/16	ADDED OWNERS RECORDS TO 99-WL
CS	01/22/16	ADDED PARCELS 30-T, 32-T, 34-T
CS	12/28/15	REVISED 30-WDV
FIELD REVIEW BY: CS, CP, JA, SA DATE: 12/16/15		
OWNERSHIP VERIFIED BY: CP DATE: 12/16/15		
DATE COMPLETED: 12/21/15		

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SECTION 14, T2N, R15W, U.S.M.L.

JERSEY TOWNSHIP
LICKING COUNTY

- 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
 - ⊙ R.K.F. P.K. NAIL FOUND
 - ⊙ R.K.S. P.K. NAIL SET



BEGIN PROJECT
STA. 97+77.06
S.R. 161

BEGIN LA-RW ACQUISITION
STA. 106+86.41
S.R. 161

3
FEE SIMPLE INTERESTS
035-106428-00.008
NO TAKE

15
DAVID O. & MARGY CORDRAY
035-107400-00.004
NO TAKE

18
ROBERT L. & SANDRA M. LUCAS
035-107400-04.000
TRACT 2
NO TAKE

20
THE JERSEY UNITED
PRESBYTERIAN CHURCH AN
OHIO NOT FOR PROFIT
CORPORATION
035-107400-08.000
TRACT 5
NO TAKE

19
EDWARD L. & DEBBI S. BRIGHT
035-107400-09.000
TRACT 1
NO TAKE

21
MINK CORNER HOLDINGS LLC, AN
OHIO LIMITED LIABILITY COMPANY
035-107400-07.003
NO TAKE

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.
FRA-161-23.20/LIC-161-0.00
CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
ALL EXISTING FENCE LOCATED INSIDE OF PROPOSED RIGHT OF WAY IS TO BE REMOVED.
THE DISPOSITION OF EXISTING CONSTRUCTION ITEMS WITHIN WORK LIMITS ARE SHOWN ON THE CONSTRUCTION PLANS.
ALL STATION AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 161 UNLESS OTHERWISE STATED.

REV. BY	DATE	DESCRIPTION
DATE COMPLETED: 12/21/15		

RIGHT OF WAY TOPO SHEET
S.R. 161 STA. 97+00 TO STA. 108+50

LIC-161-1.83

PID NO. 97879

R/W DESIGNER CS R/W REVIEWER CP

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321
336

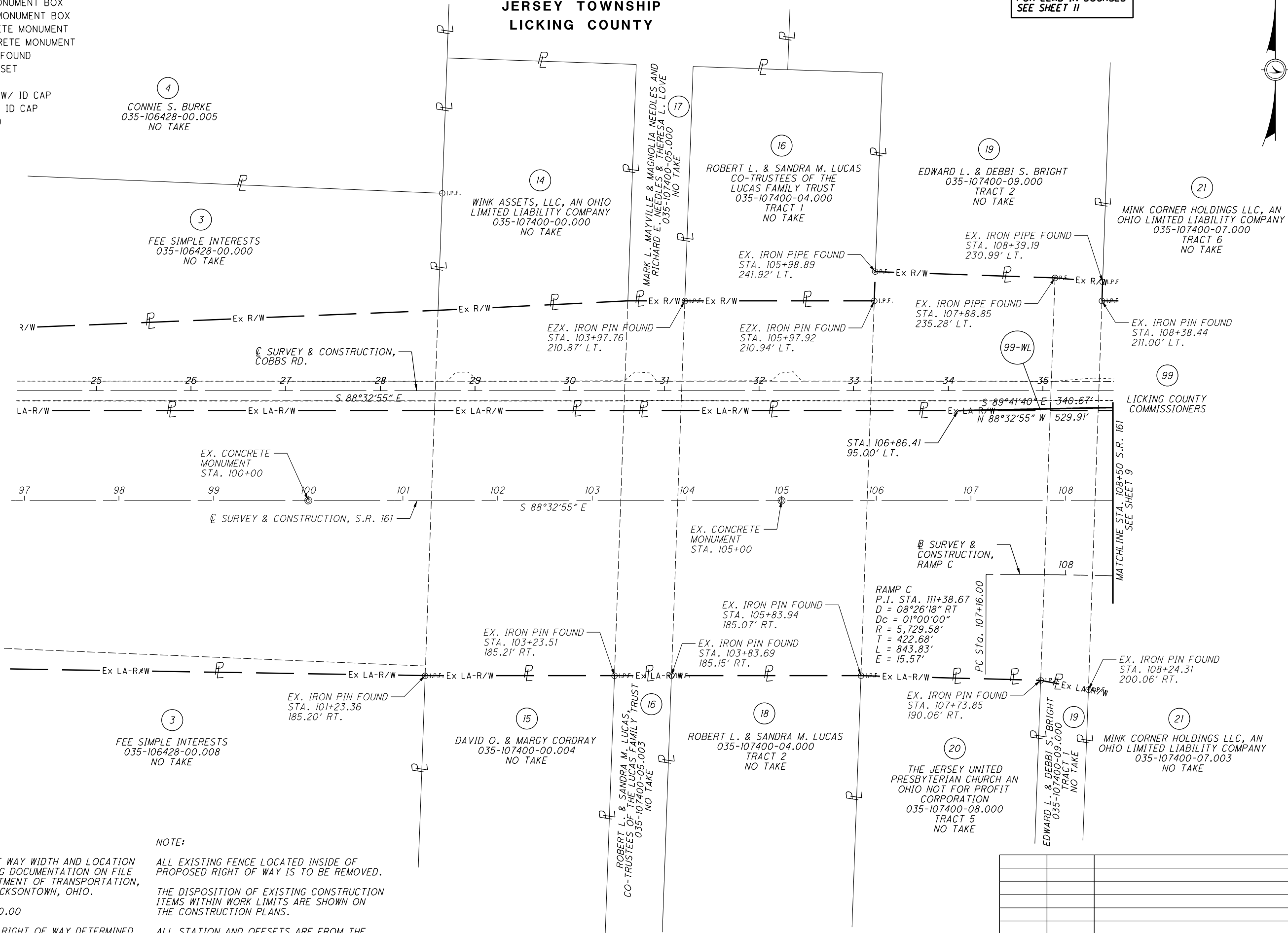
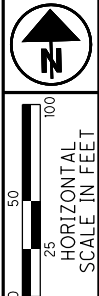
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MONUMENT LEGEND

- ☐ 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
- ⊙ R.K.F. P.K. NAIL FOUND
- ⊙ R.K.S. P.K. NAIL SET

**SECTION 14, T2N, R15W, U.S.M.L.
JERSEY TOWNSHIP
LICKING COUNTY**

FOR LEAD IN COURSES
SEE SHEET II



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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.
FRA-161-23.20/LIC-161-0.00
CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
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THE DISPOSITION OF EXISTING CONSTRUCTION ITEMS WITHIN WORK LIMITS ARE SHOWN ON THE CONSTRUCTION PLANS.
ALL STATION AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 161 UNLESS OTHERWISE STATED.

PID NO. **97879**
R/W DESIGNER CS
R/W REVIEWER CP

**RIGHT OF WAY BOUNDARY SHEET
S.R. 161 STA. 97+00 TO STA. 108+50**

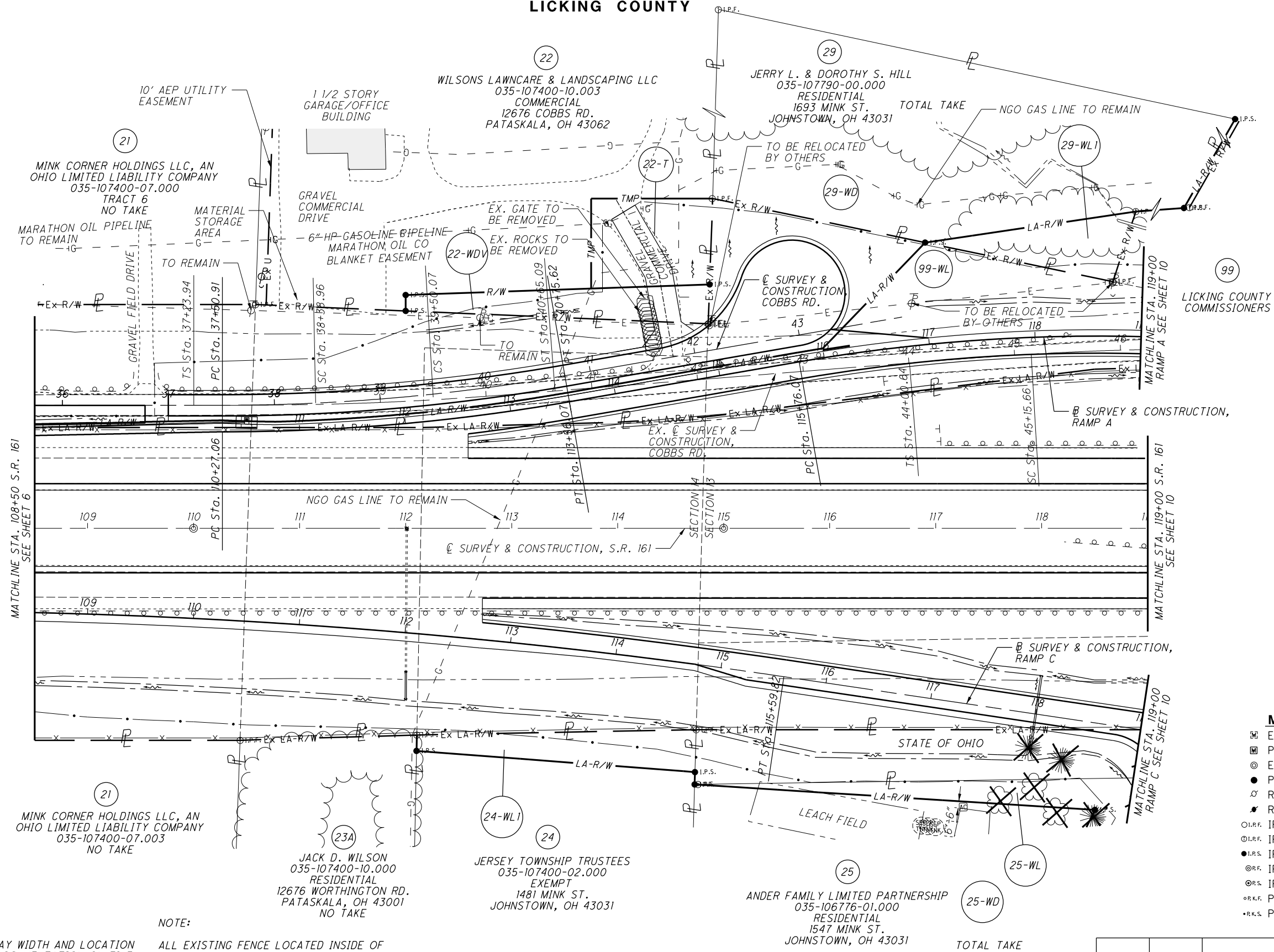
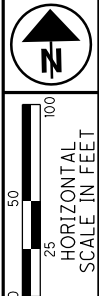
LIC-161-1.83

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322
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REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 12/21/15

SECTIONS 13 & 14, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY



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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- P.K.F. P.K. NAIL FOUND
- P.K.S. P.K. NAIL SET

NOTE:
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 FRA-161-23.20/LIC-161-0.00
 CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
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 THE DISPOSITION OF EXISTING CONSTRUCTION ITEMS WITHIN WORK LIMITS ARE SHOWN ON THE CONSTRUCTION PLANS.
 ALL STATION AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 161 UNLESS OTHERWISE STATED.

REV. BY	DATE	DESCRIPTION
CS	03/14/16	DELETED PARCEL 23A-WL PER REAL ESTATE
CS	01/13/16	REVISED 22-WDV & 22-T PER REAL ESTATE
DATE COMPLETED: 12/21/15		

PID NO. **97879**

R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY TOPO SHEET
S.R. 161 STA. 108+50 TO STA. 119+00

LIC-161-1.83

8 / 21
 323
 336

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SECTIONS 13 & 14, T2N, R15W, U.S.M.L.

JERSEY TOWNSHIP
LICKING COUNTY

FOR LEAD IN COURSES
SEE SHEET 11



PID NO.
97879

R/W DESIGNER
CS
R/W REVIEWER
CP

RIGHT OF WAY BOUNDARY SHEET
S.R. 161 STA. 108+50 TO STA. 119+00

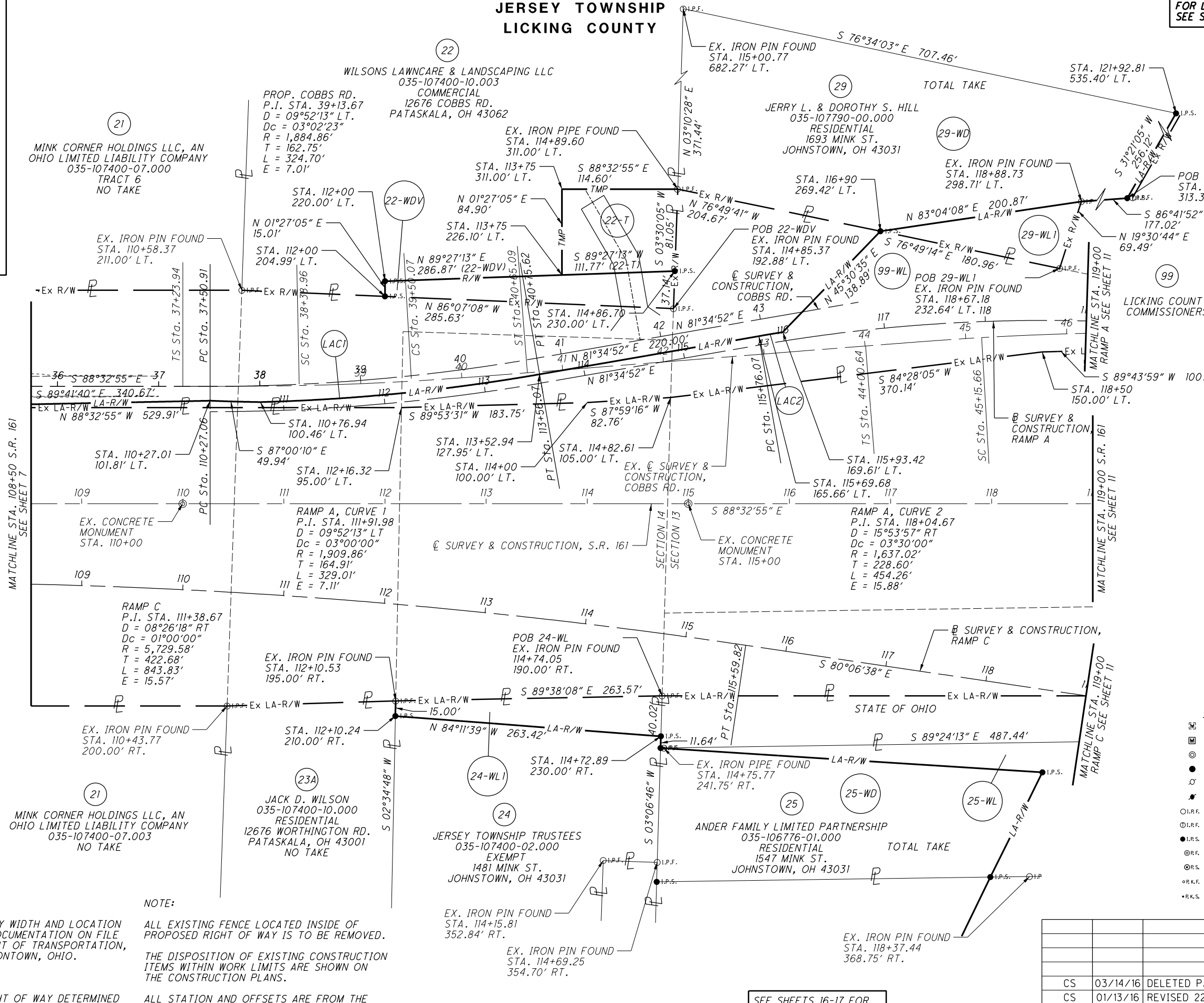
LIC-161-1.83

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324
336

(LAC1)
STATE OF OHIO
LIMITED ACCESS PARCEL
CURVE 1
CHORD = N 85°45'51" E
277.36'
D = 08°22'01" LT.
Dc = 03°00'50"
R = 1,901.05'
ARC = 277.61'

(LAC2)
STATE OF OHIO
LIMITED ACCESS PARCEL
CURVE 2
CHORD = N 82°00'00" E
24.07'
D = 00°50'16" RT.
Dc = 03°28'53"
R = 1,645.83'
ARC = 24.07'



- 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
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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.

FRA-161-23.20/LIC-161-0.00

CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
ALL EXISTING FENCE LOCATED INSIDE OF PROPOSED RIGHT OF WAY IS TO BE REMOVED.

THE DISPOSITION OF EXISTING CONSTRUCTION ITEMS WITHIN WORK LIMITS ARE SHOWN ON THE CONSTRUCTION PLANS.

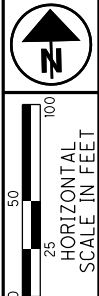
ALL STATION AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 161 UNLESS OTHERWISE STATED.

SEE SHEETS 16-17 FOR
PARCELS 25-WL & 25-WD

REV. BY	DATE	DESCRIPTION
CS	03/14/16	DELETED PARCEL 23A-WL PER REAL ESTATE
CS	01/13/16	REVISED 22-WDV & 22-T PER REAL ESTATE
DATE COMPLETED: 12/21/15		

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SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY



PID NO. **97879**
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY TOPO SHEET
S.R. 161 STA. 119+00 TO STA. 129+00

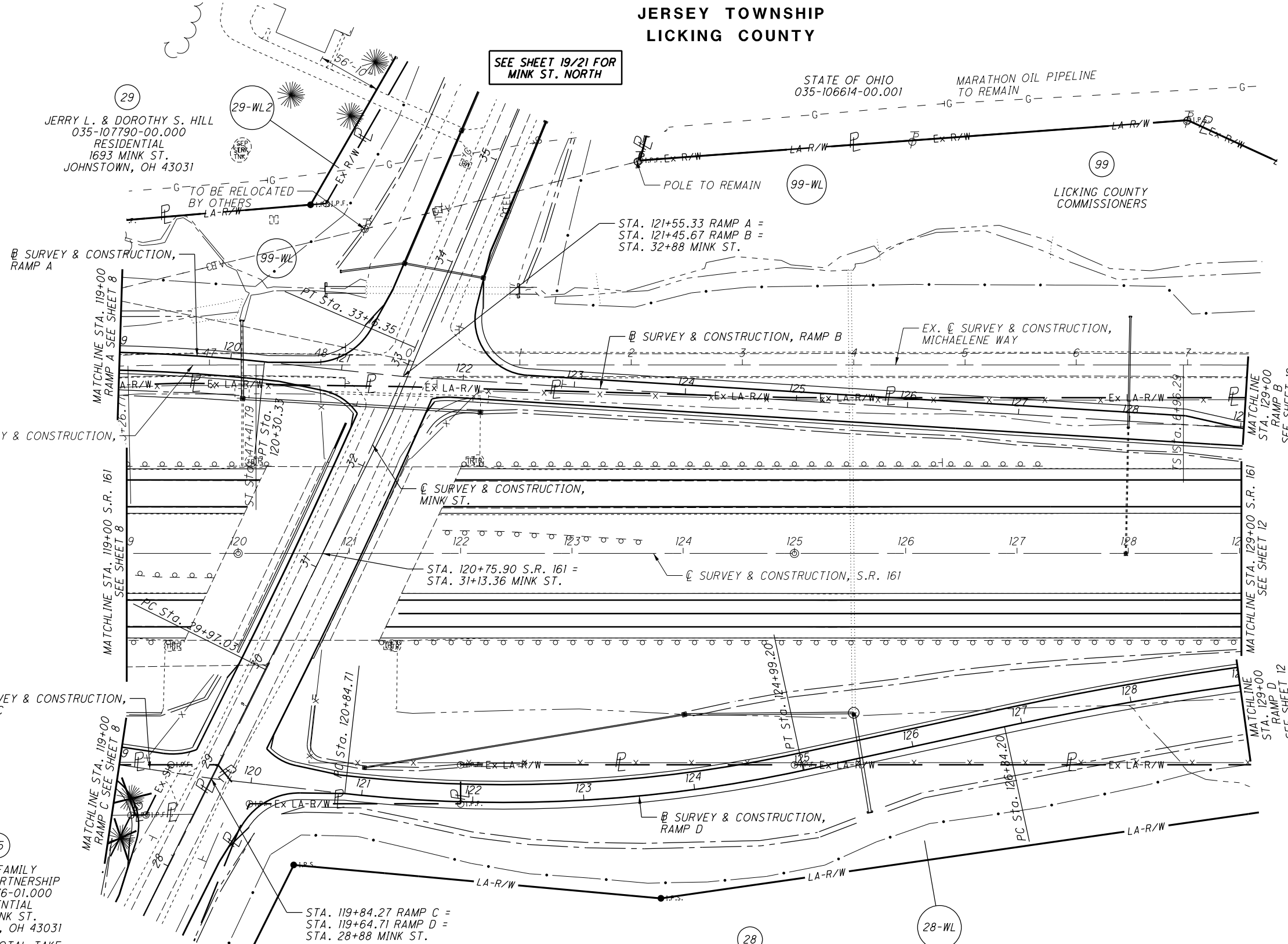
LIC-161-1.83

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325
 336

SEE SHEET 19/21 FOR
 MINK ST. NORTH

SEE SHEET 17/21 FOR
 MINK ST. SOUTH



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.
 FRA-161-23.20/LIC-161-0.00
 CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
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- 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

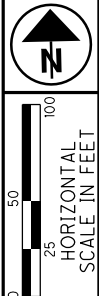
REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 12/21/15

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SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

FOR LEAD IN COURSES
 SEE SHEET 11

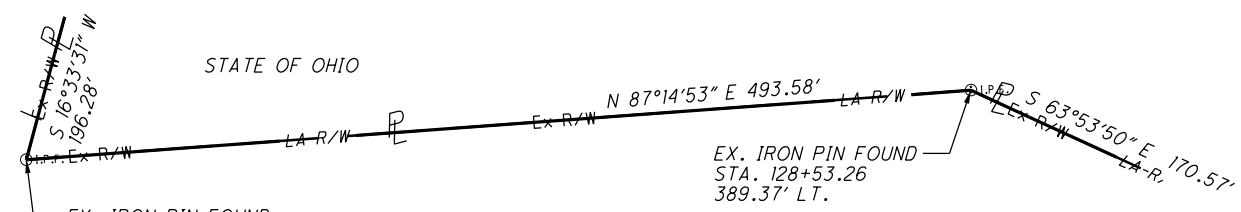


29
 JERRY L. & DOROTHY S. HILL
 035-107790-00.000
 RESIDENTIAL
 1693 MINK ST.
 JOHNSTOWN, OH 43031

SEE SHEET 19/21 FOR
 MINK ST. NORTH

RAMP A, CURVE 2
 P.I. STA. 118+04.67
 D = 15°53'57" RT
 Dc = 03°30'00"
 R = 1,637.02'
 T = 228.60'
 L = 454.26'
 E = 15.88'

POB 29-WL2
 EX. IRON PIN FOUND
 STA. 120+79.10
 314.54' LT.



99-WL
 SURVEY & CONSTRUCTION,
 RAMP A
 STA. 119+50
 153.00' LT.

99-WL
 SURVEY & CONSTRUCTION,
 MINK ST.

99-WL

99
 LICKING COUNTY
 COMMISSIONERS

MATCHLINE STA. 119+00
 RAMP A
 SEE SHEET 9

EX. SURVEY & CONSTRUCTION,
 COBBS RD.

EX. CONCRETE
 MONUMENT
 STA. 120+00

MATCHLINE STA. 119+00 S.R. 161
 SEE SHEET 9

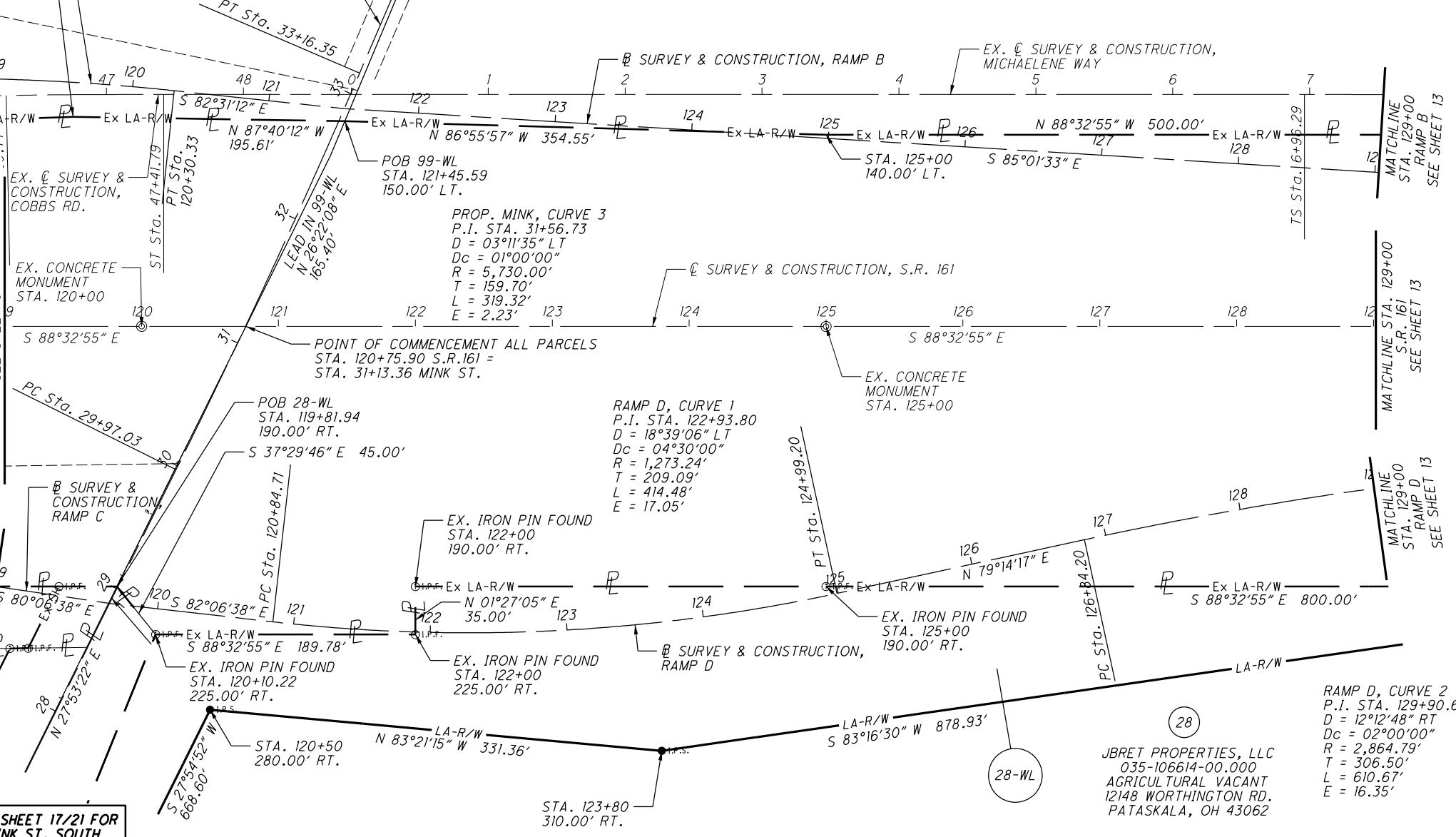
MATCHLINE STA. 119+00
 RAMP C
 SEE SHEET 9

MATCHLINE STA. 119+00
 RAMP D
 SEE SHEET 9

MATCHLINE STA. 119+00
 RAMP E
 SEE SHEET 9

MATCHLINE STA. 119+00
 RAMP F
 SEE SHEET 9

MATCHLINE STA. 119+00
 RAMP G
 SEE SHEET 9



PROP. MINK, CURVE 3
 P.I. STA. 31+56.73
 D = 03°11'35" LT
 Dc = 01°00'00"
 R = 5,730.00'
 T = 159.70'
 L = 319.32'
 E = 2.23'

RAMP D, CURVE 1
 P.I. STA. 122+93.80
 D = 18°39'06" LT
 Dc = 04°30'00"
 R = 1,273.24'
 T = 209.09'
 L = 414.48'
 E = 17.05'

RAMP D, CURVE 2
 P.I. STA. 129+90.69
 D = 12°12'48" RT
 Dc = 02°00'00"
 R = 2,864.79'
 T = 306.50'
 L = 610.67'
 E = 16.35'

JBRET PROPERTIES, LLC
 035-106614-00.000
 AGRICULTURAL VACANT
 12148 WORTHINGTON RD.
 PATASKALA, OH 43062

SEE SHEET 17/21 FOR
 MINK ST. SOUTH

25
 ANDER FAMILY
 LIMITED PARTNERSHIP
 035-106776-01.000
 RESIDENTIAL
 1547 MINK ST.
 JOHNSTOWN, OH 43031
 TOTAL 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

NOTE:
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 WERE DETERMINED USING DOCUMENTATION ON FILE
 FROM THE OHIO DEPARTMENT OF TRANSPORTATION,
 DISTRICT 5 OFFICE, JACKSONTOWN, OHIO.
 FRA-161-23.20/LIC-161-0.00
 CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED
 FROM THE LICKING COUNTY ENGINEER'S OFFICE
 LICKING COUNTY, OHIO.

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 ITEMS WITHIN WORK LIMITS ARE SHOWN ON
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 CENTERLINE OF SURVEY AND CONSTRUCTION,
 S.R. 161 UNLESS OTHERWISE STATED.

LEAD IN COURSES

22-WDV	N 70°27'37" W	621.23'	27-WL	S 27°48'45" W	899.85'	31-WL & 31-WD	N 33°56'51" E	643.07'
24-WL1	S 73°55'51" W	631.13'	28-WL	S 27°45'59" W	211.97'			
24-WL2	S 27°48'14" W	561.81'	29-WL1	N 40°26'46" W	312.55'	32-WDV	N 25°46'35" E	815.40'
25-WL	S 27°46'40" W	261.49'	29-WL2	N 02°02'04" E	314.55'	34-WDV	N 26°12'23" E	1,035.22'
25-WD	S 41°48'11" W	348.58'	29-WD	N 00°30'55" W	313.56'	36-WDV	N 26°29'08" E	1,254.85'
26-WL	S 27°47'44" W	410.43'	30B-WL	N 15°01'30" E	548.22'	37-WDV	N 26°40'53" E	1,474.50'
26-WD	S 38°21'02" W	461.65'	30B-WDV	N 25°53'01" E	860.99'	39-WD	N 84°15'05" E	1,930.85'

REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	03/14/16	DELETED LEADIN 23A-WL PER REAL ESTATE
DATE COMPLETED: 12/21/15		

PID NO.
 97879

R/W DESIGNER
 CS
 R/W REVIEWER
 CP

RIGHT OF WAY BOUNDARY SHEET
 S.R. 161 STA. 119+00 TO STA. 129+00

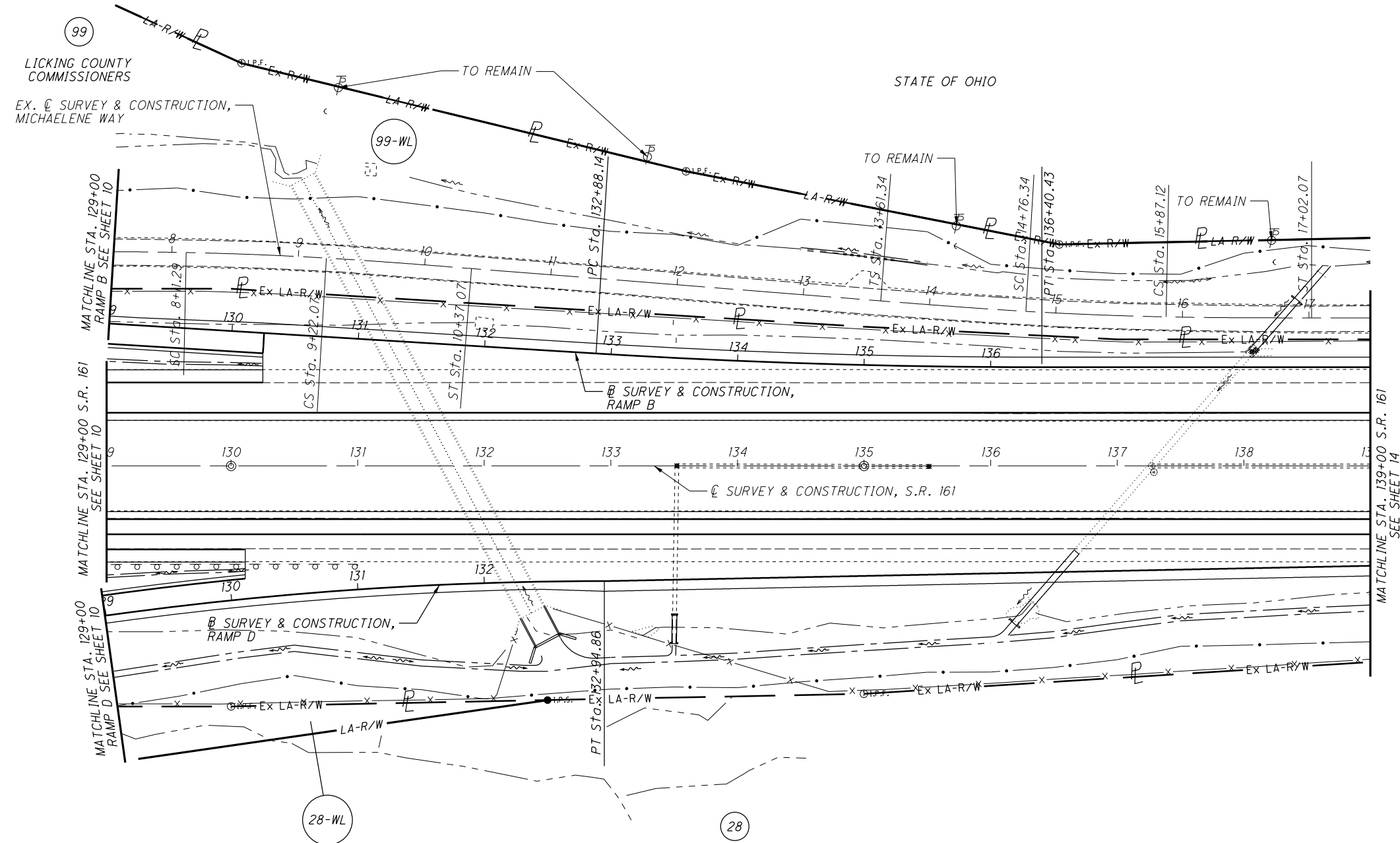
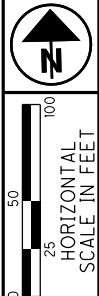
LIC-161-1.83

11 / 21

326
 336

I:\ProjectData\LIC\97879\Design\RW_Sheets\97879_RB003.dgn Sheet 8/11/2016 1:01:21 PM cyount

SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY



99
 LICKING COUNTY COMMISSIONERS
 EX. C SURVEY & CONSTRUCTION,
 MICHAELNE WAY

28
 JBRET PROPERTIES, LLC
 035-106614-00.000
 AGRICULTURAL VACANT
 12148 WORTHINGTON RD.
 PATASKALA, OH 43062

NOTE:
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 FRA-161-23.20/LIC-161-0.00
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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
- ⊙ R.F. IRON PIPE FOUND
- ⊙ R.F. IRON PIPE SET
- ⊙ R.K.F. P.K. NAIL FOUND
- R.K.S. P.K. NAIL SET

REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 12/21/15

PID NO.
97879

R/W DESIGNER
 CS
 R/W REVIEWER
 CP

RIGHT OF WAY TOPO SHEET
S.R. 161 STA. 129+00 TO STA. 139+00

LIC-161-1.83

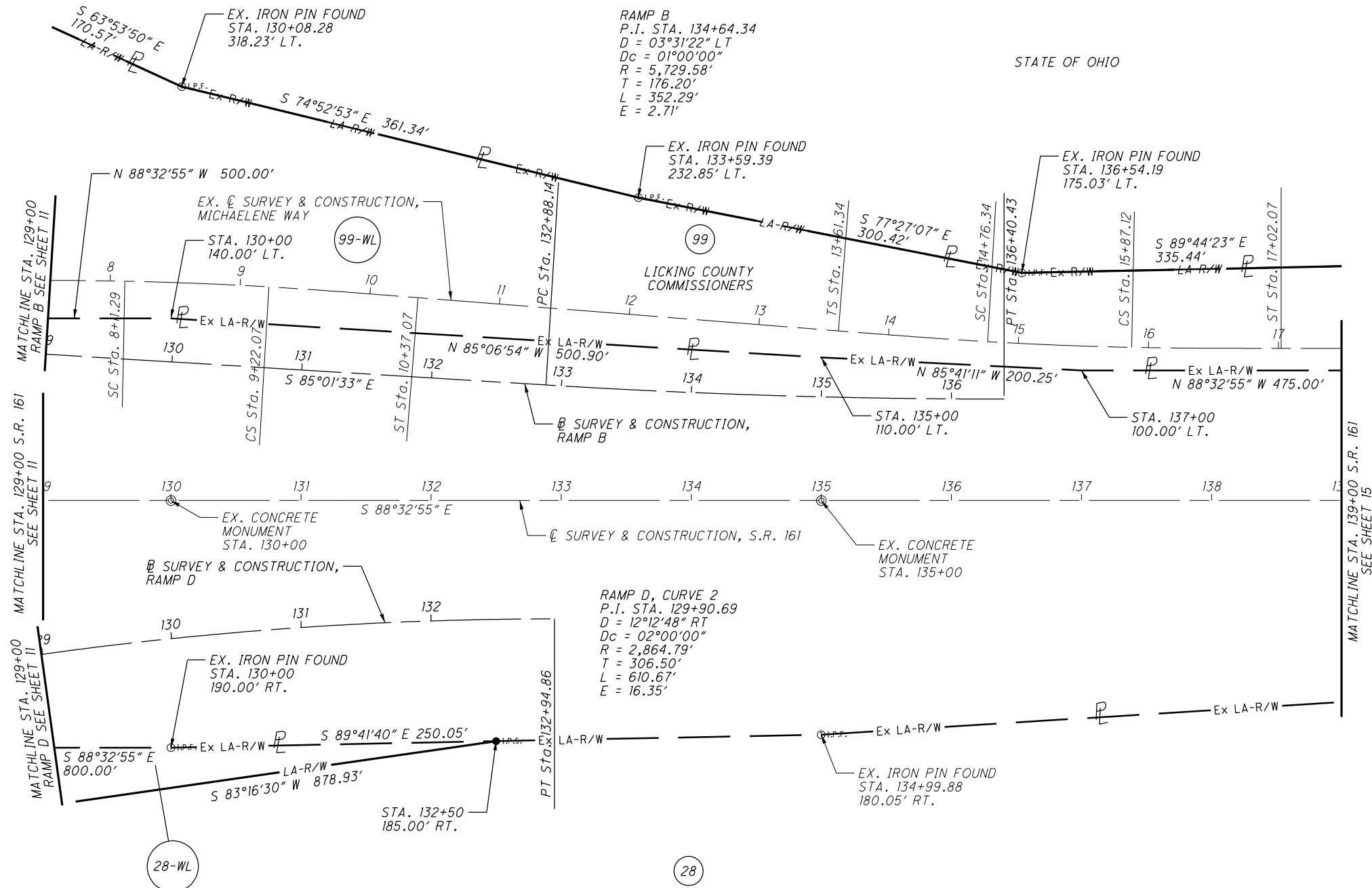
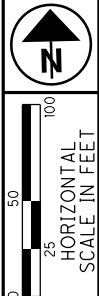
12 / 21

327
 336

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SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

FOR LEAD IN COURSES
 SEE SHEET II



RAMP B
 P.I. STA. 134+64.34
 D = 03°31'22" LT
 Dc = 01°00'00"
 R = 5,729.58'
 T = 176.20'
 L = 352.29'
 E = 2.71'

RAMP D, CURVE 2
 P.I. STA. 129+90.69
 D = 12°12'48" RT
 Dc = 02°00'00"
 R = 2,864.79'
 T = 306.50'
 L = 610.67'
 E = 16.35'

JBRET PROPERTIES, LLC
 035-106614-00.000
 AGRICULTURAL VACANT
 12148 WORTHINGTON RD.
 PATASKALA, OH 43062

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
- ⊙ R.F. IRON PIPE FOUND
- R.F. IRON PIPE SET
- R.K.F. P.K. NAIL FOUND
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REV. BY	DATE	DESCRIPTION

PID NO. 97879

R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY BOUNDARY SHEET
 S.R. 161 STA. 129+00 TO STA. 139+00

LIC-161-1.83

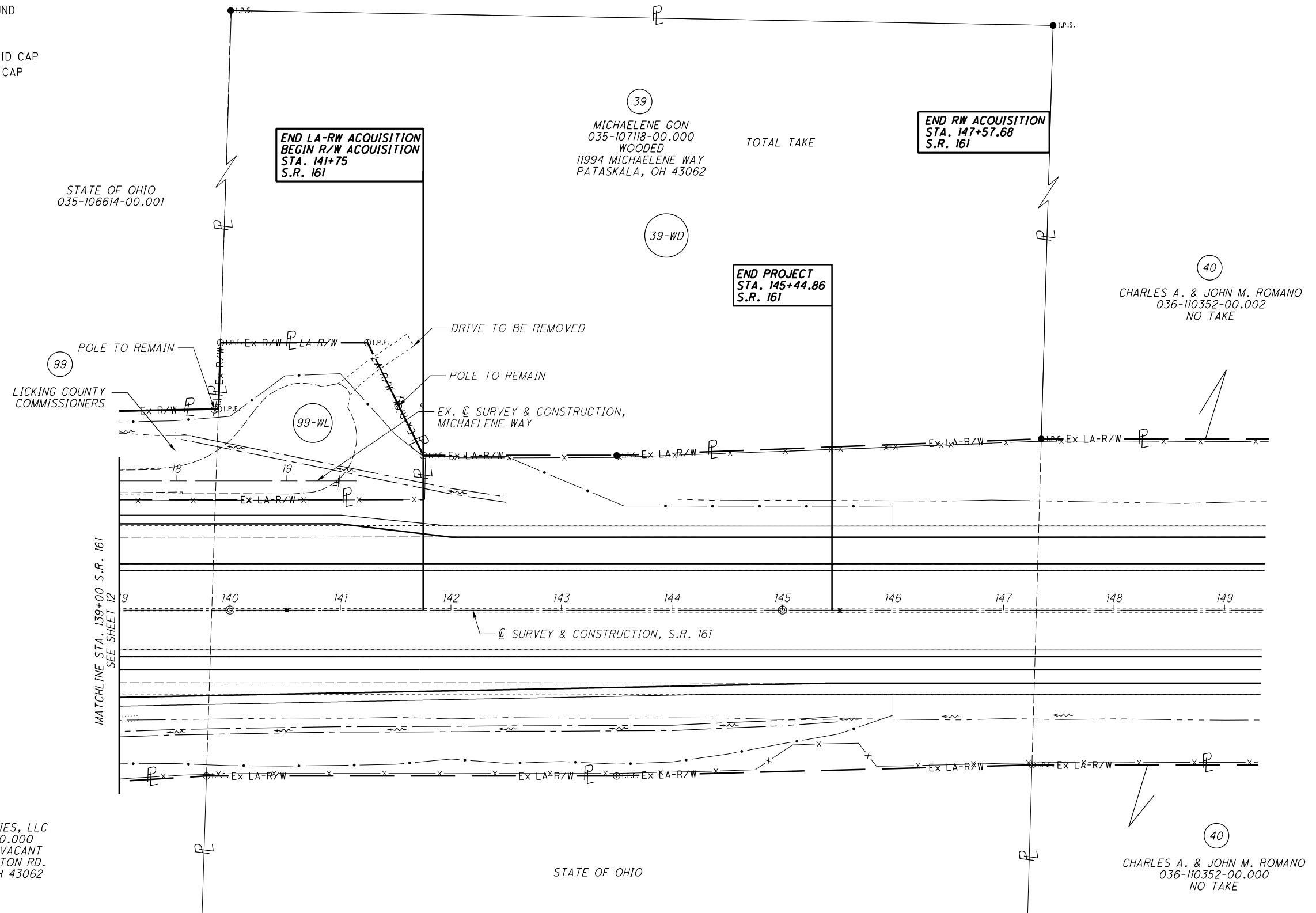
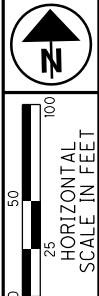
13 / 21

328
 336

SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

MONUMENT LEGEND

- ☐ EXISTING R/W MONUMENT BOX
- ▣ PROPOSED R/W MONUMENT BOX
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- PROPOSED CONCRETE MONUMENT
- ⚡ RAILROAD SPIKE FOUND
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- ⊙ 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



STATE OF OHIO
 035-106614-00.001

39
 MICHAELENE GON
 035-107118-00.000
 WOODED
 11994 MICHAELENE WAY
 PATASKALA, OH 43062

END RW ACQUISITION
 STA. 147+57.68
 S.R. 161

END PROJECT
 STA. 145+44.86
 S.R. 161

40
 CHARLES A. & JOHN M. ROMANO
 036-110352-00.002
 NO TAKE

99
 LICKING COUNTY
 COMMISSIONERS

28
 JBRET PROPERTIES, LLC
 035-106614-00.000
 AGRICULTURAL VACANT
 12148 WORTHINGTON RD.
 PATASKALA, OH 43062

40
 CHARLES A. & JOHN M. ROMANO
 036-110352-00.000
 NO TAKE

STATE OF OHIO

NOTE:

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FRA-161-23.20/LIC-161-0.00

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PID NO.
97879

R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY TOPO SHEET
S.R. 161 STA. 139+00 TO STA. 149+00

LIC-161-1.83

14 / 21

329
 336

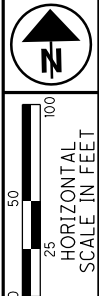
REV. BY	DATE	DESCRIPTION

DATE COMPLETED: 12/21/15

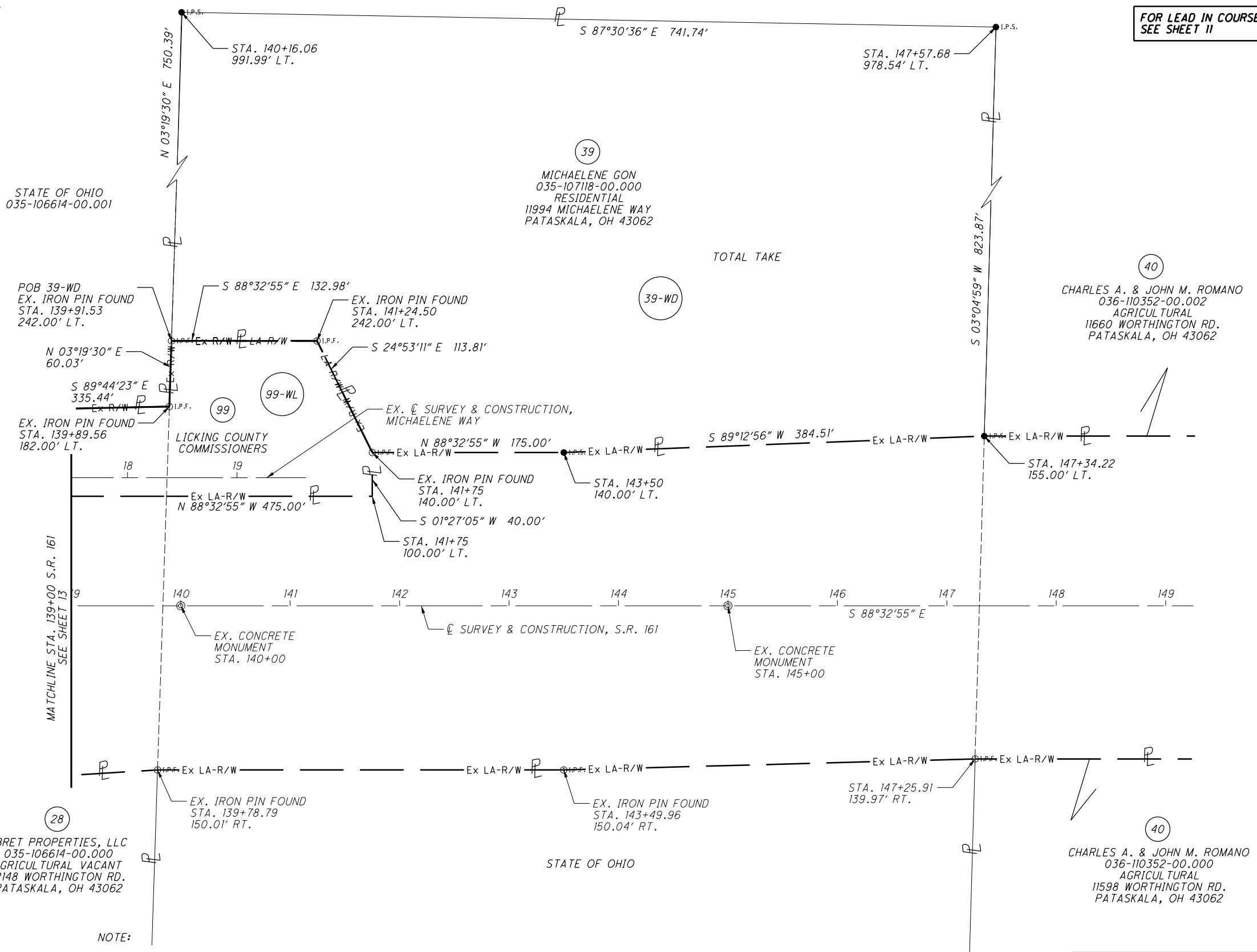
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SECTION 13. T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

FOR LEAD IN COURSES
 SEE SHEET 11



- 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



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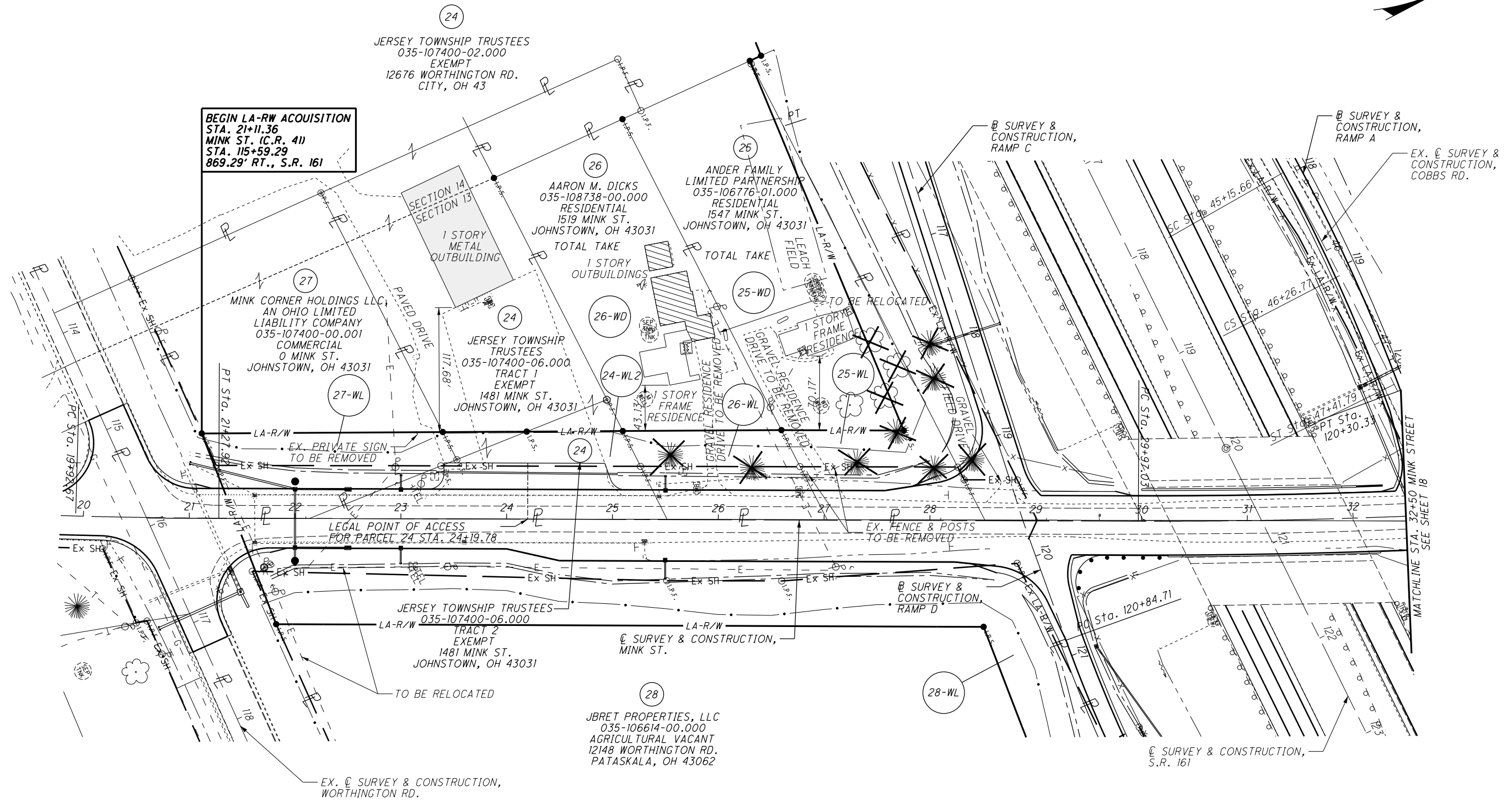
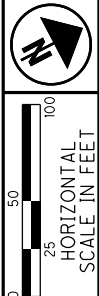
PID NO. **97879**
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY BOUNDARY SHEET
S.R. 161 STA. 139+00 TO STA. 149+00

LIC-161-1.83

REV. BY	DATE	DESCRIPTION
DATE COMPLETED: 12/21/15		

SECTIONS 13 & 14, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY



BEGIN LA-RW ACQUISITION
 STA. 21+11.36
 MINK ST. (C.R. 4)
 STA. 115+59.29
 869.29' RT., S.R. 161

MONUMENT LEGEND

- ▣ EXISTING R/W MONUMENT BOX
- ▣ PROPOSED R/W MONUMENT BOX
- ⊙ EXISTING CONCRETE MONUMENT
- PROPOSED CONCRETE MONUMENT
- ⚡ RAILROAD SPIKE FOUND
- ⚡ RAILROAD SPIKE SET
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- I.R.F. IRON PIN FOUND W/ ID CAP
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DATE COMPLETED: 12/21/15		

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 R/W REVIEWER CP

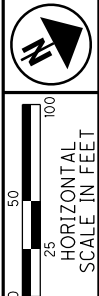
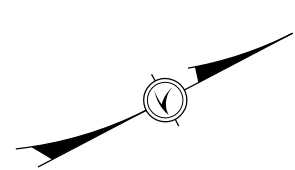
RIGHT OF WAY TOPO SHEET
MINK ST. STA. 20+00 TO STA. 32+50

LIC-161-1.83

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SECTIONS 13 & 14, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

FOR LEAD IN COURSES
 SEE SHEET II

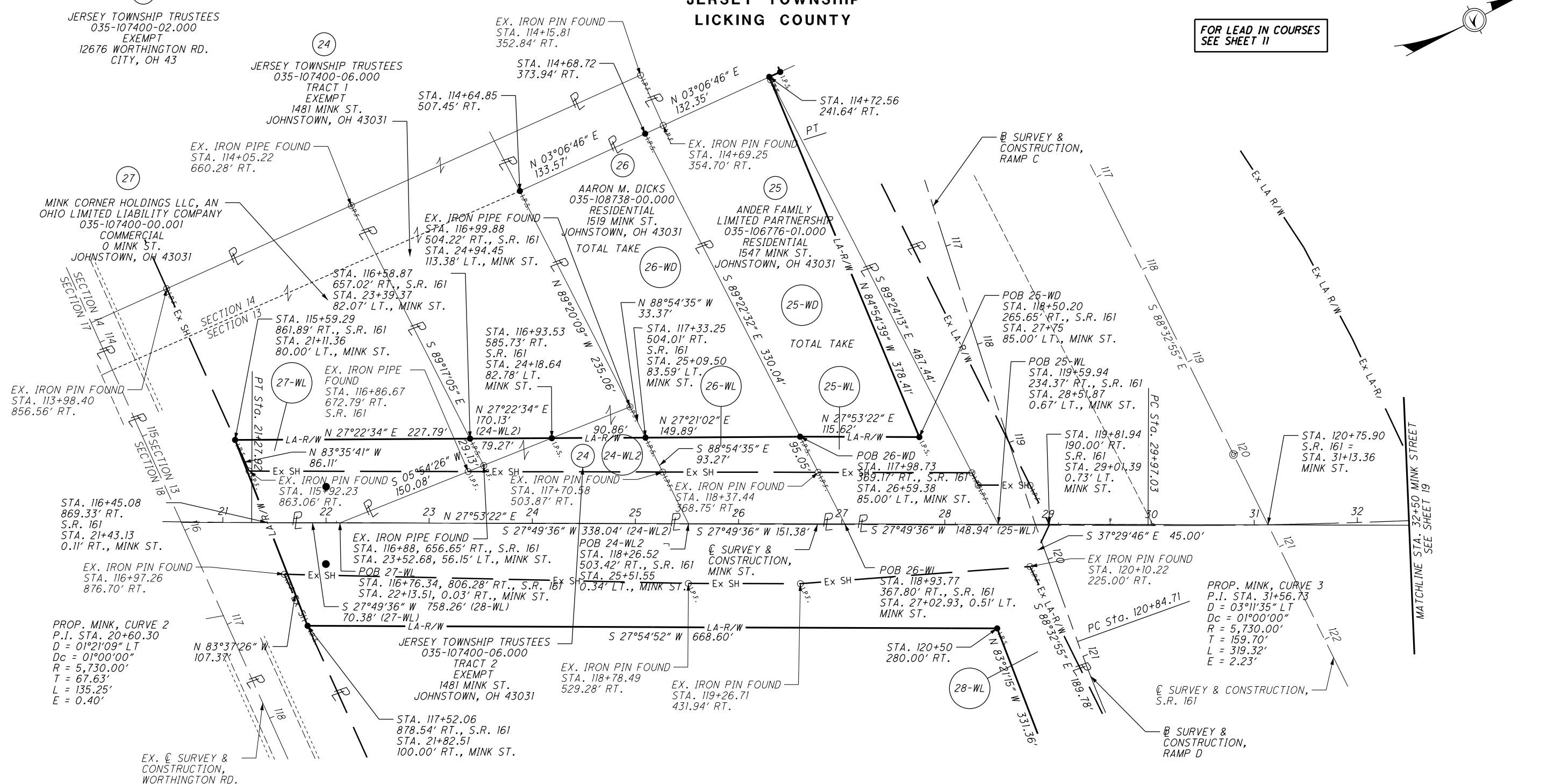


PID NO. 97879
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY BOUNDARY SHEET
 MINK ST. STA. 20+00 TO STA. 32+50

LIC-161-1.83

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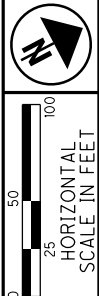
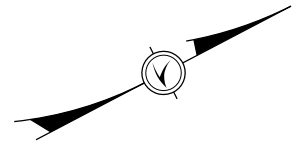
JBRET PROPERTIES, LLC
 035-106614-00.000
 AGRICULTURAL VACANT
 12148 WORTHINGTON RD.
 PATASKALA, OH 43062

MONUMENT LEGEND

- ☐ EXISTING R/W MONUMENT BOX
- ◻ PROPOSED R/W MONUMENT BOX
- ⊙ EXISTING CONCRETE MONUMENT
- PROPOSED CONCRETE MONUMENT
- ⚡ RAILROAD SPIKE FOUND
- ⚡ RAILROAD SPIKE SET
- I.R.F. IRON PIN FOUND
- ⊙ I.R.F. IRON PIN FOUND W/ ID CAP
- I.R.S. IRON PIN SET W/ ID CAP
- ⊙ P.F. IRON PIPE FOUND
- ⊙ P.S. IRON PIPE SET
- ⊙ P.K.F. P.K. NAIL FOUND
- ⊙ P.K.S. P.K. NAIL SET

REV. BY	DATE	DESCRIPTION
CS	12/28/15	TYPHO CORRECTED; NO CHANGE TO RW OR LEGALS
DATE COMPLETED: 12/21/15		

SECTION 13, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

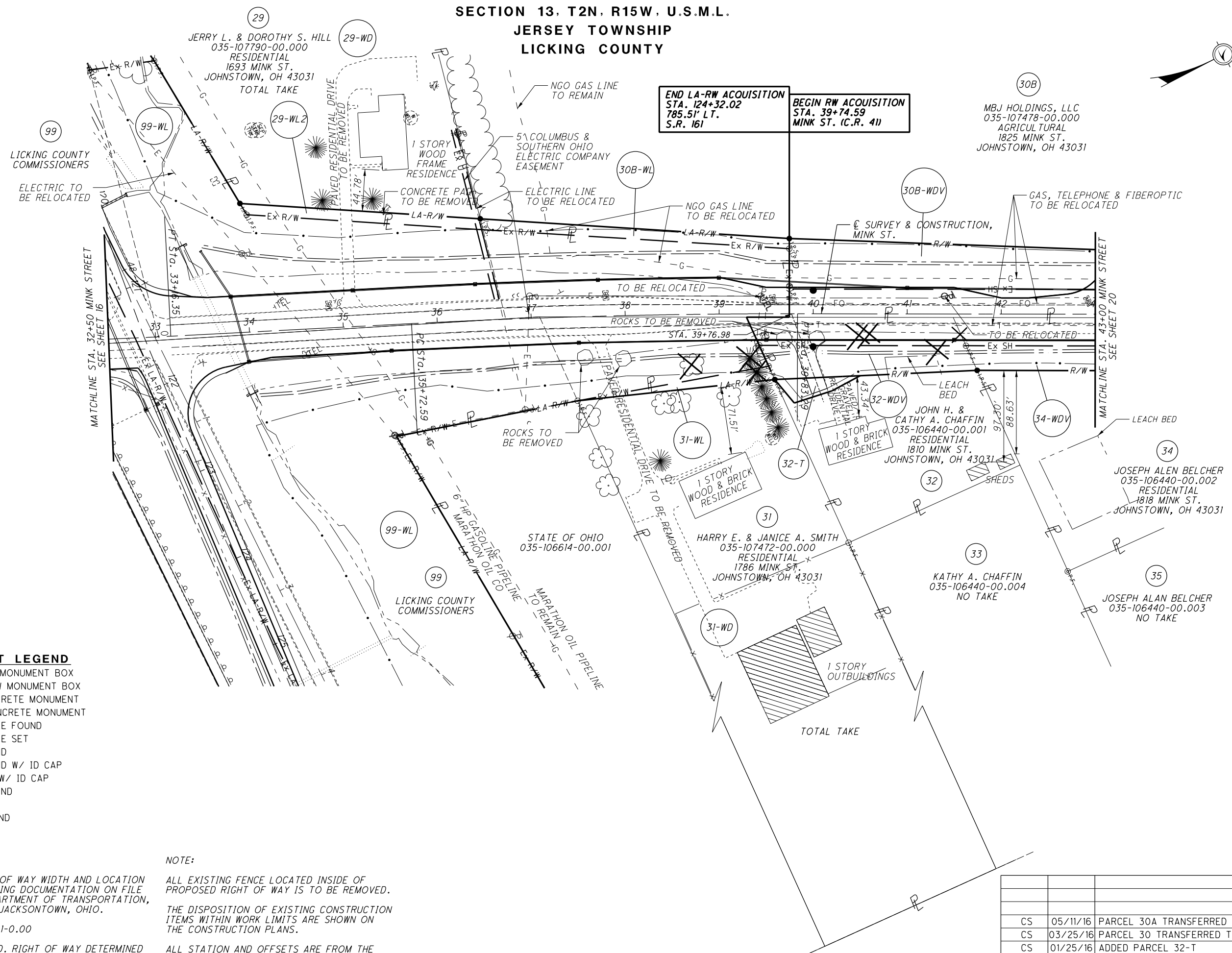


PID NO. **97879**
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY TOPO SHEET
MINK ST. STA. 32+50 TO STA. 43+00

LIC-161-1.83

18 / 21
 333
 336



END LA-RW ACQUISITION
 STA. 124+32.02
 785.51' LT.
 S.R. 161

BEGIN RW ACQUISITION
 STA. 39+74.59
 MINK ST. (C.R. 41)

30B
 M.B. HOLDINGS, LLC
 035-107478-00.000
 AGRICULTURAL
 1825 MINK ST.
 JOHNSTOWN, OH 43031

32-WDV
 JOHN H. & CATHY A. CHAFFIN
 035-106440-00.001
 RESIDENTIAL
 1810 MINK ST.
 JOHNSTOWN, OH 43031

31
 HARRY E. & JANICE A. SMITH
 035-107472-00.000
 RESIDENTIAL
 1786 MINK ST.
 JOHNSTOWN, OH 43031

34
 JOSEPH ALAN BELCHER
 035-106440-00.002
 RESIDENTIAL
 1818 MINK ST.
 JOHNSTOWN, OH 43031

33
 KATHY A. CHAFFIN
 035-106440-00.004
 NO TAKE

35
 JOSEPH ALAN BELCHER
 035-106440-00.003
 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

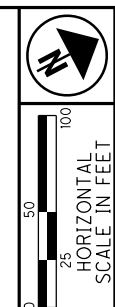
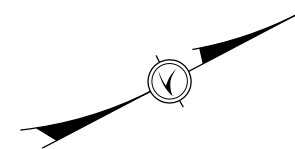
NOTE:
 THE EXISTING RIGHT OF WAY WIDTH AND LOCATION WERE DETERMINED USING DOCUMENTATION ON FILE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5 OFFICE, JACKSONTOWN, OHIO.
 FRA-161-23.20/LIC-161-0.00
 CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

NOTE:
 ALL EXISTING FENCE LOCATED INSIDE OF PROPOSED RIGHT OF WAY IS TO BE REMOVED.
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 ALL STATION AND OFFSETS ARE FROM THE CENTERLINE OF SURVEY AND CONSTRUCTION, S.R. 161 UNLESS OTHERWISE STATED.

REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	01/25/16	ADDED PARCEL 32-T
DATE COMPLETED: 12/21/15		

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SECTION 13, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

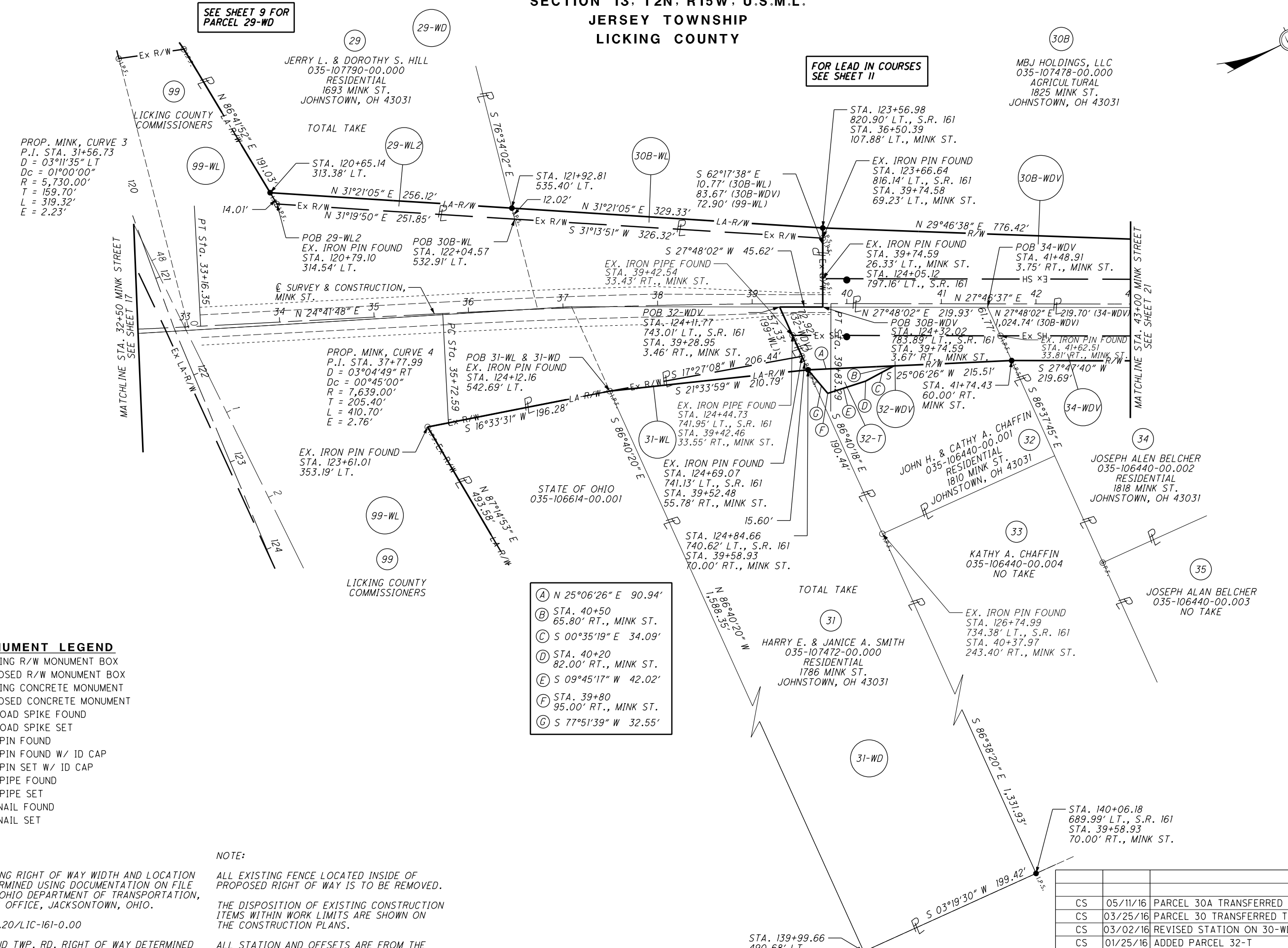


PID NO. **97879**
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY BOUNDARY SHEET
MINK ST. STA. 32+50 TO STA. 43+00

LIC-161-1.83

19 / 21
 334
 336



SEE SHEET 9 FOR
 PARCEL 29-WD

FOR LEAD IN COURSES
 SEE SHEET 11

PROP. MINK, CURVE 3
 P.I. STA. 31+56.73
 D = 03°11'35" LT
 Dc = 01°00'00"
 R = 5,730.00'
 T = 159.70'
 L = 319.32'
 E = 2.23'

PROP. MINK, CURVE 4
 P.I. STA. 37+77.99
 D = 03°04'49" RT
 Dc = 00°45'00"
 R = 7,639.00'
 T = 205.40'
 L = 410.70'
 E = 2.76'

- MONUMENT LEGEND**
- (A) N 25°06'26" E 90.94'
 - (B) STA. 40+50
65.80' RT., MINK ST.
 - (C) S 00°35'19" E 34.09'
 - (D) STA. 40+20
82.00' RT., MINK ST.
 - (E) S 09°45'17" W 42.02'
 - (F) STA. 39+80
95.00' RT., MINK ST.
 - (G) S 77°51'39" W 32.55'

- 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

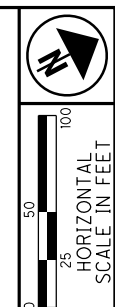
NOTE:
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 FRA-161-23.20/LIC-161-0.00
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REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	03/02/16	REVISED STATION ON 30-WD & 30-WDV
CS	01/25/16	ADDED PARCEL 32-T
DATE COMPLETED:		12/21/15

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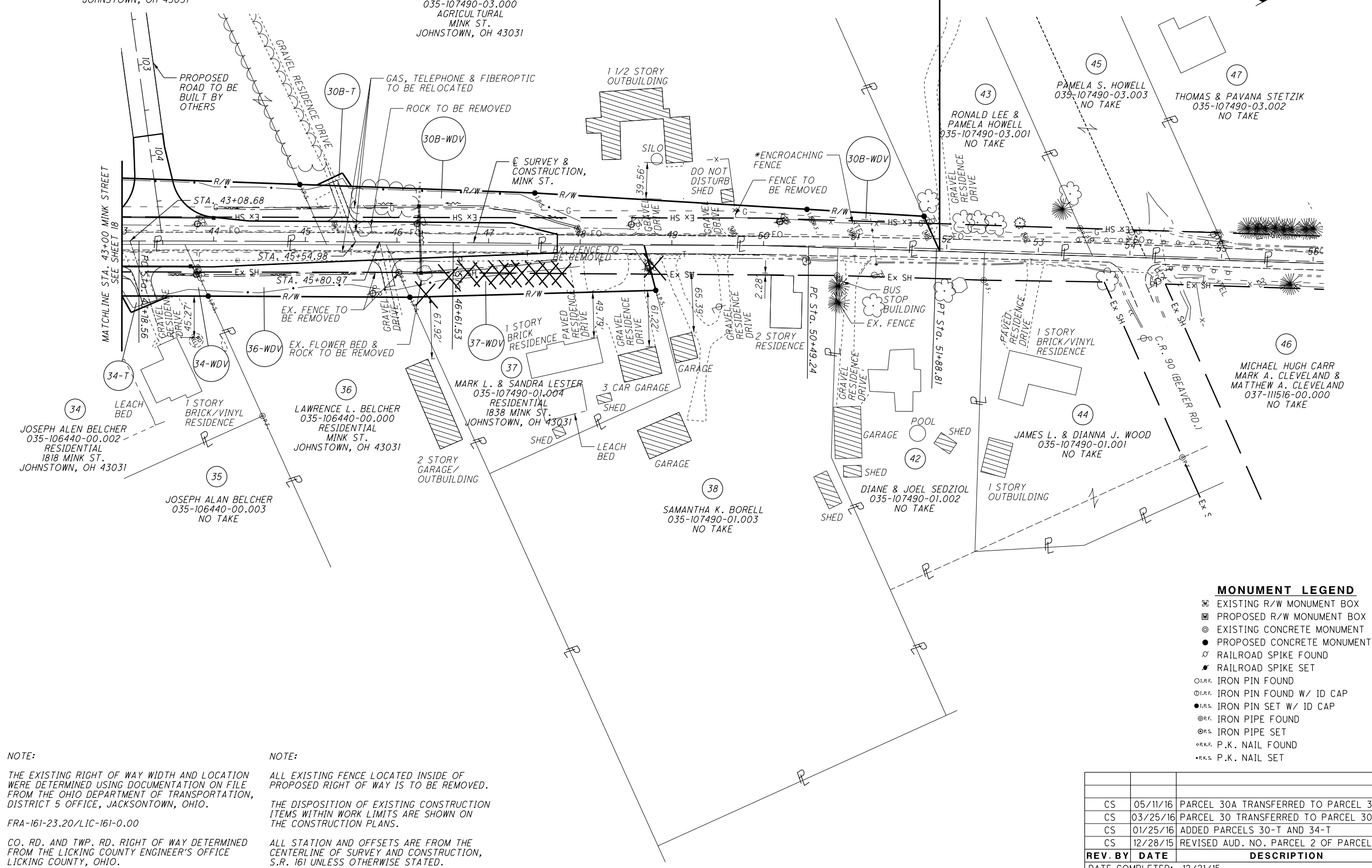
SECTION 13, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY



30B
 MBJ HOLDINGS, LLC
 035-107478-00.000
 AGRICULTURAL
 1825 MINK ST.
 JOHNSTOWN, OH 43031

30B
 MBJ HOLDINGS, LLC
 035-107490-03.000
 AGRICULTURAL
 MINK ST.
 JOHNSTOWN, OH 43031

END RW ACQUISITION
 STA. 51+92.39
 MINK ST. (C.R. 41)



PID NO.
97879

R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY TOPO SHEET
 MINK ST. STA. 43+00 TO STA. 55+50

LIC-161-1.83

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. NAIL FOUND
- ⊙ P.K. NAIL SET

NOTE:
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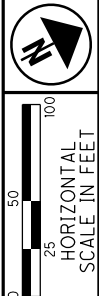
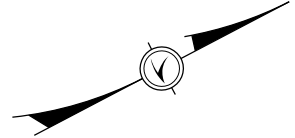
REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/25/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	01/25/16	ADDED PARCELS 30-T AND 34-T
CS	12/28/15	REVISED AUD. NO. PARCEL 2 OF PARCEL 30
DATE COMPLETED:		12/21/15

20/21
 335
 336

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SECTION 13, T2N, R15W, U.S.M.L.
 JERSEY TOWNSHIP
 LICKING COUNTY

FOR LEAD IN COURSES
 SEE SHEET II



PID NO. 97879
 R/W DESIGNER CS
 R/W REVIEWER CP

RIGHT OF WAY BOUNDARY SHEET
 MINK ST. STA. 43+00 TO STA. 55+50

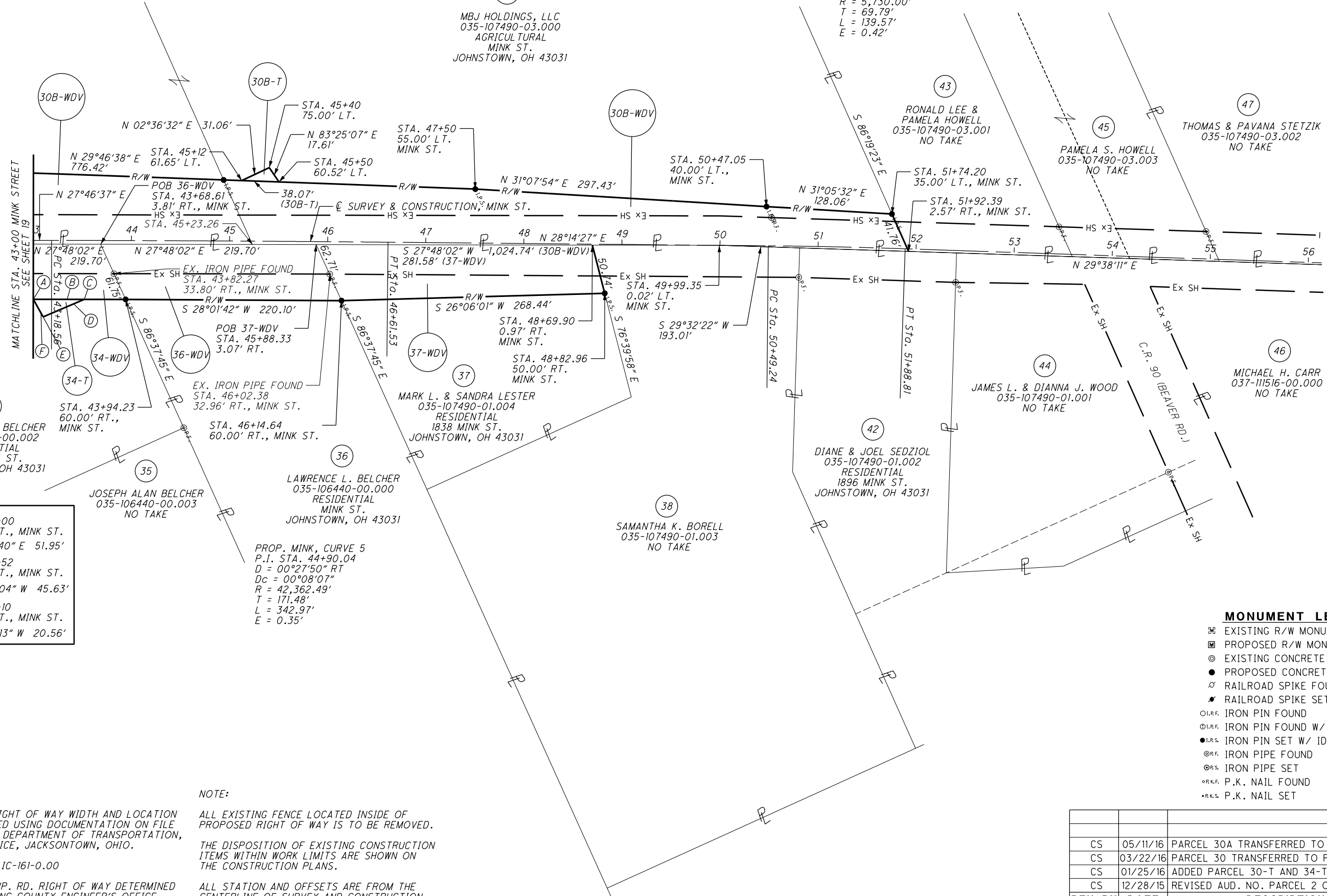
LIC-161-1.83

21 / 21
 336
 336

30B
 MBJ HOLDINGS, LLC
 035-107478-00.000
 AGRICULTURAL
 1825 MINK ST.
 JOHNSTOWN, OH 43031

30B
 MBJ HOLDINGS, LLC
 035-107490-03.000
 AGRICULTURAL
 MINK ST.
 JOHNSTOWN, OH 43031

PROP. MINK, CURVE 6
 P.I. STA. 51+19.03
 D = 01°23'44" RT
 Dc = 01°00'00"
 R = 5,730.00'
 T = 69.79'
 L = 139.57'
 E = 0.42'



- (A) STA. 43+00
60.04' RT., MINK ST.
- (B) N 27°47'40" E 51.95'
- (C) STA. 43+52
60.04' RT., MINK ST.
- (D) S 04°37'04" W 45.63'
- (E) STA. 43+10
78.00' RT., MINK ST.
- (F) S 88°40'13" W 20.56'

PROP. MINK, CURVE 5
 P.I. STA. 44+90.04
 D = 00°27'50" RT
 Dc = 00°08'07"
 R = 42,362.49'
 T = 171.48'
 L = 342.97'
 E = 0.35'

- 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.S. IRON PIPE FOUND
 - I.P.S. IRON PIPE SET
 - P.K.F. P.K. NAIL FOUND
 - P.K.S. P.K. NAIL SET

NOTE:
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 FRA-161-23.20/LIC-161-0.00

CO. RD. AND TWP. RD. RIGHT OF WAY DETERMINED FROM THE LICKING COUNTY ENGINEER'S OFFICE LICKING COUNTY, OHIO.

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REV. BY	DATE	DESCRIPTION
CS	05/11/16	PARCEL 30A TRANSFERRED TO PARCEL 30B
CS	03/22/16	PARCEL 30 TRANSFERRED TO PARCEL 30A
CS	01/25/16	ADDED PARCEL 30-T AND 34-T
CS	12/28/15	REVISED AUD. NO. PARCEL 2 OF PARCEL 30
DATE COMPLETED:		12/21/15

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PROJECT DESCRIPTION

THE PROJECT INVOLVES THE CONSTRUCTION OF A NEW INTERCHANGE FOR SR 161 AT MINK STREET IN LICKING COUNTY, OHIO. ROADWAY WIDENING WILL BE PERFORMED ALONG MINK STREET.

HISTORIC RECORDS

THIRTY ONE (31) BORINGS FROM THE FRA/LIC-161-23.20/0.00 PROJECT ARE PRESENTED ON THIS SOIL PROFILE SHEETS.

GEOLOGY

ACCORDING TO THE OHIO DEPARTMENT OF NATURAL RESOURCES, PHYSIOGRAPHIC REGIONS OF OHIO, THE SITE LIES ON THE GALION GLACIATED LOW PLATEAU. ACCORDING TO BEDROCK GEOLOGY MAP OF OHIO (2006), BEDROCK BELOW THE SITE CONSISTS PRIMARILY OF MISSISSIPPIAN AND DEVONIAN AGE SEDIMENTARY ROCKS MAINLY SANDSTONE, SHALE, SILTSTONE.

ACCORDING TO WEB BASED MAPPING FROM UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, THE PROJECT AREA CONTAINS PRIMARILY BENNINGTON SILT LOAM, 0 TO 2 PERCENT SLOPES (BEA), BENNINGTON SILT LOAM, 2 TO 6 PERCENT SLOPES (BEB), CENTERBURG SILT LOAM, 6 TO 12 PERCENT SLOPES, ERODED (CEC2), AND OTHER SOIL TYPES.

RECONNAISSANCE

ON AUGUST 18, 2015, A RECONNAISSANCE VISIT WAS MADE. IN GENERAL, THE PAVEMENT WITHIN THE PROJECT LIMITS EXHIBITED SOME WEAR INCLUDING RAVELING AND LONGITUDINAL CRACKING.

SOME EROSION WAS NOTED ADJACENT TO THE GUARDRAIL POSTS IN THE APPROACH EMBANKMENTS. NO MAJOR SIGNS OF SLOPE INSTABILITY WERE NOTED ALONG THE EXISTING APPROACH EMBANKMENTS OR ROADSIDE DITCHES.

THE MINK STREET GRASS SHOULDER AREAS BELOW THE EXISTING BRIDGES WERE VERY SOFT, WITH DEEP RUTS AND STANDING WATER.

THE SURROUNDING AREA IS DESCRIBED PRIMARILY AS RESIDENTIAL OR AGRICULTURAL WITH SOME PASTURE AND WOODED AREAS.

SUBSURFACE EXPLORATION

A TOTAL OF TWENTY (29) BORINGS, DESIGNATED AS B-001-0-15 THROUGH B-029-0-15, WERE DRILLED FOR THIS PROJECT AND EXTENDED TO DEPTHS RANGING FROM 7.0 TO 17.5 FEET. THE BORINGS WERE PERFORMED WITH TRUCK AND TRACK MOUNTED DRILL RIGS UTILIZING HOLLOW STEM AUGERS (HSA) BETWEEN SEPTEMBER 18 THROUGH OCTOBER 2, 2015. STANDARD PENETRATION TESTS WERE CONDUCTED USING 140-POUND AUTOMATIC HAMMERS FALLING 30 INCHES TO DRIVE A 2-INCH O.D. SPLIT BARREL SAMPLER. THE ENERGY TRANSFER RATIOS ASSOCIATED WITH THE AUTOMATIC SPT HAMMERS RANGED FROM 81.2 TO 84.4 PERCENT. THE HAMMERS WERE CALIBRATED ON SEPTEMBER 24 AND OCTOBER 29, 2013.

EXPLORATION FINDINGS

THE PROJECT BORINGS WERE DRILLED THROUGH THE ASPHALT OR THROUGH THE TOPSOIL. BELOW THE PAVEMENT OR TOPSOIL, THE BORINGS ENCOUNTERED BOTH GRANULAR AND COHESIVE SOILS TILL THE DRILLED DEPTHS. THE GRANULAR SOILS WERE DESCRIBED AS GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-b), GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT (A-2-4), OR GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT AND CLAY (A-2-6). THE COHESIVE SOILS WERE DESCRIBED AS SANDY SILT (A-4a), SILT (A-4b), SILT AND CLAY (A-6a), SILTY CLAY (A-6b) OR CLAY (A-7-6). NO BEDROCK WAS ENCOUNTERED WITHIN THE DRILLED DEPTHS.

GROUNDWATER WAS ENCOUNTERED DURING DRILLING IN BORINGS B-016-0-15 AND B-027-0-15 AT DEPTHS RANGING FROM 5.5 TO 6.5 FEET BELOW EXISTING GRADE. NO GROUNDWATER WAS ENCOUNTERED IN THE REMAINING PROJECT BORINGS.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2015.

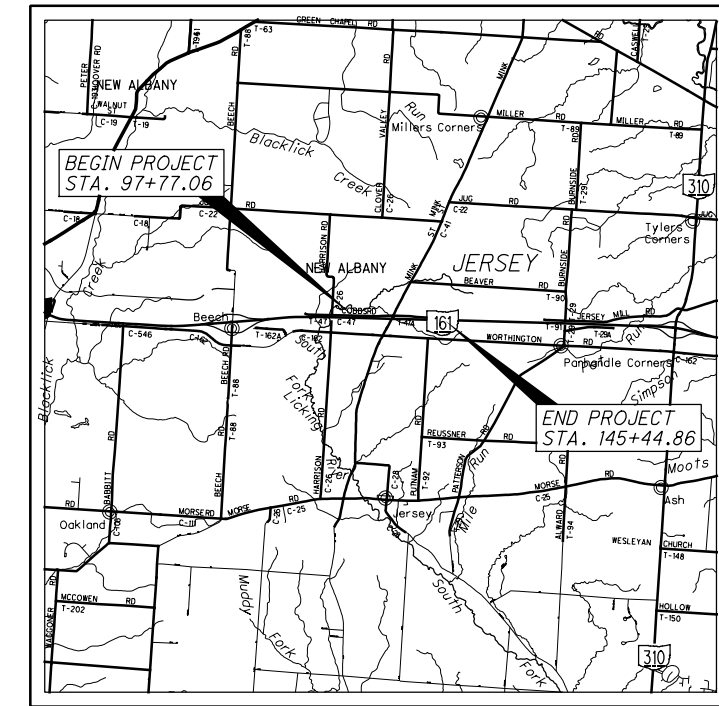
AVAILABLE INFORMATION

ALL AVAILABLE INFORMATION OF SOIL INFORMATION THAT CAN BE CONVINIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN REPORTED. ADDITIONAL SUBSURFACE EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	0	1
GRAVEL AND/OR STONE FRAGMENTS W/SAND AND SILT	A-2-4	1	2
GRAVEL AND/OR STONE FRAGMENTS W/SAND, SILT & CLAY	A-2-6	1	0
SANDY SILT	A-4a	16	13
SILT	A-4b	1	1
SILT AND CLAY	A-6a	38	31
SILTY CLAY	A-6b	19	13
CLAY	A-7-6	12	4
TOTAL	TOTAL	88	65
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
EXPLORATION LOCATION - PLAN VIEW			
HISTORIC BORING LOCATION - PLAN VIEW - FRA/LIC-161-23.20/0.00, 2003			
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.		
W	INDICATES FREE WATER ELEVATION.		
	INDICATES STATIC WATER ELEVATION.		
N₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.		
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES Y= NUMBER OF BLOWS FOR SECOND 6 INCHES Z= NUMBER OF BLOWS FOR THIRD 6 INCHES		
	INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.		
*	INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.		
SS	INDICATES A SPLIT-SPOON SAMPLE.		
NP	INDICATES A NON-PLASTIC SAMPLE.		
HISTORIC BORING DESCRIPTIONS	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	-	2
GRAVEL AND/OR STONE FRAGMENTS W/SAND AND SILT	A-2-4	-	3
SANDY SILT	A-4a	19	72
SILT	A-4b	2	5
SILT AND CLAY	A-6a	12	11
SILTY CLAY	A-6b	5	6
ELASTIC CLAY	A-7-5	1	-
CLAY	A-7-6	12	7
TOTAL	TOTAL	51	106

RECON. - JG 08/18/2015
DRILLING - CTL ENGINEERING INC 9/18-10/2/2015
DRAWN - SM 5/25/2016
REVIEWED - JG 5/26/2016

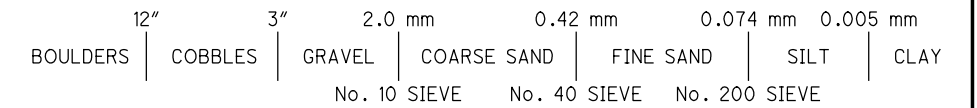


LOCATION MAP

SCALE IN MILES



PARTICLE SIZE DEFINITIONS



INDEX OF SHEETS

LOCATION FROM STA.	TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL EMB. MAX.
S.R. 161						
96+00	108+50	7	7	-	- FT	- FT
108+50	121+00	8	8	-	- FT	- FT
121+00	133+50	9	9	-	- FT	- FT
133+50	146+00	10	10	-	- FT	- FT
RAMP A						
112+57.49	121+21.96	11	11	-	- FT	3 FT
RAMP B						
121+73.23	130+25.43	12	12	-	4.0 FT	7.0 FT
RAMP C						
112+71.67	119+56.81	13	13	-	<1.0 FT	15.0 FT
RAMP D						
119+94.63	130+12.32	14	14	-	1.5 FT	12 FT
MINK STREET						
20+00	32+50	15	16	-	- FT	- FT
32+50	45+00	17	17	-	- FT	- FT
45+00	47+75	18	18	-	- FT	- FT
COBB ROAD						
35+00	43+98.40	19	19	-	<1.0 FT	9.0 FT

CTL ENGINEERING, INC.
 2860 FISHER ROAD
 COLUMBUS, OHIO 43204
 PHONE: (614) 276-8123 FAX: (614) 276-6377

PID NO.
97879

SOIL PROFILE

LIC-161-1.83

1/30



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SUMMARY OF SOIL TEST DATA
SR 161

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	GR	CS	FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-001-0-15 STA. 97+63, 82' LT. LATITUDE = 40.0811457 LONGITUDE = -82.7301836	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00	SS-1 SS-2 SS-3 SS-4	14 18 19 20	94 100 100 100	2.5 4 2.5 4.5	2 4 11 10	3 7 17 17	10 10 17 17	64 SAME AS SS-1 35 SAME AS SS-3	21 33 30 26	32 38 29 27	21 19 16 16	11 13 13 11	21 21 15 14	A-6a (8) A-6a (VISUAL) A-6a (7) A-6a (VISUAL)	<100
B-002-0-15 STA. 101+63, 82' LT. LATITUDE = 40.0811209 LONGITUDE = -82.7287534	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	18 25 45 25 25	94 100 100 100 83	4.5 4.5 4 4.5 4	9 6 11 11 4	7 7 7 11 4	14 17 18 18 15	37 33 33 34 34	33 38 35 26 26	33 38 27 27 36	17 19 19 16 19	16 19 11 11 17	12 15 5 11 10	A-6b (9) A-6b (11) A-6a (VISUAL) A-6a (5) A-6a (VISUAL)	<100
B-003-0-15 STA. 105+48, 82' LT. LATITUDE = 40.0810973 LONGITUDE = -82.727378	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	18 30 36 27 42	100 100 100 100 67	2.5 4.5 4.5 4.5 4.5	4 12 7 7 7	6 12 5 5 5	15 18 19 18 15	38 36 SAME AS SS-4 SAME AS SS-4 SAME AS SS-4	37 22 35 35 35	36 26 38 27 26	19 16 19 19 19	17 10 8 7 12	10 8 7 14 12	A-6b (11) A-4a (5) A-4a (4) A-6b (10) A-6b (VISUAL)	420
B-011-0-15 STA. 105+74, 72' RT. LATITUDE = 40.08067443 LONGITUDE = -82.7272974	01.50-02.50 02.50-03.00 03.00-04.50 04.50-06.00 06.00-07.50 08.50-10.00	SS-1A SS-1B SS-2 SS-3 SS-4 SS-5	19 19 14 15 24	100 100 100 100 100	3.5 4 3.5 4 4	- 12 4 - -	- 9 11 6 -	- 16 17 15 17	GRAY SILT AND CLAY 32 38 42 40	31 27 31 33 21	26 24 38 31	16 16 18 17	10 8 20 14	12 12 17 16 14	A-6a (VISUAL) A-4a (6) A-4a (4) A-6b (12) A-6b (VISUAL)	960
B-012-0-15 STA. 109+13, 72' RT. LATITUDE = 40.0806525 LONGITUDE = -82.7260855	01.50-02.50 02.50-03.00 03.00-04.50 04.50-06.00 06.00-07.50 08.50-10.00	SS-1A SS-1B SS-2 SS-3 SS-4 SS-5	15 19 26 15 15	100 100 100 100 100	4.5 3.5 3.5 4.5 4.5	- 19 7 - -	- 9 7 9 -	- 14 16 17 17	GRAY SILT AND CLAY 31 39 40 40	27 28 31 28	28 37 37 31	16 19 19 17	12 18 18 14	11 14 17 16 13	A-6a (VISUAL) A-6a (5) A-6b (10) A-6a (7) A-6a (VISUAL)	500
B-004-0-15 STA. 109+51, 86' LT. LATITUDE = 40.0810828 LONGITUDE = -82.7259359	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	8 10 20 38 24	44 67 67 100 67	1.75 - 2.25 2.25 2.25	17 5 10 8 -	9 5 8 3 -	17 15 17 9	27 35 37 28	30 40 28 25	26 36 25 35	15 19 15 23	11 17 10 12	13 22 11 12	A-6a (5) A-6b (11) A-4a (6) A-4a (VISUAL) A-6a (7)	<100
B-009-0-15 STA. 131+75, 94' LT. LATITUDE = 40.0809666 LONGITUDE = -82.71799	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.00-09.50	SS-1 SS-2 SS-3 SS-4 SS-5	14 16 19 11 16	100 100 100 100 100	4.5 4.5 4 3 3.5	4 16 - 9 -	7 5 - 3 -	15 13 - 9	39 38 SAME AS SS-2 47	35 28 SS-2 32	32 36 35 35	17 20 23 23	15 16 12 12	12 18 19 23 14	A-6a (10) A-6b (9) A-6b (VISUAL) A-6a (9) A-6a (VISUAL)	<100
B-010-0-15 STA. 135+76, 83' LT. LATITUDE = 40.0809113 LONGITUDE = -82.716559	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	16 26 29 14 20	100 100 100 100 100	4 4.5 3 4 4.5	4 15 - - 8	5 10 8 7	14 16 - 16	46 34 SAME AS SS-2 49	31 25 SS-2 20	42 27 25 25	21 17 9 16	21 10 15 9	21 12 14 13	A-7-6 (13) A-4a (5) A-4a (VISUAL) A-4a (VISUAL) A-4a (7)	<100
B-017-0-15 STA. 131+81, 79' RT. LATITUDE = 40.080492 LONGITUDE = -82.717984	01.00-02.00 02.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1A SS-1B SS-2 SS-3 SS-4 SS-5	14 16 20 14 16	78 100 100 100 100	- 4.5 4 3 3.5 4	- - 5 6 5 -	- 8 7 7 -	- 14 18 14 -	BROWN GRAVEL AND/OR STONE FRAGMENTS WITH SAND 43 40 31 43	30 31 29 43	36 31 31 37	22 17 14 19	14 14 18 19	11 12 16 14 19	A-1-b (VISUAL) A-6a (VISUAL) A-6a (9) A-6a (8) A-6b (11) A-6b (VISUAL)	<100
B-018-0-15 STA. 135+77, 78' RT. LATITUDE = 40.0804699 LONGITUDE = -82.7165689	01.00-02.00 02.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1A SS-1B SS-2 SS-3 SS-4 SS-5	12 22 34 37 20	100 100 89 100 100	4.5 4.5 4.5 4.5 4.5	8 - 10 - 7	9 7 7 7	15 18 15 15	39 SAME AS SS-2 38 43	29 SS-2 SS-2 28	36 36 32 32	22 13 16 17	14 16 13 15	23 17 13 13	A-6a (8) A-6b (VISUAL) A-6b (8) A-6b (VISUAL) A-6a (9) A-6a (VISUAL)	<100
B-019-0-15 STA. 139+81, 78' RT. LATITUDE = 40.080442 LONGITUDE = -82.7151276	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	30 37 28 28 14	100 100 100 100 100	4.5 4.5 4.5 4 4	8 - 10 - 11	9 9 9 8	18 16 16 19	37 SAME AS SS-1 35 42	28 SS-1 30 SS-3	28 25 29 29	16 16 9 16	12 9 8 13	15 13 8 12 12	A-6a (7) A-6a (VISUAL) A-4a (6) A-4a (VISUAL) A-6a (7)	1,240
B-020-0-15 STA. 143+63, 72' RT. LATITUDE = 40.0804348 LONGITUDE = -82.71376	01.50-02.50 02.50-03.00 03.00-04.50 04.50-06.00 06.00-07.50 08.50-10.00	SS-1A SS-1B SS-2 SS-3 SS-4 SS-5	42 30 20 20 20 12	100 100 100 100 100	4.5 4 4.5 3.5 2.5 3	- 15 - 7 - 18	- 11 7 9 -	- 17 13 17	SAME AS SS-1B SAME AS SS-1B 36 37	SS-1B SS-1B 37 25	33 33 25 26 26	21 21 15 13 13	12 12 10 10 10	11 13 10 14 13 13	A-6a (VISUAL) A-6a (5) A-6a (VISUAL) A-4a (8) A-4a (VISUAL) A-4a (4)	200

SUMMARY OF SOIL TEST DATA
RAMP A

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	GR	CS	FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-005-0-15 STA. 113+47, 108' LT. LATITUDE = 40.0811195 LONGITUDE = -82.7245213	01.00-02.50 02.50-04.00 04.00-05.50 05.50-07.00 08.50-10.00	SS-1 SS-2 SS-3 SS-4 SS-5	14 25 34 24 48	44 72 100 94 100	1.75 2 2 2 2.25	5 17 - 9 -	4 8 - 9 -	13 15 - 18	38 28 SAME AS SS-2 37	40 32 SS-2 27	33 26 26 26	16 14 15 15	17 12 11 10	20 10 13 14 13	A-6b (11) A-6a (6) A-6a (VISUAL) A-6a (6) A-6a (VISUAL)	<100

SUMMARY OF SOIL TEST DATA

RAMP A (CONT.)

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-006-0-15	01.00-02.50	SS-1	20	100	-	13	6	17	36	28	30	15	15	15	A-6a (8) *	720
STA. 117+38, 166' LT.	02.50-04.00	SS-2	23	67	-	-	-	-	SAME AS SS-1			12	12	14	A-6a (VISUAL)	
LATITUDE = 40.081254	04.00-05.50	SS-3	11	67	1.75	7	9	19	39	26	25	13	12	14	A-6a (7)	
LONGITUDE = -82.7231201	05.50-07.00	SS-4	32	100	1.5	34	12	14	28	12	24	16	8	19	A-4a (1)	
	08.50-10.00	SS-5	18	100	2	-	-	-	BROWN SILT AND CLAY			12	12	12	A-6a (VISUAL)	

SUMMARY OF SOIL TEST DATA

RAMP B

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-007-0-15	01.00-02.50	SS-1	26	100	2	15	5	13	37	30	28	15	13	14	A-6a (8)	627
STA. 123+99, 153' LT.	02.50-04.00	SS-2	43	56	-	17	6	15	35	27	31	15	16	9	A-6b (8)	
LATITUDE = 40.0811772	04.00-05.50	SS-3	27	56	2	-	-	-	SAME AS SS-2			9	9	9	A-6b (VISUAL) *	
LONGITUDE = -82.7207572	05.50-07.00	SS-4	35	0	-	-	-	-	SAME AS SS-2			-	-	-	A-6b (VISUAL) *	
	08.50-10.00	SS-5	26	100	-	12	6	17	37	28	31	16	15	19	A-6a (8) *	
B-008-0-15	01.00-02.50	SS-1	11	100	4	8	7	16	42	27	30	16	14	17	A-6a (8)	
STA. 128+34, 114' LT.	02.50-04.00	SS-2	16	100	4	-	-	-	SAME AS SS-1			20	20	20	A-6a (VISUAL)	
LATITUDE = 40.0810422	04.00-05.50	SS-3	14	100	4	2	4	13	43	38	40	19	21	17	A-6b (12)	
LONGITUDE = -82.7192089	05.50-07.00	SS-4	22	67	2.5	-	-	-	SAME AS SS-3			23	23	23	A-6b (VISUAL)	
	08.50-10.00	SS-5	23	100	4.5	-	-	-	SAME AS SS-3			15	15	15	A-6b (VISUAL)	

SUMMARY OF SOIL TEST DATA

RAMP C

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-013-0-15	01.00-02.50	SS-1	19	56	4	4	4	16	46	30	40	22	18	19	A-6b (11)	
STA. 113+02, 107' RT.	02.50-04.00	SS-2	22	100	4	-	-	-	BROWN CLAY			22	22	22	A-7-6 (13)	
LATITUDE = 40.0805321	04.00-05.50	SS-3	18	100	3.5	6	4	18	30	42	39	19	20	18	A-6b (11)	
LONGITUDE = -82.7246989	05.50-07.00	SS-4	30	100	4.5	-	-	-	SAME AS SS-3			13	13	13	A-6b (VISUAL)	
	08.50-10.00	SS-5	28	100	4.5	16	9	16	18	41	27	16	11	14	A-6a (5)	
B-014-0-15	11.00-12.50	SS-6	20	100	4.5	-	-	-	SAME AS SS-5			16	16	16	A-6a (VISUAL)	
STA. 117+03, 183' RT.	01.00-02.50	SS-1	15	67	4	13	8	16	38	25	28	15	13	12	A-6a (7)	<100
LATITUDE = 40.0802989	02.50-04.00	SS-2	23	67	4	10	8	17	34	31	27	15	12	13	A-6a (7)	
LONGITUDE = -82.723274	04.00-05.50	SS-3	23	100	4.5	-	-	-	SAME AS SS-3			14	14	14	A-6a (VISUAL)	
	05.50-07.00	SS-4	30	100	4	14	9	17	18	42	24	15	9	14	A-4a (5)	
	08.50-10.00	SS-5	30	67	4	-	-	-	SAME AS SS-4			14	14	14	A-4a (VISUAL)	

SUMMARY OF SOIL TEST DATA

RAMP D

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-015-0-15	01.00-02.50	SS-1	15	78	4.5	14	7	17	35	27	41	19	22	15	A-7-6 (10)	<100
STA. 123+99, 182' RT.	02.50-04.00	SS-2	16	78	4.5	12	6	16	41	25	31	16	15	13	A-6a (8)	
LATITUDE = 40.0802564	04.00-05.50	SS-3	26	33	4.5	-	-	-	SAME AS SS-2			10	10	10	A-6a (VISUAL)	
LONGITUDE = -82.7207859	05.50-07.00	SS-4	31	83	4	10	9	17	43	21	25	15	10	15	A-4a (6)	
	08.50-10.00	SS-5	22	100	4	-	-	-	SAME AS SS-4			15	15	15	A-4a (VISUAL)	
B-016-0-15	01.00-02.50	SS-1	9	67	3	4	5	18	43	30	50	20	30	32	A-7-6 (18)	
STA. 127+87, 126' RT.	02.50-04.00	SS-2	11	100	4	8	9	20	43	20	30	14	16	15	A-6b (8)	
LATITUDE = 40.0803865	04.00-05.50	SS-3	18	100	3	-	-	-	SAME AS SS-3			15	15	15	A-4b (VISUAL)	
LONGITUDE = -82.7193966	05.50-07.00	SS-4	22	100	3	5	5	27	60	3	17	15	2	17	A-4b (6)	
	08.50-10.00	SS-5	16	67	-	32	10	23	25	10	19	14	5	10	A-2-4 (0)	
	11.00-12.50	SS-6	15	78	-	-	-	-	SAME AS SS-5			10	10	10	A-2-4 (VISUAL)	
	13.50-14.16	SS-7	-	75	-	-	-	-	SAME AS SS-5			4	4	4	A-2-4 (VISUAL)	
	16.00-17.50	SS-8	43	100	-	31	8	14	31	16	27	14	13	7	A-6a (3)	

SUMMARY OF SOIL TEST DATA

MINK STREET

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N ₆₀	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO ₄
B-021-0-15	01.50-03.00	SS-1	6	56	-	9	6	9	34	42	50	26	24	33	A-7-6 (16) *	<100
STA. 20+87, 28' LT.	03.00-04.50	SS-2	10	44	1.75	2	1	5	48	44	56	25	31	31	A-7-6 (19)	
LATITUDE = 40.0783177	04.50-06.00	SS-3	11	67	1.5	4	2	8	28	58	49	23	26	26	A-7-6 (16)	
LONGITUDE = -82.7237169	06.00-07.50	SS-4	11	56	1.5	-	-	-	SAME AS SS-3			25	25	25	A-7-6 (VISUAL)	
	09.00-10.50	SS-5	15	100	2	-	-	-	SAME AS SS-3			15	15	15	A-7-6 (VISUAL)	
B-022-0-15	01.00-02.50	SS-1	11	67	-	2	1	6	41	50	56	24	32	28	A-7-6 (19) *	<100
STA. 24+96, 18' RT.	02.50-04.00	SS-2	15	100	2	14	6	13	39	28	31	16	15	13	A-6a (8) *	
LATITUDE = 40.0792533	04.00-05.50	SS-3	15	94	1.75	14	10	14	40	22	24	15	9	9	A-4a (5)	
LONGITUDE = -82.722892	05.50-07.00	SS-4	17	100	2	-	-	-	SAME AS SS-4			14	14	14	A-4a (VISUAL)	
	08.50-10.00	SS-5	32	67	2.25	-	-	-	BROWN SILT AND CLAY			13	13	13	A-6a (VISUAL)	

SUMMARY OF SOIL TEST DATA
MINK STREET (CONT.)

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-023-0-15	01.00-02.50	SS-1	44	56	-	48	6	8	23	15	33	18	15	7	A-6a (2) *	<100
STA. 29+10, 36' RT.	02.50-04.00	SS-2	21	100	1.75	-	-	-	SAME AS SS-3					27	A-6a (VISUAL) *	
LATITUDE = 40.0802344	04.00-05.50	SS-3	10	33	1.25	6	6	16	32	40	30	16	14	23	A-6a (9)	
LONGITUDE = -82.722147	05.50-07.00	SS-4	14	100	1.75	7	8	15	37	33	29	16	13	16	A-6a (8)	
	08.50-10.00	SS-5	23	100	-	-	-	-	SAME AS SS-3					13	A-6a (VISUAL)	
B-024-0-15	01.00-02.50	SS-1	14	44	1.75	8	7	19	36	30	34	15	19	18	A-6b (10) *	<100
STA. 33+07, 17' LT.	02.50-04.00	SS-2	16	67	2	4	4	19	42	28	35	16	19	19	A-6b (11)	
LATITUDE = 40.081275	04.00-05.50	SS-3	23	67	2.25	7	7	17	46	23	24	14	10	10	A-4a (7)	
LONGITUDE = -82.721681	05.50-07.00	SS-4	39	100	-	-	-	-	SAME AS SS-3					9	A-4a (VISUAL)	
	08.50-10.00	SS-5	18	100	1.5	-	-	-	SAME AS SS-3					19	A-4a (VISUAL)	
B-025-0-15	01.00-02.50	SS-1	15	44	-	54	6	10	17	13	31	19	12	7	A-2-6 (10) *	<100
STA. 37+06, 16' RT.	02.50-04.00	SS-2	16	56	-	4	4	10	52	30	41	21	20	23	A-7-6 (12) *	
LATITUDE = 40.0812746	04.00-05.50	SS-3	27	56	4.5	-	-	-	SAME AS SS-2					18	A-7-6 (VISUAL) *	
LONGITUDE = -82.7216808	05.50-07.00	SS-4	19	0	-	-	-	-	SAME AS SS-2					19	A-7-6 (VISUAL)	
	08.50-10.00	SS-5	22	100	4.5	13	8	16	40	23	26	15	11	13	A-6a (6)	
B-026-0-15	01.50-03.00	SS-1	15	100	4	6	3	13	37	41	43	18	25	21	A-7-6 (15) *	<100
STA. 40+95, 5' LT.	03.00-04.50	SS-2	20	100	4.5	11	7	15	42	25	29	17	12	14	A-6a (7) *	
LATITUDE = 40.0832091	04.50-06.00	SS-3	19	100	4	-	-	-	SAME AS SS-2					13	A-6a (VISUAL) *	
LONGITUDE = -82.7204188	06.00-07.50	SS-4	25	100	4.5	13	6	11	39	31	30	15	15	15	A-6a (9)	
	08.50-10.00	SS-5	16	100	4.5	-	-	-	SAME AS SS-4					12	A-6a (VISUAL)	
B-027-0-15	01.50-03.00	SS-1	12	89	4	2	2	18	45	33	47	19	28	17	A-7-6 (17) *	210
STA. 44+91, 6' RT.	03.00-04.50	SS-2	11	0	-	-	-	-	SAME AS SS-3					22	A-6a (VISUAL) *	
LATITUDE = 40.0841583	04.50-06.00	SS-3	12	100	-	0	1	17	64	18	29	17	12	27	A-6a (9)	
LONGITUDE = -82.7197235	06.00-07.50	SS-4	15	100	4.5	13	8	17	34	28	26	16	10	18	A-4a (5)	
	08.50-10.00	SS-5	19	100	4	-	-	-	SAME AS SS-4					14	A-4a (VISUAL)	
B-028-0-15	01.50-03.00	SS-1	14	100	4	3	6	18	40	33	42	20	22	16	A-7-6 (13)	<100
STA. 49+11, 7' LT.	03.00-04.50	SS-2	16	100	2.5	5	6	18	35	36	31	15	16	26	A-6b (10)	
LATITUDE = 40.0851925	04.50-06.00	SS-3	22	100	-	15	14	22	29	20	23	14	9	15	A-4a (3)	
LONGITUDE = -82.7190602	06.00-07.50	SS-4	23	100	4	-	-	-	SAME AS SS-3					15	A-4a (VISUAL)	
	08.50-10.00	SS-5	22	100	4.5	-	-	-	SAME AS SS-3					12	A-4a (VISUAL)	
B-029-0-15	01.50-03.00	SS-1	15	100	4.5	14	8	19	32	27	25	14	11	13	A-6a (5)	218
STA. 52+66, 4' RT.	03.00-04.50	SS-2	25	100	4.5	-	-	-	SAME AS SS-1					13	A-6a (VISUAL)	
LATITUDE = 40.0860318	04.50-06.00	SS-3	30	100	4	12	7	15	34	32	27	16	11	14	A-6a (7)	
LONGITUDE = -82.7184168	06.00-07.50	SS-4	31	100	4.5	12	9	18	34	27	27	14	13	12	A-6a (6)	
	08.50-10.00	SS-5	12	100	4	-	-	-	SAME AS SS-4					17	A-6a (VISUAL)	

SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - SR 161

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	N	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	ODOT CLASS (GI)
R-008-0-03	01.00-02.50	SS-1	10	0	1	7	46	46	52	26	20	A-7-6
STA. 98+00.02, 0.01' RT	02.50-04.00	SS-2	7	1	3	23	45	28	38	17	21	A-6b
	06.00-07.50	SS-3	11	-	-	-	BROWN SANDY SILT				13	A-4a (VISUAL)
	08.50-10.00	SS-4	25	-	-	-	BROWN SANDY SILT				14	A-4a (VISUAL)
R-009-0-03	00.50-02.00	SS-1	9	-	-	-	SAME AS SS-3				14	A-4a (VISUAL)
STA. 102+00.02, 0.19' RT	02.00-03.50	SS-2	18	-	-	-	SAME AS SS-3				15	A-4a (VISUAL)
	03.50-05.00	SS-3	13	8	7	21	37	27	28	10	14	A-4a
	06.00-07.00	SS-4A	11	-	-	-	SAME AS SS-3				13	A-4a (VISUAL)
	07.00-07.50	SS-4B	-	-	-	-	SAME AS SS-5				13	A-4a (VISUAL)
	08.50-10.00	SS-5	11	11	6	17	43	23	21	6	13	A-4a
	13.50-15.00	SS-6	11	-	-	-	SAME AS SS-5				20	A-4a (VISUAL)
	15.50-17.00	SS-7	16	-	-	-	SAME AS SS-5				20	A-4a (VISUAL)
R-010-0-03	01.00-02.50	SS-1	5	-	-	-	BROWN SILT AND CLAY				18	A-7-6 (VISUAL)
STA. 105+99.97, 0.02' RT	03.00-04.50	SS-2	12	-	-	-	SAME AS SS-1				13	A-7-6 (VISUAL)
	05.50-07.00	SS-3	23	-	-	-	BROWN SANDY SILT				8	A-2-4 (VISUAL)
	08.50-10.00	SS-4	41	-	-	-	BROWN GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT				6	A-4a
	13.50-15.00	SS-5	7	4	7	24	47	18	26	10	15	A-4a
	17.50-19.00	SS-6	25	-	-	-	SAME AS SS-5				15	A-4a (VISUAL)
R-011-0-03	01.00-02.50	SS-1	6	3	2	17	38	40	45	21	20	A-7-6
STA. 110+00.90, 3.18' RT	03.00-04.50	SS-2	21	-	-	-	SAME AS SS-1				14	A-7-6 (VISUAL)
	05.50-07.00	SS-3	16	-	-	-	BROWN SANDY SILT				14	A-4a (VISUAL)
	08.50-10.00	SS-4	22	-	-	-	SAME AS SS-5				12	A-6a (VISUAL)
	13.50-15.00	SS-5	10	4	6	20	46	24	30	13	11	A-6a
	17.50-19.00	SS-6	10	-	-	-	SAME AS SS-5				12	A-6a (VISUAL)
R-012-0-03	00.50-02.00	SS-1	11	-	-	-	BROWN CLAY				19	A-7-6 (VISUAL)
STA. 114+00.07, CL	02.00-03.50	SS-2	16	-	-	-	SAME AS SS-3				12	A-4a (VISUAL)
	03.50-05.00	SS-3	14	3	10	11	46	30	26	9	14	A-4a
	06.00-07.50	SS-4	14	4	10	10	45	31	25	9	16	A-4a
	08.50-09.50	SS-5A	14	-	-	-	SAME AS SS-4				14	A-4a (VISUAL)
	09.50-10.00	SS-5B	14	-	-	-	BROWN GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT				14	A-2-4 (VISUAL)
	13.50-15.00	SS-6	16	-	-	-	GRAY SANDY SILT				16	A-4a (VISUAL)
	17.50-19.00	SS-7	21	-	-	-	SAME AS SS-6				14	A-4a (VISUAL)

SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - SR 161

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	ODOT CLASS (GI)
R-013-0-03 STA. 117+99.45, 0.97' LT	00.50-02.00	SS-1	13		SAME AS SS-3					30	A-4a (VISUAL)
	02.00-03.50	SS-2	15		SAME AS SS-3					14	A-4a (VISUAL)
	03.50-05.00	SS-3	13	10	9	19	34	28	10	14	A-4a
	06.00-07.50	SS-4	14		SAME AS SS-3					13	A-4a (VISUAL)
	08.50-10.00	SS-5	9		SAME AS SS-3					-	A-4a (VISUAL)
	13.50-15.00	SS-6	11		SAME AS SS-7					16	A-4a (VISUAL)
	19.50-21.00	SS-7	10	6	11	13	43	27	8	14	A-4a
R-014-0-03 STA. 121+99.26, 0.86' RT	00.50-02.00	SS-1	12		SAME AS SS-2					15	A-4b (VISUAL)
	02.00-03.50	SS-2	19	6	7	6	53	28	8	14	A-4b
	03.50-05.00	SS-3	30		SAME AS SS-2					13	A-4b (VISUAL)
	06.00-07.00	SS-4A	17		SAME AS SS-2					12	A-4b (VISUAL)
	07.00-07.50	SS-4B			DARK GRAY SANDY SILT					13	A-4a (VISUAL)
	08.50-10.00	SS-5	15		LIGHT GRAY SANDY SILT					7	A-4a (VISUAL)
	13.50-15.00	SS-6	10		SAME AS SS-7					15	A-4a (VISUAL)
	18.50-20.00	SS-7	6	3	10	19	36	32	9	15	A-4a
R-015-0-03 STA. 126+00.07, 0.06' LT	24.50-25.50	SS-8A	8		GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT					20	A-2-4 (VISUAL)
	25.50-26.00	SS-8B			GRAY SILTY CLAY					12	A-6b (VISUAL)
	01.00-02.50	SS-1	13		BROWN SILT					26	A-4b (VISUAL)
	03.00-04.50	SS-2	15	7	6	12	24	51	13	21	A-6a
	05.50-07.00	SS-3	20		BROWN SANDY SILT					16	A-4a (VISUAL)
	08.50-10.00	SS-4	14		GRAVEL AND/OR STONE FRAGMENTS WITH SAND					22	A-1-b (VISUAL)
	13.50-15.00	SS-5	13	9	13	13	52	13	11	18	A-6a
	18.50-20.00	SS-6	14		SAME AS SS-5					14	A-4a (VISUAL)
R-016-0-03 STA. 130+00.02, 0.01' LT	01.00-02.50	SS-1	10		SAME AS SS-3					16	A-6a (VISUAL)
	02.50-04.00	SS-2	28		SAME AS SS-3					22	A-6a (VISUAL)
	04.50-06.00	SS-3	20	1	3	15	39	42	12	19	A-6a
	08.50-10.00	SS-4	19	2	9	24	45	20	6	11	A-4a
	14.50-16.00	SS-5	13		SAME AS SS-4					18	A-4a (VISUAL)
	00.50-02.00	SS-1	10	0	0	15	55	30	9	29	A-4b
	02.50-04.00	SS-2	13		SAME AS SS-1					12	A-4b (VISUAL)
R-017-0-03 STA. 134+00.02, 0.18' RT	04.50-06.00	SS-3	16	1	7	24	43	25	8	17	A-4a
	08.50-10.00	SS-4	17		SAME AS SS-3					13	A-4a (VISUAL)
	00.50-02.00	SS-1	15	0	2	16	37	45	19	24	A-7-6
	02.50-04.00	SS-2	22	1	5	17	43	34	13	17	A-6a
	04.50-06.00	SS-3	21		BROWN SANDY SILT					13	A-4a (VISUAL)
	08.50-10.00	SS-4	23		SAME AS SS-3					15	A-4a (VISUAL)
	00.25-01.75	SS-1	12	1	7	19	33	40	15	21	A-6a
R-018-0-03 STA. 136+00.03, 0.18' RT	02.00-03.50	SS-2	11	0	3	14	31	52	14	15	A-6a
	03.50-05.00	SS-3	16		SAME AS SS-4					14	A-6a (VISUAL)
	06.00-07.50	SS-4	19		BROWN SANDY SILT					A-4a	(VISUAL)
	08.50-10.00	SS-5	18		GRAY SANDY SILT					12	A-4a (VISUAL)
	00.50-02.00	SS-1	4		BROWN SILT AND CLAY					29	A-6a (VISUAL)
	02.50-04.00	SS-2	15		SAME AS SS-1					15	A-6a (VISUAL)
	04.50-06.00	SS-3	17		SAME AS SS-1					15	A-6a (VISUAL)
R-019-0-03 STA. 138+99.94, 1.04' LT	08.50-10.00	SS-4	24	7	10	2	54	27	12	11	A-6a
	13.50-15.00	SS-5	16		SAME AS SS-6					14	A-6a (VISUAL)
	16.50-18.00	SS-6	12	11	9	18	35	27	12	14	A-6a
	00.50-02.00	SS-1	7	0	0	3	45	52	31	27	A-7-6
	02.00-03.50	SS-2	6		SAME AS SS-1					25	A-7-6 (VISUAL)
	03.50-05.00	SS-3	18	9	14	23	34	20	6	13	A-4a
	06.00-07.50	SS-4	15		SAME AS SS-3					4	A-4a (VISUAL)
P-001-0-03 STA. 118+00.00, 99.98' LT	08.50-10.00	SS-5	10		GRAY SANDY SILT					13	A-4a (VISUAL)
	14.50-16.00	SS-6	9		SAME AS ABOVE					15	A-4a (VISUAL)
	01.00-02.00	SS-1	7	0	2	5	40	53	25	27	A-7-6
	02.00-03.50	SS-2	8	0	1	1	57	41	17	25	A-6b
	03.50-04.00	SS-3A	16		SAME AS SS-2					21	A-6b (VISUAL)
	04.00-05.00	SS-3B			BROWN SANDY SILT					15	A-4a (VISUAL)
	06.00-07.50	SS-4	11		SAME AS SS-3B					14	A-4a (VISUAL)
P-002-0-03 STA. 117+95.99, 87.67' LT	08.50-10.00	SS-5	17		SAME AS SS-3B					14	A-4a (VISUAL)
	01.00-02.00	SS-1	7	2	11	20	30	37	19	22	A-6b
	02.00-03.50	SS-2	19		SAME AS SS-1					18	A-6b (VISUAL)
	03.50-05.00	SS-3	21		BROWN SANDY SILT					14	A-4a (VISUAL)
	06.00-07.50	SS-4	20		GRAY SANDY SILT					12	A-4a (VISUAL)
	08.50-10.00	SS-5	14		SAME AS SS-4					13	A-4a (VISUAL)
	14.50-16.00	SS-6	15		SAME AS SS-4					12	A-4a (VISUAL)
P-003-0-03 STA. 122+00.00, 100' RT	00.50-02.00	SS-1	4		BROWN SILTY CLAY					19	A-6b (VISUAL)
	02.00-03.50	SS-2	7		SAME AS SS-1					-	A-6b (VISUAL)
	03.50-05.00	SS-3	11	19	8	14	39	20	8	15	A-4a
	06.00-07.50	SS-4	10		BROWN SANDY SILT					14	A-4a (VISUAL)
	08.50-10.00	SS-5	13	2	7	21	44	26	7	12	A-4a
	14.50-16.00	SS-6	19		SAME AS SS-5					-	A-4a (VISUAL)
	19.50-21.00	SS-7	8		GRAVEL AND/OR STONE FRAGMENTS WITH SAND					14	A-1-b (VISUAL)
P-004-0-03 STA. 122+00.00, 100' LT	00.50-02.00	SS-1	4		BROWN SILTY CLAY					19	A-6b (VISUAL)
	02.00-03.50	SS-2	7		SAME AS SS-1					-	A-6b (VISUAL)
	03.50-05.00	SS-3	11	19	8	14	39	20	8	15	A-4a
	06.00-07.50	SS-4	10		BROWN SANDY SILT					14	A-4a (VISUAL)
	08.50-10.00	SS-5	13	2	7	21	44	26	7	12	A-4a
	14.50-16.00	SS-6	19		SAME AS SS-5					-	A-4a (VISUAL)
	19.50-21.00	SS-7	8		GRAVEL AND/OR STONE FRAGMENTS WITH SAND					14	A-1-b (VISUAL)

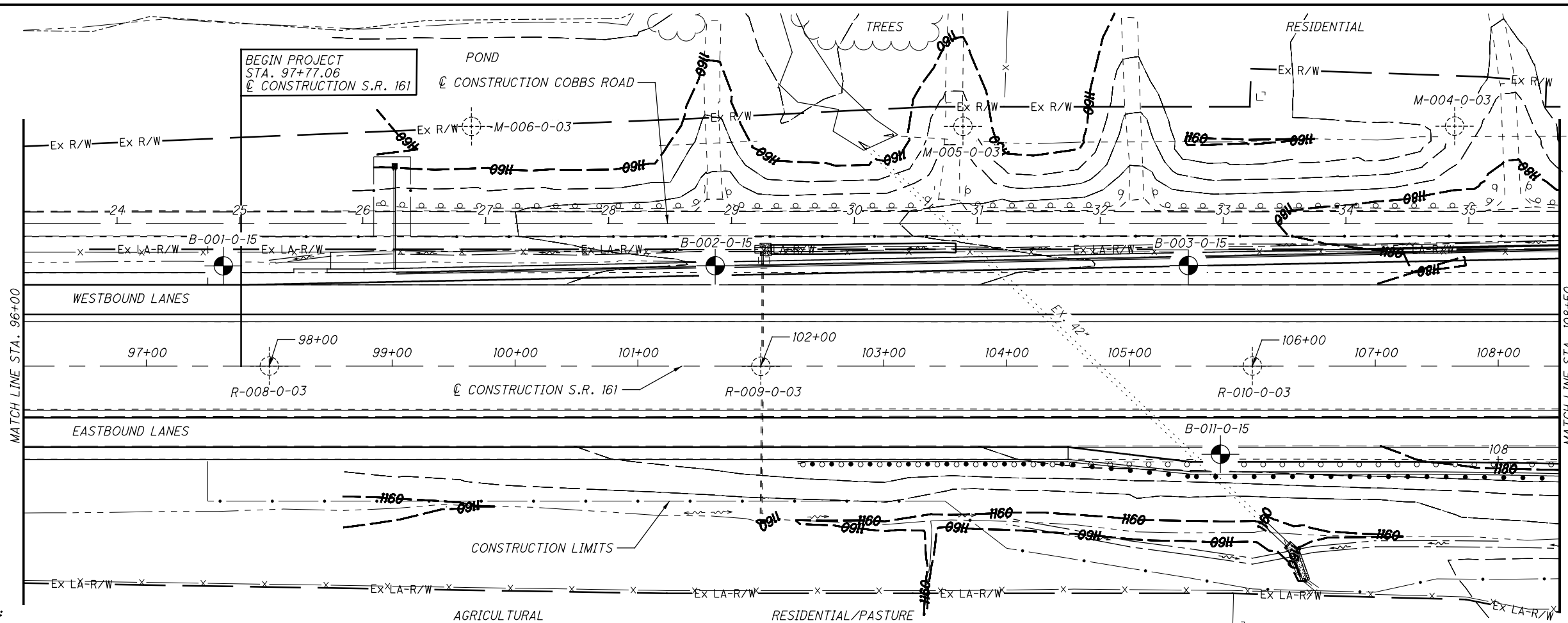
SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - SR 161

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	ODOT CLASS (GI)	
M-005-0-03 STA. 103+64.51, 195.04' LT	00.83-02.00	SS-1	7	0	1	10	41	48	22	24	A-7-6	
	02.00-03.50	SS-2	6	1	3	20	41	35	19	21	A-6b	
	03.50-05.00	SS-3	8	BROWN SANDY SILT							15	A-4a (VISUAL)
	06.00-07.00	SS-4A	19	SAME AS SS-3							14	A-4a (VISUAL)
	07.00-07.50	SS-4B	10	GRAY SANDY SILT							8	A-4a (VISUAL)
	08.50-10.00	SS-5	10	SAME AS SS-4B							12	A-4a (VISUAL)
M-006-0-03 STA. 99.64.54, 195.01 LT	00.67-02.00	SS-1	9	3	4	16	37	40	19	19	A-7-6	
	03.50-05.00	SS-2	10	1	8	7	50	34	11	16	A-6a	
	06.00-07.50	SS-3	14	BROWN SANDY SILT							13	A-4a (VISUAL)
	08.50-10.00	SS-4	23	SAME AS SS-3							13	A-4a (VISUAL)
	00.50-02.00	SS-1	8	2	9	17	44	28	41	19	21	A-7-6
N-001-0-03 STA. 123+64.22, 195.18' LT	03.00-04.50	SS-2	14	4	8	20	40	28	27	14	A-4a	
	06.00-07.50	SS-3	19	SAME AS SS-2							14	A-4a (VISUAL)
	08.50-10.00	SS-4	23	BROWN SANDY SILT							12	A-4a (VISUAL)
	01.25-02.75	SS-1	4	BROWN SILT AND CLAY							31	A-6a (VISUAL)
	03.00-04.50	SS-2	10	SAME AS SS-3							16	A-4a (VISUAL)
N-002-0-03 STA. 127+64.6, 195.03' LT	06.00-07.50	SS-3	17	4	11	21	37	27	9	13	A-4a	
	09.00-10.50	SS-4	13	GRAY SANDY SILT							14	A-4a (VISUAL)
	10.50-12.00	SS-5	18	SAME AS SS-4							12	A-4a (VISUAL)
	00.83-02.00	SS-1	7	SAME AS SS-2							17	A-4a (VISUAL)
	03.00-04.50	SS-2	14	23	28	14	21	14	24	9	14	A-4a
N-003-0-03 STA. 131+64.5, 195' LT	06.00-07.50	SS-3	23	8	12	19	43	18	24	13	A-4a	
	08.50-10.00	SS-4	21	SAME AS SS-3							14	A-4a (VISUAL)
	10.50-12.00	SS-5	20	GRAY SANDY SILT							12	A-4a (VISUAL)
	00.83-02.50	SS-1	9	2	6	12	39	41	39	17	19	A-6b
	03.50-05.00	SS-2	10	1	3	4	63	29	34	14	16	A-6a
N-004-0-03 STA. 135+64.5, 195.10' LT	06.00-07.50	SS-3	11	BROWN AND GRAY SANDY SILT							13	A-4a (VISUAL)
	08.50-10.00	SS-4	28	SAME AS SS-3							13	A-4a (VISUAL)
	00.50-02.00	SS-1	10	0	1	15	39	45	55	25	21	A-7-5
	02.00-03.50	SS-2	13	16	5	18	31	30	31	15	18	A-6a
	03.50-05.00	SS-3	18	BROWN SANDY SILT							12	A-4a (VISUAL)
N-005-0-03 STA. 139+64.56, 195.05' LT	05.50-07.00	SS-4	22	SAME AS SS-5A							12	A-4a (VISUAL)
	08.50-09.50	SS-5A	24	SAME AS SS-5A							11	A-4a (VISUAL)
	09.50-10.00	SS-5B		GRAY SANDY SILT							11	A-4a (VISUAL)
	00.58-02.00	SS-1	6	0	2	7	42	49	55	27	27	A-7-6
	02.00-03.50	SS-2	6	SAME AS SS-3							17	A-7-6 (VISUAL)
M-002-0-03 STA. 115+62.22, 169.74' LT	03.50-05.00	SS-3	10	4	9	23	36	28	57	18	A-7-6	
	06.00-07.50	SS-4	16	BROWN SANDY SILT							15	A-4a (VISUAL)
	08.50-10.00	SS-5	20	SAME AS SS-4							10	A-4a (VISUAL)
	13.50-15.00	SS-6	8	2	7	28	35	28	26	10	15	A-4a
	18.50-20.00	SS-7	15	SAME AS SS-6							14	A-4a (VISUAL)
M-003-0-03 STA. 110+64.52, 195' LT	00.75-02.00	SS-1	7	LIGHT BROWN SILTY CLAY							25	A-6b (VISUAL)
	02.00-03.50	SS-2	8	1	4	4	43	48	49	24	24	A-7-6
	03.50-05.00	SS-3	10	2	8	21	35	34	30	12	25	A-6a
	06.00-07.50	SS-4	13	BROWN SANDY SILT							13	A-4a (VISUAL)
	08.50-10.00	SS-5	14	SAME AS SS-4							13	A-4a (VISUAL)
	10.50-12.00	SS-6	16	GRAY SANDY SILT							13	A-4a (VISUAL)
M-004-0-03 STA. 107+64.54, 195.19' LT	00.67-02.00	SS-1	7	1	5	18	31	45	50	22	A-7-6	
	02.00-03.50	SS-2	12	SAME AS SS-1							25	A-7-6 (VISUAL)
	03.50-05.00	SS-3	16	SAME AS SS-4							13	A-4a (VISUAL)
	06.00-07.50	SS-4	14	2	12	21	35	30	27	10	15	A-4a
	08.50-10.00	SS-5	16	SAME AS SS-4							12	A-4a (VISUAL)
	13.50-15.00	SS-6	10	GRAY SANDY SILT							18	A-4a (VISUAL)

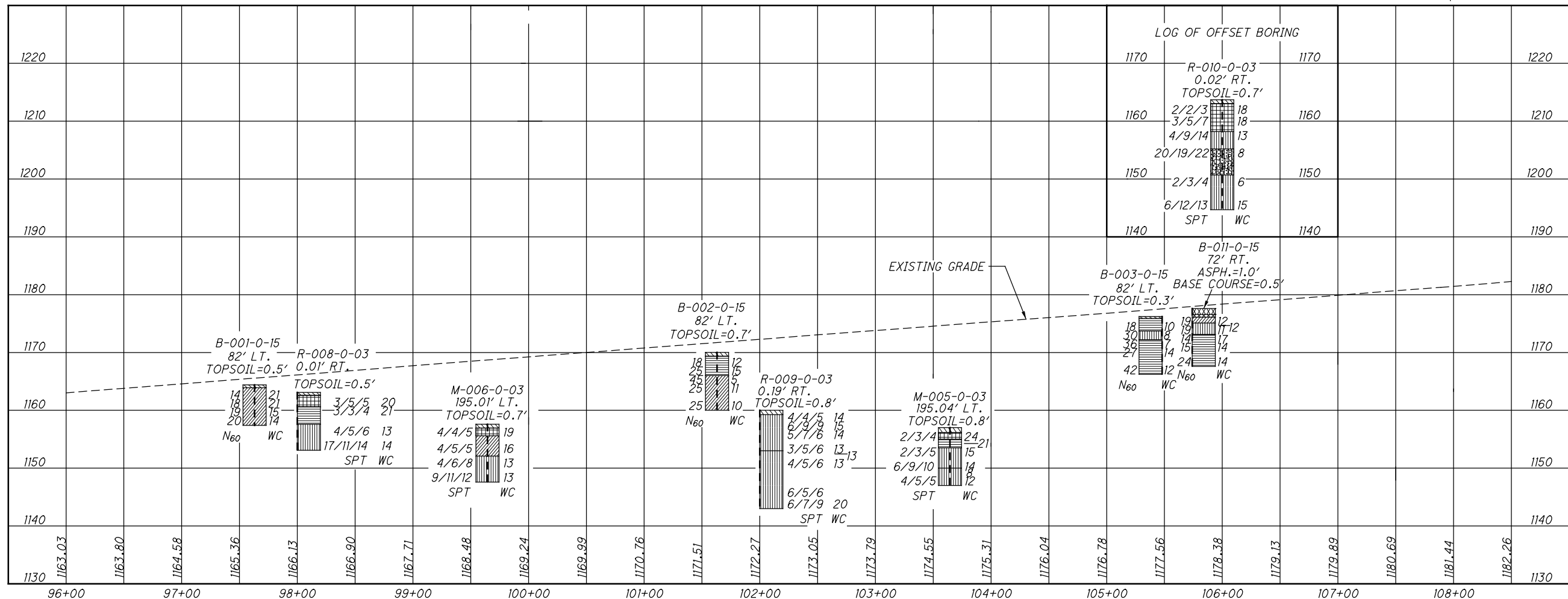
SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - COBB ROAD

EXPLORATION NO., STATION & OFFSET	FROM TO	SAMPLE ID	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	ODOT CLASS (GI)	
M-002-0-03 STA. 115+62.22, 169.74' LT	00.58-02.00	SS-1	6	0	2	7	42	49	55	27	A-7-6	
	02.00-03.50	SS-2	6	SAME AS SS-3							17	A-7-6 (VISUAL)
	03.50-05.00	SS-3	10	4	9	23	36	28	57	18	A-7-6	
	06.00-07.50	SS-4	16	BROWN SANDY SILT							15	A-4a (VISUAL)
	08.50-10.00	SS-5	20	SAME AS SS-4							10	A-4a (VISUAL)
	13.50-15.00	SS-6	8	2	7	28	35	28	26	10	15	A-4a
M-003-0-03 STA. 110+64.52, 195' LT	00.75-02.00	SS-1	7	LIGHT BROWN SILTY CLAY							25	A-6b (VISUAL)
	02.00-03.50	SS-2	8	1	4	4	43	48	49	24	24	A-7-6
	03.50-05.00	SS-3	10	2	8	21	35	34	30	12	25	A-6a
	06.00-07.50	SS-4	13	BROWN SANDY SILT							13	A-4a (VISUAL)
	08.50-10.00	SS-5	14	SAME AS SS-4							13	A-4a (VISUAL)
	10.50-12.00	SS-6	16	GRAY SANDY SILT							13	A-4a (VISUAL)
M-004-0-03 STA. 107+64.54, 195.19' LT	00.67-02.00	SS-1	7	1	5	18	31	45	50	22	A-7-6	
	02.00-03.50	SS-2	12	SAME AS SS-1							25	A-7-6 (VISUAL)
	03.50-05.00	SS-3	16	SAME AS SS-4							13	A-4a (VISUAL)
	06.00-07.50	SS-4	14	2	12	21	35	30	27	10	15	A-4a
	08.50-10.00	SS-5	16	SAME AS SS-4							12	A-4a (VISUAL)
	13.50-15.00	SS-6	10	GRAY SANDY SILT							18	A-4a (VISUAL)

J:\dept5\15 Projects\15050175COL-0DOT Dist 5-LIC 161-2.30\Design\From Sachina\15050175COL_05.26.16\97879GP007.dgn 5/26/2016 11:43:11 AM smalladi



NOTE:
SEE SHEET 19 OF 30 FOR M-004-0-03 SOIL PROFILE.

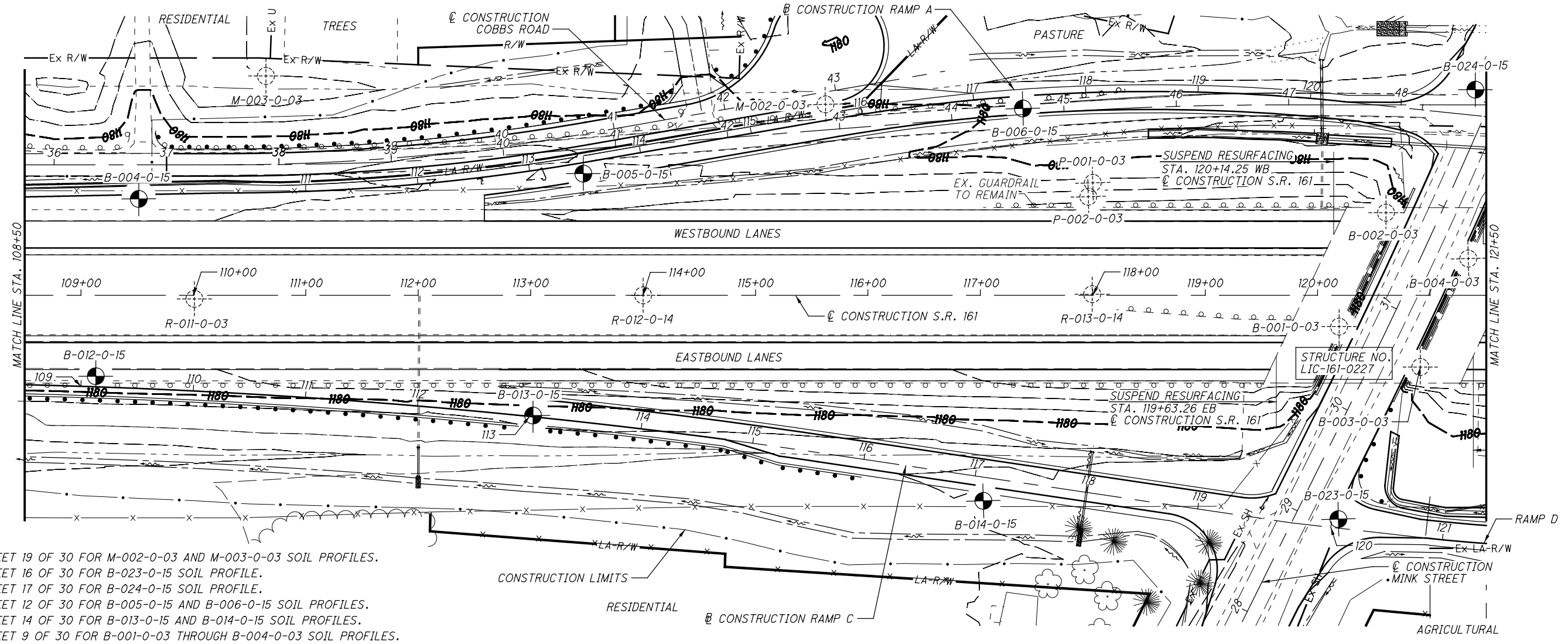


DRAWN: BRU
CHECKED: SM
SOIL PROFILE
STA. 96+00 TO STA. 108+50 S.R. 161

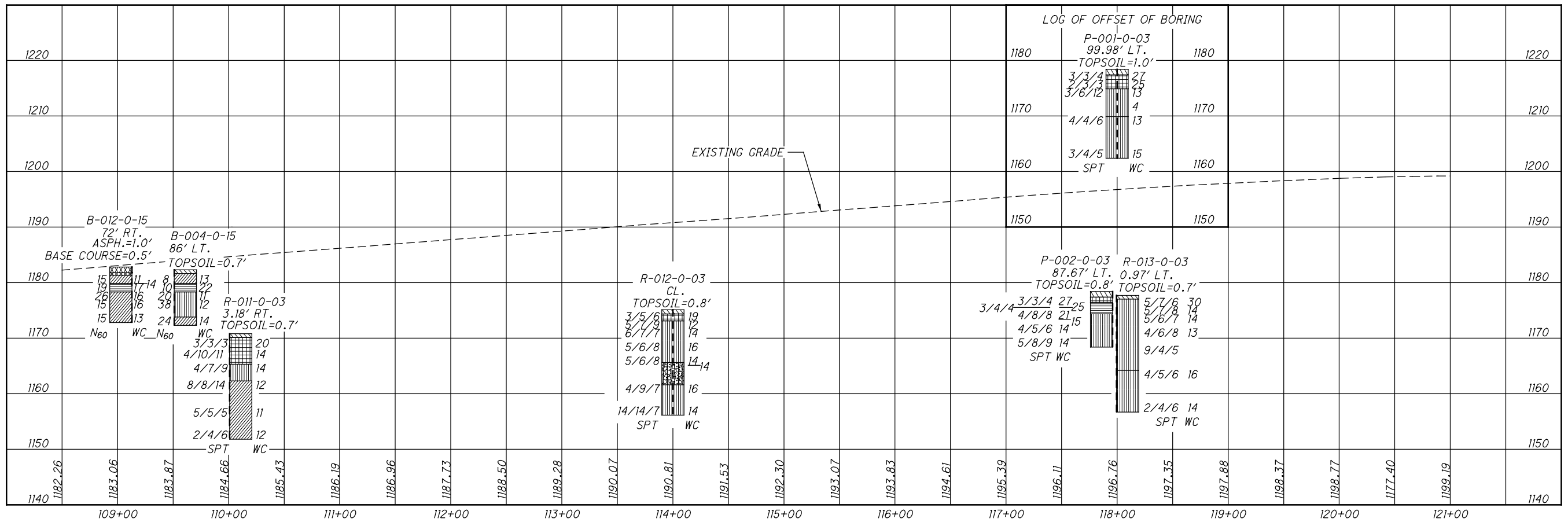
LIC-161-1.83



J:\dept5\15 Projects\15050175COL-0DOT Dist 5-LIC 161-2.30\Design\From Sachina\15050175COL_05.26.16\97879GP008.dgn 5/26/2016 11:38:20 AM smalladi



NOTE:
 SEE SHEET 19 OF 30 FOR M-002-0-03 AND M-003-0-03 SOIL PROFILES.
 SEE SHEET 16 OF 30 FOR B-023-0-15 SOIL PROFILE.
 SEE SHEET 17 OF 30 FOR B-024-0-15 SOIL PROFILE.
 SEE SHEET 12 OF 30 FOR B-005-0-15 AND B-006-0-15 SOIL PROFILES.
 SEE SHEET 14 OF 30 FOR B-013-0-15 AND B-014-0-15 SOIL PROFILES.
 SEE SHEET 9 OF 30 FOR B-001-0-03 THROUGH B-004-0-03 SOIL PROFILES.



LOG OF OFFSET OF BORING

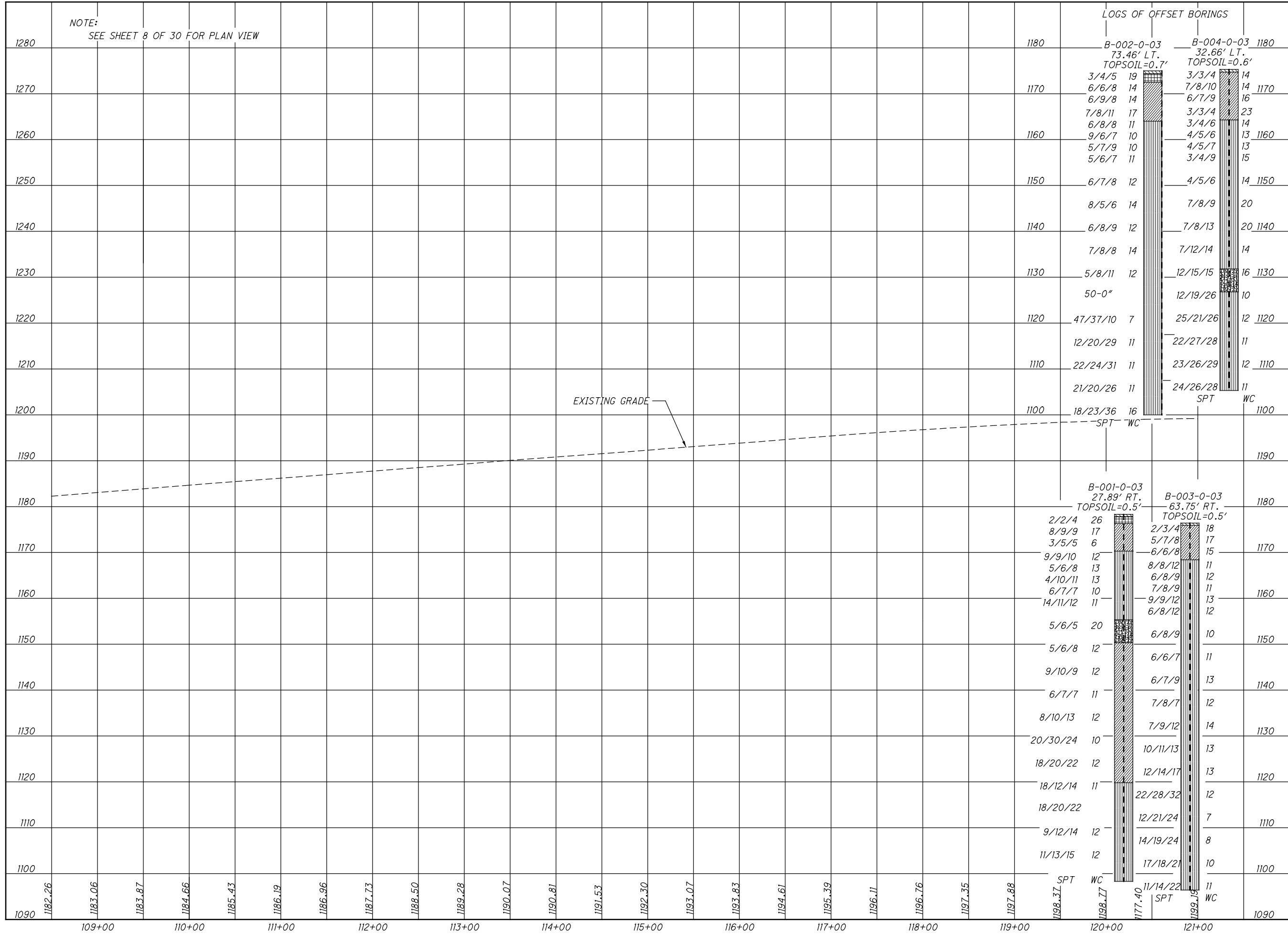
Boring ID	Length (LT.)	Topsoil	Soil Profile Data
P-001-0-03	99.98'	1.0'	3/3/4 27, 3/3/3 25, 3/6/12 13
R-013-0-03	0.97'	0.7'	4 4, 4/4/6 13
P-002-0-03	87.67'	0.8'	3/4/4 15, SPT WC
R-013-0-03	0.97'	0.7'	3/3/4 27, 4/8/8 21, 4/5/6 14, 5/8/9 14, SPT WC
R-013-0-03	0.97'	0.7'	5/7/6 30, 5/7/8 14, 4/6/8 13, 9/4/5
R-013-0-03	0.97'	0.7'	2/4/6 14, SPT WC



DRAWN: BRU
 CHECKED: SM
SOIL PROFILE
STA. 108+50 TO STA. 121+50 S.R. 161

LIC-161-1.83

J:\dept5\15 Projects\15050175COL-ODOT Dist 5-LIC 161-2.30\Design\From Sachina\15050175COL_05.26.16\97879GF009.dgn 5/26/2016 10:12:09 AM smalladi

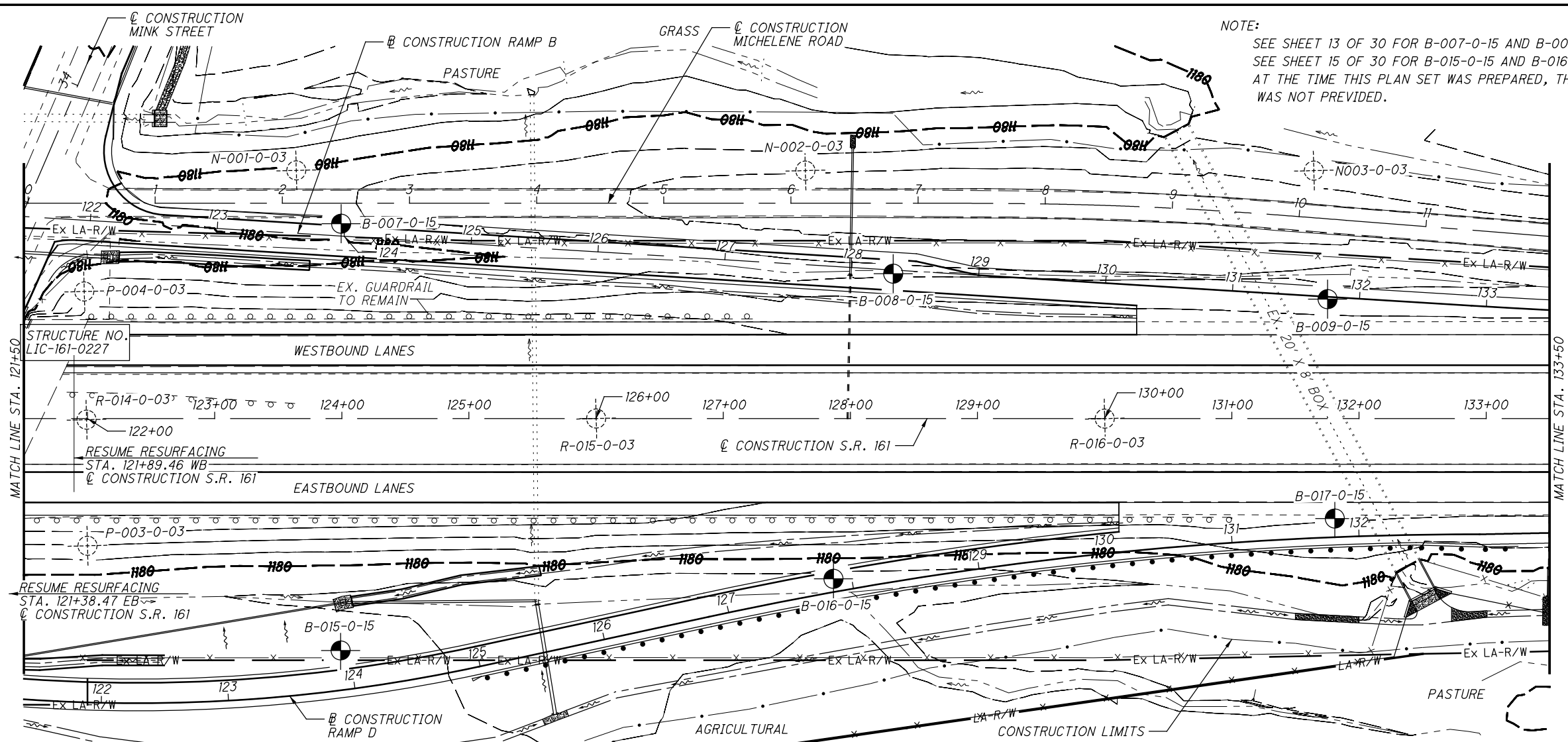


SOIL PROFILE
STA. 108+50 TO STA. 121+00 S.R. 161

LIC-161-1.83



J:\dept5\15 Projects\15050175COL-ODOT Dist 5-LIC 161-2.30\Design\From Sachina\15050175COL_05.26.16\97879GP010.dgn 5/26/2016 11:40:09 AM smalladi

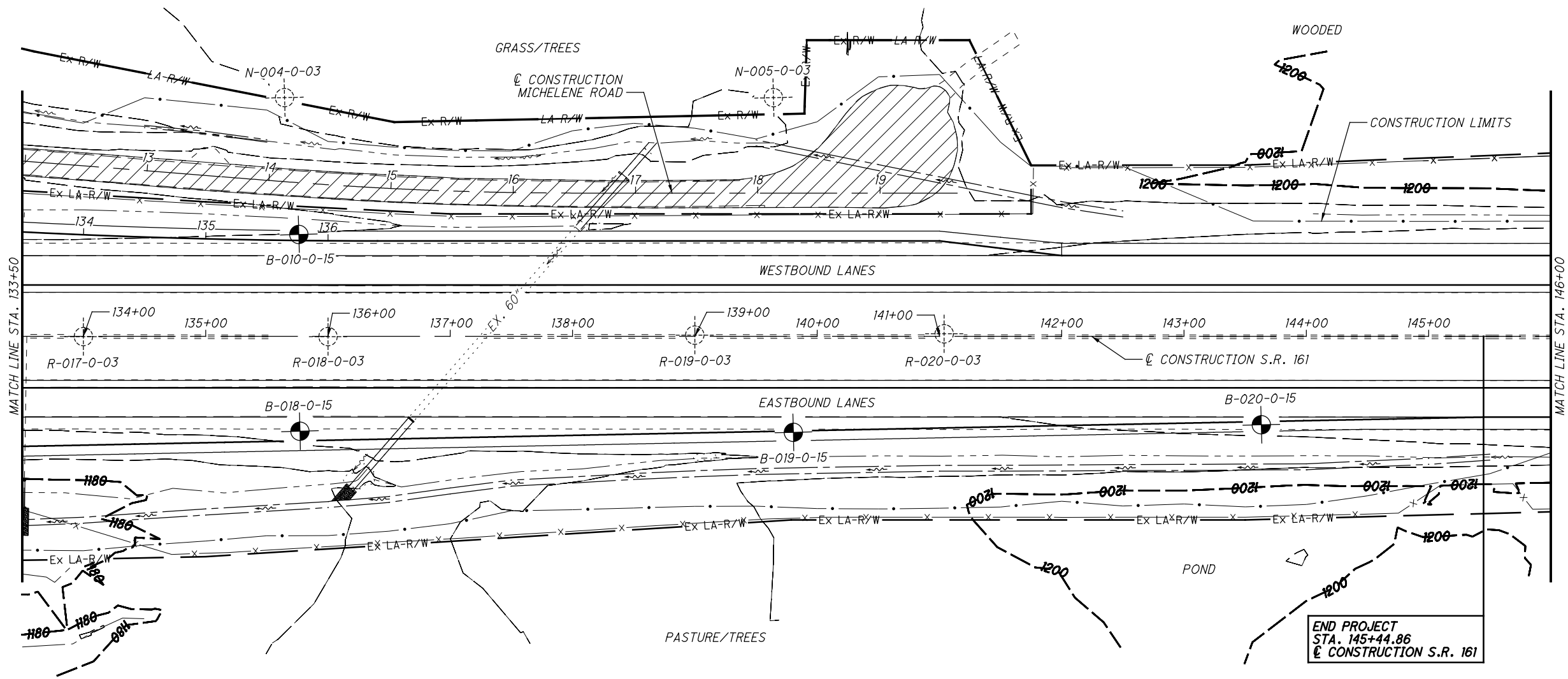


SOIL PROFILE
STA. 121+50 TO STA. 133+50 S.R. 161

LIC-161-1.83
10/30

Station	Offset	Boring ID	Depth (ft)	Notes
1210	1180	P-003-0-03	100' RT.	TOPSOIL=0.5'
1200	1170	7/9/10, 3/3/4, 9/11/10, 10/10/10, 15/6/8	12, 13, 14, 22, 18	
1190	1160	6/7/8	12	SPT WC
1180	1150	N-001-0-03	195.18' LT.	TOPSOIL=0.5'
1170	1170	P-004-0-03, R-014-0-03	100' LT, 0.86' RT.	TOPSOIL=1.5', TOPSOIL=0.4'
1160	1160	3/2/2, 3/5/7, 8/9/10, 3/5/6, 5/5/5, 5/6/7	19, 15, 14, 12, 13, 7	
1150	1150	5/3/5	14	SPT WC
1140	1140	6/5/3	20, 12	SPT WC
1130	1130			
1260	1150	R-015-0-03	0.06' LT.	TOPSOIL=1.0'
1260	1150	4/6/7, 8/7/8, 6/10/10, 5/7/7	26, 21, 16, 22	
1260	1150	6/6/7	18	SPT WC
1260	1150	8/6/8	14	SPT WC
1280	1150	N-002-0-03	195.03' LT.	TOPSOIL=1.3'
1280	1150	2/2/2, 2/4/6, 5/7/10, 6/7/8, 7/9/9	31, 16, 13, 14, 12	
1280	1150			SPT WC
1300	1150	R-016-0-03	0.01' LT.	TOPSOIL=0.7'
1300	1150	5/5/5, 10/12/16, 5/8/12, 8/8/11	16, 22, 19, 11	
1300	1150	6/6/7	18	SPT WC
1320	1150	B-017-0-15	79' RT.	
1320	1150	B-009-0-15	94' LT.	GRAVEL=0.1', TOPSOIL=0.3'
1320	1150	14, 12, 16, 18, 11, 23, 16, 14	14, 11, 12, 16, 14, 16, 19	
1320	1150			N ₆₀ WC
1320	1150	N-003-0-03	195' LT.	TOPSOIL=0.8'
1320	1150	6/3/4, 5/6/8, 5/10/13, 8/10/11, 10/10/10	17, 14, 13, 14, 12	
1320	1150			SPT WC

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SOIL PROFILE
STA. 133+50 TO STA. 146+00 S.R. 161

Station	134+00	135+00	136+00	137+00	138+00	139+00	140+00	141+00	142+00	143+00	144+00	145+00	146+00
1230													
1220													
1210													
1200													
1190													
1180													
1170													
1160													

LOG OF OFFSET BORING
N-004-0-03
195.10' LT.
TOPSOIL=0.8'

R-018-0-03
0.18' RT.
TOPSOIL=0.7'

B-010-0-15
83' LT.
TOPSOIL=0.5'

B-018-0-15
78' RT.
TOPSOIL=0.2'

R-017-0-03
0.18' RT.
TOPSOIL=0.7'

LOG OF OFFSET BORING
N-005-0-03
195.05' LT.
TOPSOIL=0.8'

R-019-0-03
1.04' LT.
TOPSOIL=0.7'

B-019-0-15
78' RT.
TOPSOIL=0.3'

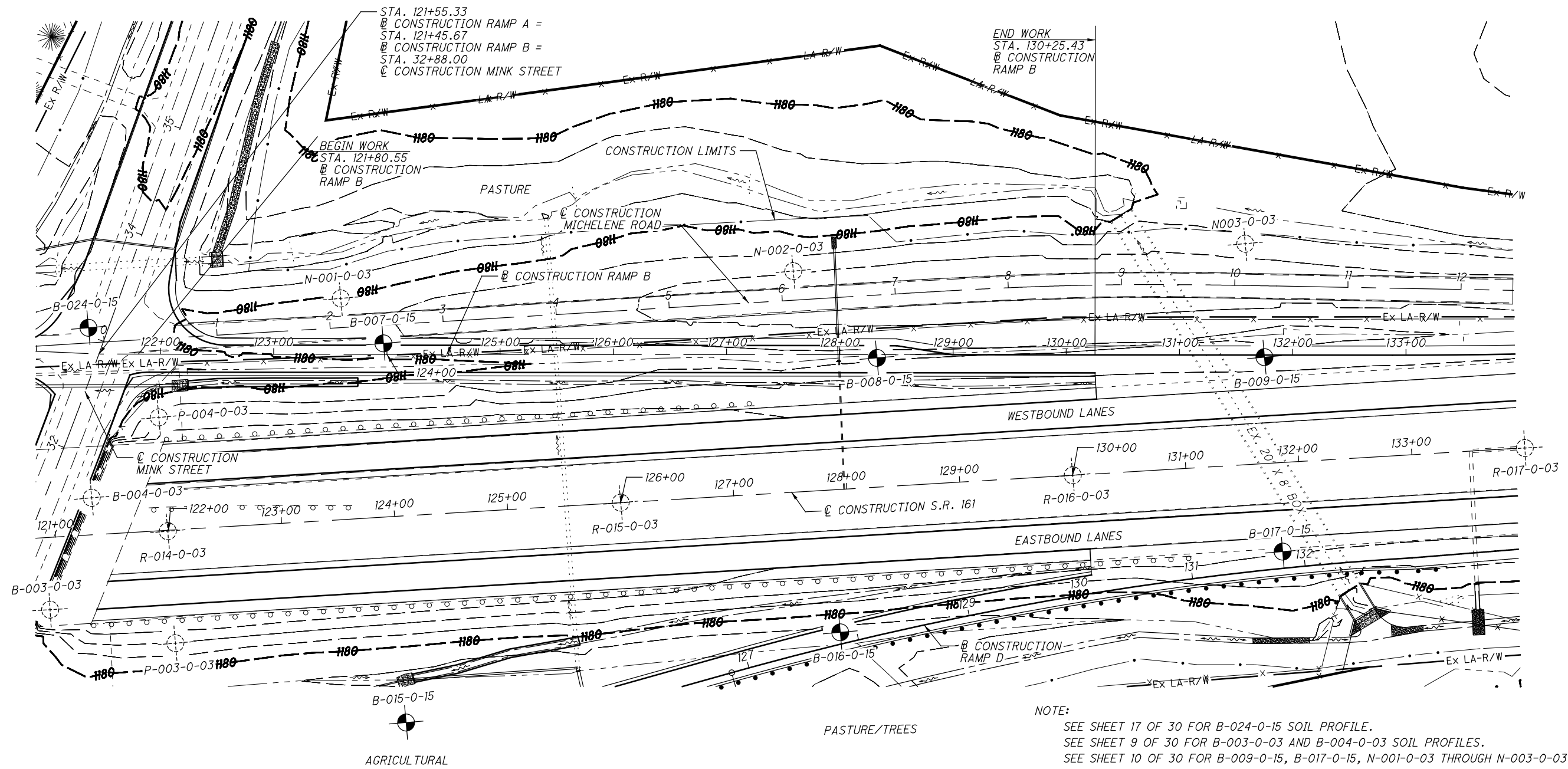
R-020-0-03
2.09' LT.
TOPSOIL=0.9'

B-020-0-15
72' RT.
ASPH.=0.9'
BASE COURSE=0.7'

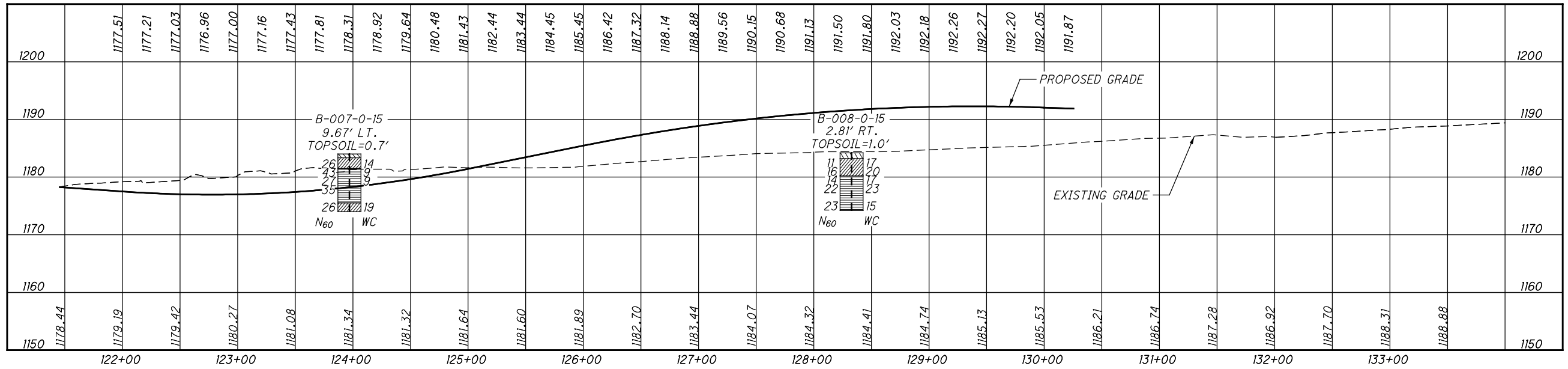
LIC-161-1.83



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NOTE:
 SEE SHEET 17 OF 30 FOR B-024-0-15 SOIL PROFILE.
 SEE SHEET 9 OF 30 FOR B-003-0-03 AND B-004-0-03 SOIL PROFILES.
 SEE SHEET 10 OF 30 FOR B-009-0-15, B-017-0-15, N-001-0-03 THROUGH N-003-0-03,
 R-015-0-03 THROUGH R-017-0-03, P-003-0-03, P-004-0-03 AND R-014-0-14 SOIL PROFILES.
 SEE SHEET 15 OF 30 FOR B-015-0-15 AND B-016-0-15 SOIL PROFILE.



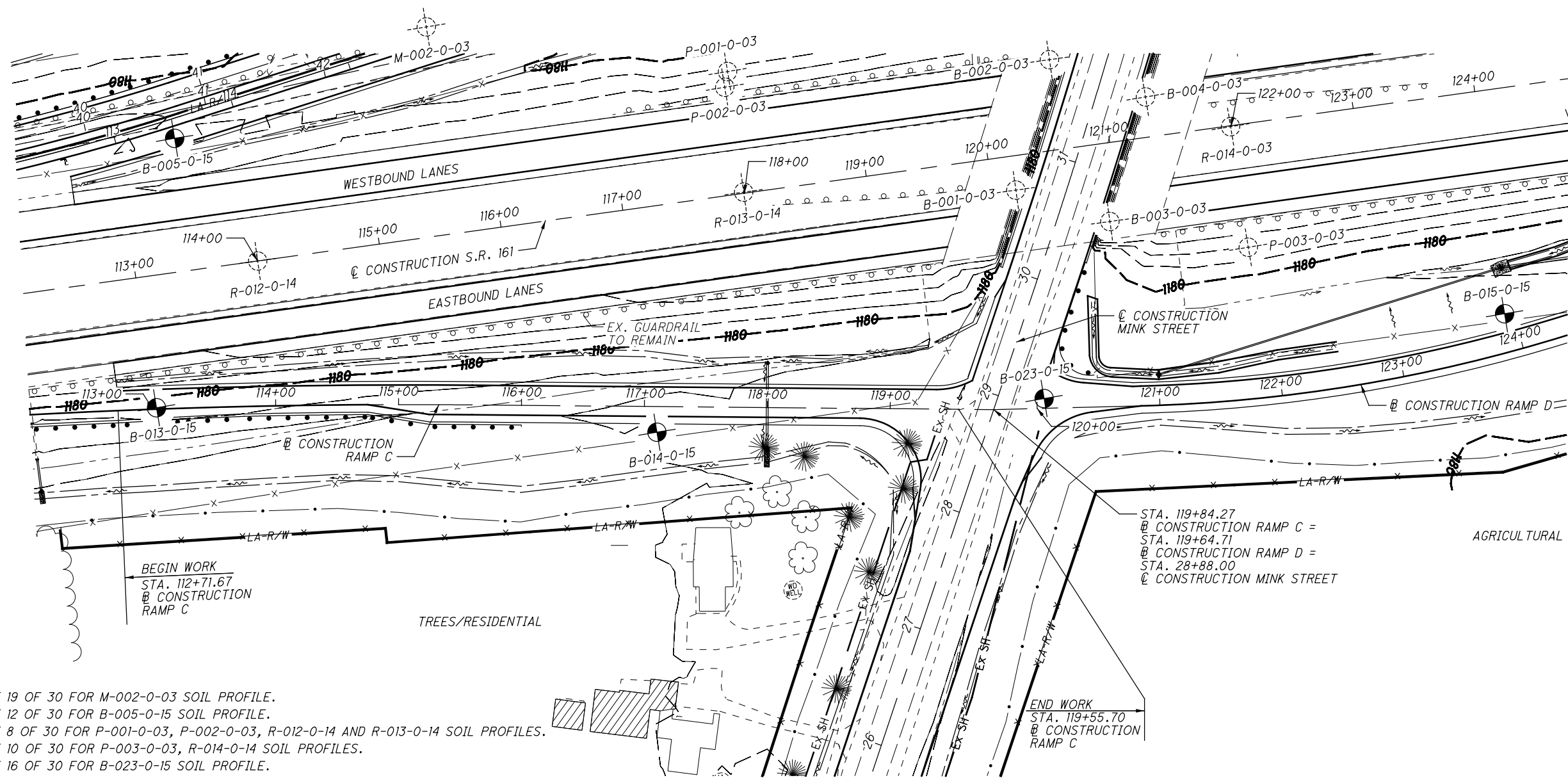
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0 50 100
25
HORIZONTAL
SCALE IN FEET

DRAWN BRU
CHECKED SM

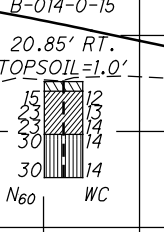
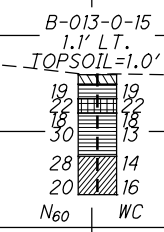
SOIL PROFILE
STA. 112+71.67 TO STA. 119+56.81 RAMP C

LIC-161-1.83



NOTE:
 SEE SHEET 19 OF 30 FOR M-002-0-03 SOIL PROFILE.
 SEE SHEET 12 OF 30 FOR B-005-0-15 SOIL PROFILE.
 SEE SHEET 8 OF 30 FOR P-001-0-03, P-002-0-03, R-012-0-14 AND R-013-0-14 SOIL PROFILES.
 SEE SHEET 10 OF 30 FOR P-003-0-03, R-014-0-14 SOIL PROFILES.
 SEE SHEET 16 OF 30 FOR B-023-0-15 SOIL PROFILE.
 SEE SHEET 9 OF 30 FOR B-001-0-03 THROUGH B-004-0-03 SOIL PROFILES.
 SEE SHEET 15 OF 30 FOR B-015-0-15 SOIL PROFILE.

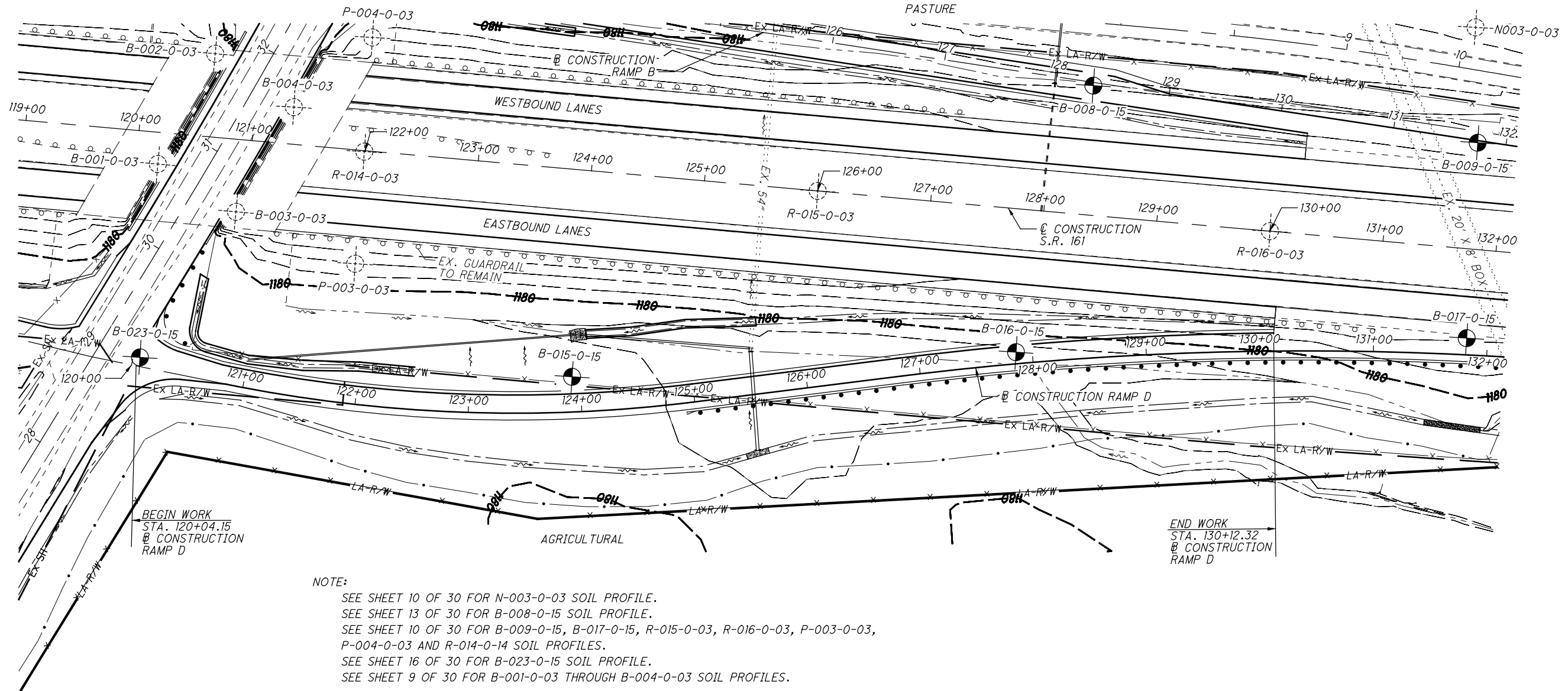
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1190																													1190
1180																													1180
1170																													1170
1160																													1160
1150																													1150
1140	1177.82	1176.96	1175.89	1175.86	1175.58	1173.88	1172.35	1171.22	1172.29	1174.09	1175.37	1175.70	1175.92	1176.11	1176.08	1176.61	1176.04	1175.37	1175.70	1175.92	1176.11	1176.08	1176.61	1176.04	1175.37	1175.70	1175.92	1176.11	1140
	112+00	113+00	114+00	115+00	116+00	117+00	118+00	119+00																					



PROPOSED GRADE

EXISTING GRADE

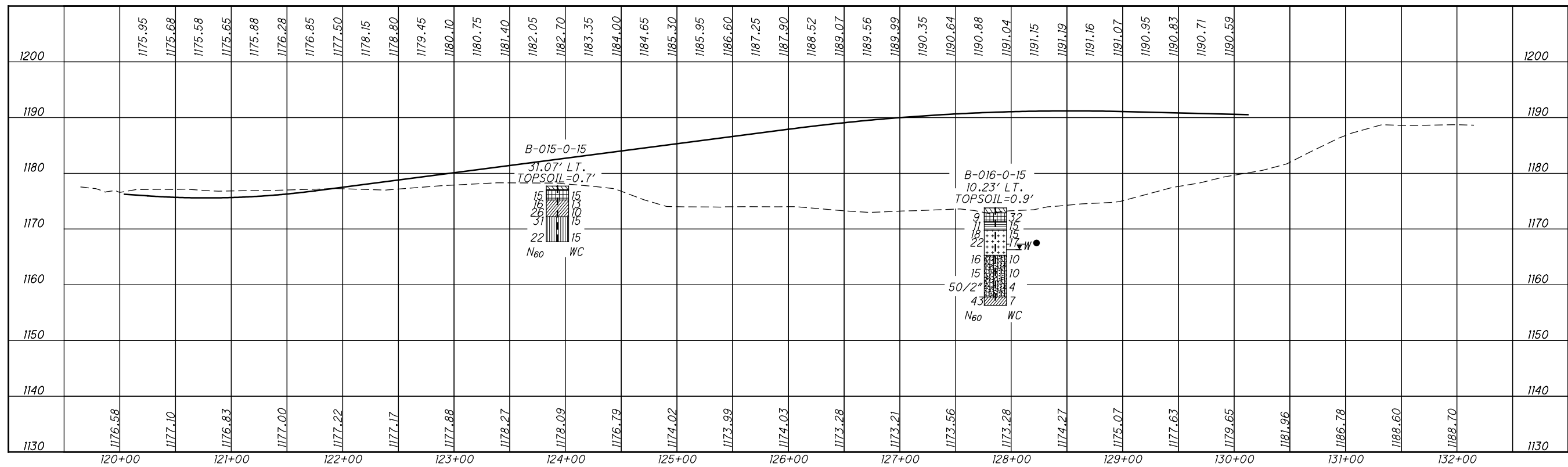
J:\dept5\15 Projects\15050175COL-ODOT Dist 5-LIC 161-2.30\Design\From Sachina\15050175COL_05.26.16\97879GP015.dgn 5/26/2016 10:14:22 AM smallodi



BEGIN WORK
STA. 120+04.15
B CONSTRUCTION
RAMP D

END WORK
STA. 130+12.32
B CONSTRUCTION
RAMP D

NOTE:
SEE SHEET 10 OF 30 FOR N-003-0-03 SOIL PROFILE.
SEE SHEET 13 OF 30 FOR B-008-0-15 SOIL PROFILE.
SEE SHEET 10 OF 30 FOR B-009-0-15, B-017-0-15, R-015-0-03, R-016-0-03, P-003-0-03,
P-004-0-03 AND R-014-0-14 SOIL PROFILES.
SEE SHEET 16 OF 30 FOR B-023-0-15 SOIL PROFILE.
SEE SHEET 9 OF 30 FOR B-001-0-03 THROUGH B-004-0-03 SOIL PROFILES.



DRAWN	BRU	CHECKED	SM
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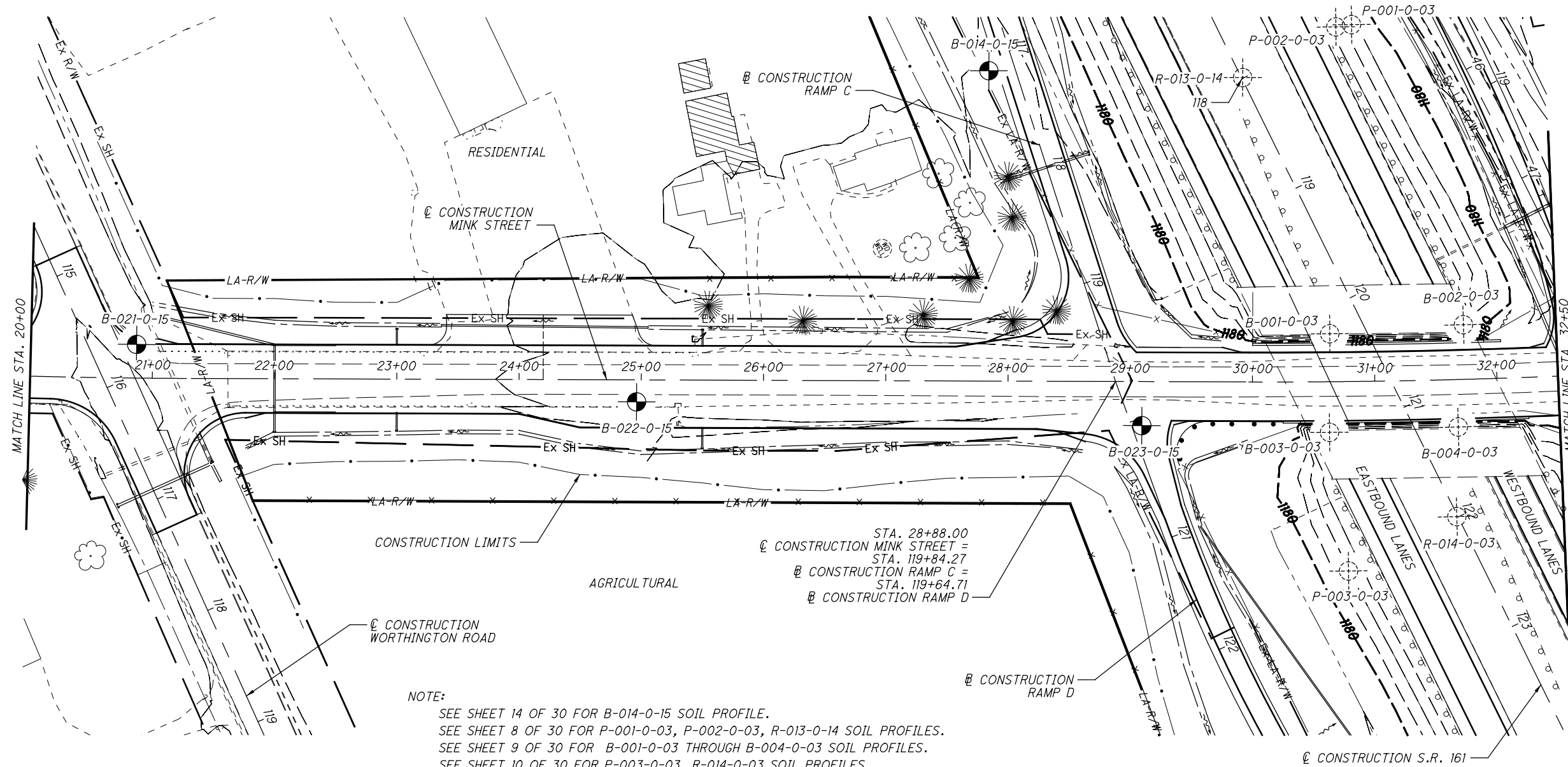
SOIL PROFILE

STA. 119+94.63 TO STA. 130+12.32 RAMP D

LIC-161-1.83

15 / 30

J:\dept5\15 Projects\15050175COL-ODOT Dist 5-LIC 161-1.83\Design\From Sachina\15050175COL_05.26.16\97879GP016.dgn 5/26/2016 11:41:06 AM smallodi

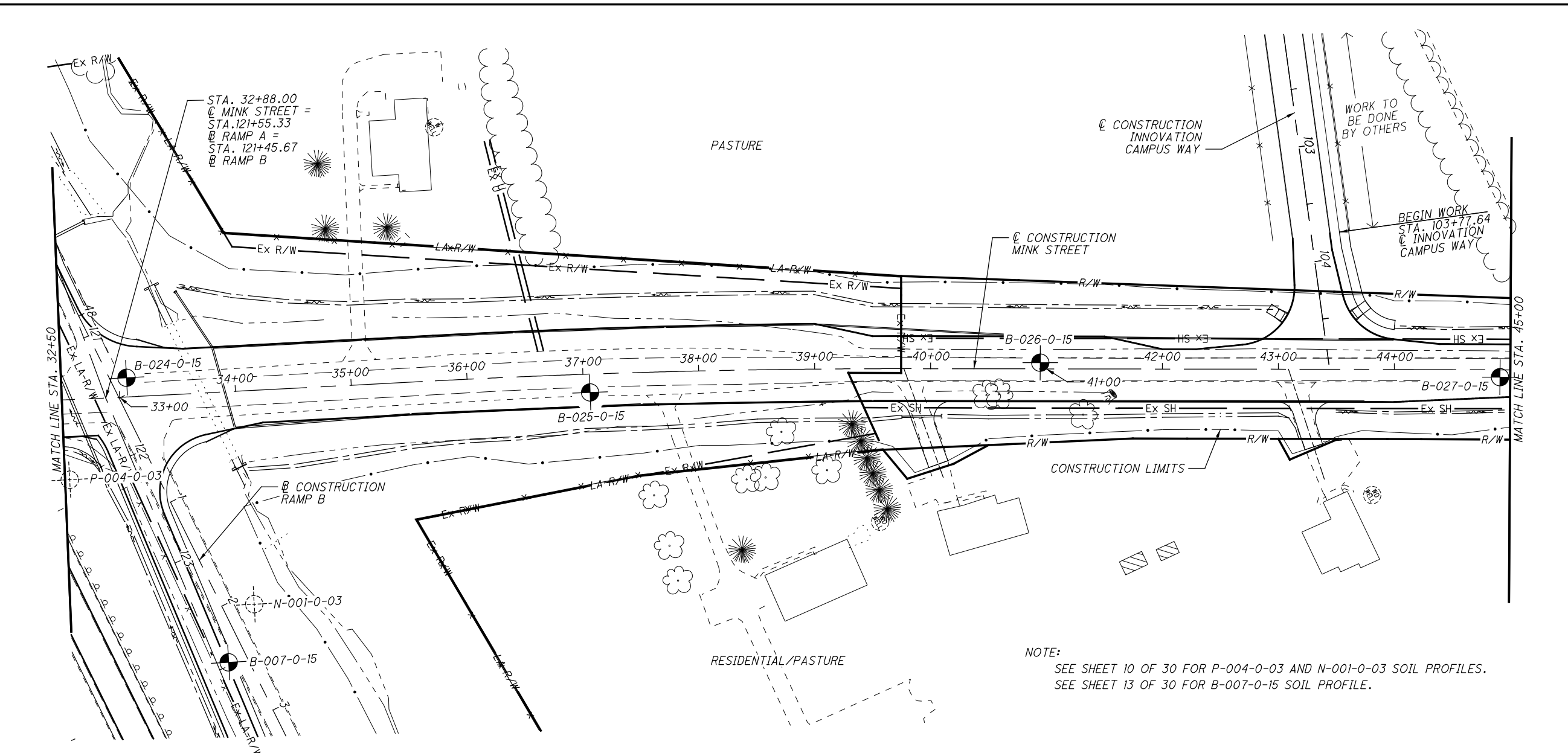


STA. 28+88.00
 @ CONSTRUCTION MINK STREET = STA. 119+84.27
 @ CONSTRUCTION RAMP C = STA. 119+64.71
 @ CONSTRUCTION RAMP D

NOTE:
 SEE SHEET 14 OF 30 FOR B-014-0-15 SOIL PROFILE.
 SEE SHEET 8 OF 30 FOR P-001-0-03, P-002-0-03, R-013-0-14 SOIL PROFILES.
 SEE SHEET 9 OF 30 FOR B-001-0-03 THROUGH B-004-0-03 SOIL PROFILES.
 SEE SHEET 10 OF 30 FOR P-003-0-03, R-014-0-03 SOIL PROFILES.

1200	1175.02	1174.91	1174.81	1174.71	1174.62	1174.57	1174.55	1174.56	1174.60	1174.68	1174.77	1174.87	1174.96	1175.05	1175.15	1175.24	1175.33	1175.43	1175.52	1175.61	1175.70	1175.80	1175.89	1175.98	1176.08	1176.17	1176.26	1176.36	1176.45	1176.54	1176.64	1176.73	1176.82	1176.92	1177.01	1177.10	1177.20	1177.29	1177.38	1177.48	1177.57	1177.66	1177.75	1177.85	1177.94	1178.03	1178.13	1200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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1180		B-021-0-15 28' LT. ASPH.=1.3'																																																		1180																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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1140	1174.81	1175.19	1174.85	1174.10	1173.91	1174.00	1174.26	1174.69	1175.19	1175.78	1176.42	1177.04	1177.60	1178.33	1179.97	1181.92	1183.81	1185.65	1187.53	1189.45	1191.35	1193.31	1195.42	1197.51	1199.72	1201.82	1203.92	1206.02	1208.12	1210.22	1212.32	1214.42	1216.52	1218.62	1220.72	1222.82	1224.92	1227.02	1229.12	1231.22	1233.32	1235.42	1237.52	1239.62	1241.72	1243.82	1245.92	1248.02	1250.12	1252.22	1254.32	1256.42	1258.52	1260.62	1262.72	1264.82	1266.92	1269.02	1271.12	1273.22	1275.32	1277.42	1279.52	1281.62	1283.72	1285.82	1287.92	1290.02	1292.12	1294.22	1296.32	1298.42	1300.52	1302.62	1304.72	1306.82	1308.92	1311.02	1313.12	1315.22	1317.32	1319.42	1321.52	1323.62	1325.72	1327.82	1329.92	1332.02	1334.12	1336.22	1338.32	1340.42	1342.52	1344.62	1346.72	1348.82	1350.92	1353.02	1355.12	1357.22	1359.32	1361.42	1363.52	1365.62	1367.72	1369.82	1371.92	1374.02	1376.12	1378.22	1380.32	1382.42	1384.52	1386.62	1388.72	1390.82	1392.92	1395.02	1397.12	1399.22	1401.32	1403.42	1405.52	1407.62	1409.72	1411.82	1413.92	1416.02	1418.12	1420.22	1422.32	1424.42	1426.52	1428.62	1430.72	1432.82	1434.92	1437.02	1439.12	1441.22	1443.32	1445.42	1447.52	1449.62	1451.72	1453.82	1455.92	1458.02	1460.12	1462.22	1464.32	1466.42	1468.52	1470.62	1472.72	1474.82	1476.92	1479.02	1481.12	1483.22	1485.32	1487.42	1489.52	1491.62	1493.72	1495.82	1497.92	1500.02	1502.12	1504.22	1506.32	1508.42	1510.52	1512.62	1514.72	1516.82	1518.92	1521.02	1523.12	1525.22	1527.32	1529.42	1531.52	1533.62	1535.72	1537.82	1539.92	1542.02	1544.12	1546.22	1548.32	1550.42	1552.52	1554.62	1556.72	1558.82	1560.92	1563.02	1565.12	1567.22	1569.32	1571.42	1573.52	1575.62	1577.72	1579.82	1581.92	1584.02	1586.12	1588.22	1590.32	1592.42	1594.52	1596.62	1598.72	1600.82	1602.92	1605.02	1607.12	1609.22	1611.32	1613.42	1615.52	1617.62	1619.72	1621.82	1623.92	1626.02	1628.12	1630.22	1632.32	1634.42	1636.52	1638.62	1640.72	1642.82	1644.92	1647.02	1649.12	1651.22	1653.32	1655.42	1657.52	1659.62	1661.72	1663.82	1665.92	1668.02	1670.12	1672.22	1674.32	1676.42	1678.52	1680.62	1682.72	1684.82	1686.92	1689.02	1691.12	1693.22	1695.32	1697.42	1699.52	1701.62	1703.72	1705.82	1707.92	1710.02	1712.12	1714.22	1716.32	1718.42	1720.52	1722.62	1724.72	1726.82	1728.92	1731.02	1733.12	1735.22	1737.32	1739.42	1741.52	1743.62	1745.72	1747.82	1749.92	1752.02	1754.12	1756.22	1758.32	1760.42	1762.52	1764.62	1766.72	1768.82	1770.92	1773.02	1775.12	1777.22	1779.32	1781.42	1783.52	1785.62	1787.72	1789.82	1791.92	1794.02	1796.12	1798.22	1800.32	1802.42	1804.52	1806.62	1808.72	1810.82	1812.92	1815.02	1817.12	1819.22	1821.32	1823.42	1825.52	1827.62	1829.72	1831.82	1833.92	1836.02	1838.12	1840.22	1842.32	1844.42	1846.52	1848.62	1850.72	1852.82	1854.92	1857.02	1859.12	1861.22	1863.32	1865.42	1867.52	1869.62	1871.72	1873.82	1875.92	1878.02	1880.12	1882.22	1884.32	1886.42	1888.52	1890.62	1892.72	1894.82	1896.92	1899.02	1901.12	1903.22	1905.32	1907.42	1909.52	1911.62	1913.72	1915.82	1917.92	1920.02	1922.12	1924.22	1926.32	1928.42	1930.52	1932.62	1934.72	1936.82	1938.92	1941.02	1943.12	1945.22	1947.32	1949.42	1951.52	1953.62	1955.72	1957.82	1959.92	1962.02	1964.12	1966.22	1968.32	1970.42	1972.52	1974.62	1976.72	1978.82	1980.92	1983.02	1985.12	1987.22	1989.32	1991.42	1993.52	1995.62	1997.72	1999.82	2001.92	2004.02	2006.12	2008.22	2010.32	2012.42	2014.52	2016.62	2018.72	2020.82	2022.92	2025.02	2027.12	2029.22	2031.32	2033.42	2035.52	2037.62	2039.72	2041.82	2043.92	2046.02	2048.12	2050.22	2052.32	2054.42	2056.52	2058.62	2060.72	2062.82	2064.92	2067.02	2069.12	2071.22	2073.32	2075.42	2077.52	2079.62	2081.72	2083.82	2085.92	2088.02	2090.12	2092.22	2094.32	2096.42	2098.52	2100.62	2102.72	2104.82	2106.92	2109.02	2111.12	2113.22	2115.32	2117.42	2119.52	2121.62	2123.72	2125.82	2127.92	2130.02	2132.12	2134.22	2136.32	2138.42	2140.52	2142.62	2144.72	2146.82	2148.92	2151.02	2153.12	2155.22	2157.32	2159.42	2161.52	2163.62	2165.72	2167.82	2169.92	2172.02	2174.12	2176.22	2178.32	2180.42	2182.52	2184.62	2186.72	2188.82	2190.92	2193.02	2195.12	2197.22	2199.32	2201.42	2203.52	2205.62	2207.72	2209.82	2211.92	2214.02	2216.12	2218.22	2220.32	2222.42	2224.52	2226.62	2228.72	2230.82	2232.92	2235.02	2237.12	2239.22	2241.32	2243.42	2245.52	2247.62	2249.72	2251.82	2253.92	2256.02	2258.12	2260.22	2262.32	2264.42	2266.52	2268.62	2270.72	2272.82	2274.92	2277.02	2279.12	2281.22	2283.32	2285.42	2287.52	2289.62	2291.72	2293.82	2295.92	2298.02	2300.12	2302.22	2304.32	2306.42	2308.52	2310.62	2312.72	2314.82	2316.92	2319.02	2321.12	2323.22	2325.32	2327.42	2329.52	2331.62	2333.72	2335.82	2337.92	2340.02	2342.12	2344.22	2346.32	2348.42	2350.52	2352.62	2354.72	2356.82	2358.92	2361.02	2363.12	2365.22	2367.32	2369.42	2371.52	2373.62	2375.72	2377.82	2379.92	2382.02	2384.12	2386.22	2388.32	2390.42	2392.52	2394.62	2396.72	2398.82	2400.92	2403.02	2405.12	2407.22	2409.32	2411.42	2413.52	2415.62	2417.72	2419.82	2421.92	2424.02	2426.12	2428.22	2430.32	2432.42	2434.52	2436.62	2438.72	2440.82	2442.92	2445.02	2447.12	2449.22	2451.32	2453.42	2455.52	2457.62	2459.72	2461.82	2463.92	2466.02	2468.12	2470.22	2472.32	2474.42	2476.52	2478.62	2480.72	2482.82	2484.92	2487.02	2489.12	2491.22	2493.32	2495.42	2497.52	2499.62	2501.72	2503.82	2505.92	2508.02	2510.12	2512.22	2514.32	2516.42	2518.52	2520.62	2522.72	2524.82	2526.92	2529.02	2531.12	2533.22	2535.32	2537.42	2539.52	2541.62	2543.72	2545.82	2547.92	2550.02	2552.12	2554.22	2556.32	2558.42	2560.52	2562.62	2564.72	2566.82	2568.92	2571.02	2573.12	2575.22	2577.32	2579.42	2581.52	2583.62	2585.72	2587.82	2589.92	2592.02	2594.12	2596.22	2598.32	2600.42	2602.52	2604.62	2606.72	2608.82	2610.92	2613.02	2615.12	2617.22	2619.32	2621.42	2623.52	2625.62	2627.72	2629.82	2631.92	2634.02	2636.12	2638.22	2640.32	2642.42	2644.52	2646.62	2648.72	2650.82	2652.92	2655.02	2657.12	2659.22	2661.32	2663.42	2665.52	2667.62	2669.72	2671.82	2673.92	2676.02	2678.12	2680.22	2682.32

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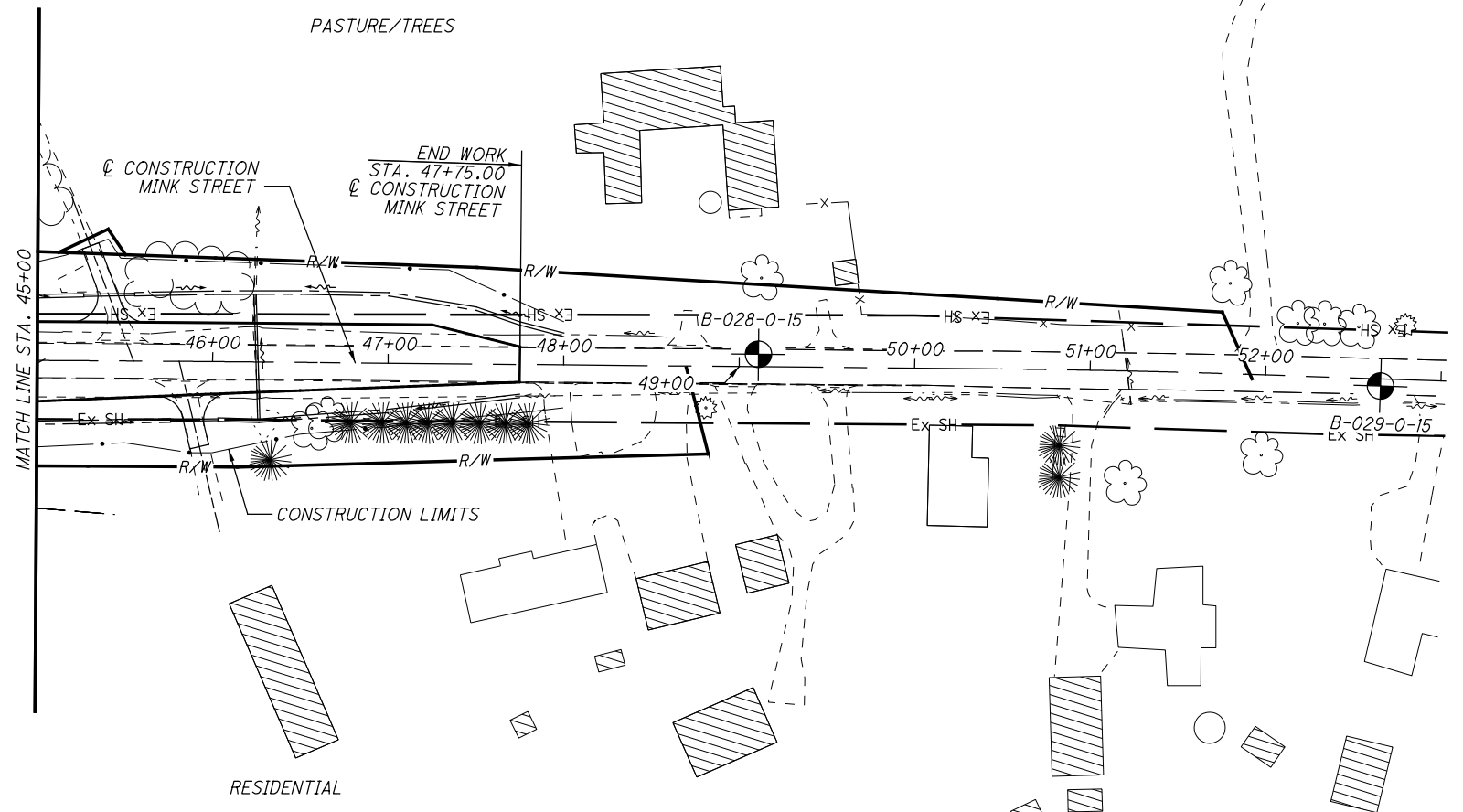
SOIL PROFILE

STA. 32+50 TO STA. 45+00 MINK STREET

LIC-161-1.83

17 / 30

1130	1183.35	1183.30	1183.33	1183.40	1183.49	1183.66	1184.01	1184.59	1185.49	1186.62	1187.49	1188.01	1187.78	1187.86	1187.91	1187.51	1186.34	1130
1140																		1140
1150																		1150
1160																		1160
1170																		1170
1180																		1180
1190																		1190
1200	1182.79	1182.88	1182.97	1183.07	1183.16	1183.25	1183.35	1183.44	1183.53	1183.63	1183.72	1183.81						1200



DRAWN BRU
CHECKED SM

SOIL PROFILE
STA. 45+00 TO STA. 47+75 MINK STREET

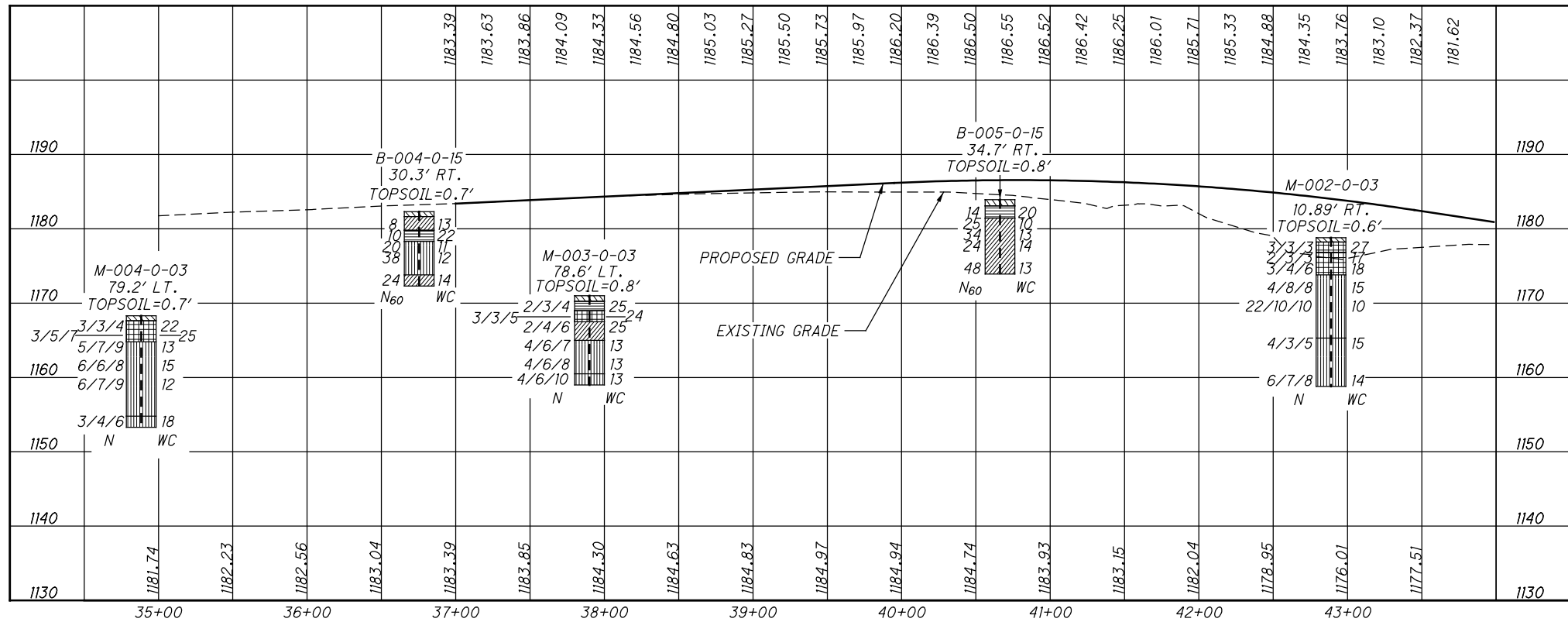
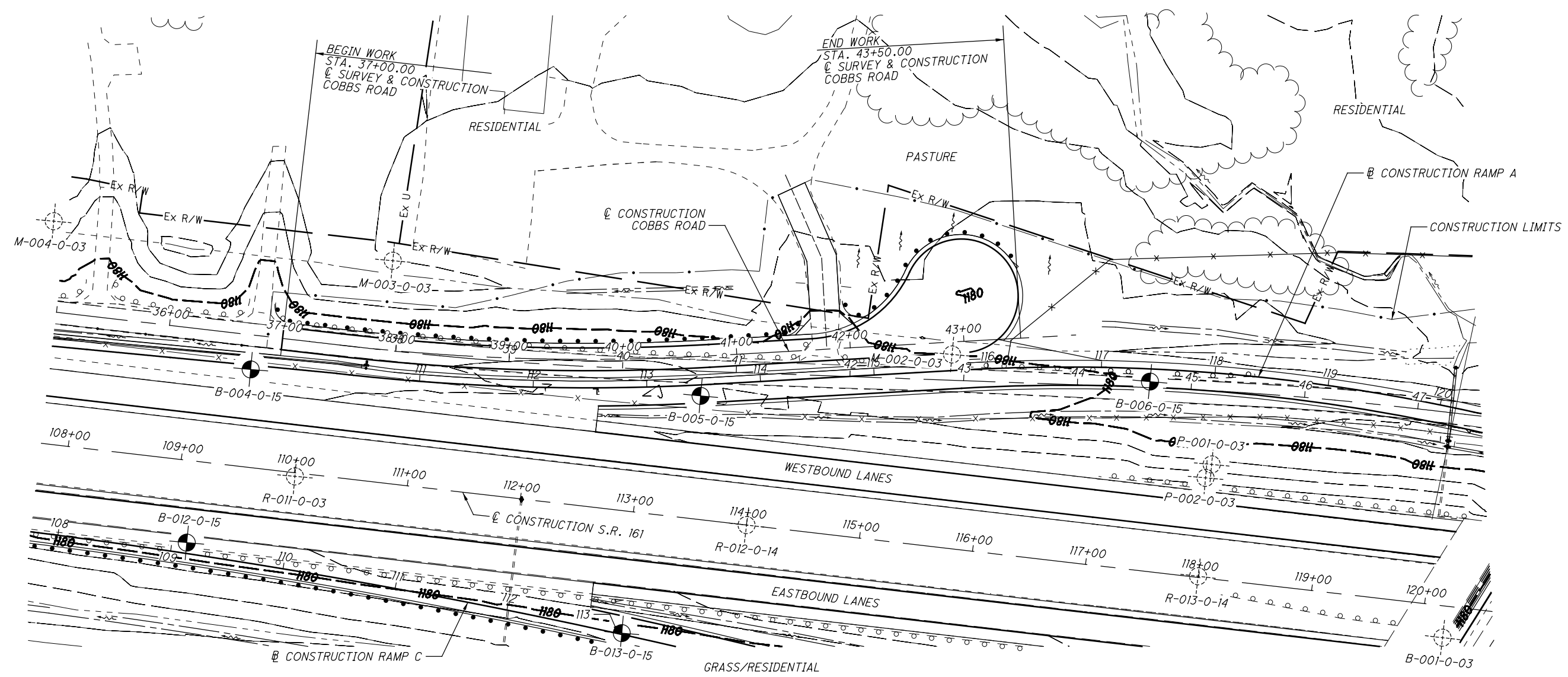
LIC-161-1.83



DRAWN BRU
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SOIL PROFILE STA. 35+00 TO STA. 43+98.40 COBB ROAD

LIC-161-1.83



NOTE:
SEE SHEET 8 OF 30 FOR B-012-0-15, R-011-0-03, P-001-0-03, P-002-0-03, R-012-0-14 AND R-013-0-14 SOIL PROFILES.
SEE SHEET 12 OF 30 FOR B-006-0-15 SOIL PROFILE.
SEE SHEET 9 OF 30 FOR B-001-0-03 SOIL PROFILES.

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B-001-0-03

LOG OF BORING

Date Started 11/18/03 Sampler: Type SS Dia. 1.375" Project Identification: Ohio Department of Transportation Dist. 5
 Date Completed 11/18/03 Casing: Length 80.0ft Dia. 3.25" FRA/LIC-161-23.20/0.00
 Boring No. B-1 Station & Offset 120+19.07, 27.89' R Water Elev. 1155.3ft Structure Foundation Exploration/ Retaining Wall
 Surface Elev. 1178.3ft CTL Project No. 03050555

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.			
1178.3	0																	
1178.3	0	2/2/4			0.5'	1	1	7	11	27	54	51	26	26	26			A-7-6
1177.8																		
1175.3	2	8/9/9				2												VIS.
1172.8	4	3/5/5				3	9	8	15	33	35	31	14	6	6			A-6a
1170.3	6																	
1169.8	8	9/9/10			8.0'	4												VIS.
1167.3	10																	
1167.3	12	5/6/8				5												13
1164.8	14	4/10/11				6												13
1162.3	16	6/7/7				7												10
1159.8	18	14/11/12				8												11
1155.3	20																	
1154.8	22																	
1150.3	24	5/6/5			23.0'	9												20
1149.8	26																	
1144.8	28	5/6/8			28.0'	10												12
1144.8	30																	
1144.8	32																	
1144.8	34	9/10/9				11	7	9	16	36	32	26	11	12	12			A-6a

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.



20/30

LIC-161-1.83

STRUCTURE FOUNDATION EXPLORATION
BORING LOG B-001-0-03

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B-001-0-03

LOG OF BORING (Continued)

Project Identification: Ohio Department of Transportation Dist. 5
FRALIC-161-23.20/0.00

Boring No. B-1

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class													
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.										
1143.3	36																								
1139.8	38	6/7/7			GRAY SANDY SILT (TILL)	12										11									VIS.
1134.8	44	8/10/13			GRAY SANDY SILT (TILL)	13										12									VIS.
1129.8	50	20/33/24			GRAY SANDY SILT WITH COBBLES (TILL)	14										10									VIS.
1124.8	54	18/20/22			GRAY SANDY SILT WITH COBBLES (TILL)	15										12									VIS.
1119.8	58	18/12/14			GRAY SANDY SILT (TILL)	16	7	10	16	36	31	24	10	11											A-4a
1114.8	64	18/20/22			GRAY SANDY SILT WITH COBBLES (TILL)	17																			VIS.
1109.8	70	9/12/14			GRAY SANDY SILT (TILL)	18										12									VIS.

OH DOT 2 CTL OH DOT.GDT 04050070CIN.GLB 03050555.GPJ 5/4/16

B-001-0-03

LOG OF BORING (Continued)

Project Identification: Ohio Department of Transportation Dist. 5
FRALIC-161-23.20/0.00

Boring No. B-1

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.			
1107.2	72																	
1104.8	74	11/13/15			GRAY SANDY SILT (TILL)	19									12			VIS.
1099.8	76																	
	78																	
1098.3	80	14/10/17			GRAY SANDY SILT (TILL)	20												VIS.
	80.0'				BOTTOM OF BORING													

OH DOT 2 CTL OH DOT.GDT 04050070CIN.GLB 03050555.GPJ 5/4/16



B-002-0-03

LOG OF BORING

Date Started 11/21/03 Sampler: Type SS Dia. 1.375" Ohio Department of Transportation Dist. 5
 Date Completed 11/21/03 Casing: Length 75.0ft Dia. 3.25" Project Identification: FRA/LIC-161-23.20/0.00
 Boring No. B-2 Station & Offset 120+60.77, 73.46' L Water Elev. 1145.5ft Structure Foundation Exploration/Retaining Wall
 Surface Elev. 1175.0ft CTL Project No. 03050555

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.				
1175.0	0																		
1174.3					0.7'														
1172.5	2	3/4/5			BROWN CLAYEY SILT WITH ROOTS	1												19	VIS.
1172.0					2.5'														
1169.5	6	6/6/8			BROWN TO BROWN AND GRAY SANDY SILT WITH COBBLE (TILL)	2	5	10	15	34	36			12	14				A-6a
1166.5	8	6/9/8			BROWN TO BROWN AND GRAY SANDY SILT WITH COBBLE (TILL)	3									14				VIS.
1164.0	10	7/8/11			BROWN TO BROWN AND GRAY SANDY SILT WITH COBBLE (TILL)	4									17				VIS.
1161.5	14	6/8/8			GRAY SANDY SILT (TILL)	5													VIS.
1159.0	16	9/6/7			GRAY SANDY SILT (TILL)	6	8	10	13	41	28			8	10				A-4a
1156.5	18	5/7/9			GRAY SANDY SILT (TILL)	7									10				VIS.
1151.5	24	5/6/7			GRAY SANDY SILT (TILL)	8													VIS.
1146.5	28	6/7/8			GRAY SANDY SILT WITH COBBLES (TILL)	9													VIS.
1141.5	34	8/5/6			GRAY SANDY SILT WITH COBBLES (TILL)	10	15	13	14	33	25			9	14				A-4a
		6/8/9			GRAY SANDY SILT WITH COBBLES (TILL)	11													VIS.

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

B-002-0-03

LOG OF BORING (Continued)

Ohio Department of Transportation Dist. 5

Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-2

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.			
1140.0	36																	
1136.5	38	7/8/8			GRAY SANDY SILT (TILL)	12									14			VIS.
1131.5	40																	
	42																	
	44	5/8/11			GRAY SANDY SILT (TILL)	13									12			VIS.
	46																	
	48																	
1126.5	50	50-0"			GRAY SANDY SILT WITH BOULDER (TILL)	14												VIS.
	52																	
	54	47/37/10			GRAY SANDY SILT WITH COBBLES (TILL)	15									7			VIS.
	56																	
	58																	
1116.5	60	12/20/29			GRAY SANDY SILT WITH COBBLES (TILL)	16									11			VIS.
	62																	
	64	22/24/31			GRAY SANDY SILT WITH COBBLES (TILL)	17									11			VIS.
1111.5	66																	
	68																	
1106.5	70	21/20/26			GRAY SANDY SILT WITH COBBLES (TILL)	18									11			VIS.

B-002-0-03

LOG OF BORING (Continued)

Page 3 of 3

Ohio Department of Transportation Dist. 5

Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-2

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.			
1103.9	72																	
1101.5	74	18/23/36			GRAY SANDY SILT WITH COBBLES (TILL)	19										16		VIS.
1100.0	75.0'				BOTTOM OF BORING													

OH DOT 2 CTL OH DOT.GDT 04050070CIN.GLB 03050555.GPJ 5/4/16



25/30

LIC-161-1.83

STRUCTURE FOUNDATION EXPLORATION
BORING LOG B-002-0-03 (CONT.)

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CHECKED
SM

B-003-0-03

LOG OF BORING

Date Started 11/19/03 Sampler: Type SS Dia. 1.375"
 Date Completed 11/20/03 Casing: Length 80.0ft Dia. 3.25"

Ohio Department of Transportation Dist. 5
 Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-3 Station & Offset 120+91.35, 63.75' R Water Elev. 1176.4ft Surface Elev. 1176.4ft CTL Project No. 03050555
Structure Foundation Exploration/ Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class												
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.										
1176.4	0																								
1176.4	0	2/3/4			0.5'	1															18	VIS.			
1175.9																									
1173.4	2	5/7/8				2																			
1170.9	4																								
1170.9	6	6/6/8				3																			
1168.4	8																								
1167.9					8.0'																				
1167.9	10	8/9/12				4																			
1165.4	12	6/8/9				5																			
1162.9	14	7/8/9				6																			
1160.4	16	9/9/12				7																			
1157.9	18	6/8/12				8																			
1152.9	24	6/8/9				9																			
1147.9	28	6/6/7				10																			
1142.9	34	6/7/9				11																			

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

B-003-0-03

LOG OF BORING (Continued)

Ohio Department of Transportation Dist. 5

Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-3

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class																	
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.														
1141.4	36																												
1137.9	38	7/8/7			GRAY SANDY SILT (TILL)	12																			12	VIS.			
1132.9	44	7/9/12			GRAY SANDY SILT (TILL)	13																				14	VIS.		
1127.9	50	10/11/13			GRAY SANDY SILT (TILL)	14																					13	VIS.	
1122.9	54	12/14/17			GRAY SANDY SILT (TILL)	15																						13	VIS.
1117.9	60	22/28/32			GRAY SANDY SILT WITH COBBLES (TILL)	16																						12	VIS.
1112.9	64	12/21/24			GRAY SANDY SILT WITH COBBLES (TILL)	17																						7	VIS.
1107.9	70	14/19/24			GRAY SANDY SILT (TILL)	18																						8	VIS.

B-003-0-03

LOG OF BORING (Continued)

Ohio Department of Transportation Dist. 5
 Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-3

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class							
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.				
1105.3	72																		
1102.9	74	17/18/21			GRAY SANDY SILT (TILL)	19									10				VIS.
1097.9	76																		
1096.4	78	11/14/22			GRAY SANDY SILT (TILL)	20									11				VIS.
80.0'	80				BOTTOM OF BORING														

OH DOT 2 CTL OH DOT.GDT 04050070CIN.GLB 03050555.GPJ 5/4/16

B-004-0-03

LOG OF BORING

Date Started 11/25/03 Sampler: Type SS Dia. 1.375" Ohio Department of Transportation Dist. 5
 Date Completed 11/25/03 Casing: Length 70.0ft Dia. 3.25" Project Identification: FRA/LIC-161-23.20/0.00
 Boring No. B-4 Station & Offset 121+33.98, 32.66' L Water Elev. 1157.8ft Structure Foundation Exploration/Retaining Wall
 Surface Elev. 1175.3ft CTL Project No. 03050555

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.			
1175.3	0																	
1175.3		3/3/4			0.6'	1	6	9	15	38	32	27	11	14				A-6a
1174.7																		
1172.3	2					2												
	4	7/8/10																
1169.8	6	6/7/9				3												
	8																	
1166.8		3/3/4				4	0	0	2	52	46	31	13	23				A-6a
	10																	
1164.3																		
	12	3/4/6			11.0'	5												
	14	4/5/6				6												
1161.8																		
	16	4/5/7				7	6	9	15	38	32	23	10	13				A-4a
	18																	
1156.8		3/4/9				8												
	20																	
	22																	
	24	4/5/6				9												
1151.8																		
	26																	
	28																	
1146.8		7/8/9				10												
	30																	
	32																	
	34	7/8/13				11												
1141.8																		

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.



B-004-0-03

LOG OF BORING (Continued)

Ohio Department of Transportation Dist. 5

Project Identification: FRA/LIC-161-23.20/0.00

Boring No. B-4

Structure Foundation Exploration/Retaining Wall

Elev. (ft)	Depth (ft)	Std. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class													
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.										
1140.3	36																								
1136.8	38	7/12/14				12																	14	VIS.	
1131.8	44	12/15/15		43.5'	BROWN AND GRAY SILTY SAND AND GRAVEL	13																	16	VIS.	
1126.8	48	13/19/26		48.5'	GRAY SANDY SILT (TILL)	14																	10	VIS.	
1121.8	54	25/21/26			GRAY SANDY SILT (TILL)	15																		12	VIS.
1116.8	60	22/27/28			GRAY SANDY SILT (TILL)	16																		11	VIS.
1111.8	64	23/26/29			GRAY SANDY SILT (TILL)	17																		12	VIS.
1106.8	68	24/26/28			GRAY SANDY SILT (TILL)	18																		11	VIS.
1105.3	70			70.0'	BOTTOM OF BORING																				

OH DOT 2 CTL OH DOT.GDT 04050070CIN.GLB 03050555.GPJ 5/4/16



30/30

LIC-161-1.83

STRUCTURE FOUNDATION EXPLORATION
BORING LOG B-004-0-03 (CONT.)

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740.548.1500 • www.augustmack.com
7830 North Central Drive, Suite B • Lewis Center, Ohio 43035

SPECIAL PROVISIONS

June 10, 2016

Ms. Sherry Derefield
Heritage Land Services, Inc
635 Brooksedge Boulevard
Westerville, Ohio 43081

Re: Limited Asbestos Survey
1519 Mink Street
Johnstown, Ohio
August Mack Project Number JQ0921.731

LIC-161-1.83

PID: 97879

ASBESTOS TESTING REPORTS

Date: July 11, 2016

Dear Mrs. Derefield:

At the request of Heritage Land Services, August Mack Environmental, Inc., (August Mack) has completed a limited asbestos survey at the above-referenced site. The purpose of the survey was to collect samples of all suspect asbestos containing materials (ACMs). August Mack personnel performed the survey activities on May 26, 2016. Inspection and survey activities were conducted by Mr. Domanic Martin; an Ohio-licensed Asbestos Hazard Evaluation Specialist. A copy of Mr. Martin's Ohio Asbestos Inspector License is provided in Attachment A.

A total of twenty-four (24) suspected ACM samples were collected and submitted for analysis to EMSL Analytical, Inc., located in Indianapolis, Indiana. All samples were analyzed utilizing the polarized-light microscopy (PLM) method as specified in *40 CFR Part 763, Section 1, Appendix E, Subpart E*. A copy of the laboratory analytical report is provided as Attachment B. A list of suspected materials found on the above site can be seen on Table 1.

Table 1
Suspected ACM materials

HVAC Seals	2 Kinds of Linoleum	Window Caulking
White Drywall (house and garage)	Colored Drywall (house)	Stamped Ceiling

The Ohio Environmental Protection Agency (OEPA) requires that prior to demolition, if regulated ACMs (RACMs) are present in quantities equal to or greater than 50 linear feet, 50 square feet, or 35 cubic feet of facility components, written notification is required prior to asbestos stripping or removal activities, or any other activities that would break up, dislodge, or disturb the asbestos. The notices must include among other things: RACMs which include friable ACMs; Category I ACMs that have become friable or that will be subjected to sanding, grinding, cutting, or abrading; and Category II ACMs that are either friable or have the potential of becoming friable by being crumbled, pulverized, or reduced to powder by the forces expected to act on the materials in the course of demolition activities. More specifically, ACMs are designated as:

- Friable asbestos - material which can be crumbled, pulverized or reduced to powder by hand pressure, a.k.a. Regulated Asbestos-Containing Materials (RACM).
- Category I non-friable (Cat. I) - includes resilient floor coverings, asphalt roofing products, gaskets and packings.
- Category II non-friable (Cat. II) - any non-friable ACM that is not in Category I (i.e., transite siding material).

Asbestos-containing materials as defined by the Federal Occupational Safety & Health Administration (OSHA) and National Emission Standards for Hazardous Air Pollutants (NESHAP) are materials with an asbestos concentration of greater than (>1.0%). Based on the results from analysis, no asbestos containing material was found in the samples taken.

CONCLUSIONS & RECOMMENDATIONS

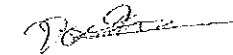
August Mack has completed a pre-demolition asbestos survey at the single-family residence located at 1519 Mink Street in Johnstown, Ohio. No asbestos was detected in any of the samples collected.

This survey was conducted to identify all ACMs present, to the extent practicable, prior to demolition of the site structures. August Mack has taken precautions to inspect the site to identify all suspect ACMs; however, it is recognized that some hidden ACMs may exist in areas that are impossible to inspect or were not encountered during this survey. If identified, these materials should be sampled prior to being impacted by the demolition activities. It should be noted that sampling of the roof materials was not a part of this survey.

August Mack recommends the client keep a copy of the asbestos analytical report on-site during demolition activities for documentation purposes.

We trust that this submittal is responsive to your needs and appreciate the opportunity to provide you with these environmental services. Please feel free to contact us if you have any questions.

Sincerely,



Domanic Martin
Field Technician
Asbestos Inspector's License# ES35856




William L. Glaze
Senior Manager/O&M Services Manager

Attachments

ATTACHMENT A
Inspector License and Accreditation

Department of Health
Asbestos Program

Asbestos Hazard Evaluation Specialist



Domanic L. Martin
August Mack Environmental
7830 N Central Drive Ste B
Lewis Center OH 43035

	Certification Number	Expiration Date
OB: 02/12/1989	ES35856	01/13/2017

is certification is issued pursuant to Chapter 3710 of the
vised Code and 3701-34 of the Ohio Administrative Code

Certification Card is
not valid if altered

ATTACHMENT B

Asbestos Laboratory Results



EMSL Analytical, Inc.

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161609476
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Attention: William Glaze
 August Mack Environmental, Inc.
 7830 N. Central Drive Suite B
 Lewis Center, OH 43035
 Project: JQ0921.731

Phone: (740) 548-1508
 Fax:
 Received Date: 05/27/2016 10:05 AM
 Analysis Date: 06/06/2016
 Collected Date: 05/26/2016

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A1 161609476-0001	HVAC seals	Gray/White Fibrous Homogeneous	20% Synthetic 60% Glass	20% Non-fibrous (Other)	None Detected
A2 161609476-0002	HVAC seals	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
A3 161609476-0003	HVAC seals	White Fibrous Homogeneous	55% Glass	45% Non-fibrous (Other)	None Detected
B1-Drywall 161609476-0004	Drywall walls	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
B1-Joint Compound 161609476-0004A <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B2 161609476-0005 <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
B3-Drywall 161609476-0006	Drywall walls	Brown/White Fibrous Heterogeneous	20% Cellulose 2% Glass	70% Gypsum 8% Non-fibrous (Other)	None Detected
B3-Joint Compound 161609476-0006A <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C1-Drywall 161609476-0007	Drywall walls	Brown/White Fibrous Heterogeneous	35% Cellulose	60% Gypsum 5% Non-fibrous (Other)	None Detected
C1-Joint Compound 161609476-0007A <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	White/Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C2-Drywall 161609476-0008	Drywall walls	Brown/White Fibrous Heterogeneous	35% Cellulose	60% Gypsum 5% Non-fibrous (Other)	None Detected
C2-Joint Compound 161609476-0008A <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	White/Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C3-Drywall 161609476-0009	Drywall walls	Brown/White Fibrous Heterogeneous	20% Cellulose 2% Glass	70% Gypsum 8% Non-fibrous (Other)	None Detected
C3-Joint Compound 161609476-0009A <i>Inseparable paint / coating layer included in analysis</i>	Drywall walls	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial Report From 06/06/2016 15:07:08

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161609476
 Customer ID: AUGU51
 Customer PO:
 Project ID:

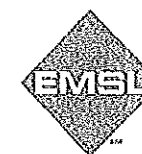
Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
D1-Drywall <i>161609476-0010</i>	Drywall ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
D1-Joint Compound <i>161609476-0010A</i> <i>Inseparable paint / coating layer included in analysis</i>	Drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D2-Drywall <i>161609476-0011</i>	Drywall ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
D2-Joint Compound <i>161609476-0011A</i> <i>Inseparable paint / coating layer included in analysis</i>	Drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D3-Drywall <i>161609476-0012</i>	Drywall ceiling	Brown/White Fibrous Heterogeneous	20% Cellulose 2% Glass	70% Gypsum 8% Non-fibrous (Other)	None Detected
D3-Joint Compound <i>161609476-0012A</i> <i>Inseparable paint / coating layer included in analysis</i>	Drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-Linoleum <i>161609476-0013</i>	Linoleum	Brown/Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-Mastic <i>161609476-0013A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E2-Linoleum <i>161609476-0014</i>	Linoleum	Brown/Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E2-Mastic <i>161609476-0014A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E3-Linoleum <i>161609476-0015</i>	Linoleum	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E3-Mastic <i>161609476-0015A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F1-Linoleum <i>161609476-0016</i>	Linoleum	Tan/White Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
F1-Mastic <i>161609476-0016A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F2-Linoleum <i>161609476-0017</i>	Linoleum	Tan/White Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
F2-Mastic <i>161609476-0017A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F3-Linoleum <i>161609476-0018</i>	Linoleum	Tan/White Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
F3-Mastic <i>161609476-0018A</i>	Linoleum	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial Report From: 06/08/2016 15:07:08

Printed: 6/8/2016 3:07 PM

Page 2 of 3

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161609476
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
G1 <i>161609476-0019</i>	Window caulk	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2 <i>161609476-0020</i>	Window caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3 <i>161609476-0021</i>	Window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1 <i>161609476-0022</i>	Drywall garage	Brown/White Fibrous Heterogeneous	35% Cellulose	60% Gypsum 5% Non-fibrous (Other)	None Detected
H2 <i>161609476-0023</i>	Drywall garage	Brown/White Fibrous Heterogeneous	35% Cellulose	60% Gypsum 5% Non-fibrous (Other)	None Detected
H3 <i>161609476-0024</i>	Drywall garage	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected

Analyst(s)

Jada Moffett (13)
 Ross Mallock (25)

Richard Harding, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 260168-D, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial Report From: 06/08/2016 15:07:08

Printed: 6/8/2016 3:07 PM

Page 3 of 3

**OHIO ENVIRONMENTAL PROTECTION AGENCY
INSTRUCTIONS FOR COMPLETING
NOTIFICATION OF DEMOLITION AND RENOVATION FORM**

ATTACHMENT C

Ohio EPA - 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 <small>day 1</small>	4 <small>day 2</small>	5 <small>day 3</small>	6
7	8 <small>day 4</small>	9 <small>day 5</small>	10 <small>day 6</small>	11 <small>day 7</small>	12 <small>day 8</small>	13
14	15 <small>day 9</small>	16 <small>day 10</small>	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 3rd.

Note: Holidays are counted when they fall on a working day.

Completion of 10-day prior notification period: July 16th.

* First day work can commence (day following the 10th working day): July 17th.

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

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

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
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



Notification of Demolition and Renovation Form
Single & Multi-Structure
 Division of Air Pollution Control

Operator Project # :		For Official Use Only		Hand-Delivered		Postmark: / /		Received by Office: / /		Notification # :			
1. Notification Type (check one)													
<input type="checkbox"/> Original		<input type="checkbox"/> Revision # :		Section #s Revised:		Offsite/Hold:		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Cancellation			
2. Facility Description (include building name, number and floor or room number). If more than one structure, use Multi-Structure Attachment form													
Building Name (if applicable):						Site Location:							
Address:						County:							
City:						State: OH		Zip:					
Building Size (ft ²):						No. of Floors:		Age (years):					
Present Use:						Prior Use:							
3. Type of Operation (check one)													
<input 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													
4. Is Asbestos Present? (check one)													
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No, previously abated Year Abated (if applicable):													
5. Owner/Coordinating Entity, Asbestos Abatement Contractor and Onsite Demolition Contractor Information													
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 type="checkbox"/> No (list contact information for property owner below)						<input type="checkbox"/> No							
Owner/Coordinating Entity:													
Address:						Email:							
City:						State:		Zip:					
Contact:						Phone: () -		Fax: () -					
Asbestos Abatement Contractor (if applicable)						On-site Demolition Contractor or Fire Department (if applicable)							
Name:						Name:							
Address:						Address:							
City:		State:		Zip:		City:		State:		Zip:			
Contact:						License #: AC							
Phone: () -		Fax: () -		Phone: () -		Fax: () -		Phone: () -		Fax: () -			
Email:						Email:							
6. Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure													
Evaluation Specialist:						License #: ES		Expiration Date: / /					
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 type="checkbox"/> PLM <input type="checkbox"/> Point Count <input type="checkbox"/> TEM <input type="checkbox"/> Other Method (Explain Below):													
7. Approximate Amount of Asbestos-Containing Materials (complete table below and Section 11 if asbestos is present)													
Material to be Removed													
Material NOT to be Removed													
RACM													
Nonfriable Asbestos-Containing Material													
Category I													
Category II													
Category I													
Category II													
Pipes (linear feet)													
Surface Area (ft ²)													
Facility Components													
<input type="checkbox"/> ft ³ <input type="checkbox"/> yd ³													
8. Scheduled Dates of Demolition or Renovation (original notification is required 10 working days prior to the start of work)													
Start: / /						Complete: / /							
9. Asbestos Removal Dates and Work Hours (if applicable, for asbestos removal only)													
Start: / /						Complete: / /							
Hours Onsite													
Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
-		-		-		-		-		-		-	



**Notification of Demolition and Renovation
Multi-Structure Attachment Form**
Division of Air Pollution Control

10. Planned Demolition or Renovation Work (check all that apply)
 Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used:
 Implosion Fire Training Wet Methods Manual Demolition Mechanical Demolition Other (Explain Below):

Description of affected facility components (include attachment if necessary):

11. Asbestos Description and Engineering Controls (if asbestos is being abated)
 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:

12. Asbestos Waste Transporters (if applicable)

Asbestos Waste Transporter #1	Asbestos Waste Transporter #2
Name:	Name:
Address:	Address:
City: State: Zip:	City: State: Zip:
Contact:	Contact:
Phone: () -	Phone: () -
Fax: () -	Fax: () -
Email:	Email:

13. Asbestos Waste Disposal (if applicable)

Asbestos Waste Disposal Site:	Contact:
Address:	Email:
City: State: Zip:	Phone: () -
	Fax: () -

14. Emergency Demolition (complete this section if you checked Emergency Demolition in Section 3)
 A copy of the issued order, including the following information, must be attached to this notification

Government Official Issuing Order:	Title:
Agency:	Authority of Order (Citation of Code):
Date of Order: / /	Demolition Date: / /

15. Emergency Renovation (complete this section if you checked Emergency Renovation in Section 3)
 A separate sheet with the following information must be attached 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:

16. Procedures to be followed should unexpected RACM be discovered (check all that apply)

<input type="checkbox"/> Stop work and keep wet	<input type="checkbox"/> Evacuate area	<input type="checkbox"/> Contact licensed abatement contractor
<input type="checkbox"/> Contact district office/local air authority	<input type="checkbox"/> Demarcate area	<input type="checkbox"/> Other (Explain Below):

17. Asbestos Abatement Signature (only sign below if asbestos is being removed)
 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)	

18. Demolition and Renovation Signature (required for all original and revised notifications)
 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.

Note: This form to be completed and attached to Notification Form when project involves more than one structure

		Date Submitted:			Revision #:	
Project Name:		Structure 1	Structure 2	Structure 3	Structure 4	Structure 5
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"/>



740.548.1500 • www.augustmack.com
7830 North Central Drive, Suite B • Lewis Center, Ohio 43035

June 28, 2016

Ms. Sherry Derefield
Heritage Land Services, Inc.
635 Brookside Boulevard
Westerville, Ohio 43081

Re: Pre-Demolition Asbestos Survey
1547 Mink Street
Johnstown, Ohio
August Mack Project Number JQ0921.731

Dear Ms. Derefield:

At the request of Heritage Land Services, August Mack Environmental, Inc., (August Mack) has completed a pre-demolition asbestos survey at the above-referenced site. The purpose of the inspection was to determine if asbestos-containing materials (ACMs) are located on or within the site prior to demolition activities. Mr. Domanic Martin, Ohio-licensed Asbestos Hazard Evaluation Specialist, performed the survey activities on June 17, 2016. A copy of the inspectors' license has been provided as Attachment A. A summary of the surveys, sampling activities and laboratory results are presented in the following sections.

PRE-DEMOLITION ASBESTOS SURVEY

A walk-through of the site structure was performed to identify suspect ACMs using the United States Environmental Protection Agency's (U.S. EPA's) list of items suspected as ACMs and the inspector's experience. Twelve (12) suspect ACMs were identified during the survey. A complete listing of all suspect ACMs sampled, including the sample numbers, material description, and location has been provided in Attachment B. Standard sampling protocols were employed, sampling tools were cleaned between samples, and chain-of-custody procedures were observed.

A total of fifty-seven (57) bulk sample layers were collected and submitted for analysis to EMSL Analytical, Inc., located in Indianapolis, Indiana. All samples were analyzed utilizing the polarized-light microscopy (PLM) method as specified in 40 CFR Part 763, Section 1, Appendix E, Subpart E. A copy of the laboratory analytical report is provided as Attachment C.

Ms. Sherry Derefield

June 28, 2016

DISCUSSION OF FINDINGS

The Ohio Environmental Protection Agency (OEPA) requires that prior to demolition, if regulated ACMs (RACMs) are present in quantities equal to or greater than 50 linear feet, 50 square feet, or 35 cubic feet of facility components, written notification is required prior to asbestos stripping or removal activities, or any other activities that would break up, dislodge, or disturb the asbestos. The notices must include among other things: RACMs which include friable ACMs; Category I ACMs that have become friable or that will be subjected to sanding, grinding, cutting, or abrading; and Category II ACMs that are either friable or have the potential of becoming friable by being crumbled, pulverized, or reduced to powder by the forces expected to act on the materials in the course of demolition activities. More specifically, ACMs are designated as:

- Friable asbestos - material which can be crumbled, pulverized or reduced to powder by hand pressure, a.k.a. Regulated Asbestos-Containing Materials (RACM).
- Category I non-friable (Cat. I) - includes resilient floor coverings, asphalt roofing products, gaskets and packings.
- Category II non-friable (Cat. II) - any non-friable ACM that is not in Category I (i.e., transite siding material).

Asbestos-containing materials as defined by the Federal Occupational Safety & Health Administration (OSHA) and National Emission Standards for Hazardous Air Pollutants (NESHAP) are materials with an asbestos concentration of greater than (>1.0%). Based on the results from analysis, no asbestos containing materials were identified during the survey.

CONCLUSIONS

August Mack has completed a pre-demolition asbestos survey at the single-family residence located at 1547 Mink Street in Johnstown, Ohio. As presented above, no asbestos containing materials were identified during this survey. August Mack recommends the client keep a copy of the asbestos analytical report on-site during demolition activities for documentation purposes. A copy of the OEPA Notification of Demolition and Renovation Form is included as Attachment D.

This survey was conducted to identify all ACMs present, to the extent practicable, prior to demolition of the site structures. August Mack has taken precautions to inspect the site to identify all suspect ACMs; however, it is recognized that some hidden ACMs may exist in areas that are impossible to inspect or were not encountered during this survey. If identified, these materials should be sampled prior to being impacted by the demolition activities.

Ms. Sherry Derefield

June 28, 2016

We trust that this submittal is responsive to your needs and appreciate the opportunity to provide you with these environmental services. Please feel free to contact us if you have any questions.

Sincerely,



Shannon Landrum
Environmental Site Assessor



William L. Glaze
Senior Manager/O&M Services Manager

Attachments

ATTACHMENT A

Inspector License and Accreditation

Department of Health
Asbestos Program

Asbestos Hazard Evaluation Specialist



Domanic L. Martin
August Mack Environmental
7830 N Central Drive Ste B
Lewis Center OH 43035

Certification Number Expiration Date
ES35856 01/13/2017

OB: 09/12/1989

A certification is issued pursuant to Chapter 3710 of the
Revised Code and 3701-24 of the Ohio Administrative Code. Certification Card is
not valid if altered.

ATTACHMENT B

Asbestos Bulk Sample Results

Asbestos Bulk Sample Results
 1547 Mink Street
 Johnstown, Ohio
 June 17, 2016

ATTACHMENT C

Laboratory Analytical Results

Client Sample	Asbestos %/Type	Sample Location	Material Location
A1	ND	Ceiling Tile	Basement
A2	ND		
A3	ND		
B1-Joint Compound	ND	Drywall Wall and Joint Compound	Throughout House
B1-Drywall	ND		
B2-Joint Compound	ND		
B2-Drywall	ND	Drywall Wall	Kitchen & Living Room
B3	ND		
C1	ND		
C2	ND	Drywall Wall and Joint Compound	Northern Half of house
C3-Drywall	ND		
C3-Texture	ND		
D1-Joint Compound	ND	Popcorn Ceiling 1 Kitchen & Living Room	Kitchen & Living Room
D1-Drywall	ND		
D2-Joint Compound	ND		
D2-Drywall	ND	Popcorn Ceiling 2 Garage	Garage
D3-Joint Compound	ND		
D3-Drywall	ND		
E1-Texture	ND	Ceiling Tile	West Bathroom 1
E1-Drywall	ND		
E2-Texture	ND		
E2-Drywall	ND	Ceramic Tile and Grout	West Bathroom 2
E3-Texture	ND		
E3-Drywall	ND		
F1-Texture	ND	Grout on Stone Wall	Kitchen
F1-Drywall	ND		
F2-Texture	ND		
F2-Drywall	ND	Kitchen Sink Coating	Kitchen Sink
F3-Texture	ND		
F3-Drywall	ND		
G1	ND	Sealant Outside	Building Around Outside of the House
G2	ND		
G3	ND		
H1-Ceramic Tile	ND	Roofing Materials	Roof of House
H1-Grout	ND		
H2-Ceramic Tile	ND		
H2-Grout	ND	L1-Shingle	Roof of House
H3-Ceramic Tile	ND		
H3-Grout	ND		
H3-Thinset	ND	L2-Shingle	Roof of House
I1	ND		
I2	ND		
I3	ND	L3-Shingle	Roof of House
J1	ND		
J2	ND		
J3	ND	L3-Shingle	Roof of House
K1	ND		
K2	ND		
K3	ND	L3-Shingle	Roof of House
L1-Shingle	ND		
L2-Shingle	ND		
L2-Tar	ND	L3-Shingle	Roof of House
L3-Shingle	ND		
L3-Shingle	ND		
L3-Shingle	ND	L3-Shingle	Roof of House
L3-Shingle	ND		
L3-Shingle	ND		

Asbestos-containing material (ACM) = greater than 1% (>1%) asbestos
 ND = None Detected

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161610957
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Attention: Bill Glaze
 August Mack Environmental, Inc.
 7830 N. Central Drive Suite B
 Lewis Center, OH 43035

Phone: (740) 548-1508
 Fax:
 Received Date: 06/20/2016 12:15 PM
 Analysis Date: 06/25/2016
 Collected Date: 06/17/2016

Project: JQ0921.731

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A1 161610957-0001	ceiling tile	White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	10% Perlite 10% Non-fibrous (Other)	None Detected
A2 161610957-0002	ceiling tile	White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	10% Perlite 10% Non-fibrous (Other)	None Detected
A3 161610957-0003	ceiling tile	Brown/White Fibrous Homogeneous	60% Cellulose 20% Min. Wool	15% Perlite 5% Non-fibrous (Other)	None Detected
B1-Joint Compound 161610957-0004 <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B1-Drywall 161610957-0004A	drywall wall	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
B2-Joint Compound 161610957-0005 <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B2-Drywall 161610957-0005A	drywall wall	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
B3 161610957-0006 <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C1 161610957-0007	drywall wall	White/Red Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
C2 161610957-0008	drywall wall	White/Red Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
C3-Drywall 161610957-0009	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C3-Texture 161610957-0009A <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D1-Joint Compound 161610957-0010	drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D1-Drywall 161610957-0010A	drywall ceiling	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected

Initial Report From: 06/27/2016 09:11:13

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161610957
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
D2-Joint Compound 161610957-0011	drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D2-Drywall 161610957-0011A	drywall ceiling	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
D3-Joint Compound 161610957-0012	drywall ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
D3-Drywall 161610957-0012A	drywall ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
E1-Texture 161610957-0013	popcorn ceiling 1 kit & liv rm	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-Drywall 161610957-0013A	popcorn ceiling 1 kit & liv rm	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
E2-Texture 161610957-0014	popcorn ceiling 1 kit & liv rm	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E2-Drywall 161610957-0014A	popcorn ceiling 1 kit & liv rm	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
E3-Texture 161610957-0015 <i>Inseparable paint / coating layer included in analysis</i>	popcorn ceiling 1 kit & liv rm	White Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
E3-Drywall 161610957-0015A	popcorn ceiling 1 kit & liv rm	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
F1-Texture 161610957-0016	popcorn ceiling 2 garage	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F1-Drywall 161610957-0016A	popcorn ceiling 2 garage	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
F2-Texture 161610957-0017	popcorn ceiling 2 garage	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F2-Drywall 161610957-0017A	popcorn ceiling 2 garage	White Non-Fibrous Homogeneous	15% Cellulose	75% Gypsum 10% Non-fibrous (Other)	None Detected
F3-Texture 161610957-0018	popcorn ceiling 2 garage	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F3-Drywall 161610957-0018A	popcorn ceiling 2 garage	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
G1 161610957-0019	linoleum	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2 161610957-0020	linoleum	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3 161610957-0021	linoleum	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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 Customer ID: AUGU51
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H1-Ceramic Tile 161610957-0022	floor tile	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1-Grout 161610957-0022A	floor tile	Gray Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
H2-Ceramic Tile 161610957-0023	floor tile	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H2-Grout 161610957-0023A	floor tile	Gray Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
H3-Ceramic Tile 161610957-0024	floor tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H3-Grout 161610957-0024A	floor tile	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (Other)	None Detected
H3-Thinset 161610957-0024B	floor tile	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
I1 161610957-0025	grout on stone wall	Gray/Various Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
I2 161610957-0026	grout on stone wall	Gray/Various Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
I3 161610957-0027	grout on stone wall	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
J1 161610957-0028	kitchen sink	White Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
J2 161610957-0029	kitchen sink	White Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
J3 161610957-0030	kitchen sink	White Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
K1 161610957-0031	sealant outside	Gray/Tan/Black Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis Result includes a small amount of inseparable attached material</i>					
K2 161610957-0032	sealant outside	White/Red/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
K3 161610957-0033	sealant outside	Brown/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis Result includes a small amount of inseparable attached material</i>					
L1-Shingle 161610957-0034	roofing material	Tan/Black Non-Fibrous Homogeneous	<1% Glass	100% Non-fibrous (Other)	None Detected
L1-Shingle 161610957-0034A	roofing material	Gray/Red Non-Fibrous Homogeneous	<1% Glass	100% Non-fibrous (Other)	None Detected

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EMSL Order: 161610957
 Customer ID: AUGU51
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 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
L2-Shingle 161610957-0035	roofing material	Tan/Black Non-Fibrous Homogeneous	<1% Glass	100% Non-fibrous (Other)	None Detected
L2-Tar 161610957-0035A	roofing material	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L3-Shingle 161610957-0036	roofing material	Gray/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
L3-Shingle 161610957-0036A	roofing material	Brown/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
L3-Shingle 161610957-0036B	roofing material	Brown/Gray/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
L3-Shingle 161610957-0036C	roofing material	Brown/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected

Analyst(s)
 Craig Nixon (23)
 Jeffery Crevier (34)

Richard N. Harding
 Richard Harding, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wa'board, etc.) are reported as a single sample. Reporting limits 1%
 Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0039, CA 2575, CO AL-15132, TX 300262

Initial Report From: 06/27/2016 09:11:13



Asbestos Chain of Custody
EMSL Order Number (Lab Use Only):

[Blank box for EMSL Order Number]

EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

PHONE:
FAX:



Asbestos Chain of Custody
EMSL Order Number (Lab Use Only):

[Blank box for EMSL Order Number]

EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Company Name: August Mack Env.		EMSL Customer ID:	
Street: 7830 N. Central Drive Suite B		City: Lewis Center	State/Province: OHIO
Zip/Postal Code: 43035	Country: U.S.A	Telephone #: 740-548-1500	Fax #:
Report To (Name): William Glaze		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: wglaze@augustmack.com		Purchase Order:	
Project Name/Number: J0921.731		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: OHIO		CT Samples: <input checked="" type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note Instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <small>*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.</small>			
PCM - Air <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)	TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.6 TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	TEM - Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite* <input type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> TEM Qual. via Filtration Technique <input type="checkbox"/> TEM Qual. via Drop-Mount Technique <small>*Can not accept New York State Loose Fill Vermiculite Samples</small> Other: <input type="checkbox"/>	
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group			
Samplers Name: <i>Dominic Martin</i>		Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Signature: <i>[Signature]</i>			
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
A1	Ceiling tile white	1	6-17-16 12:00
A2	↓	1	↓
A3	↓	1	↓
B1	Drywall - wall white	2	↓
B2	↓	2	↓
B3	↓	2	↓
C1	Drywall - wall red	3	↓
Client Sample # (s): A-2, B3, C		Total # of Samples: 36	
Relinquished (Client): <i>Dominic Martin</i>		Date: 6-17-16	Time: 15:00
Received (Lab):		Date:	Time:
Comments/Special Instructions: Also email to dmartin@augustmack.com			

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
C ²	Dry wall - wall red Red	3	6-7-16 12:00
C ³	↓	3	↓
D ²	Drywall - Ceiling	4	↓
D ²	↓	4	↓
D ³	↓	4	↓
E ¹	popcorn ceiling 1 (Kitchen + Living Room)	5	↓
E ²	↓	5	↓
E ³	↓	5	↓
F ²	popcorn ceiling 2 (garage)	6	↓
F ²	↓	6	↓
F ³	↓	6	↓
G ¹	White w/ pink center Linoleum	7	↓
G ²	↓	7	↓
G ³	↓	7	↓
H ¹	White floor tile	8	↓
H ²	↓	8	↓
H ³	↓	8	↓
I ²	grout on stone wall	9	↓
I ²	↓	9	↓
I ³	↓	9	↓
J ²	Kitchen Sink	10	↓
J ²	↓	10	↓
J ³	↓	10	↓
K ²	Sealant (outside)	11	↓

*Comments/Special Instructions:

**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 of 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 <small>day 1</small>	4 <small>day 2</small>	5 <small>day 3</small>	6
7	8 <small>day 4</small>	9 <small>day 5</small>	10 <small>day 6</small>	11 <small>day 7</small>	12 <small>day 8</small>	13
14	15 <small>day 9</small>	16 <small>day 10</small>	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 3rd.

Note: Holidays are counted when they fall on a working day.

Completion of 10-day prior notification period: July 16th.

* First day work can commence (day following the 10th working day): July 17th.

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

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

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.

- o "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.
 - o Specify if this project is part of a larger project or urban demolition (installation).
 - o If Yes, list contact information for Entity Coordinating Larger Project in next line (Owner/Coordinating Entity).
 - o If No, list the property owner information in next line (Owner/Entity Coordinator)
 - o Specify if this notification include more than one structure.
 - o If Yes, ensure the Multi-Structure Attachment Form has been completed per Section 2; attach this to your notification form.
 - o 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.
 - o 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).
 - o 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
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



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 # :	
1 Notification Type (check one)							
<input type="checkbox"/> Original		<input type="checkbox"/> Revision # :		Section #s Revised:		Offsite/Hold: <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Cancellation							
2 Facility Description (include building name, number and floor or room number). If more than one structure, use Multi-Structure Attachment form							
Building Name (if applicable) :				Site Location :			
Address :				County :			
City :				State : OH		Zip :	
Building Size (ft ²) :				No. of Floors :		Age (years) :	
Present Use :				Prior Use :			
3 Type of Operation (check one)							
<input 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							
4 Is Asbestos Present? (check one)							
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No, previously abated Year Abated (if applicable) :							
5 Owner/Coordinating Entity, Asbestos Abatement Contractor, and Onsite Demolition Contractor Information							
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 type="checkbox"/> No (list contact information for property owner below)				<input type="checkbox"/> No			
Owner/Coordinating Entity:							
Address:				Email:			
City:				State:		Zip:	
Contact:				Phone: () -		Fax: () -	
Asbestos Abatement Contractor (if applicable)							
Name:				On-site Demolition Contractor or Fire Department (if applicable)			
Address:				Address:			
City:		State:		Zip:		City:	
Contact:		License #: AC		Contact:		Contact:	
Phone: () -		Fax: () -		Phone: () -		Fax: () -	
Email:				Email:			
6 Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure							
Evaluation Specialist:				License #: ES		Expiration Date: / /	
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 type="checkbox"/> PLM <input type="checkbox"/> Point Count <input type="checkbox"/> TEM <input type="checkbox"/> Other Method (Explain Below):							
7 Approximate Amount of Asbestos-Containing Materials (complete table below and Section 11 if asbestos is present)							
	RACM	Material to be Removed		Material NOT to be Removed			
		Nonfriable Asbestos-Containing Material		Nonfriable Asbestos-Containing Material			
		Category I	Category II	Category I	Category II		
Pipes (linear feet)							
Surface Area (ft ²)							
Facility Components							
<input type="checkbox"/> ft ³ <input type="checkbox"/> yd ³							
8 Scheduled Dates of Demolition or Renovation (original notification is required 10 working days prior to the start of work)							
Start: / /				Complete: / /			
9 Asbestos Removal Dates and Work Hours (if applicable, for asbestos removal only)							
Start: / /				Complete: / /			
Hours Onsite	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	—	—	—	—	—	—	—

10 Planned Demolition or Renovation Work (check all that apply)	
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 type="checkbox"/> Other (Explain Below):	
Description of affected facility components (include attachment if necessary):	
11 Asbestos Description and Engineering Controls (if asbestos is being abated)	
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:	
12 Asbestos Waste Transporters (if applicable)	
Asbestos Waste Transporter #1	
Name:	
Address:	
City: State: Zip:	
Contact:	
Phone: () - Fax: () -	
Email:	
Asbestos Waste Transporter #2	
Name:	
Address:	
City: State: Zip:	
Contact:	
Phone: () - Fax: () -	
Email:	
13 Asbestos Waste Disposal (if applicable)	
Asbestos Waste Disposal Site:	
Address:	
City: State: Zip:	
Phone: () - Fax: () -	
Contact:	
Email:	
14 Emergency Demolition (complete this section if you checked Emergency Demolition in Section 3)	
A copy of the issued order, including the following information, must be attached to this notification	
Government Official Issuing Order:	
Title:	
Agency:	
Authority of Order (Citation of Code):	
Date of Order: / /	
Demolition Date: / /	
15 Emergency Renovation (complete this section if you checked Emergency Renovation in Section 3)	
A separate sheet with the following information must be attached 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:	
16 Procedures to be followed should unexpected RACM be discovered (check all that apply)	
<input type="checkbox"/> Stop work and keep wet	
<input type="checkbox"/> Evacuate area	
<input type="checkbox"/> Contact licensed abatement contractor	
<input type="checkbox"/> Contact district office/local air authority	
<input type="checkbox"/> Demarcate area	
<input type="checkbox"/> Other (Explain Below):	
17 Asbestos Abatement Signature (only sign below if asbestos is being removed)	
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)	
18 Demolition and Renovation Signature (required for all original and revised notifications)	
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



740.548.1500 • www.augustmack.com
7830 North Central Drive, Suite B • Lewis Center, Ohio 43035

Note: This form to be completed and attached to Notification Form when project involves more than one structure

Project Name:		Date Submitted:			Revision #:	
Project Details		Structure 1	Structure 2	Structure 3	Structure 4	Structure 5
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
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"/>

July 7, 2016

Ms. Sherry Derefield
Heritage Land Services, Inc.
635 Brooksedge Boulevard
Westerville, Ohio 43081

Re: Pre-Demolition Asbestos Survey
1693 Mink Street
Johnstown, Ohio
August Mack Project Number JQ0921.731

Dear Ms. Derefield:

At the request of Heritage Land Services, August Mack Environmental, Inc., (August Mack) has completed a pre-demolition asbestos survey at the above-referenced site. The purpose of the inspection was to determine if asbestos-containing materials (ACMs) are located on or within the site prior to demolition activities. Mr. Domanic Martin, Ohio-licensed Asbestos Hazard Evaluation Specialist, performed the survey activities on June 28, 2016. A copy of the inspectors' license has been provided as Attachment A. A summary of the surveys, sampling activities, and laboratory results are presented in the following sections.

PRE-DEMOLITION ASBESTOS SURVEY

A walk-through of the site structure was performed to identify suspect ACMs using the United States Environmental Protection Agency's (U.S. EPA's) list of items suspected as ACMs and the inspector's experience. Thirteen (13) suspect ACMs were identified during the survey. A complete listing of all suspect ACMs sampled, including the sample numbers, material description, and location has been provided in Attachment B. Standard sampling protocols were employed, sampling tools were cleaned between samples, and chain-of-custody procedures were observed.

A total of 41 bulk sample layers were collected and submitted for analysis to EMSL Analytical, Inc., located in Indianapolis, Indiana. All samples were analyzed utilizing the polarized-light microscopy (PLM) method as specified in 40 CFR Part 763, Section 1, Appendix E, Subpart E. A copy of the laboratory analytical report is provided as Attachment C.

DISCUSSION OF FINDINGS

The Ohio Environmental Protection Agency (OEPA) requires that prior to demolition, if regulated ACMs (RACMs) are present in quantities equal to or greater than 50 linear feet, 50 square feet, or 35 cubic feet of facility components, written notification is required prior to asbestos stripping or removal activities, or any other activities that would break up, dislodge, or disturb the asbestos. The notices must include among other things: RACMs which include friable ACMs; Category I ACMs that have become friable or that will be subjected to sanding, grinding, cutting, or abrading; and Category II ACMs that are either friable or have the potential of becoming friable by being crumbled, pulverized, or reduced to powder by the forces expected to act on the materials in the course of demolition activities. More specifically, ACMs are designated as:

- Friable asbestos - material which can be crumbled, pulverized or reduced to powder by hand pressure, a.k.a. Regulated Asbestos-Containing Materials (RACM).
- Category I non-friable (Cat. I) - includes resilient floor coverings, asphalt roofing products, gaskets and packings.
- Category II non-friable (Cat. II) - any non-friable ACM that is not in Category I (i.e., transite siding material).

Asbestos-containing materials as defined by the Federal Occupational Safety & Health Administration (OSHA) and National Emission Standards for Hazardous Air Pollutants (NESHAP) are materials with an asbestos concentration of greater than (>1.0%). Based on the analytical results, the undercoating of the kitchen sink was identified as "Asbestos Containing Materials".

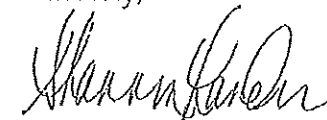
CONCLUSIONS

August Mack has completed a pre-demolition asbestos survey at the single-family residence located at 1693 Mink Street in Johnstown, Ohio. As presented above, samples H1-H3, underside of kitchen sinks, were determined to be CAT II ACM that had an asbestos content of 2.0%. The material should abated prior to site demolition activities. August Mack recommends the client keep a copy of the asbestos analytical report on-site during demolition activities for documentation purposes. A copy of the OEPA Notification of Demolition and Renovation Form is included as Attachment D.

This survey was conducted to identify all ACMs present, to the extent practicable, prior to demolition of the site structures. August Mack has taken precautions to inspect the site to identify all suspect ACMs; however, it is recognized that some hidden ACMs may exist in areas that are impossible to inspect or were not encountered during this survey. If identified, these materials should be sampled prior to being impacted by the demolition activities.

We trust that this submittal is responsive to your needs and appreciate the opportunity to provide you with these environmental services. Please feel free to contact us if you have any questions.

Sincerely,



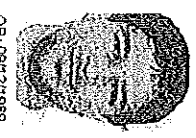
Shannon Landrum
Environmental Site Assessor



William L. Glaze
Senior Manager/O&M Services Manager

Attachments

Asbestos Hazard Evaluation Specialist



Dominic L. Martin
August Mack Environmental
7830 N Central Drive Ste B
Lewis Center OH 43035

OB:09121999 Certification Number: ES35855 Expiration Date: 01/13/2017

Asbestos Hazard Evaluation Specialist License Renewal Information: Licensees must complete 8 hours of continuing education every two years. Licensees who fail to complete the required continuing education will have their license suspended. Licensees who fail to complete the required continuing education will have their license suspended. Licensees who fail to complete the required continuing education will have their license suspended.

ATTACHMENT A
Inspector License and Accreditation

ATTACHMENT B

Asbestos Bulk Sample Results

Asbestos Bulk Sample Results
 1693 Mink Street
 Johnstown, Ohio
 June 28, 2016

Client Sample	Asbestos %/Type	Sample Location	Material Location
A1	ND	East Door Entrance	East Door Entrance
A2	ND		
A3	ND		
B1	ND	Master Bathroom	Master Bathroom
B2	ND		
B3	ND		
C1	ND	Master Bedroom	Throughout House
C2	ND	East Living Room	
C3	ND	Hallway on West Side of House	
D1	ND	East Living Room	East Living Room and Basement
D2	ND	Basement	
D3	ND		
E1	ND	Kitchen	Kitchen and Hallway to Garage
E2	ND	Hallway to Garage	
E3	ND		
F1	ND	West Bathroom	West Bathroom
F2	ND		
F3	ND		
G1	ND	Kitchen	Kitchen
G2	ND		
G3	ND		
H1	2%	Kitchen	Kitchen
H2			
H3			
I1	ND	Basement	Basement
I2	ND		
I3	ND		
J1	ND	Master Bedroom	Scattered Throughout House
J2	ND	North West Bedroom	
J3	ND	North Hallway	
J4	ND	North East Corner of Hallway	
J5	ND	Room South of Kitchen	
K1	ND	South East Corner of House	Windows on the east side of the house
K2	ND		
K3	ND		
L1	ND	South West Corner of House	Smaller Windows around House
L2	ND	South Wall of House	
L3	ND	North Wall of House	
M1	ND	North West Corner of Roof	Roof
M2	ND	West Corner of Roof	
M3	ND	South West Corner of Roof	

Asbestos-containing material (ACM) = greater than 1% (>1%) asbestos
 ND = None Detected

ATTACHMENT C

Laboratory Analytical Results



EMSL Analytical, Inc.

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Attention: Bill Glaze
 August Mack Environmental, Inc.
 7830 N. Central Drive Suite B
 Lewis Center, OH 43035
 Project: JQ0921.731

Phone: (740) 548-1508
 Fax:
 Received Date: 06/29/2016 10:10 AM
 Analysis Date: 07/06/2016 - 07/07/2016
 Collected Date: 06/28/2016

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
A1-Ceramic Tile 161611624-0001	multi-color floor tile	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A1-Grout 161611624-0001A	multi-color floor tile	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
A1-Mastic 161611624-0001B	multi-color floor tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A2-Ceramic Tile 161611624-0002	multi-color floor tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A2-Grout 161611624-0002A	multi-color floor tile	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
A2-Mastic 161611624-0002B	multi-color floor tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A3-Ceramic Tile 161611624-0003	multi-color floor tile	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A3-Grout 161611624-0003A	multi-color floor tile	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
B1 161611624-0004	linoleum	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B2 161611624-0005	linoleum	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B3 161611624-0006	linoleum	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C1-Drywall 161611624-0007	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C1-Joint Compound 161611624-0007A <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C2-Drywall 161611624-0008	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C2-Joint Compound 161611624-0008A <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial Report From: 07/07/2016 08:50:32

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
C3-Drywall 161611624-0009	drywall wall	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
C3-Wallpaper 161611624-0009A	drywall wall	Blue Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
D1 161611624-0010	concrete on fireplace	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
D2 161611624-0011	concrete on fireplace	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
D3 161611624-0012	concrete on fireplace	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
E1 161611624-0013	linoleum	Gray/White/Green Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
E2 161611624-0014	linoleum	Gray/White/Green Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
E3 161611624-0015	linoleum	Gray/White Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
F1 161611624-0016	linoleum	White/Red/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F2 161611624-0017	linoleum	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F3 161611624-0018	linoleum	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G1-Ceramic Tile 161611624-0019	kitchen wall tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G1-Mastic 161611624-0019A	kitchen wall tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2-Ceramic Tile 161611624-0020	kitchen wall tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2-Mastic 161611624-0020A	kitchen wall tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3-Ceramic Tile 161611624-0021	kitchen wall tile	White/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3-Mastic 161611624-0021A	kitchen wall tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1 161611624-0022	kitchen sink	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
H2 161611624-0023	kitchen sink				Positive Stop (Not Analyzed)

Initial Report From 07/07/2016 08:50:32

**EMSL Analytical, Inc.**

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H3 161611624-0024	kitchen sink				Positive Stop (Not Analyzed)
I1 161611624-0025	hvac tape	Silver Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
I2 161611624-0026	hvac tape	Silver Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
I3 161611624-0027	hvac tape	Silver Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
J1 161611624-0028	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J2 161611624-0029	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J3 161611624-0030	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J4-Drywall 161611624-0031	popcorn ceiling	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
J4-Texture 161611624-0031A	popcorn ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis</i>					
J5-Drywall 161611624-0032	popcorn ceiling	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
J5-Texture 161611624-0032A	popcorn ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis</i>					
K1 161611624-0033	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
K2 161611624-0034	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
K3 161611624-0035	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L1 161611624-0036	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L2 161611624-0037	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L3 161611624-0038	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M1 161611624-0039	roofing material	Black Fibrous Heterogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial Report From 07/07/2016 08:50:32



EMSL Analytical, Inc.

2001 East 52nd St. Indianapolis, IN 46206
Tel/Fax: (317) 803-2997 / (317) 803-3047
http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
Customer ID: AUGU51
Customer PO:
Project ID:

ATTACHMENT D

OEPA Notification of Demolition and Renovation Form

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
M2	roofing material	Black Fibrous Heterogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
161611624-0010					
M3	roofing material	Gray/Black/Green Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
161611624-0011					

Analyst(s)
Jada Moffett (18)
Ross Matlock (34)

Richard H. Harding
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. tile, wa-board, etc.) are reported as a single sample. Reporting limit is 1%.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200168 0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial Report From: 07/07/2016 08:50:32

**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 <i>day 1</i>	4 <i>day 2</i>	5 <i>day 3</i>	6
7	8 <i>day 4</i>	9 <i>day 5</i>	10 <i>day 6</i>	11 <i>day 7</i>	12 <i>day 8</i>	13
14	15 <i>day 9</i>	16 <i>day 10</i>	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 3rd.

Note: Holidays are counted when they fall on a working day.

Completion of 10-day prior notification period: July 16th.

* First day work can commence (day following the 10th working day): July 17th.

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

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

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.

- 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.
- 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).
- 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.

- o "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.
 - o Specify if this project is part of a larger project or urban demolition (Installation).
 - o If Yes, list contact information for Entity Coordinating Larger Project in next line (Owner/Coordinating Entity).
 - o If No, list the property owner information in next line (Owner/Entity Coordinator)
 - o Specify if this notification include more than one structure.
 - o If Yes, ensure the Multi-Structure Attachment Form has been completed per Section 2; attach this to your notification form.
 - o 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.
 - o 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).
 - o 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 power, 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
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



Notification of Demolition and Renovation Form
Single & Multi-Structure
 Division of Air Pollution Control

Operator Project # :		For Official Use Only:					
<input type="checkbox"/> Hand-Delivered		Postmark: / /	Received by Office: / /		Notification # :		
1 Notification Type (check one)							
<input type="checkbox"/> Original		<input type="checkbox"/> Revision #:	Section #s Revised:	Offsite/Hold:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Cancellation							
2 Facility Description (include building name, number and floor or room number). If more than one structure, use Multi-Structure Attachment form							
Building Name (if applicable):			Site Location:				
Address:			County:				
City:			State: OH	Zip:			
Building Size (ft ²):			No. of Floors:	Age (years):			
Present Use:			Prior Use:				
3 Type of Operation (check one)							
<input 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							
4 Is Asbestos Present? (check one)							
<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> No, previously abated			
		Year Abated (if applicable):					
5 Owner/Coordinating Entity, Asbestos Abatement Contractor and Onsite Demolition Contractor Information							
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 type="checkbox"/> No (list contact information for property owner below)				<input type="checkbox"/> No			
Owner/Coordinating Entity:							
Address:			Email:				
City:			State:	Zip:			
Contact:			Phone: () -	Fax: () -			
Asbestos Abatement Contractor (if applicable)							
Name:			On-site Demolition Contractor or Fire Department (if applicable)				
Address:			Address:				
City:		State:	Zip:	City: State: Zip:			
Contact:			License #: AC	Contact:			
Phone: () -		Fax: () -		Phone: () - Fax: () -			
Email:			Email:				
6 Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure							
Evaluation Specialist:			License #: ES	Expiration Date: / /			
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 type="checkbox"/> PLM <input type="checkbox"/> Point Count <input type="checkbox"/> TEM <input type="checkbox"/> Other Method (Explain Below):							
7 Approximate Amount of Asbestos-Containing Materials (complete table below and Section 11 if asbestos is present)							
	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 ²)							
Facility Components							
<input type="checkbox"/> ft ³ <input type="checkbox"/> yd ³							
8 Scheduled Dates of Demolition or Renovation (original notification is required 10 working days prior to the start of work)							
Start: / /			Complete: / /				
9 Asbestos Removal Dates and Work Hours (if applicable, for asbestos removal only)							
Start: / /			Complete: / /				
Hours Onsite	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	-	-	-	-	-	-	-

10 Planned Demolition or Renovation Work (check all that apply)		
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 type="checkbox"/> Other (Explain Below):		
Description of affected facility components (include attachment if necessary):		
11 Asbestos Description and Engineering Controls (if asbestos is being abated)		
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:		
12 Asbestos Waste Transporters (if applicable)		
Asbestos Waste Transporter #1	Asbestos Waste Transporter #2	
Name:	Name:	
Address:	Address:	
City: State: Zip:	City: State: Zip:	
Contact:	Contact:	
Phone: () -	Phone: () -	
Fax: () -	Fax: () -	
Email:	Email:	
13 Asbestos Waste Disposal (if applicable)		
Asbestos Waste Disposal Site:		
Address:		
City: State: Zip:	Phone: () - Fax: () -	
14 Emergency Demolition (complete this section if you checked Emergency Demolition in Section 3)		
A copy of the issued order, including the following information, must be attached to this notification		
Government Official Issuing Order:	Title:	
Agency:	Authority of Order (Citation of Code):	
Date of Order: / /	Demolition Date: / /	
15 Emergency Renovation (complete this section if you checked Emergency Renovation in Section 3)		
A separate sheet with the following information must be attached 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:		
16 Procedures to be followed should unexpected RACM be discovered (check all that apply)		
<input type="checkbox"/> Stop work and keep wet	<input type="checkbox"/> Evacuate area	<input type="checkbox"/> Contact licensed abatement contractor
<input type="checkbox"/> Contact district office/local air authority	<input type="checkbox"/> Demarcate area	<input type="checkbox"/> Other (Explain Below):
17 Asbestos Abatement Signature (only sign below if asbestos is being removed)		
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)		
18 Demolition and Renovation Signature (required for all original and revised notifications)		
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



740.548.1500 • www.augustmack.com
7830 North Central Drive, Suite B • Lewis Center, Ohio 43035

Note: This form to be completed and attached to Notification Form when project involves more than one structure

Project Name:		Date Submitted:			Revision #:	
Project Details		Structure 1	Structure 2	Structure 3	Structure 4	Structure 5
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
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"/>

July 7, 2016

Ms. Sherry Derefield
Heritage Land Services, Inc.
635 Brooksedge Boulevard
Westerville, Ohio 43081

Re: Pre-Demolition Asbestos Survey
1786 Mink Street
Johnstown, Ohio
August Mack Project Number JQ0921.731

Dear Ms. Derefield:

At the request of Heritage Land Services, August Mack Environmental, Inc., (August Mack) has completed a pre-demolition asbestos survey at the above-referenced site. The purpose of the inspection was to determine if asbestos-containing materials (ACMs) are located on or within the site prior to demolition activities. Mr. Domanic Martin, Ohio-licensed Asbestos Hazard Evaluation Specialist, performed the survey activities on June 28, 2016. A copy of the inspectors' license has been provided as Attachment A. A summary of the surveys, sampling activities, and laboratory results are presented in the following sections.

PRE-DEMOLITION ASBESTOS SURVEY

A walk-through of the site structure was performed to identify suspect ACMs using the United States Environmental Protection Agency's (U.S. EPA's) list of items suspected as ACMs and the inspector's experience. Ten (10) suspect ACMs were identified during the survey. A complete listing of all suspect ACMs sampled, including the sample numbers, material description, and location has been provided in Attachment B. Standard sampling protocols were employed, sampling tools were cleaned between samples, and chain-of-custody procedures were observed.

A total of 32 bulk sample layers were collected and submitted for analysis to EMSL Analytical, Inc., located in Indianapolis, Indiana. All samples were analyzed utilizing the polarized-light microscopy (PLM) method as specified in 40 CFR Part 763, Section 1, Appendix E, Subpart E. A copy of the laboratory analytical report is provided as Attachment C.

DISCUSSION OF FINDINGS

The Ohio Environmental Protection Agency (OEPA) requires that prior to demolition, if regulated ACMs (RACMs) are present in quantities equal to or greater than 50 linear feet, 50 square feet, or 35 cubic feet of facility components, written notification is required prior to asbestos stripping or removal activities, or any other activities that would break up, dislodge, or disturb the asbestos. The notices must include among other things: RACMs which include friable ACMs; Category I ACMs that have become friable or that will be subjected to sanding, grinding, cutting, or abrading; and Category II ACMs that are either friable or have the potential of becoming friable by being crumbled, pulverized, or reduced to powder by the forces expected to act on the materials in the course of demolition activities. More specifically, ACMs are designated as:

- Friable asbestos - material which can be crumbled, pulverized or reduced to powder by hand pressure, a.k.a. Regulated Asbestos-Containing Materials (RACM).
- Category I non-friable (Cat. I) - includes resilient floor coverings, asphalt roofing products, gaskets and packings.
- Category II non-friable (Cat. II) - any non-friable ACM that is not in Category I (i.e., transite siding material).

Asbestos-containing materials as defined by the Federal Occupational Safety & Health Administration (OSHA) and National Emission Standards for Hazardous Air Pollutants (NESHAP) are materials with an asbestos concentration of greater than (>1.0%). Based on the analytical results, two (2) building materials were identified as suspect "Asbestos Containing Materials". The identified materials consisted of the textured ceiling tile located throughout the house and the stucco siding on the exterior of the house.

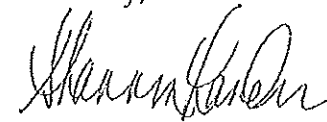
CONCLUSIONS

August Mack has completed a pre-demolition asbestos survey at the single-family residence located at 1786 Mink Street in Johnstown, Ohio. As presented above, samples H1-H5 (popcorn ceiling texture) and I1-I3 (stucco siding) were determined to be a friable ACMs that had an asbestos content of less than 1.0%. In the definition for Friable asbestos material, the material identified above would be classified as ACM until further analysis is done on the samples to determine the exact percentage of asbestos in the material. It is recommended that the two (2) building materials noted above have a "point count analysis" (PCA) completed to verify the exact percentage of asbestos present, or that the material be managed as an ACM and abated prior to site demolition activities. August Mack recommends the client keep a copy of the asbestos analytical report on-site during demolition activities for documentation purposes. A copy of the OEPA Notification of Demolition and Renovation Form is included as Attachment D.

This survey was conducted to identify all ACMs present, to the extent practicable, prior to demolition of the site structures. August Mack has taken precautions to inspect the site to identify all suspect ACMs; however, it is recognized that some hidden ACMs may exist in areas that are impossible to inspect or were not encountered during this survey. If identified, these materials should be sampled prior to being impacted by the demolition activities.

We trust that this submittal is responsive to your needs and appreciate the opportunity to provide you with these environmental services. Please feel free to contact us if you have any questions.

Sincerely,



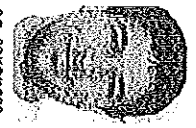
Shannon Landrum
Environmental Site Assessor



William L. Glaze
Senior Manager/O&M Services Manager

Attachments

Asbestos Hazard Evaluation Specialist



Dominic L. Martin
August Mack Environmental
7830 N Central Drive Ste B
Lewis Center OH 43035

Certification Number **ES35855** Expiration Date **01/13/2017**

OS:09/12/1989
I have taken a 24-hour course in Chapter 37100 of the Code
and have met the requirements for the Ohio Asbestos Abatement Code

Certification Card ID
101301418

ATTACHMENT A
Inspector License and Accreditation

ATTACHMENT B

Asbestos Bulk Sample Results

Asbestos Bulk Sample Results
 1786 Mink Street
 Johnstown, Ohio
 June 24, 2016

Client Sample	Asbestos %/Type	Sample Location	Material Location
A1	ND	Basement	Basement
A2	ND		
A3	ND		
B1	ND	Sunroom	Sunroom
B2	ND		
B3	ND		
C1	ND	South Living Room	South Living Room
C2	ND		
C3	ND		
D1	ND	Hallway	Hallway
D2	ND		
D3	ND		
E1	ND	East Bathroom 2	East Bathroom 2
E2	ND		
E3	ND		
F1	ND	West Bedroom	Multiple Rooms in House
F2	ND	West Living Room	
F3	ND		
G1	ND	Hallway Entrance of East Outside Door	Hallway Entrance of East Outside Door
G2	ND		
G3	ND		
H1	<1%	Garage	Throughout House
H2	<1%	South Living Room	
H3	<1%	Kitchen	
H4	<1%	Stairs to Basement	
H5	<1%	North East Bedroom	
I1	<1%	South Outside Wall	Outside Walls of House
I2	<1%	South East corner of Outside Wall	
I3	<1%	East Side of Outside Wall	
J1	ND	North West Corner of Roof	Roof
J2	ND	South West Corner of Roof	
J3	ND	South East Corner of Roof	

Asbestos-containing material (ACM) = greater than 1% (>1%) asbestos
 ND = None Detected

ATTACHMENT C

Laboratory Analytical Results



EMSL Analytical, Inc.

2001 East 52nd St. Indianapolis, IN 46205
 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Attention: Bill Glaze
 August Mack Environmental, Inc.
 7830 N. Central Drive Suite B
 Lewis Center, OH 43035
 Project: JQ0921.731

Phone: (740) 548-1508
 Fax:
 Received Date: 06/29/2016 10:10 AM
 Analysis Date: 07/06/2016 - 07/07/2016
 Collected Date: 06/28/2016

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
A1-Ceramic Tile 161611624-0001	multi-color floor tile	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A1-Grout 161611624-0001A	multi-color floor tile	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
A1-Mastic 161611624-0001B	multi-color floor tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A2-Ceramic Tile 161611624-0002	multi-color floor tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A2-Grout 161611624-0002A	multi-color floor tile	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
A2-Mastic 161611624-0002B	multi-color floor tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A3-Ceramic Tile 161611624-0003	multi-color floor tile	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A3-Grout 161611624-0003A	multi-color floor tile	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
B1 161611624-0004	linoleum	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B2 161611624-0005	linoleum	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B3 161611624-0006	linoleum	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C1-Drywall 161611624-0007	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C1-Joint Compound 161611624-0007A <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C2-Drywall 161611624-0008	drywall wall	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
C2-Joint Compound 161611624-0008A <i>Inseparable paint / coating layer included in analysis</i>	drywall wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial Report From: 07/07/2016 08:50:32

**EMSL Analytical, Inc.**

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 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
C3-Drywall <i>161611624-0009</i>	drywall wall	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
C3-Wallpaper <i>161611624-0009A</i>	drywall wall	Blue Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
D1 <i>161611624-0010</i>	concrete on fireplace	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
D2 <i>161611624-0011</i>	concrete on fireplace	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
D3 <i>161611624-0012</i>	concrete on fireplace	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
E1 <i>161611624-0013</i>	linoleum	Gray/White/Green Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
E2 <i>161611624-0014</i>	linoleum	Gray/White/Green Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
E3 <i>161611624-0015</i>	linoleum	Gray/White Fibrous Heterogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
F1 <i>161611624-0016</i>	linoleum	White/Red/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F2 <i>161611624-0017</i>	linoleum	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F3 <i>161611624-0018</i>	linoleum	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G1-Ceramic Tile <i>161611624-0019</i>	kitchen wall tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G1-Mastic <i>161611624-0019A</i>	kitchen wall tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2-Ceramic Tile <i>161611624-0020</i>	kitchen wall tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G2-Mastic <i>161611624-0020A</i>	kitchen wall tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3-Ceramic Tile <i>161611624-0021</i>	kitchen wall tile	White/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
G3-Mastic <i>161611624-0021A</i>	kitchen wall tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
H1 <i>161611624-0022</i>	kitchen sink	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
H2 <i>161611624-0023</i>	kitchen sink				Positive Stop (Not Analyzed)

Initial Report From 07/07/2016 08:50:32

**EMSL Analytical, Inc.**

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 Tel/Fax: (317) 803-2997 / (317) 803-3047
 http://www.EMSL.com / indianapolislab@emsl.com

EMSL Order: 161611624
 Customer ID: AUGU51
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H3 <i>161611624-0024</i>	kitchen sink				Positive Stop (Not Analyzed)
I1 <i>161611624-0025</i>	hvac tape	Silver Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
I2 <i>161611624-0026</i>	hvac tape	Silver Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
I3 <i>161611624-0027</i>	hvac tape	Silver Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
J1 <i>161611624-0028</i>	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J2 <i>161611624-0029</i>	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J3 <i>161611624-0030</i>	popcorn ceiling	Brown/White Fibrous Heterogeneous	25% Cellulose	70% Gypsum 5% Non-fibrous (Other)	None Detected
J4-Drywall <i>161611624-0031</i>	popcorn ceiling	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
J4-Texture <i>161611624-0031A</i>	popcorn ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis</i>					
J5-Drywall <i>161611624-0032</i>	popcorn ceiling	Brown/White Fibrous Heterogeneous	20% Cellulose	70% Gypsum 10% Non-fibrous (Other)	None Detected
J5-Texture <i>161611624-0032A</i>	popcorn ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
<i>Inseparable paint / coating layer included in analysis</i>					
K1 <i>161611624-0033</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
K2 <i>161611624-0034</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
K3 <i>161611624-0035</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L1 <i>161611624-0036</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L2 <i>161611624-0037</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
L3 <i>161611624-0038</i>	window caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M1 <i>161611624-0039</i>	roofing material	Black Fibrous Heterogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial Report From 07/07/2016 08:50:32



EMSL Analytical, Inc.

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http://www.EMSL.com / indianapolislabs@emsl.com

EMSL Order: 161611624
Customer ID: AUGU51
Customer PO:
Project ID:

ATTACHMENT D

OEPA Notification of Demolition and Renovation Form

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
M2	roofing material	Black Fibrous Heterogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
161611624-0010					
M3	roofing material	Gray/Black/Green Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
161611624-0011					

Analyst(s)
Jadda Moffett (18)
Ross Matlock (34)

Richard H. Harding
Richard Harding, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-triatic organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN NVLAP Lab Code 200188-0, AZ0939, CA 2575, CO AL-15132, TX 300262

Initial Report From: 07/07/2016 08:50:32

**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.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 <i>day 1</i>	4 <i>day 2</i>	5 <i>day 3</i>	6
7	8 <i>day 4</i>	9 <i>day 5</i>	10 <i>day 6</i>	11 <i>day 7</i>	12 <i>day 8</i>	13
14	15 <i>day 9</i>	16 <i>day 10</i>	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 3rd.

Note: Holidays are counted when they fall on a working day.

Completion of 10-day prior notification period: July 16th.

* First day work can commence (day following the 10th working day): July 17th.

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

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

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.

- o "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.
 - o Specify if this project is part of a larger project or urban demolition (installation).
 - o If Yes, list contact information for Entity Coordinating Larger Project in next line (Owner/Coordinating Entity).
 - o If No, list the property owner information in next line (Owner/Entity Coordinator)
 - o Specify if this notification include more than one structure.
 - o If Yes, ensure the Multi-Structure Attachment Form has been completed per Section 2; attach this to your notification form.
 - o 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.
 - o 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).
 - o 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
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



Notification of Demolition and Renovation Form
Single & Multi-Structure
 Division of Air Pollution Control

Operator Project #:		For Official Use Only					
<input type="checkbox"/> Hand-Delivered		Postmark: / /		Received by Office: / /		Notification #:	
1 Notification Type (check one)							
<input type="checkbox"/> Original		<input type="checkbox"/> Revision #:		Section #s Revised:		<input type="checkbox"/> Offsite/Hold: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cancellation	
2 Facility Description (include building name, number and floor or room number). If more than one structure, use Multi-Structure Attachment form							
Building Name (if applicable):				Site Location:			
Address:				County:			
City:		State: OH		Zip:			
Building Size (ft ²):		No. of Floors:		Age (years):			
Present Use:				Prior Use:			
3 Type of Operation (check one)							
<input 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			
4 Is Asbestos Present? (check one)							
<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> No, previously abated		Year Abated (if applicable):	
5 Owner/Coordinating Entity, Asbestos Abatement Contractor and Onsite Demolition Contractor Information							
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 type="checkbox"/> No (list contact information for property owner below)				<input type="checkbox"/> No			
Owner/Coordinating Entity:							
Address:				Email:			
City:		State:		Zip:			
Contact:				Phone: () -		Fax: () -	
Asbestos Abatement Contractor (if applicable):							
Name:				On-site Demolition Contractor or Fire Department (if applicable):			
Address:				Name:			
City:		State:		Zip:			
Contact:				License #: AC		Contact:	
Phone: () -		Fax: () -		Phone: () -		Fax: () -	
Email:				Email:			
6 Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure							
Evaluation Specialist:				License #: ES		Expiration Date: / /	
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 type="checkbox"/> PLM <input type="checkbox"/> Point Count <input type="checkbox"/> TEM <input type="checkbox"/> Other Method (Explain Below):							
7 Approximate Amount of Asbestos-Containing Materials (complete table below and Section 11 if asbestos is present):							
	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 ²)							
Facility Components							
<input type="checkbox"/> ft ³ <input type="checkbox"/> yd ³							
8 Scheduled Dates of Demolition or Renovation (original notification is required 10 working days prior to the start of work)							
Start: / /				Complete: / /			
9 Asbestos Removal Dates and Work Hours (if applicable, for asbestos removal only)							
Start: / /				Complete: / /			
Hours Onsite	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	—	—	—	—	—	—	—

10 Planned Demolition or Renovation Work (check all that apply)		
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 type="checkbox"/> Other (Explain Below):		
Description of affected facility components (include attachment if necessary):		
11 Asbestos Description and Engineering Controls (if asbestos is being abated)		
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:		
12 Asbestos Waste Transporters (if applicable)		
Asbestos Waste Transporter #1	Asbestos Waste Transporter #2	
Name:	Name:	
Address:	Address:	
City:	City:	
State:	State:	
Zip:	Zip:	
Contact:	Contact:	
Phone: () -	Phone: () -	
Fax: () -	Fax: () -	
Email:	Email:	
13 Asbestos Waste Disposal (if applicable)		
Asbestos Waste Disposal Site:	Contact:	
Address:	Email:	
City:	Phone: () -	
State:	Fax: () -	
Zip:		
14 Emergency Demolition (complete this section if you checked Emergency Demolition in Section 3)		
A copy of the issued order, including the following information, must be attached to this notification		
Government Official Issuing Order:	Title:	
Agency:	Authority of Order (Citation of Code):	
Date of Order: / /	Demolition Date: / /	
15 Emergency Renovation (complete this section if you checked Emergency Renovation in Section 3)		
A separate sheet with the following information must be attached 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:		
16 Procedures to be followed should unexpected RACM be discovered (check all that apply)		
<input type="checkbox"/> Stop work and keep wet	<input type="checkbox"/> Evacuate area	<input type="checkbox"/> Contact licensed abatement contractor
<input type="checkbox"/> Contact district office/local air authority	<input type="checkbox"/> Demarcate area	<input type="checkbox"/> Other (Explain Below):
17 Asbestos Abatement Signature (only sign below if asbestos is being removed)		
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)		
18 Demolition and Renovation Signature (required for all original and revised notifications)		
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 Submitted:			Revision #:	
Project Details		Structure 1	Structure 2	Structure 3	Structure 4	Structure 5
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"/>