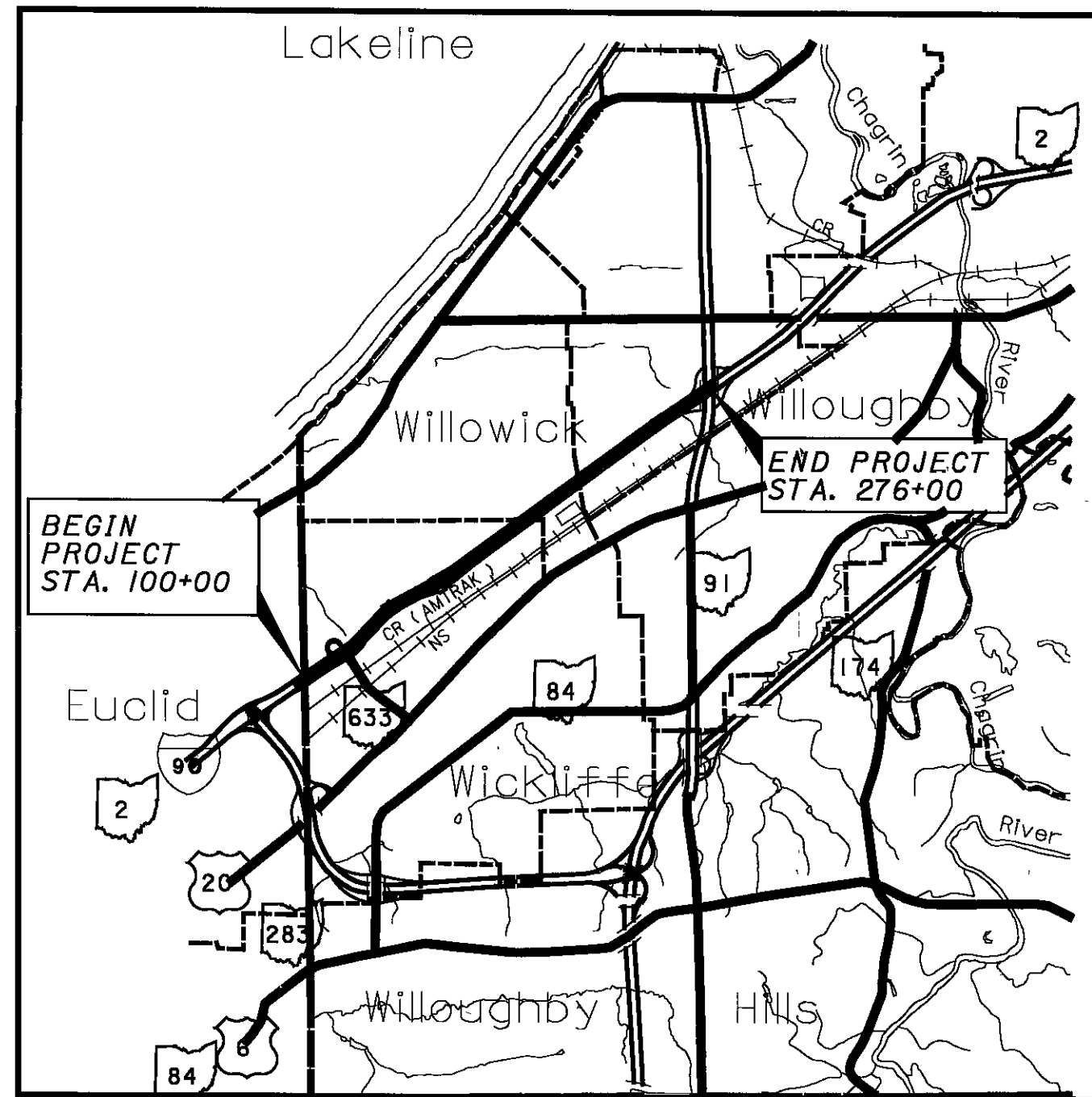


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
LAK-2-0.00
REHABILITATION OF EXISTING
PAVEMENT FROM
COUNTY LINE WEST TO SR 91
CITIES OF WICKLIFFE,
WILLOWICK, AND EASTLAKE
LAKE COUNTY



LOCATION MAP

LATITUDE: 41°36'32" LONGITUDE: 81°29'18"



PORTION TO BE IMPROVED	—————
INTERSTATE & DIVIDED HIGHWAY	=====
UNDIVIDED STATE & FEDERAL ROUTES	—————
RAILROADS	+++++
OTHER ROADS	—————

DESIGN DESIGNATION

CURRENT ADT (2006)	90600
DESIGN YEAR ADT (2026)	93500
DESIGN HOURLY VOLUME	7200
DIRECTIONAL DISTRIBUTION	65/35
TRUCKS (24 HOUR B & C)	3%
DESIGN SPEED	60
LEGAL SPEED	60
DESIGN FUNCTIONAL CLASSIFICATION	- URBAN INTERSTATE

DESIGN EXCEPTIONS

SHOULDER WIDTH	02/15/06
----------------	----------

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

TITLE SHEET		INDEX OF SHEETS:	
SCHEMATIC PLAN	2-3	NOISE BARRIER PROFILES	320-342, 344-356
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TYPICAL SECTIONS	12-22	TRAFFIC CONTROL SUMMARY	361-366
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<p>ENGINEERS SEAL:</p> <div style="text-align: center;"> <p>Baker</p> <p>MICHAEL BAKER JR., INC. 1228 EUCLID AVENUE, SUITE 1050 CLEVELAND, OHIO 44115</p> </div> <p>SIGNED: <i>K.N. Bowen</i> DATE: 05-03-06</p>	<p>ENGINEERS SEAL:</p> <div style="text-align: center;"> <p>BURGESS & NIPLE</p> <p>BURGESS & NIPLE, INC 100 WEST ERIE STREET PAINESVILLE, OH 44077</p> </div> <p>SIGNED: <i>J. Stodolak</i> DATE: 05-03-06</p>
---	---

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	
BP-2.2	7-16-04	GR-3.2	4-18-03	MT-35.10	4-20-01	HL-10.11	1-16-04	TC-41.20	1-19-01	800	7-21-06
BP-2.3	7-16-04	GR-3.5	4-18-03	MT-95.30	7-16-04	HL-10.12	1-21-05	TC-41.40	7-16-04		
BP-3.1	7-16-04	GR-4.2	4-15-05	MT-98.12	4-19-02	HL-10.13	1-17-03	TC-41.41	1-19-01	802	4-15-05
BP-5.1	7-28-00	GR-5.3	1-16-04	MT-98.13	4-19-02	HL-20.11	4-19-02	TC-41.50	7-16-04	832	4-25-06
BP-9.1	4-15-05	GR-6.1	4-18-03	MT-98.14	4-19-02	HL-30.11	1-21-05	TC-42.10	1-19-01		
CB-4.1	7-19-02	GR-6.2	4-18-03	MT-98.15	7-16-04	HL-30.21	4-19-02	TC-42.20	7-16-04	847	4-15-05
DM-1.1	4-21-06	F-1.1	7-16-04	MT-98.18	10-18-02	HL-30.22	1-21-05	TC-51.11	4-20-01	848	4-15-05
DM-1.2	10-20-05	F-3.1	7-28-00	MT-98.19	10-18-02	HL-40.20	1-16-04	TC-51.12	4-20-01		
DM-1.4	4-21-06	I-2.3	7-15-05	MT-99.20M	1-30-95	HL-50.21	1-21-05	TC-52.10	4-20-01		
DM-2.1	7-20-01	MH-1.2	1-20-06	MT-101.70	10-18-02	HL-60.11	1-16-04	TC-52.20	4-20-01		
DM-4.1	7-19-02	RM-3.1	4-18-03	MT-102.10	10-18-02	HL-60.12	1-21-05	TC-61.10	1-19-01		
DM-4.3	7-19-02	RM-4.3	4-18-03	MT-105.10	10-18-02	HL-60.31	7-20-01	TC-65.10	1-21-05		
DM-4.4	7-19-02	RM-4.4	4-18-03	MT-105.11	10-18-02	HL-60.24	1-08-02	TC-65.11	1-21-05		
GR-1.1	7-16-04	RM-4.5	4-18-03	PCB-91	7-19-02	TC-21.20	1-19-01	TC-71.10	1-21-05		
GR-2.1	1-16-04	RM-4.6	1-16-04	AS-1-81	7-19-02	TC-22.20	1-19-01	TC-72.20	1-21-05		
GR-3.1	4-18-03	SBR-1-99	7-19-02			TC-41.10	1-19-01	TC-82.10	4-19-02		

SPECIAL PROVISIONS

PROJECT DESCRIPTION
THE PROJECT CONSISTS OF THE REHABILITATION AND SAFETY UPGRADES TO STATE ROUTE 2 IN LAKE COUNTY FROM THE WESTERN COUNTY LINE TO S. R. 91 INCLUDING: RESURFACING, SHOULDER REPLACEMENT, GUARDRAIL REPLACEMENT, & LIGHTING. IN ADDITION, NOISE BARRIERS WILL BE INSTALLED FROM E. 260TH ST. IN CUYAHOGA COUNTY TO JUST EAST OF E. 337TH ST. IN LAKE COUNTY ON THE NORTH SIDE OF THE PROJECT.

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

2005 SPECIFICATIONS
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 32, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

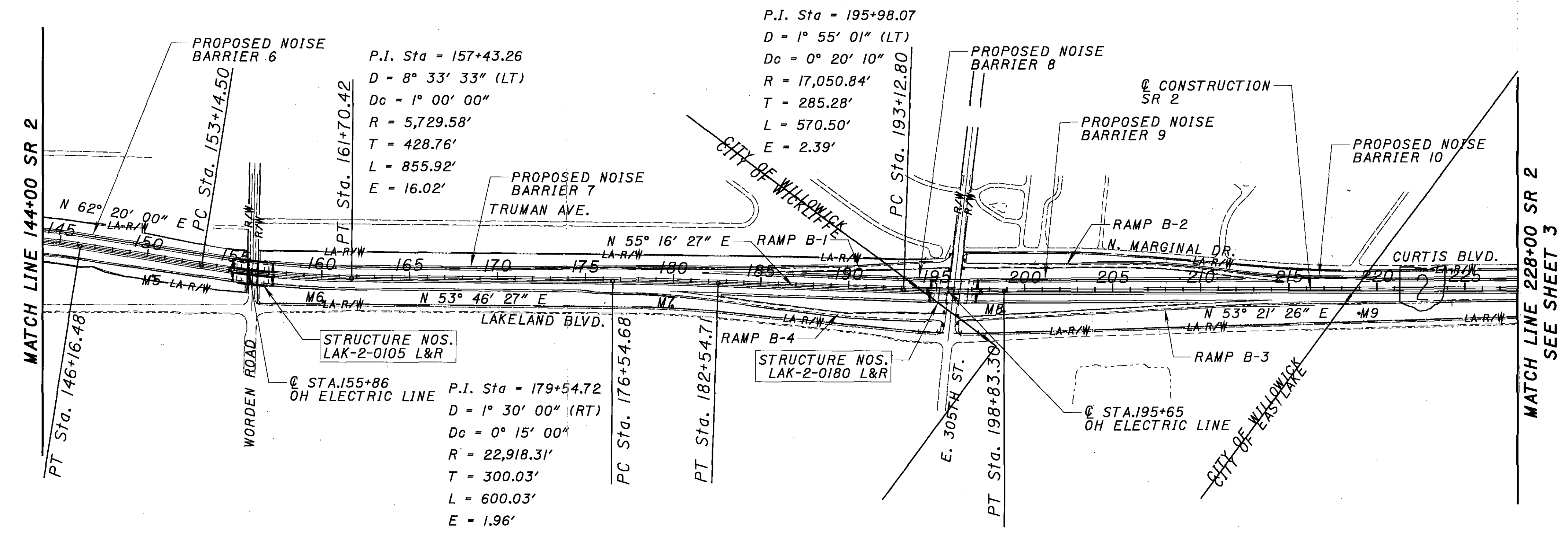
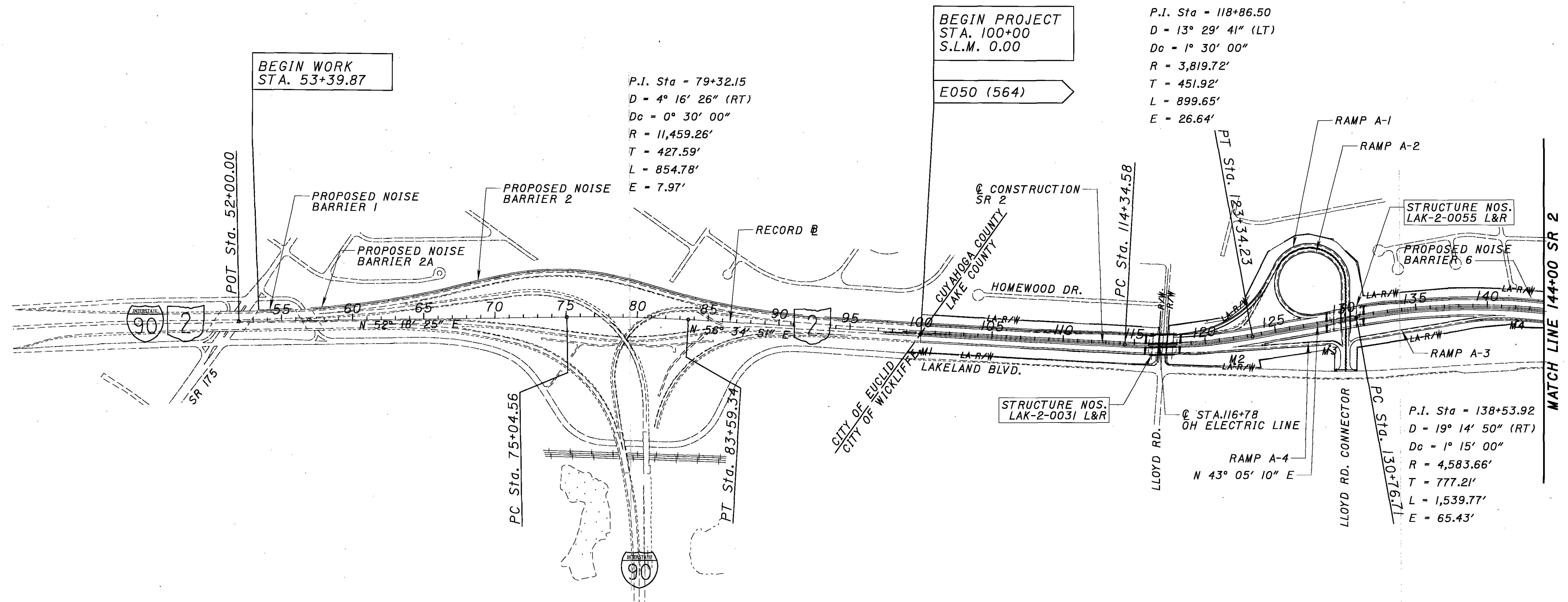
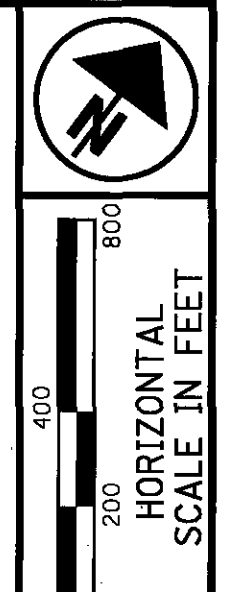
- EARTH DISTURBED AREA**
- PROJECT EARTH DISTURBED AREA 134.0 Ac
 - ESTIMATED CONTRACTOR EARTH DISTURBED AREA 2.60 Ac
 - NOTICE OF INTENT EARTH DISTURBED AREA 136.6 Ac

APPROVED: *[Signature]*
DATE: 2-23-06 DISTRICT DEPUTY DIRECTOR

APPROVED: *[Signature]*
DATE: 8-23-06 DIRECTOR, DEPARTMENT OF TRANSPORTATION

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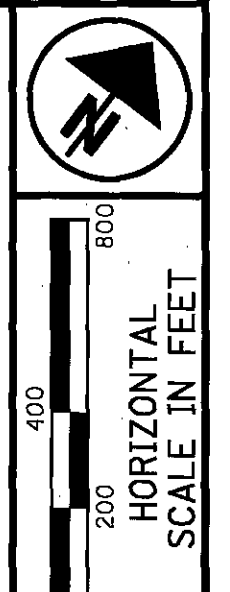
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PID NO. 21778
CONSTRUCTION PROJECT NO.
LAK-2-0.00
1/524



SCHEMATIC PLAN

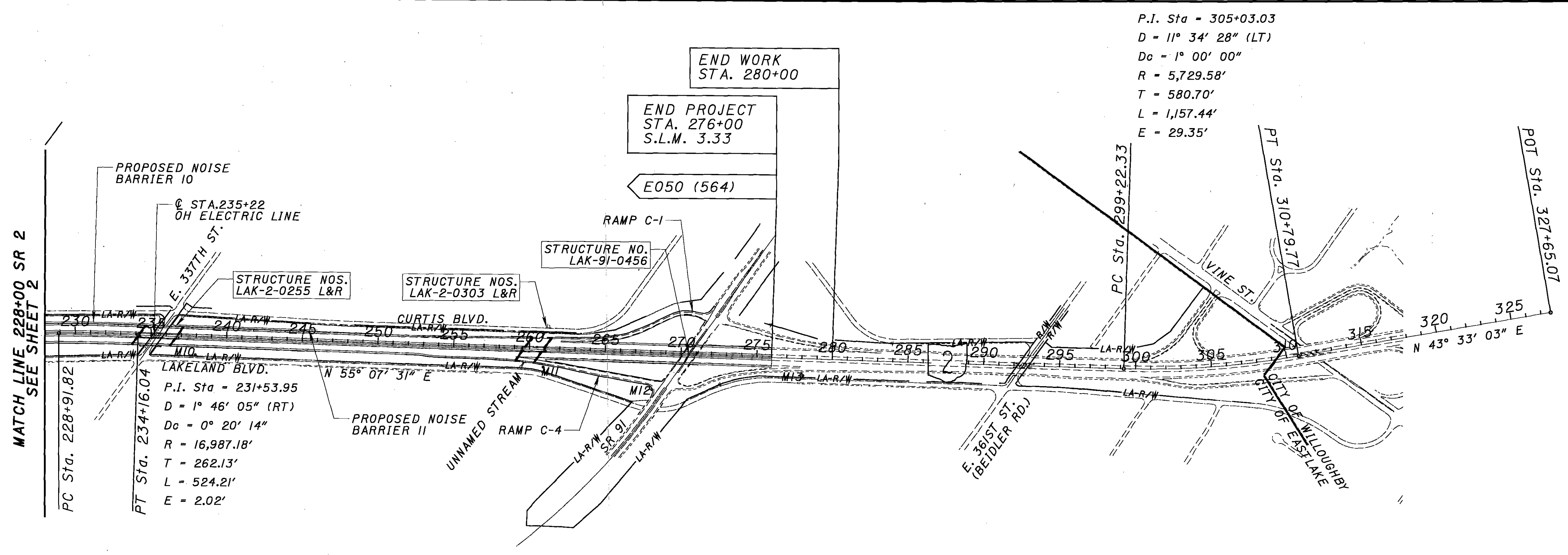
LAK-2-0-00

FOR RAMP GEOMETRY, SEE SHEETS 7-11



SCHEMATIC PLAN

LAK-2-0.00



CENTERLINE PTS. BEGIN PROJECT TO LAKE COUNTY LINE				
POINT		NORTHING	EASTING	STATION
CLW6	CL PT. FROM REC.	706,490.7073	2,241,322.8123	052+00.00
CLW4	CL PT. FROM REC.	707,899.7867	2,243,146.4054	075+04.56
PI CLW-C1	CL PT. FROM REC.	708,161.2285	2,243,484.7564	079+32.15
CLW2	CL PT. FROM REC.	708,396.7280	2,243,841.6503	083+59.34
CLW1 (FOK1000)	CL MON SET	709,300.3378	2,245,211.0496	100+00.00

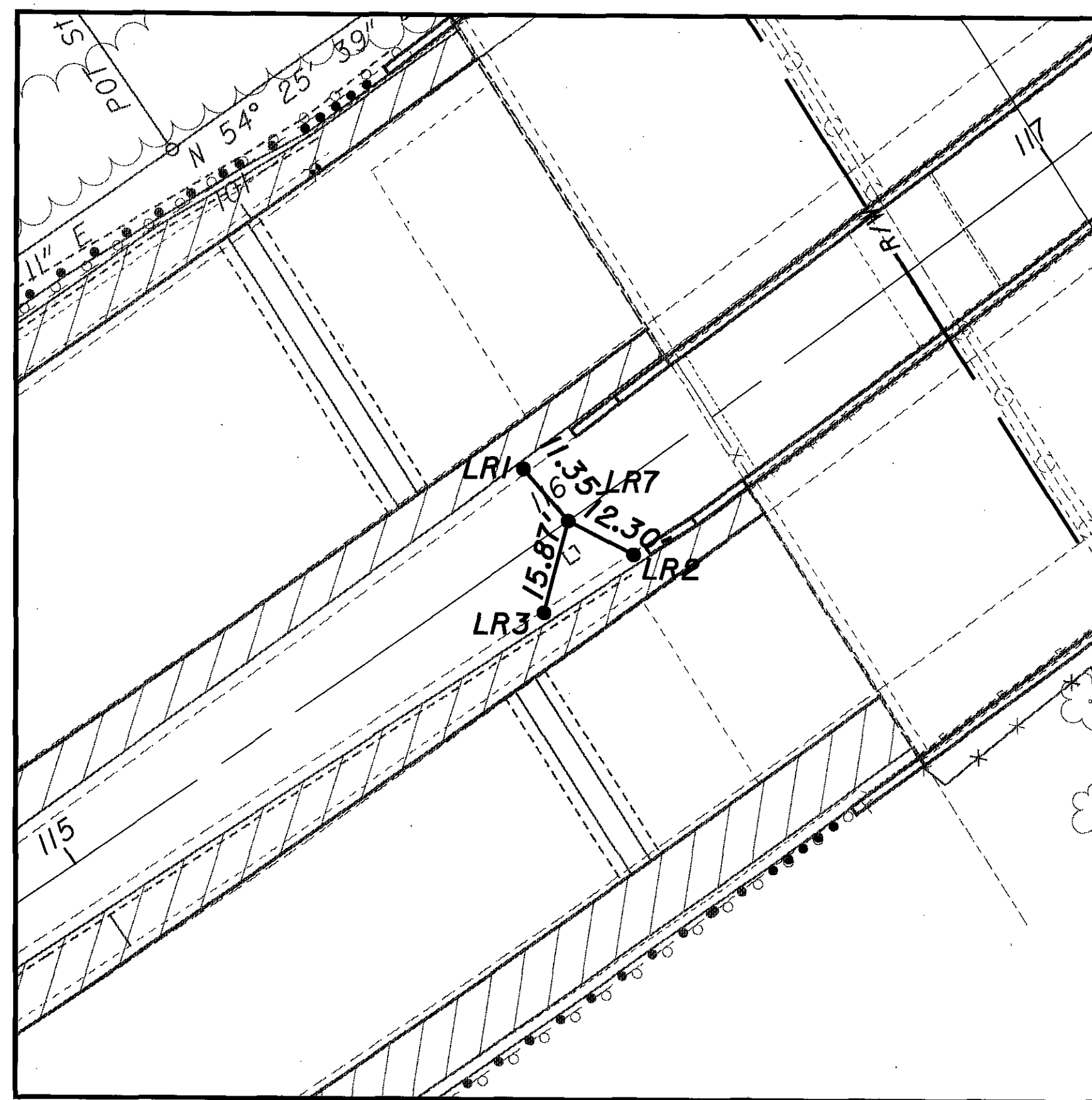
CENTERLINE PTS. LAKE COUNTY LINE TO END PROJECT				
POINT	DESCRIPTION	NORTHING	EASTING	STATION
FOK1000	CL MON SET	709,300.3378	2,245,211.0496	100+00.00
PI C1 (FOK1001)	CL MON SET	710,339.3432	2,246,785.6436	118+86.50
PI C2 (FOK1002)	CL MON SET	711,779.2584	2,248,132.4416	138+53.92
PI C3 (FOK1003)	CL MON SET	712,663.3296	2,249,818.7320	157+43.26
PI C4 (FOK1004)	CL MON SET	713,971.1776	2,251,603.9856	179+54.72
PI C5 (FOK1005)	CL MON SET	714,907.3361	2,252,954.6686	195+98.07
PI C6 (FOK1006)	CL MON SET	717,029.6059	2,255,807.8439	231+53.95
PI C7 (FOK1007)	CL MON SET	721,231.7203	2,261,837.0887	305+03.03
FOK1008	CL MON SET	722,874.0326	2,263,398.3548	327+65.07

MONUMENT SET	NORTHING	EASTING	ELEVATION	STATION	OFFSET
M1	709196.891	2245280.514	651.240	100+01.00	124.60
M2	710438.385	2247111.066	646.358	121+83.73	173.11
M3	710940.642	2247570.557	649.807	128+57.63	162.50
M4	711871.775	2248525.629	645.716	142+22.77	84.04
M5	712251.486	2249253.541	647.600	150+51.46	102.32
M6	712716.673	2250113.091	645.618	160+14.25	133.10
M7	713883.213	2251718.319	651.437	179+97.01	135.99
M8	714987.222	2253250.547	647.211	198+83.10	112.49
M9	716177.698	2254877.809	645.429	218+99.28	128.48
M10	717302.541	2256402.600	640.266	237+97.91	116.16
M11	718615.168	2258285.531	633.693	260+93.21	115.90
M12	718925.950	2258946.500	657.111	268+13.17	238.87
M13	719600.894	2259691.888	631.498	278+10.62	111.34

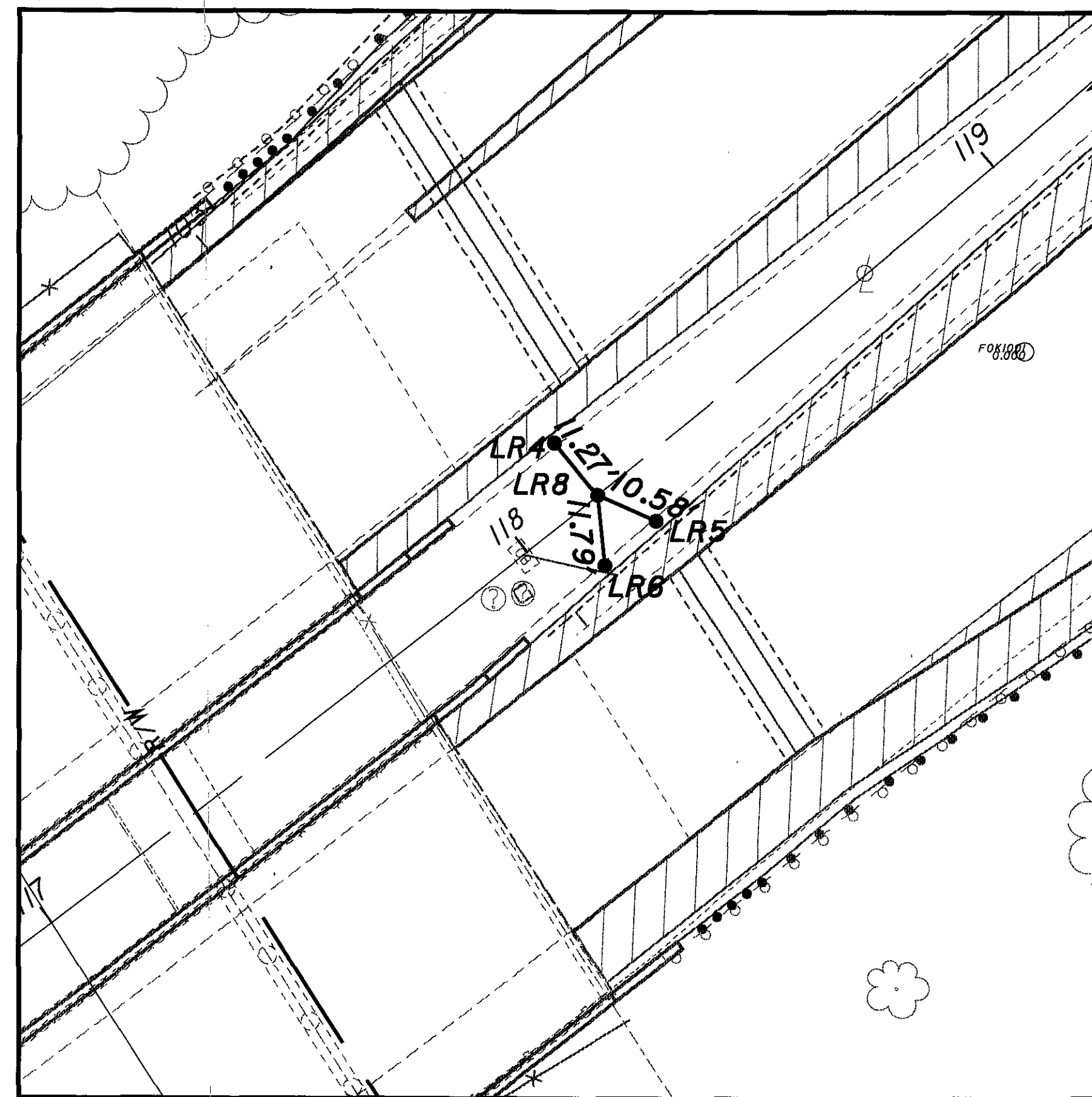
FOR RAMP GEOMETRY, SEE SHEETS 7-II

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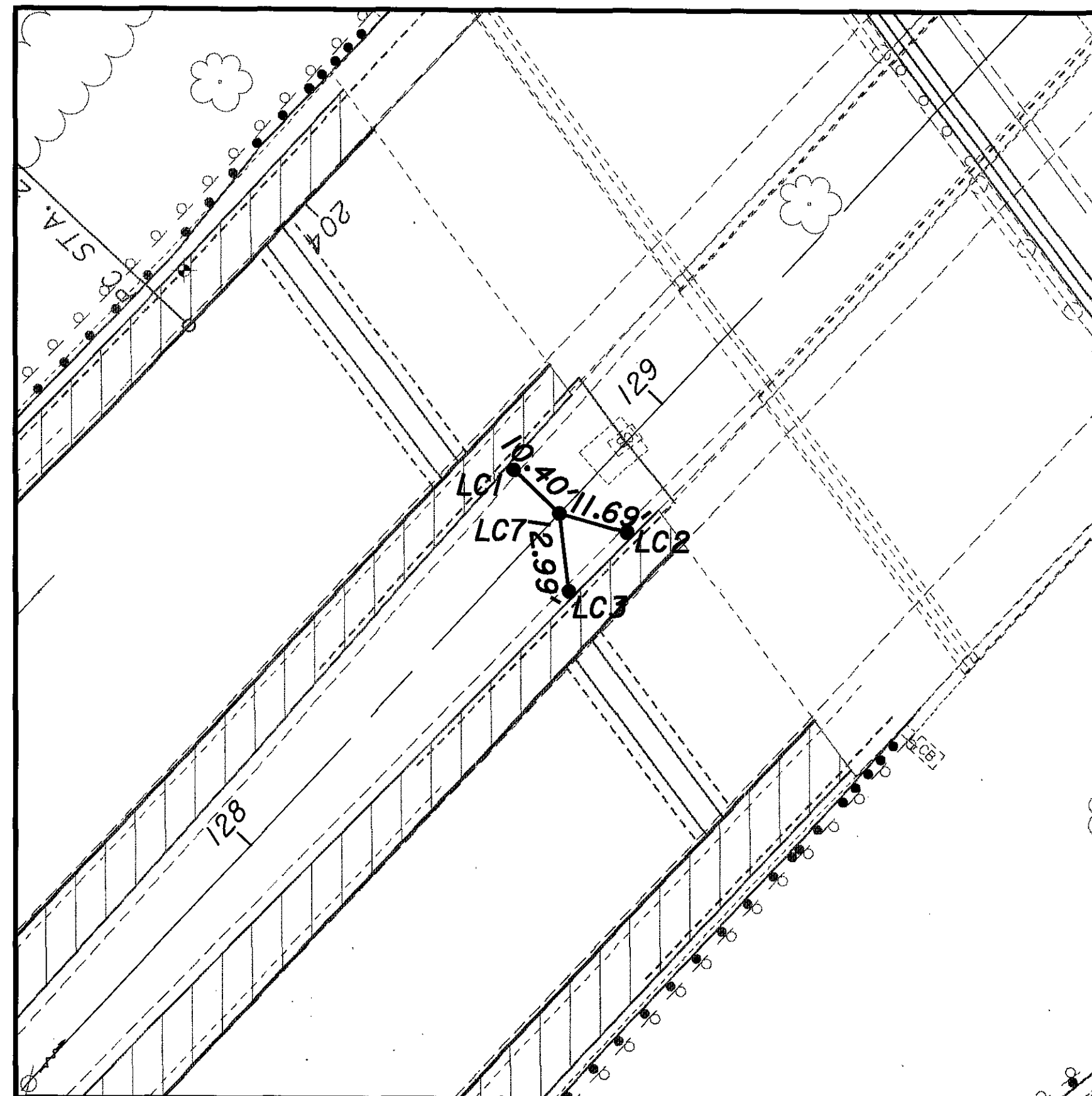
LLOYD ROAD (WEST)



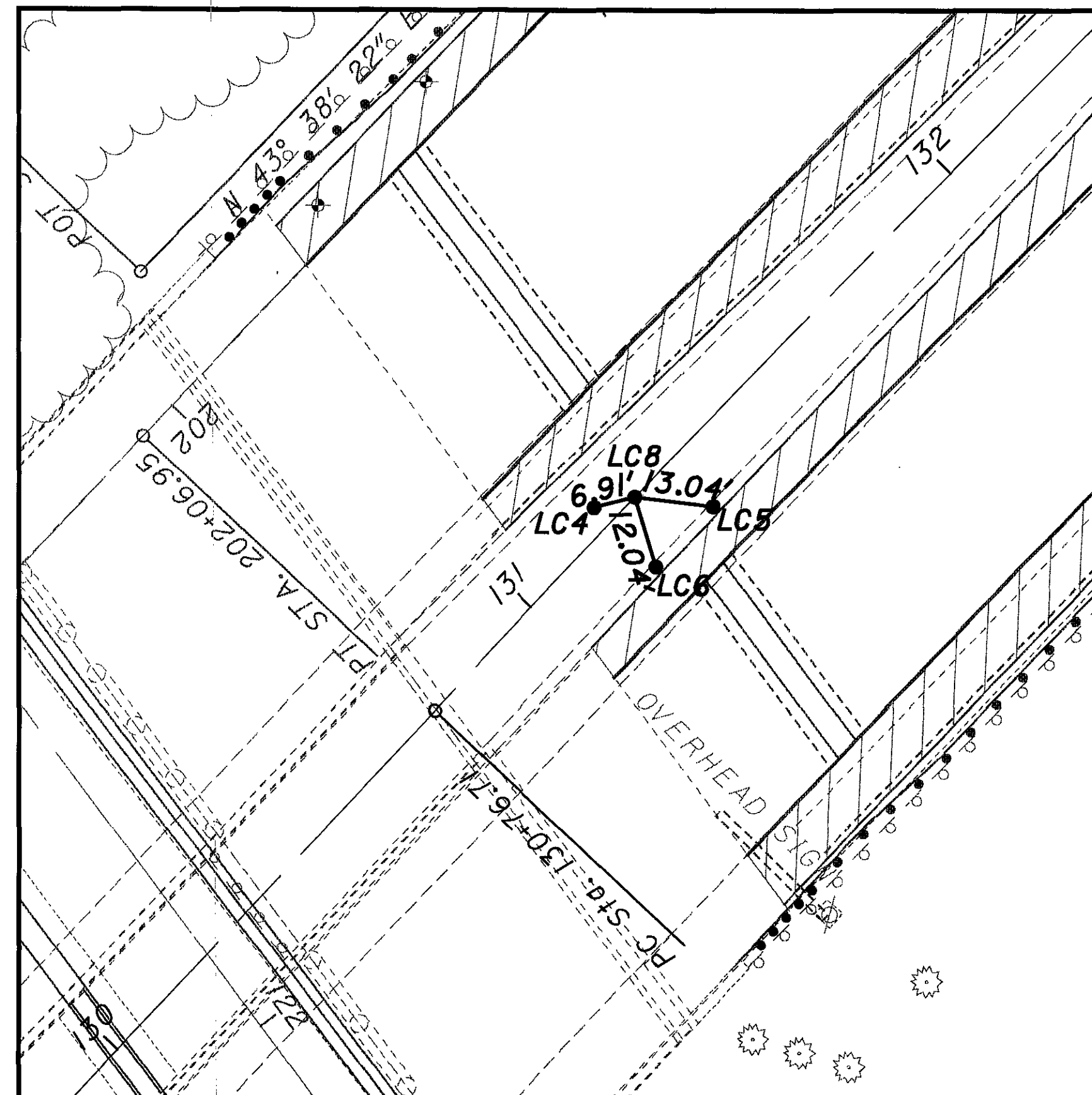
LLOYD ROAD (EAST)

LLOYD ROAD

TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
LR1	DRILLHOLE	710193.13	2246537.11	115+99.07	11.31 LT	668.96
LR2	DRILLHOLE	710178.83	2246555.41	116+05.49	11.00 RT	669.05
LR3	DRILLHOLE	710169.14	2246540.57	115+87.84	10.17 RT	668.78
LR4	DRILLHOLE	710324.12	2246707.87	118+14.95	11.27 LT	671.97
LR5	DRILLHOLE	710311.16	2246724.69	118+19.80	9.41 RT	672.08
LR6	DRILLHOLE	710303.69	2246719.23	118+08.56	9.87 RT	671.97
LR7	IRON PIN	710184.51	2246544.50	116+00.00	0.00	-
LR8	IRON PIN	710315.42	2246715.02	118+15.00	0.00	-



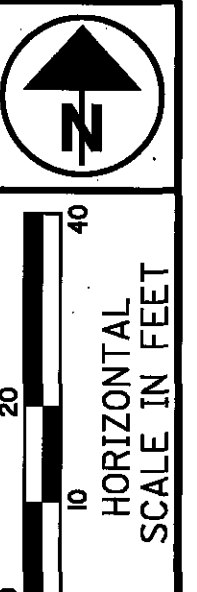
LLOYD ROAD CONNECTOR (WEST)



LLOYD ROAD CONNECTOR (EAST)

LLOYD ROAD CONNECTOR

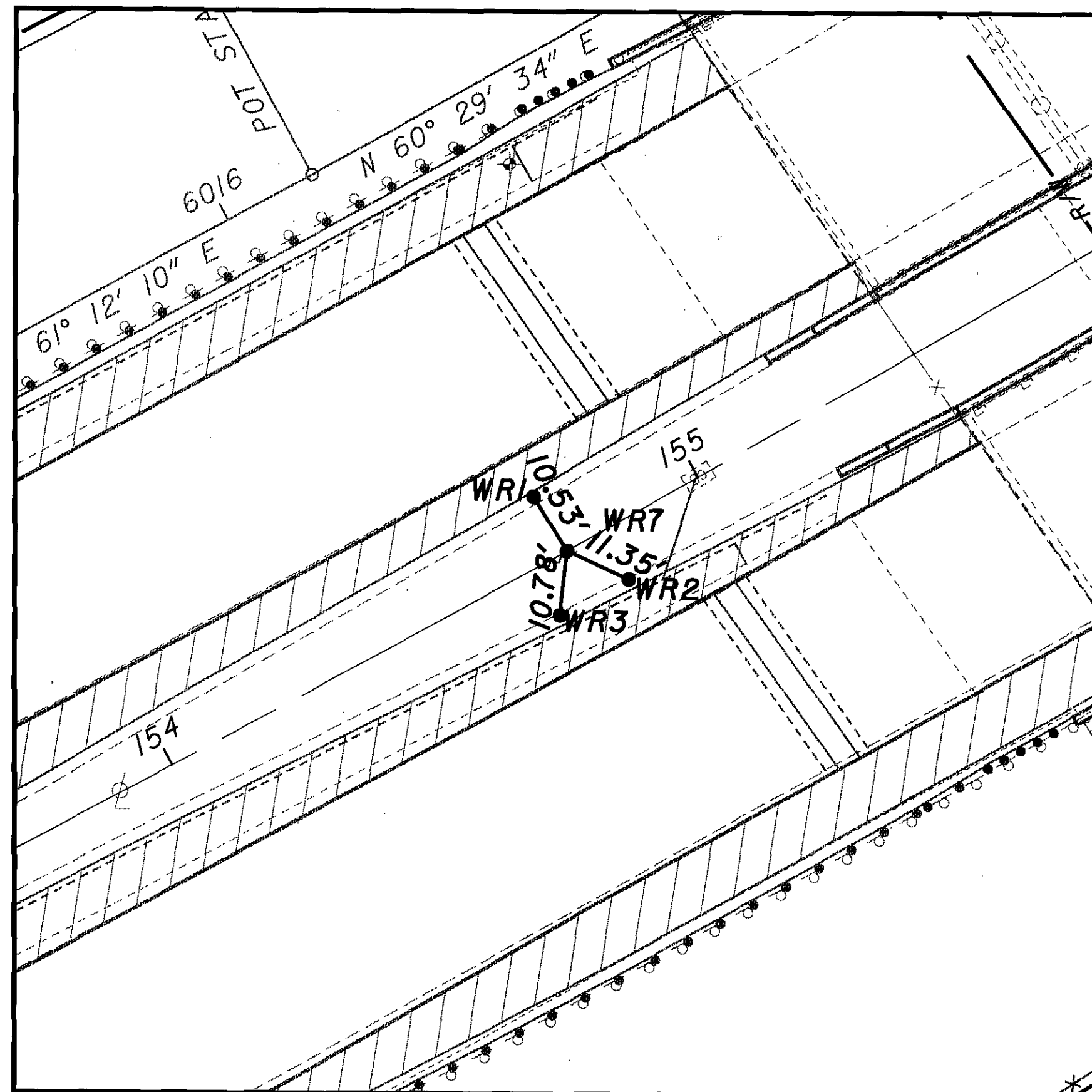
TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
LC1	DRILLHOLE	711071.50	2247456.21	128+75.09	10.40 LT	671.67
LC2	DRILLHOLE	711061.15	2247474.99	128+80.36	10.39 RT	671.79
LC3	DRILLHOLE	711051.44	2247465.39	128+66.71	10.01 RT	671.94
LC4	DRILLHOLE	711254.03	2247628.01	131+19.15	3.66 LT	667.28
LC5	DRILLHOLE	711245.24	2247647.65	131+32.88	10.39 RT	667.26
LC6	DRILLHOLE	711235.24	2247638.27	131+19.14	10.52 RT	667.62
LC7	IRON PIN	711064.33	2247463.74	128+75.00	0.00	-
LC8	IRON PIN	711246.73	2247634.70	131+25.00	0.00	-



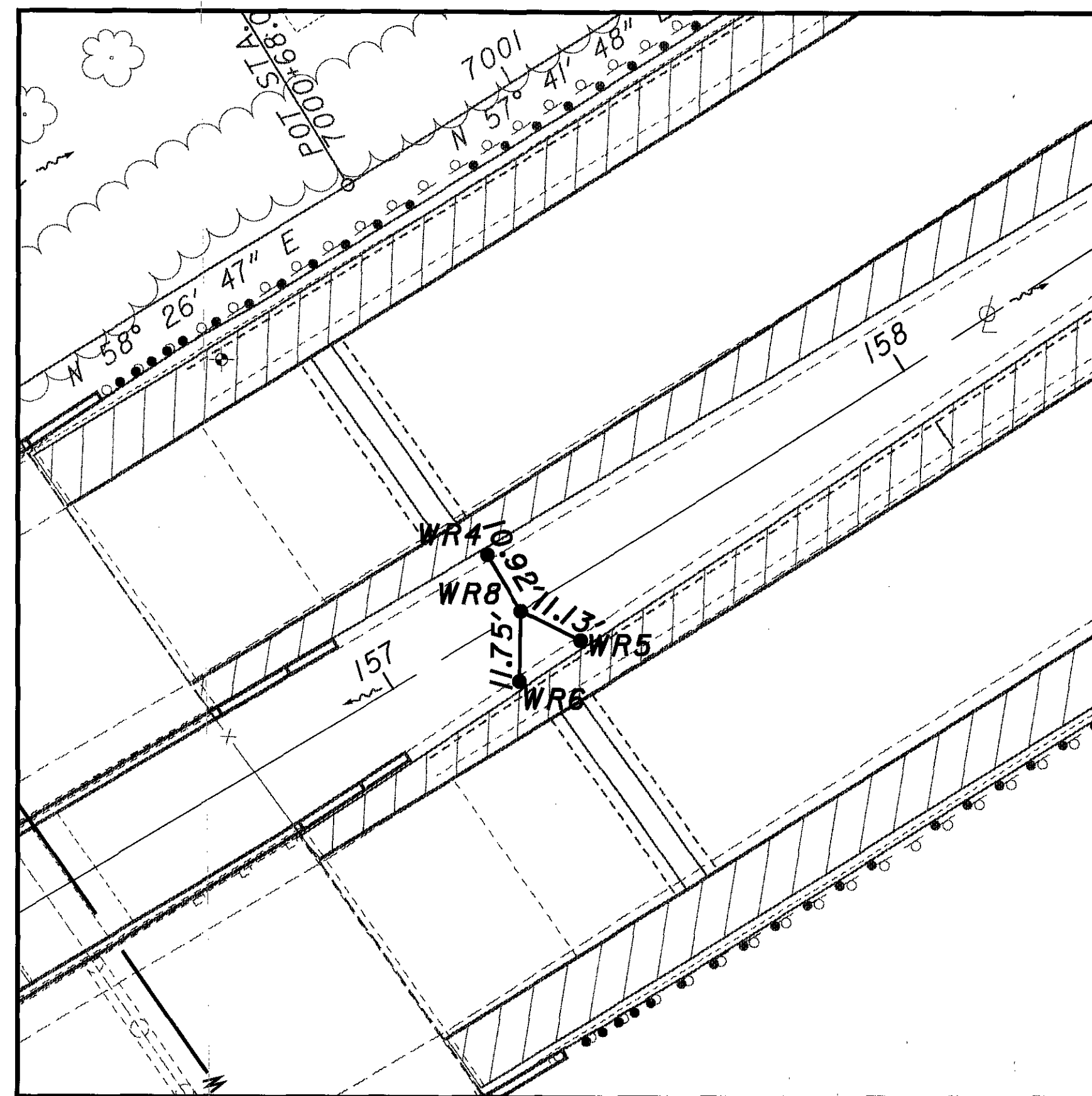
CENTERLINE REFERENCE TIES

LAK-2-0.00

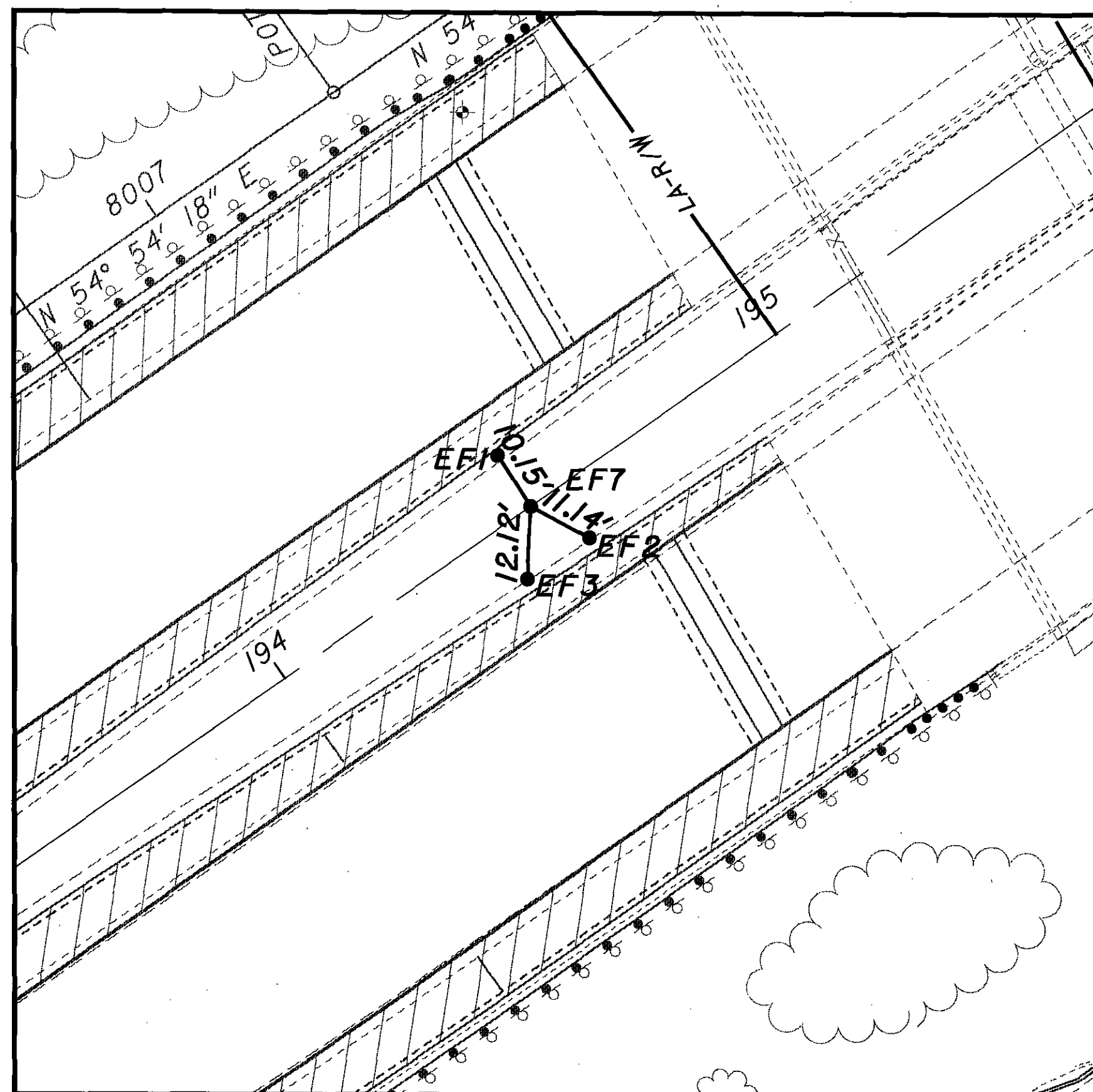
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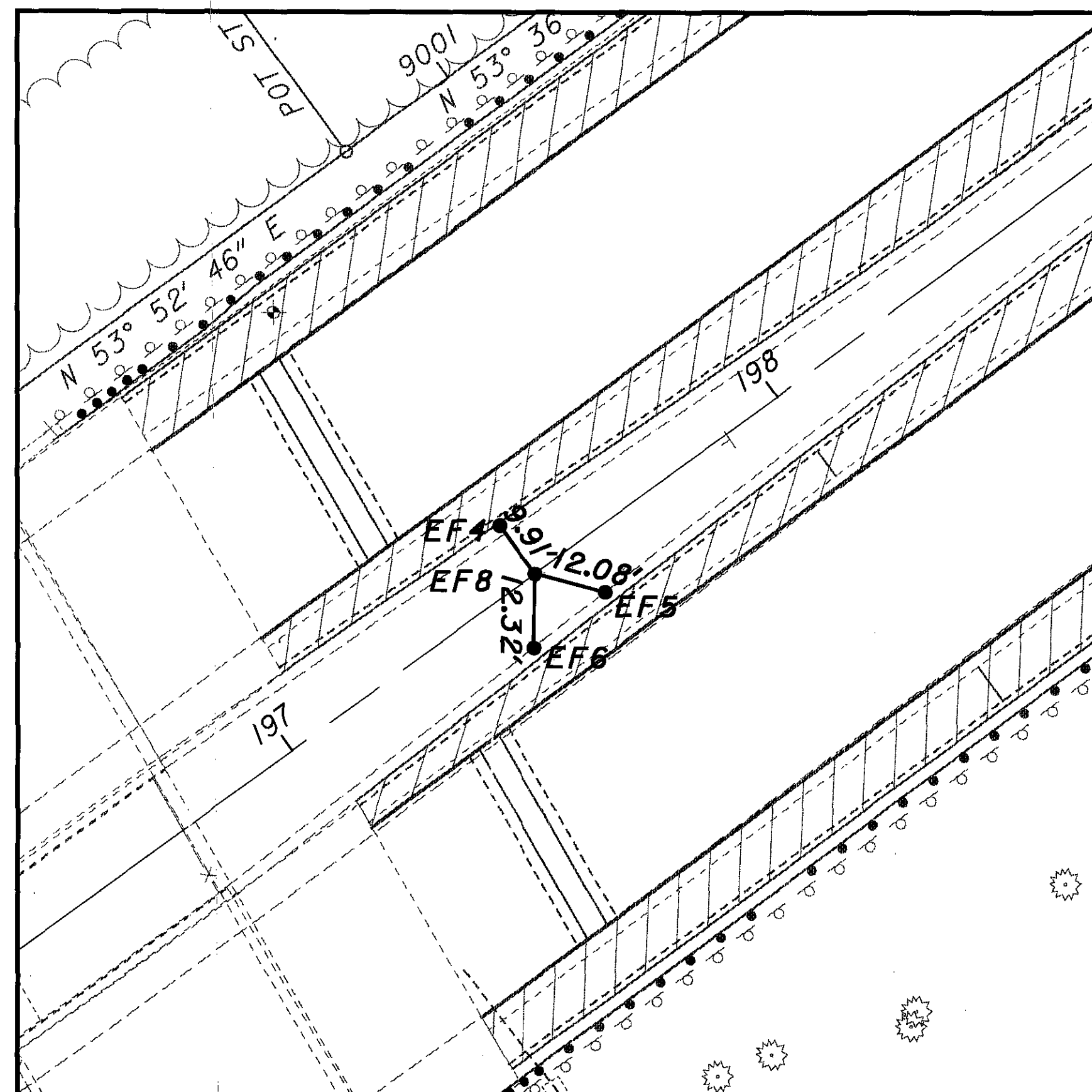
WORDEN ROAD (WEST)



WORDEN ROAD (EAST)



EAST 305th STREET (WEST)



EAST 305th STREET (EAST)

WORDEN ROAD

TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
WR1	DRILLHOLE	712549.70	2249574.52	154+74.52	10.52 LT	661.58
WR2	DRILLHOLE	712536.04	2249590.41	154+81.69	9.16 RT	661.53
WR3	DRILLHOLE	712530.03	2249578.91	154+68.75	8.78 RT	661.57
WR4	DRILLHOLE	712677.02	2249789.73	157+25.06	10.92 LT	660.24
WR5	DRILLHOLE	712662.78	2249805.40	157+30.88	9.44 RT	660.32
WR6	DRILLHOLE	712655.95	2249795.28	157+18.70	9.92 RT	660.46
WR7	IRON PIN	712540.75	2249580.08	154+75.00	0.00	-
WR8	IRON PIN	712667.71	2249795.42	157+25.00	0.00	-

EAST 305th STREET

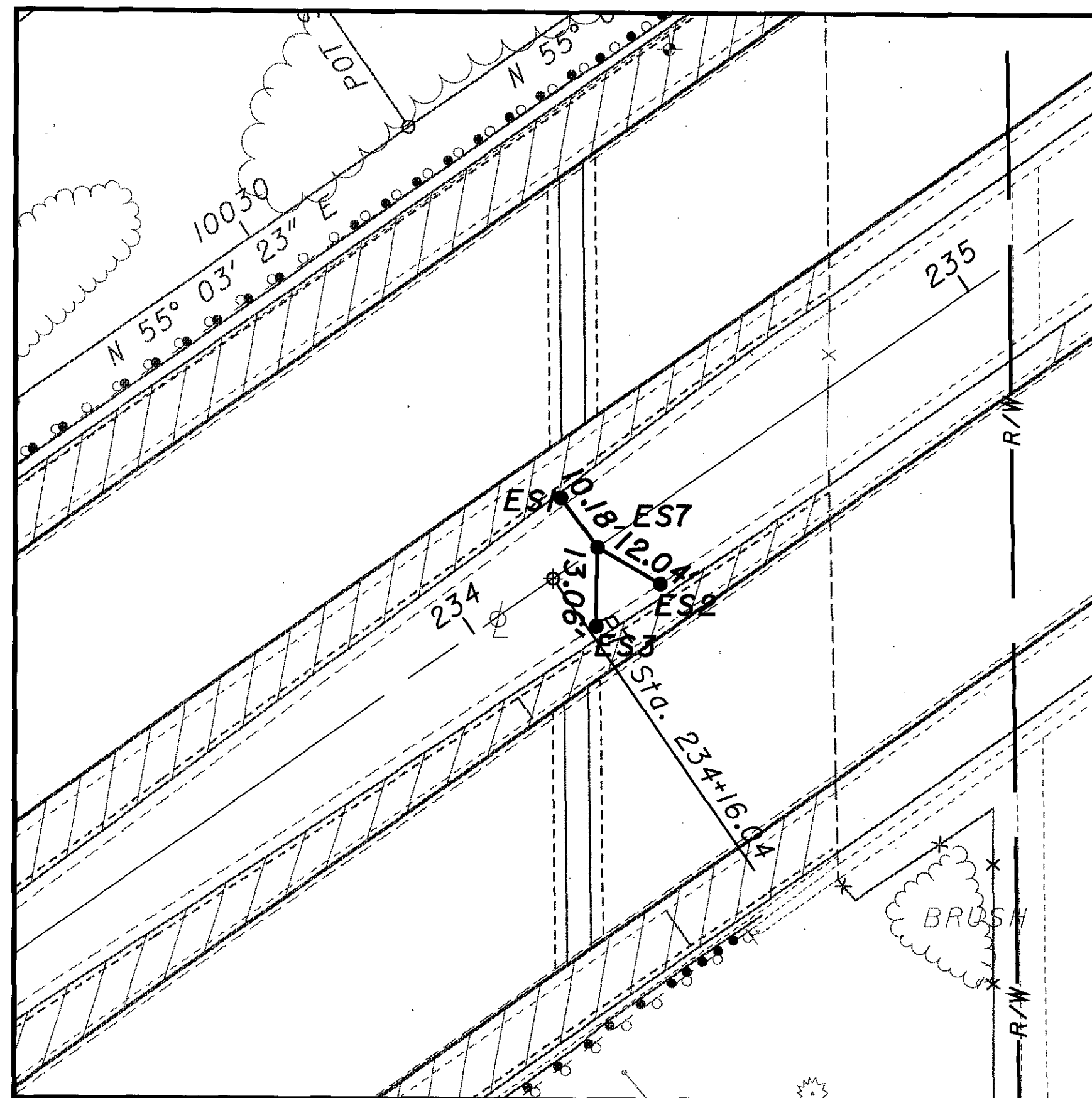
TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
EF1	DRILLHOLE	714832.01	2252827.20	194+50.48	10.14 LT	670.42
EF2	DRILLHOLE	714818.21	2252842.49	194+55.02	9.95 RT	670.57
EF3	DRILLHOLE	714811.33	2252832.11	194+42.58	9.58 RT	670.53
EF4	DRILLHOLE	715006.42	2253070.40	197+49.94	9.91 LT	670.55
EF5	DRILLHOLE	714995.40	2253087.99	197+57.62	9.37 RT	670.44
EF6	DRILLHOLE	714986.14	2253076.14	197+42.60	9.85 RT	670.50
EF7	IRON PIN	714823.44	2252832.65	194+50.00	0.00	-
EF8	IRON PIN	714998.46	2253076.30	197+50.00	0.00	-



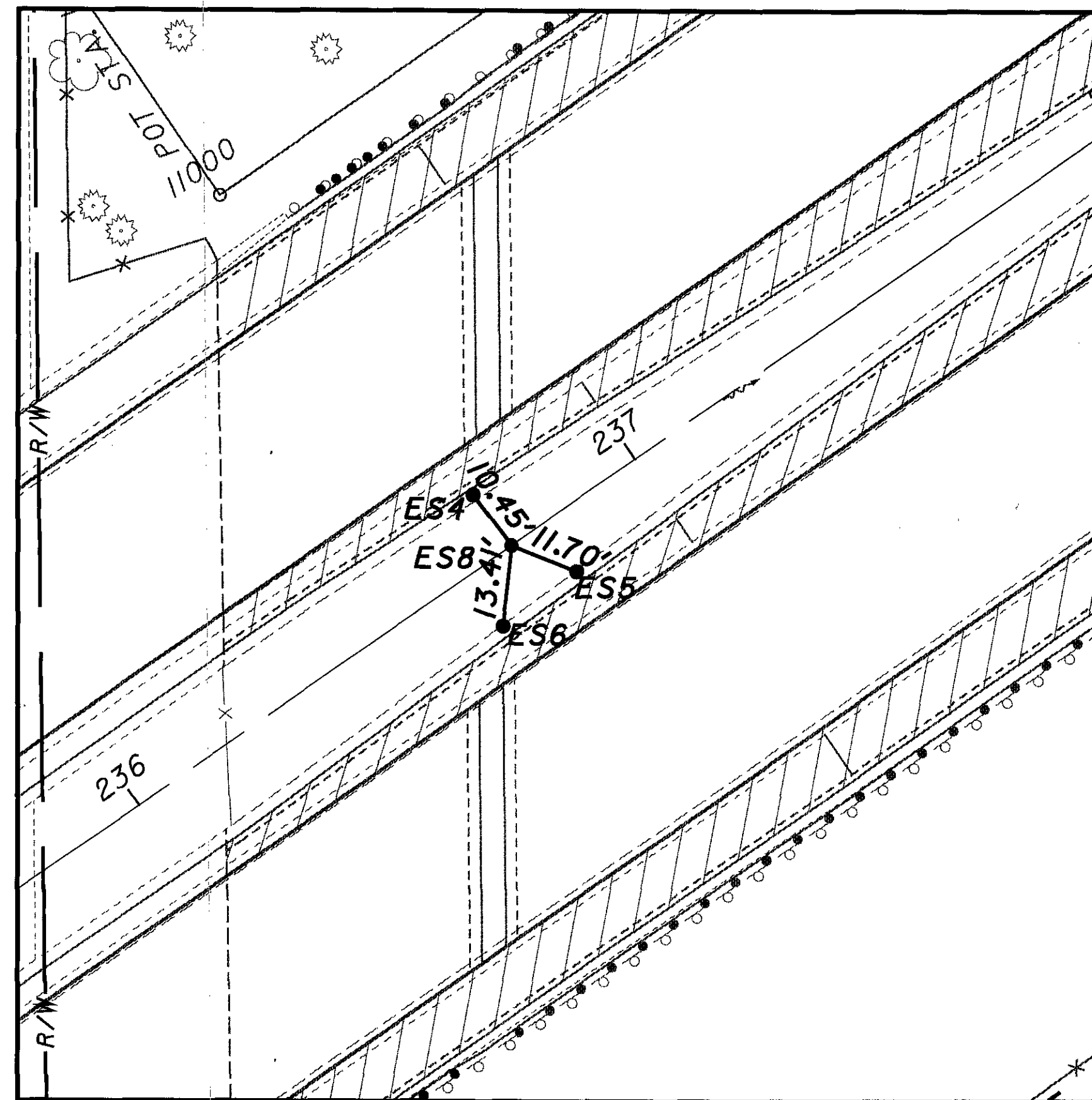
CENTERLINE REFERENCE TIES

LAK-2-0.00

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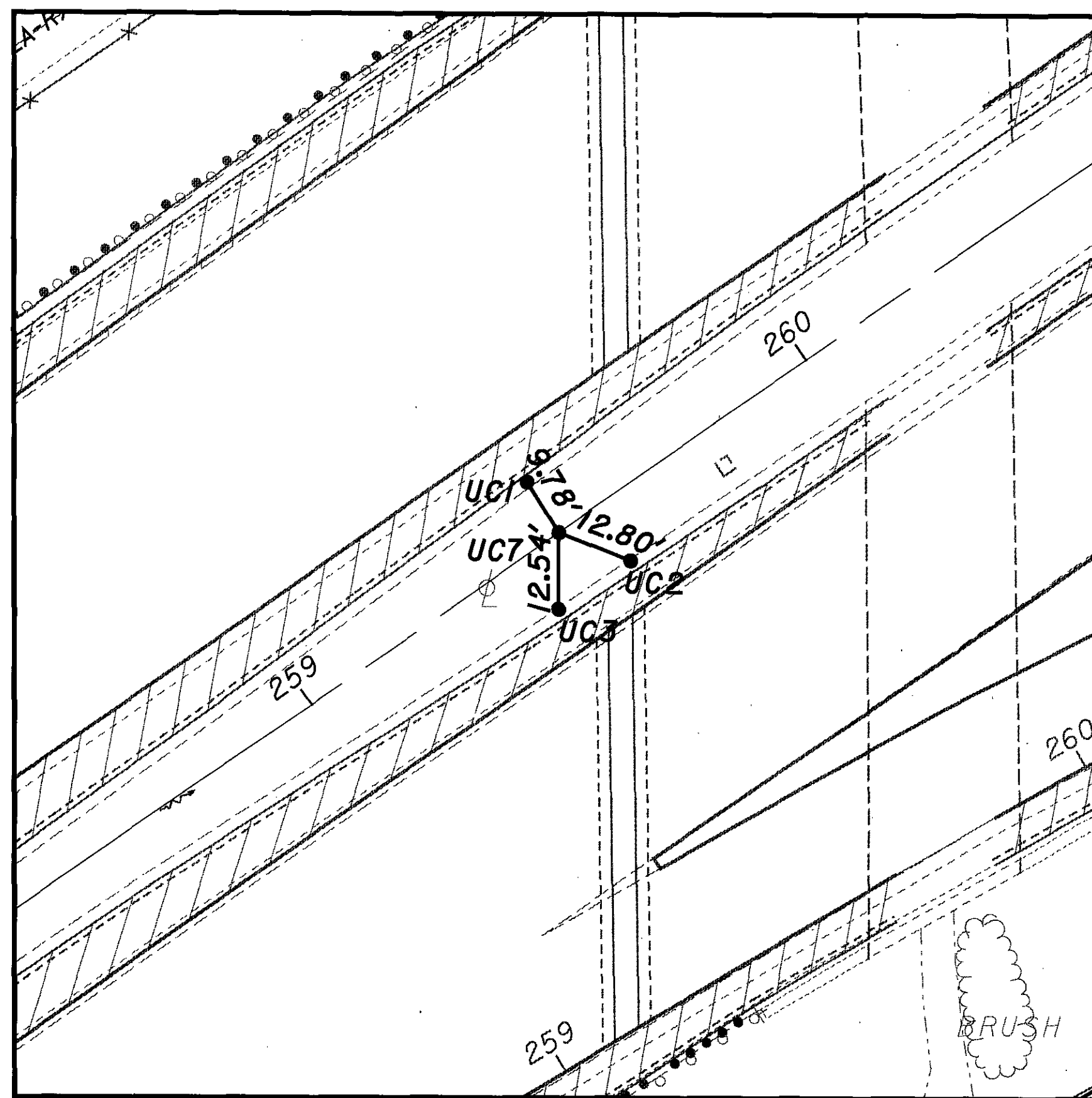
EAST 337th STREET (WEST)



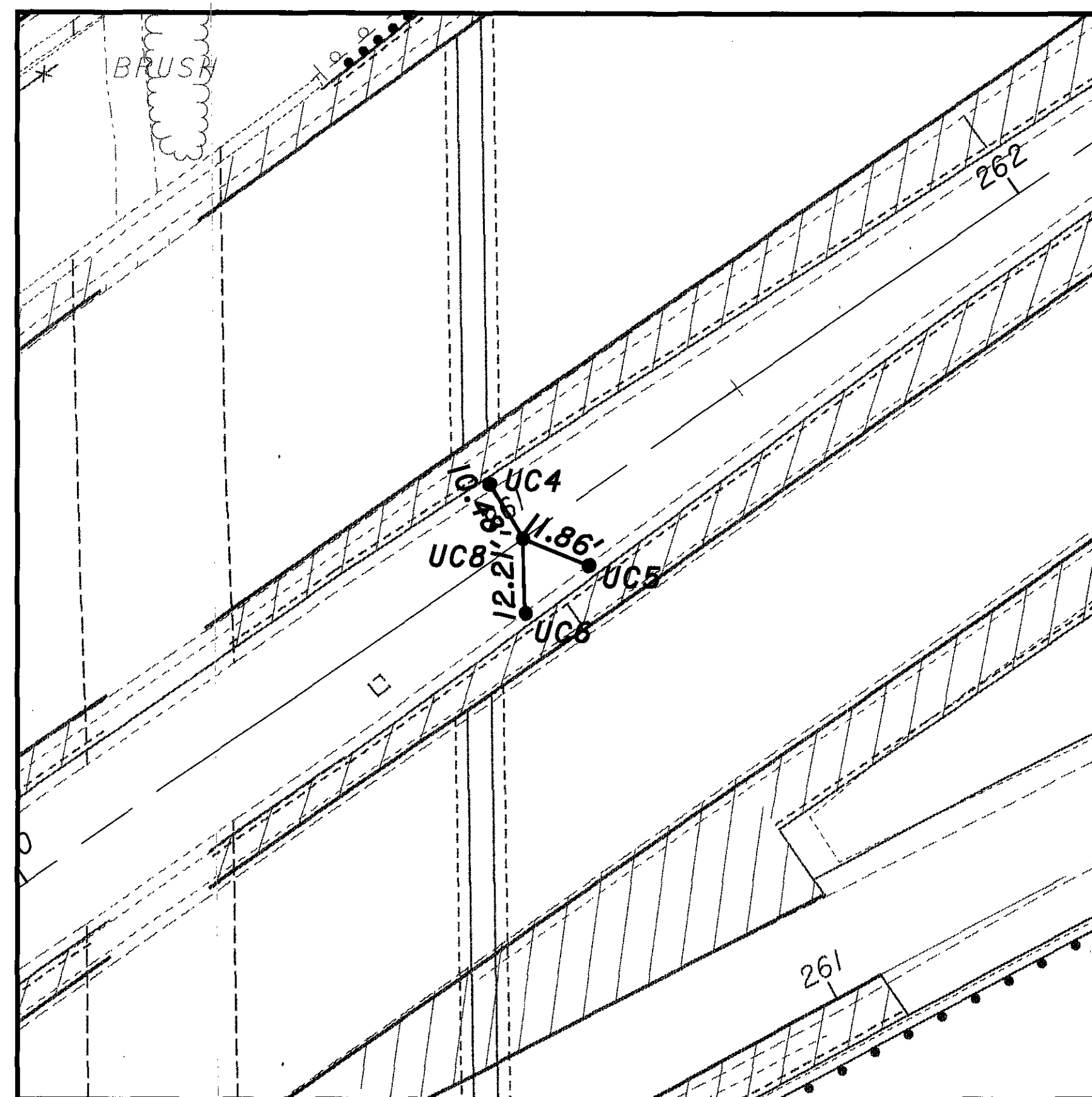
EAST 337th STREET (EAST)

EAST 337th STREET

TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
ES1	DRILLHOLE	717192.80	2256024.19	234+24.71	10.18 LT	662.24
ES2	DRILLHOLE	717178.68	2256040.73	234+30.21	10.85 RT	662.21
ES3	DRILLHOLE	717171.56	2256030.03	234+17.35	10.59 RT	662.16
ES4	DRILLHOLE	717335.84	2256228.98	236+74.51	10.44 LT	662.19
ES5	DRILLHOLE	717323.37	2256246.27	236+81.57	9.68 RT	662.30
ES6	DRILLHOLE	717314.22	2256233.91	236+66.19	10.12 RT	662.35
ES7	IRON PIN	717184.61	2256030.25	234+25.00	0.00	-
ES8	IRON PIN	717327.56	2256235.35	236+75.00	0.00	-



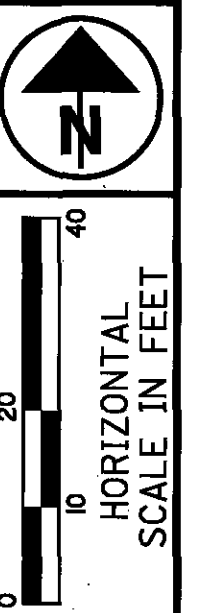
UNNAMED CREEK (WEST)



UNNAMED CREEK (EAST)

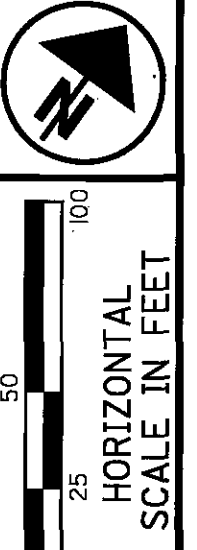
UNNAMED CREEK

TIE	DESCRPN.	NORTHING	EASTING	STATION	OFFSET	ELEV.
UC1	DRILLHOLE	718636.62	2258096.52	259+50.41	9.77 LT	639.07
UC2	DRILLHOLE	718623.74	2258113.70	259+57.15	10.62 RT	639.04
UC3	DRILLHOLE	718615.83	2258101.72	259+42.80	10.26 RT	639.10
UC4	DRILLHOLE	718723.05	2258219.31	261+00.57	10.46 LT	638.78
UC5	DRILLHOLE	718709.80	2258235.87	261+06.58	9.87 RT	638.76
UC6	DRILLHOLE	718701.93	2258225.26	260+93.38	10.26 RT	638.79
UC7	IRON PIN	718628.37	2258101.77	259+50.00	0.00	-
UC8	IRON PIN	718714.14	2258224.83	261+00.00	0.00	-



CENTERLINE REFERENCE TIES

LAK-2-0.00



LLOYD RD. CONNECTOR & SR 2 INTERCHANGE
RAMPS A-1 & A-4 GEOMETRICS

LAK-2-0.00

(A1)-(A2)

P.I. Sta = 107+28.36
D = 63° 41' 42" (LT)
Dc = 8° 30' 03"
R = 674.00'
Lsl = 650.00'
Thetal = 27° 37' 40"
LTI = 438.73'
STI = 221.58'
xl = 635.05'
yl = 102.75'
kl = 322.50'
pl = 25.90'
Dc = 36° 04' 02" (LT)
Lc = 424.28'
Tsl = 728.36'
Ts2 = 447.57'
Es = 135.07'
emax = 0.060

(A3)

P.I. Sta = 122+86.06
D = 151° 29' 34" (RT)
Dc = 20° 59' 56"
R = 272.85'
T = 1,074.07'
L = 721.43'
E = 835.33'
emax = 0.063 (EXIST.)

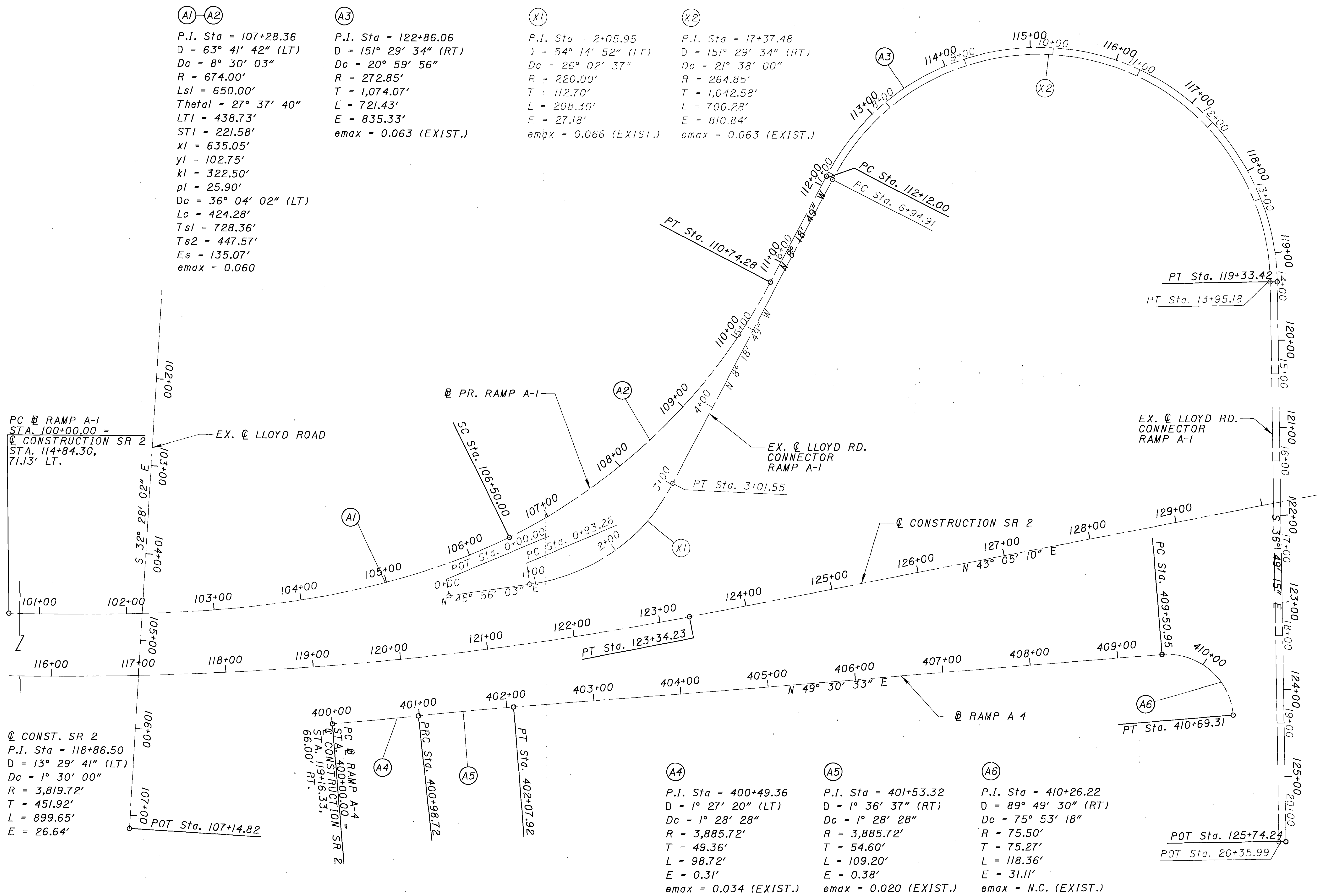
(X1)

P.I. Sta = 2+05.95
D = 54° 14' 52" (LT)
Dc = 26° 02' 37"
R = 220.00'
T = 112.70'
L = 208.30'
E = 27.18'
emax = 0.066 (EXIST.)

(X2)

P.I. Sta = 17+37.48
D = 151° 29' 34" (RT)
Dc = 21° 38' 00"
R = 264.85'
T = 1,042.58'
L = 700.28'
E = 810.84'
emax = 0.063 (EXIST.)

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PC @ RAMP A-1
STA. 100+00.00 =
@ CONSTRUCTION SR 2
STA. 114+84.30,
71.13' LT.

@ CONST. SR 2
P.I. Sta = 118+86.50
D = 13° 29' 41" (LT)
Dc = 1° 30' 00"
R = 3,819.72'
T = 451.92'
L = 899.65'
E = 26.64'

PC @ RAMP A-4
STA. 400+00.00 =
@ CONSTRUCTION SR 2
STA. 119+16.33,
66.00' RT.

@ PR. RAMP A-1
SC Sta. 106+50.00

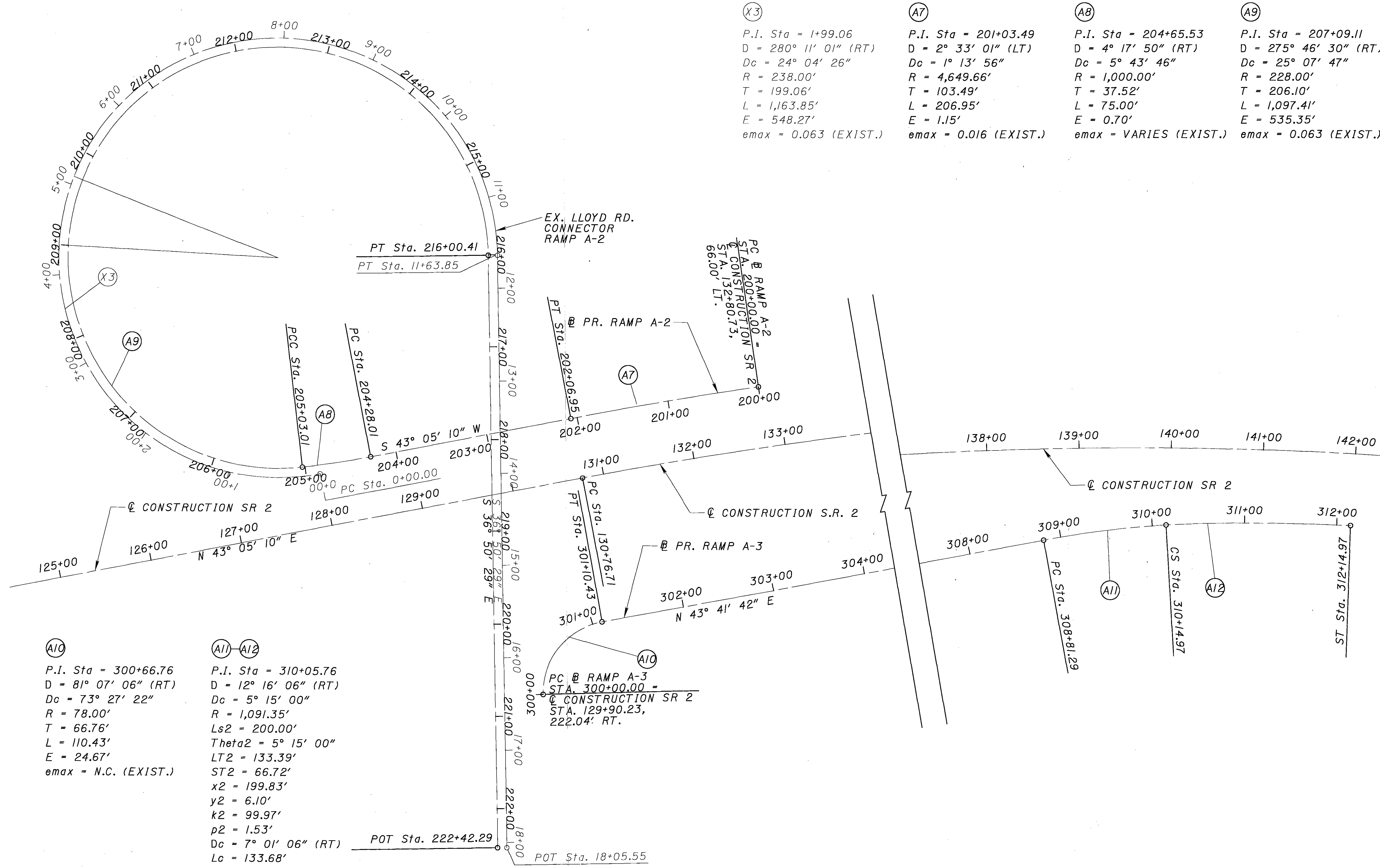
(A4)
P.I. Sta = 400+49.36
D = 1° 27' 20" (LT)
Dc = 1° 28' 28"
R = 3,885.72'
T = 49.36'
L = 98.72'
E = 0.31'
emax = 0.034 (EXIST.)

(A5)
P.I. Sta = 401+53.32
D = 1° 36' 37" (RT)
Dc = 1° 28' 28"
R = 3,885.72'
T = 54.60'
L = 109.20'
E = 0.38'
emax = 0.020 (EXIST.)

(A6)
P.I. Sta = 410+26.22
D = 89° 49' 30" (RT)
Dc = 75° 53' 18"
R = 75.50'
T = 75.27'
L = 118.36'
E = 31.11'
emax = N.C. (EXIST.)

POT Sta. 125+74.24
POT Sta. 20+35.99

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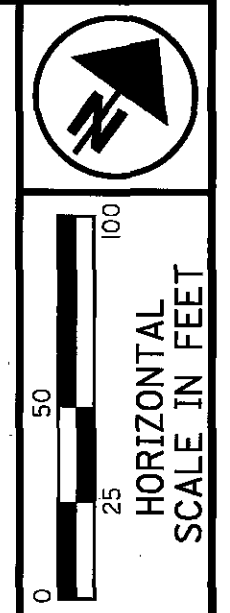
(X3)	(A7)	(A8)	(A9)
P.I. Sta = 1+99.06	P.I. Sta = 201+03.49	P.I. Sta = 204+65.53	P.I. Sta = 207+09.11
D = 280° 11' 01" (RT)	D = 2° 33' 01" (LT)	D = 4° 17' 50" (RT)	D = 275° 46' 30" (RT)
Dc = 24° 04' 26"	Dc = 1° 13' 56"	Dc = 5° 43' 46"	Dc = 25° 07' 47"
R = 238.00'	R = 4,649.66'	R = 1,000.00'	R = 228.00'
T = 199.06'	T = 103.49'	T = 37.52'	T = 206.10'
L = 1,163.85'	L = 206.95'	L = 75.00'	L = 1,097.41'
E = 548.27'	E = 1.15'	E = 0.70'	E = 535.35'
emax = 0.063 (EXIST.)	emax = 0.016 (EXIST.)	emax = VARIES (EXIST.)	emax = 0.063 (EXIST.)

(A10)

P.I. Sta = 300+66.76
 D = 81° 07' 06" (RT)
 Dc = 73° 27' 22"
 R = 78.00'
 T = 66.76'
 L = 110.43'
 E = 24.67'
 emax = N.C. (EXIST.)

(A11) (A12)

P.I. Sta = 310+05.76
 D = 12° 16' 06" (RT)
 Dc = 5° 15' 00"
 R = 1,091.35'
 Ls2 = 200.00'
 Theta2 = 5° 15' 00"
 LT2 = 133.39'
 ST2 = 66.72'
 x2 = 199.83'
 y2 = 6.10'
 k2 = 99.97'
 p2 = 1.53'
 Dc = 7° 01' 06" (RT)
 Lc = 133.68'
 Ts1 = 124.47'
 Ts2 = 210.24'
 Es = 7.08'
 emax = 0.030 (EXIST.)



LLOYD RD. CONNECTOR & SR 2 INTERCHANGE
 RAMPS A-2 & A-3 GEOMETRICS

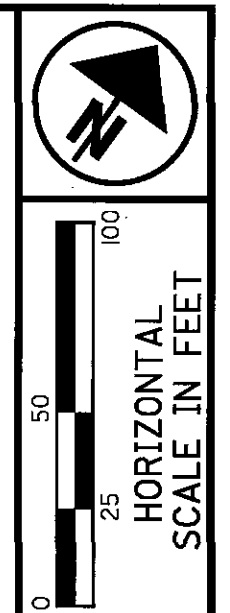
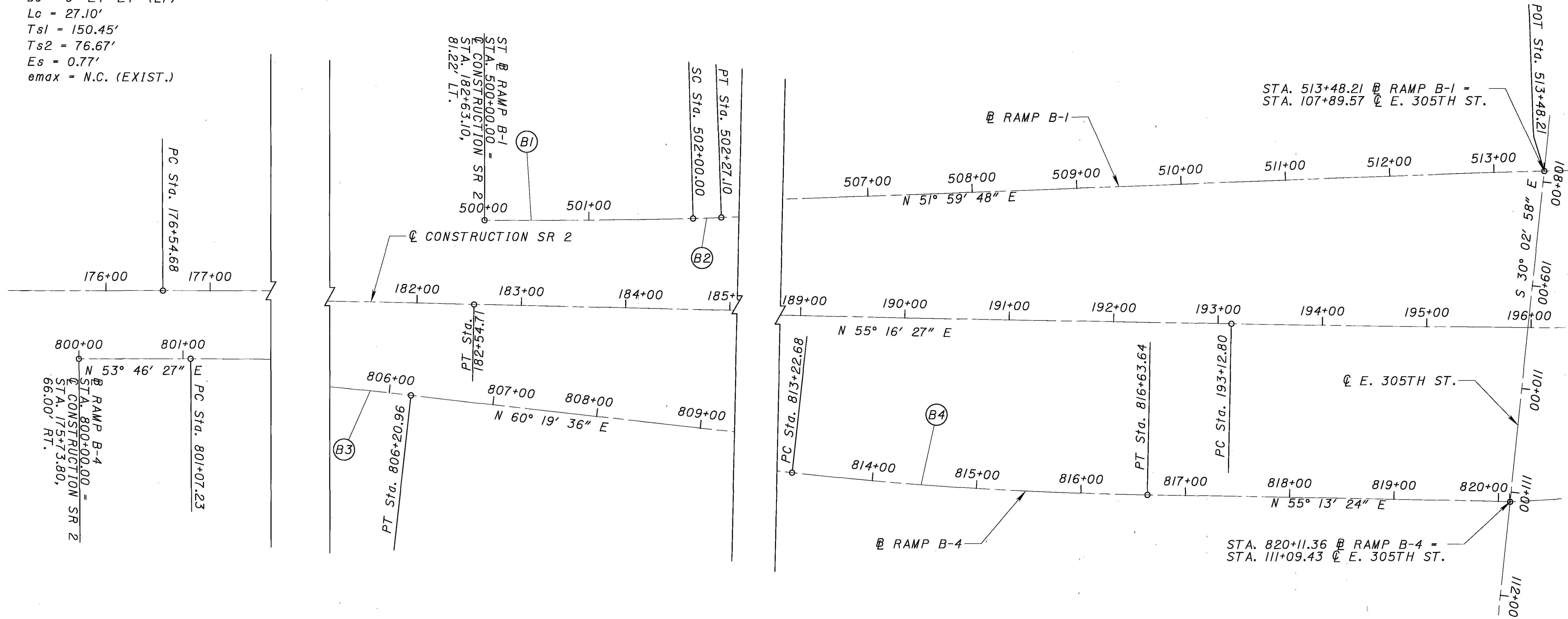
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(B1)-(B2)
 P.I. Sta = 501+50.45
 D = 1° 54' 24" (LT)
 Dc = 1° 30' 00"
 R = 3,819.72'
 Lsl = 200.00'
 Thetal = 1° 30' 00"
 LTI = 133.34'
 STI = 66.67'
 xl = 199.99'
 yl = 1.75'
 kl = 100.00'
 pl = 0.44'
 Dc = 0° 24' 24" (LT)
 Lc = 27.10'
 Tsl = 150.45'
 Ts2 = 76.67'
 Es = 0.77'
 emax = N.C. (EXIST.)

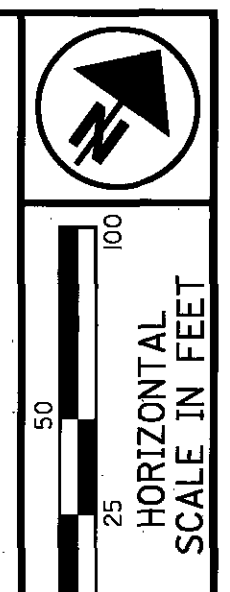
(B3)
 P.I. Sta = 803+64.37
 D = 6° 33' 09" (RT)
 Dc = 1° 16' 32"
 R = 4,492.00'
 T = 257.14'
 L = 513.73'
 E = 7.35'
 emax = N.C. (EXIST.)

(B4)
 P.I. Sta = 814+93.27
 D = 5° 06' 12" (LT)
 Dc = 1° 29' 48"
 R = 3,828.00'
 T = 170.59'
 L = 340.96'
 E = 3.80'
 emax = N.C. (EXIST.)



**E. 305TH ST. & SR 2 INTERCHANGE
 RAMPS B-1 & B-4 GEOMETRICS**

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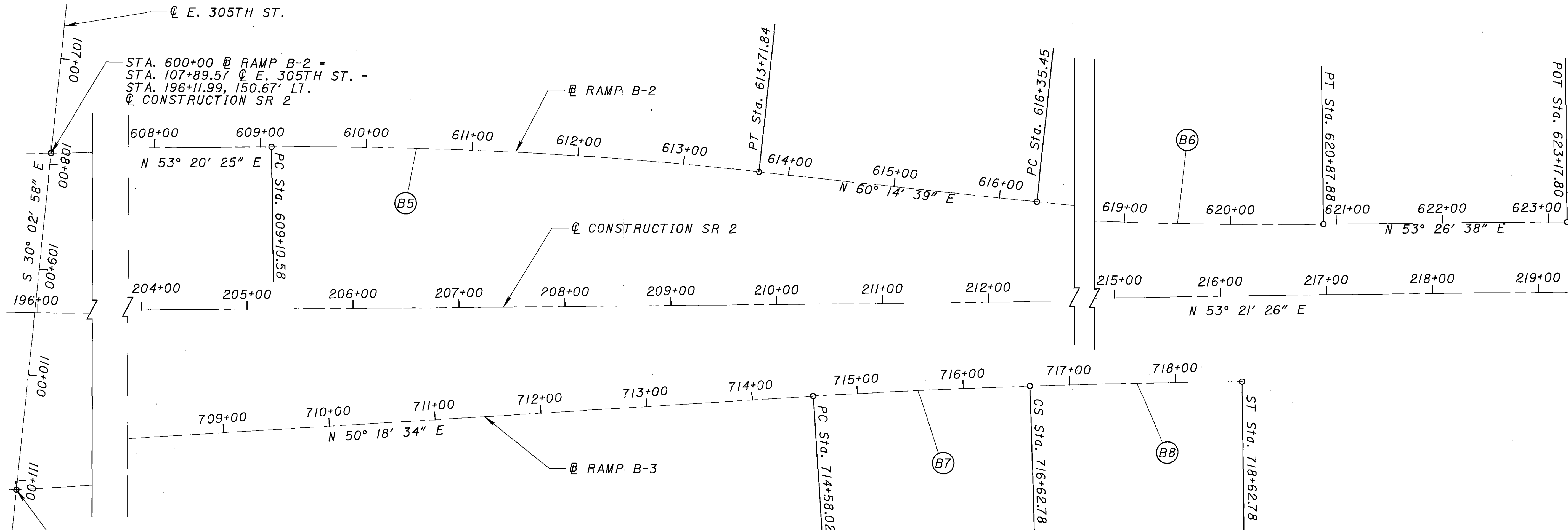


(B5)

P.I. Sta = 611+41.49
 D = 6° 54' 14" (RT)
 Dc = 1° 29' 48"
 R = 3,828.00'
 T = 230.91'
 L = 461.26'
 E = 6.96'
 emax = N.C. (EXIST.)

(B6)

P.I. Sta = 618+61.93
 D = 6° 48' 01" (LT)
 Dc = 1° 30' 11"
 R = 3,812.00'
 T = 226.48'
 L = 452.43'
 E = 6.72'
 emax = N.C. (EXIST.)



STA. 600+00 @ RAMP B-2 =
 STA. 107+89.57 @ E. 305TH ST. =
 STA. 196+11.99, 150.67' LT.
 @ CONSTRUCTION SR 2

STA. 700+00 @ RAMP B-3 =
 STA. 111+09.43 @ E. 305TH ST. =
 STA. 195+80.63, 167.63' RT.
 @ CONSTRUCTION SR 2

(B7) (B8)

P.I. Sta = 716+15.91
 D = 3° 02' 52" (RT)
 Dc = 1° 00' 00"
 R = 5,729.58'
 Ls2 = 200.00'
 Theta2 = 1° 00' 00"
 LT2 = 133.34'
 ST2 = 66.67'
 x2 = 199.99'
 y2 = 1.16'
 k2 = 100.00'
 p2 = 0.29'
 Dc = 2° 02' 52" (RT)
 Lc = 204.77'
 Ts1 = 157.89'
 Ts2 = 246.96'
 Es = 2.18'
 emax = N.C. (EXIST.)

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**E. 305TH ST. & SR 2 INTERCHANGE
 RAMPS B-2 & B-3 GEOMETRICS**

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(C6)
 P.I. = 264+67.95
 Ls = 200.00'
 fs = 8° 00' 00"
 LT = 133.47'
 ST = 66.79'
 x = 199.61'
 y = 9.30'
 k = 99.94'
 p = 2.33'

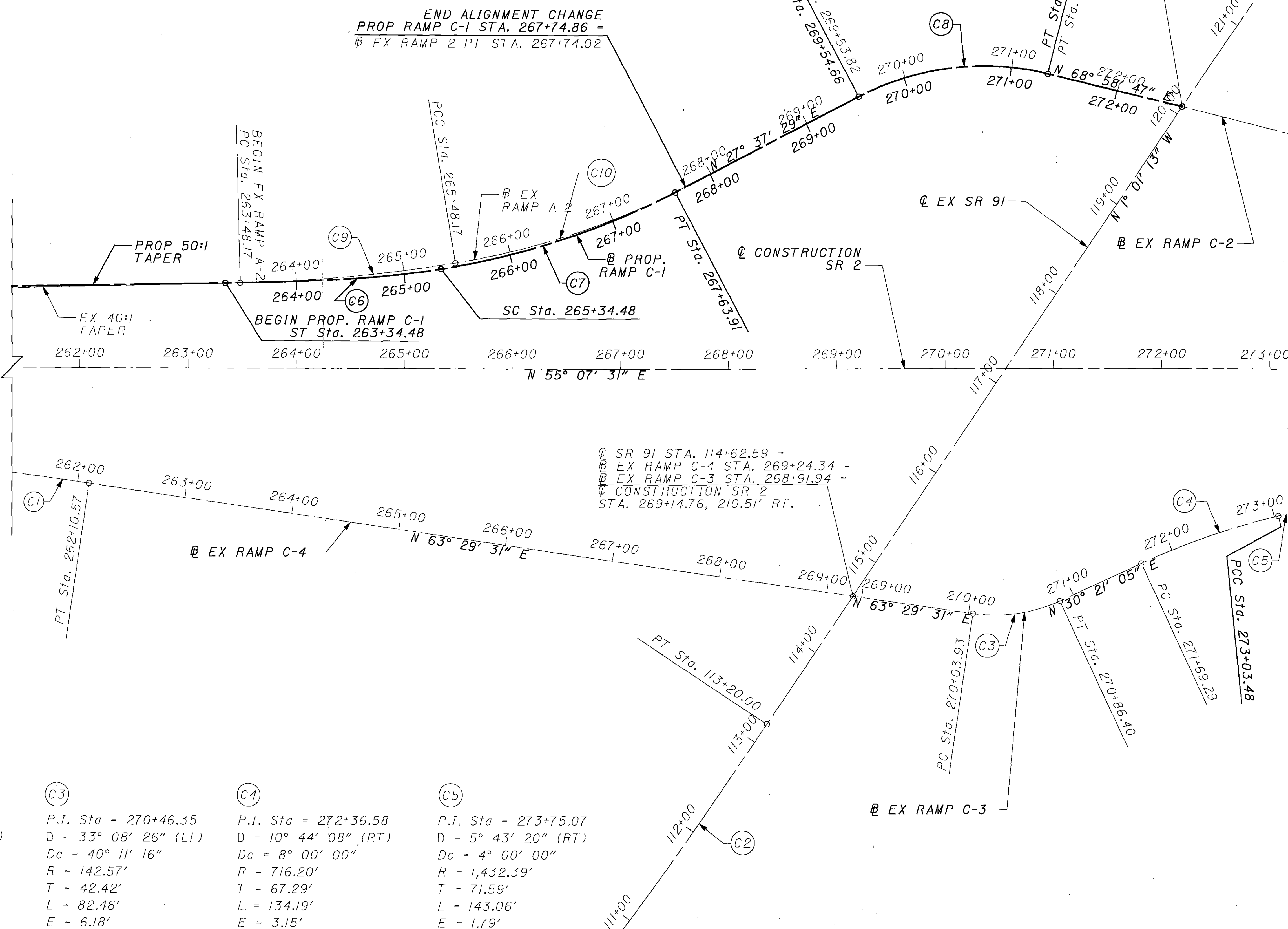
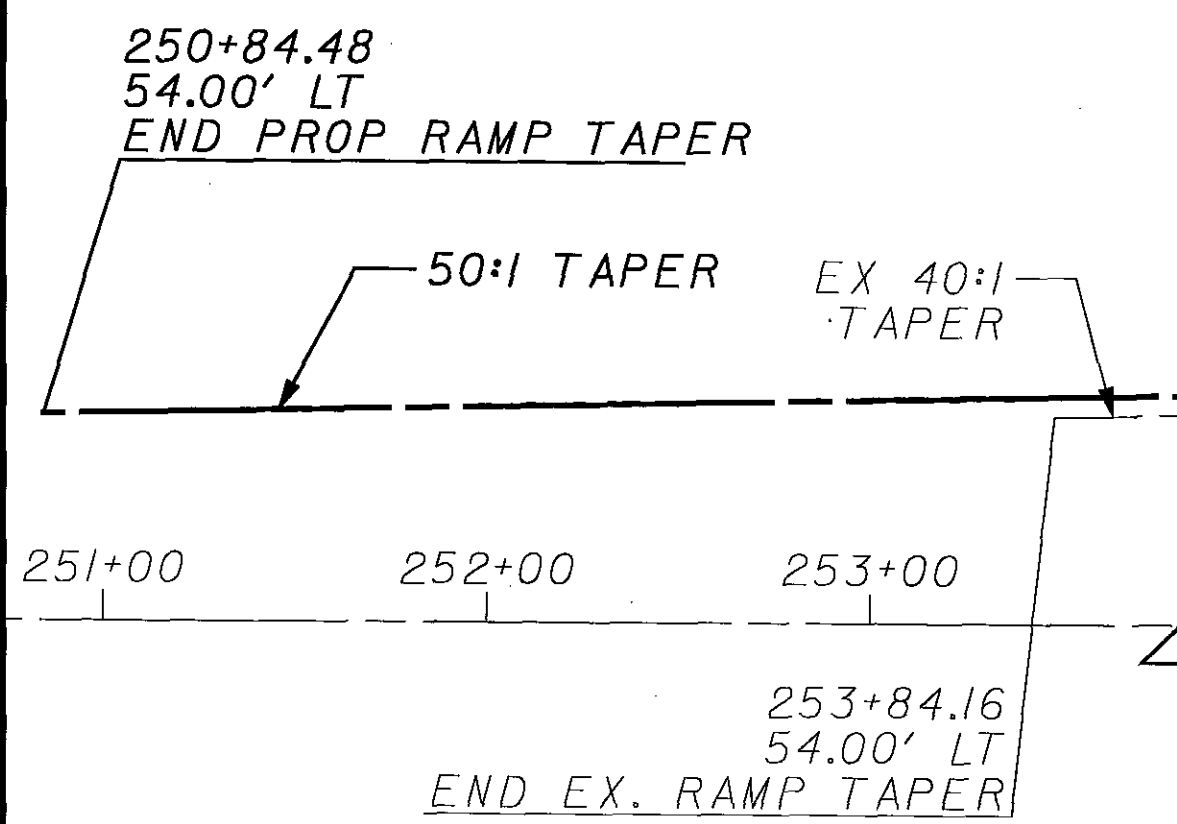
(C7)
 P.I. Sta = 265+97.40
 D = 26° 21' 17" (LT)
 Dc = 8° 00' 00"
 R = 716.20'
 Lsl = 200.00'
 Theta1 = 8° 00' 00"
 LTI = 133.47'
 STI = 66.79'
 xl = 199.61'
 yl = 9.30'
 kl = 99.94'
 pl = 2.33'
 Dc = 18° 21' 17" (LT)
 Lc = 229.43'
 Tsl = 262.92'
 Ts2 = 172.92'
 Es = 20.58'

(C8)
 P.I. Sta = 270+48.68
 D = 41° 21' 18" (RT)
 Dc = 23° 00' 00"
 R = 249.11'
 T = 94.02'
 L = 179.80'
 E = 17.15'

(C9)
 P.I. Sta = 264+48.33
 D = 8° 00' 00" (LT)
 Dc = 4° 00' 00"
 R = 1,432.39'
 T = 100.16'
 L = 200.00'
 E = 3.50'

(C10)
 P.I. Sta = 266+62.04
 D = 18° 04' 06" (LT)
 Dc = 8° 00' 00"
 R = 716.20'
 T = 113.87'
 L = 225.85'
 E = 9.00'

C SR 91 STA. 120+08.08 =
 EX RAMP C-1 STA. 272+61.38 =
 EX RAMP C-2 STA. 272+01.73 =
 PROP. RAMP C-1 STA. 272+62.22 =
 CONSTRUCTION SR 2
 STA. 272+18.65, 242.49' LT.



(C1)
 P.I. Sta = 259+32.18
 D = 8° 22' 00" (RT)
 Dc = 1° 30' 00"
 R = 3,819.72'
 T = 279.39'
 L = 557.78'
 E = 10.20'


(C2)
 P.I. Sta = 106+64.60
 D = 16° 30' 00" (LT)
 Dc = 1° 15' 00"
 R = 4,583.66'
 T = 664.60'
 L = 1,320.00'
 E = 47.93'

(C3)
 P.I. Sta = 270+46.35
 D = 33° 08' 26" (LT)
 Dc = 40° 11' 16"
 R = 142.57'
 T = 42.42'
 L = 82.46'
 E = 6.18'

(C4)
 P.I. Sta = 272+36.58
 D = 10° 44' 08" (RT)
 Dc = 8° 00' 00"
 R = 716.20'
 T = 67.29'
 L = 134.19'
 E = 3.15'

(C5)
 P.I. Sta = 273+75.07
 D = 5° 43' 20" (RT)
 Dc = 4° 00' 00"
 R = 1,432.39'
 T = 71.59'
 L = 143.06'
 E = 1.79'

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HORIZONTAL
SCALE IN FEET

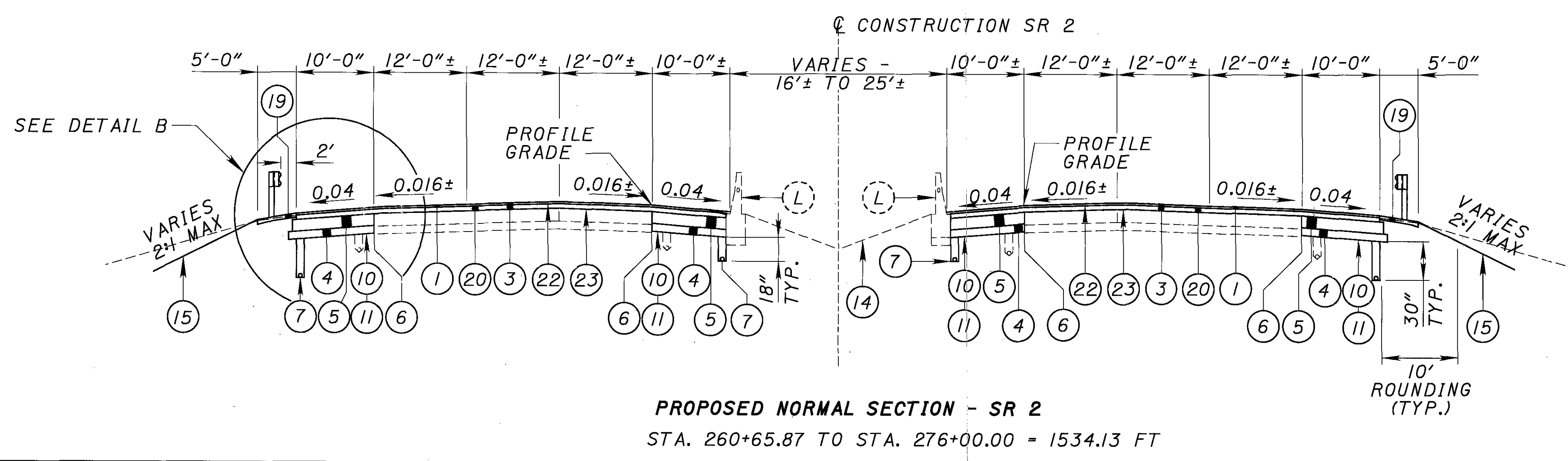
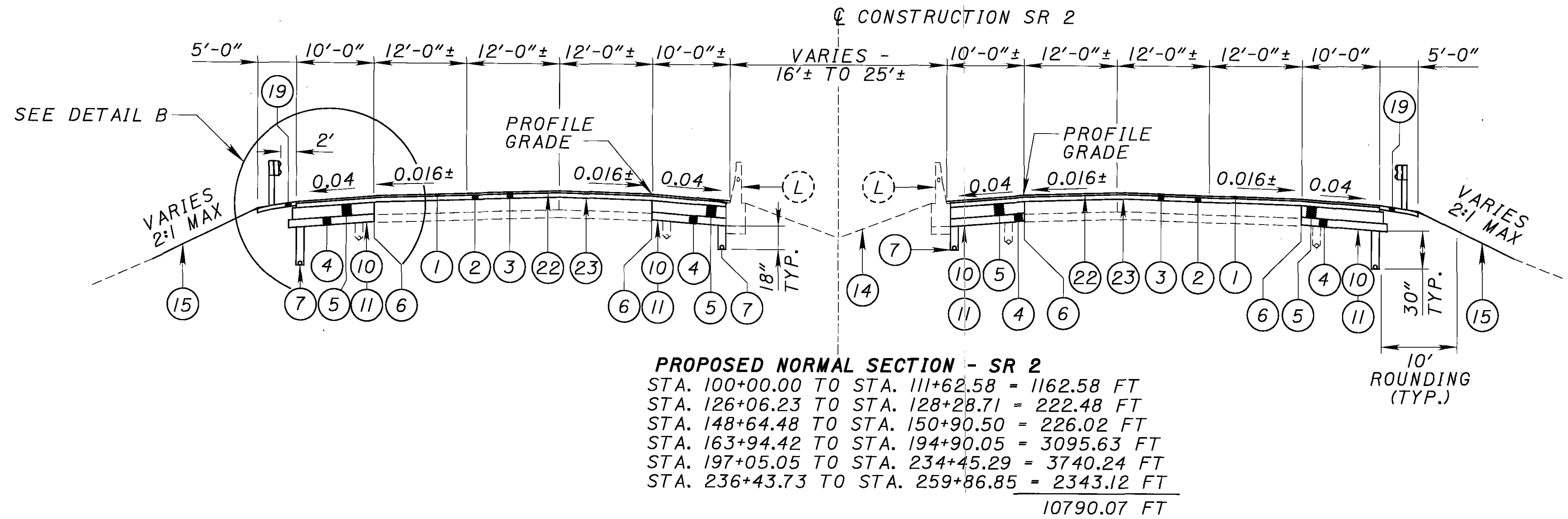
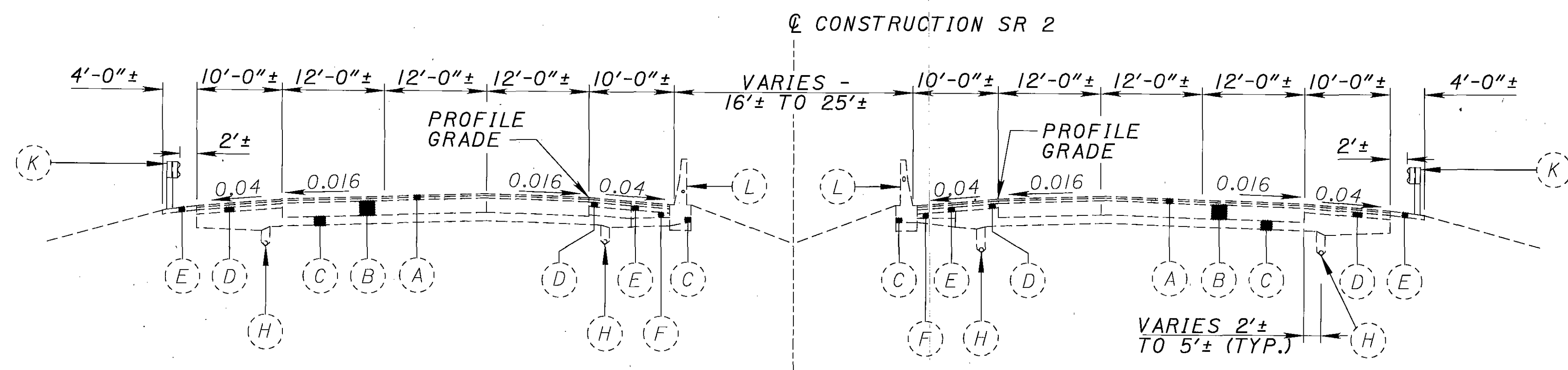
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**SR 91 & SR 2 INTERCHANGE
RAMP C-1 GEOMETRICS**

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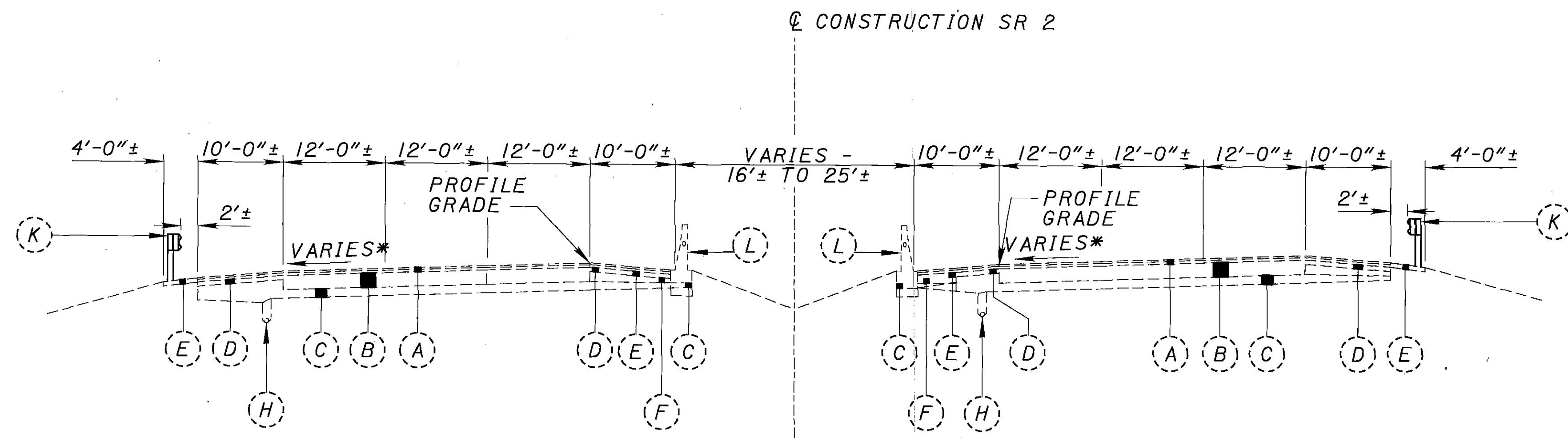
- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

TYPICAL SECTIONS - SR 2 MAINLINE

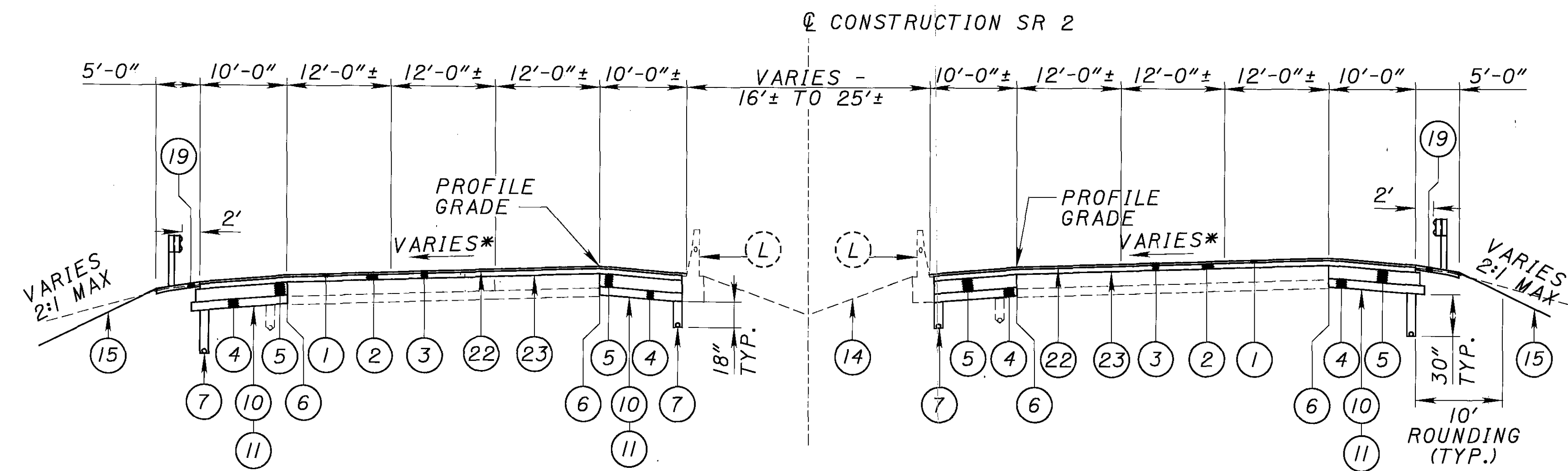
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EXISTING SUPERELEVATED SECTION SR 2
 STA. 111+62.58 TO STA. 116+03.31 = 440.73 FT (EMAX = 0.036±)
 STA. 117+97.82 TO STA. 126+06.23 = 808.41 FT (EMAX = 0.036±)
 STA. 128+28.71 TO STA. 128+88.70 = 59.99 FT (EMAX = 0.030±)
 STA. 131+04.26 TO STA. 148+64.48 = 1706.22 FT (EMAX = 0.030±)
 STA. 150+90.50 TO STA. 155+17.04 = 426.54 FT (EMAX = 0.024±)
 STA. 156+98.60 TO STA. 163+94.42 = 695.82 FT (EMAX = 0.024±)
 4137.71 FT

* MEET EXISTING



PROPOSED SUPERELEVATED SECTION SR 2
 STA. 111+62.58 TO STA. 116+03.31 = 440.73 FT (EMAX = 0.036±)
 STA. 117+97.82 TO STA. 126+06.23 = 808.41 FT (EMAX = 0.036±)
 STA. 128+28.71 TO STA. 128+88.70 = 59.99 FT (EMAX = 0.030±)
 STA. 131+04.26 TO STA. 148+64.48 = 1706.22 FT (EMAX = 0.030±)
 STA. 150+90.50 TO STA. 155+17.04 = 426.54 FT (EMAX = 0.024±)
 STA. 156+98.60 TO STA. 163+94.42 = 695.82 FT (EMAX = 0.024±)
 4137.71 FT

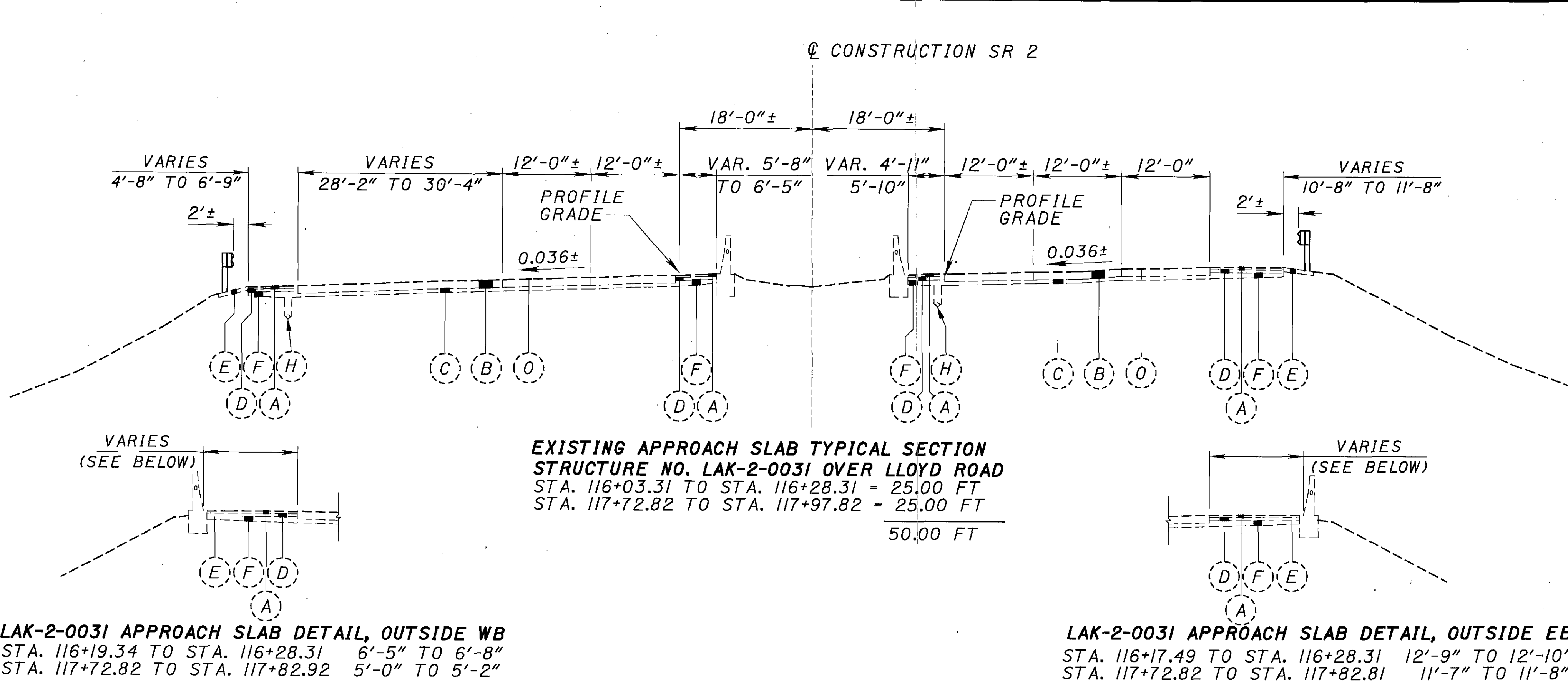
- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

TYPICAL SECTIONS - SR 2 MAINLINE

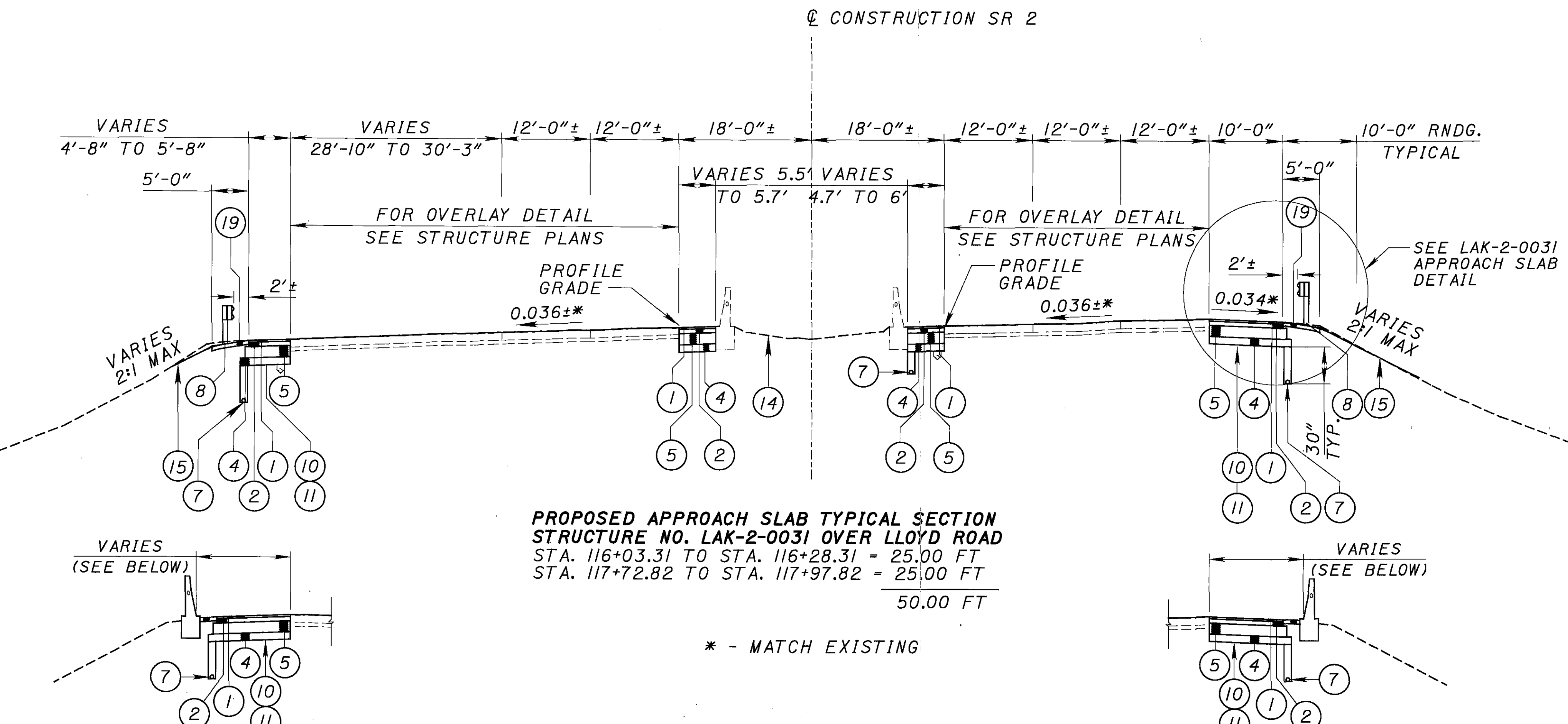
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- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)



LAK-2-0031 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 116+19.34 TO STA. 116+28.31 6'-5" TO 6'-8"
 STA. 117+72.82 TO STA. 117+82.92 5'-0" TO 5'-2"

LAK-2-0031 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 116+17.49 TO STA. 116+28.31 12'-9" TO 12'-10"
 STA. 117+72.82 TO STA. 117+82.81 11'-7" TO 11'-8"



LAK-2-0031 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 116+14.22 TO STA. 116+28.31 6'-5" TO 6'-8"
 STA. 117+72.82 TO STA. 117+86.25 5'-0" TO 5'-2"

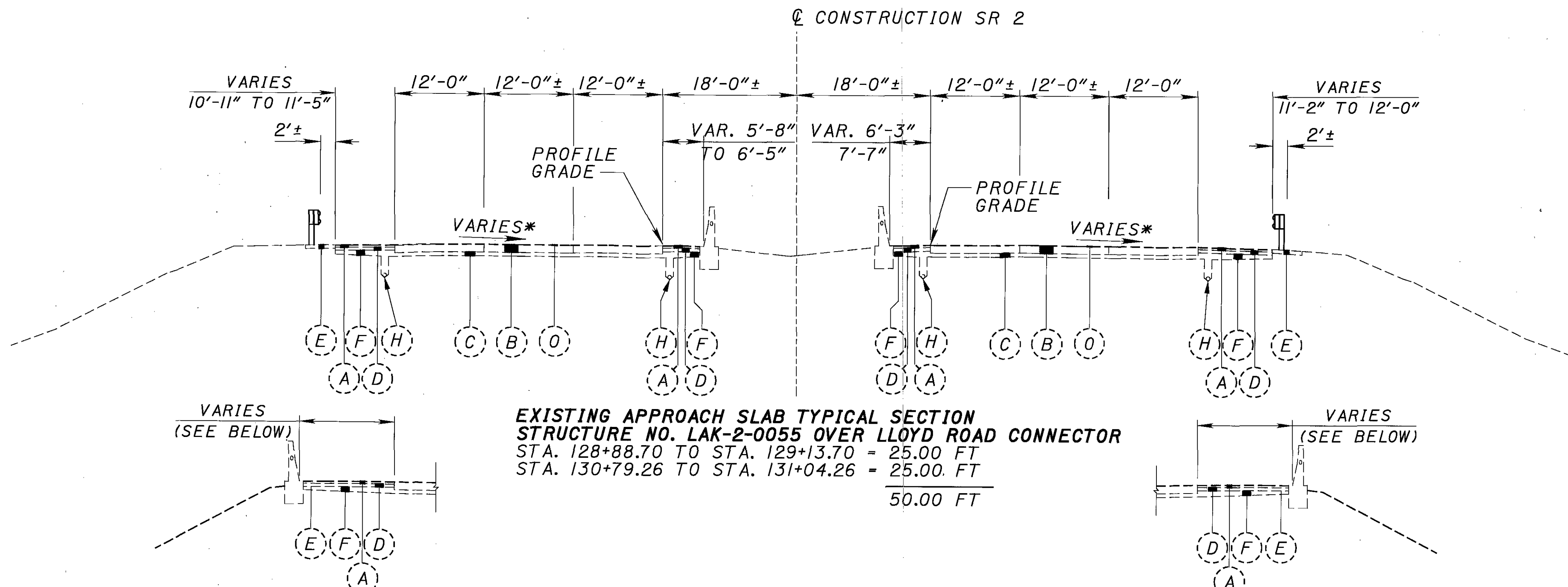
LAK-2-0031 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 116+17.49 TO STA. 116+28.31 12'-1" TO 13'-1"
 STA. 117+72.82 TO STA. 117+82.81 11'-11" TO 12'-0"

* - MATCH EXISTING

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

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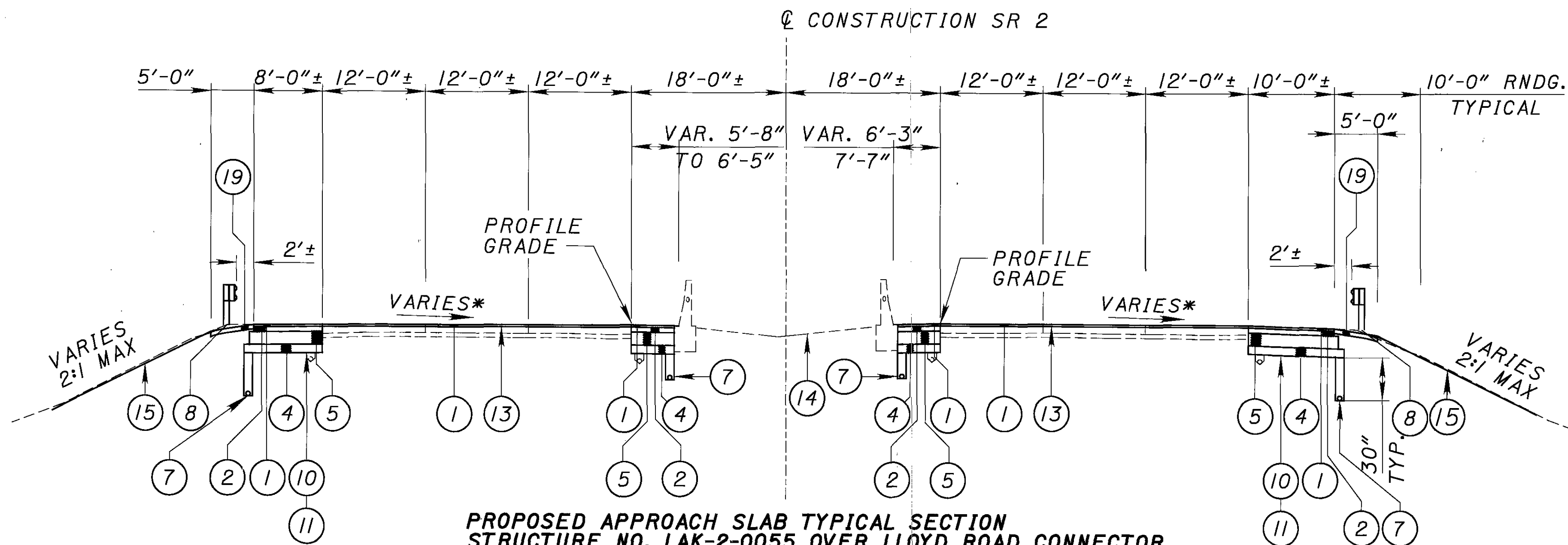
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EXISTING APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0055 OVER LLOYD ROAD CONNECTOR
 STA. 128+88.70 TO STA. 129+13.70 = 25.00 FT
 STA. 130+79.26 TO STA. 131+04.26 = 25.00 FT
 50.00 FT

LAK-2-0055 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 129+00.95 TO STA. 129+13.70 11'-1" TO 11'-2"
 STA. 130+79.26 TO STA. 130+92.78 11'-5" TO 11'-8"

LAK-2-0055 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 129+00.77 TO STA. 129+13.70 12'-1" TO 12'-3"
 STA. 130+79.26 TO STA. 130+92.60 11'-7" TO 11'-8"



PROPOSED APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0055 OVER LLOYD ROAD CONNECTOR
 STA. 128+88.70 TO STA. 129+13.70 = 25.00 FT
 STA. 130+79.26 TO STA. 131+04.26 = 25.00 FT
 50.00 FT

* - MATCH EXISTING

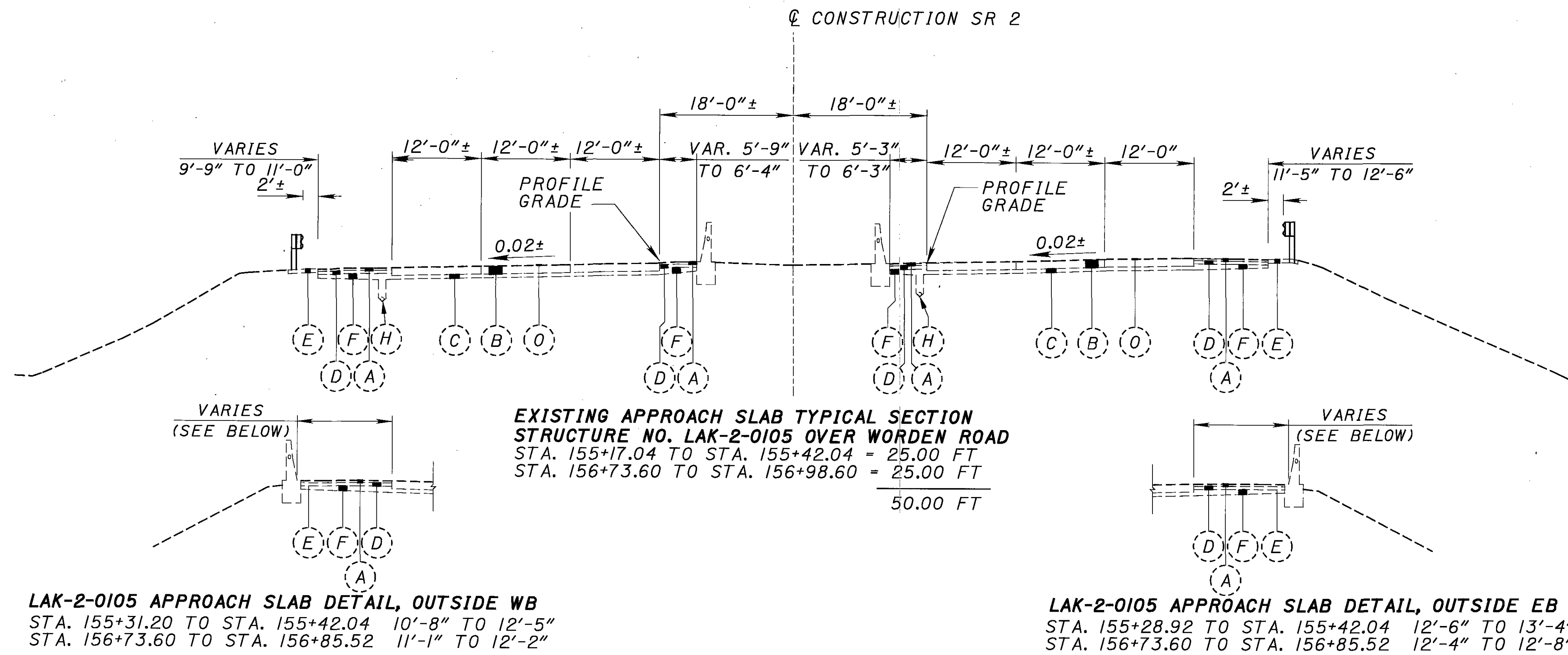
LAK-2-0055 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 129+00.95 TO STA. 129+13.70 11'-1" TO 11'-2"
 STA. 130+79.26 TO STA. 130+92.78 11'-5" TO 11'-8"

LAK-2-0055 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 129+00.77 TO STA. 129+13.70 12'-1" TO 12'-3"
 STA. 130+79.26 TO STA. 130+92.60 11'-7" TO 11'-8"

- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

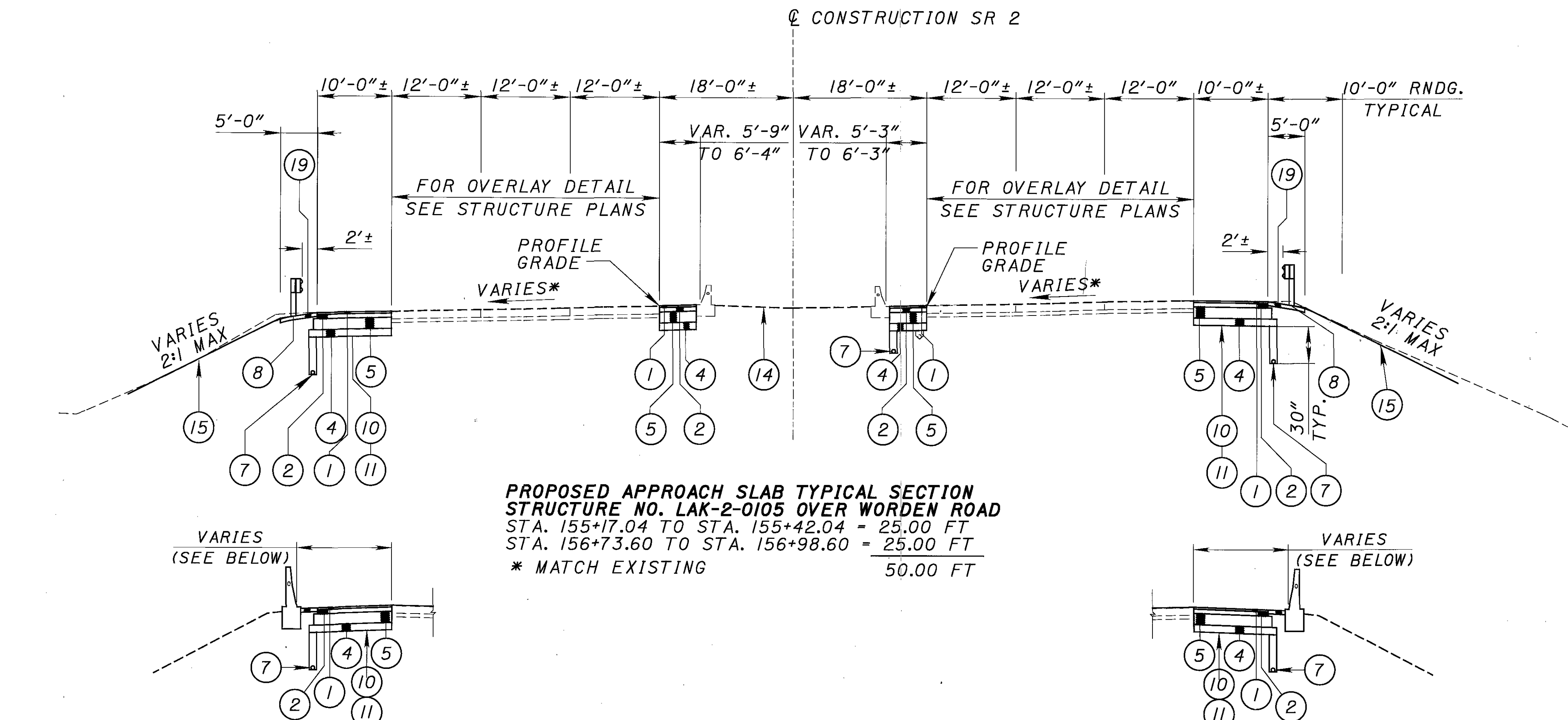
NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

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LAK-2-0105 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 155+31.20 TO STA. 155+42.04 10'-8" TO 12'-5"
 STA. 156+73.60 TO STA. 156+85.52 11'-1" TO 12'-2"

LAK-2-0105 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 155+28.92 TO STA. 155+42.04 12'-6" TO 13'-4"
 STA. 156+73.60 TO STA. 156+85.52 12'-4" TO 12'-8"



LAK-2-0105 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 155+27.91 TO STA. 155+42.04 10'-8" TO 12'-5"
 STA. 156+73.60 TO STA. 156+85.52 11'-1" TO 12'-2"

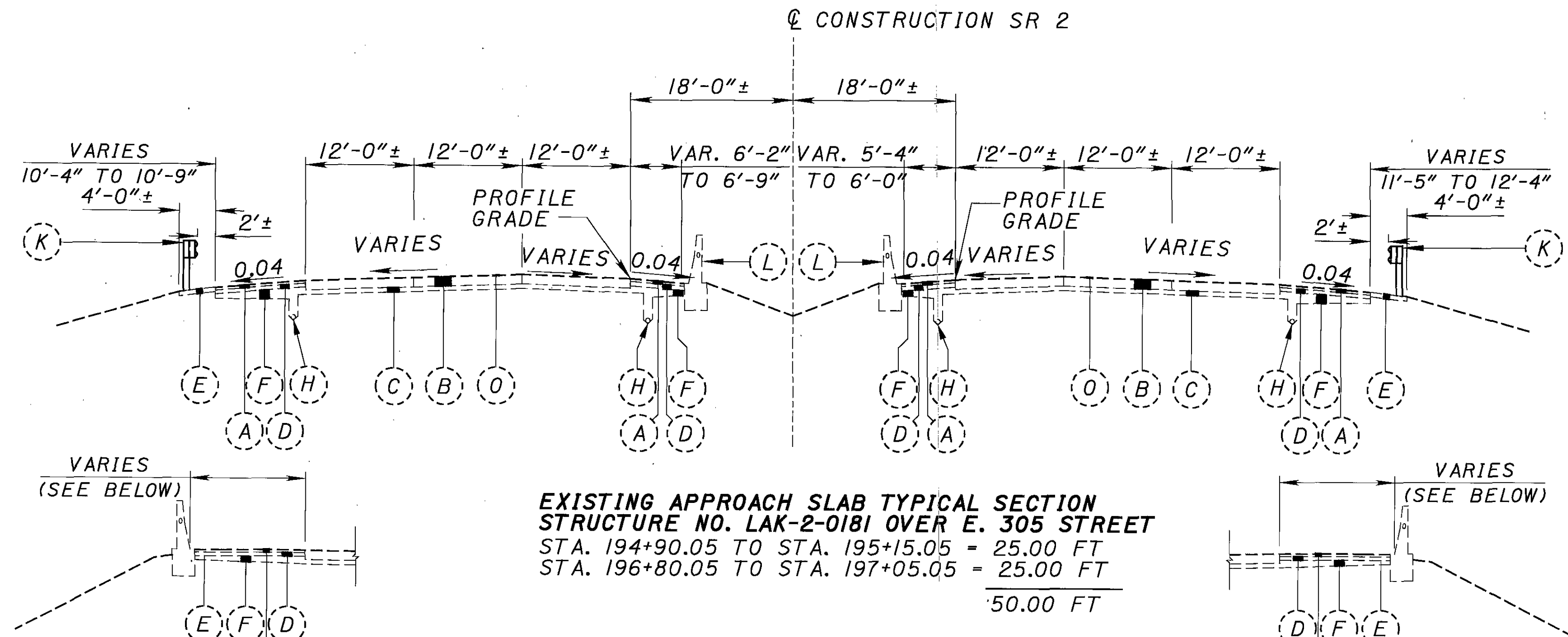
LAK-2-0105 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 155+28.05 TO STA. 155+42.04 11'-6" TO 11'-8"
 STA. 156+73.60 TO STA. 156+88.36 12'-6" TO 12'-8"

- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

TYPICAL SECTIONS - SR 2 MAINLINE

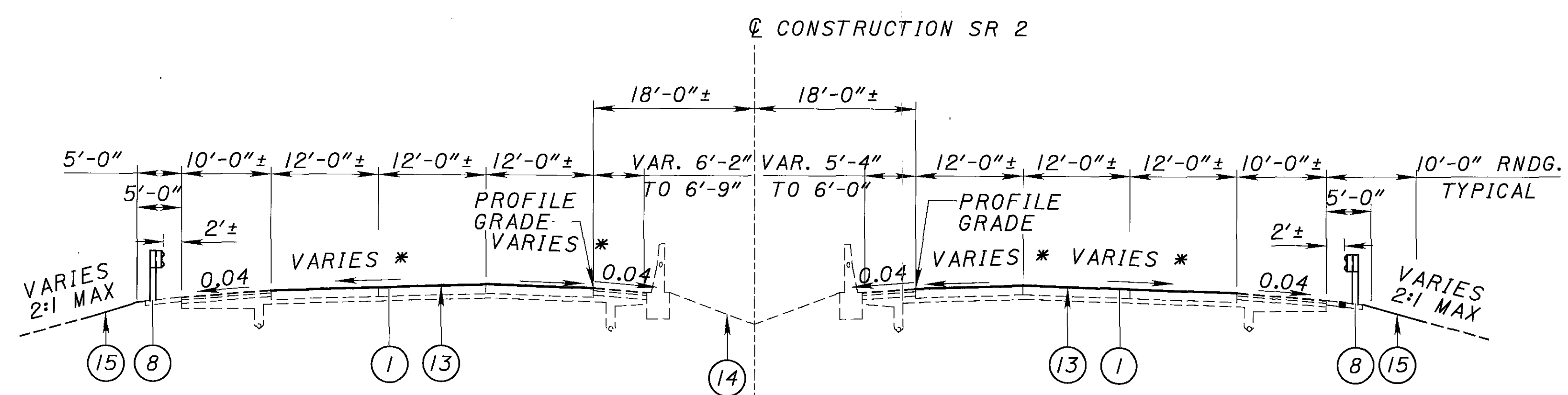
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EXISTING APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0181 OVER E. 305 STREET
 STA. 194+90.05 TO STA. 195+15.05 = 25.00 FT
 STA. 196+80.05 TO STA. 197+05.05 = 25.00 FT
 50.00 FT

LAK-2-0181 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 195+03.01 TO STA. 195+15.05 10'-4" TO 10'-6"
 STA. 196+80.05 TO STA. 196+93.87 10'-3" TO 10'-9"

LAK-2-0181 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 195+03.09 TO STA. 195+15.05 12'-2" TO 12'-5"
 STA. 196+80.05 TO STA. 196+92.15 12'-1" TO 12'-2"



PROPOSED APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0181 OVER E. 305 STREET
 STA. 194+90.05 TO STA. 195+15.05 = 25.00 FT
 STA. 196+80.05 TO STA. 197+05.05 = 25.00 FT
 50.00 FT

LAK-2-0181 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 195+03.01 TO STA. 195+15.05 10'-4" TO 10'-6"
 STA. 196+80.05 TO STA. 196+93.87 10'-3" TO 10'-9"

LAK-2-0181 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 195+03.09 TO STA. 195+15.05 12'-2" TO 12'-5"
 STA. 196+80.05 TO STA. 196+92.15 12'-1" TO 12'-2"

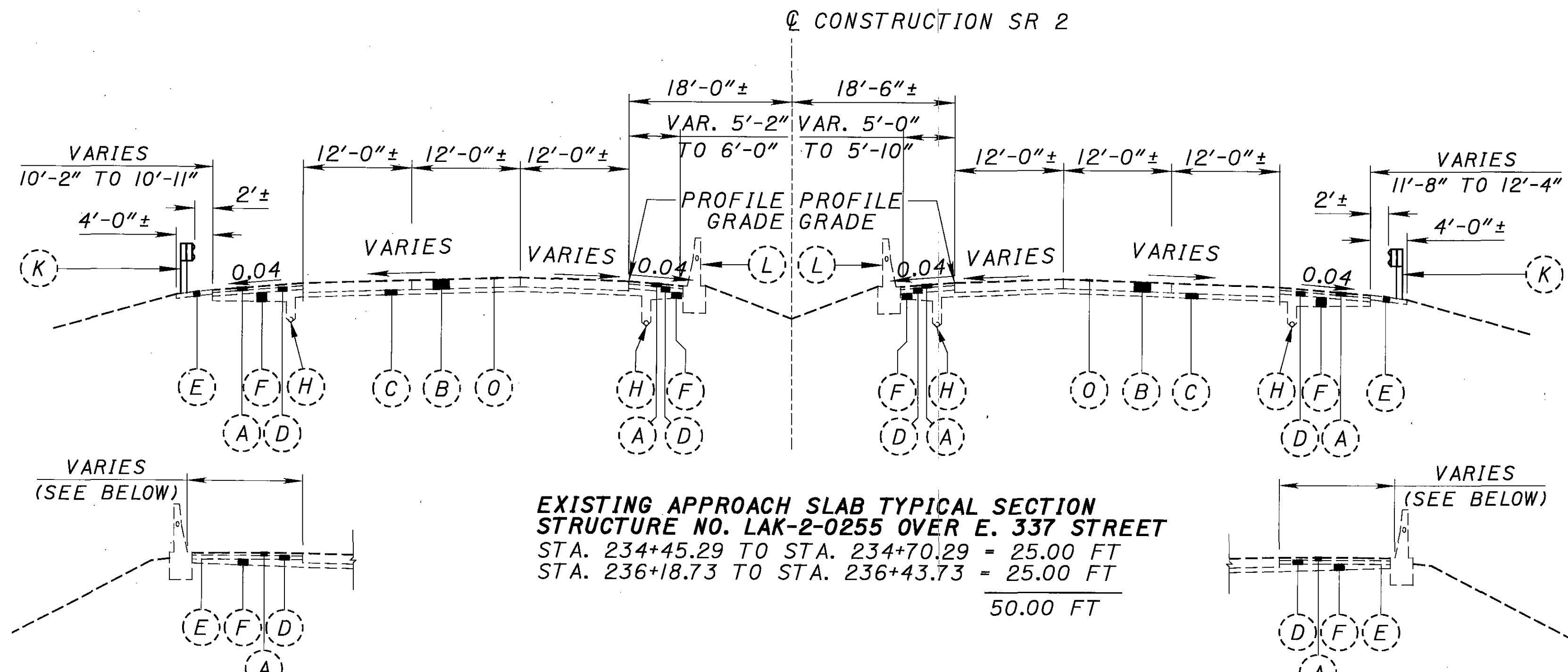
- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

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TYPICAL SECTIONS - SR 2 MAINLINE

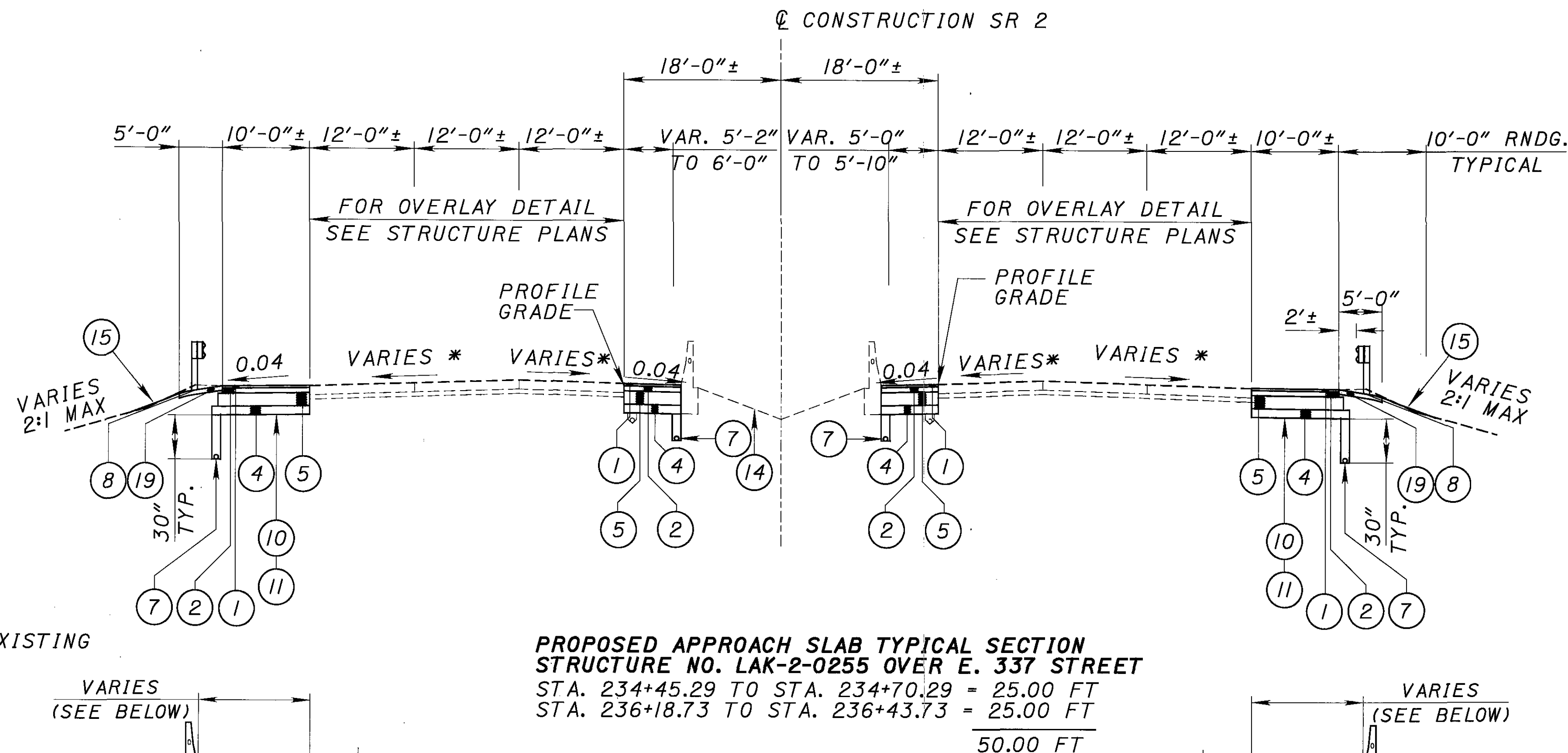
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EXISTING APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0255 OVER E. 337 STREET
 STA. 234+45.29 TO STA. 234+70.29 = 25.00 FT
 STA. 236+18.73 TO STA. 236+43.73 = 25.00 FT
 50.00 FT

LAK-2-0255 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 234+57.54 TO STA. 234+70.29 11'-6" TO 11'-10"
 STA. 236+18.73 TO STA. 236+31.53 11'-11" TO 12'-7"

LAK-2-0255 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 234+55.17 TO STA. 234+70.29 13'-2" TO 11'-8"
 STA. 236+18.73 TO STA. 236+32.92 12'-0" TO 13'-1"



PROPOSED APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0255 OVER E. 337 STREET
 STA. 234+45.29 TO STA. 234+70.29 = 25.00 FT
 STA. 236+18.73 TO STA. 236+43.73 = 25.00 FT
 50.00 FT

* MEET EXISTING

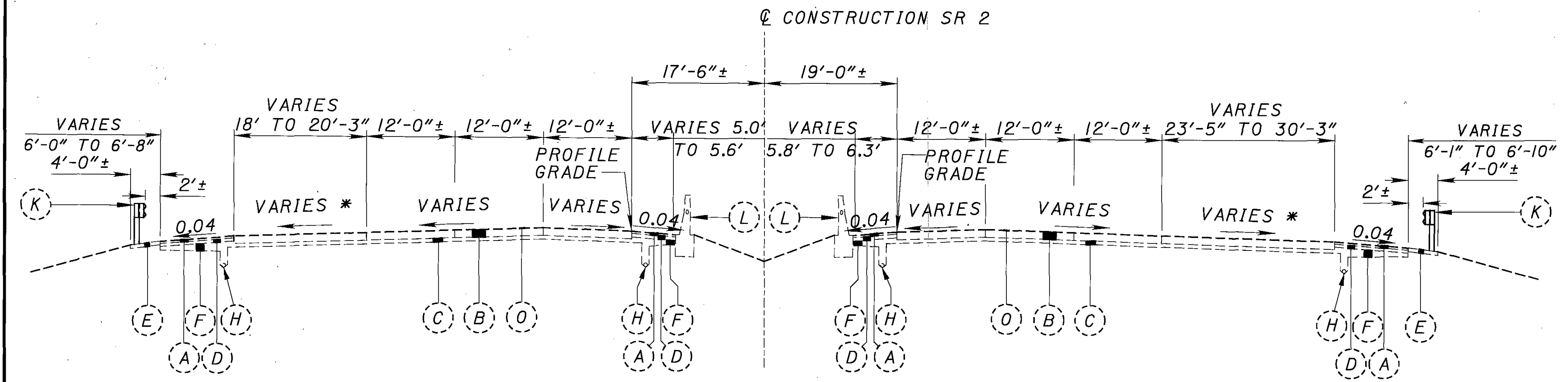
LAK-2-0255 APPROACH SLAB DETAIL, OUTSIDE WB
 STA. 234+56.67 TO STA. 234+70.29 11'-11" TO 12'-7"
 STA. 236+18.73 TO STA. 236+34.44 11'-6" TO 11'-6"

LAK-2-0255 APPROACH SLAB DETAIL, OUTSIDE EB
 STA. 234+54.64 TO STA. 234+70.29 11'-6" TO 11'-9"
 STA. 236+18.73 TO STA. 236+32.29 11'-4" TO 11'-6"

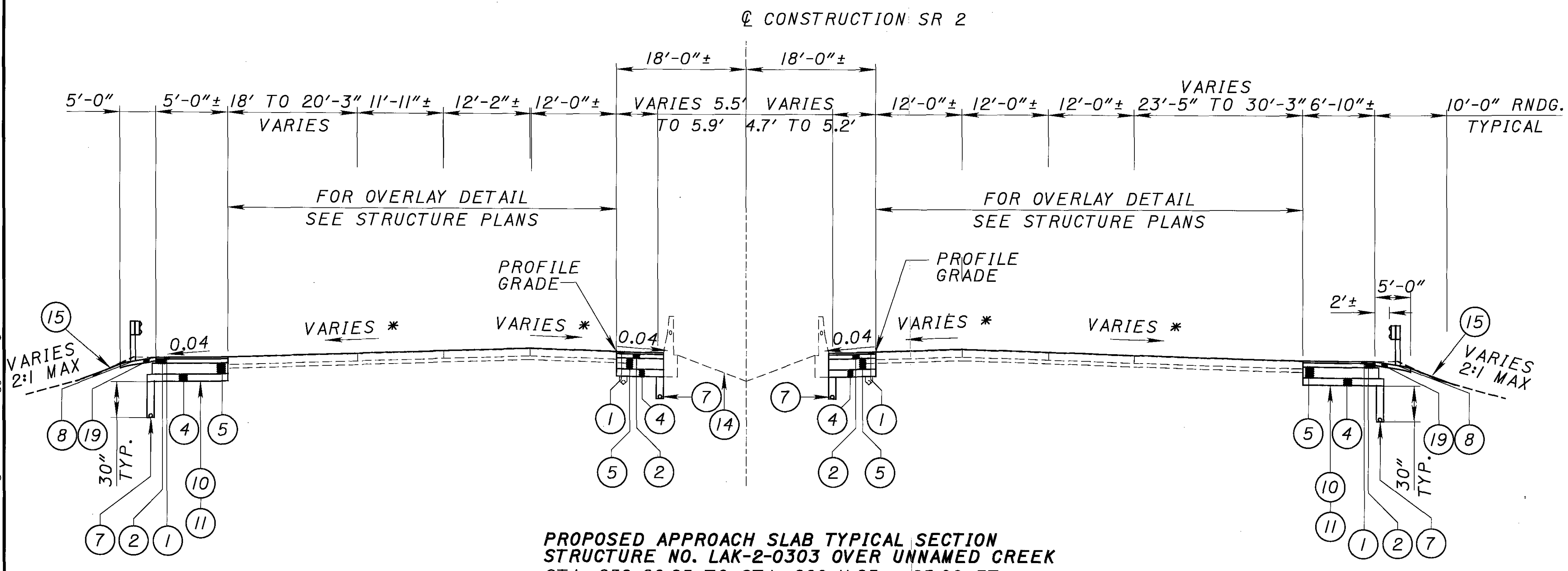
- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

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EXISTING APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0303 OVER UNNAMED CREEK
 STA. 259+86.85 TO STA. 260+11.85 = 25.00 FT
 STA. 260+40.87 TO STA. 260+65.87 = 25.00 FT
 50.00 FT



PROPOSED APPROACH SLAB TYPICAL SECTION
STRUCTURE NO. LAK-2-0303 OVER UNNAMED CREEK
 STA. 259+86.85 TO STA. 260+11.85 = 25.00 FT
 STA. 260+40.87 TO STA. 260+65.87 = 25.00 FT
 50.00 FT

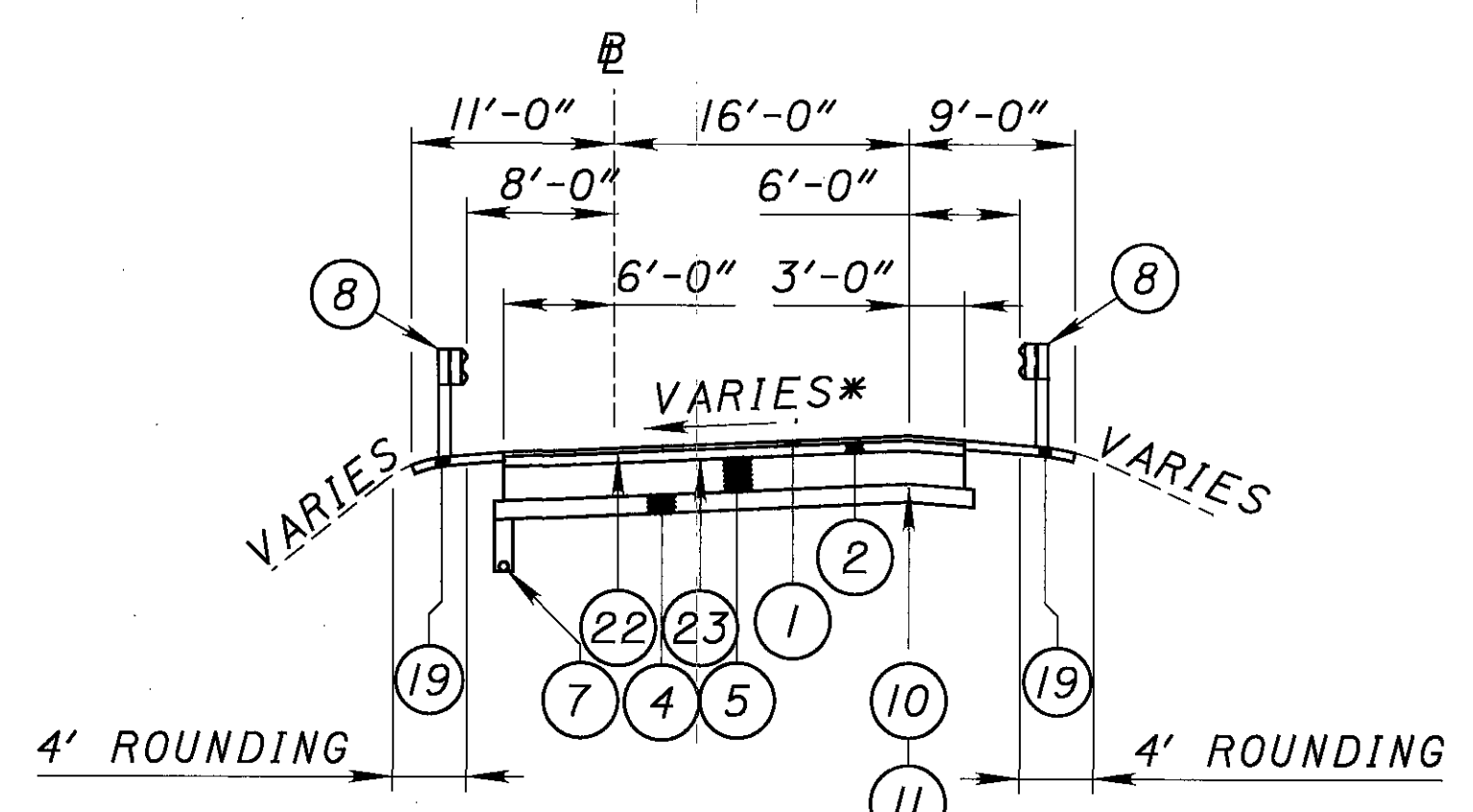
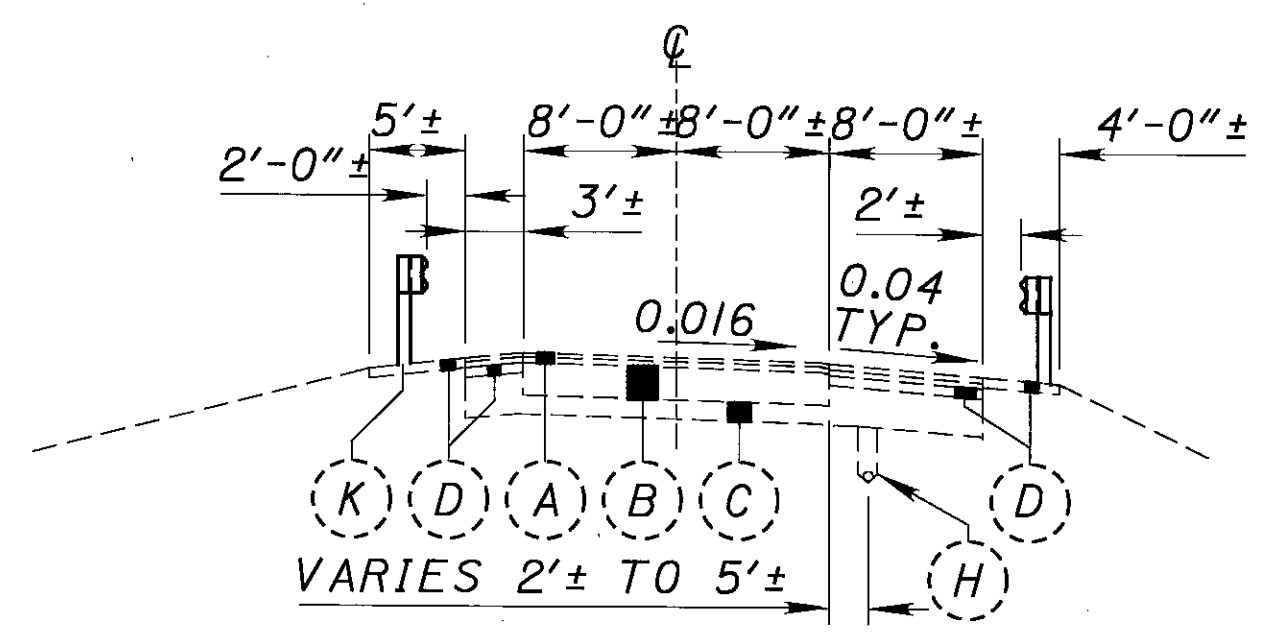
* MEET EXISTING

- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

TYPICAL SECTIONS - SR 2 MAINLINE

LAK-2-0.00



RAMP NO. A-1*

$e = 0.036$ TO 0.041

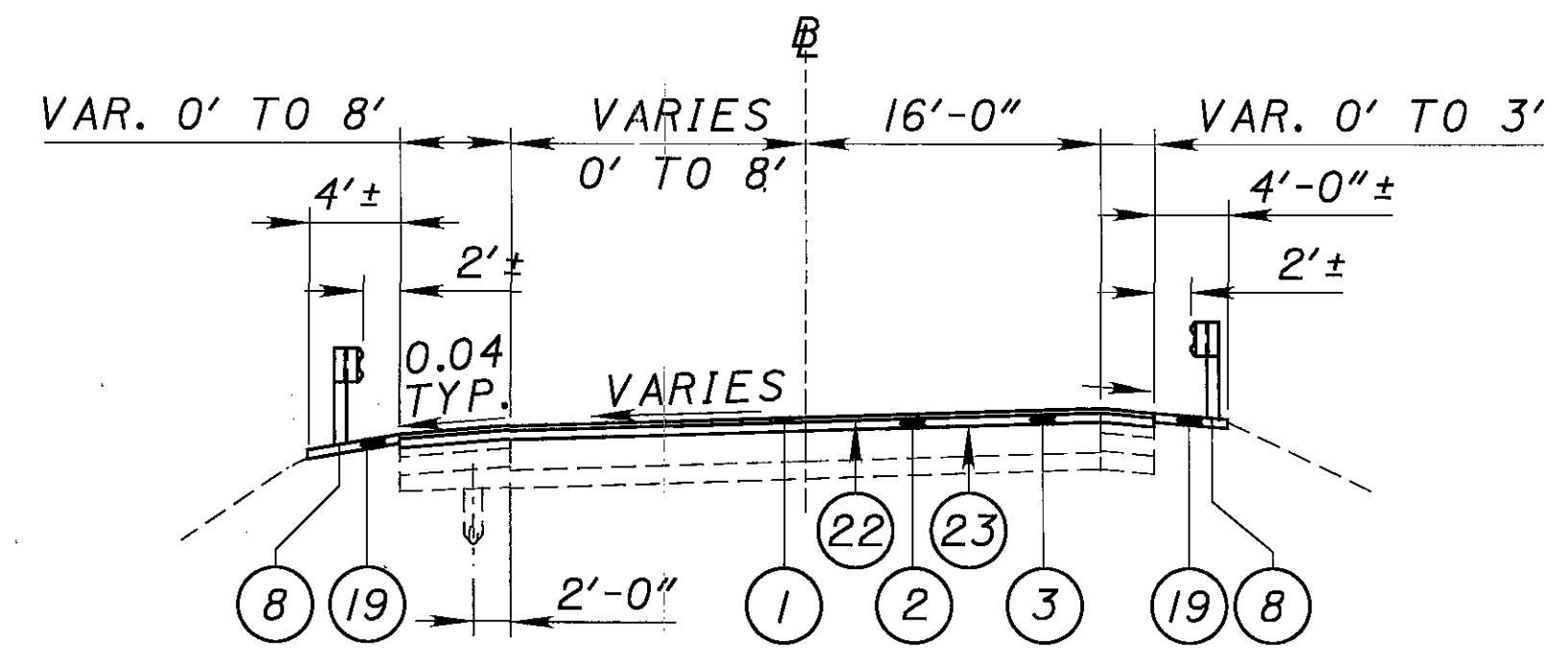
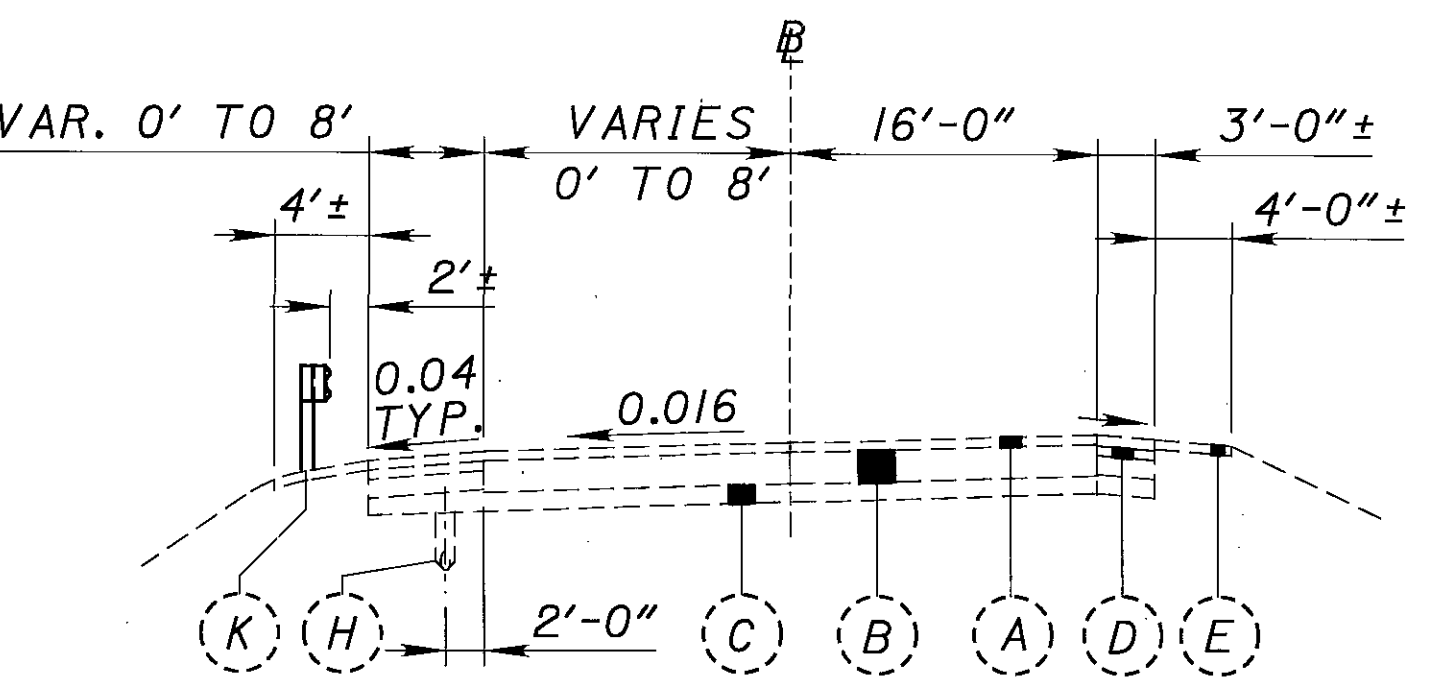
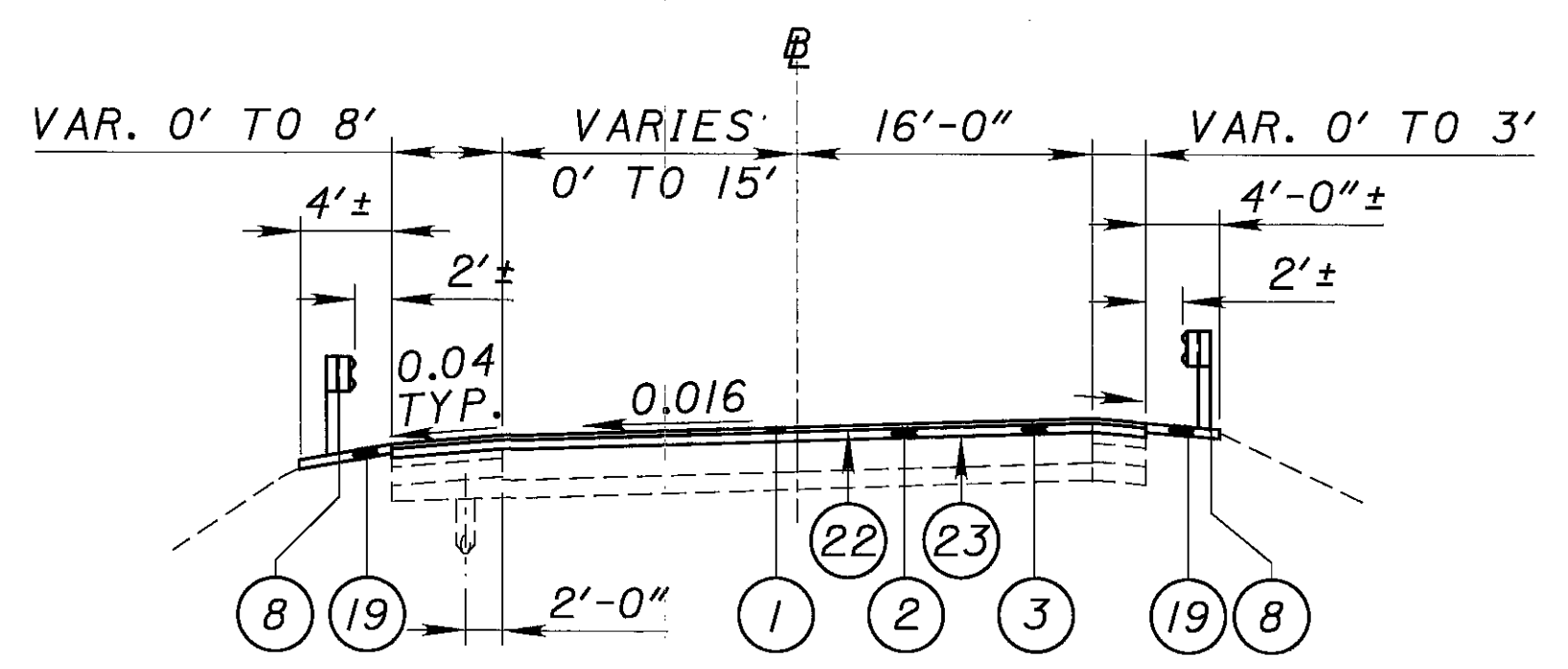
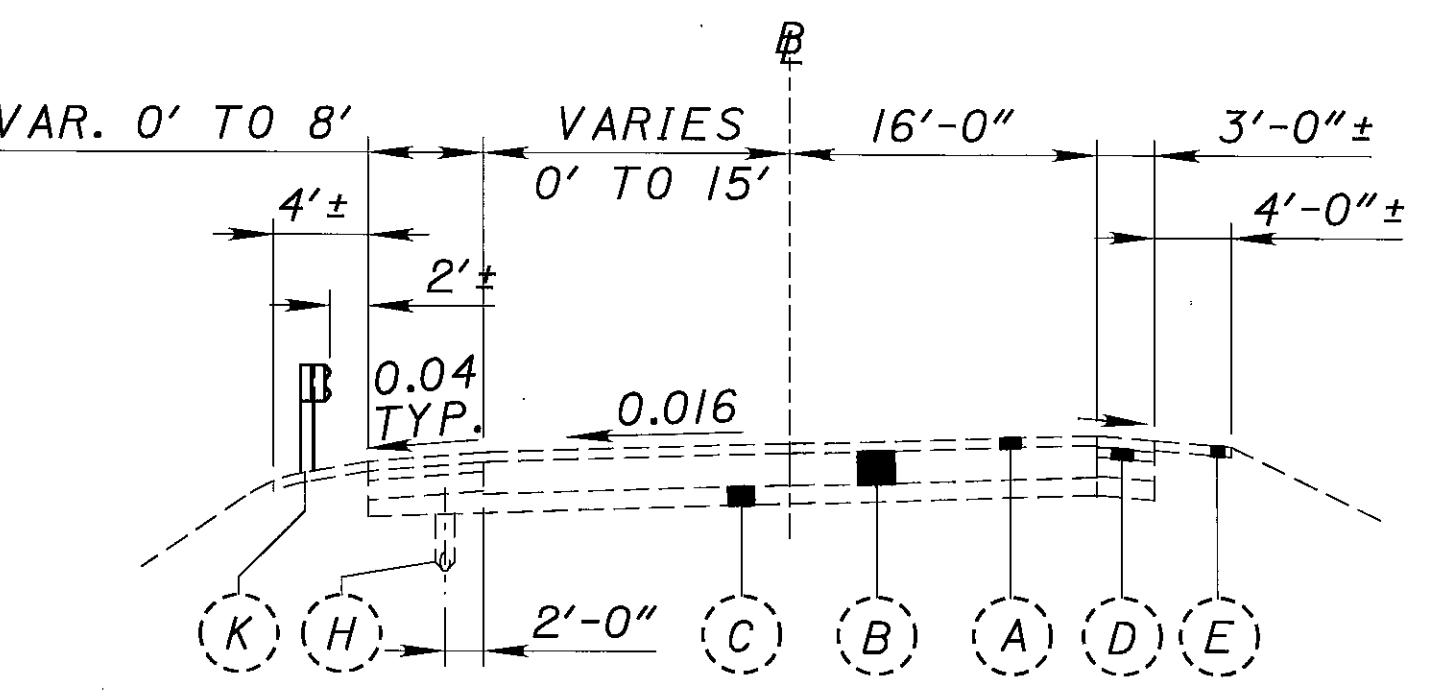
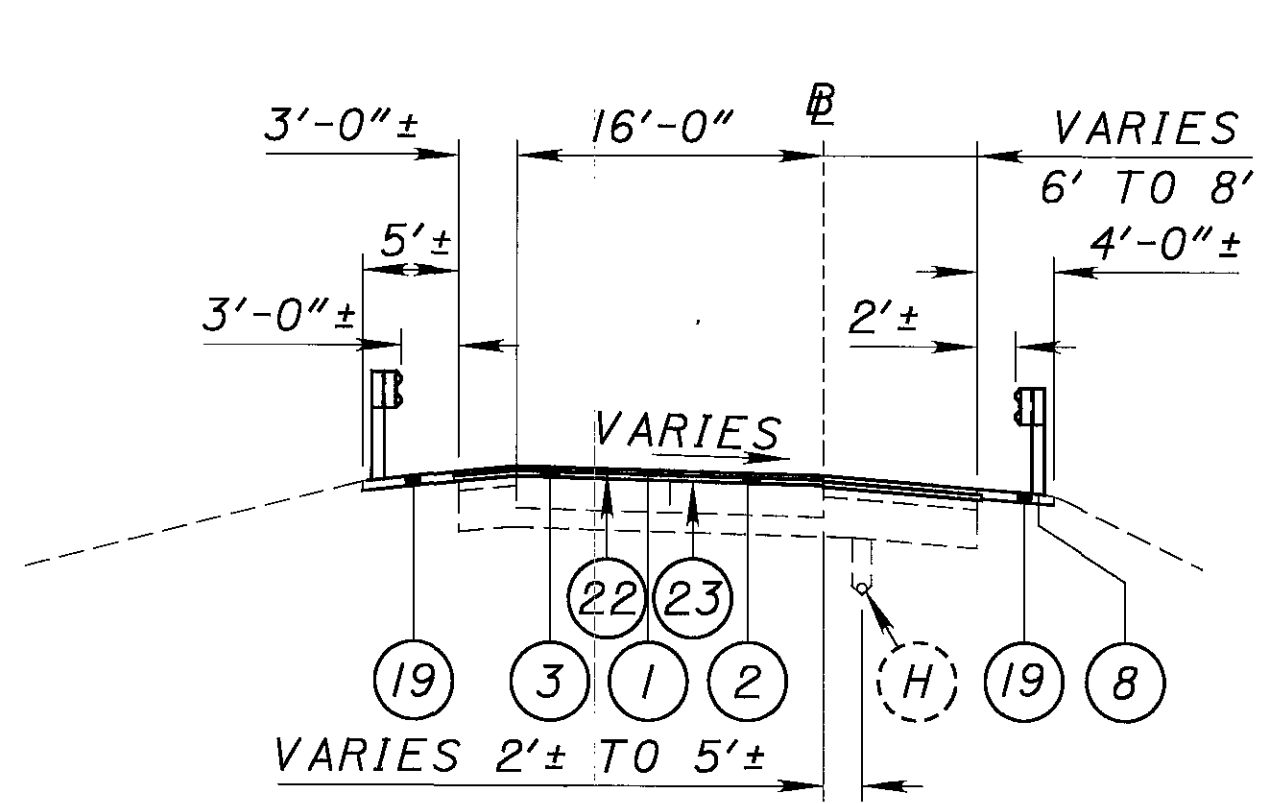
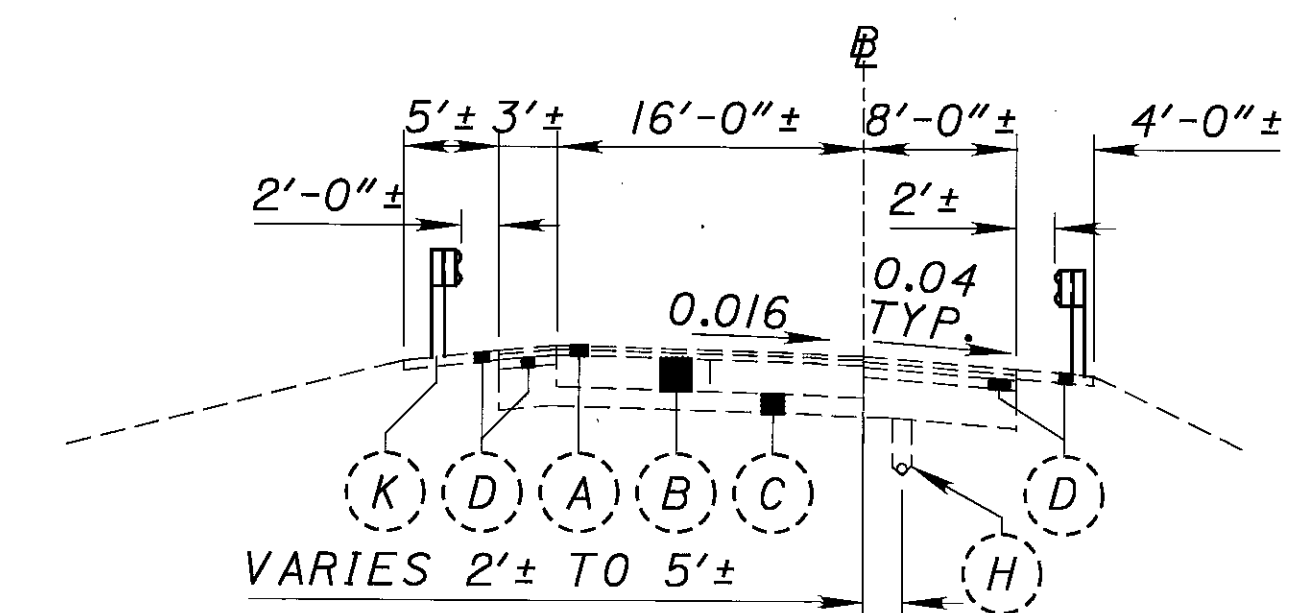
STA. 100+00.00 TO STA. 104+18.06
 $e = 0.041$ TO 0.060

STA. 104+18.06 TO STA. 106+50.00
 $e = 0.060$

STA. 106+50.00 TO STA. 109+93.63
 $e = 0.060$ TO 0.00

STA. 109+93.63 TO STA. 111+60.57
 $e = 0.00$ TO 0.022

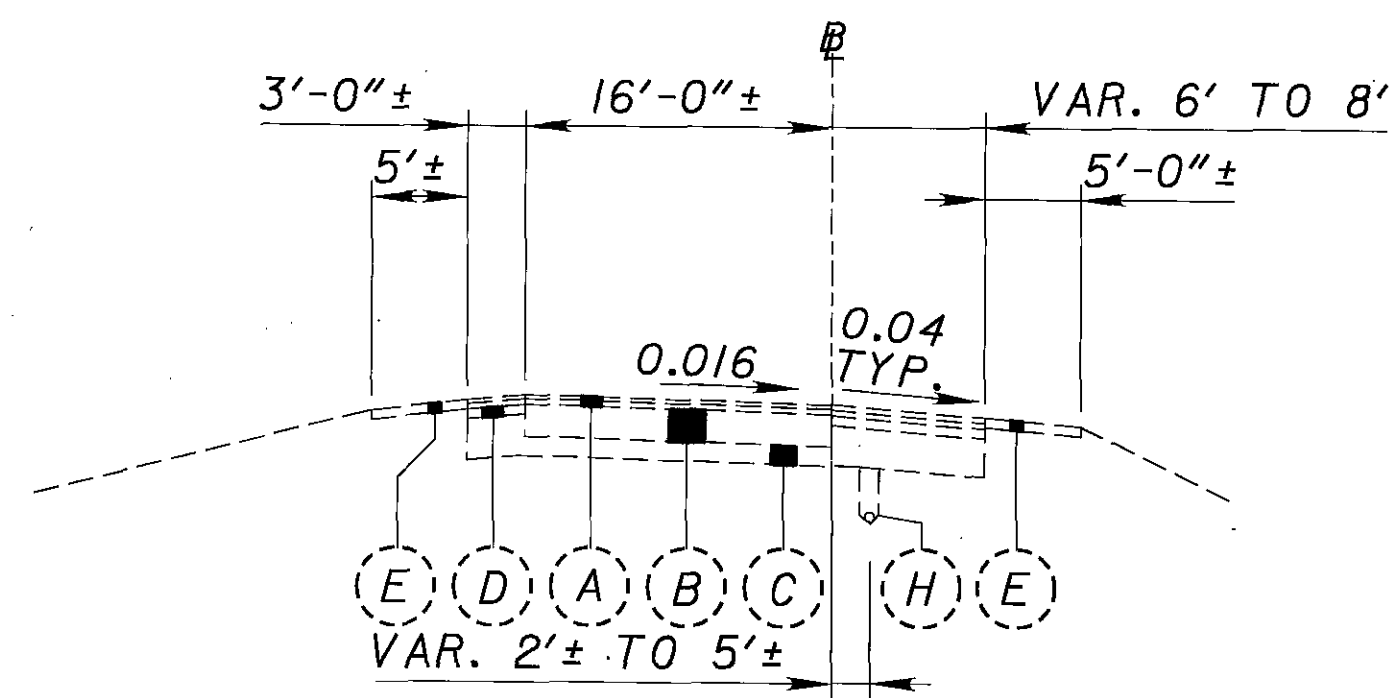
STA. 111+60.57 TO STA. 112+12.00



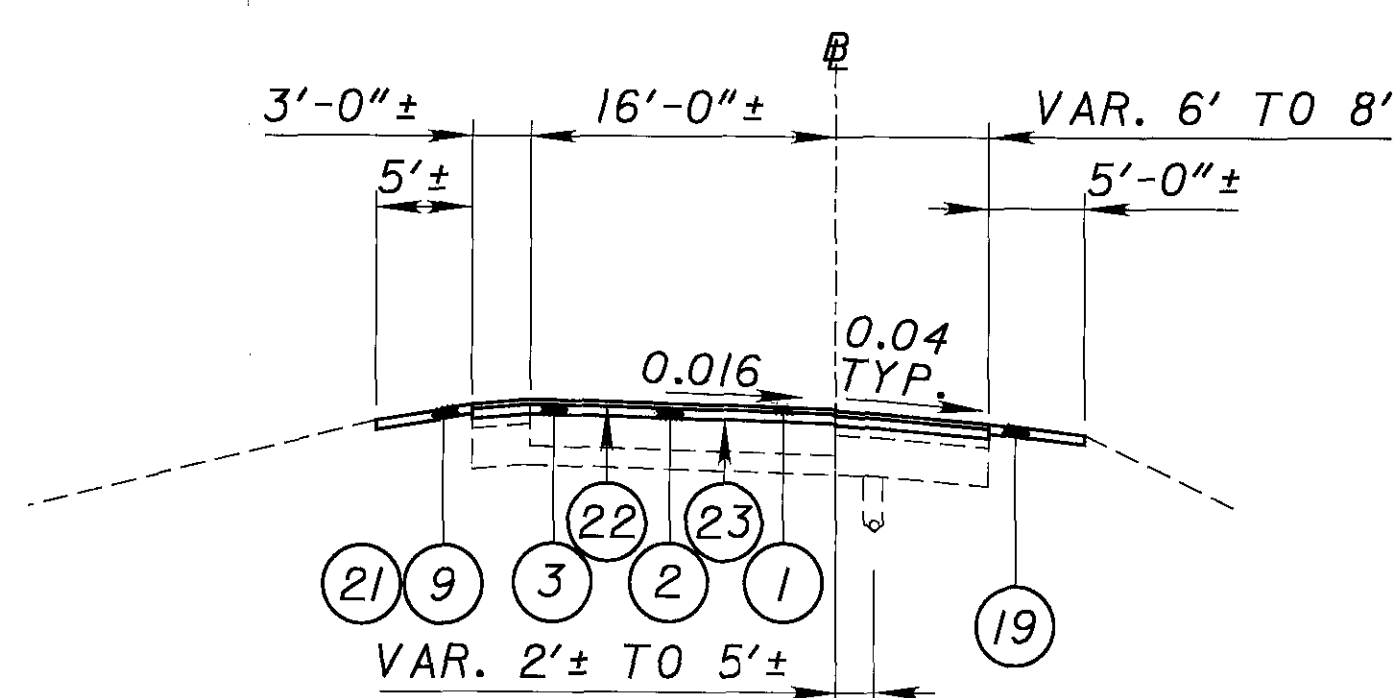
- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
- (G) 4" CONCRETE SIDEWALK
- (H) 6" SHALLOW PIPE UNDERDRAIN
- (I) CONCRETE CURB
- (J) CONCRETE BASE (T=10"±)
- (K) GUARDRAIL
- (L) CONCRETE BARRIER
- (M) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=9"±)
- (N) SIDEWALK
- (O) ASPHALT CONCRETE (T= 1"±)
- (P) PORTLAND CEMENT CONCRETE MEDIAN
- (1) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446), AS PER PLAN
- (2) ITEM 442 - 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3"±)
- (4) ITEM 304 - 6" AGGREGATE BASE
- (5) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22
- (6) ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
- (8) ITEM 606 - GUARDRAIL, TYPE 5
- (9) ITEM 617 - COMPACTED AGGREGATE
- (10) ITEM 204 - SUBGRADE COMPACTION
- (11) ITEM 204 - PROOF ROLLING
- (12) ITEM 622 - CONCRETE BARRIER, TYPE D
- (13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T= 1"±)
- (14) ITEM 659 - SEEDING AND MULCHING CLASS 3C
- (15) ITEM 659 - SEEDING AND MULCHING CLASS 2
- (16) ITEM 609 - CURB, TYPE 6
- (17) ITEM 609 - CURB, TYPE 2-A
- (18) ITEM 609 - CONCRETE MEDIAN
- (19) ITEM 448 - 3" ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
- (20) ITEM 442 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- (21) ITEM 209 - LINEAR GRADING, METHOD A
- (22) ITEM 407 - TACK COAT (0.10 GAL./S.Y.)
- (23) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.05 GAL./S.Y.)

NOTES:
 FOR LIMITS OF GUARDRAIL, SEE PLAN SHEETS.
 FOR SHOULDER DETAILS, SEE SHEET 22.
 FOR UNDERDRAIN DETAILS, SEE SHEET 311.

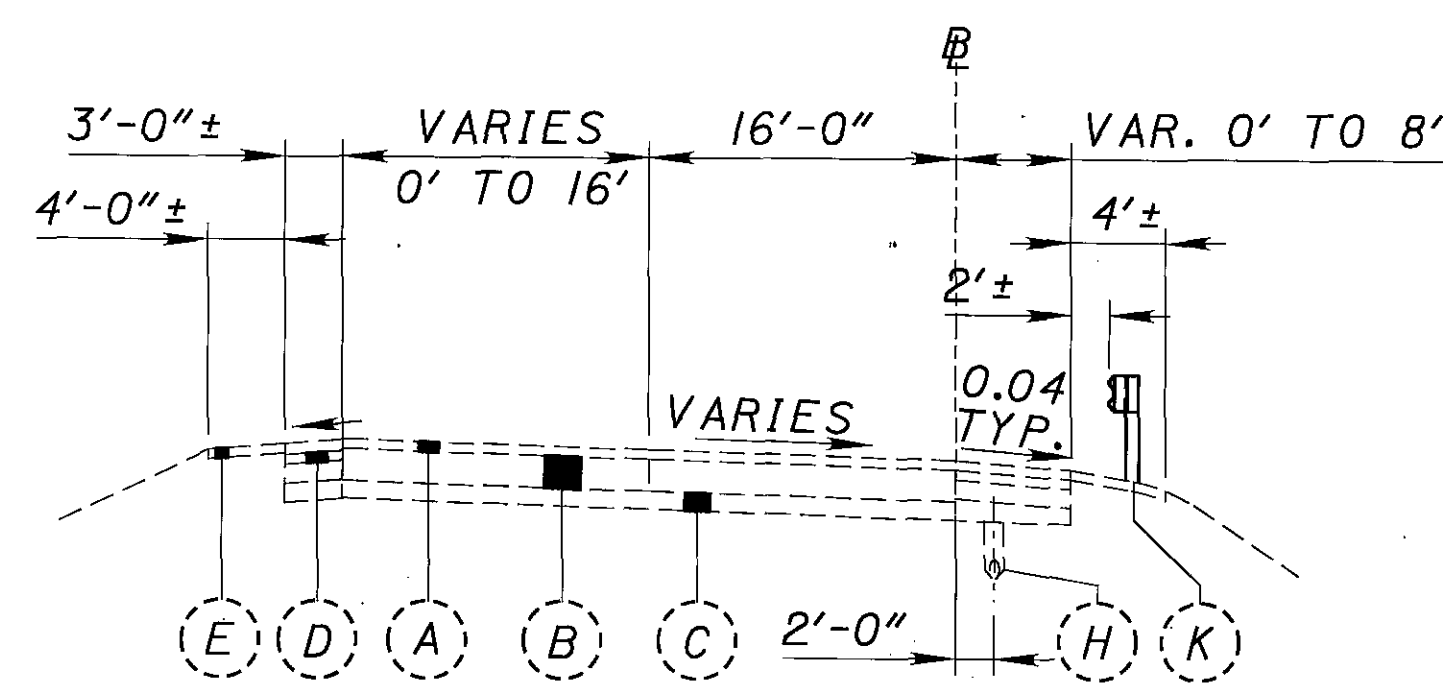
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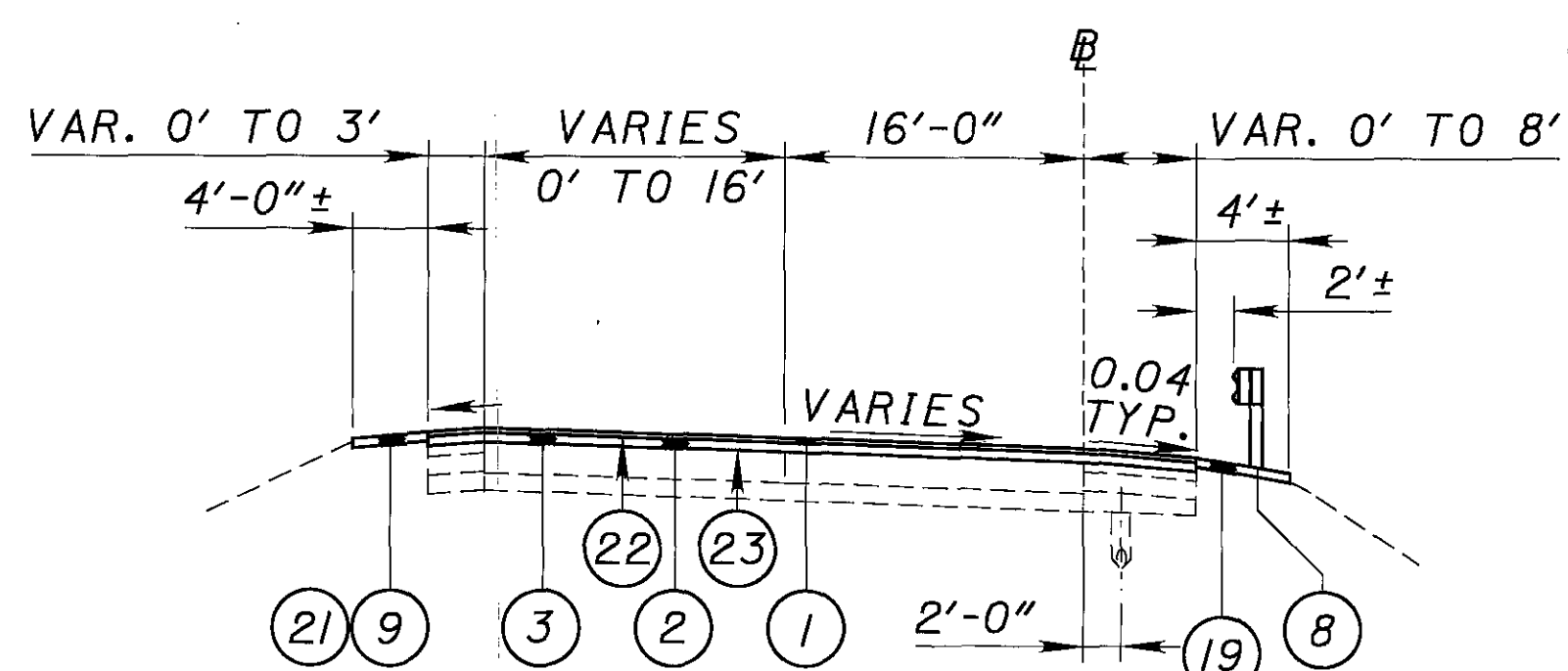
EXISTING NORMAL SECTION RAMP B-3
STA. 700+68.04 TO STA. 716+20.04 = 1552.00 FT



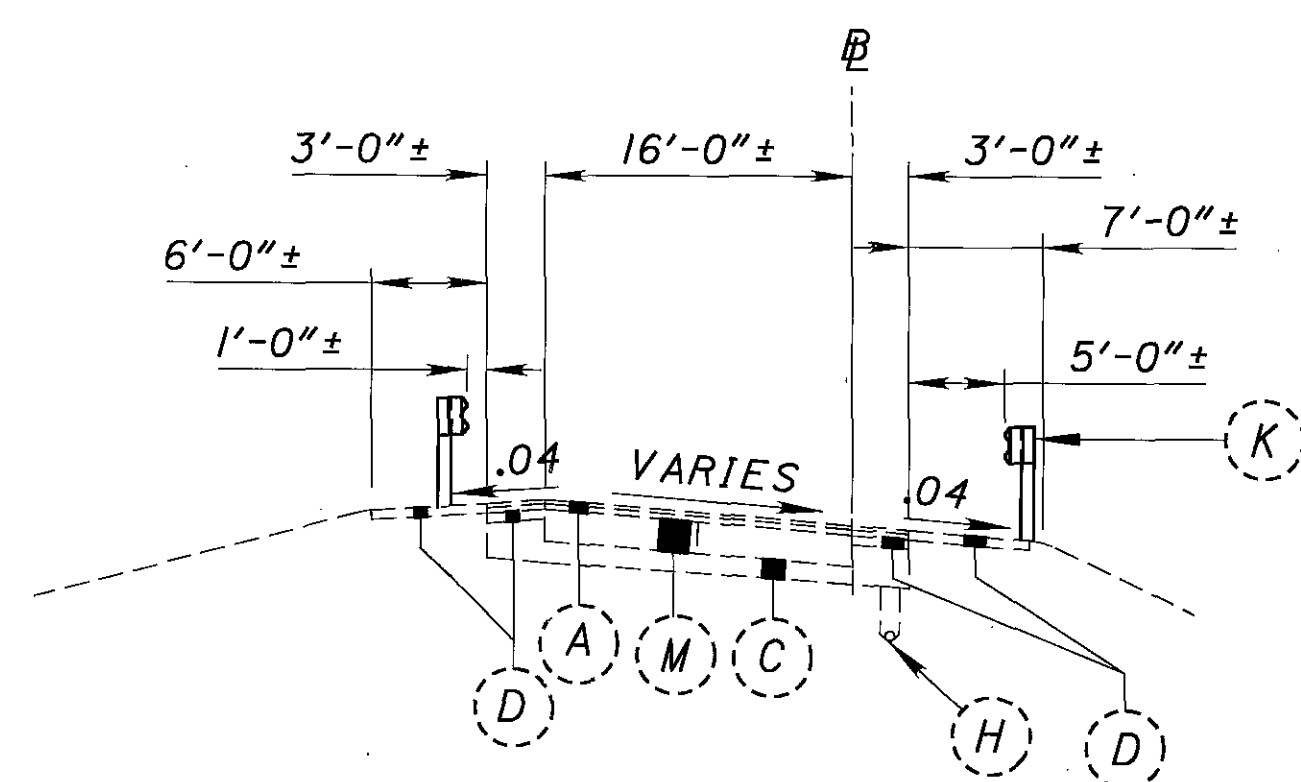
PROPOSED RESURFACING SECTION RAMP B-3
STA. 700+68.04 TO STA. 716+20.04 = 1552.00 FT



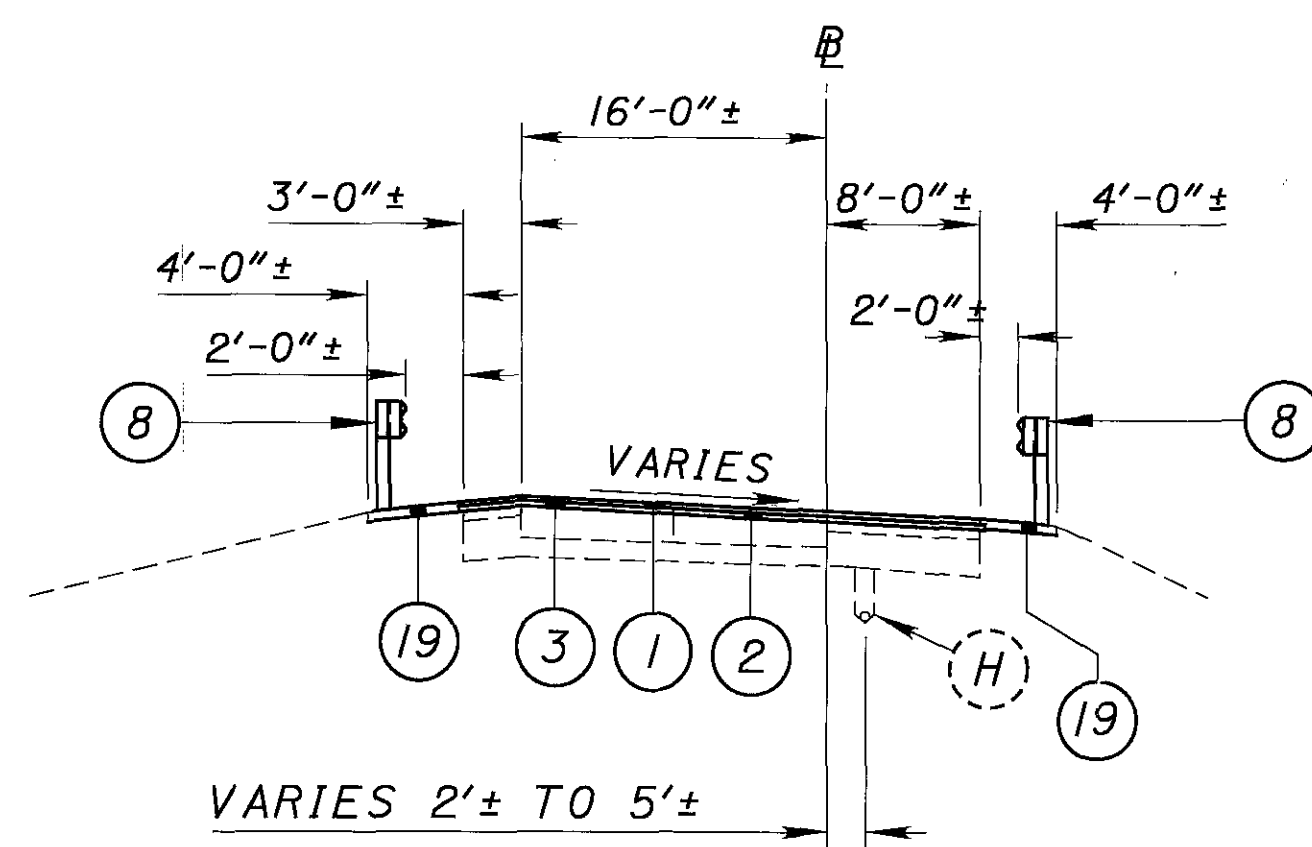
EXISTING NORMAL SECTION RAMP B-4
STA. 806+99.09 TO STA. 819+14.15 = 1215.06 FT



PROPOSED RESURFACING SECTION RAMP B-4
STA. 806+99.09 TO STA. 819+14.15 = 1215.06 FT



EX. RAMP SECTION C-1 & C-4
(C-1) STA. 263+34.48 TO STA. 272+23.14 = 888.66 FT
(C-4) STA. 261+06.27 TO STA. 268+86.08 = 779.81 FT



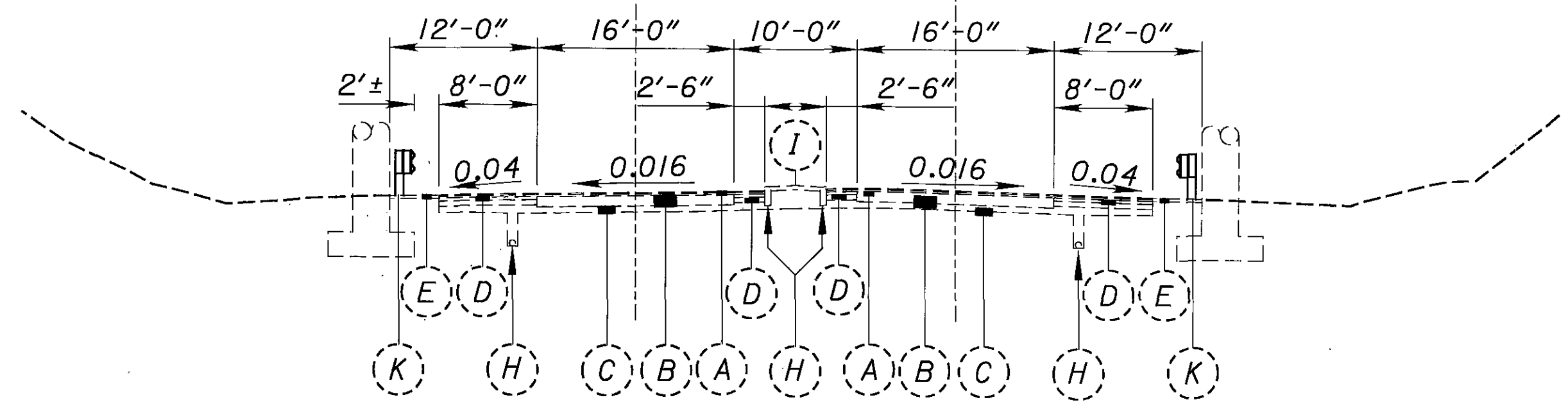
PROP. RAMP RESURFACING SECTION C-1 & C-4
(C-1) STA. 263+34.48 TO STA. 272+23.14 = 888.66 FT
(C-4) STA. 261+06.27 TO STA. 268+86.08 = 779.81 FT

- (A) ASPHALT CONCRETE (T= 3"±)
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- (C) SUBBASE
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- (E) ASPHALT CONCRETE BASE, (T=3"±)
- (F) AGGREGATE BASE (T=3"± MIN. TO 7"± MAX.)
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- (16) ITEM 609 - CURB, TYPE 6
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NOTES:
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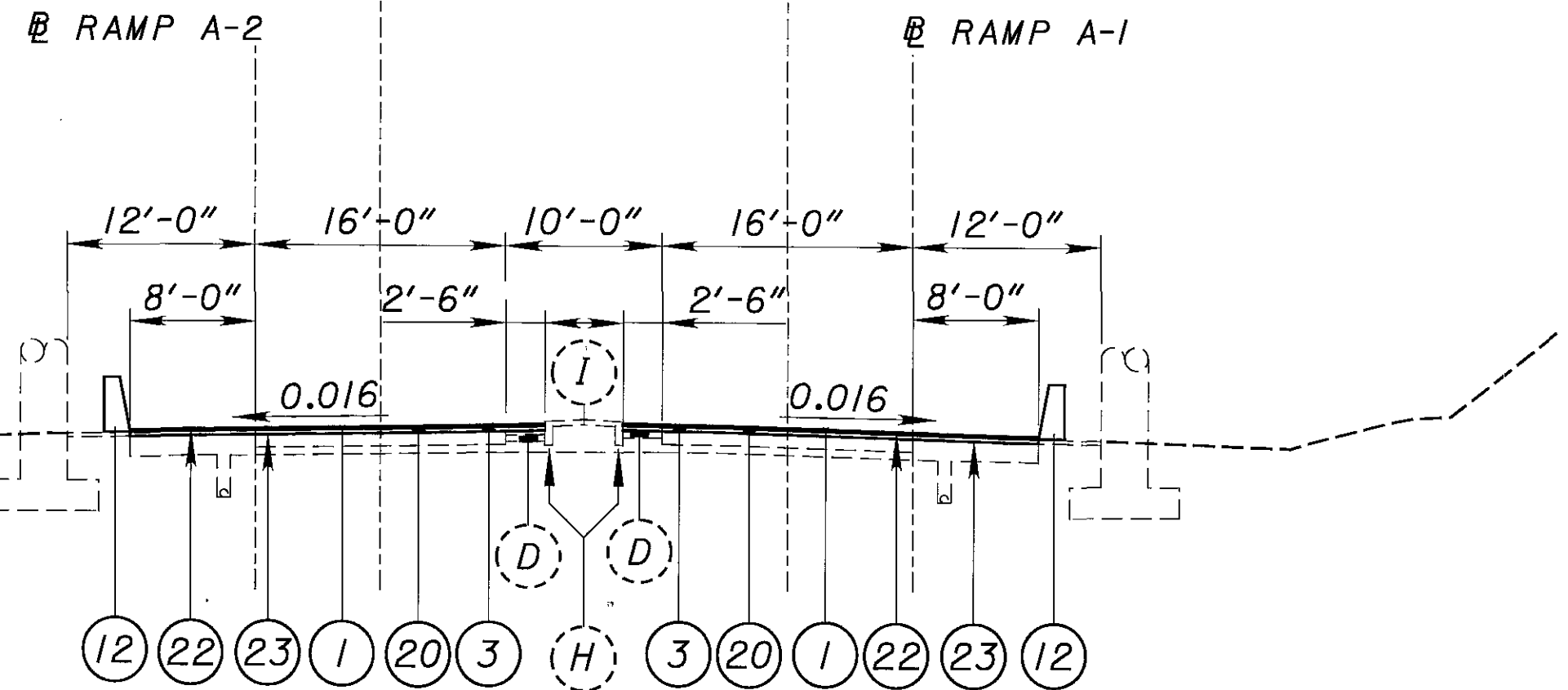
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EXIST. LLOYD ROAD CONNECTOR RAMP A-2 EXIST. LLOYD RD. CONNECTOR RAMP A-1

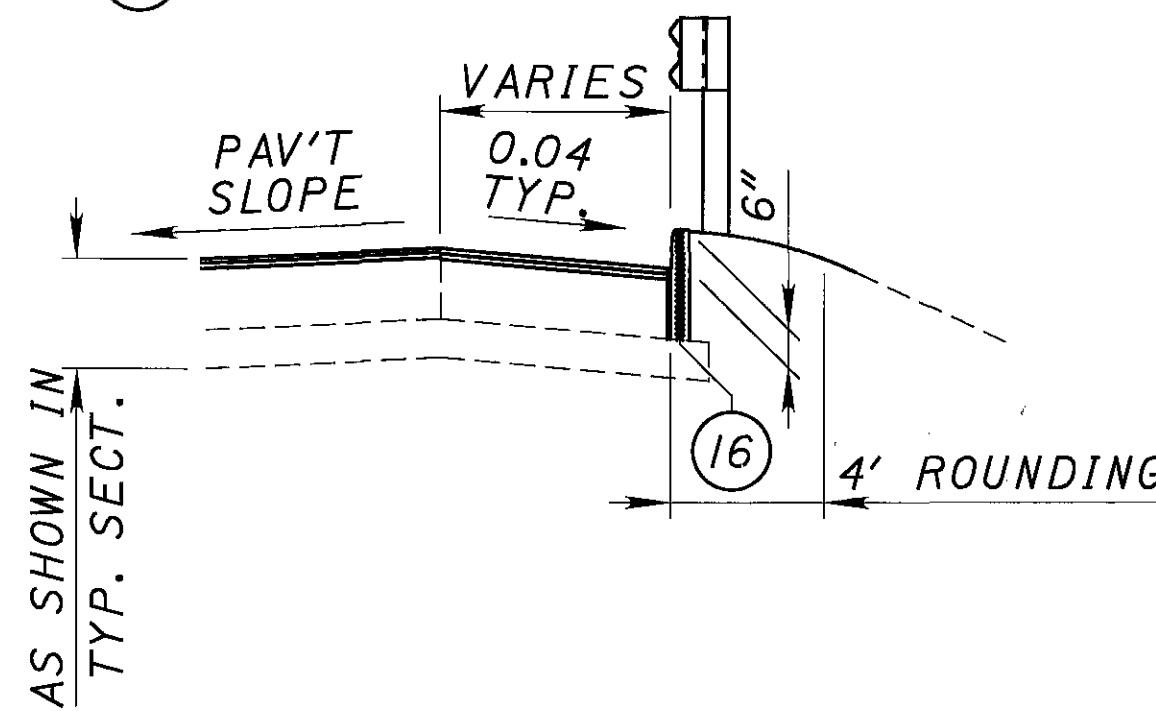
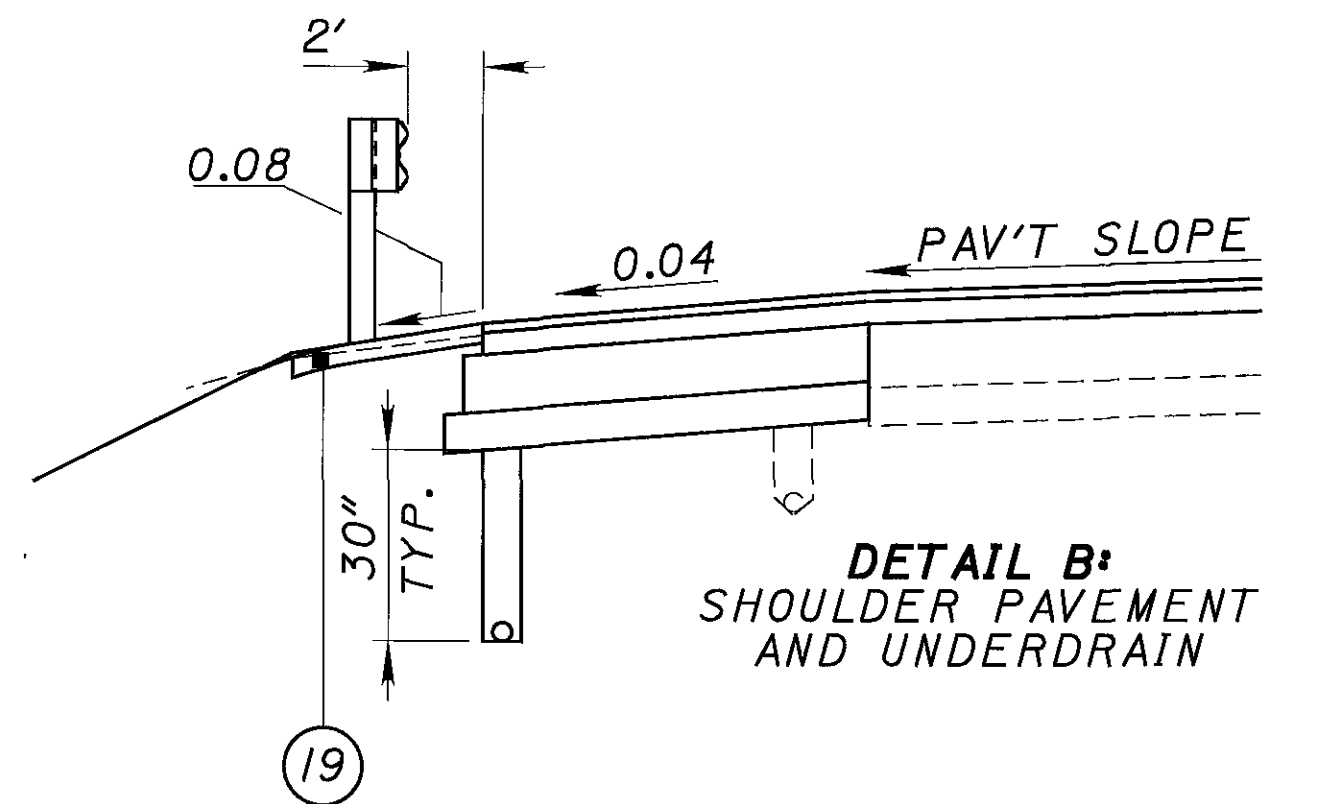
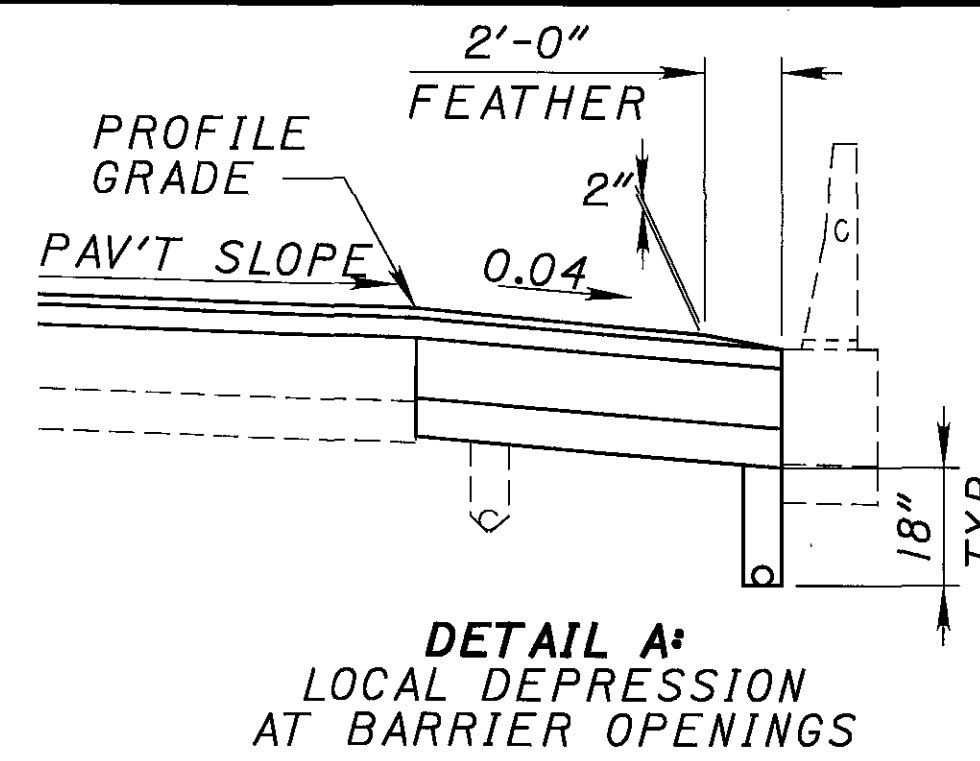
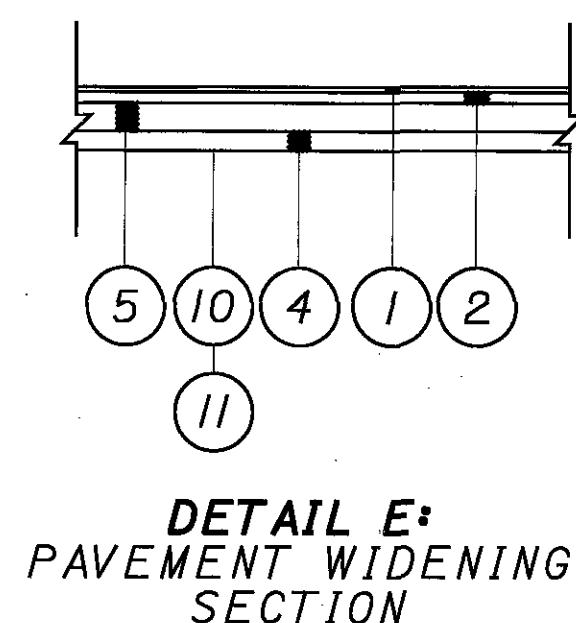


EXISTING TYPICAL SECTION - LLOYD ROAD CONNECTOR
 EX. RAMP A-2 STA. 5+08.83 TO STA. 17+89.13 = 1280.30 FT
 EX. RAMP A-1 STA. 6+94.91 TO STA. 20+19.80 = 1324.89 FT

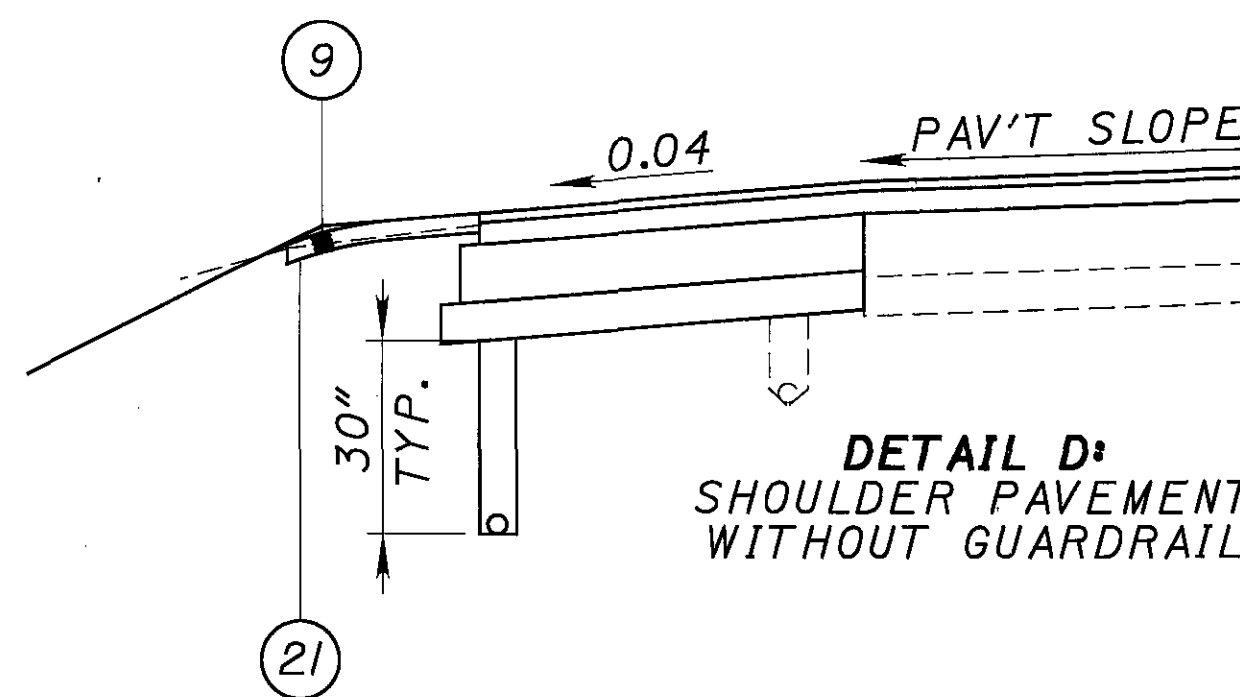
EXIST. LLOYD ROAD CONNECTOR RAMP A-2 EXIST. LLOYD RD. CONNECTOR RAMP A-1



PROPOSED TYPICAL SECTION - LLOYD ROAD CONNECTOR
 EX. RAMP A-2 STA. 209+73.54 TO STA. 222+25.90 = 1252.36 FT
 EX. RAMP A-1 STA. 112+12.00 TO STA. 125+58.02 = 1346.02 FT
 2598.38 FT



DETAIL C: CURB, TYPE 6
 NOTE: FOR LOCATIONS, SEE PLAN SHEETS.



- (A) ASPHALT CONCRETE (T= 3"±)
- (B) REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (T=10"±)
- (C) SUBBASE
- (D) ASPHALT CONCRETE BASE, (T=3"± TO 6"±)
- (E) ASPHALT CONCRETE BASE, (T=3"±)
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- (G) 4" CONCRETE SIDEWALK
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GENERAL

ROUNDING

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

UTILITIES

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

UTILITIES OWNERS:

DOMINION EAST OHIO
ATTN: MARGARET BEVEL
1201 EAST 55TH STREET
CLEVELAND, OH 44103
(216) 736-6831

LAKE CO. UTILITIES, ENGINEERING DIVISION
ATTN: RANDY ROTHLSBERGER
105 MAIN ST., P.O. BOX 490
PAINESVILLE, OH 44077
(440) 350-2652

LEVEL 3
ATTN: SEAN BELT
1025 ELDORADO DR.
BLOOMFIELD, CO 80021-8254
(720) 888-2999

SBC
ATTN: SALLY KOCH
13630 LORAIN AVE., FLOOR 2
CLEVELAND, OH 44111
(216) 476-6067

THE ILLUMINATING COMPANY
ATTN: FRANK DIBBS
6896 MILLER ROAD
BRECKSVILLE, OH 44141
(440) 546-8731

SPRINT
ATTN: DANA COSTAS
11815 HIGHWAY AVE.
CINCINNATI, OH 45241
(513) 459-5761

ADELPHIA
ATTN: DENNY THOMSON
1100 EAST 222ND ST.
EUCLID, OH 44117
(216) 531-6400

COMCAST
ATTN: MIKE JONES
7820 DIVISION DRIVE
MENTOR, OH 44060
(440) 974-3401

LAKE COUNTY ENGINEERS OFFICE
ATTN: JAMES R. GILLS
550 BLACKBROOK RD
PAINESVILLE, OH 44077
(440)-350-2770

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.

ITEM 204 - PROOF ROLLING

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

ITEM 204 - PROOF ROLLING 50 HOURS

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

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, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 9:30 PM AND 7 AM. IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME 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

PROJECT COORDINATES AND ELEVATIONS ARE BASED UPON U.S.G.S. STATE PLANE DATUM NAD83(86) AND NAVD88, OHIO NORTH ZONE.

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.

CONVERSION OF STANDARD CONSTRUCTION DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.02 OF THE 2005 CONSTRUCTION AND MATERIAL SPECIFICATIONS.

CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

EXISTING PLANS

EXISTING PLANS ENTITLED LAK-2-0.00 (1986) AND LAK-2-0.00 (1959) MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS, OH.

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 619 - FIELD OFFICE, TYPE C, AS PER PLAN

A TYPE C FIELD OFFICE IS REQUIRED FOR THIS PROJECT. IN ADDITION TO THE REQUIREMENTS AS DESCRIBED IN ITEM 619 OF THE CMS, THE FIELD OFFICE SHALL INCLUDE BROADBAND (DSL OR CABLE) ACCESS.

ITEM SPECIAL - ACCESS HOLES

THIS ITEM CONSISTS OF PLACING A 12" DIAMETER, CIRCULAR HOLE IN THE NOISE BARRIER FOR FIRE HYDRANT ACCESS. THE ACCESS HOLES SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE PLAN AND PROFILE SHEETS. THE ACCESS HOLES SHALL BE PLACED 36" ABOVE THE GROUND LINE AT THE BASE OF THE NOISE BARRIER.

THE ACCESS HOLES SHALL BE PREFABRICATED BY THE MANUFACTURER OF THE NOISE WALL PANELS. THE OPENING SHALL HAVE A SECTION OF PVC PIPE EQUAL TO THE THICKNESS OF THE PANEL PLACED ALONG THE PERIMETER OF THE ACCESS HOLE TO ENSURE A SMOOTH SURFACE WHICH WILL PREVENT THE SNAGGING OF A FIRE HOSE. THE SEAL AROUND THE PVC PIPE SHALL BE WATER TIGHT.

THE PAYMENT FOR ALL OF THE EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL - ACCESS HOLES. NO DEDUCTION IN AREA SHALL BE MADE TO THE NOISE BARRIER QUANTITIES. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 622 - BARRIER, MISC: ACCESS HOLES. 40 EACH

ENVIRONMENTAL COMMITMENTS

ANY UNAVOIDABLE CUTTING OF TREES WITH SUITABLE ROOSTING AND BROAD-REARING HABITAT FOR THE INDIANA BAT (LIVING OR STANDING DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES, OR CAVITIES) WILL BE PERFORMED ONLY BEFORE APRIL 15 OR AFTER SEPTEMBER 15 WHEN THE SPECIES WOULD NOT BE USING SUCH HABITATS.

SPECIFICATIONS SET FORTH IN THE MOST CURRENT VERSION ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LOCATION AND DESIGN MANUAL AND STANDARD DRAWINGS WILL BE USED TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION. THIS INCLUDES THE USE OF BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL ALONG WITH ADDITIONAL PROTECTIVE MEASURES SUCH AS: PROTECTIVE FENCING, ETC., TO AVOID IMPACTS TO ADJACENT PROPERTIES AND WETLANDS FROM THE CONSTRUCTION ACTIVITIES.

TO COMPLY WITH THE REQUIREMENTS OF A NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, A STORM WATER POLLUTION PREVENTION PLAN WILL BE DEVELOPED AND IMPLEMENTED.

THE CONTRACTOR SHALL NOT PERFORM ANY WORK IN AND/OR PLACE ANY FILL IN JURISDICTIONAL STREAMS OR WETLANDS UNTIL THE WATERWAY PERMIT(S) IS (ARE) OBTAINED FOR THE PROJECT. THE APPROVED WATERWAY PERMITS WILL BE INCLUDED WITH THE CONSTRUCTION PLANS AS SPECIAL PROVISIONS. ALL CONDITIONS CONTAINED WITH THE WATERWAY PERMITS WILL BE PART OF THE CONSTRUCTION CONTRACT AND SHALL BE ADHERED TO DURING CONSTRUCTION.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO A FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

STAGING AREAS

THERE ARE NO SPECIFIC AREAS GIVEN IN THE PLANS FOR THE CONTRACTOR TO USE AS A STAGING AREA(S). IF THE CONTRACTOR WANTS TO USE AN AREA(S) FOR STAGING, REGARDLESS IF IT FALLS WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO CONTACT JILL POWERS AT 216-584-2195 AT DISTRICT 12 IN ORDER TO APPLY FOR A PERMIT PER SECTION 107.02 OF THE CMS.

IF A PERMIT IS GRANTED, ALL CONDITIONS OF THE PERMIT SHALL BE MET IN ADDITION TO THE REQUIREMENTS OF 104.04 OF THE CMS, AT NO ADDITIONAL COST TO THE STATE. IF THE PROJECT ENGINEER DEEMS THAT ALL THE CONDITIONS OF THE PERMIT WERE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE PERMIT ARE SATISFIED.

CALCULATED AS
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GENERAL NOTES

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ROADWAY

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 209 - LINEAR GRADING, METHOD A

THIS ITEM OF WORK SHALL CONSIST OF GRADING ALONG THE OUTSIDE EDGE OF THE PAVED SHOULDER WIDE ENOUGH TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE SHOULDER AND TO PREPARE THE GROUND SURFACE FOR THE PLACING OF ITEM 617.

ANY DEBRIS COLLECTED SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 209, STA. LINEAR GRADING, METHOD A AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THIS ITEM OF WORK.

THE FOLLOWING CALCULATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY. THIS ITEM IS TO BE USED AS OUTLINED ABOVE AT LOCATIONS SHOWN IN THE SUBSUMMARY.

ITEM 209 - LINEAR GRADING, METHOD A 199 STA.

**ITEM 202 - FENCE REMOVED, AS PER PLAN
ITEM 607 - FENCE CLT**

THE ESTIMATED QUANTITIES TABULATED IN THE SUB-SUMMARY ARE TO BE USED TO REMOVE THE EXISTING FENCE SUBSEQUENTLY REPLACE IT WITH TYPE CLT FENCE IN ITS CURRENT LOCATION. THE LIMITS FOR THE REMOVAL AND REPLACEMENT ARE FOR NORTH AND SOUTH OF SR 2 FROM THE LAKE COUNTY LINE TO SR 91. THE NEW FENCE SHALL BE TYPE CLT AND ABUT THE EXISTING TYPE CLT AT THE BEGINNING OF THE PROJECT.

THE EXISTING FENCE LOCATIONS ARE SHOWN IN THE PLANS, BUT THE CONTRACTOR SHALL STAKE ALL HORIZONTAL DEFLECTION POINTS OF THE EXISTING FENCE DURING THE REMOVAL FOR LAYING OUT THE PROPOSED FENCE. STAKING OF DEFLECTION POINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - FENCE REMOVED, AS PER PLAN. THE CONTRACTOR SHOULD LIMIT THE VEGETATION REMOVAL TO A NARROW SWATH WIDE ENOUGH TO REMOVE THE EXISTING FENCE AND CONSTRUCT THE PROPOSED FENCE. ALL VEGETATION REMOVED SHALL BE DISPOSED OF AS PER ITEM 201 - CLEARING AND GRUBBING.

ONCE THE EXISTING FENCE IS REMOVED, THE CONTRACTOR SHALL ERECT THE PROPOSED FENCE WITHIN 7 CALENDAR DAYS.

FENCE LENGTHS

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

ITEM 202 - GUARDRAIL REMOVED

THIS ITEM SHALL INCLUDE BOTH STANDARD AND BARRIER TYPE RAILS INCLUDING ANCHOR ASSEMBLIES AND TERMINAL ASSEMBLIES.

GUARDRAIL PROTECTION

NO SIGN SUPPORTS SHALL BE ERECTED BEFORE THE NECESSARY GUARDRAIL PROTECTION IS IN PLACE. SIMILARLY EXISTING GUARDRAIL WHICH PROTECTS AN OBSTRUCTION OR SLOPE WHICH IS TO BE UPGRADED TO ELIMINATE GUARDRAIL, SHALL NOT BE REMOVED UNTIL THAT WORK HAS BEEN COMPLETED. EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE REPLACED WITH TYPE 5 GUARDRAIL, SHALL NOT BE REMOVED UNTIL THE NEW GUARDRAIL IS READY TO BE INSTALLED. UNDER NO CIRCUMSTANCES SHALL ANY HAZARD BE WITHOUT GUARDRAIL PROTECTION FOR MORE THAN 24 HOURS.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

TYPE 5 GUARDRAIL POST SPACING

WHEN THE OFFSET BETWEEN THE FACE OF THE GUARDRAIL AND THE BRIDGE PIERS, MAJOR SIGNS, SIGN SUPPORTS, OR OTHER FIXED OBSTACLES IS LESS THAN 5 FEET 6 INCHES THE GUARDRAIL SHALL BE STIFFENED BY PROVIDING 3 FEET 1.5 INCH POST SPACING FROM 12.5 FEET IN ADVANCE OF THE OBSTRUCTION TO ITS END, AS PER STANDARD DRAWING GR-2.1 COST SHALL BE INCLUDED IN THE TYPE 5A UNIT PRICE BID.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED, AS DIRECTED BY THE ENGINEER, IN PLACE OF TYPE 5 GUARDRAIL AS OUTLINED ABOVE:

ITEM 606 - GUARDRAIL, TYPE 5A 125 FEET

ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98

SEE NOTES AND DETAILS ON SHEET 306A.

LOCATION OF GUARDRAIL

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

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, LINEAR GRADING, AND PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTIBLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL (CONTINUED)

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A: 1) SET GUARDRAIL POSTS

2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)

3) SET GUARDRAIL POSTS

4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

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GENERAL NOTES

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DRAINAGE AND EROSION CONTROL

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

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

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

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

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 603 CONDUIT ITEMS.

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY COUNTY FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

ITEM SPECIAL- MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 604 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL - MISCELLANEOUS METAL 20,000 POUNDS

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

ITEM 603 - 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS

THE FOLLOWING ESTIMATED QUANTITY SHALL BE USED WHEN PLACING UNDERDRAINS OVER EXISTING CONDUITS, AS SHOWN ON THE PLAN SHEETS, AND TO CONNECT EXISTING UNDERDRAIN OUTLETS TO PROPOSED OUTLETS WHEN ENCOUNTERED DURING CONSTRUCTION. THE COST FOR ALL PIPE BENDS AND BRANCHES SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 603 - 6" CONDUIT, TYPE F.

THE FOLLOWING ESTIMATED QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER AS STATED ABOVE:

ITEM 603-6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS 1778 FT

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. 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 OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT. THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK TO BE PERFORMED AT THE LOCATIONS SHOWN IN THE SUBSUMMARY:

ITEM SPECIAL - PIPE CLEANOUT 150 FT.

SEEDING AND MULCHING

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

659 - SOIL ANALYSIS TEST	2 EACH
659 - TOPSOIL	7446 CU. YD.
659 - SEEDING AND MULCHING	67083 SQ. YD.
659 - REPAIR SEEDING AND MULCHING	3354 SQ. YD.
659 - INTER-SEEDING	3354 SQ. YD.
659 - COMMERCIAL FERTILIZER	9.06 TON
659 - LIME	13.86 ACRES
659 - WATER	363 M. GAL.
659 - MOWING	151 M. SQ. FT.

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.

STORM WATER POLLUTION PREVENTION PLAN

THE CONDITIONS OF THE NPDES CONSTRUCTION STORM WATER GENERAL PERMIT (SEE PROPOSAL) SHALL BE MET DURING ALL STAGES OF CONSTRUCTION. THE LOCATION AND TIMING OF ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE FIELD ADJUSTED TO PREVENT SIGNIFICANT IMPACTS ON RECEIVING WATERS. IMPLEMENTATION OF THIS STORM WATER POLLUTION PREVENTION PLAN SHALL CONTINUE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL SUCH TIME THAT THE UPSLOPE DISTURBED AREAS ARE STABILIZED.

INSTALLATIONS OF SEDIMENT BASINS/DAMES, PERIMETER FILTER FABRIC FENCE, AND DITCH CHECKS SHALL BE AS CONSTRUCTION AND MATERIAL SPECIFICATION 832.08.

ALL REASONABLE ATTEMPTS SHOULD BE MADE TO MINIMIZE THE TOTAL AREA OF DISTURBED LAND.

AREAS TO REMAIN DORMANT FOR MORE THAN 45 DAYS SHOULD BE IMMEDIATELY STABILIZED WITH CONSTRUCTION SEEDING AND MULCHING, EROSION CONTROL MATTING OR OTHER APPROPRIATE EROSION CONTROL MEASURES.

PAVEMENT

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.

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

THIS ITEM SHALL BE USED ALONG ALL THE SHOULDERS WHERE NO GUARDRAIL IS PRESENT. MATERIAL SHALL BE LIMITED TO CRUSHED SLAG, CRUSHED LIMESTONE OR ASPHALT GRINDINGS. IF ASPHALT GRINDINGS ARE USED, AN ADDITIONAL MATERIAL REQUIREMENT IS THAT 100% SHALL PASS A 1" SIEVE.

THE ACTUAL DEPTH USED WILL VARY DEPENDING ON EXISTING CONDITIONS. FOR ESTIMATING PURPOSES, AN AVERAGE DEPTH OF 2 INCHES WILL BE USED. WATER, IF NEEDED SHALL BE APPLIED AS PER 617 AND INCLUDED UNDER ITEM 617, COMPACTED AGGREGATE, AS PER PLAN.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENTS AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD. FOR ESTIMATING PURPOSES ONLY.

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

THE RATE OF APPLICATION OF THE 407 TACK COAT FOR INTERMEDIATE COURSE SHALL BE SUBJECT TO ADJUSTMENTS AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.05 GALLONS PER SQUARE YARD. FOR ESTIMATING PURPOSES ONLY.

ITEM 618 - RUMBLE STRIPS (ASPHALT CONCRETE)

ITEM 618 - RUMBLE STRIPS (ASPHALT CONCRETE) SHALL BE CONSTRUCTED AS PER STANDARD DRAWING BP-9.I.

LONGITUDINAL JOINTS (FLEXIBLE PAVEMENT)

LONGITUDINAL JOINTS BETWEEN A PAVEMENT LANE AND ADJOINING BERM OR SPEED CHANGE LANE, AND BETWEEN A SPEED CHANGE LANE AND THE ADJOINING BERM, SHALL BE MADE THE SAME DAY. ALL LONGITUDINAL JOINTS SHALL BE HOT WITH THE EXCEPTION OF ONE COLD JOINT PER ROADWAY. LONGITUDINAL JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER. EACH RAMP SHALL HAVE ONLY ONE LONGITUDINAL COLD JOINT LOCATED APPROXIMATELY HALFWAY ACROSS THE RAMP.

FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

THE FOLLOWING QUANTITIES HAS BEEN PROVIDED FOR FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT AS DIRECTED BY THE ENGINEER:

ITEM 252 FULL DEPTH RIGID PAVEMENT REPLACEMENT REMOVAL AND FLEXIBLE REPLACEMENT: 3520 SY

FOR ESTIMATION PURPOSES:
ASSUME JOINT EVERY 60', ASSUME 10% JOINTS REPLACED
ASSUME 12' LONG AND FULL WIDTH OF RIGID BASE
 $(17800)/60' = 296$ JOINTS ML, ASSUME 300
 $300(12')(72')(0.1) = 2880$ SY

$(17103)/60' = 285$ JOINTS (RAMPS), ASSUME 300
 $300(12')(16')(0.1) = 640$ SY

ITEM 252 FULL DEPTH PAVEMENT SAWING: 5280 FT

FOR ESTIMATION PURPOSES:
SAW LENGTH CUTS, 30 ON RAMP, 30 ON MAINLINE
 $30(16')(2) = 960'$ ON RAMPS
 $30(72')(2) = 4320'$ ON MAINLINE

ITEM 409 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS: 67200 FT

FOR ESTIMATION PURPOSES:
ASSUME 300 JOINTS MAINLINE, CUT PERIMETER
LENGTH = $300(12'+12'+72'+72') = 50400$ FT MAINLINE

ASSUME 300 JOINTS ON RAMPS, CUT PERIMETER
LENGTH = $300(12'+12'+16'+16') = 16800$ FT RAMPS

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN

THE COURSE AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO A BLEND OF AIR COOLED BLAST FURNACE SLAG AND LIMESTONE. THE CONTRACTOR SHALL USE A MINIMUM OF 50 PERCENT AIR COOLED BLAST FURNACE SLAG WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE. THIS ITEM IS FOR MAINLINE PAVEMENT.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN

THE COURSE AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO AIR COOLED BLAST FURNACE SLAG. THIS ITEM IS FOR RAMP PAVEMENT.

ITEM 254 - PATCHING PLANED SURFACE

THE FOLLOWING ESTIMATED QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER FOR THE PURPOSE OF PATCHING PLANED SURFACE.

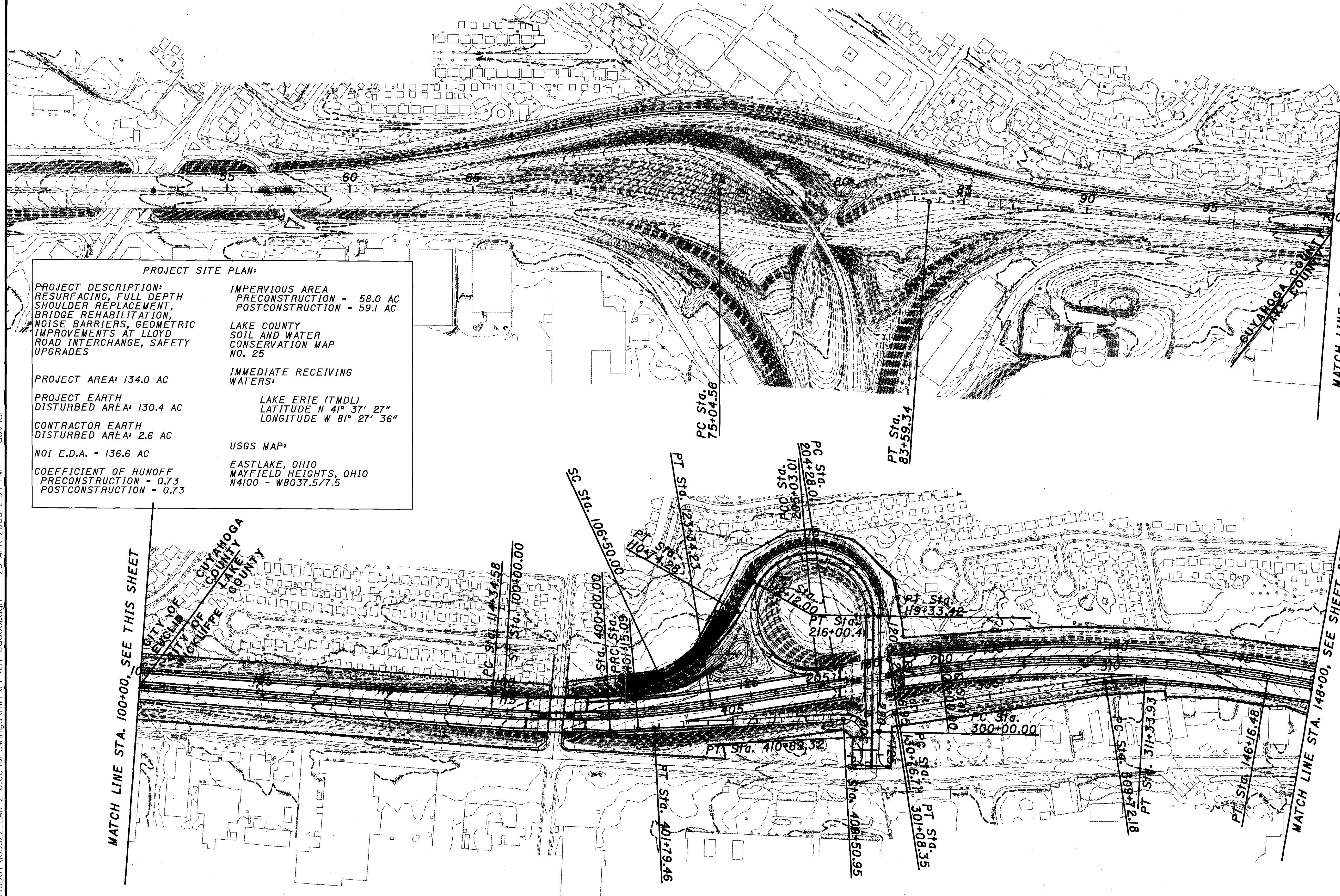
ITEM 254 - PATCHING PLANED SURFACE 43500 SQ YD

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GENERAL NOTES

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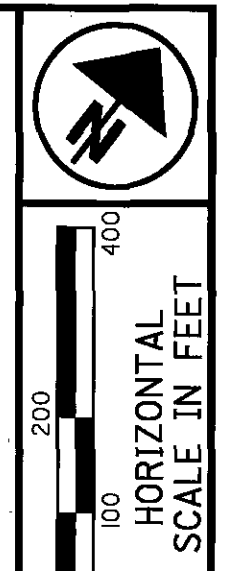
PROJECT SITE PLAN:

PROJECT DESCRIPTION: RESURFACING, FULL DEPTH SHOULDER REPLACEMENT, BRIDGE REHABILITATION, NOISE BARRIERS, GEOMETRIC IMPROVEMENTS AT LLOYD ROAD INTERCHANGE, SAFETY UPGRADES	IMPERVIOUS AREA PRECONSTRUCTION = 58.0 AC POSTCONSTRUCTION = 59.1 AC
PROJECT AREA: 134.0 AC	LAKE COUNTY SOIL AND WATER CONSERVATION MAP NO. 25
PROJECT EARTH DISTURBED AREA: 130.4 AC	IMMEDIATE RECEIVING WATERS:
CONTRACTOR EARTH DISTURBED AREA: 2.6 AC	LAKE ERIE (TMDL) LATITUDE N 41° 37' 27" LONGITUDE W 81° 27' 36"
NOI E.D.A. = 136.6 AC	USGS MAP:
COEFFICIENT OF RUNOFF PRECONSTRUCTION = 0.73 POSTCONSTRUCTION = 0.73	EASTLAKE, OHIO MAYFIELD HEIGHTS, OHIO N4100 - W8037.5/7.5

MATCH LINE STA. 100+00, SEE THIS SHEET

MATCH LINE STA. 148+00, SEE SHEET 28

MATCH LINE STA. 100+00, SEE THIS SHEET



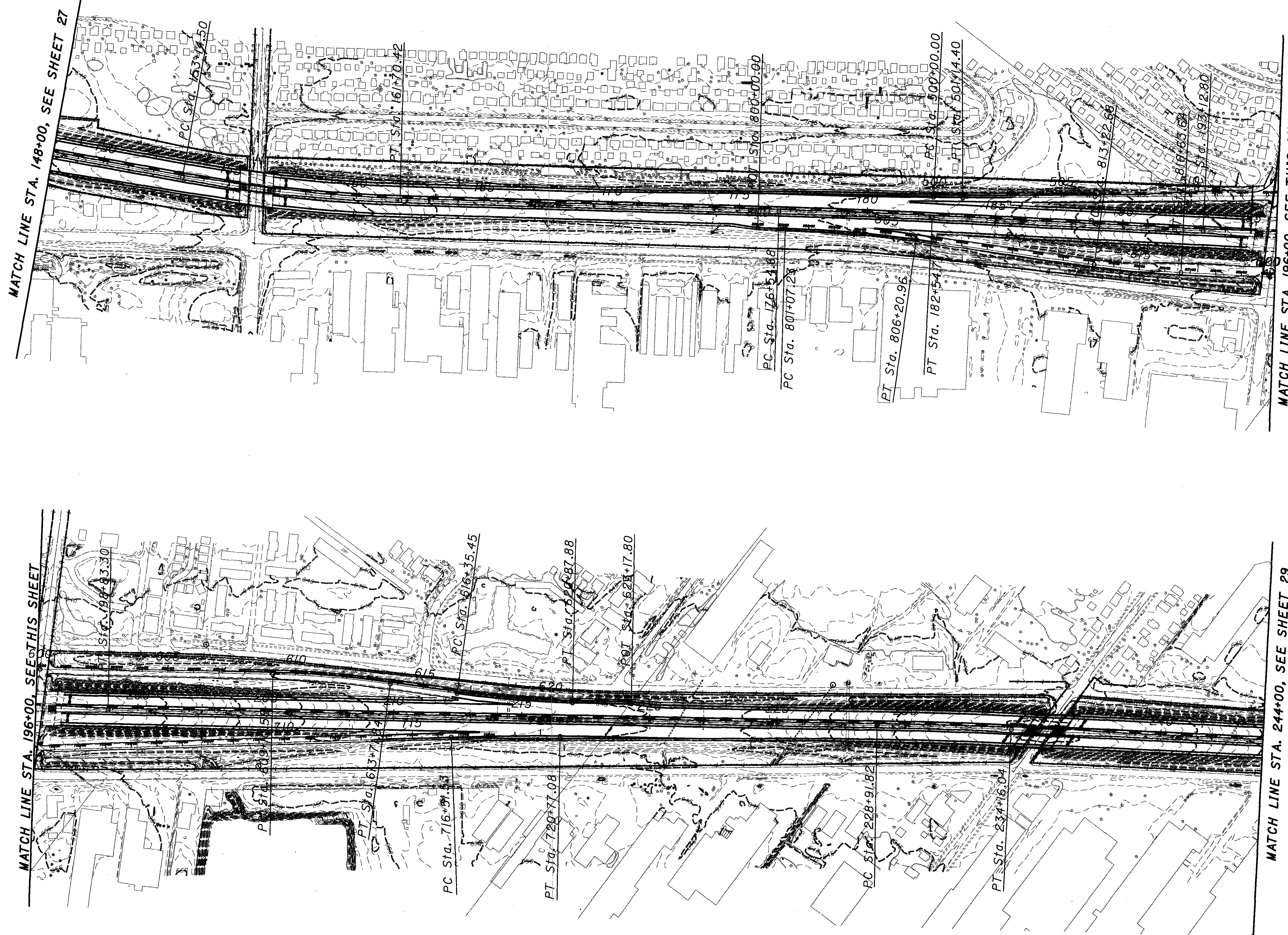
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PROJECT SITE PLAN
BEGIN PROJECT TO STA. 148+00

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MATCH LINE STA. 148+00, SEE SHEET 27

MATCH LINE STA. 196+00, SEE THIS SHEET



MATCH LINE STA. 244+00, SEE SHEET 29

MATCH LINE STA. 196+00, SEE THIS SHEET

614 MAINTAINING TRAFFIC

THE PURPOSE OF THIS PROJECT IS TO RESURFACE THE ROADWAY, REPAIR THE BRIDGE DECKS, REPLACE THE BRIDGE PARAPETS, INSTALL NEW LIGHTING AND PROVIDE NOISE WALLS.

ALL WORK VEHICLES LICENSED TO OPERATE ON THE HIGHWAY, INCLUDING MATERIAL TRUCKS, SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF ONE-QUARTER MILE IN BRIGHT SUNLIGHT AND SHALL BE OPERATED WITH LIGHTED HEAD AND TAIL LAMPS. THE AMBER LIGHT SHALL BE IN OPERATION AT ALL TIMES WITHIN THE WORK ZONE AND WHILE TRAVELING TO AND FROM THE WORK ZONE WHENEVER THE VEHICLE SPEED IS BELOW 40 MPH. VEHICLE HAZARD LAMPS DO NOT SATISFY THIS REQUIREMENT. ALL OTHER EQUIPMENT SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF ONE-QUARTER MILE IN BRIGHT SUNLIGHT. THE AMBER LIGHT SHALL BE IN OPERATION WHILE THE EQUIPMENT IS WITHIN THE WORK ZONE.

LIGHTING USED TO ILLUMINATE THE WORK AREA SHALL BE AIMED AND SHIELDED TO PREVENT GLARE ENCROACHING INTO OPEN TRAFFIC LANES. FOR ADDITIONAL NOTES SEE THE "FLOODLIGHTING" NOTE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES PER 108.07 OF THE CMS.

ALL SIGNS, BARRICADES, SIGN SUPPORTS, CONES, DRUMS, FLAGGERS AND INCIDENTALS SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE MOST RECENT REVISION, CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD), EXCEPT AS NOTED WITHIN. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES.

THE MAINTENANCE OF TRAFFIC DETAILS SHALL BE COORDINATED WITH THE MAINTENANCE OF TRAFFIC DETAILS OF ANY ADJACENT CONSTRUCTION PROJECTS. THE CONTRACTORS ARE REQUIRED TO COOPERATE WITH EACH OTHERS WORK ACTIVITIES DURING THE ENTIRE CONSTRUCTION PROCESS.

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

GENERAL

THREE (3) LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON S.R. 2, EXCEPT FOR MINIMUM PERIODS, AS NOTED IN THE "PERMITTED LANE CLOSURE" NOTE, WHEN TWO OR ONE LANE OF TRAFFIC IN EACH DIRECTION WILL BE PERMITTED.

S.R. 2 RECONSTRUCTION WILL BE BY TWO (2) SEPARATE STAGES. ONE CONSTRUCTION SEASON IS PROVIDED FOR EACH STAGE. THE SEQUENCE FOR CONSTRUCTION SHALL BE STAGE 1, STAGE 2. THE CONSTRUCTION OF EACH STAGE SHALL BE COMPLETED AND TRAFFIC RETURNED TO THE NORMAL THREE LANES OF TRAFFIC IN EACH DIRECTION BY OCTOBER 1 OF EACH YEAR. OCTOBER 1 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES WILL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THAT TRAFFIC IS STILL DIVERTED FROM THE NORMAL TRAFFIC LANES. THE CONTRACTOR HAS THE OPTION TO PERFORM BOTH STAGES SIMULTANEOUSLY DURING THE FIRST CONSTRUCTION SEASON, PROVIDING THAT HE CAN FINISH ALL BRIDGE AND ROADWAY RESURFACING (EXCEPT SURFACE COURSE) DURING THE FIRST CONSTRUCTION SEASON.

DUE TO THE TIME CONSTRAINTS AND THE TEMPERATURE RESTRICTIONS FOR PLACING THE ASPHALT SURFACE COURSE, THE CONTRACTOR WILL BE PERMITTED TO PLACE THE 446 SURFACE COURSE DURING THE SPRING OF THE NEXT YEAR IF THAT FALLS WITHIN THE OVERALL PROJECT COMPLETION DATE.

THREE LANE TRAFFIC WIDTH REQUIREMENTS:

UNLESS SPECIFICALLY STATED OR SHOWN IN THE PLANS, THREE LANES OF TRAFFIC SHALL CONSIST OF A MINIMUM OF THREE 11'-0" WIDE LANES PLUS 12" MINIMUM BUFFER ON EACH SIDE TO GUARDRAIL, PARAPETS, DRUMS, BARRIER OR EDGES OF PAVED SURFACES. THUS THE THREE LANE TRAFFIC WIDTH SHALL BE A MINIMUM OF 35'-0" CLEAR.

INSTALLATION OF TRAFFIC SHIFTS (PHASES 1 & 2):

THE INSTALLATION OF LONG TERM MAINTENANCE OF TRAFFIC SHIFTS (THOSE USING TRANSITION AREA DELINEATION AND PORTABLE CONCRETE BARRIERS) IS RESTRICTED TO THE TIMES PROVIDED BY THE PERMITTED LANE CLOSURE NOTE ON SHEET 32.

TRUCK MOUNTED ATTENUATOR

WHEN THE CONTRACTOR IS SETTING SHORT TERM WORK ZONES AND THE SHOULDERS (RIGHT OR LEFT SHOULDER) ARE LESS THAN 10 FEET IN WIDTH AND ARE ON A ROAD WITH SPEEDS 45 MPH OR HIGHER, A TRUCK MOUNTED ATTENUATOR (TMA) MUST TRAIL THE OPERATION OF SETTING THE ADVANCE WARNING SIGNS UP OR TAKING THEM DOWN. THIS SAME TRUCK MUST HAVE A TYPE B FLASHING ARROW PANEL MOUNTED ON IT FACING THE REAR OF THE TRUCK.

THE TMA MUST BRING A VEHICLE WEIGHING 1800 TO 4500 POUNDS AND TRAVELING AT 60 MPH TO A SAFE, CONTROLLED STOP, PER NCHRP 350 CRITERIA. THE MANUFACTURER'S SPECIFICATION MUST BE FOLLOWED CONCERNING THE SIZE OF THE TRUCK AND THE CONNECTIONS TO THE TMA.

TRUCK ENTRY AND EGRESS FROM THE WORK ZONE

THE CONTRACTOR SHALL DESIGN A PLAN FOR TRUCKS TO ENTER AND EXIT THE WORK ZONE. ANY TIME MORE THAN 10 TRUCKS PER HOUR ENTER OR LEAVE THE WORK ZONE A LANE MUST BE CLOSED OR A 1200' ACCELERATION / DECELERATION LANE MUST BE PROVIDED. THE TRUCKS ENTERING OR EXITING ARE TO USE THIS CLOSED LANE FOR ACCELERATION AND DECELERATION.

THE CONTRACTOR SHALL HAVE A PROFESSIONAL ENGINEER DRAW UP THE TRUCK ENTRY AND EGRESS PLAN. THE PLAN MUST BE STAMPED AND PRESENTED TO THE ODOT PROJECT ENGINEER FOR ACCEPTANCE. LANES CAN ONLY BE CLOSED PER THE PERMITTED LANE CLOSURE SCHEDULE FOUND ON THE WEB.

[HTTP://WWW.DOT.STATE.OH.US/DIST12/WORKZONE/LANECLO.HTM](http://www.dot.state.oh.us/dist12/workzone/laneclo.htm)

SEQUENCE OF CONSTRUCTION:

EACH CONSTRUCTION STAGE SHALL BE CONSTRUCTED IN PHASES. PRE-PHASE 1 CONSISTS OF NEW UNDERDRAINS AND SHOULDER REPLACEMENT WHICH ARE TO BE PERFORMED PRIOR TO, PHASE 1 MAINTENANCE OF TRAFFIC SHIFTS. PHASE 1 RECONSTRUCTS THE MEDIAN PARAPETS AND PLACES THE DECK OVERLAYS. PHASE 2 RECONSTRUCTS THE OUTSIDE PARAPET AND PLACES THE DECK OVERLAYS. PHASE 3 REMOVES THE EXISTING ASPHALT COURSES. PHASE 4 PLACES THE NEW ASPHALT INTERMEDIATE COURSE. THE REMAINDER OF THE FINAL SURFACE COURSE AND PAVEMENT MARKINGS ARE PLACED UNDER THE FINAL PHASE, WHICH IS AT THE END OF PHASE 4. SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS AND PLAN DETAILS FOR THE VARIOUS PHASES OF CONSTRUCTION.

CONSTRUCTION STAGES 1&2, PHASES 1&2 HAVE USED STANDARD CONSTRUCTION DRAWING MT-102.10 AS A BASE, UNLESS SPECIFICALLY SHOWN OTHERWISE, ALL REQUIREMENTS OF THIS STANDARD CONSTRUCTION DRAWING SHALL BE INCORPORATED IN THE APPLICABLE CONSTRUCTION STAGES/PHASES AS DETAILED IN THESE PLANS EXCEPT FOR THE FOLLOWING ITEMS:

1. NO LIGHTING IS REQUIRED.
 2. OC-53-36 "MAINTAIN PRESENT LANE" SIGN IS NOT REQUIRED. *
 3. OW-138-36 (DIAGONAL ARROW) SIGN IS NOT REQUIRED. *
- * - THESE SIGNS MAY BE REQUIRED IN SPECIAL SITUATIONS.

PUBLIC SAFETY

THE FOLLOWING PROVISIONS "A", "B", AND "C" SHALL APPLY WHEN THE LANE ADJACENT TO THE GUARDRAIL IS OPEN TO TRAFFIC:

THE PERIOD OF TIME THAT A HAZARD IS LEFT UNPROTECTED BY THE REMOVAL OF GUARDRAIL SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN NO CASE SHALL SUCH A PERIOD BE LONGER THAN ONE WORKING DAY. IF, AFTER ONE DAY, THE ENTIRE RUN OF GUARDRAIL CONSTRUCTION IS NOT COMPLETE THE FOLLOWING SHALL APPLY:

- A. IN AREAS WHERE EXISTING GUARDRAIL HAS BEEN REMOVED OR THE GUARDRAIL IS IN A PARTIAL STAGE OF COMPLETION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TYPE II BARRICADES WITH TYPE C (STEADY BURNING) WARNING LIGHTS WITHIN THE LIMITS OF THE UNPROTECTED AREA. THE BARRICADES SHALL BE PLACED AT 50' INTERVALS AND OFFSET AT LEAST TWO FEET FROM THE EDGE OF THE TRAVELED ROADWAY AND IN CLOSE PROXIMITY TO THE CONSTRUCTION. THE APPROACH END OF A PARTIALLY COMPLETED RUN OF GUARDRAIL SHALL BE FASTENED AT GROUND LEVEL TO A STEEL DRUM.
- B. IF THE EXISTING GUARDRAIL IS FOR THE PROTECTION OF AN OBSTACLE (I.E. SIGN SUPPORT, BRIDGE PARAPET, ETC.) THE CONTRACTOR SHALL ERECT CONCRETE BARRIER IN THE DIRECTION OF TRAFFIC. THE REQUIREMENTS OF PARAGRAPH "A" SHALL APPLY TO THE REMAINING GUARDRAIL WITHIN THE RUN. PORTABLE BARRIER SHALL BE FLARED AT A 20:1 TAPER RATE AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER RM-4.2.
- C. THE REQUIREMENTS STATED IN "A" SHALL APPLY FOR A PERIOD NOT TO EXCEED ONE WEEK. WHERE THE REBUILDING OR CONSTRUCTION OF ANY RUN OF GUARDRAIL CANNOT BE ACCOMPLISHED WITHIN ONE WEEK, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN PORTABLE CONCRETE BARRIER IN THE INTERIM TIME IT TAKES TO COMPLETE THE WORK. (SEE DETAIL BELOW) THE APPROACH END OF THE PORTABLE CONCRETE BARRIER SHALL BE FLARED 8 FT. (160' AT 20:1 TAPER) AND SHALL INCLUDE A WORK ZONE IMPACT ATTENUATOR. IN ADDITION, A TYPE II BARRICADE WITH A TYPE B (HIGH INTENSITY FLASHER) WARNING LIGHT SHALL BE PLACED IN FRONT OF THIS INITIAL SECTION OF PORTABLE CONCRETE BARRIERS TO PROVIDE FOREWARNING TO THE APPROACHING TRAFFIC.

WHEN THE LANE ADJACENT TO THE GUARDRAIL IS CLOSED TO TRAFFIC, THE PROVISIONS OF PARAGRAPH "A" ABOVE SHALL APPLY AFTER 1 DAY, THE PROVISIONS OF PARAGRAPH "B" SHALL APPLY AFTER 10 DAYS, AND THE PROVISIONS OF PARAGRAPH "C" SHALL APPLY AFTER 15 DAYS.

THE TERM "GUARDRAIL" AS USED HEREIN SHALL BE UNDERSTOOD TO COVER ALL TYPES OF GUARDRAIL, EXISTING OR PROPOSED FOR THE PROJECT, INCLUDING BARRIER DESIGN GUARDRAIL, BRIDGE WINGWALL PARAPETS, AND CONCRETE BARRIER.

THE COST OF COMPLYING WITH THESE SAFETY PROCEDURES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

PORTABLE CONCRETE BARRIER (PUBLIC SAFETY)

PORTABLE CONCRETE BARRIER SECTIONS (10' LONG) AS REQUIRED BY THE PUBLIC SAFETY NOTE SHALL BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING, UNLOADING, AND TRANSPORTATION OF THE BARRIER.

THE BARRIER SECTIONS SHALL BE BOLTED TOGETHER WITH STEEL CONNECTIONS AS PER SCD RM-4.2.

ALL COSTS FOR FURNISHING, INSTALLING, REINSTALLING AND SUBSEQUENT REMOVAL OF THE PORTABLE CONCRETE BARRIER AS DESCRIBED UNDER PUBLIC SAFETY, WILL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

THE INSTALLATION OF LONG TERM MAINTENANCE OF TRAFFIC SHIFTS (THOSE USING TRANSITION AREA DELINEATION AND PORTABLE CONCRETE BARRIERS) IS RESTRICTED TO THE TIMES PROVIDED BY THE PERMITTED LANE CLOSURE NOTE ON SHEET 32.

CONSTRUCTION TRAFFIC

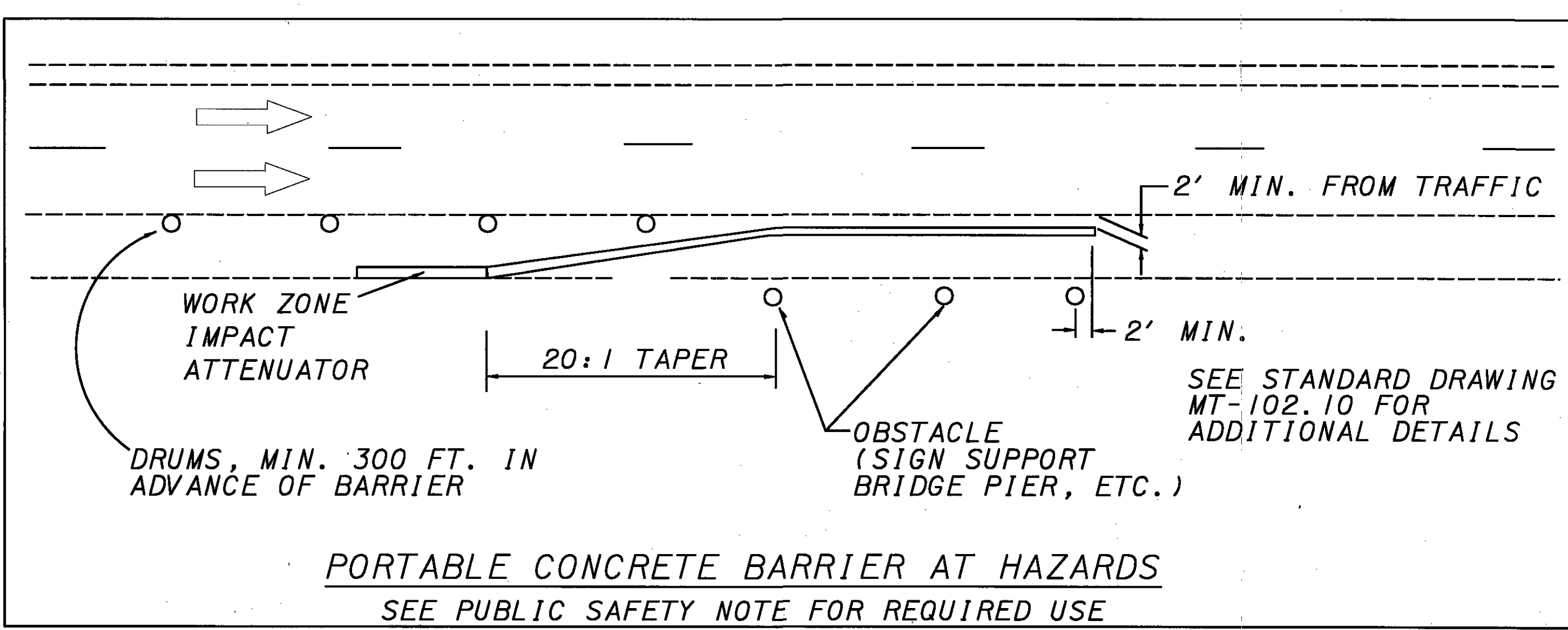
THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

- ITEM 616 - WATER 10 M. GAL.
- ITEM 616 - CALCIUM CHLORIDE 1 TON

PLANED SURFACES

THE DURATION OF THE TIME BETWEEN REMOVING THE EXISTING ASPHALT CONCRETE PAVEMENT AND PLACING THE SUBSEQUENT ASPHALT COURSE SHALL BE KEPT TO A MINIMUM. IN NO INSTANCE SHALL THIS TIME EXCEED 15 CALENDAR DAYS. THIS IS TO ENSURE THAT THE POTENTIAL DEGRADATION OF THE EXISTING PAVEMENT DUE TO TRAFFIC IS KEPT TO A MINIMUM.

IN THE EVENT THAT THE TIME BETWEEN REMOVING THE EXISING ASPHALT CONCRETE AND PLACING THE SUBSEQUENT ASPHALT COURSE EXCEEDS 15 CALENDAR DAYS, LIQUIDATED DAMAGES AS PER CMS 108.07 SHALL BE ASSESSED.



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MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" DESCRIBED ON SHEET NO. 43. THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO MINIMIZE ENCROACHMENT UPON THE TRAVELED WIDTH OF PAVEMENT.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE RESPONSIBLE LAW ENFORCEMENT AGENCY AND THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 PUBLIC INFORMATION OFFICER ((216) 584-2007) NOT LESS THAN TWENTY-FOUR (24) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.
3. NIGHTTIME WORK, EXCLUDING NOISEWALL ITEMS, SHALL BE PERMITTED IN ACCORDANCE WITH THESE PLANS AND NOTES. THE CONTRACTOR SHALL PROVIDE FLOOD LIGHTING OF THE WORK AREA IN ORDER TO ASSURE THE SAFEST CONDITIONS DURING NIGHTTIME WORK. A LIGHTING PLAN FOR NIGHTTIME OPERATIONS SHALL BE PRESENTED TO AND APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.

SEE THE ODOTCD AND STANDARD DRAWINGS FOR THE MINIMUM SIGNAGE REQUIRED.

5. TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING STAGE IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.
6. PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" DESCRIBED ON SHEET NO. 43.

THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES AS PER MT-99.20M FOLLOWING THE PAVEMENT MARKING EQUIPMENT. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE FIRST TRAIL VEHICLE IN A TRAFFIC LANE SHALL BE EQUIPPED WITH A TRUCK MOUNTED ATTENUATOR MEETING NCHRP 350 REQUIREMENTS. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE. EACH TRAILING VEHICLE SHALL HAVE A YELLOW FLASHING BEACON PLUS 48" MIN. ORANGE AND BLACK CONSTRUCTION WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED AND WHICH LANE IS CLOSED.

MAINTAINING VEHICULAR TRAFFIC (CONT.)

7. DURING NON-WORKING PERIODS, OPEN EXCAVATIONS SHALL BE DELINEATED WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER.
8. EXISTING SIGNS LOCATED WITHIN THE ROAD WORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND REERECTED IN LOCATIONS AS APPROVED BY THE ENGINEER.
9. NO STOPPAGE OF TRAFFIC SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.
10. WHENEVER A TOTAL CLOSURE IS IMPLEMENTED, THE CONTRACTOR SHALL PROVIDE A PORTABLE CHANGEABLE MESSAGE SIGN, TYPE FROM ODOT'S PRE-APPROVED LIST. IT SHALL BE PLACED 1.5 MILES TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.
12. FOR ANY OPERATION NOT SPECIFICALLY MENTIONED IN THESE PLANS, THE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
13. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

PROGRESS SCHEDULE (CRITICAL PATH METHOD)

A PRE-CONSTRUCTION MEETING SHALL BE HELD AFTER THE CONTRACT IS SIGNED. THE CONTRACTOR SHALL SUBMIT THEIR PROPOSED CPM SCHEDULE AT THE PRE-CONSTRUCTION MEETING FOR REVIEW BY THE CONSTRUCTION ENGINEER WITHIN 14 CALENDAR DAYS AFTER THE PRE-CONSTRUCTION MEETING.

A FINAL CPM SCHEDULE SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER WITHIN 30 CALENDAR DAYS FROM THE DATE OF THE PRE-CONSTRUCTION MEETING BUT AT LEAST SEVEN (7) CALENDAR DAYS PRIOR TO THE DATE DESIGNATED AS THE STARTING DATE IN THE CPM SCHEDULE. THE SCHEDULE SHALL BE SIGNED AND DATED BY THE PRIME CONTRACTOR AND NAMED SUBCONTRACTORS.

PROJECT PROGRESS MEETINGS

PROGRESS MEETINGS WILL BE HELD EVERY FOUR (4) WEEKS AT THE PROJECT OFFICE, OR OTHER LOCATION DESIGNATED BY THE CONSTRUCTION ENGINEER AND ATTENDED BY O.D.O.T. AND CONTRACTOR DECISION-MAKING PERSONNEL.

THE PURPOSE OF THESE MEETINGS WILL BE TO DISCUSS CRITICAL OPERATIONS AND POTENTIAL PROBLEMS. THE CONTRACTOR WILL CONFIRM THE NUMBER AND DURATION OF WORK SHIFTS, NUMBER OF WORK CREWS, AND SPECIFIC PORTIONS OF THE WORK TO BE PERFORMED DURING THE FOLLOWING WEEKS.

THESE MEETINGS CAN ONLY BE WAIVED BY THE CONSTRUCTION ENGINEER.

SUSPENSION OF WORK

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

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MAINTENANCE OF TRAFFIC
GENERAL NOTES

LAK-2-0.00

31A
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ADDITIONAL LANE CLOSURE TIME DURING HOLIDAY WEEKENDS

FOR MEMORIAL DAY AND LABOR DAY HOLIDAYS ONLY, THE CONTRACTOR MAY EXTEND THE ONE-LANE CLOSURE THROUGH THE MONDAY HOLIDAY IF THE CLOSURE IS IN EFFECT FOR THE PURPOSE OF BRIDGE DECK OVERLAY CURING.

REMOVAL OF PAVEMENT MARKINGS FOR 1 OR 2 LANE CLOSURES

THE REMOVAL OF THE LANE LINE (OR CHANNELIZING LINE) AS SHOWN ON MT-95.30 IS NOT REQUIRED FOR SHORT TERM (LESS THAN 1 DAY) OR INTERMEDIATE TERM (LESS THAN 3 DAY) LANE CLOSURES.

RAMP CLOSURES FOR PAVEMENT REPAIR AND RESURFACING

TO PROVIDE WORKER SAFETY, EACH RAMP SHALL BE CLOSED TO ALL TRAFFIC DURING PAVEMENT PLANING, PAVEMENT REPAIR AND RESURFACING. THE RAMP CLOSURES SHALL BE LIMITED TO ONE RAMP AT A TIME. PRIOR TO CLOSING THE RAMP, THE CONTRACTOR SHALL PLACE EITHER A FLAT SHEET GROUND MOUNTED SIGN OR A PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) ALONG THE RAMP AT LEAST 3 DAYS IN ADVANCE, INFORMING THE MOTORISTS OF PLANNED CLOSURE. THE RAMP CLOSURES SHALL BE LIMITED TO BETWEEN 9 PM AND 6 AM.

EACH RAMP SHALL BE CLOSED NO MORE THAN 3 TIMES TO PERFORM THE NECESSARY WORK.

FREEWAY ENTRANCE RAMPS SHALL BE CLOSED WITH A PCMS SUGGESTING A RECOMMENDED DETOUR. CLOSURES SHALL BE AS PER SHEET 79A.

FREEWAY EXIT RAMPS SHALL BE CLOSED WITH A PCMS ROUTING TRAFFIC TO THE NEXT EXIT AND A SECOND PCMS INDICATING A U-TURN AT THAT EXIT (UNLESS DIRECTED DIFFERENTLY BY THE ENGINEER). THE RAMP CLOSURES SHALL BE AS PER MT-98.19.

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL RAMP TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE & PER TIME UNIT
SR-91 TO SR-2 WB (C-1)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1565
SR-2 EB TO SR-91 (C-4)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1674
SR-2 EB TO E 305 (B-4)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1254
SR-2 WB TO E 305 (B-2)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1138
E 305 TO SR-2 EB (B-3)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1022
E 305 TO SR-2 WB (B-1)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1370
SR-2EB TO LLOYD RD. (A-4)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1942
SR-2 WB TO LLOYD RD. (A-2)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1261
LLOYD RD. SR-2 EB (A-3)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1840
LLOYD TO SR-2 WB (A-1)	6:01 A.M - 8:59 P.M.	EACH HOUR	\$1052

PERMITTED LANE CLOSURES

LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIME PERMITTED BY THE DISTRICT 12 "PERMITTED LANE CLOSURE TIMES MAP" WHICH IS LOCATED ON ODOT'S WEB SITE AT:

WWW.DOT.STATE.OH.US/DIST12/WORKZONE/LANECLO.HTM

THE LATEST REVISION, 14 DAYS PRIOR TO THE BID DATE, WILL BE IN EFFECT FOR THIS PROJECT.

WINTER TIME LIMITATIONS

ALL EXISTING LANES, INCLUDING RAMP TURN LANES, SHALL BE OPEN TO TRAFFIC BETWEEN OCTOBER 1 AND APRIL 1. OCTOBER 1 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

PAVEMENT WORK AREA DEFINITION

THROUGHOUT THESE NOTES THE PAVEMENT WORK AREAS WHICH ARE TO BE COMPLETED AND LIMITS OF THAT WORK IS DESCRIBED. ALTHOUGH NOT SPECIFICALLY STATED, ALL ASSOCIATED DRAINAGE WORK, BRIDGE WORK, GRADING, INSTALLATION OF EROSION CONTROL ITEMS, TRAFFIC CONTROL WORK, LIGHTING WORK, GUARDRAIL OR BARRIER WORK, ETC. IS ALSO TO BE PERFORMED.

LANE CLOSURES ANALYSIS FOR ADDITIONAL LANE CLOSURE TIMES

IF THE CONTRACTOR WOULD LIKE TO CLOSE LANES OUTSIDE THE TIME PERMITTED THERE MUST FIRST BE A LANE CLOSURE ANALYSIS. A LANE CLOSURE ANALYSIS SHALL BE DONE IN THE FOLLOWING MANNER:

LANES MAY BE CLOSED IF THE HOURLY COUNTS ARE LESS THAN THE COUNTS GIVEN BELOW. IF THE ADDITIONAL HOURS ARE ON A WEEKDAY THE COUNT MUST BE DONE ON A WEEKDAY. SAME FOR A WEEKEND.

FOR 2 OUT OF 3 LANES CLOSED:

TWO HOURLY COUNTS SHALL BE DONE FOR THE SPECIFIC ADDITIONAL HOURS THE ROADWAY IS PROPOSED TO BE CLOSED. IF THE HOURLY COUNT IS UNDER 1400 VEHICLES PER HOUR FOR WEEKDAYS AND 1500 VEHICLES PER HOUR FOR WEEKENDS THEN THE CONTRACTOR MAY CLOSE A LANE DURING HOURS THAT MEET THIS CRITERIA.

FOR 1 OUT OF 3 LANES CLOSED:

TWO HOURLY COUNTS SHALL BE DONE FOR THE ADDITIONAL TIMES THE ROADWAY WOULD LIKE TO BE CLOSED. IF THE HOURLY COUNT IS UNDER 2800 VEHICLES PER HOUR FOR WEEKDAYS AND 3000 VEHICLES PER HOUR FOR WEEKENDS THEN THE CONTRACTOR MAY CLOSE A LANE DURING HOURS THAT MEET THIS CRITERIA.

THE TRAFFIC COUNTS SHALL BE TURNED INTO THE WORK ZONE TRAFFIC CONTROL ENGINEER FOR APPROVAL OF THE NEW TIMES. IF A BACK UP, (STOP AND GO TRAFFIC) OR DELAYS, (SPEEDS BELOW 40 MPH) OCCURS DURING THE NEW CLOSURE TIMES THE CONTRACTOR SHALL DO ANOTHER ANALYSIS. IF A TRAFFIC BACKUP OR DELAY OCCURS AFTER THE SECOND ANALYSIS, THE CONTRACTOR SHALL NOT CLOSE THE LANES FOR THE ADDITIONAL HOURS.

MAINTENANCE OF TRAFFIC
GENERAL NOTES

LAK-2-0.00

STAGE 1 - MAINTENANCE OF TRAFFIC

STAGE 1 CONSTRUCTION - S.R. 2 EASTBOUND

THIS STAGE RESURFACES THE MAINLINE PAVEMENT, REPLACES BRIDGE PARAPETS, AND OVERLAYS THE BRIDGE DECKS. LIGHTING AND NOISE WALLS MAY BE PERFORMED DURING EITHER STAGE.

PRE-PHASE 1

MAINTAIN A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION AS PER THE REQUIREMENTS ON SHEET MN2, COMPLETE THE FOLLOWING WORK DURING THIS PHASE:

1. INSTALL NEW SHOULDER UNDERDRAINS.
2. REMOVE THE EXISTING SHOULDER, PLACE NEW SUBBASE AND ASPHALT SHOULDER.
3. CONSTRUCT RAMP GEOMETRIC PAVEMENT REVISIONS WHILE REPLACING THE SHOULDERS. (DO NOT REVISE PAVEMENT MARKINGS TO NEW TAPER RATE AT THIS TIME)

PHASE 1

IMPLEMENT THE PHASE 1 MAINTENANCE OF TRAFFIC SHIFTS AS DETAILED ON SHEETS 44-60. INSTALL PCB, TEMPORARY PAVEMENT MARKINGS AND SIGNS, AS NEEDED. REFACE OR REPLACE THE PARAPETS AS SPECIFIED. REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK BEHIND PCB FOR OVERLAY, OR WAIT UNTIL PHASE 1A. REPLACE PCB WITH DRUMS.

PHASE 1A (JOINT WORK AND OVERLAY WORK WILL LIKELY REQUIRE SEPARATE WEEKEND CLOSURES)

CLOSE ONE LANE (SEE PERMITTED LANE CLOSURE NOTE) AS PER THE PHASE 1A DETAILS AS SHOWN ON SHEETS 44-60.

REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK FOR CONCRETE OVERLAY.

CLOSE SECOND LANE (SEE PERMITTED LANE CLOSURE NOTE) AND PLACE BRIDGE OVERLAY. RE-OPEN TO TWO LANES DURING BRIDGE DECK CURE.

CURE CONCRETE DECK OVERLAY, PLACE PAVEMENT MARKINGS ON DECK. RE-OPEN TO ALL THREE LANES OF TRAFFIC AS PER THE PHASE 1 LAYOUT.

AFTER PHASE 1A BRIDGE WORK HAS BEEN COMPLETED ON ALL EASTBOUND BRIDGES, CONTINUE ON TO PHASE 2 WORK.

PHASE 2

IMPLEMENT THE PHASE 2 MAINTENANCE OF TRAFFIC SHIFTS AS DETAILED ON SHEETS 44-60. INSTALL PCB, TEMPORARY PAVEMENT MARKINGS AND SIGNS, AS NEEDED. REFACE OR REPLACE THE PARAPETS AS SPECIFIED. REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK BEHIND PCB FOR OVERLAY, OR WAIT UNTIL PHASE 2A. REPLACE PCB WITH DRUMS.

PHASE 2A (JOINT WORK AND OVERLAY WORK WILL LIKELY REQUIRE SEPARATE WEEKEND CLOSURES)

CLOSE ONE LANE (SEE PERMITTED LANE CLOSURE NOTE) AS PER THE PHASE 2A DETAILS AS SHOWN ON SHEETS 44-60.

REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK FOR CONCRETE OVERLAY.

CLOSE SECOND LANE (SEE PERMITTED LANE CLOSURE NOTE) AND PLACE BRIDGE OVERLAY. RE-OPEN TO TWO LANES DURING BRIDGE DECK CURE.

CURE CONCRETE DECK OVERLAY, PLACE PAVEMENT MARKINGS ON DECK. RE-OPEN TO ALL THREE LANES OF TRAFFIC AS PER THE PHASE 2 LAYOUT.

AFTER PHASE 2A BRIDGE WORK HAS BEEN COMPLETED AT SR 91, CONTINUE ON TO PHASE 2B WORK.

AFTER ALL PHASE 2A & 2B WORK HAS BEEN COMPLETED, REMOVE ALL LANE SHIFTS AND RETURN TRAFFIC TO ITS NORMAL POSITION.

PHASES 3A-3D

REMOVE EXISTING ASPHALT OVERLAY SEQUENTIALLY AS DETAILED ON SHEET 82. WHEN COMPLETE, PERFORM PAVEMENT REPAIRS AND INSTALL PRESSURE RELIEF JOINTS (THOSE NOT PLACED DURING PHASES 1, 1A, 2 & 2A) BY CLOSING LANES AS PER THE PERMITTED LANE CLOSURE NOTE ON SHEET 32.

PHASES 4A-4D

PLACE INTERMEDIATE COURSE SEQUENTIALLY AS DETAILED ON SHEET 83. DO NOT BEGIN PLACING THE SURFACE COURSE UNTIL THE INTERMEDIATE COURSE IS PLACED FULL WIDTH.

FINAL PHASE

CONSTRUCT THE ASPHALT SURFACE COURSE USING THE MOT PHASES AS PER PHASES 4A-4D. PLACE FINAL PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS AND SHOULDER RUMBLE STRIPS AS PER THE TRAFFIC CONTROL PLANS.

STAGE 2 - MAINTENANCE OF TRAFFIC

STAGE 2 CONSTRUCTION - S.R. 2 WESTBOUND

THIS STAGE RESURFACES THE MAINLINE PAVEMENT, REPLACES BRIDGE PARAPETS AND OVERLAYS THE BRIDGE DECKS. LIGHTING AND NOISE WALLS MAY BE PERFORMED DURING EITHER STAGE.

PRE-PHASE 1

MAINTAIN A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION AS PER THE REQUIREMENTS ON SHEET 32, COMPLETE THE FOLLOWING WORK DURING THIS PHASE:

1. INSTALL NEW SHOULDER UNDERDRAINS.
2. REMOVE THE EXISTING SHOULDER, PLACE NEW SUBBASE AND ASPHALT SHOULDER.
3. CONSTRUCT RAMP GEOMETRIC PAVEMENT REVISIONS WHILE REPLACING THE SHOULDERS. (DO NOT REVISE PAVEMENT MARKINGS TO NEW TAPER RATE AT THIS TIME)

PHASE 1

IMPLEMENT THE PHASE 1 MAINTENANCE OF TRAFFIC SHIFTS AS DETAILED ON SHEETS 61-77. INSTALL PCB, TEMPORARY PAVEMENT MARKINGS AND SIGNS, AS NEEDED. REFACE OR REPLACE THE PARAPETS AS SPECIFIED. REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK BEHIND PCB FOR OVERLAY, OR WAIT UNTIL PHASE 1A. REPLACE PCB WITH DRUMS.

PHASE 1A (JOINT WORK AND OVERLAY WORK WILL LIKELY REQUIRE SEPARATE WEEKEND CLOSURES)

CLOSE ONE LANE (SEE PERMITTED LANE CLOSURE NOTE) AS PER THE PHASE 1A DETAILS AS SHOWN ON SHEETS 61-77.

REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK FOR CONCRETE OVERLAY.

CLOSE SECOND LANE (SEE PERMITTED LANE CLOSURE NOTE) AND PLACE BRIDGE OVERLAY. RE-OPEN TO TWO LANES DURING BRIDGE DECK CURE.

CURE CONCRETE DECK OVERLAY, PLACE PAVEMENT MARKINGS ON DECK. RE-OPEN TO ALL THREE LANES OF TRAFFIC AS PER THE PHASE 1 LAYOUT.

AFTER PHASE 1A BRIDGE WORK HAS BEEN COMPLETED ON ALL EASTBOUND BRIDGES, CONTINUE ON TO PHASE 2 WORK.

PHASE 2

IMPLEMENT THE PHASE 2 MAINTENANCE OF TRAFFIC SHIFTS AS DETAILED ON SHEETS 61-77. INSTALL PCB, TEMPORARY PAVEMENT MARKINGS AND SIGNS, AS NEEDED. REFACE OR REPLACE THE PARAPETS AS SPECIFIED. REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK BEHIND PCB FOR OVERLAY, OR WAIT UNTIL PHASE 2A. REPLACE PCB WITH DRUMS.

PHASE 2A (JOINT WORK AND OVERLAY WORK WILL LIKELY REQUIRE SEPARATE WEEKEND CLOSURES)

CLOSE ONE LANE (SEE PERMITTED LANE CLOSURE NOTE) AS PER THE PHASE 2A DETAILS AS SHOWN ON SHEETS 61-77. IMPLEMENT DETOUR AS DETAILED ON SHEET 65.

REPAIR OR CONSTRUCT PORTION OF BACKWALL, EXPANSION JOINT AND ROADWAY PRESSURE RELIEF JOINT. PREPARE BRIDGE DECK FOR CONCRETE OVERLAY.

CLOSE SECOND LANE (SEE PERMITTED LANE CLOSURE NOTE) AND PLACE BRIDGE OVERLAY. RE-OPEN TO TWO LANES DURING BRIDGE DECK CURE.

CURE CONCRETE DECK OVERLAY, PLACE PAVEMENT MARKINGS ON DECK. RE-OPEN TO THREE LANES OF TRAFFIC AS PER THE PHASE 2 LAYOUT. REMOVE DETOUR PRIOR TO 6 AM MONDAY.

AFTER ALL PHASE 2A WORK HAS BEEN COMPLETED, REMOVE ALL LANE SHIFTS AND RETURN TRAFFIC TO ITS NORMAL POSITION.

PHASES 3A-3D

REMOVE EXISTING ASPHALT OVERLAY SEQUENTIALLY AS DETAILED ON SHEET 82. WHEN COMPLETE, PERFORM PAVEMENT REPAIRS AND INSTALL PRESSURE RELIEF JOINTS (THOSE NOT PLACED DURING PHASES 1, 1A, 2 & 2A) BY CLOSING LANES AS PER THE PERMITTED LANE CLOSURE NOTE ON SHEET 32.

PHASES 4A-4D

PLACE INTERMEDIATE COURSE SEQUENTIALLY AS DETAILED ON SHEET 83. DO NOT BEGIN PLACING THE SURFACE COURSE UNTIL THE INTERMEDIATE COURSE IS PLACED FULL WIDTH.

FINAL PHASE

CONSTRUCT THE ASPHALT SURFACE COURSE USING THE MOT PHASES AS PER PHASES 4A-4D. PLACE FINAL PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS AND SHOULDER RUMBLE STRIPS AS PER THE TRAFFIC CONTROL PLANS.

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INTERIM COMPLETION DATE - STAGE 1 CONSTRUCTION

OCTOBER 1 OF THE FIRST CONSTRUCTION SEASON SHALL CONSTITUTE AN INTERIM COMPLETION DATE OF THE STAGE 1 WORK ITEMS REQUIRED TO OPEN THE ROADWAYS TO TRAFFIC. LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 SHALL BE ASSESSED FOR EACH DAY FOR WHICH THESE TIME LIMITS ARE NOT MET.

INTERIM COMPLETION DATE - STAGE 2 CONSTRUCTION

OCTOBER 1 OF THE SECOND CONSTRUCTION SEASON SHALL CONSTITUTE AN INTERIM COMPLETION DATE OF THE STAGE 2 WORK ITEMS REQUIRED TO OPEN THE ROADWAYS TO TRAFFIC. LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 SHALL BE ASSESSED FOR EACH DAY FOR WHICH THESE TIME LIMITS ARE NOT MET.

MAINTAINING TRAFFIC - GENERAL

COORDINATION WITH ADJACENT PROJECTS

THE CONSTRUCTION AT EITHER TERMINI OF THIS PROJECT MAY REQUIRE THE CONTRACTOR TO COORDINATE CONSTRUCTION WITH AN ADJACENT CONSTRUCTION PROJECT. IF COORDINATION IS NECESSARY, THE CONTRACTORS MUST COORDINATE THEIR WORK SCHEDULES AND SUBMIT TO THE DISTRICT CONSTRUCTION ENGINEER WHO WILL ESTABLISH THE FINAL APPROVED COORDINATED WORK SCHEDULE.

FINAL PAVEMENT MARKINGS / RUMBLE GROOVES / RAISED PAV'T MARKERS

PLACEMENT OF RUMBLE GROOVES AND RAISED PAVEMENT MARKERS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "PERMITTED LANE CLOSURE" NOTE ON SHEET 32.

FINAL PAVEMENT MARKING MAY BE INSTALLED AS A MOVING OPERATION. THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES AS PER MT-99.20M FOLLOWING THE PAVEMENT MARKING EQUIPMENT. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE FIRST TRAIL VEHICLE IN A TRAFFIC LANE SHALL BE EQUIPPED WITH A TRUCK MOUNTED ATTENUATOR MEETING NCHRP 350 REQUIREMENTS. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT.

THE ABOVE WORK ITEMS MAY BE PLACED, WHEREVER PRACTICAL, DURING THE END OF THE PHASE 4 WORK (AFTER THE FINAL SURFACE COURSE HAD BEEN PLACED)

TRENCH CLOSING FOR SHOULDER PAVEMENT CONSTRUCTION

SHOULDER REPLACEMENTS SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 1 1/2" BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK SHIFT. NO TRENCH SHALL BE LEFT OPEN WHEN OPENING THE ADJACENT LANE TO TRAFFIC. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED PAVING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

THE FOLLOWING ITEM WILL BE USED FOR THE MAINTENANCE OF THE EXISTING PAVEMENT, SHOULDERS OR BRIDGES:

614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 50 CU. YARD

FREEWAY CLOSURE

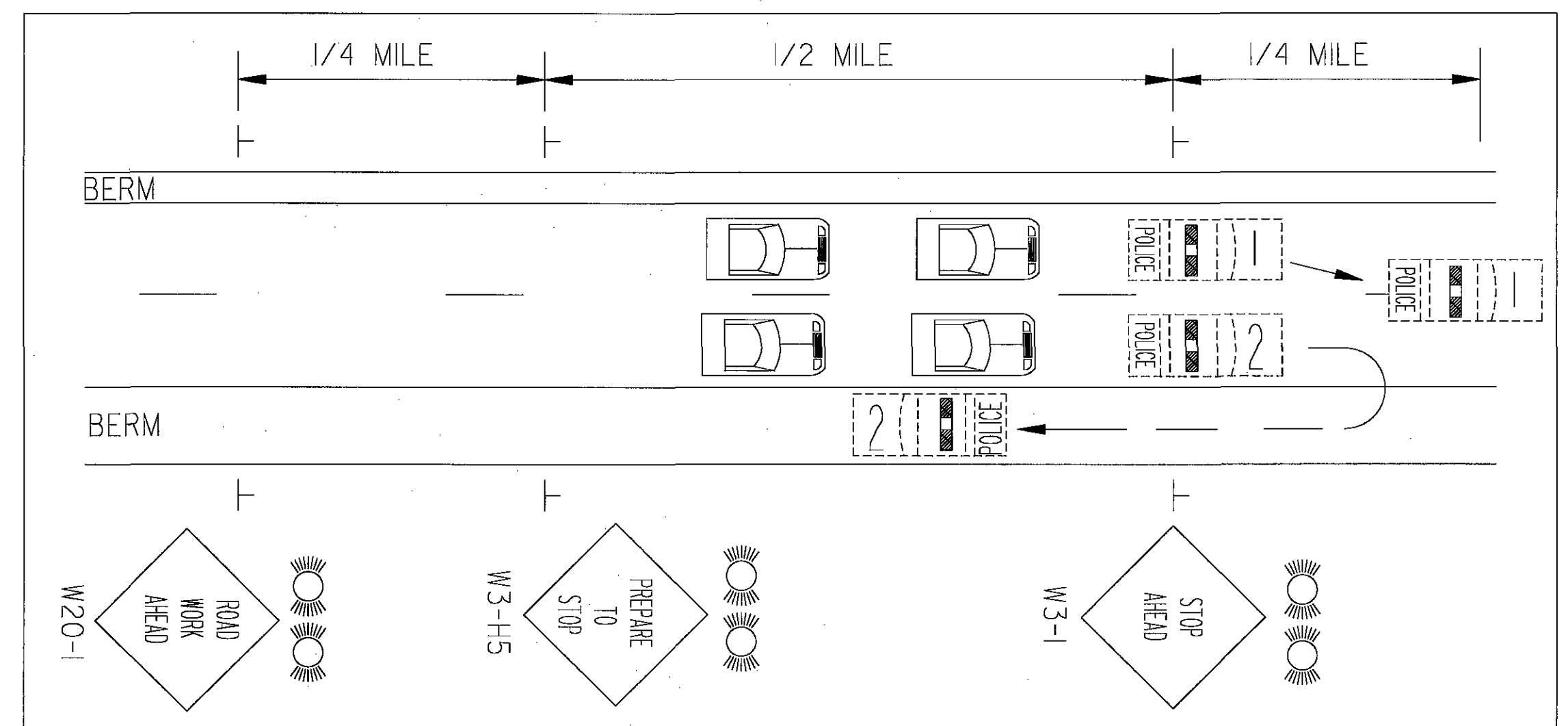
ANY TIME TRAFFIC MUST BE COMPLETELY STOPPED ON A FREEWAY, OR INTERSTATE IT SHALL BE DONE IN THE FOLLOWING MANNER: (THIS INCLUDES THE ERECTION OF OVERHEAD SIGN SUPPORTS OR BRIDGE BEAMS.) THE COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY SHALL BE NO MORE THAN 10 MINUTES IN ANY ONE CONSECUTIVE 30 MINUTE PERIOD.

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

AFTER TRAFFIC HAS BEEN SLOWED, ONE (1) PATROL VEHICLE SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACK UP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGMEN ON THE RAMPS TO STOP TRAFFIC. PATROL VEHICLES SHALL HAVE FLASHING BEACONS.

TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS THE CONTRACTOR SHALL ERECT AND MAINTAIN "ROADWORK AHEAD", "PREPARE TO STOP", AND "STOP AHEAD" SIGNS WITH TWO FLASHING TWELVE INCH (12) TRAFFIC SIGNAL HEADS IN ACCORDANCE WITH 632.05. THESE SIGNS SHALL BE ILLUMINATED DURING NIGHT OPERATIONS AND SHALL BE 48 INCH BY 48 INCH SIGNS. PATROL VEHICLES AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE SKETCH BELOW.

STOPPING TRAFFIC SHALL BE DONE WHEN THE GREATEST NUMBER OF LANES IS PERMITTED TO BE CLOSED BY THE PLANS. A PORTABLE CHANGEABLE MESSAGE SIGN, FROM ODOTS PRE-APPROVED LIST, SHALL BE PLACED 1.5 MILES TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.



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GENERAL REQUIREMENTS

ITEM 614, WORK ZONE PAVEMENT MARKINGS

THE "TEMPORARY" PAVEMENT MARKING DESCRIPTIONS AND LEGENDS SHOWN THROUGHOUT THESE PLANS SHOULD BE CONSIDERED TO READ "WORK ZONE" PAVEMENT MARKINGS AS PER THE 2005 CMS. ALL 4" TEMPORARY OR WORK ZONE PAVEMENT MARKINGS SHALL BE INCREASED TO 6".

ITEM 614, WORK ZONE SIGNING

ALL WORK ZONE SIGNING SHALL UTILIZE A FLUORESCENT ORANGE BACKGROUND COLOR EXCEPT FOR REGULATORY SIGNS.

ITEM 614, BARRIER REFLECTORS AND OBJECT MARKERS

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR MAINTENANCE OF TRAFFIC AND ON ALL EXISTING GUARDRAIL OR BARRIER WHICH IS ADJACENT TO SHIFTED TRAFFIC. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO THE APPROPRIATE STANDARD CONSTRUCTION DRAWING AND ITEM 626 EXCEPT THAT THE SPACING SHALL BE 50 FEET.

CURE WATER

THE CONTRACTOR IS RESPONSIBLE TO CONTROL ANY WATER THAT FLOWS ONTO THE ROADWAY. DURING TIMES WHEN THE WATER MAY FREEZE, IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE SURE THE ROADWAY DOES NOT BECOME ICY. PLACE SIGNS ON ROADWAYS "CLEAN WATER FALLING".

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. 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 USING A 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.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - REPLACEMENT SIGN 10 EACH

ITEM 614 - WORK ZONE PAVEMENT MARKINGS - PHASES 3 & 4

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PLACEMENT OF PAVEMENT MARKINGS AFTER PAVEMENT PLANING (PHASE 3), AFTER PLACING THE INTERMEDIATE COURSE (PHASE 4) AND AFTER PLACING THE SURFACE COURSE (FINAL PHASE).

PLANING AND INTERMEDIATE COURSES

ITEM 614 - WORK ZONE EDGE LINE, CLASS I 2x18.07 MI. = 36.14 MI.
 ITEM 614 - WORK ZONE LANE LINE, CLASS I 2x13.88 MI. = 27.76 MI.
 ITEM 614 - WORK ZONE CHANNELIZING LINE, CLASS I 2x5380 FT. = 10760 FT.
 ITEM 614 - WORK ZONE STOP LINE, CLASS I 2x163 FT. = 326 FT.

FINAL SURFACE COURSE

ITEM 614 - WORK ZONE EDGE LINE, CLASS I (740.06 TYPE I) 1x18.07 MI. = 18.07 MI.
 ITEM 614 - WORK ZONE LANE LINE, CLASS I (740.06 TYPE I) 1x13.88 MI. = 13.88 MI.
 ITEM 614 - WORK ZONE CHANNELIZING LINE, CLASS I (740.06 TYPE I) 1x5380 FT. = 5380 FT.
 ITEM 614 - WORK ZONE STOP LINE, CLASS I (740.06 TYPE I) 1x163 FT. = 163 FT.

WORK ZONE DELINEATION

IN TRANSITION AREAS FOR LANE SHIFTS EQUAL TO OR GREATER THAN 4 FEET, THE CONTRACTOR SHALL PROVIDE DELINEATION AS FOLLOWS:

1. ON ASPHALT SURFACES, DELINEATION SHALL BE BY USE OF 642 TYPE 2 ALKYD PAINT OR 643 POLYESTER. THIS MARKING SHALL CONSIST OF 6 INCH EDGE LINES AND 8 INCH CHANNELIZING LINES.

THE TRANSITION AREA SHALL BE RESURFACED AS PART OF THE ROADWAY WORK. PAYMENT FOR RESURFACING IS NOT PART OF THIS ITEM OF WORK. FOR DETAILS ON THIS DELINEATION SCHEME SEE PLAN SHEET 78.

2. ON CONCRETE PAVEMENT, DELINEATION IN THE TRANSITION AREA DURING THE CONSTRUCTION SEASON SHALL BE BY USE OF 873 WET REFLECTIVE REMOVABLE TAPE.

IN THE TANGENT AREA, DELINEATION SHALL BE PROVIDED BY USE OF 643 POLYESTER FOR LONG LINE MARKING, WITH PIECES OF 873 WET REFLECTIVE REMOVABLE TAPE (6" X 12") TO BE PROVIDED AT 80 FOOT INCREMENTS, ALONG THE LANE LINES. FOR DETAILS SEE PLAN SHEET 79.

ALL MATERIAL FURNISHED FOR 873 WET REFLECTIVE TAPE SHALL BE LISTED ON THE DEPARTMENT'S PREQUALIFIED LISTS. THE INSTALLATION OF ALL MATERIALS SHALL MEET OR EXCEED THE MANUFACTURER'S RECOMMENDATIONS.

AFTER REMOVABLE PAVEMENT MARKINGS HAVE BEEN INSTALLED, THEY SHALL BE CUT AT 10 FOOT OR SHORTER INTERVALS.

THE TRANSITION AREA FOR SHIFT TAPERS IS GENERALLY CONSIDERED TO BEGIN 300 FT IN ADVANCE OF THE BEGINNING OF THE SHIFT TAPER AND TO END 300 FT BEYOND THE TERMINATION OF THE SHIFT TAPER.

PAYMENT FOR ALL WORK ZONE DELINEATION SHALL BE MADE AS TRANSITION AREA DELINEATION. PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE PER FOOT OF TRANSITION AREA AND SHALL INCLUDE THE COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING, IF NECESSARY, THE APPROPRIATE DELINEATION SCHEME SPECIFIED ABOVE.

PAYMENT FOR ITEM 614 TANGENT AREA DELINEATION SHALL BE MADE AT THE CONTRACT BID PRICE PER FOOT OF TANGENT AREA AND SHALL INCLUDE THE COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING, IF NECESSARY, THE APPROPRIATE DELINEATION SCHEME SPECIFIED ABOVE.

PAYMENT SHALL ALSO INCLUDE REPLACEMENT, AS PER 614.II.A (CONSTRUCTION AND MATERIALS SPECIFICATIONS) OR 614.II5.D (PROPOSAL NOTE 10I-2005), OF ANY PART OF THE DELINEATION SYSTEM WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAILS. PAYMENT SHALL ALSO INCLUDE THE REPLACEMENT OF PAVEMENT MARKINGS IN BRIDGE REPAIR AREAS AT NO ADDITIONAL COST. THAT PLACEMENT SHALL BE PERFORMED PRIOR TO REOPENING THE LANE(S) TO TRAFFIC. LANE CLOSURES REQUIRED TO REPAIR OR REPLACE MISSING TAPE OR RAISED PAVEMENT MARKERS WILL BE AT THE ENGINEERS'S APPROVAL AND AT THE CONTRACTOR'S COST.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITITES AT THE CONTRACT PRICE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
614	FOOT	TRANSITION AREA DELINEATION
614	FOOT	TANGENT AREA DELINEATION

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614 - PORTABLE CHANGEABLE MESSAGE SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE WHEN NO LONGER NEEDED. A PORTABLE CHANGEABLE MESSAGE SIGN(S). THE PCMS SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR:
 HTTP://WWW.DOT.STATE.OH.US/TESTLAB/APPLISTS/MISC/PCMS%20_%20NTPPEP-BASED.HTM

WITH THE EXCEPTION THAT NO FLIP DISC (OR VARIATION OF FLIP DISC) UNITS WILL BE ALLOWED, THE PCMS SHALL BE A CLASS I OR CLASS II TYPE UNIT.

THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE MOUNTED ON A TRAILER. THE LOCATION OF THE PCMS SHALL BE AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE LINK WHICH WILL ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER THE SOFTWARE NECESSARY TO CONTROL THE PCMS REMOTELY.

THE PCMS SHALL BE EQUIPPED WITH A MYRIAD SAFETY BEAM OR AN APPROVED EQUAL AS DETERMINED BY THE ENGINEER. THE MYRIAD SAFETY BEAM SENDS OUT A SIGNAL THAT ACTIVATES RADAR DETECTORS. THE BEAM IS APPROVED BY THE F.C.C.. THE MYRIAD SAFETY BEAM SHALL USE THE SAME POWER SUPPLY AS THE PCMS. THE MYRIAD SAFETY BEAM SHALL BE ABLE TO BE ACTIVATED WITH THE PCMS RUNNING OR NOT. THE MYRIAD SAFETY BEAM IS DISTRIBUTED BY THE TRIPLEX GROUP, INC. P.O. BOX 428, NEW HOPE, PA. 18938, PHONE (215) 862-5077

AT THE DIRECTION OF THE ENGINEER THE PCMS MAY BE REMOVED FOR PERIODS OF TIMES WHEN NOT IN USE. NO PAYMENT WILL BE MADE FOR THESE TIMES (EXAMPLE: WINTER MONTHS).

PAYMENT:

THERE SHALL BE 2 CLASS I OR CLASS II PCMS UNITS AT 20 MONTHS EACH.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, 40 SIGN MONTHS

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER SIGN-MONTH FOR ALL SIGNS FURNISHED UNDER ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK, INCLUDING RELOCATION IF NECESSARY.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, 20 SIGN MNTH.

PAVEMENT MARKINGS AFTER PHASE 1 & PHASE 2 SHIFT REMOVALS

FOR AREAS WHERE SHIFTED TRAFFIC WILL RETURN TO NORMAL LANE POSITIONS, AND NOT SHIFT TO A DIFFERENT MOT SCHEME, THE ORIGINAL PAVEMENT MARKINGS SHALL BE RESTORED. THE FOLLOWING ITEMS ARE TO BE USED TO RETURN TRAFFIC TO THE ORIGINAL POSITION AFTER PHASES 1 & 2 ARE COMPLETE.

	LOCATION	FROM STATION	TO STATION	EDGE LINE YELLOW FT.	EDGE LINE WHITE FT.	LANE LINES(2) FT.
PHASE 1 TO	SR 2 EB	125+30	125+70	40	40	80
PHASE 2		164+30	164+70	40	40	80
		243+80	251+20	740	740	1480
		268+30	268+45	15	15	30
	SR 2 WB	125+40	126+40	100	100	200
		147+30	147+70	40	40	80
		226+30	227+20	90	90	180
		268+30	268+70	40	40	80
	DECEL LANE	256+10	262+70	660	660	
END OF PHASE 2	SR 2 EB	111+70	122+30	1060	1060	2120
		147+20	161+30	1410	1410	2820
		229+70	240+80	1110	1110	2220
		254+20	265+30	1110	1110	2220
	SR 2 WB	107+00	122+20	1520	1520	3040
		150+70	161+30	1060	1060	2120
		230+20	241+30	1110	1110	2220
		248+08	265+30	1722	1722	3444
	ACCEL LANE	253+75	265+30	1155	1155	
TOTALS				13022	13022	22414

ITEM 614 - WORK ZONE EDGE LINE, CLASS I (13022+13022) / 5280 = 4.93 MI.
 ITEM 614 - WORK ZONE LANE LINE, CLASS I (22414) / 5280 = 4.25 MI.

CALCULATED
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MAINTENANCE OF TRAFFIC
 GENERAL NOTES

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WORKSITE TRAFFIC SUPERVISOR

THE CONTRACTOR SHALL EMPLOY (OTHER THAN THE SUPERINTENDENT) AND SUBJECT TO THE APPROVAL OF THE ENGINEER, A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS). THE WTS MAY BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

- 1) AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION A.T.S.S.A. ,PHONE NUMBER 1-800-272-8772, CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS)
- 2) THE NATIONAL SAFETY COUNCIL, TRAFFIC CONTROL ZONES SUPERVISORS COURSE PHONE NUMBER 1-800-441-5103
- 3) NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0528
- 4) OHIO CONTRACTOR ASSOCIATION, PHONE NUMBER 800-229-1388, TRAFFIC CONTROL SUPERVISORS TRAINING COURSE.

A CERTIFIED WTS SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THE CONTRACTOR OR SUBCONTRACTOR MUST PRESENT A COPY OF CERTIFICATES FOR ALL WTS TO THE ENGINEER. A WTS MUST BE PRESENT WHEN THE WORK ZONE IS BEING SET UP OR REMOVED.

THE WTS POSITION IS ESTABLISHED FOR THE PURPOSE OF MONITORING THE TRAFFIC CONTROL PLAN (TCP) AND CORRECTING ANY TRAFFIC CONTROL DEFICIENCIES IN THE WORK ZONE. THE WTS MUST ALSO COORDINATE WITH ALL LAW ENFORCING AGENCIES RESPONSIBLE FOR THE ROADWAY UNDER CONSTRUCTION AND RETRIEVE ALL CRASH REPORTS (OH-1) THAT OCCUR WHEN TEMPORARY TRAFFIC CONTROL DEVICES ARE IN PLACE. THE WTS SHALL OVERSEE ALL OPERATIONS THAT AFFECT THE MOVEMENT OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY WHEN A WORK ZONE IS IN PLACE.

DAILY, INCLUDING WEEKENDS AND HOLIDAYS, THE WTS SHALL SPEND A MINIMUM OF ONE HOUR REVIEWING THE WORK ZONE AND/OR CRASH DATA FOR DEFICIENCIES AND MAINTAINING THE WORK ZONE.

WEEKLY, THE WTS MUST RETRIEVE/COLLECT ALL CRASH REPORTS (OH-1) FROM ALL LAW ENFORCING AGENCIES, EVALUATE THE CRASHES, AND RECOMMEND SOLUTIONS TO ADDRESS ANY ISSUES WITH THE TCP THAT ARE POTENTIALLY CREATING CRASHES WITHIN THE WORK ZONE. THE WTS MUST PRESENT THESE SOLUTIONS TO THE ENGINEER FOR APPROVAL WEEKLY. UPON APPROVAL BY THE ENGINEER AND THE DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM), THE CONTRACTOR MUST IMPLEMENT THE RECOMMENDED SOLUTIONS TO THE WORK ZONE WITHIN ONE WEEK - ADDITIONAL COST TO BE PAID UNDER CONSTRUCTION AND MATERIALS SPECIFICATIONS - 109. THE WTS MUST INSPECT THE WORK ZONE AT THE BEGINNING AND THE END OF EACH WORK DAY AND ONE TIME PER WEEK DURING THE HOURS OF DARKNESS. THE FOLLOWING ITEMS SHALL BE INCLUDED, BUT NOT RESTRICTED TO, IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION; PLACEMENT; VISIBILITY; TRAFFIC FLOW CONDITIONS; INCIDENTS; CONGESTION POINTS; DELAYS; ADEQUACY OF ADVANCED INFORMATIONAL SIGNS BEYOND PROJECT LIMITS; INTERACTION OF WORK VEHICLES AND TRAFFIC; ACCIDENTS; PROPER STORAGE OF MATERIALS AND EQUIPMENT; CONFORMANCE WITH TCP; ADEQUACY OF TCP; CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS. THE WTS SHALL HAVE THE NECESSARY AUTHORITY TO IMMEDIATELY PERFORM ANY CORRECTIVE WORK. A RECORD OF EACH DAYS REVIEW SHALL BE GIVEN TO THE ENGINEER THE FOLLOWING WORKDAY IN WRITING AND SHALL INCLUDE ALL DEFICIENCIES AND RESOLUTIONS TO THE DEFICIENCIES. THE INSPECTION WILL BE DOCUMENTED ON THE LONG/SHORT TERM WORK ZONE REVIEW FORM PROVIDED BY ODOT. WEEKLY, THE INSPECTION FORM MUST BE ACCOMPANIED BY ALL OF THE OH-1 CRASH REPORTS AND THE PROPOSED SOLUTIONS TO ANY IDENTIFIED CRASH PROBLEMS.

IF THE RESTRICTIONS ARE SHORT TERM, THE WTS SHALL MONITOR THE ZONE FOR COMPLIANCE, DURING LANE CLOSURES; HE SHALL MAKE SURE ALL TRAFFIC CONTROL ITEMS ARE FUNCTIONING PROPERLY. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY DURING IMPLEMENTATION OF ZONES OR SHORT TERM ZONES. THE WTS SHALL PROVIDE THE DWZTM A SKETCH OF THE TRAFFIC CONTROL PLAN (TCP) EVERYDAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THIS TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

THE WTS SHALL BE ON STANDBY 24-HOUR BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. A 24-HOUR CONTACT NUMBER(S) SHALL BE MADE AVAILABLE TO THE ENGINEER TO CONTACT THE WTS.

FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY OF THE ABOVE, SHALL CONSTITUTE CAUSE FOR THE PROJECT ENGINEER TO DEDUCT \$500.00 PER DAY FROM MONEY DUE TO THE CONTRACTOR NOT AS A PENALTY, BUT AS A LIQUIDATION DAMAGE.

PAYMENT FOR THE WTS SHALL BE PAID FOR UNDER THE MONTHLY UNITS FOR ITEM 614 - WORKSITE TRAFFIC SUPERVISOR.

ITEM 614 - WORKSITE TRAFFIC SUPERVISOR 20 MONTHS

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC AS DIRECTED AND APPROVED BY THE ENGINEER FOR THE FOLLOWING TASKS:

- A) 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.
- B) DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- C) DURING A TRAFFIC SIGNAL INSTALLATION.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR .. 1200 HOURS

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

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE.

BUTT JOINTS

MILLED AREAS FOR BUTT JOINTS AT THE RESURFACING LIMITS AND AT THE BRIDGES SHALL NOT BE LEFT OPEN TO TRAFFIC. BEFORE OPENING TO TRAFFIC A TEMPORARY ASPHALT CONCRET WEDGE OF SUFFICIENT LENGTH SHALL BE CONSTRUCTED AT THE DROPOFF AT A RATE OF 1" PER 4' OR FLATTER. ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC IS TO BE USED FOR THE WEDGE CONSTRUCTION. IT SHALL BE PLACED WHILE TRAFFIC IS PROHIBITED. BEFORE THE NEW PAVEMENT IS PLACED, THE WEDGE SHALL BE REMOVED AND THE COSTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

THE FOLLOWING ITEM SHALL BE USED FOR THIS PURPOSE:

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 120 CU. YD.

"BUMP" (W8-1) AND "ADVISORY SPEED" (W13-1) SIGNS AND SUPPORTS SHALL BE ERECTED AND MAINTAINED AT THE BUTT JOINT UNTIL THE SURFACE COURSE IS COMPLETED. THE COSTS FOR PROVIDING, ERECTING, MAINTAINING AND SUBSEQUENTLY REMOVING THESE SIGNS AND SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

CALCULATED
DCF
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MAINTENANCE OF TRAFFIC
GENERAL NOTES

LAK-2-0.00

37
524

21778MNC001.DGN

WORK ZONES INCREASED PENALTIES SIGN

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 SHUT-DOWNS.

(THE SIGNS SHALL BE DUAL MOUNTED. 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.)

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

WORK ZONES 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 ZONES INCREASED PENALTIES SIGN 12 EACH

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. REPLACEMENT DRUMS SHALL BE NEW.

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

THE FOLLOWING ESTIMATED QUANTITIY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - REPLACEMENT DRUM 200 EACH

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (50 MPH SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

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

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. 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 DAYS, SUCH AS DURING WINTER SHUTDOWNS.

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

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 CONSECUTIVE CALENDAR DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS. THE FIRST WORK ZONE SPEED LIMIT SIGN SHALL BE PLACED 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER OR AT A POINT WHEREVER CONSTRUCTION BEGINS, WHICHEVER COMES FIRST. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 250 FEET IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE FOR 50 MPH ZONES AND EVERY ONE-HALF MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE.

REDUCED SPEED AHEAD SIGNS SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1300 FEET ON MULTI-LANE HIGHWAYS.

A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. R2-1 (SPEED LIMIT) SIGNS SHALL BE USED ON UNDIVIDED ROADWAYS. R2-1 (SPEED LIMIT) AND R2-H2a (SPEED LIMIT) SIGNS SHALL BE USED ON DIVIDED ROADWAYS. WHEN USED THE R2-1 AND R2-H2a SIGNS SHALL BE MOUNTED SIDE-BY-SIDE ON SEPARATE SUPPORTS. THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO ITEM 630, GROUND MOUNTED SUPPORTS, NO. 3 POSTS.

WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

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

ITEM 614, WORK ZONE SPEED LIMIT SIGN 32 EACH

21778MNOO1.DGN

CALCULATED
DCF
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MAINTENANCE OF TRAFFIC
GENERAL NOTES

LAK-2-0.00

38
524

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 MAINTAINING TRAFFIC.

ITEM 614 - WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BIDIRECTIONAL)

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

- 1) THE QUADGUARD CZ, (24" WIDE 6-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE 6-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 Rev. J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 Rev. D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG	7/30/99 Rev. F	8/27/99
354051Z	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24,30,36	5/17/99	8/27/99
35-40-18	TRANSITION ASSEMBLY, 4 OFFSET, QG	6/25/99 Rev. F	8/27/99
3540260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 Rev. C	8/27/99

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

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

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS450	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 Rev. 1	8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS	6/30/99 Rev. 1	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS	6/30/99	8/27/99

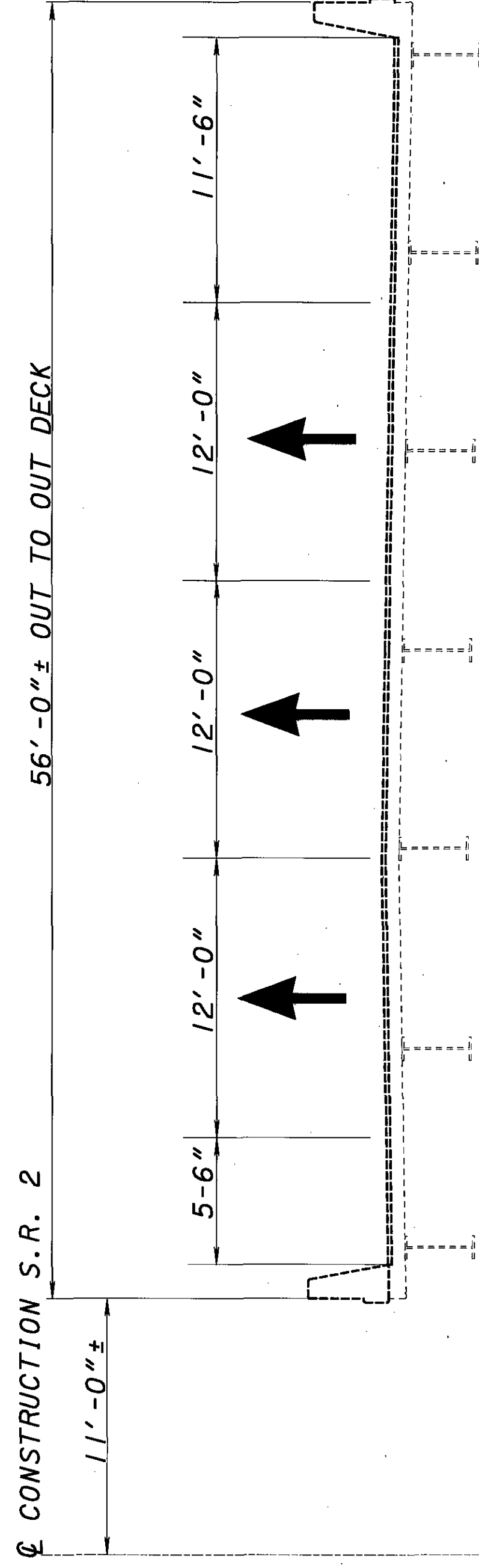
- 3) THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515, (TELEPHONE 330-799-9291)

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

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
A040416	UNIVERSAL TAU-II PARTS LIST	4/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP	4/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)	1/7/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)	4/21/04	10/16/04

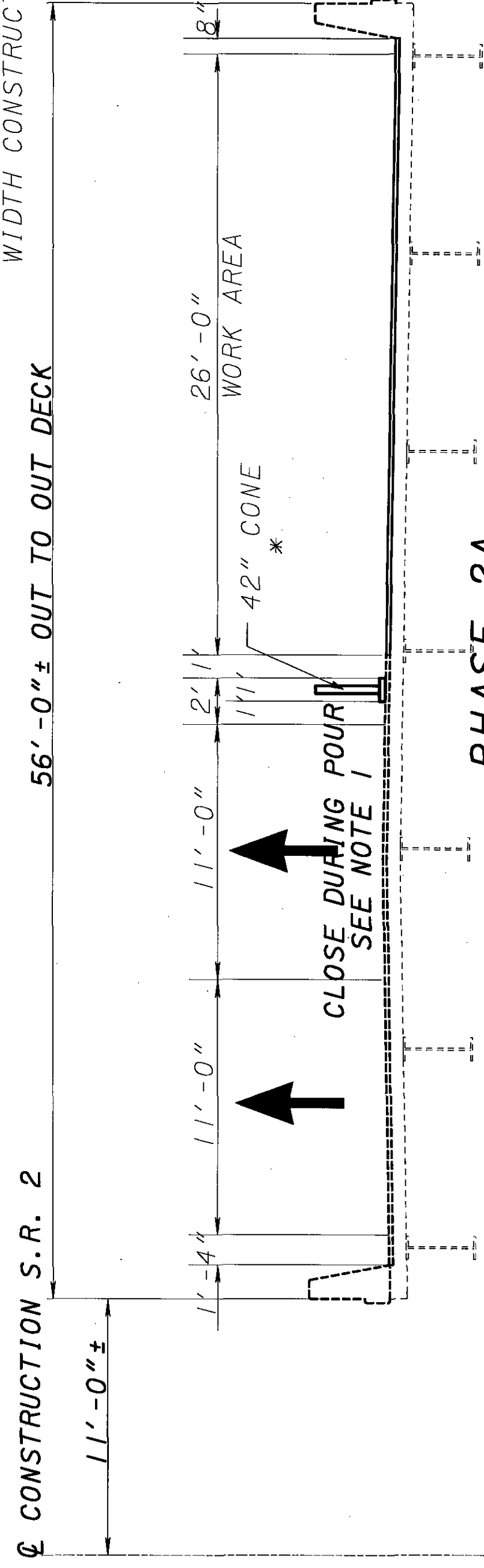
- 4) THE GREAT CZ IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. THIS ATTENUATOR MAY BE USED UNTIL JANUARY 1, 2007 IF THE ITEM WAS PURCHASED BEFORE OCTOBER 1, 1998 AND IS IN THE CONTRACTOR'S INVENTORY.

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY 1 TO 6 UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, 5 INSTALLED UNITS REQUIRE 1 SPARE PARTS PACKAGE AND 7 INSTALLED UNITS REQUIRE 2 SPARE PARTS PACKAGES. WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 614, WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BI-DIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN, REPAIR, REPLACE OR RELOCATE A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.



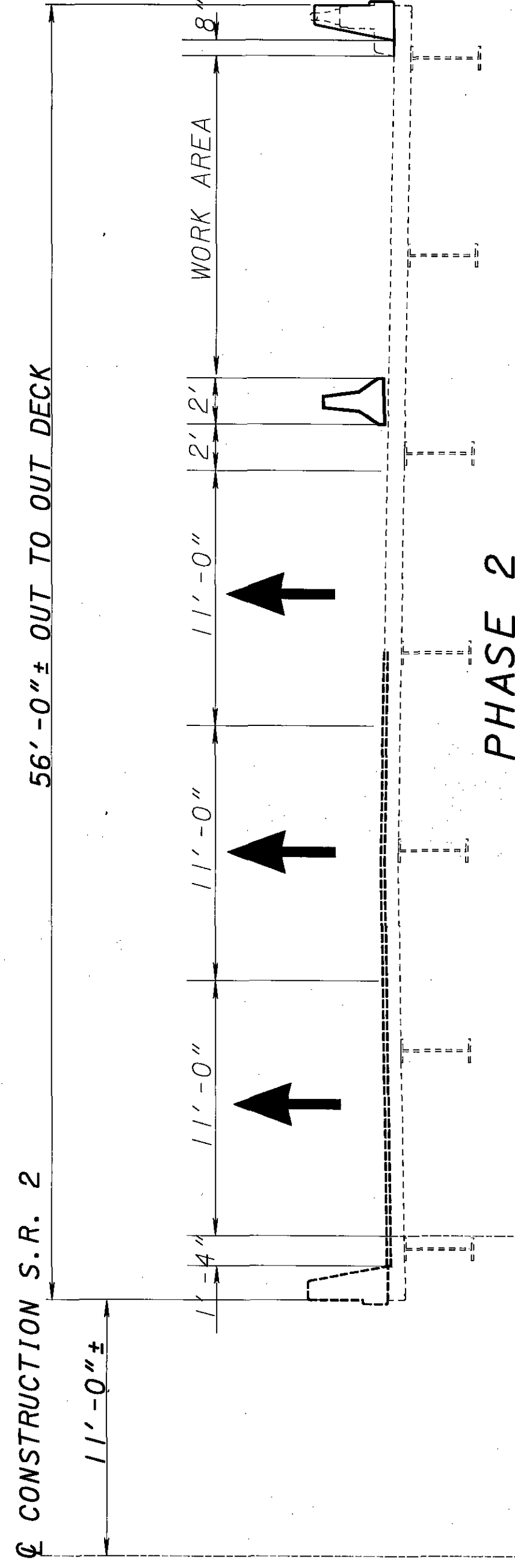
FINAL BRIDGE

* 42" CONE USE SHALL BE LIMITED TO 12 HOURS AT A TIME. AT ALL OTHER TIMES, DRUMS SHALL BE USED. THE CHANGE TO 42" CONES SHALL BE TYPICALLY DONE WHEN WORK IS BEING PERFORMED WITHIN 2 FEET OF THE PART WIDTH CONSTRUCTION JOINT.



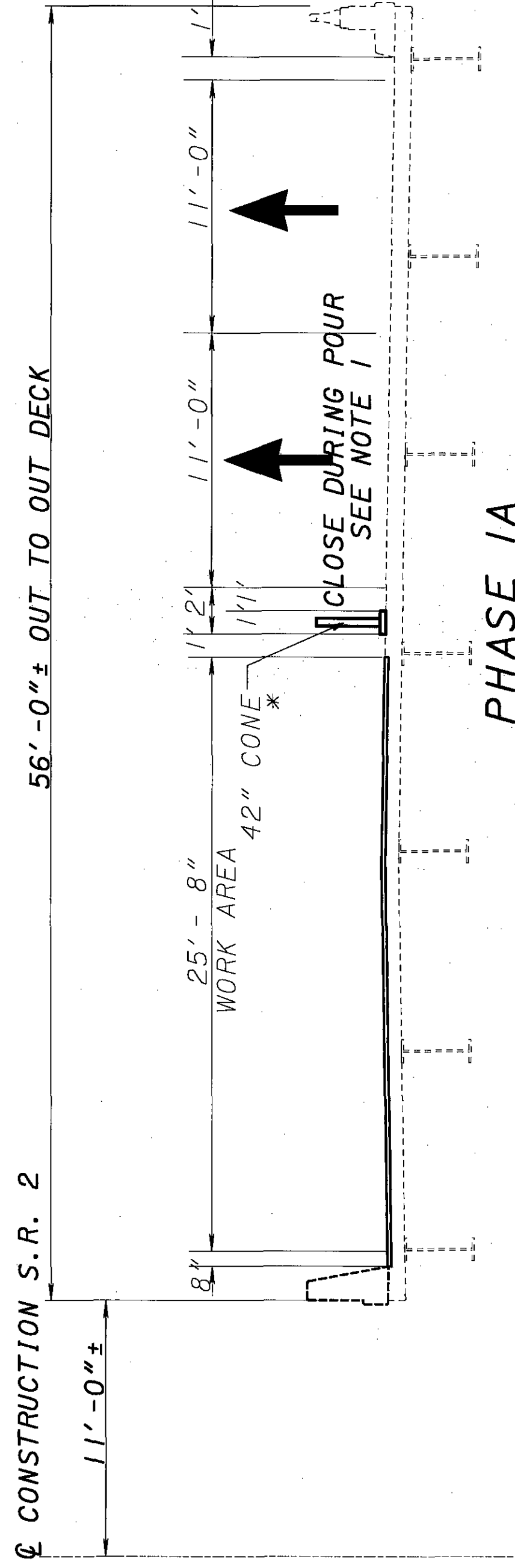
PHASE 2A

AFTER WEEKEND, RE-OPEN TO 3 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION (RIGHT BRIDGE SHOWN, LEFT SIMILAR)
 OVERLAY RIGHT HALF OF BRIDGE WEEKEND WORK



PHASE 2

MAINTENANCE OF TRAFFIC AND CONSTRUCTION (RIGHT BRIDGE SHOWN, LEFT SIMILAR)
 REPLACE OUTSIDE PARAPET

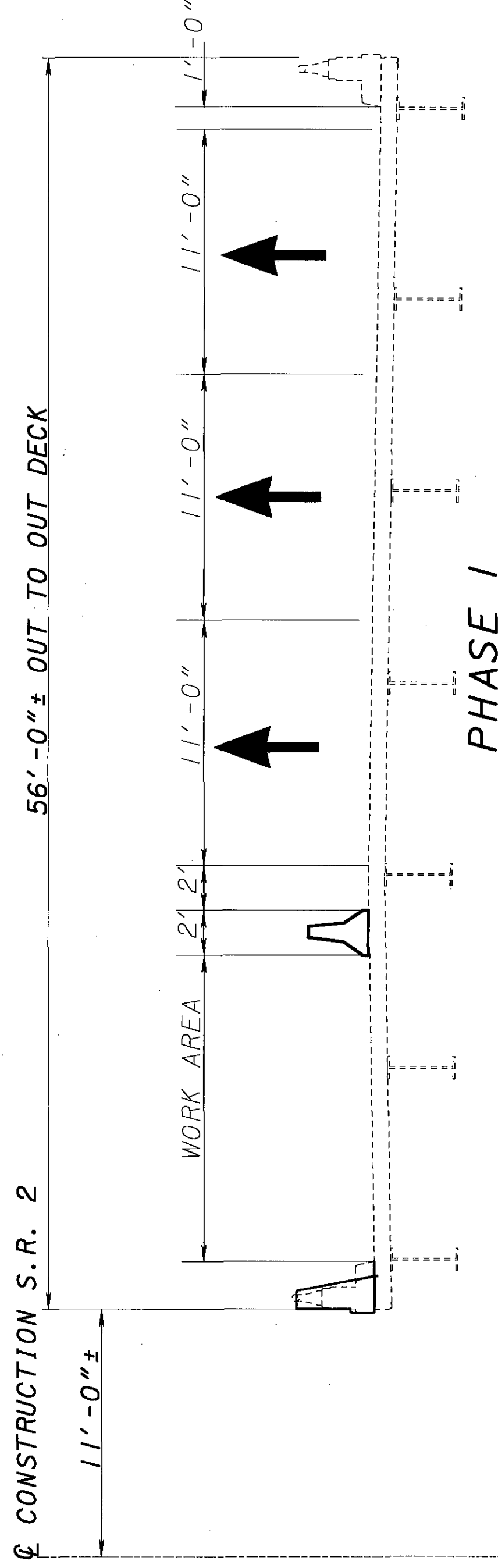


PHASE 1A

NOTE 1:
 THE DECK OVERLAY PLACEMENT SHALL BE SCHEDULED WHEN TWO LANES CAN BE CLOSED TO TRAFFIC.

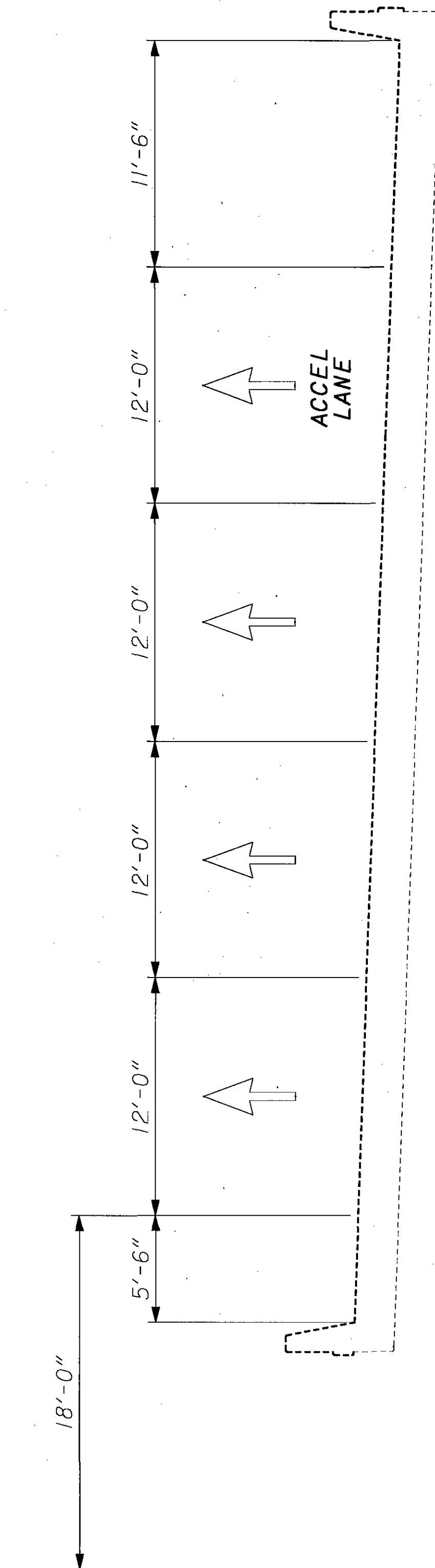
MAINTENANCE OF TRAFFIC AND CONSTRUCTION (RIGHT BRIDGE SHOWN, LEFT SIMILAR)
 OVERLAY LEFT HALF OF BRIDGE WEEKEND WORK

AFTER WEEKEND, RE-OPEN TO 3 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB



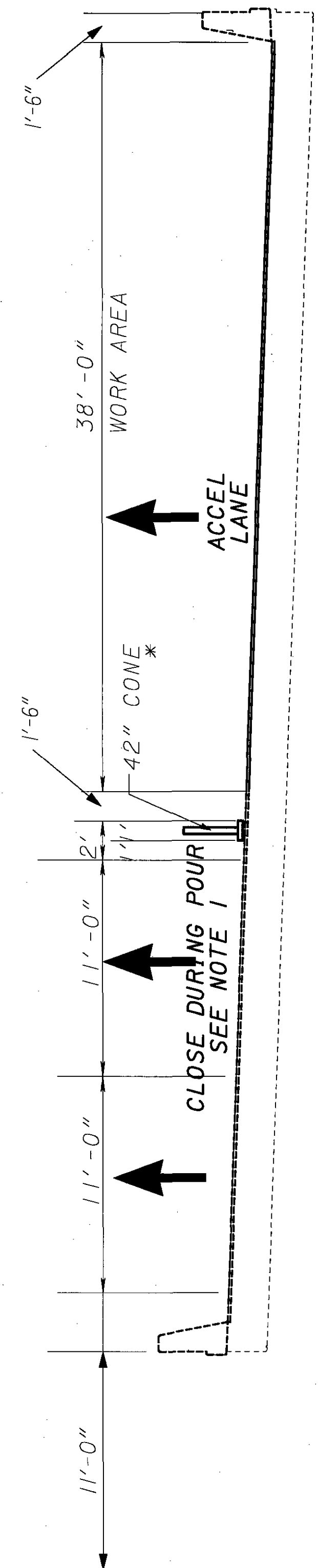
PHASE 1

MAINTENANCE OF TRAFFIC AND CONSTRUCTION (RIGHT BRIDGE SHOWN, LEFT SIMILAR)
 REPLACE MEDIAN PARAPET



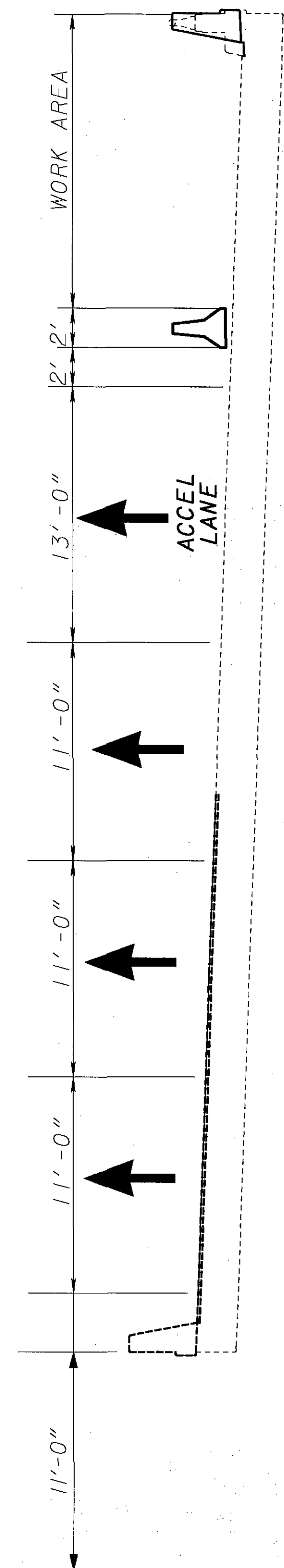
FINAL BRIDGE

* - 42" CONE USE SHALL BE LIMITED TO 12 HOURS AT A TIME. AT ALL OTHER TIMES, DRUMS SHALL BE USED. THE CHANGE TO 42" CONES SHALL BE TYPICALLY DONE WHEN WORK IS BEING PERFORMED WITHIN 2 FEET OF THE PART WIDTH CONSTRUCTION JOINT.

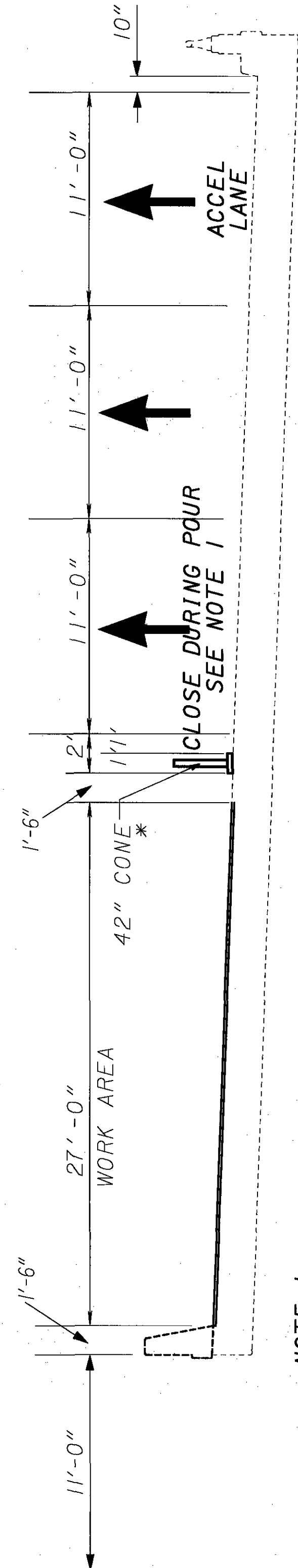


PHASE 2A

AFTER WEEKEND, RE-OPEN TO 4 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB

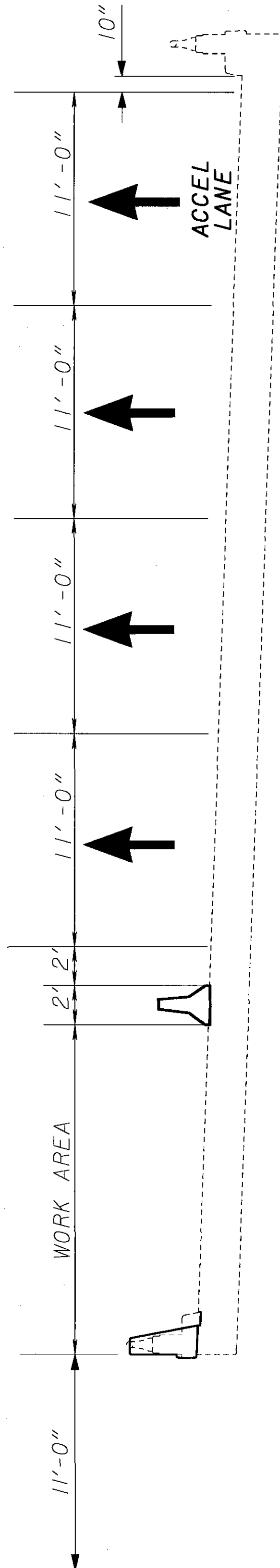


PHASE 2



NOTE 1: THE DECK OVERLAY PLACEMENT SHALL BE SCHEDULED WHEN TWO LANES CAN BE CLOSED TO TRAFFIC. AFTER WEEKEND, RE-OPEN TO 4 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB

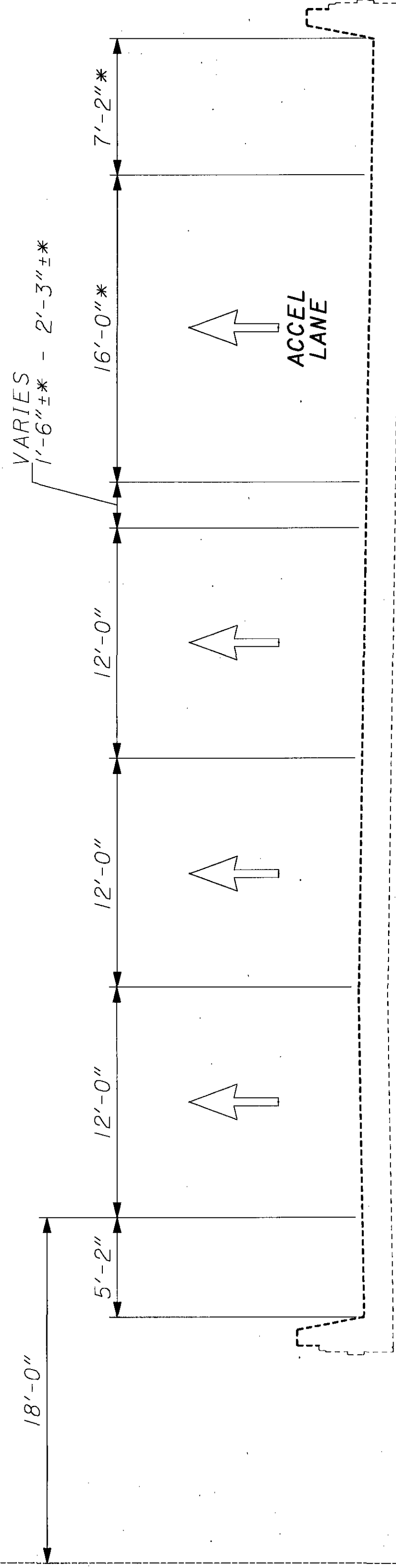
PHASE 1A



PHASE 1

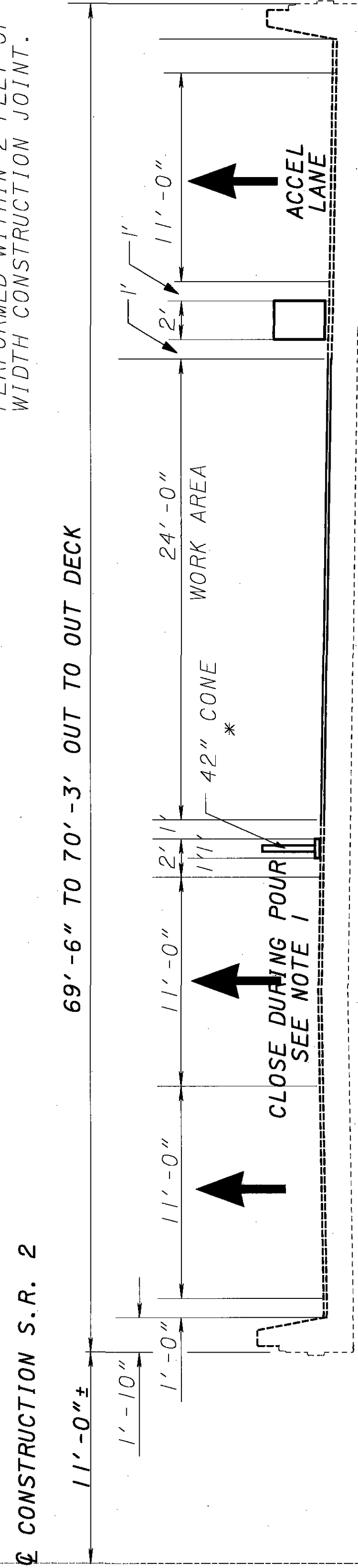
NOTE: ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO THE Q OF SR 2

Q SR 2

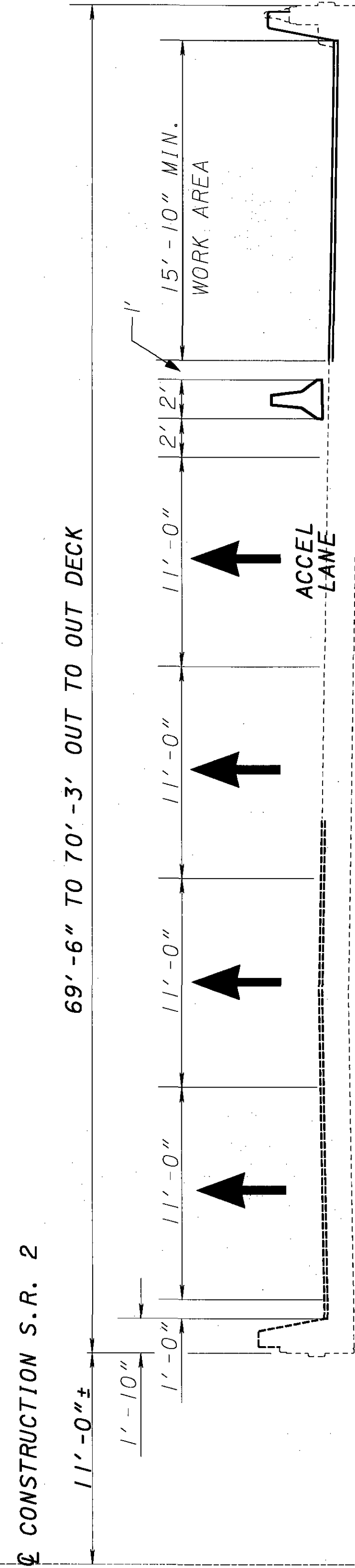


FINAL BRIDGE

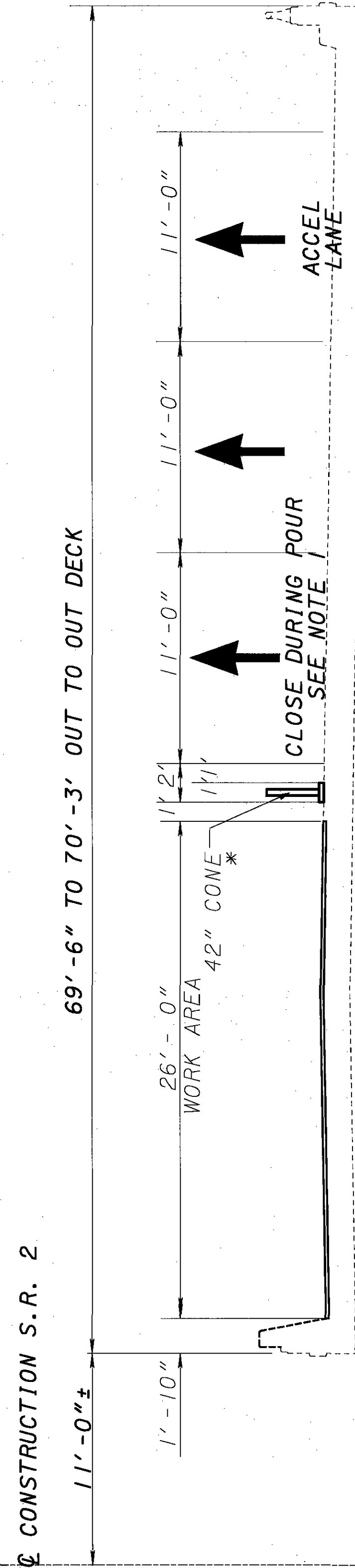
* - 42" CONE USE SHALL BE LIMITED TO 12 HOURS AT A TIME. AT ALL OTHER TIMES, DRUMS SHALL BE USED. THE CHANGE TO 42" CONES SHALL BE TYPICALLY DONE WHEN WORK IS BEING PERFORMED WITHIN 2 FEET OF THE PART WIDTH CONSTRUCTION JOINT.



AFTER WEEKEND, RE-OPEN TO 4 LANES USING DRUMS INSTEAD OF PCB **PHASE 2A**



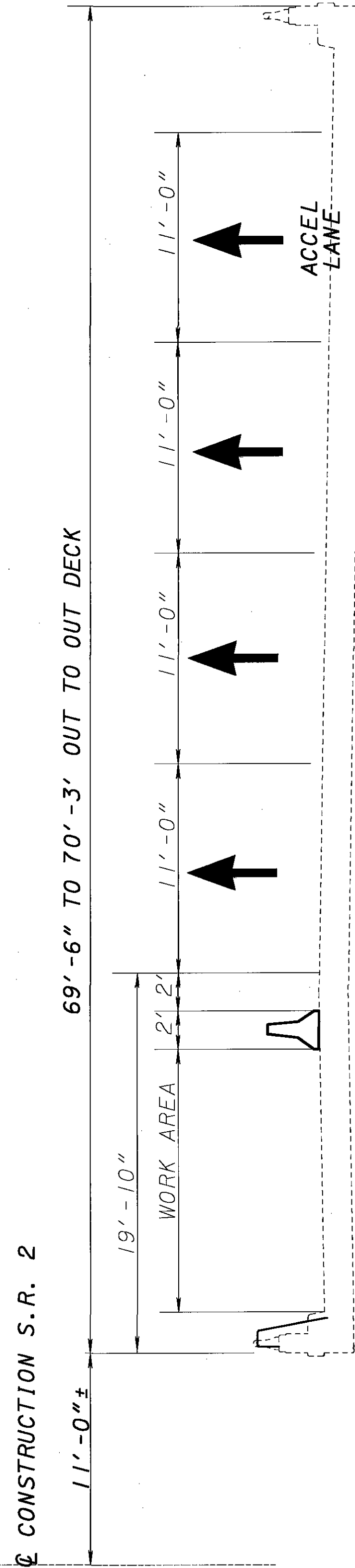
PHASE 2



NOTE 1: THE DECK OVERLAY PLACEMENT SHALL BE SCHEDULED WHEN TWO LANES CAN BE CLOSED TO TRAFFIC.

PHASE 1A

AFTER WEEKEND, RE-OPEN TO 4 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB

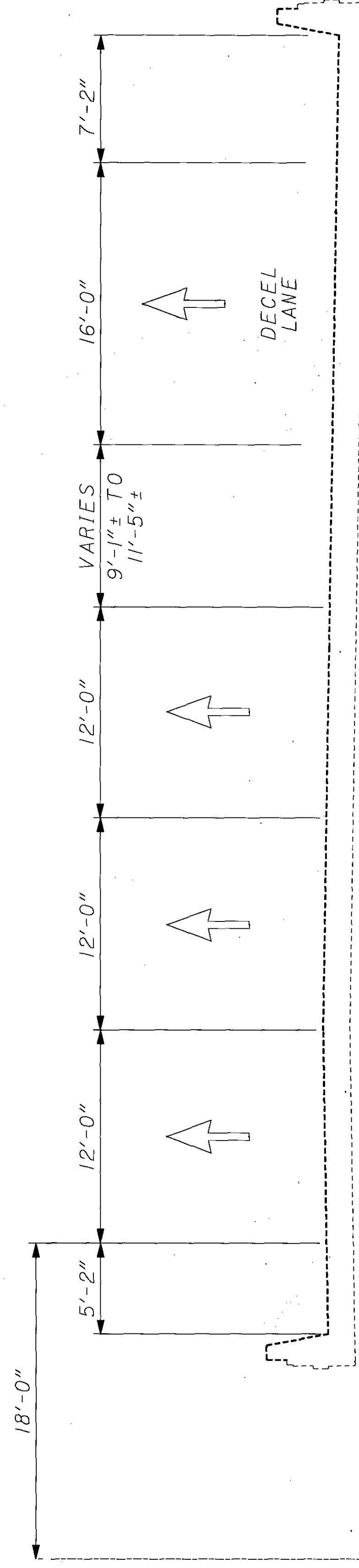


PHASE 1

EXISTING BRIDGE SHOWN IN THE DIRECTION OF TRAVEL

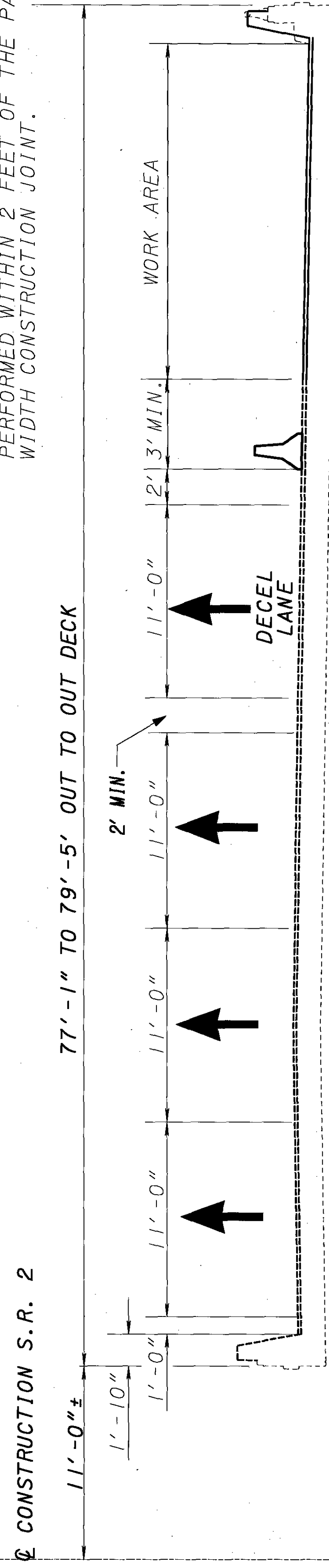
DISTANCES MEASURED PERPENDICULAR TO LANE LINES

NOTE: ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO THE ϕ OF SR 2

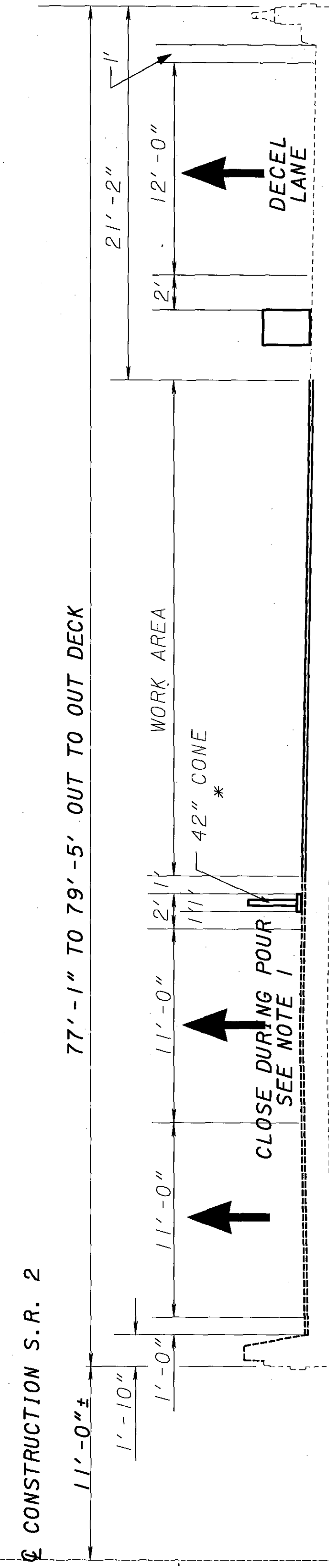


* - 42" CONE USE SHALL BE LIMITED TO 12 HOURS AT A TIME. AT ALL OTHER TIMES, DRUMS SHALL BE USED. THE CHANGE TO 42" CONES SHALL BE TYPICALLY DONE WHEN WORK IS BEING PERFORMED WITHIN 2 FEET OF THE PART WIDTH CONSTRUCTION JOINT.

FINAL BRIDGE

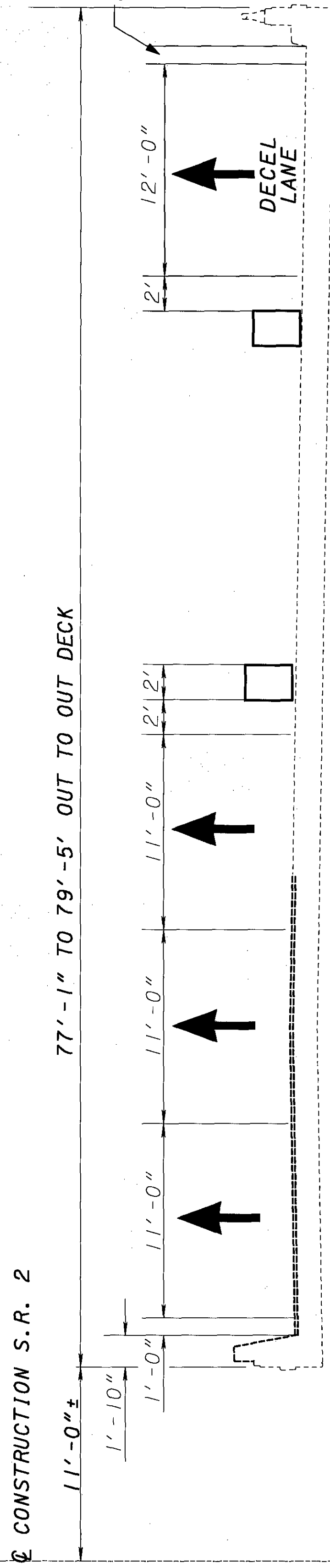


PHASE 2B

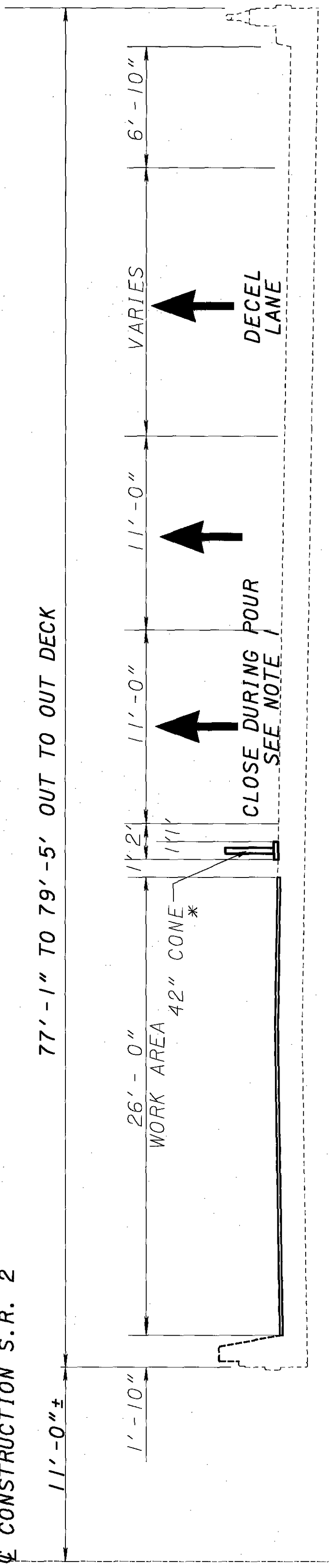


AFTER WEEKEND, RE-OPEN TO 4 LANES USING DRUMS IN POSITIONS SHOWN BELOW

PHASE 2A



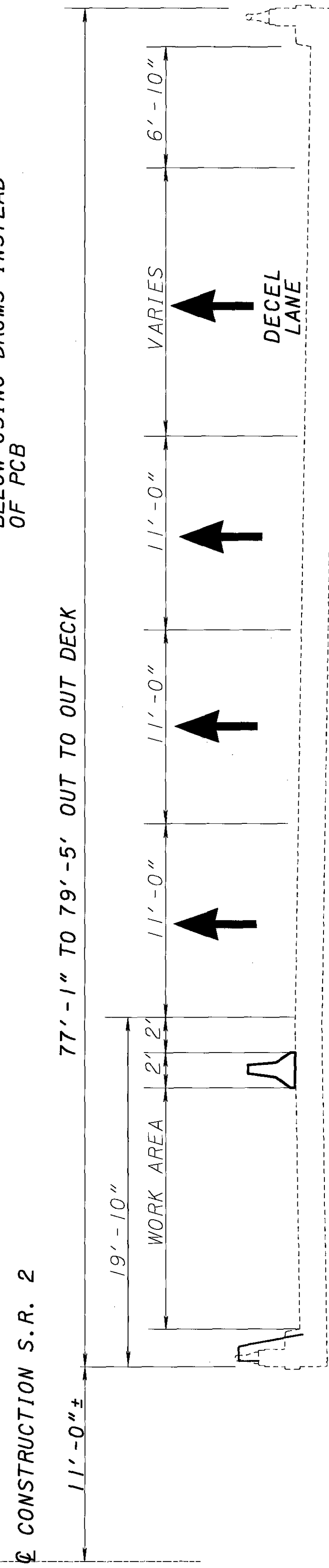
PHASE 2



NOTE 1: THE DECK OVERLAY PLACEMENT SHALL BE SCHEDULED WHEN TWO LANES CAN BE CLOSED TO TRAFFIC.

PHASE 1A

AFTER WEEKEND, RE-OPEN TO 4 LANES IN POSITION SHOWN BELOW USING DRUMS INSTEAD OF PCB





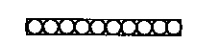

PHASE 1

EXISTING BRIDGE SHOWN IN THE DIRECTION OF TRAVEL

DISTANCES MEASURED PERPENDICULAR TO LANE LINES

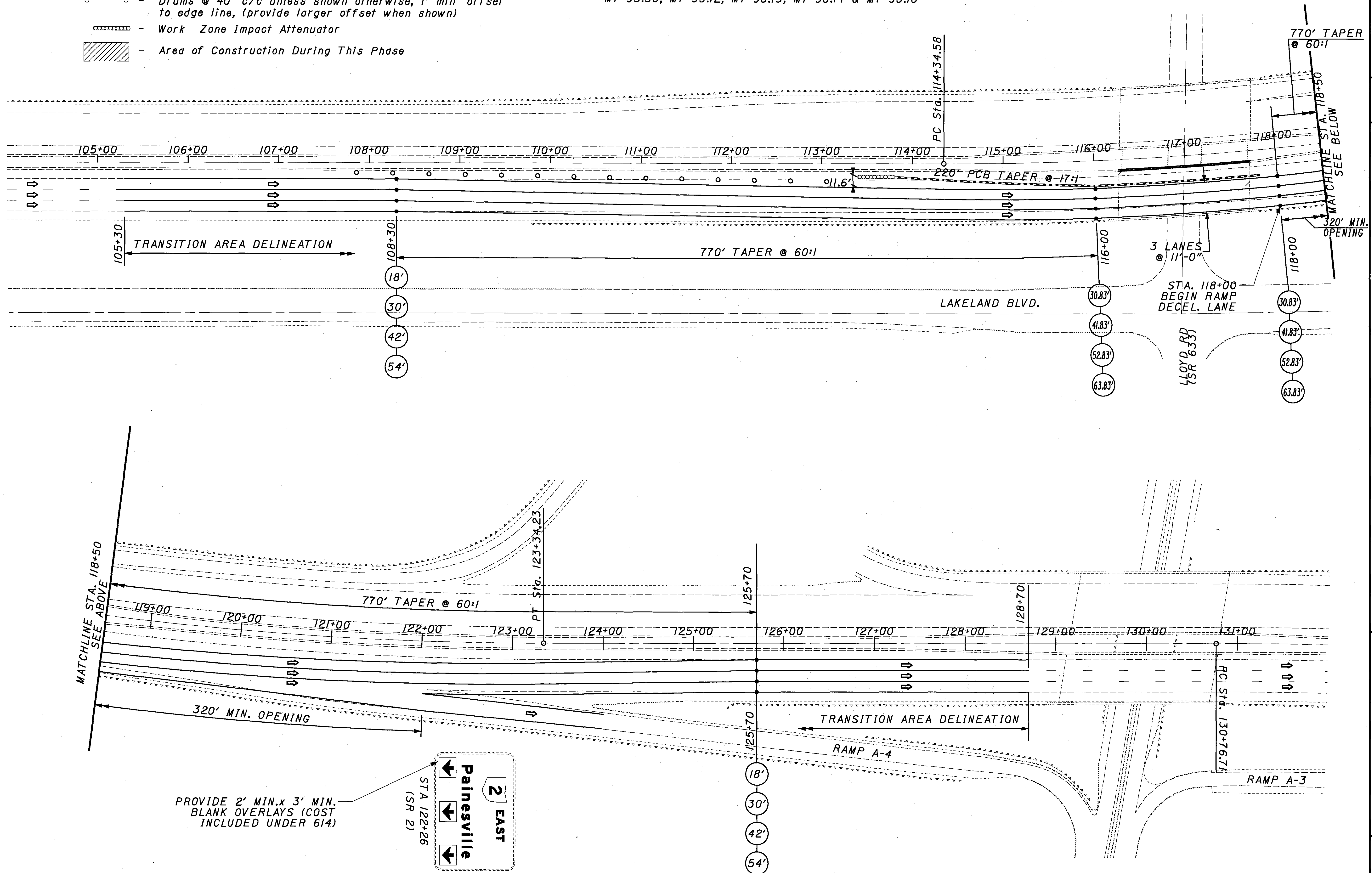
NOTE: ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO THE ϕ OF SR 2

LEGEND

-  - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
-  - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
-  - Work Zone Impact Attenuator
-  - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



MATCHLINE STA. 118+50
SEE ABOVE

TRANSITION AREA DELINEATION

770' TAPER @ 60:1

LAKELAND BLVD.

3 LANES @ 11'-0"
STA. 118+00 BEGIN RAMP DECEL. LANE

LOYD RD
4SR 6.33'

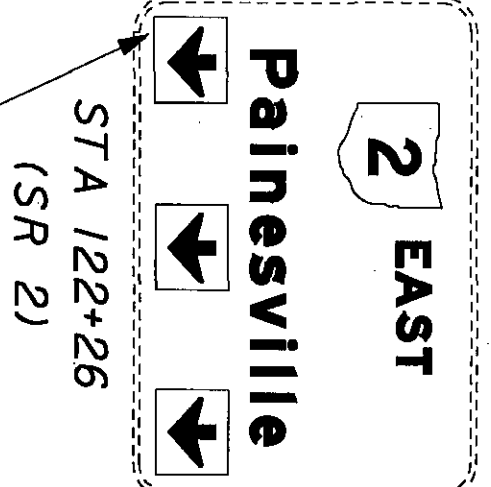
320' MIN. OPENING

TRANSITION AREA DELINEATION

RAMP A-4

RAMP A-3

PROVIDE 2' MIN. x 3' MIN. BLANK OVERLAYS (COST INCLUDED UNDER 614)



STA 122+26 (SR 2)



0 25 50
HORIZONTAL SCALE IN FEET

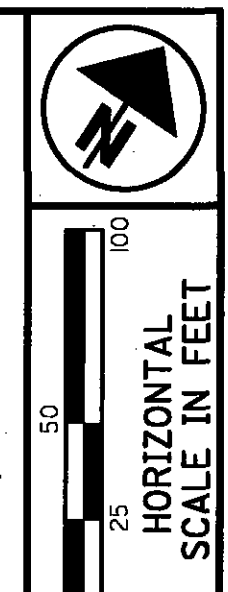
CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 R STAGE 1 PHASE 1 EB

LAK-2-0-00

44
524

21778mp001.dgn



CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 R STAGE 1 PHASE 1A EB

LAK-2-0.00

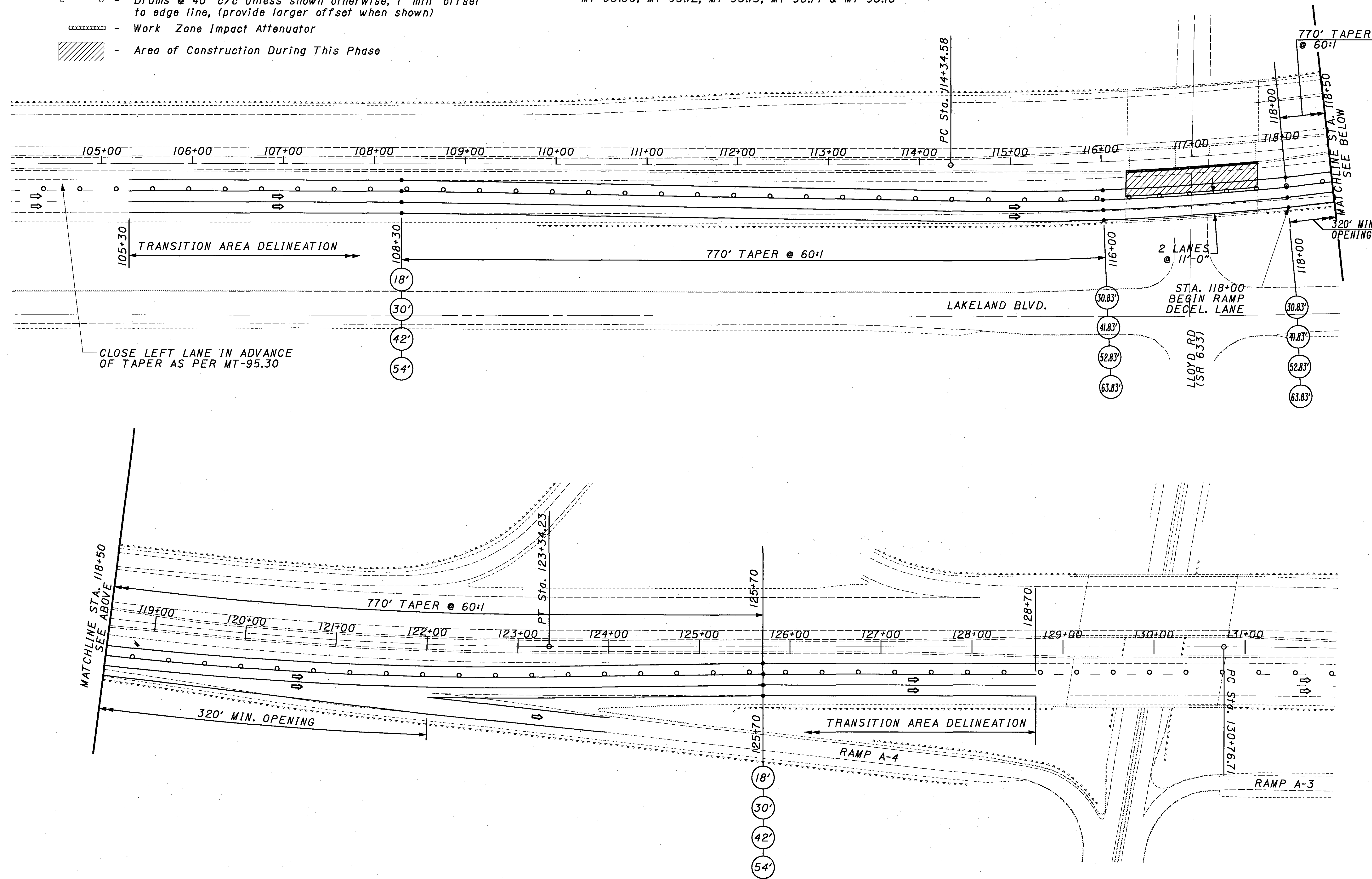
45
524

LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



CLOSE LEFT LANE IN ADVANCE OF TAPER AS PER MT-95.30

MATCHLINE STA. 118+50
SEE ABOVE

770' TAPER @ 60:1

MATCHLINE STA. 118+50
SEE BELOW

770' TAPER @ 60:1

LAKELAND BLVD.

2 LANES @ 11'-0"
STA. 118+00
BEGIN RAMP
DECEL. LANE

LLOYD RD
(SR 633)

770' TAPER @ 60:1

320' MIN. OPENING

TRANSITION AREA DELINEATION

RAMP A-4

RAMP A-3

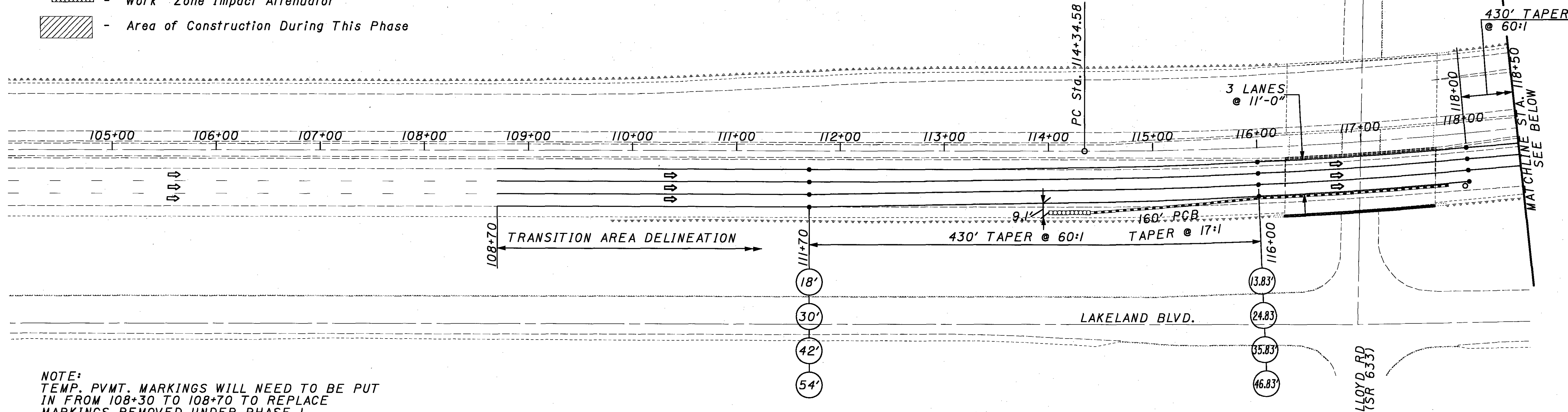
.. \21778mp001.dgn

LEGEND

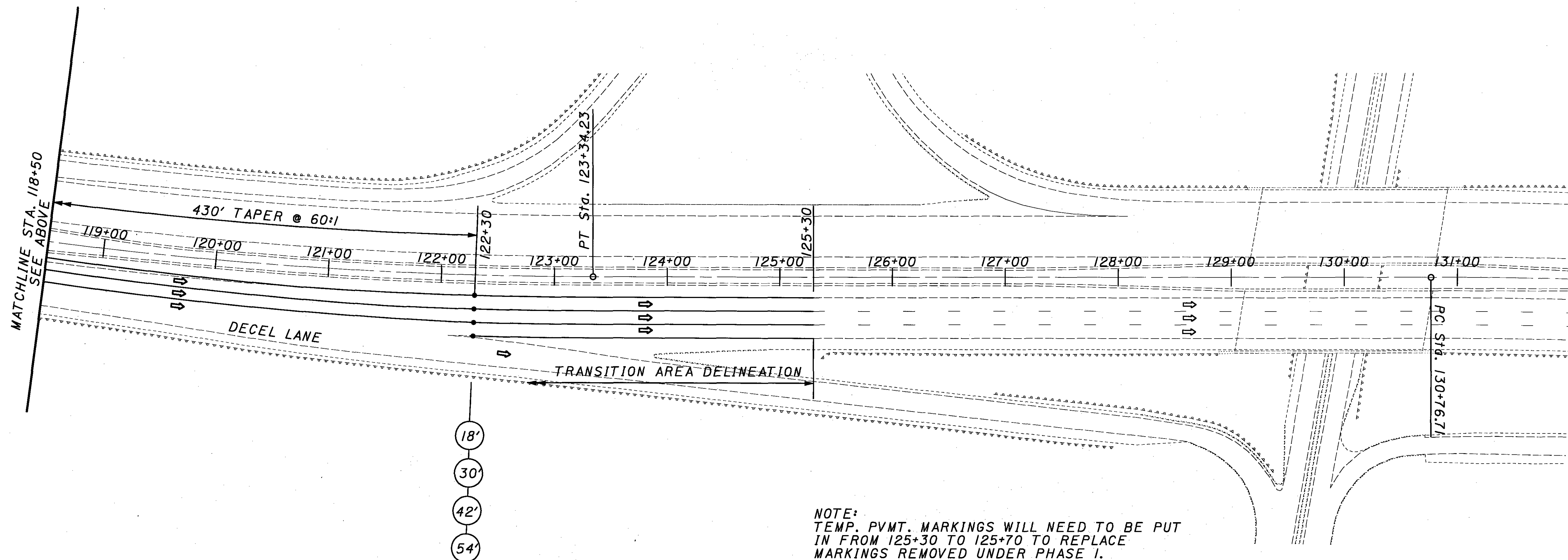
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- o - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

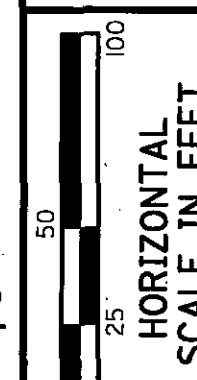
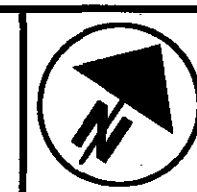
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 108+30 TO 108+70 TO REPLACE MARKINGS REMOVED UNDER PHASE 1.



NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 125+30 TO 125+70 TO REPLACE MARKINGS REMOVED UNDER PHASE 1.







CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 R STAGE 1 PHASE 2 EB

LAK-2-0-00

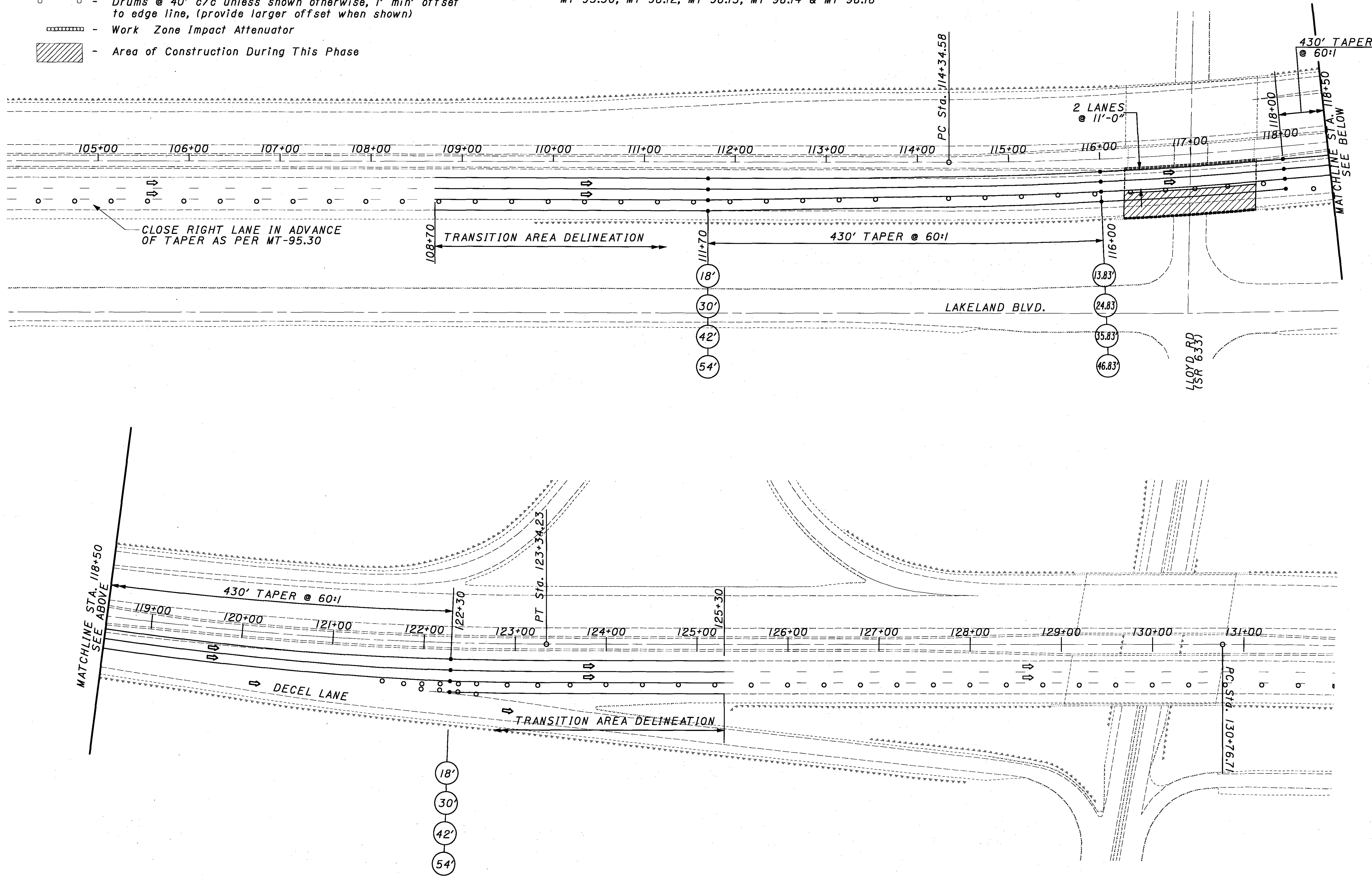
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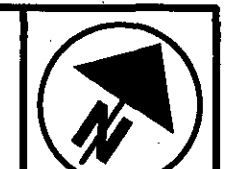
LEGEND

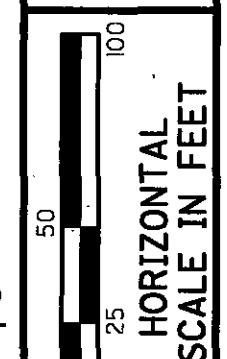
-  - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
-  - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
-  - Work Zone Impact Attenuator
-  - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



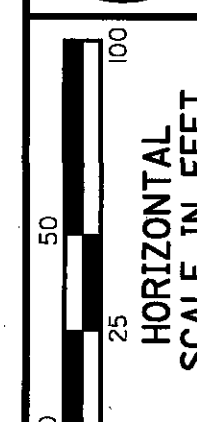
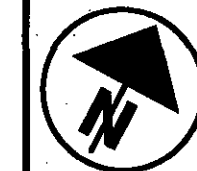




 HORIZONTAL SCALE IN FEET

CALCULATED _____
 CHECKED _____
MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 R STAGE 1 PHASE 2A EB

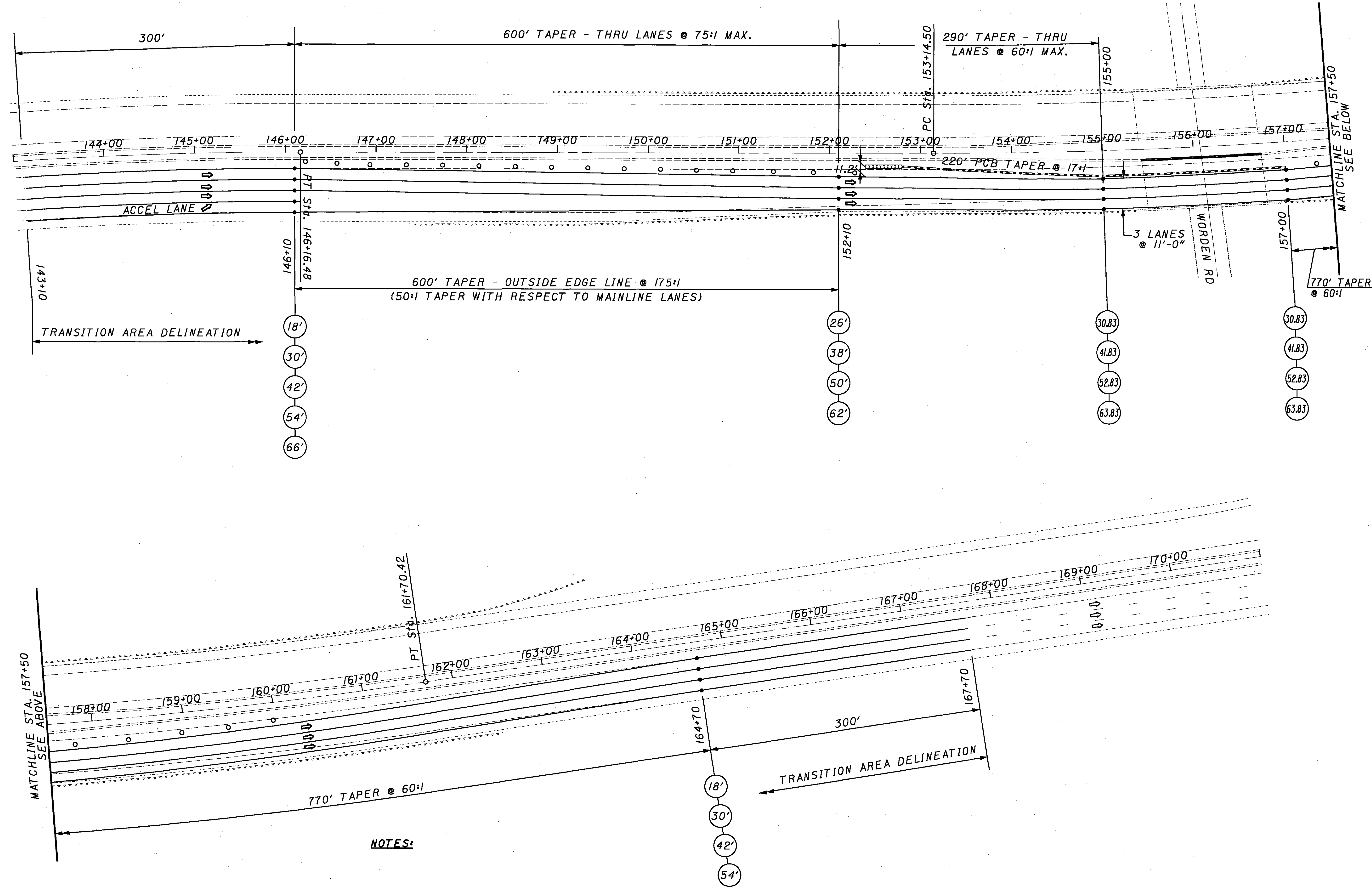
LAK-2-0.00
 47
 524



CALCULATED
CHECKED

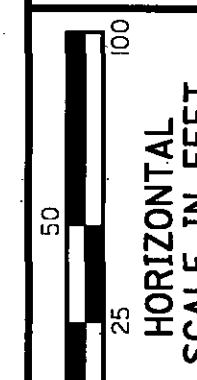
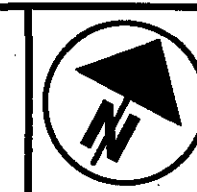
**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 R STAGE 1 PHASE 1 EB**

LAK-2-0.00



NOTES:

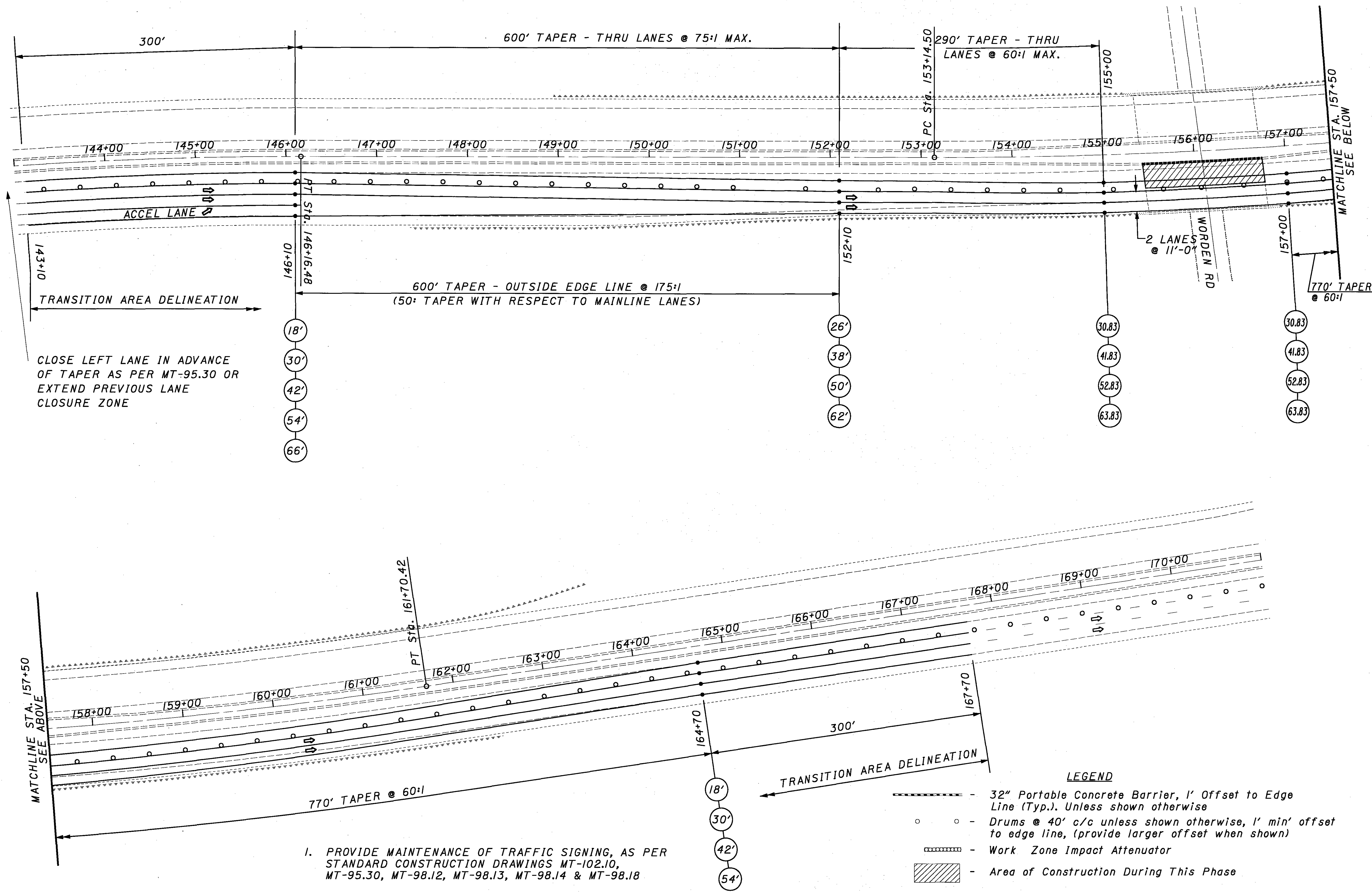
...21778mp004.dgn



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 R STAGE 1 PHASE 1A EB**

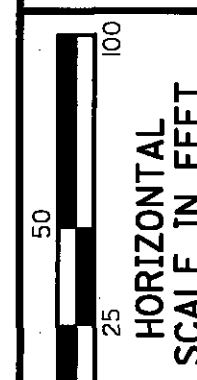
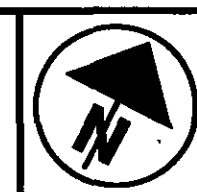
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... \21778mp004.dgn

NOTES:

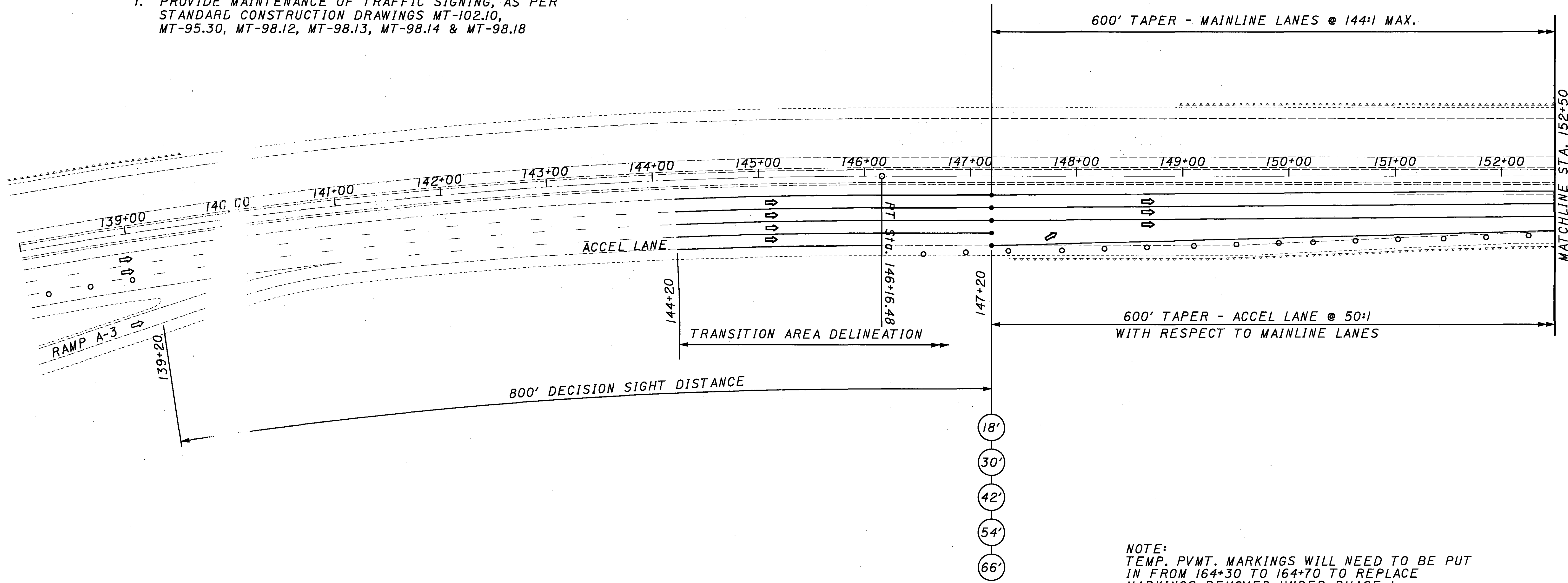
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



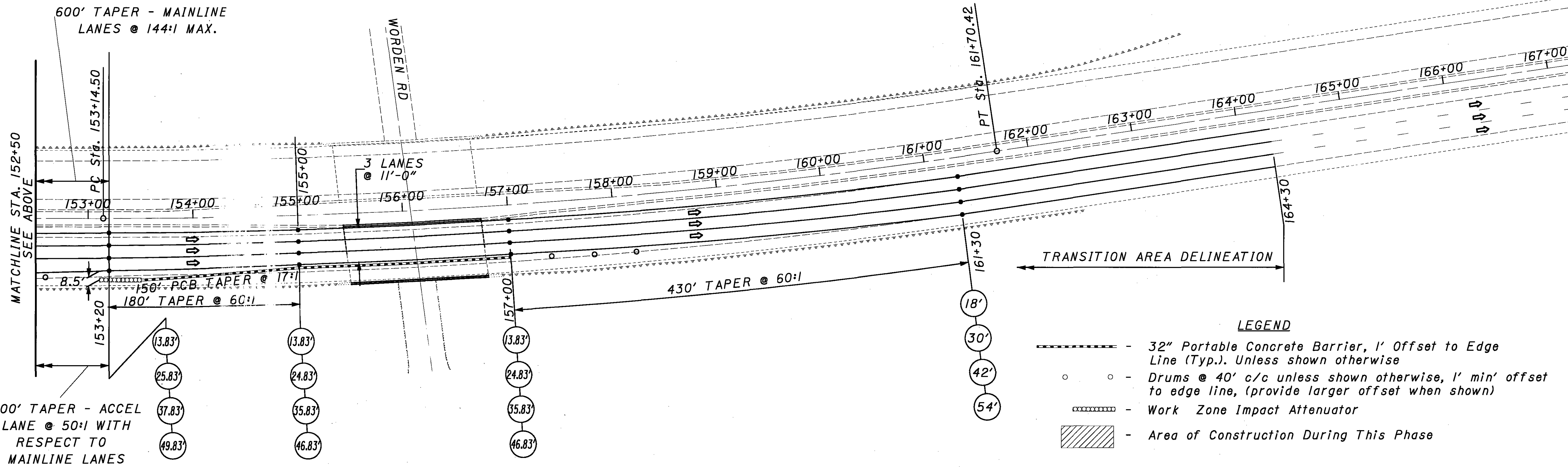
CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 R STAGE 1 PHASE 2 EB**

LAK-2-0.00



NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 164+30 TO 164+70 TO REPLACE MARKINGS REMOVED UNDER PHASE 1.

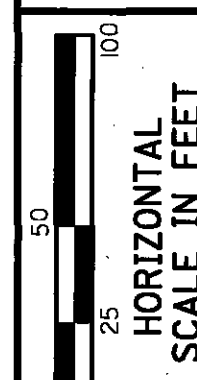
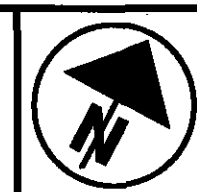


- LEGEND**
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - ○ Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - ▨ Area of Construction During This Phase

...21778mp005.dgn

NOTES:

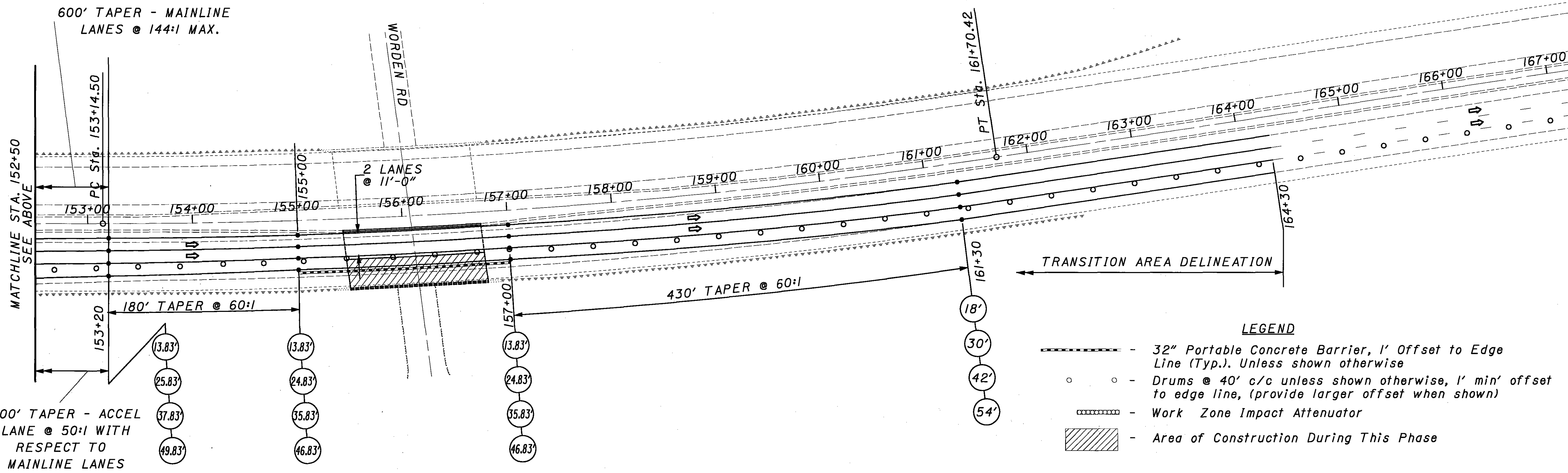
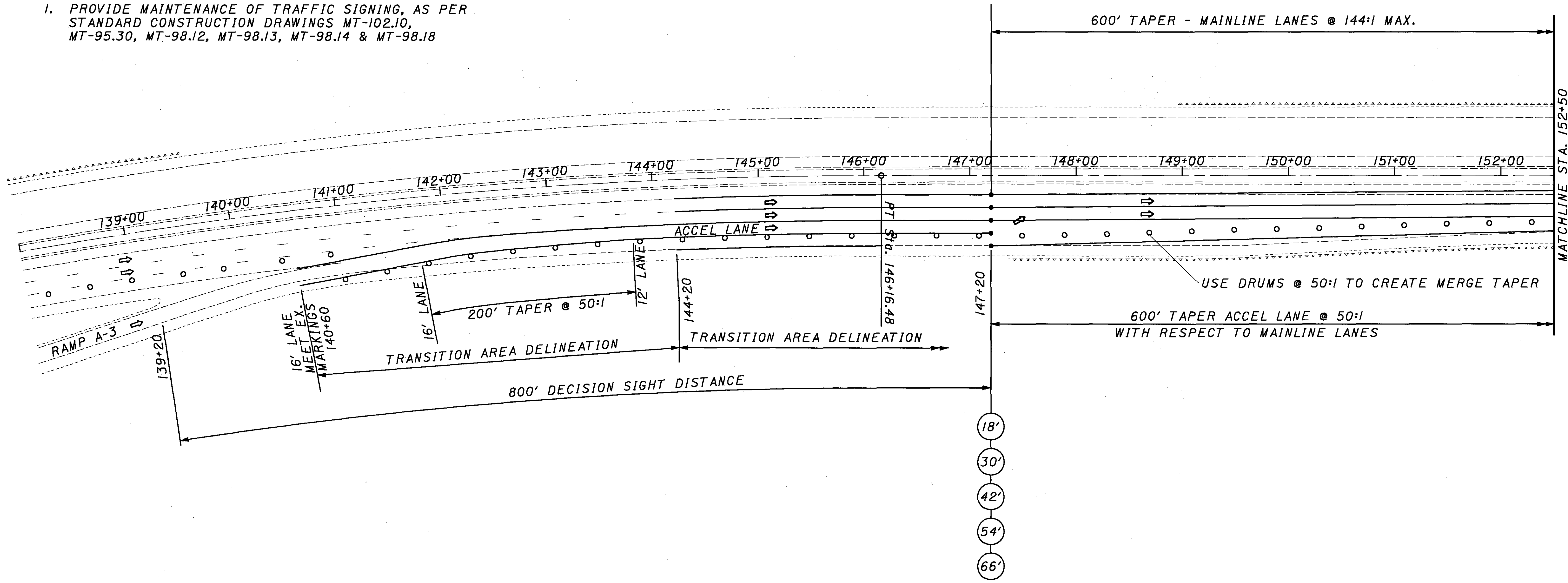
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



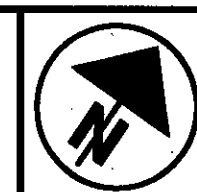
CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 R STAGE 1 PHASE 2A EB**

LAK-2-0.00



...N21778mp005.dgn



0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 R STAGE 1 PHASE 1 EB

LAK-2-0.00

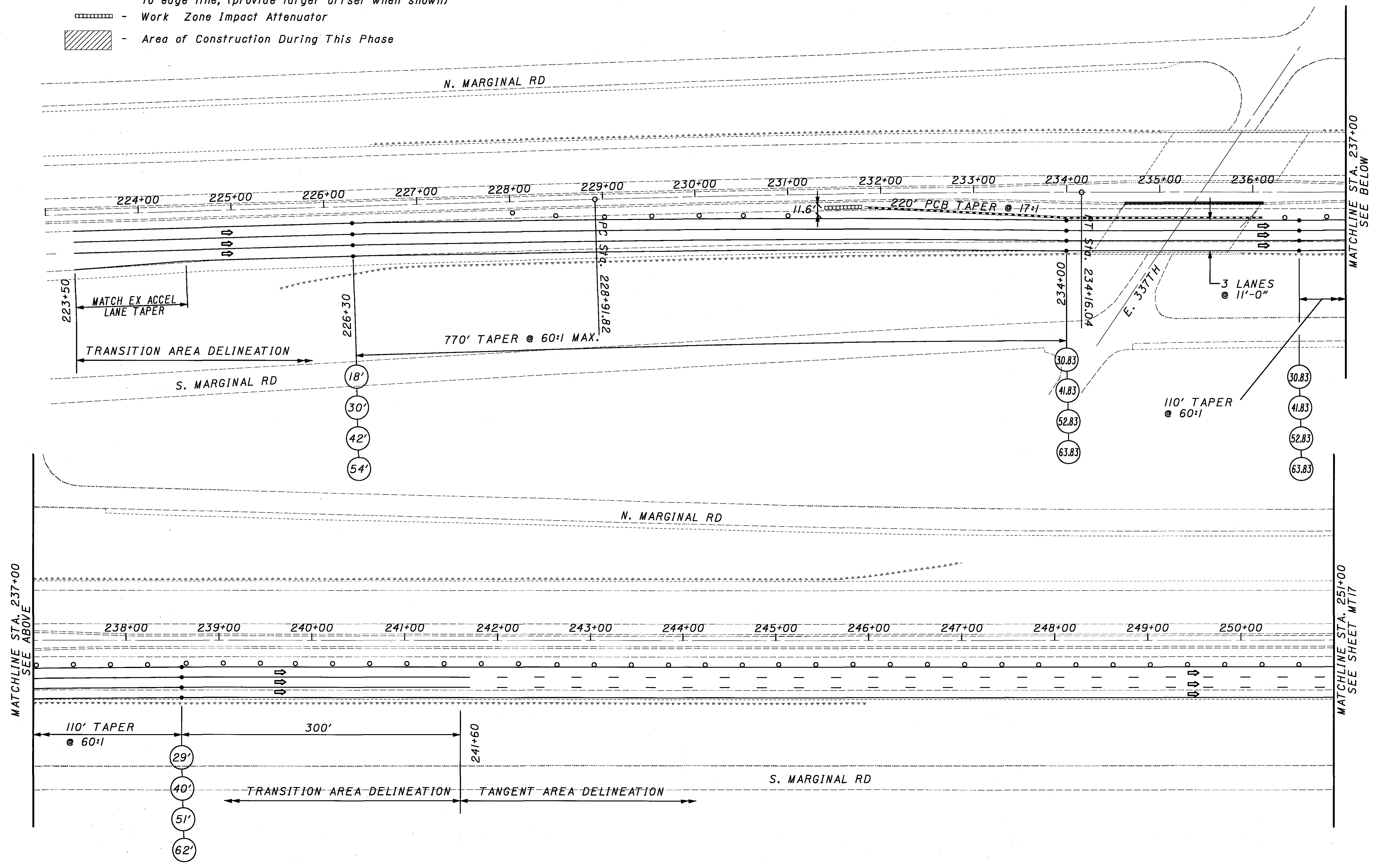
52
524

LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



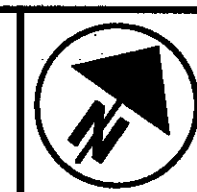
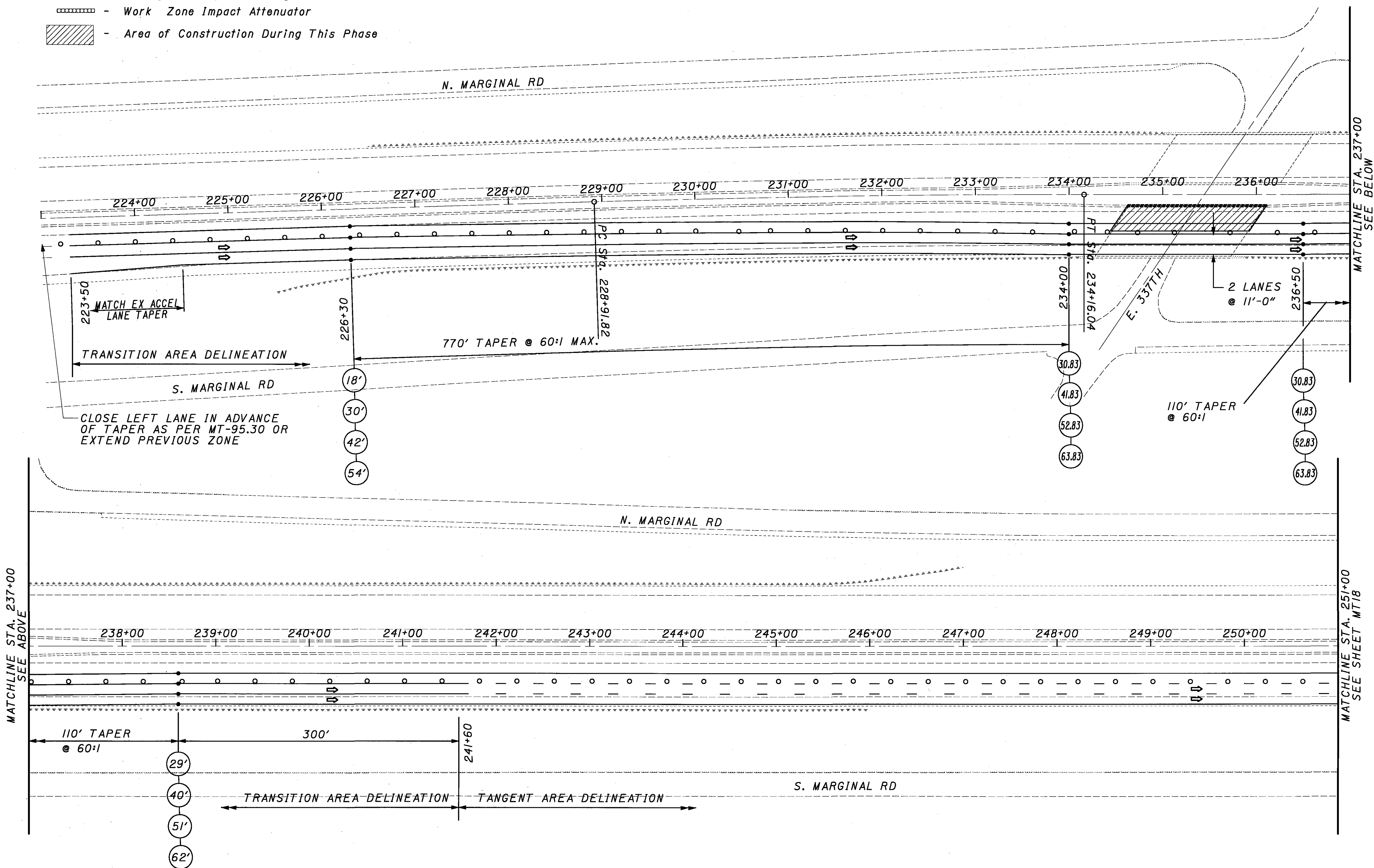
...21778mp006.dgn

LEGEND

- - - - - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- o o - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- ▤ - Work Zone Impact Attenuator
- ▨ - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



0 25 50
HORIZONTAL
SCALE IN FEET



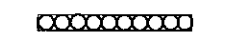

CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 R STAGE 1 PHASE 1A EB**

LAK-2-0.00

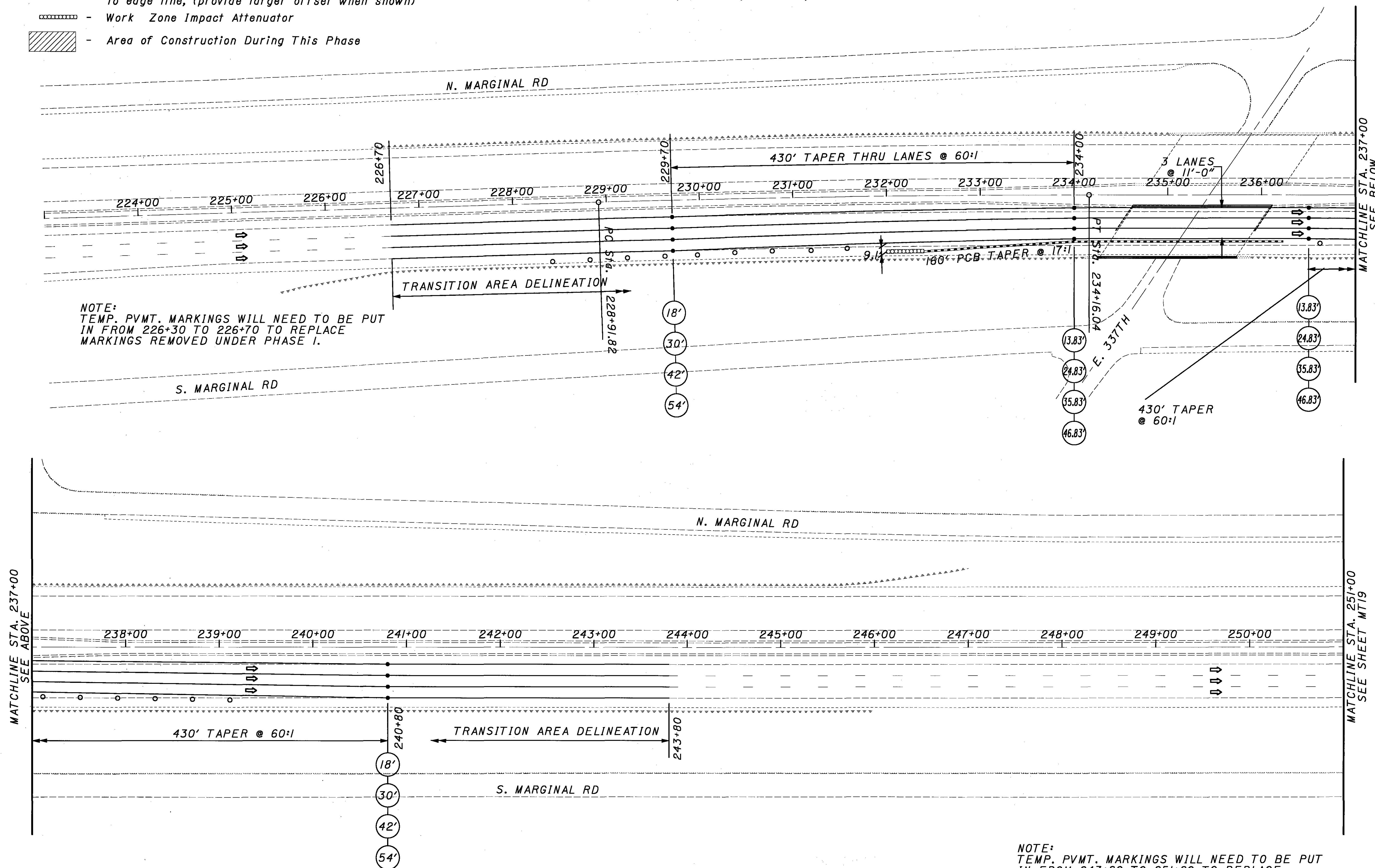
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LEGEND

-  - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
-  - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
-  - Work Zone Impact Attenuator
-  - Area of Construction During This Phase

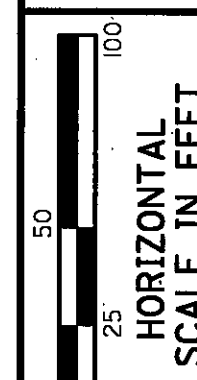
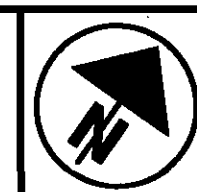
NOTES:

- I. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 226+30 TO 226+70 TO REPLACE MARKINGS REMOVED UNDER PHASE I.

NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 243+80 TO 251+20 TO REPLACE MARKINGS REMOVED UNDER PHASE I.



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 R STAGE 1 PHASE 2 EB**

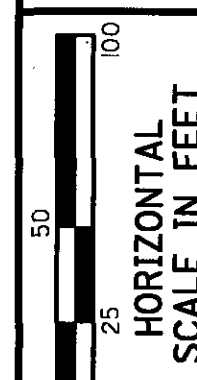
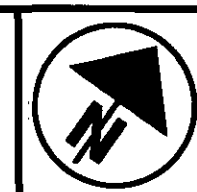
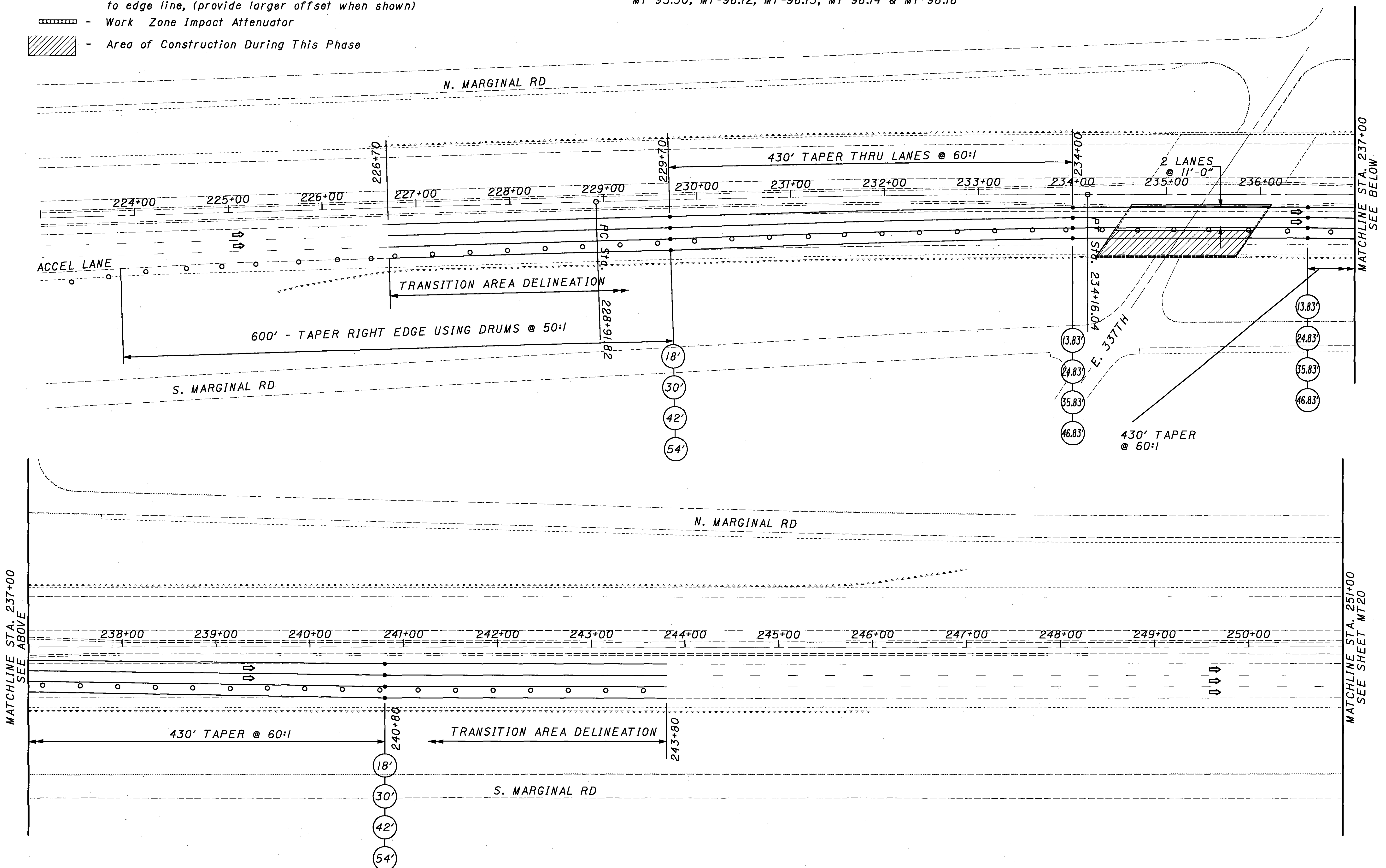
LAK-2-0.00

LEGEND

- - - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- ○ - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- ▤ - Work Zone Impact Attenuator
- ▨ - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

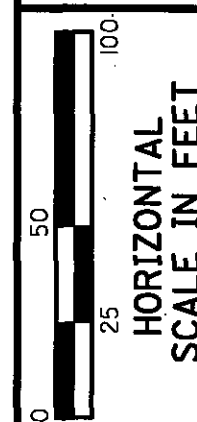
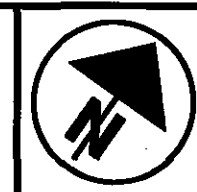


CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 R STAGE 1 PHASE 2A EB**

LAK-2-0.00

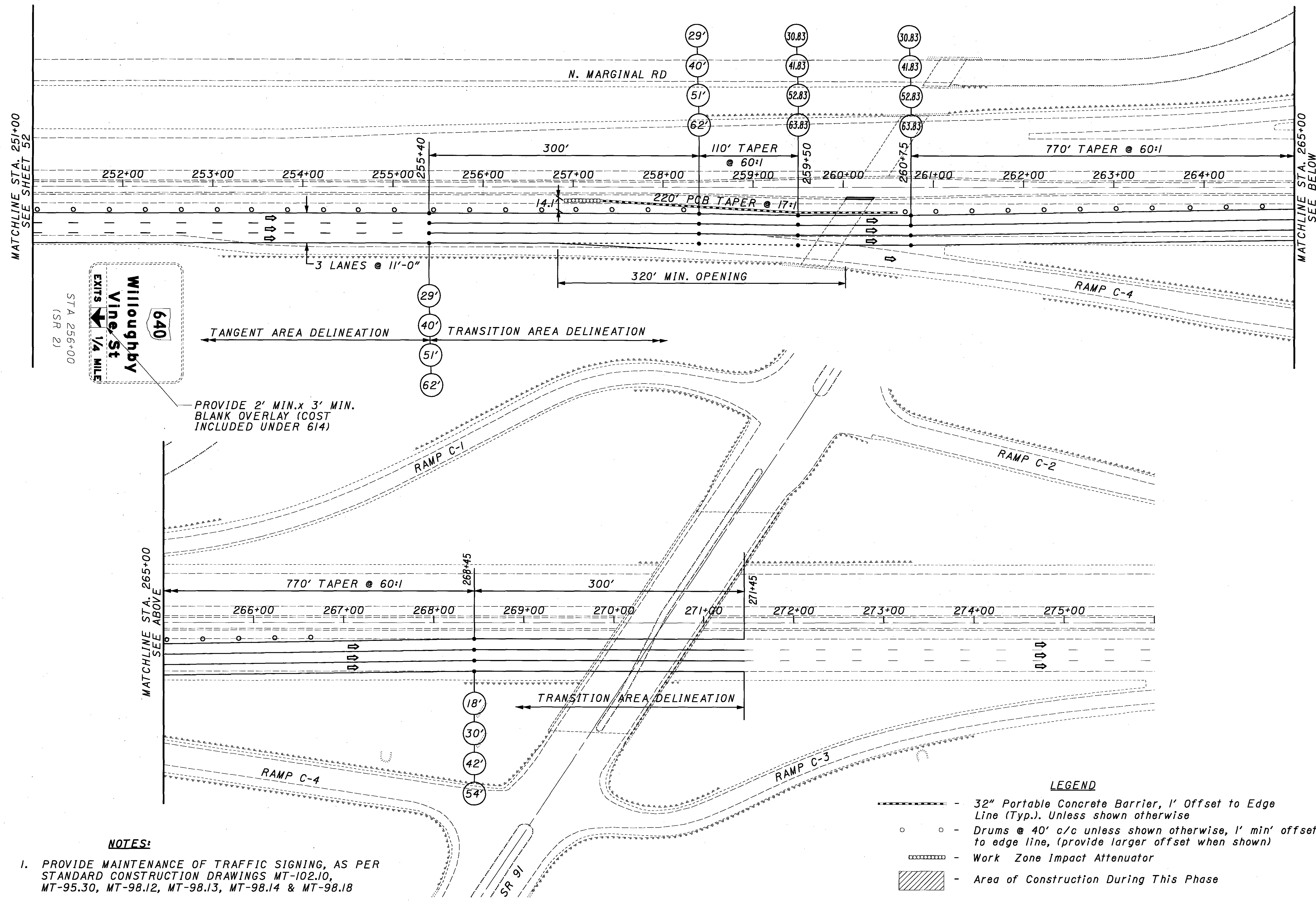
...21778mp008.dgn



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 R STAGE 1 PHASE 1 EB**

LAK-2-0.00



640
Willoughby
Vine St
EXITS
1/4 MILE

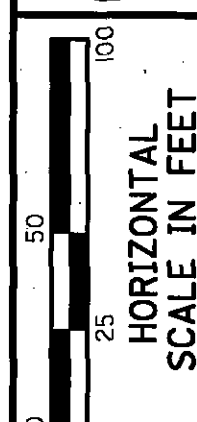
PROVIDE 2' MIN. x 3' MIN.
BLANK OVERLAY (COST
INCLUDED UNDER 614)

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

- LEGEND**
- - - 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - o o - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - ▨ Area of Construction During This Phase

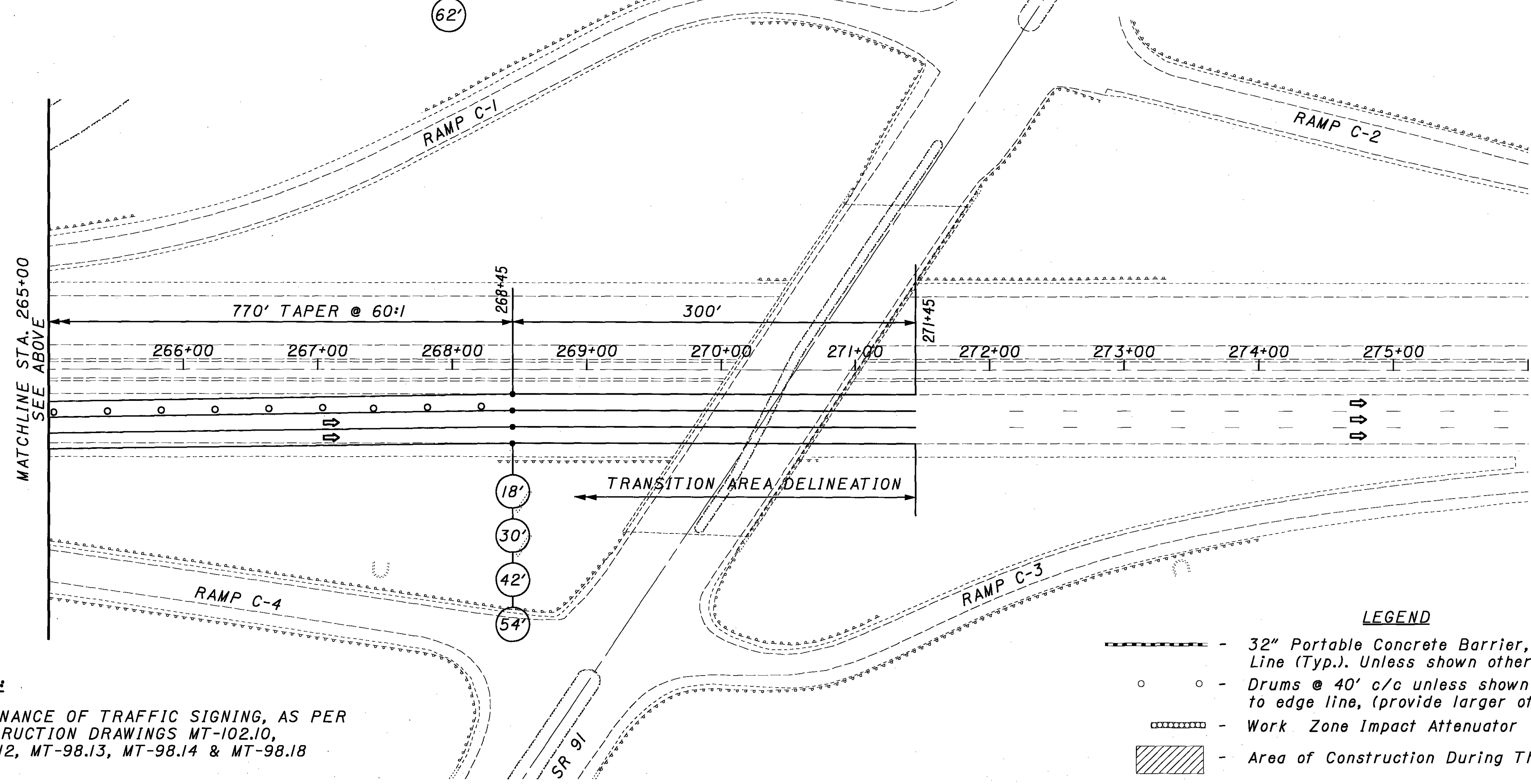
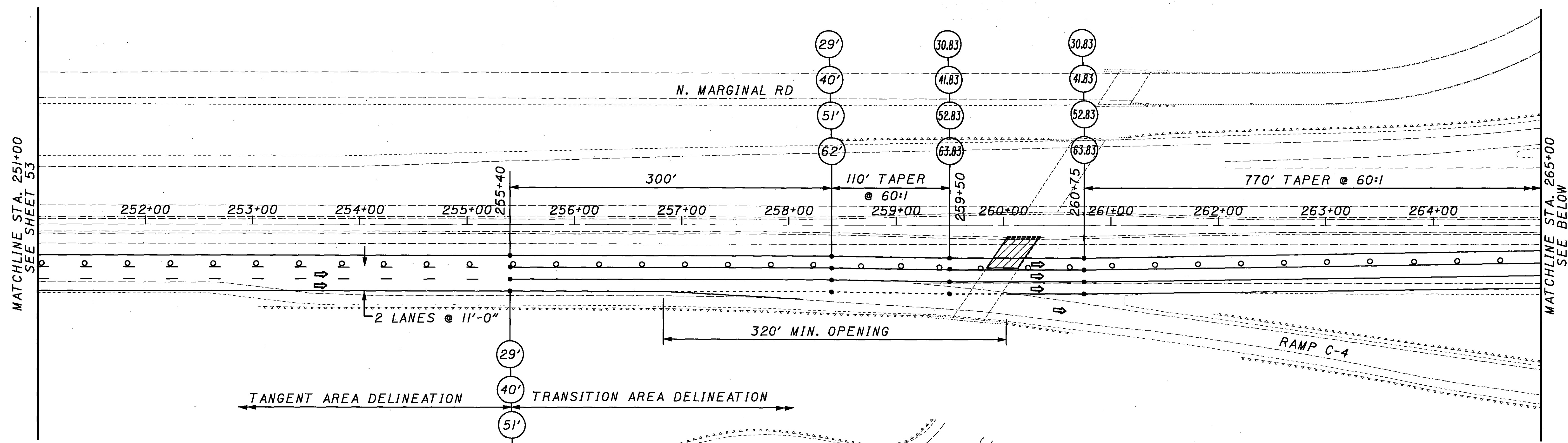
...N21778mp007.dgn



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 R STAGE 1A EB**

LAK-2-0.00



- LEGEND**
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - Area of Construction During This Phase

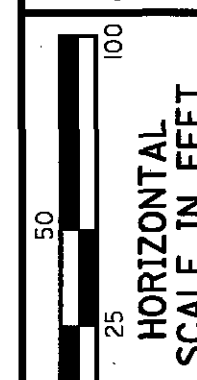
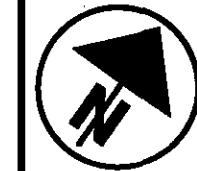
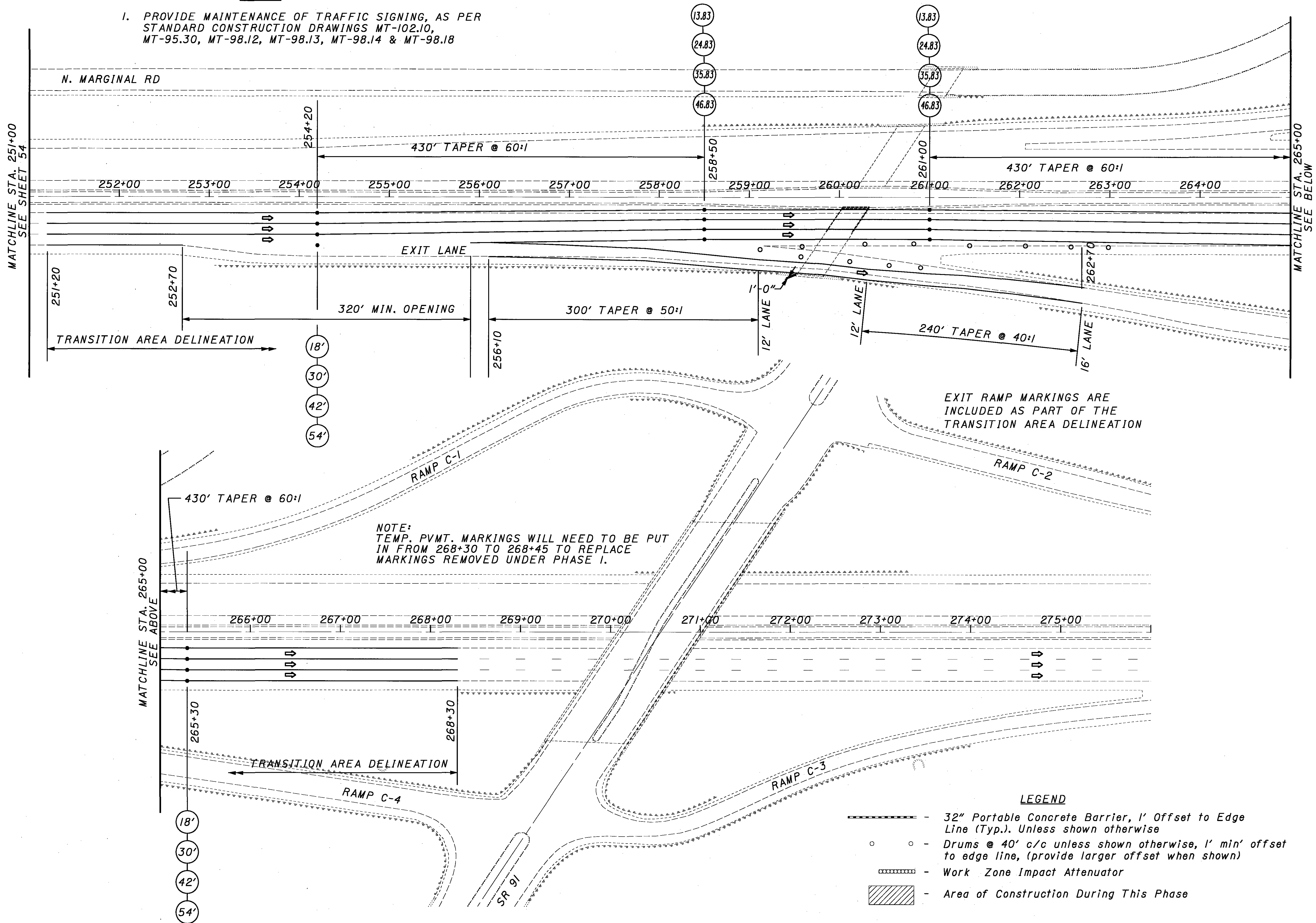
NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

...N21778mp007.dgn

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



CALCULATED
CHECKED

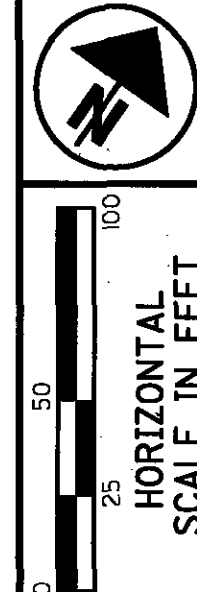
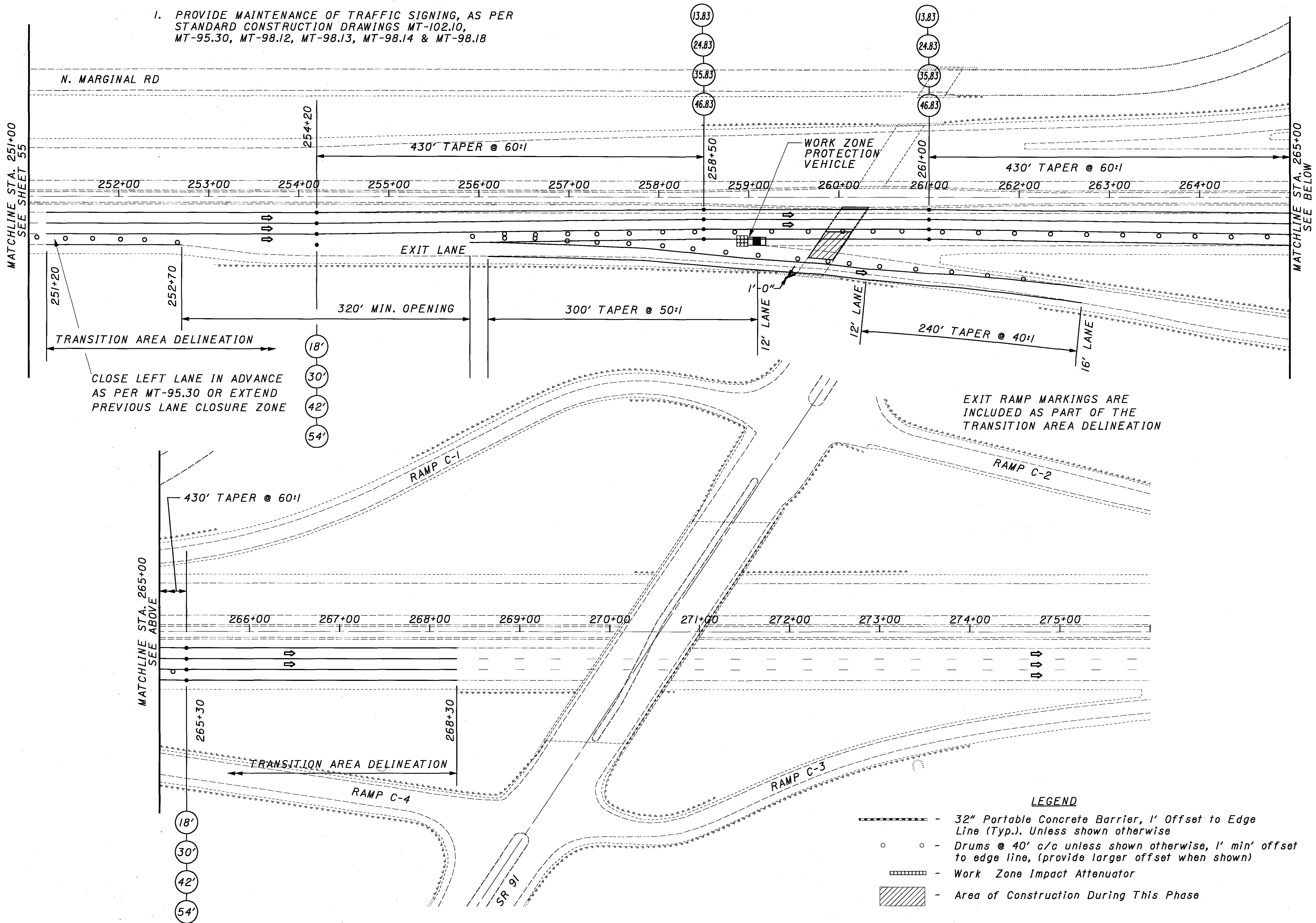
**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 R STAGE 1 PHASE 2 EB**

LAK-2-0.00

...21778mp009.dgn

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



CALCULATED
CHECKED

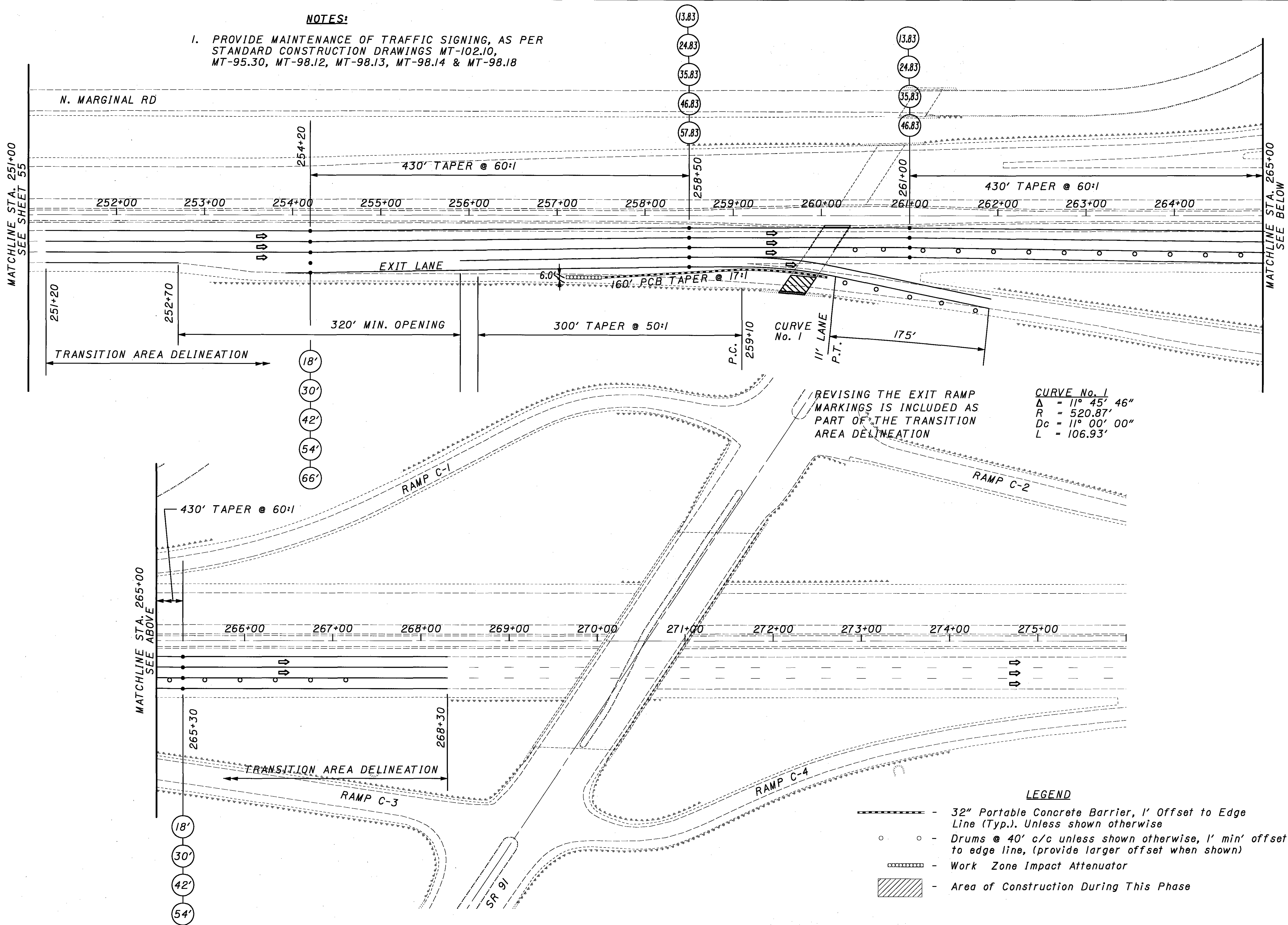
**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 R STAGE 1 PHASE 2A EB**

LAK-2-0.00

...21778mp009.dgn

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



0 25 50 100
HORIZONTAL SCALE IN FEET

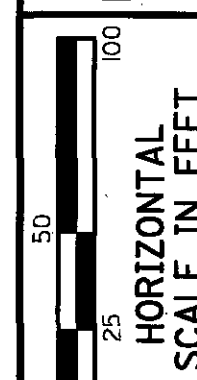
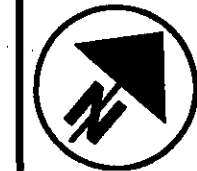
CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 R STAGE 1 PHASE 2B EB**

LAK-2-0.00

60
524

...21778mp009.dgn



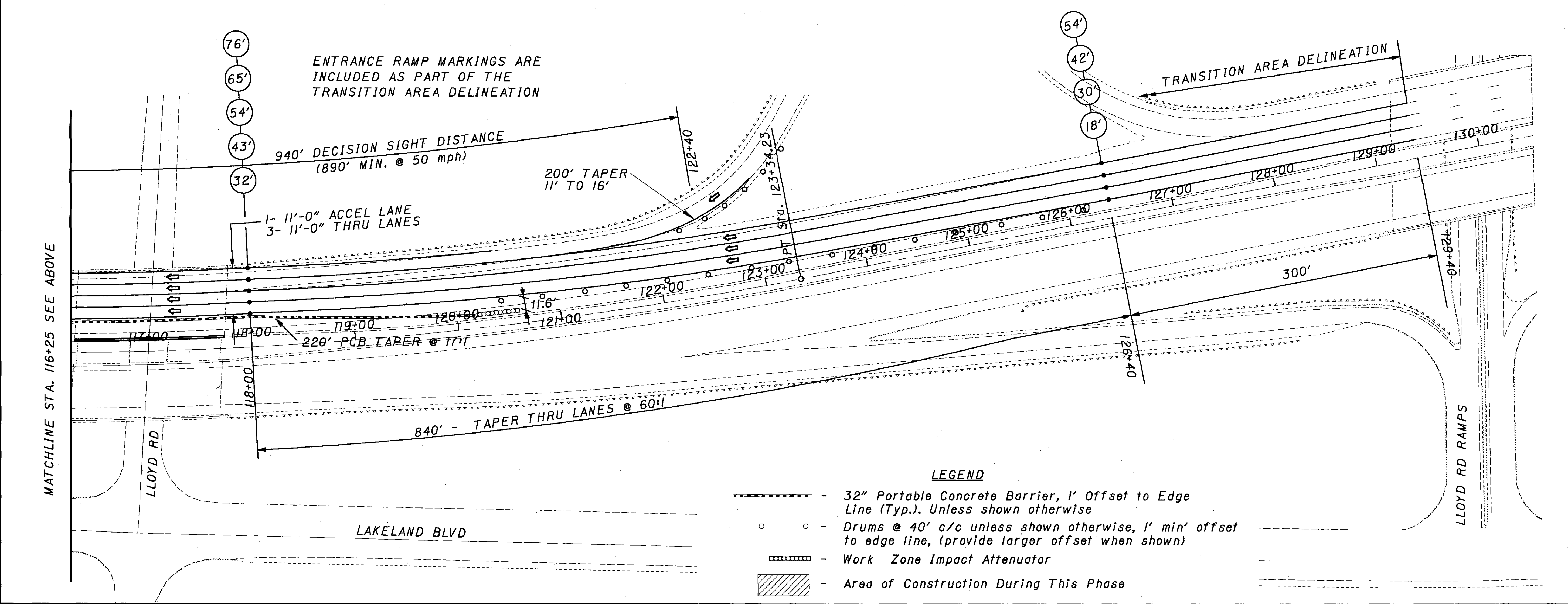
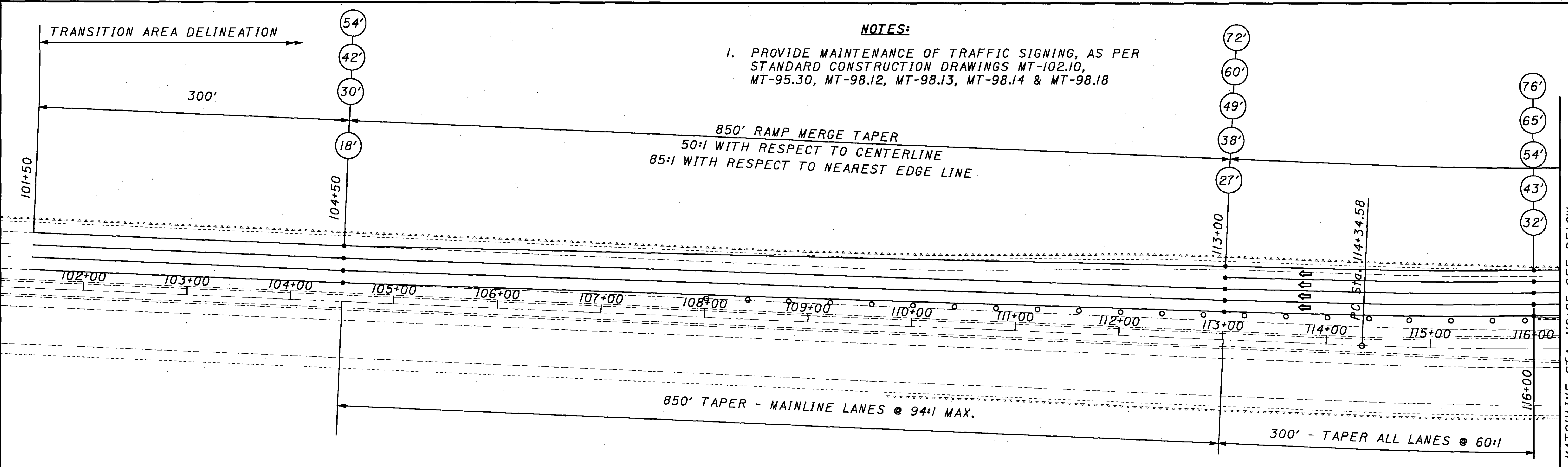
CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 L STAGE 2 PHASE 1 WB**

LAK-2-0.00

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

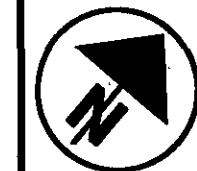


LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

MATCHLINE STA. 116+25 SEE BELOW

MATCHLINE STA. 116+25 SEE ABOVE



0 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

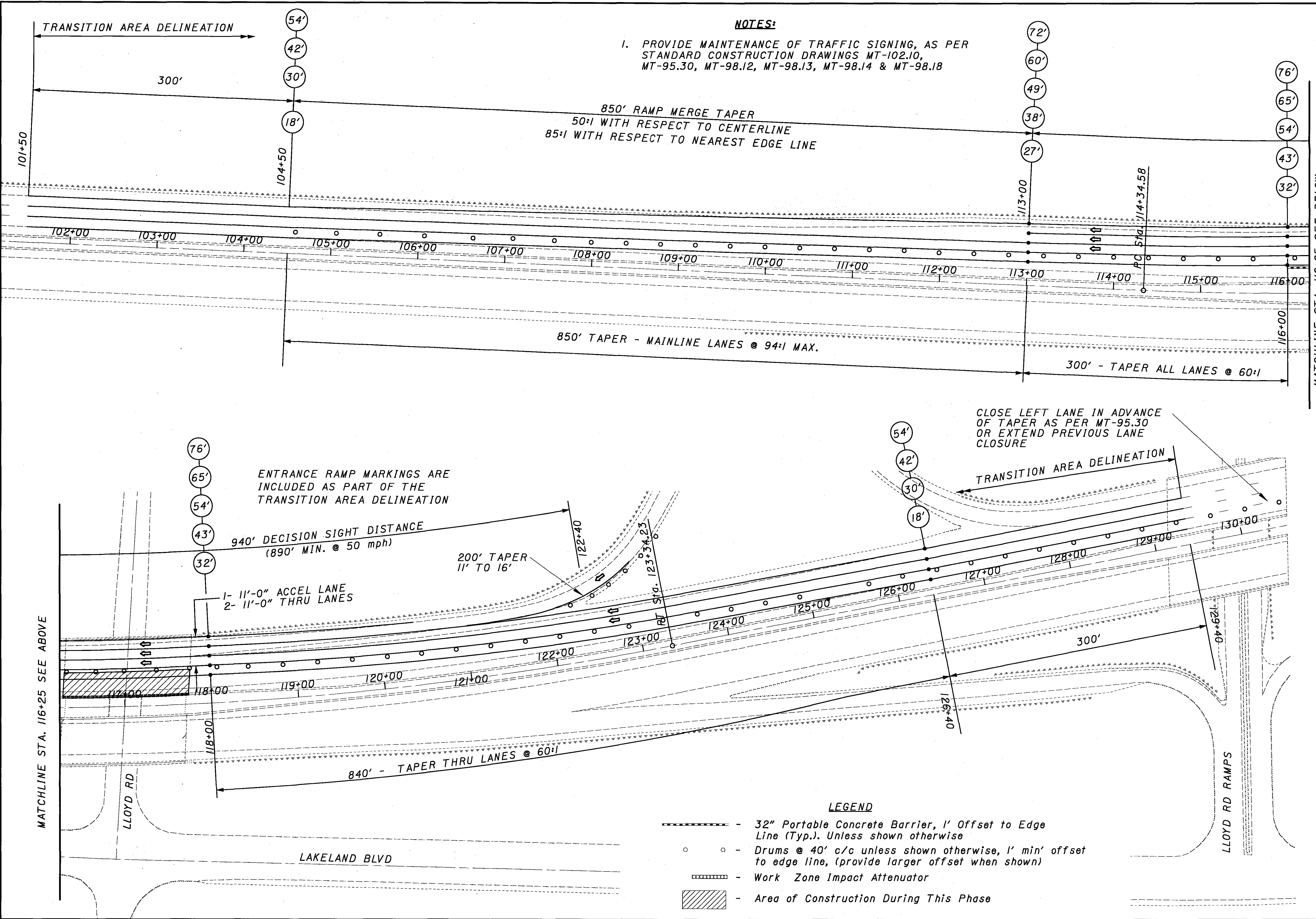
MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 L STAGE 2 PHASE 1A WB

LAK-2-0.00

62
524

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



850' RAMP MERGE TAPER
50:1 WITH RESPECT TO CENTERLINE
85:1 WITH RESPECT TO NEAREST EDGE LINE

850' TAPER - MAINLINE LANES @ 94:1 MAX.

300' - TAPER ALL LANES @ 60:1

ENTRANCE RAMP MARKINGS ARE INCLUDED AS PART OF THE TRANSITION AREA DELINEATION

940' DECISION SIGHT DISTANCE
(890' MIN. @ 50 mph)

200' TAPER
11' TO 16'

1- 11'-0" ACCEL LANE
2- 11'-0" THRU LANES

CLOSE LEFT LANE IN ADVANCE OF TAPER AS PER MT-95.30 OR EXTEND PREVIOUS LANE CLOSURE

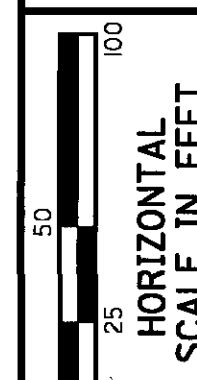
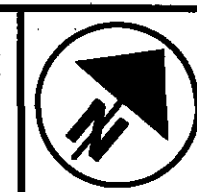
LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

MATCHLINE STA. 116+25 SEE BELOW

MATCHLINE STA. 116+25 SEE ABOVE

...21778mp01a.dgn



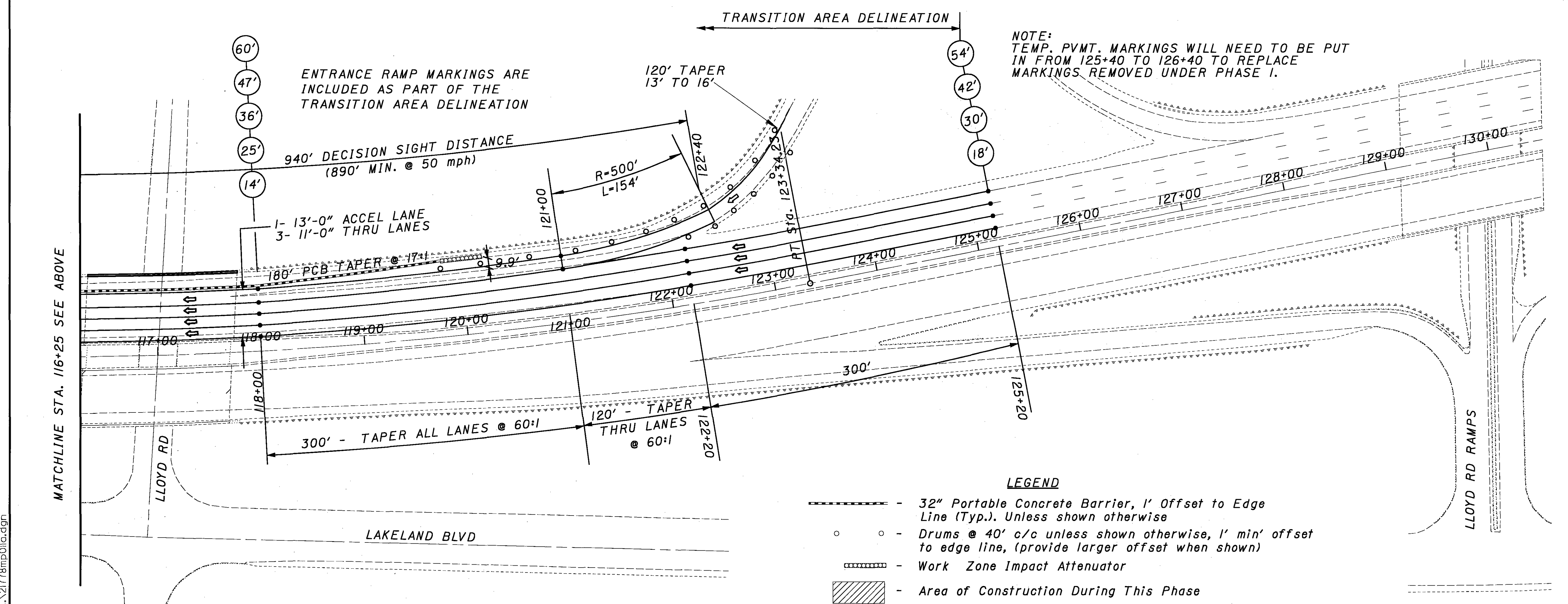
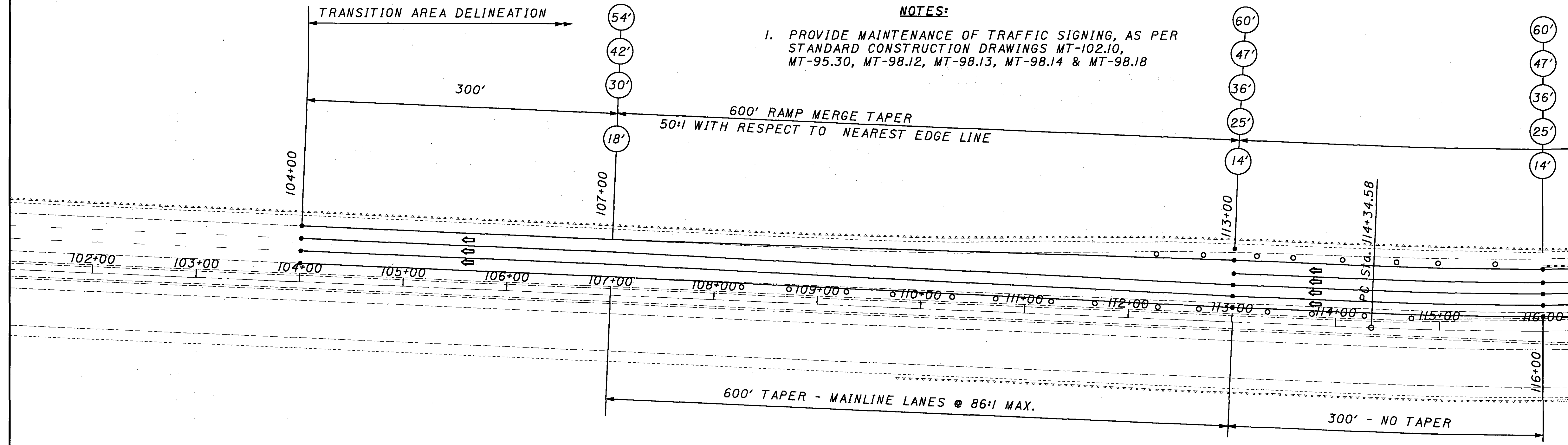
CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0031 L STAGE 2 PHASE 2 WB**

LAK-2-0.00

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



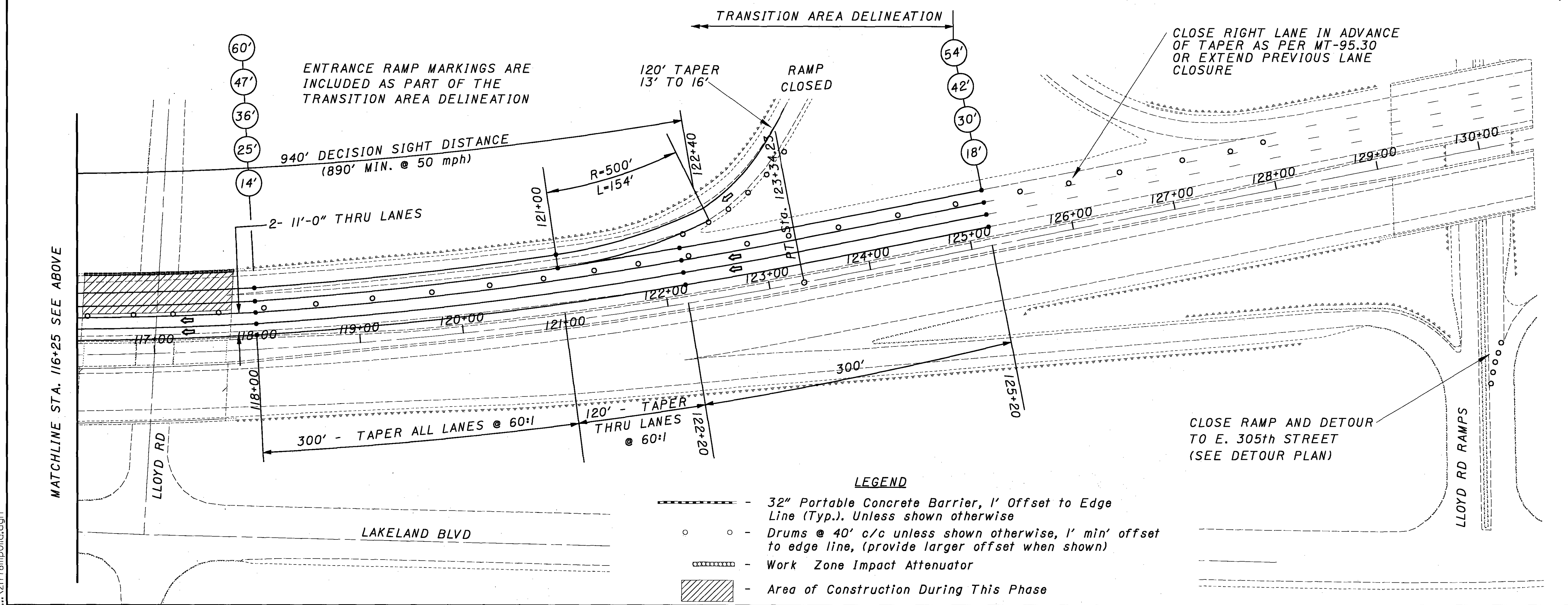
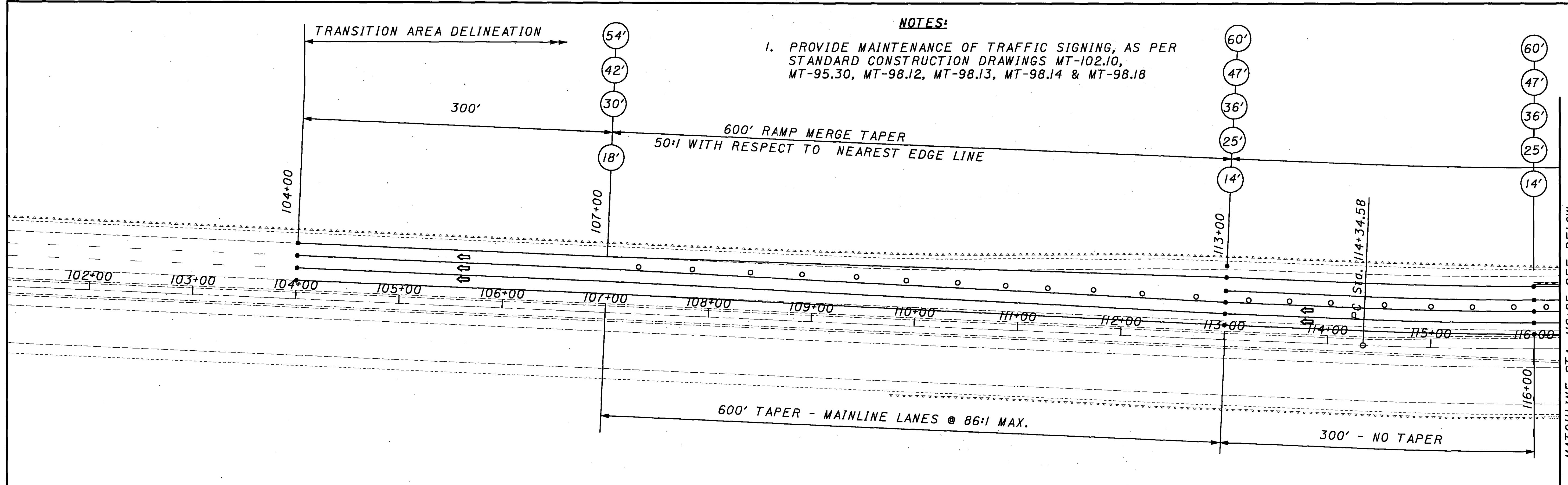
NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT IN FROM 125+40 TO 126+40 TO REPLACE MARKINGS REMOVED UNDER PHASE I.

LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

...21778mp01la.dgn

...21778mp01a.dgn

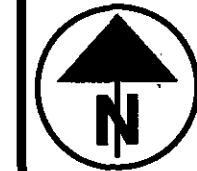


- LEGEND**
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - ○ Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - ▨ Area of Construction During This Phase

MATCHLINE STA. 116+25 SEE BELOW
 MAINTENANCE OF TRAFFIC PLAN
 LAK-2-0031 L STAGE 2 PHASE 2A WB
 LAK-2-0.00
 64
 524

CALCULATED
 CHECKED

HORIZONTAL SCALE IN FEET
 0 25 50 100



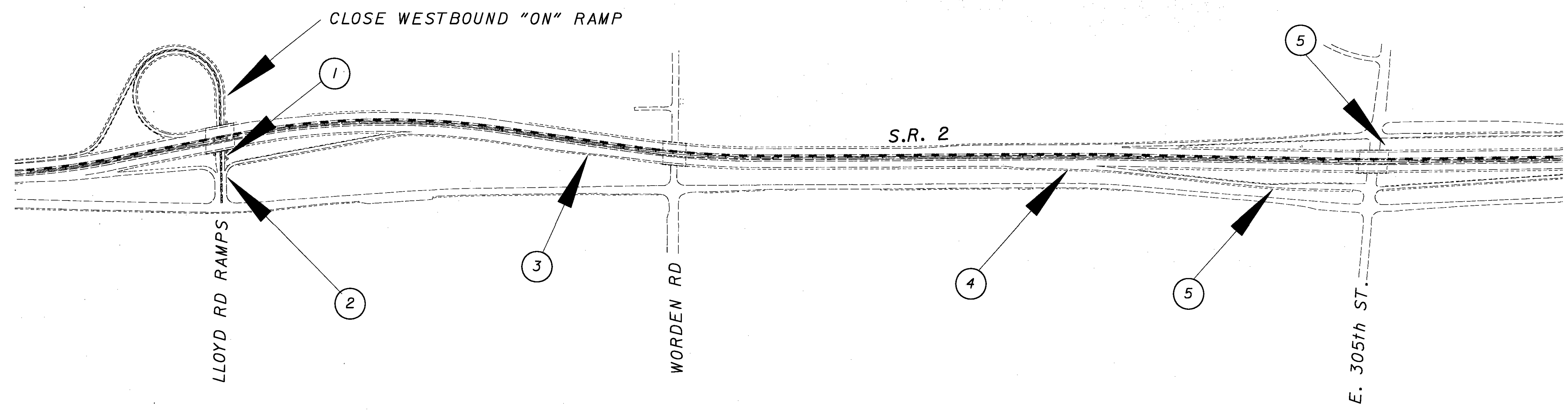
0 200 400
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

DETOUR PLAN
LAK-2-0031L STAGE 2 - PHASE 2A WB

LAK-2-0.00

65
524



①
PLACE 2 WEEKS
IN ADVANCE

RAMP WILL BE
CLOSED -----
FOR 3 DAYS
OHIO DEPT. OF TRANSPORTATION

W20-H14-60

②

WEST M3-4-24

2 MI-5-36-1

DETOUR M4-9R-30

③

WEST M3-4-24

2 MI-5-36-1

DETOUR M4-9-30

④

WEST M3-4-24

2 MI-5-36-1

DETOUR M4-9R-30

⑤

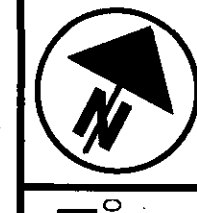
DETOUR M4-8a-24

WEST M3-4-36

2 MI-5-36-1

← M5-1-30

.. \21778mp01la.dgn

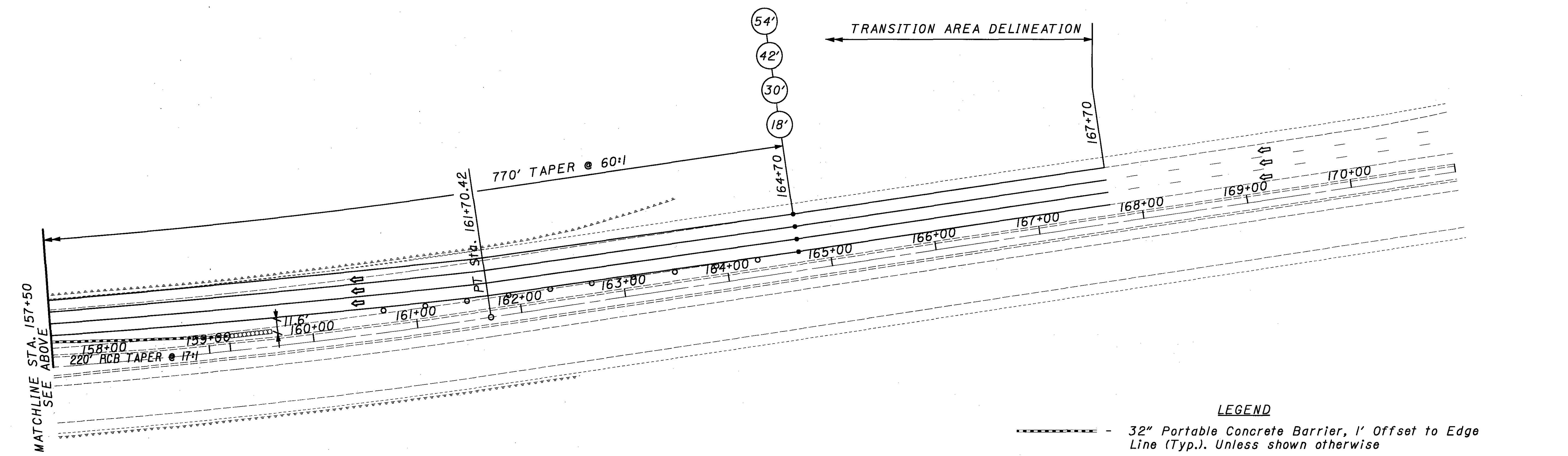
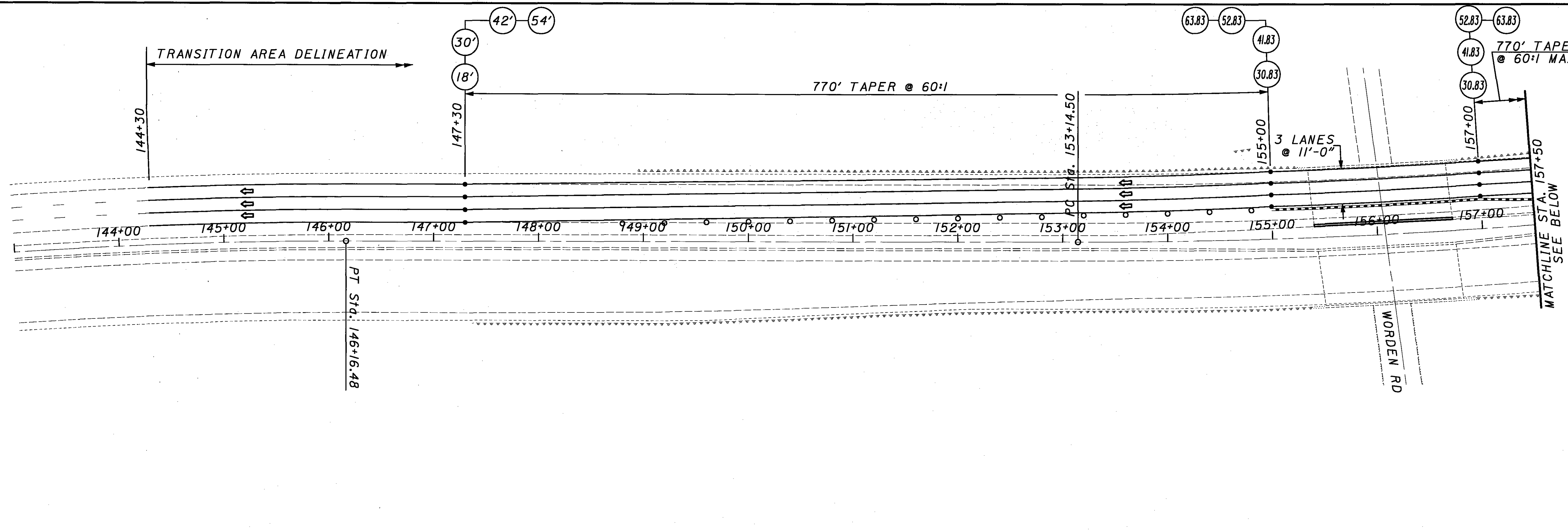


0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 L STAGE 2 PHASE 1 WB**

LAK-2-0.00

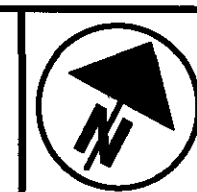


- LEGEND**
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

.. \21778.mpd\014.dgn

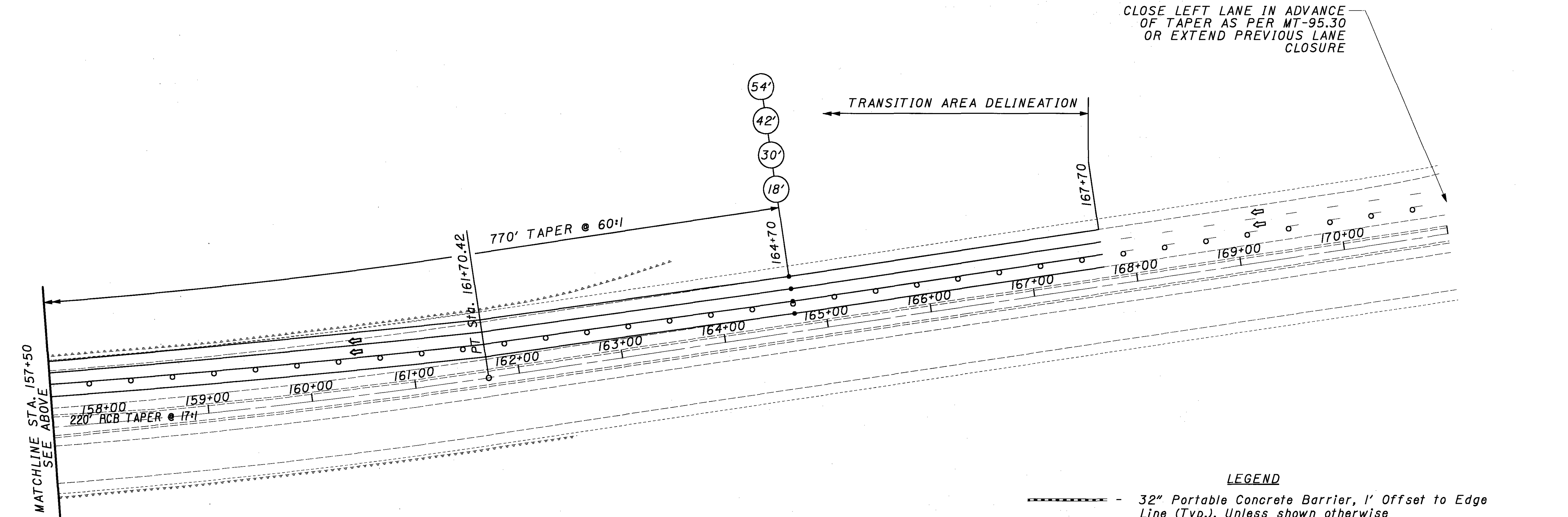
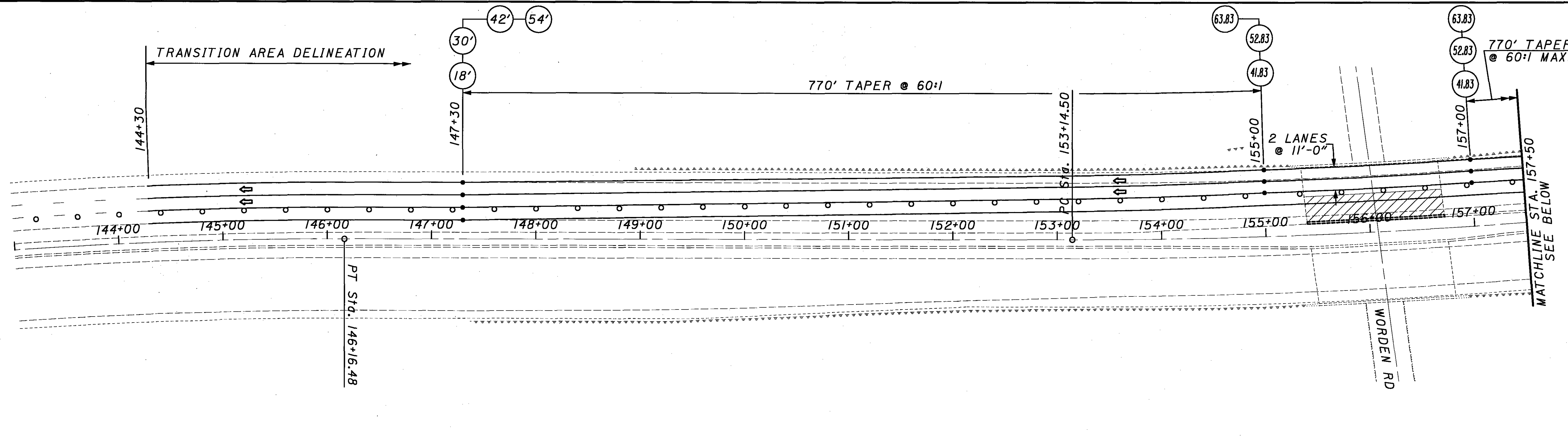


0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 L STAGE 2 PHASE 1A WB**

LAK-2-0.00



CLOSE LEFT LANE IN ADVANCE
OF TAPER AS PER MT-95.30
OR EXTEND PREVIOUS LANE
CLOSURE

NOTES:

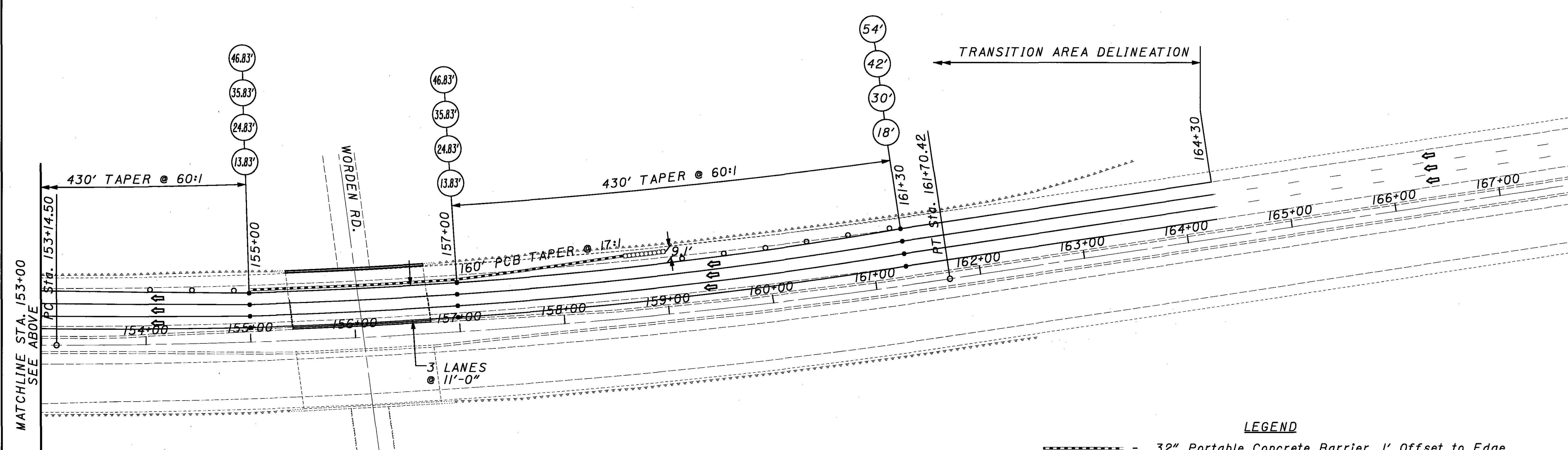
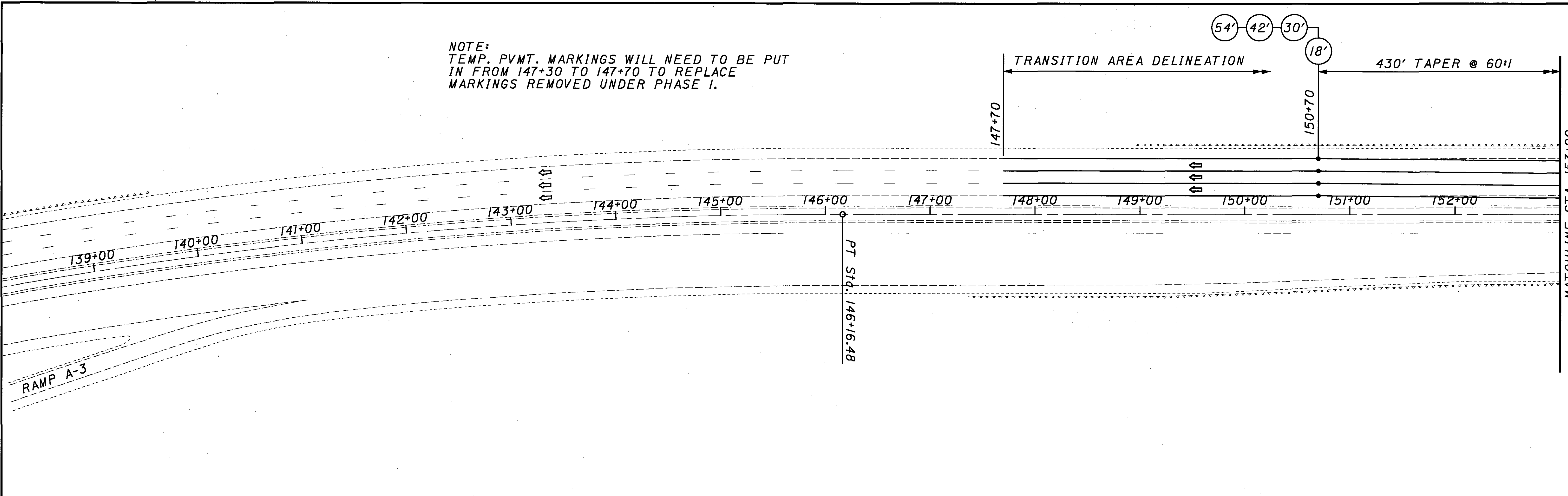
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

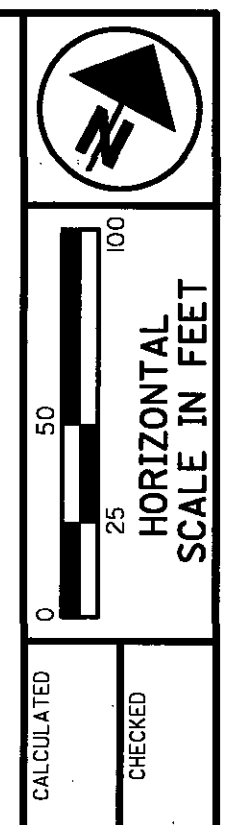
...21778mp014.dgn

NOTE:
 TEMP. PVMT. MARKINGS WILL NEED TO BE PUT
 IN FROM 147+30 TO 147+70 TO REPLACE
 MARKINGS REMOVED UNDER PHASE I.



MATCHLINE STA. 153+00
 SEE ABOVE

MATCHLINE STA. 153+00
 SEE BELOW



MAINTENANCE OF TRAFFIC PLAN
 LAK-2-0105 L STAGE 2 PHASE 2 WB

LAK-2-0-00

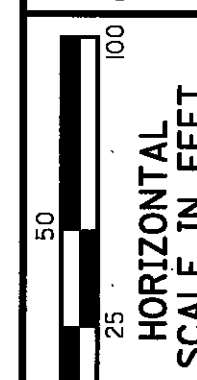
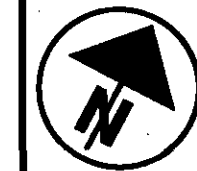
68
 524

LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

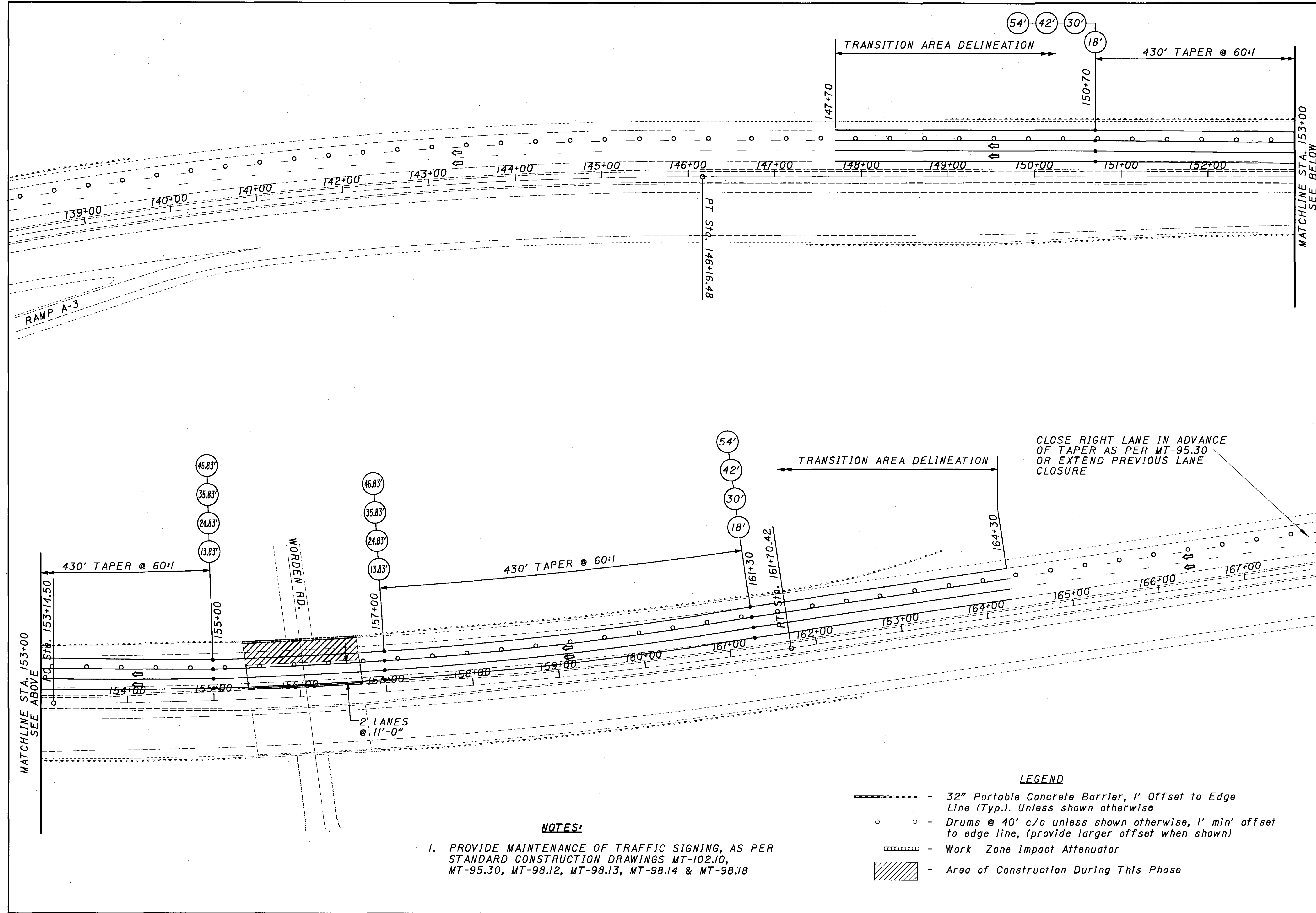
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0105 L STAGE 2 PHASE 2A WB**

LAK-2-0.00



- LEGEND**
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
 - Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
 - Work Zone Impact Attenuator
 - Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18



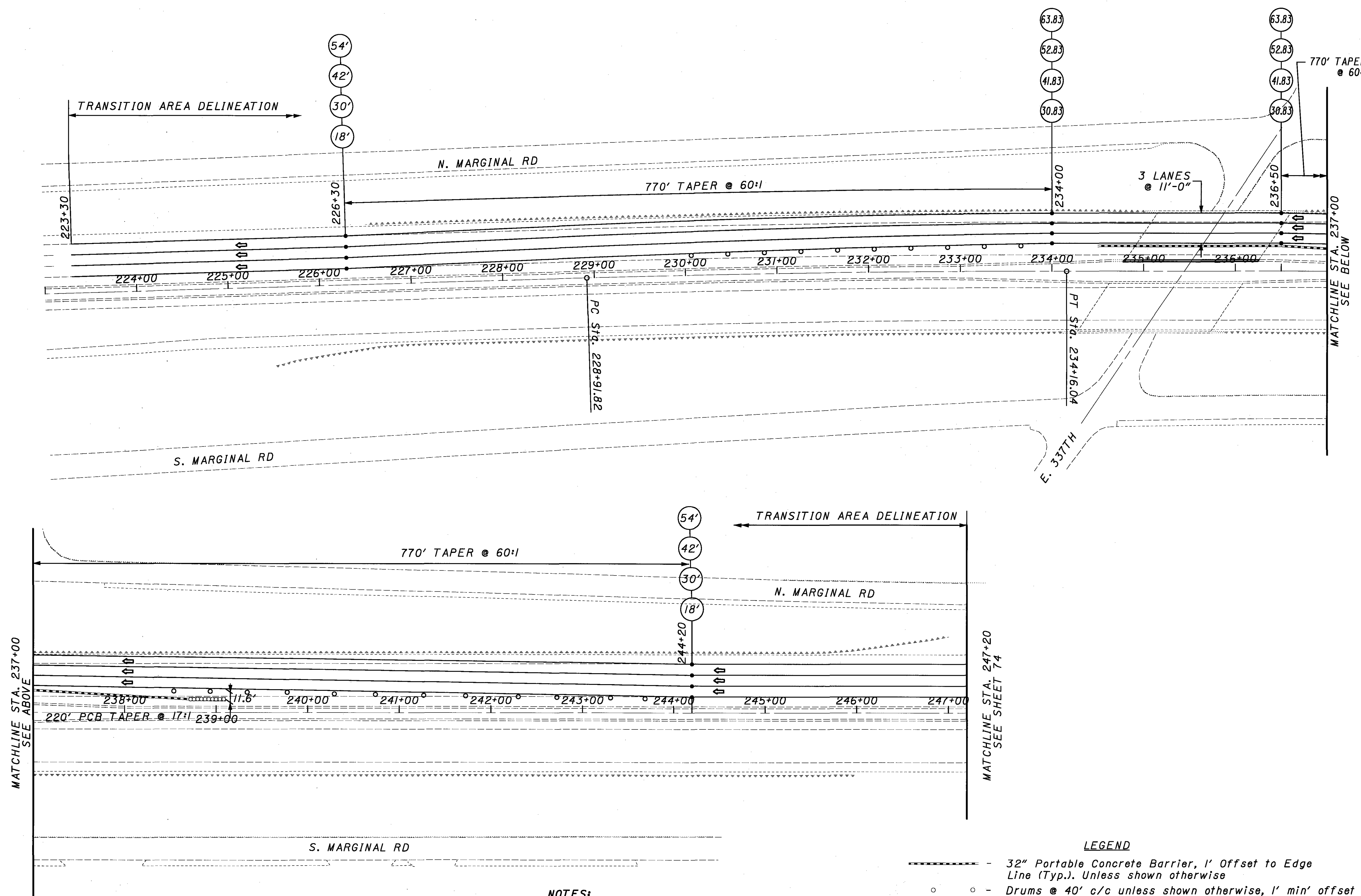
0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 L STAGE 2 PHASE 1 WB**

LAK-2-0.00

70
524



MATCHLINE STA. 237+00
SEE ABOVE

MATCHLINE STA. 247+20
SEE SHEET 74

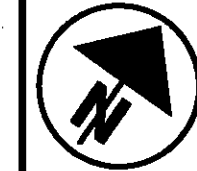
LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

.. \21778mp016.dgn

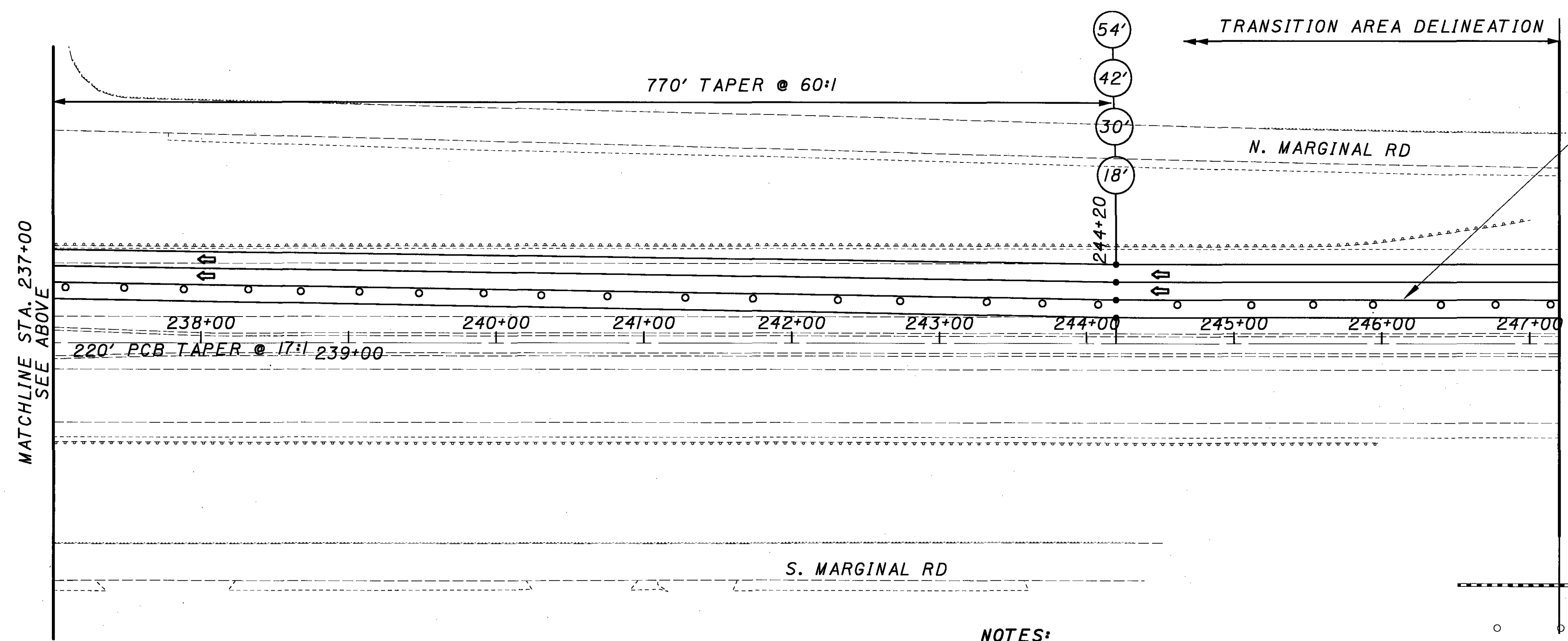
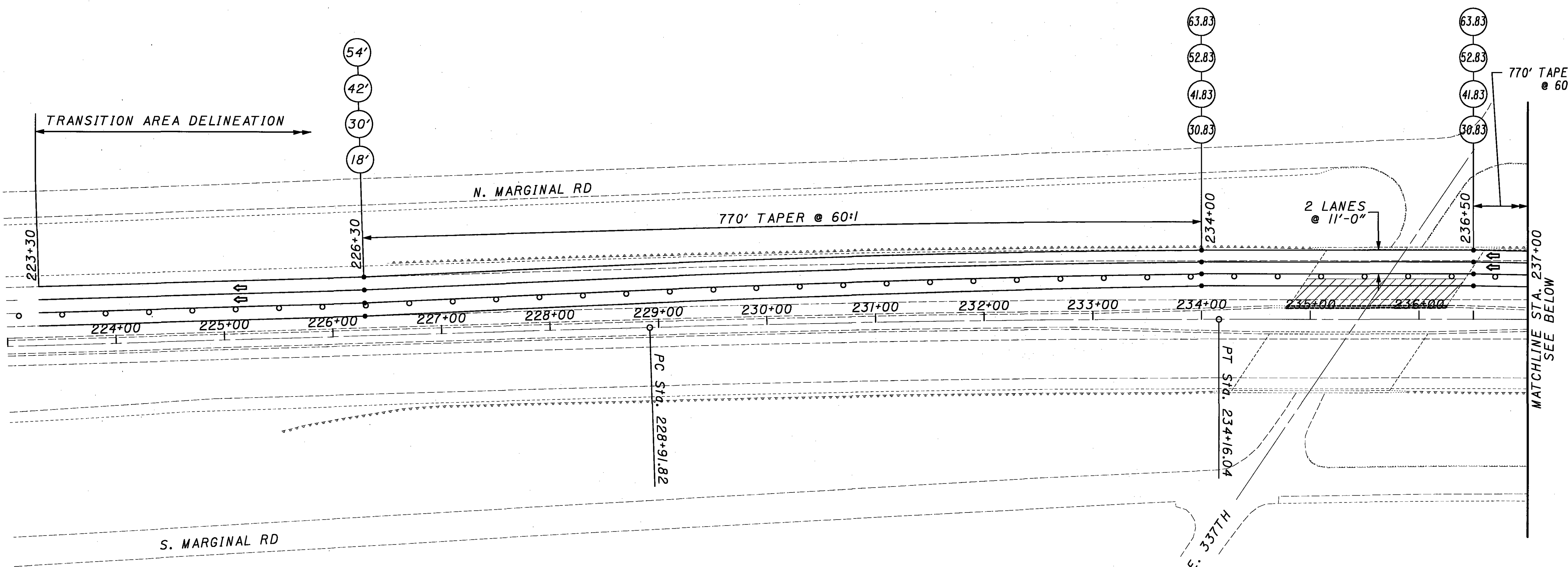


0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 L STAGE 2 PHASE 1A WB**

LAK-2-0.00



CLOSE LEFT LANE IN ADVANCE OF TAPER AS PER MT-95.30 OR EXTEND PREVIOUS LANE CLOSURE

LEGEND

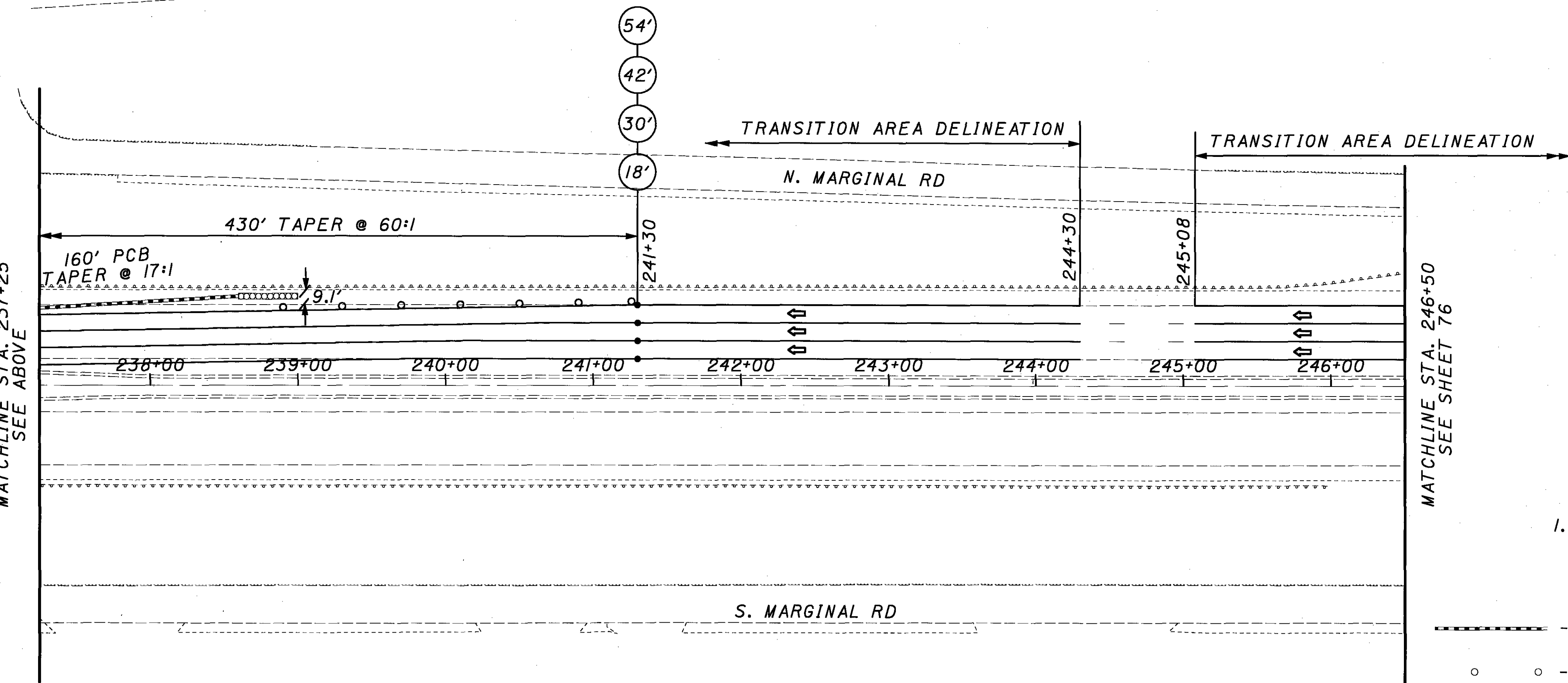
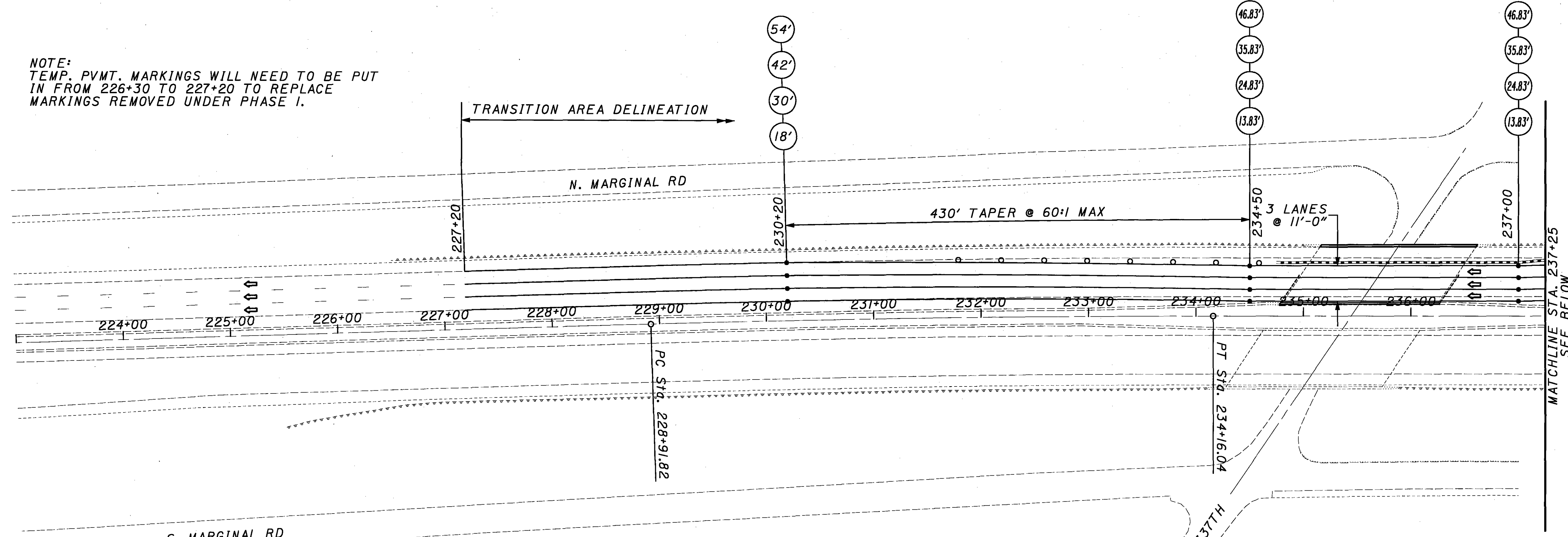
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

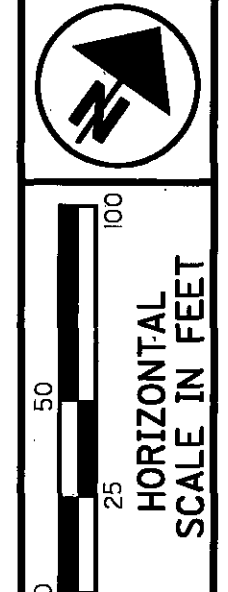
...21778mp016.dgn

NOTE:
TEMP. PVMT. MARKINGS WILL NEED TO BE PUT
IN FROM 226+30 TO 227+20 TO REPLACE
MARKINGS REMOVED UNDER PHASE I.



MATCHLINE STA. 237+25
SEE ABOVE

MATCHLINE STA. 246+50
SEE SHEET 76



CALCULATED
CHECKED

MATCHLINE STA. 237+25
SEE BELOW

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 L STAGE 2 PHASE 2 WB**

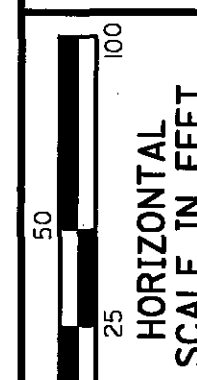
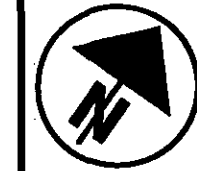
LAK-2-0.00

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

LEGEND

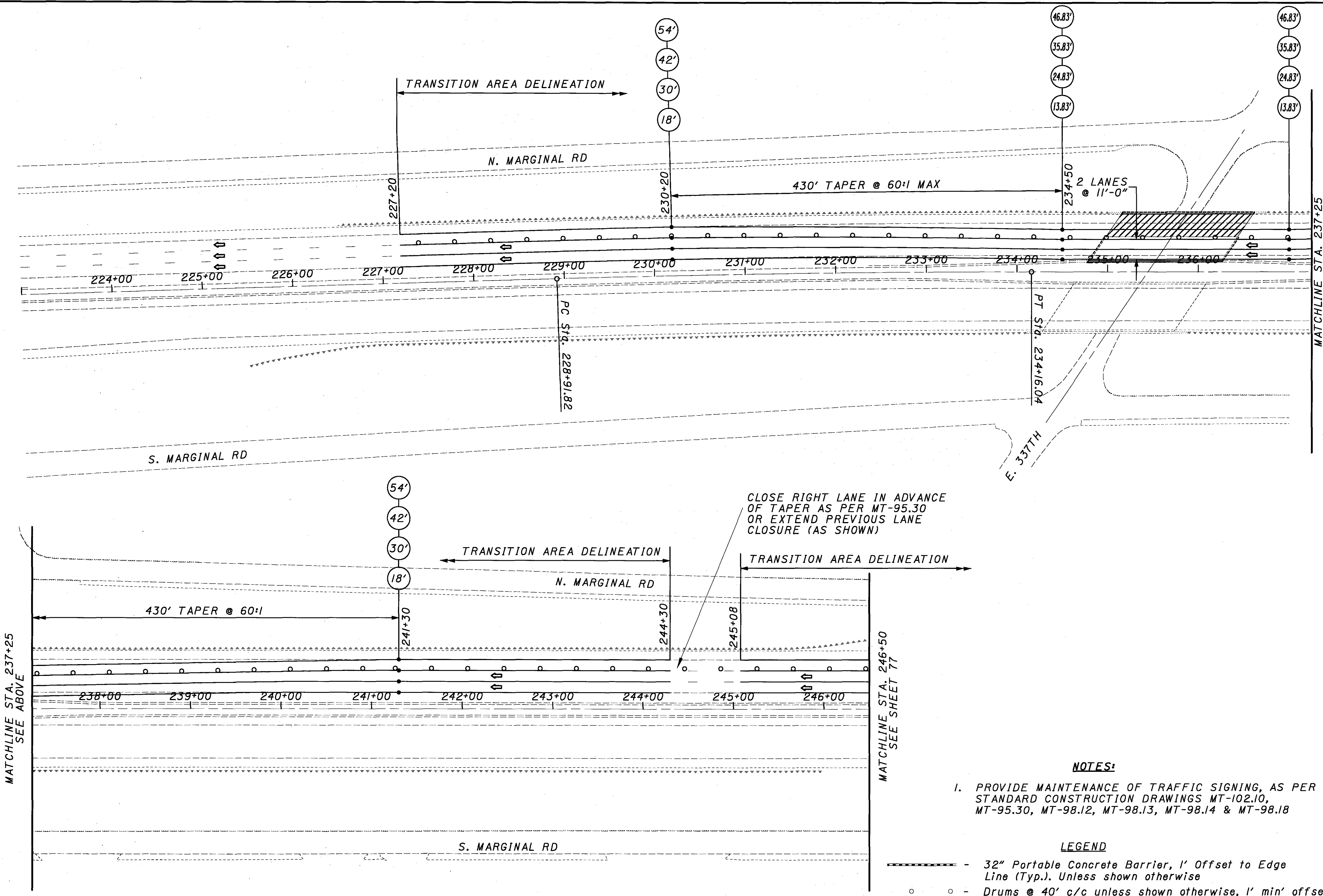
- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0255 L STAGE 2 PHASE 2A WB**

LAK-2-0.00



CLOSE RIGHT LANE IN ADVANCE
OF TAPER AS PER MT-95.30
OR EXTEND PREVIOUS LANE
CLOSURE (AS SHOWN)

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

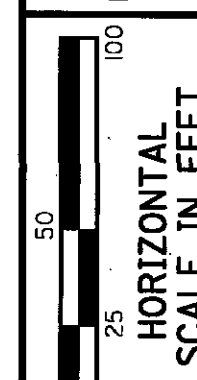
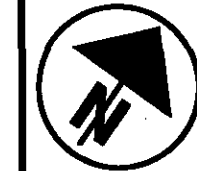
LEGEND

- 32" Portable Concrete Barrier, 1' Offset to Edge Line (Typ.). Unless shown otherwise
- Drums @ 40' c/c unless shown otherwise, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase

MATCHLINE STA. 237+25
SEE ABOVE

MATCHLINE STA. 246+50
SEE SHEET 77

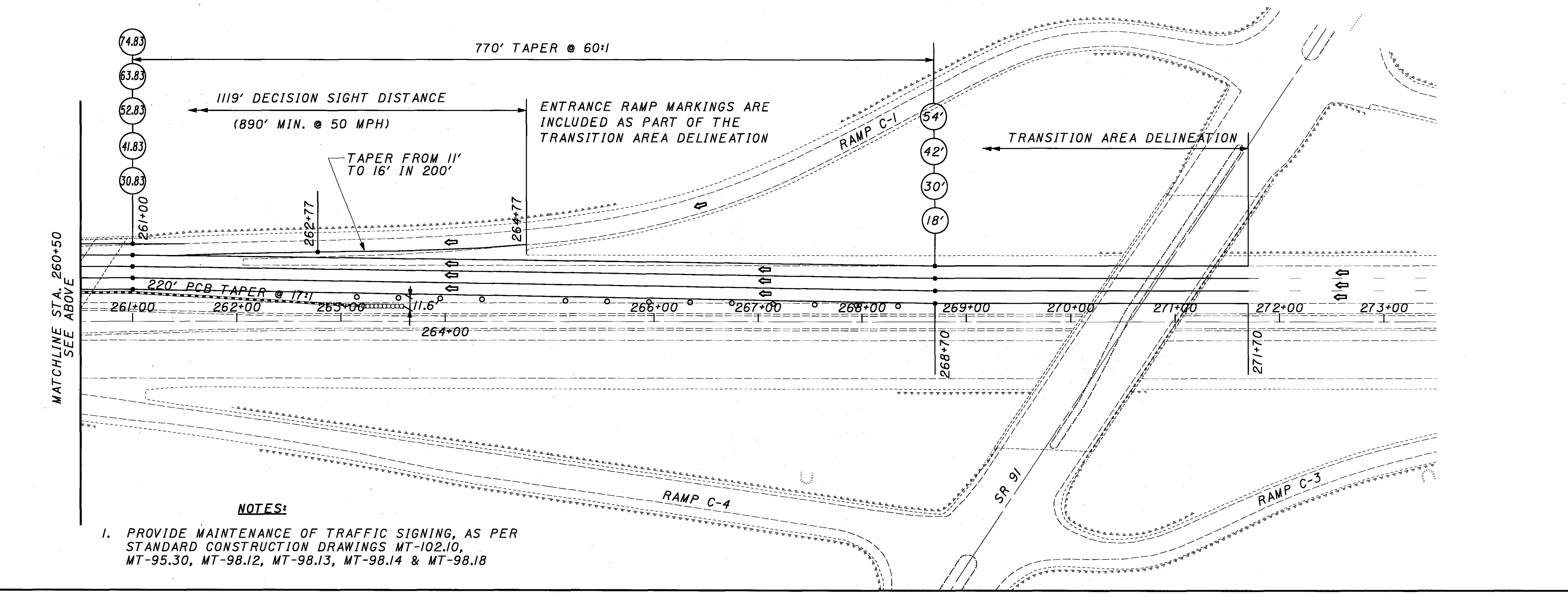
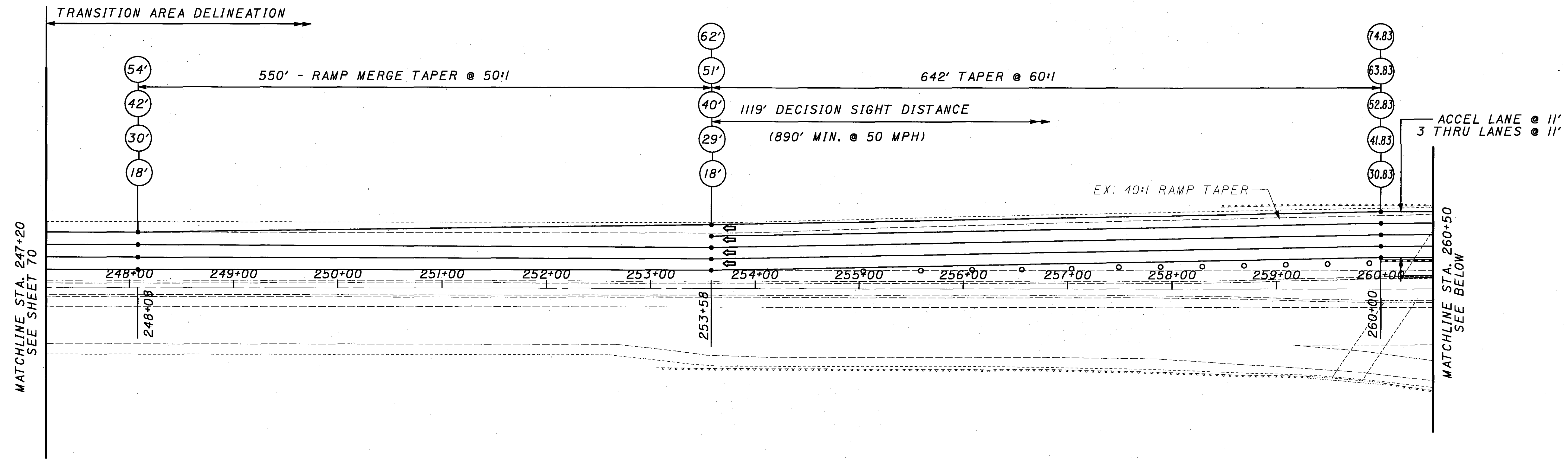
MATCHLINE STA. 237+25
SEE BELOW



CALCULATED
CHECKED

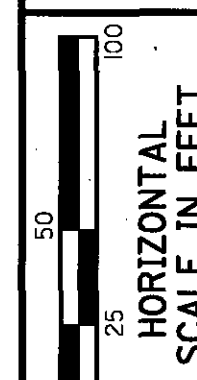
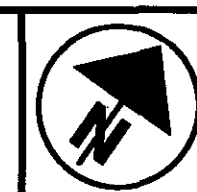
**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 L STAGE 2 PHASE 1 WB**

LAK-2-0.00



- NOTES:**
1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

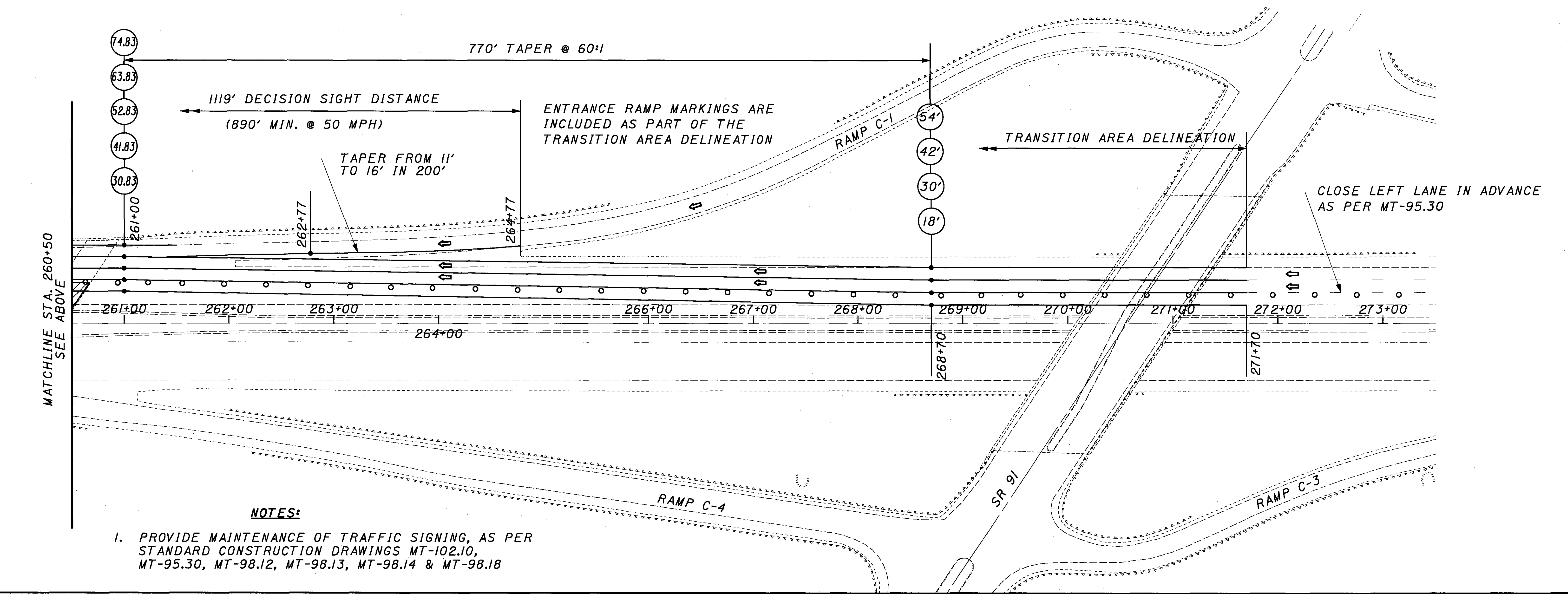
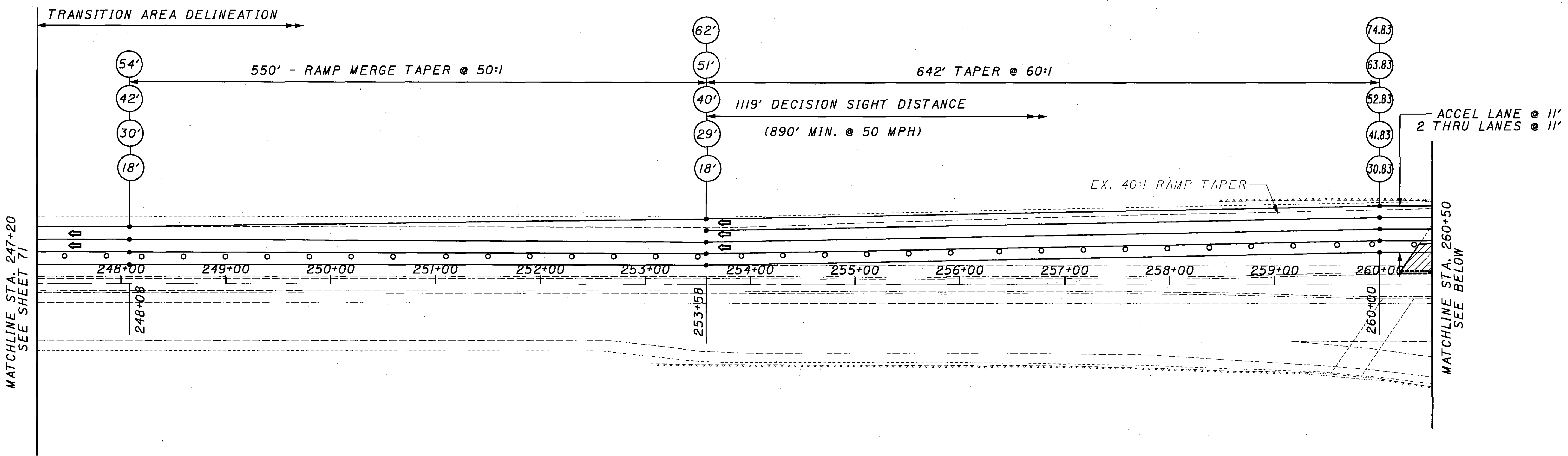
... \21778mp017.dgn



CALCULATED
CHECKED

**MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 L STAGE 2 PHASE 1A WB**

LAK-2-0.00



NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

...21778mp017.dgn



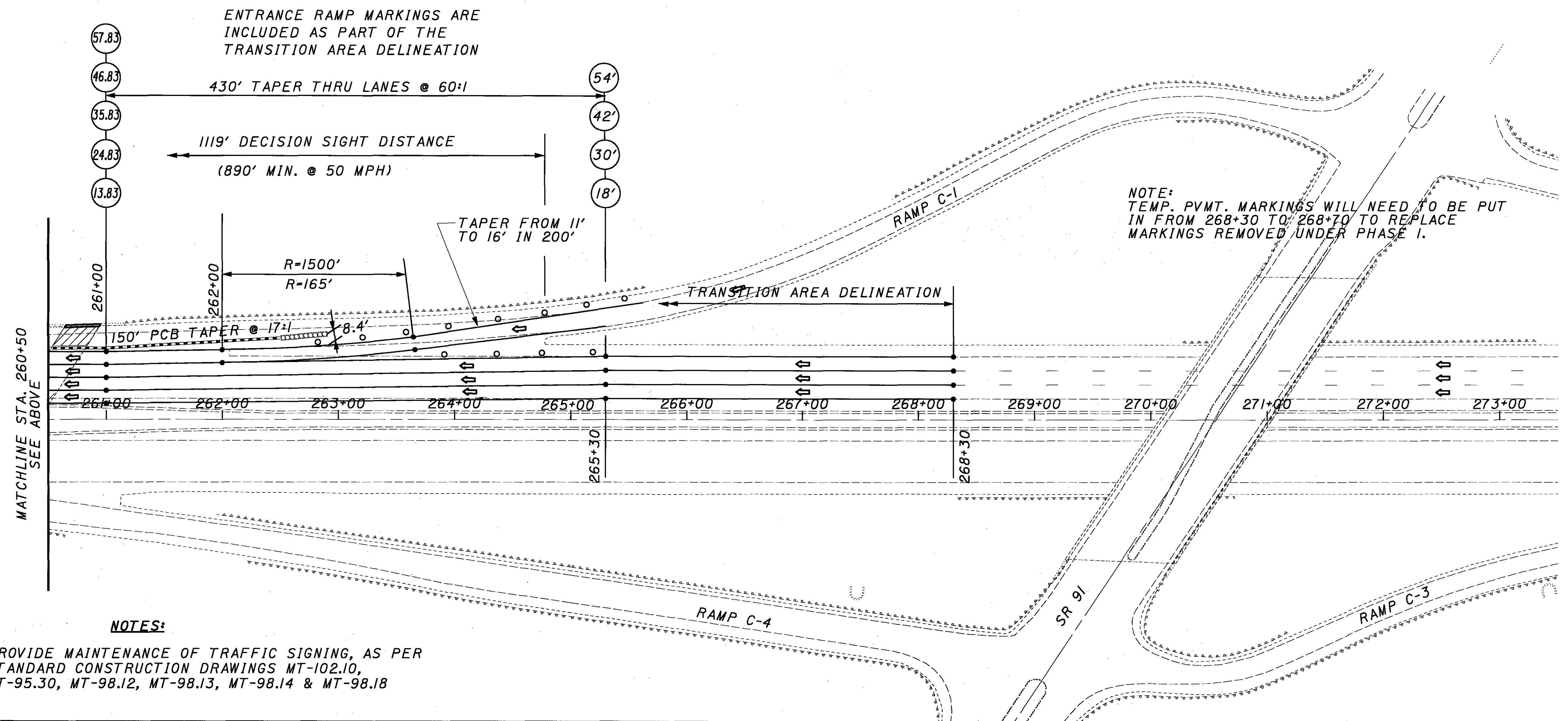
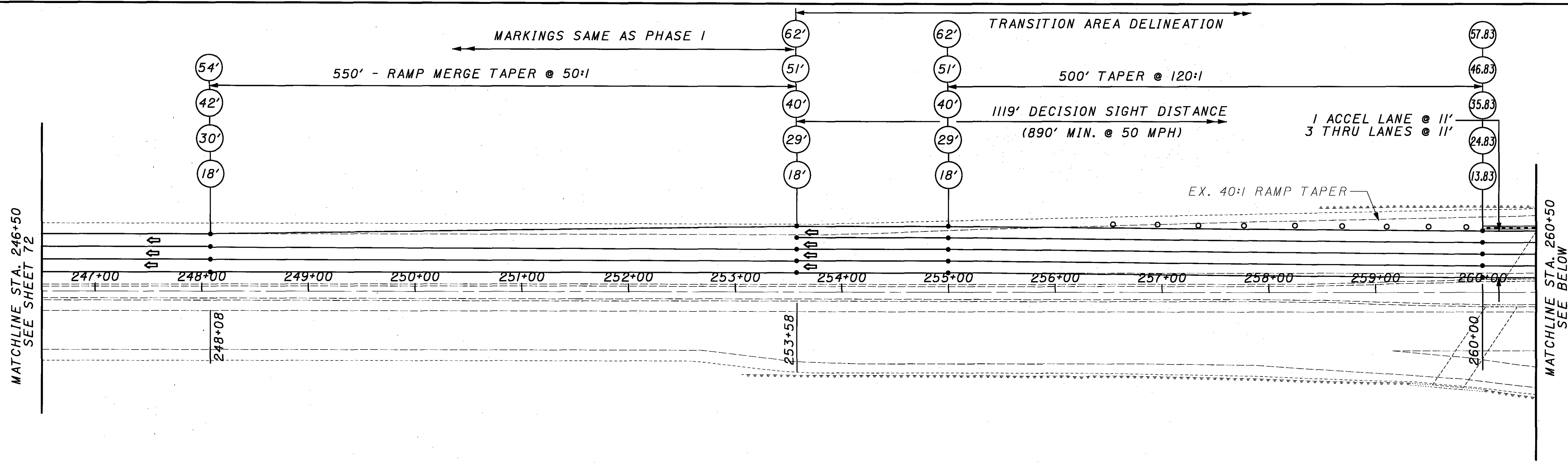
0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 L STAGE 2 PHASE 2 WB

LAK-2-0.00

76
524



NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

.. \21778mp017.dgn

CLOSE LANE USING DRUMS AS PER MT-95.30 IF CLOSURE REQUIRED TO WEST

MARKINGS SAME AS PHASE I

TRANSITION AREA DELINEATION

550' - RAMP MERGE TAPER @ 50:1

500' TAPER @ 120:1

1 ACCEL LANE @ 11'
2 THRU LANES @ 11'

FOLLOW EX. RAMP TAPER

EX. 40:1 RAMP TAPER

MATCHLINE STA. 246+50
SEE SHEET 73

MATCHLINE STA. 260+50
SEE BELOW

247+00 248+00 249+00 250+00 251+00 252+00 253+00 254+00 255+00 256+00 257+00 258+00 259+00 260+00

248+08

253+58

260+00

77.83
66.83
35.83
24.83
13.83

430' TAPER THRU LANES @ 60:1

REVISING THE ENTRANCE RAMP MARKINGS IS INCLUDED AS PART OF THE TRANSITION AREA DELINEATION

TAPER FROM 11' TO 16' IN 200'

54'
42'
30'
18'

CLOSE RIGHT LANE IN ADVANCE OF TAPER AS PER MT-95.30

TRANSITION AREA DELINEATION

MATCHLINE STA. 260+50
SEE ABOVE

261+00 262+00 263+00 264+00 265+00 266+00 267+00 268+00 269+00 270+00 271+00 272+00 273+00

261+00

262+75

265+30

268+30

NOTES:

1. PROVIDE MAINTENANCE OF TRAFFIC SIGNING, AS PER STANDARD CONSTRUCTION DRAWINGS MT-102.10, MT-95.30, MT-98.12, MT-98.13, MT-98.14 & MT-98.18

...21778mp017.dgn



CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC PLAN
LAK-2-0303 L STAGE 2 PHASE 2A WB

LAK-2-0.00

77
524

NOTES

1. This drawing presents delineation procedures for freeways and expressways on asphalt surfaces. Procedures are provided for transition areas and for tangent areas. The procedures for transition areas apply to crossovers and to lane shifts of 4 feet (1.2 m) or greater. Delineation of transition areas for shifts of less than 4 feet (1.2 m) shall be as per the tangent area delineation.
2. Raised Pavement Markers shall meet the following seasonal specifications:
 - a) Raised Pavement Markers in place during the normal construction season may be either 621 Raised Pavement Markers or 614 Work Zone Raised Pavement Markers (WZRPMS). The normal construction season with regard to use of WZRPMS shall be the period from April 1 through October 15.
 - b) At locations where it is intended that Raised Pavement Markers will winter over, 621 Raised Pavement Markers shall be provided.
 - c) At locations where it is intended that work will continue beyond October 15 but will be completed prior to the beginning of snow-plowing season, 614 WZRPMS may remain in place until such time. Snow-plowing season shall be as specified in the plans. If snow-plowing season is not specified in the plans, it shall be assumed that snow-plowing season runs from October 16 through March 31. If project delays, not the fault of ODOT, cause work to extend into the snow-plowing season, the contractor shall be responsible for replacing WZRPMS with 621 Raised Pavement Markers, as determined by the Engineer, at the contractor's expense.
3. All material furnished shall be listed on the Department's Prequalified Lists.
4. The geometrics of the crossover shall be as shown in the plans. Additional details are provided in Standard Construction Drawing MT-95.70.
5. See Standard Construction Drawings MT-102.10 and MT-102.20 for more details concerning lane shifts.
6. Spacing of raised pavement markers (RPMs) shall be at 20 feet (6 m) center-to-center for all long-line marking within transition areas. Within tangent areas RPMs shall be provided only along the lane lines, spaced at 120 foot (36 m) center-to-center.
7. The RPMs shall be 1-way, facing oncoming traffic, and shall be white or yellow to match the color of the associated line marking.
8. Along the edge lines, the RPMs shall be offset a maximum of 4 inches (100 mm) to the outside of the lines. Along the channelizing lines, the RPMs shall be offset to the left of the lines by no more than 1 inch (25 mm). Along the lane lines the RPMs shall be centered between dashes.
9. The RPMs shall be removed when they are no longer appropriate.
10. Holes resulting from removal of 621 RPMs shall be filled as per 202.10. If removal of the 621 RPMs does not take place immediately after the highlighted alignment becomes invalid, the reflectors within the 621 RPMs shall be removed.
11. Following removal of 621 RPMs resurfacing of the transition shall be performed. The resurfacing shall be performed at the time the surface course is being applied. In preparation for resurfacing, the existing pavement shall be removed to a depth necessary to match the level of the intermediate course of the proposed pavement.

04-21-06

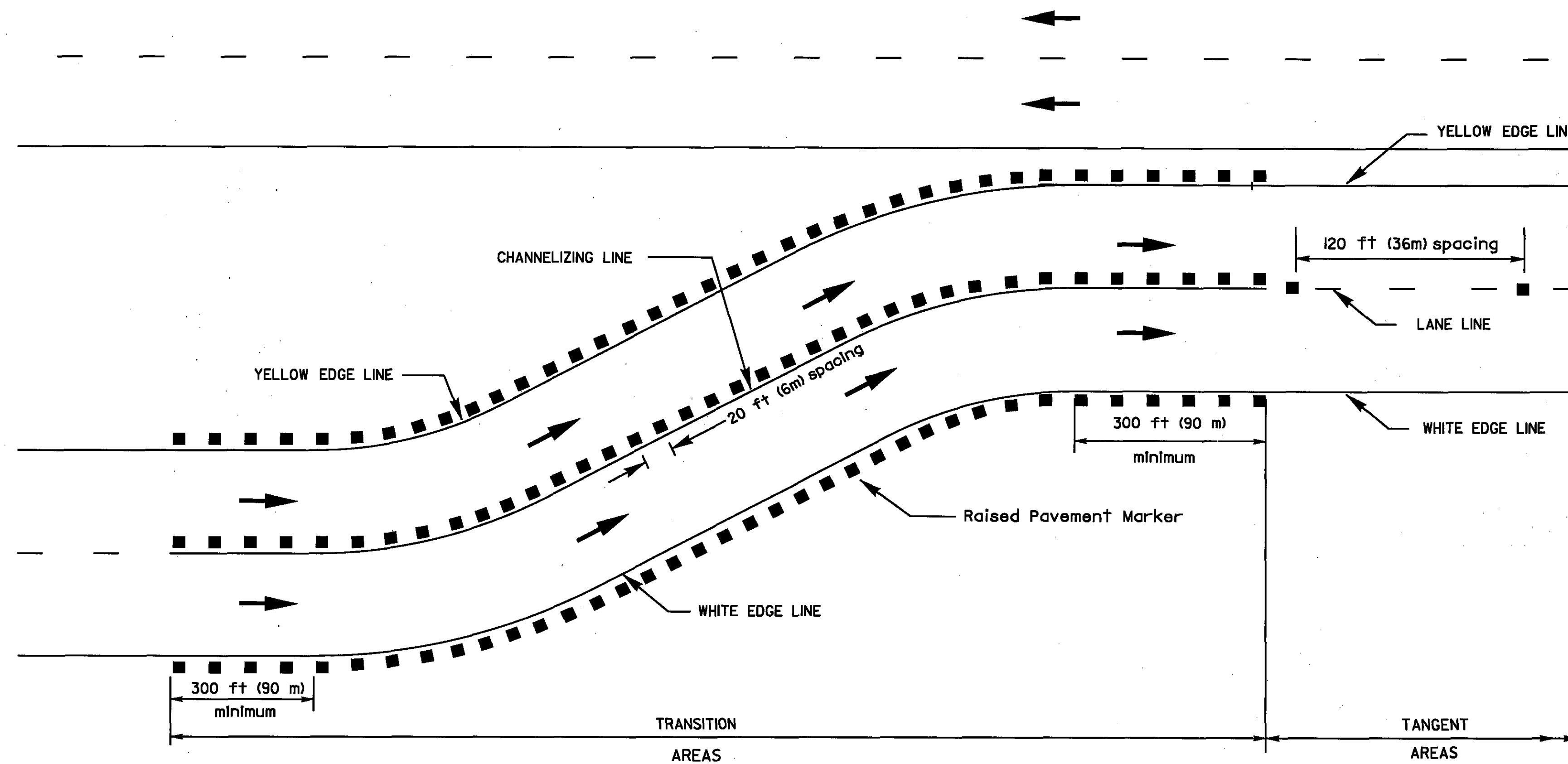
WORK ZONE DELINEATION ON ASPHALT SURFACES

OFFICE OF TRAFFIC ENGINEERING

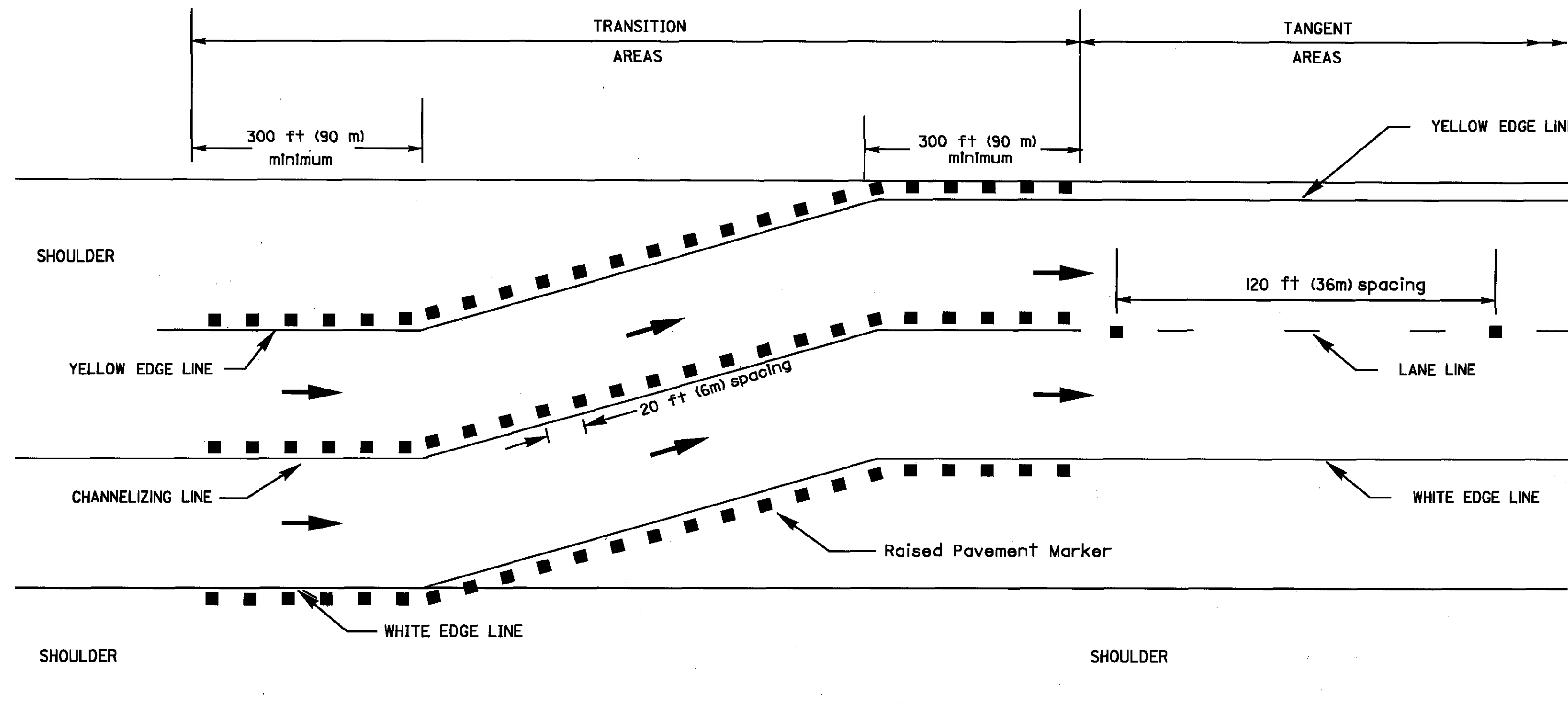
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WORK ZONE DELINEATION FOR CROSSOVERS



WORK ZONE DELINEATION FOR LANE SHIFTS

LEGEND

- RPM
- ➔ DIRECTION OF TRAVEL

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NOTES

1. This drawing presents delineation procedures for freeways and expressways on concrete surfaces. Procedures are provided for transition areas and for tangent areas. The procedures for transition areas apply to crossovers and to lane shifts of 4 feet (1.2 m) or greater. Delineation of transition areas for shifts of less than 4 feet (1.2 m) shall be as per the tangent area delineation.
2. The Work Zone Raised Pavement Markers (WZRPMS) shown on this drawing are intended for use only during the non-snow-plowing season. WZRPMS shall not be provided during the snow-plowing season. The snow-plowing season shall be from October 16 through March 31 or as otherwise specified in the plans. Where a temporary alignment will remain in use through the winter, the WZRPMS shall be removed prior the beginning of snow-plowing season and replaced approximately April 1, or as otherwise determined by the Engineer.
3. All material furnished shall be listed on the Department's Qualified Products Lists.
4. The geometrics of the crossover shall be as shown in the plans. Additional details are provided in Standard Construction Drawing MT-95.70.
5. See Standard Construction Drawings MT-102.10 and MT-102.20 for more details concerning lane shifts.
6. Spacing of WZRPMS shall be at 20 feet (6 m) center-to-center for all long-line marking within transition areas. Within tangent areas WZRPMS shall be provided only along the lane lines, spaced at 120 feet (36 m) center-to-center.
7. The WZRPMS shall be I-way, facing oncoming traffic, and shall be white or yellow to match the color of the associated line marking.
8. Along the edge lines, the WZRPMS shall be offset a maximum of 4 inches (100 mm) to the outside of the lines. Along the channelizing lines, the WZRPMS shall be offset to the left of the lines by no more than 1 inch (25 mm). Along the lane lines the WZRPMS shall be centered between dashes.
9. The WZRPMS shall be removed when they are no longer appropriate.

04-21-06

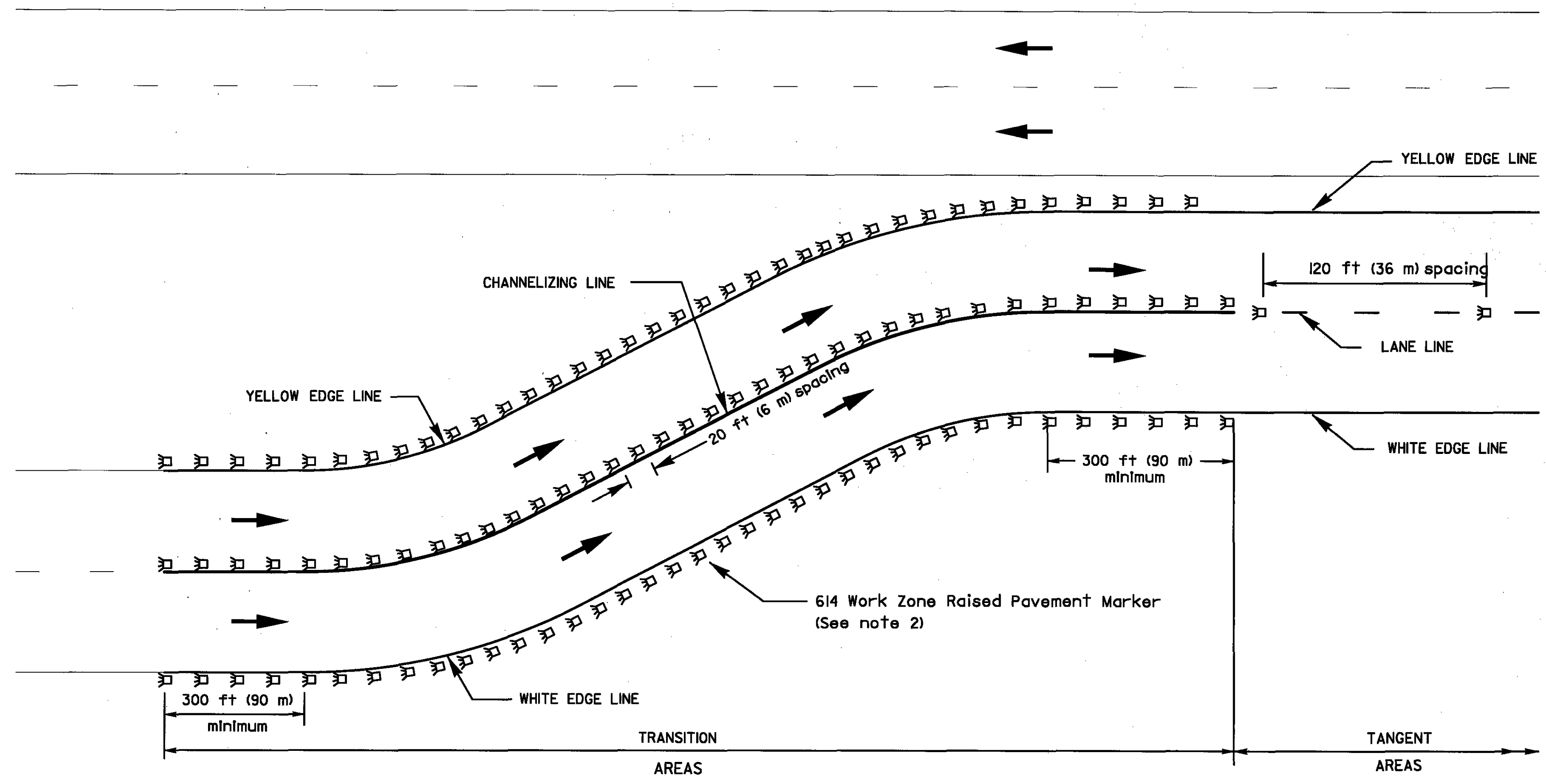
WORK ZONE DELINEATION ON CONCRETE SURFACES

OFFICE OF TRAFFIC ENGINEERING

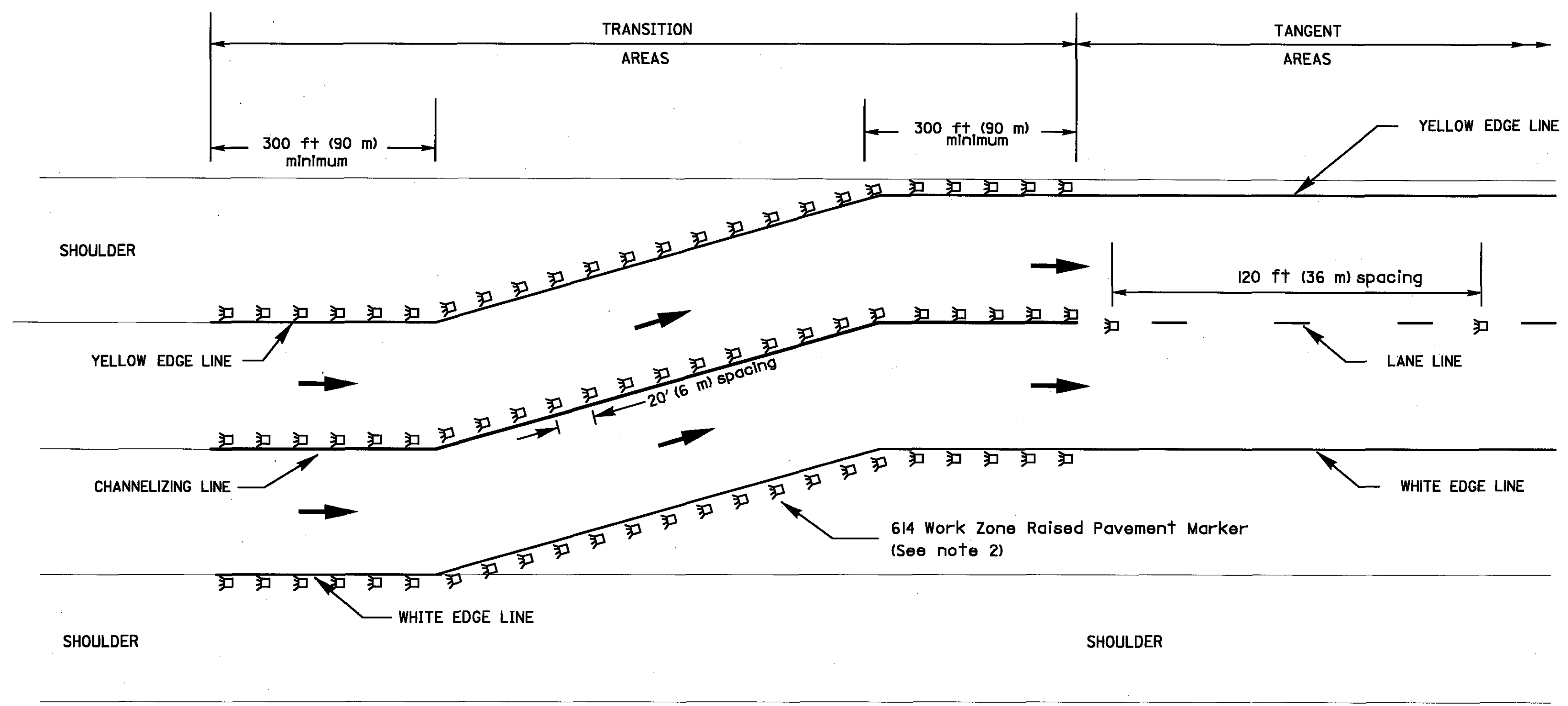
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WORK ZONE DELINEATION FOR CROSSOVERS

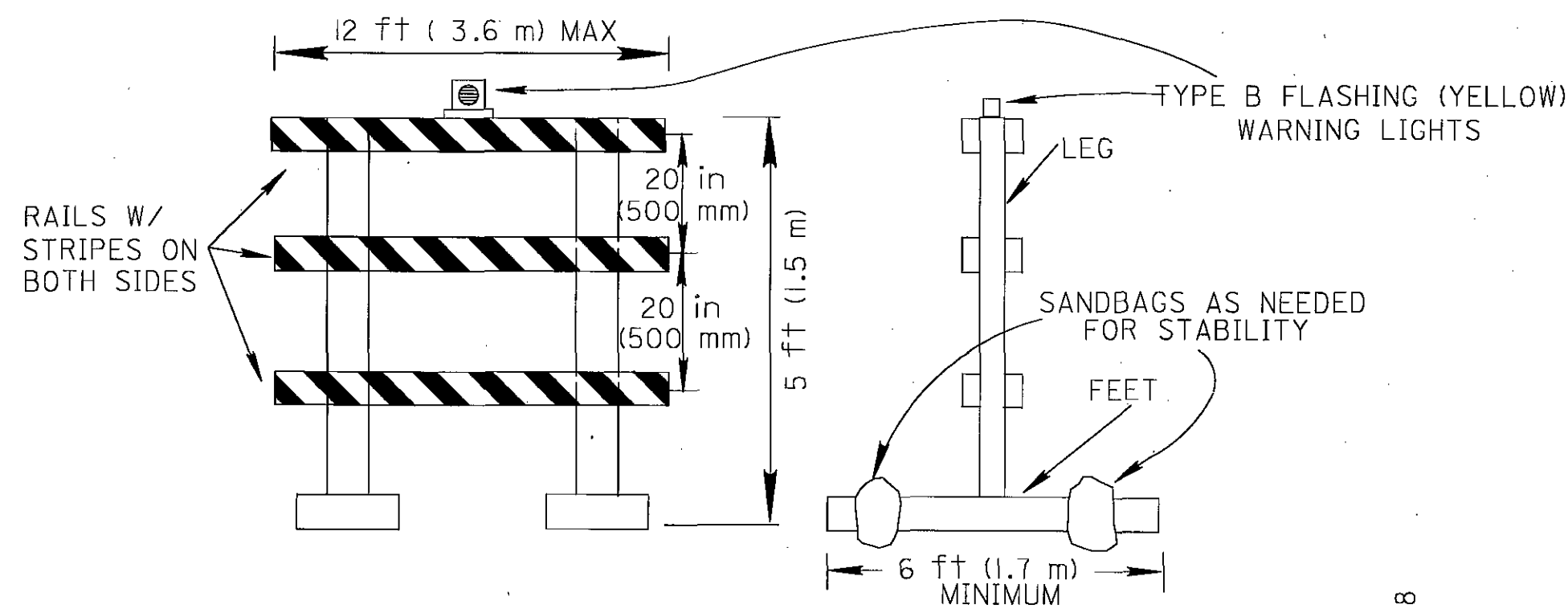


WORK ZONE DELINEATION FOR LANE SHIFTS

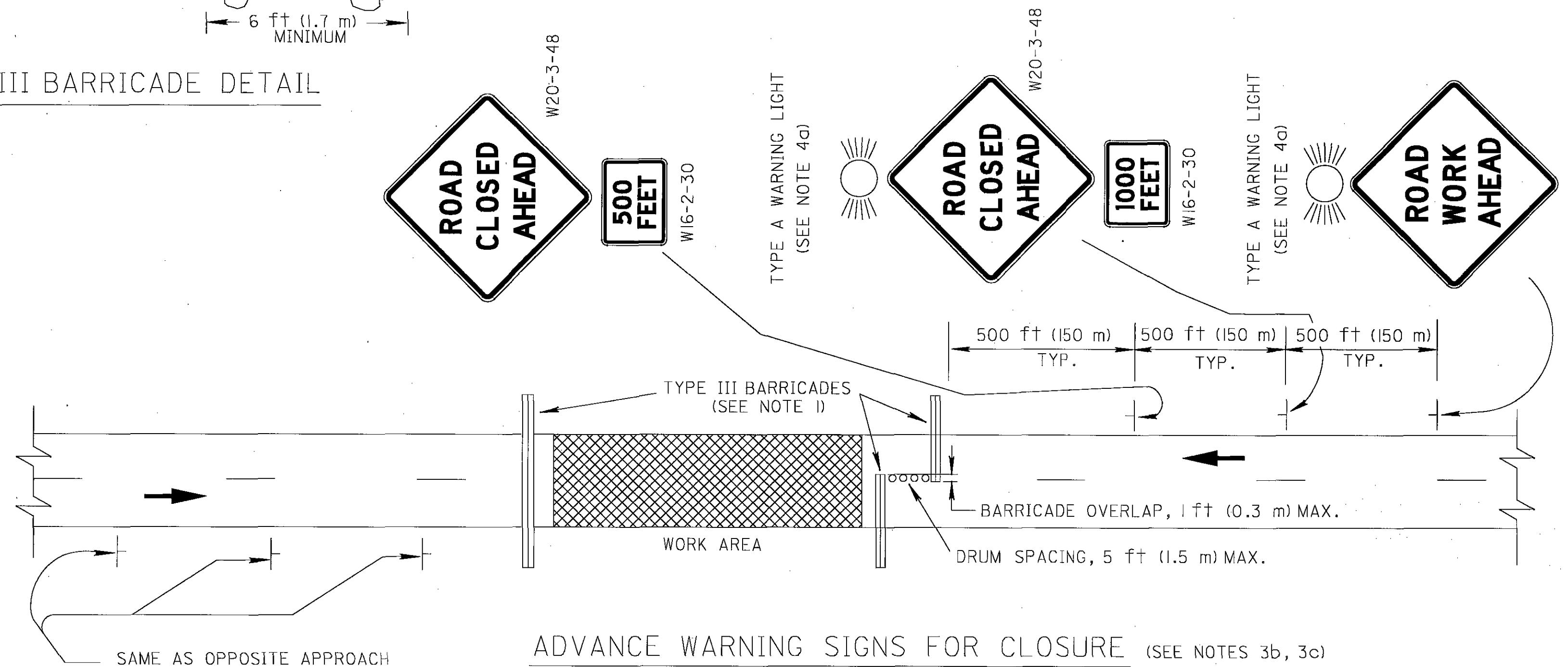
LEGEND

-  WORK ZONE RPM, TYPE A
-  DIRECTION OF TRAVEL

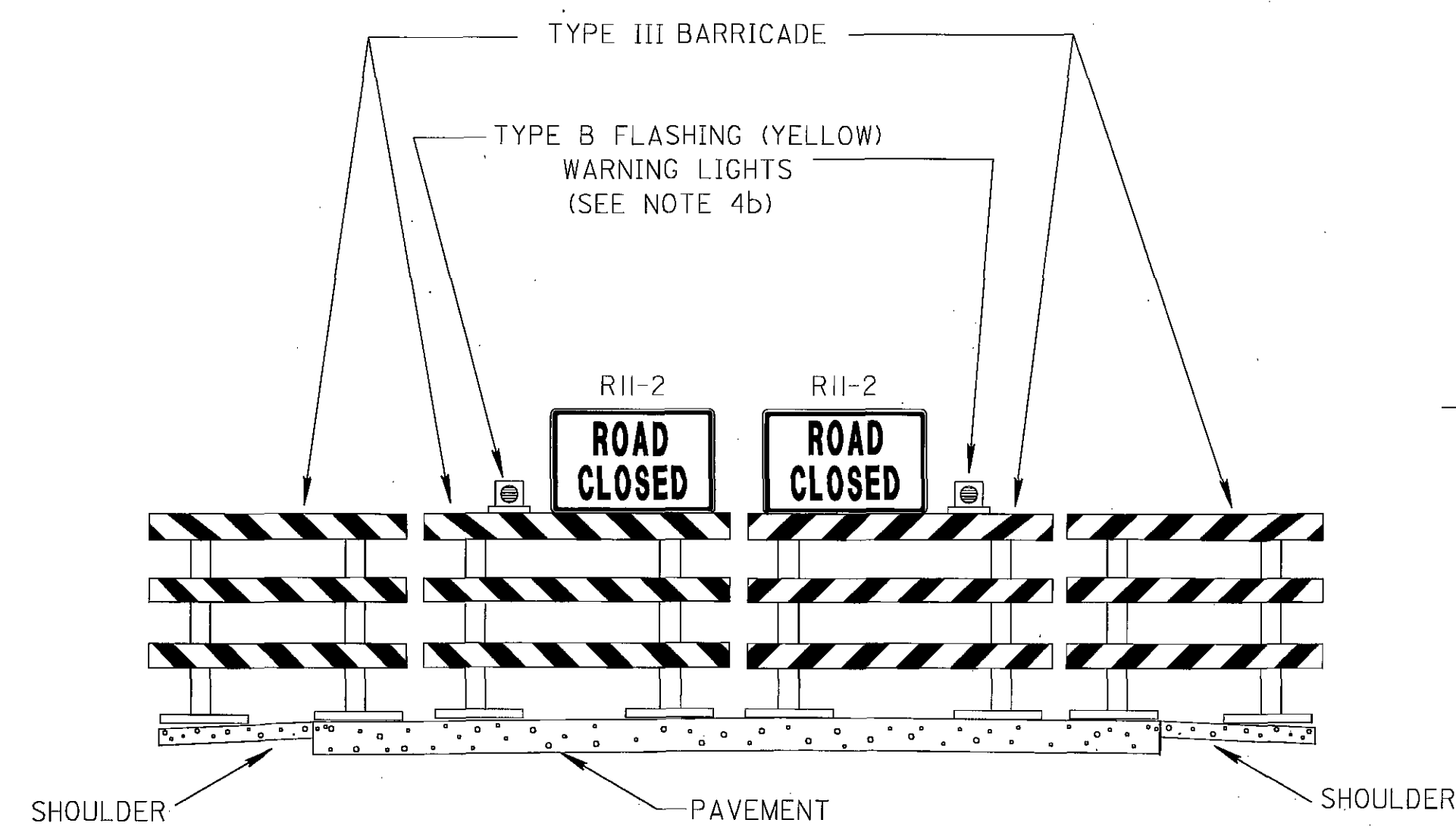
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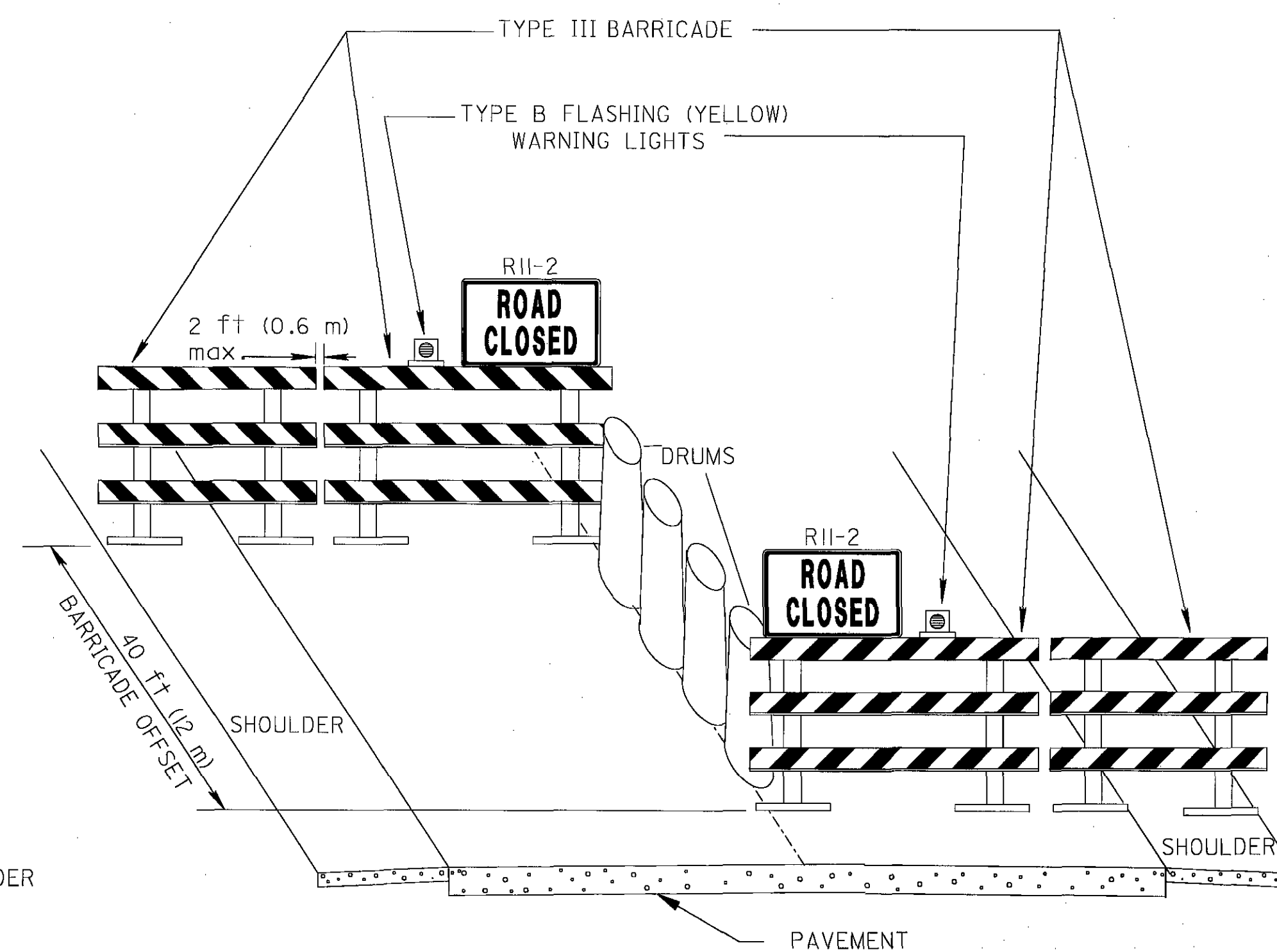
TYPE III BARRICADE DETAIL



ADVANCE WARNING SIGNS FOR CLOSURE (SEE NOTES 3b, 3c)



BARRICADE CLOSURE PROFILE



BARRICADE CLOSURE OFFSET OPTION

NOTES

1. BARRICADE USE
 - a. Barricades shall be NCHRP 350 compliant and shall be erected according to details shown. When the road is closed to traffic, barricades shall be used to effectively close the entire roadway, including the paved or aggregate shoulder.
 - b. Barricades along adjacent lanes may be offset from each other as shown, with drums used to close the resulting gap. Maximum drum spacing shall be 5 feet (1.5 m).
2. BARRICADE REFLECTORIZATION AND COLOR
 - a. In construction or maintenance areas, all rails of the barricades shall be reflectorized with orange and white reflectorized Type G sheeting in 6 inches (150 mm) wide alternate stripes which slope downward toward the center line of the road at an angle of 45 degrees. All three rails of the barricade shall be striped on both sides. Legs and feet shall be either all-white or may display the natural color of the material used.
 - b. Barricades used in permanent or semi-permanent applications shall differ only in that they shall use red and white stripes.
3. SIGNS
 - a. Where the road is closed to traffic by the erection of barricades, ROAD CLOSED (R11-2) signs shall be mounted as shown.
 - b. The Advance Warning Signs shown on this drawing are intended for use when the travelled way is brought to an end with no direction given to traffic. Where traffic has been directed from the permanent roadway at or just in advance of the barricades, advance signing should be provided as shown in SCD MT-95.70 or OMTCD Figure 6H-7 as appropriate.
 - c. The Advance Warning Signs shall be placed on both sides of the roadway for 4-lane divided highways or when required by the plans.
4. FLASHING WARNING LIGHTS
 - a. Type A Flashing Warning Lights are required on the ROAD WORK AHEAD (W20-1) sign and on the first ROAD CLOSED AHEAD (W20-3) sign.
 - b. Type B Flashing Warning Lights shall be provided on Type III Barricades, one light per each closed lane. Each light shall be conspicuously visible at all distances up to 1000 feet (300 m) under normal atmospheric conditions. The light shall be in operation at all times during the period the highway is closed.
5. OPERATION ON 2-LANE 2-WAY ROADWAYS
 - a. Where the barricade runs across the entire roadway without longitudinally offsetting sections, the Contractor will normally open only the left side of the barricade as necessary to allow the construction vehicle to enter, and then shall immediately close it. The entire barricade will not normally be opened at the same time. The Contractor shall assign an employee to assure that the barricade is closed at the end of each workday.
 - b. Where the sections of the barricade are offset from each other with drums provided to close the gap (see note 1b), the contractor may move the drums as necessary to allow the construction vehicle to enter, and then shall immediately replace the drums. The contractor shall assign an employee to assure that the drums are in place at the end of each workday.

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ROAD CLOSURE USING TYPE III BARRICADES

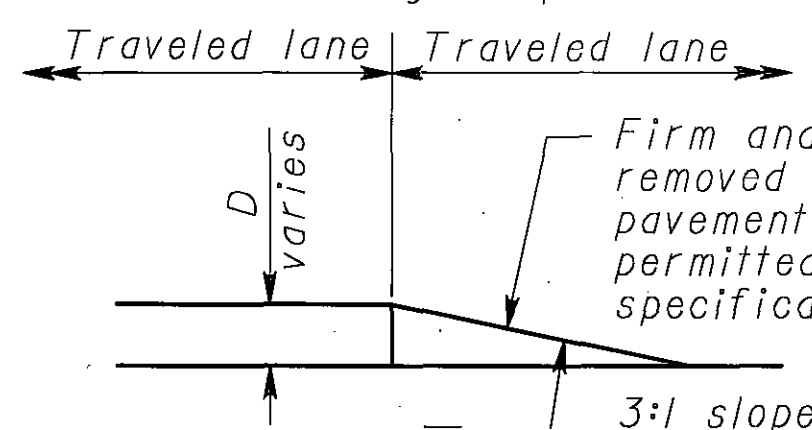
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GENERAL NOTES

- It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. The suggested treatments are intended for high volume projects that will last at least seven days and have an active work zone 1 mile [1.6 km] or less in length. For guidance on the use of this sheet, see L&D Manual Volume One, Section 500. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for **Item 614 - Maintaining Traffic**.
- While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
- In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
- The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
- Where concrete barrier is specified, it shall be in accordance with **SCD RM-4.2** and Item 622.
- When drums are specified for a drop-off condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
- When OW-151 (Low Shoulder) signs or OW-155 (Shoulder Drop-Off) signs or OW-171 (Uneven Lanes) signs are required, they shall be placed 750' [230 m] in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the drop-off condition extends more than 0.5 mile [800 m], additional signs should be erected at intervals of 1.0 mile [1600 m] or less.
- For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate a difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
- Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10' [3.0 m], drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" [125] and approval is granted by the Project Engineer.
- Pavement Repairs (or similar work):
 - Lengths greater than 60' [18 m] - utilize appropriate treatment from Condition I.
 - Lengths of 60' [18 m] or less - repairs shall be effected in accordance with CMS 255.08. Drums may be used as a separator adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT (MILLING OR RESURFACING)

- This treatment may be used when permitted for Condition I only.
- OW-171 sign required.



Firm and unyielding material (to be removed prior to placing the abutting pavement course, unless otherwise permitted to remain by the plans or specifications).

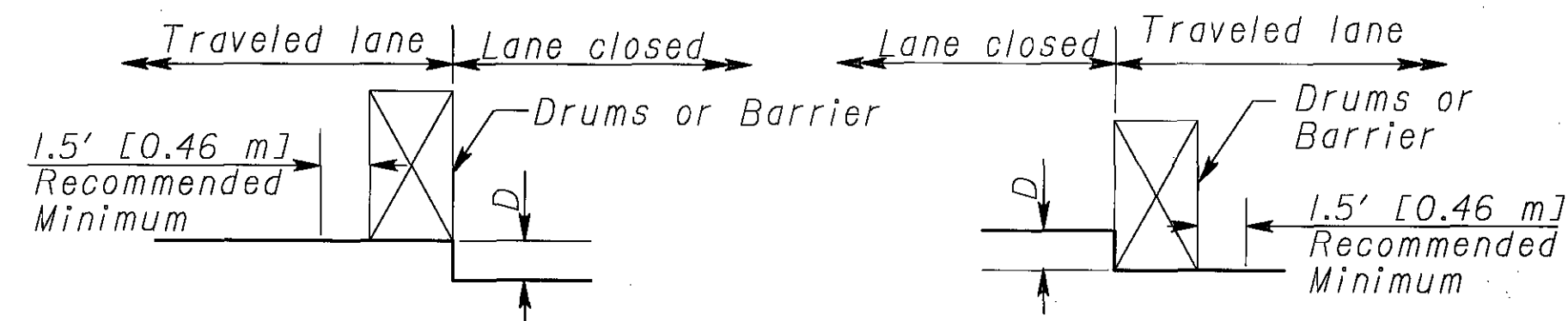
CONDITION I

DROP-OFFS BETWEEN TRAVELED LANES

- These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D	Treatment
$\leq 1\frac{1}{2}"$ [≤ 40]	Erect OW-171 sign.
$1\frac{1}{2}"$ -3" [40-75]	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
$> 3"$ -5" [> 75 -125]	Lane closure utilizing drums as shown below.
$> 5"$ [> 125]	Lane closure utilizing portable concrete barrier as shown below.

* Cones may be used for daytime only conditions.



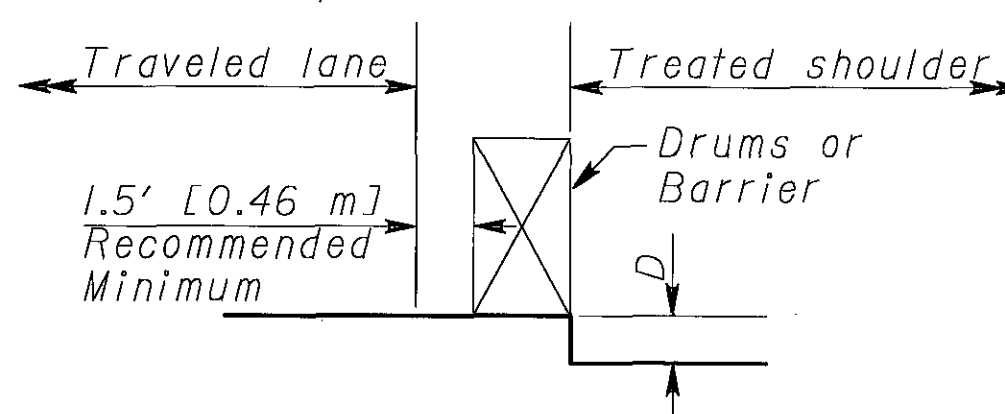
CONDITION II

DROP-OFFS WITHIN GRADED SHOULDER AREA

- The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
- The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials or concrete). For the purpose herein, its maximum width shall be considered to be 12' [3.6 m].

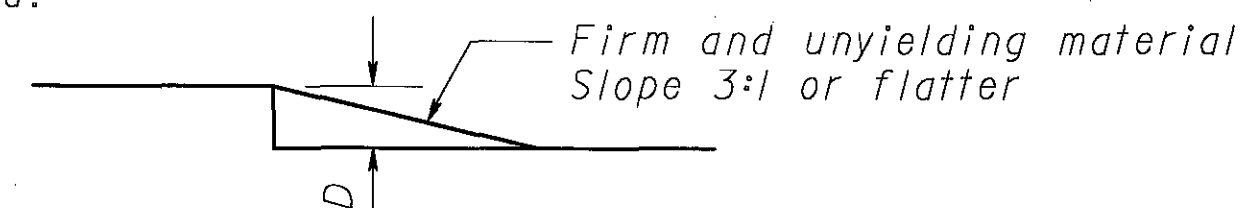
D	Treatment
$\leq 1\frac{1}{2}"$ [≤ 40]	1) Erect OW-155 signs.
$> 1\frac{1}{2}"$ -5" [> 40 -125]	1) If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If minimum lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
$> 5"$ -12" [125-305] Daylight only	If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below.
$> 5"$ -24" [> 125 -610]	1) If minimum lane width* requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If minimum lane width* requirements cannot be met, close adjacent lane utilizing drums.
$> 24"$ [> 610]	Lane closure utilizing portable concrete barrier as shown below.

* Minimum lane widths shall be 10' [3.0 m] unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

- This treatment may not be used within a bituminous shoulder where a hot longitudinal joint per CMS 401.15 is required.
- OW-151 signs required.



CONDITION III

DROP-OFFS BEYOND GRADED SHOULDER OR BACK OF CURB

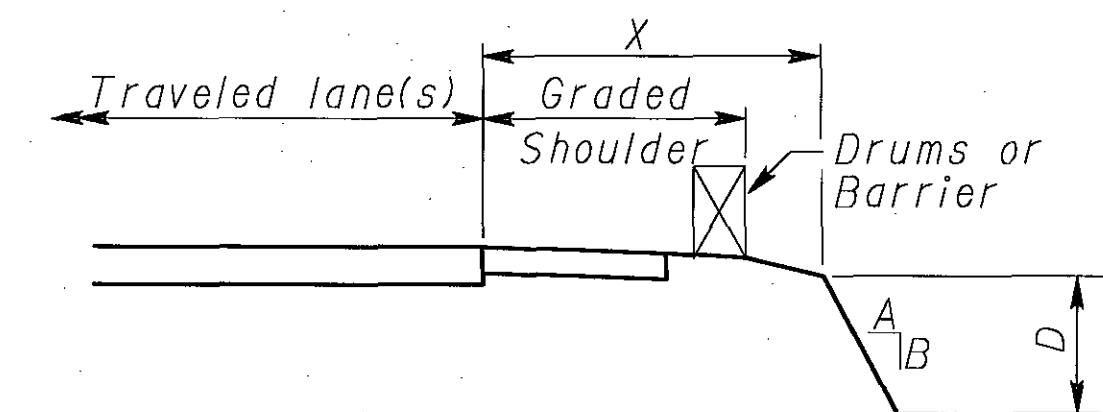
- See Note 2 under Condition II.
- Use Chart A or B below, as applicable.

CHART A

USE FOR: 1. Uncurbed Facilities.

2. Curbed Facilities, where:

- Curbs are less than 6" [150] in height.
- Curbs are 6" [150] or greater in height and the legal speed is greater than 40 mph [70 km/h].

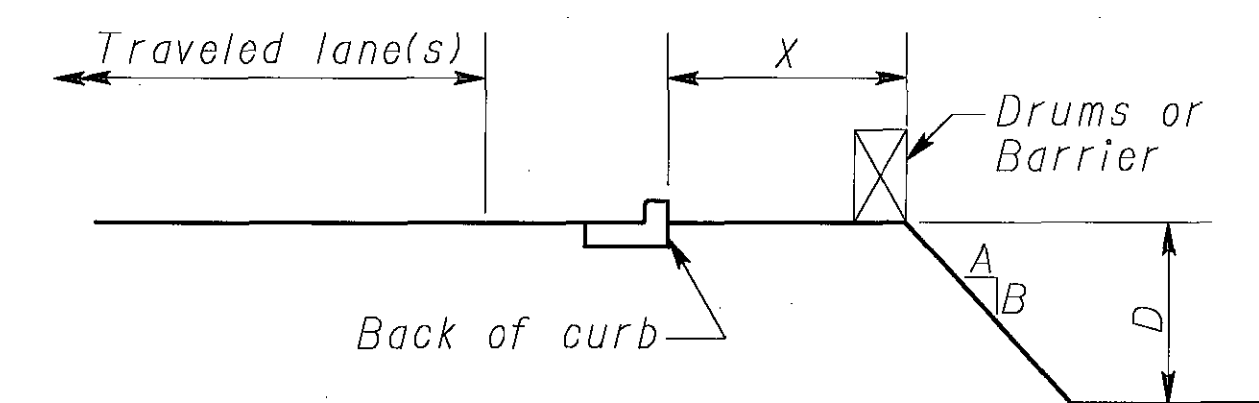


X	D	A/B	Treatment Required	
			Day	Night
0-4' [0-1.2 m]	Any	Any	(a)	(a)
4'-30' [1.2-9.1 m]	Any	3:1 or Flatter	None	None
4'-12' [1.2-3.6 m]	$\leq 3"$ [≤ 75]	Steeper than 3:1	None	None
4'-12' [1.2-3.6 m]	$> 3"$ - $\leq 12"$ [> 75 - ≤ 305]	Steeper than 3:1	Drums	Drums
4'-12' [1.2-3.6 m]	$> 12"$ [> 305]	Steeper than 3:1	Drums	Barrier
$> 12'$ -20' [> 3.6 -6.1 m]	$\leq 12"$ [≤ 305]	Steeper than 3:1	None	None
$> 12'$ -20' [> 3.6 -6.1 m]	$> 12"$ - $\leq 24"$ [> 305 - ≤ 610]	Steeper than 3:1	Drums	Drums
$> 12'$ -20' [> 3.6 -6.1 m]	$> 24"$ [> 610]	Steeper than 3:1	Drums	Barrier
$> 20'$ -30' [> 6.1 -9.1 m]	$\leq 24"$ [≤ 610]	Steeper than 3:1	None	None
$> 20'$ -30' [> 6.1 -9.1 m]	$> 24"$ [> 610]	Steeper than 3:1	Drums	Barrier
$> 30'$ [> 9.1 m]	Any	Any	None	None

(a) Use treatment specified under Condition II.

CHART B

USE FOR: Curbed facilities, where the curb is 6" [150] or greater in height and the legal speed is 40 mph [70 km/h] or less.



X	D	A/B	Treatment Required	
			Day	Night
0-10' [0-3.0 m]	$\leq 12"$ [≤ 305]	Any	None	Drums
0-10' [0-3.0 m]	$> 12"$ [> 305]	Any	Drums	Drums
$> 10'$ [> 3.0 m]	Any	Any	None	None

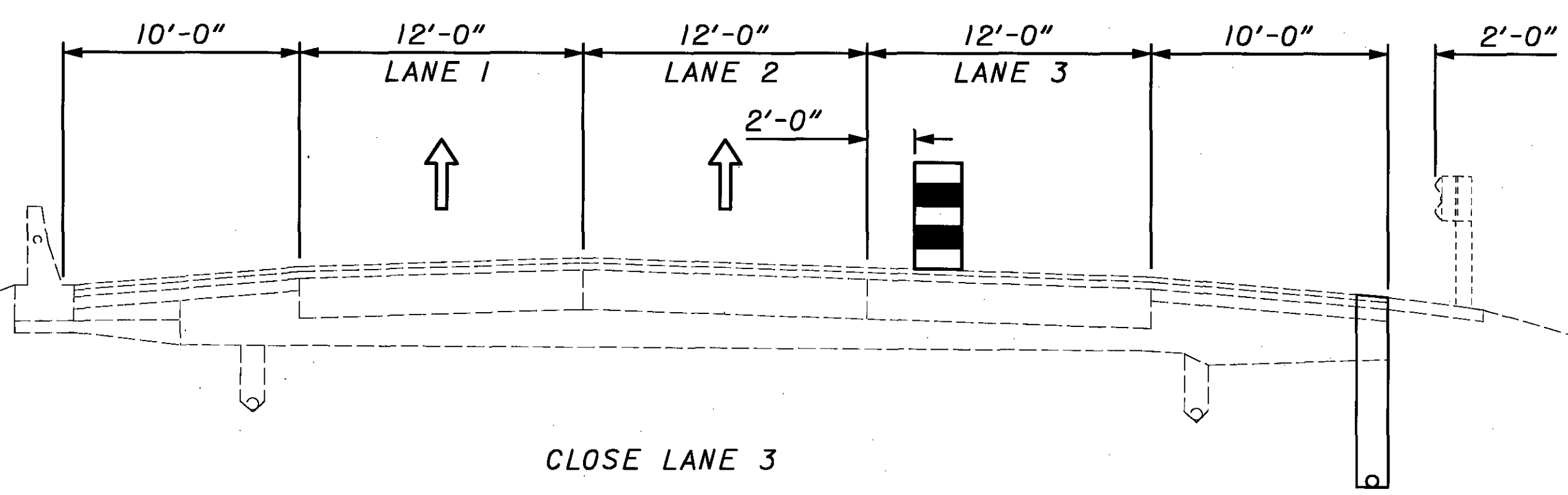
NOTE: All metric dimensions (in brackets []) are in millimeters unless otherwise noted.

CONSTRUCTION S.R. 2

PRE-PHASE 1 - A

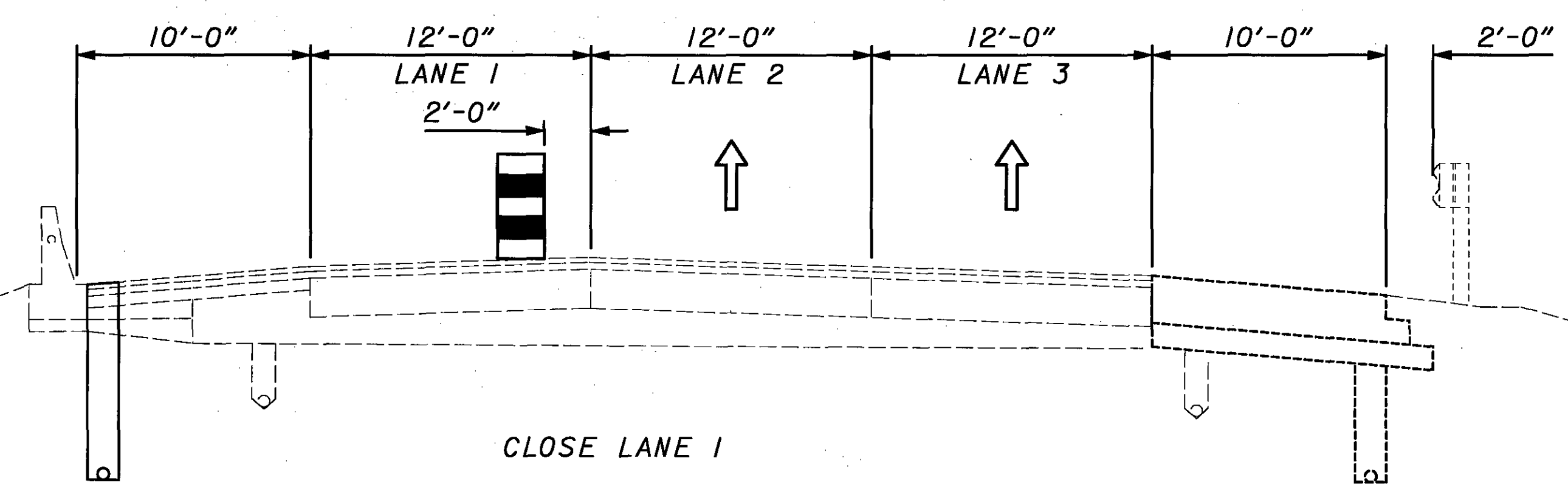
ALL PHASES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE "PERMITTED LANE CLOSURE" NOTE ON SHEET 82.

PRE-PHASE 1 - C



CLOSE LANE 3
SHORT TERM CLOSURE
PLACE OUTSIDE UNDERDRAIN

CONSTRUCTION S.R. 2

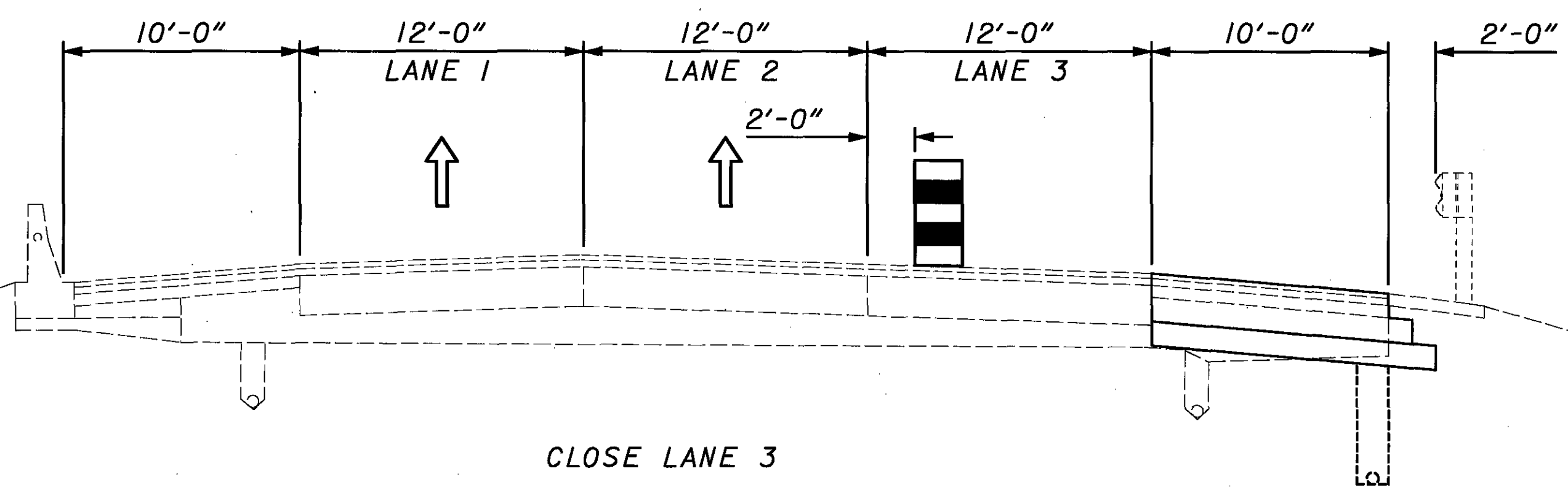


CLOSE LANE 1
SHORT TERM CLOSURE
PLACE INSIDE UNDERDRAIN

CONSTRUCTION S.R. 2

PRE-PHASE 1 - B

THE SHOULDER EXCAVATION AREA SHALL BE BACKFILLED PRIOR TO OPENING THE ADJACENT LANE TO TRAFFIC. SEE DROP OFF NOTE.



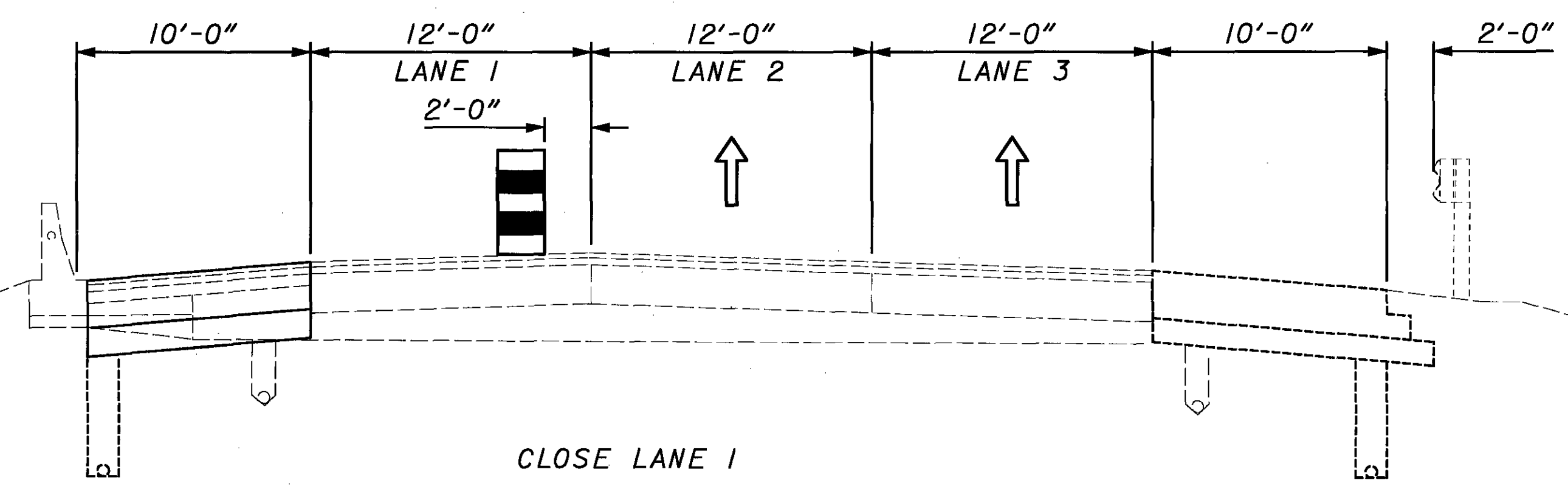
CLOSE LANE 3
SHORT TERM CLOSURE
REMOVE SHOULDER, PLACE SUBBASE AND 12" - 30I.

PRE-PHASE 1-B MAY BE COMBINED WITH PRE-PHASE 1-A PROVIDING THAT THE SHOULDER WORK CAN BE COMPLETED AND LANE 3 OPENED TO TRAFFIC AS PER THE THE SCHEDULE OF THRU LANES TO BE MAINTAINED.

CONSTRUCTION S.R. 2

PRE-PHASE 1 - D

THE SHOULDER EXCAVATION AREA SHALL BE BACKFILLED PRIOR TO OPENING THE ADJACENT LANE TO TRAFFIC. SEE DROP OFF NOTE.



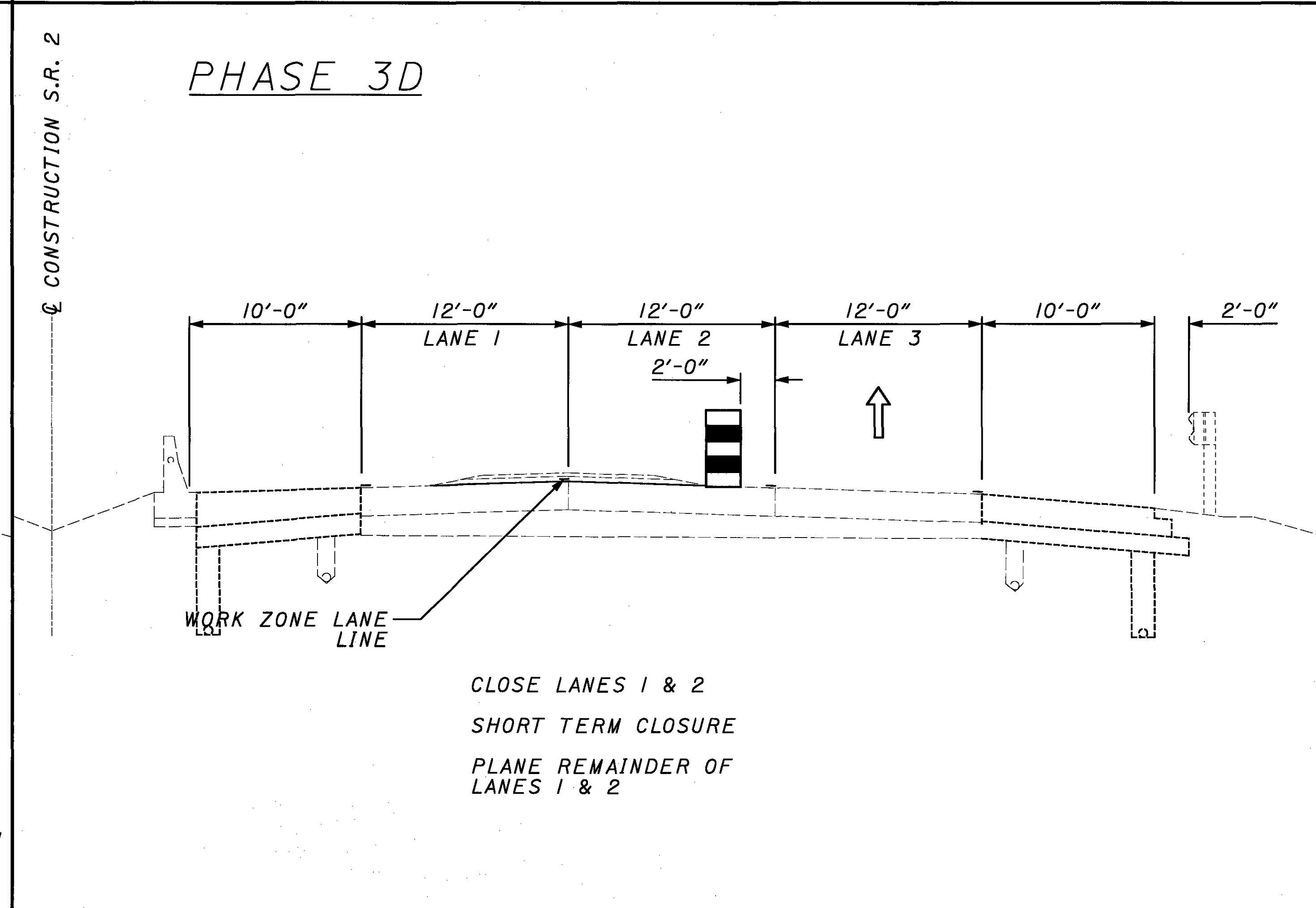
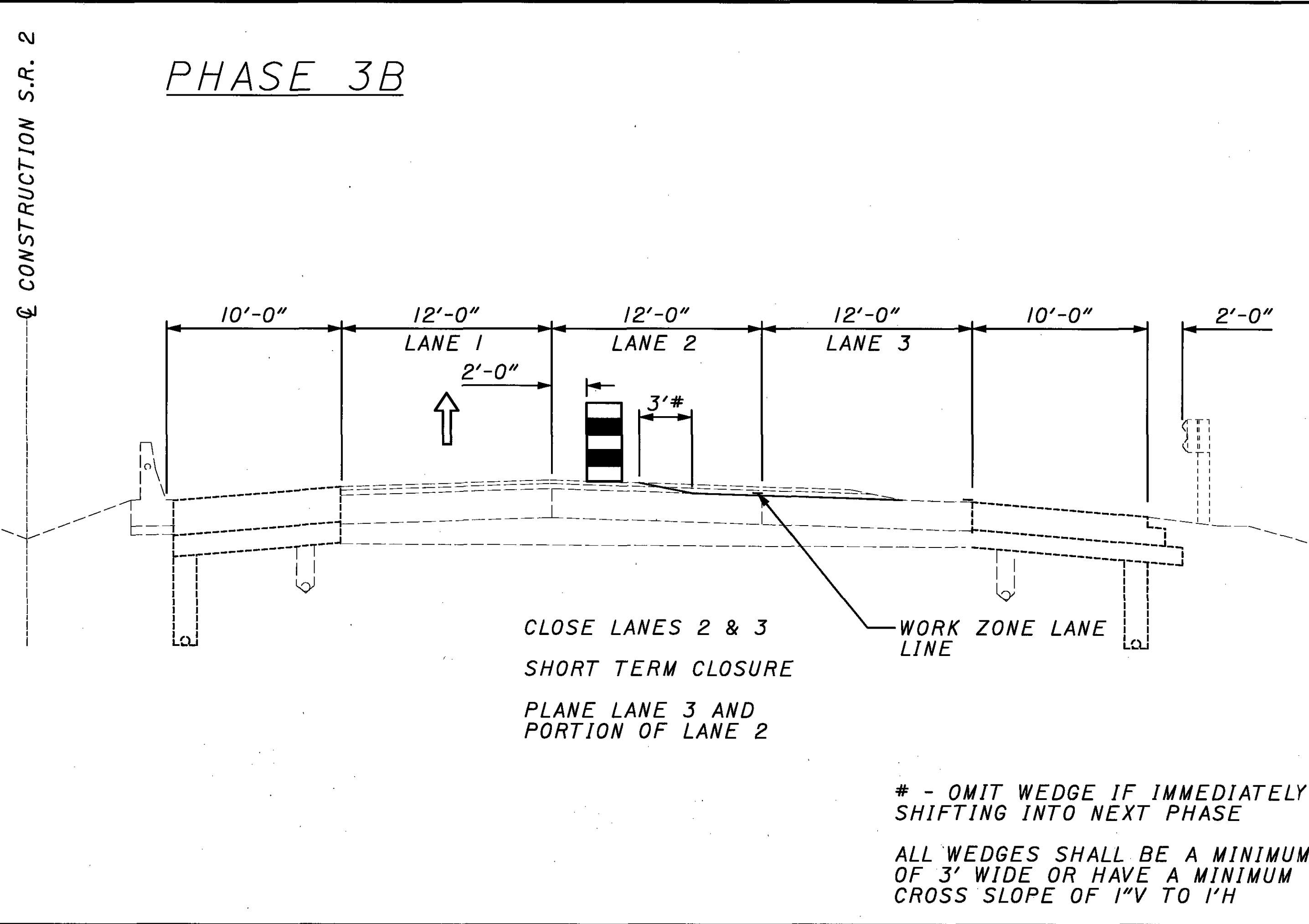
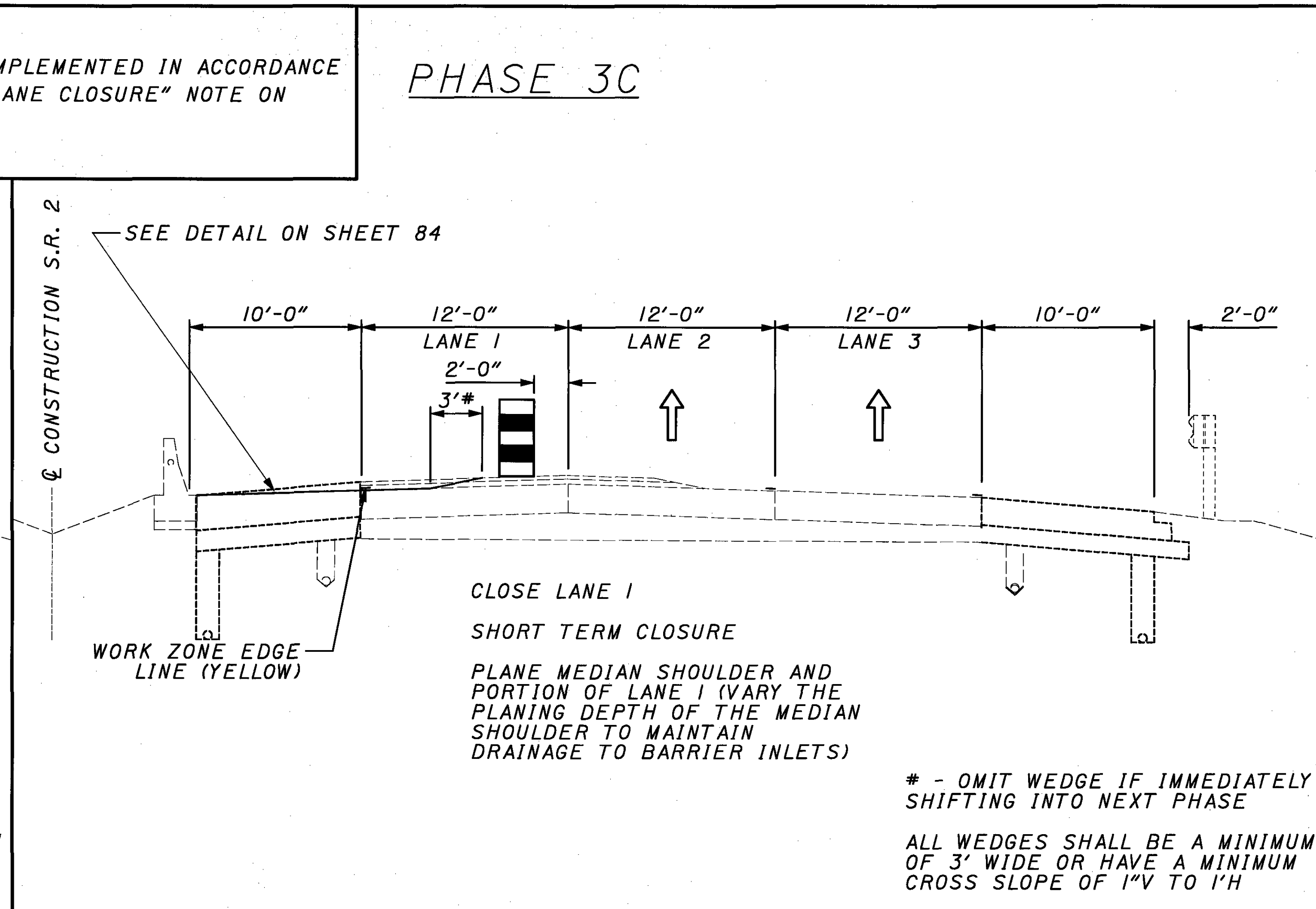
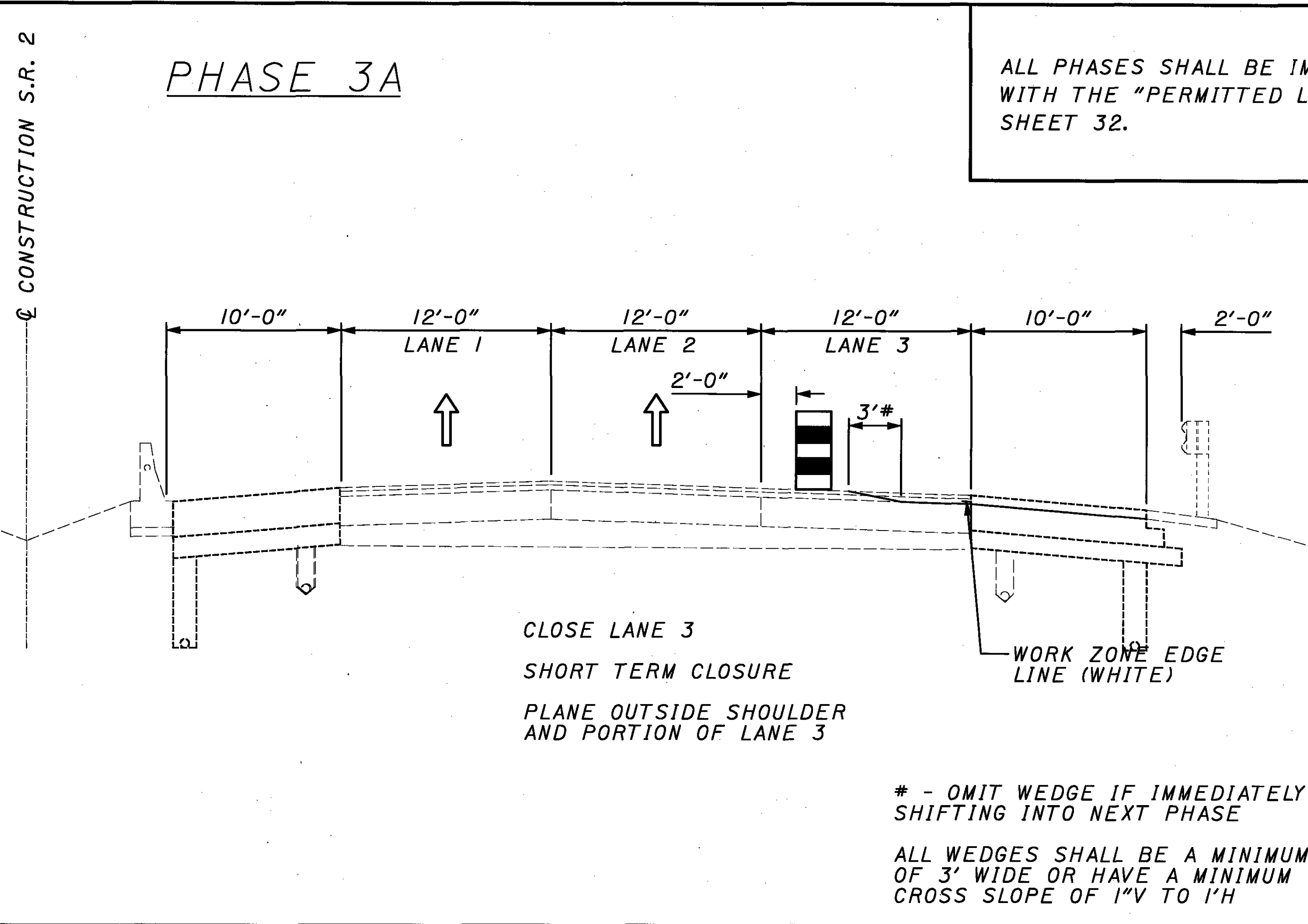
CLOSE LANE 1
SHORT TERM CLOSURE
REMOVE SHOULDER, PLACE SUBBASE AND 12" - 30I.

PRE-PHASE 1-D MAY BE COMBINED WITH PRE-PHASE 1-C PROVIDING THAT THE SHOULDER WORK CAN BE COMPLETED AND LANE 3 OPENED TO TRAFFIC AS PER THE THE SCHEDULE OF THRU LANES TO BE MAINTAINED.

MAINTENANCE OF TRAFFIC - MAINLINE

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ALL PHASES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE "PERMITTED LANE CLOSURE" NOTE ON SHEET 32.



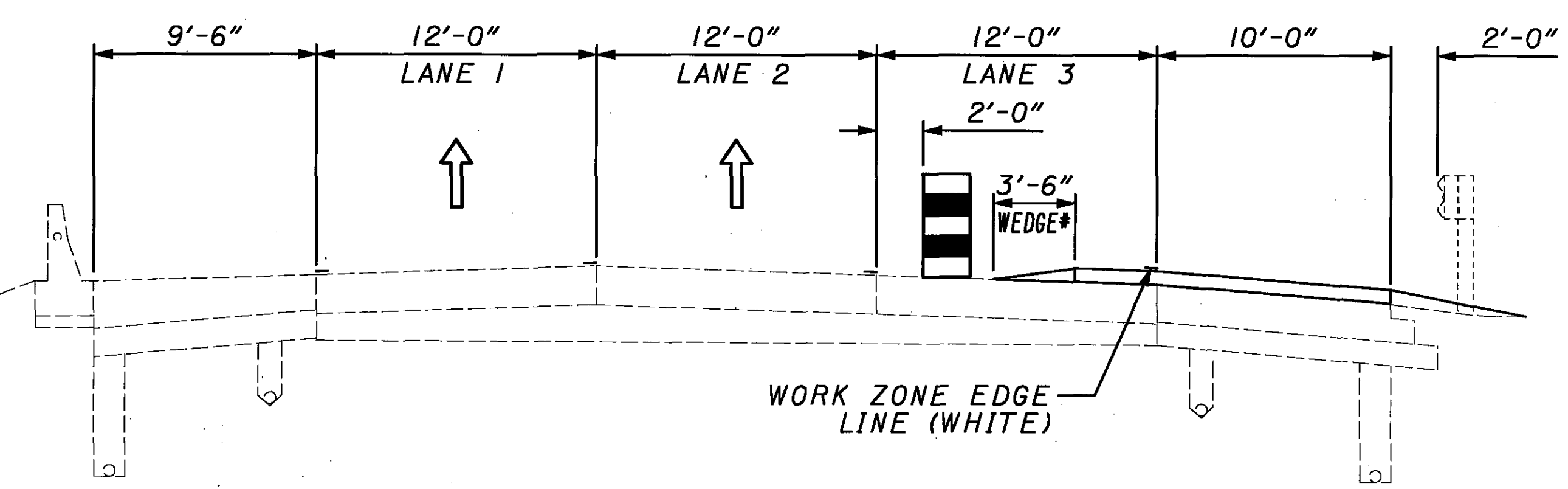
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CONSTRUCTION S.R. 2

PHASE 4A

ALL PHASES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE "PERMITTED LANE CLOSURE" NOTE ON SHEET 32.

PHASE 4C

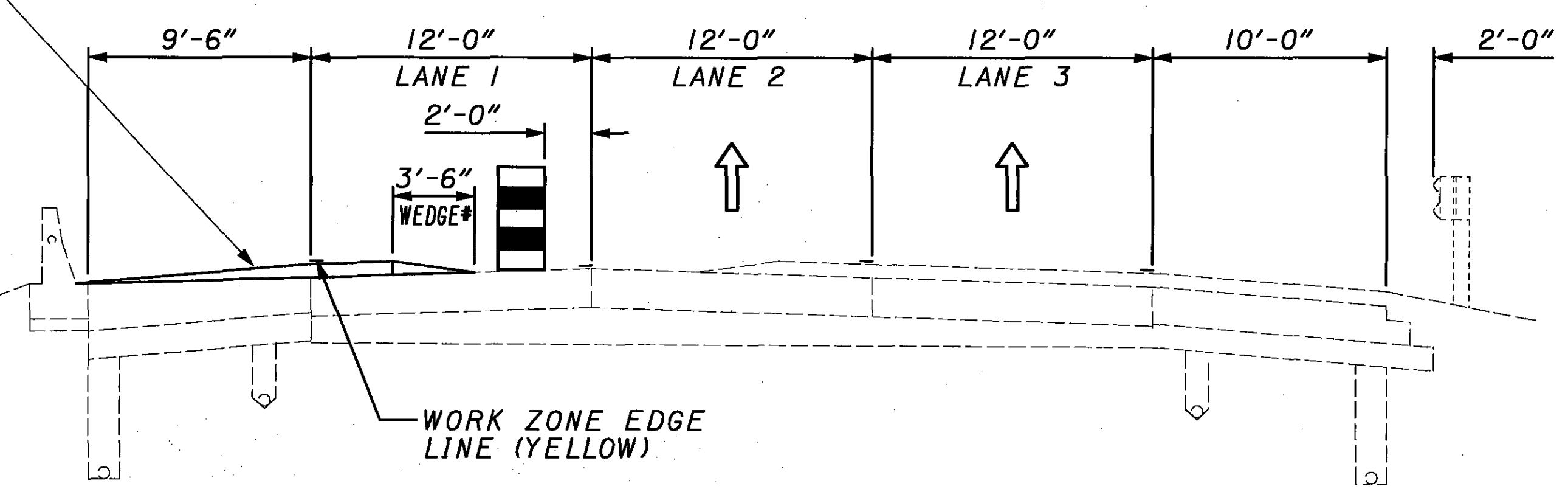


CLOSE LANE 3
SHORT TERM CLOSURE
PLACE INTERMEDIATE COURSE ON OUTSIDE SHOULDER AND PORTION OF LANE 3

* - OMIT WEDGE IF IMMEDIATELY SHIFTING INTO NEXT PHASE
REMOVE WEDGE PRIOR TO PLACING ABUTTING COURSE

CONSTRUCTION S.R. 2

SEE SHOULDER DETAIL ON SHEET 84

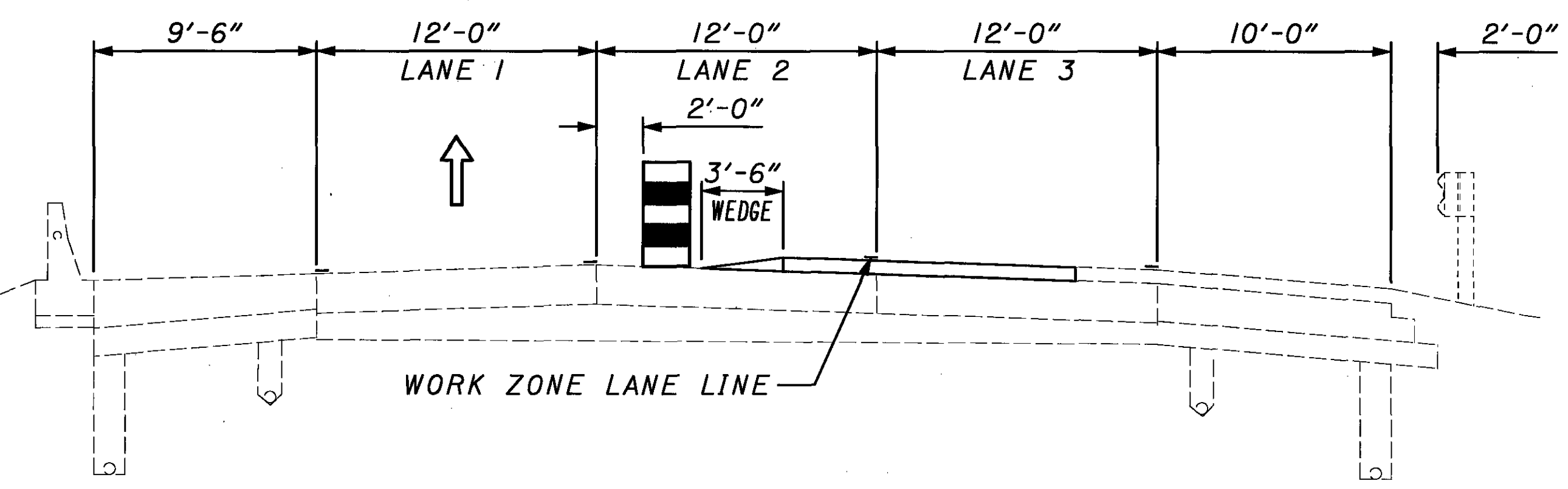


CLOSE LANE 1
SHORT TERM CLOSURE
PLACE INTERMEDIATE COURSE ON INSIDE SHOULDER AND PORTION OF LANE 1

* - OMIT WEDGE IF IMMEDIATELY SHIFTING INTO NEXT PHASE
REMOVE WEDGE PRIOR TO PLACING ABUTTING COURSE

CONSTRUCTION S.R. 2

PHASE 4B

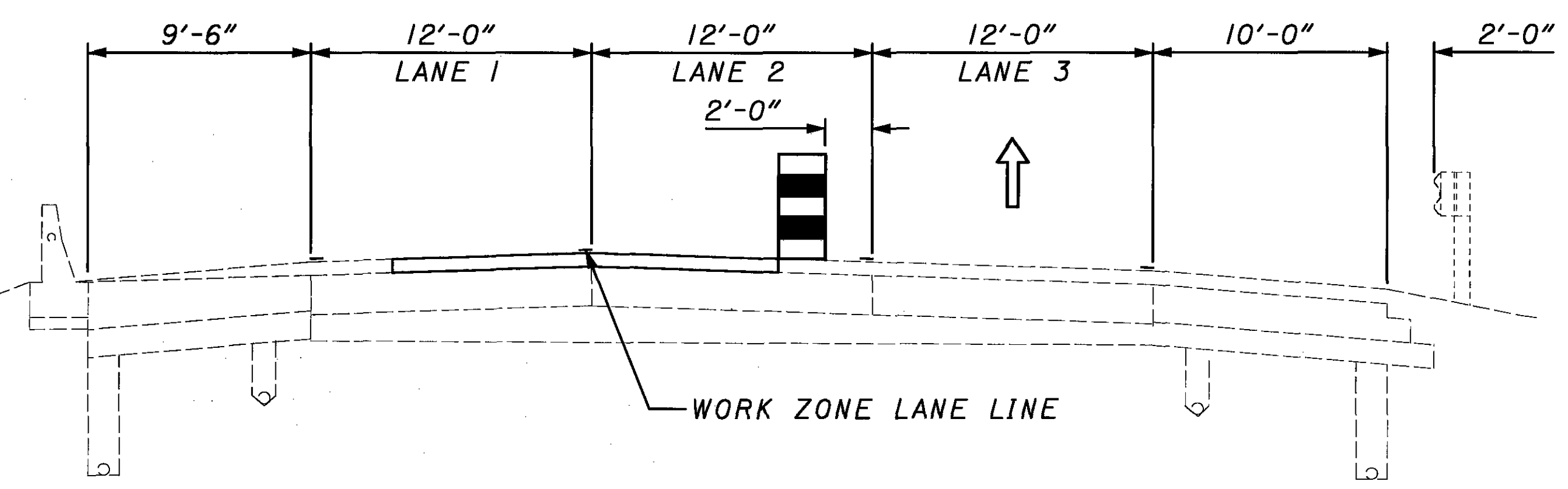


CLOSE LANES 2 & 3
SHORT TERM CLOSURE
PLACE INTERMEDIATE COURSE ON LANE 3 AND PORTION OF LANE 2

REMOVE WEDGE PRIOR TO PLACING ABUTTING COURSE

CONSTRUCTION S.R. 2

PHASE 4D



CLOSE LANES 1 & 2
SHORT TERM CLOSURE
PLACE INTERMEDIATE COURSE ON REMAINDERS OF LANES 1 & 2.

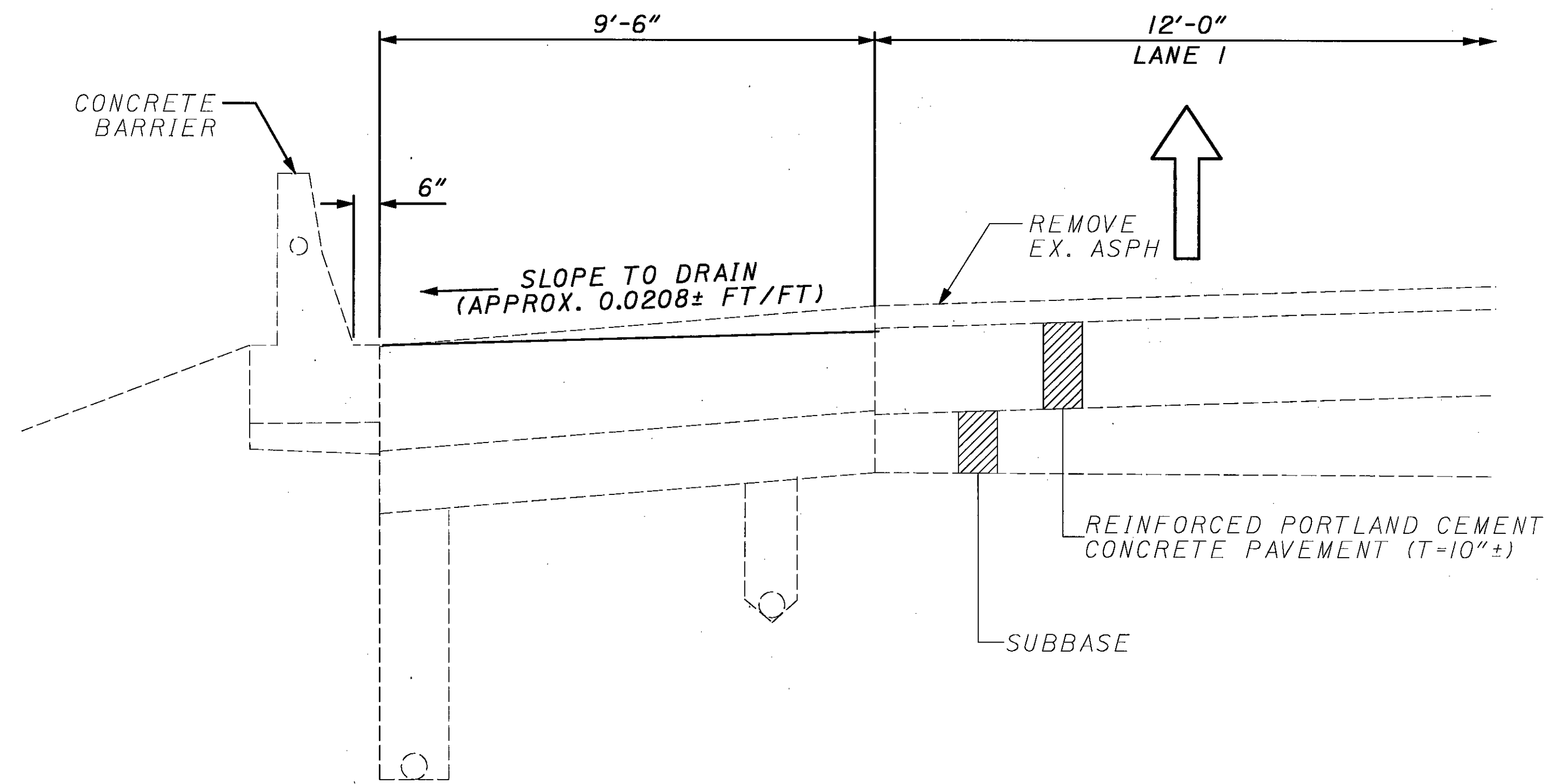
REMOVE WEDGES PRIOR TO PLACING ABUTTING COURSE

AFTER COMPLETING THE INTERMEDIATE COURSE, CONSTRUCT THE SURFACE COURSE SIMILAR TO PHASING SHOWN ON THIS SHEET. PAVEMENT WEDGES ARE NOT NEEDED BETWEEN PHASES. SEE SHEET 80 FOR SIGNAGE REQUIREMENTS.

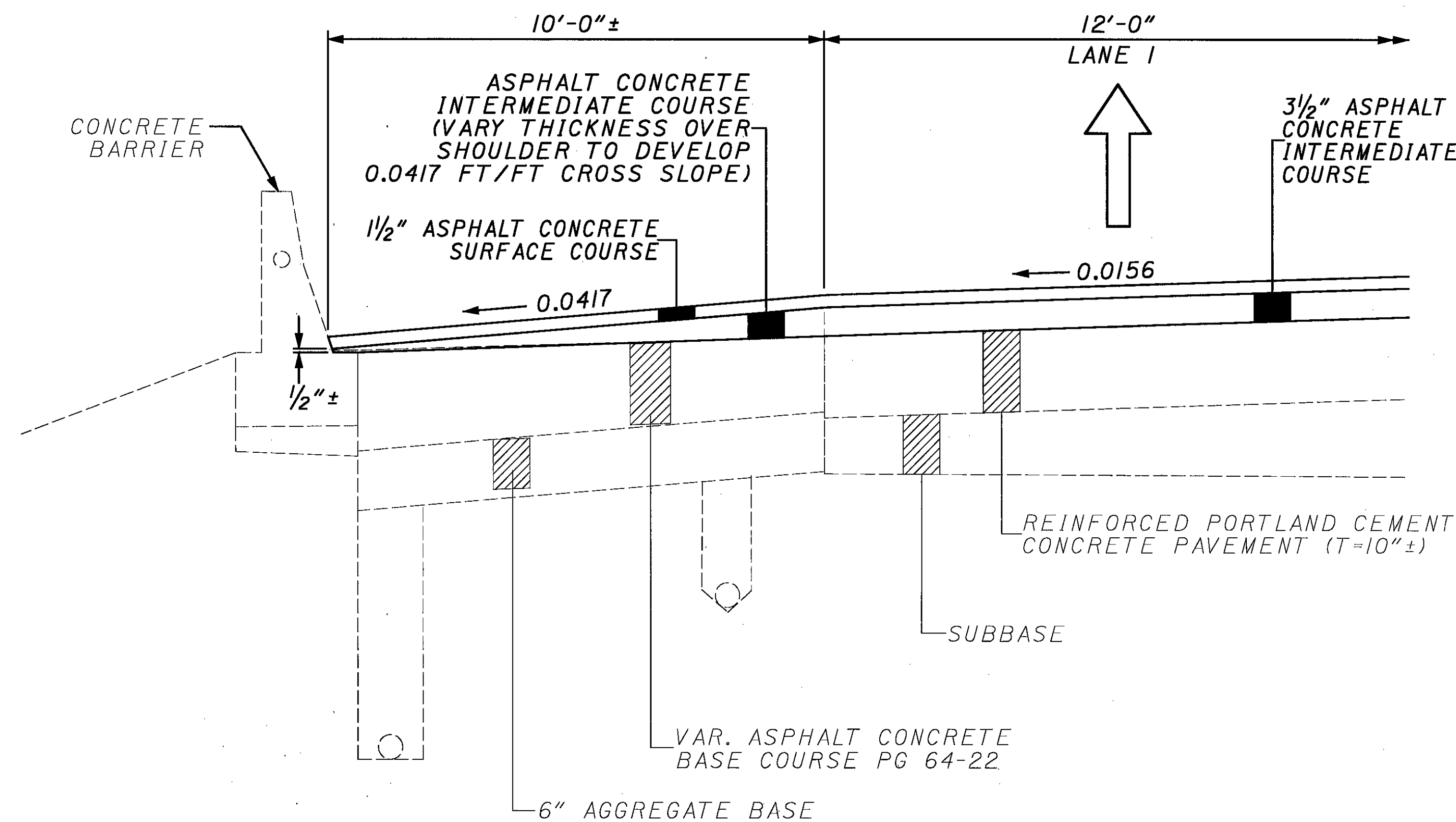
MAINTENANCE OF TRAFFIC - MAINLINE

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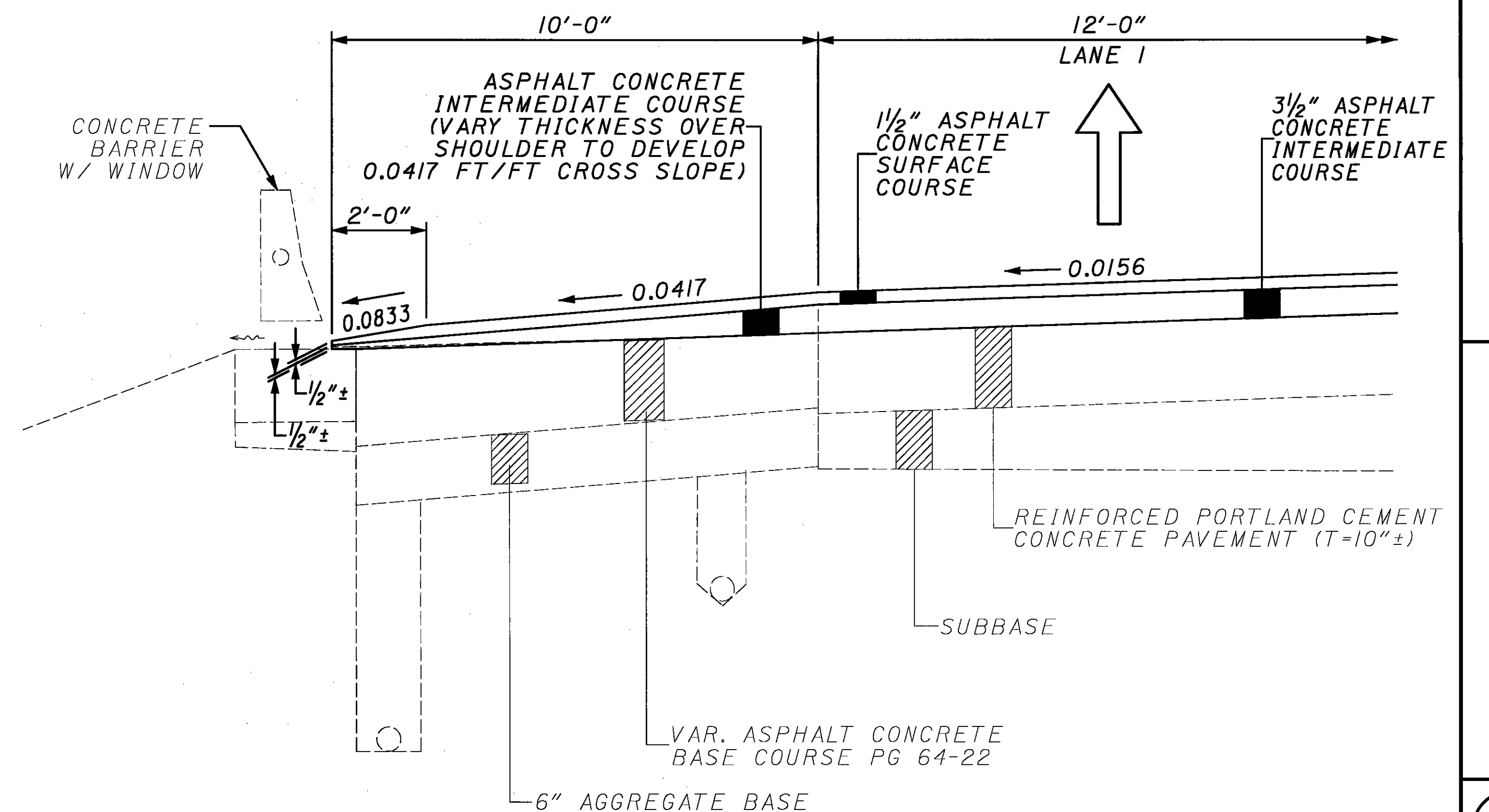
PHASE 3C - DETAIL



PHASE 4C - DETAIL



PHASE 4C - BARRIER INLET DETAIL



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CALCULATED
CHECKED

MOT - MEDIAN SHOULDER REPLACEMENT

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23	24	25	26	31	34	35	36	37	38	85	100	98	94	93	90A	314	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NUMBER	
																	201	11000	LUMP		CLEARING AND GRUBBING		
															5919		202	23000	5,919	SQ YD	PAVEMENT REMOVED		
														812			202	30000	812	SQ FT	WALK REMOVED		
														2560			202	32000	2,560	FT	CURB REMOVED		
													695				202	35100	695	FT	PIPE REMOVED, 24" AND UNDER		
													409				202	35200	409	FT	PIPE REMOVED, OVER 24"		
														25183			202	38000	25,183	FT	GUARDRAIL REMOVED		
													1				202	58000	1	EACH	MANHOLE REMOVED		
													2				202	58100	2	EACH	CATCH BASIN REMOVED		
														35305			202	75001	35,305	FT	FENCE REMOVED, AS PER PLAN	24	
													150				SPECIAL	202E70100	150	FT	SPECIAL - PIPE CLEANOUT	25	
																	203	10000	40,804	CU YD	EXCAVATION		
																	203	20000	14,980	CU YD	EMBANKMENT		
																	204	10000	95,851	SQ YD	SUBGRADE COMPACTION		
50																	204	45000	50	hour	PROOF ROLLING		
																	209	60200	199	STATION	LINEAR GRADING METHOD A	24	
																	601	28000	458	CU YD	DUMPED ROCK FILL, TYPE D		
																	162568	SPECIAL	606E10310	162,568	SQ FT	SPECIAL - NOISE BARRIER (ABSORPTIVE), OVER 10' TO 14' HEIGHT	
																	107760	SPECIAL	606E10320	107,760	SQ FT	SPECIAL - NOISE BARRIER (ABSORPTIVE), OVER 14' TO 20' HEIGHT	
																	1159	SPECIAL	606E10810	1,159	EACH	SPECIAL - NOISE BARRIER MISC.: NOISE WALL POST AND FOUNDATION	
																	58	SPECIAL	606E10810	58	EACH	SPECIAL - NOISE BARRIER MISC.: FOUNDATION EXTENSION	
																	606	13000	37,132	FT	GUARDRAIL, TYPE 5		
	125																606	13050	125	FT	GUARDRAIL, TYPE 5A		
														16			606	22010	16	EACH	ANCHOR ASSEMBLY, TYPE E-98		
														17			606	26500	17	EACH	ANCHOR ASSEMBLY, TYPE T		
														31			606	35000	31	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1		
														27			606	35100	27	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2		
														3			606	60010	3	EACH	IMPACT ATTENUATOR, TYPE I-98 (BIDIRECTIONAL)		
														35305			607	23000	35,305	FT	FENCE, TYPE CLT		
																	607	98000	18,188	FT	FENCE MISC., TEMPORARY FENCE		
														20			622	10200	20	EACH	BARRIER TRANSITION		
														1200			622	24000	1,200	FT	CONCRETE BARRIER, TYPE D		
														2			622	24800	2	EACH	CONCRETE BARRIER END SECTION, TYPE A		
														34			622	25010	34	EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED		
40																	622	90200	40	EACH	BARRIER, MISC: ACCESS HOLES	23	

GENERAL SUMMARY

LAK-2-0.00

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TYPICAL SECTION BALLOON REFERENCE NUMBER				202	10	21	3, 13	5	4	22	23	6	2, 20	1	9	618	603						
STATION FROM	STATION TO	DISTANCE (D)	AVERAGE WIDTH (W)	RESURFACING SURFACE AREA (A-D*W)	RESURFACING SURFACE AREA (A-D*W)/9	FULL-DEPTH SURFACE AREA	FULL-DEPTH SURFACE AREA	PAVEMENT REMOVED	SUBGRADE COMPACTION	LINEAR GRADING	PAVEMENT PLANING, ASPHALT CONCRETE	ASPHALT CONCRETE BASE, PG64-22	AGGREGATE BASE	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	ASPHALT CONCRETE INTERMEDIATE COURSE 19MM, TYPE A (446)	ASPHALT CONCRETE SURFACE COURSE 12.5MM, TYPE A (446), AS PER PLAN	SPECIAL - PRESSURE RELIEF JOINT, TYPE A	COMPACTED AGGREGATE, AS PER PLAN	RUMBLE STRIPS, TYPE 2 (ASPHALT CONCRETE)	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
S.R. 2 WB	FT	FT	PLANIMETER	SQ FT	SQ YD	SQ FT	SQ YD	SQ YD	SQ YD	STATION	SQ YD	CU YD	CU YD	GALLON	GALLON	FT	CU YD	CU YD	FT	CU YD	FT	FT	
99+64.35	100+00.00	35.65	PLANIMETER			554	62		88			19	15	7	3	36	6	3				36	
100+00.00	106+27.80	627.80		22601	2511	12629	1403		1473		2511	351	245	391	197	1256	384	163			1256		
106+27.80	116+03.31	975.51		42318	4702	170449	18939		19047		4702	4735	3175	2364	1185	1951	2304	985	53		1951	53	
117+97.82	119+11.26	113.44	PLANIMETER	6223	691	1603	178		191		691	45	32	86	44	227	85	36	56		227	56	
119+11.26	120+16.93	105.67		5495	611	3157	351	289	363		611	88	60	96	48	211	94	40			211		
120+16.93	126+90.11	673.18		24234	2693	13094	1455		1530		2693	364	255	415	209	1346	407	173			1346		
126+90.11	128+55.66	165.55	PLANIMETER	9710	1079	3431	381	68	399		1079	95	67	146	74	331	143	61			331		
128+55.66	128+88.70	33.04		1586	176	478	53		57		176	13	9	24	11	66	22	10	49		66	49	
128+88.70	129+13.70	25.00		1650	183						183							8			50		
130+79.26	131+04.26	25.00		1650	183						183							8			50		
131+04.26	132+80.73	176.47		8471	941	2839	315		335		941	79	56	125	63	353	123	52	49		353	49	
132+80.73	133+80.73	100.00		4200	467	1913	213		224		467	53	37	67	34	200	67	28			200		
133+80.73	155+17.04	2136.31		76907	8545	42465	4718		4955		8545	1180	826	1327	669	4273	1301	553	37		4273	37	
156+98.60	169+02.37	1203.77		59719	6635	23461	2607		2741		6635	652	457	924	465	2408	905	385	36		2408	36	
169+02.37	181+52.38	1250.01	PLANIMETER	58401	6489	25287	2810		2949		6489	703	491	929	469	2500	911	387			2500		
181+52.38	185+56.86	404.48	PLANIMETER	21173	2353	13050	1450	605	1495		2353	363	249	379	191	809	372	158			809		
185+56.86	194+90.05	933.19		33595	3733	18331	2037		2141		3733	509	357	576	291	1866	566	240	37		1866	37	
194+90.05	195+15.05	25.00		1330	148						148							6			50		
196+80.05	197+05.05	25.00		1330	148						148							6			50		
197+05.05	212+28.07	1523.02		54829	6092	30991	3443		3612		6092	861	602	953	481	3046	935	397	37		3046	37	
212+28.07	212+46.87	18.80		1447	161	329	37		39		161	9	7	19	10	38	19	8			38		
212+46.87	219+28.08	681.21	PLANIMETER	39415	4379	10121	1125	306	1201		4379	281	200	550	277	1362	539	229			1362		
219+28.08	220+28.09	100.01		4200	467	1966	218		229		467	55	38	70	34	200	67	29			200		
220+28.09	234+45.29	1417.20		51019	5669	28889	3210		3367		5669	803	561	888	448	2834	871	370	44		2834	44	
236+43.73	250+98.17	1454.44		52360	5818	30282	3365		3527		5818	841	588	919	463	2909	901	383	44		2909	44	
250+98.17	259+86.85	888.68		39893	4433	6695	744		843		4433	186	140	518	261	1777	508	216	66		1777	66	
260+65.87	263+48.57	450.98	PLANIMETER	20764	2307	5409	601	112	651		2307	150	109	290	147	902	285	121	69		565	69	
263+48.57	265+16.85	190.97		9930	1103	5585	621	269	642		1103	155	107	173	87	382	169	72			337		
265+16.85	265+39.54	22.69	PLANIMETER	1184	132	698	78		88		132	20	14	22	11	45	21	9			45		
265+39.54	276+00.00	1060.46		38177	4242	21374	2375		2493		4242	594	415	662	334	2121	649	276			2121		
S.R. 2 EB																							
97+52.79	100+00.00	247.21	PLANIMETER			2852	317		556			79	93	31	16	247	32	13			247		
100+00.00	116+03.31	1603.31		57719	6413	31321	3480		3658		6413	870	610	989	499	970	970	412	37		3207	37	
117+97.82	118+16.33	18.51		666	74	309	34		36		74	9	6	12	6	37	11	5	37		37	37	
118+16.33	119+16.33	100.00		4200	467	1777	197		208		467	49	35	67	33	200	65	28			200		
119+16.33	120+13.38	97.05		4658	518	1775	197		208		518	49	35	72	36	194	70	30			194		
120+13.38	124+11.02	397.64	PLANIMETER	22562	2507	10446	1161	274	1205		2507	290	201	367	185	795	359	153			795		
124+11.02	128+88.70	477.68		17196	1911	9337	1037		1090		1911	259	182	295	149	955	289	123	37		955	37	
128+88.70	129+13.70	25.00		1345	149						149							6			50		
130+79.26	131+04.26	25.00		1345	149						149							6			50		
131+04.26	138+57.01	752.75		27099	3011	14328	1592		1676		3011	398	279	461	232	1506	452	192	37		1506	37	
138+57.01	139+06.65	49.64	PLANIMETER	2526	281	1490	166		188		281	42	30	46	23	99	44	19			99		
139+06.65	141+99.49	292.84	PLANIMETER	14597	1622	9545	1061	642	1094		1622	265	182	269	135	586	262	112			586		
141+99.49	154+48.54	1249.05	PLANIMETER	57573	6397	25227	2803		2942		6397	701	490	919	463	2498	901	383			2498		
154+48.54	155+17.04	68.50		2466	274	1179	131		139		274	33	23	41	21	137	40	17	37		137	37	
156+98.60	174+73.80	1775.20		63907	7101	34063	3785		3982		7101	946	664	1090	549	3550	1068	454	36		3550	36	
174+73.80	175+73.80	100.00		4200	467	1811	201		212		467	50	35	67	33	200	65	28			200		
175+73.80	176+81.11	107.31		5151	572	1804	200		212		572	50	35	77	39	215	76	32			215		
176+81.11	182+75.94	594.83	PLANIMETER	34399	3822	13067	1452	337	1518		3822	363	253	528	265	1190	516	220			1190		
182+75.94	194+90.05	1214.11		43708	4856	22934	2548		2683		4856	637	447	742	373	2428	726	309	37		2428	37	
194+90.05	195+15.05	25.00		1330	148						148							6			50		
196+80.05	197+05.05	25.00		1330	148						148							6			50		
TOTALS (THIS SHEET)								2902	76287	0	117978	18294	12712	18993	9563	48286	18600	7966	835	0	51512	835	

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PAVEMENT SUB-SUMMARY

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STATION FROM		STATION TO		DISTANCE (D)	AVERAGE WIDTH (W)	RESURFACING SURFACE AREA (A-D*W)	RESURFACING SURFACE AREA (A-D*W)/9	FULL-DEPTH SURFACE AREA	FULL-DEPTH SURFACE AREA	PAVEMENT REMOVED	SUBGRADE COMPACTION	LINEAR GRADING	PAVEMENT PLANING, ASPHALT, CONCRETE	ASPHALT CONCRETE BASE, P664-22	AGGREGATE BASE	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE A 19MM, (446)	ASPHALT CONCRETE SURFACE COURSE, TYPE A 12.5MM, (446), AS PER PLAN	SPECIAL - PRESSURE RELIEF JOINT, TYPE A	COMPACTED AGGREGATE, AS PER PLAN	RUMBLE STRIPS, TYPE 2 (ASPHALT CONCRETE)	6" CONDUIT TYPE F FOR UNDERDRAIN OUTLETS
S.R.		2 EB		FT	FT	SQ FT	SQ YD	SQ FT	SQ YD	SQ YD	SQ YD	STATION	SQ YD	CU YD	CU YD	GALLON	GALLON	FT	CU YD	CU YD	FT	CU YD	FT	FT
197+05.05	209+25.31	1220.26	36.00	43929	4881	23085	2565				2701		4881	641	450	744	376	2441	731	310	37		2441	37
209+25.31	214+16.35	491.04	PLANIMETER	26198	2911	14232	1581	535	1636				2911	395	273	449	226	982	439	187			982	
214+16.35	226+88.25	1271.90	PLANIMETER	56424	6269	28413	3157	689	3298				6269	789	550	943	475	2544	923	393			2544	
226+88.25	234+45.29	757.04	36.00	27253	3028	14004	1556		1640				3028	389	273	458	231	1514	450	191	44		1514	44
236+43.73	252+72.59	1628.86	36.00	58639	6515	31067	3452		3633				6515	863	605	996	503	3258	978	415	44		3258	44
252+72.59	253+72.59	100.00	42.00	4200	467	1855	206		217				467	52	36	67	34	200	66	28			200	
253+72.59	256+52.79	280.20	48.00	13450	1494	4875	542		573				1494	136	96	204	102	560	199	85			560	
256+52.79	259+86.85	334.06	PLANIMETER	15707	1745	4925	547		584				1745	137	97	230	116	668	225	96	69		668	69
260+65.87	261+07.10	41.23	PLANIMETER	3312	368	3112	346	115	351				368	87	58	72	36	82	70	30	81		82	81
261+07.10	276+00.00	1492.90	36.00	53744	5972	29047	3227		3393				5972	807	565	919	464	2986	902	383			2986	
RAMP A-1						13842	1538	1678	1538					392	267	154	77		150	64				
105+20.61	110+74.28	553.67	25.00																					
110+74.28	122+68.08	1193.80	16.00	19101	2122								2122			211	106		206	88				
122+68.08	123+23.45	55.37	16.00	886	98								98			10	5		10	4				
123+23.45	125+58.00	234.55	PLANIMETER	6062	674								674			67	34		66	28				
RAMP A-2																								
205+89.23	216+00.41	1011.18	18.00	18201	2022								2022			202	101		197	84				
216+00.41	220+39.37	438.96	17.33	7607	845								845			84	42		82	35				
220+39.37	222+26.00	186.63	PLANIMETER	6084	676								676			67	34		66	28				
RAMP A-3																								
300+00.00	301+14.77	114.77	PLANIMETER	1802	200								200			19	10		19	8				
301+14.77	301+44.88	30.11	16.00	482	54								54			5	3		5	2				
301+44.88	308+81.29	736.41	16.00	11783	1309								1309			132	65		127	55				
RAMP A-4																								
405+02.11	409+18.53	114.77	16.00	1836	204								204			22	10		20	9			200	
409+18.53	409+46.81	30.11	16.00	482	54								54			5	3		5	2				
409+46.81	410+69.31	736.41	PLANIMETER	239	27								27			2	2		3	1				
RAMP B-1																								
502+92.93	507+22.88	416.42	16.00	6663	740								740			74	37		72	31				
507+22.88	511+01.96	28.28	23.04	652	72								72			7	4		7	3				
511+01.96	512+35.21	122.50	30.04	3680	409								409			41	21		40	17				
512+35.21	513+34.69	99.48	PLANIMETER	4432	492								492			50	25		48	21				
RAMP B-2																								
600+23.98	600+62.41	38.43	PLANIMETER	1183	131								131			12	7		13	5				
600+62.41	602+43.63	181.22	24.00	4349	483								483			48	24		47	20				
602+43.63	603+63.63	120.00	20.00	2400	267								267			26	13		26	11				
603+63.63	603+89.55	25.92	16.00	415	46								46			5	2		4	2				
603+89.55	616+19.22	1229.67	16.00	19675	2186								2186			218	110		213	91				
RAMP B-3																								
700+23.41	700+68.04	44.63	PLANIMETER	1194	133								133			14	7		13	6				
700+68.04	701+00.45	32.41	16.13	523	58								58			5	3		6	2				
701+00.45	713+51.10	1250.65	16.13	20173	2241								2241			223	112		218	93				
RAMP B-4																								
806+99.09	814+36.65	737.56	16.00	11801	1311								1311			132	65		127	55				
814+36.65	818+62.66	426.01	25.84	11008	1223								1223			122	61		119	51				
818+62.66	818+98.74	36.08	35.82	1292	144								144			14	7		14	6				
818+98.74	819+89.36	90.62	PLANIMETER	3744	416								416			41	21		40	17				
RAMP C-1																								
265+37.97	271+33.63	595.66	16.00	9531	1059								1059			106	53		103	44				
271+33.63	271+65.43	31.80	18.27	581	65								65			7	3		6	3				
271+65.43	272+41.17	75.74	PLANIMETER	2884	320								320			31	16		31	13				
RAMP C-4																								
261+06.27	262+86.67	180.40	16.00	2886	321								321			31	16		31	13				
262+86.67	263+96.93	110.26	19.68	2170	241								241			24	12		23	10				
263+96.93	267+92.62	395.69	23.68	9370	1041								1041			103	52		101	43				
267+92.62	269+04.21	111.59	PLANIMETER	4472	497								497			50	25		48	21				
TOTALS (THIS SHEET)										3017	19564	0	55831	4688	3270	7446	3751	15235	7289	3104	275	0	15435	275

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SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	202 WALK REMOVED SQ FT	202 GUARDRAIL REMOVED FT	202 FENCE REMOVED, AS PER PLAN FT	202 CURB REMOVED FT	448 ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL CU YD	606 GUARDRAIL, TYPE 5 FT	606 ANCHOR ASSEMBLY, TYPE E-98 EACH	606 ANCHOR ASSEMBLY, TYPE T EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	606 IMPACT ATTENUATOR, TYPE I-98 (BIDIRECTIONAL) EACH	607 FENCE, TYPE CLT FT	608 4" CONCRETE WALK SQ FT	608 CURB RAMP SQ FT	609 CURB, TYPE 6 FT	622 BARRIER TRANSITION EACH	622 CONCRETE BARRIER, TYPE D FT	622 CONCRETE BARRIER END SECTION, TYPE A EACH	622 CONCRETE BARRIER END SECTION, TYPE D, REINFORCED EACH	
109	B-1	97+36.78	99+06.83	LT/RT																	2	207	1	
110	B-2	100+43.00	102+13.31	LT/RT																	2	207	1	
110	B-3	104+53.81	105+01.81	LT																		20		2
112	B-4	110+77.27	111+25.27	RT																		20		2
128	B-5	149+77.44	150+25.44	LT																		20		2
132	B-6	159+69.43	160+16.87	RT																		20		2
162	B-7	241+35.06	241+83.06	LT																		20		2
164	B-8	244+65.82	245+13.82	RT																		20		2
174	B-9	271+78.16	272+26.16	RT																		20		2
176	B-10	273+75.93	274+23.93	LT																		20		2
118	B-11	120+87.34	122+67.95	LT																		20		2
154	B-12	217+65.56	219+50.70	RT																		180		2
191	B-13	402+94.61	403+42.61	RT																		185		1
208	B-14	817+04.81	817+52.80	LT																		20		2
172	B-15	267+91.95	268+27.08	LT																		96		1
174	B-16	271+57.73	271+94.19	RT																		45		2
148	B-17	205+23.65	205+73.95	RT																		20		2
104	B-18	69+53.91	70+00.98	LT																		20		2
107	B-19	85+06.72	85+54.17	LT																		20		2
118, 188	C-1	122+68.08	301+26.73	LT				52											160					
154, 191-192	C-2	21994.46	409+34.75	RT				298											173					
188, 118	C-3	301+44.88	125+55.31	LT				198														322		
191-192, 154	C-4	409+18.53	222+24.09	RT				310														300		
195	C-5	511+50.96	513+32.73	LT				27														219		
195	C-6	512+19.53	513+13.71	RT				186														108		
196	C-7	600+26.47	601+34.61	RT				102														343		
196	C-8	600+36.45	603+89.43	LT				198														116		
207	C-9	818+62.78	819+74.62	RT				86														130		
207	C-10	818+86.64	819+87.34	LT				94														108		
201	C-11	700+25.40	701+00.45	LT				62														95		
201	C-12	700+36.38	700+82.64	RT				59														61		
101	GR-1	53+47.98	55+86.30	LT					11	237.50				/	/									
102-104	GR-2	57+22.83	69+56.29	LT					58	1250.00				/	/									
104-107	GR-3	69+99.24	85+08.54	LT					72	1562.50				/	/							20		2
107-110	GR-4	85+51.84	104+55.91	LT					89	1912.50				/	/									
110-116	GR-5	104+99.71	116+21.62	LT					52	1125.00				/	/									
112-114	GR-6	107+07.12	110+79.37	RT					15	325.00	/			/	/									
114-116	GR-7	111+23.17	116+12.11	RT					23	500.00				/	/									
116-118	GR-8	117+77.56	122+06.63	RT					20	437.50				/	/									
118-120	GR-9	125+36.81	128+91.31	RT					14	312.50	/			/	/									
120-124	GR-10	130+79.07	137+38.01	RT					30	637.50				/	/									
120-128	GR-11	131+03.88	149+79.54	LT					88	1900.00				/	/									
128-130	GR-12	147+14.91	155+36.52	RT					36	775.00	/			/	/									
128-130	GR-13	150+23.34	155+23.45	LT					23	500.00				/	/									
130, 193-195	GR-14	156+81.41	512+10.49	LT					173	3737.50	/			/	/									
130-132	GR-15	156+90.83	159+71.50	RT					13	287.50				/	/									
132-134	GR-16	160+14.80	162+56.85	RT					11	237.50				/	/									
140-146	GR-17	183+81.17	194+99.19	RT					50	1075.00	/			/	/									
142-146	GR-18	186+54.04	195+11.00	LT					39	850.00				/	/									
146-150	GR-19	196+83.34	206+33.30	RT					44	950.00				/	/									
146-152	GR-20	196+98.42	212+52.46	LT				205	75	1612.50				/	/									
197, 160	GR-21	607+12.50	235+02.84	LT					147	3175.00				/	/									
156-160	GR-22	223+35.51	234+12.66	RT					47	1025.00	/			/	/									
160-164	GR-23	235+86.18	244+67.93	RT					41	887.50				/	/									
160-162	GR-24	236+76.35	241+37.16	LT					21	462.50				/	/									
162-166	GR-25	241+80.96	249+99.69	LT					36	768.75	/			/	/									
164	GR-26	245+11.73	245+92.98	RT					3	68.75				/	/									
166-170	GR-27	251+78.60	259+34.21	RT					32	687.50	/			/	/									
170	GR-28	258+78.74	260+45.93	LT					7	156.25				/	/									
172-174	GR-29	264+65.50	271+12.50	RT					27	587.50	/			/	/									
SUBTOTALS (THIS SHEET)					0	0	0	1877	1297	28044.00	9	9	21	19	3	0	0	0	2135	4	1200	2	34	

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SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	202	202	202	202	448	606	606	606	606	606	606	607	608	608	609	622	622	622	622
					WALK REMOVED SQ FT	GUARDRAIL REMOVED FT	FENCE REMOVED, AS PER PLAN FT	CURB REMOVED FT	ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL CU YD	GUARDRAIL, TYPE 5 FT	ANCHOR ASSEMBLY, TYPE E-98 EACH	ANCHOR ASSEMBLY, TYPE T EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	IMPACT ATTENUATOR, TYPE I-98 (BIDIRECTIONAL) EACH	FENCE, TYPE CLT FT	4" CONCRETE WALK SQ FT	CURB RAMP SQ FT	CURB, TYPE 6 FT	BARRIER TRANSITION EACH	CONCRETE BARRIER, TYPE D FT	CONCRETE BARRIER END SECTION, TYPE A EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED EACH
174	GR-30	269+86.51	271+80.26	LT					8	181.25													
174-176	GR-31	272+24.06	273+78.03	LT					8	162.50													
176	GR-32	274+21.83	275+90.58	LT					5	118.75													
178-181	GR-33	103+02.98	120+75.44	LT					83	1787.50													
183-184	GR-34	203+66.98	205+25.85	RT					8	162.50													
184-186	GR-35	205+71.76	217+53.66	RT					53	1150.00													
191-192	GR-36	403+40.48	409+21.47	RT					26	568.75													
192	GR-37	407+57.23	410+22.14	LT					10	225.00													
193-194	GR-38	503+77.84	510+15.33	RT					27	575.00													
205	GR-39	800+69.73	804+20.43	RT					13	287.50													
206-208	GR-40	808+76.12	818+65.65	RT					43	925.00													
207-208	GR-41	815+65.59	817+06.94	LT					4	93.75													
208	GR-42	817+50.73	818+31.97	LT					3	68.75													
210-211	GR-43	260+02.84	267+94.85	RT					37	800.00													
210-211	GR-44	261+67.83	268+95.68	LT					32	687.50													
213	GR-45	270+50.65	271+60.03	RT					5	100.00													
213	GR-46	271+93.27	271+83.24	RT					1	31.25													
210-213	GR-47	261+15.21	272+29.75	LT					54	1162.50													
101-102	R-1	53+50.08	55+84.17	LT		234.09																	
102-103	R-2	57+24.88	63+28.63	LT		603.75																	
104	R-3	70+02.40	71+03.00	LT		100.60																	
107	R-4	85+57.39	86+71.18	LT		113.79																	
110-116	R-5	100+86.79	116+24.37	LT		1537.58																	
112-116	R-6	109+78.85	116+13.31	RT		634.46																	
118-120	R-7	125+36.81	128+89.26	RT		352.45	201																
120-124	R-8	130+81.20	137+15.73	RT		634.53																	
122-126	R-9	131+05.40	142+18.58	LT		1113.18																	
128-130	R-10	147+36.89	155+35.35	RT		798.46																	
128-130	R-11	148+94.78	155+24.66	LT		629.88																	
130-134	R-12	156+79.28	163+60.23	LT		680.95																	
130-134	R-13	156+90.09	162+45.72	RT		555.63																	
140-146	R-14	183+92.79	194+95.65	RT		1102.86																	
142-146	R-15	186+58.21	195+09.09	LT		850.88	179																
146-150	R-16	196+85.43	206+21.27	RT		935.84																	
146-150	R-17	197+00.43	208+09.36	LT		1108.93																	
156-160	R-18	225+50.02	234+10.46	RT		860.44																	
156-160	R-19	226+56.04	235+01.34	LT		845.30																	
160-164	R-20	235+88.37	245+99.64	RT		1011.27																	
160-164	R-21	236+75.57	247+00.28	LT		1024.71																	
168-170	R-22	253+05.76	259+32.33	RT		626.57																	
170	R-23	258+47.00	260+44.34	LT		197.34																	
170-172	R-24	261+15.74	265+67.87	LT		452.13																	
174	R-25	268+33.53	270+72.38	RT		238.85																	
174-176	R-26	270+27.19	273+31.25	LT		304.06																	
178-181	R-27	103+03.79	119+60.87	LT		1657.08																	
181-182	R-28	120+86.71	123+11.09	LT		224.38																	
183-184	R-29	203+69.08	206+40.39	RT		271.31	205																
186	R-30	216+53.29	219+54.91	RT		301.62																	
116, 191-192	R-31	117+75.67	408+91.52	RT		1036.40																	
192-193	R-32	407+81.99	410+24.15	LT		242.16																	
193-194	R-33	501+33.69	509+99.25	LT		865.56																	
199-199	R-34	618+08.01	620+24.96	LT		216.95																	
205	R-35	802+47.51	803+99.79	RT		152.28																	
206-208	R-36	809+16.53	819+43.46	RT		1026.93																	
210	R-37	260+02.98	260+66.69	RT		63.71																	
209-213	R-38	261+93.95	268+95.68	LT		711.65																	
210-213	R-39	262+25.52	268+26.80	RT		672.46																	
213	R-40	270+58.99	271+83.94	RT		192.22																	
SUBTOTALS (THIS SHEET)					0	25183	0	585	420	9088	7	8	10	8	0	0	0	0	0	0	0	0	0

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	202	202	202	202	448	606	606	606	606	606	606	607	608	608	609	622	622	622	622
					WALK REMOVED SQ FT	GUARDRAIL REMOVED FT	FENCE REMOVED, AS PER PLAN FT	CURB REMOVED FT	ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL CU YD	GUARDRAIL, TYPE 5 FT	ANCHOR ASSEMBLY, TYPE E-98 EACH	ANCHOR ASSEMBLY, TYPE T EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL) EACH	FENCE, TYPE CLT FT	4" CONCRETE WALK SQ FT	CURB RAMP SQ FT	CURB, TYPE 6 FT	BARRIER TRANSITION EACH	CONCRETE BARRIER, TYPE D FT	CONCRETE BARRIER END SECTION, TYPE A EACH	CONCRETE BARRIER END SECTION, TYPE D, REINFORCED EACH
182	W-1	125+47.33	125+52.95	LT	93			14									25	74					
187	W-2	222+14.00	222+19.76	RT	82			12									25	63					
195	W-3	513+06.45	513+14.85	LT	100			14									23	83					
195	W-4	513+01.80	513+06.72	RT	67			7									22	49					
196	W-5	600+40.89	600+45.82	LT	67			9									19	53					
196	W-6	600+36.47	600+43.36	RT	68			7									23	49					
208	W-7	819+67.13	819+71.93	RT	95			9									40	60					
208	W-8	819+70.89	819+76.96	LT	82			7									40	43					
201	W-9	700+36.75	700+45.10	RT	85			11									23	68					
201	W-10	700+42.67	700+48.91	LT	73			8									23	54					
116	BT-1	116+09.32	116+18.44	LT																			
116	BT-2	116+07.87	116+16.92	RT																			
116	BT-3	117+81.65	117+90.69	RT																			
130	BT-4	155+20.85	155+29.91	RT																			
130	BT-5	155+19.71	155+28.81	LT																			
130	BT-6	156+86.64	156+95.74	LT																			
130	BT-7	156+87.06	156+96.13	RT																			
160	BT-8	234+63.58	234+72.68	LT																			
160	BT-9	234+78.99	234+88.09	RT																			
160	BT-10	236+16.34	236+25.44	RT																			
160	BT-11	236+32.19	236+41.29	LT																			
170	BT-12	259+81.73	259+90.83	RT																			
170	BT-13	259+97.92	260+07.02	LT																			
116	BT-14	117+83.97	117+93.08	LT																			
170	BT-15	260+45.70	260+54.80	RT																			
170	BT-16	260+61.89	260+70.99	LT																			
110-116	F-1	99+11.92	116+55.15	RT			1830									1830							
116-120	F-2	117+28.80	128+79.75	RT			1484									1484							
120-130	F-3	129+95.36	155+73.90	RT			3451									3451							
130-146	F-4	156+52.79	195+30.68	RT			4045									4045							
146-156	F-5	196+29.32	224+82.56	RT			2223									2223							
160-170	F-6	235+08.00	259+21.08	RT			2510									2510							
170-172	F-7	259+64.82	267+93.35	RT			857									857							
170-174	F-8	261+23.34	271+20.94	LT			1047									1047							
160-170	F-9	236+39.82	260+81.56	LT			2502									2502							
146-160	F-10	196+65.17	235+65.13	LT			4028									4028							
130-146	F-11	156+34.27	195+76.24	LT			4061									4061							
116-130	F-12	117+49.24	155+60.92	LT			4565									4565							
110-116	F-13	100+00.00	116+74.27	LT			1713									1713							
156-160	F-14	225+01.55	227+50.58	RT			249									249							
156-160	F-15	227+71.98	234+54.49	RT			740									740							
SUBTOTALS (THIS SHEET)					812	0	35305	98	0	0	0	0	0	0	0	35305	263	596	0	16	0	0	0
SUBTOTAL (SHEET 91)					0	0.00	0	1877	1297	28044.00	9	9	21	19	3	0	0	0	2135	4	1200	2	34
SUBTOTAL (SHEET 92)					0	25183	0	585	420	9088.00	7	8	10	8	0	0	0	0	0	0	0	0	0
TOTALS CARRIED TO GENERAL SUMMARY					812	25183	35305	2560	1717	37132.0	16	17	31	27	3	35305	263	596	2135	20	1200	2	34

SHEET NO.	REF. NO.	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED, 24" AND UNDER FT	202 PIPE REMOVED, OVER 24" FT	202 MANHOLE REMOVED EACH	202 CATCH BASIN REMOVED EACH	SPECIAL PIPE CLEANOUT FT	603 15" CONDUIT, TYPE B FT	603 15" CONDUIT, TYPE C FT	603 27" CONDUIT, TYPE C FT	603 36" CONDUIT, TYPE B FT	603 36" CONDUIT, TYPE C FT	604 CATCH BASIN, NO. 7 EACH	604 MANHOLE, NO. 3 EACH
LLOYD RD. RAMP A-1																
178	D-1	102+39.48	103+12.51	LT		72.6							72.6			
178-179	D-2	103+12.51	106+60.84	LT		335.9		1								
178	D-3	103+12.51	104+96.24	LT										173.2		1
178-179	D-4	104+96.24	105+69.52	LT	20.0					84.5						1
178-179	D-5	104+96.24	106+83.39	LT										181.1	1	
179	D-6	106+83.39	108+42.90	LT										153.4	1	
179-180	D-7	108+42.90	111+57.65	LT								299.8				
179	D-8	108+42.90	108+31.24	LT							23.1					1
179	D-9	108+31.24	109+48.77	LT/RT	187.0						176.2					
179	D-10	106+60.84	108+22.63	LT	157.6		1									
179-180	D-11	108+22.63	111+57.65	LT	322.7											
180	D-12*	115+92.35	- -	LT												
LLOYD RD. RAMP A-4																
192	D-13*	410+52.95	- -	RT												
MAINLINE																
124	D-14*	139+61.97	- -	CL												
142	D-15	185+00.22	- -	RT				80.0								
152	D-16	212+39.07	- -	LT	8.0				8.0							1
172	D-17	265+50.11	- -	LT				70.0								
E. 305TH RAMP B-4																
208	D-18*	819+07.06	- -	LT/RT												
* STRUCTURE CLEANOUT - DO NOT MARK																
TOTALS (THIS SHEET)					695.3	408.5	1	2	150.0	8.0	283.8	299.8	72.6	507.7	2	4
TOTALS CARRIED TO GENERAL SUMMARY					695	409	1	2	150	8	284	300	73	508	2	4

CALCULATED AS
CHECKED KMB

DRAINAGE SUB-SUMMARY

LAK-2-0.00

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
UNDERDRAIN PIPE								
110-116	U-1	100+00.00	116+03.31	WB-Out				1603.3
110-114	U-2	099+97.21	111+62.58	WB-Ins				1165.4
110-116	U-3	099+85.50	116+03.31	EB-Ins				1617.8
110-114	U-4	100+00.00	111+62.58	EB-Out				1162.6
178-179	U-5	103+07.99	110+74.28	Ramp A-1				766.3
116-120	U-6	120+16.93	126+06.23	WB-Out				589.3
116-120	U-7	117+92.86	126+06.23	EB-Ins				813.4
183-184	U-8	203+56.92	205+89.23	Ramp A-2				232.3
120	U-9	128+28.71	128+93.69	WB-Ins				65.0
120	U-10	128+28.71	128+88.70	EB-Ins				60.0
120	U-11	128+28.71	128+88.70	EB-Out				60.0
120-128	U-12	131+04.26	150+90.50	WB-Ins				1986.2
120-124	U-13	131+04.26	139+06.65	EB-Out				802.4
124-128	U-14	138+60.78	150+90.50	EB-Out				1229.7
128-130	U-15	148+64.48	155+17.04	WB-Out				652.6
128-130	U-16	148+64.48	155+17.04	EB-Ins				652.6
130-142	U-17	156+98.60	184+42.70	WB-Out				2744.1
130-144	U-18	156+98.60	194+88.86	EB-Ins				3790.3
134-146	U-19	163+94.42	194+91.09	WB-Ins				3096.7
134-140	U-20	163+94.42	182+73.28	EB-Out				1878.9
140-146	U-21	182+75.79	194+84.31	EB-Out				1208.5
142-146	U-22	185+56.86	194+95.83	WB-Out				939.0
146-152	U-23	197+11.65	212+28.07	WB-Out				1516.4
146-160	U-24	197+06.25	234+80.35	WB-Ins				3774.1
146-160	U-25	197+03.75	234+61.67	EB-Ins				3757.9
146-150	U-26	196+98.10	209+25.31	EB-Out				1227.2
150-160	U-27	209+27.23	234+28.59	EB-Out				2501.4
152-160	U-28	212+30.83	235+14.25	WB-Out				2283.4
160-170	U-29	236+60.27	260+43.81	WB-Out				2383.5
160-170	U-30	236+26.81	260+24.60	WB-Ins				2397.8
160-170	U-31	236+07.54	260+02.77	EB-Ins				2395.2
160-170	U-32	235+74.69	259+59.01	EB-Out				2384.3
170-172	U-33	261+17.36	265+32.77	WB-Out				415.4
170-176	U-34	260+50.29	276+00.00	WB-Ins				1549.7
170-176	U-35	260+27.68	276+00.00	EB-Ins				1572.3
170	U-36	259+78.07	261+07.10	EB-Out				129.0
170-176	U-37	261+07.10	276+00.00	EB-Out				1492.9
172-176	U-38	265+16.85	276+00.00	WB-Out				1083.2
UNDERDRAIN OUTLETS								
EASTBOUND (RT)								
110	U0-1	100+17.10	--	RT	12.0			
110	U0-2	105+11.26	--	RT	14.0			
112	U0-3	108+67.40	--	RT	16.8			
112	U0-4	110+00.00	--	RT	25.7			
114	U0-5	112+59.16	--	RT	12.1			
116	U0-6	118+09.16	--	RT	15.7			
116	U0-7	120+55.85	--	RT	10.0			
120	U0-8	128+89.39	--	RT	13.1			
122	U0-9	135+00.00	--	RT	14.8			
124	U0-10	140+00.00	--	RT	18.7			
TOTALS (THIS COLUMN)					152.9	0	0	57980.0

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
EASTBOUND (RT), CONT.								
128	U0-11	148+00.00	--	RT	31.7		1	
130	U0-12	154+86.55	--	RT	18.0			
132	U0-13	161+89.61	--	RT	15.5			
134	U0-14	167+28.84	--	RT	13.5			
134	U0-15	167+33.15	--	RT	28.9			
138	U0-16	174+04.52	--	RT	10.9			
138	U0-17	174+24.82	--	RT	40.7			
140	U0-18	179+23.98	--	RT	10.3			
142	U0-19	185+04.45	--	RT	10.9			
142	U0-20	186+00.00	--	RT	27.3		1	
144	U0-21	190+11.49	--	RT	16.0			
144	U0-22	191+00.00	--	RT	15.3		1	
148	U0-23	201+84.55	--	RT	76.6			
148	U0-24	202+40.59	--	RT	15.1			
150	U0-25	208+15.65	--	RT	14.3			
152	U0-26	213+92.89	--	RT	13.7			
154	U0-27	220+02.15	--	RT	10.0			
154	U0-28	222+12.68	--	RT	9.9			
156	U0-29	224+00.00	--	RT	29.7		1	
158	U0-30	229+57.17	--	RT	11.0			
158	U0-31	230+00.00	--	RT	16.5		1	
162	U0-32	240+00.00	--	RT	15.7		1	
162	U0-33	242+00.76	--	RT	9.7			
164	U0-34	245+00.00	--	RT	21.9		1	
166	U0-35	248+51.83	--	RT	9.1			
166	U0-36	252+60.00	--	RT	29.9			
168	U0-37	254+01.60	--	RT	9.0			
170	U0-38	259+00.00	--	RT	18.0		1	
172	U0-39	265+54.47	--	RT	9.5			
174	U0-40	269+55.33	--	RT	8.7			
174	U0-41	271+00.00	--	RT	26.7		1	
WESTBOUND (LT)								
110	U0-42	100+20.53	--	LT	13.5			
110	U0-43	105+00.00	--	LT	33.7		1	
110	U0-44	105+17.14	--	LT	18.9			
112	U0-45	108+69.86	--	LT	18.7			
112	U0-46	110+00.00	--	LT	20.8		1	
114	U0-47	115+00.00	--	LT	14.8		1	
116	U0-48	120+00.00	--	LT	14.5		1	
118	U0-49	123+00.00	--	LT	55.5		1	
120	U0-50	128+00.00	--	LT	18.6		1	
120	U0-51	128+93.69	--	LT	13.0			
122	U0-52	135+22.13	--	LT	10.3			
126	U0-53	141+33.86	--	LT	11.7			
126	U0-54	143+34.18	--	LT	11.4			
128	U0-55	147+62.27	--	LT	14.2			
128	U0-56	149+00.00	--	LT	21.7		1	
130	U0-57	154+00.00	--	LT	16.9		1	
132	U0-58	159+00.00	--	LT	20.1		1	
134	U0-59	164+00.00	--	LT	31.4		1	
TOTALS (THIS COLUMN)					953.7	0	19	0
TOTALS (THIS SHEET)					1106.6	0	19	57980.0

CALCULATED AS CHECKED KWB

DRAINAGE SUB-SUMMARY

LAK-2-0.00

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SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
WESTBOUND (LT), CONT.								
134	U0-60	165+52.54	--	LT	8.8			
134	U0-61	167+46.03	--	LT	11.9			
136	U0-62	169+34.70	--	LT	11.7			
136	U0-63	169+51.37	--	LT	54.3			
138	U0-64	174+16.64	--	LT	18.1			
138	U0-65	175+00.00	--	LT	61.8			
140	U0-66	179+36.93	--	LT	19.1			
140	U0-67	182+00.00	--	LT	21.8		1	
142	U0-68	185+15.72	--	LT	17.8			
142	U0-69	185+55.42	--	LT	16.4		1	
142	U0-70	189+00.00	--	LT	16.3		1	
144	U0-71	189+98.80	--	LT	8.6			
144	U0-72	194+00.00	--	LT	16.4		1	
146	U0-73	200+00.00	--	LT	13.5		1	
148	U0-74	205+00.00	--	LT	14.8		1	
150	U0-75	208+14.64	--	LT	14.4			
152	U0-76	213+00.00	--	LT	27.0		1	
152	U0-77	213+92.27	--	LT	13.6			
154	U0-78	218+00.00	--	LT	20.0		1	
154	U0-79	219+92.09	--	LT	13.0			
154	U0-80	222+23.85	--	LT	14.1			
156	U0-81	223+00.00	--	LT	25.5		1	
158	U0-82	228+00.00	--	LT	15.3		1	
158	U0-83	229+51.47	--	LT	9.1			
160	U0-84	233+00.00	--	LT	15.0		1	
162	U0-85	238+00.00	--	LT	16.0		1	
162	U0-86	241+89.71	--	LT	13.8			
164	U0-87	243+00.00	--	LT	15.0		1	
166	U0-88	248+00.00	--	LT	33.0		1	
166	U0-89	248+39.31	--	LT	14.5			
168	U0-90	253+00.00	--	LT	27.8		1	
168	U0-91	253+88.77	--	LT	14.9			
170	U0-92	258+00.00	--	LT	14.0		1	
172	U0-93	265+41.74	--	LT	14.8			
174	U0-94	269+55.34	--	LT	9.3			
176	U0-95	275+00.00	--	LT	20.1			
UNDERDRAIN CONNECTIONS								
110	UC-1	103+00.00	--	WB-Out.		6.9		
112	UC-2	106+00.00	--	WB-Out.		6.8		
112	UC-3	109+00.00	--	WB-Out.		10.2		
114	UC-4	112+00.00	--	WB-Out.		6.1		
114	UC-5	115+00.00	--	WB-Out.		6.5		
118	UC-6	121+00.00	--	WB-Out.		5.7		
118	UC-7	124+00.00	--	WB-Out.		6.3		
120	UC-8	128+00.00	--	WB-Out.		3.1		
128	UC-9	149+00.00	--	WB-Out.		6.6		
130	UC-10	152+00.00	--	WB-Out.		6.7		
130	UC-11	155+00.00	--	WB-Out.		6.8		
132	UC-12	159+00.00	--	WB-Out.		6.6		
TOTALS (THIS COLUMN)					671.5	78.3	16	0

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
UNDERDRAIN CONNECTIONS, CONT.								
132	UC-13	162+00.00	--	WB-Out.		6.8		
134	UC-14	165+00.00	--	WB-Out.		6.8		
136	UC-15	168+00.00	--	WB-Out.		7.0		
136	UC-16	171+00.00	--	WB-Out.		5.0		
138	UC-17	175+00.00	--	WB-Out.		2.2		
138	UC-18	178+00.00	--	WB-Out.		8.5		
140	UC-19	181+00.00	--	WB-Out.		9.4		
140	UC-20	184+00.00	--	WB-Out.		4.2		
142	UC-21	187+00.00	--	WB-Out.		7.4		
142	UC-22	189+00.00	--	WB-Out.		7.4		
144	UC-23	194+00.00	--	WB-Out.		6.5		
146	UC-24	200+00.00	--	WB-Out.		6.5		
148	UC-25	203+00.00	--	WB-Out.		6.7		
150	UC-26	206+00.00	--	WB-Out.		7.1		
150	UC-27	209+00.00	--	WB-Out.		7.2		
152	UC-28	212+00.00	--	WB-Out.		6.8		
152	UC-29	213+00.00	--	WB-Out.		3.5		
1554	UC-30	218+00.00	--	WB-Out.		2.4		
154	UC-31	221+00.00	--	WB-Out.		6.6		
156	UC-32	224+00.00	--	WB-Out.		7.5		
156	UC-33	227+00.00	--	WB-Out.		7.4		
158	UC-34	230+00.00	--	WB-Out.		7.4		
160	UC-35	233+00.00	--	WB-Out.		7.4		
160	UC-36	237+00.00	--	WB-Out.		7.6		
162	UC-37	240+00.00	--	WB-Out.		7.9		
164	UC-38	243+00.00	--	WB-Out.		7.8		
164	UC-39	246+00.00	--	WB-Out.		7.9		
166	UC-40	249+00.00	--	WB-Out.		7.7		
166	UC-41	252+00.00	--	WB-Out.		8.5		
168	UC-42	255+00.00	--	WB-Out.		8.6		
170	UC-43	258+00.00	--	WB-Out.		5.9		
170	UC-44	262+00.00	--	WB-Out.		4.5		
172	UC-45	266+00.00	--	WB-Out.		6.6		
174	UC-46	269+00.00	--	WB-Out.		6.5		
174	UC-47	272+00.00	--	WB-Out.		6.7		
176	UC-48	275+00.00	--	WB-Out.		6.2		
110	UC-49	103+00.00	--	WB-Ins.		7.3		
112	UC-50	106+00.00	--	WB-Ins.		7.1		
112	UC-51	109+00.00	--	WB-Ins.		7.2		
122	UC-52	134+00.00	--	WB-Ins.		7.0		
124	UC-53	137+00.00	--	WB-Ins.		7.2		
124	UC-54	140+00.00	--	WB-Ins.		7.8		
124	UC-55	143+00.00	--	WB-Ins.		7.7		
126	UC-56	146+00.00	--	WB-Ins.		7.4		
128	UC-57	149+00.00	--	WB-Ins.		7.3		
134	UC-58	165+00.00	--	WB-Ins.		7.3		
136	UC-59	168+00.00	--	WB-Ins.		7.4		
136	UC-60	171+00.00	--	WB-Ins.		7.3		
138	UC-61	175+00.00	--	WB-Ins.		7.3		
138	UC-62	178+00.00	--	WB-Ins.		7.3		
TOTALS (THIS COLUMN)					0	342.7	0	0
TOTALS (THIS SHEET)					671.5	421	16	0

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
UNDERDRAIN CONNECTIONS, CONT.								
140	UC-63	181+00.00	--	WB-Ins.		7.4		
140	UC-64	184+00.00	--	WB-Ins.		7.0		
142	UC-65	187+00.00	--	WB-Ins.		7.1		
144	UC-66	189+98.80	--	WB-Ins.		7.2		
144	UC-67	193+00.00	--	WB-Ins.		6.9		
146	UC-68	200+00.00	--	WB-Ins.		7.4		
146	UC-69	203+00.00	--	WB-Ins.		7.8		
150	UC-70	206+00.00	--	WB-Ins.		7.8		
150	UC-71	209+00.00	--	WB-Ins.		7.5		
152	UC-72	212+00.00	--	WB-Ins.		7.7		
152	UC-73	213+00.00	--	WB-Ins.		7.8		
154	UC-74	218+00.00	--	WB-Ins.		7.8		
154	UC-75	221+00.00	--	WB-Ins.		7.3		
156	UC-76	224+00.00	--	WB-Ins.		7.5		
156	UC-77	227+00.00	--	WB-Ins.		7.8		
158	UC-78	230+00.00	--	WB-Ins.		7.5		
160	UC-79	233+00.00	--	WB-Ins.		7.2		
160	UC-80	237+00.00	--	WB-Ins.		3.9		
162	UC-81	240+00.00	--	WB-Ins.		7.6		
164	UC-82	243+00.00	--	WB-Ins.		7.8		
164	UC-83	246+00.00	--	WB-Ins.		7.5		
166	UC-84	249+00.00	--	WB-Ins.		7.8		
166	UC-85	252+00.00	--	WB-Ins.		7.5		
168	UC-86	255+00.00	--	WB-Ins.		7.5		
170	UC-87	258+00.00	--	WB-Ins.		7.0		
170	UC-88	262+00.00	--	WB-Ins.		6.4		
172	UC-89	266+00.00	--	WB-Ins.		7.3		
174	UC-90	269+00.00	--	WB-Ins.		7.7		
174	UC-91	272+00.00	--	WB-Ins.		7.3		
176	UC-92	275+00.00	--	WB-Ins.		7.3		
110	UC-93	103+00.00	--	EB Out.		7.2		
112	UC-94	106+00.00	--	EB Out.		7.2		
112	UC-95	109+00.00	--	EB Out.		7.0		
122	UC-96	132+00.00	--	EB Out.		6.3		
122	UC-97	135+00.00	--	EB Out.		6.8		
124	UC-98	138+00.00	--	EB Out.		7.0		
124	UC-99	141+00.00	--	EB Out.		16.8		
126	UC-100	144+00.00	--	EB Out.		11.5		
128	UC-101	147+00.00	--	EB Out.		5.4		
128	UC-102	150+00.00	--	EB Out.		2.2		
134	UC-103	164+00.00	--	EB Out.		6.9		
134	UC-104	167+00.00	--	EB Out.		7.0		
136	UC-105	170+00.00	--	EB Out.		7.3		
136	UC-106	173+00.00	--	EB Out.		7.2		
138	UC-107	176+00.00	--	EB Out.		4.9		
140	UC-108	179+00.00	--	EB Out.		1.0		
140	UC-109	182+00.00	--	EB Out.		4.2		
142	UC-110	185+00.00	--	EB Out.		6.6		
142	UC-111	188+00.00	--	EB Out.		7.1		
144	UC-112	191+00.00	--	EB Out.		7.2		
TOTALS (THIS COLUMN)					0	356.1	0	0

SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	603	603	604	605
					6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
UNDERDRAIN CONNECTIONS, CONT.								
144	UC-113	194+00.00	--	EB Out.		6.9		
146	UC-114	198+00.00	--	EB Out.		7.0		
148	UC-115	201+00.00	--	EB Out.		7.1		
148	UC-116	204+00.00	--	EB Out.		7.0		
150	UC-117	207+00.00	--	EB Out.		6.9		
150	UC-118	210+00.00	--	EB Out.		3.9		
152	UC-119	213+00.00	--	EB Out.		8.9		
152	UC-120	216+00.00	--	EB Out.		15.2		
154	UC-121	219+00.00	--	EB Out.		10.3		
154	UC-122	222+00.00	--	EB Out.		4.8		
156	UC-123	225+00.00	--	EB Out.		8.6		
158	UC-124	228+00.00	--	EB Out.		7.2		
158	UC-125	231+00.00	--	EB Out.		7.1		
160	UC-126	234+00.00	--	EB Out.		7.2		
160	UC-127	237+00.00	--	EB Out.		7.8		
162	UC-128	240+00.00	--	EB Out.		7.3		
164	UC-129	243+00.00	--	EB Out.		7.0		
164	UC-130	246+00.00	--	EB Out.		6.8		
166	UC-131	249+00.00	--	EB Out.		7.0		
166	UC-132	252+00.00	--	EB Out.		7.0		
168	UC-133	255+00.00	--	EB Out.		4.3		
170	UC-134	258+00.00	--	EB Out.		5.1		
170	UC-135	262+00.00	--	EB Out.		7.9		
172	UC-136	265+00.00	--	EB Out.		8.5		
174	UC-137	268+00.00	--	EB Out.		8.3		
174	UC-138	271+00.00	--	EB Out.		8.1		
176	UC-139	274+00.00	--	EB Out.		7.4		
110	UC-140	103+00.00	--	EB-Ins.		7.3		
112	UC-141	106+00.00	--	EB-Ins.		7.0		
112	UC-142	109+00.00	--	EB-Ins.		7.1		
114	UC-143	112+00.00	--	EB-Ins.		6.8		
114	UC-144	115+00.00	--	EB-Ins.		6.1		
116	UC-145	118+00.00	--	EB-Ins.		3.0		
118	UC-146	121+00.00	--	EB-Ins.		6.5		
118	UC-147	124+00.00	--	EB-Ins.		7.4		
128	UC-148	149+00.00	--	EB-Ins.		6.9		
130	UC-149	152+00.00	--	EB-Ins.		6.3		
130	UC-150	155+00.00	--	EB-Ins.		3.9		
132	UC-151	158+00.00	--	EB-Ins.		5.1		
132	UC-152	161+00.00	--	EB-Ins.		6.7		
134	UC-153	164+00.00	--	EB-Ins.		7.0		
134	UC-154	167+00.00	--	EB-Ins.		6.8		
136	UC-155	170+00.00	--	EB-Ins.		6.6		
136	UC-156	173+00.00	--	EB-Ins.		6.3		
138	UC-157	176+00.00	--	EB-Ins.		6.2		
140	UC-158	179+00.00	--	EB-Ins.		6.4		
140	UC-159	182+00.00	--	EB-Ins.		6.9		
142	UC-160	185+00.00	--	EB-Ins.		7.1		
142	UC-161	188+00.00	--	EB-Ins.		6.8		
144	UC-162	191+00.00	--	EB-Ins.		6.8		
TOTALS (THIS COLUMN)					0	347.6	0	0
TOTALS (THIS SHEET)					0	703.7	0	0

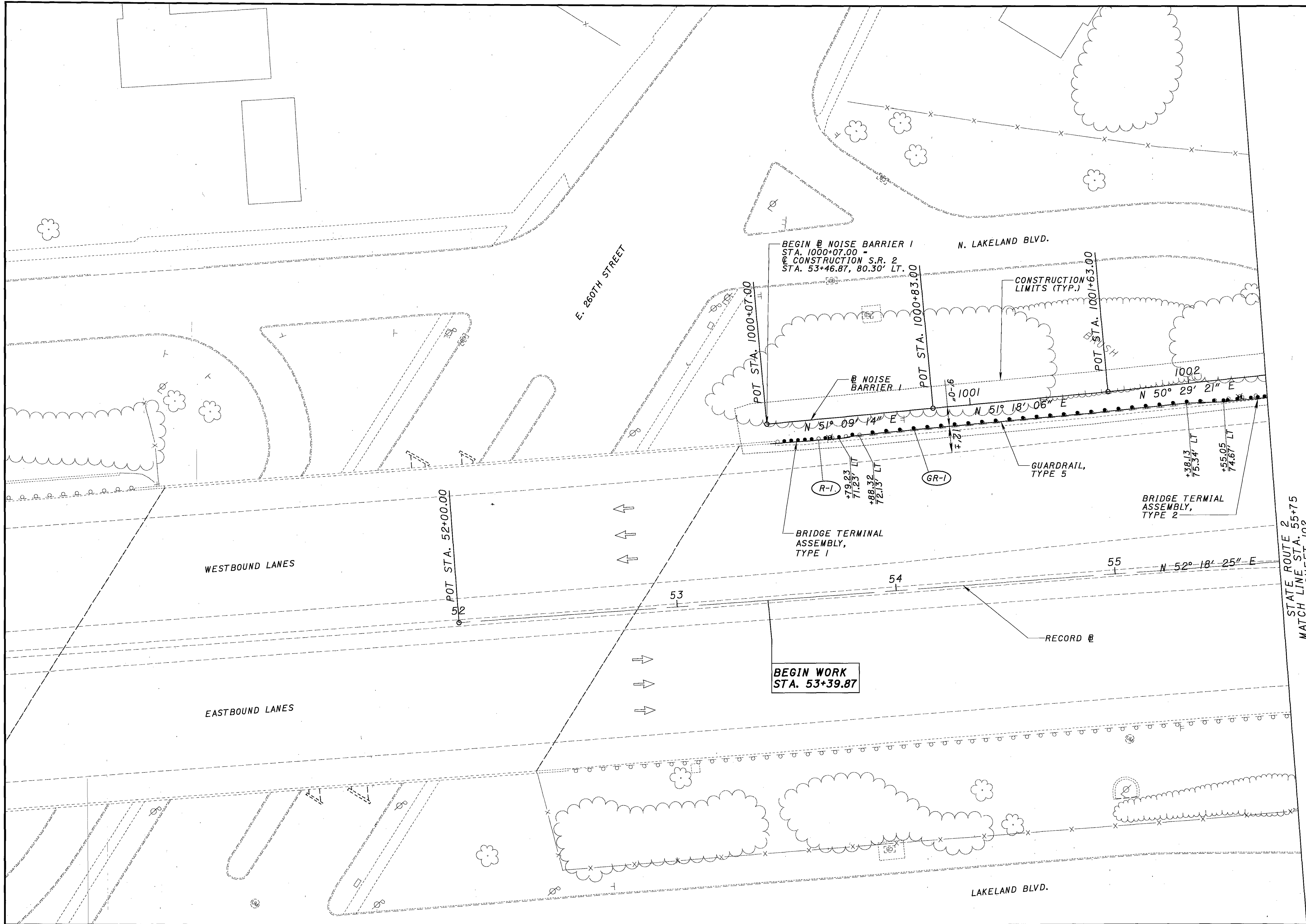
SHEET NO.	REF NO.	STATION FROM	STATION TO	SIDE	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	PRECAST REINFORCED CONCRETE OUTLET EACH	6" SHALLOW PIPE UNDERDRAINS FT
UNDERDRAIN CONNECTIONS, CONT.								
144	UC-163	194+00.00	--	EB-Ins.		5.3		
146	UC-164	198+00.00	--	EB-Ins.		5.2		
148	UC-165	201+00.00	--	EB-Ins.		6.7		
150	UC-166	204+00.00	--	EB-Ins.		7.0		
150	UC-167	207+00.00	--	EB-Ins.		7.0		
150	UC-168	210+00.00	--	EB-Ins.		6.7		
152	UC-169	213+00.00	--	EB-Ins.		6.7		
152	UC-170	216+00.00	--	EB-Ins.		7.0		
154	UC-171	219+00.00	--	EB-Ins.		7.0		
154	UC-172	222+00.00	--	EB-Ins.		6.9		
156	UC-173	225+00.00	--	EB-Ins.		6.8		
158	UC-174	228+00.00	--	EB-Ins.		7.1		
158	UC-175	231+00.00	--	EB-Ins.		7.1		
160	UC-176	234+00.00	--	EB-Ins.		4.0		
160	UC-177	237+00.00	--	EB-Ins.		4.5		
162	UC-178	240+00.00	--	EB-Ins.		6.9		
164	UC-179	243+00.00	--	EB-Ins.		7.3		
164	UC-180	246+00.00	--	EB-Ins.		7.4		
166	UC-181	249+00.00	--	EB-Ins.		7.4		
166	UC-182	252+00.00	--	EB-Ins.		7.3		
168	UC-183	255+00.00	--	EB-Ins.		7.2		
170	UC-184	258+00.00	--	EB-Ins.		7.4		
170	UC-185	261+00.00	--	EB-Ins.		4.3		
172	UC-186	264+00.00	--	EB-Ins.		7.0		
172	UC-187	267+00.00	--	EB-Ins.		7.1		
174	UC-188	272+00.00	--	EB-Ins.		7.2		
175	UC-189	275+00.00	--	EB-Ins.		7.3		
TOTALS (THIS COLUMN)					0	178.8	0	0
TOTALS (THIS SHEET)					0	178.8	0	0
TOTALS (SHEET 95)					1106.6	0.0	19.0	57980.0
TOTALS (SHEET 96)					671.5	421.0	16.0	0.0
TOTALS (SHEET 97)					0.0	703.7	0.0	0.0
TOTALS CARRIED TO GENERAL SUMMARY					1778	1304	35	57980

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STATION	CUT AREA		203		203		659		659	
	SY	SY	CU YD	CU YD	FT	SY	FT	SY	FT	SY
100+00.00	76	0			28		10			
100+10.01	58	15	25	3	20	27	10	11		
101+00.00	57	14	192	49	22	210	11	105		
102+00.00	61	3	219	32	20	233	11	122		
103+00.00	66	1	235	8	29	272	11	122		
104+00.00	64	0	241	2	25	300	11	122		
104+99.12	61	4	229	8	27	286	11	121		
105+00.00	61	4	2	0	27	3	11	1		
106+00.00	68	1	239	10	27	328	11	122		
107+00.00	63	1	243	4	22	300	12	128		
108+00.00	60	1	228	3	15	206	12	133		
108+53.07	53	12	111	13	18	97	12	71		
109+00.00	60	0	98	11	13	81	11	60		
110+00.00	63	0	228	0	23	200	11	122		
111+00.00	60	0	228	-1	19	233	12	128		
112+00.00	59	0	220	-1	19	211	12	133		
112+51.94	60	2	114	2	17	104	12	69		
113+00.00	60	0	107	2	16	88	12	64		
114+00.00	61	2	224	3	16	250	12	133		
115+00.00	57	30	219	59	29	439	12	150		
116+00.00	46	0	191	56	18	378	20	194		
116+28.31	0	0	24	0	0	28	0	31		
117+72.23	0	0	0	0	0	0	0	0		
119+00.00	171	385	405	912	104	738	14	99		
120+00.00	286	632	684	1883	67	950	11	139		
121+00.00	63	0	484	1170	7	411	11	122		
122+00.00	70	0	246	0	8	83	11	122		
123+00.00	69	0	257	0	9	94	11	122		
124+00.00	79	0	274	0	27	200	11	122		
124+84.23	69	0	231	0	26	248	11	103		
125+00.00	70	0	41	0	26	46	11	19		
126+00.00	66	0	252	0	7	183	11	122		
127+00.00	61	0	235	0	14	117	11	122		
128+00.00	53	0	211	0	16	167	14	139		
129+13.70	0	0	112	0	0	101	0	88		
130+79.26	0	0	0	0	0	0	0	0		
132+00.00	91	37	204	84	34	228	15	101		
133+00.00	99	66	352	192	51	472	11	144		
TOTAL (COLUMN 1)			7603	4501		8313		3711		

STATION	CUT AREA		203		203		659		659	
	SY	SY	CU YD	CU YD	FT	SY	FT	SY	FT	SY
134+00.00	103	54	374	223	35	478	11	122		
135+00.00	96	44	368	181	35	389	11	122		
136+00.00	64	10	296	100	23	322	12	128		
137+00.00	64	22	237	60	36	328	11	128		
138+00.00	71	0	250	41	24	333	11	122		
139+00.00	73	0	267	0	31	306	11	122		
139+75.24	63	2	189	3	18	205	11	92		
140+00.00	64	0	58	1	18	50	11	30		
141+00.00	60	2	230	3	18	250	11	122		
142+00.00	60	2	222	7	27	289	11	122		
142+97.98	63	0	223	4	25	289	11	122		
143+00.00	63	0	223	4	15	218	11	120		
143+48.82	58	3	5	0	15	3	11	2		
144+00.00	60	2	109	3	14	92	11	60		
145+00.00	58	3	112	5	20	91	11	63		
146+00.00	58	0	219	8	12	167	11	122		
147+00.00	61	4	215	5	18	194	11	122		
147+47.73	61	0	220	7	17	244	11	122		
148+00.00	67	0	108	3	27	119	11	58		
149+00.00	68	0	124	0	18	148	11	64		
150+00.00	64	0	250	0	33	356	11	122		
151+00.00	62	0	244	0	31	328	11	122		
151+29.84	61	1	233	0	28	289	11	122		
152+00.00	63	3	68	0	24	71	11	38		
153+00.00	65	0	161	5	19	253	12	94		
153+50.00	64	2	237	5	46	406	12	128		
154+00.00	57	2	119	1	27	153	11	61		
154+02.52	57	3	112	3	28	131	11	67		
155+00.00	55	1	5	0	19	5	13	4		
155+42.04	0	0	202	7	20	195	13	168		
156+74.24	1	0	43	1	16	37	18	42		
157+50.09	55	2	2	0	0	0	0	0		
158+00.00	61	2	79	3	6	110	0	72		
159+00.00	68	3	107	4	20	125	17	86		
160+00.00	68	1	239	9	25	294	14	144		
161+00.00	69	3	252	8	28	300	12	133		
162+00.00	63	2	254	8	26	333	12	128		
162+01.26	63	2	244	10	34	294	11	128		
TOTAL (COLUMN 2)			6682	717		7909		3505		

STATION	CUT AREA		203		203		659		659	
	SY	SY	CU YD	CU YD	FT	SY	FT	SY	FT	SY
163+00.00	68	0	240	4	23	236	12	132		
164+00.00	65	1	246	3	22	250	12	133		
165+00.00	64	0	239	2	18	222	12	133		
166+00.00	66	0	241	0	17	194	12	133		
166+48.38	63	0	116	0	12	78	12	65		
166+49.20	63	0	2	0	12	1	12	1		
167+00.00	63	0	119	0	19	87	12	68		
168+00.00	66	0	239	0	21	222	12	133		
169+00.00	64	0	241	0	19	222	12	133		
169+23.61	64	0	56	0	18	49	12	31		
170+00.00	62	0	178	0	21	166	12	102		
171+00.00	62	0	230	0	21	233	12	133		
172+00.00	55	0	217	0	24	250	12	128		
173+00.00	52	0	198	0	15	217	12	128		
173+50.00	53	1	97	1	17	89	12	67		
174+00.00	54	0	99	1	16	92	12	67		
174+50.60	53	0	100	0	12	79	12	67		
175+00.00	55	0	99	0	14	71	12	66		
176+00.00	53	0	200	0	14	156	12	133		
177+00.00	50	1	191	2	17	172	12	133		
178+00.00	54	0	193	2	24	228	12	133		
179+00.00	57	0	206	1	22	256	12	133		
180+00.00	54	0	206	1	21	239	12	133		
181+00.00	59	4	209	8	26	261	12	128		
182+00.00	55	3	211	13	27	294	11	122		
183+00.00	59	1	211	8	24	283	12	128		
184+00.00	58	0	217	3	19	239	12	133		
185+00.00	59	0	217	0	22	228	12	133		
186+00.00	62	4	224	8	35	317	11	128		
187+00.00	63	1	231	10	28	350	12	128		
188+00.00	67	2	241	6	31	328	12	133		
189+00.00	67	0	248	4	33	356	12	133		
190+00.00	69	0	252	0	42	417	12	133		
191+00.00	91	0	296	0	57	550	12	133		
192+00.00	72	1	302	2	58	639	12	133		
TOTAL (COLUMN 3)			6809	79		8069		3954		
TOTAL (COLUMN 2)			6682	717		7909		3505		
TOTAL (COLUMN 1)			7603	4501		8313		3711		
TOTAL (THIS SHEET)			21094	5297		24291		11170		



CALCULATED AS
 CHECKED KMB

0 10 20
 HORIZONTAL SCALE IN FEET

**PLAN - MAINLINE SR 2
 BEGIN WORK TO STA. 55+75**

LAK-2-0.00

STATE ROUTE 2
 MATCH LINE STA. 55+75
 SEE SHEET 102

BEGIN @ NOISE BARRIER 1
 STA. 1000+07.00
 @ CONSTRUCTION S.R. 2
 STA. 53+46.87, 80.30' LT.

N. LAKELAND BLVD.

CONSTRUCTION LIMITS (TYP.)

POT STA. 1000+07.00

POT STA. 1000+83.00

POT STA. 1001+63.00

NOISE BARRIER 1

GUARDRAIL, TYPE 5

BRIDGE TERMINAL ASSEMBLY, TYPE 2

BRIDGE TERMINAL ASSEMBLY, TYPE 1

WESTBOUND LANES

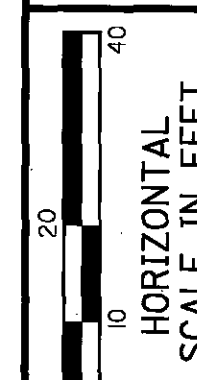
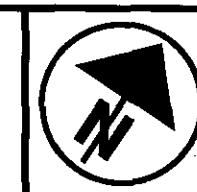
EASTBOUND LANES

POT STA. 52+00.00

BEGIN WORK
 STA. 53+39.87

RECORD @

LAKELAND BLVD.

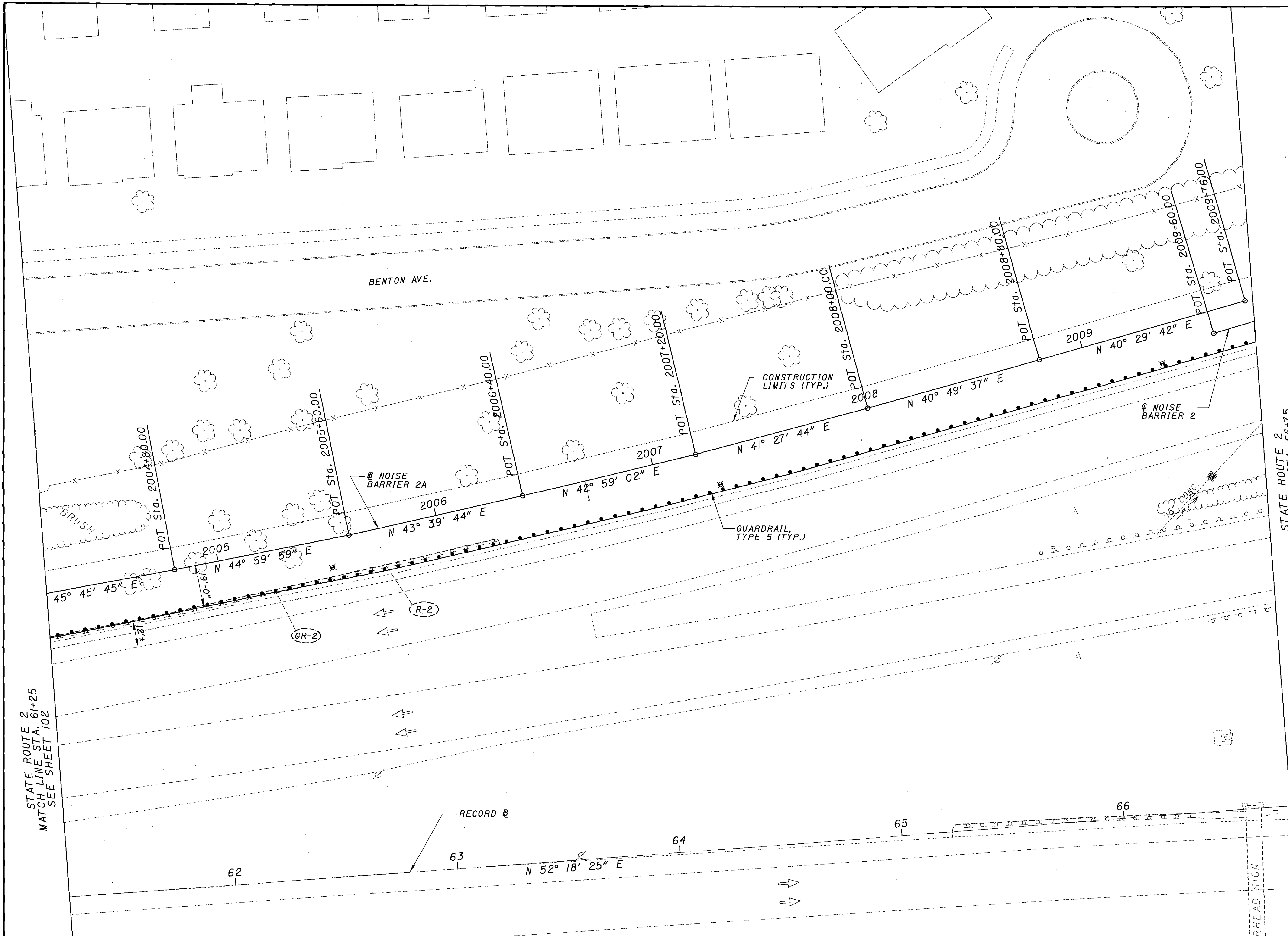


CALCULATED AS
CHECKED KMB

**PLAN - MAINLINE SR 2
STA. 61+25 TO STA. 66+75**

LAK-2-0.00

103
524



STATE ROUTE 2
MATCH LINE STA. 61+25
SEE SHEET 102

STATE ROUTE 2
MATCH LINE STA. 66+75
SEE SHEET 104

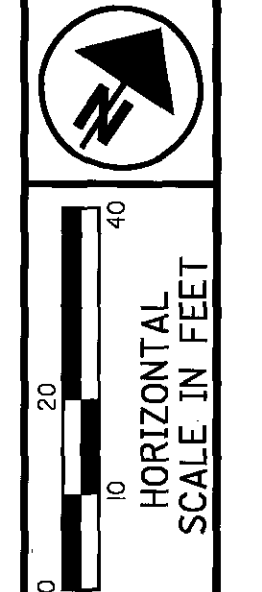
HEAD SIGN



STATE ROUTE 2
MATCH LINE STA. 72+25
SEE SHEET 104

STATE ROUTE 2
MATCH LINE STA. 77+75
SEE SHEET 106

P.I. Sta = 79+32.15
D = 4° 16' 26" (RT)
Dc = 0° 30' 00"
R = 11,459.26'
T = 427.59'
L = 854.78'
E = 7.97'



CALCULATED AS
CHECKED KMB

PLAN - MAINLINE SR 2
STA. 72+25 TO STA. 77+75

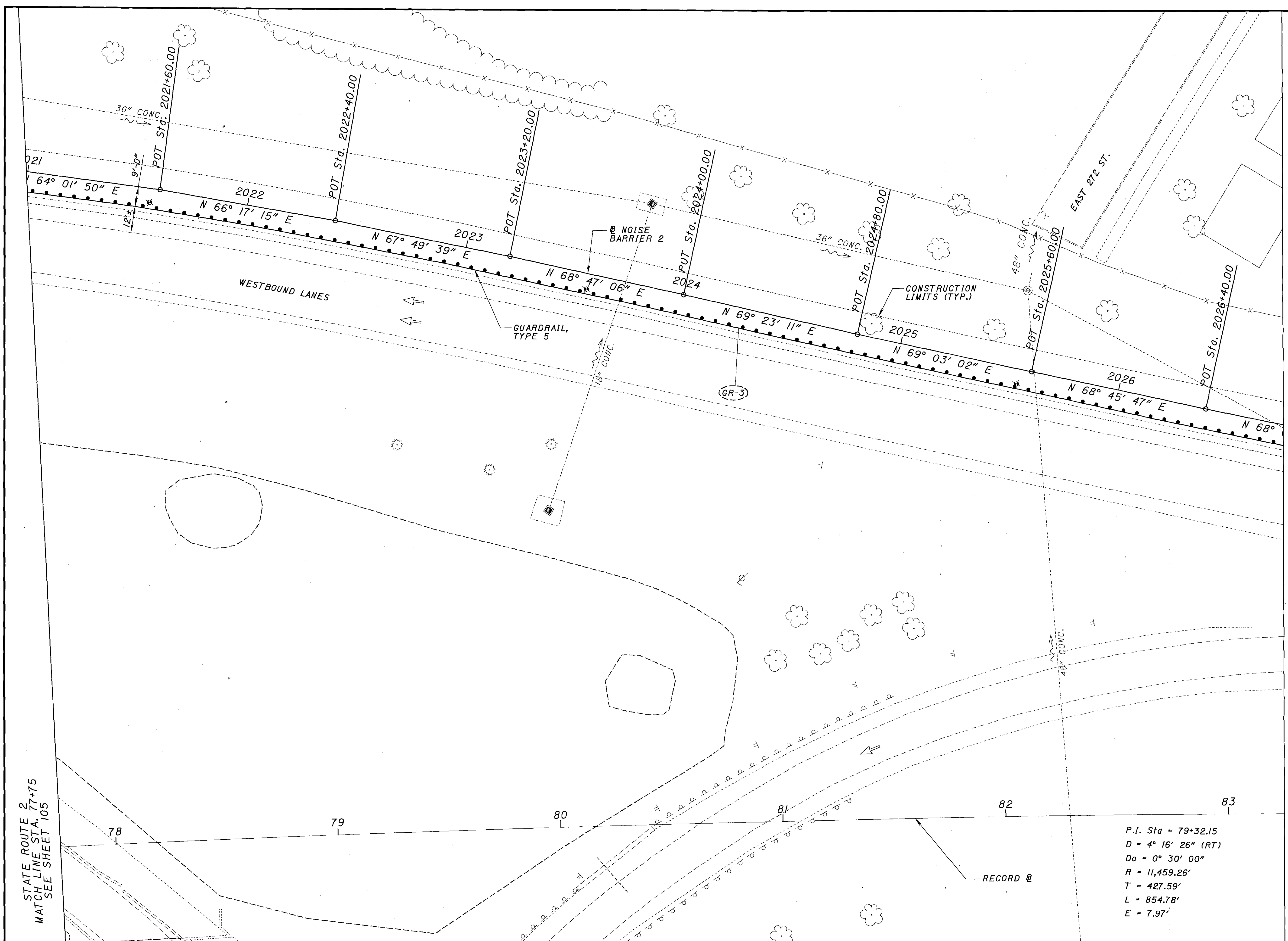
LAK-2-0.00

CALCULATED AS
 CHECKED KMB

0 20 40
 HORIZONTAL SCALE IN FEET

**PLAN - MAINLINE SR 2
 STA. 77+75 TO STA. 83+25**

LAK-2-0.00

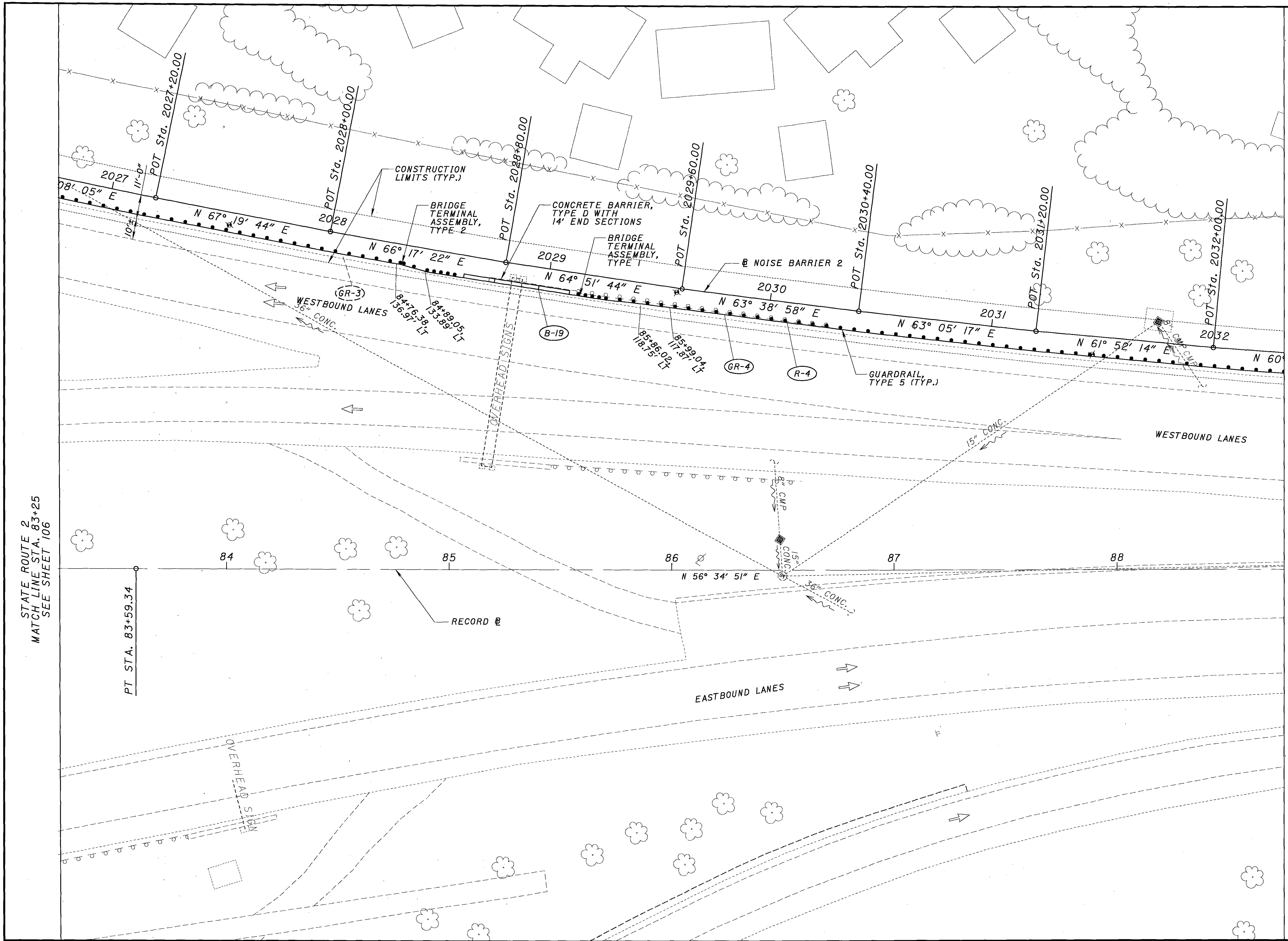


STATE ROUTE 2
 MATCH LINE STA. 77+75
 SEE SHEET 105

STATE ROUTE 2
 MATCH LINE STA. 83+25
 SEE SHEET 107

P.I. Sta = 79+32.15
 D = 4° 16' 26" (RT)
 Dc = 0° 30' 00"
 R = 11,459.26'
 T = 427.59'
 L = 854.78'
 E = 7.97'

RECORD B



STATE ROUTE 2
MATCH LINE STA. 83+25
SEE SHEET 106

PT STA. 83+59.34

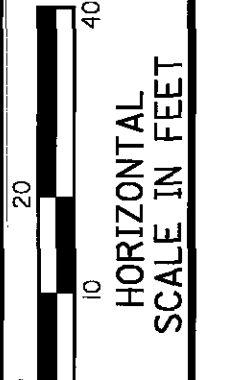
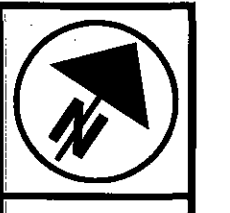
STATE ROUTE 2
MATCH LINE STA. 88+75
SEE SHEET 108

CALCULATED AS
CHECKED KNB

0 10 20
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 83+25 TO STA. 88+75

LAK-2-0.00



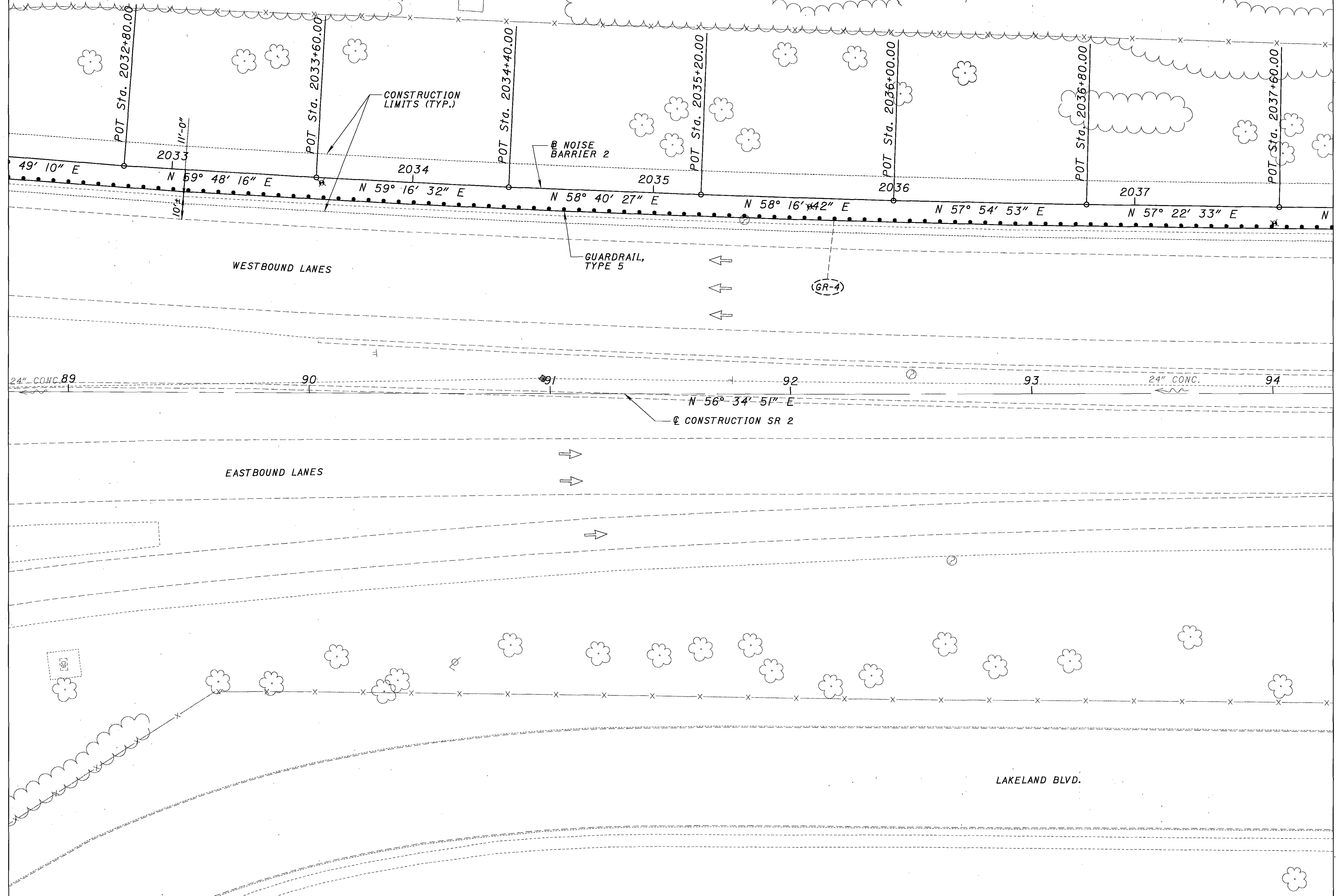
CALCULATED AS
CHECKED KWB

**PLAN - MAINLINE SR 2
STA. 88+75 TO STA. 94+25**

LAK-2-0.00

STATE ROUTE 2
MATCH LINE STA. 88+75
SEE SHEET 107

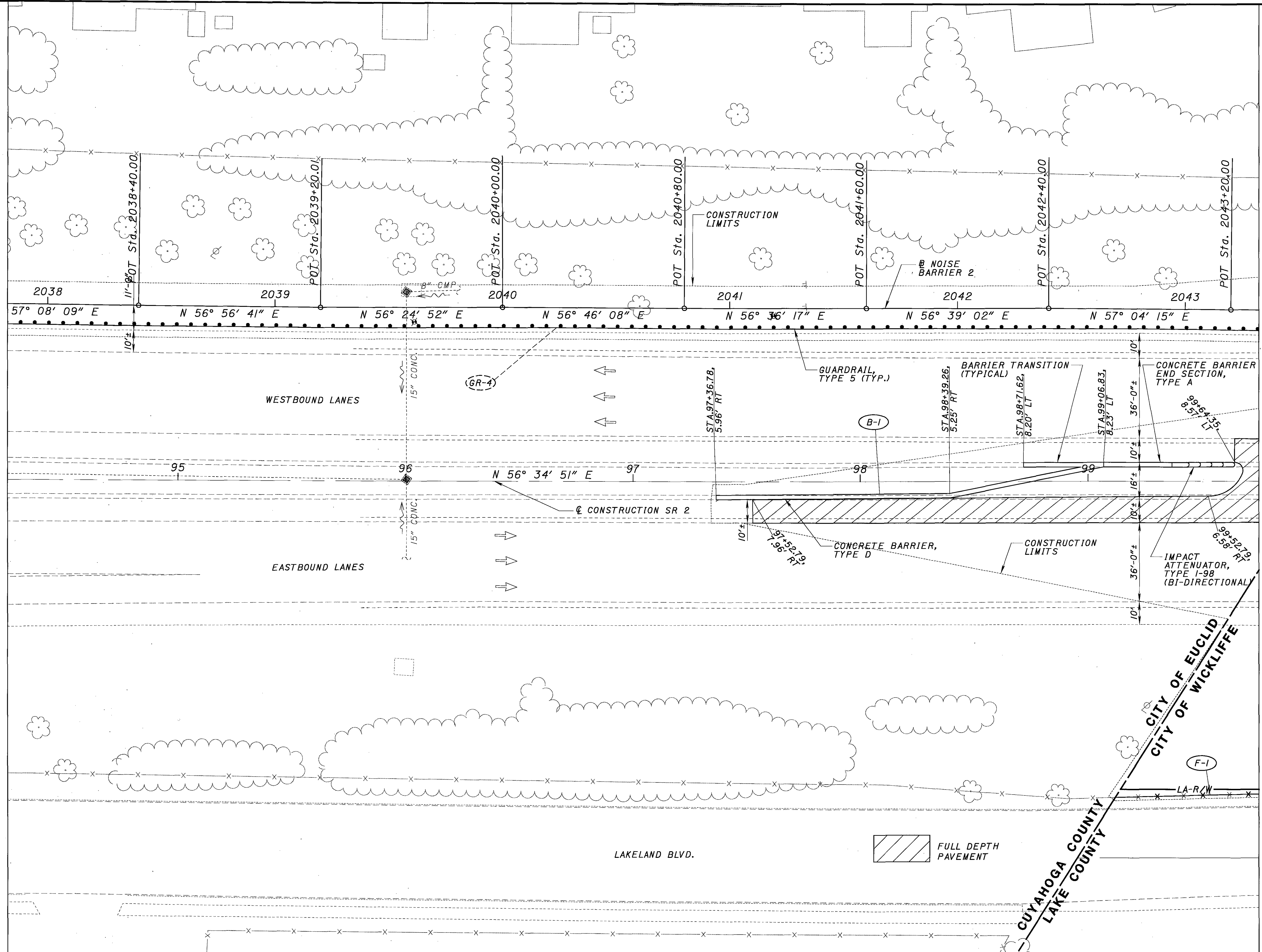
STATE ROUTE 2
MATCH LINE STA. 94+25
SEE SHEET 109



CALCULATED AS
CHECKED KMB

0 10 20 30
HORIZONTAL SCALE IN FEET

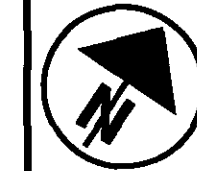
STATE ROUTE 2
MATCH LINE STA. 94+25
SEE SHEET 108



STATE ROUTE 2
MATCH LINE STA. 99+75
SEE SHEET 110

PLAN - MAINLINE SR 2
STA. 94+25 TO STA. 99+75

LAK-2-0.00



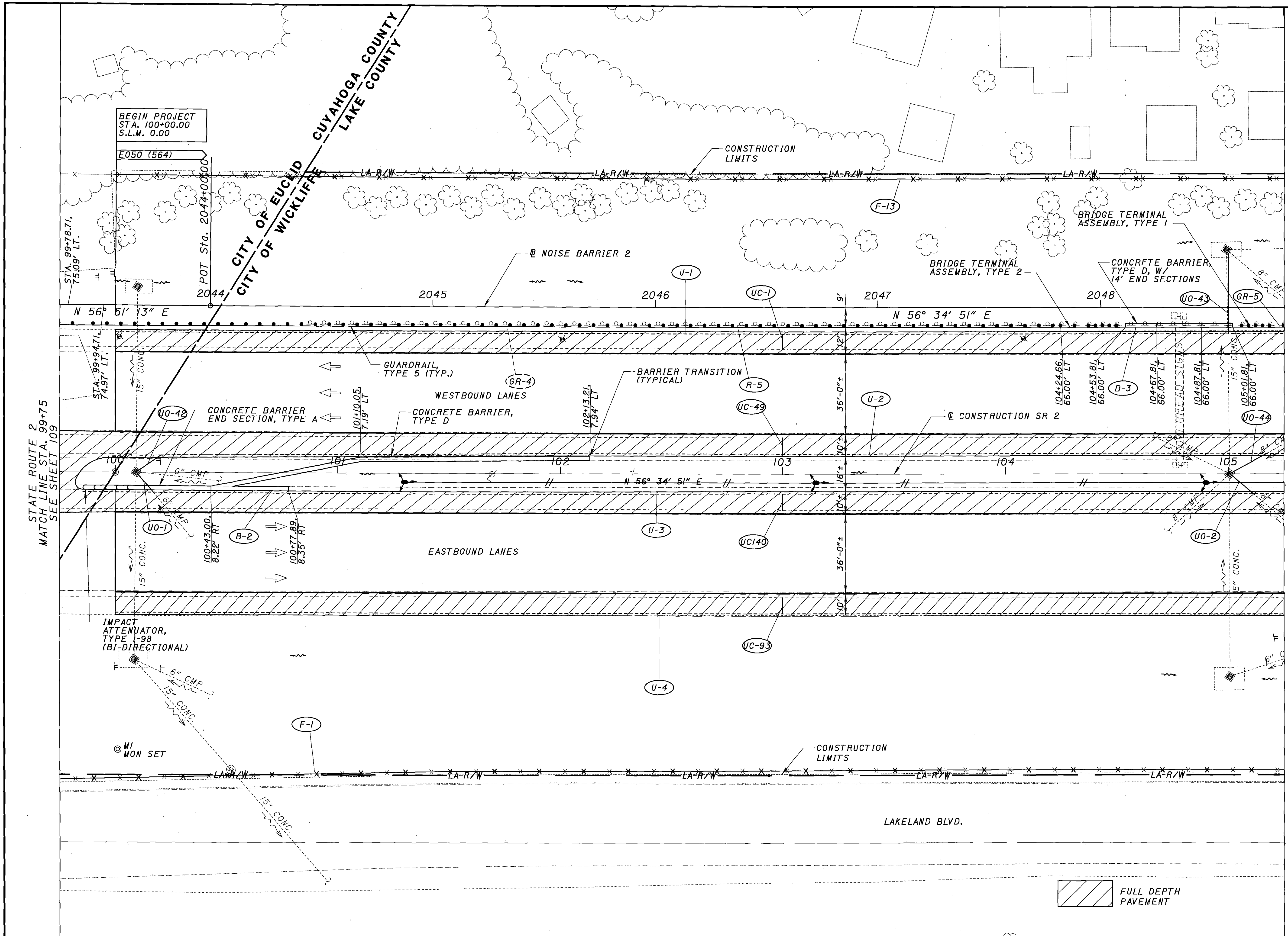
0 10 20
HORIZONTAL
SCALE IN FEET

CALCULATED AS
CHECKED KWB

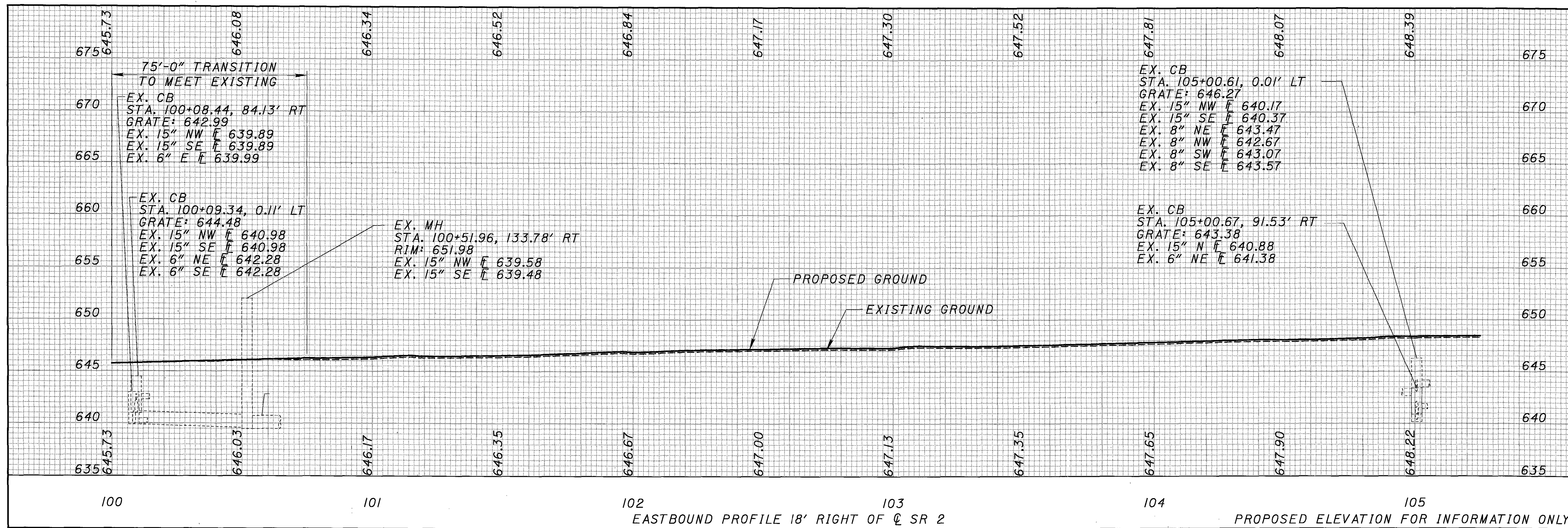
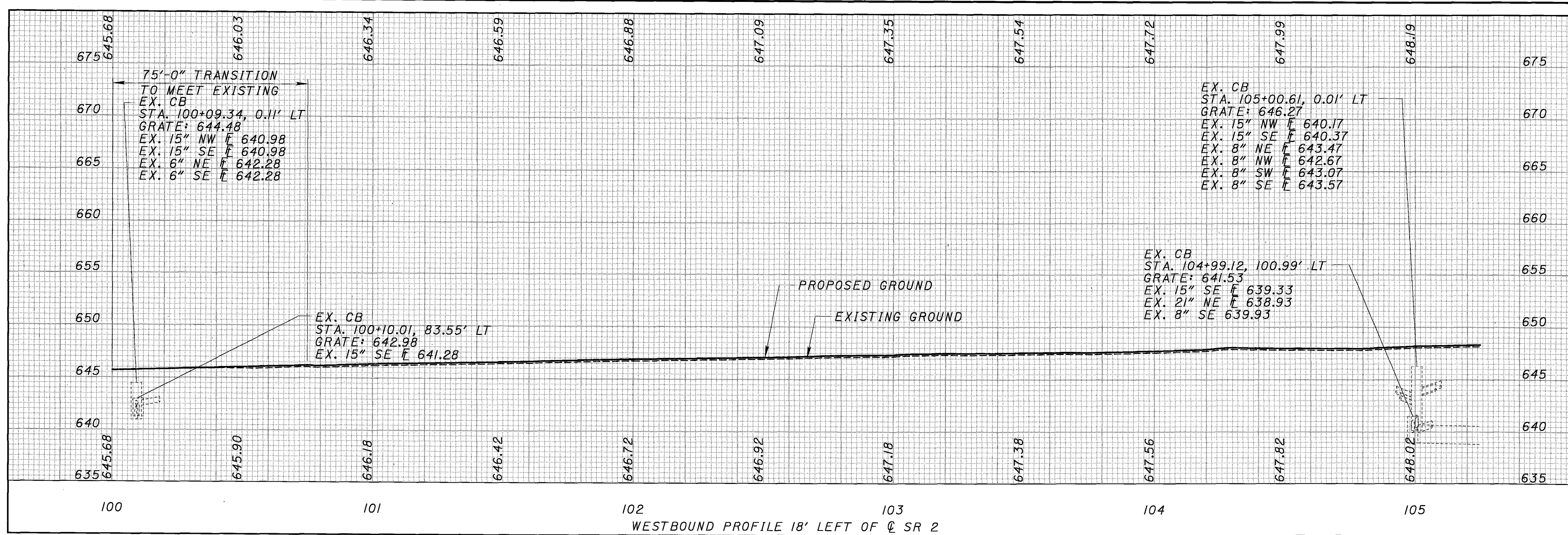
PLAN - MAINLINE SR 2
STA. 99+75 TO STA. 105+25

LAK-2-0.00

110
524

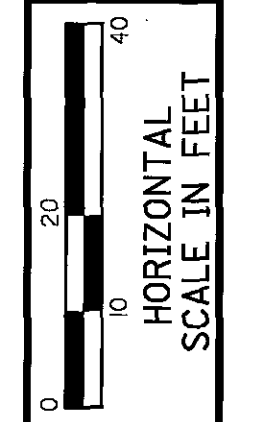
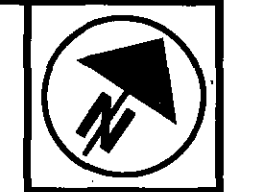


FULL DEPTH PAVEMENT



PROPOSED ELEVATION FOR INFORMATION ONLY

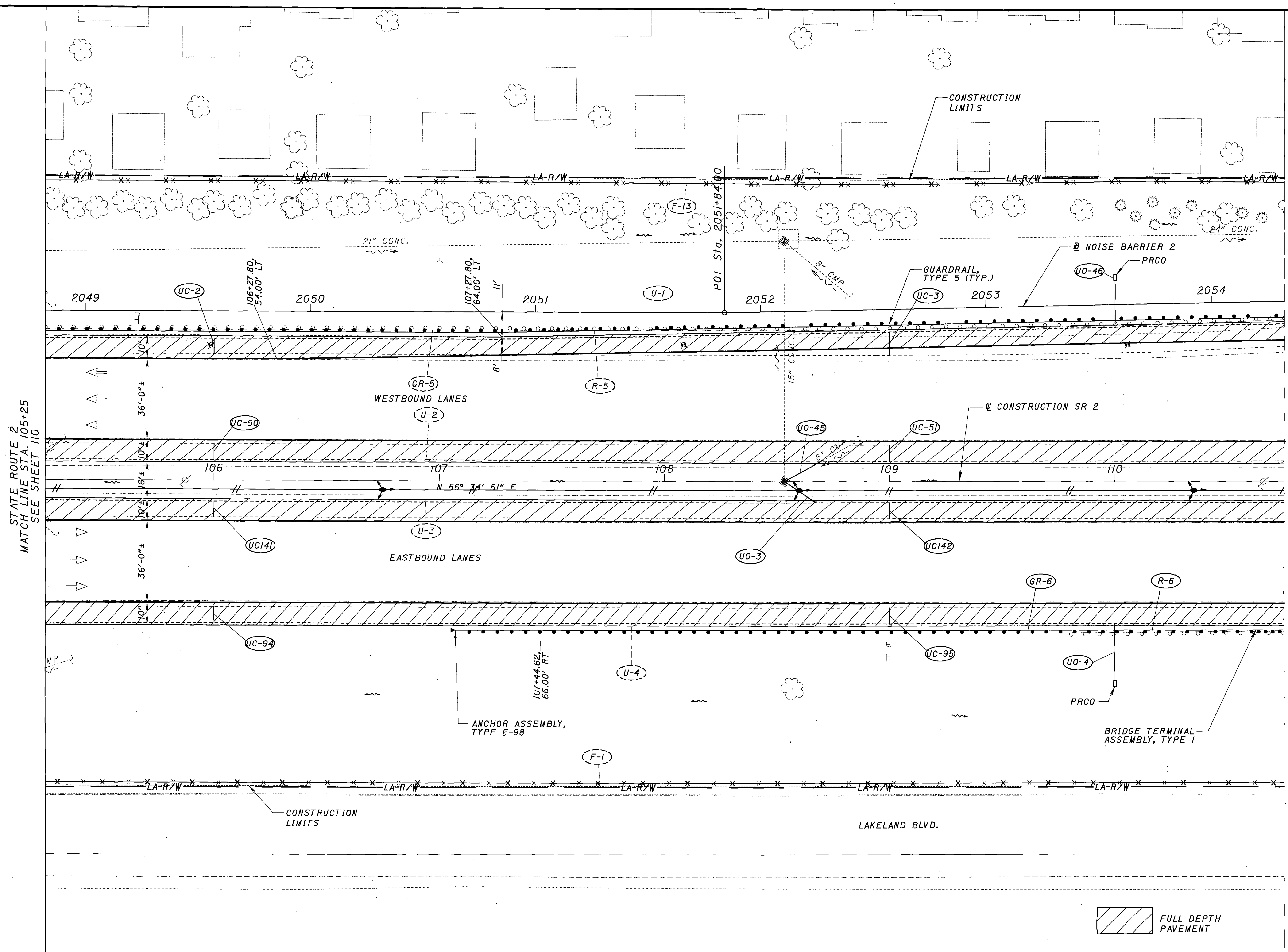
CALCULATED AS	PROFILE STA. 100+00 TO 105+25
CHECKED KWB	LAK-2-0.00
	III 524



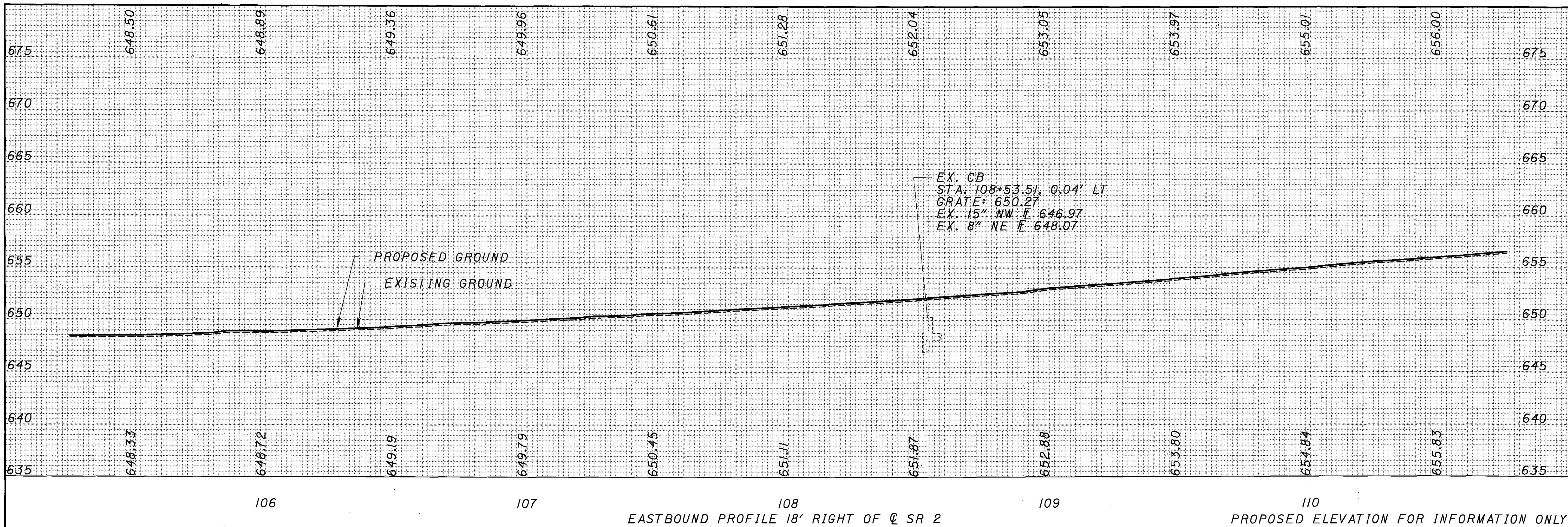
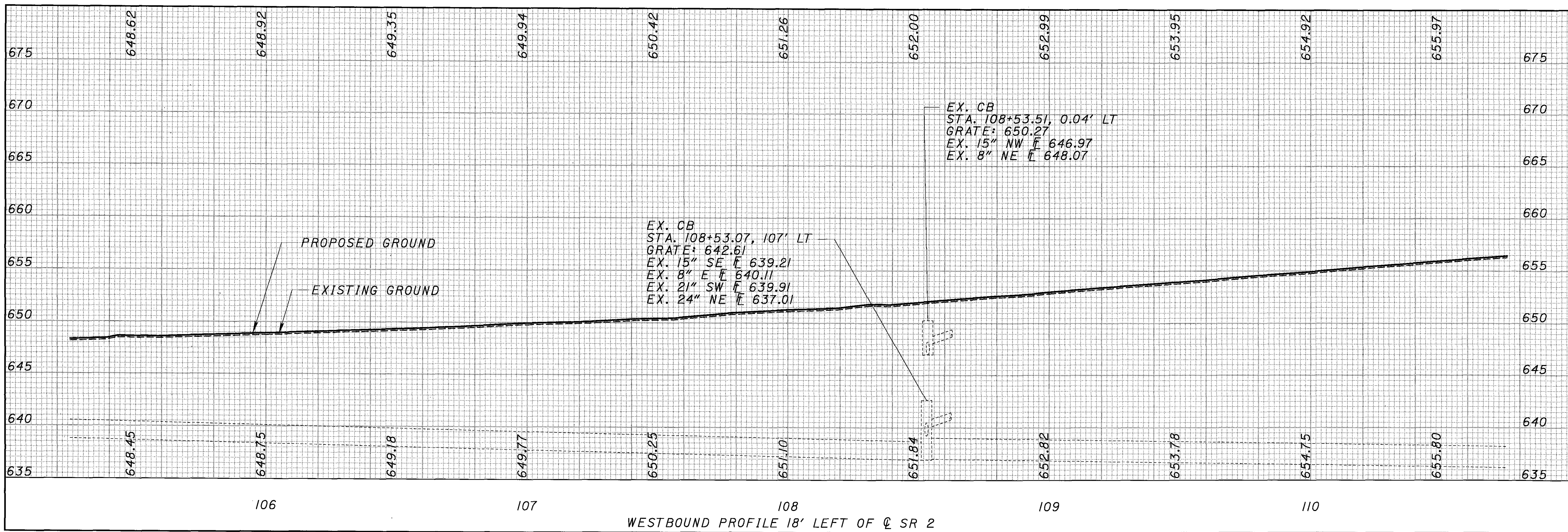
CALCULATED AS
CHECKED KMB

PLAN - MAINLINE SR 2
STA. 105+25 TO STA. 110+75

LAK-2-0.00

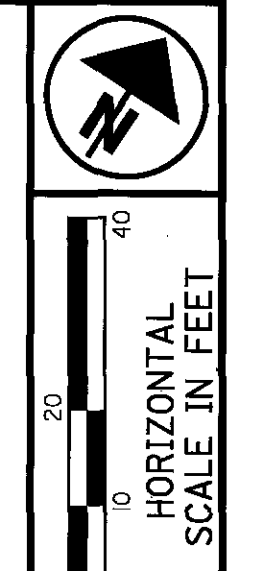


FULL DEPTH PAVEMENT



PROPOSED ELEVATION FOR INFORMATION ONLY

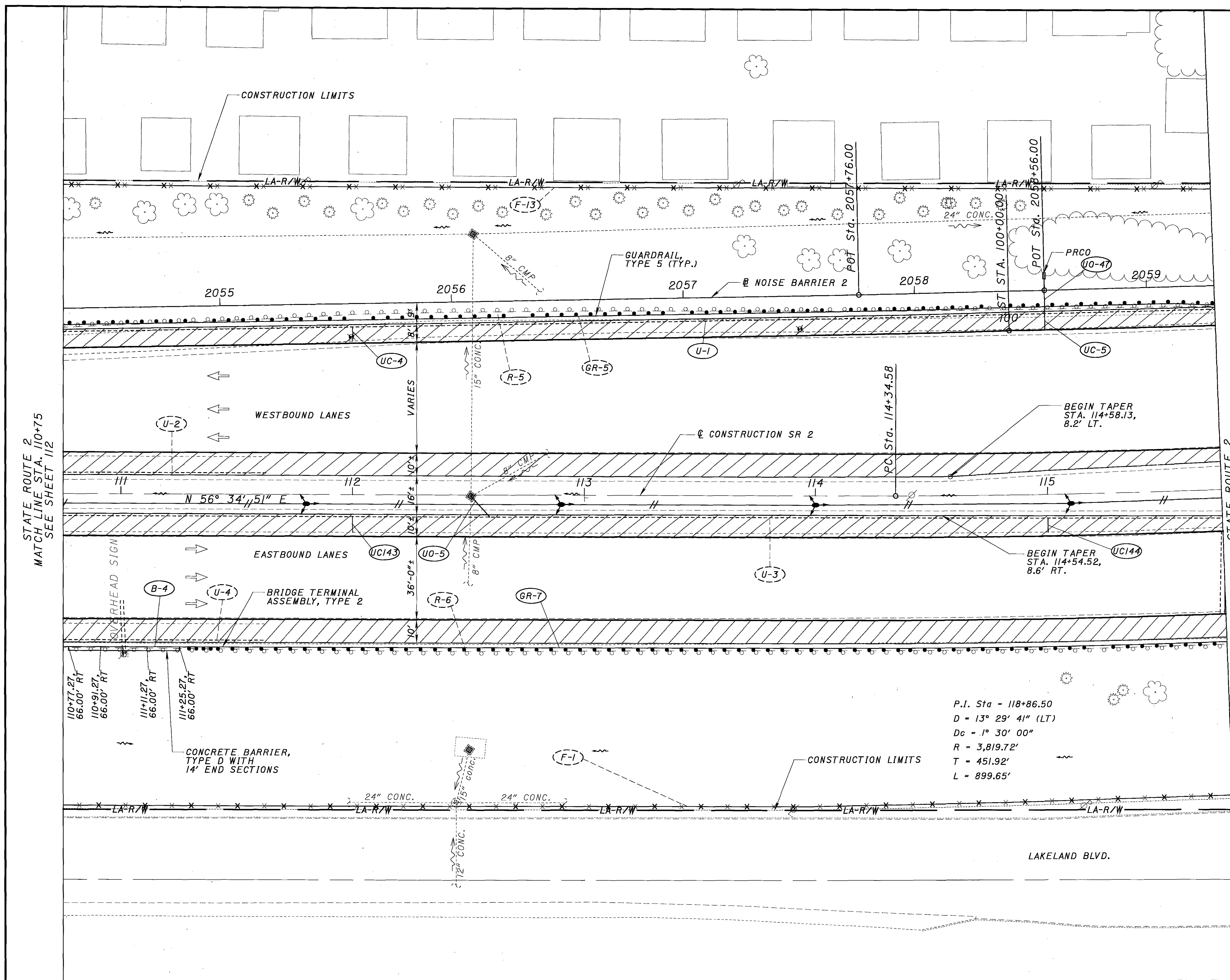
CALCULATED AS	CHECKED KMB	PROFILE STA. 105+25 TO 110+75	LAK-2-0.00	113 524



CALCULATED AS
CHECKED KMB

**PLAN - MAINLINE SR 2
STA. 110+75 TO STA. 115+75**

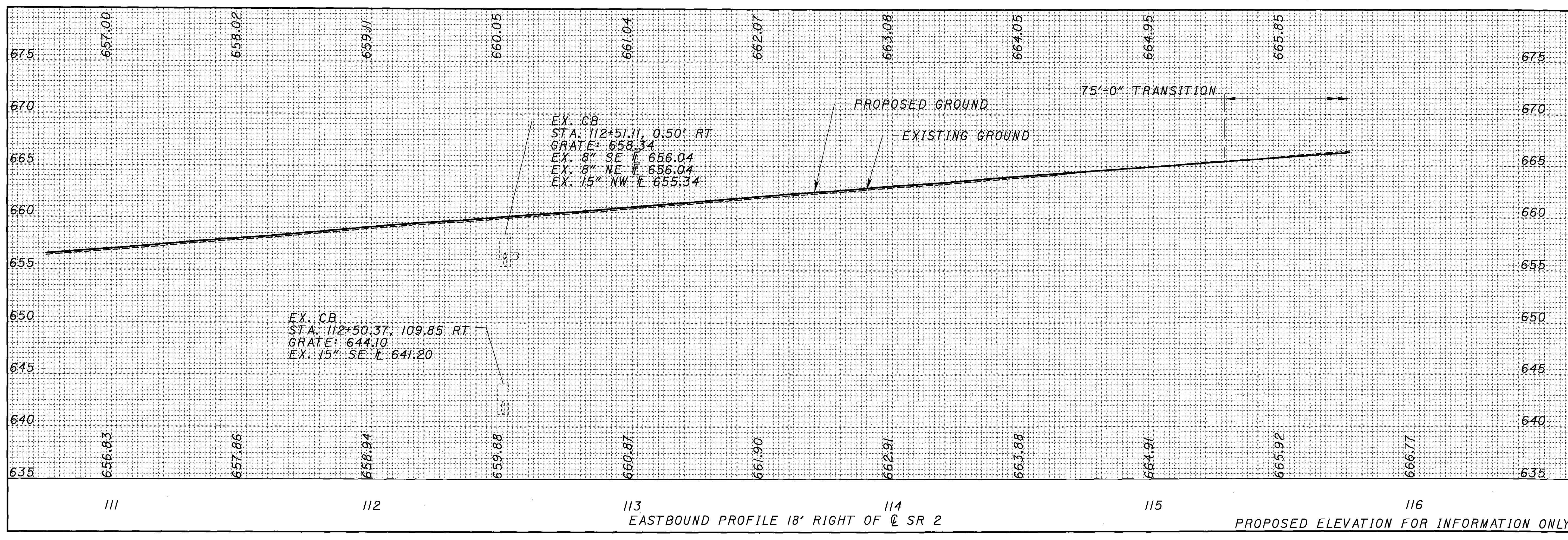
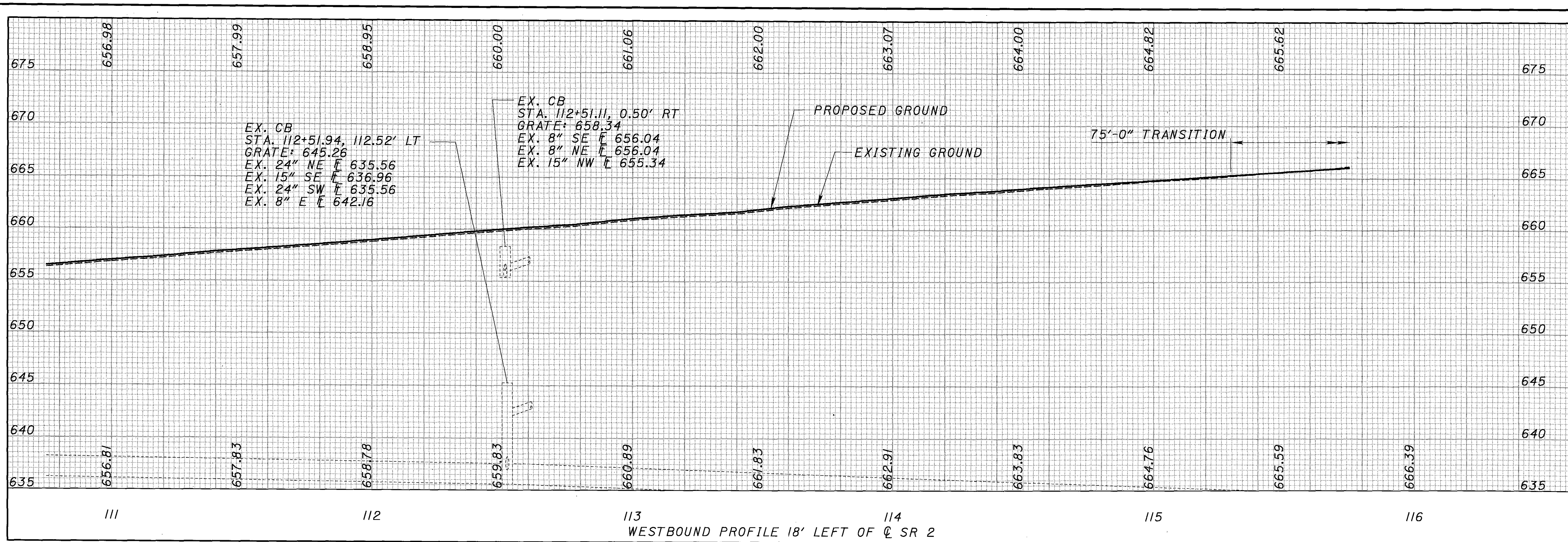
LAK-2-0.00



P.I. Sta = 118+86.50
 D = 13° 29' 41" (LT)
 Dc = 1° 30' 00"
 R = 3,819.72'
 T = 451.92'
 L = 899.65'

FULL DEPTH PAVEMENT

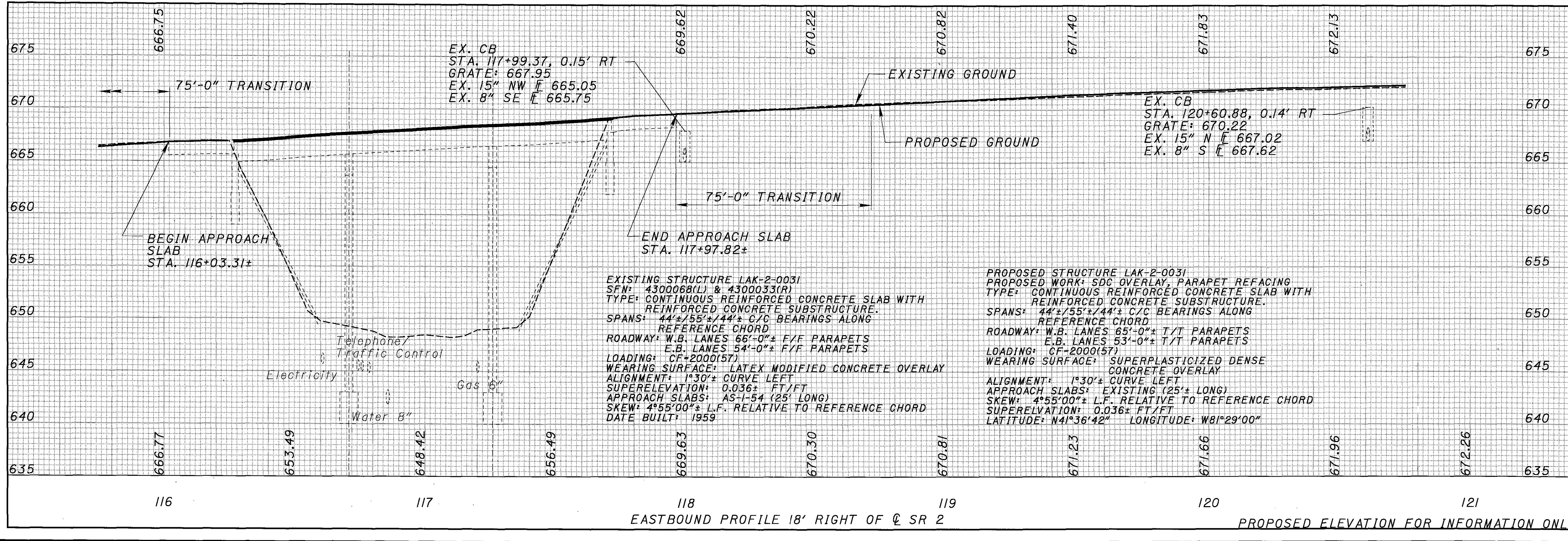
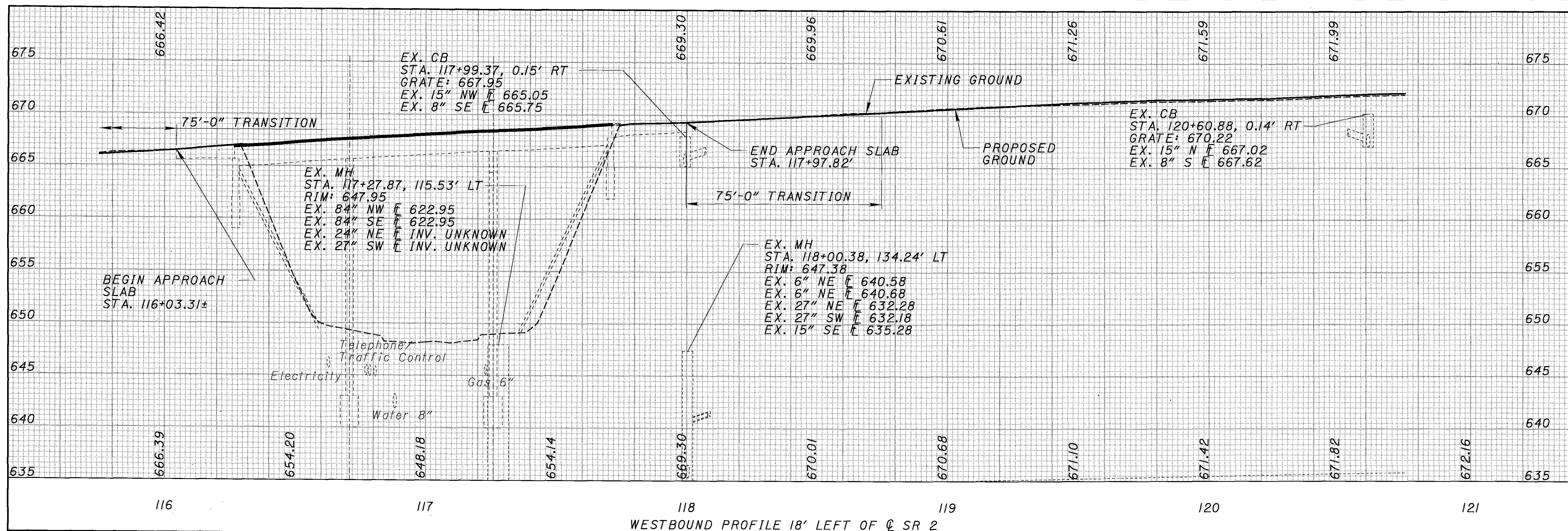
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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED	AS
CHECKED	KWB
PROFILE	
STA. 110+75 TO 115+75	
LAK-2-0.00	
(115 / 524)	

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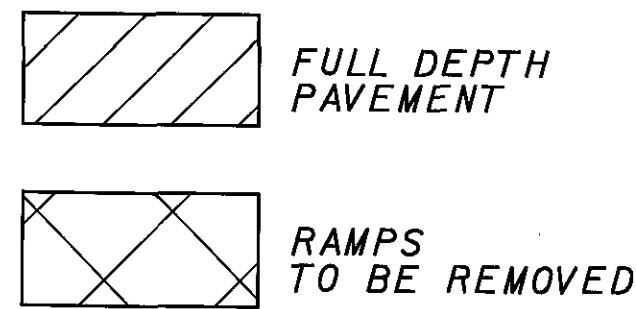
CALCULATED AS
 CHECKED KNB

PROFILE
STA. 115+75 TO 120+75

LAK-2-0.00

117
 524

PROPOSED ELEVATION FOR INFORMATION ONLY

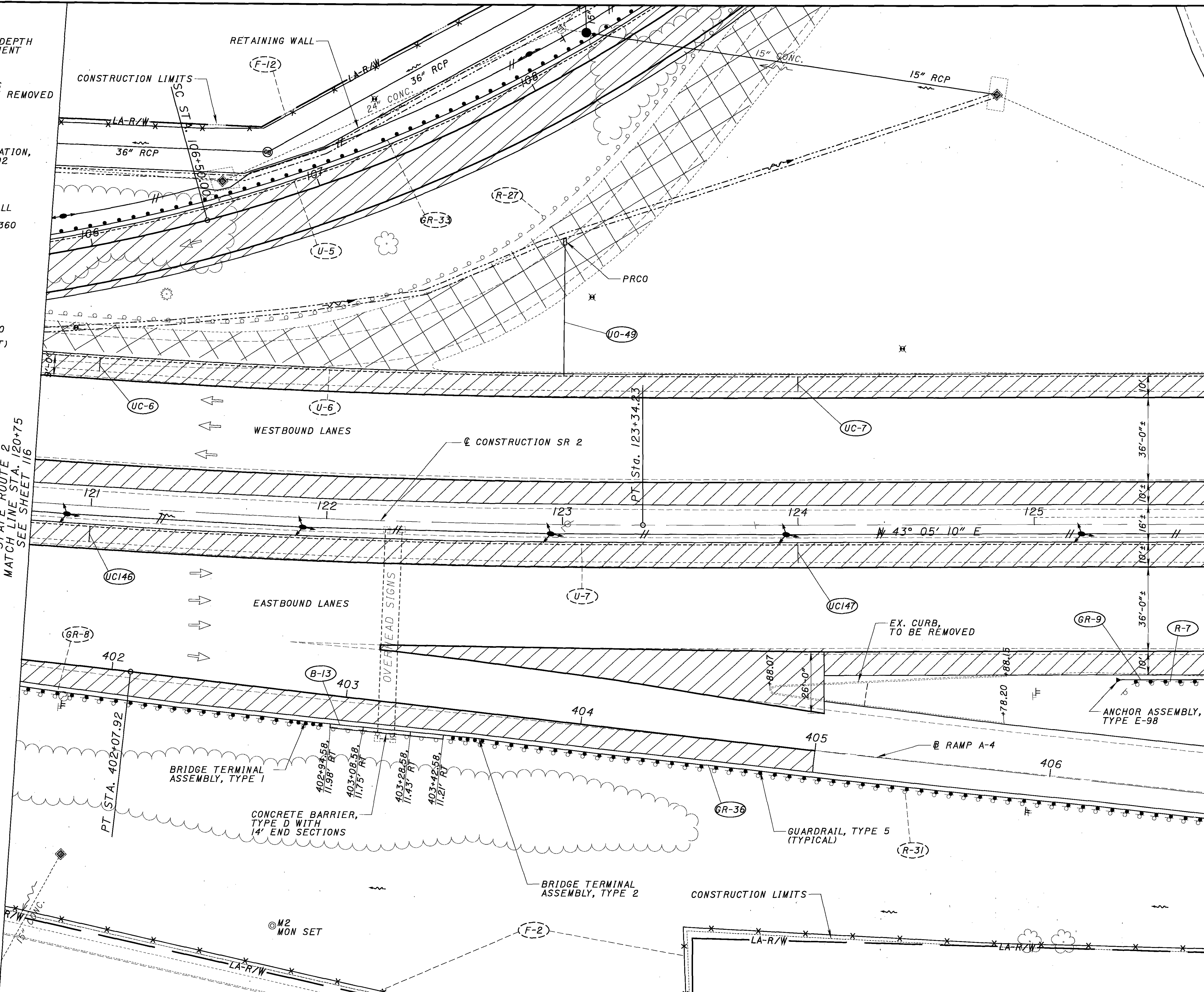


FOR RAMP INFORMATION,
SEE SHEETS 191-192

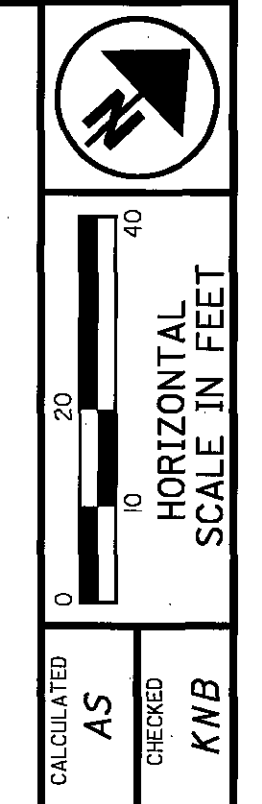
FOR RETAINING WALL
INFORMATION,
SEE SHEETS 358-360

P.I. Sta - 118+86.50
D - 13° 29' 41" (LT)
Dc - 1° 30' 00"
R = 3,819.72'
T = 451.92'
L = 899.65'

STATE ROUTE 2
MATCH LINE STA. 120+75
SEE SHEET 116



STATE ROUTE 2
MATCH LINE STA. 125+75
SEE SHEET 120



CALCULATED AS
CHECKED KWB

**PLAN - MAINLINE SR 2
STA. 120+75 TO STA. 125+75**

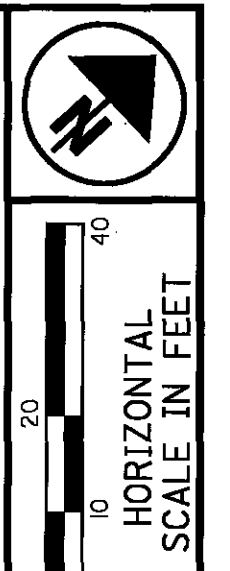
LAK-2-0.00

FULL DEPTH PAVEMENT

FOR STRUCTURE DATA, SEE SHEET 121
FOR RAMP INFORMATION, SEE SHEETS 183-187

FOR INTERSECTION DETAILS, SEE SHEET 287

P.I. Sta = 138+53.92
D = 19° 14' 50" (RT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 777.21'
L = 1,539.77'
E = 65.43'



CALCULATED AS
CHECKED KNB

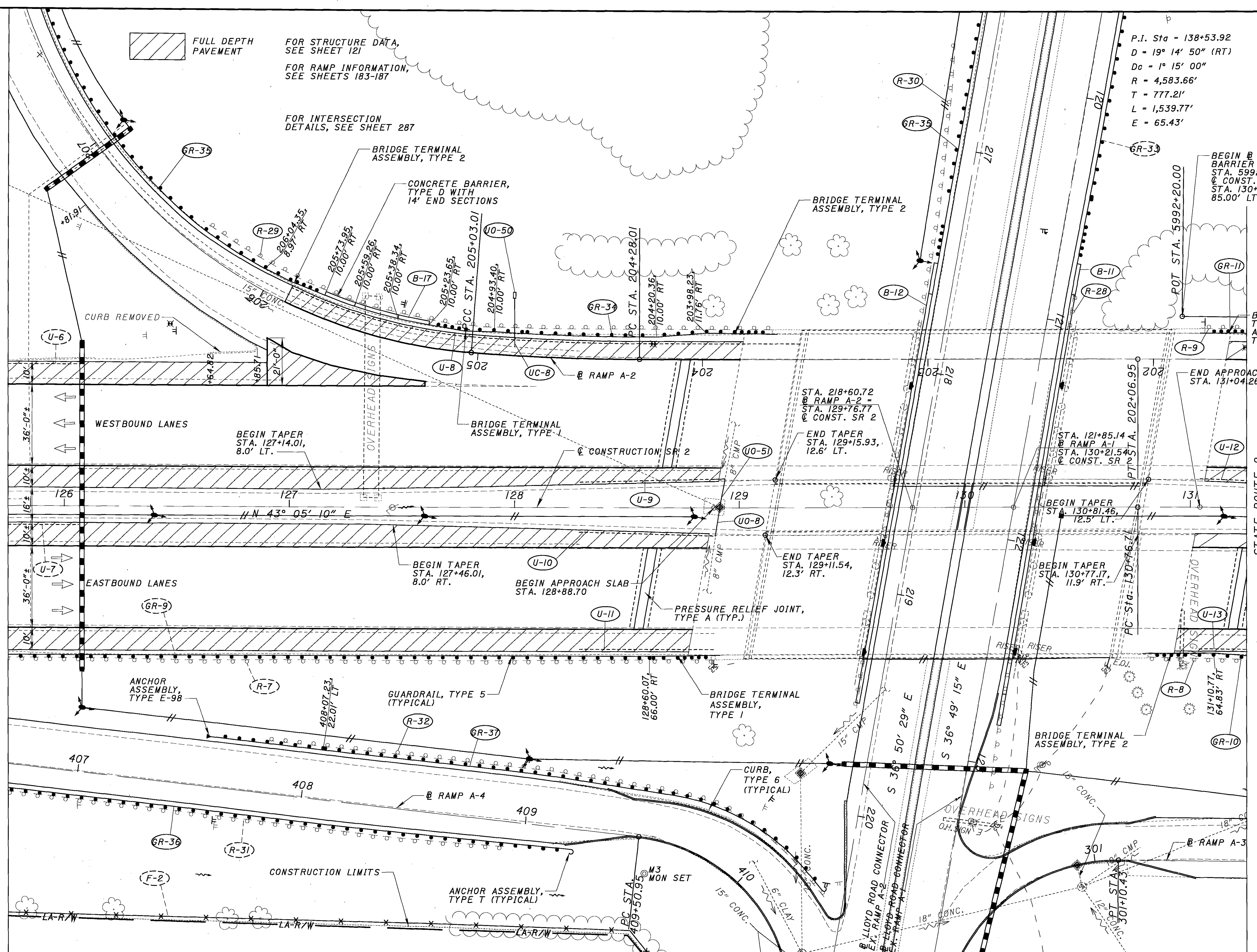
STATE ROUTE 2
MATCH LINE STA. 125+75
SEE SHEET 118

STATE ROUTE 2
MATCH LINE STA. 131+25
SEE SHEET 122

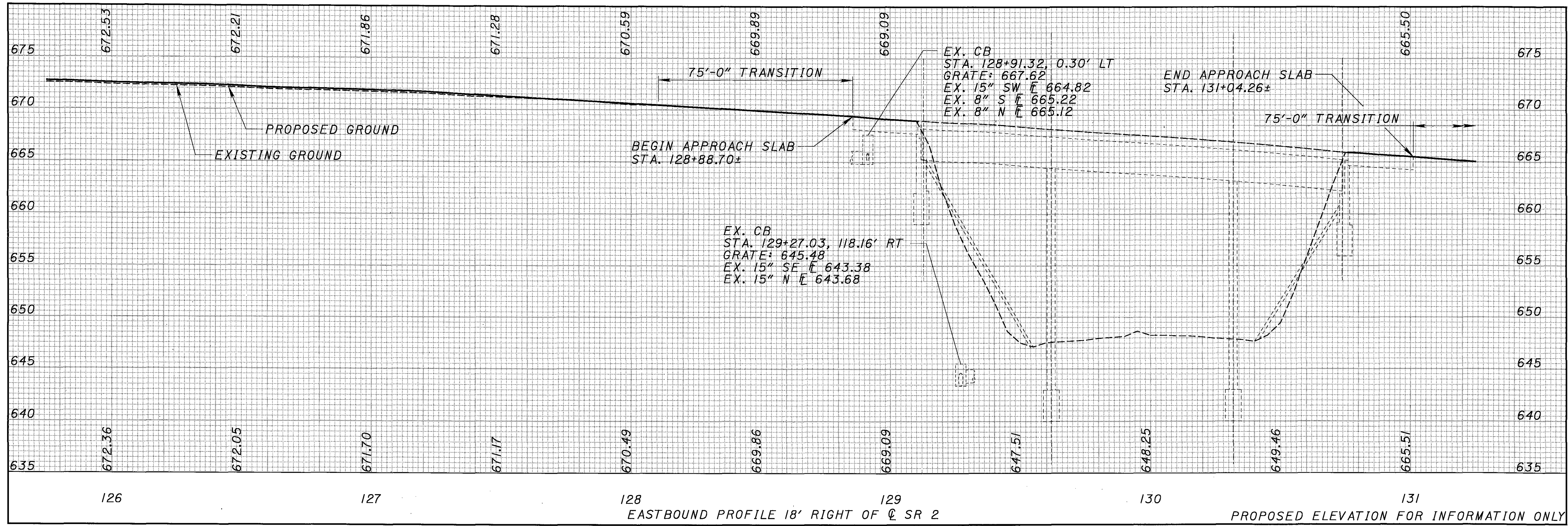
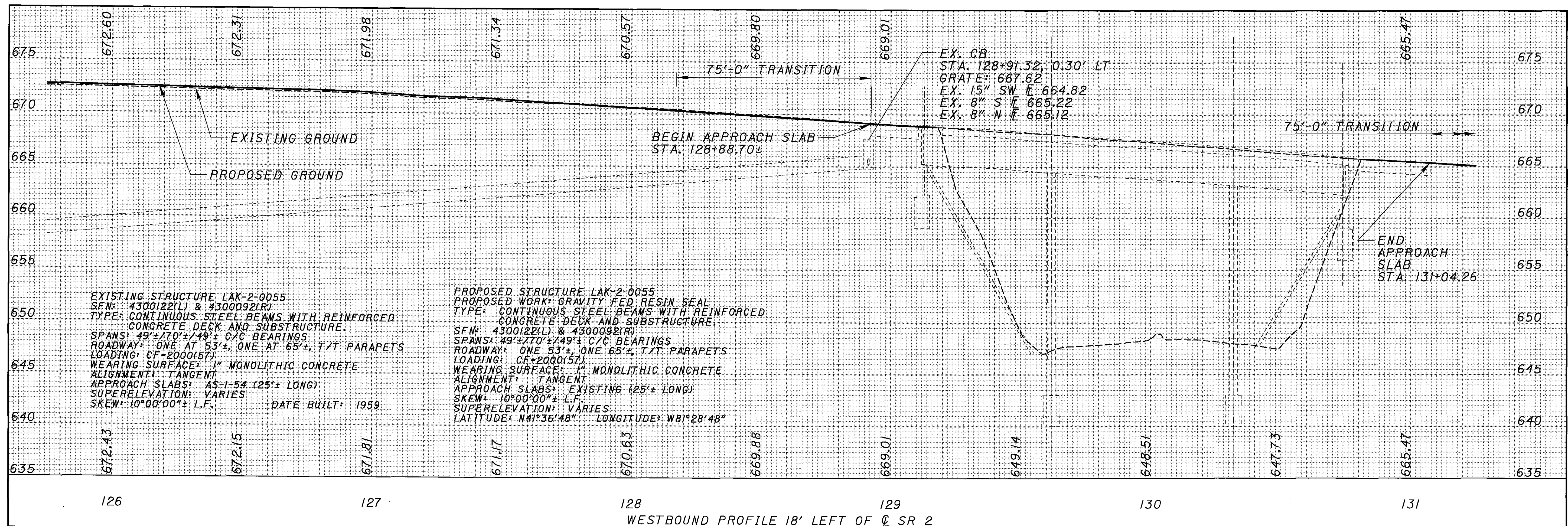
PLAN - MAINLINE SR 2
STA. 125+75 TO STA. 131+25

LAK-2-0.00

120
524



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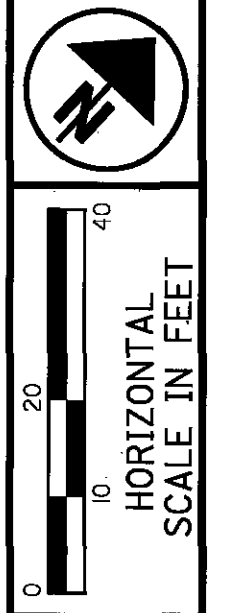


CALCULATED AS
 CHECKED KMB

PROFILE
STA. 125+75 TO 131+25

LAK-2-0.00

121
 524

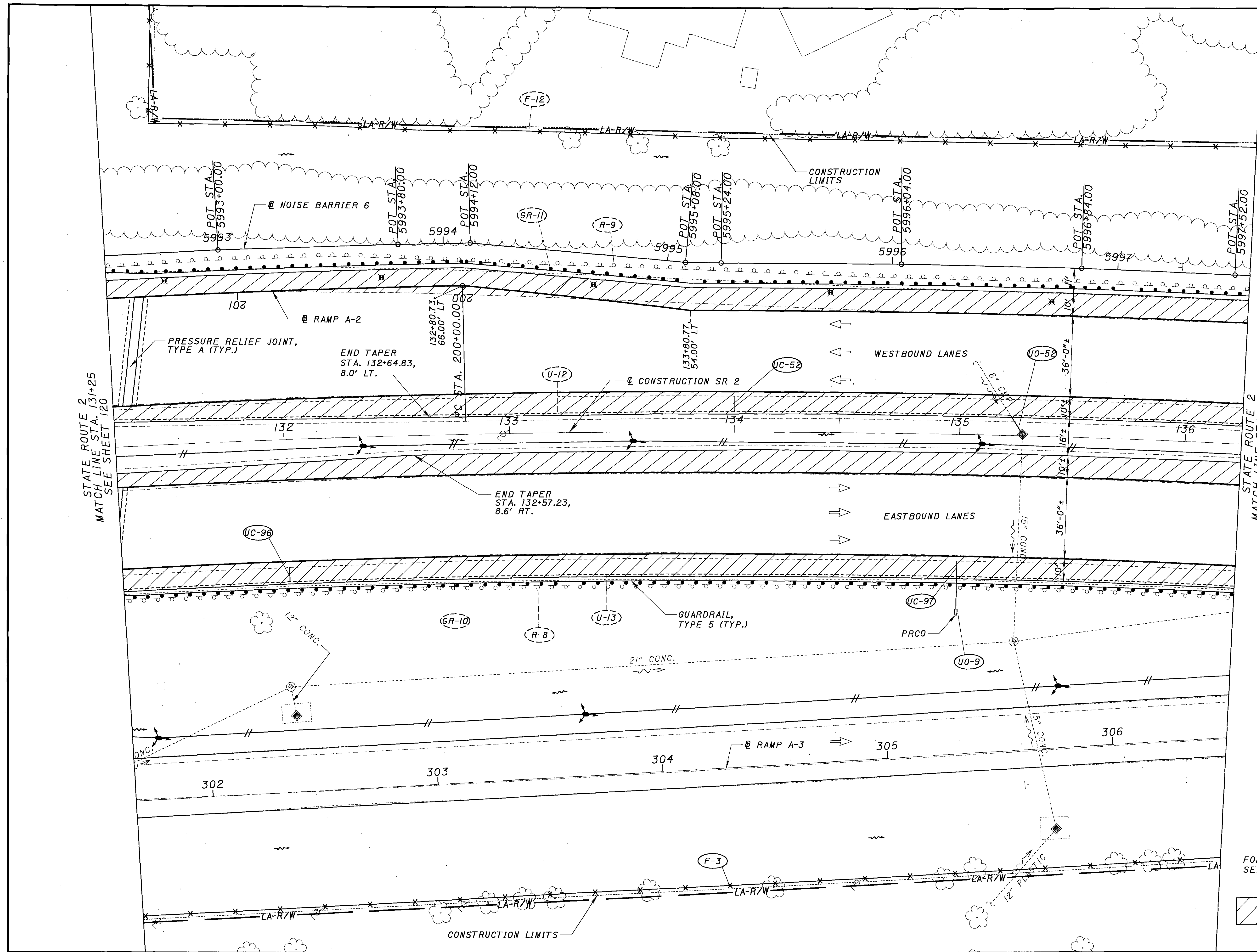


CALCULATED AS
CHECKED KWB

PLAN - MAINLINE SR 2
STA. 131+25 TO STA. 136+25

LAK-2-0.00

122
524



STATE ROUTE 2
MATCH LINE STA. 131+25
SEE SHEET 120

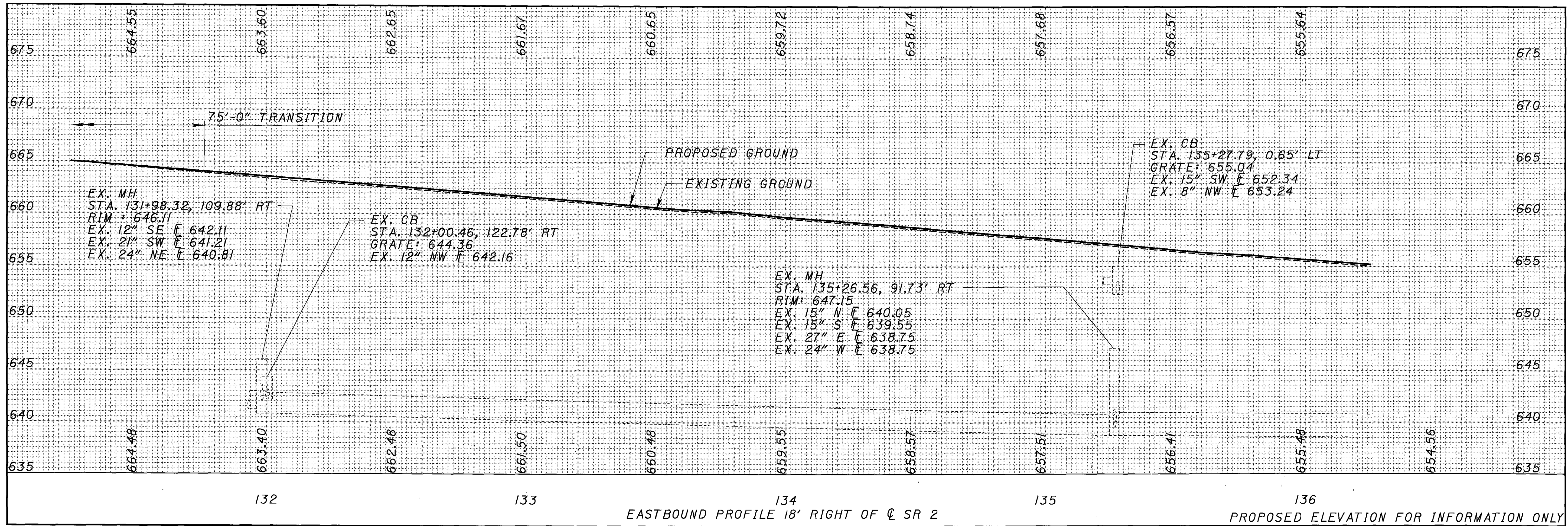
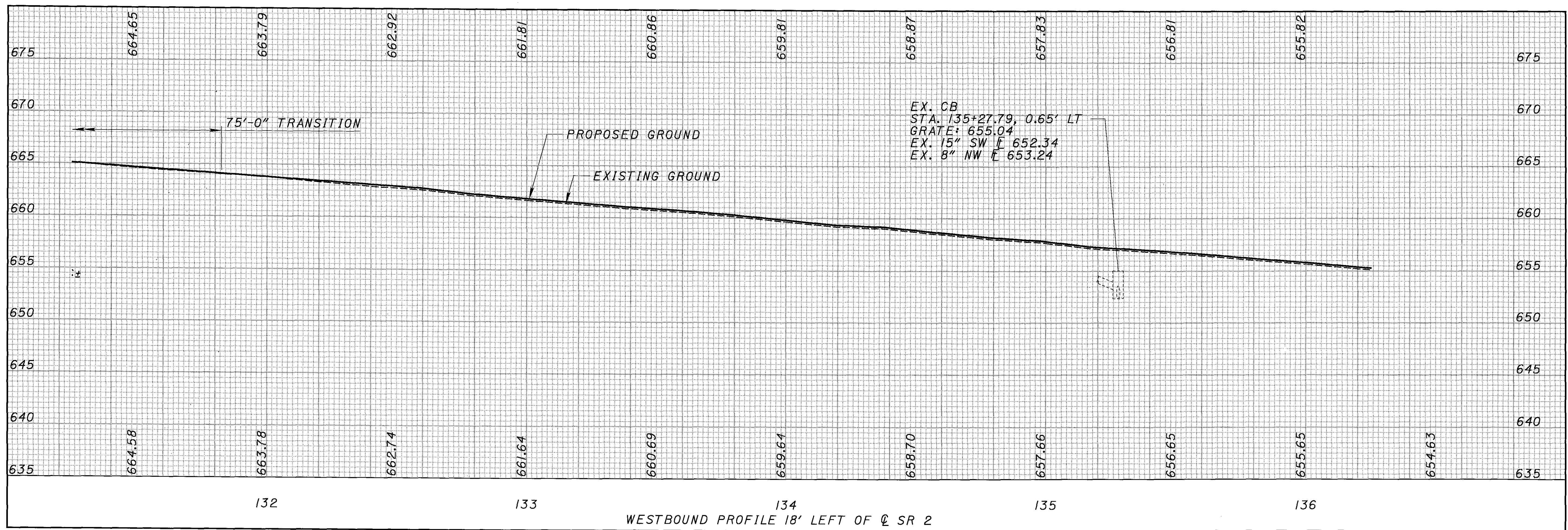
STATE ROUTE 2
MATCH LINE STA. 136+25
SEE SHEET 124

P.I. Sta = 138+53.92
D = 19° 14' 50" (RT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 777.21'
L = 1,539.77'
E = 65.43'

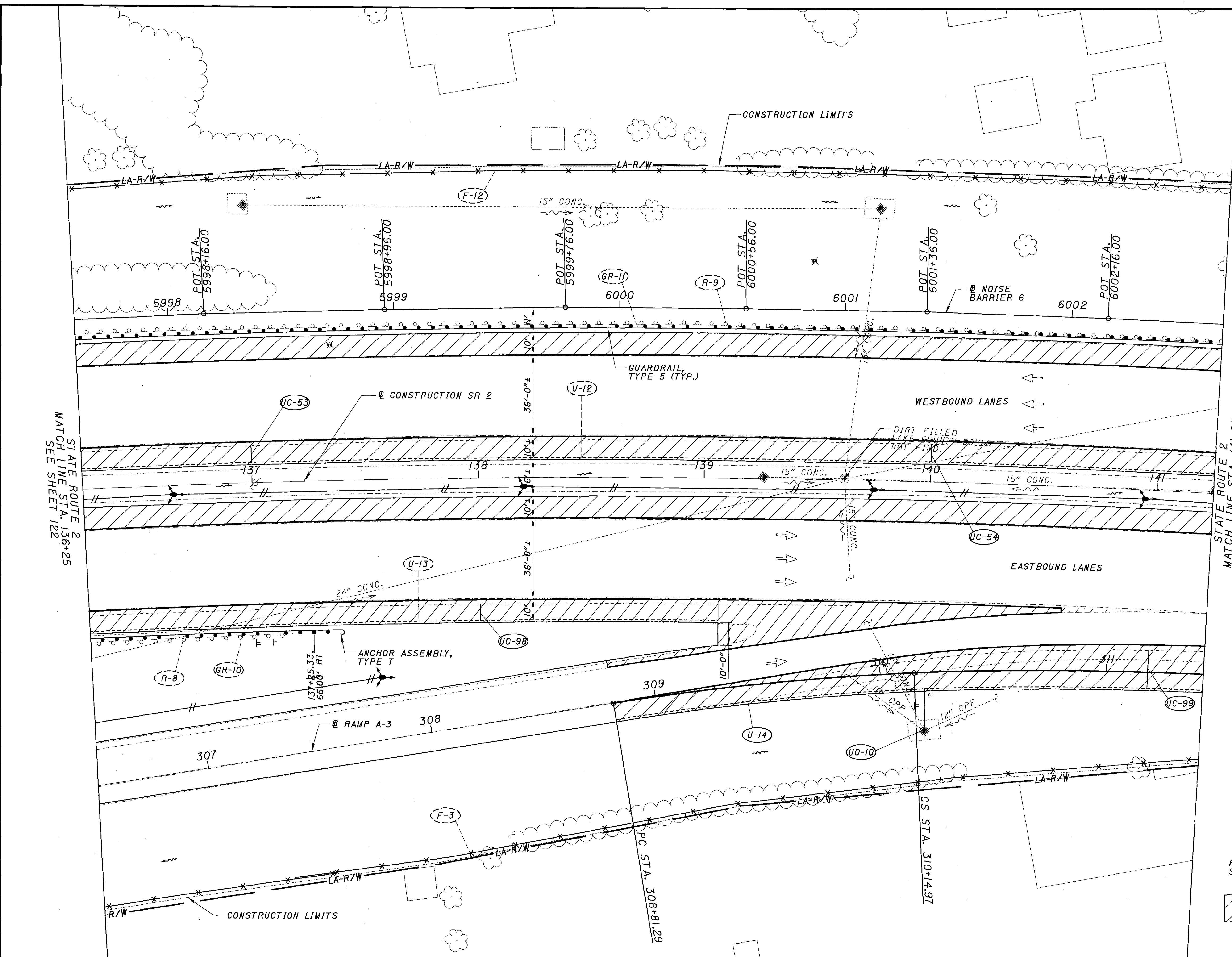
FOR RAMP INFORMATION,
SEE SHEETS 183-187



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CALCULATED AS	CHECKED KMB
PROFILE STA. 131+25 TO 136+25	
LAK-2-0.00	
PROPOSED ELEVATION FOR INFORMATION ONLY	
123 524	



STATE ROUTE 2
MATCH LINE STA. 136+25
SEE SHEET 122

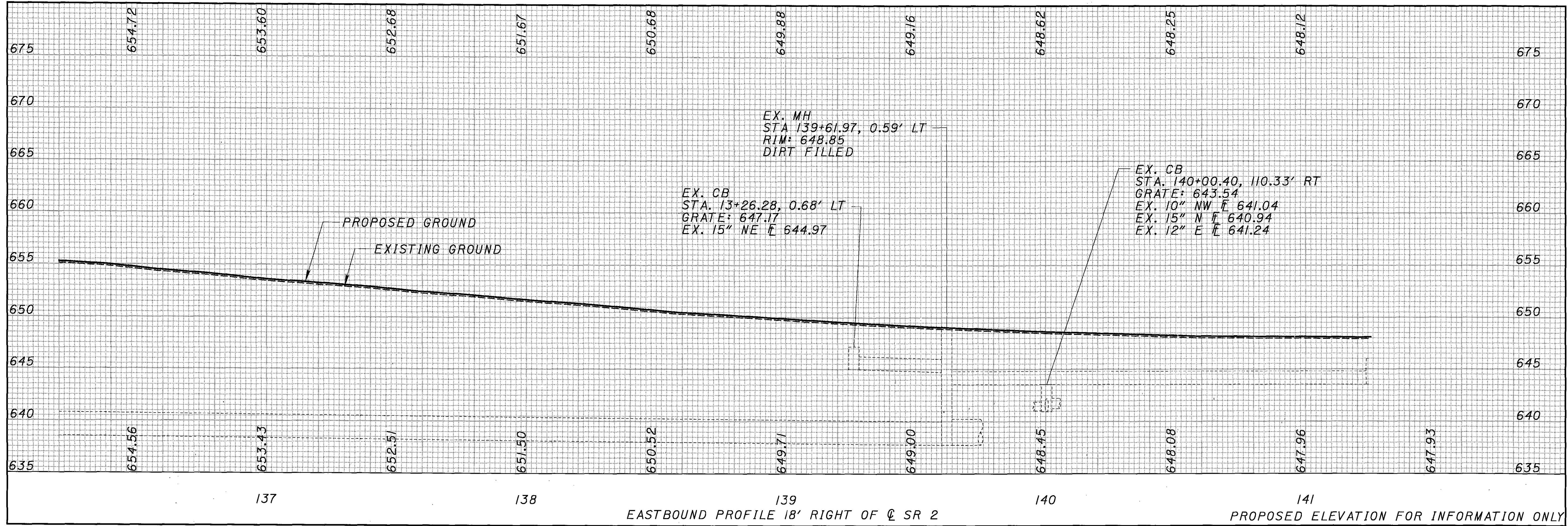
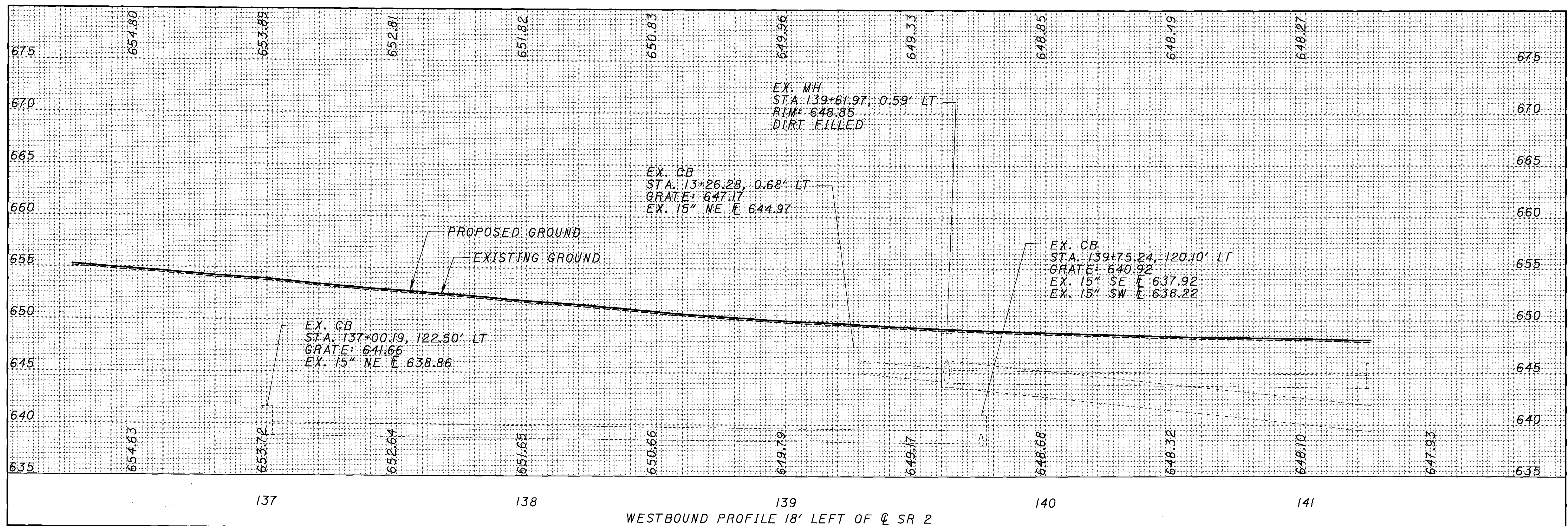
STATE ROUTE 2
MATCH LINE STA. 141+25
SEE SHEET 126

P.I. Sta = 138+53.92
D = 19° 14' 50" (RT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 777.21'
L = 1,539.77'
E = 65.43'

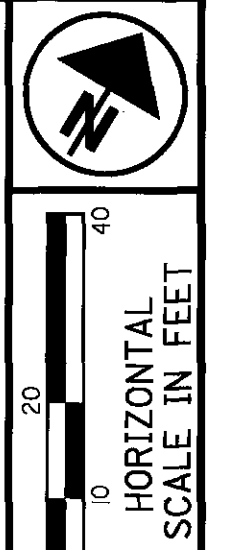
FOR RAMP INFORMATION,
SEE SHEETS 188-190

FULL DEPTH PAVEMENT

L:\Projects\0001\03322.LAK-2-0.00\Drawings\HWY\PP\21778g\F008.dgn 25-APR-2006 3:08 PM asvllar



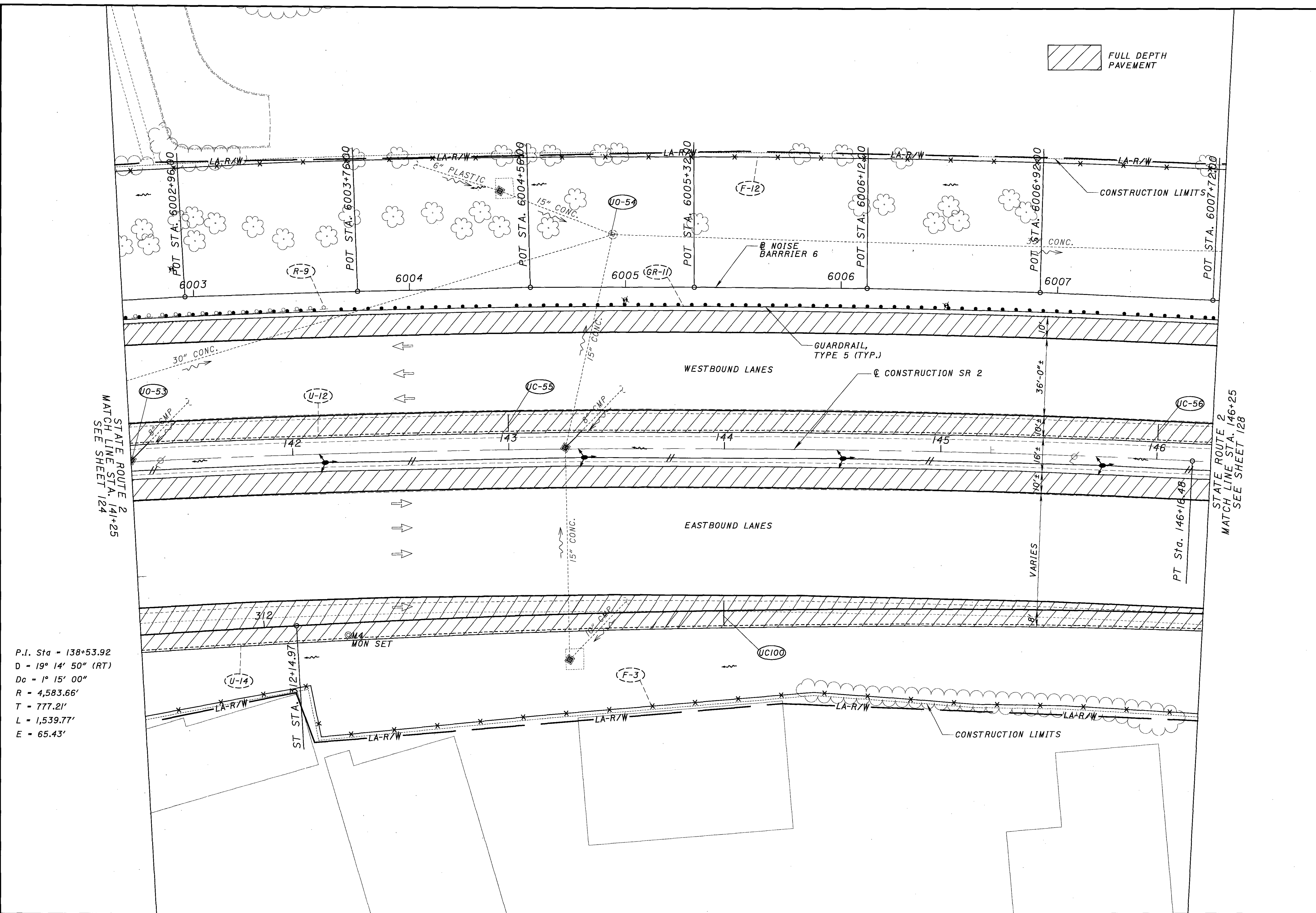
CALCULATED AS
 CHECKED KMB
PROFILE
STA. 136+25 TO 141+25
LAK-2-0.00
 125
 524



CALCULATED AS
CHECKED KWB

**PLAN - MAINLINE S.R. 2
STA. 141+25 TO STA. 146+25**

LAK-2-0.00



STATE ROUTE 2
MATCH LINE STA. 141+25
SEE SHEET 124

STATE ROUTE 2
MATCH LINE STA. 146+25
SEE SHEET 128

P.I. Sta = 138+53.92
D = 19° 14' 50" (RT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 777.21'
L = 1,539.77'
E = 65.43'

ST. STA. 12+14.97

PT Sta. 146+16.48

VARIES

36'-0"±

70'-0"±

16'±

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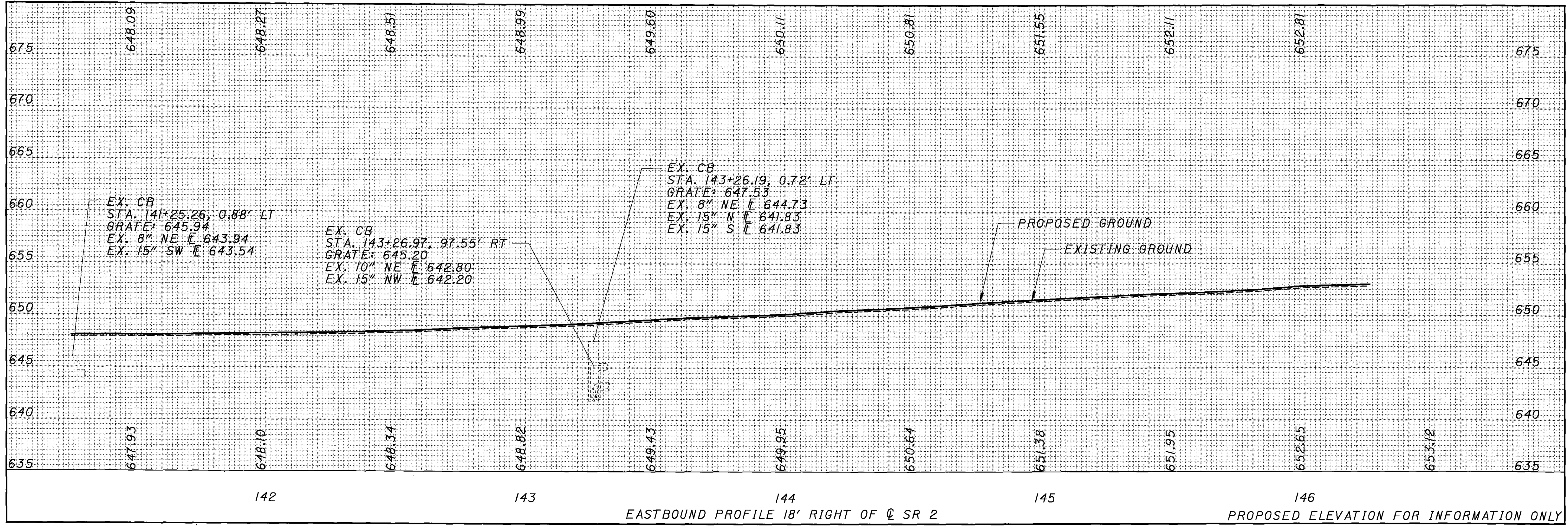
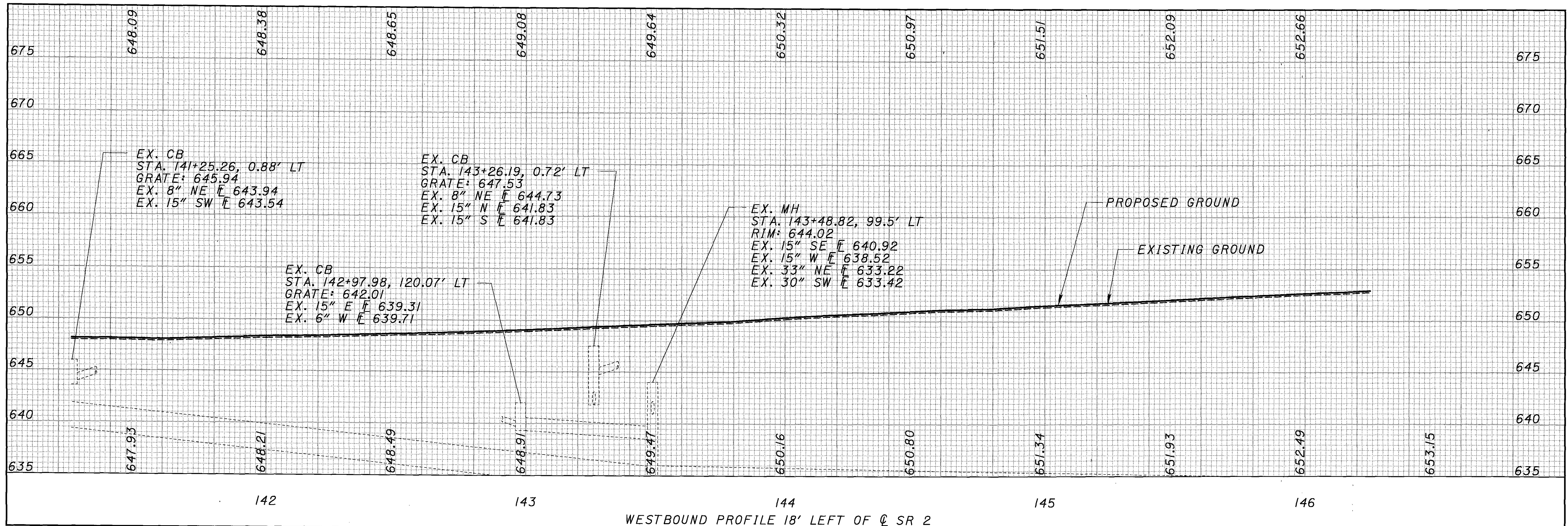
8'

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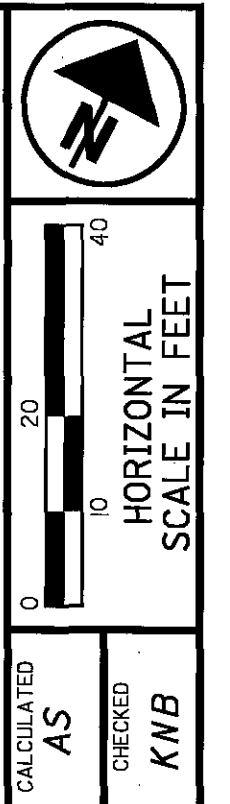
PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS
 CHECKED KMB

PROFILE
STA. 141+25 TO 146+25

LAK-2-0.00

127
 524

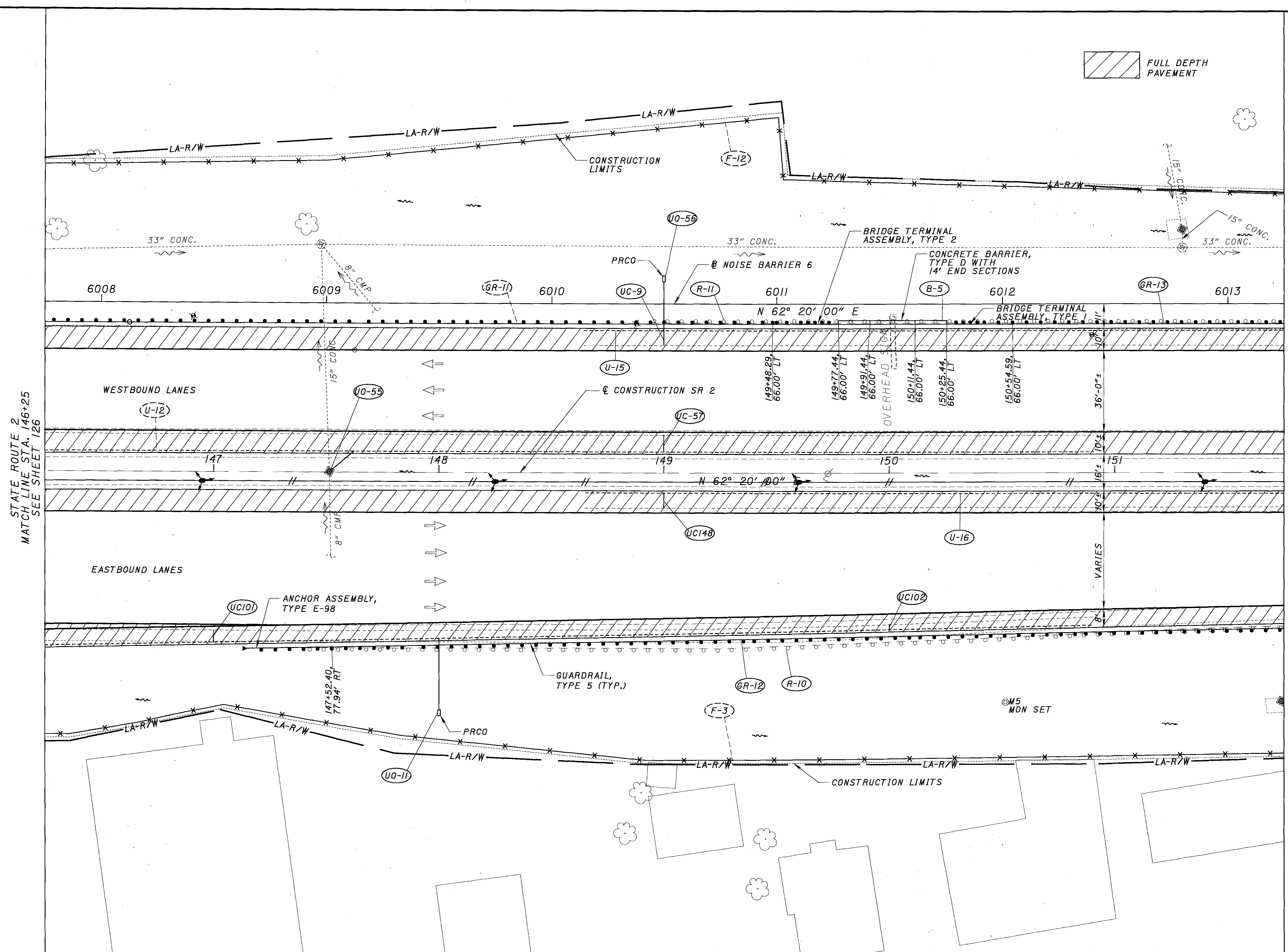


CALCULATED AS
CHECKED KWB

PLAN - MAINLINE SR 2
STA. 146+25 TO STA. 151+75

LAK-2-0.00

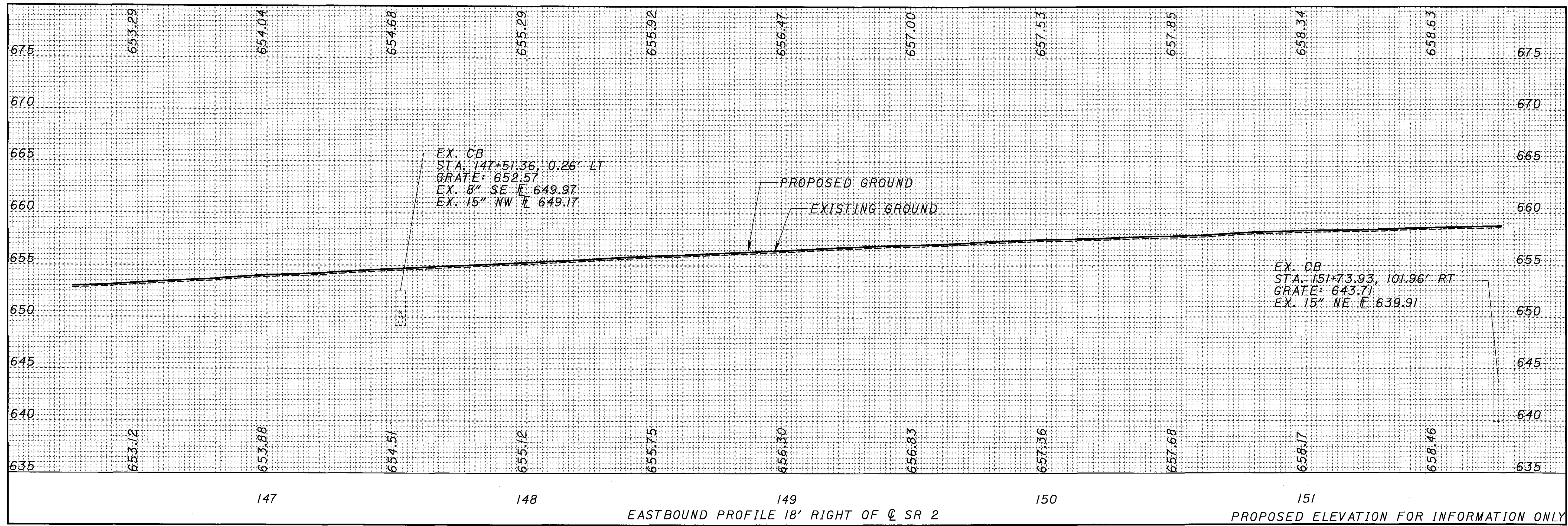
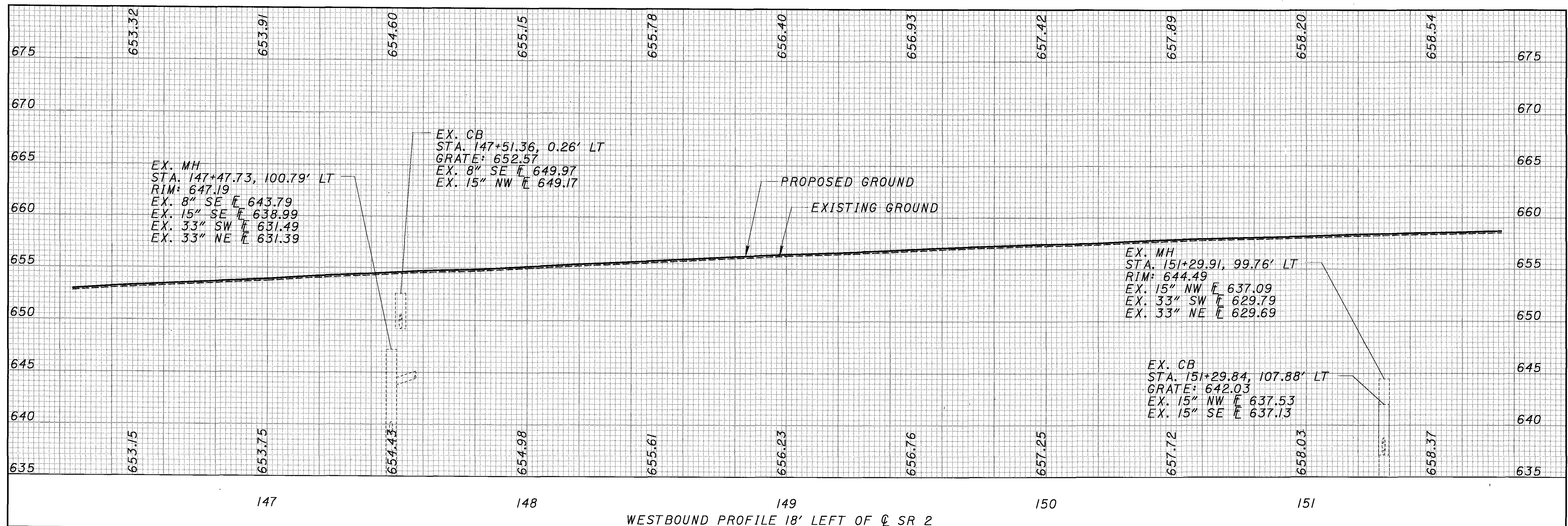
FULL DEPTH PAVEMENT



STATE ROUTE 2
MATCH LINE STA. 146+25
SEE SHEET 126

STATE ROUTE 2
MATCH LINE STA. 151+75
SEE SHEET 130

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CALCULATED AS

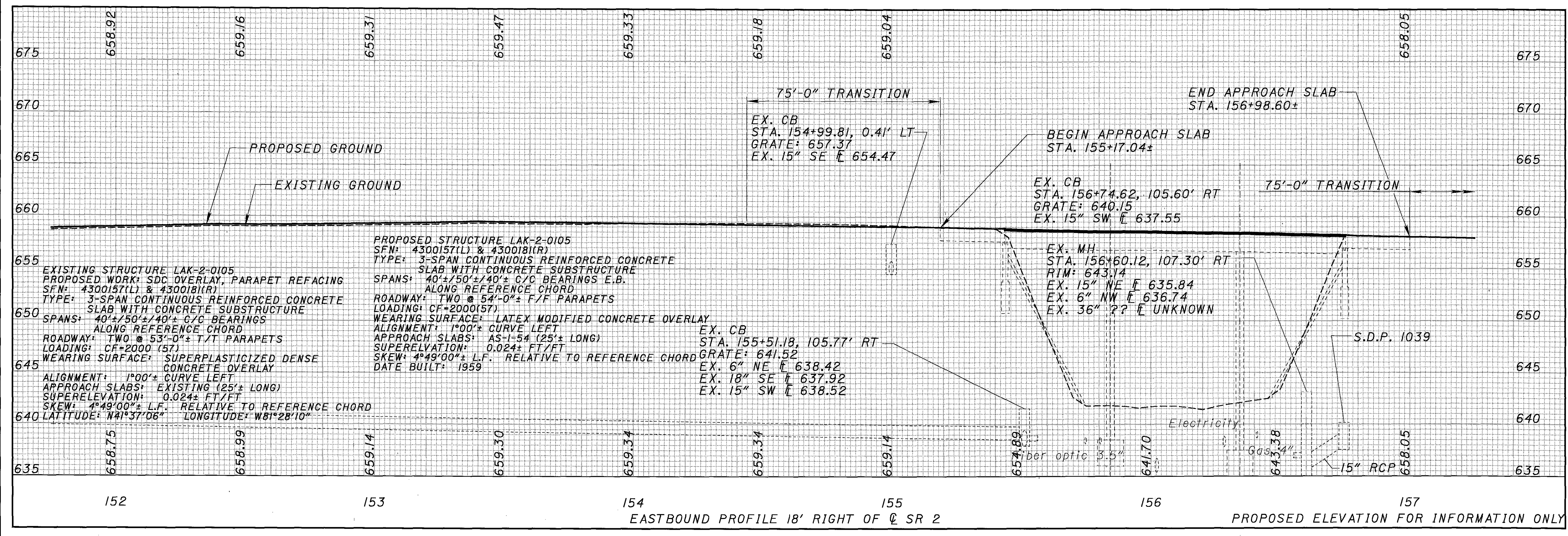
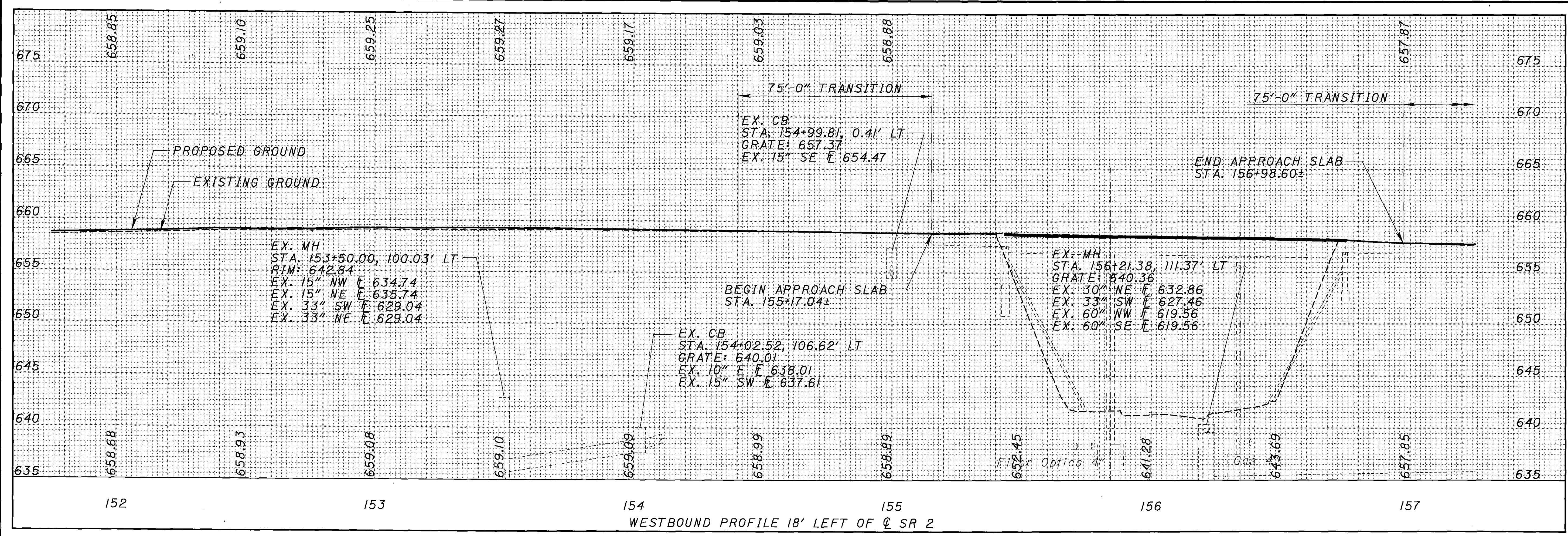
CHECKED KWB

PROFILE STA. 146+25 TO 151+75

LAK-2-0.00

129
524

PROPOSED ELEVATION FOR INFORMATION ONLY



PROFILE
STA. 151+75 TO 157+25

LAK-2-0.00

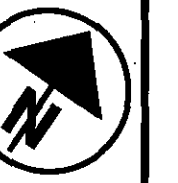
L:\Projects\0DOT\103322_LAK-2-0.00\Drawings\HWY\PP\217789\F01.dgn 25-APR-2006 3:08 PM asv/llar

PROPOSED ELEVATION FOR INFORMATION ONLY

P.I. Sta = 157+43.26
 D = 8° 33' 33" (LT)
 Dc = 1° 00' 00"
 R = 5,729.58'
 T = 428.76'
 L = 855.92'
 E = 16.02'

STATE ROUTE 2
 MATCH LINE STA. 157+25
 SEE SHEET 130

FULL DEPTH PAVEMENT



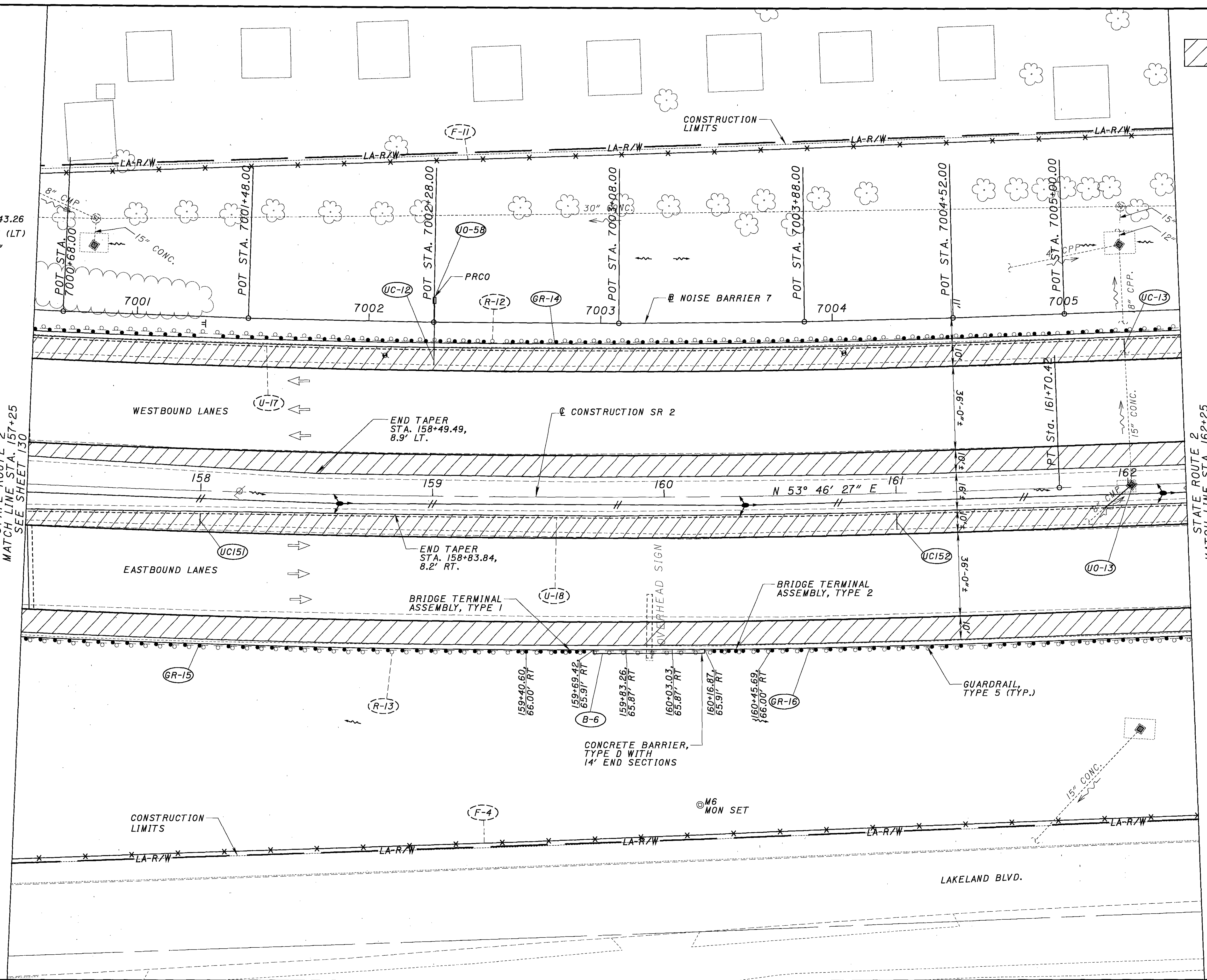
0 20 40
 HORIZONTAL SCALE IN FEET

CALCULATED AS
 CHECKED KNB

PLAN - MAINLINE SR 2
 STA. 157+25 TO STA. 162+25

LAK-2-0.00

132
 524

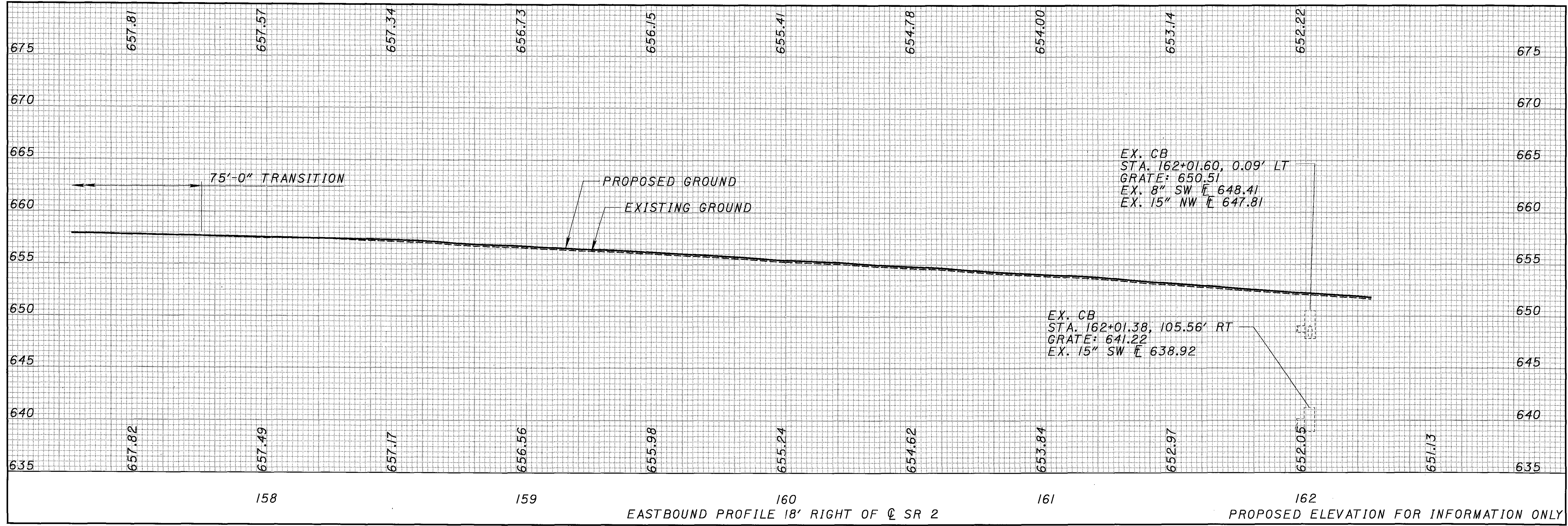
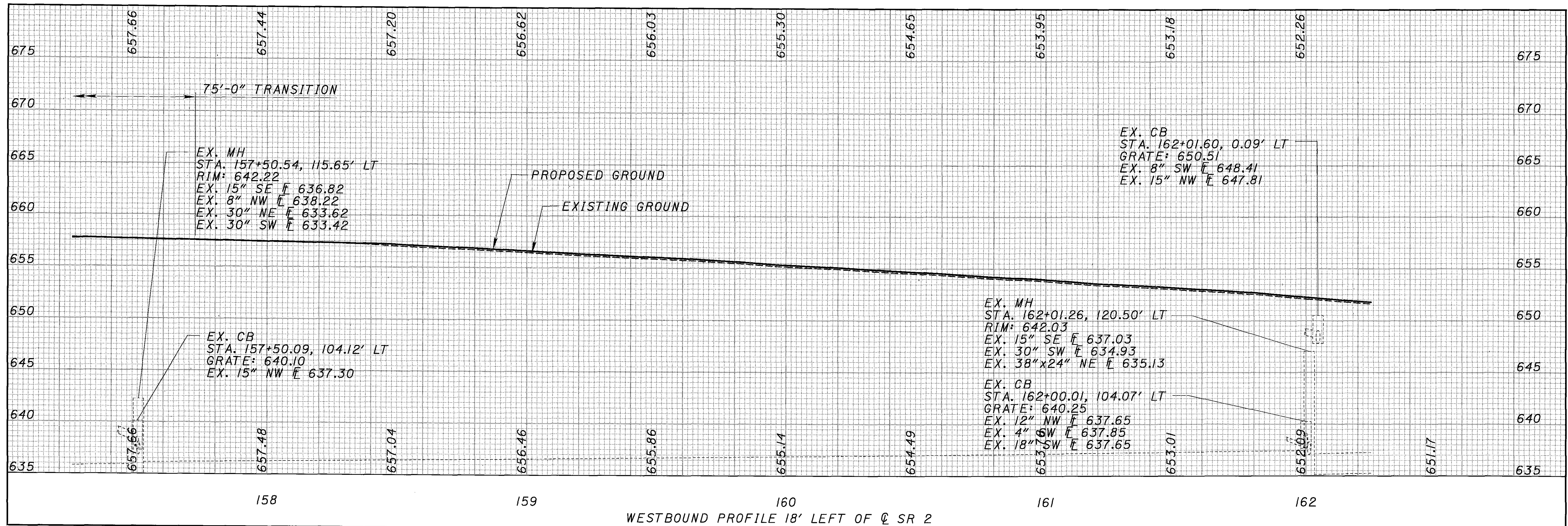


STATE ROUTE 2
 MATCH LINE STA. 157+25
 SEE SHEET 130

STATE ROUTE 2
 MATCH LINE STA. 162+25
 SEE SHEET 134

LAKELAND BLVD.

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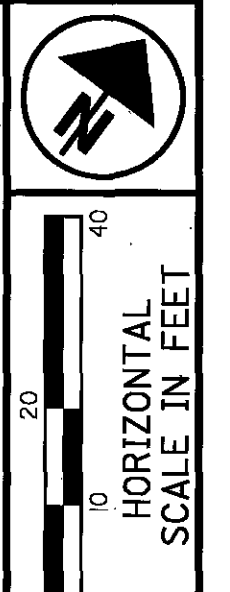


CALCULATED AS
CHECKED KMB

PROFILE
STA. 157+25 TO 162+25

LAK-2-0.00

133
524



CALCULATED AS
CHECKED KWB

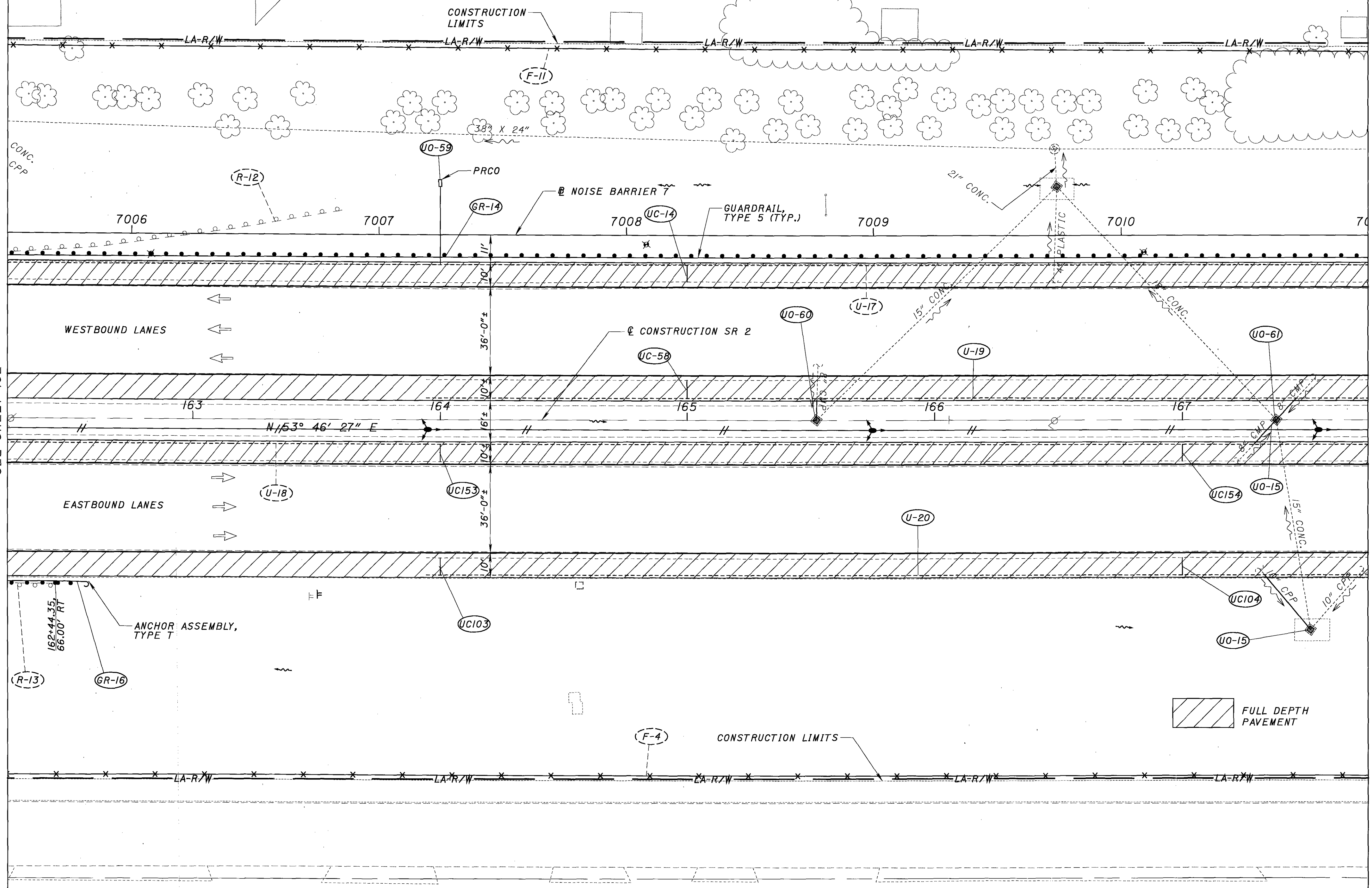
PLAN - MAINLINE SR 2
STA. 162+25 TO STA. 167+75

LAK-2-0.00

134
524

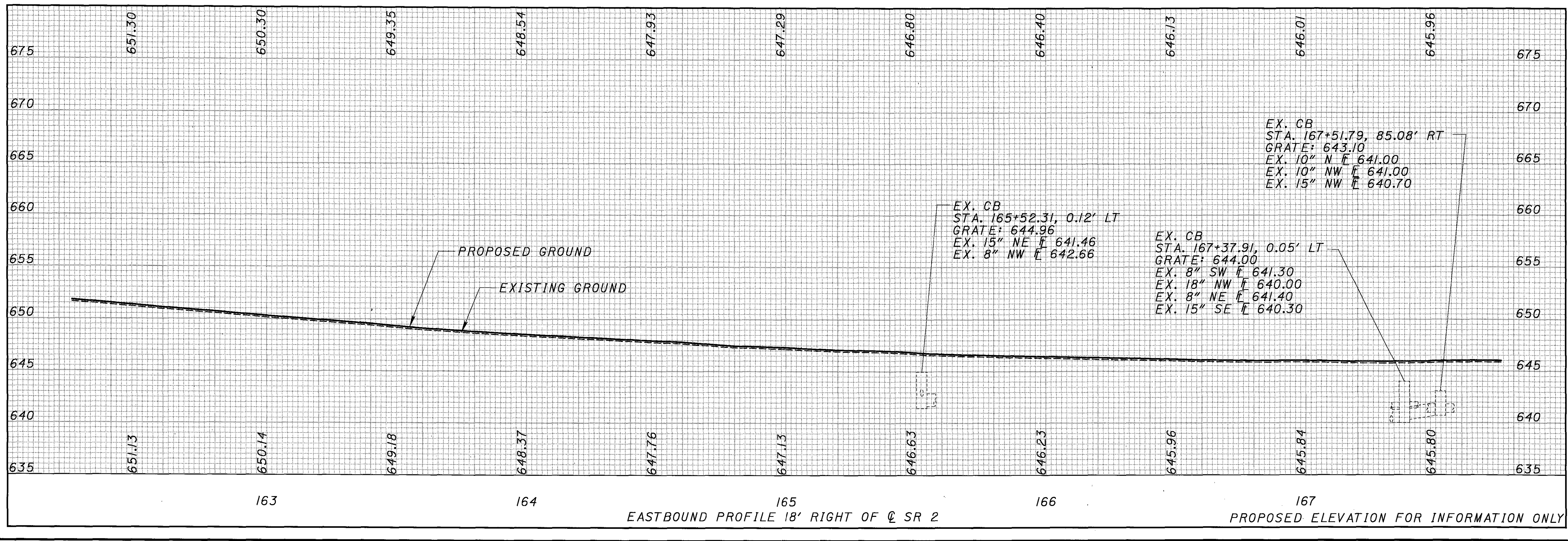
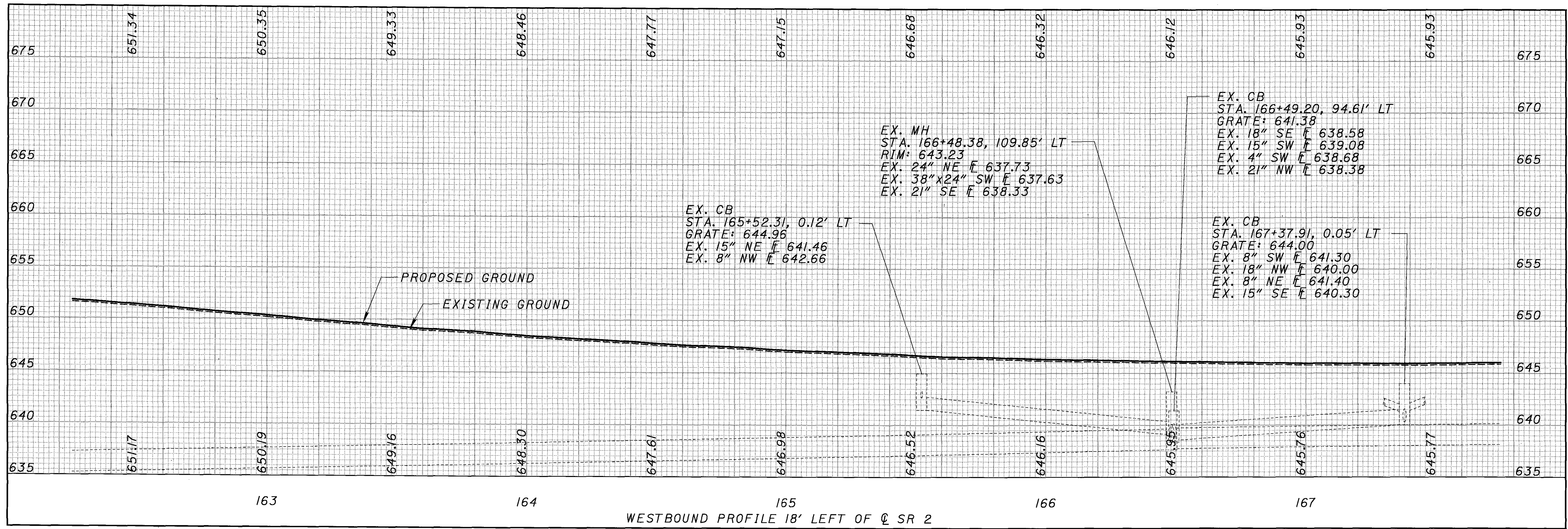
STATE ROUTE 2
MATCH LINE STA. 162+25
SEE SHEET 132

STATE ROUTE 2
MATCH LINE STA. 167+75
SEE SHEET 136



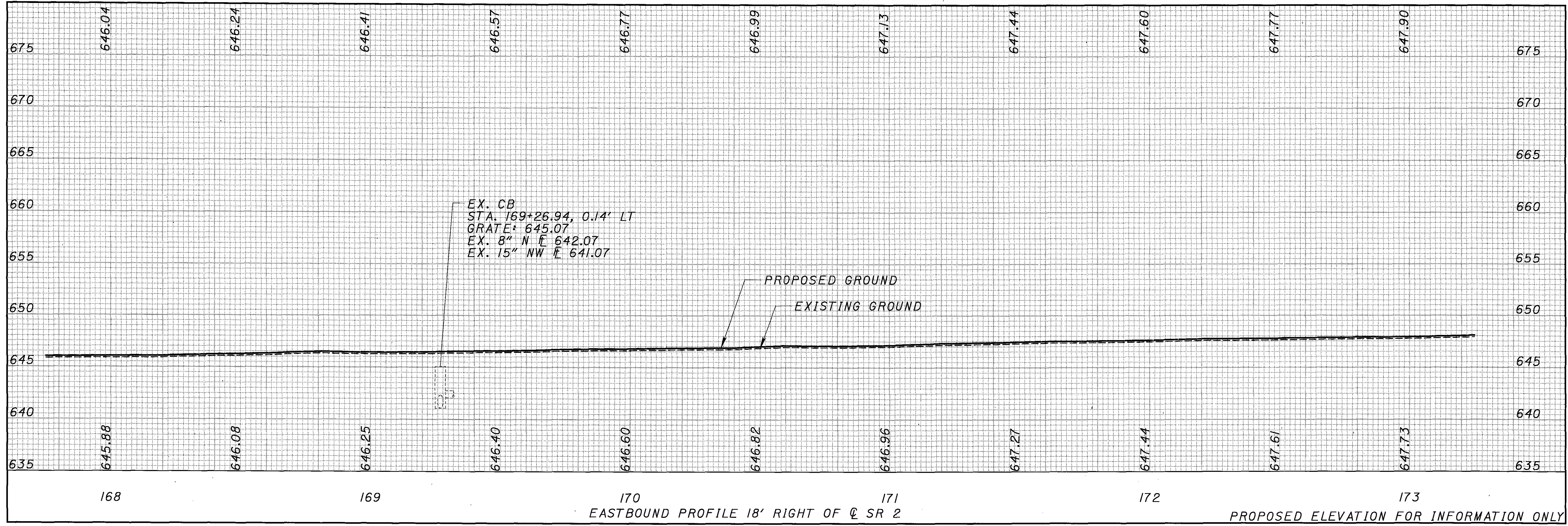
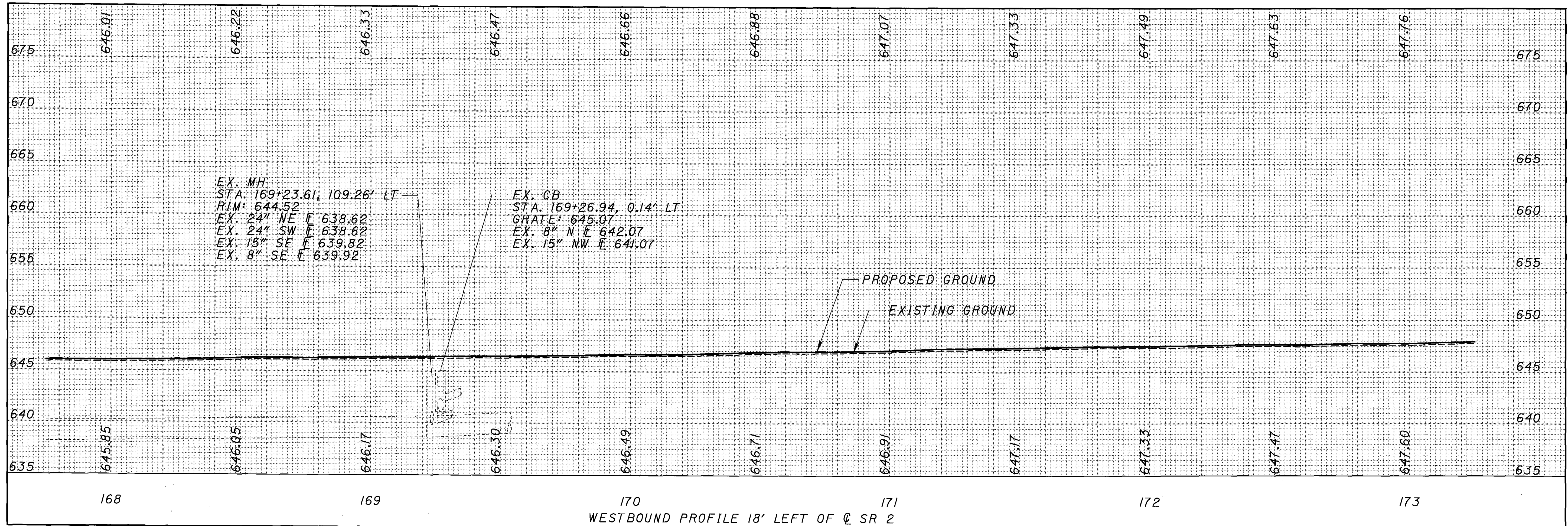
FULL DEPTH PAVEMENT

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CALCULATED AS
 CHECKED KMB
 PROFILE
 STA. 162+25 TO 167+75
 LAK-2-0.00
 135
 524

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PROPOSED ELEVATION FOR INFORMATION ONLY

PROFILE
STA. 167+75 TO 173+25

LAK-2-0.00

CALCULATED AS
 CHECKED KVB

137
 524



0 10 20
HORIZONTAL
SCALE IN FEET

CALCULATED BY
AS
CHECKED BY
KWB

STATE ROUTE 2
MATCH LINE STA. 178+75
SEE SHEET 140

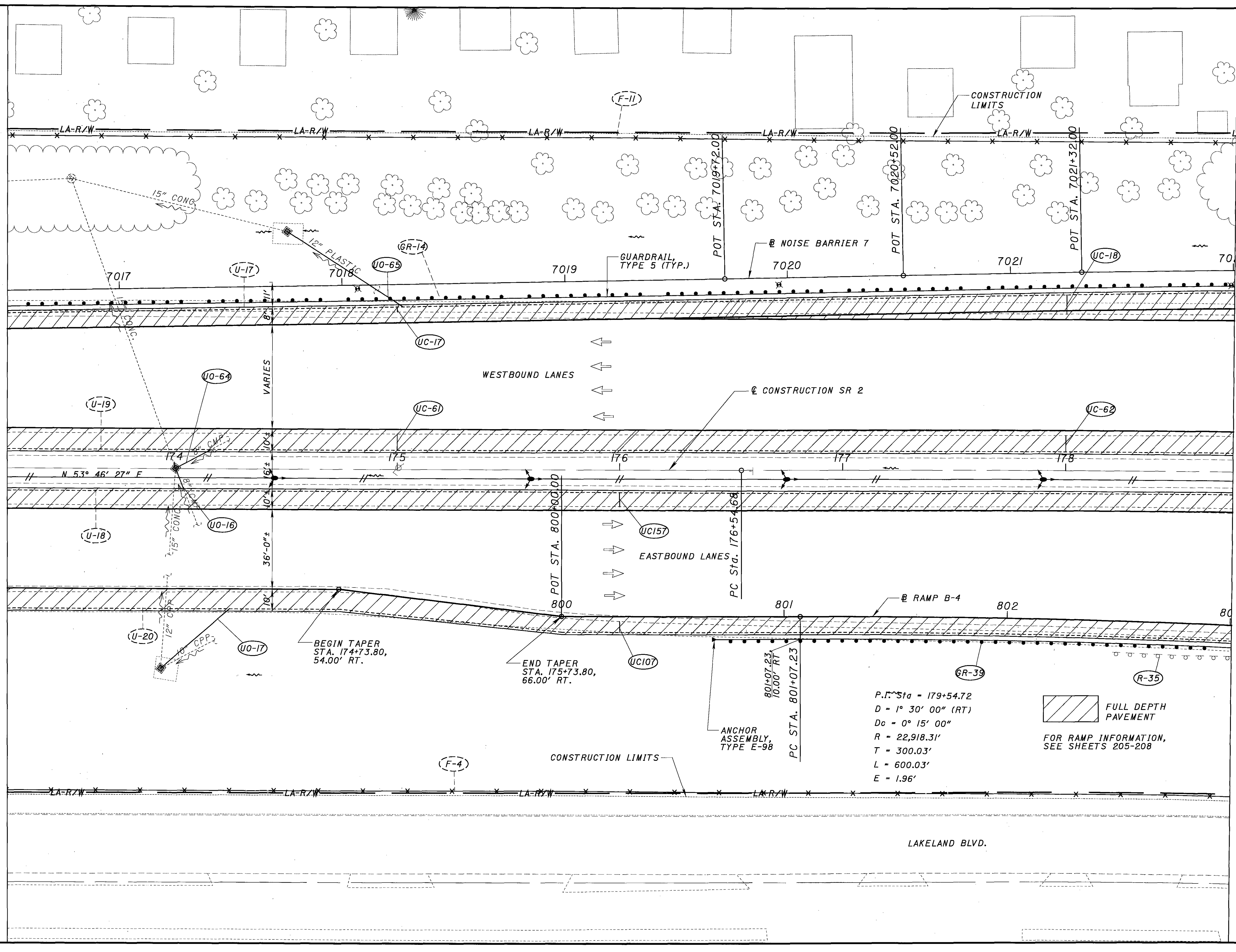
**PLAN - MAINLINE SR 2
STA. 173+25 TO STA. 178+75**

LAK-2-0.00

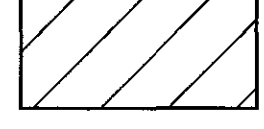
138
524

STATE ROUTE 2
MATCH LINE STA. 173+25
SEE SHEET 136

STATE ROUTE 2
MATCH LINE STA. 178+75
SEE SHEET 140

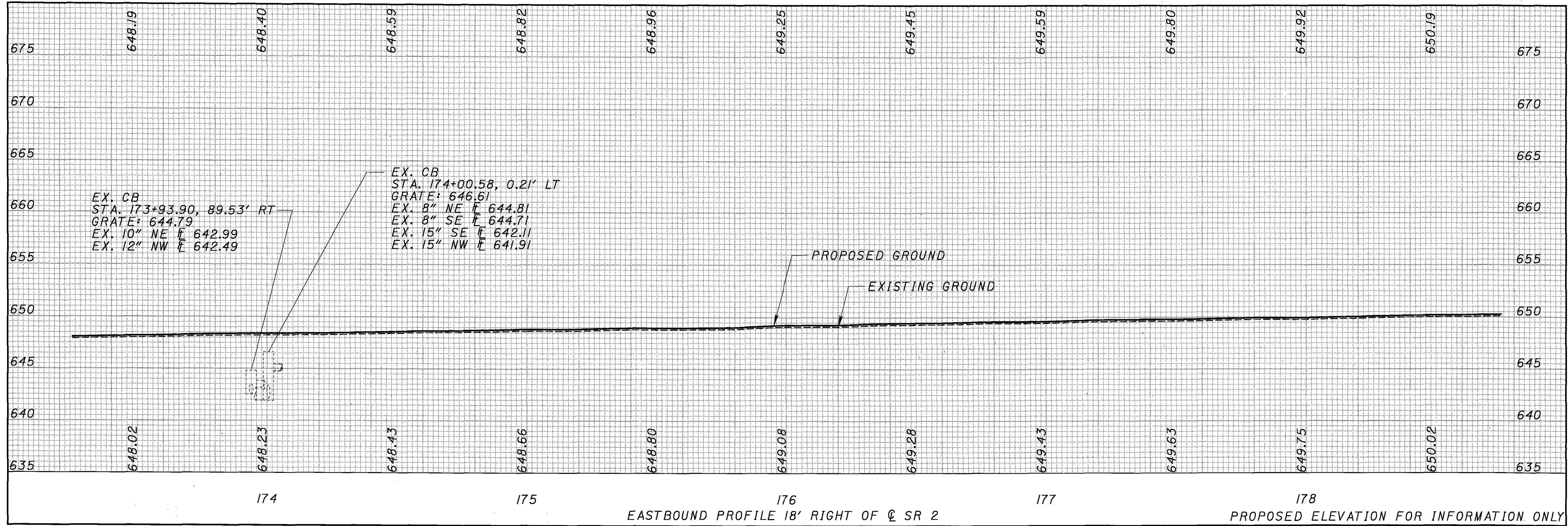
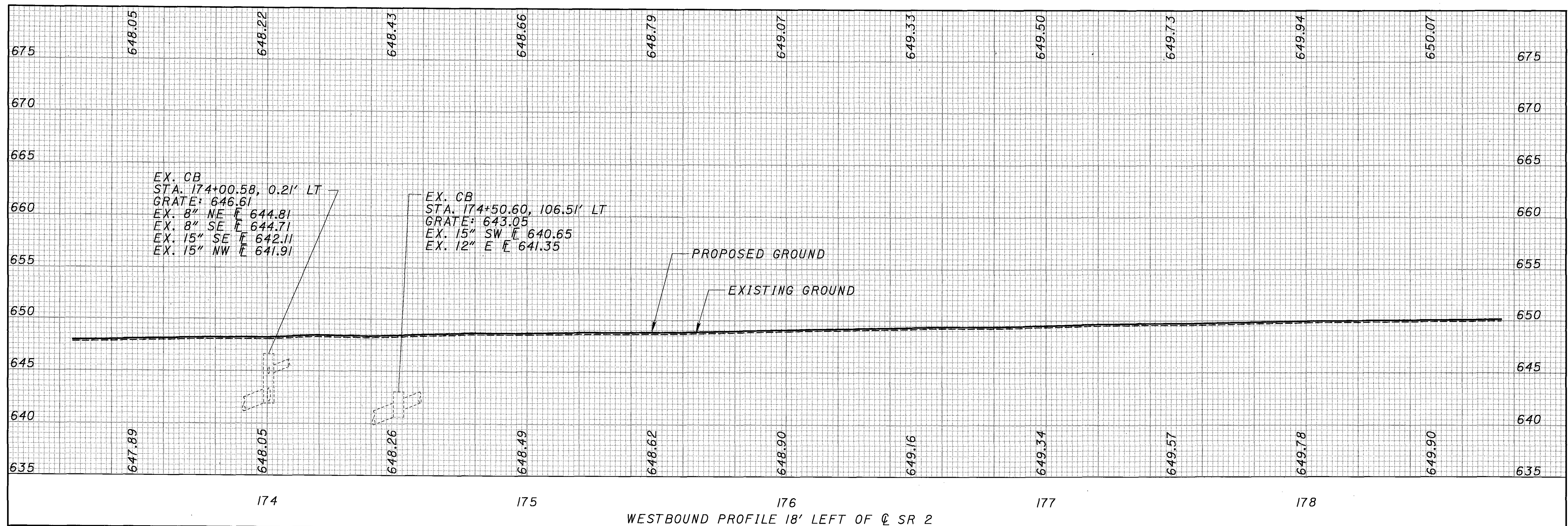


P.I. Sta = 179+54.72
 D = 1° 30' 00" (RT)
 Dc = 0° 15' 00"
 R = 22,918.31'
 T = 300.03'
 L = 600.03'
 E = 1.96'

 FULL DEPTH PAVEMENT
 FOR RAMP INFORMATION, SEE SHEETS 205-208

LAKELAND BLVD.

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PROPOSED ELEVATION FOR INFORMATION ONLY

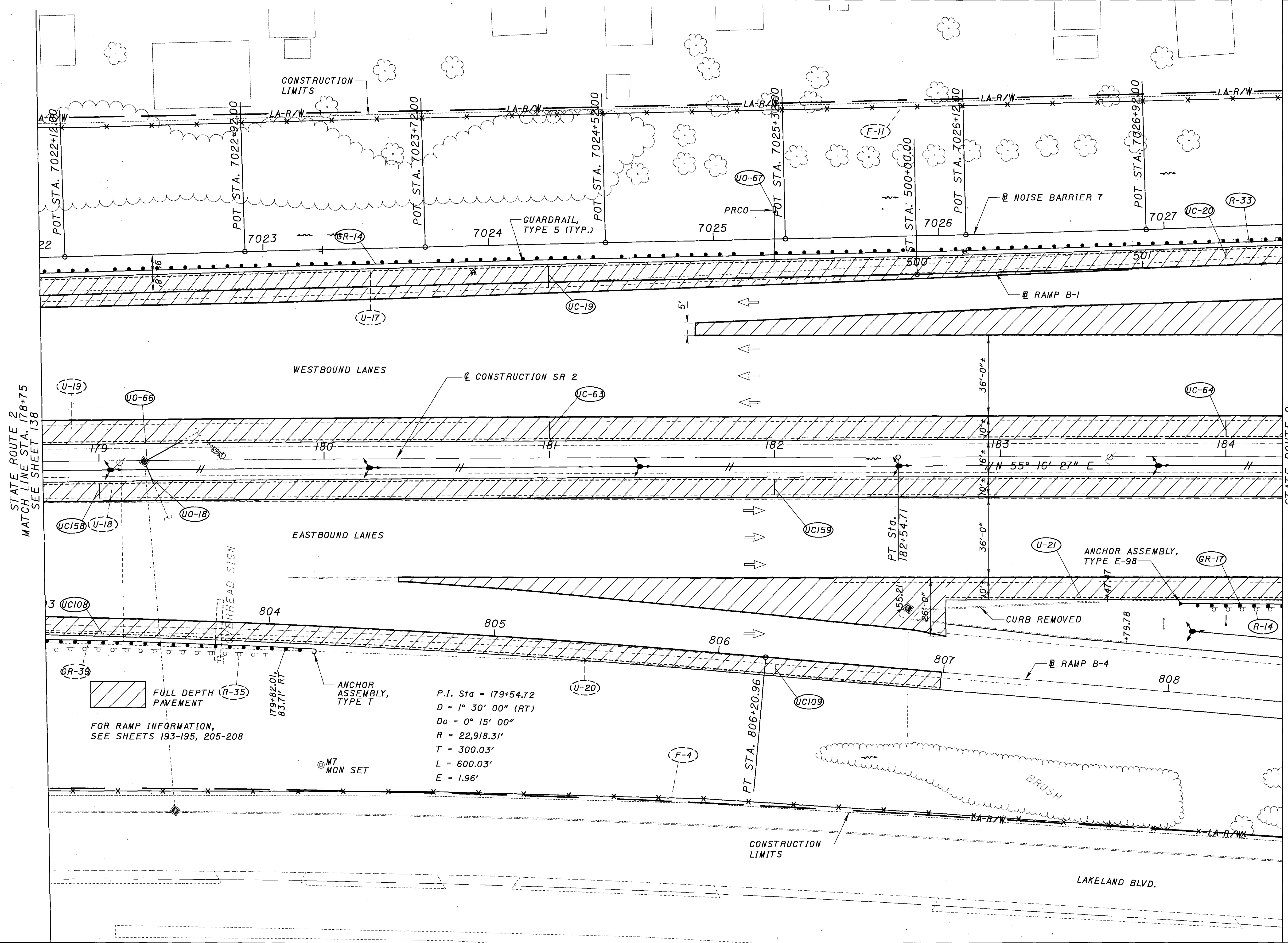
CALCULATED AS
CHECKED KWB

PROFILE

STA. 173+25 TO 178+75

LAK-2-0.00

139
524



STATE ROUTE 2
MATCH LINE STA. 178+75
SEE SHEET 138

STATE ROUTE 2
MATCH LINE STA. 184+25
SEE SHEET 142

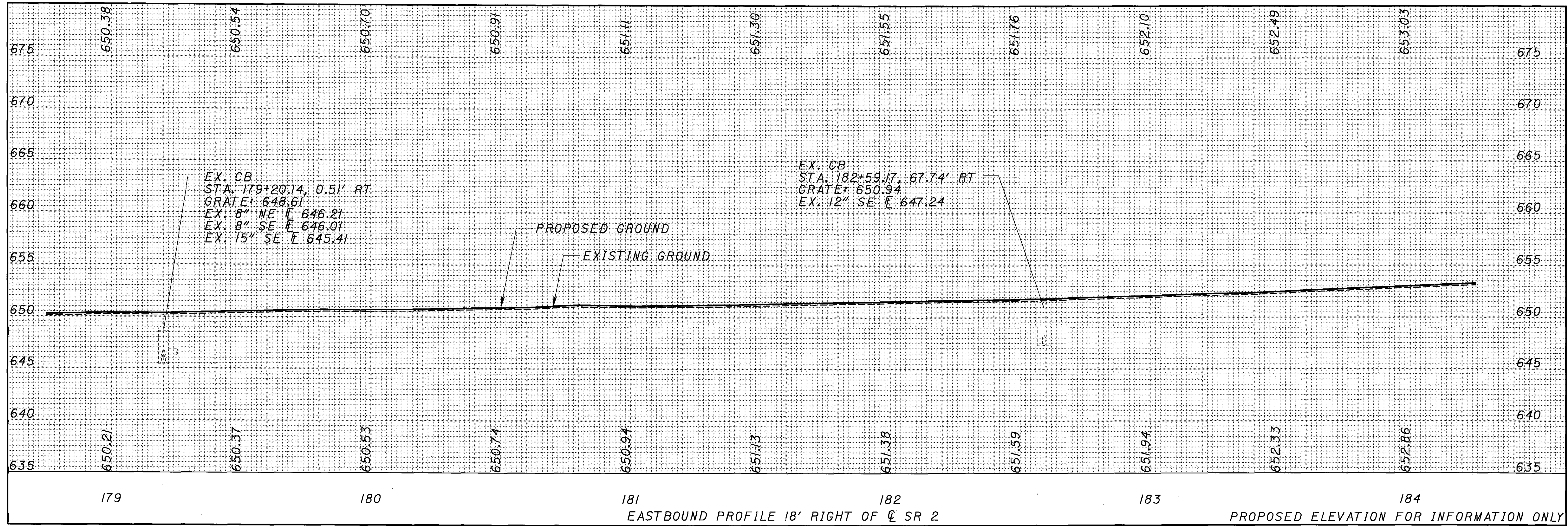
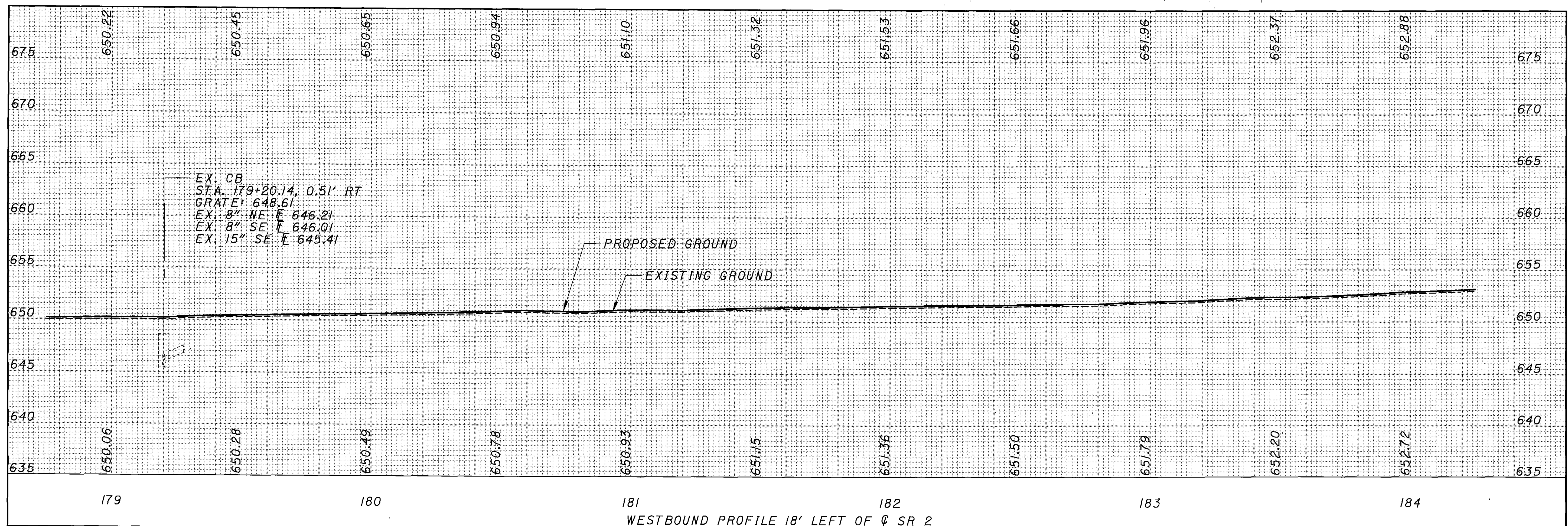
FULL DEPTH PAVEMENT (R-35)
FOR RAMP INFORMATION,
SEE SHEETS 193-195, 205-208

P.I. Sta = 179+54.72
D = 1° 30' 00" (RT)
Dc = 0° 15' 00"
R = 22,918.31'
T = 300.03'
L = 600.03'
E = 1.96'

© M7
MON SET

LAKELAND BLVD.

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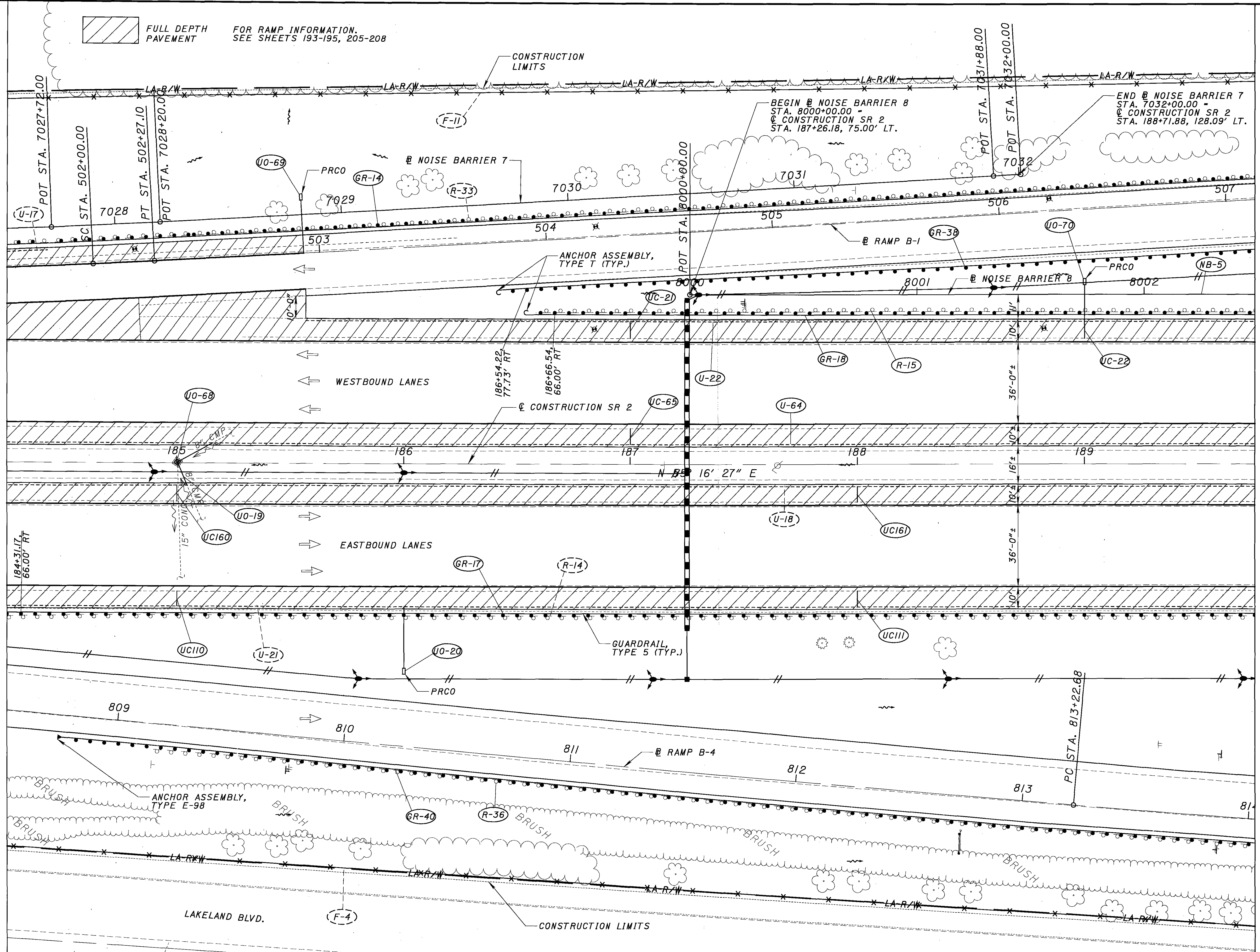


PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS	CHECKED KMB
PROFILE	
STA. 178+75 TO 184+25	
LAK-2-0.00	
141	524

 FULL DEPTH PAVEMENT FOR RAMP INFORMATION. SEE SHEETS 193-195, 205-208

STATE ROUTE 2
MATCH LINE STA. 184+25
SEE SHEET 140




STATE ROUTE 2
MATCH LINE STA. 189+75
SEE SHEET 144

PLAN - MAINLINE SR 2
STA. 184+25 TO STA. 189+75

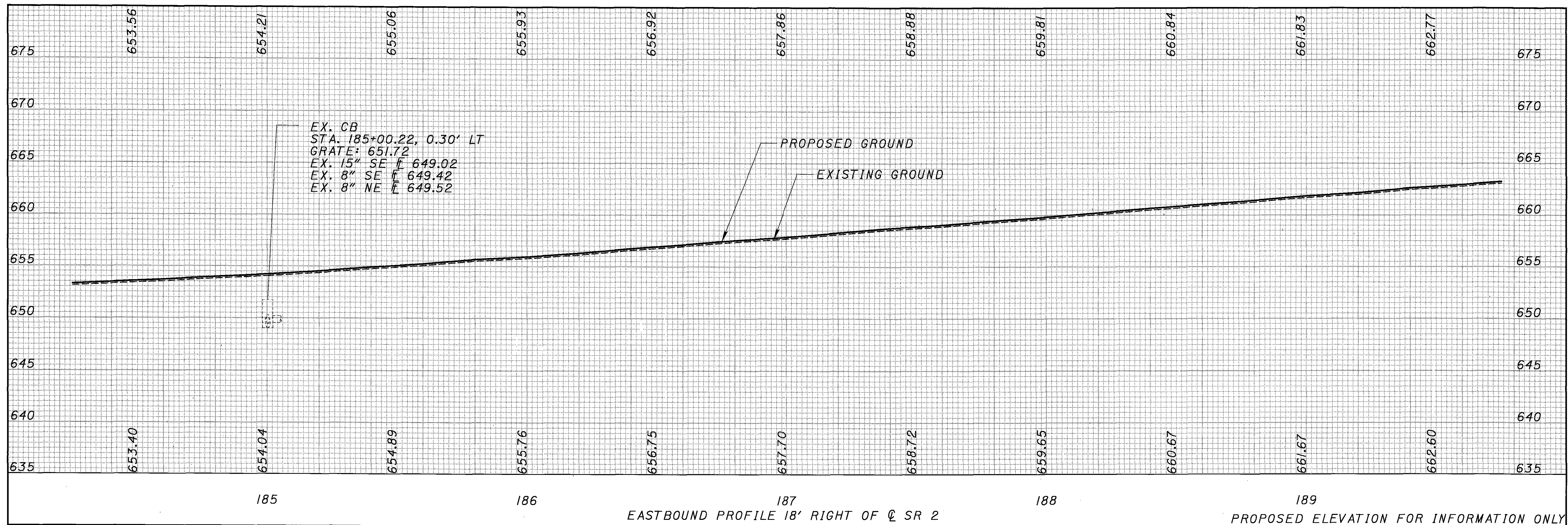
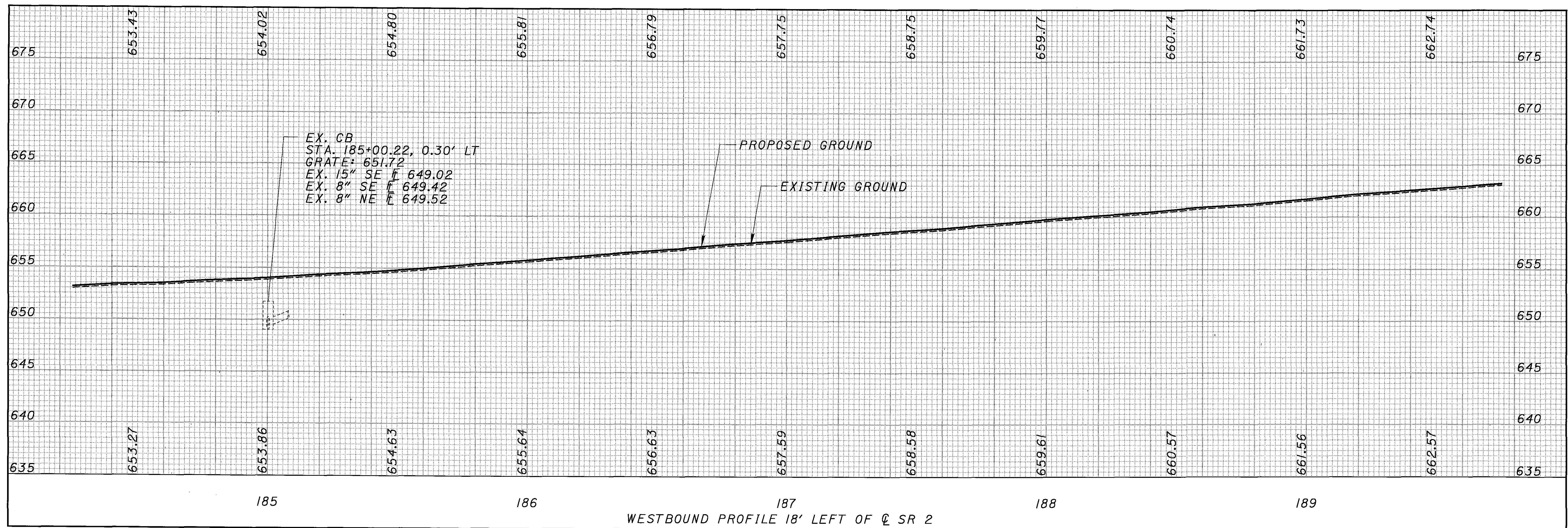
LAK-2-0.00

CALCULATED AS
CHECKED KWB

0 20 40
HORIZONTAL SCALE IN FEET



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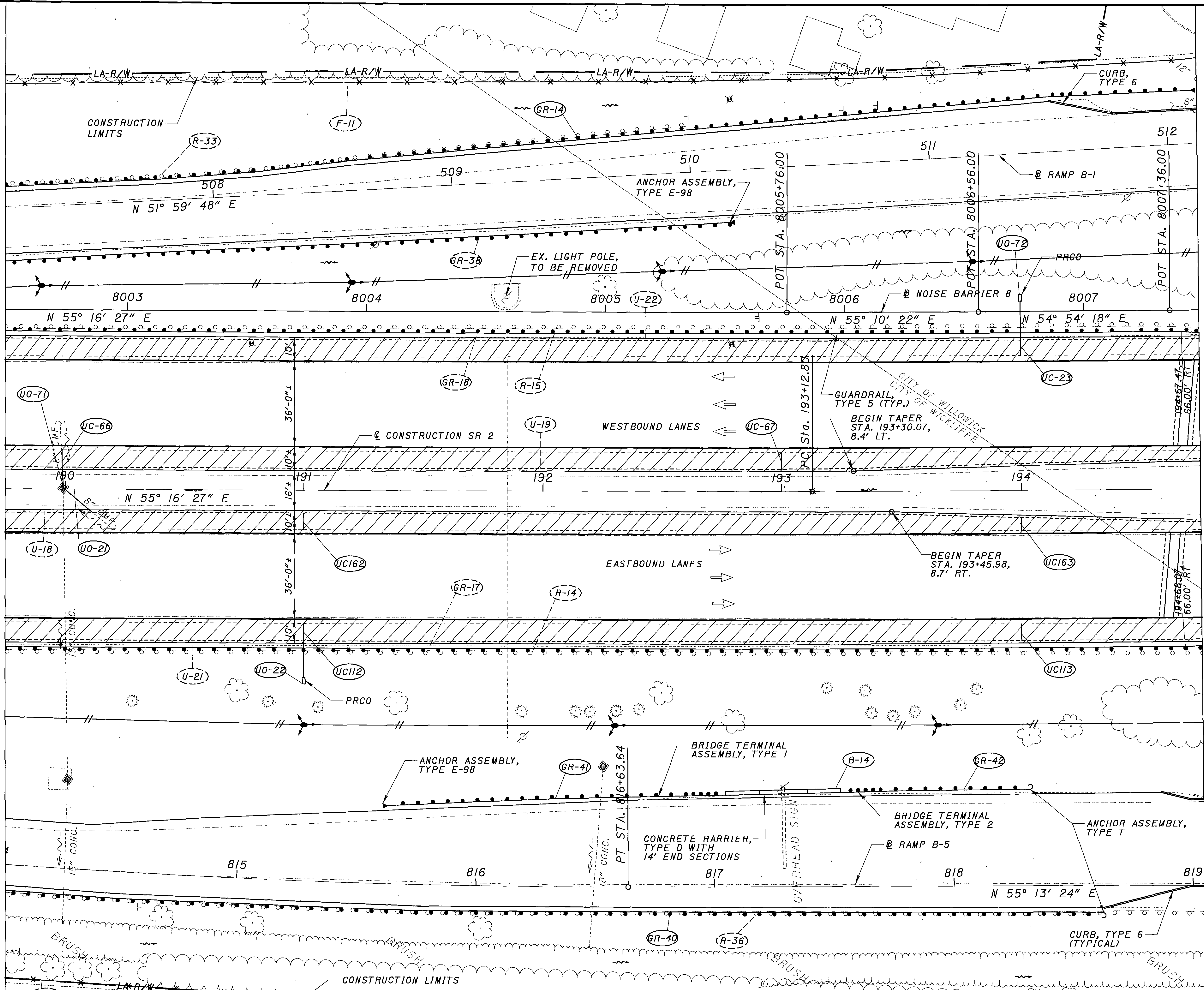


PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED	AS
	CHECKED
KWB	
PROFILE	
STA. 184+25 TO 189+75	
LAK-2-0.00	
143	524

STATE ROUTE 2
MATCH LINE STA. 189+75
SEE SHEET 142

STATE ROUTE 2
MATCH LINE STA. 194+75
SEE SHEET 146



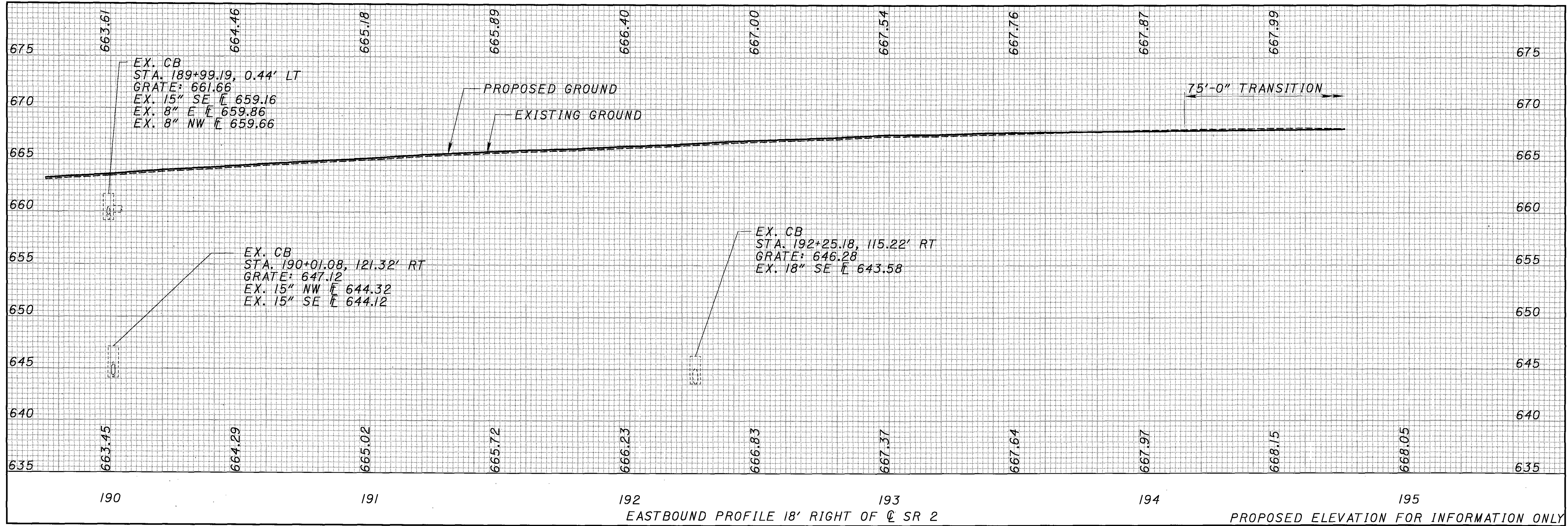
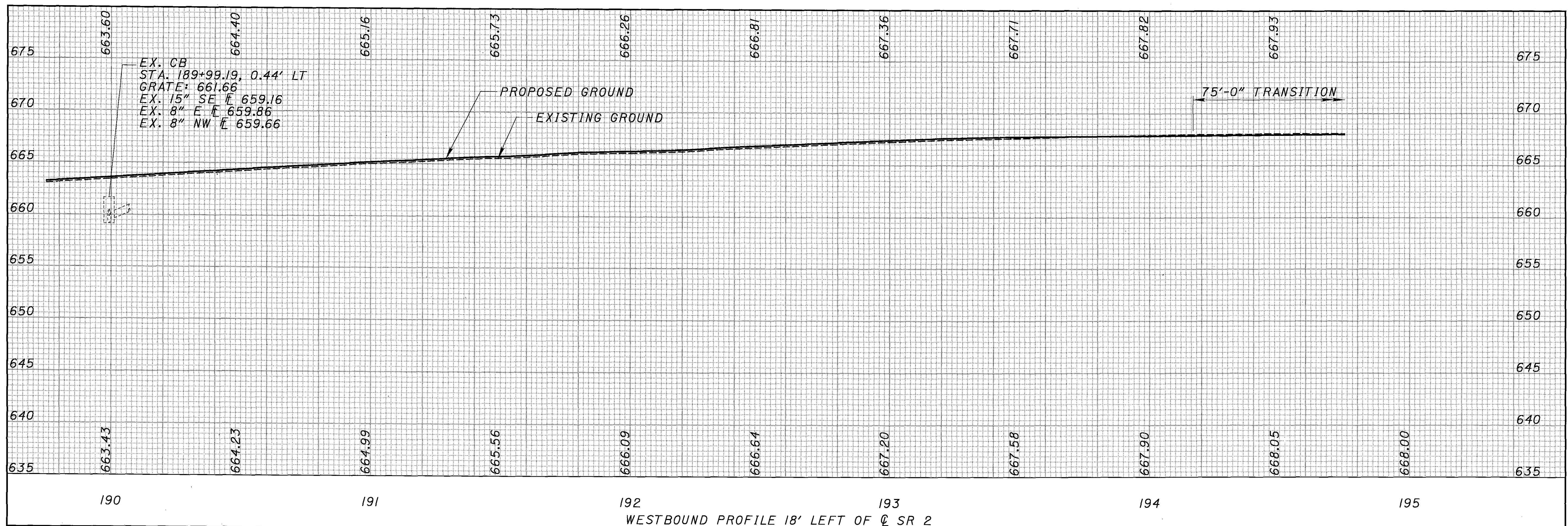
P.I. Sta = 195+98.07
 D = 1° 55' 01" (LT)
 Dc = 0° 20' 10"
 R = 17,050.84'
 T = 285.28'
 L = 570.50'
 E = 2.39'

FULL DEPTH PAVEMENT
 FOR RAMP INFORMATION, SEE SHEETS 193-195, 205-208

PLAN - MAINLINE SR 2
 STA. 189+75 TO STA. 194+75

LAK-2-0.00

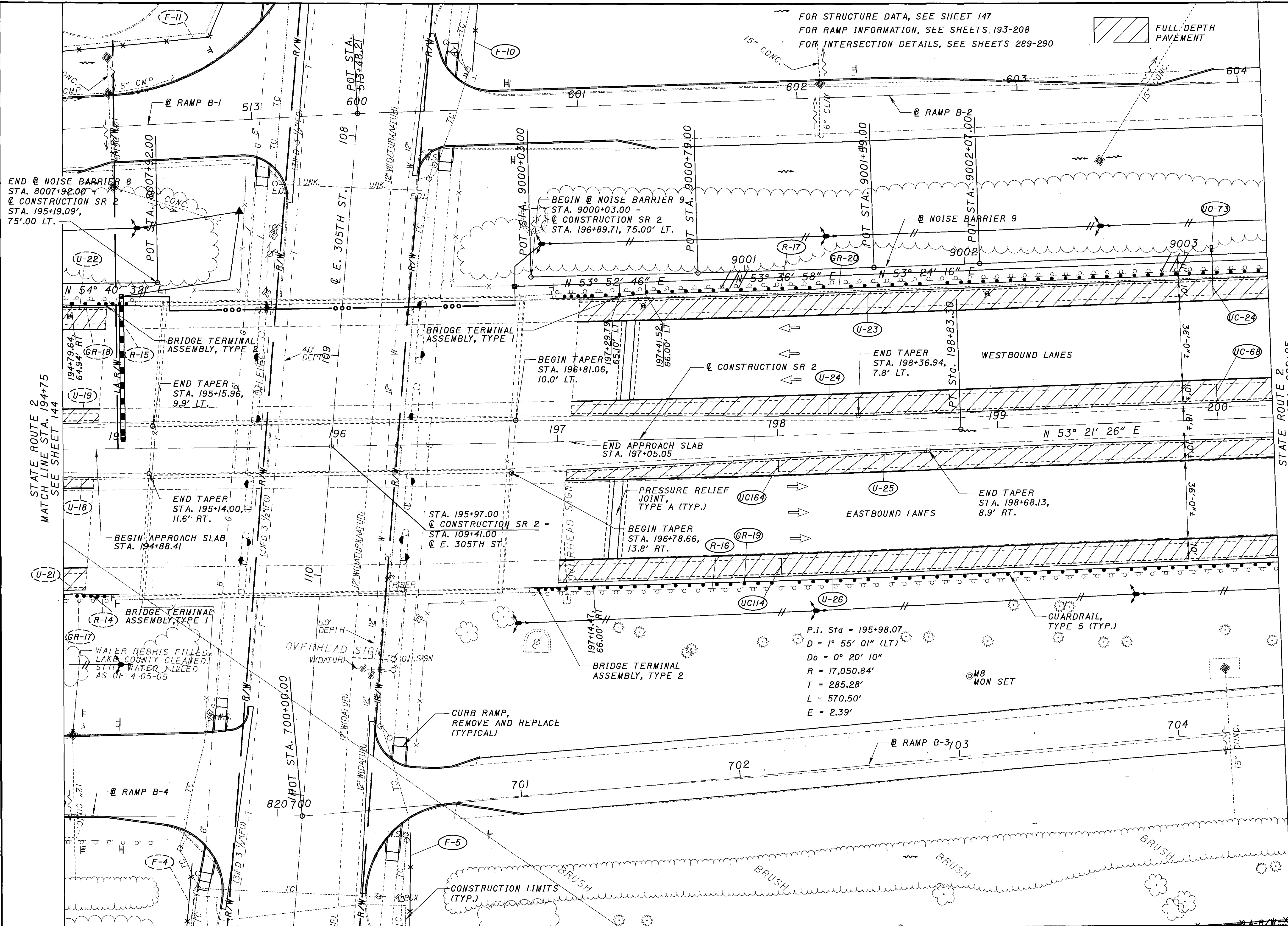
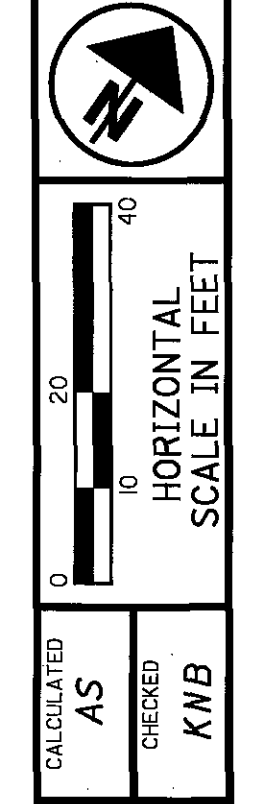
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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS	PROFILE
CHECKED KMB	STA. 189+75 TO 194+75
LAK-2-0.00	
145 524	

FOR STRUCTURE DATA, SEE SHEET 147
 FOR RAMP INFORMATION, SEE SHEETS 193-208
 FOR INTERSECTION DETAILS, SEE SHEETS 289-290



STATE ROUTE 2
 MATCH LINE STA. 194+75
 SEE SHEET 144

STATE ROUTE 2
 MATCH LINE STA. 200+25
 SEE SHEET 148

**PLAN - MAINLINE SR 2
 STA. 194+75 TO STA. 200+25**

LAK-2-0.00

P.I. Sta - 195+98.07
 D - 1° 55' 01" (LT)
 Dc - 0° 20' 10"
 R - 17,050.84'
 T - 285.28'
 L - 570.50'
 E - 2.39'

END @ NOISE BARRIER 8
 STA. 8007+92.00
 @ CONSTRUCTION SR 2
 STA. 195+19.09',
 75.00 LT.

BEGIN @ NOISE BARRIER 9
 STA. 9000+03.00 -
 @ CONSTRUCTION SR 2
 STA. 196+89.71, 75.00' LT.

END TAPER
 STA. 195+15.96,
 9.9' LT.

BEGIN TAPER
 STA. 196+81.06,
 10.0' LT.

END TAPER
 STA. 198+36.94,
 7.8' LT.

END TAPER
 STA. 195+14.00,
 11.6' RT.

BEGIN TAPER
 STA. 196+78.66,
 13.8' RT.

END TAPER
 STA. 198+68.13,
 8.9' RT.

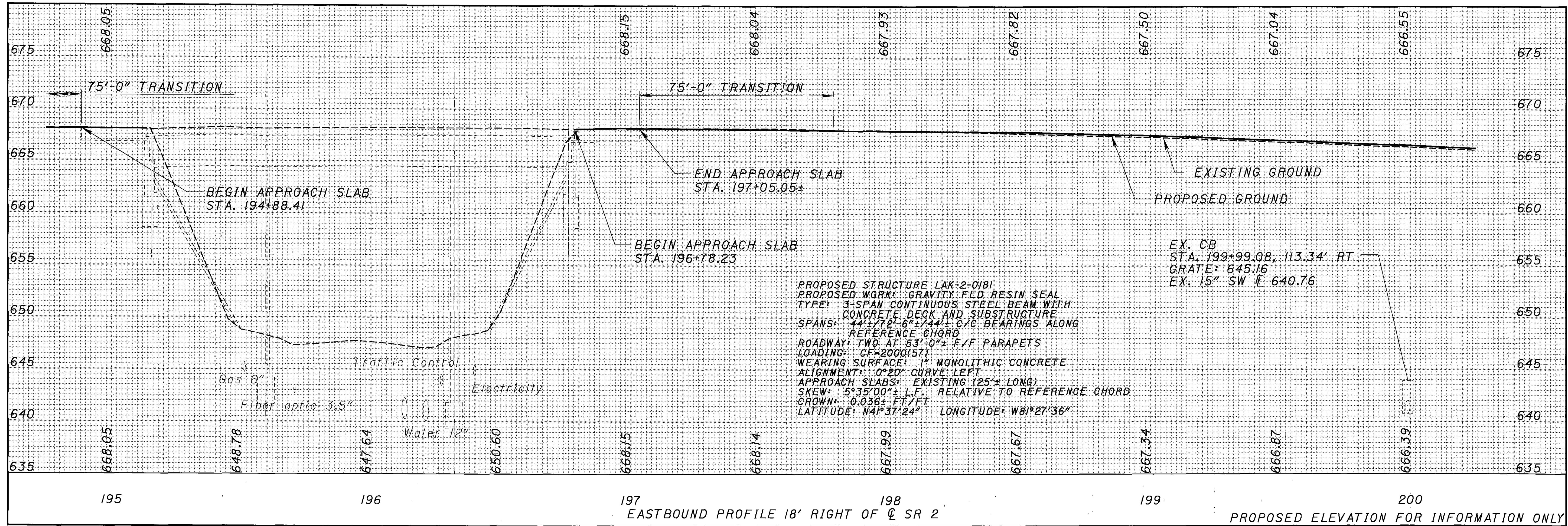
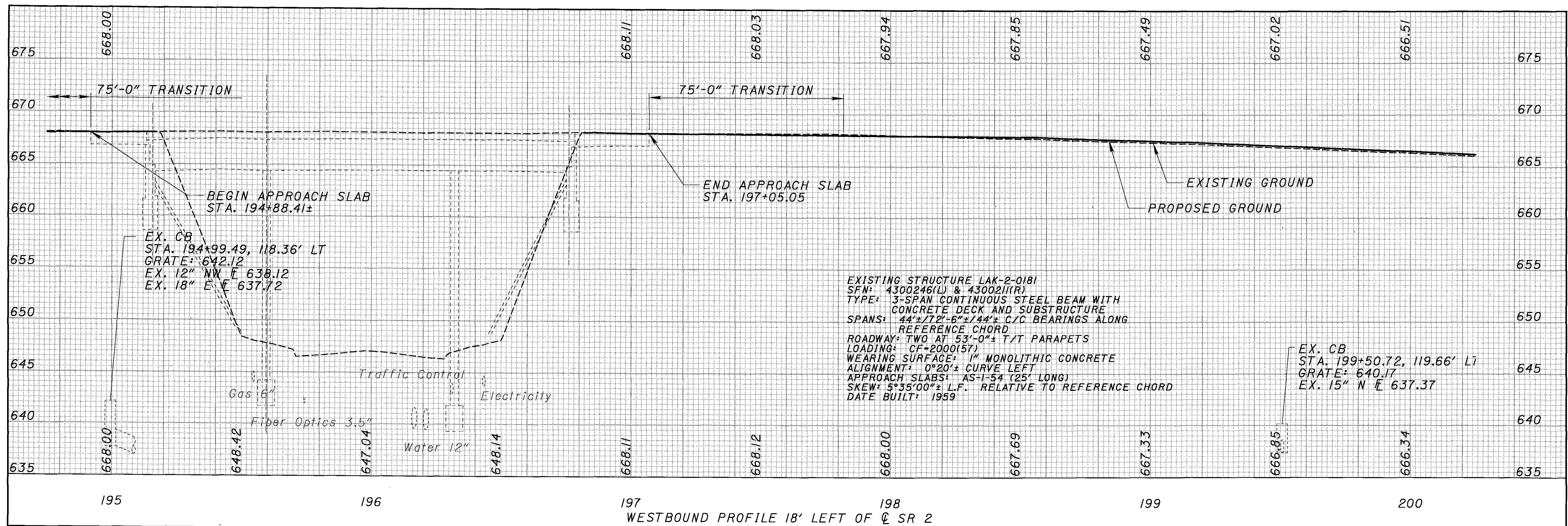
BRIDGE TERMINAL ASSEMBLY, TYPE I
 WATER DEBRIS FILLED.
 LAKE COUNTY CLEANED.
 STILL WATER FILLED
 AS OF 4-05-05

BRIDGE TERMINAL ASSEMBLY, TYPE 2

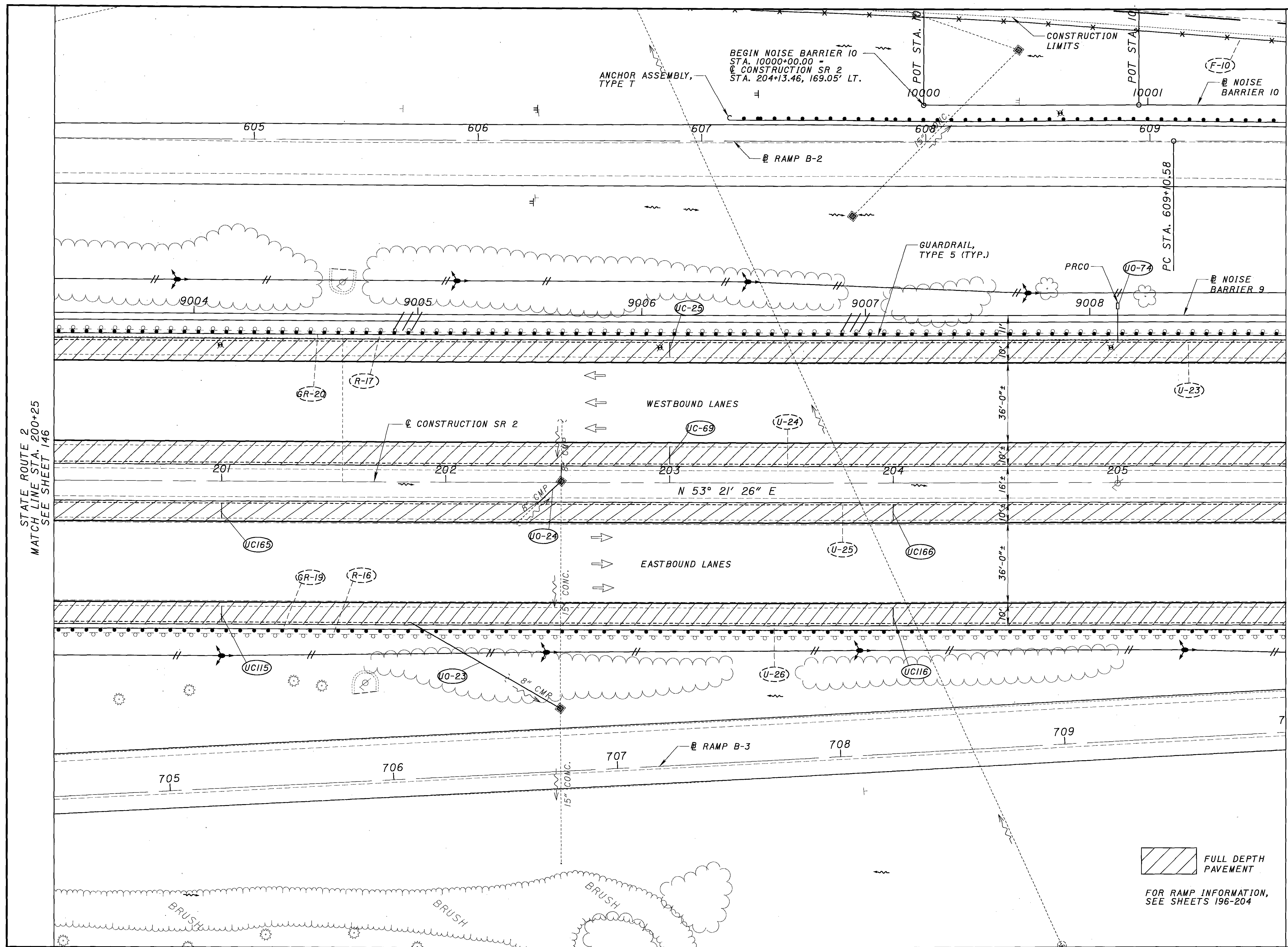
CURB RAMP,
 REMOVE AND REPLACE
 (TYPICAL)

CONSTRUCTION LIMITS
 (TYP.)

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CALCULATED AS
 CHECKED KWB
PROFILE STA. 194+75 TO 200+25
LAK-2-0.00
 147
 524
 PROPOSED ELEVATION FOR INFORMATION ONLY



STATE ROUTE 2
MATCH LINE STA. 200+25
SEE SHEET 146

STATE ROUTE 2
MATCH LINE STA. 205+75
SEE SHEET 150

CALCULATED AS
CHECKED KWB

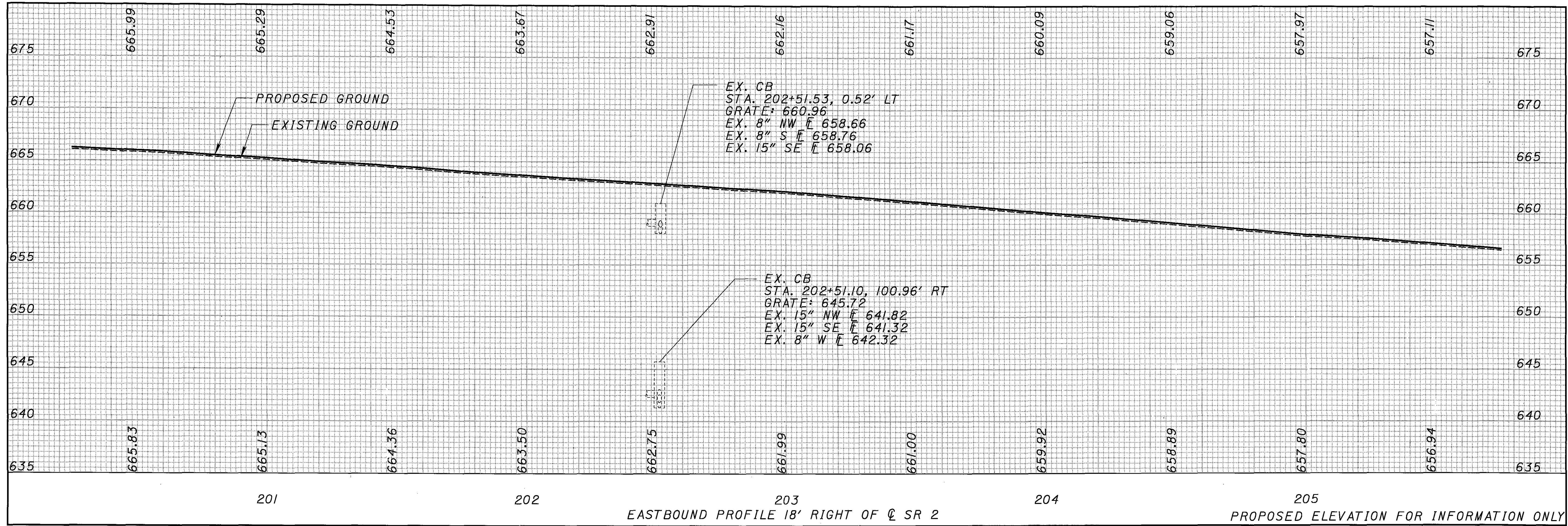
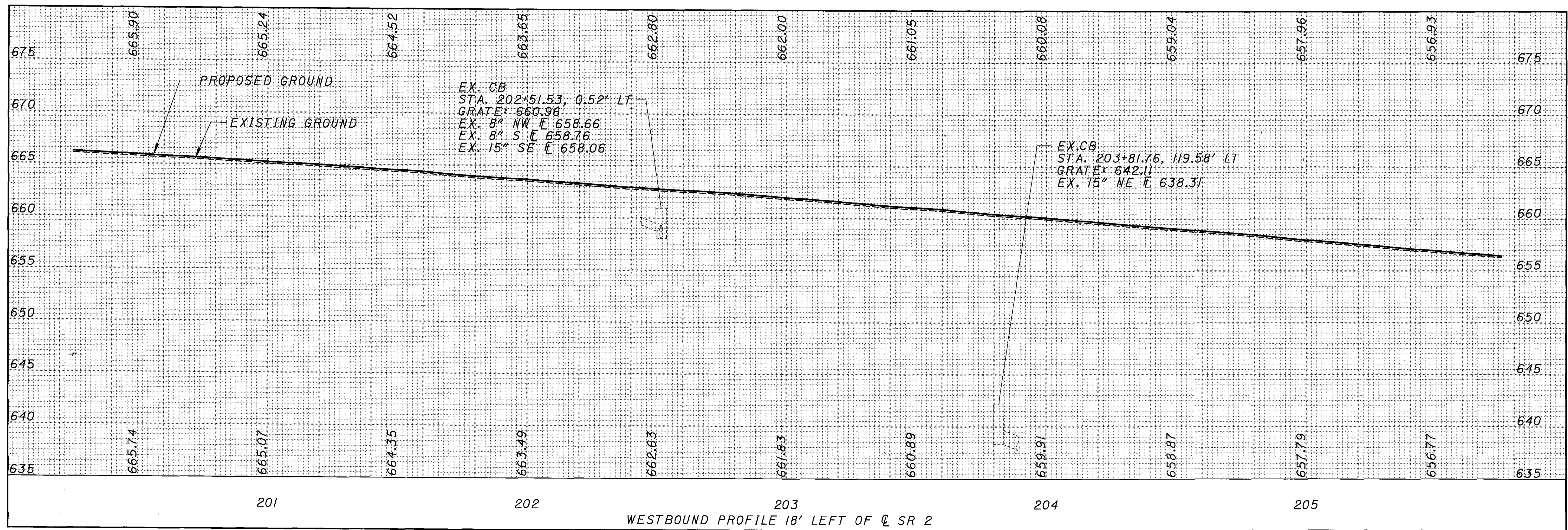
0 10 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 200+25 TO STA. 205+75

FULL DEPTH PAVEMENT

FOR RAMP INFORMATION,
SEE SHEETS 196-204

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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS

CHECKED KNB

PROFILE STA. 200+25 TO 205+75

LAK-2-0.00

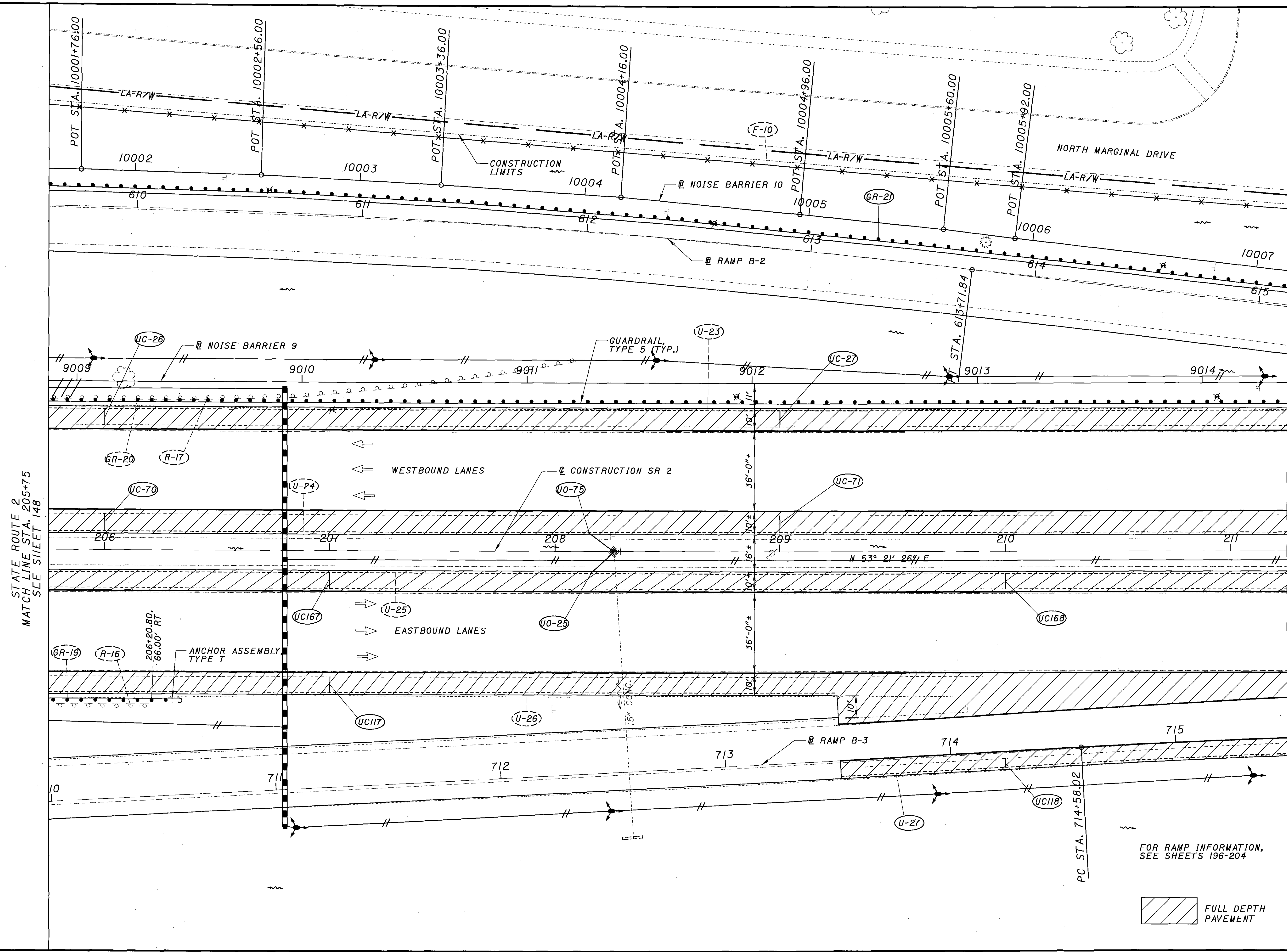
CALCULATED AS
CHECKED KWB

0 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 205+25 TO STA. 211+25

LAK-2-0.00

150
524



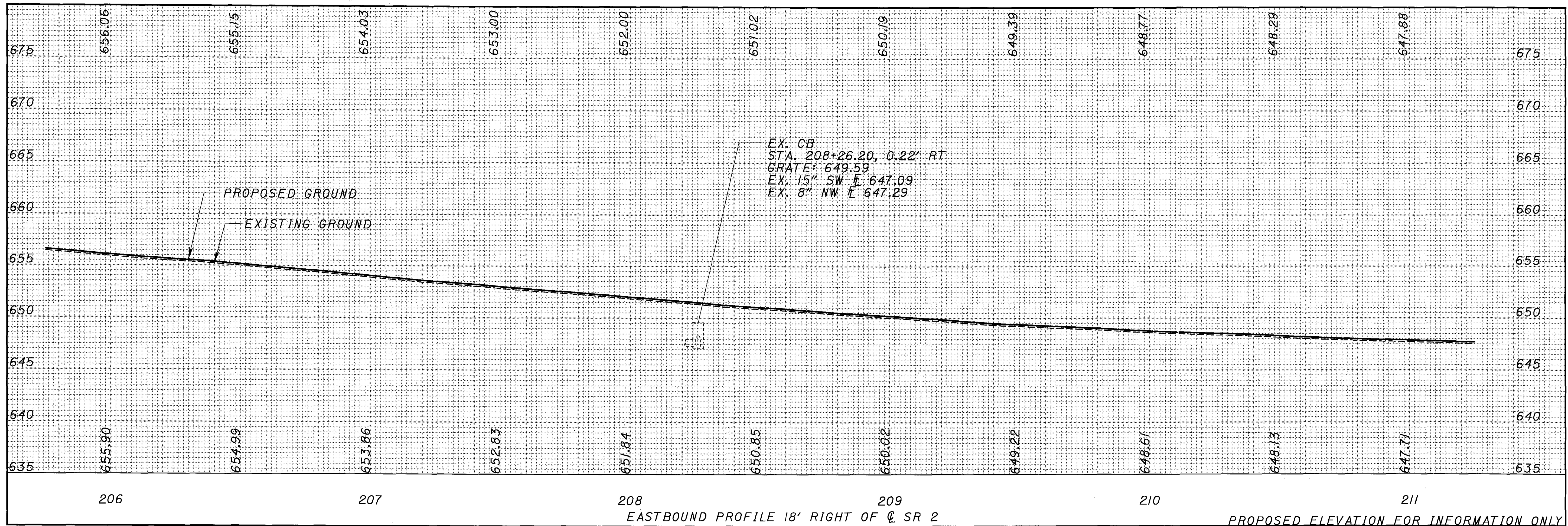
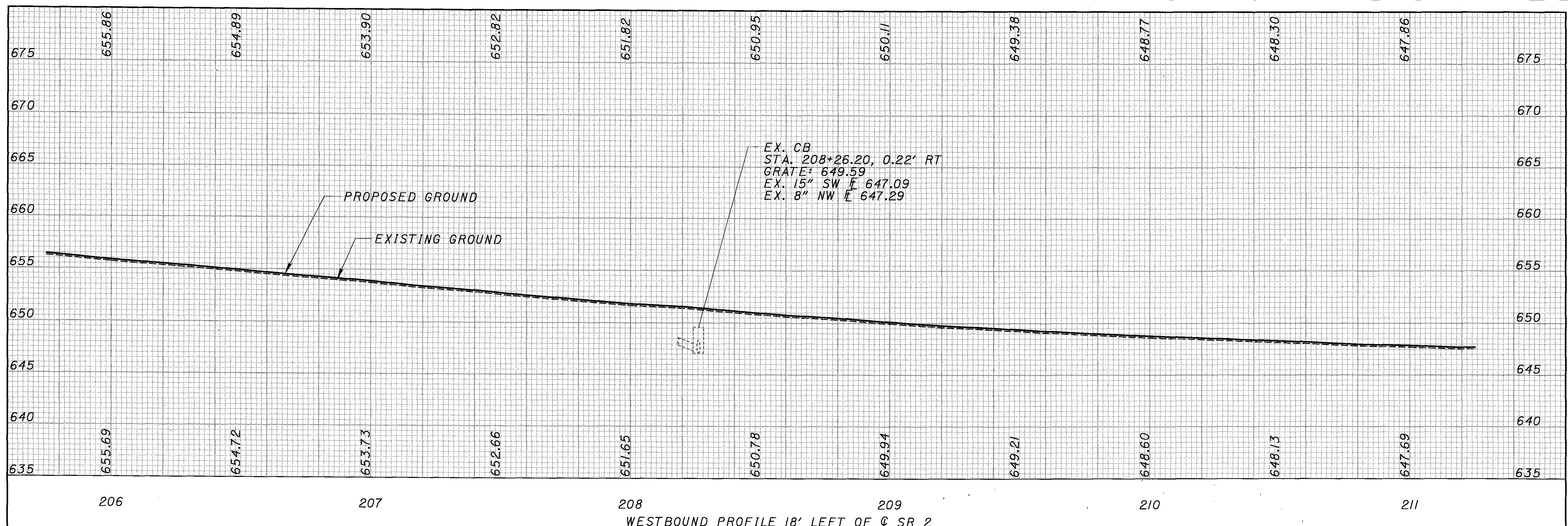
FOR RAMP INFORMATION,
SEE SHEETS 196-204

FULL DEPTH PAVEMENT

STATE ROUTE 2
MATCH LINE STA. 205+75
SEE SHEET 148

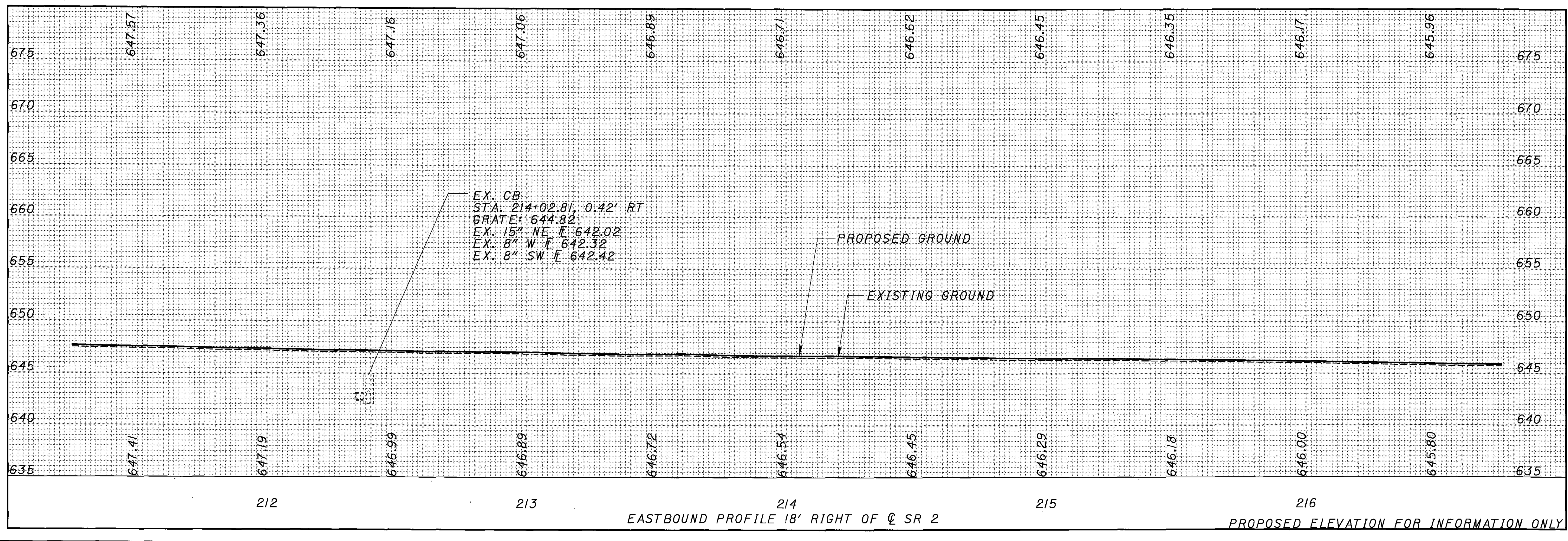
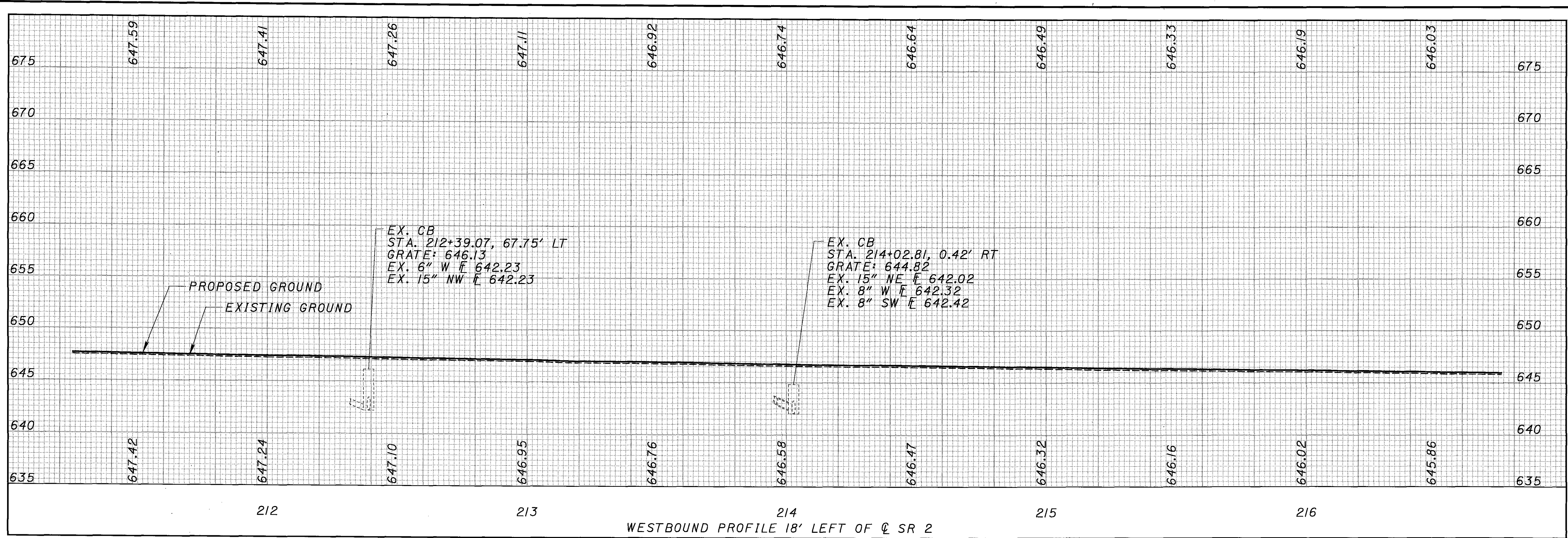
STATE ROUTE 2
MATCH LINE STA. 211+25
SEE SHEET 152

L:\Projects\0001\03322_LAK-2-0.00\Drawings\HWY\PP\217789\F021.dgn 25-APR-2006 3:08 PM asvlldr



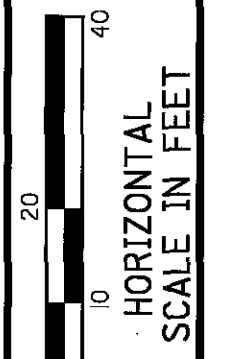
CALCULATED AS	CHECKED KWB
PROFILE	
STA. 205+75 TO 211+25	
LAK-2-0.00	
151 524	

L:\Projects\0001\03322_LAK-2-0.00\Drawings\HWY\PP\217789f022.dgn 25-APR-2006 3:08 PM csvilgr



PROFILE STA. 211+25 TO 216+75	CALCULATED AS CHECKED KWB
LAK-2-0.00	153 524

PROPOSED ELEVATION FOR INFORMATION ONLY



CALCULATED AS
CHECKED KWB

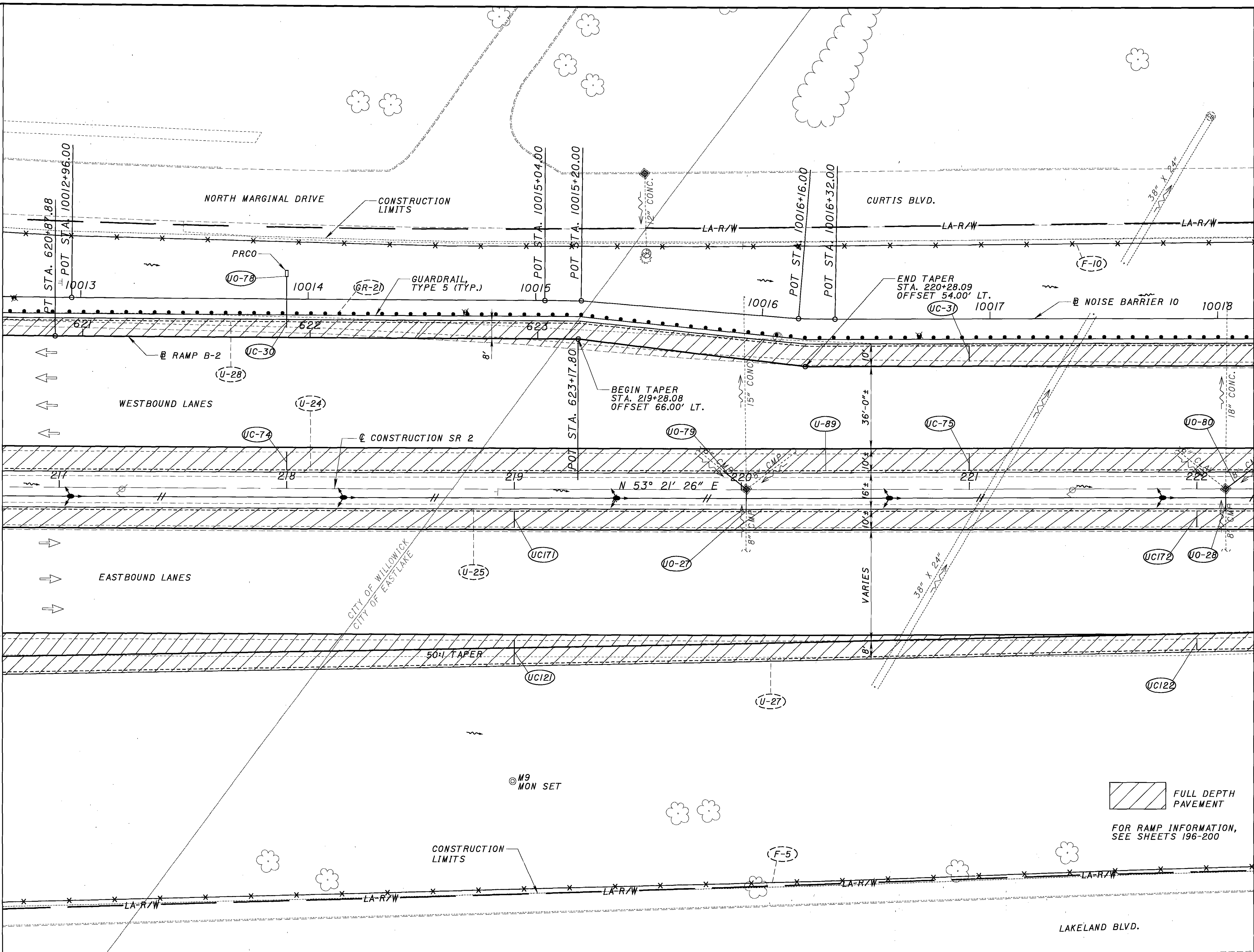
**PLAN - MAINLINE SR 2
STA. 216+75 TO STA. 222+25**

LAK-2-0.00

154
524

STATE ROUTE 2
MATCH LINE STA. 218+75
SEE SHEET 152

STATE ROUTE 2
MATCH LINE STA. 222+25
SEE SHEET 156

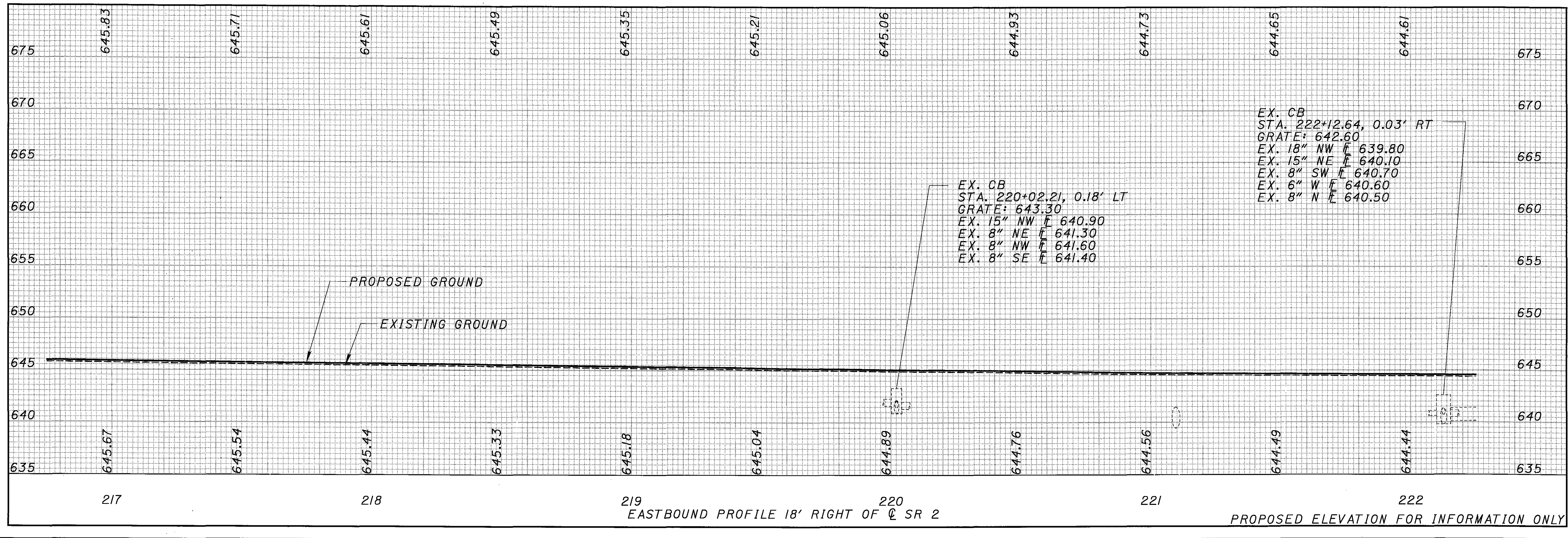
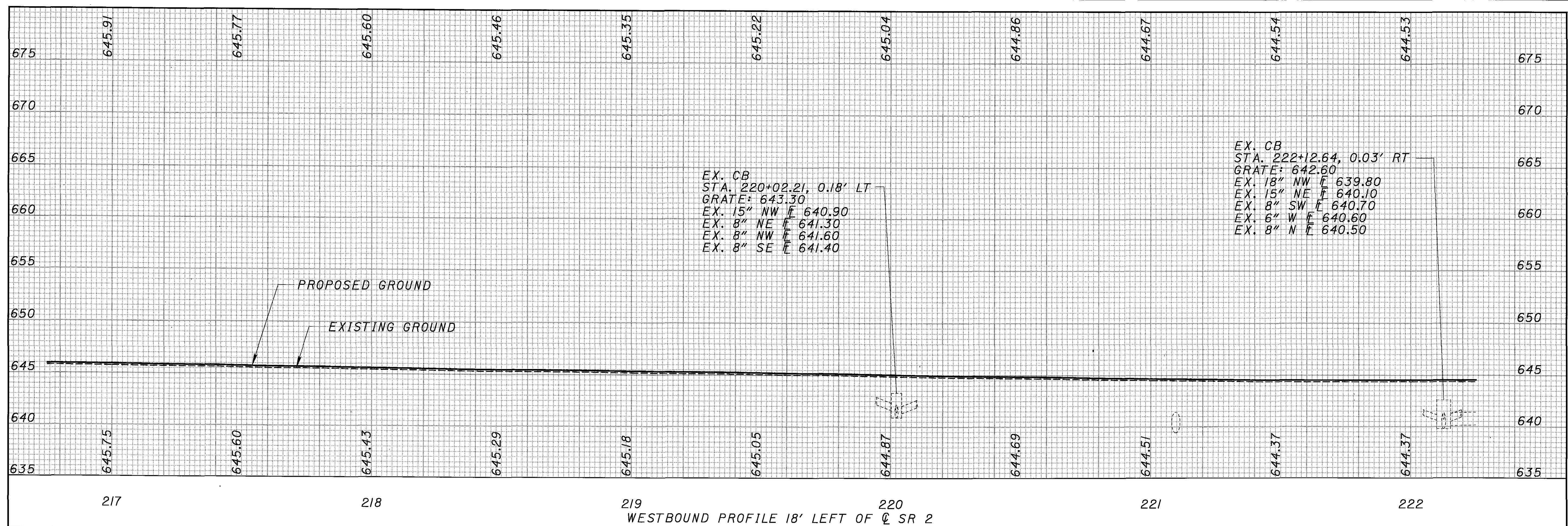


FULL DEPTH PAVEMENT

FOR RAMP INFORMATION, SEE SHEETS 196-200

LAKELAND BLVD.

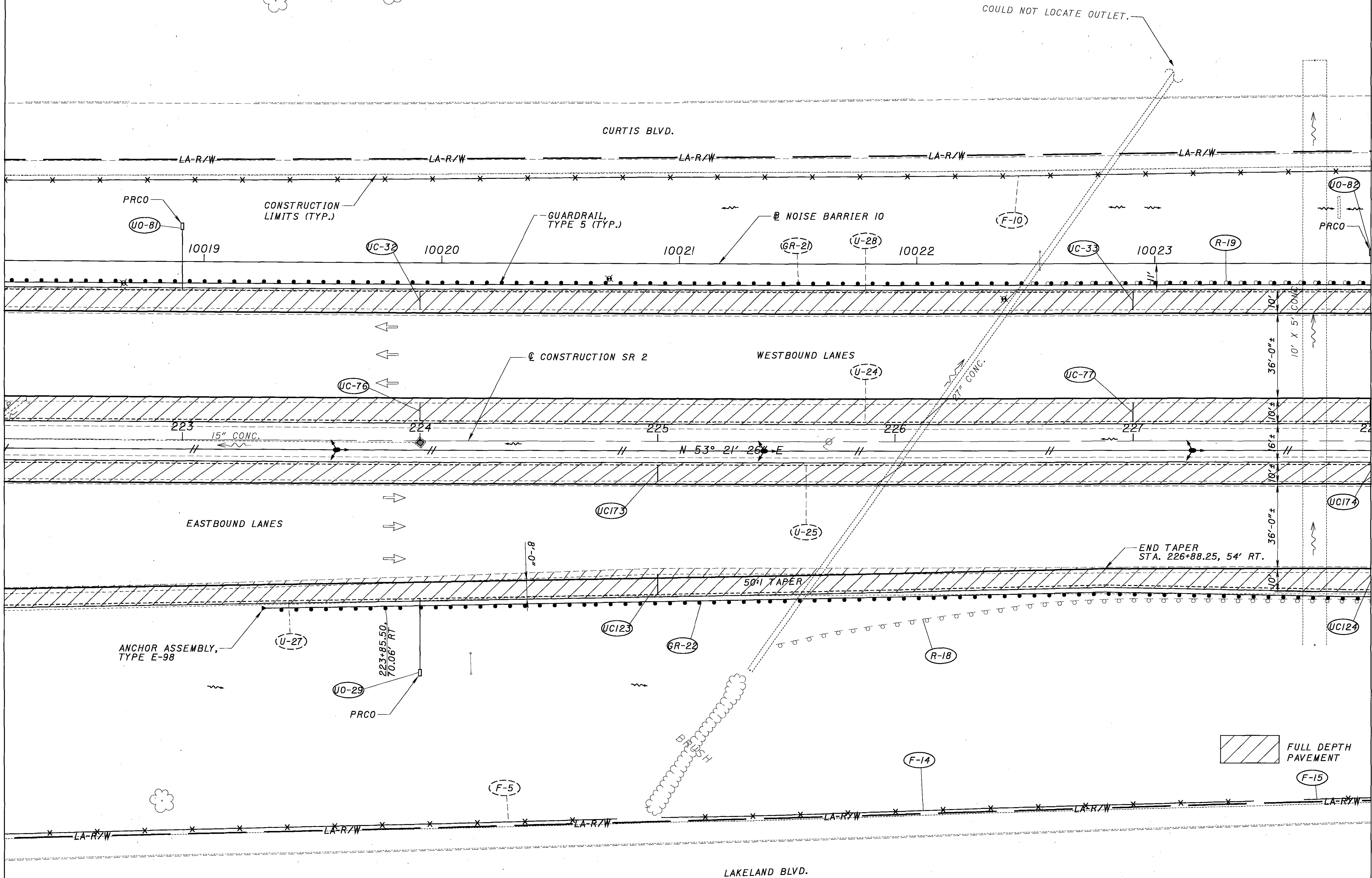
L:\Projects\0001\03322-LAK-2-0-00\Drawings\HWY\PP\21778g\023.dgn 25-APR-2006 3:08 PM cswilar



PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS	PROFILE
CHECKED KWB	STA. 216+75 TO 222+25
	LAK-2-0.00
	155
	524

STATE ROUTE 2 MATCH LINE
STA. 222+25 SEE SHEET 154



STATE ROUTE 2
MATCH LINE STA. 228+00
SEE SHEET 158

PLAN - MAINLINE SR 2
STA. 222+25 TO STA. 228+00

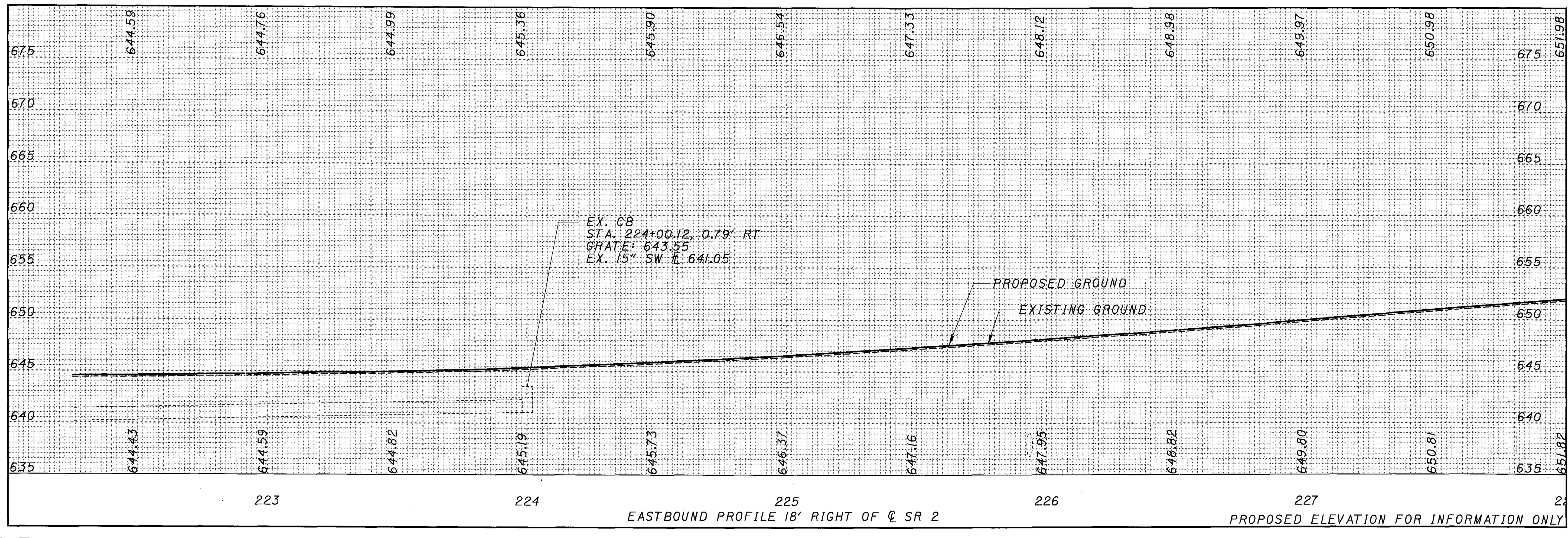
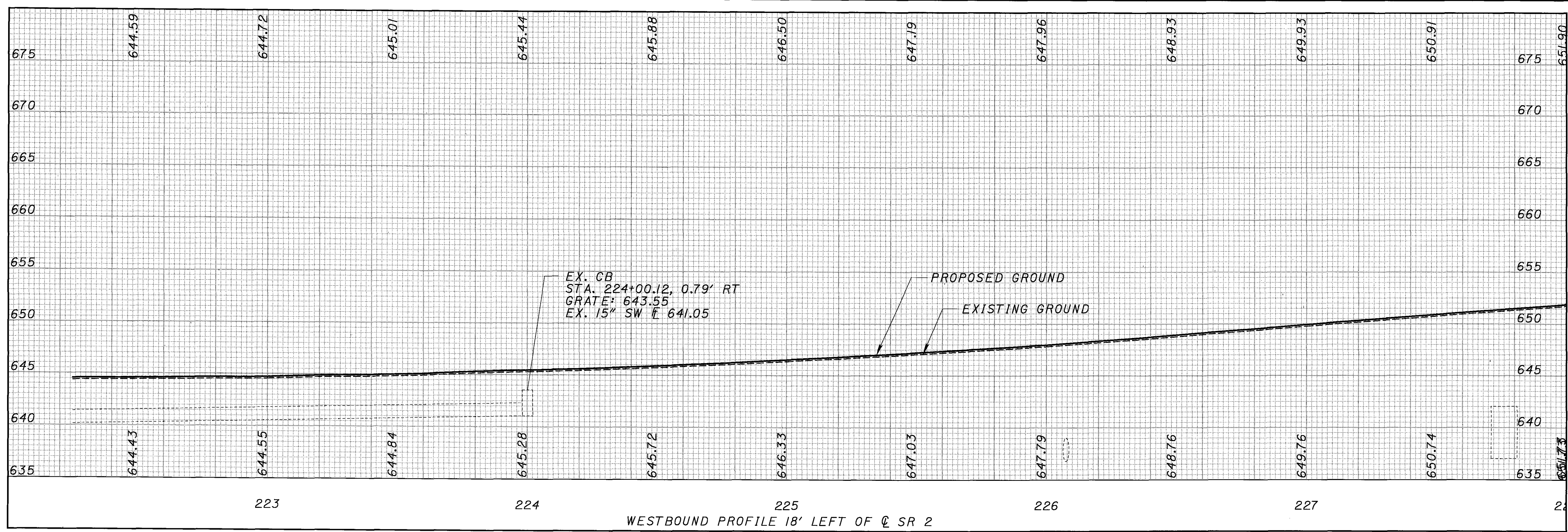
LAK-2-0.00

156
524

CALCULATED AS
CHECKED KWB

0 10 20 40
HORIZONTAL
SCALE IN FEET

L:\Projects\000T\03322_LAK-2-0-00\Drawings\HWY\PP\21778gF024.dgn 25-APR-2006 3:09 PM gsvlgr



PROFILE
STA. 222+25 TO 228+00

LAK-2-0.00

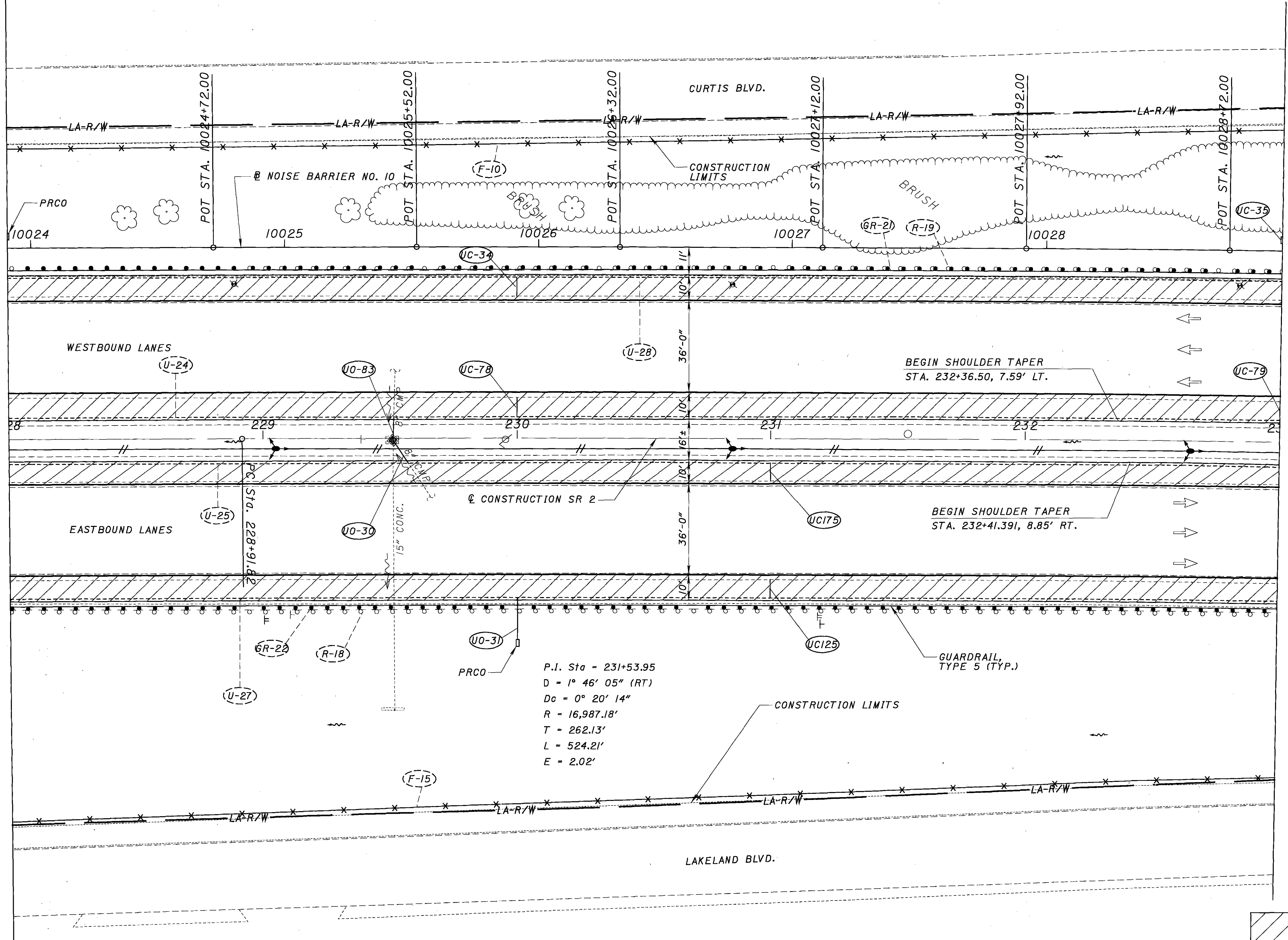
PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS
 CHECKED KWB

157
524

L:\Projects\0001\03322_LAK-2-0.00\Drawings\HWY\PP\21778gp025.dgn 25-APR-2006 3:06 PM asvilar

STATE ROUTE 2
MATCH LINE STA. 228+00
SEE SHEET 156



P.I. Sta = 231+53.95
 D = 1° 46' 05" (RT)
 Dc = 0° 20' 14"
 R = 16,987.18'
 T = 262.13'
 L = 524.21'
 E = 2.02'

FULL DEPTH PAVEMENT

STATE ROUTE 2
MATCH LINE STA. 233+00
SEE SHEET 160

CALCULATED AS
CHECKED KWB

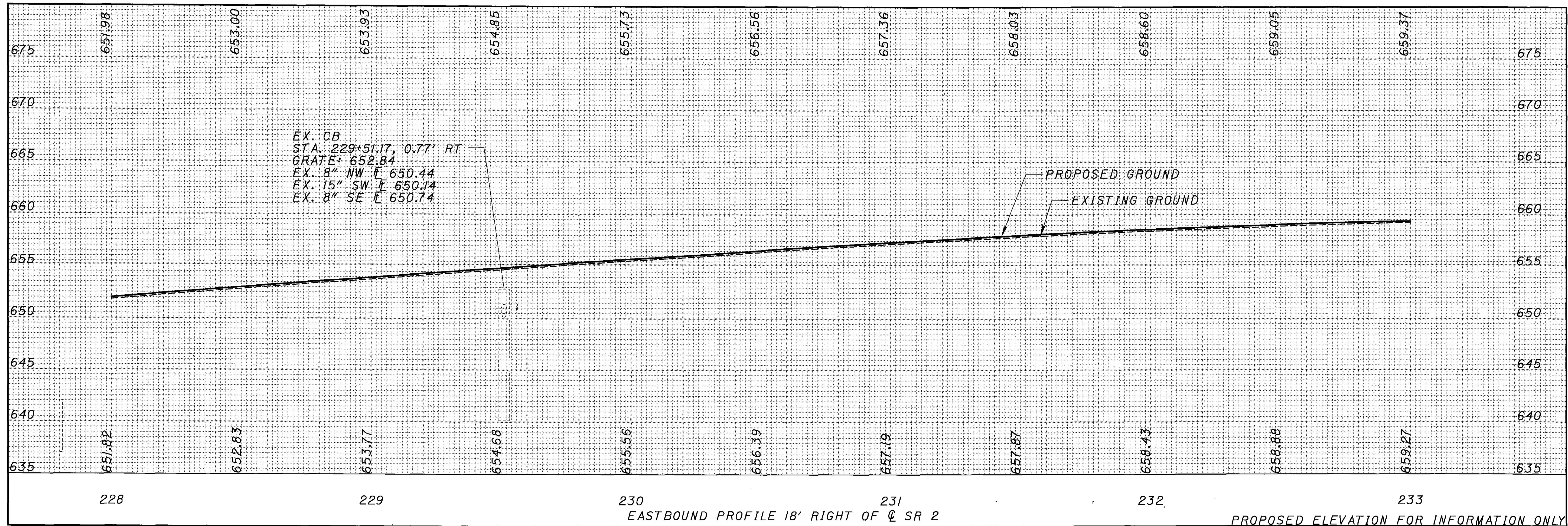
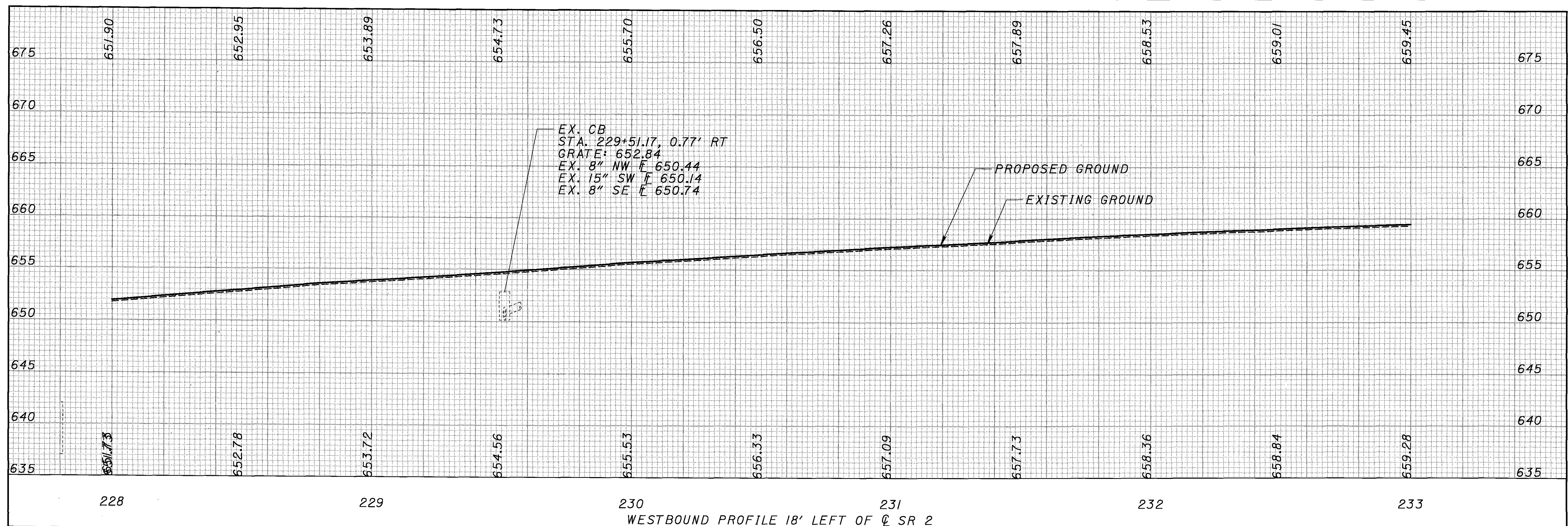
0 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 228+00 TO STA. 233+00

LAK-2-0.00

158
524

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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS

CHECKED KNB

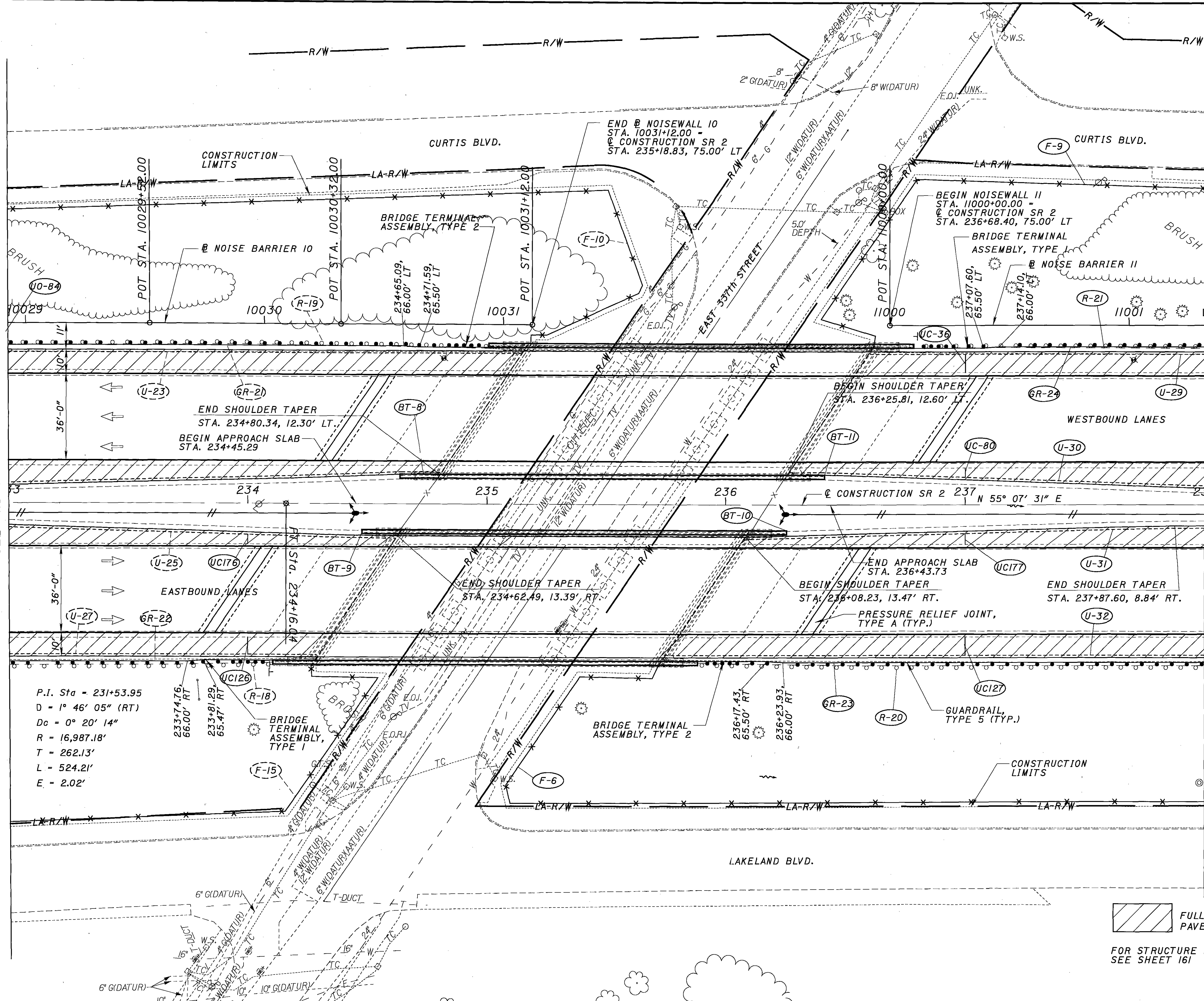
PROFILE STA. 228+00 TO 233+00

LAK-2-0.00

159
524

L:\Projects\001\03322_LAK-2-0.00\Drawings\HWY\PP\21778gp026.dgn 25-APR-2006 3:06 PM asvilar

STATE ROUTE 2
MATCH LINE STA. 233+00
SEE SHEET 158



P.I. Sta = 231+53.95
 D = 1° 46' 05" (RT)
 Dc = 0° 20' 14"
 R = 16,987.18'
 T = 262.13'
 L = 524.21'
 E = 2.02'

FULL DEPTH PAVEMENT

FOR STRUCTURE DATA,
SEE SHEET 161

CALCULATED AS
CHECKED KWB

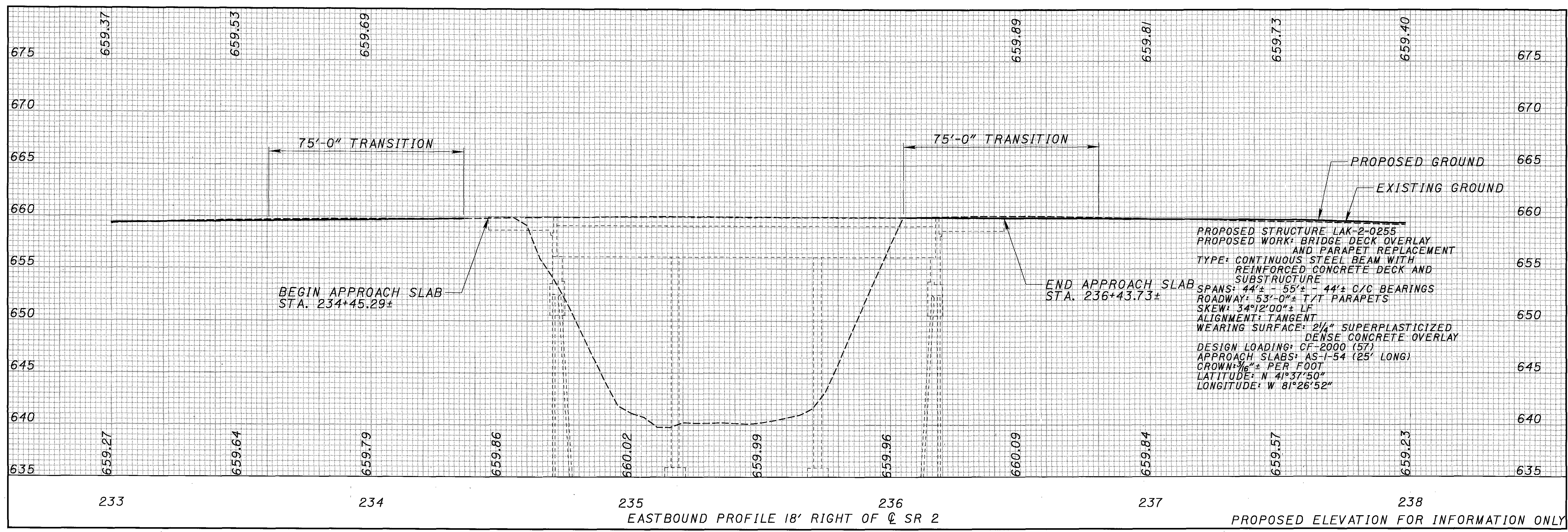
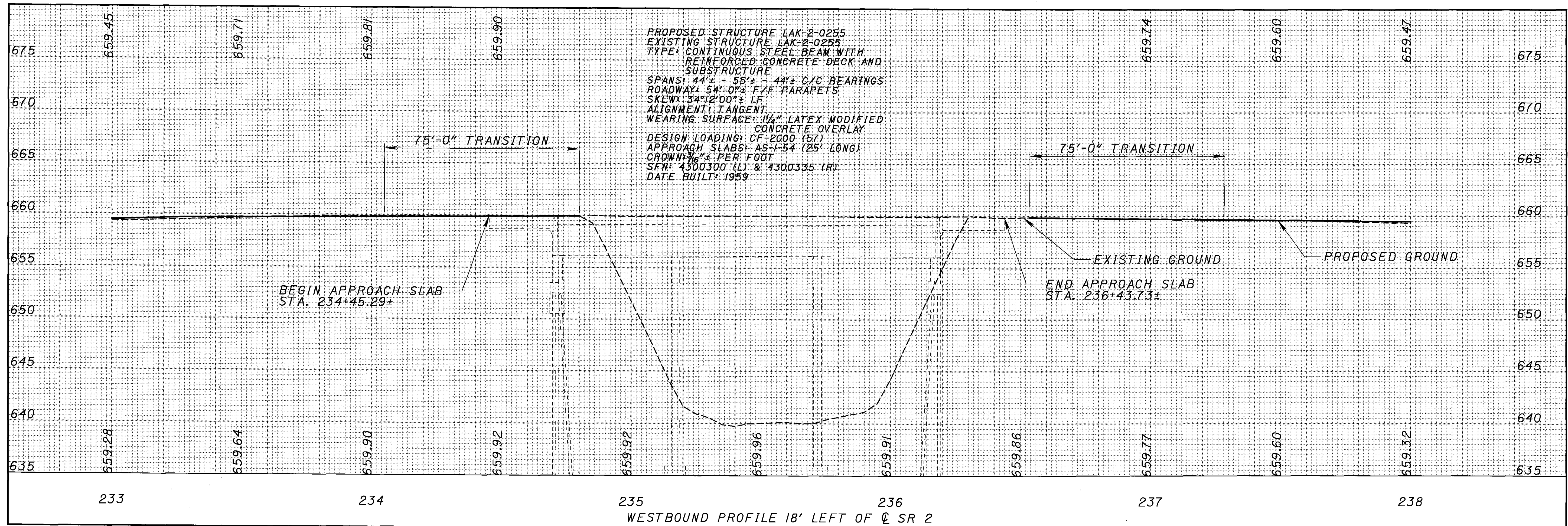
0 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 233+00 TO STA. 238+00

LAK-2-0.00

STATE ROUTE 2
MATCH LINE STA. 238+00
SEE SHEET 162

L:\Projects\000T\0322-LAK-2-0.00\Drawings\HWY\PP\2178g.f026.dgn 25-APR-2006 3:09 PM csw/lar



CALCULATED AS
 CHECKED KMB

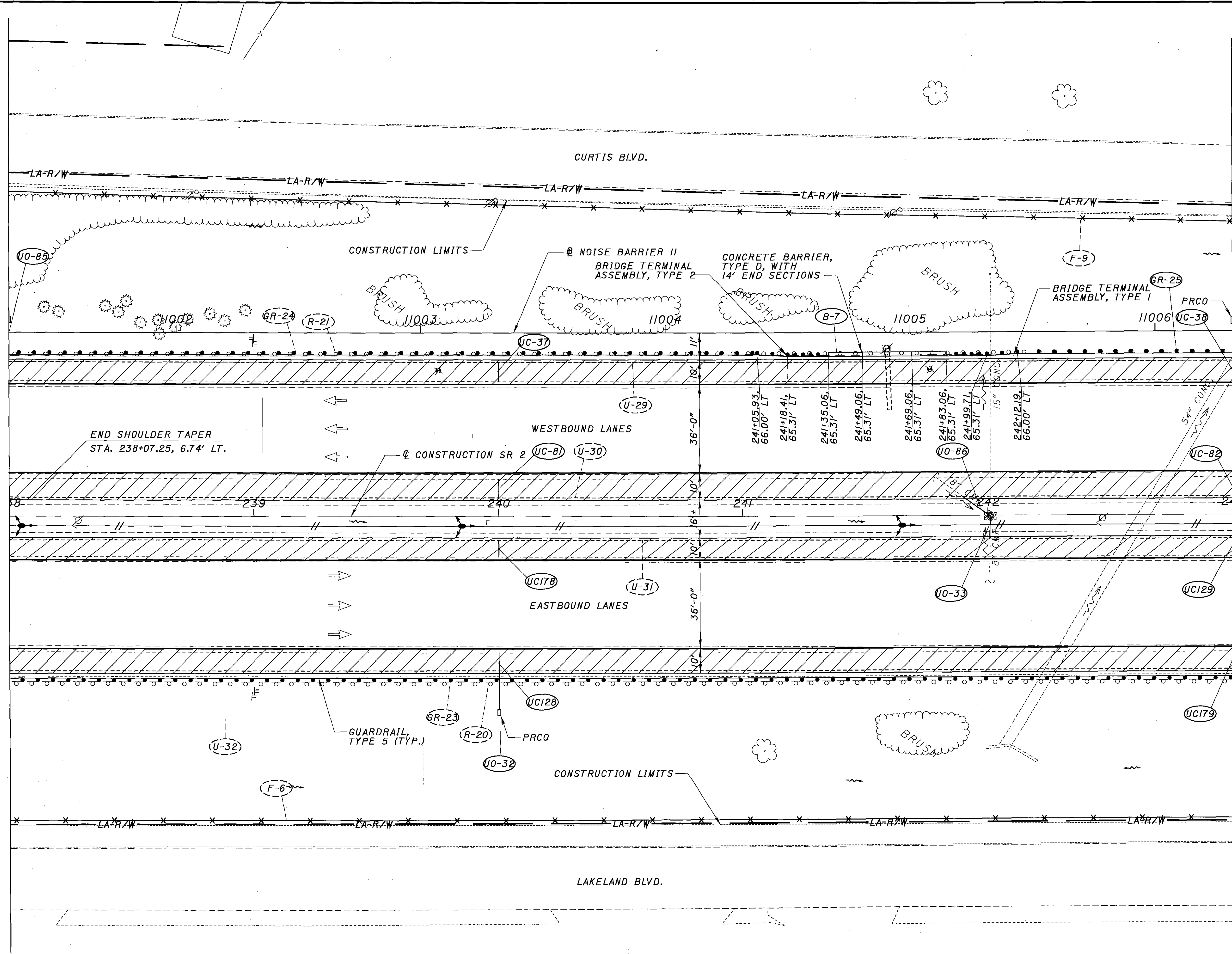
PROFILE
 STA. 233+00 TO 238+00

LAK-2-0.00

161
524

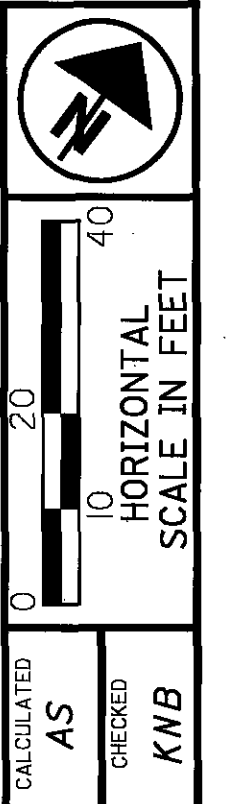
L:\Projects\ODOT\03322_LAK-2-0.00\Drawings\HWY\PP\21778p027.dgn 25-APR-2006 3:06 PM asvilgr

STATE ROUTE 2
MATCH LINE STA. 238+00
SEE SHEET 160



STATE ROUTE 2
MATCH LINE STA. 243+00
SEE SHEET 164

FULL DEPTH PAVEMENT



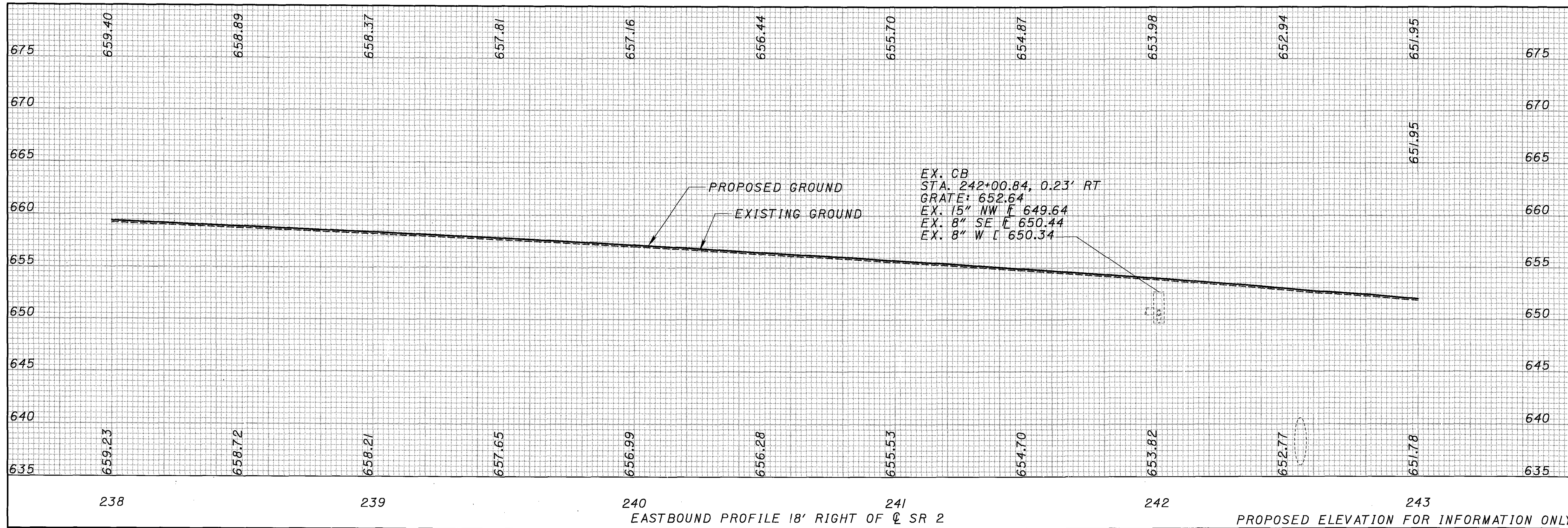
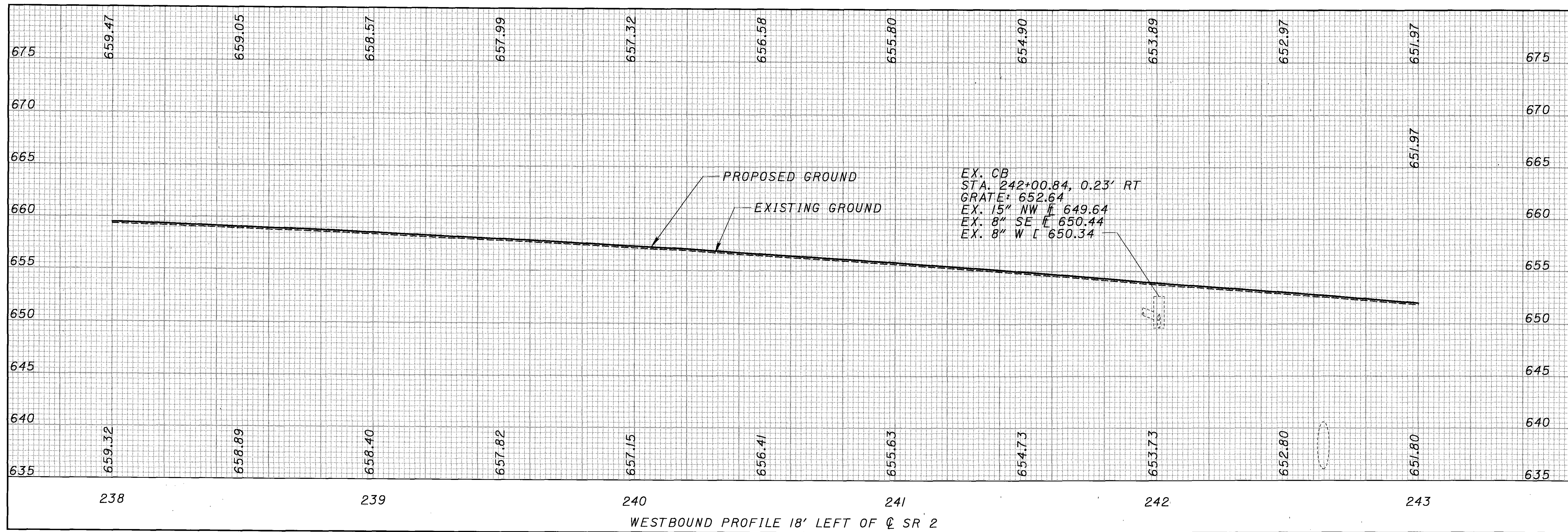
CALCULATED	AS
CHECKED	KWB

PLAN - MAINLINE SR 2
STA. 238+00 TO STA. 243+00

LAK-2-0.00

162
524

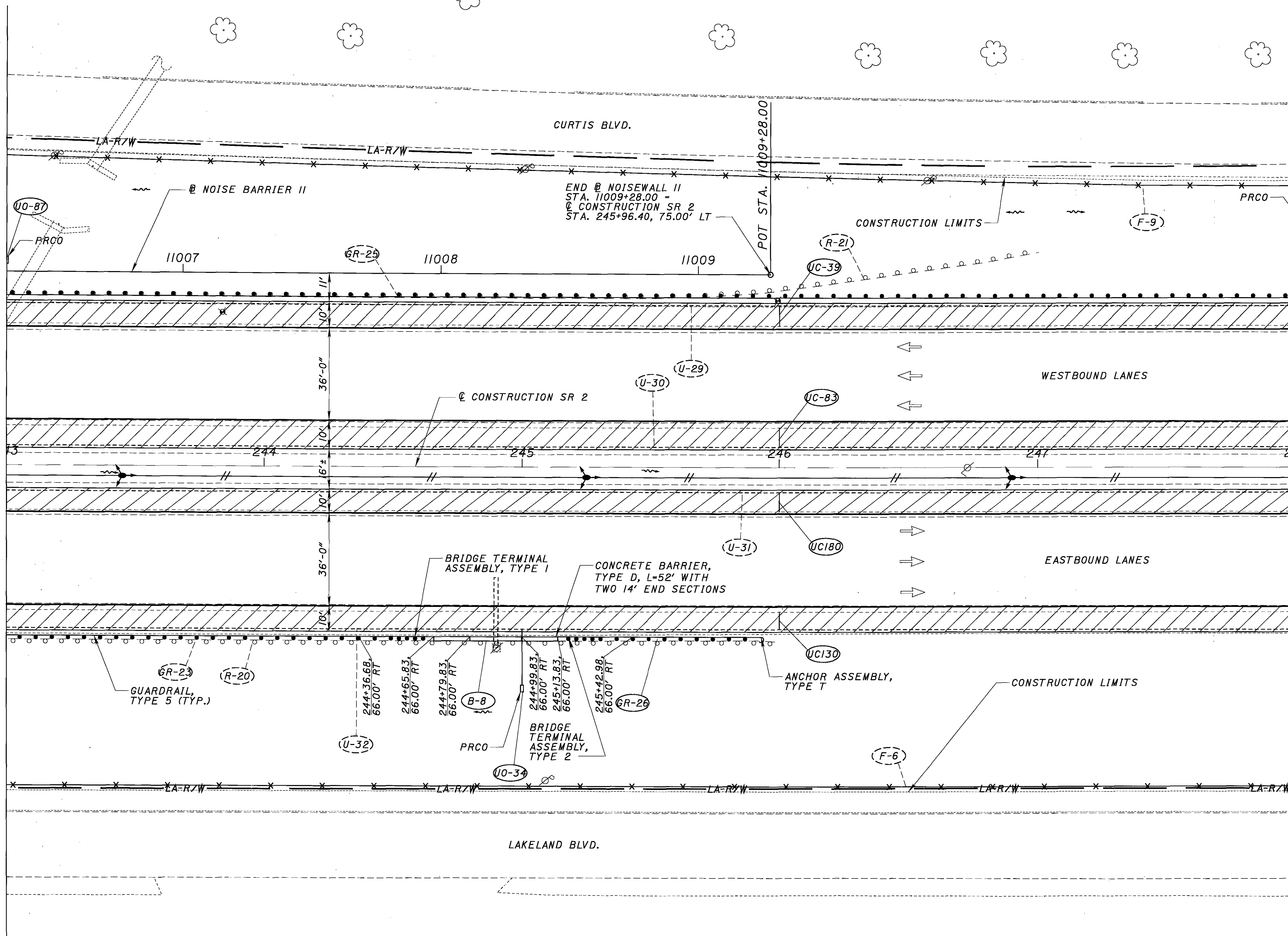
L:\Projects\0001\03322_LAK-2-0.00\Drawings\HWY\PP\2178gF027.dgn 25-APR-2006 3:09 PM asvllar



CALCULATED AS	PROFILE
CHECKED KWB	STA. 238+00 TO 243+00
LAK-2-0.00	
163 524	

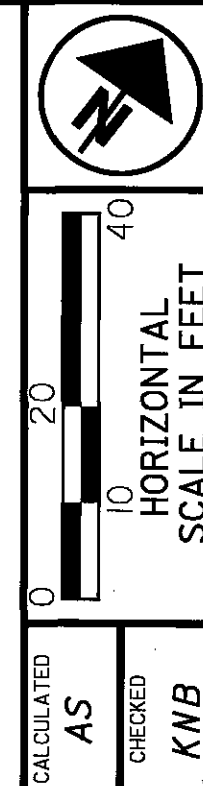
L:\Projects\0001\03322_LAK-2-0.00\Drawings\HWY\PP\21778p028.dgn 25-APR-2006 3:07 PM asvilar

STATE ROUTE 2
MATCH LINE STA. 243+00
SEE SHEET 162



STATE ROUTE 2
MATCH LINE STA. 248+00
SEE SHEET 166

FULL DEPTH
PAVEMENT



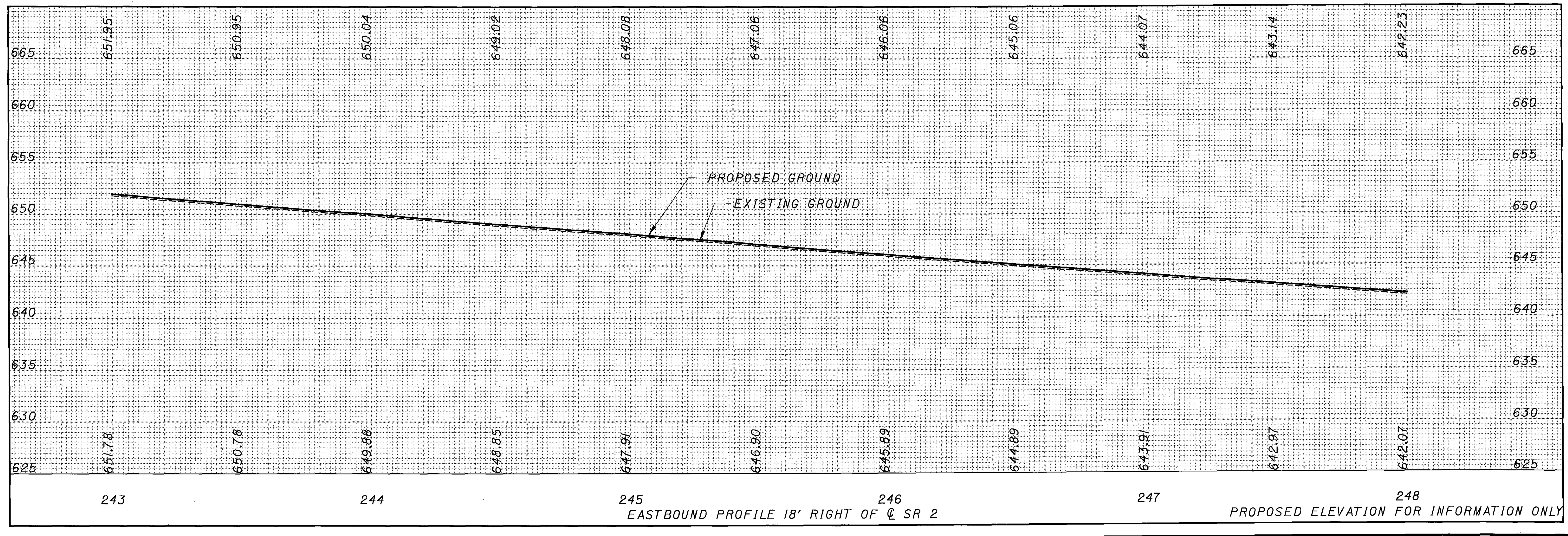
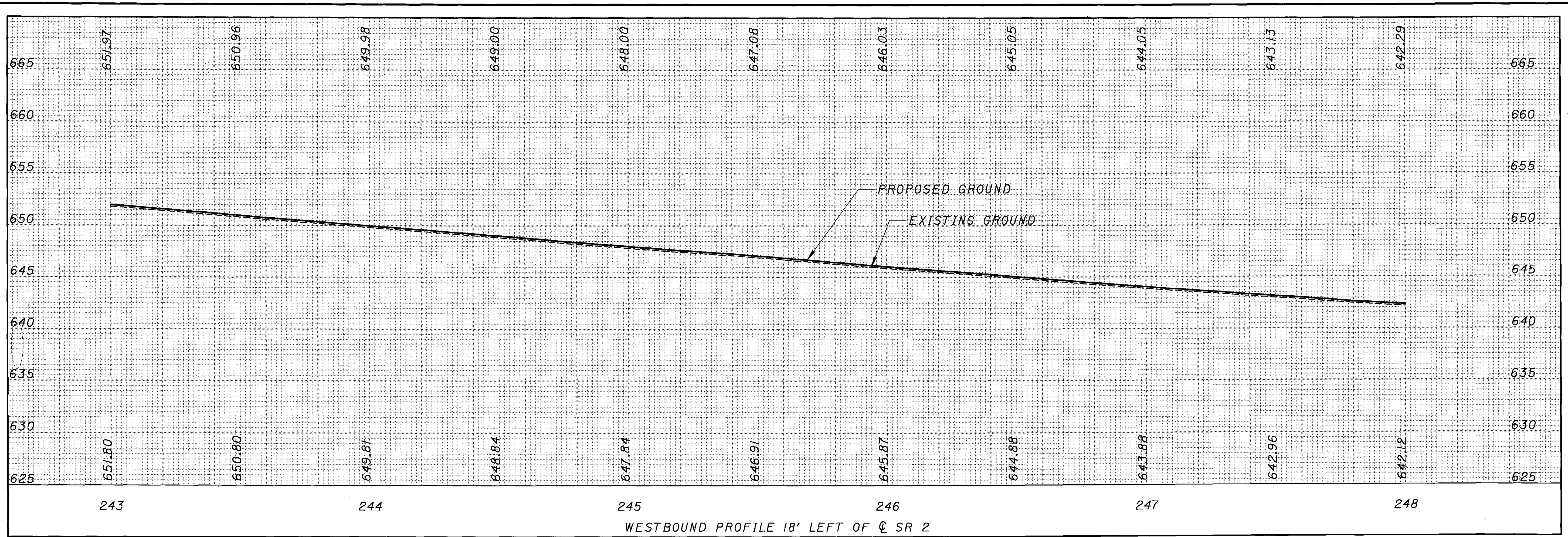
CALCULATED AS
CHECKED KWB

PLAN - MAINLINE SR 2
STA. 243+00 TO STA. 248+00

LAK-2-0.00

164
524

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CALCULATED	AS
CHECKED	KNB

PROFILE
STA. 243+00 TO 248+00

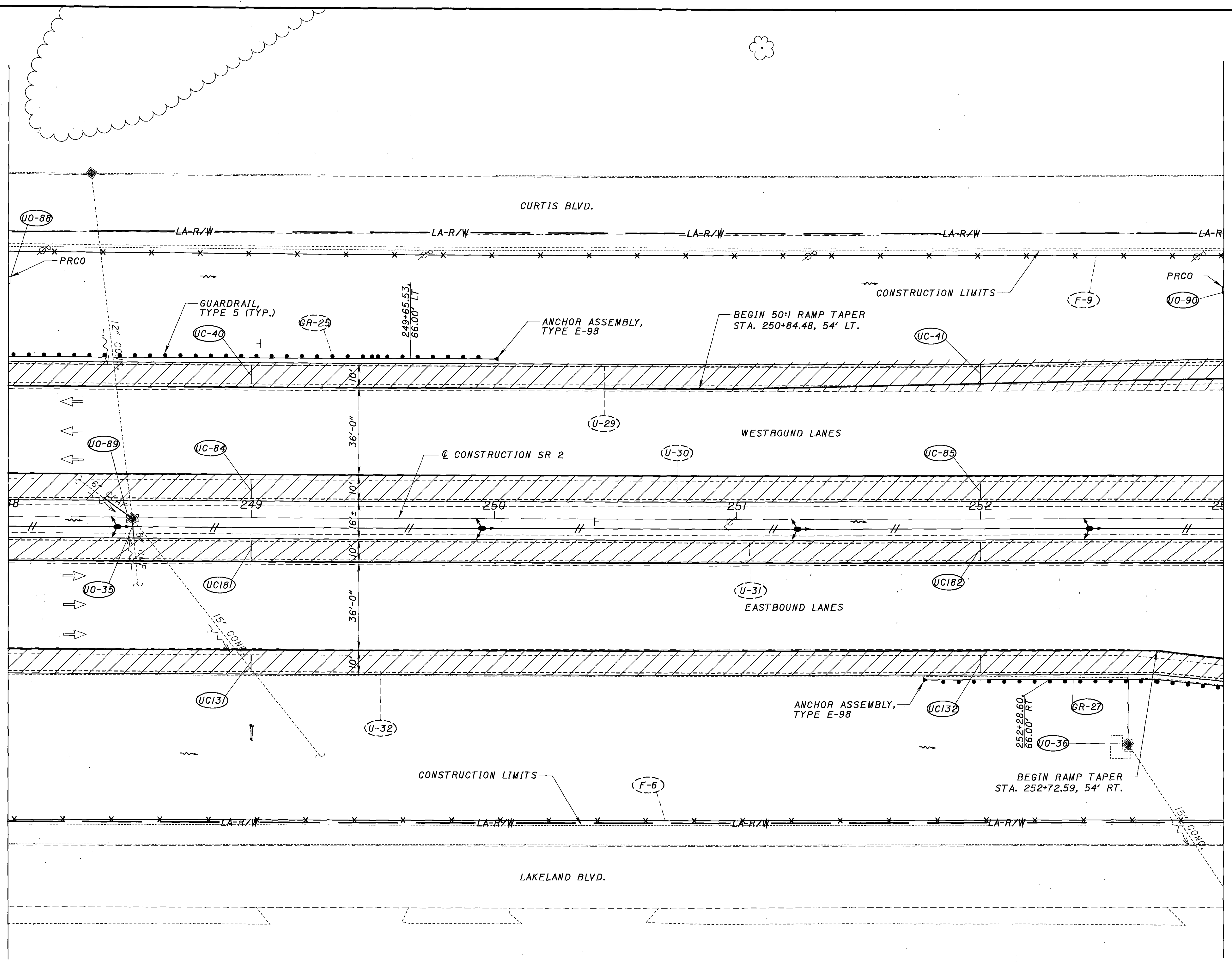
LAK-2-0.00

165
524

L:\Projects\000T\03322_LAK-2-0-00\Drawings\HWY\PP\21778gp029.dgn 25-APR-2006 3:07 PM asvilar

STATE ROUTE 2
MATCH LINE STA. 248+00
SEE SHEET 164

STATE ROUTE 2
MATCH LINE STA. 253+00
SEE SHEET 168



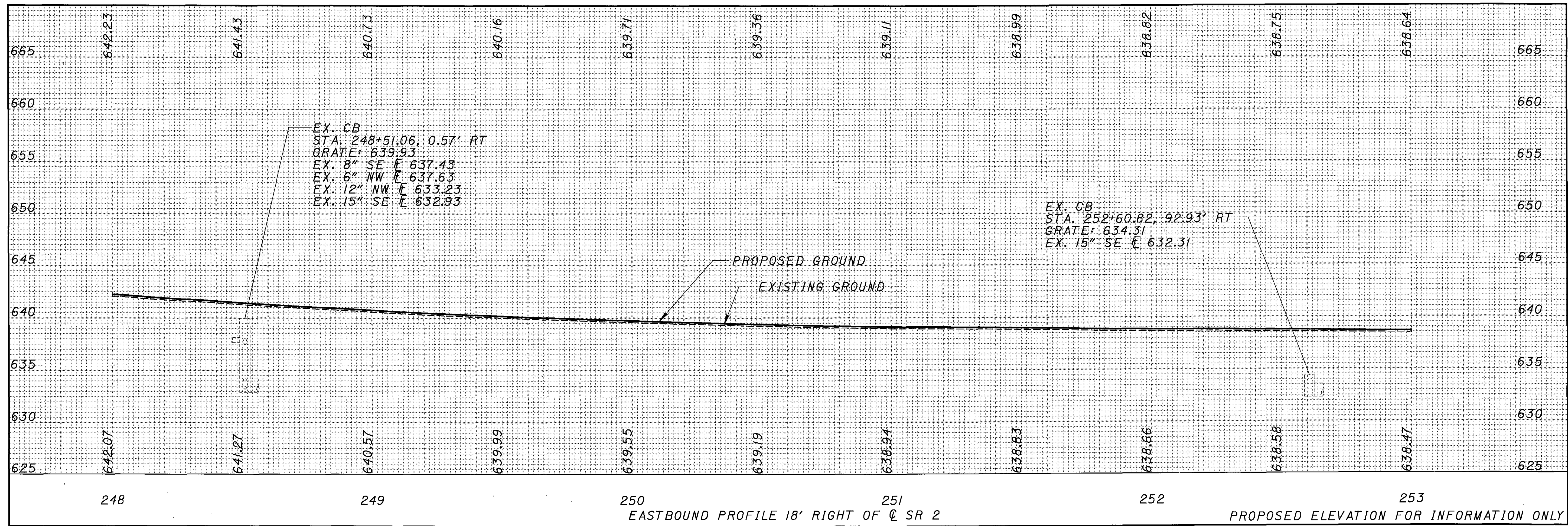
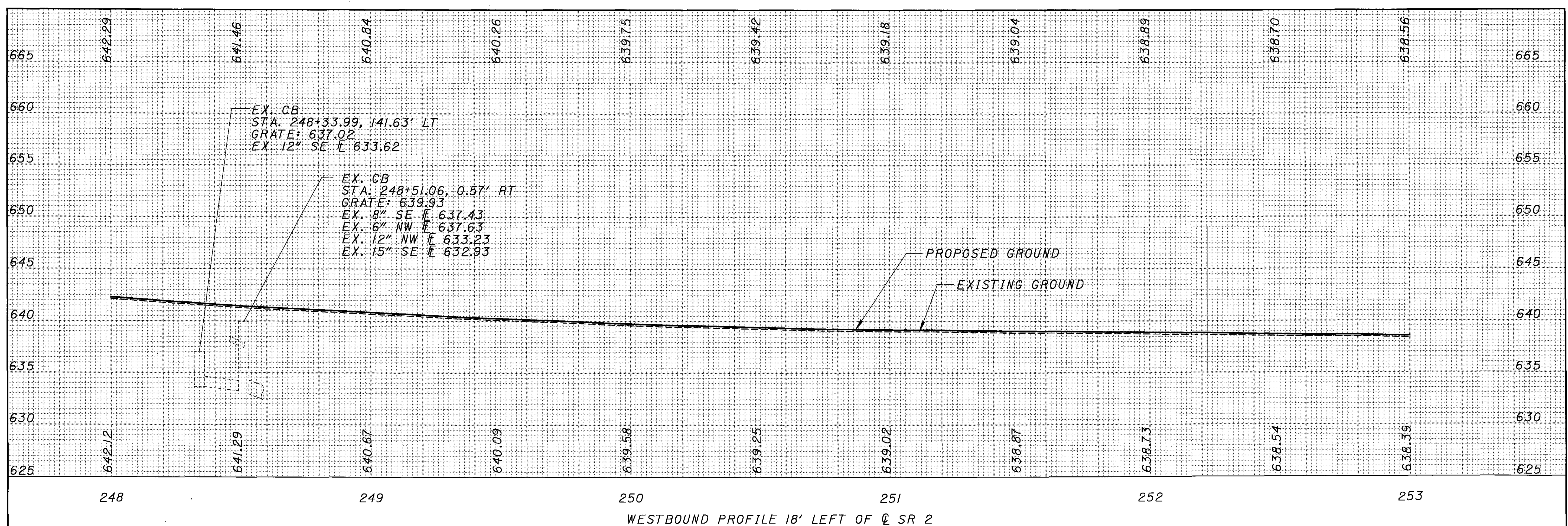
CALCULATED AS
CHECKED KWB

0 10 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 248+00 TO STA. 253+00

LAK-2-0.00

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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS
 CHECKED KNB

PROFILE
STA. 248+00 TO 253+00

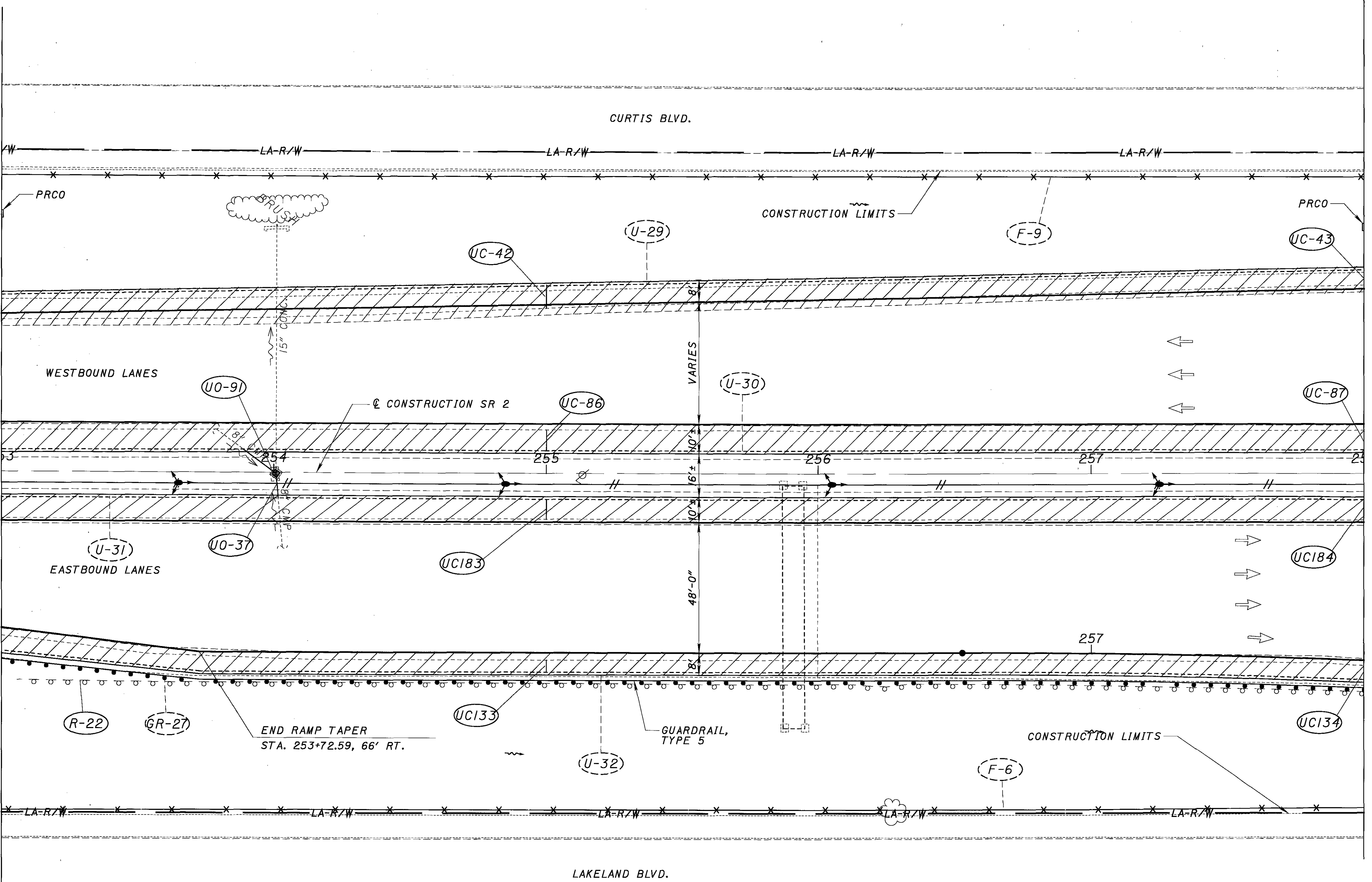
LAK-2-0.00

167
524

L:\Projects\000T\03322.LAK-2-0.00\Drawings\HWY\PP\21778p030.dgn 25-APR-2006 3:07 PM asvilar

FULL DEPTH PAVEMENT

STATE ROUTE 2
MATCH LINE STA. 253+00
SEE SHEET 166



STATE ROUTE 2
MATCH LINE STA. 258+00
SEE SHEET 170

P.I. Sta = 259+32.18
 D = 8° 22' 00" (RT)
 Dc = 1° 30' 00"
 R = 3,819.72'
 T = 279.39'
 L = 557.78'
 E = 10.20'

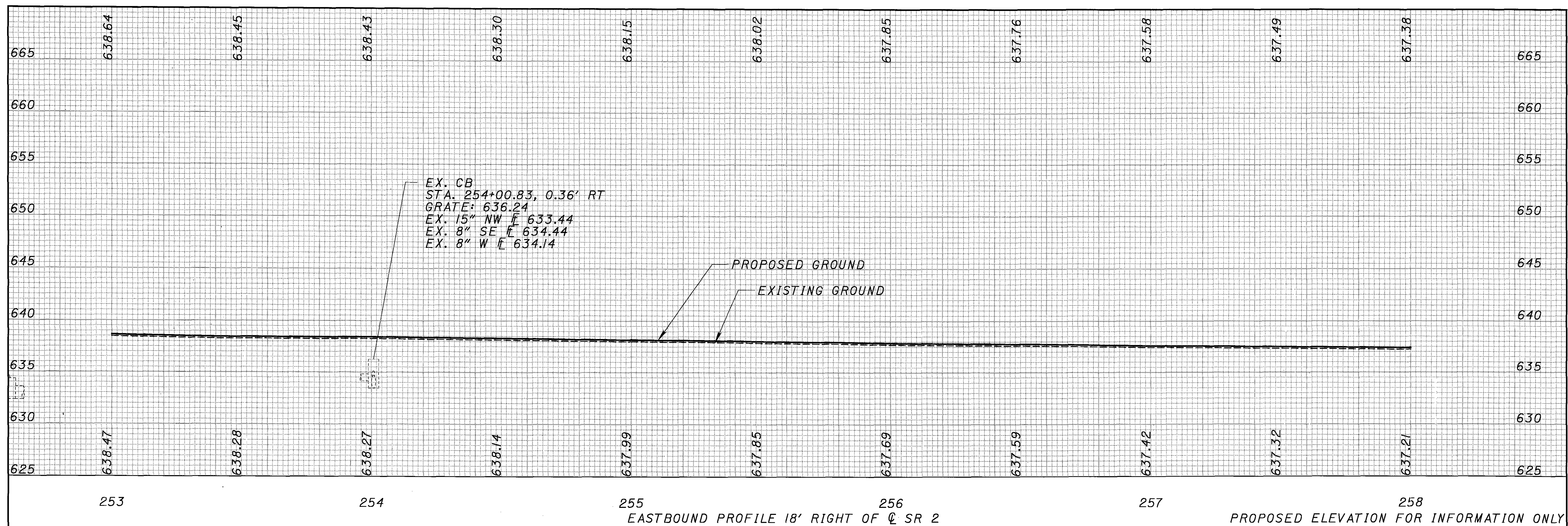
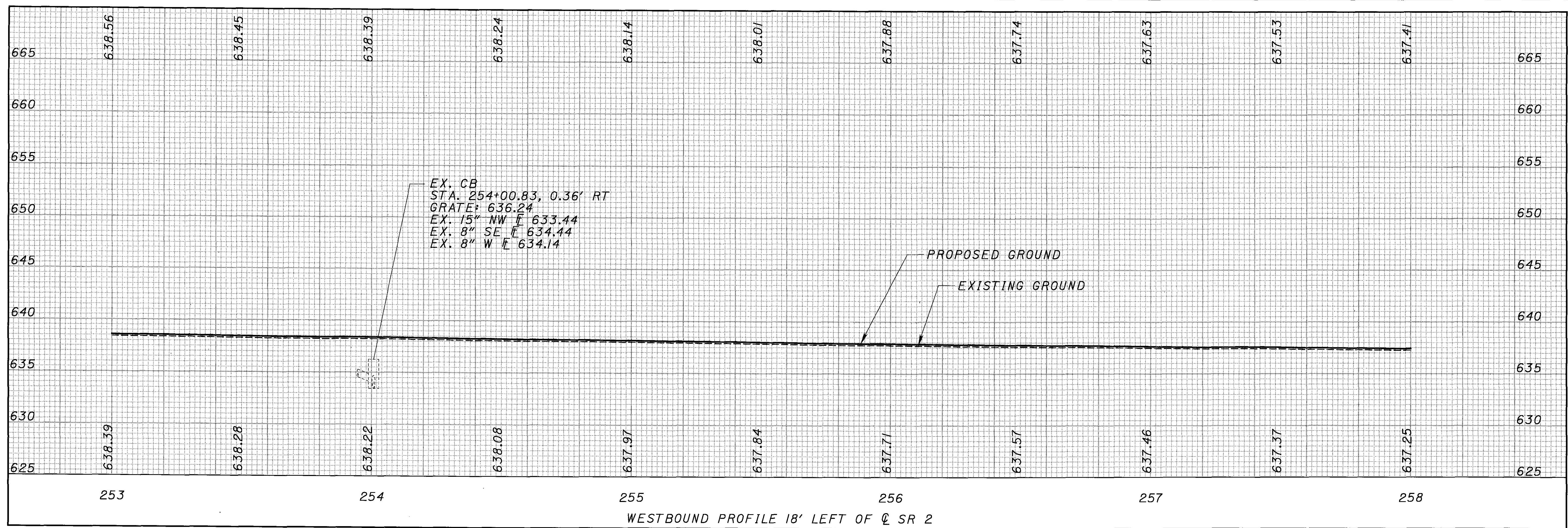


CALCULATED AS
 CHECKED KWB

PLAN - MAINLINE SR 2
STA. 253+00 TO STA. 258+00

LAK-2-0.00

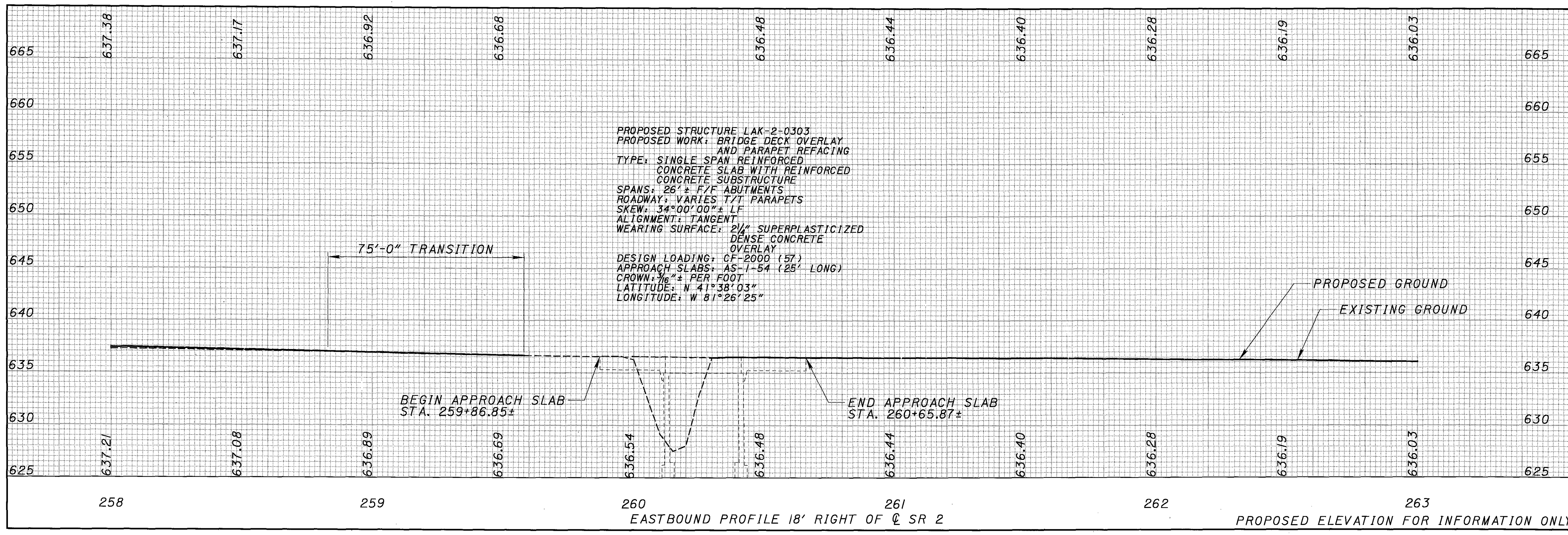
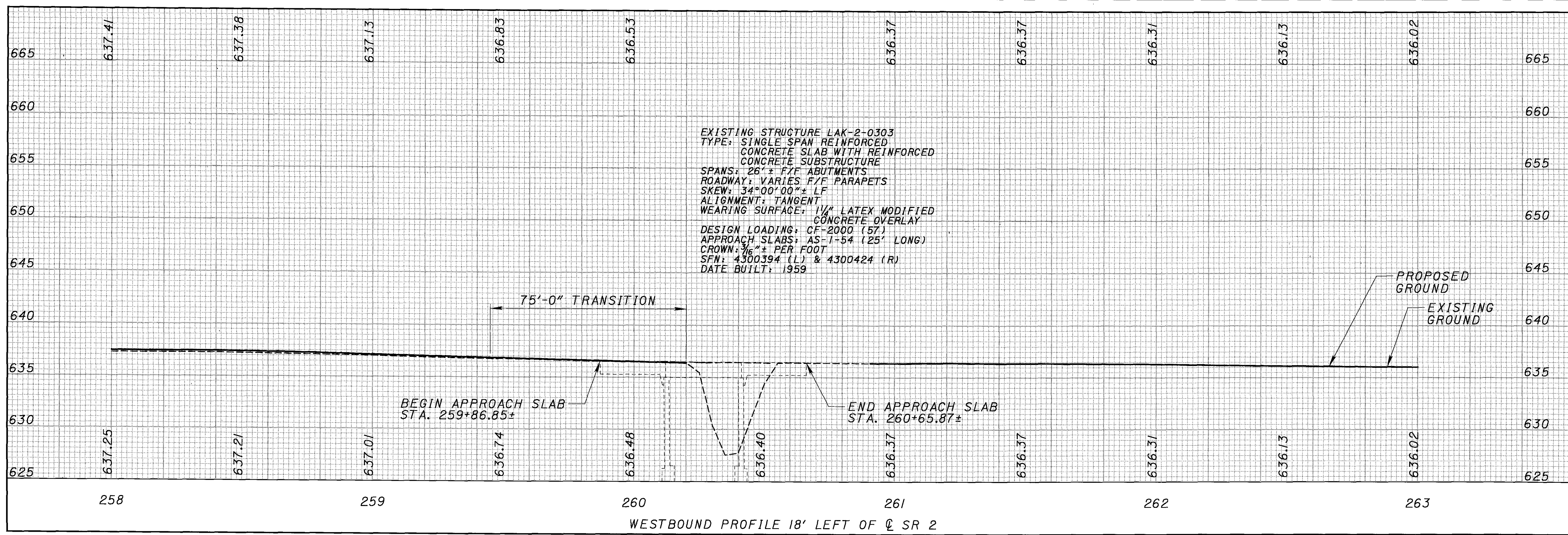
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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS	PROFILE STA. 253+00 TO 258+00
CHECKED KMB	LAK-2-0.00
	169 524

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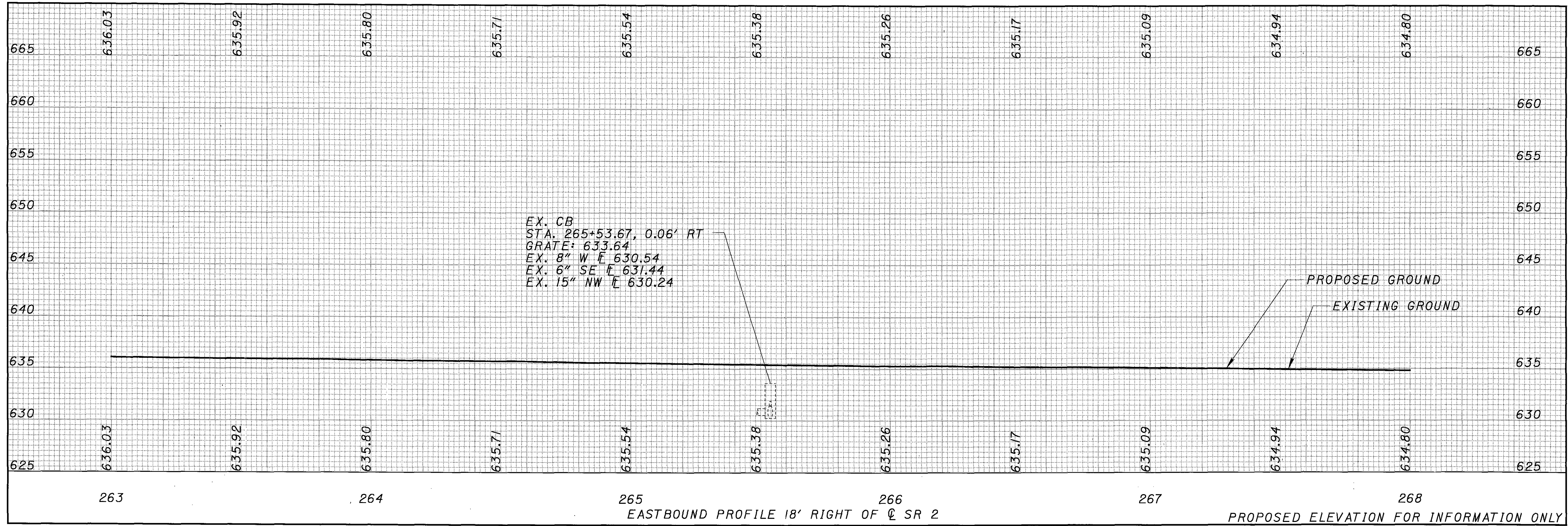
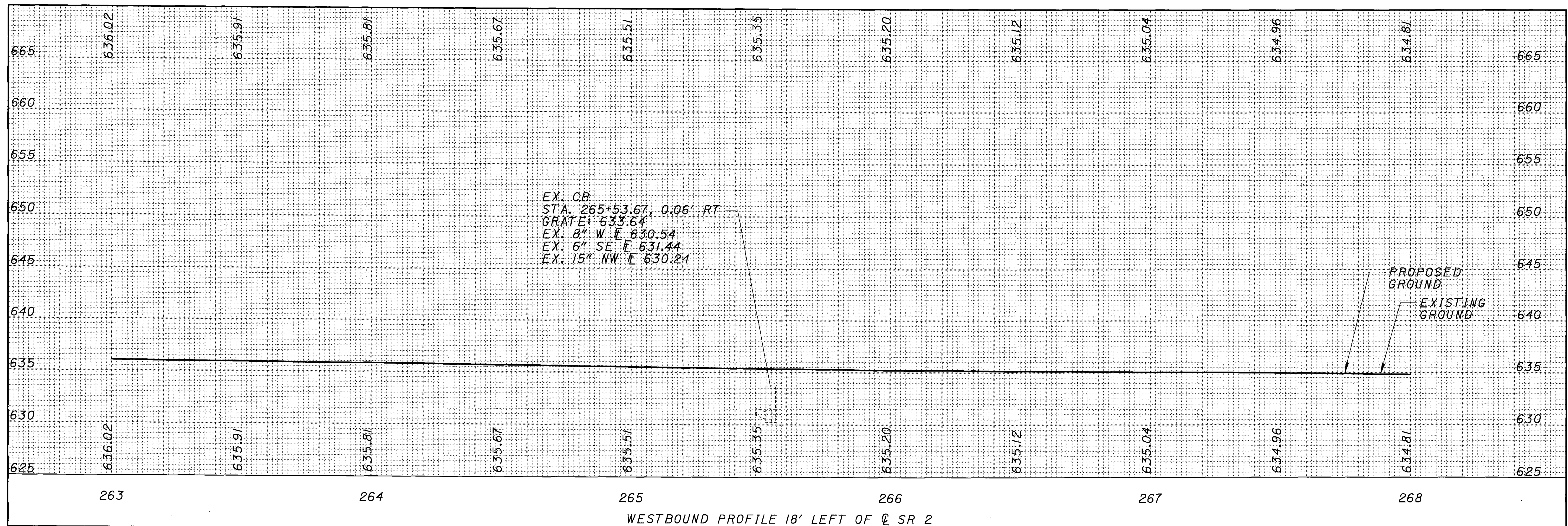
CALCULATED AS
 CHECKED KMB

PROFILE
STA. 258+00 TO 263+00

LAK-2-0.00

171
 524

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PROPOSED ELEVATION FOR INFORMATION ONLY

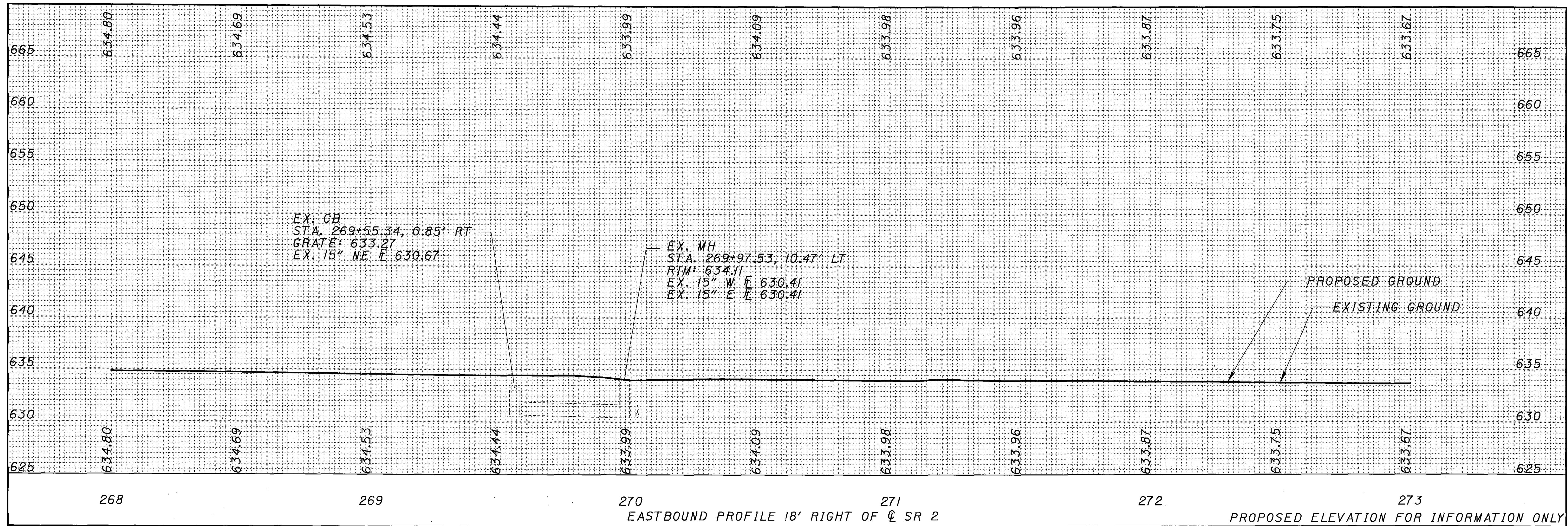
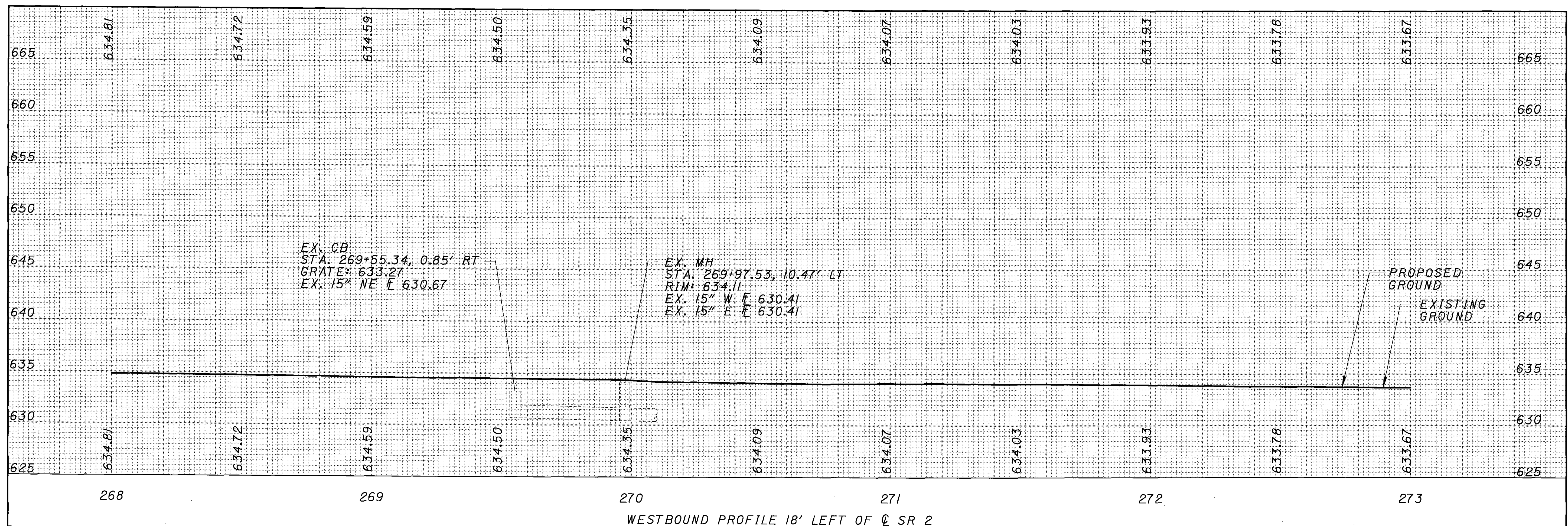
CALCULATED AS
CHECKED KNB

PROFILE
STA. 263+00 TO 268+00

LAK-2-0.00

173
524

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PROPOSED ELEVATION FOR INFORMATION ONLY

CALCULATED AS
CHECKED KMB

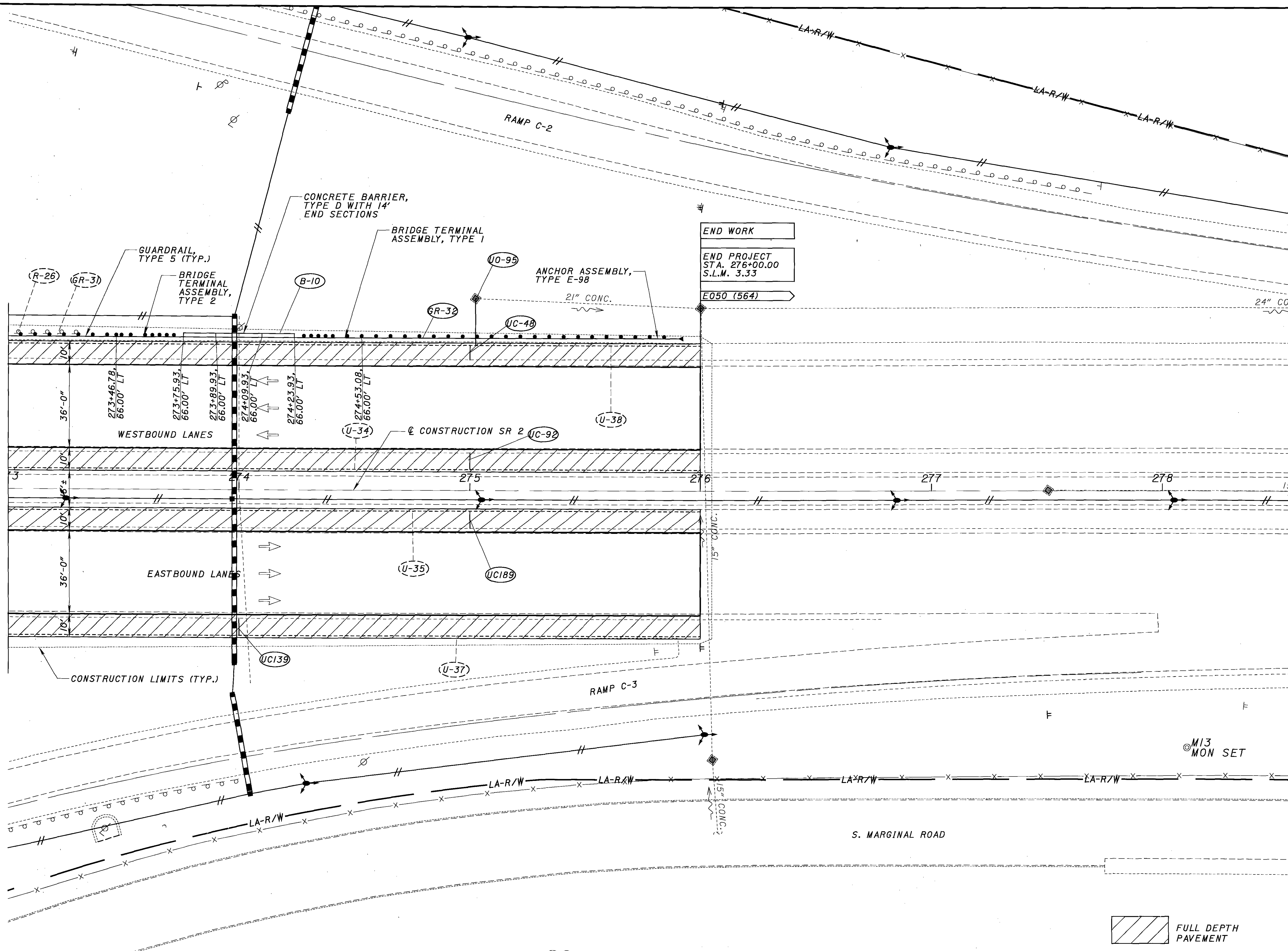
PROFILE
STA. 268+00 TO 273+00

LAK-2-0.00

175
524

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STATE ROUTE 2
MATCH LINE STA. 273+00
SEE SHEET 174



END WORK

END PROJECT
STA. 276+00.00
S.L.M. 3.33

E050 (564)

FULL DEPTH PAVEMENT

CALCULATED AS
CHECKED KWB

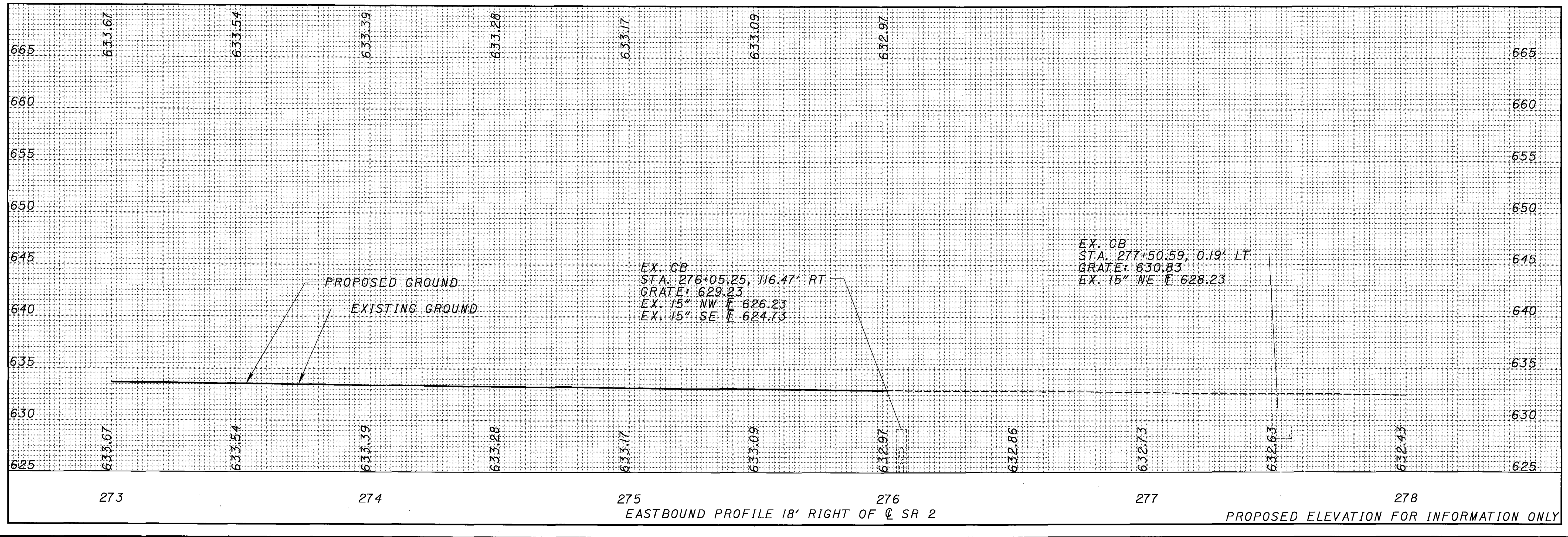
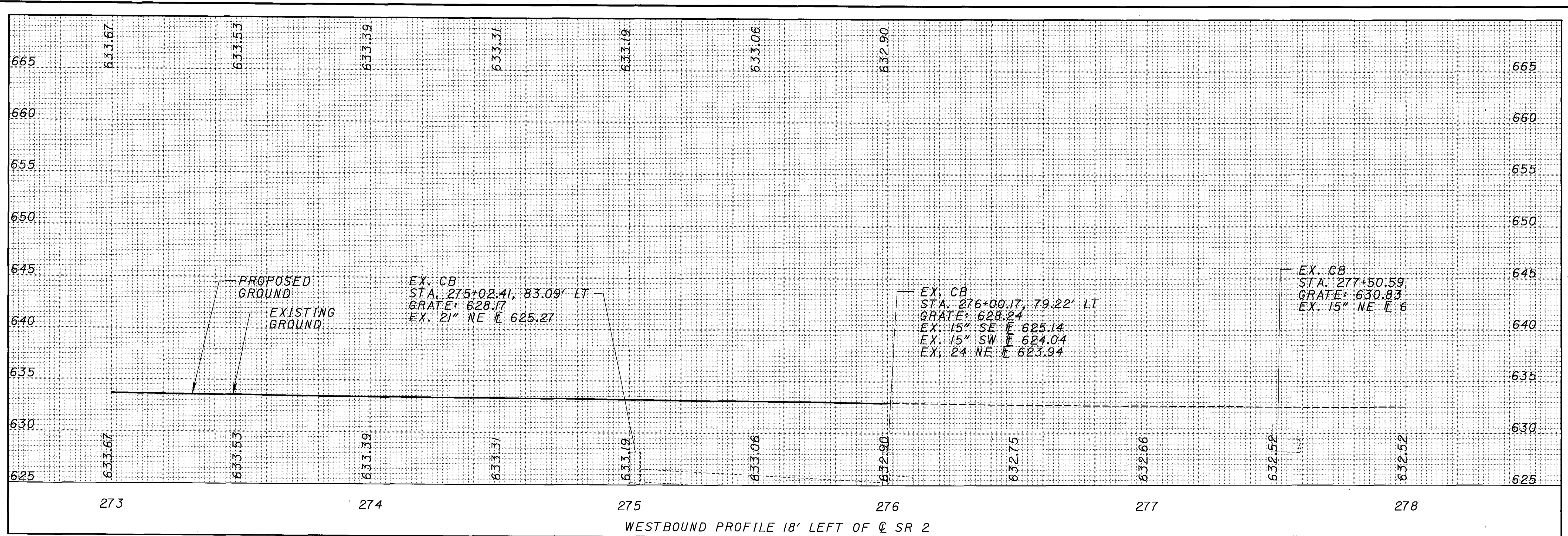
0 10 20 40
HORIZONTAL SCALE IN FEET

PLAN - MAINLINE SR 2
STA. 273+00 TO END PROJECT

LAK-2-0.00

176
524

L:\Projects\000T\03322-LAK-2-0-00\Drawings\HWY\PPV\2178gF034.dgn 25-APR-2006 3:09 PM gsvlor



CALCULATED AS

CHECKED KNB

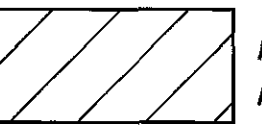
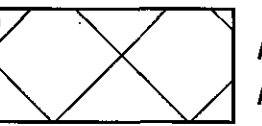
PROFILE STA. 273+00 TO 278+00

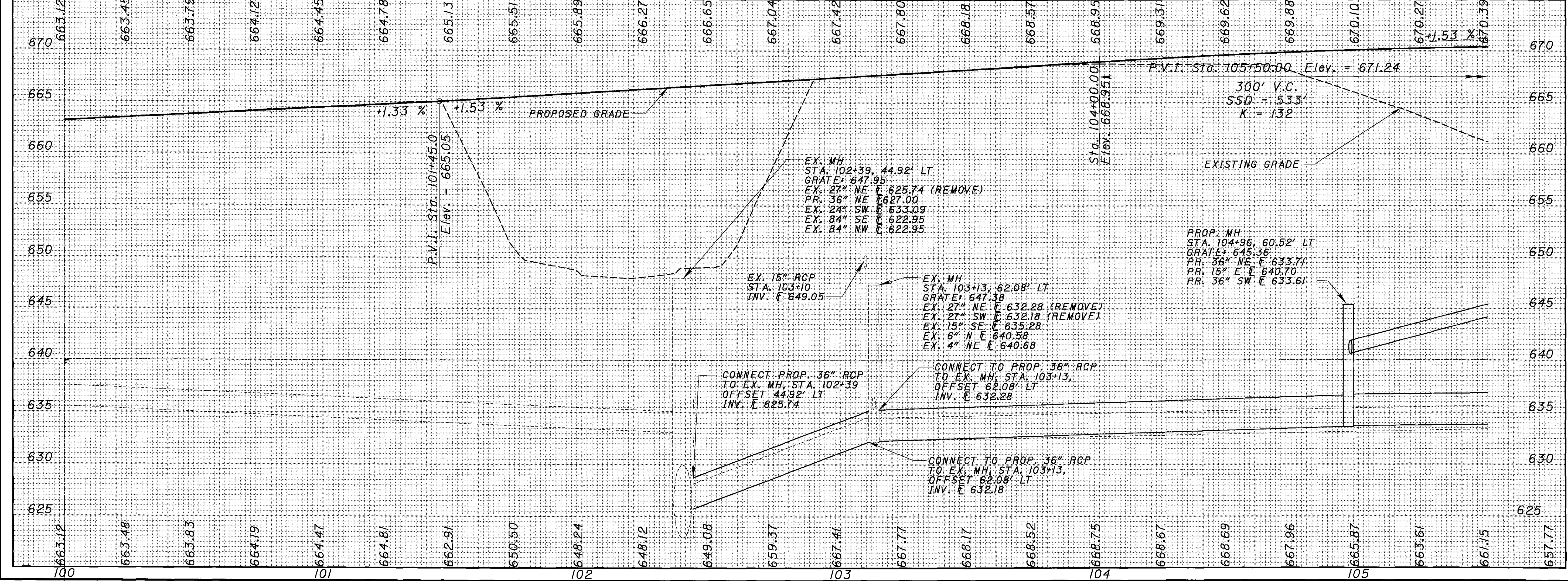
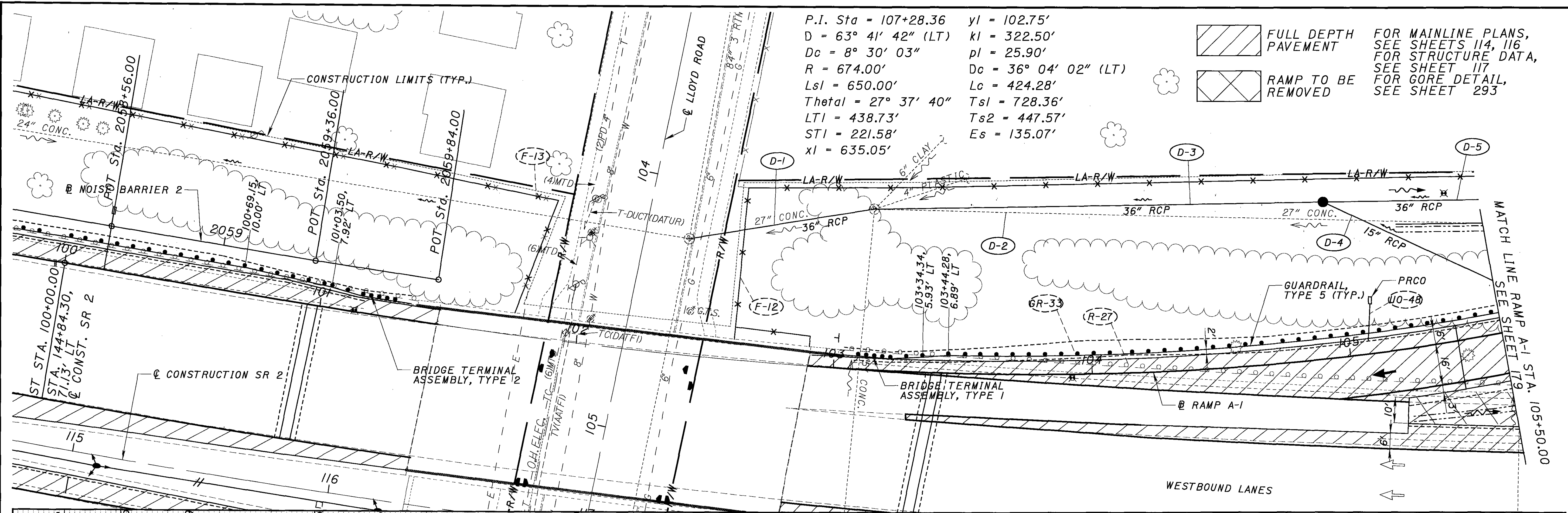
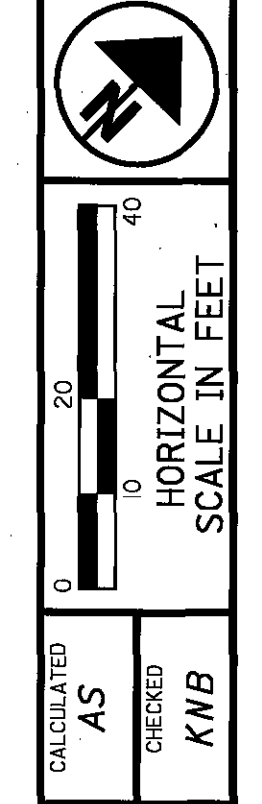
LAK-2-0-00

177
524

L:\Projects\000\T\03322_LAK-2-0.00\Drawings\HWY\PP\21778gp01.dgn 25-APR-2006 3:09 PM asvilar

P.I. Sta = 107+28.36 y1 = 102.75'
 D = 63° 41' 42" (LT) kl = 322.50'
 Dc = 8° 30' 03" pl = 25.90'
 R = 674.00' Dc = 36° 04' 02" (LT)
 Lsl = 650.00' Lc = 424.28'
 Theta1 = 27° 37' 40" Tsl = 728.36'
 LTI = 438.73' Ts2 = 447.57'
 STI = 221.58' Es = 135.07'
 xl = 635.05'


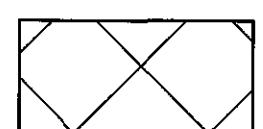
 FULL DEPTH PAVEMENT FOR MAINLINE PLANS, SEE SHEETS 114, 116
 RAMP TO BE REMOVED FOR STRUCTURE DATA, SEE SHEET 117
 FOR GORE DETAIL, SEE SHEET 293



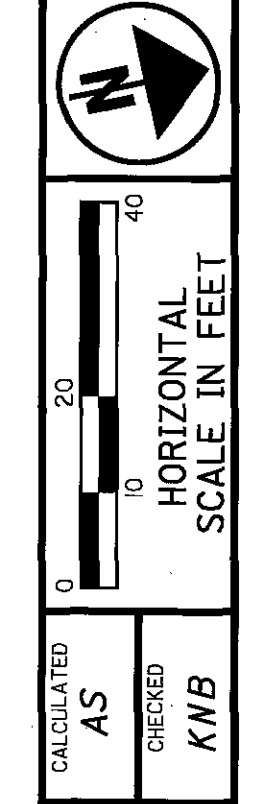
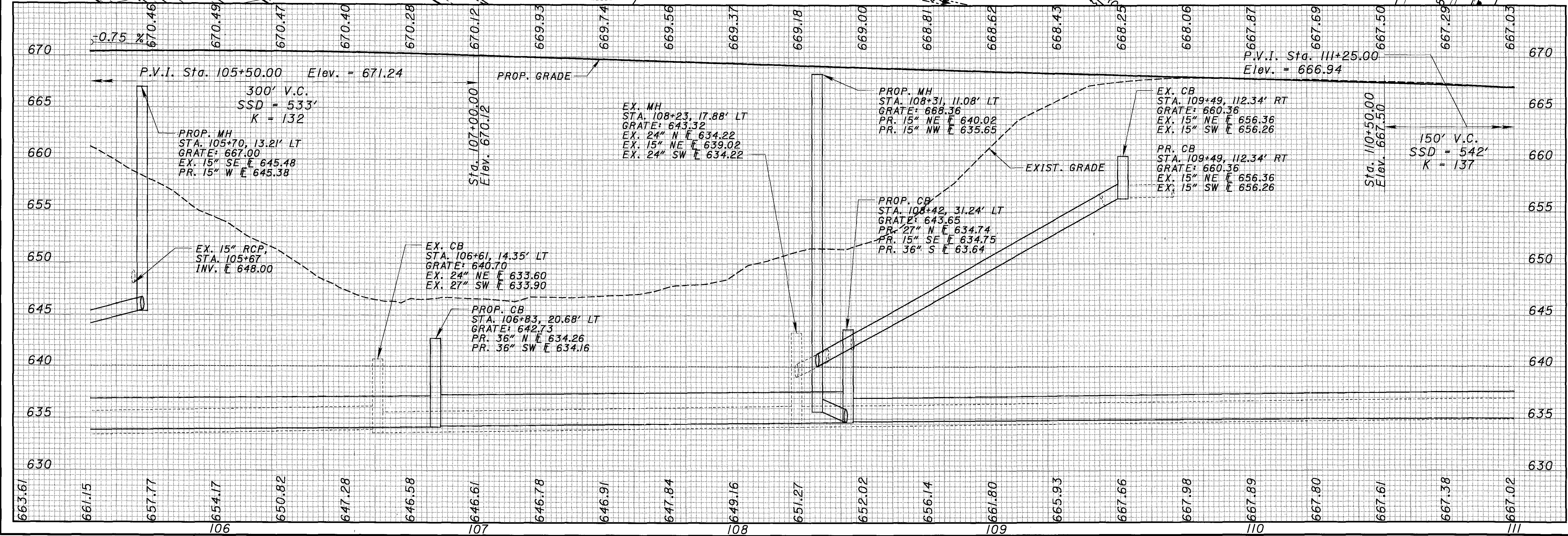
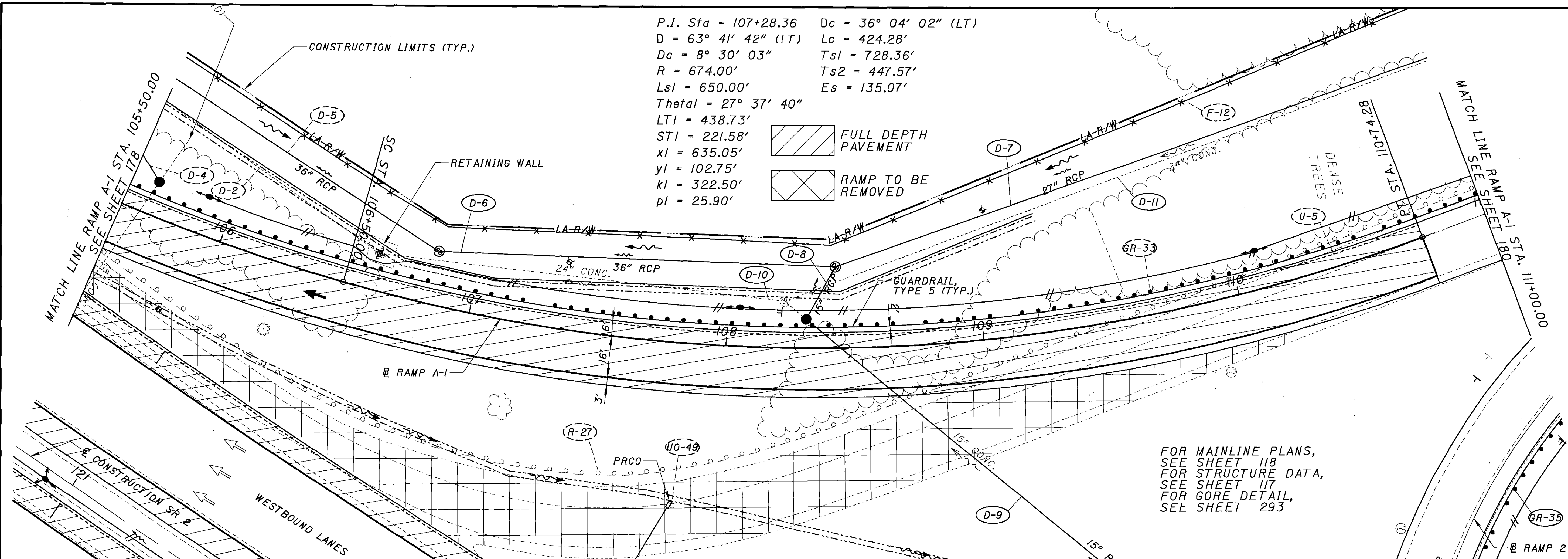
PLAN AND PROFILE - RAMP A-1
 STA. 100+00 TO 105+50

LAK-2-0.00

P.I. Sta = 107+28.36 Dc = 36° 04' 02" (LT)
 D = 63° 41' 42" (LT) Lc = 424.28'
 Dc = 8° 30' 03" Tsl = 728.36'
 R = 674.00' Ts2 = 447.57'
 Lsl = 650.00' Es = 135.07'
 Theta1 = 27° 37' 40"
 LTI = 438.73'
 STI = 221.58'
 xl = 635.05'
 yl = 102.75'
 kl = 322.50'
 pl = 25.90'

 FULL DEPTH PAVEMENT
 RAMP TO BE REMOVED

FOR MAINLINE PLANS,
 SEE SHEET 118
 FOR STRUCTURE DATA,
 SEE SHEET 117
 FOR GORE DETAIL,
 SEE SHEET 293



CALCULATED AS
 CHECKED KWB

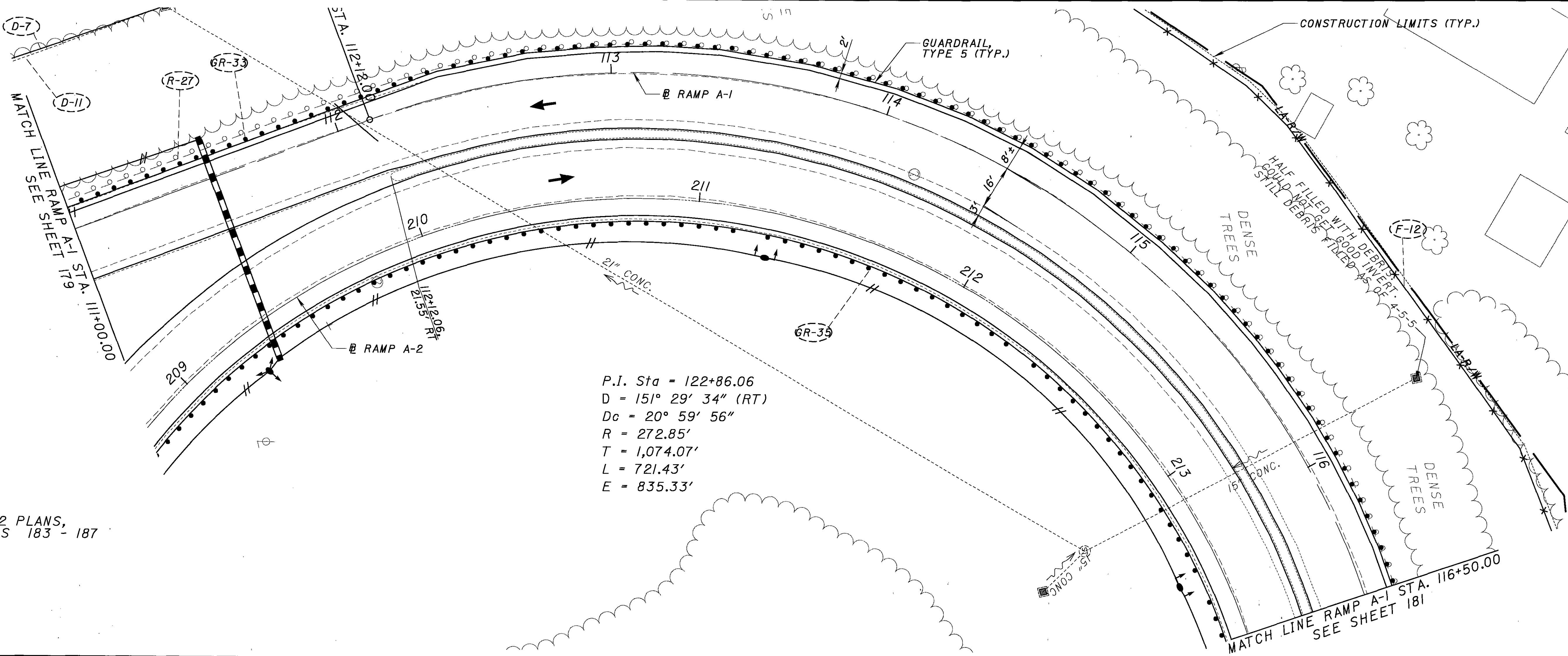
PLAN AND PROFILE - RAMP A-1
STA. 105+50.00 TO STA. 111+00.00

LAK-2-0.00

179
 524

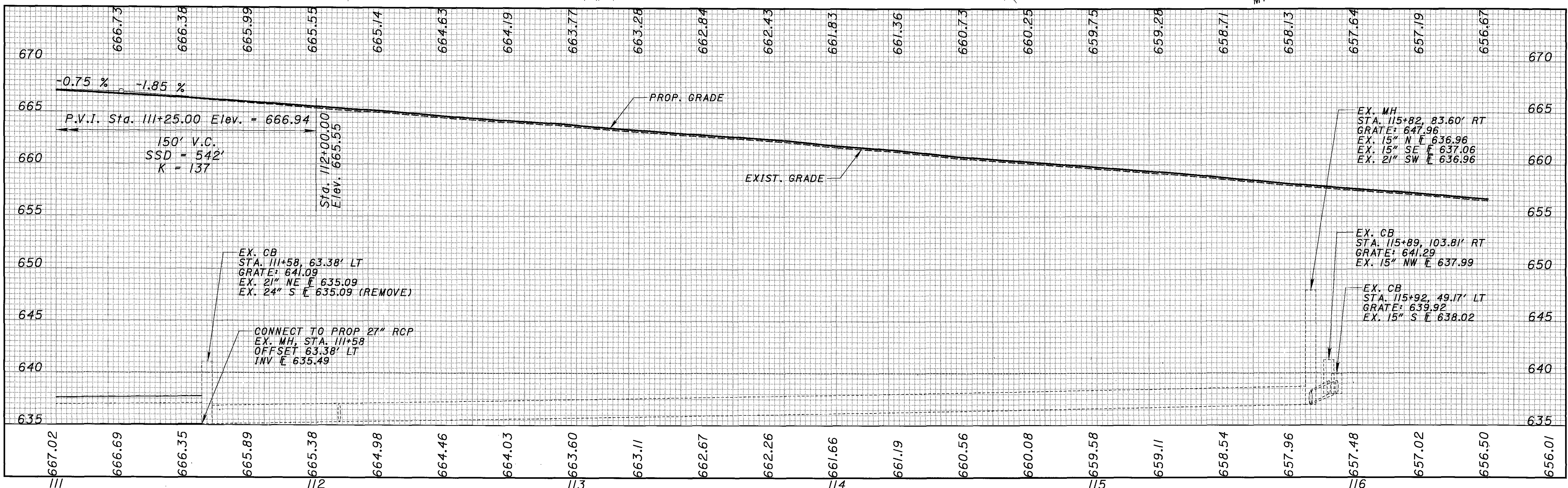
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L:\Projects\000103322_LAK-2-0.00\Drawings\HWY\PP\217789p103.dgn 25-APR-2006 3:09 PM cswllar



P.I. Sta = 122+86.06
 D = 151° 29' 34" (RT)
 Dc = 20° 59' 56"
 R = 272.85'
 T = 1,074.07'
 L = 721.43'
 E = 835.33'

FOR RAMP 2 PLANS,
 SEE SHEETS 183 - 187



0 20 40
 HORIZONTAL
 SCALE IN FEET

CALCULATED
AS

CHECKED
KWB

PLAN AND PROFILE - RAMP A-1

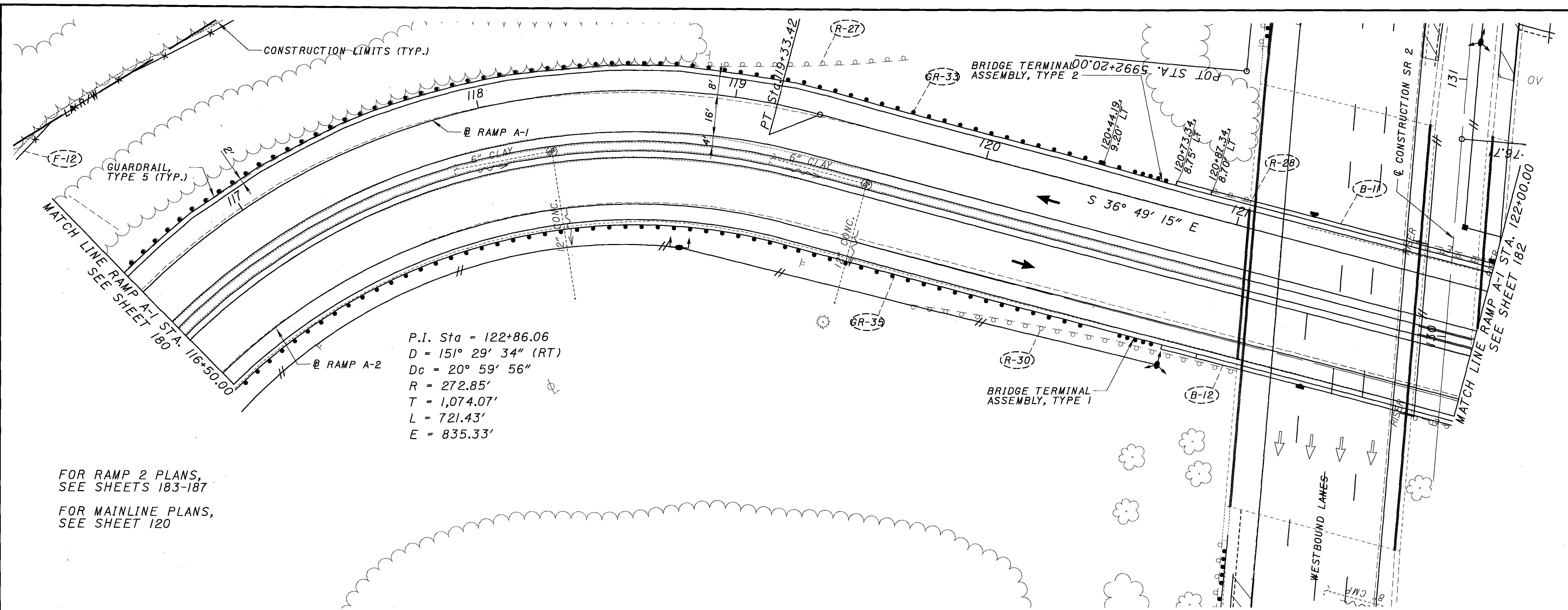
STA. 111+00.00 TO STA. 116+50.00

LAK-2-0.00

180

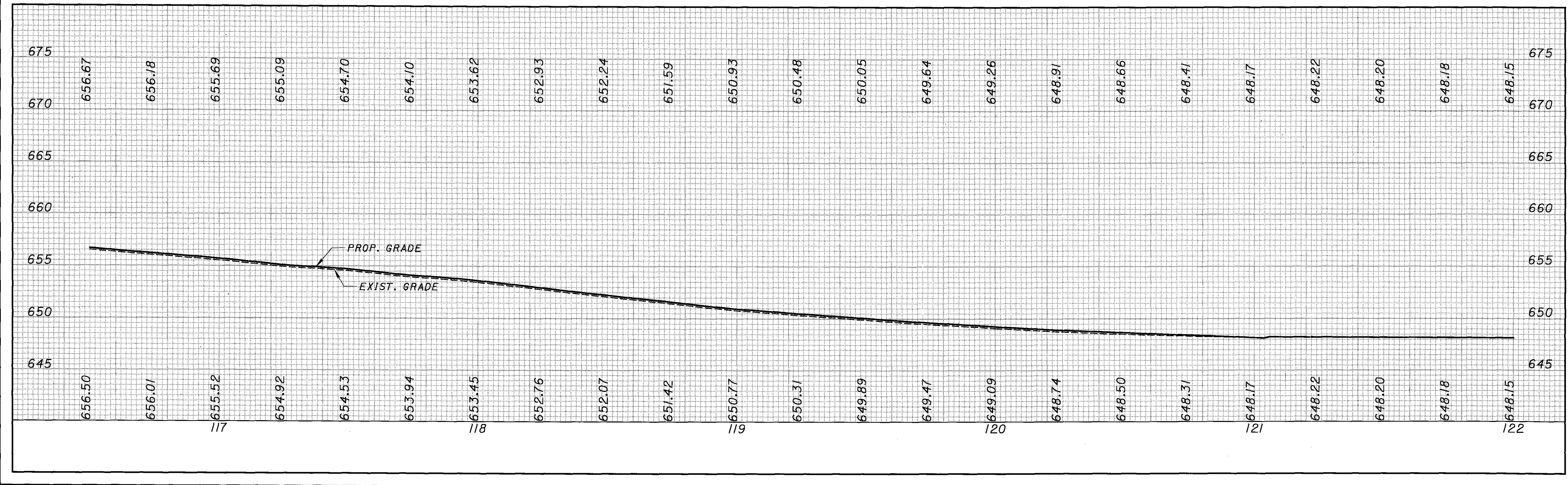
524

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P.I. Sta = 122+86.06
 D = 151° 29' 34" (RT)
 Dc = 20° 59' 56"
 R = 272.85'
 T = 1,074.07'
 L = 721.43'
 E = 835.33'

FOR RAMP 2 PLANS,
 SEE SHEETS 183-187
 FOR MAINLINE PLANS,
 SEE SHEET 120



CALCULATED AS

CHECKED KWB

HORIZONTAL SCALE IN FEET

PLAN AND PROFILE - RAMP A-1
 STA. 116+50.00 TO STA. 122+00.00

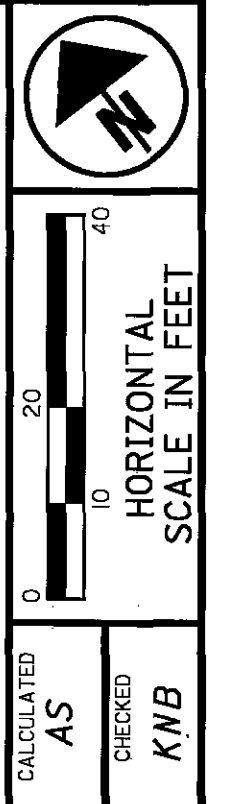
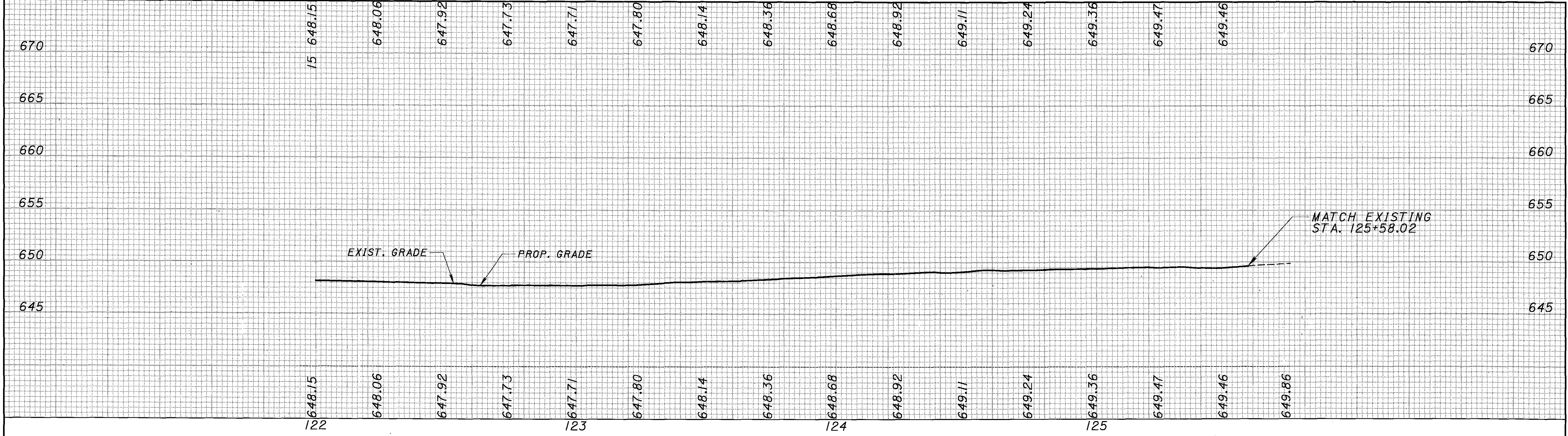
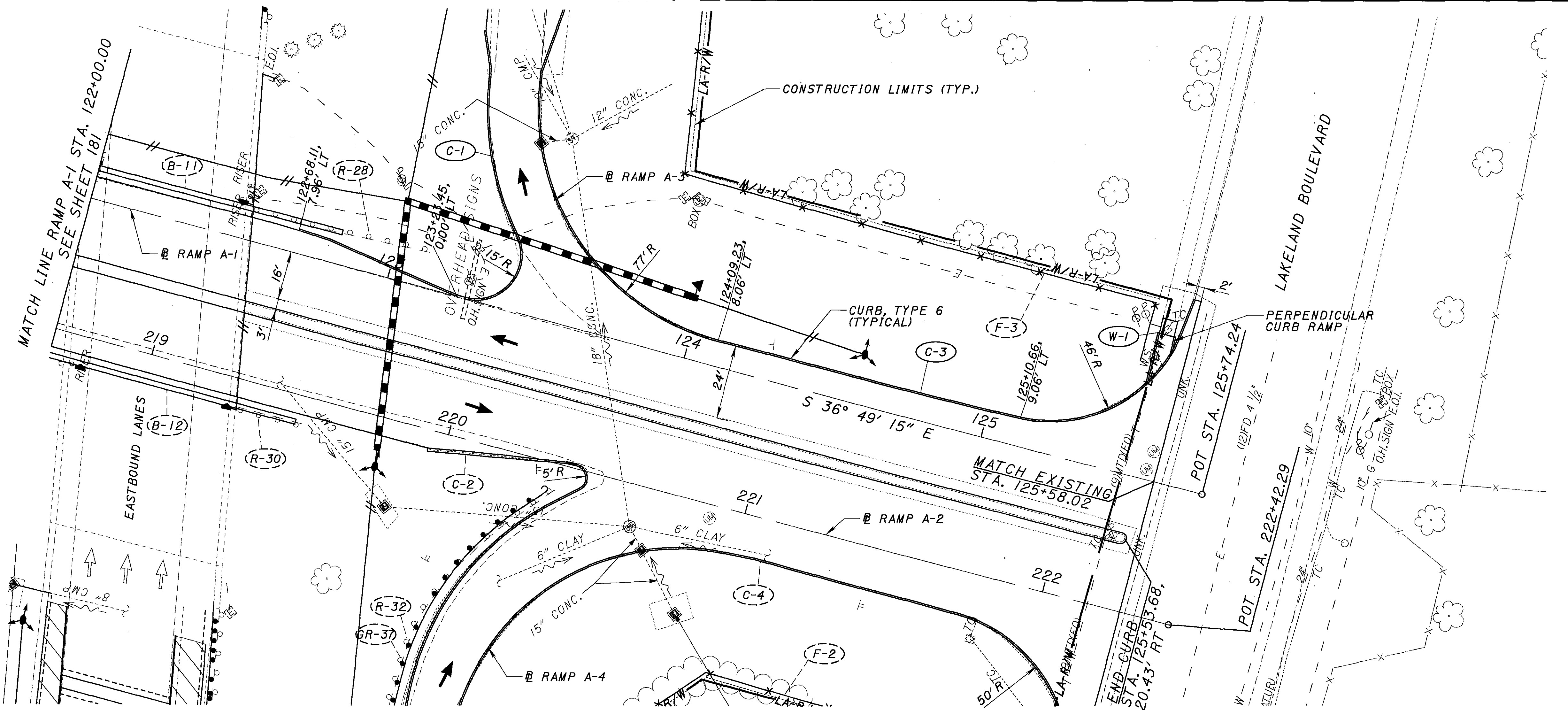
LAK-2-0.00

181

524

FOR MAINLINE PLANS,
SEE SHEET 120

FOR INTERSECTION DETAILS,
SEE SHEET 288

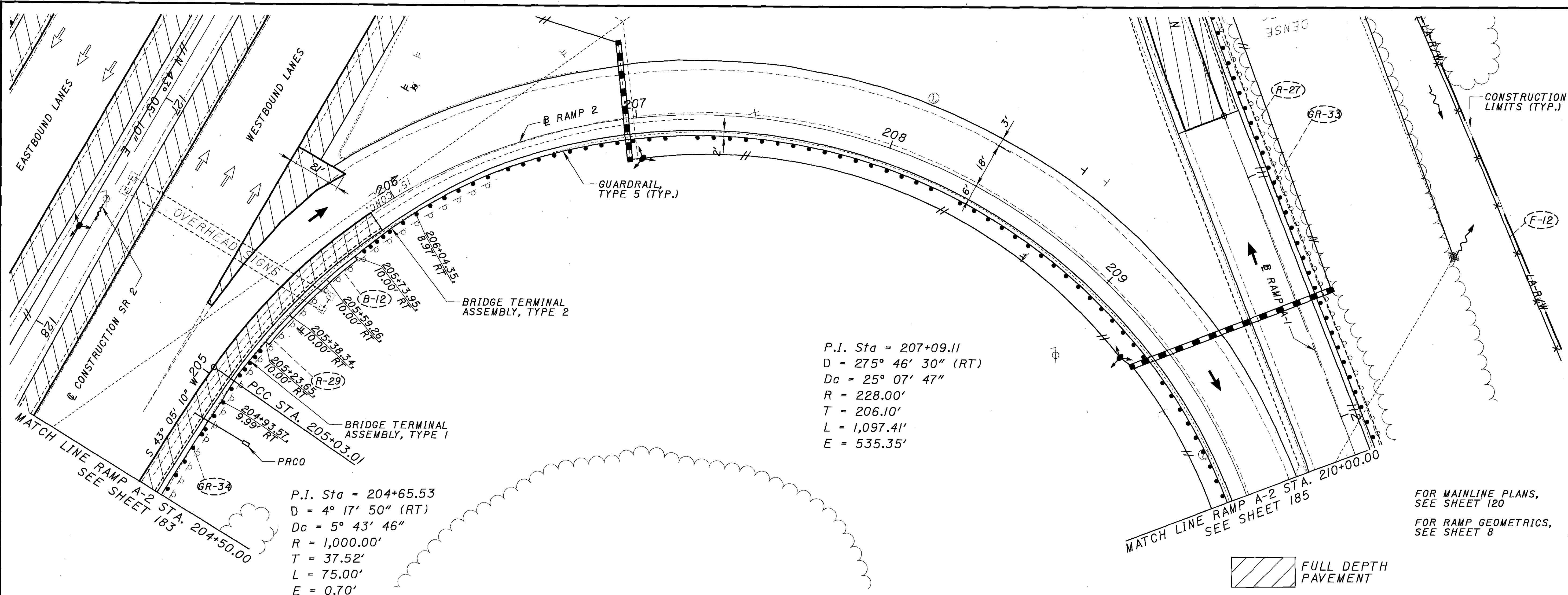


PLAN AND PROFILE - RAMP A-1
STA. 122+00.00 TO STA. 125+74.24

LAK-2-0.00

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L:\Projects\000T\03322_LAK-2-0.00\Drawings\HWY\PP\2178gp202.dgn 25-APR-2006 3:10 PM asvilar

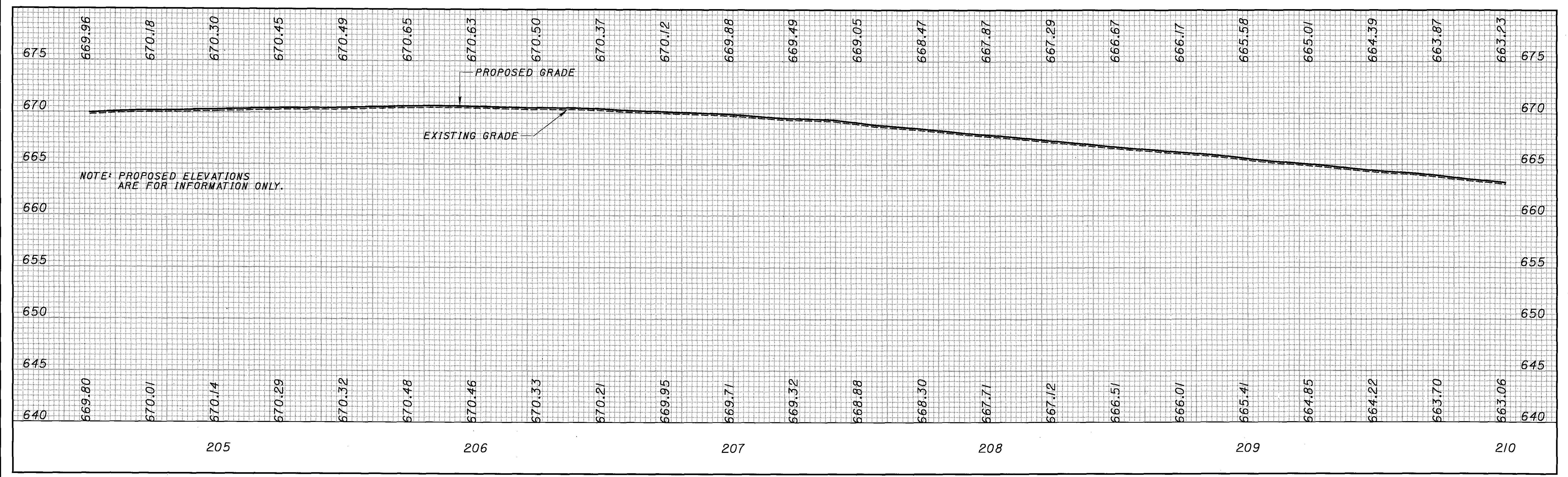


P.I. Sta = 207+09.11
 D = 275° 46' 30" (RT)
 Dc = 25° 07' 47"
 R = 228.00'
 T = 206.10'
 L = 1,097.41'
 E = 535.35'

P.I. Sta = 204+65.53
 D = 4° 17' 50" (RT)
 Dc = 5° 43' 46"
 R = 1,000.00'
 T = 37.52'
 L = 75.00'
 E = 0.70'

FULL DEPTH PAVEMENT

FOR MAINLINE PLANS, SEE SHEET 120
 FOR RAMP GEOMETRICS, SEE SHEET 8



CALCULATED AS
CHECKED KNB

HORIZONTAL SCALE IN FEET

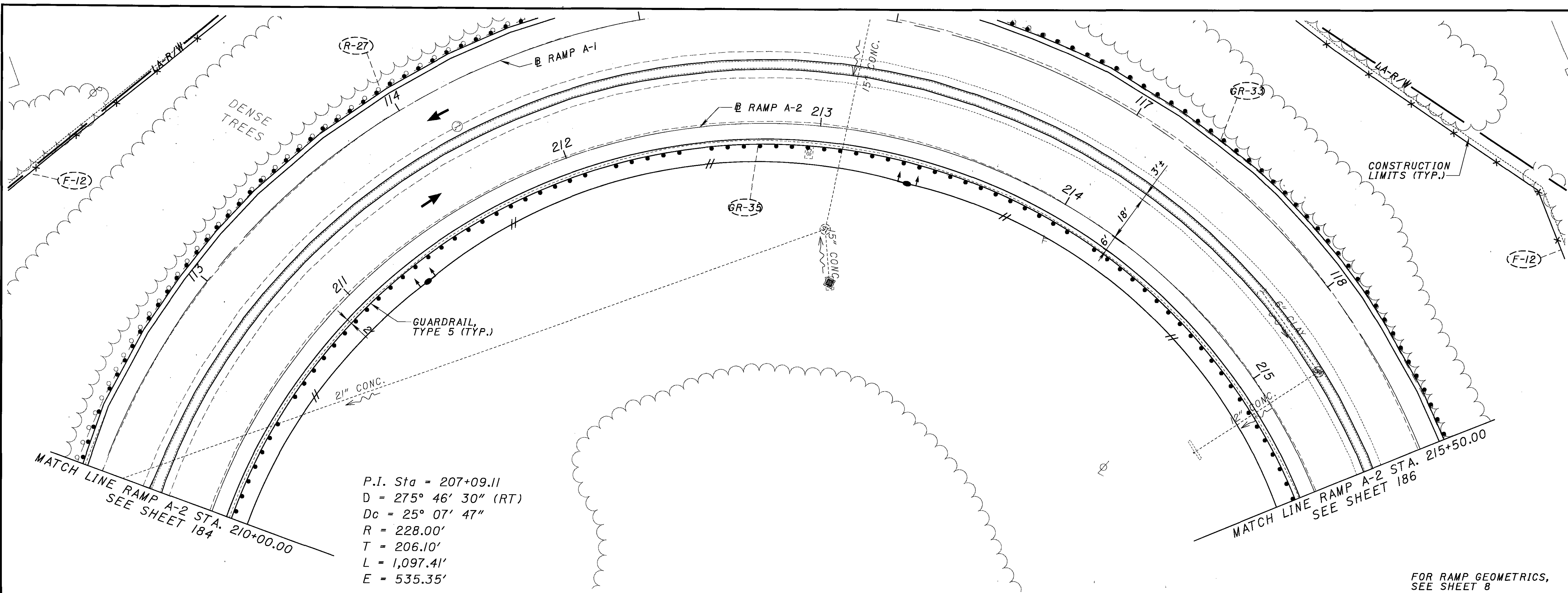
PLAN AND PROFILE - RAMP A-2

STA. 204+50.00 TO STA. 210+00.00

LAK-2-0.00

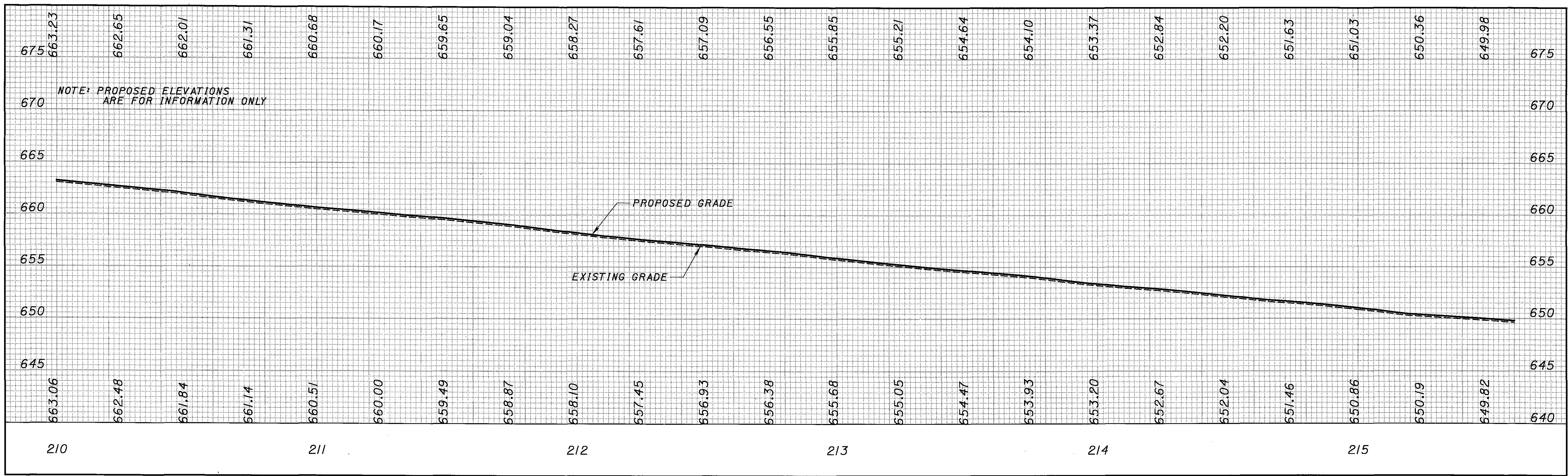
184
524

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P.I. Sta = 207+09.11
 D = 275° 46' 30" (RT)
 Dc = 25° 07' 47"
 R = 228.00'
 T = 206.10'
 L = 1,097.41'
 E = 535.35'

FOR RAMP GEOMETRICS,
 SEE SHEET 8



SCALE IN FEET

0 10 20 40

CALCULATED

AS

CHECKED

KWB

LAK-2-0.00

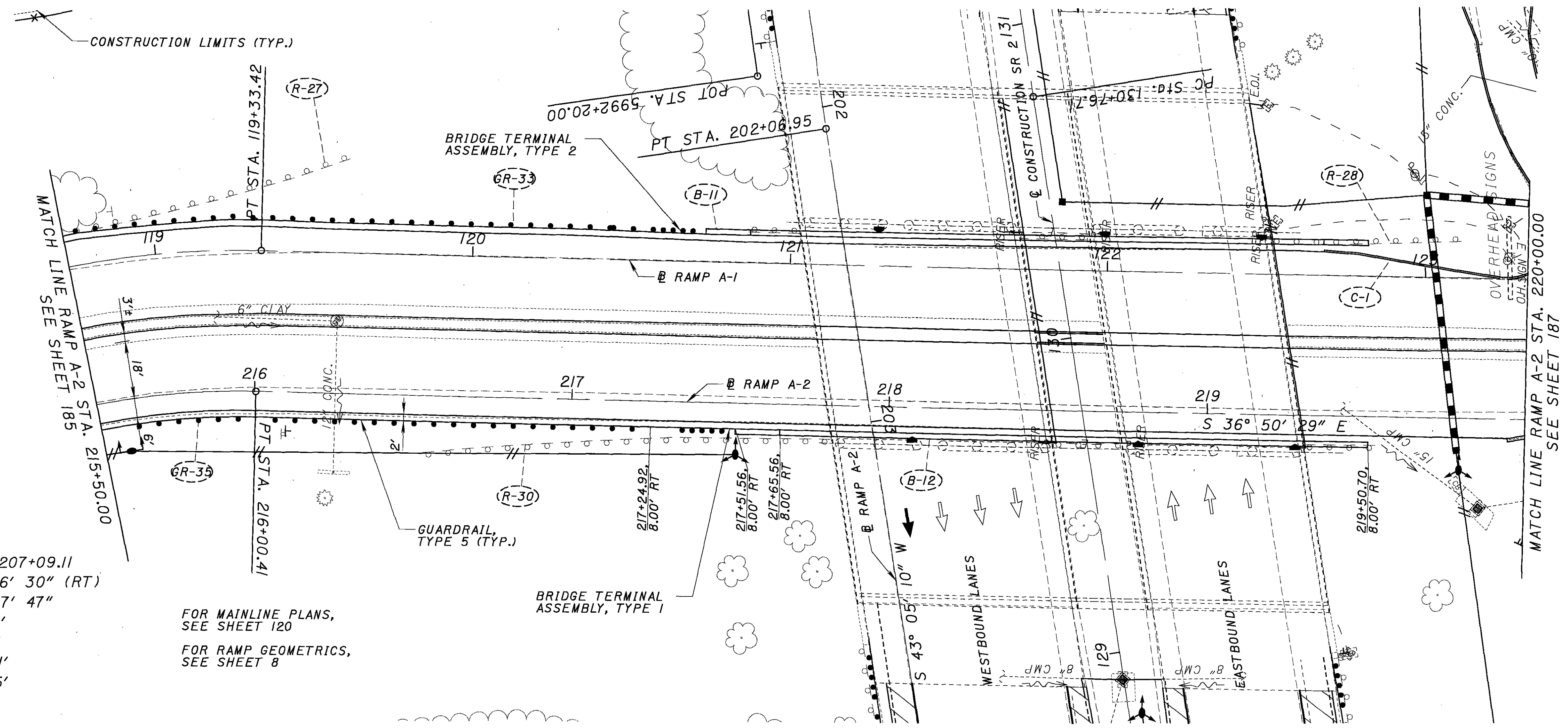
PLAN AND PROFILE - RAMP A-2

STA. 210+00.00 TO STA. 215+50.00

185

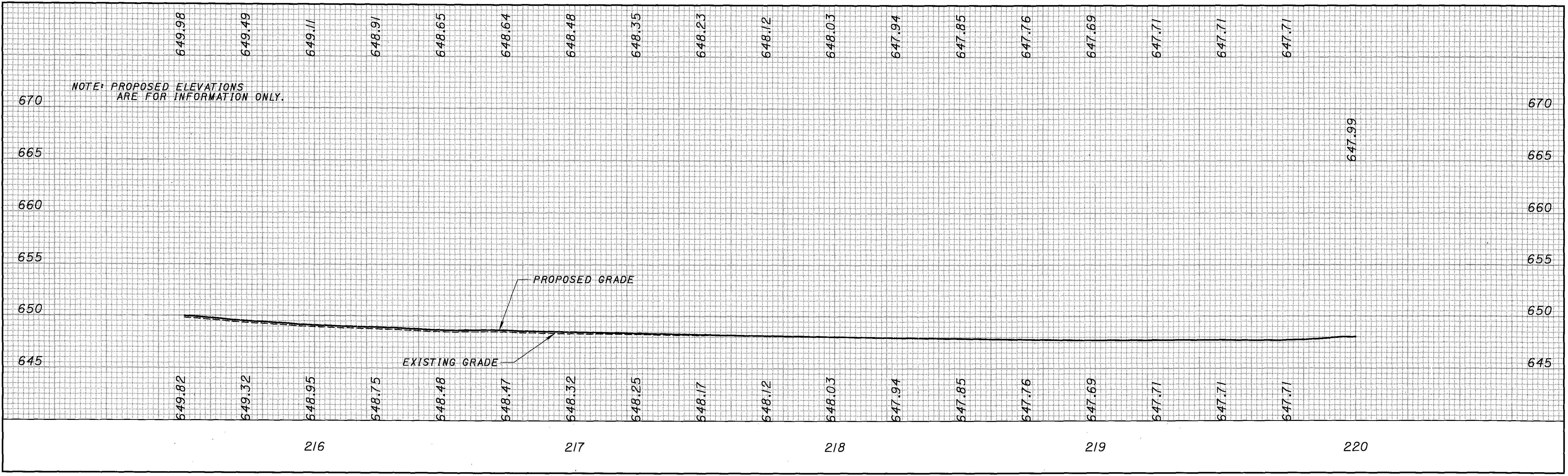
524

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P.I. Sta = 207+09.11
 D = 275° 46' 30" (RT)
 Dc = 25° 07' 47"
 R = 228.00'
 T = 206.10'
 L = 1,097.41'
 E = 535.35'

FOR MAINLINE PLANS,
 SEE SHEET 120
 FOR RAMP GEOMETRICS,
 SEE SHEET 8



NOTE: PROPOSED ELEVATIONS
 ARE FOR INFORMATION ONLY.

CALCULATED AS
 CHECKED KWB

HORIZONTAL
 SCALE IN FEET

PLAN AND PROFILE - RAMP A-2

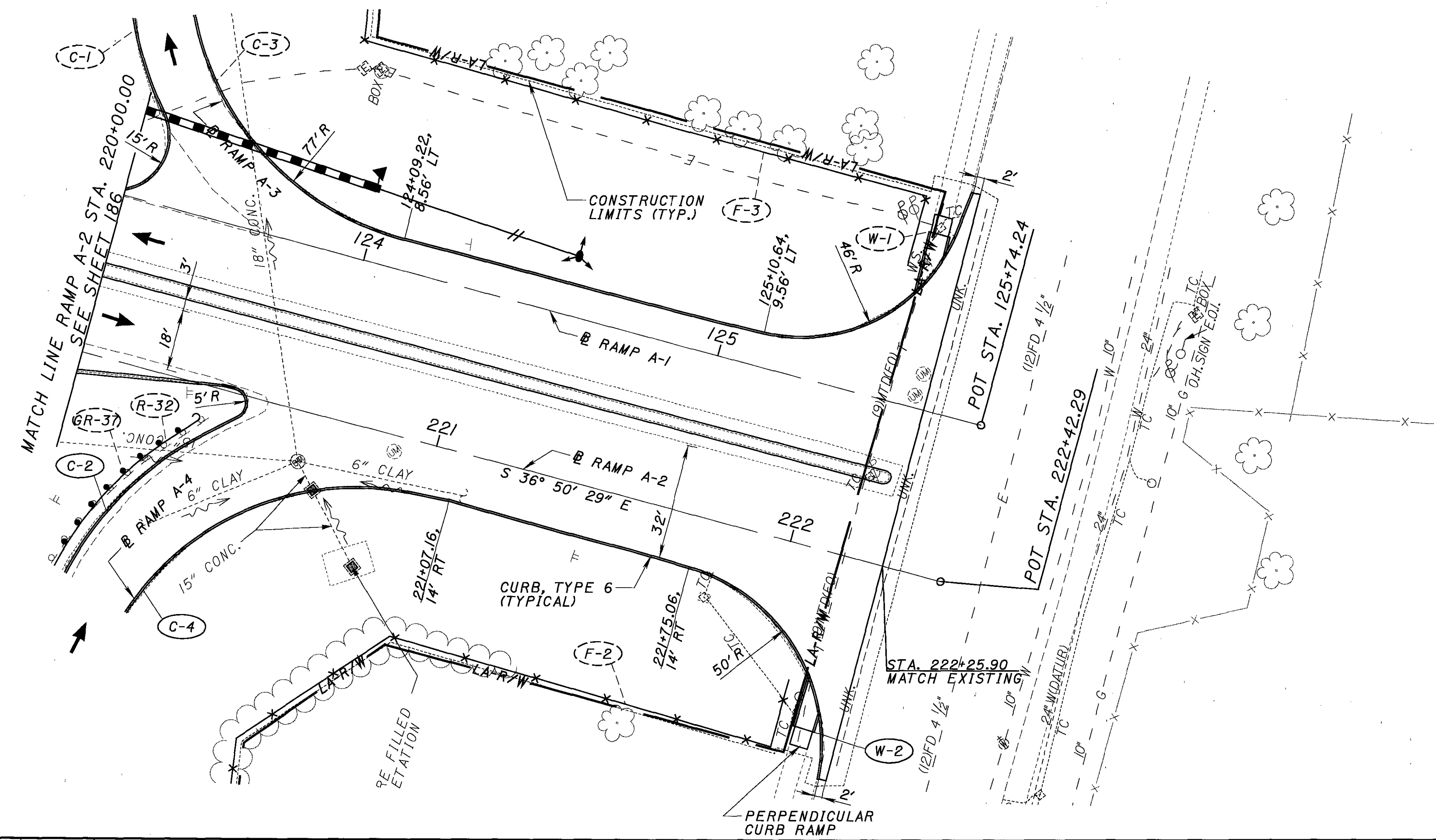
STA. 215+50.00 TO STA. 220+00.00

LAK-2-0.00

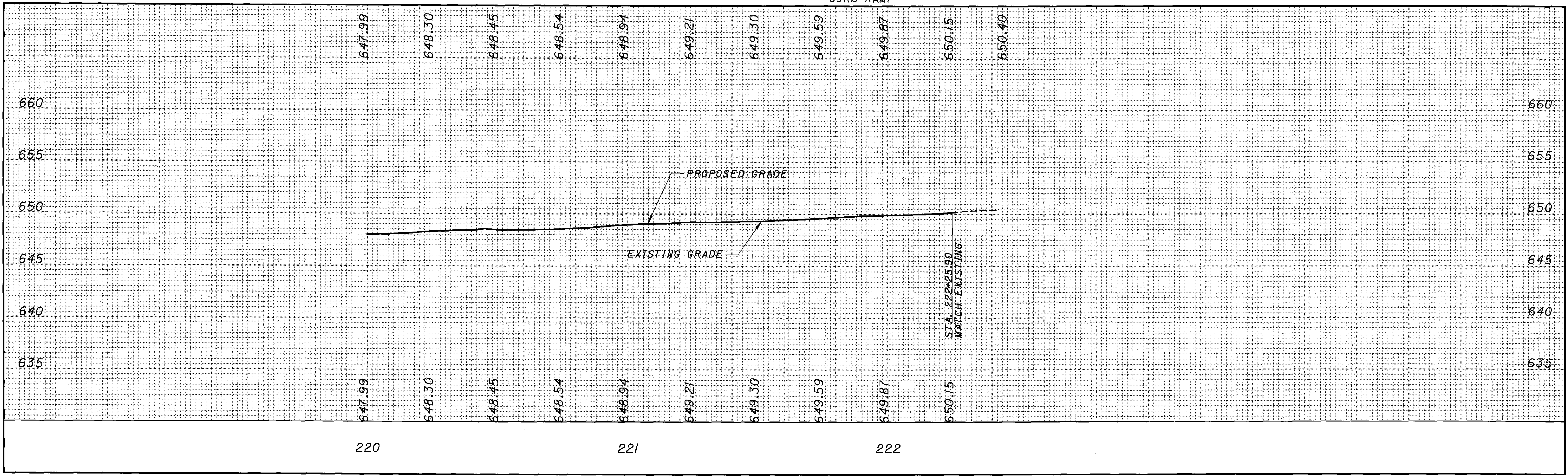
186

524

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FOR RAMP GEOMETRICS,
SEE SHEETS 7, 8
FOR INTERSECTION DETAILS,
SEE SHEET 287



PLAN AND PROFILE - RAMP A-2
STA. 220+00.00 TO STA. 222+25.90

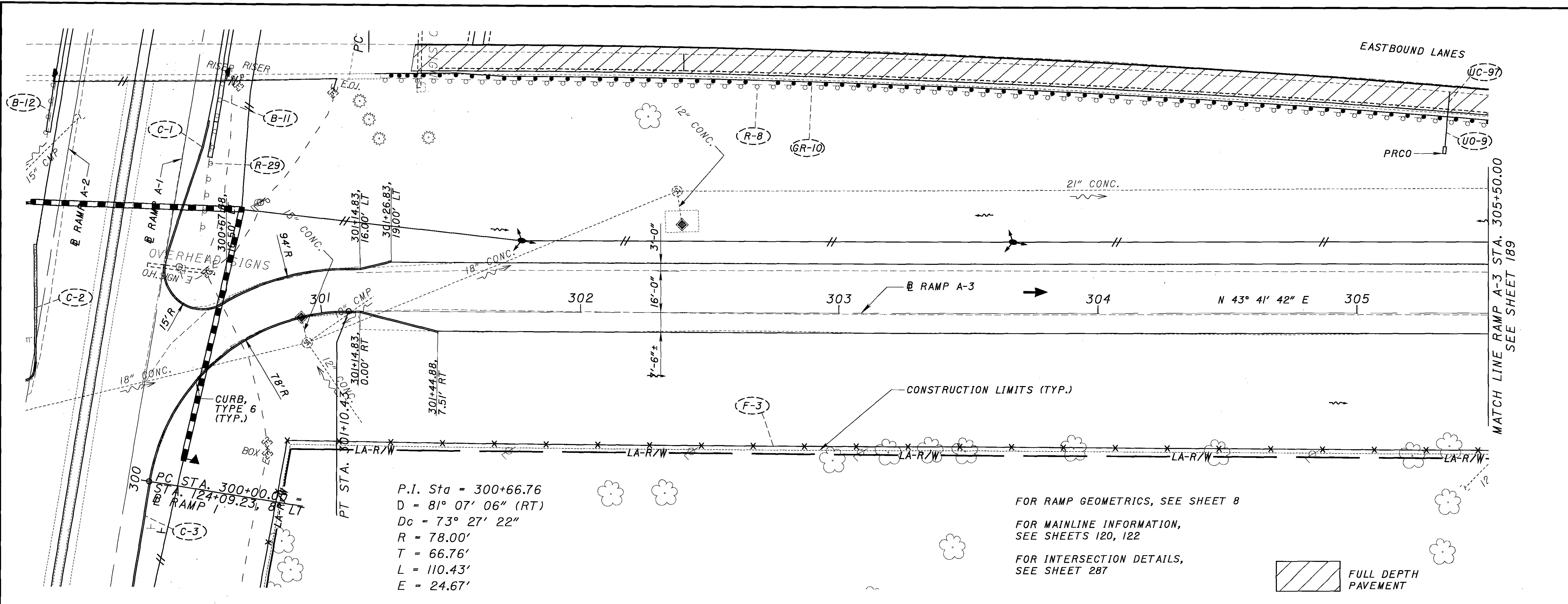
CALCULATED AS
CHECKED KWB

HORIZONTAL SCALE IN FEET
0 10 20 40

LAK-2-0.00

187
524

L:\Project\000\103322_LAK-2-0.00\Drawings\HWY\PP\21778gp301.dgn 25-APR-2006 3:10 PM asvljar

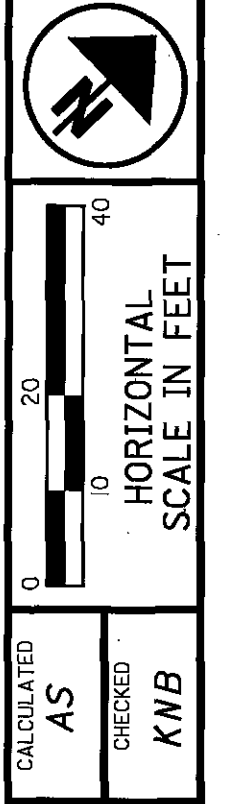


P.I. Sta = 300+66.76
 D = 81° 07' 06" (RT)
 Dc = 73° 27' 22"
 R = 78.00'
 T = 66.76'
 L = 110.43'
 E = 24.67'

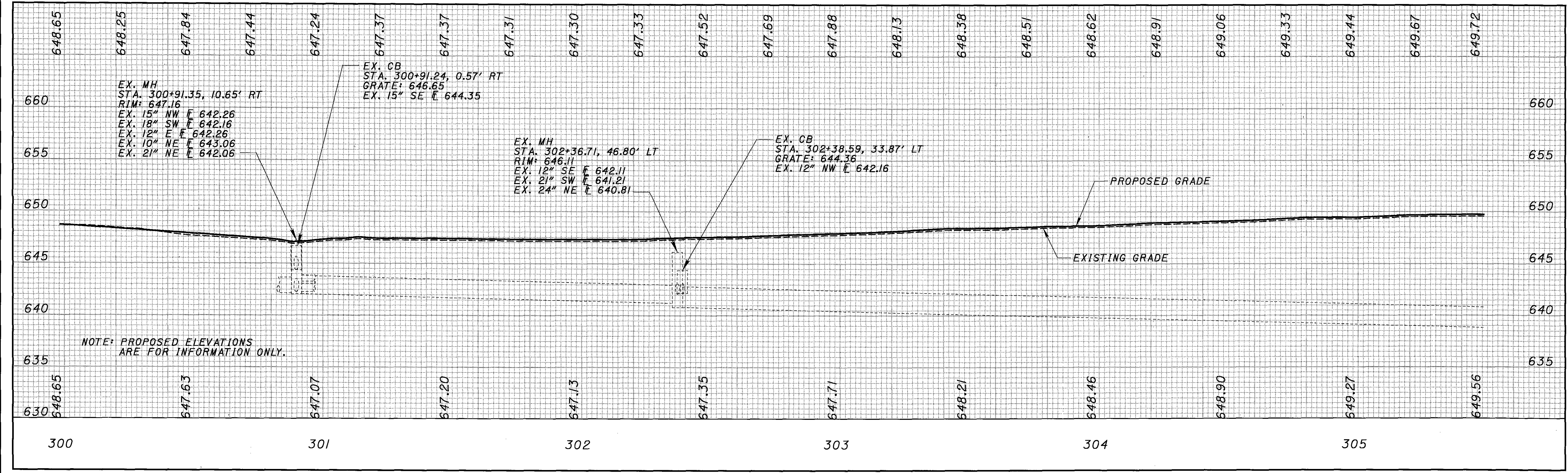
FOR RAMP GEOMETRICS, SEE SHEET 8
 FOR MAINLINE INFORMATION, SEE SHEETS 120, 122
 FOR INTERSECTION DETAILS, SEE SHEET 287

FULL DEPTH PAVEMENT

MATCH LINE RAMP A-3 STA. 305+50.00
 SEE SHEET 189

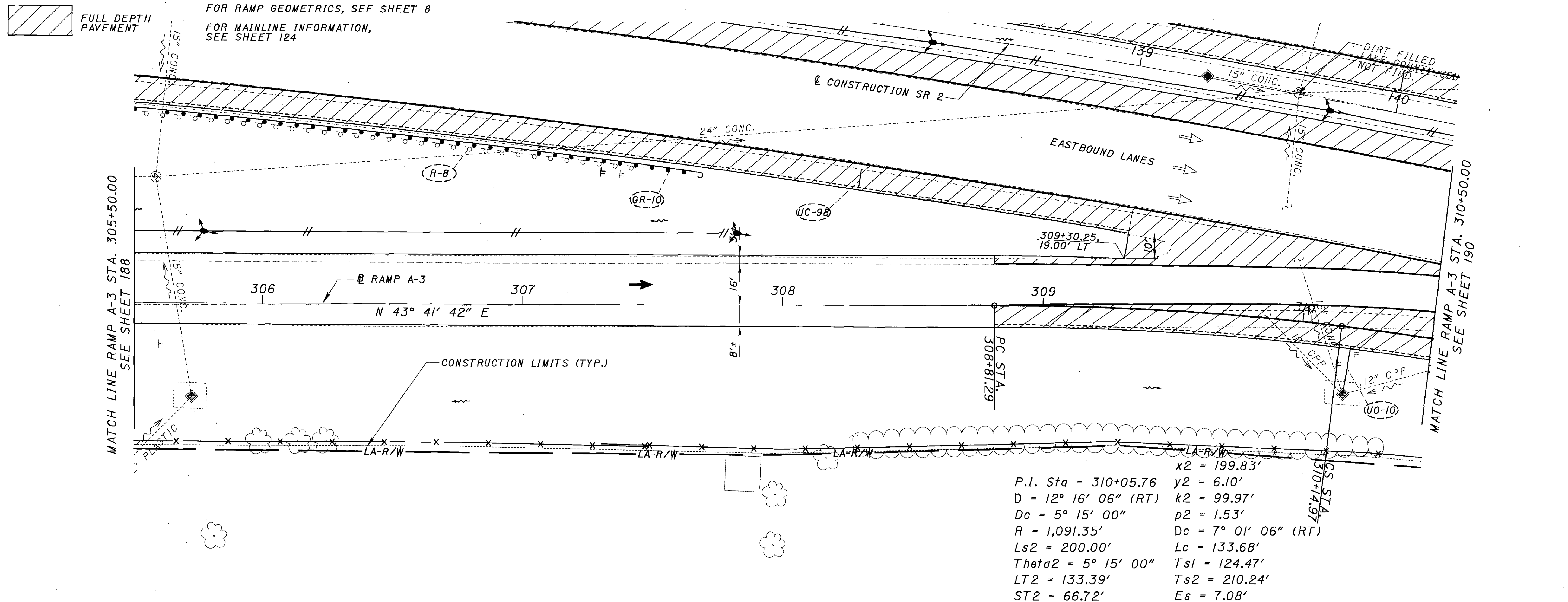


**PLAN AND PROFILE - RAMP A-3
 STA. 300+00 TO STA. 305+50**

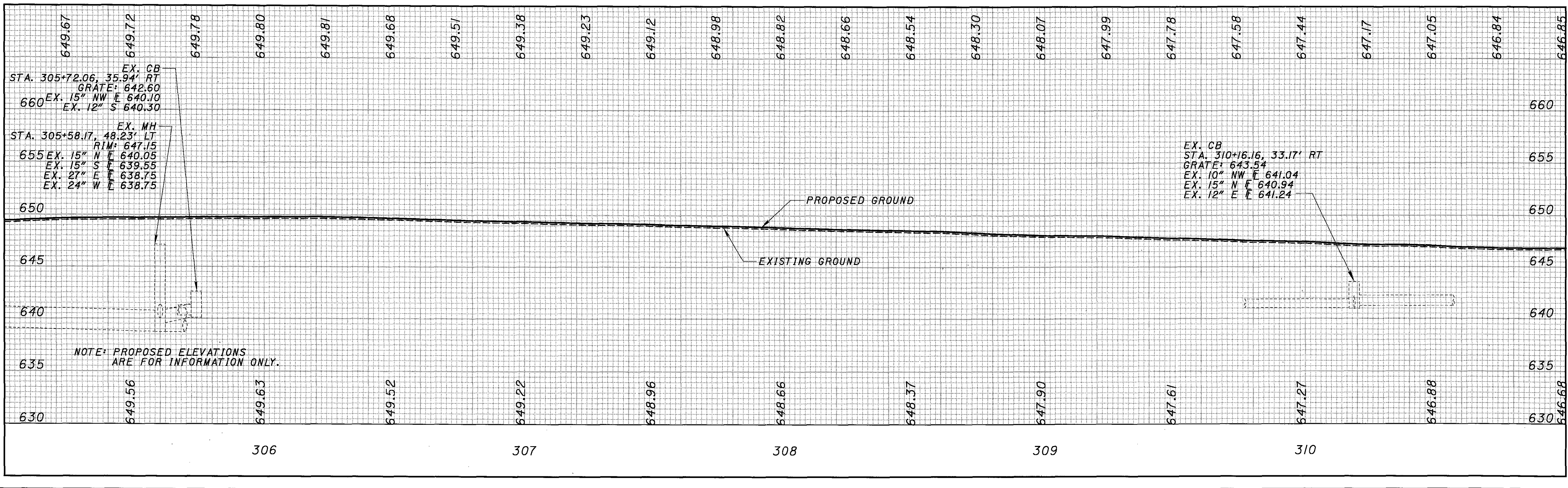


LAK-2-0.00

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$x2 = 199.83'$
 $y2 = 6.10'$
 $D = 12^\circ 16' 06'' \text{ (RT)}$ $k2 = 99.97'$
 $Dc = 5^\circ 15' 00''$ $p2 = 1.53'$
 $R = 1,091.35'$ $Dc = 7^\circ 01' 06'' \text{ (RT)}$
 $Ls2 = 200.00'$ $Lc = 133.68'$
 $\text{Theta}2 = 5^\circ 15' 00''$ $Ts1 = 124.47'$
 $LT2 = 133.39'$ $Ts2 = 210.24'$
 $ST2 = 66.72'$ $Es = 7.08'$

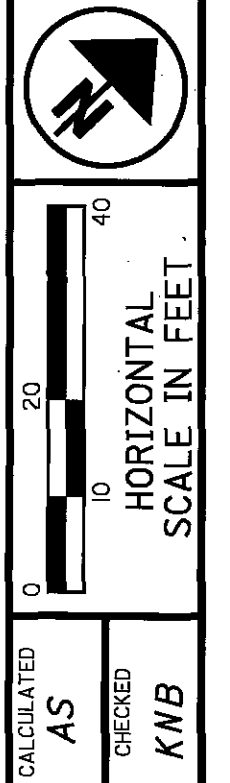


EX. CB
 STA. 305+72.06, 35.94' RT
 GRATE: 642.60
 660 EX. 15" NW E 640.10
 EX. 12" S 640.30

EX. MH
 STA. 305+58.17, 48.23' LT
 RIM: 647.15
 655 EX. 15" N E 640.05
 EX. 15" S E 639.55
 EX. 27" E E 638.75
 EX. 24" W E 638.75

EX. CB
 STA. 310+16.16, 33.17' RT
 GRATE: 643.54
 EX. 10" NW E 641.04
 EX. 15" N E 640.94
 EX. 12" E E 641.24

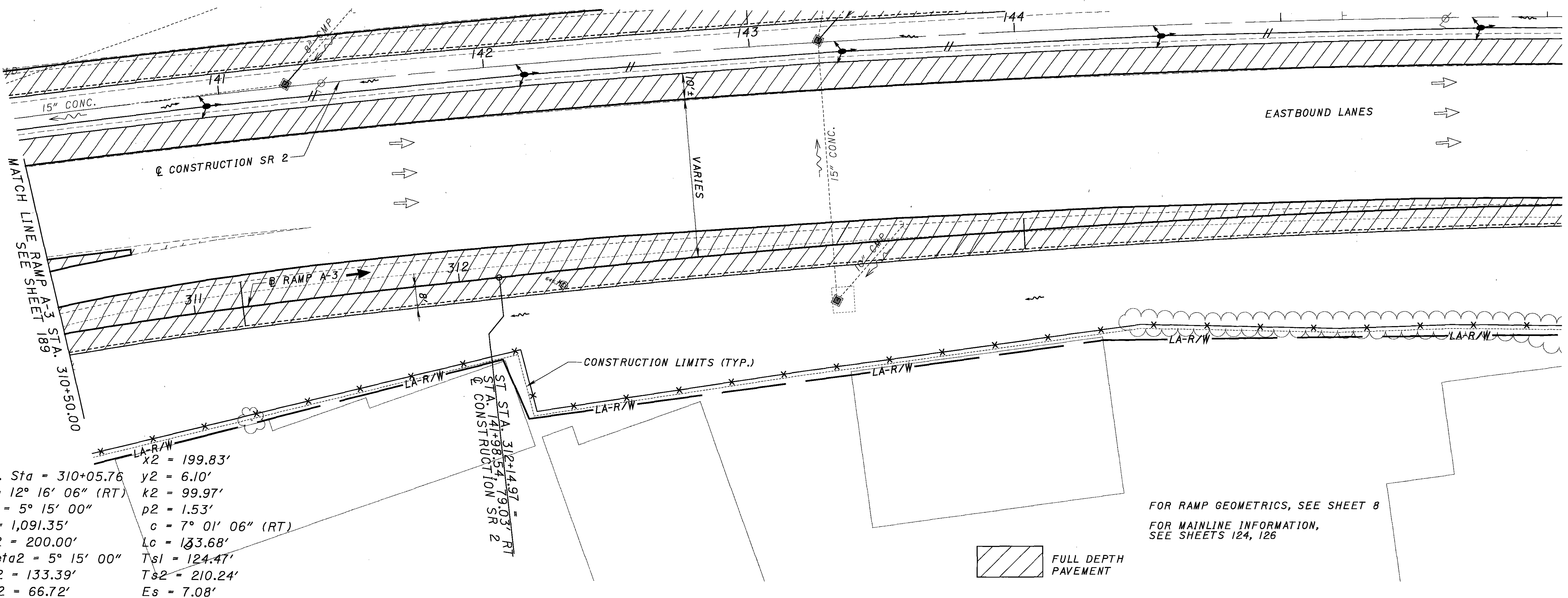
NOTE: PROPOSED ELEVATIONS ARE FOR INFORMATION ONLY.



**PLAN AND PROFILE - RAMP A-3
STA. 305+50 TO 310+50**

LAK-2-0.00

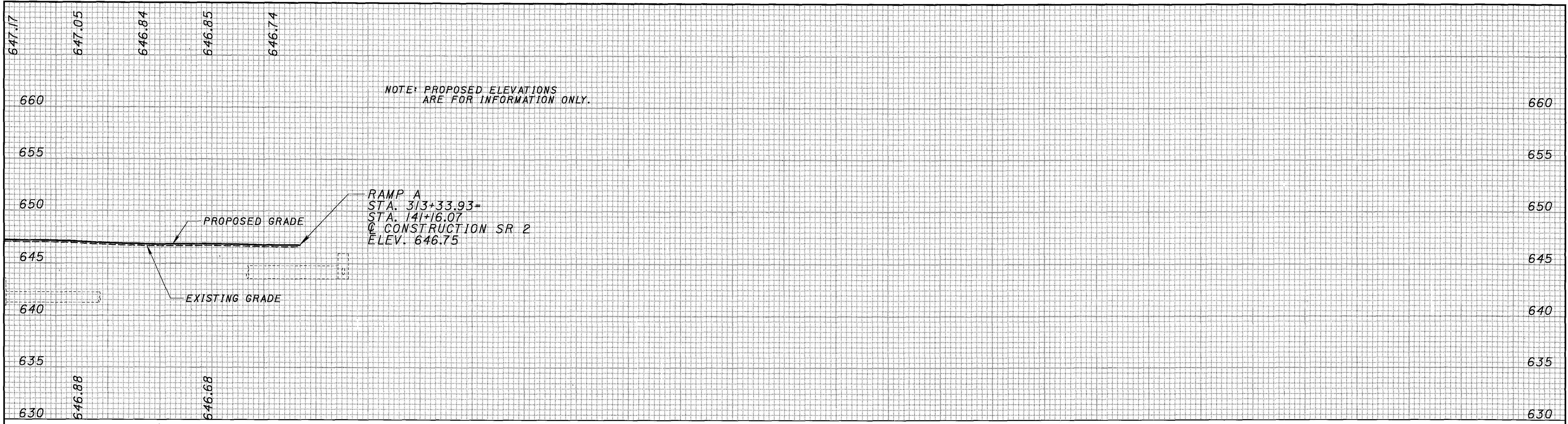
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P.I. Sta = 310+05.76
 D = 12° 16' 06" (RT)
 Dc = 5° 15' 00"
 R = 1,091.35'
 Ls2 = 200.00'
 Theta2 = 5° 15' 00"
 LT2 = 133.39'
 ST2 = 66.72'
 y2 = 6.10'
 k2 = 99.97'
 p2 = 1.53'
 c = 7° 01' 06" (RT)
 Lc = 133.68'
 Tsl = 124.47'
 T&2 = 210.24'
 Es = 7.08'

FOR RAMP GEOMETRICS, SEE SHEET 8
 FOR MAINLINE INFORMATION, SEE SHEETS 124, 126

FULL DEPTH PAVEMENT



311

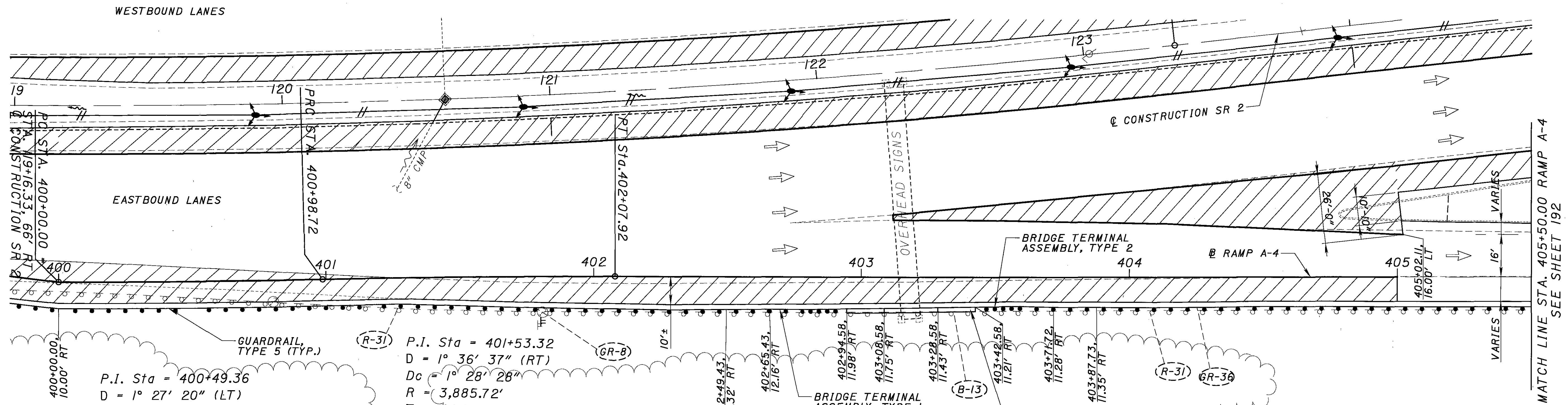
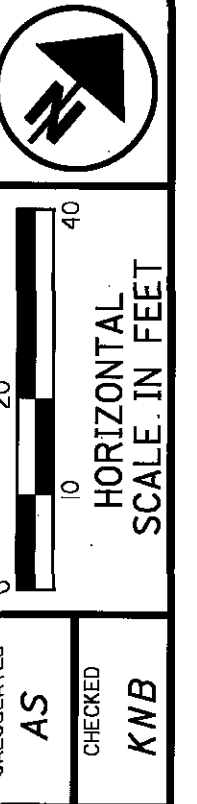
CALCULATED AS
 CHECKED KWB
 HORIZONTAL SCALE IN FEET
 0 10 20 40

PLAN AND PROFILE - RAMP A - 3
STA. 310+50 TO STA. 312+14.97

LAK-2-0.00

FOR RAMP GEOMETRICS, SEE SHEET 7
 FOR MAINLINE INFORMATION, SEE SHEETS 116, 118

FULL DEPTH PAVEMENT



GUARDRAIL, TYPE 5 (TYP.)

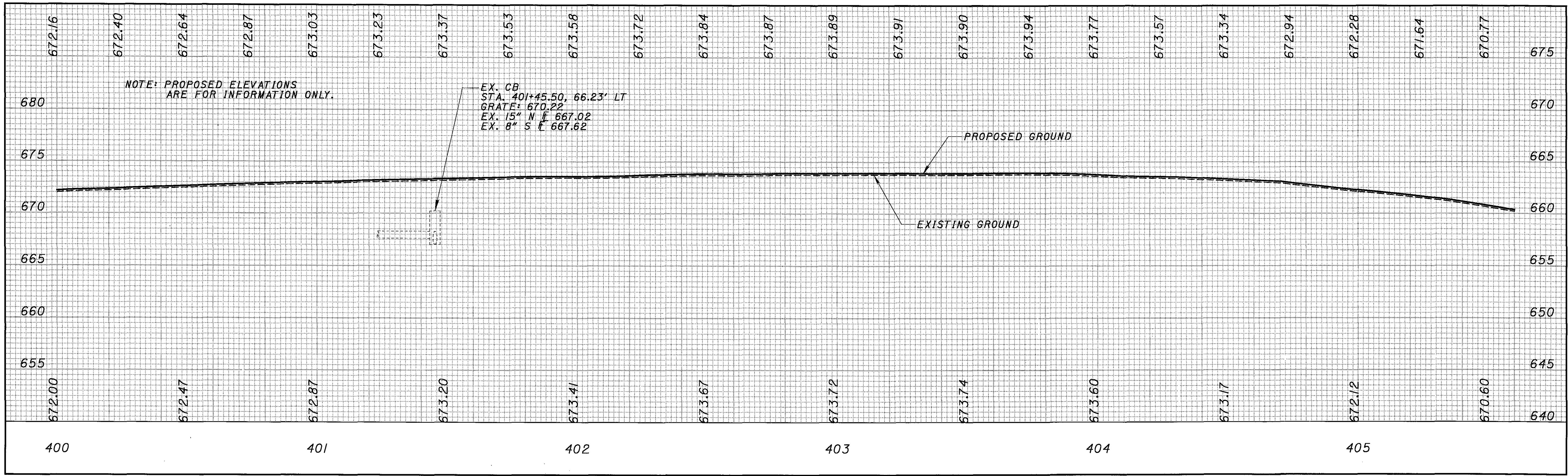
P.I. Sta = 400+49.36
 D = 1° 27' 20" (LT)
 Dc = 1° 28' 28"
 R = 3,885.72'
 T = 49.36'
 L = 98.72'
 E = 0.31'

P.I. Sta = 401+53.32
 D = 1° 36' 37" (RT)
 Dc = 1° 28' 28"
 R = 3,885.72'
 T = 54.60'
 L = 109.20'
 E = 0.38'

BRIDGE TERMINAL ASSEMBLY, TYPE 1

BRIDGE TERMINAL ASSEMBLY, TYPE 2

CONCRETE BARRIER, TYPE D
 L = 52', WITH TWO 14' END SECTIONS



PLAN AND PROFILE - RAMP A-4
 STA. 400+00 TO 405+50

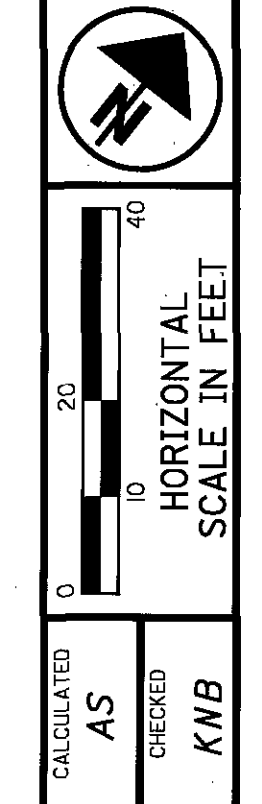
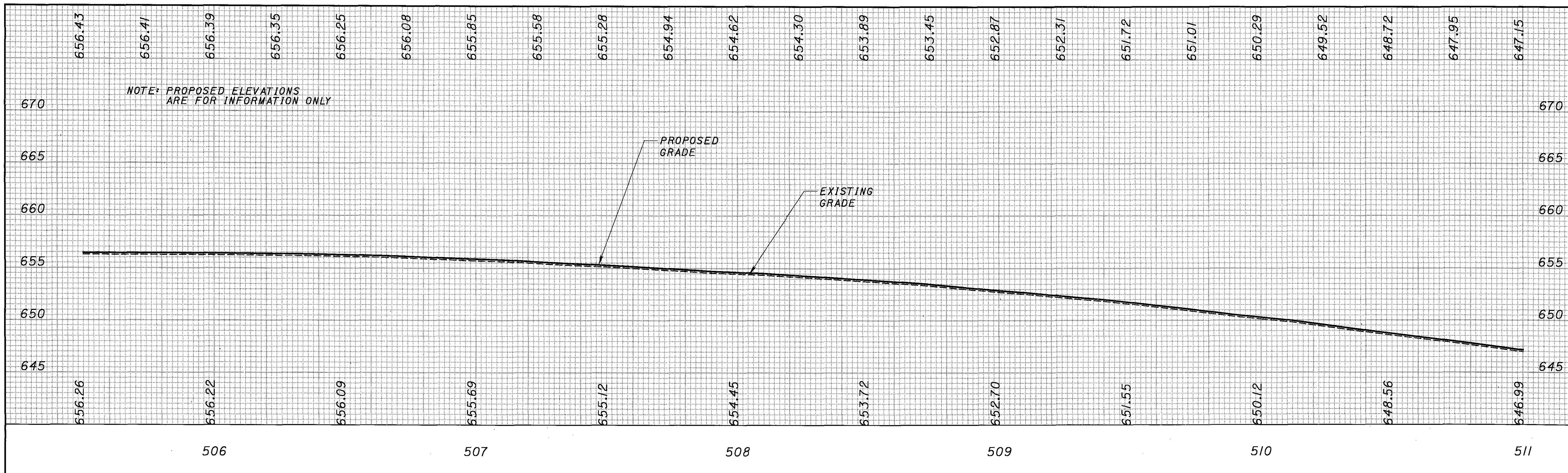
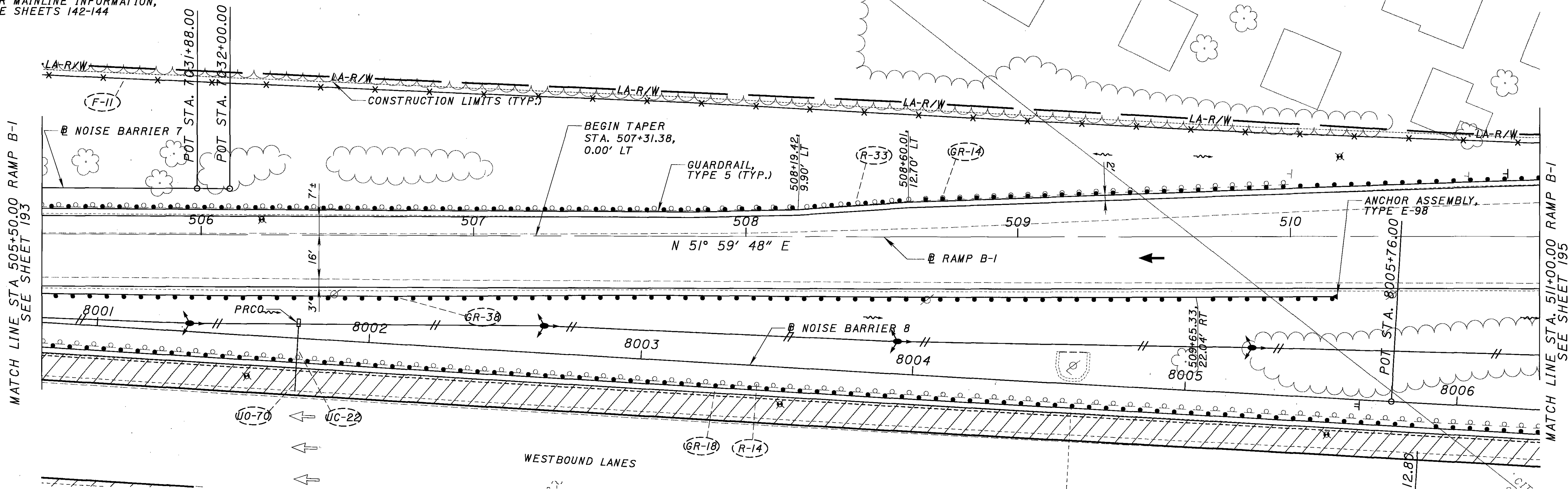
LAK-2-0.00

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 FULL DEPTH PAVEMENT

FOR RAMP GEOMETRICS, SEE SHEET 9

FOR MAINLINE INFORMATION, SEE SHEETS 142-144



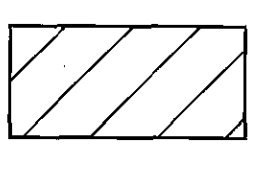
CALCULATED AS
CHECKED KNB

PLAN AND PROFILE - RAMP B-1
STA. 505+50 TO 511+00

LAK-2-0.00

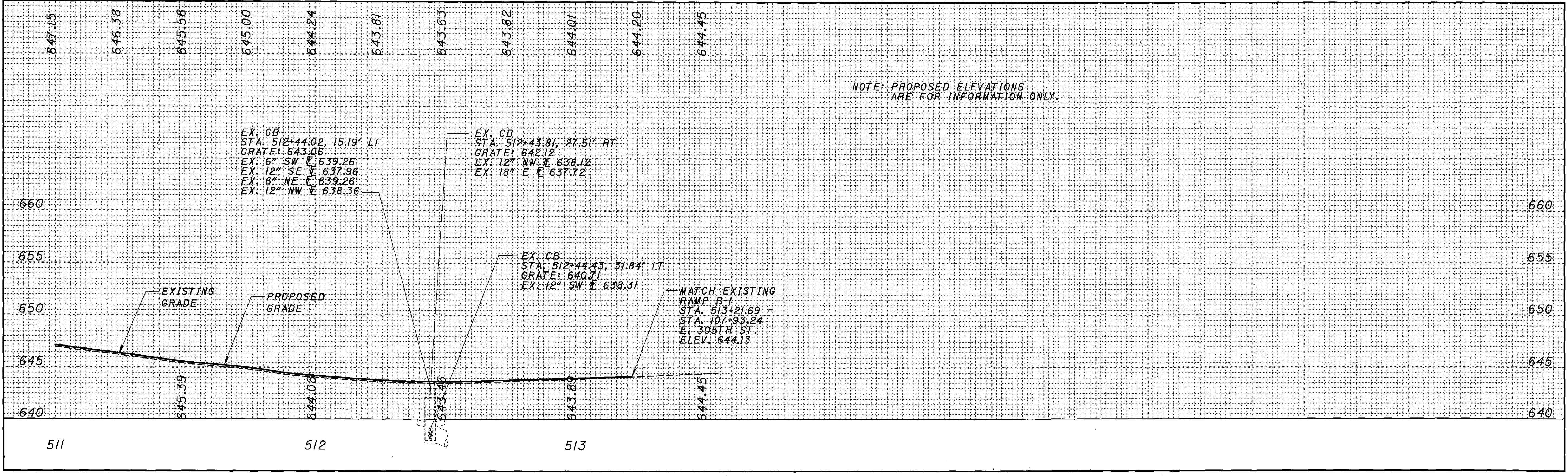
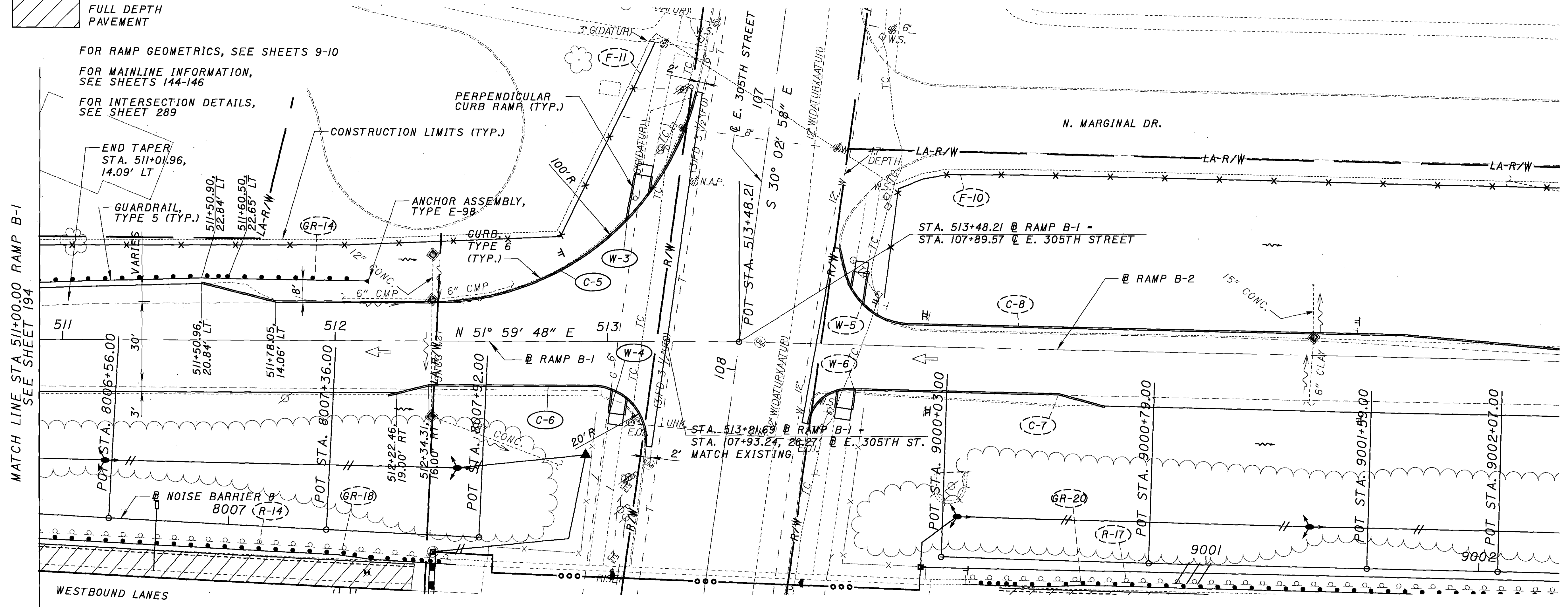
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FULL DEPTH PAVEMENT

FOR RAMP GEOMETRICS, SEE SHEETS 9-10
FOR MAINLINE INFORMATION, SEE SHEETS 144-146
FOR INTERSECTION DETAILS, SEE SHEET 289



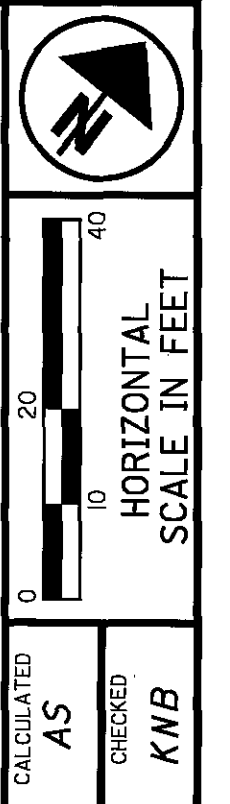
NOTE: PROPOSED ELEVATIONS ARE FOR INFORMATION ONLY.

EX. CB STA. 512+44.02, 15.19' LT
GRATE: 643.06
EX. 6" SW E 639.26
EX. 12" SE E 637.96
EX. 6" NE E 639.28
EX. 12" NW E 638.36

EX. CB STA. 512+43.81, 27.51' RT
GRATE: 642.12
EX. 12" NW E 638.12
EX. 18" E E 637.72

EX. CB STA. 512+44.43, 31.84' LT
GRATE: 640.71
EX. 12" SW E 638.31

MATCH EXISTING RAMP B-1 STA. 513+21.69 - STA. 107+93.24 @ E. 305TH ST. ELEV. 644.13

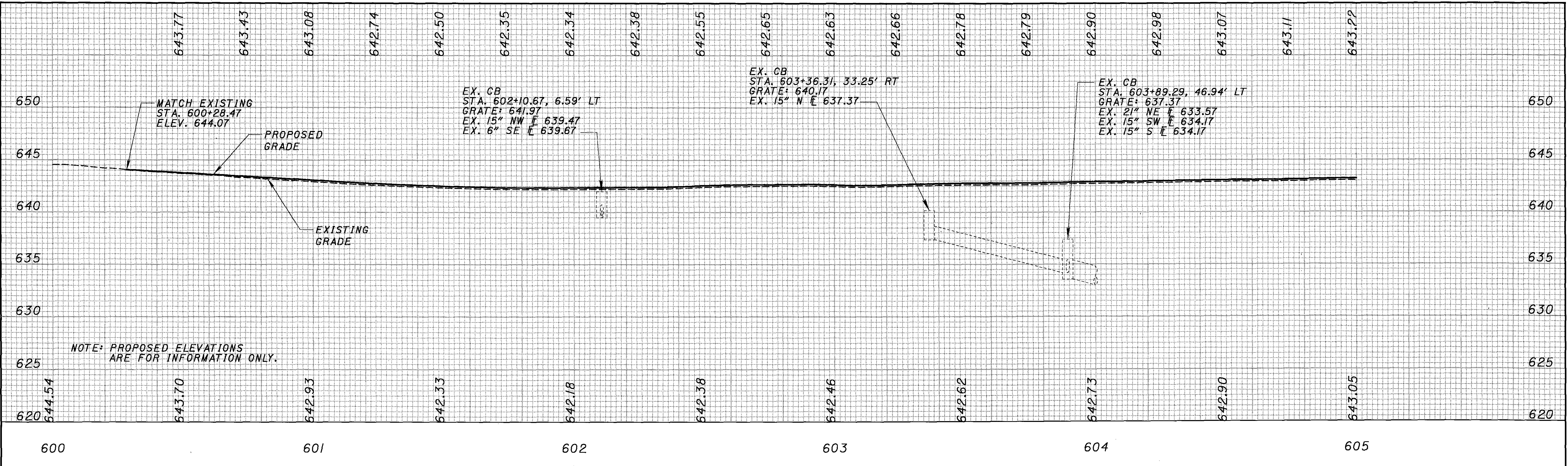
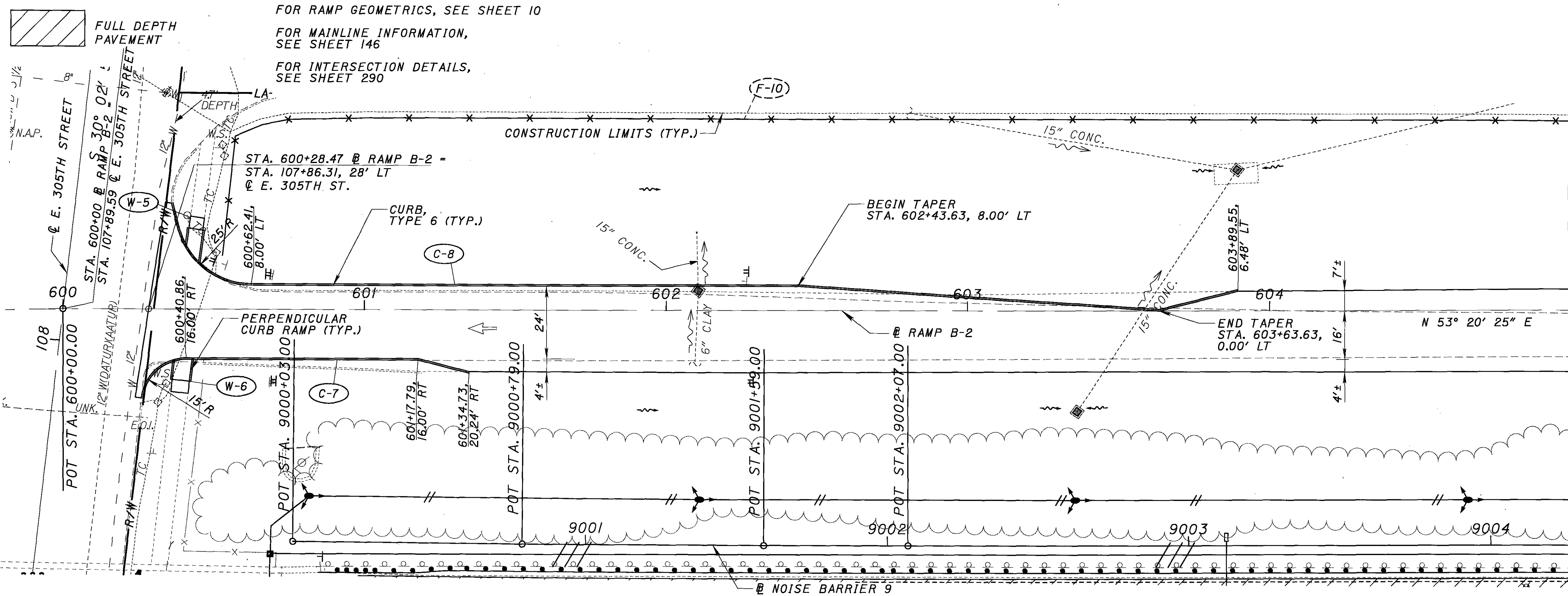


PLAN AND PROFILE - RAMP B-1
STA. 511+00 TO STA. 513+56.71

LAK-2-0.00

195
524

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FOR RAMP GEOMETRICS, SEE SHEET 10
 FOR MAINLINE INFORMATION, SEE SHEET 146
 FOR INTERSECTION DETAILS, SEE SHEET 290

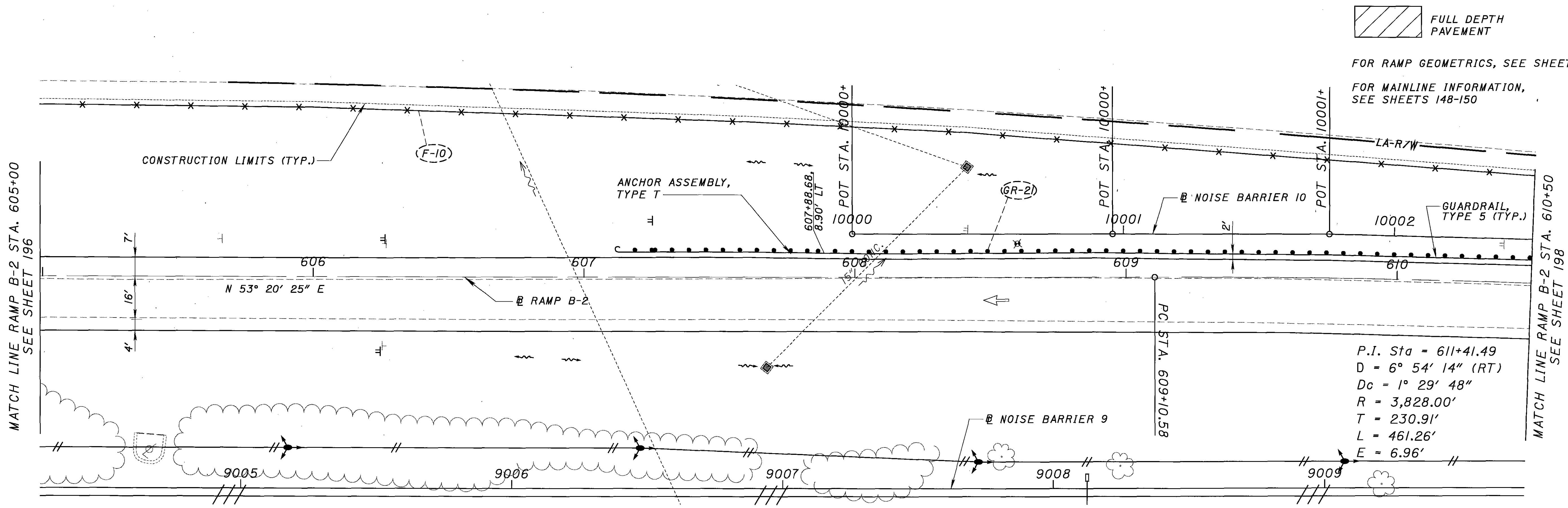
CALCULATED AS
 CHECKED KMB

0 10 20
 HORIZONTAL SCALE IN FEET

PLAN AND PROFILE - RAMP B-2
STA. 600+00 TO 605+00

LAK-2-0.00

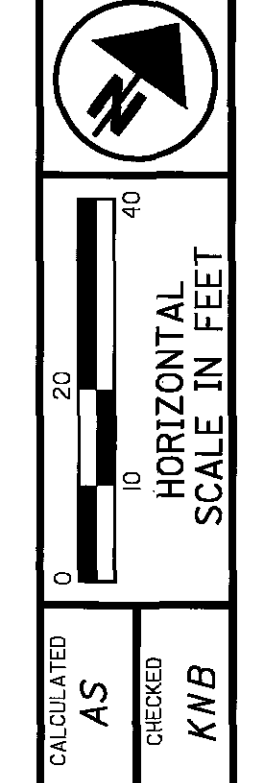
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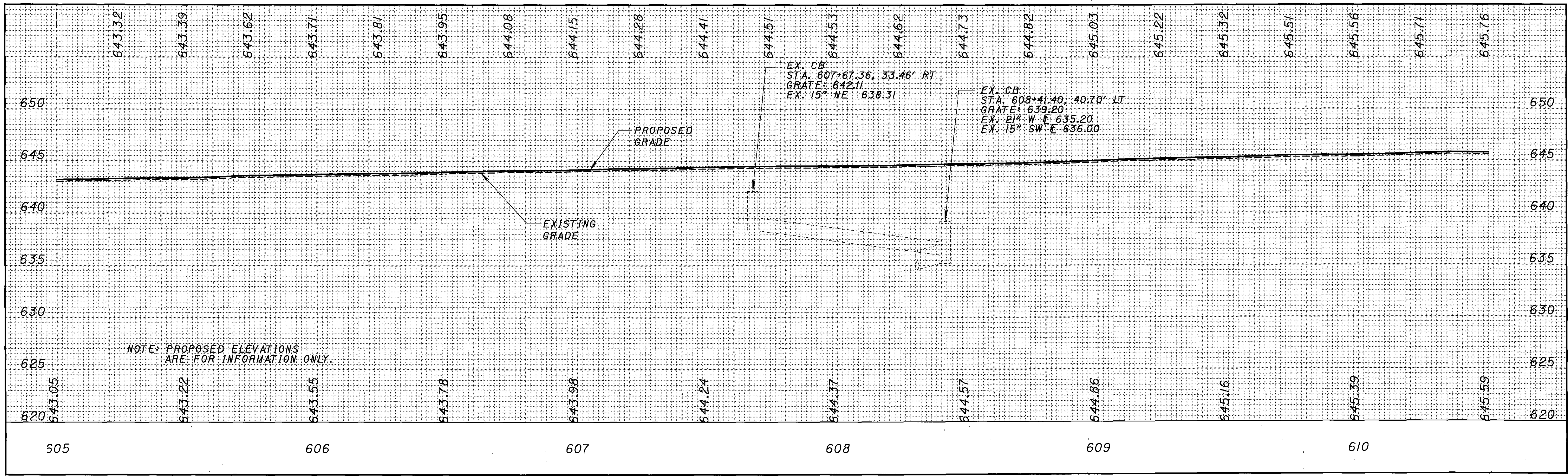
FULL DEPTH PAVEMENT

FOR RAMP GEOMETRICS, SEE SHEET 10

FOR MAINLINE INFORMATION, SEE SHEETS 148-150



PLAN AND PROFILE - RAMP B-2
STA. 605+00 TO 610+50

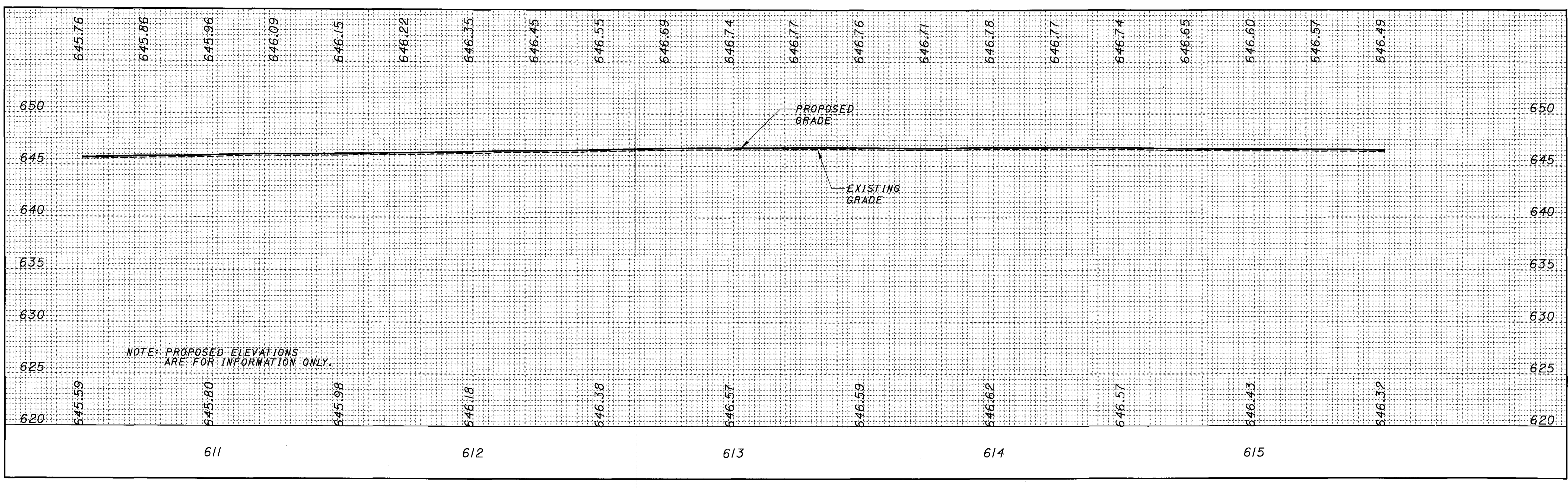
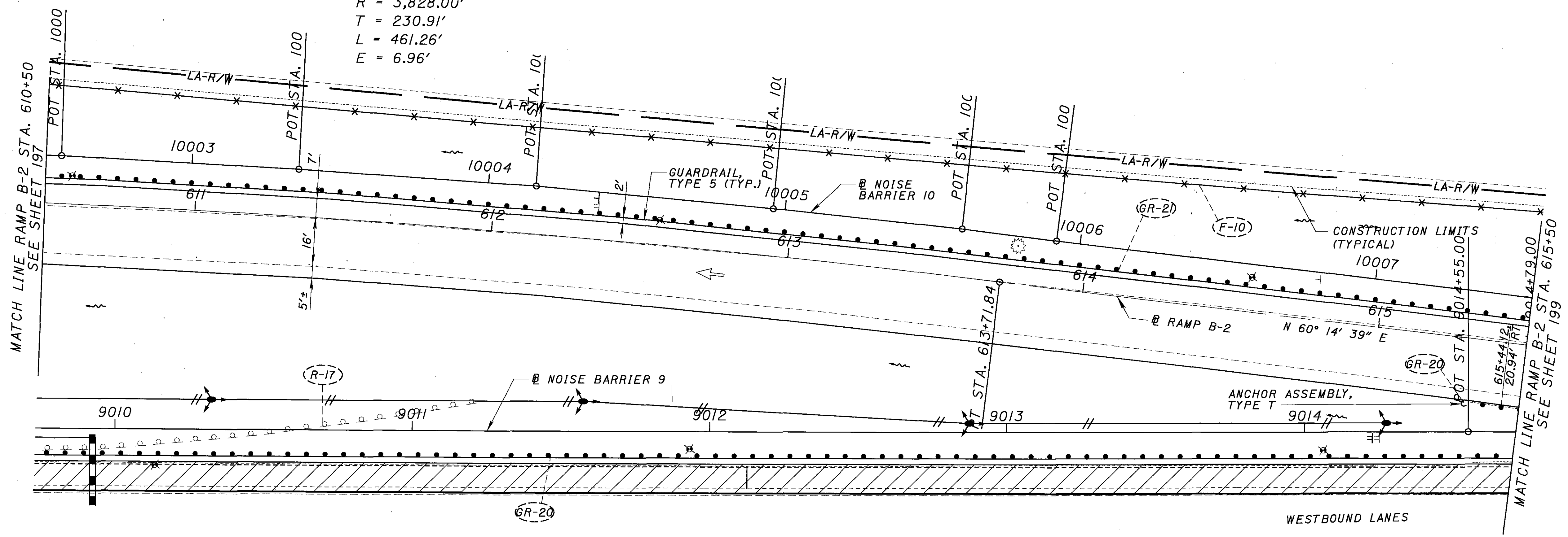
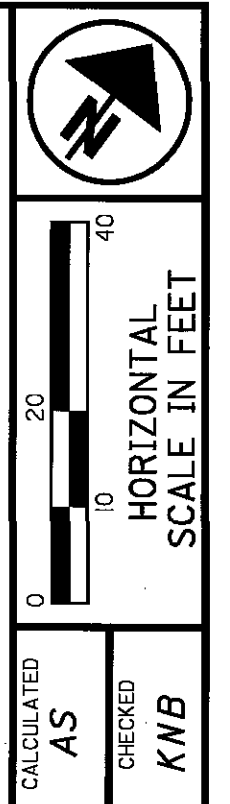


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P.I. Sta = 611+41.49
 D = 6° 54' 14" (RT)
 Dc = 1° 29' 48"
 R = 3,828.00'
 T = 230.91'
 L = 461.26'
 E = 6.96'

FOR RAMP GEOMETRICS, SEE SHEET 10
 FOR MAINLINE INFORMATION,
 SEE SHEET 150

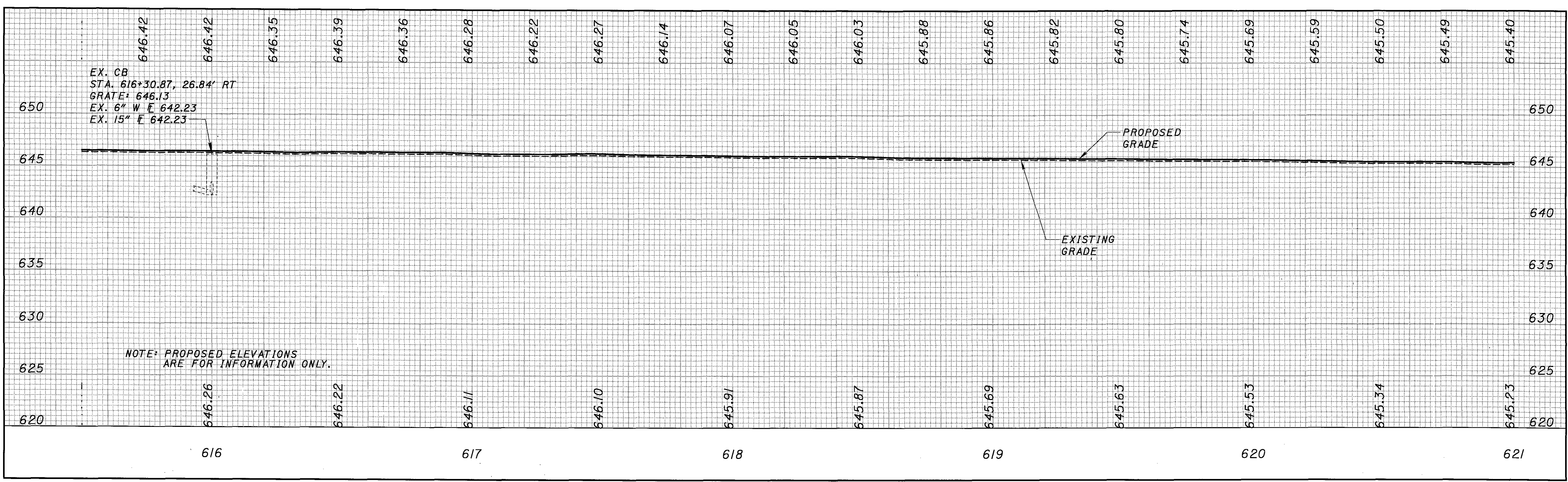
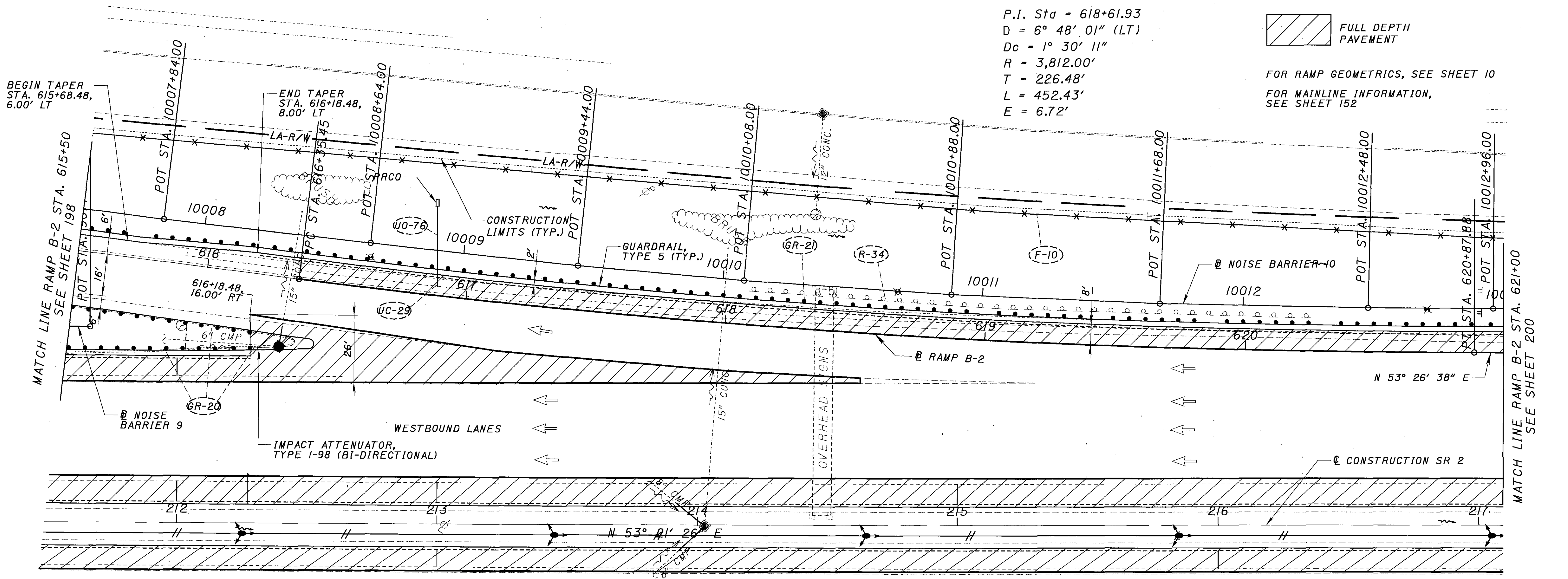
 FULL DEPTH PAVEMENT



PLAN AND PROFILE - RAMP B-2
 STA. 610+50 TO 615+50

LAK-2-0.00

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PLAN AND PROFILE - RAMP B-2
STA. 615+50 TO 621+00

LAK-2-0.00

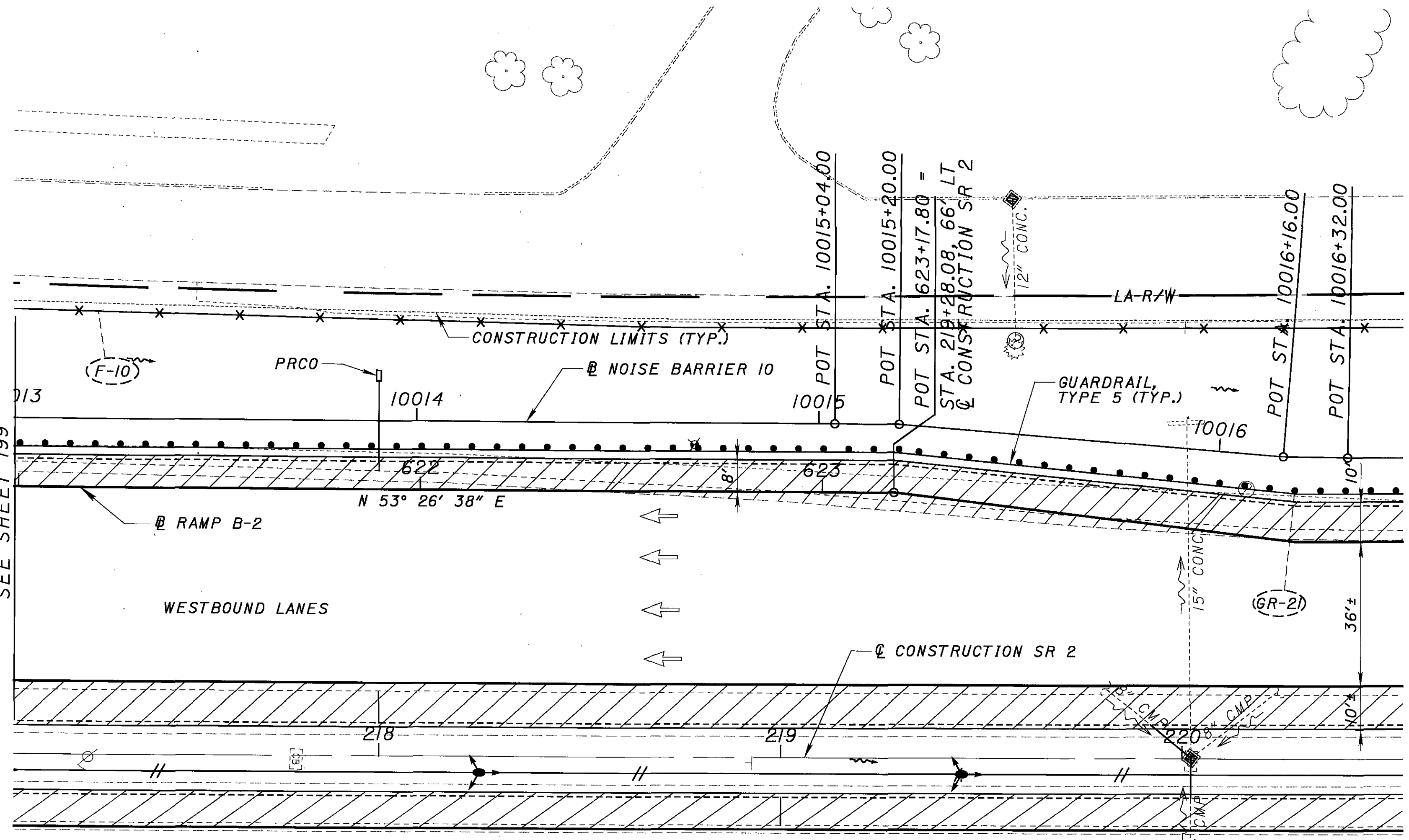
CALCULATED: AS
 CHECKED: KWB

HORIZONTAL SCALE IN FEET

199
524

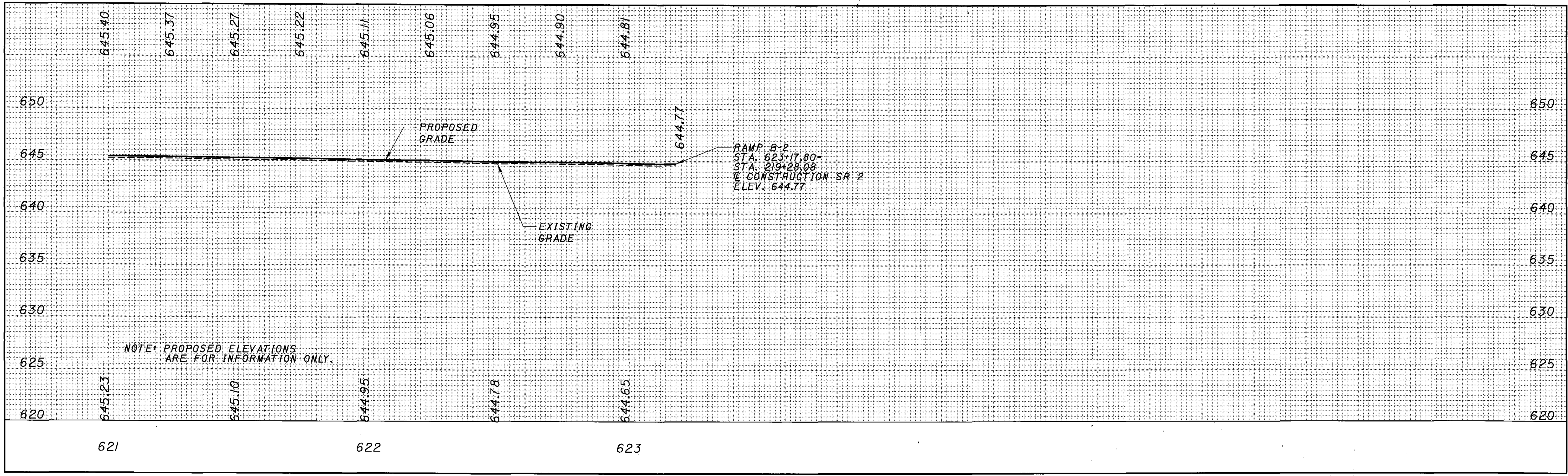
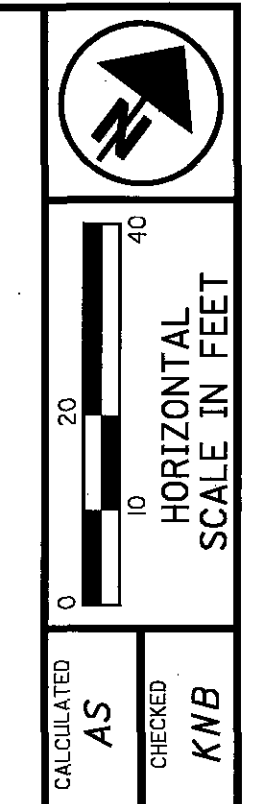
L:\Projects\000TV\03322_LAK-2-0.00\Drawings\HWY\PP\21778gp605.dgn 25-APR-2006 3:12 PM cswilgr

MATCH LINE RAMP B-2 STA. 621+00
SEE SHEET 199



FULL DEPTH PAVEMENT

FOR RAMP GEOMETRICS, SEE SHEET 10
FOR MAINLINE INFORMATION, SEE SHEET 154

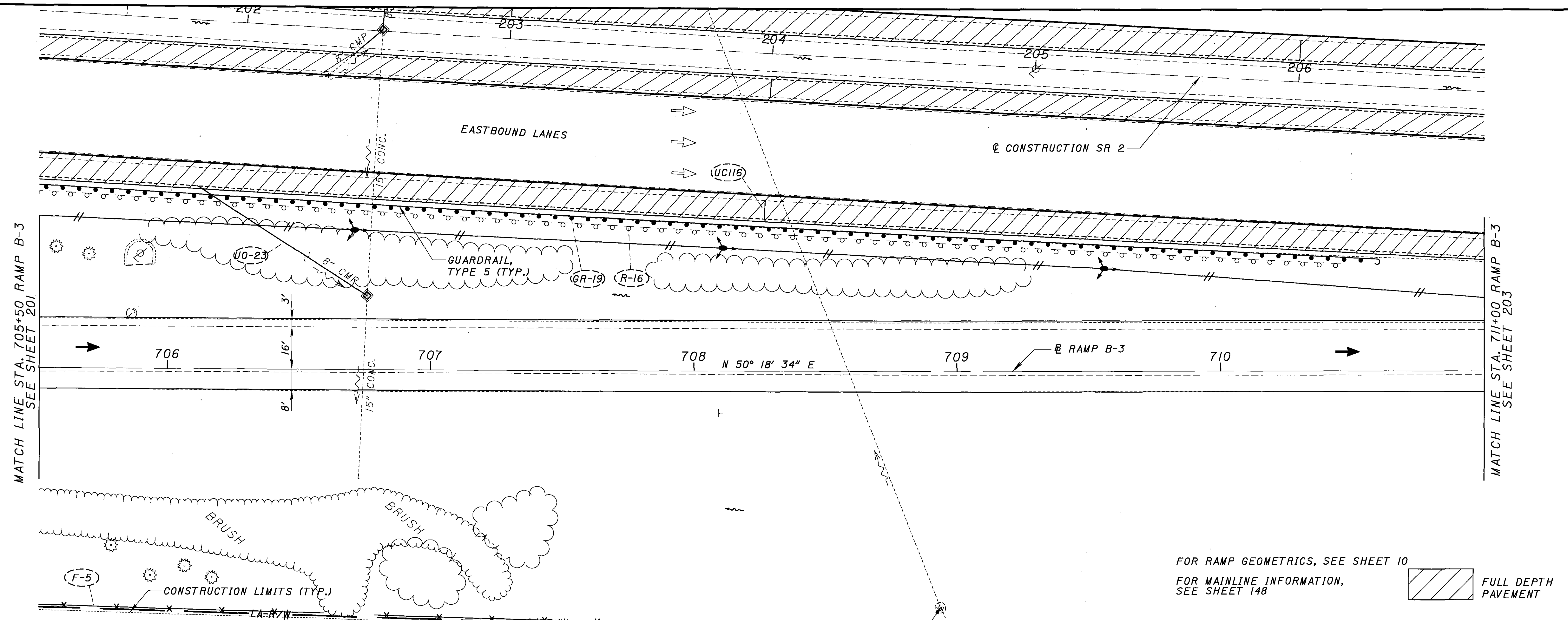


PLAN AND PROFILE - RAMP B-2
STA. 621+00 TO 623+17.80

LAK-2-0.00

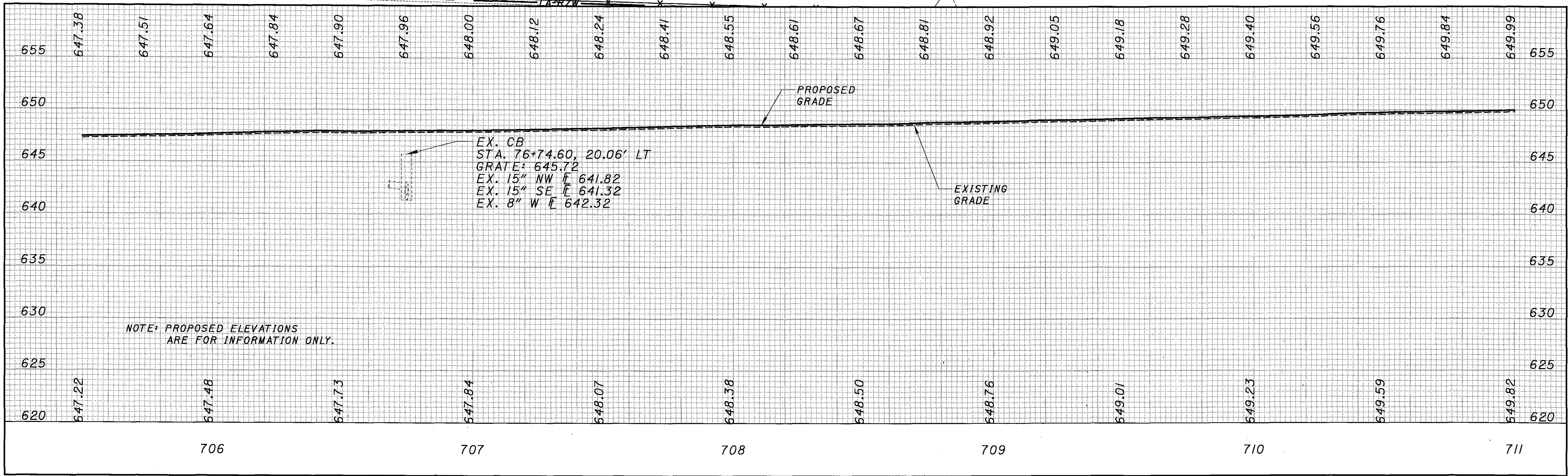
200
524

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FOR RAMP GEOMETRICS, SEE SHEET 10
 FOR MAINLINE INFORMATION, SEE SHEET 148

FULL DEPTH PAVEMENT



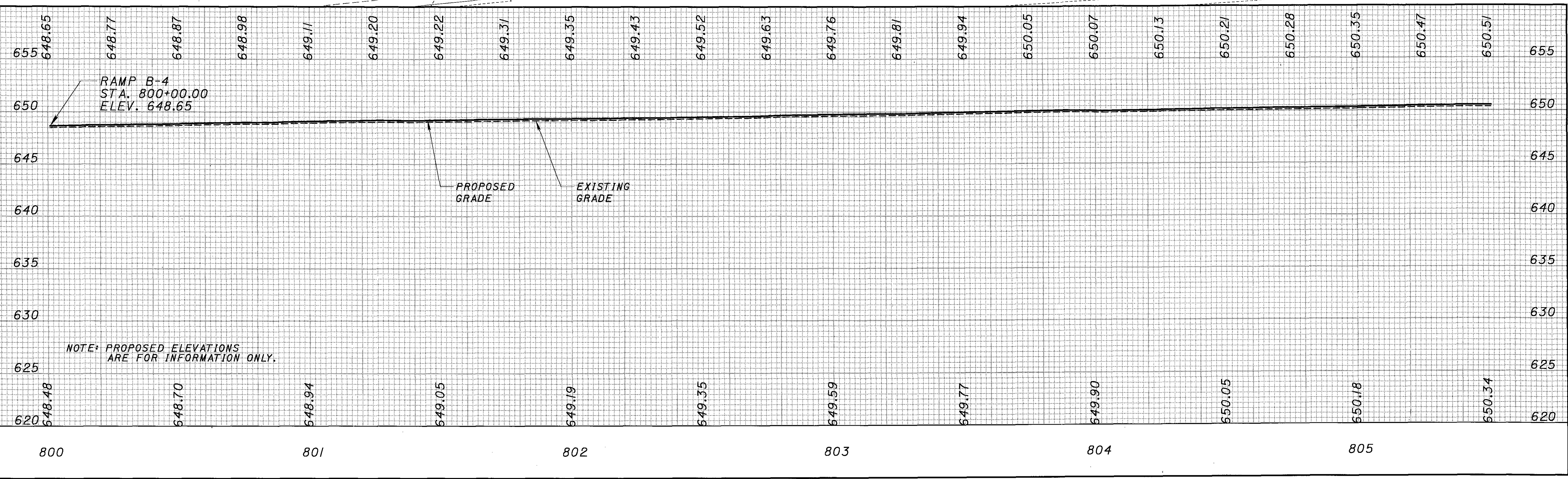
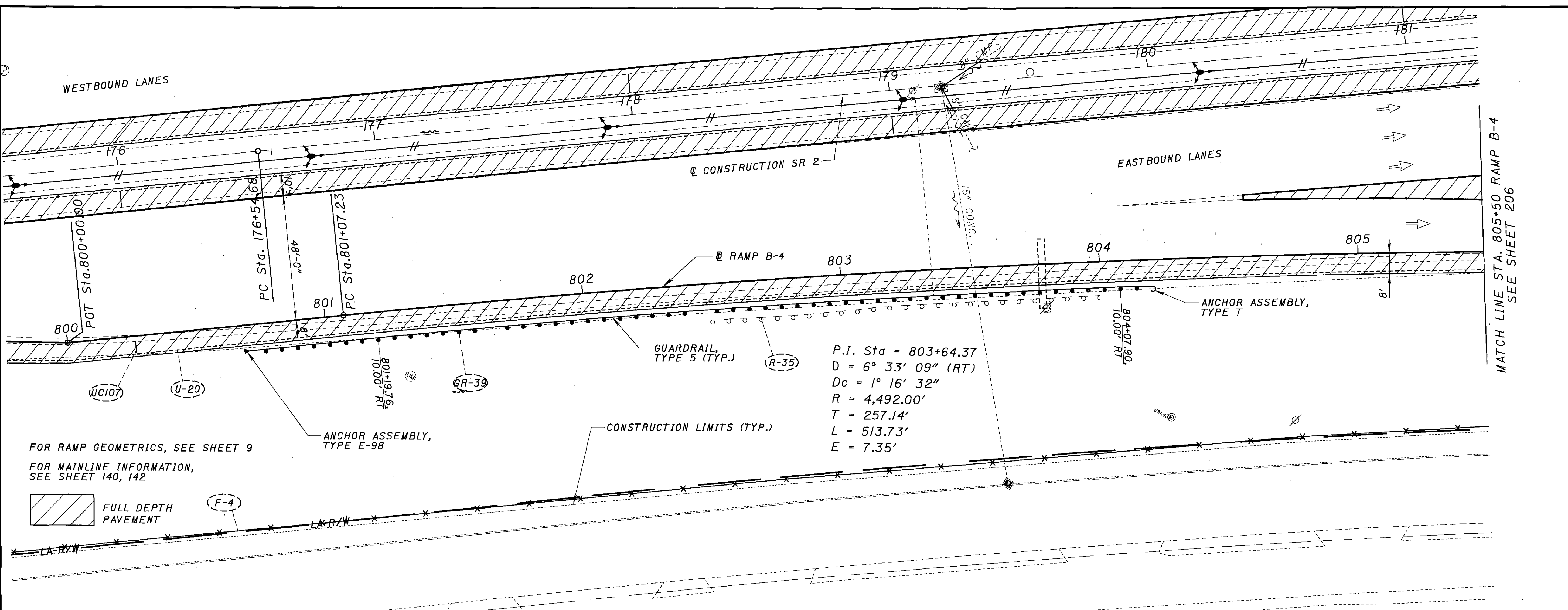
HORIZONTAL SCALE IN FEET
 CALCULATED AS
 CHECKED KWB

PLAN AND PROFILE - RAMP B-3
STA. 705+50 TO 711+00

LAK-2-0.00

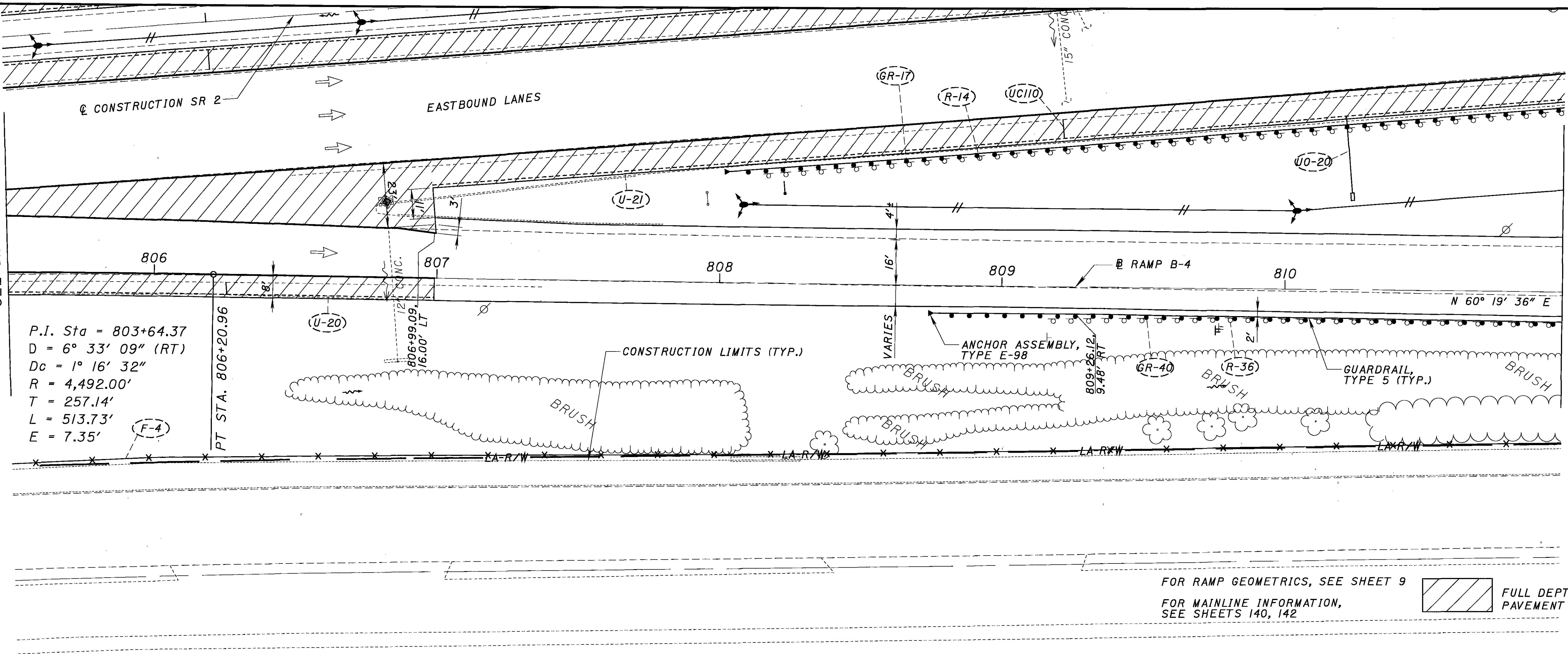
202
 524

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MATCH LINE STA. 805+50 RAMP B-4
SEE SHEET 205

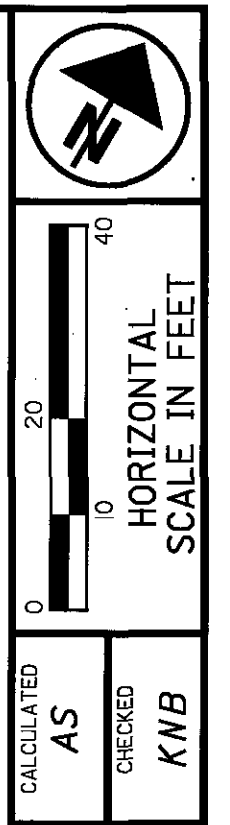
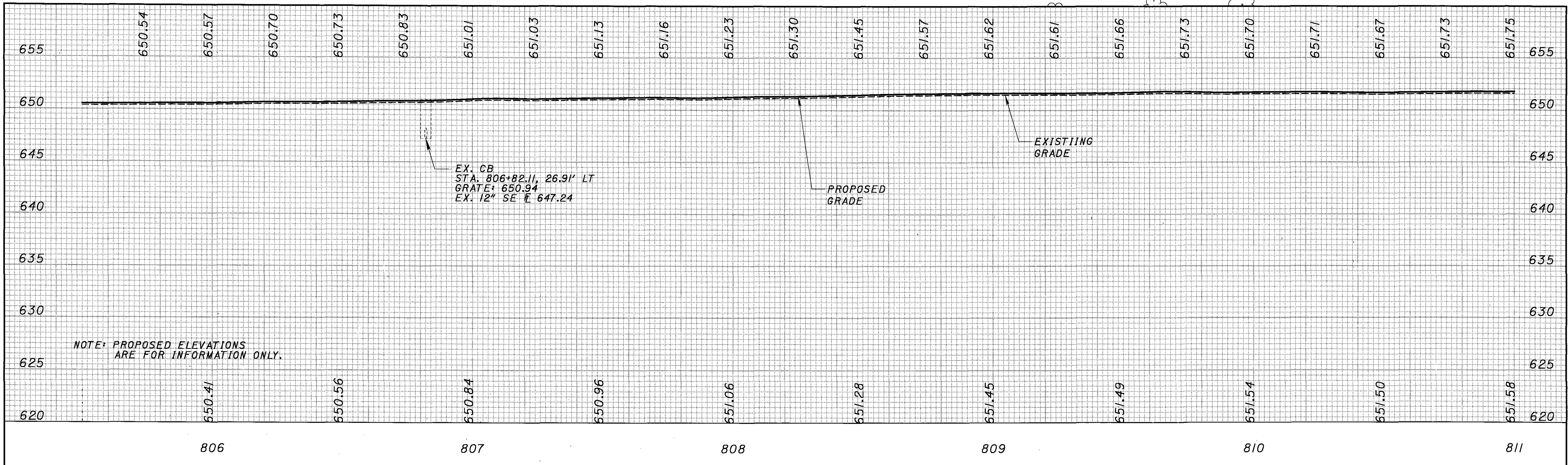


P.I. Sta = 803+64.37
D = 6° 33' 09" (RT)
Dc = 1° 16' 32"
R = 4,492.00'
T = 257.14'
L = 513.73'
E = 7.35'

PT STA. 806+20.96

806+99.09
16.00' LT

FOR RAMP GEOMETRICS, SEE SHEET 9
FOR MAINLINE INFORMATION, SEE SHEETS 140, 142

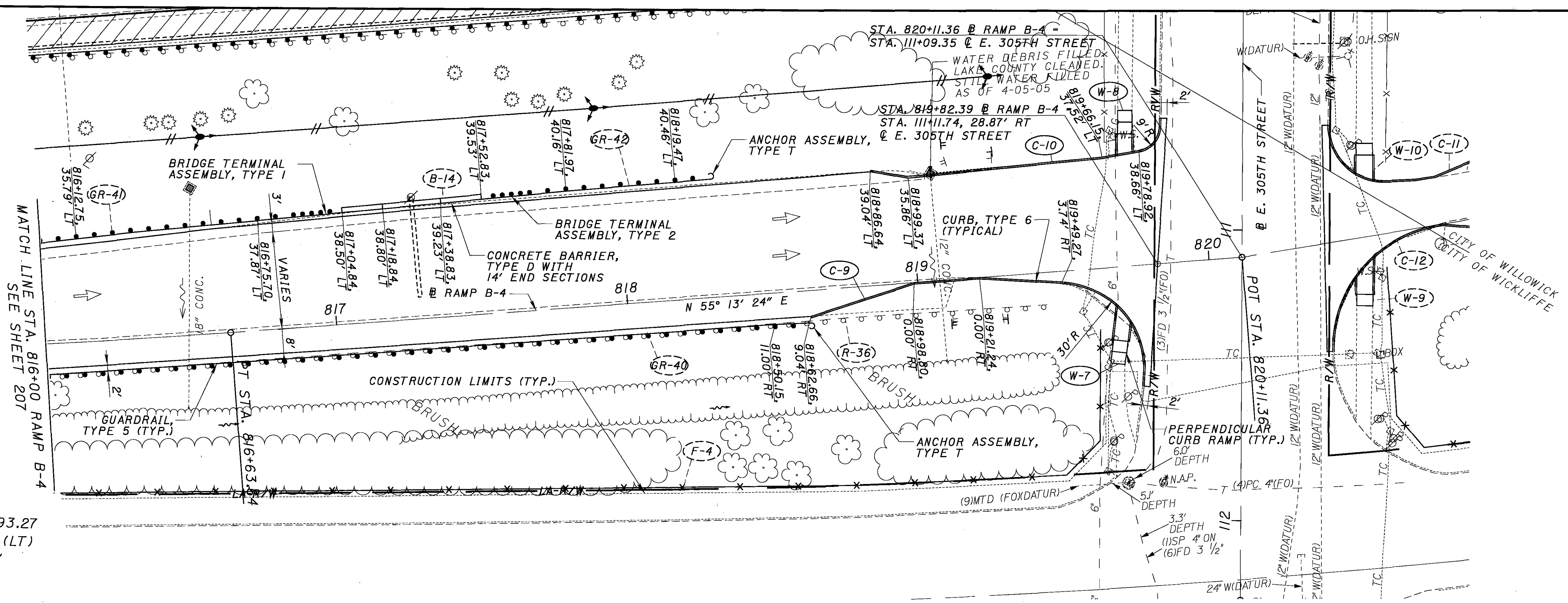


PLAN AND PROFILE - RAMP B-4
STA. 805+50 TO 811+00

LAK-2-0.00

206
524

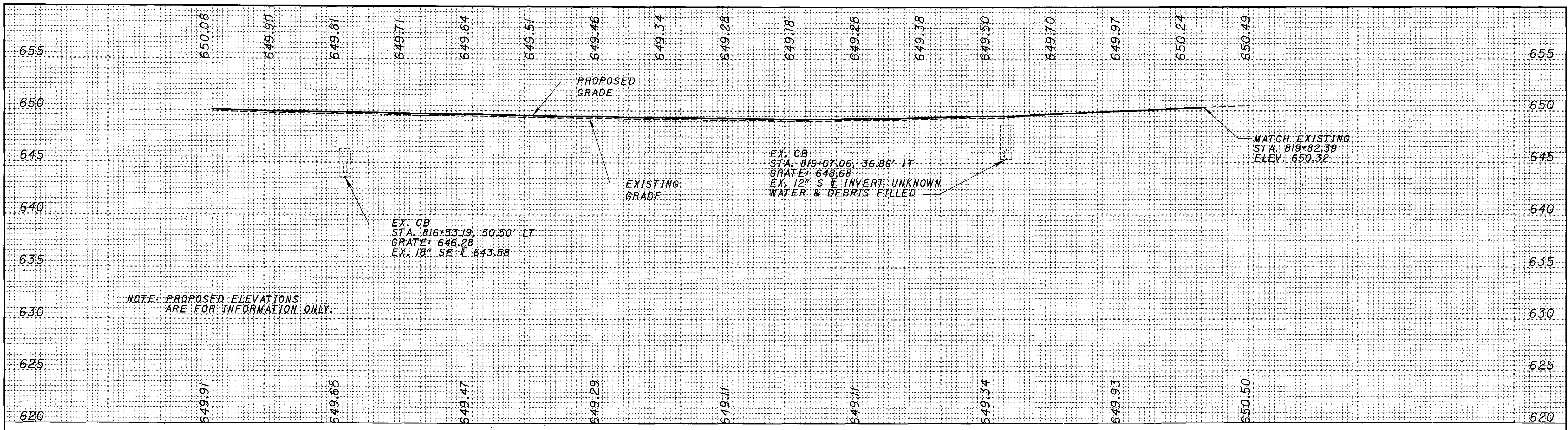
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P.I. Sta = 814+93.27
 D = 5° 06' 12" (LT)
 Dc = 1° 29' 48"
 R = 3,828.00'
 T = 170.59'
 L = 340.96'
 E = 3.80'

FOR RAMP GEOMETRICS, SEE SHEET 9
 FOR MAINLINE INFORMATION, SEE SHEETS 144, 146
 FOR INTERSECTION DETAILS, SEE SHEET 290

FULL DEPTH PAVEMENT



NOTE: PROPOSED ELEVATIONS ARE FOR INFORMATION ONLY.

EX. CB
 STA. 816+53.19, 50.50' LT
 GRATE: 646.28
 EX. 18" SE E 643.58

EX. CB
 STA. 819+07.06, 36.86' LT
 GRATE: 648.68
 EX. 12" S E INVERT UNKNOWN
 WATER & DEBRIS FILLED

MATCH EXISTING
 STA. 819+82.39
 ELEV. 650.32

CALCULATED AS
 CHECKED KNB

HORIZONTAL
 SCALE IN FEET

PLAN AND PROFILE - RAMP B-4

STATIONING: STA. 816+00 TO 820+11.36

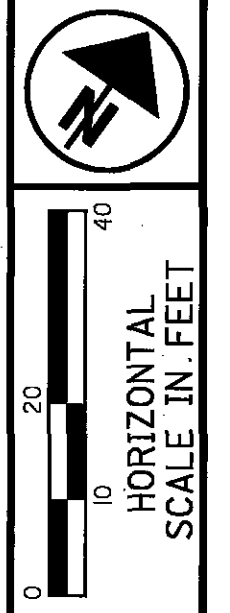
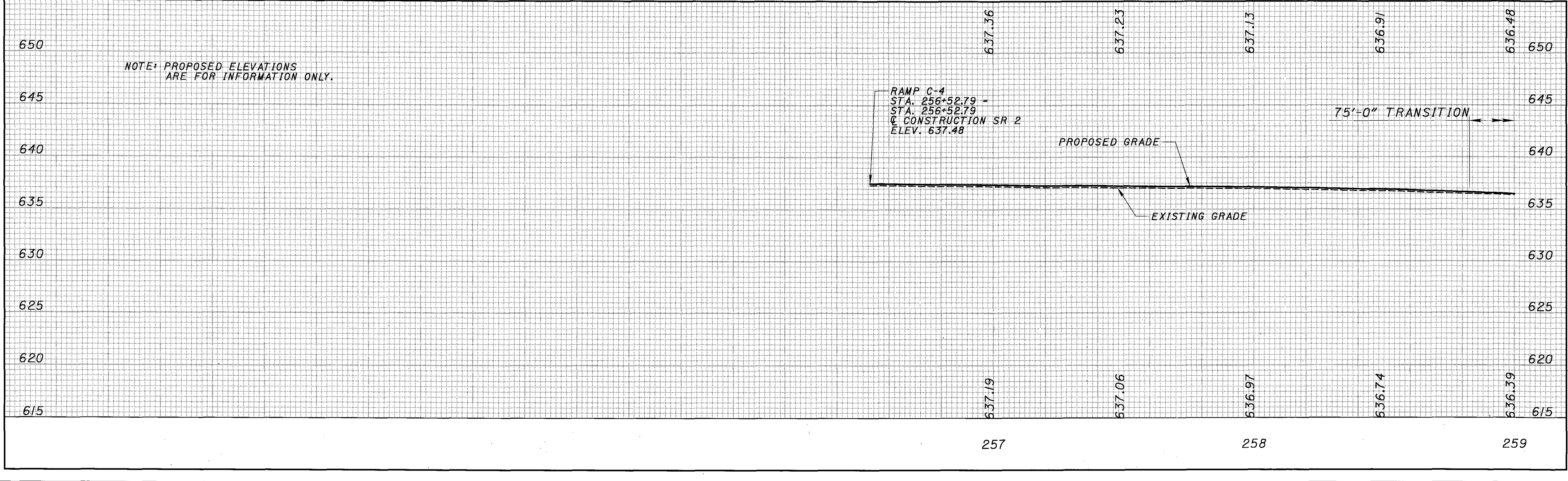
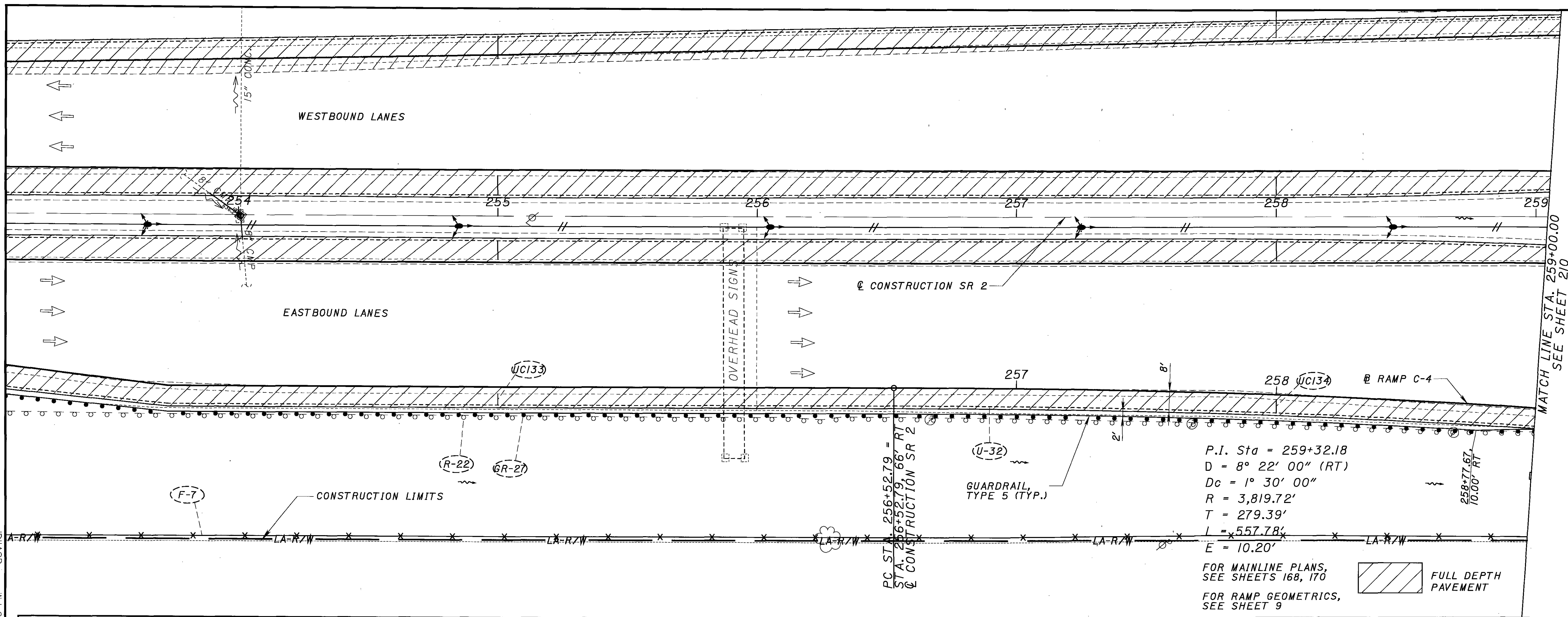
LAK-2-0.00

PROJECT: CITY OF WILLOWICK
 CITY OF WICKLIFFE

208

524

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CALCULATED
 MRC
 CHECKED
 KWB

PLAN AND PROFILE - RAMP C-4
 STA. 256+52.79 TO STA. 259+00.00

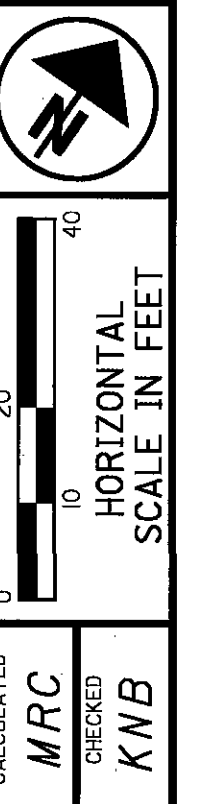
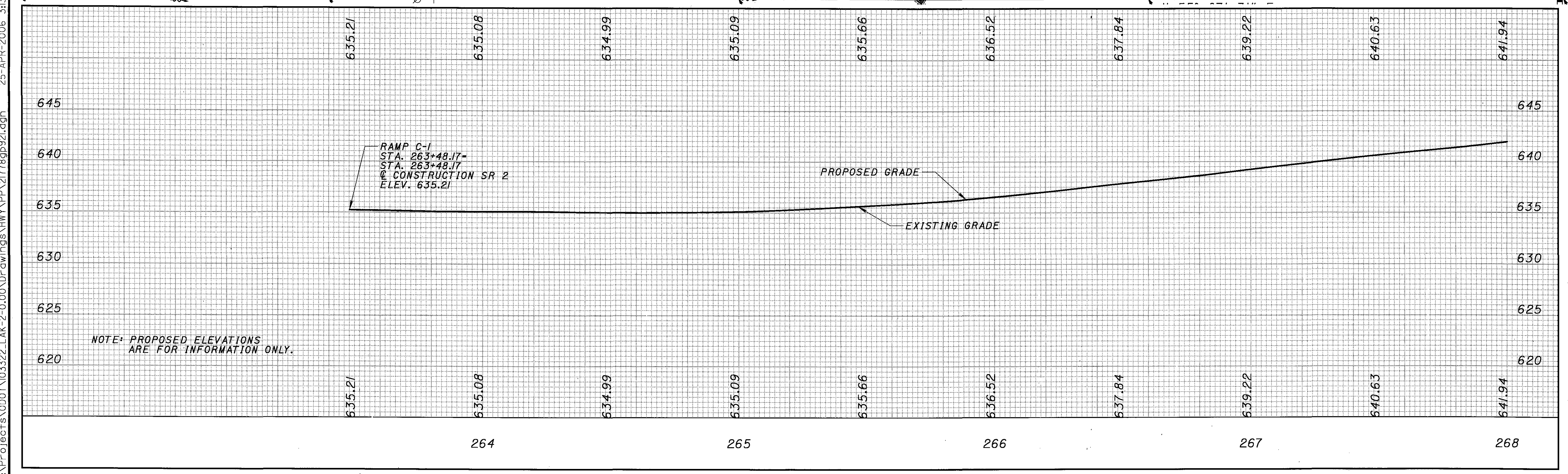
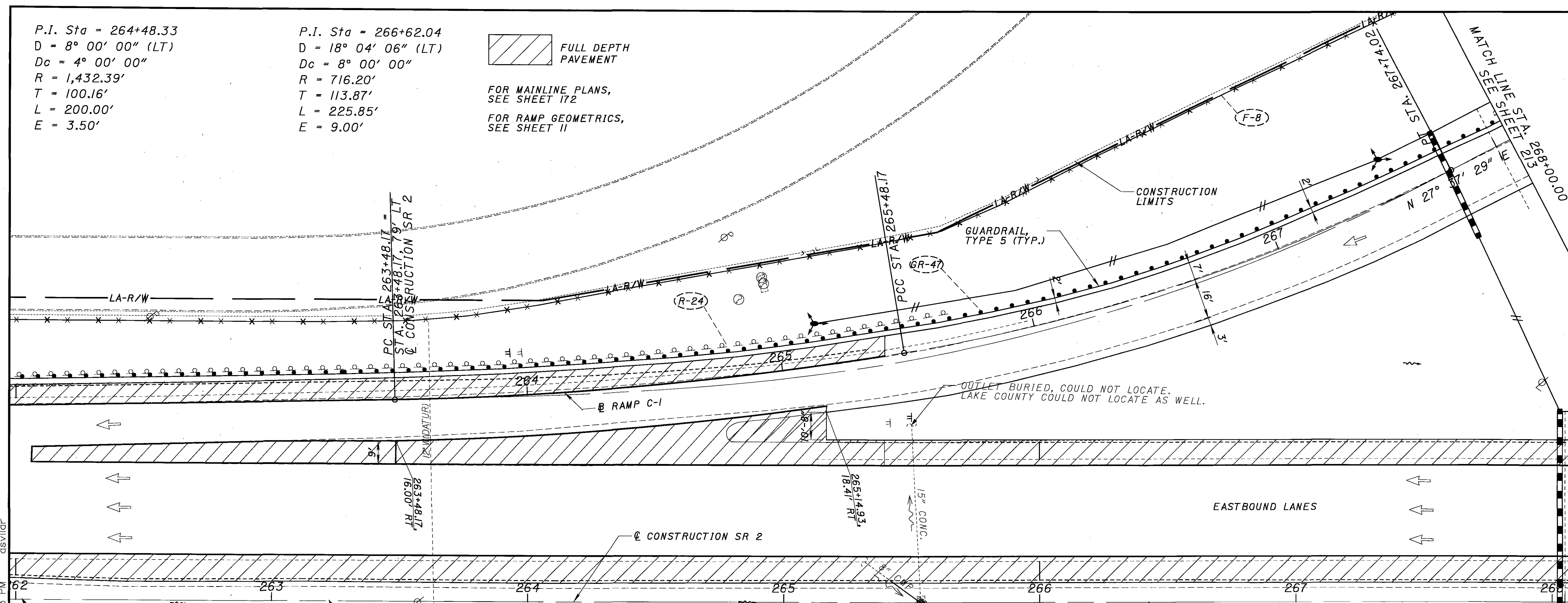
LAK-2-0.00

P.I. Sta = 264+48.33
 D = 8° 00' 00" (LT)
 Dc = 4° 00' 00"
 R = 1,432.39'
 T = 100.16'
 L = 200.00'
 E = 3.50'

P.I. Sta = 266+62.04
 D = 18° 04' 06" (LT)
 Dc = 8° 00' 00"
 R = 716.20'
 T = 113.87'
 L = 225.85'
 E = 9.00'

 FULL DEPTH PAVEMENT

FOR MAINLINE PLANS,
 SEE SHEET 172
 FOR RAMP GEOMETRICS,
 SEE SHEET 11



CALCULATED
 MRC
 CHECKED
 KWB

PLAN AND PROFILE - RAMP C-1
 STA. 263+48.17 TO STA. 268+00.00

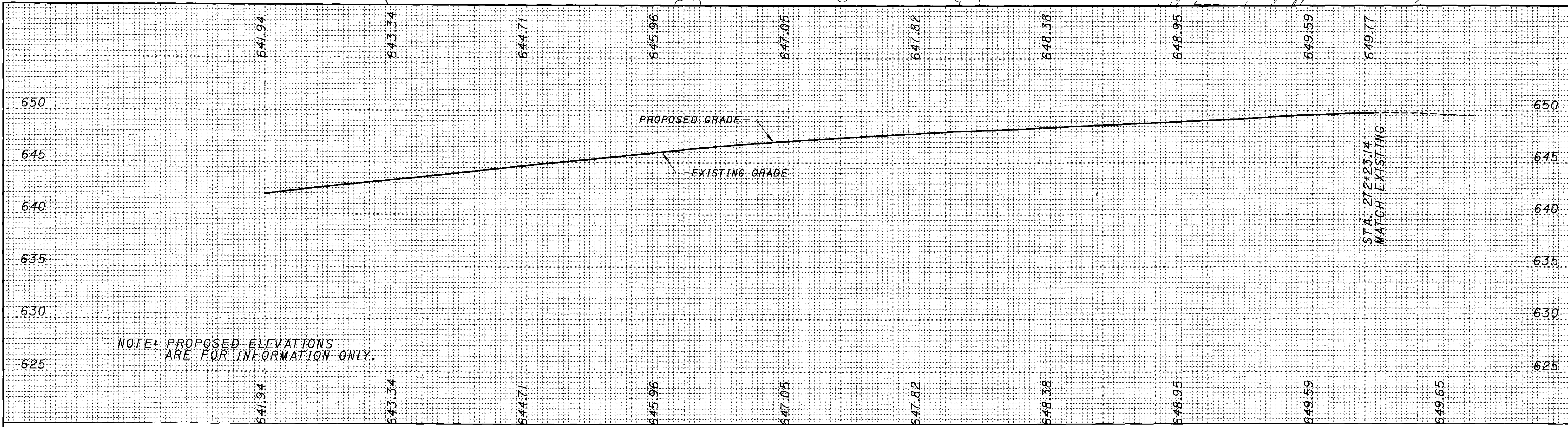
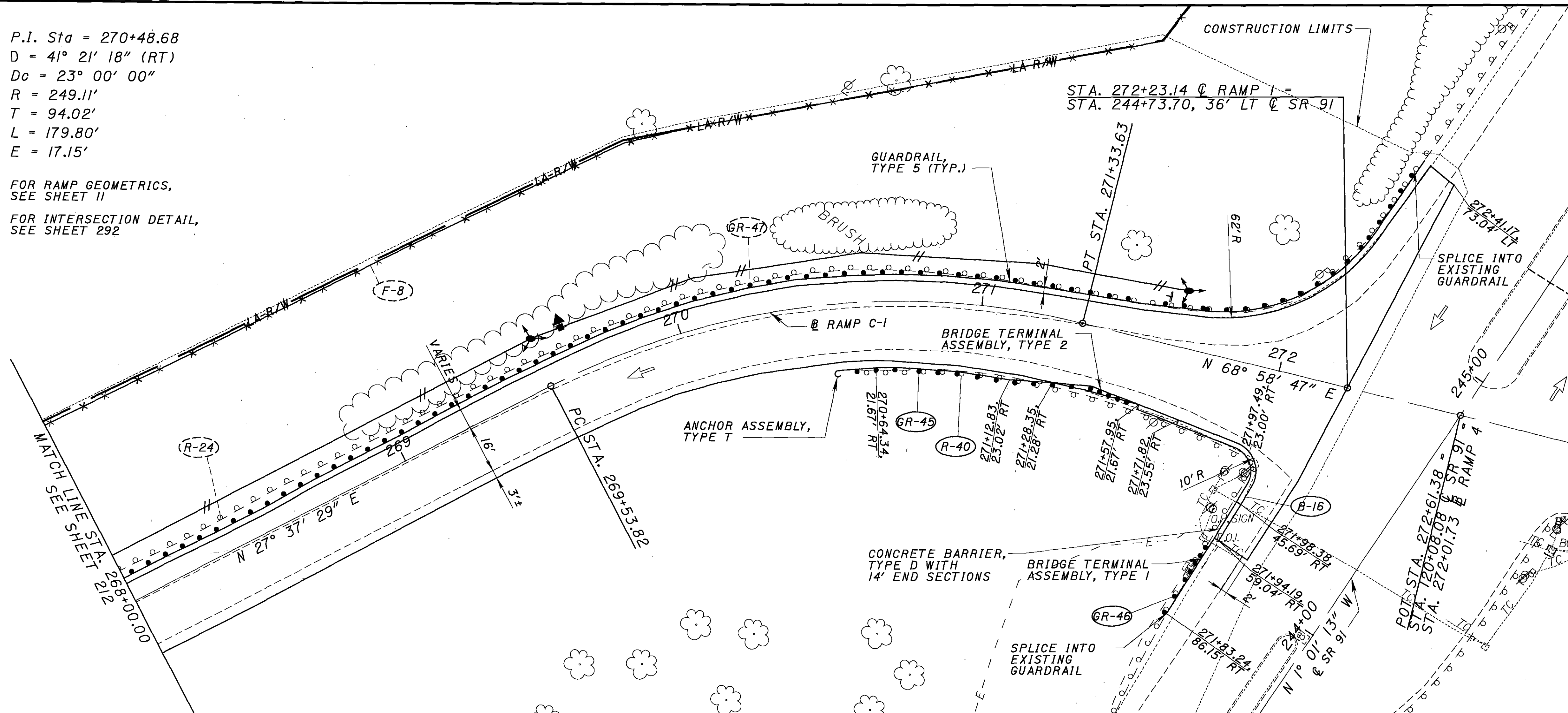
LAK-2-0.00

212
 524

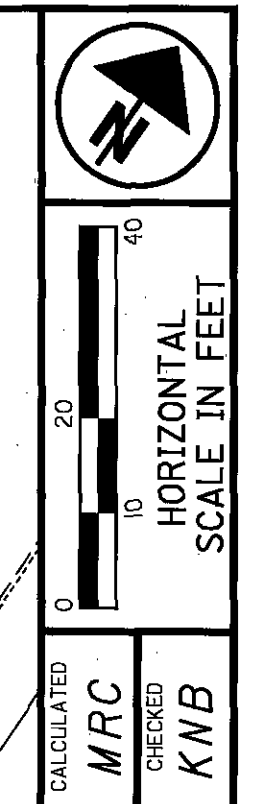
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P.I. Sta = 270+48.68
 D = 41° 21' 18" (RT)
 Dc = 23° 00' 00"
 R = 249.11'
 T = 94.02'
 L = 179.80'
 E = 17.15'

FOR RAMP GEOMETRICS,
 SEE SHEET II
 FOR INTERSECTION DETAIL,
 SEE SHEET 292



NOTE: PROPOSED ELEVATIONS
 ARE FOR INFORMATION ONLY.



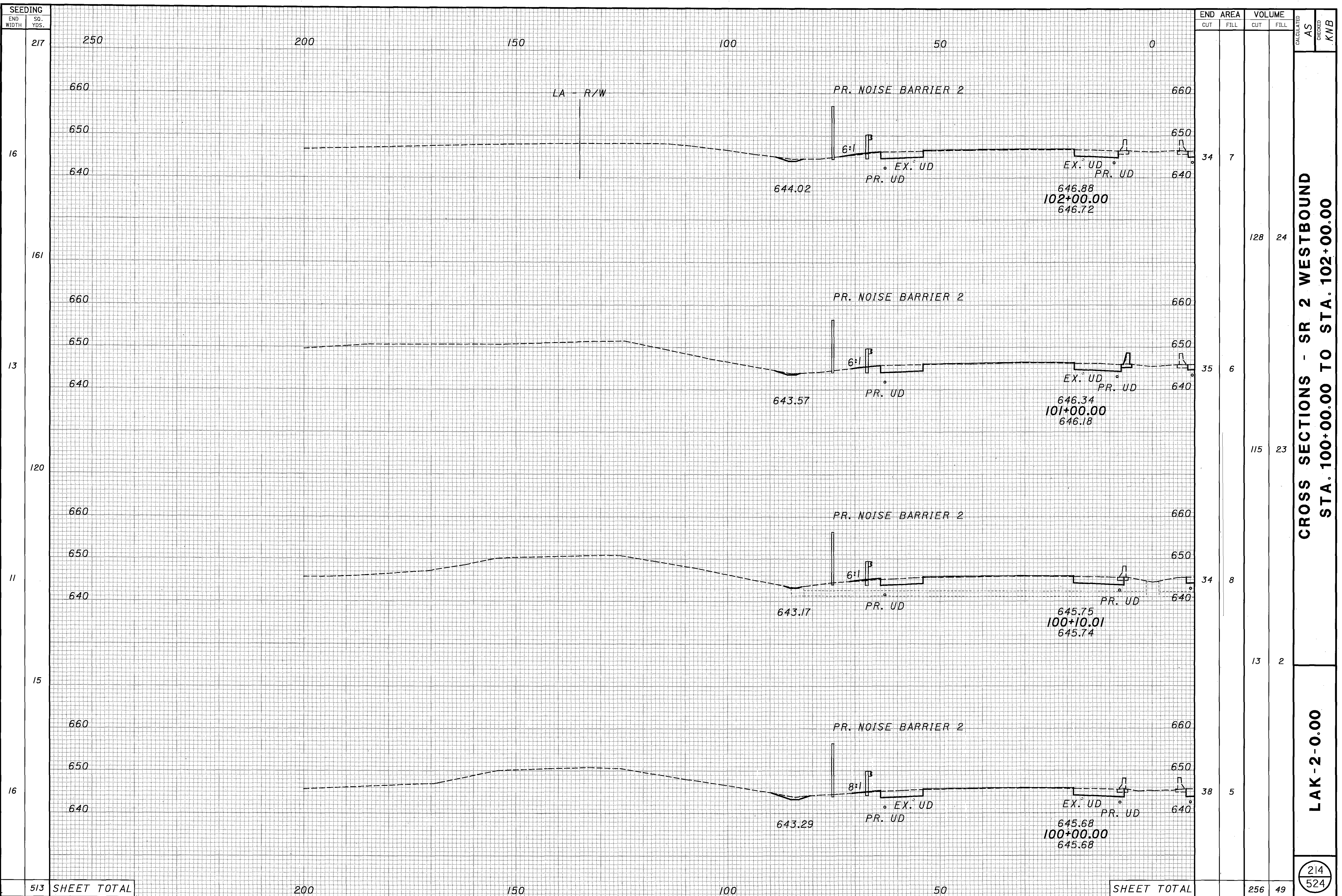
CALCULATED
 MRC
 CHECKED
 KWB

PLAN AND PROFILE - RAMP C-1
 STA. 268+00.00 TO STA. 272+61.38

LAK-2-0.00
 213
 524

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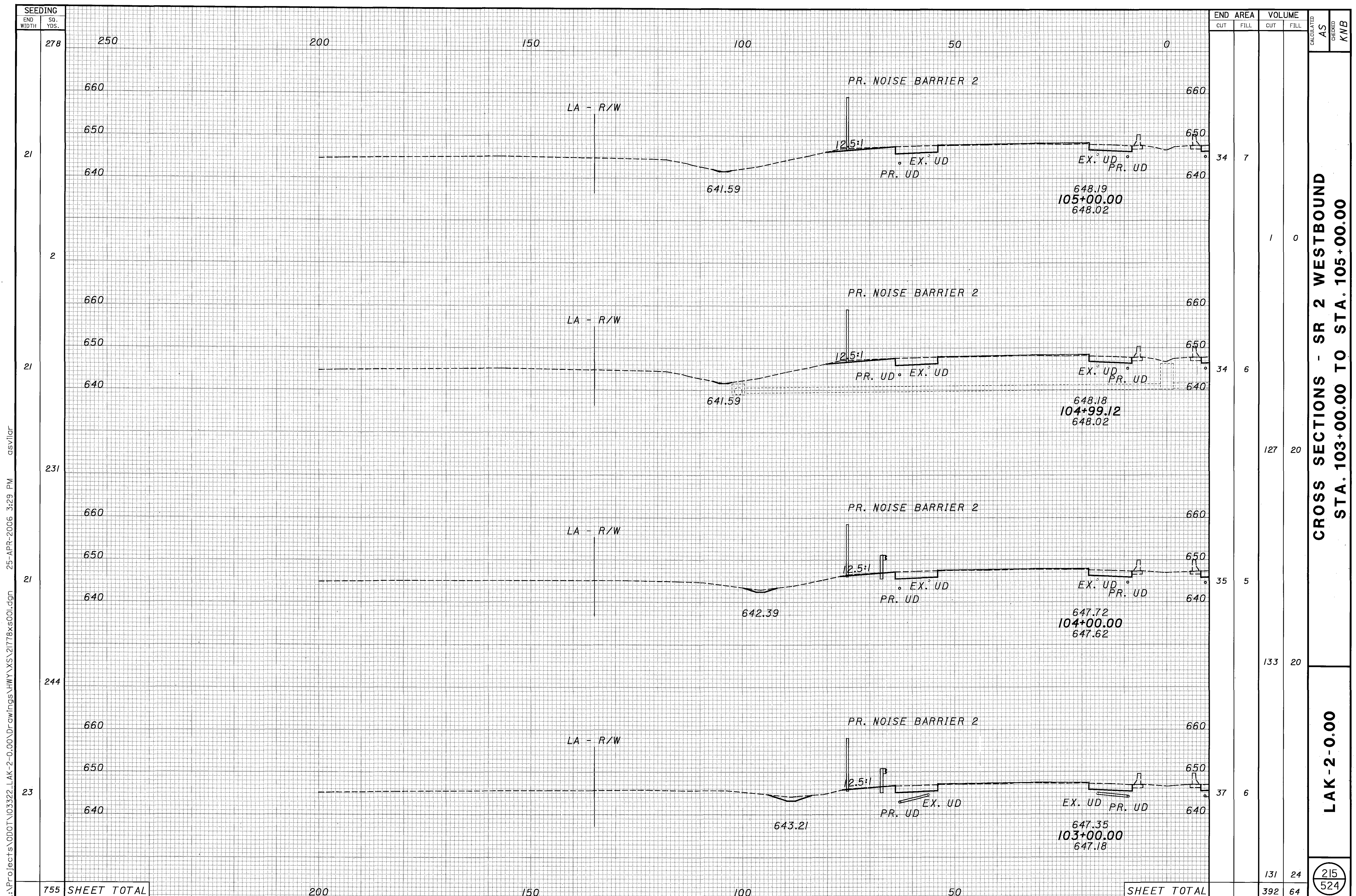


END	AREA		VOLUME		CALCULATED	AS	CHECKED	KMB
	CUT	FILL	CUT	FILL				
16	34	7	128	24				
13	35	6	115	23				
11	34	8	13	2				
15	38	5	256	49				
513	SHEET TOTAL		256	49				

CROSS SECTIONS - SR 2 WESTBOUND
STA. 100+00.00 TO STA. 102+00.00

LAK-2-0.00

214
524



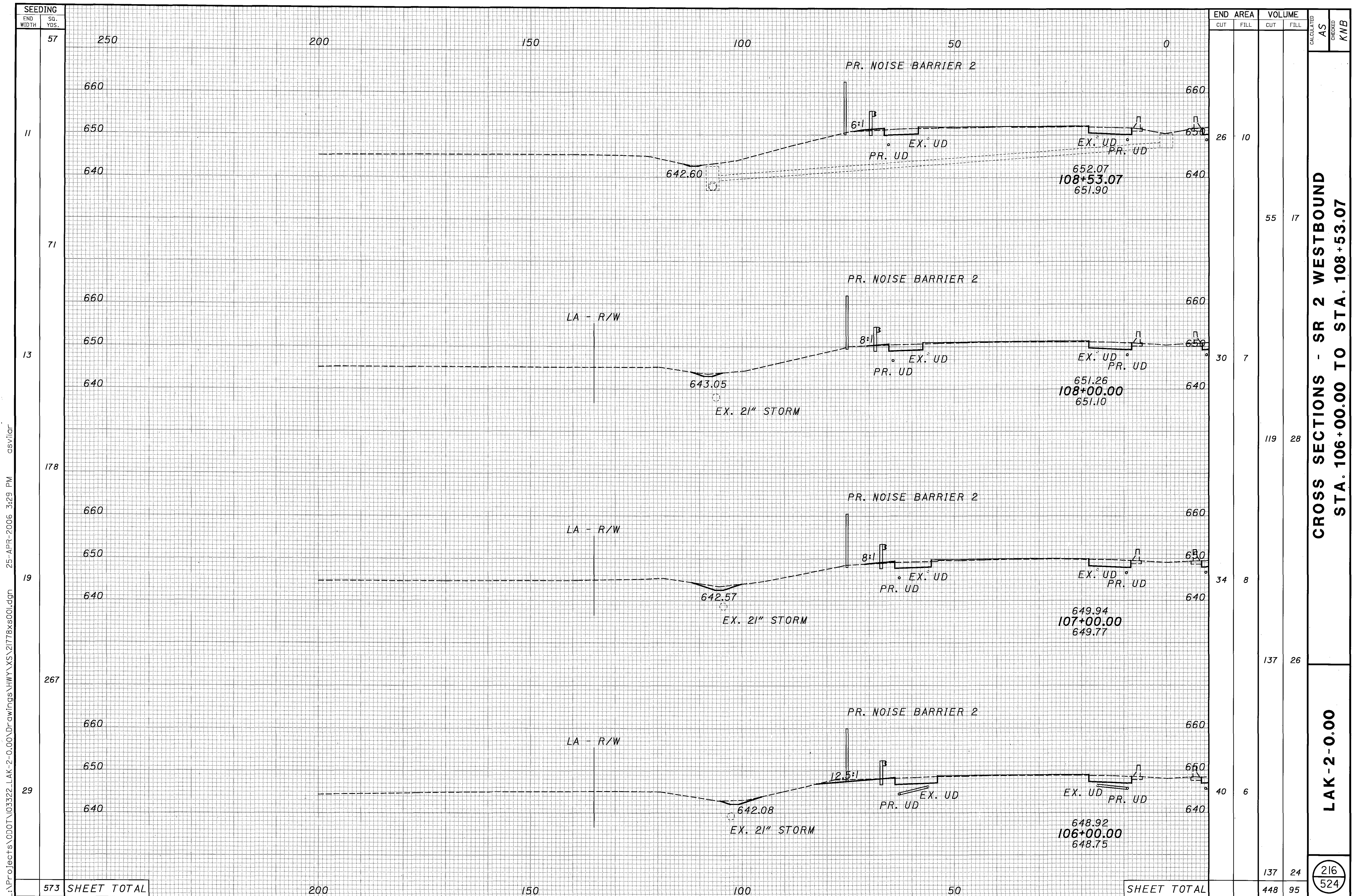
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 103+00.00 TO STA. 105+00.00

LAK-2-0.00

CALCULATED AS
 CHECKED KWB

215
 524



SEEDING	
END WIDTH	SO. YDS.
57	250
71	200
13	150
178	100
19	50
267	0
29	250
573	200

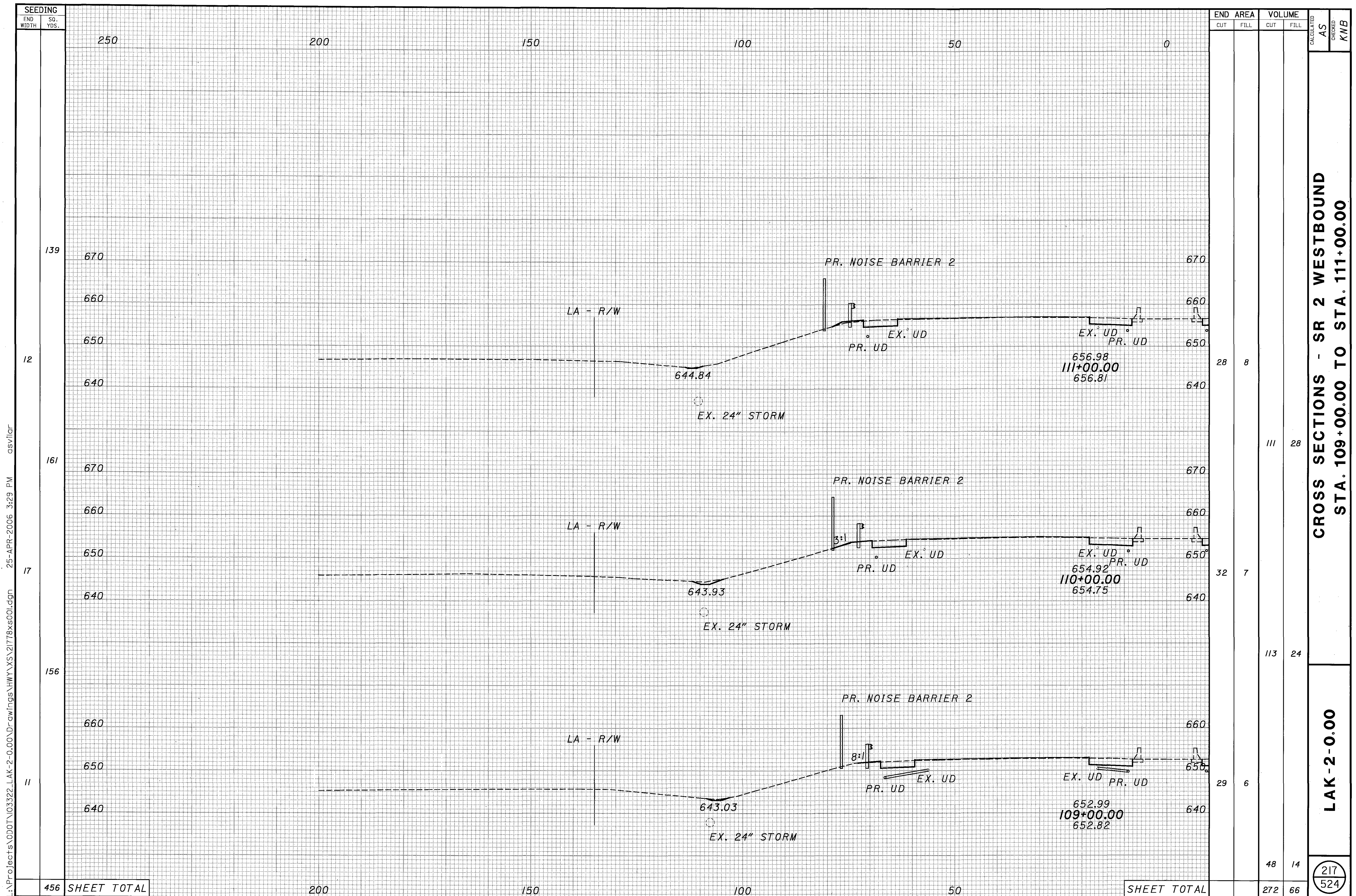
END	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
26	10		55	17		
30	7		119	28		
34	8		137	26		
40	6		137	24		
SHEET TOTAL			448	95		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 106+00.00 TO STA. 108+53.07

LAK-2-0.00

216
 524

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SEEDING	
END WIDTH	SO. YDS.
250	
200	
150	
100	
50	
0	
139	
161	
156	
456	SHEET TOTAL

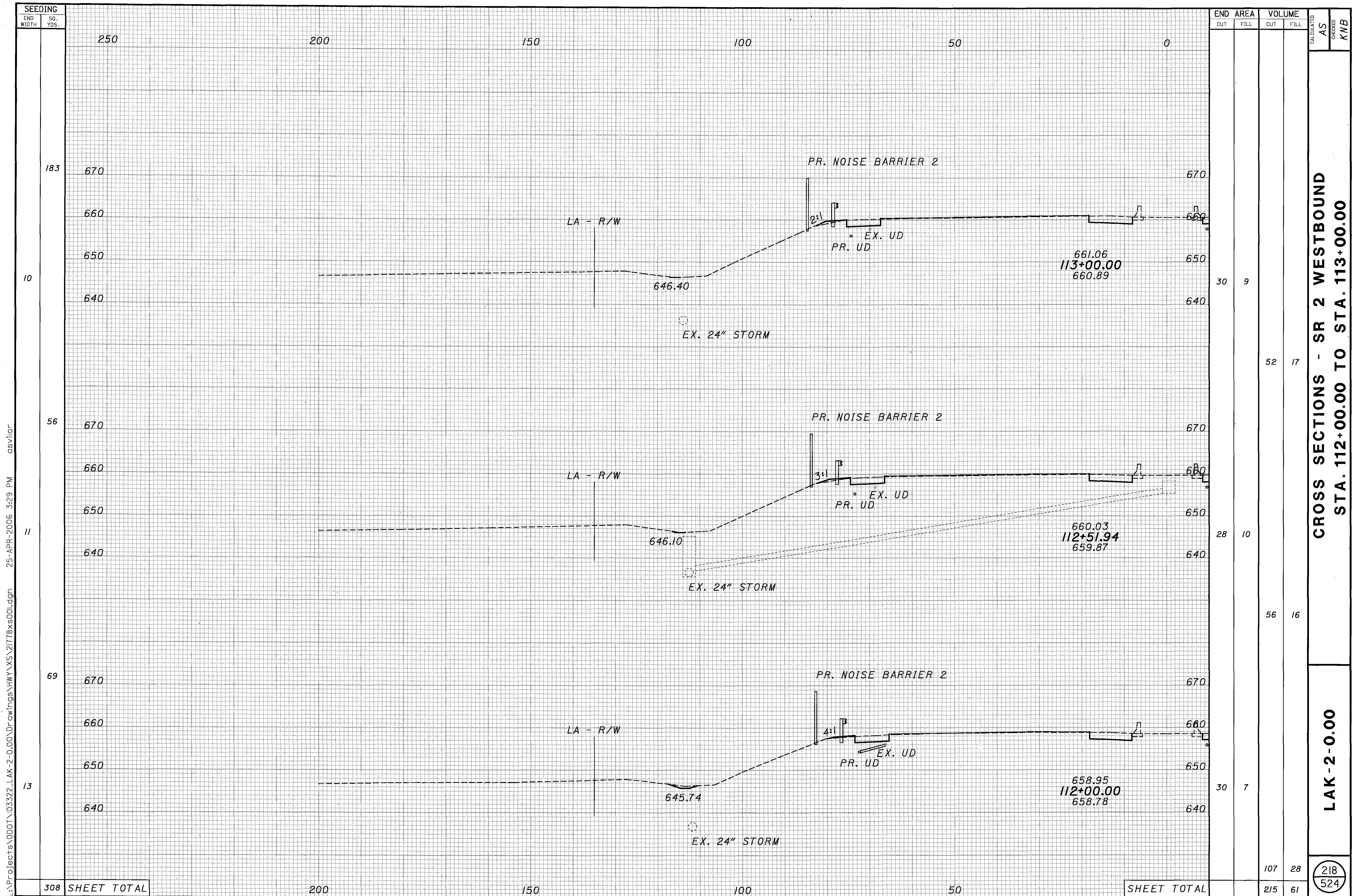
END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KWB
		CUT	FILL		
28	8				
32	7				
29	6				
48	14				
272	66				

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 109+00.00 TO STA. 111+00.00

LAK-2-0.00

217
 524

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SEEDING	
END WIDTH	SO. YDS.
183	
56	
69	
13	
308	SHEET TOTAL

END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KMB
		CUT	FILL		
30	9				
52	17				
28	10				
56	16				
30	7				
107	28				
215	61				

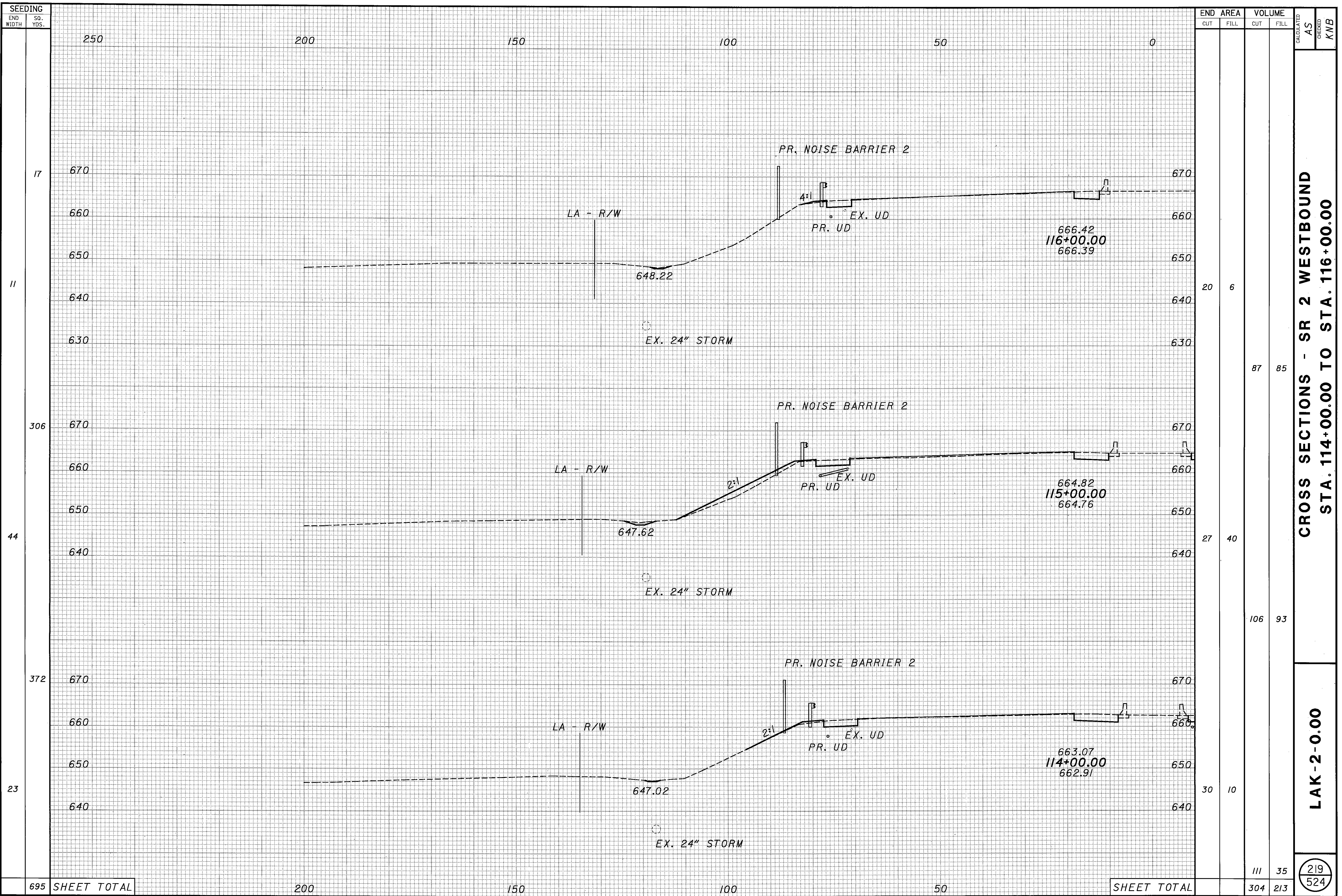
CROSS SECTIONS - SR 2 WESTBOUND
 STA. 112+00.00 TO STA. 113+00.00

LAK-2-0.00

218
 524

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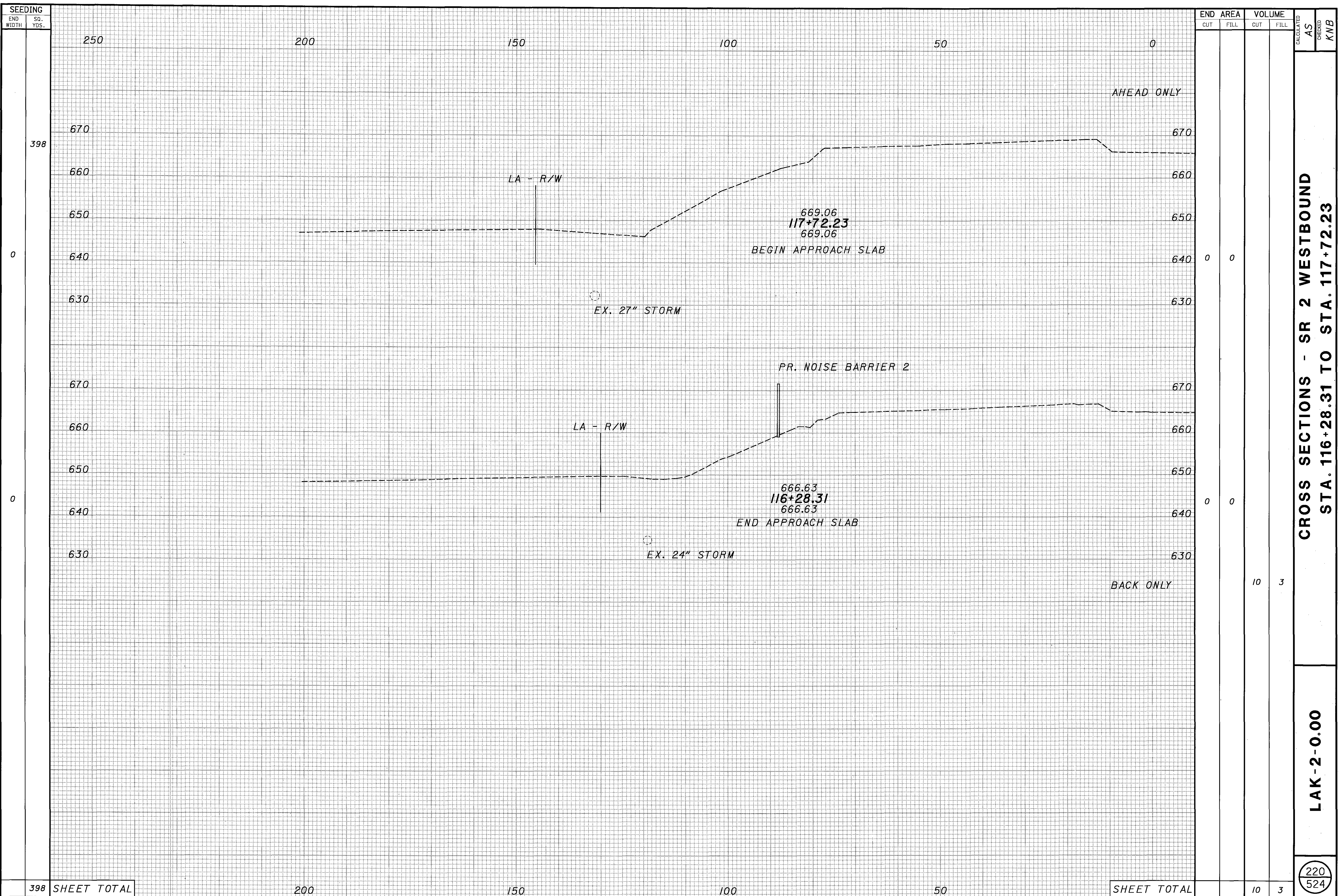
SEEDING	
END WIDTH	SO. YDS.
250	17
200	11
150	306
100	44
50	372
0	23
695 SHEET TOTAL	

END AREA		VOLUME		CALCULATED AS	CHECKED KNB
CUT	FILL	CUT	FILL		
20	6	87	85		
27	40	106	93		
30	10	111	35		
SHEET TOTAL		304	213	219	524

**CROSS SECTIONS - SR 2 WESTBOUND
STA. 114+00.00 TO STA. 116+00.00**

LAK-2-0.00

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SEEDING	
END WIDTH	SO. YDS.
398	0
398	0
398	0

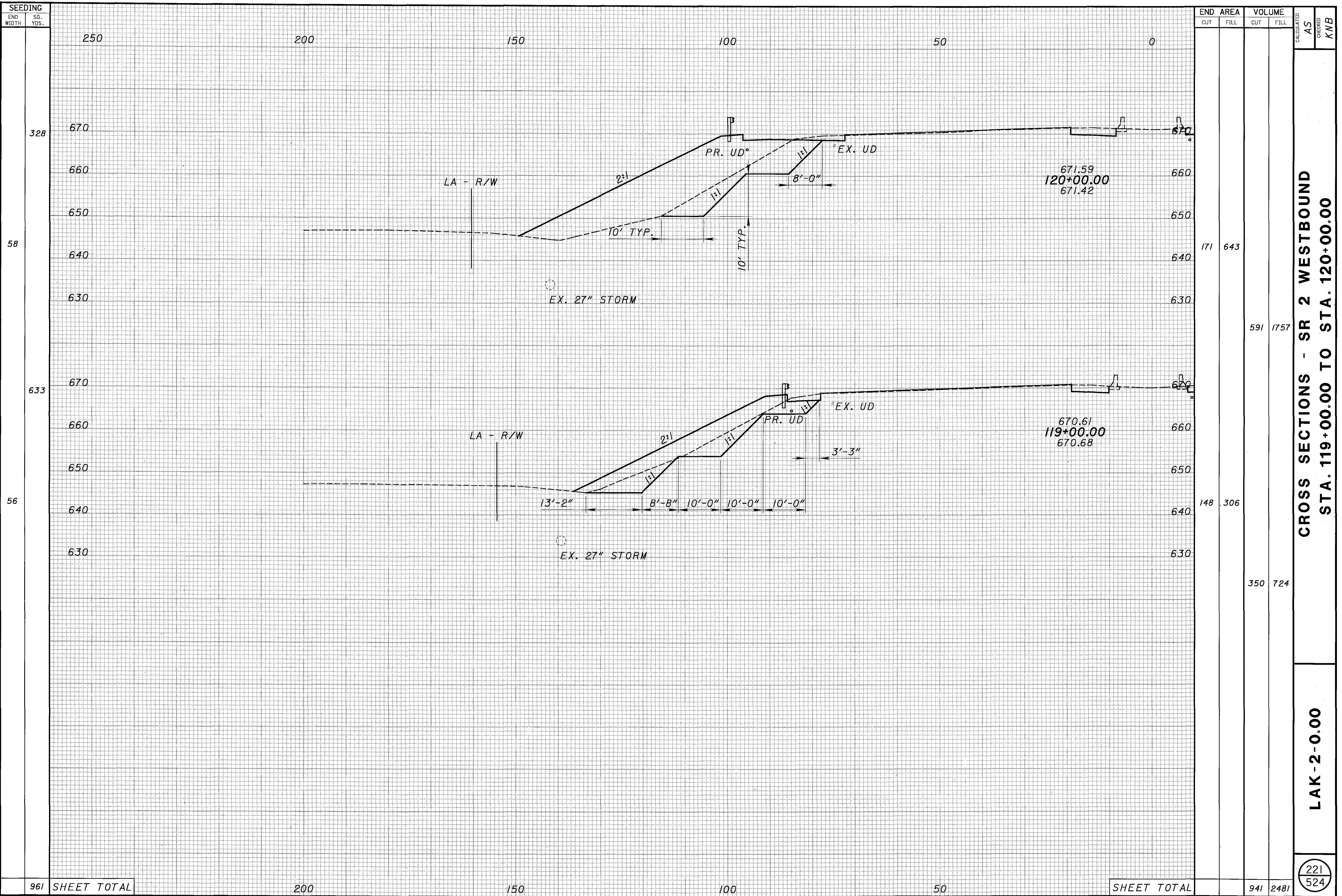
END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		
0	0	0	0		
0	0	10	3		
SHEET TOTAL		10	3		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 116+28.31 TO STA. 117+72.23

LAK-2-0.00

220
524

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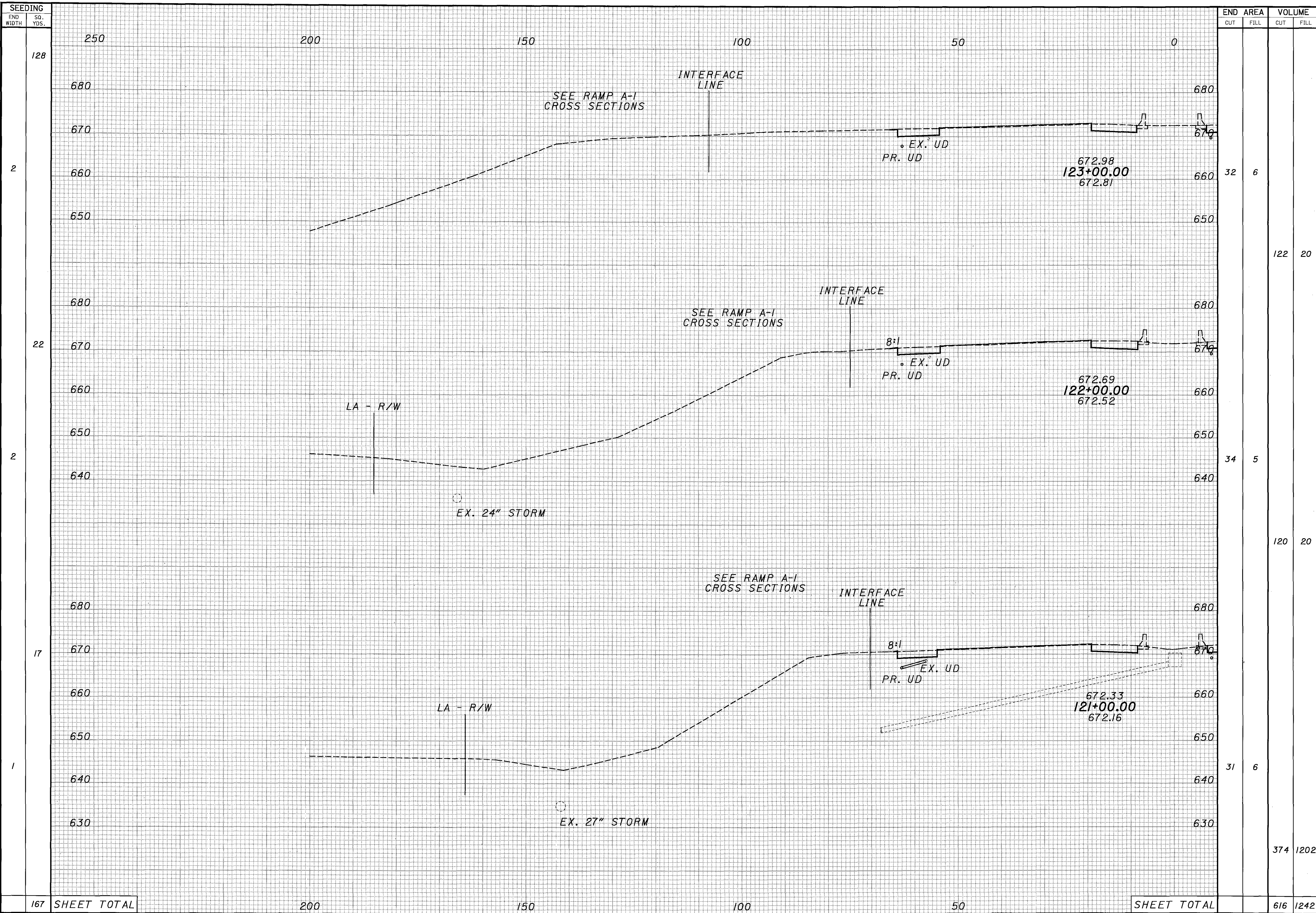
SEEDING	
END WIDTH	SO. YDS.
328	250
58	200
633	150
56	100
961	50
SHEET TOTAL	
961	200

END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		
171	643	591	1757		
148	306	350	724		
SHEET TOTAL		941	2481	221	524

CROSS SECTIONS - SR 2 WESTBOUND
STA. 119+00.00 TO STA. 120+00.00

LAK-2-0.00

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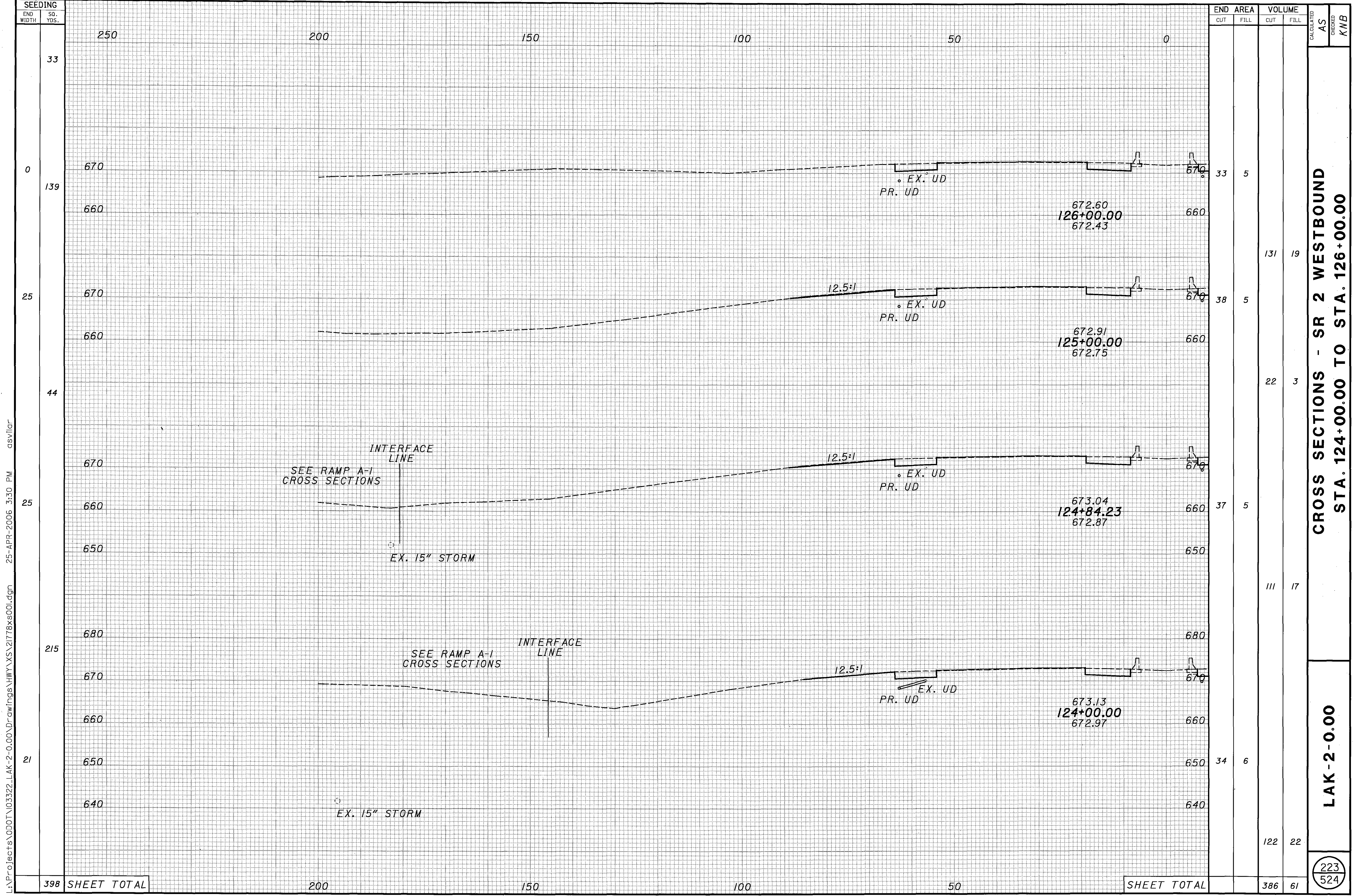


SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
			CUT	FILL	CUT	FILL		
128	250	200						
2			32	6	122	20		
22								
2			34	5	120	20		
17								
1			31	6	374	1202		
167	SHEET TOTAL				616	1242		

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 121+00.00 TO STA. 123+00.00

LAK-2-0.00

222
 524



SEEDING	END WIDTH	SO. YDS.
	33	250
	139	200
	25	150
	44	100
	25	50
	215	0
	21	
398	SHEET TOTAL	

END	AREA		VOLUME		CALCULATED	AS	CHECKED	KWB
	CUT	FILL	CUT	FILL				
33	5							
131	19							
38	5							
22	3							
37	5							
111	17							
34	6							
122	22							
SHEET TOTAL		386	61					

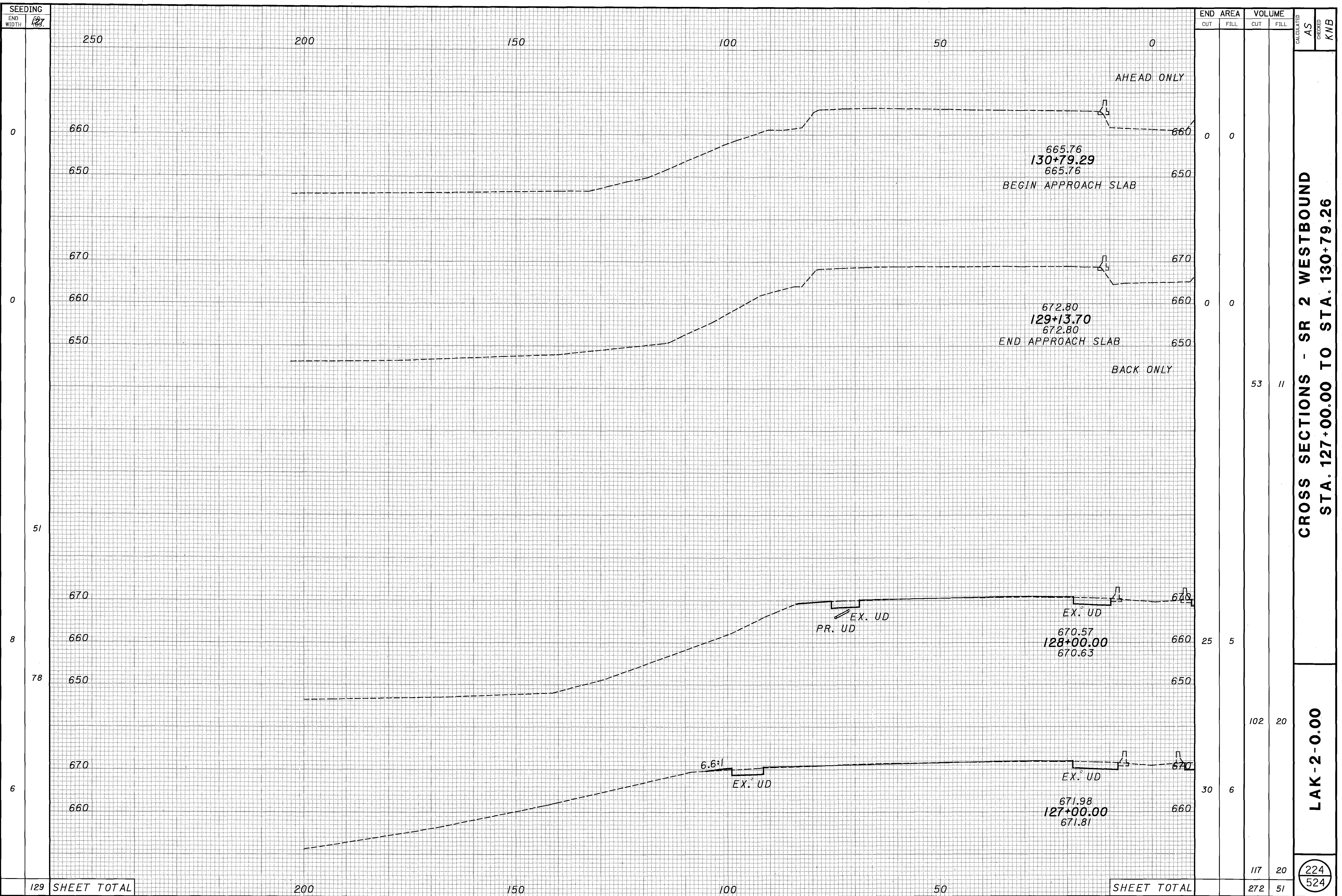
CROSS SECTIONS - SR 2 WESTBOUND
 STA. 124+00.00 TO STA. 126+00.00

LAK-2-0.00

223
 524

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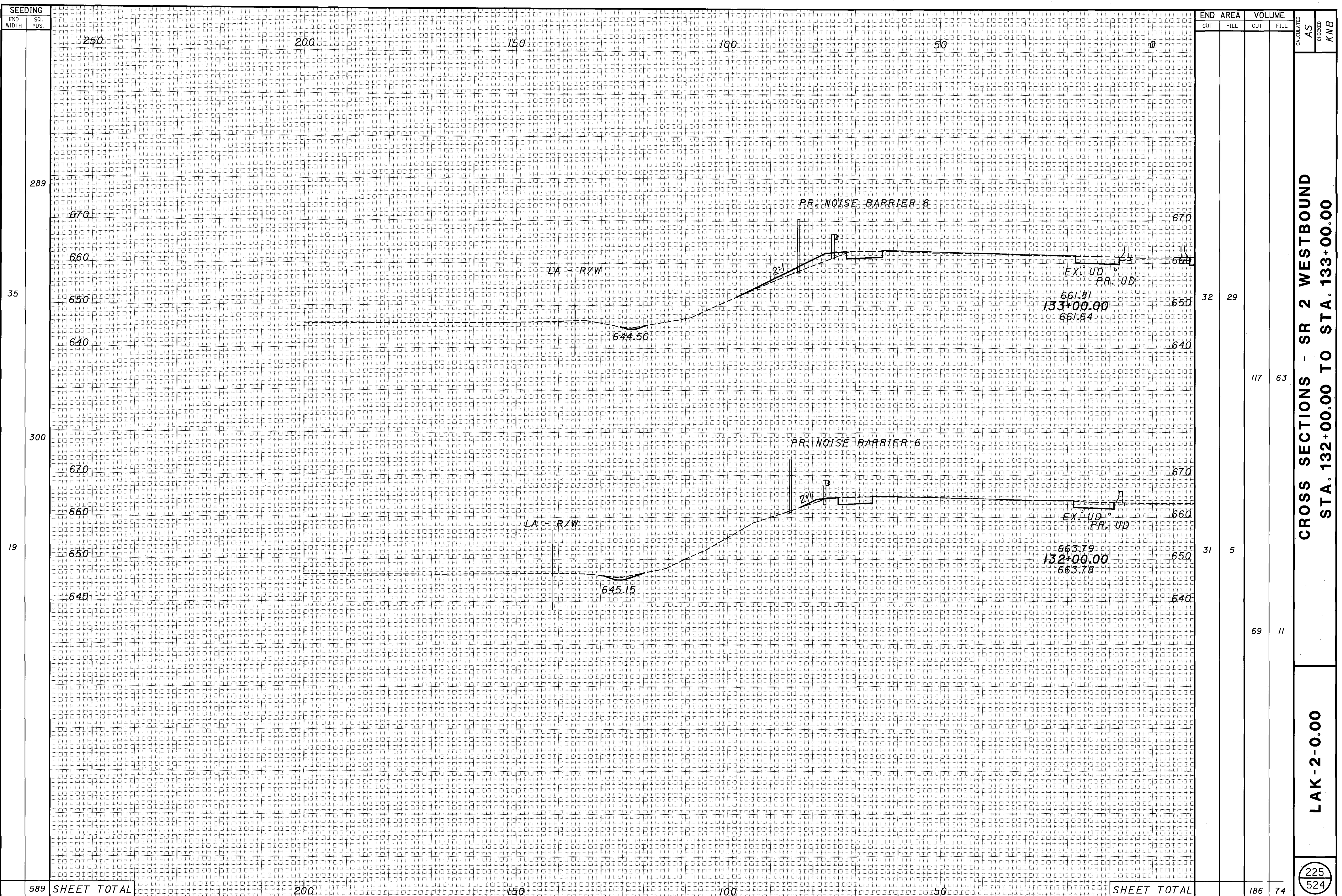


CROSS SECTIONS - SR 2 WESTBOUND
STA. 127+00.00 TO STA. 130+79.26

LAK-2-0.00

224
524

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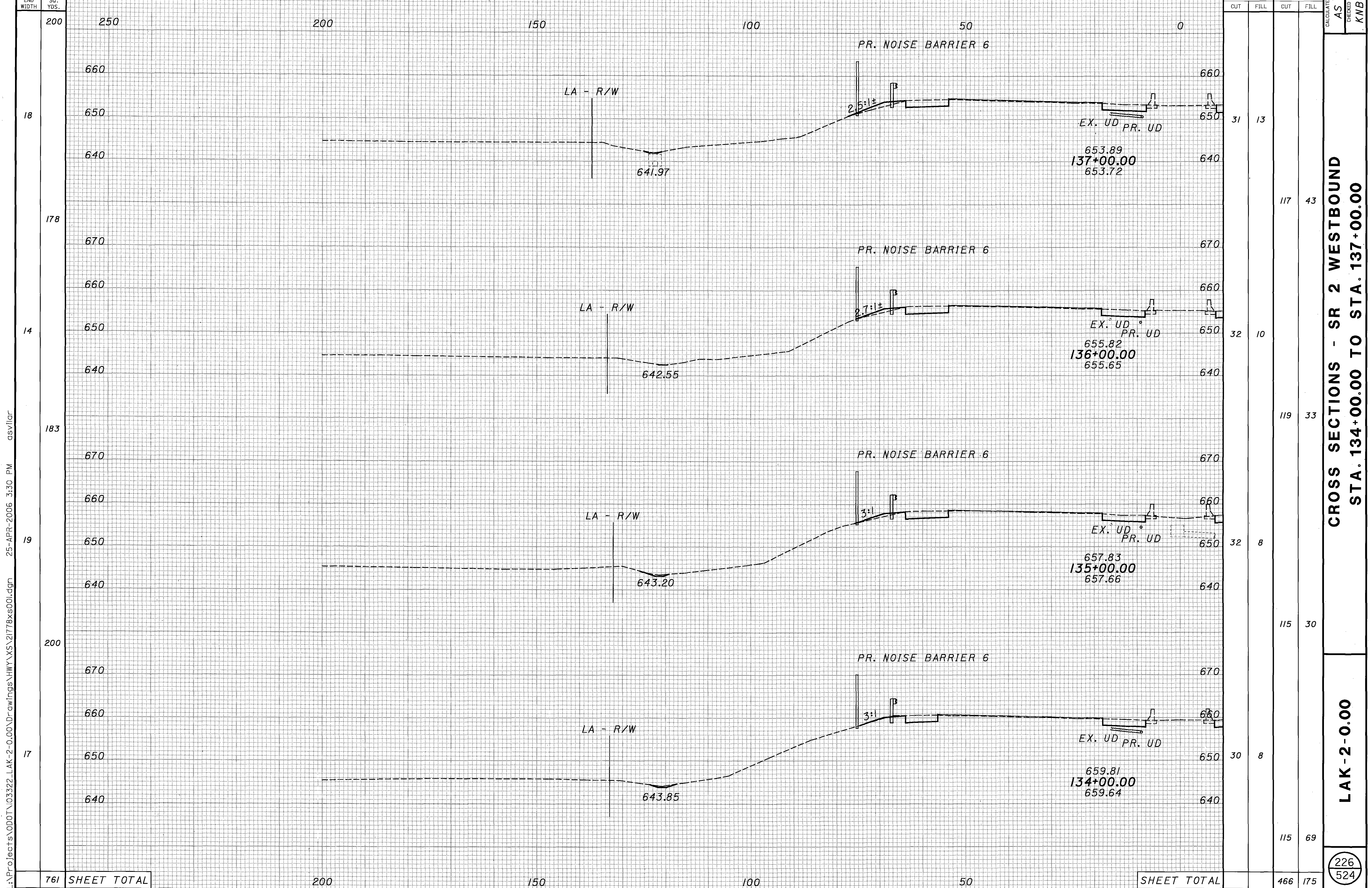
SEEDING	
END WIDTH	SO. YDS.
250	289
200	35
150	300
100	19
50	589
SHEET TOTAL	

END AREA		VOLUME		CALCULATED AS	CHECKED KNB
CUT	FILL	CUT	FILL		
32	29	117	63		
31	5	69	11		
SHEET TOTAL		186	74		

**CROSS SECTIONS - SR 2 WESTBOUND
STA. 132+00.00 TO STA. 133+00.00**

LAK-2-0.00

225
524



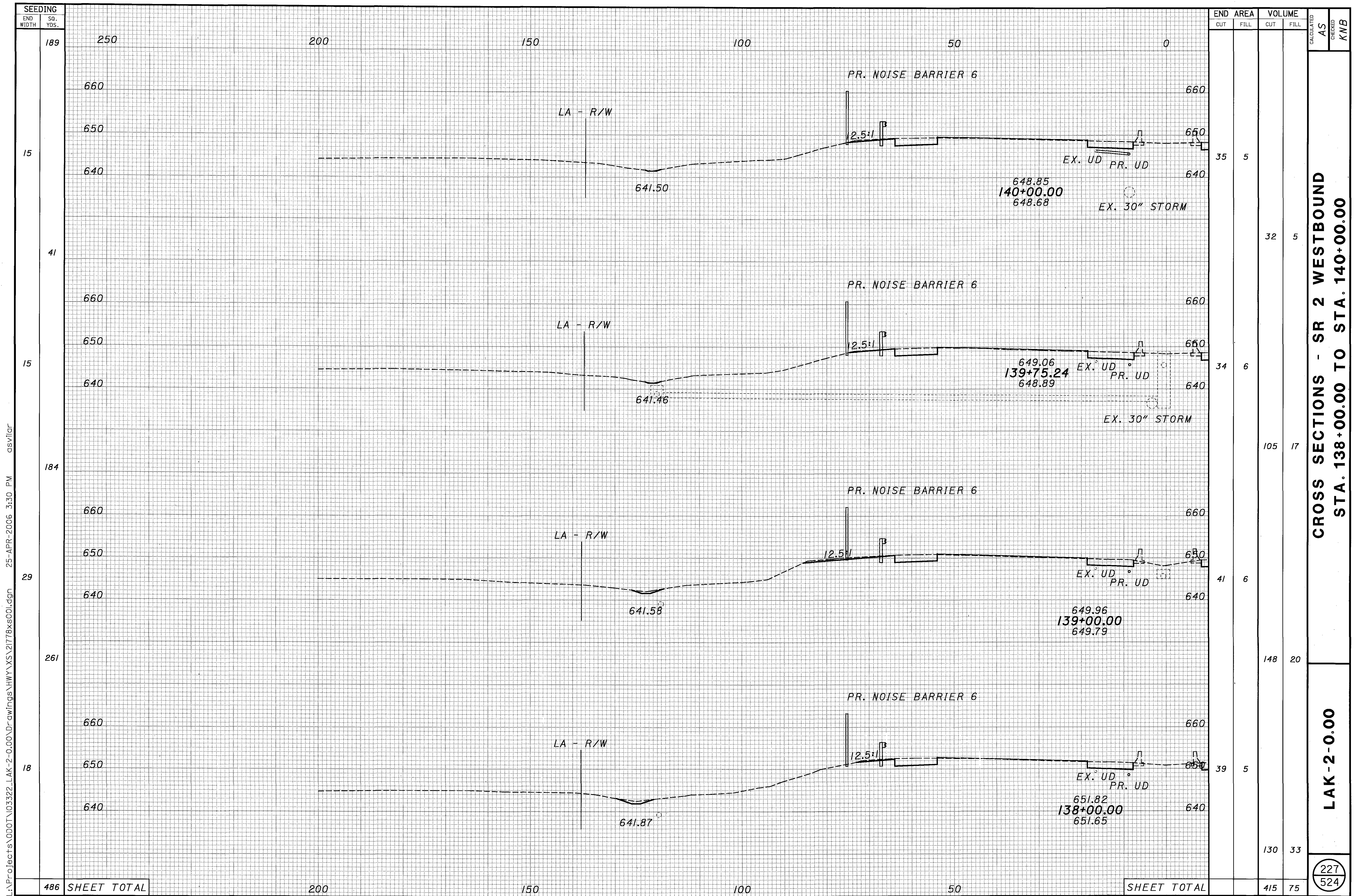
SEEDING	END WIDTH	SQ. YDS.	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
			CUT	FILL	CUT	FILL		
18	200	250	31	13				
178	200	200			117	43		
14	200	150	32	10				
183	200	100			119	33		
19	200	50	32	8				
200	200	0			115	30		
17	200	250	30	8				
761	SHEET TOTAL				466	175		

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 134+00.00 TO STA. 137+00.00

LAK-2-0.00

226
 524

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SEEDING	
END WIDTH	SQ. YDS.
189	250
41	200
184	150
261	100
18	50
486	SHEET TOTAL

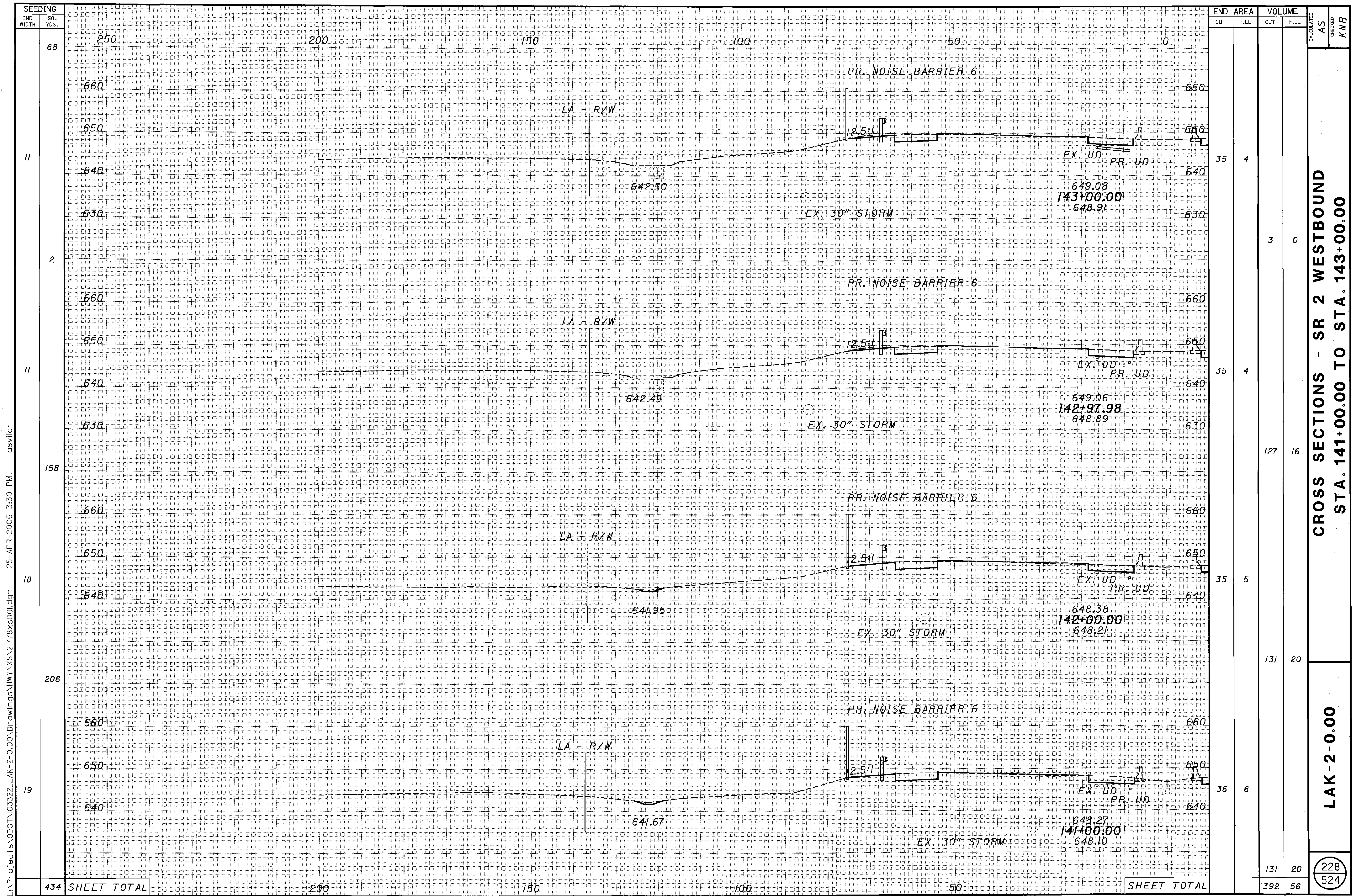
END AREA		VOLUME		CALCULATED AS CHECKED	KMB
CUT	FILL	CUT	FILL		
35	5	32	5		
34	6	105	17		
41	6	148	20		
39	5	130	33		
		415	75		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 138+00.00 TO STA. 140+00.00

LAK-2-0.00

227
 524

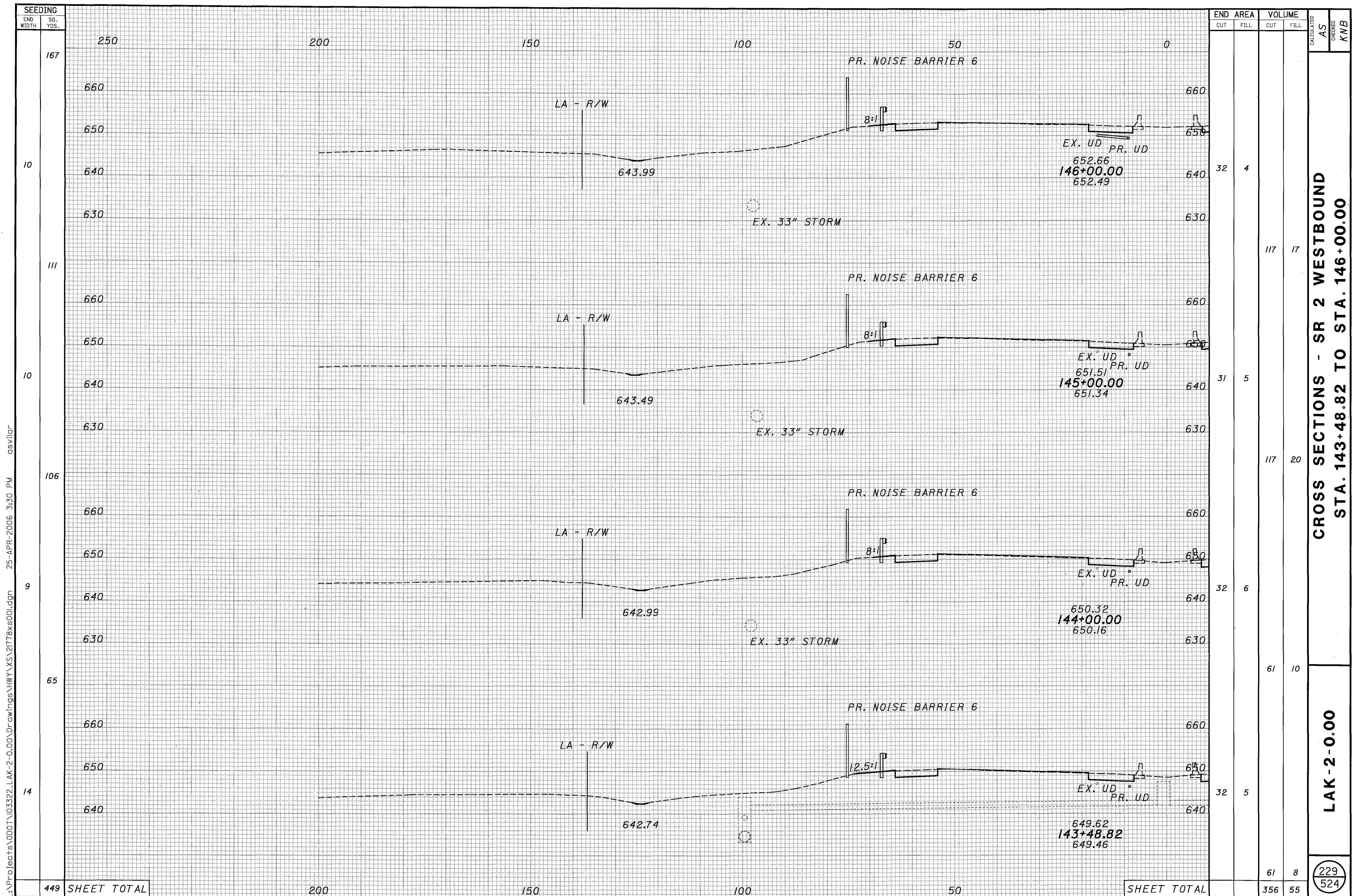
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 141+00.00 TO STA. 143+00.00

LAK-2-0.00
 CALCULATED AS
 CHECKED KWB
 228
 524



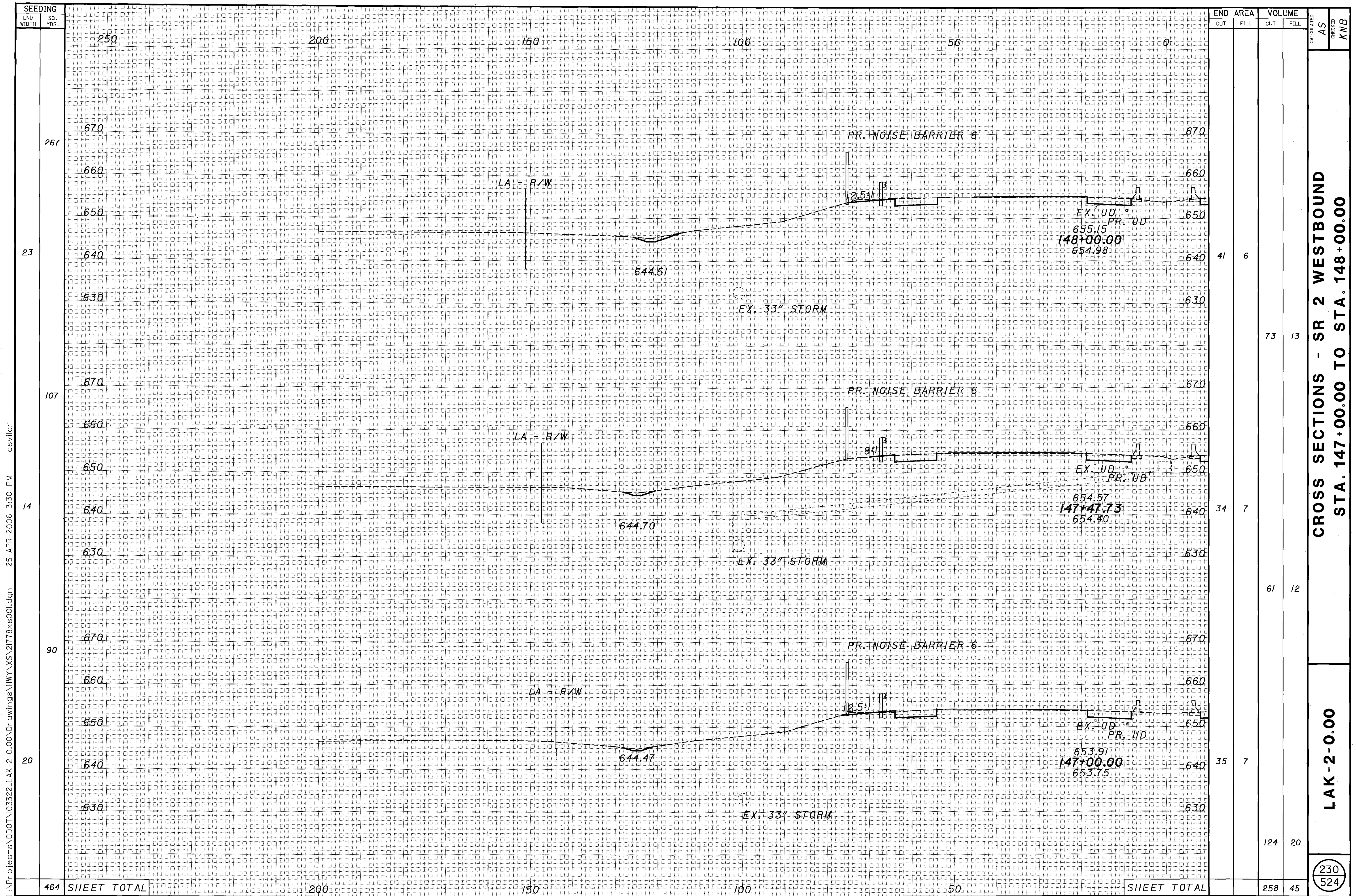
SEEDING	
END WIDTH	SO. YDS.
167	250
10	200
111	150
10	100
106	50
9	0
65	
14	
449	SHEET TOTAL

END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		
32	4	117	17		
31	5	117	20		
32	6	61	10		
32	5				
		61	8	229	524
		356	55		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 143+48.82 TO STA. 146+00.00

LAK - 2 - 0.00

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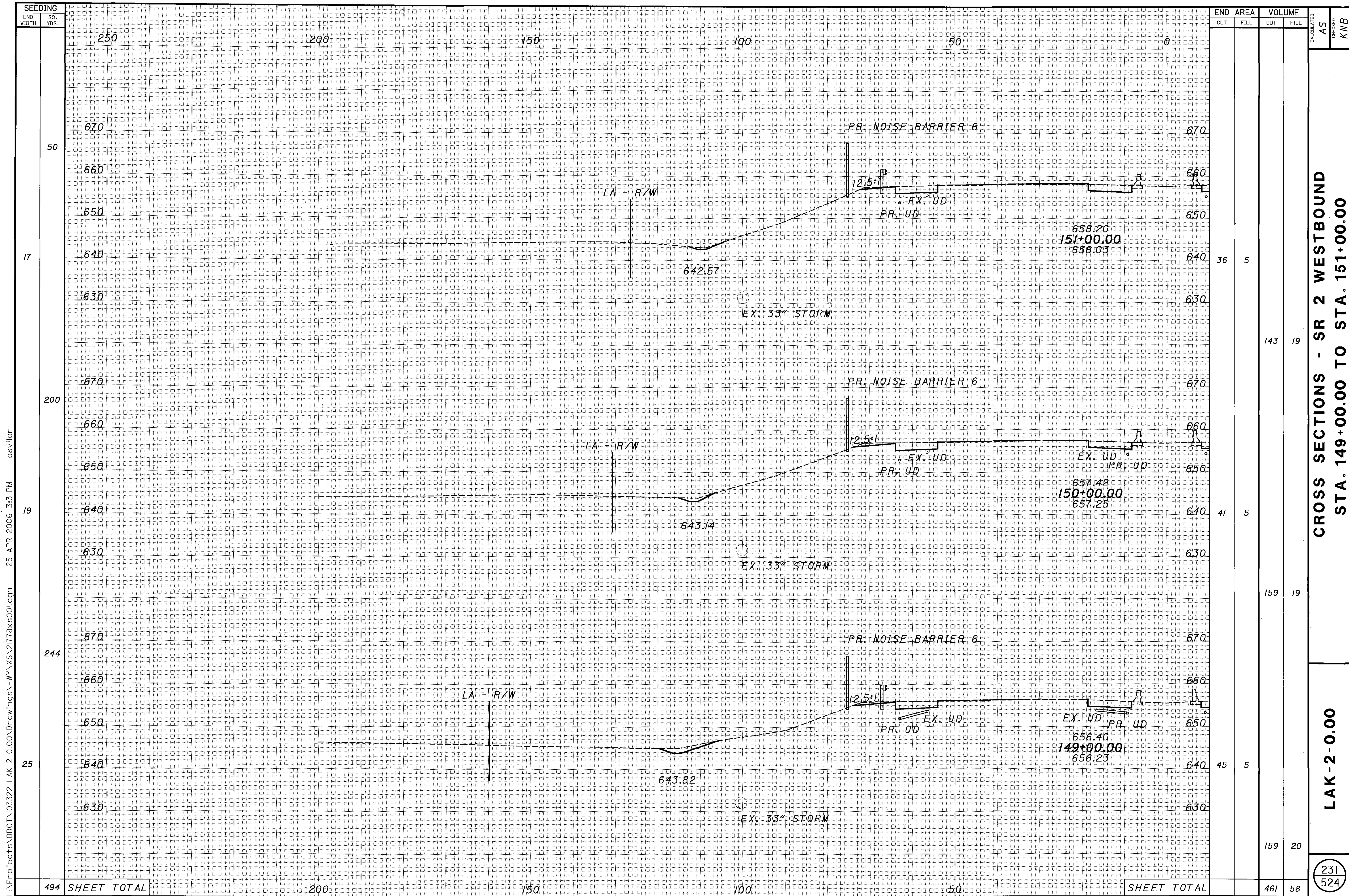
END STA.	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
148+00.00	41	6				
147+47.73	34	7				
147+00.00	35	7				
SHEET TOTAL			124	20		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 147+00.00 TO STA. 148+00.00

LAK-2-0.00

230
 524

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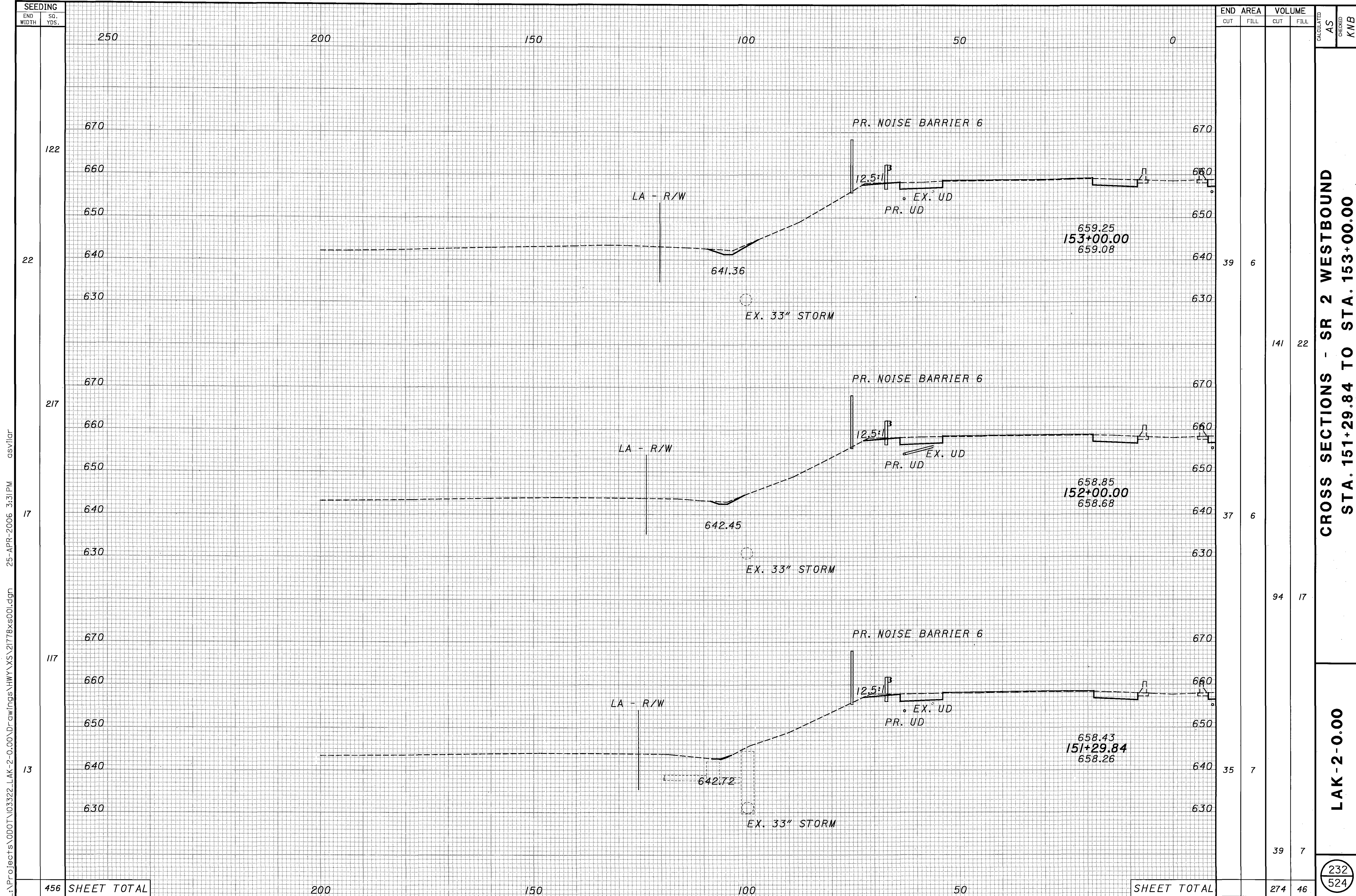
END STA.	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
151+00.00	36	5				
150+00.00	41	5				
149+00.00	45	5				
SHEET TOTAL			159	20		
494	SHEET TOTAL		461	58		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 149+00.00 TO STA. 151+00.00

LAK-2-0.00

231
 524

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SEEDING	
END WIDTH	SO. YDS.
22	122
17	217
13	117
456	SHEET TOTAL

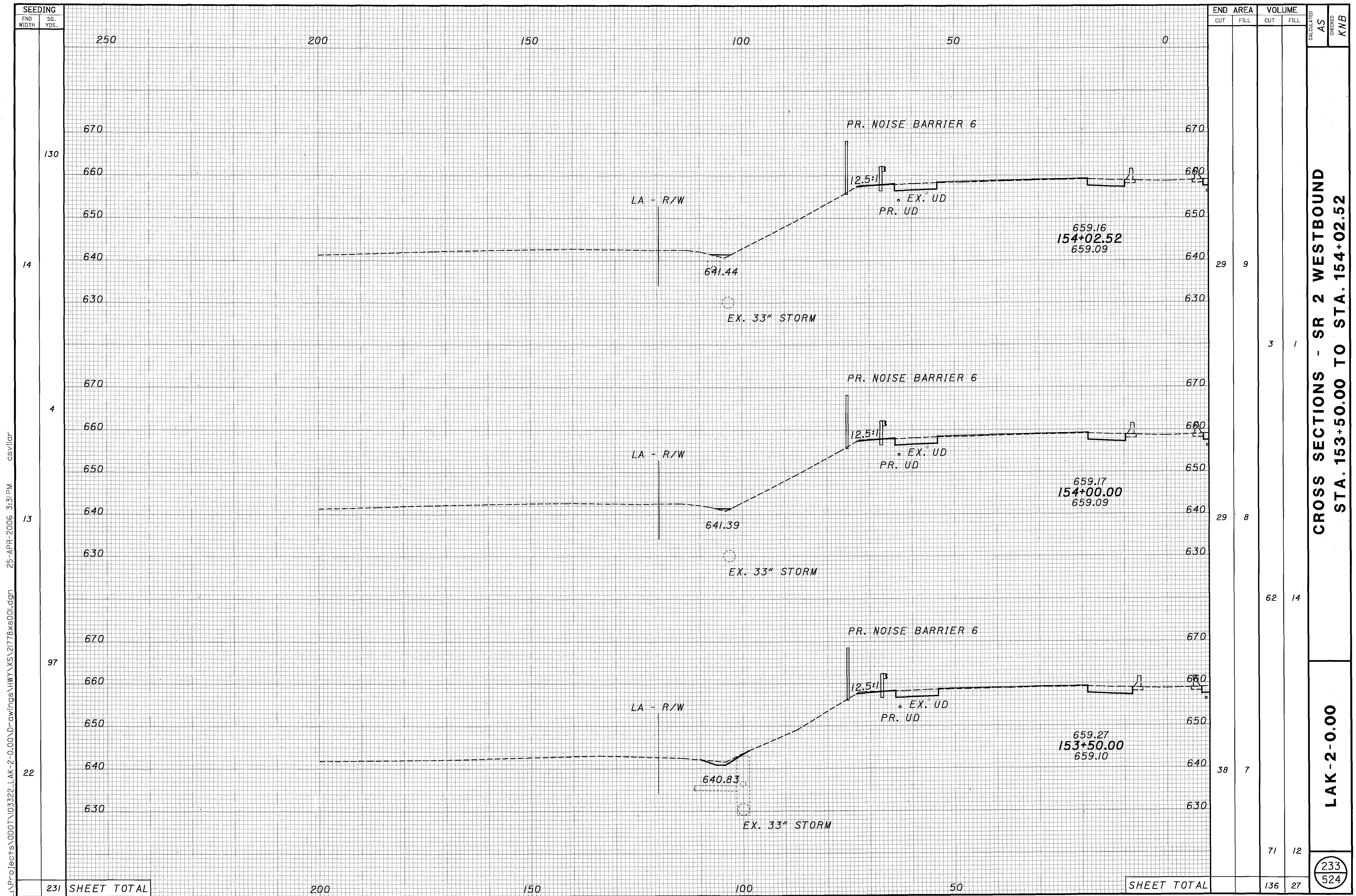
END AREA		VOLUME		CALCULATED AS	CHECKED KMB
CUT	FILL	CUT	FILL		
39	6	141	22		
37	6	94	17		
35	7	39	7		
SHEET TOTAL		274	46		

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 151+29.84 TO STA. 153+00.00

LAK-2-0.00

232
 524

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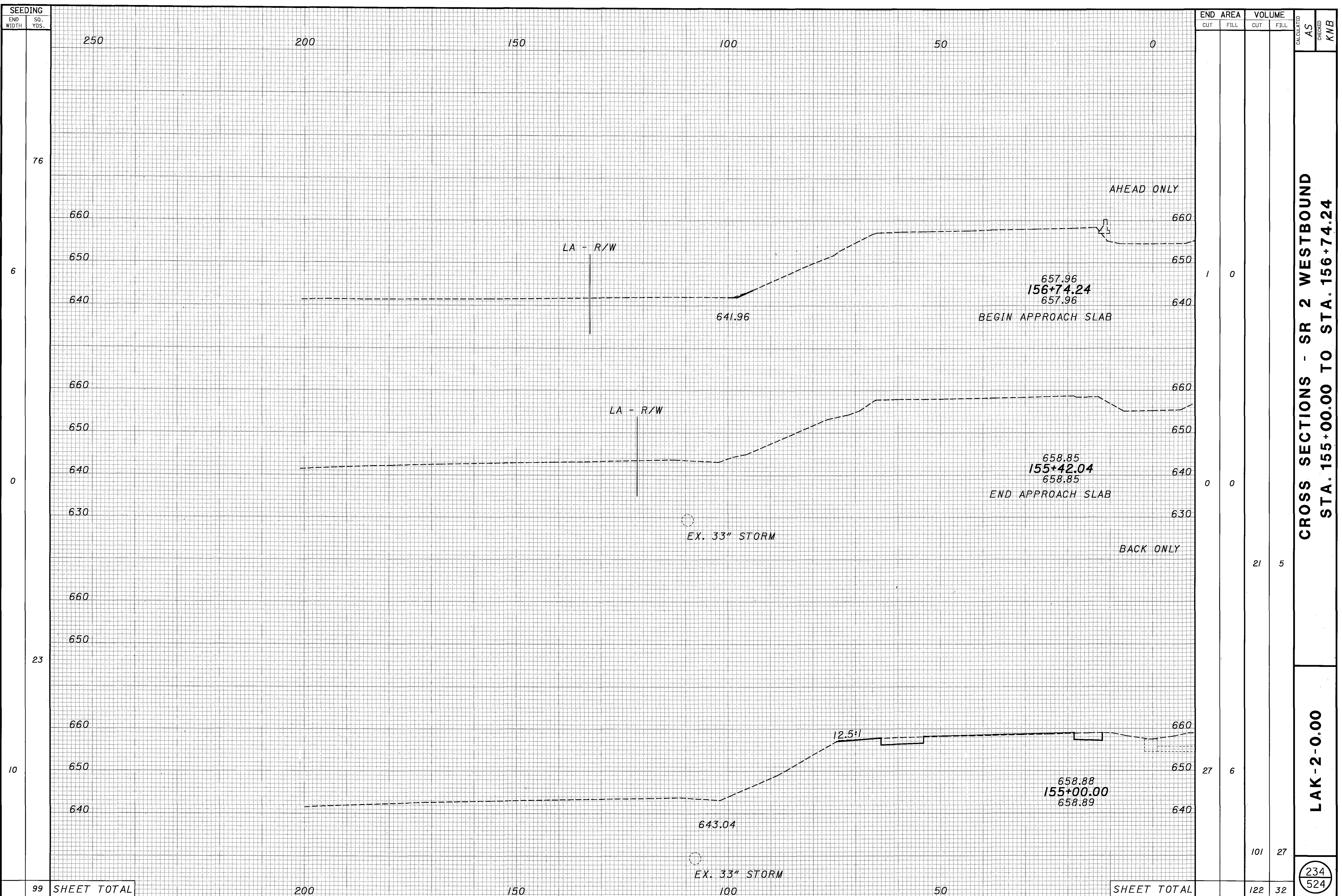
CROSS SECTIONS - SR 2 WESTBOUND
STA. 153+50.00 TO STA. 154+02.52

LAK-2-0.00

CALCULATED AS
 CHECKED KWB

233
 524

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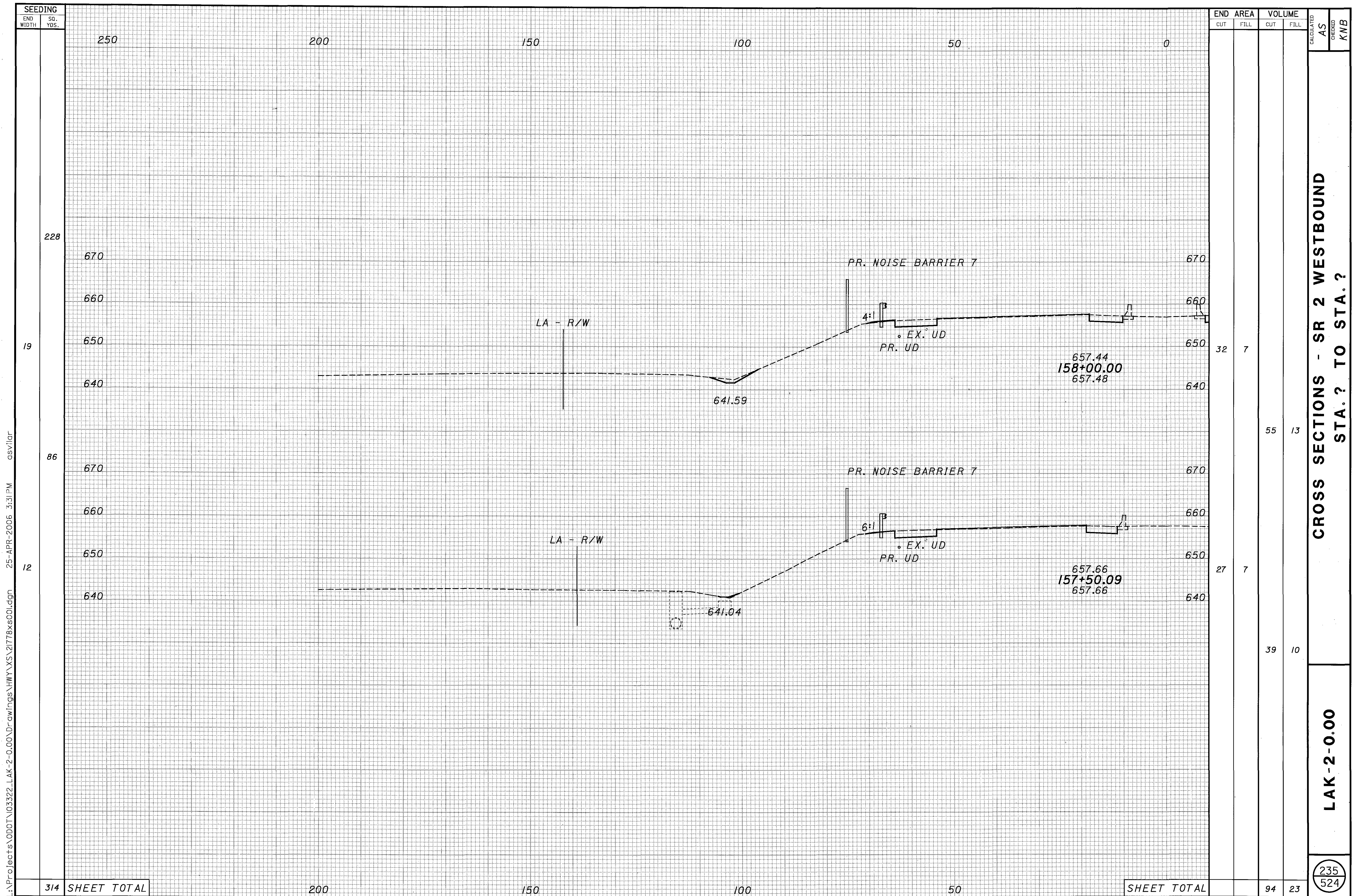
SEEDING	
END WIDTH	SQ. YDS.
76	
6	
0	
23	
10	
99	SHEET TOTAL

END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KWB
		CUT	FILL		
1	0				
0	0				
21	5				
27	6	101	27		
		122	32		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 155+00.00 TO STA. 156+74.24

LAK-2-0.00

234
524

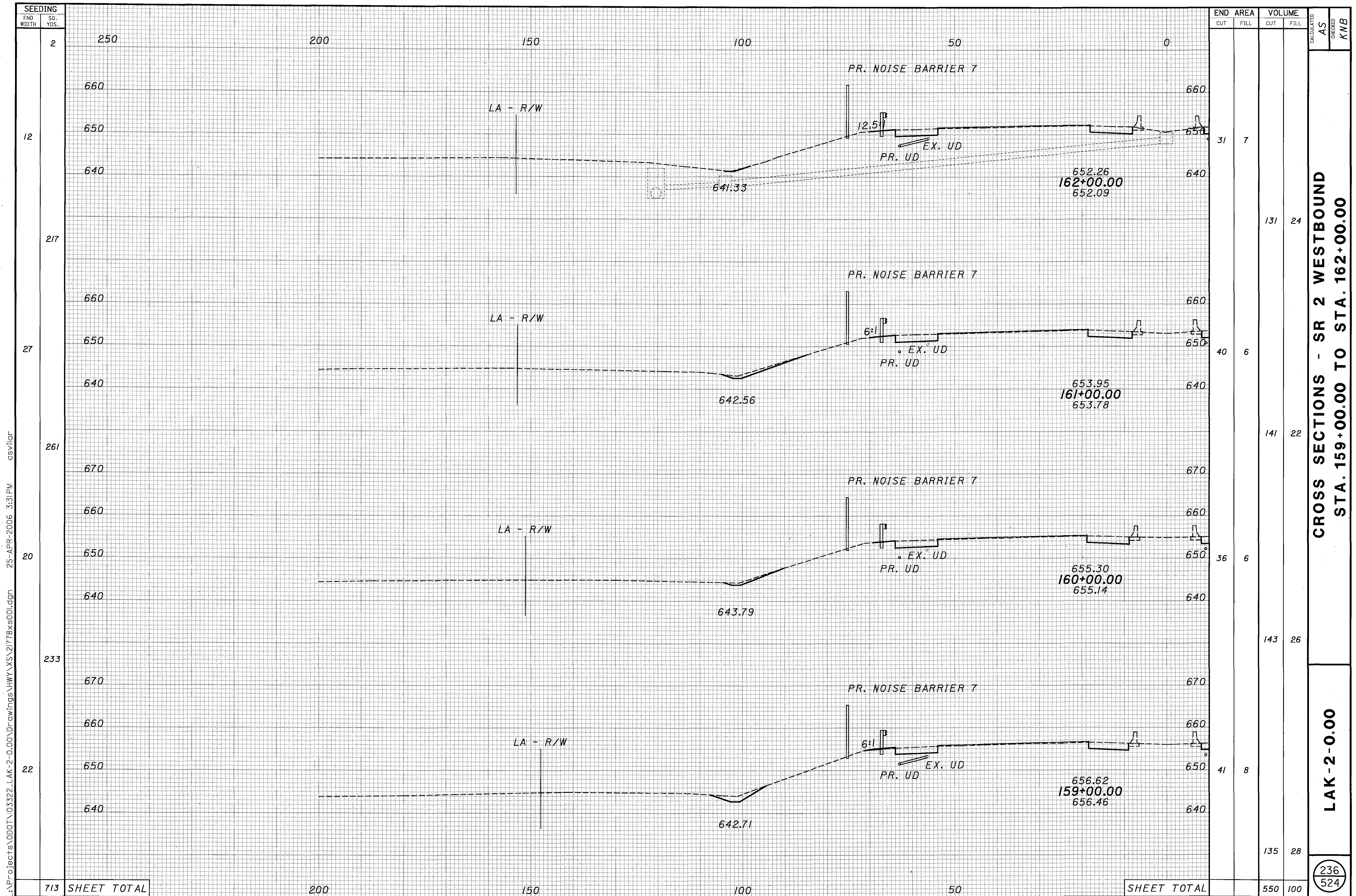


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CROSS SECTIONS - SR 2 WESTBOUND
STA.? TO STA.?

LAK-2-0.00

235
524



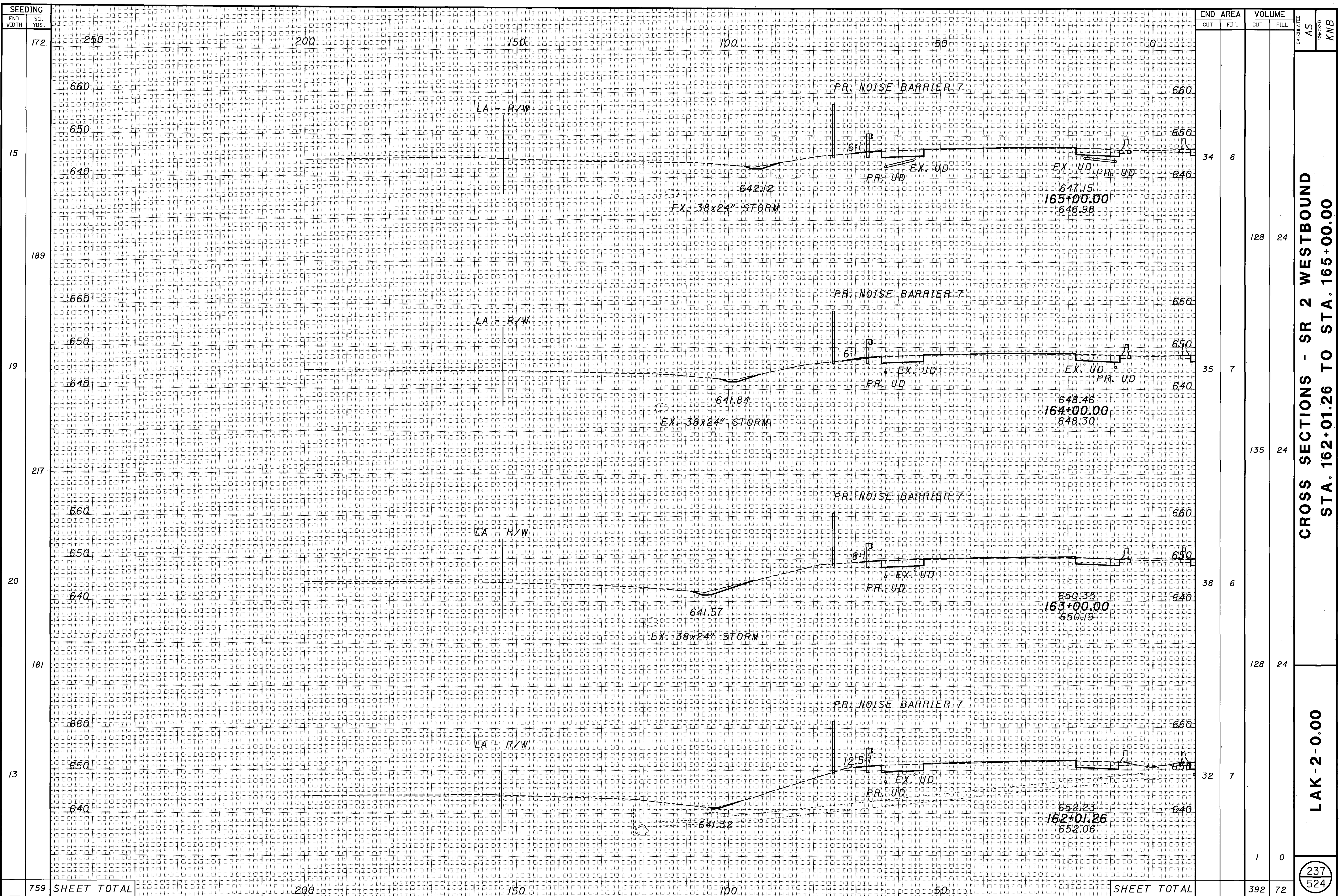
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 159+00.00 TO STA. 162+00.00

LAK-2-0-00

CALCULATED AS
 CHECKED KMB
 236
 524

L:\Projects\00DOT\03322.LAK-2-0.00\Drawings\HWY\XS\21778xs001.dgn 25-APR-2006 3:31 PM csvlar

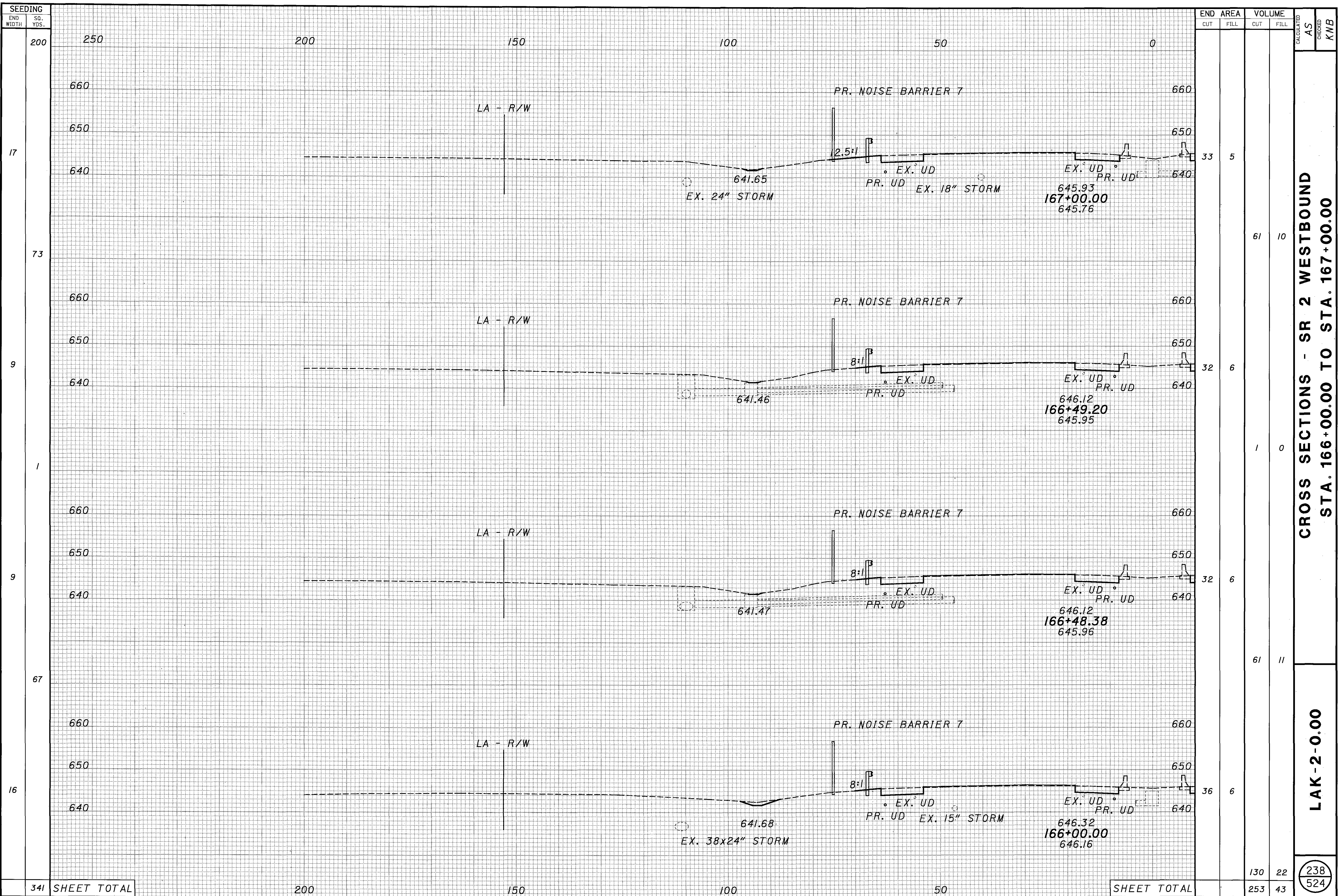


CROSS SECTIONS - SR 2 WESTBOUND
STA. 162+01.26 TO STA. 165+00.00

LAK-2-0.00

CALCULATED AS
 CHECKED KMB
 237
 524

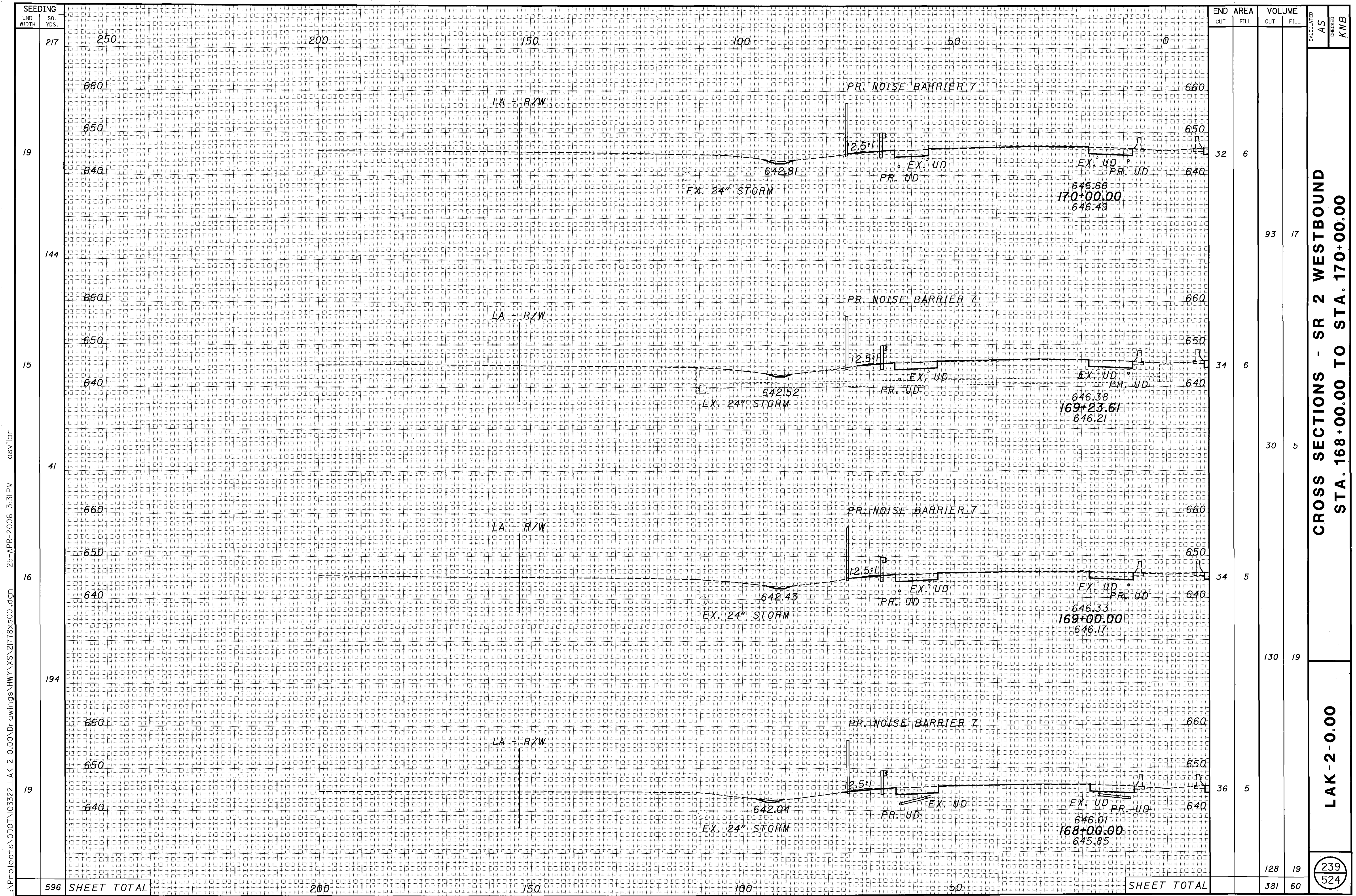
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 166+00.00 TO STA. 167+00.00

LAK-2-0.00

238
524

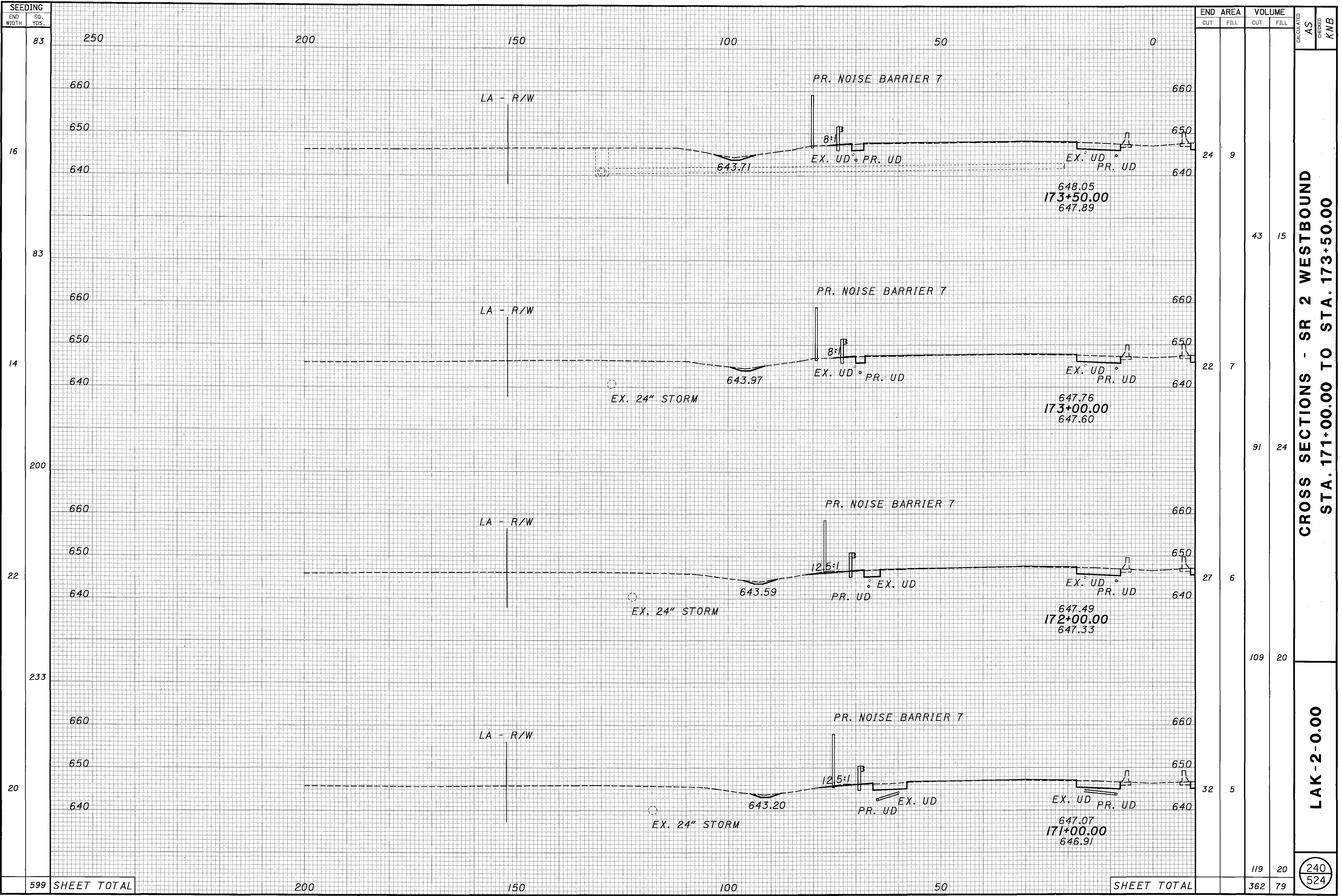


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CROSS SECTIONS - SR 2 WESTBOUND
STA. 168+00.00 TO STA. 170+00.00

LAK-2-0.00
 CALCULATED AS 239
 CHECKED KWB 524

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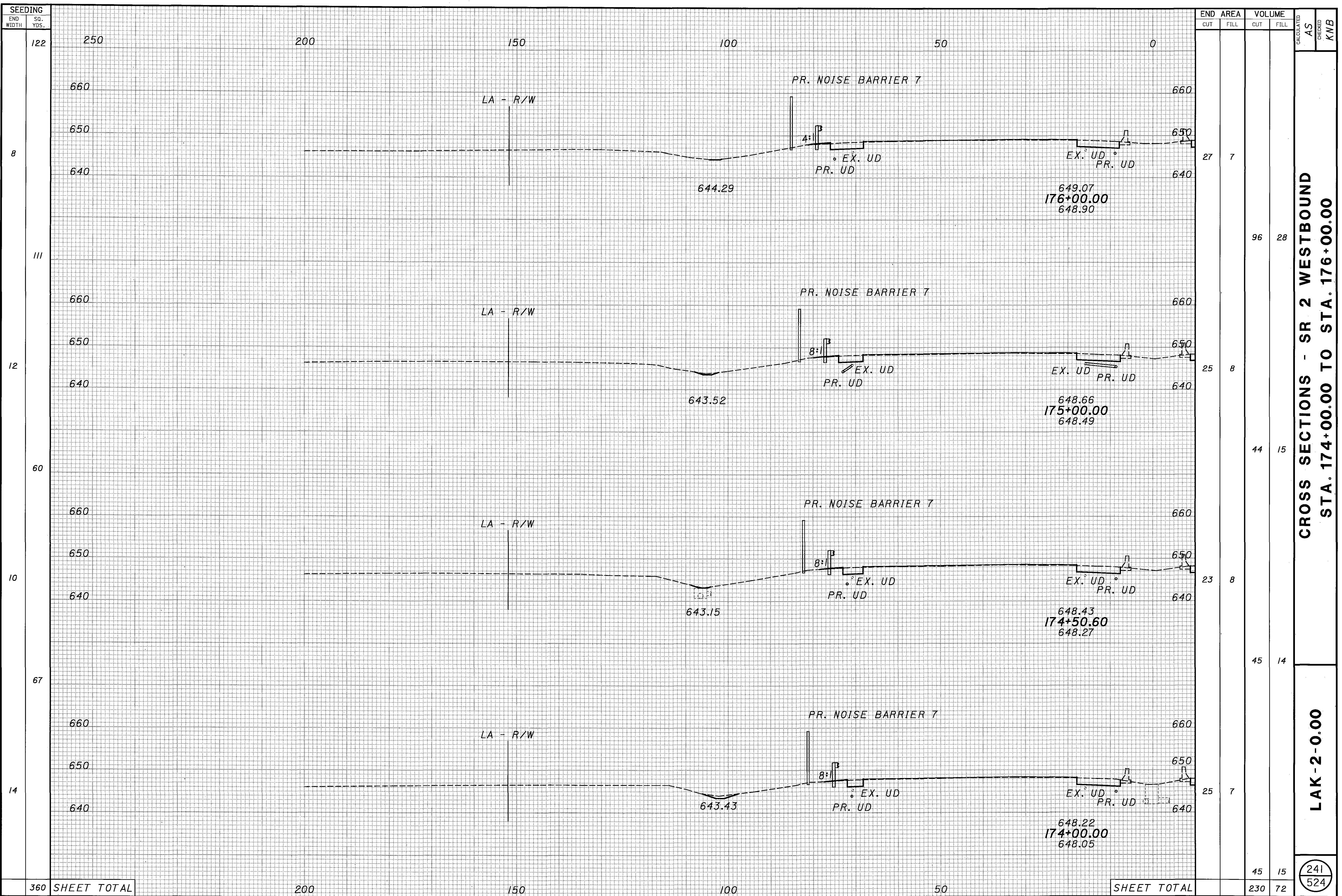
SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
			CUT	FILL	CUT	FILL		
83	250	200						
16			24	9	43	15		
83					91	24		
14			22	7				
200					109	20		
233								
20			32	5				
599	SHEET TOTAL				119	20		
	200	150			362	79		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 171+00.00 TO STA. 173+50.00

LAK-2-0.00

240
524

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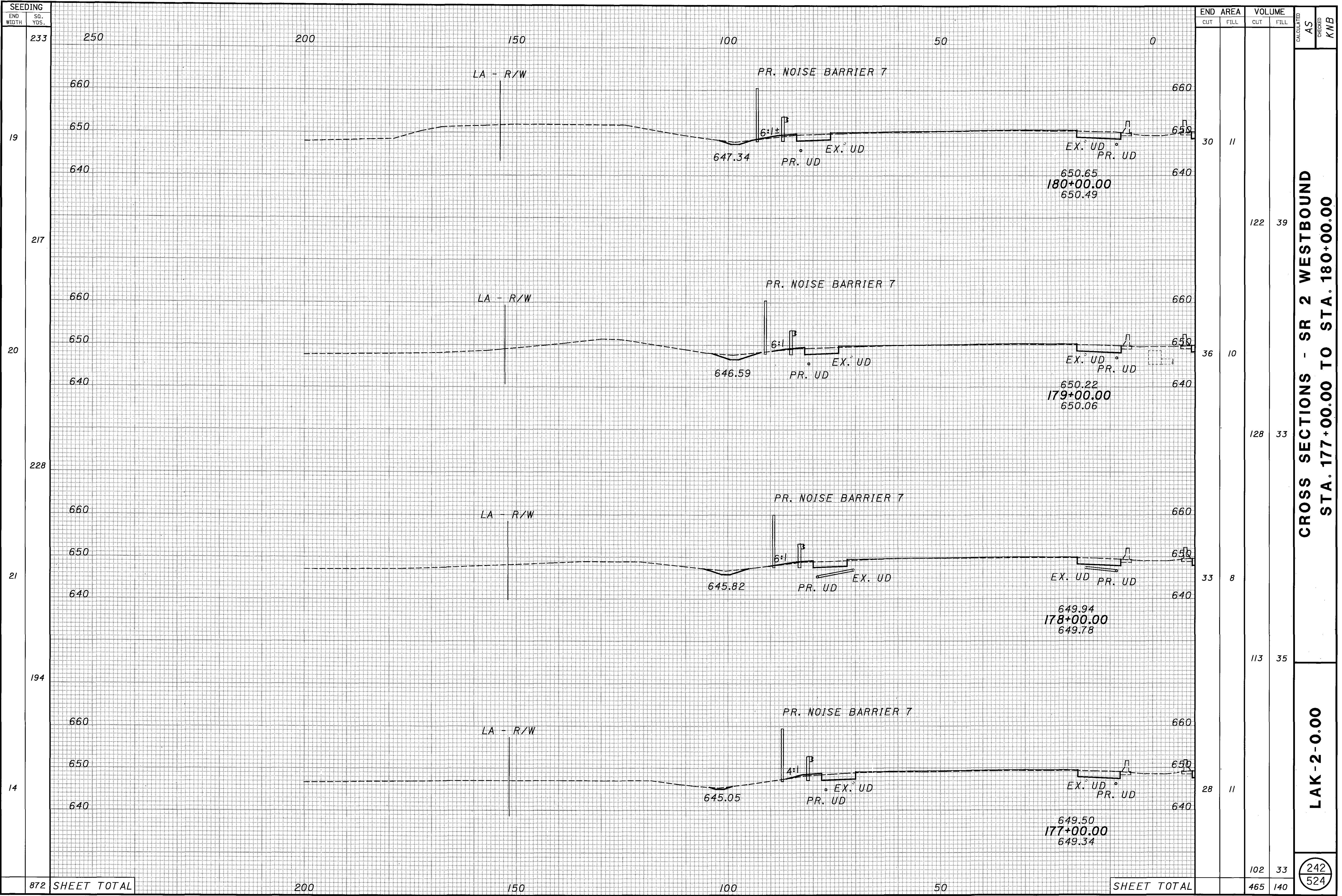


CROSS SECTIONS - SR 2 WESTBOUND
STA. 174+00.00 TO STA. 176+00.00

LAK-2-0.00

241
524

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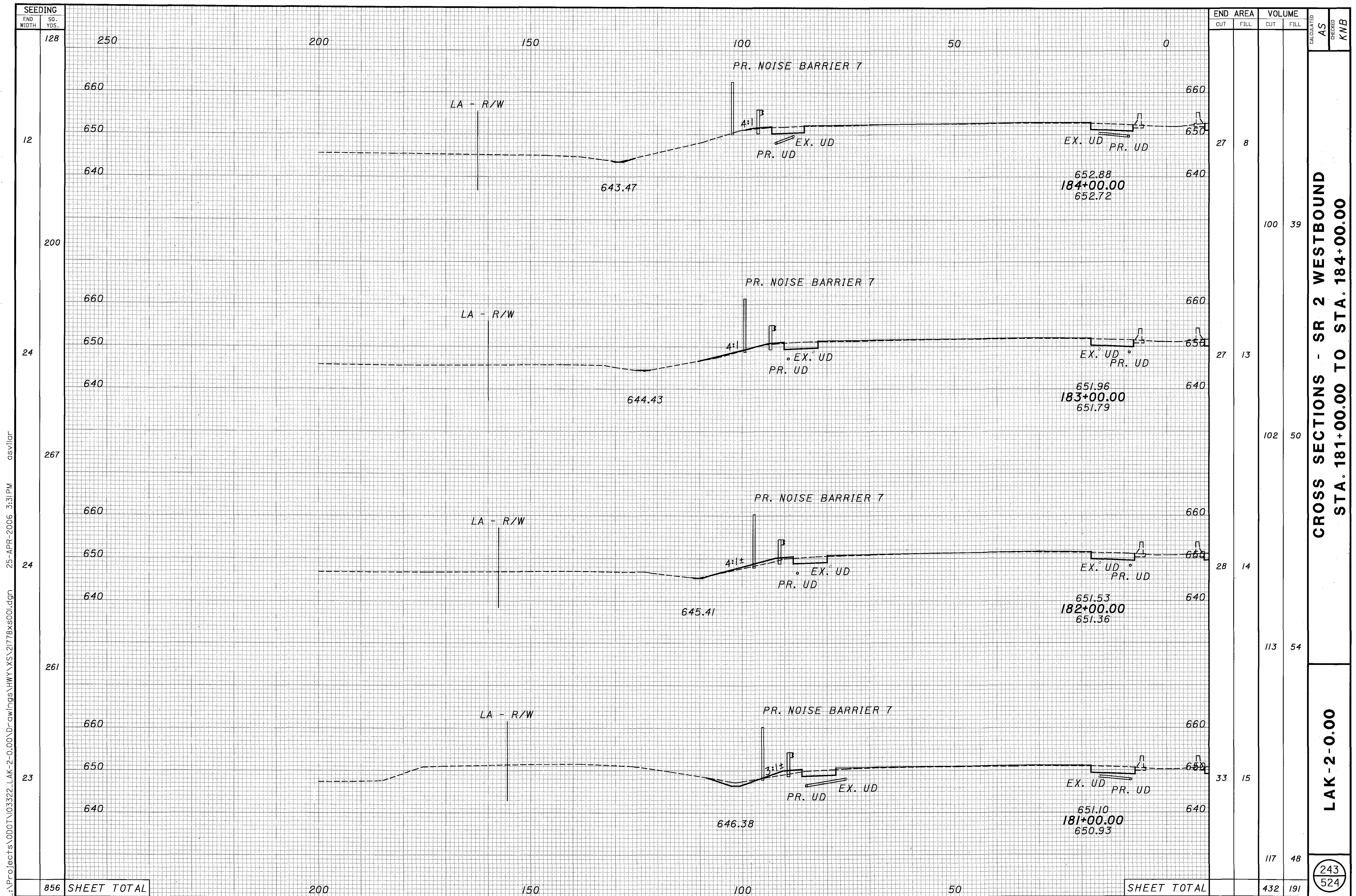


SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
			CUT	FILL	CUT	FILL		
233	250	19						
		217			122	39		
		20			128	33		
		228			113	35		
		194						
		14						
872	SHEET TOTAL				465	140		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 177+00.00 TO STA. 180+00.00

LAK-2-0.00

242
 524



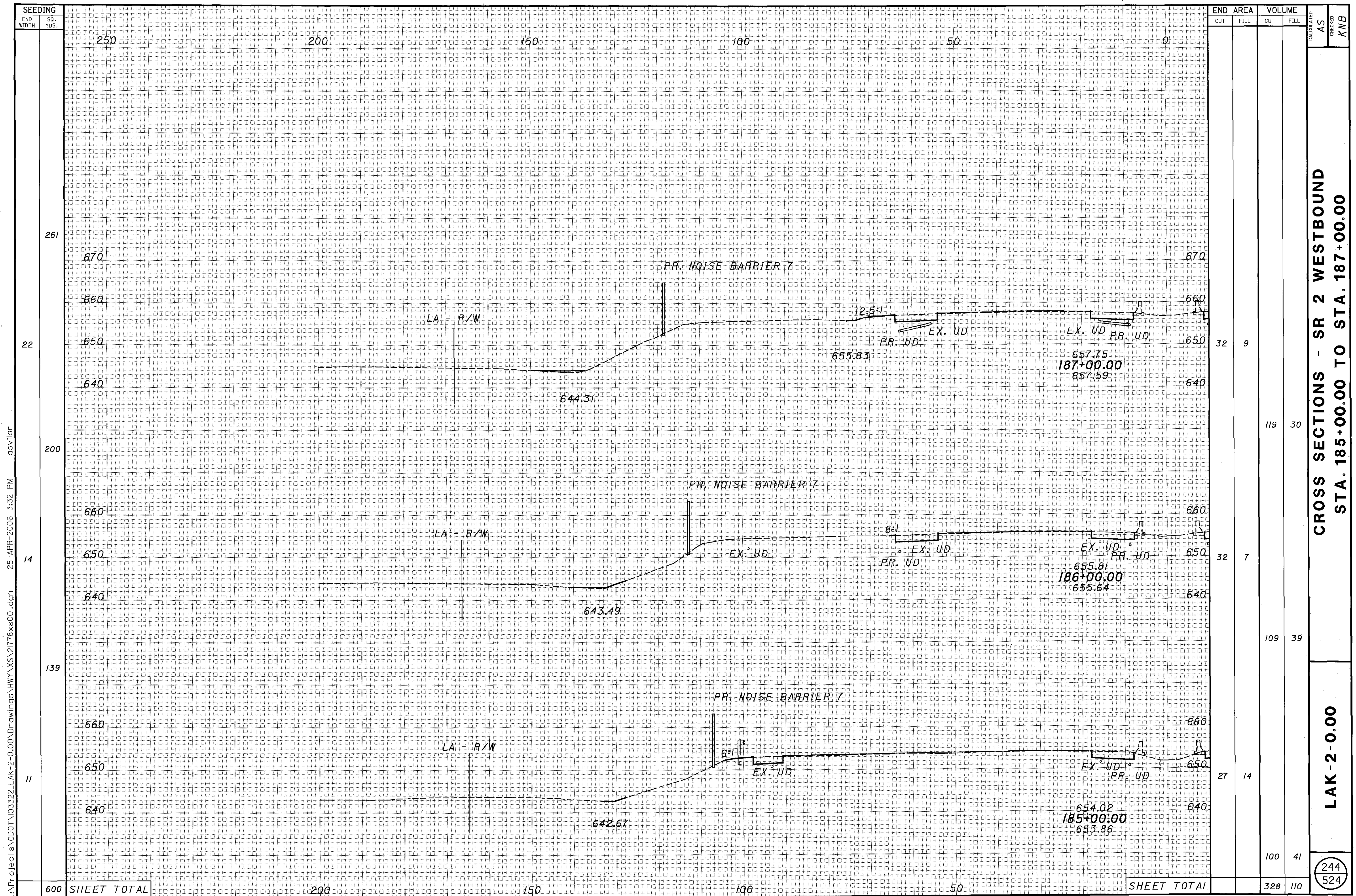
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END STA	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
184+00.00	27	8	100	39		
183+00.00	27	13	102	50		
182+00.00	28	14	113	54		
181+00.00	33	15	117	48		
856 SHEET TOTAL			432	191		

**CROSS SECTIONS - SR 2 WESTBOUND
STA. 181+00.00 TO STA. 184+00.00**

LAK-2-0.00

243
524



SEEDING	
END WIDTH	SO. YDS.
600	200
600	150
600	100
600	50
600	0

END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KWB
		CUT	FILL		
32	9				
32	7				
27	14				
100	41				
328	110				

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 185+00.00 TO STA. 187+00.00

LAK-2-0.00

244
 524

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261
 22
 200
 14
 139
 11

670
 660
 650
 640
 660
 650
 640
 660
 650
 640

250

200

150

100

50

0

644.31
 643.49
 642.67

12.5:1
 655.83
 657.75
 187+00.00
 657.59

8:1
 655.81
 186+00.00
 655.64

6:1
 654.02
 185+00.00
 653.86

SHEET TOTAL

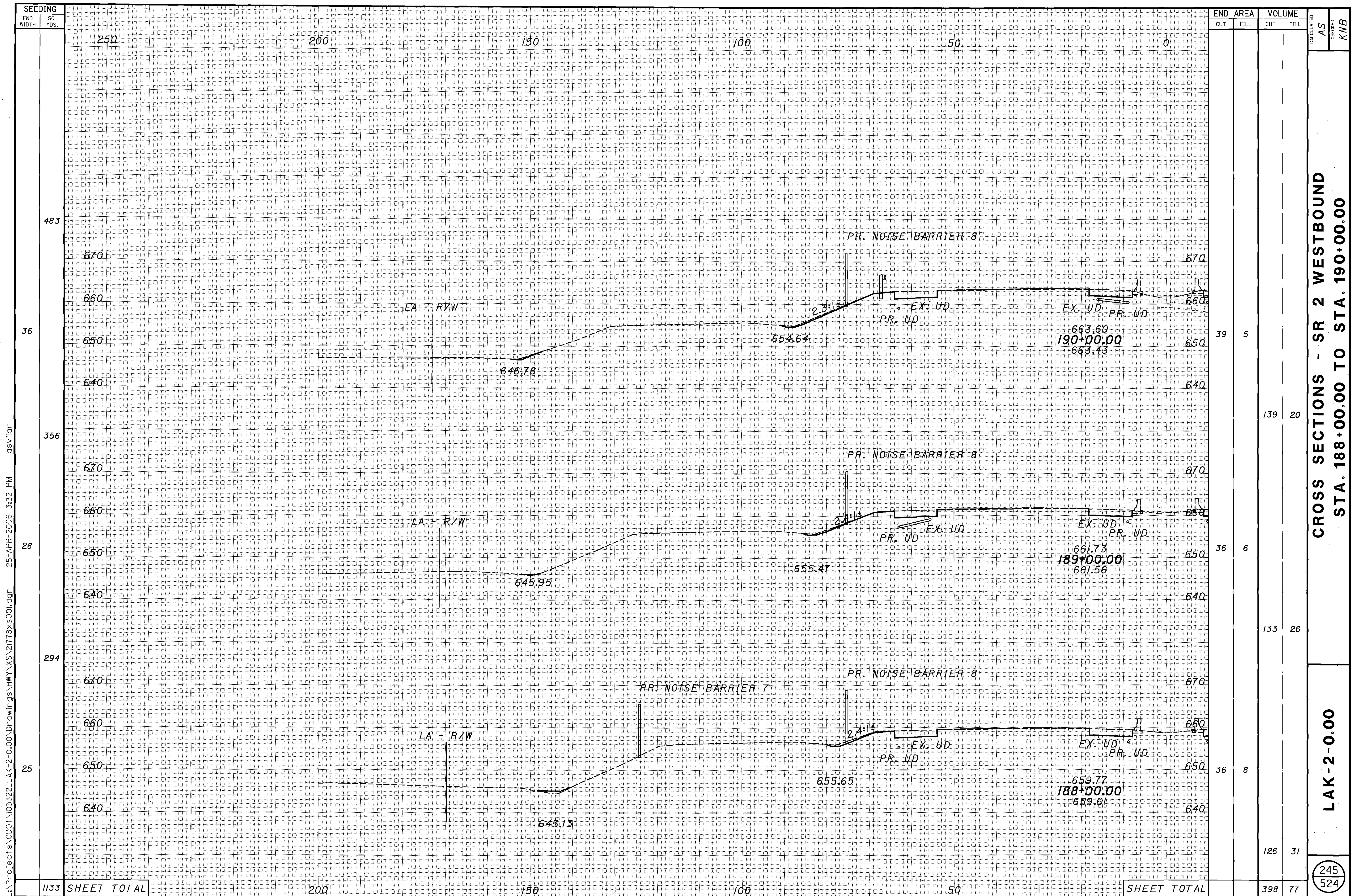
SHEET TOTAL

200

150

100

50



SEEDING	
END WIDTH	SO. YDS.
250	
200	
150	
100	
50	
0	
483	
36	
356	
28	
294	
25	
1133	SHEET TOTAL

END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KMB
		CUT	FILL		
39	5				
139	20				
36	6				
133	26				
36	8				
126	31				
398	77				

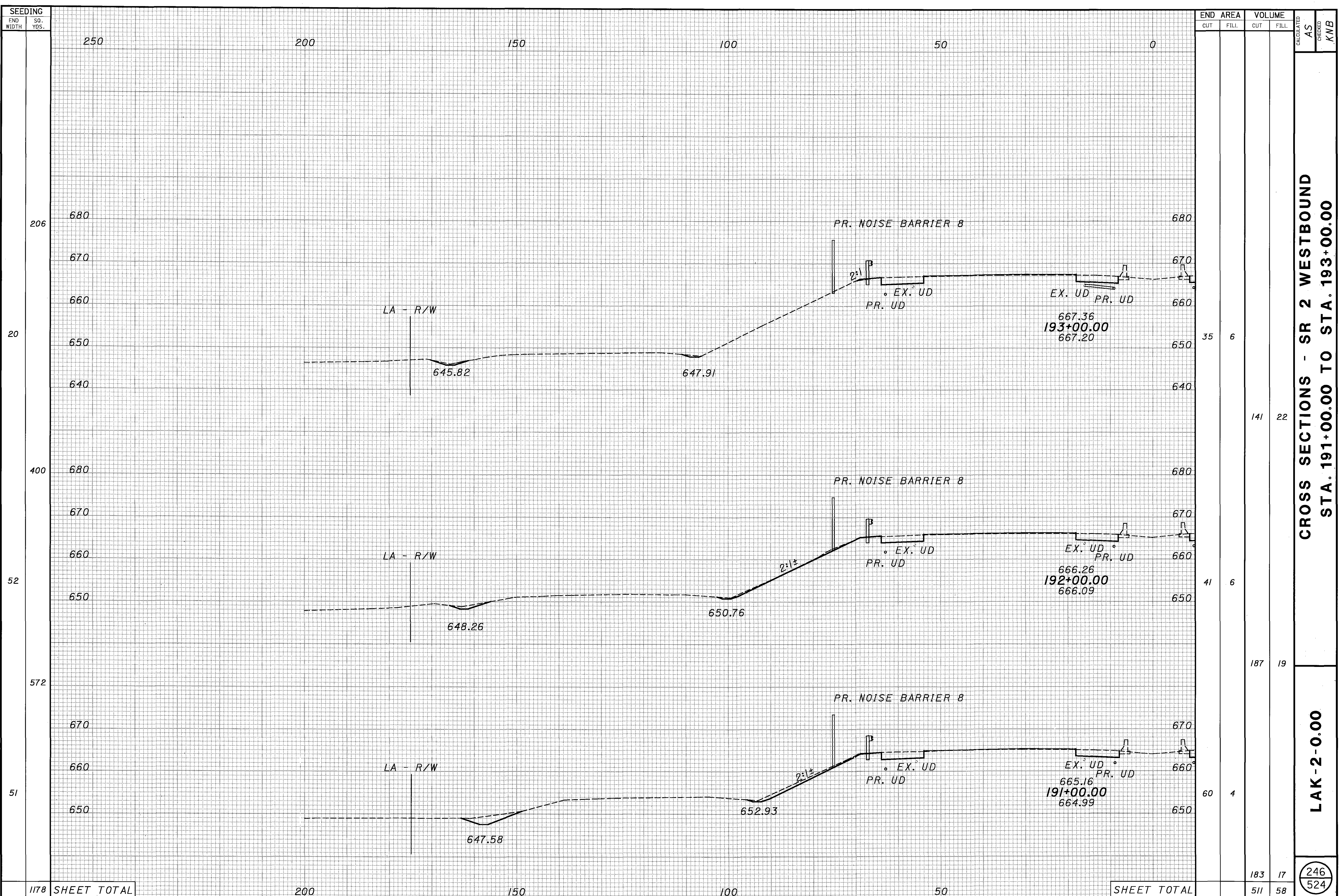
CROSS SECTIONS - SR 2 WESTBOUND
 STA. 188+00.00 TO STA. 190+00.00

LAK-2-0.00

245
524

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END STA.	AREA		VOLUME		CALCULATED	AS	CHECKED	KWB
	CUT	FILL	CUT	FILL				
193+00.00	35	6						
192+00.00	41	6	141	22				
191+00.00	60	4	187	19				
SHEET TOTAL	136	16	315	50				

CROSS SECTIONS - SR 2 WESTBOUND
STA. 191+00.00 TO STA. 193+00.00

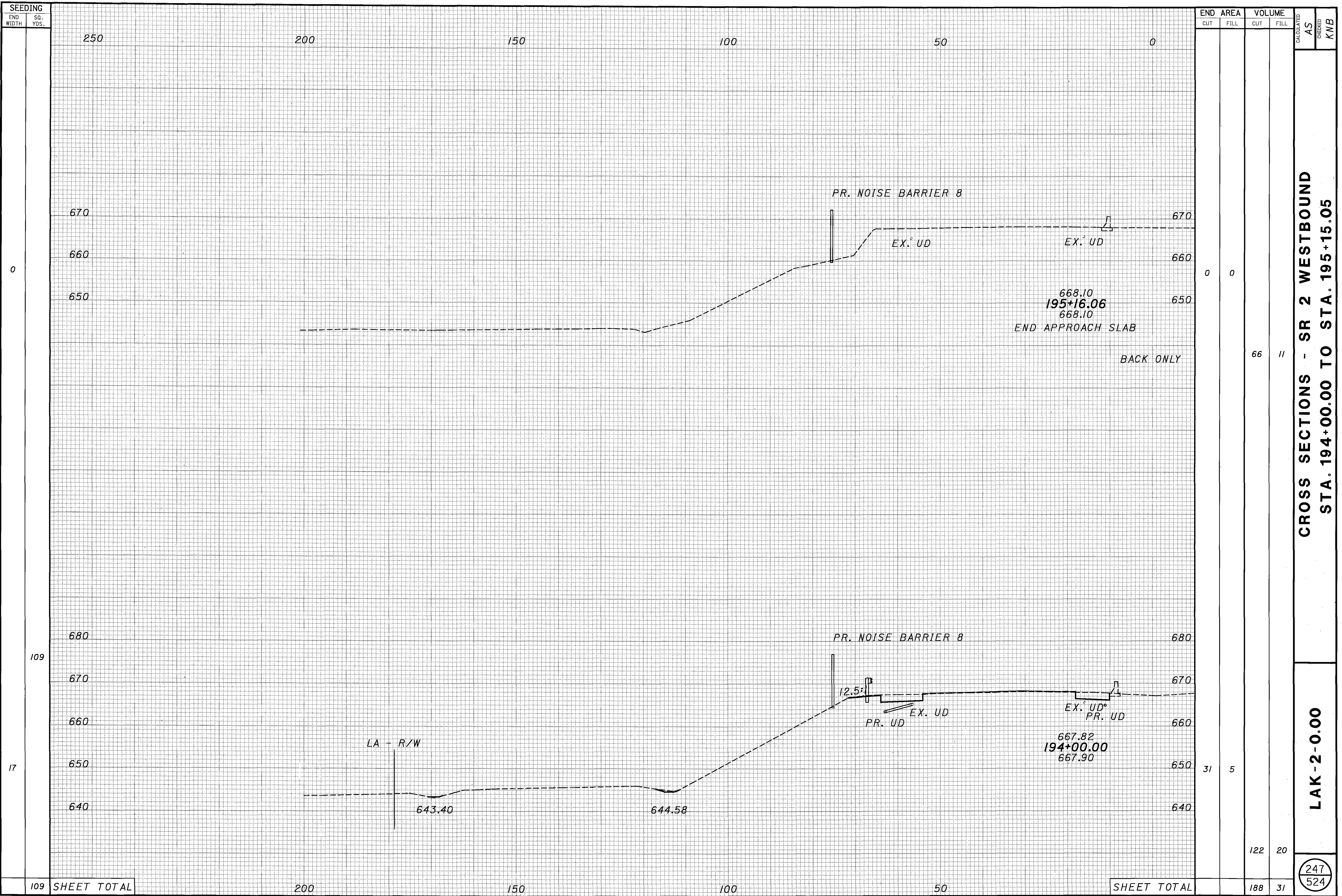
LAK-2-0.00

246
524

1178 SHEET TOTAL

SHEET TOTAL

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SEEDING	
END WIDTH	SO. YDS.
0	250
109	200
17	150
109	100
109	50
109	0
SHEET TOTAL	

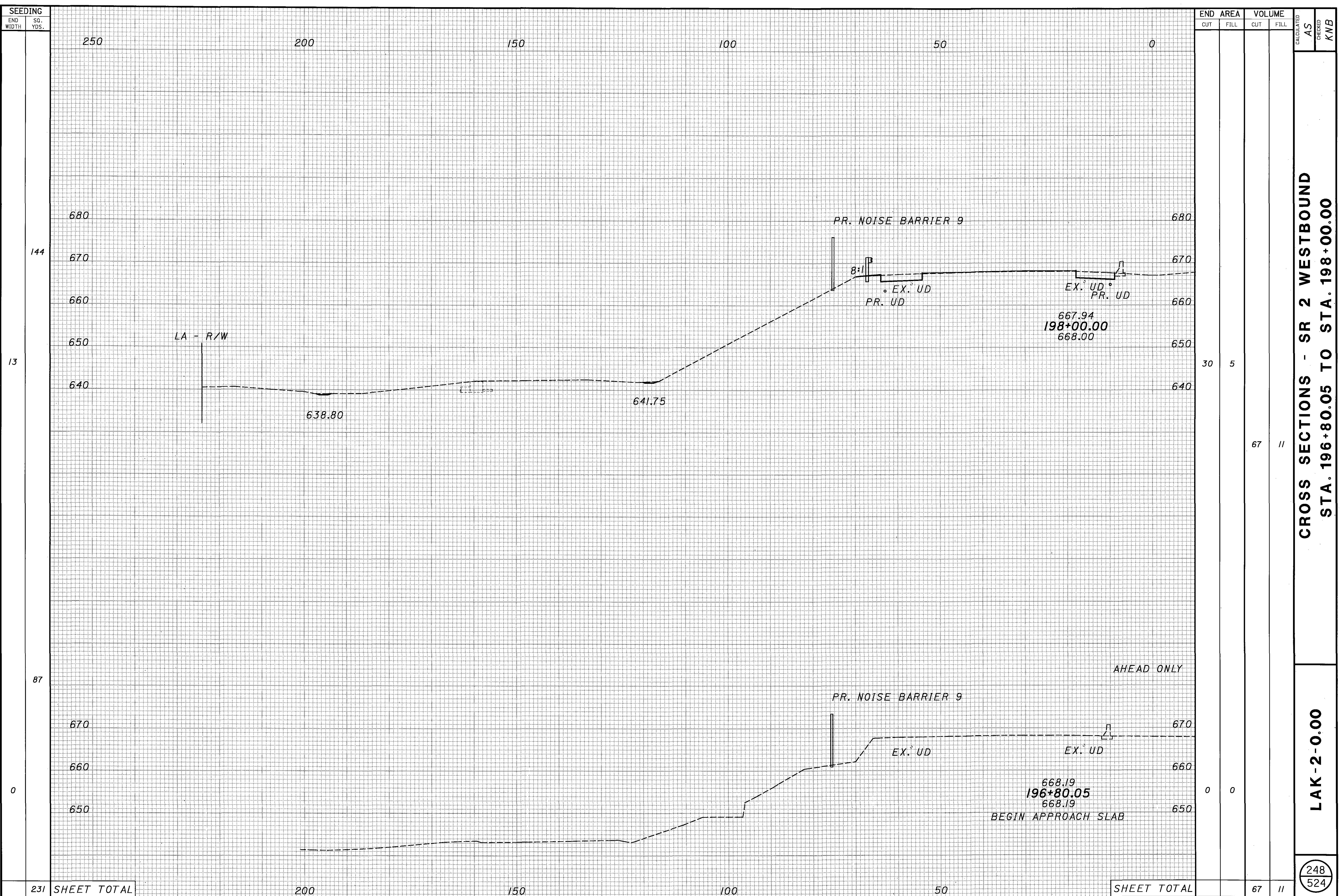
END AREA		VOLUME		CALCULATED AS	CHECKED KNB
CUT	FILL	CUT	FILL		
0	0	0	0		
31	5	122	20		
SHEET TOTAL		188	31		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 194+00.00 TO STA. 195+15.05

LAK-2-0.00

247
524

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SEEDING	
END WIDTH	SQ. YDS.
144	
13	
87	
0	
231	SHEET TOTAL

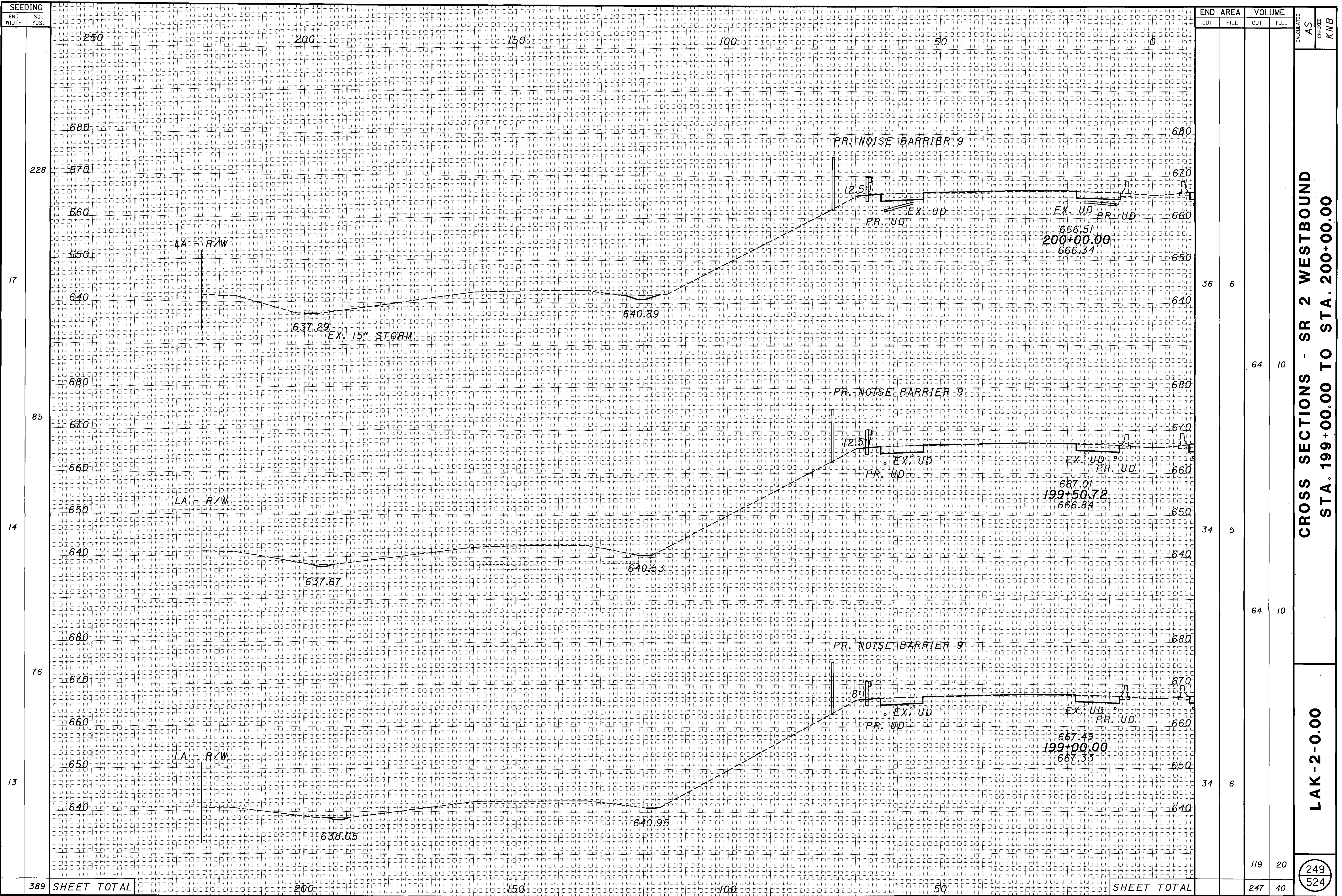
END AREA		VOLUME		CALCULATED AS	CHECKED KMB
CUT	FILL	CUT	FILL		
30	5				
		67	11		
0	0				
		67	11		
SHEET TOTAL					

CROSS SECTIONS - SR 2 WESTBOUND
STA. 196+80.05 TO STA. 198+00.00

LAK-2-0.00

248
524

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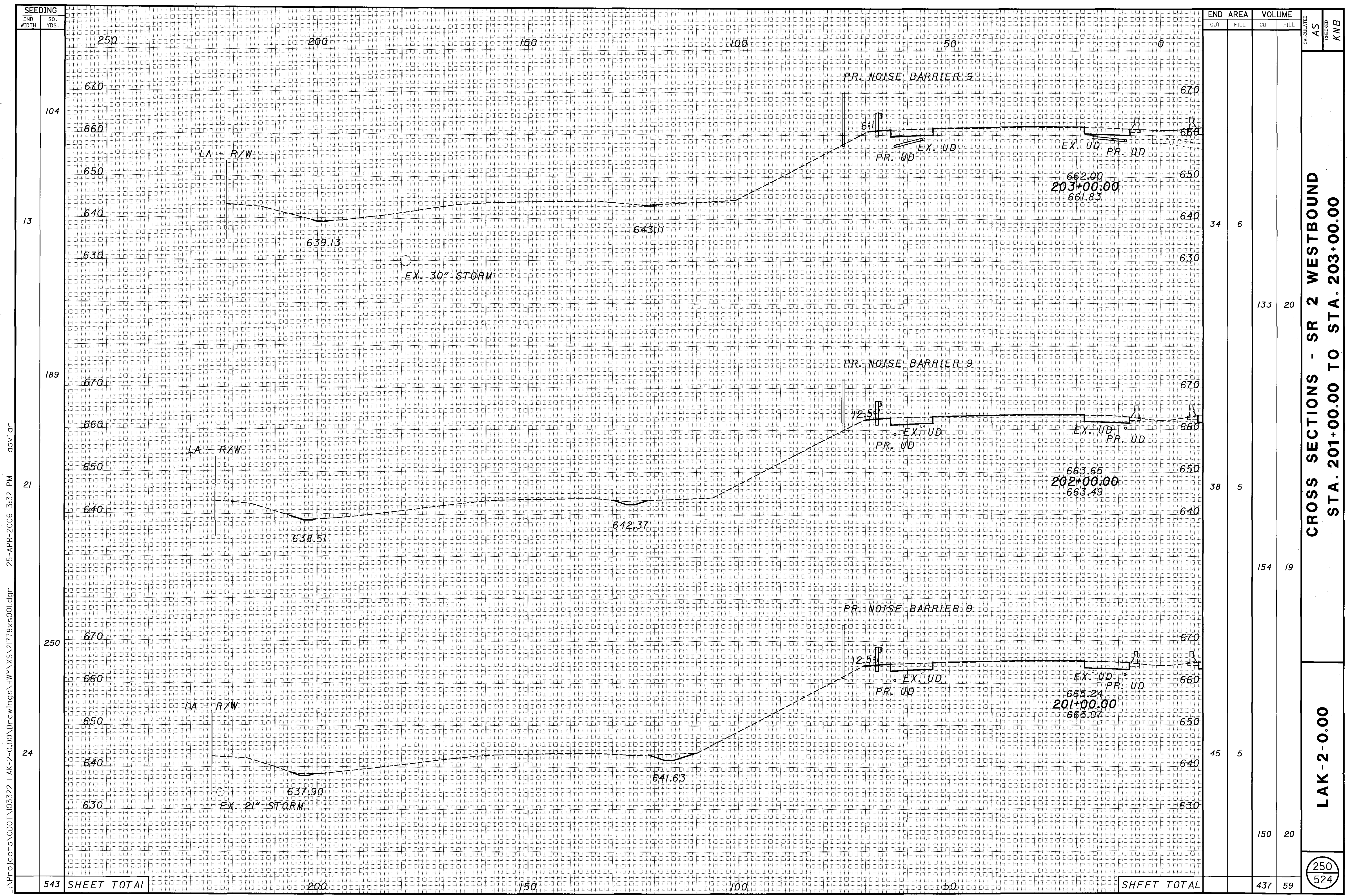
SEEDING	
END WIDTH	SO. YDS.
250	200
200	150
150	100
100	50
50	0
389	SHEET TOTAL

END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KWB
		CUT	FILL		
36	6				
64	10				
34	5				
64	10				
34	6				
119	20				
247	40				

CROSS SECTIONS - SR 2 WESTBOUND
STA. 199+00.00 TO STA. 200+00.00

LAK-2-0.00

249
524

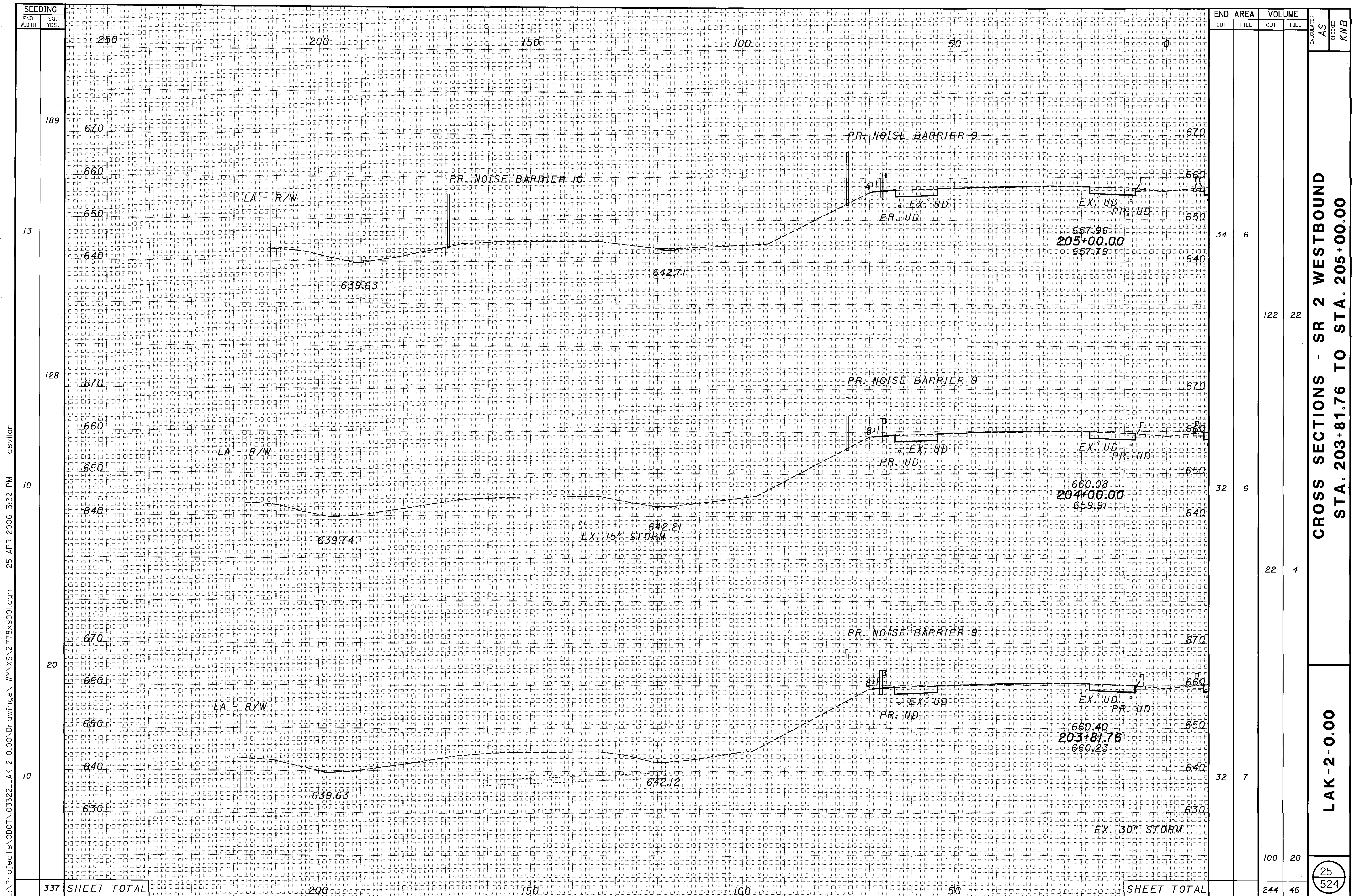


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CROSS SECTIONS - SR 2 WESTBOUND
STA. 201+00.00 TO STA. 203+00.00

LAK-2-0.00

CALCULATED AS CHECKED KWB
 250
 524



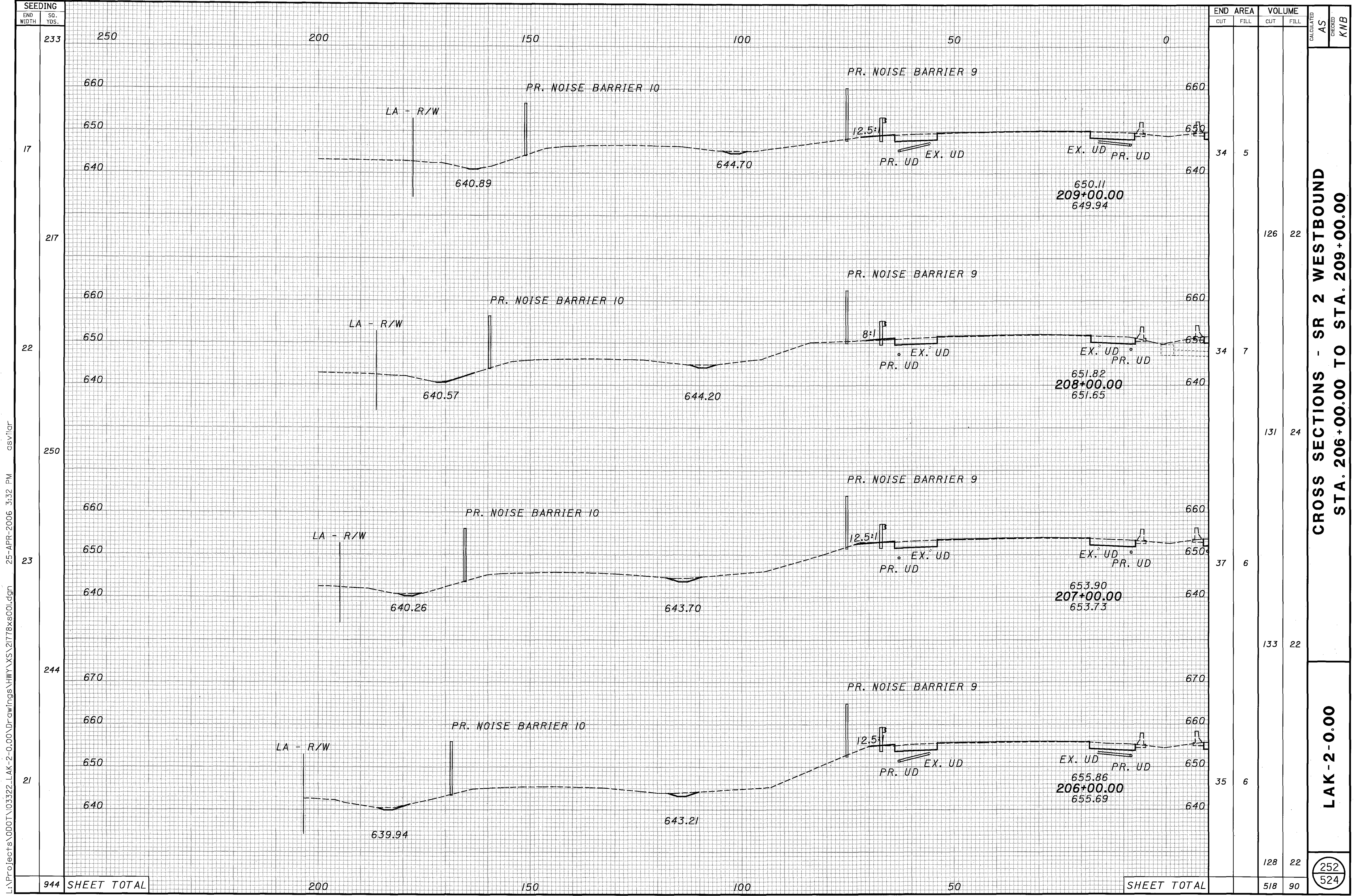
END	AREA		VOLUME		CALCULATED	AS	CHECKED	KWB
	CUT	FILL	CUT	FILL				
189	34	6	122	22				
128	32	6	22	4				
20	32	7	100	20				
337	SHEET TOTAL		244	46				

CROSS SECTIONS - SR 2 WESTBOUND
STA. 203+81.76 TO STA. 205+00.00

LAK-2-0.00

251
 524

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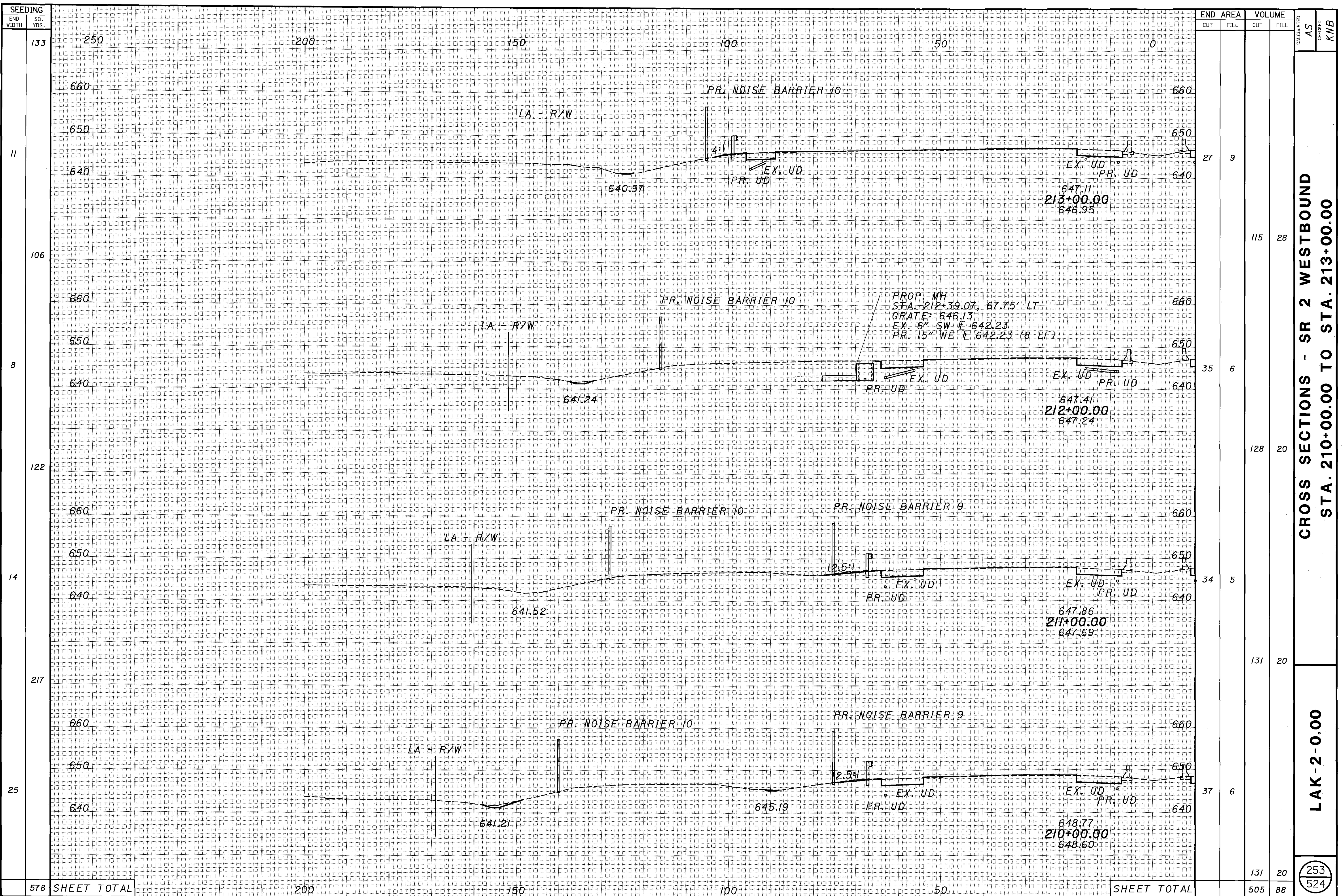


SEEDING	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
233				
17	34	5		
217			126	22
22	34	7		
250			131	24
23	37	6		
244			133	22
21	35	6		
944	SHEET TOTAL		518	90

CALCULATED	CHECKED	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
AS	KWB				
CROSS SECTIONS - SR 2 WESTBOUND STA. 206+00.00 TO STA. 209+00.00					
LAK-2-0.00					
				128	22
				252	524

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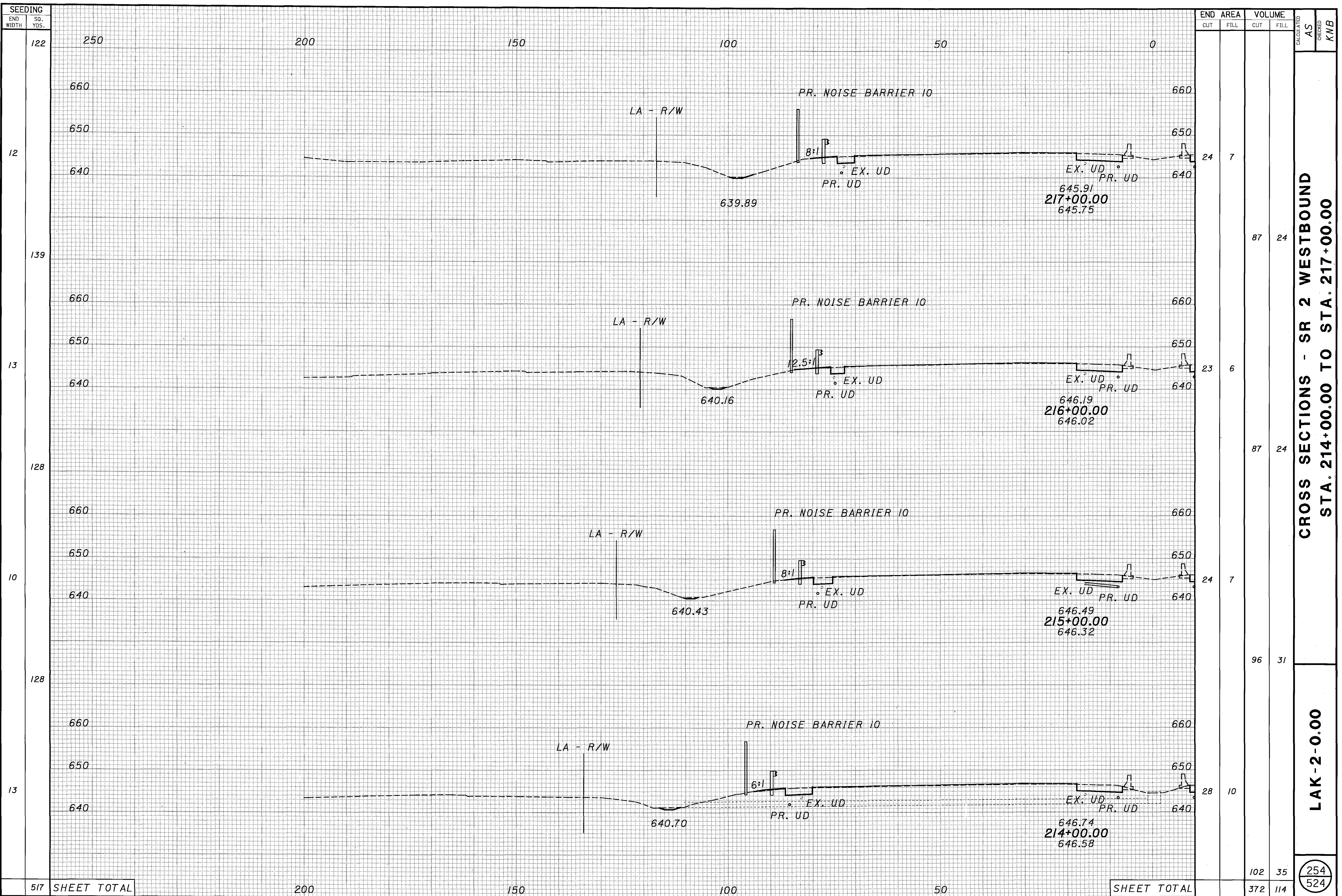
CROSS SECTIONS - SR 2 WESTBOUND
STA. 210+00.00 TO STA. 213+00.00

LAK-2-0.00

CALCULATED AS
 CHECKED KWB

253
 524

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SEEDING	END WIDTH	SQ. YDS.	STATIONING									
			250	200	150	100	50	0				
122												
139												
128												
128												
13												
517	SHEET TOTAL		200		150		100		50			SHEET TOTAL

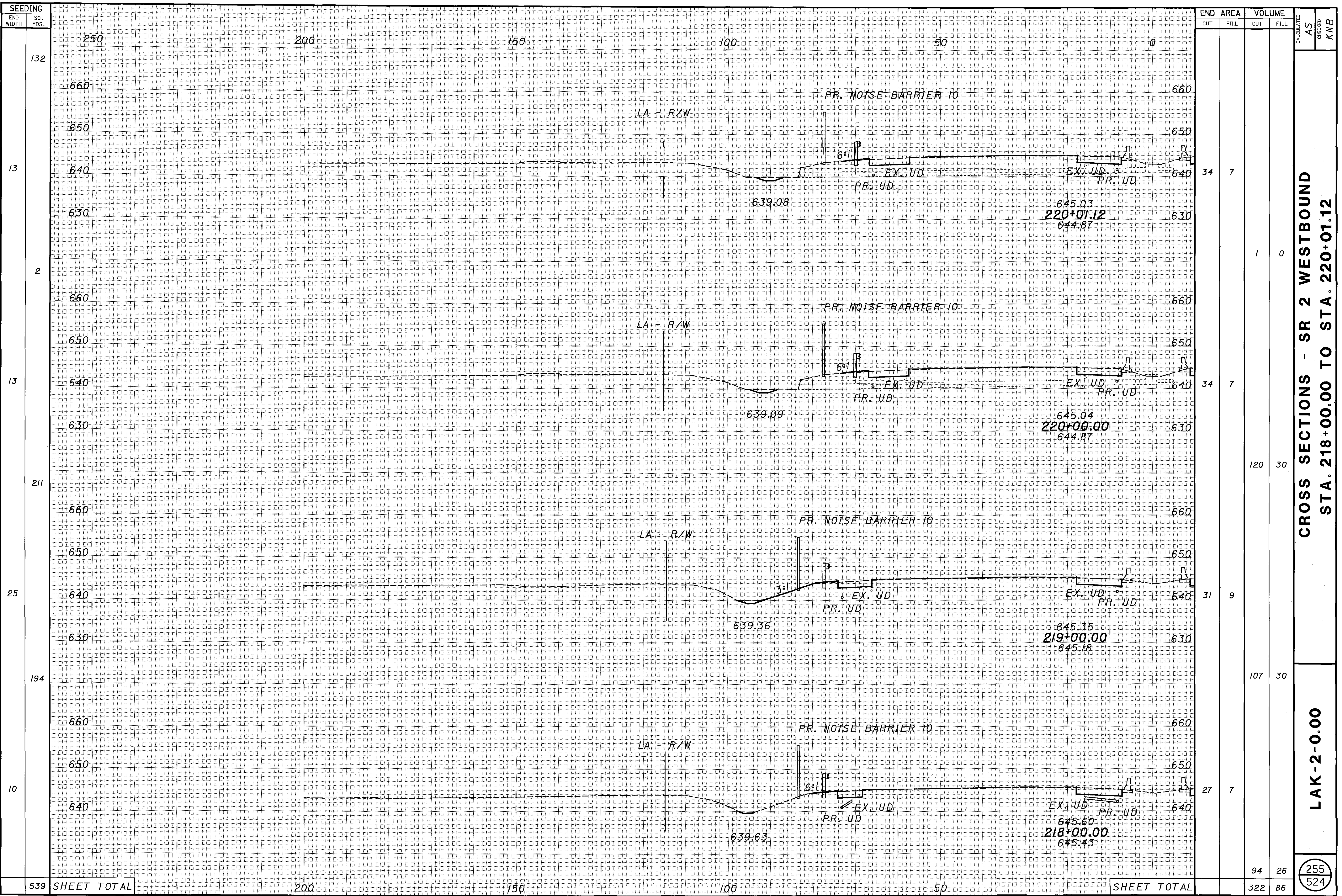
END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
24	7		87	24	AS	KWB
23	6		87	24		
24	7		96	31		
28	10		102	35		
			372	114		

CROSS SECTIONS - SR 2 WESTBOUND
 STA. 214+00.00 TO STA. 217+00.00

LAK-2-0.00

254
 524

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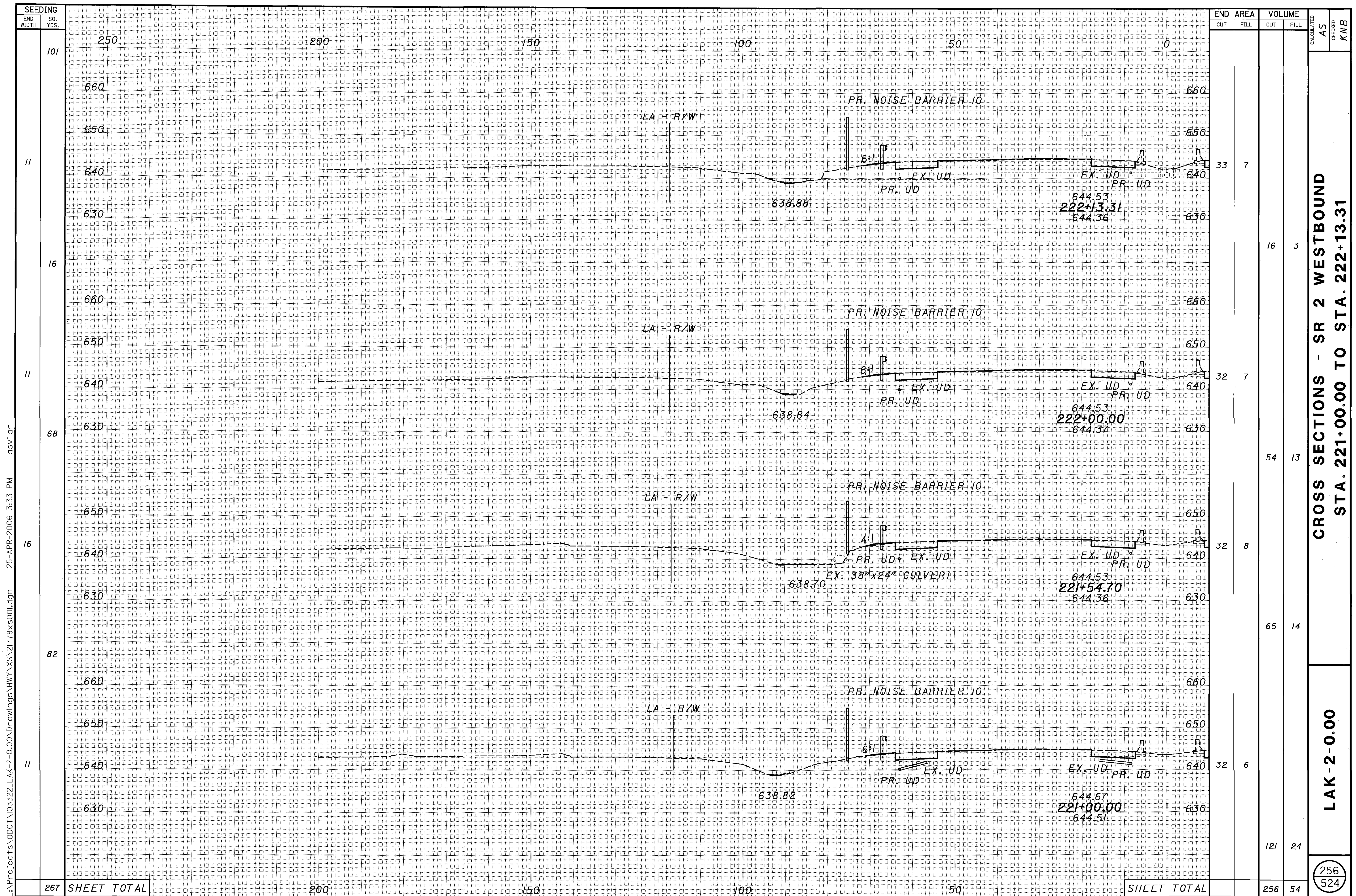
SEEDING	
END WIDTH	SO. YDS.
132	250
13	200
2	150
13	100
211	50
25	0
194	
10	
539	SHEET TOTAL

END AREA		VOLUME		CALCULATED AS	CHECKED KMB
CUT	FILL	CUT	FILL		
34	7	1	0		
34	7	120	30		
31	9	107	30		
27	7	94	26		
SHEET TOTAL		322	86		

**CROSS SECTIONS - SR 2 WESTBOUND
STA. 218+00.00 TO STA. 220+01.12**

LAK-2-0.00

255
524



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SEEDING	
END WIDTH	SQ. YDS.
101	250
16	200
16	150
16	100
16	50
267	SHEET TOTAL

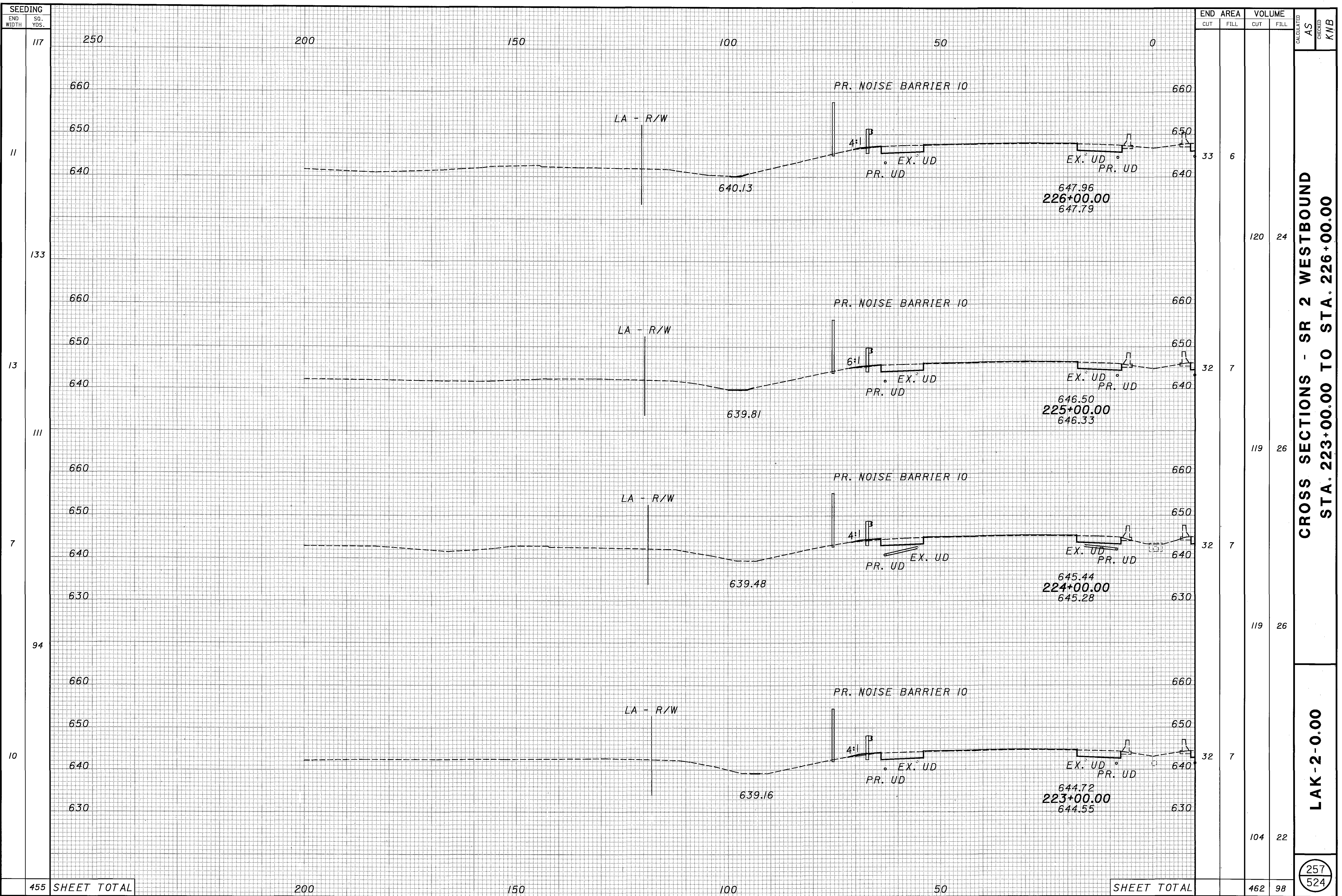
END	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
33	7					
16		3				
32	7					
54		13				
32	8					
65		14				
32	6					
121		24				
			256	54		
SHEET TOTAL						

CROSS SECTIONS - SR 2 WESTBOUND
STA. 221+00.00 TO STA. 222+13.31

LAK-2-0.00

256
 524

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SEEDING	
END WIDTH	SO. YDS.
117	250
133	200
111	150
94	100
7	50
10	0
455	SHEET TOTAL

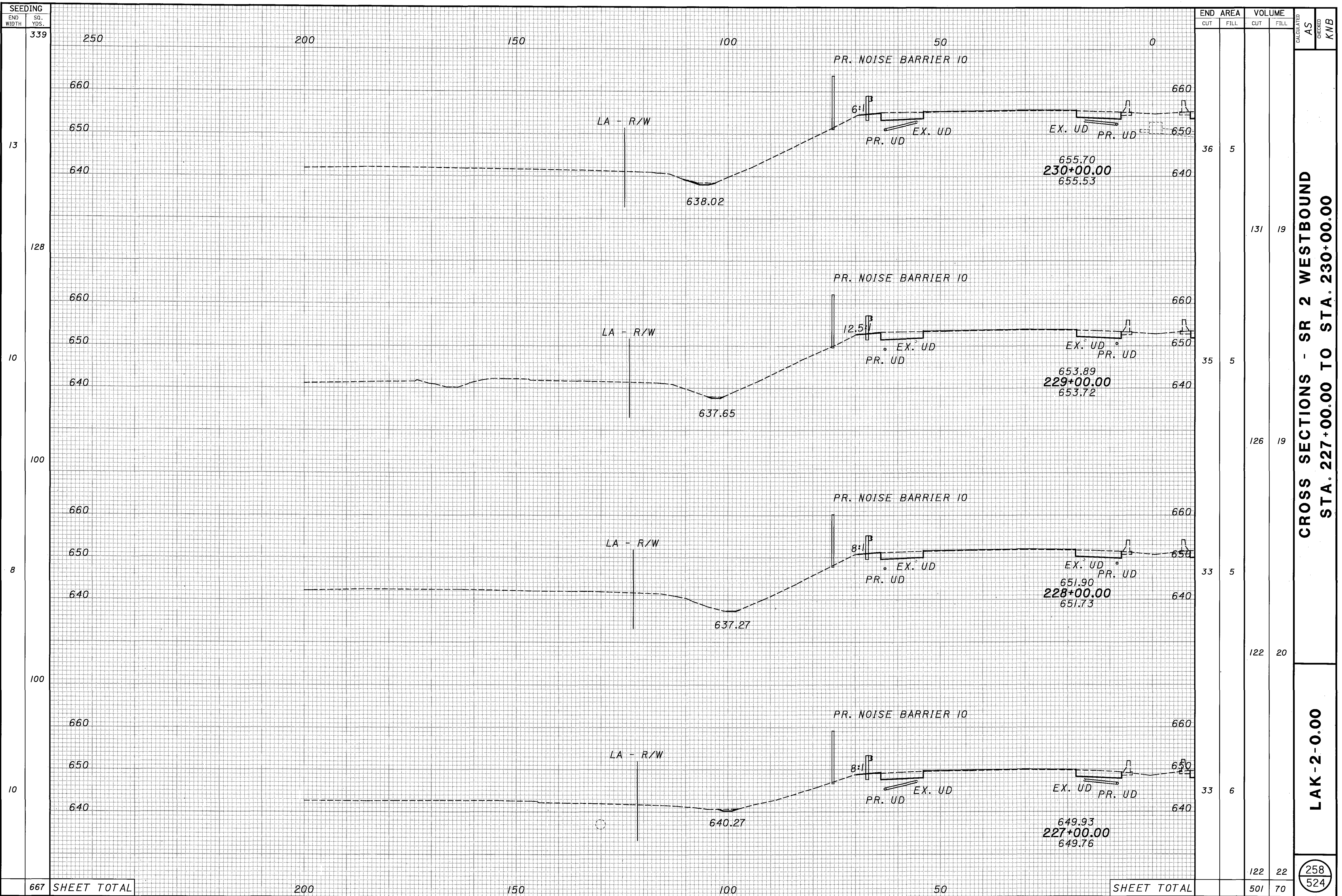
END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KMB
		CUT	FILL		
33	6	120	24		
32	7	119	26		
32	7	119	26		
32	7	104	22		
		462	98		

**CROSS SECTIONS - SR 2 WESTBOUND
STA. 223+00.00 TO STA. 226+00.00**

LAK-2-0.00

257
524

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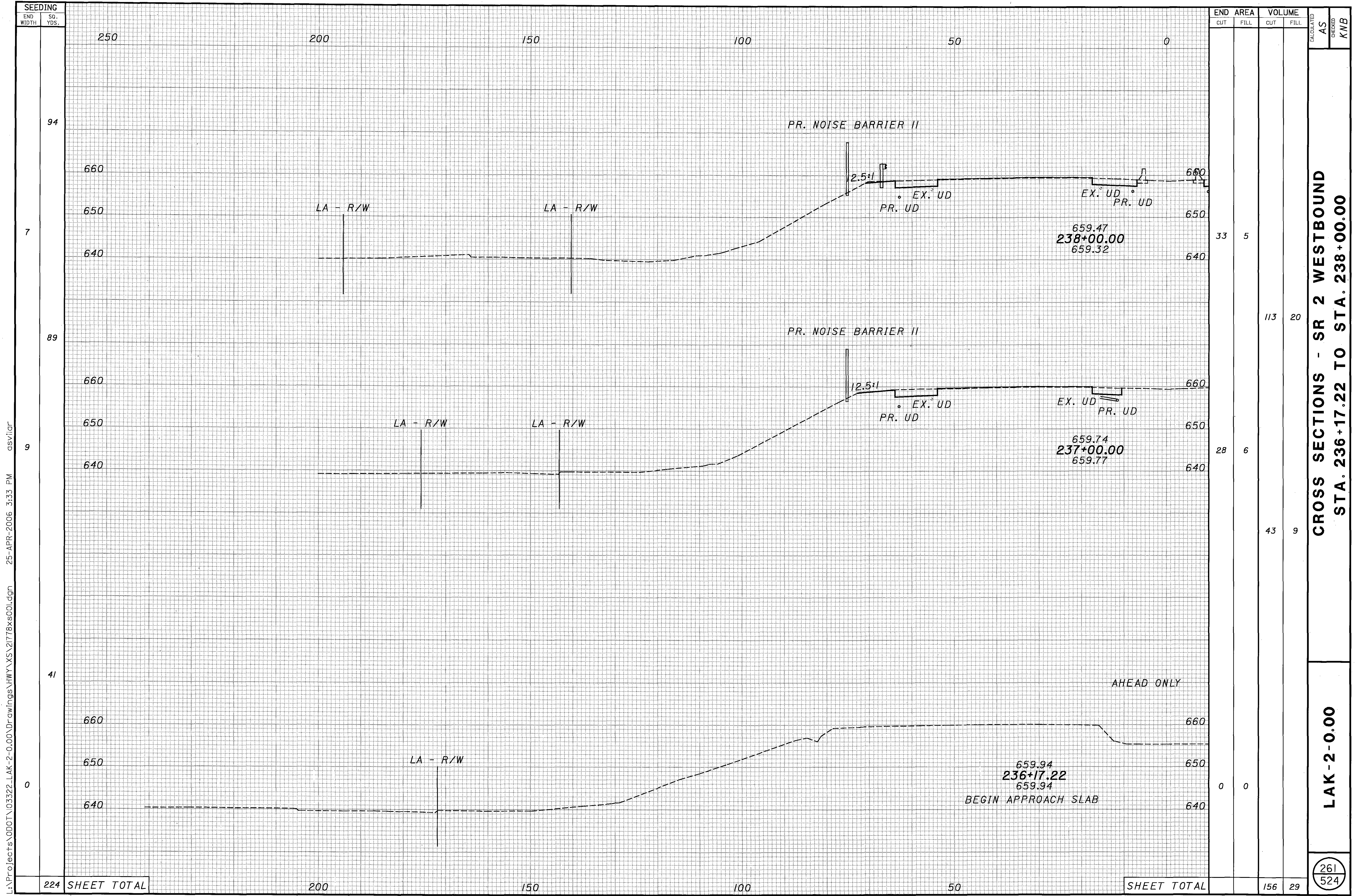
CROSS SECTIONS - SR 2 WESTBOUND
STA. 227+00.00 TO STA. 230+00.00

LAK-2-0.00

258
524

SEEDING	
END WIDTH	SO. YDS.
339	250
128	200
100	150
100	100
10	50
667	200
SHEET TOTAL	

END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
339	36	5	131	19	AS	KNB
128	35	5	126	19		
100	33	5	122	20		
10	33	6	122	22		
667	122	22	501	70		



SEEDING	SO. YDS.
END WIDTH	

END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		

224 SHEET TOTAL

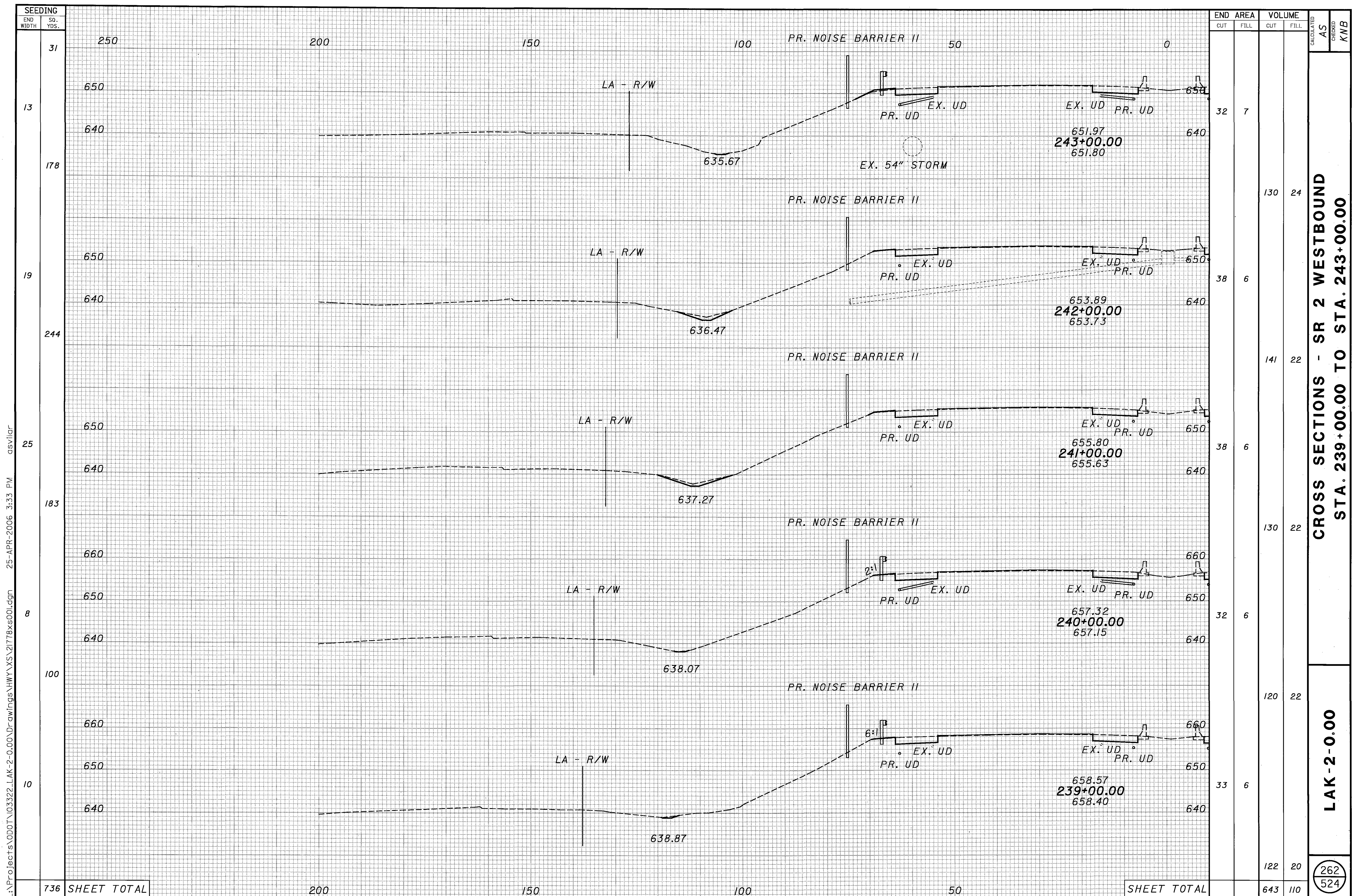
SHEET TOTAL 156 29

CROSS SECTIONS - SR 2 WESTBOUND
STA. 236+17.22 TO STA. 238+00.00

LAK-2-0.00

261
524

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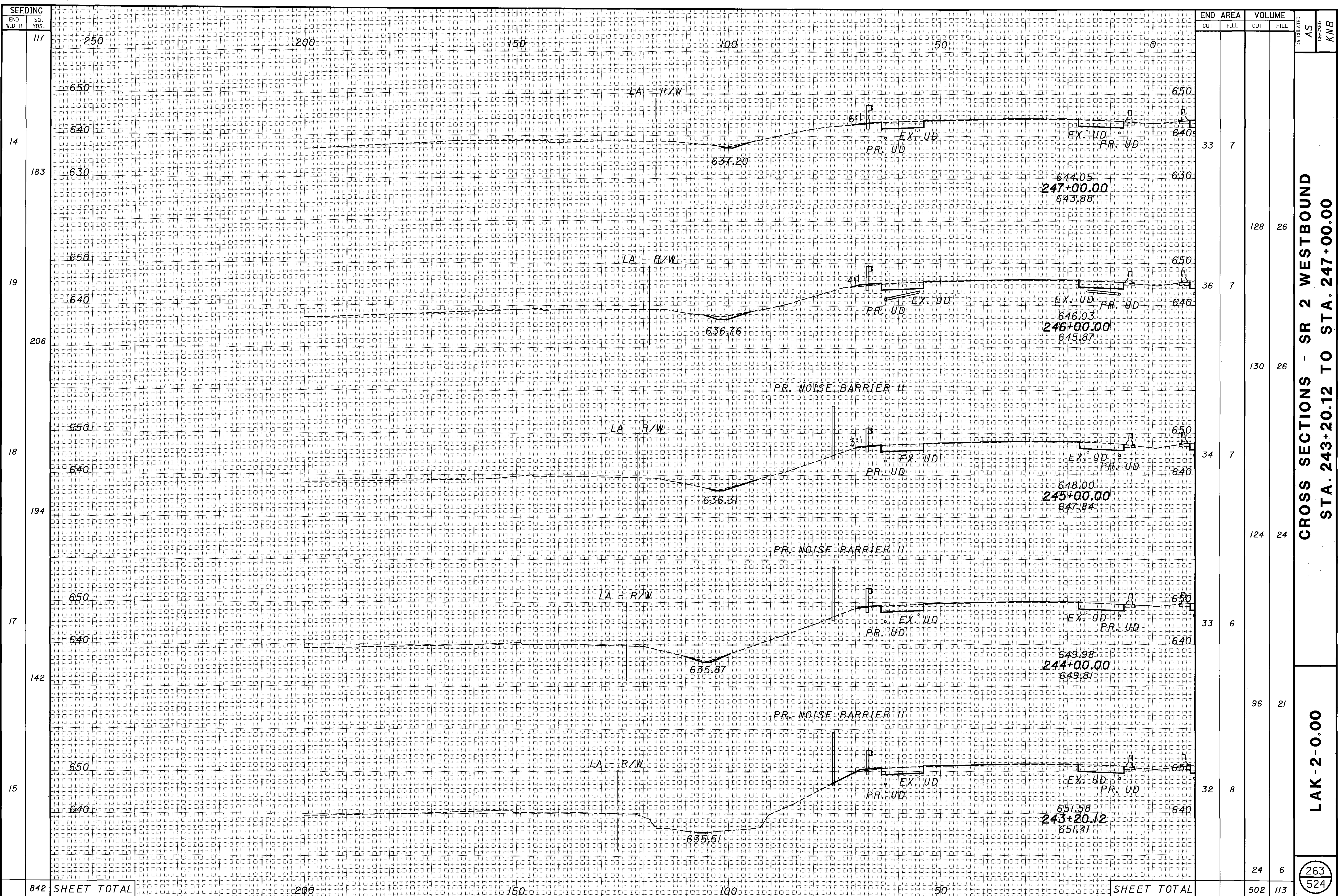
CROSS SECTIONS - SR 2 WESTBOUND
STA. 239+00.00 TO STA. 243+00.00

LAK-2-0.00

CALCULATED AS
 CHECKED KWB

262
 524

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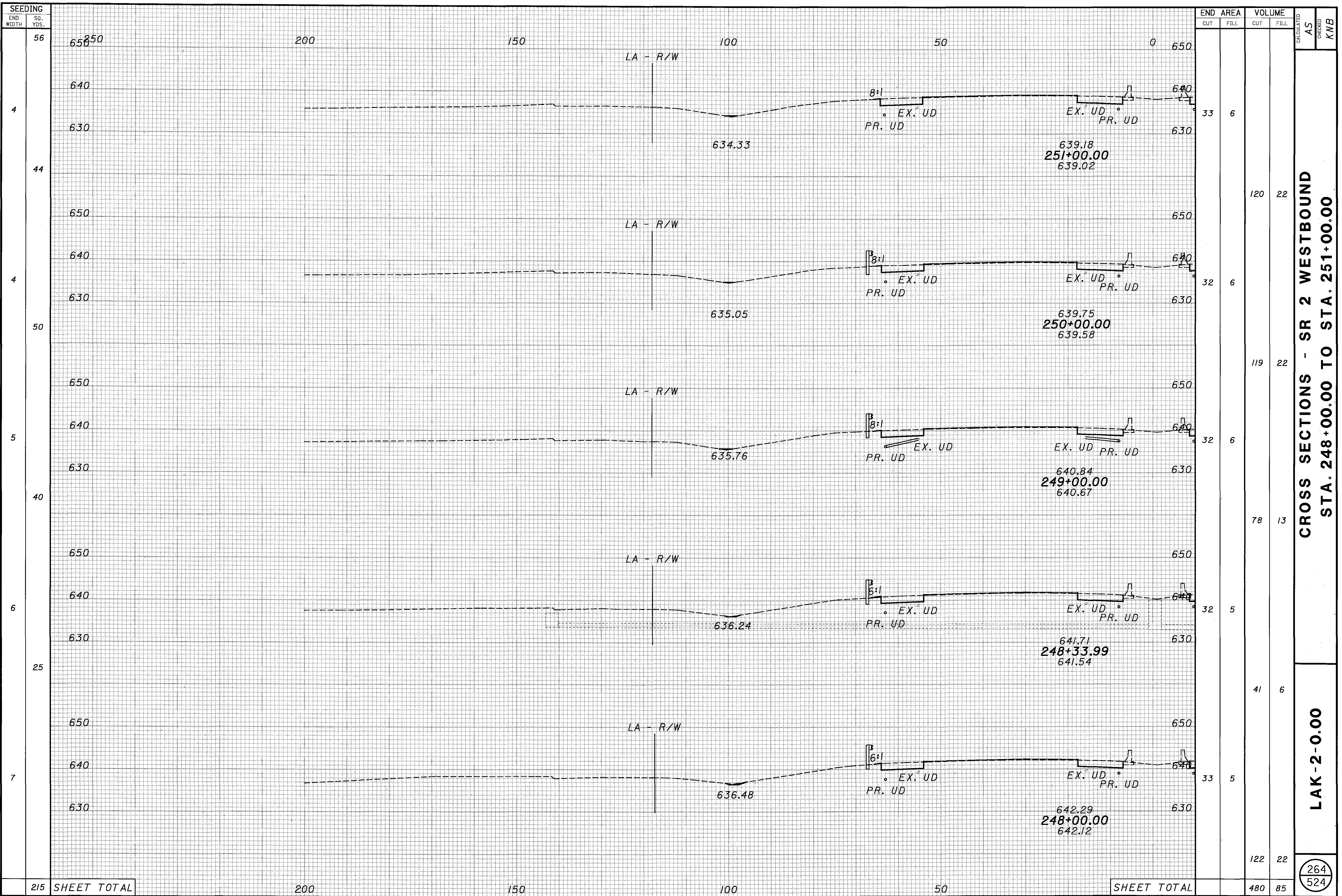


CROSS SECTIONS - SR 2 WESTBOUND
STA. 243+20.12 TO STA. 247+00.00

LAK-2-0.00

263
524

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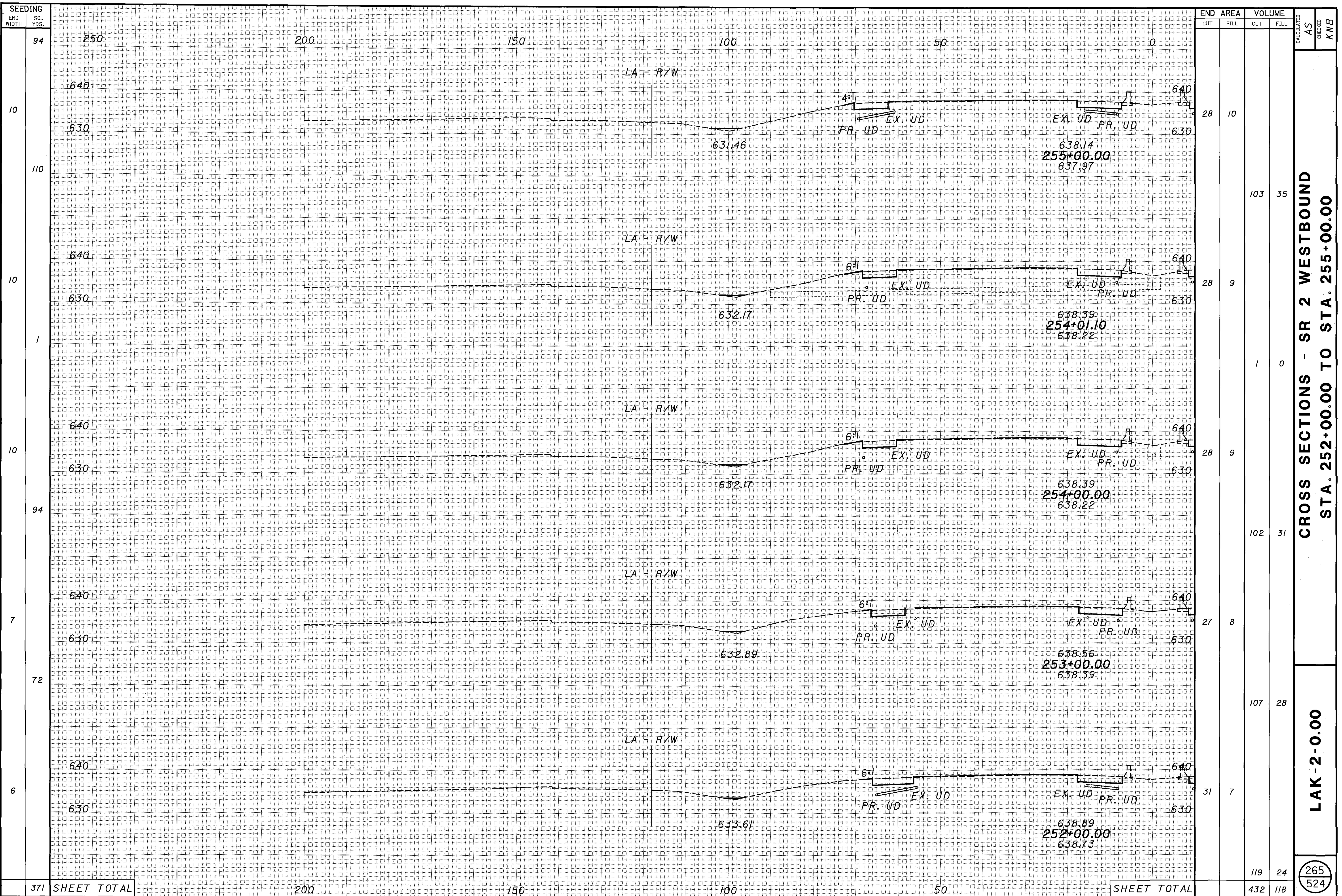


CROSS SECTIONS - SR 2 WESTBOUND
STA. 248+00.00 TO STA. 251+00.00

LAK-2-0.00

264
524

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CROSS SECTIONS - SR 2 WESTBOUND
STA. 252+00.00 TO STA. 255+00.00

LAK-2-0.00



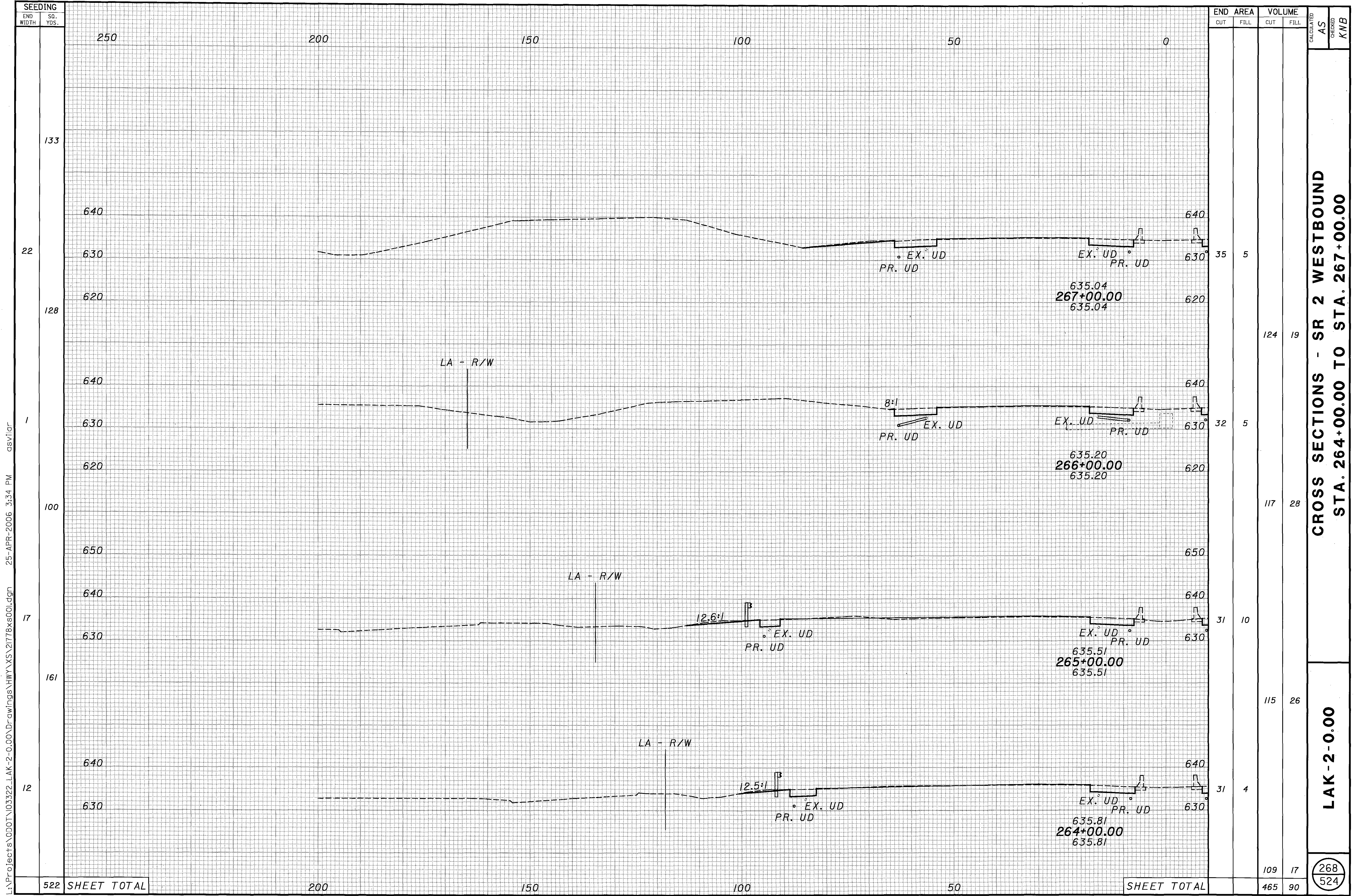
SEEDING END WIDTH	SQ. YDS.	250	200	150	100	50	0	END AREA		VOLUME		CALCULATED AS	CHECKED KWB
								CUT	FILL	CUT	FILL		
17	105							32	8				
150										115	28		
10	83							30	7				
83										106	26		
5	67							27	7				
67										100	30		
7								27	9				
7										102	35		
405	SHEET TOTAL	200		150	100	50	SHEET TOTAL			423	119		

CROSS SECTIONS - SR 2 WESTBOUND
STA. 256+00.00 TO STA. 259+85.80

LAK-2-0.00

266
 524

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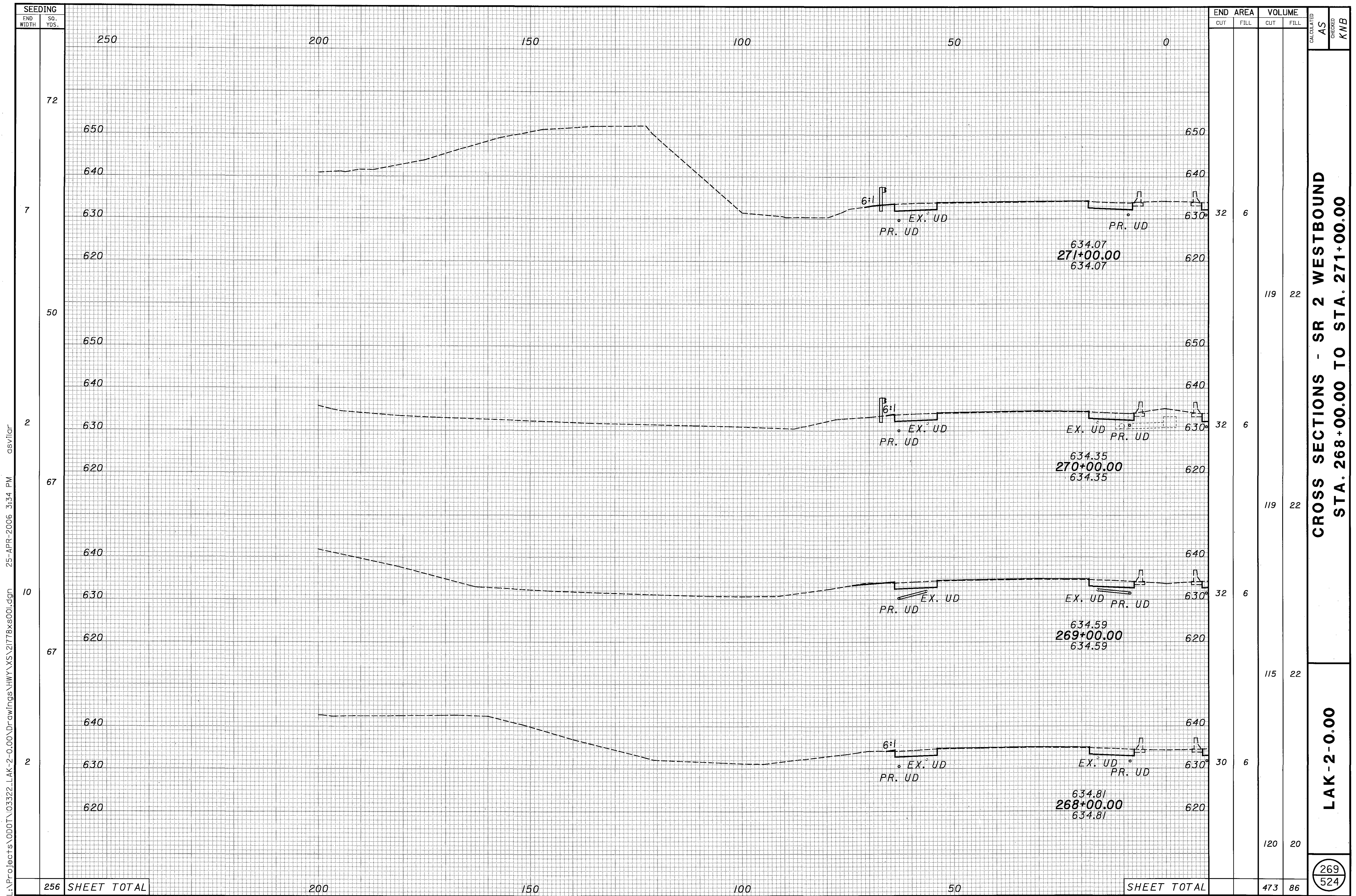
CROSS SECTIONS - SR 2 WESTBOUND
STA. 264+00.00 TO STA. 267+00.00

LAK-2-0.00

CALCULATED AS 268
 CHECKED KWB 524

SEEDING
 END WIDTH 50 YDS.
 22
 128
 1
 100
 17
 161
 12
 522 SHEET TOTAL

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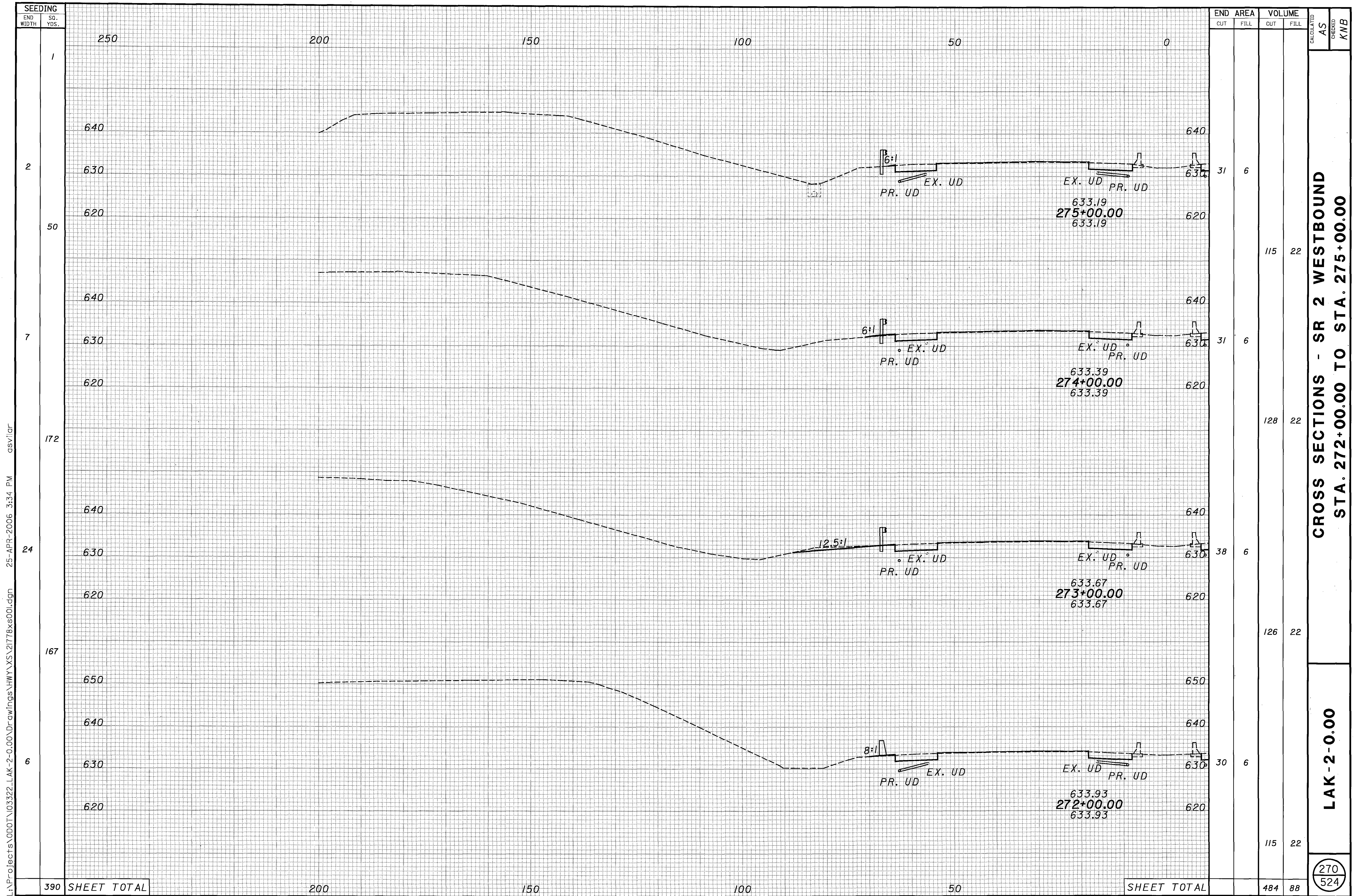


CROSS SECTIONS - SR 2 WESTBOUND
 STA. 268+00.00 TO STA. 271+00.00

LAK-2-0.00

269
524

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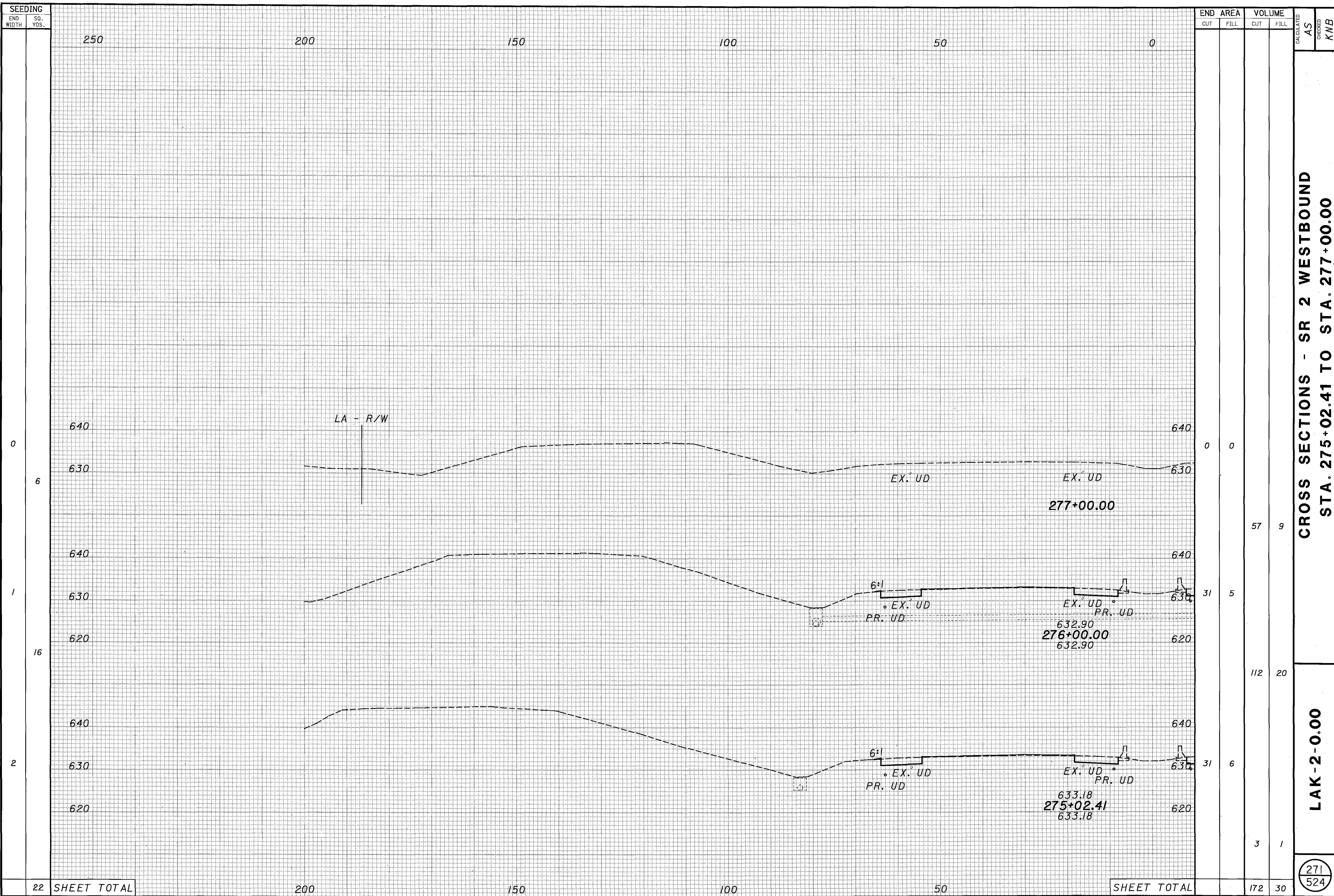
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 272+00.00 TO STA. 275+00.00

LAK-2-0.00

CALCULATED AS CHECKED KWB
 270
 524

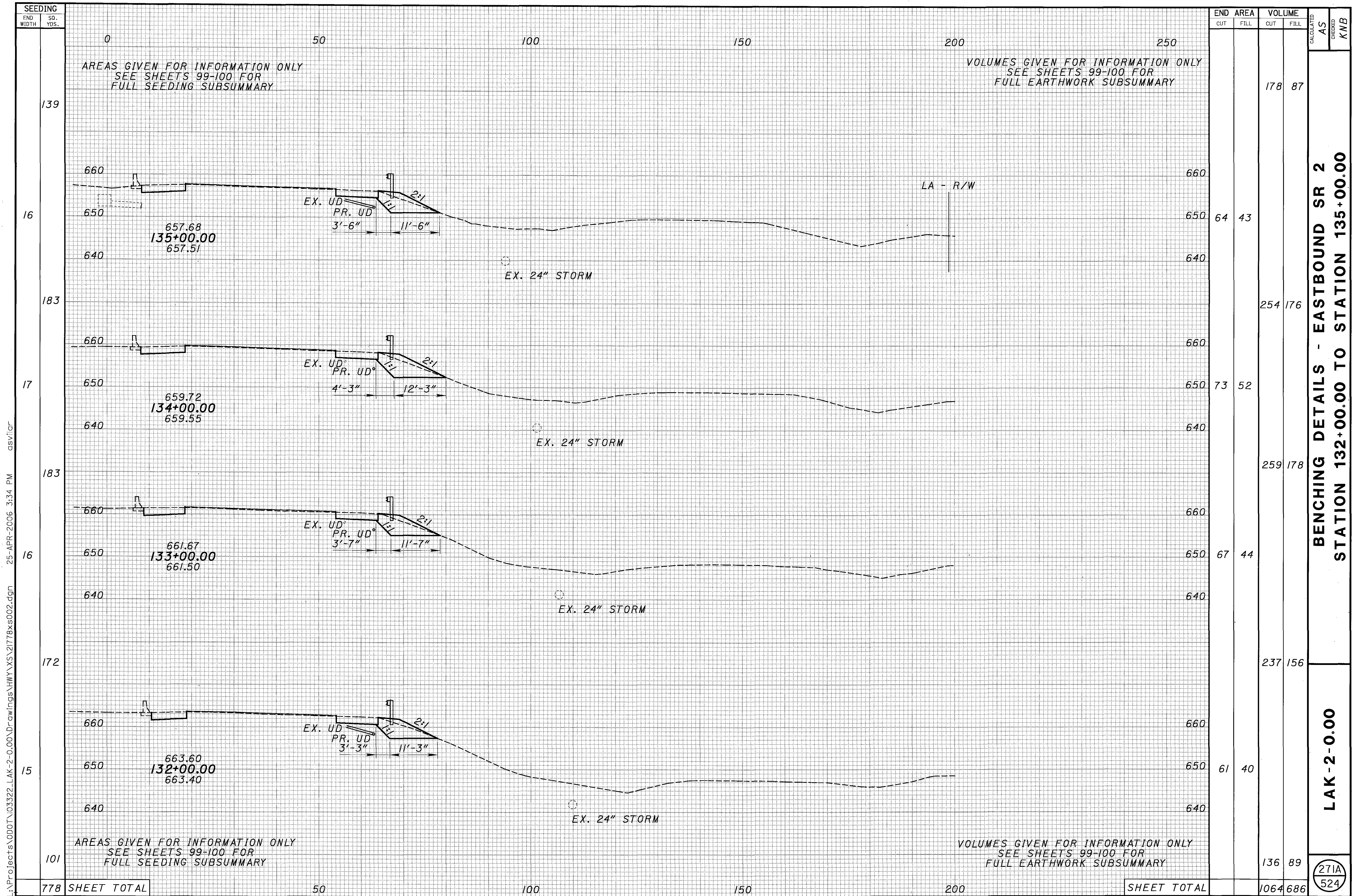
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CROSS SECTIONS - SR 2 WESTBOUND
STA. 275+02.41 TO STA. 277+00.00

LAK-2-0.00

271
524



AREAS GIVEN FOR INFORMATION ONLY
SEE SHEETS 99-100 FOR
FULL SEEDING SUBSUMMARY

VOLUMES GIVEN FOR INFORMATION ONLY
SEE SHEETS 99-100 FOR
FULL EARTHWORK SUBSUMMARY

END	AREA		VOLUME		CALCULATED AS	CHECKED KNB
	CUT	FILL	CUT	FILL		
139			178	87		
16	64	43				
183			254	176		
17	73	52				
183			259	178		
16	67	44				
172			237	156		
15	61	40				
101			136	89		
778	SHEET TOTAL		1064	686		

AREAS GIVEN FOR INFORMATION ONLY
SEE SHEETS 99-100 FOR
FULL SEEDING SUBSUMMARY

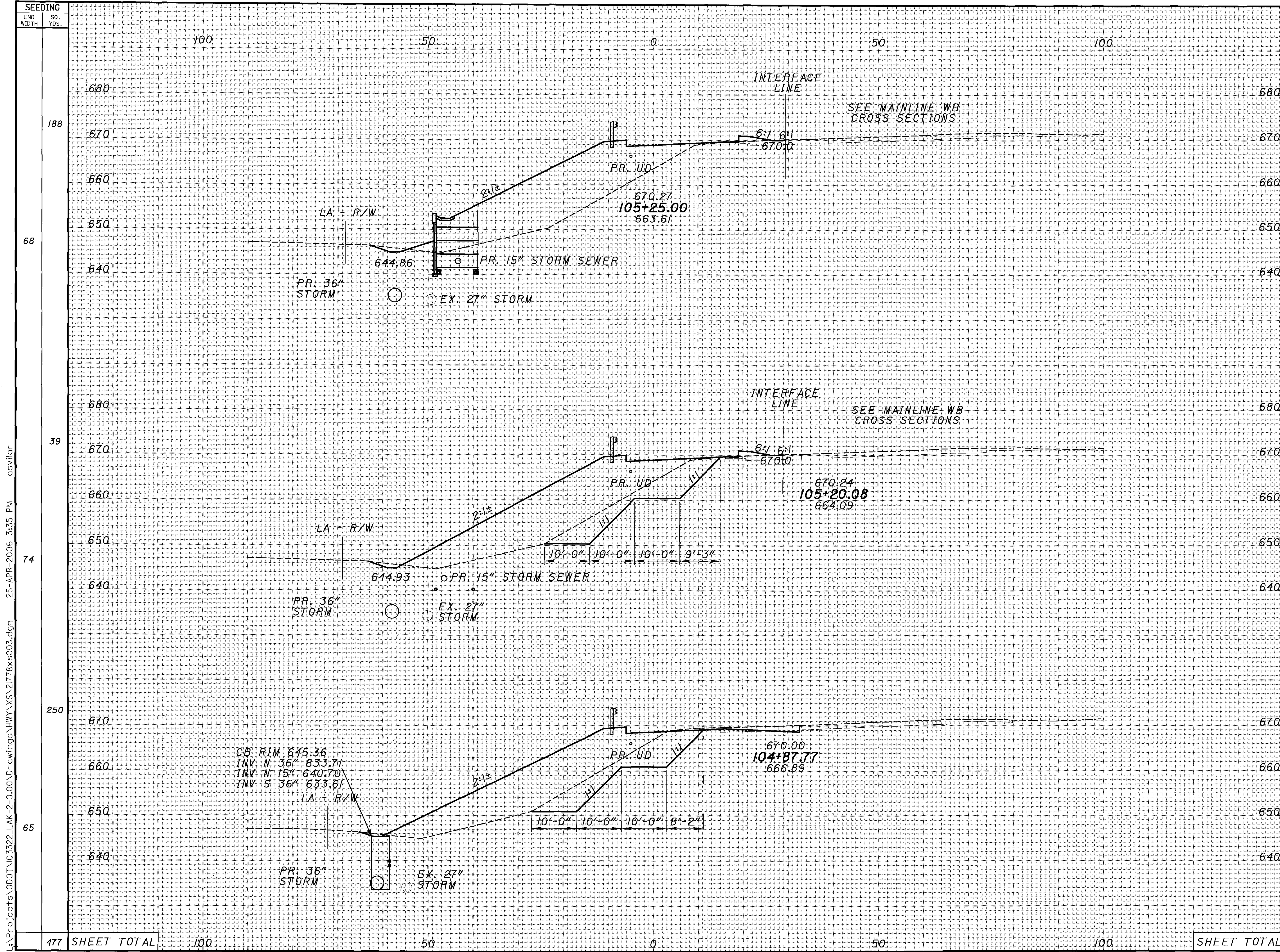
VOLUMES GIVEN FOR INFORMATION ONLY
SEE SHEETS 99-100 FOR
FULL EARTHWORK SUBSUMMARY

BENCHING DETAILS - EASTBOUND SR 2
 STATION 132+00.00 TO STATION 135+00.00

LAK-2-0.00

271A
524

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END STA.	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
105+25.00	5	474				
105+20.08	14	103				
104+87.77	147	652				
TOTAL	182	562				
104+87.77	158	578				
104+87.77	196	839				

CROSS SECTIONS
 RAMP A-1 - STA. 104+87.77 TO STA. 105+25.00

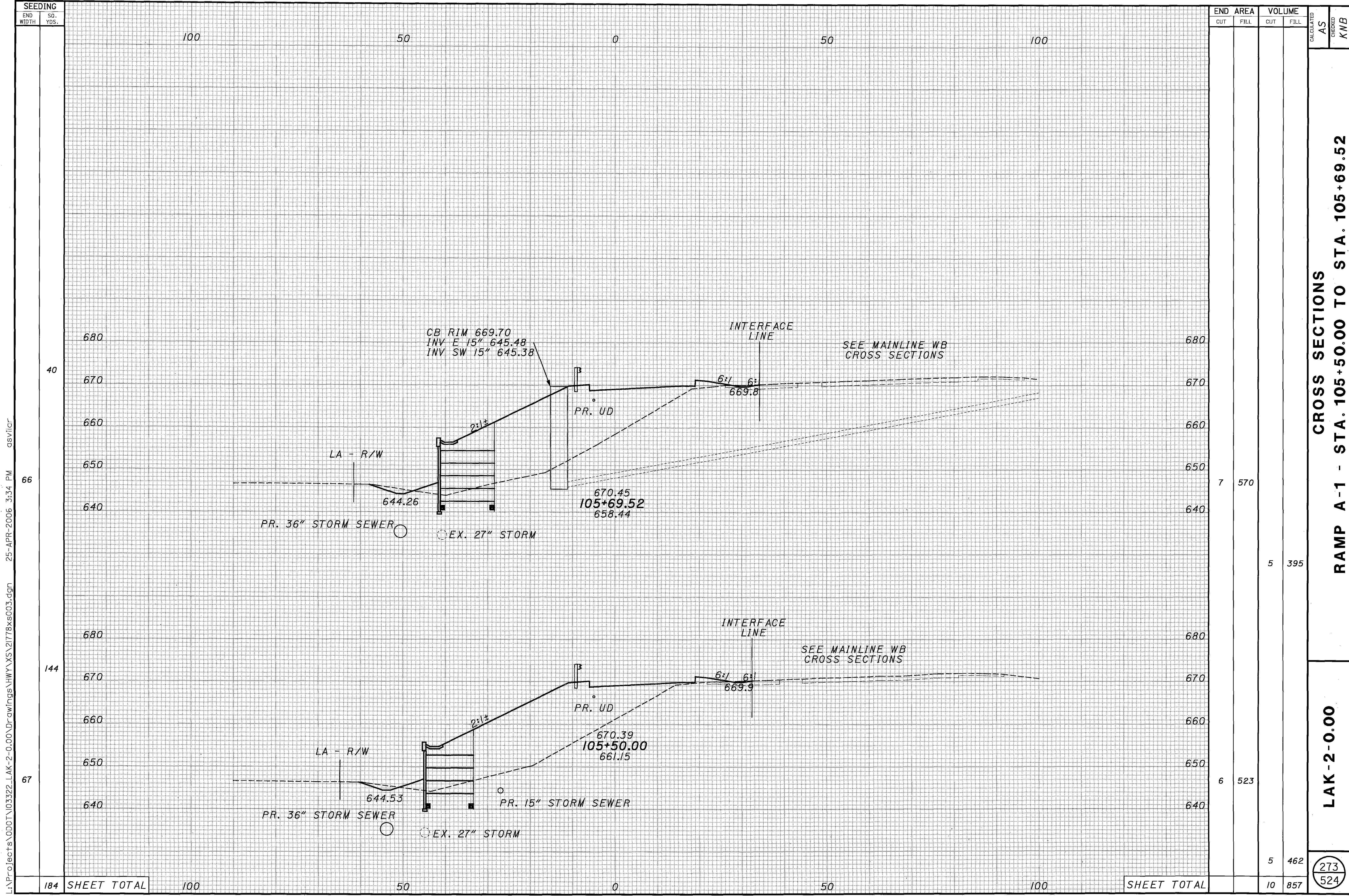
LAK-2-0.00

272
 524

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477 SHEET TOTAL

SHEET TOTAL



SEEDING
END SO. WIDTH YDS.
100 50 0 50 100

END CUT	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
7	570					
5			395			
6	523					
5			462			
10			857			

CROSS SECTIONS
RAMP A-1 - STA. 105+50.00 TO STA. 105+69.52

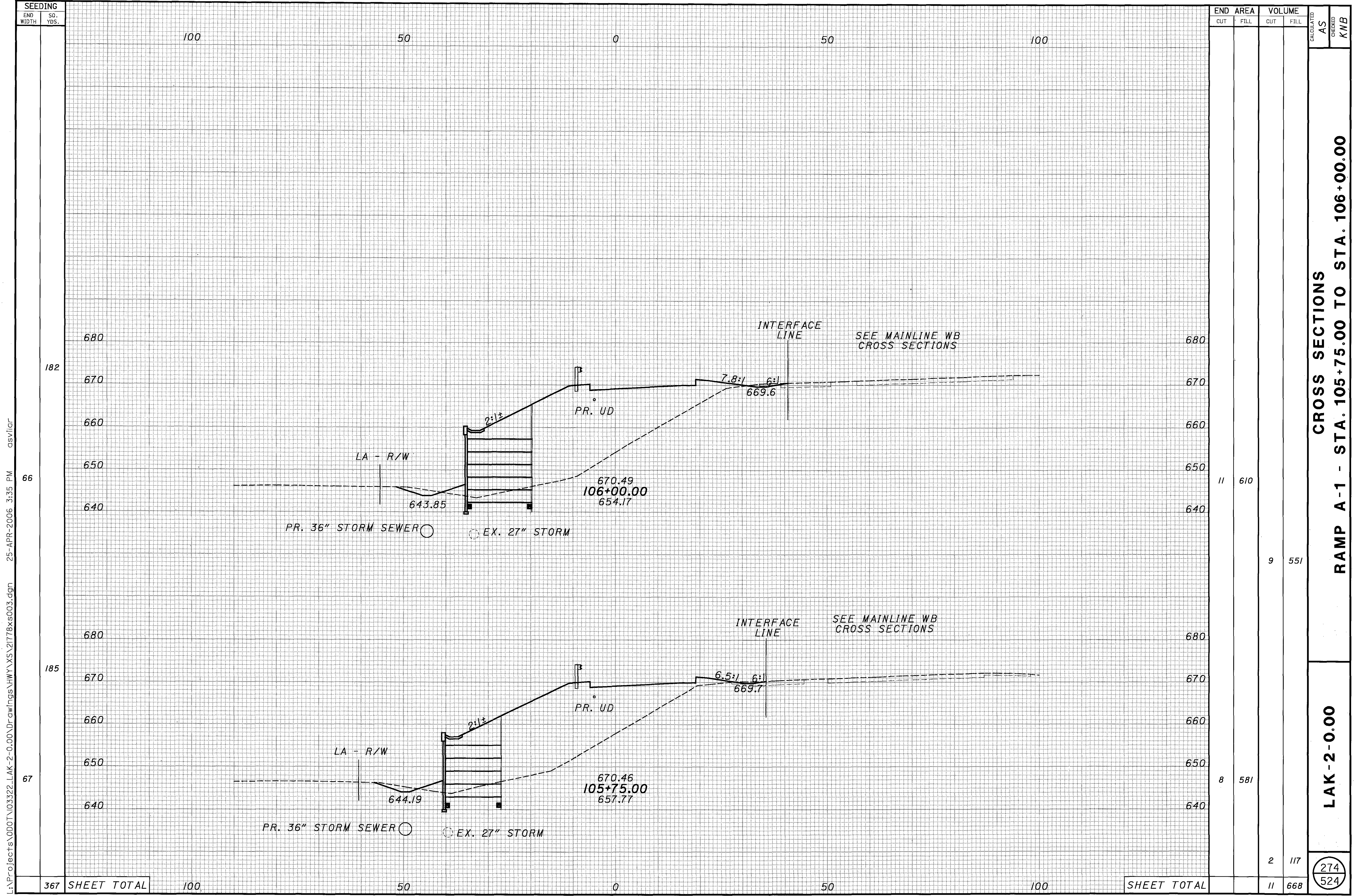
LAK-2-0.00

273
524

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184 SHEET TOTAL

SHEET TOTAL



SEEDING	
END WIDTH	SO. YDS.
100	50
0	50
100	100
367	SHEET TOTAL

END	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
11		610				
9			551			
8	581					
2			117			
11		668				

CROSS SECTIONS
 RAMP A-1 - STA. 105+75.00 TO STA. 106+00.00

LAK-2-0.00

274
 524

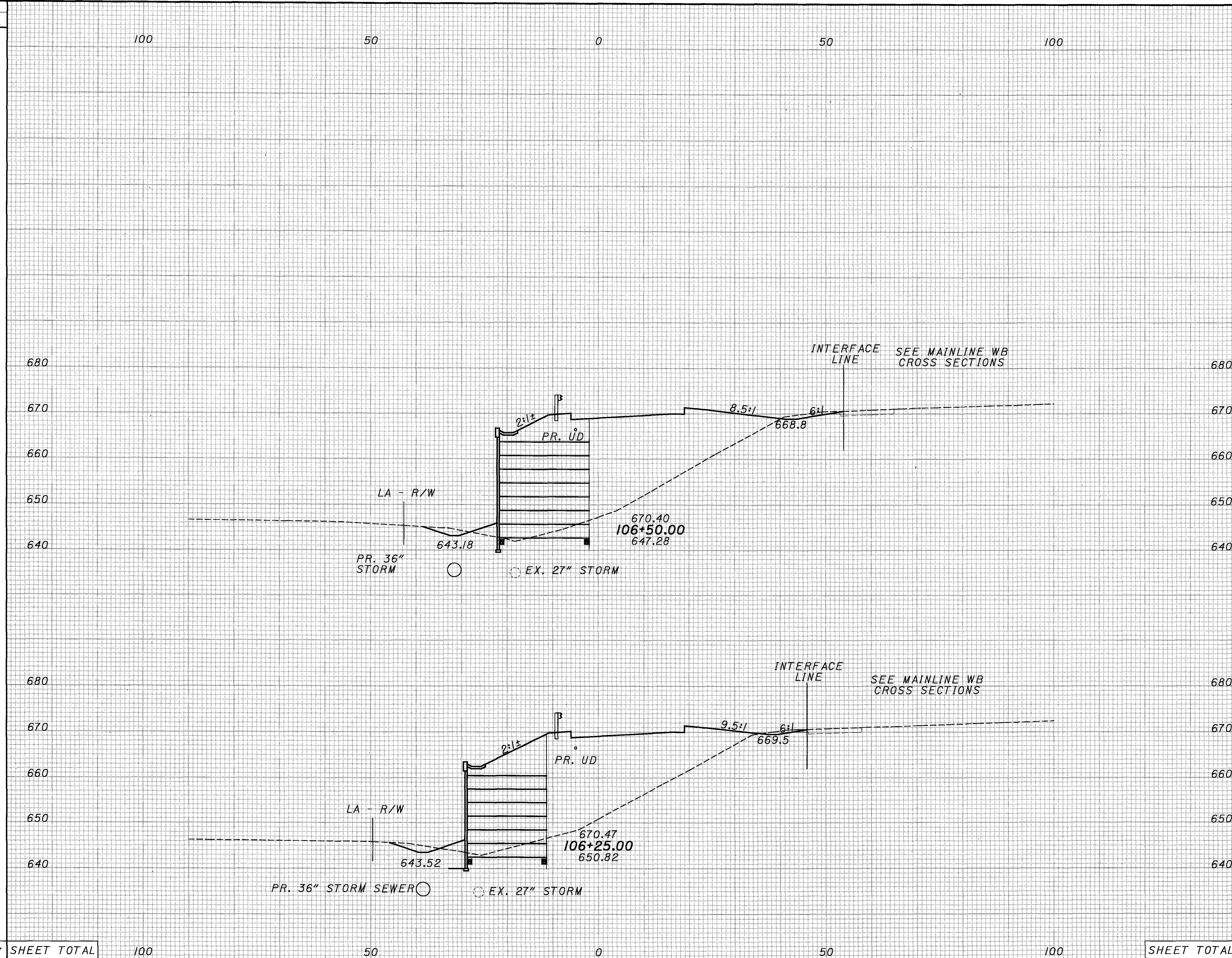
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SEEDING
 END SO. YDS.
 WIDTH YDS.

100 50 0 50 100

176
 65
 65
 181
 65

357 SHEET TOTAL



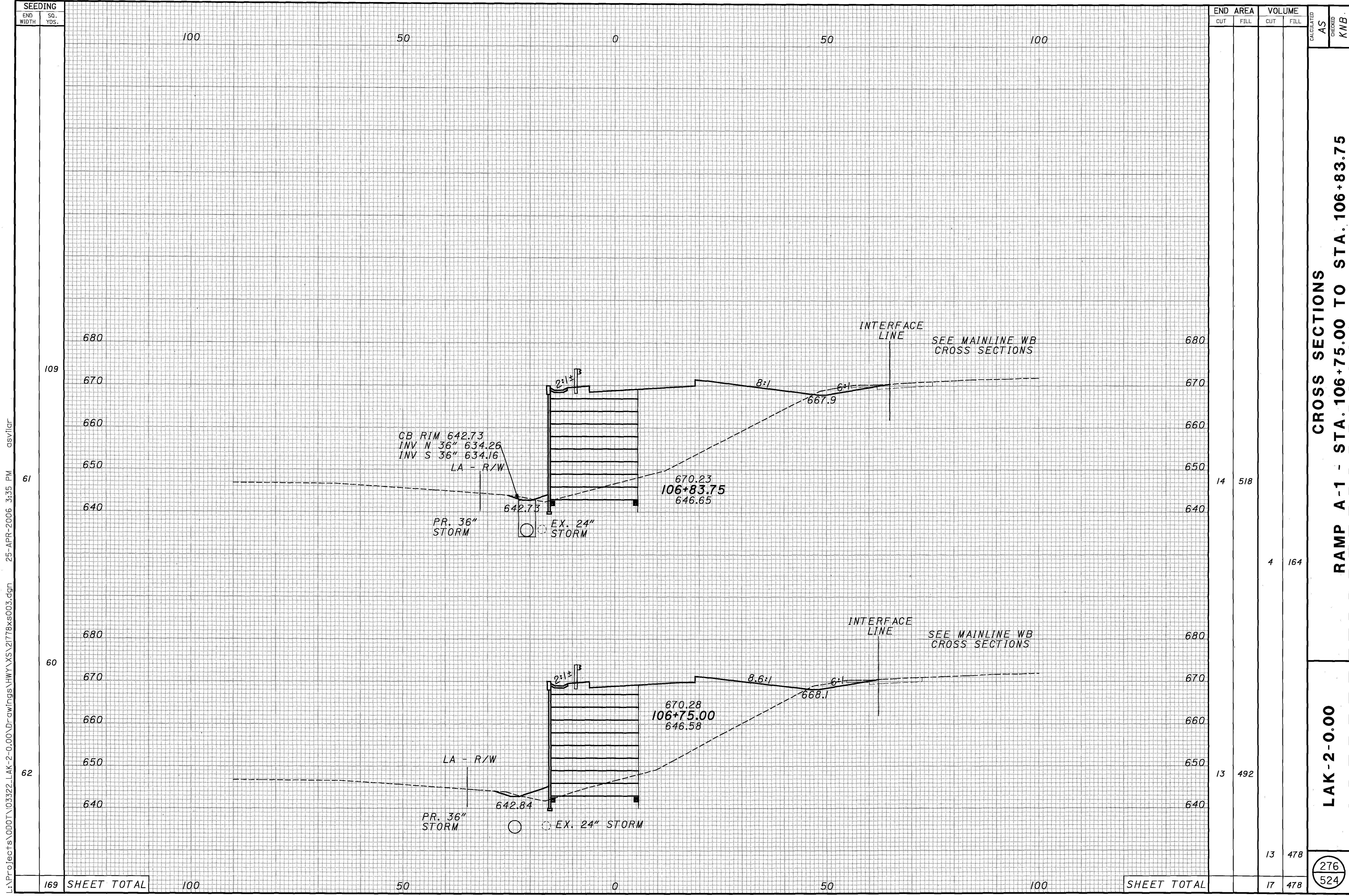
END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
15		540			AS	KWB
13			522			
13		587				
11			554			
24			1076			

CROSS SECTIONS
 RAMP A-1 - STA. 106+25.00 TO STA. 106+50.00

LAK-2-0.00

275
 524

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SEEDING
END WIDTH SO. YDS.
100 50 0 50 100

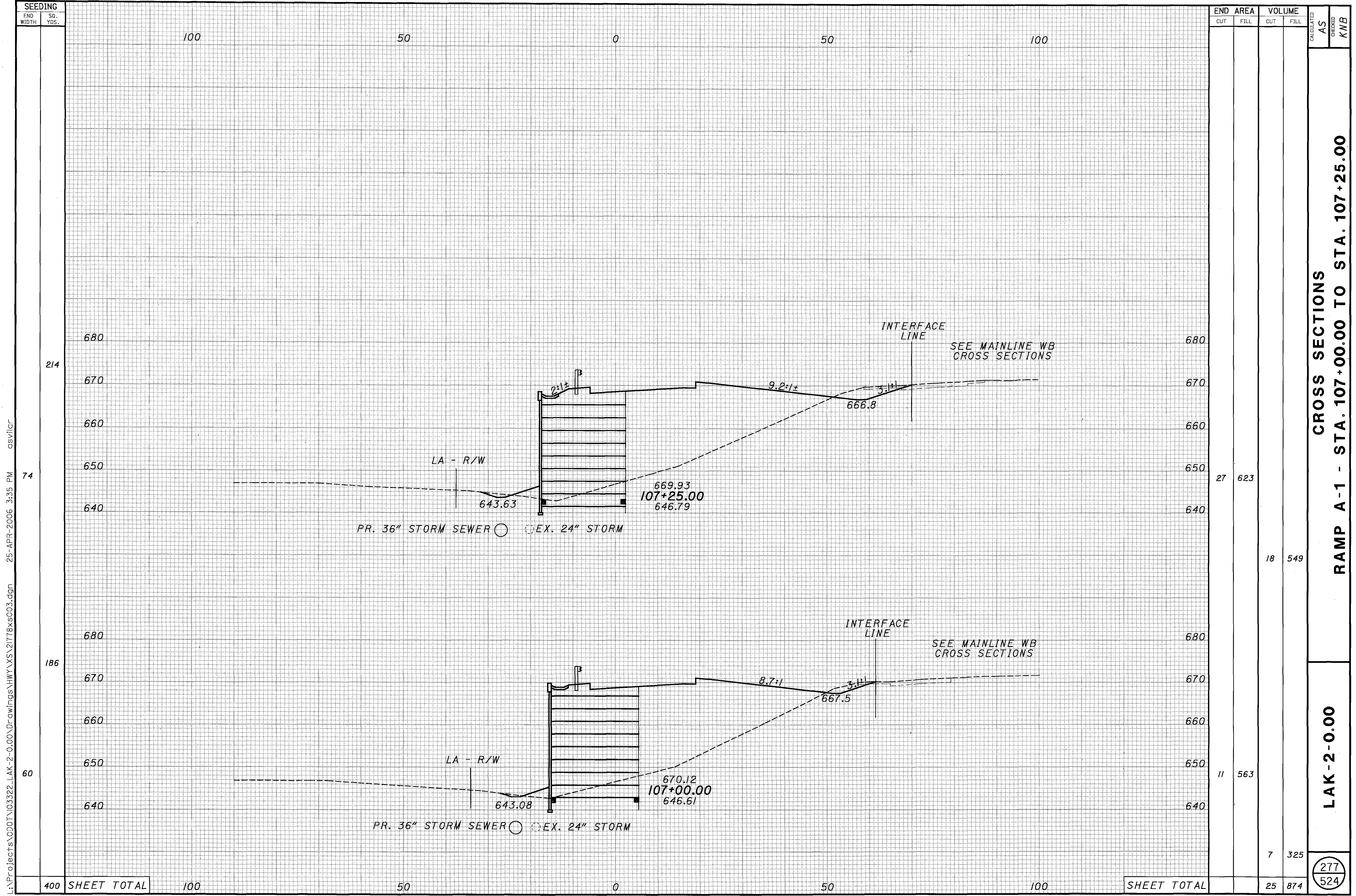
END CUT	AREA FILL	VOLUME		CALCULATED AS	CHECKED KWB
		CUT	FILL		
14	518	4	164		
13	492				
17	478				
169	SHEET TOTAL 100	50	0	50	100

CROSS SECTIONS
RAMP A-1 - STA. 106+75.00 TO STA. 106+83.75

LAK-2-0.00

276
524

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SEEDING	
END WIDTH	SO. YDS.
100	100
50	50
0	0
50	50
100	100
400	SHEET TOTAL

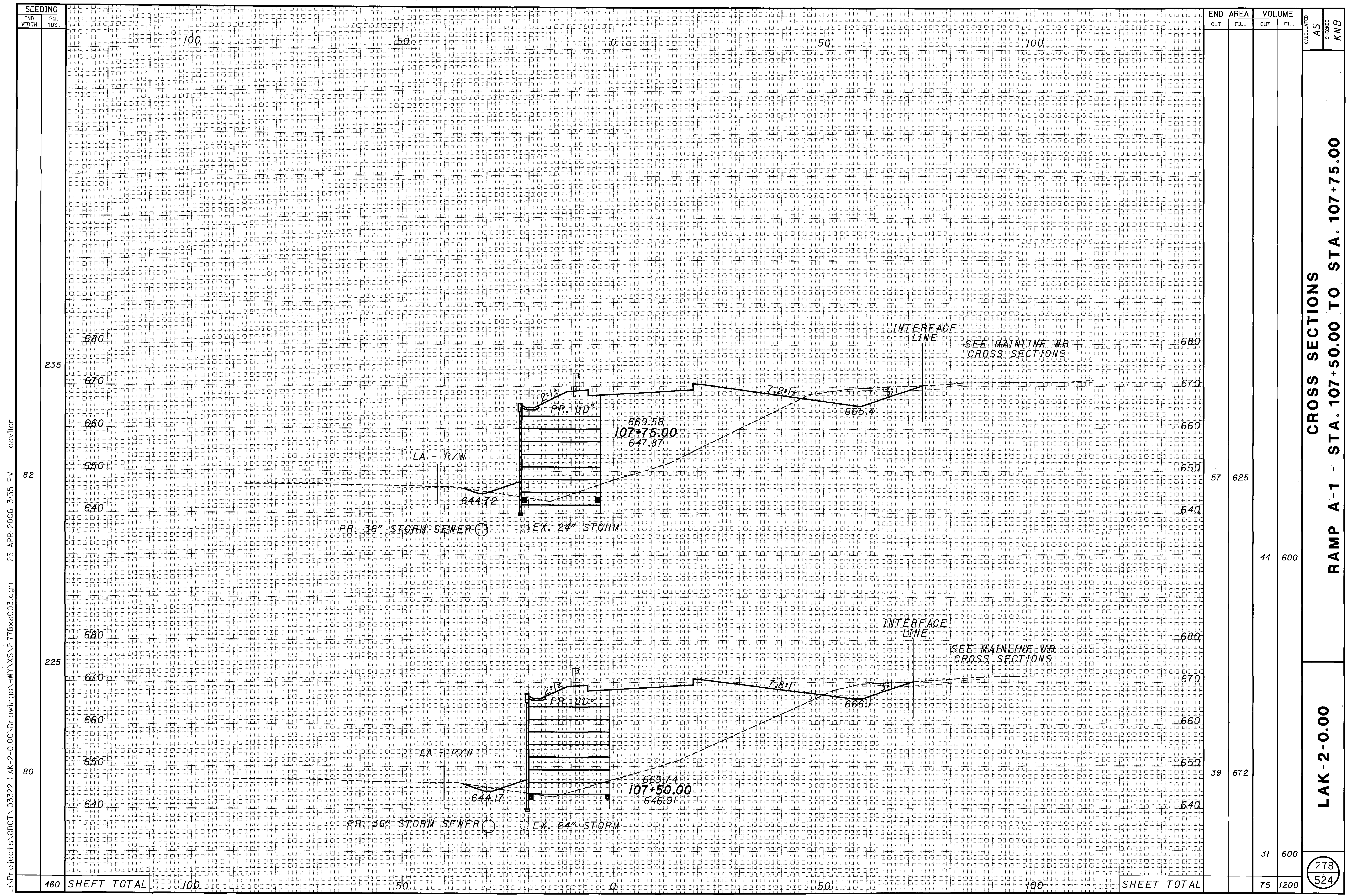
END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		
27	623	18	549		
11	563	7	325		
		25	874		

CROSS SECTIONS
 RAMP A-1 - STA. 107+00.00 TO STA. 107+25.00

LAK-2-0.00

277
 524

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SEEDING	
END WIDTH	SQ. YDS.
100	
50	
0	
50	
100	
460	SHEET TOTAL

END AREA		VOLUME		CALCULATED AS	CHECKED KWB
CUT	FILL	CUT	FILL		
57	625	44	600		
39	672	31	600		
75	1200				

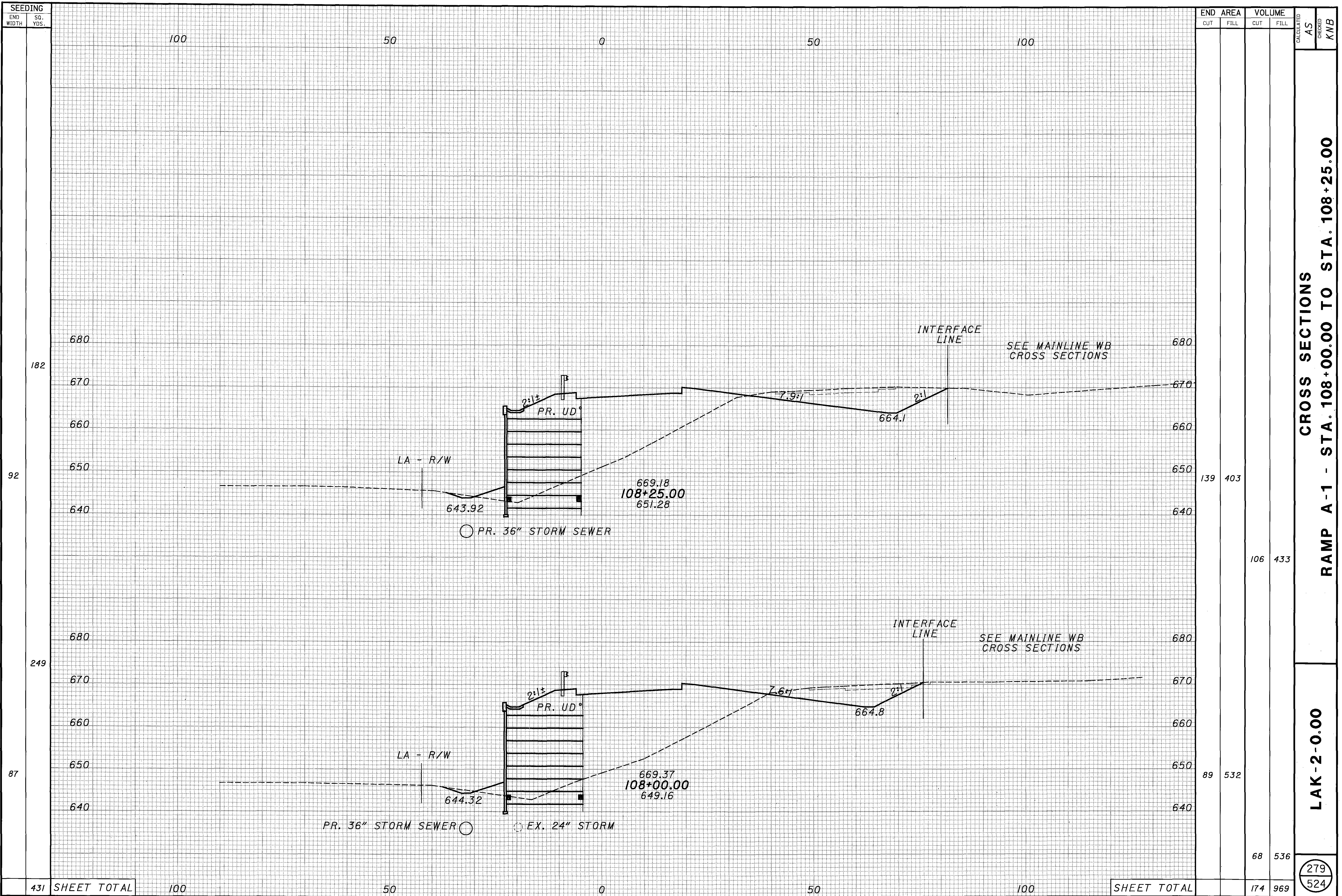
CROSS SECTIONS
 RAMP A-1 - STA. 107+50.00 TO STA. 107+75.00

LAK-2-0.00

278
 524

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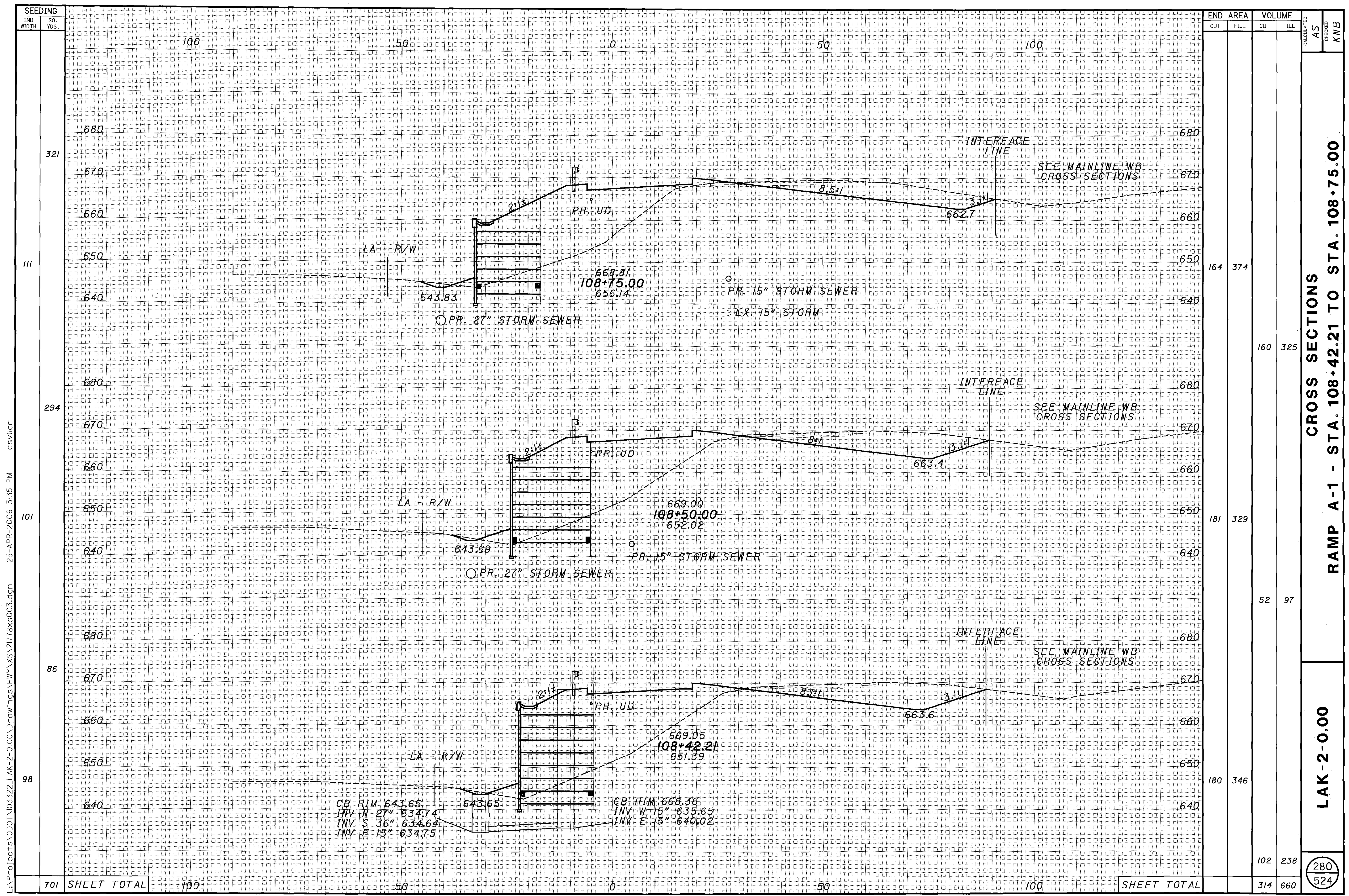
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SEEDING	
END WIDTH	SQ. YDS.
100	50
100	0
100	50
100	100
431	SHEET TOTAL

END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
182					AS	KNB
92	139	403				
249			106	433		
87	89	532				
			68	536		
			174	969		
					279	524

CROSS SECTIONS
 RAMP A-1 - STA. 108+00.00 TO STA. 108+25.00
 LAK-2-0.00



SEEDING	
END WIDTH	SO. YDS.
100	321
50	294
0	101
50	86
100	98
701 SHEET TOTAL	

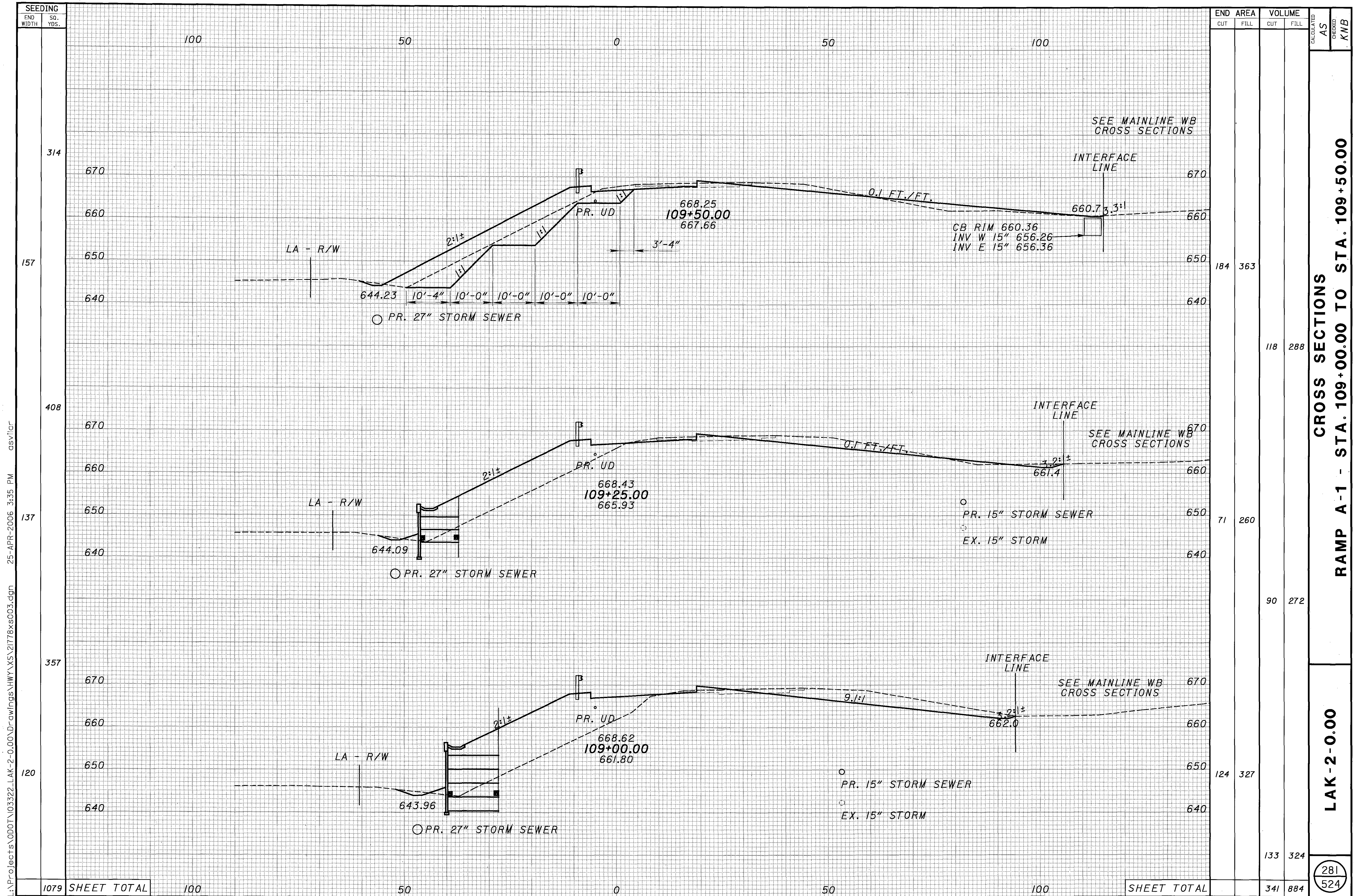
END AREA		VOLUME		CALCULATED AS	CHECKED KMB
CUT	FILL	CUT	FILL		
164	374				
181	329				
180	346				
102	238				
314	660				

CROSS SECTIONS
 RAMP A-1 - STA. 108+42.21 TO STA. 108+75.00

LAK-2-0.00

280
524

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SEEDING	
END WIDTH	SQ. YDS.
100	
50	
0	
50	
100	
1079	SHEET TOTAL

END CUT	AREA FILL	VOLUME	
		CUT	FILL
184	363		
71	260		
90	272		
124	327		
133	324		
		341	884

CALCULATED AS
 CHECKED KMB
CROSS SECTIONS
RAMP A-1 - STA. 109+00.00 TO STA. 109+50.00
LAK-2-0.00
 281
 524

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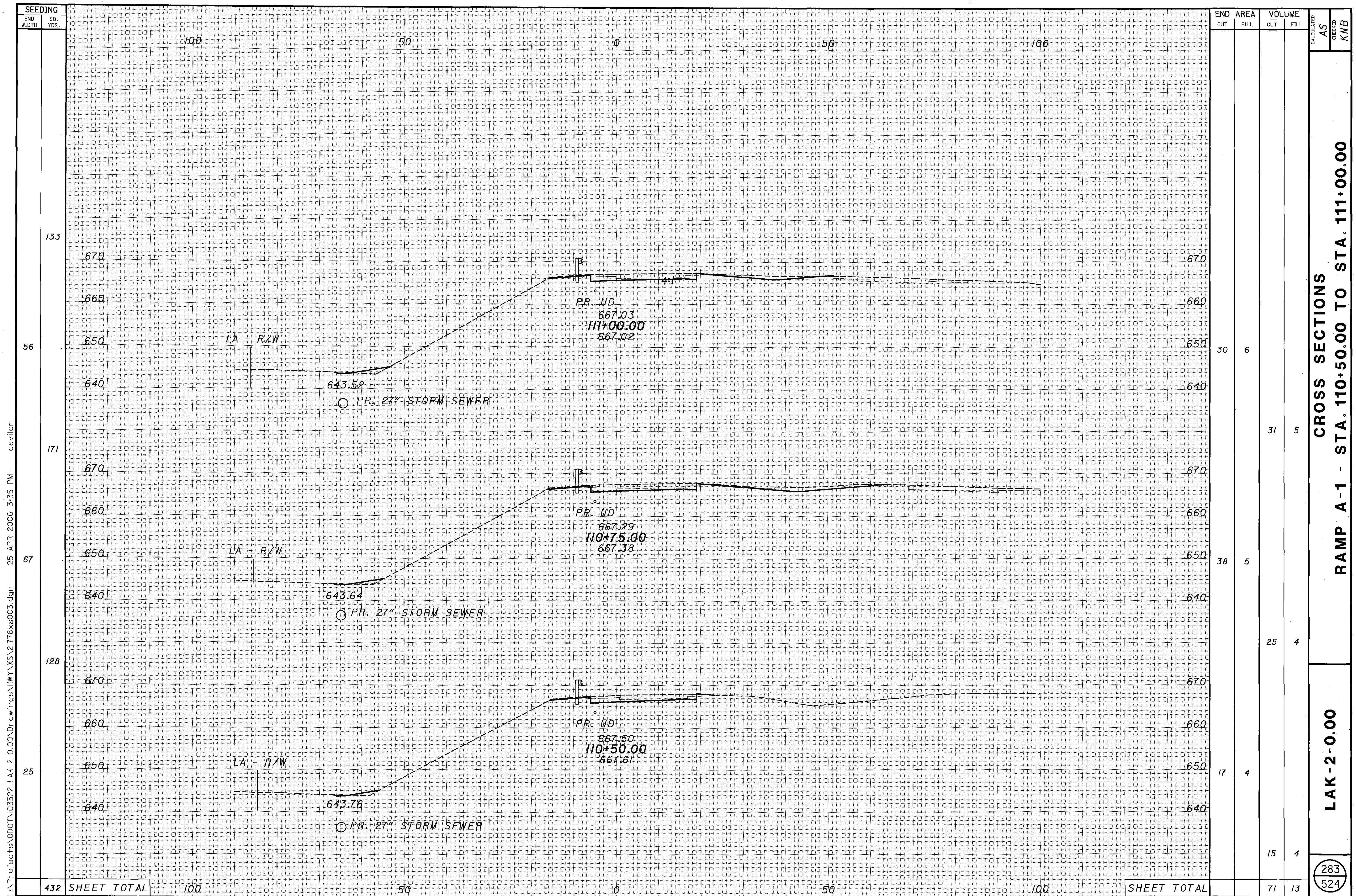
SEEDING
END WIDTH SO. YDS.
100 50 0 50 100

END CUT	AREA		VOLUME		CALCULATED AS	CHECKED KNB
	CUT	FILL	CUT	FILL		
17		4				
299	313		146	147		
245		292				
230	318					
192		315				
389	SHEET TOTAL	100	583	754	282	524

CROSS SECTIONS
RAMP A-1 - STA. 109+75.00 TO STA. 110+25.00

LAK-2-0.00

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SEEDING	
END WIDTH	SO. YDS.
100	
50	
0	
50	
100	
432	SHEET TOTAL

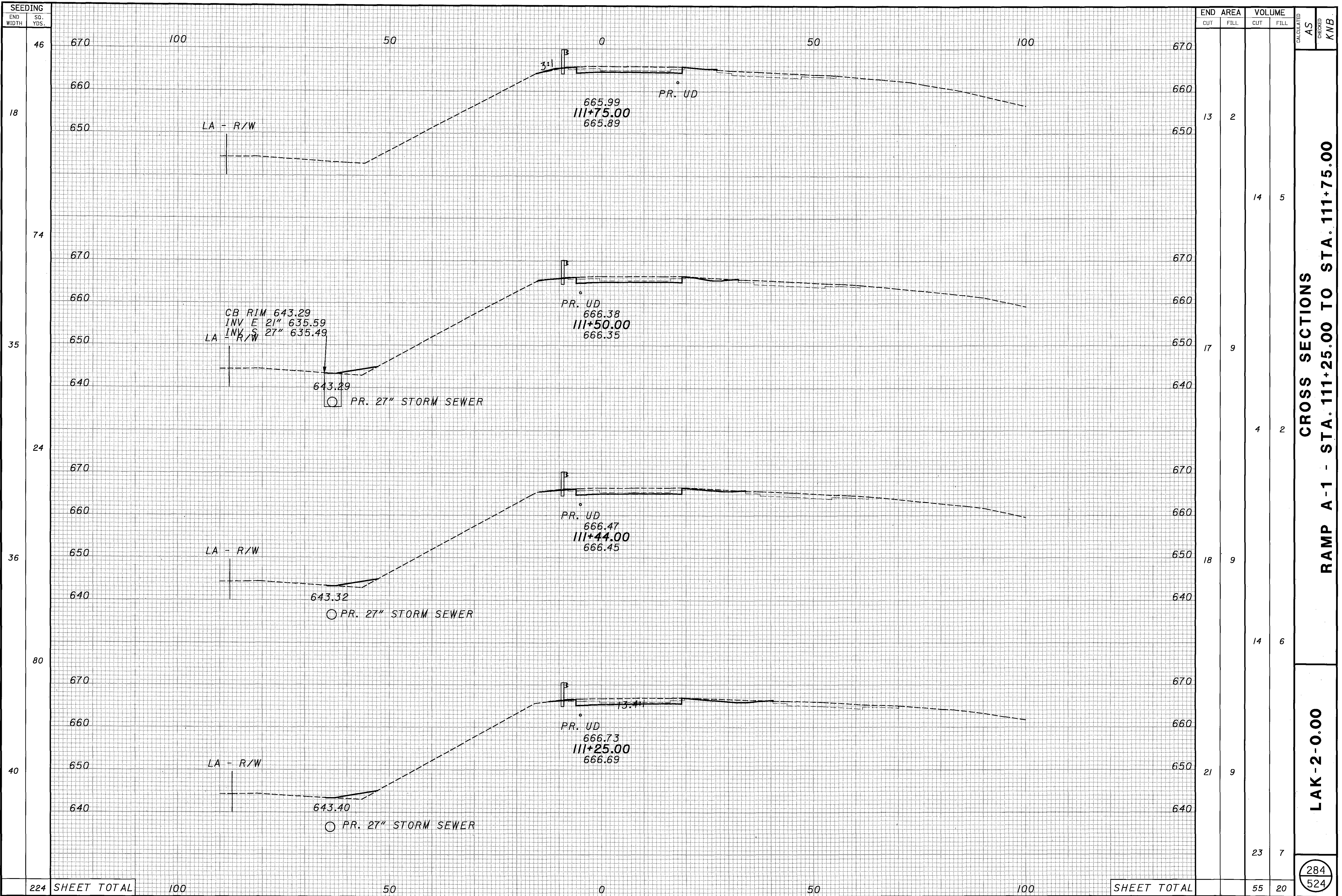
END CUT	AREA		VOLUME		CALCULATED AS	CHECKED KWB
	CUT	FILL	CUT	FILL		
30	6					
38	5					
17	4					
15	4					
71	13					
SHEET TOTAL						

CROSS SECTIONS
 RAMP A-1 - STA. 110+50.00 TO STA. 111+00.00
 LAK-2-0.00

283
 524

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SEEDING		STATION	ELEVATION	DESCRIPTION	END CUT	AREA FILL	VOLUME CUT	VOLUME FILL
END WIDTH	SO. YDS.							
46	670	100	50	0	50	100	670	
18	660							
	650							
74	670							
35	660							
	650							
	640							
24	670							
	660							
	650							
	640							
36	670							
	660							
	650							
	640							
80	670							
	660							
	650							
	640							
40	670							
	660							
	650							
	640							
224	SHEET TOTAL		100	50	0	50	100	SHEET TOTAL

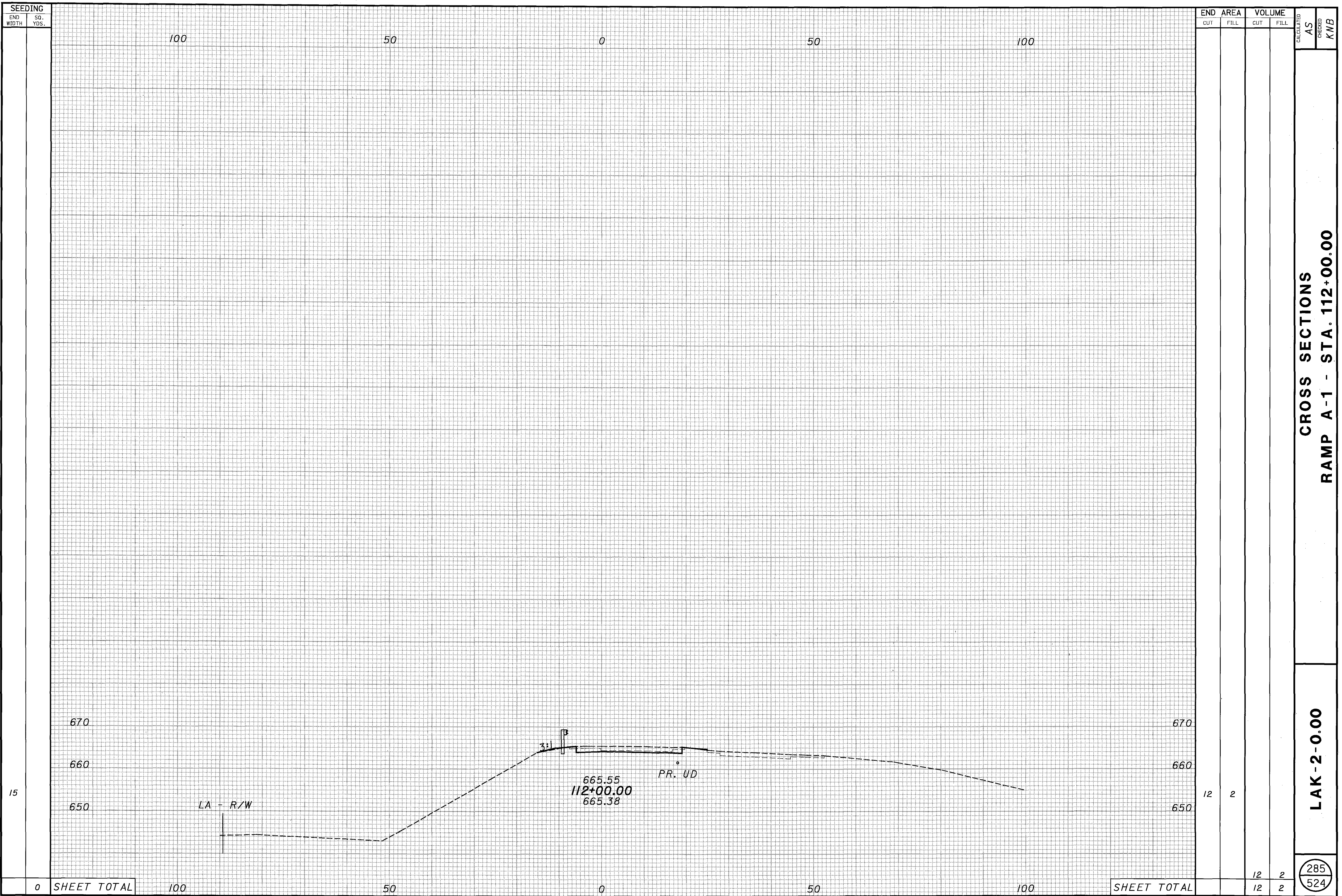
END CUT	AREA FILL	VOLUME		CALCULATED	CHECKED
		CUT	FILL		
13	2			AS	KNB
		14	5		
		4	2		
17	9				
		18	9		
		14	6		
		21	9		
		23	7		
		55	20		

CROSS SECTIONS
RAMP A-1 - STA. 111+25.00 TO STA. 111+75.00

LAK-2-0.00

284
 524

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SEEDING	
END WIDTH	SQ. YDS.
0	
SHEET TOTAL	

END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
100				
50				
0				
50				
100				
SHEET TOTAL				
100				
50				
0				
50				
100				
SHEET TOTAL				

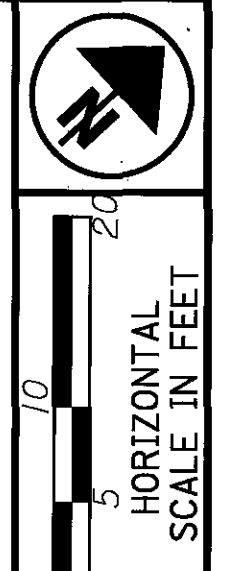
CALCULATED	AS	CHECKED	KNB

CROSS SECTIONS
RAMP A-1 - STA. 112+00.00

LAK-2-0.00

285
524

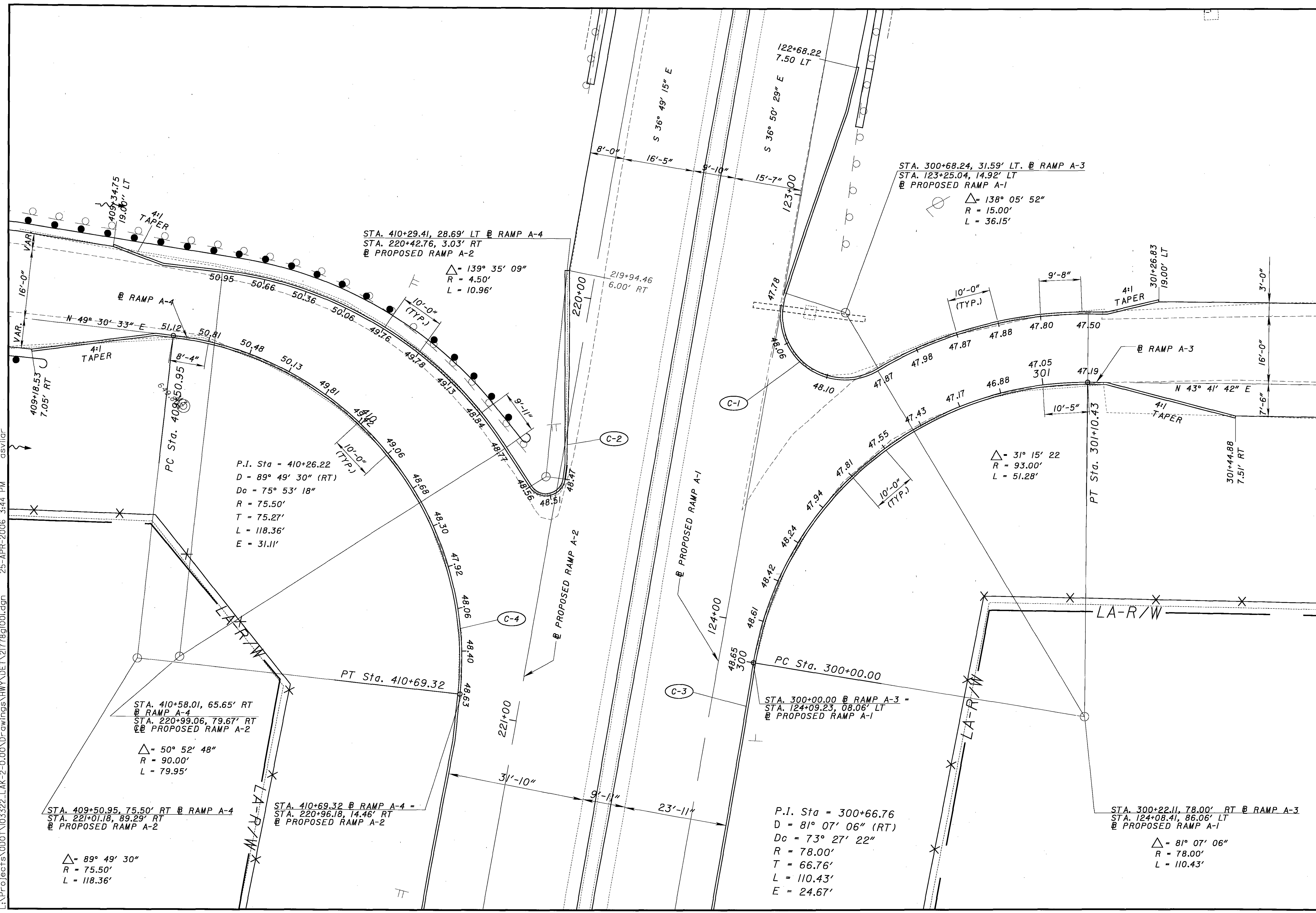
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CALCULATED
ETB
CHECKED
MRC

INTERSECTION DETAILS
RAMP A-1, RAMP A-2, RAMP A-3, AND RAMP A-4

LAK-2-0.00



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STA. 221+74.14, 64.00' RT
 @ RAMP A-2
 $\Delta = 93^\circ 41' 19''$
 $R = 50.00'$
 $L = 74.23'$

STA. 221+76.05, 13.76' RT
 @ RAMP A-2

STA. 2222+24.07, 60.32' RT
 @ RAMP A-2

STA. 125+10.66, 9.06' LT
 @ RAMP A-1

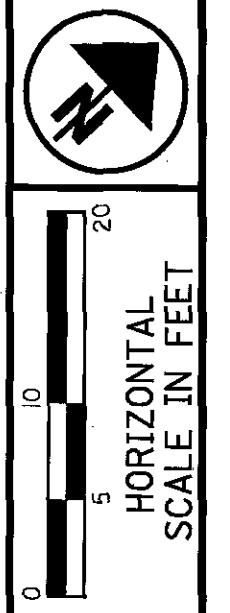
STA. 125+08.88, 55.03' LT
 @ RAMP A-1
 $\Delta = 97^\circ 11' 16''$
 $R = 46.00'$
 $L = 65.36'$

STA. 125+54.60' LT
 @ RAMP A-1

POT Sta. 222+42.29

POT Sta. 125+74.24

LAKELAND BLVD.

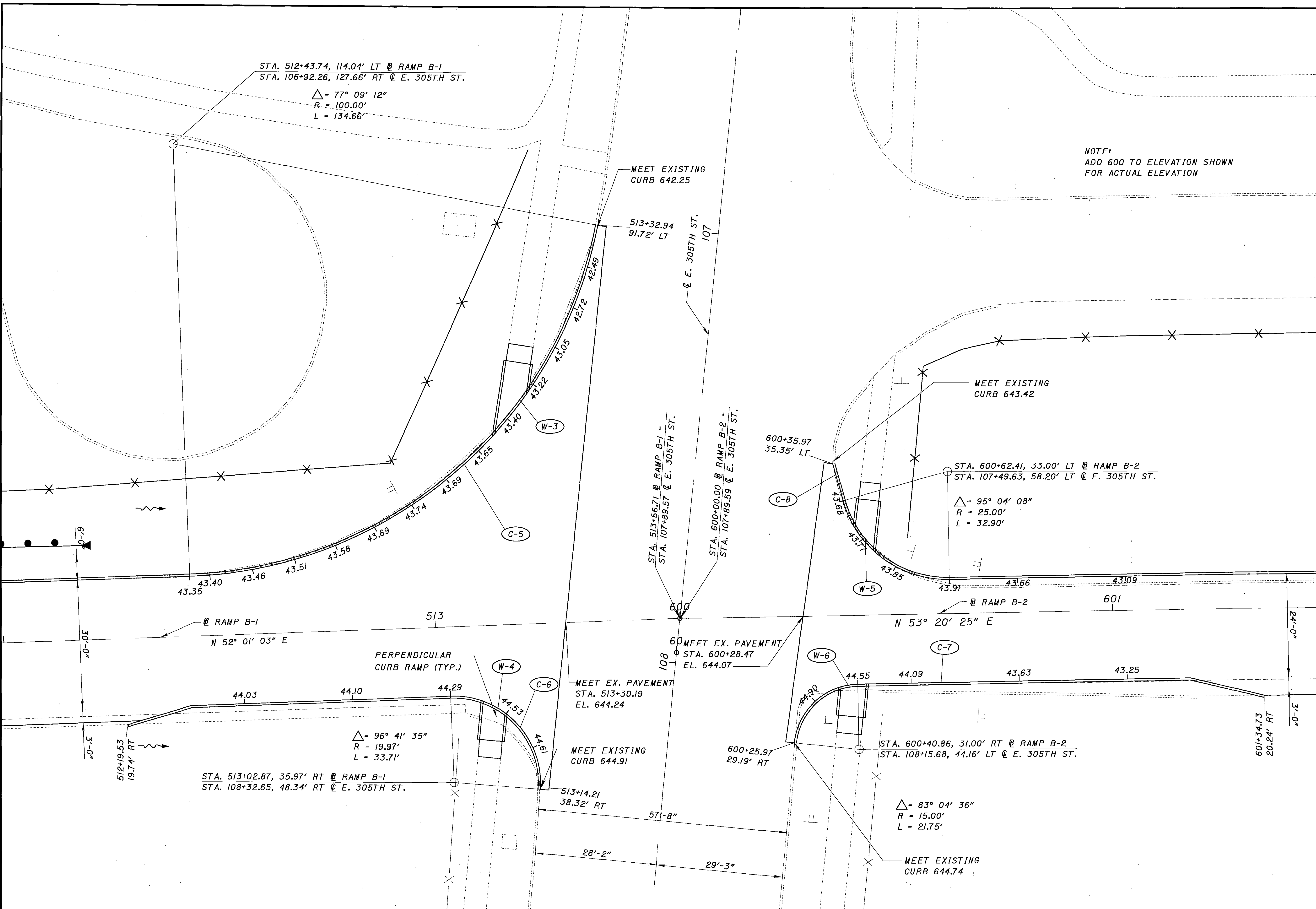


CALCULATED
 ETB
 CHECKED
 MRC

INTERSECTION DETAILS
 LLOYD RD. CONNECTOR, RAMP A-1 & RAMP A-2

LAK-2-0.00

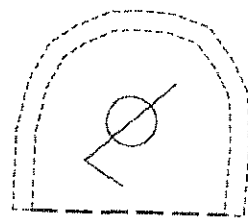
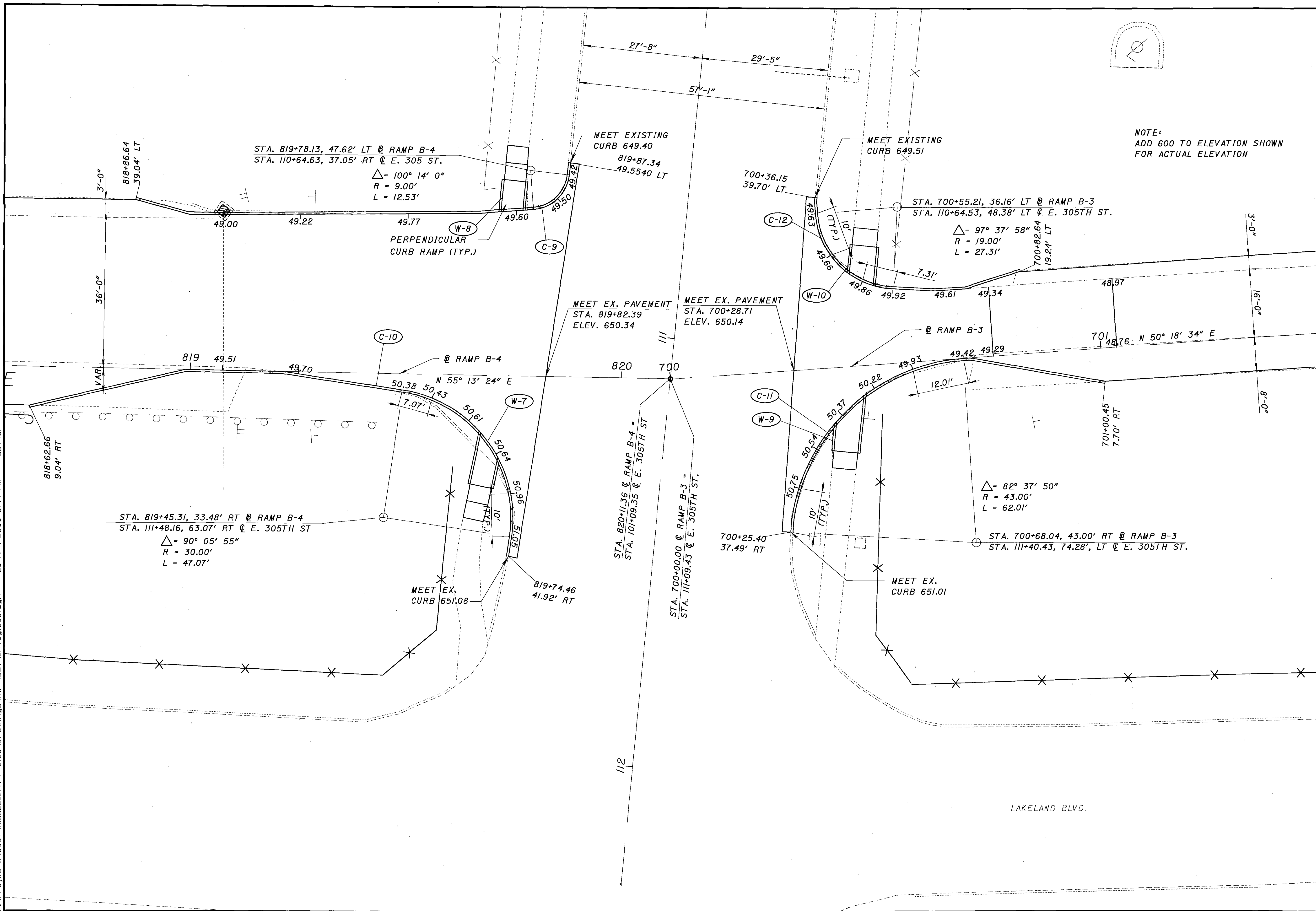
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CALCULATED
 ETB
 CHECKED
 MRC

INTERSECTION DETAILS
 E. 305TH ST., RAMP B-1 AND RAMP B-2

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NOTE:
ADD 600 TO ELEVATION SHOWN
FOR ACTUAL ELEVATION

CALCULATED
ETB
CHECKED
MRC

0 5 10 20
HORIZONTAL
SCALE IN FEET

INTERSECTION DETAILS
EAST 305TH ST., RAMP B-3 AND RAMP B-4

LAK-2-0.00

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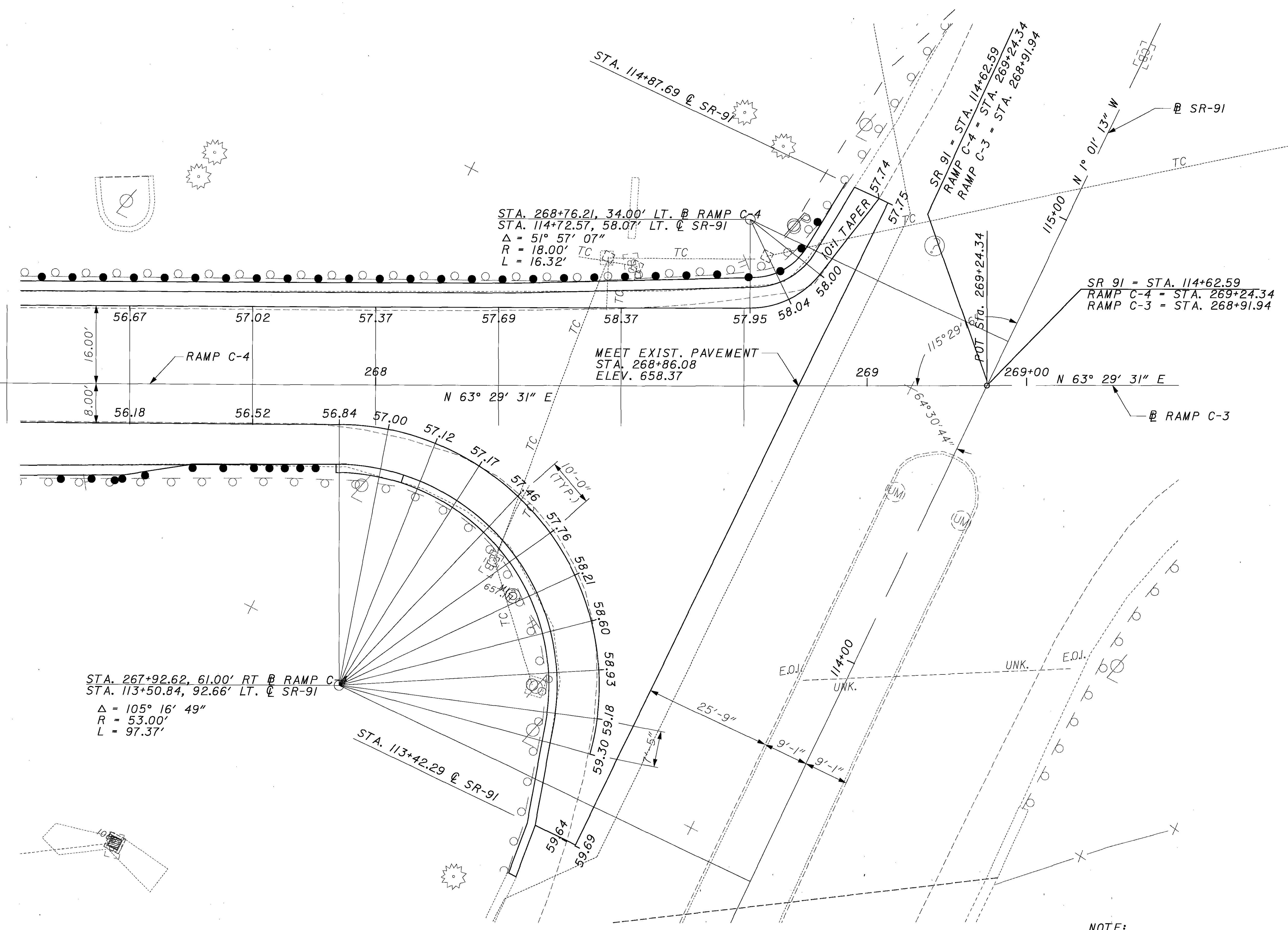
CALCULATED
ETB
CHECKED
MRC

HORIZONTAL SCALE IN FEET

INTERSECTION DETAIL
SR-91 & SR-2 RAMP C-4

LAK-2-0.00

291
524

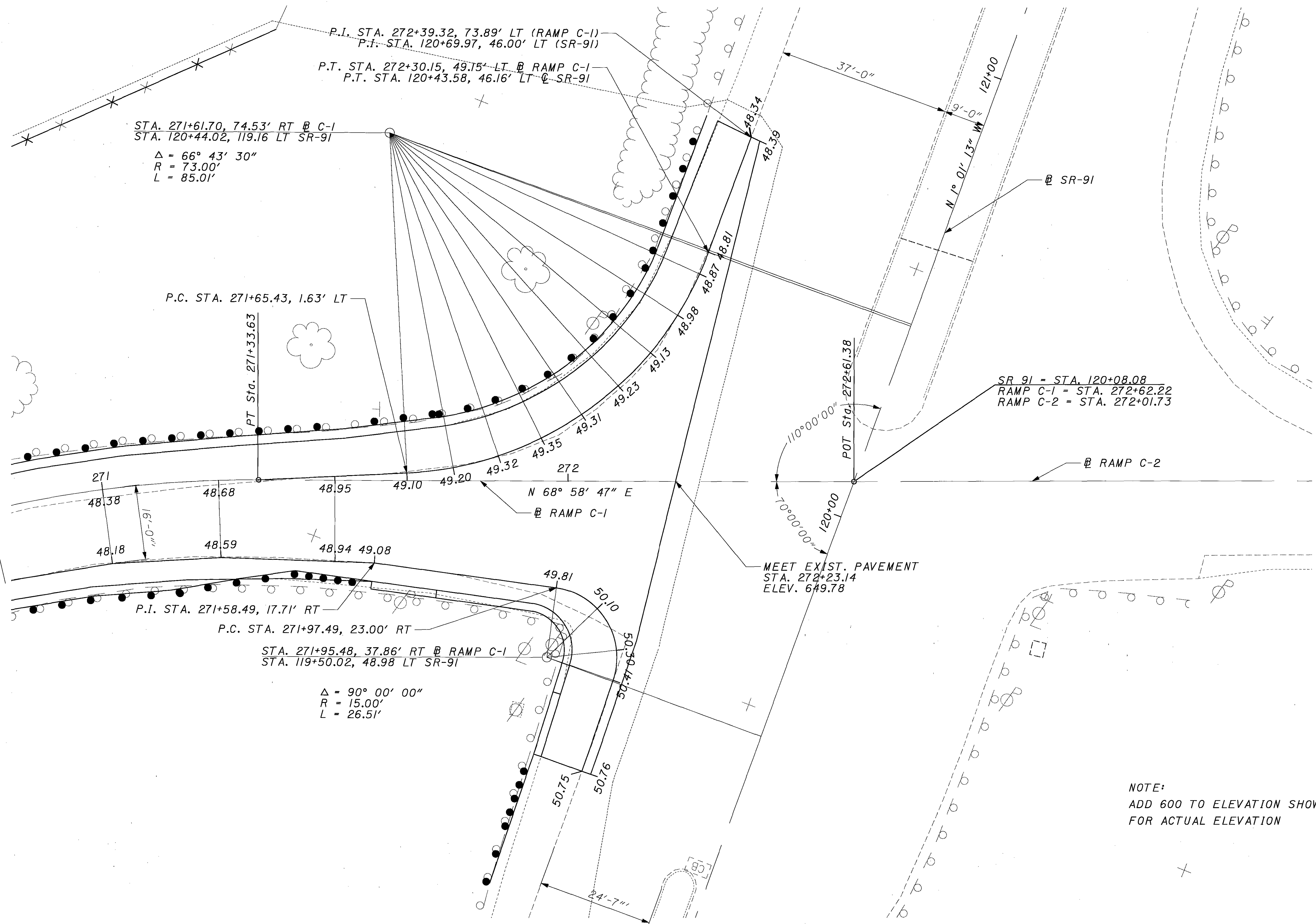


NOTE:
ADD 600 TO ELEVATION SHOWN
FOR ACTUAL ELEVATION

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CALCULATED
ETB
CHECKED
MRC

0 5 10 20
HORIZONTAL
SCALE IN FEET

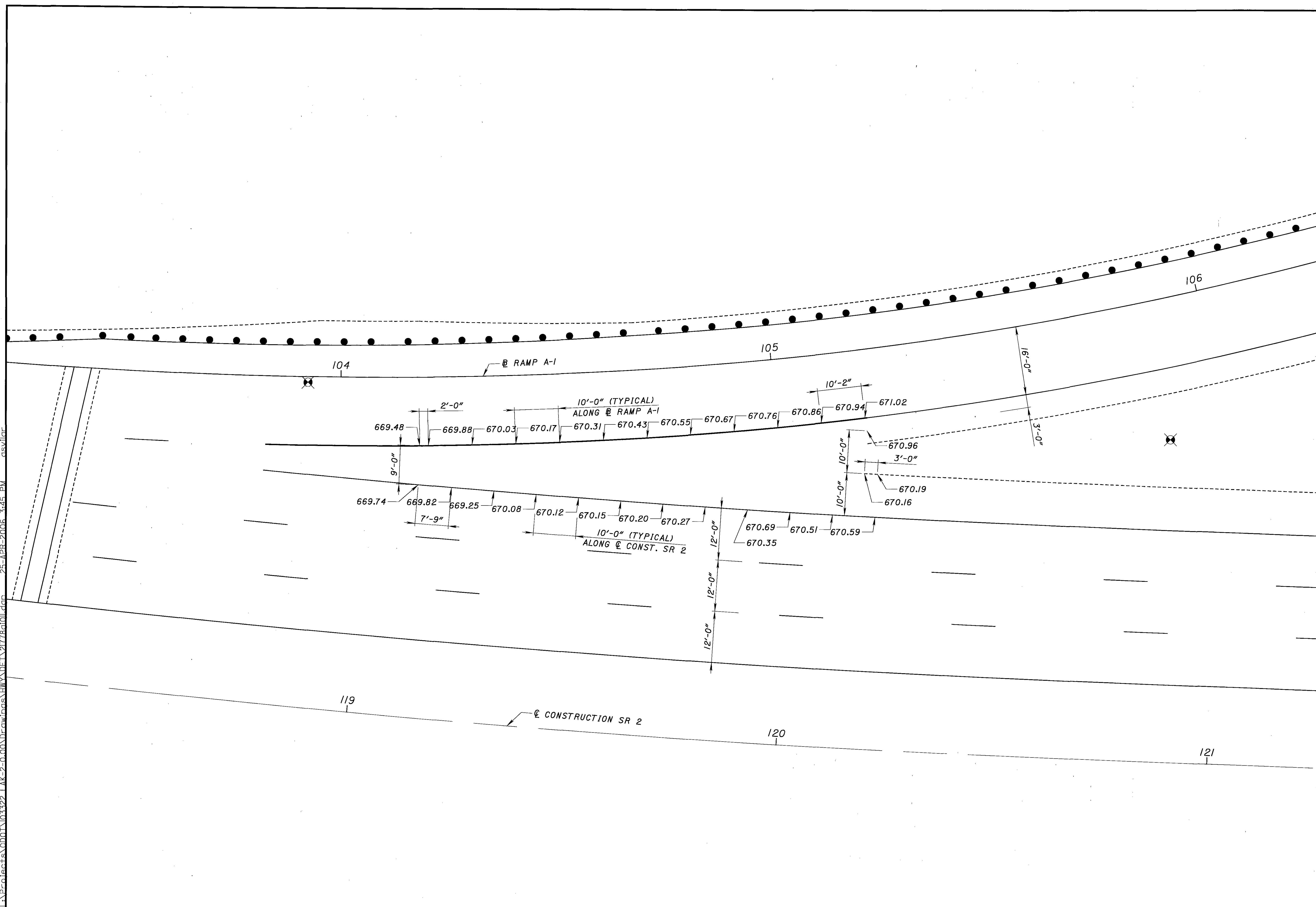


NOTE:
ADD 600 TO ELEVATION SHOWN
FOR ACTUAL ELEVATION

INTERSECTION DETAIL
SR-91 & SR-2 RAMP C-1

LAK-2-0.00

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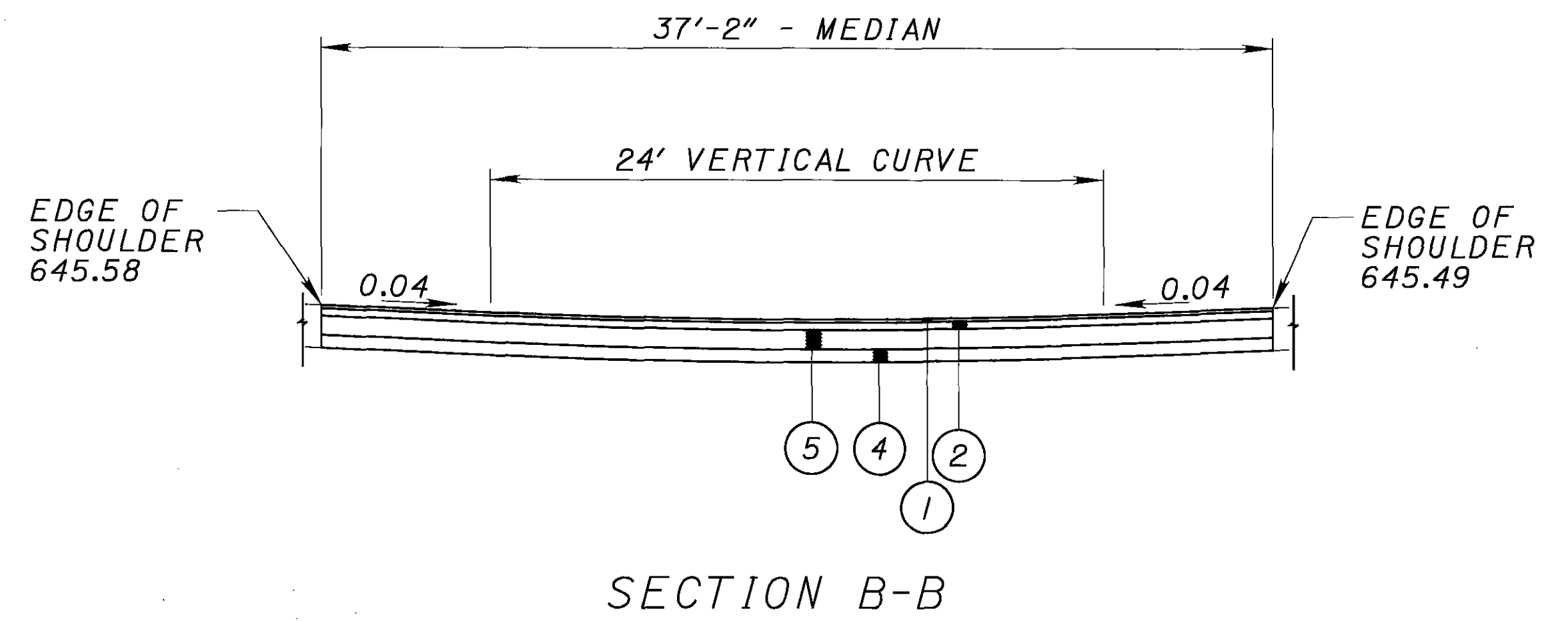
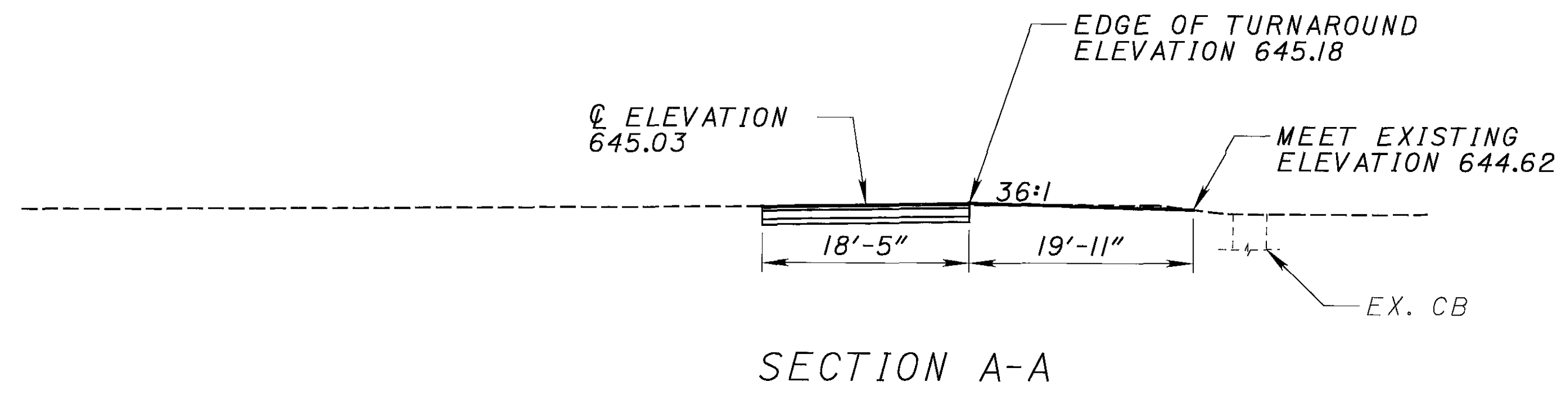
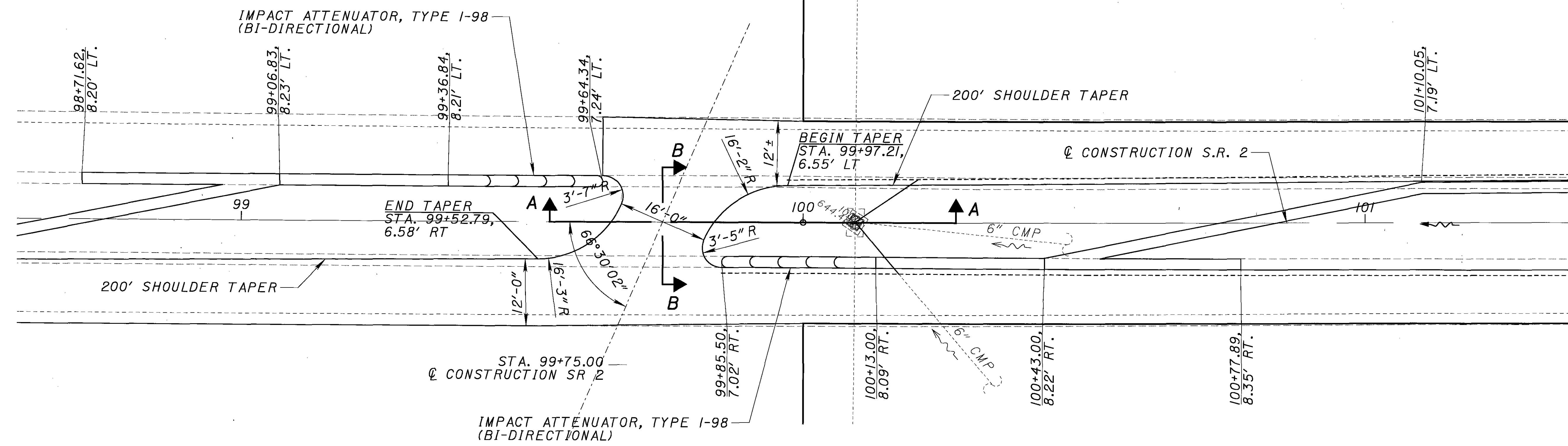


CALCULATED
MRC
CHECKED
APG

0 10 20
HORIZONTAL
SCALE IN FEET

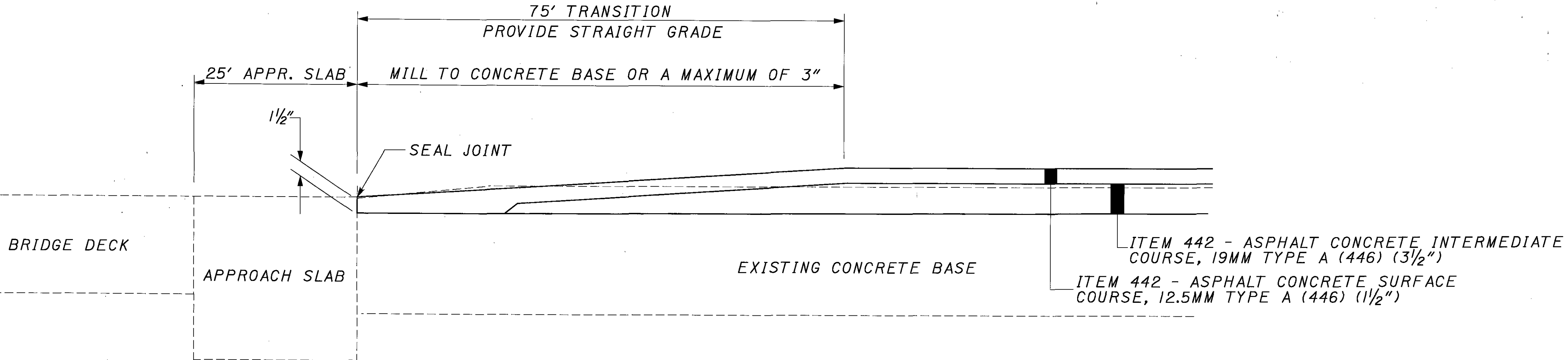
INTERCHANGE DETAILS
LLOYD ROAD CONNECTOR, RAMP A-1

LAK-2-0.00

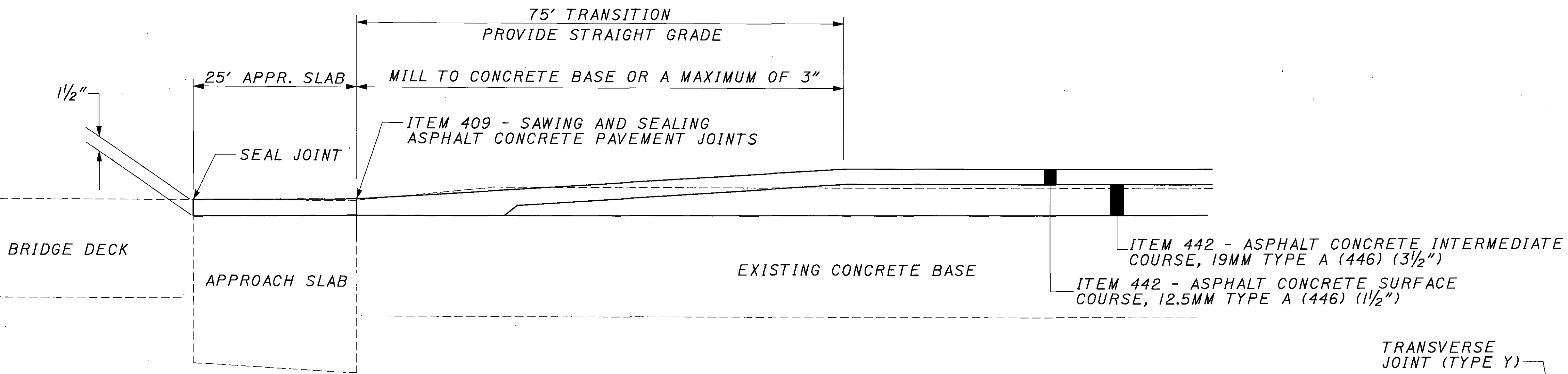


- ① ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM TYPE A (446)
- ② ITEM 442 - 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A (446)
- ③ ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T-3"±)
- ④ ITEM 304 - 6" AGGREGATE BASE
- ⑤ ITEM 301 - 9" ASPHALT CONCRETE BASE, PG 64-22

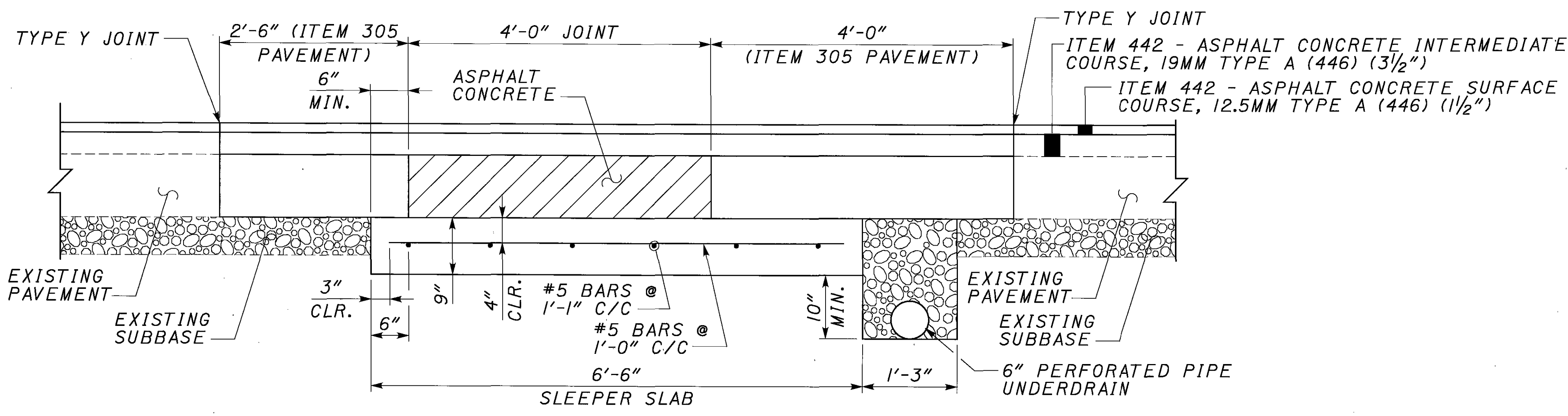
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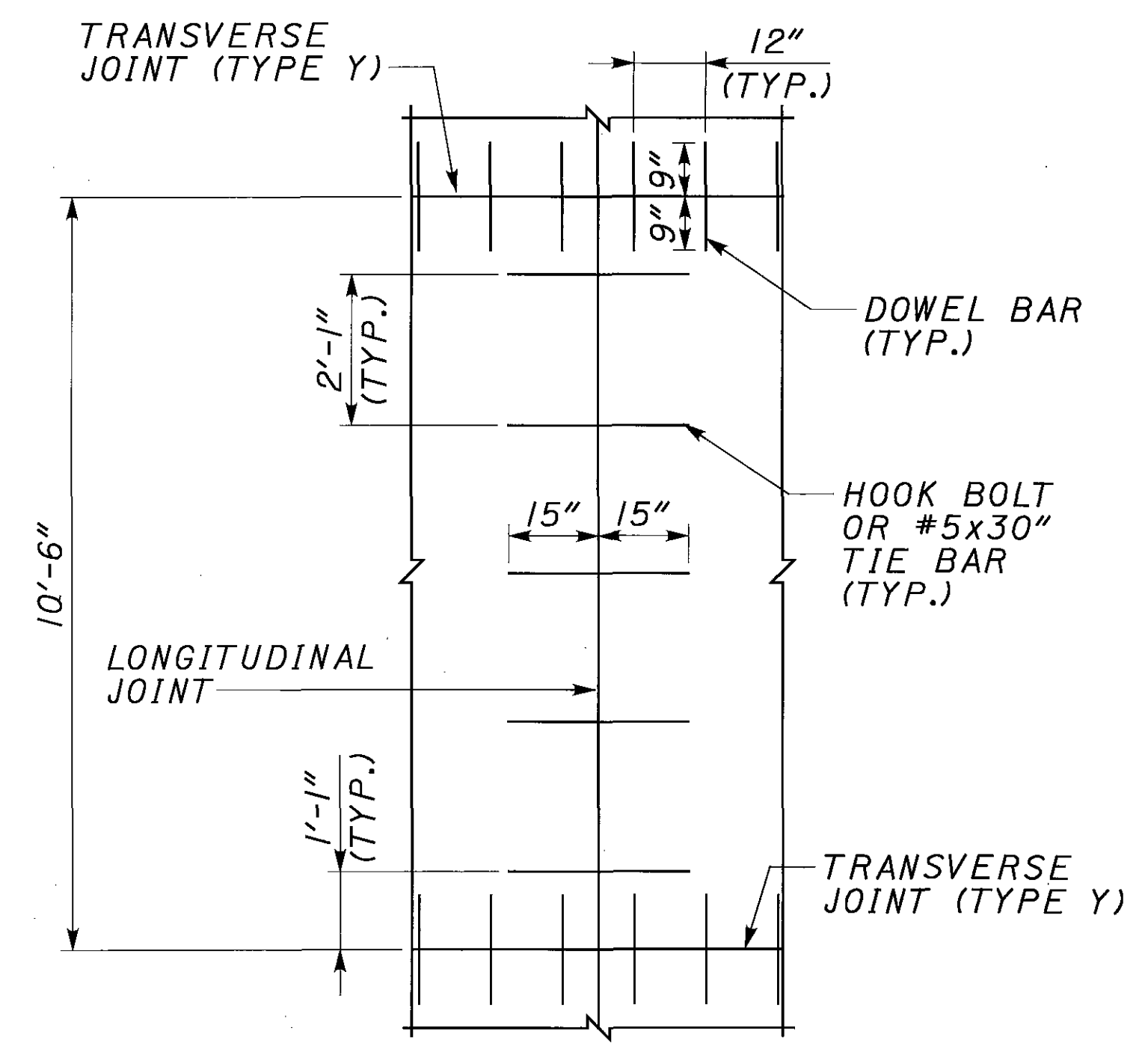
PAVEMENT TRANSITION AT BARE CONCRETE APPROACH SLAB



PAVEMENT TRANSITION AT CONCRETE APPROACH SLAB WITH EXISTING OVERLAY



PRESSURE RELIEF JOINT TYPE A
(SEE SCD BP-2.3 FOR ADDITIONAL DETAILS)



PAVEMENT JOINT DETAIL AT PRESSURE RELIEF JOINT TYPE A
(SEE SCD BP-2.1 AND BP-2.5 FOR ADDITIONAL DETAILS)

NOTES

GENERAL: This End Section is to be used in roadside applications when traffic is only on one side. This section attaches to a Single Slope Concrete Barrier, Type D, as shown on SCD RM-4.5. See SCD RM-4.3 for Single Slope Barrier materials and other details. Provide 2" [50] concrete cover over rebar, except as noted.

GUARDRAIL: For Bridge Terminal Assembly and attachment details see SCD GR-3.1 (or GR-3.2).

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the vertical face to the single slope face are made over a 10' [3000] distance.

PCJ: Permissible Construction Joint.

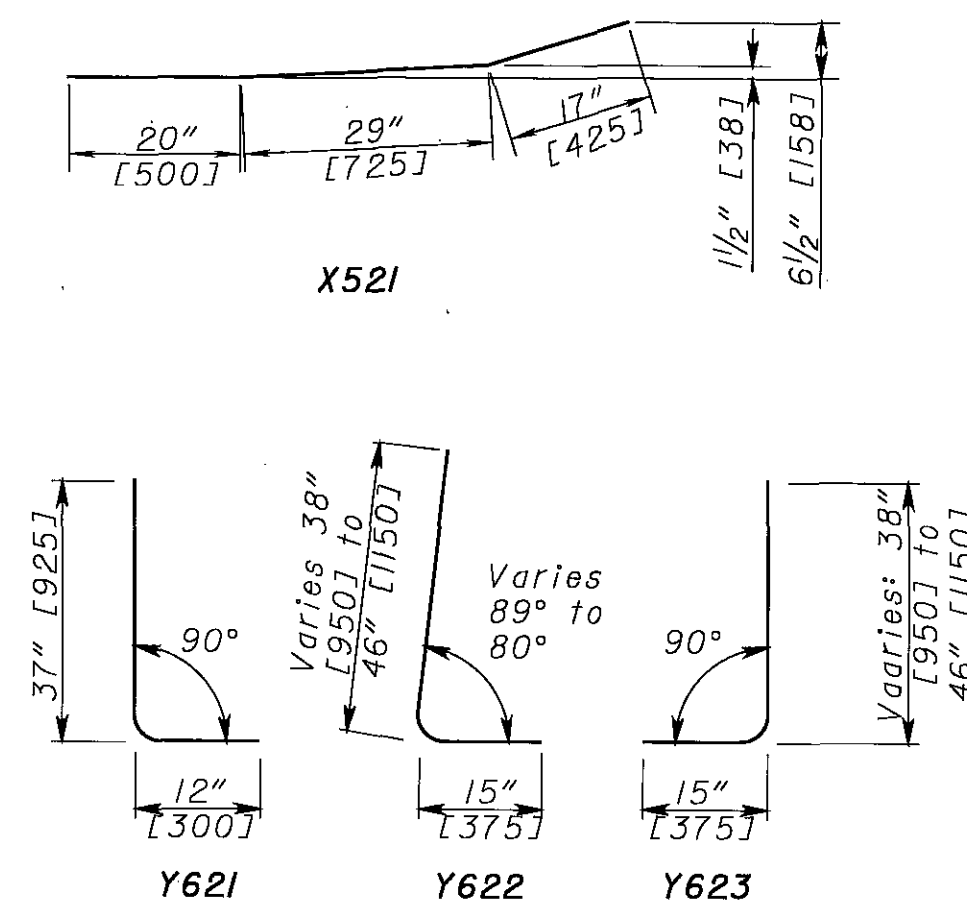
PAYMENT: Payment for the Concrete End Section shall be made at the unit price for Item 622 - Concrete Barrier End Section, Type D, Each, and shall include all materials, labor, and reinforcing steel required to construct the barrier end as shown.

INCORPORATED INSTALLATIONS: For barrier installations that cannot be constructed at the normal guardrail offset the incorporated installations shown on Sheet 2 may be installed at vertical wall, piers or other similar obstructions.

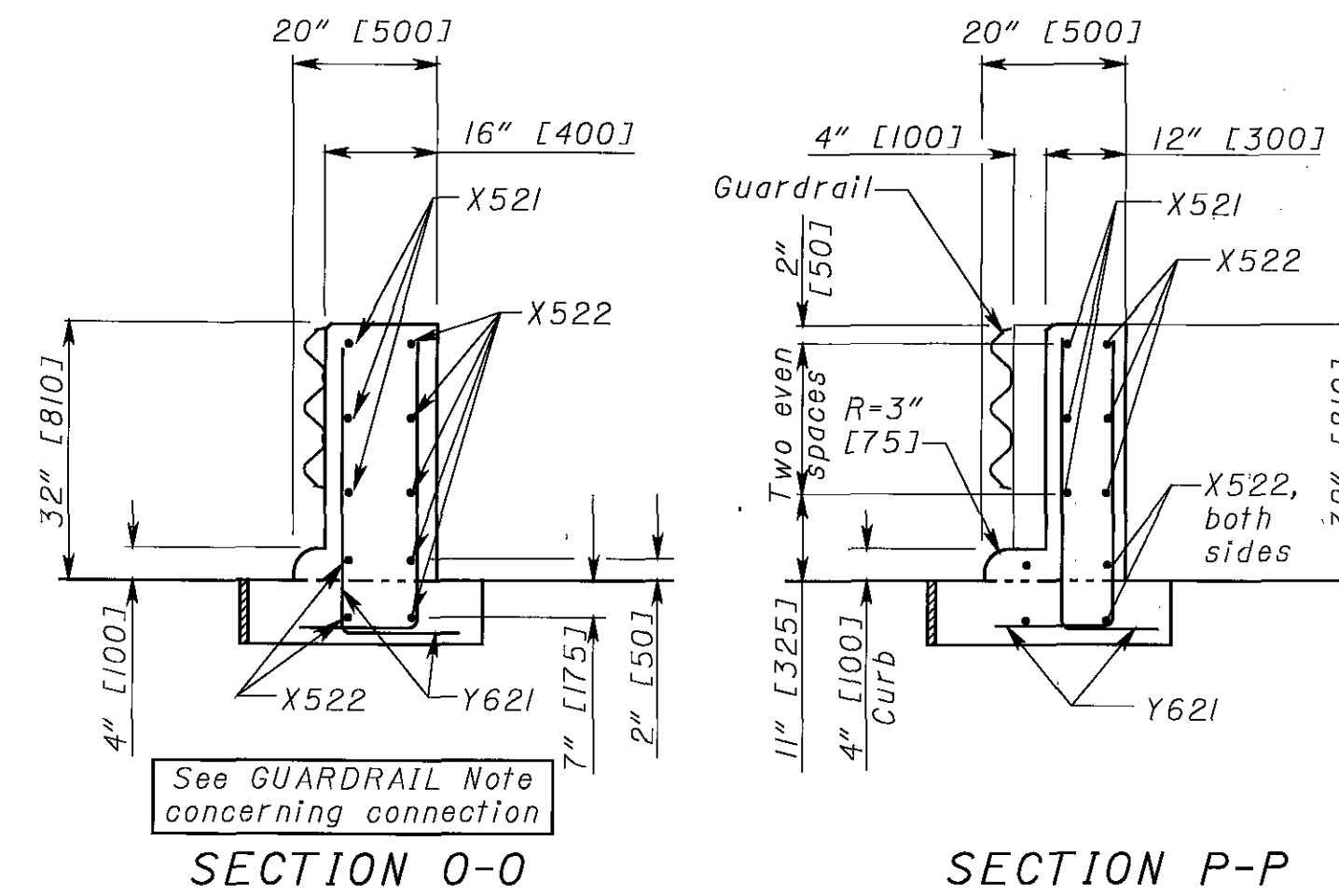
For pier-incorporated installations the contractor may use the optional treatment, forming the back face of the Single Slope Barrier, Type D, to the location shown (between piers only), with any additional cost being included in the cost of Item 622.

PAYMENT: will be made at the unit price bid per Feet [Meter] for Item 622 - Concrete Barrier, Single Slope, Type D. Include all materials and labor to construct the Barrier, and any End Anchorages, as shown.

Type D STEEL LIST				
Mark	Bar	Shape	No.	Length
X521	#5 [#16M]	Bent	3	5'-6" [1650]
X522	#5 [#16M]	Str.	7	5'-6" [1650]
X523	#5 [#16M]	Str.	8	11'-1" [3325]
X524	#5 [#16M]	Str.	2	9'-8" [2950]
Y621	#6 [#19M]	Bent	10	3'-11" [1175]
Y622	#6 [#19M]	Bent	Series of 5	Varies: 4'-3" [1275] to 5'-3" [1575]
Y623	#6 [#19M]	Bent	Series of 5	Varies: 4'-3" [1275] to 5'-3" [1575]



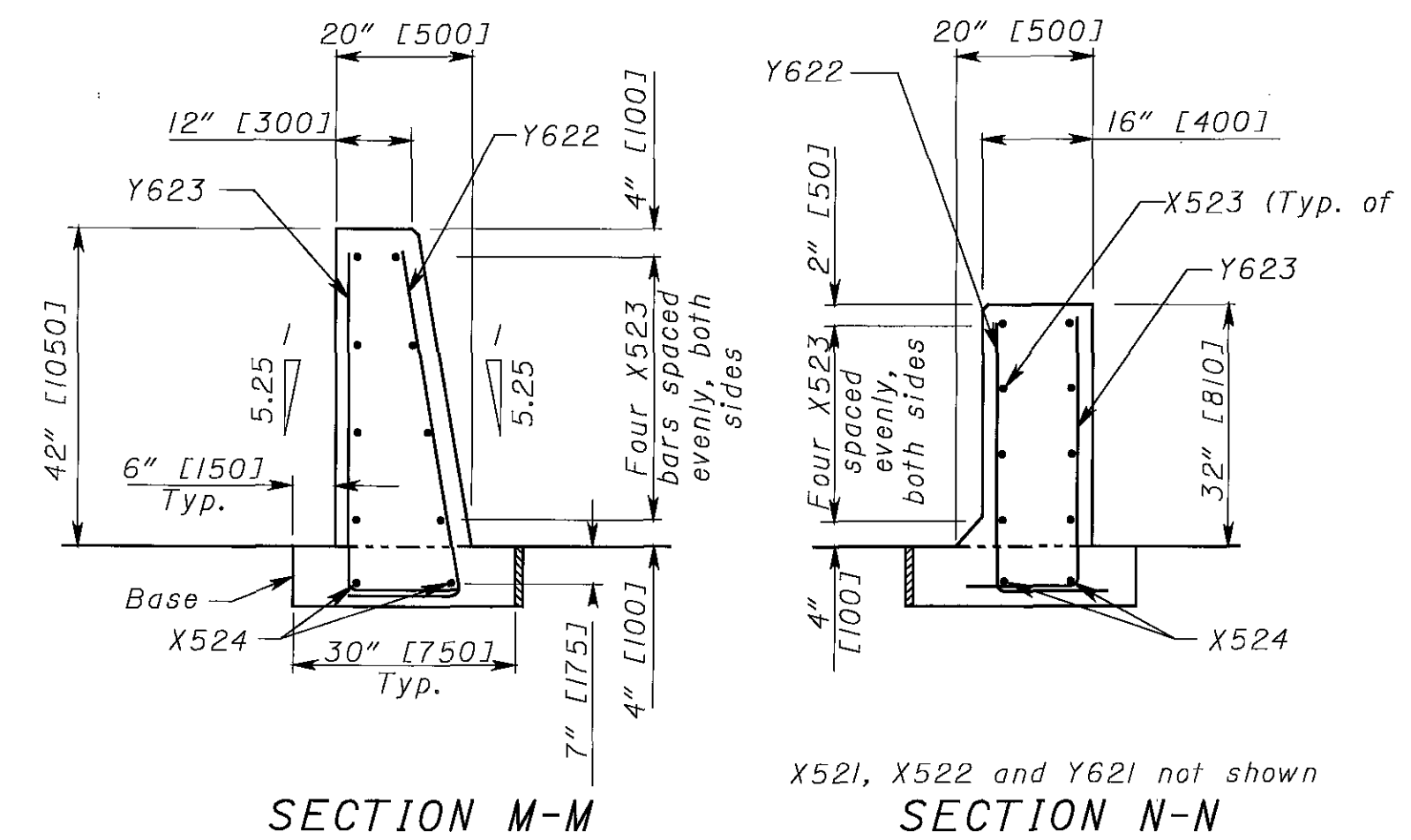
BENDING DIAGRAMS



See GUARDRAIL Note concerning connection

SECTION O-O

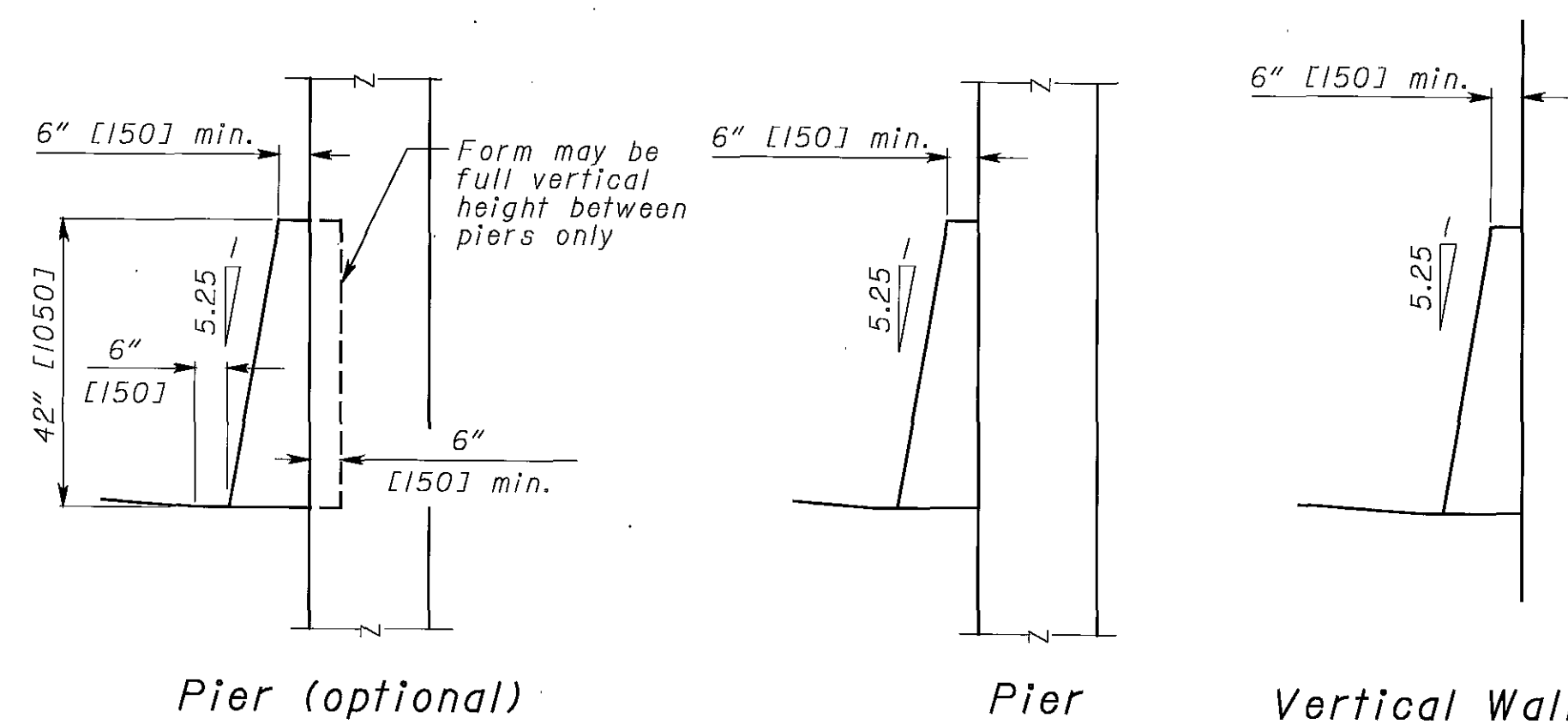
SECTION P-P



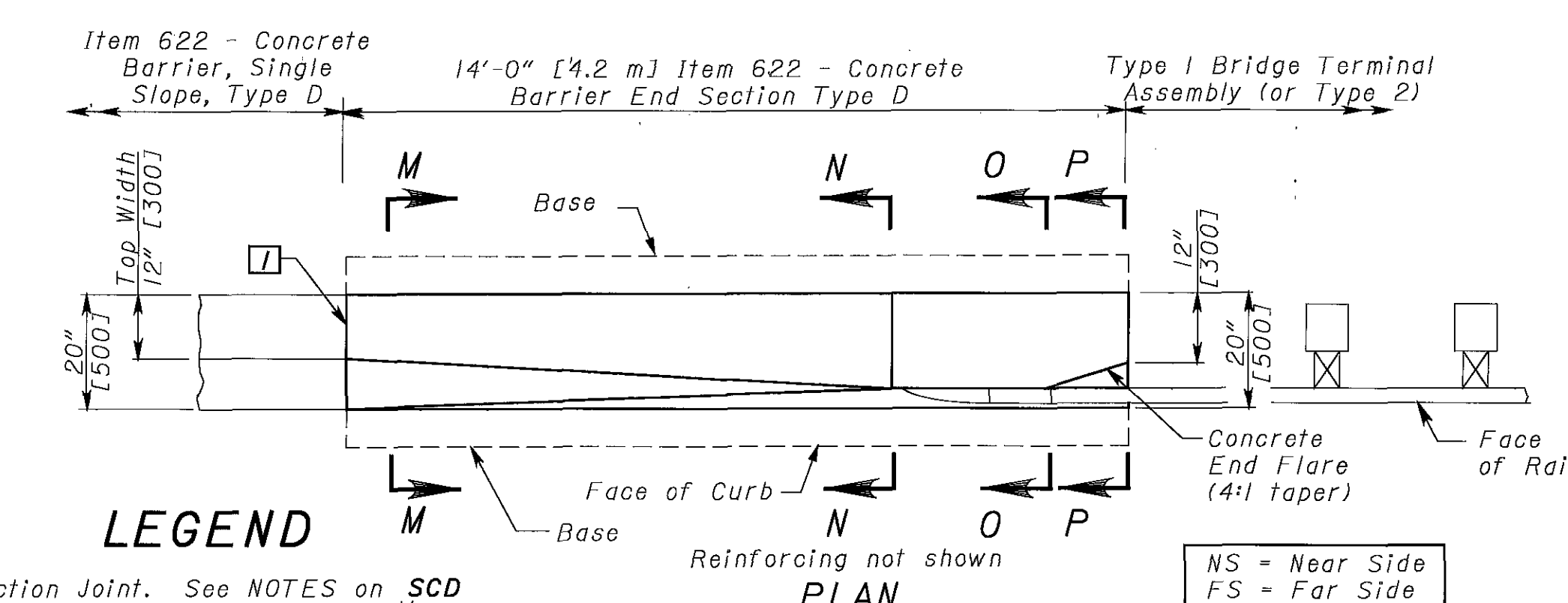
SECTION M-M

SECTION N-N

X521, X522 and Y621 not shown



INCORPORATED INSTALLATIONS

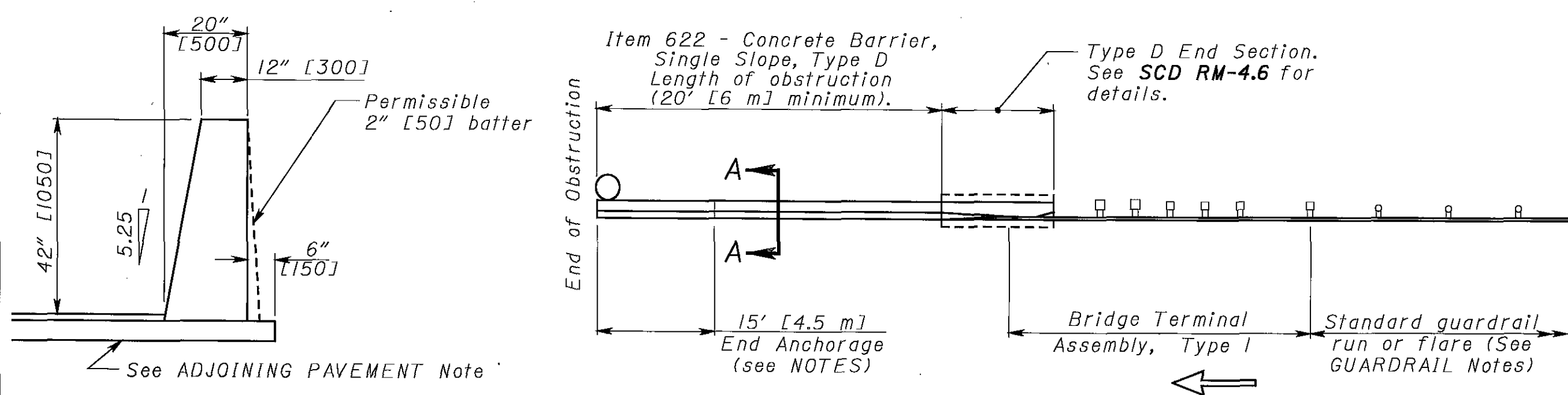


LEGEND

□ Contraction Joint. See NOTES on SCD RM-4.3, Provide rebar cover of 3/2" [90].

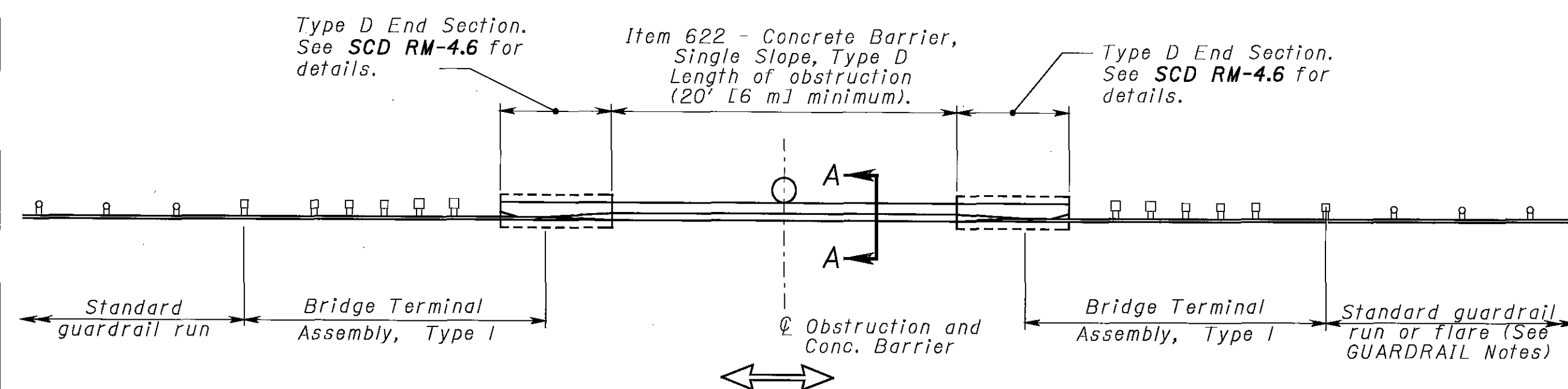
PLAN

NS = Near Side
FS = Far Side



SECTION A-A

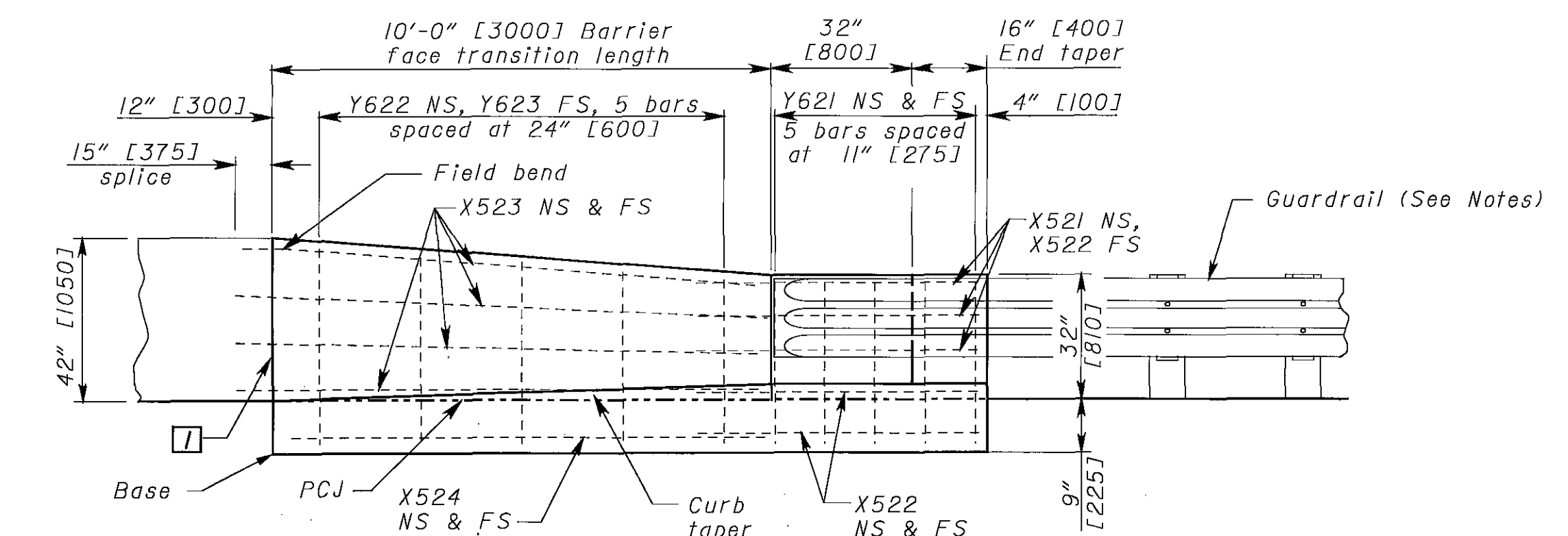
Directional Travel where no trailing guardrail is used.



Use Bridge Terminal Assembly, Type 2 for directional roadways where trailing guardrail is used and is out of the Clear Zone of opposite direction traffic.

Bi-directional Travel or Directional Travel where trailing guardrail is used.

TYPICAL INSTALLATIONS CONCRETE BARRIER AT OBSTRUCTIONS



**ELEVATION
BARRIER END SECTION TYPE D**

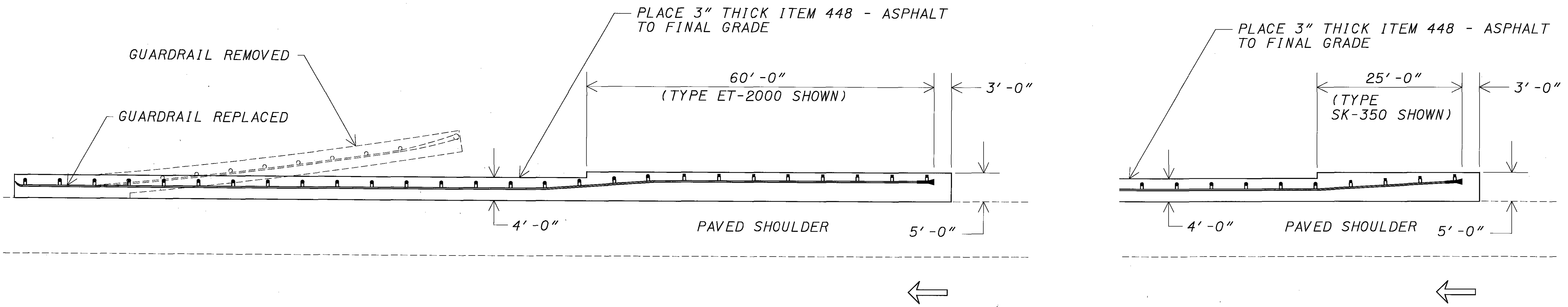
CALCULATED AS
CHECKED KMB

GUARDRAIL / BARRIER DETAILS

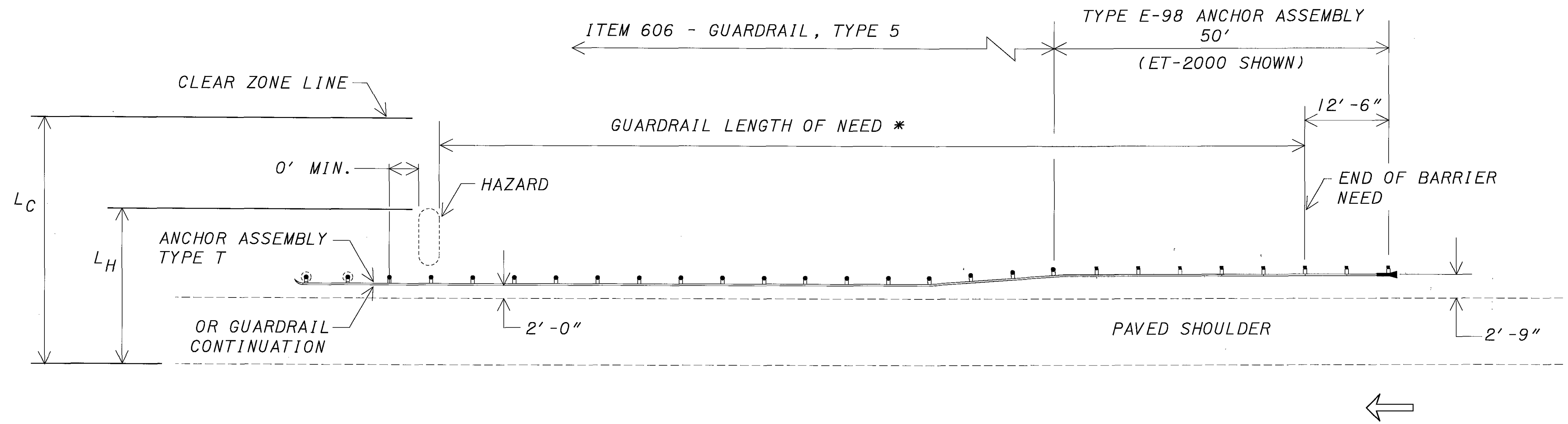
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ITEM 448 FOR EROSION CONTROL WITH TYPE E-98 ANCHOR ASSEMBLY



TYPICAL GUARDRAIL PROTECTION OF HAZARDS

PLOTTED FROM: \$\$\$\$\$\$DCNSPEC\$\$\$\$\$\$\$\$

ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

- 1) THE ET-2000 (1997) MANUFACTURED BY SYRO, INC.
 1170 N. STATE STREET
 GIRARD, OHIO 44420
 TELEPHONE: (330) 545-4373.

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0" (15.24 m), INCLUSIVE OF TWO 25'-0" (7.62 m) LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PREAPPROVED SHOP DRAWING:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL
SS265M	ET-2000 (1997) PLAN, ELEVATION & SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION & SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION & SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0' WITH 12'-6" PANELS & HBA POSTS 1-4 PLAN, ELEVATION & SECTION	5/22/00	7/31/00

- 2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC.
 NEW CASTLE DRIVE
 FRANKFORT, IL 60423
 TELEPHONE: (815) 464-5917.

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0" (15.24 m), INCLUSIVE OF FOUR 12'-6" (3.81 m) LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

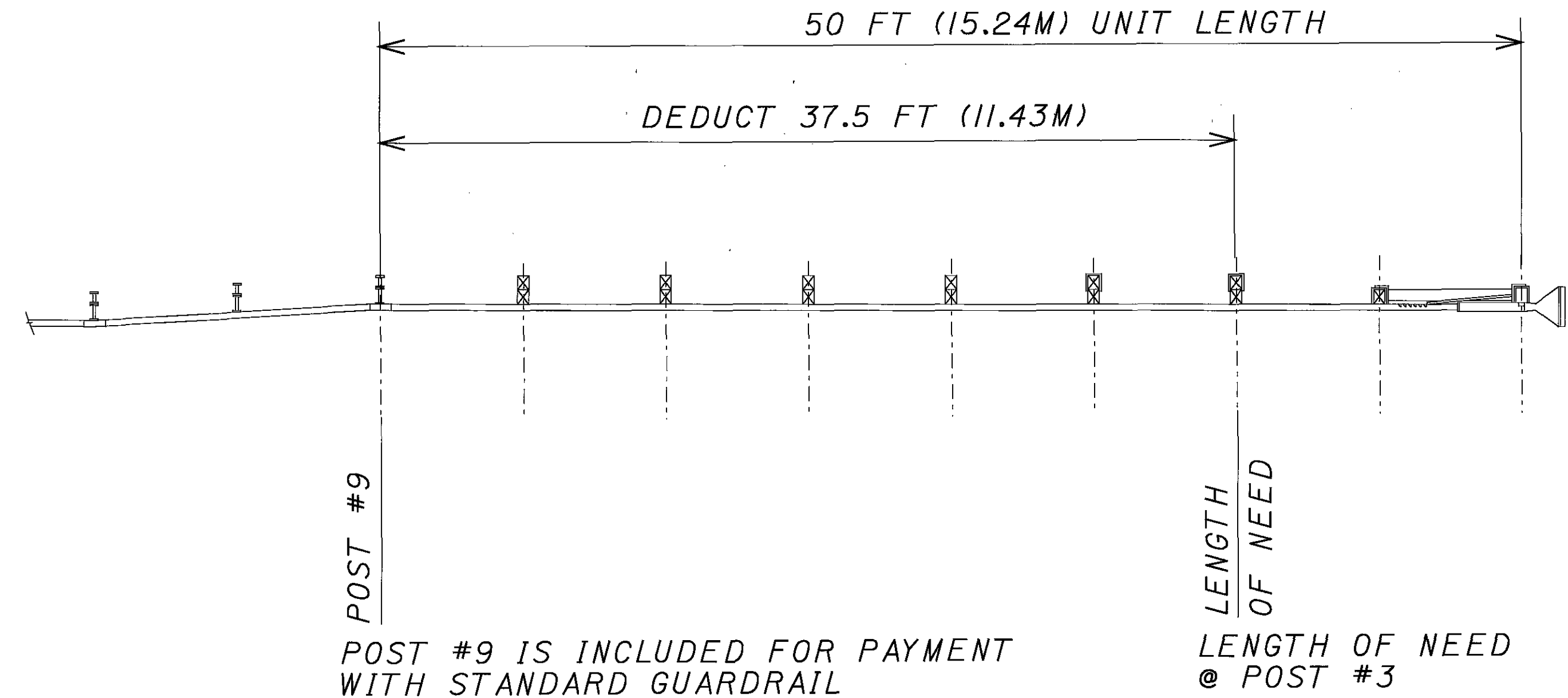
DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18" (450 mm X 450 mm.)

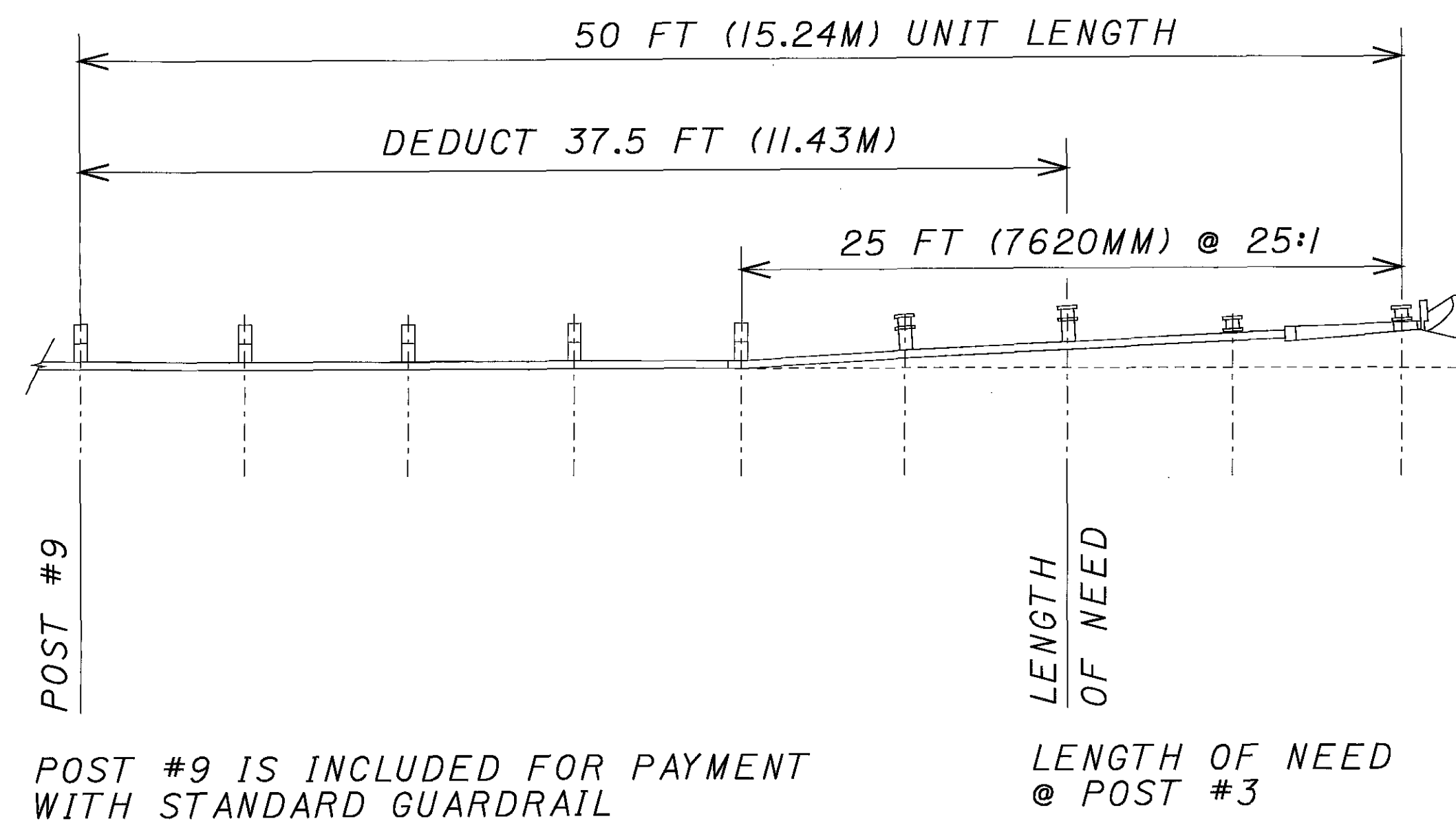
REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES (100 mm) ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES (706 mm) 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 (100 mm) ABOVE THE GROUND LINE.

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



ET-2000



SKT-350

CALCULATED
 EMK
 CHECKED
 LDH

TYPE E-98 ANCHOR ASSEMBLY DETAILS

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NOTES

GENERAL: This insert details the Barrier Transition, to connect existing NJ Concrete Barrier (safety shape) to a new run of Single Slope Concrete Barrier at locations shown on the plans. For NJ barrier shape and other details see the respective plan insert sheets. For Single Slope barrier details, see SCD RM-4.3 (RM-4.5 for Type D).

ADJACENT CONCRETE BARRIER RUNS: Remove any tapered end sections, Impact attenuators, or other guardrail hardware from existing barrier end.

The barrier to barrier transition is not intended to be used at transition sections (those shown on SCD RM-4.4), Inlets, or on Type C or CI Barrier.

If proposed adjacent single slope barrier is Type A or AI, the Barrier Transition should contain horizontal reinforcing steel similar to that required in the respective single slope barrier. Reinforcement is not shown and should be detailed separately.

The adjacent single slope end should be terminated with a reinforced End Anchor as detailed on the SCDs.

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the safety shape face to the single slope face is made over a 20' [6 m] length. The actual shape of the Transition is dependent on both the adjacent NJ barrier and the single slope barrier Types, as detailed on the plans. The contractor and Engineer will agree on a construction method to ensure a smooth barrier face.

MATERIALS: Materials are same for those shown on RM-4.3 and RM-4.5, except that cast-in-place is the only acceptable method. Edges may be chamfered or radiused as shown on those drawings.

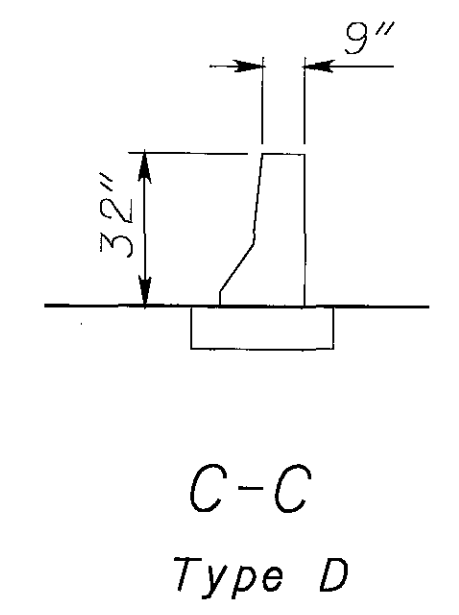
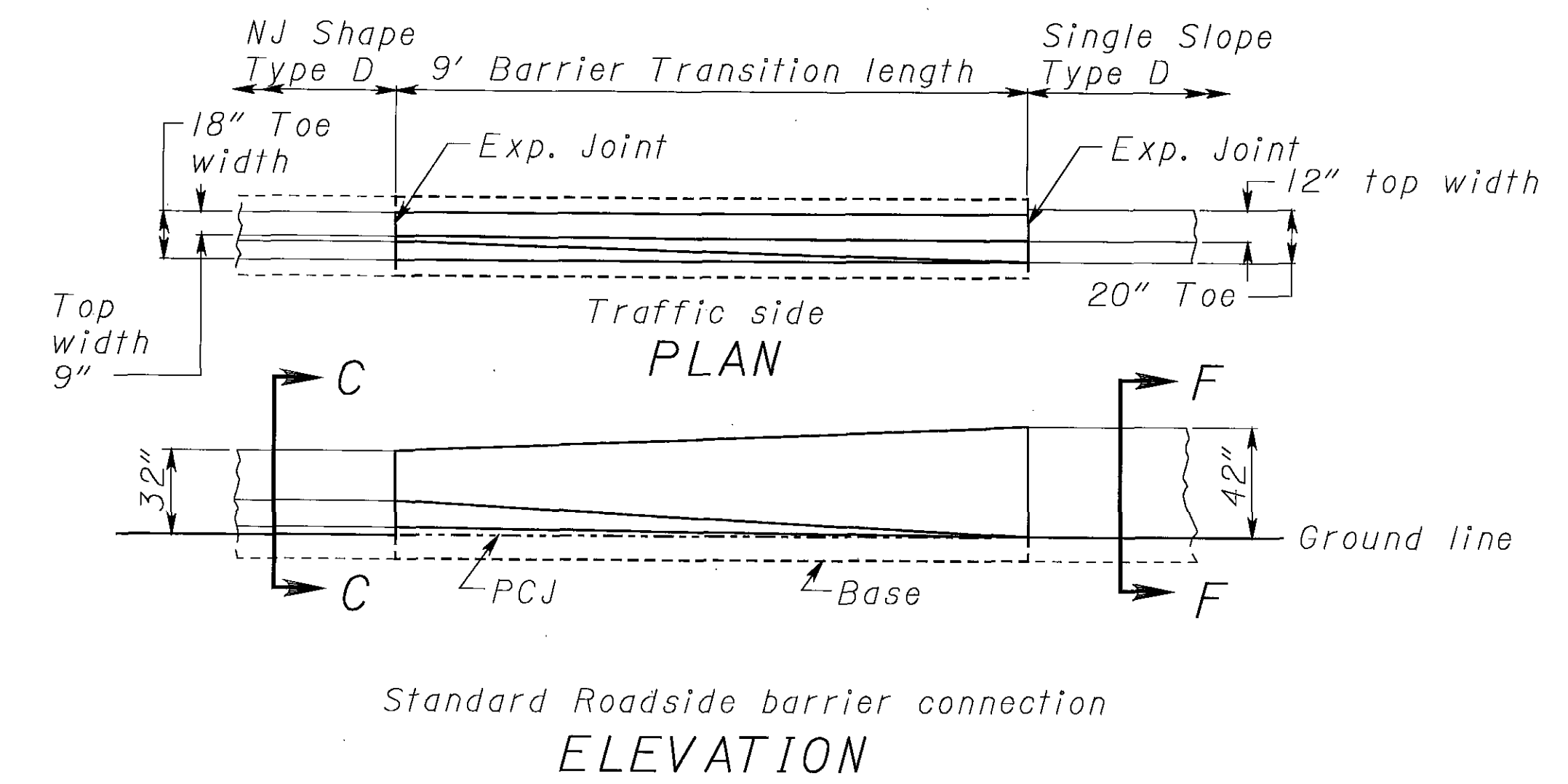
CONCRETE BASE: Construct base as shown on the NJ shape insert sheets, including the methods detailing the footing joint, Permissible Construction Joint (PCJ), and Dowelling requirements. The width of the base matches the existing NJ barrier.

JOINTS: Construct joints as shown on respective barrier drawings.

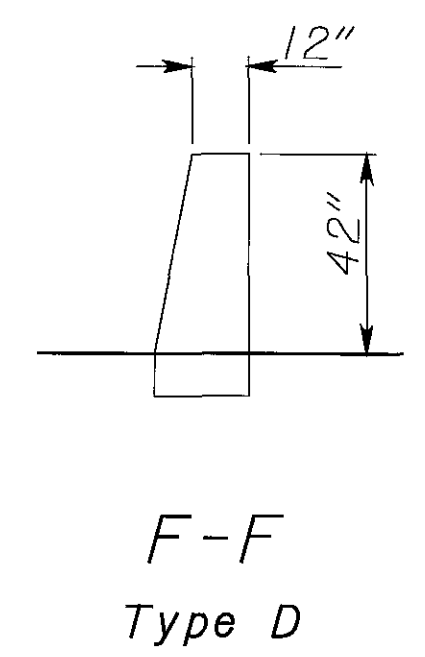
RACEWAYS: When specified, place raceway(s) to match raceway elevation in adjoining segments. Place to obtain maximum concrete cover.

METRIC UNITS: Refer to respective barrier drawings or inserts for metric dimensions.

PAYMENT: This Barrier Transition shall include all material and labor needed to construct this 20' [6 m] section, including any raceways, reinforcing steel, dowels and other necessary incidentals. Payment shall be made at the unit price for Item 622 - Barrier Transition, Each.



NJ SHAPE SECTIONS
See Plan Insert sheets for specific NJ Shape Concrete barrier details.



SINGLE SLOPE SECTIONS
See SCD RM-4.3 and RM-4.5 for specific Single Slope concrete barrier details.

10-17-03

BARRIER TO BARRIER TRANSITION

LAK-2-0.00

Street Slope	Ramp Length @ 1"/ft [0.083]	
	L LOW SIDE*	L HIGH SIDE*
0.01	5'-5" [1.6 m]	6'-10" [2.1 m]
0.02	4'-10" [1.5 m]	7'-11" [2.4 m]
0.03	4'-5" [1.3 m]	9'-5" [2.9 m]
0.04	4'-1" [1.2 m]	11'-8" [3.6 m]
0.05	3'-9" [1.1 m]	15'-2" [4.6 m]

* Measured along the back of a 6" [150] high curb.

$$L_{HIGH} = \frac{\text{Curb ht.}}{0.083 - \text{Street Slope}} \quad [7]$$

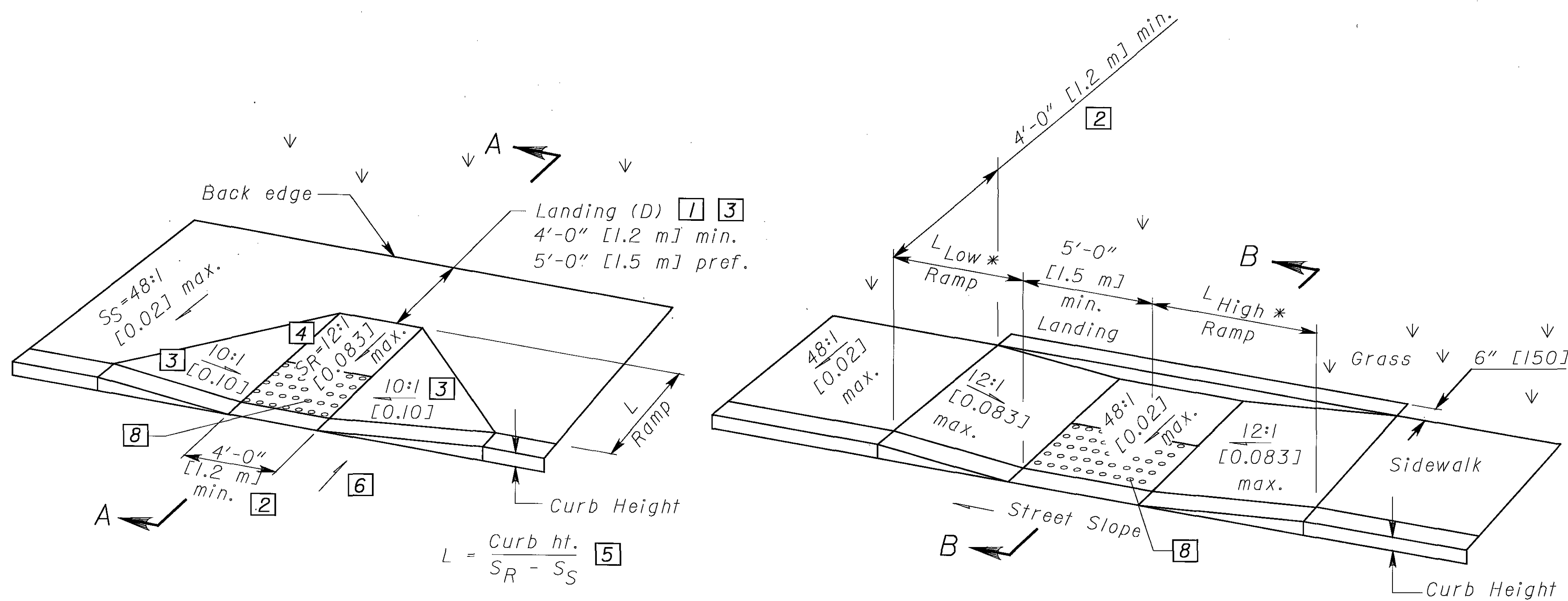
$$L_{LOW} = \frac{\text{Curb ht.}}{0.083 + \text{Street Slope}} \quad [7]$$

LEGEND

- [1] May be reduced to 3'-0" [915] in existing sidewalks if the landing is unconstrained along the back edge.
- [2] May be reduced to 3'-4" [1.02 m] in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.
- [3] Where landing width (D) has been reduced to 3'-0" [915] the flared sides shall have a maximum slope of 12:1 [0.083].

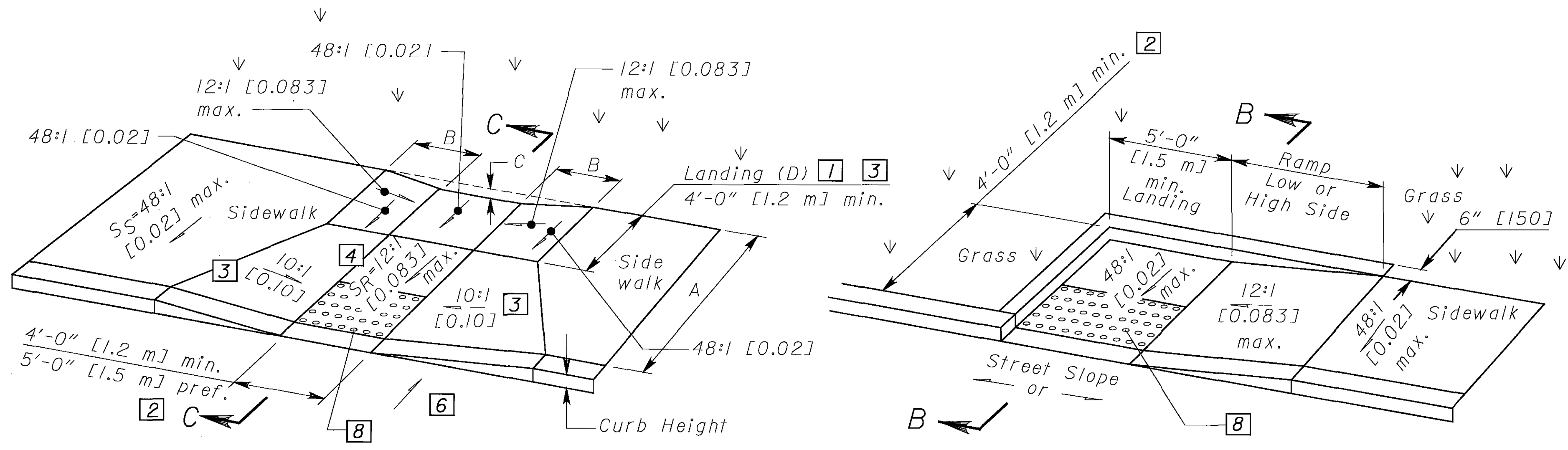
Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheel chair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.
- [4] The slope of the ramp toward the curb is preferred to be 12:1 [0.083] or flatter related to the horizontal, but the maximum slope shall be 12:1 [0.083] relative to the existing or proposed walk slope.

In existing sidewalks, where the maximum ramp slope (S_R) is not feasible, it may be reduced as follows:
A) 10:1 [0.10] for a max. rise of 6" [150],
B) 8:1 [0.125] for a max. rise of 3" [75],
C) 6:1 [0.167] over a max. run of 2'-0" [610] for historic areas where a flatter slope is not feasible.
- [5] The minimum length of a perpendicular ramp is 6' [2.0 m] from the back of a 6" [150] curb and may be increased where feasible to obtain a flatter ramp slope or to better blend with the walk configuration.
- [6] Gutter counter slopes at the foot of perpendicular curb ramps should not exceed 20:1 [0.05] over a distance of 2'-0" [610] from the curb.
- [7] Dimensions derived by equation are nominal. Construct ramps to meet required slopes and existing conditions.
- [8] Detectable Warnings (truncated domes) are to be installed in the location shown. Dimensions of the domes are 24" [610] from the back of the curb by the width of the ramp. See NOTES on sheet 3.



See Sht. 3/3 for SECTION A-A
PERPENDICULAR CURB RAMP DETAIL

See Sht. 3/3 for SECTION B-B
PARALLEL CURB RAMP DETAIL (DOUBLE)



See Sht. 3/3 for SECTION C-C
COMBINED CURB RAMP DETAIL

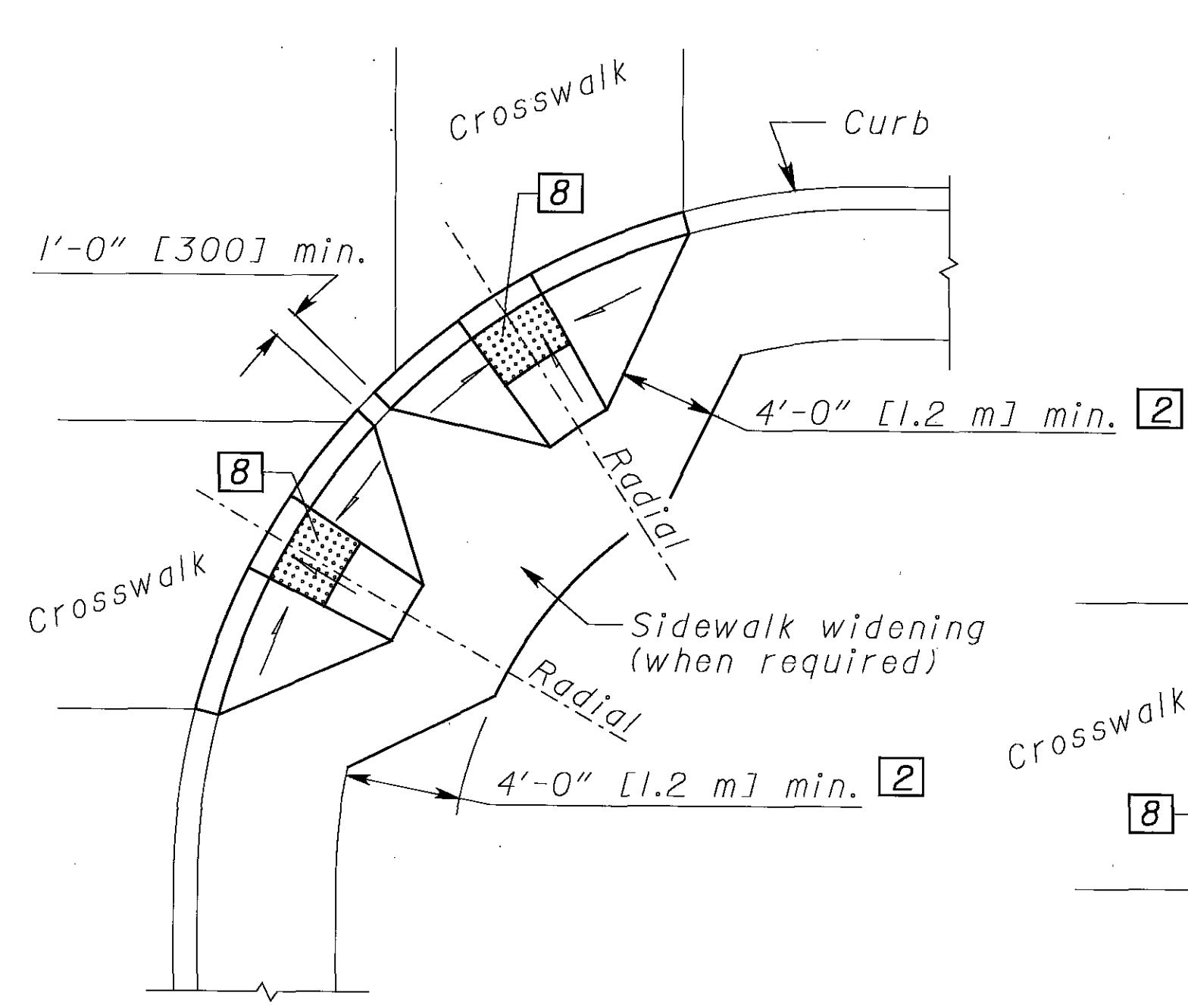
See Sht. 3/3 for SECTION B-B
PARALLEL CURB RAMP DETAIL (SINGLE)

$$B = C / 0.083$$

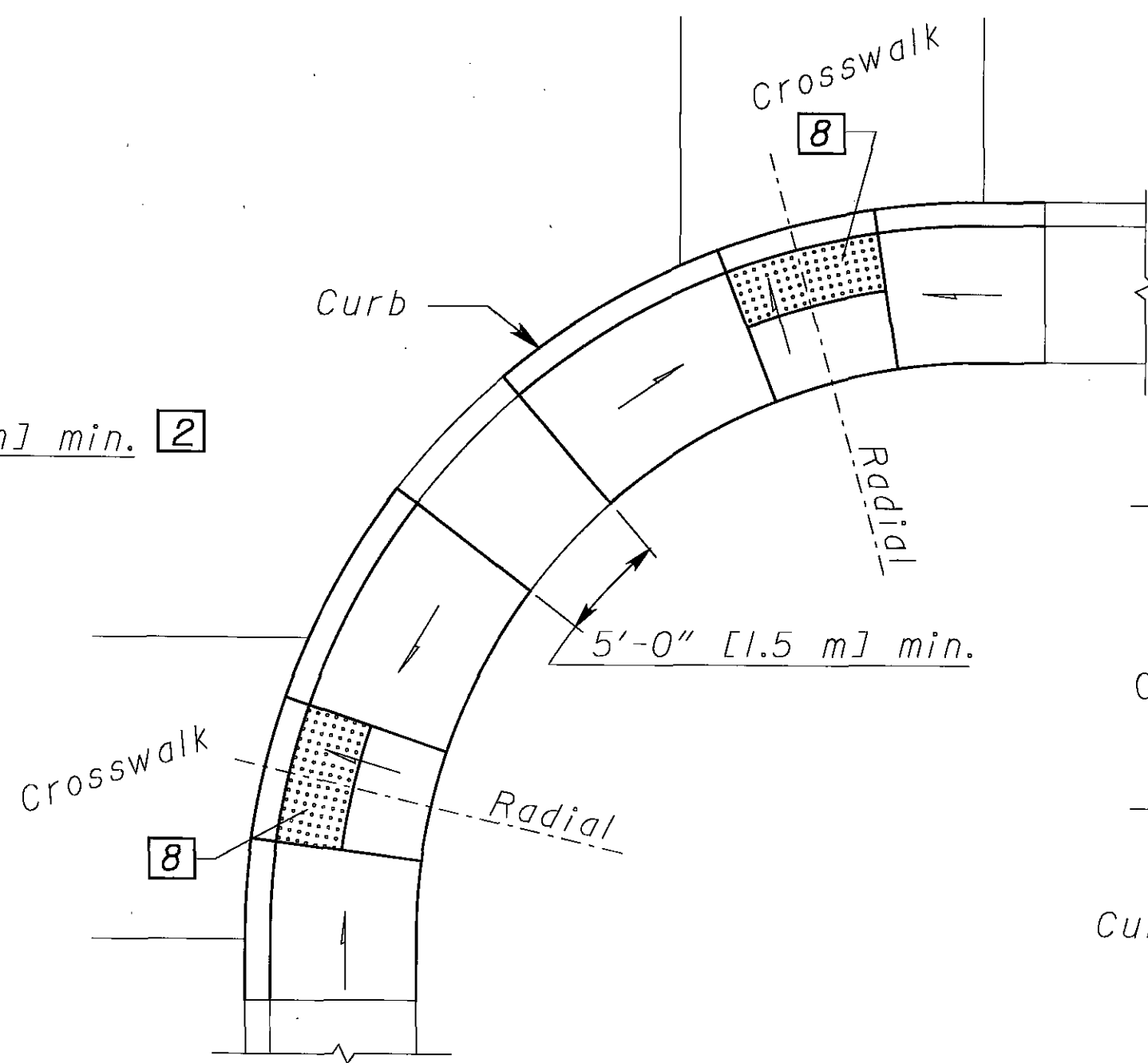
$$C = [\text{Curb ht.} + A(S_S)] - [(A-D)S_R + D(0.02)]$$

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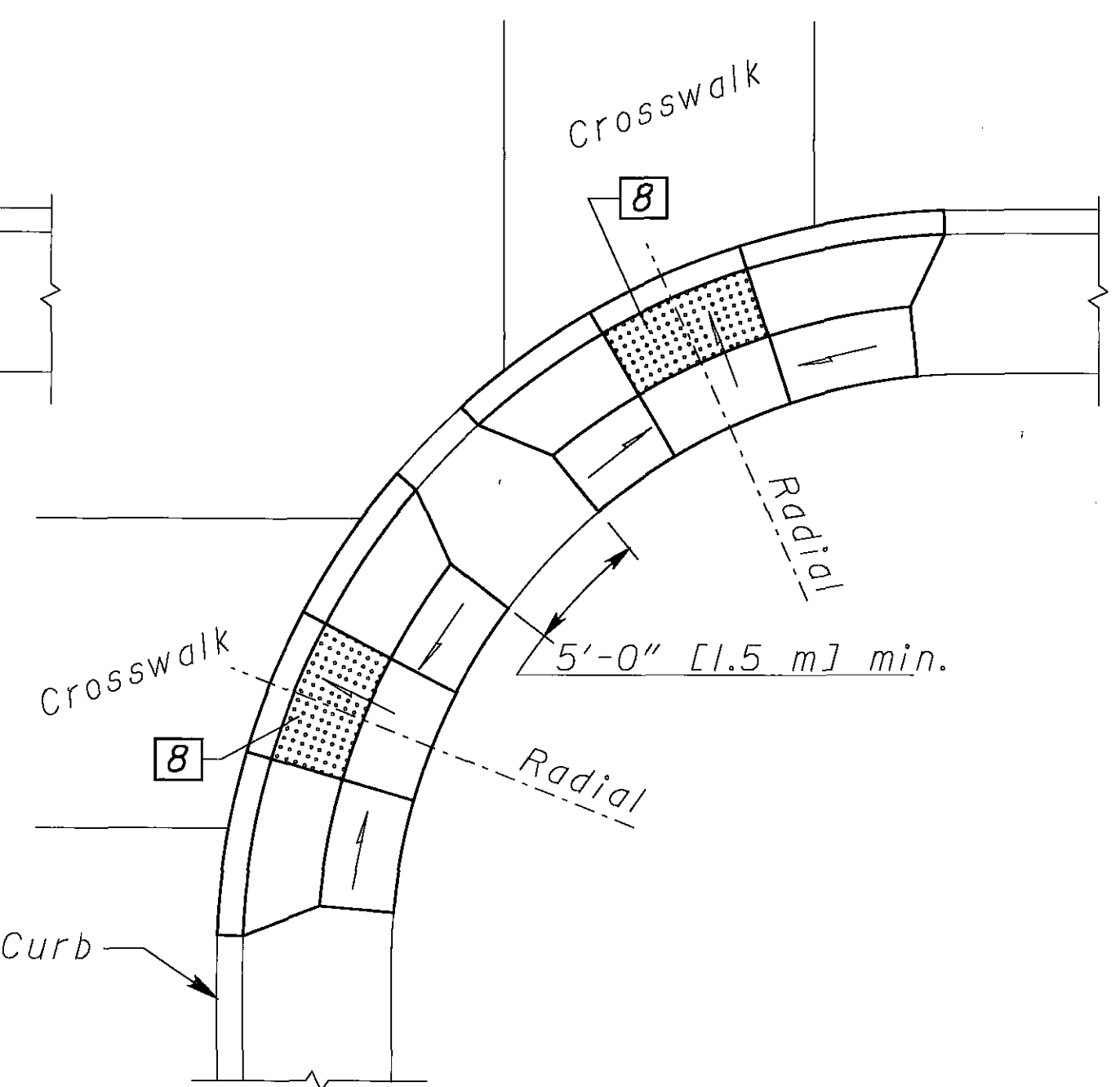
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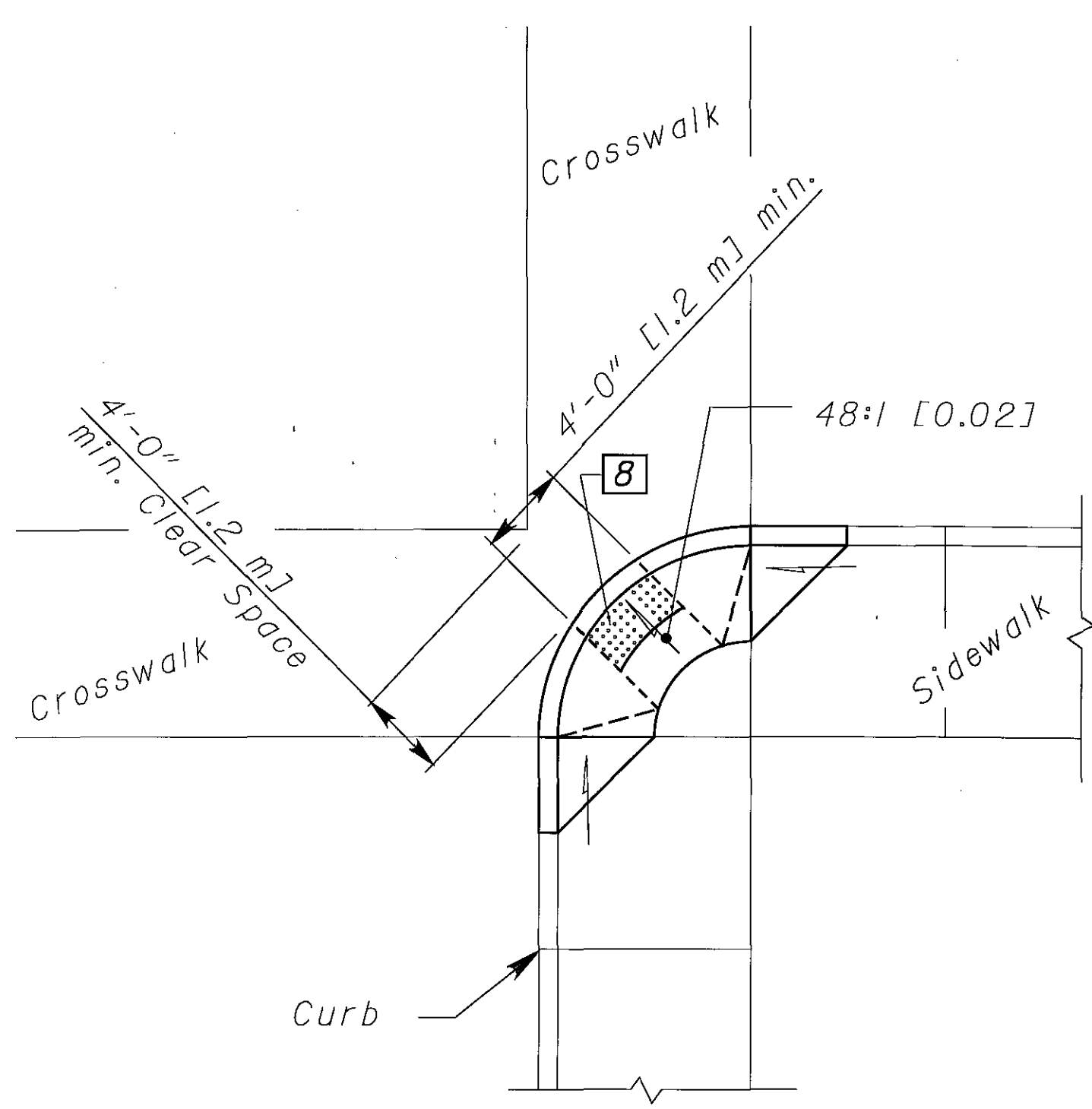
DESIGN A
PERPENDICULAR RAMP



DESIGN B
PARALLEL RAMP



DESIGN C
COMBINATION RAMP



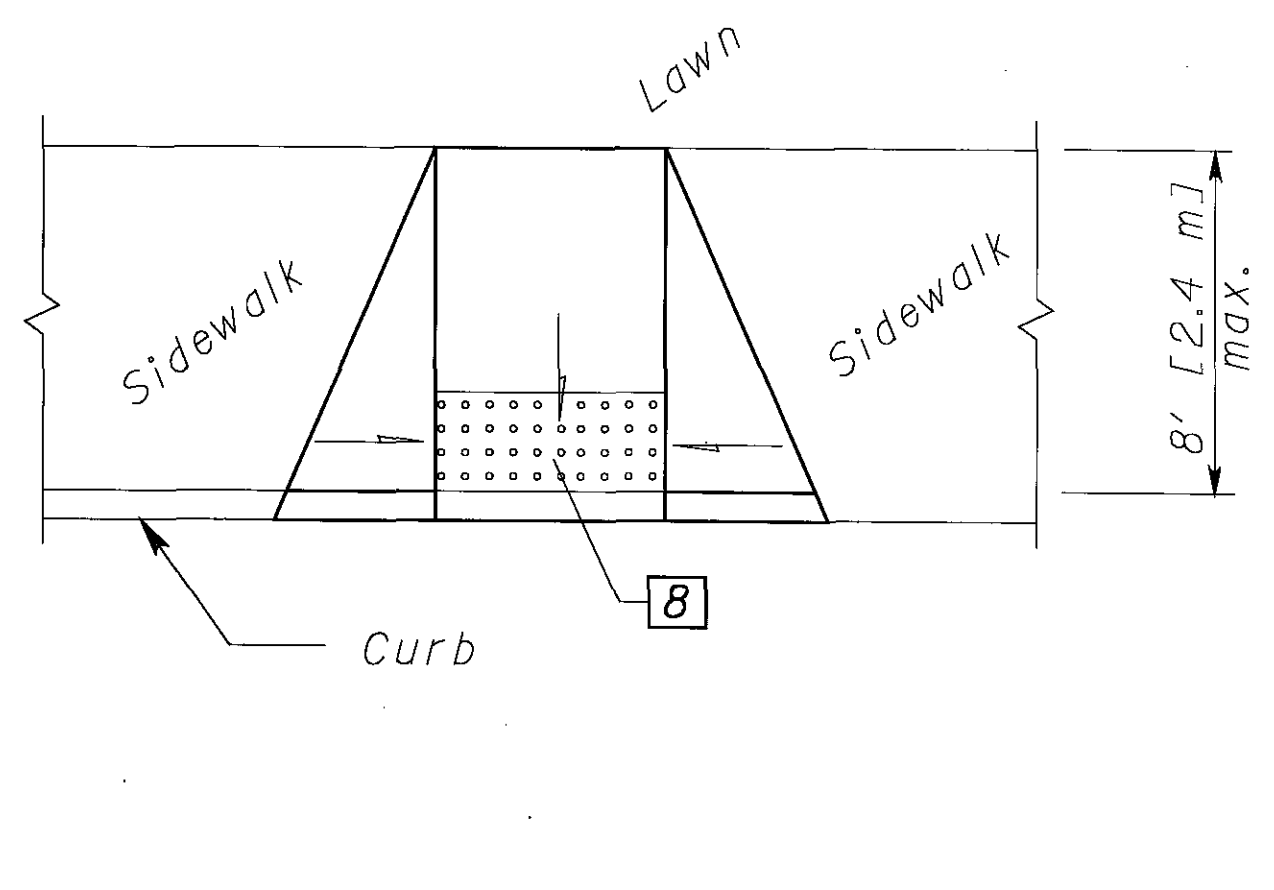
DESIGN D
DIAGONAL RAMP

CORNER CURB RAMP DESIGNS

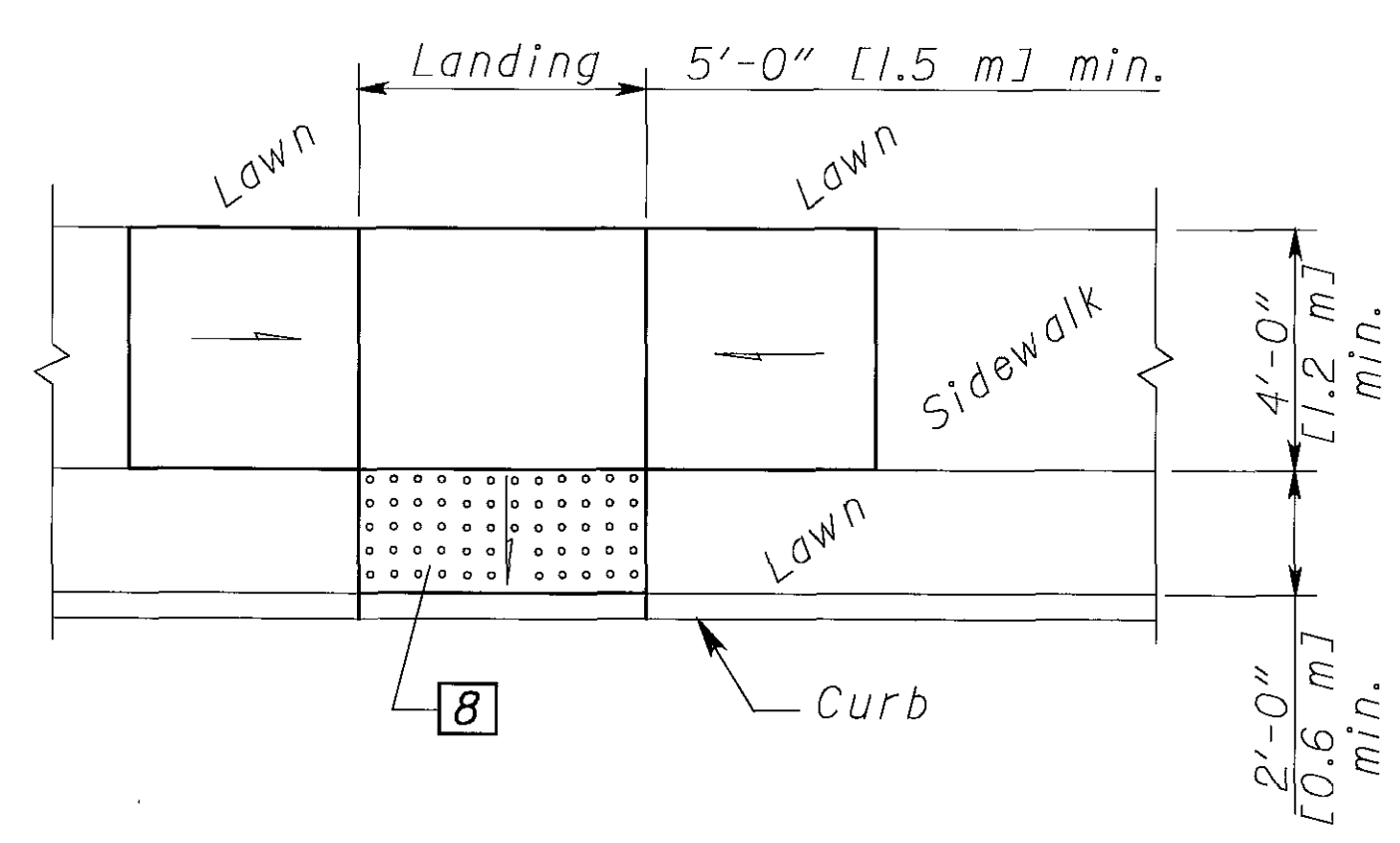
(See Curb Ramp Details on Sht. 1/3 for additional requirements.)

For LEGEND, See sheet 1.

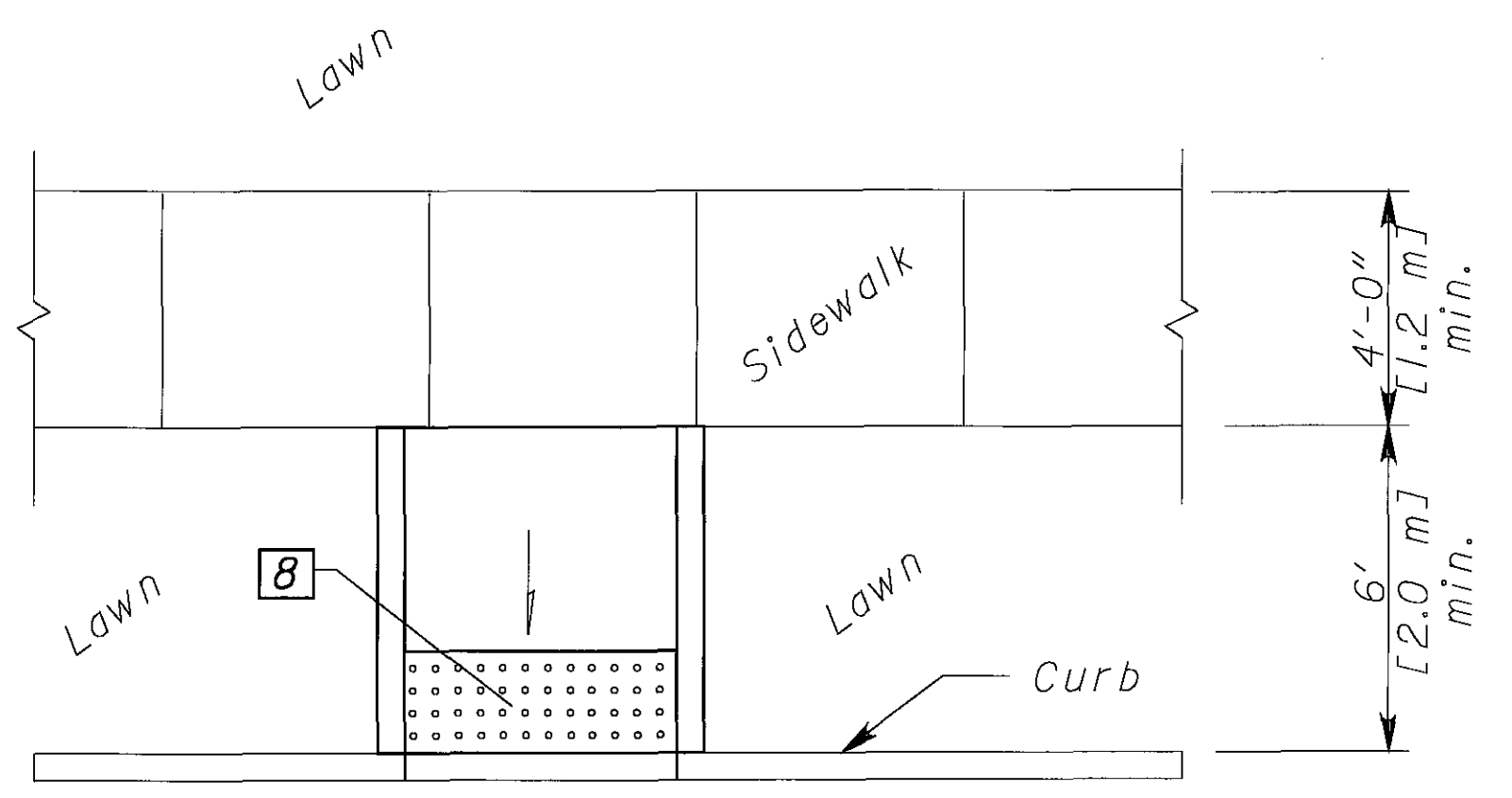
Use in existing walks only and when site constraints prohibit other designs. The diagonal ramp may be perpendicular, parallel or combination. Avoid using where curb radii are less than 20'-0" [6.0 m].



DESIGN E
PERPENDICULAR RAMP



DESIGN F
PARALLEL RAMP



DESIGN G
PERPENDICULAR RAMPS
w/o FLARES

MID BLOCK CURB RAMP DESIGNS

(See Curb Ramp Details on Sht. 1/3 for additional requirements.)

NOTES

SURFACE TEXTURE: Texture of concrete surfaces shall be obtained by coarse brooming transverse to the ramp slopes and shall be rougher than adjacent walk.

TRUNCATED DOMES: Install detectable warnings (truncated domes) for a distance of 24" [610] from the back of the curb for the entire width of the ramp opening as shown on details on Sheet 1.

Pavers will meet ASTM C 902 Class SX, Type I, or C 936, or C 1272 Type R.

Acceptable manufacturers and products are:

- Whitacre-Greer Fireproofing Company, 1400 S. Mahoning Ave, Alliance, OH, 44601, (800) WG PAVER ADA Paver, 4"x8"x2-1/4", Clear Red (Rustic) #30.

- Hanover Architectural Products, 240 Bender Rd., Hanover, PA. 17331, (717) 637-0500 Detectable Warning Paver, 12"x12"x2", or 24"x24"x2", Red or Quarry Red.

- Endicott Clay Products, PO Box 17, Fairbury, NE, 68352, (402) 729-5804 Handicap Detectable Warning Paver, 4"x8"x2-1/4", Red Blend.

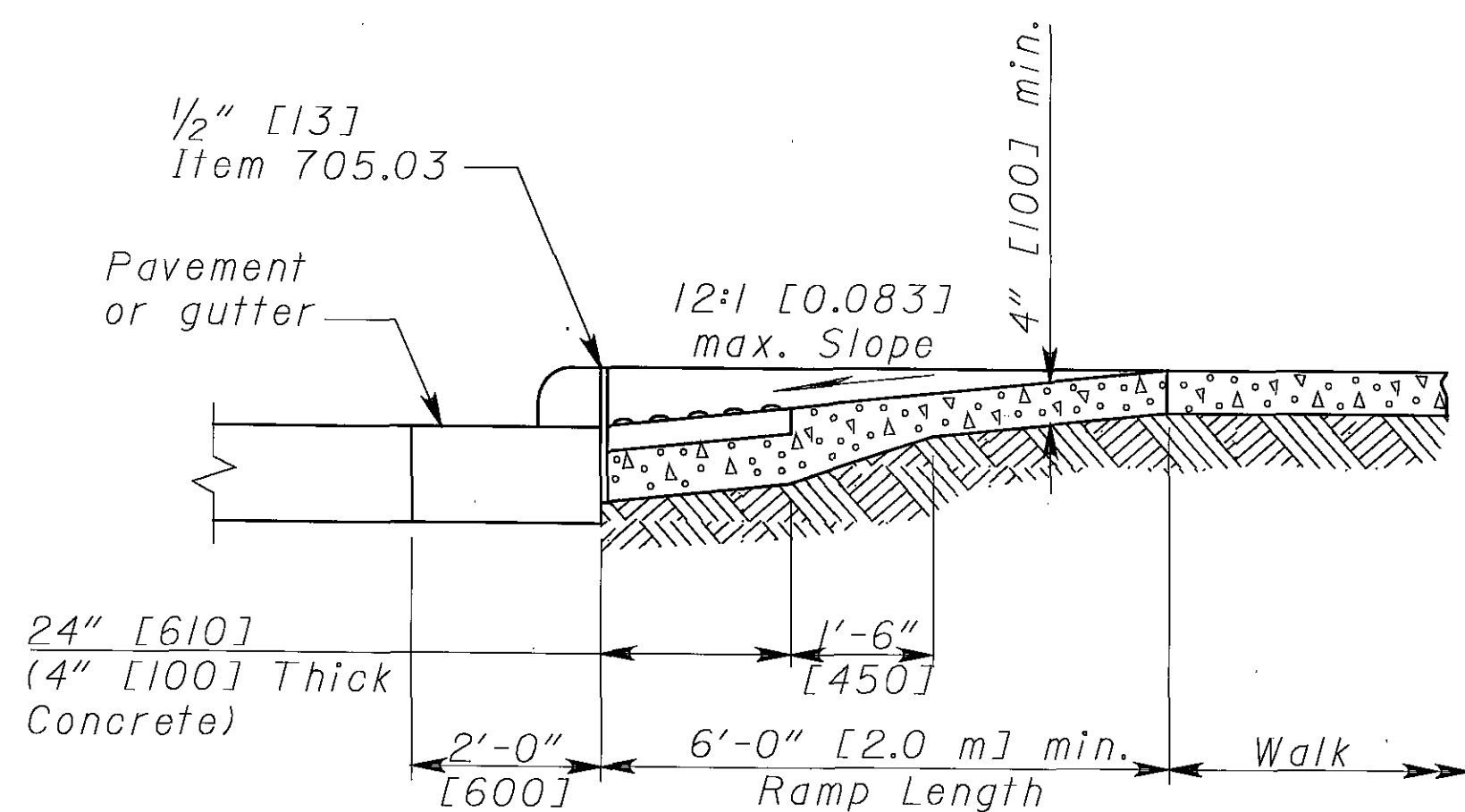
Pavers will laid on top of a 4" [100] unreinforced concrete base. Setting bed and joints to be mortared in accordance with manufacturer's instruction, or with a maximum 1/2" [13] thick bed of latex modified cement mortar. Mortar joints to a width not greater than 5/32" [4] and not less than 1/16" [1.5]. Pavers shall not be directly touching each other unless they have spacing bars.

Mortared joints are to be flush with top surface and struck so as to give a smooth surface. Pavers shall be laid such that joints are level with adjoining joints so as to provide a smooth transition from brick to brick and brick to concrete surface.

The surface of any two adjacent units should not differ by more than 1/8" [3] in height. Bricks shall be placed in a running bond pattern. Face of all brick shall be clean of cement and protected so as to avoid chipping during construction.

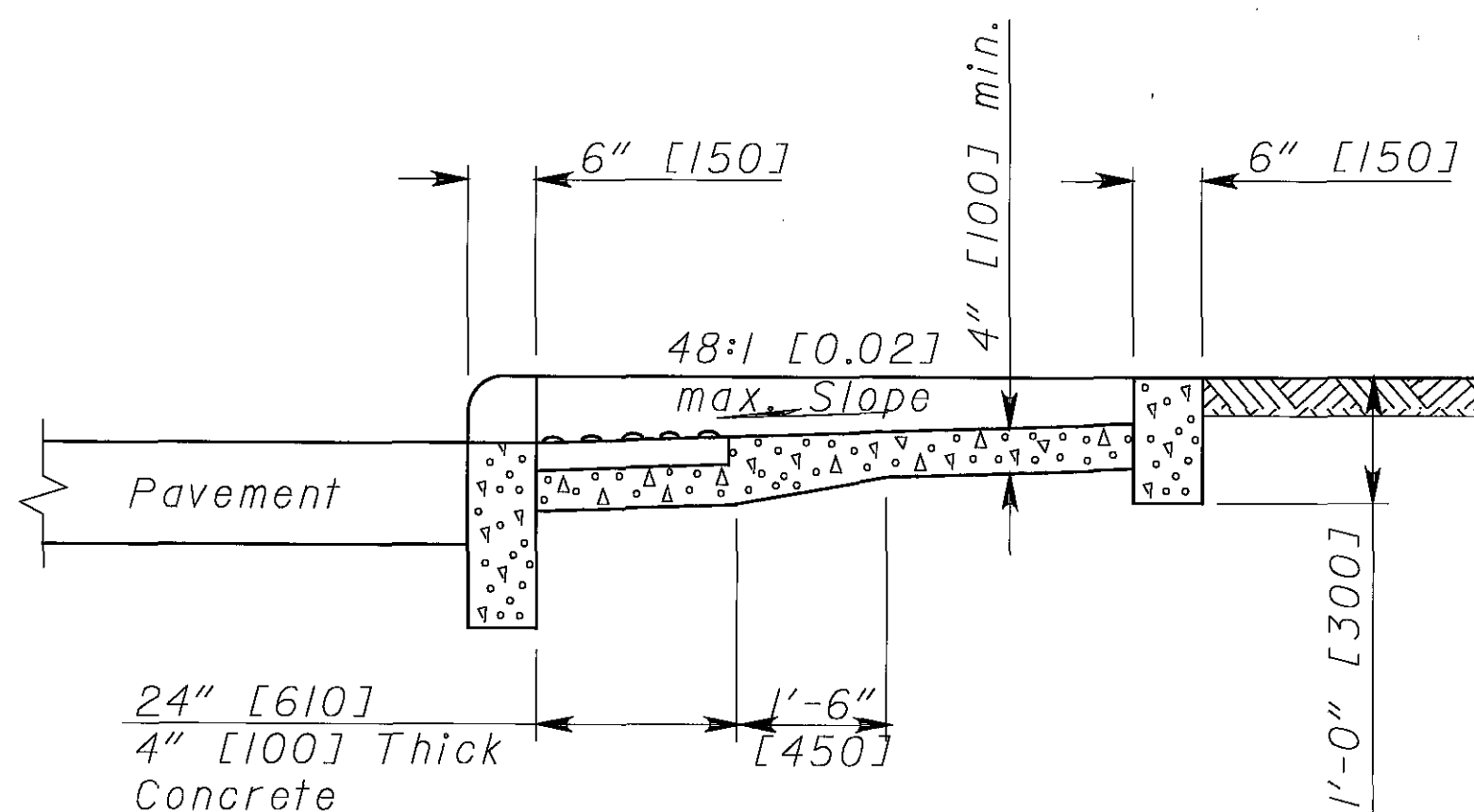
EXPANSION JOINTS: shall be provided in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. A 1/2" [13] Item 705.03 expansion joint filler shall be provided around the edge of ramps built in existing concrete walk. Lines shown on this drawing indicate the ramp edge and slope changes and are not necessarily joint lines.

PAYMENT: Walk and curb, Items 608 and 609, shall be measured through the curb ramp area paid for under their respective Items. **Item 608 - Curb Ramp, As Per Plan, Each constructed in new curb and walk shall include the cost of any additional materials and installation (including truncated domes), grading, forming and finishing. Item 608 - Curb Ramp, As Per Plan, Square Foot [Meter], constructed in existing curb and walk shall include the cost of furnishing and installing all materials (including truncated domes), grading, forming, and finishing of the curb and walk of the curb ramp. Removal of existing curb and walk shall be paid for under Item 202.**



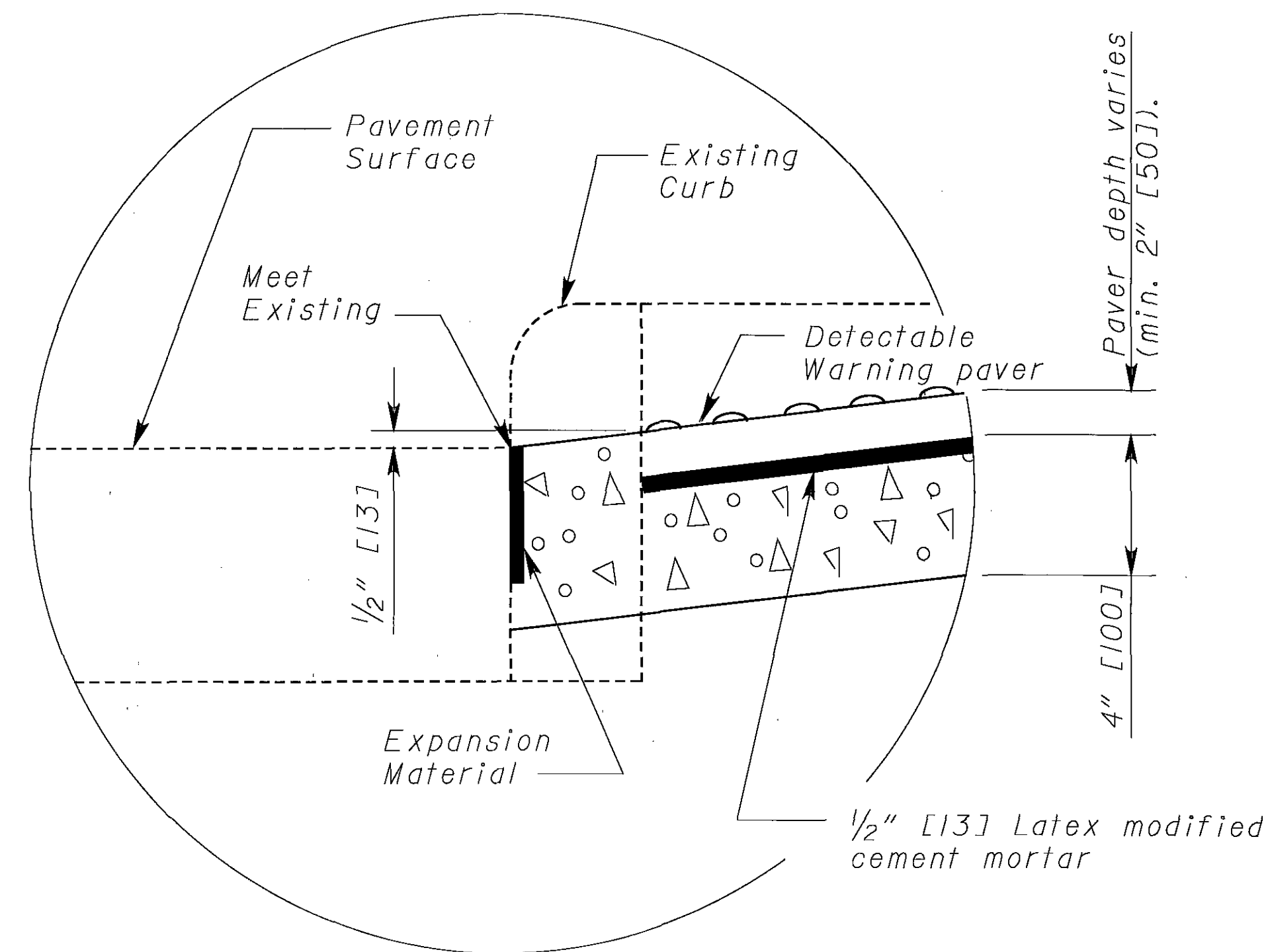
**SECTION A-A
NORMAL DETAIL**

See Sheet 1 of 3.
(Gutter shown)

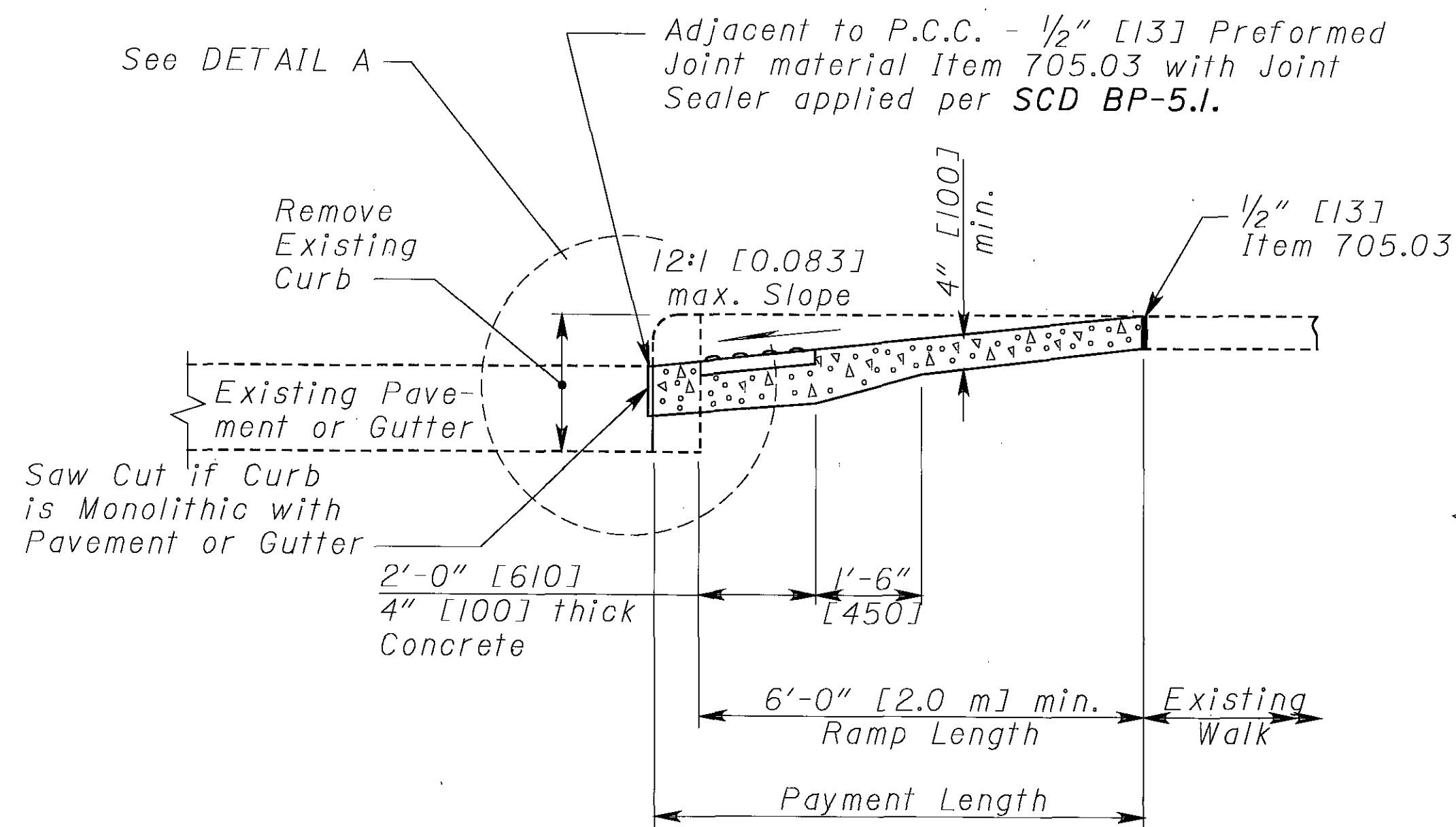


SECTION B-B

See Sheet 1 of 3.

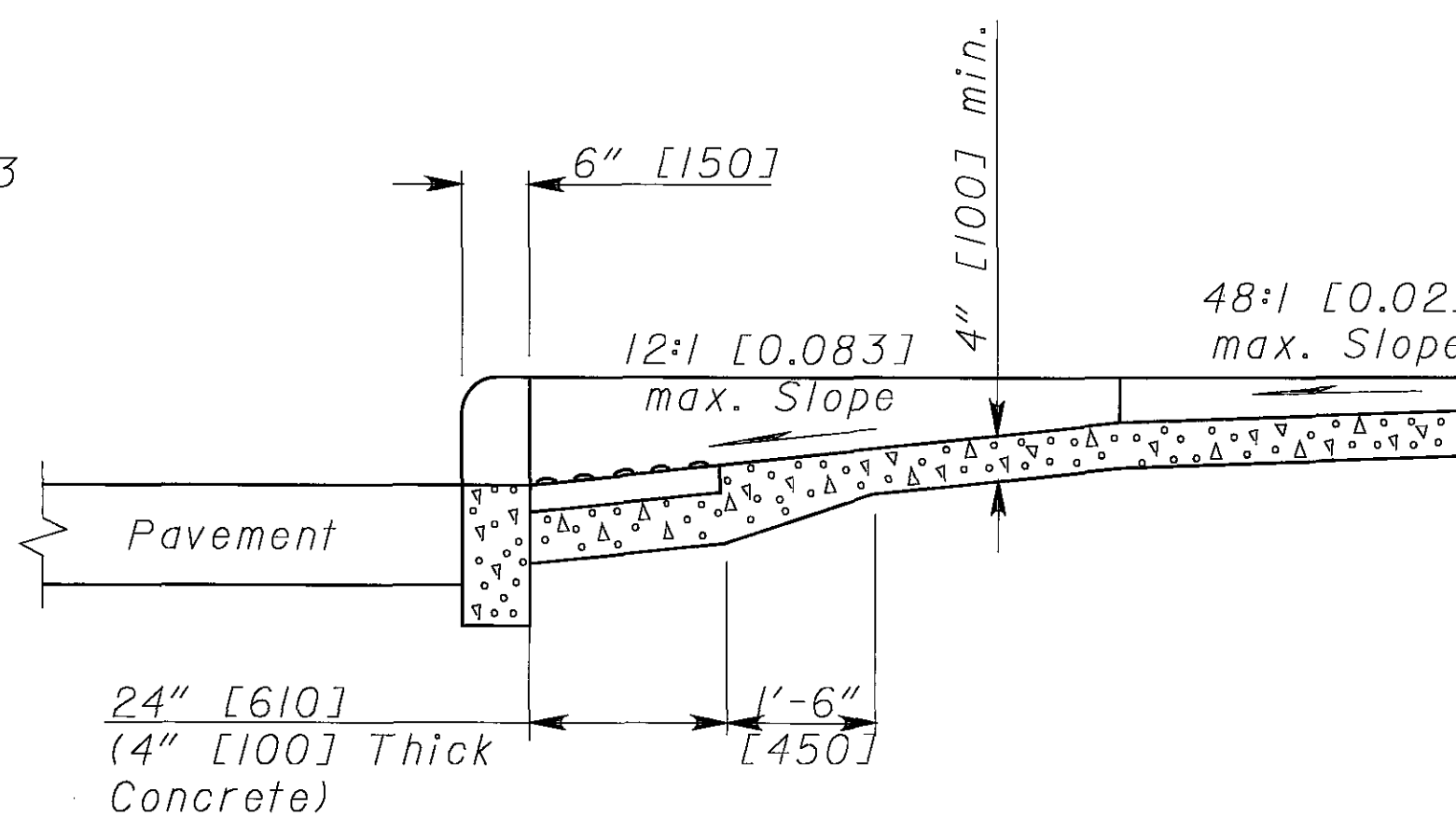


DETAIL A



**SECTION A-A
EXISTING WALK DETAIL**

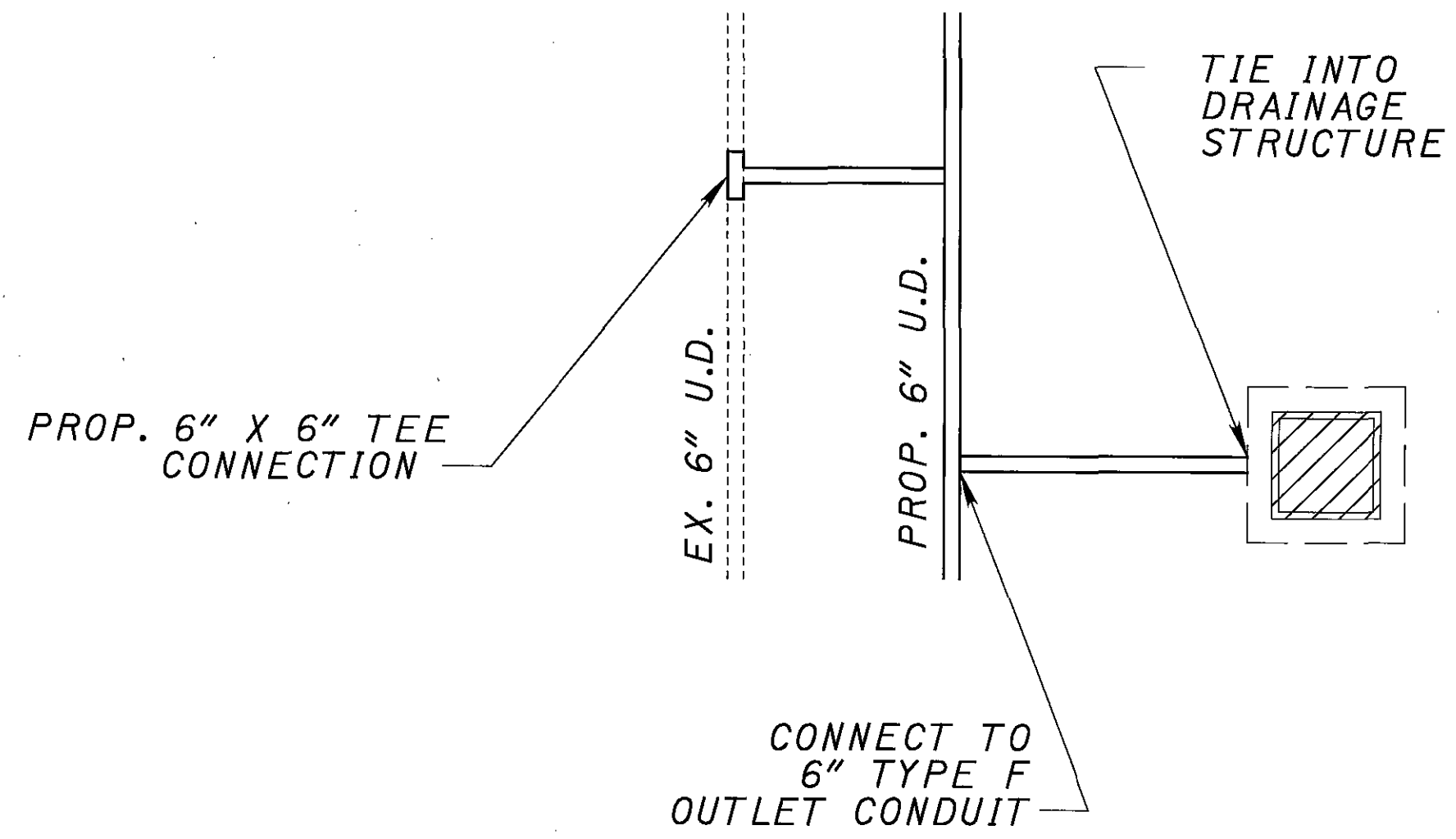
See Sheet 1 of 3.



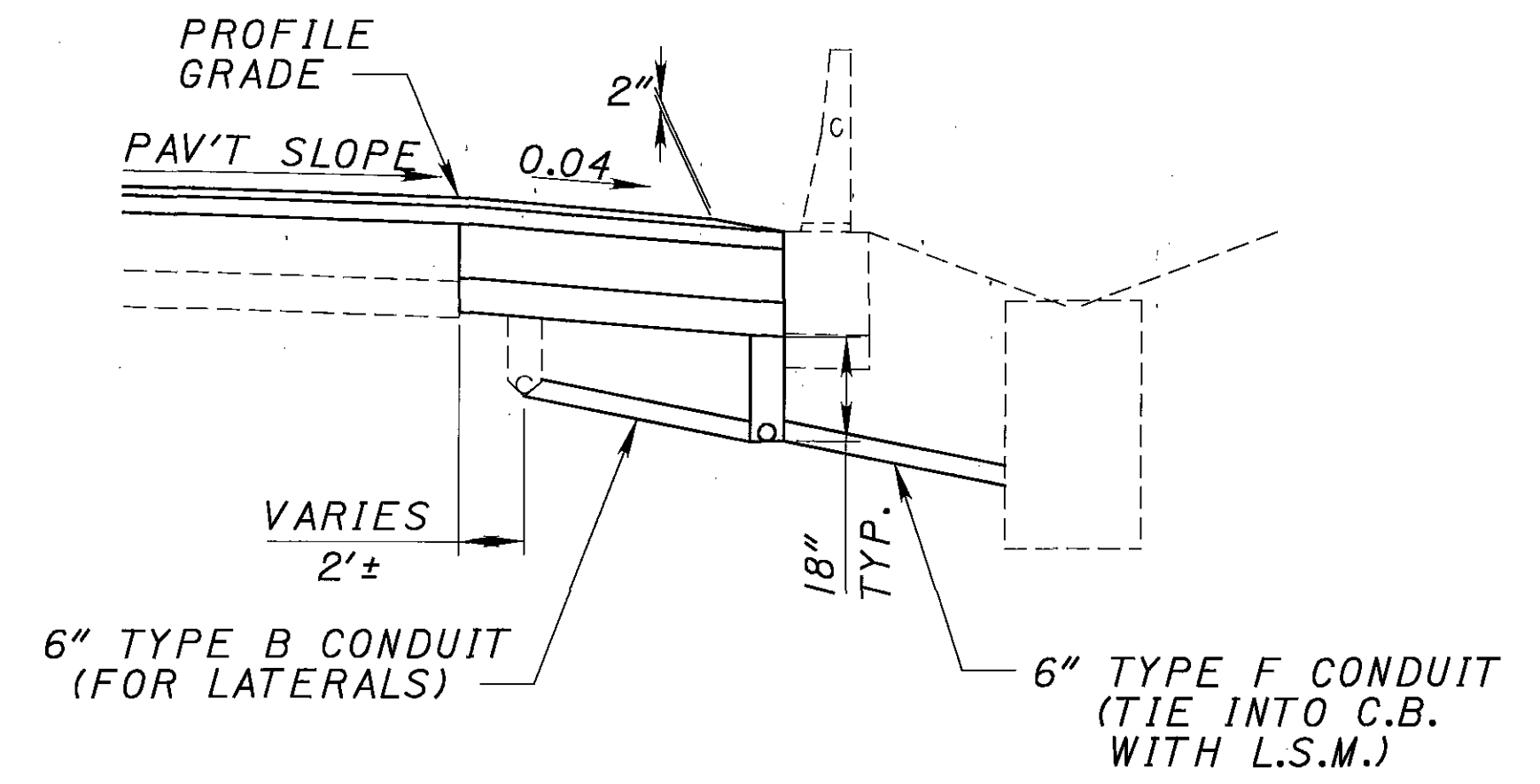
SECTION C-C

See Sheet 1 of 3.

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UNDERDRAIN CONNECTIONS
PLAN VIEW



UNDERDRAIN CONNECTION
ELEVATION VIEW

SEE SUBSUMMARY FOR
LOCATIONS & ELEVATIONS,
SHEET

GENERAL NOTES

NOISE BARRIER

- I. DESCRIPTION
- II. POSTS
- III. BARRIER MATERIALS
- IV. CONSTRUCTION METHODS
- V. ACCEPTANCE CRITERIA
- VI. METHOD OF MEASUREMENT
- VII. BASIS OF PAYMENT

ITEM SPECIAL-NOISE BARRIER

I. DESCRIPTION

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING NOISE BARRIERS INCLUDING ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED IN ACCORDANCE WITH THESE PROVISIONS AND APPLICABLE STANDARDS AND IN CONFORMITY WITH THE DIMENSIONS, LINES AND GRADES SHOWN ON THE PLANS.

NO MIXING OF BARRIER MATERIAL TYPES OR COLORS AT ANY ONE NOISE BARRIER UNLESS OTHERWISE SPECIFIED IN THE PLANS WILL BE ALLOWED, EXCEPT WHERE A RUN OF NOISE BARRIER INCLUDES PLACEMENT ON A BRIDGE.

NOISE BARRIERS PLACED ON BRIDGES SHALL NOT WEIGH MORE THAN 225 LBS. /LINEAR FOOT.

BARRIER MATERIAL TYPE SUPPLIED FOR ABSORPTIVE NOISE BARRIER PROJECTS SHALL BE ANY LISTED ON SHEET 318 OF 524 UNLESS OTHERWISE SPECIFIED.

INDIVIDUAL BARRIER FABRICATION AND ERECTION DETAILS, EXCEPT FOR POSTS AND FOUNDATIONS, SHALL BE AS PER APPROVED MANUFACTURER'S DRAWINGS LISTED ON SHEETS 315-318 OF 524. POSTS AND FOUNDATIONS SHALL BE AS DETAILED IN THESE PLANS. POSTS AND FOUNDATIONS SHALL BE AS DETAILED IN THESE PLANS UNLESS ALTERNATIVE MANUFACTURER'S DETAILS ARE SUBMITTED AND APPROVED BY THE ENGINEER.

MAXIMUM POST SPACING SHALL BE 16 FT. ANY INTERFERENCE WITH UTILITIES OR OTHER POST SPACING ADJUSTMENTS REQUIRED TO MEET DESIGN PLAN ALIGNMENT, CONNECTIONS TO STRUCTURES, OR OTHER CONDITIONS CREATED DUE TO CHANGING OF POST SPACINGS SHALL BE AT THE CONTRACTOR'S EXPENSE.

COPIES OF THE ODOT APPROVED, MANUFACTURER'S DRAWINGS LISTED ON SHEET 314 SHALL BE FURNISHED TO THE ENGINEER BEFORE ANY WORK IS INITIATED. ALL PROJECT SPECIFIC DETAILS NOT COVERED BY THE PLANS OR THE MANUFACTURER'S DRAWINGS SHALL BE APPROVED BY THE ENGINEER BEFORE WORK IS INITIATED.

THE BARRIER AND THE ASSOCIATED WORK SHALL CONFORM TO SECTIONS 499 AND 501 OF THE CMS AS APPROPRIATE.

A. CONCRETE NOISE BARRIER PANELS AND POSTS

EVERY PRODUCER OF PRECAST CONCRETE NOISE BARRIER COMPONENTS SUPPLIED TO THE PROJECT SHALL BE CERTIFIED IN ACCORDANCE WITH SUPPLEMENT 1073. THE DEPARTMENT WILL NOT ACCEPT PRECAST COMPONENTS FROM NON-CERTIFIED PLANTS.

THE CONCRETE SUPPLIED FOR CONCRETE POSTS AND PANELS SHALL BE AS SPECIFIED BY THE SUPPLIER ON THEIR ODOT APPROVED PLAN SHEETS. THE CONCRETE PANELS AND POSTS SHALL NOT EXHIBIT ANY EFFLORESCENCE FOR A PERIOD OF 3 YEARS AFTER THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF EFFLORESCENCE ON THE SOUND WALL FOR THIS PERIOD OF TIME AT NO EXPENSE TO ODOT.

CONCRETE NOISE BARRIER PANELS AND POSTS REQUIRE A REINFORCED INTEGRAL OR NON-INTEGRAL CAP ON THE TOP OF THE POSTS AND THE TOP OF THE TOP NOISE BARRIER PANELS AS PER BDM SECTION 802.2. WHEN CALLED OUT ON THE PLANS, THE CONCRETE NOISE BARRIER PANELS AND POSTS SHOULD BE COATED WITH AN ODOT APPROVED COATING FROM A SUPPLIER ON THE NOISE BARRIER CONCRETE PANEL SEALER/COATING SPECIFICATION AVAILABLE FROM THE ODOT OFFICE OF MATERIALS MANAGEMENT. ALL CONCRETE NOISE BARRIER PANEL EDGES SHALL BE SEALED/COATED AT THE MANUFACTURING PLANT. THE SEALER/COATING SHALL BE IDENTICAL TO THE SEALER/COATING WHICH IS APPLIED TO THE FRONT AND BACK SURFACES OF THE PANELS. HORIZONTAL JOINT LINES BETWEEN PANELS SHALL MATCH FOR A MINIMUM DISTANCE OF 500 FEET FOR AESTHETIC PURPOSES.

B. CONCRETE POSTS AND PANELS (WITH AND WITHOUT INTEGRAL CAP), PEDESTALS, SPREAD FOOTINGS, AND DRILLED SHAFTS

REINFORCING STEEL SHALL BE CMS 709.00, GRADE 60, WELDED WIRE FABRIC SHALL BE 709.14. PRESTRESSED CONCRETE SHALL HAVE AN ODOT APPROVED CORROSION INHIBITOR ADDED TO THE CONCRETE MIX.

CONCRETE SHALL MEET CMS 499, EXCEPT FOR DRILL SHAFT CONCRETE WHICH SHALL CONFORM TO SECTION H. CONCRETE FOR DRILLED SHAFTS.

THE CONCRETE MIX DESIGN FOR PANELS SHALL CONTAIN A WATER REPELLANT ADMIXTURE AND 15% BY WEIGHT FLY ASH OR 15-30% GROUND GRANULATED BLAST FURNACE SLAG (GGBF). POST CONCRETE SHALL BE COLORED TO MATCH THE NOISE PANEL MATERIAL UNLESS OTHERWISE SPECIFIED IN THE PLANS.

THE NON-INTEGRAL CAP SHALL BE ATTACHED TO THE TOP OF THE POST AND PANEL BY MEANS OF A STRUCTURAL DESIGNED MECHANICAL ATTACHMENT WHICH HAS BEEN APPROVED BY THE ODOT OFFICE OF STRUCTURAL ENGINEERING.

C. PRESTRESSED CONCRETE POSTS (WITH AND WITHOUT INTEGRAL CAP)

ITEM 515 OF THE CMS SHALL APPLY EXCEPT AS MODIFIED BELOW.

PRESTRESSED CONCRETE;
 COMPRESSIVE STRENGTH - 5,000 PSI,
 COMPRESSIVE STRENGTH AT TRANSFER OF PRESTRESS - 4,000 PSI
 INITIAL STRESS = 0.70 F'S.

PRESTRESSING STRAND SHALL BE 1/2" DIAMETER WITH AN AREA OF 0.153 SQ. IN. AN INITIAL TENSILE FORCE OF 28900 LBS. SHALL BE APPLIED TO EACH STRAND. EXPOSED STRAND ENDS SHALL BE PAINTED WITH APPROVED EPOXY. SEE SECTION C. ABOVE FOR SPECIFICATIONS AND APPLICATION RATES.

POST CONCRETE SHALL BE COLORED TO MATCH THE NOISE PANEL MATERIAL UNLESS OTHERWISE SPECIFIED IN THE PLANS.

D. DRILLED SHAFTS

DRILLED SHAFTS SHALL BE CONSTRUCTED AS PER CMS ITEM 524. THE DESIGNER IS RESPONSIBLE TO DETERMINE THE "N" VALUE AND SOIL TYPE BASED ON THE NOISE WALL BORINGS AND THE DESIGN DATA SHEET. THE DESIGNER CAN THEN DETERMINE THE DRILLED SHAFT LENGTH FROM THE NOISE BARRIER TABLE (POST AND PANEL CONSTRUCTION) ON SHEET 7 OF 7. ONLY THE STATION LOCATIONS, THE TOP ELEVATION OF THE DRILLED SHAFT AND THE ACTUAL DRILLED SHAFT LENGTHS SHOULD BE SHOWN ON THE PROJECT PLANS.

THE DESIGN DATA SHEET AND THE NOISE BARRIER TABLE (POST AND PANEL CONSTRUCTION) SHEET SHOULD NOT BE INCLUDED IN THE PLANS. THE CONTRACTOR AT NO TIME SHOULD BE REQUIRED TO DETERMINE THE DRILLED SHAFT LENGTH.

ODOT REQUIRES FOR ALL NOISE WALLS THAT SOIL BORINGS SHALL BE SUPPLIED BY THE CONSULTANT OR IN THE CASE OF AN IN-HOUSE PROJECT, BY THE ODOT OFFICE OF GEOTECHNICAL ENGINEERING. SOIL BORINGS SHALL BE LOCATED DIRECTLY ALONG THE ALIGNMENT OF THE NOISE BARRIER WALL. SOIL BORINGS SHALL BE OBTAINED ACCORDING TO THE ODOT MANUAL: "SPECIFICATIONS FOR SUBSURFACE INVESTIGATION".

E. BEARING PADS

ALL BOTTOM NOISE WALL PANELS REQUIRE A NEOPRENE PREFORMED BEARING PAD BETWEEN THE BOTTOM OF THE NOISE PANEL AND THE BEARING SURFACE. THE BEARING PADS SHALL BE A MINIMUM 1/4" THICK AND COVER A MINIMUM OF 25 SQUARE INCHES. THE BEARING PADS SHALL CONFORM TO ODOT CMS SECTION 711.21 PREFORMED BEARING PADS.

III. BARRIER MATERIALS

ACCEPTABLE NOISE PANEL DESIGNS ARE LISTED ON SHEET 316 OF 524. FOR ABSORPTIVE BARRIER SEE SHEET 318. MATERIALS SHALL EITHER MEET THE MANUFACTURER'S REQUIREMENTS LISTED ON THEIR APPROVED DRAWINGS OR CMS REQUIREMENTS IF NOT LISTED ON MANUFACTURER'S APPROVED DRAWINGS.

IV. CONSTRUCTION METHODS

A. NOISE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS. JOINTS AND CONNECTIONS SHALL BE SECURED IN SUCH A MANNER AS TO BE STRUCTURALLY SOUND WITH NO VISIBLE OPENINGS FOR SOUND TRANSMISSION. NOISE PANEL ATTACHMENTS TO POSTS AND INSTALLATION METHODS SHALL BE STRUCTURALLY SOUND, GIVE ADEQUATE SUPPORT TO THE NOISE PANELS, AND BE SECURED TO THE POST OR ADEQUATELY BLOCKED BETWEEN THE POST'S FLANGES TO ELIMINATE MOVEMENT AT THE SUPPORT AND ELIMINATE ANY POSSIBLE VIBRATION.

EXCLUSIVE OF THE CONTRACTOR'S CHOICE OF NOISE BARRIER PANEL, THE TOP OF INSTALLED NOISE BARRIERS SHALL MATCH THE TOP OF WALL DESIGN ELEVATIONS, WITH NO VARIATION BETWEEN POSTS, UNLESS THE DESIGN PLANS REQUIRE AN ELEVATION CHANGE.

B. MARRED, CHIPPED, SCRATCHED, SPALLED, OR ANY OTHER DAMAGE DEEMED DETRIMENTAL TO THE NOISE BARRIERS BY THE ENGINEER SHALL BE REPLACED, AS APPROVED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

C. ALL EXCESS EXCAVATION SHALL BE DISPOSED OF IN A MANNER SATISFACTORY TO THE ENGINEER.

D. AFTER ERECTION OF THE NOISE BARRIER, THE DISTURBED AREA SHALL BE LEFT IN A FINISHED CONDITION AT THE DIRECTION OF THE ENGINEER AND A GROWTH OF GRASS ESTABLISHED, AT THE CONTRACTOR'S EXPENSE, IN ACCORDANCE WITH CMS ITEM 659.

E. TOLERANCES

1. POSTS (MEASURED AT TOP)

- A. VERTICAL ALIGNMENT SHALL BE WITHIN 0.05 INCH/FT. OF HEIGHT.
- B. POSTS SHALL BE SET WITHIN +/- 1/2 INCH OF THEIR SPECIFIED LOCATION.

2. NOISE BARRIERS

- A. VERTICAL ALIGNMENT SHALL BE WITHIN 0.05 INCH/FT. OF HEIGHT.

F. FOR NOISE BARRIERS THAT ARE BUILT ON TOP OF EARTH BERMS, THE BERMS SHALL BE CONSTRUCTED OF EARTHWORK FILL MATERIAL IN ACCORDANCE WITH ITEM 203 OF THE CMS.

G. INLET NO. 3E SHALL BE CONSTRUCTED AS PER THE DETAILS AND NOTES ON STANDARD CONSTRUCTION DRAWINGS 1-2.3, "CONCRETE BARRIER (TYPE D) INLET"

H. CONCRETE EPOXY SEALER WHERE NOISE BARRIERS ARE CONSTRUCTED ADJACENT TO BRIDGE PARAPET OR TYPE D CONCRETE BARRIERS AND THE NOISE BARRIER IS NOT CONSTRUCTED TO THE GROUND LINE, THE EXPOSED CONCRETE SURFACE SHALL BE COATED WITH A CONCRETE EPOXY SEALER OF A COLOR MATCHING THAT OF THE NOISE BARRIER. THE SEALER SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. A URETHANE TOP COAT SEALER SHALL ALSO BE APPLIED OVER THE CONCRETE AREAS COATED WITH EPOXY SEALER. THE URETHANE COATING SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

I. STAINLESS STEEL UNLESS OTHERWISE SPECIFIED, SHALL BE ASTM F593 AUSTENITIC ALLOY GROUPS 1, 2, OR 3, EXCEPT THE FREE-MACHINING GRADES 303 OR 303SE USED TO MAKE FASTENERS. ALL STAINLESS STEEL USED IN ODOT NOISE WALLS SHALL BE CAPABLE OF PASSING THE TEST FOR SUSCEPTIBILITY TO INTERGRANULAR CORROSION AS SPECIFIED IN PRACTICE E OF ASTM PRACTICES A 262.

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NOISE BARRIER NOTES

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V. ACCEPTANCE REQUIREMENTS

IN ADDITION TO CONFORMING WITH THE STRUCTURAL REQUIREMENTS AS SHOWN IN THE PLANS, IT IS ALSO NECESSARY TO COMPLY WITH THE FOLLOWING AESTHETIC REQUIREMENTS.

THE CONTRACTOR SHALL DELIVER TO THE JOB SITE ONE FULL SIZE NOISE PANEL, AND ONE FULL SIZE POST REPRESENTATIVE OF THE PRODUCT THE CONTRACTOR IS GOING TO SUPPLY. THE ENGINEER WILL EVALUATE WHETHER BOTH THE NOISE PANEL AND POST MEET ALL PLAN SPECIFIED FEDERAL COLOR STANDARD, TEXTURE, TRIM, AND/OR COATING REQUIREMENTS. TO FACILITATE THIS COMPARISON, THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A COPY OF "FEDERAL STANDARD 595B COLOR USED IN GOVERNMENT PROCUREMENT". IF EITHER THE NOISE PANEL OR POST DO NOT MEET THE PLAN REQUIREMENTS THE CONTRACTOR SHALL HAVE ANOTHER NOISE PANEL OR POST MANUFACTURED AND DELIVERED TO THE JOB SITE FOR APPROVAL BY THE ENGINEER. IF THE PLANS DO NOT SPECIFY A COLOR, TEXTURE, TRIM, OR COATING REQUIREMENT, IT WILL STILL BE NECESSARY TO DELIVER THE SAMPLE POST AND PANEL TO THE JOB SITE FOR APPROVAL, PRIOR TO THE PRODUCTION OF ANY ADDITIONAL NOISE BARRIERS OR POSTS.

THE SAMPLE POST AND PANEL WILL BECOME THE CONTROL POST AND PANEL WITH WHICH ALL SUBSEQUENT POSTS AND PANELS WILL BE COMPARED. THIS CONTROL POST AND PANEL SHALL BE DELIVERED TO, AND IF NECESSARY, MOVED TO DIFFERENT LOCATIONS TO FACILITATE COMPARISONS WITH THE REMAINING POSTS AND PANELS.

ANY DELIVERED AND/OR ERECTED POSTS AND PANELS WHICH DO NOT MATCH THE CONTROL POST AND PANEL OR DO NOT CONFORM WITH THE STRUCTURAL REQUIREMENTS AS SHOWN IN THE PLANS SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COSTS.

ALL NOISE BARRIER PANELS SHALL BE MANUFACTURED USING THE SAME METHOD OF CONSTRUCTION SO AS TO PRODUCE A UNIFORM PANEL FINISH.

VI. METHOD OF MEASUREMENT

NOISE BARRIER PLAN QUANTITIES ARE MEASURED IN SQUARE FEET OF ACCEPTABLE BARRIER USING A HEIGHT FROM BOTTOM OF WALL TO TOP OF WALL INCLUDING THE CAP AND A LENGTH FROM POST TO POST AS DETAILED IN THE PLANS. WHERE A NOISE BARRIER IS CONSTRUCTED BEHIND A CONCRETE PARAPET THE BOTTOM OF THE WALL SHALL BE DEFINED AS THE TOP OF THE PARAPET FOR MEASUREMENT PURPOSES.

FINAL PLAN QUANTITIES OF NOISE BARRIER IN SQUARE FEET SHALL NOT INCLUDE ANY ADDITION FOR NOISE BARRIER HEIGHTS GREATER THAN PLAN REQUIREMENTS. THE ADDITIONAL HEIGHTS OF NOISE BARRIER REQUIRED TO ACCOMMODATE THE CONTRACTOR'S SELECTED MANUFACTURED BARRIER MATERIALS OR POST SPACING EITHER GREATER OR LESS THAN PLAN POST SPACING SHALL NOT BE INCLUDED FOR PAYMENT. SQUARE FEET OF NOISE BARRIER CONSTRUCTED BELOW THE GROUND LINE SHALL ALSO NOT BE INCLUDED FOR PAYMENT.

THE COMPLETED AND ACCEPTED INLETS, WHETHER NEW, RECONSTRUCTED, OR ADJUSTED TO GRADE WILL BE MEASURED BY THE UNIT FOR EACH TYPE OF STRUCTURE AND CLASS OF WORK ITEMIZED.

VII. BASIS OF PAYMENT

NOISE BARRIERS, COMPLETED AND IN PLACE, AS DESCRIBED IN METHOD OF MEASUREMENT, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT. THIS PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, INCLUDING PANELS, PANELS WITH AN INTEGRAL CAP, POSTS, FOUNDATIONS, PROTECTIVE COATINGS, LABOR AND EQUIPMENT NECESSARY TO CONSTRUCT THE NOISE BARRIER. ALL EXCAVATION, BACKFILL WITH SUITABLE MATERIAL AND ANY ADJUSTMENT IN EARTHWORK QUANTITIES REQUIRED DUE TO THE CONTRACTOR'S SELECTED NOISE PANEL, SEALING CONCRETE WITH EPOXY AND URETHANE, AGGREGATE DRAINS, COMPACTION, DISPOSAL OF SURPLUS OR UNSUITABLE MATERIALS, SEEDING, FERTILIZING AND MULCHING OF DISTURBED AREAS SHALL ALSO BE INCLUDED FOR PAYMENT.

SEE SUMMARY SHEET 314

ABBREVIATIONS

- AITC AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWPA AMERICAN WOOD PRESERVERS' ASSOCIATION
BIA BRICK INSTITUTE OF AMERICA
CCA CROMATED COPPER ARSENATE
CMS CONSTRUCTION AND MATERIALS SPECIFICATIONS OF ODOT
ILI INDIANA LIMESTONE INSTITUTE
LPG VOLATILE PETROLEUM SOLVENT (LIQUID PROPANE GAS)
SSPC STRUCTURAL STEEL PAINTING COUNCIL
VPS VOLUNTARY PRODUCT STANDARD

ITEM 607 - FENCE MISC., TEMPORARY FENCE

THIS ITEM SHALL BE USED WHEN THE TIME BETWEEN THE REMOVAL OF THE EXISTING FENCE AND THE INSTALLATION OF THE PROPOSED FENCE OR NOISE BARRIER EXCEEDS ONE DAY. THIS FENCE SHALL BE INSTALLED IMMEDIATELY AFTER THE EXISTING FENCE IS REMOVED. THE TEMPORARY FENCE SHALL BE THE WOOD SNOW FENCE, PLASTIC NYLON CONSTRUCTION FENCE OR EXISTING FENCE FABRIC VARIETY MOUNTED ON DRIVEN POSTS. FOR EACH NOISE BARRIER SECTION, THE EXISTING FENCE SHALL NOT BE REMOVED EARLIER THAN 3 MONTHS PRIOR TO COMPLETION OF THE NOISE BARRIER PANELS. ALL COSTS ASSOCIATED WITH PROVIDING, INSTALLING, MAINTAINING AND REMOVING THE TEMPORARY FENCE SHALL BE INCLUDED UNDER THIS ITEM.

THE FOLLOWING ESTIMATED QUANTITY IS CARRIED TO THE GENERAL SUMMARY:

ITEM 607 - FENCE MISC., TEMPORARY FENCE 18,188 FT

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

THE CONTRACTOR SHALL LAYOUT AND STAKE EACH NOISE BARRIER SITE IN THE FIELD AND VERIFY THE DIMENSIONS OF THE POST AND PANELS PRIOR TO ORDERING FABRICATION. COST FOR THIS WORK TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

SOIL INFORMATION

THE BORINGS WERE TAKEN AT THE PROPOSED NOISE BARRIER LOCATIONS. THE INFORMATION CAN BE FOUND IN THE NOISE BARRIER SOIL INFORMATION CHART INCLUDED IN THE PLANS.

ITEM 201 - CLEARING AND GRUBBING

THIS LUMP SUM ITEM SHALL BE USED TO CLEAR BRUSH AND THE NEAT TRIMMING AND/OR REMOVAL OF TREES IN CONFLICT WITH THE PROPOSED NOISE BARRIER LOCATIONS. TREES SCHEDULED TO BE TRIMMED OR REMOVED SHALL BE MARKED AND APPROVED BY THE PROJECT ENGINEER PRIOR TO THE WORK BEING PERFORMED. CLEARING OF TREES SHALL BE KEPT TO A MINIMUM. FOR CLARIFICATION, TREES SHALL BE INTERPRETED AS ANY GROWTH WITH A TRUNK DIAMETER OF AT LEAST 3 INCHES.

IN THE AREA BETWEEN THE BACK OF THE NOISE BARRIER AND EXISTING FENCE, WHERE THE FENCE IS TO BE REMOVED, AND THE ADJOINING PROPERTY IS GRASSED RESIDENTIAL, THE AREA SHALL BE FINISHED TO A STATE COMPARABLE TO THE ADJOINING PROPERTY.

PROTECTION OF EXISTING SEWERS AND CULVERTS

BEFORE AUGURING POST HOLES OR EXCAVATING FOR SPREAD FOOTERS, THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING SEWERS AND CULVERTS.

SHOULD A SEWER OR CULVERT BE DAMAGED BY THE CONTRACTOR'S NEGLIGENCE IN THE ABOVE MENTIONED WORK, THE DAMAGED SECTIONS OF THE SEWER OR CULVERT SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

ITEM SPECIAL - NOISE BARRIER MISC: NOISE WALL POST AND FOUNDATION

IF, AFTER THE SHOP DRAWINGS HAVE BEEN APPROVED, AND THE AVOIDANCE OF UTILITIES REQUIRES THAT A CLOSER POST SPACING BE USED, PAYMENT WILL BE MADE FOR THE ADDITIONAL POSTS AND FOUNDATIONS REQUIRED, ON A PER EACH BASIS. IF PANEL WIDTHS, WITHIN THESE CLOSER POST SPACINGS ARE NOT A STANDARD WIDTH AND A PANEL IS TO BE MADE BY CUTTING A STANDARD PANEL TO SIZE, PAYMENT FOR THIS ADDITIONAL WORK SHALL INCLUDE THE COST FOR THE ADDITIONAL POST, CUTTING THE PANELS TO SIZE, AND FOUNDATION. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO PERFORM THIS WORK:

ITEM SPECIAL - NOISE BARRIER MISC: NOISE WALL POST AND FOUNDATION 1159 EACH

NOISE BARRIER FOUNDATIONS IN WEAK SOIL

IN AREAS WHERE POOR SOIL CONDITIONS EXIST THAT WERE NOT SHOWN AS SUCH IN THE BORINGS, AND EXTRA 3 FEET OF FOUNDATION DEPTH SHALL BE ADDED.

A POOR SOIL CONDITION SHALL BE CONSIDERED TO EXIST WHEN OVER ONE-THIRD (1/3) OF THE EXCAVATED DEPTH SHOWS AN UNEXPECTED WEAK SOIL TYPE. THIS SHALL BE DETERMINED BY THE PROJECT ENGINEER.

THE REINFORCEMENT FOR THE 3 FEET OF EXTENDED FOUNDATION SHALL BE DEVELOPED BY USING A MINIMUM 2 FEET LAP SPLICE WITHIN THE CAGE TO ATTACH THE EIGHT (8) EXTRA BARS. NO EXTRA SPIRAL TIES WILL BE NECESSARY. PAYMENT FOR THE EXTRA REINFORCING STEEL, CONCRETE AND ALL LABOR NECESSARY TO PERFORM THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR EACH ITEM SPECIAL - NOISE BARRIER MISC.: FOUNDATION EXTENSION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY AND IS TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL - NOISE BARRIER MISC.: FOUNDATION EXTENSION 58 EACH

WALL MATERIAL AND COLOR

THE CONTRACTOR MUST MAINTAIN UNIFORMITY OF WALL TYPE, TEXTURE, JOINTS, AND COLOR. THE TONGUE AND GROOVE JOINTS OF NOISE BARRIER PANELS BETWEEN ADJOINING POSTS MUST BE MAINTAINED AT CONSTANT ELEVATIONS. ANY JOINT THAT IS OFFSET FROM THE JOINT IN THE ADJACENT PANEL SHALL BE ADJUSTED IN THE FIELD TO PROVIDE AN UNINTERRUPTED JOINT LINE BETWEEN ADJACENT PANELS. THE POSTS USED FOR THIS PROJECT SHALL BE CONCRETE POSTS OR PRESTRESSED CONCRETE POSTS AS SPECIFIED IN THE "NOISE BARRIER DETAILS". THE PANELS SHALL BE ATTACHED TO THE POSTS AS PER MANUFACTURERS SPECIFICATIONS.

THE WALLS SHALL BE COLORED AS PER THE FOLLOWING REQUIREMENTS:

FEDERAL COLOR # 595B-20109 (RED BRICK)

THE WALL ICONS, POSTS, POST CAPS AND PANEL CAPS SHALL BE COLORED AS PER THE FOLLOWING REQUIREMENTS:

FEDERAL COLOR # 595B-27722 (BUFF)

THE PANELS SHALL BE TEXTURED ON BOTH SIDES WITH A BRICK RELIEF PATTERN AS SHOWN ON SHEET 318.

RESTORATION OF WORK AREA

THIS NOTE SHALL SUPERSEDE THE REQUIREMENTS OF THE NOTE FOUND ON THE OHIO DEPARTMENT OF TRANSPORTATION'S NOISE BARRIER DETAILS SECTION IV, NOTE F. SHEET 2 OF 9. THIS NOTE APPLIES TO AREAS LOCATED ON THE FREEWAY SIDE OF THE NOISE BARRIERS. AREAS ON THE RESIDENTIAL SIDE OF THE NOISE BARRIERS SHALL BE RESTORED AS PER THE ITEM 201 - CLEARING AND GRUBBING NOTE. UPON COMPLETION OF NOISE BARRIER INSTALLATION, THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION. RESTORATION SHALL INCLUDE SEEDING AND MULCHING AS DEFINED IN CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 659 USING A CROWN VETCH TYPE SEED MIXTURE AS DEFINED IN SECTION 659.09. THE RESTRICTION FROM SOWING CROWN VETCH DURING THE MONTHS OF SEPTEMBER AND OCTOBER IS WAIVED, BUT ALL OTHER RESTRICTIONS AND REQUIREMENTS OF 659.09 AND 659 SHALL APPLY.

PAYMENT FOR ALL EQUIPMENT, LABOR AND MATERIALS, INCLUDING COMMERCIAL FERTILIZER, AGRICULTURAL LIMING, SEEDING AND MULCHING, AND WATER, NECESSARY TO COMPLETE THE RESTORATION OF ALL DISTURBED AREAS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM SPECIAL - NOISE BARRIER.

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NOISE BARRIER NOTES

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ITEM SPECIAL - NOISE BARRIER (ABSORPTIVE). OVER 14± TO 20± HEIGHT

THESE ITEMS SHALL BE AS SHOWN IN THE DETAILS ON SHEETS 315 THRU 318 OF THESE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING DETAILED PLANS INCORPORATING THE NOISE BARRIER MATERIALS HE PROPOSES TO USE.

A TRENCH OR FAN NOISE BARRIER WILL NOT BE ACCEPTABLE FOR THIS PROJECT AT ANY OF THE LOCATIONS.

TYPICAL SECTIONS ARE SHOWN FOR NOISE BARRIERS MOUNTED WITHIN THE FLANGES OF THE POSTS.

CONCRETE POSTS SHALL BE USED.

ABSORPTIVE CONCRETE PANELS WITH A BRICK RELIEF SHALL BE USED AS DETAILED ON SHEET 318.

THE ABSORPTIVE SIDE SHALL FACE THE HIGHWAY.

PLAN QUANTITIES AND DETAILS HAVE BEEN DEVELOPED FOR 12 & 16-FOOT PANEL WIDTHS. OTHER PANEL WIDTHS ARE ACCEPTABLE TO AVOID UNDERGROUND FEATURES AND TO MEET THE OVERALL WALL LENGTHS BETWEEN BENDS ONLY. PANEL SPACING ON A LONGITUDINAL 2:1 SLOPE SHALL BE A MAXIMUM 16- FEET.

CLIP ANGLES SHALL BE USED FOR ALL POSTS AND PANEL TYPE WALLS TO HOLD THE BOTTOM WALL PANEL LEVEL IN ORDER TO MAINTAIN A LEVEL WALL. THESE ANGLES SHALL MEET THE MANUFACTURER'S SPECIFICATIONS DEPENDING ON THE NOISE WALL MATERIAL TYPE.

HORIZONTAL LINES BETWEEN PANELS SHALL MATCH, EXCEPT AT 90-DEGREE ANGLE BREAKS. MISMATCH OF LINES IS ACCEPTABLE IN THE TOP PANEL WHERE THERE IS AN ELEVATION CHANGE. MISMATCH OF LINES IS ACCEPTABLE AT LONGITUDINAL DISTANCES OF 500 FEET (MAX) IN ORDER TO MINIMIZE EXCESS WALL AREA.

THE CONTRACTOR SHALL BE PAID FOR 107,760 S.F. OF NOISE BARRIER OVER 14 FEET TO 20± HEIGHT. ANY ADDITIONAL SQUARE FEET SHALL BE AT THE CONTRACTOR'S EXPENSE EXCEPT WHEN THE EXISTING GROUND LINE ALONG THE WALL, AS FIELD MEASURED IS LOWER THAN WHAT IS SHOWN IN THE PLANS BY AN AMOUNT REQUIRING EQUIVALENT TO THE PROPOSED MEDIAN THEORETICAL TOP OF WALL.

THE CALCULATED NOISE WALL AREA SHOWN IN THE PLANS IS BASED UPON A 6-INCH INCREMENTAL PANEL HEIGHT. IF THE PANELS SUPPLIED HAVE GREATER MINIMUM INCREMENTS AND THEREFORE EXTEND ABOVE THE TOP OF WALL ELEVATION OR BELOW THE BOTTOM OF WALL ELEVATION, AS SHOWN IN THE PLANS, THE ADDITIONAL WALL AREA WILL NOT BE INCLUDED IN THE MEASURED AREA FOR PAYMENT.

ITEM SPECIAL - NOISE BARRIER (ABSORPTIVE). OVER 14± TO 20± HEIGHT (CONT')

PRIOR TO THE CREATION OF THE SHOP DRAWINGS, THE CONTRACTOR SHALL PERFORM A FIELD SURVEY, UTILITY LOCATIONS SHALL BE INCLUDED IN THIS SURVEY BUT SHALL BE PERFORMED BY THE OWNER OF THE UTILITY. THIS INFORMATION SHALL BE SHOWN ON THE SHOP DRAWINGS AND ALL FOUNDATIONS MOVED TO AVOID ANY UNDERGROUND FEATURES.

IF ADDITIONAL POSTS AND FOUNDATIONS NEED TO BE ADDED TO AVOID HITTING AN UNDERGROUND FEATURE, THE COST FOR THE ADDITIONAL FOUNDATIONS, POSTS, AND BASE PLATES (IF USED) SHALL BE INCLUDED UNDER ITEM SPECIAL - NOISE BARRIER MISC.: NOISE BARRIER POST AND FOUNDATION. SEE NOTE FOR FURTHER INFORMATION.

THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT AND APPROVED BY THE PROJECT ENGINEER.

IN ORDER TO ASSURE POSITIVE DRAINAGE UNDER THE NOISE BARRIER, A 6 INCH LAYER OF #8 OR #57 STONE SHALL BE PLACED CONTINUOUSLY UNDER THE NOISE WALL PANELS. THE WIDTH OF THE LAYER SHALL BE AT LEAST 12 INCHES. PAYMENT FOR ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PERFORM THIS WORK SHALL BE INCLUDED UNDER ITEM SPECIAL - NOISE BARRIER.

ESTIMATED NOISE WALL QUANTITIES				
ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION
601		458	CY	DUMPED ROCK FILL, TYPE D
604		382	EACH	PRECAST REINFORCED CONCRETE OUTLET
605		3820	FT	6" UNCLASSIFIED PIPE UNDERDRAINS
607		18188	FT	FENCE MISC., TEMPORARY FENCE
SPECIAL		162568	SQ FT	SPECIAL - NOISE BARRIER (ABSORPTIVE), OVER 10' TO 14' HEIGHT
SPECIAL		107760	SQ FT	SPECIAL - NOISE BARRIER (ABSORPTIVE), OVER 14' TO 20' HEIGHT
SPECIAL		1159	EACH	SPECIAL - NOISE BARRIER MISC.: NOISE WALL POST AND FOUNDATION
SPECIAL		58	EACH	SPECIAL - NOISE BARRIER MISC.: FOUNDATION EXTENSION

QUANTITIES CARRIED TO GENERAL SUMMARY

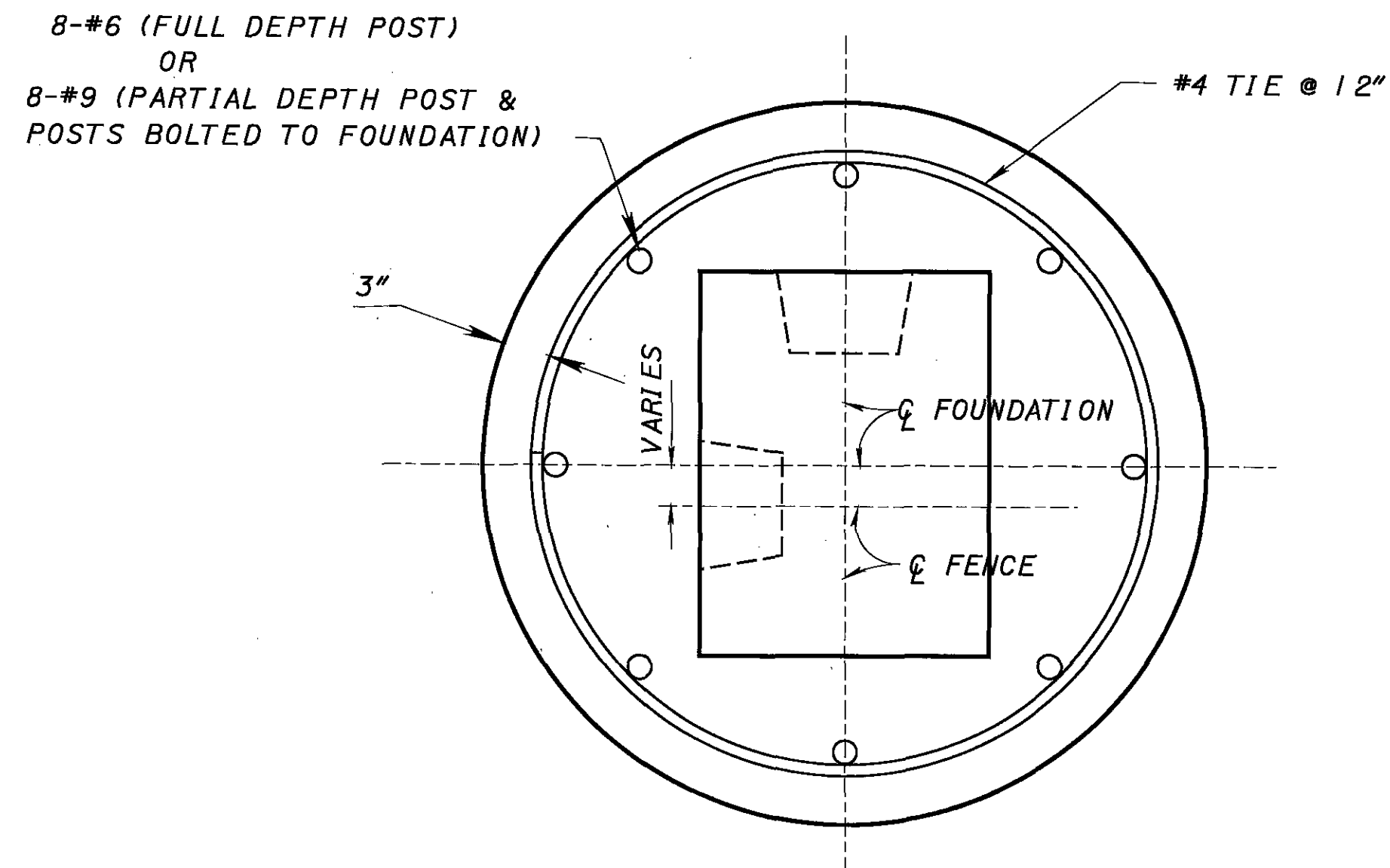
APPROVED ABSORPTIVE BARRIER SUPPLIERS

SUPPLIERS	DRAWINGS & NOTES	VARIABLES	COLOR TEXTURE PATTERN BRICK STYLE
<p>FADDIS CONCRETE PRODUCTS 3515 Kings Hwy. Downingtown, PA 19335 Telephone: (800) 777-7973 or (610) 269-4685 Fax: 1-215-873-8431</p>	<p>"Faddis Concrete Standard and Sound Absorptive Ground Mounted Sound Barriers for Ohio D.O.T." 2003.203.009 (A thru C) - Sheets 1 thru 3, Approved August 10, 2004</p>		
<p>DURISOL INC. 67 Frid Street Hamilton, Ontario Canada, L8P 4M3 Telephone: (905) 521-0999 Fax: 1-905-521-8658 E-mail: edwards@durisol.com</p>	<p>Durisol Noise Barrier Wall System (Sound Absorptive) Noise Barrier Panel Details - OHDNBP (7-24)A Drawings: OH10-A1, OH10A2, & OH10-A3 (DATED 05-02-02) Sound Barriers for Ohio D.O.T.</p>		

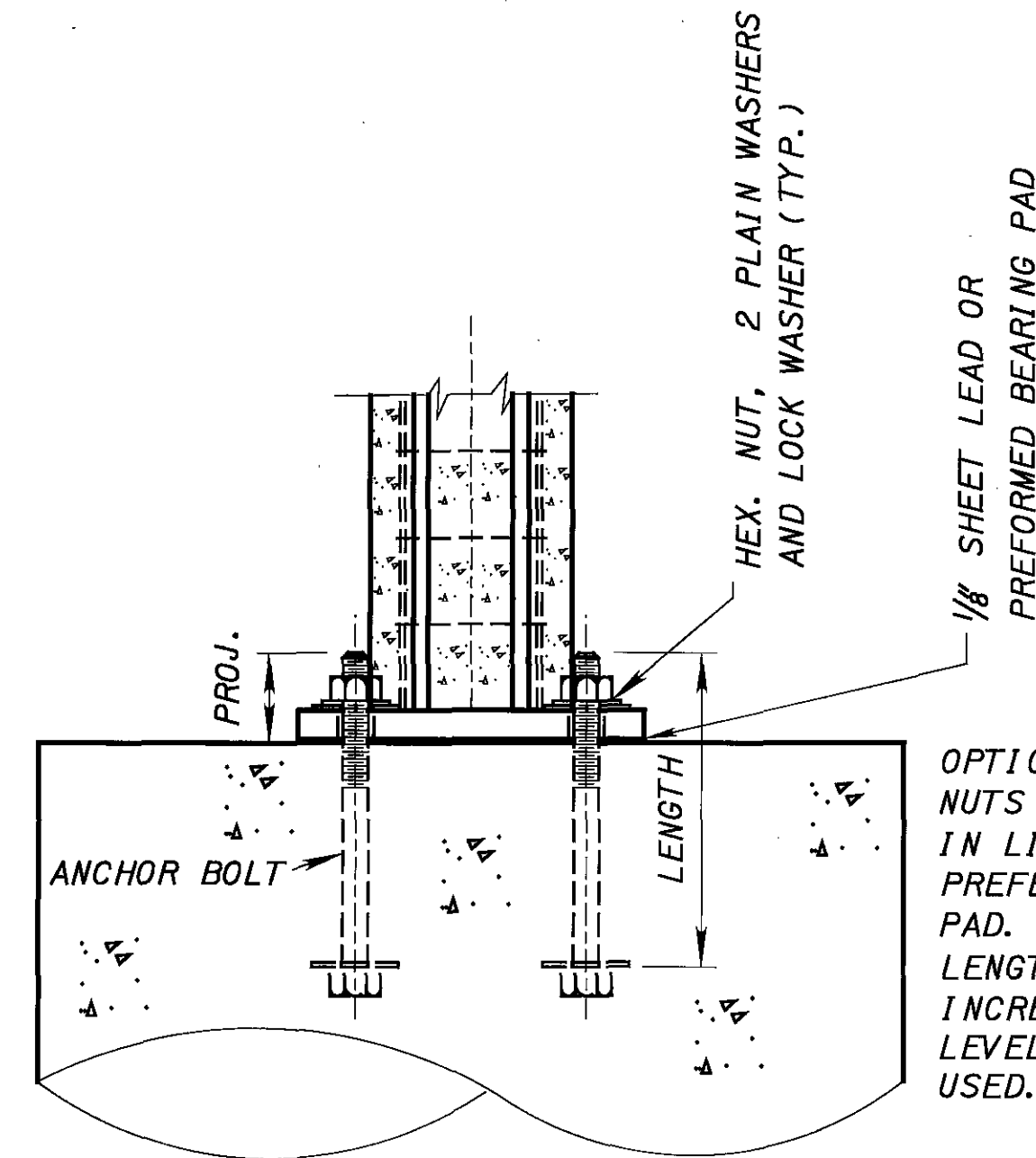
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CONCRETE

CONCRETE

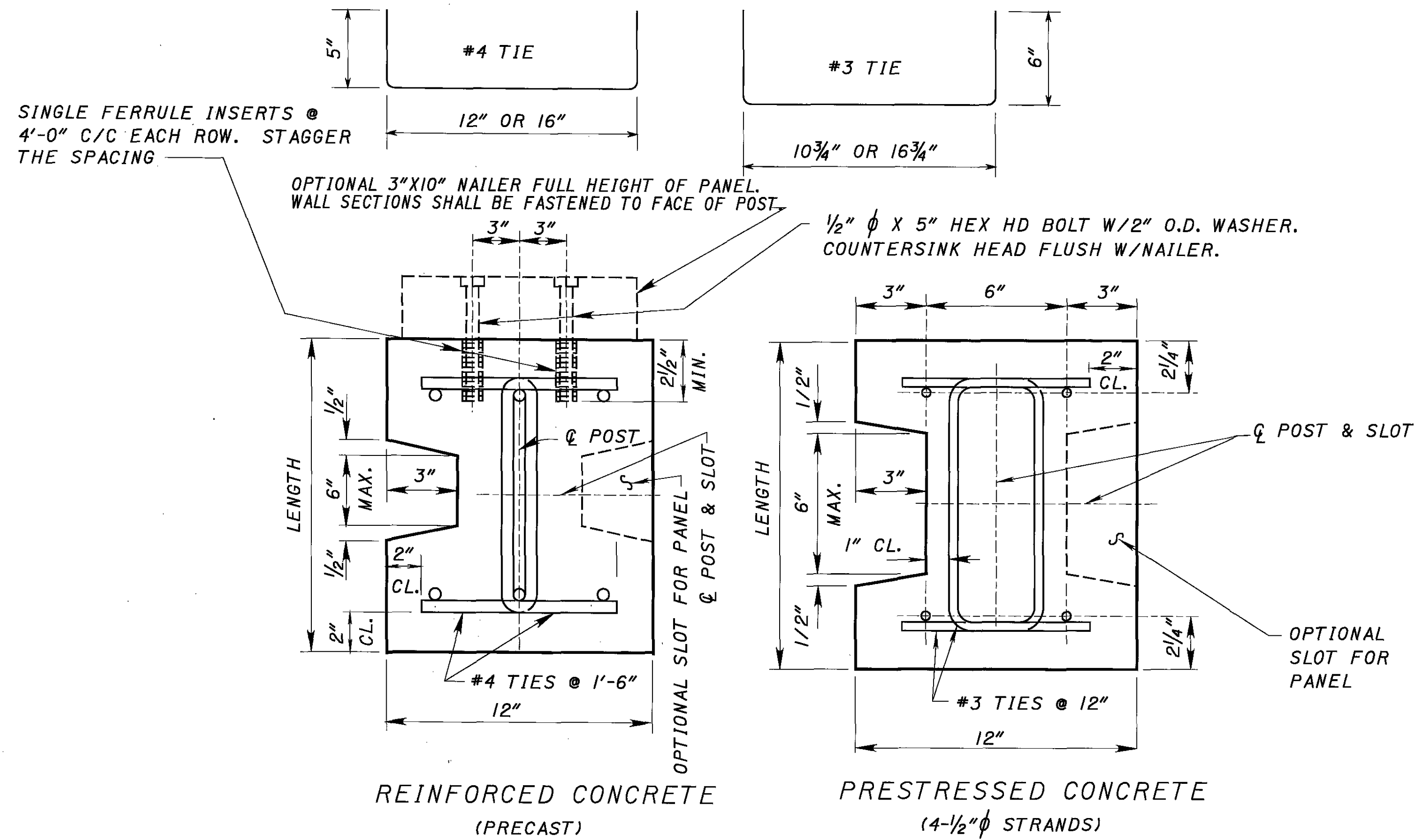


TYPICAL DRILLED SHAFT CROSS-SECTION



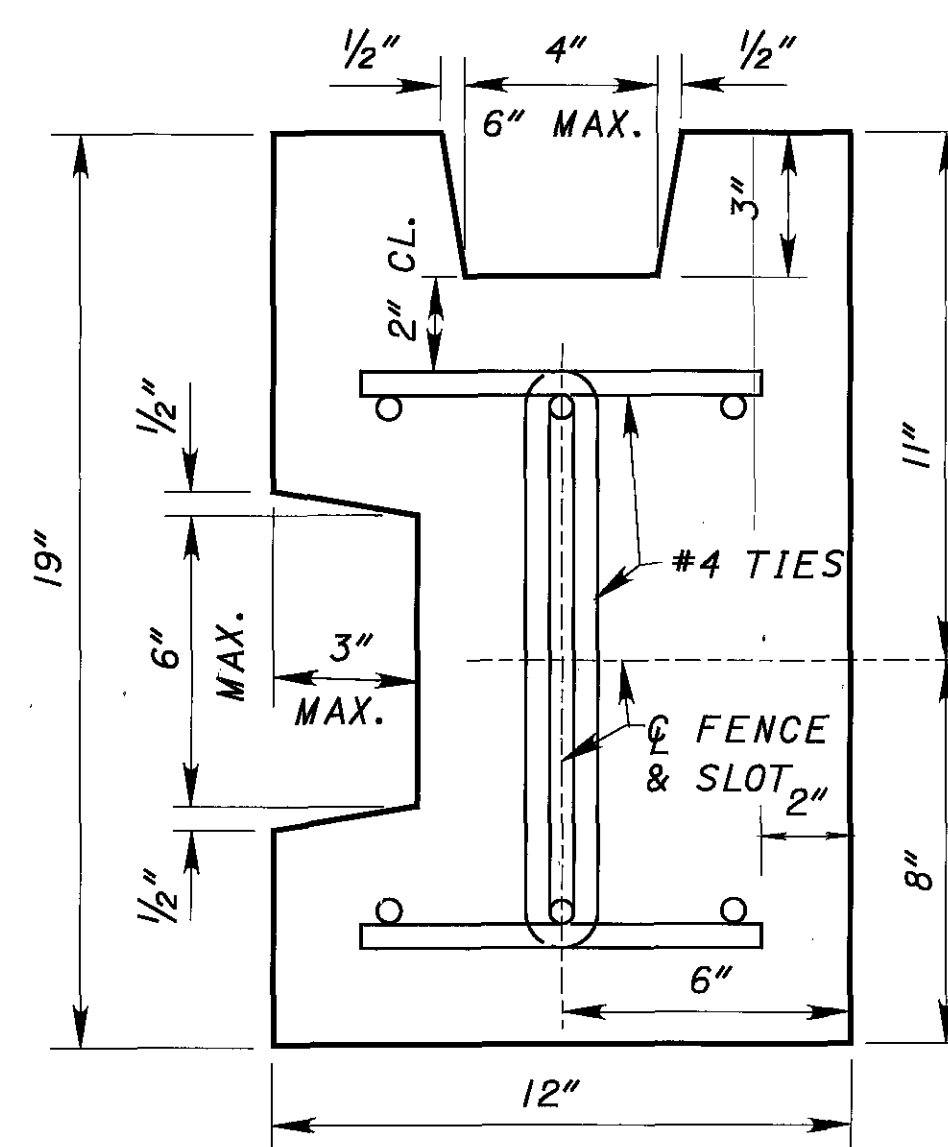
PARTIAL ELEVATION A-A
CONCRETE POST

OPTIONAL LEVELING NUTS MAY BE USED IN LIEU OF PREFERRED BEARING PAD. ANCHOR BOLT LENGTH SHALL BE INCREASED IF LEVELING NUTS ARE USED.

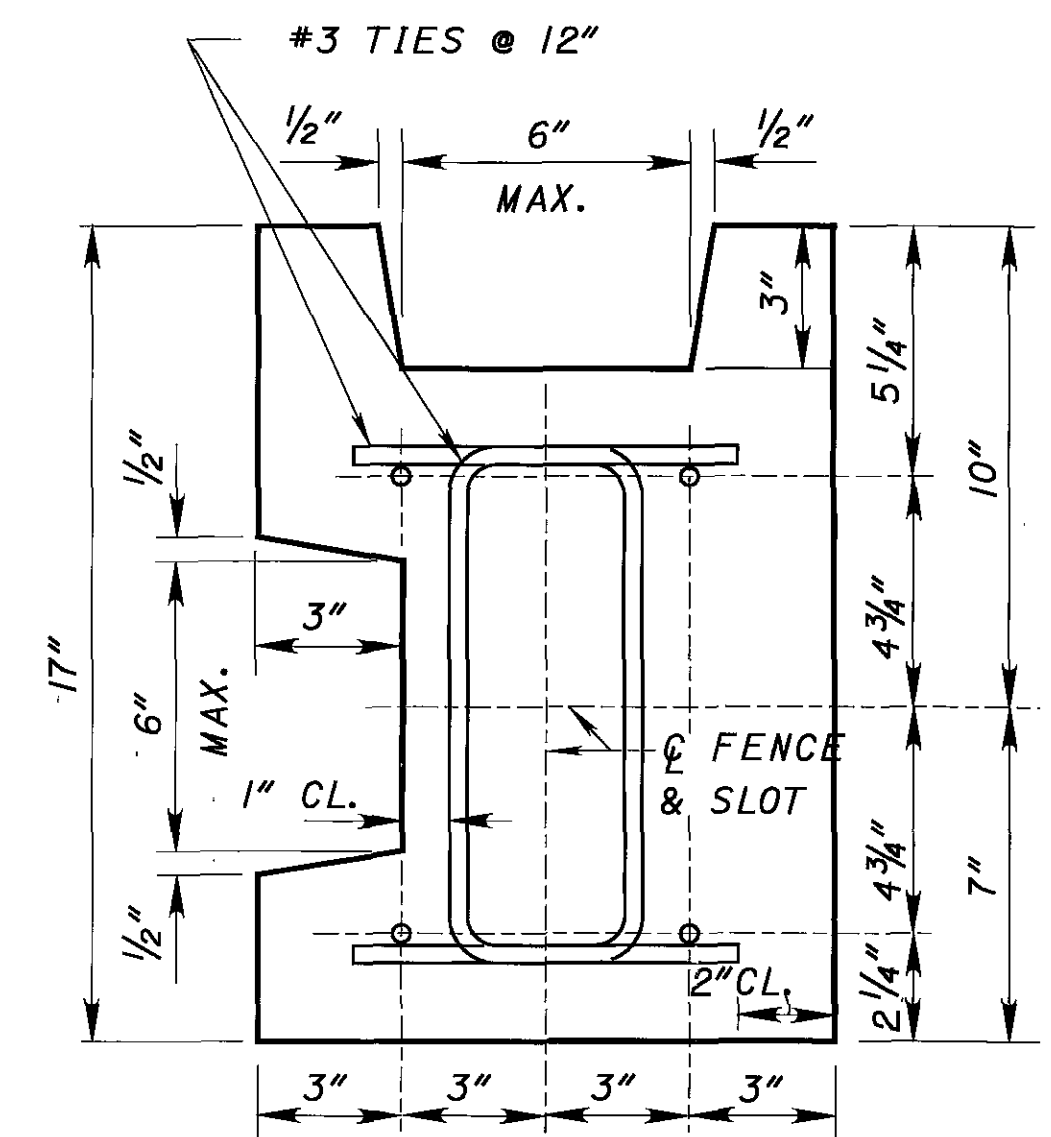


REINFORCED CONCRETE
(PRECAST)

PRESTRESSED CONCRETE
(4-1/2" ϕ STRANDS)



REINFORCED CONCRETE
CORNER POST

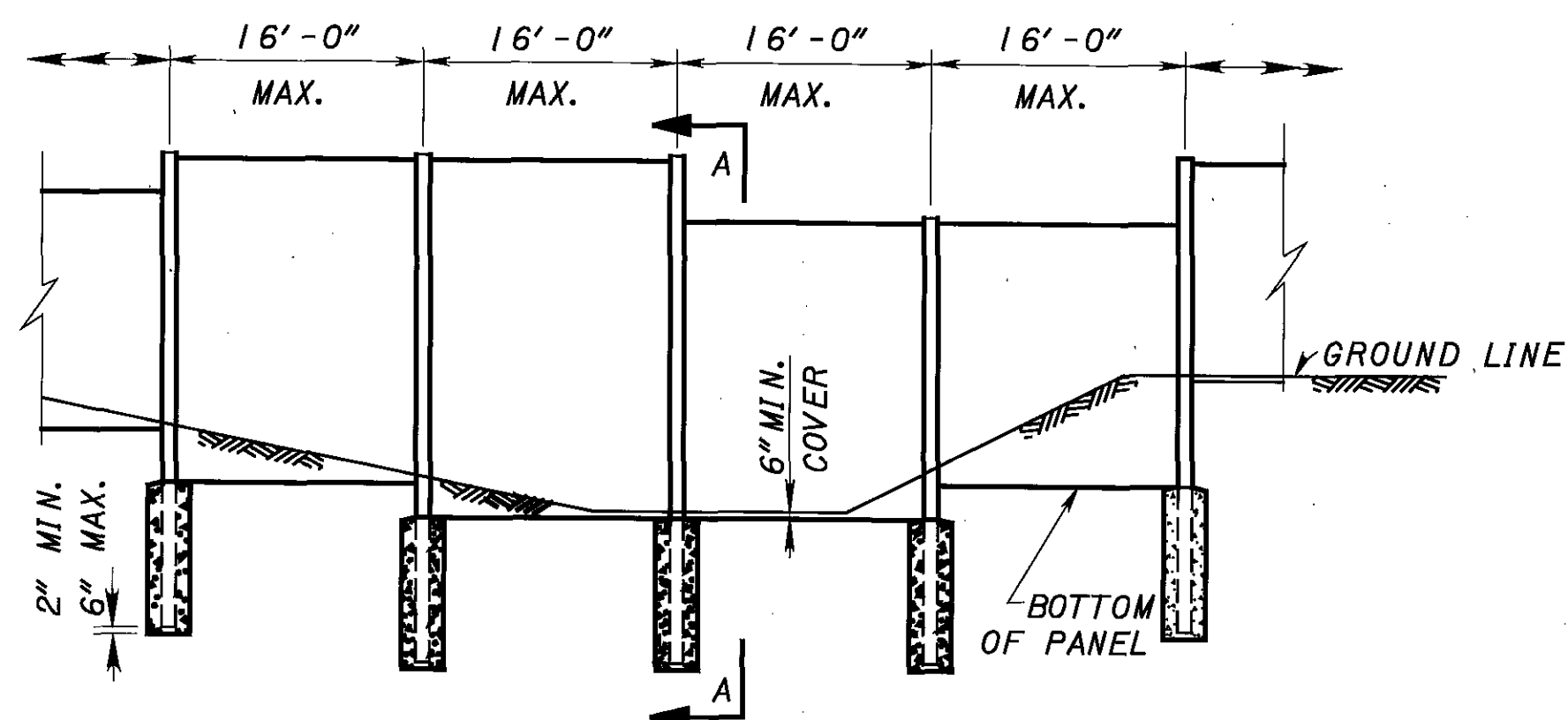


PRESTRESSED CONCRETE
CORNER POST

LINE POST DETAILS

NOTE: FOR POST SIZES AND CONCRETE POST REINFORCEMENT, SEE NOISE BARRIER TABLE ON SHEET 6 OF 7.

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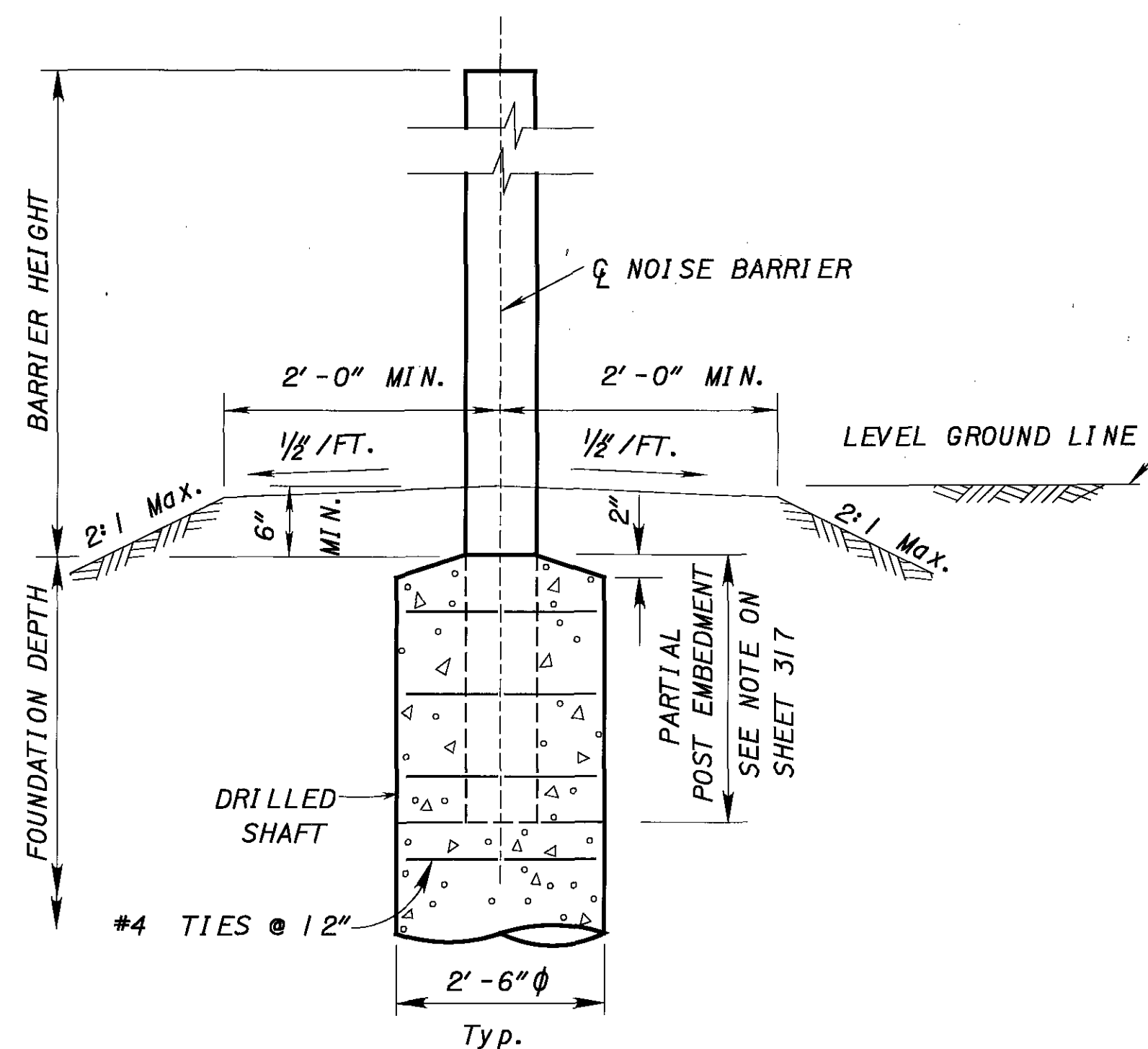
FRONT ELEVATION
(POST AND PANEL NOISE BARRIER)

NOTE: MAXIMUM STEP IN TOP ELEVATION WILL BE 12 INCHES FOR AESTHETIC PURPOSES.

NOTE: ALL NOISE WALL DESIGNS WILL BE REQUIRED TO HAVE A CAP ON TOP OF THE WALL FOR AESTHETIC PURPOSES.

NOTE: A NOISE WALL ALIGNMENT WHICH ENCOUNTERS AN OBSTRUCTION IN ITS PATH WILL BE REQUIRED TO VEER 30° FROM ITS ORIGINAL ALIGNMENT TO AVOID THE OBSTRUCTION. IT SHOULD CONTINUE AT LEAST 10 FEET PARALLEL TO THE ORIGINAL ALIGNMENT AND THEN RETURN 30° BACK TO THE ORIGINAL ALIGNMENT AFTER HAVING CLEARED THE OBSTRUCTION. (I.E. LIGHT POSTS, SIGN SUPPORTS ECT.)

NOTE: FOR DRAINAGE INLETS BELOW TYPE D CONCRETE BARRIER CONSULT THE STANDARD CONSTRUCTION DRAWING I-2.3 CONCRETE BARRIER (TYPE D) INLET.



IF A FRONT MOUNTED NOISE WALL PANEL IS REQUIRED TO BE CUT OR PHYSICALLY ALTERED IN SOME OTHER MANNER THAT WILL STRUCTURALLY DAMAGE THE MANUFACTURER'S STANDARD PANEL SECTION, THE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

THE NOISE WALL PANELS SHALL EXTEND DOWN TO THE TOP OF THE POST FOOTING OR BE EMBEDDED A MINIMUM 6 INCHES BELOW THE FINISHED GRADELINE. NO ADDITIONAL PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR ANY ADDITIONAL MATERIALS OR LABOR REQUIRED TO CONSTRUCT THE OPTION.

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CALCULATED
A/G

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NOISE BARRIER DETAILS

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NOISE BARRIER TABLE (POST AND PANEL CONSTRUCTION)

BARRIER HEIGHT (FEET)	POST SPACING (FEET)			PANEL GROUP	POST SIZE	SOIL TYPE	FOUNDATION DEPTH (FEET)							
	8 & Under	Over 8 Thru 12	Over 12 Thru 16				GRANULAR SOIL							
							N (2)	2-3	4-9	10-19	20-29	30-49	50-60	
Greater Than 12 Thru 16	12 and Less	8 and Less	8 and Less	I	Reinforced Concrete	12"x16"	W/6 #4	LEVEL	8.0	8.0	6.5	6.0	5.5	5.0
					Prestressed Concrete	12"x14"	W/4 strands	5:1	8.0	8.0	7.0	6.5	6.0	5.5
					4:1	8.5	8.5	7.0	7.0	6.0	6.0			
					3:1	9.0	8.5	7.5	7.0	6.5	6.5			
		Greater Than 10 Thru 14	10 and Less	8 and Less	I	LEVEL	9.5	9.5	8.0	7.5	7.5	6.5		
						5:1	10.5	10.0	8.5	8.0	8.0	7.0		
						4:1	11.0	10.5	9.0	8.5	8.0	7.5		
						3:1	11.5	11.0	9.5	9.0	8.5	7.5		
	Greater Than 14 Thru 20	Greater Than 12 Thru 16	Greater Than 12 Thru 16	III	LEVEL	11.5	11.0	10.0	9.5	9.0	8.0			
					5:1	12.5	12.0	10.0	10.0	8.5	8.5			
					4:1	13.0	12.0	10.5	10.5	9.0	8.5			
					3:1	13.5	13.0	11.0	10.5	9.5	9.0			
		Greater Than 16 Thru 20	Greater Than 16 Thru 20	Greater Than 16 Thru 20	IV	LEVEL	15.5	14.0	12.0	11.0	10.5	10.5		
						5:1	19.0	16.0	13.5	12.5	11.0	11.0		
						4:1	20.5	17.5	14.0	13.0	12.0	11.5		
						3:1	24.0	19.5	15.0	14.0	12.5	12.0		
Greater Than 16 Thru 20	Greater Than 16 Thru 20	Greater Than 16 Thru 20	IV	2:1	*	30.0	19.0	16.0	14.0	13.0				

- (1) TRANSVERSE GRADE SLOPE WILL BE AS DESIGNATED IN THE PLANS.
- (2) N = SUMMATION SP TEST VALUES AT 12 INCHES AND 18 INCHES.
- (3) ESTIMATED FRICTION ANGLE BASED ON N VALUE

NOISE BARRIER TABLE (POST AND PANEL CONSTRUCTION)

BARRIER HEIGHT (FEET)	POST SPACING (FEET)			PANEL GROUP	POST SIZE	SOIL TYPE	FOUNDATION DEPTH (FEET)						
	8 & Under	Over 8 Thru 12	Over 12 Thru 16				COHESIVE SOIL						
							N (2)	0-1	2-3	4-8	9-15	16-32	
Greater Than 12 Thru 16	12 and Less	8 and Less	8 and Less	I	Reinforced Concrete	12"x16"	W/6 #4	LEVEL	12.5	12.5	7.0	5.0	4.0
					Prestressed Concrete	12"x14"	W/4 strands	5:1	13.5	13.5	7.5	5.0	4.0
					4:1	13.5	13.5	7.5	5.0	4.0			
					3:1	14.0	14.0	8.0	5.0	4.0			
		Greater Than 10 Thru 14	10 and Less	8 and Less	I	LEVEL	14.5	15.0	8.0	5.5	4.0		
						5:1	17.0	17.0	9.5	7.5	5.0		
						4:1	18.5	18.5	10.0	8.0	5.0		
						3:1	19.0	18.5	10.5	8.0	5.0		
	Greater Than 14 Thru 20	Greater Than 12 Thru 16	Greater Than 12 Thru 16	III	LEVEL	19.5	19.0	10.5	8.0	5.0			
					5:1	20.0	20.0	11.0	8.5	5.5			
					4:1	21.5	21.0	13.5	9.5	6.5			
					3:1	23.0	23.0	14.5	10.0	7.0			
		Greater Than 16 Thru 20	Greater Than 16 Thru 20	Greater Than 16 Thru 20	IV	LEVEL	23.5	23.0	14.5	10.0	7.0		
						5:1	25.0	24.0	15.0	10.5	7.0		
						4:1	25.5	24.5	16.0	11.0	7.0		
						3:1	LEVEL	*	*	19.0	13.0	9.0	
Greater Than 16 Thru 20	Greater Than 16 Thru 20	Greater Than 16 Thru 20	IV	5:1	*	*	20.5	14.0	9.0				
				4:1	*	*	21.0	14.5	9.0				
				3:1	*	*	22.0	15.0	9.5				
				2:1	*	*	24.0	15.0	10.0				

NOTES:

NOISE BARRIER HEIGHT IS THE DISTANCE FROM THE TOP OF DRILLED SHAFT TO THE TOP OF THE HIGHER BARRIER WALL AT THAT POST, ROUNDED TO THE NEAREST FOOT.

ALL POSTS AND PANEL NOISE BARRIERS SHALL UTILIZE DRILLED SHAFT FOUNDATIONS UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER.

IF WITHIN THE REQUIRED LENGTH OF THE FOUNDATION, BEDROCK IS ENCOUNTERED, THE DRILLED SHAFT FOUNDATION MAY BE TERMINATED AFTER 3 FEET OF PENETRATION INTO HARD BEDROCK OR 6 FEET OF PENETRATION INTO SOFT BEDROCK.

CONCRETE POSTS SHALL BE EMBEDDED NOT LESS THAN 3'-0".

* - NOT AN ACCEPTABLE DESIGN - SELECT OR INSTALL AT A LOWER SPACING TO MEET THE HEIGHT REQUIREMENTS OF THE WALL.

LEGEND: Δ Core dimensions only
 (***) = Top of foundation.

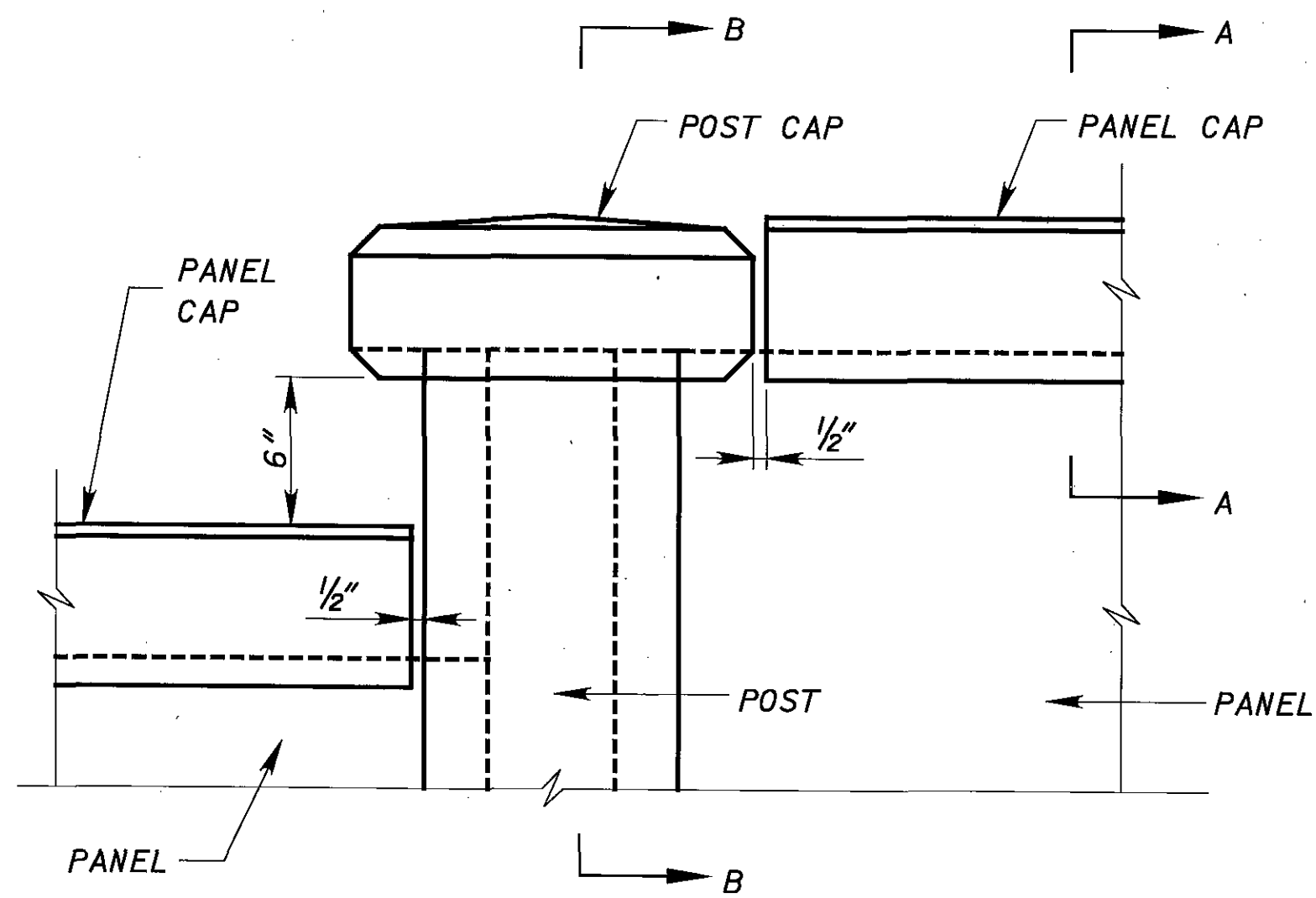
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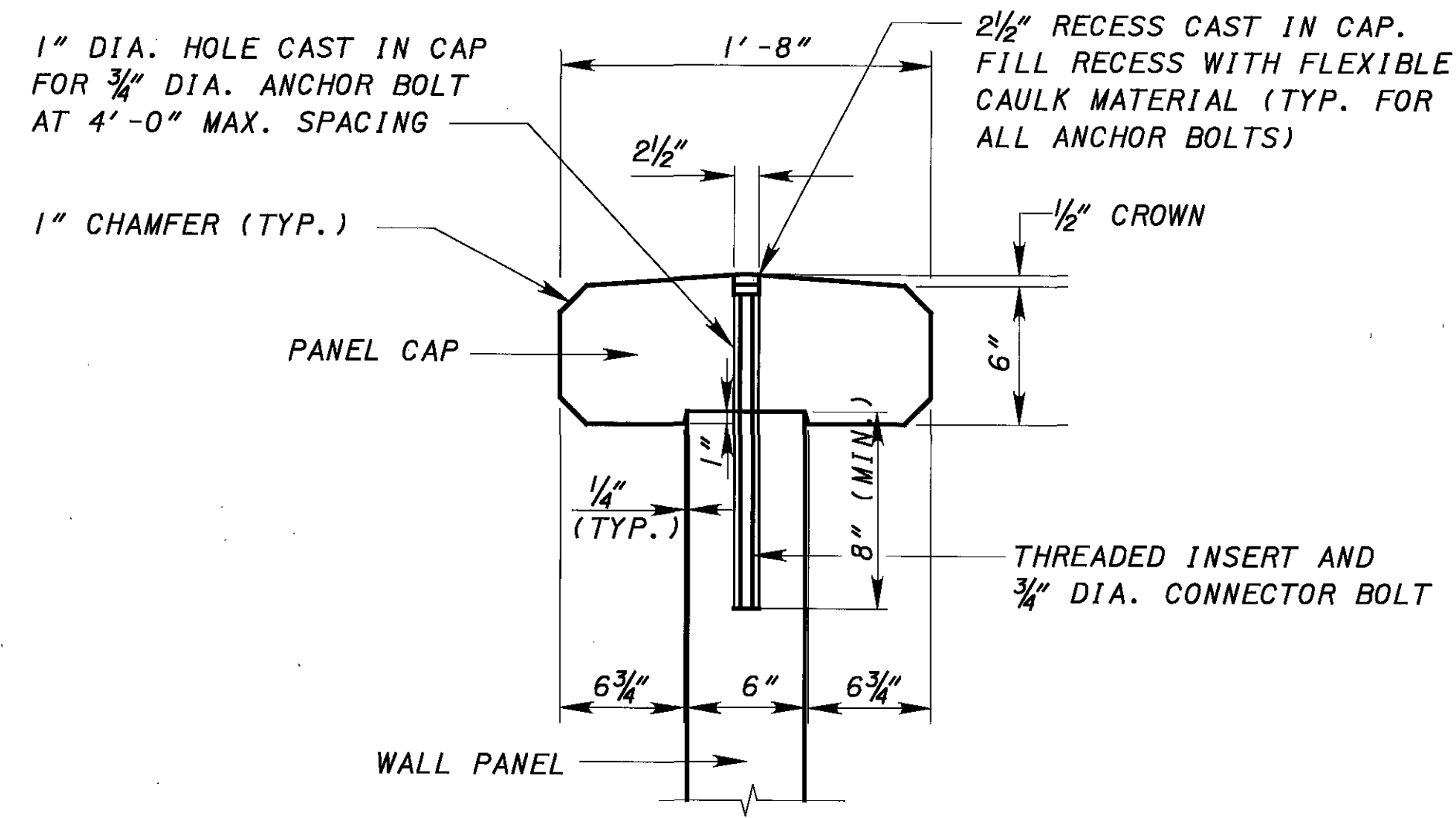
NOISE BARRIER NOTES

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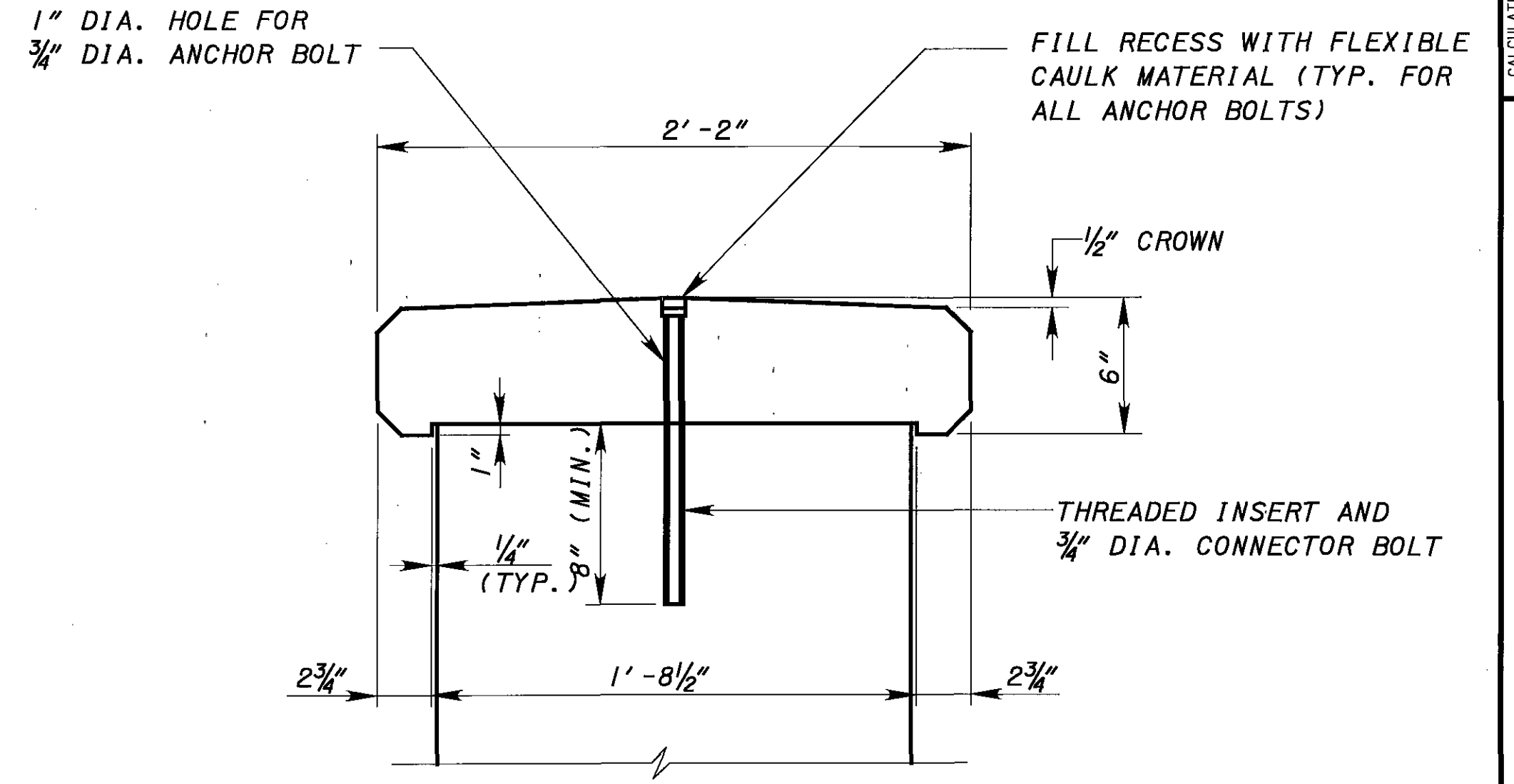
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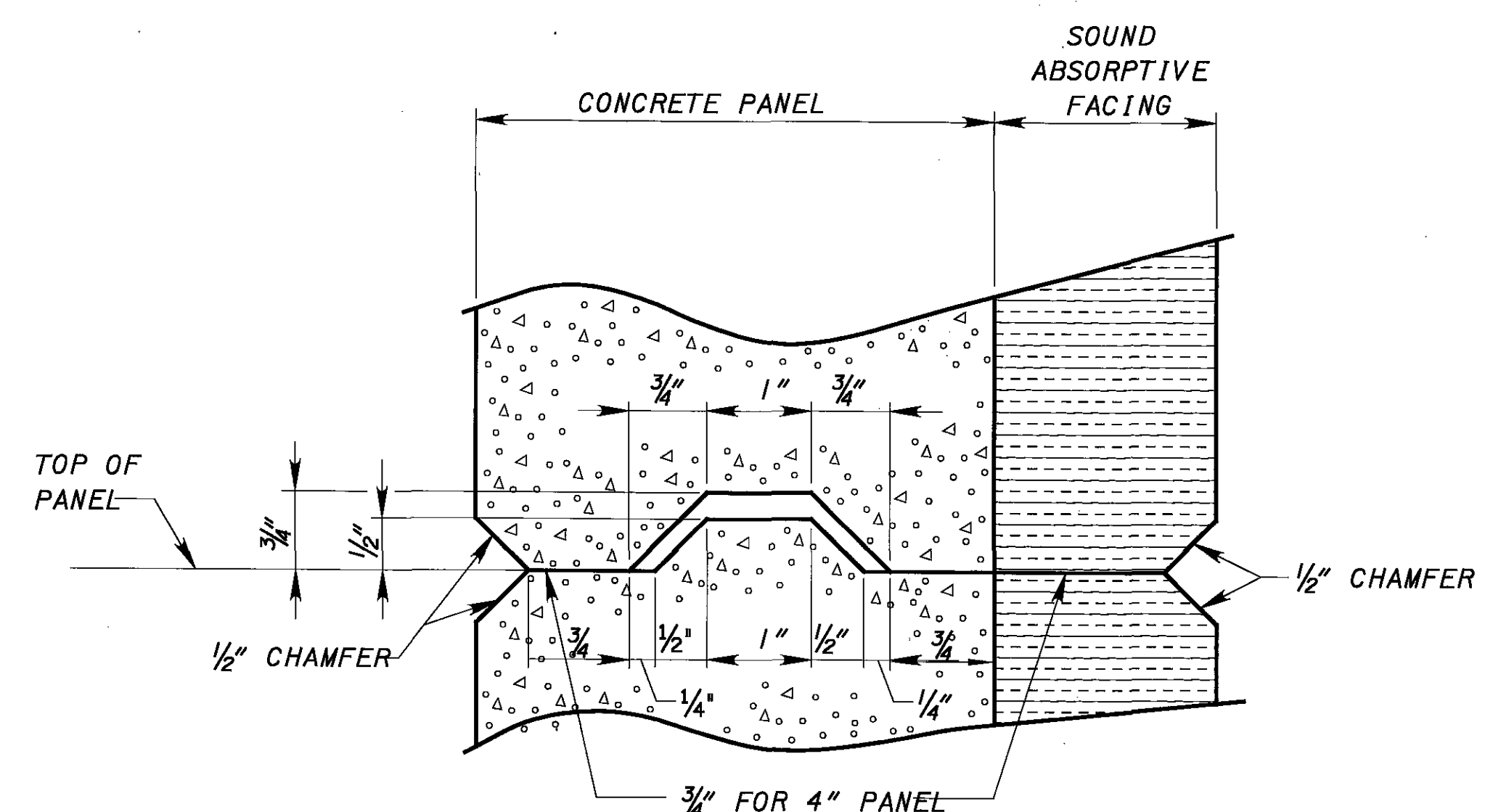
PARTIAL ELEVATION



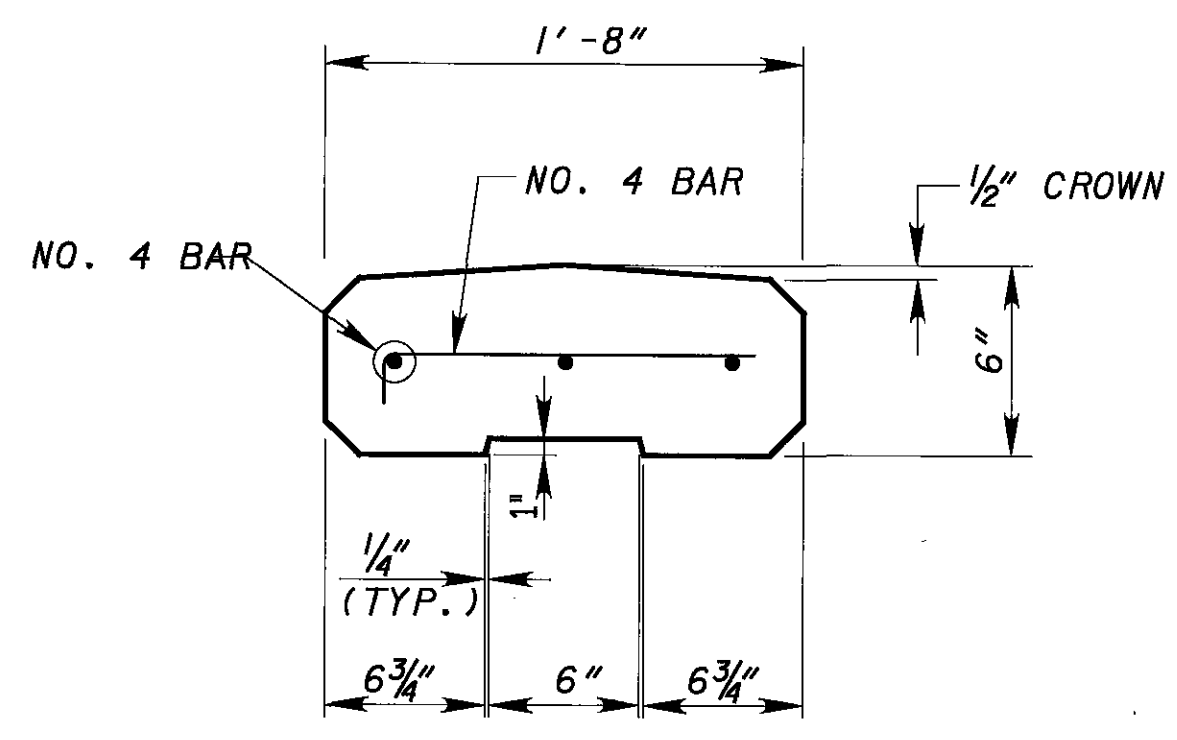
SECTION A-A



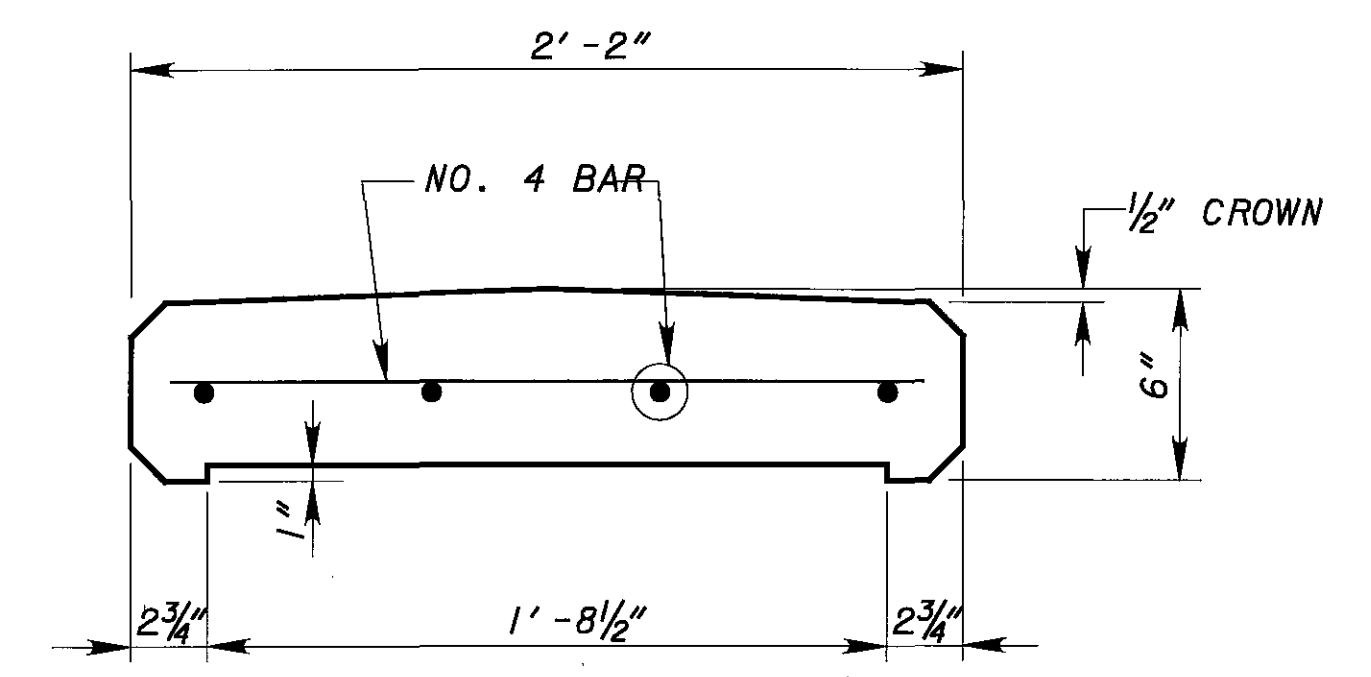
SECTION B-B



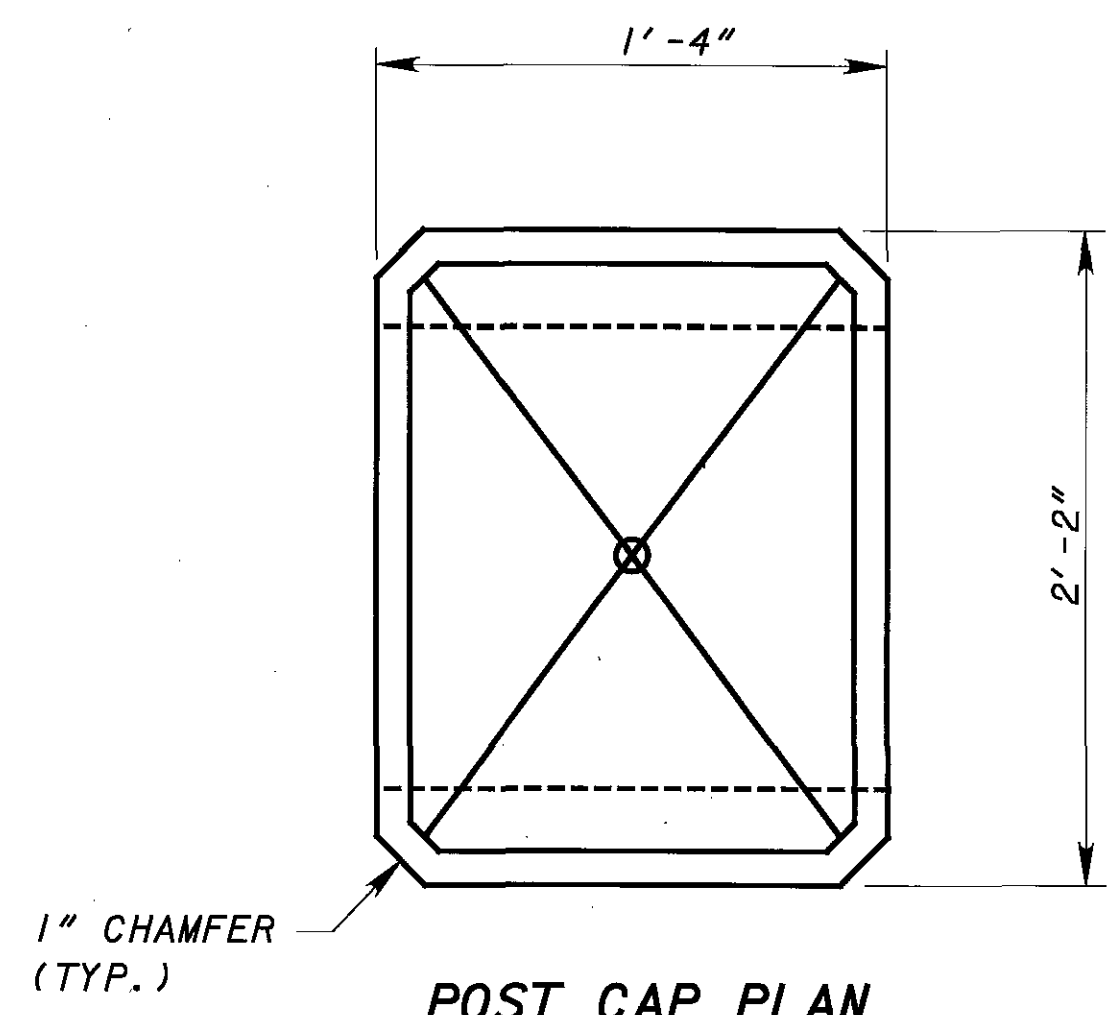
**DETAIL AT HORIZONTAL JOINT
SINGLE SIDED
SOUND ABSORPTIVE PANEL**



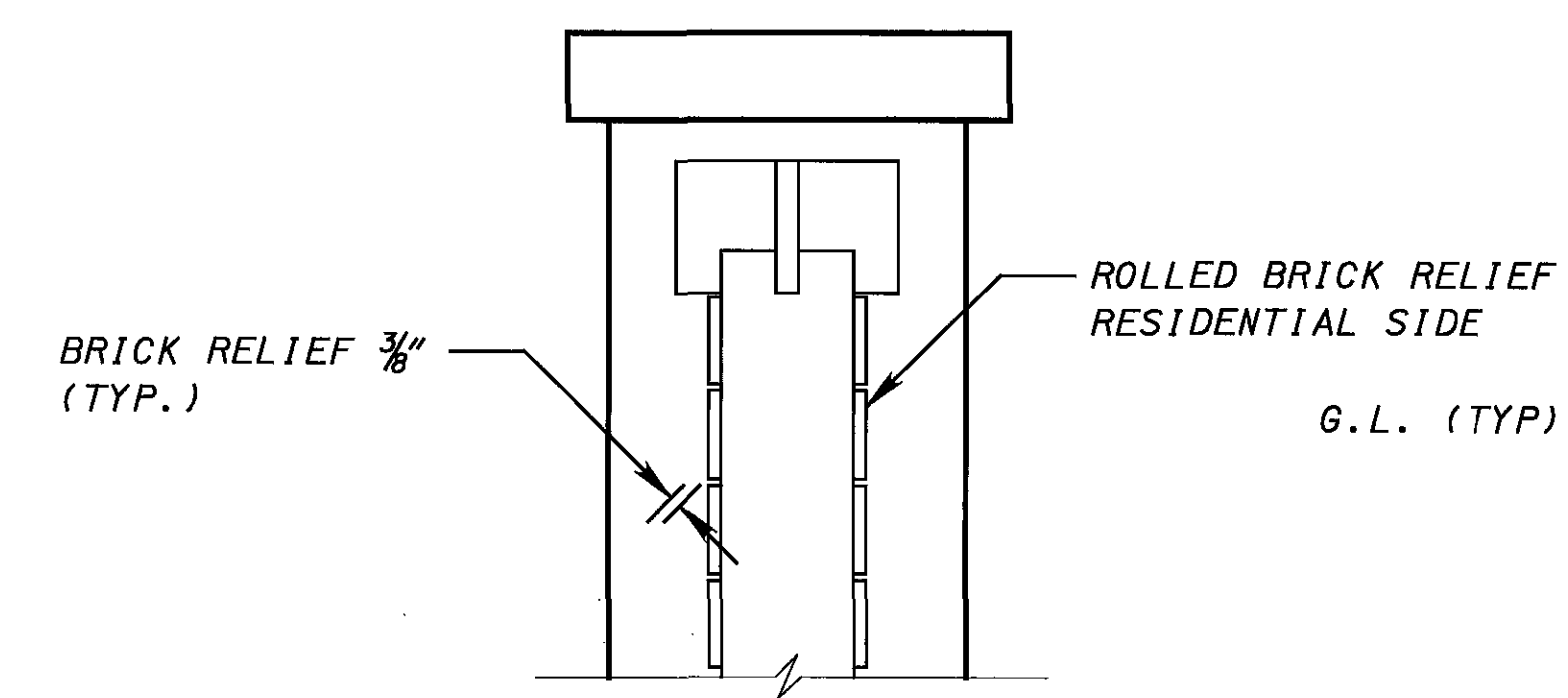
PANEL CAP DETAIL



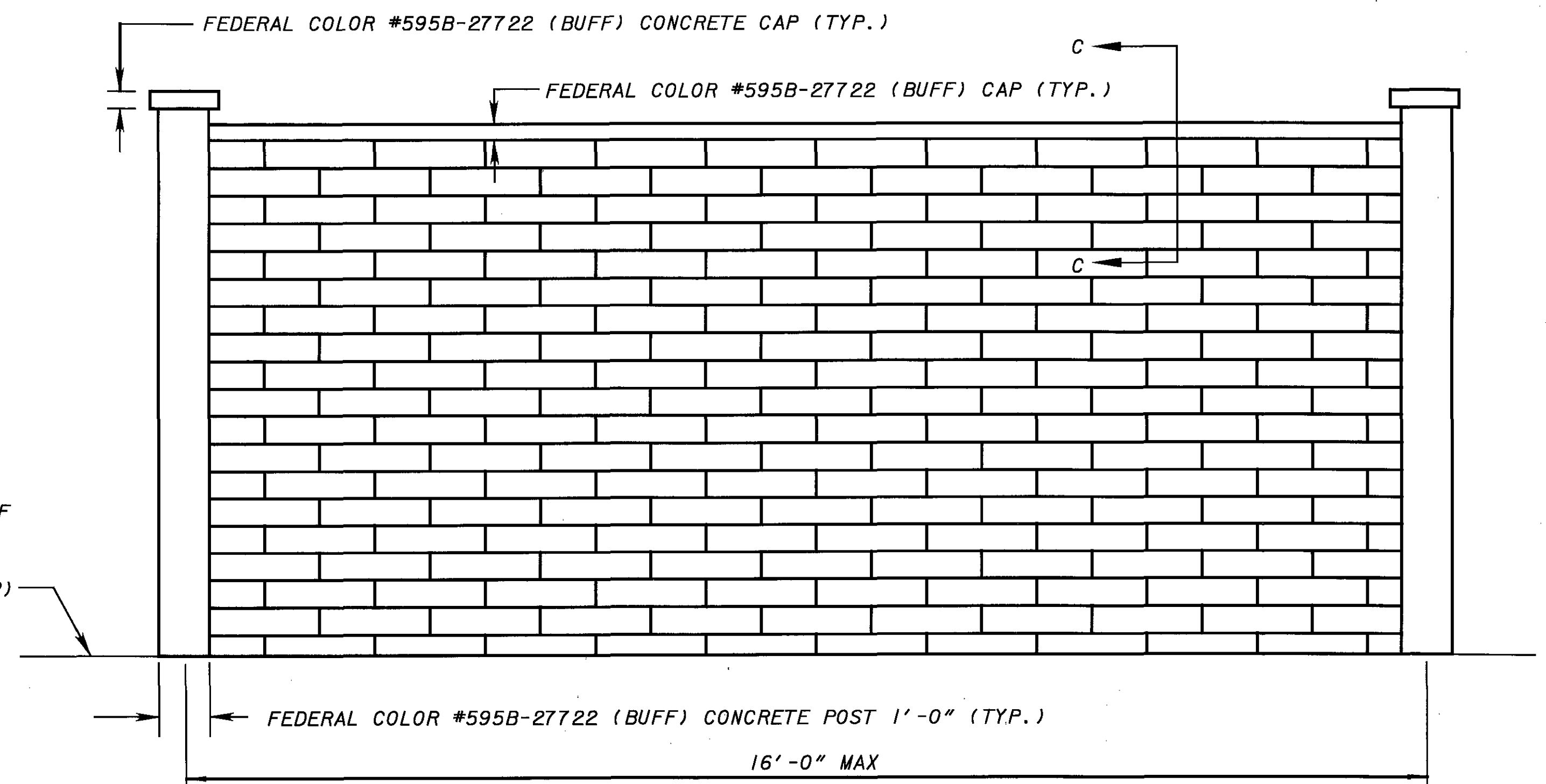
POST CAP DETAIL



POST CAP PLAN

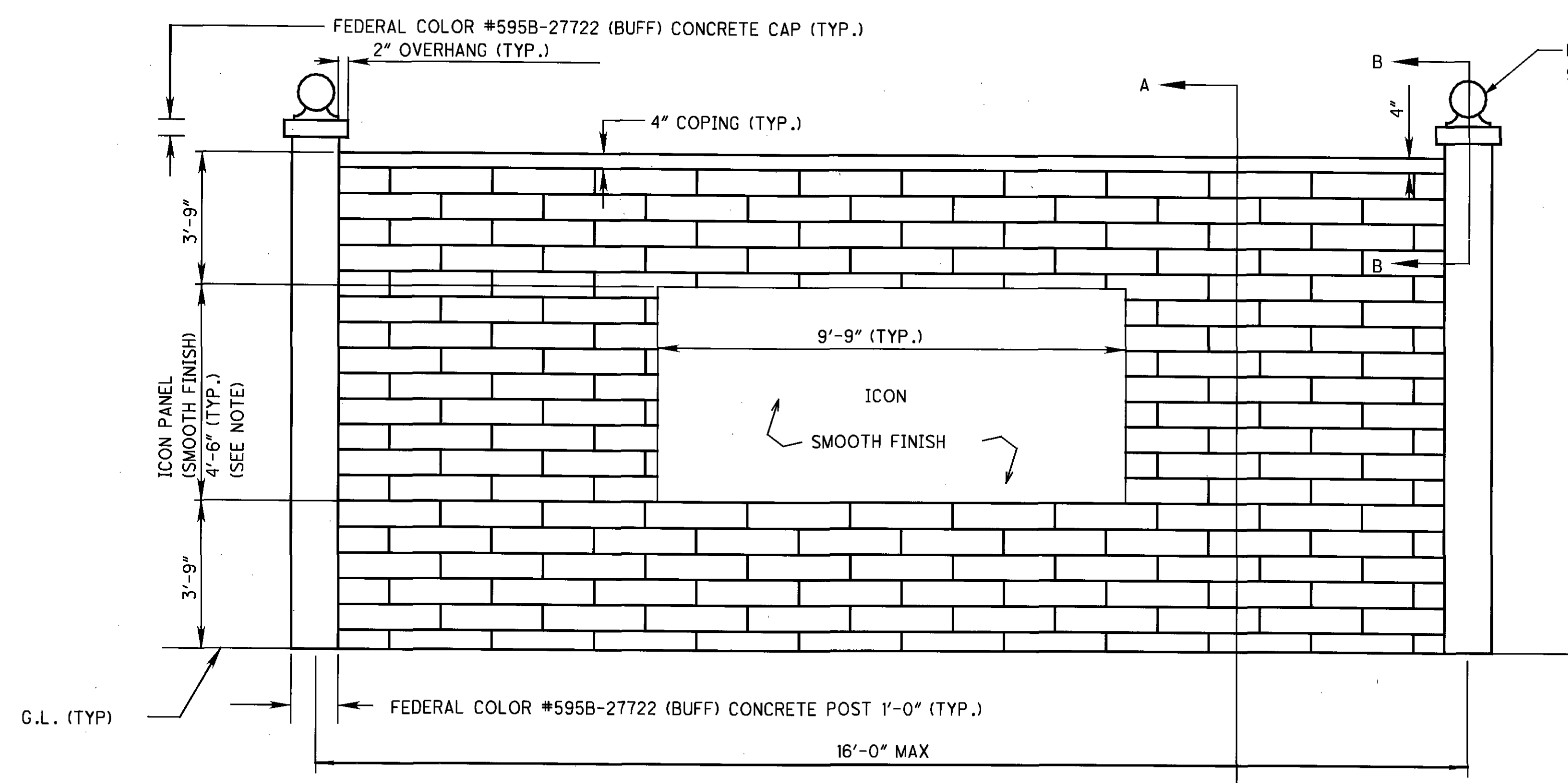


SECTION C-C



NOISE WALL DETAIL

CALCULATED: ATG
 CHECKED: SCT
NOISE BARRIER CAP AND JOINT DETAILS
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 318
 524



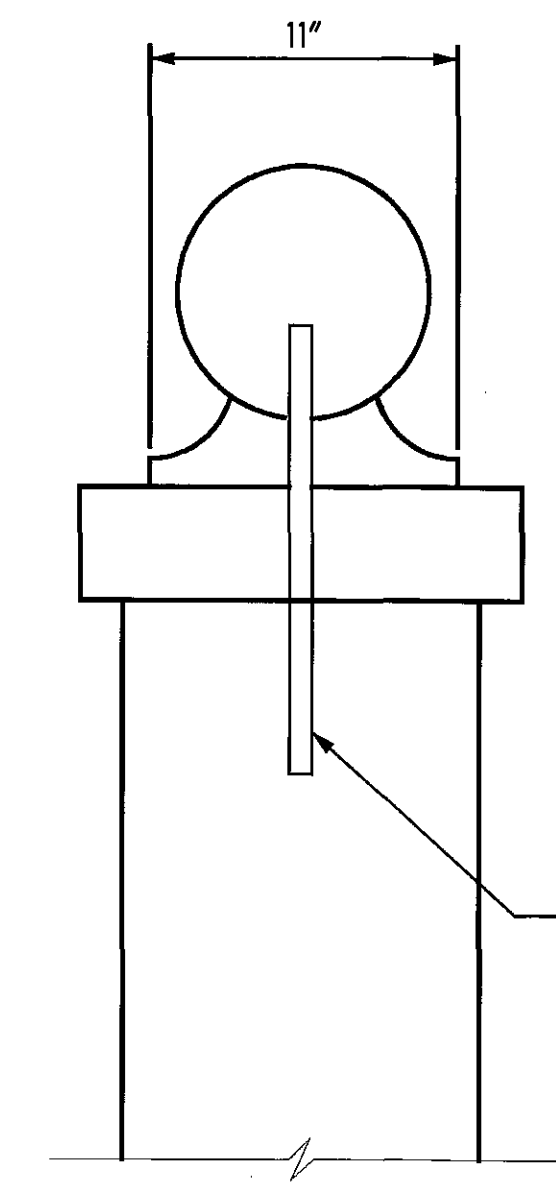
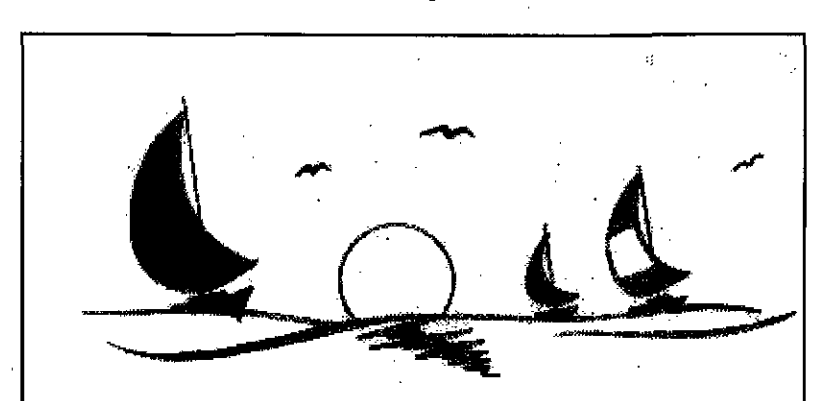
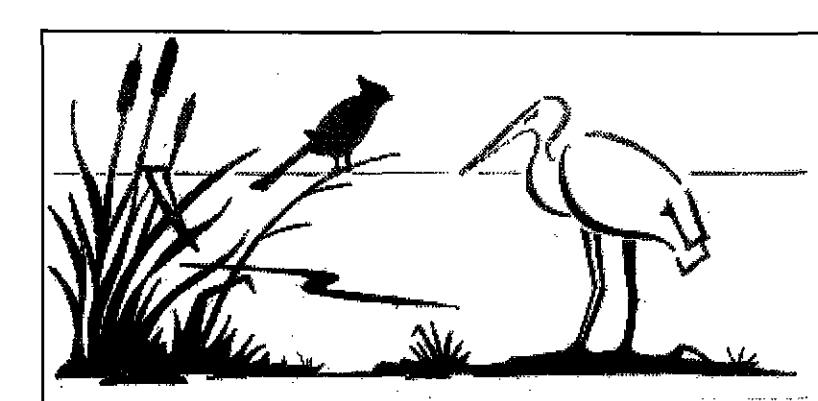
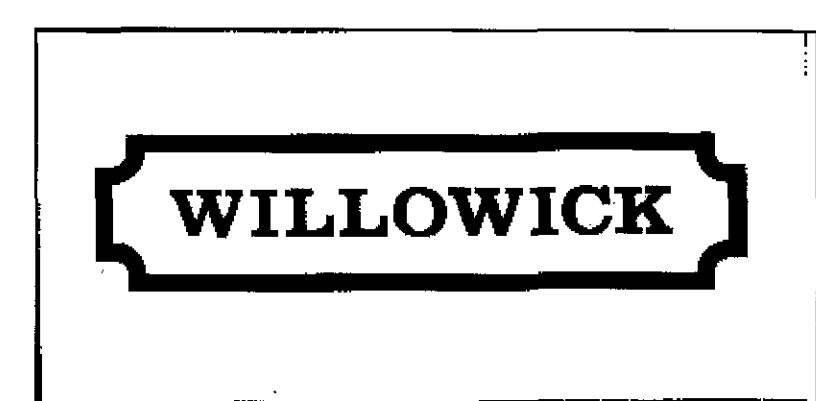
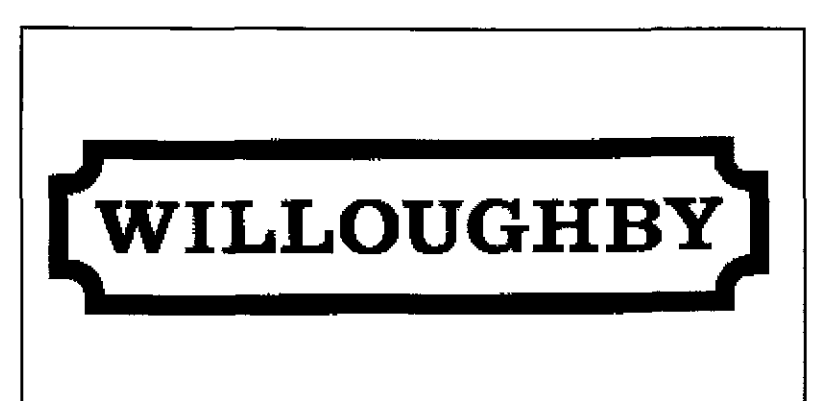
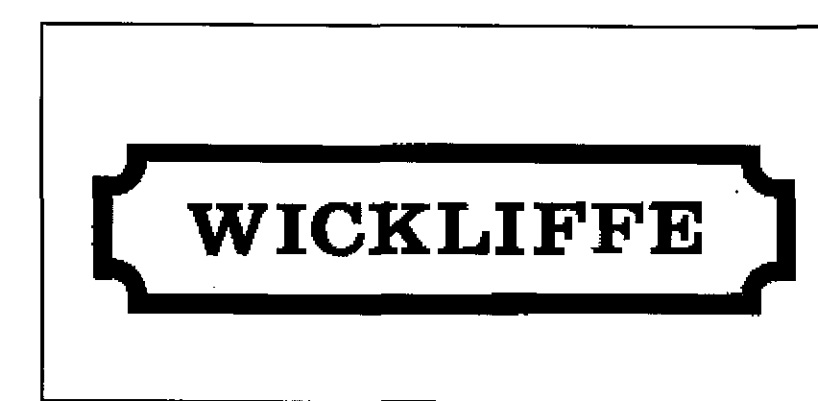
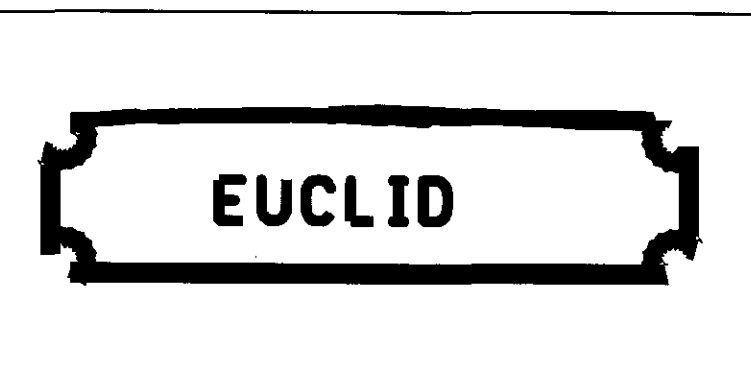
NOISE BARRIER ELEVATION
(HIGHWAY SIDE)

NOTE:
ICONS SHALL BE PLACED WITH A 250' MINIMUM DISTANCE BETWEEN ICONS.

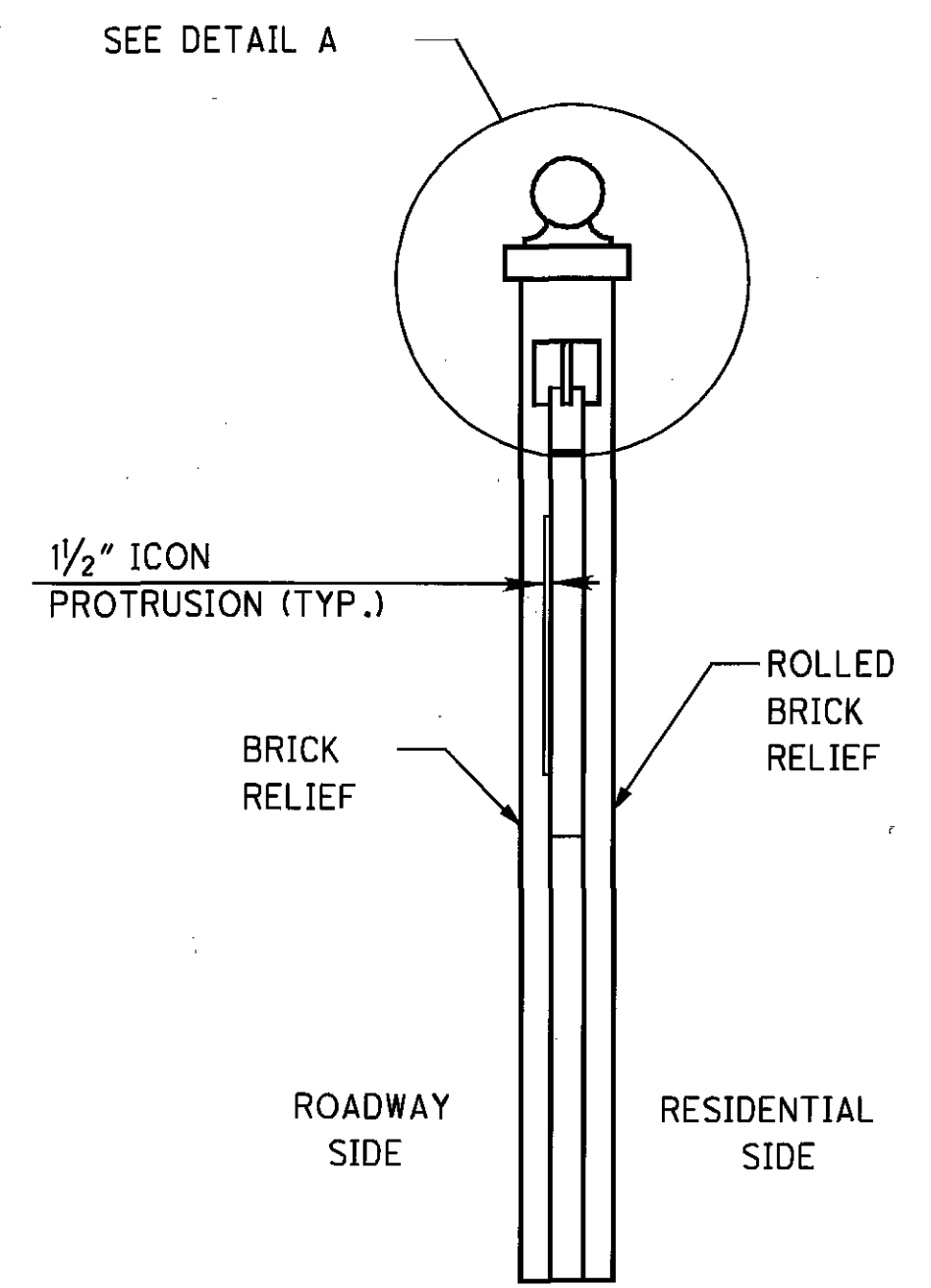
IN LAKE COUNTY (STA. 100+00 - END PROJECT) THE ICONS SHALL BE PLACED IN ORDER #1 THROUGH #5, WITH THE CITY NAME ICON TO FOLLOW BEFORE THE SEQUENCE IS REPEATED. (1, 2, 3, 4, 5, "COUNTY ICON", 1, 2...), WITH THE CITY ICON CHANGING AS FOLLOWS:

- WICKLIFFE = STA. 100+00 - STA. 194+15
- WILLOWICK = STA 194+15 - 218+73
- EASTLAKE = STA. 218+73 - 309+31
- WILLOUGHBY = STA. 309+31 - END PROJECT

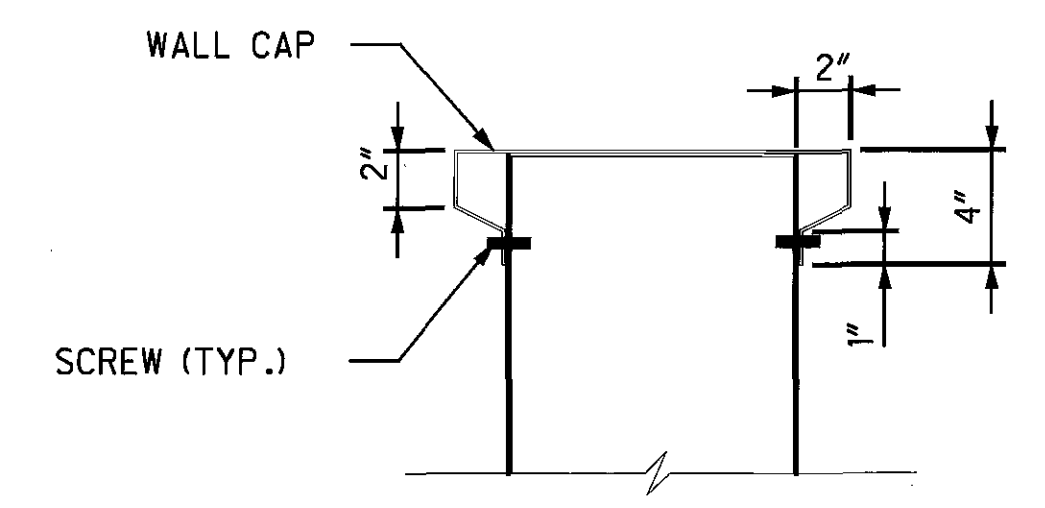
IN CUYAHOGA COUNTY (BEGIN PROJECT - STA. 100+00) THE ICONS SHALL BE PLACED IN ORDER #2 THROUGH #5 WITH THE CITY NAME ICON ("EUCLID") TO FOLLOW BEFORE THE SEQUENCE IS REPEATED. (2, 3, 4, 5, "EUCLID", 2, 3...)



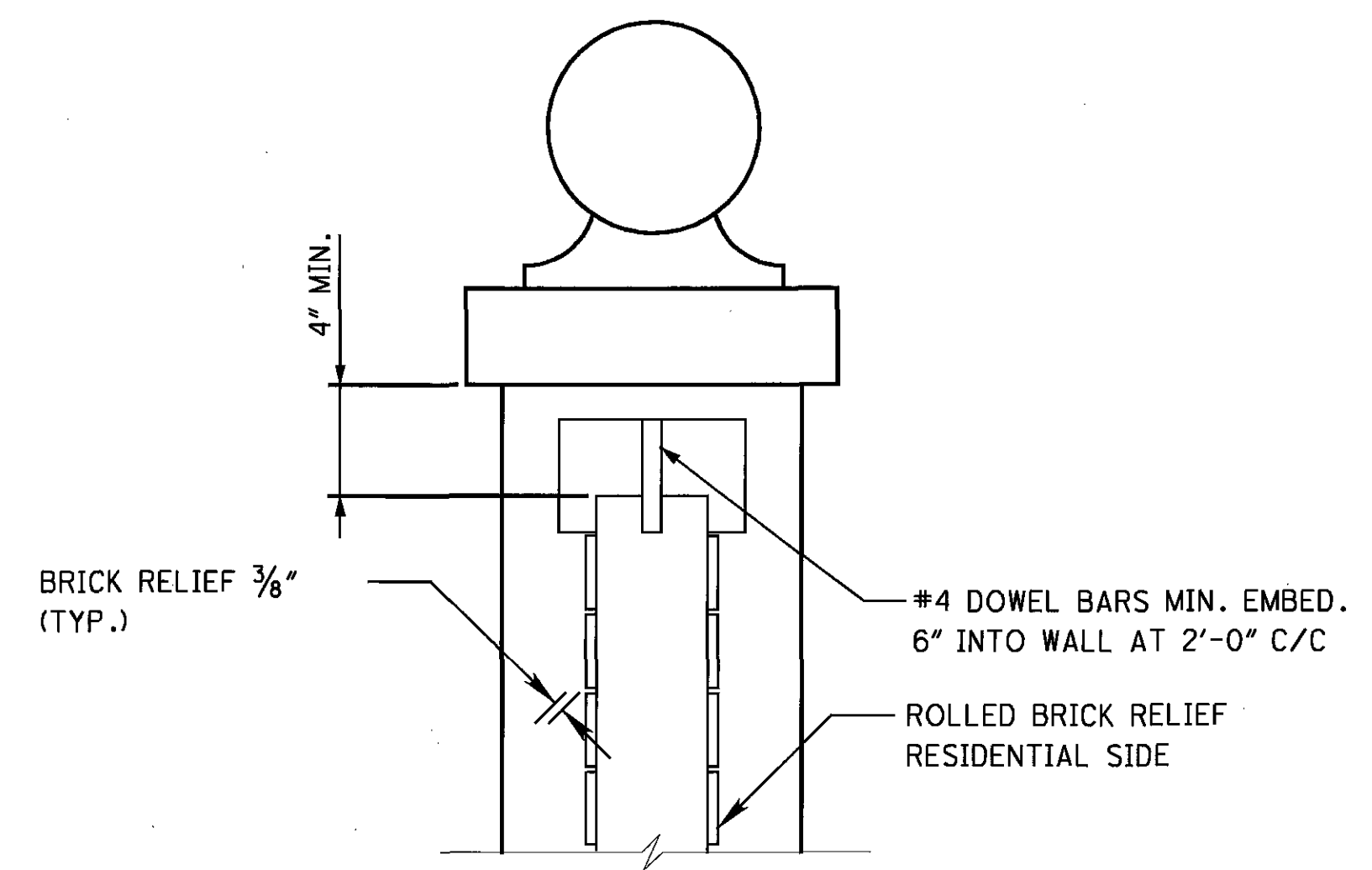
SECTION B-B



SECTION A-A



CAP DETAIL FOR THE NOISE BARRIER,
ALUMINUM, ON THE STRUCTURE



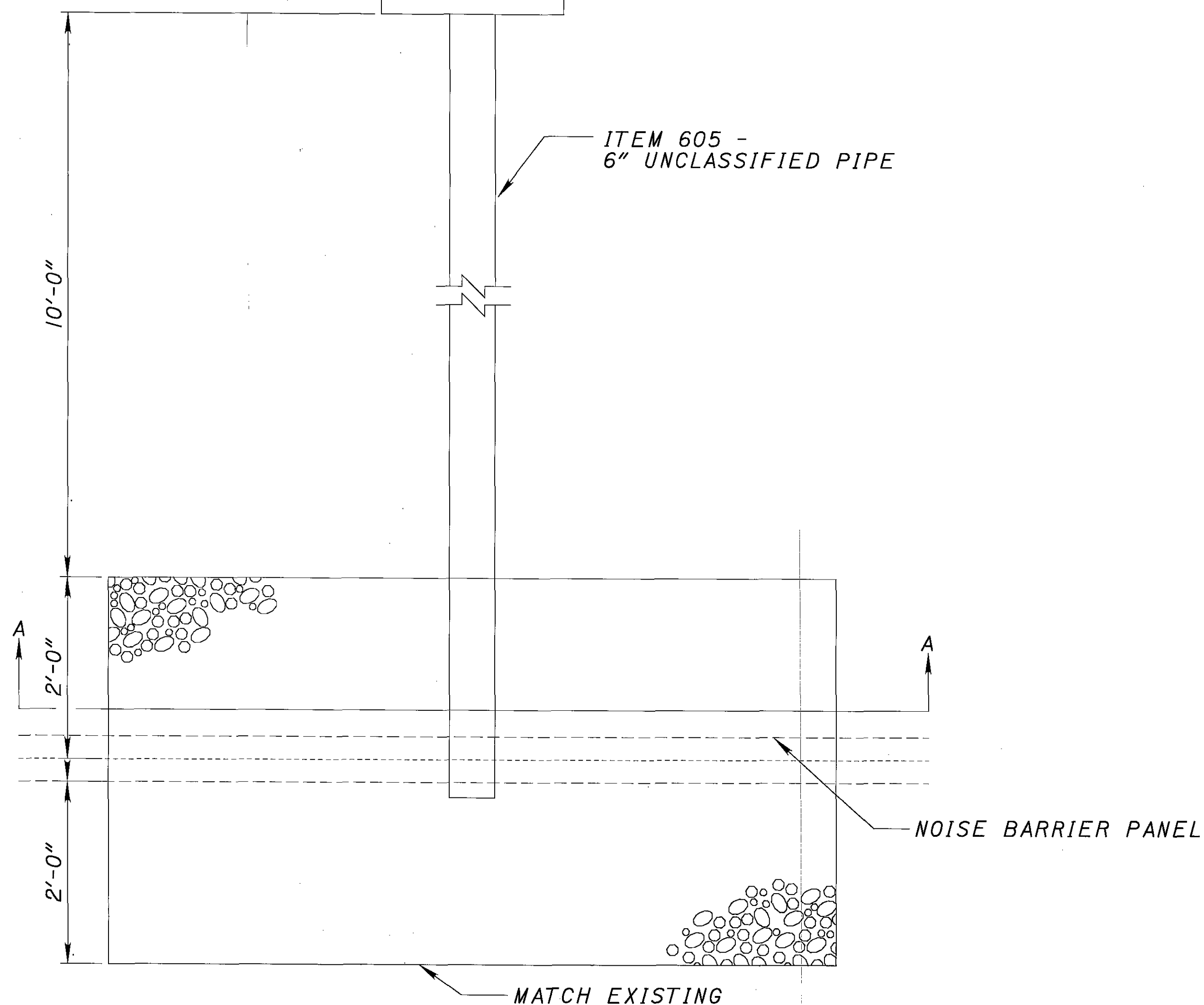
DETAIL - A

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TIED CONCRETE BLOCK MAT
 TYPE I GROUTED PER CMS 601.11
 TO BE FLUSH WITH SURFACE OF SLOPE.
 INCLUDED FOR PAYMENT WITH ITEM 604-
 REINFORCED CONCRETE OUTLET

ITEM 604-REINFORCED
 CONCRETE OUTLET

ITEM 605 -
 6" UNCLASSIFIED PIPE



PLAN

BOTTOM OF NOISE
 BARRIER PANEL

PROPOSED GROUNDLINE

FABRIC FILTER

ITEM 605 -
 6" UNCLASSIFIED PIPE

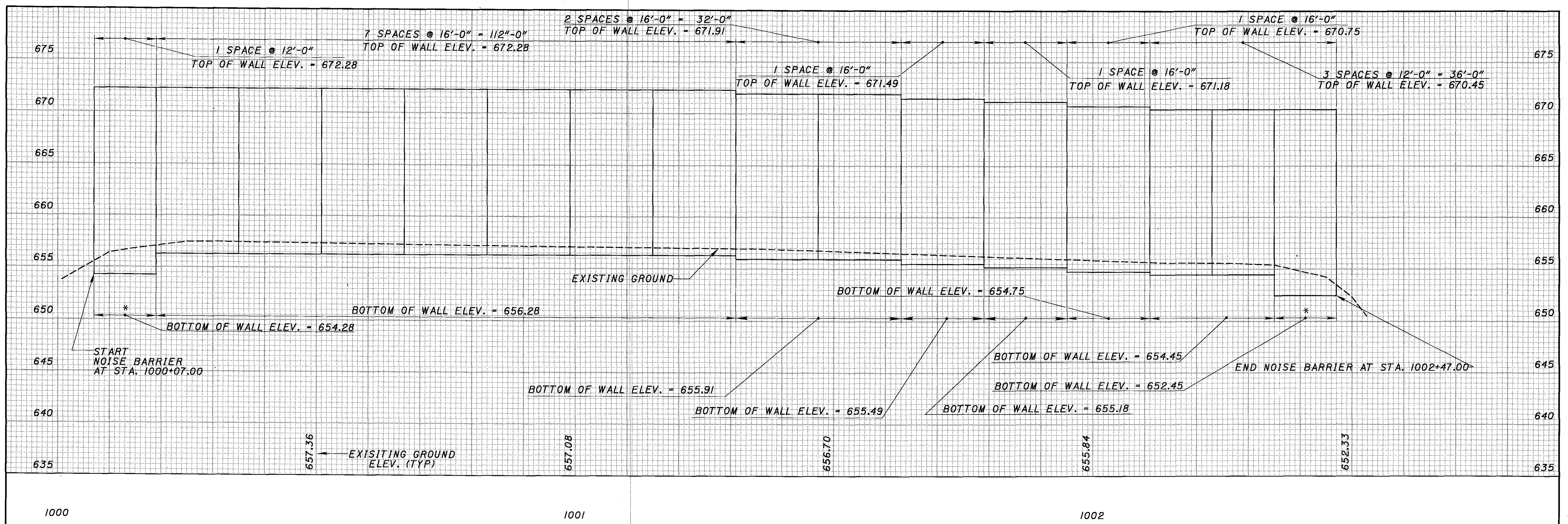
12" MIN. TYPE D DUMPED
 ROCK FILL

SECTION A-A

NOTES:

1. SEE PLAN SHEETS AND NOISE BARRIER PROFILE SHEETS FOR THE LOCATIONS OF GUTTERS OR DITCHES.
2. SEE NOISE BARRIER NOTES FOR FURTHER DRAINAGE INFORMATION.
3. DRAINAGE DETAIL SHALL BE PROVIDED AT LOW POINTS ALONG NOISE WALL OR AT 48'-0" MAXIMUM INTERVALS.
4. SEE SCD DM-1.1 FOR ADDITIONAL DETAILS.

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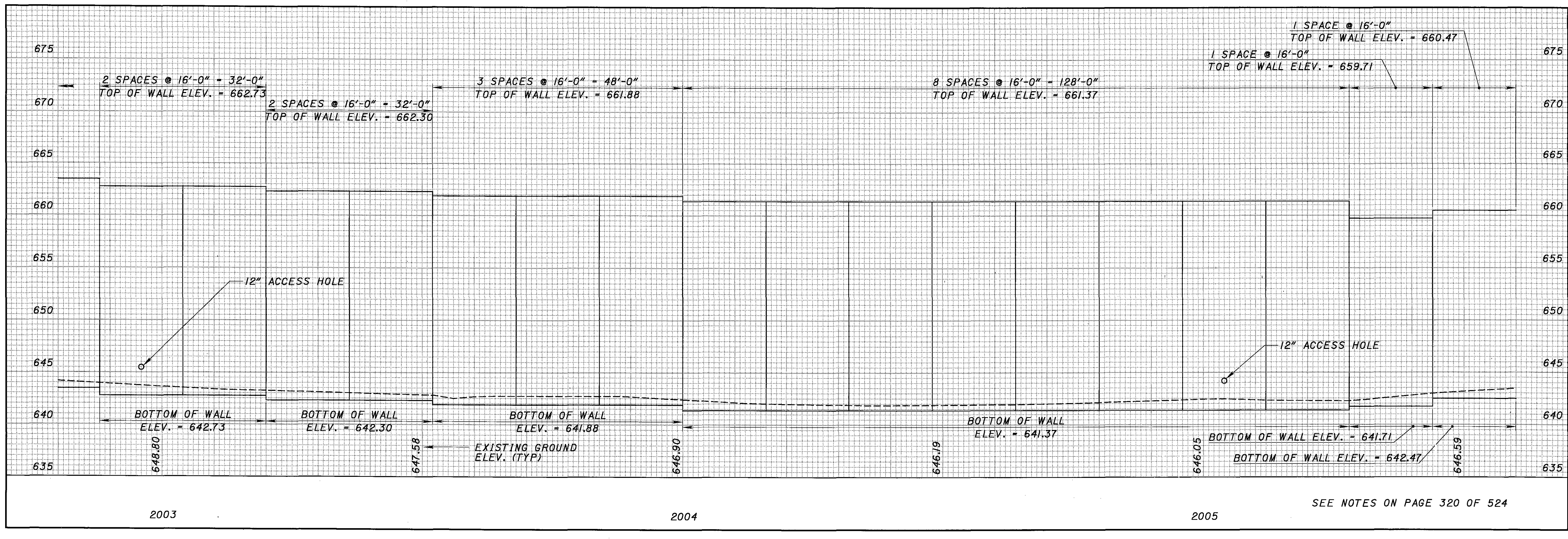
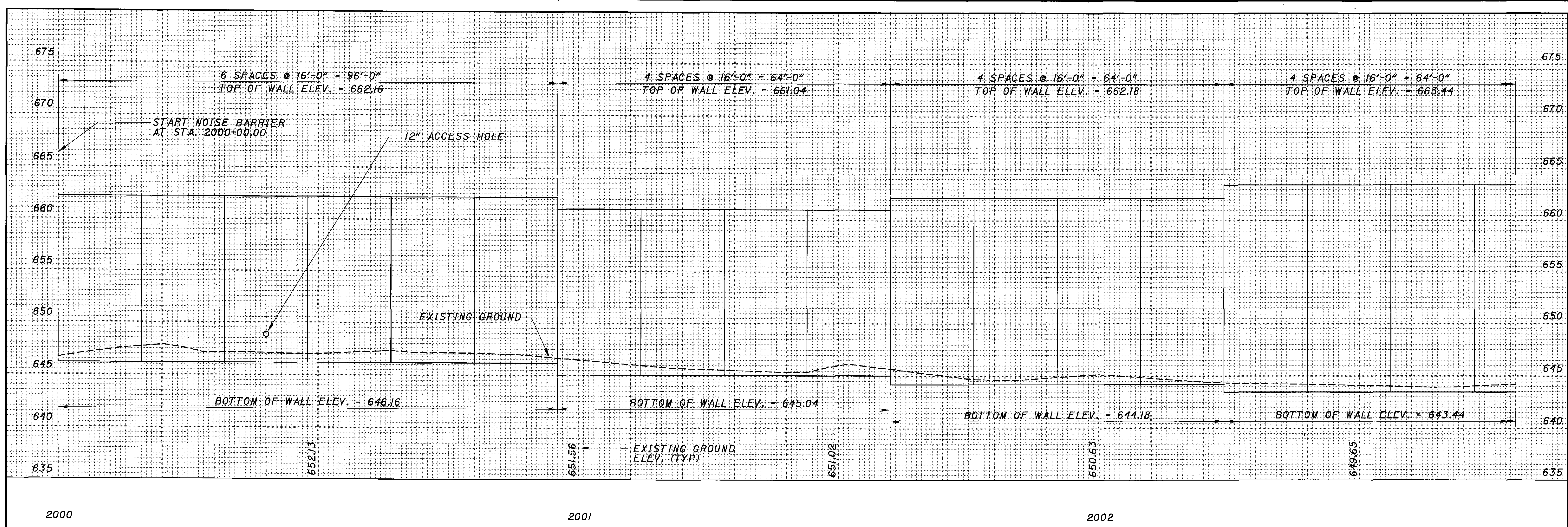


NOTES:

1. BOTTOM ELEVATIONS SHOWN ON PROFILE ARE FOR THE BOTTOM OF THE PANEL, NOT THE FINISHED GRADE LINE.
2. TOP ELEVATIONS SHOWN ARE THE MINIMUM TOP ELEVATIONS.
3. SEE SHEETS 101/524 TO 213/524 FOR NOISE BARRIER PLANS.
4. IF DRAINAGE STRUCTURES ARE DAMAGED DURING INSTALLATION OF DRILLED SHAFTS, THEY WILL BE REPAIRED OR RE-ROUTED TO AVOID THE DRILLED SHAFTS AT NO ADDITIONAL COST TO THE STATE.
5. ALL DRILLED SHAFTS LENGTHS SHALL BE 11'-0" EXCEPT FOR NOISE BARRIER 1, AND WHERE NOTED OTHERWISE THE DRILLED SHAFTS SHALL BE 15'-0".
6. * DRILLED SHAFTS SHALL BE 15'-0" DEEP.

CALCULATED	ETB	CHECKED	SCT
NOISE BARRIER 1 PROFILE			
STA. 10000+07.00 STA. 10002+47.00			
LAK-2-0.00			
320 524			

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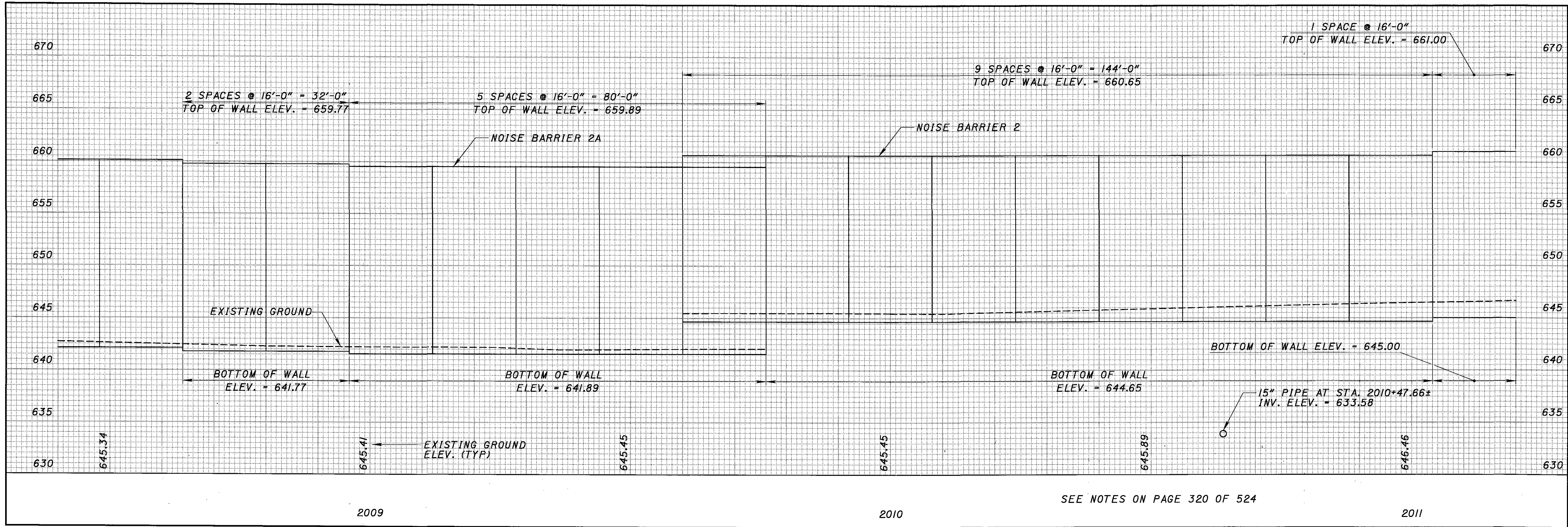
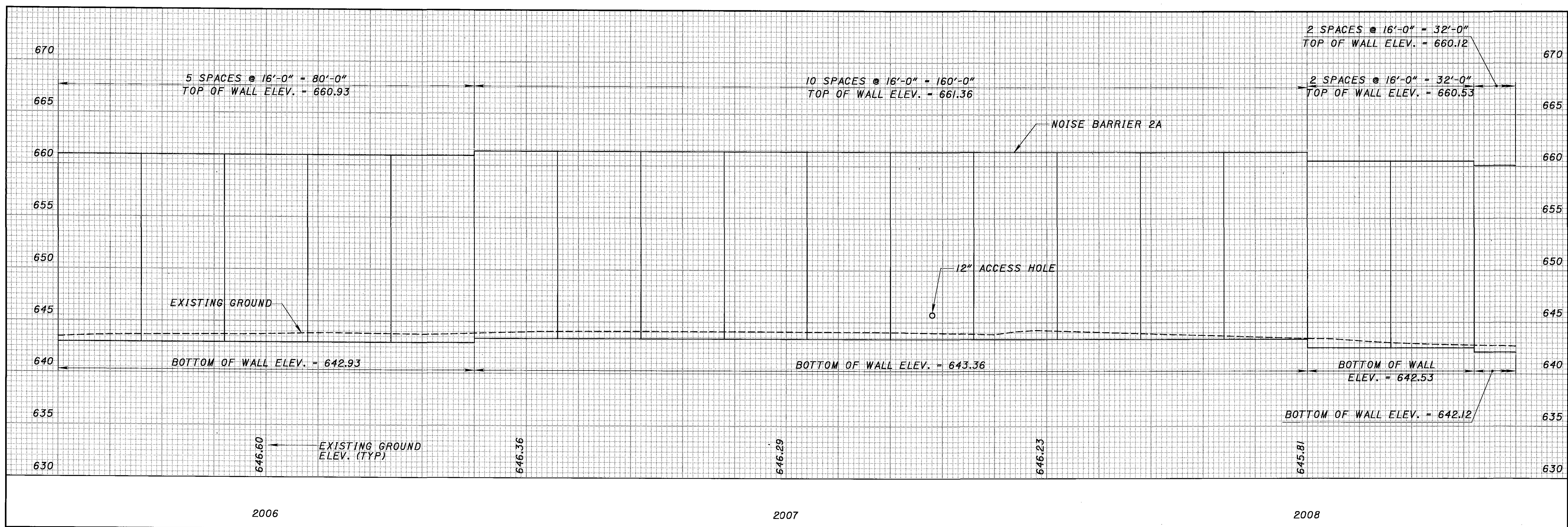
SEE NOTES ON PAGE 320 OF 524

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NOISE BARRIER 2A PROFILE
STA. 2000+00.00 TO STA. 2005+60.00

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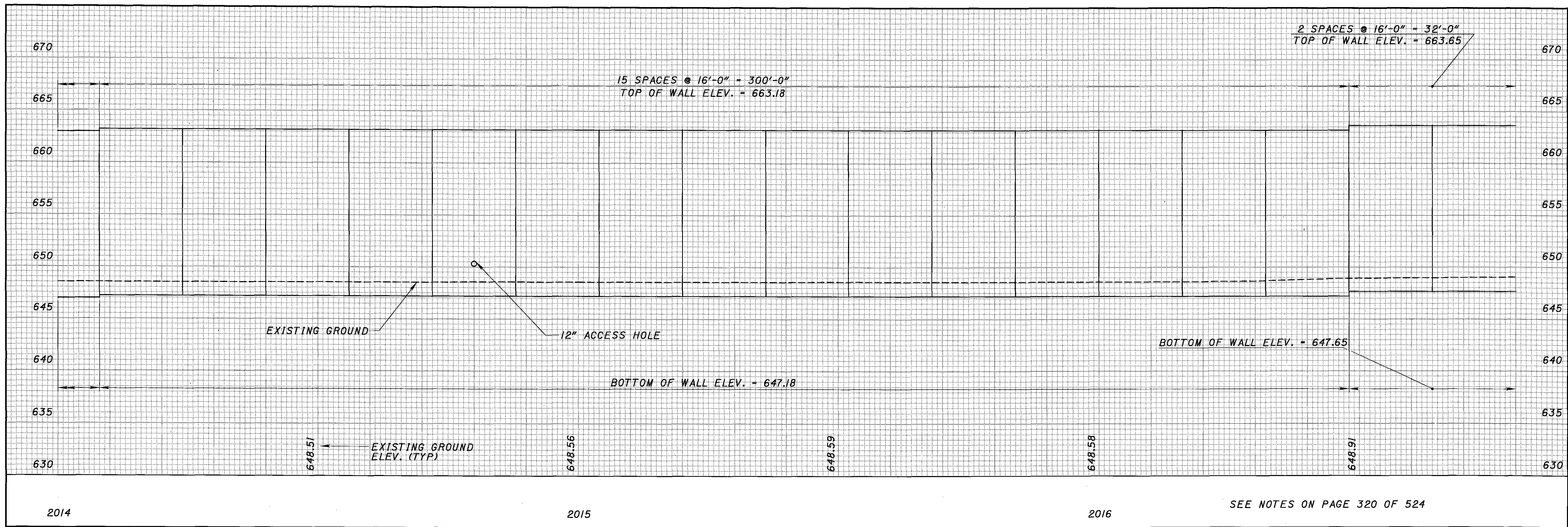
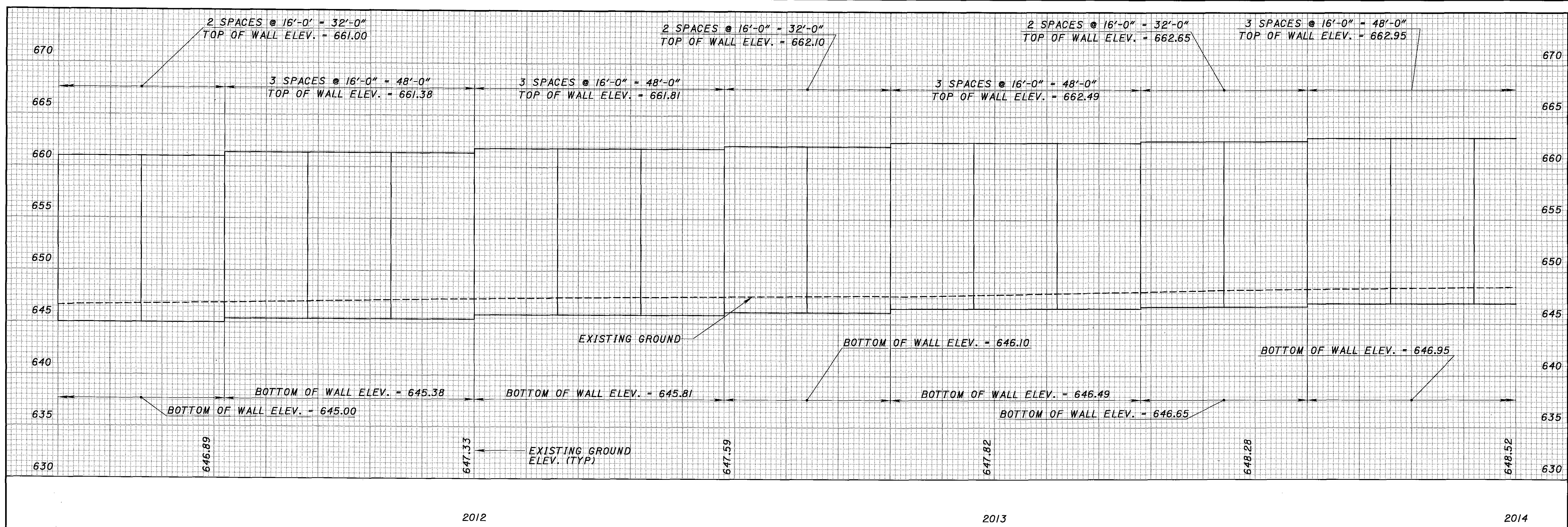
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NOISE BARRIER 2A AND 2 PROFILE
STA. 2005+60.00 TO STA. 2011+20.00

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322
524

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SEE NOTES ON PAGE 320 OF 524

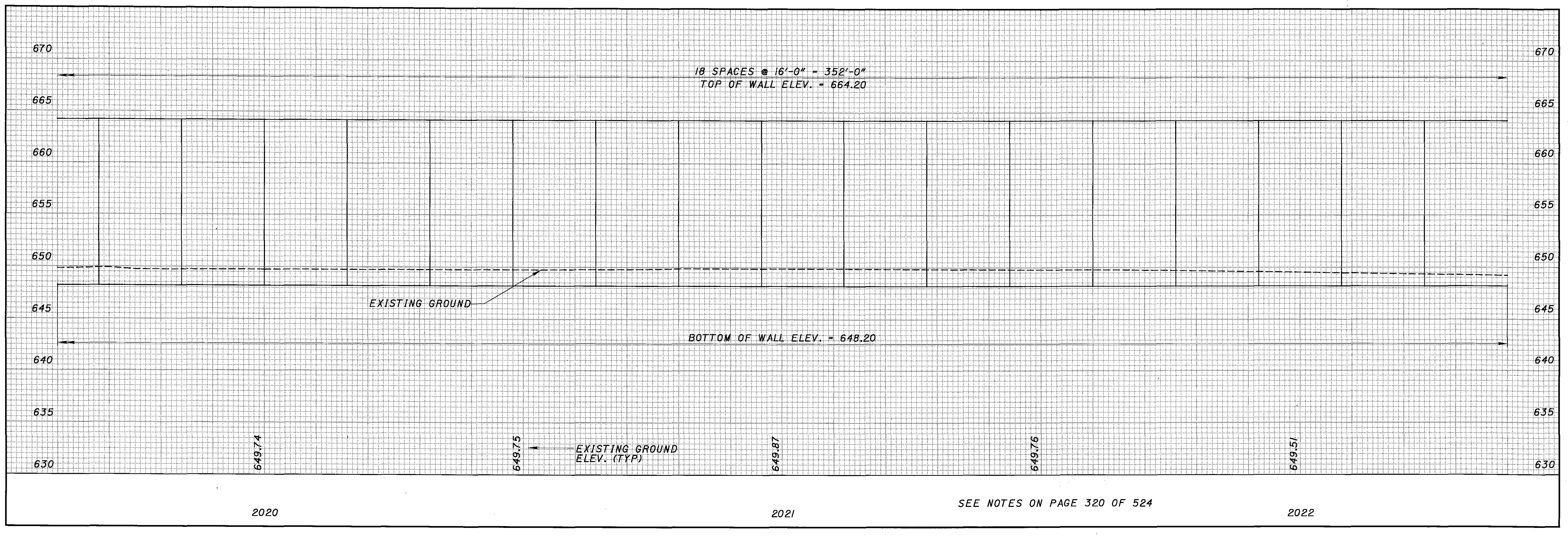
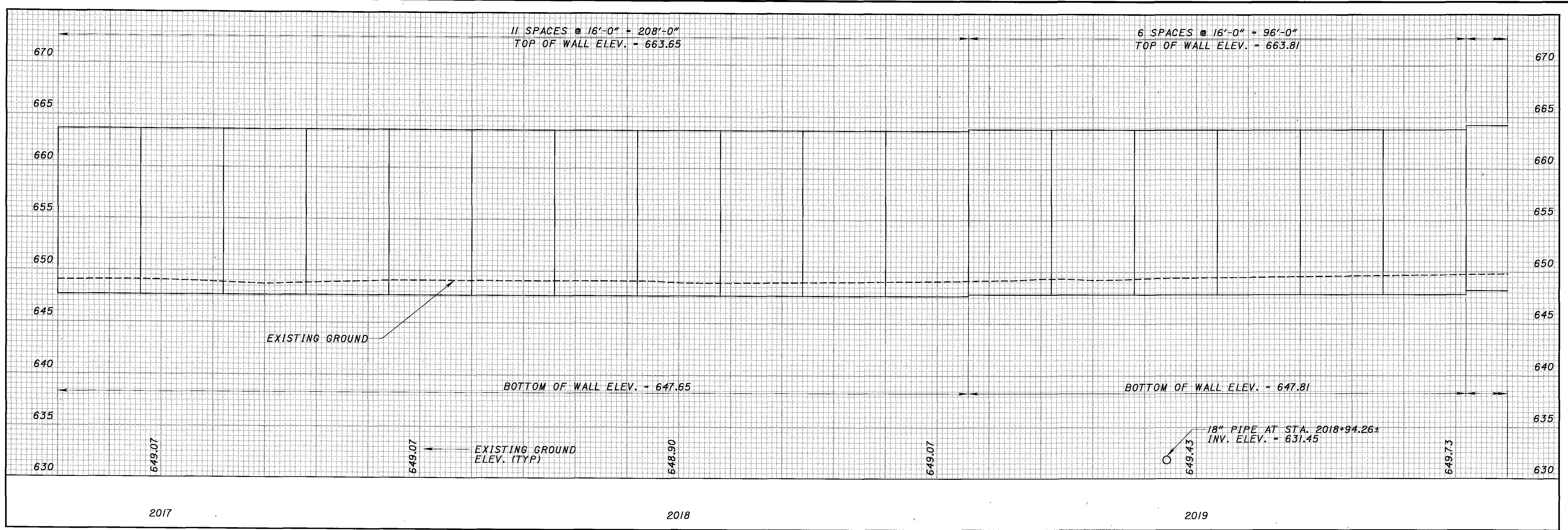
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NOISE BARRIER 2 PROFILE
STA. 2011+20.00 TO STA. 2016+80.00

LAK-2-0.00

323
524

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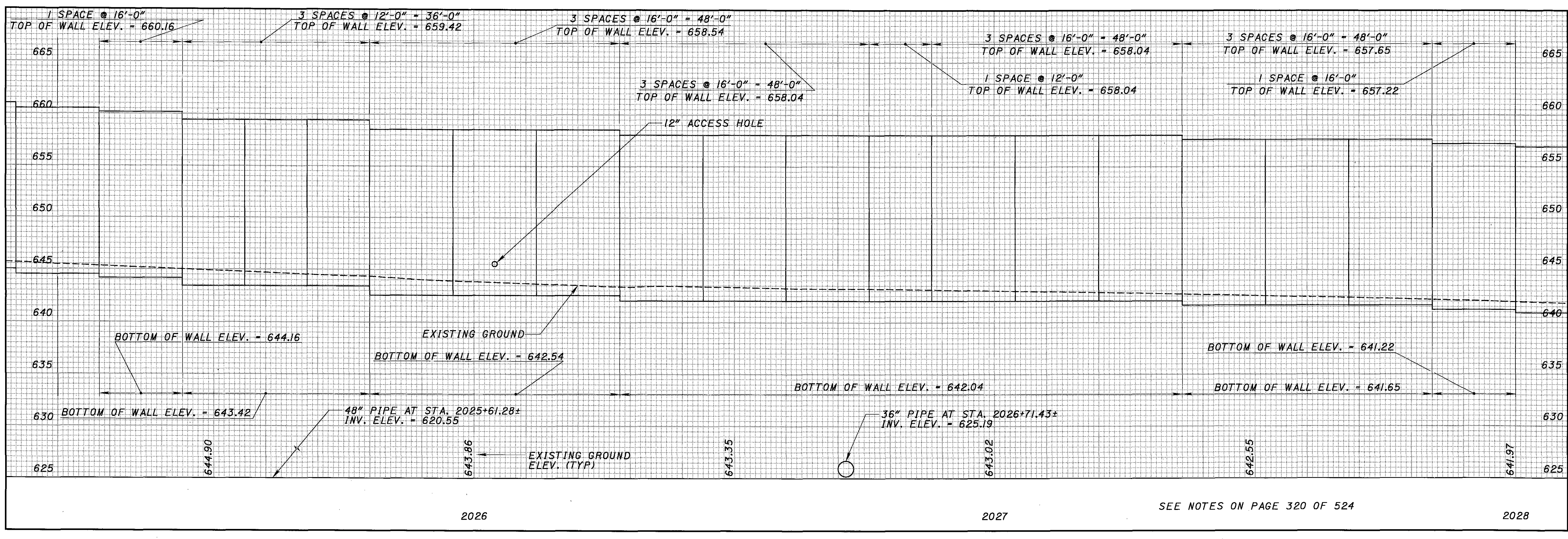
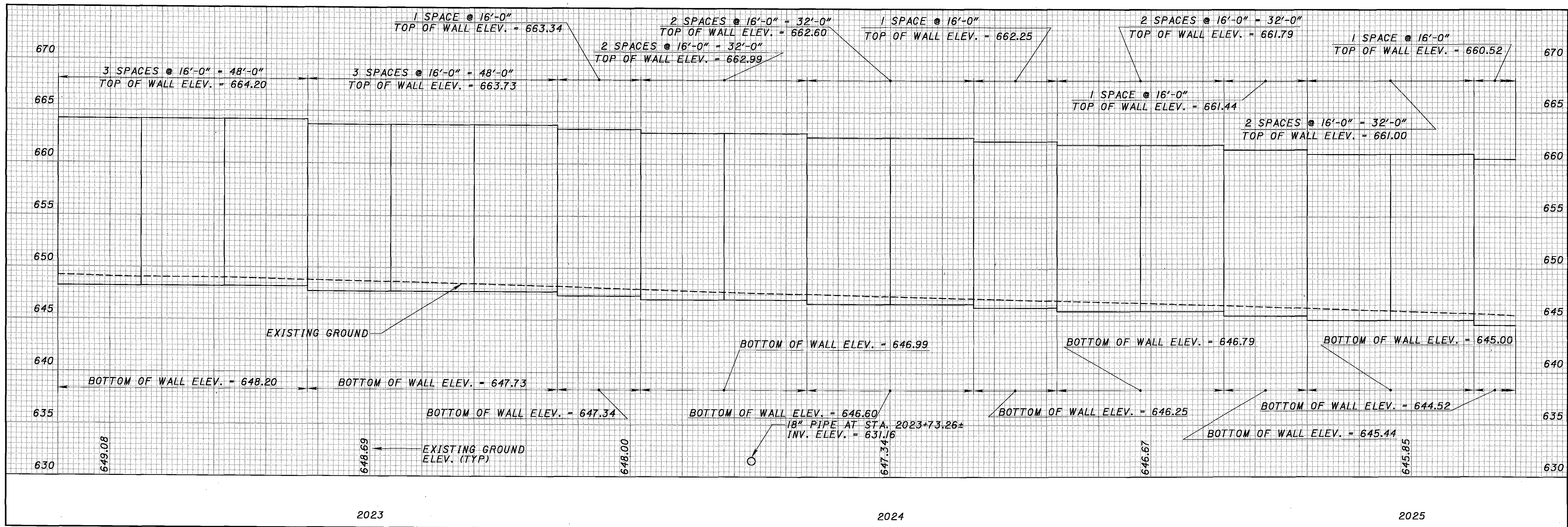
NOISE BARRIER 2 PROFILE
STA. 2016+80.00 TO STA. 2022+40.00

LAK-2-0.00

324
524

SEE NOTES ON PAGE 320 OF 524

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SEE NOTES ON PAGE 320 OF 524

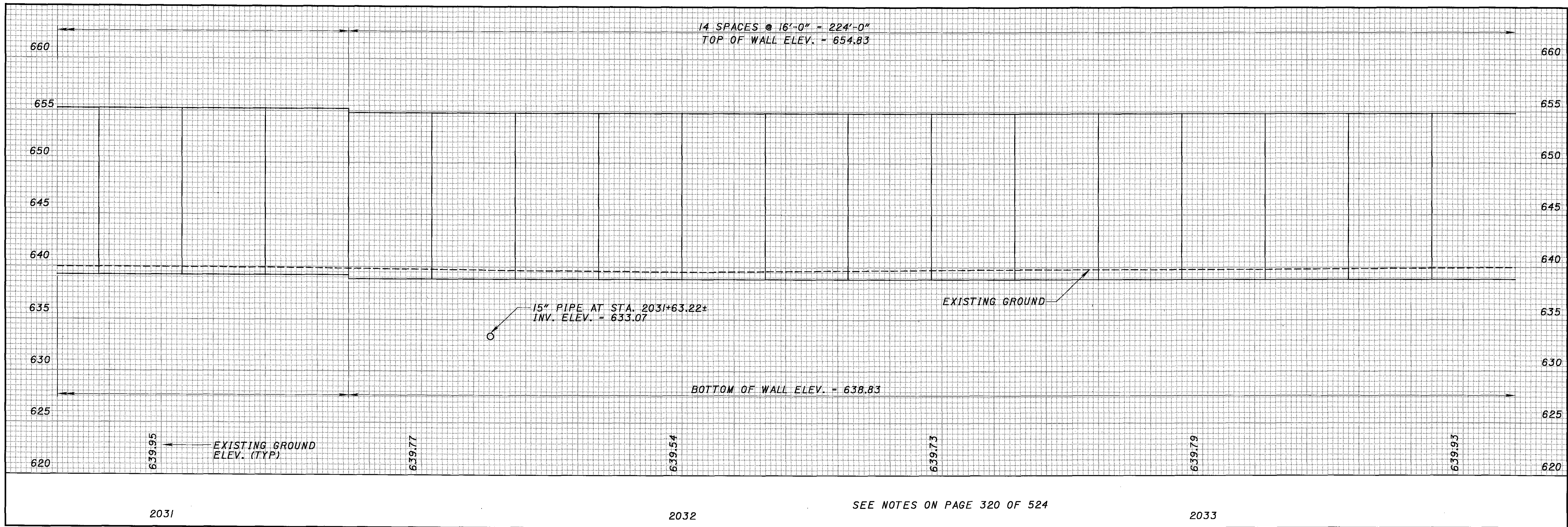
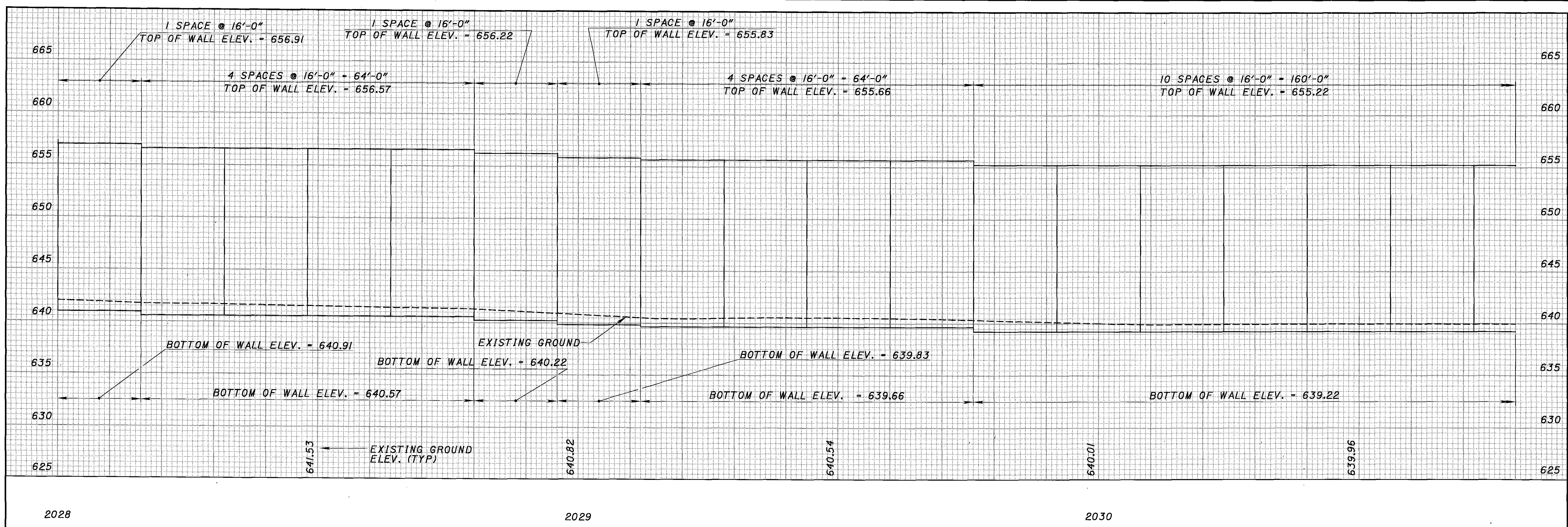
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LAK-2-0.00

325
 524

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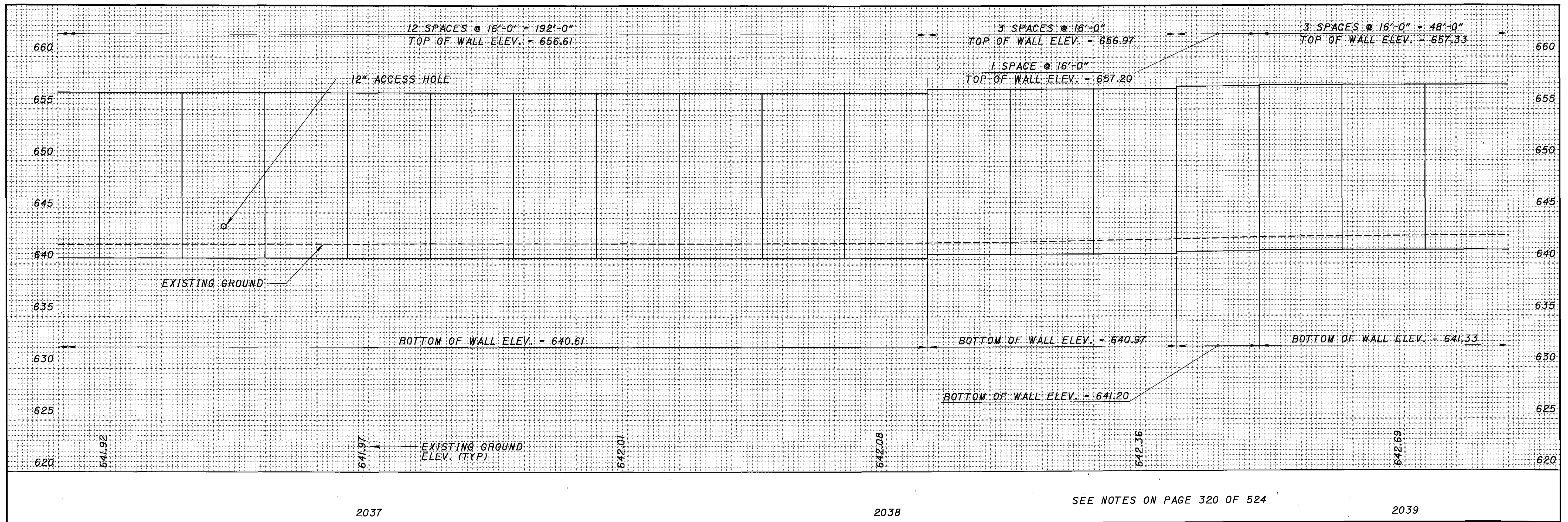
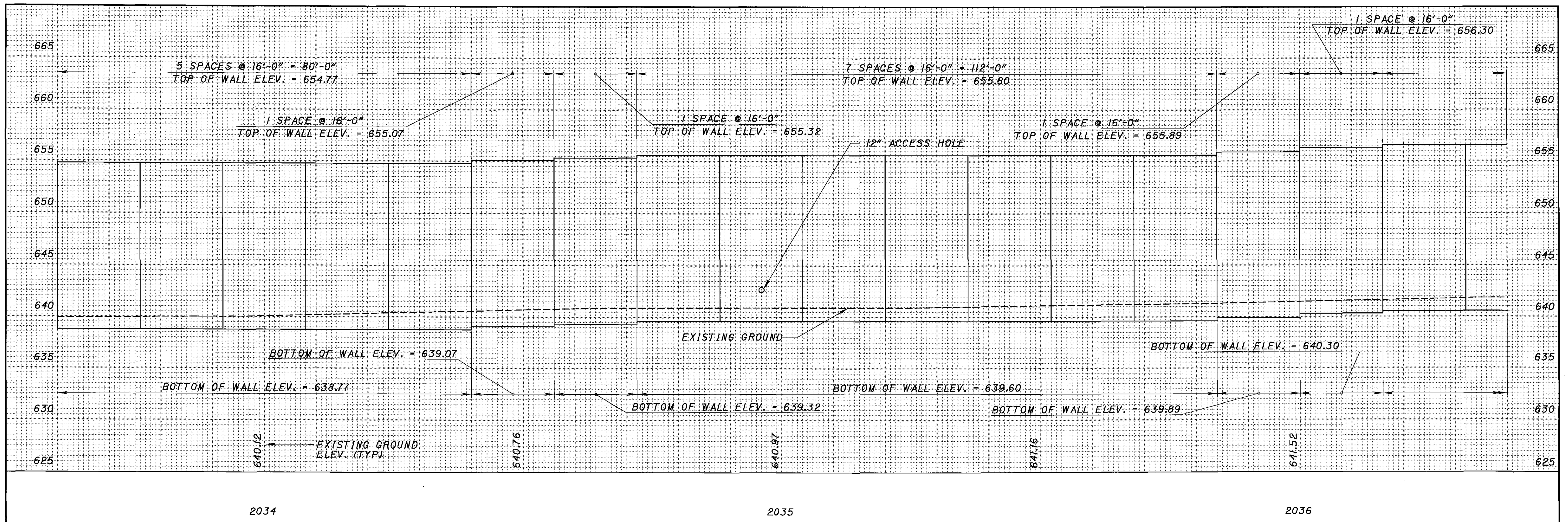
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LAK-2-0.00

326
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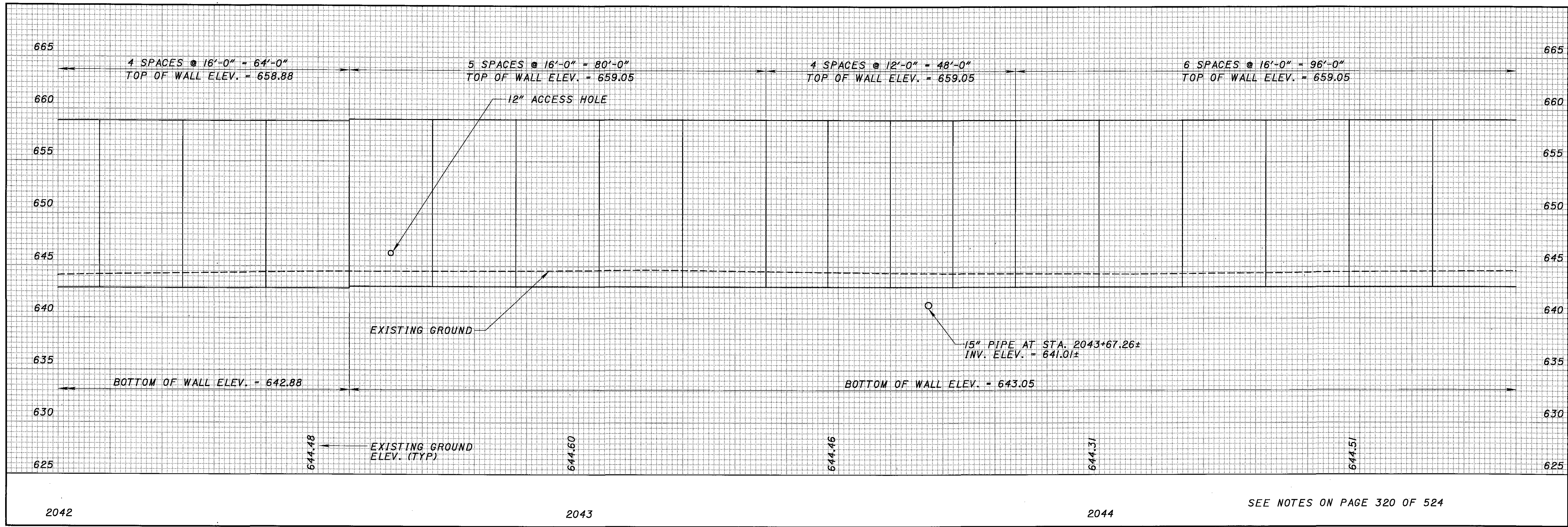
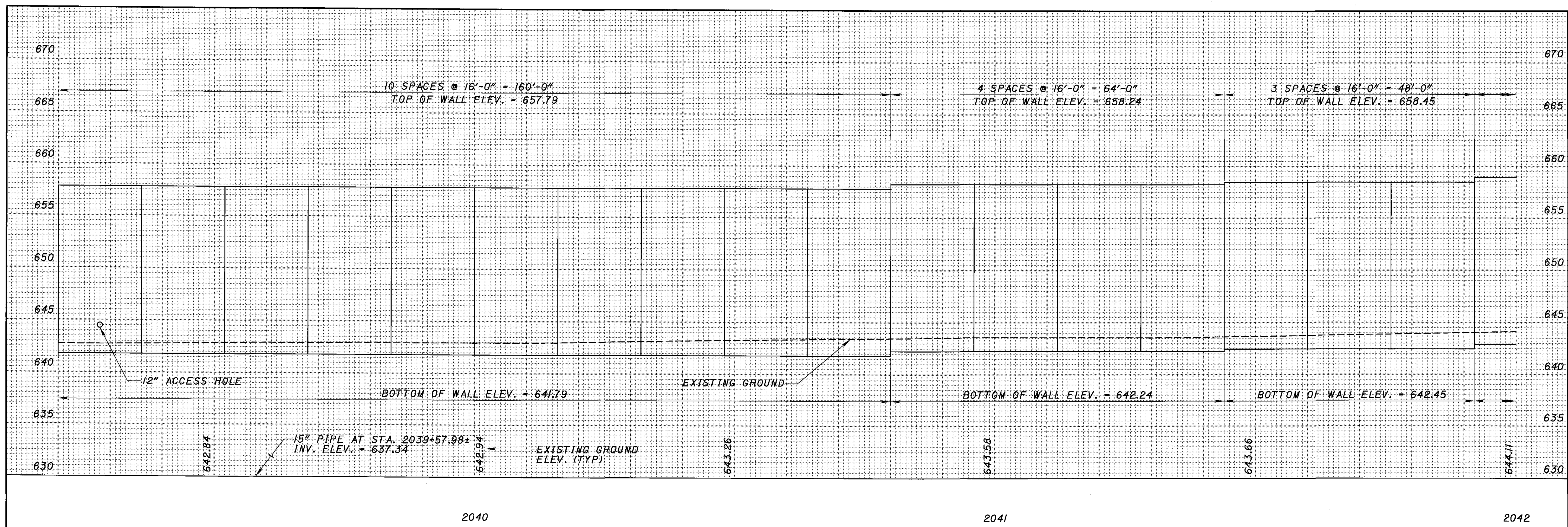
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SEE NOTES ON PAGE 320 OF 524

CALCULATED
 ETB
 CHECKED
 SCT
NOISE BARRIER 2 PROFILE
STA. 2033+60.00 TO STA. 2039+20.00
LAK-2-0.00
 327
 524

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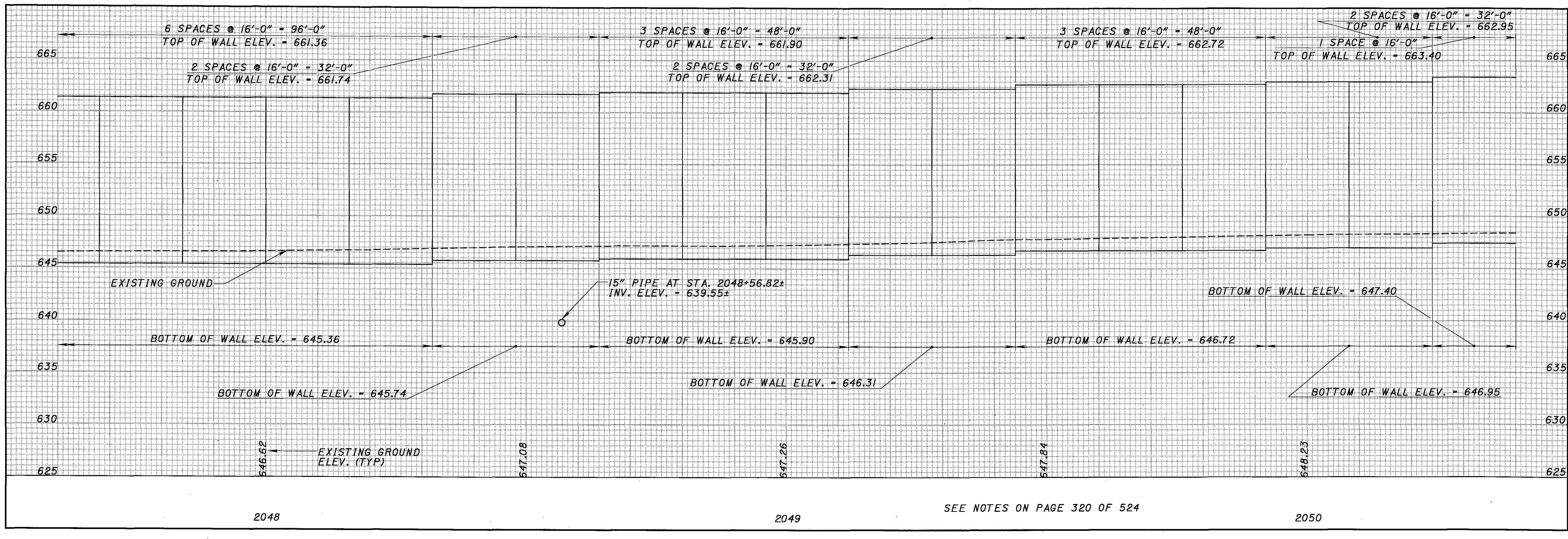
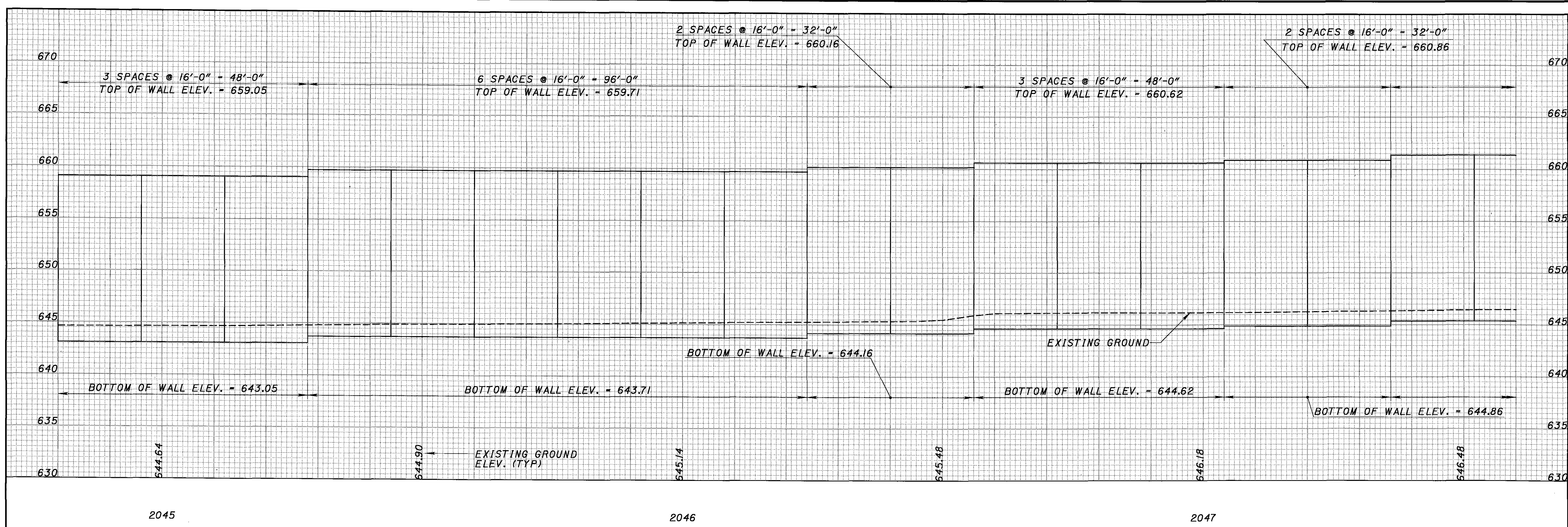
SEE NOTES ON PAGE 320 OF 524

CALCULATED
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NOISE BARRIER 2 PROFILE
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LAK-2-0.00

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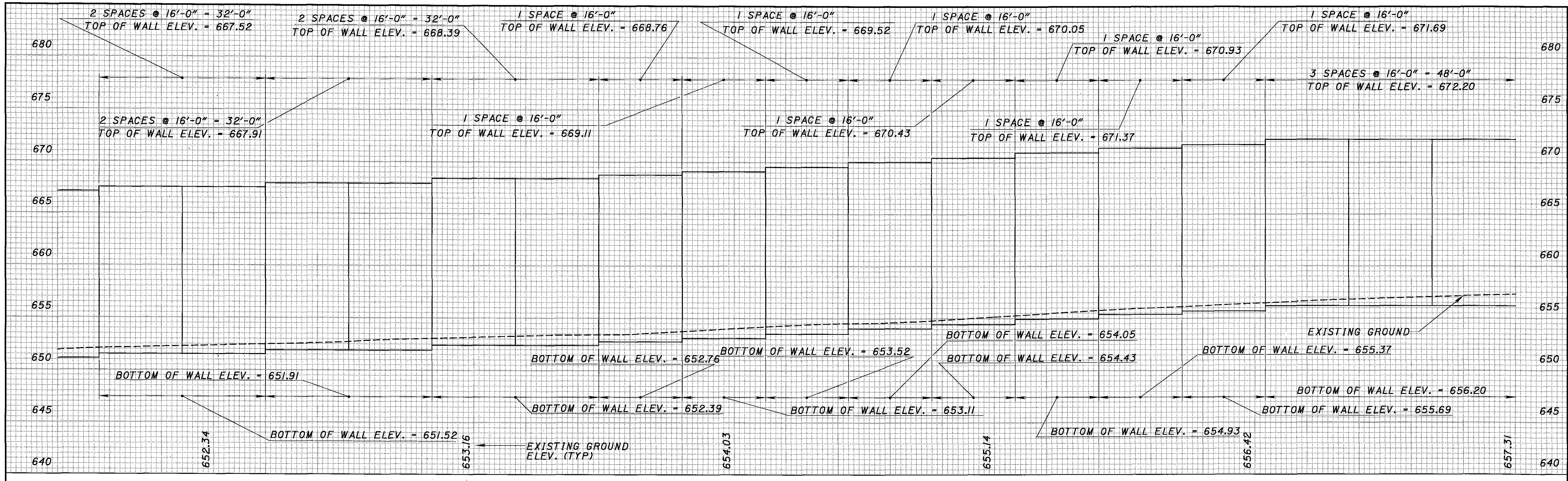
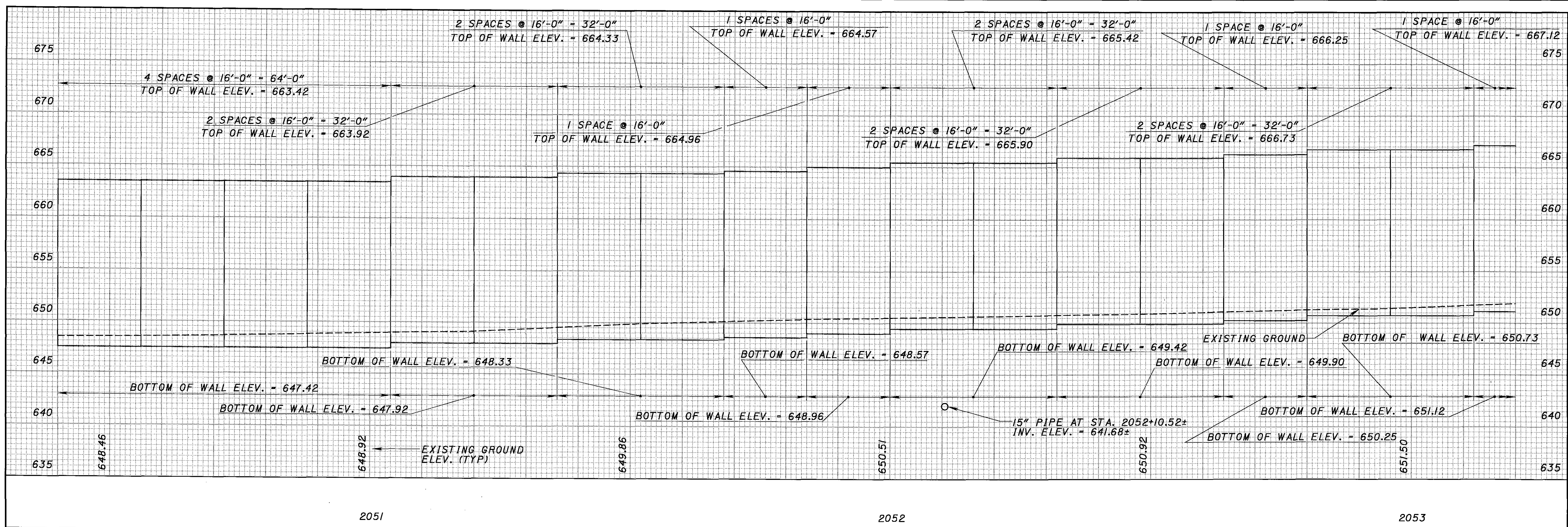
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LAK-2-0.00

329
524

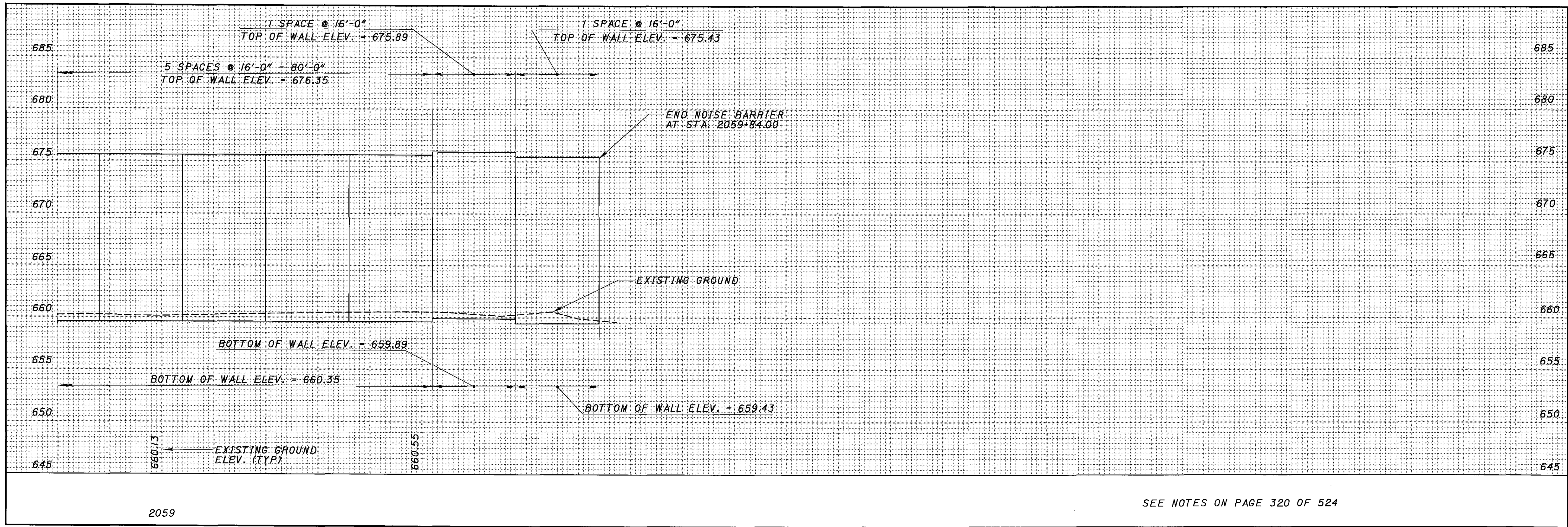
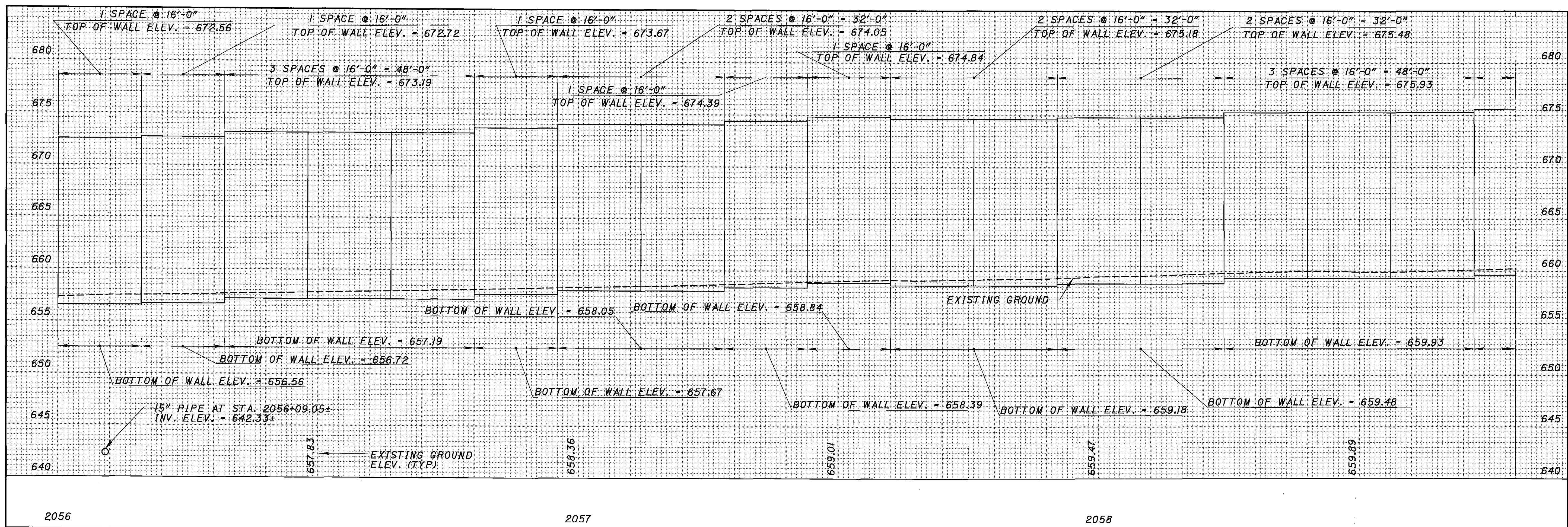
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SEE NOTES ON PAGE 320 OF 524

CALCULATED ETB
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LAK-2-0.00
 330
 524

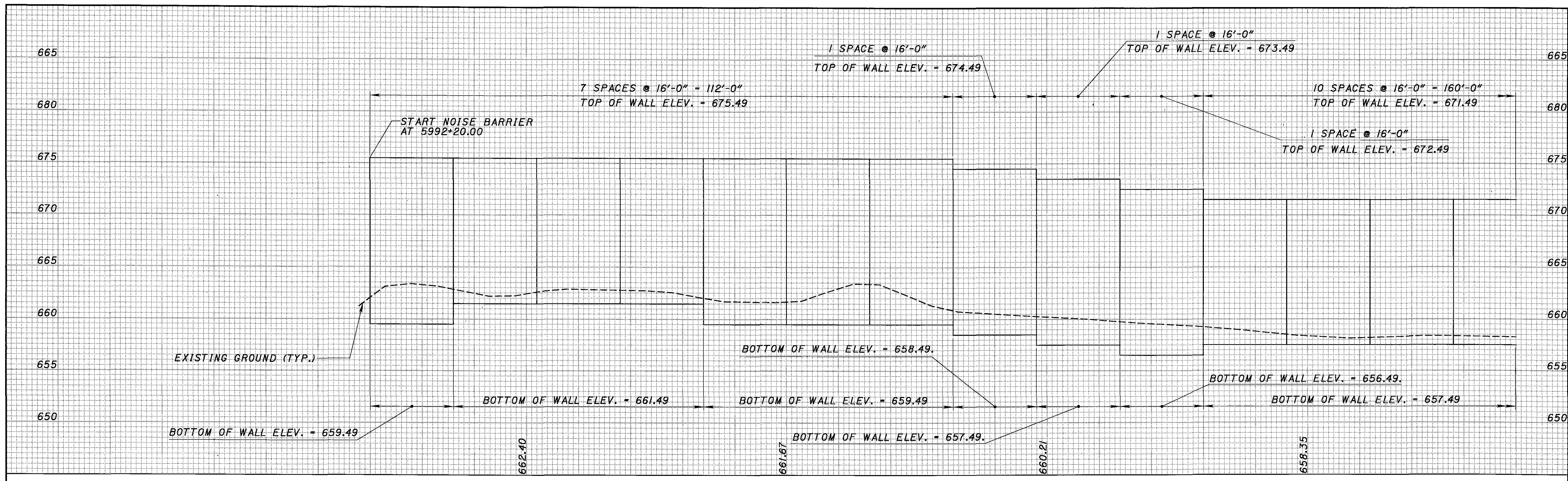
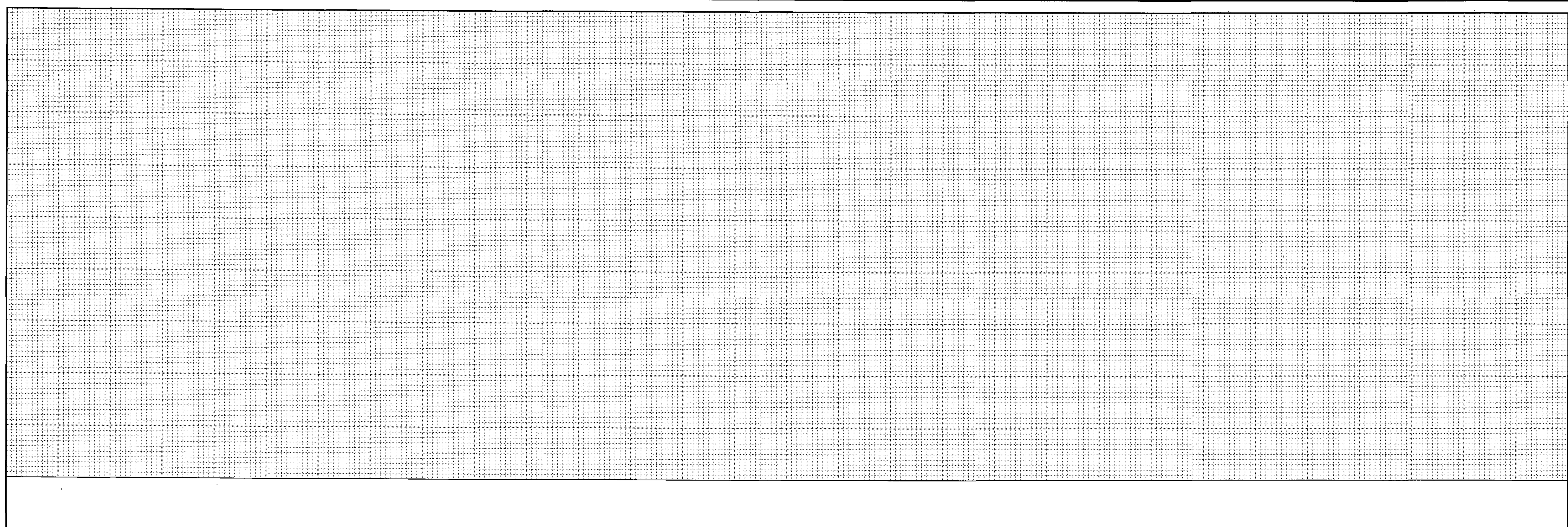
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SEE NOTES ON PAGE 320 OF 524

CALCULATED ETB	CHECKED SC7
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STA. 2056+00.00 TO STA. 2059+84.00	
LAK-2-0.00	
331 524	

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5992

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5994

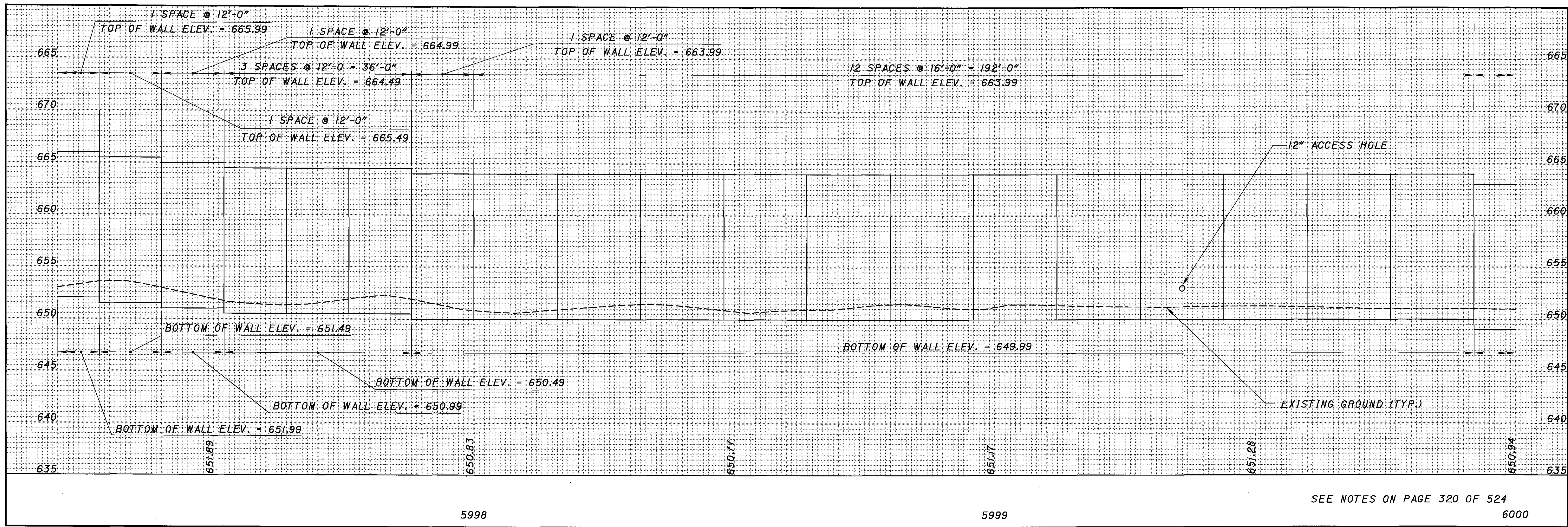
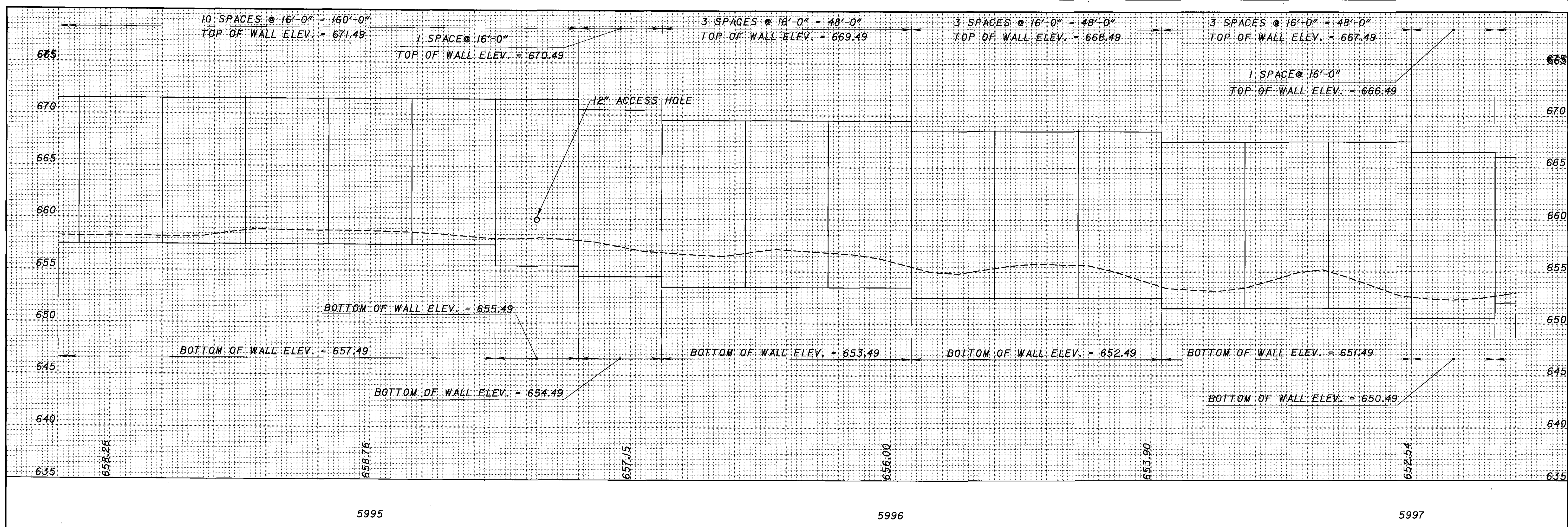
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STA. 5992+20.00 TO STA. 5994+40.00

LAK-2-0.00

332
524

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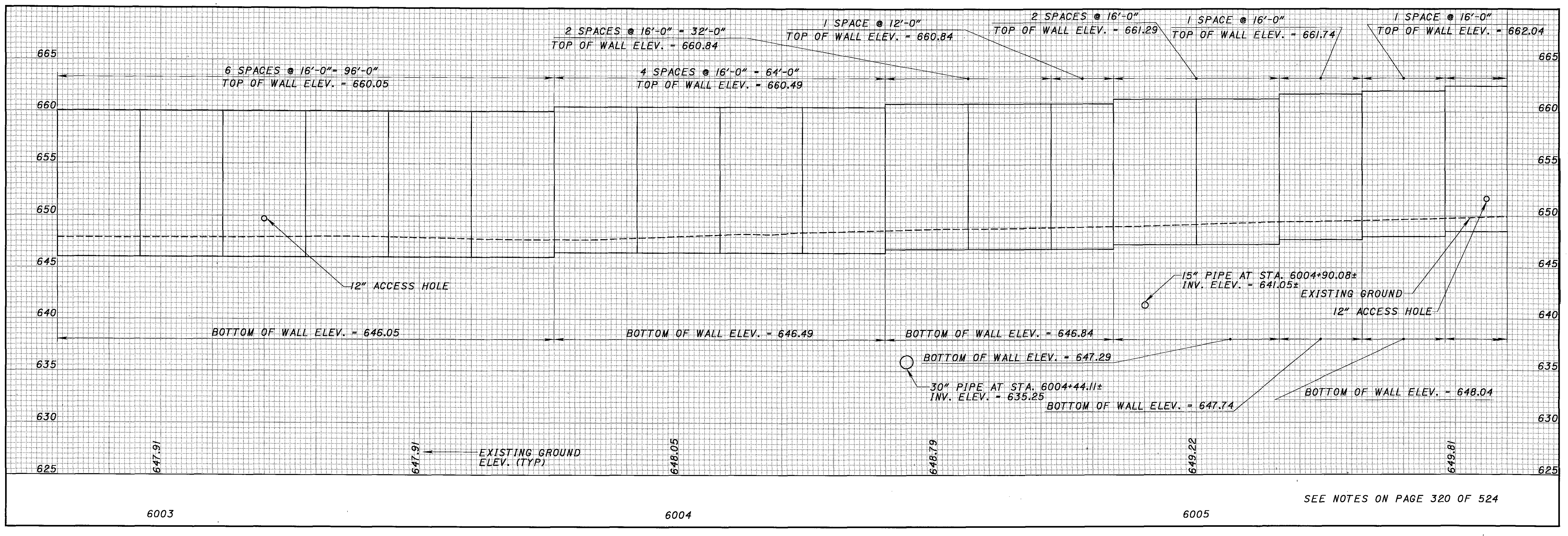
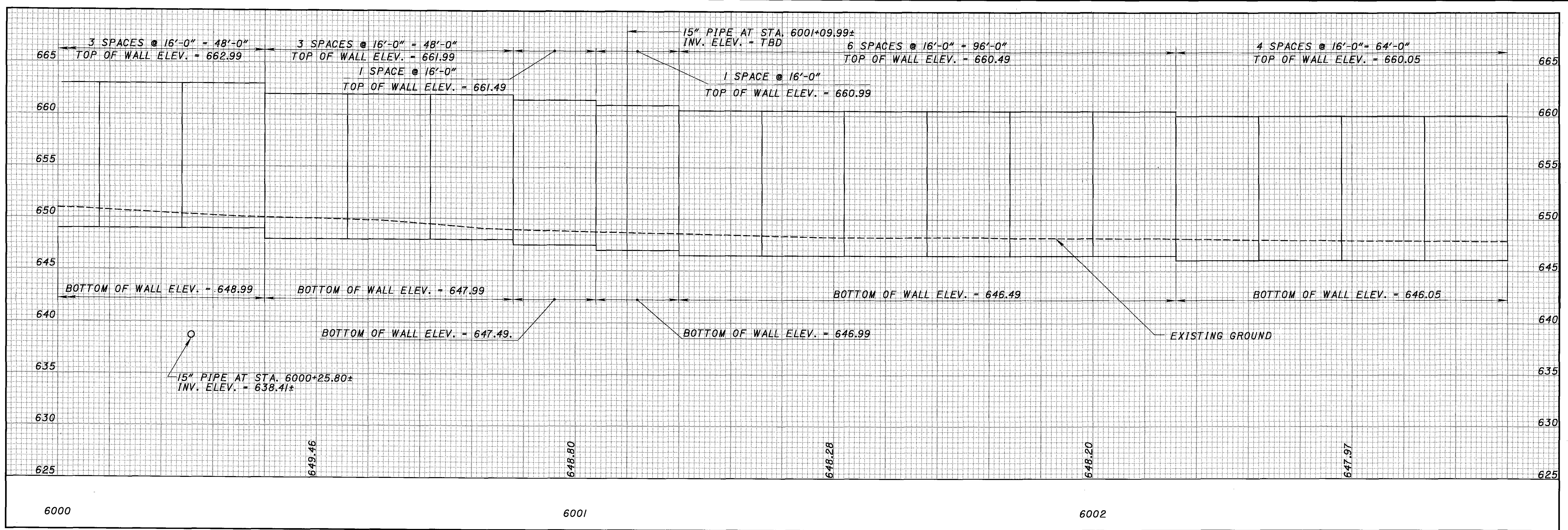
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LAK-2-0-00

333
524

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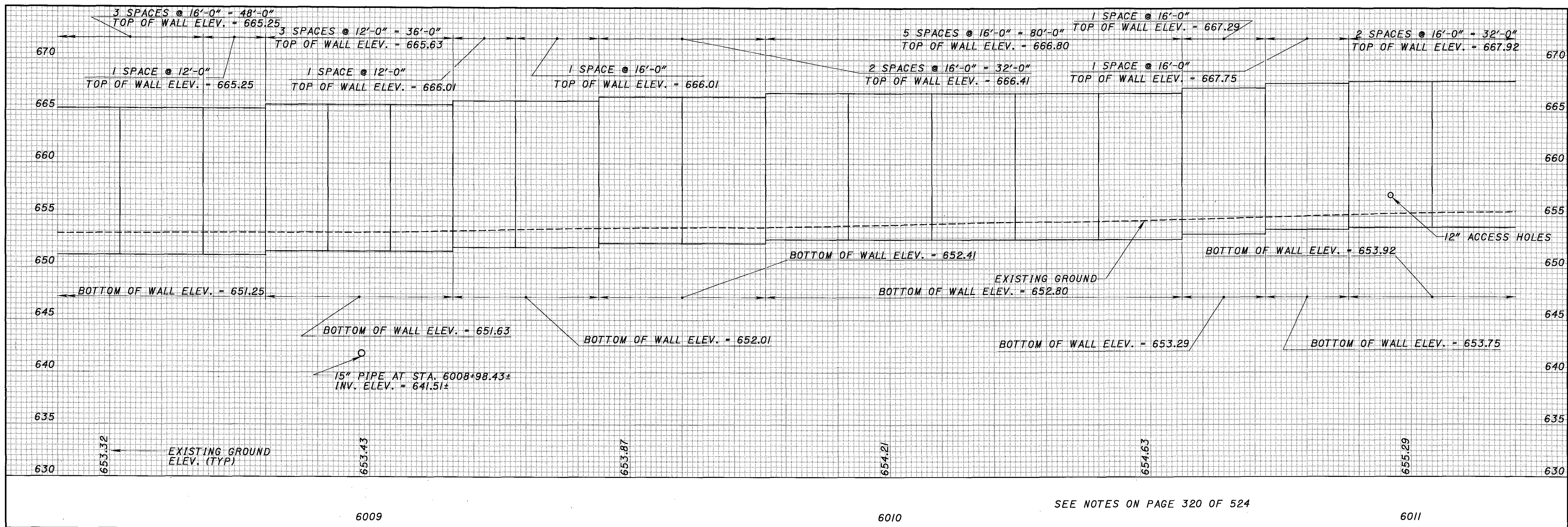
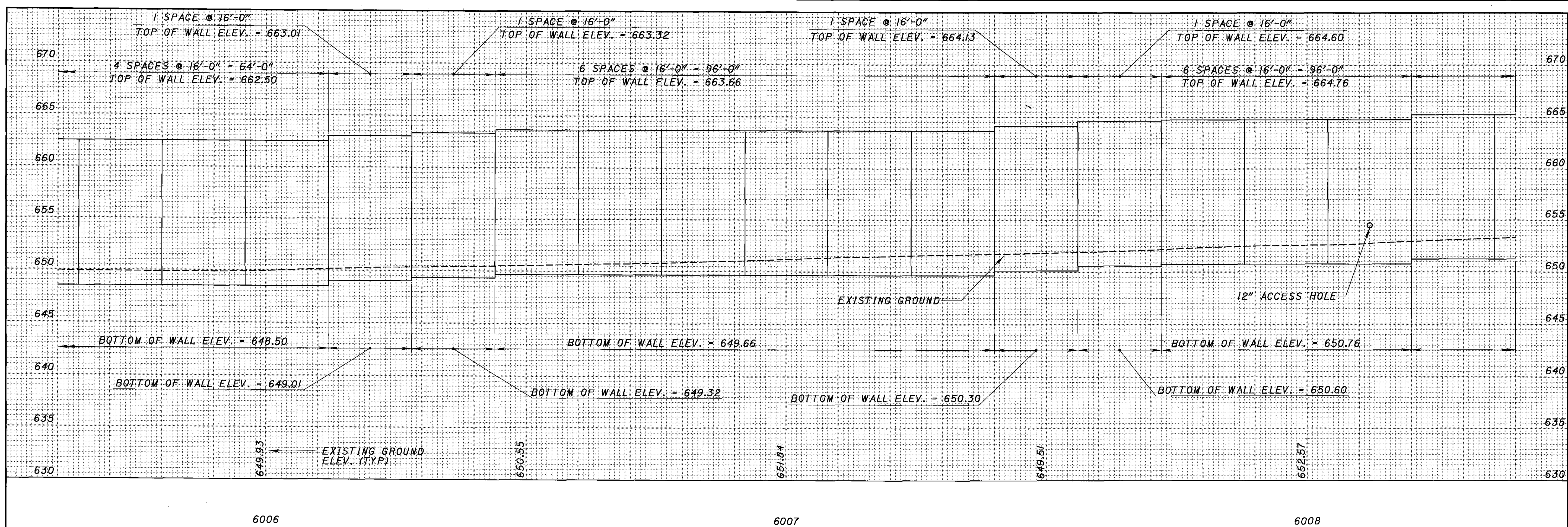
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LAK-2-0.00

334
524

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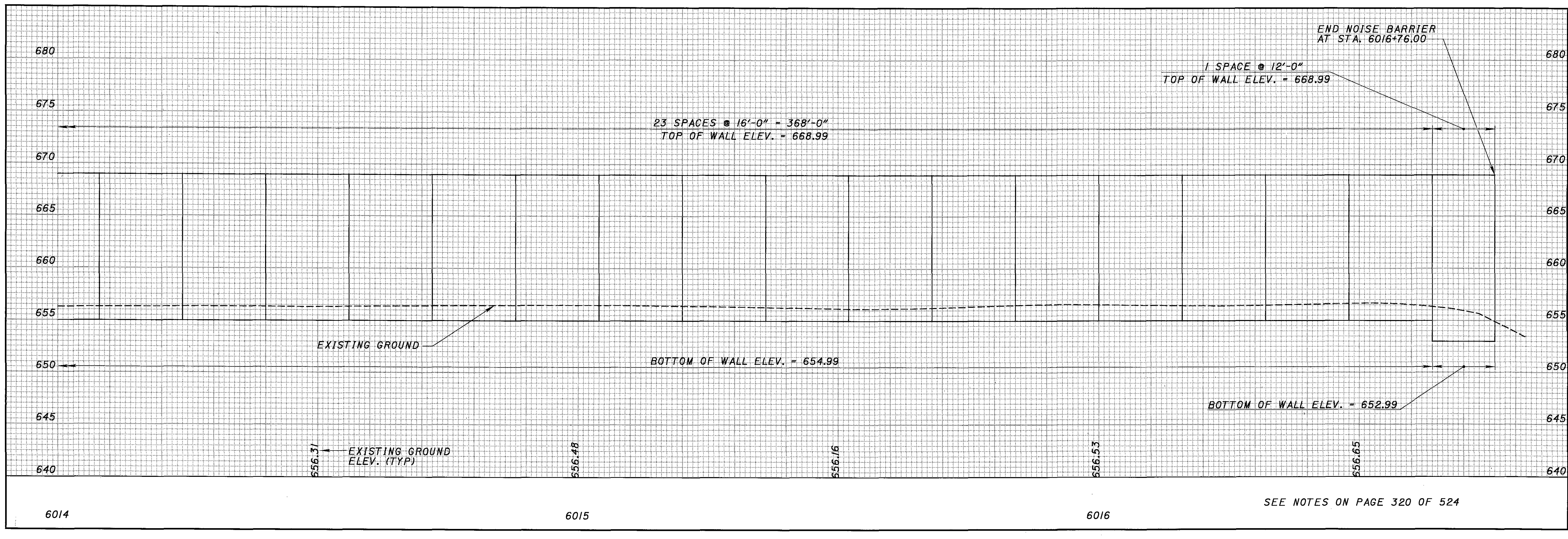
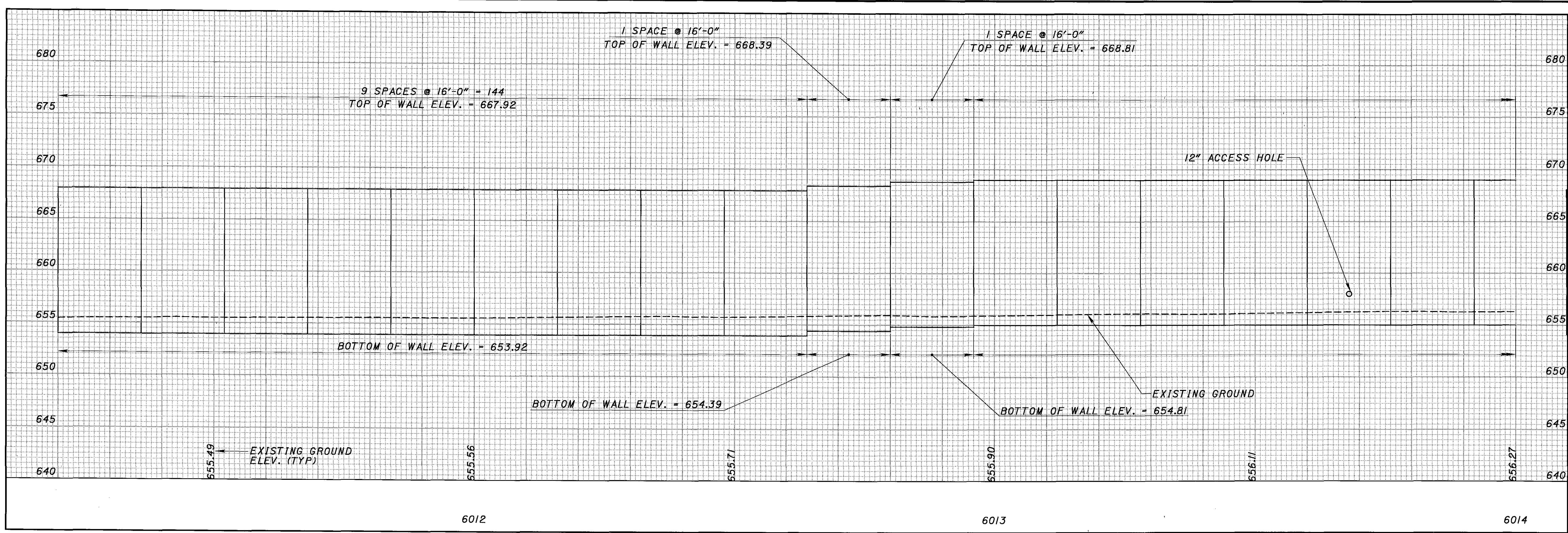
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LAK-2-0.00

335
524

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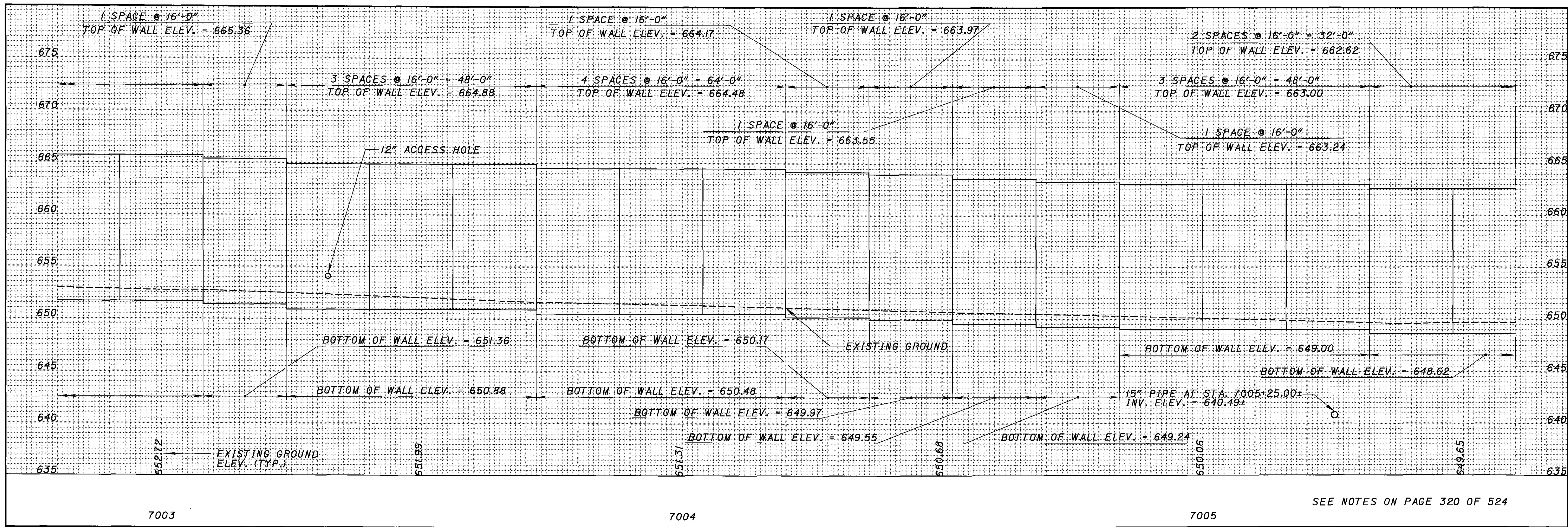
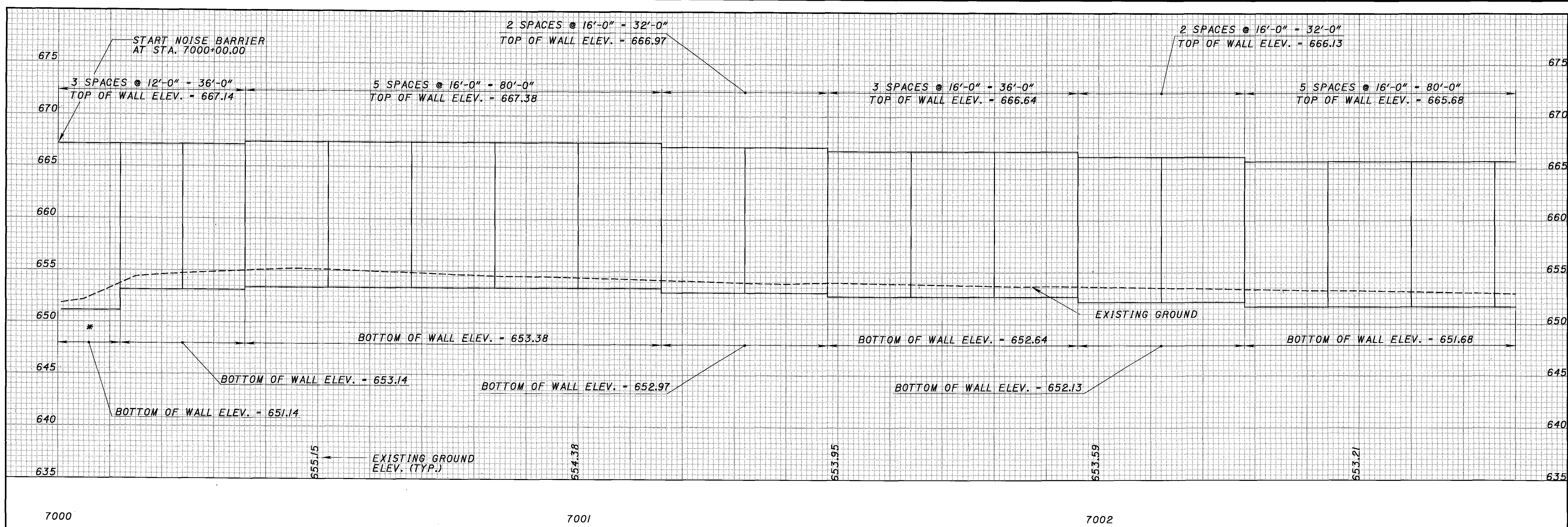
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STA. 6011+20.00 TO STA. 6016+76.00

LAK-2-0.00

336
520

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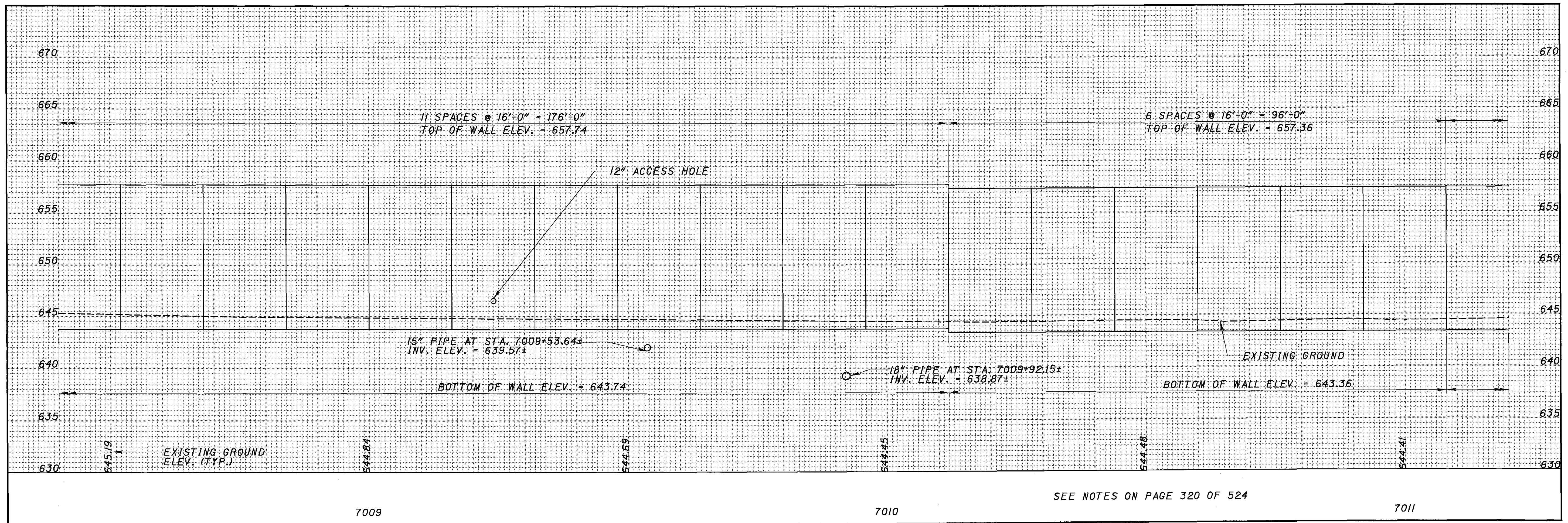
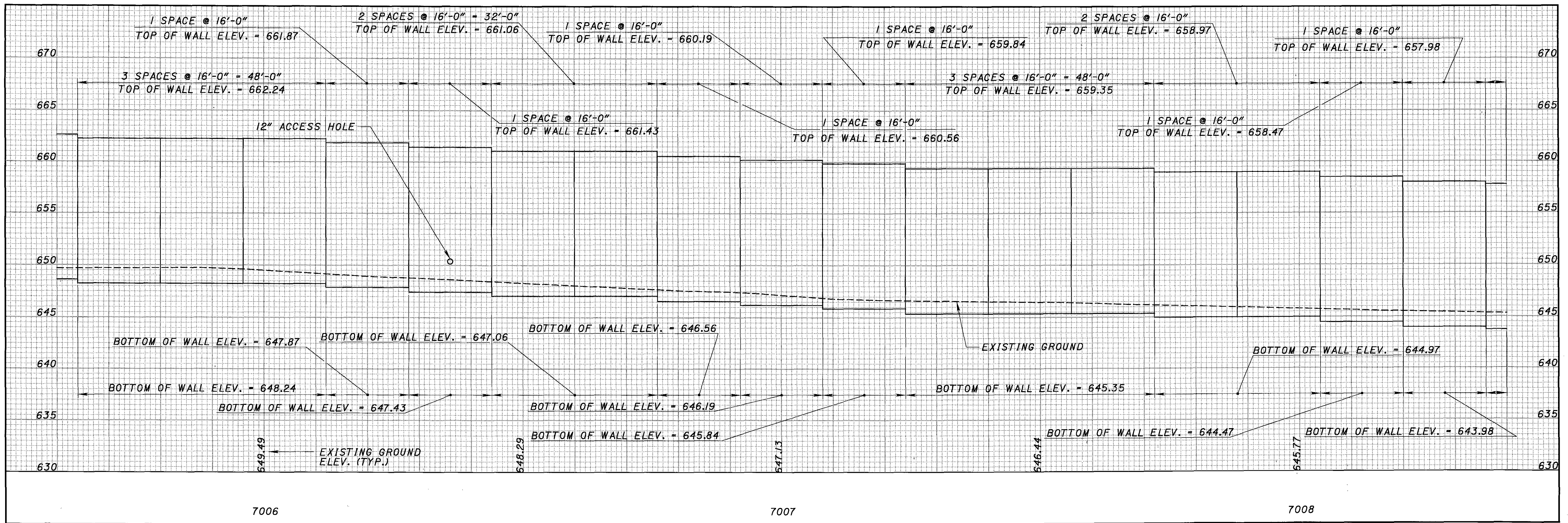
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LAK-2-0-00

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524

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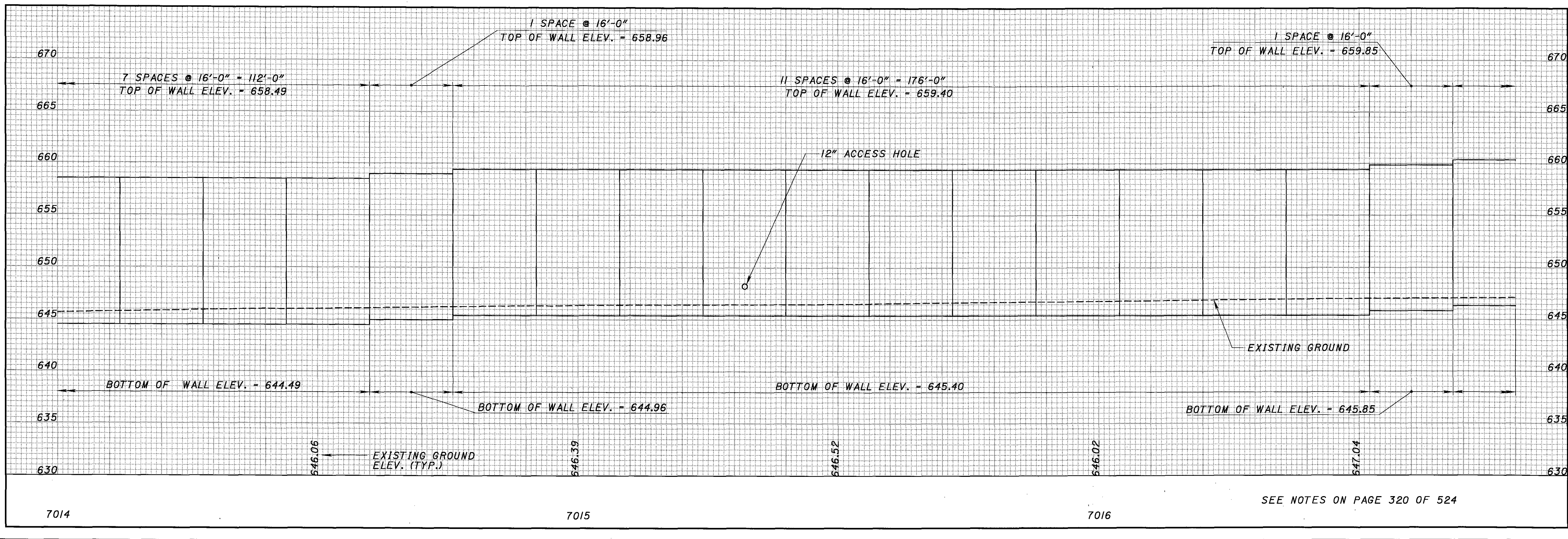
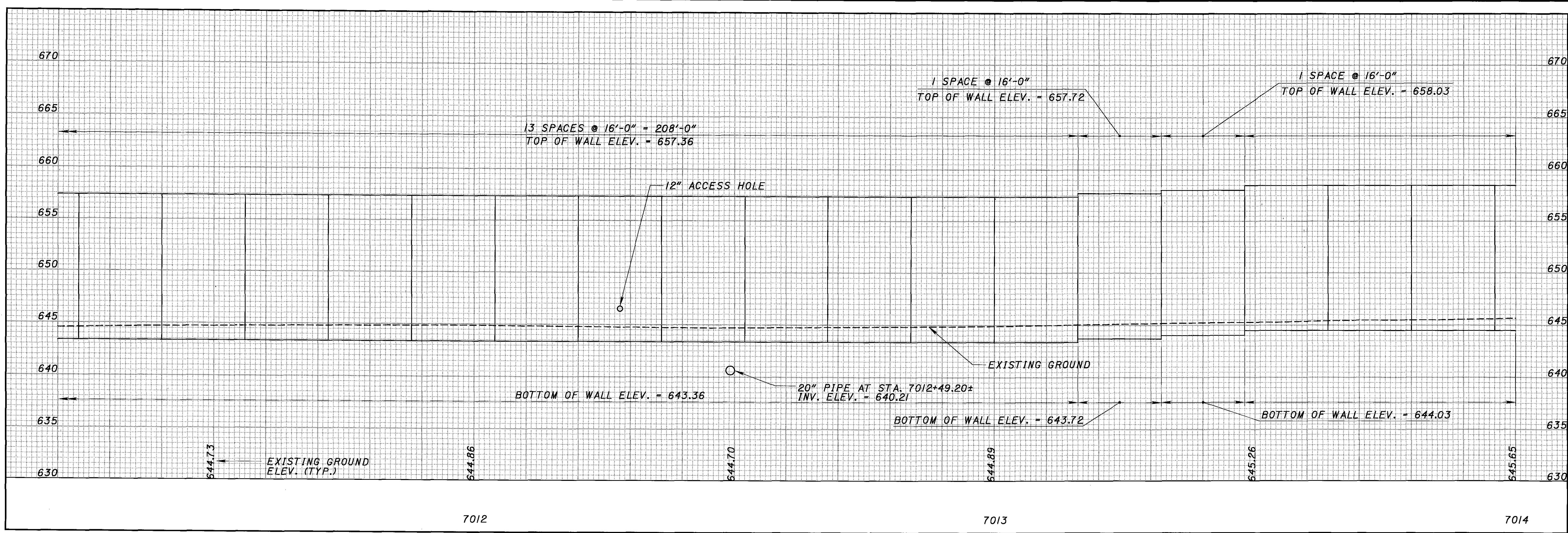


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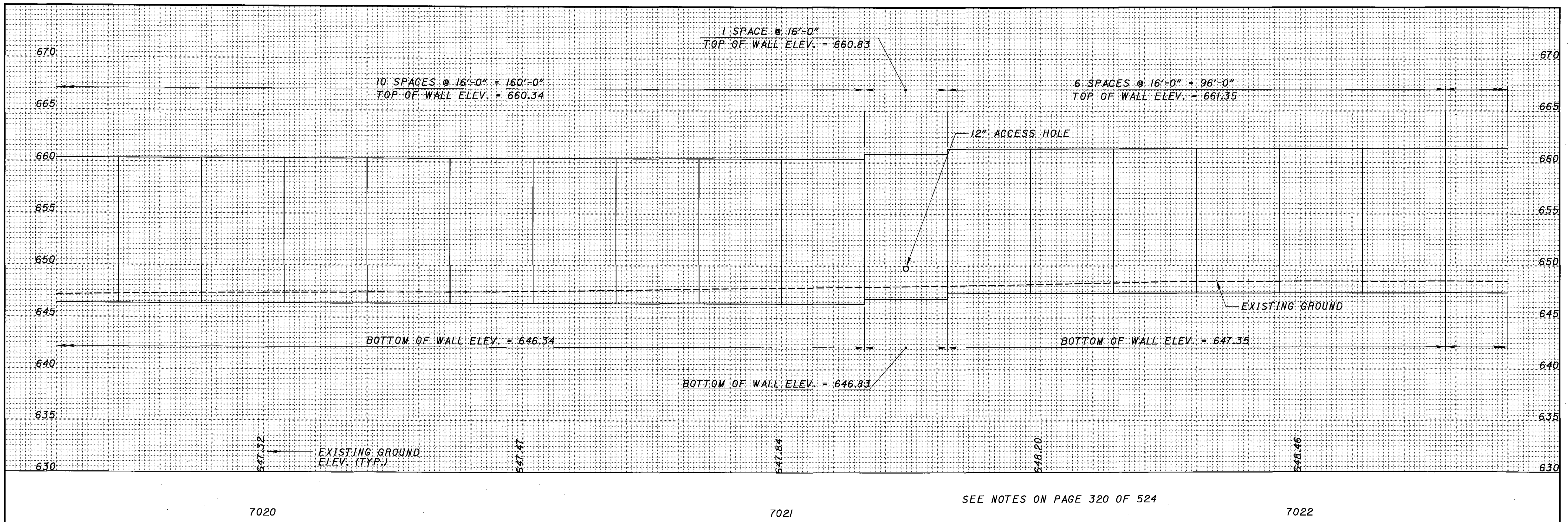
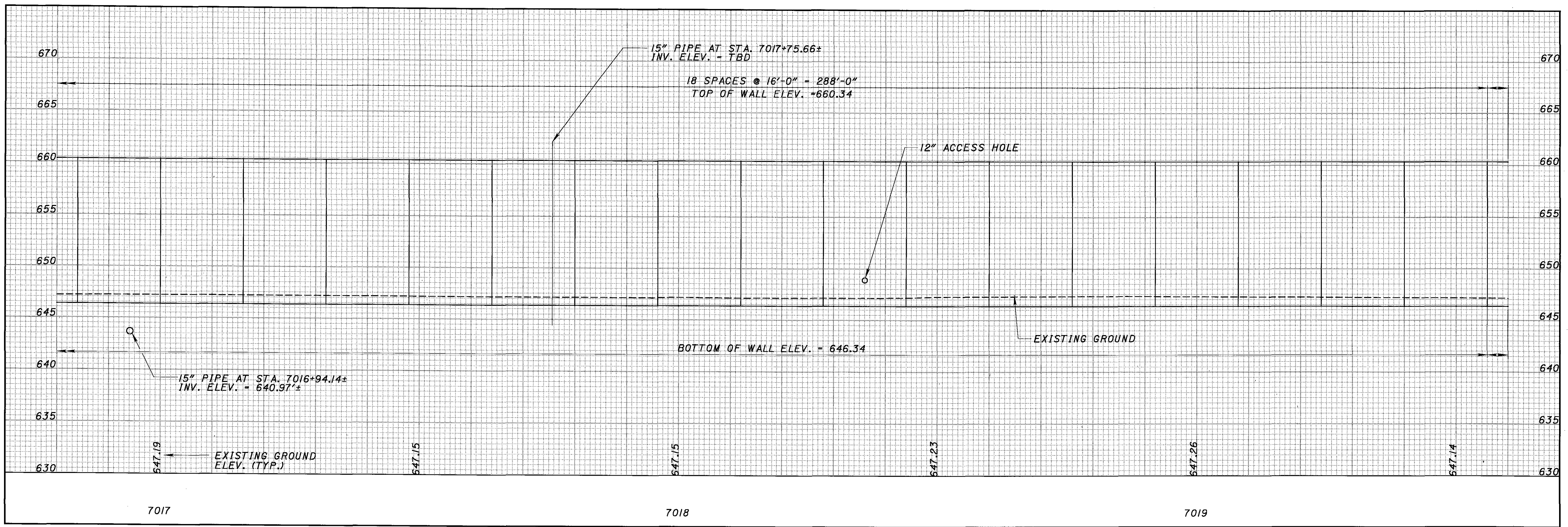


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339
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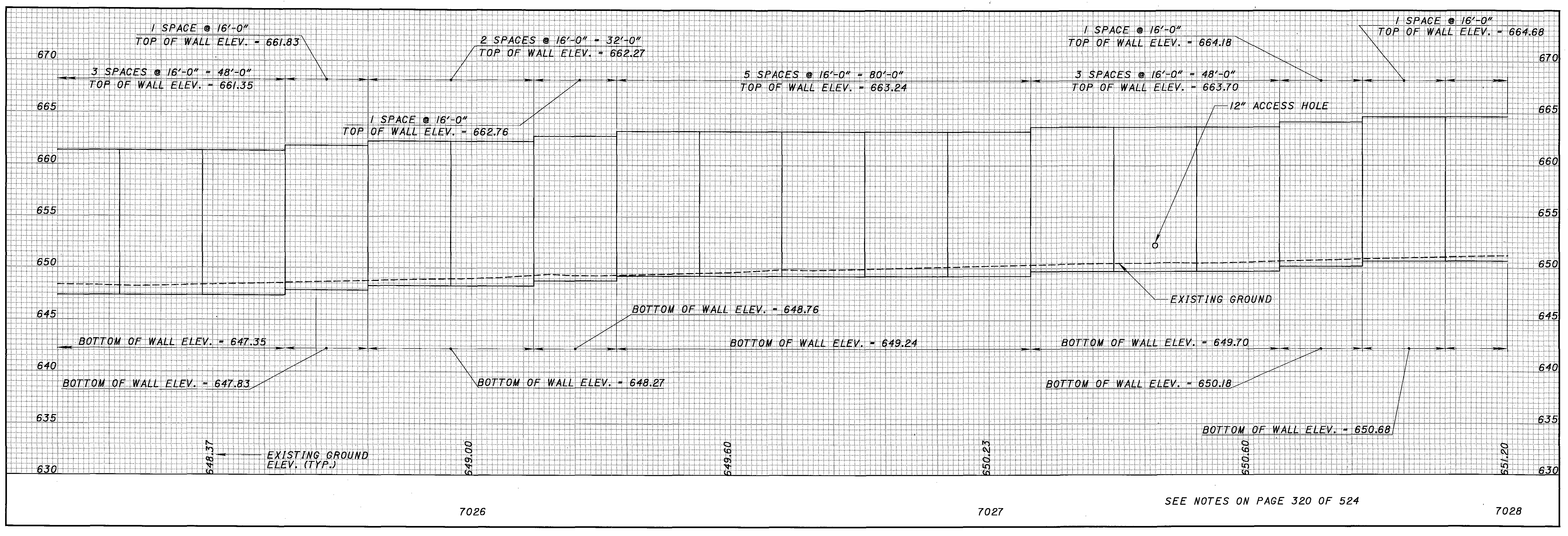
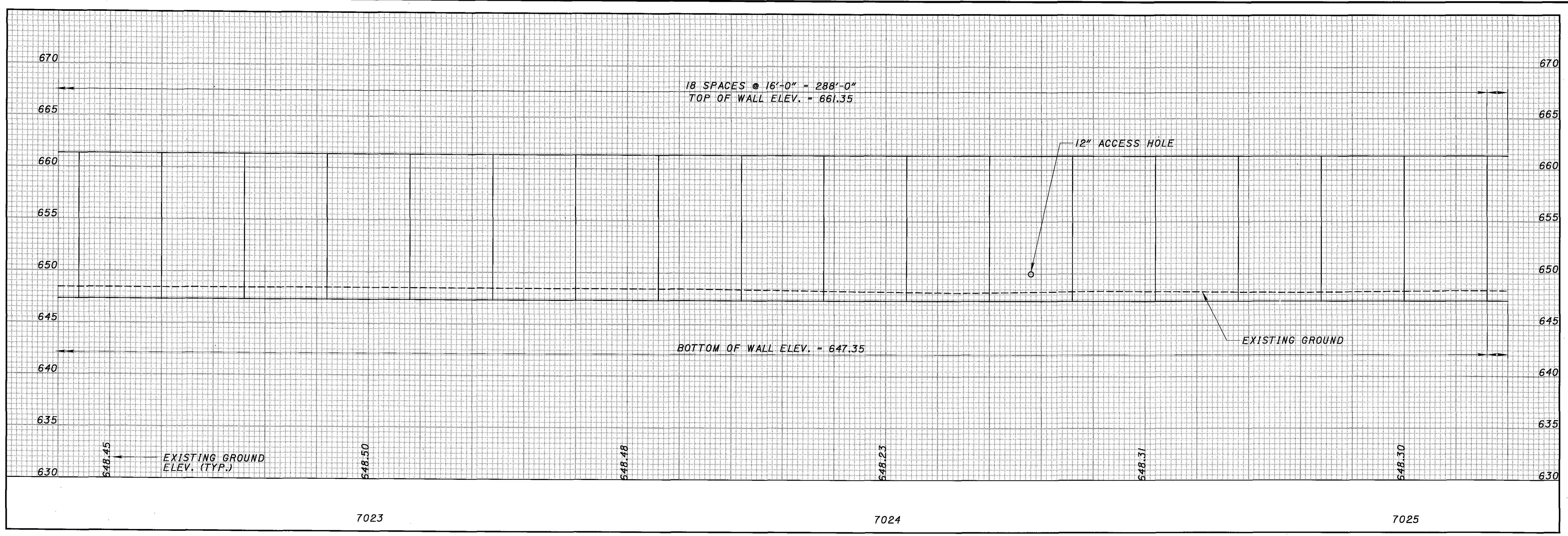
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LAK-2-0.00

340
524

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SEE NOTES ON PAGE 320 OF 524

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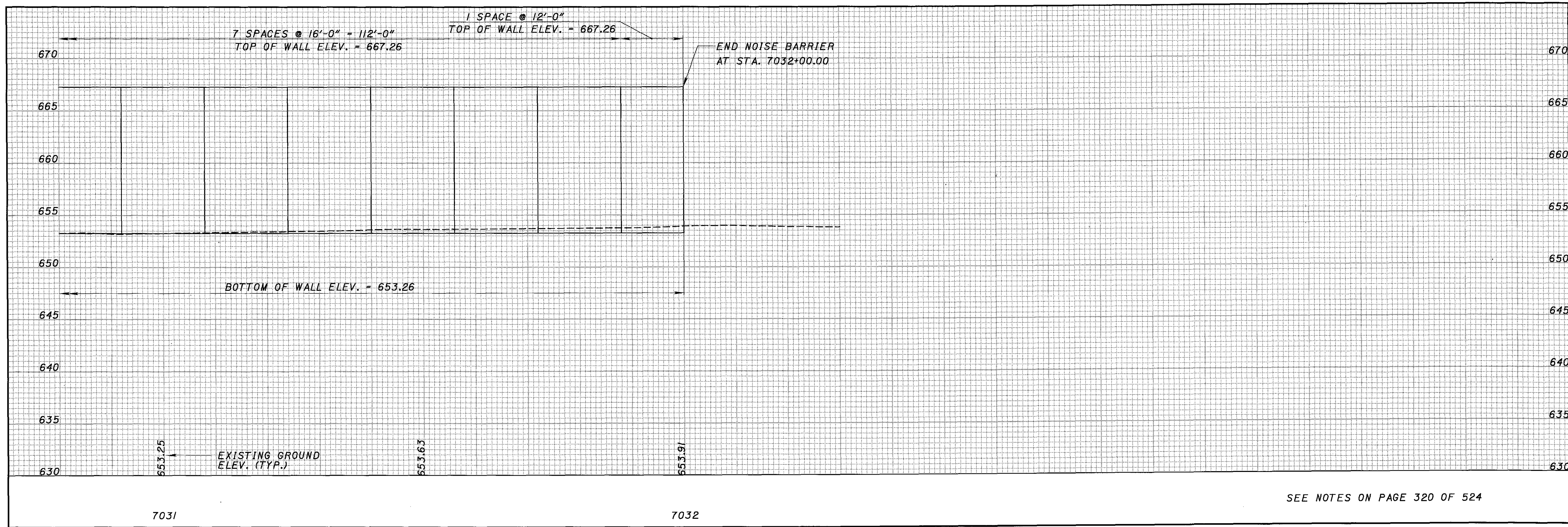
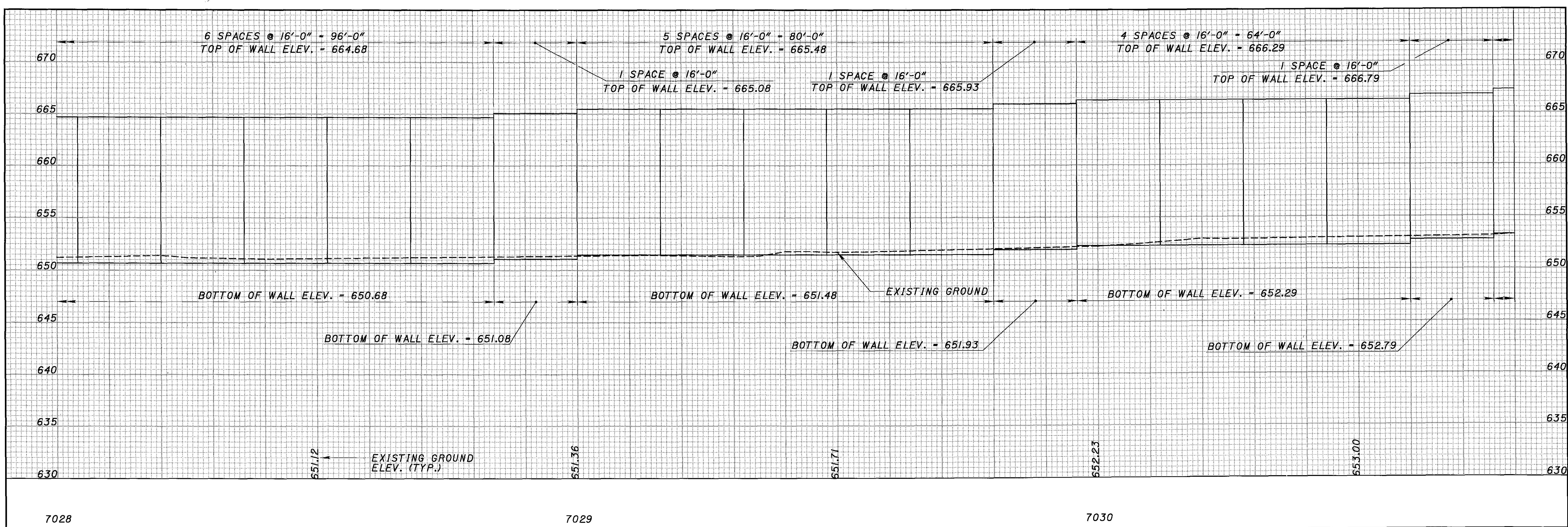
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LAK-2-0.00

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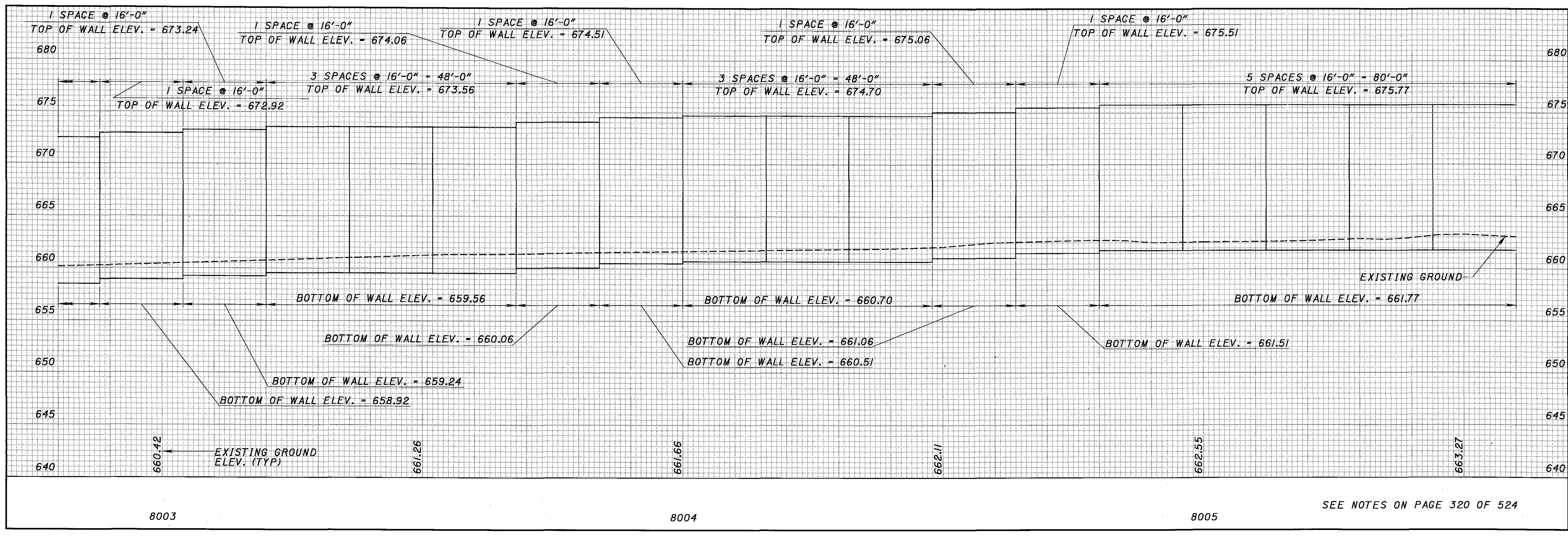
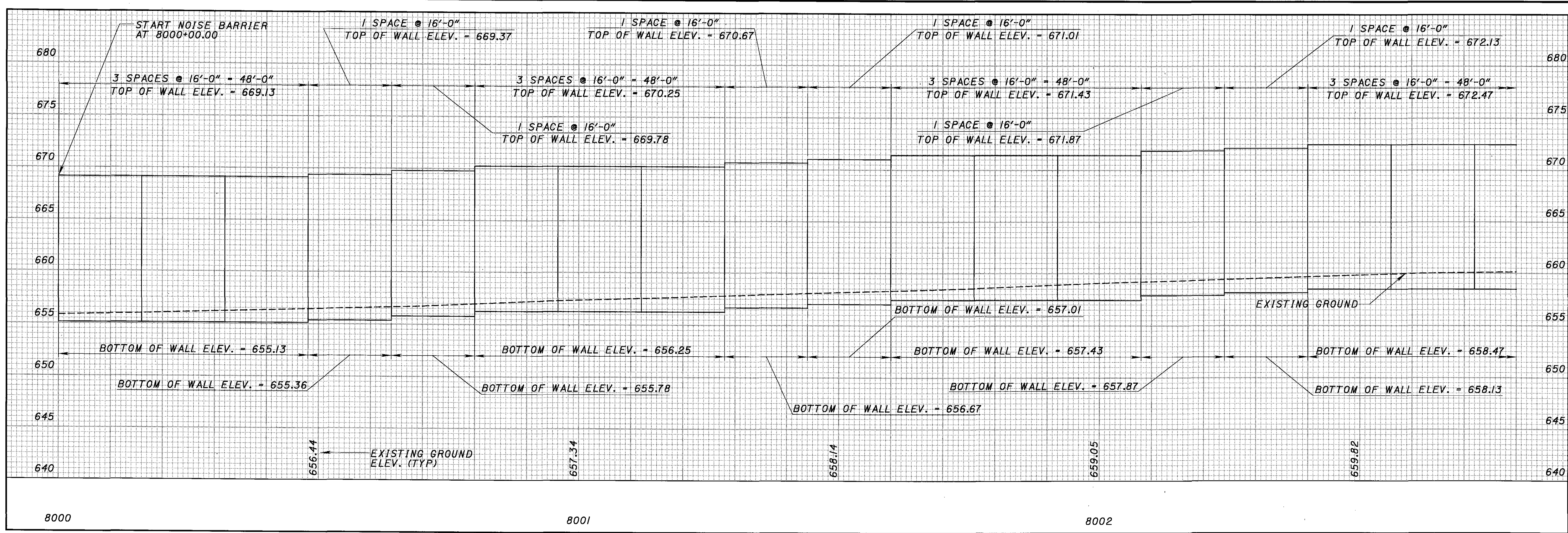
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SEE NOTES ON PAGE 320 OF 524

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NOISE BARRIER 7 PROFILE	
STA. 7028+00.00 TO STA. 7032+00.00	
LAK-2-0.00	
342	524

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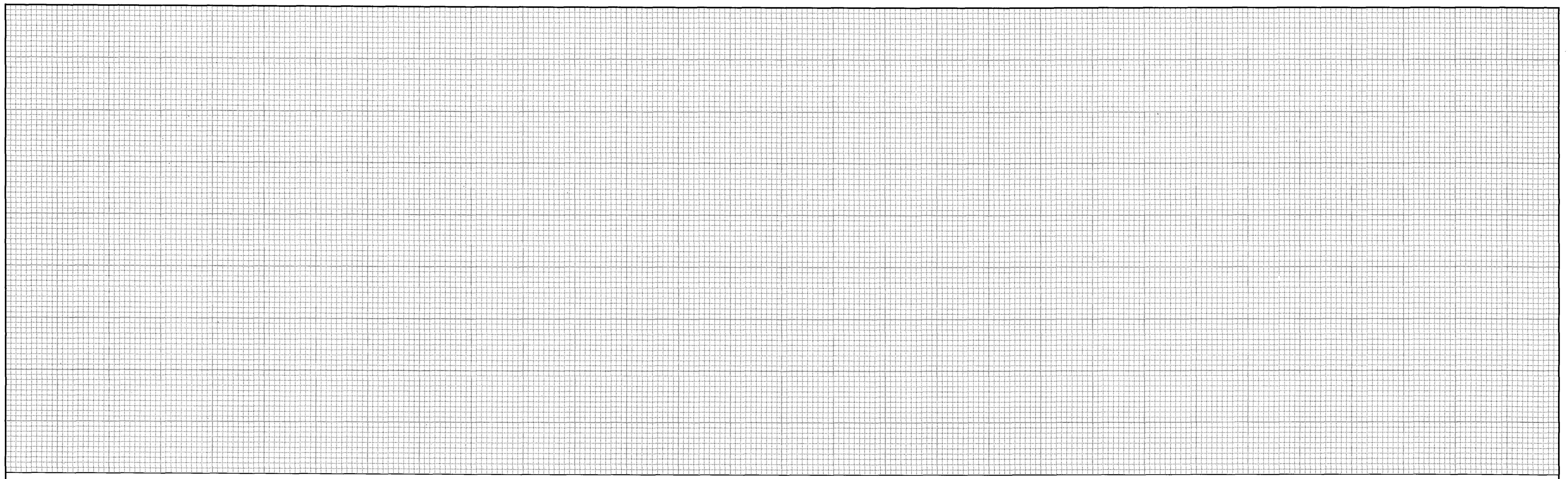
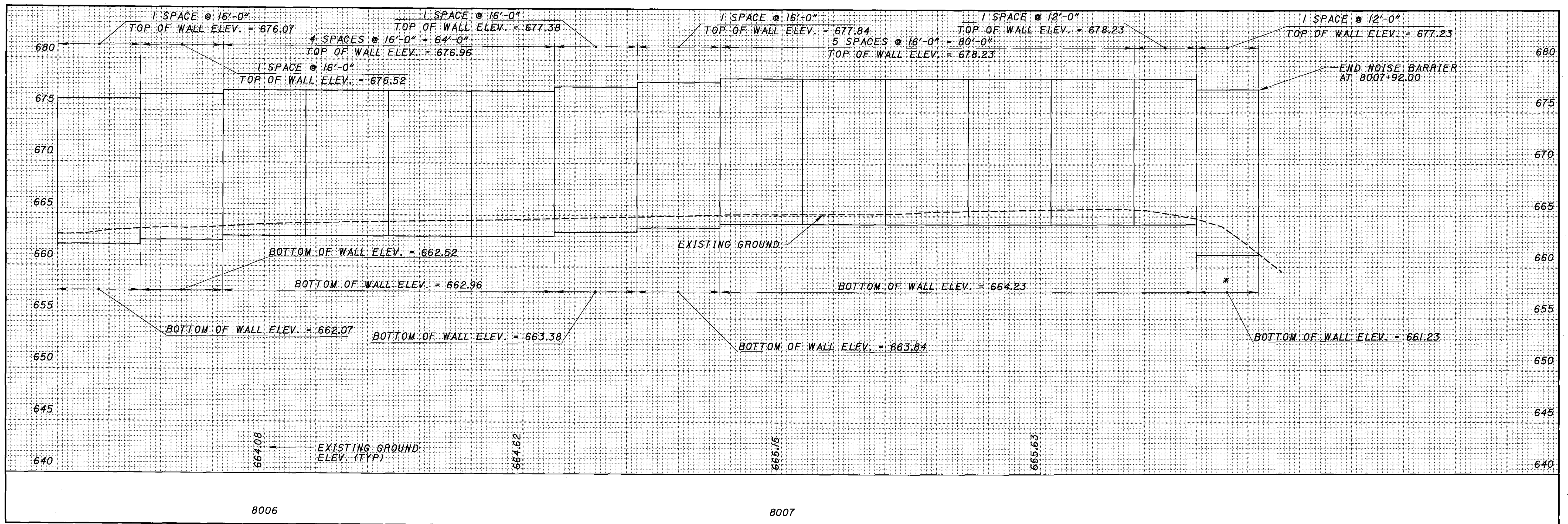
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LAK-2-0.00

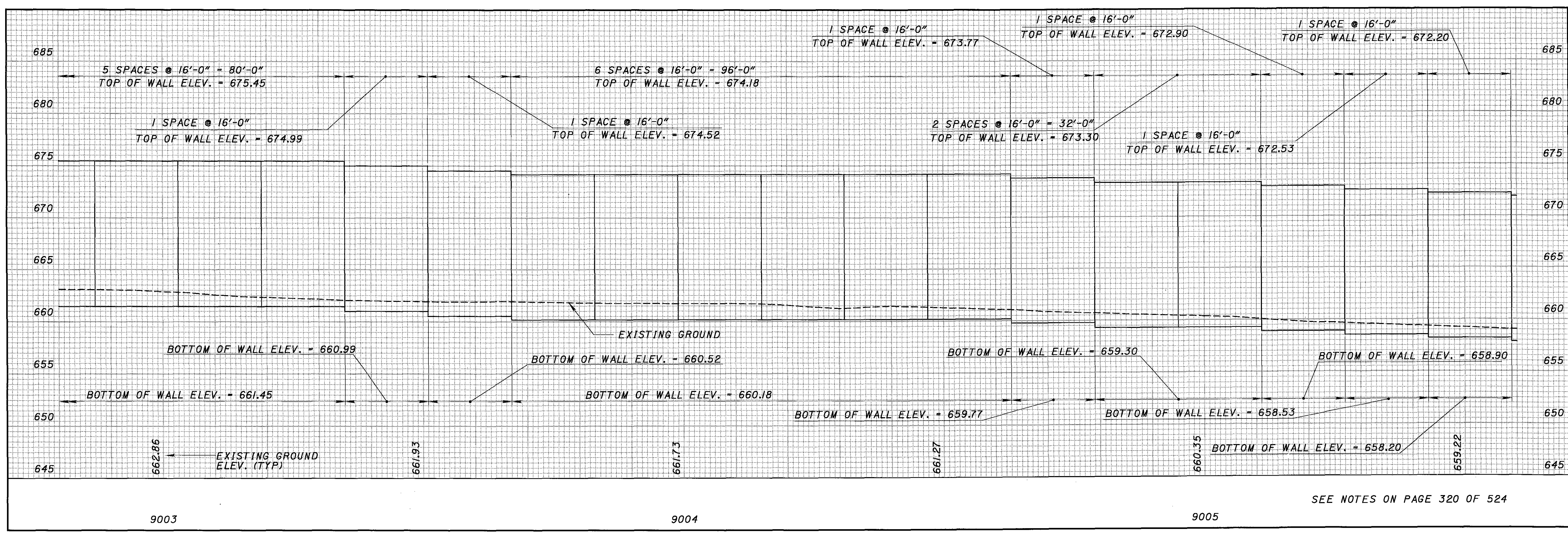
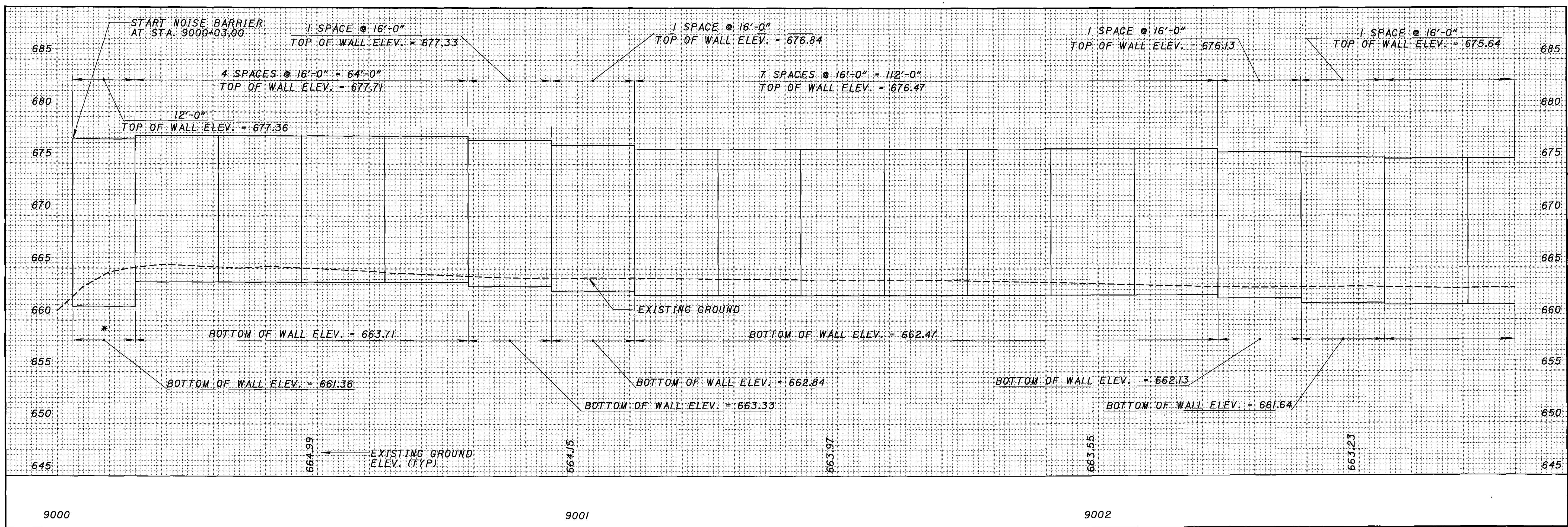
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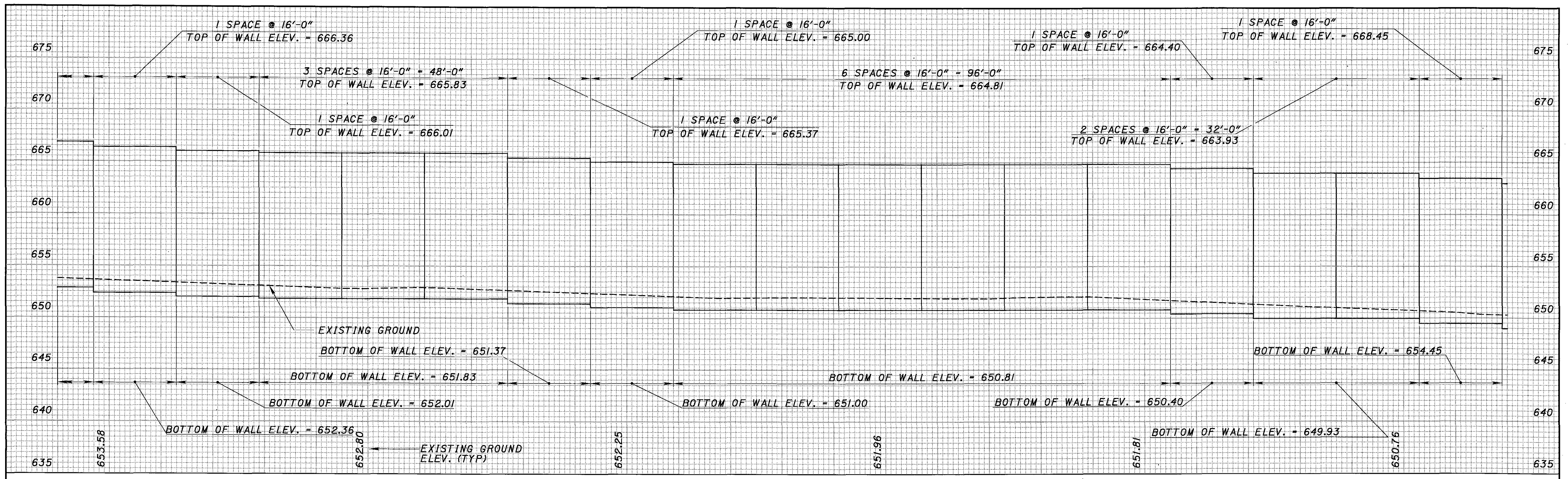
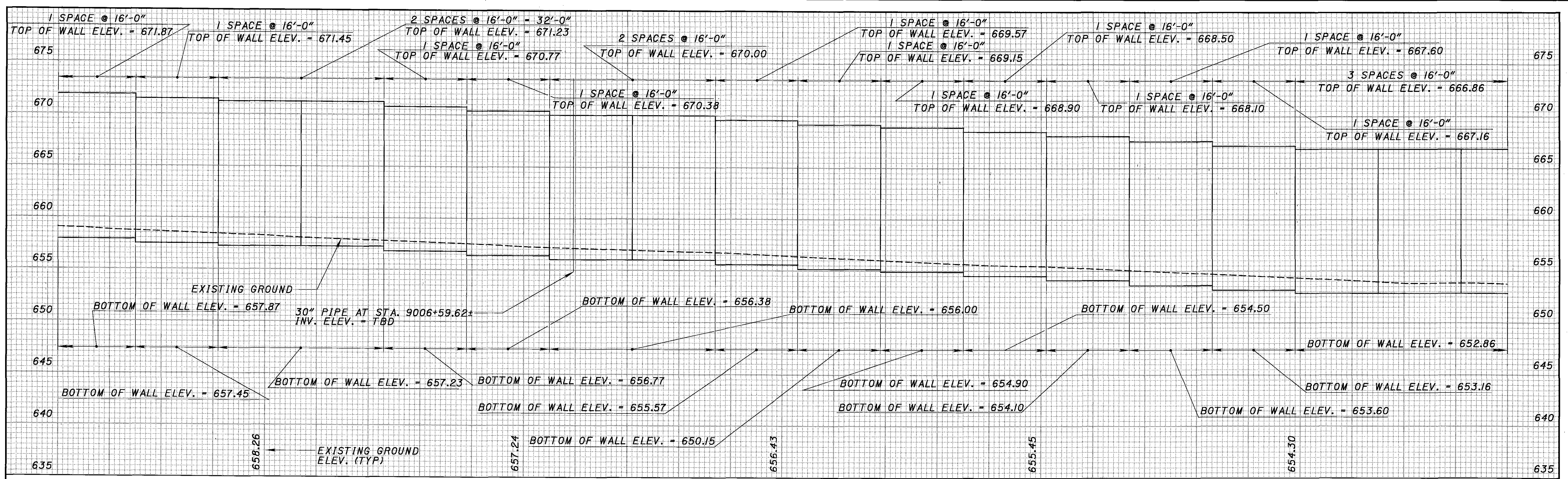
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SEE NOTES ON PAGE 320 OF 524

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NOISE BARRIER 9 PROFILE
STA. 9000+03.00 TO STA. 9005+60.00
LAK-2-0.00
 346
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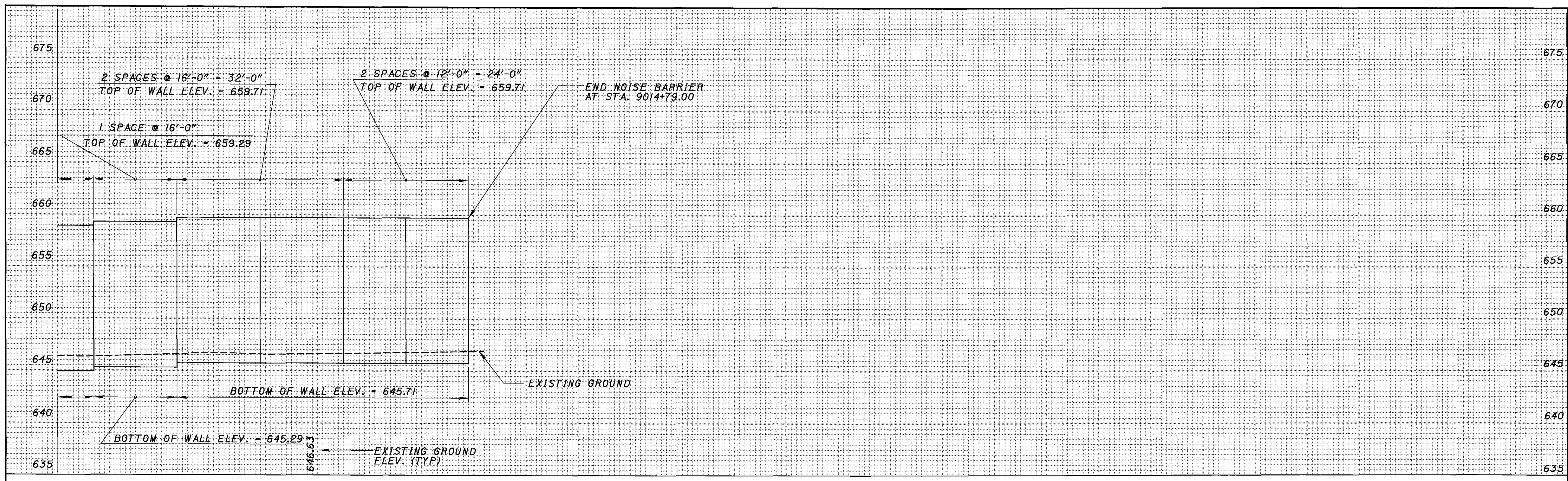
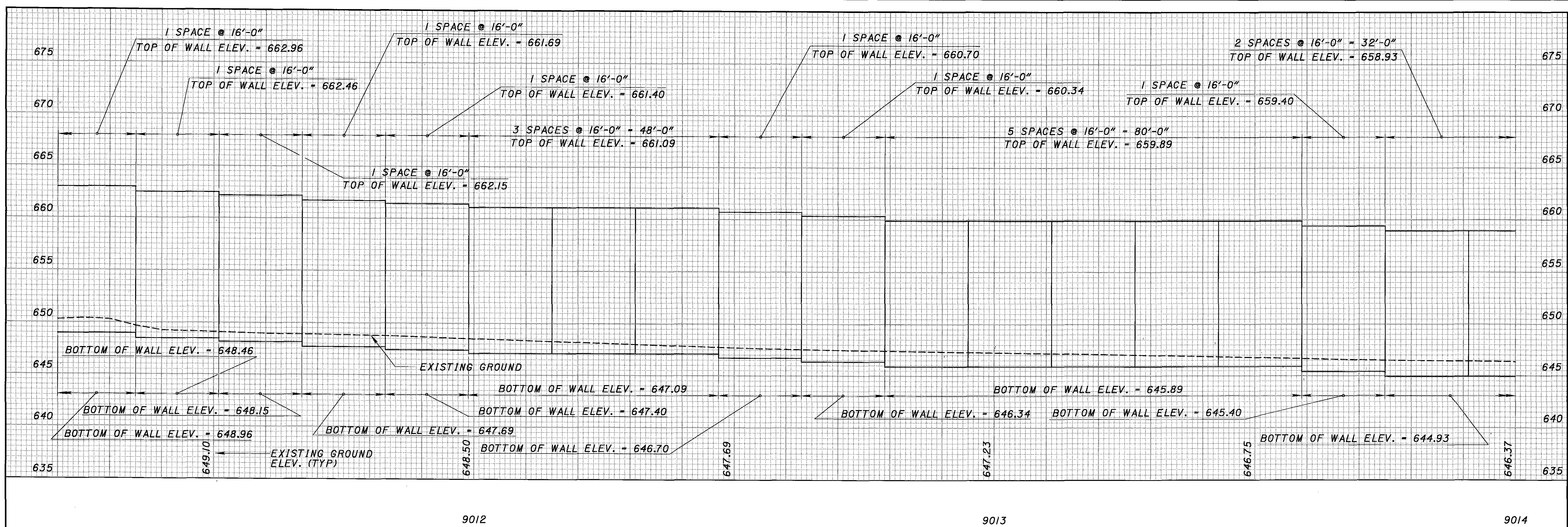
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347
524

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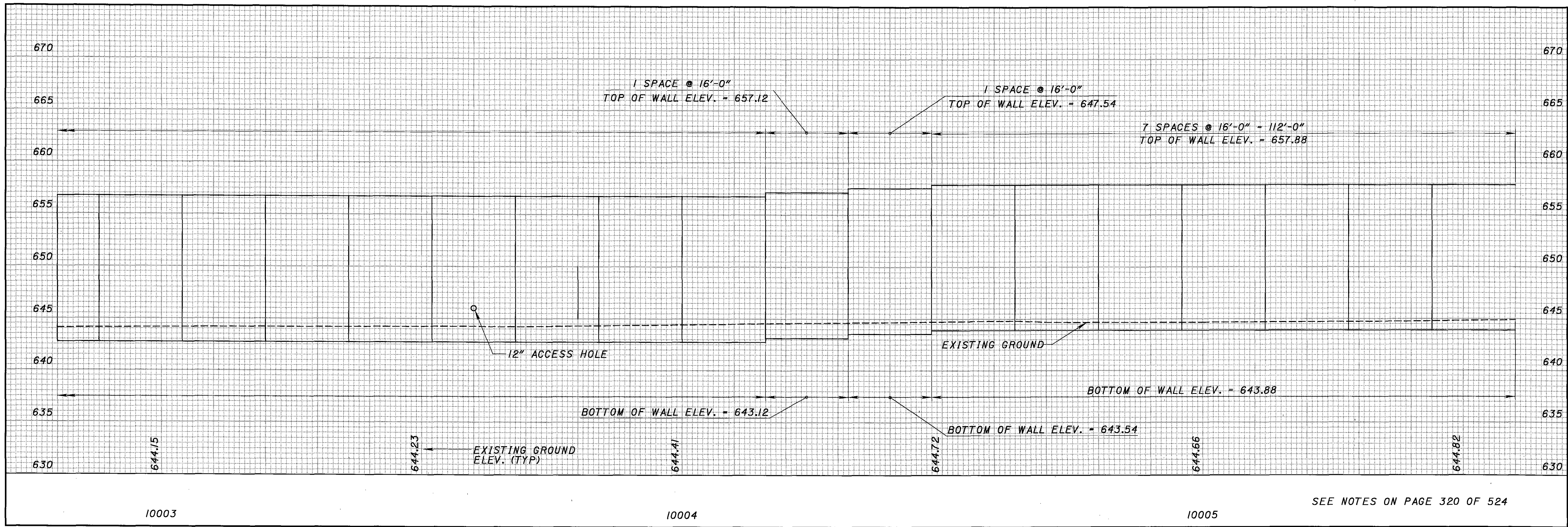
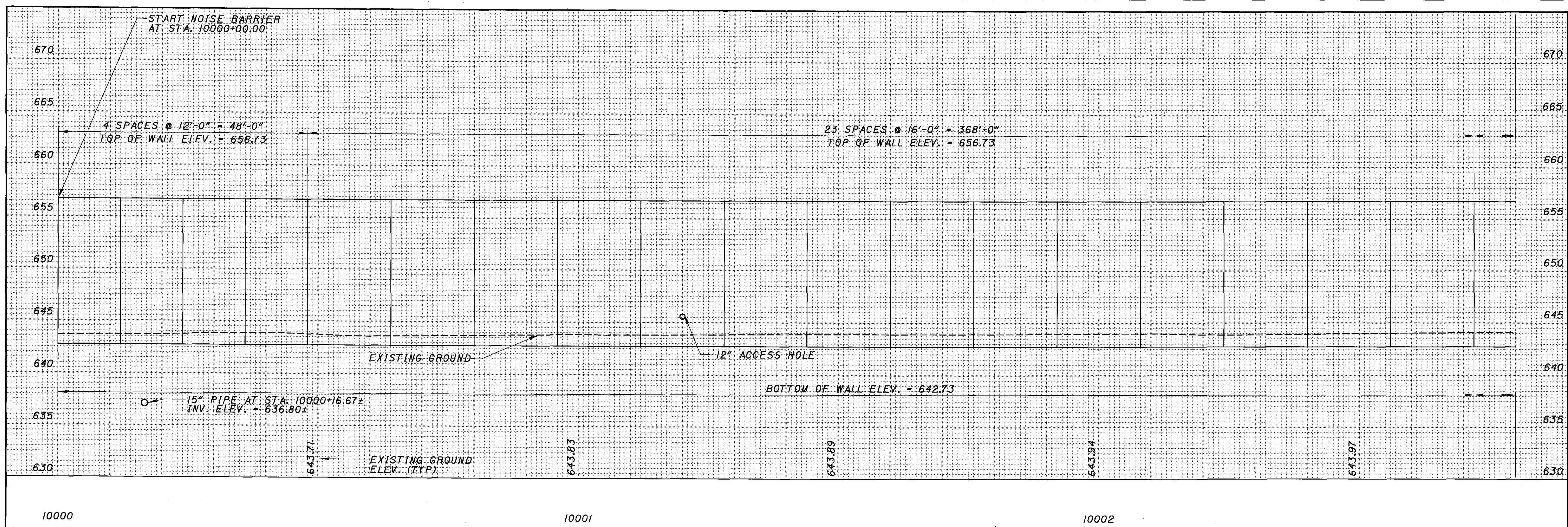
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LAK-2-0.00

348
524

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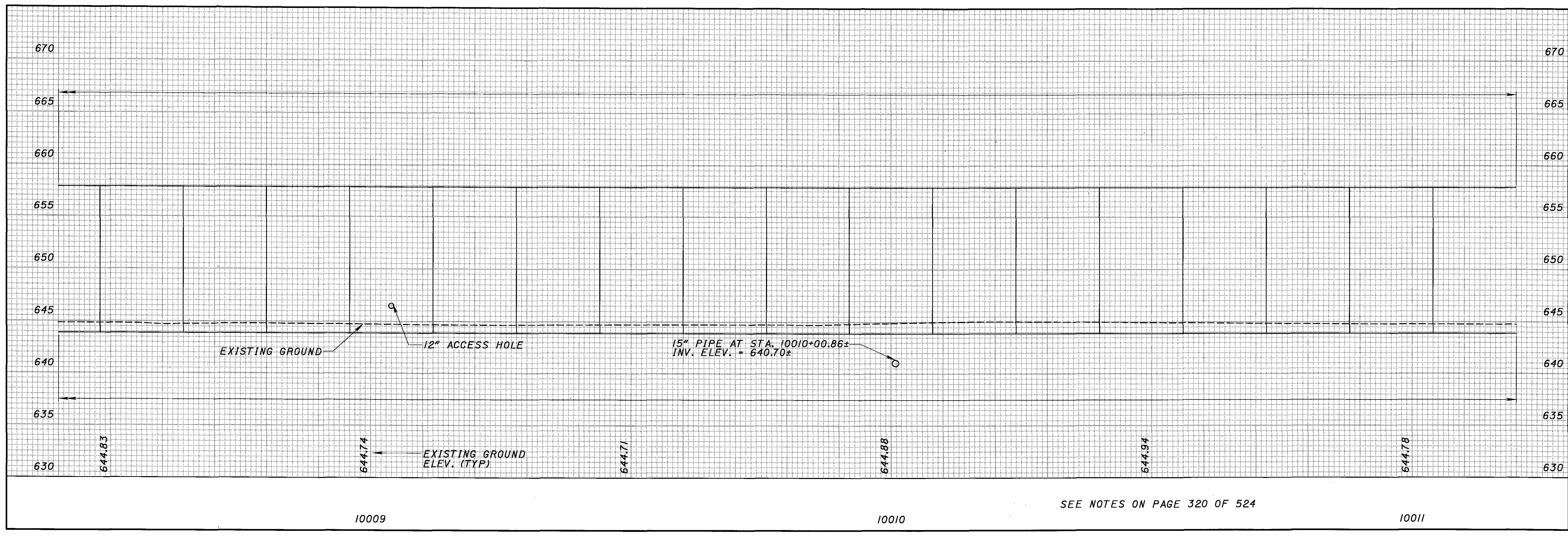
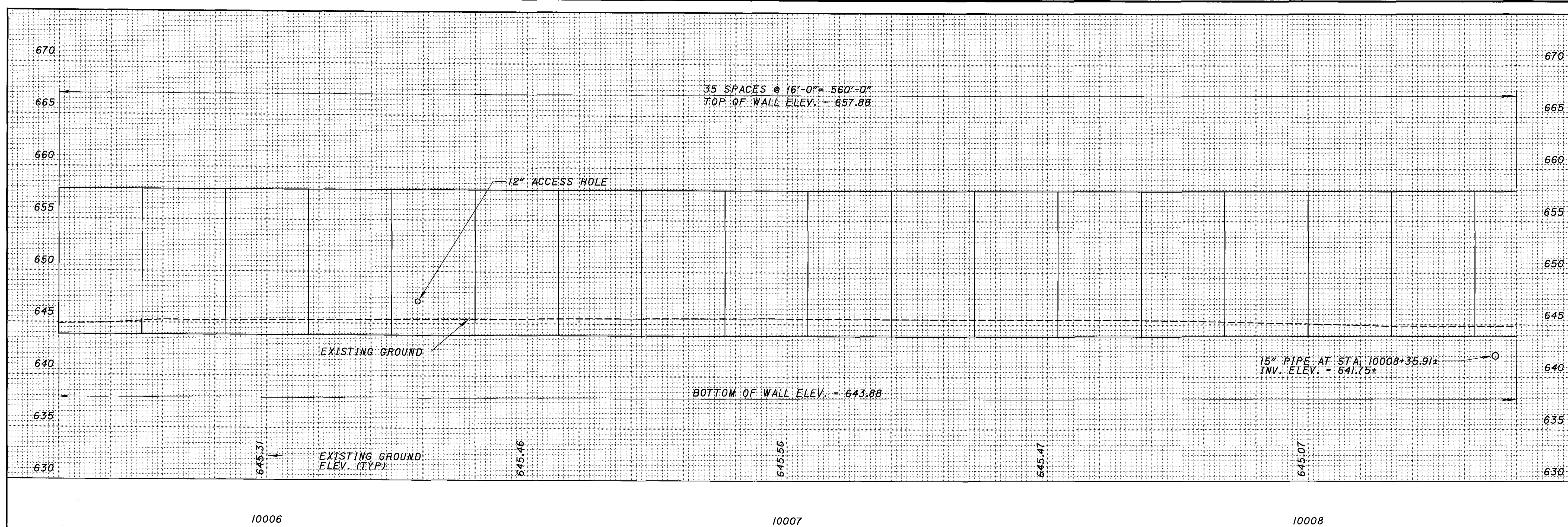
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LAK-2-0.00

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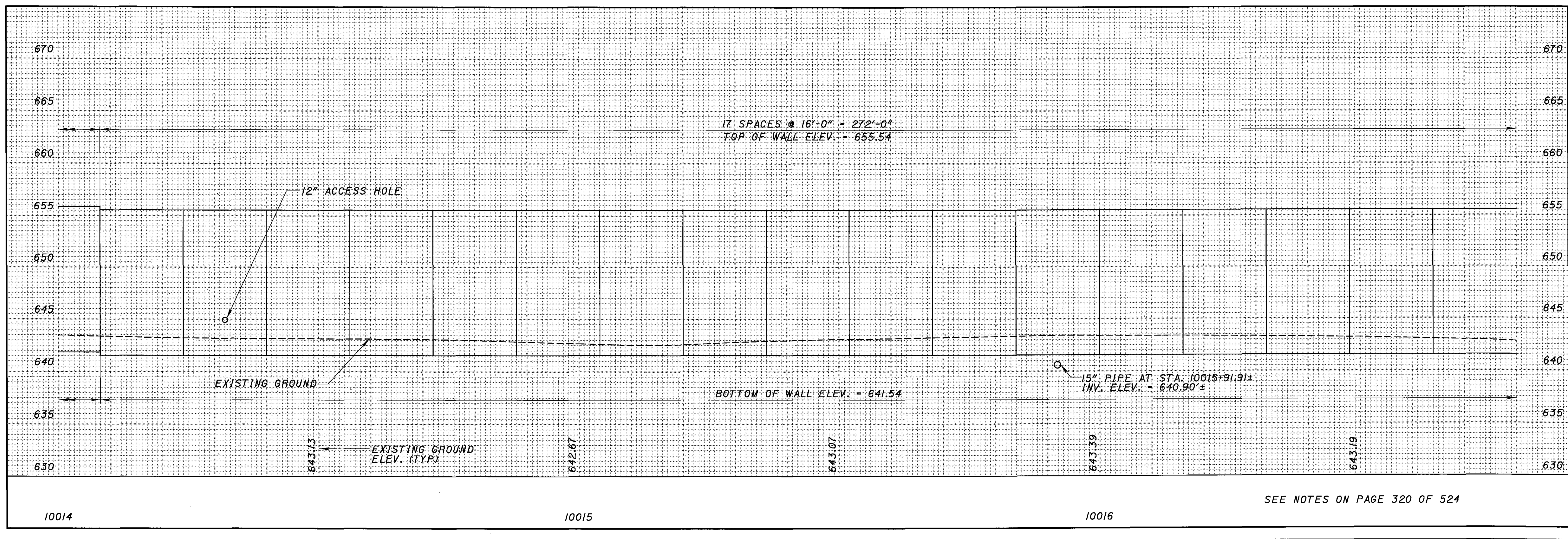
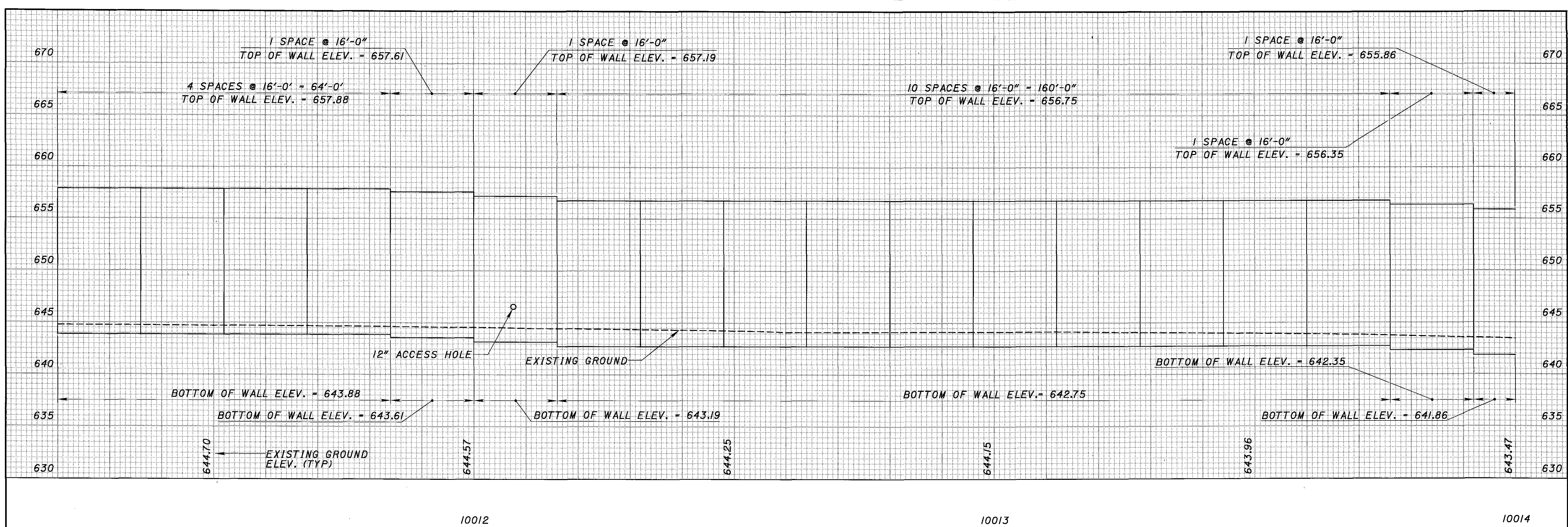
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LAK-2-0.00

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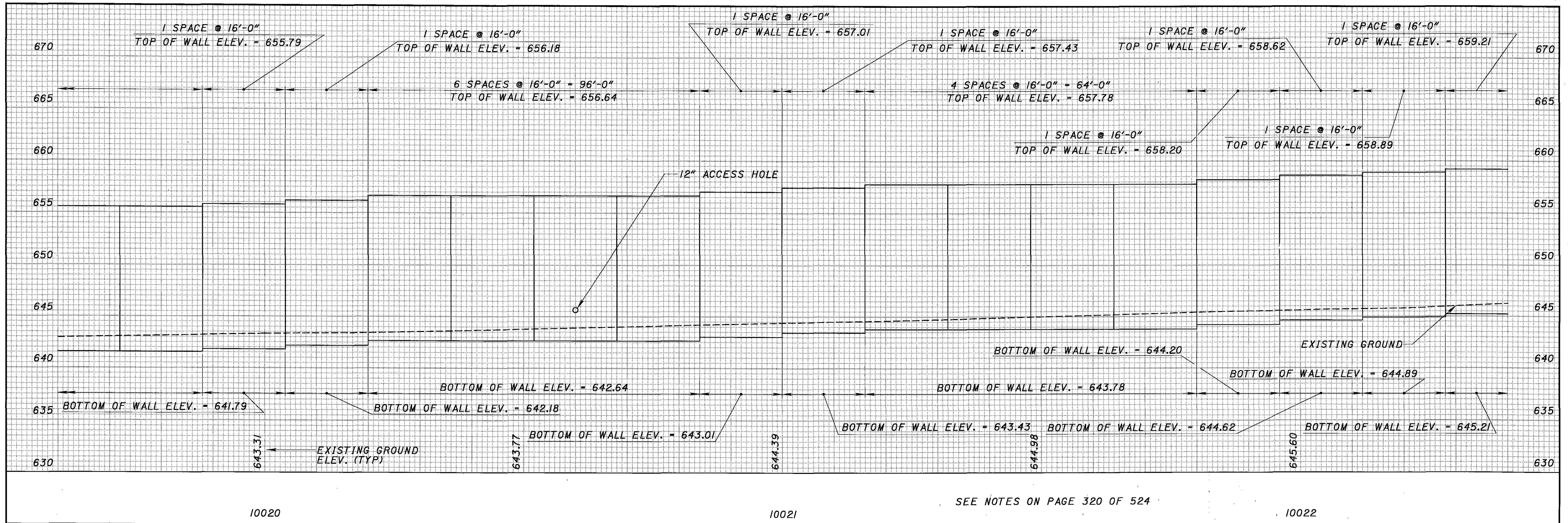
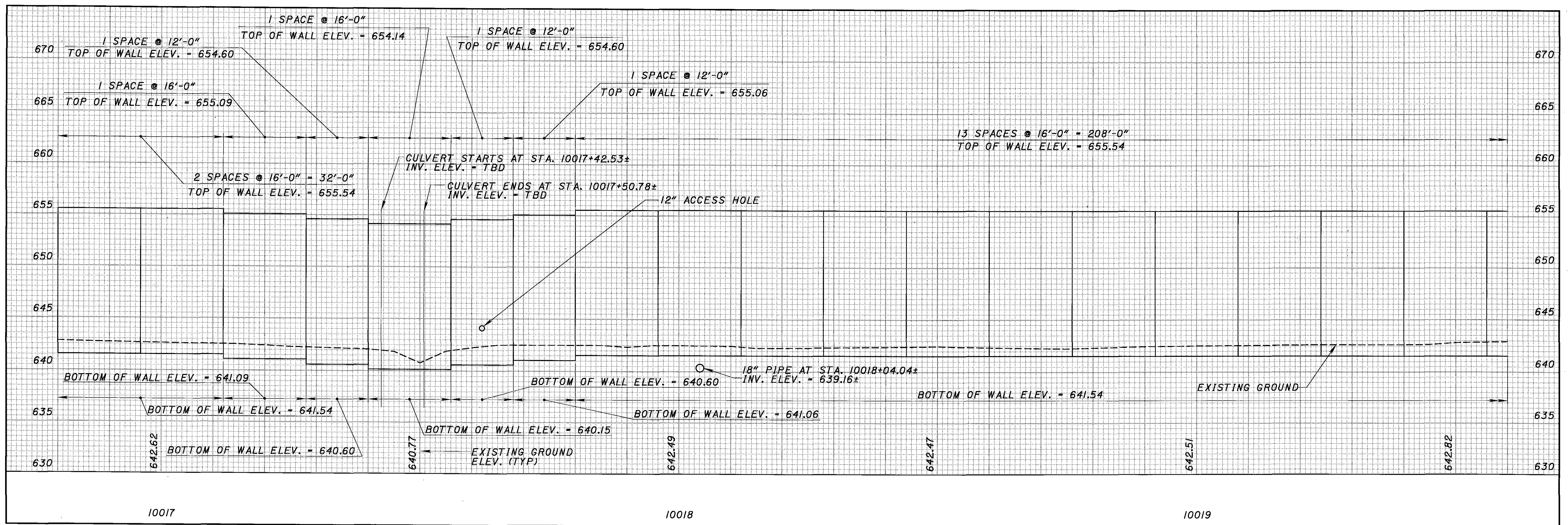
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LAK-2-0.00

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SEE NOTES ON PAGE 320 OF 524

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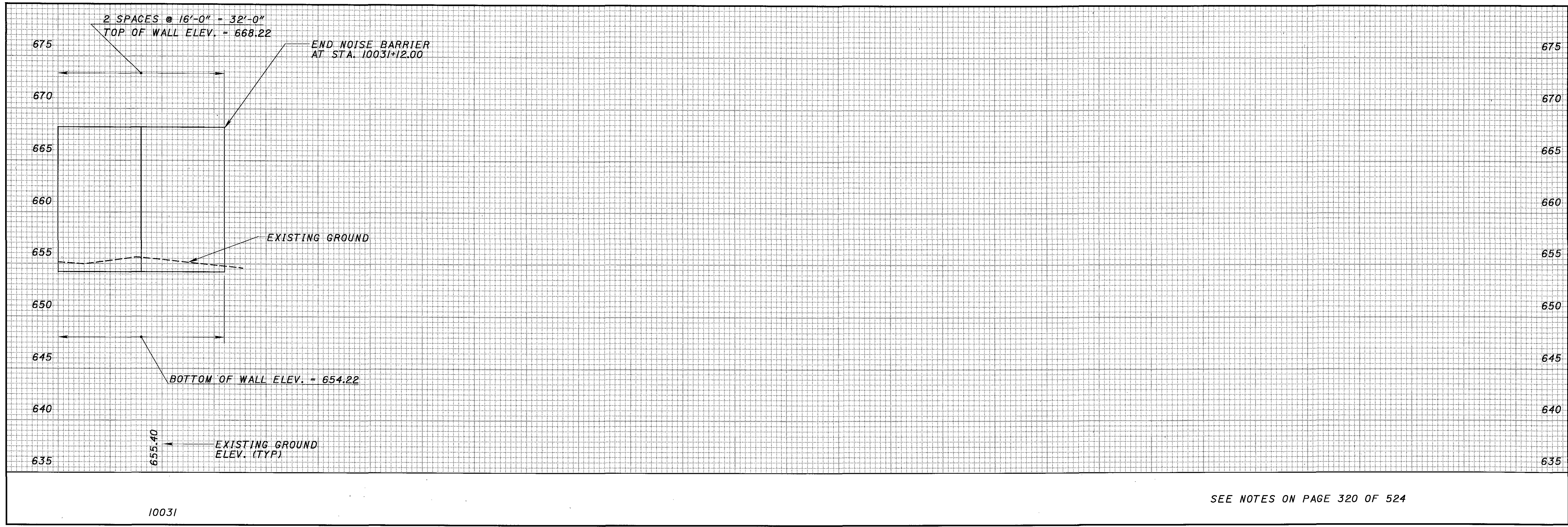
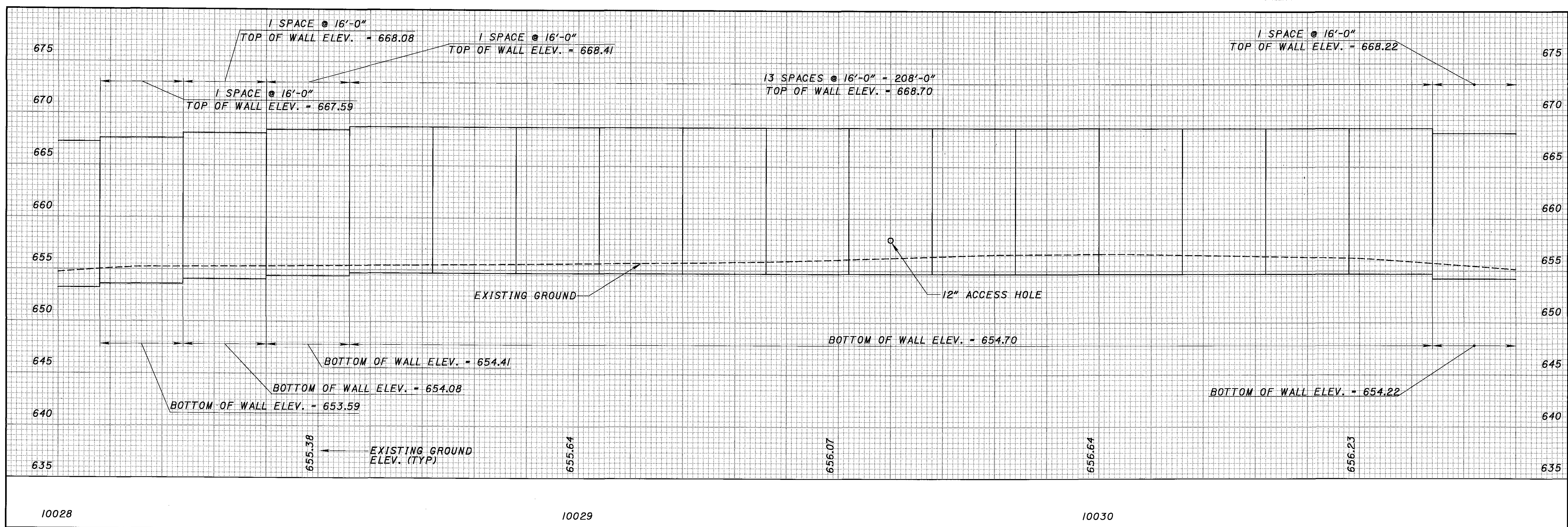
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LAK-2-0-00

352
524

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SEE NOTES ON PAGE 320 OF 524

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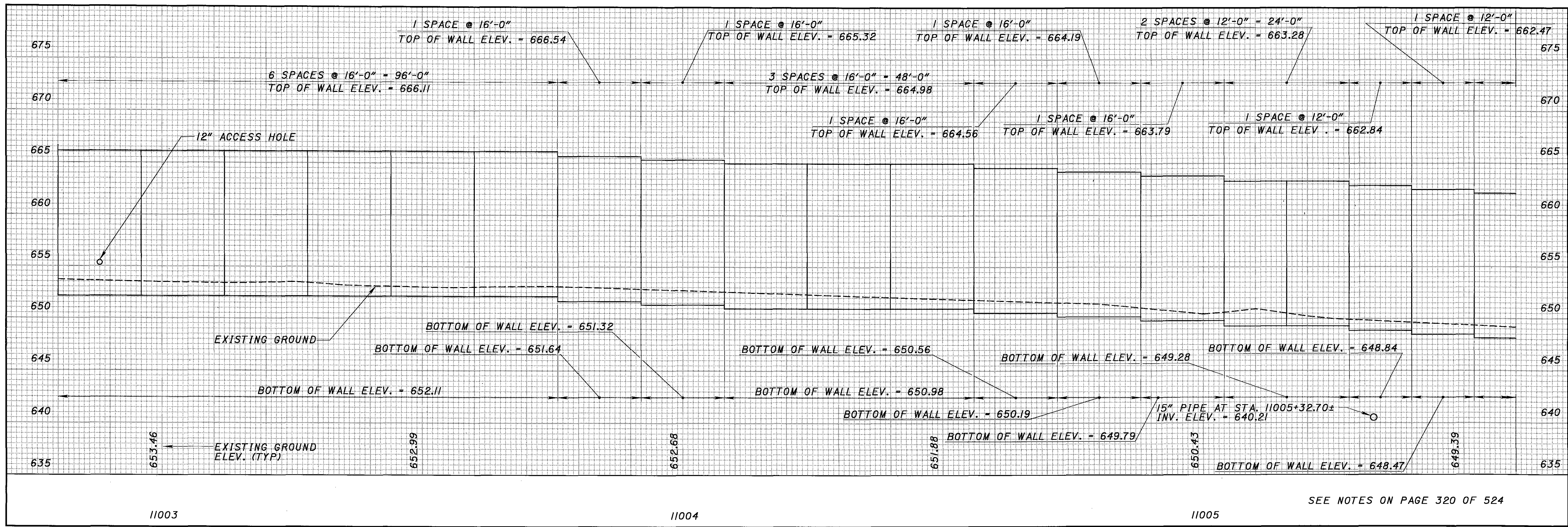
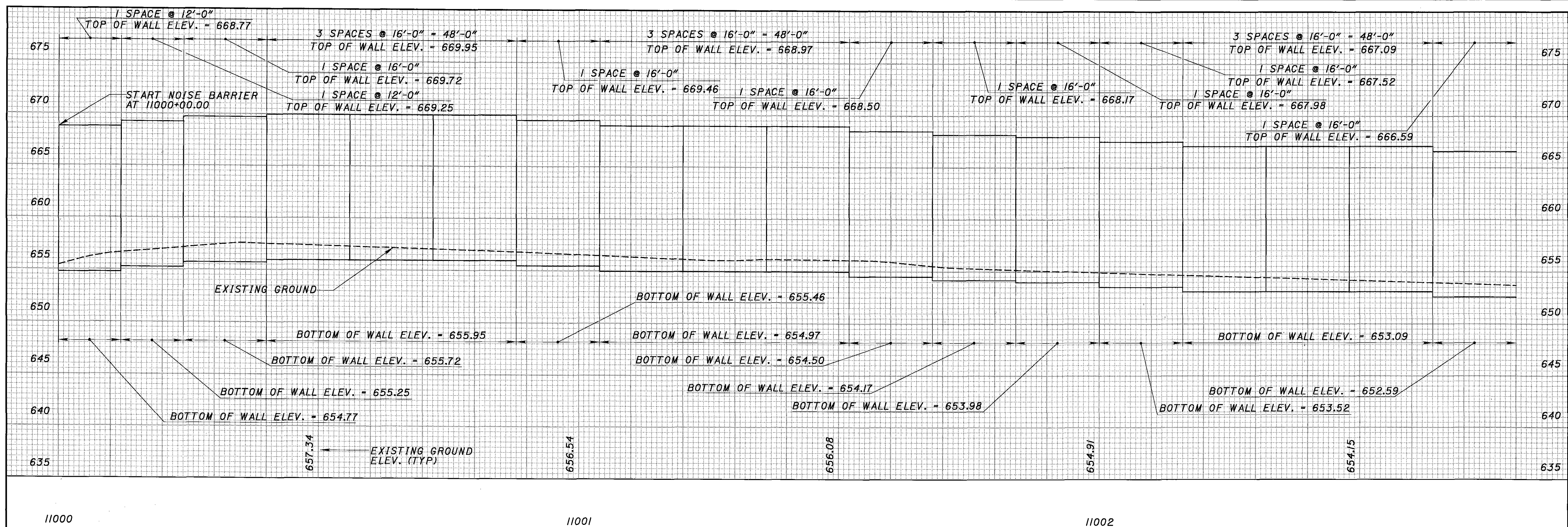
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354
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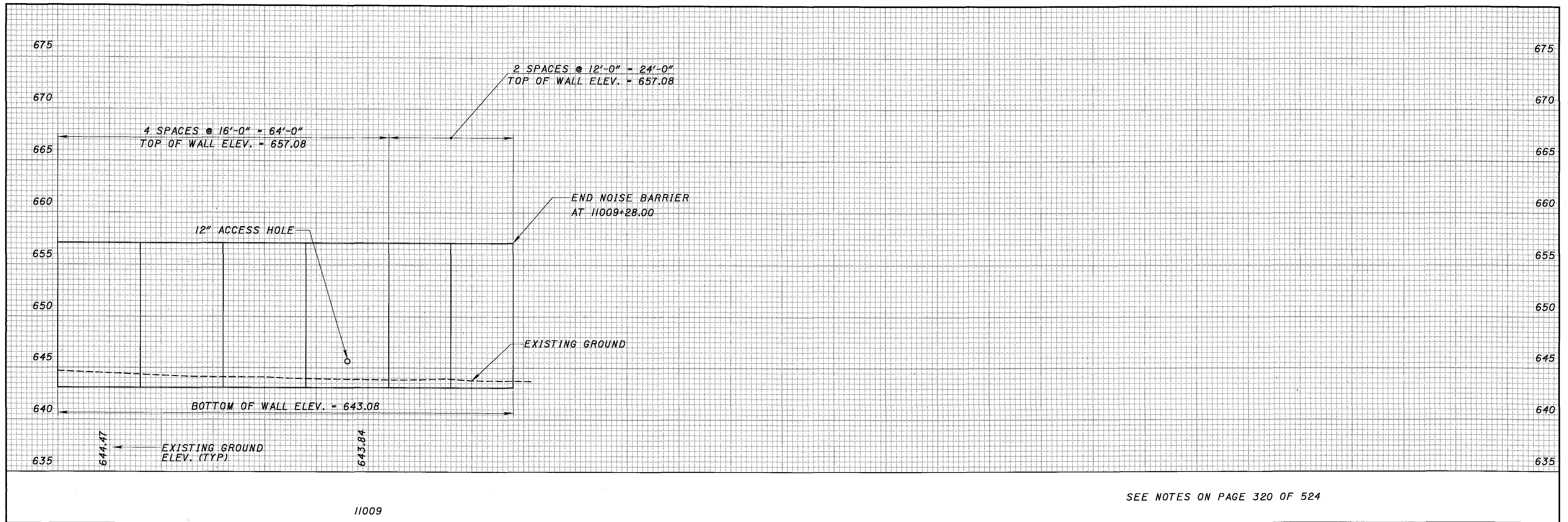
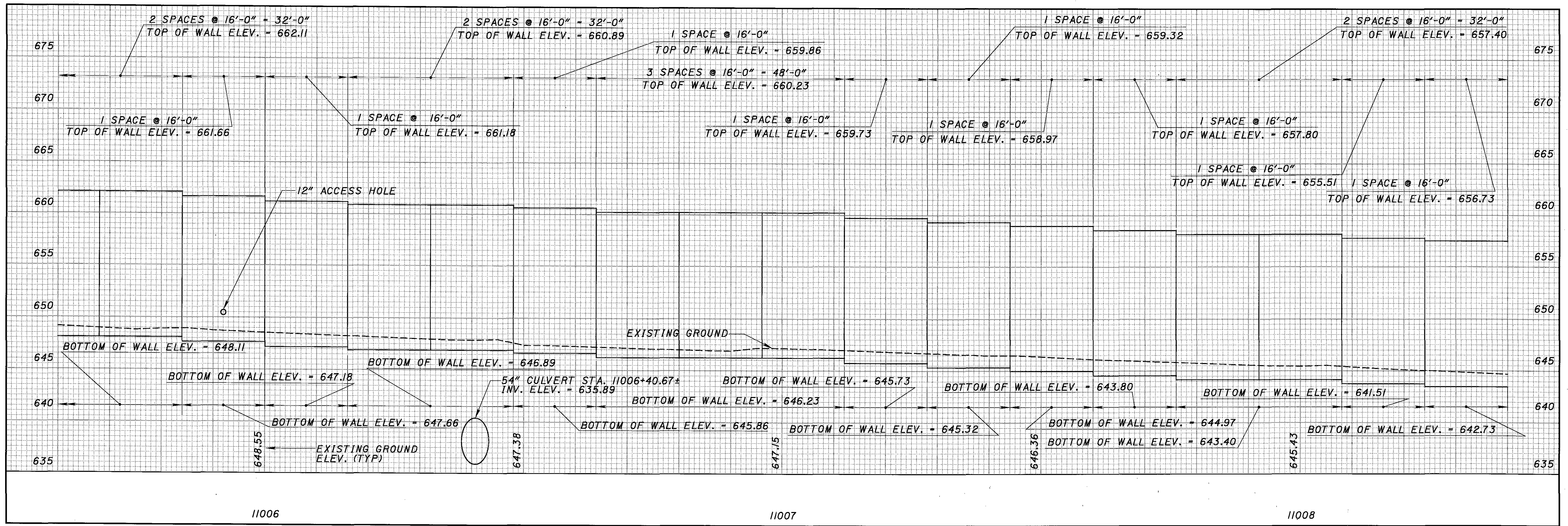
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SCT

NOISE BARRIER 11 PROFILE
STA. 11000+00.00 TO STA. 11005+60.00

LAK-2-0-00

355
524

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SEE NOTES ON PAGE 320 OF 524

CALCULATED
ETB

CHECKED
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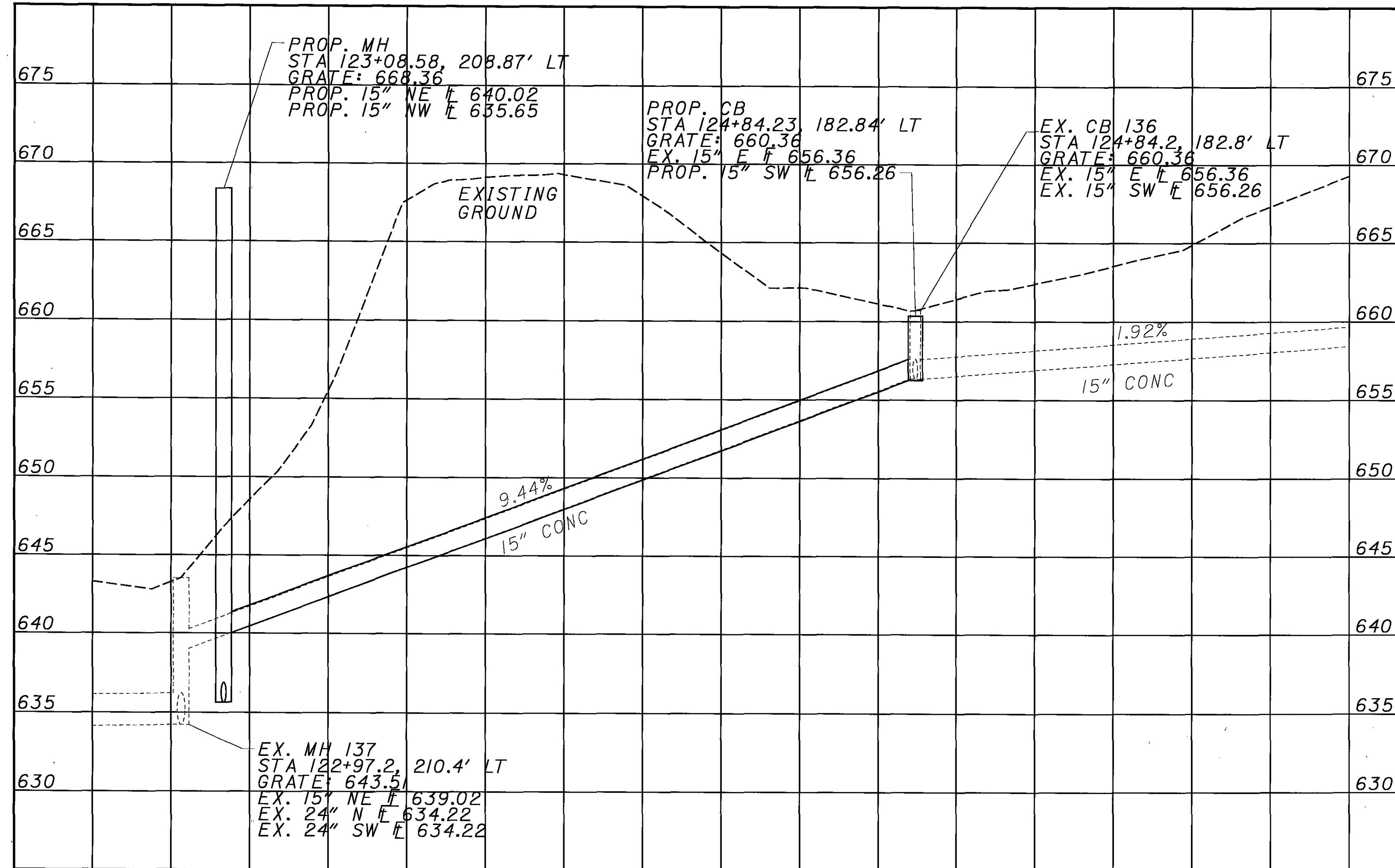
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STA. 11005+60.00 TO 11009+28.00

LAK-2-0.00

356
524

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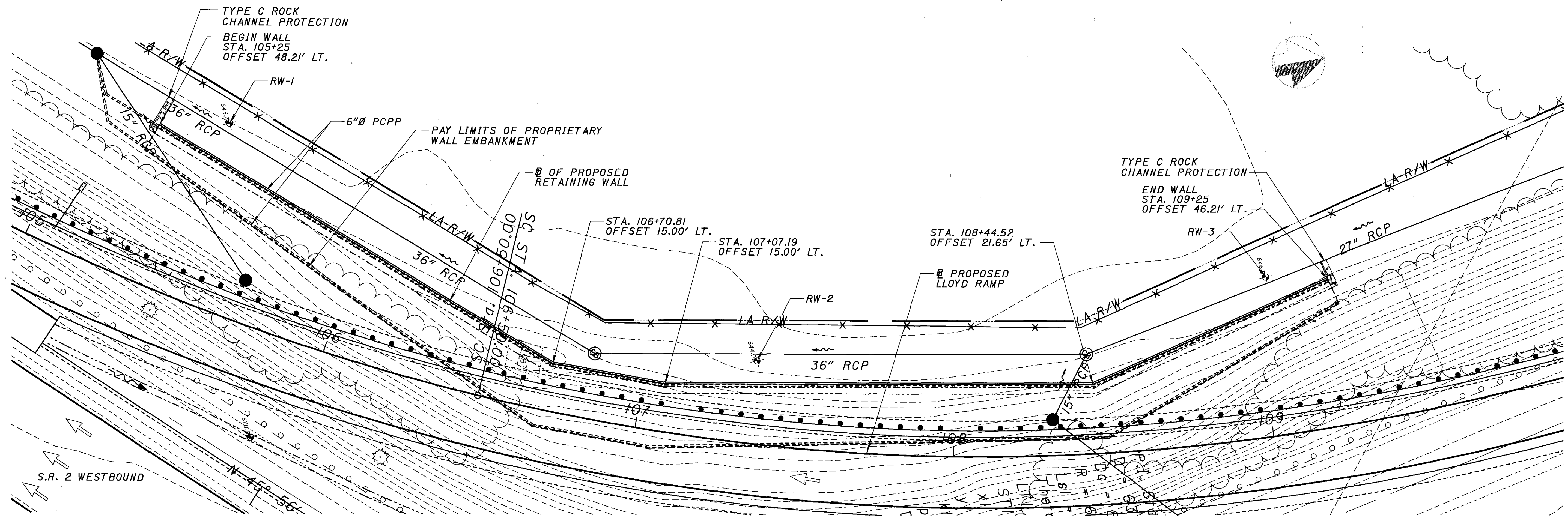


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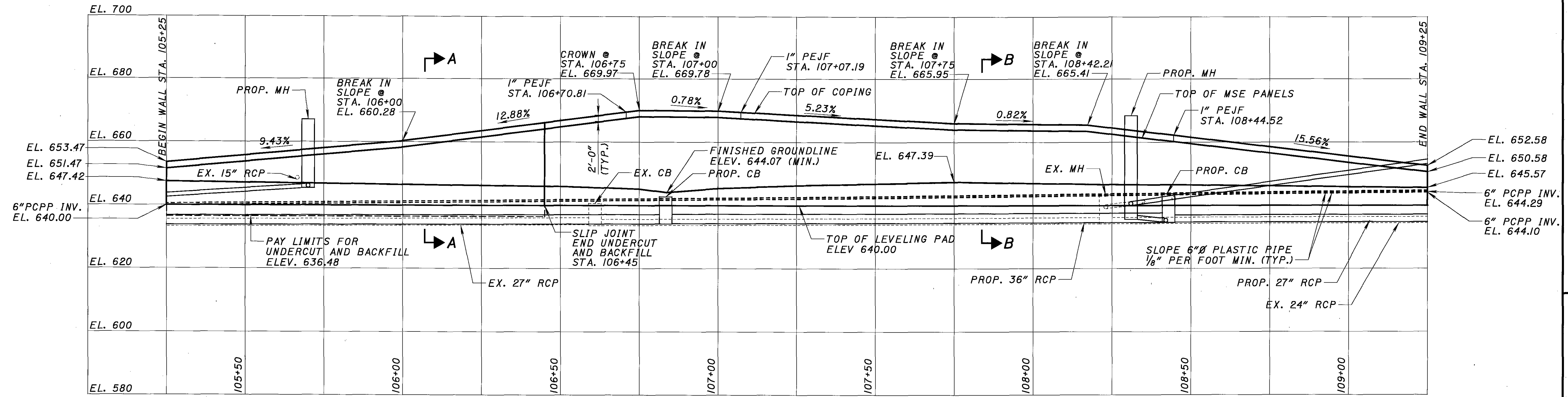
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CALCULATED	ATG
CHECKED	KMB

357
524



PLAN



ELEVATION

LEGEND

EL. = ELEVATION
STA. = STATION

SOIL TEST BORING LOCATIONS

DESIGN AGENCY
Baker
2000 EAST NINTH STREET, SUITE 1220
CLEVELAND, OHIO 44115

DESIGNED
KAS

CHECKED
SCT

DRAWN
KAS

REVIEWED
WDA

DATE
7-28-2005

STRUCTURE FILE NUMBER
4300126L/4300092R

MSE RETAINING WALL SITE PLAN (I)
STA. 105+25 TO STA. 109+25

LAK-2-0.00

1/3

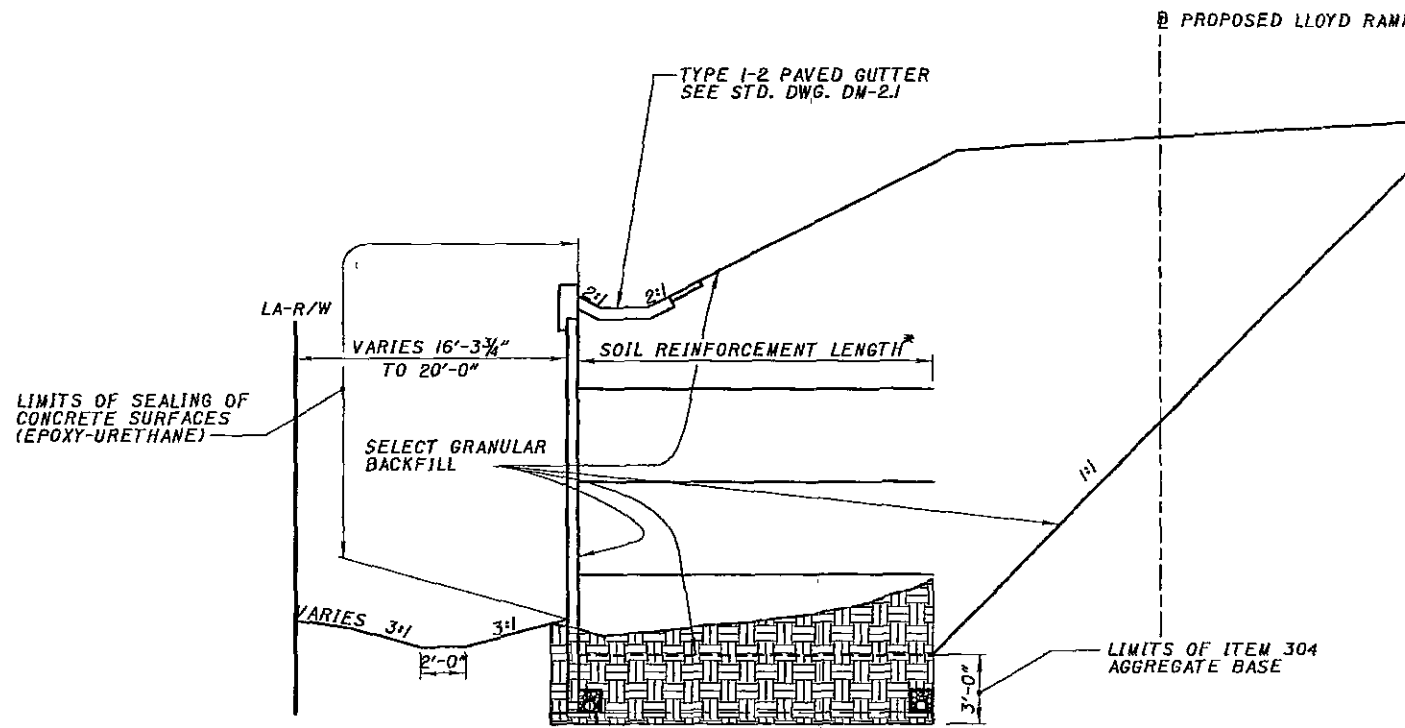
358
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DATE
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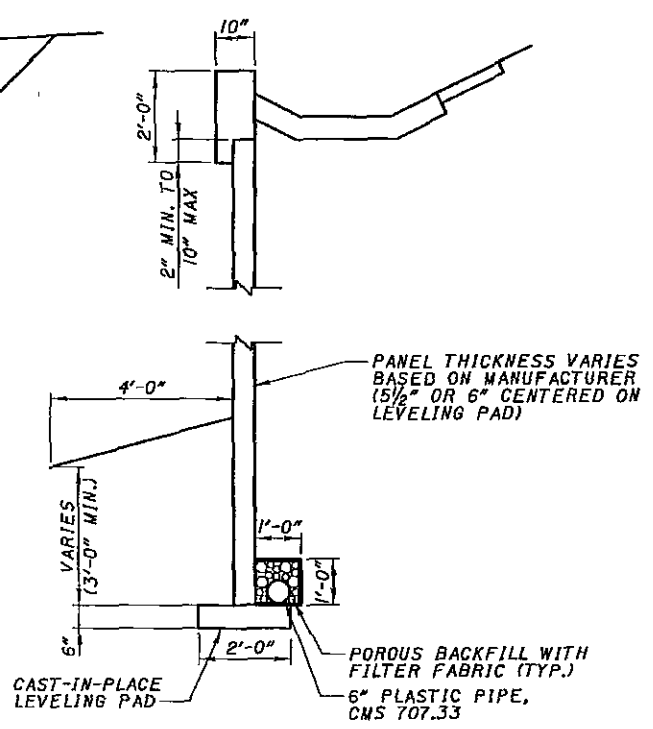
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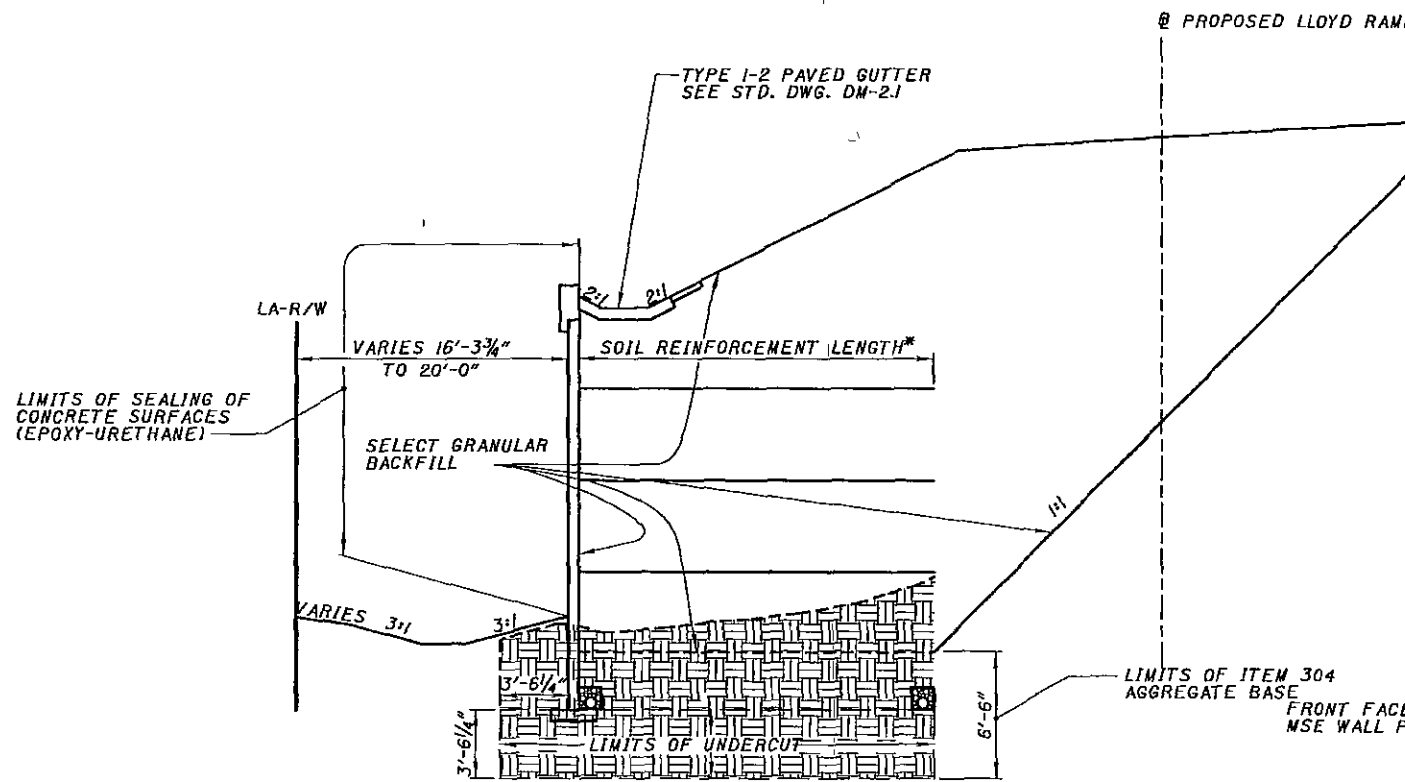
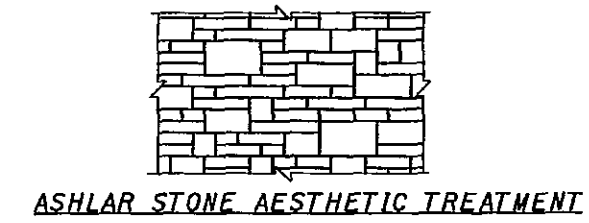
ESTIMATED QUANTITIES				
ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION
304	20000	267	CY	AGGREGATE BASE
503	21100	1412	CY	UNCLASSIFIED EXCAVATION
512	10100	790	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)
516	13600	5	SQ FT	1" PREFORMED EXPANSION JOINT FILLER
518	21200	33	CY	POROUS BACKFILL WITH FILTER FABRIC
518	40000	874	FEET	6" PERFORATED CORRUGATED PLASTIC PIPE
601	32200	3	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
601	37500	402	FEET	PAVED GUTTER, TYPE 1-2
SPECIAL	61013500	9500	SQ FT	SPECIAL - REINFORCED EARTH WALL SYSTEM (OPTION A) ✓
SPECIAL	61013700	9500	SQ FT	SPECIAL - RETAINED EARTH WALL SYSTEM (OPTION B)
SPECIAL	61013900	9500	SQ FT	SPECIAL - A.R.E.S RETAINING WALL SYSTEM (OPTION C)
SPECIAL	61014100	9500	SQ FT	SPECIAL - MSE PLUS RETAINING WALL SYSTEM (OPTION D)
SPECIAL	61016000	LUMP		SPECIAL - UNDERCUT AND BACKFILL
SPECIAL	61016200	402	FEET	SPECIAL - CONCRETE COPING



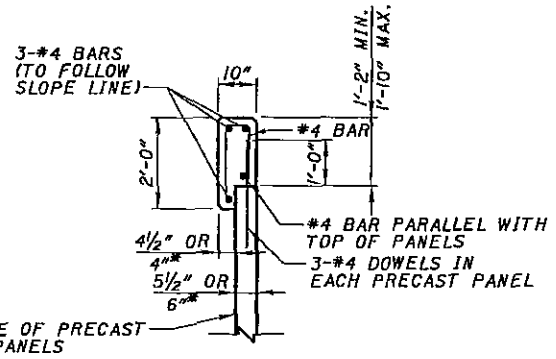
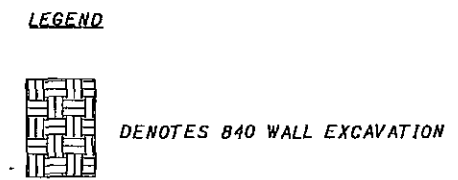
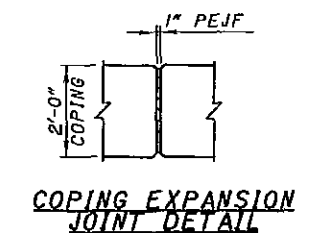
TYPICAL RETAINING WALL SECTION B-B
 STA. 106+45 TO 109+25
 HEIGHT VARIES
 (ALL DIMENSIONS PERPENDICULAR TO MSE WALL)
 *NUMBER AND LENGTH OF SOIL REINFORCEMENT STRIPS DETERMINED BY WALL SUPPLIER



MSE RETAINING WALL DETAIL



TYPICAL RETAINING WALL SECTION A-A
 STA. 105+25 TO 106+45
 HEIGHT VARIES
 (ALL DIMENSIONS PERPENDICULAR TO MSE WALL)
 *NUMBER AND LENGTH OF SOIL REINFORCEMENT STRIPS DETERMINED BY WALL SUPPLIER



COPING DETAIL
 *DEPENDS ON THE APPROVED WALL SYSTEM (REINFORCING STEEL IS INCLUDED WITH CONCRETE COPING FOR PAYMENT.)

- NOTES:**
1. ALL REINFORCING STEEL TO BE EPOXY COATED.
 2. FOR UTILITIES INFORMATION AND LOCATIONS, SEE ROADWAY CROSS SECTIONS.
 3. PAY LIMITS OF PROPRIETARY WALL EMBANKMENT ARE ESTIMATED. EXACT LENGTHS ARE TO BE DESIGNED BY THE MSE WALL DESIGNER.
 4. ALLOWABLE BEARING PRESSURE: THE ALLOWABLE BEARING PRESSURE FOR THE SOIL MATERIAL LOCATED BELOW THE WALL IS RECOMMENDED TO BE 6.2 KSF.

SHEET NUMBER								PARTICIPATION		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	CALCULATED	JTP	CHECKED	NJC
362	363	364	365	366	367	368	369/370											
														TRAFFIC CONTROL				
						1107.0				202	54000	1107	EACH	RPM REMOVED				
										620	10300	150	EACH	DELINEATOR, TYPE C, POST MOUNTED				
										620	15300	25	EACH	DELINEATOR, TYPE D, POST MOUNTED				
										621	00100	1107	EACH	RPM				
				14.0						625	01500	14	EACH	CABLE SPLICING KIT				
										626	00100	375.0	EACH	BARRIER REFLECTOR, TYPE A				
275.0	296.0	267.0	118.0							630	02100	956.0	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				
201.0	81.0	83.0	85.0							630	03100	450.0	FT	GROUND MOUNTED SUPPORT, NO. 3 POST				
30.0	45.0	15.0	15.0							630	04100	105.0	FT	GROUND MOUNTED SUPPORT, NO. 4 POST				
185.0	174.0	101.0	185.0							630	06400	645.0	FT	GROUND MOUNTED SUPPORT, S4X7.7 BEAM				
		27.0								630	06500	27.0	FT	GROUND MOUNTED SUPPORT, W6X9 BEAM				
	44.0		55.0							630	07500	99.0	FT	GROUND MOUNTED SUPPORT, W10X22 BEAM				
87.0		39.0	41.0							630	07600	167.0	FT	GROUND MOUNTED SUPPORT, W10X12 BEAM				
28.0	55.0	110.0								630	08100	193.0	FT	ONE WAY SUPPORT, NO. 4 POST				
14.0	12.0	10.0	14.0							630	09000	50	EACH	BREAKAWAY BEAM CONNECTION				
				97.0						630	75000	97.0	EACH	SIGN ATTACHMENT ASSEMBLY				
				3.0						630	79100	3.0	EACH	SIGN HANGER ASSEMBLY, MAST ARM				
281.3	239.5	241.5	133.1	23.0						630	80100	918.4	SQ FT	SIGN, FLAT SHEET				
242.0	233.0	156.0	401.0							630	80200	1032.0	SQ FT	SIGN, GROUND MOUNTED EXTRUSHEET				
				3885.0						630	80225	3885.0	SQ FT	SIGN, OVERHEAD EXTRUSHEET, AS PER PLAN				369
14.0	12.0	10.0	14.0							630	84500	50	EACH	GROUND MOUNTED BEAM SUPPORT FOUNDATION				
36.0	34.0	35.0	16.0							630	84900	121	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				
	3.0	2.0								630	85100	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION				
7.0	5.0	5.0	7.0							630	85400	24	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL				
44.0	35.0	36.0	18.0							630	86002	133	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL				
10.0	10.0	8.0	14.0							630	86102	42	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL				
				34.0						630	87400	34	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL				
				41.0						631	94200	41	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL				
				14.0						631	94304	14	EACH	REMOVAL OF DISCONNECT SWITCH AND DISPOSAL				
				23.0						631	94406	23	EACH	REMOVAL OF SIGNS WIRED				
				14						631	94412	14	EACH	REMOVAL OF SIGN SERVICE AND DISPOSAL				
							10			632	26501	10	EACH	DETECTOR LOOP, AS PER PLAN				370
				18.21						646	10001	18.21	MILE	EDGE LINE, AS PER PLAN				
				13.92						646	10101	13.92	MILE	LANE LINE, AS PER PLAN				
				5542						646	10301	5542	FT	CHANNELIZING LINE, AS PER PLAN				
				163						646	10401	163	FT	STOP LINE, AS PER PLAN				
				14						646	20301	14	EACH	LANE ARROW, AS PER PLAN				
				7						646	20401	7	EACH	WORD ON PAVEMENT, 72", AS PER PLAN				
				18.21						646	10001	18.21	MILE	EDGE LINE, AS PER PLAN - ALTERNATE BID				
				13.92						646	10101	13.92	MILE	LANE LINE, AS PER PLAN - ALTERNATE BID				
				5542						646	10301	5542	FT	CHANNELIZING LINE, AS PER PLAN - ALTERNATE BID				
				163						646	10401	163	FT	STOP LINE, AS PER PLAN - ALTERNATE BID				
				14						646	20301	14	EACH	LANE ARROW, AS PER PLAN - ALTERNATE BID				
				7						646	20401	7	EACH	WORD ON PAVEMENT, 72", AS PER PLAN - ALTERNATE BID				

TRAFFIC CONTROL GENERAL SUMMARY

LAK-2-0.00

...d gn_moy 2006_new @ 217781g00.l.dgn

4" EDGE LINE (WHITE)

REFERENCE	STATION FROM	TO	LOCATION	LENGTH FT.
A1	100+00.00	119+16.33	SR2 EB	1916.33
	400+00.00	412+22.51	RAMP A-4	1222.51
A2	100+00.00	114+84.28	SR2 WB	1484.28
	100+00.00	123+42.93	RAMP A-1	2342.93
A3	124+11.02	140+00.00	SR2 EB	1588.98
A4	118+75.52	126+90.11	SR2 WB	814.59
A31	132+80.73	140+00.00	SR2 WB	719.27
	200+00.00	220+48.04	RAMP A-2	2048.04
A5	300+00.00	312+14.97	RAMP A-3	1214.97
A6	142+00.00	160+00.00	SR2 EB	1800.00
A7	140+00.00	143+49.65	SR2 EB	349.65
A8	140+00.00	160+00.00	SR2 WB	2000.00
A9	160+00.00	175+73.80	SR2 EB	1573.80
	800+00.00	804+21.15	RAMP B-4	421.15
A10	160+00.00	180+00.00	SR2 WB	2000.00
A11	804+21.15	819+96.92	RAMP B-4	1575.77
A12	182+75.79	200+00.00	SR2 EB	1724.21
A13	180+02.36	200+00.00	SR2 WB	1997.64
A14	180+00.00	182+63.04	RAMP B-1	263.04
	500+00.00	513+34.69	RAMP B-1	1334.69
A15	700+06.03	704+30.50	RAMP B-3	424.47
A16	600+20.58	603+85.56	RAMP B-2	364.98
A17	704+30.50	718+62.78	RAMP B-3	1432.28
	214+38.25	220+00.00	RAMP B-3	561.75
A18	200+00.00	215+88.08	SR2 EB	1588.08
A19	200+00.00	212+28.07	SR2 WB	1228.07
A20	603+85.56	623+17.00	RAMP B-2	1931.44
	219+28.09	220+00.00	RAMP B-2	71.91
A21	220+00.00	240+00.00	SR2 EB	2000.00
A22	220+00.00	240+00.00	SR2 WB	2000.00
A23	240+00.00	256+52.79	SR2 EB	1652.79
	256+52.79	259+93.07	RAMP C-4	340.28
A24	240+00.00	260+00.00	SR2 WB	2000.00
A25	259+93.07	268+40.67	RAMP C-4	847.60
A26	261+07.10	273+00.00	SR2 EB	1192.90
A27	261+84.64	273+00.00	SR2 WB	1115.36
A28	260+00.00	263+34.46	RAMP C-1	334.46
	263+07.94	272+77.70	RAMP C-1	969.77
A29	273+00.00	276+00.00	SR2 EB	300.00
A30	273+00.00	276+00.00	SR2 WB	300.00
SUBTOTAL				49047.99

ITEM 646 - EDGE LINE, AS PER PLAN
TOTAL 18.21 MILES

CHANNELIZING LINE (WHITE)

REFERENCE	STATION FROM	TO	LOCATION	LENGTH FT.
D1	103+83.17	105+20.08	RAMP A-1	136.91
D2	402+23.46	405+02.11	RAMP A-4	278.65
	121+36.82	124+11.02	SR 2 EB	274.20
D3	205+26.19	205+89.23	RAMP A-2	63.04
	126+90.11	127+54.57	SR 2 WB	64.46
D4	309+30.25	312+14.97	RAMP A-3	284.72
	141+98.59	143+49.65	SR 2 EB	151.06
D5	803+25.37	806+99.09	RAMP B-4	373.72
	179+00.45	182+75.79	SR 2 EB	375.34
D6	500+00.00	502+92.93	RAMP B-1	292.93
	180+02.36	182+63.04	SR 2 WB	260.68
D7	817+29.79	819+71.52	RAMP B-4	241.73
D8	817+29.79	819+71.52	RAMP B-4	241.73
D9	600+42.31	601+92.34	RAMP B-2	150.03
D10	713+51.10	718+62.78	RAMP B-3	511.68
	214+38.25	215+88.08	SR 2 EB	149.83
D11	616+18.48	619+26.97	RAMP B-2	308.49
	212+28.07	215+36.61	SR 2 WB	308.54
D12	258+27.25	261+06.27	RAMP C-4	279.02
	258+27.91	261+07.10	SR 2 EB	279.19
D13	263+07.94	265+11.72	RAMP C-1	203.78
	261+84.64	263+34.46	SR 2 WB	149.84
D14	267+06.58	268+69.15	RAMP C-4	162.57
SUBTOTAL				5542.14

ITEM 646 - CHANNELIZING LINE, AS PER PLAN
TOTAL 5542.14 FT

4" EDGE LINE (YELLOW)

REFERENCE	STATION FROM	TO	LOCATION	LENGTH FT.
B1	100+00.00	120+00.00	SR2 EB	2000.00
B2	100+00.00	120+00.00	SR2 WB	2000.00
B3	120+00.00	140+00.00	SR2 EB	2000.00
B4	120+00.00	140+00.00	SR2 WB	2000.00
B5	105+20.08	125+58.11	RAMP A-1	2038.03
B6	405+02.11	410+44.38	RAMP A-4	542.27
B7	300+45.02	309+30.25	RAMP A-3	885.23
B8	205+89.23	222+25.85	RAMP A-2	1636.62
B9	140+00.00	160+00.00	SR2 EB	2000.00
B10	140+00.00	160+00.00	SR2 WB	2000.00
B11	160+00.00	180+00.00	SR2 EB	2000.00
B12	160+00.00	180+00.00	SR2 WB	2000.00
B13	180+00.00	200+00.00	SR2 EB	2000.00
B14	180+00.00	200+00.00	SR2 WB	2000.00
B15	806+99.09	819+94.27	RAMP B-4	1295.18
B16	502+92.93	513+69.87	RAMP B-1	1076.94
B17	700+25.55	704+30.58	RAMP B-3	405.03
B18	600+20.58	603+85.56	RAMP B-2	364.98
B19	704+30.58	713+51.10	RAMP B-3	920.52
B20	200+00.00	220+00.00	SR2 EB	2000.00
B21	200+00.00	220+00.00	SR2 WB	2000.00
B22	603+85.56	616+18.48	RAMP B-2	1232.92
B23	220+00.00	240+00.00	SR2 EB	2000.00
B24	220+00.00	240+00.00	SR2 WB	2000.00
B25	240+00.00	260+00.00	SR2 EB	2000.00
B26	240+00.00	260+00.00	SR2 WB	2000.00
B27	261+06.27	269+02.41	RAMP C-4	796.14
B28	260+00.00	273+00.00	SR2 EB	1300.00
B29	260+00.00	273+00.00	SR2 WB	1300.00
B30	265+11.72	272+02.96	RAMP C-1	691.24
B31	273+00.00	276+00.00	SR2 EB	300.00
B32	273+00.00	276+00.00	SR2 WB	300.00
SUBTOTAL				47085.10

LANE ARROW	STATION	QUANTITY EACH
RAMP		
B-4	818+27.26	3
B-4	819+61.51	3
B-2	600+49.84	2
B-2	601+84.09	2
C-4	267+14.83	2
C-4	268+60.93	2
SUBTOTAL		14

ITEM 646 - LANE ARROW, AS PER PLAN
TOTAL 14 EACH

WORD ON PAVEMENT, 72"	STATION	QUANTITY EACH
RAMP		
B-4	818+93.26	3
B-2	601+18.09	2
C-4	267+79.88	2
SUBTOTAL		7

ITEM 646 - WORD ON PAVEMENT, 72", AS PER PLAN
TOTAL 7 EACH

6" LANE LINE (WHITE)

REFERENCE	STATION FROM	TO	LOCATION	LENGTH FT.
C1	100+00.00	140+00.00	SR2 EB	4000.00
C2	100+00.00	140+00.00	SR2 EB	4000.00
C3	100+00.00	140+00.00	SR2 WB	4000.00
C4	100+00.00	140+00.00	SR2 WB	4000.00
C5	114+27.80	114+84.28	RAMP A-1	56.48
	100+0.00	103+82.64	RAMP A-1	382.64
C6	401+11.96	402+23.46	RAMP A-4	111.50
C7	143+49.65	146+49.31	RAMP A-3	229.66
C8	140+00.00	160+00.00	SR2 EB	2000.00
C9	140+00.00	160+00.00	SR2 EB	2000.00
C10	140+00.00	160+00.00	SR2 WB	2000.00
C11	140+00.00	160+00.00	SR2 WB	2000.00
C12	160+00.00	180+00.00	SR2 EB	2000.00
C13	160+00.00	180+00.00	SR2 EB	2000.00
C14	160+00.00	180+00.00	SR2 WB	2000.00
C15	160+00.00	180+00.00	SR2 WB	2000.00
C16	801+62.90	803+25.37	RAMP B-4	162.47
C17	177+02.39	180+04.02	RAMP B-1	301.63
C18	180+00.00	200+00.00	SR2 EB	2000.00
C19	180+00.00	200+00.00	SR2 EB	2000.00
C20	180+00.00	200+00.00	SR2 WB	2000.00
C21	180+00.00	200+00.00	SR2 WB	2000.00
C22	200+00.00	220+00.00	SR2 EB	2000.00
C23	200+00.00	220+00.00	SR2 EB	2000.00
C24	200+00.00	220+00.00	SR2 WB	2000.00
C25	200+00.00	220+00.00	SR2 WB	2000.00
C26	215+88.08	218+88.08	SR 2 EB	300.00
C27	619+26.97	621+72.09	RAMP B-2	245.74
C28	220+00.00	240+00.00	SR2 EB	2000.00
C29	220+00.00	240+00.00	SR2 EB	2000.00
C30	220+00.00	240+00.00	SR2 WB	2000.00
C31	220+00.00	240+00.00	SR2 WB	2000.00
C32	240+00.00	260+00.00	SR2 EB	2000.00
C33	240+00.00	260+00.00	SR2 EB	2000.00
C34	240+00.00	260+00.00	SR2 WB	2000.00
C35	240+00.00	260+00.00	SR2 WB	2000.00
C36	256+00.25	258+27.91	RAMP C-4	227.66
C37	258+84.64	261+84.64	SR 2 WB	300.00
C38	260+00.00	273+00.00	SR2 EB	1300.00
C39	260+00.00	273+00.00	SR2 EB	1300.00
C40	260+00.00	273+00.00	SR2 WB	1300.00
C41	260+00.00	273+00.00	SR2 WB	1300.00
C42	263+86.67	267+06.58	RAMP C-4	319.91
C43	273+00.00	276+00.00	SR2 EB	300.00
C44	273+00.00	276+00.00	SR2 EB	300.00
C45	273+00.00	276+00.00	SR2 WB	300.00
C46	273+00.00	276+00.00	SR2 WB	300.00
C47	202+64.58	205+26.19	RAMP A-2	261.61
C48	510+99.82	513+21.54	RAMP B-1	221.72
SUBTOTAL				73521.02

ITEM 646 - LANE LINE, AS PER PLAN
TOTAL 13.92 MILES

STOP LINE (WHITE)

REFERENCE	STATION TO	LENGTH FT.
G1	819+71.68	54.24
G2	600+40.91	33.36
G3	268+61.26	75.83
SUBTOTAL		163.43

ITEM 646 - STOP LINE, AS PER PLAN
TOTAL 163.43 FT

CALCULATED
JTP
CHECKED
NUG

PAVEMENT MARKING CALCULATIONS

LAK-2-0.00

LOCATION	STATION		* DETAIL	202	621	FOR INFORMATION ONLY					
				RPM REMOVED AND DISPOSED	RPM	PRISMATIC RETROREFLECTOR COLORS					
						ONE WAY		TWO WAY			
						WHITE	YELLOW	WHITE/ RED	YELLOW/ YELLOW	YELLOW/ RED	
FROM	TO		EACH	EACH	EACH	EACH	EACH	EACH	EACH		
SR2 EB	121+36.82	124+11.02	3	7	7			7			
SR2 EB	179+00.45	182+75.79	3	10	10			10			
SR2 EB	258+27.91	261+07.10	3	7	7			7			
SR2 EB	100+00.00	276+00.00	1	221	221	221					
SR2 EB	100+00.00	276+00.00	1	221	221	221					
SR2 WB	126+90.11	127+54.57	3	3	3			3			
SR2 WB	212+28.07	215+36.61	3	8	8			8			
SR2 WB	100+00.00	276+00.00	1	221	221	221					
SR2 WB	100+00.00	276+00.00	1	221	221	221					
RAMP A-1	103+82.00	105+20.08	2	4	4			4			
RAMP A-1	105+20.08	112+12.36	2	9	9					9	
RAMP A-2	205+26.19	205+89.23	3	2	2			2			
RAMP A-2	205+89.23	209+96.50	3	6	6					6	
RAMP A-3	309+30.25	313+64.68	2	6	6			6			
RAMP A-3	301+00.00	309+30.25	2	11	11					11	
RAMP A-4	402+23.46	405+02.11	3	6	6			6			
RAMP A-4	405+02.11	410+00.00	3	7	7			7			
RAMP B-1	180+02.36	182+63.04									
	500+00.00	502+92.93	2	14	14			14			
RAMP B-1	502+92.93	510+99.82	2	11	11					11	
RAMP B-2	616+18.48	619+26.97	3	7	7			7			
RAMP B-2	616+18.48	601+92.34	3	18	18					18	
RAMP B-3	713+51.10	718+62.78									
	214+38.25	215+88.08	3	17	17			17			
RAMP B-3	701+00.00	713+51.10	2	16	16					16	
RAMP B-4	803+25.37	806+99.36	3	9	9			9			
RAMP B-4	806+99.36	817+29.79	3	13	13					13	
RAMP C-1	263+07.94	265+11.72									
	261+84.64	263+34.48	2	9	9			9			
RAMP C-1	265+11.72	272+00.00	2	9	9					9	
RAMP C-4	258+27.25	261+06.27	3	6	6			6			
RAMP C-4	261+06.27	267+06.58	3	8	8					8	
TOTALS CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY				1107	1107	884		122		101	

*

	DETAIL
1	TYPICAL
2	ACCELERATION LANE
3	DECELERATION LANE
4	MULTILANE DIVIDED-CONTROLLED ACCESS
5	4 LANE DIVIDED TO 2 LANE TRANSITION
6	4 LANE UNDIVIDED TO 2 LANE TRANSITION
7	ONE LANE BRIDGE
8	STOP APPROACH
9	THROUGH APPROACH
10	TWO WAY LEFT TURN LANE
11	HORIZONTAL CURVE
12	APPROACH W/ LT. TURN LANE

SEE STANDARD CONSTRUCTION
DRAWINGS TC-65.10 THRU TC-65.12
FOR RPM DETAILS

SIGN LOCATIONS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, GROUND MOUNTED SIGNS SHOULD HAVE THE CORRECT LATERAL AND VERTICAL CLEARANCE AND LONGITUDINAL POSITION IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DRAWINGS AND OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) WHERE PHYSICAL CONDITIONS PERMIT.

IN ADDITION, GROUND MOUNTED POST SUPPORTS SHALL BE LOCATED NO MORE THAN 1 FOOT IN ANY DIRECTION FROM THE EXISTING SUPPORT AND SIGN THAT IT IS REPLACING UNLESS OTHERWISE NOTED IN THIS PLAN. NEW GROUND MOUNTED BEAM SUPPORT LOCATIONS SHALL BE FIELD REVIEW.

IF THERE IS A CONFLICT WITH ANY OF THE PROPOSED LOCATIONS, THE CONTRACTOR SHOULD GET THE APPROVAL OF THE PROJECT ENGINEER FIRST BEFORE INSTALLING THE NEW SIGN(S) AND SUPPORT(S).

RAISED PAVEMENT MARKERS

RAISED PAVEMENT MARKER SPACING SHALL BE 120 FEET AS PER STANDARD CONSTRUCTION DRAWING TC-65.10, EXCEPT AT LANE LINES THE SPACING SHALL BE 80'.

PAVEMENT MARKINGS

ENTERANCE AND EXIT MARKINGS SHALL BE LOCATED AND INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-72.20. PLAN DETAILS SHOWING GORE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ANY MEASUREMENTS AS NEEDED TO DETERMINE THE LOCATION OF THE MARKINGS.

AUXILIARY MARKINGS SHALL BE LOCATED AND INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-71.10.

SIGN SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF SIGN SHOP DRAWINGS TO THE PROJECT ENGINEER FOR APPROVAL BEFORE THE SIGNS ARE TO BE FABRICATED. THE PROJECT ENGINEER SHOULD FORWARD THE SIGN SHOP DRAWINGS TO THE DISTRICT PRODUCTION DEPARTMENT C/O FRANK KONOPKA FOR APPROVAL.

LOGO/TODS SIGNS

PLEASE REFER TO C.M.S. 630.09 FOR THE PROCEDURE NECESSARY TO RELOCATE THE SPECIFIC SERVICE SIGNS. THE CONTRACTOR SHALL NOTIFY OHIO LOGOS (TOLL FREE 1-800-860-LOGO) AT LEAST SIXTY DAYS PRIOR TO THE DATE OF THE DESIRED REMOVAL.

ITEM 620 - DELINEATORS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY TO ALLOW FOR THE TOTAL REPLACEMENT OF DELINEATORS ON THE MAINLINE SR-2 AND RAMPS. THE REMOVAL AND DISPOSAL QUANTITY IS 75% OF THE REPLACEMENT QUANTITY BASED ON THE FACT THAT MANY EXISTING DELINEATORS ARE DAMAGED OR MISSING.

ITEM 620 - DELINEATOR, TYPE C, POST MOUNTED 150 EACH
ITEM 620 - DELINEATOR, TYPE D, POST MOUNTED 25 EACH

ITEM 626 - BARRIER REFLECTORS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO ALLOW FOR THE INSTALLATION OF BARRIER REFLECTORS ON NEW GUARDRAIL RUNS AND NEW CONCRETE BARRIER SECTIONS. THEY SHOULD BE INSTALLED AND LAID OUT PER SECTION 626 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

ITEM 626 - BARRIER REFLECTOR, TYPE A 375 EACH

ITEM 631 - REMOVAL OF LUMINAIRE AND DISPOSAL

INCIDENTAL TO THE REMOVAL OF THE LUMINAIRE, THE BALLAST AND THE MOUNTING BRACKET ASSEMBLY SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 625 - CABLE SPLICING KIT

CABLE SPLICE KITS ARE BEING PROVIDED AT LOCATIONS WHERE SIGN LIGHTING AND SIGN SERVICE IS BEING REMOVED. THEY ARE TO BE USED TO PROPERLY TERMINATE THE POWER FEED FROM THE MAIN CIRCUIT TO THE PULL BOX THAT SUPPLIES POWER TO THE SIGN LOCATION.

CALCULATED
JTP
CHECKED
NUG

TRAFFIC CONTROL NOTES

LAK-2-0.00

369
524

...Vtrna.dgn

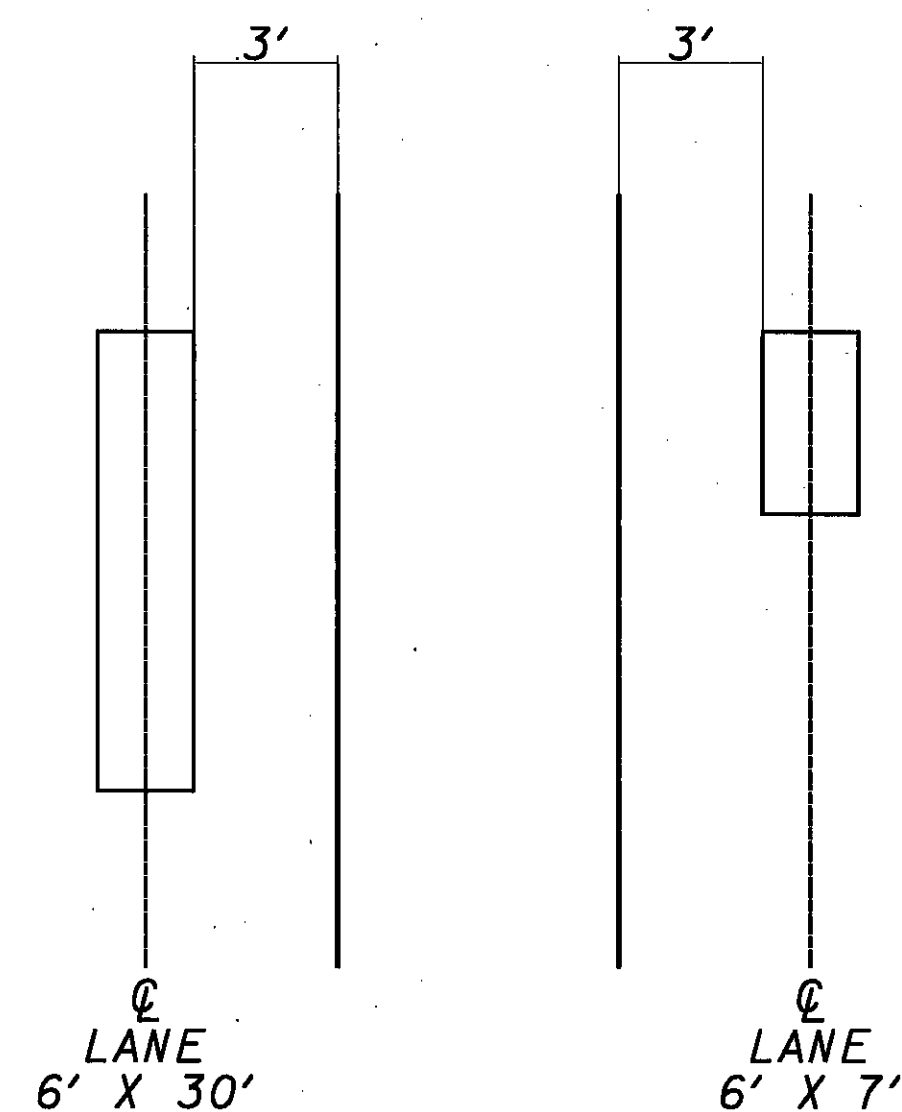
ITEM 632 - DETECTOR LOOP, AS PER PLAN

AN ESTIMATED QUANTITY OF ITEM 632 - DETECTOR LOOP, AS PER PLAN HAS BEEN PROVIDED AS A CONTINGENCY WHEN WIRE IS CUT, BROKEN, OR HAS BEEN DESTROYED DUE TO PAVEMENT REPAIR OR BUTT JOINT OPERATIONS ON THE EXIT RAMPS FROM SR-2.

NEW LOOP DETECTORS SHALL BE PLACED AT THE SAME LOCATION, STYLE, AND SIZE AS THE EXISTING (SEE DETAIL BELOW). THE LOOP DETECTOR WIRE SHALL BE REPLACED TO THE PULL BOX OR POLE, WHICHEVER IS APPLICABLE, UNDER ITEM 632 AND TC-82.10. NEW CABLE SPLICE KITS SHALL BE INCLUDED IN THIS PAY ITEM.

ITEM 632 - DETECTOR LOOP, AS PER PLAN 10 EACH

TYPICAL LOOP PLACEMENT



ITEM 646 - EPOXY PAVEMENT MARKINGS, AS PER PLAN

THE EPOXY PAVEMENT MARKING MATERIAL FURNISHED FOR THIS PROJECT SHALL BE EPOPLEX LS-60 AS FURNISHED BY EPOPLEX, MAPLESIDE, NJ.

THE WIDTH OF THE LANE LINES SHALL BE SIX INCHES (6"). ALL OTHER PAVEMENT MARKINGS SHALL BE PLACED PER C.M.S. 641.08.

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

THE EPOXY PAVEMENT MARKING MATERIAL SHALL BE MARK 55.4 AS FURNISHED BY POLYCARB, CLEVELAND, OH. PAYMENT WILL BE AT THE NORMAL CONTRACT UNIT PRICE AS SPECIFIED IN ITEM 646.

THE WIDTH OF THE LANE LINES SHALL BE SIX INCHES (6"). ALL OTHER PAVEMENT MARKINGS SHALL BE PLACED PER C.M.S. 641.08.

ITEM 630 - SIGNING, MISC.: INVENTORY TAG

WHERE EXISTING SIGNS AND SUPPORTS ARE BEING REPLACED WITH NEW SIGNS AND SUPPORTS AT THE SAME LOCATION, THE CONTRACTOR SHALL TRANSFER THE YELLOW INVENTORY TAG AFFIXED TO THE EXISTING SIGN SUPPORT TO THE NEW SIGN SUPPORT WITH A PLASTIC ZIP-TIE.

WHERE A NEW SUPPORT LOCATION IS BEING ESTABLISHED THE CONTRACTOR SHALL CONTACT TRAVIS BONNETT, DISTRICT 12 TRAFFIC ENGINEER AT EXT 2220, TO OBTAIN INVENTORY TAGS AND AFFIX IT TO THE NEW LOCATION(S) BY THE ZIP-TIE METHOD. ONCE THIS IS DONE THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF THE NEW LOCATION. THE PROJECT ENGINEER SHALL FORWARD THE NEW LOCATION INFORMATION TO THE TRAFFIC OFFICE FOR PROPER DOCUMENTATION.

PAYMENT FOR THIS ITEM OF WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 630-SIGNING, MISC.: INVENTORY TAG.

CALCULATED
JTP
CHECKED
NJG

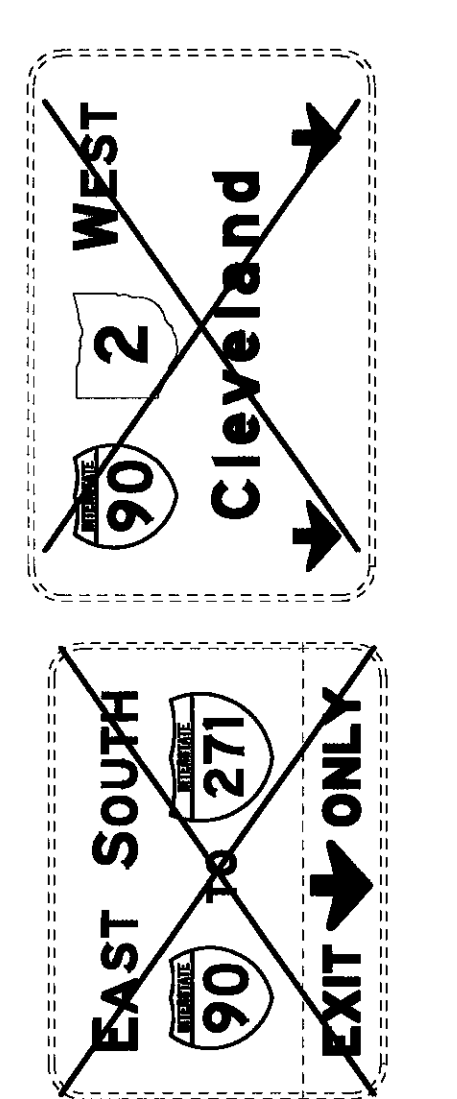
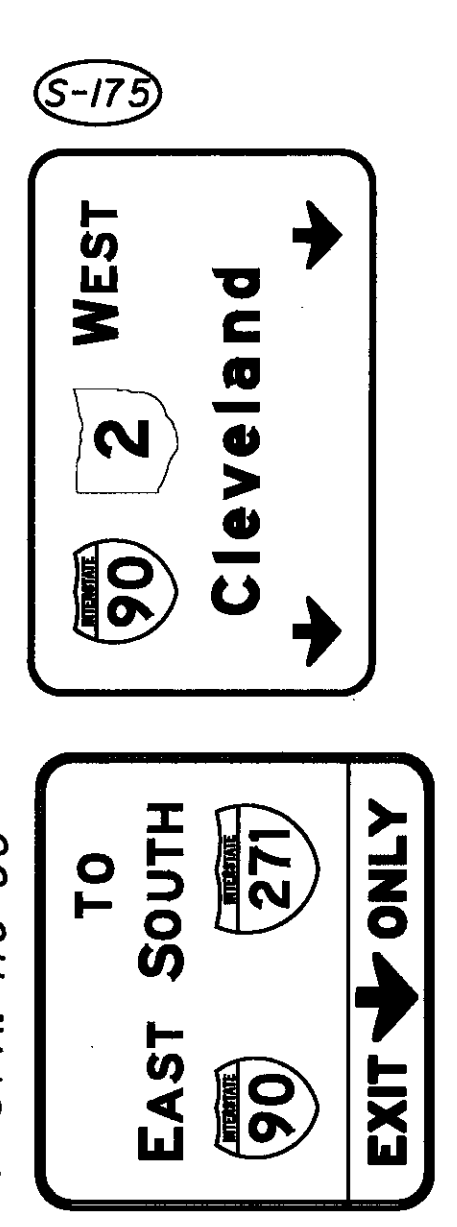
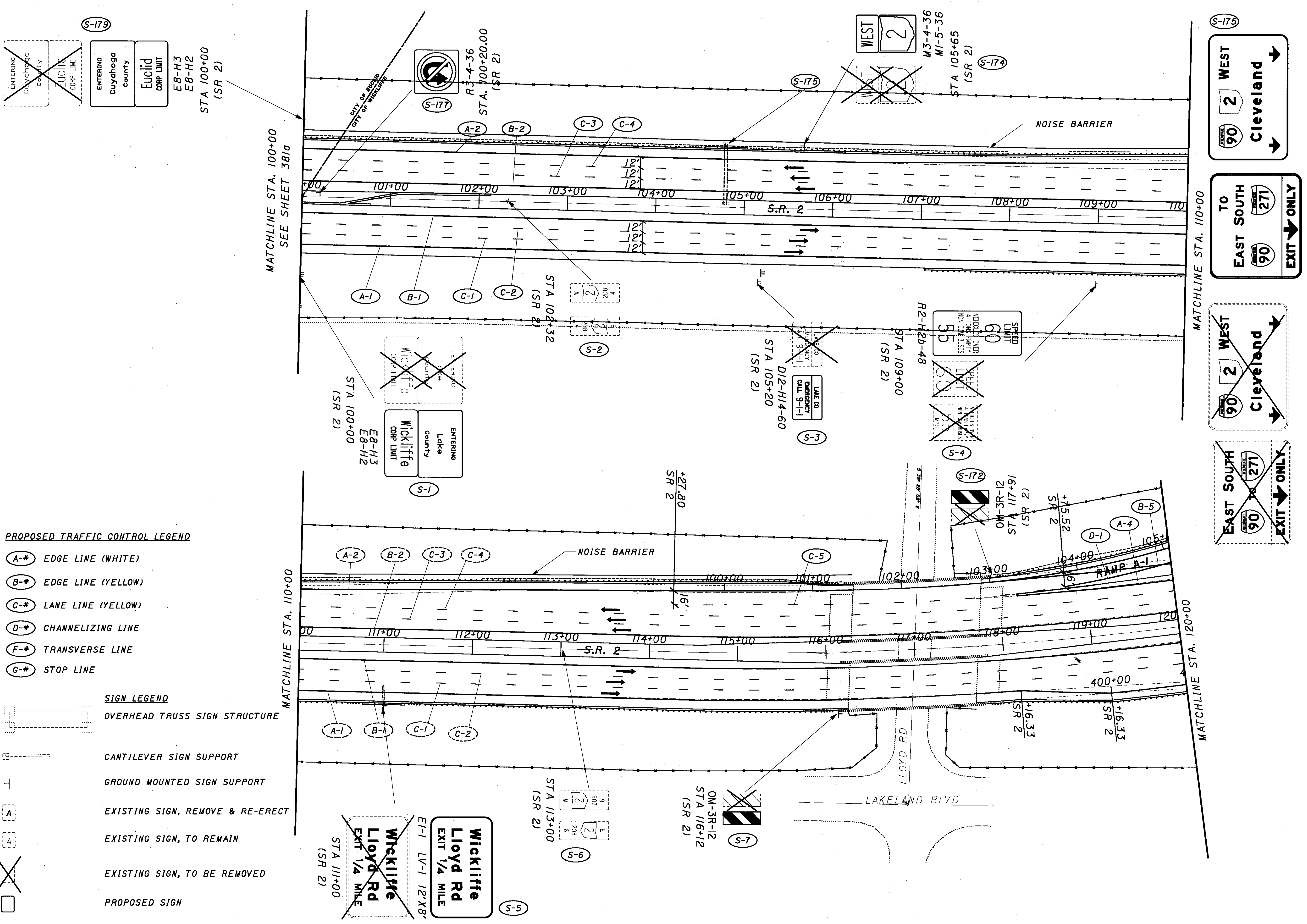
TRAFFIC CONTROL NOTES

LAK-2-0.00

370
524

...Vtnc.dgn

- PROPOSED TRAFFIC CONTROL LEGEND**
- (A-#) EDGE LINE (WHITE)
 - (B-#) EDGE LINE (YELLOW)
 - (C-#) LANE LINE (YELLOW)
 - (D-#) CHANNELIZING LINE
 - (F-#) TRANSVERSE LINE
 - (G-#) STOP LINE
- SIGN LEGEND**
- OVERHEAD TRUSS SIGN STRUCTURE
 - CANTILEVER SIGN SUPPORT
 - GROUND MOUNTED SIGN SUPPORT
 - EXISTING SIGN, REMOVE & RE-ERECT
 - EXISTING SIGN, TO REMAIN
 - EXISTING SIGN, TO BE REMOVED
 - PROPOSED SIGN



EL-H3 LV-1 12'X15' E6-2 LV-1 17'X10'
STA 104+90 (SR 2)

TRAFFIC CONTROL PLAN
STA. 100+00 TO STA. 120+00

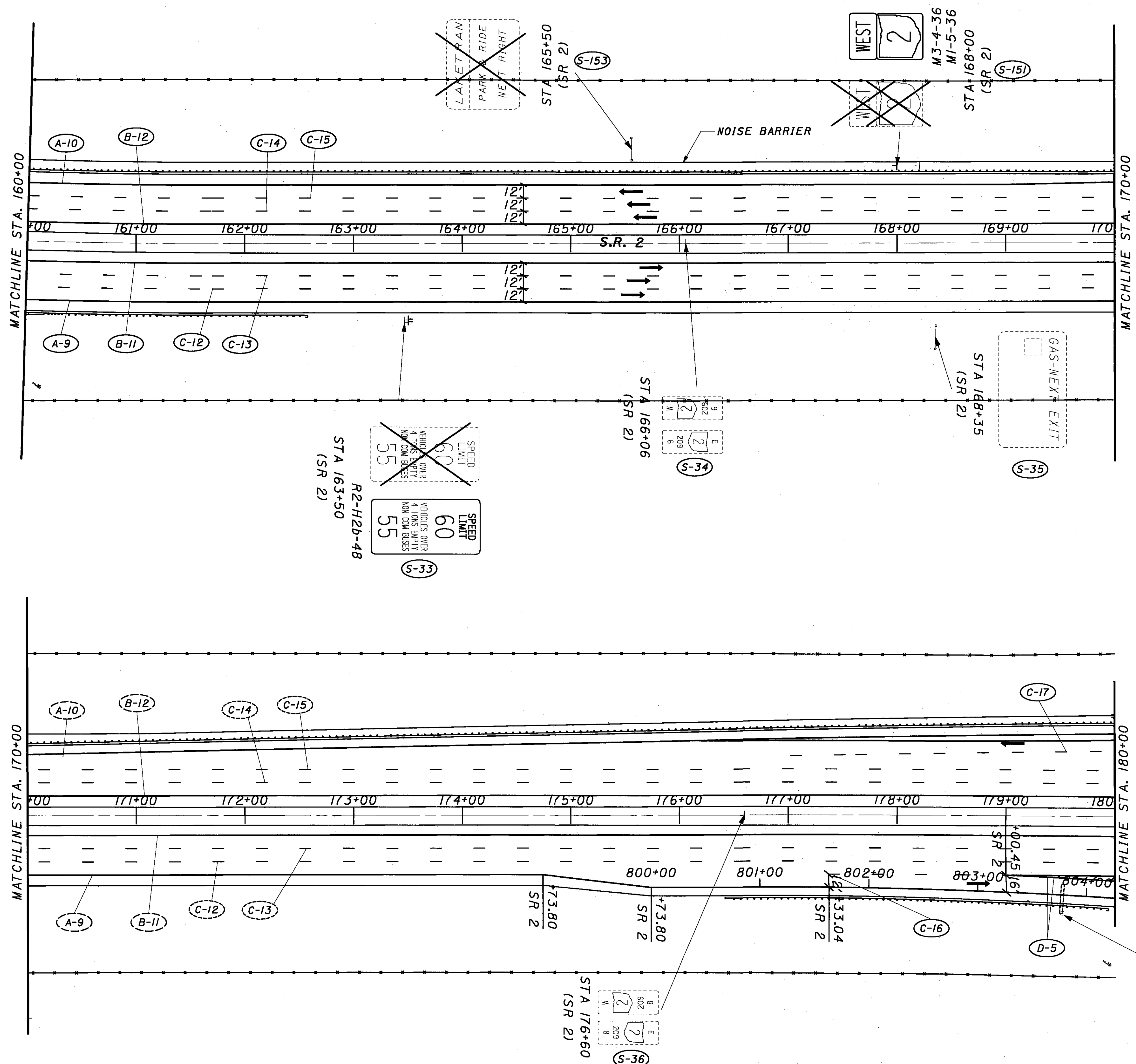
LAK-2-0.00

CALCULATED JTP
CHECKED NJG

371
524

N:\21778\p001.dgn

FOR LEGEND SEE SHEET 371.



CALCULATED JTP
 CHECKED WJG

0 25 50
 HORIZONTAL SCALE IN FEET

2

TRAFFIC CONTROL PLAN
 STA. 160+00 TO STA. 180+00

LAK-2-0.00

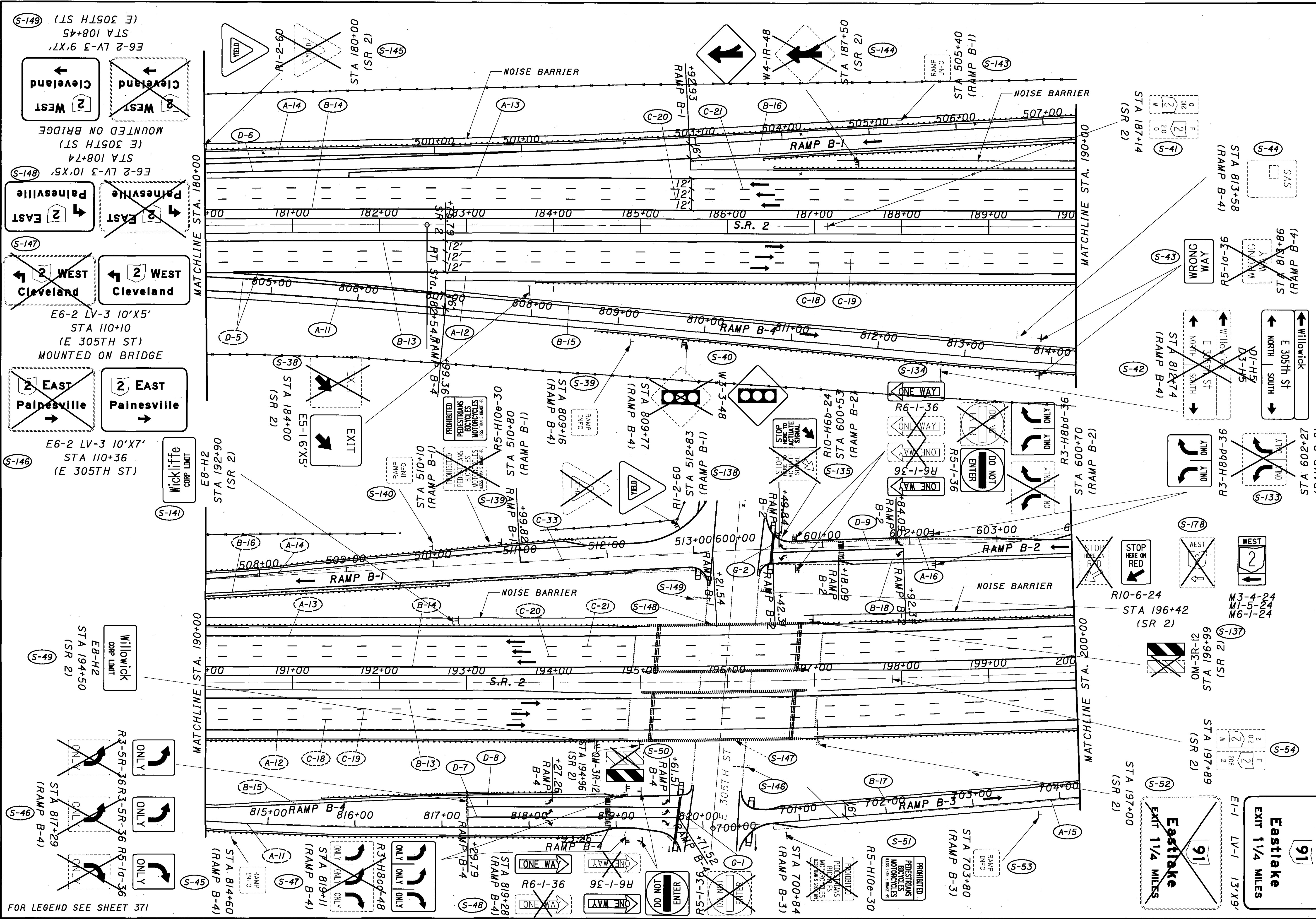


CALCULATED JTP
CHECKED NJG

TRAFFIC CONTROL PLAN
STA. 180+00 TO STA. 200+00

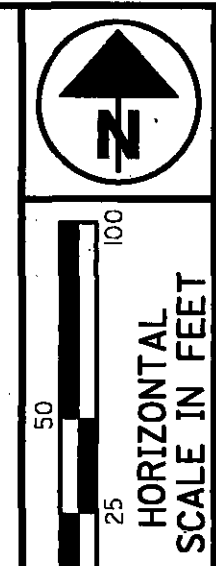
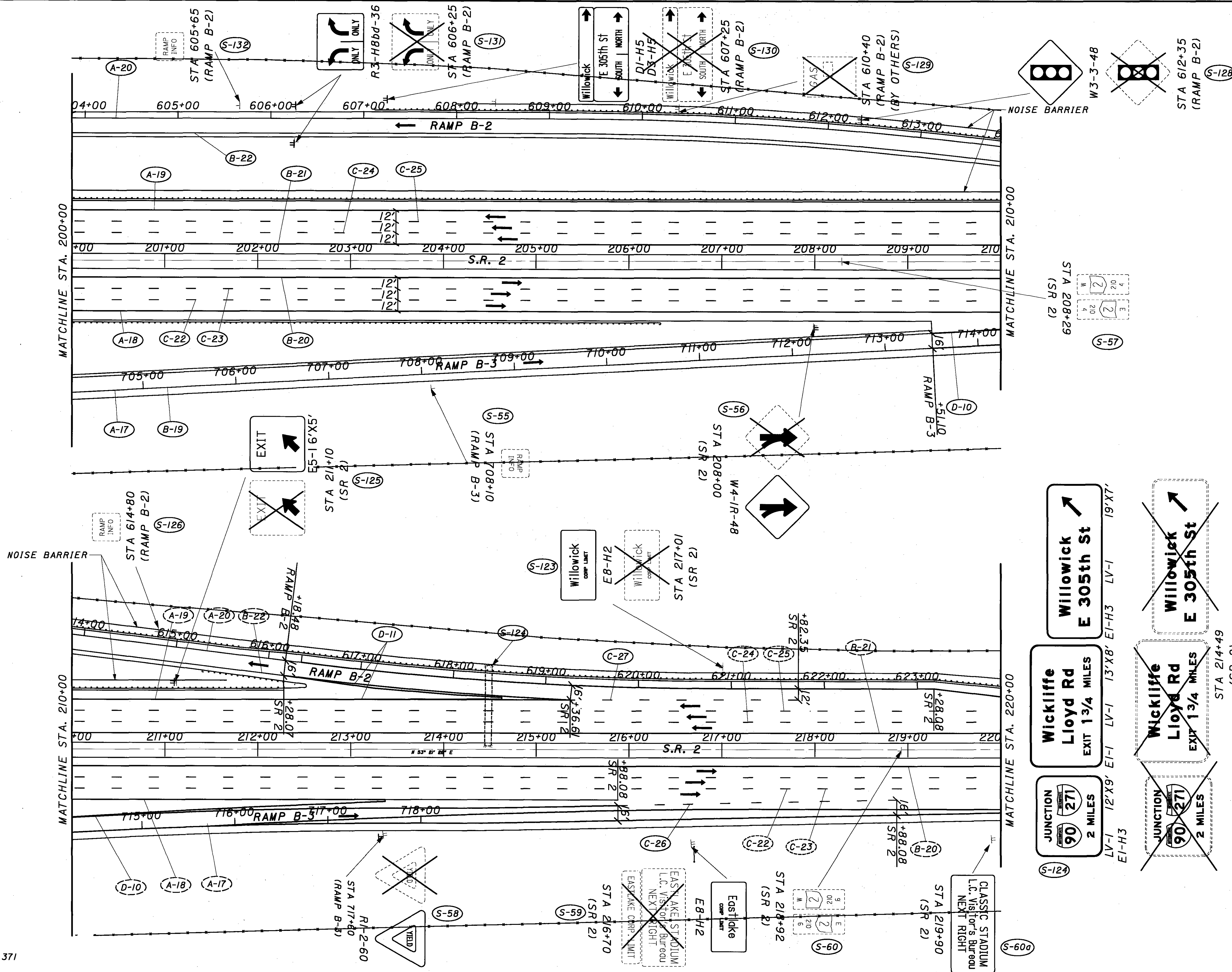
LAK-2-0.00

375
524



FOR LEGEND SEE SHEET 371

21778+P005.dgn



CALCULATED
JTP
CHECKED
NJG

TRAFFIC CONTROL PLAN
STA. 200+00 TO STA. 220+00

LAK-2-0.00

376
524

2 EAST
Painesville
→

STA 240+29
(SR 91)

S-112
OM-3R-12
STA 261+17
(SR 2)

S-110
STA 261+43
(SR 2)

S-109
RI-2-60
STA 263+93
(SR 2)

S-108
W4-IR-48
STA 265+50
(SR 2)

S-106
R5-H10e-30
STA 271+60
(RAMP C-1)

R5-1-36
R6-1-36
R6-1-36
DO NOT ENTER
ONE WAY
DO NOT ENTER
ONE WAY
DO NOT ENTER
ONE WAY

S-105
R3-H8bd-36
STA 0+40
(RAMP C-2)

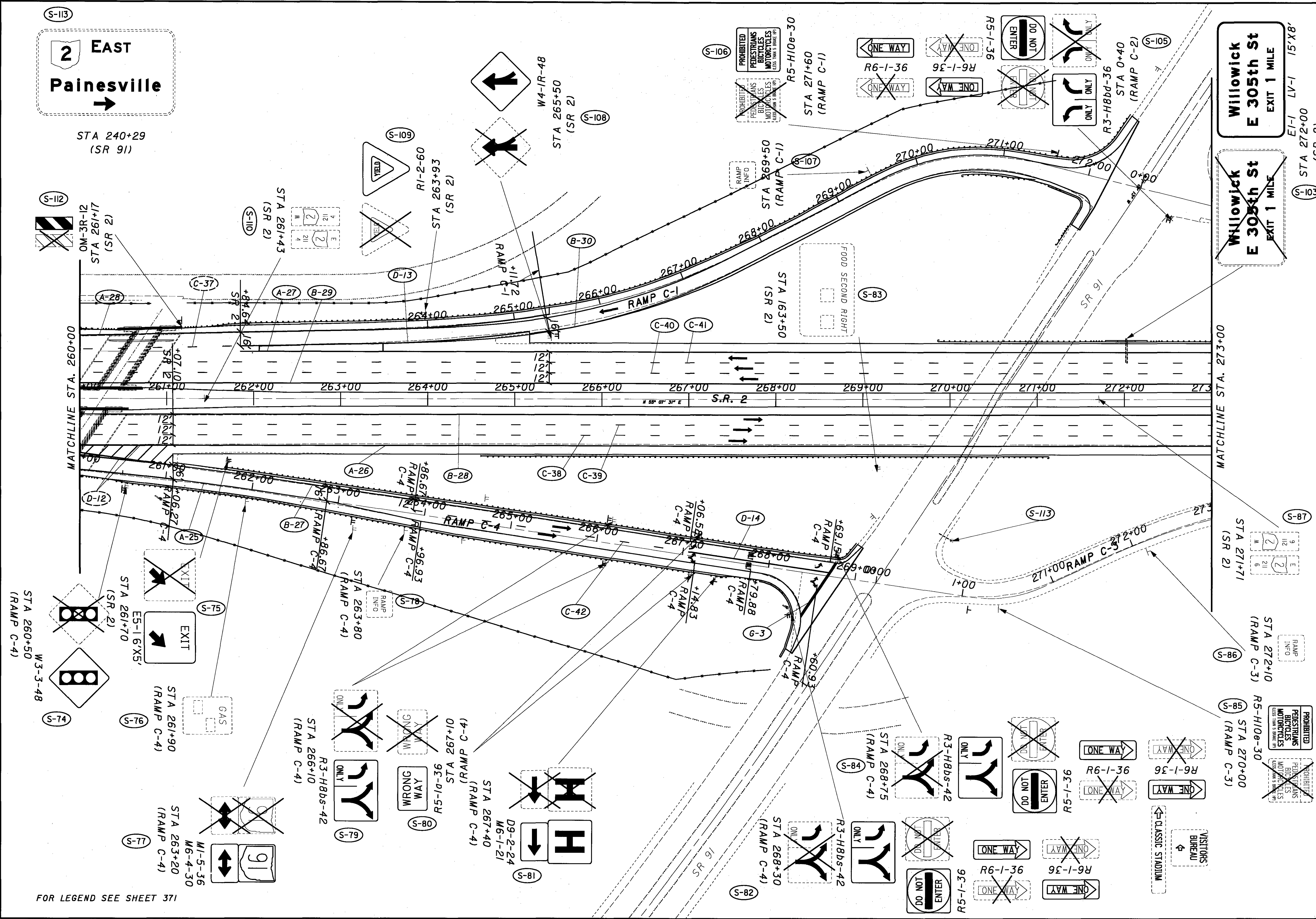
S-103
W1-1 LV-15'X8'
E 305th St
EXIT 1 MILE
STA 272+00
(SR 2)

0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED JTP
CHECKED NJG

TRAFFIC CONTROL PLAN
STA. 260+00 TO STA. 273+00

LAK-2-0.00
379
524

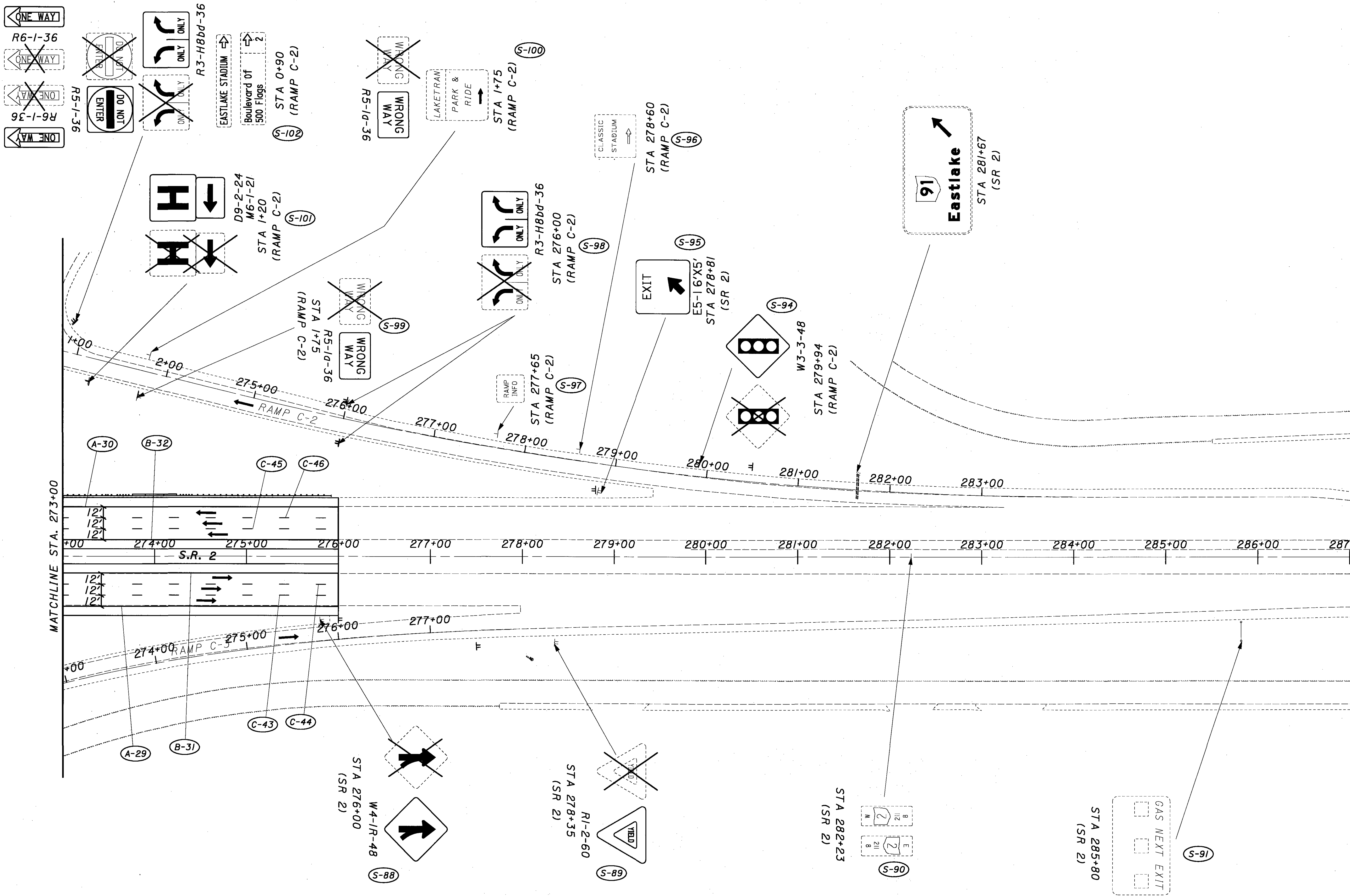


FOR LEGEND SEE SHEET 371

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FOR LEGEND SEE SHEET 371

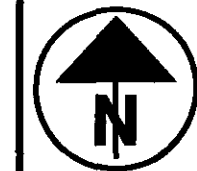


CALCULATED JTP
CHECKED NJG

0 25 50
HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 273+00 TO STA. 287+00.00

LAK-2-0.00



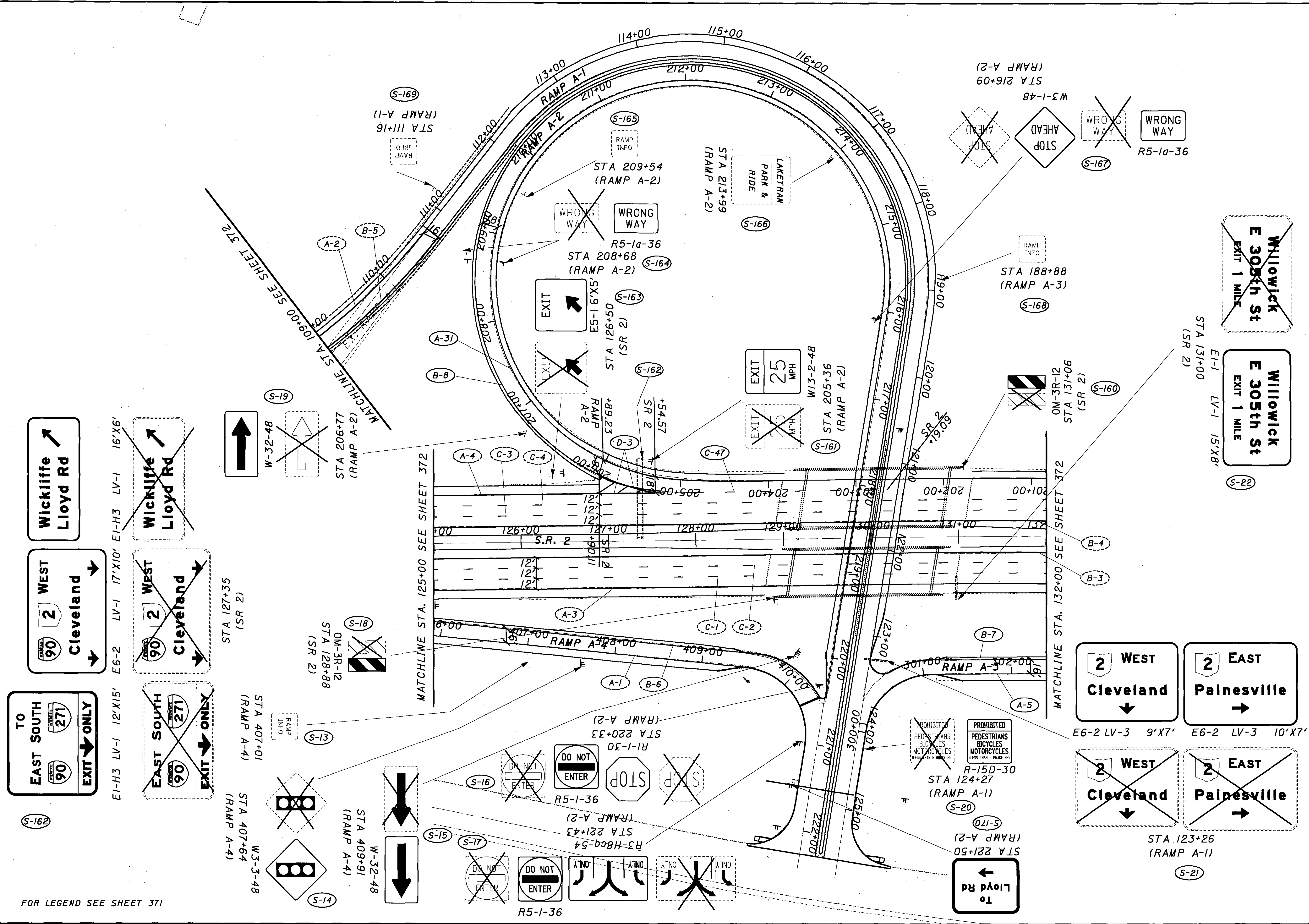
0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED JTP
CHECKED NJG

TRAFFIC CONTROL PLAN
STA. 120+00 TO STA. 140+00

LAK-2-0.00

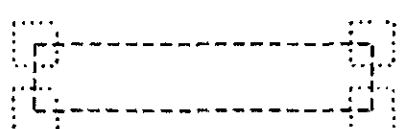
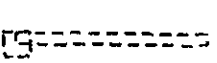





381
524

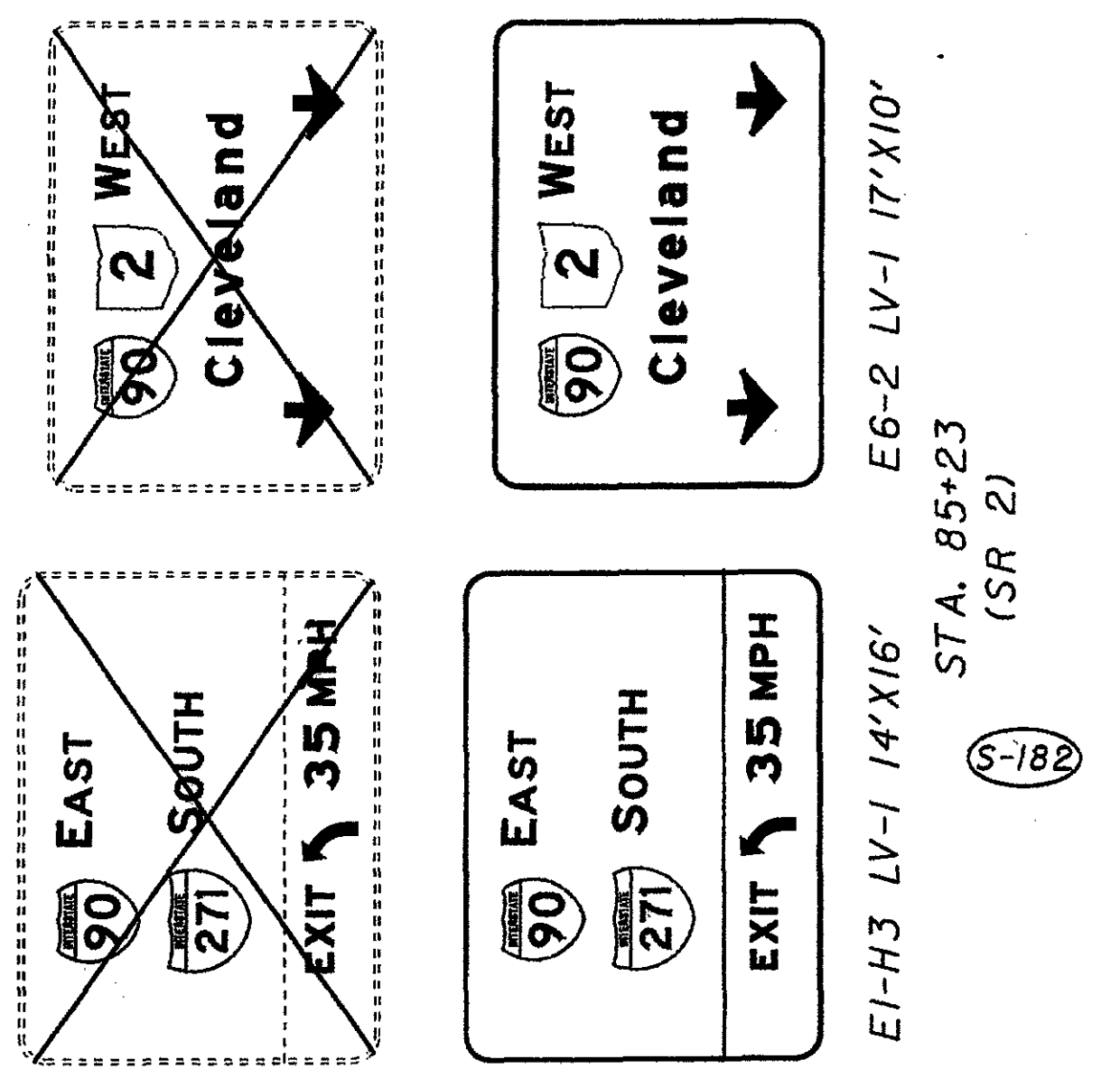
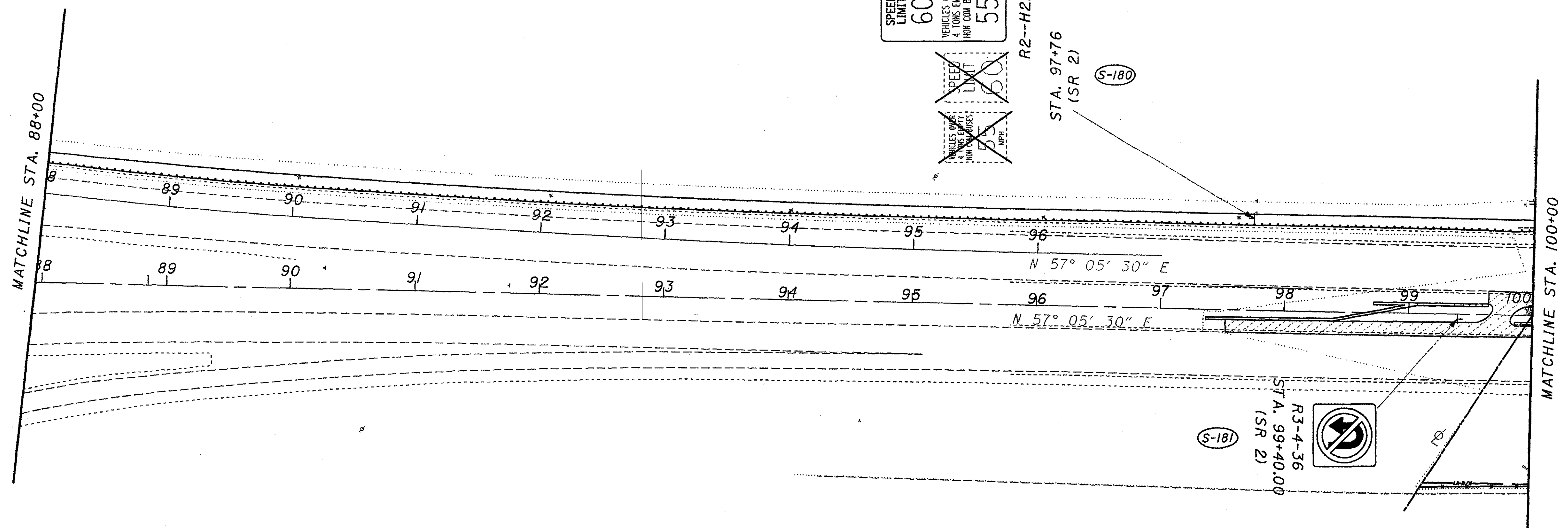
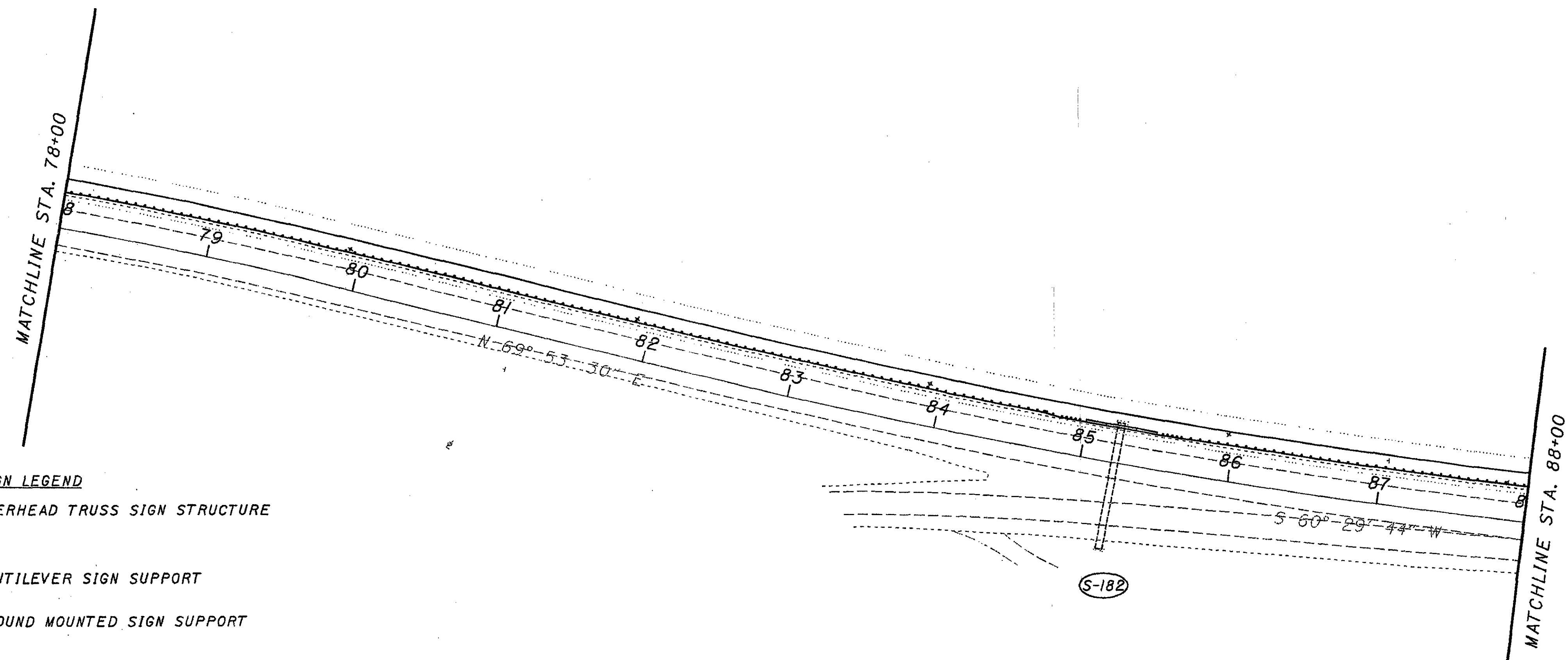


FOR LEGEND SEE SHEET 371

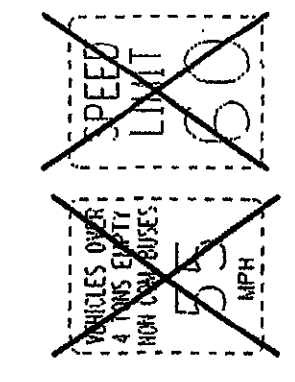
217781p01.dgn

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- SIGN LEGEND**
-  OVERHEAD TRUSS SIGN STRUCTURE
 -  CANTILEVER SIGN SUPPORT
 -  GROUND MOUNTED SIGN SUPPORT
 -  EXISTING SIGN, REMOVE & RE-ERECT
 -  EXISTING SIGN, TO REMAIN
 -  EXISTING SIGN, TO BE REMOVED
 -  PROPOSED SIGN



SPEED LIMIT
60
 VEHICLES OVER
 4 TONS EMPTY
 NON COM BUSES
55



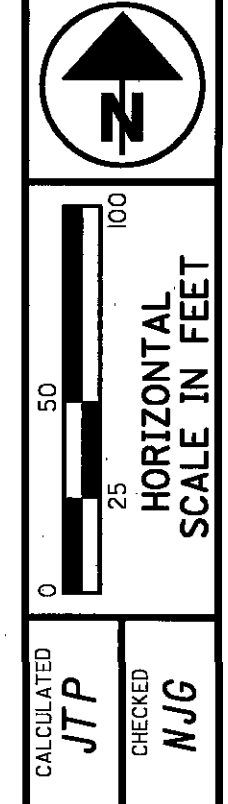
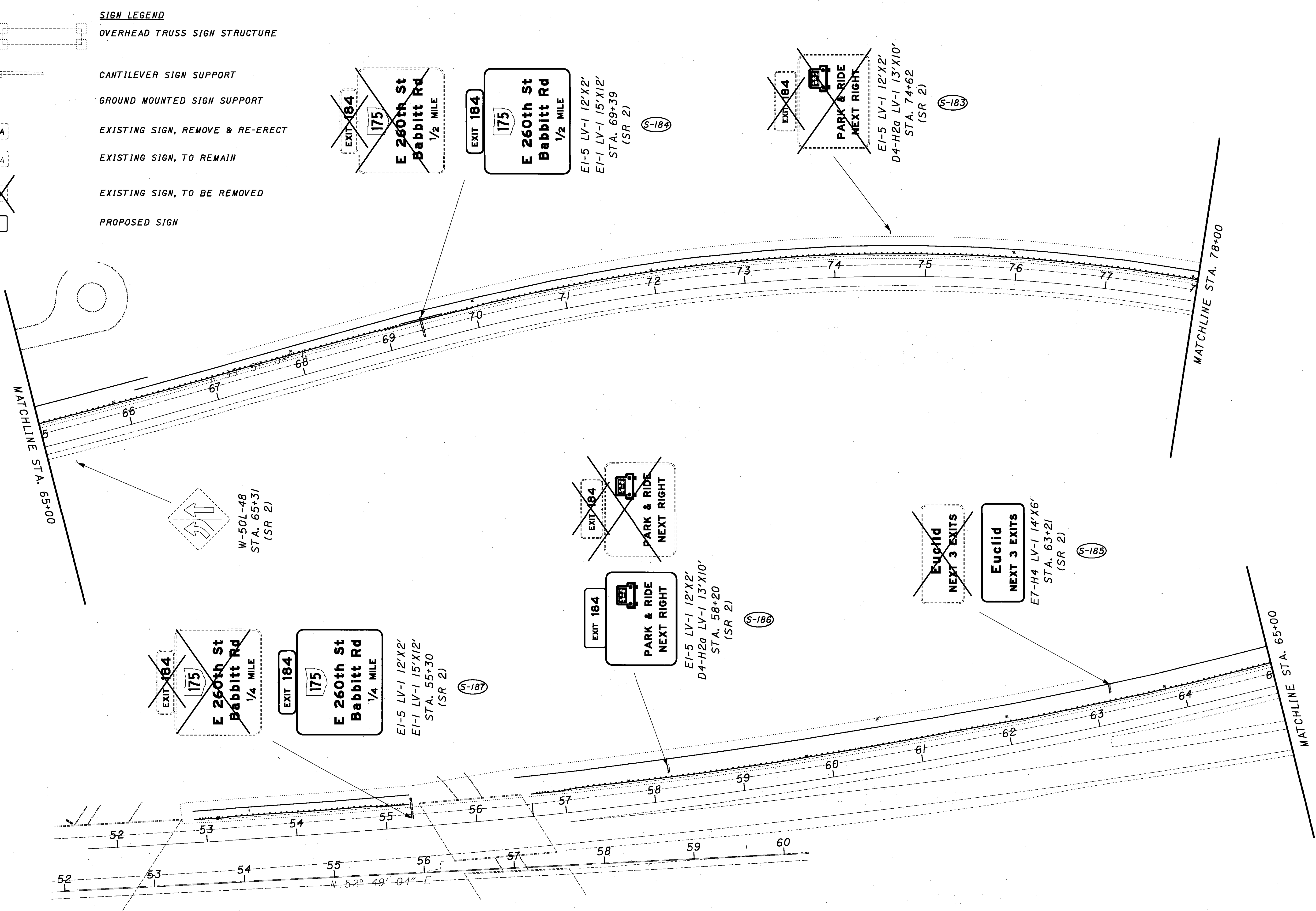
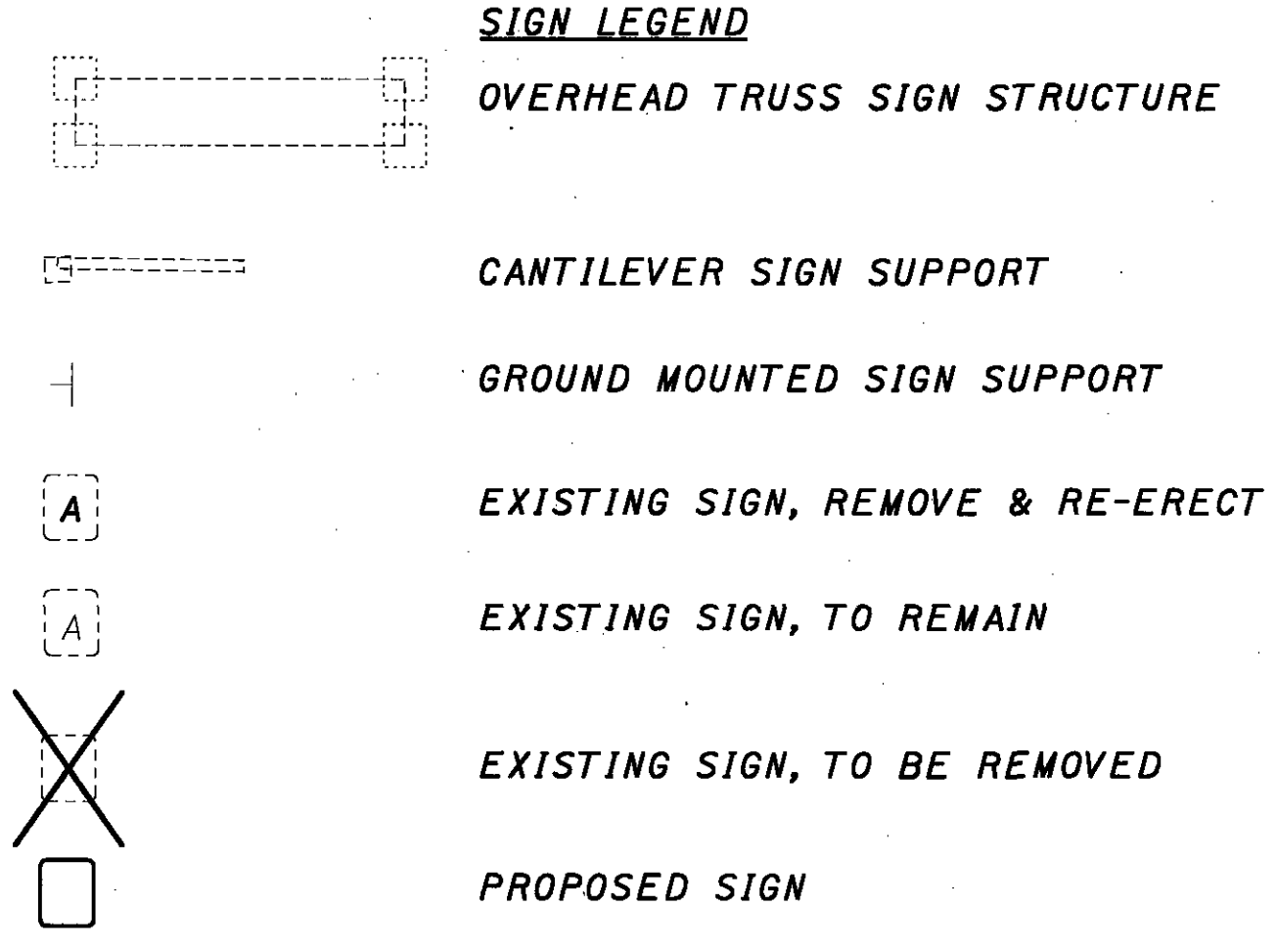
CALCULATED
 JTP
 CHECKED
 NJG

HORIZONTAL
 SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 78+00 TO STA. 100+00

LAK-2-0.00

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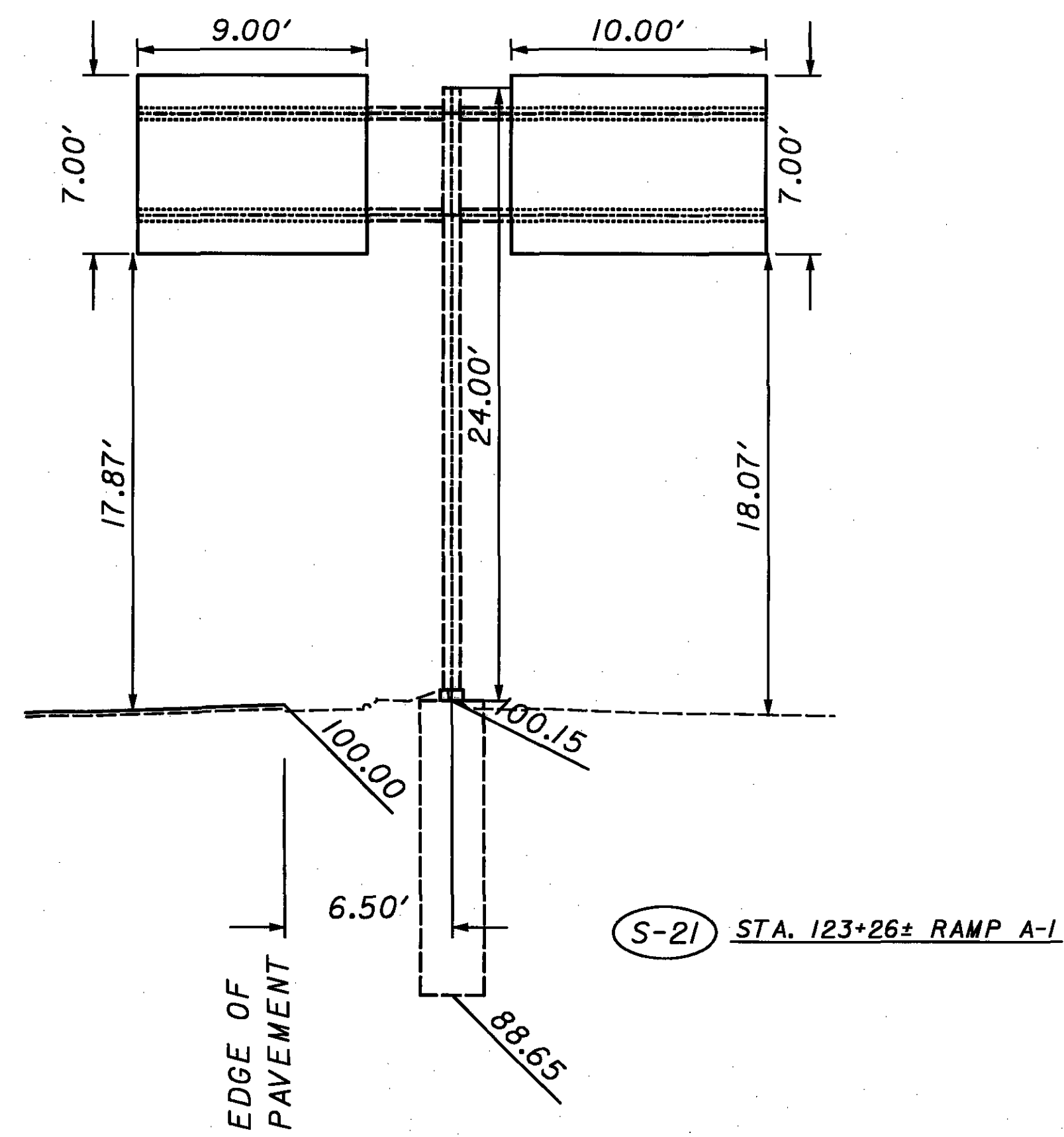
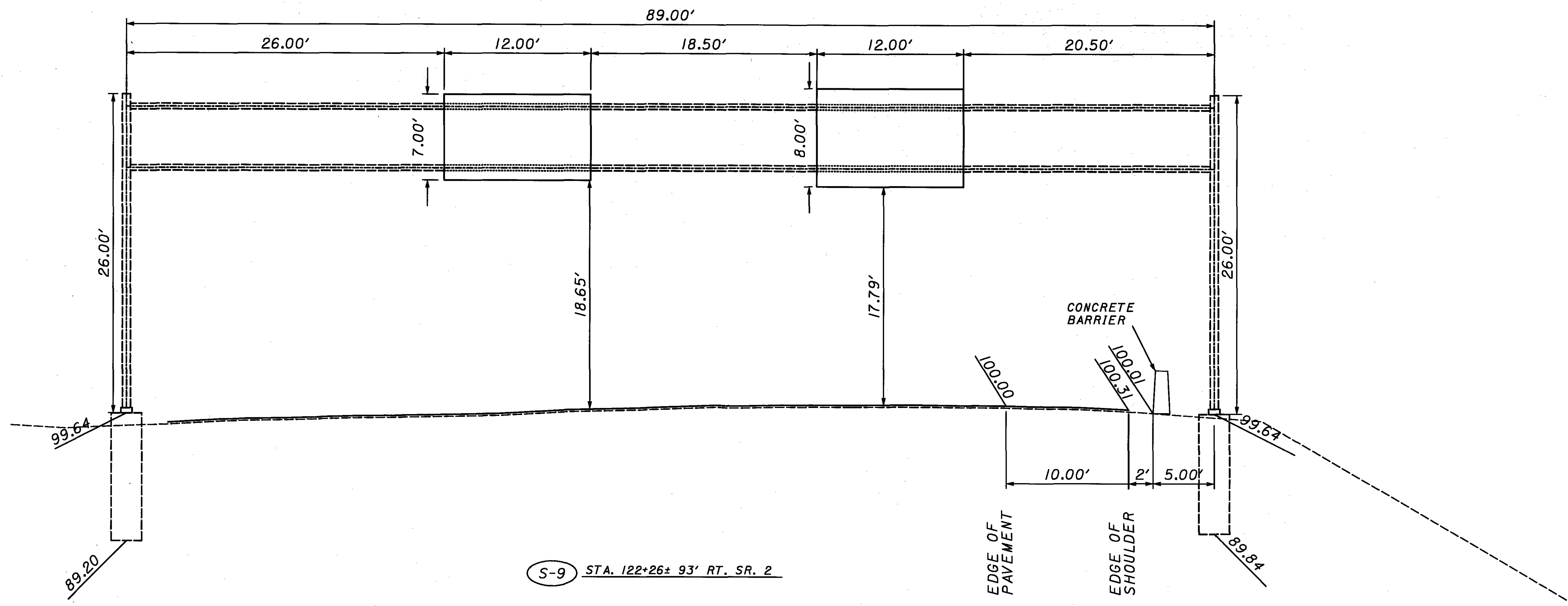
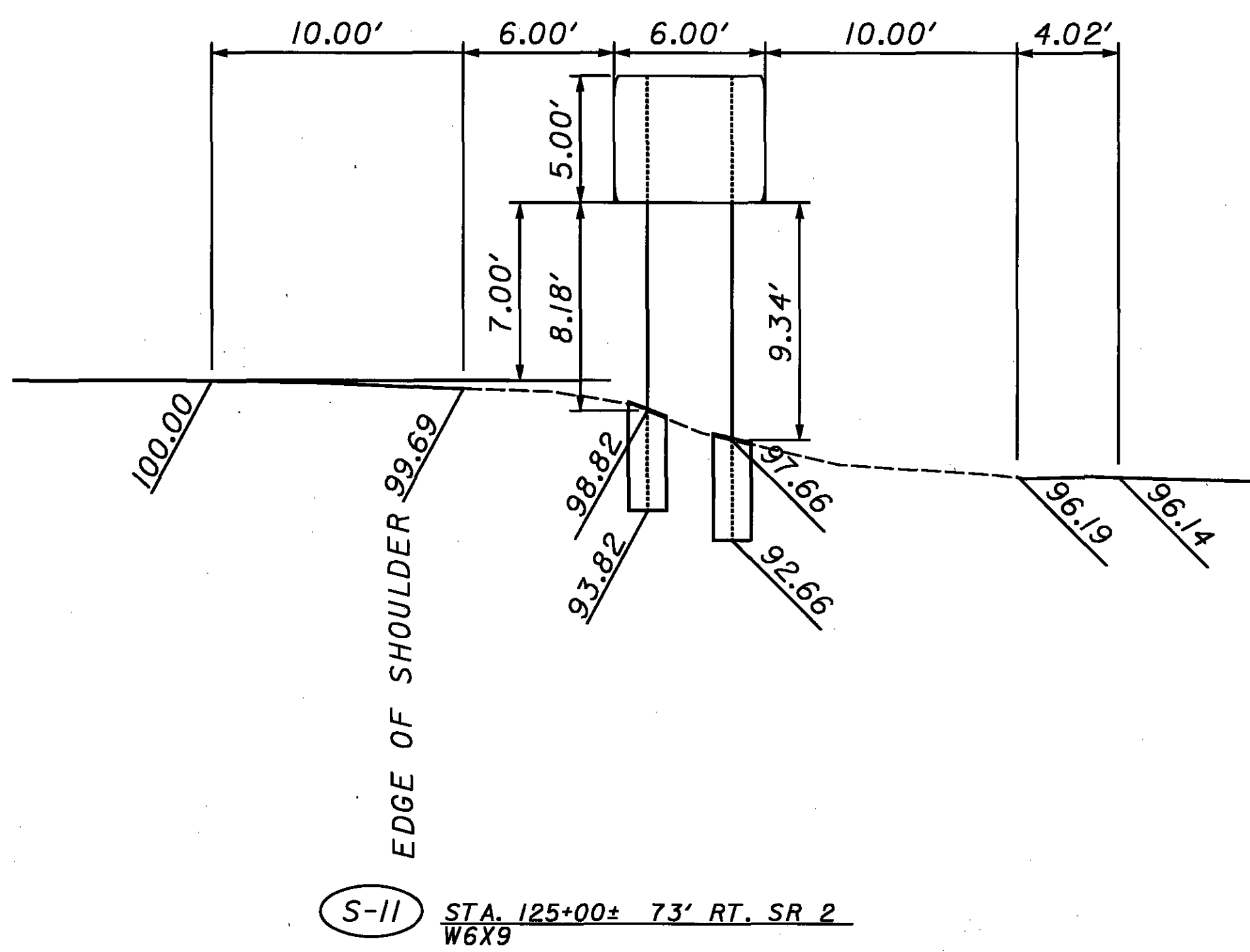


TRAFFIC CONTROL PLAN
STA. 52+00 TO STA. 78+00

LAK-2-0.00

38lb
524

... \xs-sign.dgn

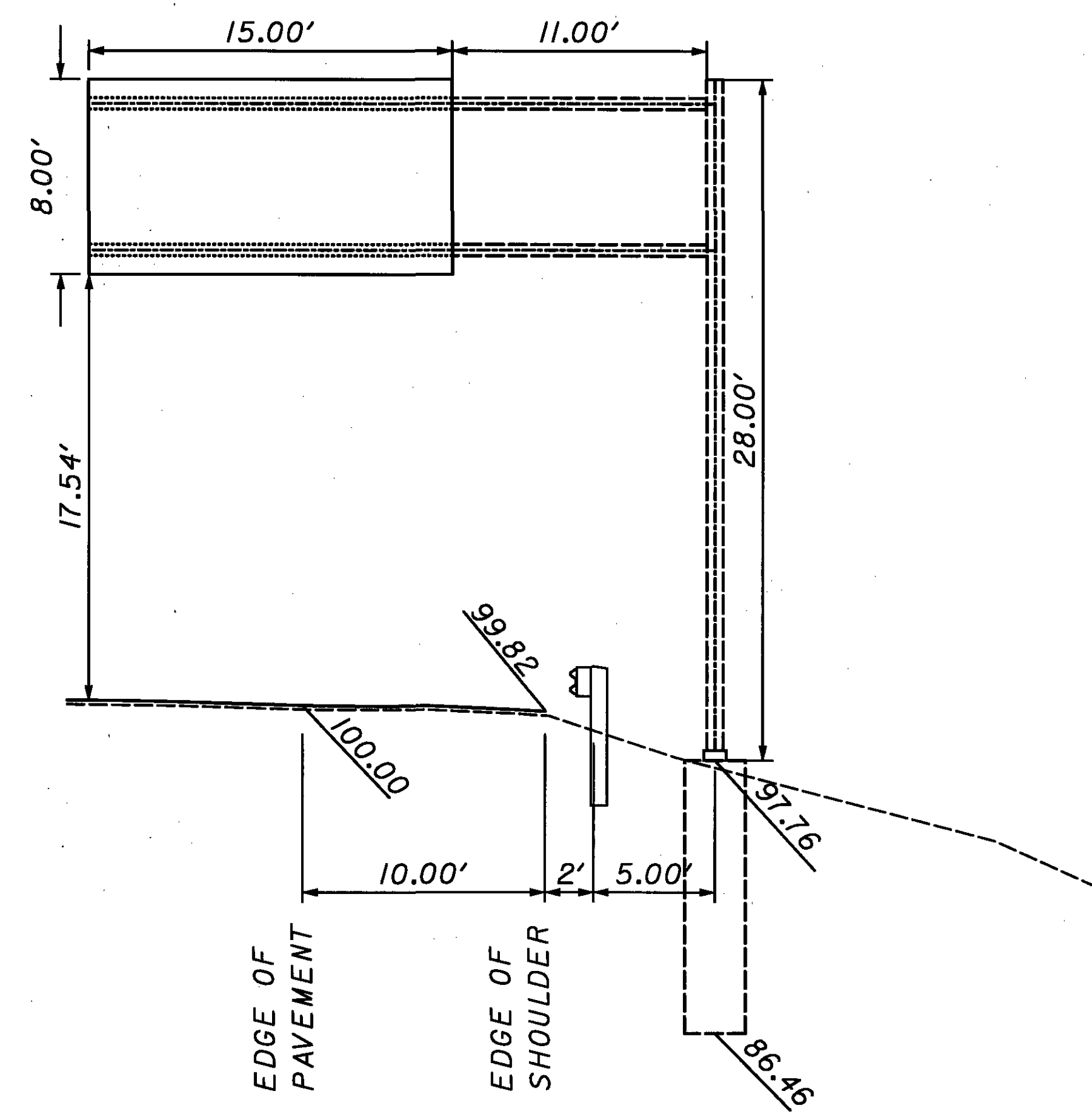


CALCULATED
JTP
CHECKED
NJG

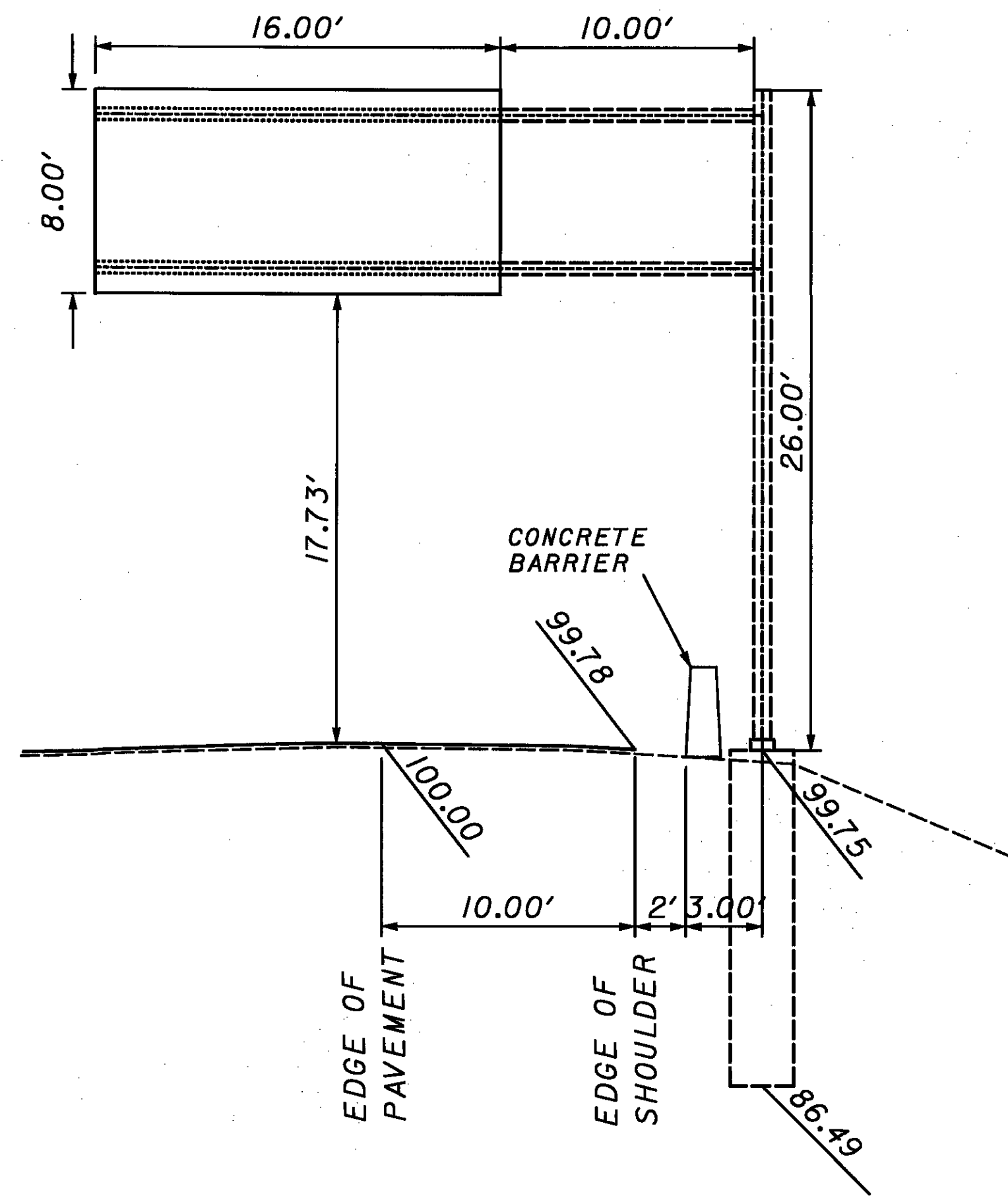
SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

SIGNING ELEVATION VIEWS

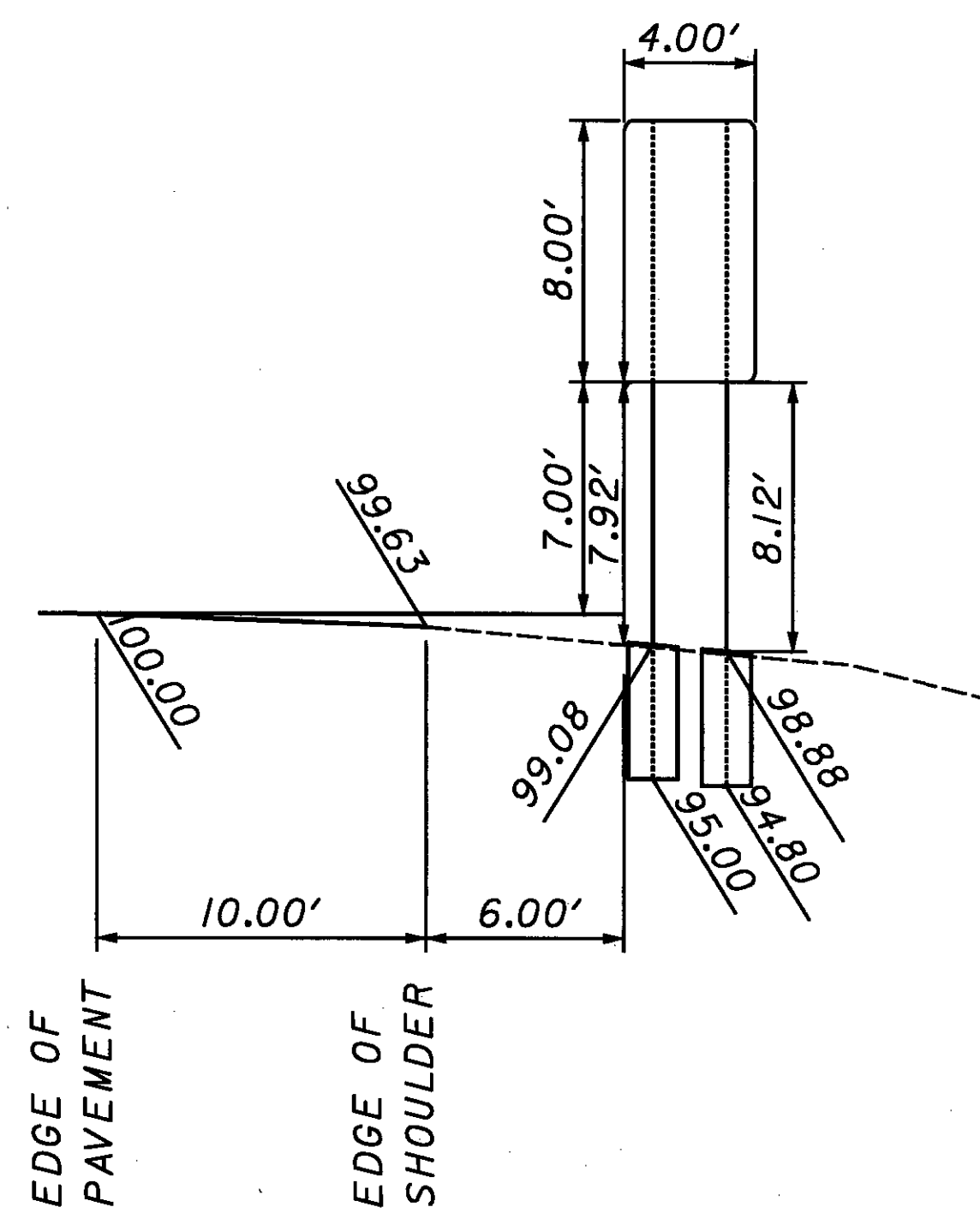
LAK-2-0.00



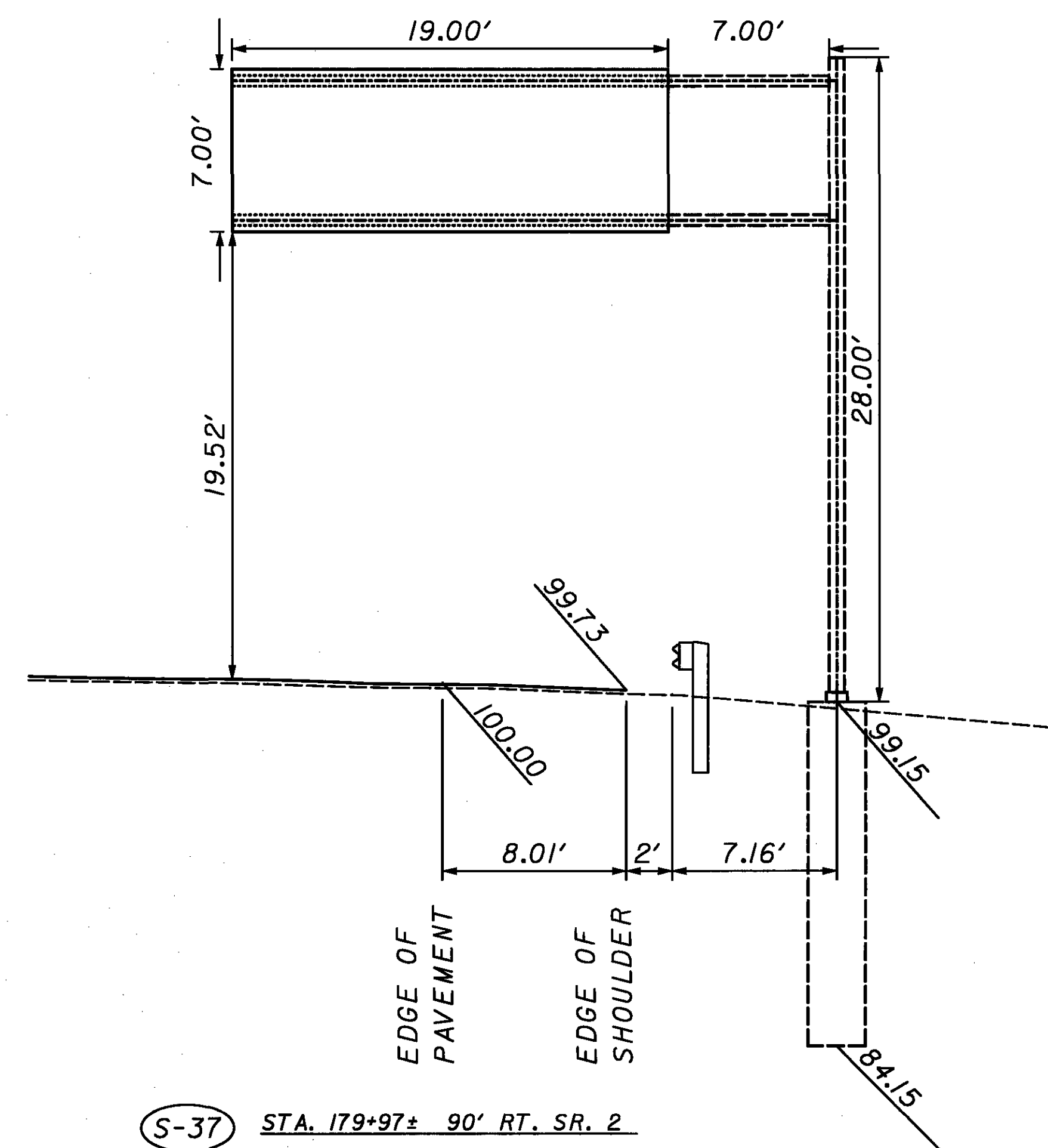
S-22 STA. 131+00± 71' RT. SR. 2



S-32 STA. 160+00± 69' RT. SR. 2



S-33 STA. 163+50± 72' RT. SR. 2
S4X7.7



S-37 STA. 179+97± 90' RT. SR. 2

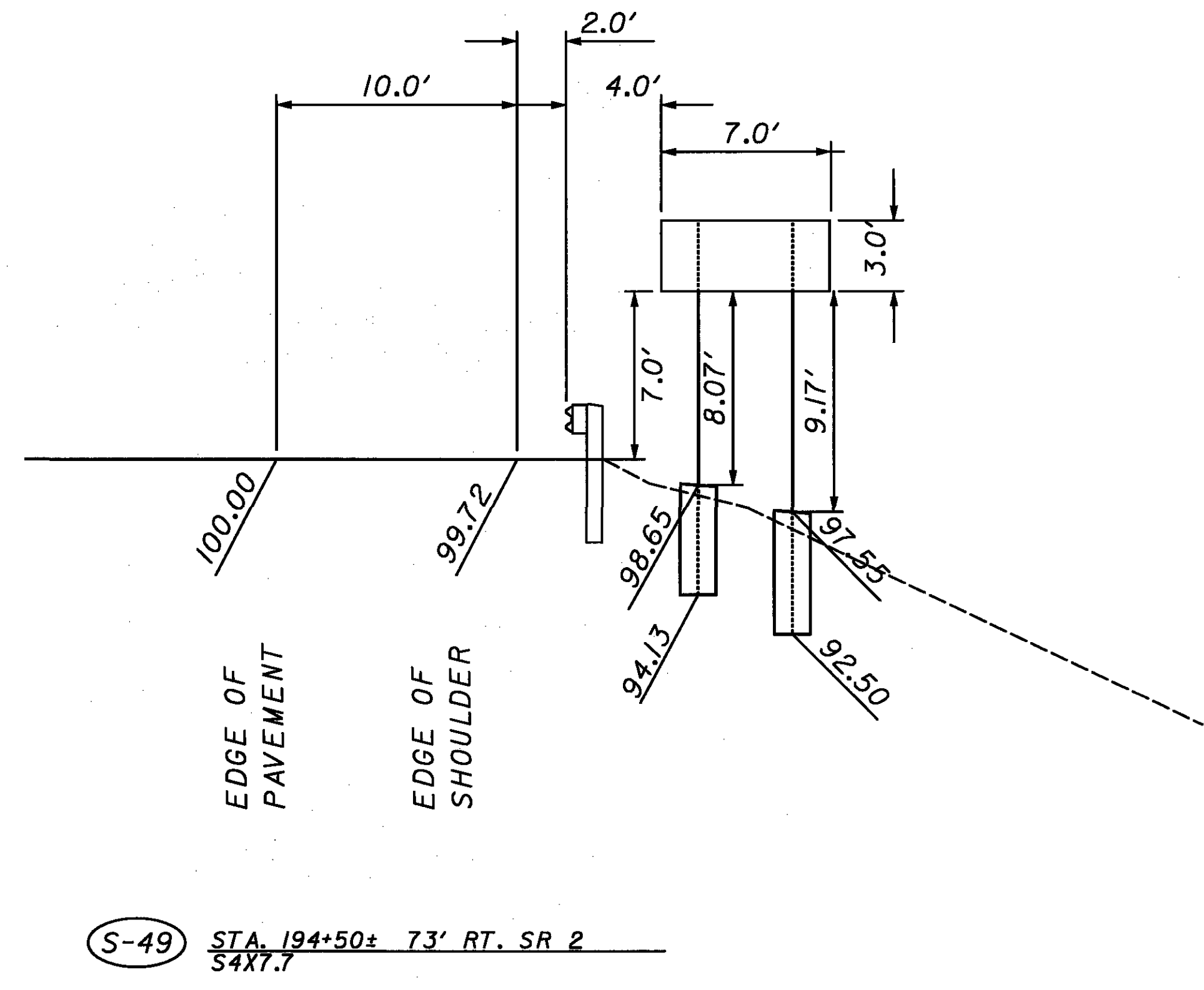
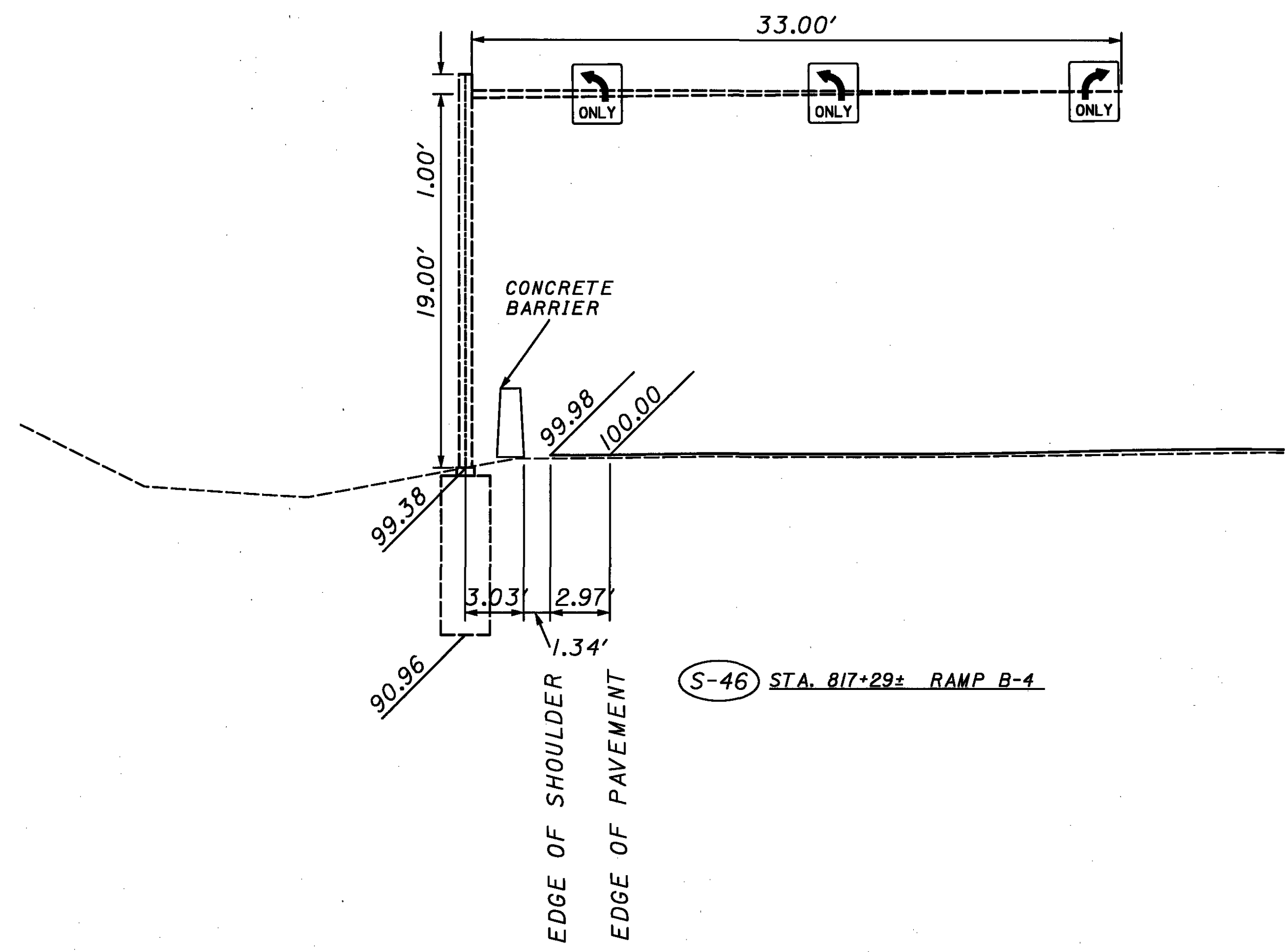
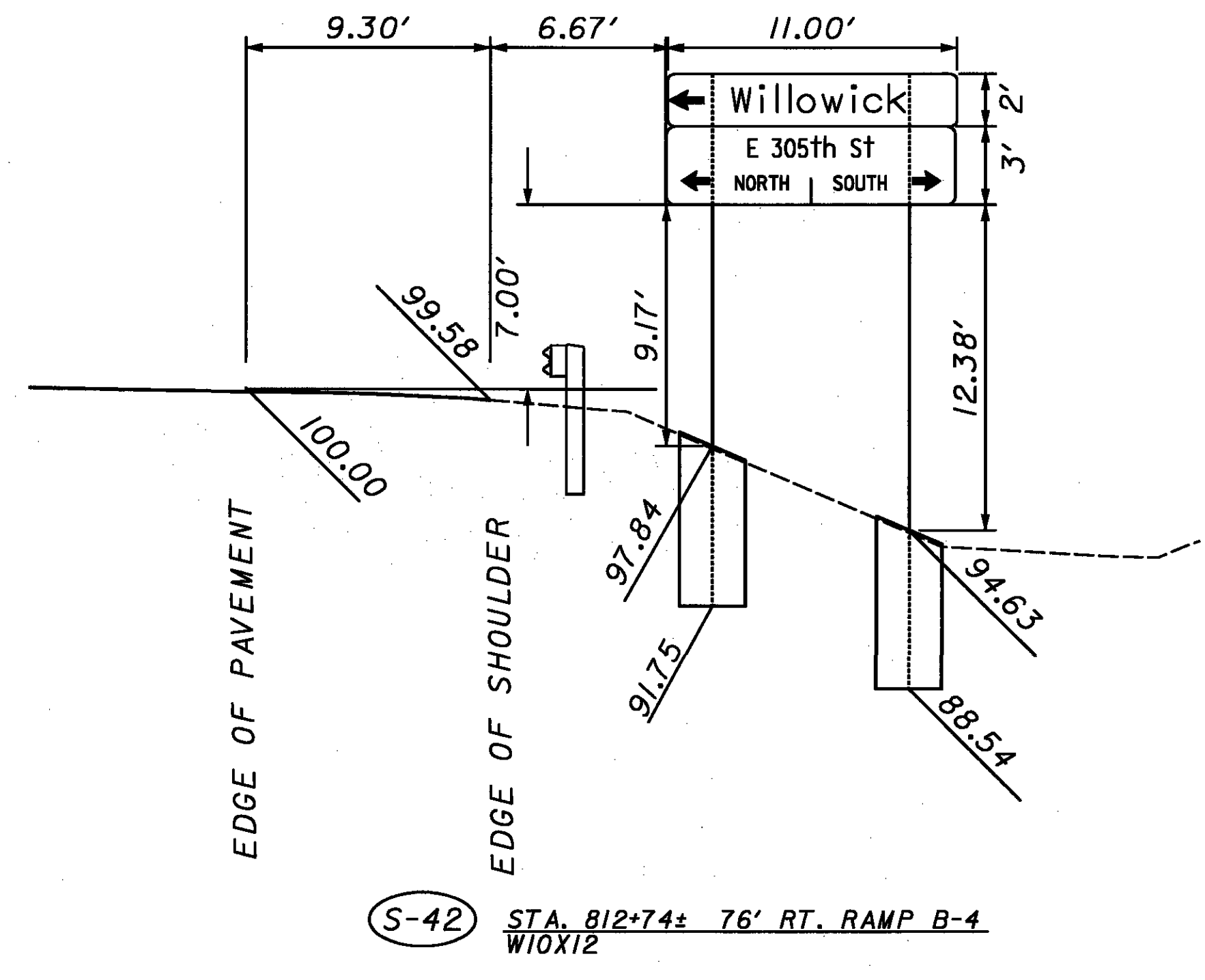
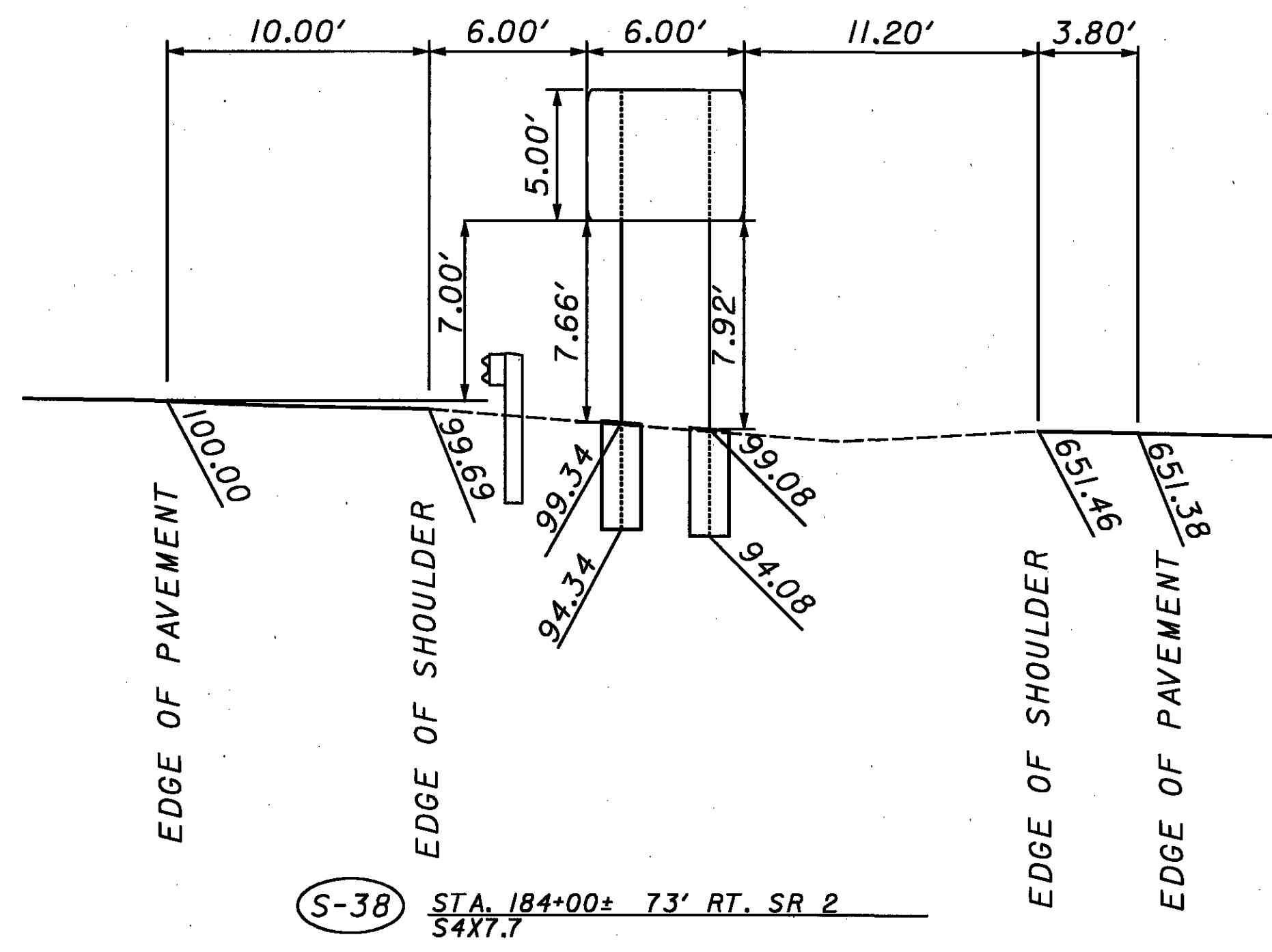
SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

CALCULATED
JTP
CHECKED
WJG

SIGNING ELEVATION VIEWS

LAK-2-0.00

384
524



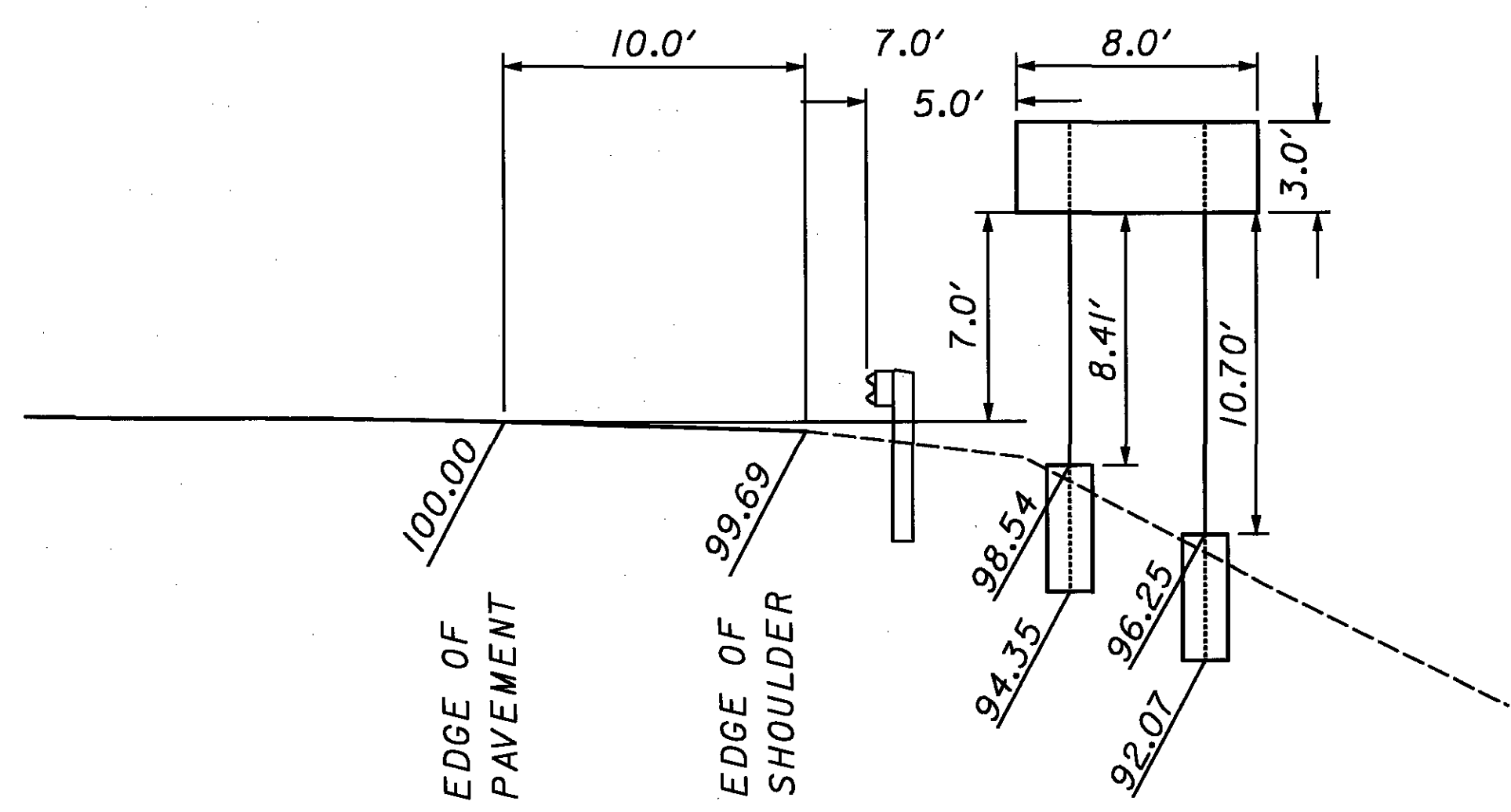
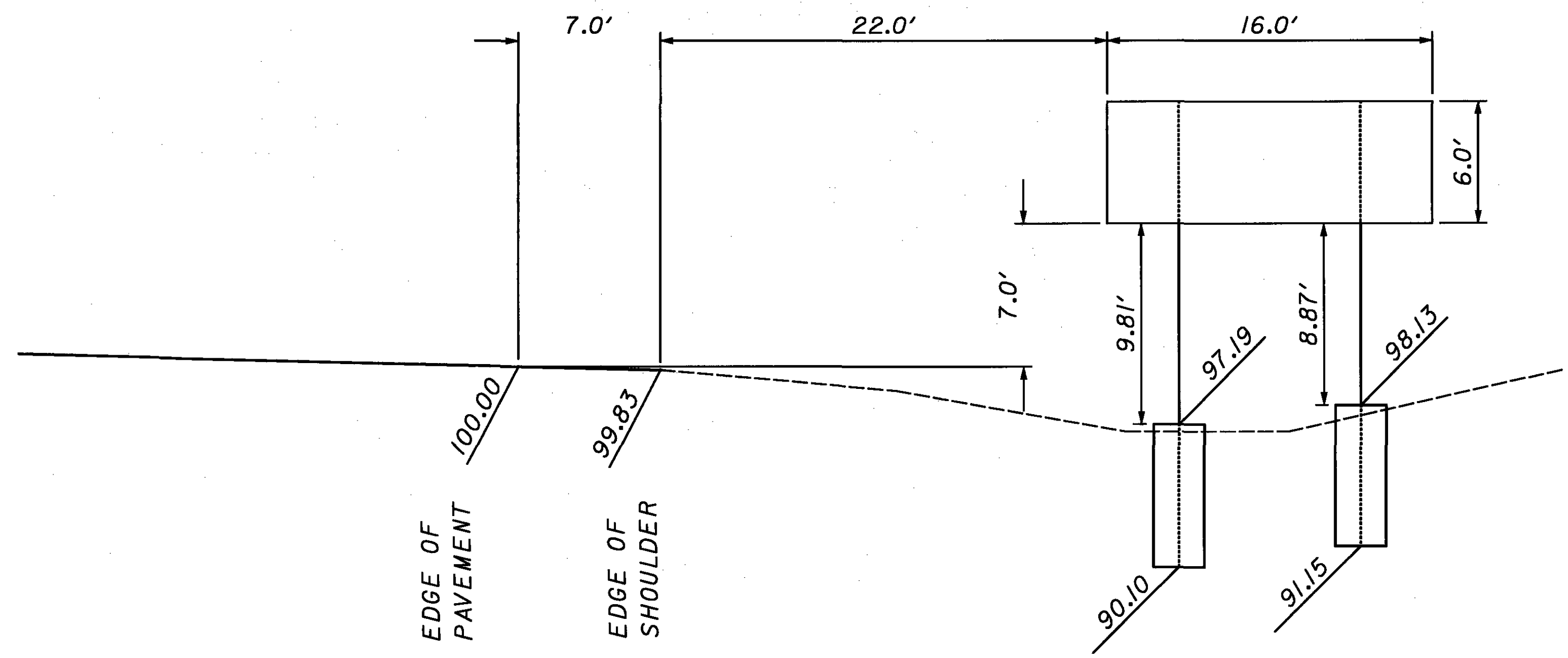
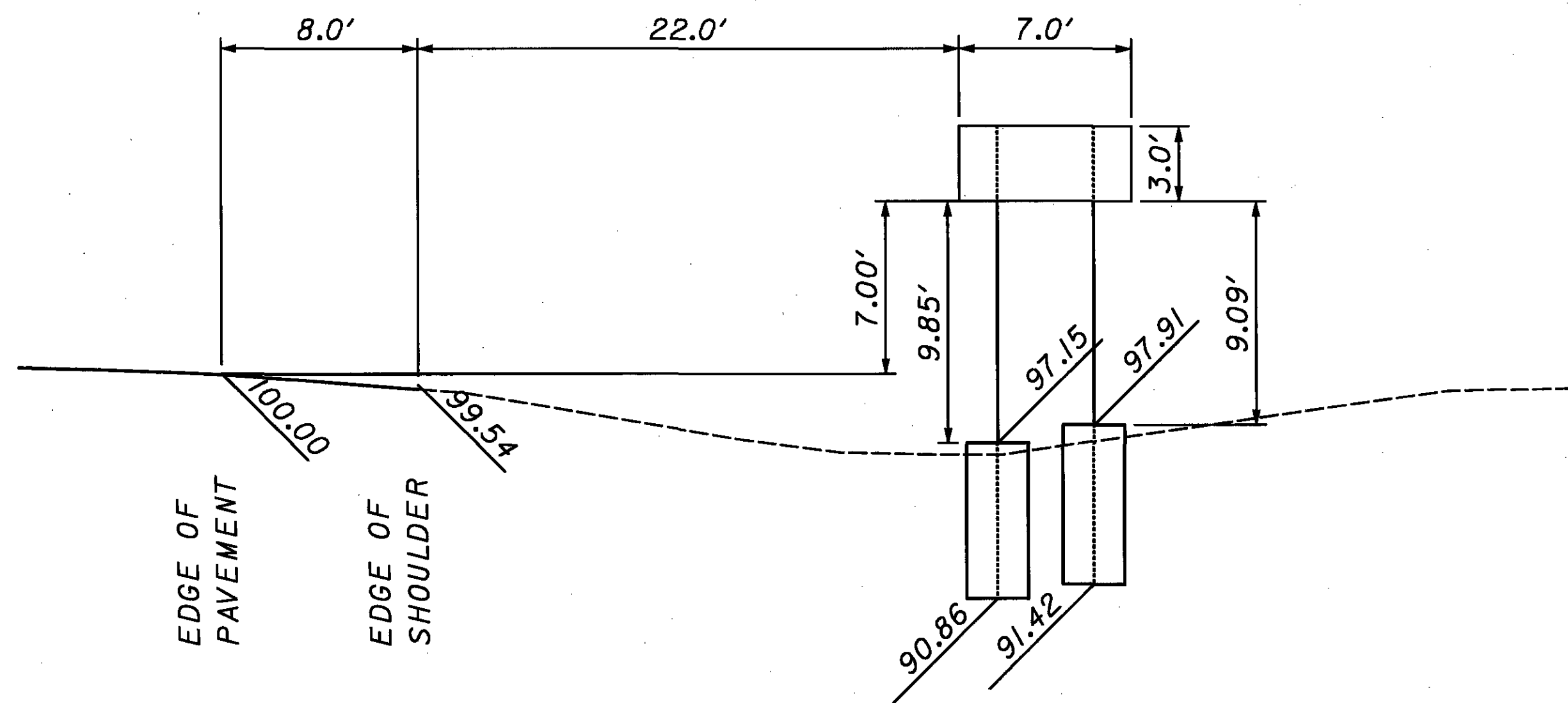
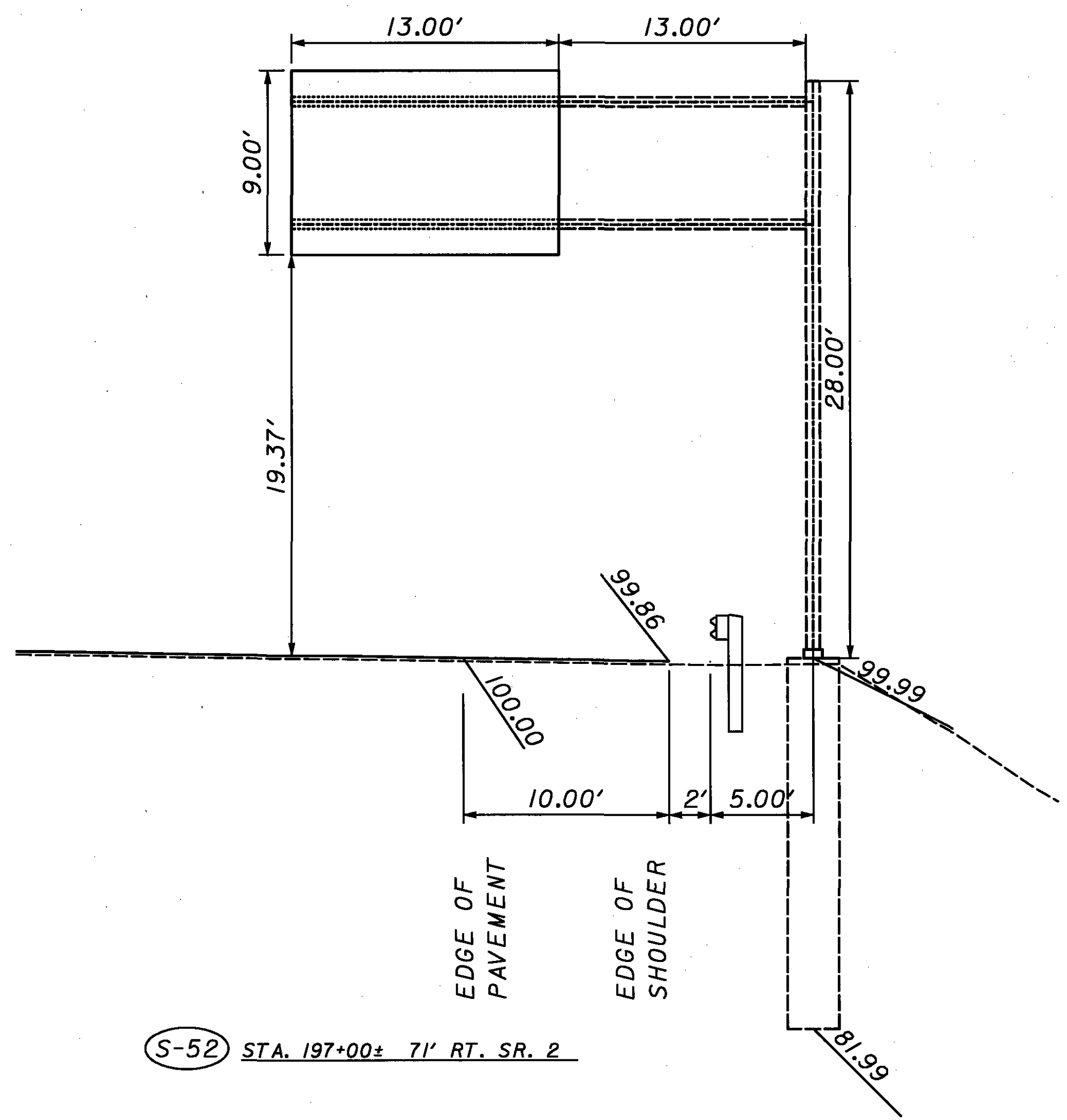
CALCULATED JTP
CHECKED NJG

SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

SIGNING ELEVATION VIEWS

LAK-2-0.00

385
524



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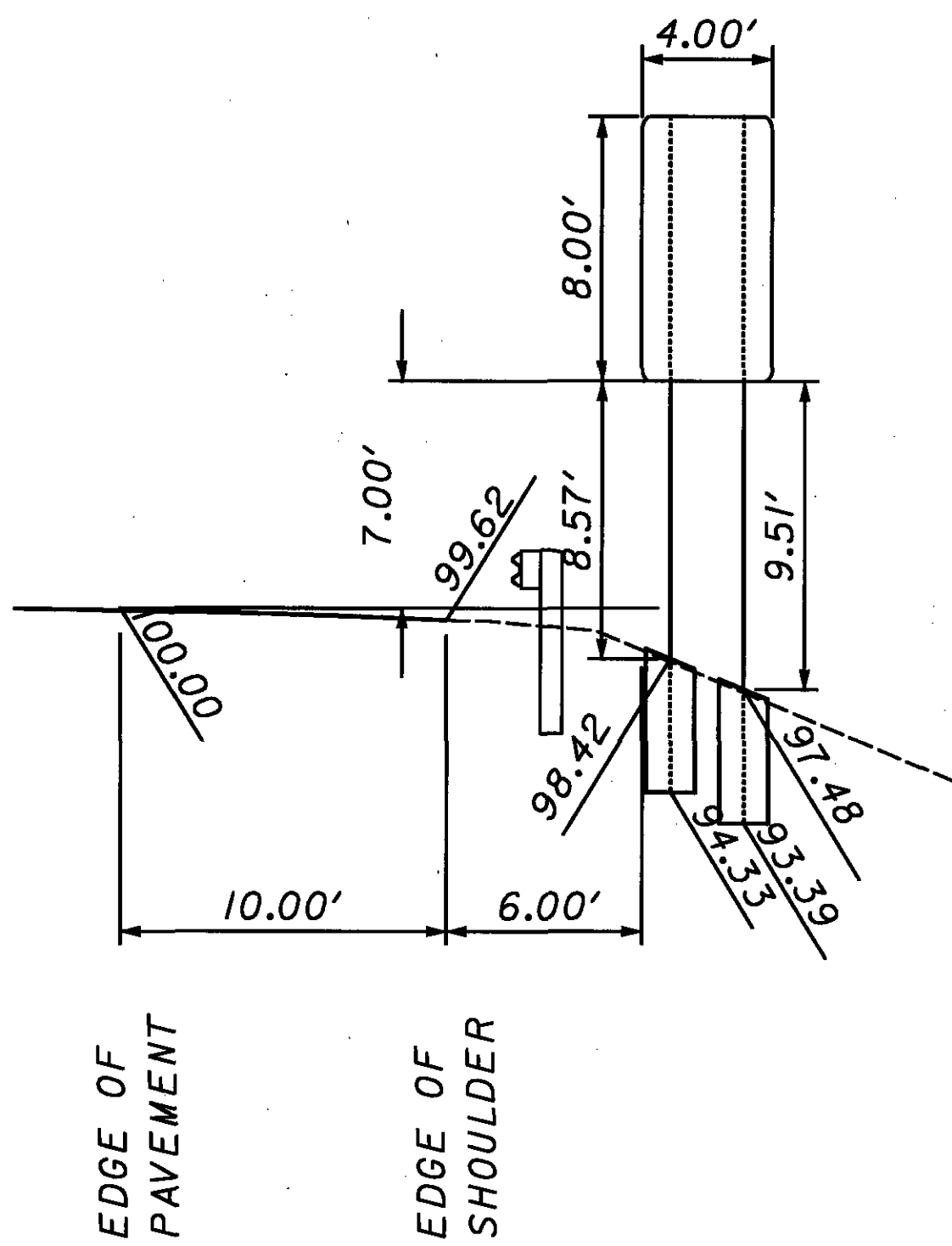
SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

CALCULATED
JTP
CHECKED
NJG

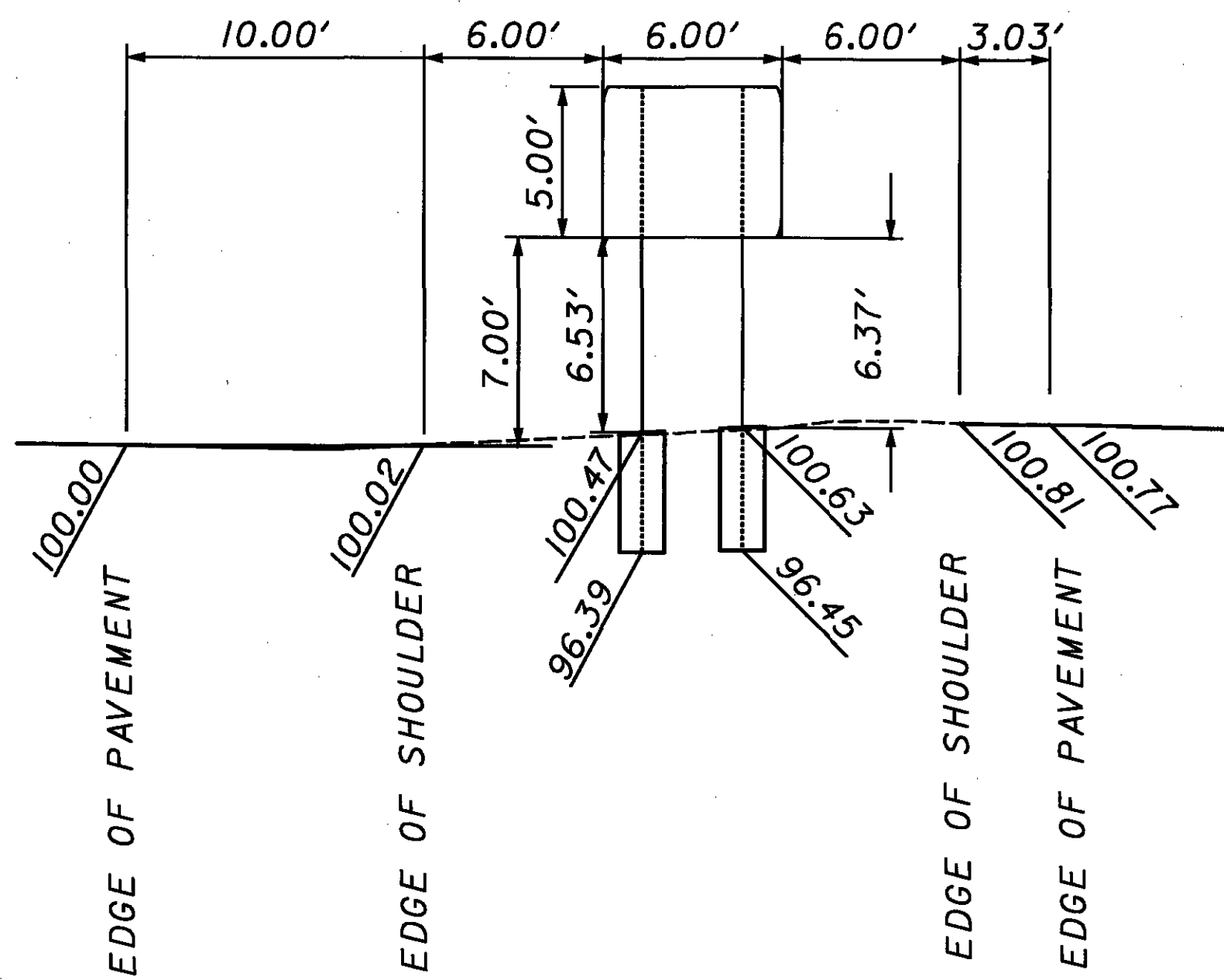
SIGNING ELEVATION VIEWS

LAK-2-0.00

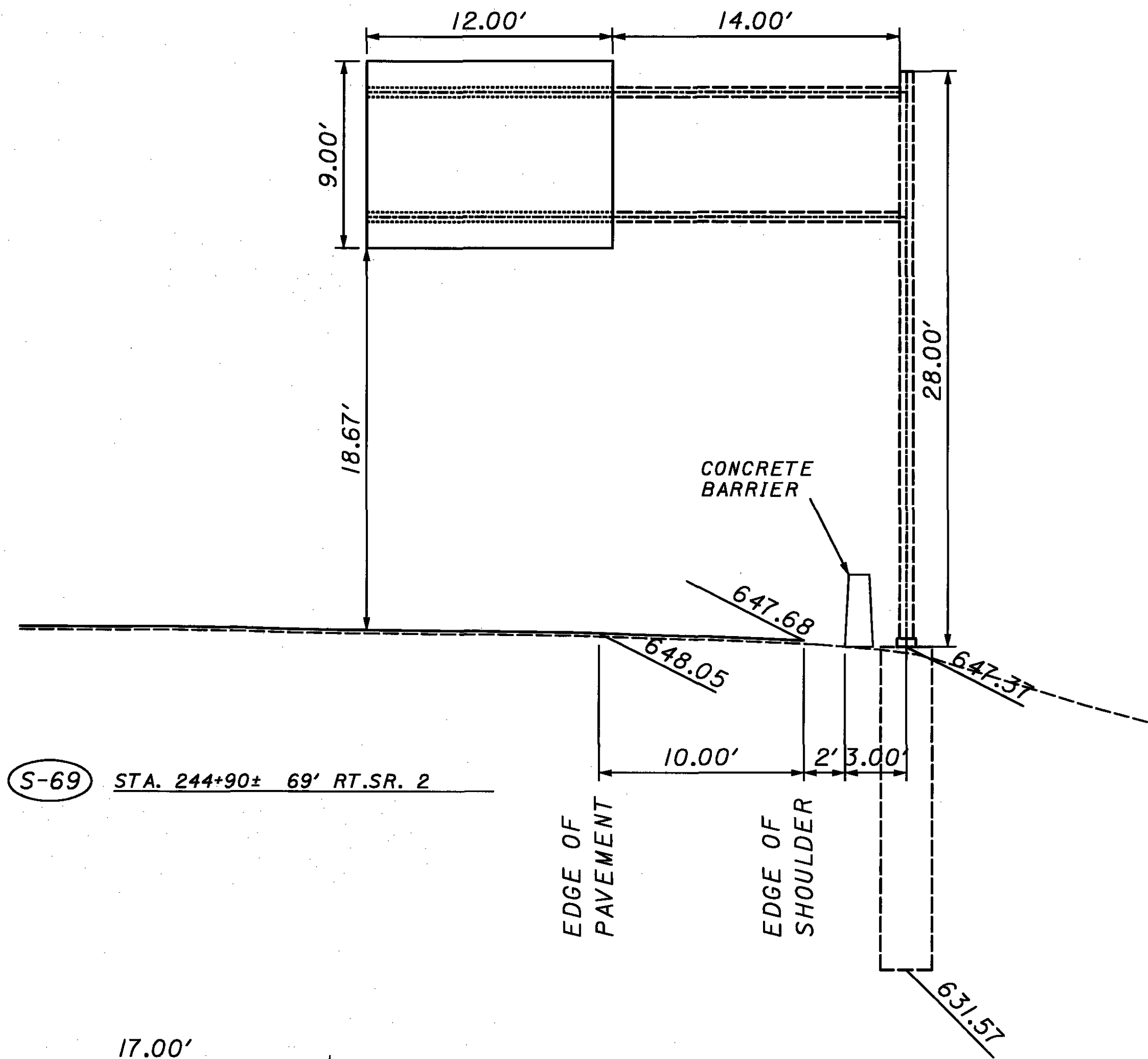
386
524



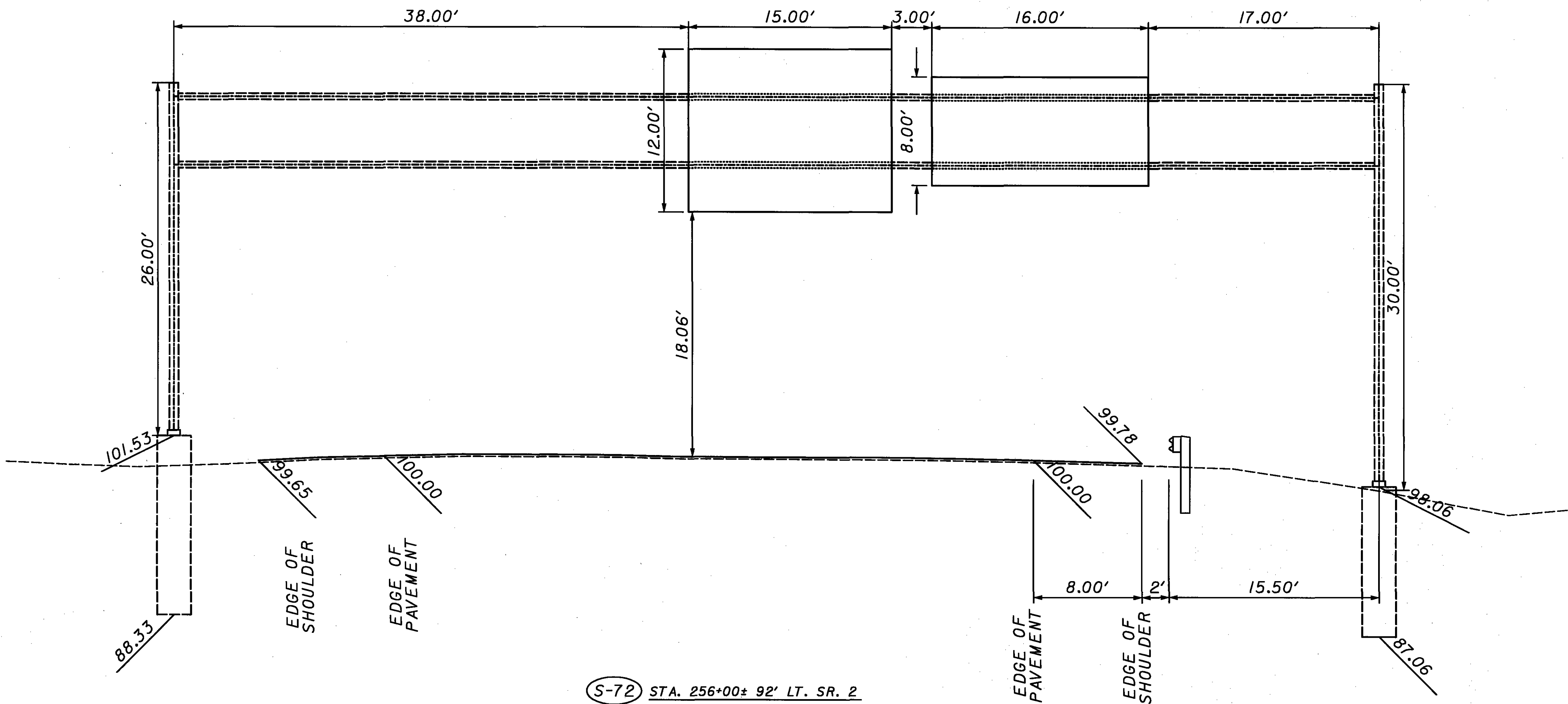
S-67 STA. 239+00± 72' RT. SR. 2
54X7.7



S-75 STA. 261+70± 73' RT. SR. 2
54X7.7



S-69 STA. 244+90± 69' RT. SR. 2



S-72 STA. 256+00± 92' LT. SR. 2

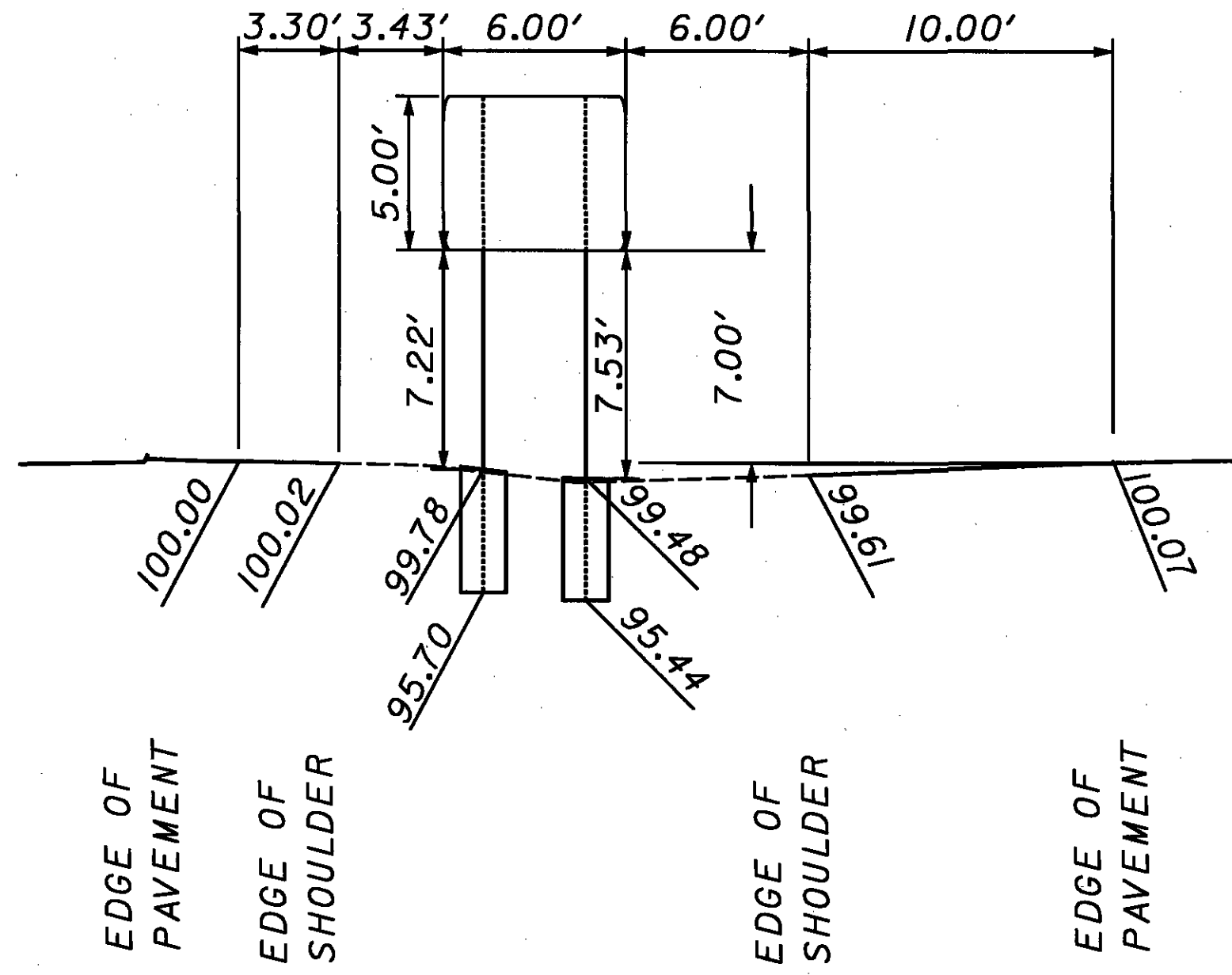
SCALE
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VERTICAL 1" = 5'

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WJG

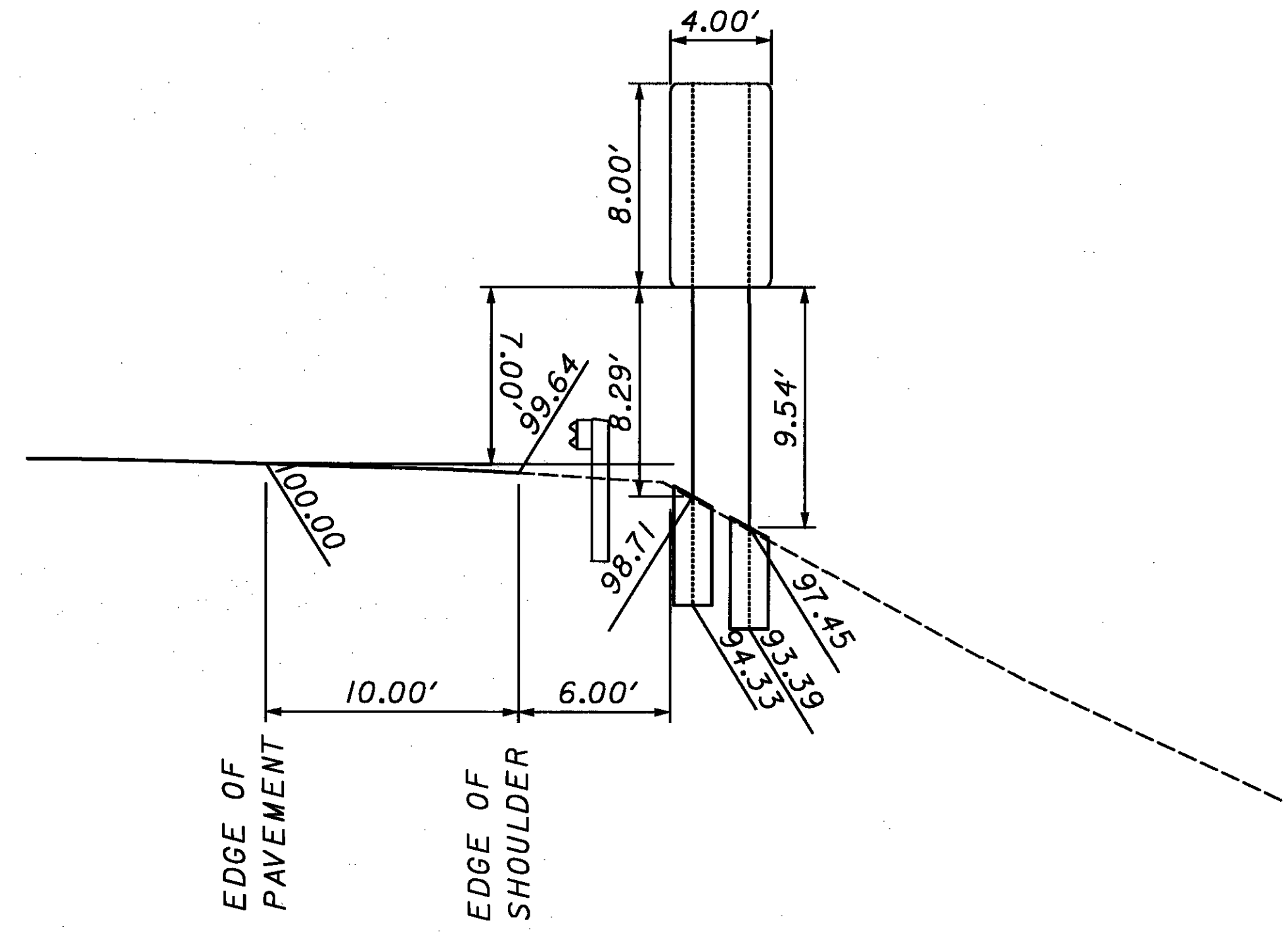
SIGNING ELEVATION VIEWS

LAK-2-0.00

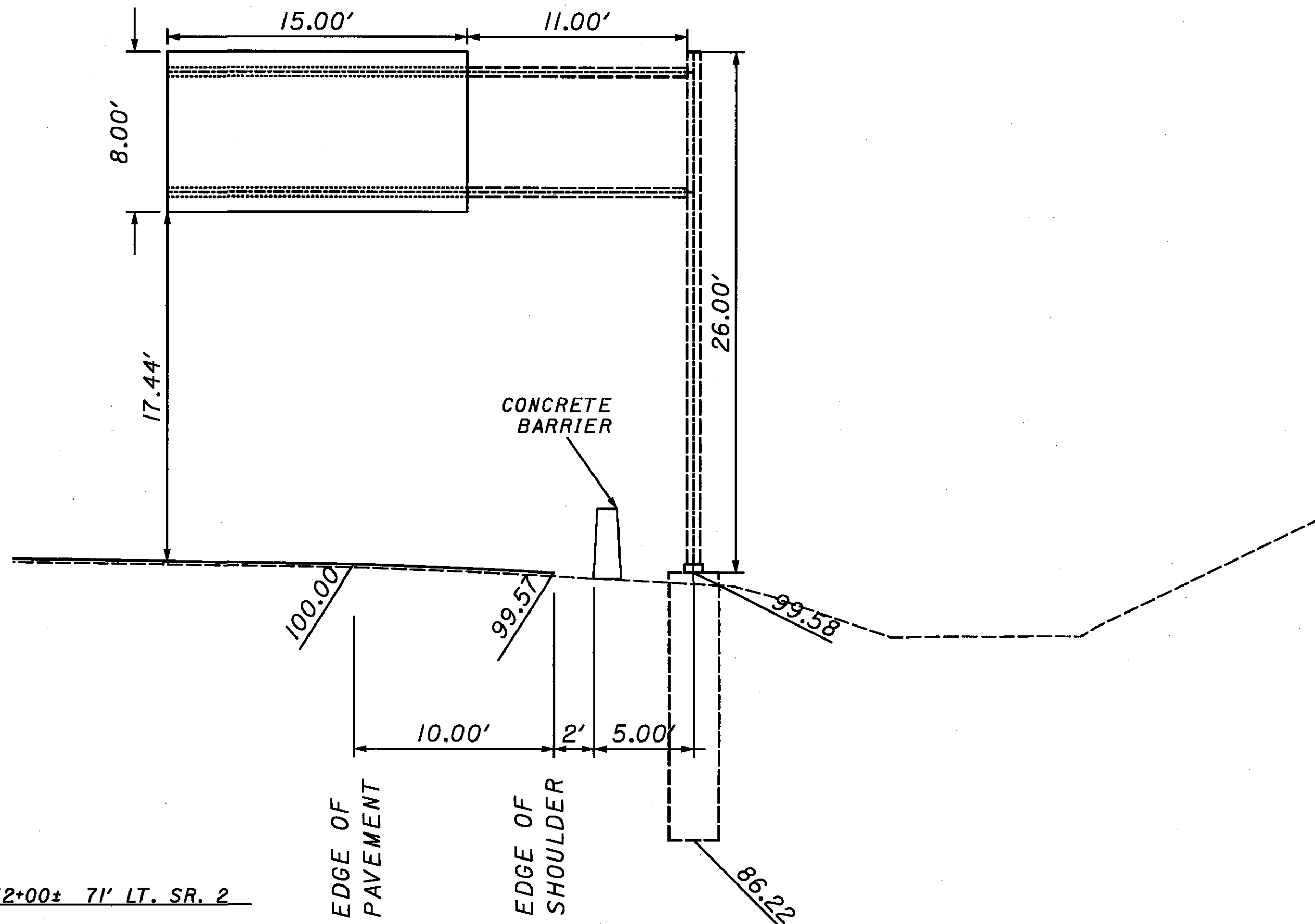
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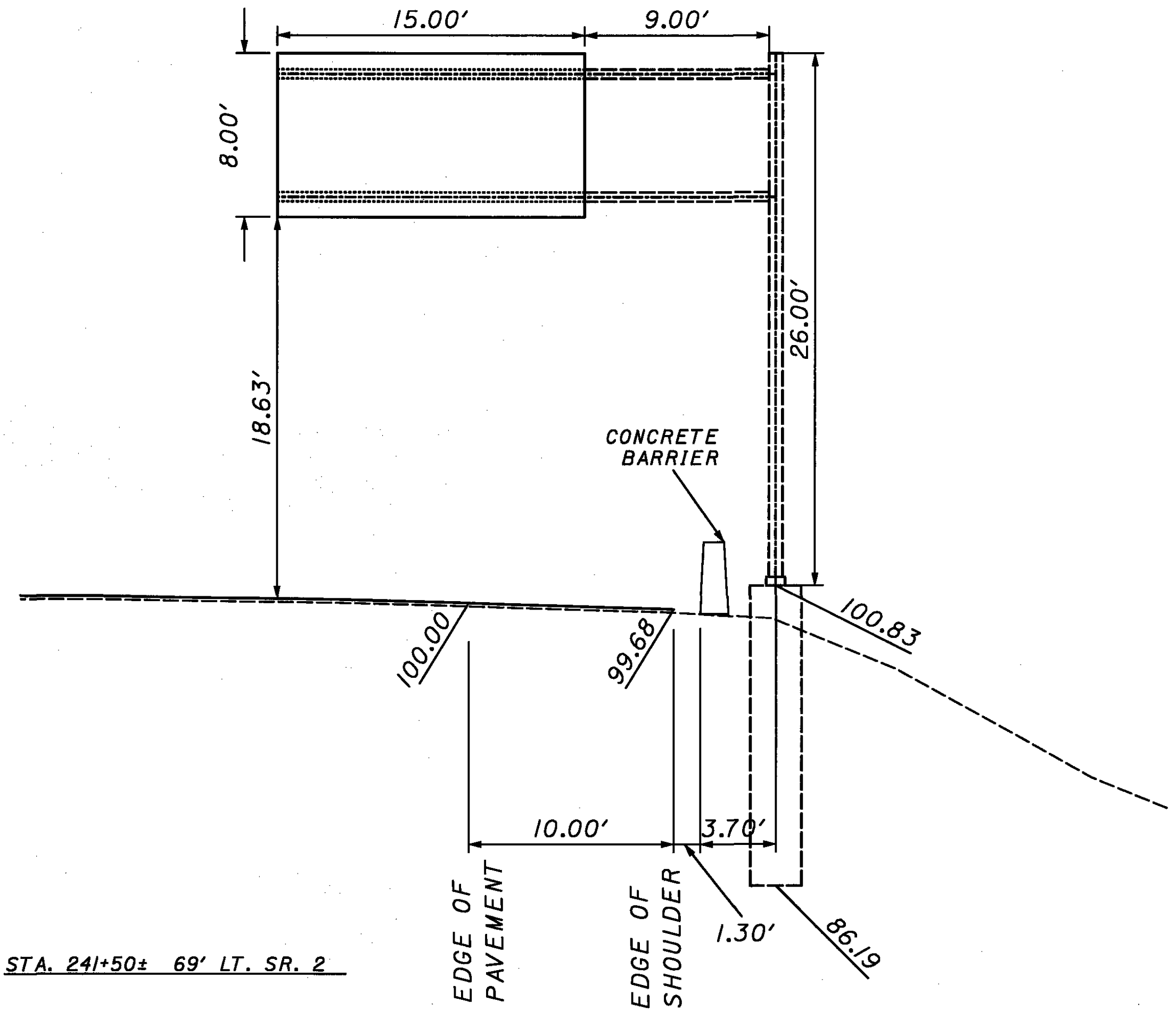
S-95 STA. 278+81± 73' LT. SR 2
54X7.7



S-118 STA. 239+00± 72' LT. SR 2
54X7.7



S-103 STA. 272+00± 71' LT. SR. 2



S-116 STA. 241+50± 69' LT. SR. 2

SCALE
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VERTICAL 1" = 5'

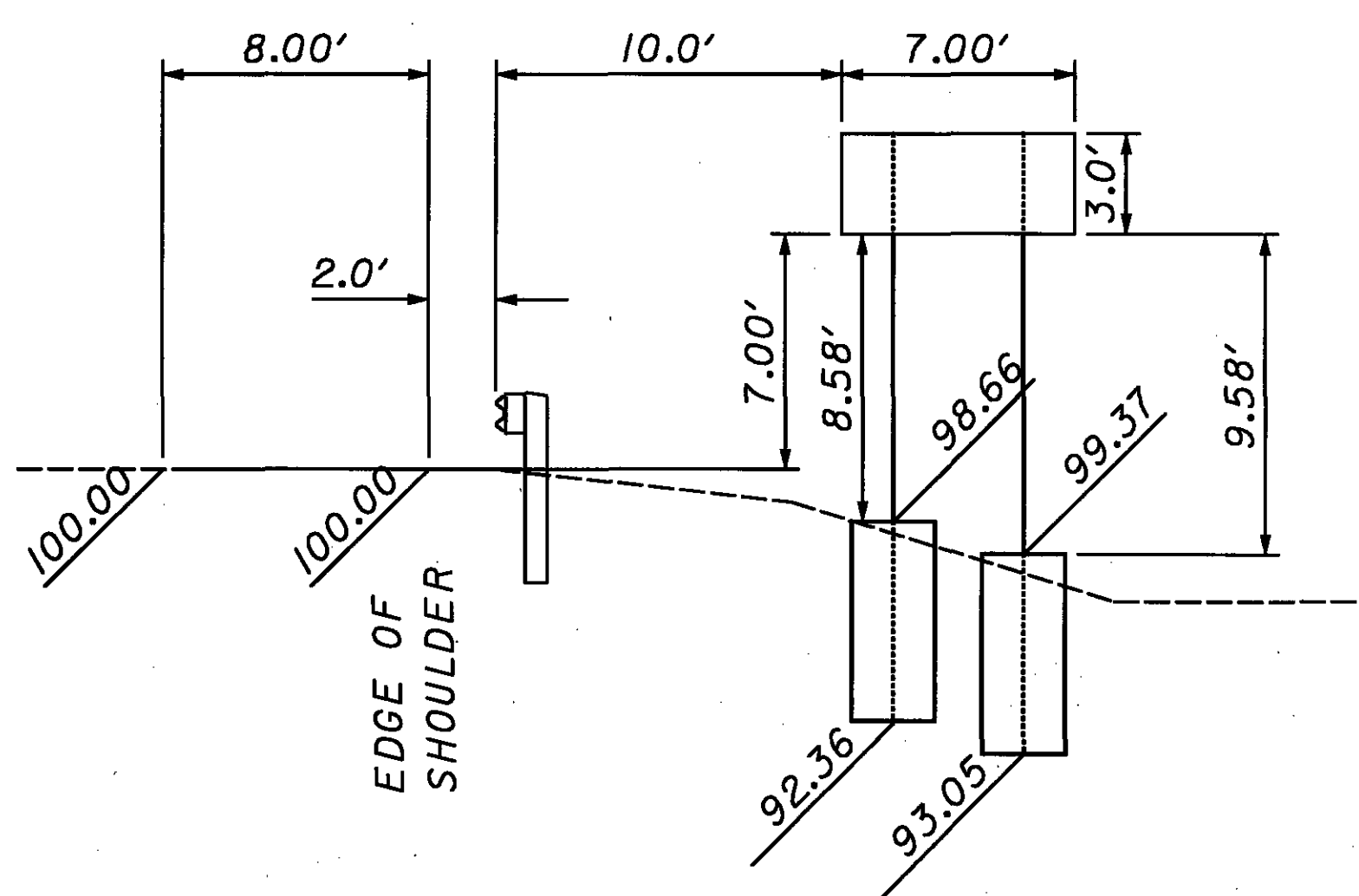
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SIGNING ELEVATION VIEWS

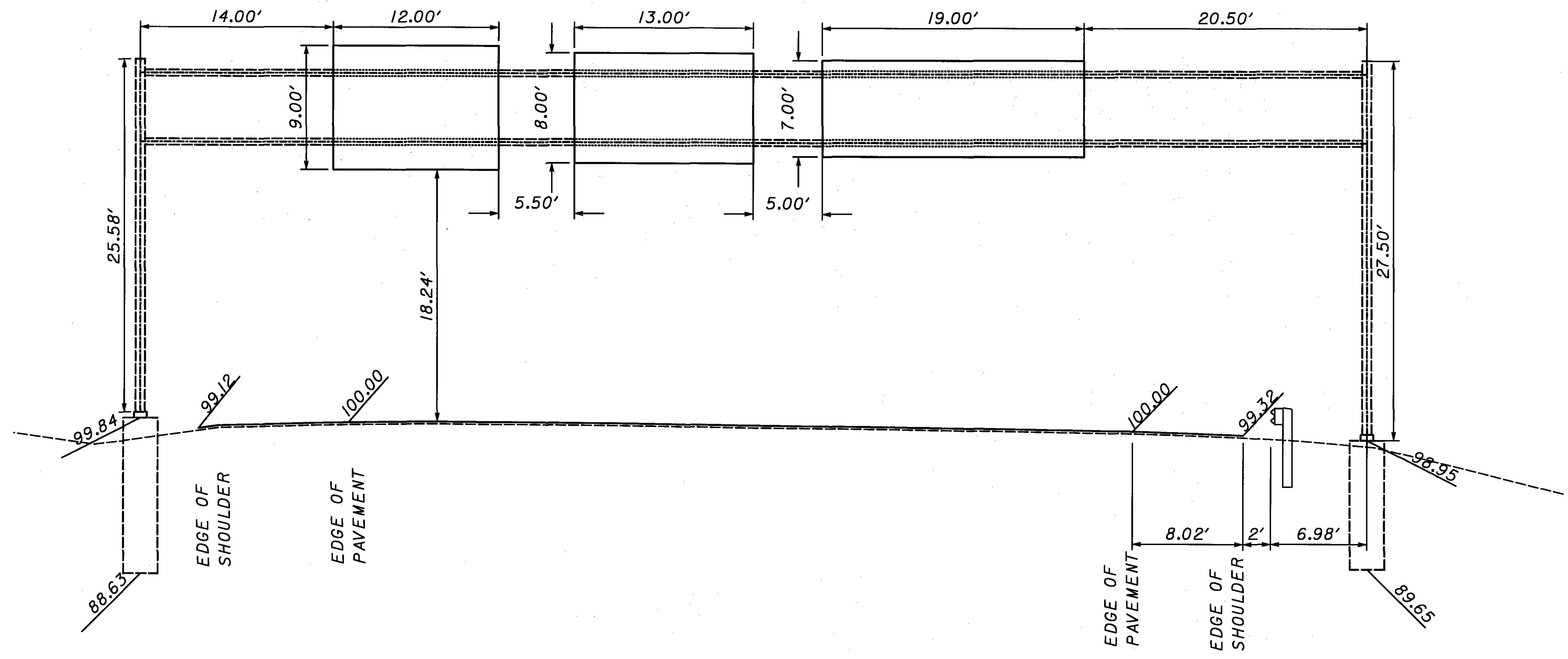
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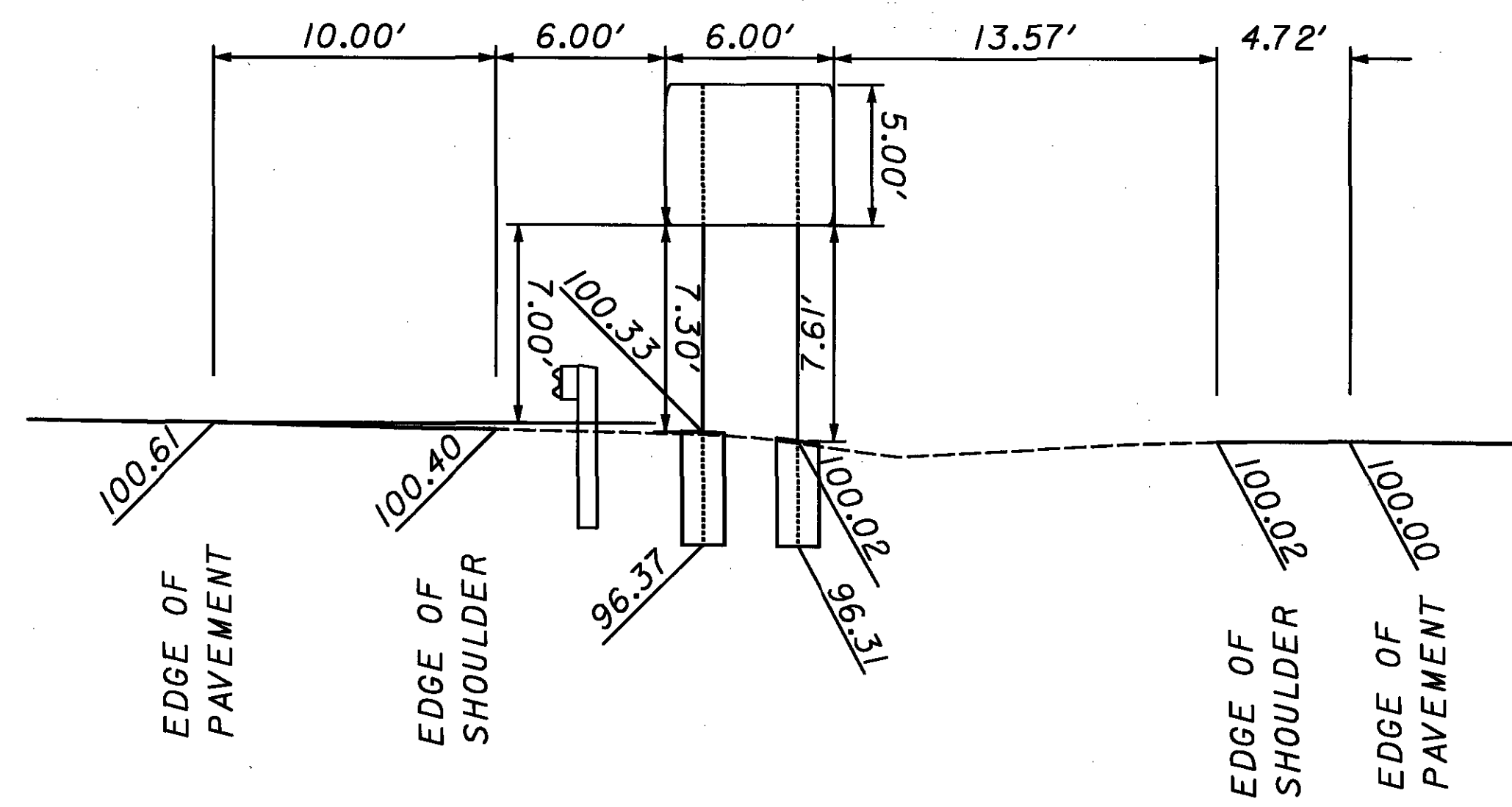
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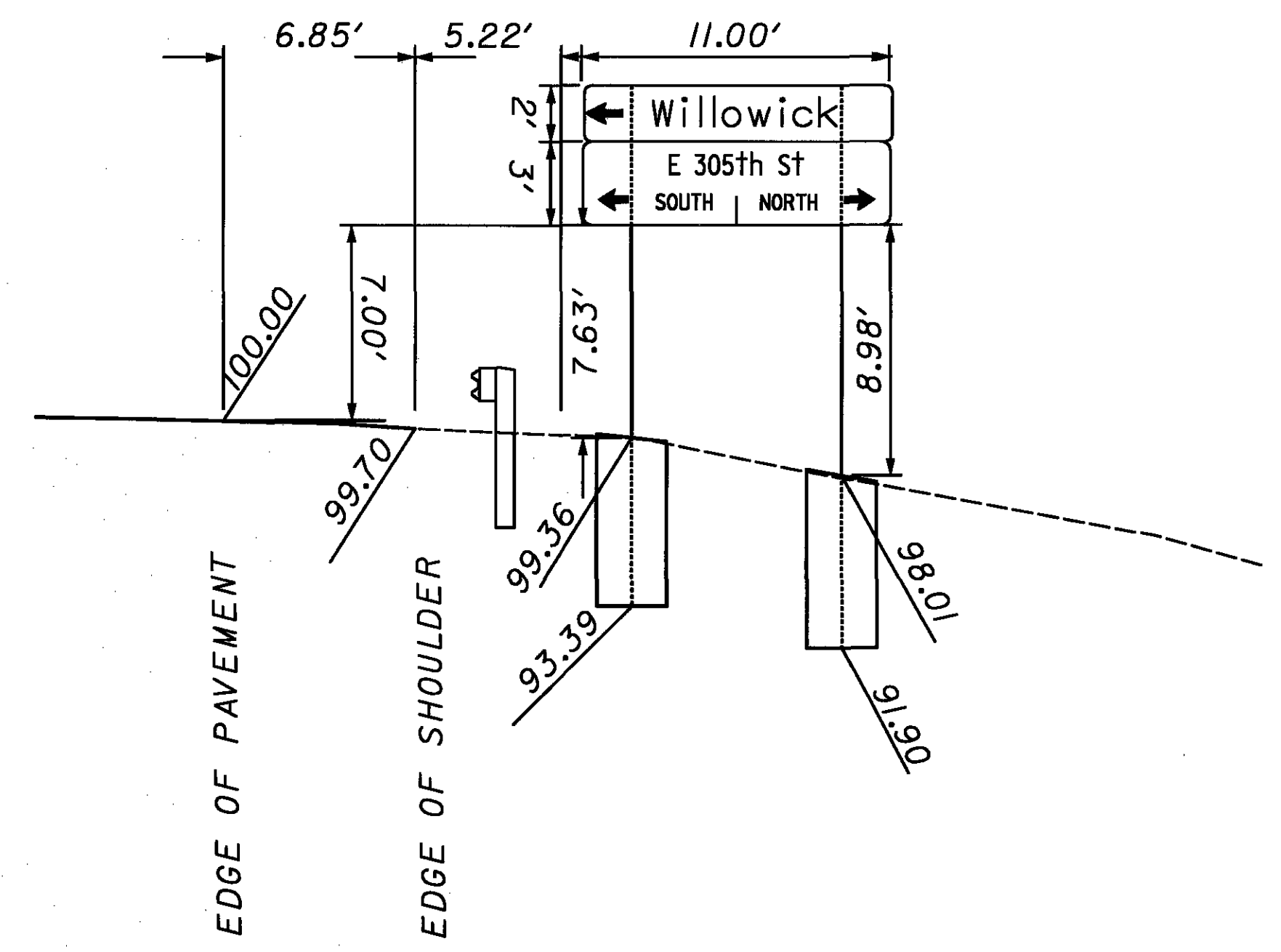
S-123 STA. 217+01' 90' LT. SR 2 W6X9



S-124 STA. 214+49± 92' LT. 2



S-125 STA. 211+10' 73' LT. SR 2 S4X7.7



S-130 STA. 607+25± 72' LT. RAMP B-2 W10X12

SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

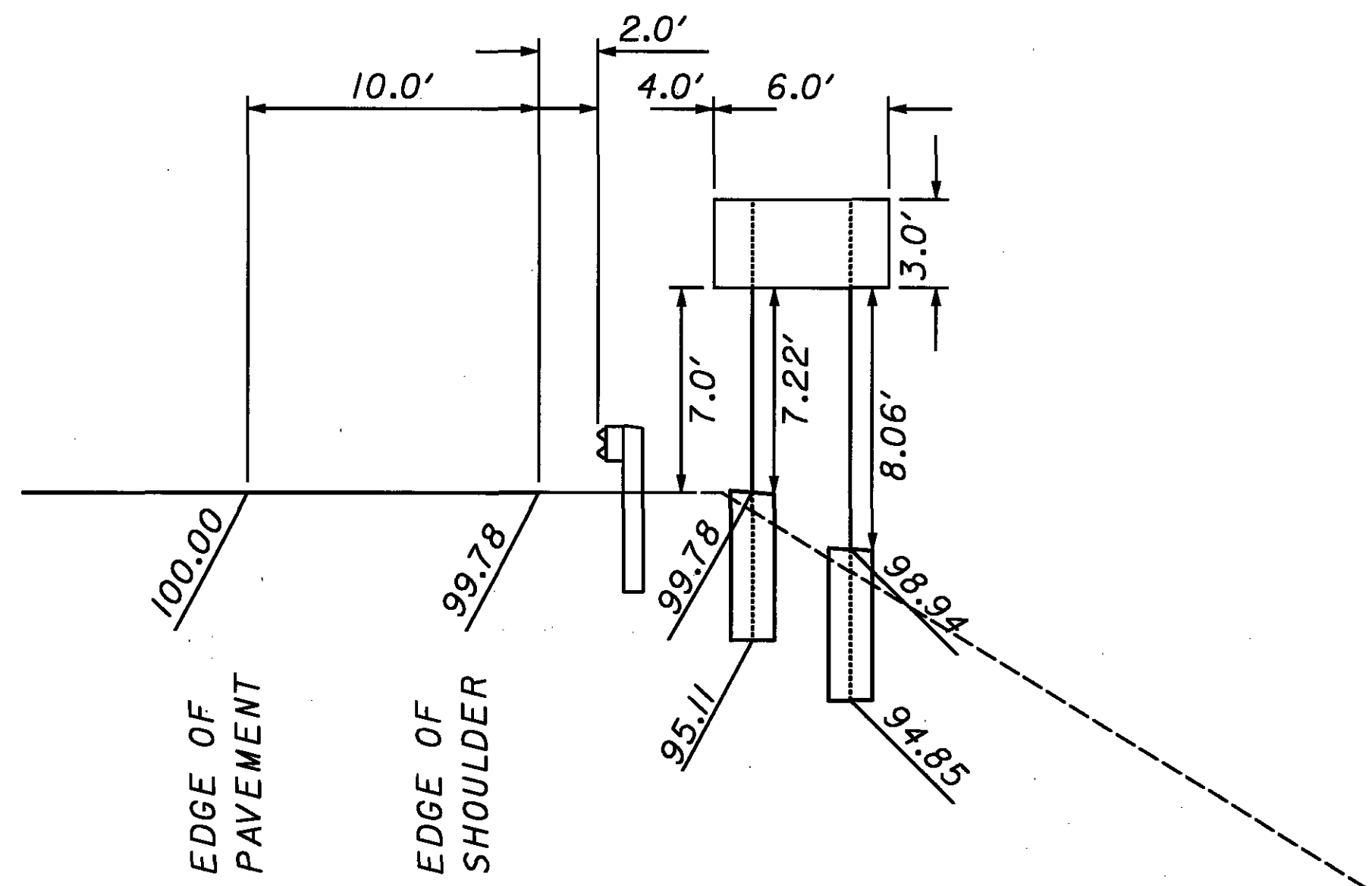
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SIGNING ELEVATION VIEWS

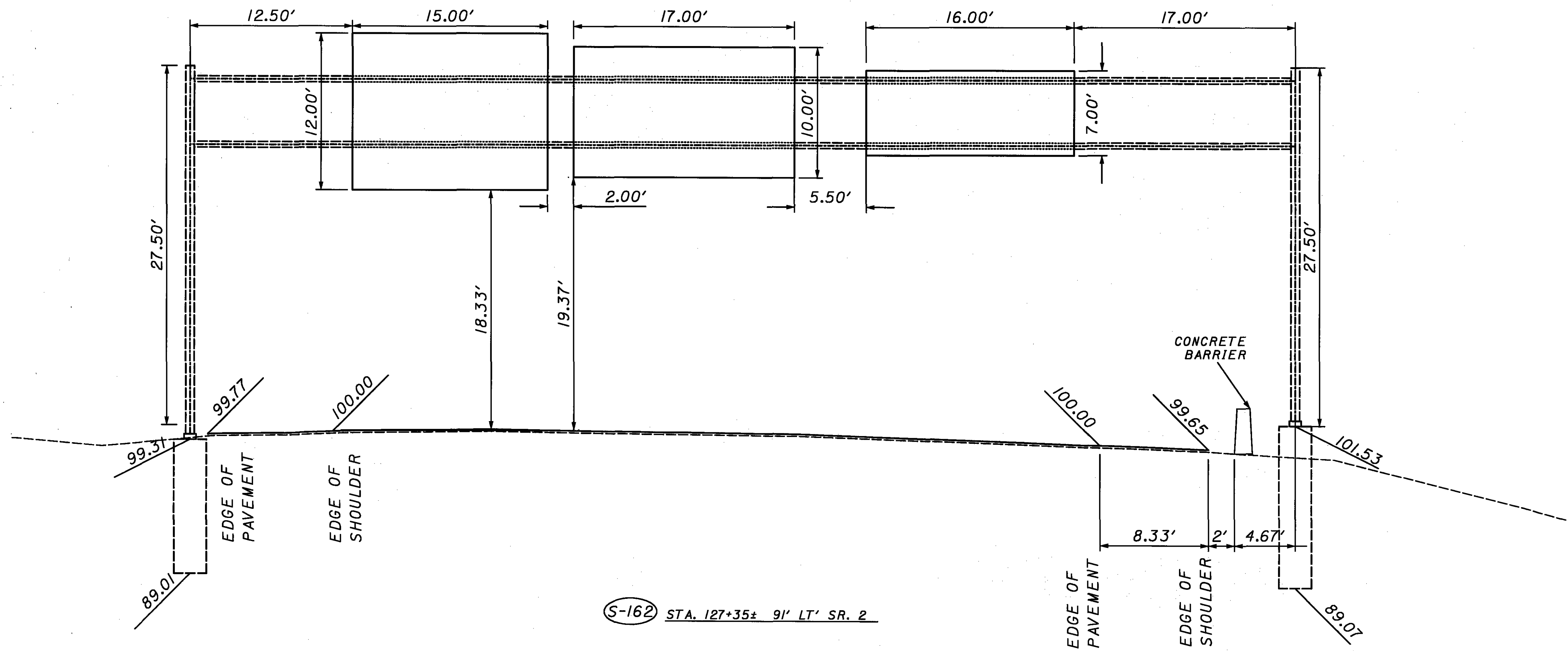
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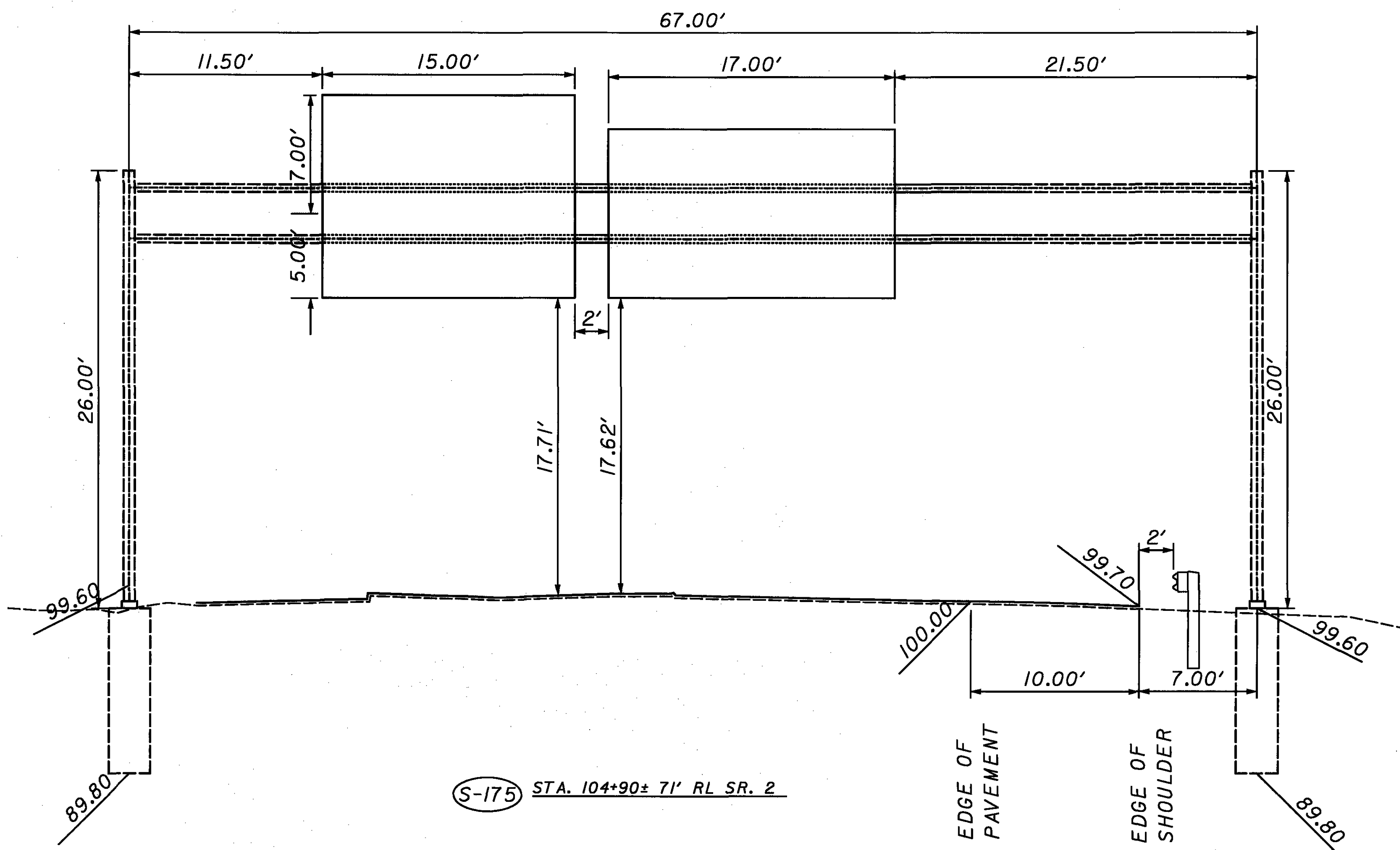
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(S-141) STA. 192+90± 73' RT. SR. 2
54X7.7



(S-162) STA. 127+35± 9' LT' SR. 2



(S-175) STA. 104+90± 71' RL SR. 2

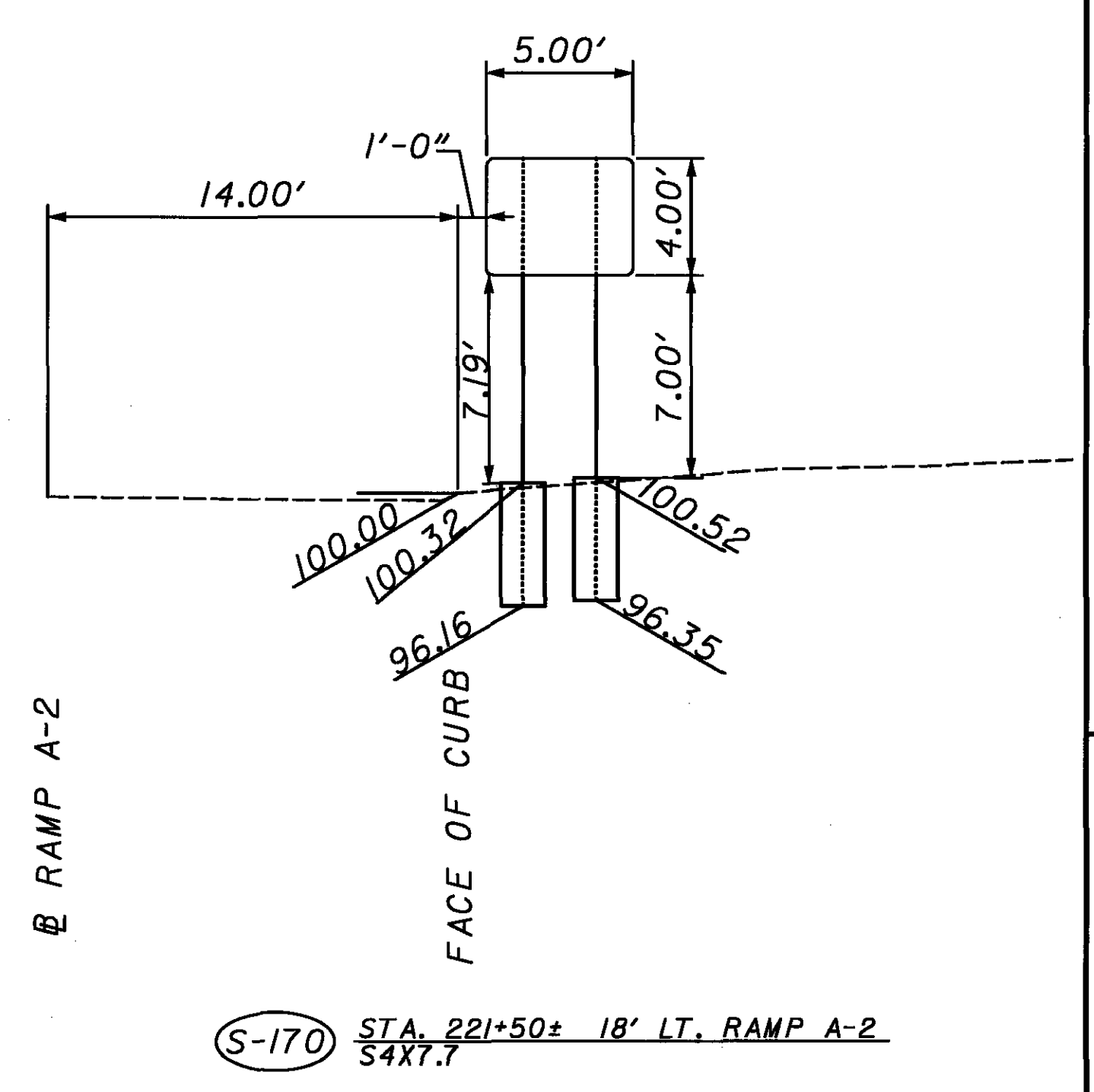
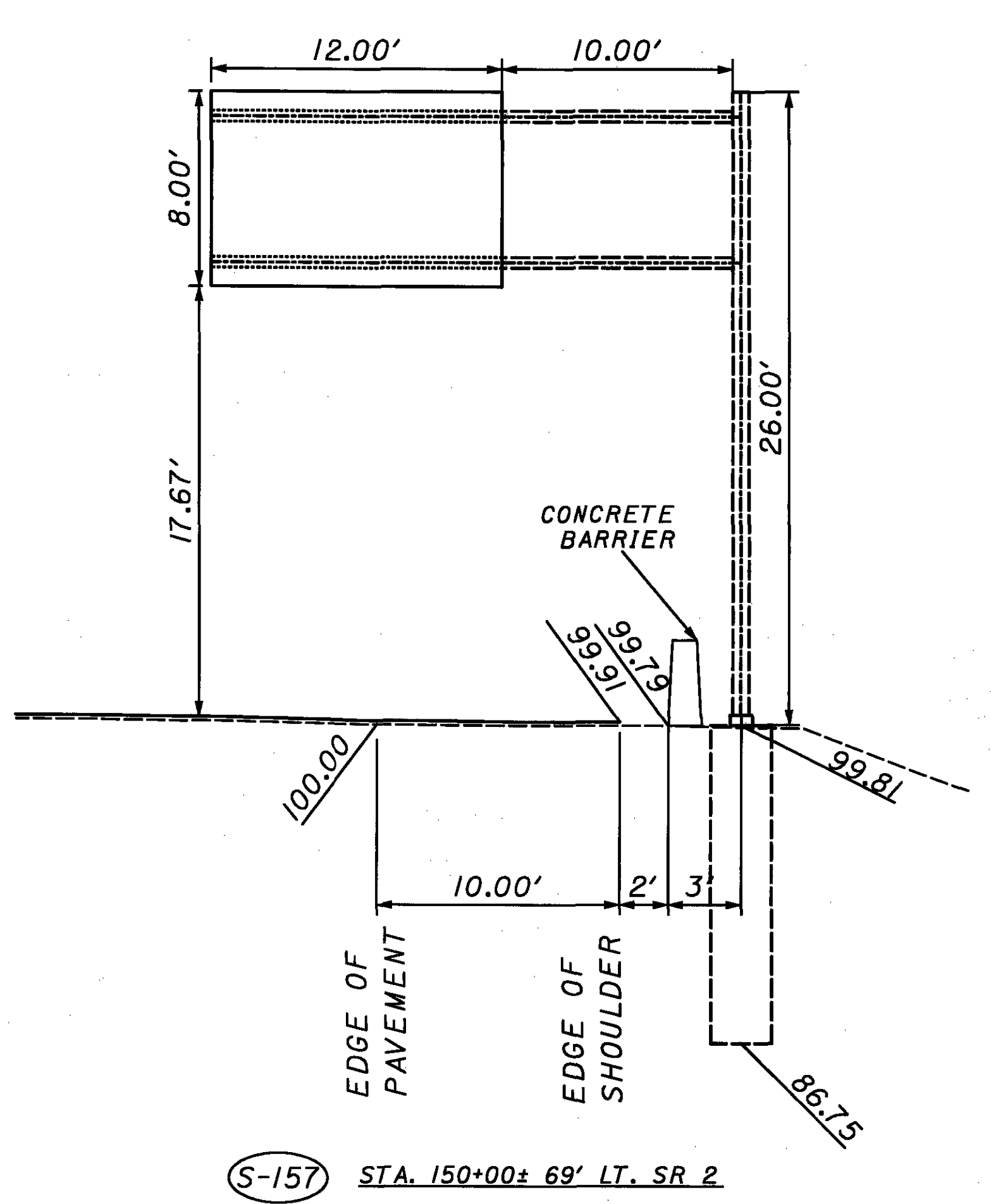
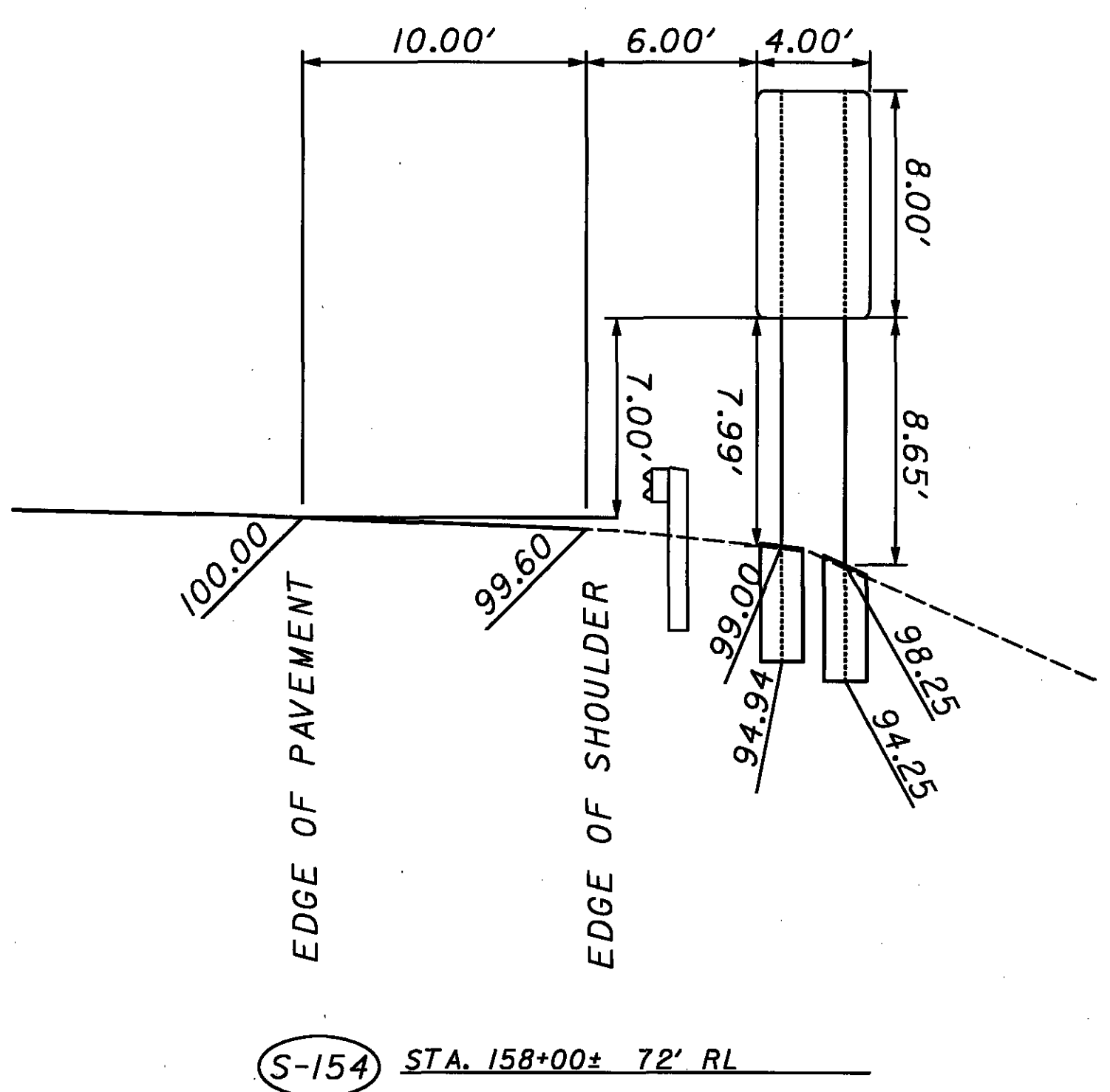
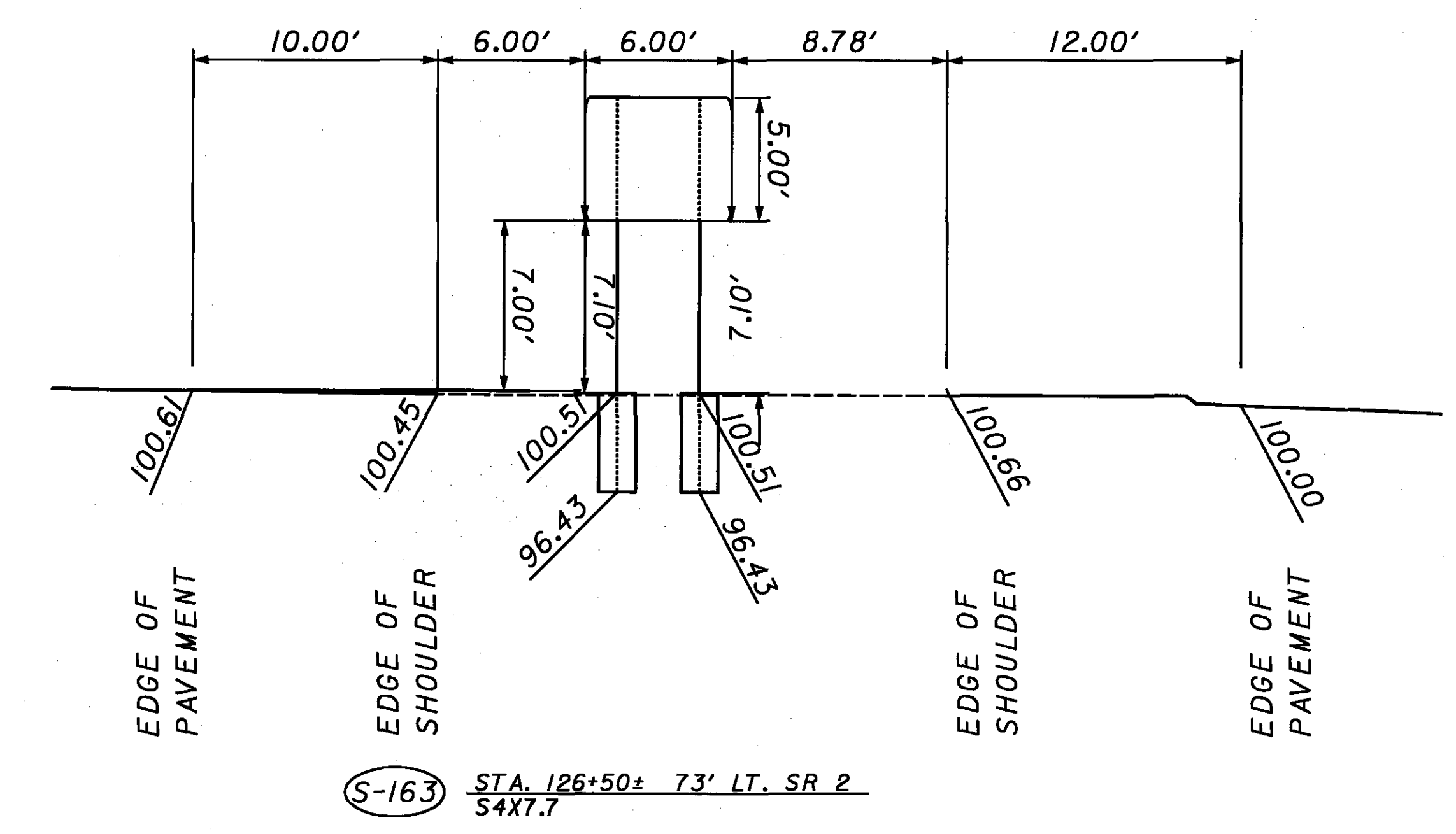
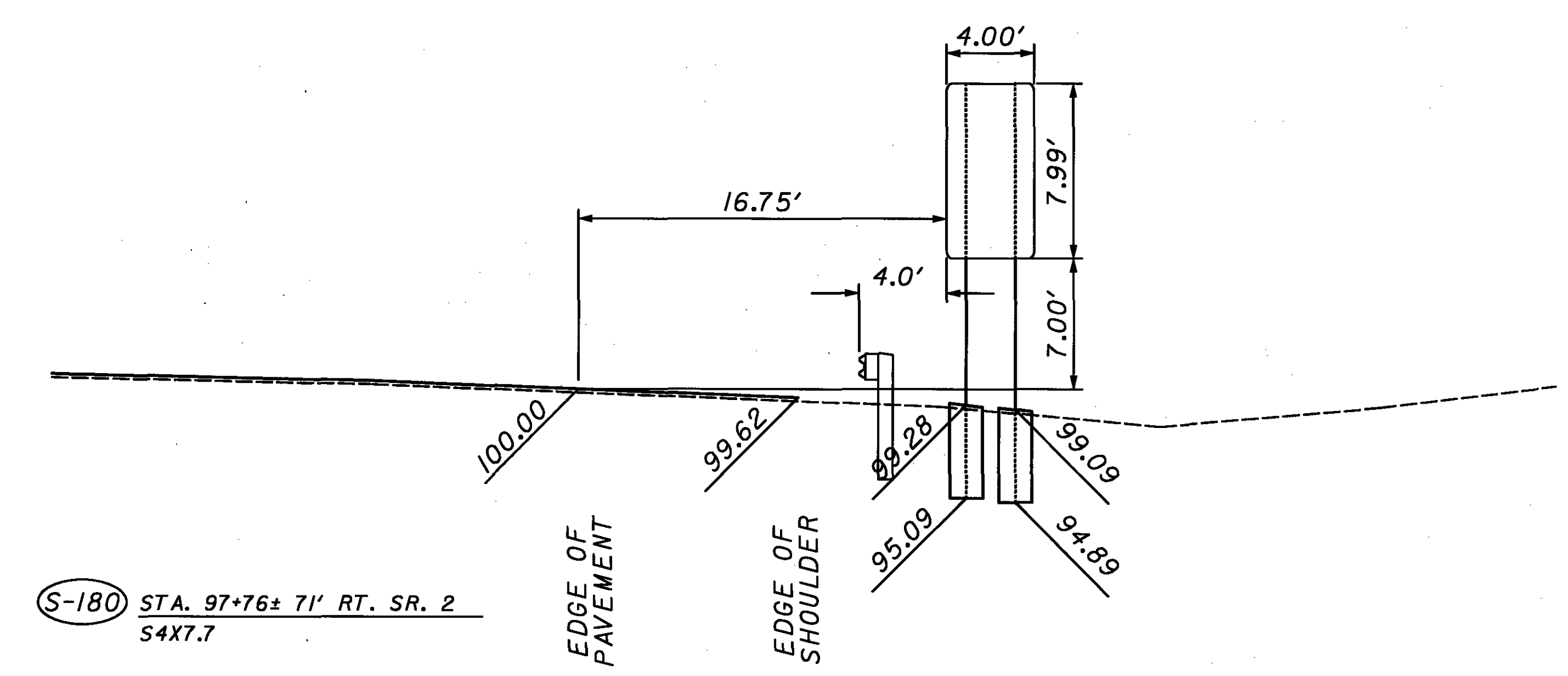
SCALE
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VERTICAL 1" = 5'

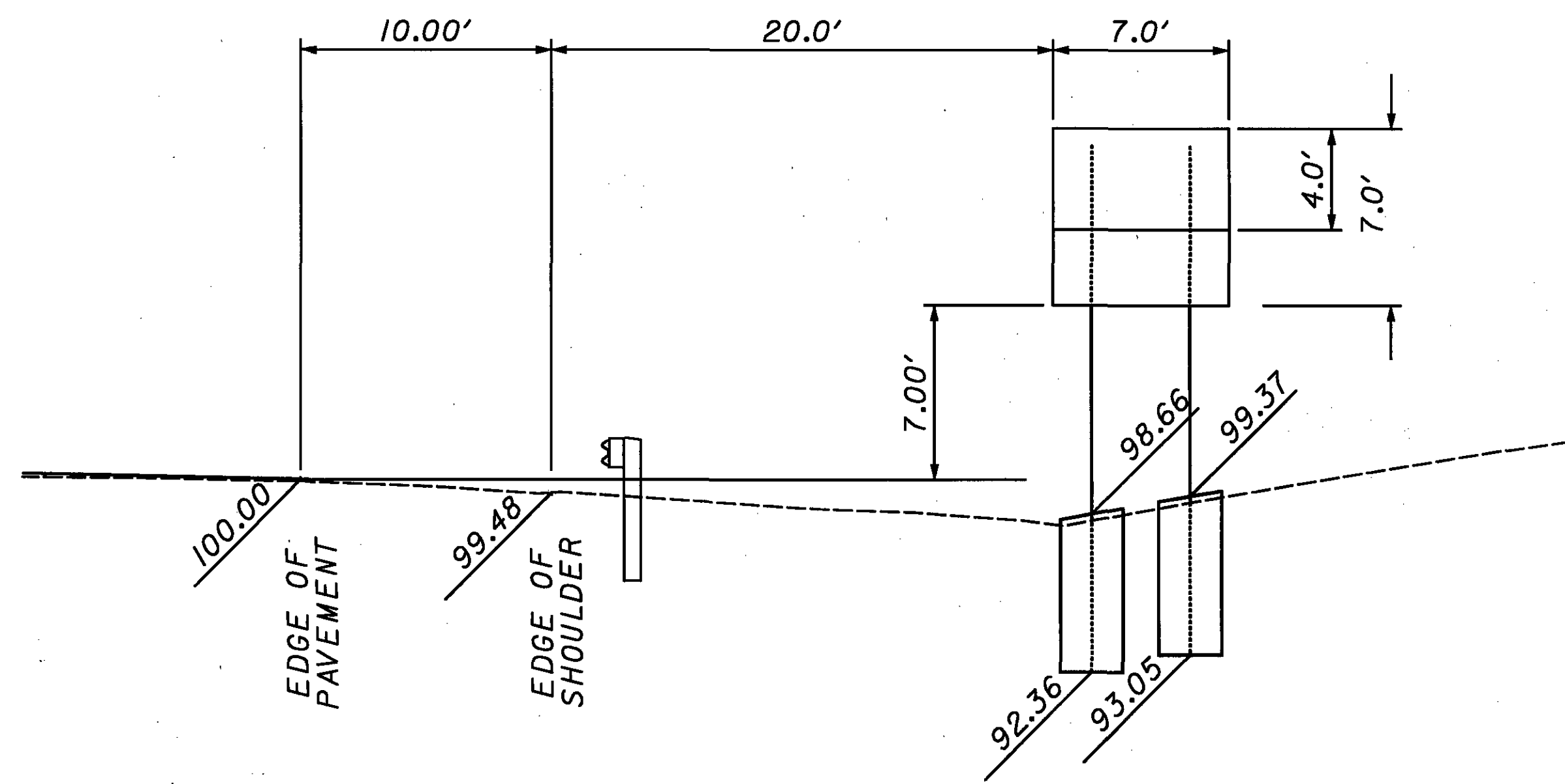
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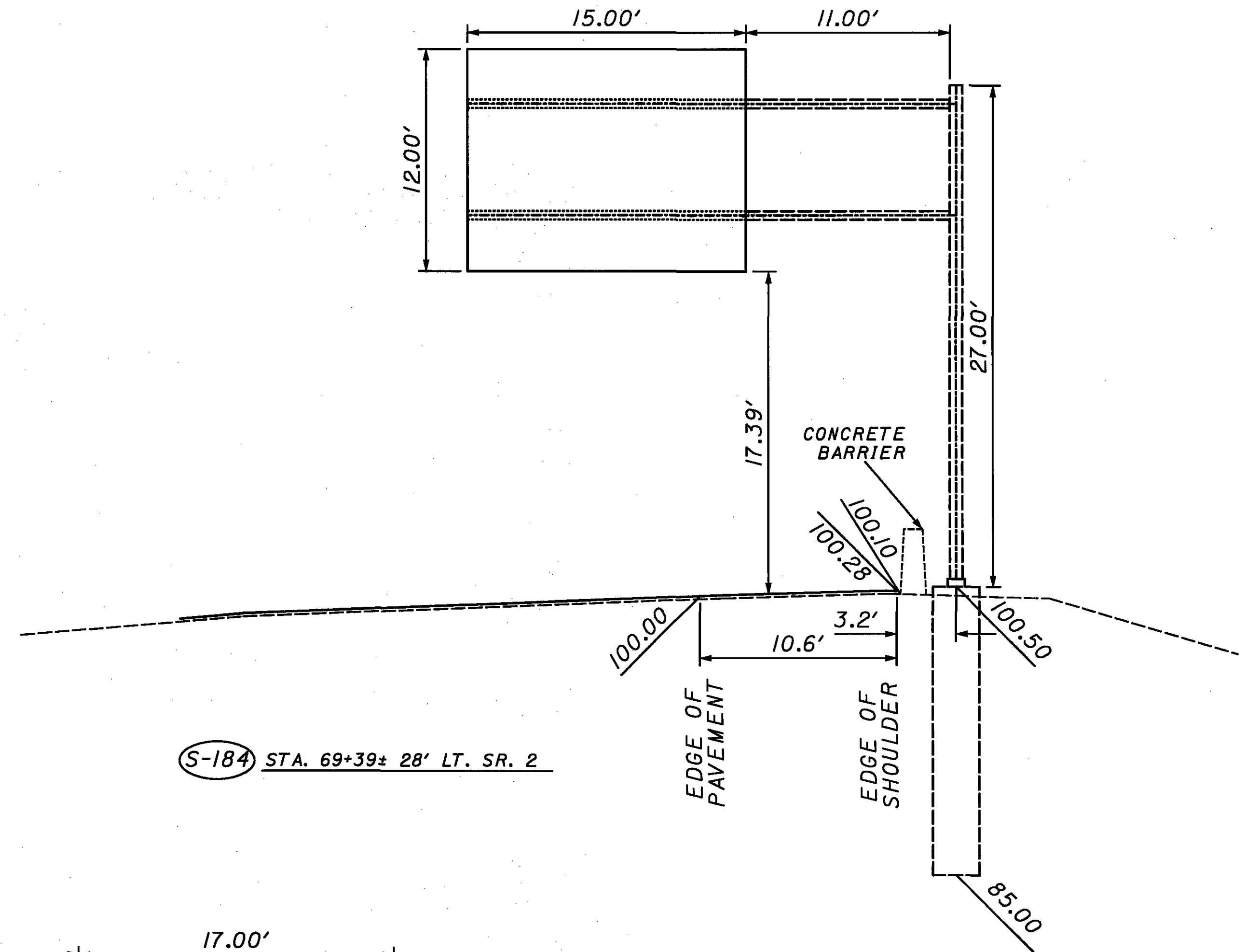
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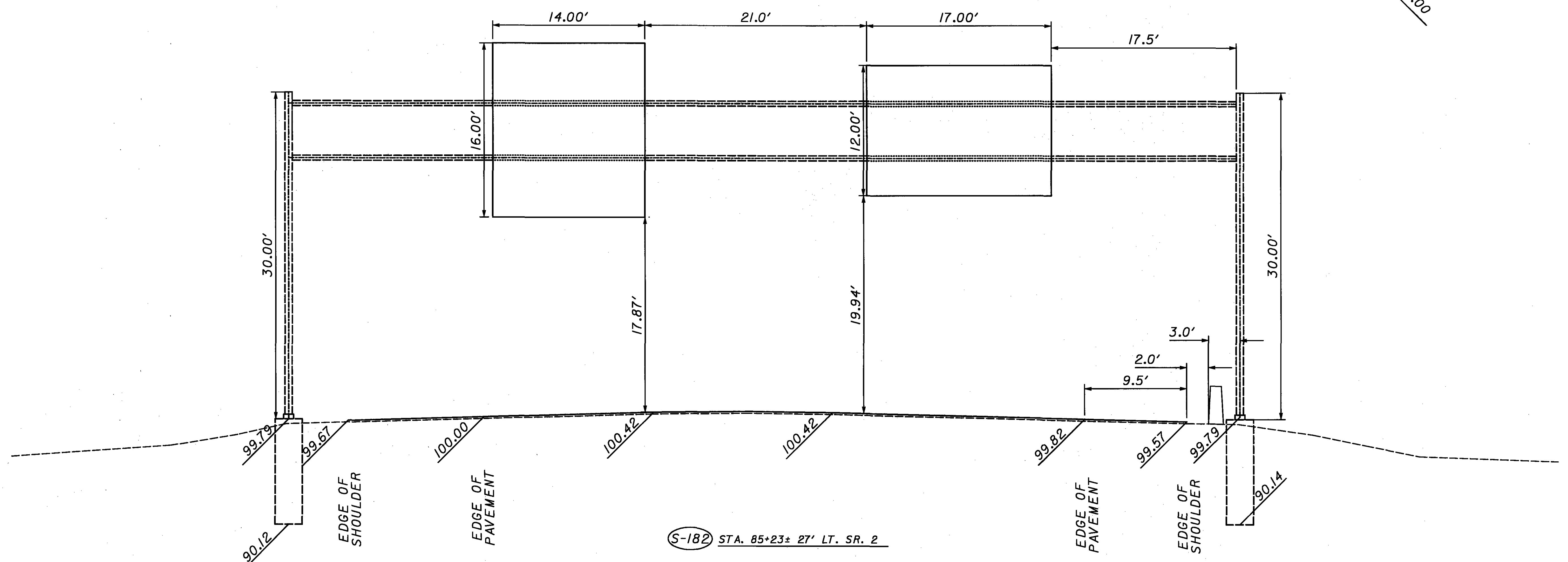




S-179 STA. 100+00± 90' LT. SR. 2
W10X12



S-184 STA. 69+39± 28' LT. SR. 2



S-182 STA. 85+23± 27' LT. SR. 2

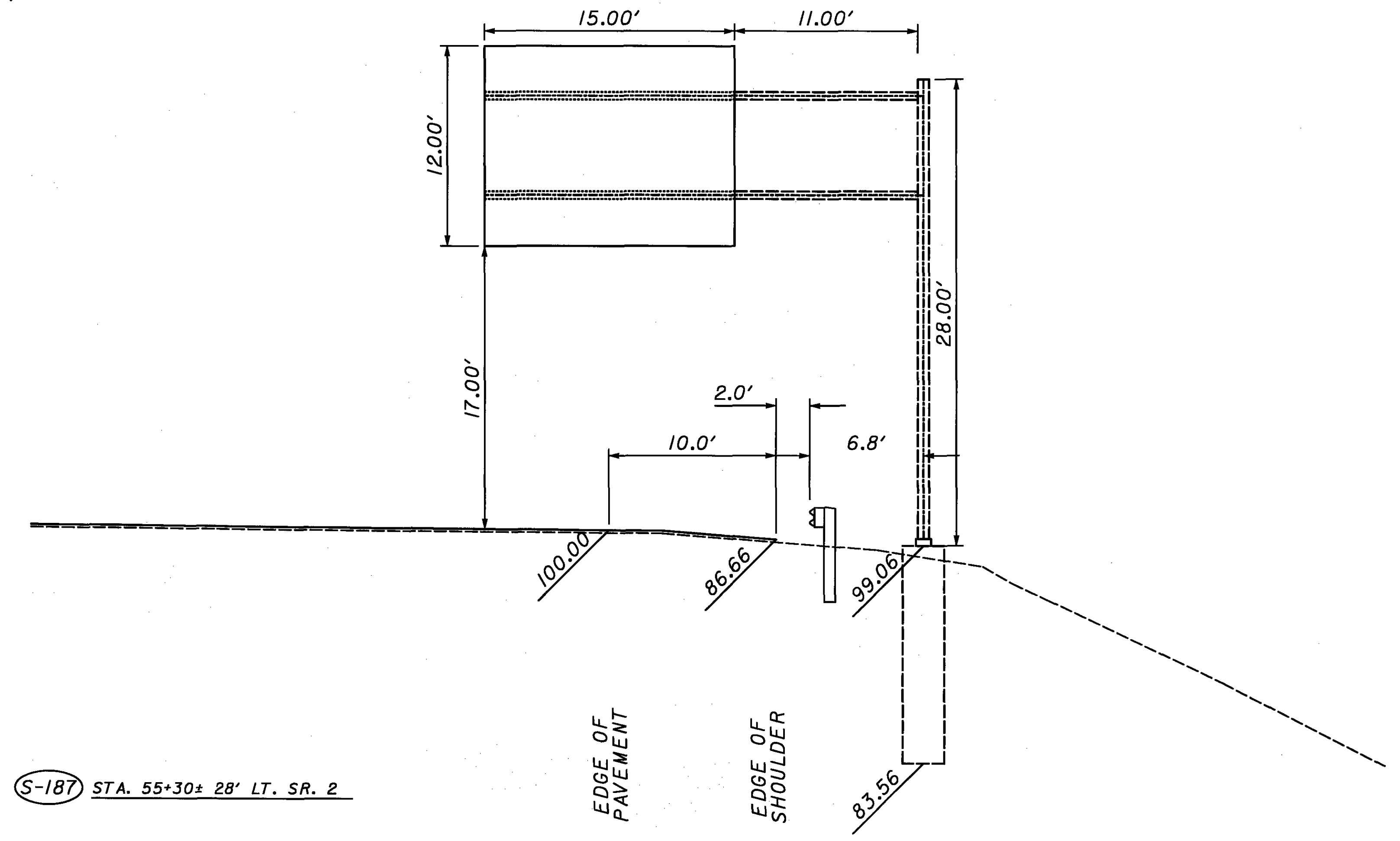
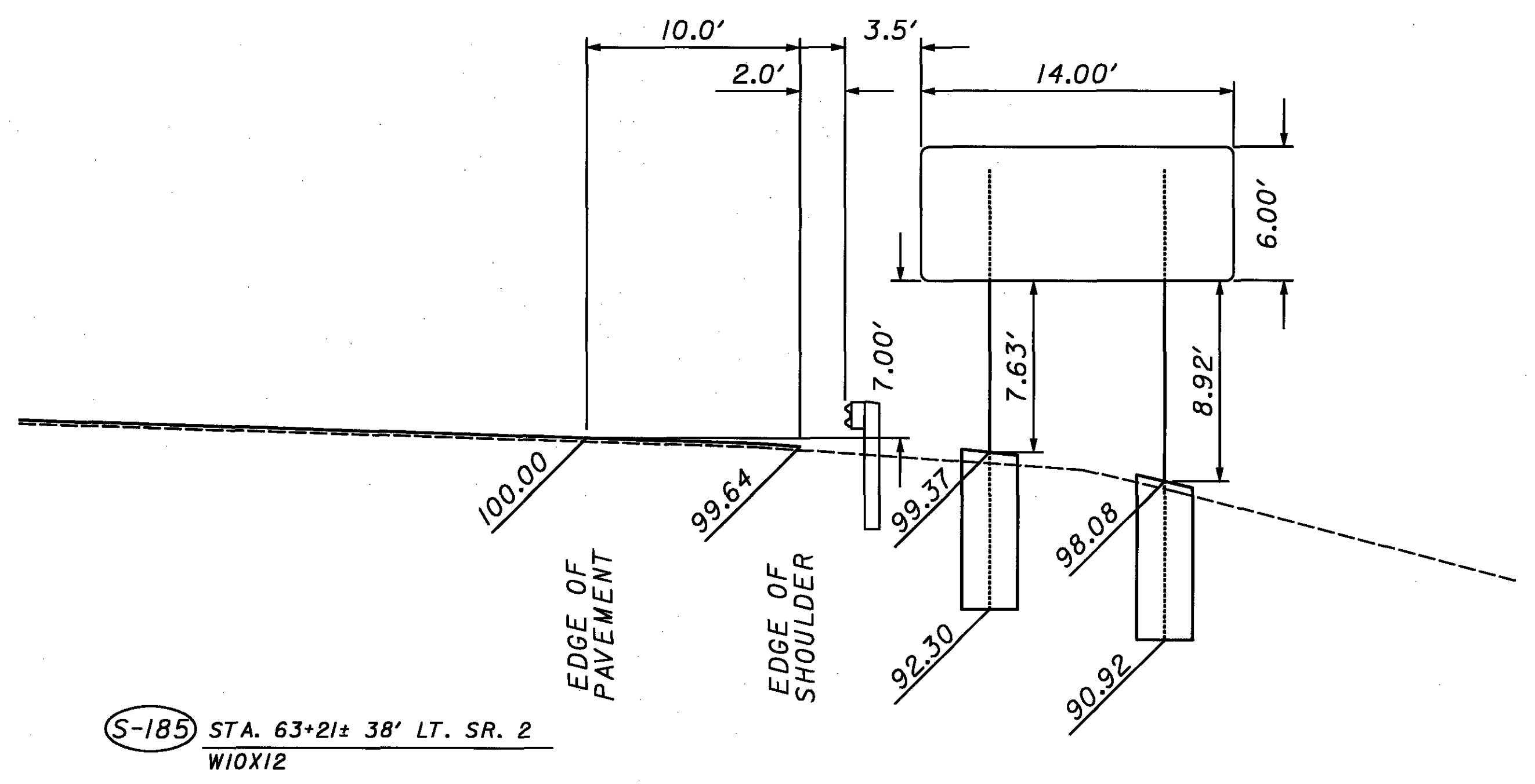
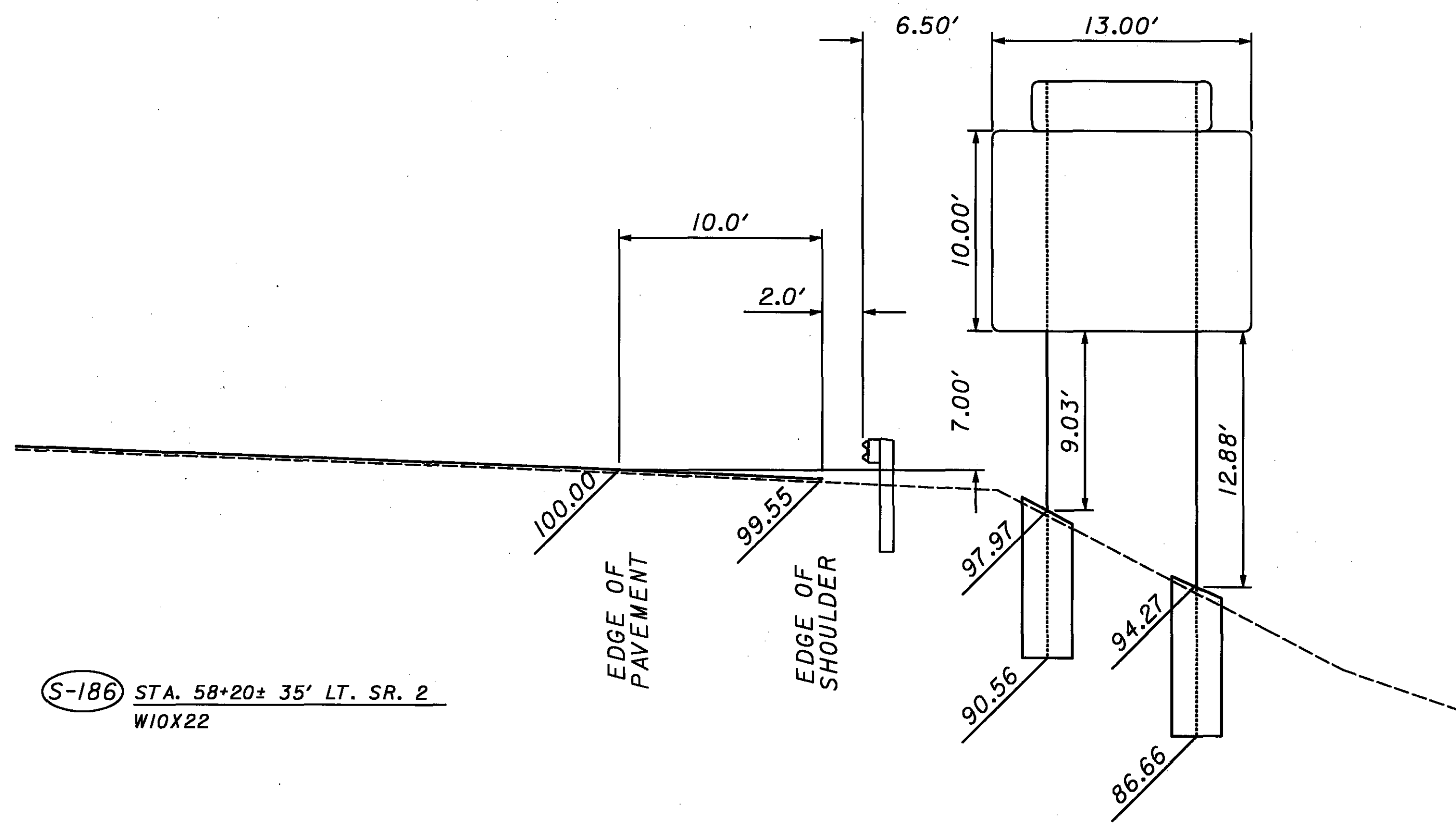
SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

CALCULATED
JTP
CHECKED
N/JG

SIGNING ELEVATION VIEWS

LAK-2-0.00

391d
524



SCALE
HORIZONTAL 1" = 5'
VERTICAL 1" = 5'

CALCULATED JTP
CHECKED NJG

SIGNING ELEVATION VIEWS

LAK-2-0.00

391b
524

LIGHTING GENERAL NOTES

CALCULATED
KEH
CHECKED
ENF

LIGHTING GENERAL NOTES

LAK-2-0.00

392
524

PROPOSED WORK

THE FOLLOWING MAJOR WORK ITEMS ARE PROPOSED:

1. REPLACE THE EXISTING TOWER LIGHTING WITH LOW MAST LIGHTING
2. REPLACE THE EXISTING UNDERPASS LIGHTING AT LLOYD ROAD, LLOYD ROAD RAMPS, WORDEN ROAD AND 305TH (RUSH RD).

SEQUENCING OF OPERATIONS

TOWER LIGHTING:

THE EXISTING LIGHTS SHALL REMAIN OPERATIVE UNTIL ALL OF THE PROPOSED POLES, CONTROL CENTERS AND CIRCUITS THAT ARE NOT LOCATED IN EXISTING CONDUITS ARE CONSTRUCTED. AT THIS TIME THE EXISTING LIGHTING SHALL BE DISCONNECTED AND THE CONTRACTOR SHALL INSTALL NEW CIRCUITS IN THE EXISTING CONDUITS. THE TIME WITHOUT FUNCTIONING LIGHTING FOR EACH EXISTING CIRCUIT SHALL BE KEPT TO A MINIMUM AND IN ALL CASES SHALL NOT EXCEED 7 DAYS UNTIL THE PROPOSED LIGHTING IS ACTIVATED. ALL COSTS FOR SEQUENCING THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM PROVIDED FOR "MAINTAIN EXISTING LIGHTING".

UNDERPASS LIGHTING:

THE EXISTING UNDERPASS LIGHTING SHALL NOT BE CONSTRUCTED UNTIL ALL PATCHING OF EXISTING PIERS IS COMPLETED. THE TIME WITHOUT FUNCTIONING LIGHTING FOR EACH EXISTING CIRCUIT SHALL BE KEPT TO A MINIMUM AND IN ALL CASES SHALL NOT EXCEED 14 DAYS UNTIL THE PROPOSED LIGHTING IS ACTIVATED. ALL COSTS FOR SEQUENCING THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM PROVIDED FOR "MAINTAIN EXISTING LIGHTING".

MAINTAINING AGENCY

THE MAINTAINING AGENCY FOR THIS PROJECT IS:

LAKE COUNTY ENGINEER
550 BLACKBROOK ROAD
PAINESVILLE, OHIO 44077
ATTN: THEODORE J. GALUSCHIK, PE
PHONE: (440) 350-2770

EXISTING LIGHTING ITEMS, SIGNS, DUCT CABLE AND CONDUIT

THE LOCATIONS OF EXISTING LIGHTING ITEMS, SIGNS, CONDUIT AND DUCT CABLE SHOWN ON THE PLANS HAVE BEEN OBTAINED BY SEARCHES OF AVAILABLE RECORDS AND FIELD CHECKS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, HOWEVER, THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. SEVERAL LIGHT POLES AND SIGNS HAVE BEEN REWIRED OVERHEAD SINCE THE ORIGINAL CONSTRUCTION. FIELD VERIFY ALL CIRCUITS.

EXISTING PLANS AND CONSTRUCTION PROJECT NO. ARE:

LAK-2-0.00 (1985)
LAK-2-0.01 (1969)

SOIL INFORMATION

SUBSURFACE INVESTIGATIONS WERE MADE FOR THE ORIGINAL CONSTRUCTION OF S.R. 2. COPIES OF THIS DATA MAY BE INSPECTED AT THE DISTRICT 12 DESIGN OFFICE, 5500 TRANSPORTATION BLVD., GARFIELD HTS. OHIO.

EXISTING CABLE AND LIGHTING ITEMS

CIRCUIT CABLE IN TRENCHES MAY BE ABANDONED IN PLACE OR REMOVED. THE REMOVAL OR ABANDONMENT OF ANY ITEMS WHICH ARE NOT ITEMIZED SEPARATELY SHALL BE CONSIDERED INCIDENTAL TO THE ADJACENT WORK ITEM.

202 - LUMINAIRE REMOVED

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE. THE LUMINAIRE SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "LUMINAIRE REMOVED" FOR EACH LUMINAIRE REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMAN LIKE MANNER.

202 - LIGHT TOWER REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT TOWER AND THE LUMINAIRES ON IT. THE LIGHT TOWER AND LUMINAIRES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "LIGHT TOWER REMOVED, AS PER PLAN" FOR EACH TOWER REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 202 - PORTION OF LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

THIS ITEM OF WORK WILL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF ONE FOOT BELOW FINISHED GRADE, BACKFILLING THE RESULTANT DEPRESSION WITH COMPACTED SOIL AND RESTORING THE DISTURBED AREA.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "LIGHT POLE FOUNDATION REMOVED" FOR EACH FOUNDATION REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMAN LIKE MANNER.

ITEM 202 - PULL BOX REMOVED

THIS ITEM OF WORK WILL CONSIST OF REMOVING AND PROPERLY DISPOSING OF AN EXISTING PULL BOX. THE RESULTANT OPENING SHALL THEN BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "PULL BOX REMOVED" FOR EACH PULL BOX REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMAN LIKE MANNER.

WHERE A PROPOSED PULL BOX WILL BE PLACED IN THE SAME AREA AS AN EXISTING PULL BOX, THE REMOVAL COST OF AN EXISTING PULL BOX WILL BE INCIDENTAL TO THE 625- PULL BOX ITEM.

ITEM 202 - POWER SERVICE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF AN EXISTING POWER SERVICE.

INCLUDED FOR REMOVAL WILL BE ALL POWER SERVICE COMPONENTS SUCH AS THE WOOD POLE, WEATHER HEAD AND ALL ABOVE GRADE WIRING, CONTROL CENTER ENCLOSURE, PHOTOELECTRIC CELL AND ALL OTHER APPURTENANCES. THE CABLE ENCLOSED IN THE 2-INCH CONDUIT WHICH RUNS INTO THE GROUND SHALL BE CUT WHERE IT EXITS THE 2-INCH CONDUIT, APPROXIMATELY 2 FEET BELOW THE GROUND, AND SHALL BE ABANDONED. ALL DISTURBED AREAS SHALL BE RESTORED TO MATCH THE SURROUNDING AREA.

ALL POWER SERVICE COMPONENTS INCLUDING THE CONTROL CENTER, POLE, PHOTOELECTRIC CELL, 2-INCH CONDUIT, WEATHER HEAD AND ALL ABOVE-GROUND WIRING SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF THE PROJECT SITE.

THIS ITEM WILL ALSO COMPENSATE THE CONTRACTOR FOR COORDINATING WITH THE POWER COMPANY TO INSURE THAT THE COMPANY DISCONNECTS THE SERVICE, AND THAT ITEMS WHICH BELONG TO THE POWER COMPANY AND ARE REMOVED BY THE CONTRACTOR SUCH AS THE METER BASE SHALL BE RETURNED TO THE POWER COMPANY.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "POWER SERVICE REMOVED, AS PER PLAN" FOR EACH SERVICE REMOVED WHICH SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 202 - REMOVAL MISC. - UNDERPASS LIGHTING SYSTEM REMOVED

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF AN EXISTING UNDERPASS LIGHTING SYSTEM. THE CONTRACTOR SHALL REMOVE ALL LUMINAIRES, CONDUIT, CONDUIT HANGERS, DISCONNECT, SWITCHES, JUNCTION BOXES AND ANY OTHER INCIDENTAL ITEMS ASSOCIATED WITH THE SYSTEM.

THE CONTRACTOR SHALL PATCH ANY HOLES LEFT FROM CONNECTORS WITH A DURABLE, WEATHER PROOF MATERIAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "UNDERPASS LIGHTING SYSTEM REMOVED" FOR EACH SYSTEM REMOVED WHICH SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

LIGHTING GENERAL NOTES

CALCULATED
KEH
CHECKED
ENF

LUMINAIRE, LOW MAST, AS PER PLAN

THE LUMINAIRES SHALL BE AS SPECIFIED FOR HIGH-MAST LUMINAIRES IN CMS 725.21 EXCEPT THAT THE LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS ARE HEREBY WAIVED. IN ADDITION, THE LUMINAIRES FOR LOW-MAST LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS:

LUMINAIRES FOR LOW-MAST LIGHTING UNITS WITH SYMMETRIC DISTRIBUTION SHALL BE HOLOPHANE "HMST" WITH PHOTOMETRIC DISTRIBUTION 36383, GENERAL ELECTRIC "HM" WITH PHOTOMETRIC DISTRIBUTION 6312, OR COOPER "HMX" WITH PHOTOMETRIC DISTRIBUTION HMX4SDW, OR EQUAL AS APPROVED BY THE ENGINEER.

LUMINAIRES FOR LOW-MAST LIGHTING UNITS WITH ASYMMETRIC DISTRIBUTION SHALL BE HOLOPHANE "HMST" WITH PHOTOMETRIC DISTRIBUTION 46973, GENERAL ELECTRIC "HM" WITH PHOTOMETRIC DISTRIBUTION 7349, OR COOPER "HMC" WITH PHOTOMETRIC DISTRIBUTION HMC4S3D, OR EQUAL AS APPROVED BY THE ENGINEER.

LUMINAIRES FOR LOW-MAST LIGHTING UNITS WITH LONG NARROW DISTRIBUTION SHALL BE HOLOPHANE "HMST" WITH PHOTOMETRIC DISTRIBUTION 36801, GENERAL ELECTRIC "HM" WITH PHOTOMETRIC DISTRIBUTION 8946, OR COOPER "HMC" WITH PHOTOMETRIC DISTRIBUTION HMC4SIDL, OR EQUAL AS APPROVED BY THE ENGINEER.

IN ADDITION, OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE DESIGNED NUMBER AND TYPE OF FIXTURES PER POLE.

LAMPS-HIGH PRESSURE SODIUM (HPS)

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX," OSRAM SYLVANIA "LUMALUX", PHILIPS "CERAMALUX," OR EQUAL APPROVED BY THE ENGINEER.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYPED IN ACCORDANCE WITH CMS 631.06. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

LIGHT POLE FOUNDATIONS

ALL PROPOSED LIGHT POLE FOUNDATIONS SHALL BE 8' DEEP UNLESS OTHERWISE NOTED IN THE PLANS.

MAINTENANCE OF PROPOSED LIGHTING

THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL PROPOSED LIGHTING UNTIL FINAL INSPECTION. THIS INCLUDES BUT IS NOT LIMITED TO REPLACING DEFECTIVE POLES, LUMINAIRE AND LAMS THAT MAY FAIL THE TEN DAY BURN IN TEST

SERVICE TO UNDERPASS LIGHTING, AS PER PLAN

THIS ITEM SHALL INCLUDE THE CONDUIT, WIRING, TRENCH AND JUNCTION BOXES FROM THE ROADWAY LIGHTING PULLBOX TO THE DISCONNECT SWITCH ENCLOSURE. IT SHALL ALSO INCLUDE THE DISCONNECT SWITCH, ENCLOSURE AND MOUNTING BRACKET AS PER ITEM 631.06 WITH A 10 AMP FUSE AS WELL ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM.

FLEXIBLE CONDUIT

WHEN FLEXIBLE CONDUIT IS CALLED OUT ON THE PLANS IT SHALL BE PAID FOR AS RIGID CONDUIT OF THE SAME SIZE.

625 - LUMINAIRE, UNDERPASS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR UNDERPASS LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR UNDERPASS LIGHTING UNITS SHALL BE AMERICAN ELECTRIC "SIDELIGHT SERIES 582" WITH PHOTOMETRIC DISTRIBUTION AE20811, GENERAL ELECTRIC "VERSAFLOOD II WALLIGHTER" WITH PHOTOMETRIC DISTRIBUTION 8578, HOLOPHANE "WALLPACK II" TEST WITH PHOTOMETRIC DISTRIBUTION 33263, OR EQUAL AS APPROVED BY THE ENGINEER.

LUMINAIRES FOR UNDERPASS LIGHTING UNIT WHICH ARE WALL MOUNTED SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSES.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LUMINAIRE, UNDERPASS, 70 WATT H.P.S., 240 VOLT, AS PER PLAN" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625 - POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED. THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

POWER COMPANY: FIRST ENERGY, THE ILLUMINATING COMPANY

ADDRESS: 6896 MILLER RD, BRECKSVILLE, OH 44141

PHONE # (440)546-5748

CONTACT NAME: FRANK DIBBS

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

FOR NEW POWER SERVICES, SUPPLIED POWER SHALL BE 480 VOLT, 3 WIRE, ONE SIDE GROUNDED. TWO 240 VOLT HOTS AND ONE NEUTRAL. (UNCONTROLLED POWER)

POWER FROM THE 3 WIRE LIGHTING CIRCUIT TO UNDERPASS LIGHTING (LLOYD RD, LLOYD RAMPS, WORDEN RD. E. 305TH) SHALL BE 3 WIRE TO THE PULL BOX DIRECTLY BEFORE THE UNDERPASS LIGHTING, THEN BRANCH INTO TWO - 2 WIRE 240 VOLT CIRCUITS. (HOT AND NEUTRAL).

THE SERVICE WILL BE GROUND MOUNTED CONTROL CENTER FOR ODOT CIRCUITS. CONTROL CENTER "L", "R" & "S", WILL BE NEW ODOT CONTROL CENTERS.

SERVICE CONDUIT LOCATIONS, CONDUIT TYPES AND TERMINATION HEIGHTS ON THE SERVICE POLE SHALL BE AS DIRECTED BY CEI. THE CONTRACTOR SHALL ARRANGE WITH UTILITY COMPANY FOR A FIELD INSPECTION OF SERVICE LOCATION PRIOR TO HIS INSTALLATION OF THE SERVICE EQUIPMENT.

THE CONTROL CENTERS SHALL CONTAIN THE CIRCUITS IN ONE CABINET. THE CABINET SHOULD BE SIZED ADEQUATELY TO HOUSE THE PROPER NUMBER (2 MIN.) OF CONDUITS. LAKE COUNTY CABINETS SHALL BE STENCILED "LAKE COUNTY ENGINEER"

ITEM 625 - LIGHTING, MISC: TEST EXISTING CIRCUITS

UPON COMPLETION OF PROPOSED GUARDRAIL RUNS, THE CONTRACTOR SHALL TEST ALL EXISTING CIRCUITS TO VERIFY THAT POWER IS SUPPLIED TO ALL LIGHT POLES AND THAT NO CIRCUITS HAVE BEEN DAMAGED. BOTH THE ENGINEER AND THE LAKE COUNTY ENGINEER SHALL BE PRESENT FOR THE INSPECTION OF THESE CIRCUITS. THE FOLLOWING CITY CIRCUITS SHALL BE CHECKED IN THIS FASHION :LLOYD RD., WORDEN RD. AND SOM CENTER RD. THE FOLLOWING ITEM HAS BEENCARRIED TO THE GENERAL SUMMARY:

ITEM 625 LIGHTING, MISC: TEST EXISTING CIRCUITS 16 EACH

ITEM 625 - LIGHTING, MISC: TROUBLE SHOOT DAMAGED CIRCUITS

ONCE THE EXISTING CIRCUITS HAVE BEEN TESTED, IF ALL OR PORTIONS OF A CIRCUIT ARE FOUND TO BE NON-FUNCTIONAL, THE CONTRACTOR SHALL TROUBLESHOOT THE EXISTING CIRCUIT TO FIND THE LOCATION(S) WHERE DAMAGE HAS OCCURRED. REPAIRS SHALL BE MADE USING THE CONTINGENCY QUANTITIES PROVIDED UNDER "LIGHT CIRCUIT REPAIR ITEMS". AFTER REPAIRS HAVE BEEN MADE, THE CIRCUIT SHALL AGAIN BE TESTED TO VERIFY THE DAMAGE HAS BEEN CORRECTED. ANY SUBSEQUENT TESTING OF CIRCUITS IS INCIDENTAL TO THIS ITEM. PURSUANT TO THE PROVISIONS OF THIS ITEM, ALL CIRCUITS SHALL BE IN COMPLETE WORKING ORDER UPON COMPLETION OF THE PROJECT

ITEM 625 LIGHTING, MISC: TROUBLE SHOOT DAMAGED CIRCUITS 5 EACH

LIGHTING CIRCUIT REPAIR ITEMS

THE PLAN PROVISIONS TO TEST, TROUBLESHOOT AND SUBSEQUENTLY REPAIR EXISTING HIGHWAY CIRCUITS IN NO WAY HOLD THE CONTRACTOR BLAMELESS FOR WILLFULLY DAMAGING LAKE COUNTY ELECTRICAL CIRCUITS; HOWEVER, THE DEPARTMENT ACKNOWLEDGES THAT IN MANY CASES, THE FOLLOWING CONTINGENCY QUANTITIES SHALL BE USED TO REPAIR DAMAGED CIRCUITS:

ITEM 625	TRENCH	<u>500 LIN FT</u>
ITEM 625	1/2 DUCT CABLE, NO.4 AWG, WITH THREE 5000V CABLES	<u>500 LIN FT</u>
ITEM 625	NO. 4 5000V DISTRIBUTION CABLE	<u>1000 LIN FT</u>
ITEM 625	CABLE SPLICE KITS	<u>32 EACH</u>
ITEM 625	CONNECTOR KIT, TYPE II	<u>5 EACH</u>
ITEM 625	CONNECTOR KIT, TYPE III	<u>5 EACH</u>
ITEM 625	PULLBOX, 24", 725.08	<u>10 EACH</u>

LIGHTING CIRCUITS SHALL BE TESTED, TROUBLESHOT AND REPAIRED WITHIN 14 DAYS AFTER THE COMPLETION OF THE PROPOSED GUARDRAIL WORK AT THE AFFECTED LOCATIONS. IN INSTANCES WHERE PROPOSED GUARDRAIL WORK IS SUSPENDED IN THE MIDDLE OF AN EXISTING CIRCUIT, THE ENGINEER MAY DIRECT THE CONTRACTOR TO TROUBLE SHOOT AND REPAIR DAMAGED CIRCUITS IF HE IS WARE THAT DAMAGE HAS OCCURRED. ONCE WRITTEN NOTICE IS GIVEN TO THE CONTRACTOR OF THE NEED TO TROUBLESHOOT AND REPAIR A CIRCUIT, THE CONTRACTOR SHALL HAVE 5 WORKING DAYS TO LOCATE THE DAMAGE AND MAKE THE APPROPRIATE REPAIRS. IF AFTER 5 DAYS THE, THE DAMAGE HAS NOT BEEN REPAIRED, LIQUIDATED DAMAGES IN THE AMOUNT OF \$400 PER DAY SHALL BE ASSESSED THE CONTRACTOR FOR EACH DAY AFTER THE 5 DAY PERIOD THAT THE CIRCUIT REMAINS UNREPAIRED.

ITEM 625 - CONCRETE PULL BOX, 725.08 18" OR 24"

THE FOLLOWING ESTIMATED CONTINGENCY QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPLACE ANY BADLY DAMAGED PULLBOXES THAT ARE TO REMAIN IN SERVICE. THIS ITEM SHALL INCLUDE ALL COSTS OF REMOVING THE OLD PULLBOX. IF PULLBOXES ARE FOUND TO BE ADEQUATE, THIS ITEM SHALL BE NON-PERFORMED. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY

ITEM 625 PULLBOX, 24", 725.08 10 EACH

LIGHTING GENERAL NOTES

LAK-2-0.00

393
524

...2177BLN001.dgn

LIGHTING GENERAL NOTES

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

UNDERPASS LIGHTING SEQUENCING

THE CONTRACTOR SHALL COMPLETE ALL PATCHING WORK ON PIERS BEFORE INSTALLING NEW UNDERPASS LIGHTING.

MAINTAINING CITY CIRCUITRY

THE CONTRACTOR SHALL MAINTAIN CONTINUITY IN EXISTING CITY CIRCUITS WHEN REMOVING UNDERPASS LIGHTING FROM CITY CIRCUITS. PAYMENT FOR THIS SHALL BE CONSIDERED INCIDENTAL TO REMOVAL OF THE EXISTING UNDERPASS LIGHTING.

THE CONTRACTOR SHALL MAINTAIN CONTINUITY IN EXISTING CITY CIRCUITS WHEN REMOVING LUMINAIRES FROM POLES. PAYMENT FOR THIS SHALL BE CONSIDERED INCIDENTAL TO REMOVAL OF THE EXISTING LUMINAIRES.

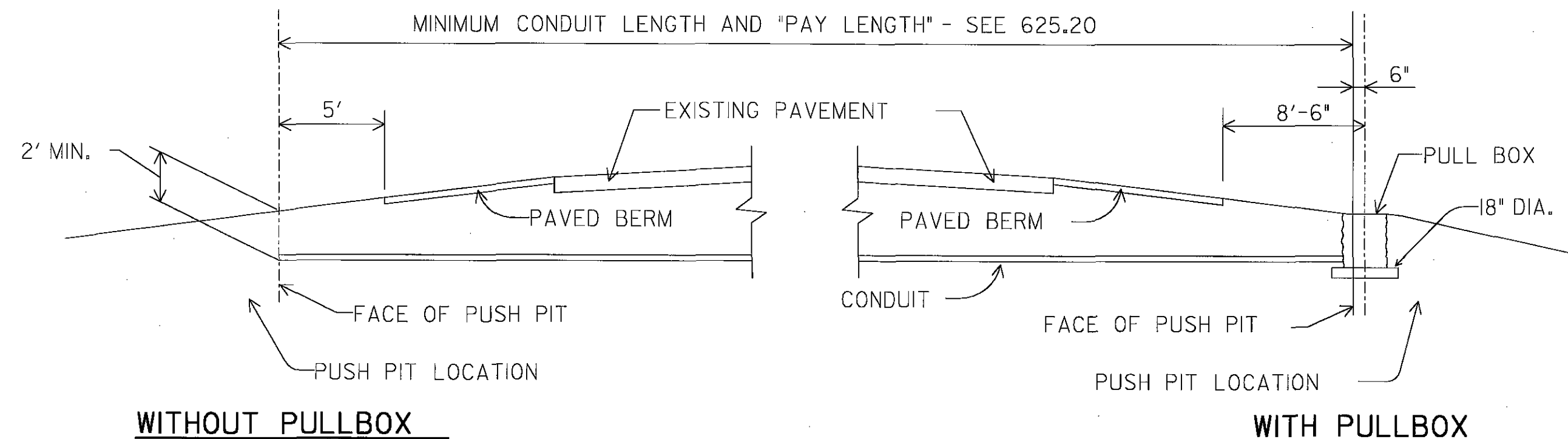
ABANDONING EXISTING CONDUIT & DUCT CABLE

UNLESS OTHERWISE NOTED IN THE PLANS THE EXISTING CONDUITS AND DUCT CABLES SHALL BE ABANDONED IN PLACE. NO PAYMENT WILL BE MADE FOR THIS ITEM.

RECONNECTING EXISTING LIGHTING CIRCUITS DURING CONSTRUCTION

DUE TO THE PROXIMITY OF THE EXISTING CIRCUITRY TO THE PROPOSED GUARDRAIL AND NOISE BARRIER IT IS LIKELY THAT THE EXISTING CIRCUITRY MAY BECOME DAMAGED. WHEN PRACTICAL THE CONTRACTOR SHALL REPAIR THE EXISTING CIRCUIT TO MAINTAIN THE EXISTING LIGHTING. THE REPAIR SHALL MEET ALL APPLICABLE CODES.

PAYMENT FOR THIS ITEM SHALL BE ITEM BE CONSIDERED INCIDENTAL TO THE ITEM "MAINTAIN EXISTING LIGHTING" AND SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE.



CONDUIT JACKED OR DRILLED UNDER PAVEMENT

CALCULATED
KEH
CHECKED
ENF

LIGHTING GENERAL NOTES & DETAIL

LAK-2-0.00

394
524

REFERENCE NO.	SHEET NO.	SIDE	LOCATION	ROADWAY	ITEM 625																																	
					LIGHT TOWER REMOVED	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	REMOVAL MISC: UNDERPASS LIGHTING SYSTEM REMOVED	CONTROL CENTER REMOVED	CONNECTOR KIT, TYPE II	CABLE SPLICING KIT	LIGHT POLE, MISC: LOW MAST, DESIGN AT0N40	LIGHT POLE, MISC: LOW MAST, DESIGN AT0N45	LIGHT POLE, MISC: LOW MAST, DESIGN AT0N60	LIGHT POLE, MISC: LOW MAST, DESIGN AT0N55	LIGHT POLE, MISC: LOW MAST, DESIGN AT0N60	LIGHT TOWER FOUNDATION, 24" X 8' DEEP	LIGHT TOWER FOUNDATION, 24" X 9' DEEP	LIGHT TOWER FOUNDATION, 24" X 10' DEEP	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	NO. 10 AWG 600 VOLT DISTRIBUTION CABLE	1 1/2" DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT DISTRIBUTION CABLES	1 1/2" DUCT CABLE WITH THREE NO. 2 AWG 5000 VOLT DISTRIBUTION CABLES	CONDUIT, 1 1/4" 725.04	CONDUIT, JACKED AND DRILLED UNDER PAVEMENT, 3" 725.04	CONDUIT, 2" 725.04	LUMINAIRE, LOW MAST, LONG & NARROW 400 WATT H.P.S., 480 VOLT, APP	LUMINAIRE, LOW MAST, ASYM 400 WATT H.P.S., 480 VOLT, APP	LUMINAIRE, LOW MAST, SYM, 400 WATT H.P.S., 480 VOLT, APP	LUMINAIRE, UNDERPASS, 70 WATT H.P.S., 240 VOLT, APP	TRENCH IN PAVED AREA, TYPE A	TRENCH	PULL BOX, 725.08 24"	JUNCTION BOX 6"x6"x4"	GROUND ROD	STRUCTURE GROUNDING SYSTEM	SERVICE TO UNDERPASS LIGHTING, APP
EACH	EACH	EACH	LUMP	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH		
436	418	LT	273+99	SR2																			79															
437	418	LT	273+99	SR2						3																												
438	417/418	LT	268+03-273+99	SR2																																		
439	418	RT	273+99	SR2																																		
440	418	RT	273+99-275+05	SR2																																		
441	418	RT	275+05	SR2						2					1																							
442	418	RT	275+05-276+85	SR2																																		
443	418	RT	276+85	SR2						2					1																							
444	418	RT	276+85-278+05	SR2																																		
445	418	RT	278+05	SR2						2					1																							
446	418	RT	278+05-279+25	SR2																																		
447	418	RT	279+25	SR2						2					1																							
448	418	RT	279+25-280+45	SR2																																		
449	418	RT	279+99	SR2	1	1																																
450	418	RT	280+45	SR2						2					1																							
451	418	RT	280+45-281+65	SR2																																		
452	418	RT	281+65	SR2						2					1																							
453	418	RT	281+65-282+85	SR2																																		
454	418	RT	282+85	SR2						2					1																							
455	418	RT	283+47	SR2	1	1																																
456	418	RT	282+85-284+05	SR2																																		
457	418	RT	284+05	SR2						2					1																							
458	418	RT	284+05-285+25	SR2																																		
459	418	RT	285+25	SR2						2					1																							
460	418/419	RT	285+25-286+35	SR2																																		
461	418	LT	273+99-274+21	SR2																																		
462	418	RT	1+97	RAMP C-2	1	1																																
463	418	RT	2+16	RAMP C-2											3																							
463A	418	LT/RT	2+16	RAMP C-2																																		
464	418	LT	2+16	RAMP C-2											3																							
465	418	LT	0+98-2+16	RAMP C-2																																		
466	418	LT	0+98	RAMP C-2						2					1																							
467	418	LT	274+85	RAMP C-2						2					1																							
468	418	LT	274+85-276+75	RAMP C-2																																		
469	418	LT	276+75	RAMP C-2						2					1																							
470	418	LT	276+75-278+65	RAMP C-2																																		
471	418	LT	278+65	RAMP C-2						2					1																							
472	418	LT	278+65-280+55	RAMP C-2																																		
473	418	LT	280+55	RAMP C-2						2					1																							
474	418	LT	274+00	RAMP C-3											3																							
475	418	LT	274+00	RAMP C-3																																		
476	418	RT	274+00	RAMP C-3											3																							
477	418	LT	2+16-274+85	RAMP C-2																																		
478	417/418	RT	272+65-274+00	RAMP C-3																																		
479	418	RT	273+35	RAMP C-3	1	1																																
480	418	RT	274+00-274+25	RAMP C-3																																		

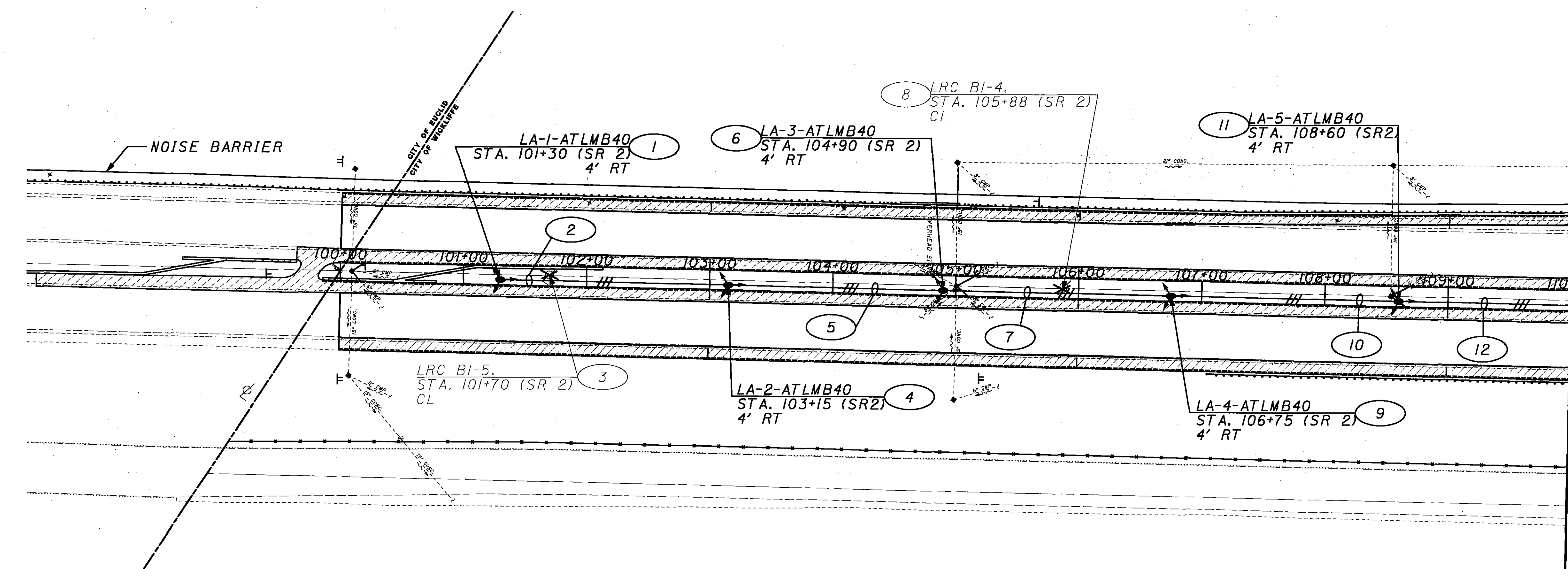
TOTALS CARRIED TO LIGHTING GENERAL SUMMARY

4 4 28 15 14 14 696 1,120 3,049 202 14 2,849 5 14

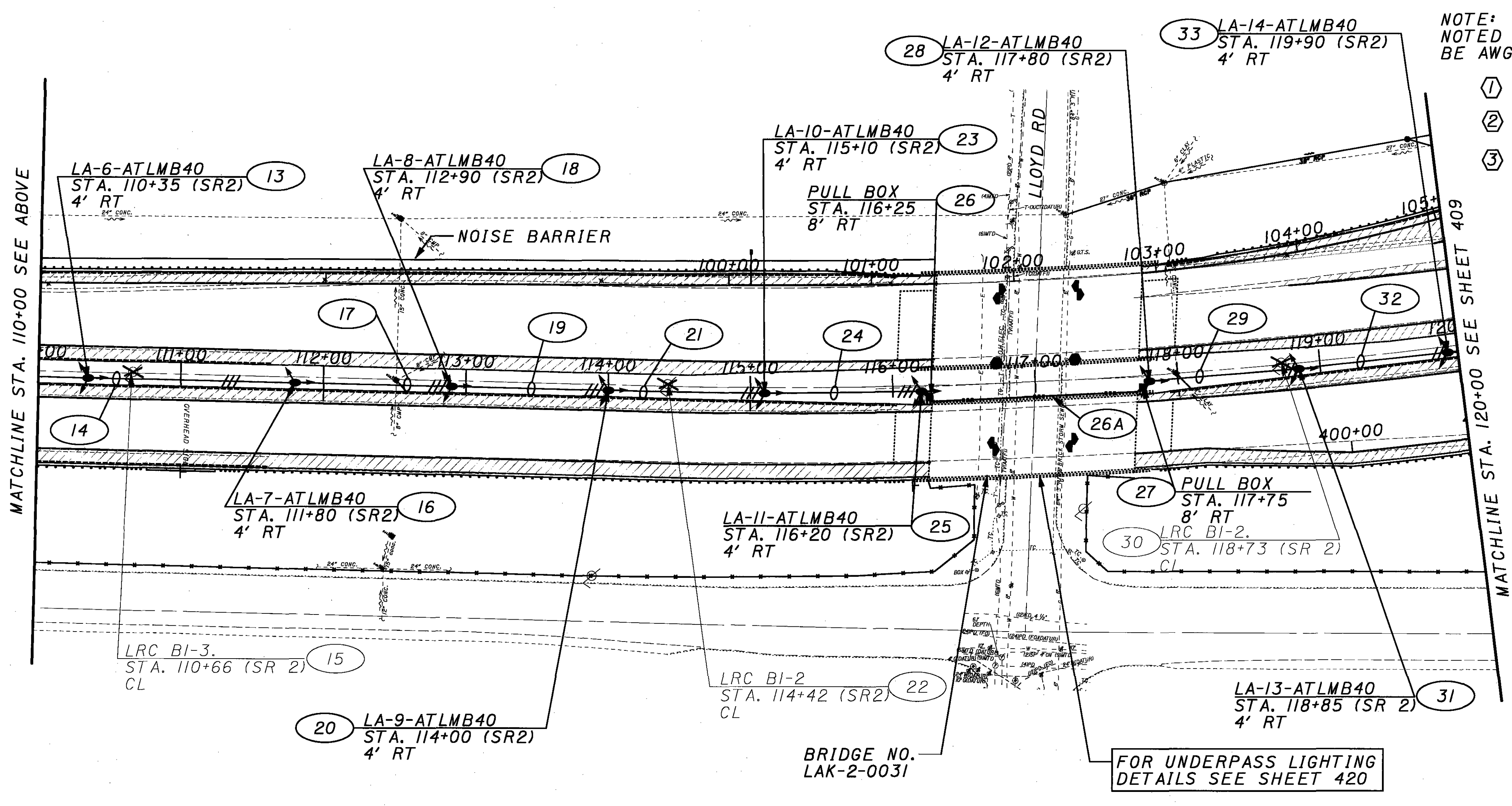
LIGHTING SUBSUMMARY

CALCULATED JMH
 CHECKED KEH

LAK-2-0.00



- LIGHTPOLE IDENTIFICATION**
- PROP. CONTROL CENTER
 - PROP. CIRCUIT NUMBER
 - SF-2 — PROP. POLE NUMBER
- LEGEND:**
- EX. CANTILEVER SIGN SUPPORT
 - EX. TRUSS SIGN SUPPORT
 - EX. LIGHT POLE (NO WORK)
 - EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
 - PROPOSED CABLE IN EXISTING CONDUIT
 - EXISTING CONDUIT
 - PROPOSED DUCT CABLE
 - EXISTING PULLBOX
 - PROPOSED PULLBOX
 - EX. PULLBOX TO BE REPLACED
 - PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
 - △ EXISTING POWER SERVICE
 - ▲ PROPOSED PAD MOUNTED POWER SERVICE
 - LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIR PER 725.II
 - LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIR PER 725.II
 - LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIR PER 725.II
 - TOW H.P.S. UNDERPASS LUMINAIR PER 725.II



NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

...21778LP001.dgn

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✕ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
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- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- LOW MAST POLE W/I-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/I-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/I-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
- TOW H.P.S. UNDERPASS LUMINAIRE PER 725.II

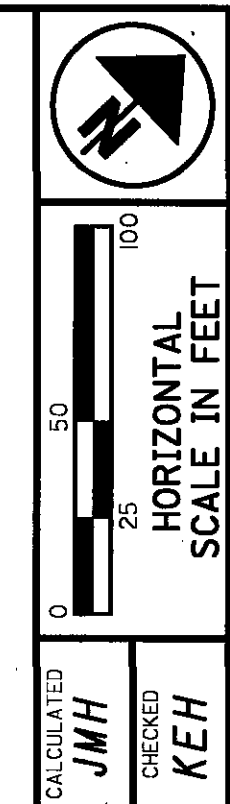
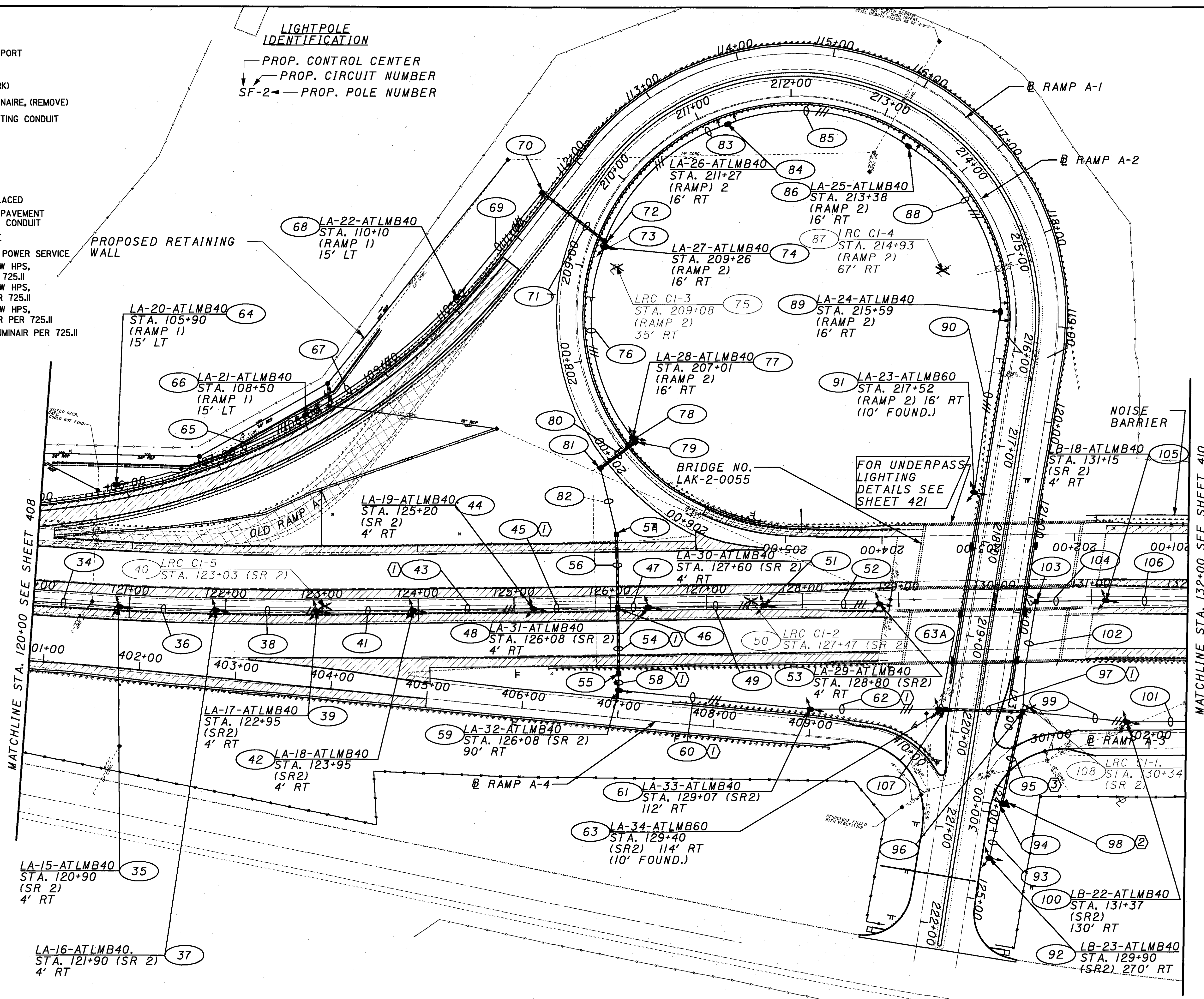
LIGHTPOLE IDENTIFICATION
 PROP. CONTROL CENTER
 PROP. CIRCUIT NUMBER
 SF-2 ← PROP. POLE NUMBER

PROPOSED RETAINING WALL

NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

- 46 PULL BOX STA. 126+08 4' RT (SR2)
- 55 PULL BOX STA. 126+08 73' RT (SR2)
- 57 PULL BOX STA. 126+08 72' LT (SR2)
- 70 PULL BOX STA. 209+50 66' LT (RAMP A-2)
- 72 PULL BOX STA. 209+32 15' RT (RAMP A-2)
- 79 PULL BOX STA. 206+96 16' RT (RAMP A-2)
- 81 PULL BOX STA. 206+96 30' LT (RAMP A-2)
- 94 PULL BOX STA. 130+04 213' RT (SR2)
- 96 PULL BOX STA. 130+27 118' RT (SR2)
- 103 PULL BOX STA. 130+43 4 RT
- 107 PULL BOX STA. 129+46 114' RT (SR2)

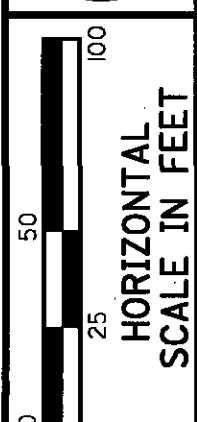
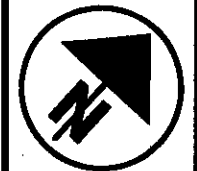


CALCULATED: JMH
 CHECKED: KEH

LIGHTING PLAN
STA. 120+00 TO STA. 132+00

LAK-2-0-00
 409
 524

217781p002.dgn



CALCULATED
JMH
CHECKED
KEH

LIGHTPOLE IDENTIFICATION

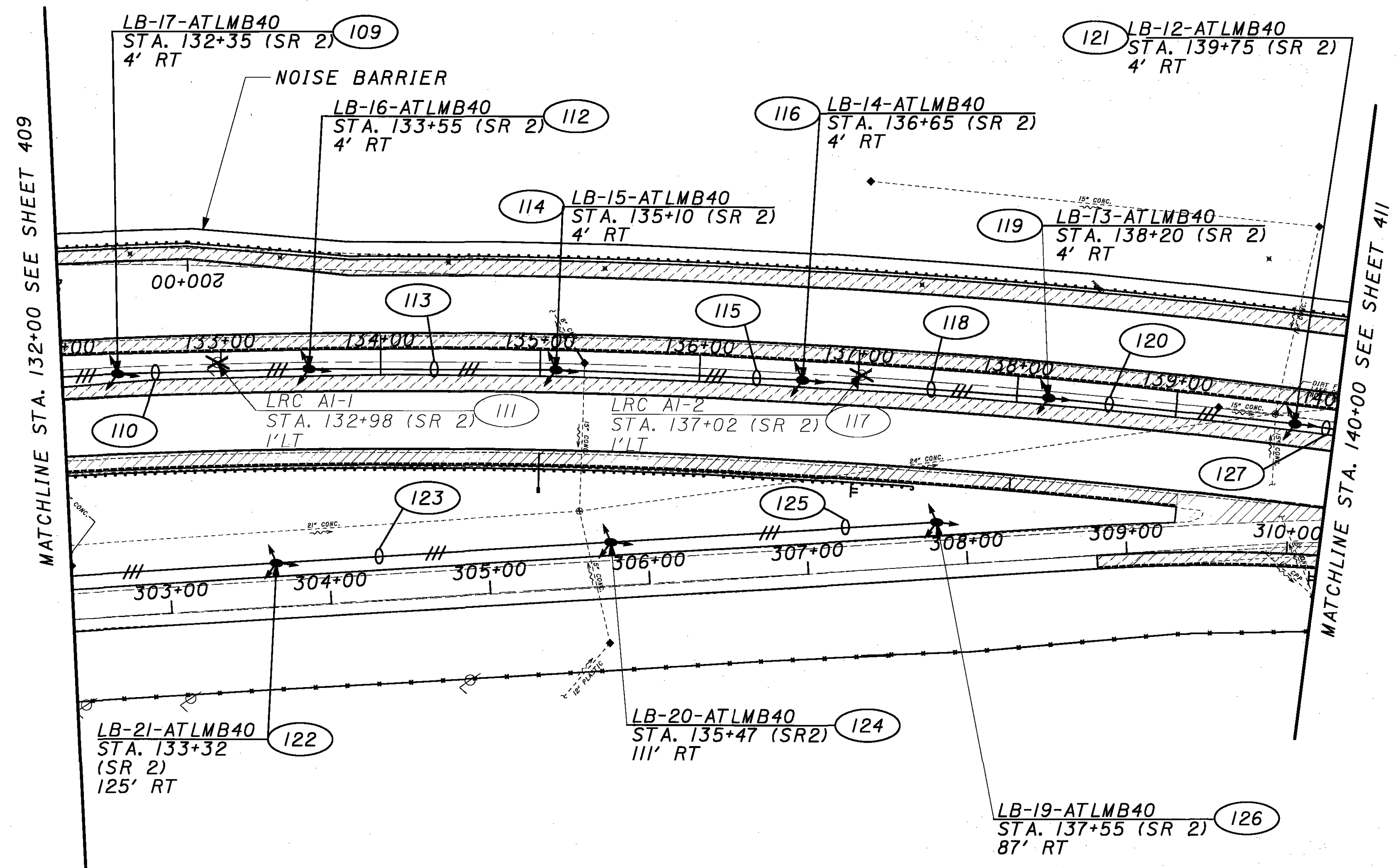
— PROP. CONTROL CENTER
— PROP. CIRCUIT NUMBER
SF-2 ← PROP. POLE NUMBER

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✗ — EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// — PROPOSED DUCT CABLE
- — EXISTING PULLBOX
- — PROPOSED PULLBOX
- — EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
- △ — EXISTING POWER SERVICE
- ▲ — PROPOSED PAD MOUNTED POWER SERVICE
- LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIR PER 725.II
- LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIR PER 725.II
- LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIR PER 725.II
- ▶ — 70W H.P.S. UNDERPASS LUMINAIR PER 725.II

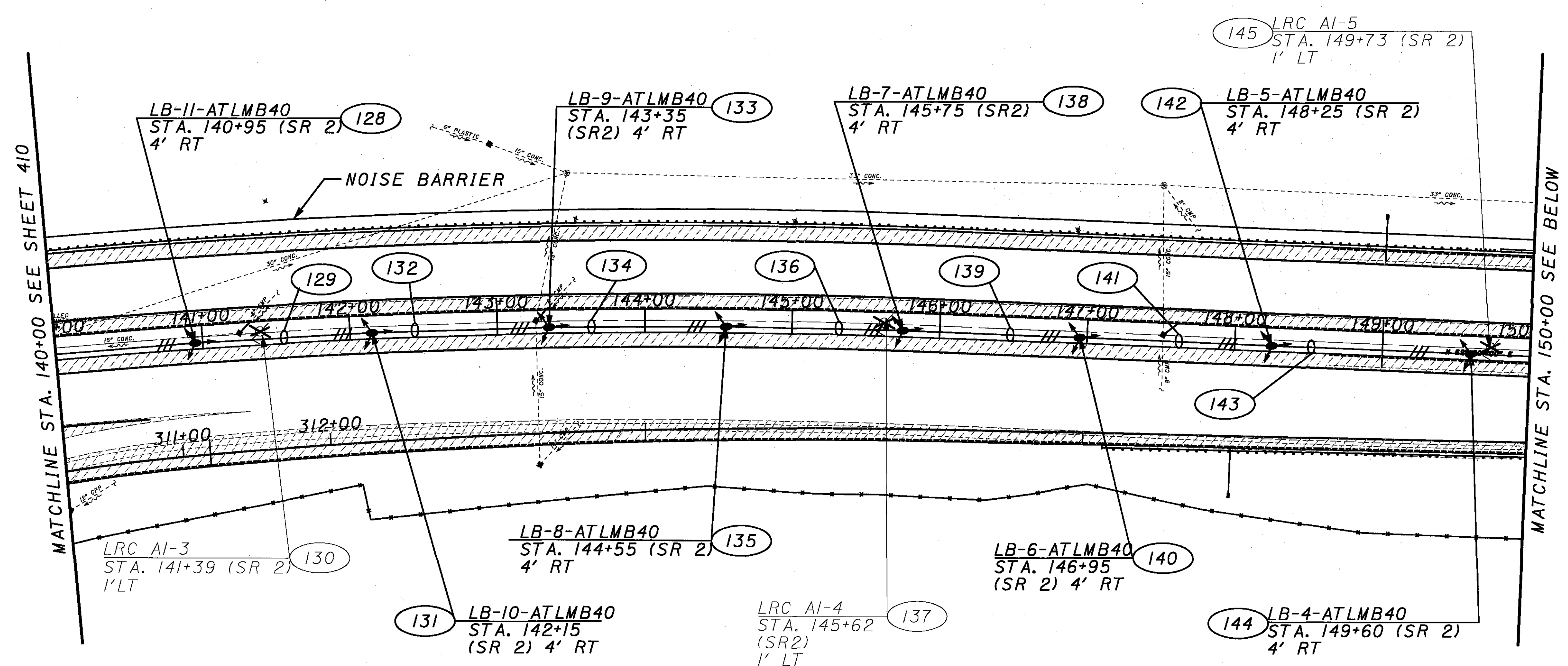
NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES



LIGHTING PLAN
STA. 132+00 TO STA. 140+00

LAK-2-0.00



NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

 ① NO. 2 AWG WIRES

 ② 2 SETS OF NO. 2 AWG WIRES

 ③ 1 SET IF NO. 2 AWG WIRES

 1 SET IF NO. 4 AWG WIRES

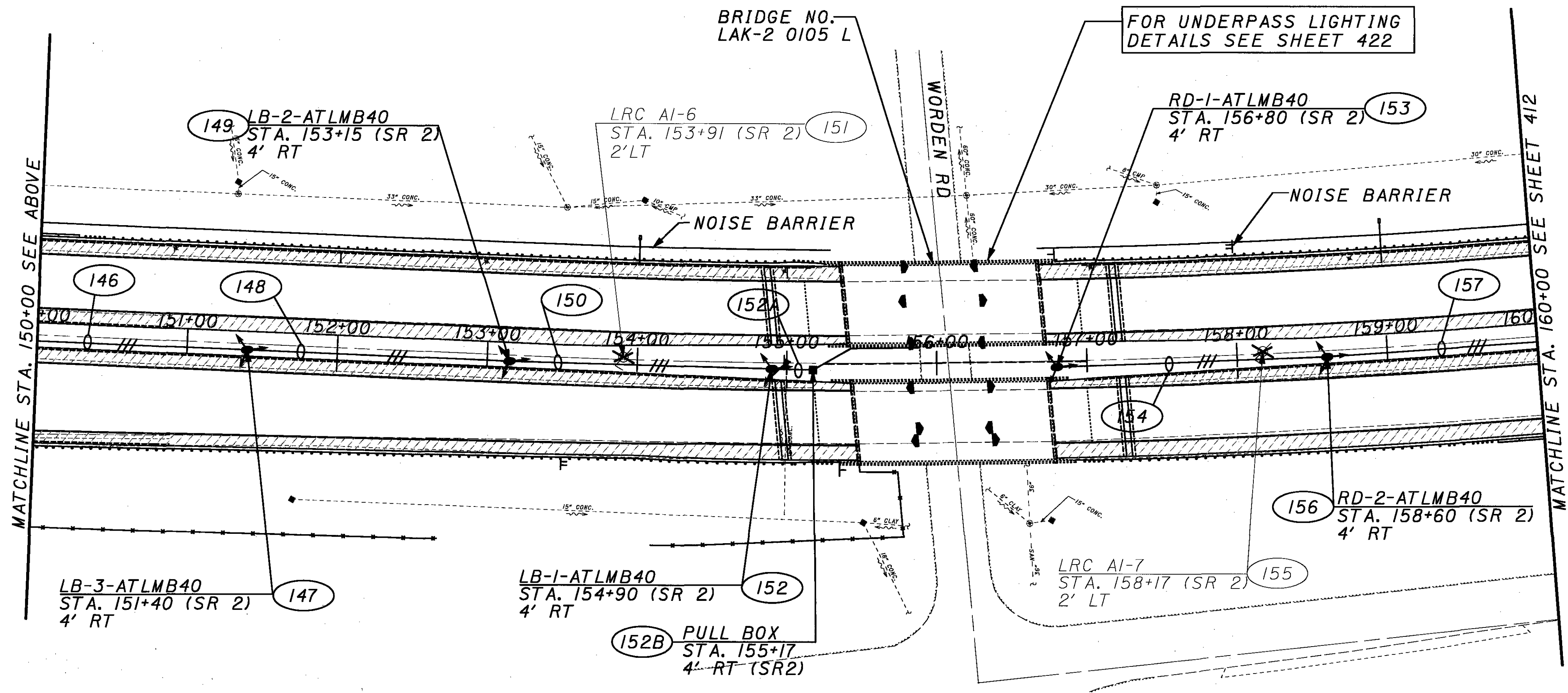
LIGHT POLE IDENTIFICATION

 — PROP. CONTROL CENTER

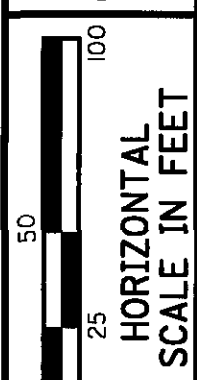
 — PROP. CIRCUIT NUMBER

 SF-2 — PROP. POLE NUMBER

- LEGEND:**
- EX. CANTILEVER SIGN SUPPORT
 - EX. TRUSS SIGN SUPPORT
 - EX. LIGHT POLE (NO WORK)
 - ✕ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
 - PROPOSED CABLE IN EXISTING CONDUIT
 - EXISTING CONDUIT
 - /// PROPOSED DUCT CABLE
 - EXISTING PULLBOX
 - PROPOSED PULLBOX
 - EX. PULLBOX TO BE REPLACED
 - PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
 - △ EXISTING POWER SERVICE
 - ▲ PROPOSED PAD MOUNTED POWER SERVICE
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 - LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
 - ▶ 70W H.P.S. UNDERPASS LUMINAIRE PER 725.II



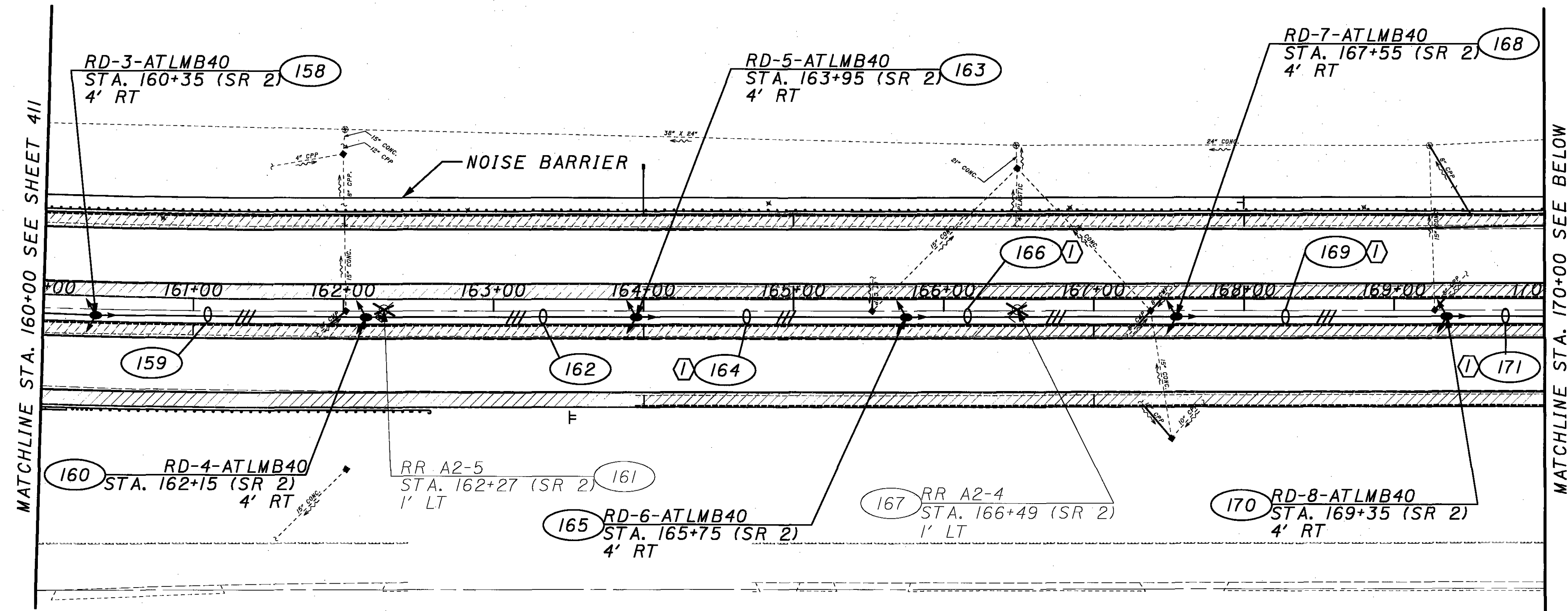
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CALCULATED
JMH
CHECKED
KEH

LIGHTING PLAN
STA. 160+00 TO STA. 180+00

LAK-2-0.00



NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

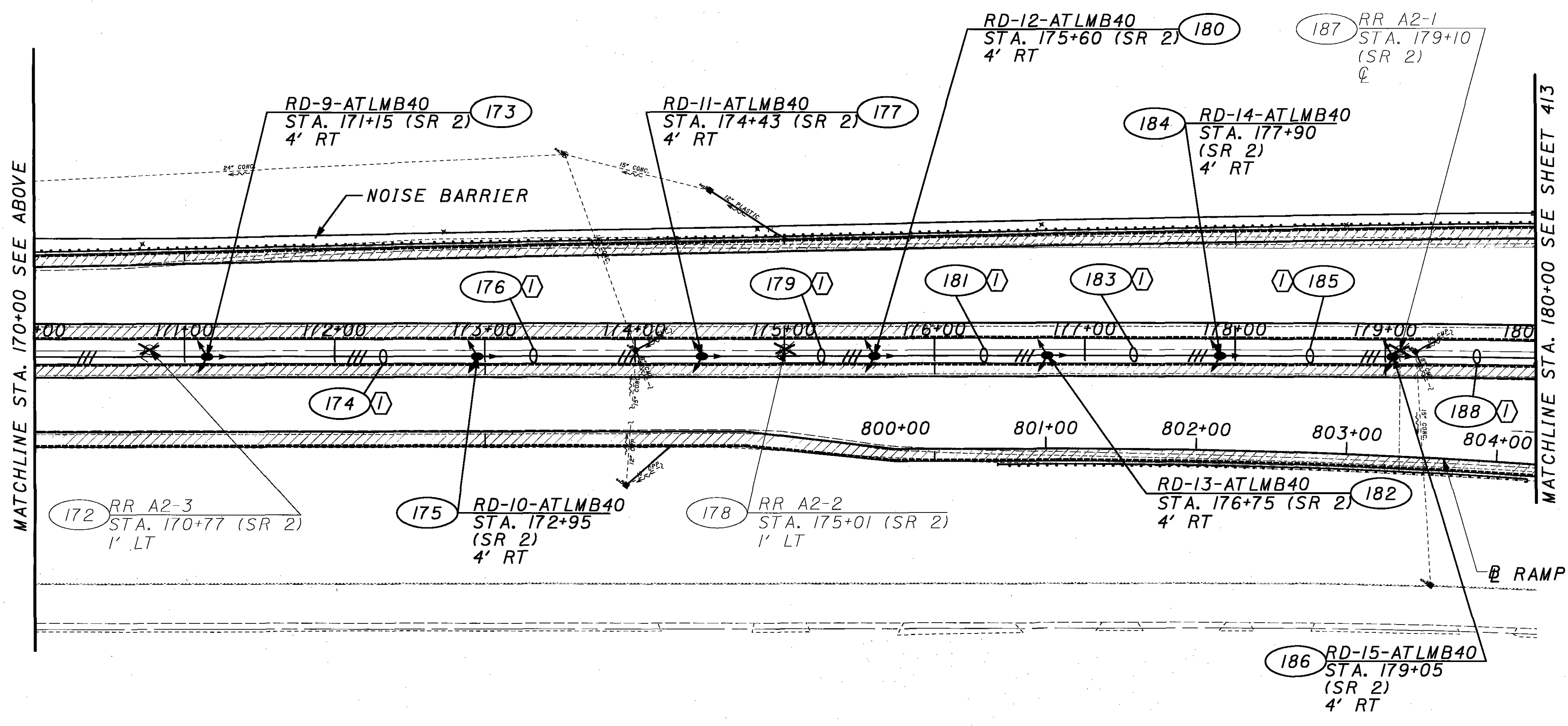
- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION

PROP. CONTROL CENTER
PROP. CIRCUIT NUMBER
SF-2 PROP. POLE NUMBER

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✕ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
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- ▲ PROPOSED PAD MOUNTED POWER SERVICE
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- LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
- 70W H.P.S. UNDERPASS LUMINAIRE PER 725.II



RAMP B-4

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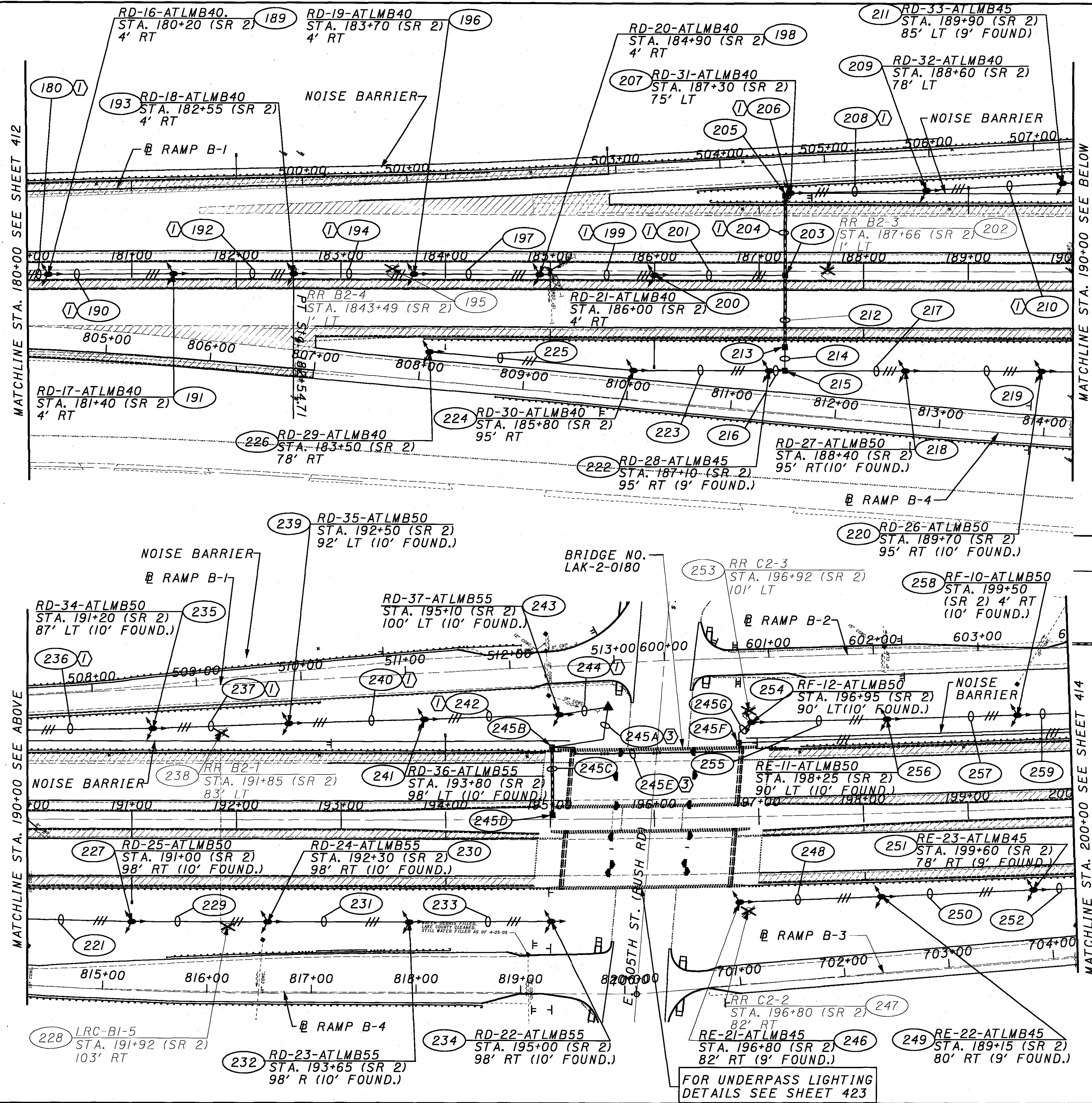
NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION

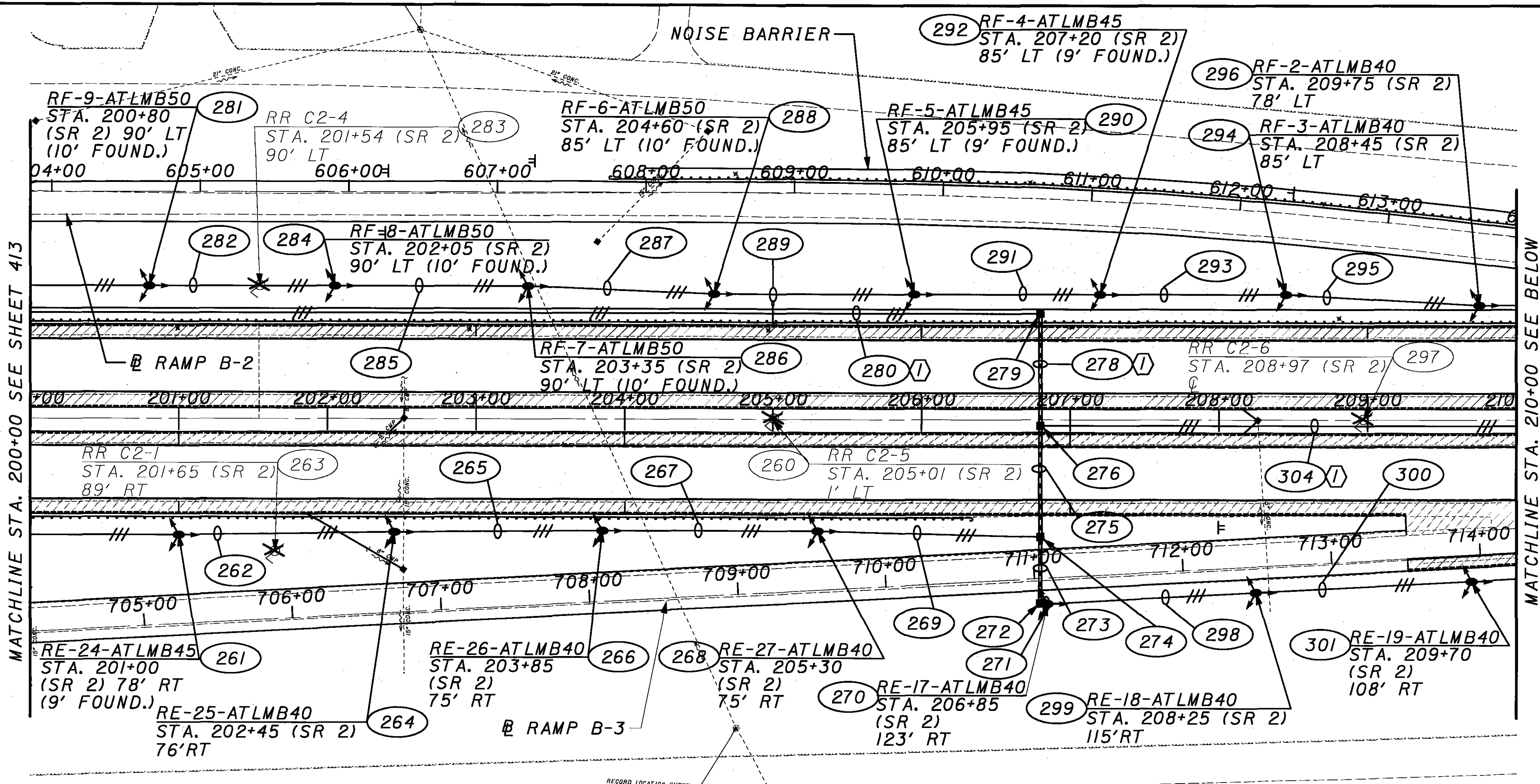
— PROP. CONTROL CENTER
 — PROP. CIRCUIT NUMBER
 SF-2 ← PROP. POLE NUMBER

- LEGEND:**
- EX. CANTILEVER SIGN SUPPORT
 - EX. TRUSS SIGN SUPPORT
 - EX. LIGHT POLE (NO WORK)
 - EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
 - PROPOSED CABLE IN EXISTING CONDUIT
 - EXISTING CONDUIT
 - PROPOSED DUCT CABLE
 - EXISTING PULLBOX
 - PROPOSED PULLBOX
 - EX. PULLBOX TO BE REPLACED
 - PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
 - △ EXISTING POWER SERVICE
 - ▲ PROPOSED PAD MOUNTED POWER SERVICE
 - LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIR PER 725.II
 - LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIR PER 725.II
 - LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIR PER 725.II
 - TOW H.P.S. UNDERPASS LUMINAIR PER 725.II



- 203 PULL BOX STA. 187+25 4' RT (SR2)
- 205 PULL BOX STA. 187+25 73' LT (SR2)
- 213 PULL BOX STA. 187+25 72' RT (SR2)
- 215 PULL BOX STA. 187+25 95' RT (SR2)
- 245B PULL BOX STA. 195+02 67' LT (SR2)
- 245D PULL BOX STA. 195+02 4' LT (SR2)
- 245F PULL BOX STA. 196+82 71' LT (SR2)

FOR UNDERPASS LIGHTING DETAILS SEE SHEET 423



- (272) PULL BOX
STA. 206+80
72' LT (SR2)
- (274) PULL BOX
STA. 206+80
4' RT (SR2)
- (276) PULL BOX
STA. 206+80
79' RT (SR2)
- (279) PULL BOX
STA. 85+22
24' LT (RAMP B-3)

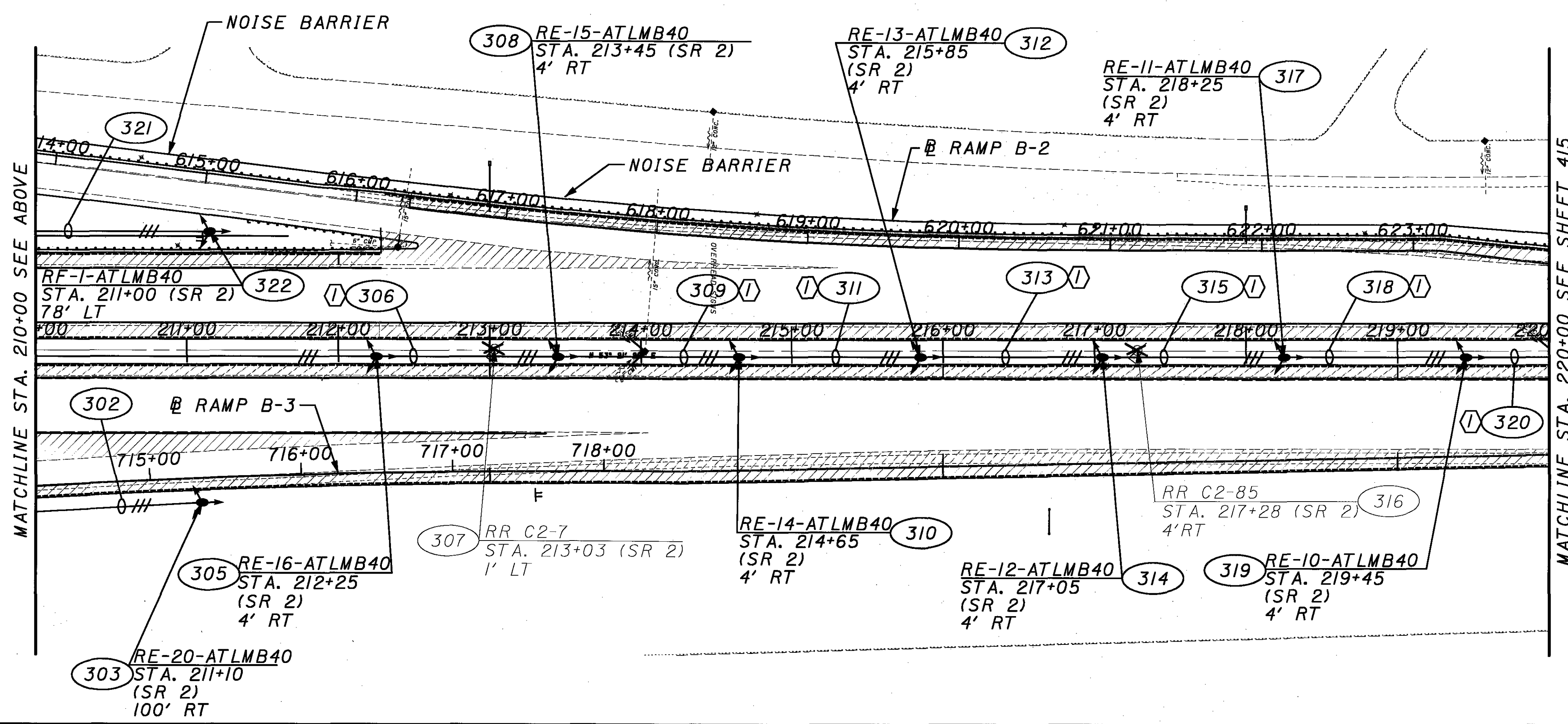
NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION
 PROP. CONTROL CENTER
 PROP. CIRCUIT NUMBER
 SF-2 PROP. POLE NUMBER

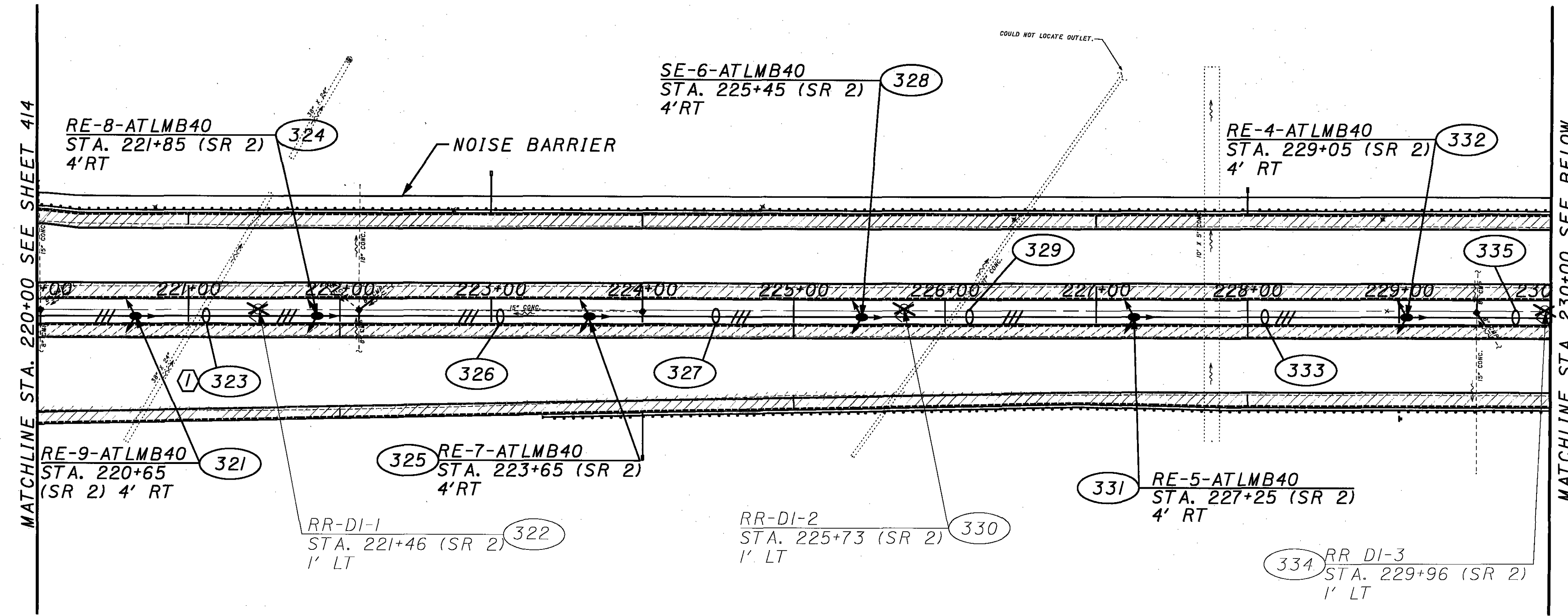
LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✕ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
- △ EXISTING POWER SERVICE
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
- TOW H.P.S. UNDERPASS LUMINAIRE PER 725.II



MATCHLINE STA. 210+00 SEE ABOVE

MATCHLINE STA. 220+00 SEE SHEET 415



NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

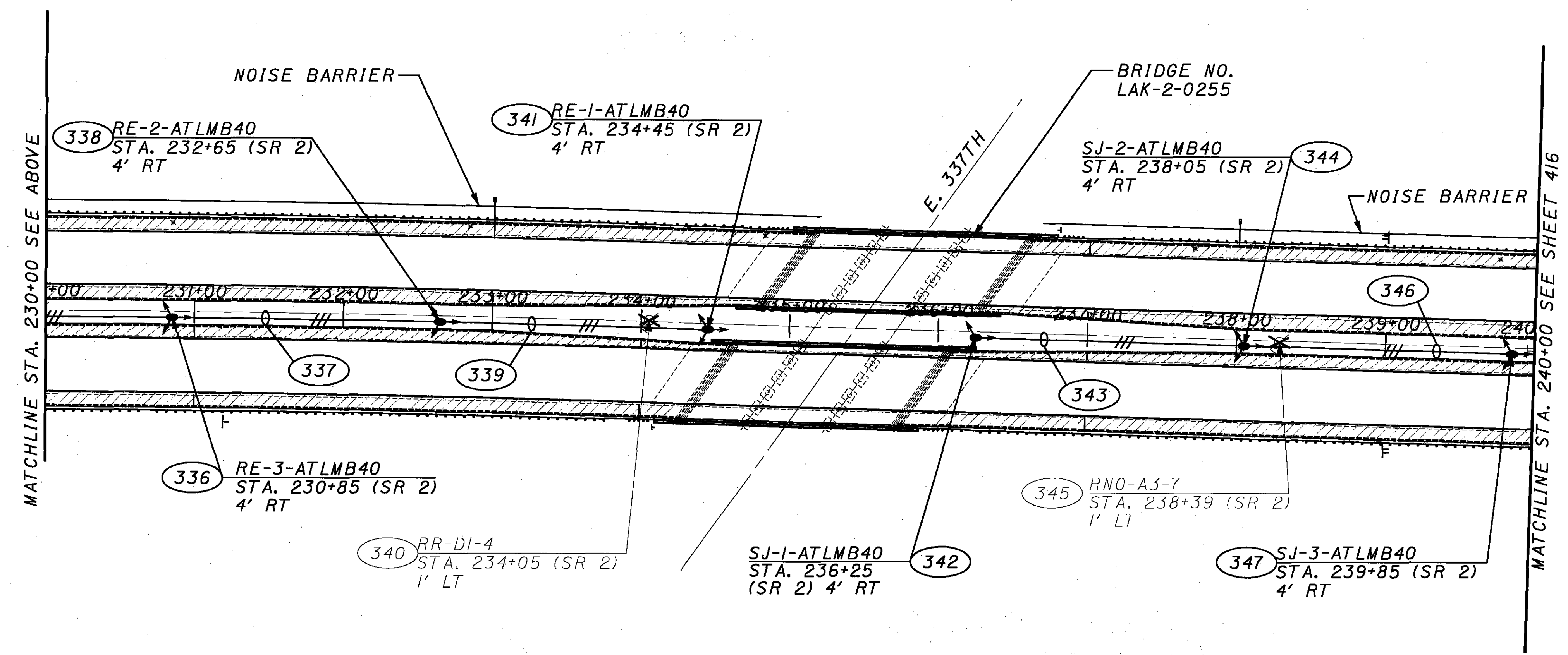
- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION

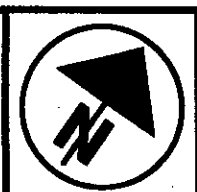
PROP. CONTROL CENTER
PROP. CIRCUIT NUMBER
SF-2 PROP. POLE NUMBER

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✱ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
- △ EXISTING POWER SERVICE
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- ▲ LOW MAST POLE W/I-400W HPS, SYMMETRIC LUMINAIR PER 725.II
- ▲ LOW MAST POLE W/I-400W HPS, ASYMMETRIC LUMINAIR PER 725.II
- ▲ LOW MAST POLE W/I-400W HPS, LONG & NARROW LUMINAIR PER 725.II
- ▲ 70W H.P.S. UNDERPASS LUMINAIR PER 725.II



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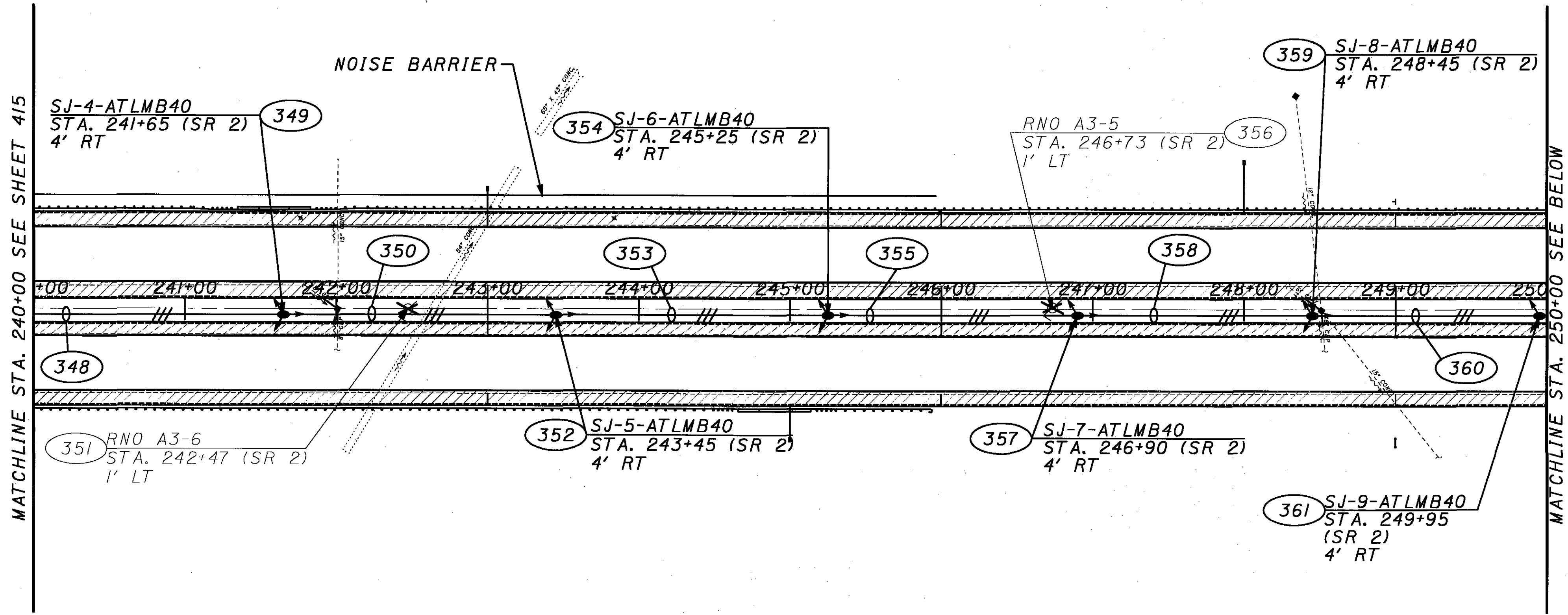
0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED
JMH
CHECKED
KEH

LIGHTING PLAN
STA. 240+00 TO STA. 260+00

LAK-2-0.00

416
524



NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

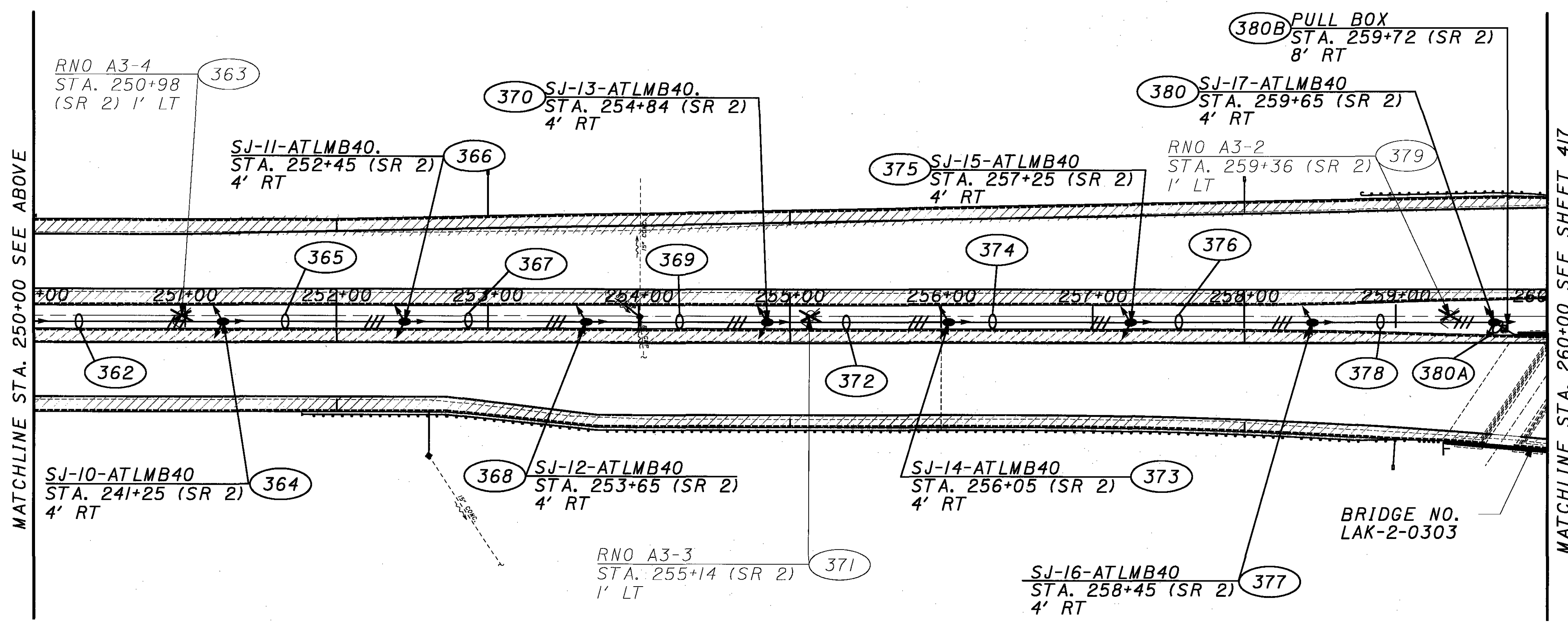
- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION

— PROP. CONTROL CENTER
 — PROP. CIRCUIT NUMBER
 SF-2 ← PROP. POLE NUMBER

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ✕ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
- △ EXISTING POWER SERVICE
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
- LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
- 70W H.P.S. UNDERPASS LUMINAIRE PER 725.II



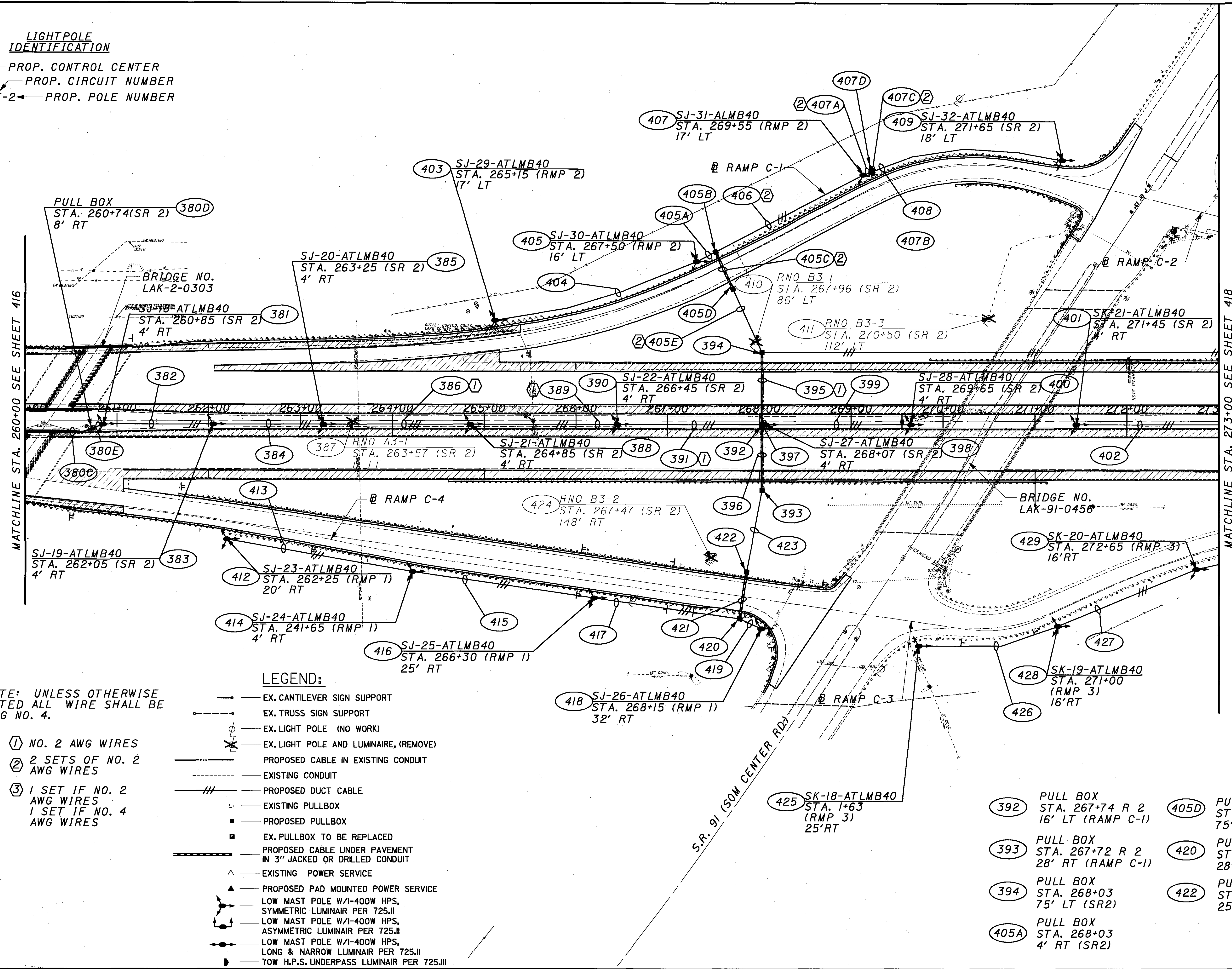
...X21778lp009.dgn

LIGHTPOLE IDENTIFICATION

 PROP. CONTROL CENTER

 PROP. CIRCUIT NUMBER

 SF-2 PROP. POLE NUMBER



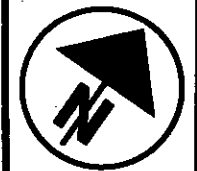
NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- LEGEND:**
- EX. CANTILEVER SIGN SUPPORT
 - - - EX. TRUSS SIGN SUPPORT
 - ⊕ EX. LIGHT POLE (NO WORK)
 - ⊗ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
 - - - PROPOSED CABLE IN EXISTING CONDUIT
 - - - EXISTING CONDUIT
 - /// PROPOSED DUCT CABLE
 - EXISTING PULLBOX
 - PROPOSED PULLBOX
 - EX. PULLBOX TO BE REPLACED
 - - - PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
 - △ EXISTING POWER SERVICE
 - ▲ PROPOSED PAD MOUNTED POWER SERVICE
 - ▲ LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
 - ▲ LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
 - ▲ LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
 - ▲ 70W H.P.S. UNDERPASS LUMINAIRE PER 725.III

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

- ③92 PULL BOX STA. 267+74 R 2 16' LT (RAMP C-1)
- ③93 PULL BOX STA. 267+72 R 2 28' RT (RAMP C-1)
- ③94 PULL BOX STA. 268+03 75' LT (SR2)
- ④05A PULL BOX STA. 268+03 4' RT (SR2)
- ④05D PULL BOX STA. 268+03 75' RT (SR2)
- ④20 PULL BOX STA. 267+90 R 2 28' LT (RAMP C-4)
- ④22 PULL BOX STA. 267+90 R 2 25' RT (RAMP C-4)

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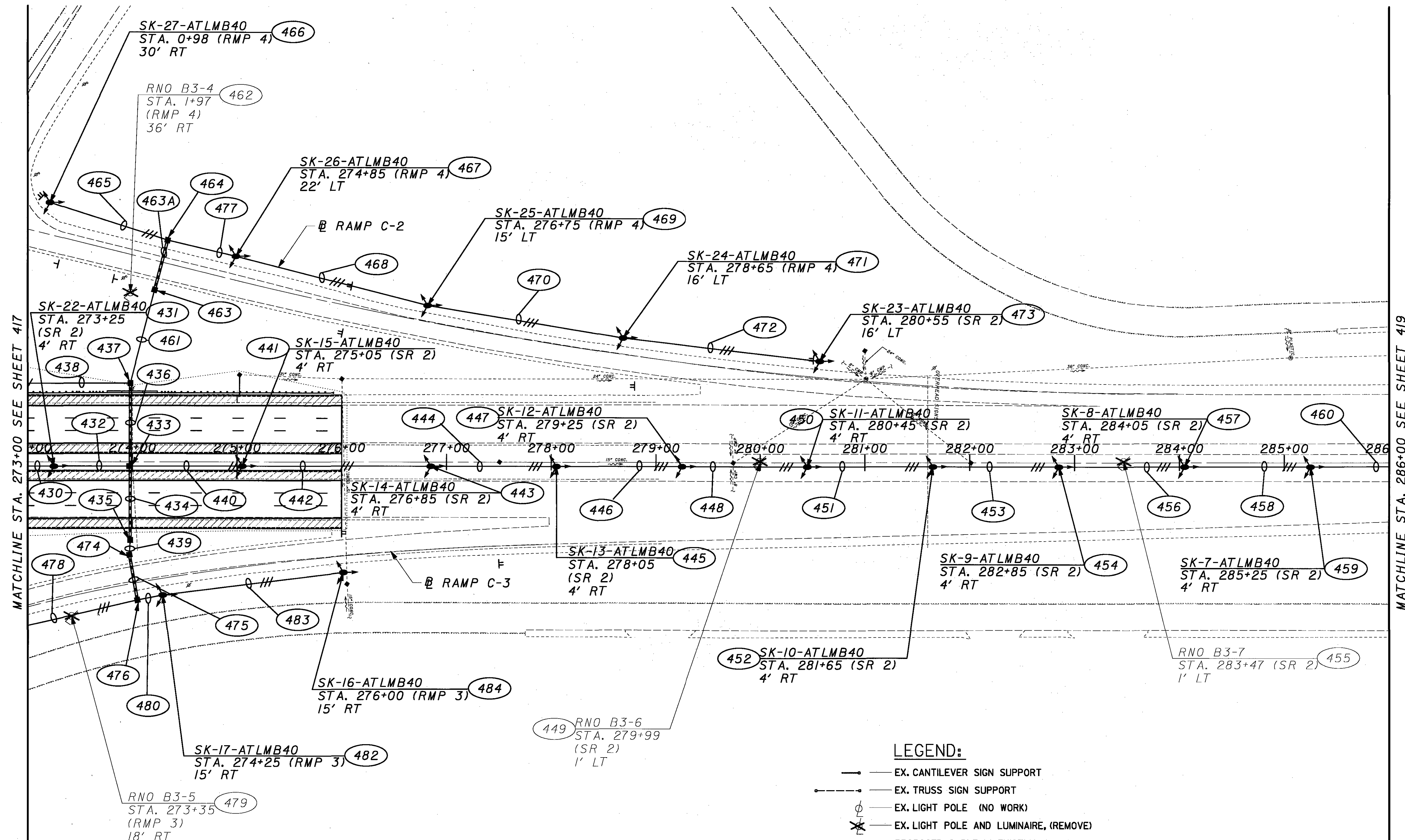
0 25 50
HORIZONTAL
SCALE IN FEET

CALCULATED
JMH
CHECKED
KEH

LIGHTING PLAN
STA. 273+00 TO STA. 286+00.00

LAK-2-0.00

418
524



MATCHLINE STA. 273+00 SEE SHEET 417

MATCHLINE STA. 286+00 SEE SHEET 419

LEGEND:

- EX. CANTILEVER SIGN SUPPORT
- EX. TRUSS SIGN SUPPORT
- EX. LIGHT POLE (NO WORK)
- ⊗ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CONDUIT
- /// PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- EX. PULLBOX TO BE REPLACED
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
- △ EXISTING POWER SERVICE
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- ▲ LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
- ▲ LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
- ▲ LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
- ▲ TOW H.P.S. UNDERPASS LUMINAIRE PER 725.II

NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

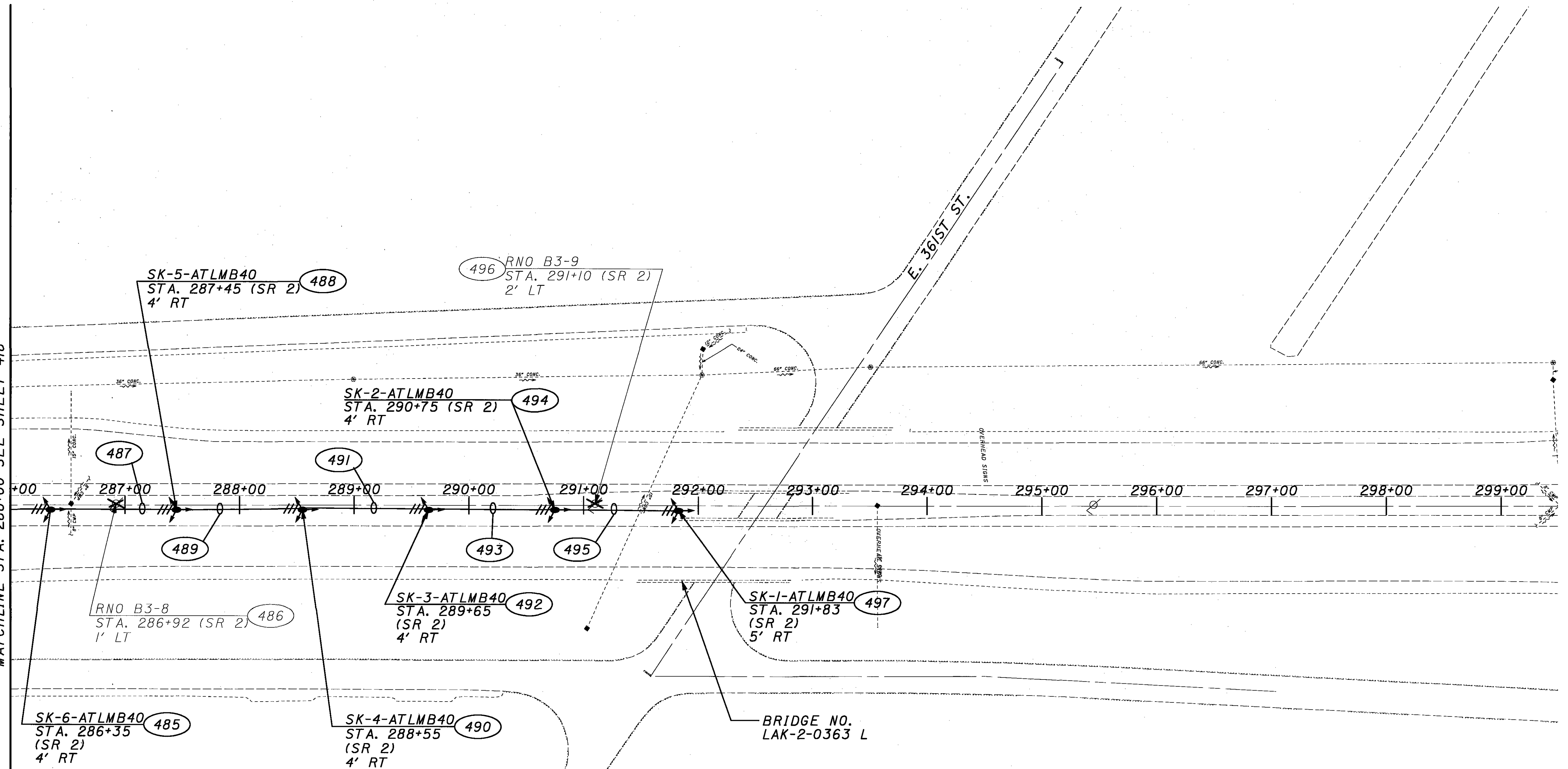
- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTPOLE IDENTIFICATION

- PROP. CONTROL CENTER
- PROP. CIRCUIT NUMBER
- SF-2 ← PROP. POLE NUMBER

...217781p01.dgn

MATCHLINE STA. 286+00 SEE SHEET 418



LIGHTPOLE IDENTIFICATION
 ▸ PROP. CONTROL CENTER
 ▸ PROP. CIRCUIT NUMBER
 SF-2 ← PROP. POLE NUMBER

- LEGEND:**
- EX. CANTILEVER SIGN SUPPORT
 - EX. TRUSS SIGN SUPPORT
 - ⊕ EX. LIGHT POLE (NO WORK)
 - ✱ EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
 - PROPOSED CABLE IN EXISTING CONDUIT
 - EXISTING CONDUIT
 - /// PROPOSED DUCT CABLE
 - EXISTING PULLBOX
 - PROPOSED PULLBOX
 - EX. PULLBOX TO BE REPLACED
 - PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED OR DRILLED CONDUIT
 - △ EXISTING POWER SERVICE
 - ▲ PROPOSED PAD MOUNTED POWER SERVICE
 - LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE PER 725.II
 - LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE PER 725.II
 - LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE PER 725.II
 - ▬ 70W H.P.S. UNDERPASS LUMINAIRE PER 725.II

NOTE: UNLESS OTHERWISE NOTED ALL WIRE SHALL BE AWG NO. 4.

- ① NO. 2 AWG WIRES
- ② 2 SETS OF NO. 2 AWG WIRES
- ③ 1 SET IF NO. 2 AWG WIRES
1 SET IF NO. 4 AWG WIRES

LIGHTING PLAN
STA. 286+00 TO STA. 299+00.00

LAK-2-0.00

1 70W HIGH PRESSURE SODIUM UNDERPASS LIGHT FIXTURE

2 1-1/4" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 1-1/4" CONDUIT, 725.04)

3 1-1/4" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

4 JUNCTION BOX 6" X 6" X 4"

5 2" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

6 2" CONDUIT, 725.04, CLAMP ON EXISTING CROSS FRAMES, SEE DETAIL ON SHEET LD5

7 2" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 2" CONDUIT, 725.04)

8 DISCONNECT SWITCH

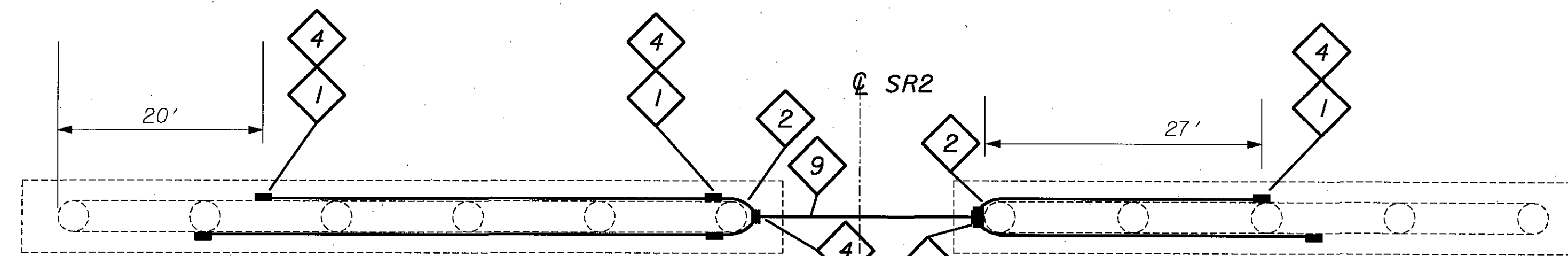
9 1/4" CONDUIT, 725.04, IN NARROW SLIT TYPE TRENCH IN PAVEMENT (TYPE A)

UNDERPASS LIGHTING

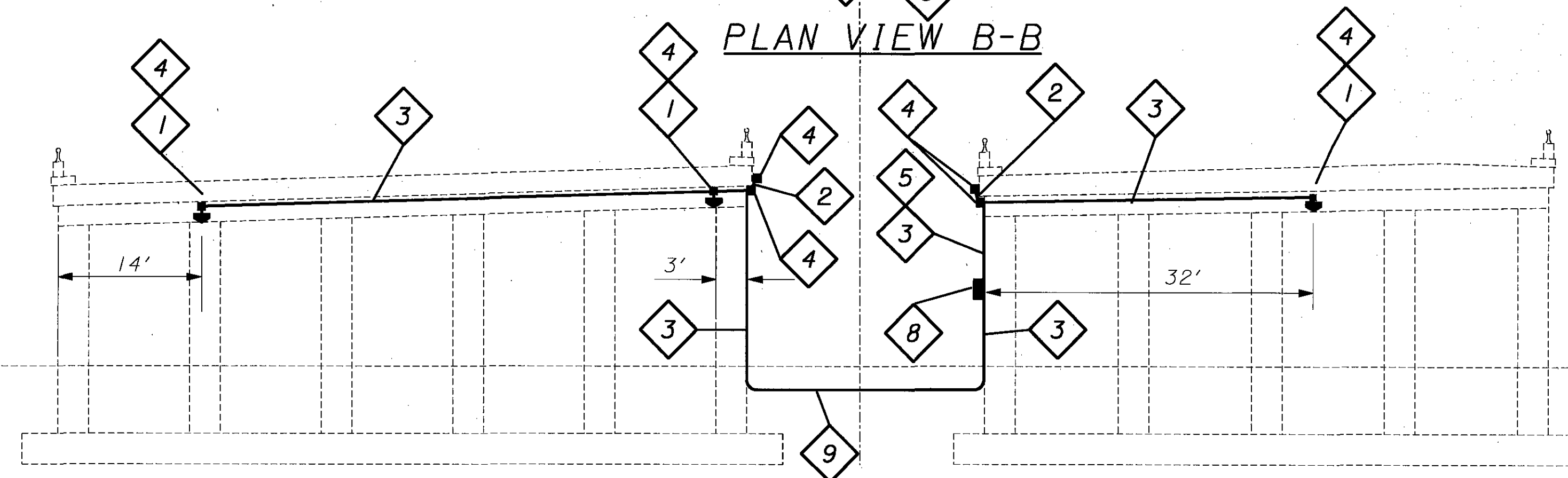
ELECTRICAL SERVICE:
3 WIRE - 480 VOLT

UNDERPASS SERVICE:
2 WIRE - 240 VOLT PER CIRCUIT

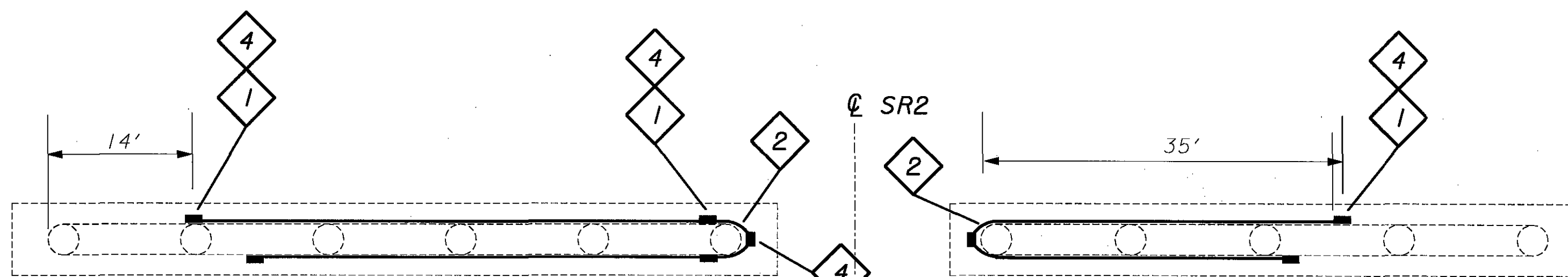
EACH CIRCUIT CONSISTS OF
2-NO. 10 AWG CABLES UNLESS
SHOWN OTHERWISE



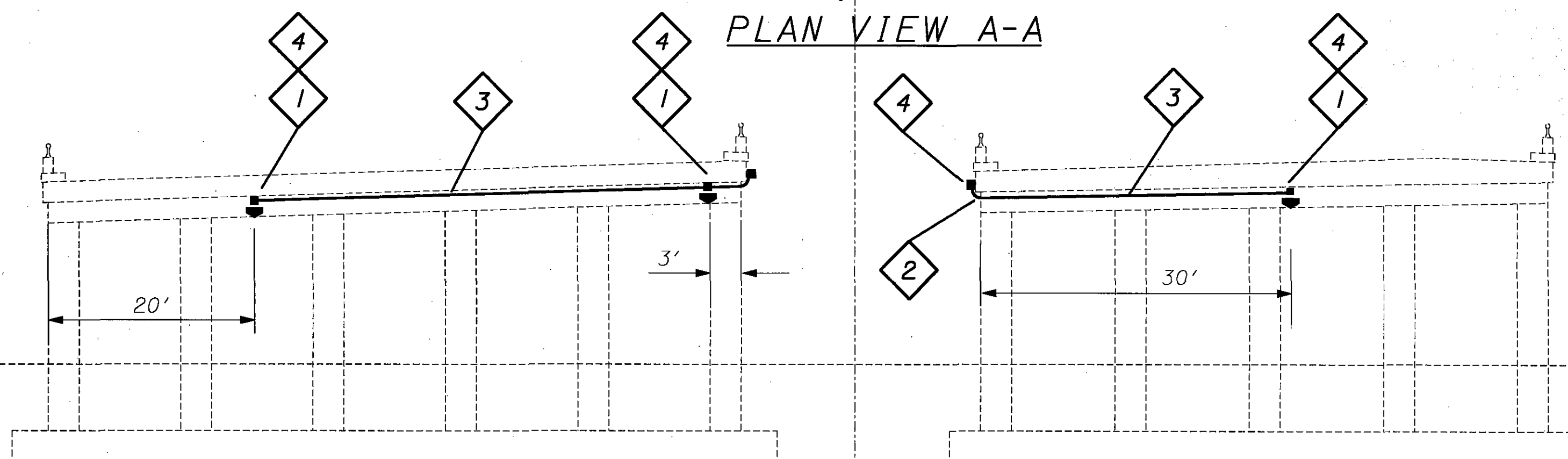
PLAN VIEW B-B



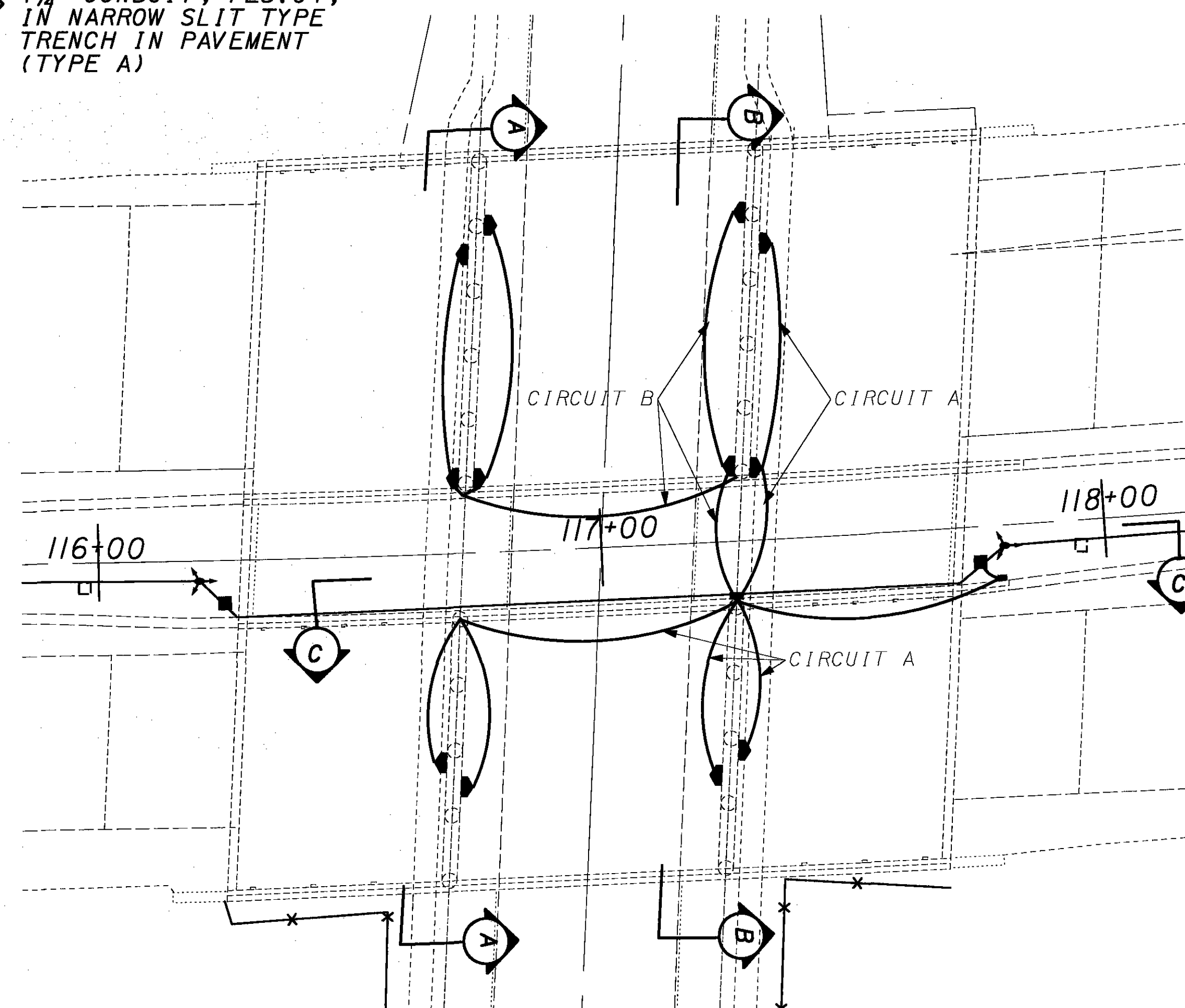
ELEVATION VIEW - SECTION B-B



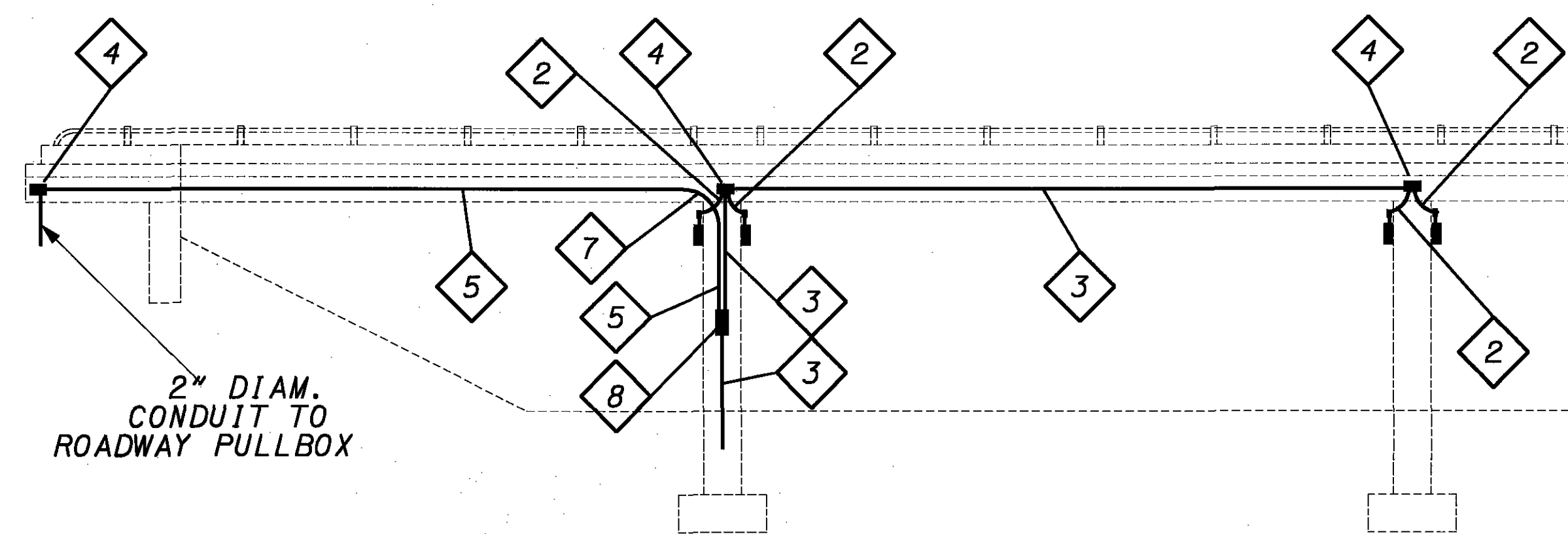
PLAN VIEW A-A



ELEVATION VIEW - SECTION A-A



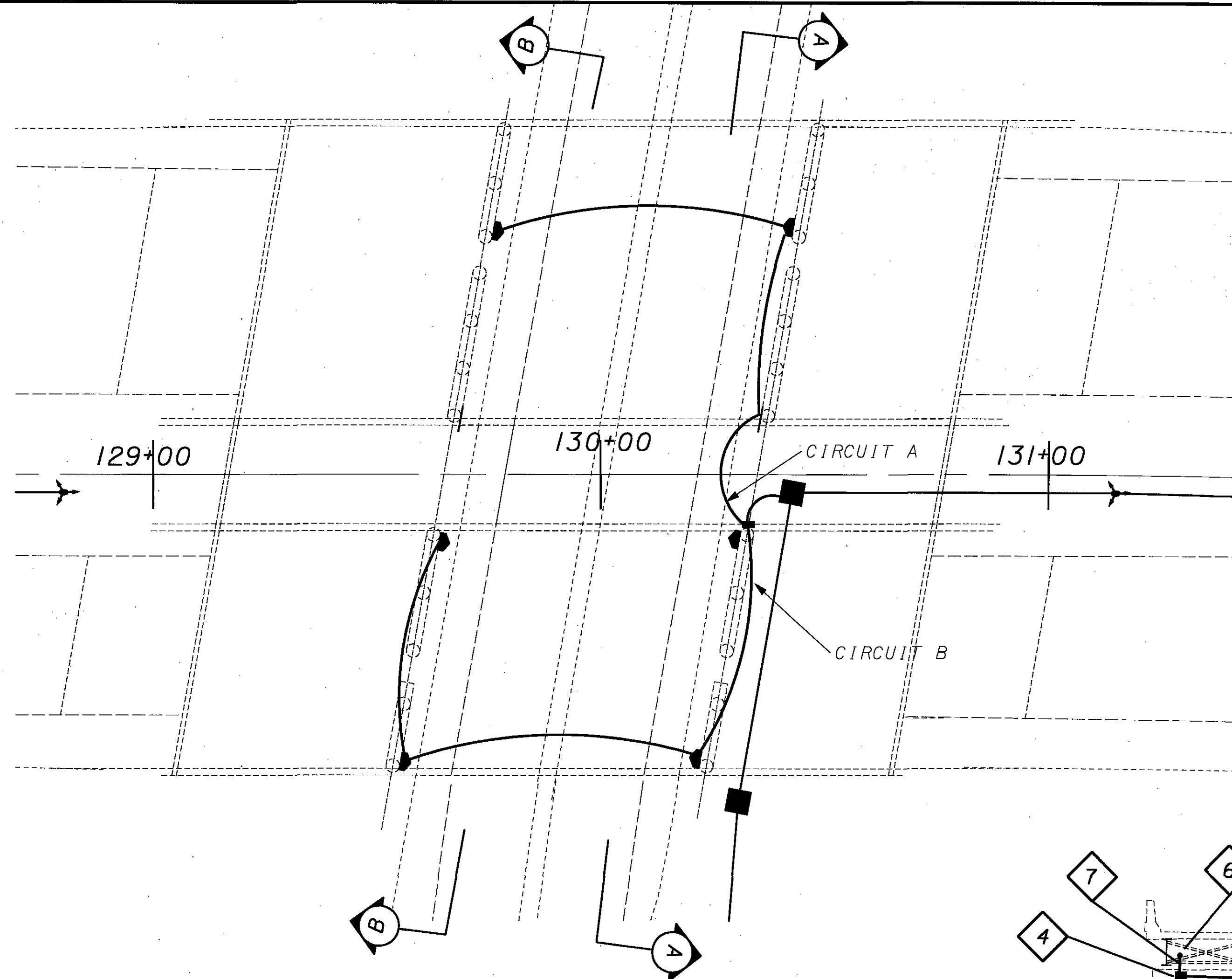
UNDERPASS LIGHTING PLAN



ELEVATION VIEW - SECTION C-C

CALCULATED
CHECKED
UNDERPASS LIGHTING DETAIL
SR 2 & LLOYD RD

LAK-2-0.00



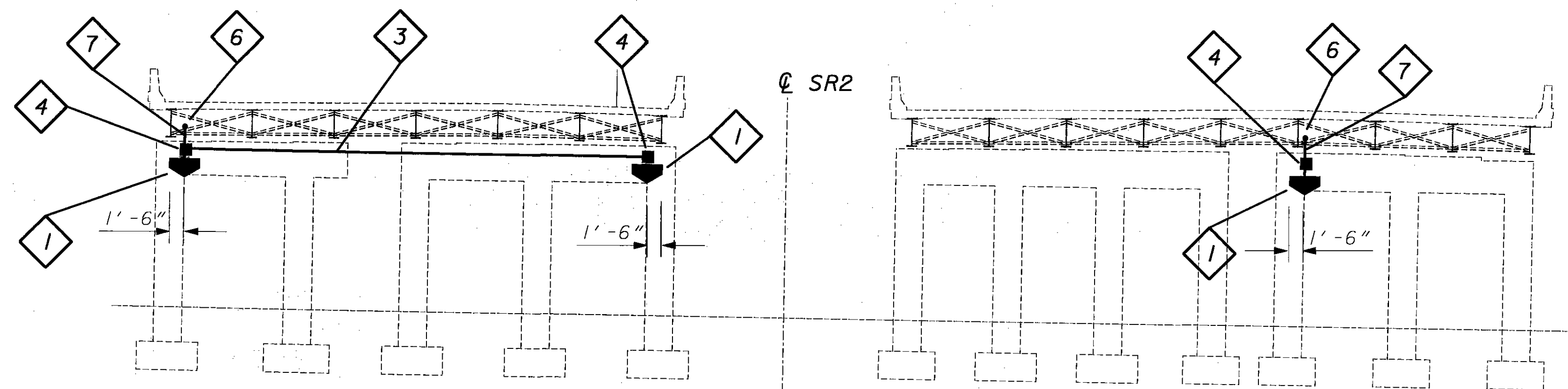
UNDERPASS LIGHTING PLAN

- 1 70W HIGH PRESSURE SODIUM UNDERPASS LIGHT FIXTURE
- 2 1-1/4" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 1-1/4" CONDUIT, 725.04)
- 3 1-1/4" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 5/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.
- 4 JUNCTION BOX 6" X 6" X 4"
- 5 2" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 5/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.
- 6 2" CONDUIT, 725.04, CLAMP ON EXISTING CROSS FRAMES, SEE DETAIL ON SHEET LD5
- 7 2" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 2" CONDUIT, 725.04)

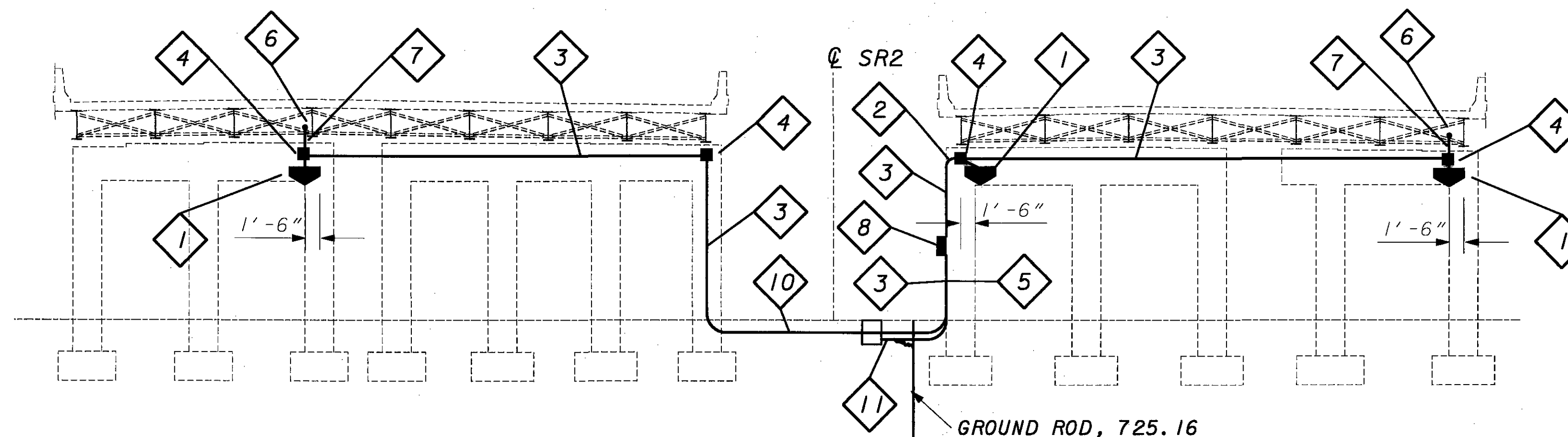
UNDERPASS LIGHTING
 ELECTRICAL SERVICE:
 3 WIRE - 480 VOLT
 UNDERPASS SERVICE:
 2 WIRE - 240 VOLT PER CIRCUIT
 EACH CIRCUIT CONSISTS OF
 2-NO. 10 AWG CABLES UNLESS
 SHOWN OTHERWISE

- 8 DISCONNECT SWITCH
- 10 1/4" CONDUIT, 725.04, IN TRENCH
- 11 2" CONDUIT, 725.04, IN TRENCH

NOTE: LAK-2-0055R HAS EXISTING STRUCTURE GROUNDING. PAY ITEM FOR STRUCTURE GROUNDING IS FOR LAK-2-0055L



ELEVATION VIEW - SECTION B-B



ELEVATION VIEW - SECTION A-A

- 1 70W HIGH PRESSURE SODIUM UNDERPASS LIGHT FIXTURE
- 2 1-1/4" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 1-1/4" CONDUIT, 725.04)
- 3 1-1/4" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

- 4 JUNCTION BOX 6" X 6" X 4"
- 5 2" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

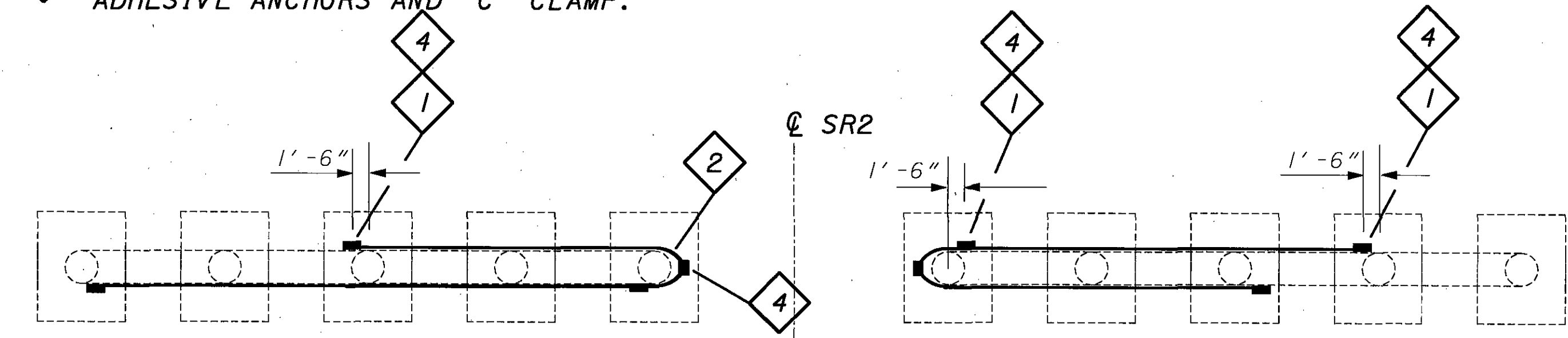
- 6 2" CONDUIT, 725.04, CLAMP ON EXISTING CROSS FRAMES, SEE DETAIL ON SHEET LD5
- 7 2" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 2" CONDUIT, 725.04)
- 8 DISCONNECT SWITCH
- 9 1 1/4" CONDUIT, 725.04, IN NARROW SLIT TYPE TRENCH IN PAVEMENT (TYPE A)

UNDERPASS LIGHTING

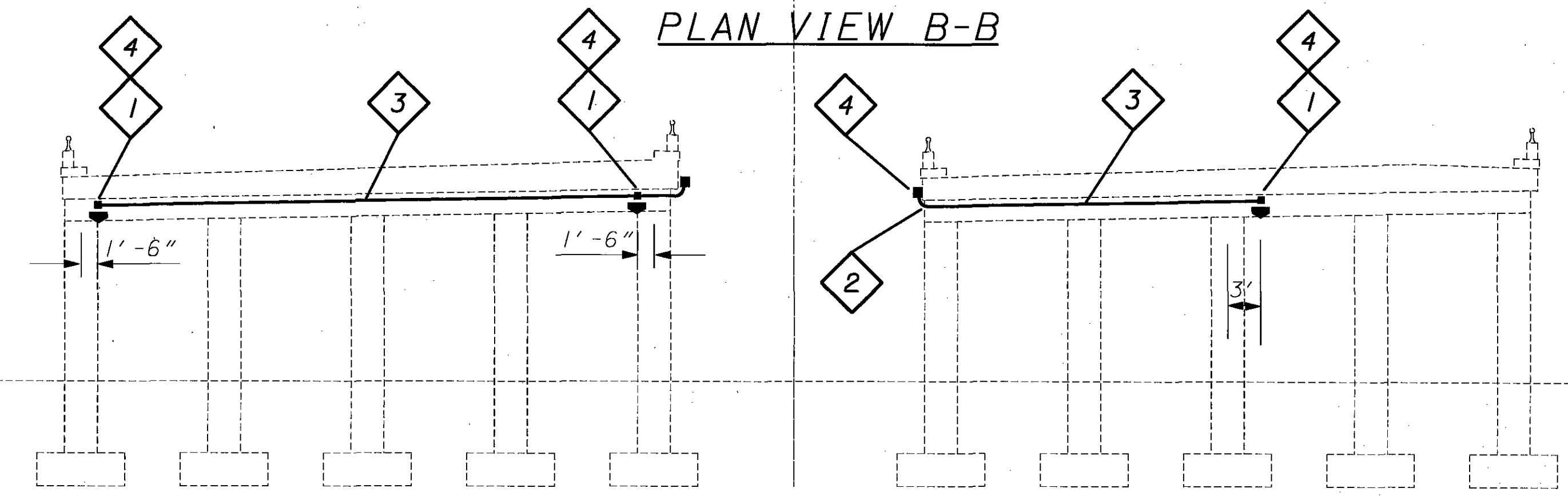
ELECTRICAL SERVICE:
3 WIRE - 480 VOLT

UNDERPASS SERVICE:
2 WIRE - 240 VOLT PER CIRCUIT

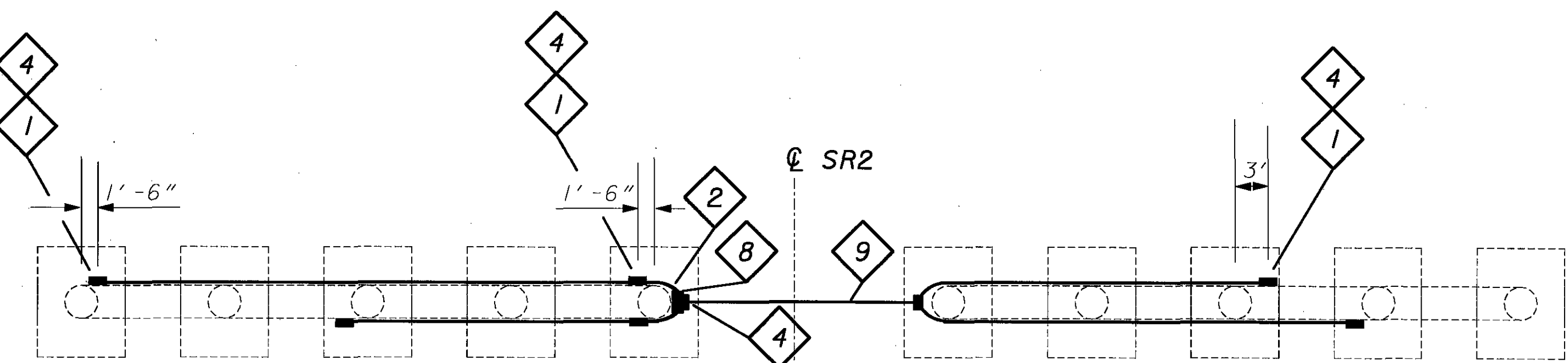
EACH CIRCUIT CONSISTS OF
2-NO. 10 AWG CABLES UNLESS
SHOWN OTHERWISE



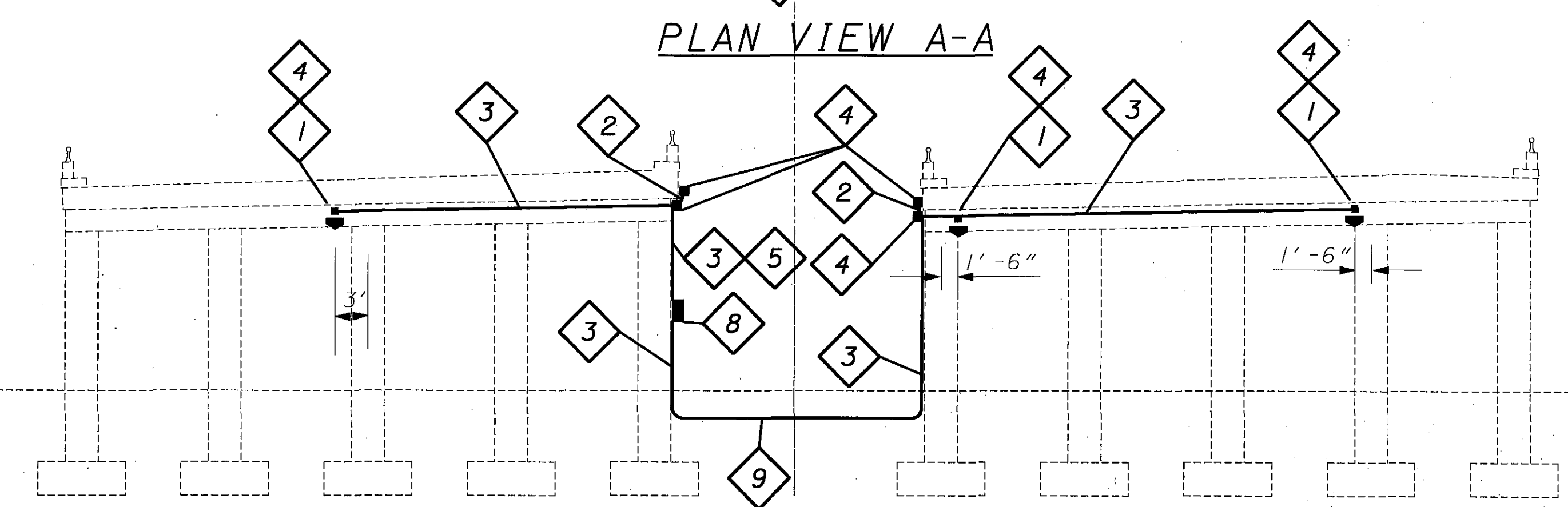
PLAN VIEW B-B



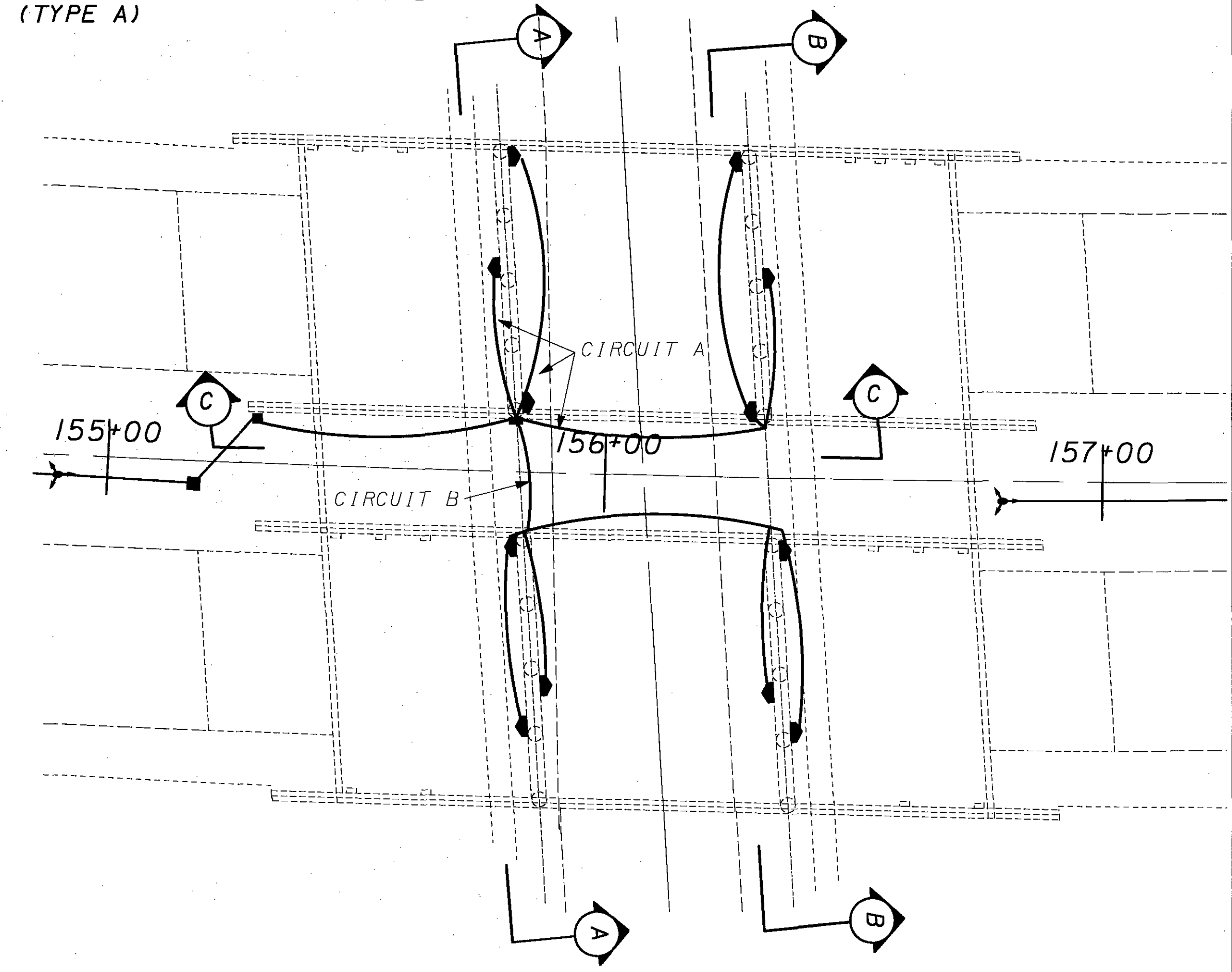
ELEVATION VIEW - SECTION B-B



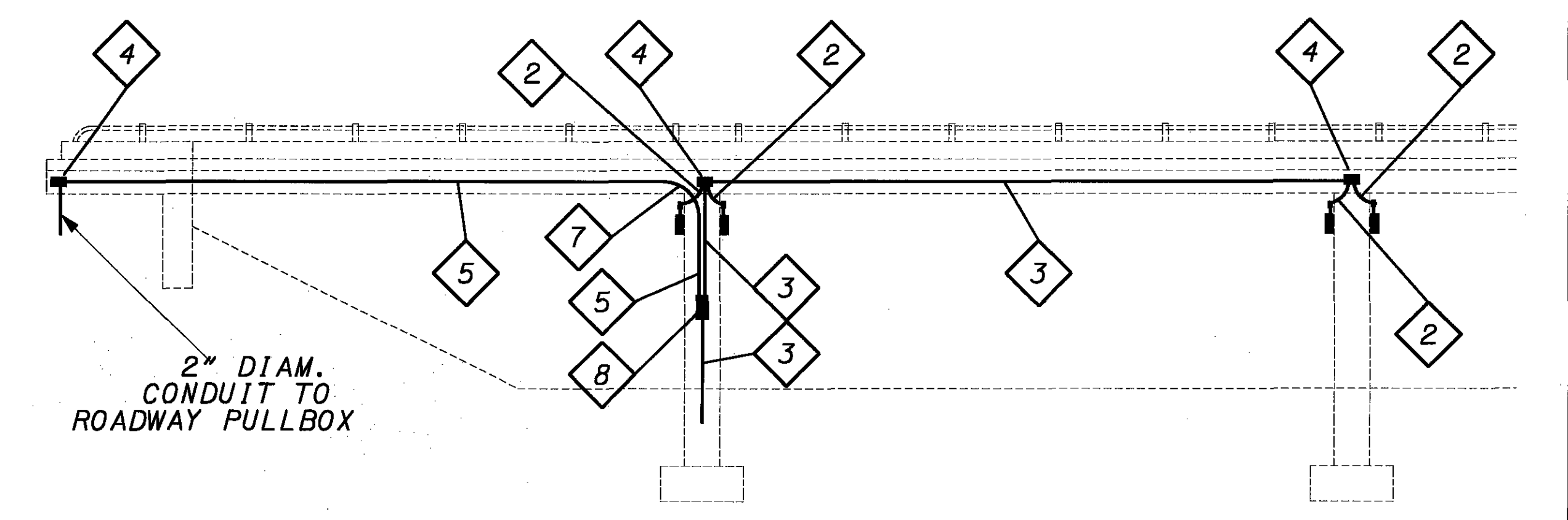
PLAN VIEW A-A



ELEVATION VIEW - SECTION A-A



UNDERPASS LIGHTING PLAN



ELEVATION VIEW - SECTION C-C

UNDERPASS LIGHTING DETAIL
SR 2 & WORDEN RD

LAK-2-0-00

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1 70W HIGH PRESSURE SODIUM UNDERPASS LIGHT FIXTURE

2 1-1/4" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 1-1/4" CONDUIT, 725.04)

3 1-1/4" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

4 JUNCTION BOX 6" X 6" X 4"

5 2" CONDUIT, 725.04, CLAMP @ 5' C/C MAX. USING 3/16" HILTI HVA ADHESIVE ANCHORS AND "C" CLAMP.

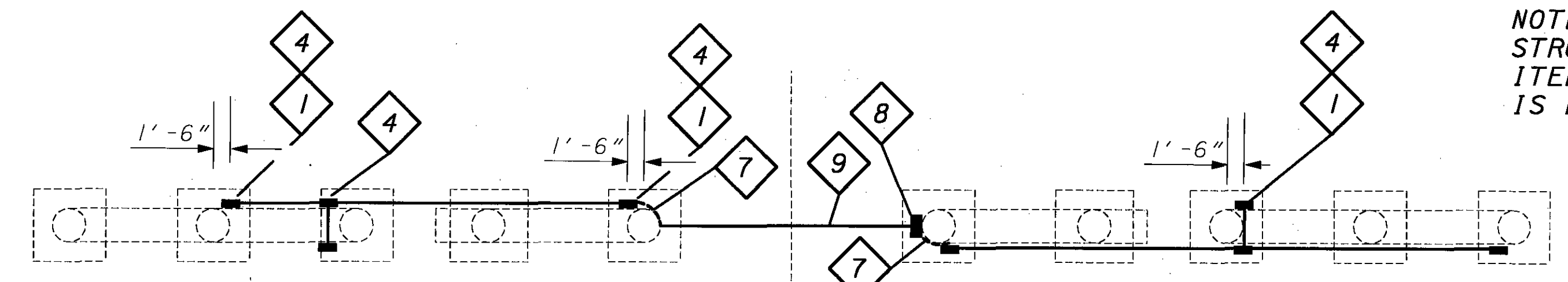
7 2" FLEXIBLE, LIQUID TIGHT CONDUIT (PAYMENT SHALL BE MADE UNDER 2" CONDUIT, 725.04)

8 DISCONNECT SWITCH

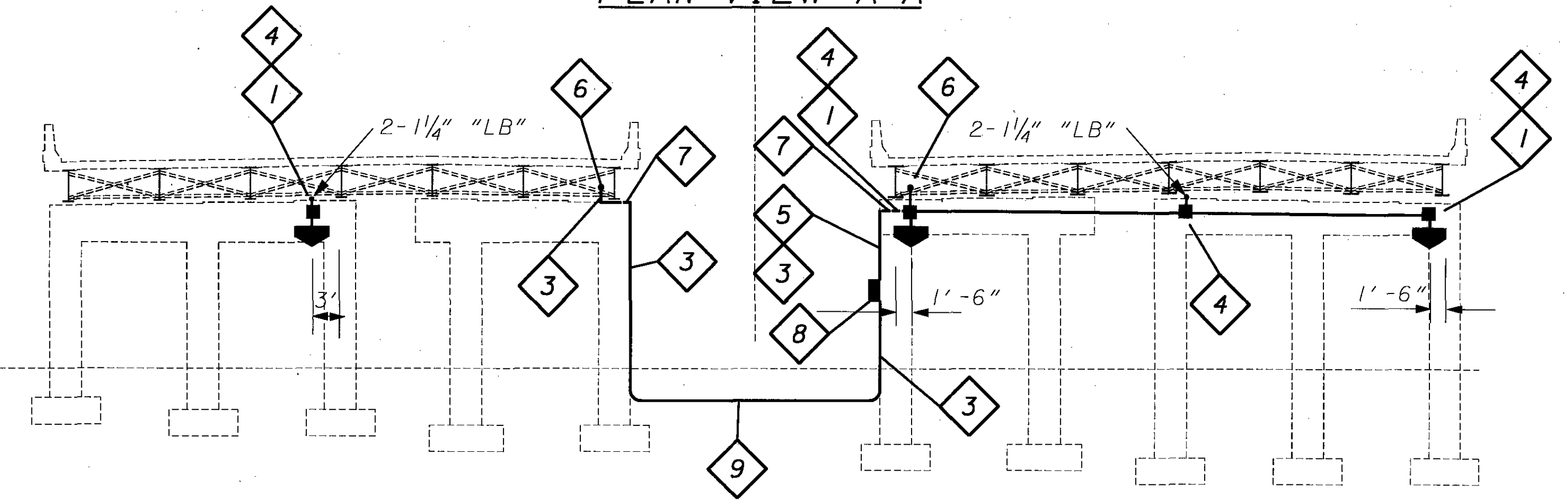
9 1/4" CONDUIT, 725.04, IN NARROW SLIT TYPE TRENCH IN PAVEMENT (TYPE A)

UNDERPASS LIGHTING
 ELECTRICAL SERVICE: 3 WIRE - 480 VOLT
 UNDERPASS SERVICE: 2 WIRE - 240 VOLT PER CIRCUIT
 EACH CIRCUIT CONSISTS OF 2-NO. 10 AWG CABLES UNLESS SHOWN OTHERWISE

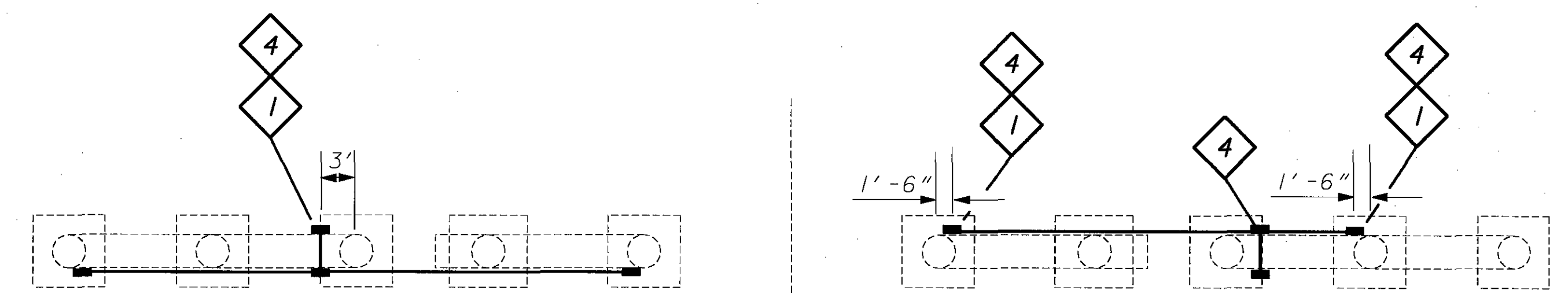
NOTE: LAK-2-0181L HAS EXISTING STRUCTURE GROUNDING. PAY ITEM FOR STRUCTURE GROUNDING IS FOR LAK-2-0181R



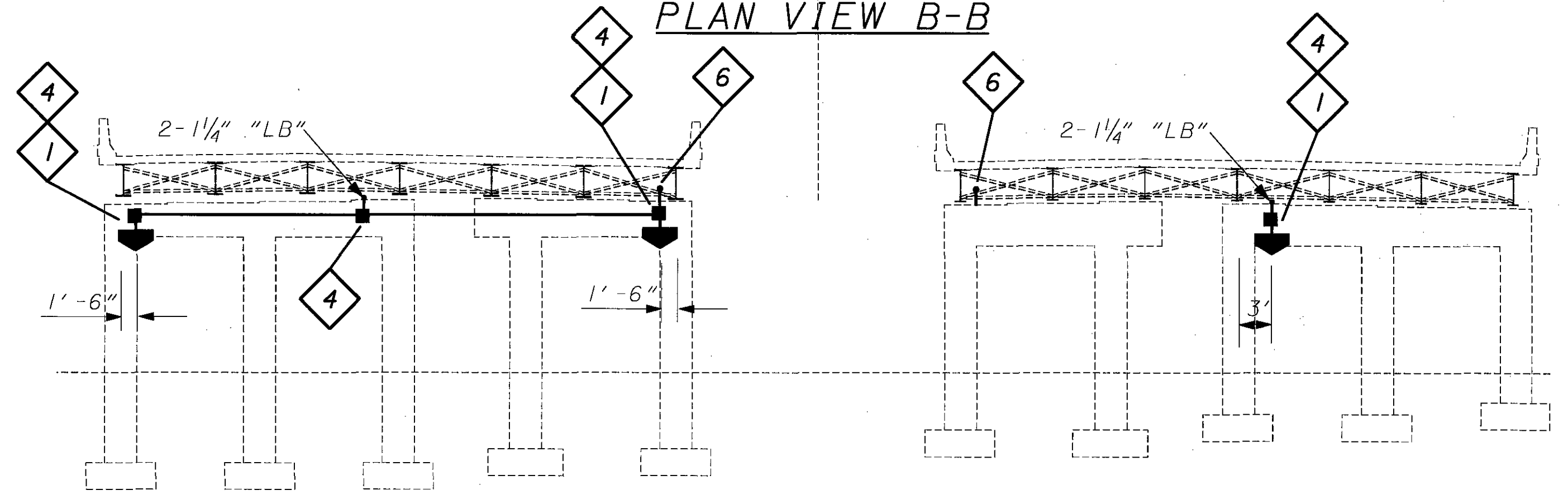
PLAN VIEW A-A



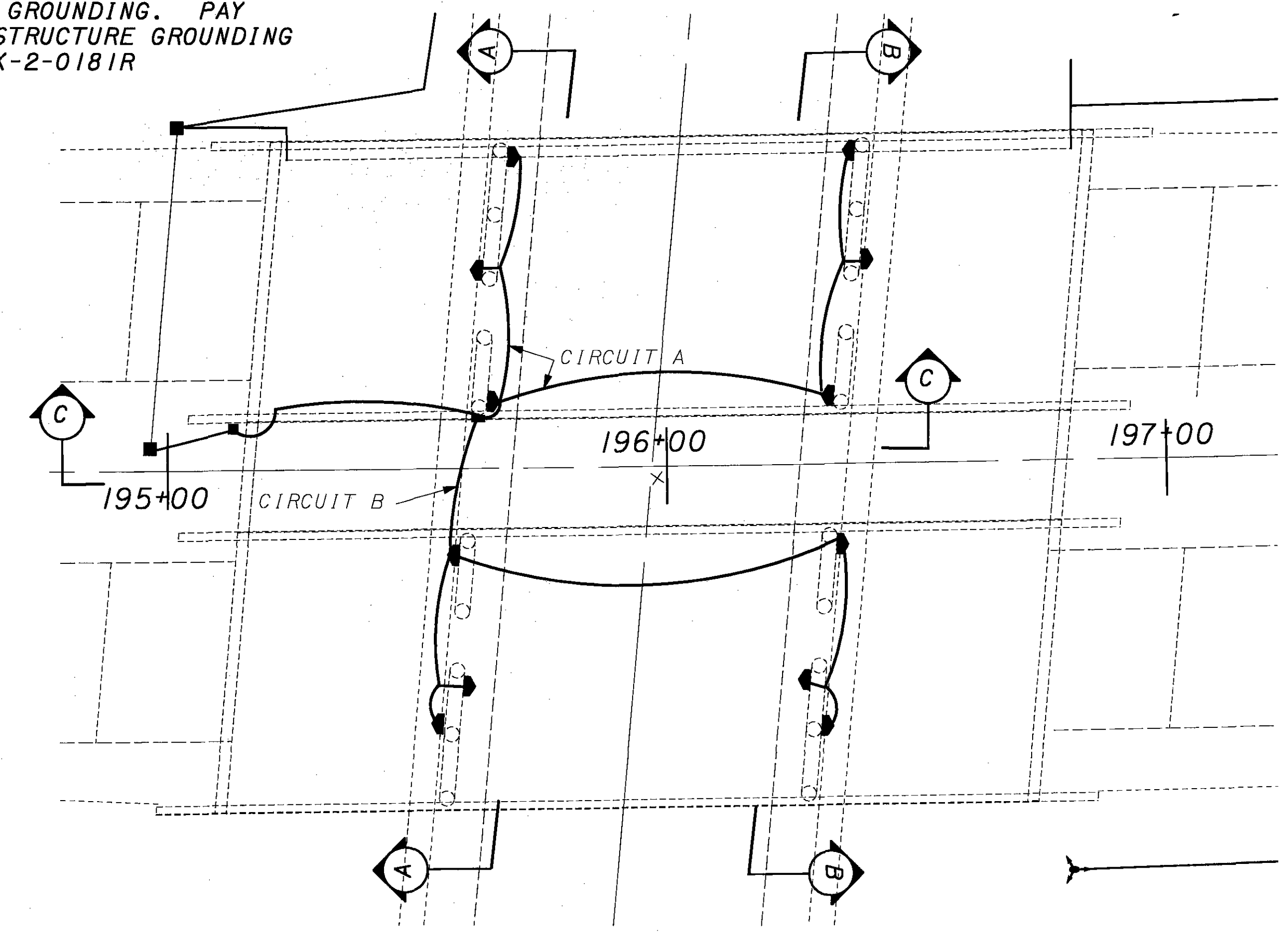
ELEVATION VIEW - SECTION A-A



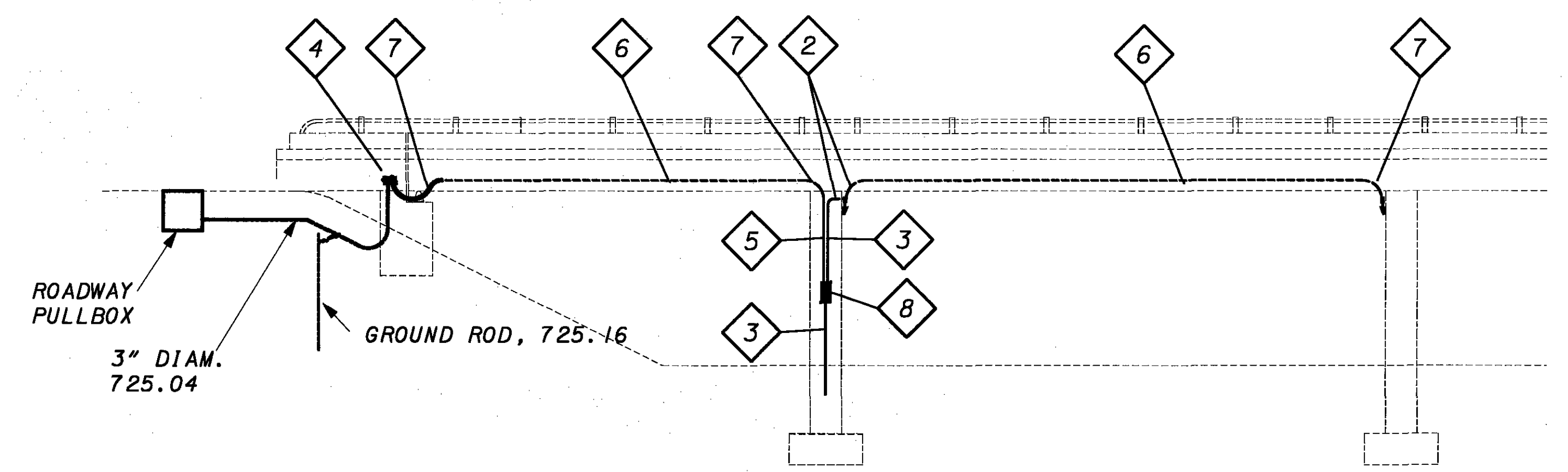
PLAN VIEW B-B



ELEVATION VIEW - SECTION B-B



UNDERPASS LIGHTING PLAN



ELEVATION VIEW - SECTION C-C
 FOR ADDITIONAL DETAILS, SEE SHEET LD5

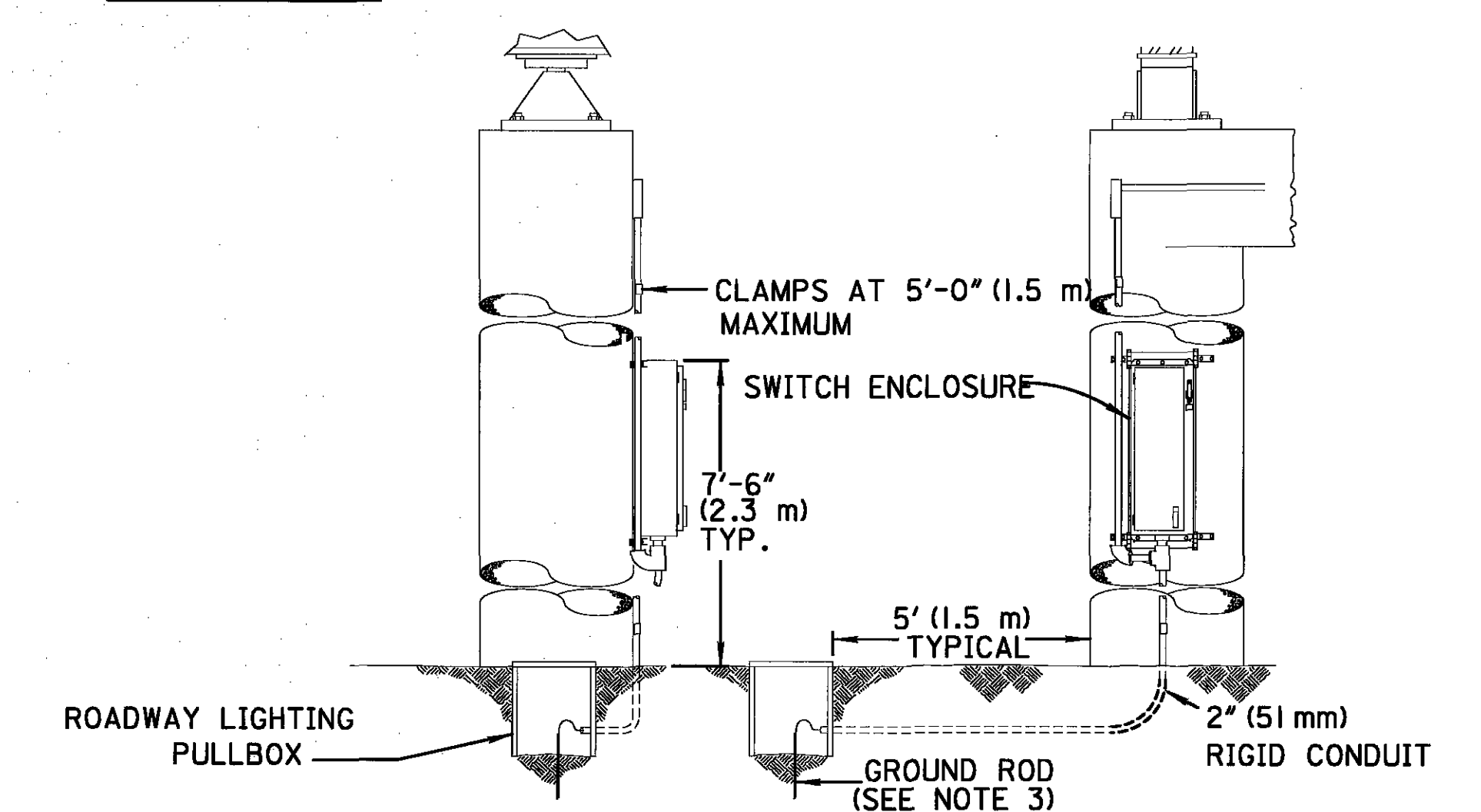
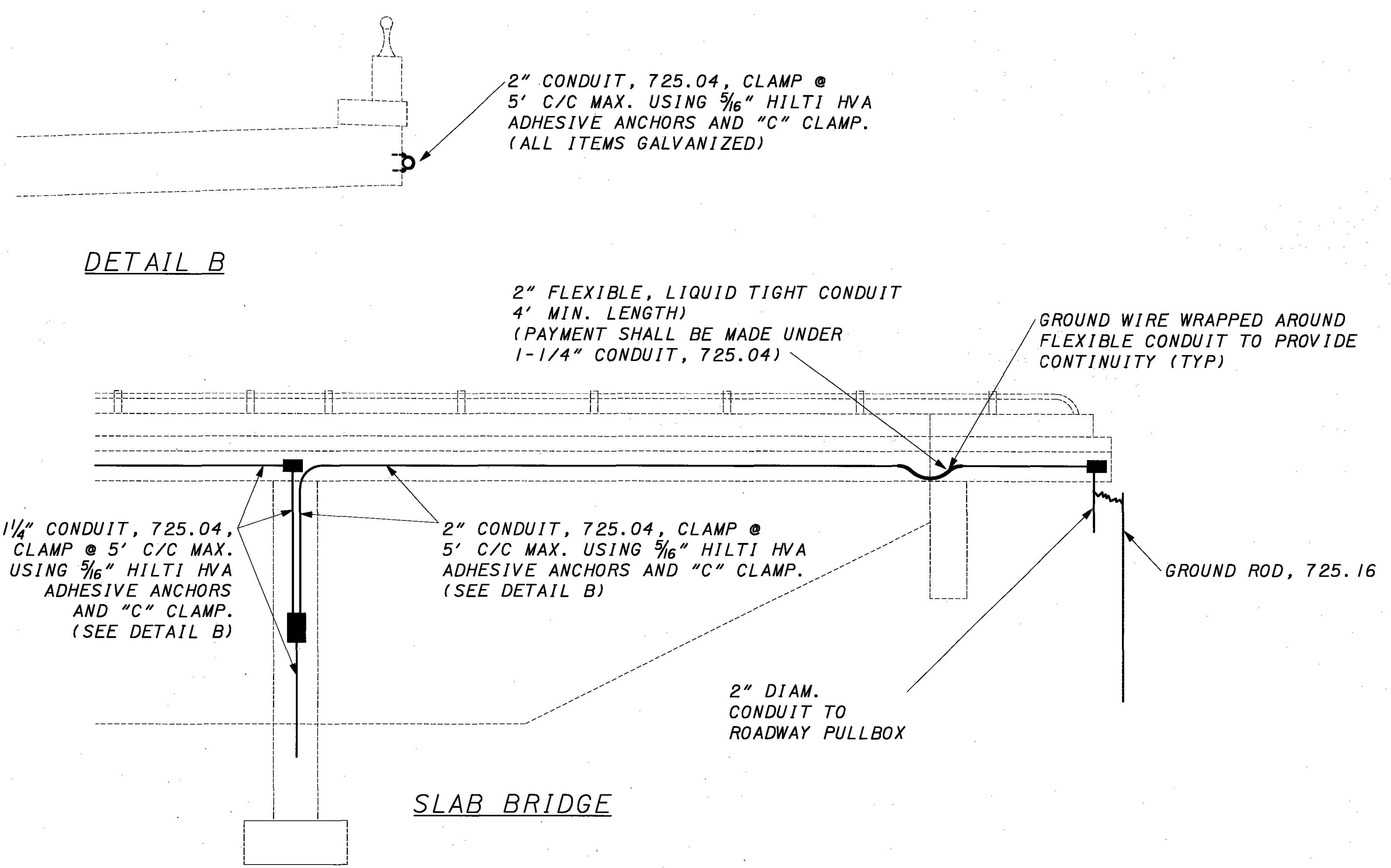
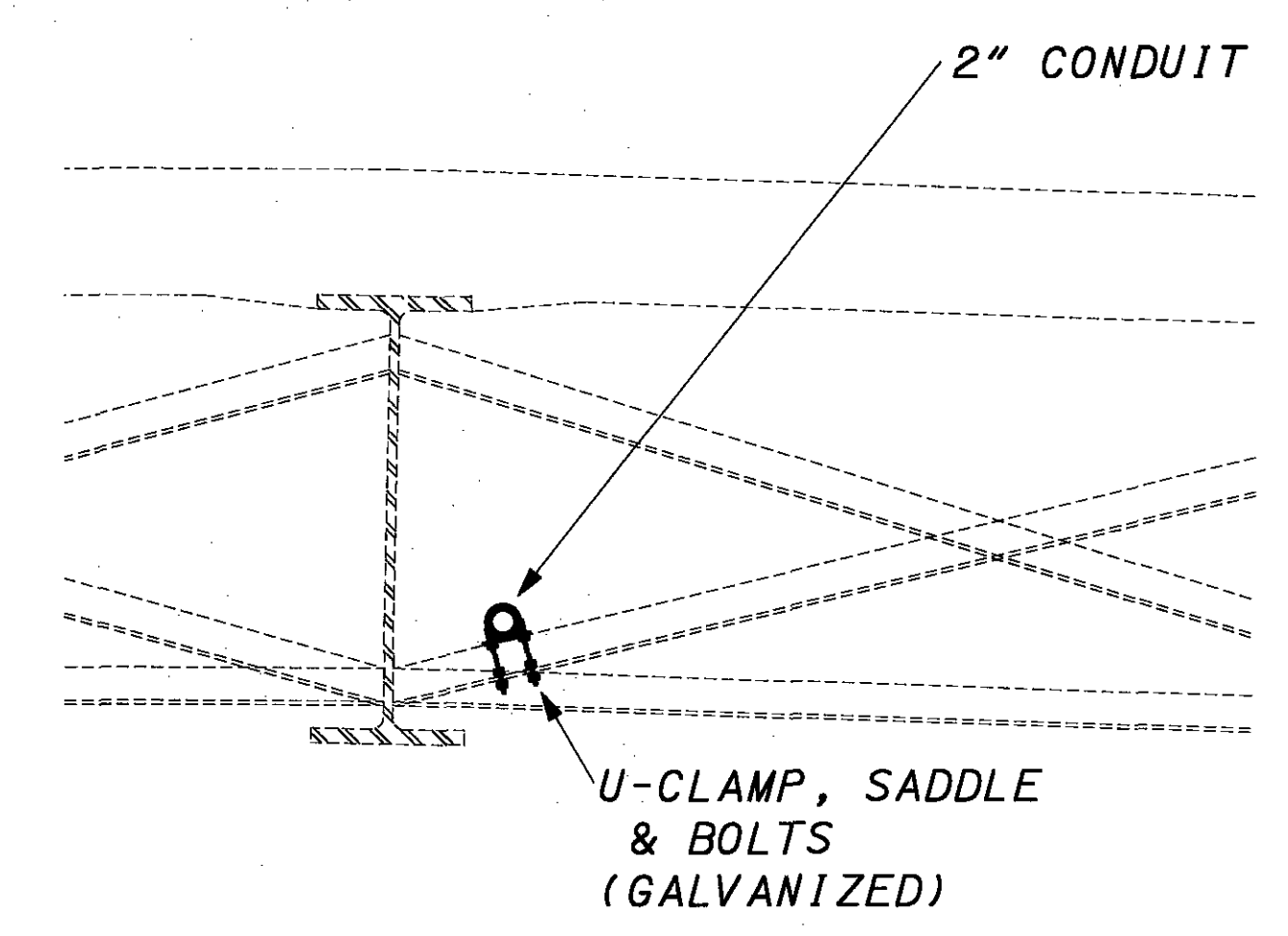
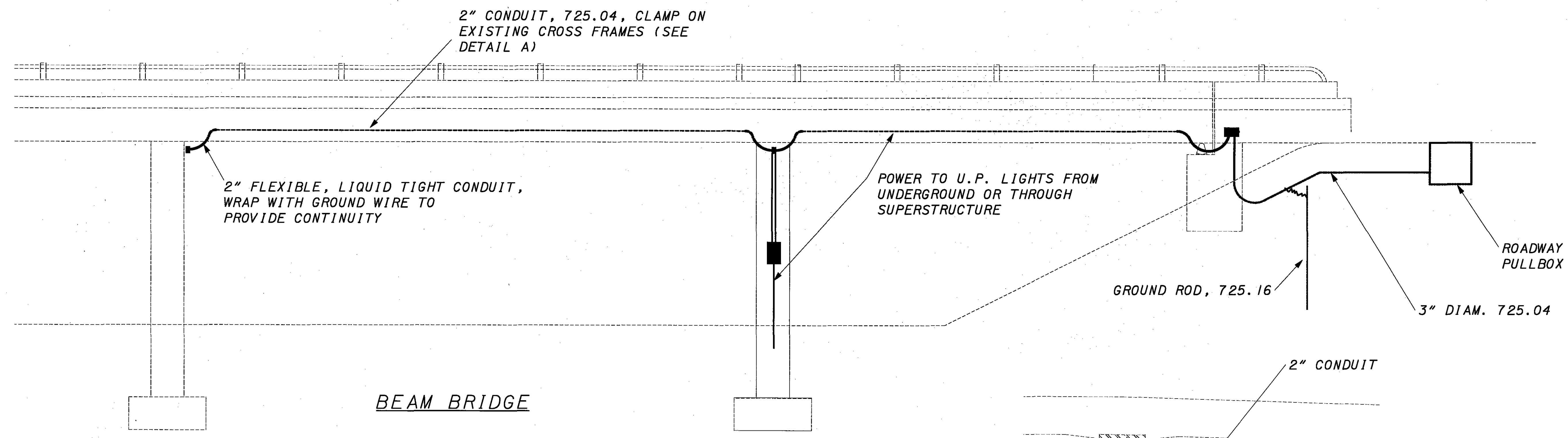
...21778LD001.dgn

CALCULATED
 CHECKED

UNDERPASS LIGHTING DETAIL
 SR 2 & E. 305TH STREET

LAK-2-0.00

423
 524



- NOTES:
- DISCONNECT SWITCH AND ENCLOSURE SHALL BE PER 631.06 AND SHALL HAVE A 10 AMP FUSE. PAYMENT SHALL BE MADE UNDER ITEM 625 SERVICE TO UNDERPASS LIGHTING, APP
 - WIRE COMMING INTO THE SWITCH SHALL BE AWG NO. 4 AND SHALL BE AWG NO. 10 GOING OUT OF THE SWITCH.
 - IF POWER COMES IN AT THE ABUTMENTS AND THROUGH THE SUPER STRUCTURE, IT SHALL BE RUN IN 2" RIGED CONDUIT AND CONNECTED TO THE SWITCH ENCLOSURE.

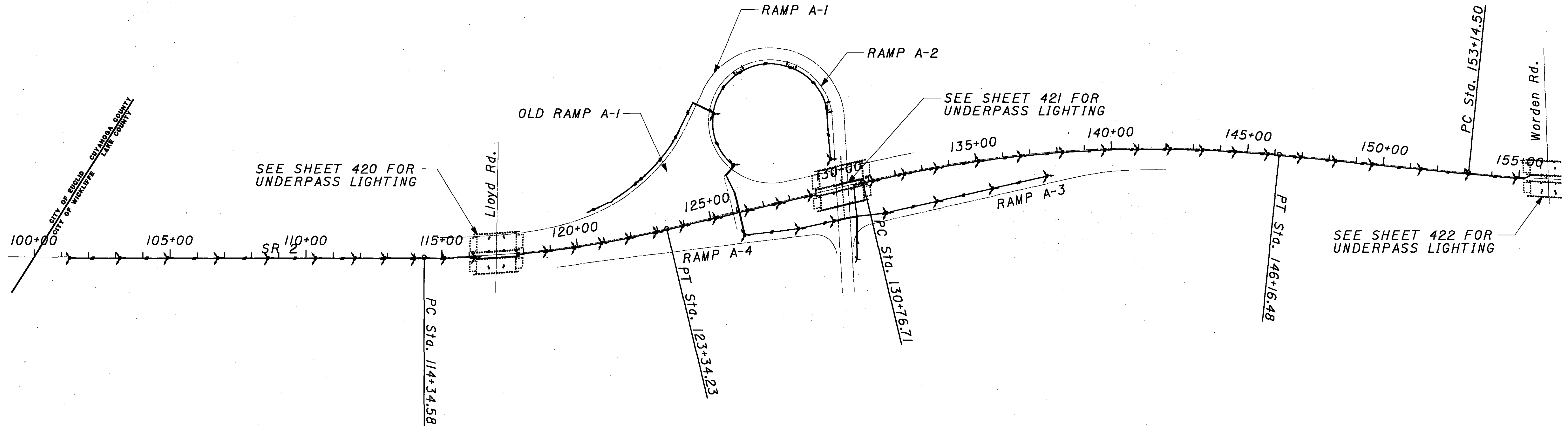
UNDERPASS POWER DISCONNECT SWITCH

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LEGEND:

- PROPOSED DUCT CABLE
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED CONDUIT
- PROPOSED PULLBOX
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- Y LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE, PER 725.II
- LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE, PER 725.II
- ↑ LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE, PER 725.II

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLES (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
L	480	36.4	2/0	100	A	42.7	60	2	LAKE COUNTY ENGINEER
					B	33.2	60	2	



0 200 400
HORIZONTAL SCALE IN FEET

CALCULATED
CHECKED

LIGHTING CIRCUIT DIAGRAM

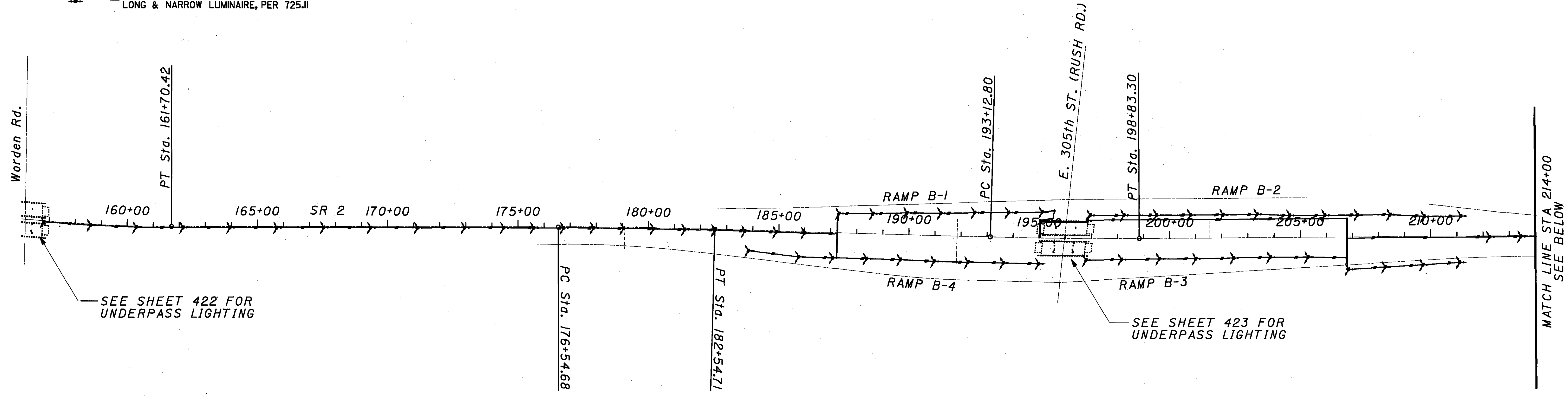
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425
524

LEGEND:

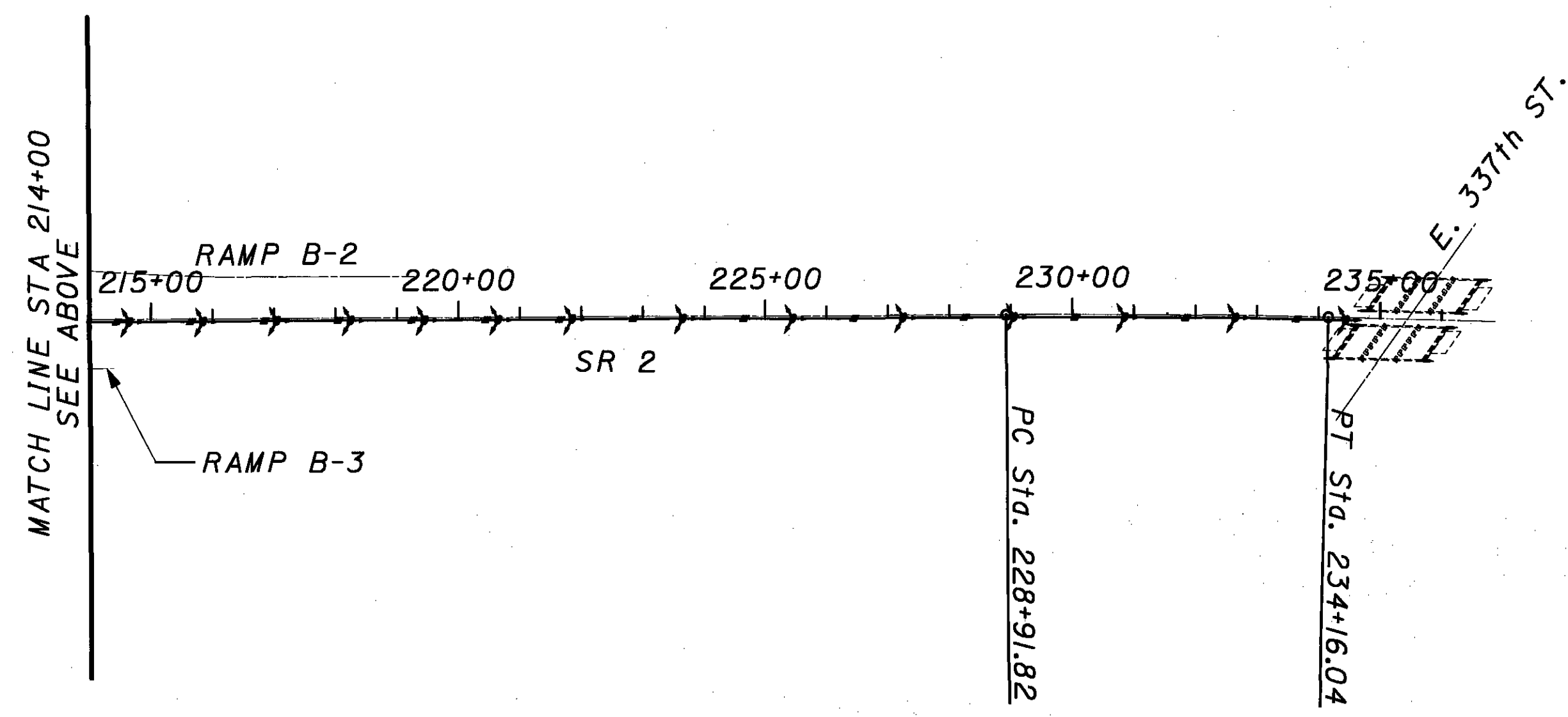
- PROPOSED DUCT CABLE
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED CONDUIT
- PROPOSED PULLBOX
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- Y LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE, PER 725.II
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- Y LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE, PER 725.II

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLES (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
R	480	42.7	2/0	150	D	40.7	60	2	LAKE COUNTY ENGINEER
					E	29.7	60	2	
					F	18.5	60	4	



SEE SHEET 422 FOR UNDERPASS LIGHTING

SEE SHEET 423 FOR UNDERPASS LIGHTING



CALCULATED
CHECKED

0 200 400
HORIZONTAL SCALE IN FEET

LIGHTING CIRCUIT DIAGRAM

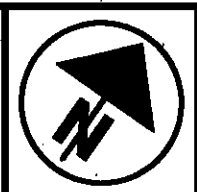
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LEGEND:

- PROPOSED DUCT CABLE
- PROPOSED CABLE UNDER PAVEMENT IN 3" JACKED CONDUIT
- PROPOSED PULLBOX
- ▲ PROPOSED PAD MOUNTED POWER SERVICE
- Y LOW MAST POLE W/1-400W HPS, SYMMETRIC LUMINAIRE, PER 725.II
- Y LOW MAST POLE W/1-400W HPS, ASYMMETRIC LUMINAIRE, PER 725.II
- Y LOW MAST POLE W/1-400W HPS, LONG & NARROW LUMINAIRE, PER 725.II

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLES (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
S	480	31.2	2/0	100	J	35.2	60	4	LAKE COUNTY ENGINEER
					K	29.7	60	2	

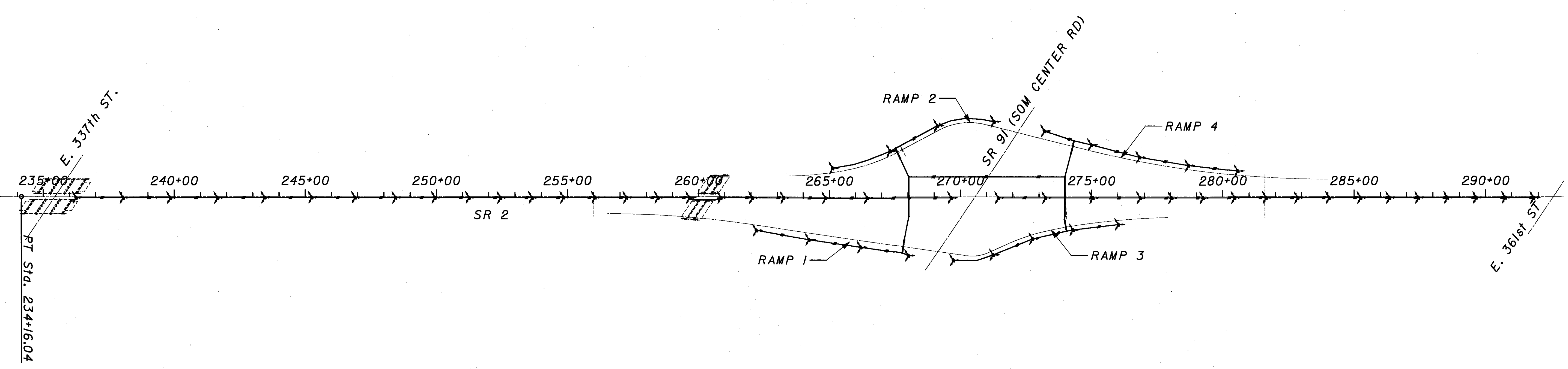


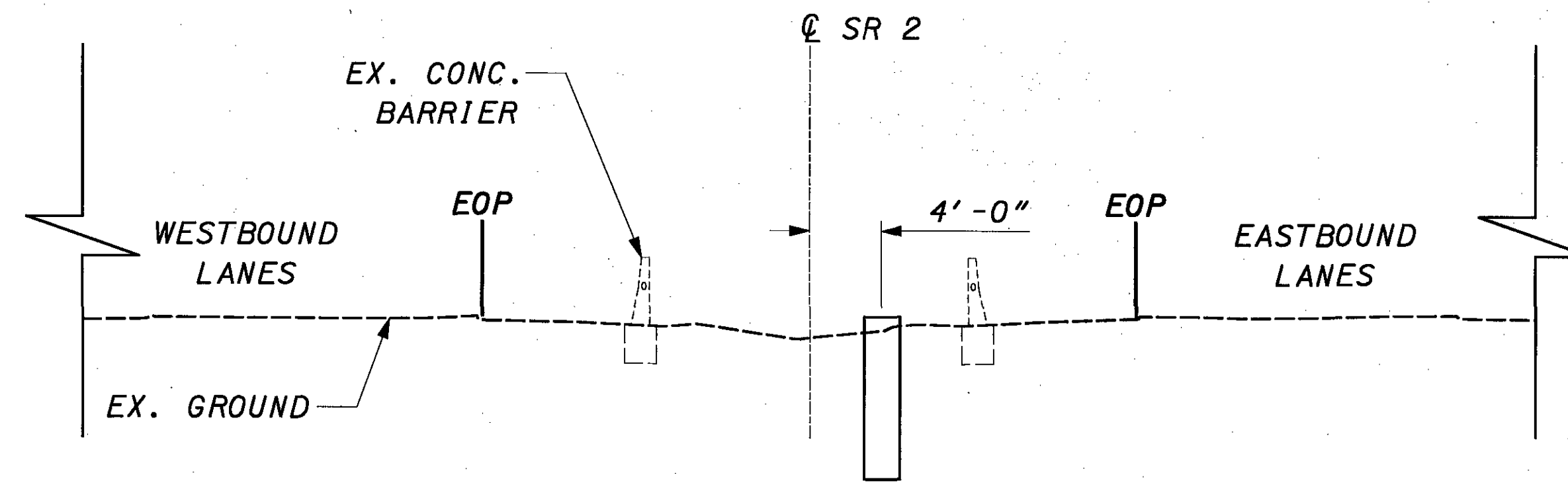
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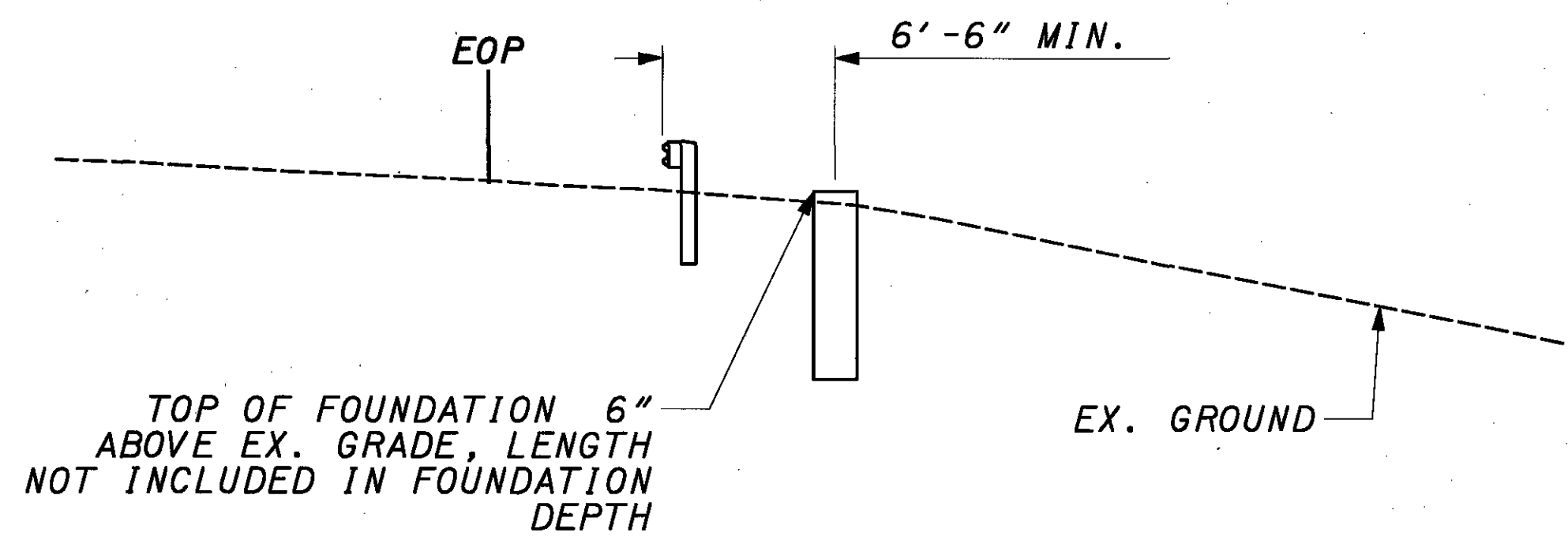
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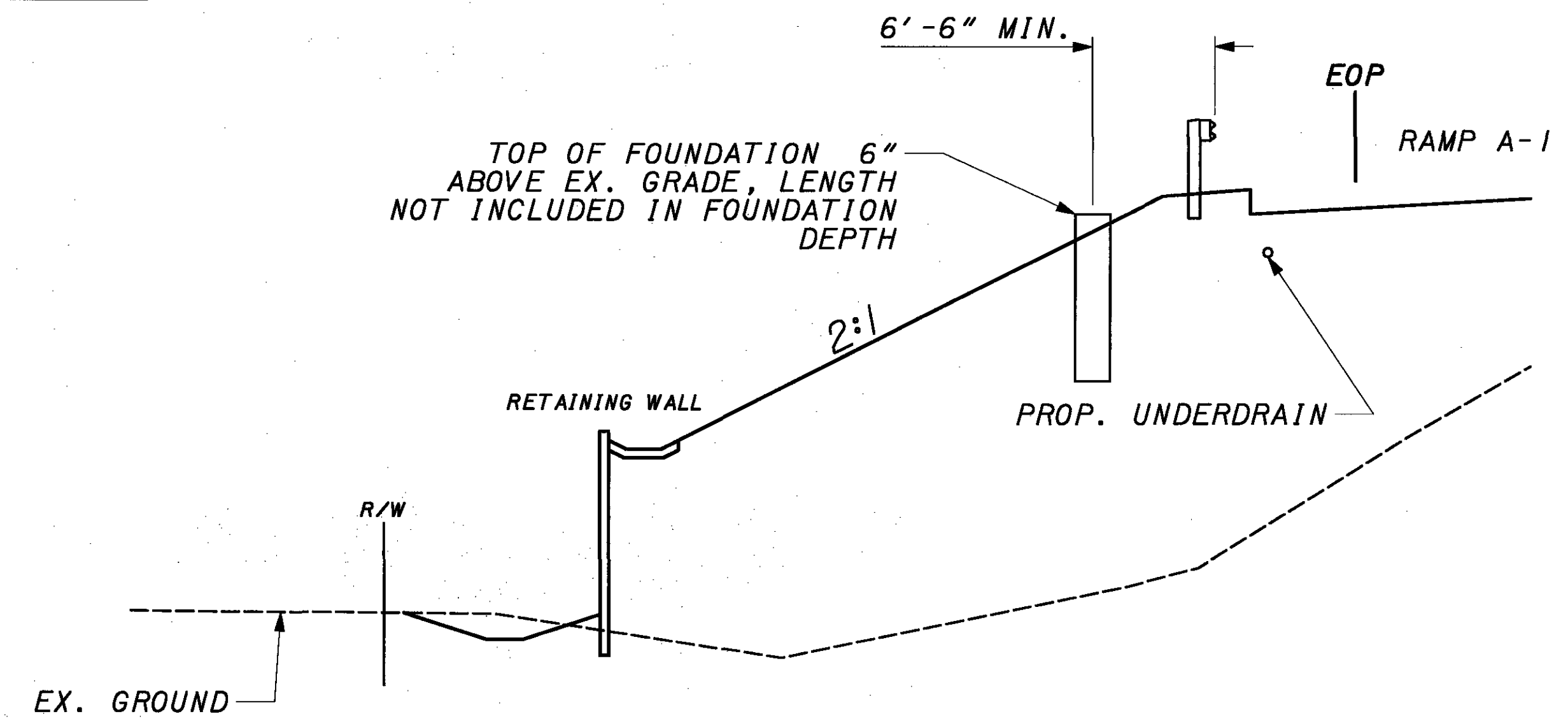




TYPICAL MEDIAN PLACEMENT



TYPICAL SHOULDER PLACEMENT



TYPICAL RETAINING WALL PLACEMENT

GALVANIC CORROSION PROTECTION SYSTEM

DESCRIPTION

THE GALVANIC PROTECTION SYSTEM IS INTENDED TO EXTEND THE SERVICE LIFE OF THE STRUCTURE BY MITIGATING CHLORIDE-ION INDUCED CORROSION ACTIVITY OF THE TOP REINFORCING LAYER.

THE WORK UNDER THIS SECTION CONSISTS OF SUPPLYING, INSTALLING, AND ENERGIZING A ZINC-BASED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS, INCLUDING REQUIRED ELECTRICAL CONNECTIONS, MATERIALS, TESTING, AND ENSURING CONTINUITY OF THE REINFORCING STEEL IN THE STRUCTURAL DECK AS OUTLINED IN THE CONSTRUCTION DRAWINGS.

REFERENCES

- A. ACI 222R PROTECTION OF METALS IN CONCRETE AGAINST CORROSION
- B. ASTM B6 STANDARD SPECIFICATION FOR ZINC
- C. ASTM B69 STANDARD SPECIFICATION FOR ROLLED ZINC
- D. ASTM B418 STANDARD SPECIFICATION FOR CAST AND WROUGHT GALVANIC ZINC ANODES
- E. SSPC-10 NEAR-WHITE BLAST CLEANING

BID QUANTITY

BASE BIDS ON THE QUANTITY, DIMENSIONS, LENGTH, WEIGHT AND INFORMATION IN THIS SPECIFICATION AND AS SHOWN ON THE DRAWINGS.

SUBMITTALS

SUBMIT TYPICAL GALVANIC CORROSION PROTECTION SYSTEM INSTALLATION DETAILS, SUCH AS DISTRIBUTED ANODE DIMENSIONS, SACRIFICIAL ZINC MASS, ANODE TO HEADER CONNECTION DETAIL, HEADER TO REINFORCING CONNECTION DETAIL, CEMENTITIOUS GROUT DATA. SUBMITTAL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY FIELD INSTALLATIONS.

ZINC ANODES

GALVANIC ANODE UNITS SHALL BE CYLINDRICAL PRISMS OF ALKALI-ACTIVATED ZINC WITH A PH GREATER THAN 14 AND NOMINAL LENGTH AS INDICATED ON THE DRAWINGS. THE DISTRIBUTED ANODE UNITS SHALL CONTAIN AT LEAST 0.4 LB. OF HIGH-PURITY ZINC PER LINEAL FOOT OF ANODE AND SHALL CONTAIN NO CONSTITUENTS THAT ARE CORROSIVE TO REINFORCING STEEL AS PER ACI 222R SUCH AS CHLORIDES, BROMIDES, OR OTHER HALIDES. THE ZINC ANODES SHALL CONTAIN A STEEL CORE AND SHALL BE MANUFACTURED IN COMPLIANCE WITH ASTM B 418 TYPE II (Z13000) AND ASTM B69 ROLLED SPECIAL HIGH GRADE ZINC (Z13004) USING ZINC IN COMPLIANCE WITH ASTM B6 SPECIAL HIGH GRADE (Z13001) WITH IRON CONTENT LESS THAN 15 PPM.

THE GALVANIC PROTECTION SHALL BE GALVANODE DAS DISTRIBUTED ANODE SYSTEM SUPPLIED BY VECTOR CORROSION TECHNOLOGIES, [TAMPA, FL (813) 830-7566, (800) 665-6680], WWW.VECTOR-CORROSION.COM] OR APPROVED EQUAL.

EMBEDMENT GROUT

EMBEDMENT GROUT SHALL BE A PRE-PACKAGED, NON-SHRINK, MINERAL AGGREGATE, CEMENT-BASED MATERIAL WITH ELECTRICAL RESISTIVITY LESS THAN 5,000 OHM-CM WHEN TESTED AFTER 28 DAYS OF MOIST CURING. THIS MATERIAL SHALL BE FREEZE THAW DURABLE. THE EMBEDMENT GROUT SHALL BE SIKAGROUT Z12 MANUFACTURED BY SIKA CORPORATION, 201 POLITO AVENUE, LYNDHURST, NJ 07071, (800) 993-7452, WWW.SIKA-CORP.COM, OR APPROVED EQUAL.

IF AN ALTERNATE GROUT IS PROPOSED, CONTRACTOR SHALL CONSULT WITH ANODE MANUFACTURER FOR COMPATIBLE GROUT SELECTION. IF REQUIRED, CONTRACTOR SHALL SUBMIT THREE 3-INCH DIAMETER X 6-INCH LONG CYLINDER SAMPLES OF PROPOSED ALTERNATE EMBEDMENT GROUT TO THE ANODE MANUFACTURER TO VERIFY ELECTRICAL RESISTIVITY PRIOR TO USE ON THE PROJECT. SUBMIT CYLINDER SAMPLES IN A MOIST CONDITION AND IN SUFFICIENT TIME FOR 28-DAY TESTING.

CONCRETE REPAIR MATERIAL

CONCRETE REPAIR MATERIALS SHALL BE COMPATIBLE WITH THE GALVANIC ANODE SYSTEM AS APPROVED BY THE ANODE MANUFACTURER. COMPATIBLE REPAIR MATERIALS SHALL BE PRE-PACKAGED HYDRAULIC-CEMENT BASED MORTARS WITH 28-DAY MOIST CURED ELECTRICAL RESISTIVITY LESS THAN 15,000 OHM-CM.

REPAIR MATERIALS CONTAINING MAGNESIUM PHOSPHATE, OR HIGH LEVELS OF SUPPLEMENTARY CEMENTITIOUS MATERIALS SUCH AS SILICA FUME, GROUND-GRANULATED BLAST FURNACE SLAG, FLY ASH OR METAKAOLIN MAY NOT MEET THIS RESISTIVITY REQUIREMENT. EPOXY MORTARS OR BONDING AGENTS SHALL NOT BE PERMITTED.

CONTRACTOR SHALL CONSULT WITH ANODE MANUFACTURER FOR COMPATIBLE REPAIR MATERIAL SELECTION. IF REQUIRED, CONTRACTOR SHALL SUBMIT THREE 3-INCH DIAMETER X 6-INCH LONG CYLINDER SAMPLES OF THE PROPOSED CONCRETE REPAIR MATERIAL TO THE ANODE MANUFACTURER TO VERIFY ELECTRICAL RESISTIVITY. SUBMIT CYLINDER SAMPLES IN A MOIST CONDITION AND IN SUFFICIENT TIME FOR 28-DAY TESTING.

GENERAL DESCRIPTION

THE GALVANIC CORROSION PROTECTION SYSTEM SHALL CONSIST OF INTERCONNECTED GALVANIC ANODES THAT ARE GROUTED TO THE STRUCTURAL SLAB AND ARE ELECTRICALLY CONNECTED TO THE REINFORCING STEEL THROUGH A HEADER WIRE OR STRAP. THE HEADER CONNECTS ROWS OF ANODES TO THE REINFORCING STEEL AS SHOWN ON THE DRAWINGS. THE CONCRETE OVERLAY IS PLACED FOLLOWING STANDARD CONCRETE OVERLAY PROCEDURES. AFTER THE ANODES ARE INSTALLED AND ENCASED IN THE OVERLAY CONCRETE, THE ANODES WILL PROVIDE GALVANIC PROTECTION TO THE REINFORCING STEEL IN THE STRUCTURAL SLAB.

MANUFACTURER TECHNICAL ASSISTANCE

- A. THE CONTRACTOR WILL ENLIST AND PAY FOR THE SERVICES OF A NACE CERTIFIED CATHODIC PROTECTION TECHNICIAN WHO IS AN EMPLOYEE OF THE GALVANIC ANODE MANUFACTURER TO PROVIDE TRAINING AND ON-SITE TECHNICAL ASSISTANCE DURING THE INITIAL INSTALLATION OF THE GALVANIC PROTECTION SYSTEM. THE CATHODIC PROTECTION TECHNICIAN SHALL HAVE VERIFIABLE EXPERIENCE IN THE INSTALLATION AND TESTING OF EMBEDDED GALVANIC PROTECTION SYSTEMS FOR REINFORCED CONCRETE STRUCTURES.
- B. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE DESIGNATED CATHODIC PROTECTION TECHNICIAN TO ALLOW FOR SITE SUPPORT DURING PROJECT STARTUP AND INITIAL ANODE INSTALLATION. THE TECHNICIAN SHALL PROVIDE CONTRACTOR TRAINING AND SUPPORT FOR DEVELOPMENT OF APPLICATION PROCEDURES, RELATED SUBMITTALS, ANODE INSTALLATION, REINFORCING STEEL CONNECTION PROCEDURES, AND ELECTRICAL CONTINUITY VERIFICATION OF EMBEDDED REINFORCING STEEL.
- C. THE CATHODIC PROTECTION TECHNICIAN SHALL COORDINATE SYSTEM TESTING REQUIREMENTS WITH THE ENGINEER AND SHALL INSTALL SYSTEM INSTRUMENTATION WIRING, CONDUIT, AND RELATED DEVICES, AT LOCATIONS APPROVED BY THE ENGINEER.

SURFACE PREPARATION FOR ANODE INSTALLATION

- A. PERFORM CONCRETE REMOVAL AND SURFACE PREPARATION FOR THE CONCRETE OVERLAY IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 848.
- B. FULLY EXPOSE REINFORCING AT EACH EDGE OF THE PREPARED SURFACE AT INTERVALS AS INDICATED ON THE DRAWINGS TO ALLOW ELECTRICAL CONNECTION OF THE HEADER TO THE REINFORCING STEEL. REINFORCEMENT ACCESS HOLES SHALL BE PREPARED FOLLOWING PROCEDURES FOR EXCAVATING PARTIAL-DEPTH REPAIRS WHERE BOTH LAYERS OF THE TOP REINFORCING MAT ARE FULLY EXPOSED. TYPICAL ACCESS HOLES ARE 6-IN TO 12-IN ACROSS.
- C. EXPOSED REINFORCING STEEL AND CONCRETE SHOULD BE CLEANED BY ABRASIVE BLASTING OR OTHER MEANS TO REMOVE CORROSION BY-PRODUCTS AND OTHER MATERIALS THAT MAY INHIBIT ELECTRICAL CONTINUITY.
- D. DAMPEN THE CONCRETE SURFACE TO A SATURATED SURFACE DRY CONDITION PRIOR TO THE GROUTING OPERATION IN ACCORDANCE WITH GROUT MANUFACTURER'S INSTRUCTIONS. REMOVE ANY STANDING WATER PRIOR TO GROUTING.

ELECTRICAL CONTINUITY

THE REINFORCING STEEL IN THE STRUCTURAL DECK SHALL BE TESTED FOR ELECTRICAL CONTINUITY BETWEEN ACCESS LOCATIONS SPACED APPROXIMATELY EIGHT FEET ON CENTER ALONG EACH SIDE OF EACH OVERLAY PLACEMENT, AND AT PARTIAL-DEPTH REPAIR AREAS WHERE REINFORCEMENT IS EXPOSED. CONTINUITY SHALL BE CHECKED BETWEEN BARS IN EACH LOCATION AND BETWEEN ACCESS HOLES IN THE LATERAL DIRECTION, IN THE LONGITUDINAL DIRECTION, AND DIAGONALLY. USE A VOLTMETER WITH INTERNAL MEASURING IMPEDANCE OF AT LEAST 10 Mohm ON THE DC mV SCALE. CONNECT THE TEST LEADS TO CLEAN REINFORCING STEEL AT TWO TEST SITES. A VOLTAGE DIFFERENCE BETWEEN THE TEST SITES LESS THAN 1.0 mV SHALL BE CONSIDERED CONFIRMATION OF ELECTRICAL CONTINUITY.

IN SITUATIONS WHERE CONTINUITY IS NOT CONFIRMED, RE-ESTABLISH CONTINUITY BY TYING REINFORCING TOGETHER WITH STEEL TIE WIRE OR BY OTHER APPROVED MEANS. IF NECESSARY, REMOVE A STRIP OF CONCRETE SUFFICIENT TO FULLY EXPOSE THE TOP LAYER OF REINFORCING STEEL BETWEEN DISCONTINUOUS LOCATIONS SO THAT ELECTRICAL CONTINUITY OF THE TOP LAYER OF REINFORCING STEEL CAN BE RE-ESTABLISHED.

GALVANIC ANODE INSTALLATION

DISTRIBUTED GALVANIC ANODE UNITS SHALL BE LOCATED AS INDICATED ON THE DRAWINGS. LOCATE A ROW OF ANODES ON THE PREPARED AND PRE-WETTED DECK. PLACE ANODES BETWEEN PARALLEL REINFORCING BARS WHERE EXPOSED. MIX THE CEMENTITIOUS GROUT TO A MORTAR-LIKE CONSISTENCY AND LAY A NOMINAL 2-IN WIDE BED OF GROUT ALONG EACH ANODE OF SUFFICIENT THICKNESS TO FILL ANY VOID BETWEEN THE PREPARED SURFACE AND THE ANODE. PLACE ANODE INTO THE GROUT BED AND TOOL THE EDGES TO ENSURE THAT THE GROUT CONTACTS AT LEAST 50% OF THE ANODE CIRCUMFERENCE.

EMBEDMENT GROUT IS NOT REQUIRED IN SITUATIONS WHERE THE ANODE SPANS A PARTIAL DEPTH REPAIR AREA DEEP ENOUGH TO FULLY EXPOSE BOTH LAYERS OF THE TOP REINFORCING STEEL MAT AND THE OVERLAY CONCRETE WILL BE CAST MONOLITHICALLY WITH THE REPAIR. IF PARTIAL DEPTH REPAIR AREAS ARE FILLED PRIOR TO THE OVERLAY OPERATION, EMBEDMENT GROUT SHALL BE USED.

PROTECT ANODES AND ELECTRICAL CONNECTIONS FROM DAMAGE DURING INSTALLATION.

PROVIDE AT LEAST 1.5 INCHES OF CONCRETE COVER OVER THE ANODES.

ELECTRICAL CONNECTIONS

ELECTRICALLY CONNECT ANODES TO HEADER. THE TYPICAL CONNECTION IS A SELF-TAPPING SCREW CONNECTION BETWEEN THE ANODE CORE AND A PERFORATED STEEL STRAP HEADER. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER. IDENTIFY ANODE MANUFACTURER APPROVED ANODE-TO-HEADER CONNECTION DETAIL IN THE GALVANIC PROTECTION SYSTEM SUBMITTAL.

ELECTRICALLY CONNECT HEADER TO REINFORCING AT ACCESS HOLES. THE TYPICAL CONNECTION IS A BRAZED CONNECTION OF A STEEL HEADER STRAP THAT IS WRAPPED AROUND THE REINFORCING. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER. IDENTIFY ANODE MANUFACTURER APPROVED HEADER TO REINFORCING CONNECTION DETAIL IN THE GALVANIC PROTECTION SYSTEM SUBMITTAL.

ALL REINFORCING STEEL CONNECTIONS SHALL BE CLEANED AFTER BRAZING AND RECEIVE A COAT OF 100% SOLIDS, NON-CONDUCTIVE EPOXY SUCH THAT NO BRAZING MATERIAL IS EXPOSED TO THE CONCRETE WHEN PATCHING IS COMPLETE. THE CONTRACTOR SHALL VERIFY CONTINUITY BETWEEN THE ANODES AND THE REINFORCING PRIOR TO COATING WITH EPOXY.

THE HEADER MAY BE SECURED INTERMITTENTLY TO THE STRUCTURAL DECK WITH MECHANICAL FASTENERS OR TO EXPOSED REINFORCING BARS WITH STEEL TIE WIRE BETWEEN ACCESS HOLES, IF NECESSARY.

CONCRETE OVERLAY PLACEMENT

COMPLETE CONCRETE OVERLAY PLACEMENT FOLLOWING THE STANDARD PROCEDURES SPECIFIED IN SUPPLEMENTAL SPECIFICATION 848. DO NOT DRIVE MACHINERY ON OR OTHERWISE DAMAGE INSTALLED GALVANIC ANODES OR ELECTRICAL CONNECTIONS.

ALL WORK DESCRIBED ABOVE SHALL BE COMPLETED DURING WEEKEND OVERLAYS AS DESCRIBED AND DETAILED ON SHEETS 30-85. EACH ANODE PROVIDED AND INSTALLED, WITH ALL INCIDENTALS INCLUDED SHALL BE PAID FOR AT THE UNIT BID PRICE FOR:

ITEM	DESCRIPTION	UNIT
511E81300	CONCRETE MISCELLANEOUS: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS	EACH

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GALVANIC CORROSION PROTECTION SYSTEM NOTES

LAK-2-0.00

INSTALLATION NOTES

CONCRETE REMOVAL

1. REMOVE EXISTING WEARING COURSE AND DELAMINATED CONCRETE AS REQUIRED.
2. EXPOSE REINFORCING AT EACH END OF EACH ANODE ROW

ELECTRICAL CONTINUITY

1. VERIFY ELECTRICAL CONTINUITY OF THE REINFORCING STEEL USING A HIGH IMPEDANCE DIGITAL VOLTMETER ON THE DC MV SCALE. ATTACH THE TEST LEADS TO THE REINFORCING STEEL IN THE ACCESS HOLES. MEASURE AND RECORD THE VOLTAGE. VOLTMETER READINGS OF 1.0 MV OR LESS SHALL BE CONSIDERED CONFIRMATION OF ELECTRICAL CONTINUITY.
2. IF CONTINUITY IS NOT CONFIRMED, ESTABLISH CONTINUITY BY CONNECTING DISCONTINUOUS REINFORCEMENT TOGETHER WITH STEEL TIE WIRE. ENSURE REINFORCING STEEL CONTACT AREAS ARE CLEAN TO PROVIDE BEST RESULTS
3. REMEASURE AND RECORD DISCONTINUOUS REINFORCING STEEL LOCATIONS TO CONFIRM REPAIRED CONTINUITY.

GALVANIC ANODE INSTALLATION

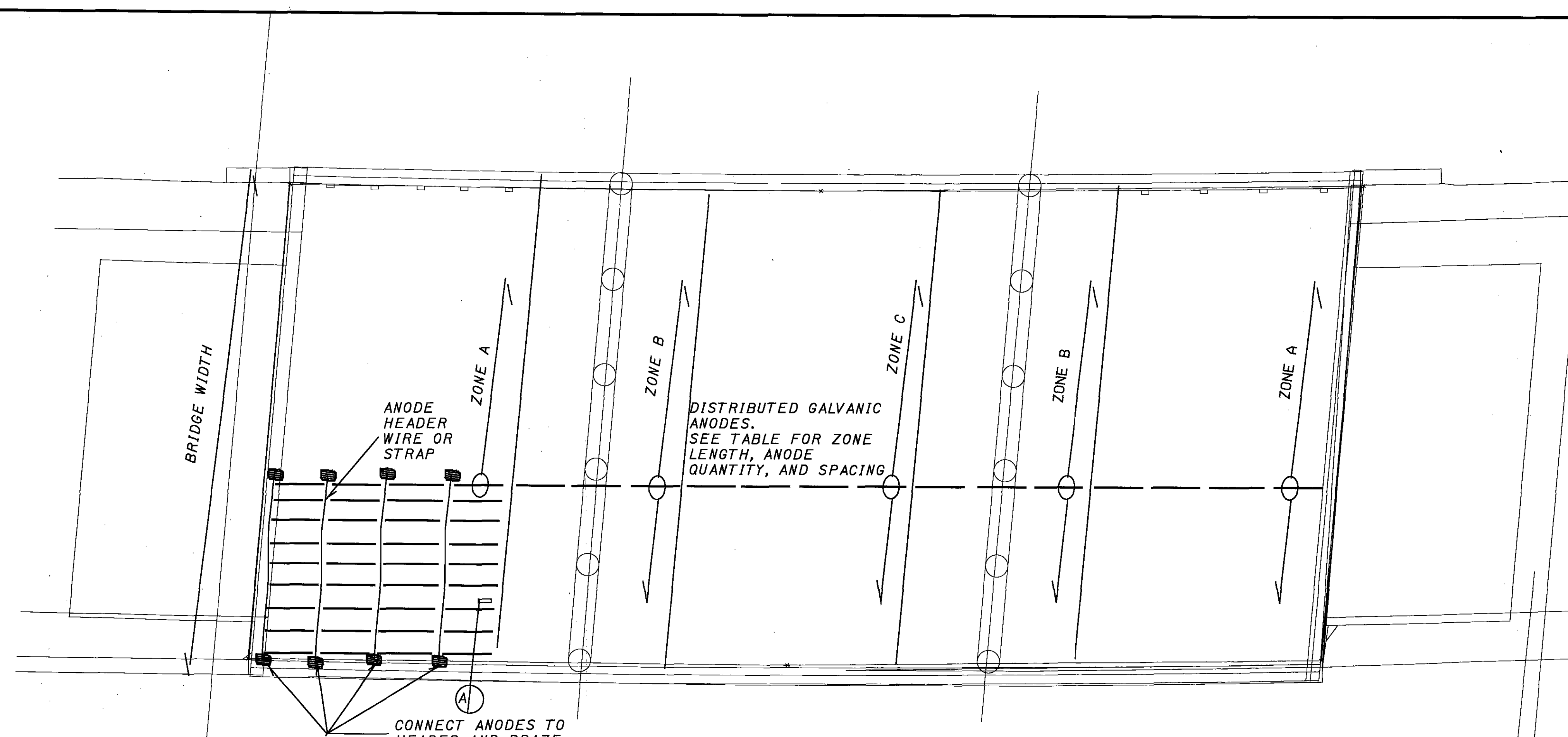
1. LAYOUT ANODES AS INDICATED ON THE SCHEDULE
2. REMOVE ALL DIRT AND DUST FROM THE PREPARED SURFACE.
3. MOISTEN THE SURFACE TO A SATURATED SURFACE DRY CONDITION. REMOVE ANY STANDING WATER.
4. MIX COMPATIBLE GROUT TO A FLOWABLE CONSISTENCY. PLACE THIN BEAD OF GROUT (+/- 1-IN WIDE) ON PREPARED SURFACE.
5. PLACE ANODE INTO GROUT BED AND TOOL EDGES TO INSURE GROUT FILLS ANY VOIDS BETWEEN THE ANODE AND THE SUBSTRATE.
6. CONNECT ANODES TO HEADER AND HEADER TO REINFORCING STEEL.
7. VERIFY ELECTRICAL CONTINUITY BETWEEN ANODES AND HEADER.
8. BRAZE HEADER TO REINFORCING STEEL. VERIFY ELECTRICAL CONTINUITY, THEN CLEAN AND SEAL CONNECTION WITH EPOXY.

FRP GRID

1. COVER ANODES WITH 3-IN X 3-IN ALKALI-RESISTANT FIBERGLASS OR CARBON FIBER GRID INTENDED FOR USE IN CONCRETE.
2. PIN FRP REINFORCING TO DECK AT 24-IN SPACING BETWEEN ANODES. FASTENERS SHALL NOT DAMAGE THE GRID.

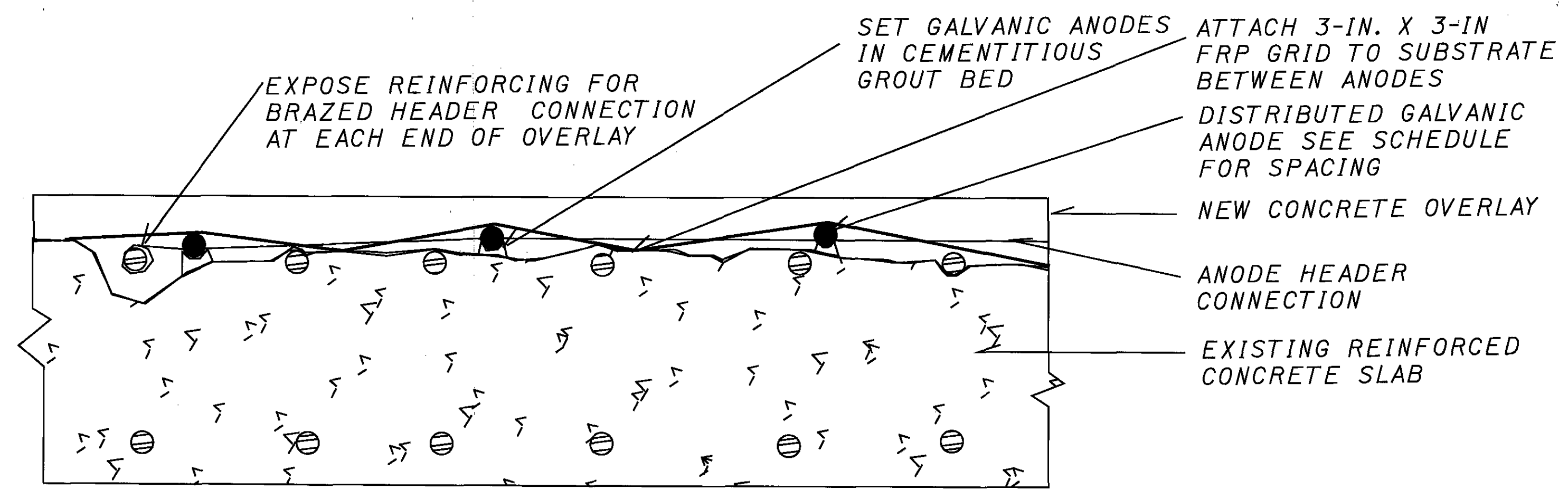
CONCRETE PLACEMENT

1. AVOID DRIVING MACHINERY ON ANODES AFTER GROUTING.
2. USE OF A CONCRETE PUMP OR CONVEYOR IS RECOMMENDED.



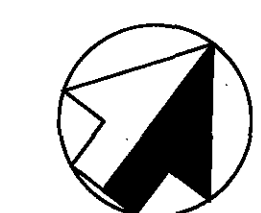
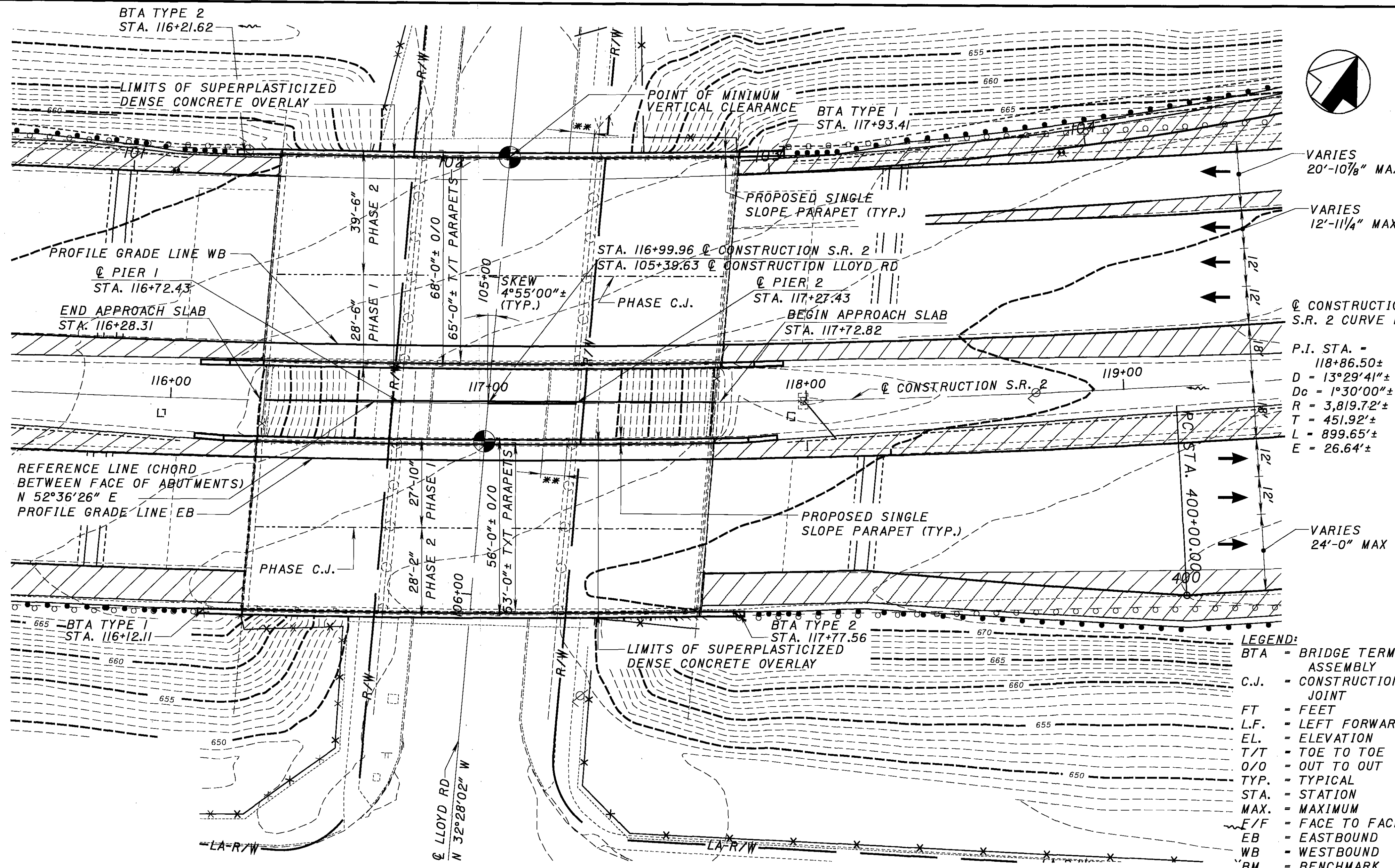
CONNECT ANODES TO HEADER AND BRAZE CONNECTION BETWEEN ANODE HEADER AND REINFORCING STEEL AT END OF EACH SECTION. (TYP.)

GALVANIC ANODE LAYOUT PLAN N.T.S.



GALVANIC OVERLAY SECTION

STRUCTURE	DESCRIPTION	WIDTH (FT)	LENGTH (FT)	#ROWS	ZONE A		ZONE B			ZONE C			SUMMARY			
					SPACING (IN)	QTY./ZONE	LENGTH (FT)	#ROWS	SPACING (IN)	QTY./ZONE	LENGTH (FT)	#ROWS	SPACING (IN)	QTY./ZONE	TOTAL ANODES	ANODE LENGTH (FT)
LAK-2-0031R	OVER LLOYD RD EB	56	32	4	18	148	24	3	8	251	31	4	18	148	946	7.5
LAK-2-0031L	OVER LLOYD RD WB	68	32	4	18	180	24	3	8	305	31	4	18	180	1150	7.5
LAK-2-0105R	OVER WORDEN RD. EB	56	27	3	18	111	26	3	8	251	24	3	18	111	835	7.5
LAK-2-0105L	OVER WORDEN RD. WB	56	27	3	18	111	26	3	8	251	24	3	18	111	835	7.5
LAK-2-0255R	OVER 337TH STREET EB	56	32	4	18	148	24	3	12	167	31	4	18	148	778	7.5
LAK-2-0255L	OVER 337TH STREET WB	56	32	4	18	148	24	3	12	167	31	4	18	148	778	7.5
LAK-2-0304R	SR91 DRAINAGE DITCH EB	54	29	4	18	143									286	6.5
LAK-2-0304L	SR91 DRAINAGE DITCH WB	54	29	4	18	143									286	6.5
														5,894		



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

** MINIMUM HORIZONTAL CLEARANCES		
	RIGHT BRIDGE	LEFT BRIDGE
EXISTING	7'-6 1/8" ±	7'-4 1/8" ±
PROPOSED	7'-6 1/8" ±	7'-4 1/8" ±

BENCHMARK DATA

BENCHMARK #105:
MAGNETIC NAIL SET IN ASPHALT PAVED SHOULDER.
STA. 117+99.73/3, 62.2045' RT
BM ELEV: 670.59

© CONSTRUCTION S.R. 2 CURVE DATA
P.I. STA. = 118+86.50 ±
D = 13°29'41" ± (RT)
Dc = 1°30'00" ±
R = 3,819.72' ±
T = 451.92' ±
L = 899.65' ±
E = 26.64' ±

TRAFFIC DATA

CURRENT ADT (2006) 90600
DESIGN YEAR ADT (2026) 93500
DESIGN YEAR ADTT (2026) 2805

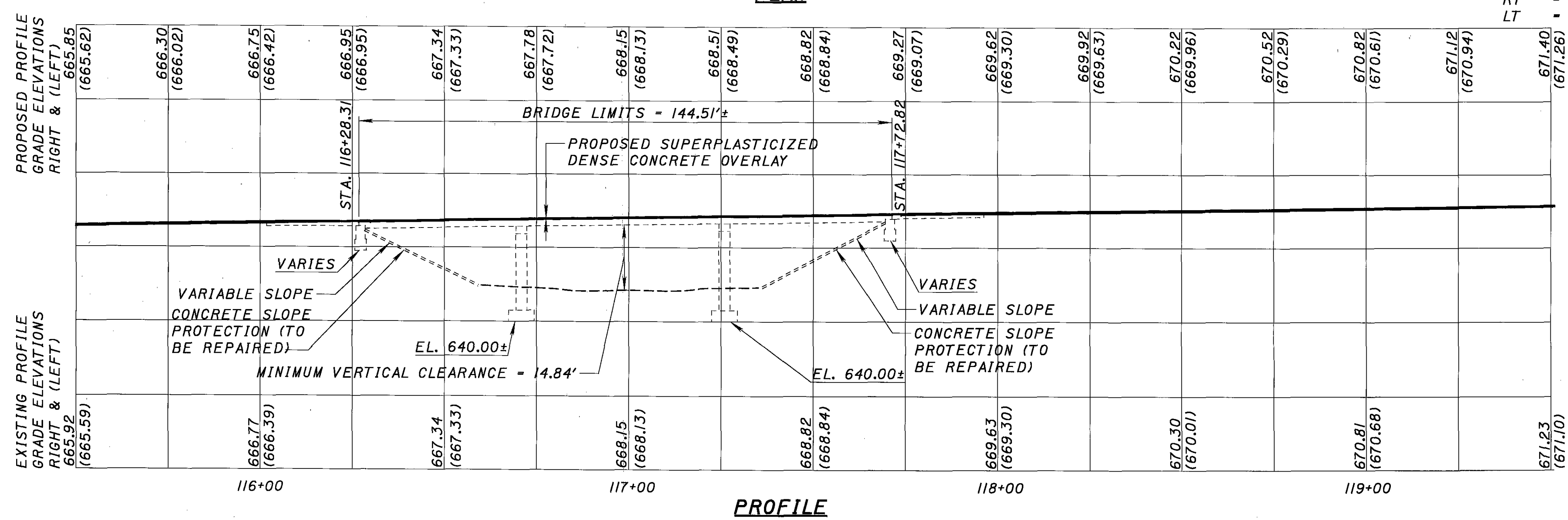
EXISTING STRUCTURE

SFN: 4300068(R) & 4300033(L)
TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SPANS: 44' ± / 55' ± / 44' ± C/C BEARINGS ALONG REFERENCE CHORD
ROADWAY: WB LANES 66'-0" ± F/F PARAPETS
EB LANES 54'-0" ± F/F PARAPETS
LOADING: CF-2000(57)
WEARING SURFACE: LATEX MODIFIED CONCRETE OVERLAY
ALIGNMENT: 1°30' ± CURVE LEFT
SUPERELEVATION: 0.036 ± FT/FT
APPROACH SLABS: AS-1-54 (25' LONG)
SKEW: 4°55'00" ± L.F. RELATIVE TO REFERENCE CHORD
DATE BUILT: 1959

PROPOSED STRUCTURE

PROPOSED WORK: SDC OVERLAY, PARAPET REFACING
TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SPANS: 44' ± / 55' ± / 44' ± C/C BEARINGS ALONG REFERENCE CHORD
ROADWAY: WB LANES 65'-0" ± T/T PARAPETS
EB LANES 53'-0" ± T/T PARAPETS
LOADING: CF-2000(57)
WEARING SURFACE: SUPERPLASTICIZED DENSE CONCRETE OVERLAY
ALIGNMENT: 1°30' ± CURVE LEFT
APPROACH SLABS: EXISTING (25' ± LONG)
SKEW: 4°55'00" ± L.F. RELATIVE TO REFERENCE CHORD
SUPERELEVATION: 0.036 ± FT/FT
LATITUDE: N41°36'42" LONGITUDE: W81°29'00"

- LEGEND:**
- BTA - BRIDGE TERMINAL ASSEMBLY
 - C.J. - CONSTRUCTION JOINT
 - FT - FEET
 - L.F. - LEFT FORWARD
 - EL. - ELEVATION
 - T/T - TOE TO TOE
 - O/O - OUT TO OUT
 - TYP. - TYPICAL
 - STA. - STATION
 - MAX. - MAXIMUM
 - E/F - FACE TO FACE
 - EB - EASTBOUND
 - WB - WESTBOUND
 - BM - BENCHMARK
 - RT - RIGHT
 - LT - LEFT



\$DATE\$
\$FILE\$

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION STANDARD BRIDGE DRAWING(S):

SBR-1-99 REVISED 7-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

847 REVISED 4-15-05
848 REVISED 4-15-05

EXISTING STRUCTURE VERIFICATION

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

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

EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

MAINTENANCE OF TRAFFIC

SEE THE ROADWAY PLANS FOR MAINTENANCE OF TRAFFIC REQUIREMENTS.

DESIGN DATA

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

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

PROPOSED WORK

1. REMOVE EXISTING OVERLAY, PERFORM SURFACE PREPARATIONS, AND OVERLAY EXISTING DECK WITH SUPERPLASTICIZED DENSE CONCRETE AS SPECIFIED IN THESE PLANS.
2. REMOVE EXISTING PARAPET AND REPLACE AS SPECIFIED, INCLUDING BARRIER TRANSITIONS AND EXTENSIONS OF THE EXPANSION JOINTS.
3. PATCH CONCRETE SUBSTRUCTURE WITH ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
4. PAINT THE BEAM ENDS, ENDFRAMES, AND CROSSFRAMES AS PER THESE PLANS AND SPECIFICATIONS.
5. SEAL PORTIONS OF THE SUBSTRUCTURE AND PARAPETS WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).
6. REPLACE AREAS OF THE CONCRETE SLOPE PROTECTION WITH ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION:

THIS WORK CONSISTS OF THE REMOVAL OF PARAPETS, RAILINGS, DECK JOINTS, UNDER DECK SPALLED AREAS AND OTHER APPURTENANCES. THIS ITEM SHALL ALSO INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. PERFORM WORK CAREFULLY DURING CONCRETE REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONT.)

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 511, CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

GENERAL REQUIREMENTS

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

MIX OPTIONS

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

THE FOLLOWING PORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE

QUANTITIES PER CUBIC YARD AGGREGATES (SSD)

HP4, AS PER PLAN (6GBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGRE. (LB)	**#8 COARSE AGGRE. (LB)	**#57 COARSE AGGRE. (LB)	TOTAL (LB)
GRAVEL	1245	360	1315	2920
LIMESTONE	1245	360	1335	2940
SLAG	1245	315	1155	2715

AGGREGATE TYPE	CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO SILICA (LB)	WATER TO CEMENTITIOUS RATIO +/- .02	AIR CONTENT +/- 2%
GRAVEL	400	170	30	.42	7
LIMESTONE	400	170	30	.42	7
SLAG	400	170	30	.42	7

***ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127.**

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIAL OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

PARAPET CONSTRUCTION (FORMED AND POURED)

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 152.4MM (6 INCHES), WITH A MAXIMUM SLUMP OF 203.2 MM (8 INCHES).

ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

SLIP FORMED PARAPETS WILL NOT BE ALLOWED

CRACK CONTROL JOINTS

FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 38 MM (1 1/2") DEEP AND 6 MM (1/4") WIDE CRACK CONTROL JOINTS SPACED AT A MINIMUM OF 1830 MM (6 FT) AND A MAXIMUM OF 2440 MM (8 FT) ON CENTER. THE CRACK CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK. THE CONTRACTOR MAY EITHER FORM THE CRACK CONTROL JOINTS IN WITH FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CRACK CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE, OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 38 MM (1 1/2") WITH A CAULKING MATERIAL CONFORMING TO ASTM C920, TYPE S.

ITEM 511 CLASS HP CONCRETE BRIDGE DECK (PARAPET), AS PER PLAN

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

ITEM	UNITS	DESCRIPTION
511E50101	CUBIC YARD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

ITEM 510 DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 510, THE FOLLOWING CONDITIONS SHALL APPLY:

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF EPOXY GROUT INTO HOLES.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR ITEM 510-DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN.

ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE CONCRETE SEALER SHALL BE APPLIED TO THE SURFACE OF THE PARAPETS AND EXPOSED SURFACES OF THE SUBSTRUCTURES EXCEPT THE TOPS OF THE PIER CAPS AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT OR OTHER MATERIAL USED TO CLEAN SEAL, OR TREAT ANY BRIDGE STRUCTURE FROM ENTERING ANY STREAM, WETLANDS OR OTHER WATER AND TAKE APPROPRIATE ACTION.

ITEM 512 SEALING OF CONCRETE SURFACES (NON-EPOXY)

THIS ITEM OF WORK SHALL BE USED TO SEAL UNDERDECK SPALLED AREAS OF CONCRETE.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 512 SEALING OF CONCRETE SURFACES (NON-EPOXY). THIS PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER.

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE BUFF, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-27722.

ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN: PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511-CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 604, CONCRETE SLOPE PROTECTION AS PER PLAN, AS PER PLAN

THIS WORK SHALL INCLUDE THE FOLLOWING:

A. REMOVAL OF EXISTING DAMAGED PORTIONS OF CONCRETE SLOPE PROTECTION TO A DEPTH NECESSARY TO ESTABLISH A PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED SIX INCH THICK CONCRETE SLOPE PROTECTION.

B. THE INSTALLATION OF THE NEW CONCRETE SLOPE PROTECTION AS SHOWN ON SHEET 22/23.

C. CONSTRUCTION JOINTS: THE HORIZONTAL AND VERTICAL JOINTS SHALL MATCH THE REMAINING EXISTING CONCRETE SLOPE PROTECTION.

PAYMENT:

ALL COST OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING SAW CUTTING, ALL NECESSARY EMBANKMENT, EXCAVATION, PREFORMED EXPANSION JOINT FILLER, CONCRETE AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ITEM 848, SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1 INCH. FULL DEPTH REPAIR WILL NOT HAVE TO BE USED UNLESS THE FULL DEPTH OF THE DECK HAS BEEN PENETRATED.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO-DEMOLITION" WITH THE FOLLOWING REVISIONS:

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS PER ASTM C-127

THE THICKNESS OF THE PROPOSED OVERLAY SHALL BE AS SPECIFIED IN THE PLANS

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL PATH

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

ITEM SPECIAL - STRUCTURE MISC: SACRIFICIAL CATHODIC PROTECTION SYSTEM

DESCRIPTION

THIS WORK PERTAINS TO THE APPLICATION OF AN ALUMINUM-ZINC INDIUM (AL-ZN-IN) ANODE COATING TO THE SPALLED AREAS IN THE CONCRETE DECK BOTTOM USING THE THERMAL SPRAY PROCESS AS DIRECTED BY THE ENGINEER. THE PURPOSE OF THE ANODE COATING IS TO STOP CORROSION OF THE EXPOSED AND EMBEDDED STEEL BY GALVANIC CATHODIC PROTECTION (CP). WHEN ELECTRICALLY SHORTED TO THE REINFORCING STEEL IN THE CONCRETE, A SMALL DIRECT CURRENT WILL FLOW FROM THE SACRIFICIAL ANODE TO THE STEEL, THEREBY PROTECTING THE STEEL FROM ANY FURTHER CORROSION.

THE ELECTRICALLY SHORTED CP SYSTEM SHALL CONSIST OF AN AL-ZN-IND ANODE COATING.

THE CP SYSTEM FURNISHED SHALL INCLUDE ALL MATERIALS IDENTIFIED IN THESE SPECIFICATIONS. REQUEST FOR SUBSTITUTION OF ANY MATERIALS MUST CONTAIN APPROPRIATE DOCUMENTATION THAT SUBSTITUTES ARE EQUAL TO THE SPECIFIED ITEM.

THE CONTRACTOR SHALL DEMONSTRATE THAT THEY ARE CAPABLE OF SPRAYING THE SACRIFICIAL ALLOY PRIOR TO INSTALLATION AT THE JOB SITE. THE THERMAL SPRAY OPERATOR SHALL HAVE ADEQUATE TECHNICAL TRAINING AND FIELD EXPERIENCE TO SAFELY AND PROFICIENTLY APPLY THE ANODE COATING ON CONCRETE STRUCTURES. THE OPERATOR SHALL DEMONSTRATE THE ABILITY TO SET UP AND OPERATE THE THERMAL SPRAY EQUIPMENT. THE CONTRACTOR SHALL SUBMIT VALID RECORDS SHOWING OPERATOR QUALIFICATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR HAVING THE ANODE MANUFACTURER'S REPRESENTATIVE ON SITE UNTIL THE ENGINEER DEEMS THE CONTRACTOR TO BE PROFICIENT IN INSTALLATION OF THE ANODE.

THE FOLLOWING STANDARDS SHALL BE OBSERVED:

- ASTM D1002 - STRENGTH PROPERTIES OF ADHESIVES IN SHEAR BY TENSION LOADING
- ASTM D4285 - STANDARD TEST METHOD FOR INDICATING OIL OR WATER IN COMPRESSED AIR
- ASTM D4541 - STANDARD TEST METHOD FOR PULL-OFF STRENGTH OF COATINGS USING PORTABLE ADHESION TESTERS

MATERIALS AND EQUIPMENT:

AS A MINIMUM, THE CONTRACTOR SHALL SUPPLY THE FOLLOWING:

ABRASION OF CONCRETE SURFACES: THE ABRASIVE BLASTING EQUIPMENT SHALL BE A CONVENTIONAL, AIR-PRESSURE TYPE BLASTER. A MAXIMUM OF 80 PSI SHALL BE MAINTAINED AT THE BLAST NOZZLE.

THE ABRASIVE MATERIAL SHALL BE CLEAN AND DRY NON-METALLIC GRIT WITH NO MINERAL CONSTITUENTS THAT TEND TO BREAK DOWN AND REMAIN ON THE SURFACE IN VISIBLE QUANTITY. THE ABRASIVE SIZE SHALL BE SELECTED FROM 20-40 MESH AND SHALL BE HARD AND ANGULAR IN SHAPE. ABRASIVES THAT HAVE BEEN PREVIOUSLY USED TO REMOVE OIL AND/OR GREASE SHALL NOT BE ALLOWED. ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED.

COMPRESSED AIR USED FOR ABRASIVE BLASTING SHALL BE CLEAN, OIL-FREE AND DRY PER ASTM D4285. AIR LINE FILTERS AND MOISTURE SEPARATORS SHALL BE INSTALLED UPSTREAM FROM THE BLASTING EQUIPMENT. THESE SHALL BE INSPECTED DAILY FOR CLEANLINESS AND CORRECT OPERATION.

APPLICATION EQUIPMENT: THE COATING SHALL BE APPLIED USING ELECTRIC-ARC SPRAY EQUIPMENT. THE ARC SPRAY EQUIPMENT SHALL CONSIST OF A SPRAY GUN WIRE FEED UNIT, POWER SUPPLY, AND AIR COMPRESSOR. TO READILY SPRAY THE COILED ANODE WIRE, A STRAIGHTENING DEVICE MAY BE NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ANY NECESSARY MODIFICATIONS AND ADJUSTMENTS TO THE THERMAL SPRAY EQUIPMENT SO THAT THE ALLOY WIRE CAN BE SPRAYED PROPERLY.

ANODE SYSTEM: THE SACRIFICIAL ANODE SYSTEM SHALL BE AS SUPPLIED BY CORRPRO COMPANIES, INC., 1055 WEST SMITH ROAD, MEDINA, OHIO 44256, OR AN APPROVED EQUAL. THE MATERIAL SHALL HAVE THE FOLLOWING MATERIAL SPECIFICATIONS:

NOMINAL CHEMICAL COMPOSITION: AL/20 ZN /0 .2 IN WIRE DIAMETER: 1/8" TYPE: CORED WIRE DENSITY: 1.87 OZ/CU.IN. OPEN CIRCUIT POTENTIAL IN SIMULATED CONCRETE PRE- SOLUTION WITH PH = 12-13: > -1.6V (CSE)

THE ANODE WIRE SHALL BE KEPT CLEAN, DRY AND FREE FROM OXIDES AT ALL TIMES.

INSTALLATION: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF THE SYSTEM WITH ALL OTHER CONSTRUCTION OPERATIONS.

INSTALLATION SEQUENCE: INSTALLATION SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE:

1. PREPARATION OF THE REINFORCING STEEL AND CONCRETE SURFACES: WORK PERFORMED UNDER THIS SECTION CONSISTS OF CLEANING SPALLS AND THE ADJACENT CONCRETE SURFACE AT LEAST TWELVE INCHES (12") BEYOND THE SPALL PERIMETER, CLEANING EXPOSED STEEL TO COMPLY WITH SSPC-SP10 AND PROVIDING AN ANCHOR PROFILE BY ABRASIVE BLASTING SO THAT AN ADEQUATE BOND BETWEEN THE CONCRETE AND THERMALLY SPRAYED ANODE CAN BE OBTAINED. THE MAIN PURPOSE IS TO REMOVE DUST, GRIT, CHALK MARKS, RUST, PAINTS, CURING COMPOUNDS AND OTHER SUBSTANCES THAT MIGHT INHIBIT BONDING OF THE ANODE TO THE CONCRETE.
2. ABRASIVE BLASTING: ABRASIVE BLASTING SHALL NOT COMMENCE UNTIL ALL SPALLS HAVE BEEN REMOVED FROM THE DECK BOTTOM.

APPLICATION OF AL-ZN-IN ANODE COATING: THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT FOR INSTALLATION OF THE ANODE SYSTEM IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

1. SURFACES SHALL BE THOROUGHLY VACUUMED OR BLOWN CLEAN WITHIN 15 MINUTES BEFORE THERMAL SPRAYING OF THE AREA IS STARTED. ANY OIL, GREASE, SOIL, WATER, OR OTHER FOREIGN MATTER THAT MAY HAVE DEPOSITED ON THE SURFACE AFTER THE SURFACE PREPARATION HAS BEEN COMPLETED SHALL BE REMOVED BEFORE SPRAY APPLICATION. COATING APPLICATION SHALL EXTEND AT LEAST TWELVE INCHES (12") BEYOND THE SPALL PERIMETER AND SHALL ONLY BE PERFORMED WHEN THE CONCRETE SURFACE IS CLEAN AND DRY.
2. ALL METALLIC APPURTENANCES SUCH AS DRAIN PIPES, CONDUIT OR BEARING STEEL PLATES SHALL BE ISOLATED FROM THE ANODE AND TEMPORARILY COVERED WITH SUITABLE MASKING MATERIALS THAT EXTEND FROM THE OBJECTS BY AT LEAST 1/8" ON THE CONCRETE SURFACE. REINFORCING STEEL SHALL BE FULLY COATED.
3. THE INSTALLATION AREAS SHALL BE ENCLOSED DURING SPRAYING FOR DUST CONTAINMENT. THE ENCLOSURE SHALL CONSIST OF TARPS, PANELS, OR OTHER METHODS TO PREVENT DUST FROM ESCAPING THE IMMEDIATE AREA SUCH THAT IT WOULD CONSTITUTE A HEALTH HAZARD. PERSONNEL CONDUCTING SPRAYING OPERATIONS WITHIN THE ENCLOSURE SHALL BE PROVIDED WITH A HOOD WITH EXTERNAL AIR SUPPLY FOR RESPIRATION IN ACCORDANCE WITH OSHA 19-10-134.
4. CONCRETE SURFACES SHALL NOT BE SPRAYED WHEN THE TEMPERATURE IS LESS THAN 41 DEGREES F.
5. DURING APPLICATION, THE THERMAL SPRAY NOZZLE SHALL BE MAINTAINED AT A TRAVEL SPEED AND A DISTANCE FROM THE WORK SURFACE SUCH THAT THE ANODE DEPOSITS EFFICIENTLY AND BOND STRENGTHS ARE MAXIMIZED. TRAVEL SPEED SHALL BE APPROXIMATELY 6" PER SECOND. THE DISTANCE FROM THE NOZZLE TO THE SURFACE SHOULD BE APPROXIMATELY 6".
6. THE COATING SHALL BE APPLIED IN MULTIPLE PASSES AND SHOULD OVERLAP ON EACH PASS IN A CROSSHATCH PATTERN BEFORE THE FIRST LAYER OF MATERIAL COOLS. UNIFORM GUN MOVEMENT SHOULD BE USED TO ENSURE A CONSISTENT THICKNESS. SUFFICIENT ANODE MATERIAL SHALL BE SPRAYED TO ACHIEVE A MINIMUM THICKNESS OF 12 MILS. THE THICKNESS OF THE COATING SHALL BE MEASURED AT A MINIMUM OF FIVE LOCATIONS PER 100 SQUARE FEET USING A METALLIC COATING THICKNESS GAGE SUCH AS A DEFELSKO POSITECTOR 100. THE DETECTOR SHALL BE CALIBRATED FOR THE ALLOY BEING TESTED.
7. COMPRESSED AIR USED FOR SPRAYING SHALL BE CLEAN, OIL-FREE AND DRY, PER ASTM D4285. AIR LINE FILTERS AND MOISTURE SEPARATORS SHALL BE INSTALLED UPSTREAM FROM THE SPRAYING EQUIPMENT. THESE SHALL BE INSPECTED DAILY FOR CLEANLINESS AND CORRECT OPERATION. ANY INDICATION OF MALFUNCTION IN THE EQUIPMENT, INDICATED BY OIL OR WATER IN THE FILTER OR TRAPS, SHALL BE CORRECTED IMMEDIATELY.
8. THE ANODE COATING SHALL NOT CONTAIN ANY LUMPS, BLISTERS, COARSE TEXTURE, OR LOOSELY ADHERING PARTICLES, NOR SHALL IT CONTAIN ANY CRACKS, PINHOLES, OR CHIPS THAT EXPOSE THE CONCRETE SUBSTRATE. UNACCEPTABLE AREAS SHALL BE REPAIRED. REPAIR WORK SHALL BE CONDUCTED AS FOLLOWS:
 - A. REMOVE ALL DEGRADED ANODE COATING BY SCRAPING, STRIP BLASTING, OR BOTH. DURING THIS PROCESS LIGHT BLASTING SHALL BE APPLIED TO THE AREAS WITHOUT EXPOSING LARGE AGGREGATES.
 - B. RE-APPLY SACRIFICIAL ANODE COATING.
 - C. INSPECT THE SPRAYED ANODE FOR PROPER THICKNESS AS DESCRIBED ABOVE.

METHOD OF MEASUREMENT:

THE AREA UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF SACRIFICIAL ANODE COATING COMPLETED ON THE DECK BOTTOM AND ACCEPTED IN PLACE.

BASIS OF PAYMENT:

ACCEPTED QUANTITIES OF SACRIFICIAL ANODE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR:

ITEM	DESCRIPTION	UNIT
SPECIAL	STRUCTURE MISC.: SACRIFICIAL CATHODIC PROTECTION SYSTEM	SQ. FT.

PAYMENT SHALL INCLUDE ALL MATERIALS, SCAFFOLDING, MANUFACTURER'S REPRESENTATIVE, ENCLOSURES, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS REQUIRED FOR THE COMPLETION AND ACCEPTANCE OF THIS ITEM.

ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				AS PER PLAN REFERENCE SHEET NO.
					ABUT-MENT	PIER	SUPER-STRUCTURE	TOTAL	ABUT-MENT	PIER	SUPER-STRUCTURE	TOTAL	
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN				LUMP				LUMP	2/23, 20/23, 21/23
509	10000	17243	POUND	EPOXY COATED REINFORCING STEEL			8622	8622			8621	8621	
510	10001	1352	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	96		580	676	96		580	676	2/23, 15/23, 16/23, 19/23
511	50101	104	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	8		44	52	8		44	52	2/23, 15/23, 16/23, 19/23
511	81300	2096	EACH	CONCRETE, MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS			1150	1150			946	946	
512	10100	1311	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	27	261	392	680	22	217	392	631	
516	13600	32	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	16			16	16			16	
519	11101	328	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	48	135		183	102	43		145	3/23, 9/23 - 14/23, 20/23, 21/23
SPECIAL	530E00600	1676	SQ YD	STRUCTURE MISC.: SACRIFICIAL CATHODIC PROTECTION SYSTEM			925	925			751	751	
601	21001	281	SQ YD	CONCRETE SLOPE PROTECTION, AS PER PLAN	136			136	145			145	3/23, 22/23
847	30400	1895	SQ YD	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" THICK)			1044	1044			851	851	
848	10200	1895	SQ YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (1 3/4" THICK)			1044	1044			851	851	
848	10200	467	SQ YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (2" THICK)	267			267	200			200	
848	20000	2362	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION	267		1044	1311	200		851	1051	3/23, 17/23, 18/23
848	30200	8	CU YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY VARIABLE THICKNESS, MATERIAL ONLY	1		3	4	1		3	4	
848	50000	55	SQ YD	HAND CHIPPING			44	44			11	11	
848	50100	LUMP		TEST SLAB				LUMP				LUMP	
848	50200	4	CU YD	FULL DEPTH REPAIR			2	2			2	2	
848	50300	467	SQ YD	WEARING COURSE REMOVED, ASPHALT	267			267	200			200	
848	50340	562	SQ YD	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			444	444			118	118	

* SEE SHEETS 428A AND 428B FOR NOTES AND DETAILS PERTAINING TO THIS ITEM.

** SEE GENERAL NOTES SHEET 3723

ESTIMATED QUANTITIES
BRIDGE NO. LAK-2-0031 L/R
OVER LLOYD ROAD

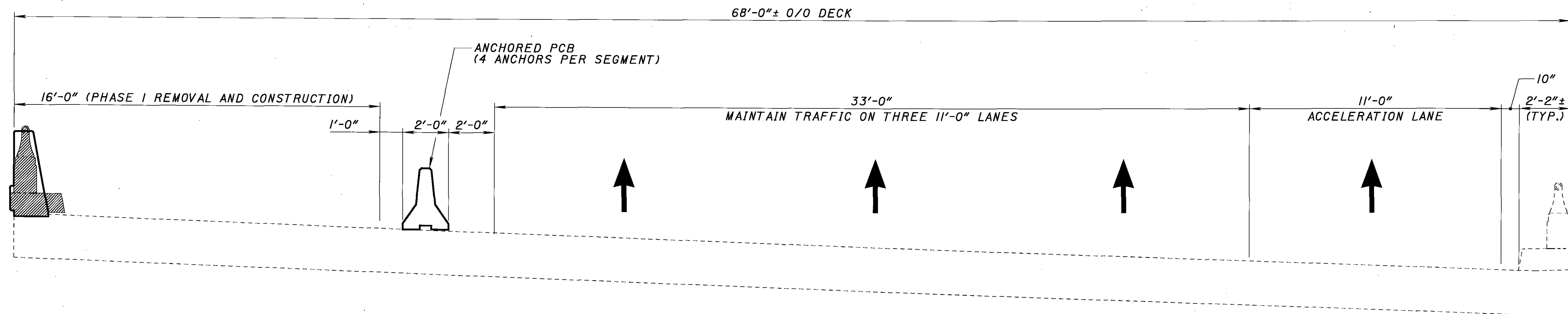
LAK-2-0.00

4/23

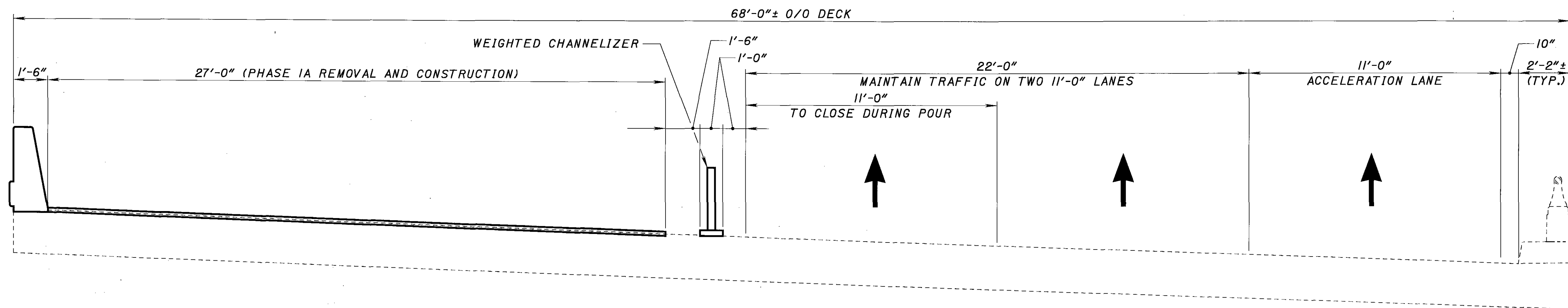
432
524

DESIGNED: SCT
CHECKED: RSC
DRAWN: RSC
REVISED: RSC
REVIEWED: JWB
DATE: 7-27-2005
STRUCTURE FILE NUMBER: 4300033L/4300068R

DESIGN AGENCY
Baker
228 EUCLID AVENUE, SUITE 1050
CLEVELAND, OHIO 44115



TRANSVERSE SECTION - PHASE I
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

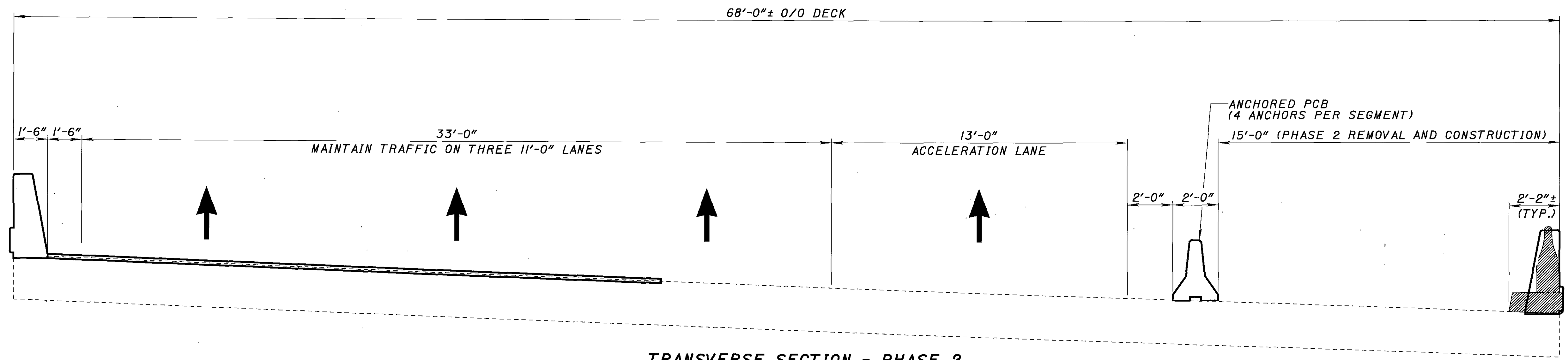


TRANSVERSE SECTION - PHASE IA
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

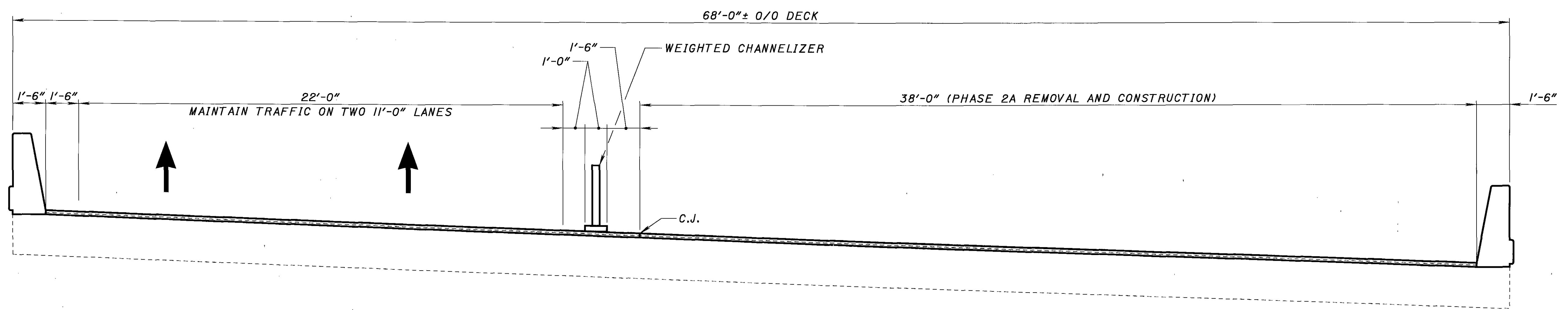
INDICATES PORTION OF STRUCTURE REMOVED

NOTE: SECTIONS SHOWN IN THE DIRECTION OF TRAVEL

\$DATE\$
\$FILE\$



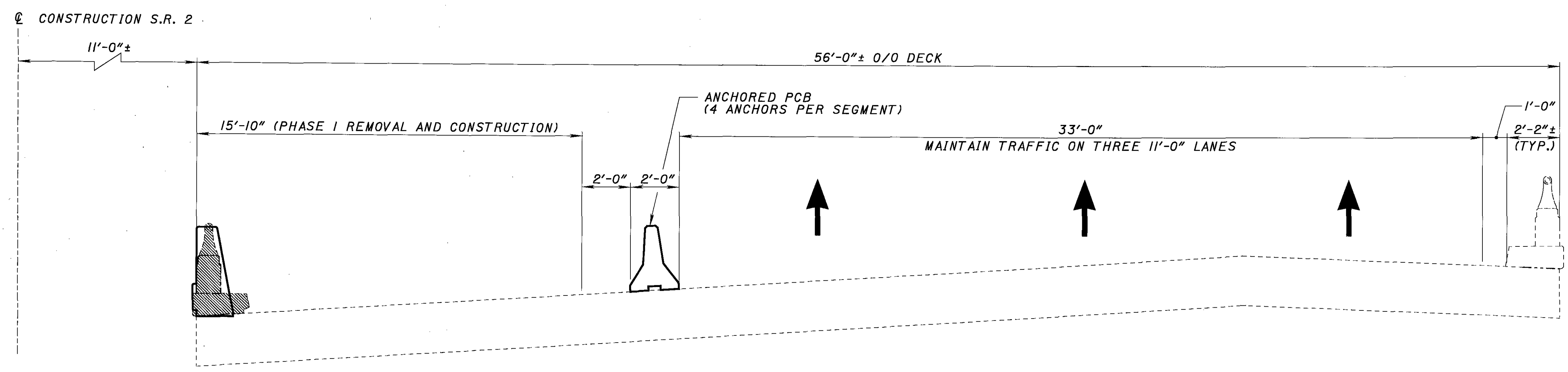
TRANSVERSE SECTION - PHASE 2
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION



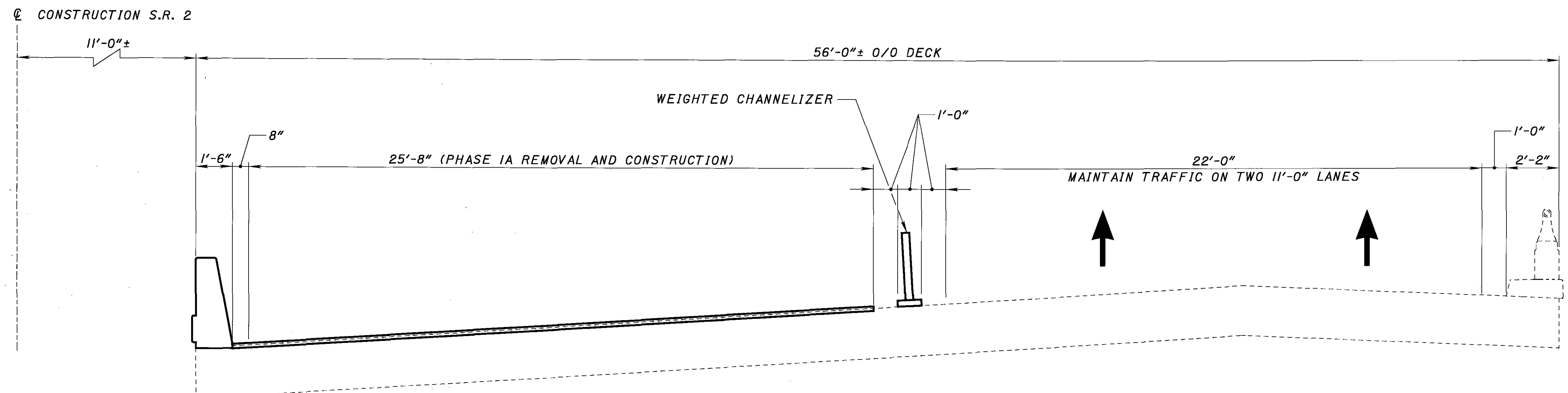
TRANSVERSE SECTION - PHASE 2A
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION

INDICATES PORTION OF STRUCTURE REMOVED

NOTE:
 SECTIONS SHOWN IN THE DIRECTION OF TRAVEL



TRANSVERSE SECTION - PHASE I
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION

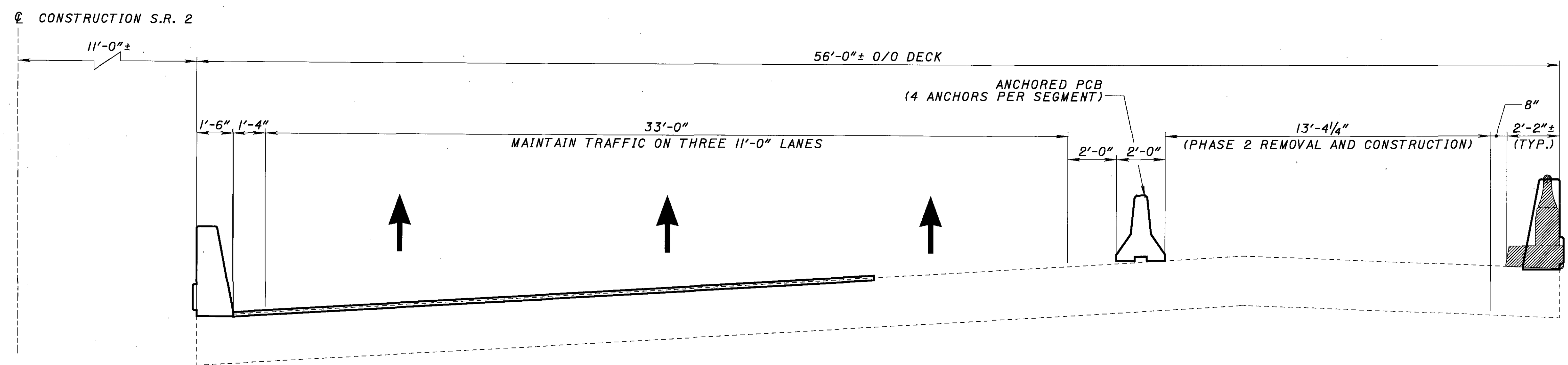


TRANSVERSE SECTION - PHASE IA
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION

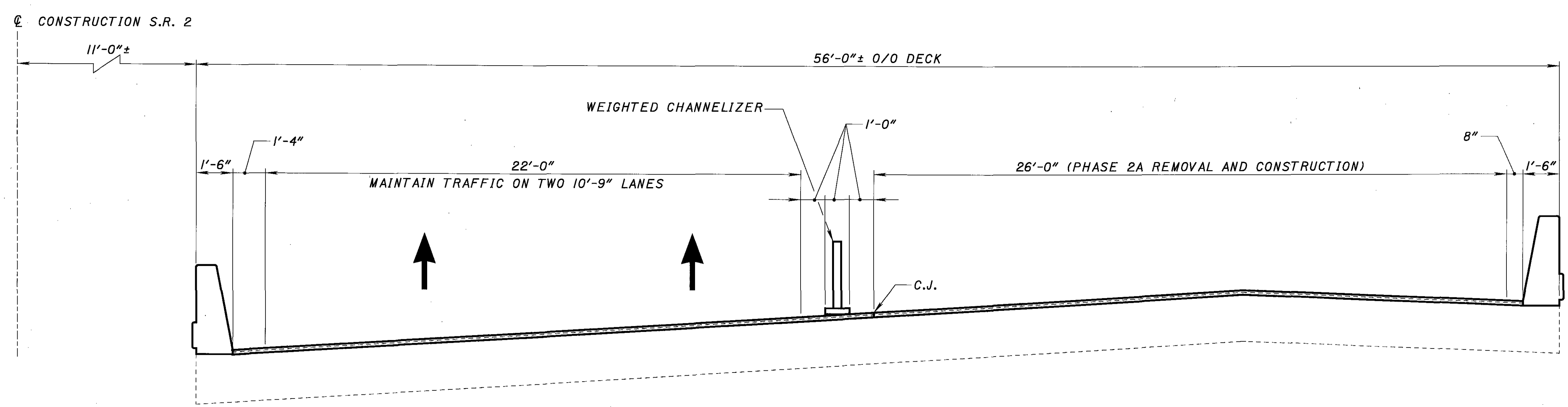
INDICATES PORTION OF STRUCTURE REMOVED

NOTE:
 SECTIONS SHOWN IN THE DIRECTION OF TRAVEL

\$DATE\$
 \$FILE\$



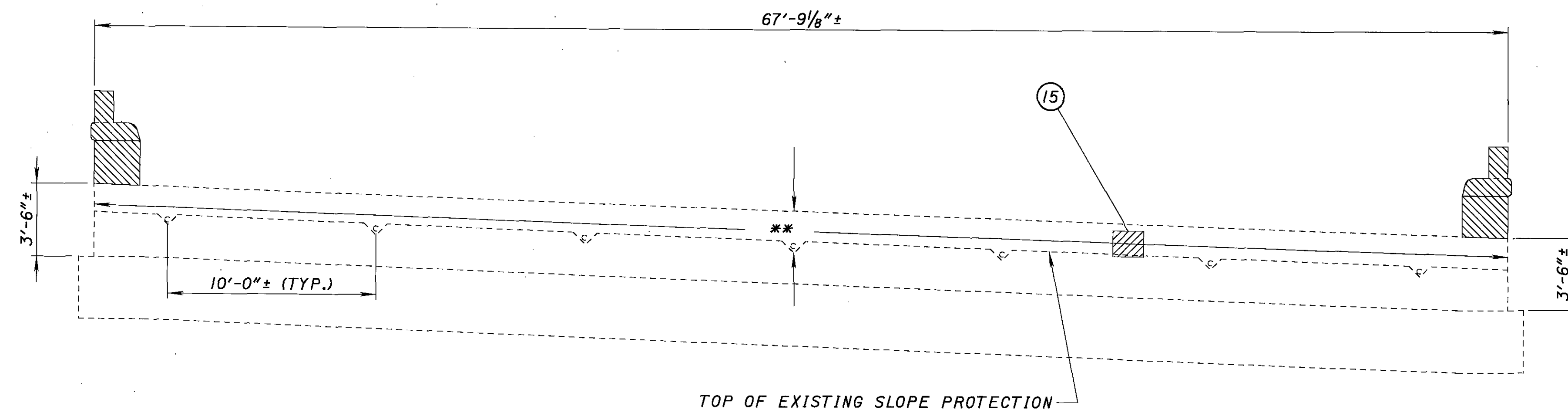
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 MAINTENANCE OF TRAFFIC AND CONSTRUCTION



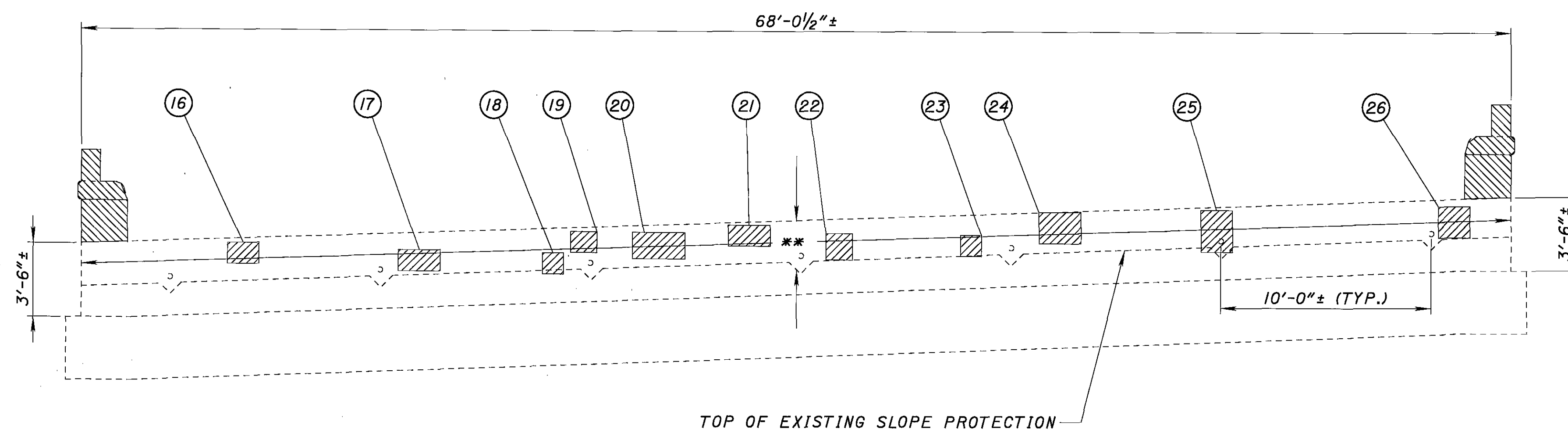
TRANSVERSE SECTION - PHASE 2A
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION

INDICATES PORTION OF STRUCTURE REMOVED

NOTE:
 SECTIONS SHOWN IN THE DIRECTION OF TRAVEL



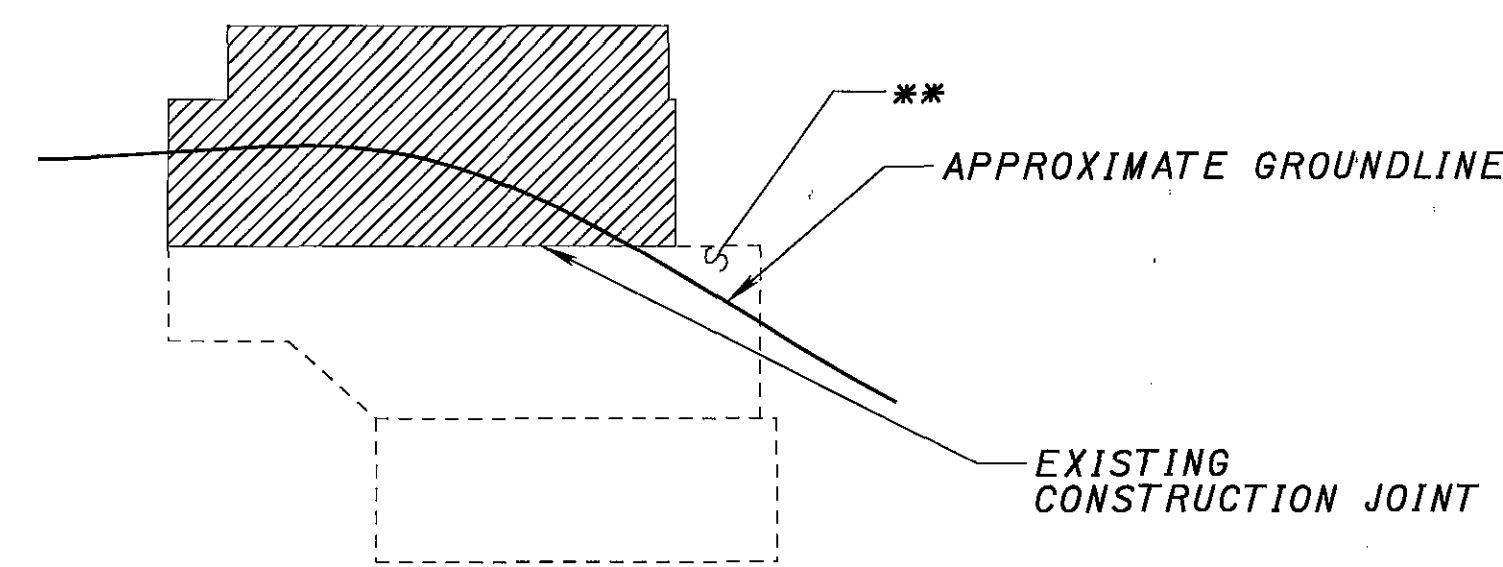
REAR ABUTMENT LEFT BRIDGE - ELEVATION



FORWARD ABUTMENT LEFT BRIDGE - ELEVATION

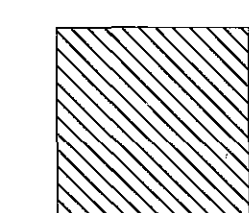
REAR ABUTMENT LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
15	1'-6" x 1'-3"	1.88
TOTAL:		1.88
(MULTIPLIER) x 2		4.00

FORWARD ABUTMENT LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
16	1'-6" x 1'-0"	1.50
17	2'-0" x 1'-0"	2.00
18	1'-0" x 1'-0"	1.00
19	1'-3" x 1'-0"	1.25
20	2'-6" x 1'-3"	3.13
21	2'-0" x 1'-0"	2.00
22	1'-3" x 1'-3"	1.56
23	1'-0" x 1'-0"	1.00
24	2'-0" x 1'-6"	3.00
25	1'-6" x 2'-0"	3.00
26	1'-6" x 1'-6"	2.25
TOTAL:		21.69
(MULTIPLIER) x 2		44.00

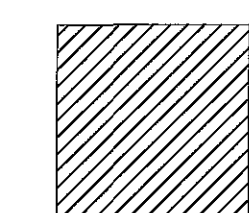


WINGWALL DETAIL
ALL WINGWALLS SIMILAR

LEGEND:



AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN

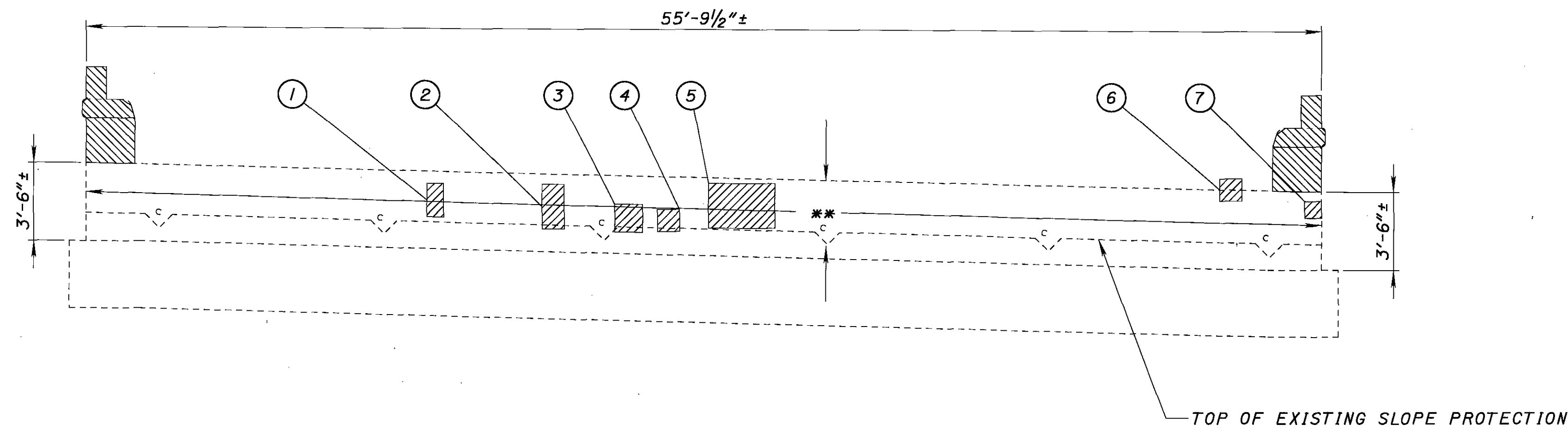


AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES

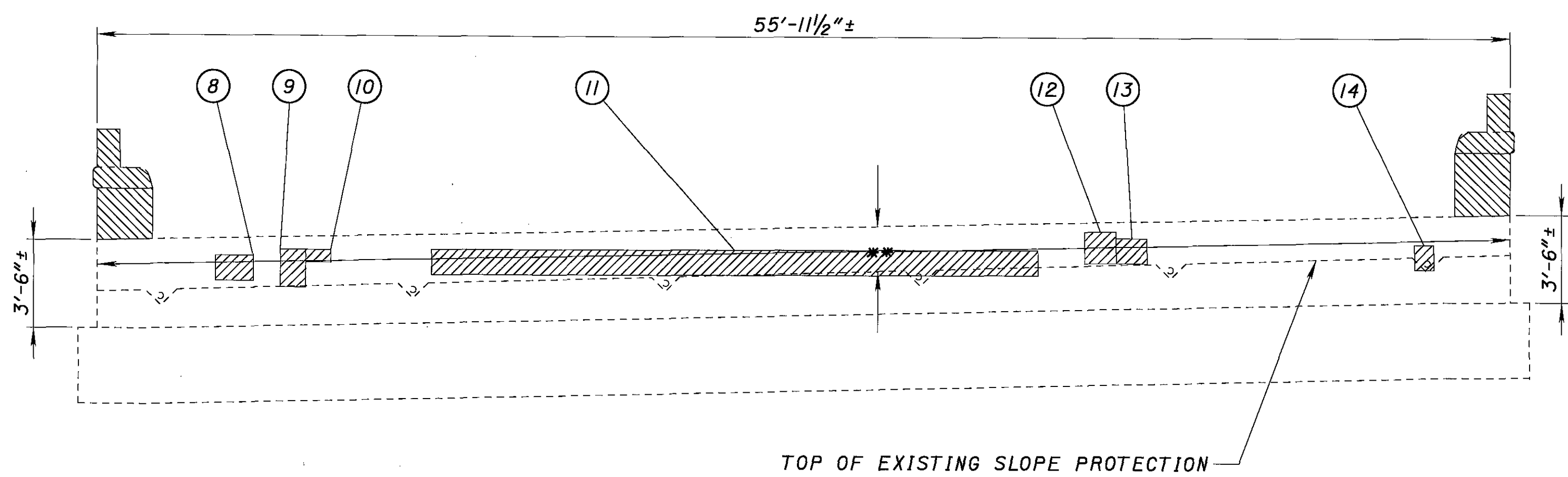
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SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

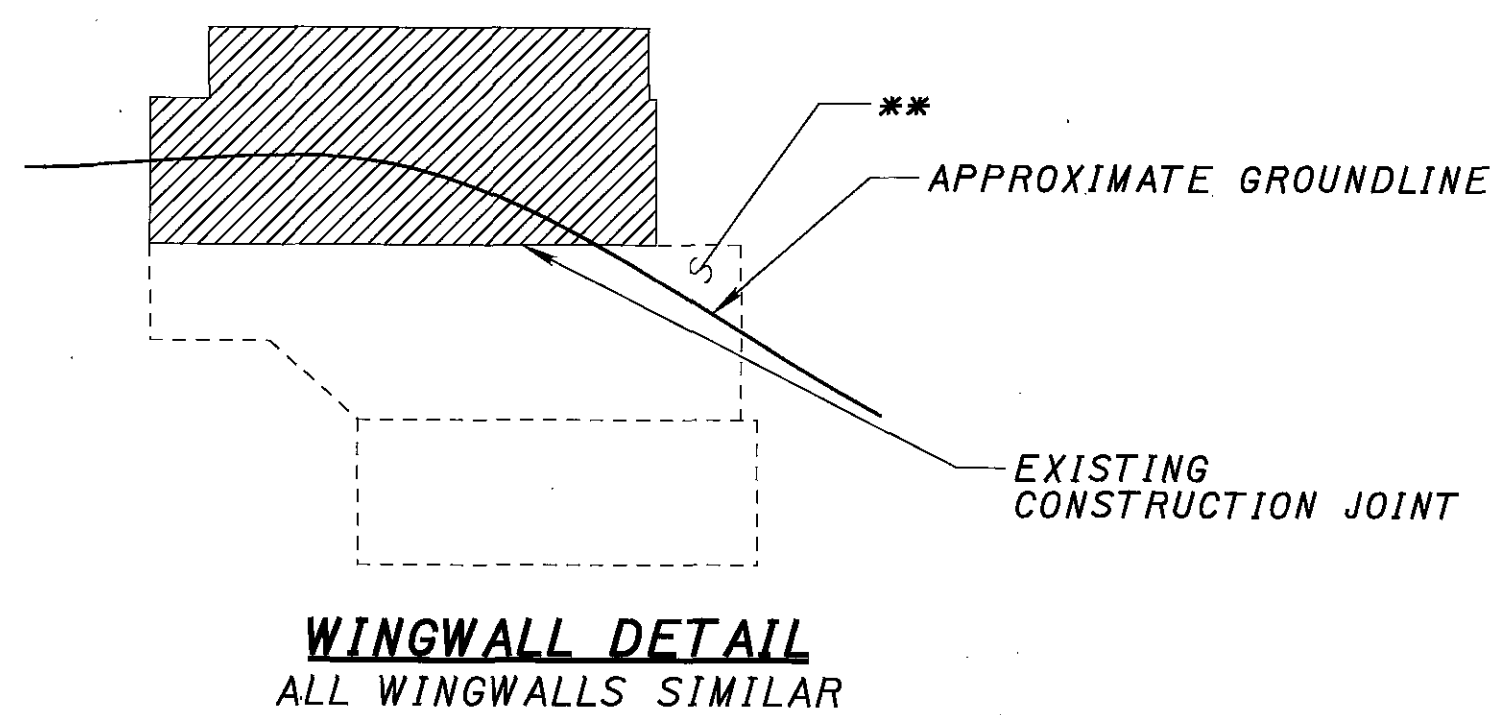
\$DATE\$
\$FILE\$



REAR ABUTMENT RIGHT BRIDGE - ELEVATION



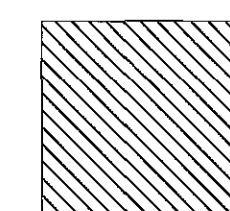
FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION



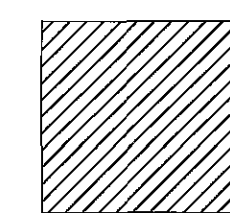
REAR ABUTMENT RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	0'-9" x 1'-6"	1.13
2	1'-0" x 2'-0"	2.00
3	1'-3" x 0'-9"	0.94
4	1'-0" x 1'-0"	1.00
5	3'-0" x 2'-0"	6.00
6	1'-0" x 1'-0"	1.00
7	0'-9" x 0'-9"	0.56
TOTAL:		12.63
(MULTIPLIER) x 2		26.00

FORWARD ABUTMENT RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
8	1'-6" x 1'-0"	1.50
9	1'-0" x 2'-0"	2.00
10	1'-0" x 1'-0"	1.00
11	24'-0" x 1'-3"	30.00
12	1'-3" x 1'-3"	1.56
13	1'-3" x 1'-0"	1.25
14	0'-9" x 1'-0"	0.75
TOTAL:		38.06
(MULTIPLIER) x 2		76.00

LEGEND:



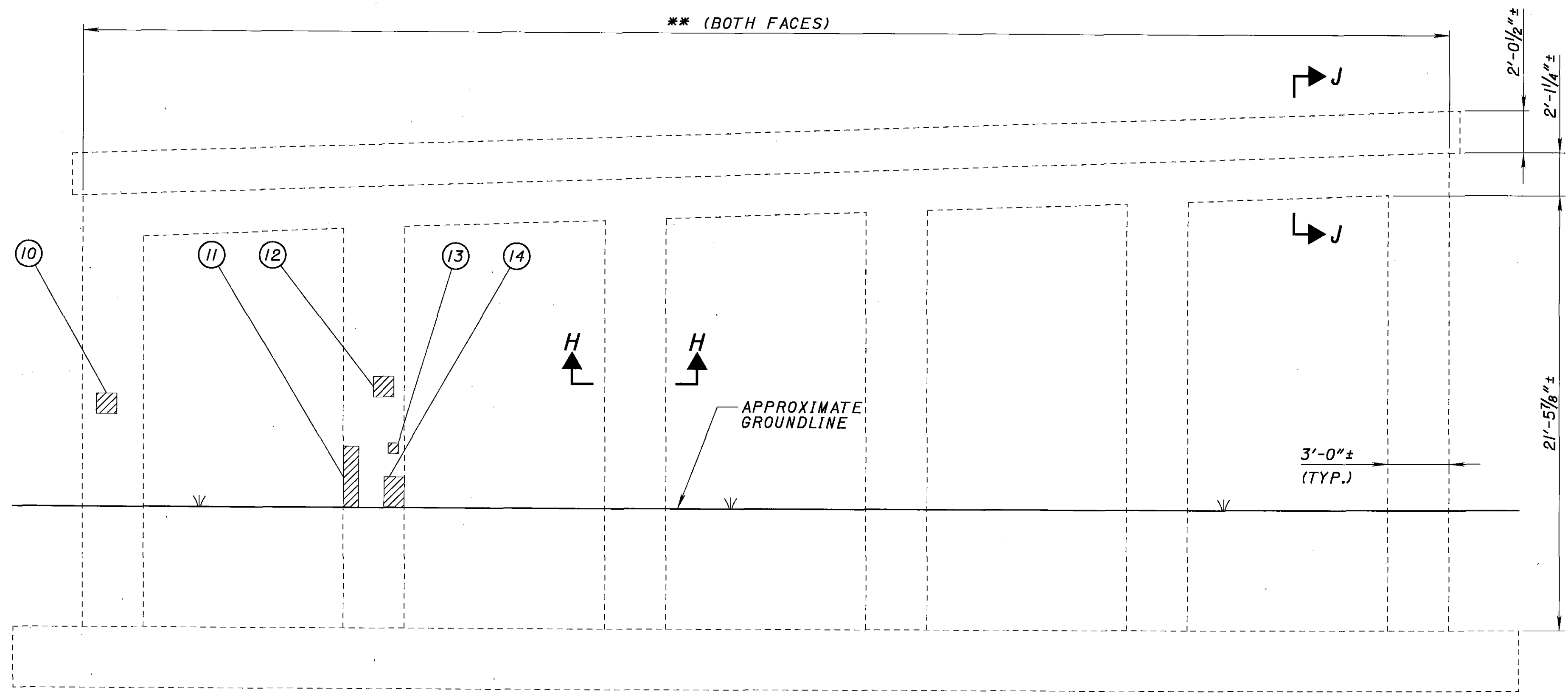
AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



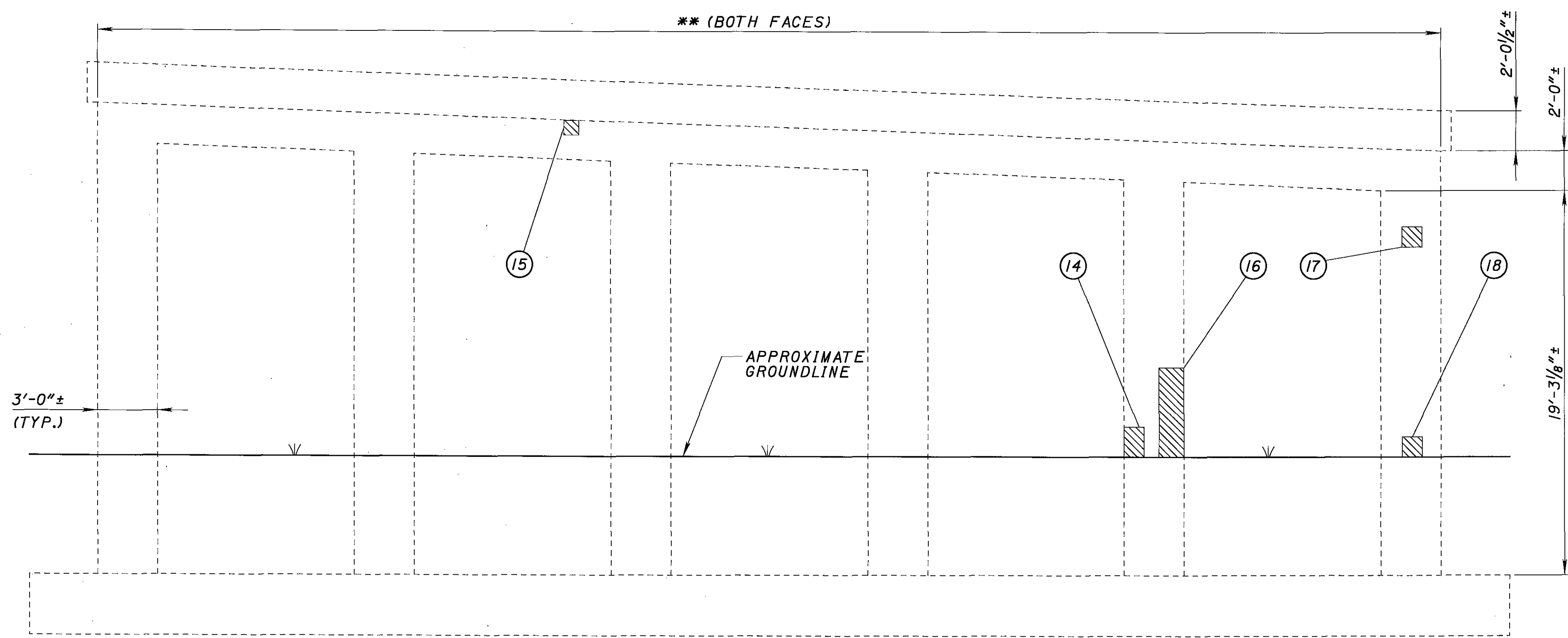
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES

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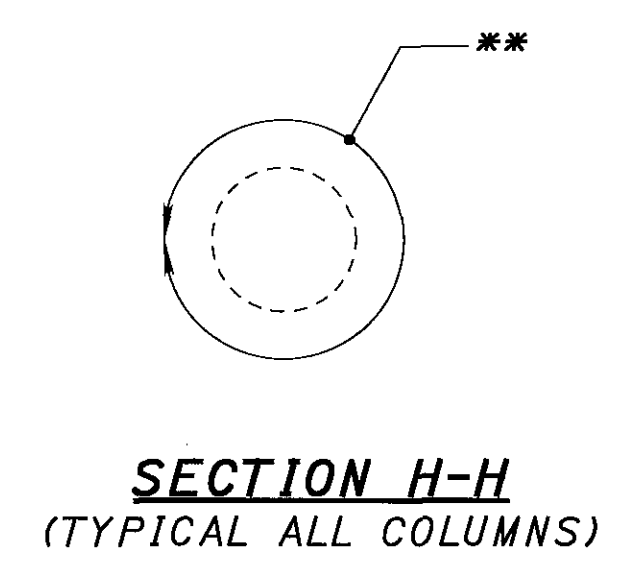
SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



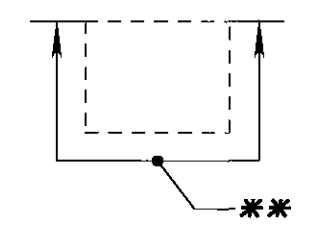
PIER I LEFT BRIDGE
LOOKING UP STATION



PIER I LEFT BRIDGE
LOOKING DOWN STATION



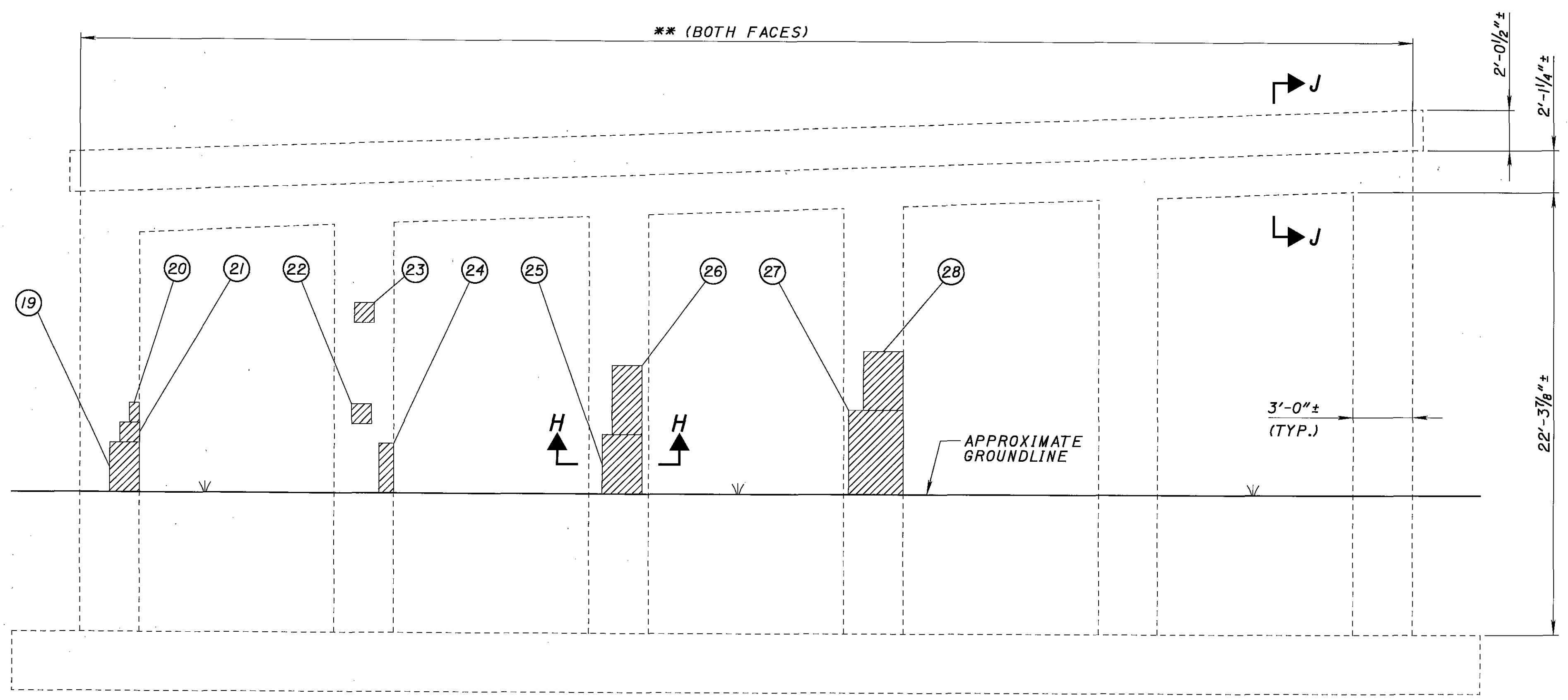
SECTION H-H
(TYPICAL ALL COLUMNS)



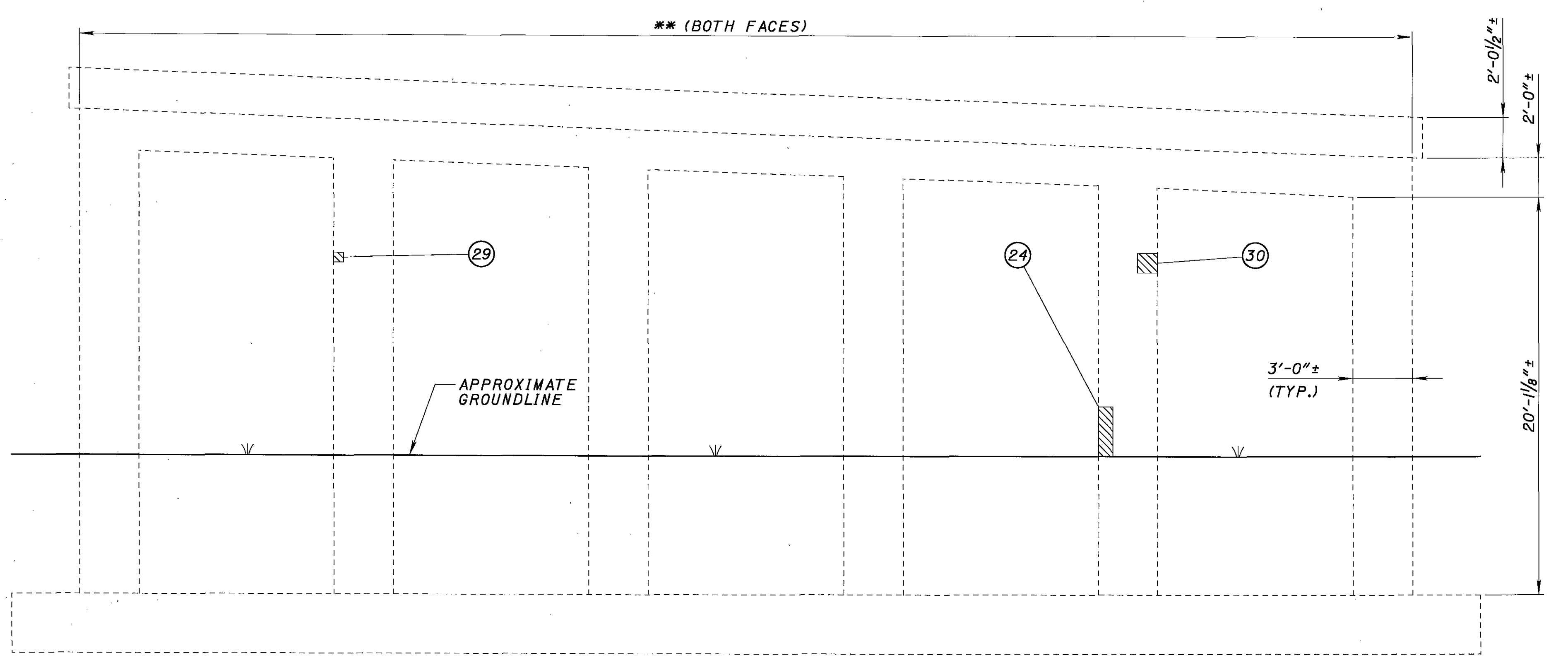
SECTION J-J
(TYPICAL ALL PIERS)

PIER I LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
10	1'-0" x 1'-0"	1.00
11	1'-9" x 3'-0"	5.25 on side
12	1'-0" x 1'-0"	1.00
13	0'-6" x 0'-6"	0.25
14	2'-6" x 1'-6"	3.75 on side
15	0'-9" x 0'-9"	0.56
16	1'-9" x 1'-6"	2.63
17	1'-0" x 1'-0"	1.00
18	1'-0" x 1'-0"	1.00
TOTAL:		16.44
(MULTIPLIER) x 2		33.00

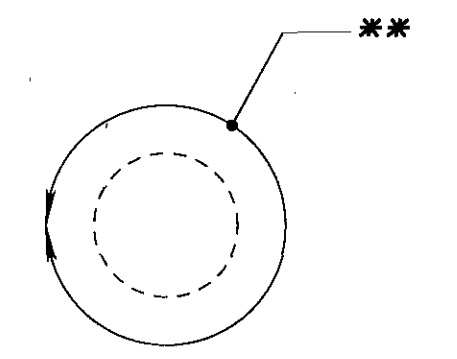
- LEGEND:**
- AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES (UP STATION VIEW)
 - AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES (DOWN STATION VIEW)
 - ** SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
 - TYP. = TYPICAL



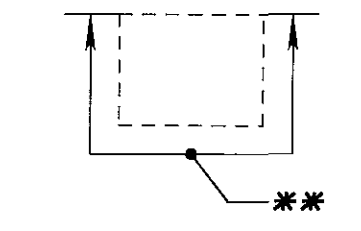
PIER 2 LEFT BRIDGE
 LOOKING UP STATION



PIER 2 LEFT BRIDGE
 LOOKING DOWN STATION



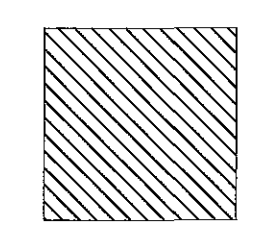
SECTION H-H
 (TYPICAL ALL COLUMNS)



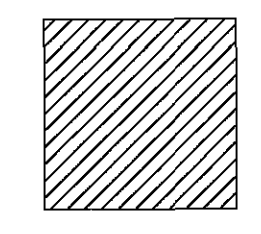
SECTION J-J
 (TYPICAL ALL PIERS)

PIER 2 LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
19	2'-6" x 2'-6"	6.25
20	0'-9" x 1'-0"	0.75
21	1'-6" x 1'-0"	1.50
22	1'-0" x 1'-0"	1.00
23	1'-0" x 1'-0"	1.00
24	2'-6" x 2'-6"	6.25 on side
25	2'-0" x 3'-0"	6.00
26	1'-6" x 3'-6"	5.25
27	3'-6" x 4'-3"	14.88
28	2'-3" x 3'-0"	6.75
29	0'-6" x 0'-6"	0.25
30	1'-0" x 1'-0"	1.00
Total:		50.88
(MULTIPLIER) x 2		102.00

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
 PATCHING CONCRETE STRUCTURES
 (UP STATION VIEW)



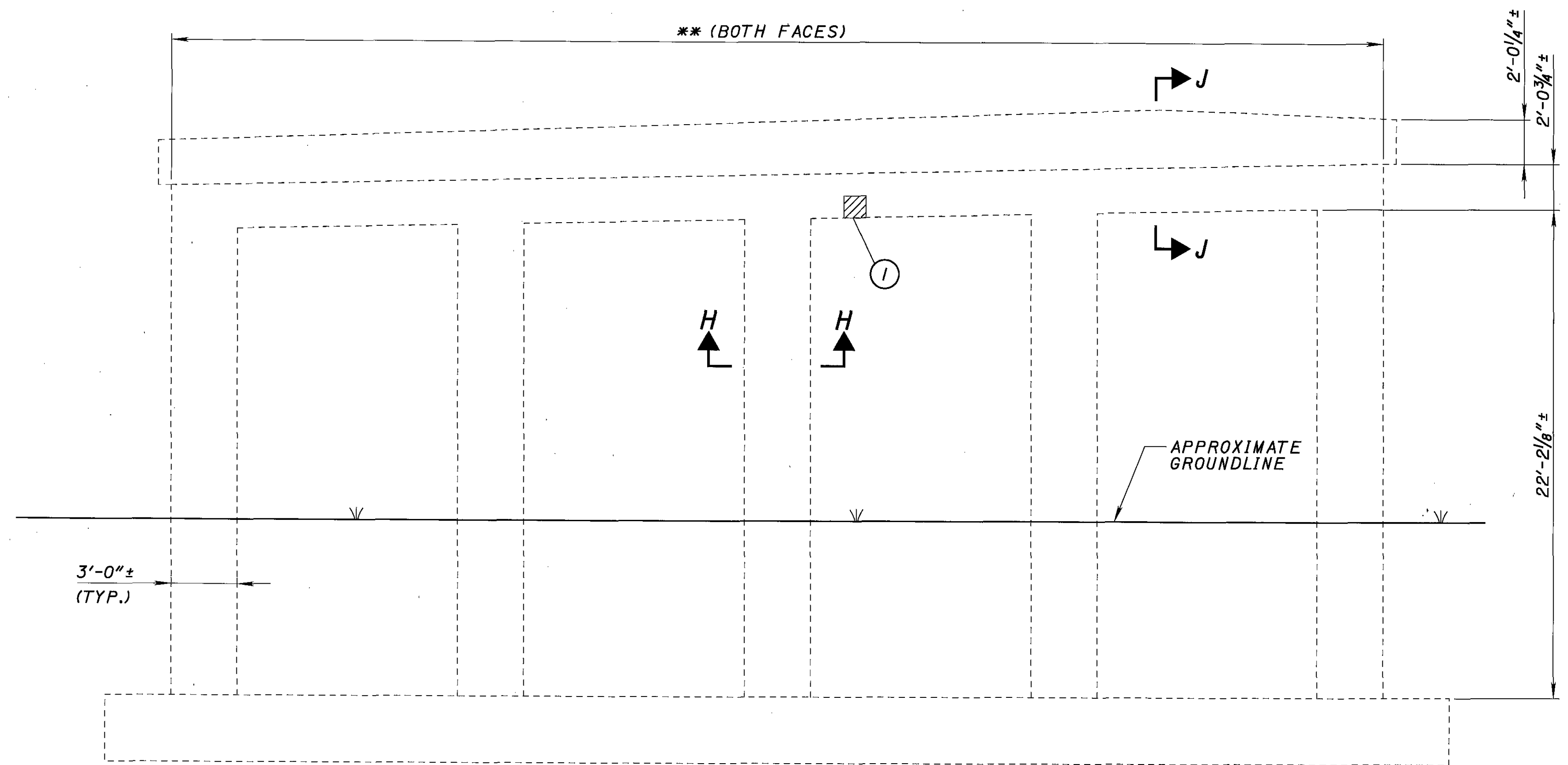
AREAS TO BE PATCHED PER ITEM 519 -
 PATCHING CONCRETE STRUCTURES
 (DOWN STATION VIEW)

**

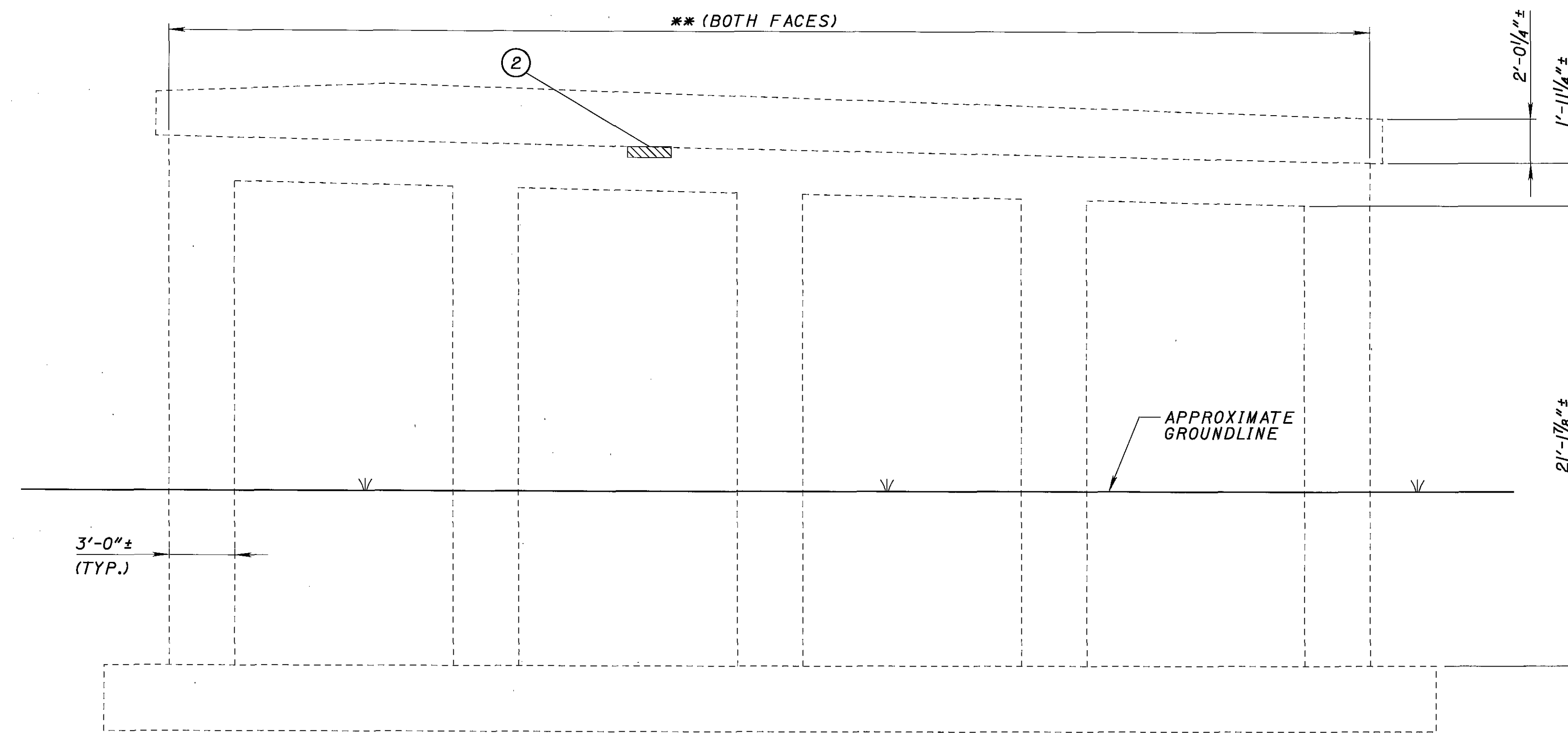
SEAL ALL EXPOSED CONCRETE SURFACES
 WITH ITEM 512 - SEALING OF CONCRETE
 SURFACES (EPOXY-URETHANE)

TYP. =

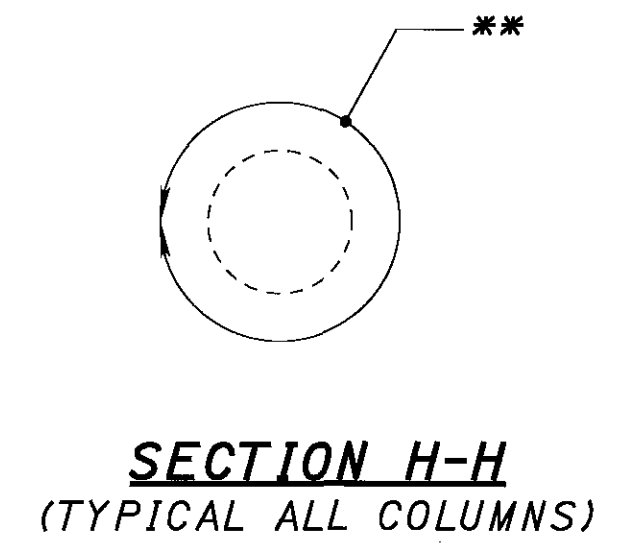
TYPICAL



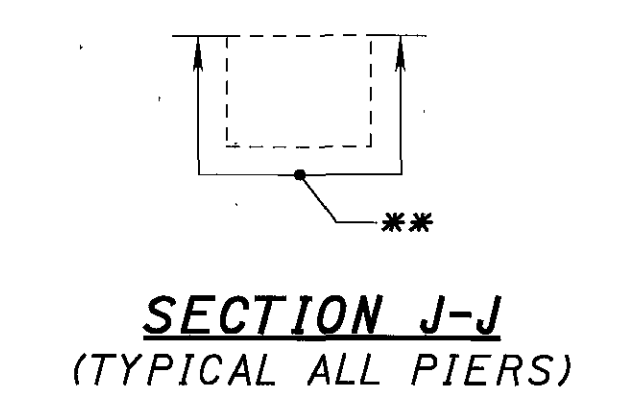
PIER I RIGHT BRIDGE
LOOKING UP STATION



PIER I RIGHT BRIDGE
LOOKING DOWN STATION



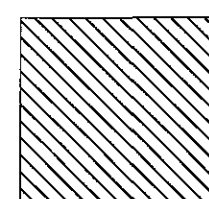
SECTION H-H
(TYPICAL ALL COLUMNS)

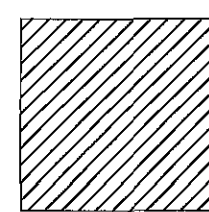


SECTION J-J
(TYPICAL ALL PIERS)

PIER I RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	1'-0" x 1'-0"	1.00 wraps
2	2'-0" x 0'-6"	1.00
TOTAL:		2.00
(MULTIPLIER) x 2		4.00

LEGEND:

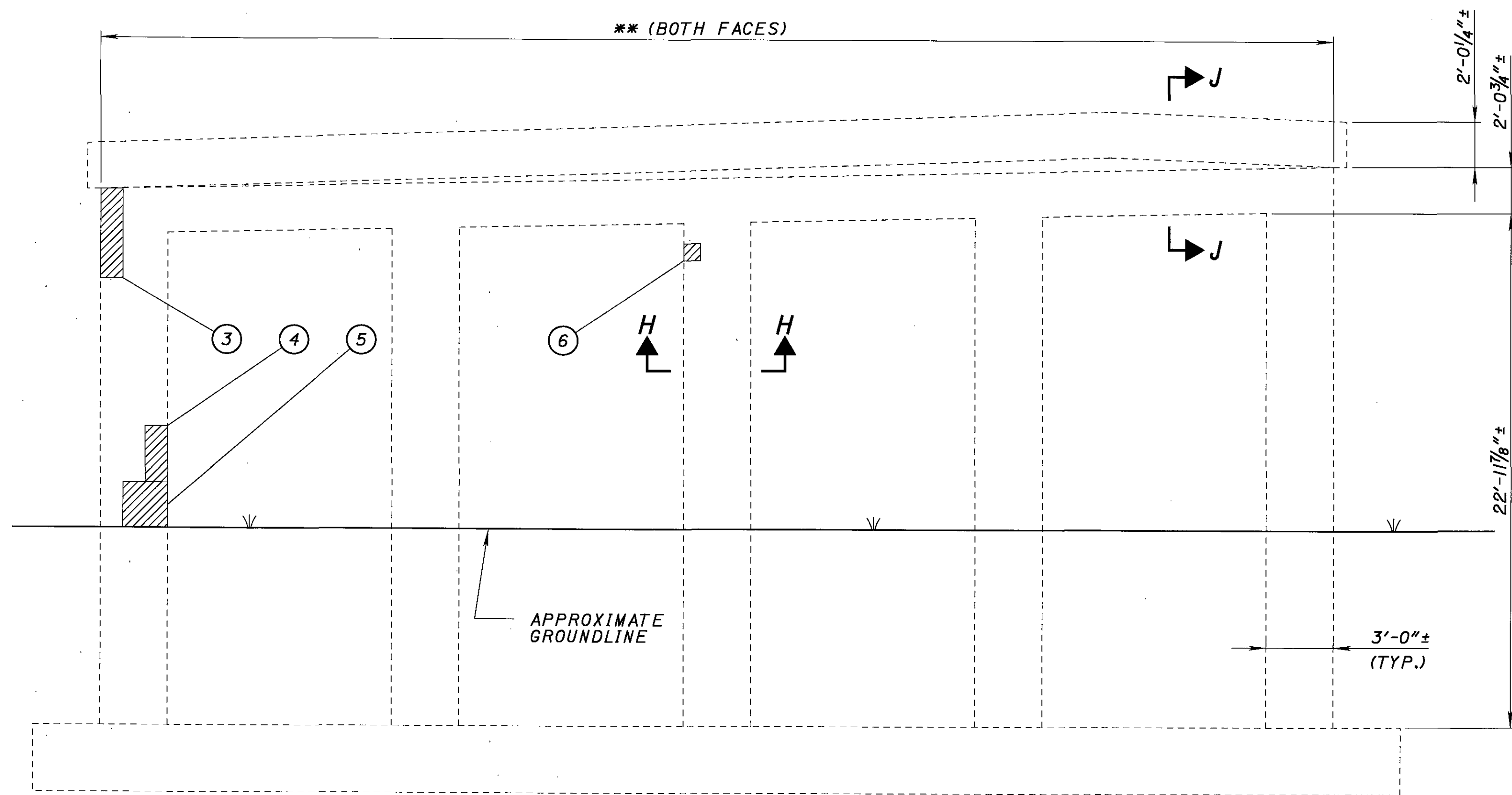
 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES (UP STATION VIEW)

 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES (DOWN STATION VIEW)

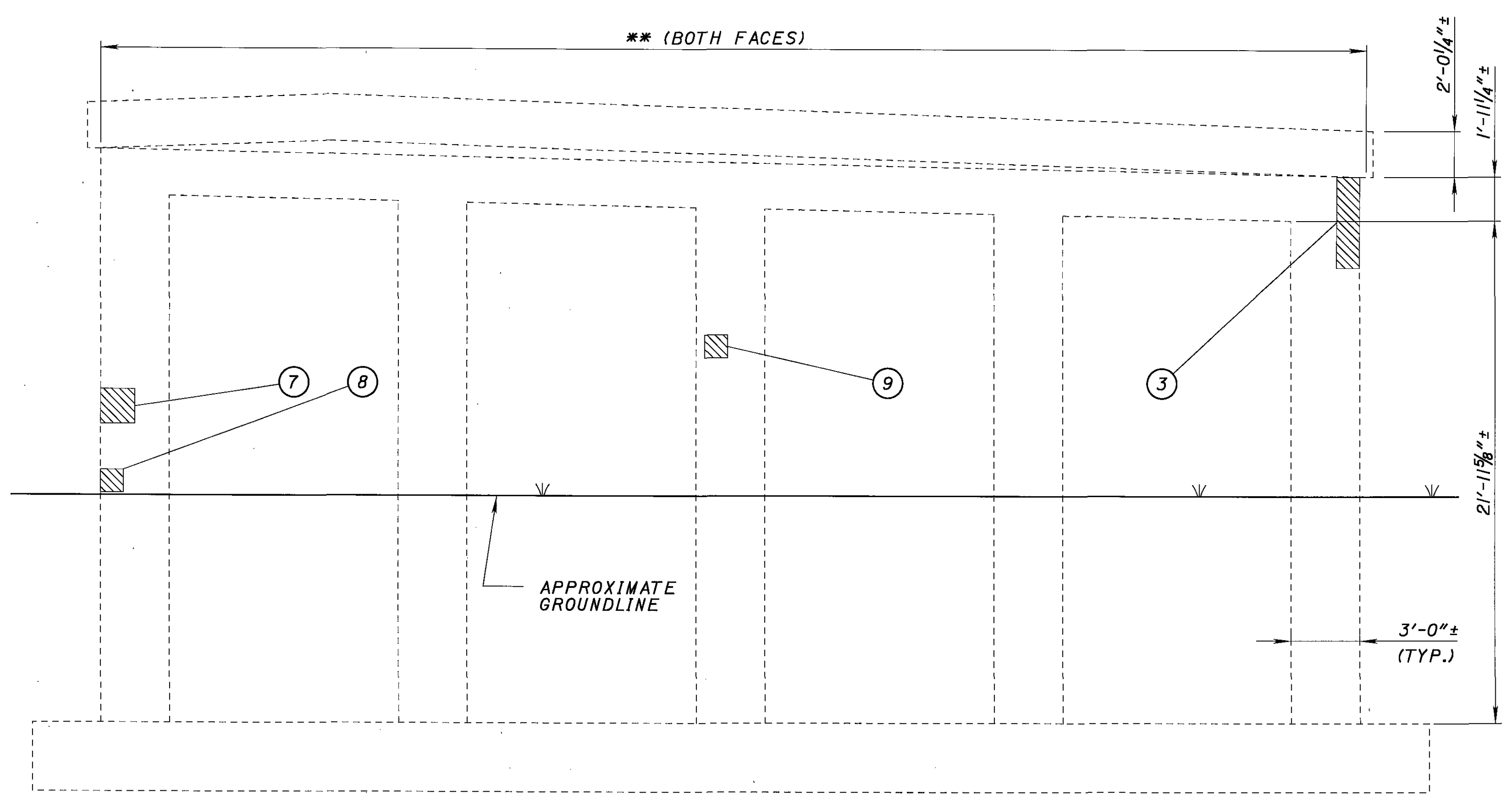
** SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

TYP. - TYPICAL

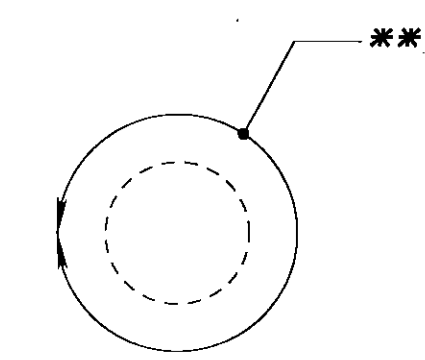
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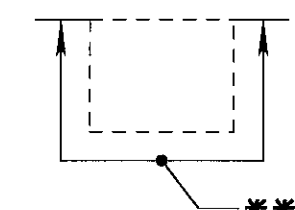
PIER 2 RIGHT BRIDGE
LOOKING UP STATION



PIER 2 RIGHT BRIDGE
LOOKING DOWN STATION



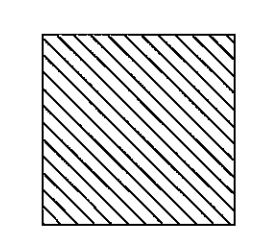
SECTION H-H
(TYPICAL ALL COLUMNS)



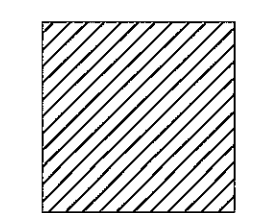
SECTION J-J
(TYPICAL ALL PIERS)

PIER 2 RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
3	2'-0" x 4'-0"	8.00 on side
4	1'-0" x 2'-6"	2.50
5	2'-0" x 2'-0"	4.00
6	0'-9" x 0'-9"	0.56
7	1'-6" x 1'-0"	2.25
8	1'-0" x 1'-0"	1.00
9	1'-0" x 1'-0"	1.00
TOTAL:		19.31
(MULTIPLIER) x 2		39.00

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(UP STATION VIEW)



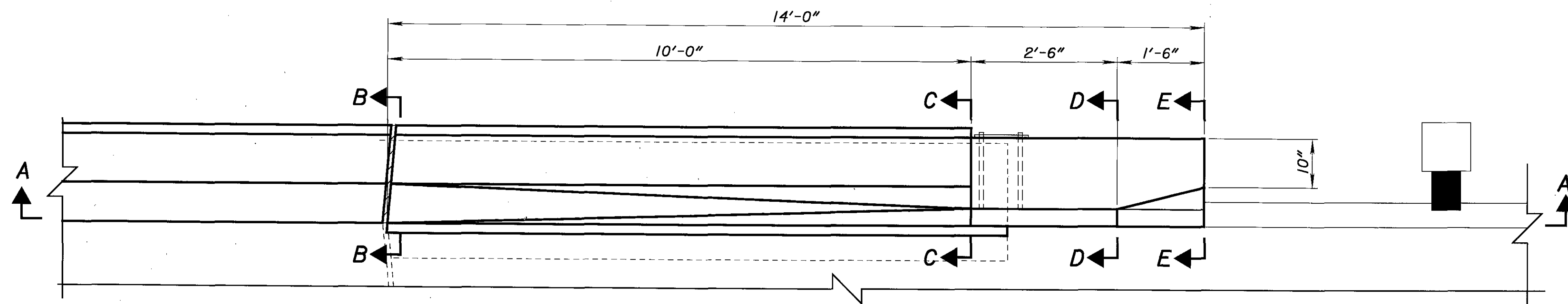
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(DOWN STATION VIEW)

**

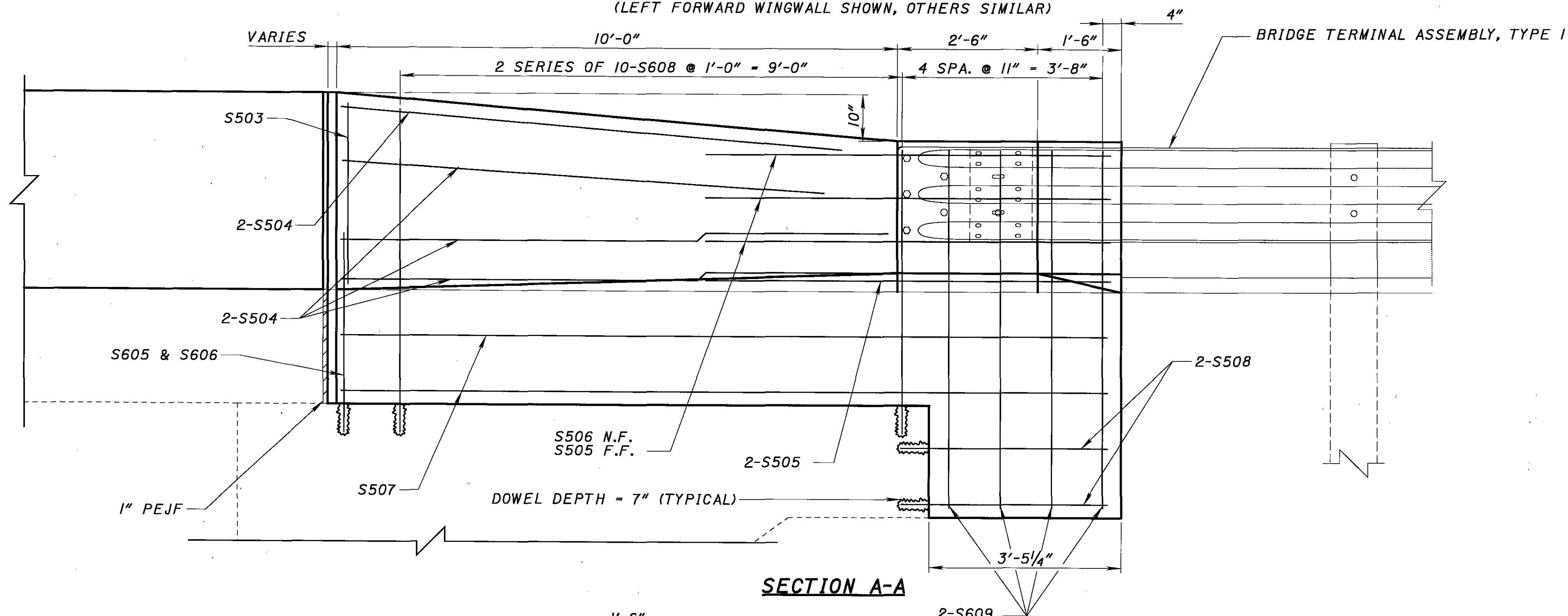
SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512 - SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

TYP. = TYPICAL

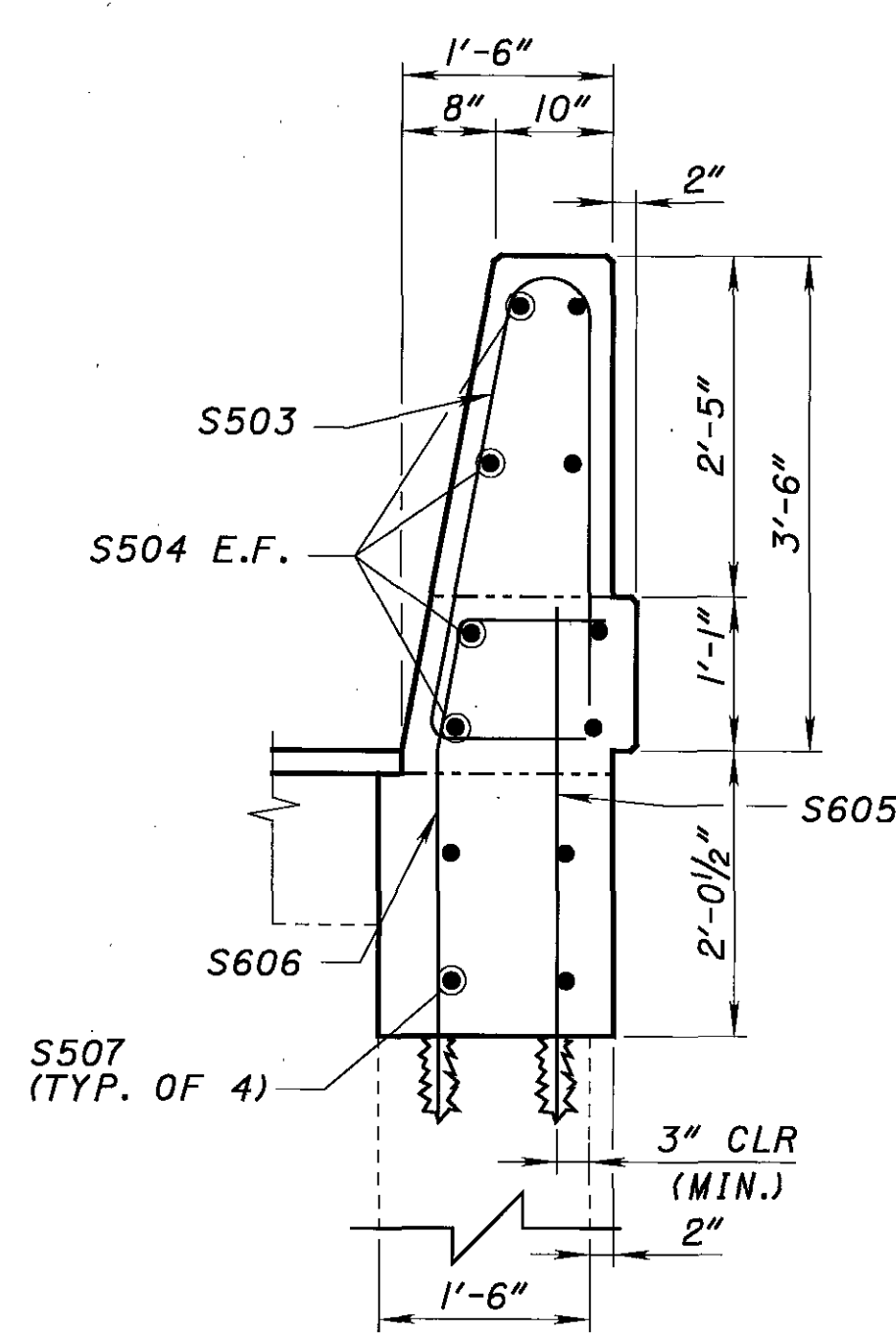
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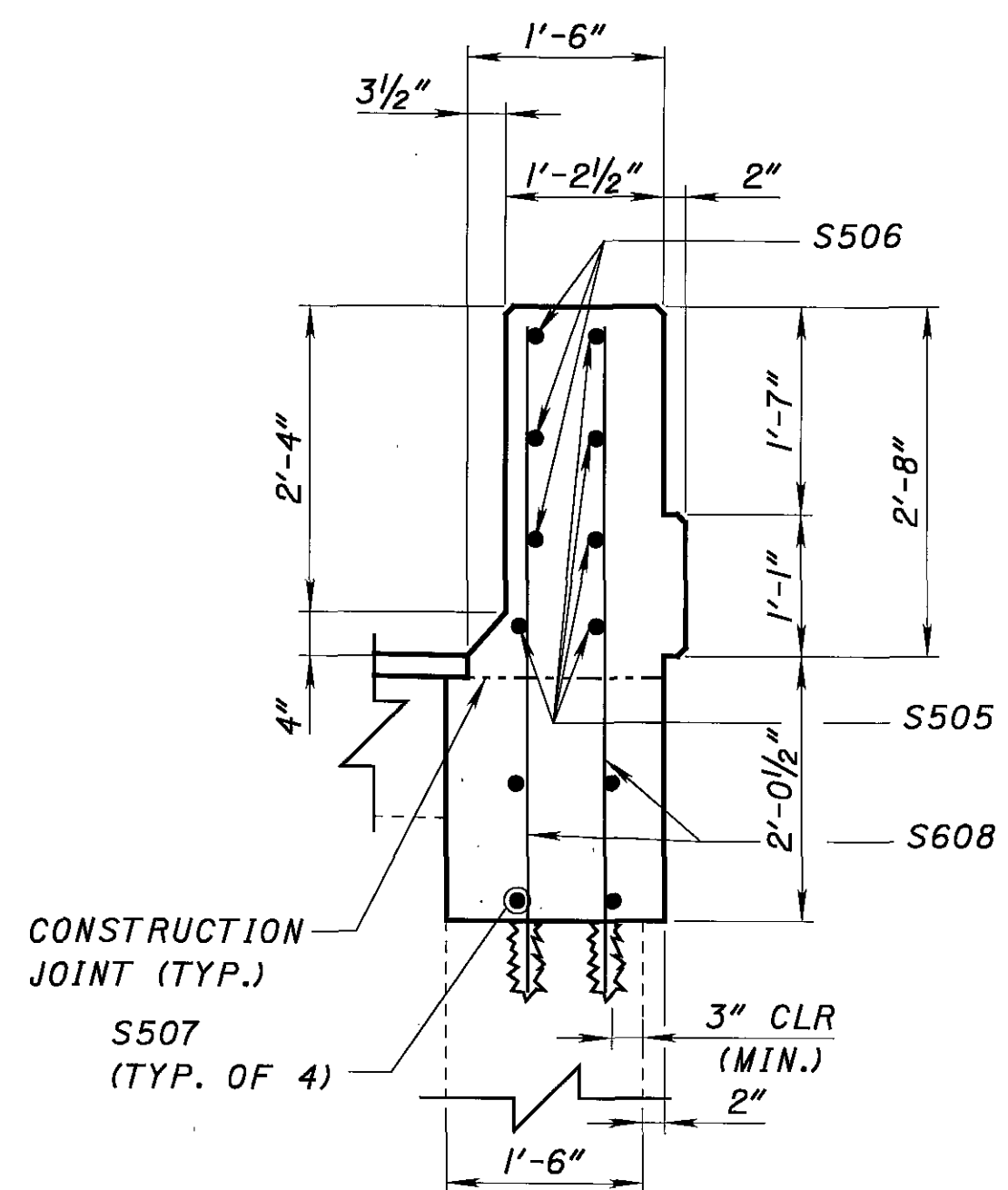
OUTSIDE WINGWALL PLAN
(LEFT FORWARD WINGWALL SHOWN, OTHERS SIMILAR)



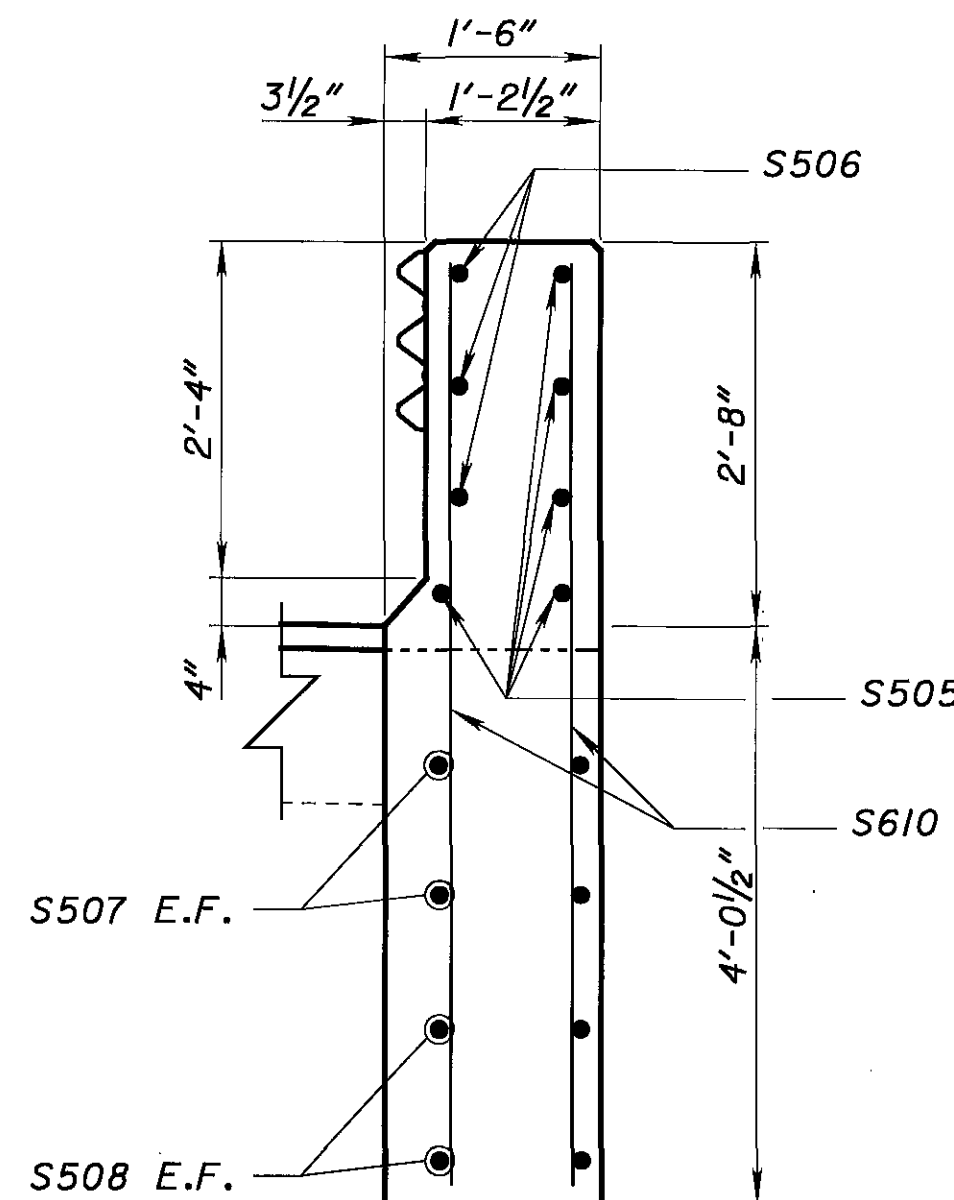
SECTION A-A



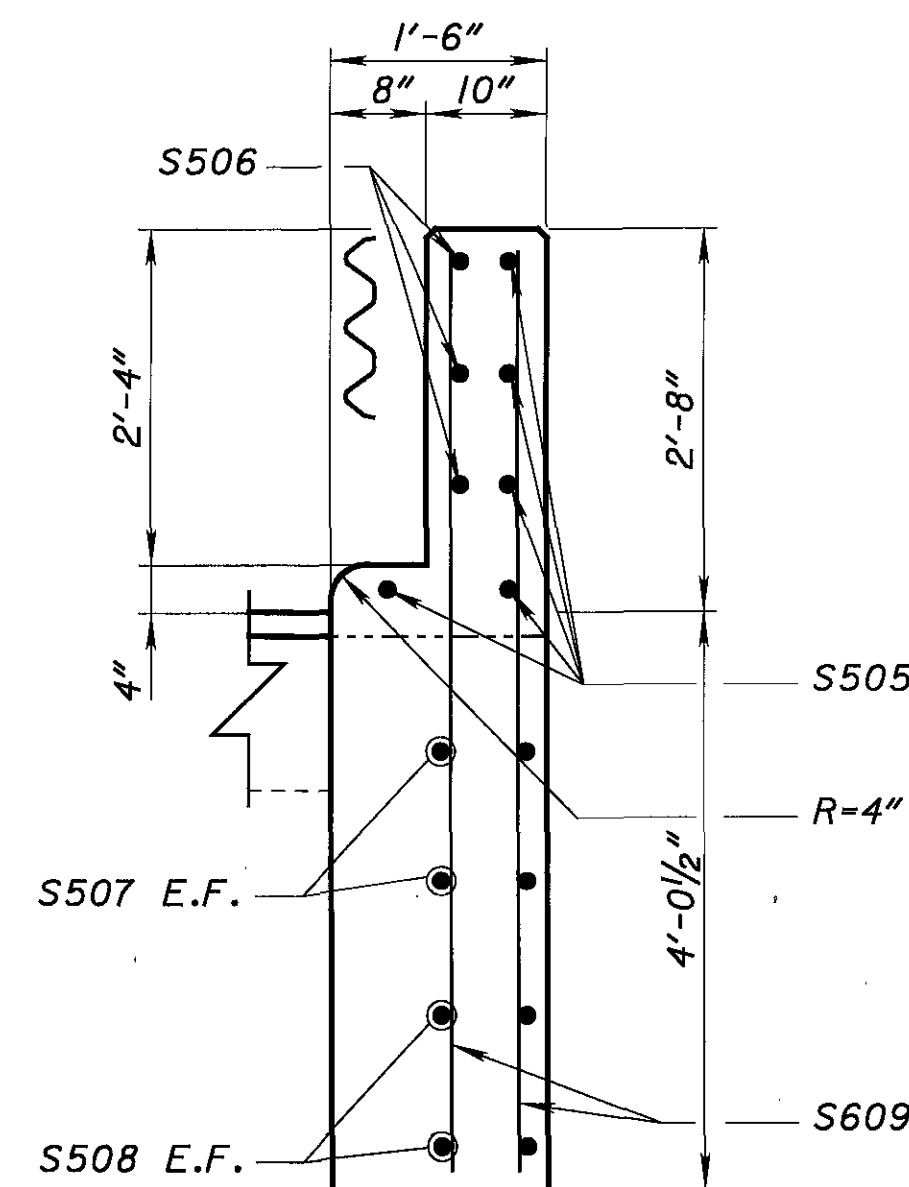
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

LEGEND:

- N.F. - NEAR FACE
- F.F. - FAR FACE
- E.F. - EACH FACE
- SPA. - SPACES
- CLR. - CLEARANCE
- MIN. - MINIMUM
- TYP. - TYPICAL

NOTES:

1. ALL REINFORCING STEEL TO BE EPOXY COATED.
2. SEE SHEET 19/23 FOR BRIDGE PARAPET DETAILS.
3. SEE STD. DWG. SBR-1-99 FOR ADDITIONAL DETAILS.
4. THE CONCRETE FOR WINGWALLS SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN.

\$DATE\$
\$FILE\$

OUTSIDE WINGWALL DETAIL
BRIDGE NO. LAK-2-0031 L/R
OVER LLOYD ROAD

LAK-2-0.00

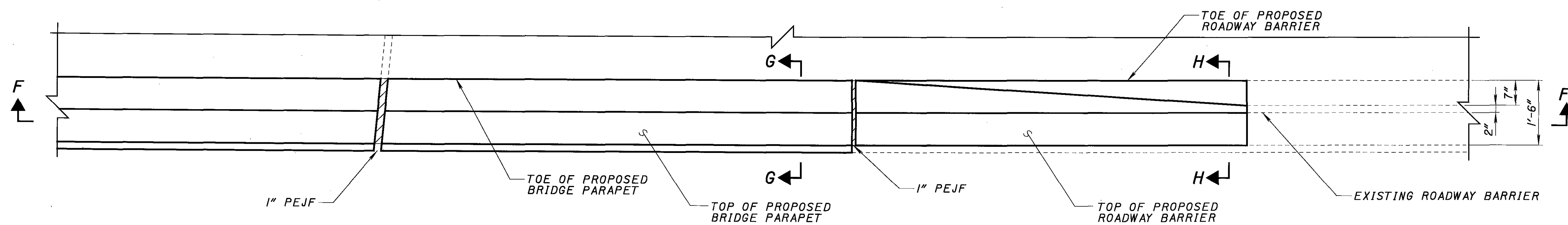
15/23

443
524

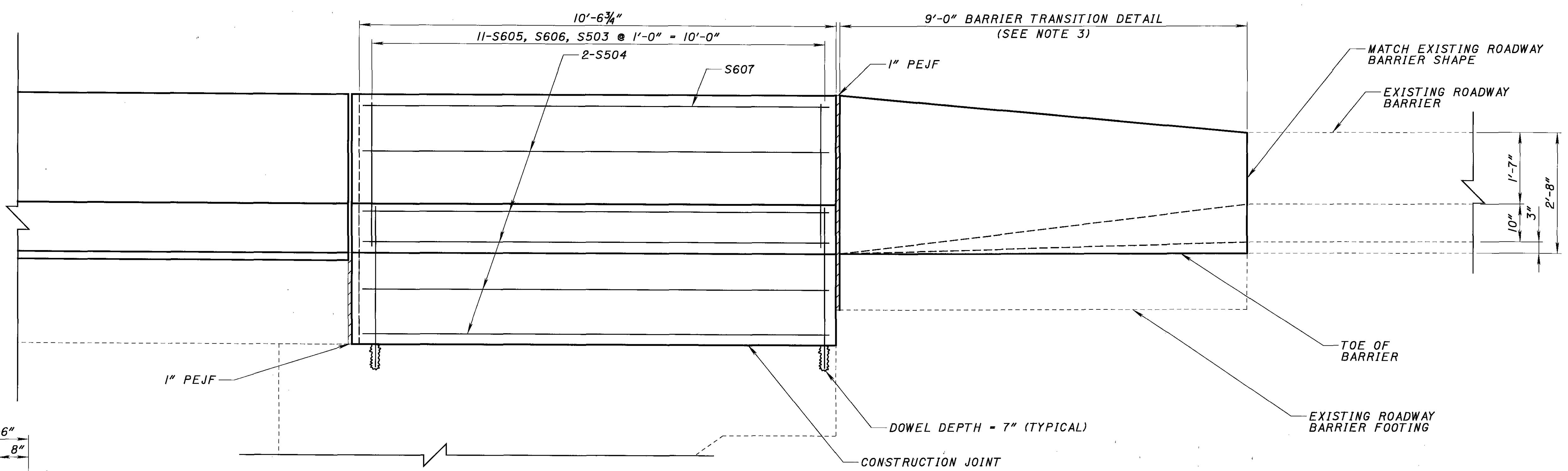
DESIGN AGENCY
Baker
1228 BUCKLE AVENUE, SUITE 1050
CLEVELAND, OHIO 44115

DATE
7-27-2005
REVIEWED
JWB
DRAWN
RSC
DESIGNED
RSC
CHECKED
SCT

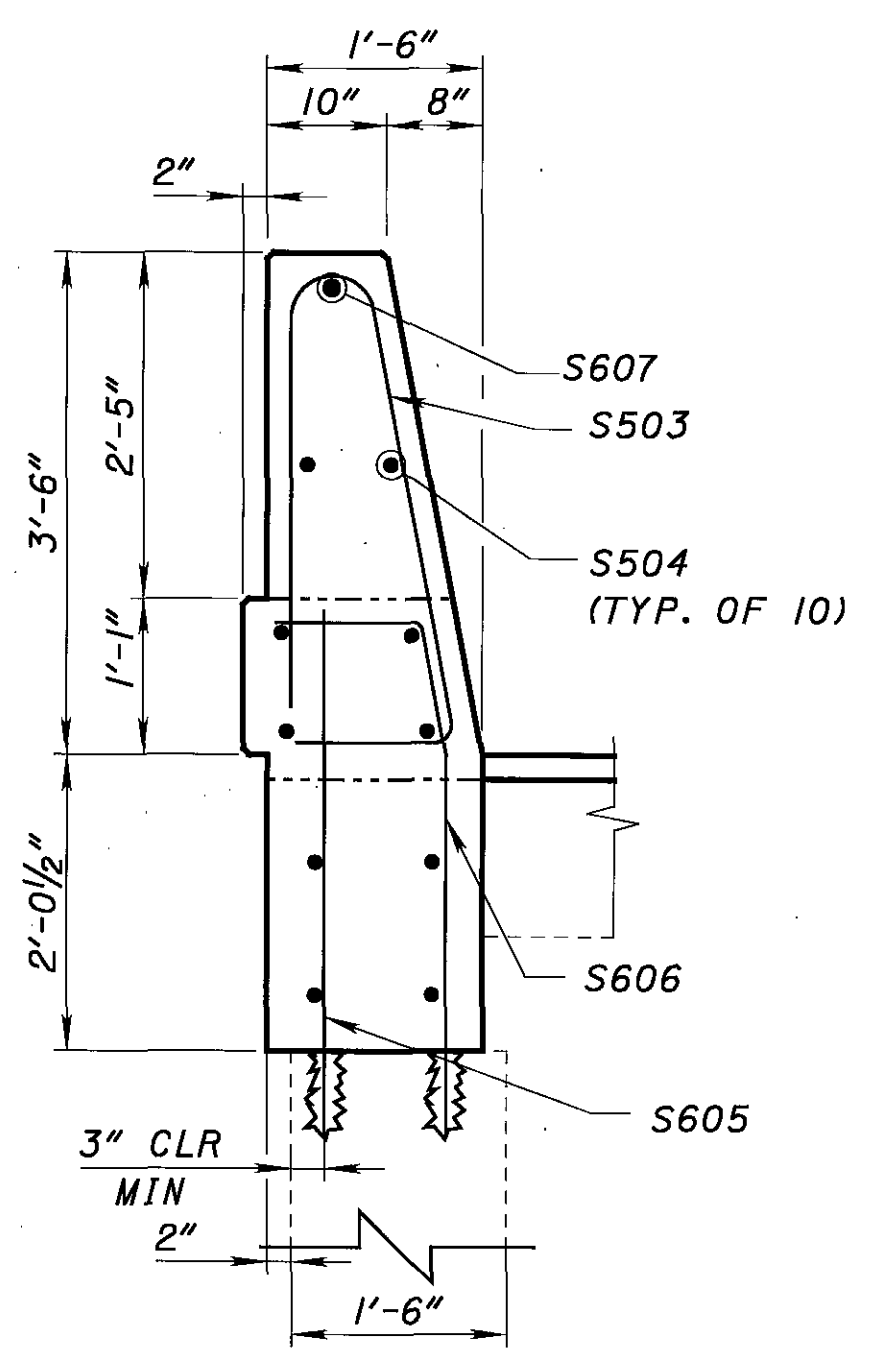
STRUCTURE FILE NUMBER
43000331/4300068R



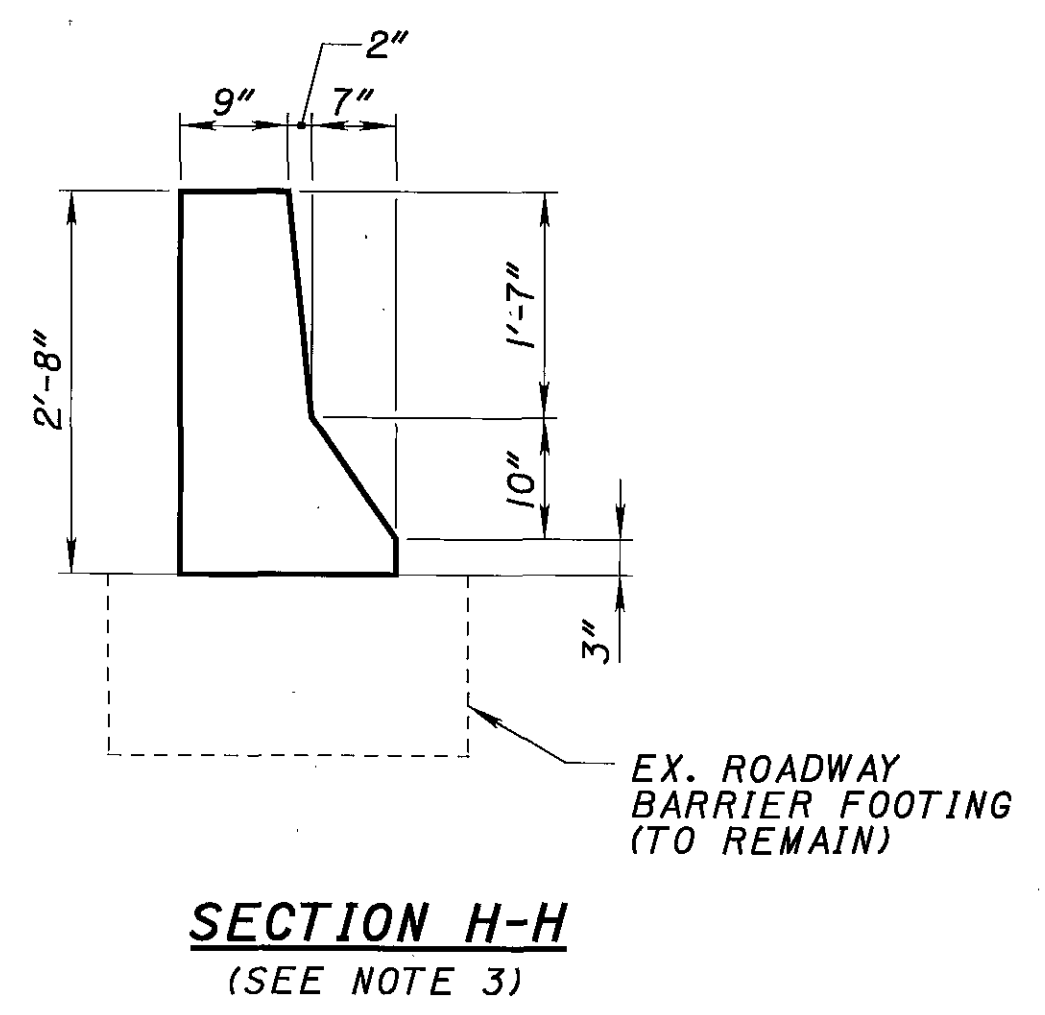
MEDIAN WINGWALL AND BARRIER TRANSITION PLAN



**SECTION F-F
(OUTSIDE FACE)**



SECTION G-G



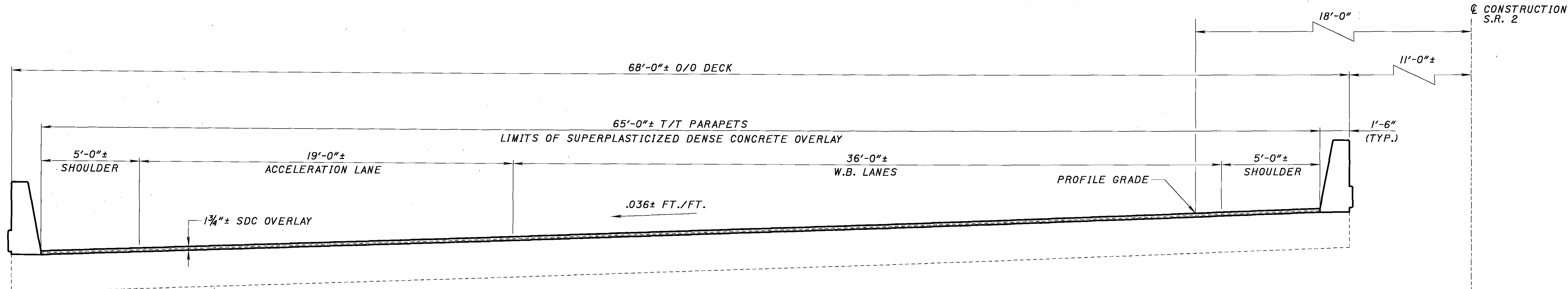
**SECTION H-H
(SEE NOTE 3)**

- LEGEND:**
- CLR. - CLEARANCE
 - MIN. - MINIMUM
 - MAX. - MAXIMUM
 - TYP. - TYPICAL
 - PEJF - PREFORMED EXPANSION JOINT FILLER

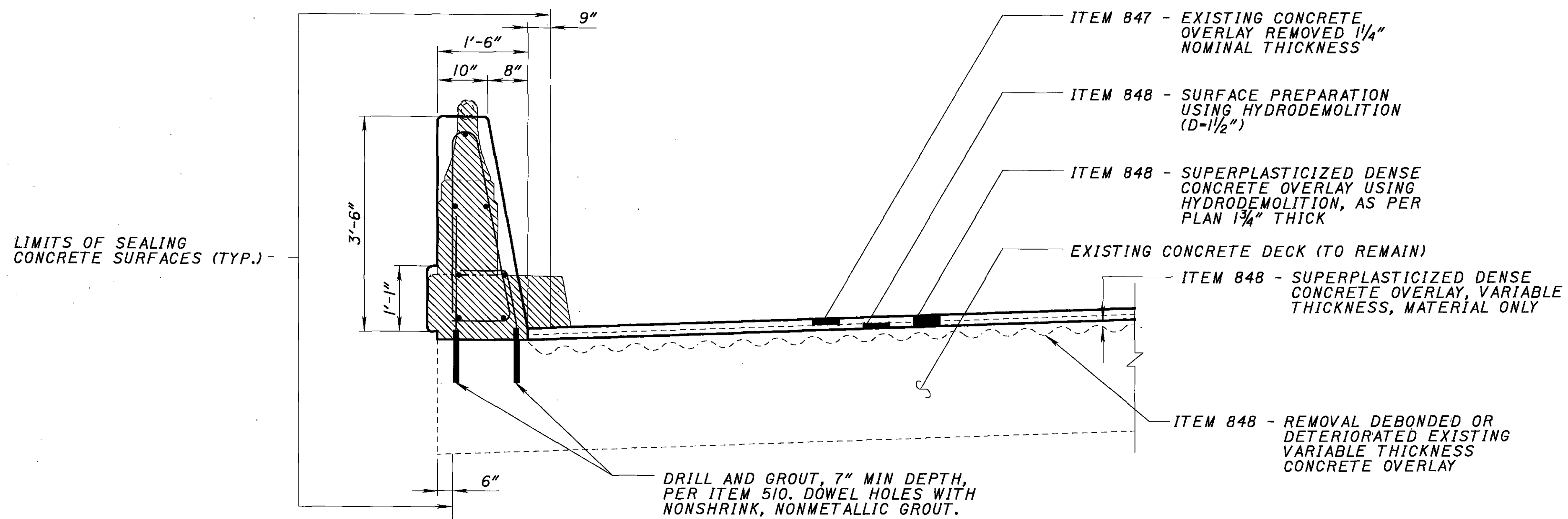
- NOTES:**
1. FOR DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWINGS RM-4.3 AND RM-4.4
 2. SEE SHEET 19723 FOR BRIDGE PARAPET DETAILS
 3. SEE PLAN INSERT SHEET FOR BARRIER TRANSITION DETAILS
 4. ALL REINFORCING STEEL TO BE EPOXY COATED.
 5. THE CONCRETE FOR MEDIAN WINGWALLS SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE BRIDGE DECK (PARAPET), AS PER PLAN

\$ DATES \$
\$ FILE \$

 228 BUCKLE AVENUE, SUITE 1050 CLEVELAND, OHIO 44115
MEDIAN WINGWALL AND BARRIER TRANSITION DETAIL BRIDGE NO. LAK-2-0031 L/R OVER LLOYD ROAD
LAK-2-0.00
16 / 23
444 524



TRANSVERSE SECTION LEFT BRIDGE



PROPOSED PARAPET REPLACEMENT DETAIL AND OVERLAY DETAIL

NOTES:

JOINT BETWEEN BRIDGE DECK AND APPROACH SLAB SHALL BE REPLACED IN KIND AND THE COST OF THE JOINT SHALL BE INCLUDED WITH ITEM - 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK

LEGEND:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

TYP. = TYPICAL

O/O = OUT TO OUT

SDC = SUPERPLASTICIZED DENSE CONCRETE

TRANSVERSE SECTION - LEFT BRIDGE
BRIDGE NO. LAK-2-0031 L/R
OVER LLOYD ROAD

LAK-2-0.00

17/23

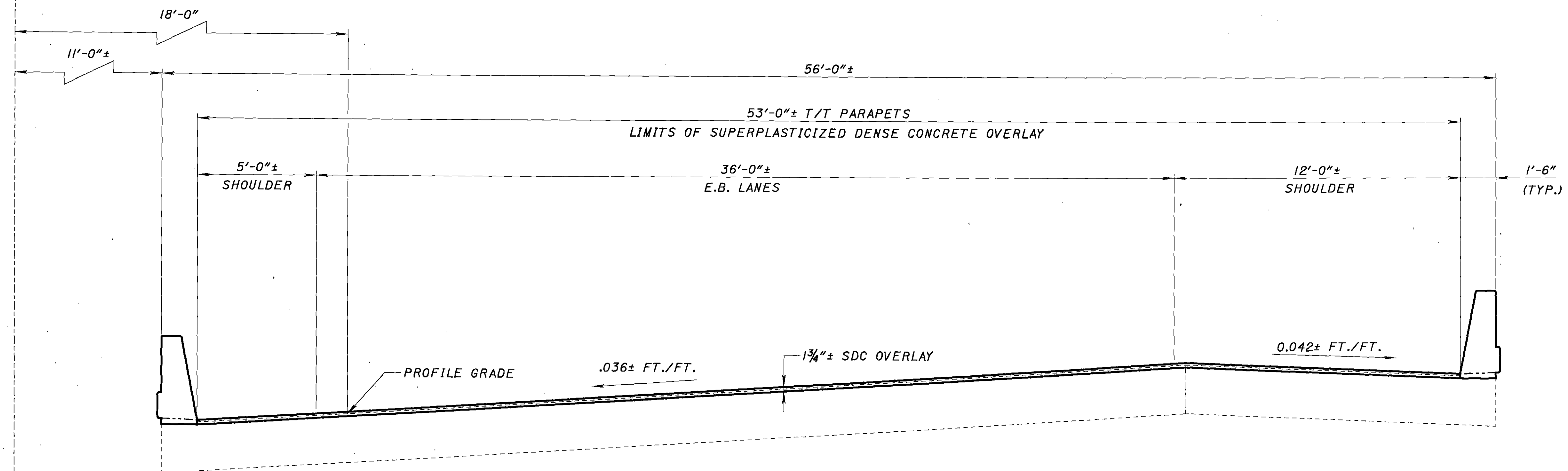
445
524

\$DATE\$
\$FILE\$

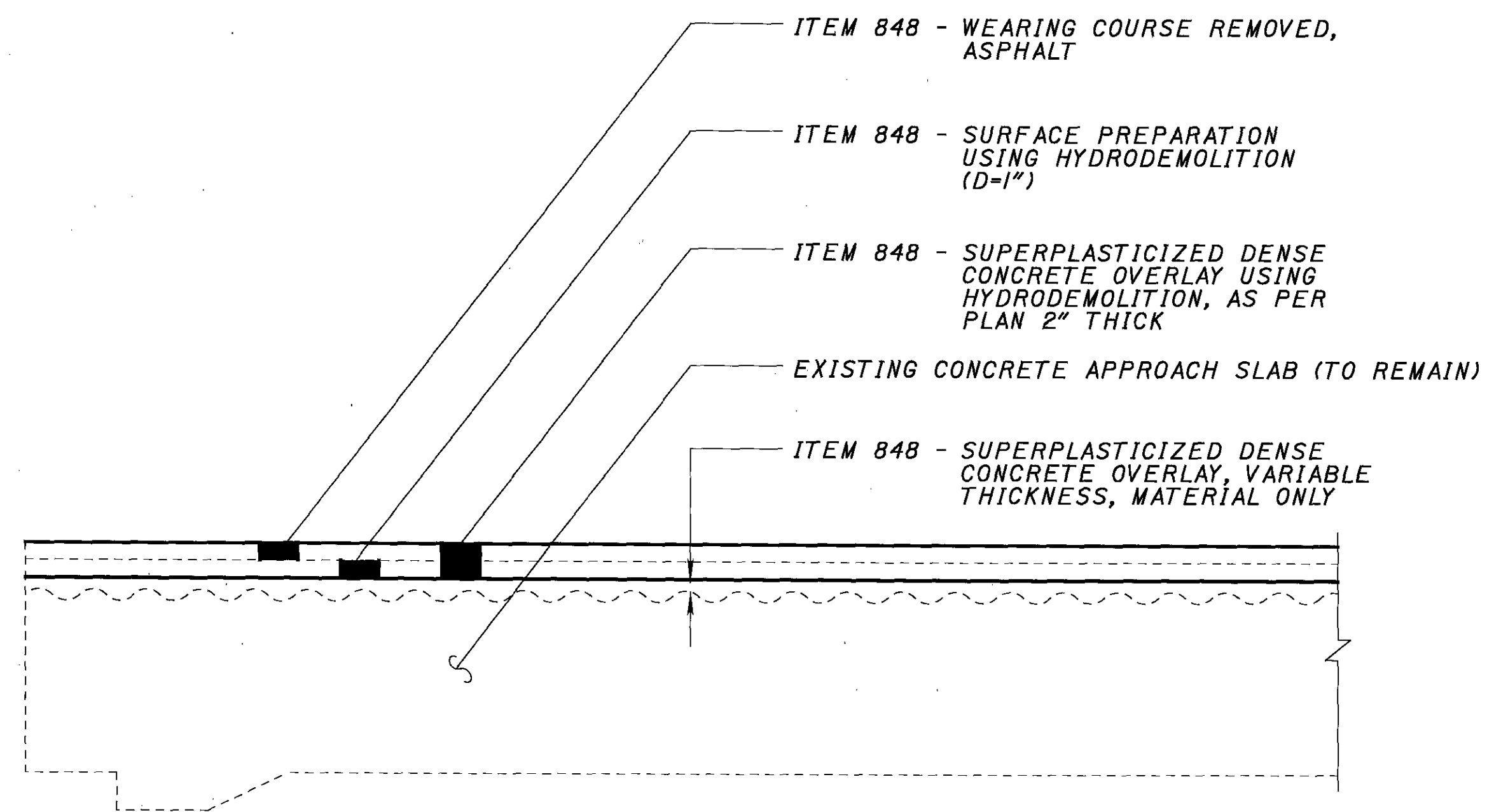
DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISED	
REVIEWED	JWB	DATE	7-27-2005
STRUCTURE FILE NUMBER	43000331/4300068R	DESIGN AGENCY	Baker

1228 BUCKLE AVENUE, SUITE 1050
CLEVELAND, OHIO 44115

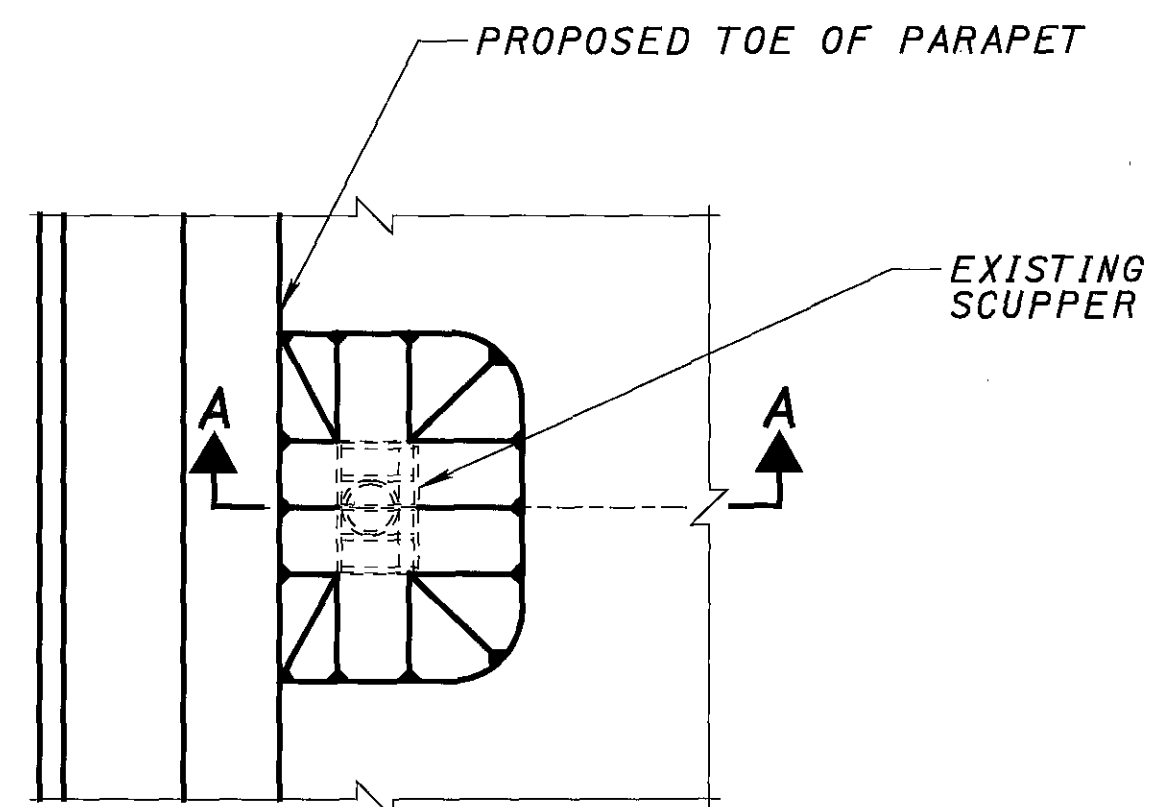
CONSTRUCTION S.R. 2



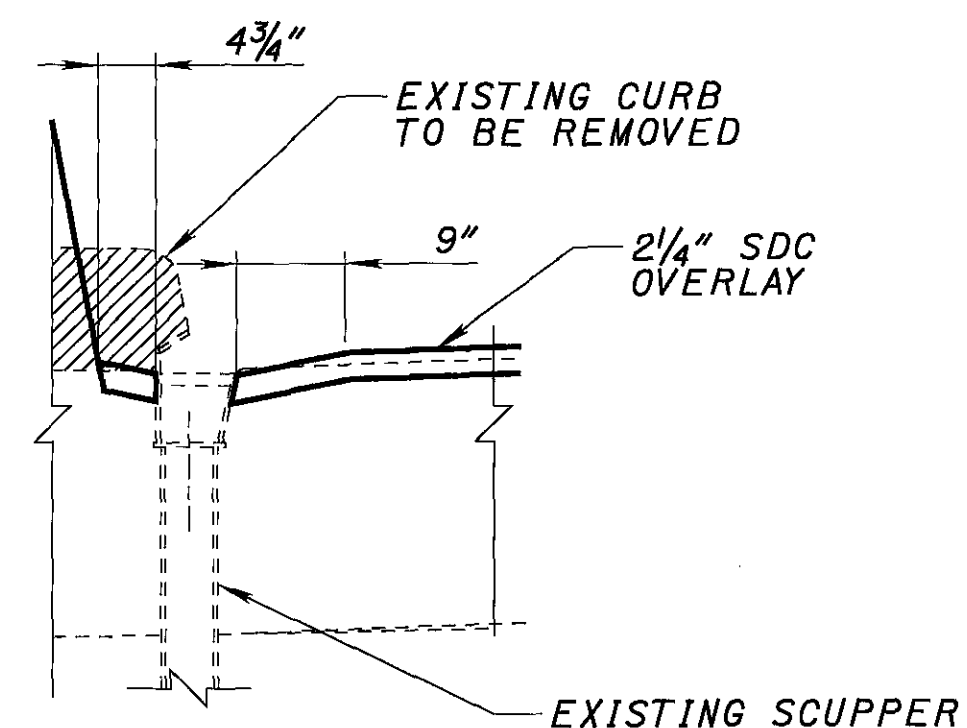
TRANSVERSE SECTION RIGHT BRIDGE



**APPROACH SLAB OVERLAY DETAIL
TYPICAL**



OVERLAY DETAIL AT SCUPPERS



SECTION A-A

NOTES:

- SEE SHEET 17/23 FOR PARAPET AND OVERLAY DETAIL
- JOINT BETWEEN BRIDGE DECK AND APPROACH SLAB SHALL BE REPLACED IN KIND AND THE COST OF THE JOINT SHALL BE INCLUDED WITH ITEM - 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK

LEGEND:

 ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

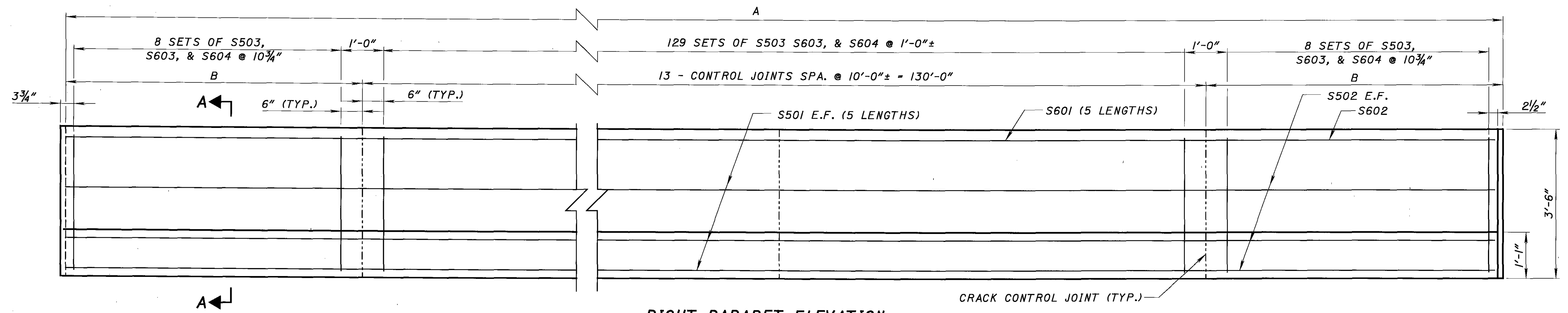
TYP. = TYPICAL

T/T = TOE TO TOE

SDC = SUPERPLASTICIZED DENSE CONCRETE

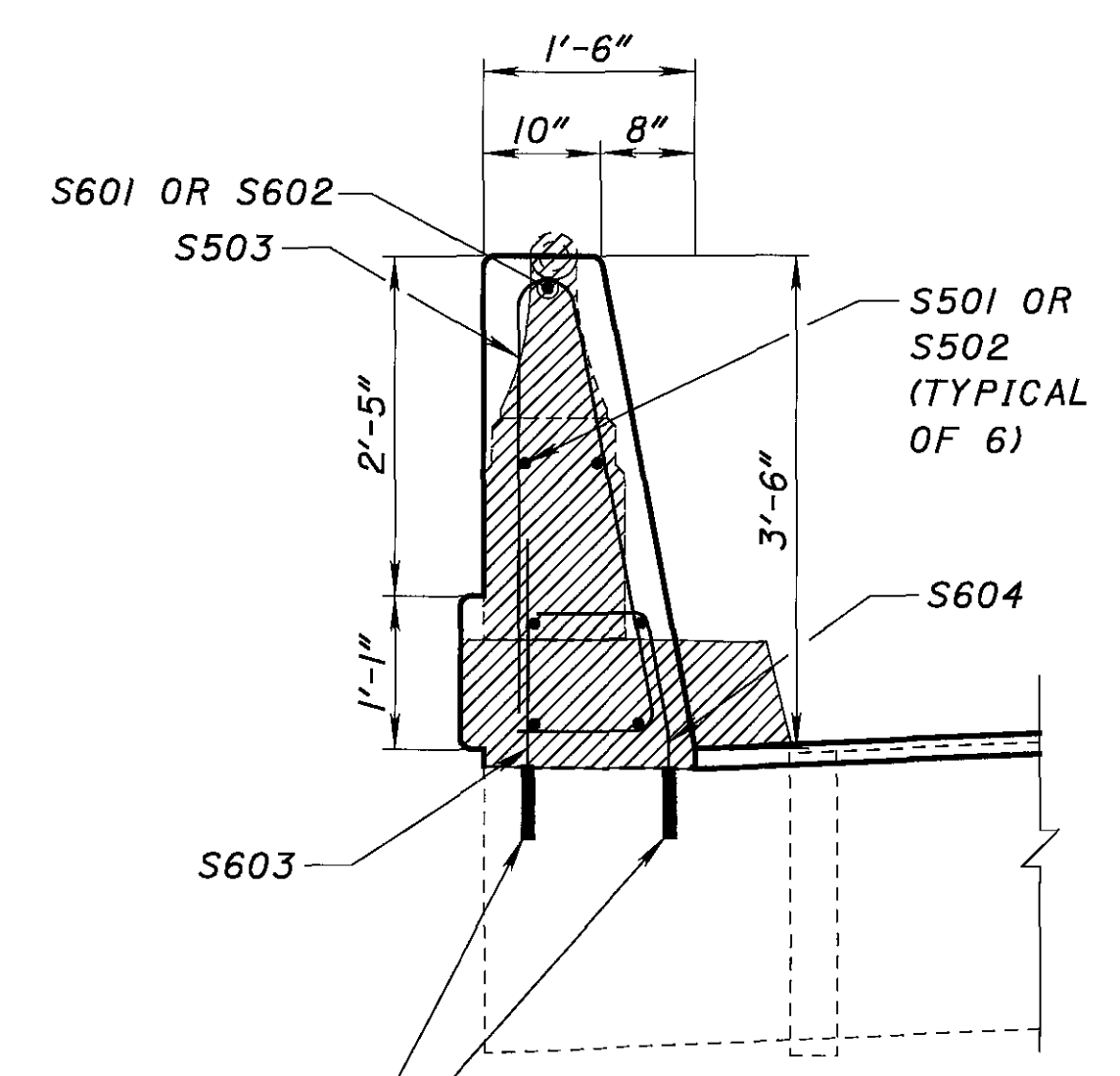
DESIGN AGENCY Baker 1228 EUCLED AVENUE, SUITE 1050 CLEVELAND, OHIO 44115	
DESIGNED RSC	DATE 7-27-2005
DRAWN RSC	REVIEWED JWB
CHECKED SCT	STRUCTURE FILE NUMBER 4300033L/4300068R
TRANSVERSE SECTION - RIGHT BRIDGE	
BRIDGE NO. LAK-2-0031 L/R OVER LLOYD ROAD	
LAK-2-0.00	
18 / 23	
446 524	

DATE\$
FILE\$



RIGHT PARAPET ELEVATION
 VIEWED ALONG OUTSIDE FACE
 ALL OTHERS SIMILAR

LOCATION	DIM. A	DIM. B
LEFT BRIDGE LEFT SIDE	144'-5 1/2" ±	7'-2 3/4" ±
LEFT BRIDGE RIGHT SIDE	144'-5 1/4" ±	7'-2 5/8" ±
RIGHT BRIDGE LEFT SIDE	144'-5" ±	7'-2 1/2" ±
RIGHT BRIDGE RIGHT SIDE	144'-2" ±	7'-1" ±



SECTION A-A

DRILL AND GROUT, MIN 7" DEPTH,
 PER ITEM 510 WITH NON-METALLIC,
 NON-SHRINK EPOXY GROUT

NOTES:

- SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS
- LAP REINFORCING STEEL THE MINIMUM LENGTHS:
 NO. 5 = 2'-11"
 NO. 6 = 3'-4"

LEGEND:

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED
- TYP. = TYPICAL
- SPA. = SPACES
- E.F. = EACH FACE

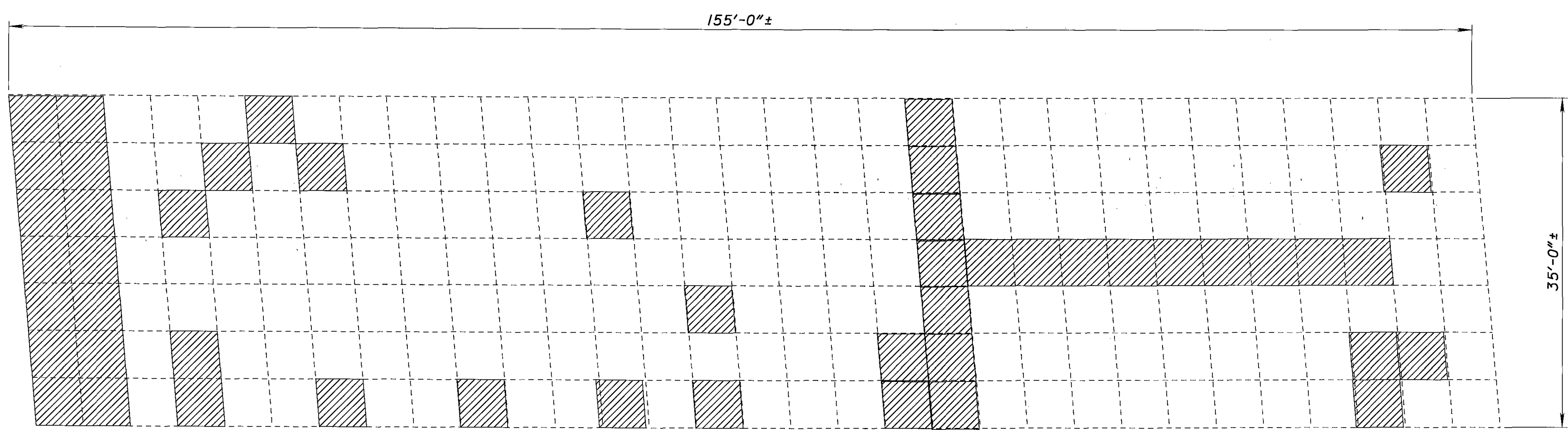
DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISIONS	
REVIEWED	JWB	DATE	7-27-2005
STRUCTURE FILE NUMBER	4300033L/4300068R		

SLOPE PROTECTION REPAIR DETAIL
 BRIDGE NO. LAK-2-0031 L/R
 OVER LLOYD ROAD

LAK-2-0.00

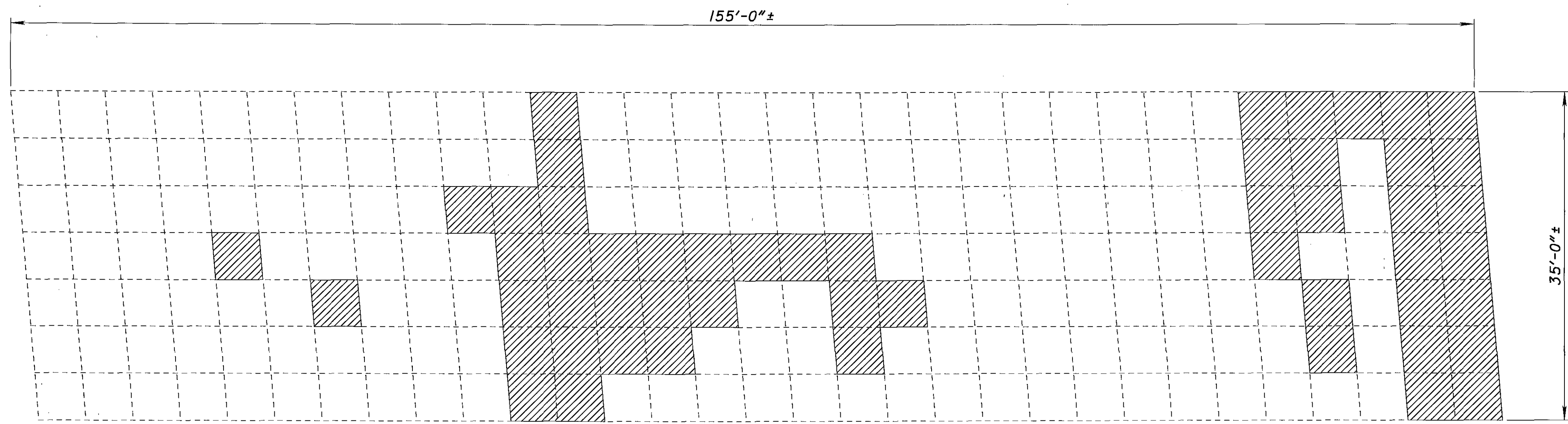
22/23

450
524

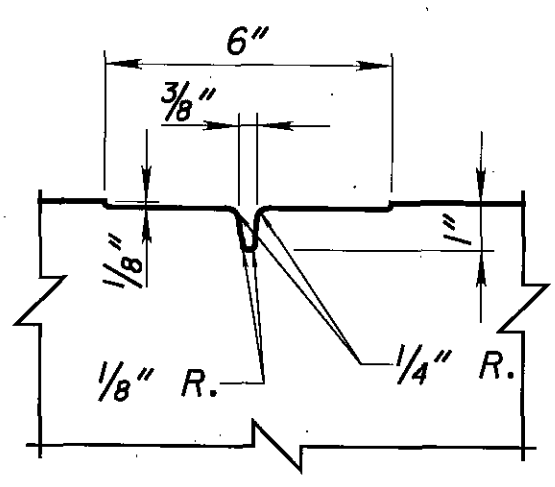


FORWARD ABUTMENT SLOPE PROTECTION

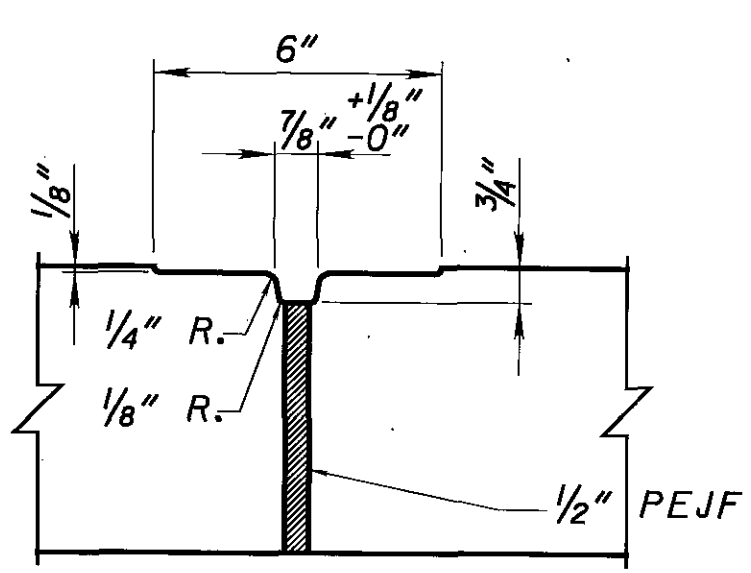
TOTAL AREA:
 FORWARD = 1325 SQ. FT. OUT OF 5424 SQ. FT.
 REAR = 1200 SQ. FT. OUT OF 5424 SQ. FT.



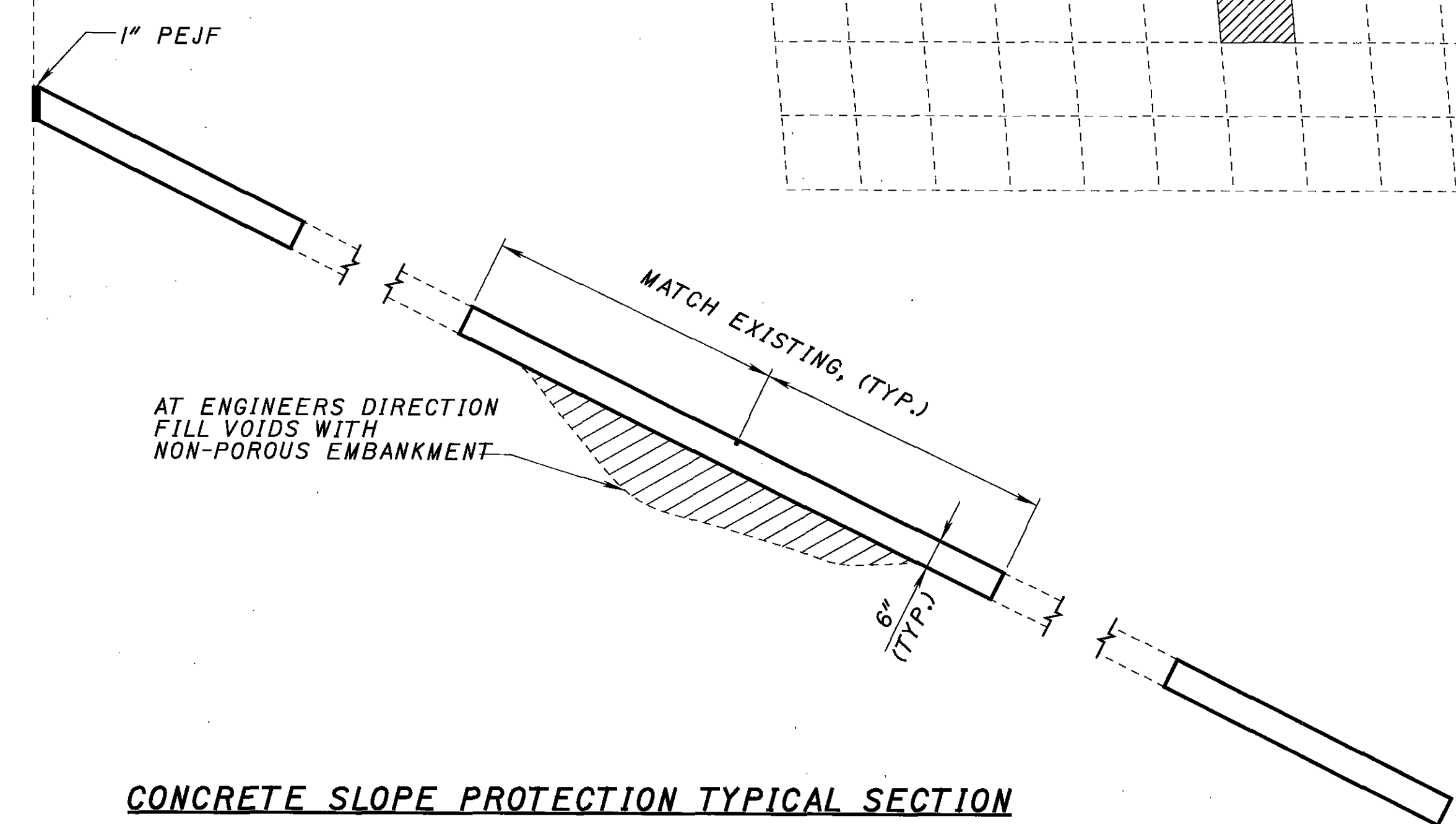
REAR ABUTMENT SLOPE PROTECTION



TOOLED GROOVE (CONTRACTION)



TOOLED GROOVE (EXPANSION)



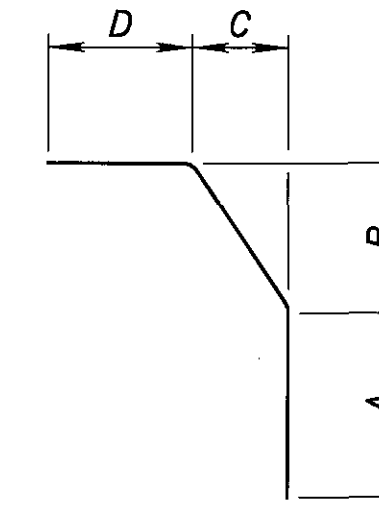
CONCRETE SLOPE PROTECTION TYPICAL SECTION

NOTES:
 THE AREA OF SLOPE PROTECTION TO BE REPLACED IS BASED UPON SEVERE CRACKING AND SETTLEMENT OR DISPLACEMENT OF TWO OR MORE INCHES.

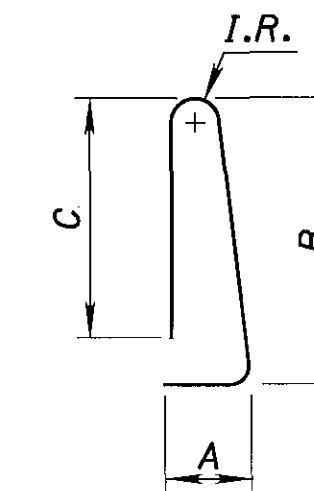
LEGEND
 PEJF. = PREFORMED EXPANSION JOINT FILLER
 R. = RADIUS
 TYP. = TYPICAL

SLOPE PROTECTION TO BE REPLACED

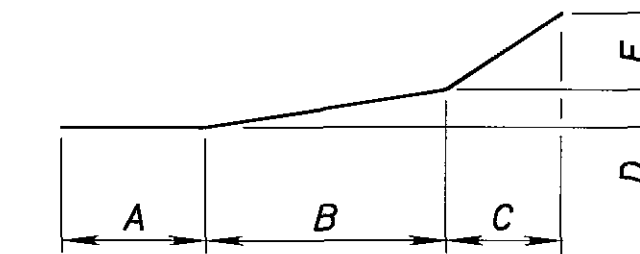
MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	SUPERSTRUCTURE DIMENSIONS						SER INC.	
	REAR	FWD.	TOTAL				A	B	C	D	E	R		
S501			120	30'-0"	3755	STR.								
S502			24	8'-8"	217	STR.								
S503			628	7'-5"	4858	23	1'-1"	3'-2"	3'-0"				0'-2 3/4"	
S504			72	10'-0"	751	STR.								
S505			20	6'-8"	139	STR.								
S506			12	6'-9"	84	25	2'-11"	2'-5"	1'-4 1/2"	0'-1 1/2"			0'-5"	
S507			16	13'-6"	225	STR.								
S508			16	3'-9"	63	STR.								
S601			20	30'-0"	901	STR.								
S602			4	10'-9"	65	STR.								
S603			580	2'-7"	2250	STR.								
S604			580	2'-8"	2323	13	0'-9"	0'-11"	0'-2"	1'-1"				
S605			48	3'-7"	255	STR.								
S606			48	4'-9"	342	13	2'-9 1/2"	0'-11"	0'-2"	1'-1"				
S607			4	10'-0"	60	STR.								
			8	5'-0"										
S608			SER. OF	T0	651	STR.								1"
			10	5'-10"										
S609			32	6'-4"	304	STR.								
				TOTAL =	17243	LBS.								



TYPE-13



TYPE-23



TYPE-25

NOTES:

1. ALL BAR LISTED BAR DIMENSIONS ARE MEASURED OUT TO OUT UNLESS OTHERWISE NOTED.
2. STANDARD BEND SHALL BE ASSUMED WHEN NO BAR LEG DIMENSION IS LISTED.
3. BAR SIZE AND LOCATION ARE INDICATED BY THE BAR MARK. THE LETTER INDICATES BAR LOCATION. THE FIRST NUMBER OF A THREE DIGIT NUMBER, OR THE FIRST TWO DIGITS OF A FOUR DIGIT NUMBER INDICATES BAR SIZE. THE REMAINING TWO DIGITS INDICATE BAR MARK.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED.

\$DATE\$
\$FILE\$

REINFORCING SCHEDULE
BRIDGE NO. LAK-2-0031 L/R
OVER LLOYD ROAD

LAK-2-0.00

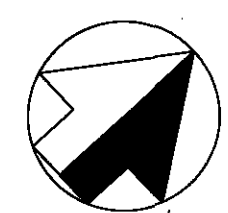
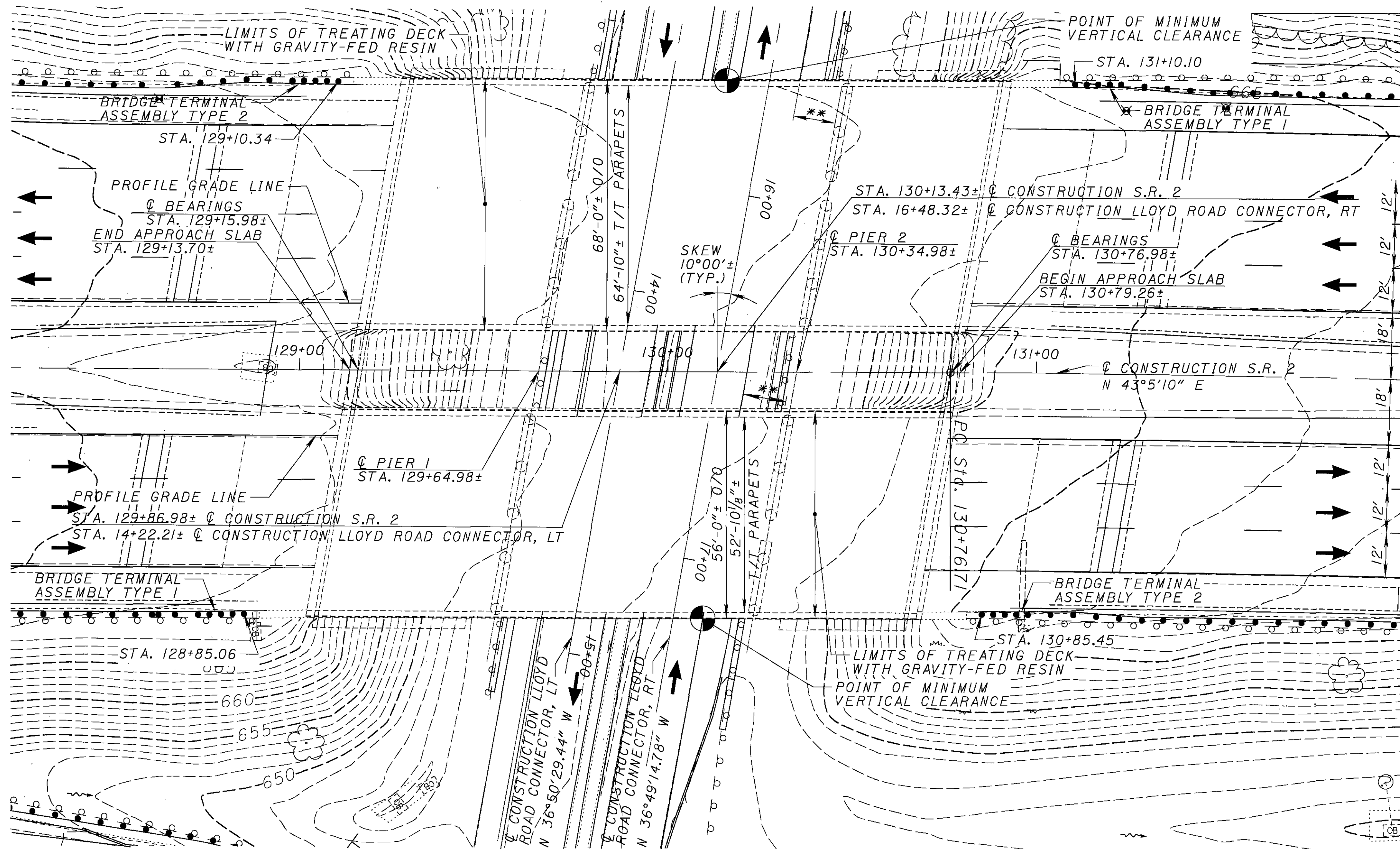
23/23

451
524

DESIGN AGENCY
Baker
228 EUCLID AVENUE, SUITE 1050
CLEVELAND, OHIO 44115

DATE
7-27-2005
REVIEWED
JWB
STRUCTURE FILE NUMBER
43000331/4300068R

DRAWN
KAS
REVISOR
DESIGNED
SCT
CHECKED
KAS



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

LEGEND:
T/T = TOE TO TOE

** MINIMUM HORIZONTAL CLEARANCES		
	RIGHT BRIDGE	LEFT BRIDGE
EXISTING	11'-7 ¹⁵ / ₁₆ "±	11'-5 ¹ / ₈ "±
PROPOSED	11'-7 ¹⁵ / ₁₆ "	11'-5 ¹ / ₈ "

CONSTRUCTION S.R. 2 CURVE DATA
 P.I. STA. = 138+53.92±
 D = 19°14'50"± (RT)
 Dc = 1°15'00"±
 R = 4,583.66'±
 T = 777.21'±
 L = 1,539.77'±
 E = 65.43'±

BENCHMARK DATA

BENCHMARK #180:
 MAG NAIL SET IN ASPHALT PAVED SHOULDER.
 STA. 131+06.7501, 75.0675' LT
 BM ELEV: 665.95

TRAFFIC DATA

CURRENT ADT (2006) 90600
 DESIGN YEAR ADT (2026) 93500
 DESIGN YEAR ADTT (2026) 2805

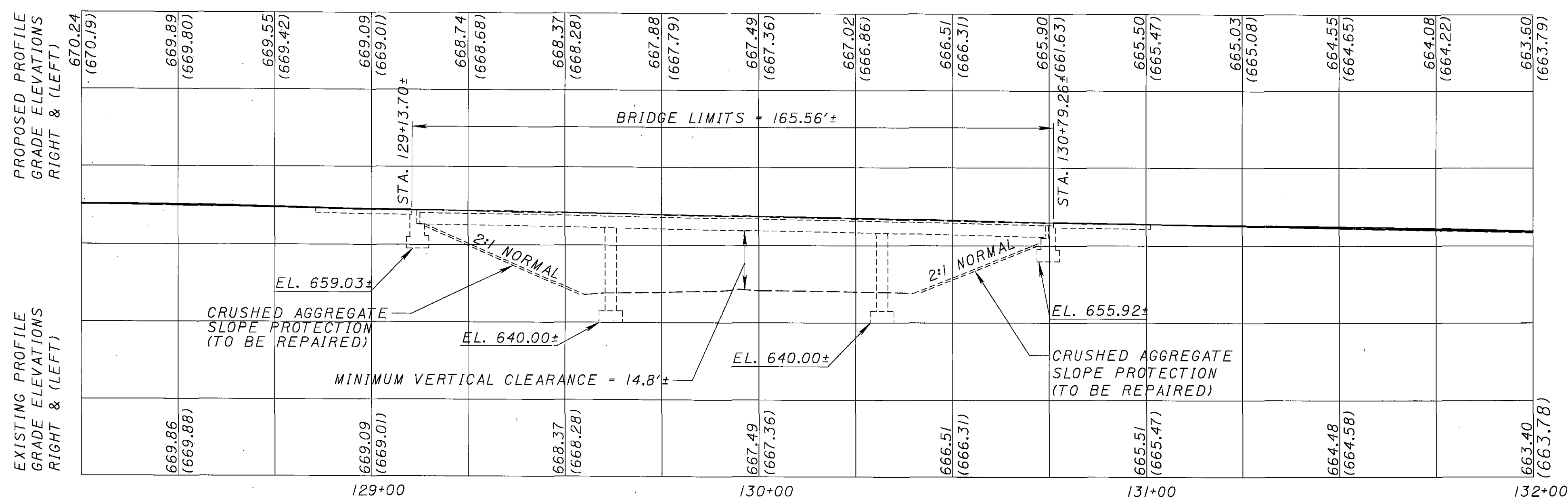
EXISTING STRUCTURE

SFN: 4300122(R) & 4300092(L)
 TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
 SPANS: 49'±/70'±/49'± C/C BEARINGS
 ROADWAY: RIGHT 52'-10¹/₈"±, LEFT 64'-10"±, T/T PARAPETS
 LOADING: CF=2000(57)
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 ALIGNMENT: TANGENT
 APPROACH SLABS: AS-1-54 (25'± LONG)
 SUPERELEVATION: VARIES
 SKEW: 10°00'00"± L.F. DATE BUILT: 1959

PROPOSED STRUCTURE

PROPOSED WORK: TREATING DECK WITH GRAVITY-FED RESIN
 TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
 SFN: 4300122(R) & 4300092(L)
 SPANS: 49'±/70'±/49'± C/C BEARINGS
 ROADWAY: RIGHT 52'-10¹/₈"±, LEFT 64'-10"±, T/T PARAPETS
 LOADING: CF=2000(57)
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 ALIGNMENT: TANGENT
 APPROACH SLABS: EXISTING (25'± LONG)
 SKEW: 10°00'00"± L.F.
 SUPERELEVATION: VARIES
 LATITUDE: N41°36'48" LONGITUDE: W81°28'48"

PLAN



PROFILE

...\\002_0055CSP001.dgn

MAINTENANCE OF TRAFFIC

FOR MAINTENANCE OF TRAFFIC DETAILS, SEE THE ROADWAY PLANS.

PROPOSED WORK:

1. PATCH CONCRETE SUBSTRUCTURE WITH ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
2. PAINT THE GIRDER ENDS, ENDFRAMES AND CROSSFRAMES AS PER THESE PLANS AND SPECIFICATIONS.
3. TREAT THE DECK WEARING SURFACE WITH GRAVITY-FED RESIN.
4. SEAL PORTIONS OF THE EXISTING CONCRETE WITH ITEM 512- SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).
5. REPAIR AREAS OF THE CRUSHED AGGREGATE SLOPE PROTECTION WITH ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN.

EXISTING STRUCTURE VERIFICATION

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

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

EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

A CONCRETE SEALER SHALL BE APPLIED TO THE SURFACES OF THE PARAPETS AND THE EXPOSED SURFACES OF THE SUBSTRUCTURES EXCEPT THE TOPS OF THE PIER CAPS AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

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

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE BUFF, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-27722.

THE COLOR FOR ITEM 514 - FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN, SHALL BE LIGHT BLUE, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-15450.

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

FIELD CLEANING AND PAINTING OF THE ENDS OF THE SUPERSTRUCTURES BELOW THE DECK WITHIN 10 FEET OF THE BACKWALLS IS INCLUDED IN THESE ITEMS. ALL SURFACES OF THE BEAMS, END CROSS FRAMES, AND INTERMEDIATE CROSS FRAMES OF WHICH ANY PORTION IS WITHIN THE 10 FEET SHALL BE CLEANED AND PAINTED.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511 - CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN

AREAS OF EXISTING CRUSHED AGGREGATE SLOPE PROTECTION FOR STRUCTURE LAK-2-0055 L&R, HAVE ERODED AS A RESULT OF DRAINAGE DISCHARGES.

THIS WORK INCLUDES THE PLACEMENT OF NON-POROUS EMBANKMENT MATERIAL AND CRUSHED AGGREGATE SLOPE PROTECTION TO MATCH THE SURROUNDING AREA.

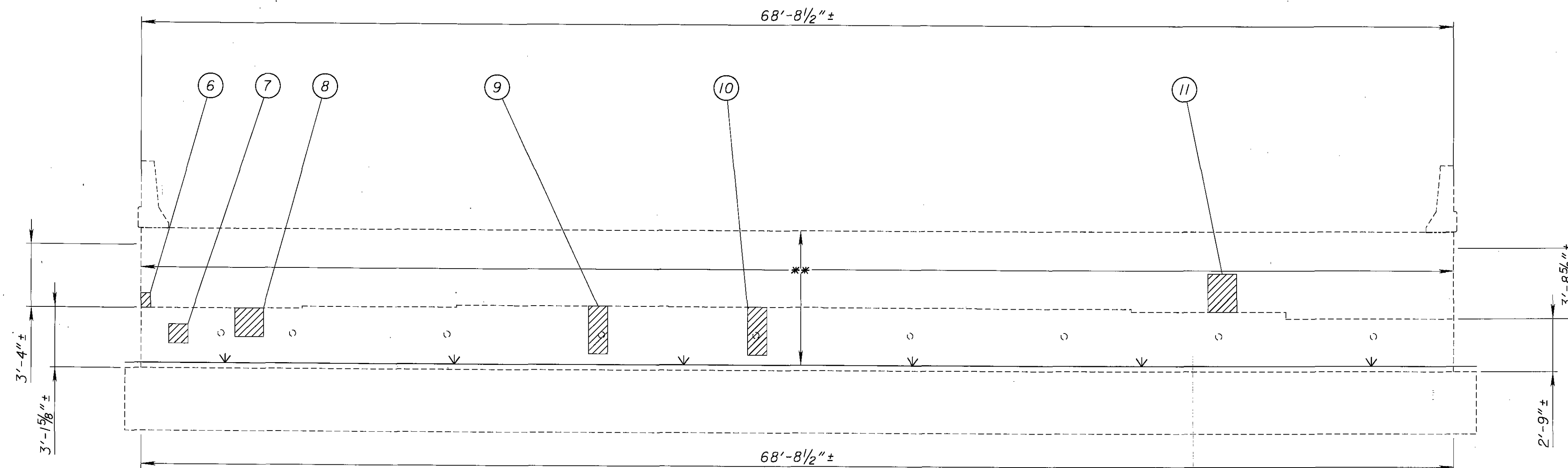
ALL COSTS OF FURNISHING AND PLACING THE EMBANKMENT SHALL BE INCLUDED UNDER ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN.

ESTIMATED QUANTITIES

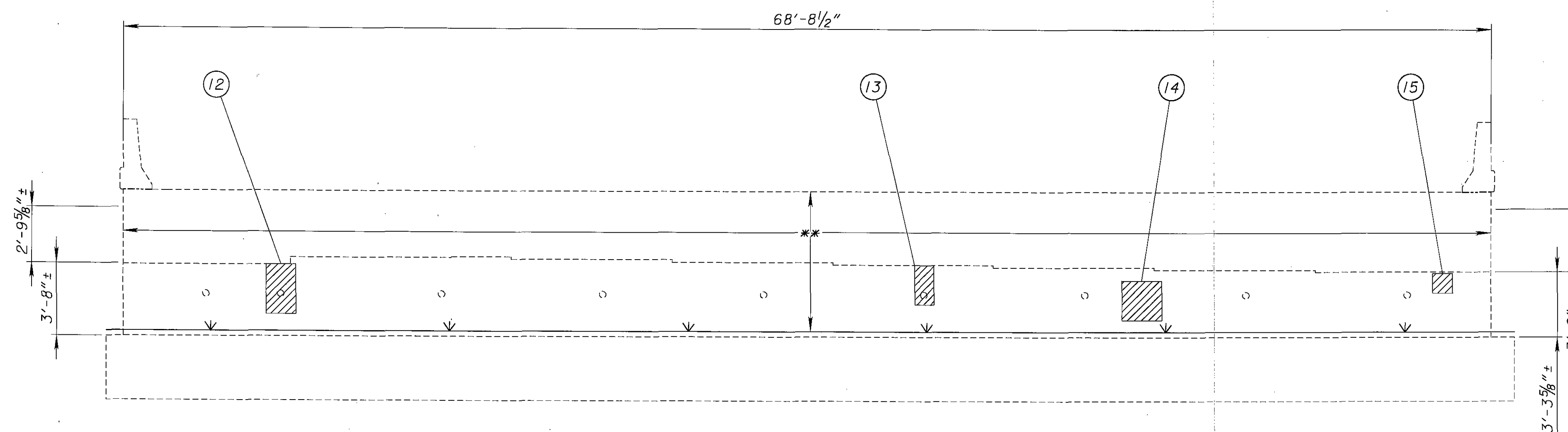
ITEM	ITEM EXT.	LEFT TOTAL	RIGHT TOTAL	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				AS PER PLAN REFERENCE SHEET
							SUPER	ABUT	PIERS	GEN'L	SUPER	ABUT	PIERS	GEN'L	
512	10100	866	778	1644	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	421	107	338		421	101	256		
512	73500	1193	972	2165	SQ. YD.	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN				1193				972	
514	00051	2370	1861	4231	SQ. FT.	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN				2370				1861	2/ 8
514	00057	2370	1861	4231	SQ. FT.	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN				2370				1861	2/ 8
514	00061	2370	1861	4231	SQ. FT.	FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN				2370				1861	2/ 8
514	00067	2370	1861	4231	SQ. FT.	FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN				2370				1861	2/ 8
514	10000	5	3	8	EACH	FINAL INSPECTION REPAIR				5				3	
519	11101	115	96	211	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		54	61			32	64		2/ 8
601	20001	3	2	5	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN*				3				2	2/ 8

*CONTINGENCY QUANTITY

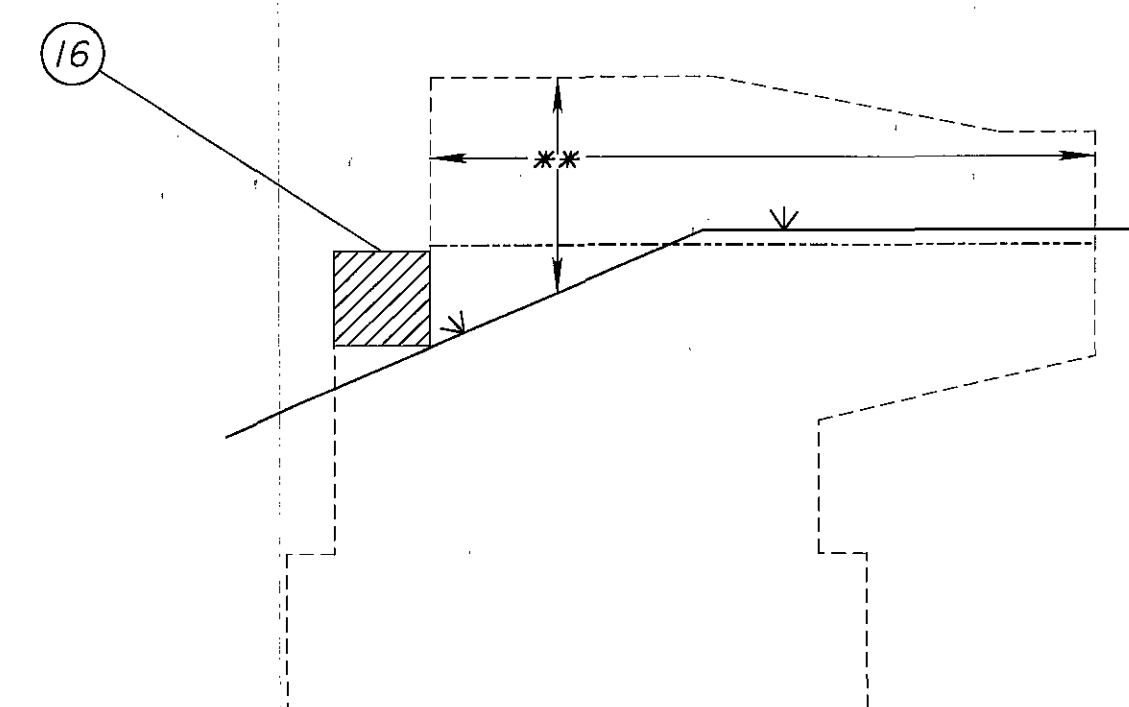
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REAR ABUTMENT LEFT BRIDGE - ELEVATION



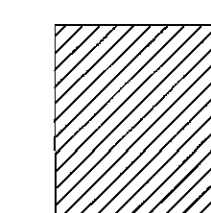
FORWARD ABUTMENT LEFT BRIDGE - ELEVATION



REAR ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
6	0'-6" x 0'-9"	0.38
7	1'-0" x 1'-0"	1.00
8	1'-6" x 1'-6"	2.25
9	1'-0" x 2'-6"	2.50
10	1'-0" x 2'-6"	2.50
11	1'-6" x 2'-0"	3.00 on backwall
TOTAL:		11.63
(MULTIPLIER) x2		24

FORWARD ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
12	1'-6" x 2'-6"	3.75
13	1'-0" x 2'-0"	2.00
14	2'-0" x 2'-0"	4.00
15	1'-0" x 1'-0"	1.00
16	2'-0" x 2'-0"	4.00
TOTAL:		14.75
(MULTIPLIER) x2		30

LEGEND:

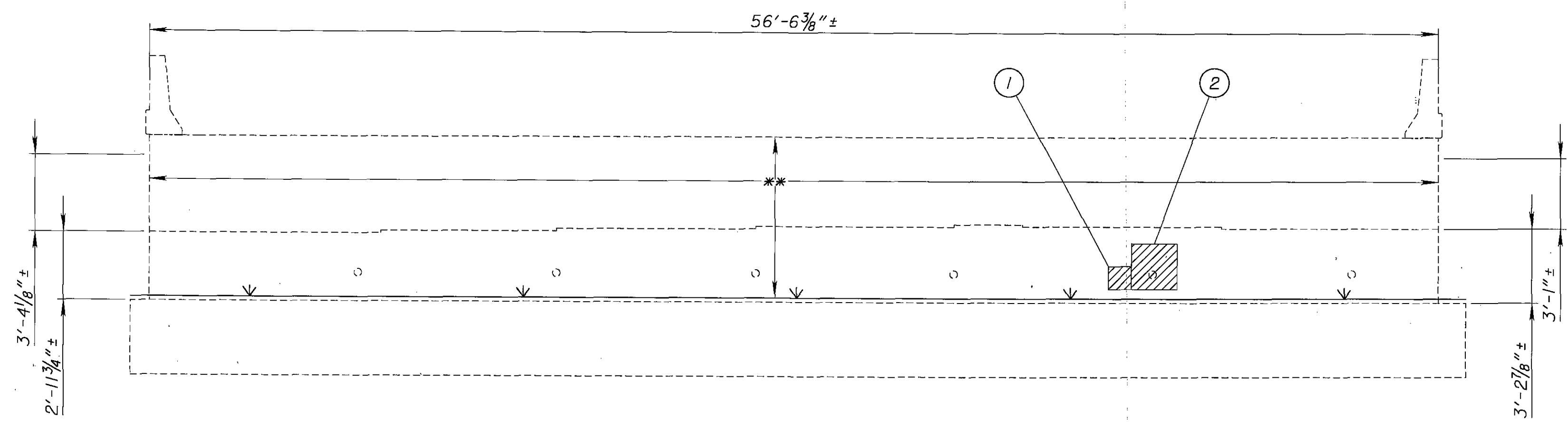


AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

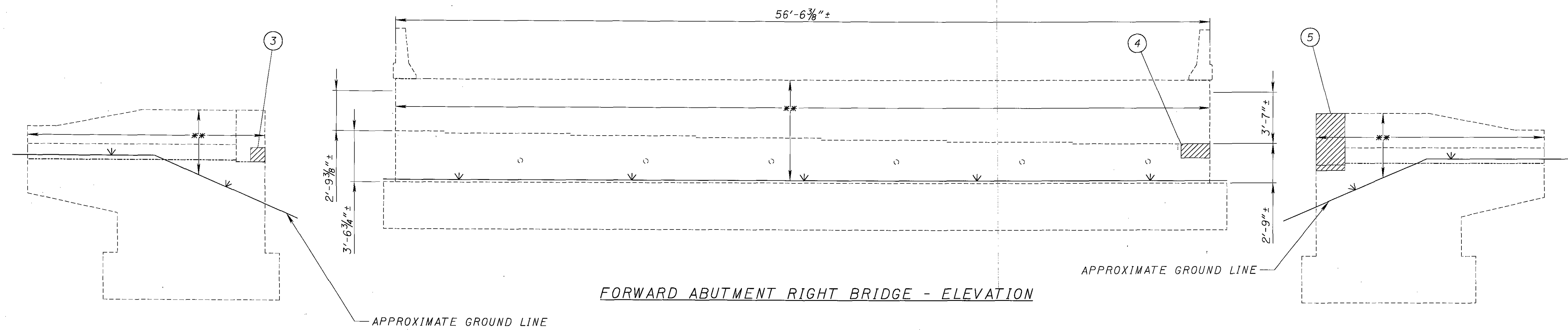
**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

...002_0055CRE002.dgn

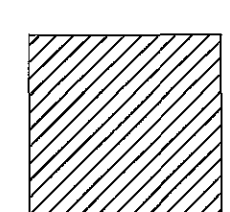


REAR ABUTMENT RIGHT BRIDGE - ELEVATION

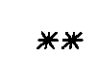


FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION

LEGEND:



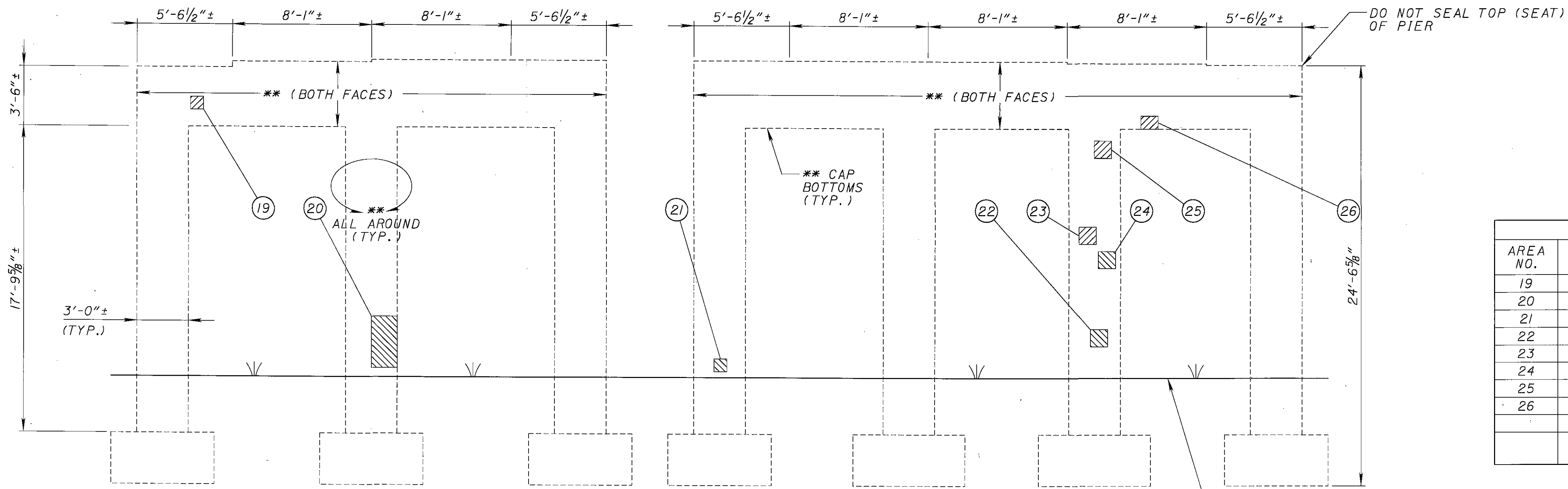
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN



SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

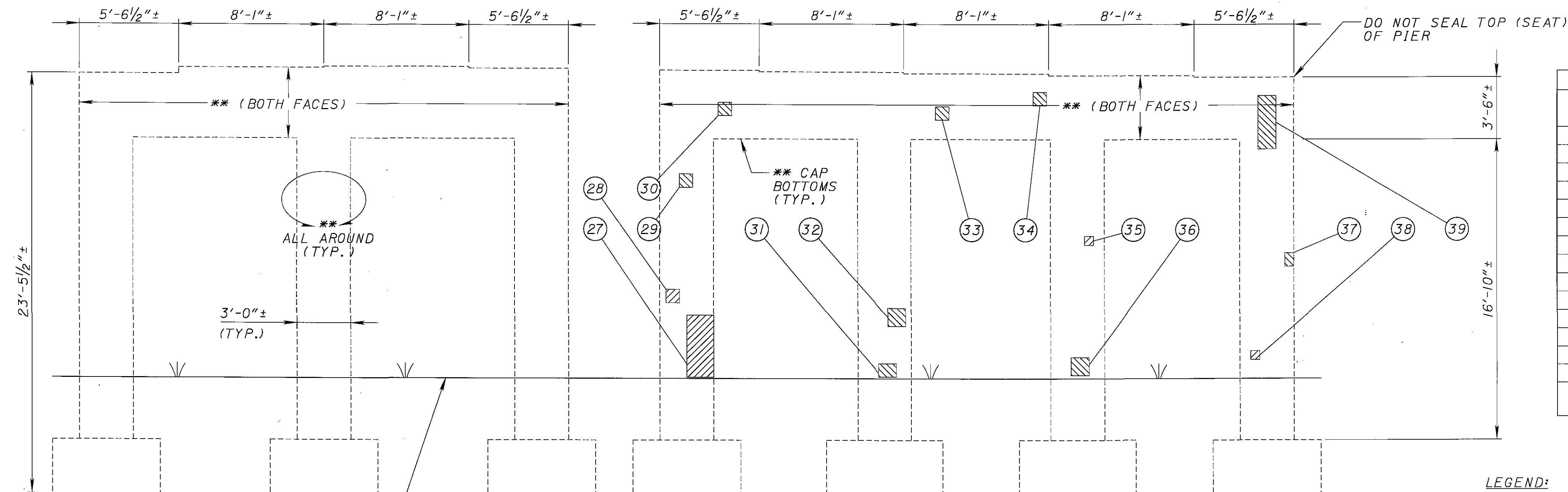
REAR ABUTMENT - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ.FT.)
1	1'-0" x 1'-0"	1.00
2	2'-0" x 2'-0"	4.00
TOTAL:		5.00
(MULTIPLIER) x2		10

FORWARD ABUTMENT - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ.FT.)
3	1'-0" x 1'-0"	1.00
4	1'-0" x 2'-0"	2.00
5	2'-0" x 4'-0"	8.00
TOTAL:		11.00
(MULTIPLIER) x2		22



PIER 1 LEFT BRIDGE
LOOKING UP STATION

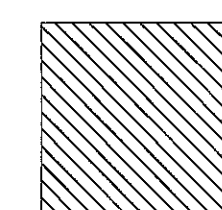
PIER 1 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
19	0'-9" x 0'-9"	0.56
20	1'-6" x 3'-0"	4.50 on side
21	0'-9" x 0'-9"	0.56
22	1'-0" x 1'-0"	1.00
23	1'-0" x 1'-0"	1.00
24	1'-0" x 1'-0"	1.00
25	1'-0" x 1'-0"	1.00
26	1'-0" x 0'-9"	0.75
TOTAL:		10.38
(MULTIPLIER) x2		21



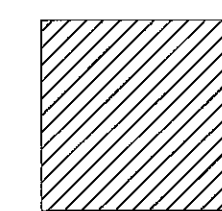
PIER 2 LEFT BRIDGE
LOOKING UP STATION

PIER 2 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
27	3'-0" x 3'-6"	10.50
28	0'-9" x 0'-9"	0.56
29	0'-9" x 0'-9"	0.56
30	0'-9" x 0'-9"	0.56
31	1'-0" x 0'-9"	0.75
32	1'-0" x 1'-0"	1.00
33	0'-9" x 0'-9"	0.56
34	0'-9" x 0'-9"	0.56
35	0'-6" x 0'-6"	0.25
36	1'-0" x 1'-0"	1.00
37	0'-6" x 0'-9"	0.38 on side
38	0'-6" x 0'-6"	0.25
39	1'-0" x 3'-0"	3.00
TOTAL:		19.94
(MULTIPLIER) x2		40

LEGEND:



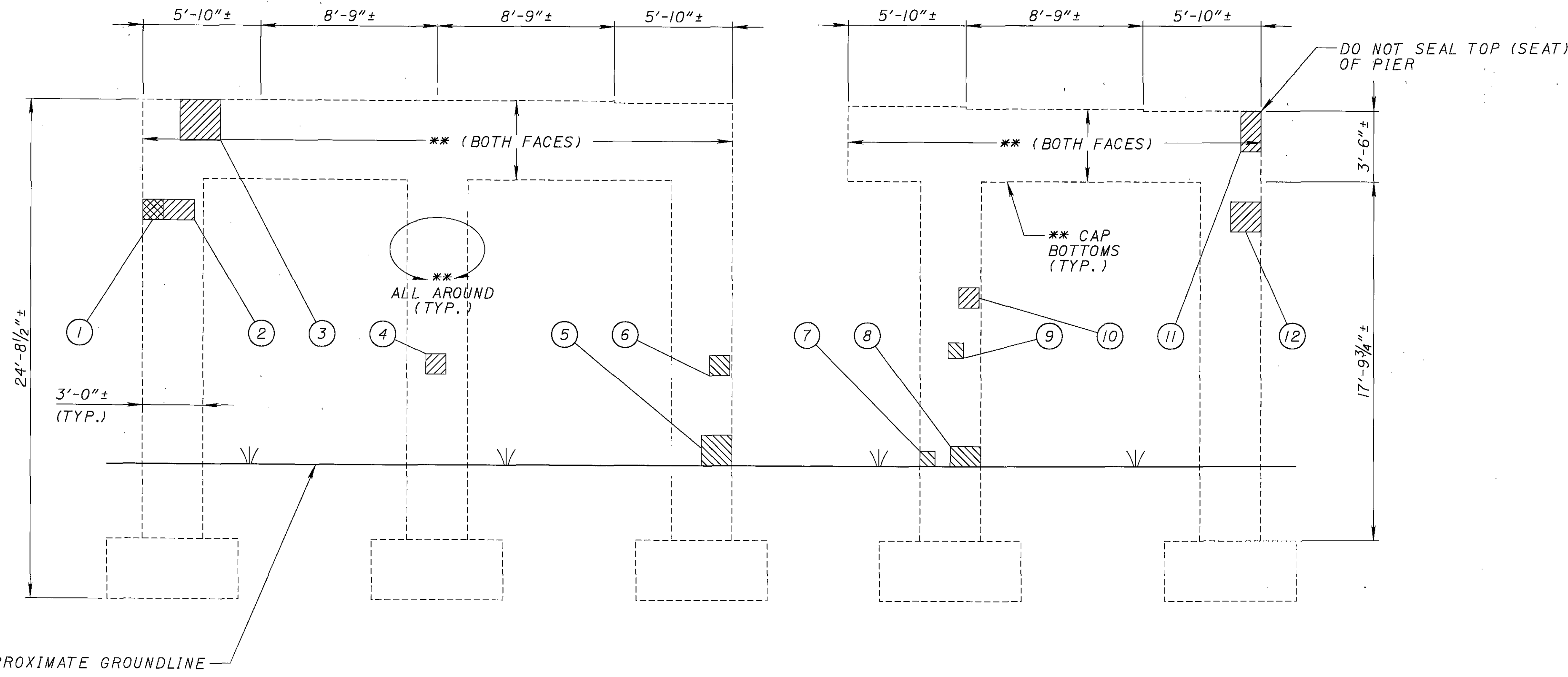
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (UP STATION VIEW)



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (DOWN STATION VIEW)

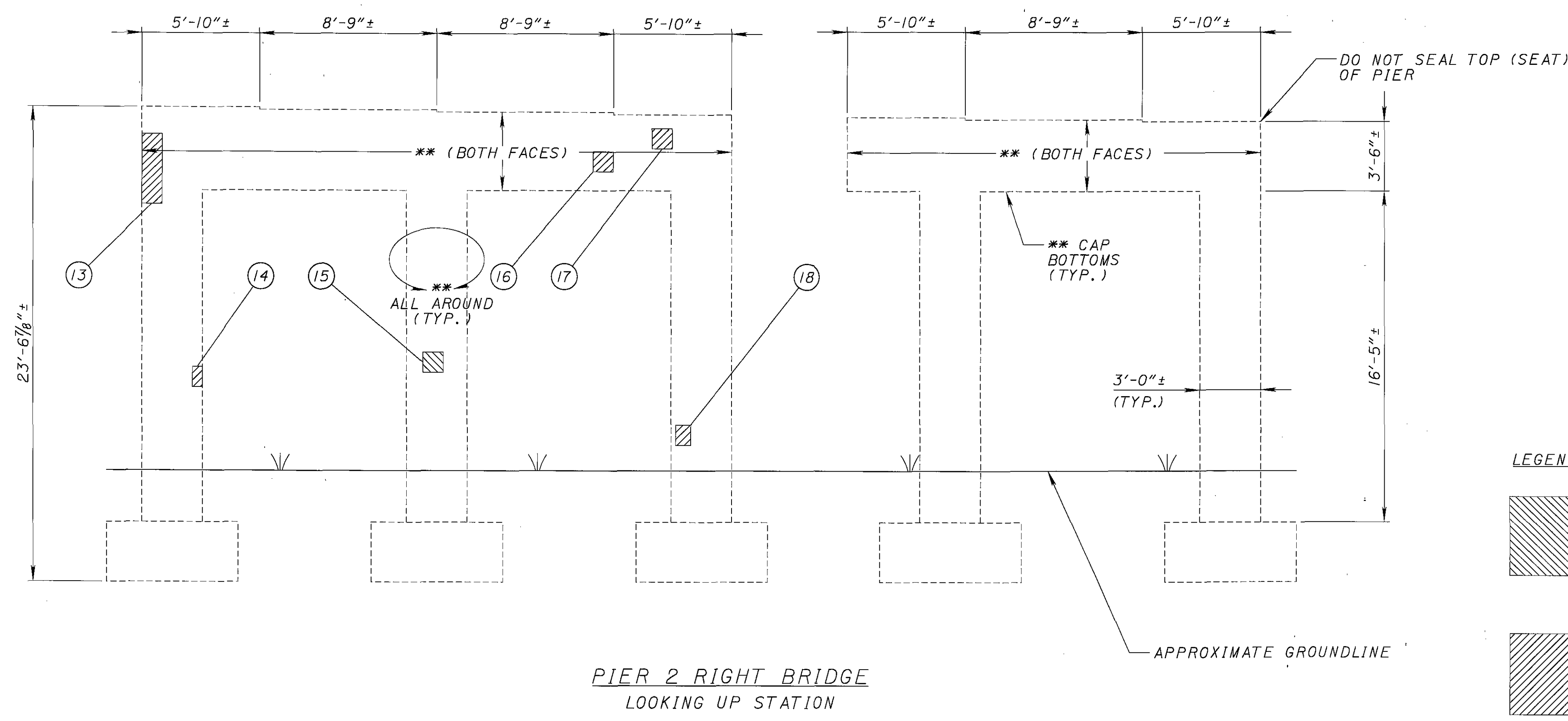
**

SEAL CONCRETE SURFACES WITH ITEM 512 -
SEALING OF CONCRETE SURFACES
(EPOXY-URETHANE)



PIER 1 - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	1'-0" x 1'-0"	1.00 on side
2	3'-0" x 1'-0"	3.00
3	2'-0" x 2'-0"	4.00
4	1'-0" x 1'-0"	1.00
5	1'-6" x 1'-6"	2.25
6	1'-0" x 1'-0"	1.00
7	0'-9" x 0'-9"	0.56
8	1'-6" x 1'-0"	1.50
9	0'-9" x 0'-9"	0.56
10	1'-0" x 1'-0"	1.00
11	1'-0" x 2'-0"	2.00 on side
12	1'-6" x 1'-6"	2.25 on side
TOTAL:		20.13
(MULTIPLIER) x2		41

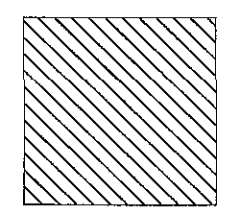
PIER 1 - RIGHT BRIDGE
 LOOKING UP STATION

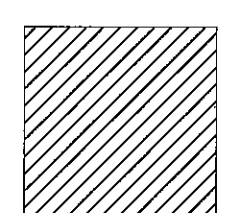


PIER 2 - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
13	2'-0" x 3'-6"	7.00 on side
14	0'-6" x 1'-0"	0.50 on side
15	1'-0" x 1'-0"	1.00
16	1'-0" x 1'-0"	1.00
17	1'-0" x 1'-0"	1.00
18	0'-9" x 1'-0"	0.75 on side
TOTAL:		11.25
(MULTIPLIER) x2		23

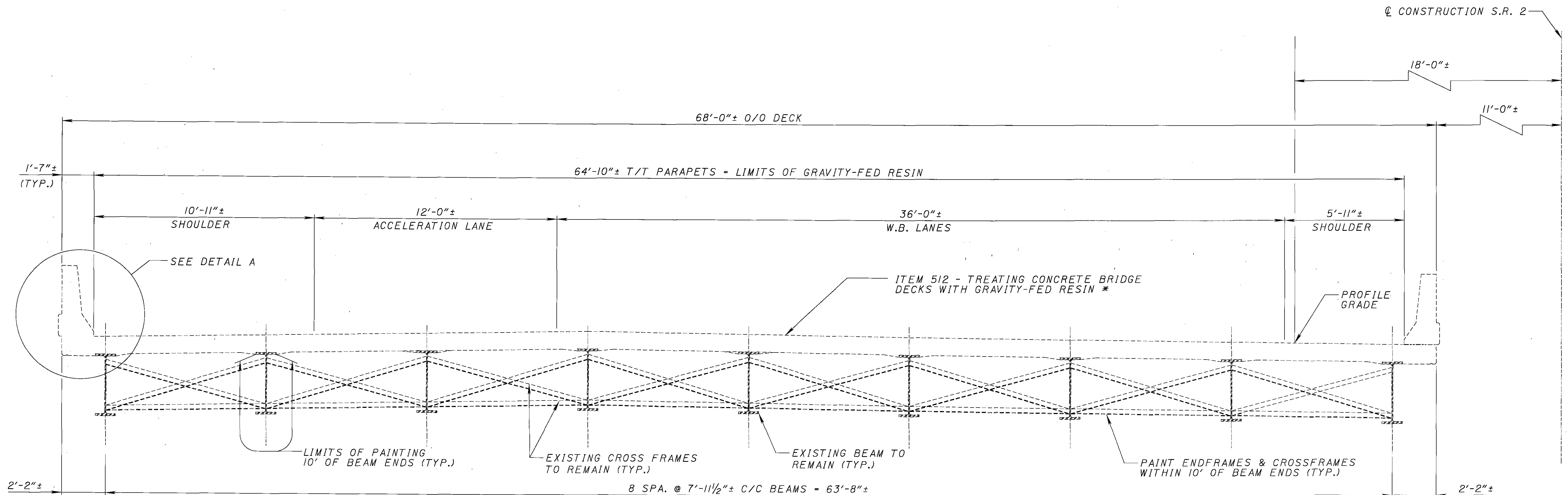
PIER 2 RIGHT BRIDGE
 LOOKING UP STATION

LEGEND:

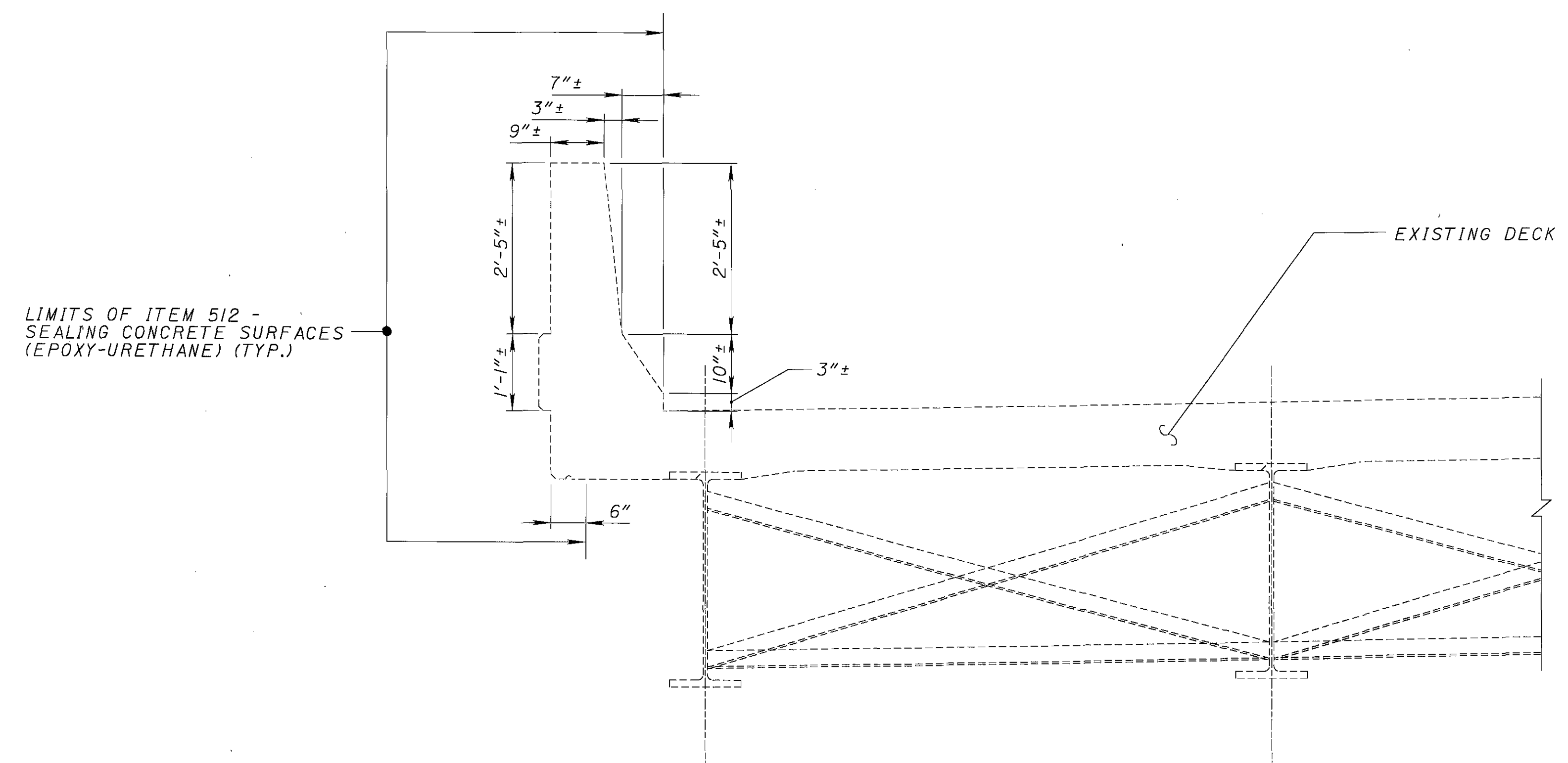
 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (UP STATION VIEW)

 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (DOWN STATION VIEW)

** SEAL CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



TRANSVERSE SECTION LEFT BRIDGE



DETAIL A

NOTES:
 * TREATMENT OF BRIDGE DECK WITH GRAVITY FED RESIN SHALL BE COORDINATED WITH OTHER CONSTRUCTION OPERATIONS.

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DESIGN AGENCY
BURGESS & NIPLE
 100 WEST ERNE STREET PAINESVILLE, OHIO 44077

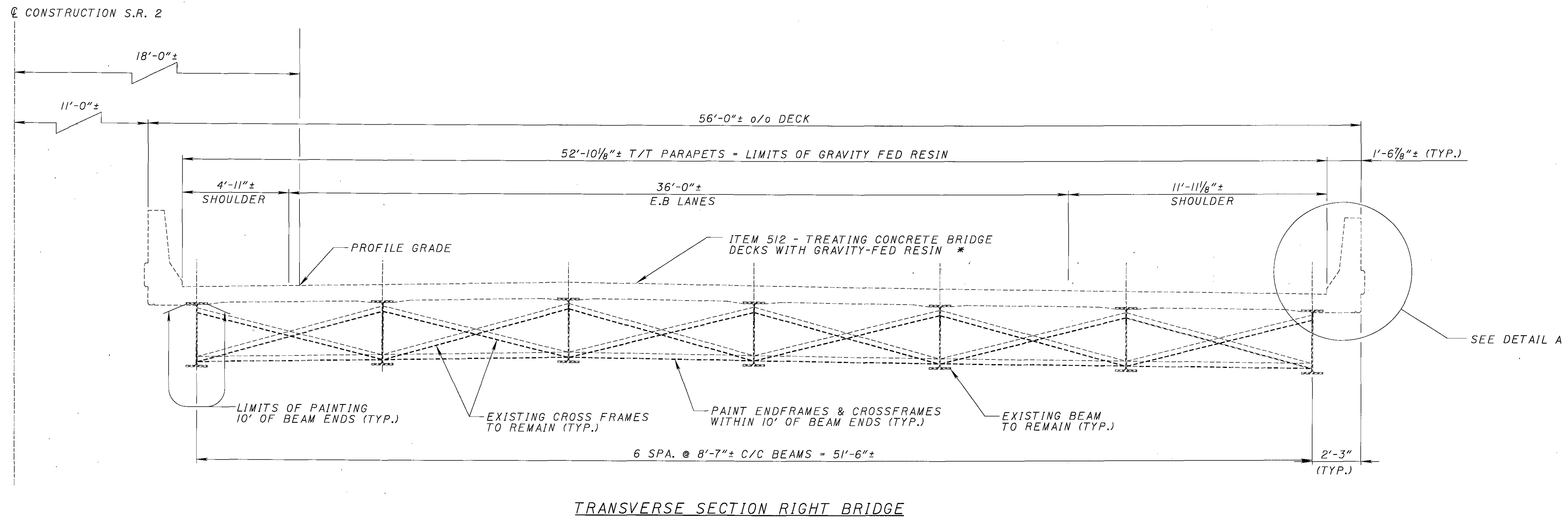
DATE	07-27-05
REVIEWED	JWB
STRUCTURE FILE NUMBER	4300092 (L) 4300122 (R)
DRAWN	RSC
REVISED	
DESIGNED	RSC
CHECKED	SCT

TRANSVERSE SECTION - LEFT BRIDGE
 BRIDGE NO. LAK-2-0055 L&R
 OVER LLOYD ROAD CONNECTOR RAMP

LAK-2-0.00

7 / 8

458
524



TRANSVERSE SECTION RIGHT BRIDGE

NOTES:
 SEE SHEET 7 / 8 FOR DETAIL A
 * TREATMENT OF BRIDGE DECK WITH GRAVITY FED RESIN SHALL BE COORDINATED WITH OTHER CONSTRUCTION OPERATIONS.

...002_0055RTS001.dgn

DESIGN AGENCY BURGESS & NIPLE 100 WEST ERNE STREET PAINESVILLE, OHIO 44077	
REVIEWED JWB	DATE 07-27-05
STRUCTURE FILE NUMBER 4300092 (L) 4300122 (R)	
DESIGNED RSC	CHECKED SCT
TRANSVERSE SECTION - RIGHT BRIDGE BRIDGE NO. LAK-2-0055 I&R OVER LLOYD ROAD CONNECTOR RAMP	
LAK-2-0.00	
8 / 8	
459	
524	

NOTES:

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

** MINIMUM HORIZONTAL CLEARANCES		
	RIGHT BRIDGE	LEFT BRIDGE
EXISTING	6'-2 7/8"±	2'-7 9/16"±
PROPOSED	6'-2 7/8"	2'-7 9/16"

BENCHMARK DATA

BENCHMARK #III:
MAGNETIC NAIL SET IN ASPHALT PAVED SHOULDER.
STA. 154+03.4012, 61.4555' RT
BM ELEV: 659.93

TRAFFIC DATA

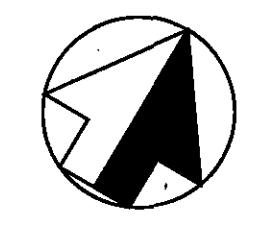
CURRENT ADT (2006) 90600
DESIGN YEAR ADT (2026) 93500
DESIGN YEAR ADTT (2026) 2805

EXISTING STRUCTURE

SFN: 4300157(L) & 4300181(R)
TYPE: 3-SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH CONCRETE SUBSTRUCTURE
SPANS: 40'±/50'±/40'± C/C BEARINGS E.B. ALONG REFERENCE CHORD
ROADWAY: TWO @ 54'-0"± F/F PARAPETS
LOADING: CF-2000(57)
WEARING SURFACE: LATEX MODIFIED CONCRETE OVERLAY
ALIGNMENT: 1°00'± CURVE LEFT
APPROACH SLABS: AS-1-54 (25'± LONG)
SUPERELEVATION: 0.024± FT/FT
SKEW: 4°49'00"± L.F. RELATIVE TO REFERENCE CHORD
DATE BUILT: 1959

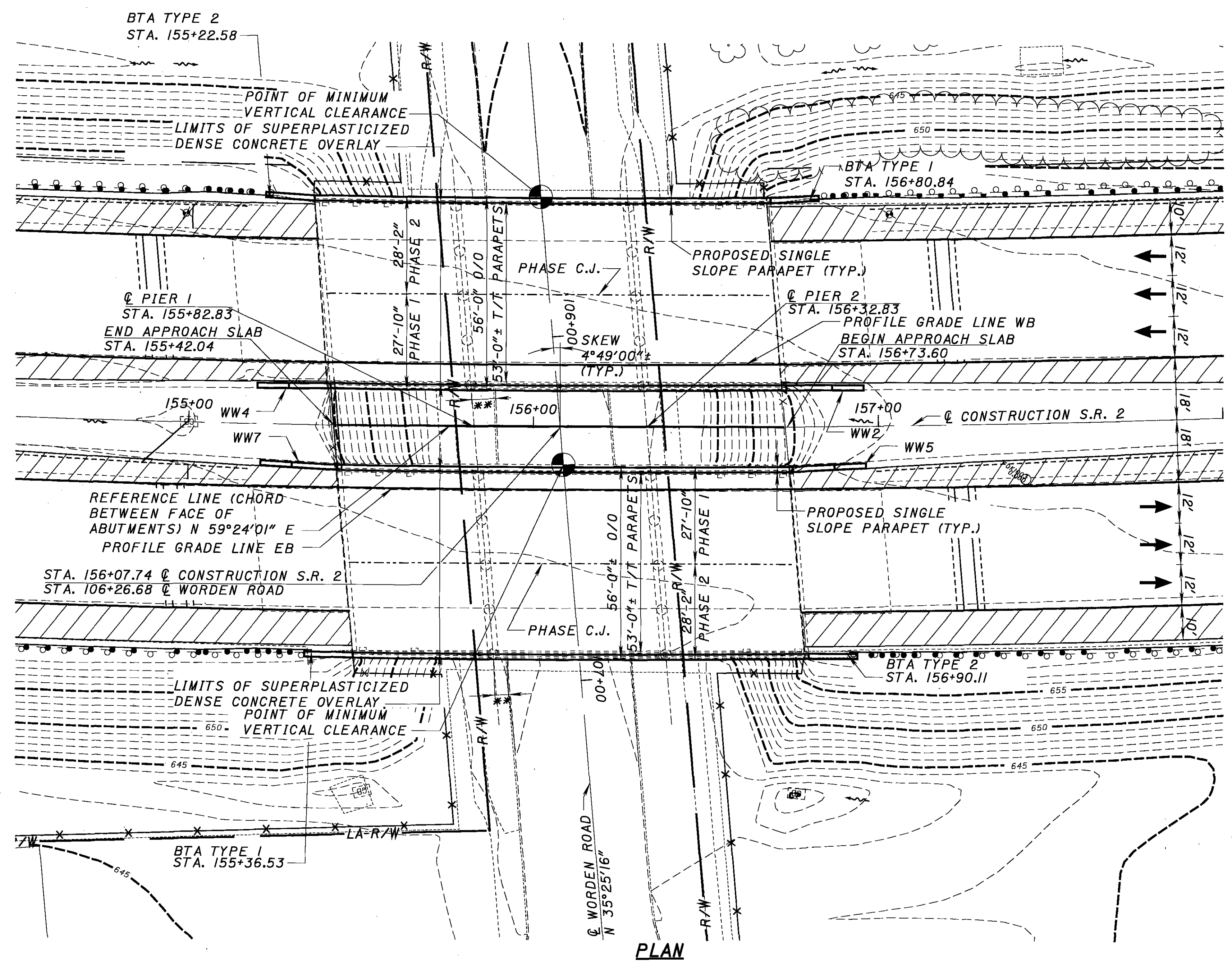
PROPOSED STRUCTURE

PROPOSED WORK: SDC OVERLAY, PARAPET REFACING
SFN: 4300157(L) & 4300181(R)
TYPE: 3-SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH CONCRETE SUBSTRUCTURE
SPANS: 40'±/50'±/40'± C/C BEARINGS ALONG REFERENCE CHORD
ROADWAY: TWO @ 53'-0"± T/T PARAPETS
LOADING: CF-2000 (57)
WEARING SURFACE: SUPERPLASTICIZED DENSE CONCRETE OVERLAY
ALIGNMENT: 1°00'± CURVE LEFT
APPROACH SLABS: EXISTING (25'± LONG)
SUPERELEVATION: 0.024± FT/FT
SKEW: 4°49'00"± L.F. RELATIVE TO REFERENCE CHORD
LATITUDE: N41°37'06" LONGITUDE: W81°28'10"

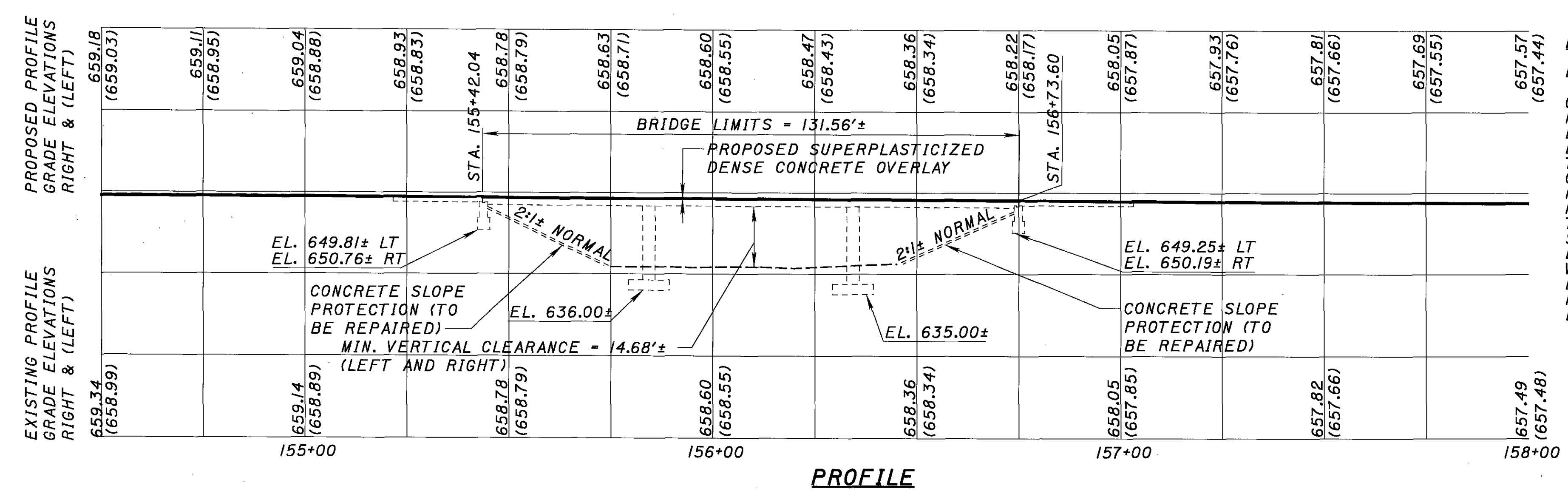


CONSTRUCTION S.R. 2 CURVE DATA

P.I. STA. = 157+43.26±
D = 8°33'33"± (LT)
Dc = 1°00'00"±
R = 5,729.58±
L = 428.76±
T = 855.92±
E = 16.02±



PLAN



PROFILE

LEGEND:

- BTA - BRIDGE TERMINAL ASSEMBLY
- C.J. - CONSTRUCTION JOINT
- FT - FEET
- L.F. - LEFT FORWARD
- EL. - ELEVATION
- T/T - TOE TO TOE
- O/O - OUT TO OUT
- F/F - FACE TO FACE
- MIN. - MINIMUM
- TYP. - TYPICAL
- STA. - STATION
- EB - EASTBOUND
- WB - WESTBOUND
- BM - BENCHMARK
- RT - RIGHT
- LT - LEFT

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION STANDARD BRIDGE DRAWING(S):

SBR-1-99 REVISED 7-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

847 REVISED 4-15-05
848 REVISED 4-15-05

EXISTING STRUCTURE VERIFICATION

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

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

EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

MAINTENANCE OF TRAFFIC

SEE THE ROADWAY PLANS FOR MAINTENANCE OF TRAFFIC REQUIREMENTS.

DESIGN DATA

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

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

PROPOSED WORK

1. REMOVE EXISTING OVERLAY, PERFORM SURFACE PREPARATIONS, AND OVERLAY EXISTING DECK WITH SUPERPLASTICIZED DENSE CONCRETE AS SPECIFIED IN THESE PLANS.
2. REMOVE EXISTING PARAPET AND REPLACE AS SPECIFIED, INCLUDING BARRIER TRANSITIONS AND EXTENSIONS OF THE EXPANSION JOINTS.
3. PATCH CONCRETE SUBSTRUCTURE WITH ITEM 519-PATCHING CONCRETE STRUCTURE, AS PER PLAN.
4. PAINT THE BEAM ENDS, ENDFRAMES, AND CROSSFRAMES AS PER THESE PLANS AND SPECIFICATIONS.
5. SEAL PORTIONS OF THE SUBSTRUCTURE AND PARAPETS WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).
6. REPLACE AREAS OF THE CONCRETE SLOPE PROTECTION WITH ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF PARAPETS, RAILINGS, DECK JOINTS, UNDER DECK SPALLED AREAS AND OTHER APPURTENANCES. THIS ITEM SHALL ALSO INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. PERFORM WORK CAREFULLY DURING CONCRETE REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONT.)

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 511, CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

GENERAL REQUIREMENTS

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

MIX OPTIONS

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

THE FOLLOWING PORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

HP4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGRE. (LB)	**#8 COARSE AGGRE. (LB)	**#57 COARSE AGGRE. (LB)	TOTAL (LB)
GRAVEL	1245	360	1315	2920
LIMESTONE	1245	360	1335	2940
SLAG	1245	315	1155	2715

AGGREGATE TYPE	CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO SILICA (LB)	WATER TO CEMENTITIOUS RATIO +/- .02	AIR CONTENT +/- 2%
GRAVEL	400	170	30	.42	7
LIMESTONE	400	170	30	.42	7
SLAG	400	170	30	.42	7

***ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127.**

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIAL OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

PARAPET CONSTRUCTION (FORMED AND POURED)

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 152.4MM (6 INCHES), WITH A MAXIMUM SLUMP OF 203.2 MM (8 INCHES).

ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

SLIP FORMED PARAPETS WILL NOT BE ALLOWED

CRACK CONTROL JOINTS

FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 38 MM (1 1/2") DEEP AND 6 MM (1/4") WIDE CRACK CONTROL JOINTS SPACED AT A MINIMUM OF 1830 MM (6 FT) AND A MAXIMUM OF 2440 MM (8 FT) ON CENTER. THE CRACK CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK. THE CONTRACTOR MAY EITHER FORM THE CRACK CONTROL JOINTS IN WITH FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CRACK CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE, OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 38 MM (1 1/2") WITH A CAULKING MATERIAL CONFORMING TO ASTM C920, TYPE S.

ITEM 511 CLASS HP CONCRETE BRIDGE DECK (PARAPET), AS PER PLAN

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

ITEM	UNITS	DESCRIPTION
511E50101	CUBIC YARD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

ITEM 510 DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 510, THE FOLLOWING CONDITIONS SHALL APPLY:

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF EPOXY GROUT INTO HOLES.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR ITEM 510-DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN.

ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE CONCRETE SEALER SHALL BE APPLIED TO THE SURFACE OF THE PARAPETS AND EXPOSED SURFACES OF THE SUBSTRUCTURES EXCEPT THE TOPS OF THE PIER CAPS AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT OR OTHER MATERIAL USED TO CLEAN SEAL, OR TREAT ANY BRIDGE STRUCTURE FROM ENTERING ANY STREAM, WETLANDS OR OTHER WATER AND TAKE APPROPRIATE ACTION.

ITEM 512 SEALING OF CONCRETE SURFACES (NON-EPOXY)

THIS ITEM OF WORK SHALL BE USED TO SEAL UNDERDECK SPALLED AREAS OF CONCRETE.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 512 SEALING OF CONCRETE SURFACES (NON-EPOXY). THIS PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER.

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE BUFF, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-27722.

ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN: PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511-CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 604, CONCRETE SLOPE PROTECTION AS PER PLAN, AS PER PLAN

THIS WORK SHALL INCLUDE THE FOLLOWING:

A. REMOVAL OF EXISTING DAMAGED PORTIONS OF CONCRETE SLOPE PROTECTION TO A DEPTH NECESSARY TO ESTABLISH A PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED SIX INCH THICK CONCRETE SLOPE PROTECTION.

B. THE INSTALLATION OF THE NEW CONCRETE SLOPE PROTECTION AS SHOWN ON SHEET 20/21.

C. CONSTRUCTION JOINTS: THE HORIZONTAL AND VERTICAL JOINTS SHALL MATCH THE REMAINING EXISTING CONCRETE SLOPE PROTECTION.

PAYMENT:

ALL COST OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING SAW CUTTING, ALL NECESSARY EMBANKMENT, EXCAVATION, PREFORMED EXPANSION JOINT FILLER, CONCRETE AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ITEM 848, SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1 INCH. FULL DEPTH REPAIR WILL NOT HAVE TO BE USED UNLESS THE FULL DEPTH OF THE DECK HAS BEEN PENETRATED.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO-DEMOLITION" WITH THE FOLLOWING REVISIONS:

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS PER ASTM C-127

THE THICKNESS OF THE PROPOSED OVERLAY SHALL BE AS SPECIFIED IN THE PLANS

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL PATH

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

ITEM SPECIAL - STRUCTURE MISC: SACRIFICIAL CATHODIC PROTECTION SYSTEM

DESCRIPTION

THIS WORK PERTAINS TO THE APPLICATION OF AN ALUMINUM-ZINC INDIUM (AL-ZN-IND) ANODE COATING TO THE SPALLED AREAS IN THE CONCRETE DECK BOTTOM USING THE THERMAL SPRAY PROCESS AS DIRECTED BY THE ENGINEER. THE PURPOSE OF THE ANODE COATING IS TO STOP CORROSION OF THE EXPOSED AND EMBEDDED STEEL BY GALVANIC CATHODIC PROTECTION (CP). WHEN ELECTRICALLY SHORTED TO THE REINFORCING STEEL IN THE CONCRETE, A SMALL DIRECT CURRENT WILL FLOW FROM THE SACRIFICIAL ANODE TO THE STEEL, THEREBY PROTECTING THE STEEL FROM ANY FURTHER CORROSION.

THE ELECTRICALLY SHORTED CP SYSTEM SHALL CONSIST OF AN AL-ZN-IND ANODE COATING.

THE CP SYSTEM FURNISHED SHALL INCLUDE ALL MATERIALS IDENTIFIED IN THESE SPECIFICATIONS. REQUEST FOR SUBSTITUTION OF ANY MATERIALS MUST CONTAIN APPROPRIATE DOCUMENTATION THAT SUBSTITUTES ARE EQUAL TO THE SPECIFIED ITEM.

THE CONTRACTOR SHALL DEMONSTRATE THAT THEY ARE CAPABLE OF SPRAYING THE SACRIFICIAL ALLOY PRIOR TO INSTALLATION AT THE JOB SITE. THE THERMAL SPRAY OPERATOR SHALL HAVE ADEQUATE TECHNICAL TRAINING AND FIELD EXPERIENCE TO SAFELY AND PROFICIENTLY APPLY THE ANODE COATING ON CONCRETE STRUCTURES. THE OPERATOR SHALL DEMONSTRATE THE ABILITY TO SET UP AND OPERATE THE THERMAL SPRAY EQUIPMENT. THE CONTRACTOR SHALL SUBMIT VALID RECORDS SHOWING OPERATOR QUALIFICATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR HAVING THE ANODE MANUFACTURER'S REPRESENTATIVE ON SITE UNTIL THE ENGINEER DEEMS THE CONTRACTOR TO BE PROFICIENT IN INSTALLATION OF THE ANODE.

THE FOLLOWING STANDARDS SHALL BE OBSERVED:

- ASTM D1002 - STRENGTH PROPERTIES OF ADHESIVES IN SHEAR BY TENSION LOADING
- ASTM D4285 - STANDARD TEST METHOD FOR INDICATING OIL OR WATER IN COMPRESSED AIR
- ASTM D4541 - STANDARD TEST METHOD FOR PULL-OFF STRENGTH OF COATINGS USING PORTABLE ADHESION TESTERS

MATERIALS AND EQUIPMENT:

AS A MINIMUM, THE CONTRACTOR SHALL SUPPLY THE FOLLOWING:

ABRASION OF CONCRETE SURFACES: THE ABRASIVE BLASTING EQUIPMENT SHALL BE A CONVENTIONAL, AIR-PRESSURE TYPE BLASTER. A MAXIMUM OF 80 PSI SHALL BE MAINTAINED AT THE BLAST NOZZLE.

THE ABRASIVE MATERIAL SHALL BE CLEAN AND DRY NON-METALLIC GRIT WITH NO MINERAL CONSTITUENTS THAT TEND TO BREAK DOWN AND REMAIN ON THE SURFACE IN VISIBLE QUANTITY. THE ABRASIVE SIZE SHALL BE SELECTED FROM 20-40 MESH AND SHALL BE HARD AND ANGULAR IN SHAPE. ABRASIVES THAT HAVE BEEN PREVIOUSLY USED TO REMOVE OIL AND/OR GREASE SHALL NOT BE ALLOWED. ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED.

COMPRESSED AIR USED FOR ABRASIVE BLASTING SHALL BE CLEAN, OIL-FREE AND DRY PER ASTM D4285. AIR LINE FILTERS AND MOISTURE SEPARATORS SHALL BE INSTALLED UPSTREAM FROM THE BLASTING EQUIPMENT. THESE SHALL BE INSPECTED DAILY FOR CLEANLINESS AND CORRECT OPERATION.

APPLICATION EQUIPMENT: THE COATING SHALL BE APPLIED USING ELECTRIC-ARC SPRAY EQUIPMENT. THE ARC SPRAY EQUIPMENT SHALL CONSIST OF A SPRAY GUN WIRE FEED UNIT, POWER SUPPLY, AND AIR COMPRESSOR. TO READILY SPRAY THE COILED ANODE WIRE, A STRAIGHTENING DEVICE MAY BE NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ANY NECESSARY MODIFICATIONS AND ADJUSTMENTS TO THE THERMAL SPRAY EQUIPMENT SO THAT THE ALLOY WIRE CAN BE SPRAYED PROPERLY.

ANODE SYSTEM: THE SACRIFICIAL ANODE SYSTEM SHALL BE AS SUPPLIED BY CORRPRO COMPANIES, INC., 1055 WEST SMITH ROAD, MEDINA, OHIO 44256, OR AN APPROVED EQUAL. THE MATERIAL SHALL HAVE THE FOLLOWING MATERIAL SPECIFICATIONS:

NOMINAL CHEMICAL COMPOSITION: AL/20 ZN /0 .2 IN
 WIRE DIAMETER: 1/16"
 TYPE: CORED WIRE
 DENSITY: 1.87 OZ/CU.IN.
 OPEN CIRCUIT POTENTIAL IN SIMULATED CONCRETE PRE- SOLUTION WITH PH = 12-13: > - 1.6V (CSE)

THE ANODE WIRE SHALL BE KEPT CLEAN, DRY AND FREE FROM OXIDES AT ALL TIMES.

INSTALLATION: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF THE SYSTEM WITH ALL OTHER CONSTRUCTION OPERATIONS.

INSTALLATION SEQUENCE: INSTALLATION SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE:

1. PREPARATION OF THE REINFORCING STEEL AND CONCRETE SURFACES: WORK PERFORMED UNDER THIS SECTION CONSISTS OF CLEANING SPALLS AND THE ADJACENT CONCRETE SURFACE AT LEAST TWELVE INCHES (12") BEYOND THE SPALL PERIMETER, CLEANING EXPOSED STEEL TO COMPLY WITH SSPC-SP10 AND PROVIDING AN ANCHOR PROFILE BY ABRASIVE BLASTING SO THAT AN ADEQUATE BOND BETWEEN THE CONCRETE AND THERMALLY SPRAYED ANODE CAN BE OBTAINED. THE MAIN PURPOSE IS TO REMOVE DUST, GRIT, CHALK MARKS, RUST, PAINTS, CURING COMPOUNDS AND OTHER SUBSTANCES THAT MIGHT INHIBIT BONDING OF THE ANODE TO THE CONCRETE.
2. ABRASIVE BLASTING: ABRASIVE BLASTING SHALL NOT COMMENCE UNTIL ALL SPALLS HAVE BEEN REMOVED FROM THE DECK BOTTOM.

APPLICATION OF AL-ZN-IND ANODE COATING: THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT FOR INSTALLATION OF THE ANODE SYSTEM IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

1. SURFACES SHALL BE THOROUGHLY VACUUMED OR BLOWN CLEAN WITHIN 15 MINUTES BEFORE THERMAL SPRAYING OF THE AREA IS STARTED. ANY OIL, GREASE, SOIL, WATER, OR OTHER FOREIGN MATTER THAT MAY HAVE DEPOSITED ON THE SURFACE AFTER THE SURFACE PREPARATION HAS BEEN COMPLETED SHALL BE REMOVED BEFORE SPRAY APPLICATION. COATING APPLICATION SHALL EXTEND AT LEAST TWELVE INCHES (12") BEYOND THE SPALL PERIMETER AND SHALL ONLY BE PERFORMED WHEN THE CONCRETE SURFACE IS CLEAN AND DRY.
2. ALL METALLIC APPURTENANCES SUCH AS DRAIN PIPES, CONDUIT, OR BEARING STEEL PLATES SHALL BE ISOLATED FROM THE ANODE AND TEMPORARILY COVERED WITH SUITABLE MASKING MATERIALS THAT EXTEND FROM THE OBJECTS BY AT LEAST 1/8" ON THE CONCRETE SURFACE. REINFORCING STEEL SHALL BE FULLY COATED.
3. THE INSTALLATION AREAS SHALL BE ENCLOSED DURING SPRAYING FOR DUST CONTAINMENT. THE ENCLOSURE SHALL CONSIST OF TARPS, PANELS, OR OTHER METHODS TO PREVENT DUST FROM ESCAPING THE IMMEDIATE AREA SUCH THAT IT WOULD CONSTITUTE A HEALTH HAZARD. PERSONNEL CONDUCTING SPRAYING OPERATIONS WITHIN THE ENCLOSURE SHALL BE PROVIDED WITH A HOOD WITH EXTERNAL AIR SUPPLY FOR RESPIRATION IN ACCORDANCE WITH OSHA 19-10-134.
4. CONCRETE SURFACES SHALL NOT BE SPRAYED WHEN THE TEMPERATURE IS LESS THAN 41 DEGREES F.
5. DURING APPLICATION, THE THERMAL SPRAY NOZZLE SHALL BE MAINTAINED AT A TRAVEL SPEED AND A DISTANCE FROM THE WORK SURFACE SUCH THAT THE ANODE DEPOSITS EFFICIENTLY AND BOND STRENGTHS ARE MAXIMIZED. TRAVEL SPEED SHALL BE APPROXIMATELY 6" PER SECOND. THE DISTANCE FROM THE NOZZLE TO THE SURFACE SHOULD BE APPROXIMATELY 6".
6. THE COATING SHALL BE APPLIED IN MULTIPLE PASSES AND SHOULD OVERLAP ON EACH PASS IN A CROSSHATCH PATTERN BEFORE THE FIRST LAYER OF MATERIAL COOLS. UNIFORM GUN MOVEMENT SHOULD BE USED TO ENSURE A CONSISTENT THICKNESS. SUFFICIENT ANODE MATERIAL SHALL BE SPRAYED TO ACHIEVE A MINIMUM THICKNESS OF 12 MILS. THE THICKNESS OF THE COATING SHALL BE MEASURED AT A MINIMUM OF FIVE LOCATIONS PER 100 SQUARE FEET USING A METALLIC COATING THICKNESS GAGE SUCH AS A DEFELSKO POSITECTOR 100. THE DETECTOR SHALL BE CALIBRATED FOR THE ALLOY BEING TESTED.
7. COMPRESSED AIR USED FOR SPRAYING SHALL BE CLEAN, OIL-FREE AND DRY, PER ASTM D4285. AIR LINE FILTERS AND MOISTURE SEPARATORS SHALL BE INSTALLED UPSTREAM FROM THE SPRAYING EQUIPMENT. THESE SHALL BE INSPECTED DAILY FOR CLEANLINESS AND CORRECT OPERATION. ANY INDICATION OF MALFUNCTION IN THE EQUIPMENT, INDICATED BY OIL OR WATER IN THE FILTER OR TRAPS, SHALL BE CORRECTED IMMEDIATELY.
8. THE ANODE COATING SHALL NOT CONTAIN ANY LUMPS, BLISTERS, COARSE TEXTURE, OR LOOSELY ADHERING PARTICLES, NOR SHALL IT CONTAIN ANY CRACKS, PINHOLES, OR CHIPS THAT EXPOSE THE CONCRETE SUBSTRATE. UNACCEPTABLE AREAS SHALL BE REPAIRED. REPAIR WORK SHALL BE CONDUCTED AS FOLLOWS:
 - A. REMOVE ALL DEGRADED ANODE COATING BY SCRAPING, STRIP BLASTING, OR BOTH. DURING THIS PROCESS, LIGHT BLASTING SHALL BE APPLIED TO THE AREAS WITHOUT EXPOSING LARGE AGGREGATES.
 - B. RE-APPLY SACRIFICIAL ANODE COATING.
 - C. INSPECT THE SPRAYED ANODE FOR PROPER THICKNESS AS DESCRIBED ABOVE.

METHOD OF MEASUREMENT:

THE AREA UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF SACRIFICIAL ANODE COATING COMPLETED ON THE DECK BOTTOM AND ACCEPTED IN PLACE.

BASIS OF PAYMENT:

ACCEPTED QUANTITIES OF SACRIFICIAL ANODE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR:

ITEM	DESCRIPTION	UNIT
SPECIAL	STRUCTURE MISC: SACRIFICIAL CATHODIC PROTECTION SYSTEM	SQ. FT.

PAYMENT SHALL INCLUDE ALL MATERIALS, SCAFFOLDING, MANUFACTURER'S REPRESENTATIVE, ENCLOSURES, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS REQUIRED FOR THE COMPLETION AND ACCEPTANCE OF THIS ITEM.

\$DATE\$
\$FILE\$

DESIGN AGENCY
Baker
1228 E. 94th AVE., SUITE 1050
CLEVELAND, OHIO 44115

DATE	7-27-2005
REVISED	JWB
DRAWN	KAS
DESIGNED	KAS
CHECKED	SCT
STRUCTURE FILE NUMBER	43001571/4300181R

GENERAL NOTES 2 OF 2
BRIDGE NO. LAK-2-0105 L/R
OVER WORDEN ROAD

LAK-2-0-00

3/21
462
524

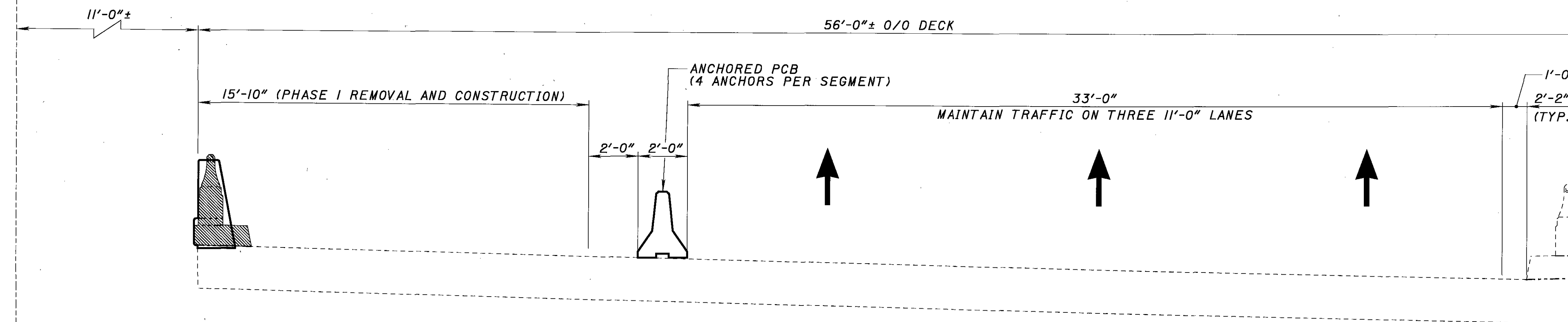
ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				AS PER PLAN REFERENCE SHEET NO.
					ABUT-MENT	PIER	SUPER-STRUCTURE	TOTAL	ABUT-MENT	PIER	SUPER-STRUCTURE	TOTAL	
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN				LUMP				LUMP	2/21, 19/21, 20/21
509	10000	15719	POUND	EPOXY COATED REINFORCING STEEL			7859	7859			7860	7860	
510	10001	1296	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	120		528	648	120		528	648	2/21, 13/21, 14/21, 17/21
511	50101	96	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	8		40	48	8		40	48	2/21, 13/21, 14/21, 17/21
511	81300	1670	EACH	CONCRETE, MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS			835	835			835	835	
512	10100	1308	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	23	264	367	654	23	264	367	654	
516	13600	32	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	16			16	16			16	
519	11101	945	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	120	215		335	130	480		610	3/21, 7/21 - 12/21, 19/21, 20/21
SPECIAL	530E00600	1368	SQ FT	STRUCTURE MISC.: SACRIFICIAL CATHODIC PROTECTION SYSTEM **			684	684			684	684	
601	21001	288	SQ YD	CONCRETE SLOPE PROTECTION, AS PER PLAN	185			185	103			103	3/21, 20/21
847	30400	1550	SQ YD	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" THICK)			775	775			775	775	
848	10200	1550	SQ YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (1 3/4" THICK)			775	775			775	775	
848	10200	400	SQ YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (2" THICK)	200			200	200			200	
848	20000	1950	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION	200		775	975	200		775	975	3/21, 15/21, 16/21
848	30200	6	CU YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY VARIABLE THICKNESS, MATERIAL ONLY	1		2	3	1		2	3	
848	50000	44	SQ YD	HAND CHIPPING			24	24			20	20	
848	50100	LUMP		TEST SLAB				LUMP				LUMP	
848	50200	4	CU YD	FULL DEPTH REPAIR			2	2			2	2	
848	50300	400	SQ YD	WEARING COURSE REMOVED, ASPHALT	200			200	200			200	
848	50340	436	SQ YD	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			244	244			192	192	

* SEE SHEETS 428A AND 428B FOR NOTES AND DETAILS PERTAINING TO THIS ITEM.

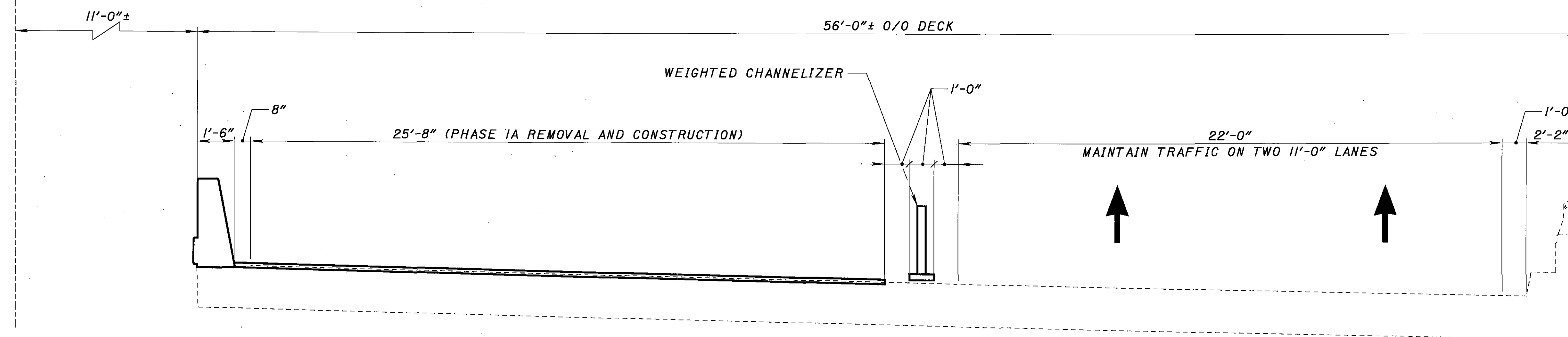
** SEE GENERAL NOTES SHEET 3721 .

CONSTRUCTION S.R. 2



TRANSVERSE SECTION - PHASE I
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR

CONSTRUCTION S.R. 2



TRANSVERSE SECTION - PHASE IA
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR

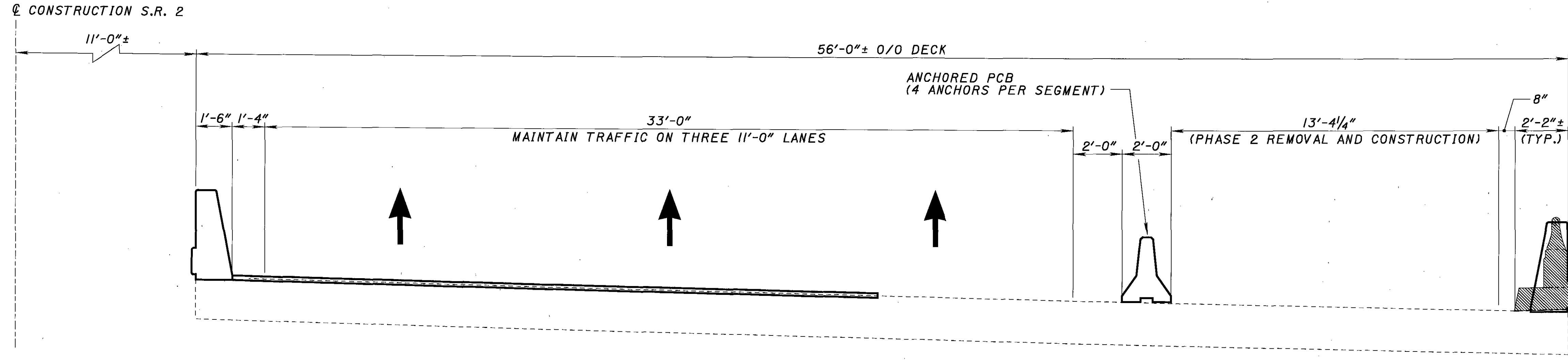
LEGEND:
 TYP. - TYPICAL
 O/O - OUT TO OUT
 C.J. - CONSTRUCTION JOINT

NOTE:
 SECTIONS SHOWN IN THE DIRECTION OF TRAVEL

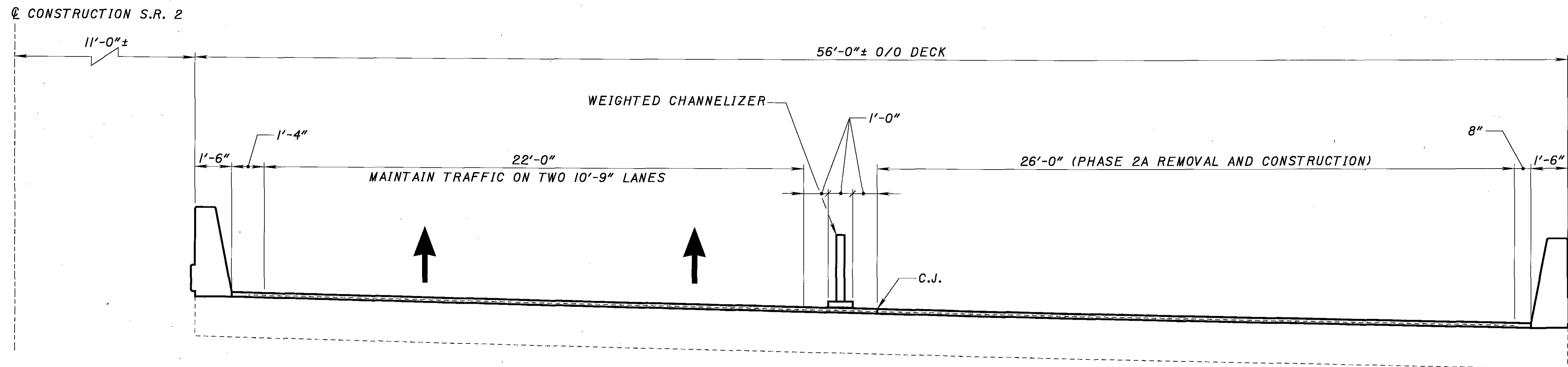
INDICATES PORTION OF STRUCTURE REMOVED

\$DATE\$
 \$FILE\$

DESIGNED	DATE
RSC	7-27-2005
CHECKED	STRUCTURE FILE NUMBER
RSC	43001571/4300181R
DRAWN	REVIEWED
RSC	JWB
REVISED	



TRANSVERSE SECTION - PHASE 2
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR



TRANSVERSE SECTION - PHASE 2A
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR

LEGEND:
 TYP. - TYPICAL
 O/O - OUT TO OUT
 C.J. - CONSTRUCTION JOINT

INDICATES PORTION OF STRUCTURE REMOVED

NOTE: SECTIONS SHOWN IN THE DIRECTION OF TRAVEL

\$DATE\$
 \$FILE\$

DESIGN AGENCY
Baker
 1238 EUCLID AVENUE, SUITE 1050
 CLEVELAND, OHIO 44115

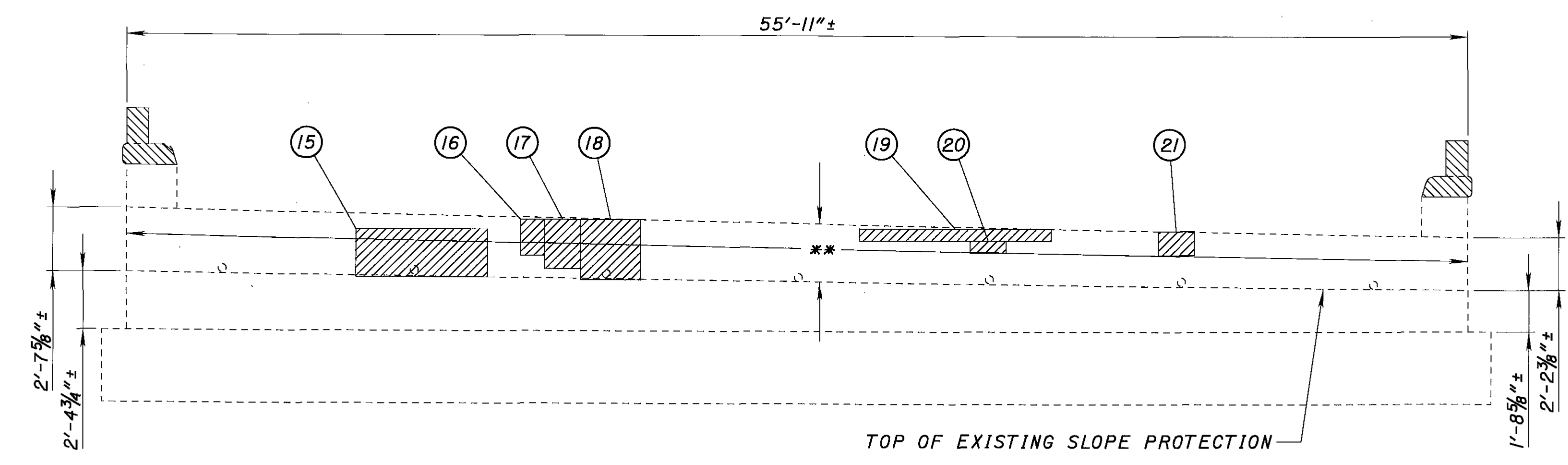
DATE	7-27-2005
REVIEWED	JWB
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DRAWN	RSC
REVISION	
DESIGNED	RSC
CHECKED	RSC

PHASE CONSTRUCTION DETAILS 2 OF 2
 BRIDGE NO. LAK-2-0105 L/R
 OVER WORDEN ROAD

LAK-2-0.00

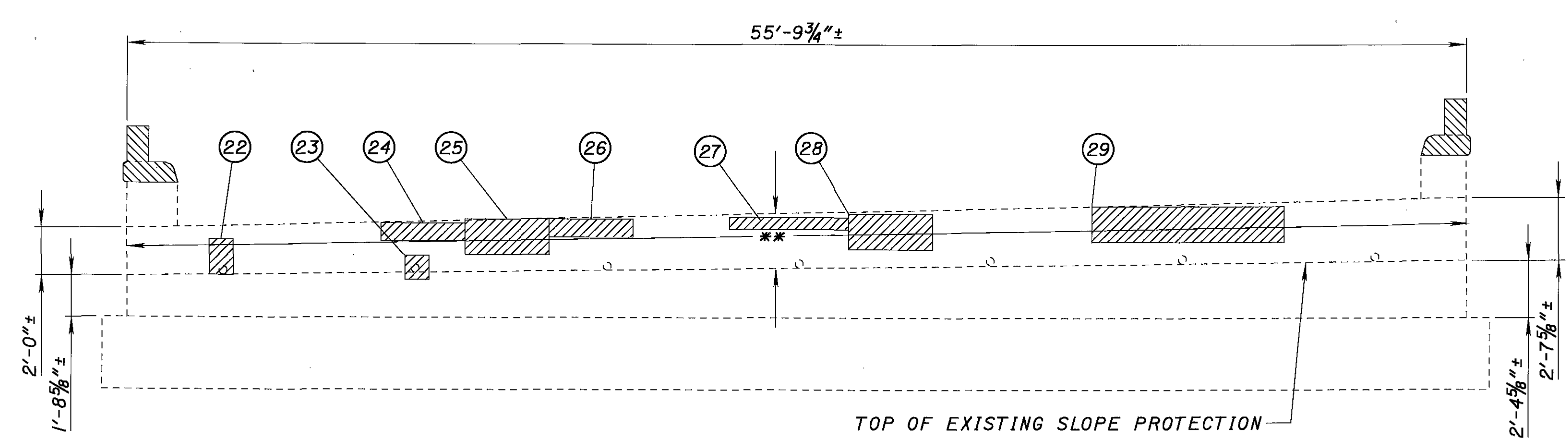
6 / 21

465
 524



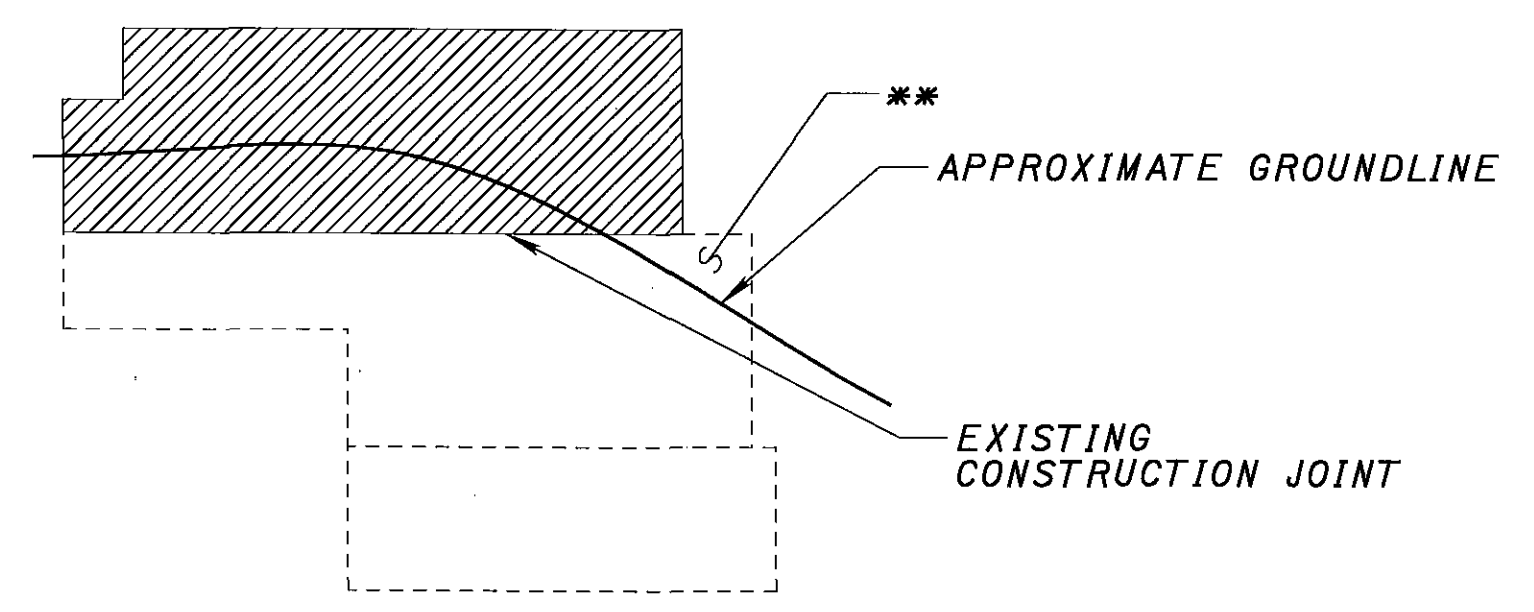
REAR ABUTMENT LEFT BRIDGE - ELEVATION

REAR ABUTMENT LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
15	5'-6" x 2'-0"	11.00
16	1'-0" x 1'-6"	1.50
17	1'-6" x 2'-0"	3.00
18	2'-6" x 2'-6"	6.25
19	8'-0" x 0'-6"	4.00
20	1'-6" x 0'-6"	0.75
21	1'-6" x 1'-0"	1.50
TOTAL:		28.00
(MULTIPLIER) x 2		54.00



FORWARD ABUTMENT LEFT BRIDGE - ELEVATION

FORWARD ABUTMENT LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
22	1'-0" x 1'-6"	1.50
23	1'-0" x 1'-0"	1.00
24	3'-6" x 0'-9"	2.63
25	3'-6" x 1'-6"	5.25
26	3'-6" x 0'-9"	2.63
27	5'-0" x 0'-6"	2.50
28	3'-6" x 1'-6"	5.25
29	8'-0" x 1'-6"	12.00
TOTAL:		32.75
(MULTIPLIER) x 2		66.00



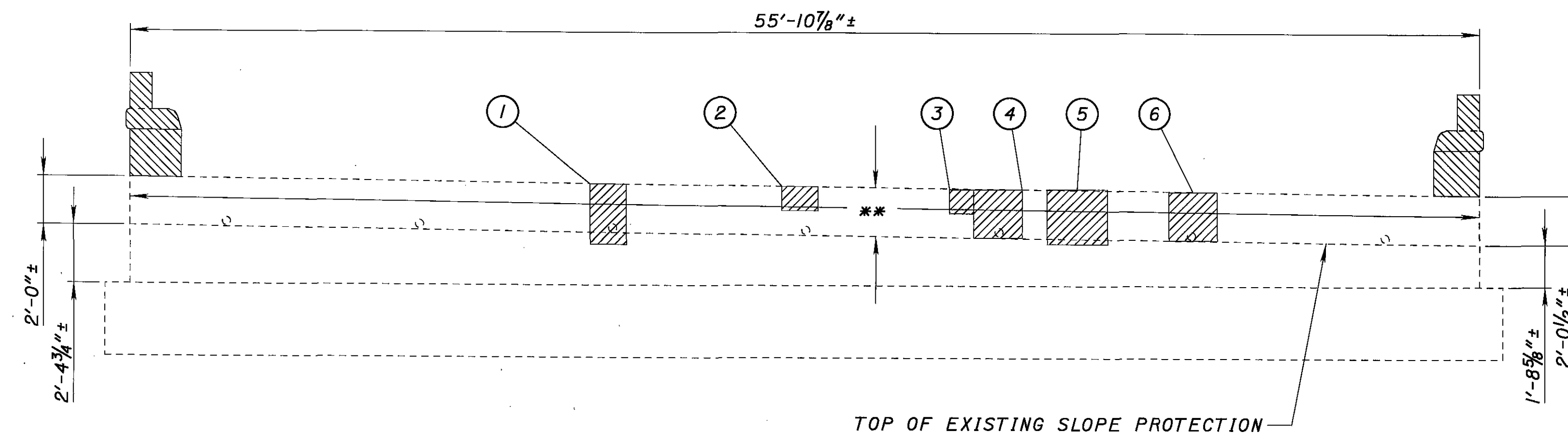
WINGWALL DETAIL
 ALL WINGWALLS SIMILAR

LEGEND:

 AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN

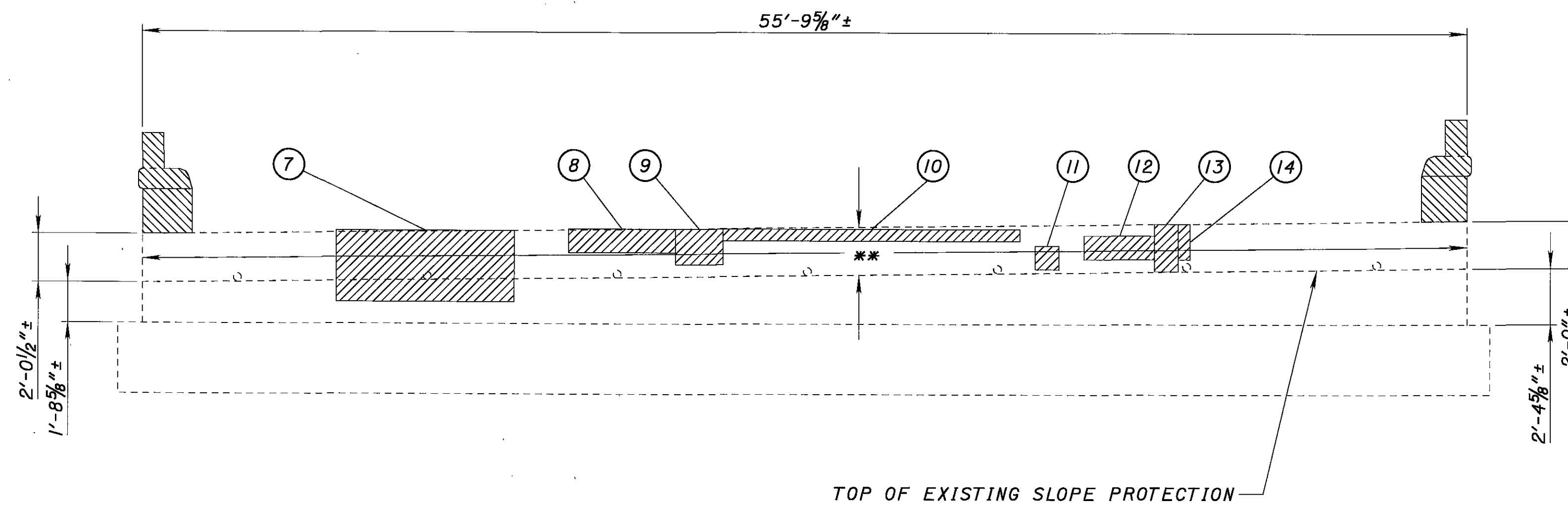
 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES

** SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

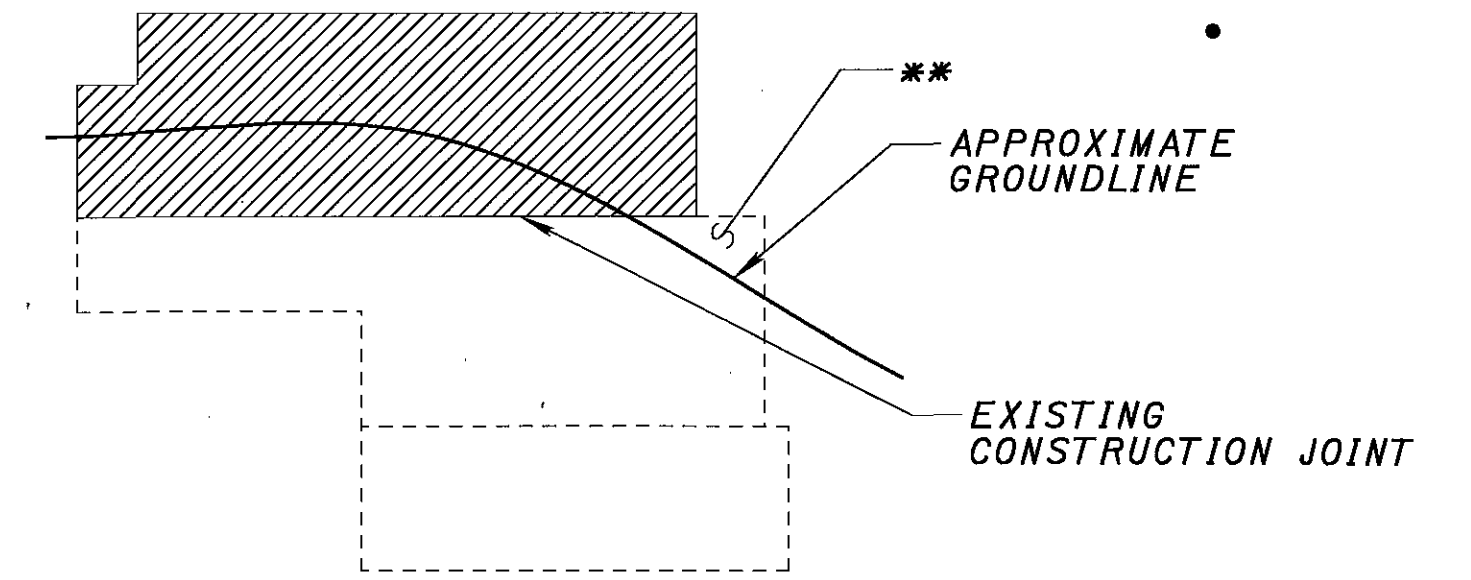


REAR ABUTMENT RIGHT BRIDGE - ELEVATION

**



FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION

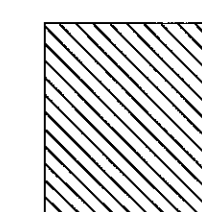


WINGWALL DETAIL
ALL WINGWALLS SIMILAR

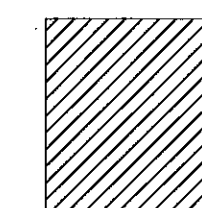
REAR ABUTMENT RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	1'-6" x 2'-6"	3.75
2	1'-6" x 1'-0"	1.50
3	1'-0" x 1'-0"	1.00
4	2'-0" x 2'-0"	4.00
5	2'-6" x 3'-0"	7.50
6	2'-0" x 2'-0"	4.00
TOTAL:		21.75
(MULTIPLIER) x 2		44.00

FORWARD ABUTMENT RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
7	7'-6" x 3'-0"	22.50
8	4'-6" x 1'-0"	4.50
9	2'-0" x 1'-6"	3.00
10	12'-6" x 0'-6"	6.25
11	1'-0" x 1'-0"	1.00
12	1'-0" x 3'-0"	3.00
13	1'-0" x 2'-0"	2.00
14	0'-6" x 1'-6"	0.75
TOTAL:		43.00
(MULTIPLIER) x 2		86.00

LEGEND:



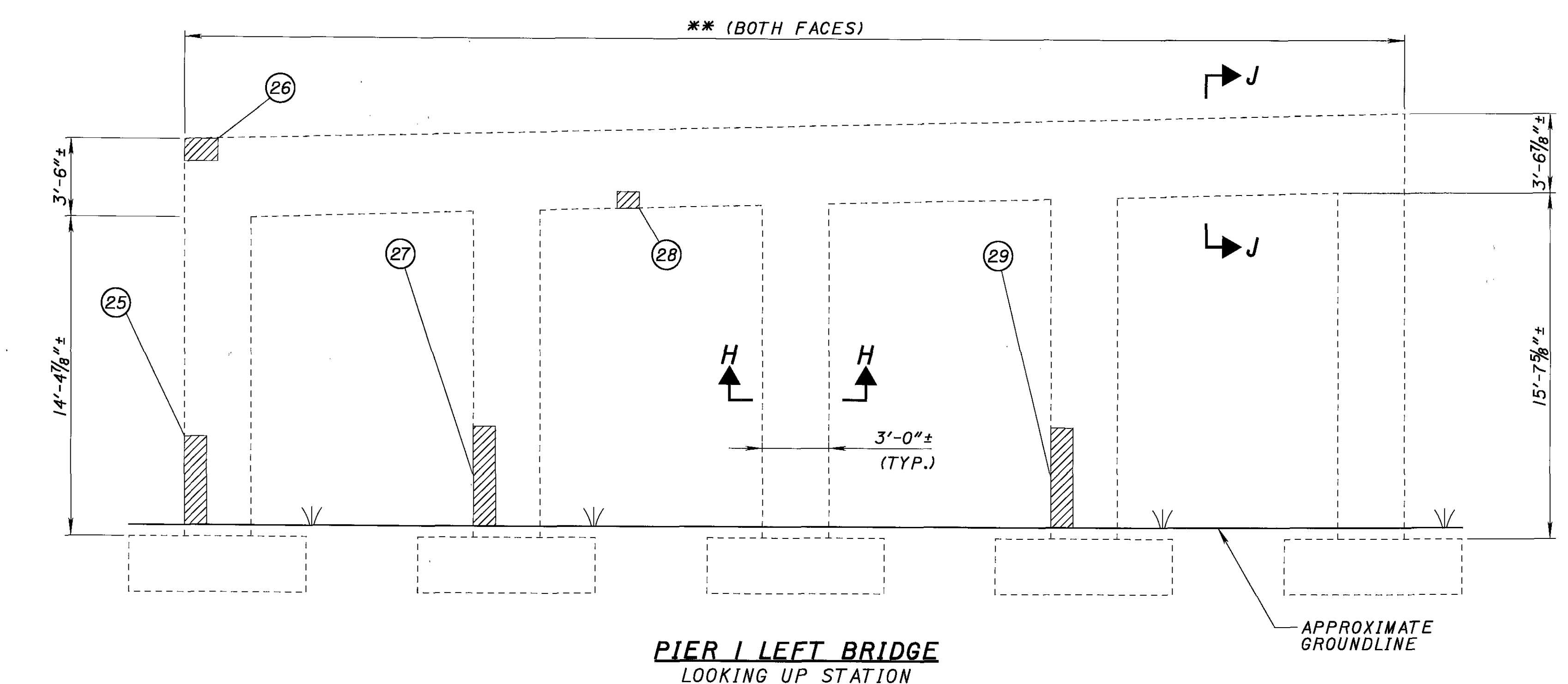
AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



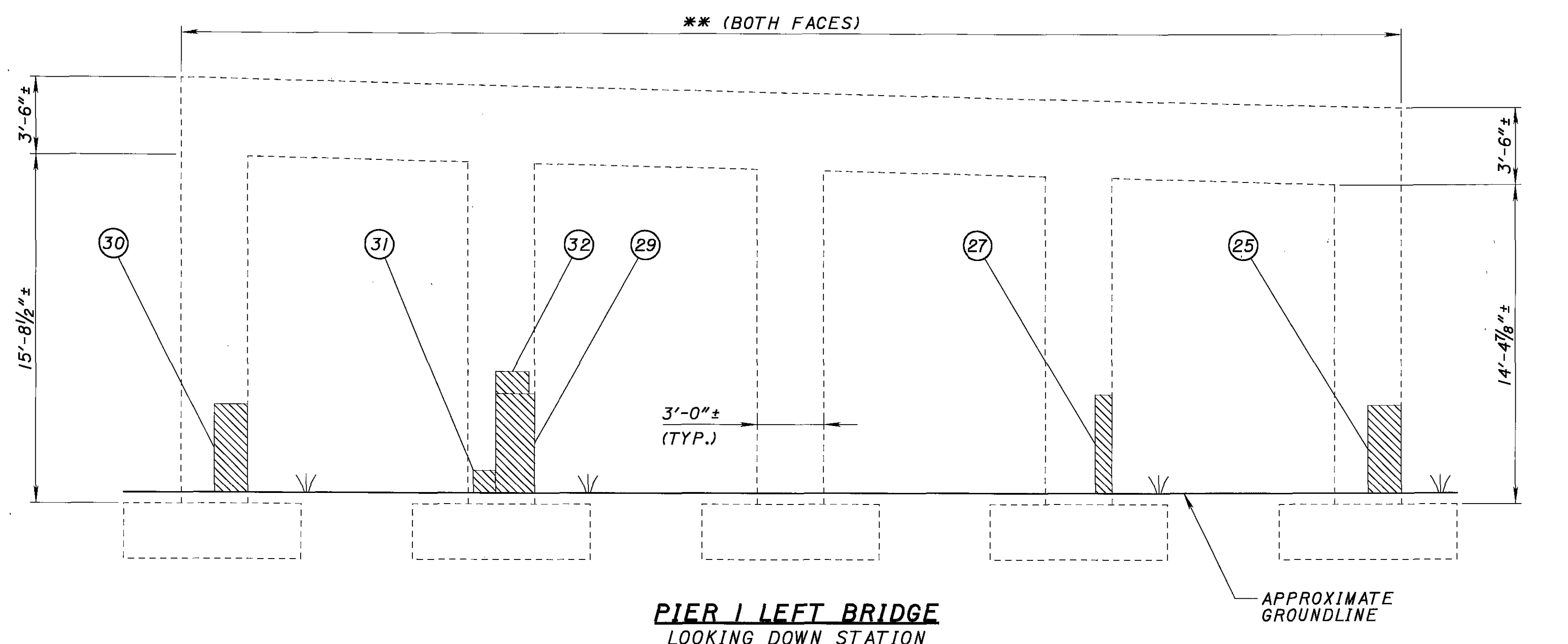
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES

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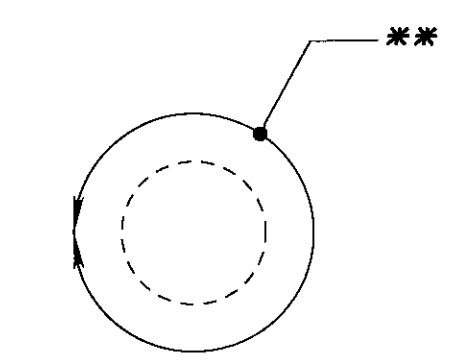
SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



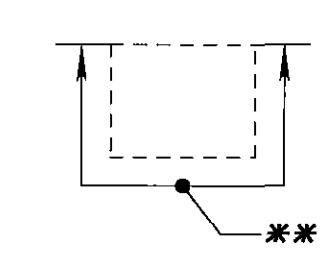
PIER I LEFT BRIDGE
LOOKING UP STATION



PIER I LEFT BRIDGE
LOOKING DOWN STATION



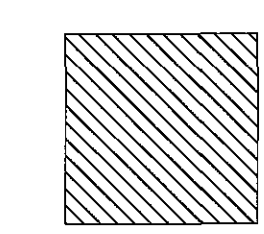
SECTION H-H
(TYPICAL ALL COLUMNS)



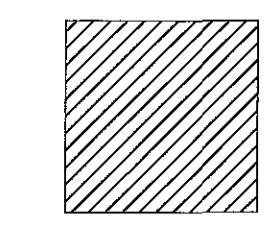
SECTION J-J
(TYPICAL ALL PIERS)

PIER I LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
25	2'-6" x 4'-0"	10.00 on side
26	1'-0" x 1'-6"	1.50
27	2'-0" x 4'-6"	9.00 on side
28	1'-0" x 0'-9"	0.75
29	4'-0" x 4'-6"	18.00 on side
30	2'-6" x 4'-0"	10.00
31	1'-0" x 1'-0"	1.00
32	2'-0" x 1'-0"	2.00
TOTAL:		52.25
(MULTIPLIER) x 2		104.50

LEGEND:



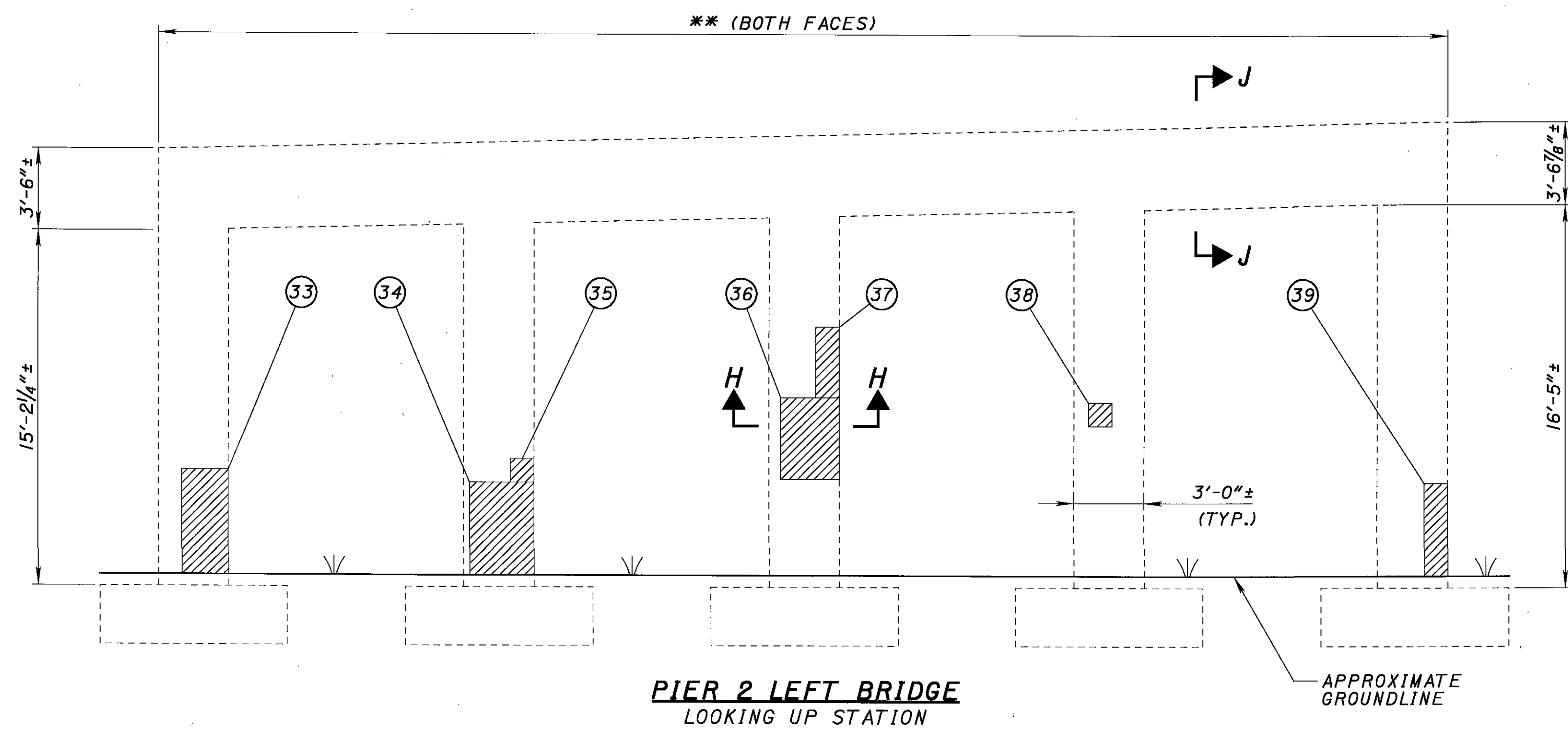
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(UP STATION VIEW)



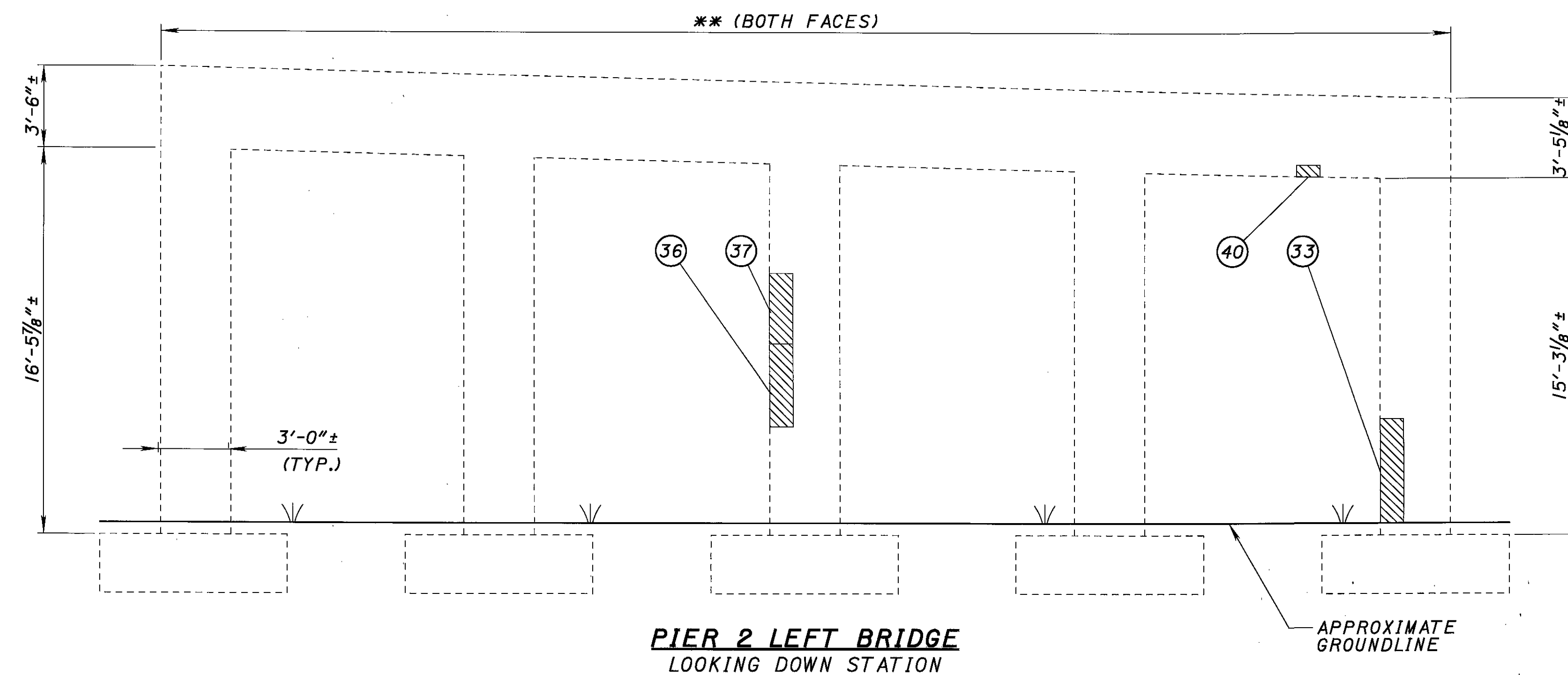
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(DOWN STATION VIEW)

** SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512 - SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

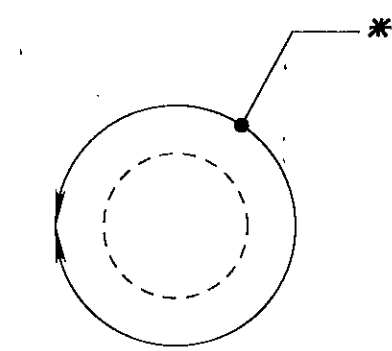
TYP. - TYPICAL



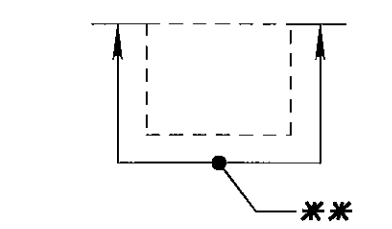
PIER 2 LEFT BRIDGE
LOOKING UP STATION



PIER 2 LEFT BRIDGE
LOOKING DOWN STATION



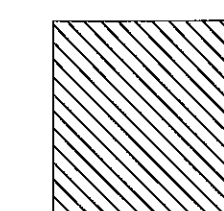
SECTION H-H
(TYPICAL ALL COLUMNS)



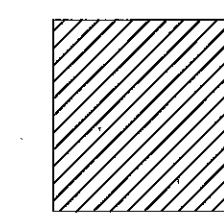
SECTION J-J
(TYPICAL ALL PIERS)

PIER 2 LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
33	4'-0" x 4'-6"	18.00
34	3'-0" x 4'-0"	12.00
35	1'-0" x 1'-0"	1.00
36	3'-6" x 3'-6"	12.25 on side
37	2'-0" x 3'-0"	6.00 on side
38	1'-0" x 1'-0"	1.00
39	1'-0" x 4'-0"	4.00
40	1'-0" x 1'-0"	1.00
TOTAL:		55.25
(MULTIPLIER) x 2		110.00

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES (UP
STATION VIEW)



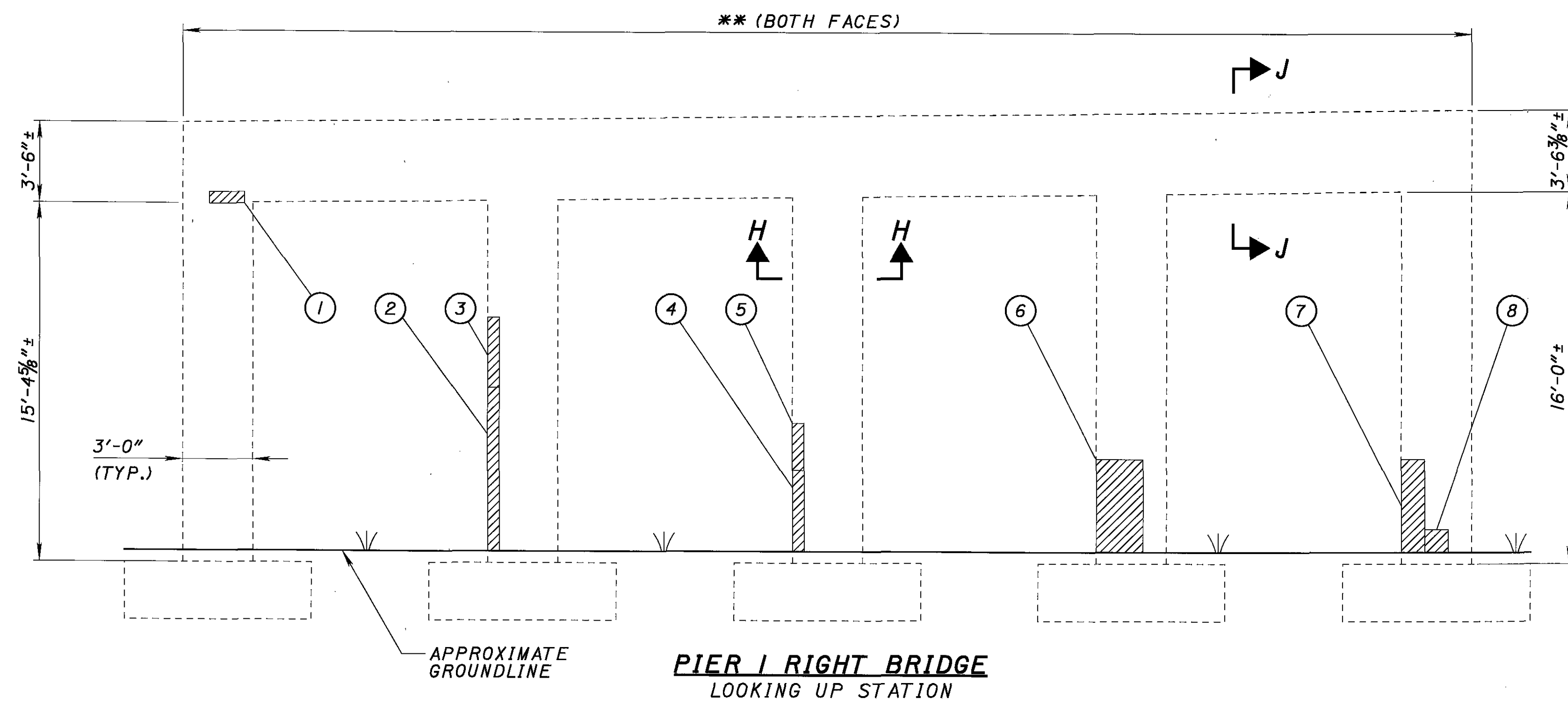
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(DOWN STATION VIEW)

** SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512 - SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

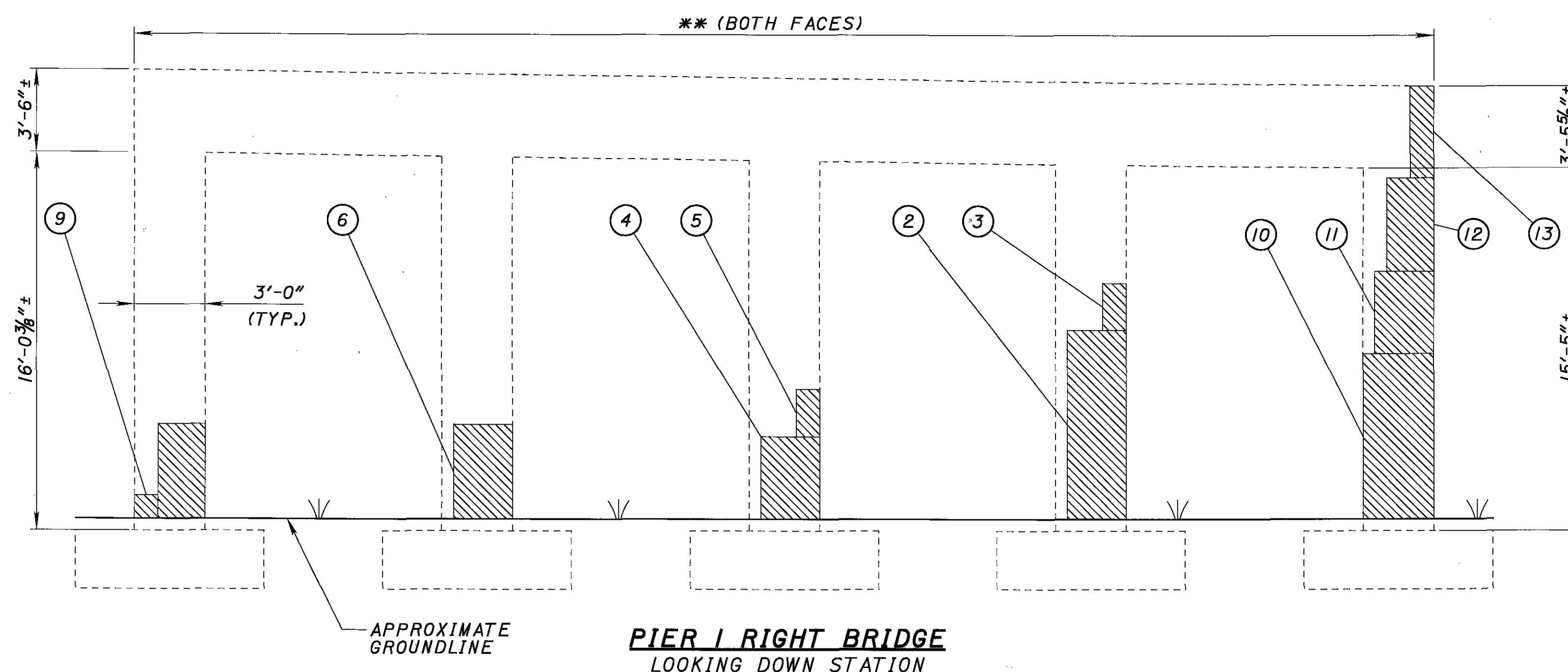
TYP. = TYPICAL

\$DATE\$

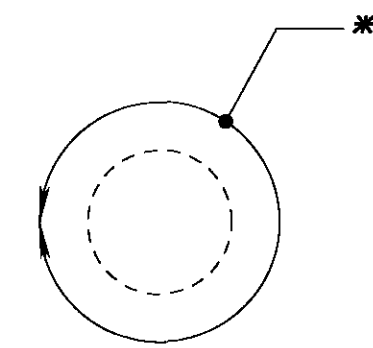
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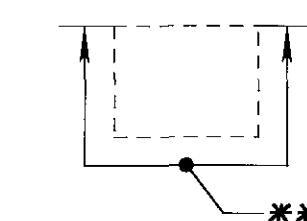
PIER I RIGHT BRIDGE
LOOKING UP STATION



PIER I RIGHT BRIDGE
LOOKING DOWN STATION



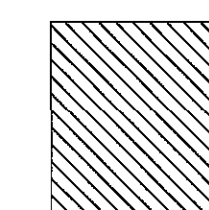
SECTION H-H
(TYPICAL ALL COLUMNS)



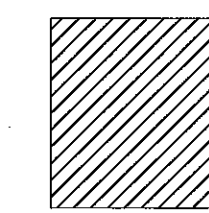
SECTION J-J
(TYPICAL ALL PIERS)

PIER I RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	1'-6" x 0'-6"	0.75
2	3'-0" x 8'-0"	24.00 on side
3	1'-6" x 2'-0"	3.00 on side
4	3'-0" x 3'-6"	10.50 on side
5	1'-6" x 2'-0"	3.00 on side
6	5'-0" x 4'-0"	20.00 on side
7	4'-6" x 4'-0"	18.00 on side
8	1'-0" x 1'-0"	1.00
9	1'-0" x 1'-0"	1.00 on side
10	3'-0" x 8'-0"	24.00
11	2'-6" x 3'-6"	8.75 on side
12	2'-0" x 4'-0"	8.00 on side
13	1'-0" x 3'-0"	3.00 on side
TOTAL:		125.00
(MULTIPLIER) x 2		250.00

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(UP STATION VIEW)



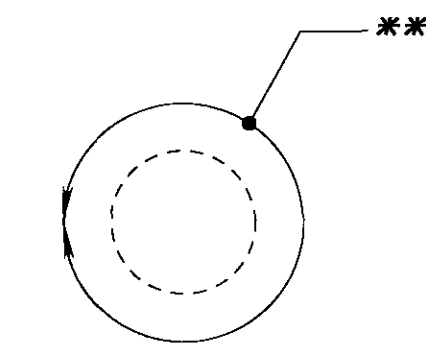
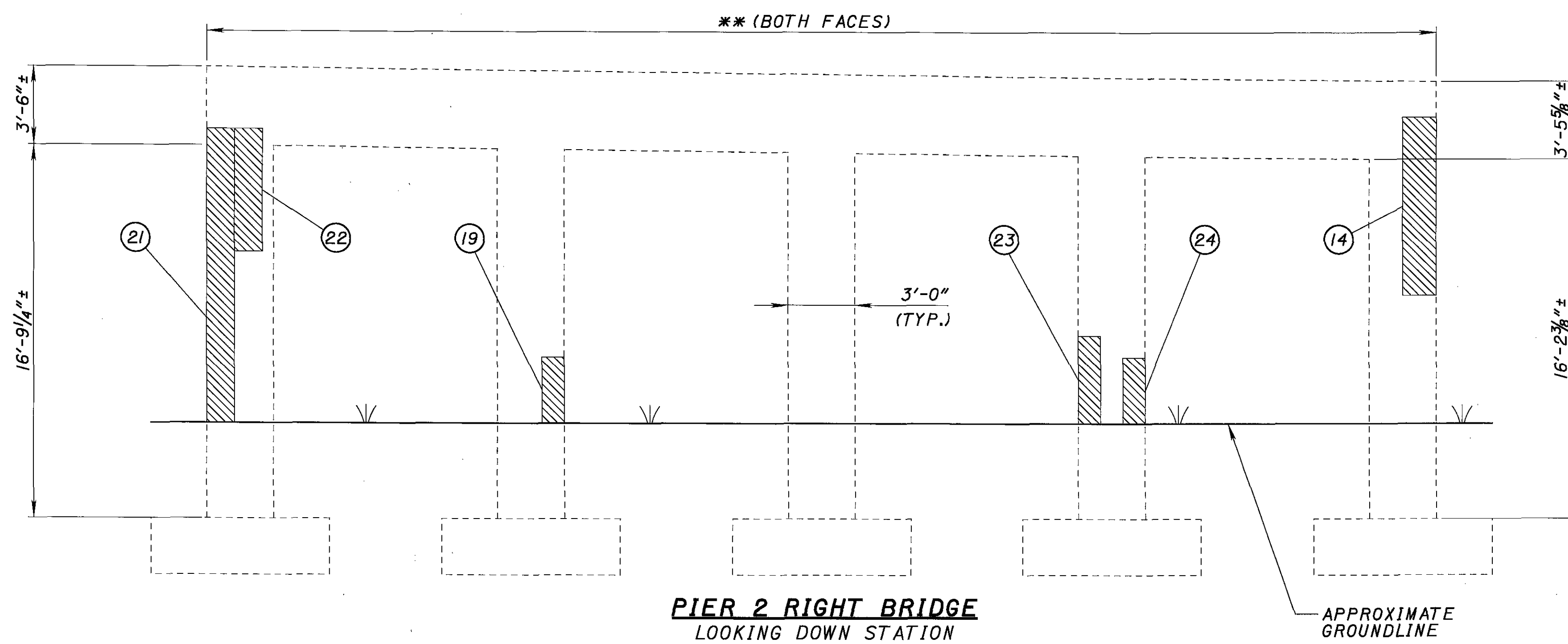
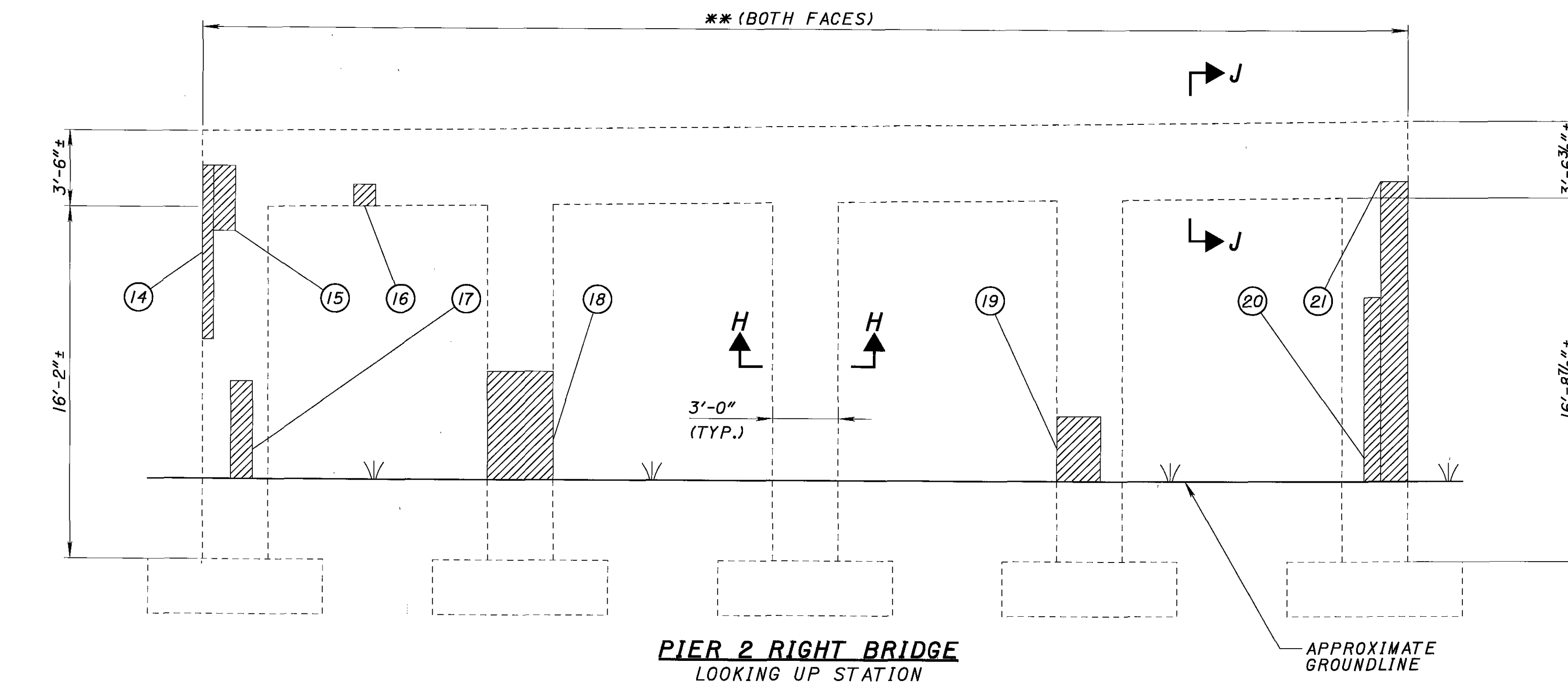
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(DOWN STATION VIEW)

**

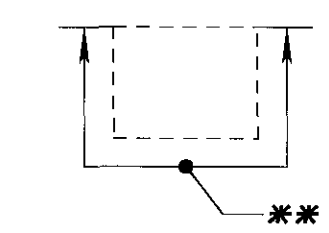
SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512 - SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

TYP. =

TYPICAL



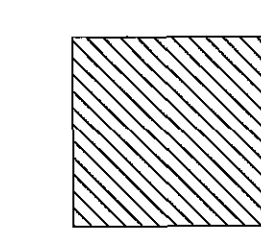
SECTION H-H
(TYPICAL ALL COLUMNS)



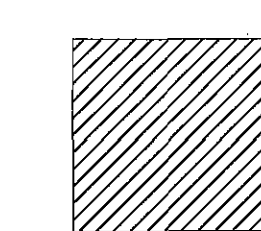
SECTION J-J
(TYPICAL ALL PIERS)

PIER 2 RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
14	2'-0" x 8'-0"	16.00 on side
15	2'-0" x 3'-0"	6.00
16	1'-0" x 1'-0"	1.00
17	1'-0" x 4'-6"	4.50
18	4'-0" x 5'-0"	20.00
19	3'-0" x 3'-0"	9.00 on side
20	1'-0" x 8'-6"	8.50
21	2'-0" x 14'-0"	28.00 on side
22	1'-0" x 5'-6"	5.50
23	3'-0" x 4'-0"	12.00 on side
24	1'-6" x 3'-0"	4.50 on side
TOTAL:		115.00
(MULTIPLIER) x 2		230.00

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(UP STATION VIEW)

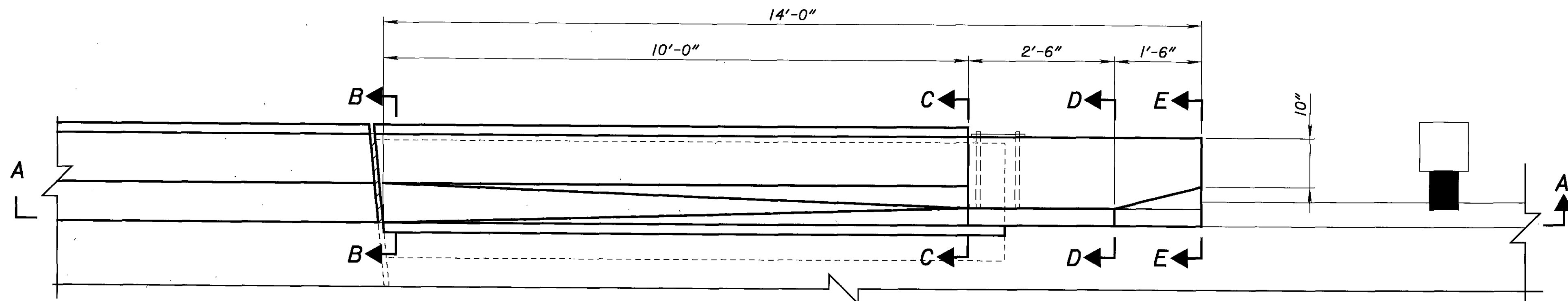


AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES
(DOWN STATION VIEW)

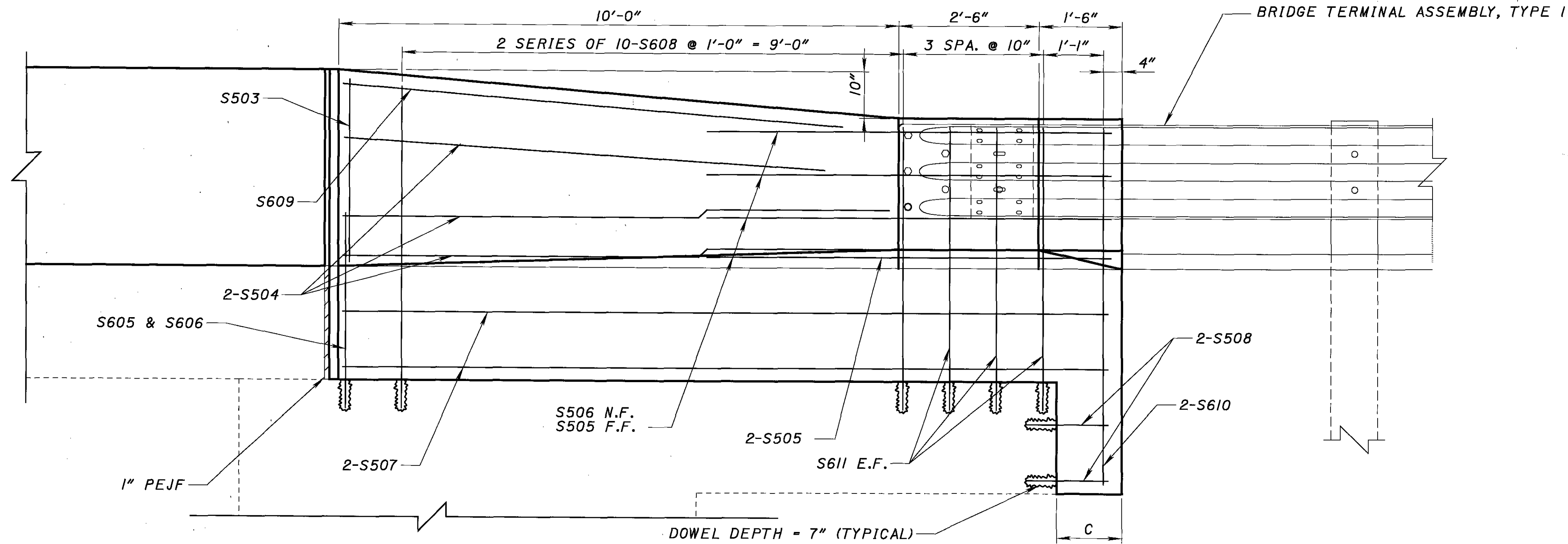
**

SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512 - SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

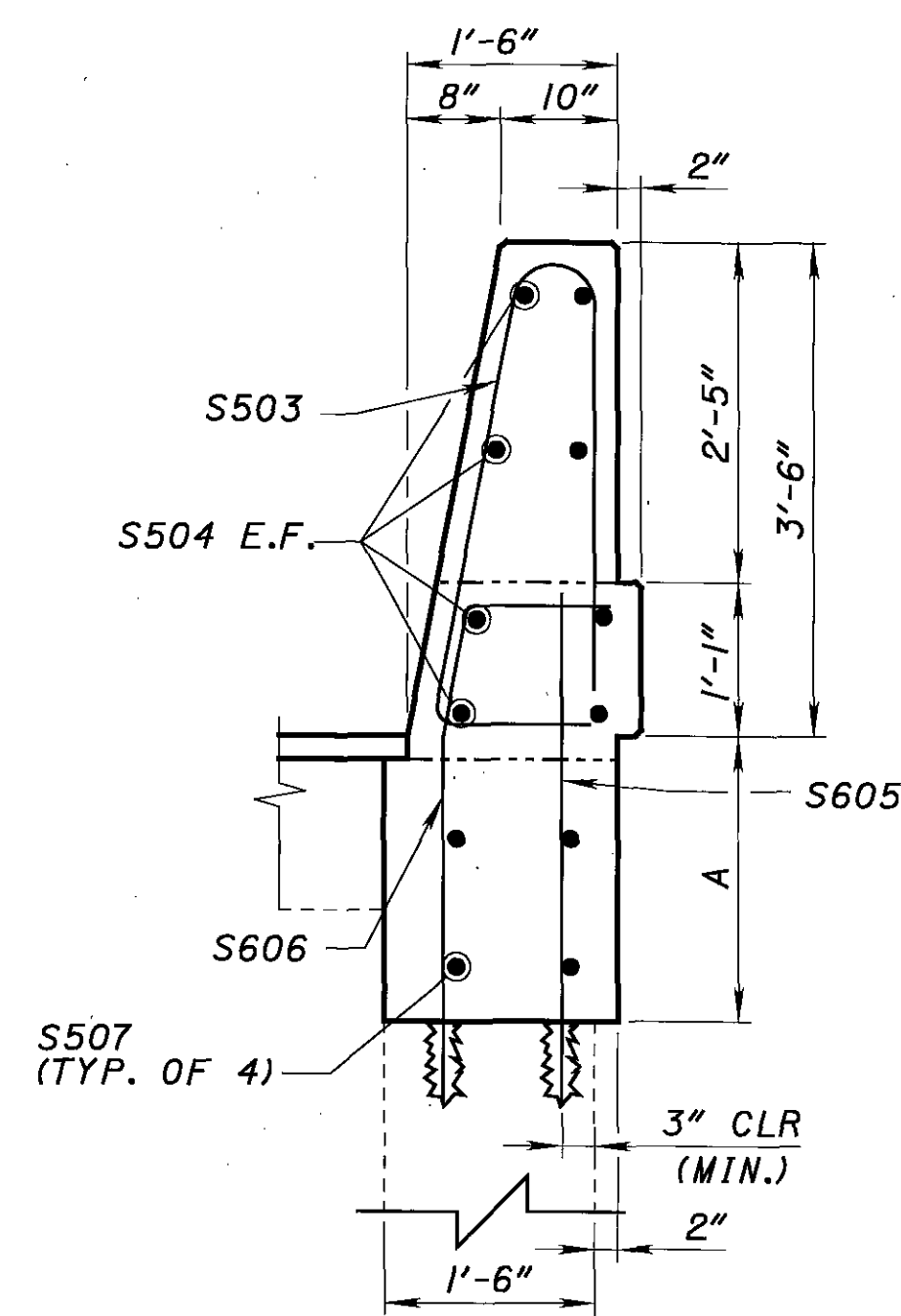
TYP. - TYPICAL



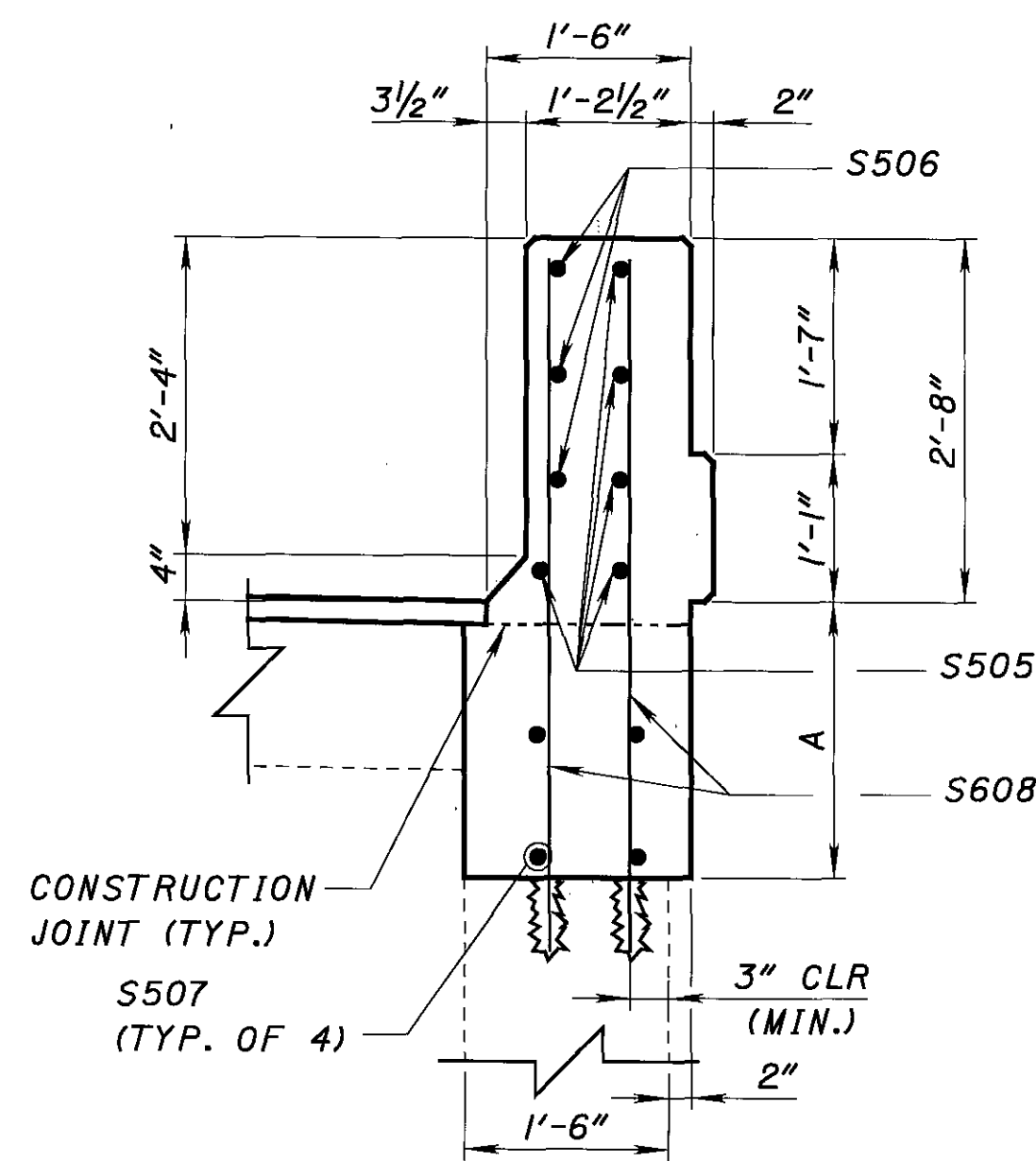
OUTSIDE WINGWALL PLAN
(LEFT FORWARD SHOWN, OTHERS SIMILAR)



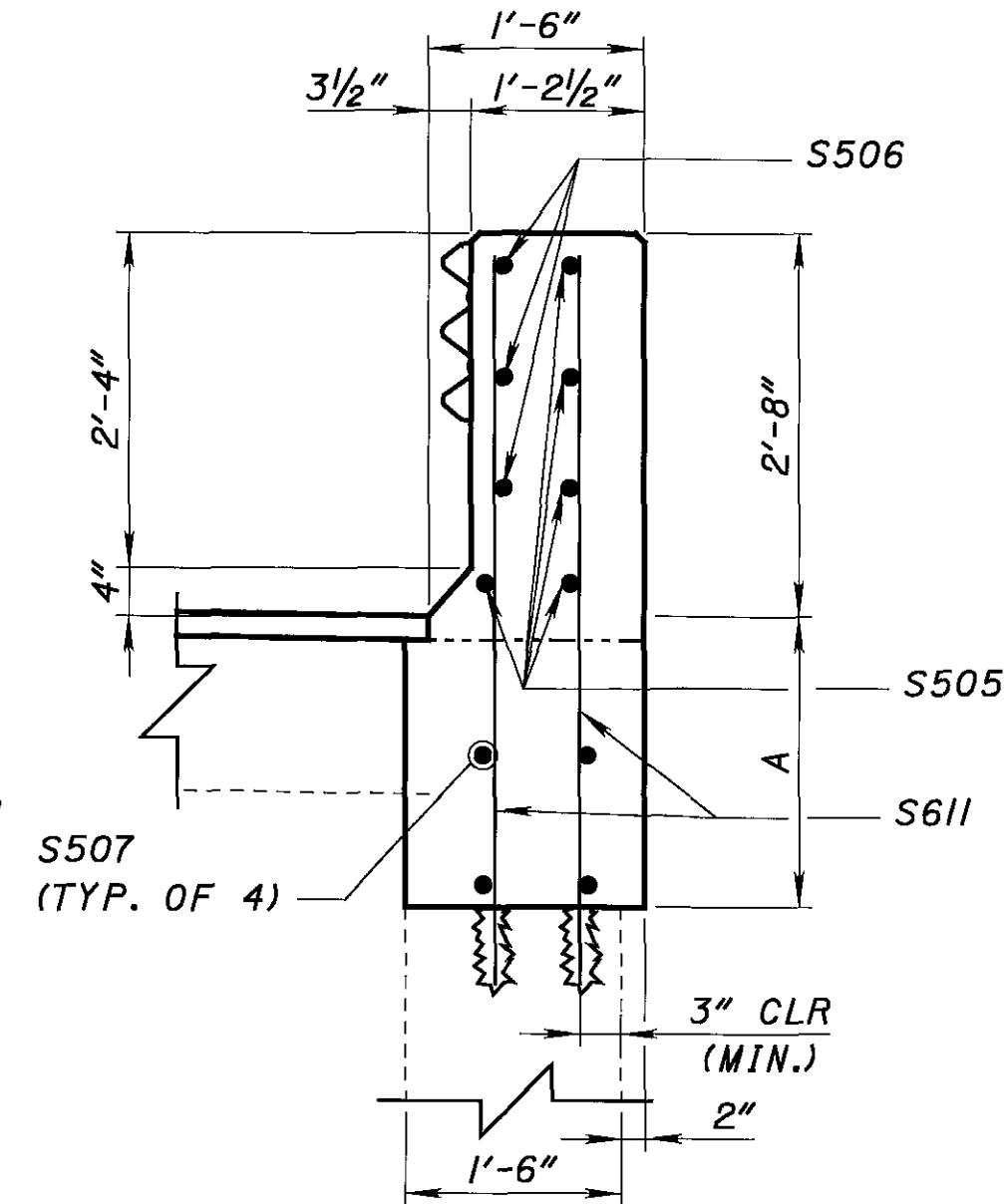
SECTION A-A



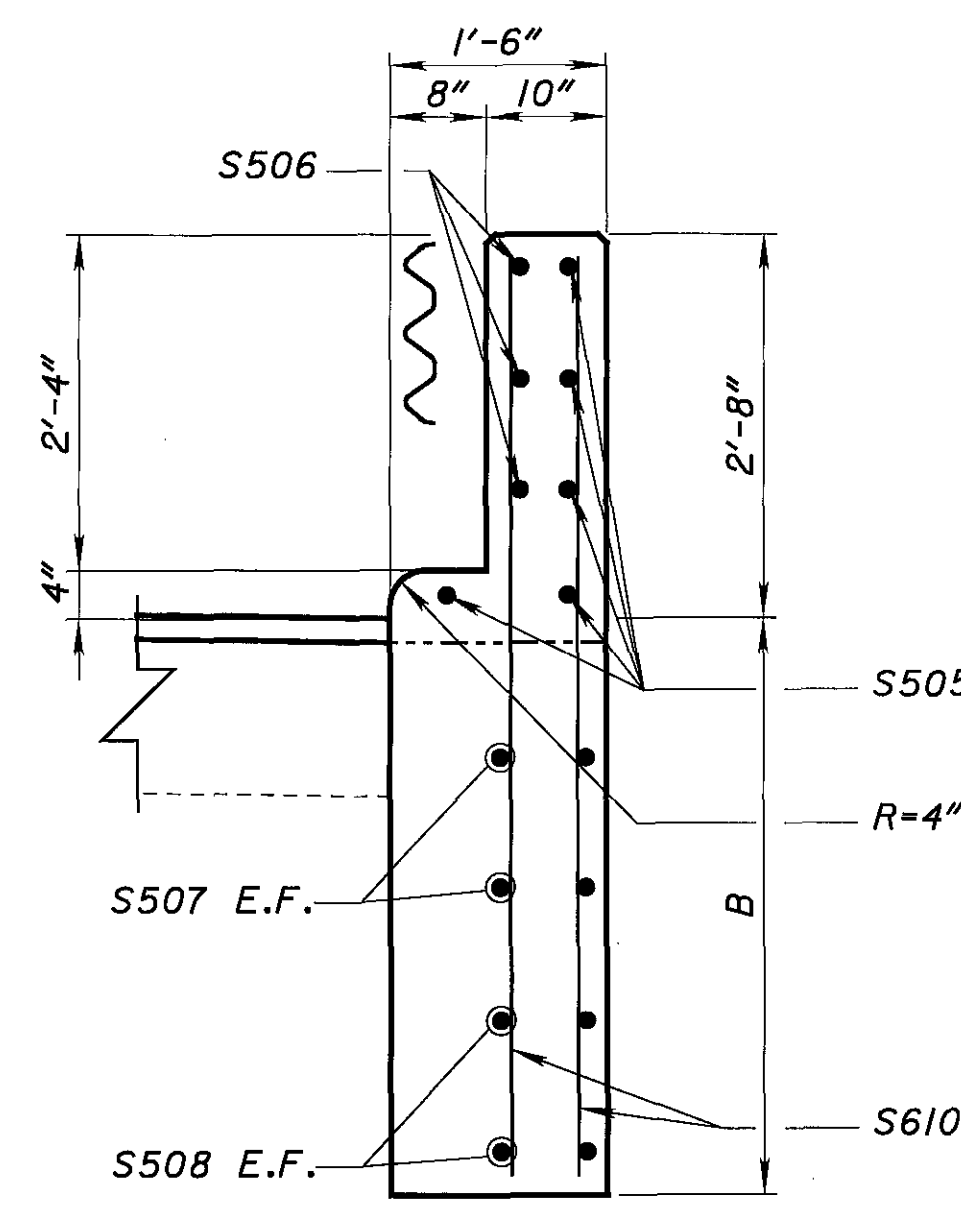
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

WINGWALL	DIM. A	DIM. B	DIM. C
1	1'-11 1/8"	3'-11 1/8"	1'-0 7/8"
3	1'-11 1/8"	3'-11 1/8"	0'-8"
6	1'-10 5/8"	3'-10 5/8"	0'-8"
8	1'-10 5/8"	3'-10 5/8"	1'-0 1/8"

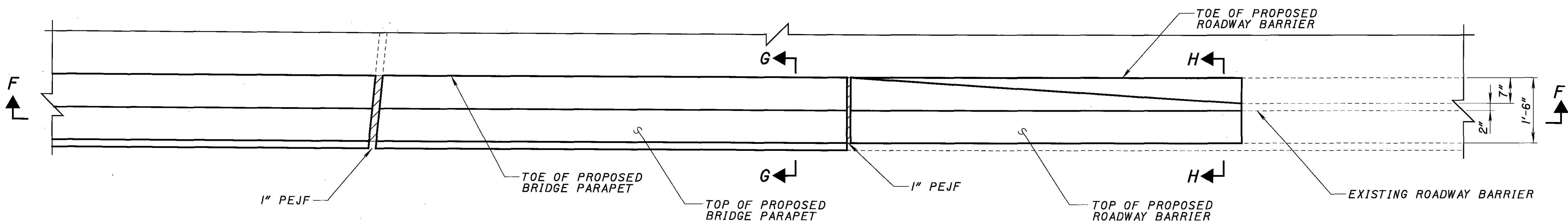
LEGEND:

- N.F. - NEAR FACE
- F.F. - FAR FACE
- E.F. - EACH FACE
- SPA. - SPACES
- CLR. - CLEARANCE
- MIN. - MINIMUM
- TYP. - TYPICAL

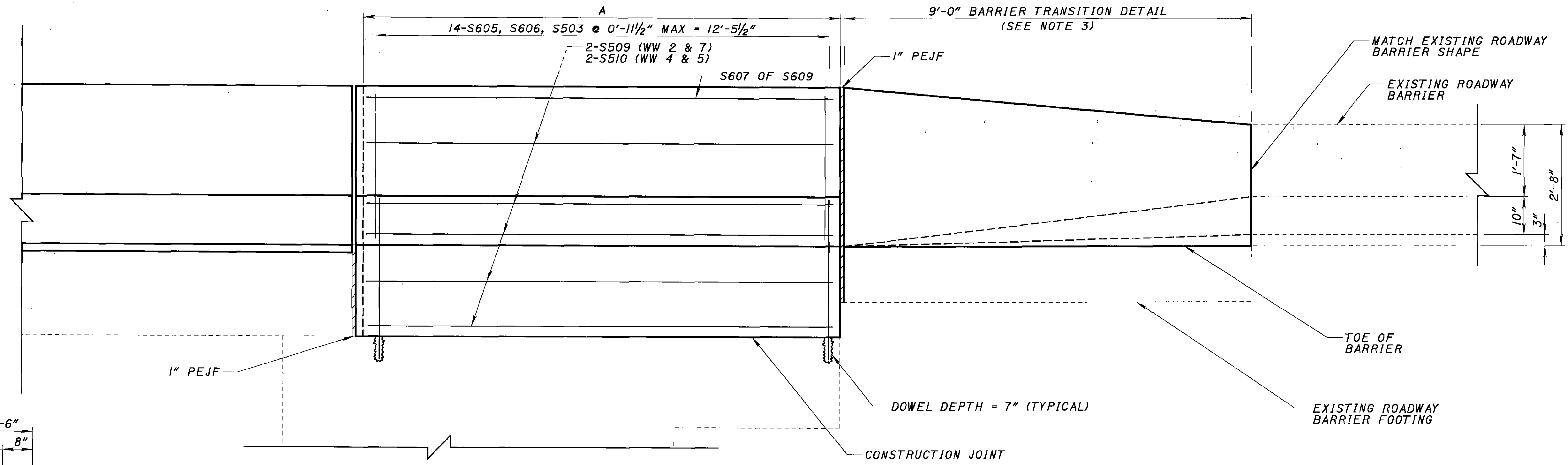
NOTES:

1. ALL REINFORCING STEEL TO BE EPOXY COATED.
2. SEE SHEET **17/21** FOR BRIDGE PARAPET DETAILS.
3. SEE STD. DWG. SBR-1-99 FOR ADDITIONAL DETAILS.
4. THE CONCRETE FOR WINGWALLS SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN.

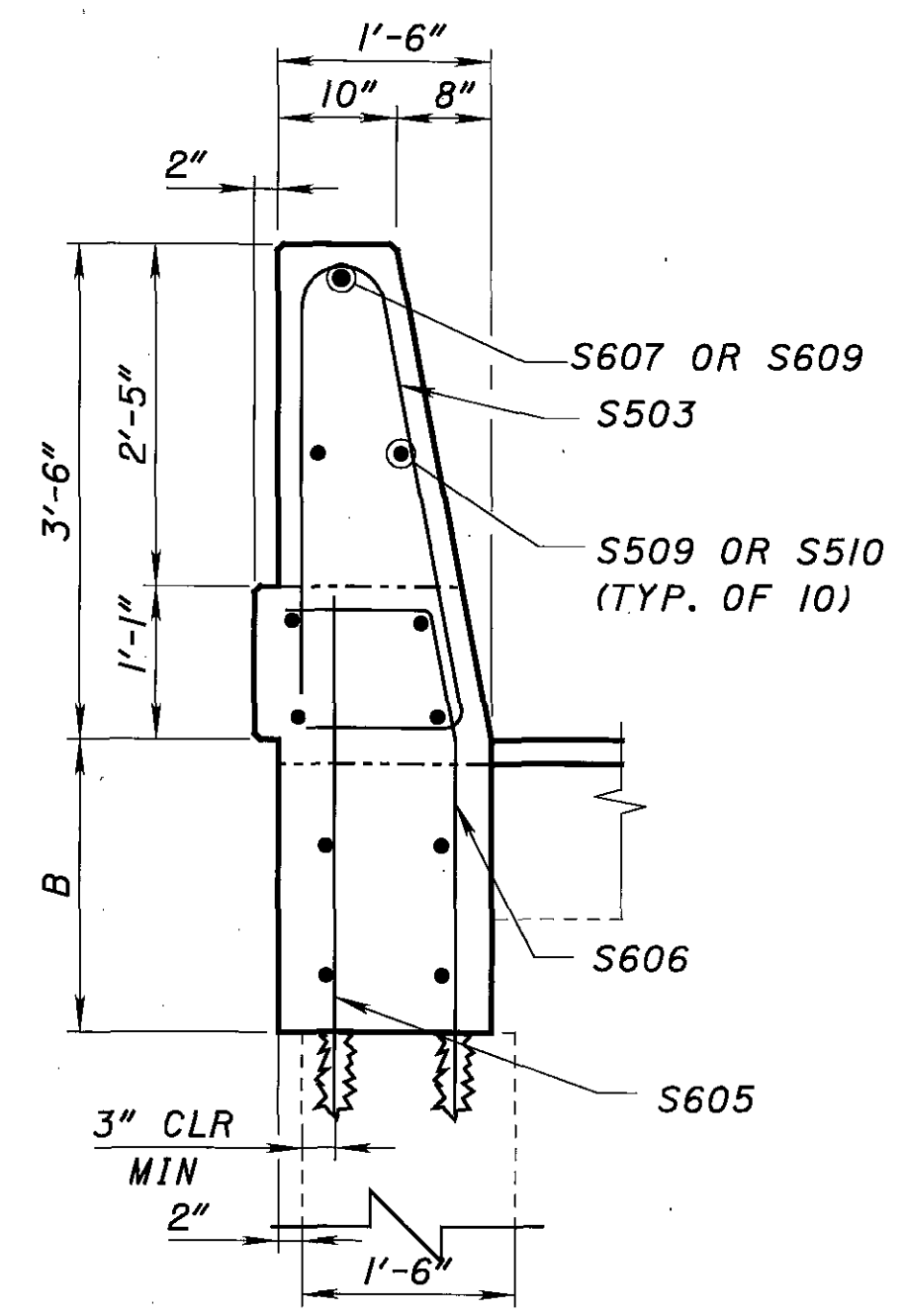
DATE\$
FILE\$



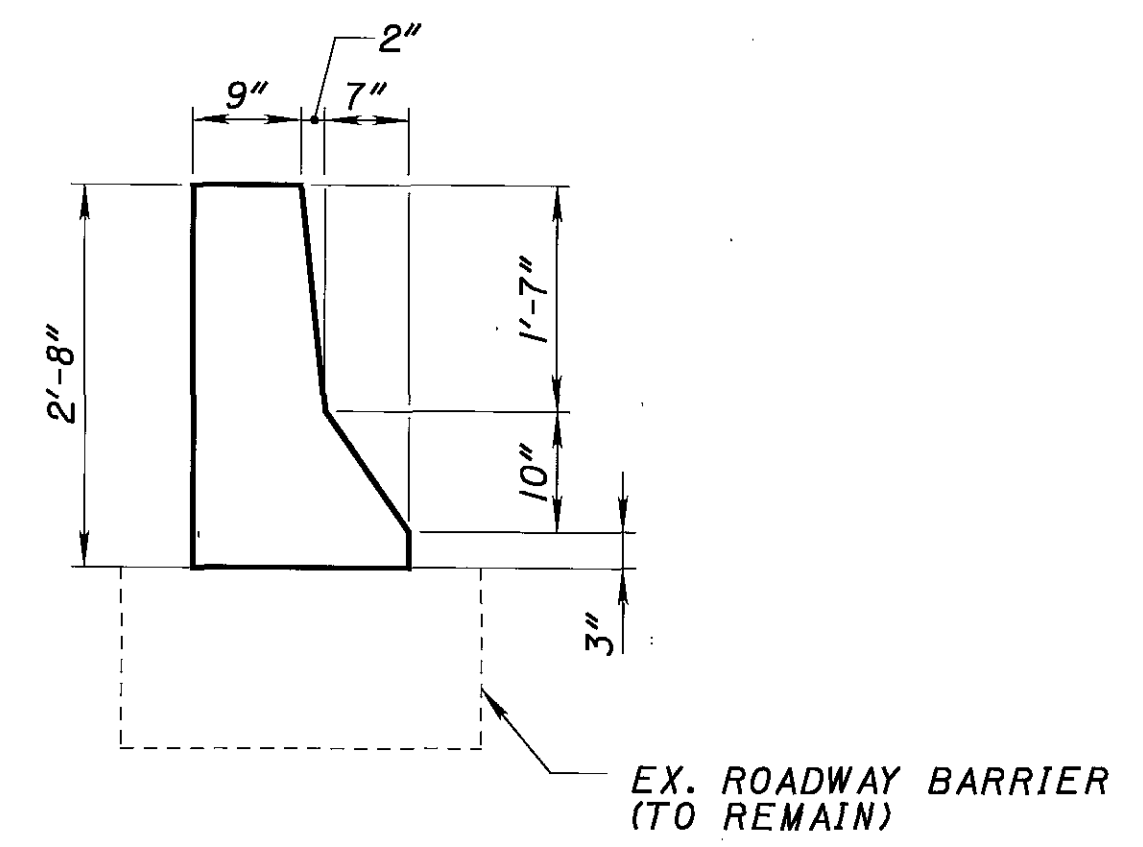
MEDIAN WINGWALL AND BARRIER TRANSITION PLAN



**SECTION F-F
(OUTSIDE FACE)**



SECTION G-G



**SECTION H-H
(SEE NOTE 3)**

WINGWALL	DIM. A	DIM. B
2	13'-2"	1'-10 5/8"
4	12'-9 1/8"	1'-10 5/8"
5	12'-9 1/8"	1'-9 5/8"
7	13'-2"	1'-9 5/8"

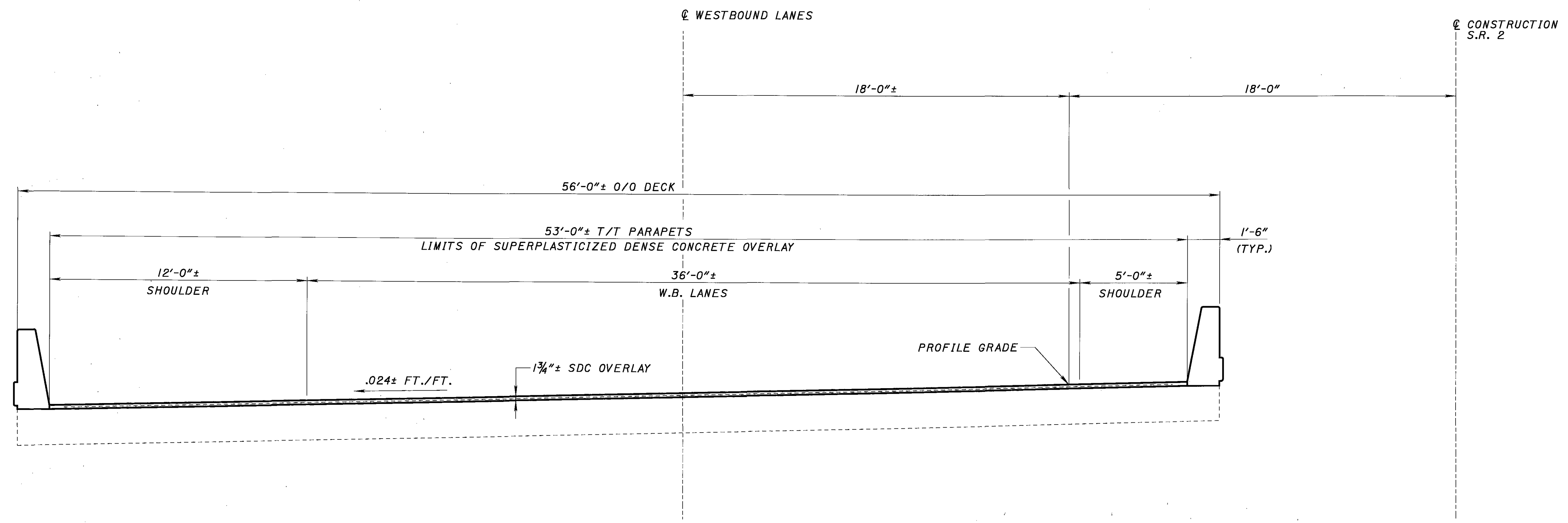
LEGEND:

- CLR. - CLEARANCE
- MIN. - MINIMUM
- MAX. - MAXIMUM
- TYP. - TYPICAL
- PEJF - PREFORMED EXPANSION JOINT FILLER

NOTES:

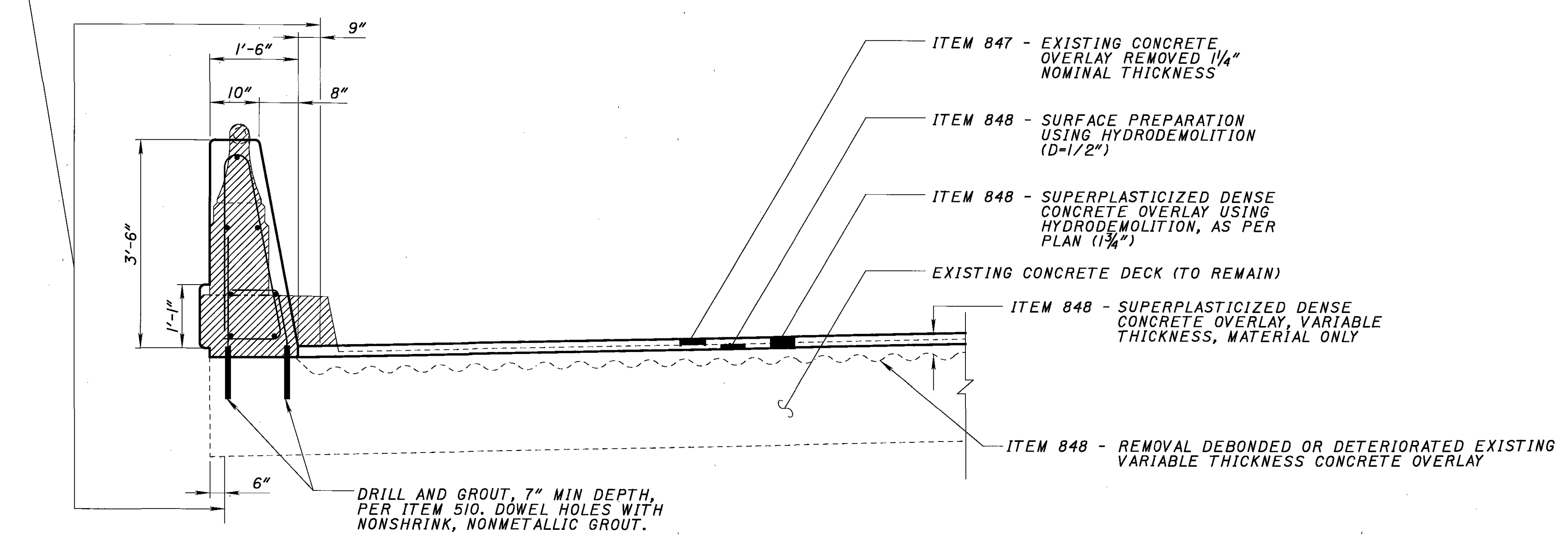
1. FOR DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWINGS RM-4.3 AND RM-4.4
2. SEE SHEET **1772** FOR BRIDGE PARAPET DETAILS
3. SEE PLAN INSERT SHEET FOR BARRIER TRANSITION DETAILS
4. ALL REINFORCING STEEL TO BE EPOXY COATED.
5. THE CONCRETE FOR MEDIAN WINGWALLS SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN.

\$DATE\$
\$FILE\$



TRANSVERSE SECTION LEFT BRIDGE

LIMITS OF SEALING
 CONCRETE SURFACES (TYP.)



PROPOSED PARAPET REPLACEMENT DETAIL AND OVERLAY DETAIL

NOTES:

JOINT BETWEEN BRIDGE DECK AND APPROACH SLAB SHALL BE REPLACED IN KIND AND THE COST OF THE JOINT SHALL BE INCLUDED WITH ITEM - 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK

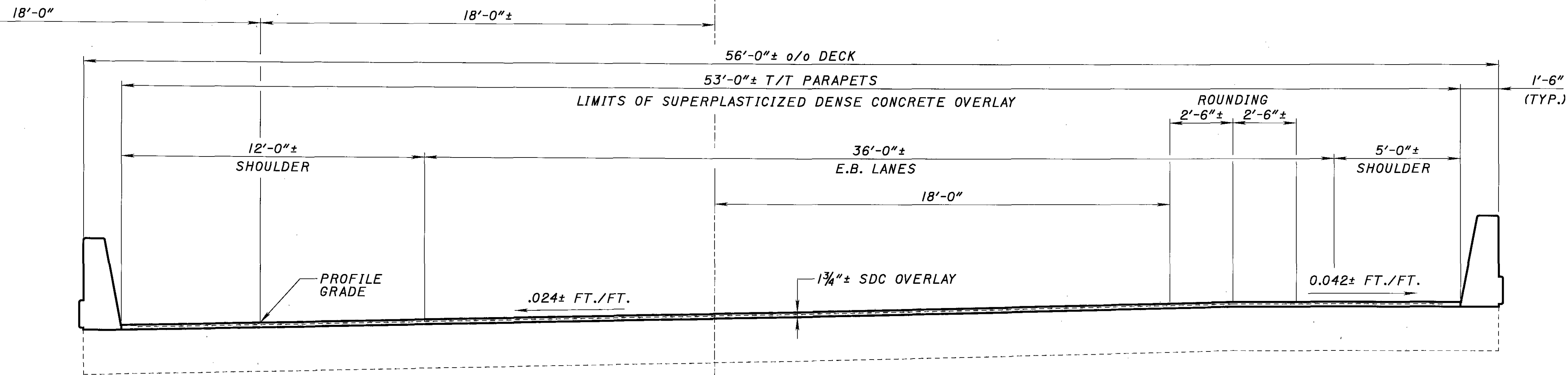
LEGEND:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

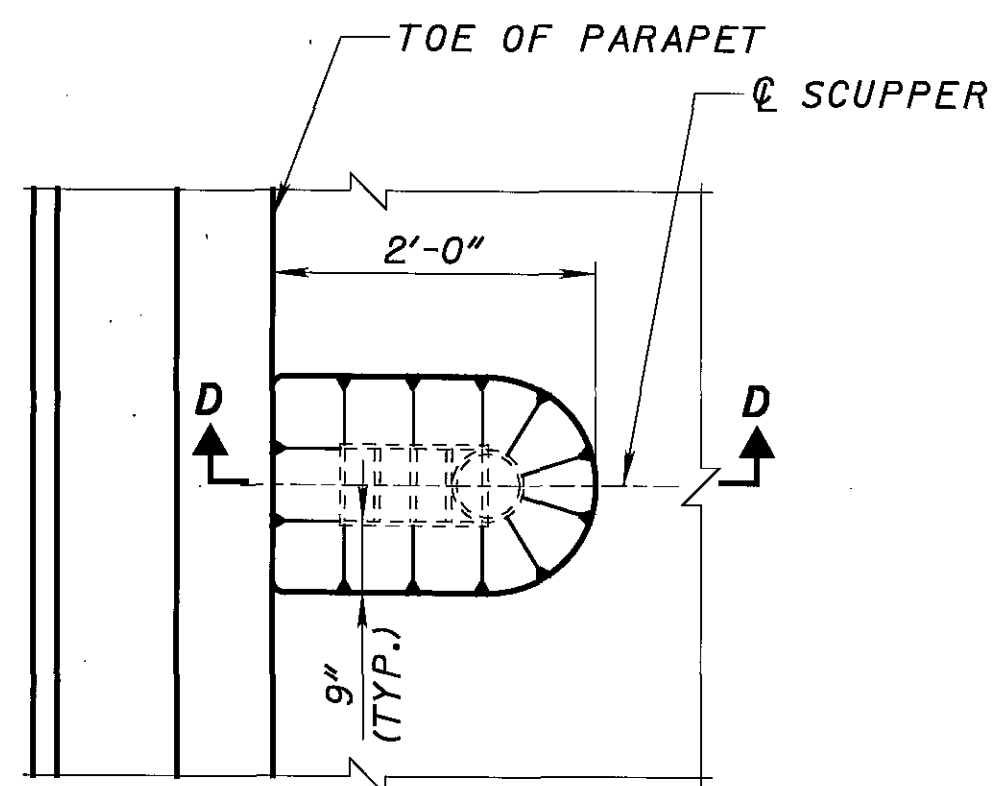
TYP. - TYPICAL
 O/O - OUT TO OUT
 MIN. - MINIMUM
 T/T - TOE TO TOE
 SDC - SUPERPLASTICIZED DENSE CONCRETE OVERLAY

CL CONSTRUCTION S.R. 2

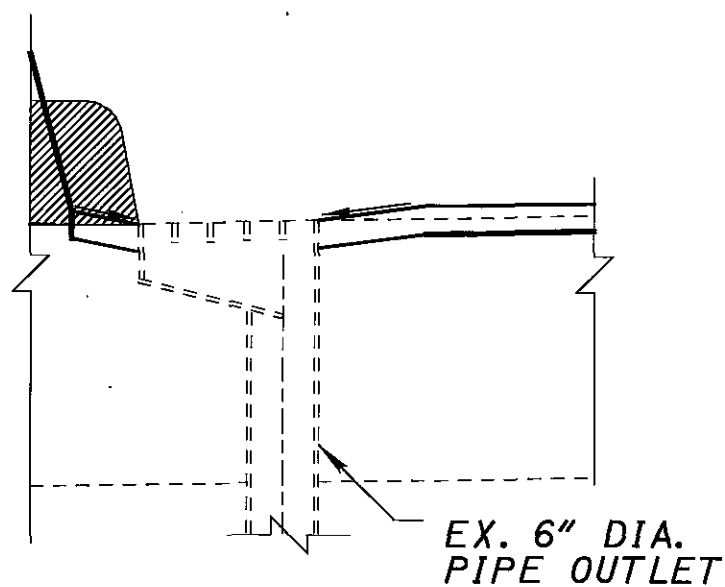
CL EASTBOUND LANES



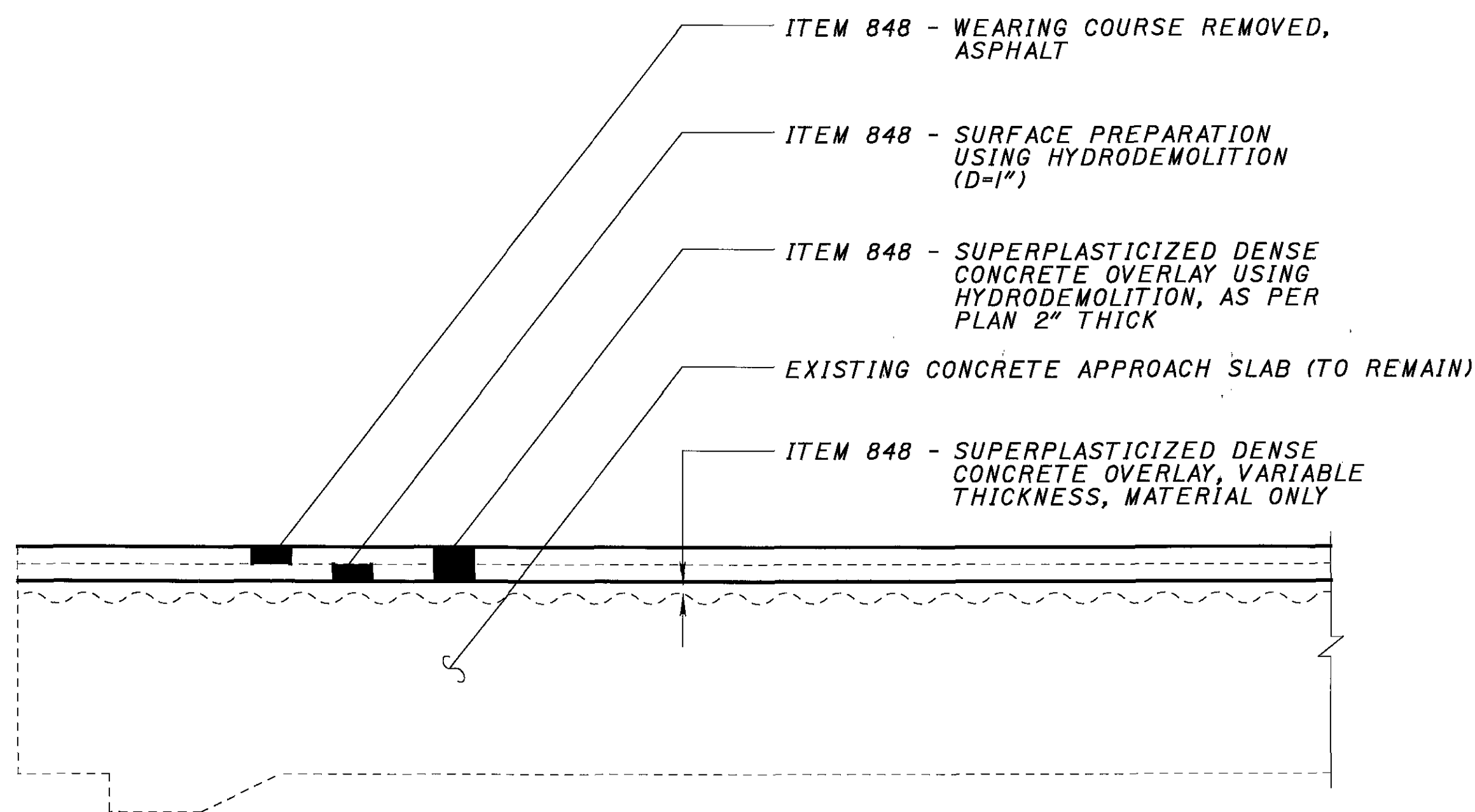
TRANSVERSE SECTION RIGHT BRIDGE



SCUPPER DRAINAGE DETAILS



SECTION D-D



**APPROACH SLAB OVERLAY DETAIL
TYPICAL**

NOTES:

- SEE SHEET 15721 FOR PARAPET AND OVERLAY DETAIL
- JOINT BETWEEN BRIDGE DECK AND APPROACH SLAB SHALL BE REPLACED IN KIND AND THE COST OF THE JOINT SHALL BE INCLUDED WITH ITEM - 848 SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK

LEGEND:

 ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

- TYP. - TYPICAL
- O/O - OUT TO OUT
- DIA. - DIAMETER
- T/T - TOE TO TOE
- SDC - SUPERPLASTICIZED DENSE CONCRETE OVERLAY

DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISED	
REVIEWED	JWB	STRUCTURE FILE NUMBER	4300157L/430018R
DATE	7-27-2005		

TRANSVERSE SECTION - RIGHT BRIDGE
BRIDGE NO. LAK-2-0105 L/R
OVER WORDEN ROAD

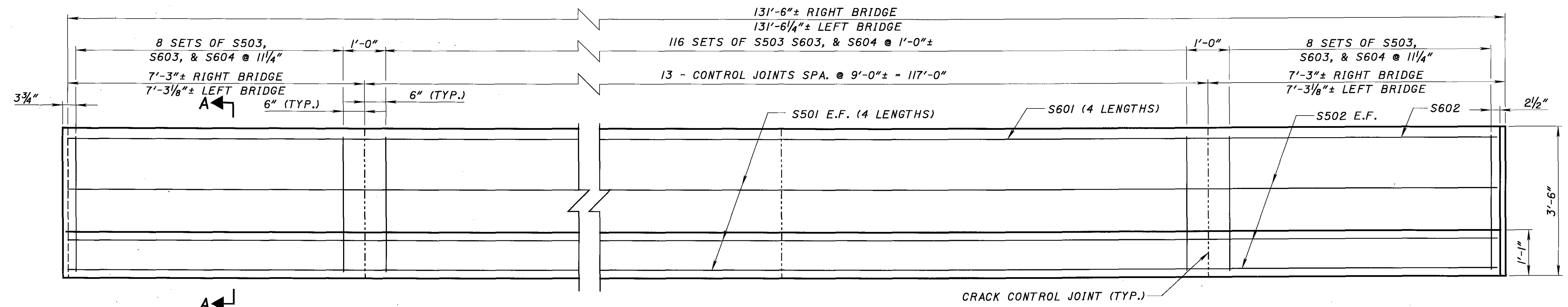
LAK-2-0.00

16/21

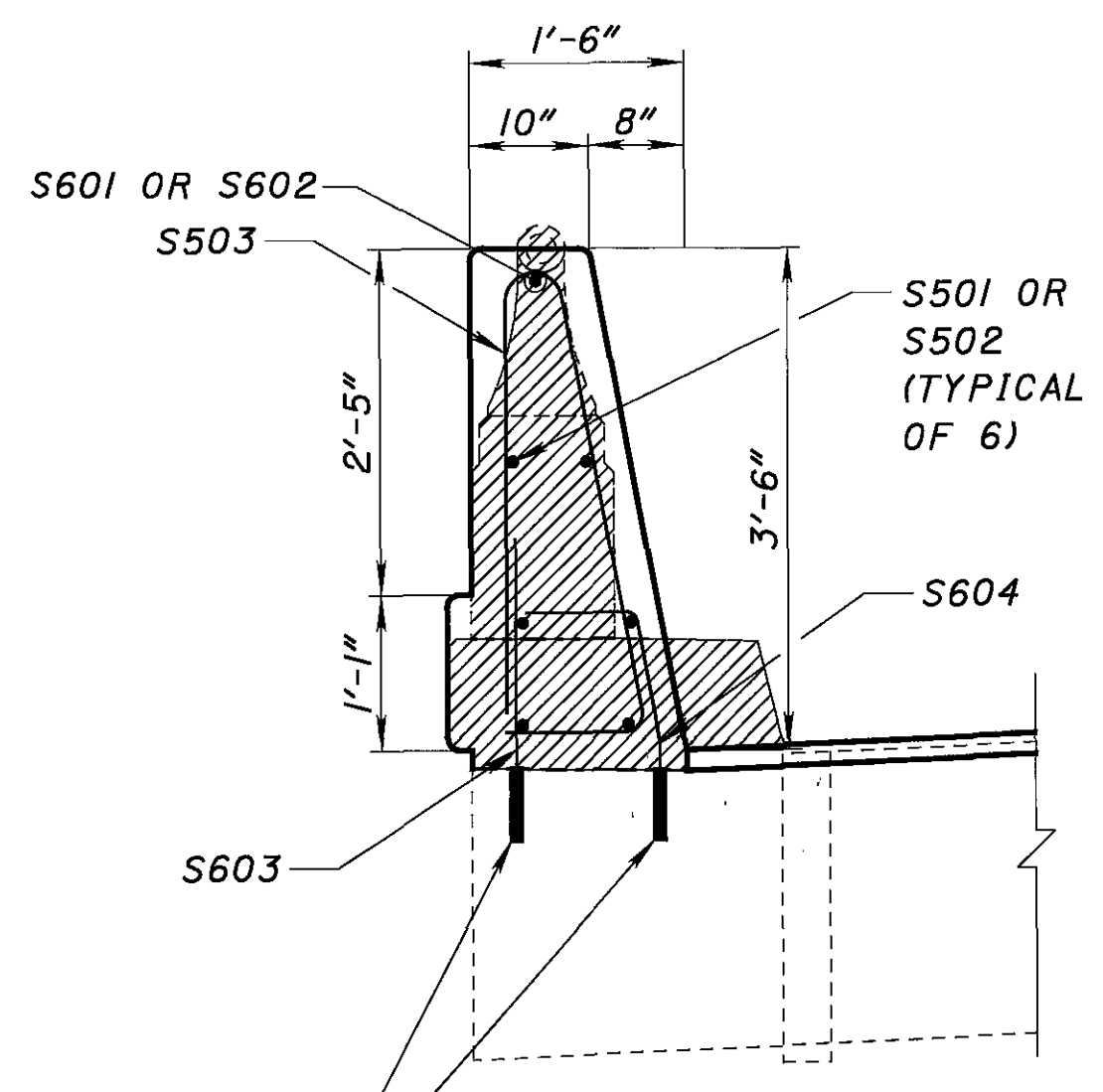
475
524

DATE\$
FILE\$

DESIGN AGENCY
Baker
228 EUCLID AVENUE, SUITE 1050
CLEVELAND, OHIO 44115



PARAPET ELEVATION RIGHT AND LEFT BRIDGES
 VIEWED ALONG OUTSIDE FACE
 ALL OTHERS SIMILAR

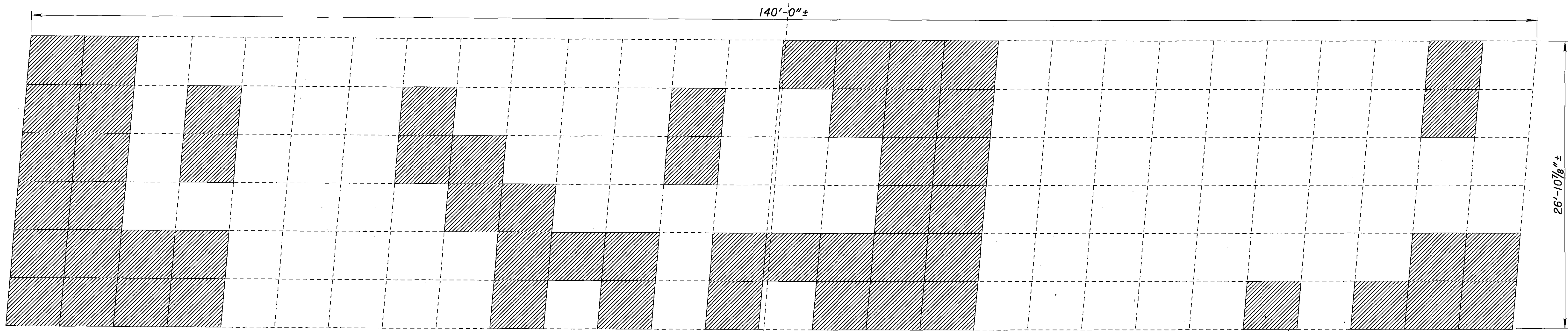


DRILL AND GROUT, MIN 7" DEPTH, PER ITEM 510 WITH NON-METALLIC, NON-SHRINK EPOXY GROUT

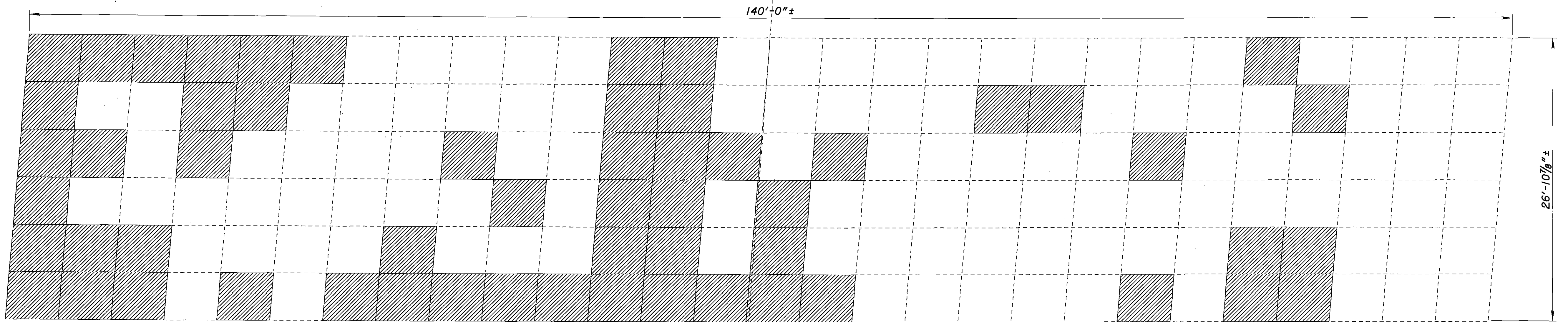
SECTION A-A

- NOTES:**
- SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS
 - LAP REINFORCING STEEL THE MINIMUM LENGTHS:
 NO. 5 = 2'-11"
 NO. 6 = 3'-4"

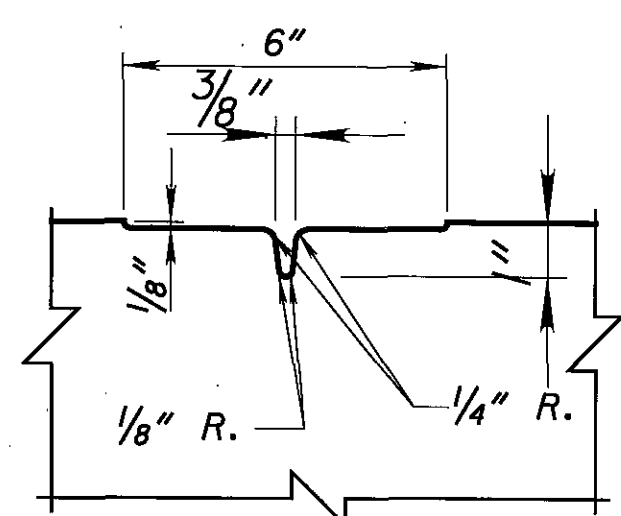
- LEGEND:**
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED
 - TYP. = TYPICAL
 - SPA. = SPACES
 - E.F. = EACH FACE



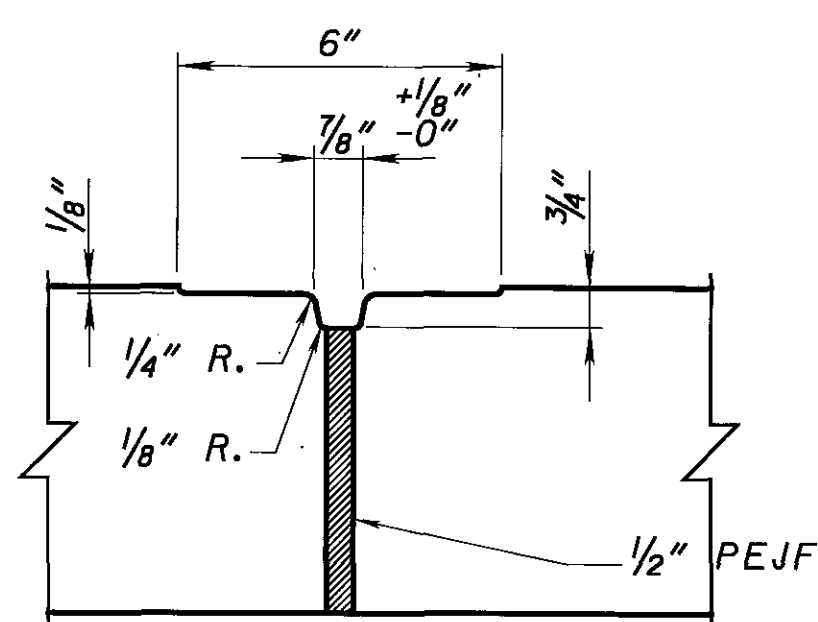
FORWARD ABUTMENT SLOPE PROTECTION



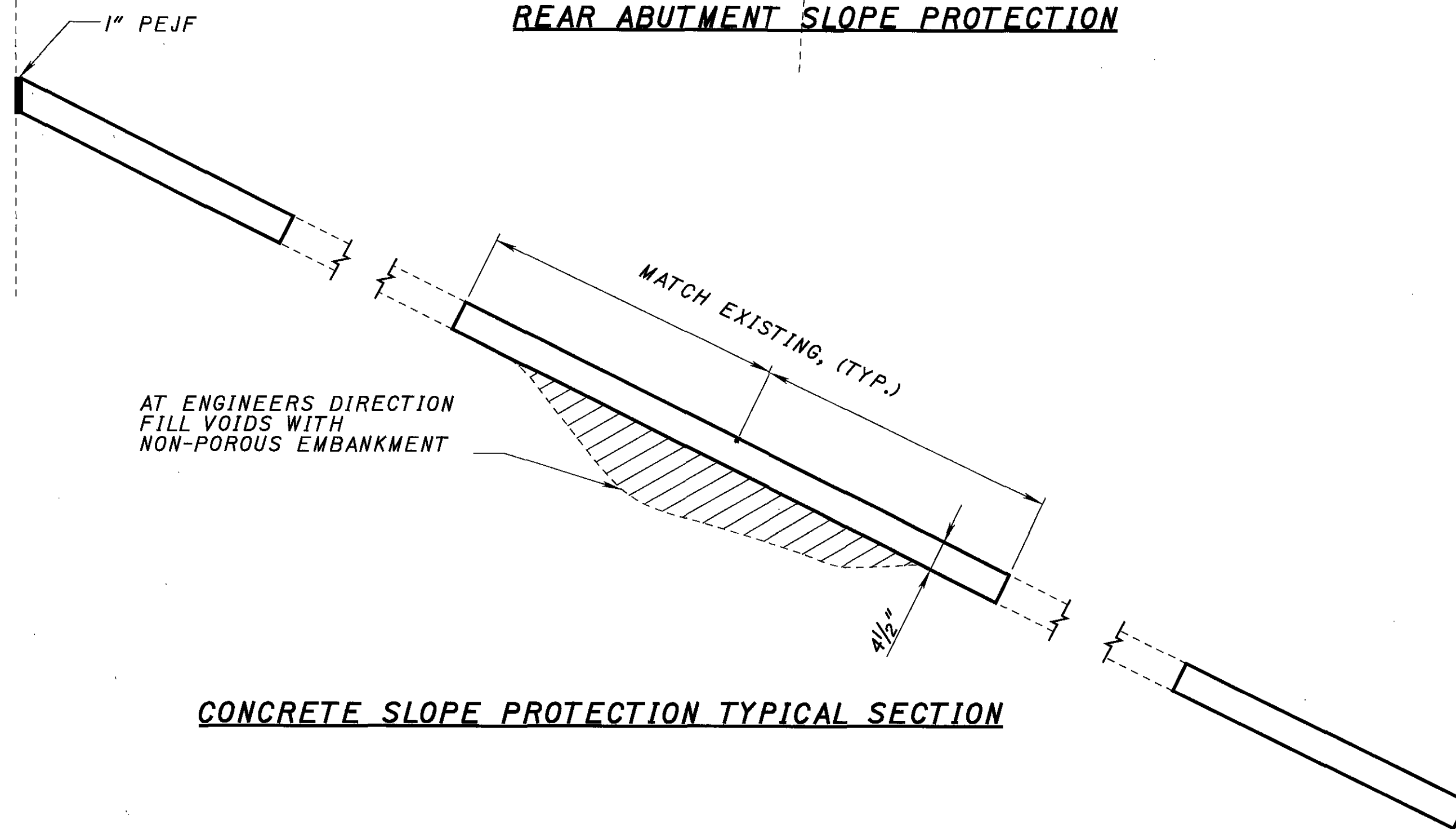
REAR ABUTMENT SLOPE PROTECTION



TOOLED GROOVE (CONTRACTION)



TOOLED GROOVE (EXPANSION)



CONCRETE SLOPE PROTECTION TYPICAL SECTION

TOTAL AREA:

FORWARD - 1283 SQ. FT. OUT OF 3780 SQ. FT.

REAR - 1305 SQ. FT. OUT OF 3780 SQ. FT.

NOTES:

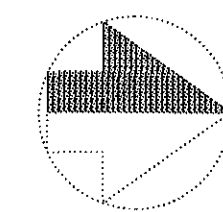
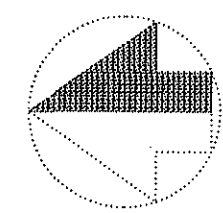
THE AREA OF SLOPE PROTECTION TO BE REPLACED IS BASED UPON SEVERE CRACKING AND SETTLEMENT OR DISPLACEMENT OF TWO OR MORE INCHES.

LEGEND

- PEJF. - PREFORMED EXPANSION JOINT FILLER
- R. - RADIUS
- TYP. - TYPICAL

SLOPE PROTECTION TO BE REPLACED

\$DATE\$
\$FILE\$

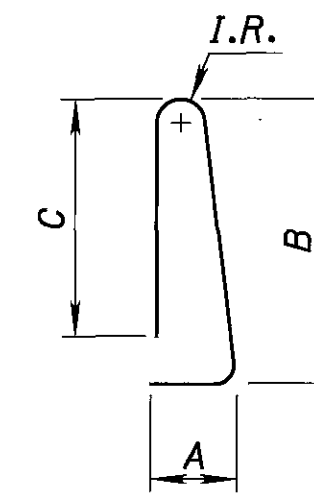


DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISED	
REVIEWED	JWB	DATE	7-27-2005
STRUCTURE FILE NUMBER	4300157L/4300181R		

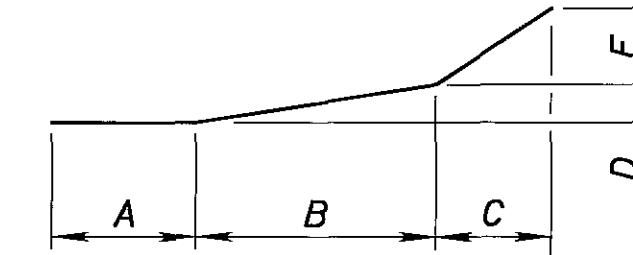
MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	SUPERSTRUCTURE DIMENSIONS						SER INC.	
	REAR	FWD.	TOTAL				A	B	C	D	E	R		
S501			96	30'-0"	3004	STR.								
S502			24	22'-11"	574	STR.								
S503			588	6'-11"	4242	23	0'-8"	3'-3"	3'-0"				0'-1 1/2"	
S504			32	10'-0"	334	STR.								
S505			20	6'-8"	139	STR.								
S506			12	6'-9"	84	25	2'-11"	2'-6"	1'-3"	0'-1 1/2"	0'-6 1/2"			
S507			16	13'-6"	225	STR.								
S508			8	1'-5"	12	STR.								
S509			20	12'-10"	268	STR.								
S510			20	12'-5"	259	STR.								
S511			8	1'-1"	9	STR.								
S601			16	30'-0"	721	STR.								
S602			4	24'-4"	146	STR.								
S603			528	2'-7"	2049	STR.								
S604			528	2'-8"	2115	13	0'-9"	0'-11"	0'-2"	1'-1"				
S605			60	3'-5"	304	STR.								
S606			60	4'-6"	406	13	2'-6 5/8"	0'-11"	0'-2"	1'-1"				
S607			4	12'-4"	74	STR.								
			8	4'-11"										
S608		SER. OF	10	5'-9"	641	STR.								1"
S609			2	12'-8"	38	STR.								
S610			8	6'-3"	75	STR.								
S611			24	4'-11"	177	STR.								
				TOTAL =	15719	LBS.								



TYPE-13



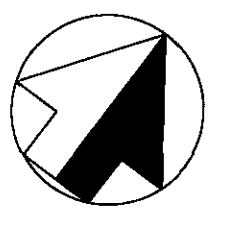
TYPE-23



TYPE-25

NOTES:

1. ALL BAR LISTED BAR DIMENSIONS ARE MEASURED OUT TO OUT UNLESS OTHERWISE NOTED.
2. STANDARD BEND SHALL BE ASSUMED WHEN NO BAR LEG DIMENSION IS LISTED.
3. BAR SIZE AND LOCATION ARE INDICATED BY THE BAR MARK. THE LETTER INDICATES BAR LOCATION. THE FIRST NUMBER OF A THREE DIGIT NUMBER, OR THE FIRST TWO DIGITS OF A FOUR DIGIT NUMBER INDICATES BAR SIZE. THE REMAINING TWO DIGITS INDICATE BAR MARK.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED.



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

LEGEND:

C/C = CENTER TO CENTER
 T/T = TOE TO TOE

** MINIMUM HORIZONTAL CLEARANCES		
	RIGHT BRIDGE	LEFT BRIDGE
EXISTING	5'-7 ¹³ / ₁₆ "±	5'-6 ¹³ / ₁₆ "±
PROPOSED	5'-7 ¹³ / ₁₆ "	5'-6 ¹³ / ₁₆ "

BENCHMARK DATA

BENCHMARK #118:
 MAG NAIL SET IN ASPHALT PAVED SHOULDER.
 STA. 194+70.4553, 62.5740' RT
 BM ELEV: 667.67

TRAFFIC DATA

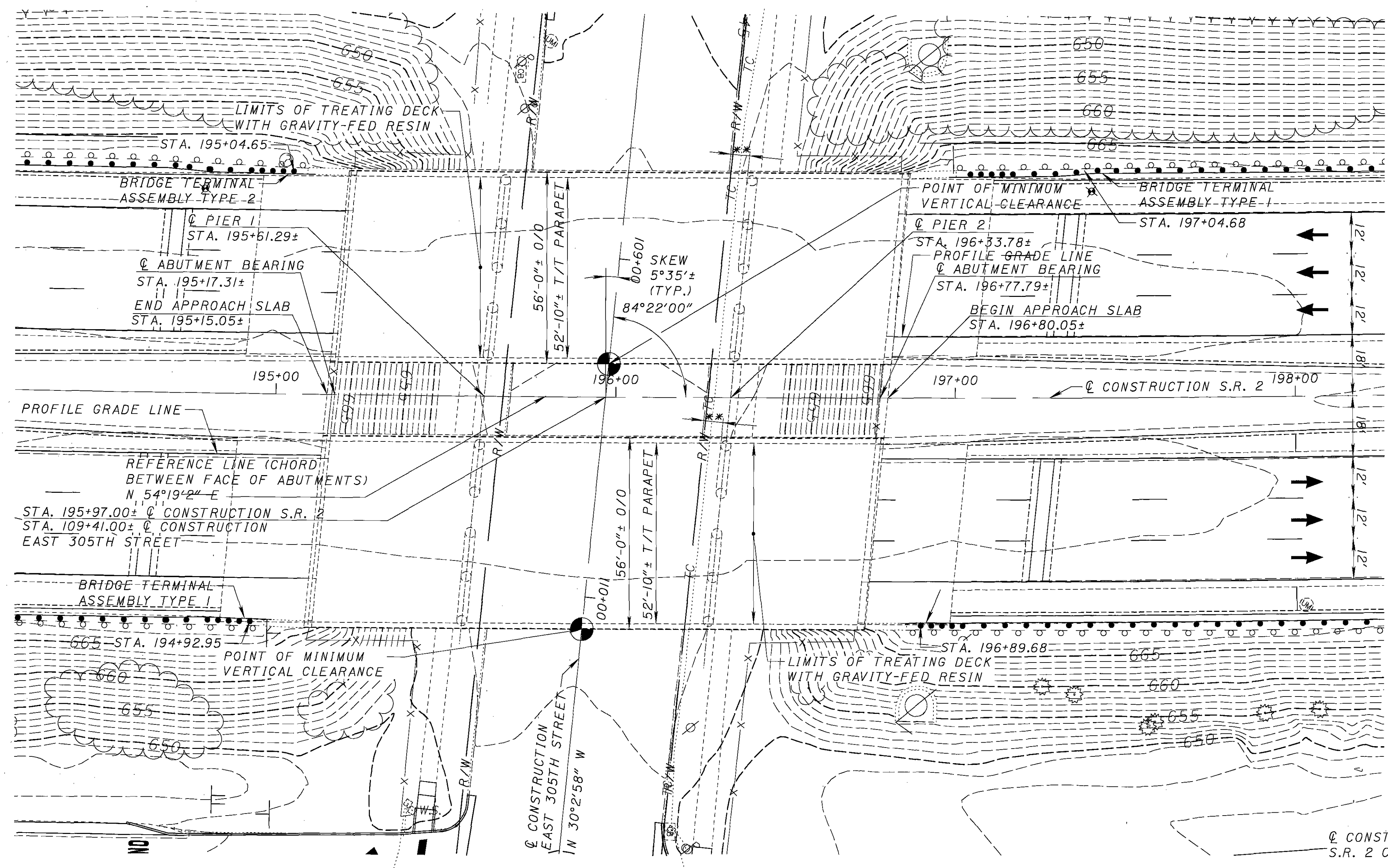
CURRENT ADT (2006) 90600
 DESIGN YEAR ADT (2026) 93500
 DESIGN YEAR ADTT (2026) 2805

EXISTING STRUCTURE

SFN: 4300246(L) & 4300211(R)
 TYPE: 3-SPAN CONTINUOUS STEEL BEAM WITH CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 44'±/72'-6"±/44'± C/C BEARINGS ALONG REFERENCE CHORD
 ROADWAY: TWO AT 52'-10"± T/T PARAPETS
 LOADING: CF=2000(57)
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 ALIGNMENT: 0°20'± CURVE LEFT
 APPROACH SLABS: AS-1-54 (25' LONG)
 SKEW: 5°35'00"± L.F. RELATIVE TO REFERENCE CHORD
 DATE BUILT: 1959

PROPOSED STRUCTURE

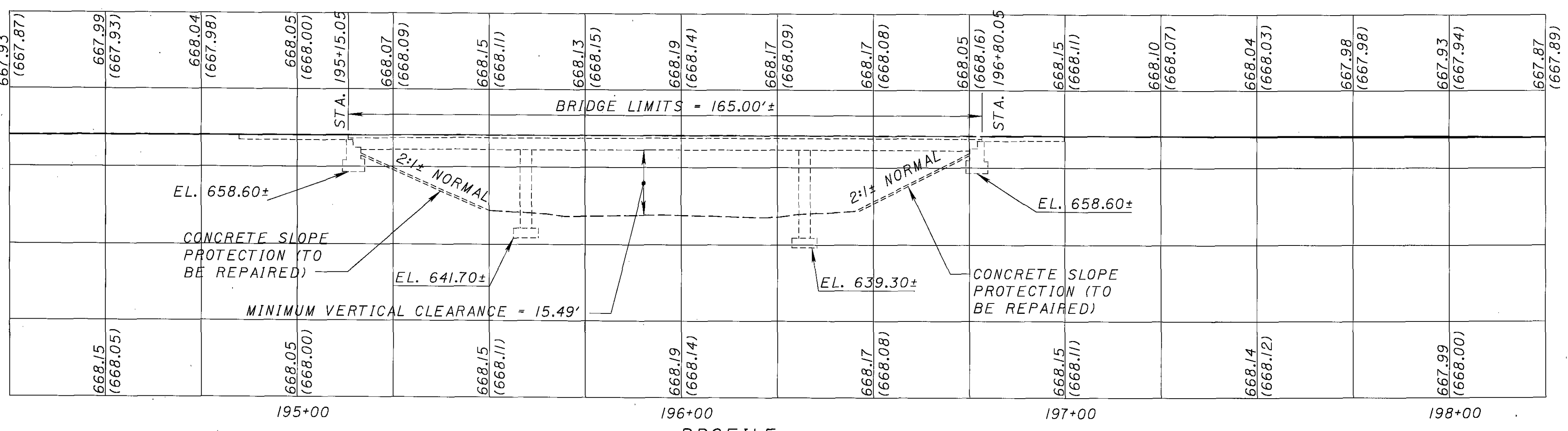
PROPOSED WORK: TREATING DECKS WITH GRAVITY-FED RESIN
 TYPE: 3-SPAN CONTINUOUS STEEL BEAM WITH CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 44'±/72'-6"±/44'± C/C BEARINGS ALONG REFERENCE CHORD
 ROADWAY: TWO AT 52'-10"± T/T PARAPETS
 LOADING: CF=2000(57)
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 ALIGNMENT: 0°20'± CURVE LEFT
 APPROACH SLABS: EXISTING (25'± LONG)
 SKEW: 5°35'00"± L.F. RELATIVE TO REFERENCE CHORD
 CROWN: 0.036± FT/FT
 LATITUDE: N41°37'24" LONGITUDE: W81°27'36"



PLAN

CONSTRUCTION S.R. 2 CURVE DATA
 P.I. STA. = 195+98.07±
 D = 1°55'01"± (RT)
 Dc = 0°20'10"±
 R = 17,050.84'±
 T = 285.28'±
 L = 570.50'±
 E = 2.39'±

PROPOSED PROFILE GRADE ELEVATIONS RIGHT & (LEFT)
 EXISTING PROFILE GRADE ELEVATIONS RIGHT & (LEFT)



PROFILE

MAINTENANCE OF TRAFFIC

FOR MAINTENANCE OF TRAFFIC DETAILS, SEE THE ROADWAY PLANS.

PROPOSED WORK:

1. PATCH CONCRETE SUBSTRUCTURE WITH ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
2. PAINT THE GIRDER ENDS, ENDFRAMES AND CROSSFRAMES AS PER THESE PLANS AND SPECIFICATIONS.
3. TREAT THE DECK WEARING SURFACE WITH GRAVITY-FED RESIN.
4. SEAL PORTIONS OF THE EXISTING CONCRETE WITH ITEM 512- SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).
5. REPLACE AREAS OF THE CONCRETE SLOPE PROTECTION WITH ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

EXISTING STRUCTURE VERIFICATION

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

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

EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

A CONCRETE SEALER SHALL BE APPLIED TO THE SURFACES OF PARAPETS AND THE EXPOSED SURFACES OF THE SUBSTRUCTURES EXCEPT FOR THE TOPS OF THE PIER CAPS AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

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

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE BUFF IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-27722.

THE TOP COAT COLOR FOR ITEM 514 - FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN SHALL BE LIGHT BLUE, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-15450.

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

FIELD CLEANING AND PAINTING OF THE ENDS OF THE SUPERSTRUCTURES BELOW THE DECK WITHIN 10 FEET OF THE BACKWALLS IS INCLUDED IN THESE ITEMS. ALL SURFACES OF THE BEAMS, END CROSS FRAMES, AND INTERMEDIATE CROSS FRAMES OF WHICH ANY PORTION IS WITHIN THE 10 FEET SHALL BE CLEANED AND PAINTED.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511 - CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 601-CONCRETE SLOPE PROTECTION, AS PER PLAN

THIS WORK SHALL INCLUDE THE FOLLOWING:

A. REMOVAL OF EXISTING DAMAGED PORTIONS OF THE CONCRETE SLOPE PROTECTION TO A DEPTH NECESSARY TO ESTABLISH A PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED SIX INCH THICK CONCRETE SLOPE PROTECTION.

B. THE INSTALLATION OF THE NEW CONCRETE SLOPE PROTECTION AS SHOWN ON SHEET 11/11.

C. CONSTRUCTION JOINTS: THE HORIZONTAL AND VERTICAL JOINTS SHALL MATCH THE REMAINING EXISTING CONCRETE SLOPE PROTECTION.

PAYMENT: ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING SAW CUTTING, ALL NECESSARY EMBANKMENT, EXCAVATION, PREFORMED EXPANSION JOINT FILLER, CONCRETE, AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	LEFT TOTAL	RIGHT TOTAL	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				AS PER PLAN REFERENCE SHEET
							SUPER	ABUT	PIERS	GEN'L	SUPER	ABUT	PIERS	GEN'L	
512	10100	764	781	1545	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	413	114	237		414	116	251		
512	73500	969	969	1938	SQ. YD.	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN				969				969	
514	00051	1860	1861	3721	SQ. FT.	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN					1860			1861	2/11
514	00057	1860	1861	3721	SQ. FT.	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN					1860			1861	2/11
514	00061	1860	1861	3721	SQ. FT.	FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN					1860			1861	2/11
514	00067	1860	1861	3721	SQ. FT.	FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT, AS PER PLAN					1860			1861	2/11
514	10000	2	3	5	EACH	FINAL INSPECTION REPAIR				2				3	
519	11101	66	78	144	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		54	12			70	8		2/11
601	21001	152	152	304	SQ. YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN				152				152	2/11

DESIGN AGENCY
BURGESS & NIPL
100 WEST EDE STREET, PAINESVILLE, OHIO 44077

DATE 07-21-05
REVIEWED DWL
STRUCTURE FILE NUMBER 4500246 (L)
4500247 (R)

DRAWN DCF
DESIGNED DCF
CHECKED JAA

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. LAK-2-0180 L&R
OVER EAST 305th STREET

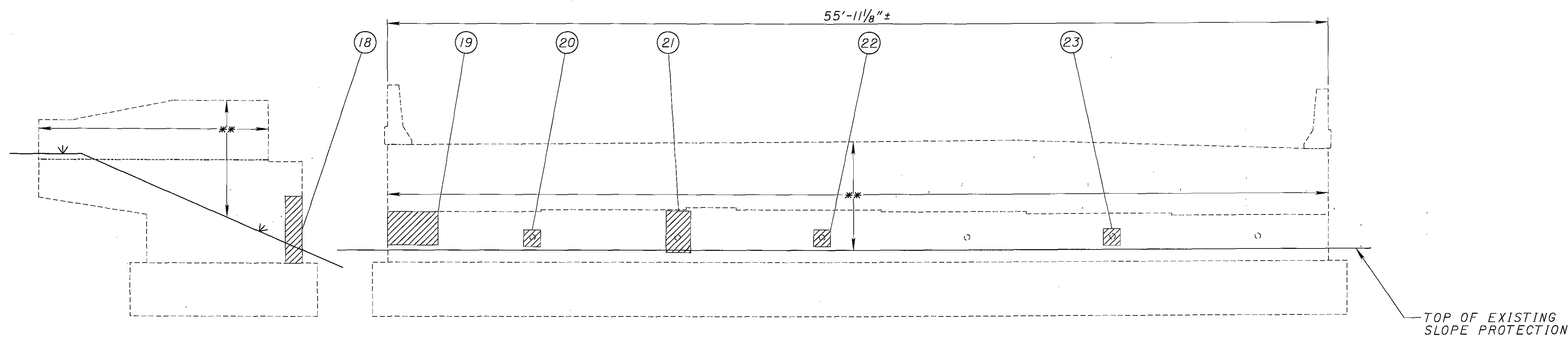
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2/11

482
524

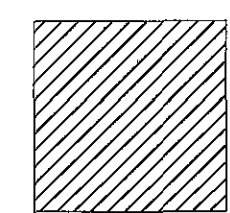
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REAR ABUTMENT LEFT BRIDGE - ELEVATION

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

REAR ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
18	1'-0" x 4'-0"	4.00
19	3'-0" x 2'-0"	6.00
20	1'-0" x 1'-0"	1.00
21	1'-6" x 2'-6"	3.75
22	1'-0" x 1'-0"	1.00
23	1'-0" x 1'-0"	1.00
TOTAL:		16.75
(MULTIPLIER) x2		34

SUBSTRUCTURE REMOVAL AND REPAIR DETAIL 1 OF 6
 BRIDGE NO. LAK-2-0180 I&R
 OVER EAST 305th STREET

LAK-2-0.00

3 / 11

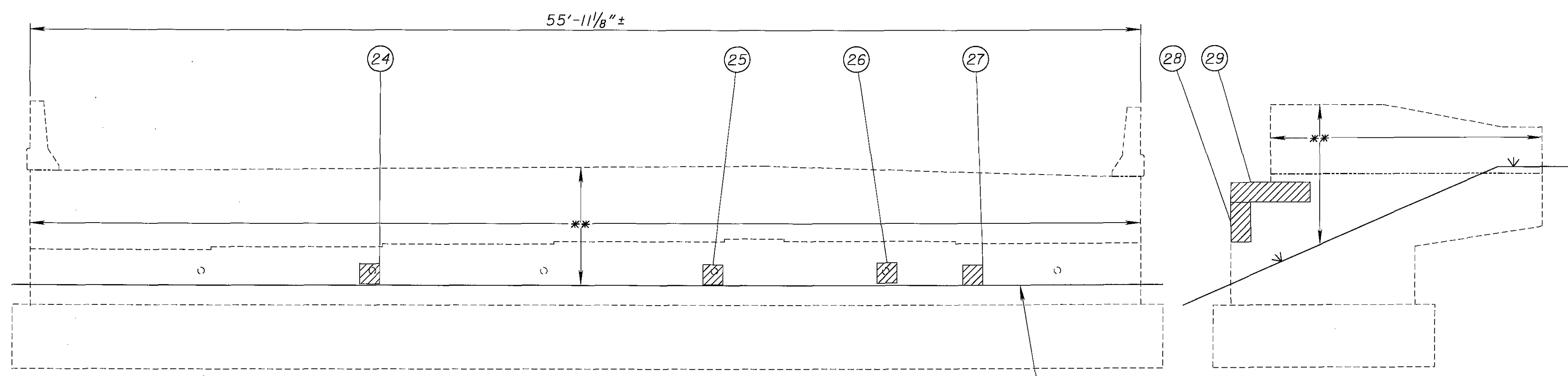
483
524

DESIGN AGENCY

 BURGESS & NIPLE
 100 WEST ERIE STREET PAINESVILLE, OHIO 44071

DESIGNED	DATE
RSC	07-27-05
CHECKED	STRUCTURE FILE NUMBER
SCT	4300246 (L) 4300211 (R)
DRAWN	REVISED
RSC	
REVIEWED	JWB

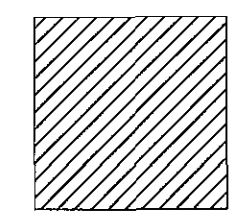
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FORWARD ABUTMENT LEFT BRIDGE - ELEVATION

TOP OF EXISTING SLOPE PROTECTION

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN

**

SEAL ALL EXPOSED CONCRETE SURFACES
WITH ITEM 512-SEALING OF CONCRETE
SURFACES (EPOXY-URETHANE)

FORWARD ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
24	1'-0" x 1'-0"	1.00
25	1'-0" x 1'-0"	1.00
26	1'-0" x 1'-0"	1.00
27	1'-0" x 1'-0"	1.00
28	1'-0" x 2'-0"	2.00
29	4'-0" x 1'-0"	4.00
TOTAL:		10.00
(MULTIPLIER) x2		20

SUBSTRUCTURE REMOVAL AND REPAIR DETAIL 2 OF 6
BRIDGE NO. LAK-2-0180 L&R
OVER EAST 305th STREET

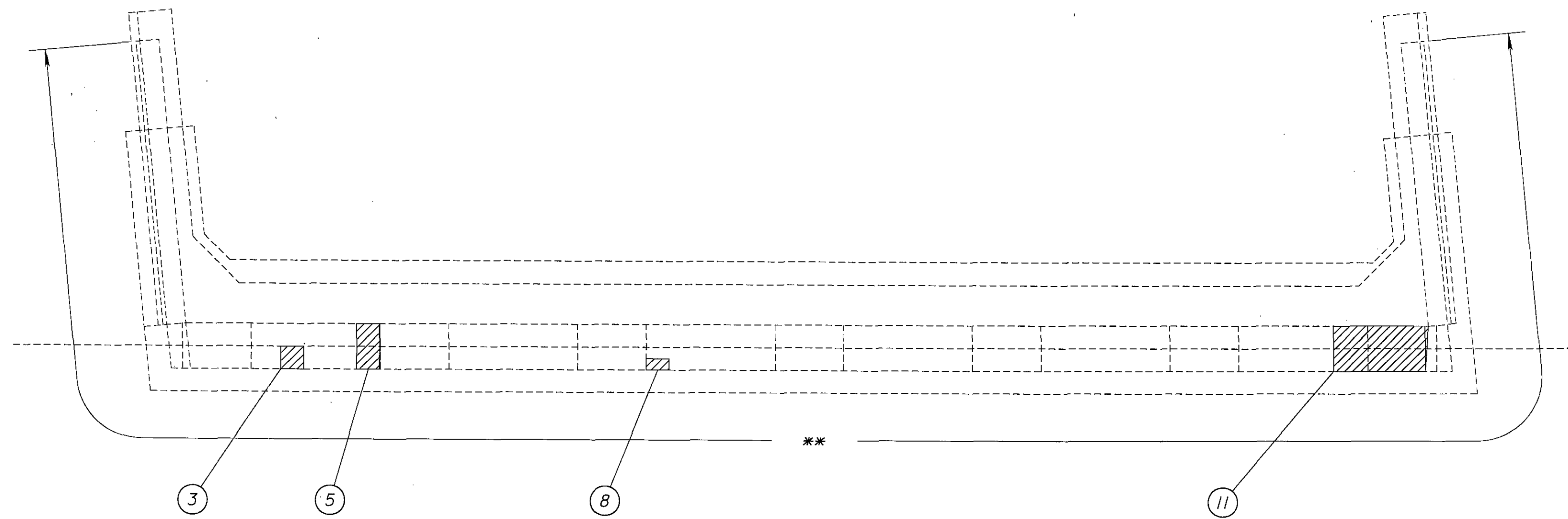
LAK-2-0.00

4 / 11

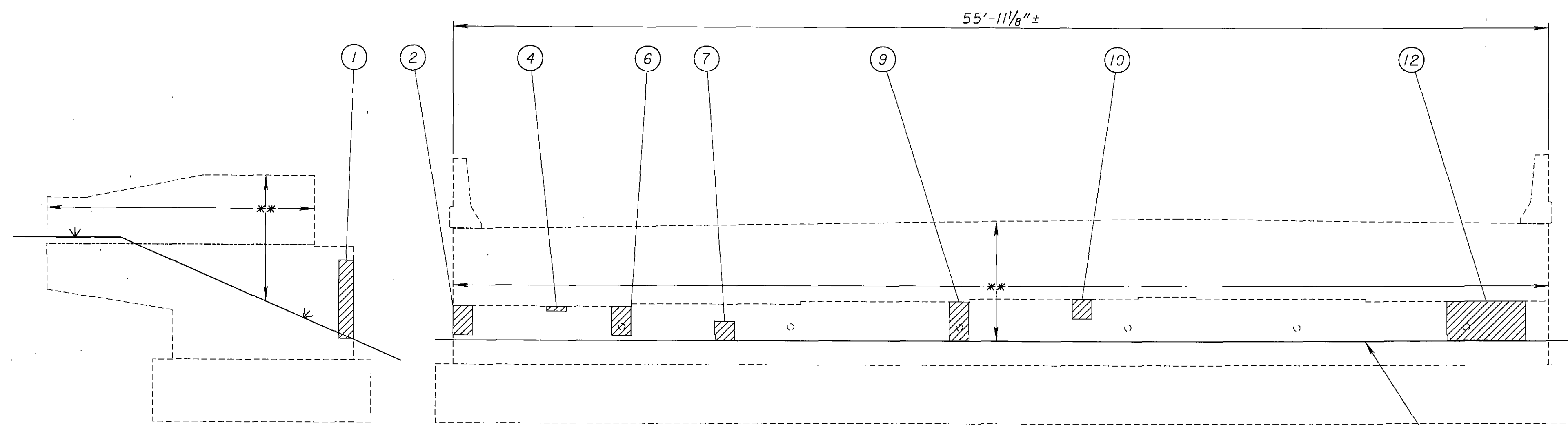
484
524

DESIGN AGENCY
BURGESS & NIPLE
100 WEST ERIE STREET PAINESVILLE, OHIO 44077

DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISED	
REVIEWED	JWB	DATE	07-27-05
STRUCTURE FILE NUMBER	4300246 (L)		
	4300211 (R)		

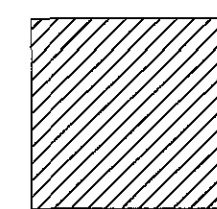


REAR ABUTMENT RIGHT BRIDGE - PLAN



REAR ABUTMENT RIGHT BRIDGE - ELEVATION

LEGEND:

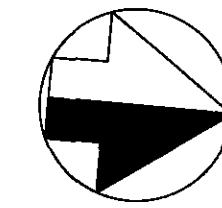


AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

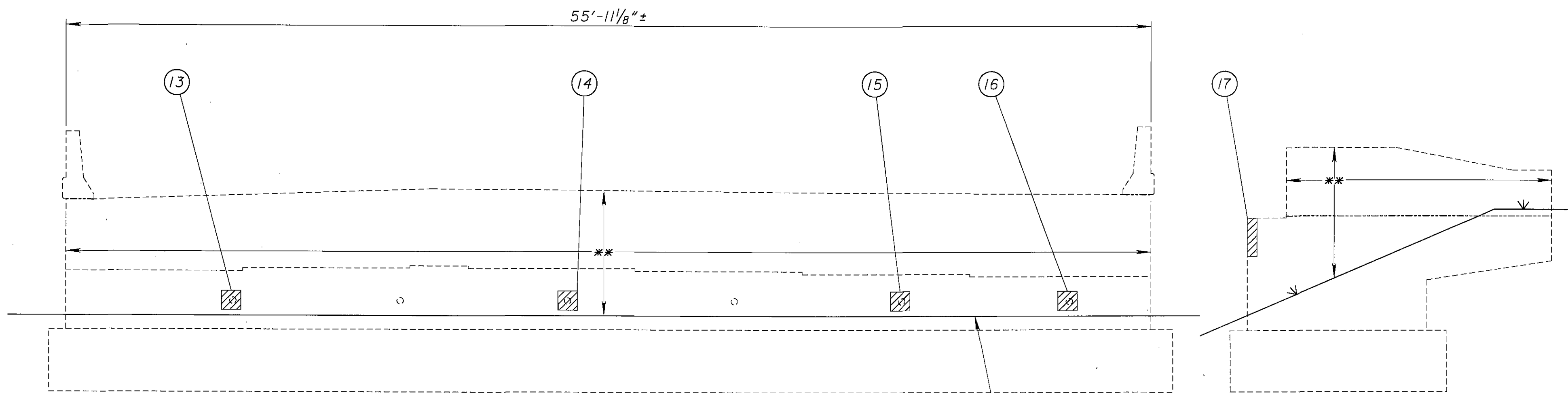
SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

REAR ABUTMENT - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	0'-9" x 4'-0"	3.00
2	1'-0" x 1'-6"	1.50
3	1'-0" x 1'-0"	1.00
4	1'-0" x 0'-3"	0.25
5	1'-0" x 1'-6"	1.50
6	1'-0" x 1'-6"	1.50
7	1'-0" x 1'-0"	1.00
8	1'-0" x 0'-6"	0.50
9	1'-0" x 2'-0"	2.00
10	1'-0" x 1'-0"	1.00
11	4'-0" x 2'-0"	8.00
12	4'-0" x 2'-0"	8.00
TOTAL:		29.25
(MULTIPLIER) x2		59



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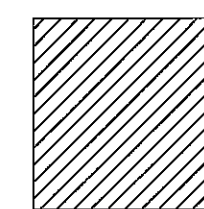
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FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION

TOP OF EXISTING SLOPE PROTECTION

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

FORWARD ABUTMENT-RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
13	1'-0" x 1'-0"	1.00
14	1'-0" x 1'-0"	1.00
15	1'-0" x 1'-0"	1.00
16	1'-0" x 1'-0"	1.00
17	0'-6" x 2'-0"	1.00
TOTAL:		5.00
(MULTIPLIER) x2		10


LAK-2-0.00

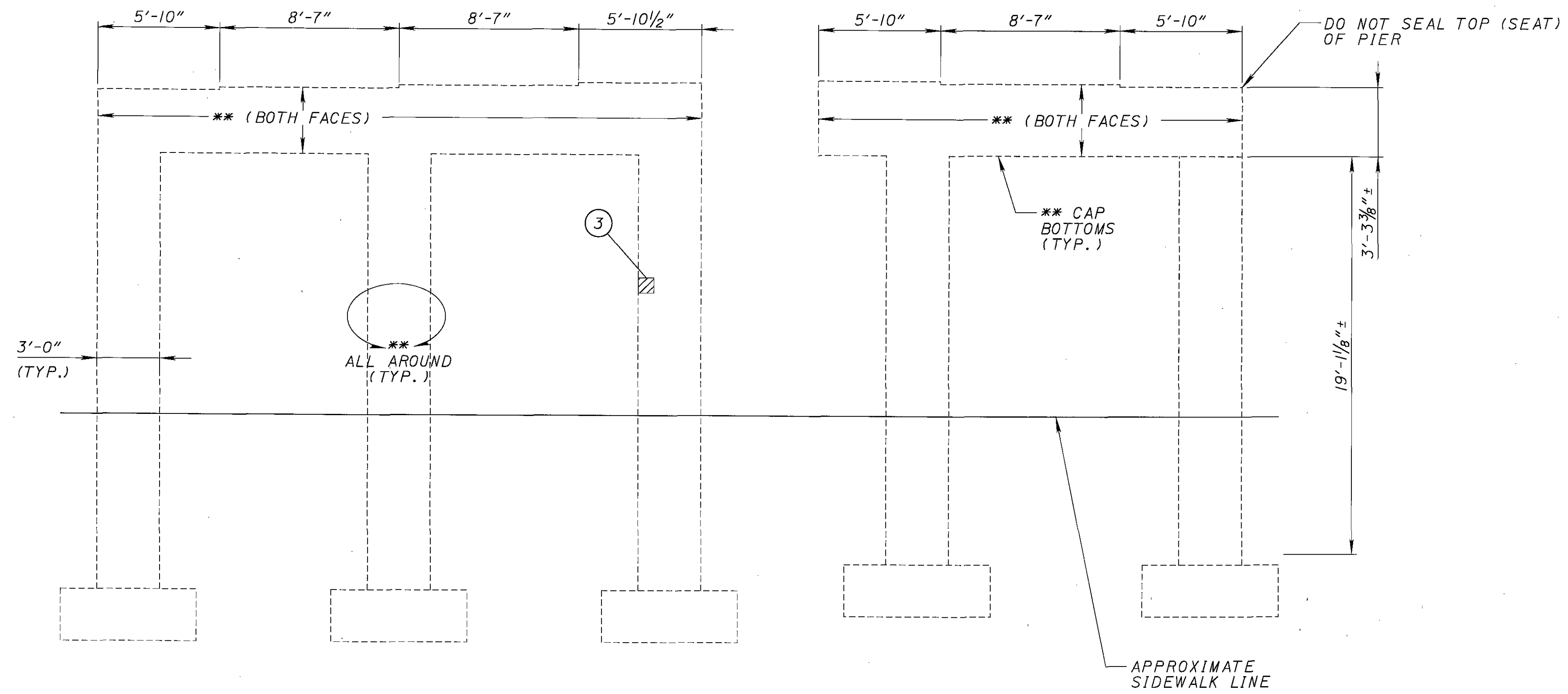
SUBSTRUCTURE REMOVAL AND REPAIR DETAIL 4 OF 6
BRIDGE NO. LAK-2-0180 I&R
OVER EAST 305th STREET

6/11

486
524

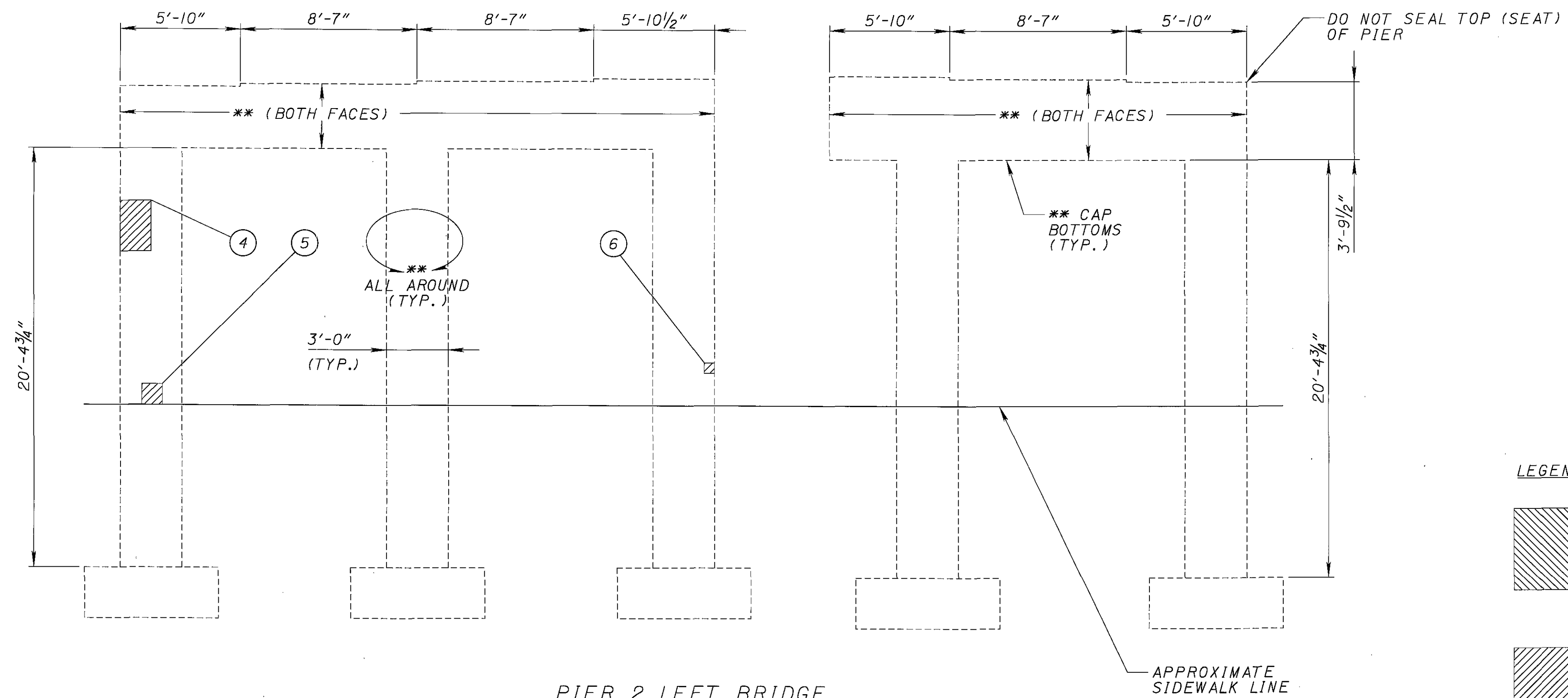
DESIGNED	RSC	CHECKED	SCT
DRAWN	RSC	REVISED	
REVIEWED	JWB	STRUCTURE FILE NUMBER	4300246 (L) 4300211 (R)
DATE	07-27-05		

DESIGN AGENCY

BURGESS & NIPLE
 100 WEST ERIE STREET
 PAINESVILLE, OHIO 44071



PIER 1 LEFT BRIDGE
LOOKING UP STATION

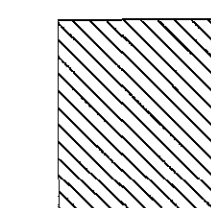
PIER 1 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
3	0'-9" x 0'-9"	0.56
TOTAL:		0.56
(MULTIPLIER) x2		2



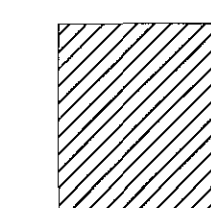
PIER 2 LEFT BRIDGE
LOOKING UP STATION

PIER 2 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
4	1'-6" x 2'-6"	3.75 on side
5	1'-0" x 1'-0"	1.00
6	0'-6" x 0'-6"	0.25
TOTAL:		5.00
(MULTIPLIER) x2		10

LEGEND:



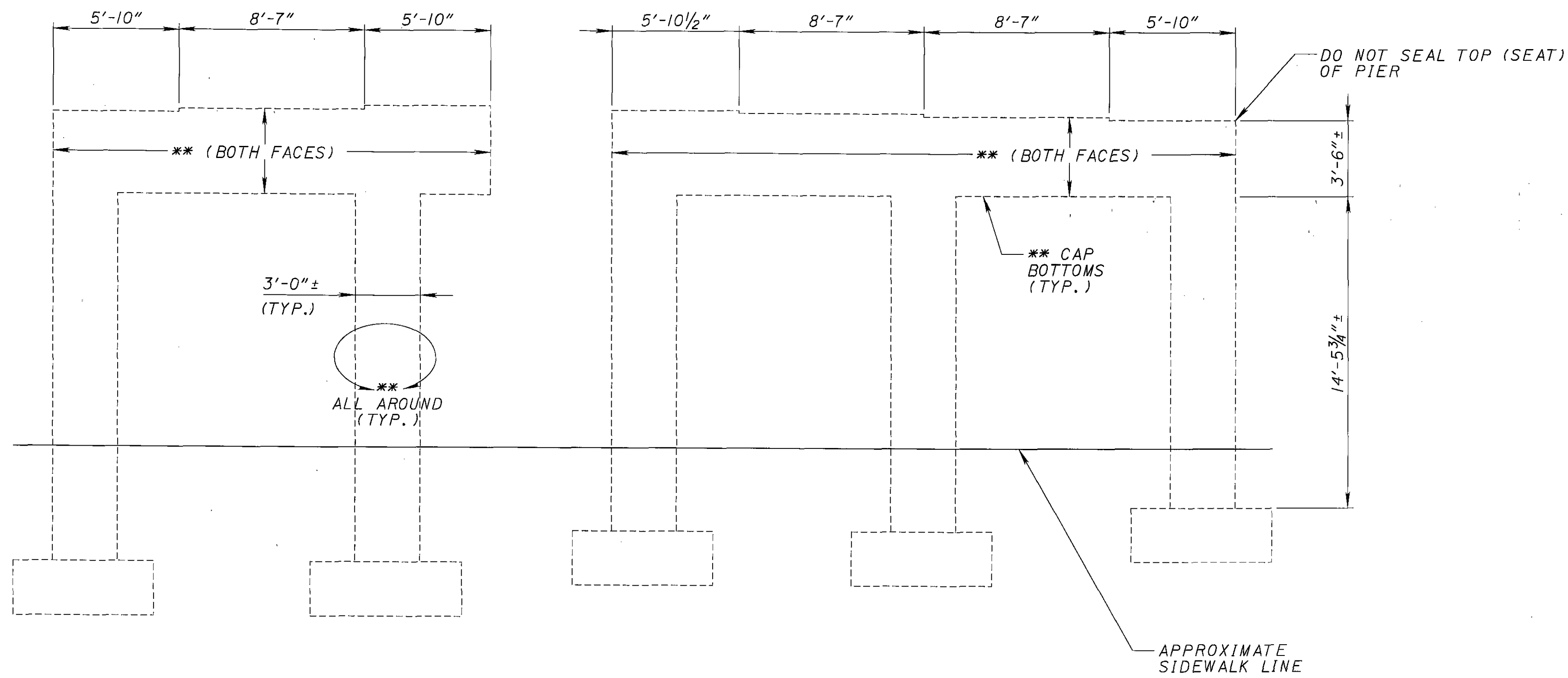
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (UP STATION VIEW)



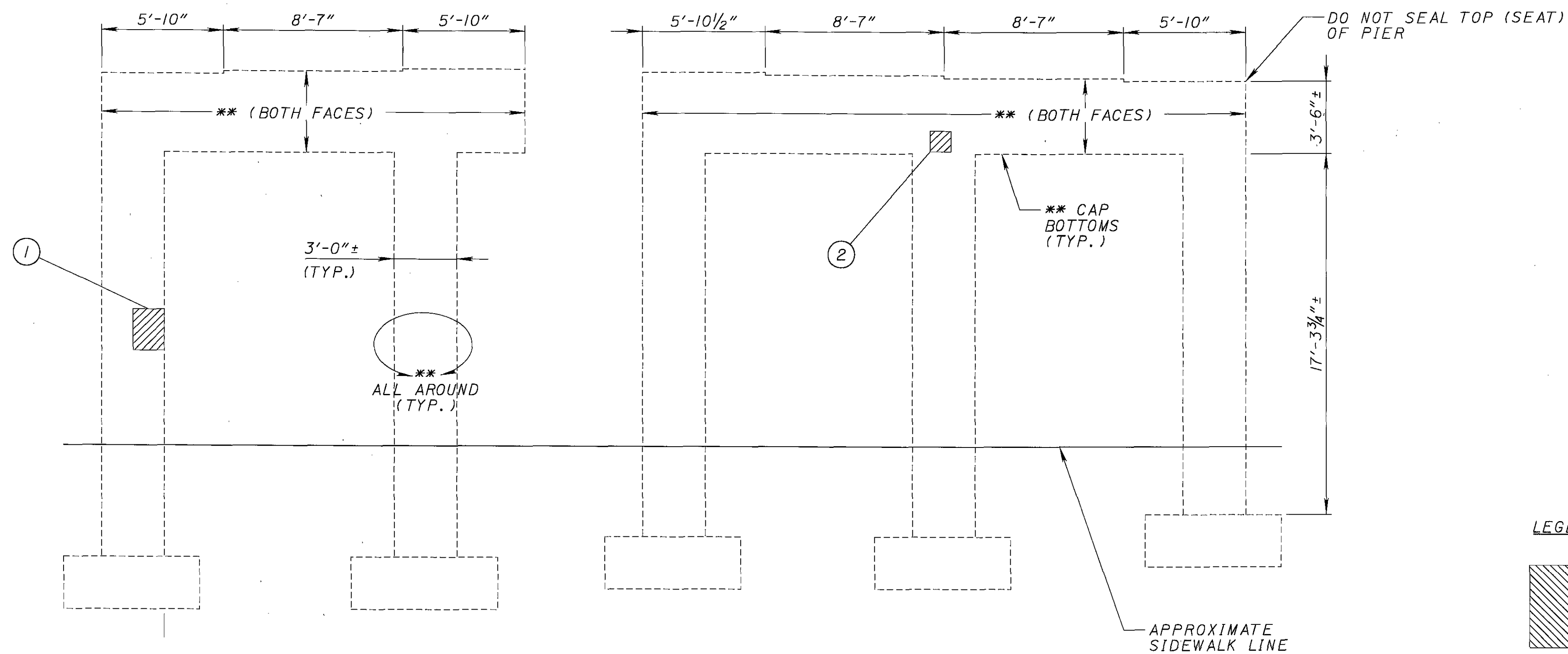
AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (DOWN STATION VIEW)

**

SEAL CONCRETE SURFACES WITH ITEM 512 -
SEALING OF CONCRETE SURFACES
(EPOXY-URETHANE)



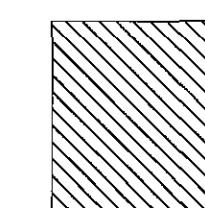
PIER 1 RIGHT BRIDGE
LOOKING UP STATION



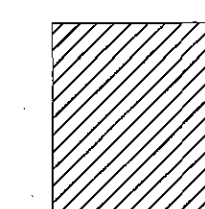
PIER 2 RIGHT BRIDGE
LOOKING UP STATION

PIER 2 - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	1'-6" x 2'-0"	3.00
2	1'-0" x 1'-0"	1.00
TOTAL:		4.00
(MULTIPLIER) x2		8

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (UP STATION VIEW)

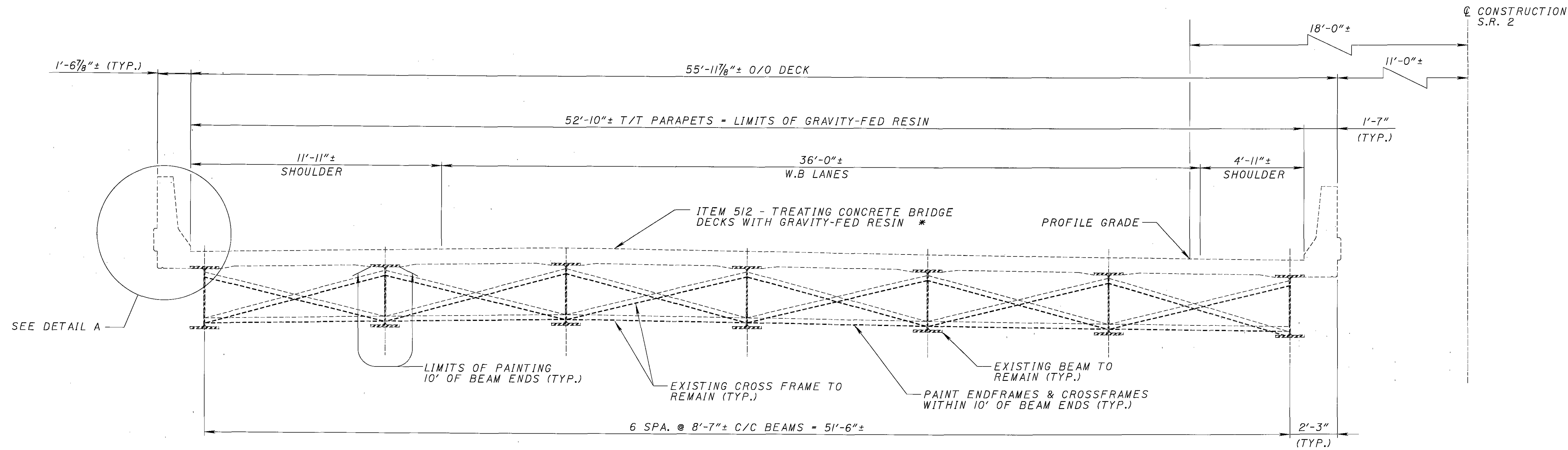


AREAS TO BE PATCHED PER ITEM 519 -
PATCHING CONCRETE STRUCTURES,
AS PER PLAN (DOWN STATION VIEW)

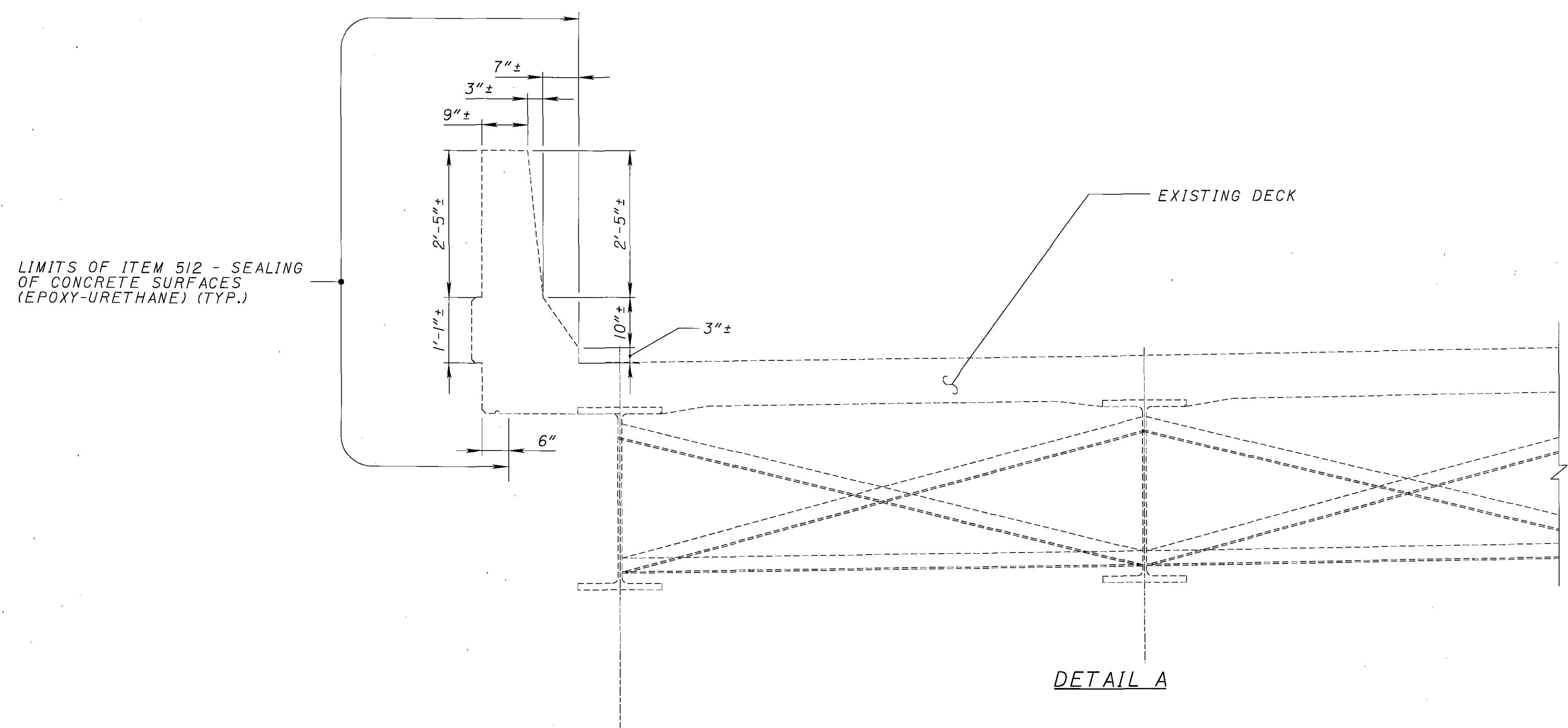
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SEAL CONCRETE SURFACES WITH ITEM 512 -
SEALING OF CONCRETE SURFACES
(EPOXY-URETHANE)

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TRANSVERSE SECTION LEFT BRIDGE

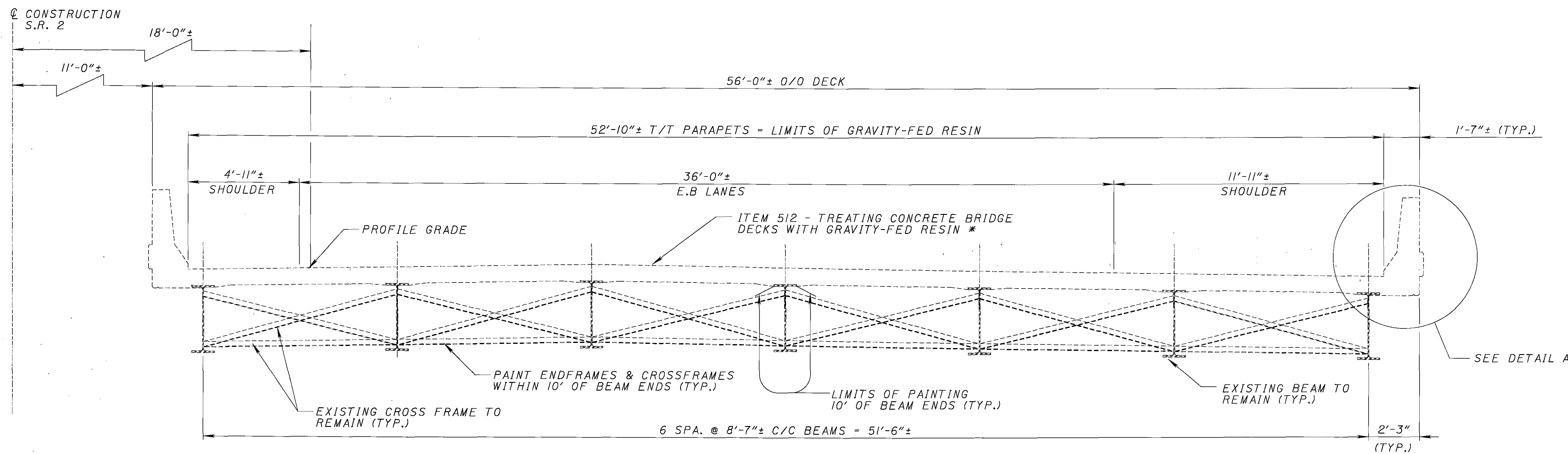


DETAIL A

NOTES:
 * TREATMENT OF BRIDGE DECK WITH GRAVITY FED RESIN SHALL BE COORDINATED WITH OTHER CONSTRUCTION OPERATIONS.

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DESIGN AGENCY BURGESS & NIPLE 100 WEST ERNE STREET PANAMA, OHIO 44071	
DATE 07-27-05	STRUCTURE FILE NUMBER 4300246 (L) 4300246 (R)
REVIEWED JWB	DESIGNED RSC
DRAWN RSC	CHECKED SCT
TRANSVERSE SECTION - LEFT BRIDGE BRIDGE NO. LAK-2-0180 L&R OVER EAST 305th STREET	
LAK-2-0.00	
9/11	
489	
524	

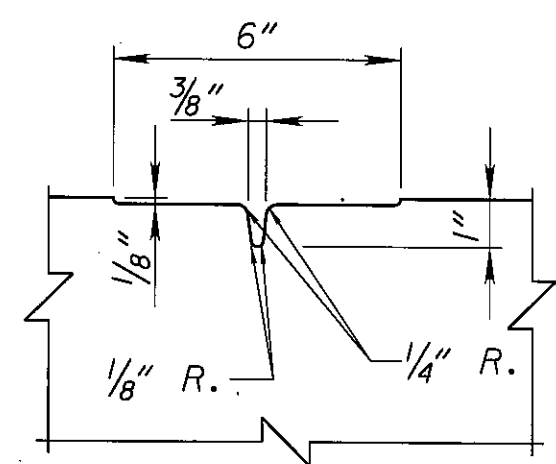


TRANSVERSE SECTION RIGHT BRIDGE

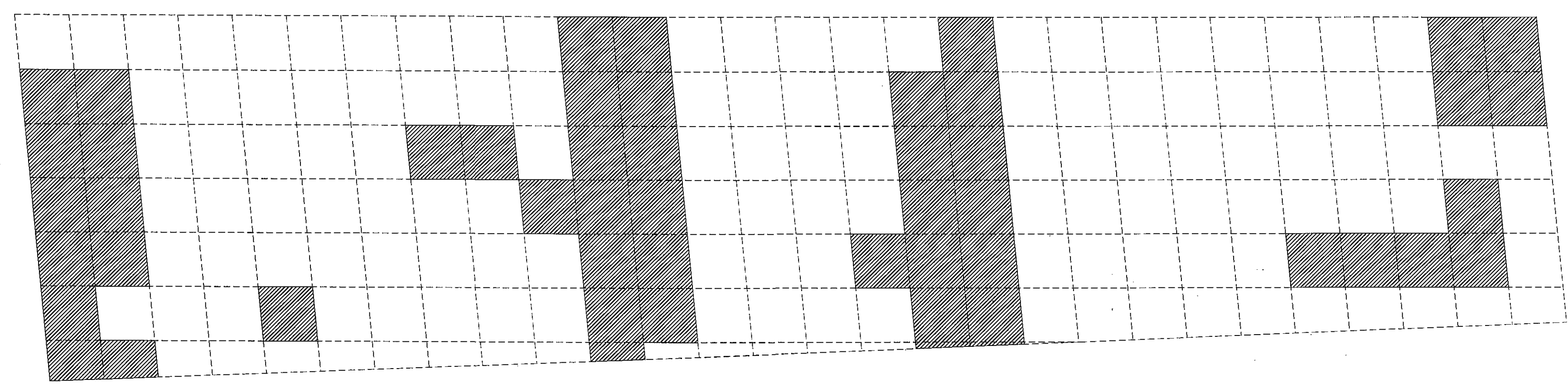
NOTES:
 SEE SHEET 9/11 FOR DETAIL A
 * TREATMENT OF BRIDGE DECK WITH GRAVITY FED RESIN SHALL BE COORDINATED WITH OTHER CONSTRUCTION OPERATIONS.

...002_0180RTS001.dgn

DESIGN AGENCY BURGESS & NIPLE 100 WEST ERNE STREET PAINESVILLE, OHIO 44071	
REVIEWED JWB	DATE 07-27-05
DRAWN RSC	STRUCTURE FILE NUMBER 4300246 (L) 4300211 (R)
DESIGNED RSC	CHECKED SCT
TRANSVERSE SECTION - RIGHT BRIDGE BRIDGE NO. LAK-2-0180 L&R OVER EAST 305th STREET	
LAK-2-0.00	
10/11	
490 524	

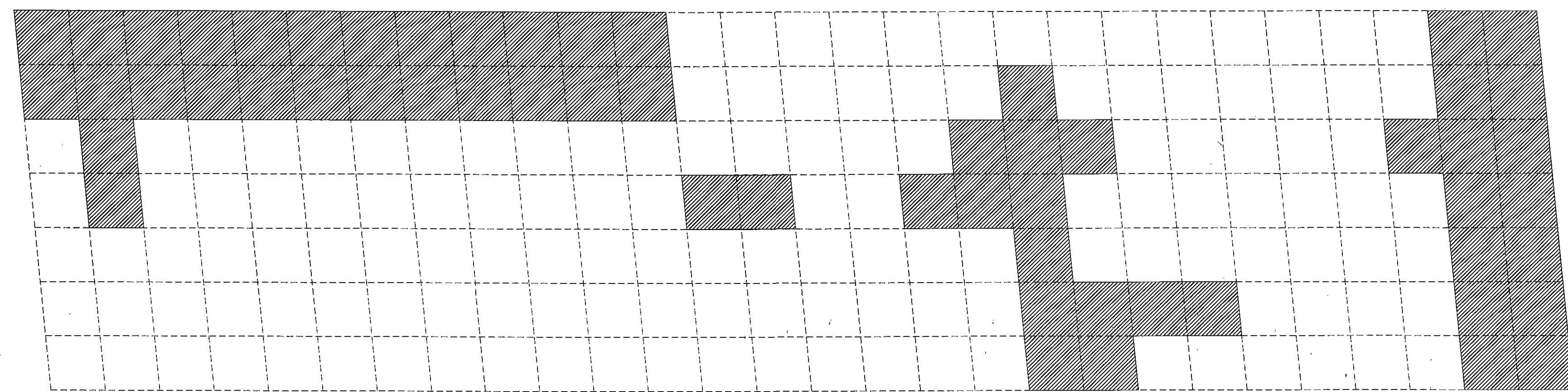


TOOLED GROOVE (CONTRACTION)

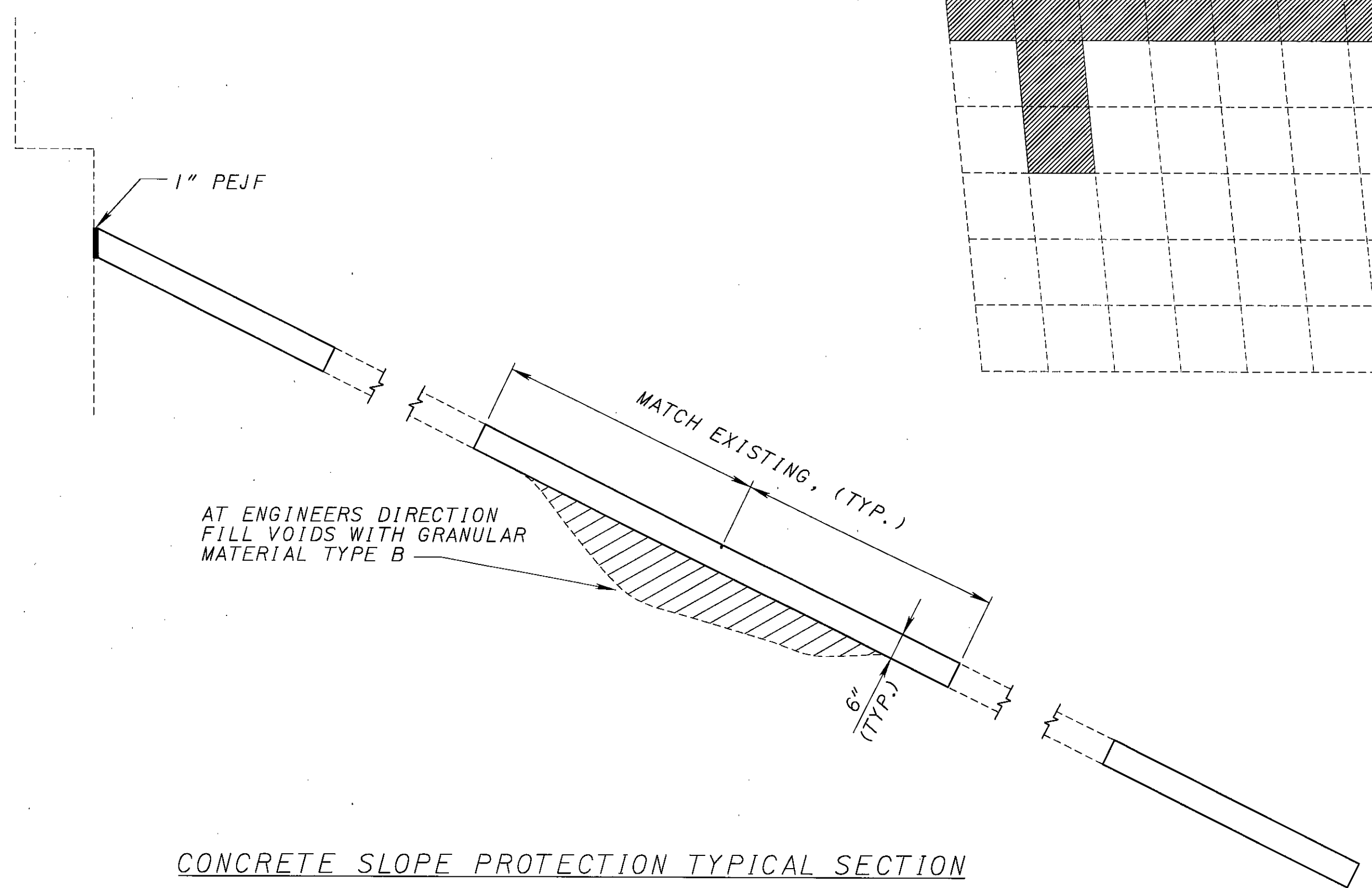


FORWARD SLOPE PROTECTION

TOTAL AREA:
 FORWARD = 1305 SQ. FT. OUT OF 4338 SQ. FT.
 REAR = 1425 SQ. FT. OUT OF 4900 SQ. FT.



REAR SLOPE PROTECTION

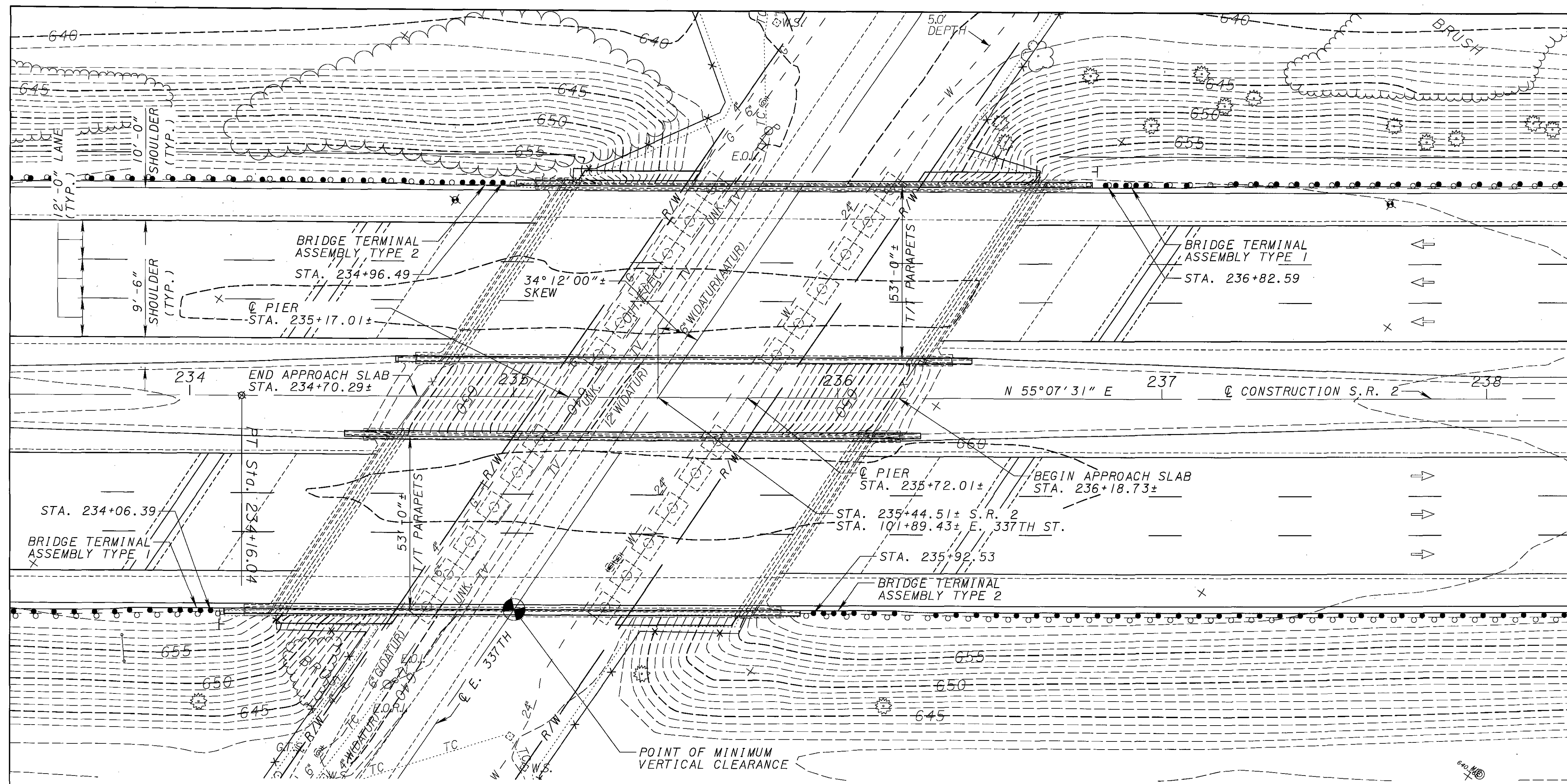


CONCRETE SLOPE PROTECTION TYPICAL SECTION

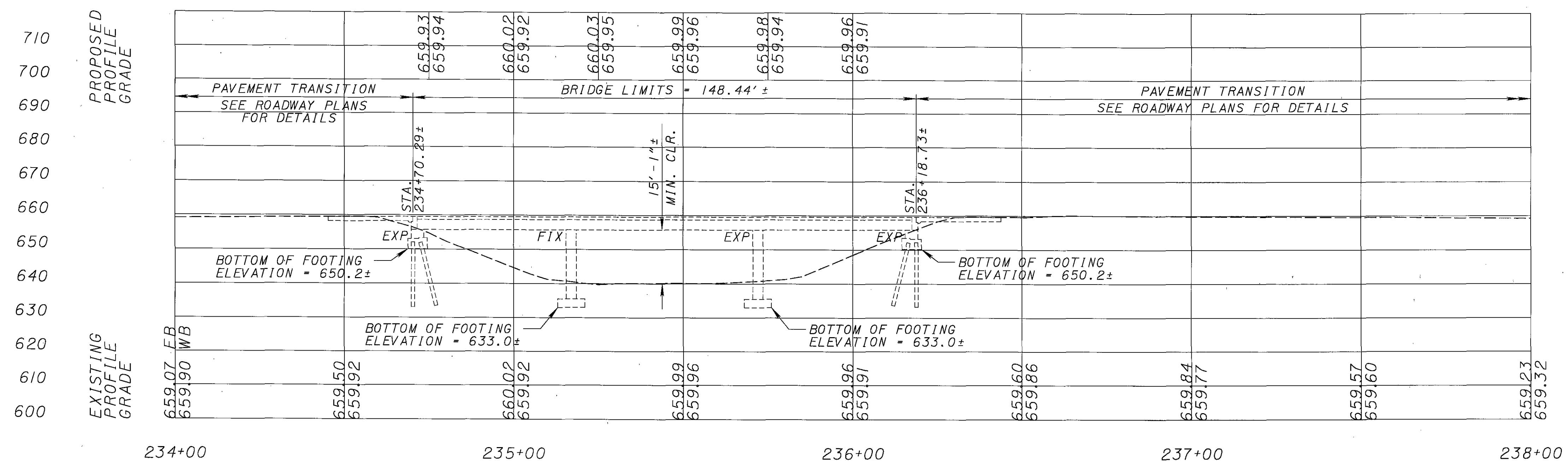
NOTES:
 THE AREA OF SLOPE PROTECTION TO BE REPLACED IS BASED UPON SEVERE CRACKING AND SETTLEMENT OR DISPLACEMENT OF TWO OR MORE INCHES.

LEGEND
 PEJF. = PREFORMED EXPANSION JOINT FILLER
 R. = RADIUS
 TYP. = TYPICAL

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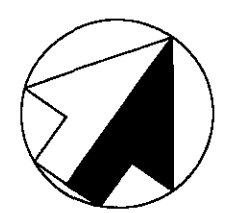
PLAN



PROFILE

LEGEND

- C/C = CENTER TO CENTER
- EB = EASTBOUND
- F.A. = FORWARD ABUTMENT
- F/F = FACE TO FACE
- R.A. = REAR ABUTMENT
- T/T = TOE TO TOE
- WB = WESTBOUND



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

BENCHMARK:

MAG NAIL IN ASPHALT OF PAVED SHOULDER S.R. 2 STA. 232+02.53, 63.32 (RT) BM ELEV.: 657.95

	MINIMUM HORIZONTAL CLEARANCES	
	MEDIAN SHOULDERS	OUTSIDE SHOULDERS
EXISTING	5' ±	10.2' ±
REQUIRED	4'	10'
PROPOSED	5.5'	10'

TRAFFIC DATA	
CURRENT ADT (2006)	86100
CURRENT ADTT (2006)	3703
DESIGN YEAR ADT (2026)	89400
DESIGN YEAR ADTT (2026)	3845

EXISTING STRUCTURE
 TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 44' ± - 55' ± - 44' ± C/C BEARINGS
 ROADWAY: 54'-0" ± F/F PARAPETS
 SKEW: 34° 12' 00" ± LF
 ALIGNMENT: TANGENT
 WEARING SURFACE: 1 1/4" LATEX MODIFIED CONCRETE OVERLAY
 DESIGN LOADING: CF-2000 (57)
 APPROACH SLABS: AS-1-54 (25' LONG)
 CROWN: 3/16" ± PER FOOT
 SFN: 4300300 (L) & 4300335 (R)
 DATE BUILT: 1959

PROPOSED STRUCTURE
 PROPOSED WORK: BRIDGE DECK OVERLAY AND PARAPET REPLACEMENT
 TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 44' ± - 55' ± - 44' ± C/C BEARINGS
 ROADWAY: 53'-0" ± T/T PARAPETS
 SKEW: 34° 12' 00" ± LF
 ALIGNMENT: TANGENT
 WEARING SURFACE: 2 1/4" SUPERPLASTICIZED DENSE CONCRETE OVERLAY
 DESIGN LOADING: CF-2000 (57)
 APPROACH SLABS: AS-1-54 (25' LONG)
 CROWN: 3/16" ± PER FOOT
 LATITUDE: N 41° 37' 50"
 LONGITUDE: W 81° 26' 52"

DESIGN AGENCY
BURGESS & NIPLE
 100 WEST EIRE STREET PANESVILLE, OHIO 44071

DATE 07-19-05
 REVIEWED DWL
 STRUCTURE FILE NUMBER 4300300 (L) 4300335 (R)

DRAWN ASK
 CHECKED JAA

LAKE COUNTY
 STA. 234+70.29±
 STA. 236+18.73±

SITE PLAN
 BRIDGE NO. LAK-2-0255 I&R
 OVER EAST 337TH STREET

LAK-2-0.00

1/19

492
 524

REFER TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS:

SBR-I-99 REVISED 07-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
847 REVISED 04-15-05
848 REVISED 04-15-05

EXISTING STRUCTURE VERIFICATION:

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

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

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

MAINTENANCE OF TRAFFIC:

SEE THE ROADWAY PLANS FOR MAINTENANCE OF TRAFFIC REQUIREMENTS.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

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

PROPOSED WORK:

- REMOVE EXISTING OVERLAY, PERFORM SURFACE PREPARATIONS, AND OVERLAY EXISTING DECK WITH SUPERPLASTICIZED DENSE CONCRETE AS SPECIFIED IN THESE PLANS.
- REMOVE EXISTING PARAPET AND REPLACE AS SPECIFIED, INCLUDING BARRIER TRANSITIONS AND EXTENSIONS OF THE EXPANSION JOINTS.
- PATCH CONCRETE SUBSTRUCTURE AND DECK BOTTOM WITH ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
- PAINT THE BEAM ENDS, ENDFRAMES, AND CROSSFRAMES AS PER THESE PLANS AND SPECIFICATIONS.
- SEAL PORTIONS OF THE EXISTING CONCRETE WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).
- REPLACE AREAS OF THE CONCRETE SLOPE PROTECTION WITH ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

DESCRIPTION:

THIS WORK CONSISTS OF THE REMOVAL OF PARAPETS, RAILINGS, DECK JOINTS, UNDER DECK SPALLED AREAS, AND OTHER APPURTENANCES. THIS ITEM SHALL ALSO INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. PERFORM WORK CAREFULLY DURING CONCRETE REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC:

PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

REMOVAL METHODS:

THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS, THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONTINUED):

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

PAYMENT:

THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 511 CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN:

GENERAL REQUIREMENTS.

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

MIX OPTIONS.

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

HP4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGREG. (LB)	* #8 COARSE AGGREG. (LB)	* #57 COARSE AGGREG. (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	GGBF SLAG (LB)	WATER TO CEMENTITIOUS RATIO ±.01	AIR CONTENT ±2%
GRAVEL	1245	360	1315	2920	400	30	170	0.43	7
LIMESTONE	1245	360	1335	2940	400	30	170	0.43	7
SLAG	1245	315	1155	2715	400	30	170	0.43	7

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127. THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

PARAPET CONSTRUCTION (FORMED AND Poured)

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 6 INCHES, WITH A MAXIMUM SLUMP OF 8 INCHES.

ANCHOR BOLTS FOR RAIL POSTS AND FENCE POSTS SHALL BE CAST IN PLACE.

SLIP-FORMED PARAPETS WILL NOT BE ALLOWED

CRACK CONTROL JOINTS

CRACK CONTROL JOINTS FOR BOTH SLIP FORMED AND FORMED AND Poured PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 1/2" DEEP AND 1/4" WIDE CRACK CONTROL JOINTS INTO THE STRUCTURAL CONCRETE FACE SPACED AT A MINIMUM OF 6 FT AND A MAXIMUM OF 8 FT ON CENTER. THE CRACK CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK. THE CONTRACTOR MAY EITHER FORM THE CRACK CONTROL JOINTS IN WITH FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CRACK CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE, OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1/2" WITH POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S.

ITEM 511 CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

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

ITEM	UNITS	DESCRIPTION
511E50101	CUBIC YARDS	CLASS HP CONCRETE, BRIDGE DECK, (PARAPET), AS PER PLAN
511E52000	LUMP SUM	CLASS HP CONCRETE, TEST SLAB

ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF ITEM 510, THE FOLLOWING CONDITIONS SHALL APPLY:

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF EPOXY GROUT INTO HOLES.

THE CONTRACTOR SHALL DEMONSTRATE HIS ABILITY TO DRILL THE DOWEL HOLES WITHOUT DAMAGING THE SURROUNDING CONCRETE OR CONCRETE DECK EDGES. SHOULD SUCH DAMAGE OCCUR, THE CONTRACTOR IS DIRECTED TO REPAIR THE DAMAGE AT HIS EXPENSE AND TO CORE DRILL THE DOWEL HOLES.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

A CONCRETE SEALER SHALL BE APPLIED TO THE SURFACES OF THE PARAPETS AND THE EXPOSED SURFACES OF THE SUBSTRUCTURES EXCEPT THE TOPS OF THE PIER CAPS AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

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

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

THIS ITEM OF WORK SHALL BE USED TO SEAL UNDERDECK SPALLED AREAS OF CONCRETE WHICH ARE OVER VEHICULAR AND PEDESTRIAN TRAFFIC.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY). THIS PRICE AND PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER.

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE _____, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER _____

THE COLOR FOR ITEM 514 - FIELD PAINTING OF EXISTING STEEL, FINISH COAT, AS PER PLAN SHALL BE _____, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER _____

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

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

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

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

FIELD CLEANING AND PAINTING OF THE ENDS OF THE SUPERSTRUCTURES BELOW THE DECK WITHIN 10 FEET OF THE BACKWALLS IS INCLUDED IN THESE ITEMS. ALL SURFACES OF THE BEAMS, END CROSS FRAMES, AND INTERMEDIATE CROSS FRAMES OF WHICH ANY PORTION IS WITHIN THE 10 FEET SHALL BE CLEANED AND PAINTED.

GENERAL NOTES 1 OF 2
BRIDGE NO. LAK-2-0255 I&R
OVER EAST 337th STREET

LAK-2-0.00

2 / 19

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DESIGN AGENCY
BURGESS & NIPLÉ
100 WEST EURE STREET PAINESVILLE, OHIO 44071

DATE
07-18-05
REVIEWED
DWL
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CHECKED
JAA
STRUCTURE FILE NUMBER
4300300 (L)
4300300 (R)

ITEM SPECIAL - POURED POLYURETHANE JOINT SEAL:

THIS WORK SHALL CONSIST OF SEALING JOINTS WITH POURED POLYURETHANE JOINT SEAL IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

THE MATERIAL FOR THIS ITEM IS A TWO-PART, COLD APPLIED, CHEMICALLY CURING, SELF-LEVELING, ELASTOMERIC, POLYURETHANE JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E AND ASTM C-920. ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS SPECIFIED BY THE MANUFACTURER.

THE SURFACES TO WHICH THE SEALER IS TO ADHERE SHALL FIRST BE THOROUGHLY CLEANED BY ABRASIVE BLASTING. POLYURETHANE JOINT SEAL SHALL BE POURED OVER THE FULL LENGTH OF THE OPEN JOINT AND SHALL BE APPLIED ONLY WHEN THE SURFACES ARE DRY AND ABOVE 50 DEGREES F. THE INSTALLED AND CURED MATERIAL SHALL BE THE DEPTH AS SHOWN IN THE PLANS AND SHALL BE BONDED TO THE SIDES OF THE JOINT. ANY UNBONDED SECTION SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DAMS AS REQUIRED TO CONTAIN THE POURED SEALER SHALL BE INCIDENTAL TO THIS ITEM OF WORK.

FOOTAGE UNDER THIS ITEM SHALL BE THE LINEAR FEET OF POLYURETHANE JOINT SEAL POURED IN THE JOINT THAT ARE COMPLETE, IN PLACE AND ACCEPTED.

THE ACCEPTED QUANTITIES OF POURED POLYURETHANE JOINT SEAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH PRICE AND PAYMENT SHALL BE IN FULL COMPENSATION FOR PREPARING THE SURFACES, FURNISHING AND PLACING ALL MATERIALS AND ALL OTHER MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT SEAL ACCORDING TO SPECIFICATIONS. PAYMENT WILL BE MADE UNDER:

ITEM	UNITS	DESCRIPTION
SPECIAL	FOOT	POURED POLYURETHANE JOINT SEAL

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511 - CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN:

THIS WORK SHALL INCLUDE THE FOLLOWING:

- A. REMOVAL OF EXISTING DAMAGED PORTIONS OF CONCRETE SLOPE PROTECTION TO A DEPTH NECESSARY TO ESTABLISH A PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED SIX INCH THICK CONCRETE SLOPE PROTECTION.
- B. THE INSTALLATION OF THE NEW CONCRETE SLOPE PROTECTION AS SHOWN ON SHEET 18/19.
- C. CONSTRUCTION JOINTS: THE HORIZONTAL AND VERTICAL JOINTS SHALL MATCH THE REMAINING EXISTING CONCRETE SLOPE PROTECTION.

PAYMENT:
ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING SAW CUTTING, ALL NECESSARY EMBANKMENT, EXCAVATION, PREFORMED EXPANSION JOINT FILLER, CONCRETE, AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ITEM 848 - SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN A:

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1/2" FOR THE DECK. FULL DEPTH REPAIR WILL NOT HAVE TO BE USED UNLESS THE FULL DEPTH OF THE DECK HAS BEEN PENETRATED.

ITEM 848 - SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN B:

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1 INCH FOR THE APPROACH SLAB. FULL DEPTH REPAIR WILL NOT HAVE TO BE USED UNLESS THE FULL DEPTH OF THE DECK HAS BEEN PENETRATED.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN
ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN
ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN:

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRODEMOLITION" WITH THE FOLLOWING REVISIONS:

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS PER ASTM C-127

THE THICKNESS OF THE PROPOSED OVERLAY SHALL BE AS SPECIFIED IN THE PLANS

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL PATH

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

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DESIGN AGENCY
BURGESS & NIPLÉ
 100 WEST EURE STREET, PAINESVILLE, OHIO 44077

DATE	07-18-05
REVIEWED	DWL
STRUCTURE FILE NUMBER	4500306 (L)
	4500305 (R)
DRAWN	ASK
DESIGNED	ASK
CHECKED	JAA
REVISION	

GENERAL NOTES 2 OF 2
 BRIDGE NO. LAK-2-0255 L&R
 OVER EAST 337th STREET

LAK-2-0.00
 3/19
 494
 524

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	LEFT TOTAL	RIGHT TOTAL	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				AS PER PLAN REFERENCE SHEET
							SUPER	ABUT	PIERS	GEN'L	SUPER	ABUT	PIERS	GEN'L	
202	11201	LUMP	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP				LUMP	2/19
509	10000	8664	8663	17327	POUND	EPOXY-COATED REINFORCING STEEL	8664				8663				
510	10001	720	720	1440	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN	720				720				2/19
511	50101	60	60	120	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	60				60				2/19
511	81300	778	778	1556	EACH	CONCRETE MISC.; DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS								778	
512	10100	840	835	1675	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	406	138	296		406	134	295		
514	00051	1861	1860	3721	SQ. FT.	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN					1861			1860	2/19
514	00057	1861	1860	3721	SQ. FT.	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN					1861			1860	2/19
514	00061	1861	1860	3721	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN					1861			1860	2/19
514	00067	1861	1860	3721	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN					1861			1860	2/19
514	10000	3	2	5	EACH	FINAL INSPECTION REPAIR					3			2	
516	11901	2	2	4	FT.	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN					2			2	16/19
SPECIAL	516E14010	129	128	257	FT.	POURED POLYURETHANE JOINT SEAL					129			128	
519	11101	598	455	1053	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		577	21			434	21		3/19
601	21001	202	202	404	SQ. YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN					202			202	3/19
847	30400	853	852	1705	SQ. YD.	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" NOMINAL THICKNESS)					853			852	
848	10200	875	874	1749	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, USING HYDRO-DEMOLITION (1 3/4" THICK)					875			874	
848	10200	400	400	400	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, USING HYDRO-DEMOLITION (2" THICK)					400			400	
848	20001	1705	1705	1705	SQ. YD.	SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN A					1705			1705	3/19
848	20001	200	200	400	SQ. YD.	SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN B					200			200	3/19
848	30200	4	4	8	CU. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY VARIABLE THICKNESS, MATERIAL ONLY					4			4	
848	50000	6	5	11	SQ. YD.	HAND CHIPPING					6			5	
848	50100	LUMP	LUMP	LUMP		TEST SLAB					LUMP			LUMP	
848	50200	1	0	1	CU. YD.	FULL DEPTH REPAIR					1				
848	50300	200	200	400	SQ. YD.	WEARING COURSE REMOVED, ASPHALT					200			200	
848	50340	341	341	682	SQ. YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY					341			341	

... \002_0255CE0001.dgn

DESIGN AGENCY
BURRESS & NIPLE
100 WEST ONE STREET PINEVILLE, OHIO 44071

DATE
07-19-05
REVIEWED
DWL
STRUCTURE FILE NUMBER
4300300 (L)
4300335 (R)

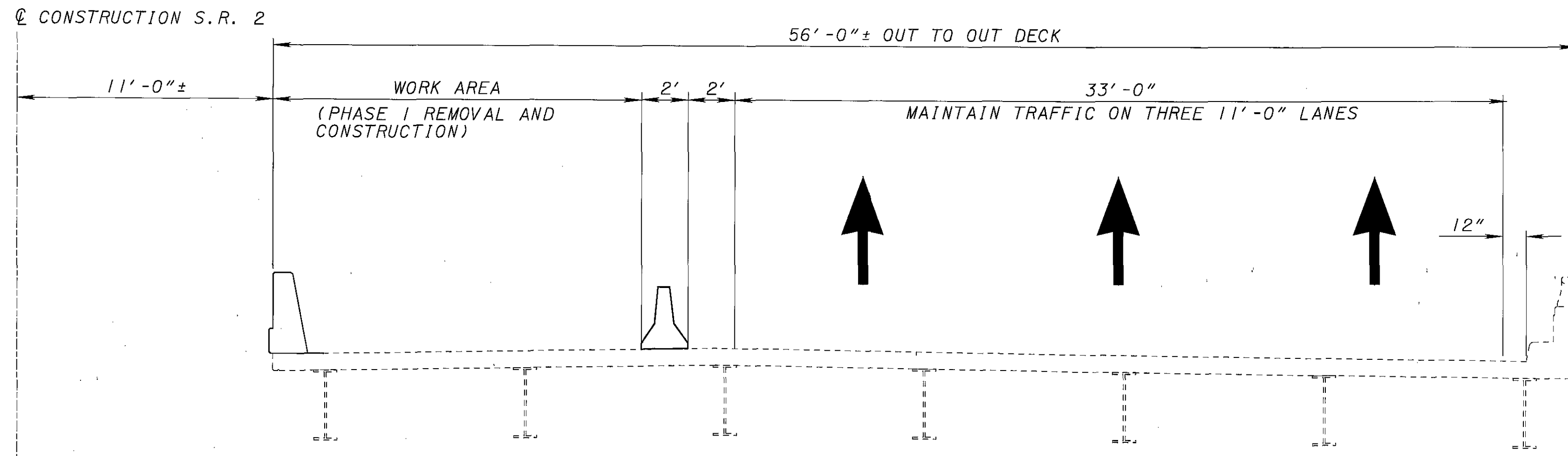
DRAWN
ASK
DESIGNED
ASK
CHECKED
JAA

ESTIMATED QUANTITIES
BRIDGE NO. LAK-2-0255 L&R
OVER EAST 337th STREET

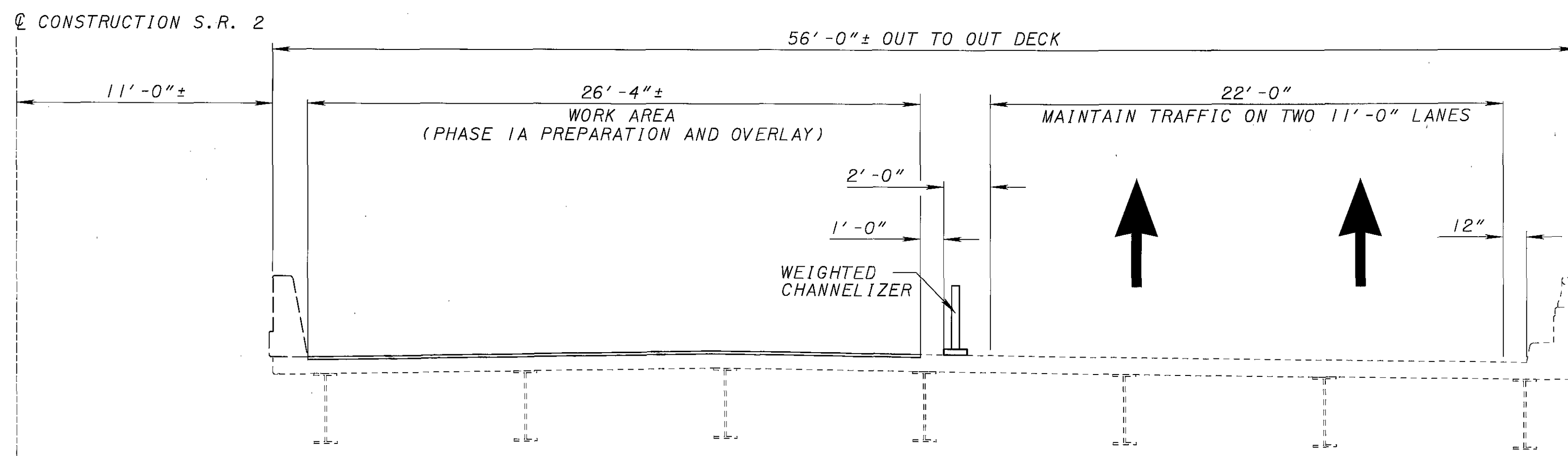
LAK-2-0.00

4/19

495
524



PHASE I
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 (RIGHT BRIDGE SHOWN, LEFT SIMILAR)



PHASE IA
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 (RIGHT BRIDGE SHOWN, LEFT SIMILAR)

...\\k002p.cpl.dgn

DESIGN AGENCY
BURGESS & NIPLE
 100 WEST ERIE STREET
 PAINESVILLE, OHIO 44077

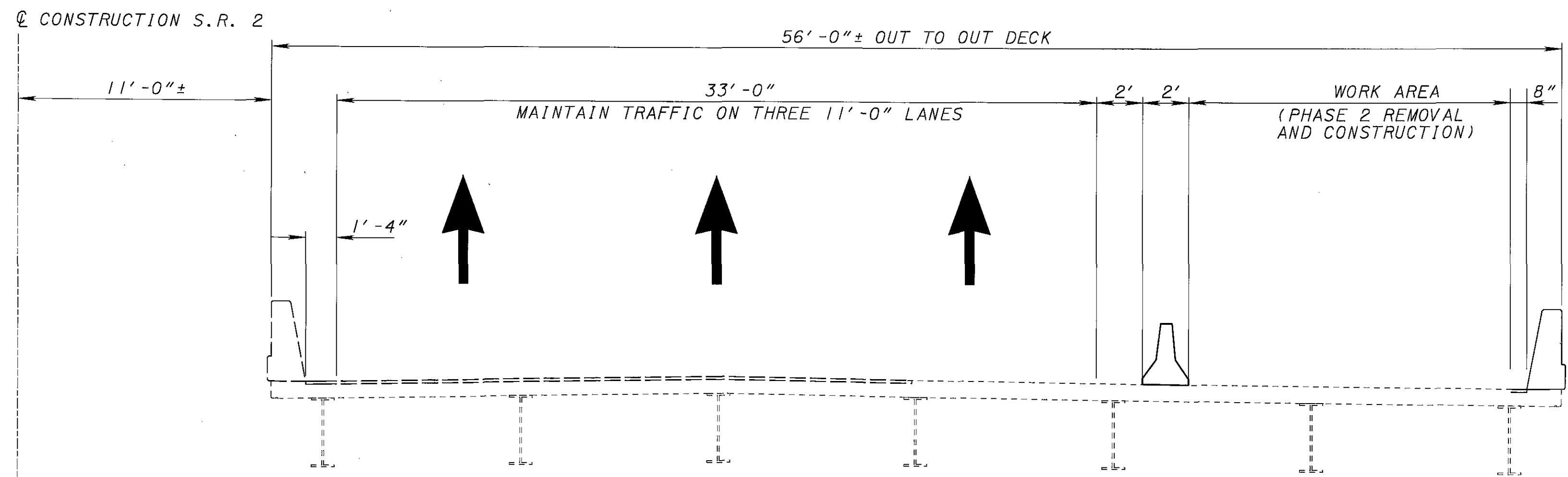
DESIGNED	EJM	CHECKED	JAA
DRAWN	ASK	REVISED	
REVIEWED	DWL	DATE	07-19-05
STRUCTURE FILE NUMBER	4300300 (L)	4300335 (R)	

STAGE CONSTRUCTION DETAILS 1 OF 2
 BRIDGE NO. LAK-2-0255 L&R
 OVER EAST 337th STREET

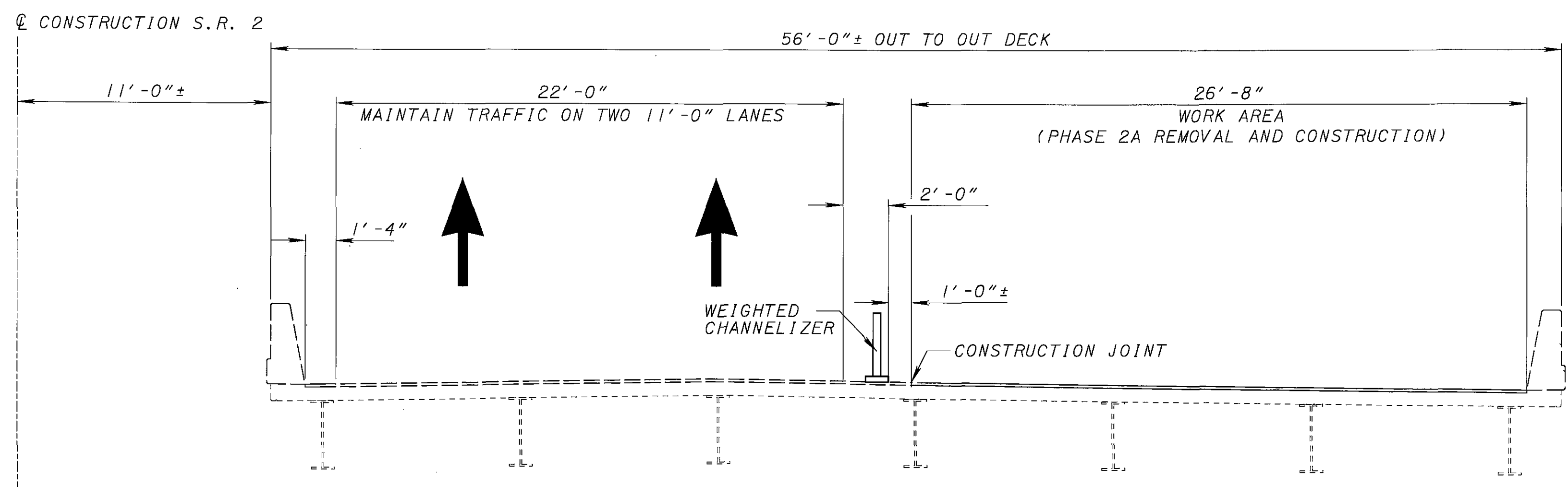
LAK-2-0.00

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496
 524

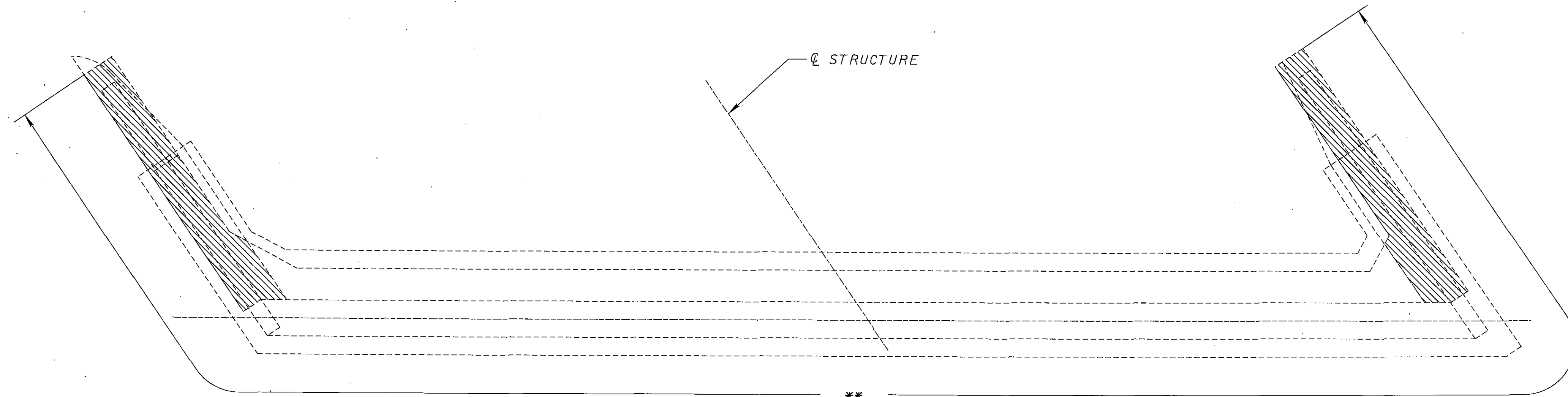


PHASE 2
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 (RIGHT BRIDGE SHOWN, LEFT SIMILAR)

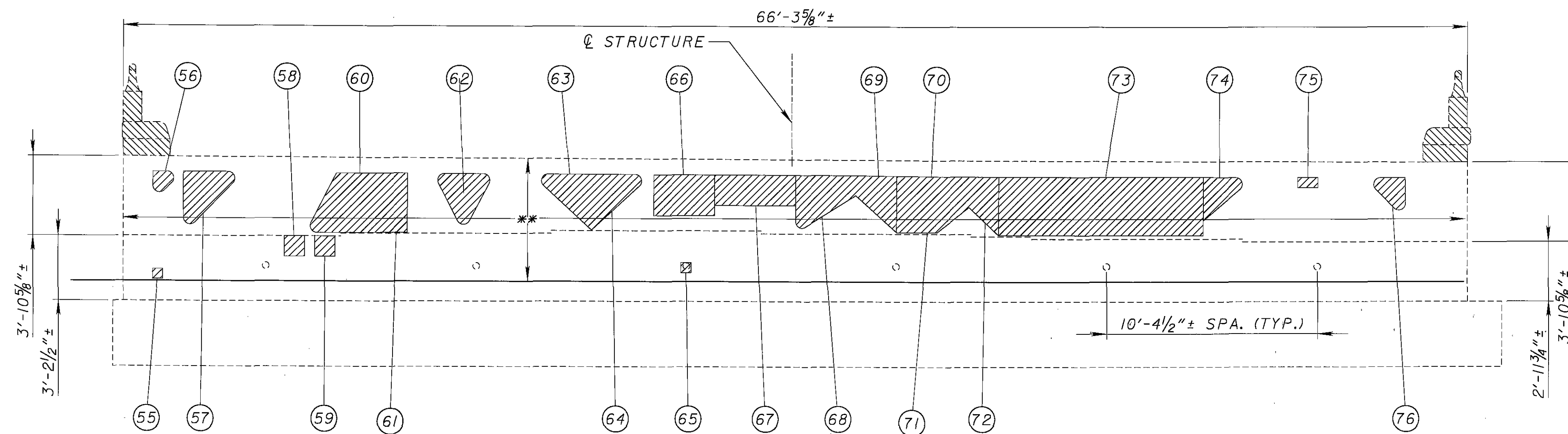


PHASE 2A
 MAINTENANCE OF TRAFFIC AND CONSTRUCTION
 (RIGHT BRIDGE SHOWN, LEFT SIMILAR)

DESIGNED	EJM	CHECKED	JAA
DRAWN	ASK	REVIEWED	
REVIEWED	DWL	STRUCTURE FILE NUMBER	4300300 (L) 4300335 (R)
DATE	07-19-05		



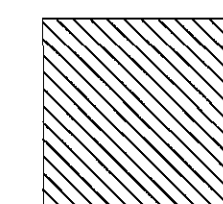
REAR ABUTMENT LEFT BRIDGE - PLAN



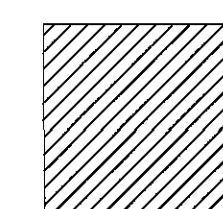
REAR ABUTMENT LEFT BRIDGE - ELEVATION

AREA NO.	DIMENSIONS	AREA (SQ. FT.)
55	0'-6" x 0'-6"	0.25
56	1'-6" x 1'-4" x .5	1.00
57	3'-0" x 3'-0" x .5	4.50
58	1'-0" x 1'-0"	1.00
59	1'-0" x 1'-0"	1.00
60	3'-3" x 3'-0"	9.75
61	1'-0" x 3'-0"	3.00
62	3'-0" x 3'-0" x .5	4.50
63	3'-0" x 3'-0" x .5	4.50
64	3'-0" x 3'-0" x .5	4.50
65	0'-6" x 0'-6"	0.25
66	2'-0" x 3'-0"	6.00
67	1'-6" x 4'-0"	6.00
68	2'-0" x 3'-0"	6.00
69	2'-0" x 2'-0"	4.00
70	3'-6" x 1'-6"	5.25
71	2'-8" x 1'-6"	4.00
72	2'-4" x 1'-6"	3.50
73	3'-0" x 10'-0"	30.00
74	2'-4" x 2'-4" x .5	2.75
75	0'-6" x 1'-0"	.50
76	2'-0" x 2'-0" x .5	2.00
TOTAL:		104.25
(MULTIPLIER) X2		209

LEGEND:



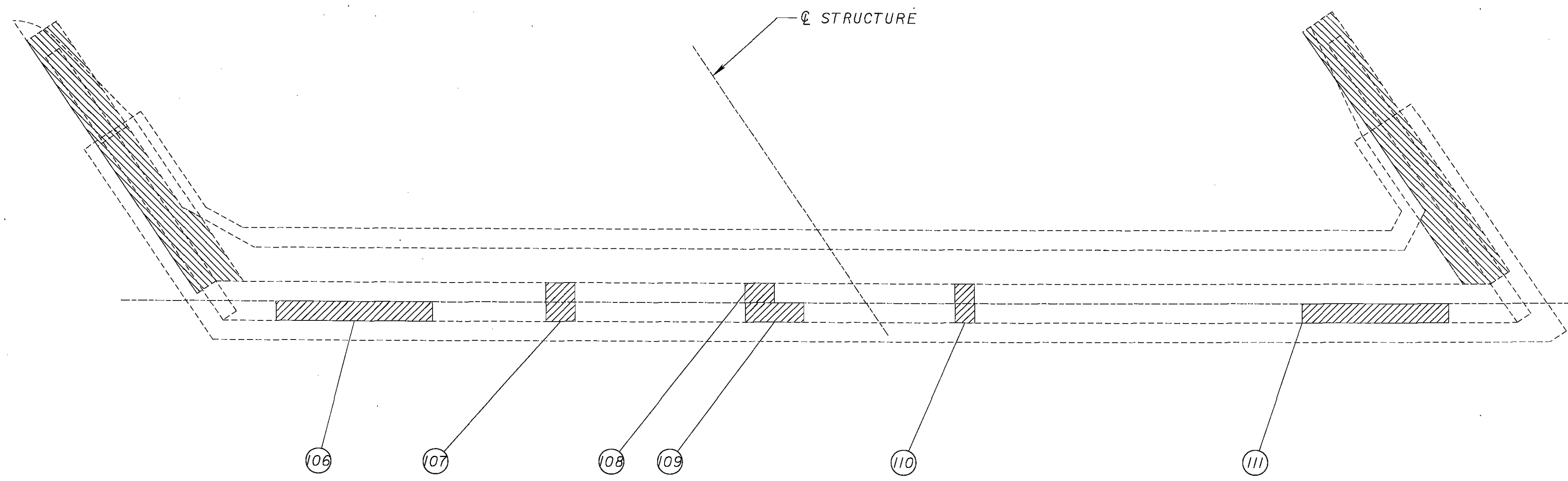
AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



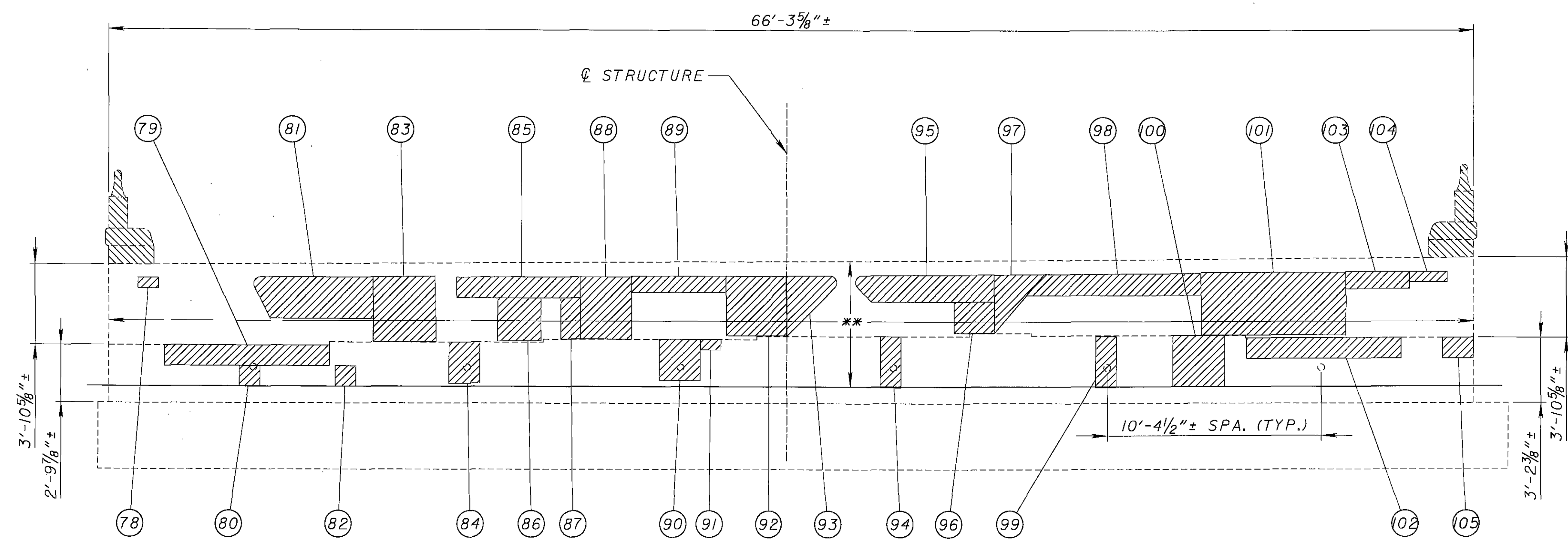
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

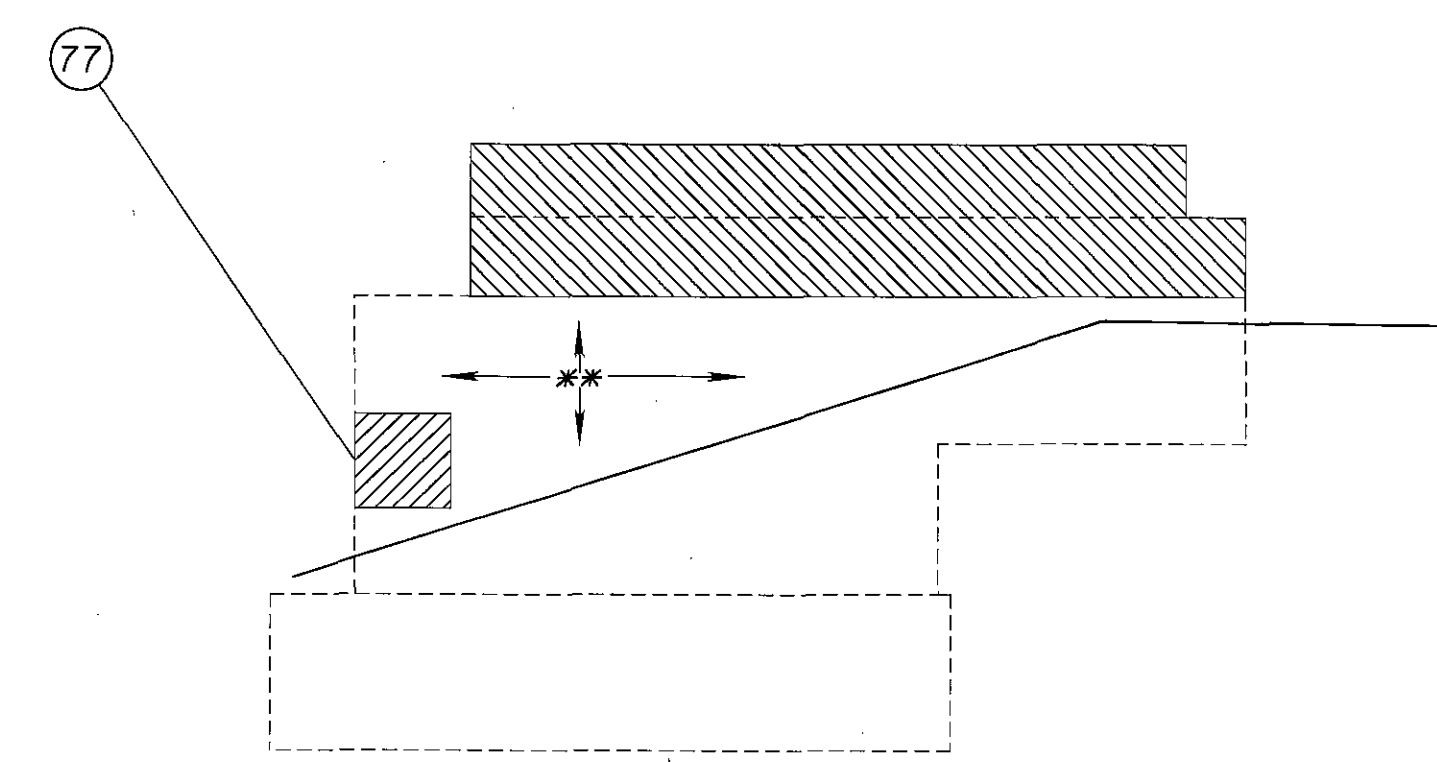
SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



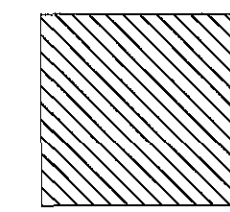
FORWARD ABUTMENT LEFT BRIDGE - PLAN



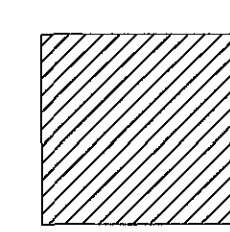
FORWARD ABUTMENT LEFT BRIDGE - ELEVATION



LEGEND:



AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

AREA NO.	DIMENSIONS	AREA (SQ. FT.)
77	2'-0" x 2'-0"	4.00
78	0'-6" x 1'-0"	0.50
79	8'-0" x 1'-0"	8.00
80	1'-0" x 1'-0"	1.00
81	5'-6" x 2'-0"	11.00
82	1'-0" x 1'-0"	1.00
83	3'-0" x 3'-0"	9.00
84	1'-6" x 2'-0"	3.00
85	6'-0" x 1'-0"	6.00
86	4'-0" x 2'-0"	8.00
87	3'-0" x 1'-0"	3.00
88	2'-6" x 3'-0"	7.50
89	1'-0" x 5'-0"	5.00
90	2'-0" x 2'-0"	4.00
91	1'-0" x 0'-6"	0.50
92	3'-0" x 3'-0"	9.00
93	3'-0" x 3'-0" x .5	4.50
94	1'-0" x 2'-6"	2.50
95	1'-6" x 6'-6"	9.75
96	1'-6" x 2'-0"	3.00
97	3'-0" x 3'-0" x .5	4.50
98	1'-6" x 7'-4"	11.00
99	1'-0" x 2'-6"	2.50
100	2'-6" x 2'-6"	6.25
101	7'-0" x 3'-0"	21.00
102	7'-6" x 1'-0"	7.50
103	1'-0" x 3'-0"	3.00
104	1'-0" x 1'-6"	1.50
105	1'-6" x 1'-0"	1.50
106	8'-0" x 1'-0"	8.00
107	1'-6" x 2'-0"	3.00
108	1'-6" x 1'-0"	1.50
109	3'-0" x 1'-0"	3.00
110	1'-0" x 2'-0"	2.00
111	7'-6" x 1'-0"	7.50
TOTAL:		184.00
(MULTIPLIER) X2		368

SUBSTRUCTURE REPAIR DETAIL 2 OF 6

BRIDGE NO. LAK-2-0255 I&R
OVER EAST 337th STREET

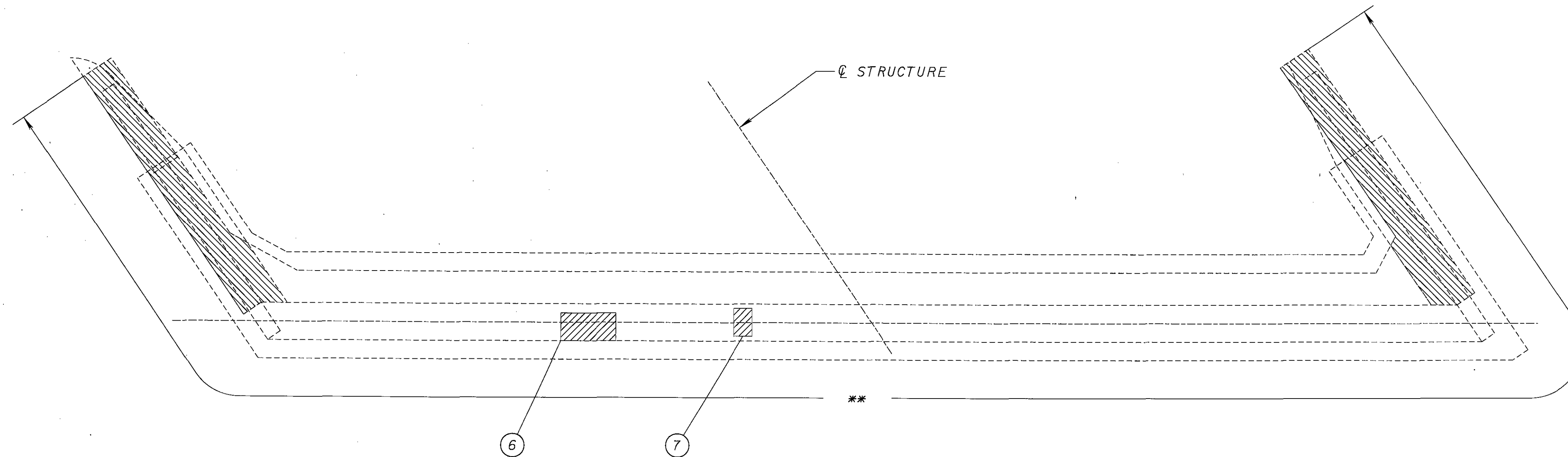
LAK-2-0.00

8 / 19

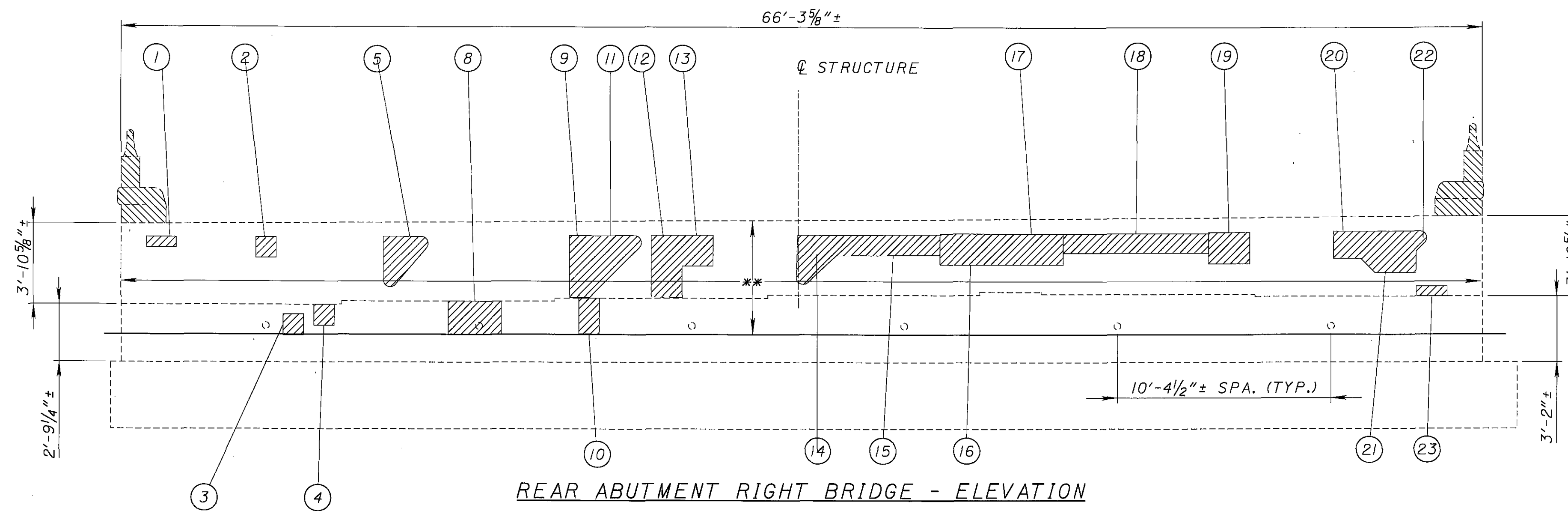
499
524

DESIGN AGENCY
BURGESS & NIPLÉ
100 WEST ERIE STREET PANAMA, OHIO 44071

DATE 7-19-05
REVIEWED DWL
DRAWN RSC/DCF
DESIGNED RSC/DCF
CHECKED SCT/JAA
STRUCTURE FILE NUMBER 4300300 (L)
4300335 (R)

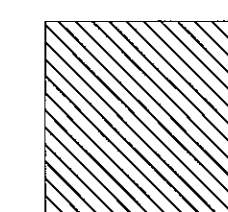


REAR ABUTMENT RIGHT BRIDGE - PLAN

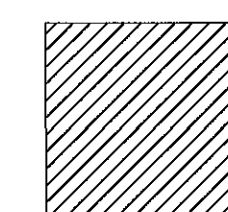


REAR ABUTMENT RIGHT BRIDGE - ELEVATION

LEGEND:



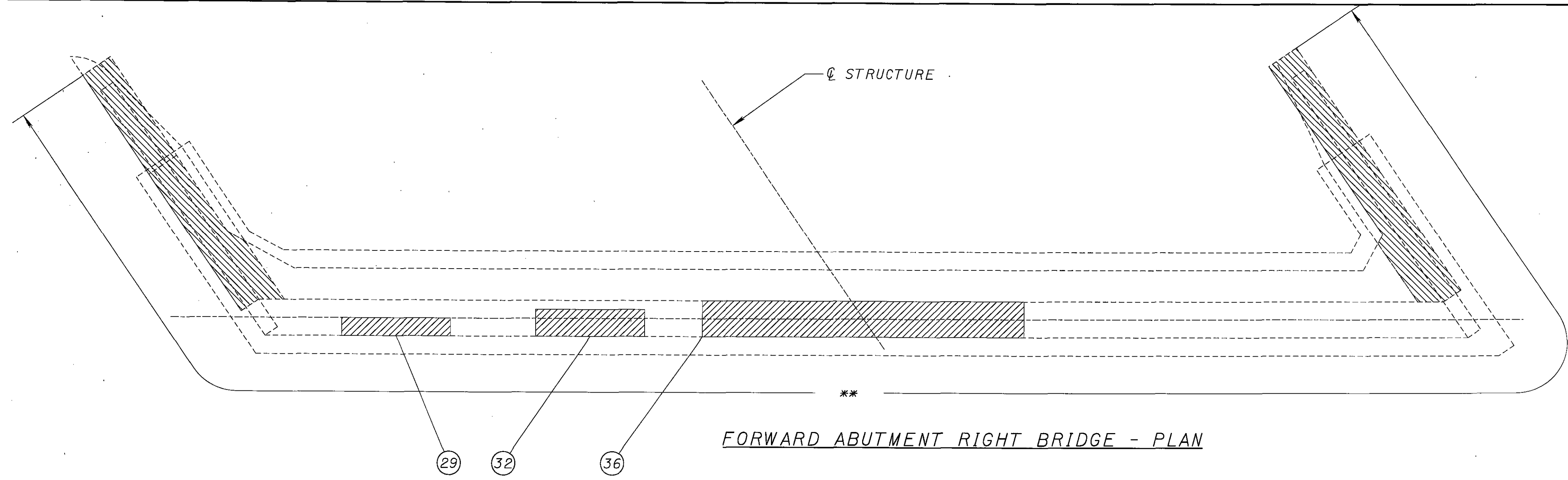
AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



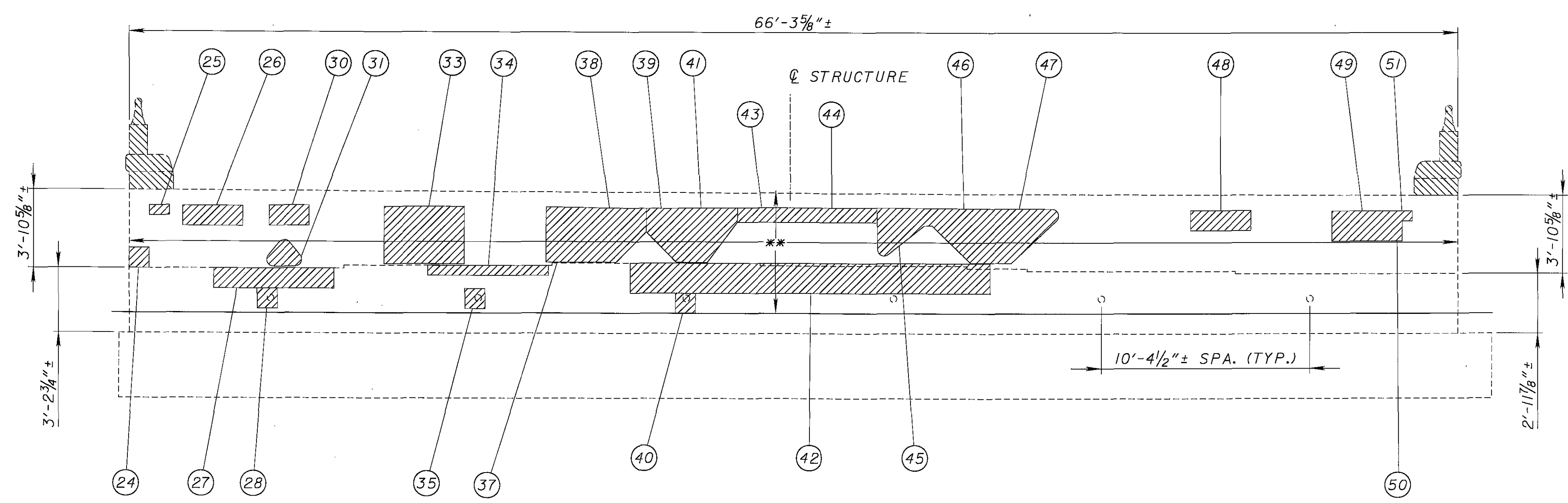
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

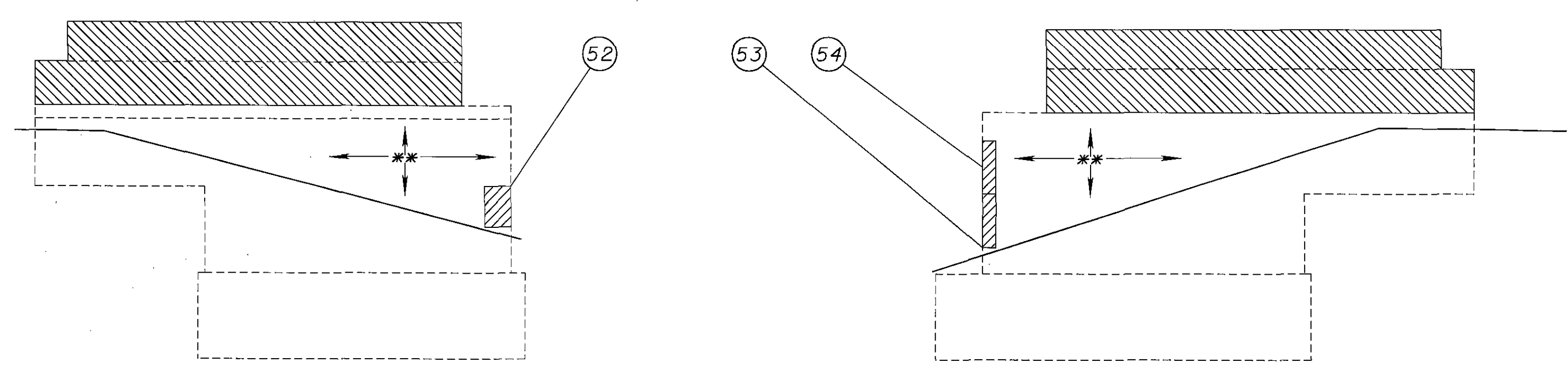
REAR ABUTMENT-RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	0'-8" x 1'-6"	1.00
2	1'-0" x 1'-0"	1.00
3	1'-0" x 1'-0"	1.00
4	1'-0" x 1'-0"	1.00
5	3'-0" x 3'-0" x .5	4.50
6	3'-0" x 1'-6"	4.50
7	1'-0" x 1'-6"	1.50
8	2'-6" x 1'-0"	2.50
9	1'-0" x 3'-0"	3.00
10	1'-0" x 1'-6"	1.50
11	3'-0" x 3'-0" x .5	4.50
12	1'-6" x 3'-0"	4.50
13	1'-6" x 1'-6"	2.25
14	3'-0" x 3'-0" x .5	4.50
15	1'-0" x 4'-0"	4.0
16	1'-6" x 3'-0"	4.50
17	1'-6" x 3'-0"	4.50
18	1'-0" x 7'-0"	7.0
19	1'-6" x 2'-0"	3.00
20	1'-6" x 1'-6"	2.25
21	2'-6" x 2'-0"	5.0
22	1'-0" x 1'-0" x .5	.50
23	0'-8" x 1'-6"	1.00
TOTAL:		69.00
(MULTIPLIER) X2		138



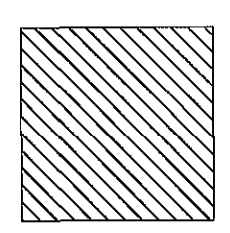
FORWARD ABUTMENT RIGHT BRIDGE - PLAN



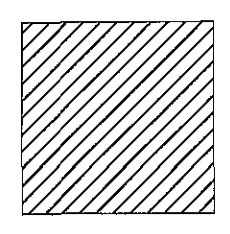
FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION



LEGEND:



AREAS TO BE REMOVED PER ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN



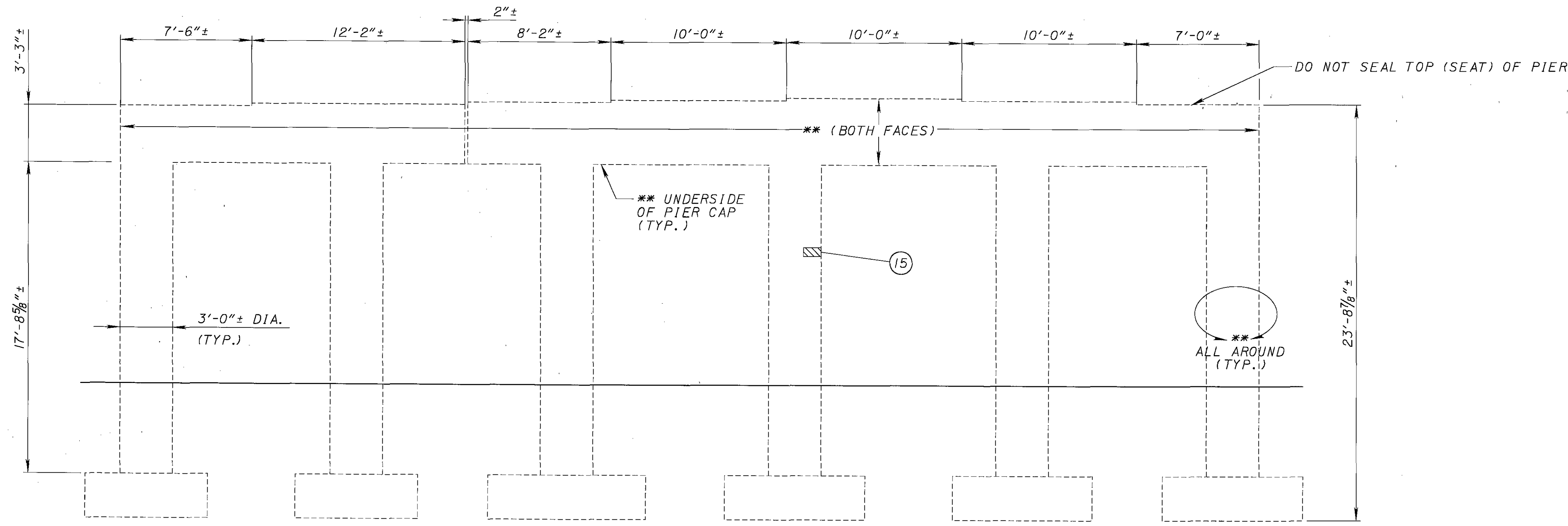
AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

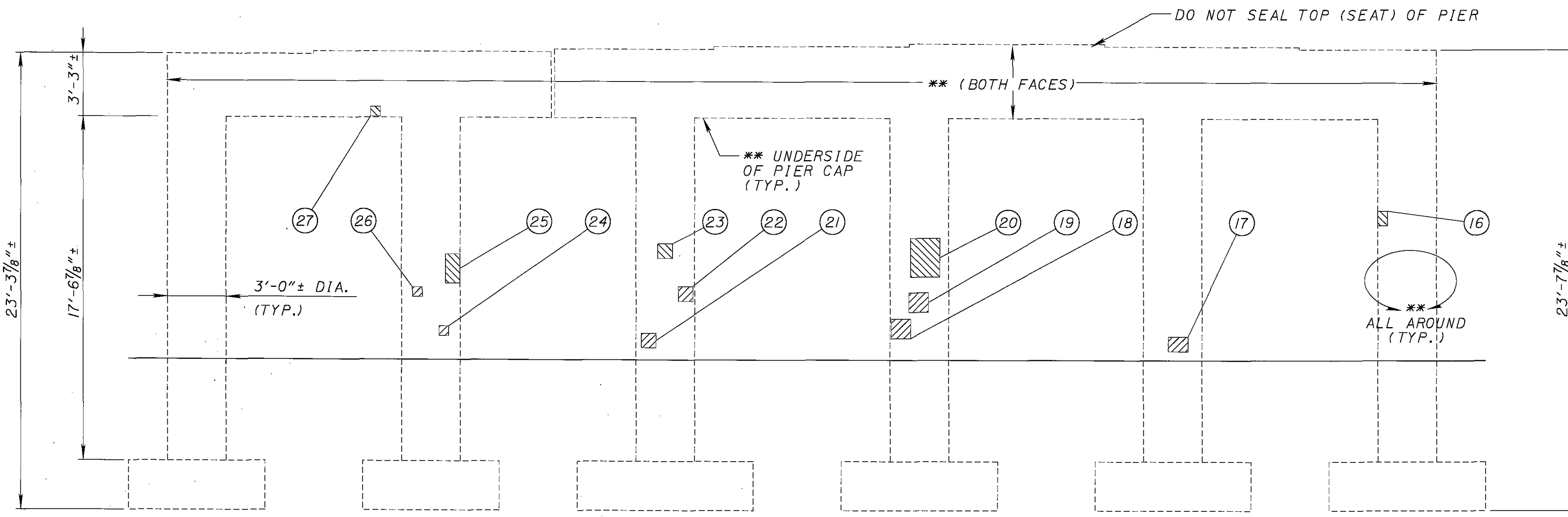
FORWARD ABUTMENT-RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
24	1'-0" x 1'-0"	1.00
25	0'-6" x 1'-0"	0.50
26	3'-0" x 1'-0"	3.00
27	6'-0" x 1'-0"	6.00
28	1'-0" x 1'-0"	1.00
29	6'-0" x 1'-0"	6.00
30	2'-0" x 1'-0"	2.00
31	2'-6" x 1'-8" x .5	2.00
32	6'-0" x 1'-6"	9.00
33	4'-0" x 3'-0"	12.00
34	6'-0" x 0'-6"	3.00
35	1'-0" x 1'-0"	1.00
36	7'-6" x 2'-0"	15.00
37	2'-0" x 3'-0"	6.00
38	2'-3" x 3'-0"	6.75
39	2'-4" x 1'-6"	3.50
40	1'-0" x 1'-0"	1.00
41	2'-8" x 3'-0"	8.00
42	18'-0" x 1'-6"	27.00
43	2'-9" x 0'-9"	2.00
44	4'-6" x 0'-8"	3.00
45	2'-8" x 3'-0" x .5	4.00
46	3'-4" x 3'-4" x .5	5.50
47	2'-6" x 3'-0"	7.50
48	3'-0" x 1'-0"	3.00
49	3'-0" x 1'-6"	4.50
50	0'-6" x 1'-0"	0.50
51	0'-6" x 1'-0"	0.50
52	1'-0" x 1'-6"	1.50
53	0'-6" x 2'-0"	1.00
54	0'-6" x 2'-0"	1.00
TOTAL:		147.75
(MULTIPLIER)		X2
		296

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PIER 1 LEFT BRIDGE
 LOOKING UP STATION

PIER 1 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
15	1'-0" x 0'-6"	0.50
TOTAL:		0.50
(MULTIPLIER) X2		1

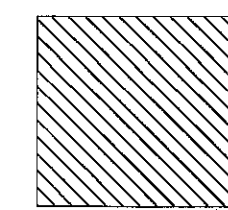


PIER 2 LEFT BRIDGE
 LOOKING UP STATION

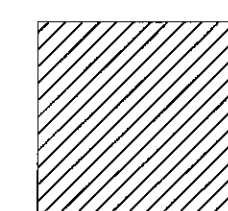
PIER 2 - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
16	0'-6" x 0'-9"	0.38
17	1'-0" x 0'-9"	0.75
18	1'-0" x 1'-0"	1.00
19	1'-0" x 1'-0"	1.00
20	1'-6" x 2'-0"	3.00
21	0'-9" x 0'-9"	0.56
22	0'-9" x 0'-9"	0.56
23	0'-9" x 0'-9"	0.56
24	0'-6" x 0'-6"	0.25
25	0'-9" x 1'-6"	1.13
26	0'-6" x 0'-6"	0.25
27	0'-6" x 0'-6"	0.25
TOTAL:		9.69
(MULTIPLIER) X2		20

LEGEND:

DIA. - DIAMETER



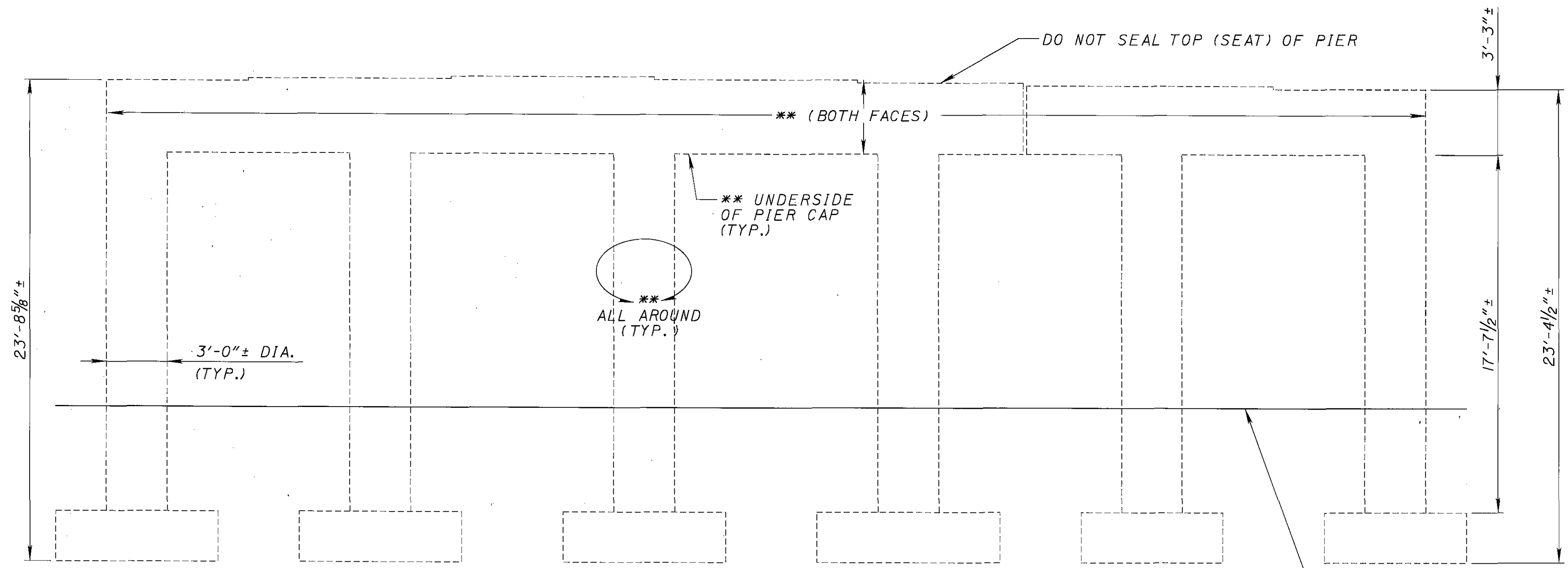
AREAS TO BE PATCHED PER ITEM 519 -
 PATCHING CONCRETE STRUCTURES,
 AS PER PLAN (THIS SIDE)



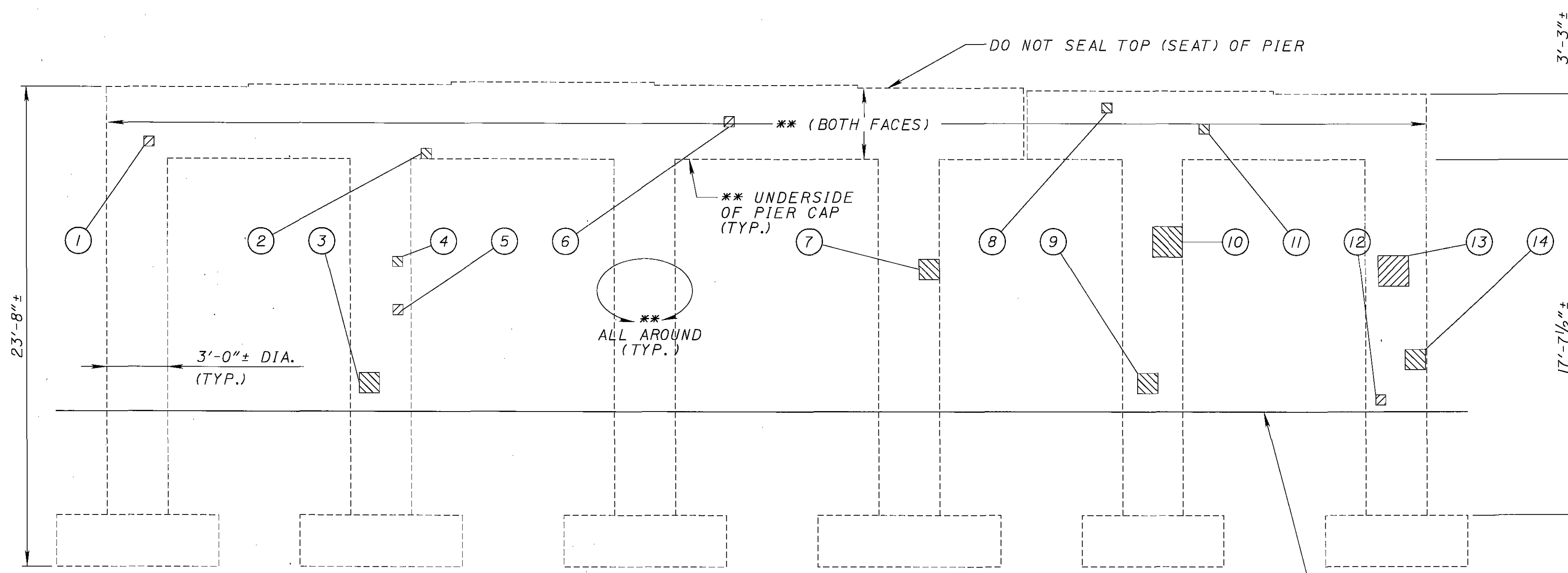
AREAS TO BE PATCHED PER ITEM 519 -
 PATCHING CONCRETE STRUCTURES,
 AS PER PLAN (OPPOSITE SIDE)

**

SEAL CONCRETE SURFACES WITH ITEM 512 -
 SEALING OF CONCRETE SURFACES
 (EPOXY-URETHANE)



PIER 1 RIGHT BRIDGE
LOOKING UP STATION

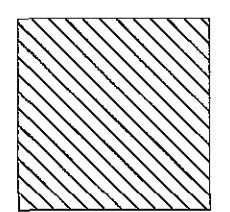


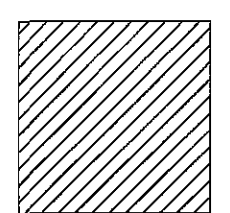
PIER 2 RIGHT BRIDGE
LOOKING UP STATION

PIER 2 - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	0'-6" x 0'-6"	0.25
2	0'-6" x 0'-6"	0.25
3	1'-0" x 1'-0"	1.00
4	0'-6" x 0'-6"	0.25
5	0'-6" x 0'-6"	0.25
6	0'-6" x 0'-6"	0.25
7	1'-0" x 1'-0"	1.00
8	0'-6" x 0'-6"	0.25
9	1'-0" x 1'-0"	1.00
10	1'-6" x 1'-6"	2.25
11	0'-6" x 0'-6"	0.25
12	0'-6" x 0'-6"	0.25
13	1'-6" x 1'-6"	2.25
14	1'-0" x 1'-0"	1.00
TOTAL:		10.50
(MULTIPLIER) X2		21

NOTE:
NO AREAS TO BE REPAIRED ON PIER 1 OF THE RIGHT BRIDGE.

LEGEND:
DIA. - DIAMETER

 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (THIS SIDE)

 AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (OPPOSITE SIDE)

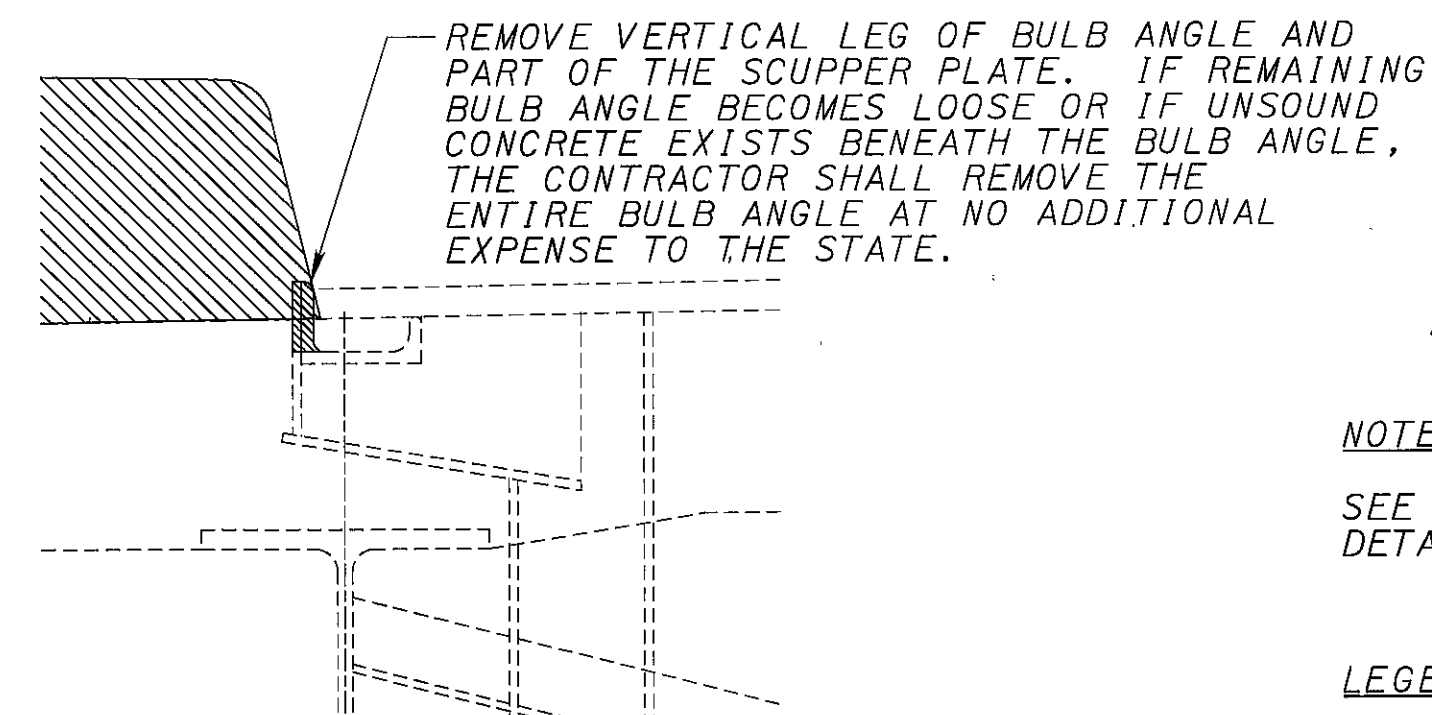
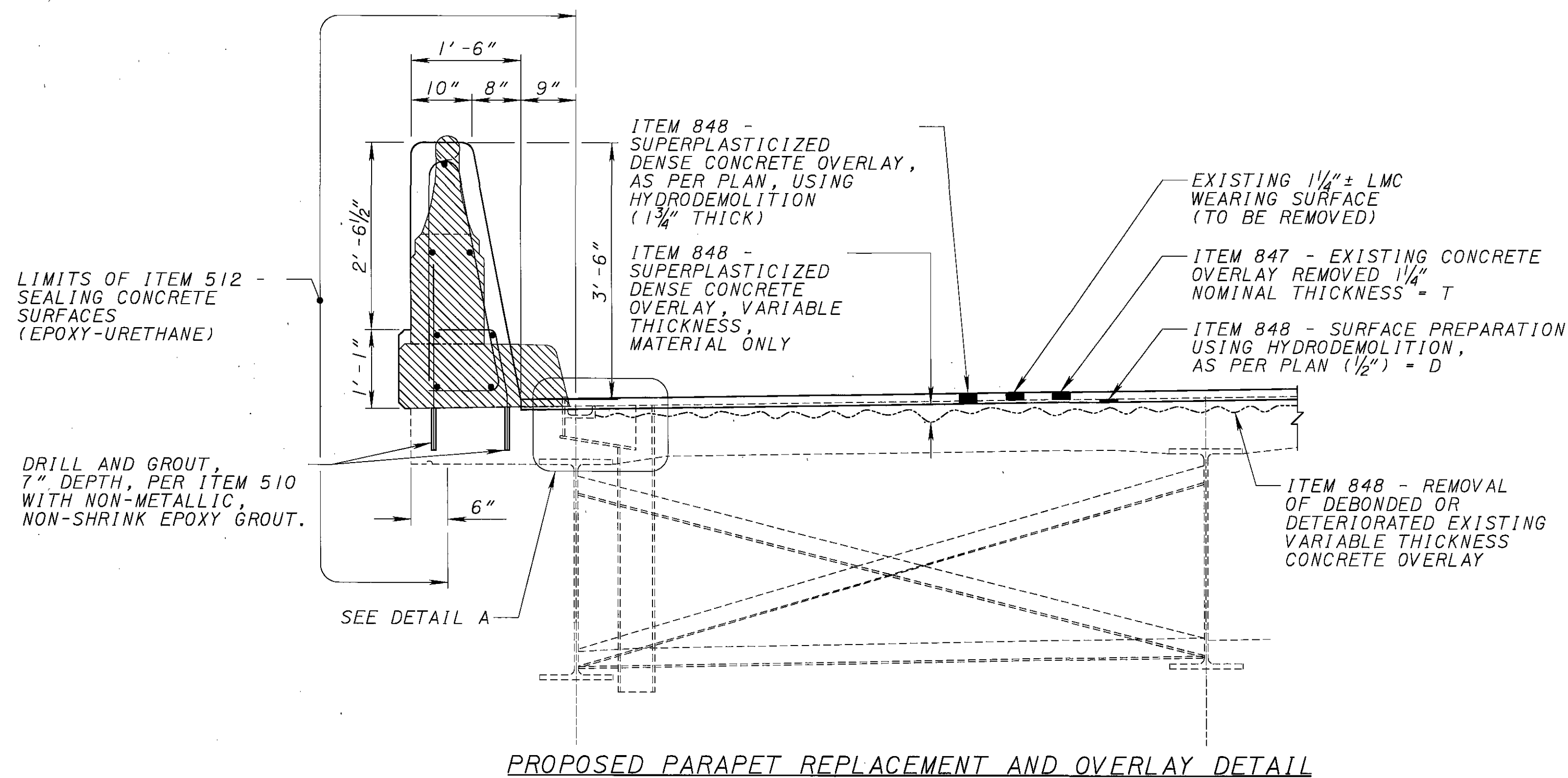
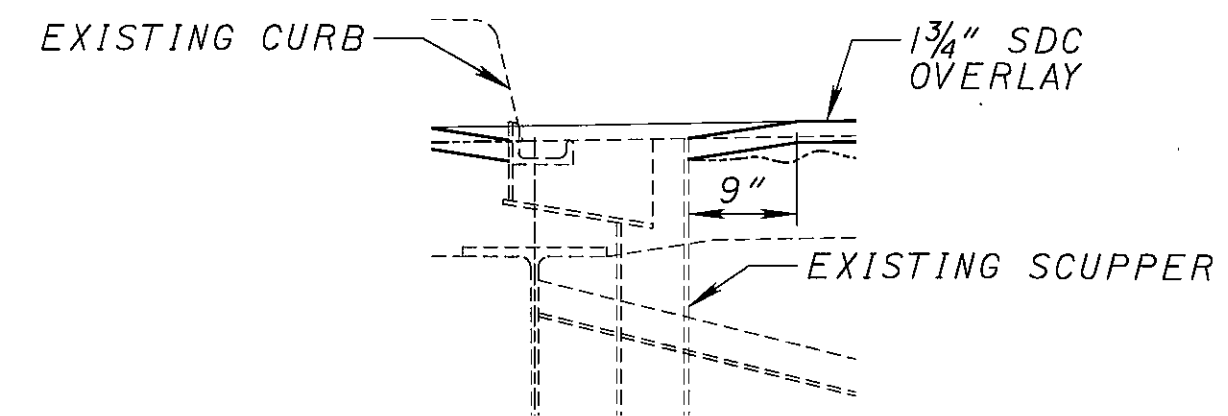
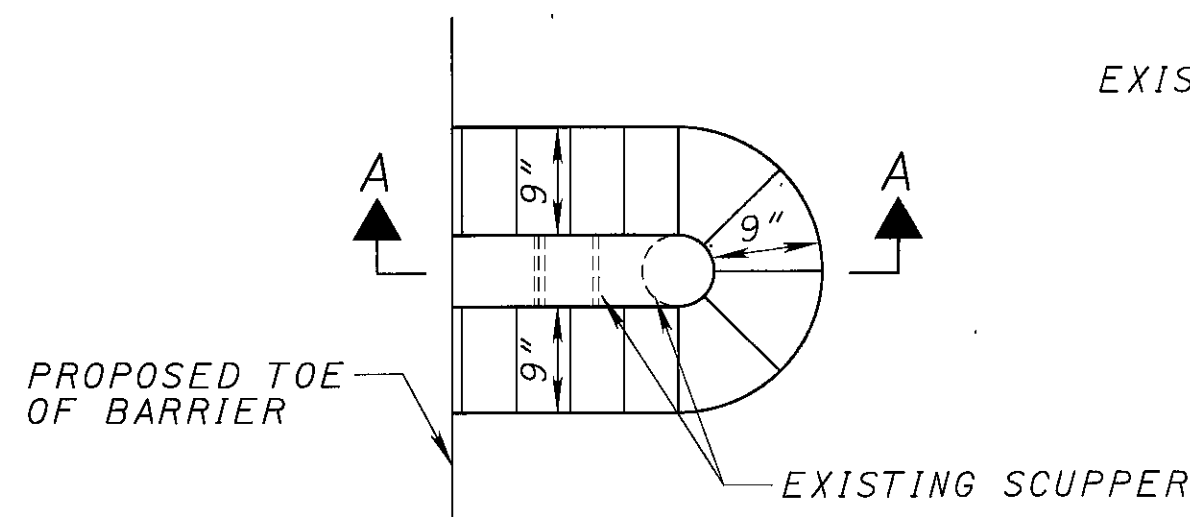
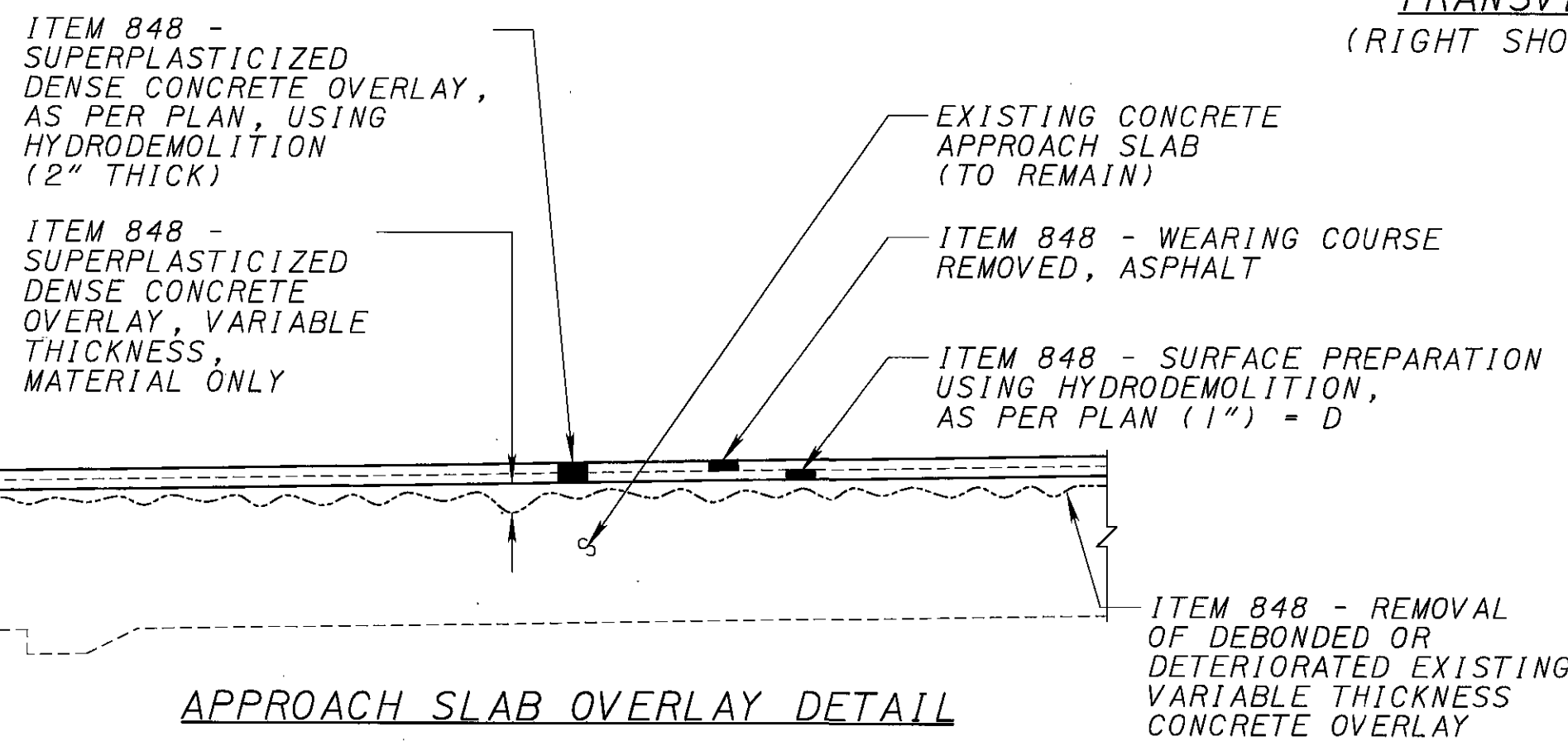
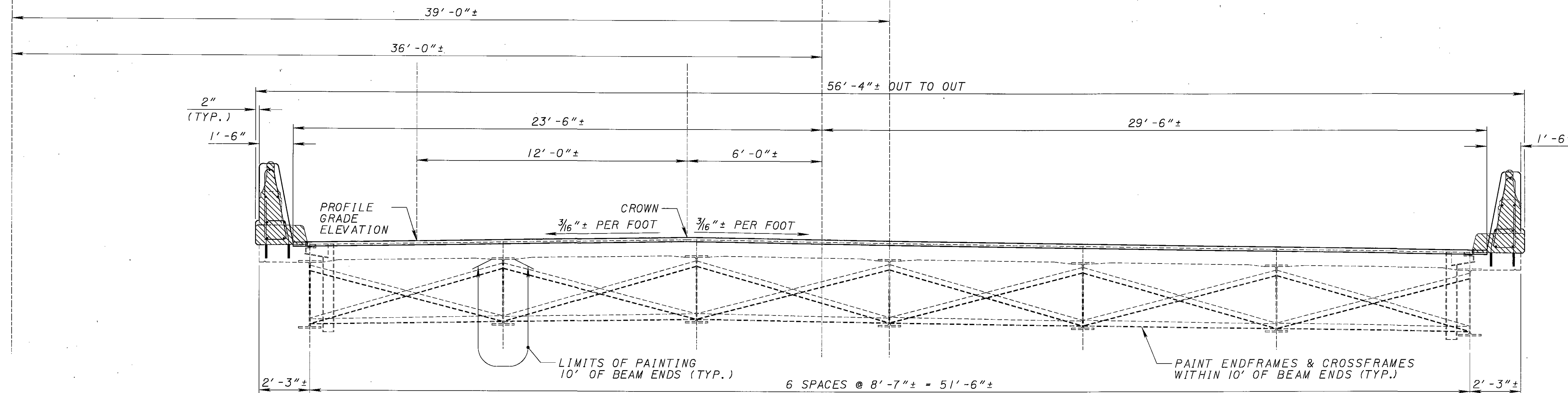
** SEAL CONCRETE SURFACES WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

SUBSTRUCTURE REPAIR DETAIL 6 OF 6
BRIDGE NO. LAK-2-0255 L&R
OVER EAST 337TH STREET

LAK-2-0.00

12/19

503
524



NOTES:
SEE SHEET 16/19 FOR PARAPET REINFORCING DETAILS.

LEGEND:
ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

TRANSVERSE SECTION
BRIDGE NO. LAK-2-0255 L&R
OVER EAST 337TH STREET

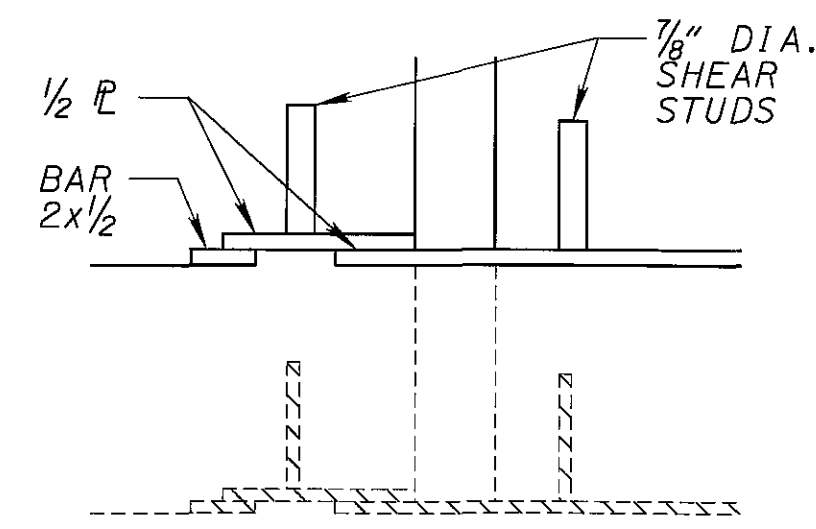
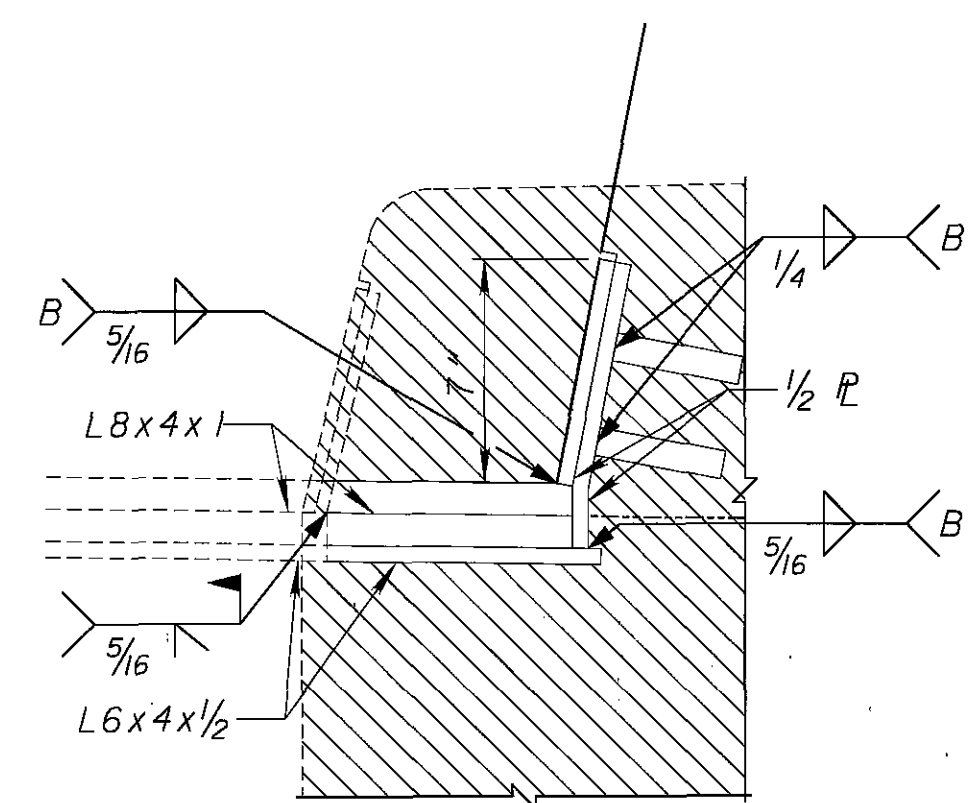
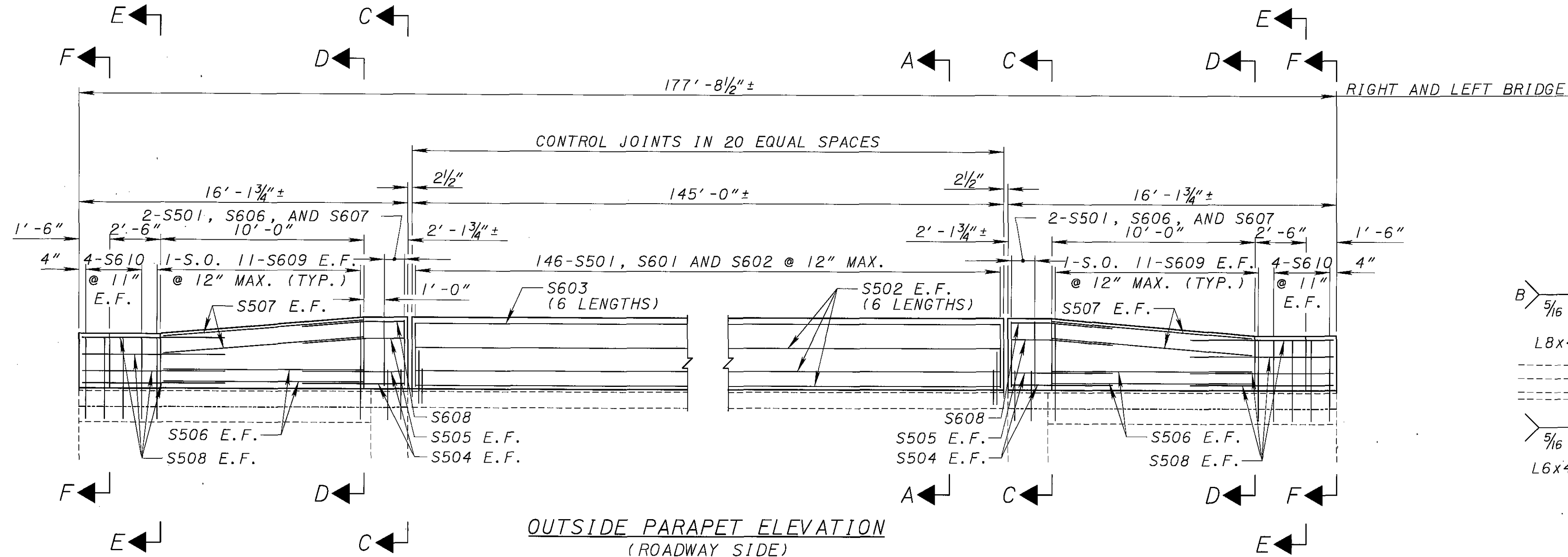
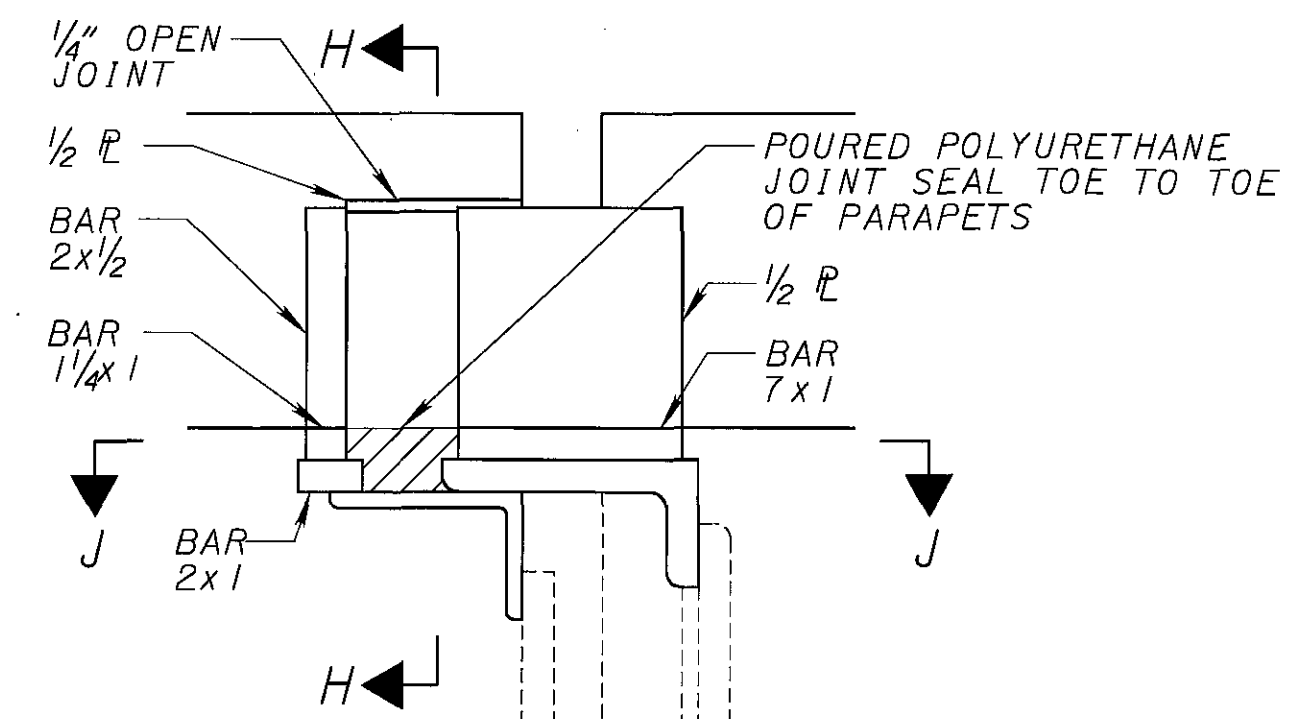
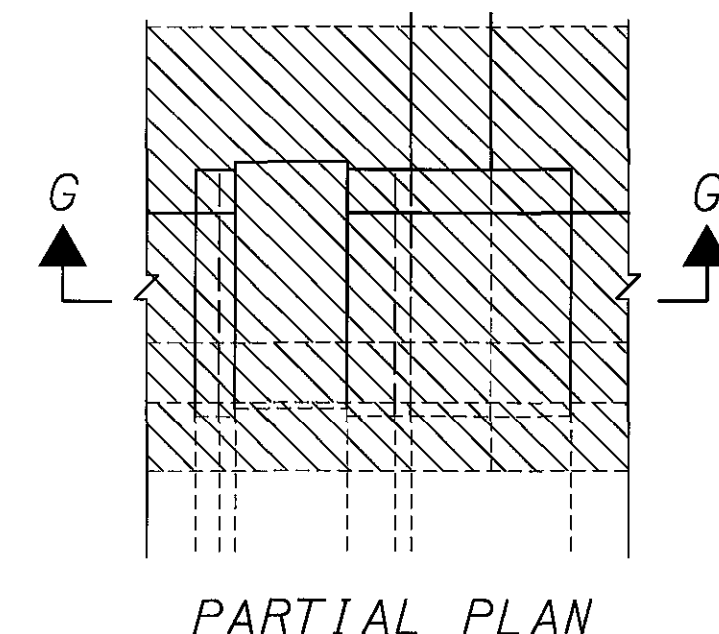
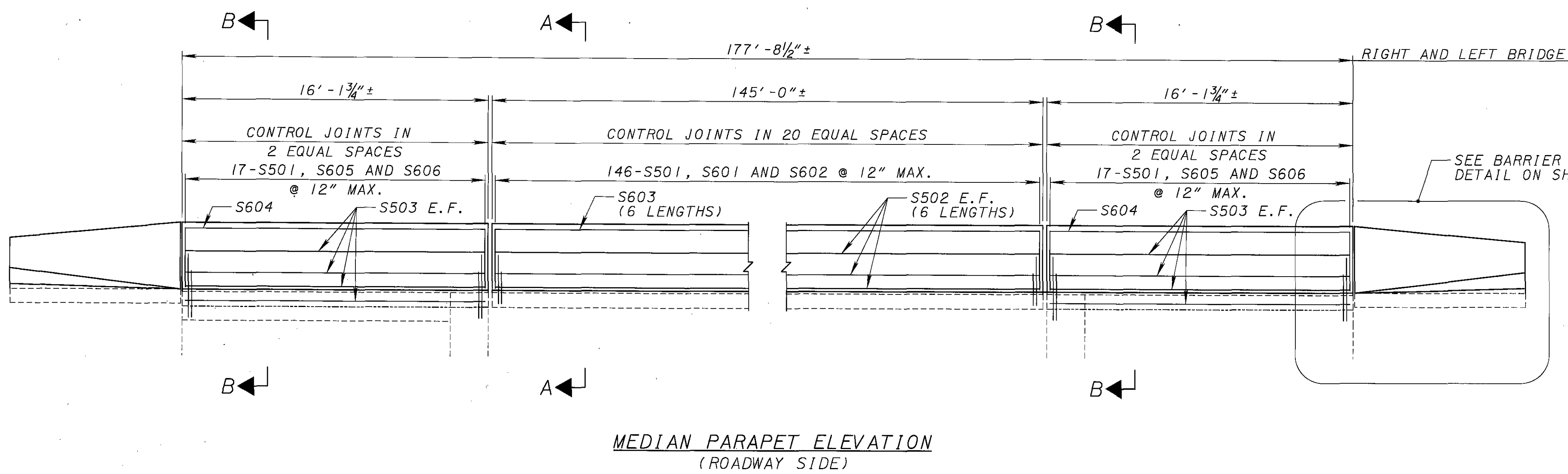
LAK-2-0.00

13/19

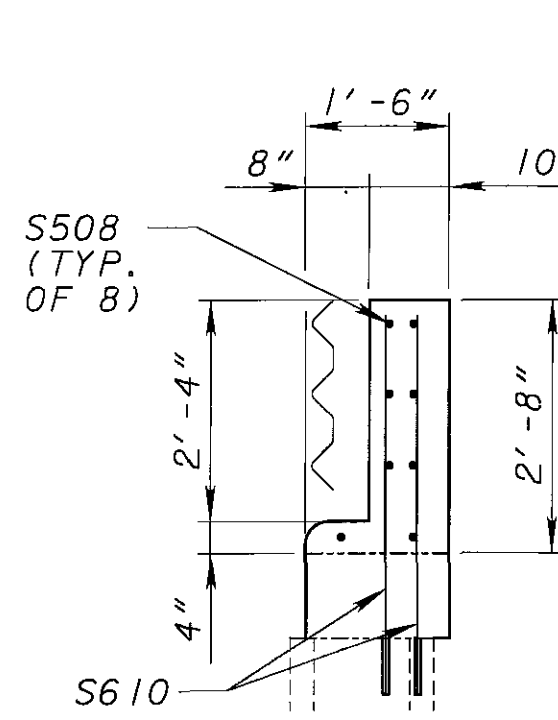
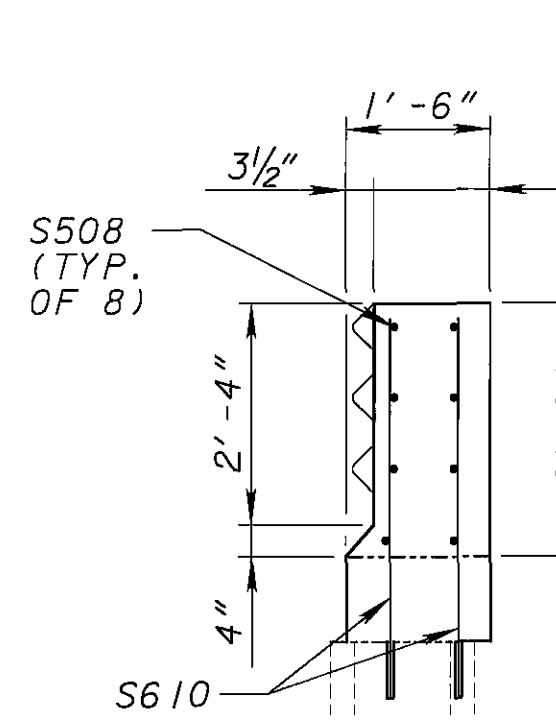
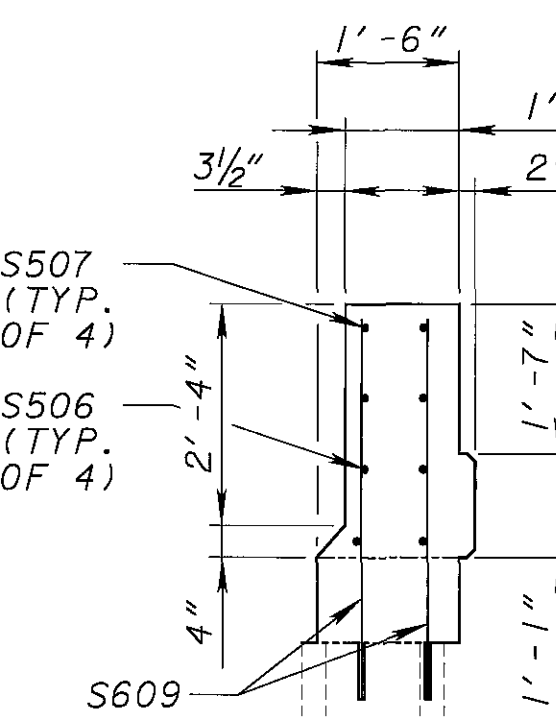
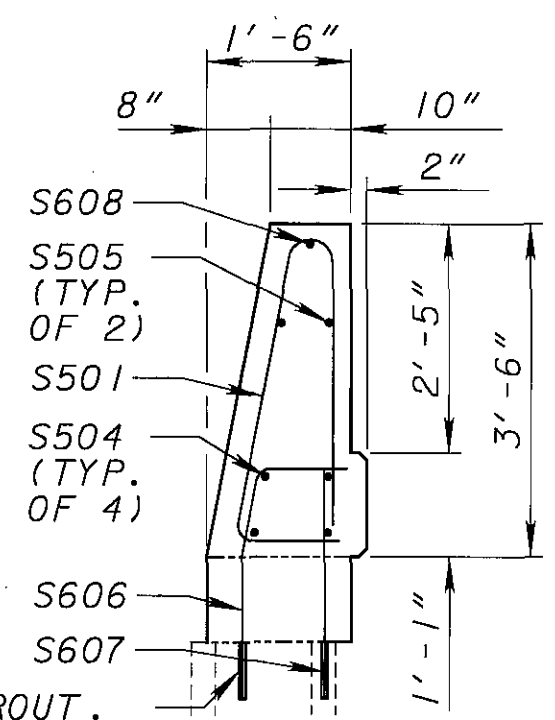
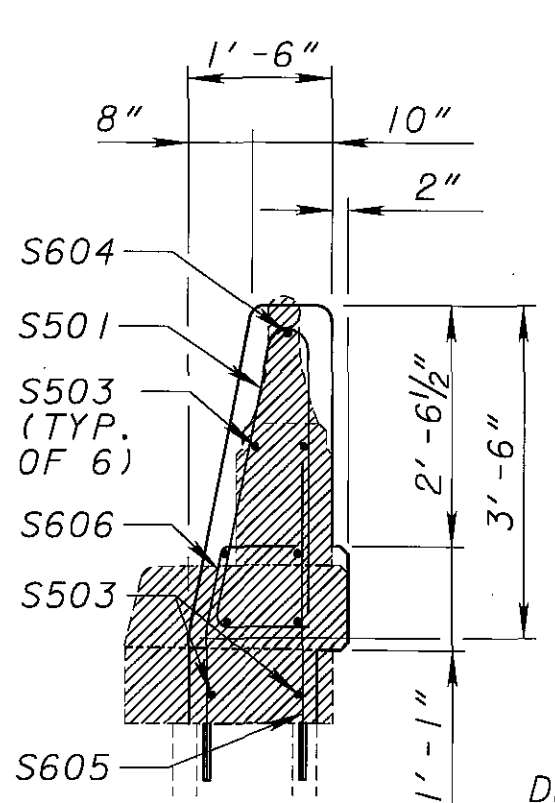
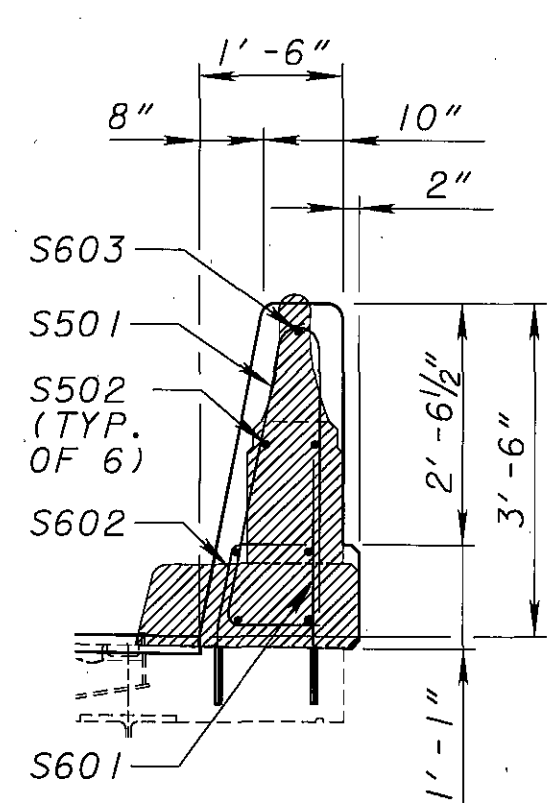
504
524

DESIGN AGENCY
BURGESS & NIPLE
100 WEST EIRE STREET PAINESVILLE, OHIO 44077

DATE 07-19-05
REVIEWED DWL
STRUCTURE FILE NUMBER 4300300 (L) 4300335 (R)
DRAWN ASK
CHECKED JAA



ITEM 516 - HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN

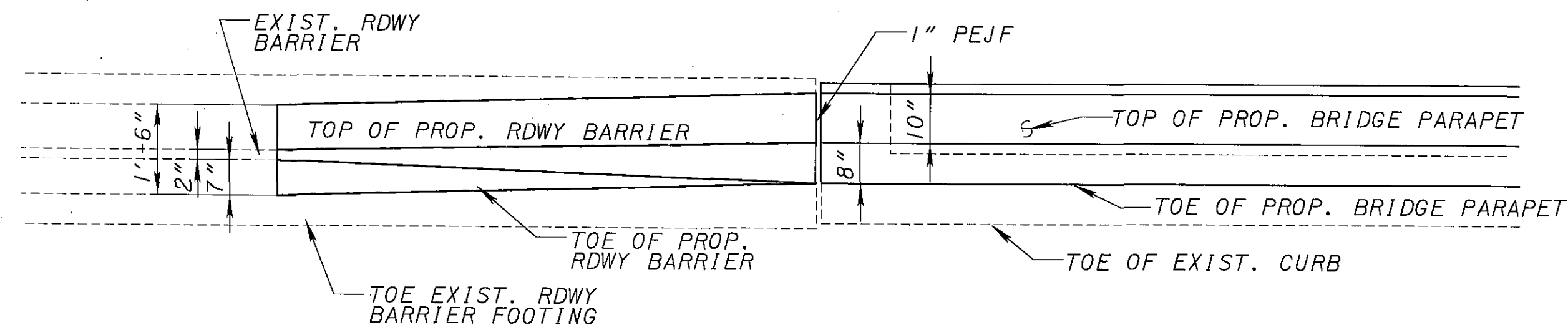


DRILL AND GROUT, 7" DEPTH, PER ITEM 510 - WITH NON-METALLIC, NON-SHRINK EPOXY GROUT (TYP.)

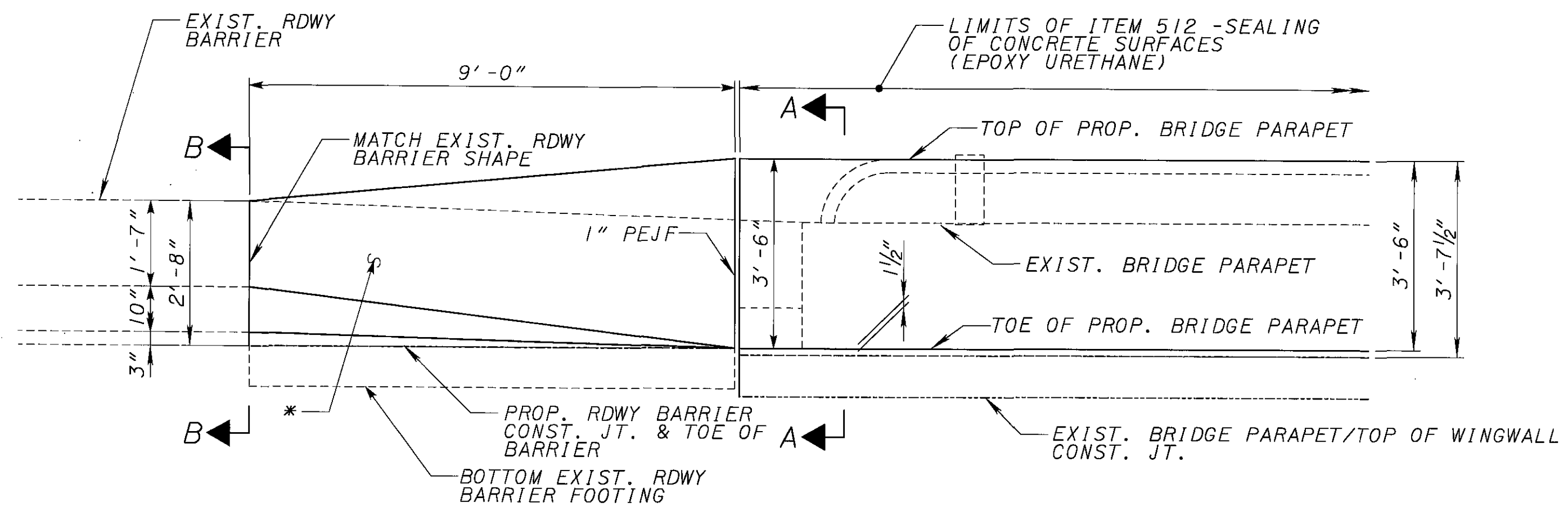
NOTES:
SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS.
SEE MEDIAN BARRIER TRANSITION DETAILS ON SHEET 17/19.
LAP REINFORCING STEEL THE FOLLOWING MINIMUM LENGTHS:
NO. 5 = 2'-11"
NO. 6 = 3'-4"

LEGEND
E.F. = EACH FACE
MAX. = MAXIMUM
TYP. = TYPICAL
ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

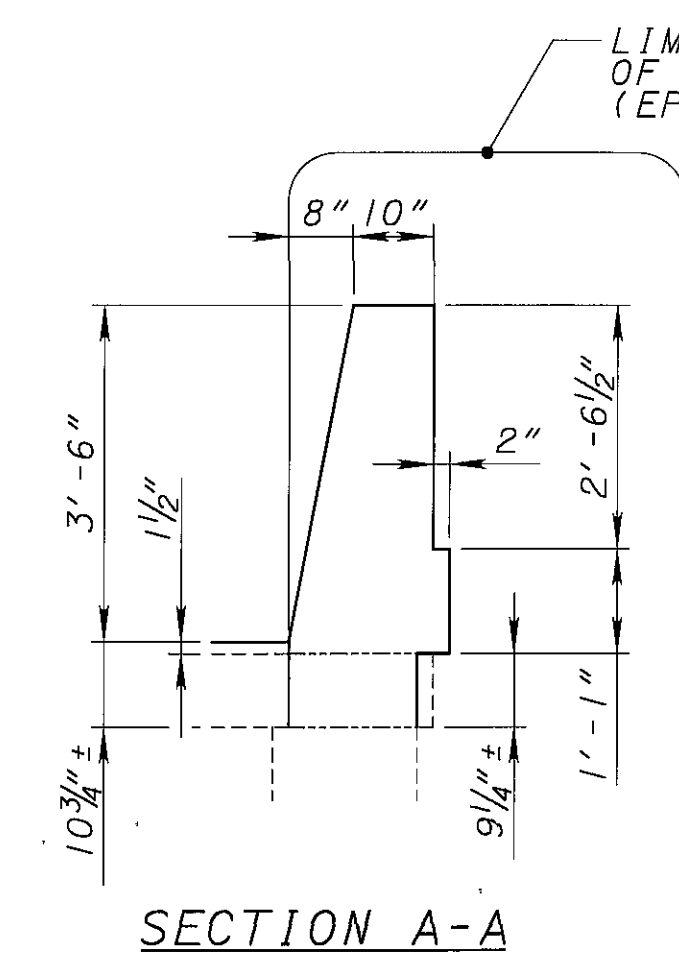
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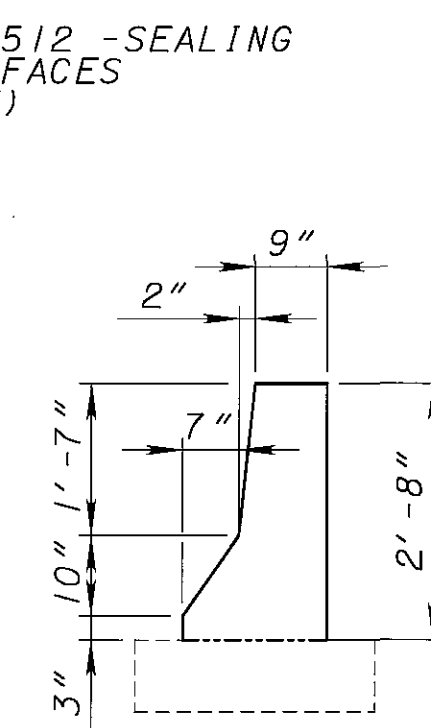
BARRIER TRANSITION PLAN



BARRIER TRANSITION ELEVATION



SECTION A-A



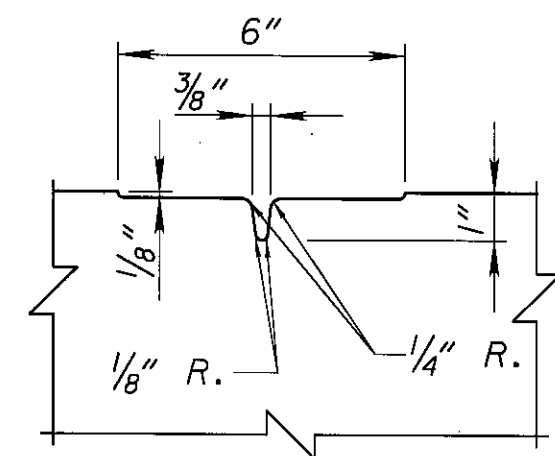
SECTION B-B

NOTES:

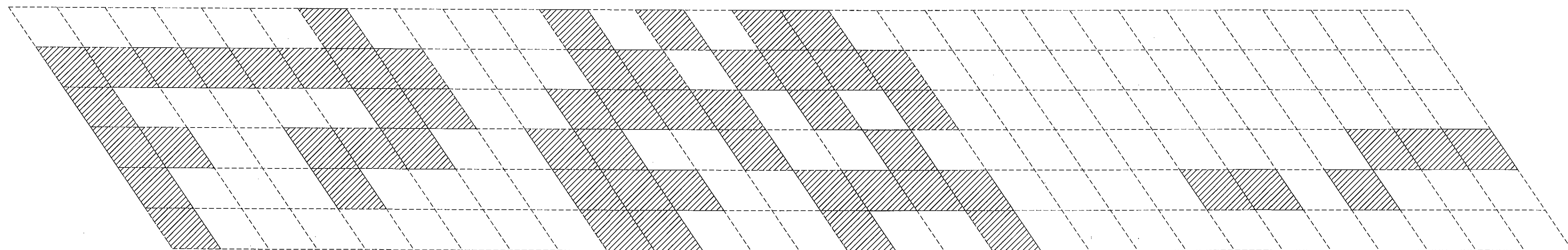
SEE SHEET [16/19] FOR BRIDGE PARAPET DETAILS.

*FOR DETAILS NOT SHOWN SEE STANDARD CONSTRUCTION DRAWINGS RM-4.3 AND RM-4.4 AND ROADWAY PLAN INSERT SHEET "BARRIER TO BARRIER TRANSITION".

...\\002_02555CSD002.dgn



TOOLED GROOVE (CONTRACTION)

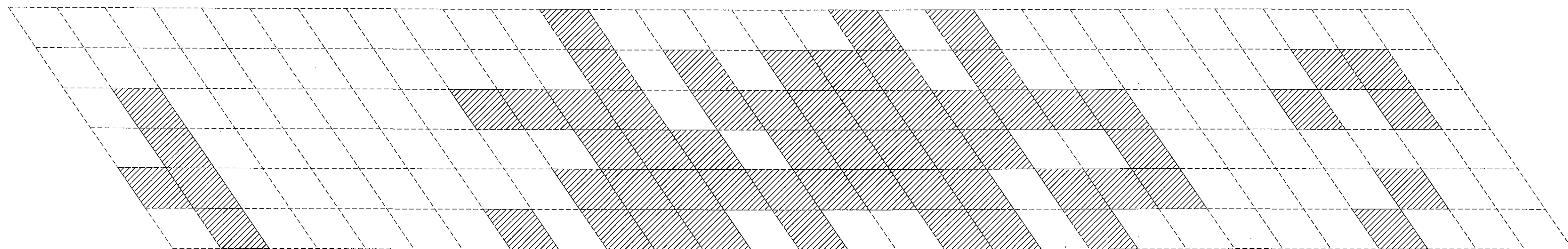


FORWARD SLOPE PROTECTION

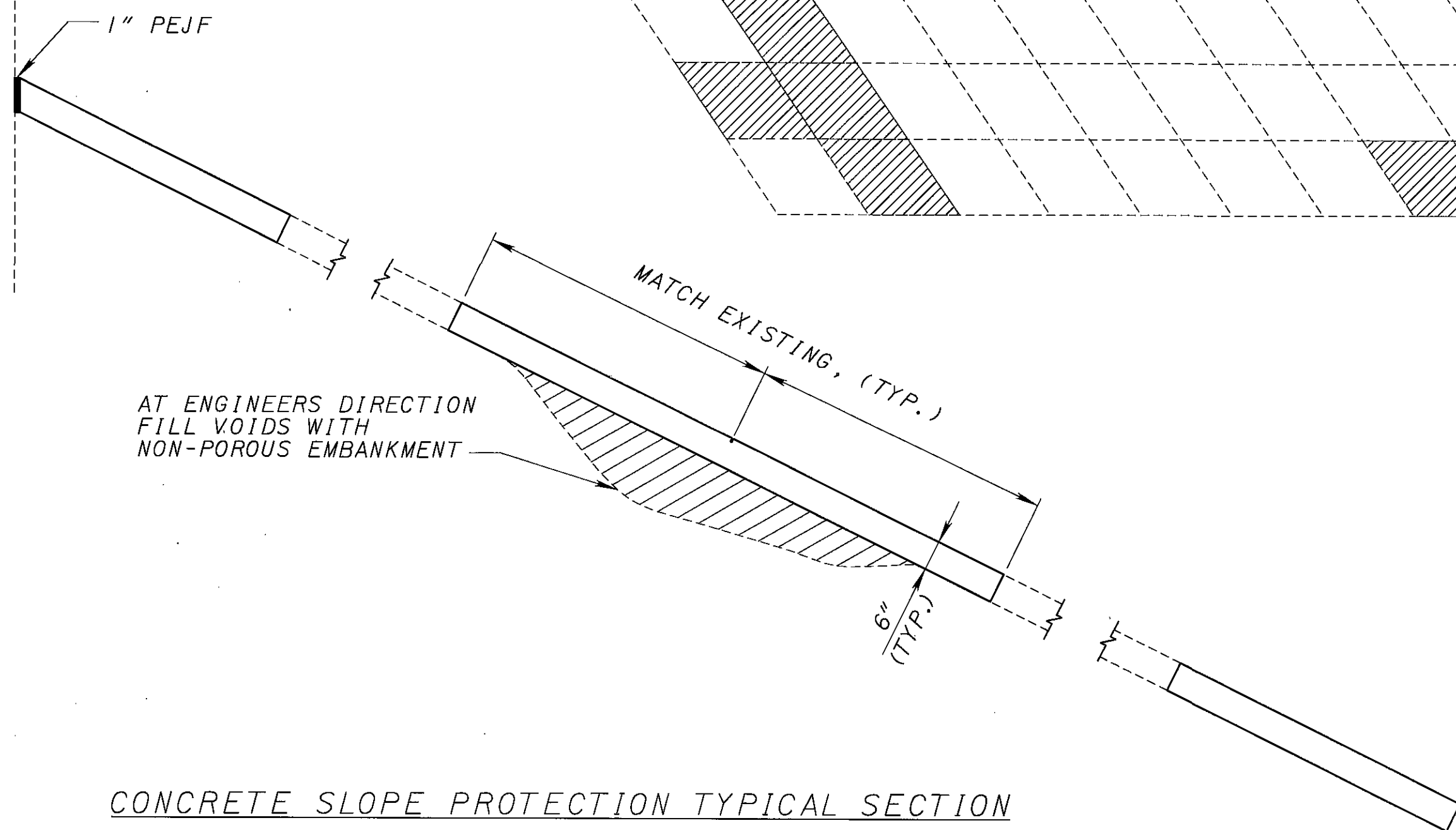
TOTAL AREA:

FORWARD = 1770 SQ. FT. OUT OF 5220 SQ. FT.

REAR = 1860 SQ. FT. OUT OF 5220 SQ. FT.



REAR SLOPE PROTECTION



CONCRETE SLOPE PROTECTION TYPICAL SECTION

NOTES:

THE AREA OF SLOPE PROTECTION TO BE REPLACED IS BASED UPON SEVERE CRACKING AND SETTLEMENT OR DISPLACEMENT OF TWO OR MORE INCHES.

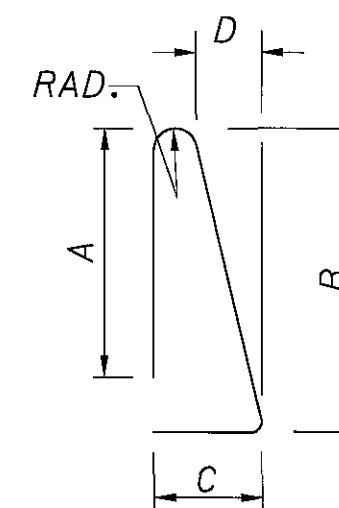
LEGEND

- PEJF. = PREFORMED EXPANSION JOINT FILLER
- R. = RADIUS
- TYP. = TYPICAL

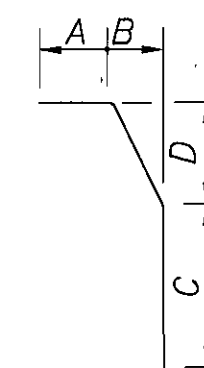
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REINFORCEMENT SCHEDULE

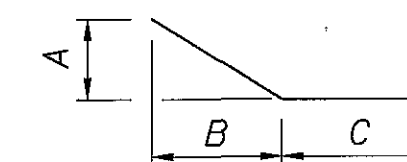
MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS							
					A	B	C	D	E	R	INC.	
S501	660	7'-4"	5048	2	3'-0"	3'-2"	1'-1"	0'-6 ³ / ₄ "			0'-2 ³ / ₄ "	
S502	144	26'-8"	4005	STR								
S503	32	15'-9"	525	STR								
S504	16	5'-0"	83	STR								
S505	8	5'-0"	41	20	0'-3"	3'-0"	2'-0"					
S506	16	10'-0"	166	STR								
S507	16	10'-1"	168	STR								
S508	32	7'-0"	233	STR								
S601	584	2'-7"	2266	STR								
S602	584	2'-6"	2192	9	0'-11"	0'-2"	0'-9"	0'-11"				
S603	24	27'-0"	973	STR								
S604	4	15'-9"	94	STR								
S605	68	3'-5"	348	STR								
S606	76	3'-4"	380	9	0'-11"	0'-2"	1'-7"	0'-11"				
S607	8	2'-4"	28	STR								
S608	4	5'-5"	32	20	0'-3 ¹ / ₂ "	3'-5"	2'-0"					
	8	3'-10"										
S609	S.O.	TO	561	STR								0'-1"
	11	4'-8"										
S610	32	3'-10"	184	STR								
		TOTAL	17327									



TYPE 2



TYPE 9



TYPE 20

NOTES:

BAR SIZE: THE BAR SIZE IS INDICATED IN THE BAR MARK. THE MARK BEGINS WITH ONE OR TWO LETTERS THAT IDENTIFY THE BAR LOCATION. THE NEXT ONE OR TWO DIGITS INDICATE THE BAR SIZE, AND THE REMAINING TWO DIGITS ARE THE SEQUENCE NUMBER.

- EXAMPLE: S1001
- S = SUPERSTRUCTURE BAR
- 10 = #10 BAR
- 01 = BAR SEQUENCE NUMBER 1

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

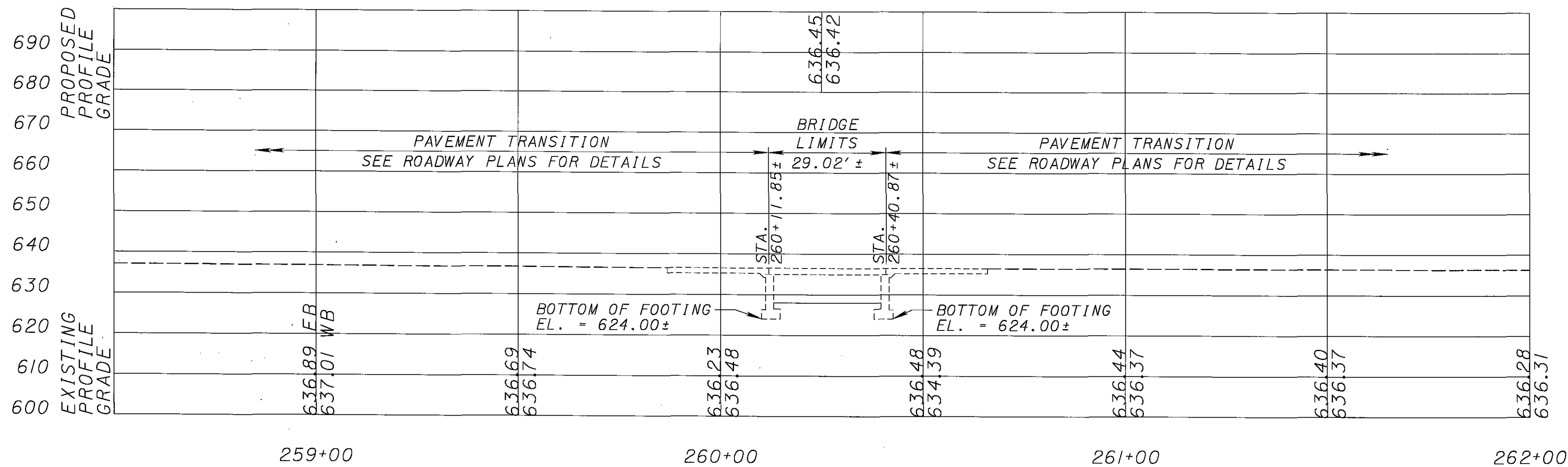
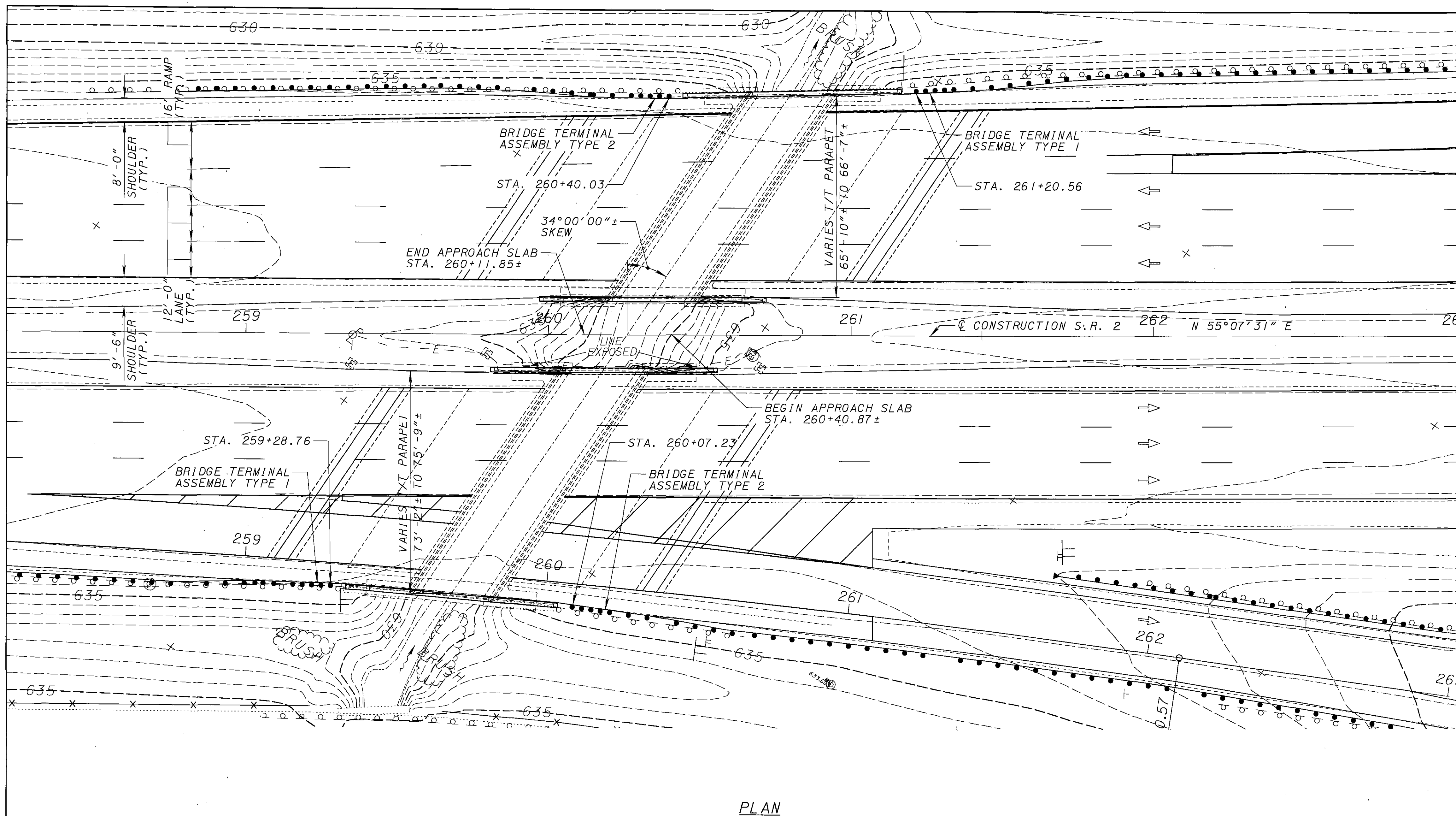
STD. WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

STR. IN THE BAR TYPE COLUMN INDICATES A STRAIGHT BAR.

R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

INC INDICATES THE LENGTH INCREMENT FOR SERIES BARS.

ALL REINFORCING STEEL TO BE EPOXY COATED.



NOTE:

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

LEGEND

- EB = EASTBOUND
- EL. = ELEVATION
- F.A. = FORWARD ABUTMENT
- F/F = FACE TO FACE
- R.A. = REAR ABUTMENT
- T/T = TOE TO TOE
- WB = WESTBOUND

BENCHMARK:

MAG NAIL IN ASPHALT OF PAVED SHOULDER
S.R. 2 STA. 262+00.72, 60.59 (RT)
BM ELEV.: 635.99

MINIMUM HORIZONTAL CLEARANCES		
	MEDIAN SHOULDERS	OUTSIDE SHOULDERS
EXISTING	5' ±	5.8' ±
REQUIRED	4'	10'
PROPOSED	4.8'	5'

TRAFFIC DATA

CURRENT ADT (2006).....86100
CURRENT ADTT (2006).....3703
DESIGN YEAR ADT (2026).....89400
DESIGN YEAR ADTT (2026).....3845

EXISTING STRUCTURE

TYPE: SINGLE SPAN REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 26' ± F/F ABUTMENTS

ROADWAY: VARIES F/F PARAPETS

SKREW: 34°00'00" ± LF

ALIGNMENT: TANGENT

WEARING SURFACE: 1 1/4" LATEX MODIFIED CONCRETE OVERLAY

DESIGN LOADING: CF-2000 (57)

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

CROWN: 3/16" ± PER FOOT

SFN: 4300394 (L) & 4300424 (R)

DATE BUILT: 1959

PROPOSED STRUCTURE

PROPOSED WORK: BRIDGE DECK OVERLAY AND PARAPET REFLACING

TYPE: SINGLE SPAN REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 26' ± F/F ABUTMENTS

ROADWAY: VARIES T/T PARAPETS

SKREW: 34°00'00" ± LF

ALIGNMENT: TANGENT

WEARING SURFACE: 2 1/4" SUPERPLASTICIZED DENSE CONCRETE OVERLAY

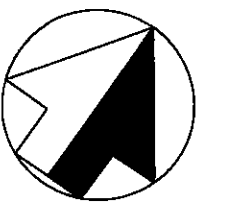
DESIGN LOADING: CF-2000 (57)

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

CROWN: 3/16" ± PER FOOT

LATITUDE: N 41°38'03"

LONGITUDE: W 81°26'25"



DESIGN AGENCY
BURGESS & NIPLE
100 WEST ERIE STREET PAINESVILLE, OHIO 44077

DATE
07-20-05
REVIEWED
DWL
DRAWN
ASK
DESIGNED
ASK
CHECKED
JAA

STRUCTURE FILE NUMBER
4300394 (L)
4300424 (R)

LAKE COUNTY
STA. 260+11.85 ±
STA. 260+40.87 ±

SITE PLAN
BRIDGE NO. LAK-2-0303 L&R
OVER STREAM

LAK-2-0.00

1 / 14

511
524

REFER TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION STANDARD BRIDGE DRAWINGS:

SBR-I-99 REVISED 07-19-02

AND TO THE FOLLOWING STANDARD CONSTRUCTION DRAWINGS: RM-4.3 REVISED 04-18-03 RM-4.4 REVISED 04-18-03

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS: 847 REVISED 04-15-05 848 REVISED 04-15-05

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN AND UPGRADING PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

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

PROPOSED WORK:

- 1. REMOVE EXISTING OVERLAY, PERFORM SURFACE PREPARATIONS, AND OVERLAY EXISTING DECK WITH SUPERPLASTICIZED DENSE CONCRETE AS SPECIFIED IN THESE PLANS.
2. REMOVE PORTIONS OF EXISTING PARAPET AND REFACE AS SPECIFIED, INCLUDING BARRIER TRANSITIONS.
3. PATCH CONCRETE SUBSTRUCTURE WITH ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.
4. SEAL PORTIONS OF THE EXISTING CONCRETE WITH ITEM 512 - SEALING OF CONCRETE SURFACES.

MAINTENANCE OF TRAFFIC:

SEE THE ROADWAY PLANS FOR MAINTENANCE OF TRAFFIC REQUIREMENTS.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF PARAPETS, RAILINGS, AND OTHER APPURTENANCES. THIS ITEM SHALL ALSO INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONTINUED):

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE, WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 511 CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

GENERAL REQUIREMENTS.

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

MIX OPTIONS.

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE QUANTITIES PER CUBIC YARD AGGREGATES (SSD)

HP4, AS PER PLAN (GGBF SLAG + MICROSILICA)

Table with 10 columns: AGGREGATE TYPE, FINE AGGREGATE (LB), #8 COARSE AGGREGATE (LB), #57 COARSE AGGREGATE (LB), TOTAL (LB), CEMENT CONTENT (LB), MICRO-SILICA (LB), GGBF SLAG (LB), WATER TO CEMENTITIOUS RATIO ±.01, AIR CONTENT ±2%. Rows include GRAVEL, LIMESTONE, and SLAG.

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127. THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15.

PARAPET CONSTRUCTION (FORMED AND POURED)

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 6 INCHES, WITH A MAXIMUM SLUMP OF 8 INCHES.

ANCHOR BOLTS FOR RAIL POSTS AND FENCE POSTS SHALL BE CAST IN PLACE.

SLIP-FORMED PARAPETS WILL NOT BE ALLOWED

CRACK CONTROL JOINTS

CRACK CONTROL JOINTS FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 1/2" DEEP AND 1/4" WIDE CRACK CONTROL JOINTS INTO THE STRUCTURAL CONCRETE FACE SPACED AT A MINIMUM OF 6 FT AND A MAXIMUM OF 8 FT ON CENTER.

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

Table with 3 columns: ITEM, UNITS, DESCRIPTION. Rows include 511E50101 CUBIC YARDS CLASS HP CONCRETE, BRIDGE DECK, (PARAPET), AS PER PLAN and 511E52000 LUMP SUM CLASS HP CONCRETE, TEST SLAB.

ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF ITEM 510, THE FOLLOWING CONDITIONS SHALL APPLY:

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF EPOXY GROUT INTO HOLES.

THE CONTRACTOR SHALL DEMONSTRATE HIS ABILITY TO DRILL THE DOWEL HOLES WITHOUT DAMAGING THE SURROUNDING CONCRETE OR CONCRETE DECK EDGES. SHOULD SUCH DAMAGE OCCUR, THE CONTRACTOR IS DIRECTED TO REPAIR THE DAMAGE AT HIS EXPENSE AND TO CORE DRILL THE DOWEL HOLES.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

A CONCRETE SEALER SHALL BE APPLIED TO THE SURFACES OF THE PARAPETS AND THE EXPOSED SURFACES OF THE SUBSTRUCTURES AS SHOWN IN THESE PLANS. PAYMENT SHALL BE INCLUDED IN ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

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

FINISH COLORS:

THE TOP COAT COLOR FOR ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) AND ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY) SHALL BE BUFF, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-27722.

THE COLOR FOR ITEM 514 - FIELD PAINTING OF EXISTING STEEL, FINISH COAT, AS PER PLAN SHALL BE LIGHT BLUE, IN ACCORDANCE WITH FEDERAL STANDARD NUMBER 595B-15450.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. CONCRETE SHALL CONFORM TO ITEM 511 - CLASS HP CONCRETE, MIX HP4, AS PER PLAN.

ITEM 848 - SURFACE PREPARATION USING HYDRO-DEMOLITION A:

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1/2" FOR THE DECK.

ITEM 848 - SURFACE PREPARATION USING HYDRO-DEMOLITION B:

THIS WORK SHALL BE PERFORMED AS PER ODOT SUPPLEMENTAL SPECIFICATION 848. THE DIMENSION "D" SHALL BE 1 INCH FOR THE APPROACH SLAB.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRODEMOLITION" WITH THE FOLLOWING REVISIONS:

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS PER ASTM C-127

THE THICKNESS OF THE PROPOSED OVERLAY SHALL BE AS SPECIFIED IN THE PLANS

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL PATH

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

NOTE:

SHEET 11/14 WAS DELETED ON 05-01-06 AS DIRECTED BY THE DISTRICT.

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	LEFT TOTAL	RIGHT TOTAL	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE			RIGHT BRIDGE			AS PER PLAN REFERENCE SHEET
							SUPER	ABUT	GEN'L	SUPER	ABUT	GEN'L	
202	11201	LUMP	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN			LUMP			LUMP	2/14
509	10000	2238	2239	4477	POUND	EPOXY-COATED REINFORCING STEEL	2238			2239			
510	10001	306	306	612	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN	306			306			2/14
511	50101	17	17	34	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	17			17			2/14
511	81300	286	286	572	EACH	CONCRETE MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM FOR OVERLAY APPLICATIONS			286			286	
512	10100	347	344	691	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	166	181		167	177		
519	11101	279	383	662	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		279			383		2/14
847	30400	218	232	450	SQ. YD.	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" NOMINAL THICKNESS)			218			232	
848	10200	218	232	450	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, USING HYDRO-DEMOLITION (1 3/4" THICK)			218			232	
848	10200	312	349	661	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, USING HYDRO-DEMOLITION (2" THICK)			312			349	
848	20001	218	232	450	SQ. YD.	SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN A			218			232	2/14
848	20001	312	349	661	SQ. YD.	SURFACE PREPARATION USING HYDRO-DEMOLITION, AS PER PLAN B			312			349	2/14
848	30200	2	3	5	CU. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY VARIABLE THICKNESS, MATERIAL ONLY			2			3	
848	50000	3	3	6	SQ. YD.	HAND CHIPPING			3			3	
848	50100	LUMP	LUMP	LUMP		TEST SLAB			LUMP			LUMP	
848	50300	312	349	661	SQ. YD.	WEARING COURSE REMOVED, ASPHALT			312			349	
848	50340	90	90	180	SQ. YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			90			90	

ESTIMATED QUANTITIES
BRIDGE NO. LAK-2-0303 L&R
OVER STREAM

LAK-2-0.00

3/14

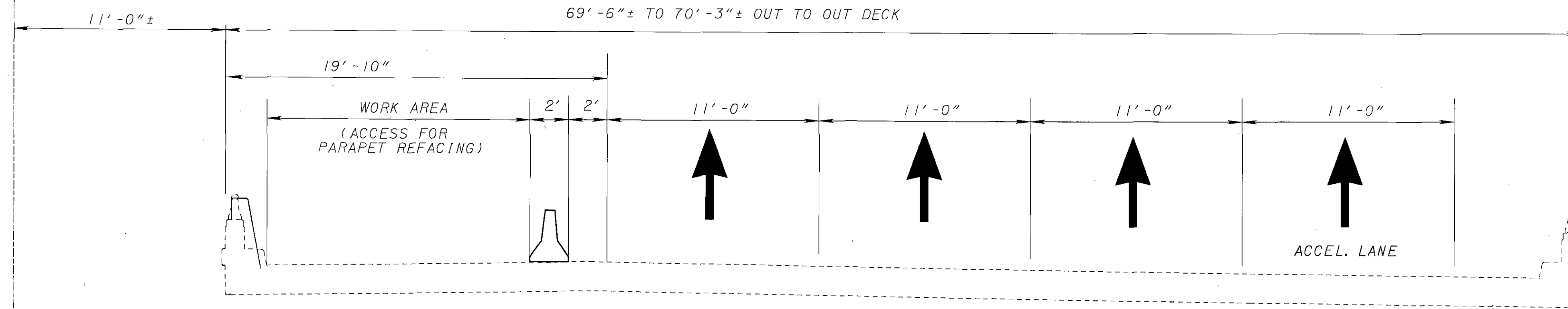
513
524

DESIGN AGENCY
BURGESS & NIPLE
100 WEST EURE STREET PAINESVILLE, OHIO 44077

REVIEWED DATE
DNL 07-20-05
STRUCTURE FILE NUMBER
4300384 (L)
4300424 (R)

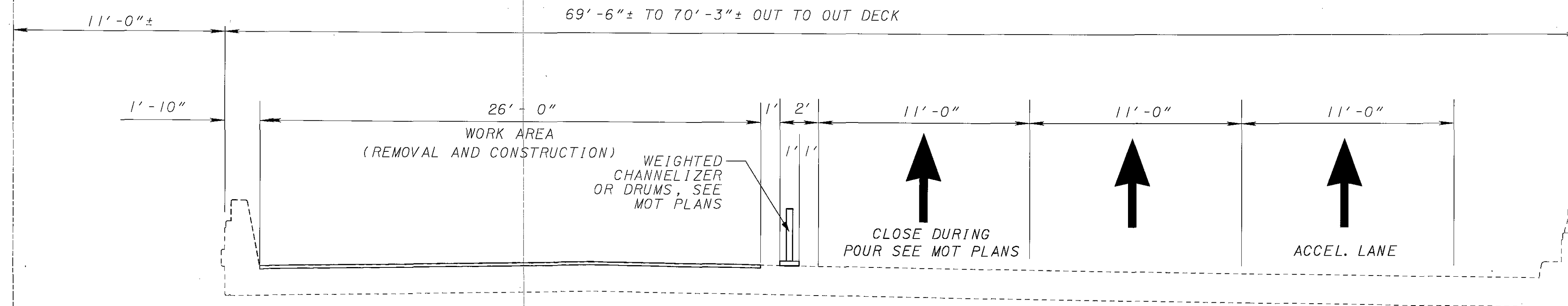
DESIGNED DRAWN
ASK ASK
CHECKED REVISOR
DCF

CONSTRUCTION S.R. 2



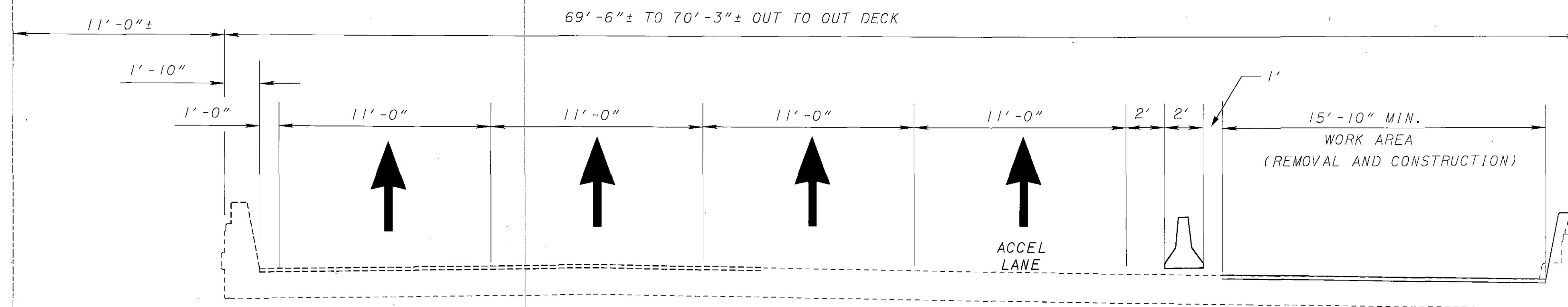
PHASE I
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2



PHASE IA
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2



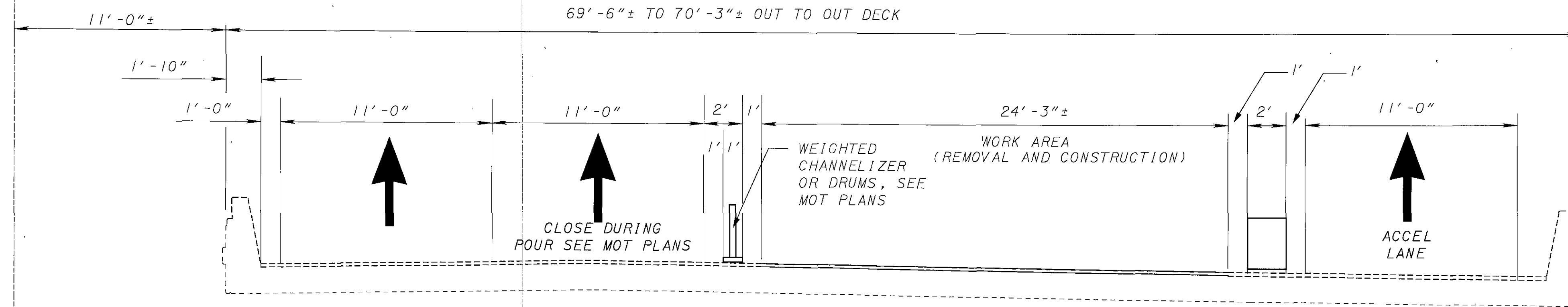
PHASE 2
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

DESIGNED EJM	CHECKED JAA	DATE 07-20-05	REVIEWED DWL
DRAWN ASK	REVISED	STRUCTURE FILE NUMBER 4300394 (L) 4300424 (R)	

STAGE CONSTRUCTION DETAILS - LEFT BRIDGE 1 OF 2
BRIDGE NO. LAK-2-0303 L&R
OVER STREAM

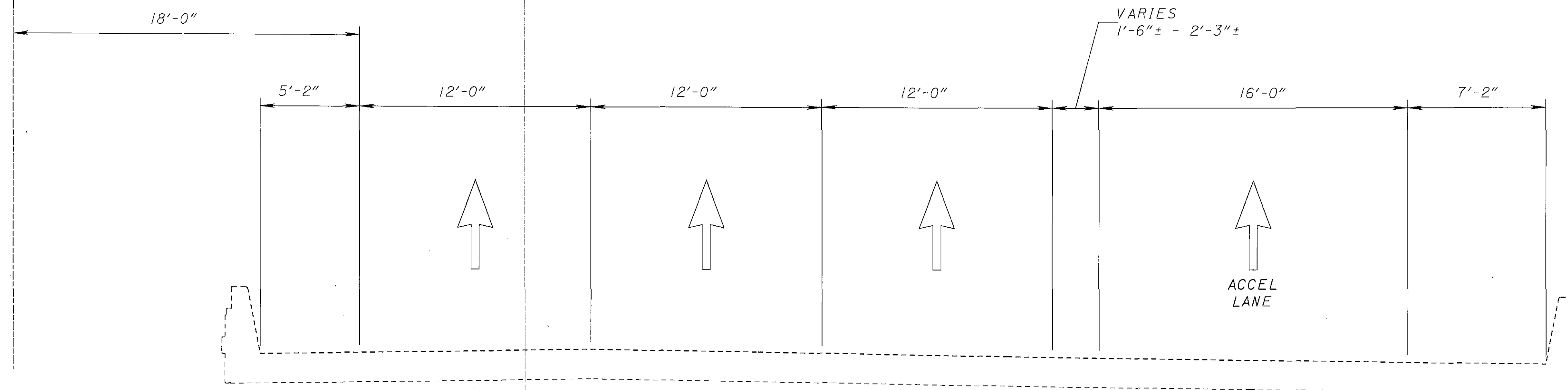
...lk002p.cpl.dgn

CONSTRUCTION S.R. 2



PHASE 2A
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2

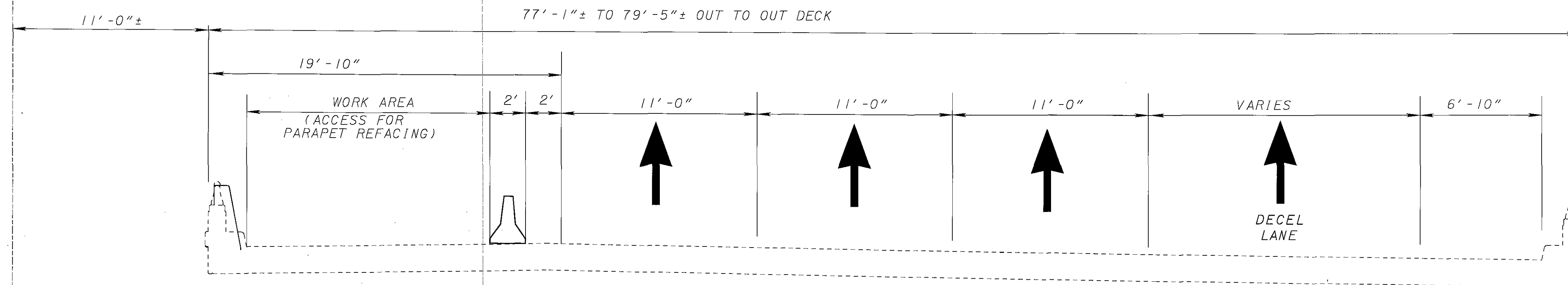


FINAL BRIDGE

DATE	07-20-05
REVIEWED	DWL
STRUCTURE FILE NUMBER	4300394 (L)
	4300424 (R)
DESIGNED	EJM
CHECKED	JAA
DRAWN	ASK
REVISED	

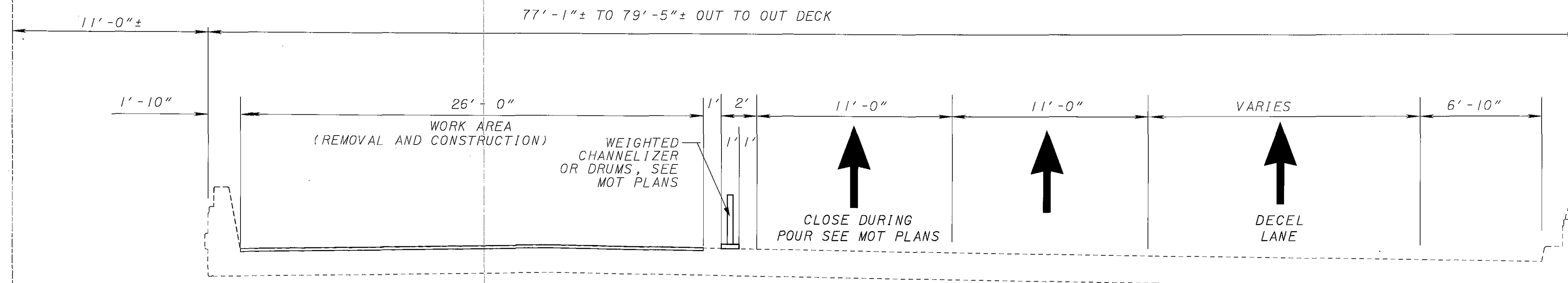
STAGE CONSTRUCTION DETAILS - LEFT BRIDGE 2 OF 2
 BRIDGE NO. LAK-2-0303 L&R
 OVER STREAM

CONSTRUCTION S.R. 2



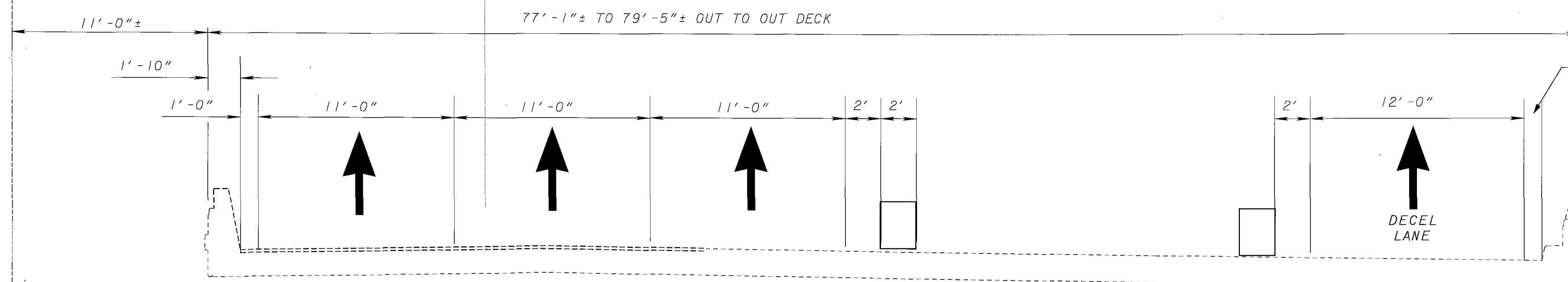
PHASE I
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2



PHASE IA
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

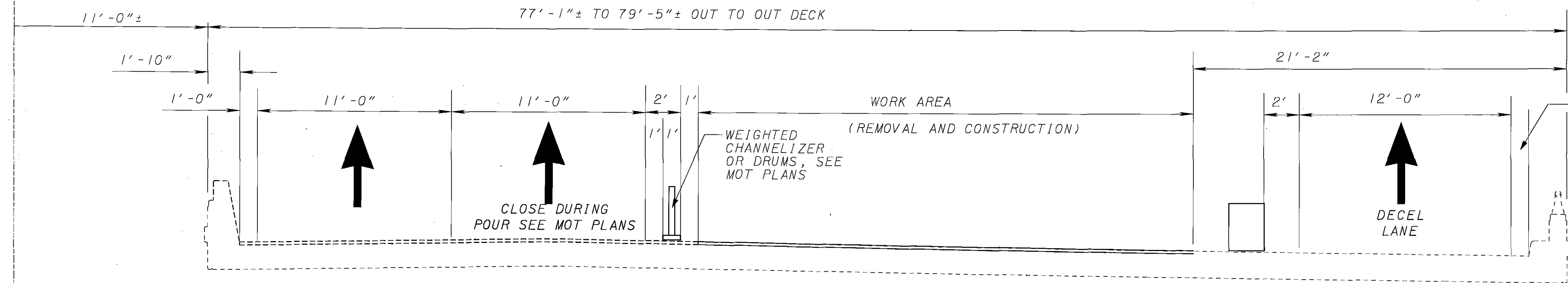
CONSTRUCTION S.R. 2



PHASE 2
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

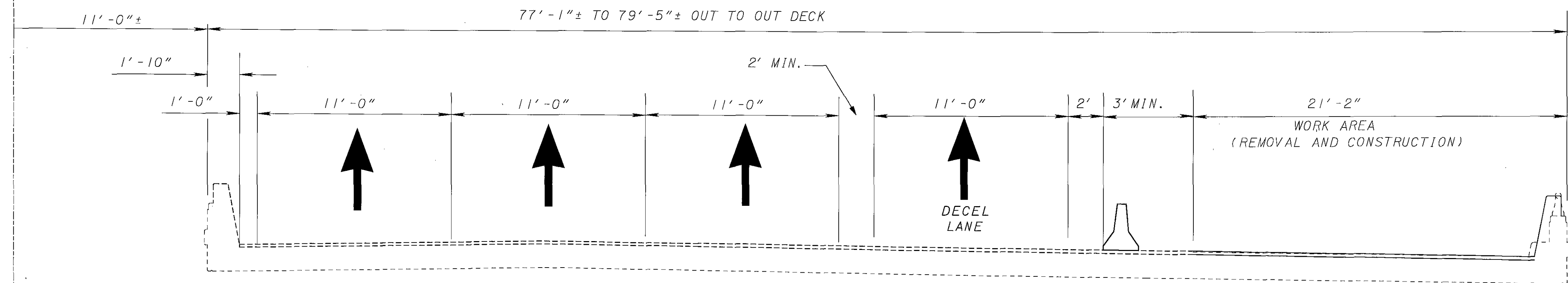
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CONSTRUCTION S.R. 2



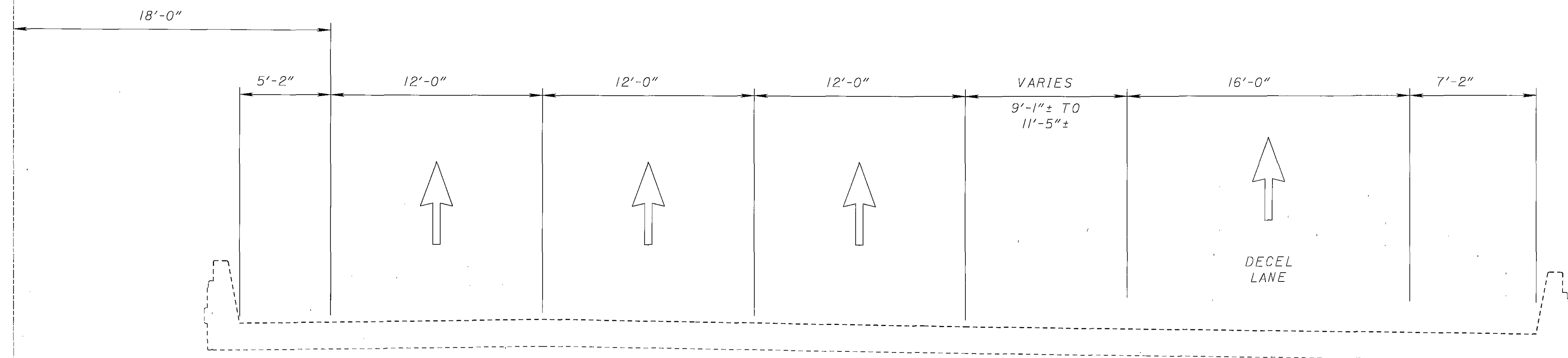
PHASE 2A
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2



PHASE 2B
MAINTENANCE OF TRAFFIC AND CONSTRUCTION

CONSTRUCTION S.R. 2



FINAL BRIDGE

DESIGN AGENCY
BURGESS & NIPLÉ
100 WEST EIRE STREET PANAMAVILLE, OHIO 44071

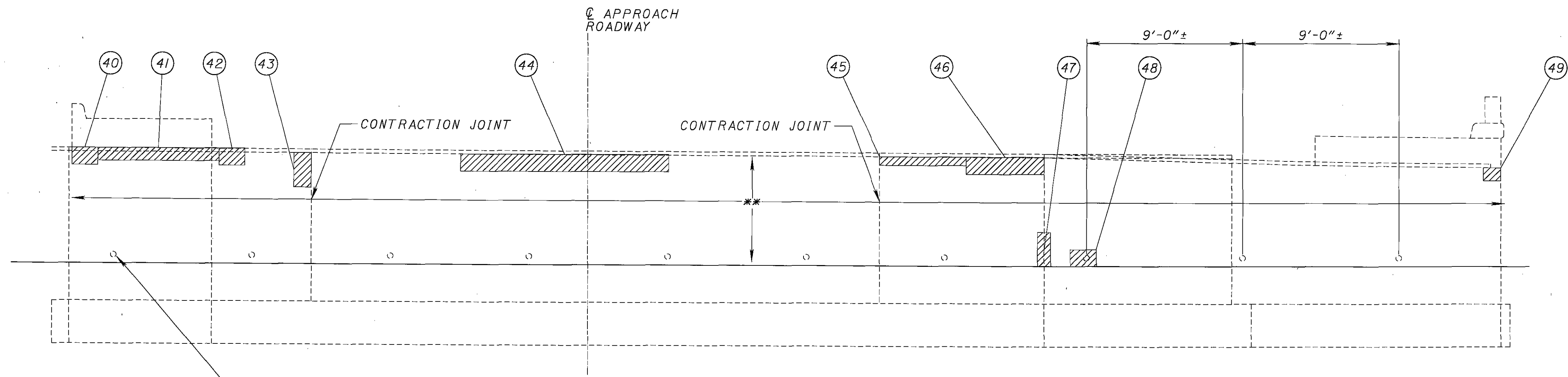
DESIGNED	EJM	CHECKED	JAA
DRAWN	ASK	REVISED	
REVIEWED	DWL	DATE	07-20-05
STRUCTURE FILE NUMBER	4300394 (L)		
	4300424 (R)		

STAGE CONSTRUCTION DETAILS - RIGHT BRIDGE 2 OF 2
BRIDGE NO. LAK-2-0303 L&R
OVER STREAM

LAK-2-0.00

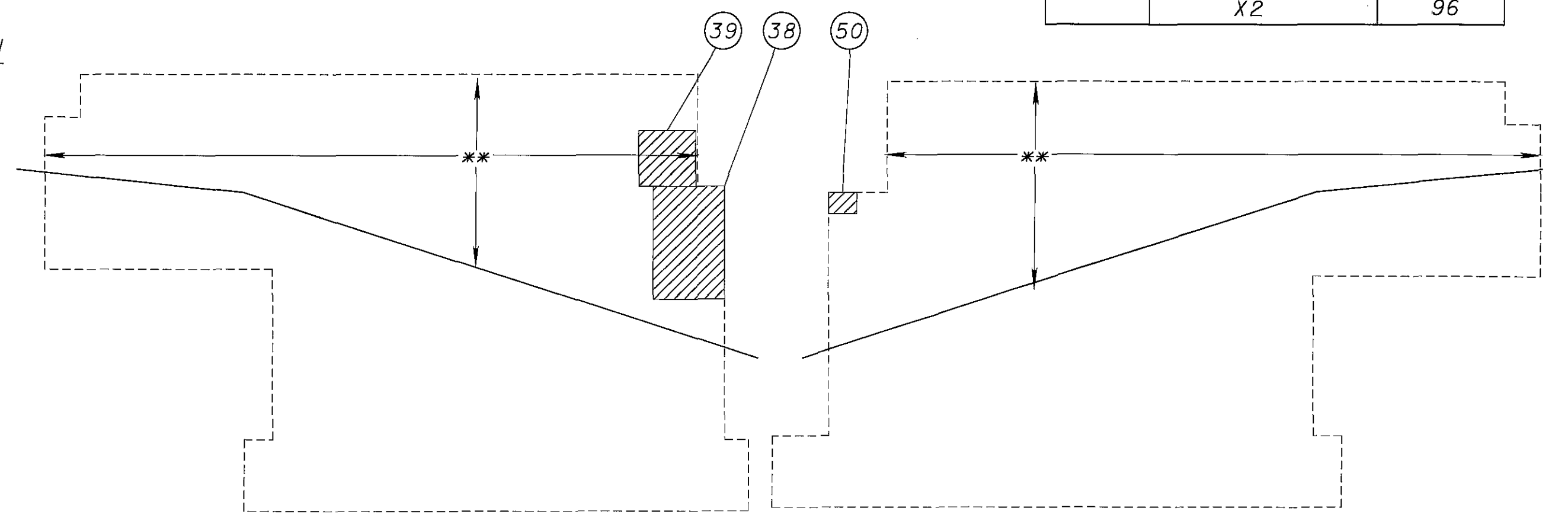
7/14

517
524

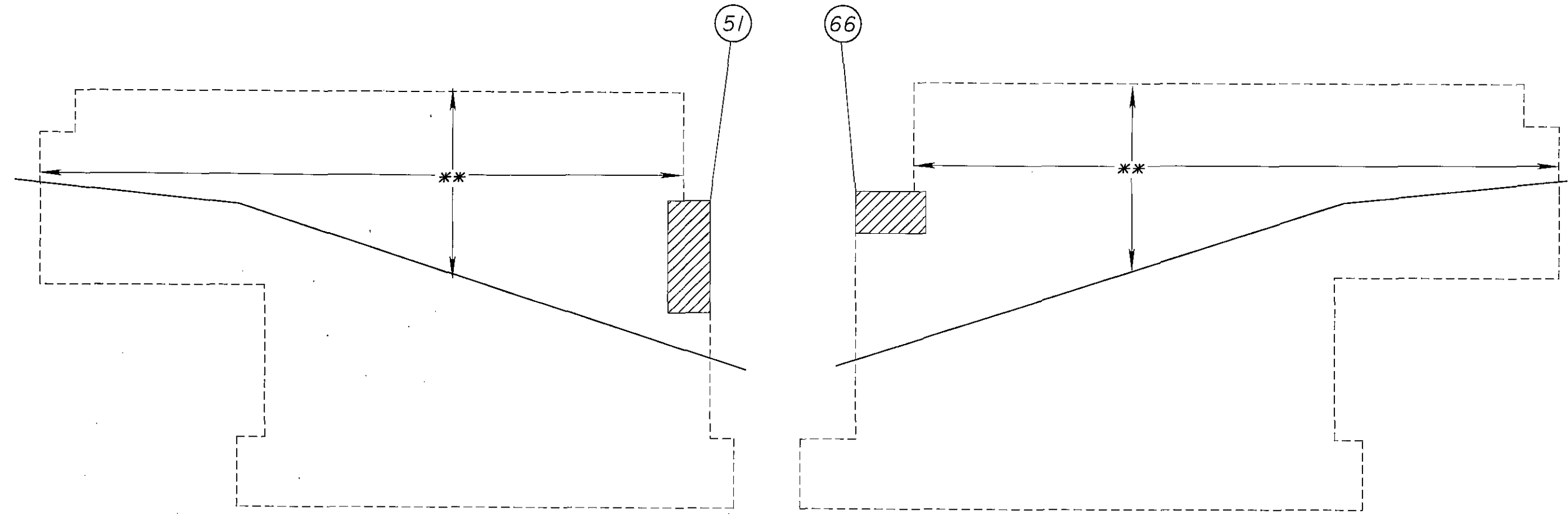


REAR ABUTMENT LEFT BRIDGE - ELEVATION

REAR ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
38	2'-6" x 4'-0"	10.00
39	2'-0" x 2'-0"	4.00
40	1'-6" x 1'-0"	1.50
41	7'-0" x 0'-9"	5.25
42	1'-6" x 1'-0"	1.50
43	1'-0" x 2'-0"	2.00
44	12'-0" x 1'-0"	12.00
45	5'-0" x 0'-6"	2.50
46	4'-6" x 1'-0"	4.50
47	0'-9" x 2'-0"	1.50
48	1'-0" x 1'-6"	1.50
49	1'-0" x 0'-9"	0.75
50	1'-0" x 0'-9"	0.75
TOTAL:		47.75
(MULTIPLIER) X2		96

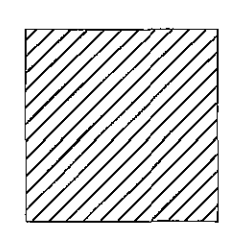


REAR ABUTMENT WINGWALLS - ELEVATION



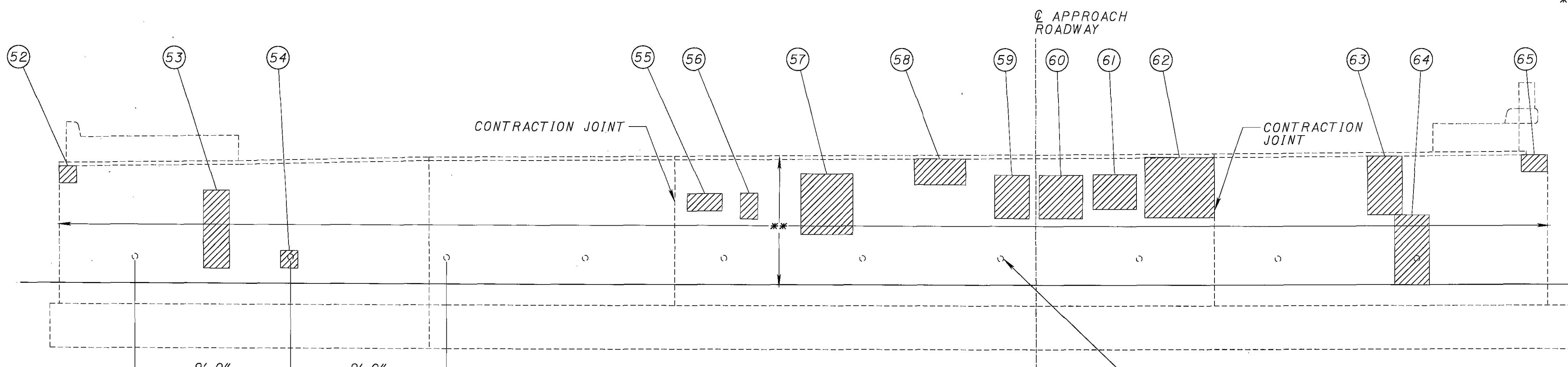
FORWARD ABUTMENT WINGWALLS - ELEVATION

LEGEND:



AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

** SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



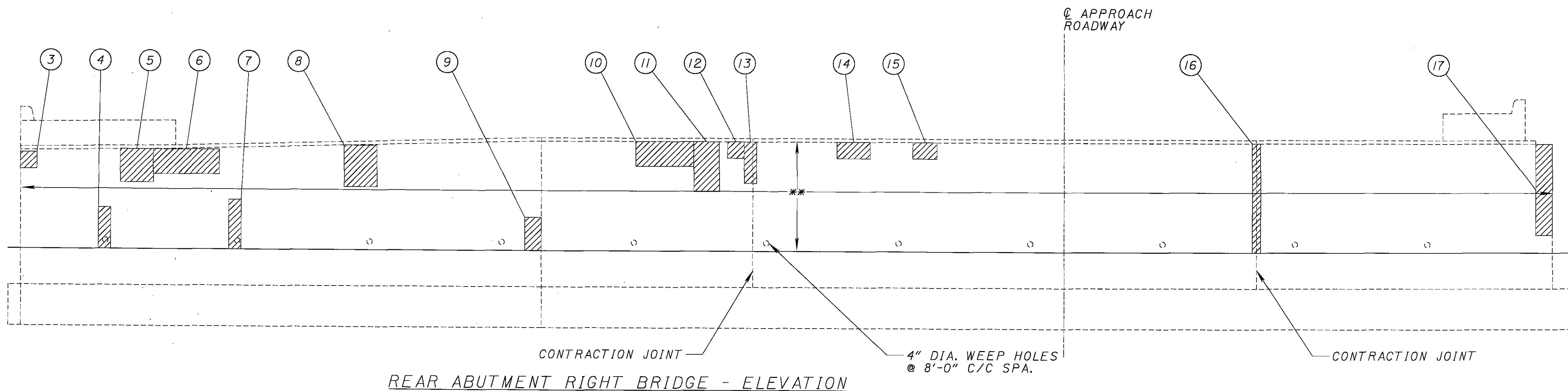
FORWARD ABUTMENT LEFT BRIDGE - ELEVATION

FORWARD ABUTMENT - LEFT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
51	1'-6" x 4'-0"	6.00
52	1'-0" x 1'-0"	1.00
53	1'-6" x 4'-6"	6.75
54	1'-0" x 1'-0"	1.00
55	2'-0" x 1'-0"	2.00
56	1'-0" x 1'-6"	1.50
57	3'-0" x 3'-6"	10.50
58	3'-0" x 1'-6"	4.50
59	2'-0" x 2'-6"	5.00
60	2'-6" x 2'-6"	6.25
61	2'-6" x 2'-0"	5.00
62	4'-0" x 3'-6"	14.00
63	2'-0" x 3'-6"	7.00
64	2'-0" x 4'-0"	8.00
65	1'-6" x 1'-0"	1.50
66	2'-6" x 4'-6"	11.25
TOTAL:		91.25
(MULTIPLIER) X2		183

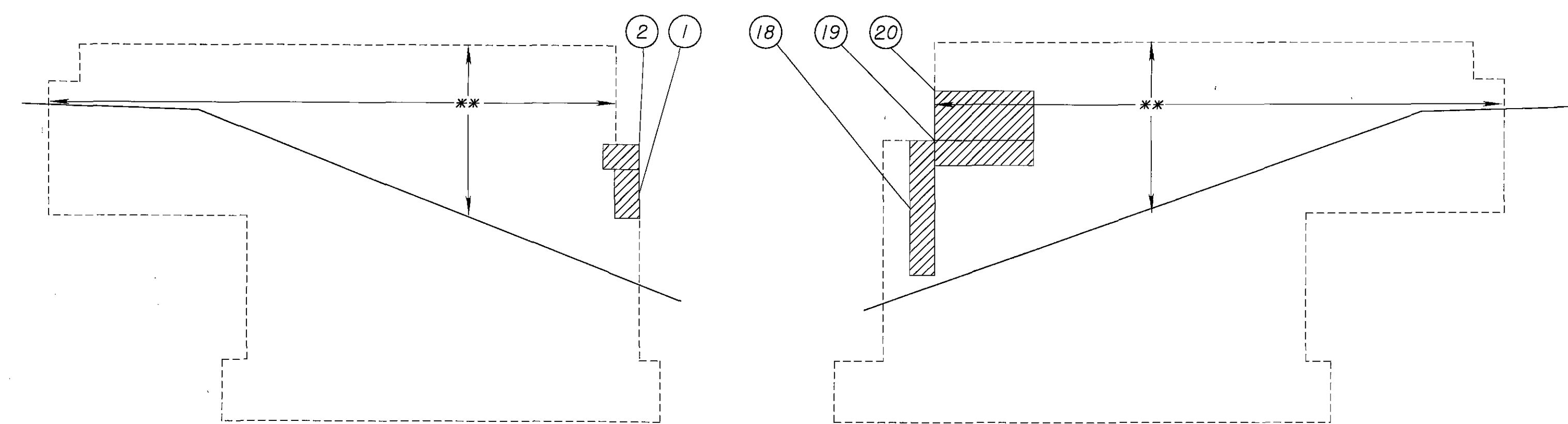
... \k002md3.dgn

REAR ABUTMENT - RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
1	2'-0" x 4'-0"	8.00
2	1'-6" x 1'-0"	1.50
3	1'-0" x 1'-0"	1.00
4	0'-9" x 2'-6"	1.88
5	2'-0" x 2'-0"	4.00
6	4'-0" x 1'-6"	6.00
7	0'-9" x 3'-0"	2.25
8	2'-0" x 2'-6"	5.00
9	1'-0" x 2'-0"	2.00
10	3'-6" x 1'-6"	5.25
11	1'-6" x 3'-0"	4.50
12	1'-0" x 1'-0"	1.00
13	0'-9" x 2'-6"	1.88
14	2'-0" x 1'-0"	2.00
15	1'-6" x 1'-0"	1.50
16	0'-6" x 7'-0"	3.50
17	1'-0" x 5'-6"	5.50
18	1'-0" x 5'-6"	5.50
19	4'-0" x 1'-0"	4.00
20	4'-0" x 2'-0"	8.00
TOTAL:		74.25
(MULTIPLIER) X2		150

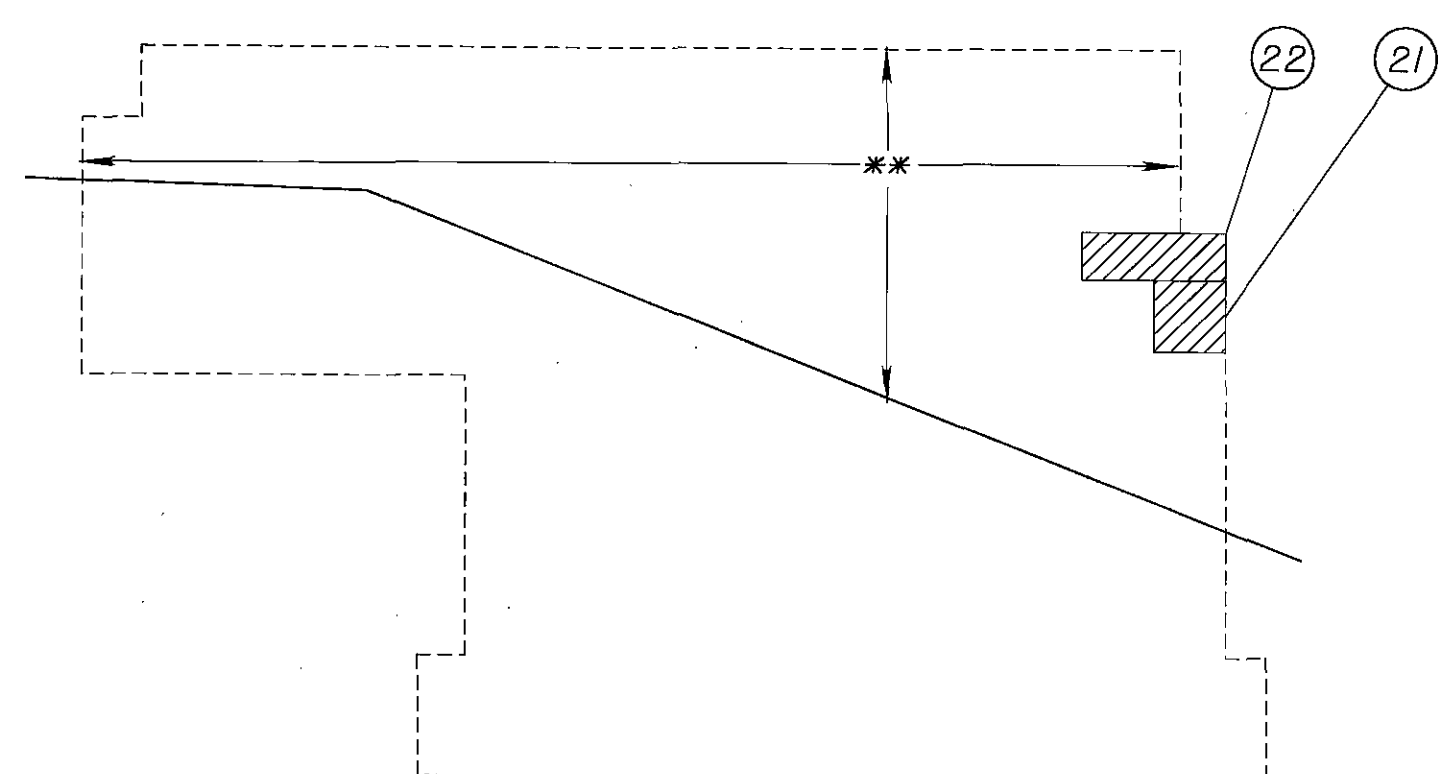
FORWARD ABUTMENT-RIGHT BRIDGE		
AREA NO.	DIMENSIONS	AREA (SQ. FT.)
21	1'-6" x 1'-6"	2.25
22	3'-0" x 1'-0"	3.00
23	2'-6" x 3'-6"	8.75
24	1'-6" x 1'-6"	2.25
25	2'-6" x 7'-0"	17.50
26	1'-0" x 1'-0"	1.00
27	4'-6" x 1'-6"	6.75
28	2'-6" x 2'-6"	6.25
29	12'-6" x 1'-0"	12.50
30	2'-0" x 1'-0"	2.00
31	2'-6" x 1'-6"	3.75
32	2'-0" x 2'-0"	4.00
33	12'-6" x 1'-6"	18.75
34	2'-6" x 7'-0"	17.50
35	2'-0" x 2'-6"	5.00
36	2'-0" x 1'-6"	3.00
37	0'-9" x 2'-6"	1.88
TOTAL:		116.13
(MULTIPLIER) X2		233



REAR ABUTMENT RIGHT BRIDGE - ELEVATION

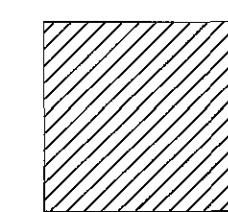


REAR ABUTMENT WINGWALLS - ELEVATION



FORWARD ABUTMENT WINGWALL - ELEVATION
(LEFT WINGWALL SHOWN, RIGHT SIMILAR)

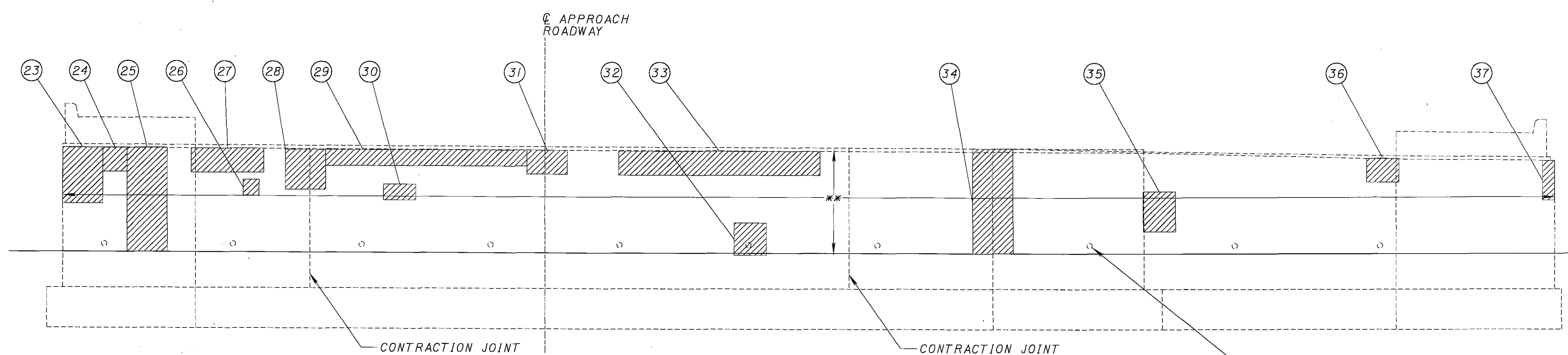
LEGEND:



AREAS TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

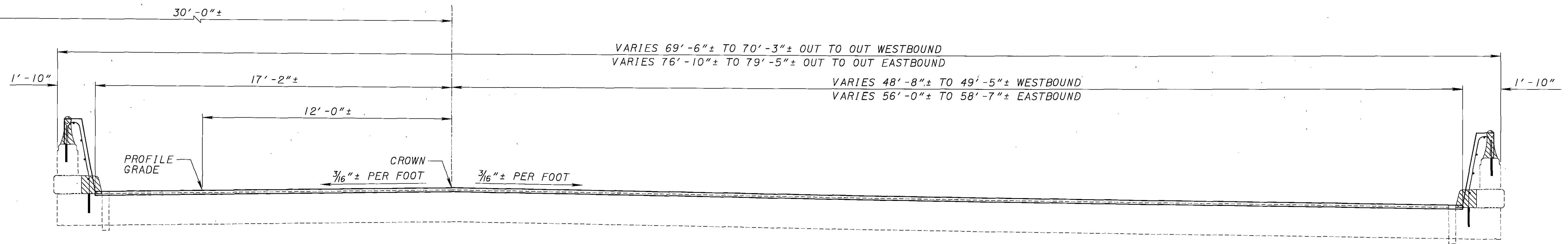
**

SEAL ALL EXPOSED CONCRETE SURFACES WITH ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

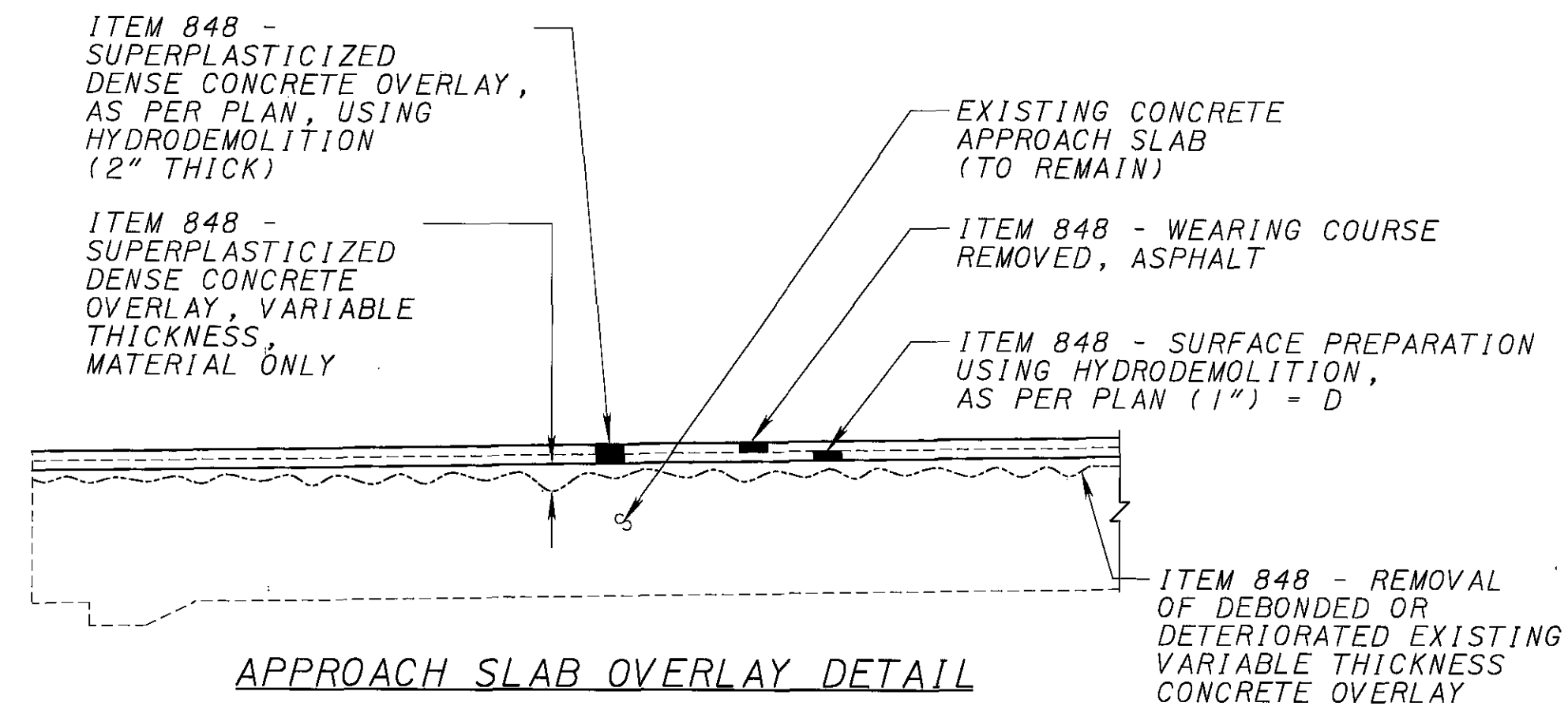


FORWARD ABUTMENT RIGHT BRIDGE - ELEVATION

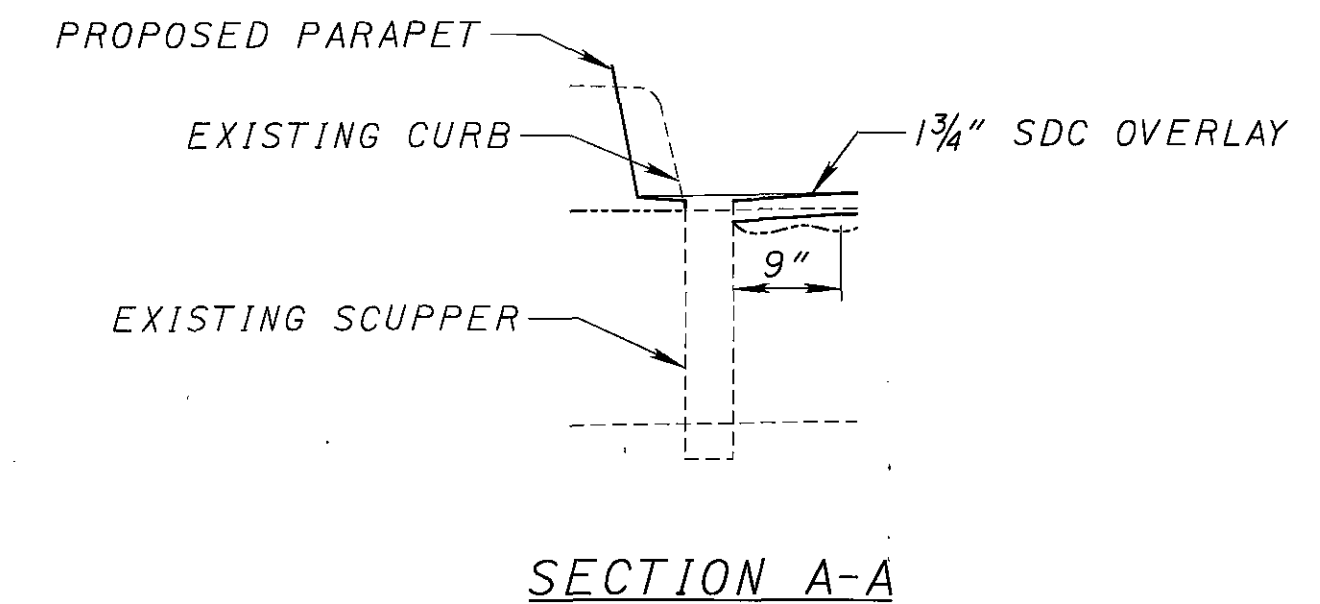
...:\k002md2.dgn



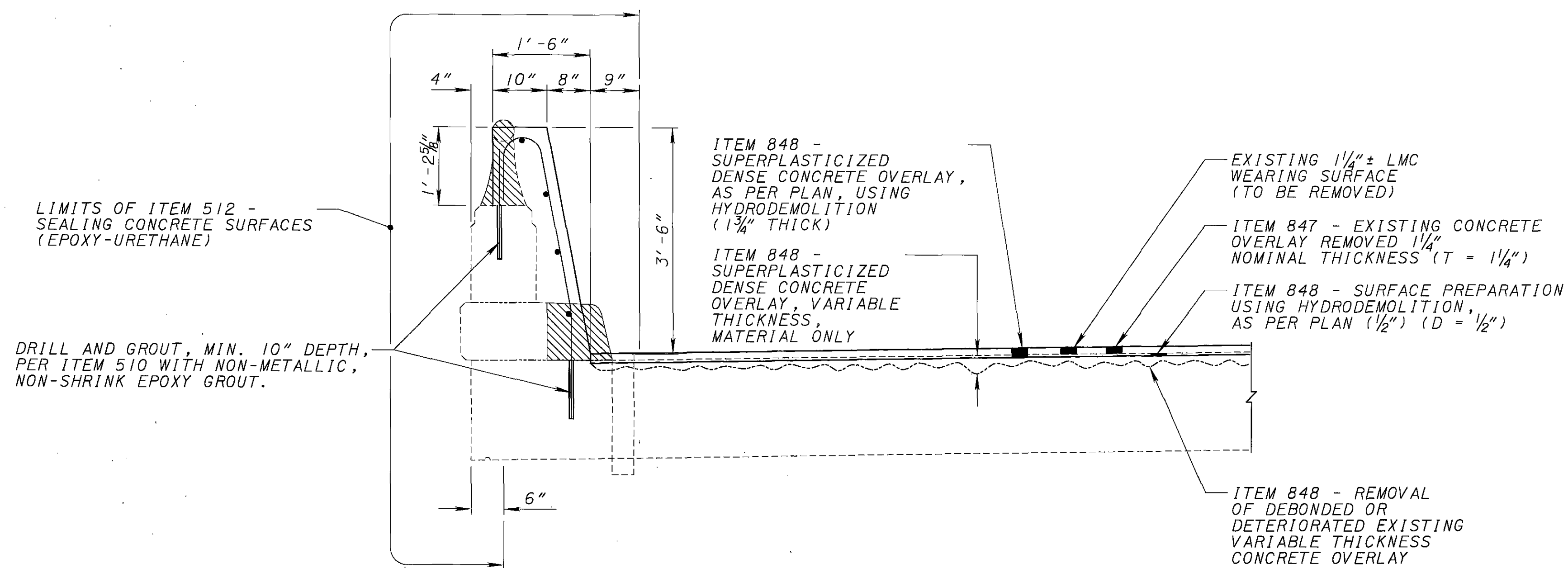
TRANSVERSE SECTION
(RIGHT SHOWN, LEFT SIMILAR)



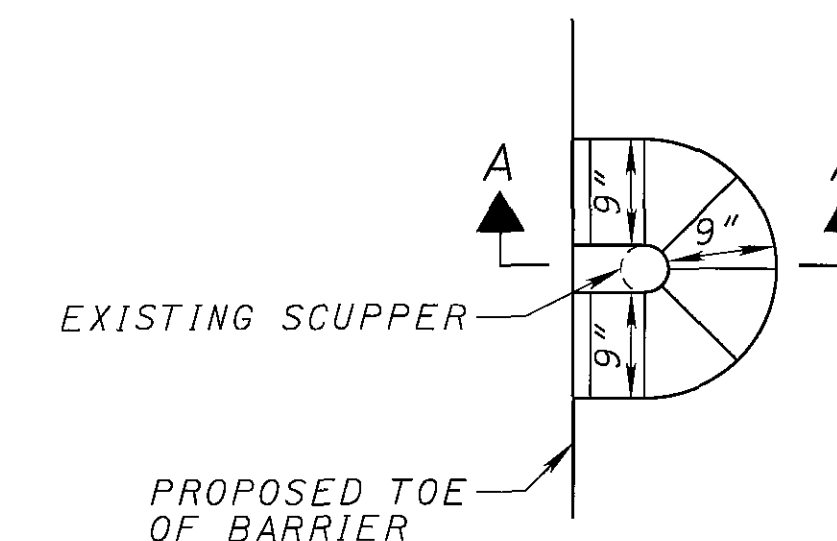
APPROACH SLAB OVERLAY DETAIL



SECTION A-A



PROPOSED PARAPET REFACING AND OVERLAY DETAIL

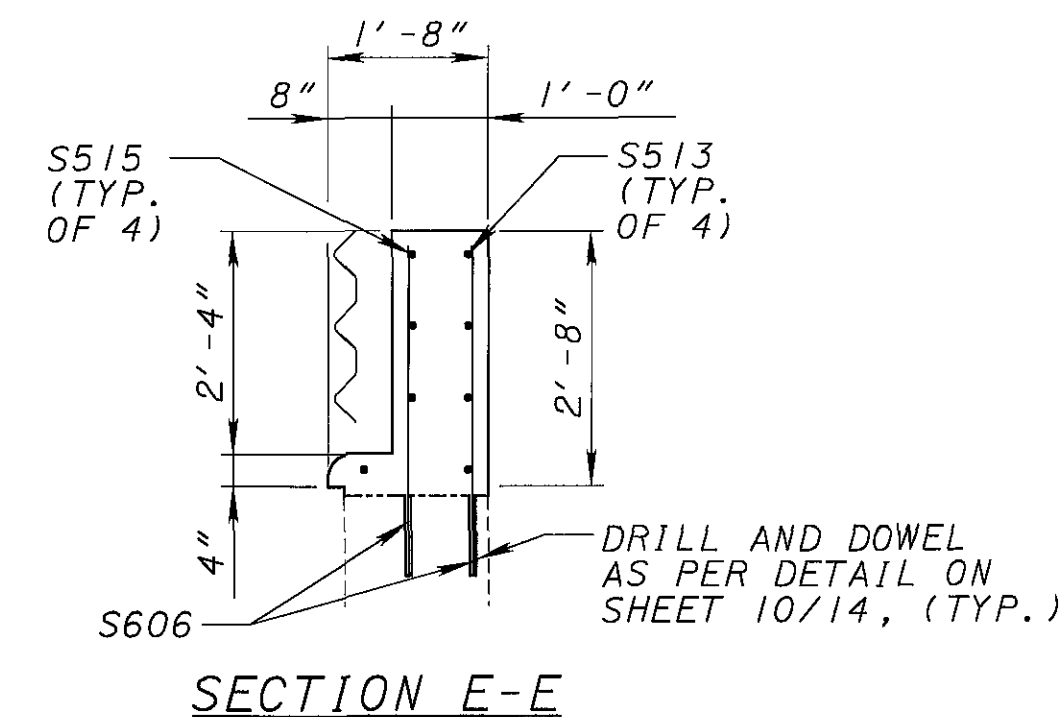
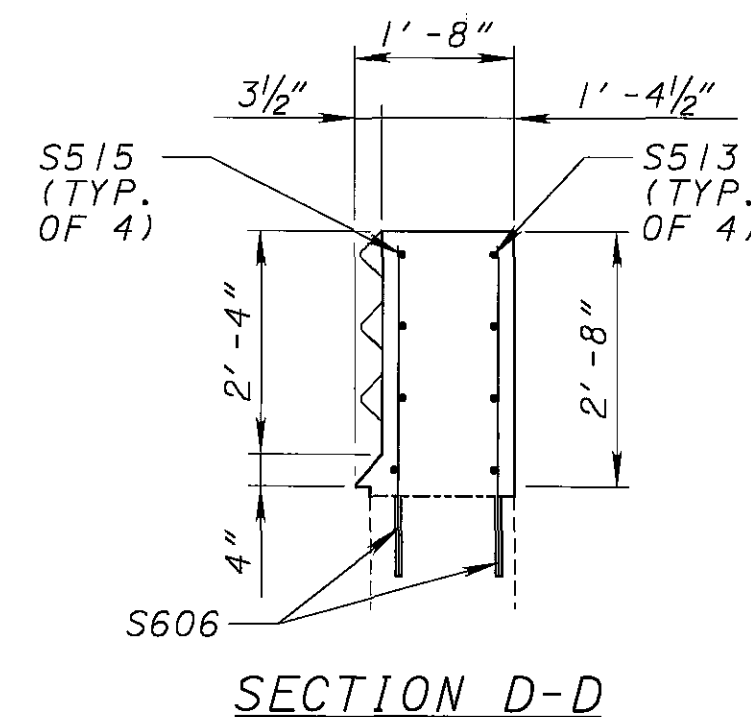
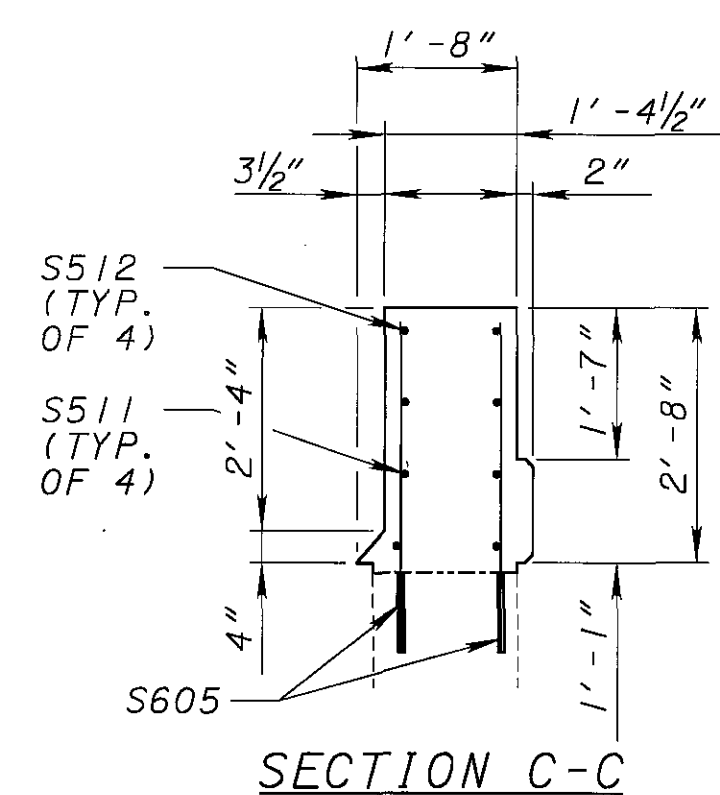
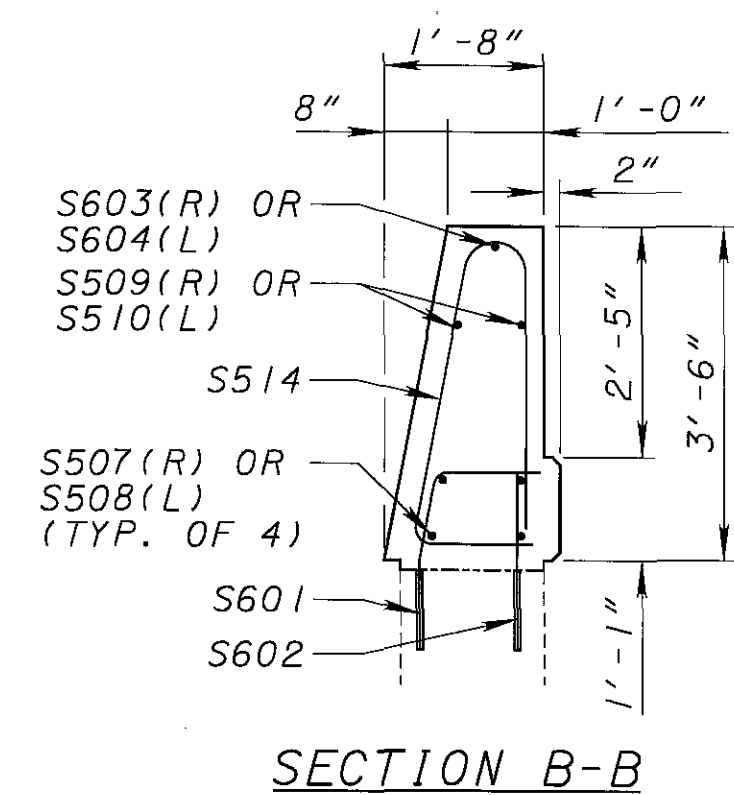
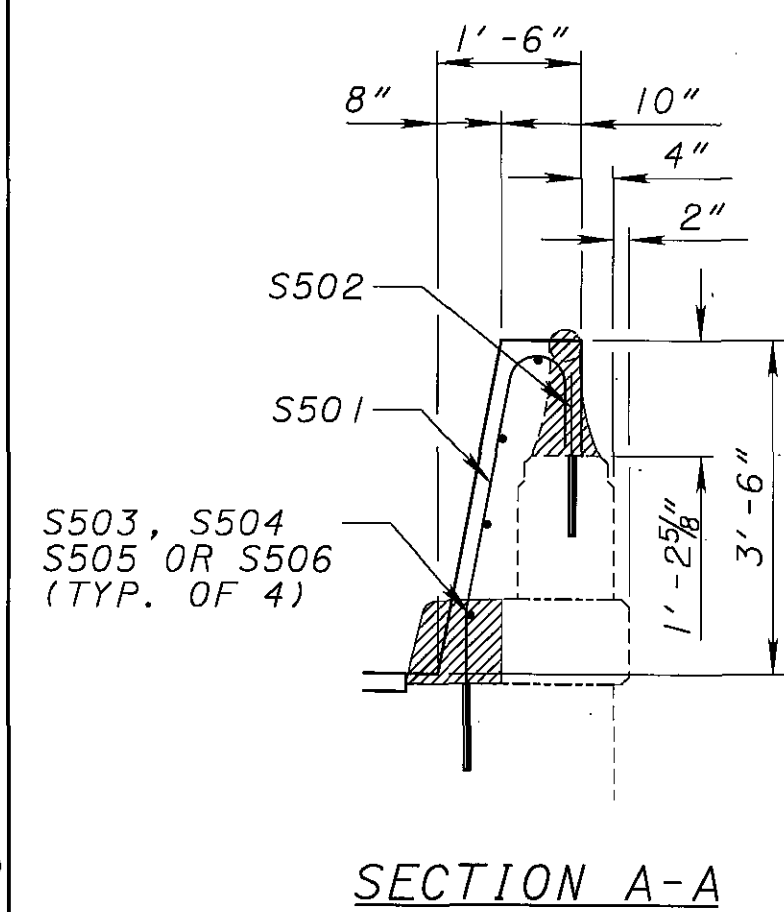
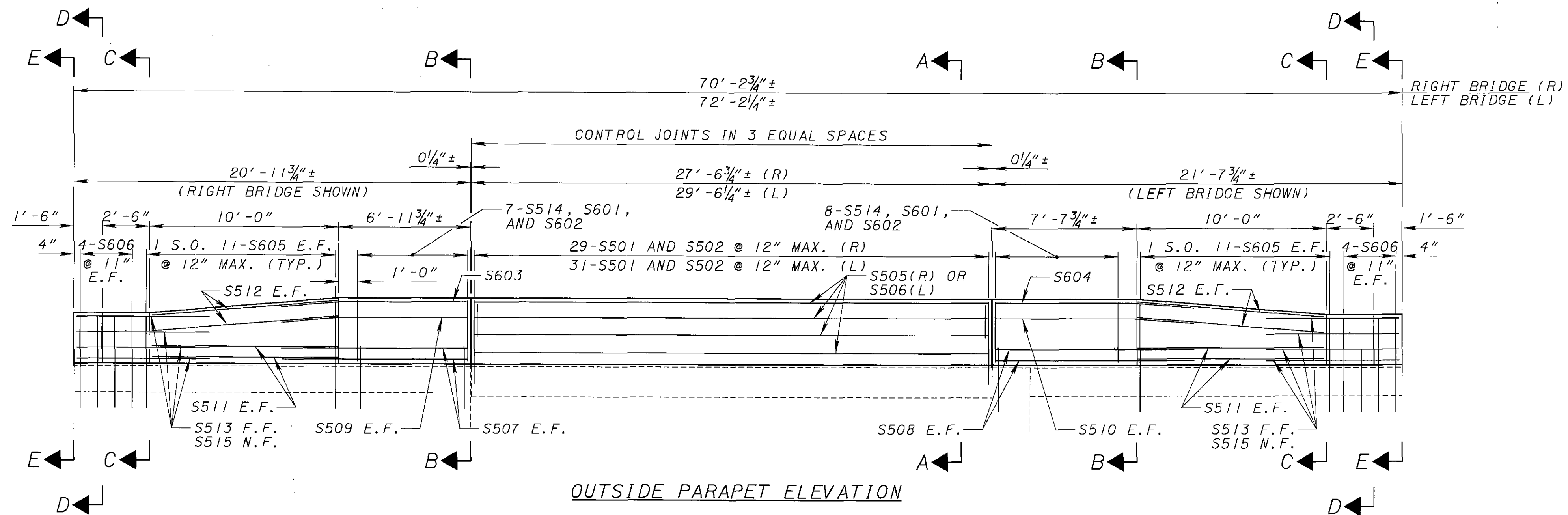
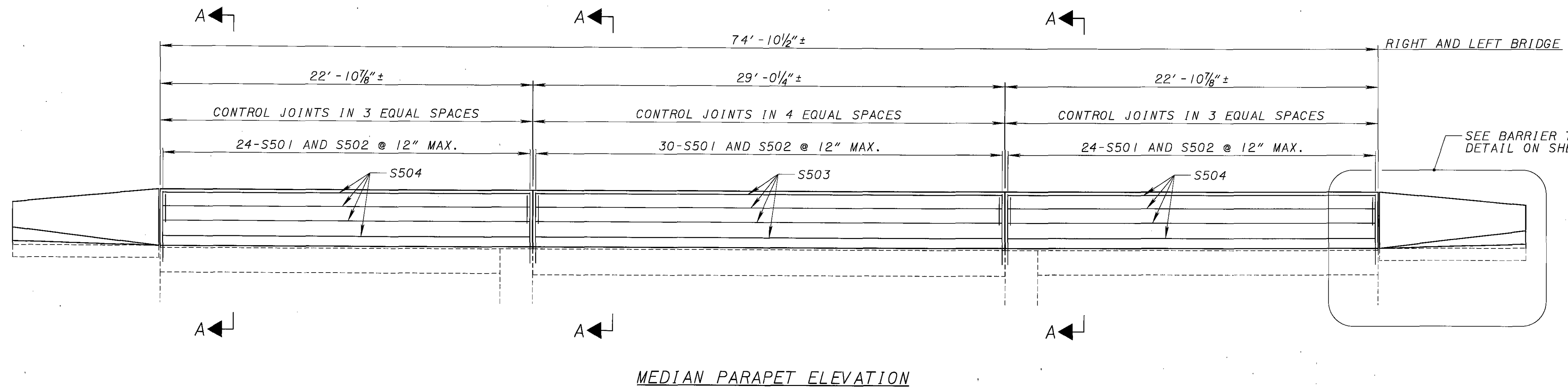


OVERLAY DETAIL AT SCUPPERS

NOTES:
JOINT BETWEEN BRIDGE DECK AND APPROACH SLAB SHALL BE REPLACED IN KIND AND THE COST OF THE JOINT SHALL BE INCLUDED WITH ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK.

LEGEND
 ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

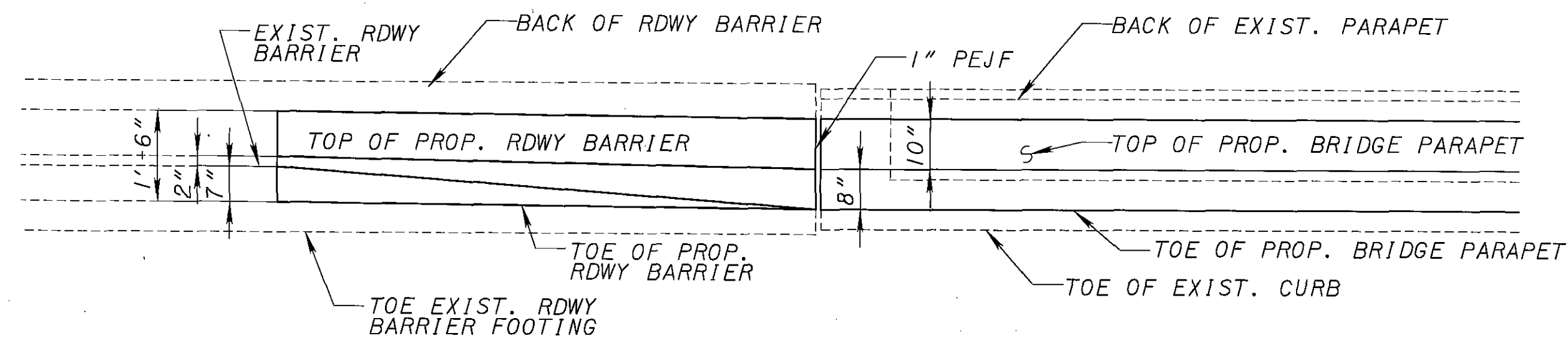
DESIGNED	DATE	REVIEWED	DATE
ASK	07-20-05	DWL	07-20-05
CHECKED	STRUCTURE FILE NUMBER	ASK	STRUCTURE FILE NUMBER
JAA	4300394 (L)	REVISED	4300424 (R)



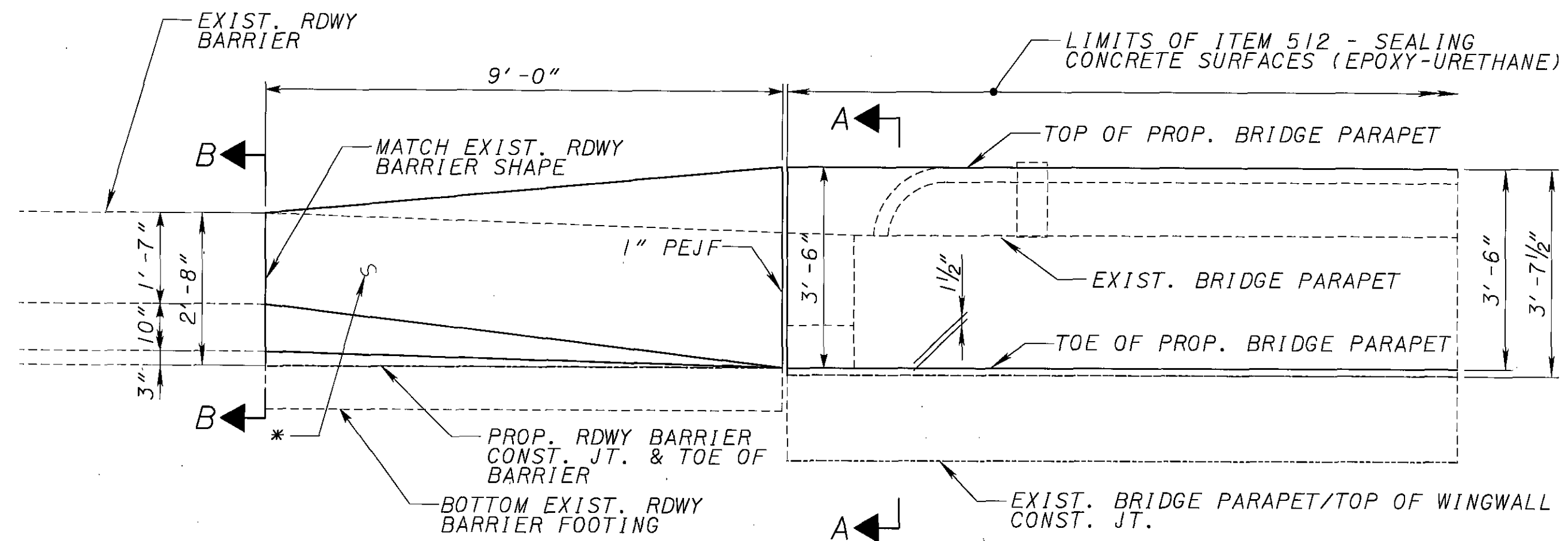
NOTES:
 SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS.
 SEE MEDIAN BARRIER TRANSITION DETAILS ON SHEET 13/14.
 LAP REINFORCING STEEL THE FOLLOWING MINIMUM LENGTHS:
 NO. 5 = 2'-11"
 NO. 6 = 3'-4"

LEGEND
 E.F. = EACH FACE
 MAX. = MAXIMUM
 TYP. = TYPICAL
 [Hatched Box] ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

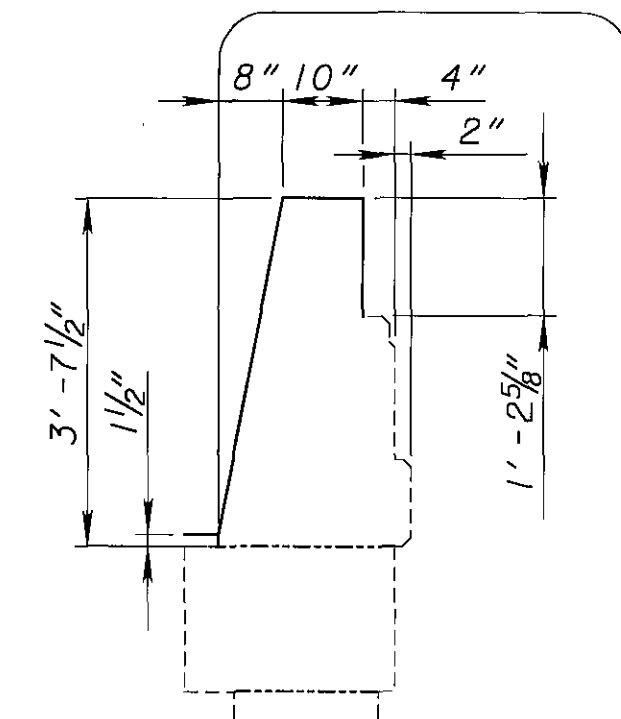
...lik002sdl.dgn



BARRIER TRANSITION PLAN

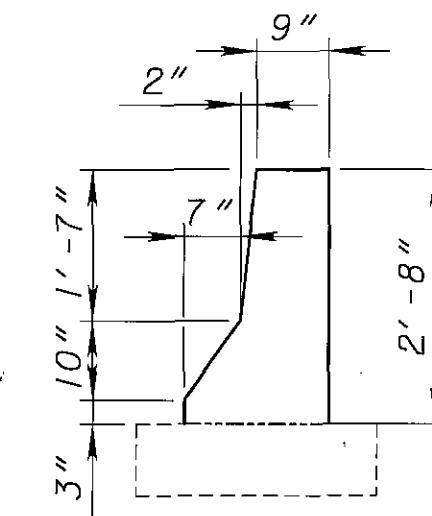


BARRIER TRANSITION ELEVATION



SECTION A-A

LIMITS OF ITEM 512 - SEALING CONCRETE SURFACES (EPOXY-URETHANE)



SECTION B-B

DATE	07-20-05
REVIEWED	DWL
STRUCTURE FILE NUMBER	4300394 (L) 4300424 (R)
DESIGNED	DCF
CHECKED	JAA

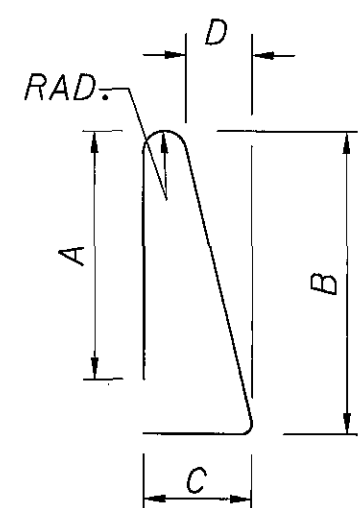
BARRIER TRANSITION DETAILS
 BRIDGE NO. LAK-2-0303 L&R
 OVER STREAM

LAK-2-0.00

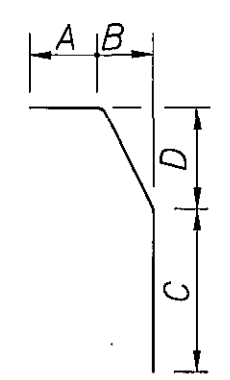
NOTES:
 SEE SHEET [12/14] FOR BRIDGE PARAPET DETAILS.
 *FOR DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWINGS RM-4.3 AND RM-4.4, AND ROADWAY PLAN INSERT SHEET "BARRIER TO BARRIER TRANSITION".

REINFORCEMENT SCHEDULE

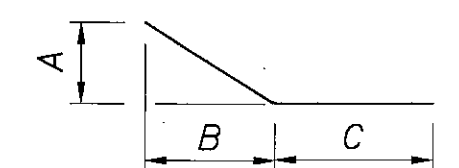
MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS							
					A	B	C	D	E	R	INC.	
S501	216	5'-8"	1276	34								
S502	216	1'-8"	375	STR								
S503	8	28'-8"	239	STR								
S504	16	22'-6"	375	STR								
S505	4	27'-2"	113	STR								
S506	4	29'-2"	121	STR								
S507	8	9'-10"	82	STR								
S508	8	10'-6"	87	STR								
S509	4	9'-10"	41	20	0'-3"	3'-0"	6'-10"					
S510	4	10'-5"	43	20	0'-3"	3'-0"	7'-5"					
S511	16	10'-0"	166	STR								
S512	16	10'-1"	168	STR								
S513	16	6'-10"	114	STR								
S514	30	7'-8"	239	2	3'-0"	3'-2"	1'-3"	0'-7 1/4"			0'-3 1/2"	
S515	16	6'-9"	112	20	0'-4 1/2"	5'-5"	1'-4"					
S601	30	2'-10"	127	9	1'-1"	0'-2"	0'-11"	0'-11"				
S602	30	1'-10"	82	STR								
S603	2	10'-3"	30	20	0'-3 1/2"	3'-5"	6'-10"					
S604	2	10'-10"	32	20	0'-3 1/2"	3'-5"	7'-5"					
	8	3'-4"										
S605	S.O.	T0	495	STR							0'-1"	
	11	4'-2"										
S606	32	3'-4"	160	STR								
		TOTAL	4477									



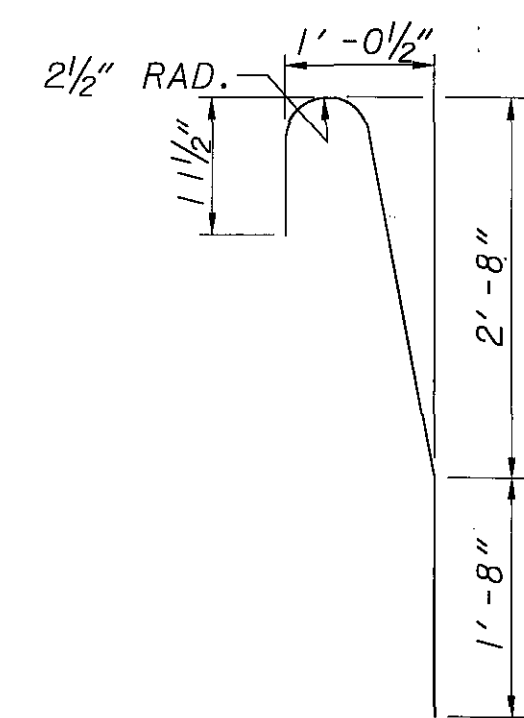
TYPE 2



TYPE 9



TYPE 20



TYPE 34

NOTES:

BAR SIZE: THE BAR SIZE IS INDICATED IN THE BAR MARK. THE MARK BEGINS WITH ONE OR TWO LETTERS THAT IDENTIFY THE BAR LOCATION. THE NEXT ONE OR TWO DIGITS INDICATE THE BAR SIZE, AND THE REMAINING TWO DIGITS ARE THE SEQUENCE NUMBER.

EXAMPLE: S1001
 S = SUPERSTRUCTURE BAR
 10 = #10 BAR
 01 = BAR SEQUENCE NUMBER 1

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

STD. WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

STR. IN THE BAR TYPE COLUMN INDICATES A STRAIGHT BAR.

R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

INC INDICATES THE LENGTH INCREMENT FOR SERIES BARS.

ALL REINFORCING STEEL TO BE EPOXY COATED.

DESIGN AGENCY
BURGESS & NIPLÉ
 100 WEST EINE STREET PANESVILLE, OHIO 44077

DATE 07-20-05
 REVIEWED DWL
 STRUCTURE FILE NUMBER 4300394 (L)
 4300424 (R)
 DRAWN ASK
 DESIGNED ASK
 CHECKED DCF

REINFORCING SCHEDULE
 BRIDGE NO. LAK-2-0303 L&R
 OVER STREAM

LAK-2-0.00

GEOLOGY OF THE SITE

THE PROPOSED LAK-2-0.00 MSE WALL STRUCTURE SITE IS LOCATED ON THE VERY LOW RELIEF, GLACIATED ERIE LAKE PLAIN JUST SOUTH OF LAKE ERIE. THE PROJECT SITE LIES AT AN APPROXIMATE ELEVATION OF 645 FEET. THE PROJECT SITE WAS PASSED OVER BY BOTH THE KANSAN AND WISCONSIN ICE SHEETS WHICH LEFT A GENERALLY THIN COATING OF DRIFT. FINE GRAINED POST-GLACIAL LAKE DEPOSITS ARE ALSO PRESENT ACROSS THE PROJECT SITE. THREE (3) TEST BORINGS (RW-1, RW-2, AND RW-3) WERE ADVANCED FOR MSE WALL FOUNDATION DESIGN. THE NEAR SURFACE SOILS ENCOUNTERED ALONG THE PROJECT SITE CONSIST OF NATURAL AND FILL SOILS. FILL SOILS WERE ENCOUNTERED DOWN TO BEDROCK IN TEST BORING RW-1 TO A DEPTH OF 8.5 FEET. THE FILL SOILS CONSISTED OF "VERY STIFF" SILTY CLAY (A-6b) AND "MEDIUM STIFF" CLAY (A-7-6) OVERLYING "SOFT" ELASTIC CLAY (A-7-5) BETWEEN ELEVATIONS 637.0 AND 639.5 FEET. NATURAL SOILS ENCOUNTERED IN TEST BORINGS RW-2 AND RW-3 CONSISTED OF "STIFF" SILTY CLAY (A-6b) DOWN TO BEDROCK. DEVONIAN-AGE SHALE BEDROCK WAS ENCOUNTERED IN ALL THREE TEST BORINGS.

EXPLORATION

THE EXPLORATION CONSISTED OF ADVANCING THREE (3) AUGER BORINGS ALONG THE PROPOSED MSE WALL MADE BY MEANS OF A MECHANICALLY POWERED, ATV-MOUNTED, HOLLOW-STEM ROTARY AUGER DRILL RIG PERFORMED ON JUNE 13, 2005. THE STRUCTURAL MSE WALL TEST BORINGS WERE ADVANCED TO DEPTHS RANGING FROM 13.0 TO 17.0 FEET BELOW THE EXISTING GROUND SURFACE. BEDROCK WAS ENCOUNTERED IN ALL THREE TEST BORINGS AND WAS CORE SAMPLED IN EACH. NOTE THAT THE NOISE BARRIER SECTION IS INCLUDED IN A SEPARATE SET OF DRAWINGS.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS








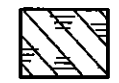

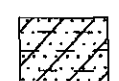
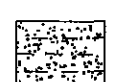
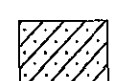
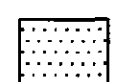



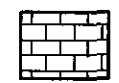
THE TEST BORINGS ADVANCED FOR MSE WALL FOUNDATION DESIGN WERE ADVANCED INTO EITHER NATURAL SOIL AND BEDROCK OR INTO FILL SOILS AND BEDROCK. THE FILL SOILS CONSISTED OF "VERY STIFF" SILTY CLAY (A-6b) AND "MEDIUM STIFF" CLAY (A-7-6) BOTH OVERLYING "SOFT" ELASTIC CLAY (A-7-5) THAT WAS ENCOUNTERED BETWEEN ELEVATIONS 637.0 AND 639.5 FEET. NATURAL SOILS ENCOUNTERED IN TEST BORINGS RW-2 AND RW-3 CONSISTED OF "STIFF" SILTY CLAY (A-6b) DOWN TO BEDROCK.

SHALE BEDROCK WAS ENCOUNTERED AT A DEPTH OF 8.5 FEET (ELEVATION OF 637.0 FEET) IN TEST BORING RW-1, AT A DEPTH OF 3.5 FEET (ELEVATION OF 640.5 FEET) IN TEST BORING RW-2, AND AT A DEPTH OF 3.5 FEET (ELEVATION OF 643.1 FEET) IN TEST BORING RW-3. THE BEDROCK ENCOUNTERED ACROSS THE MSE WALL SITE CONSISTED OF "VERY SOFT" TO "SOFT", FISSILE, GRAY SHALE THAT RANGED FROM DECOMPOSED TO WEATHERED. OXIDATION, WHICH STAINED THE ROCK BROWN, WAS GENERALLY PRESENT NEAR THE TOP OF BEDROCK. THE CONDITION OF THE CORE SAMPLES RANGED FROM "POOR" TO "FAIR" AS DETERMINED BY THE ROCK QUALITY DESIGNATION (RQD) OF THE SHALE. RQD VALUES RANGED FROM 45% TO 68%. UNCONFINED COMPRESSIVE STRENGTH TEST RESULTS OF THE SHALE CORE SPECIMENS RANGED FROM 116 PSI TO 224 PSI AND AVERAGED 155 PSI.

GROUNDWATER WAS NOT ENCOUNTERED IN ANY OF THE TEST BORINGS DURING DRILLING OPERATIONS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, IT WILL PROBABLY BE VERY LOW VOLUME SUCH AS FROM SEEPAGE.

FOR SPECIFIC CONDITIONS AT VARIOUS DEPTHS REFER TO THE INDIVIDUAL TEST BORING LOGS THAT FORM A SECTION OF THESE PLANS.





SYMBOLS OF ROCK TYPES

-  COAL
-  FIRE CLAY OR UNDERCLAY
-  WEATHERED MUDSTONE
-  MUDSTONE
-  WEATHERED SHALE
-  SHALE
-  WEATHERED CLAY-SHALE
-  CLAY-SHALE
-  BOULDERS or COBBLES
-  WEATHERED SILTSTONE
-  SILTSTONE
-  WEATHERED SANDSTONE
-  SANDSTONE
-  LEACHED DOLOMITE
-  DOLOMITE
-  LEACHED LIMESTONE
-  LIMESTONE

PARTICLE SIZE DEFINITIONS

	11.8 in	2.95 in	0.08 in	0.016 in	0.00290 in	0.0002 in
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE		

LEGEND

-  AUGER BORING LOCATION-PLAN VIEW.
-  PRESS AND/OR DRIVE SAMPLE AND/OR CORE BORING LOCATION-PLAN VIEW.
- TR TOP OF ROCK
- W — INDICATES FREE WATER ELEVATION
-  INDICATES STATIC WATER ELEVATION
-  HORIZONTAL BAR ON BORING LOG INDICATES THE DEPTH THE SAMPLE WAS TAKEN - PROFILE VIEW

X-Y-Z FIGURES BESIDE THE BORING LOG IN PROFILE INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST.

X = NO. OF BLOWS FOR FIRST 6 INCHES
Y = NO. OF BLOWS FOR SECOND 6 INCHES
Z = NO. OF BLOWS FOR THIRD 6 INCHES

GENERAL INFORMATION

DRIVE SAMPLES

DRIVE SAMPLE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG EMPLOYING A 2 INCH O.D., 1.4 INCH I.D., SPLIT-SPOON SAMPLER, AT 2.5 FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 LB HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THREE 6 INCH INCREMENTS IS CONSIDERED THE STANDARD PENETRATION TEST.

PRESS SAMPLES

PRESS SAMPLES ARE TAKEN BY MEANS OF MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG, EMPLOYING A 3 INCH O.D. THIN WALL PRESS SAMPLING TUBE. THE PRESS SAMPLING TUBE IS ADVANCED BY CONTINUOUS UNIFORM PRESSURE APPLIED BY THE DRILL RIG.

CORE BORINGS

CORE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG, EMPLOYING AN NW-PAM CORE BARREL WITH AN INDUSTRIAL DIAMOND CUTTING HEAD.

SAMPLING AND TESTING

THE BORING LOG SHEETS SHOW A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, TYPE OF SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TEST IN THREE 6 INCH INCREMENTS, AND A SAMPLE DESCRIPTION BASED ON LABORATORY TEST RESULTS, UTILIZING THE ODOT CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED ON UNDISTURBED SAMPLES, APPEAR GRAPHICALLY ON SEPARATE ENCLOSURES. ROCK SAMPLES ARE DISPLAYED ON THE LOG SHEETS, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, AMOUNT OF RECOVERY, AND A VISUAL CLASSIFICATION BASED ON TYPE, COLOR, DEGREE OF HARDNESS, GRAIN SIZE, DETERIORATION, BEDDING, ACID REACTION, AND OTHER QUALIFYING FACTORS.

AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT A SAMPLER CANNOT BE UTILIZED, A WASH SAMPLE IS PROCURED AND VISUALLY CLASSIFIED, IN ORDER TO DETERMINE THE GENERAL CHARACTERISTICS OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTES

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS 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 MATERIALS MANAGEMENT, THE OFFICE OF ROADWAY ENGINEERING OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223.

PRIME
ENGINEERING & ARCHITECTURE, INC.
COLUMBUS, OHIO 43223

DRAWN	N.S.	REVIEWED	M.B.	DATE	08/28/05
CALCULATED	S.M.	CHECKED	W.N.		

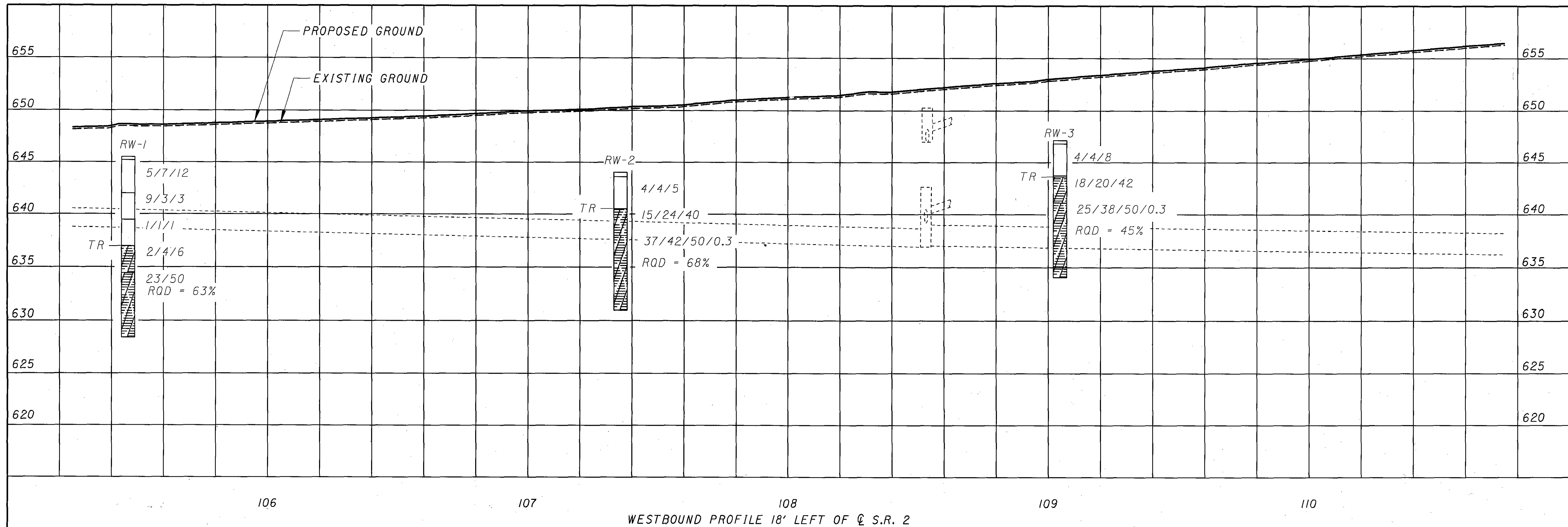
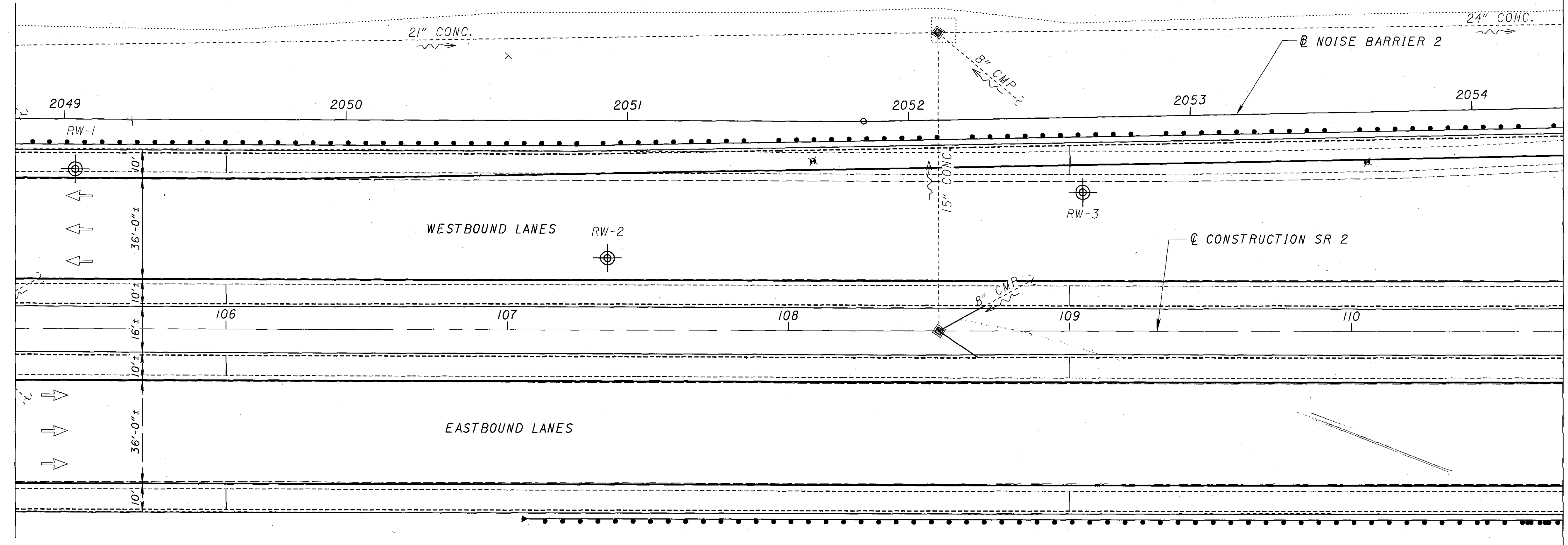
STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 MSE WALL

LAK-2-0.00

1 / 3

MATCH LINE STA. 105+25

MATCH LINE STA. 110+75



0 20 40
HORIZONTAL
SCALE IN METERS

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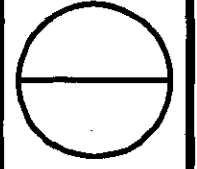
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REVIEWED
M.B.

DRAWN
N.S.

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 MSE WALL

LAK-2-0.00



State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 6/13/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 6/13/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00 (Retaining Wall)
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Boring No. RW-1 Station & Offset 105+46.40, 57.14' LT. Surface Elev. 645.48ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
645.5	0				TOPSOIL (4.0 inches thick) Very stiff, brown SILTY CLAY (A-6b), little sand, little rock and concrete fragments, moist. (FILL)	1	--	--	--	--	--	--	--	--	22	VISUAL	
642.0	4	5 - 7 - 12				2	--	--	--	--	--	--	--	--	--	28	VISUAL
639.5	6	9 - 3 - 3				3	0	3	12	85*	49	19	47			A-7-5	VISUAL
637.0	8	1 - 1 - 1		TR		4	--	--	--	--	--	--	--	--	--	--	VISUAL
634.5	12	2 - 4 - 6	41	0.9		5	--	--	--	--	--	--	--	--	--	--	VISUAL
628.5	16	23 - 50 ROD = 63%			Very soft to soft, gray, weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD. Note: U.C. Strength of SHALE at 12.1 feet = 224 psi							Run 1					

TERMINATION DEPTH = 17.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 6/13/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 6/13/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00 (Retaining Wall)
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Boring No. RW-2 Station & Offset 107+35.53, 26.00' LT. Surface Elev. 644.02ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
644.0	0				TOPSOIL (5.0 inches thick) Stiff, brown and gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL)	1	--	--	--	--	--	--	--	--	--	VISUAL	
643.6	2	4 - 4 - 5				2	--	--	--	--	--	--	--	--	--	--	VISUAL
640.5	4	15 - 24 - 40		TR		3	--	--	--	--	--	--	--	--	--	--	VISUAL
638.0	6	37-42-50/0.3				Run 1											
631.0	12	ROD = 68%	47	0.3		Very soft, brown and gray, decomposed to highly weathered SHALE. Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD. Note: U.C. Strength of SHALE at 8.8 feet = 125 psi											

TERMINATION DEPTH = 13.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 6/13/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 6/13/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00 (Retaining Wall)
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Boring No. RW-3 Station & Offset 109+04.53, 49.87' LT. Surface Elev. 646.64ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
646.6	0				TOPSOIL (4.0 inches thick) Stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL)	1	--	--	--	--	--	--	--	--	--	VISUAL	
643.1	4	4 - 4 - 8		TR		2	--	--	--	--	--	--	--	--	--	--	VISUAL
640.6	6	18 - 20 - 42				3	--	--	--	--	--	--	--	--	--	--	VISUAL
	8	25-38-50/0.3				Run 1											
633.6	12	ROD = 45%	3.6	1.4		Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE. Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, moderately fractured, fissile, poor quality as per ROD. Note: U.C. Strength of SHALE at 8.0 feet = 116 psi											

TERMINATION DEPTH = 13.0 FEET

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 (*Indicates silt & clay combined)

GEOLOGY OF THE SITE

THE NOISE BARRIER STRUCTURE SITE IS LOCATED ON THE VERY LOW RELIEF, GLACIATED ERIE LAKE PLAIN JUST SOUTH OF LAKE ERIE. THE PROJECT SITE LIES AT APPROXIMATE ELEVATIONS RANGING FROM 640.07 FEET AT STATION 87+88.90 TO 672.06 FEET AT STATION 126+47.06. THE PROJECT SITE WAS PASSED OVER BY BOTH THE KANSAN AND WISCONSIN ICE SHEETS WHICH LEFT A GENERALLY THIN COATING OF DRIFT. FINE GRAINED POST-GLACIAL LAKE DEPOSITS ARE ALSO PRESENT ACROSS THE PROJECT SITE. BEDROCK ENCOUNTERED ACROSS THE PROJECT SITE CONSISTED OF DEVONIAN-AGE SHALE. THE SHALE BEDROCK WAS ENCOUNTERED GENERALLY WITHIN 3.0 TO 4.0 FEET OF NATURAL GRADE AT ELEVATIONS RANGING FROM 630.1 FEET AT STATION 58+31.75 TO 650.3 FEET AT STATION 190+89.40. THE NEAR SURFACE SOILS ENCOUNTERED ALONG THE PROJECT SITE CONSISTED OF BOTH EMBANKMENT FILL AND OF NATURAL SOILS. THE NATURAL SOILS ENCOUNTERED BELOW THE EMBANKMENT FILL CONSISTED OF COHESIVE SOILS. THE EMBANKMENT FILL SOILS APPEARED TO BE CONSTRUCTED OF LOCAL BORROW MATERIALS THAT CONSISTED PRIMARILY OF SILT AND CLAY SOILS, SILTY CLAY SOILS, CLAY SOILS, OR OF THESE COHESIVE SOILS MIXED WITH SHALE FRAGMENTS.

EXPLORATION

THE EXPLORATION CONSISTED OF ADVANCING 108 AUGER BORINGS BETWEEN STATIONS 53+75.10 AND 245+99.34 MADE BY MEANS OF A MECHANICALLY POWERED, ATV-MOUNTED, HOLLOW-STEM ROTARY AUGER DRILL RIG PERFORMED BETWEEN JANUARY AND JUNE 2005. THE STRUCTURAL NOISE BARRIER TEST BORINGS WERE ADVANCED TO DEPTHS RANGING FROM 15.0 TO 32.0 FEET BELOW THE EXISTING GROUND SURFACE. BEDROCK WAS ENCOUNTERED IN 94 OUT OF THE 102 TEST BORINGS AND WAS CORE SAMPLED IN 70 BORINGS. THE TEST BORINGS ARE LABELED AS THE NEAREST APPROXIMATE MAINLINE OR RAMP STATION. NOTE THAT THE MSE WALL SECTION IS INCLUDED IN A SEPARATE SET OF DRAWINGS.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS




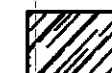





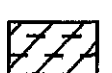


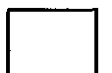

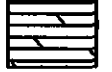


THE TEST BORINGS ADVANCED FOR NOISE BARRIER DESIGN WERE ADVANCED EITHER INTO NATURAL SOIL AND BEDROCK, THROUGH EMBANKMENT FILL INTO NATURAL SOILS AND BEDROCK, OR INTO EMBANKMENT FILL SOILS ONLY. THE EMBANKMENT FILL CONSISTED OF CLAY (A-7-6), SILTY CLAY (A-6b), SHALE FRAGMENTS WITH SAND, SILT AND CLAY (A-2-6), SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), SILT AND CLAY (A-6a), COARSE AND FINE SAND (A-3a), AND ELASTIC CLAY (A-7-5). NATURAL SOILS ENCOUNTERED IN THE NOISE BARRIER TEST BORINGS CONSISTED OF CLAY (A-7-6), ELASTIC CLAY (A-7-5), SILTY CLAY (A-6b), AND SILT AND CLAY (A-6a). THE CONSISTENCIES OF THE EMBANKMENT AND NATURAL SOILS RANGED FROM "SOFT" TO "HARD" BUT WERE PRIMARILY "STIFF". THE RELATIVE DENSITIES OF THE FEW GRANULAR AND/OR NON-COHESIVE EMBANKMENT FILL SOILS ENCOUNTERED ACROSS THE SITE RANGED FROM "VERY LOOSE" TO "MEDIUM DENSE".

BEDROCK WAS ENCOUNTERED IN 94 OUT OF THE 108 NOISE BARRIER TEST BORINGS AND WAS CORE SAMPLED IN 70 OF THESE TEST BORINGS. IN GENERAL, THE BEDROCK ENCOUNTERED ACROSS THE SITE CONSISTED OF "VERY SOFT" TO "SOFT", FISSILE, GRAY SHALE THAT RANGED FROM DECOMPOSED TO WEATHERED. OXIDATION, WHICH STAINED THE ROCK BROWN, WAS GENERALLY PRESENT NEAR THE TOP OF BEDROCK. THE CONDITION OF THE CORE SAMPLES RANGED FROM "VERY POOR" TO "EXCELLENT" AS DETERMINED BY THE ROCK QUALITY DESIGNATION (RQD) OF THE SHALE. RQD VALUES RANGED FROM 0% TO 100% BUT AVERAGED APPROXIMATELY 42%. THE UNCONFINED COMPRESSIVE STENGTH TEST RESULTS OF THE SHALE CORE SPECIMENS RANGED FROM 99 PSI TO 2,117 PSI AND AVERAGED APPROXIMATELY 605 PSI.

GROUNDWATER SEEPAGE WAS ENCOUNTERED IN 10 TEST BORINGS AT ELEVATIONS RANGING FROM 632.75 FEET IN TEST BORING 57+00R TO 658.20 FEET IN TEST BORING 53+40. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, IT CAN BE CONTROLLED THROUGH THE USE OF SUMP PUMPS.

FOR SPECIFIC CONDITIONS AT VARIOUS DEPTHS REFER TO THE INDIVIDUAL TEST BORING LOGS THAT FORM A SECTION OF THESE PLANS.




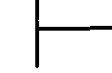
SYMBOLS OF ROCK TYPES

-  COAL
-  FIRE CLAY OR UNDERCLAY
-  WEATHERED MUDSTONE
-  MUDSTONE
-  WEATHERED SHALE
-  SHALE
-  WEATHERED CLAY-SHALE
-  CLAY-SHALE
-  BOULDERS or COBBLES
-  WEATHERED SILTSTONE
-  SILTSTONE
-  WEATHERED SANDSTONE
-  SANDSTONE
-  LEACHED DOLOMITE
-  DOLOMITE
-  LEACHED LIMESTONE
-  LIMESTONE

PARTICLE SIZE DEFINITIONS

	11.8 in	2.95 in	0.08 in	0.016 in	0.00290 in	0.0002 in
Boulders						
Cobbles						
Gravel						
Coarse Sand						
Fine Sand						
Silt						
Clay						
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE		

LEGEND

-  AUGER BORING LOCATION-PLAN VIEW.
-  PRESS AND/OR DRIVE SAMPLE AND/OR CORE BORING LOCATION-PLAN VIEW.
- TR TOP OF ROCK
- W INDICATES FREE WATER ELEVATION
-  INDICATES STATIC WATER ELEVATION
-  HORIZONTAL BAR ON BORING LOG INDICATES THE DEPTH THE SAMPLE WAS TAKEN - PROFILE VIEW

X-Y-Z FIGURES BESIDE THE BORING LOG IN PROFILE INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST.

- X = NO. OF BLOWS FOR FIRST 6 INCHES
- Y = NO. OF BLOWS FOR SECOND 6 INCHES
- Z = NO. OF BLOWS FOR THIRD 6 INCHES

DRIVE SAMPLE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG EMPLOYING A 2 INCH O.D., 1.4 INCH I.D., SPLIT-SPOON SAMPLER, AT 2.5 FOOT AND/OR 5.0 FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 LB HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THREE 6 INCH INCREMENTS IS CONSIDERED THE STANDARD PENETRATION TEST.

PRESS SAMPLES ARE TAKEN BY MEANS OF MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG, EMPLOYING A 3 INCH O.D. THIN WALL PRESS SAMPLING TUBE. THE PRESS SAMPLING TUBE IS ADVANCED BY CONTINUOUS UNIFORM PRESSURE APPLIED BY THE DRILL RIG.

CORE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED, ROTARY-TYPE DRILL RIG, EMPLOYING AN NW-PAM CORE BARREL WITH AN INDUSTRIAL DIAMOND CUTTING HEAD.

THE BORING LOG SHEETS SHOW A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, TYPE OF SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TEST IN THREE 6 INCH INCREMENTS, AND A SAMPLE DESCRIPTION BASED ON LABORATORY TEST RESULTS, UTILIZING THE ODOT CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED ON UNDISTURBED SAMPLES, APPEAR GRAPHICALLY ON SEPARATE ENCLOSURES. ROCK SAMPLES ARE DISPLAYED ON THE LOG SHEETS, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, AMOUNT OF RECOVERY, AND A VISUAL CLASSIFICATION BASED ON TYPE, COLOR, DEGREE OF HARDNESS, GRAIN SIZE, DETERIORATION, BEDDING, ACID REACTION, AND OTHER QUALIFYING FACTORS.

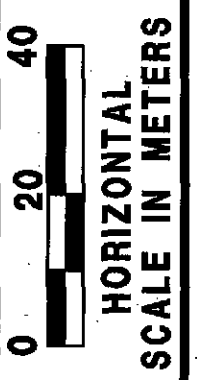
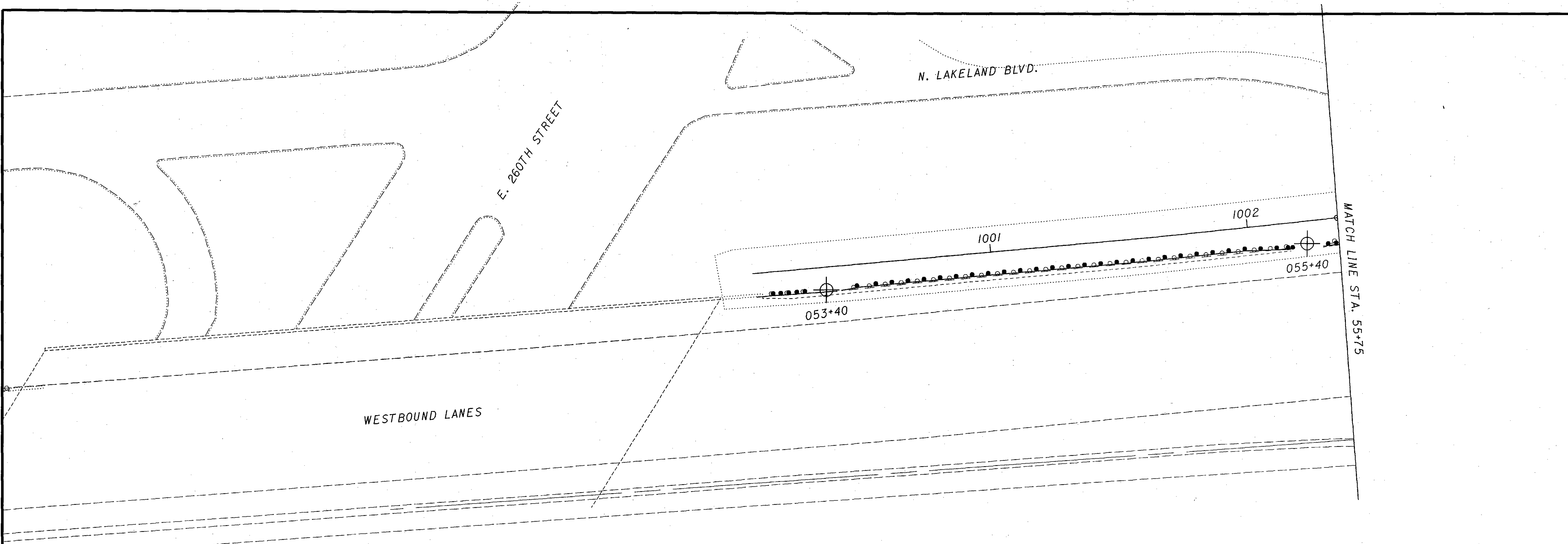
AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT A SAMPLER CANNOT BE UTILIZED, A WASH SAMPLE IS PROCURED AND VISUALLY CLASSIFIED, IN ORDER TO DETERMINE THE GENERAL CHARACTERISTICS OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS 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 MATERIALS MANAGEMENT, THE OFFICE OF ROADWAY ENGINEERING OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223.



CALCULATED	S.M.	CHECKED	W.N.
DATE	09/28/05		
REVIEWED	M.B.		
DRAWN	N.S.		

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

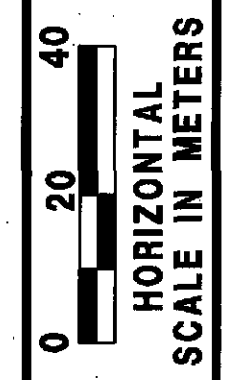
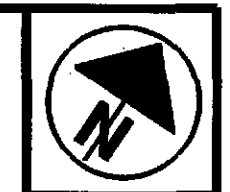


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DATE	CHECKED	
09/28/05		
REVIEWED	M.B.	
DRAWN	N.S.	

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

670																			670	
665																			665	
660																			660	
655			053+40															055+40	655	
			w															w		
			2/1/2															2/2/2		
			2/3/3															1/3/3		
			2/3/4															1/2/3		
			2/4/3															2/5/4		
			3/2/4															3/2/5		
			2/3/4															3/3/4		
			3/4/8															4/4/6		
			6/5/9															3/7/12		
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LAK-2-0.00

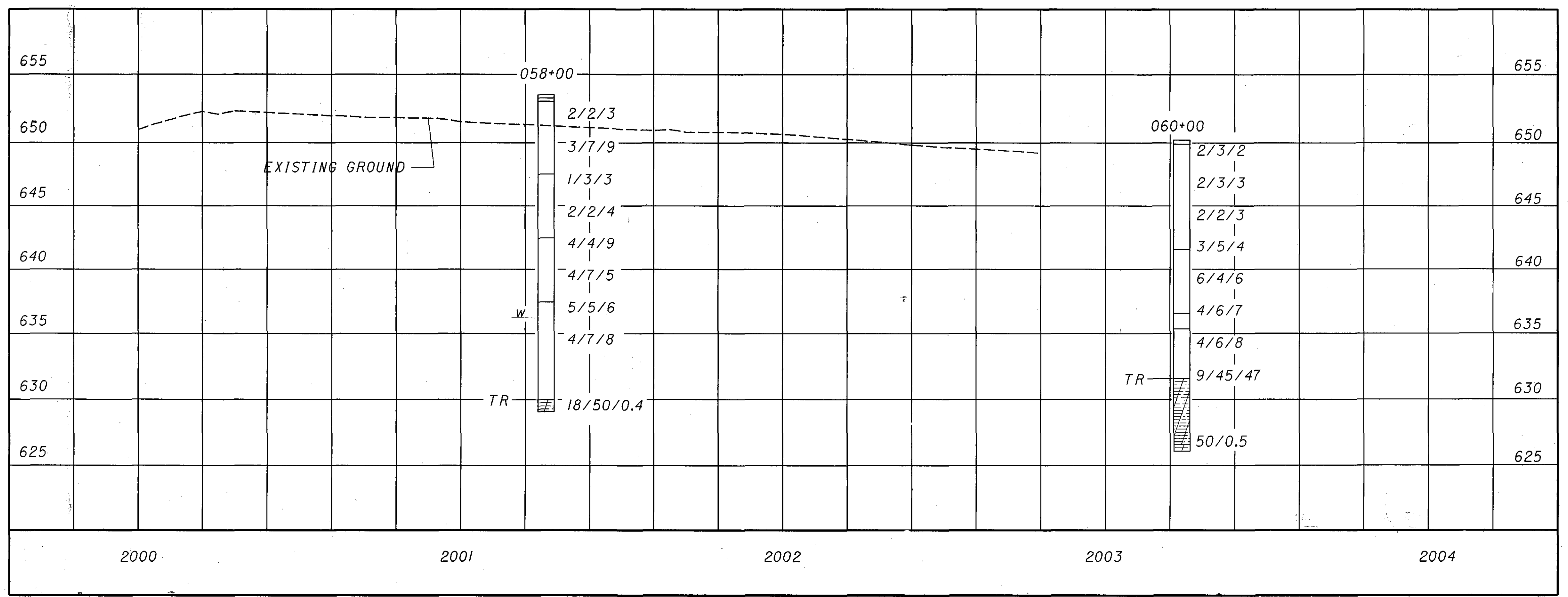
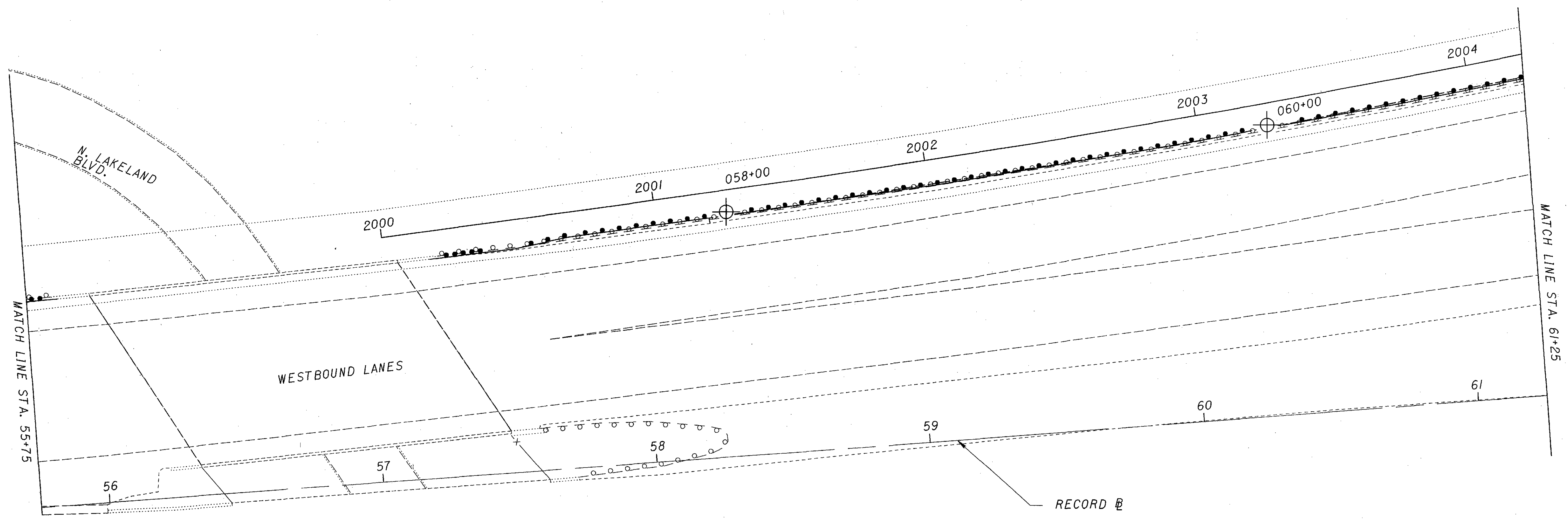


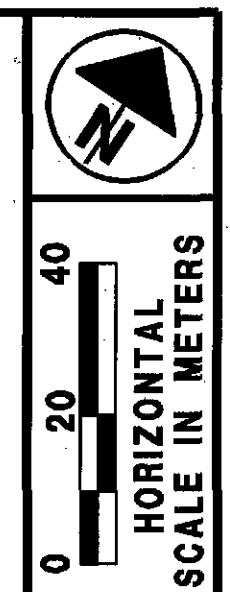
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DATE	09/28/05		
REVIEWED	M.B.		
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

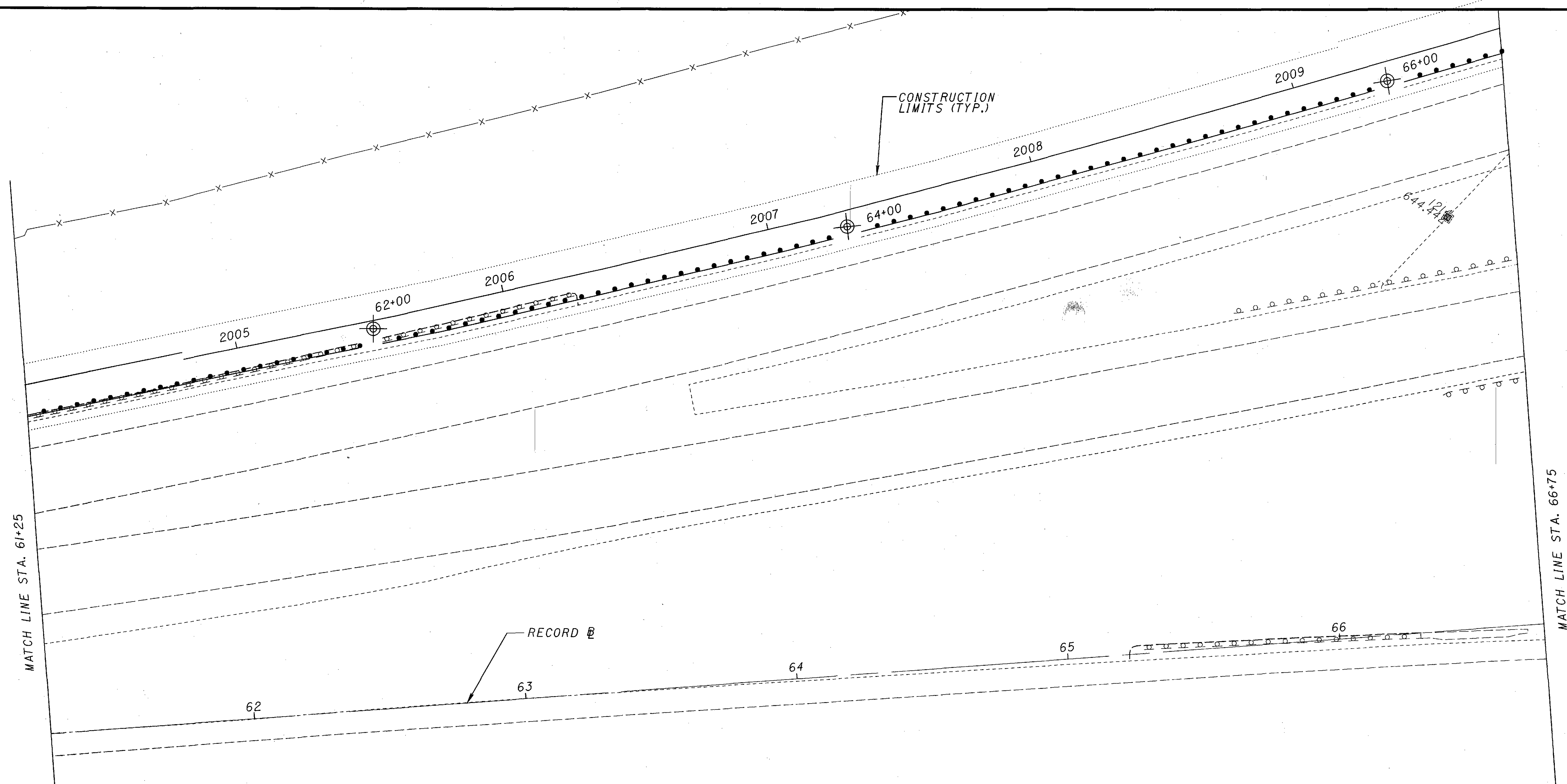
3/89



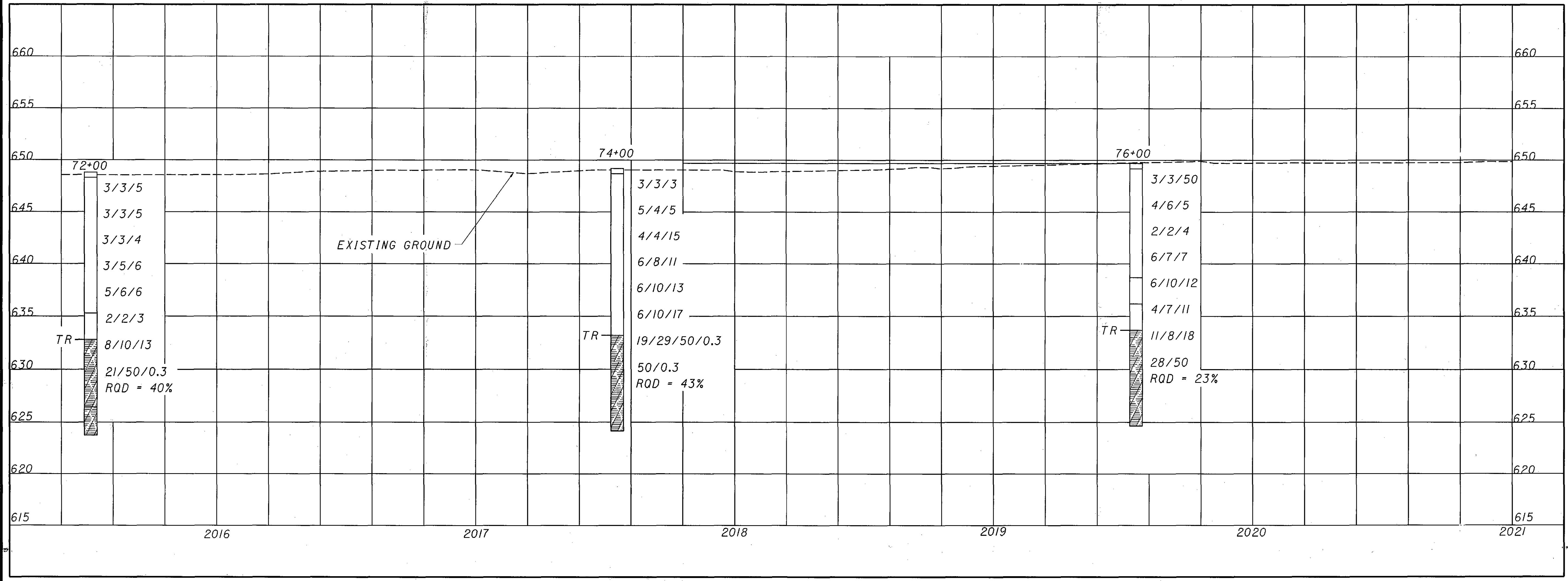
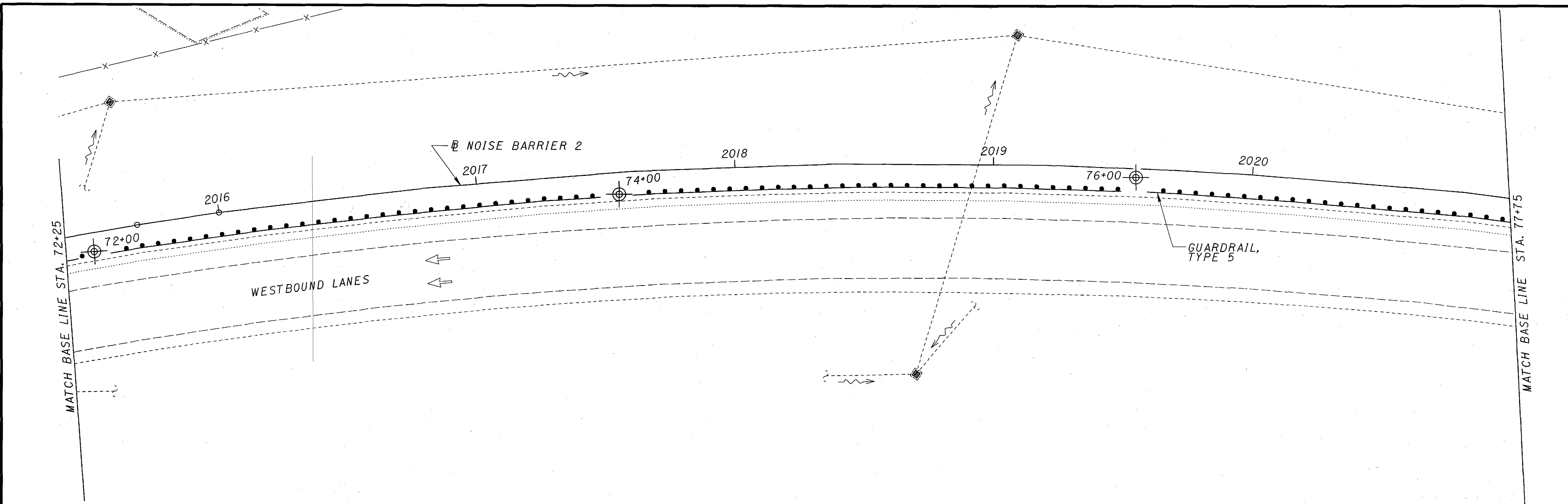


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DATE	09/28/05		
REVIEWED	M.B.		
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS



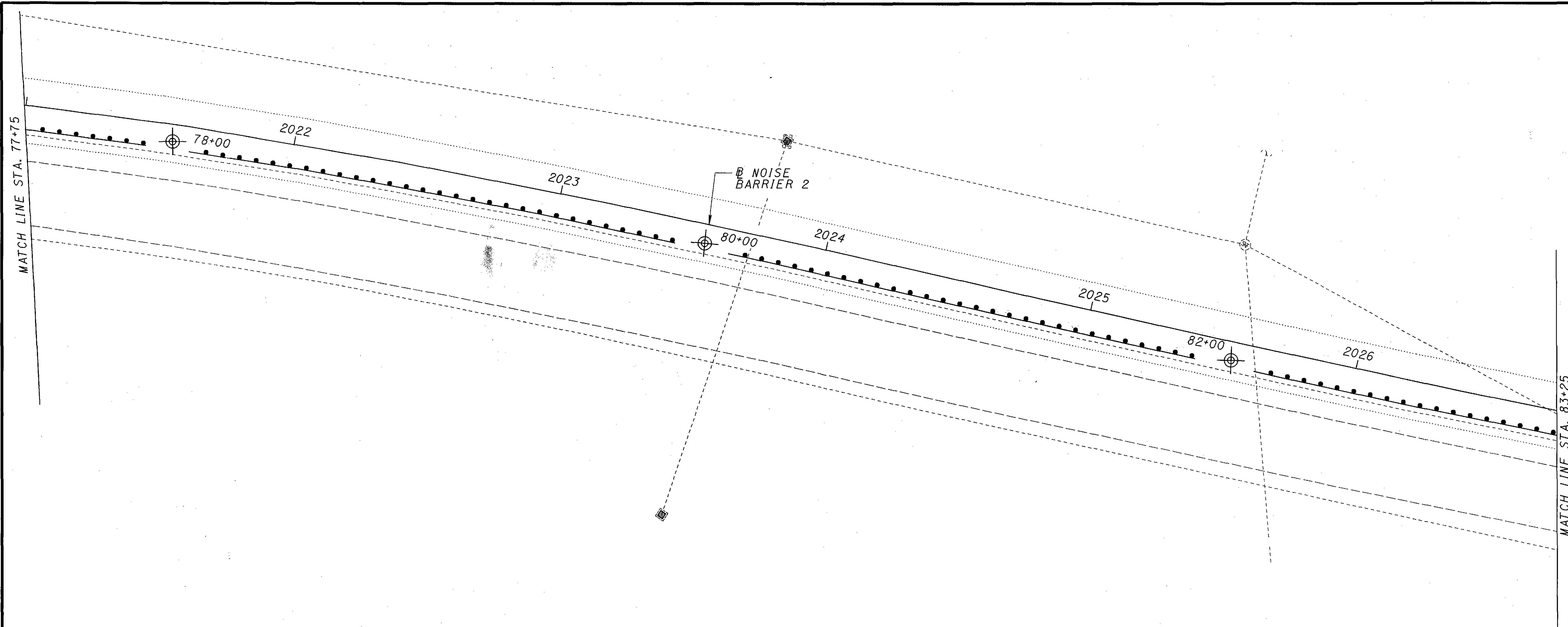
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645		3/3/3	EXISTING GROUND	4/6/8		50/0		645
640		2/3/3		4/8/13		3/3/4		640
		3/4/9		3/6/14		6/8/11		
635		4/5/6		16/18/21	TR	11/20/23		635
		9/9/14		20/21/24		19/50/0.3		
630		TR 20/28/50/0.3		50/0.3		26/50/0.3		630
		RQD = 27%		RQD = 60%		RQD = 68%		
625								625
620								620
	2005	2006	2007	2008	2009			



DRAWN	N.S.	REVIEWED	M.B.	DATE	09/28/05	CALCULATED	S.M.	CHECKED	W.N.
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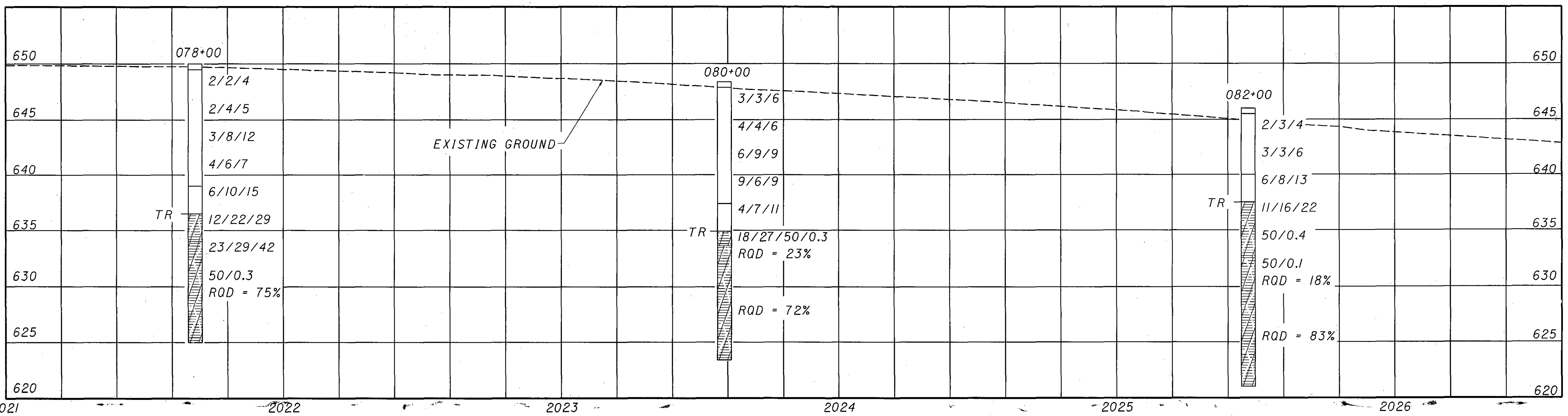
STRUCTURE FOUNDATION INVESTIGATION
 LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00
 8/89

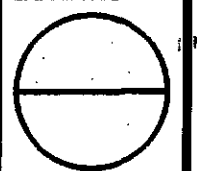


DRAWN	N.S.
REVIEWED	M.B.
DATE	08/28/05
CALCULATED	S.M.
CHECKED	W.N.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**



LAK-2-0.00





0 20 40
HORIZONTAL
SCALE IN METERS

CALCULATED
S.M.
CHECKED
W.N.

DATE
08/28/05

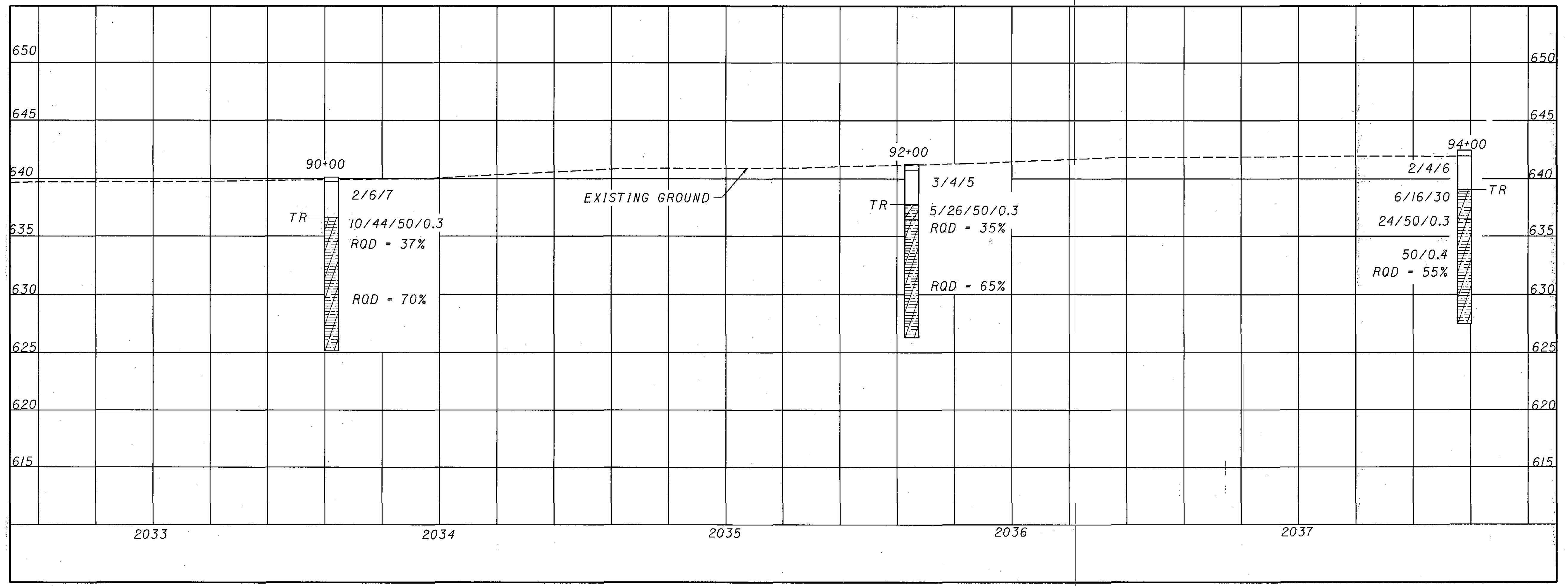
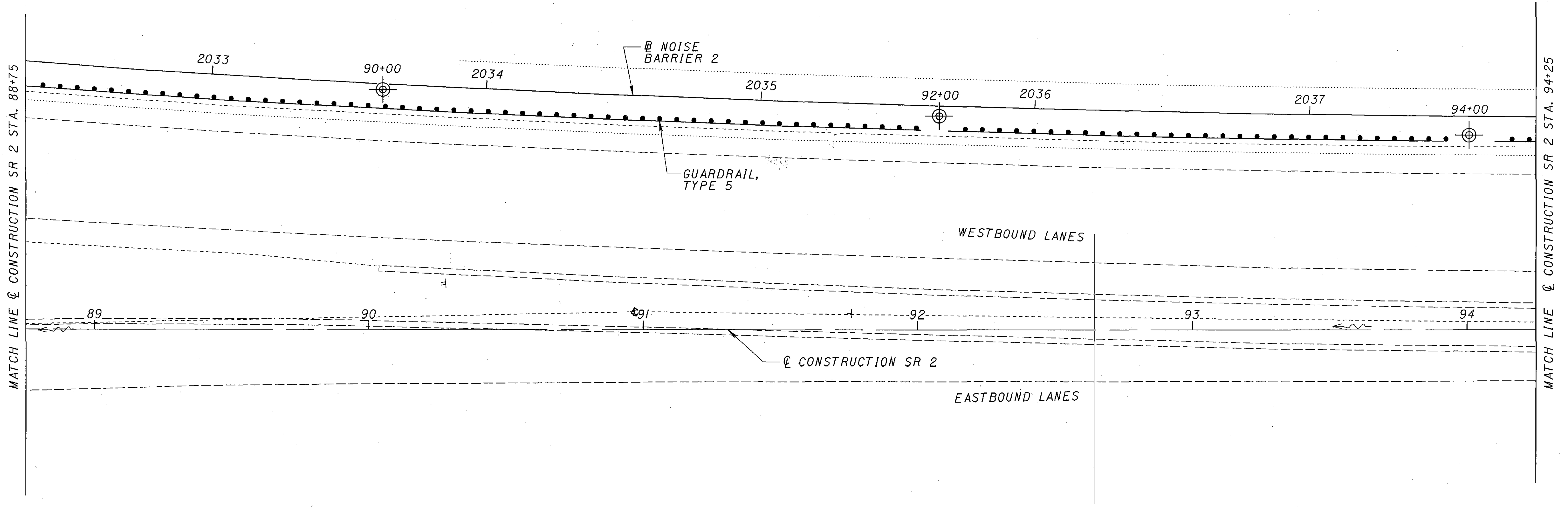
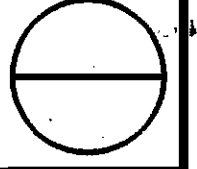
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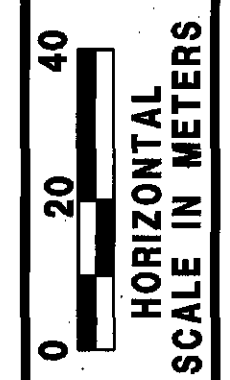
DRAWN
N.S.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

9/89





CALCULATED S.M.
CHECKED W.N.

DATE 09/28/05

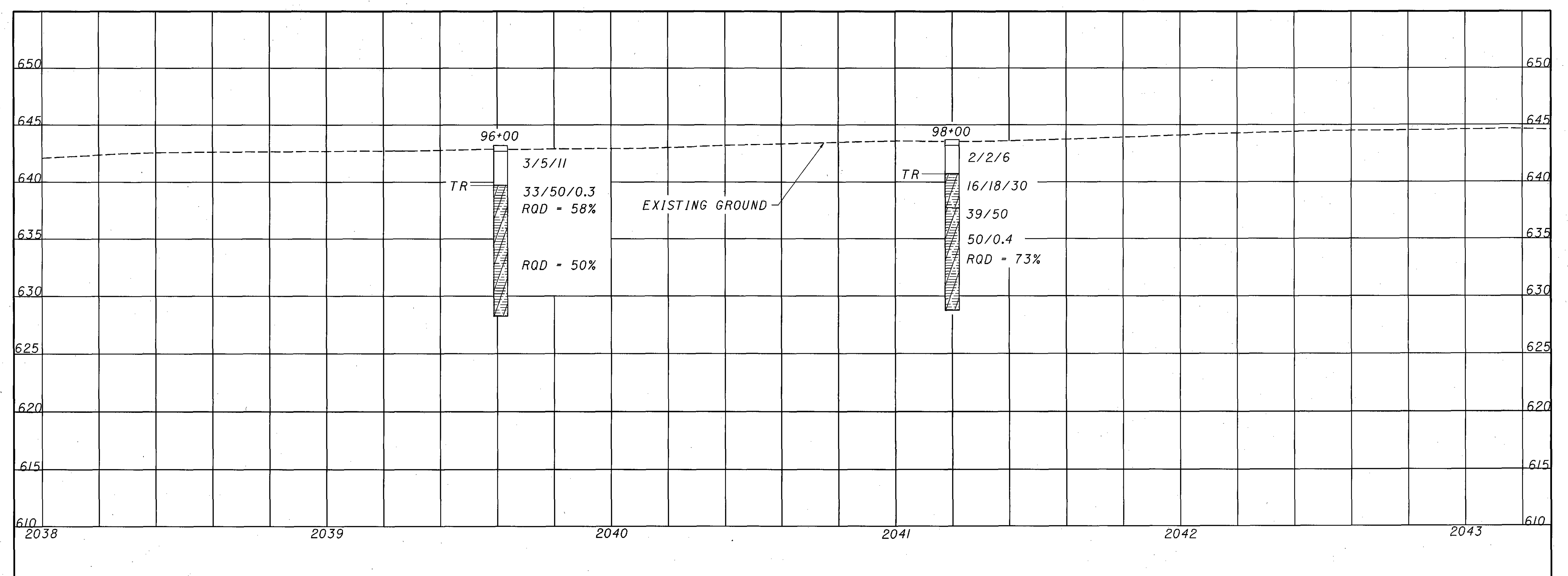
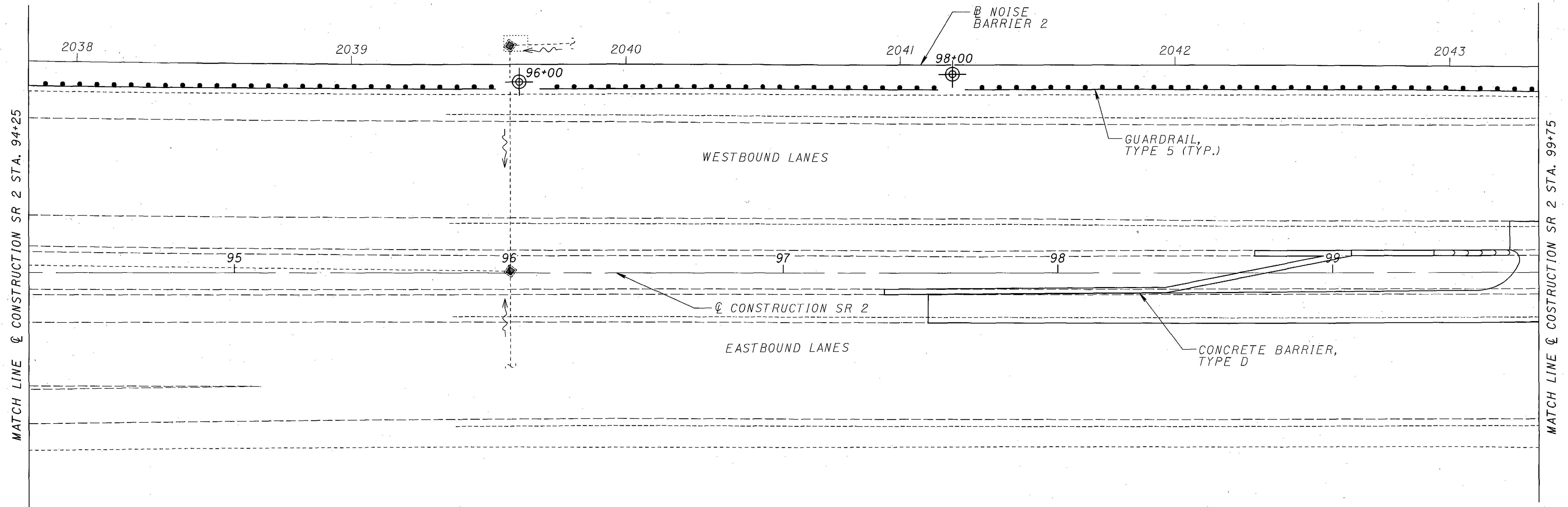
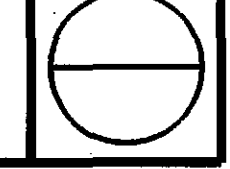
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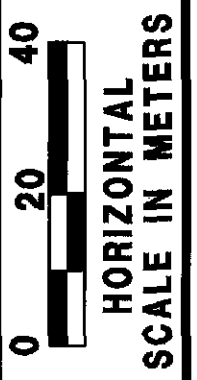
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**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

10/89

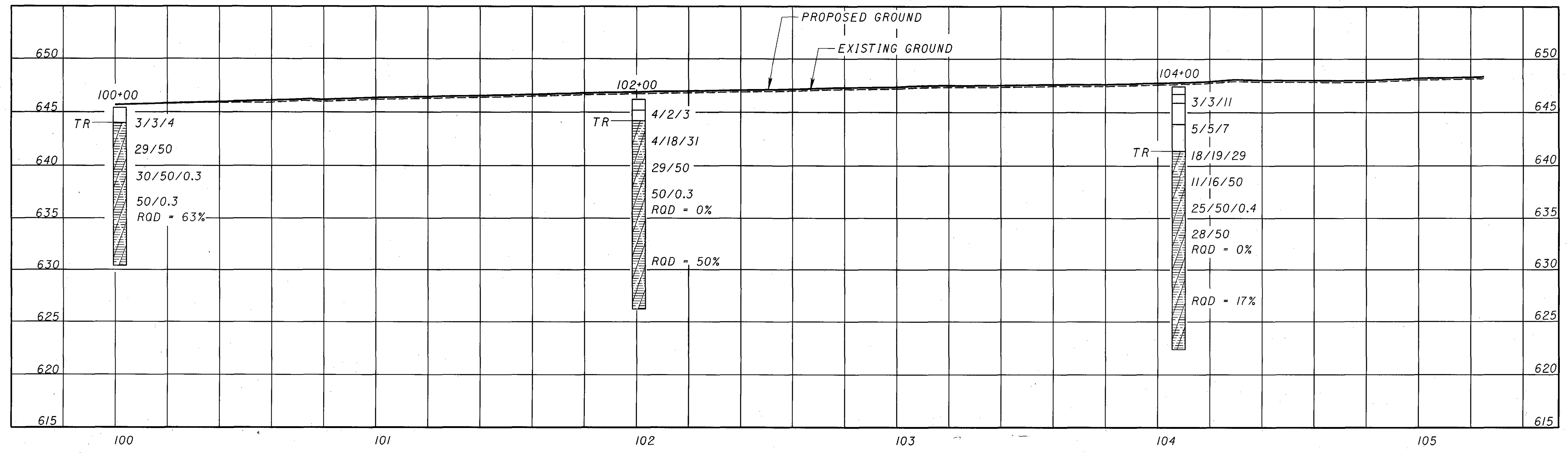
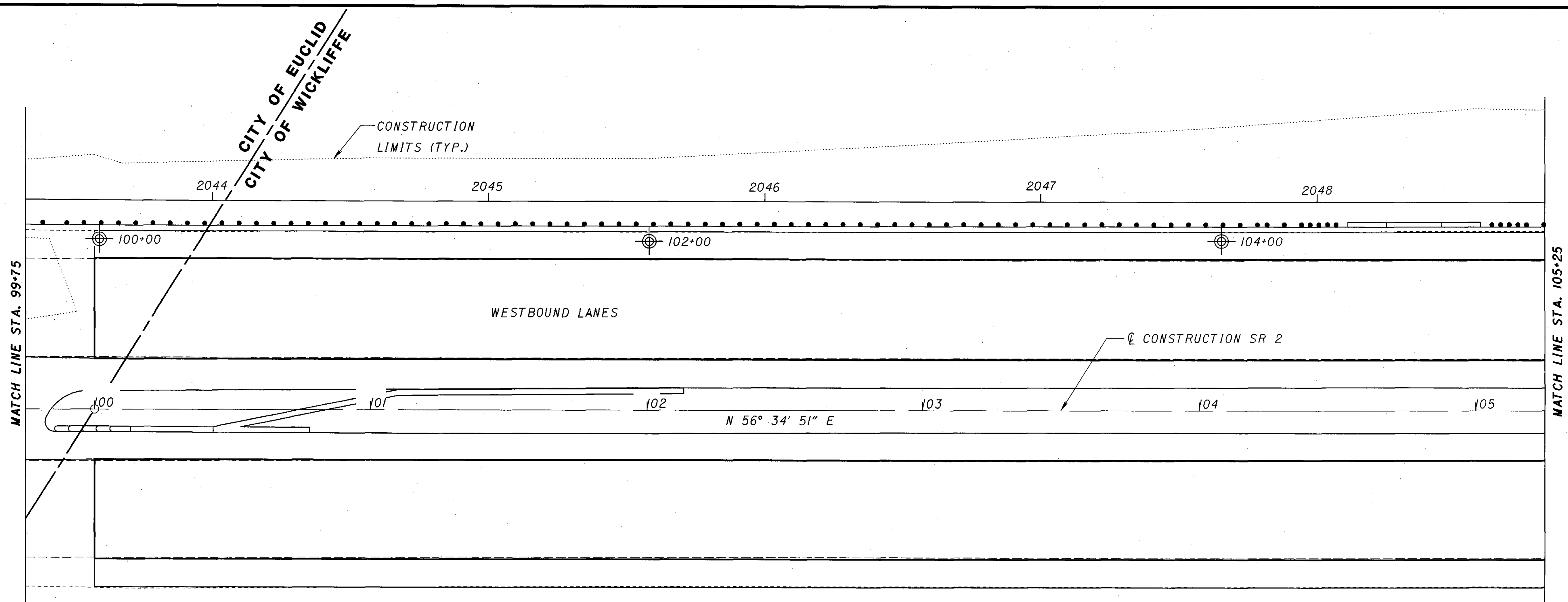




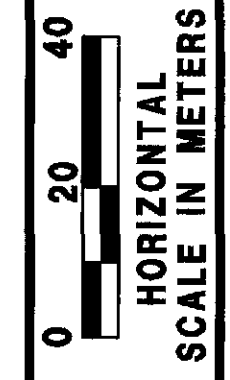
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DATE	09/28/05	
REVIEWED	M.B.	
DRAWN	N.S.	

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00
11/89



WESTBOUND PROFILE 18' LEFT OF CL S.R. 2



CALCULATED S.M. CHECKED W.N.

DATE 09/28/05

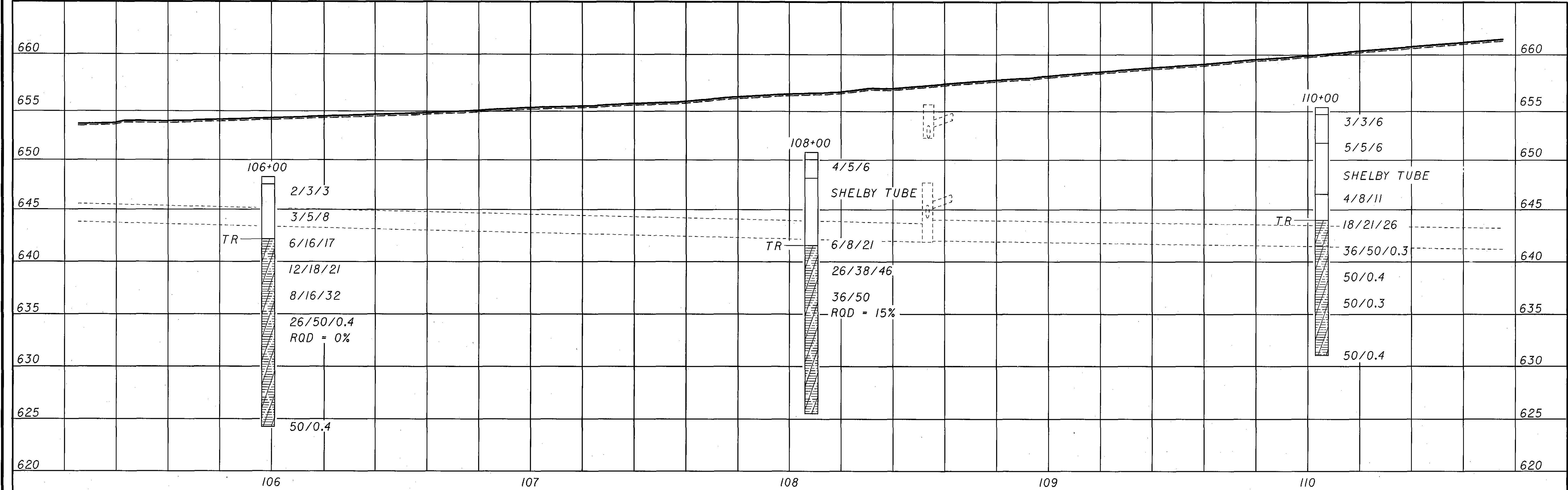
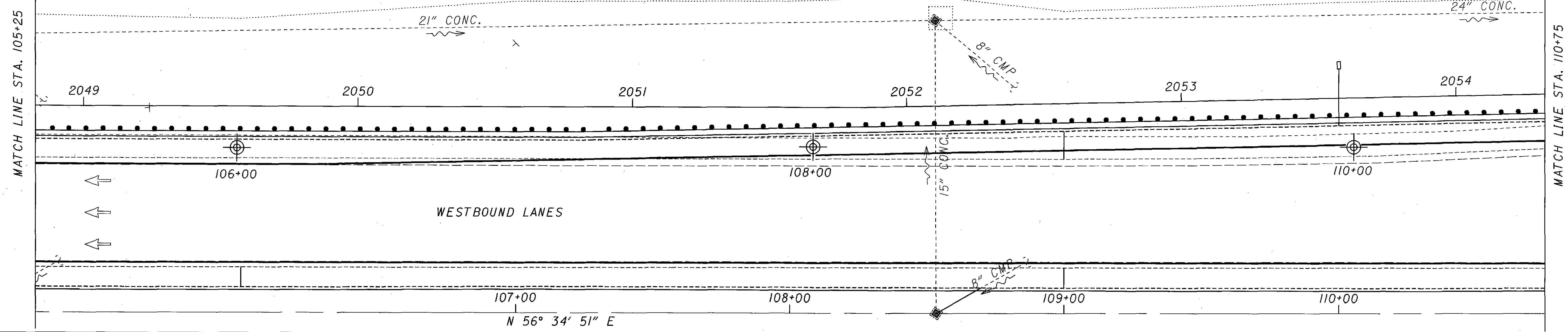
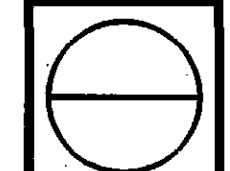
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DRAWN N.S.

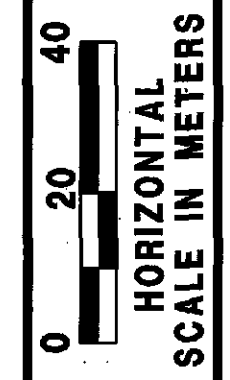
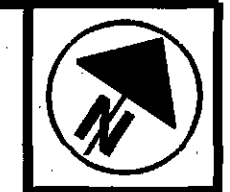
**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

12/89



WESTBOUND PROFILE 18' LEFT OF C S.R. 2

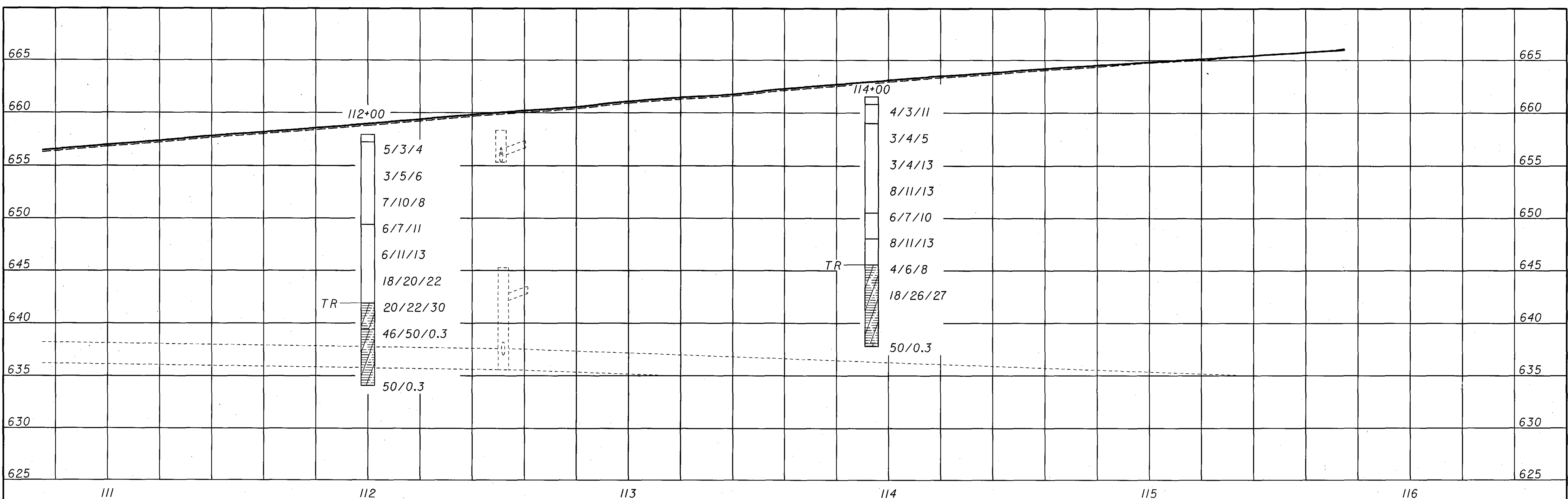
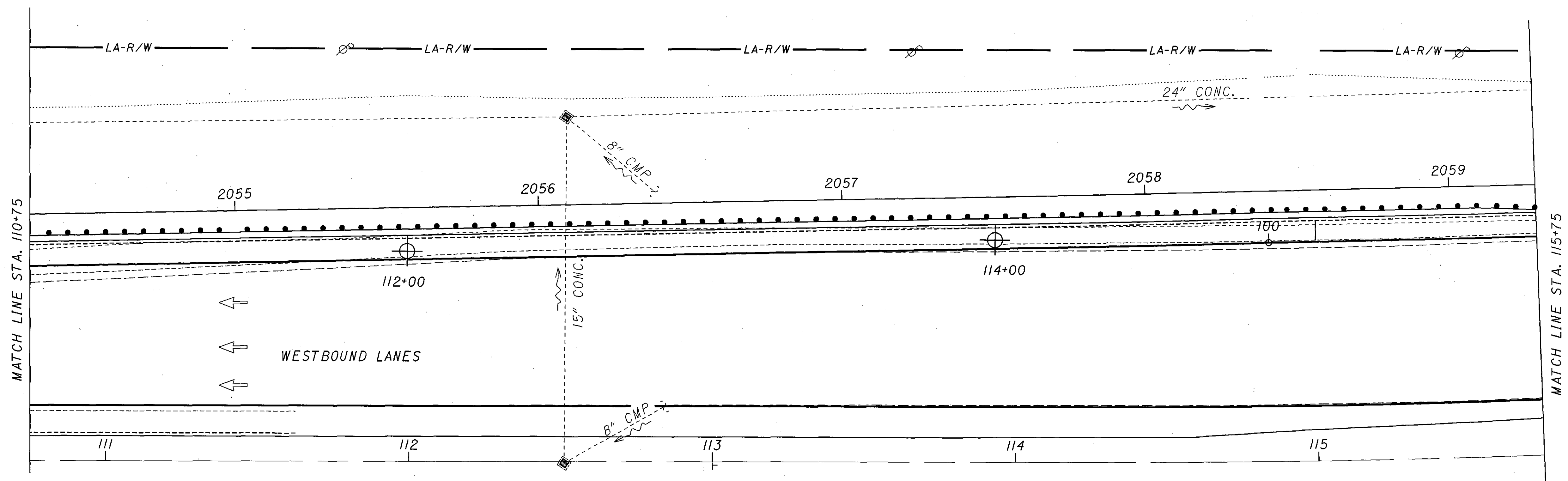
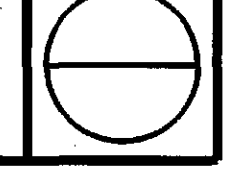


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DATE	09/28/05		
REVIEWED	M.B.		
DRAWN	N.S.		

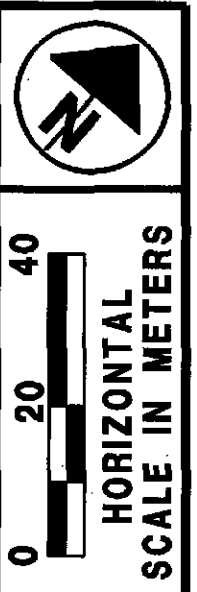
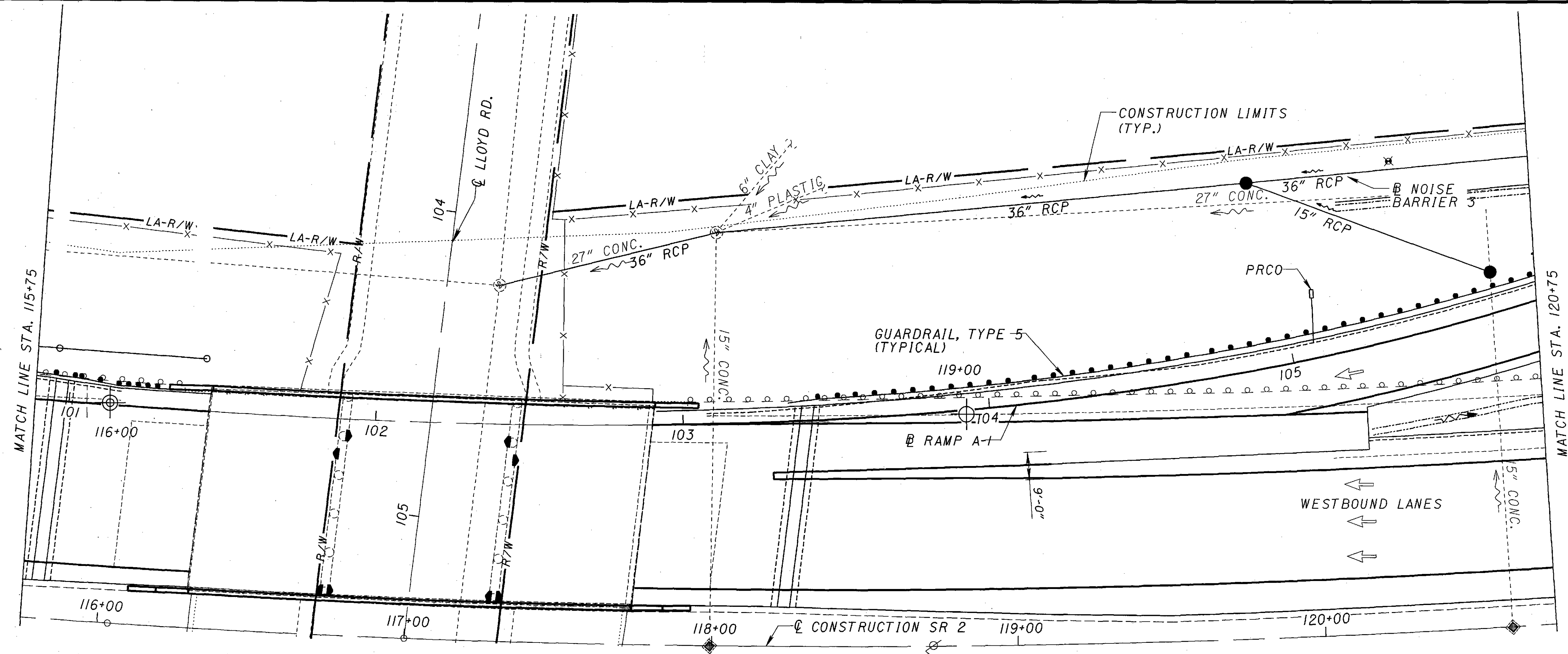
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LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

13/89

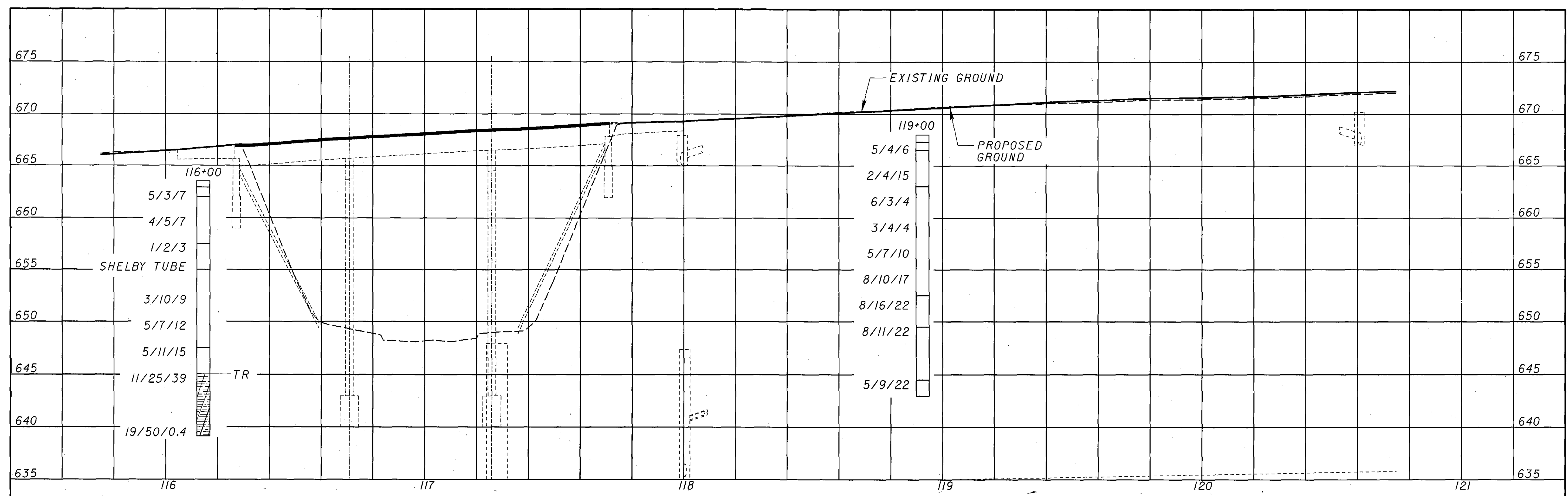


WESTBOUND PROFILE 18' LEFT OF C S.R. 2



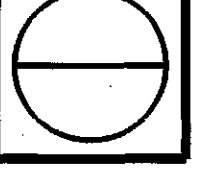
DATE	09/28/05	CALCULATED	S.M.
REVIEWED	M.B.	CHECKED	W.N.
DRAWN	N.S.		

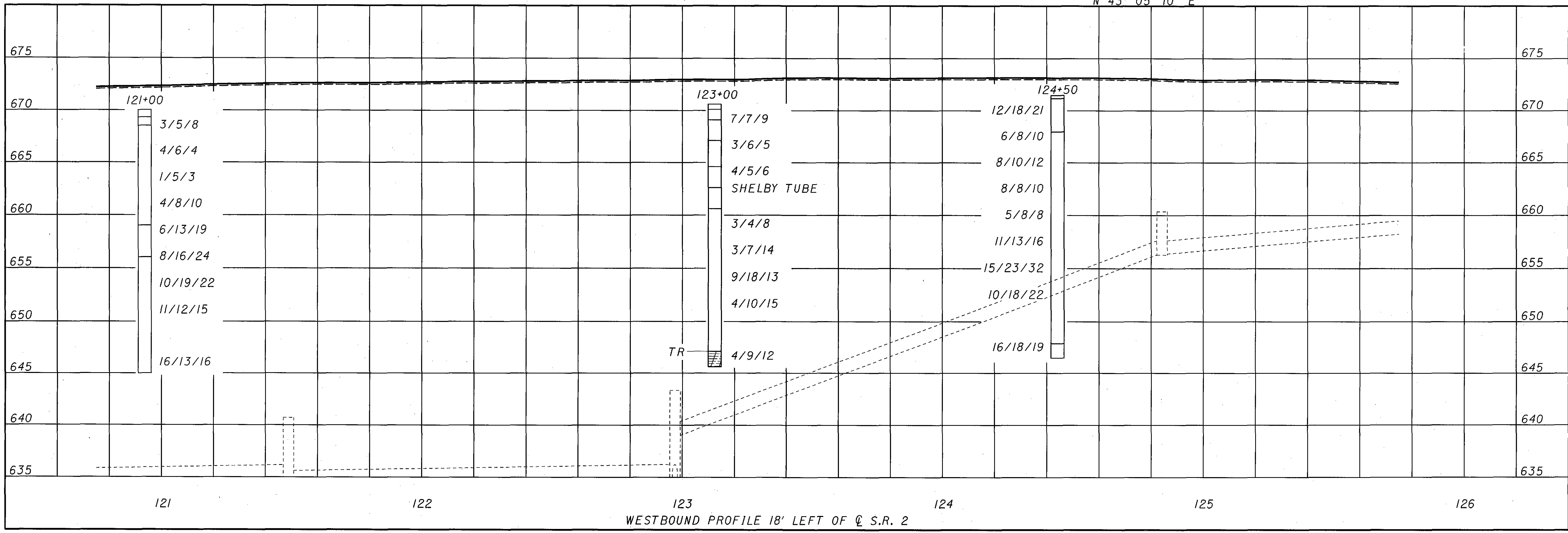
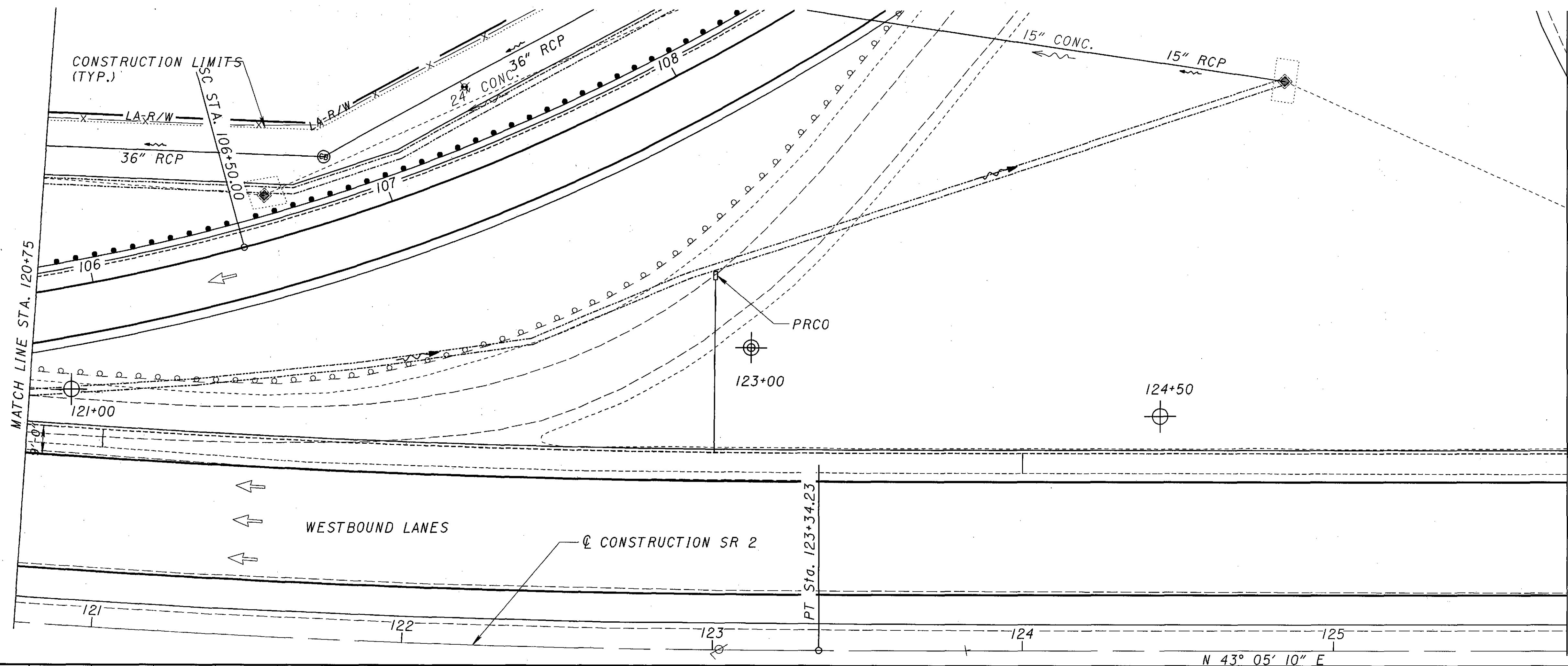
**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**




WESTBOUND PROFILE 18' LEFT OF C.S.R. 2

LAK-2-0.00







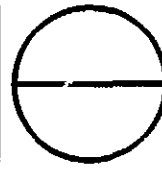
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HORIZONTAL
SCALE IN METERS

DATE	09/28/05	CALCULATED	S.M.
REVIEWED	M.B.	CHECKED	W.N.
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

15/89



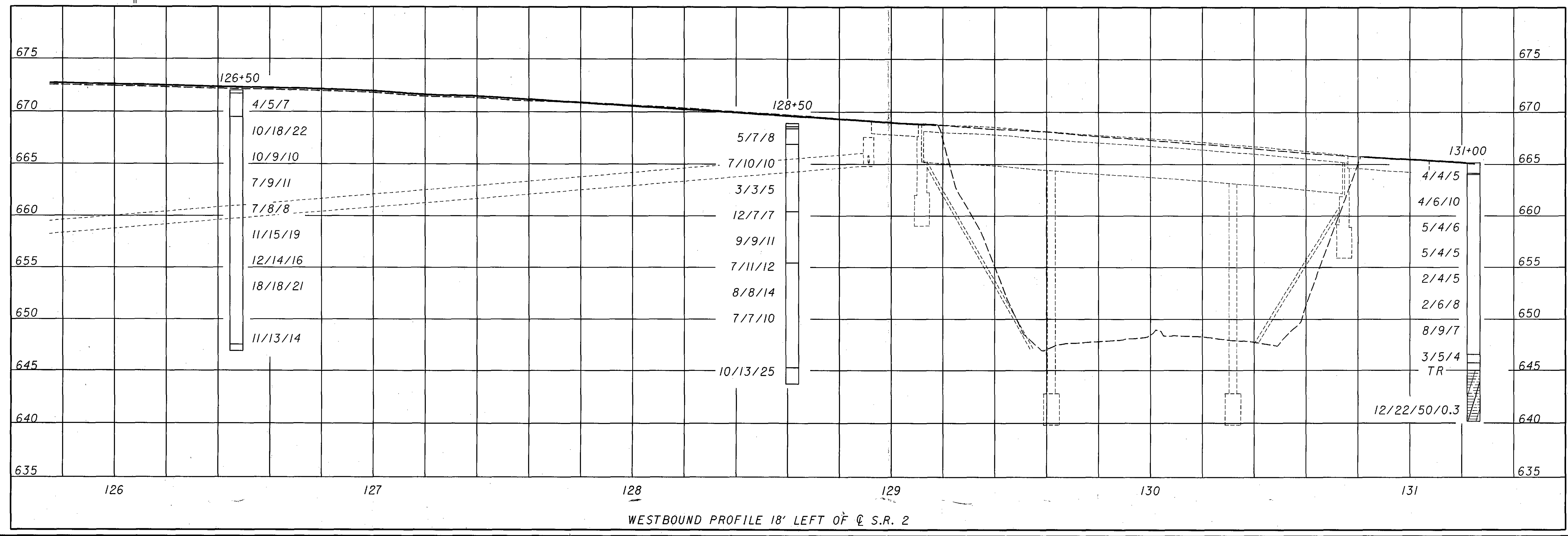
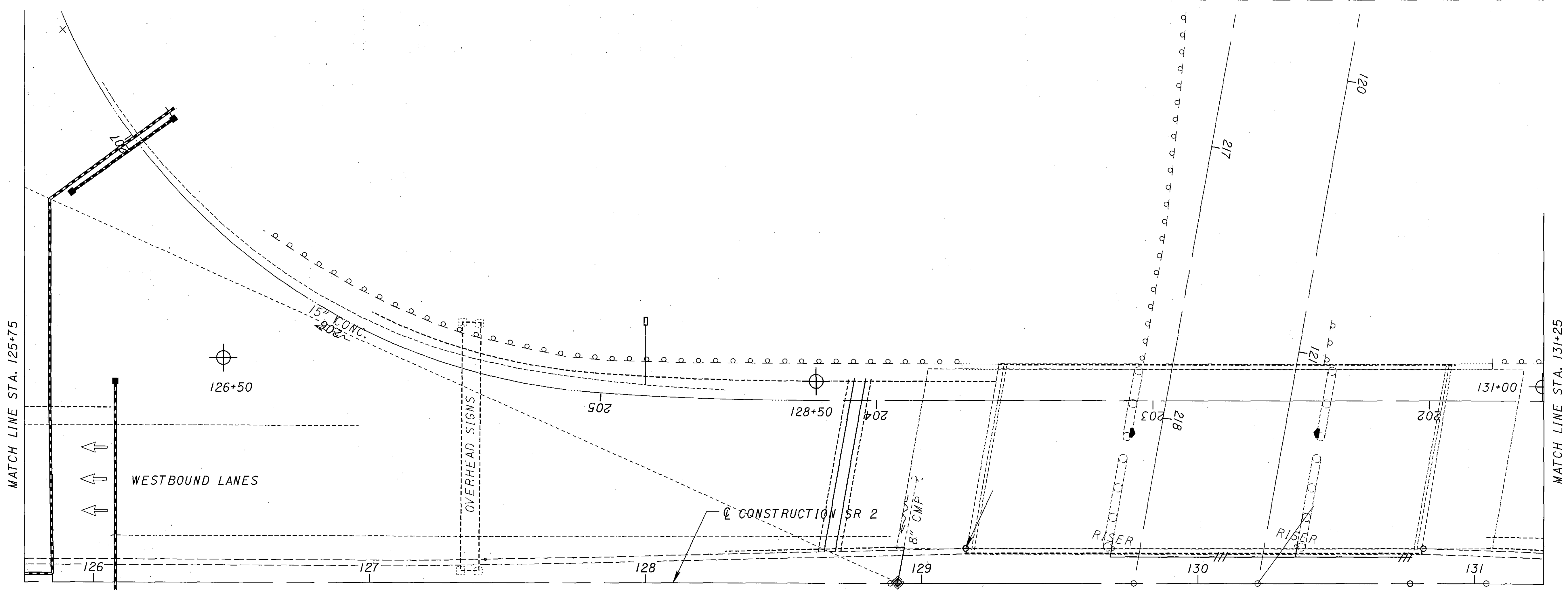
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LAK-2-0.00 NOISE BARRIERS**

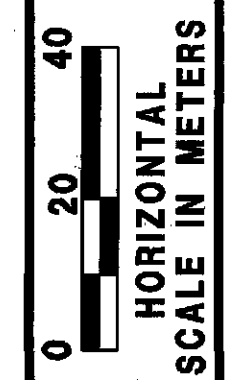
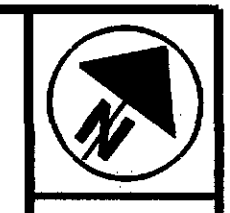
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16/89

DRAWN: N.S. REVIEWED: M.B. DATE: 08/28/05 CALCULATED: S.M. CHECKED: W.N.

0 20 40
HORIZONTAL SCALE IN METERS





CALCULATED
DATE 09/28/05
S.M.
CHECKED
W.N.

REVIEWED
M.B.

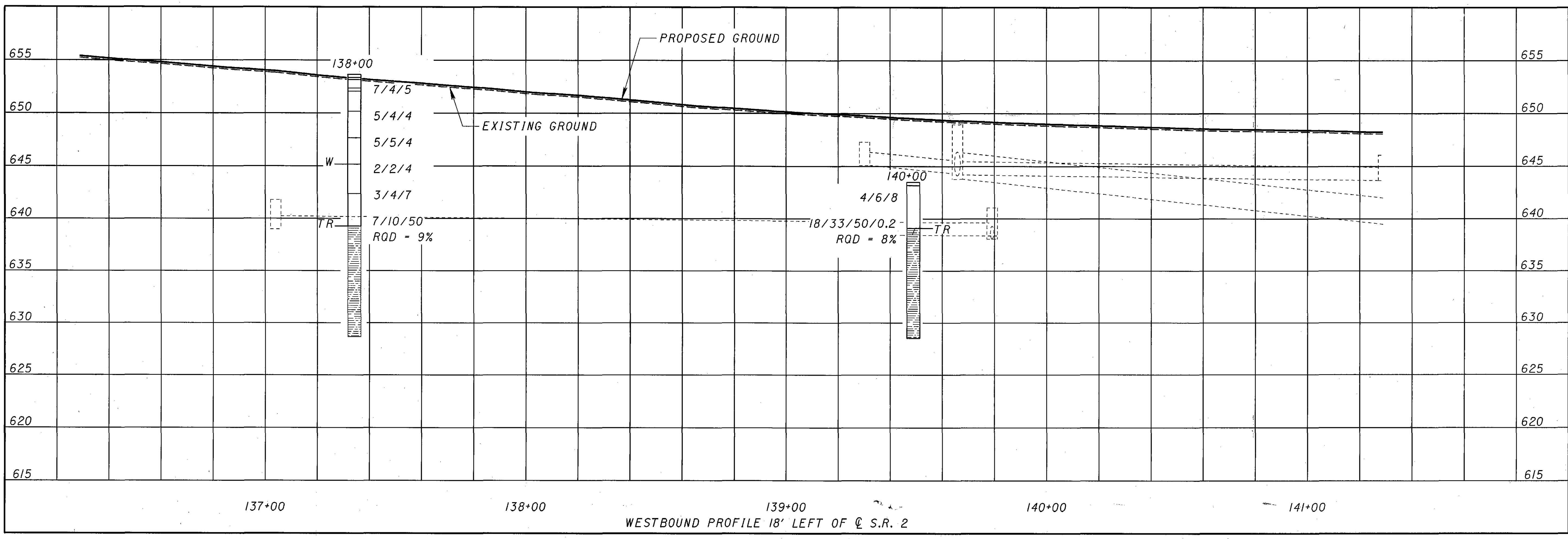
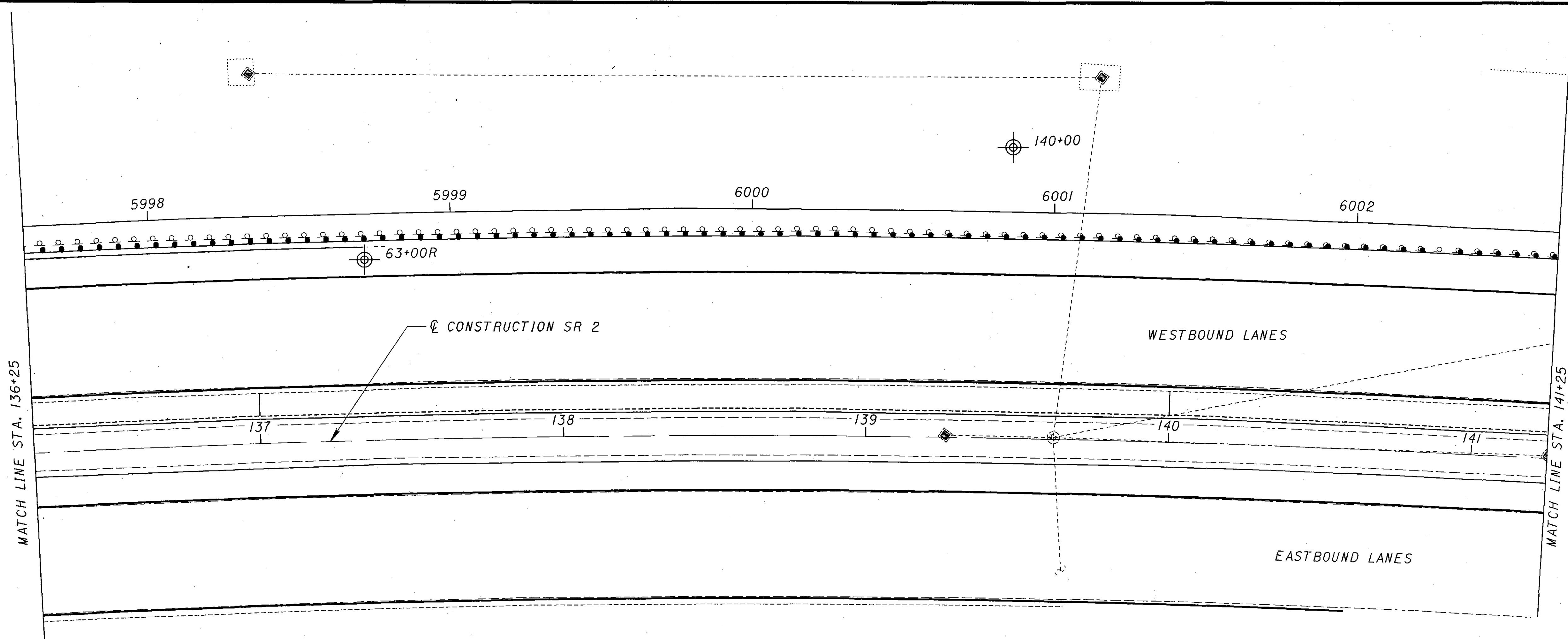
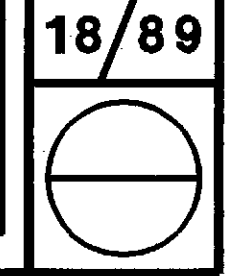
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N.S.

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

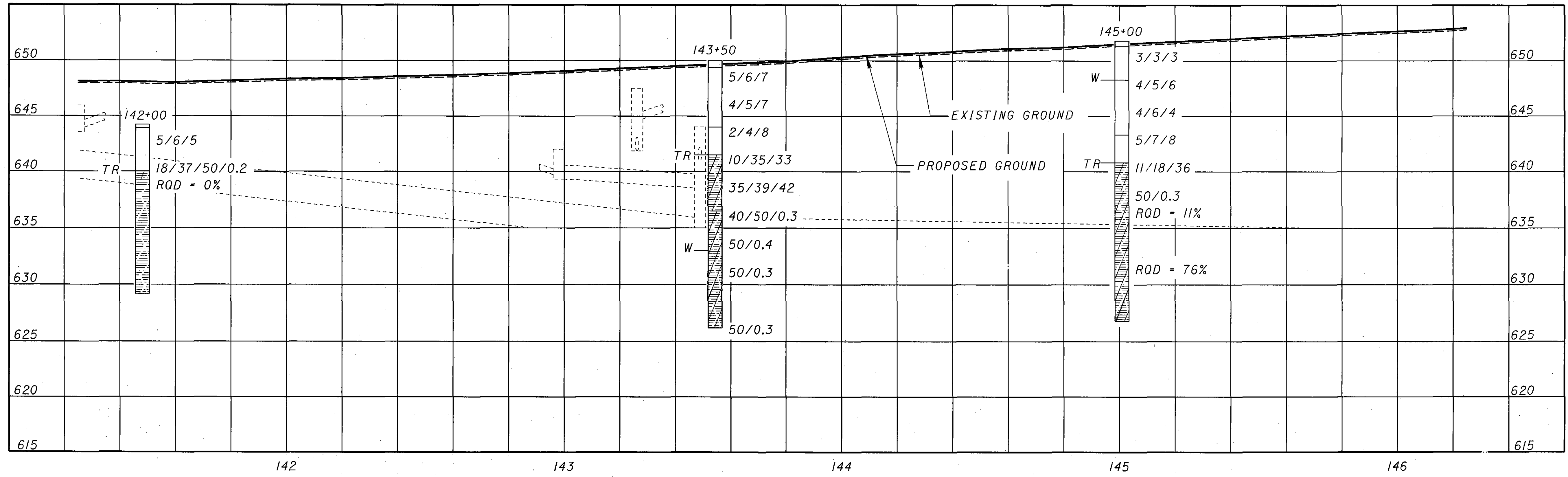
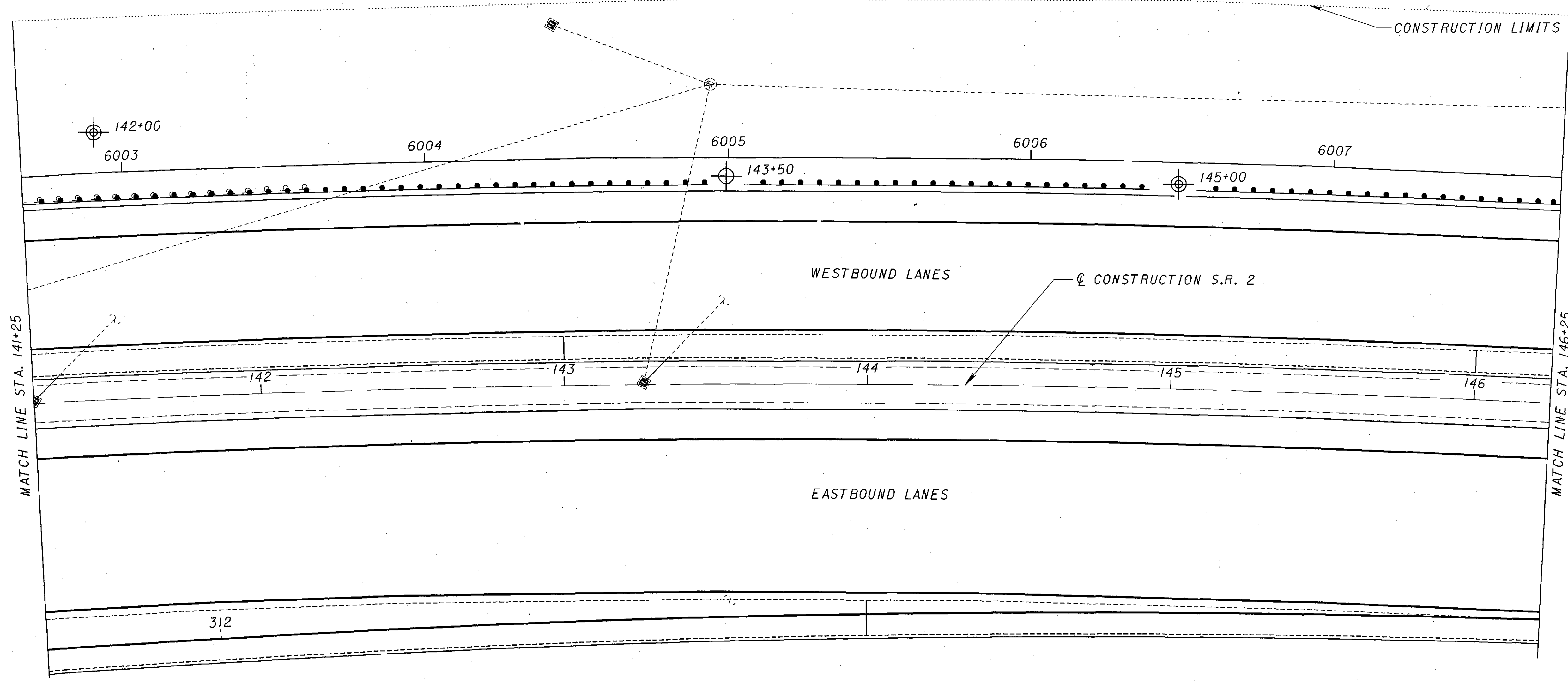
STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

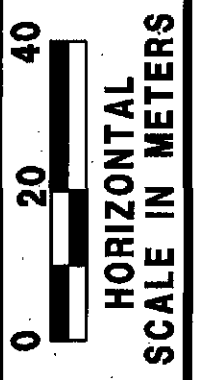
18/89



WESTBOUND PROFILE 18' LEFT OF C.S.R. 2



WESTBOUND PROFILE 18' LEFT OF CL S.R. 2

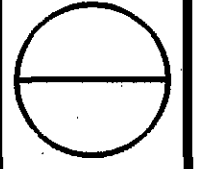


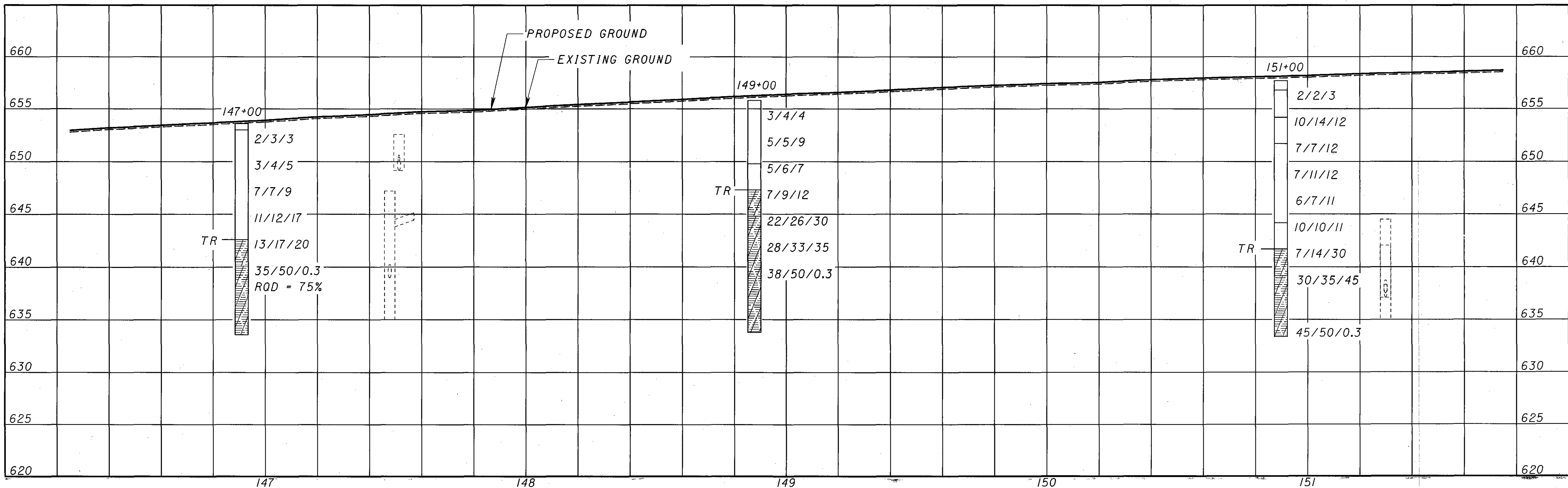
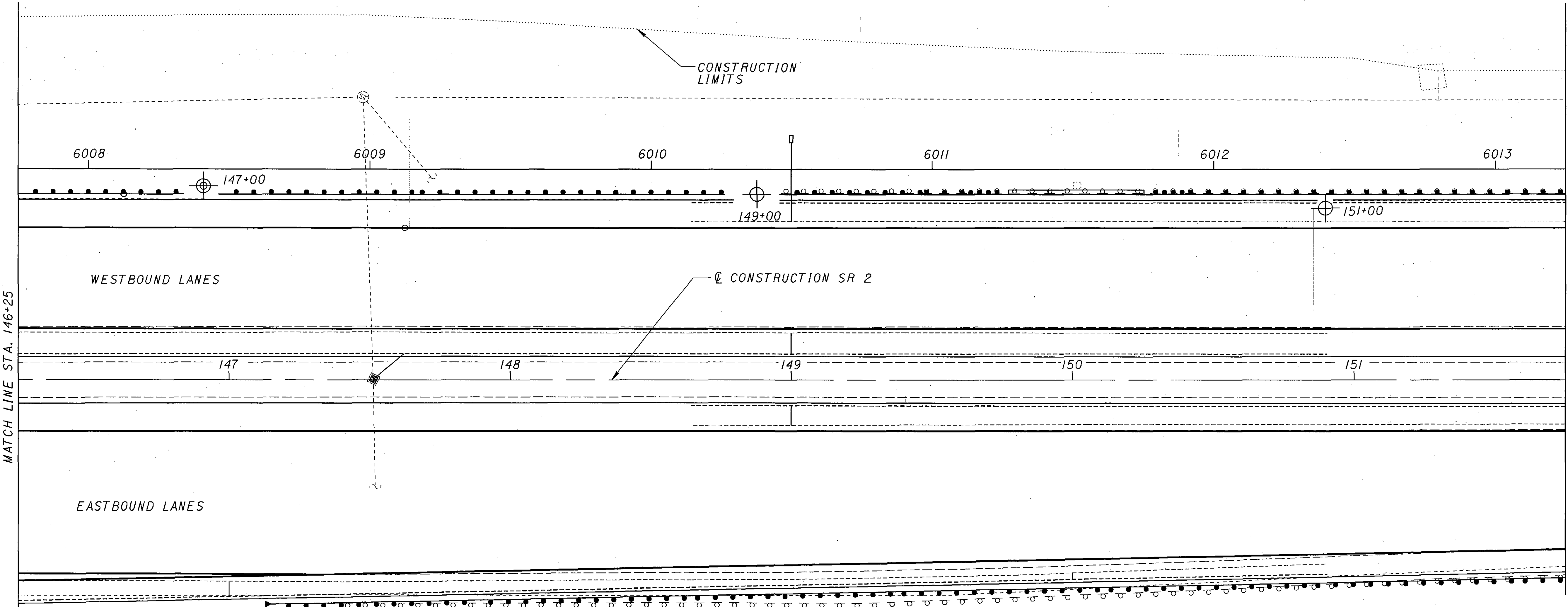
CALCULATED	S.M.
DATE	09/28/05
REVIEWED	M.B.
DRAWN	N.S.
CHECKED	W.N.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

19/89





WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

20/89

DRAWN
N.S.

REVIEWED
M.B.

DATE
08/28/05

CALCULATED
S.M.

CHECKED
W.N.

HORIZONTAL
SCALE IN METERS

0 20 40



0 20 40
HORIZONTAL
SCALE IN METERS

CALCULATED
S.M.
CHECKED
W.N.

DATE
08/28/05

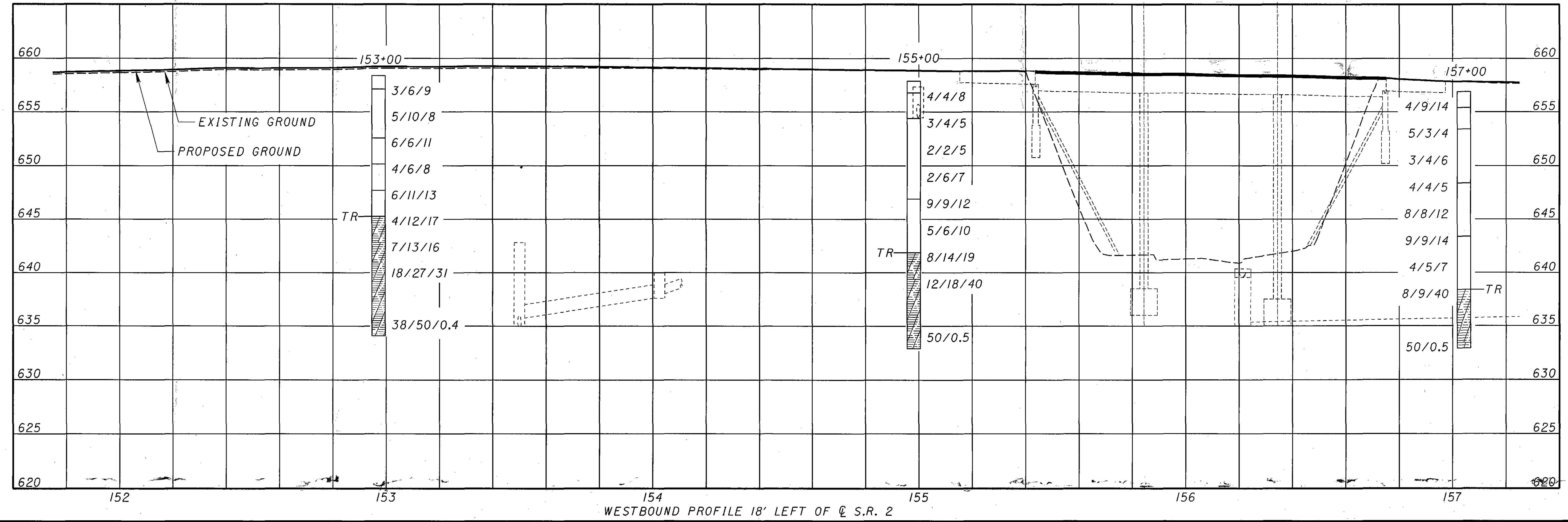
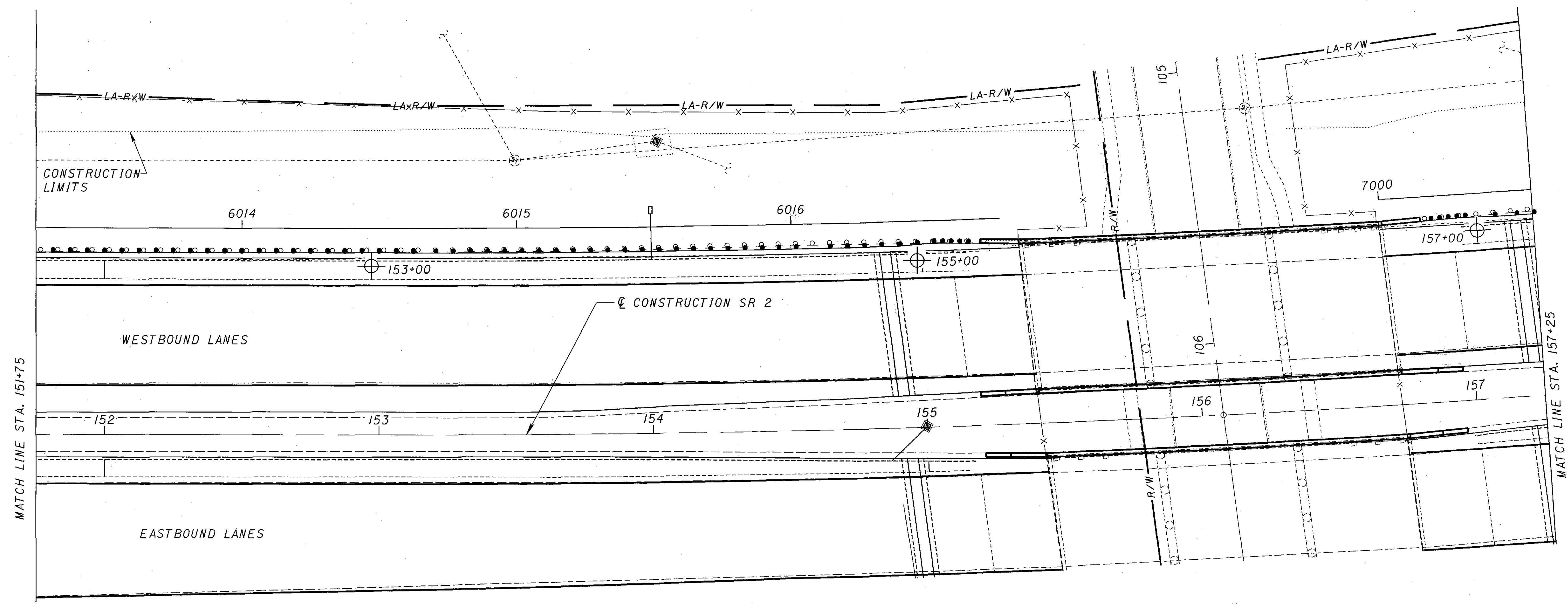
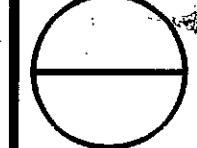
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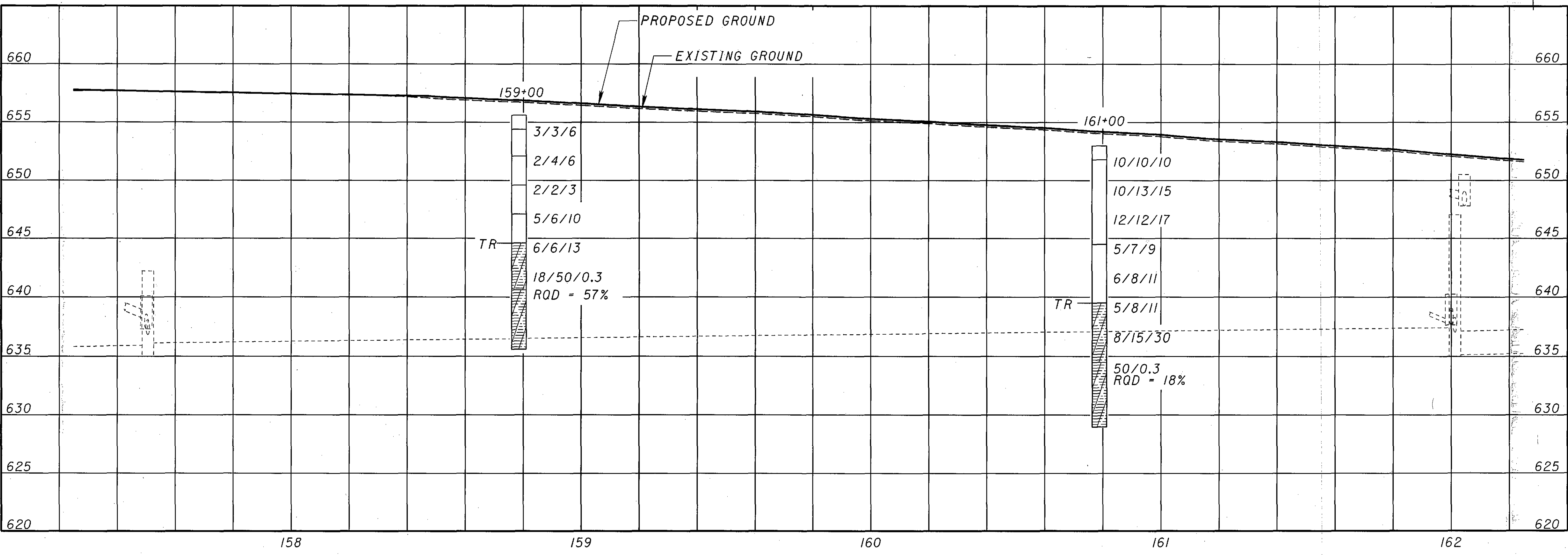
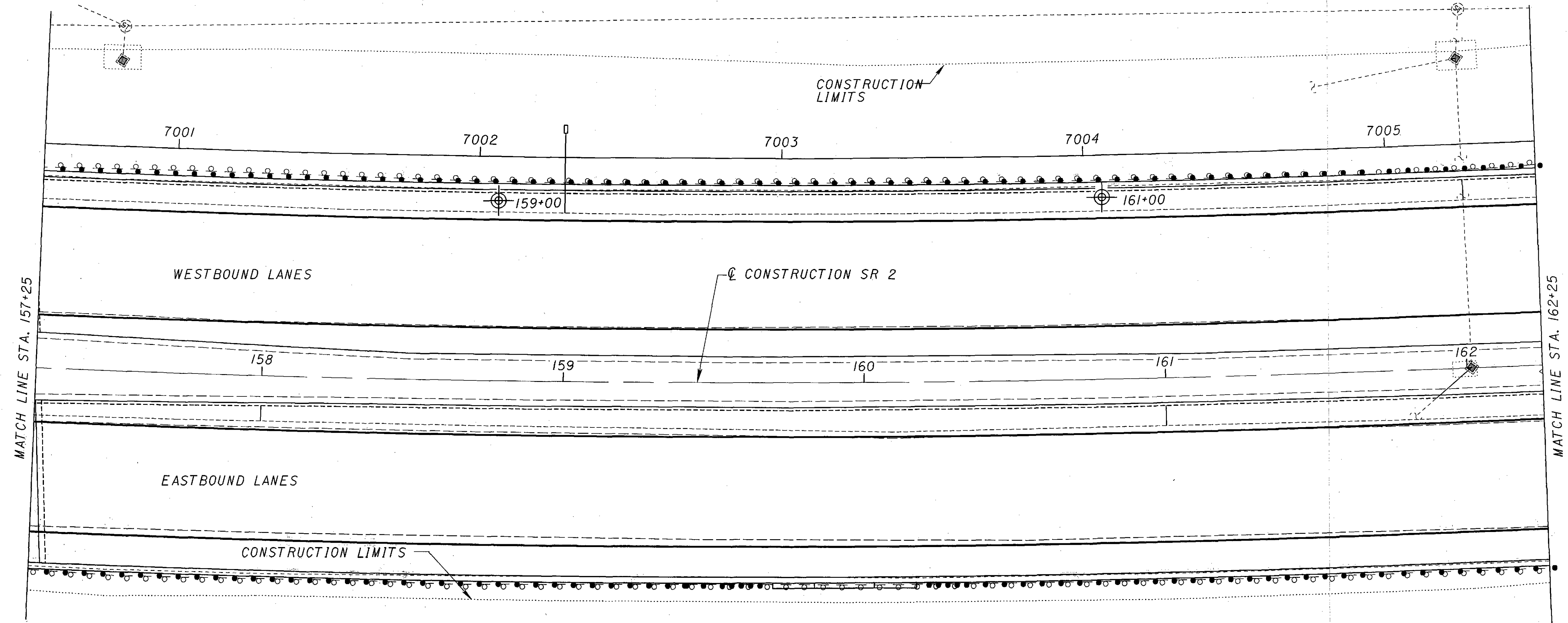
DRAWN
N.S.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

21/89





WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2

CALCULATED	S.M.	CHECKED	W.N.
DATE	09/28/05	REVIEWED	M.B.
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
 LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

22/89



0 20 40
HORIZONTAL
SCALE IN METERS

CALCULATED
S.M.

DATE
09/28/05

REVIEWED
M.B.

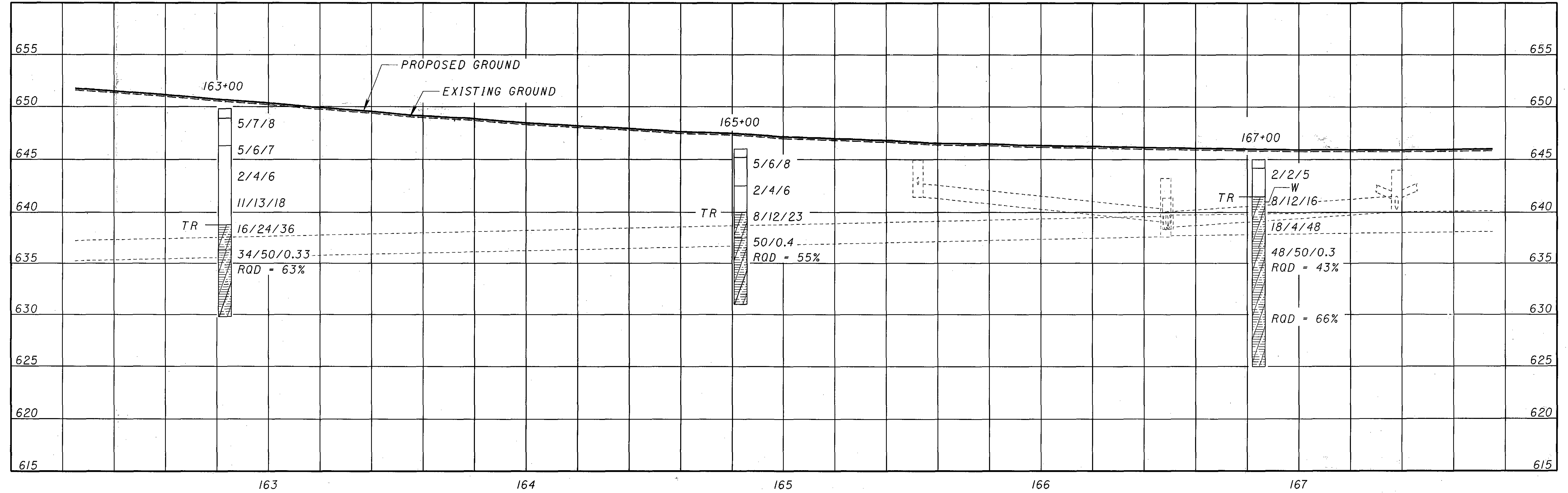
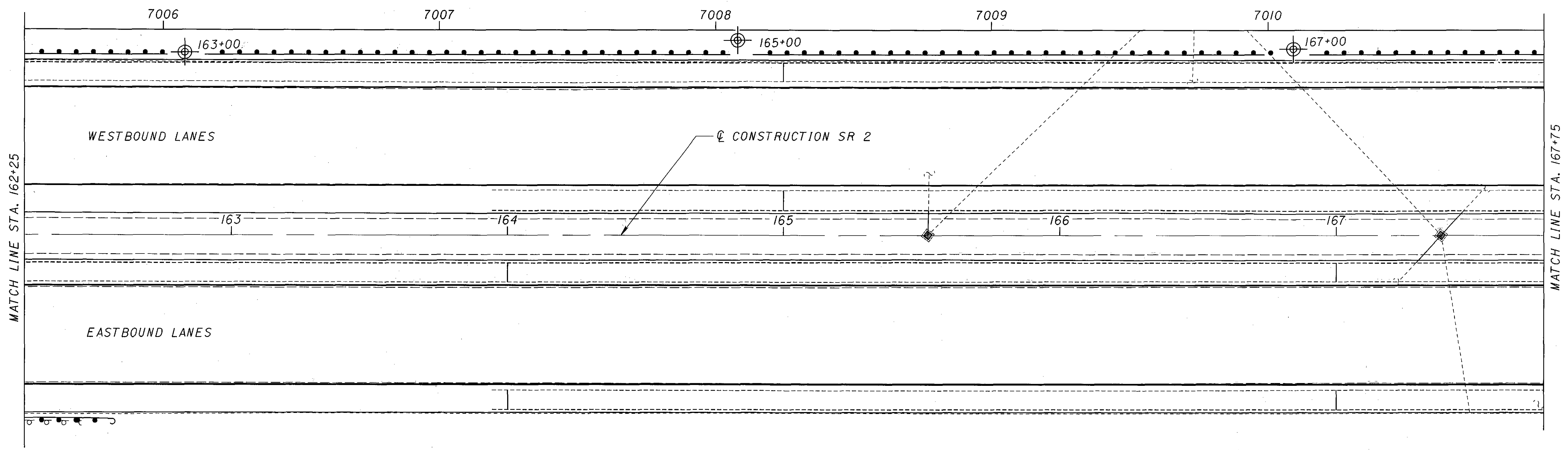
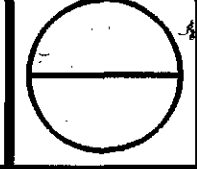
DRAWN
N.S.

CHECKED
W.N.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

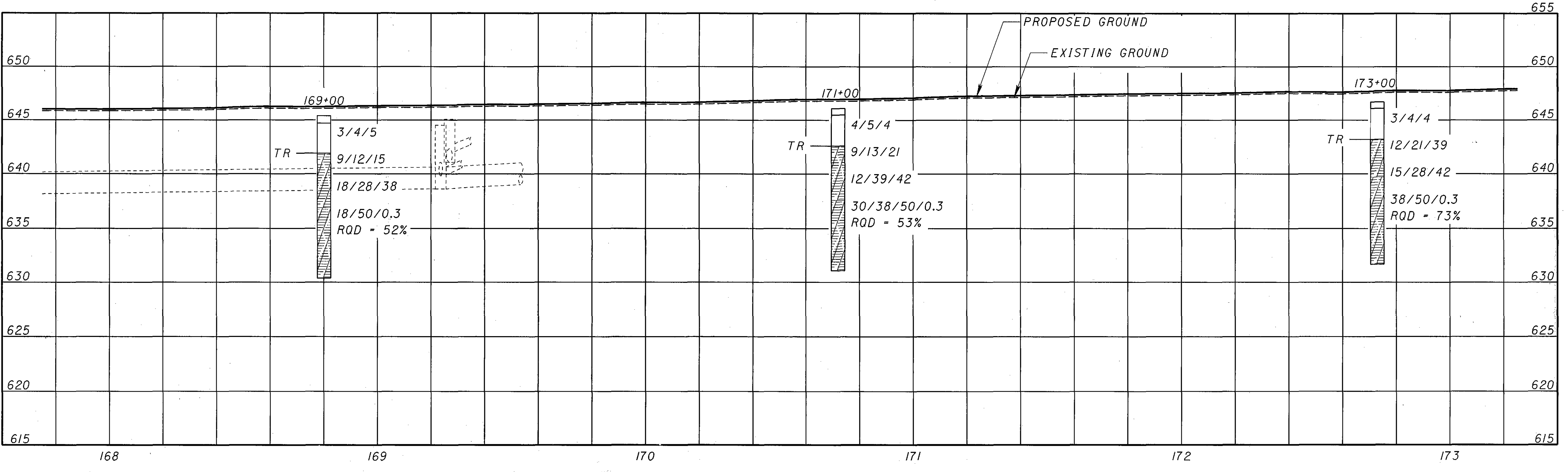
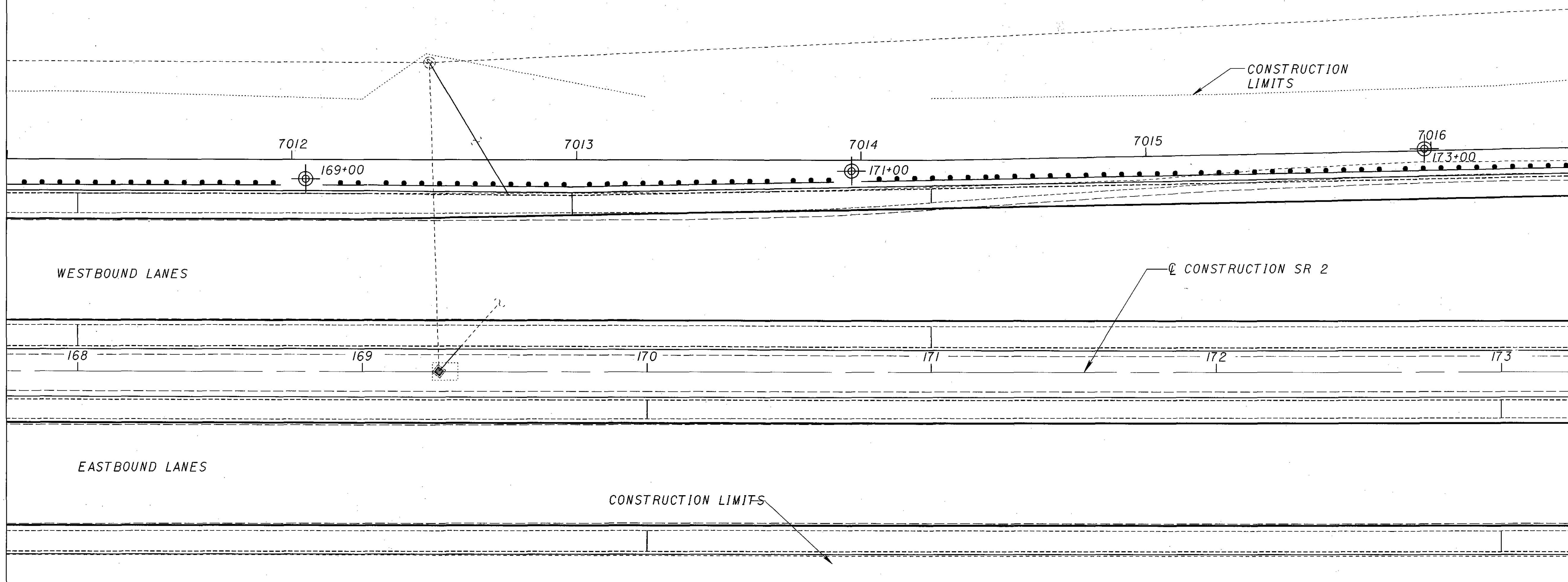
23/89



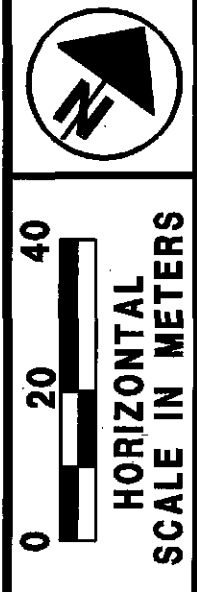
WESTBOUND PROFILE 18' LEFT OF C S.R. 2

MATCH LINE STA. 167+75

MATCH LINE STA. 173+25

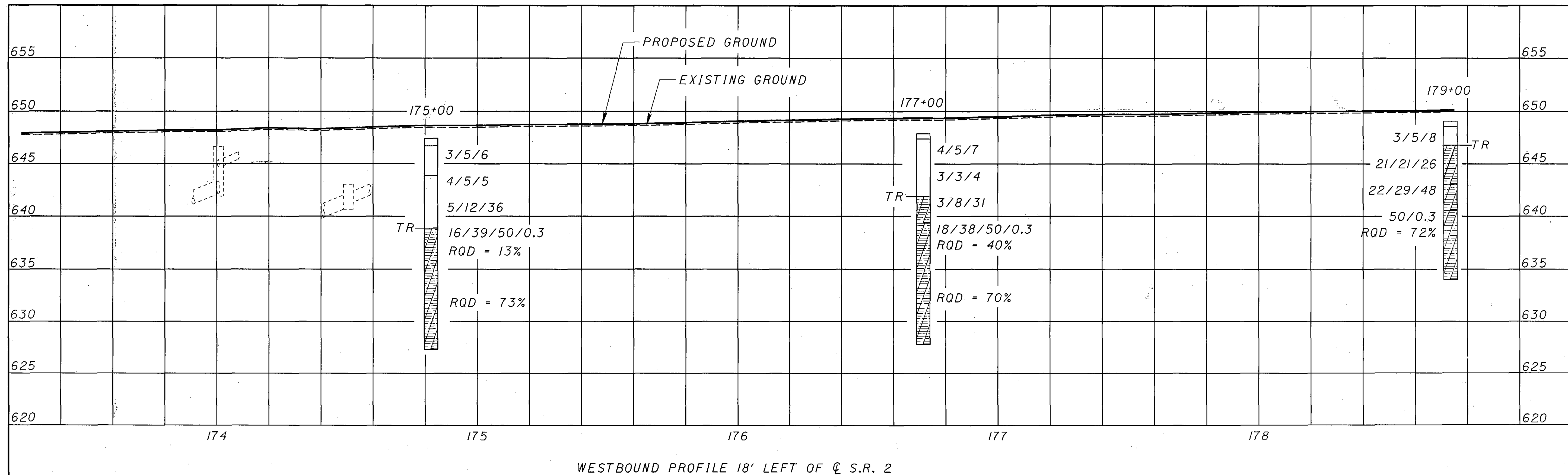
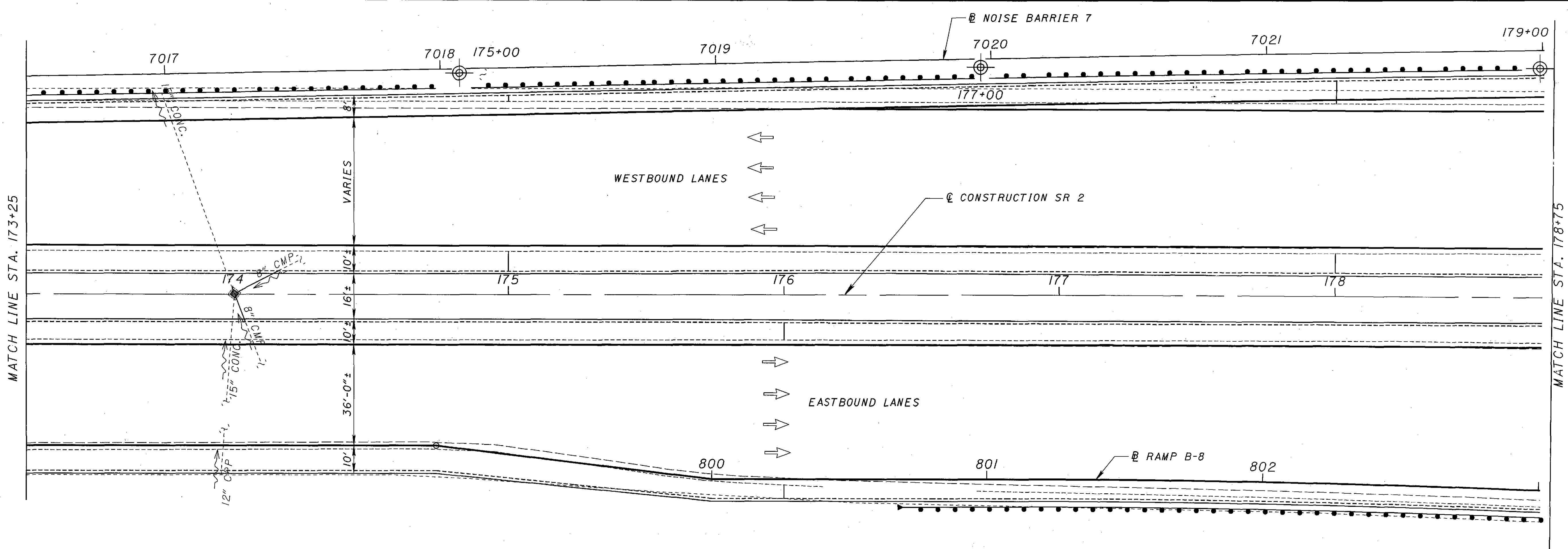


WESTBOUND PROFILE 18' LEFT OF CL S.R. 2



CALCULATED	S.M.
DATE	09/28/05
REVIEWED	M.B.
DRAWN	N.S.
CHECKED	W.N.

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0-00 NOISE BARRIERS



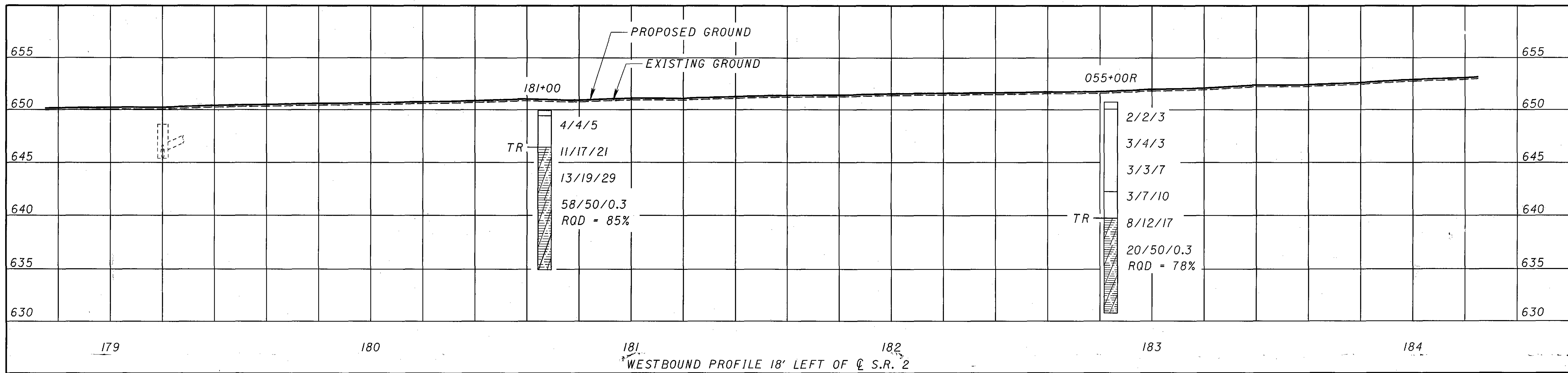
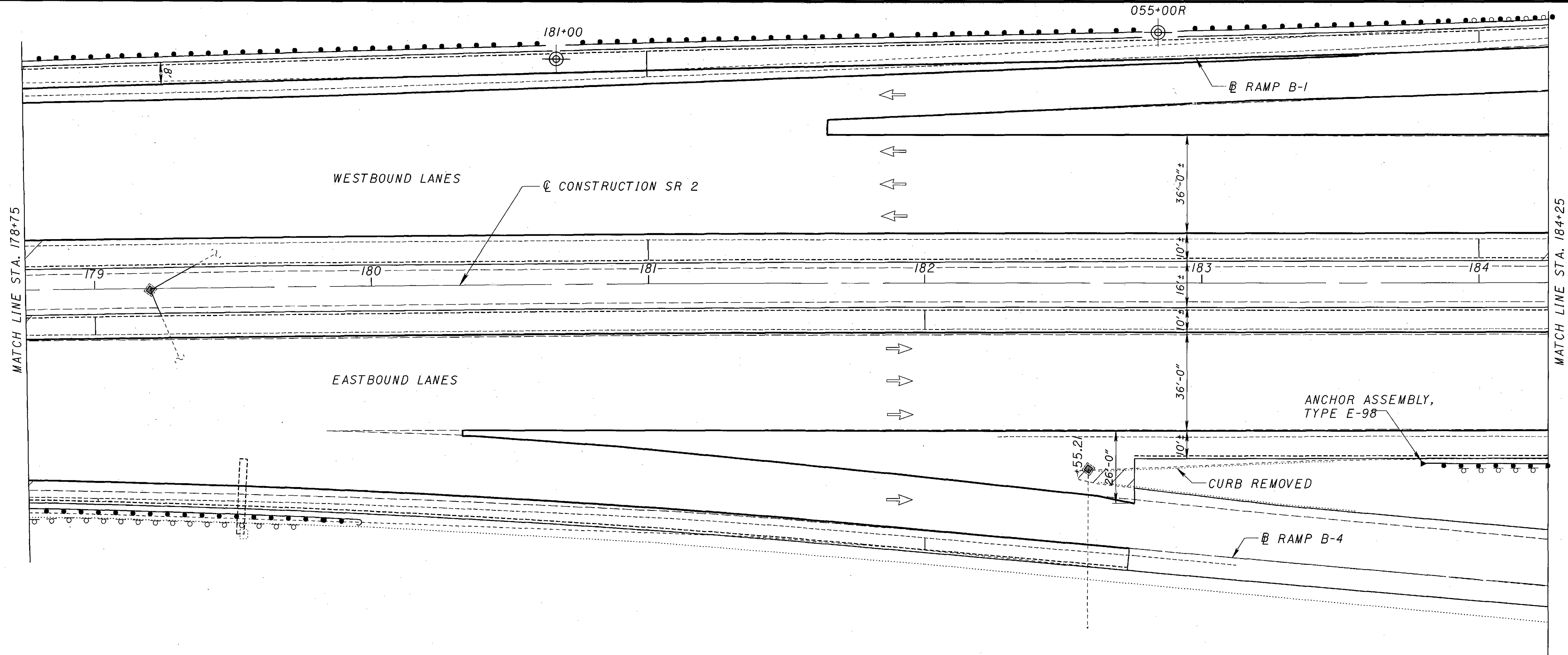
HORIZONTAL SCALE IN METERS

DRAWN	REVIEWED	DATE	CALCULATED
N.S.	M.B.	08/28/05	S.M.
			CHECKED
			W.N.

STRUCTURE FOUNDATION INVESTIGATION
 LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

25/89





0 20 40
HORIZONTAL
SCALE IN METERS

DATE	09/28/05	CALCULATED	S.M.
REVIEWED	M.B.	CHECKED	W.N.
DRAWN	N.S.		

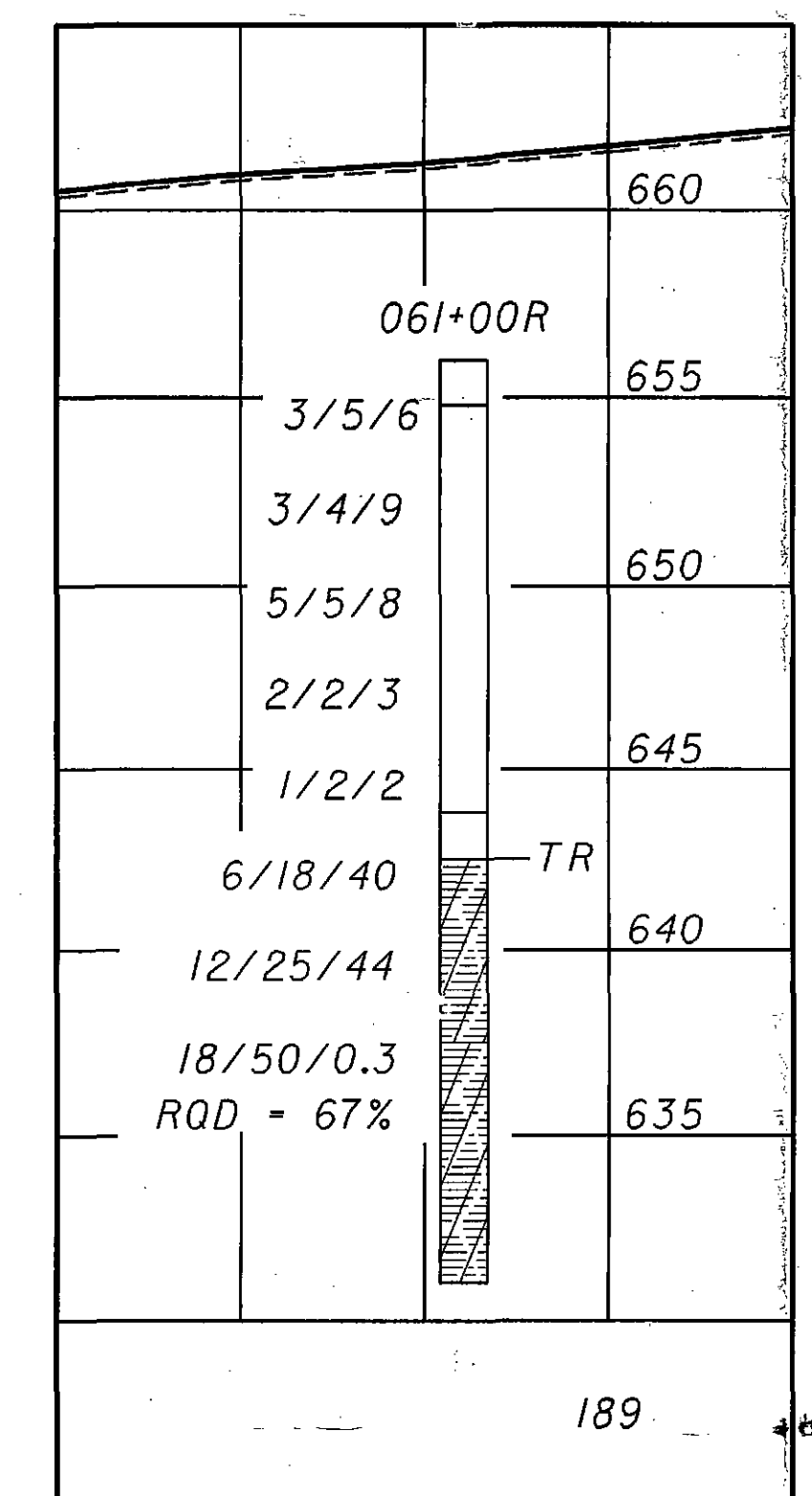
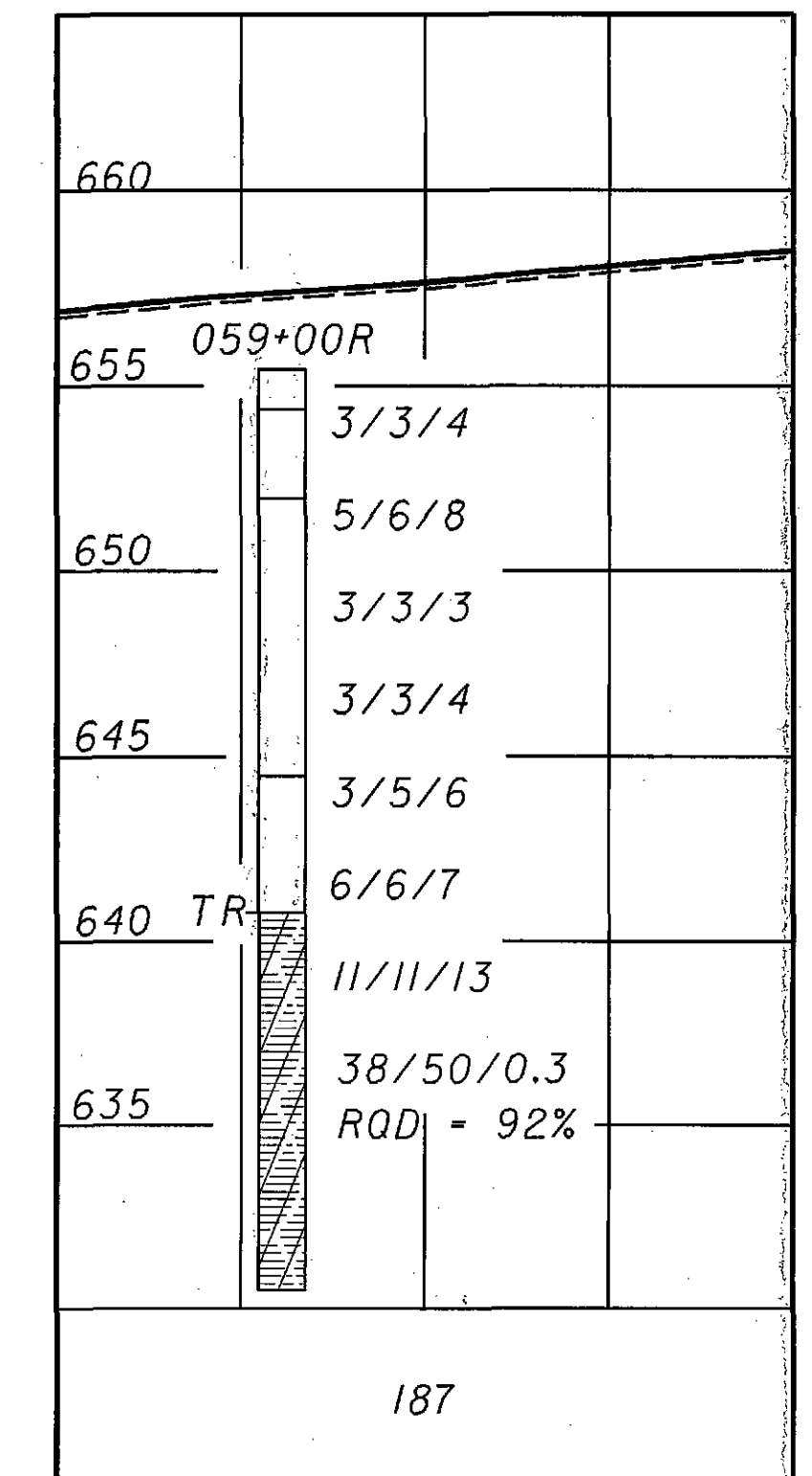
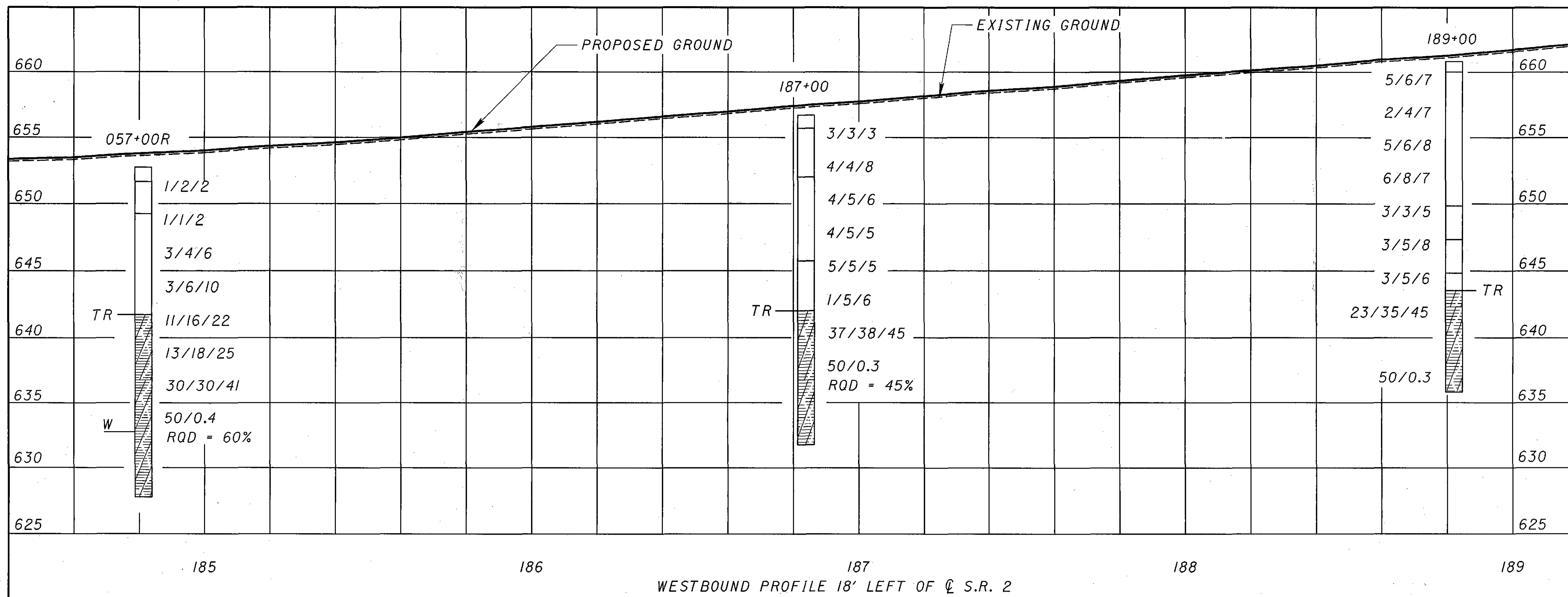
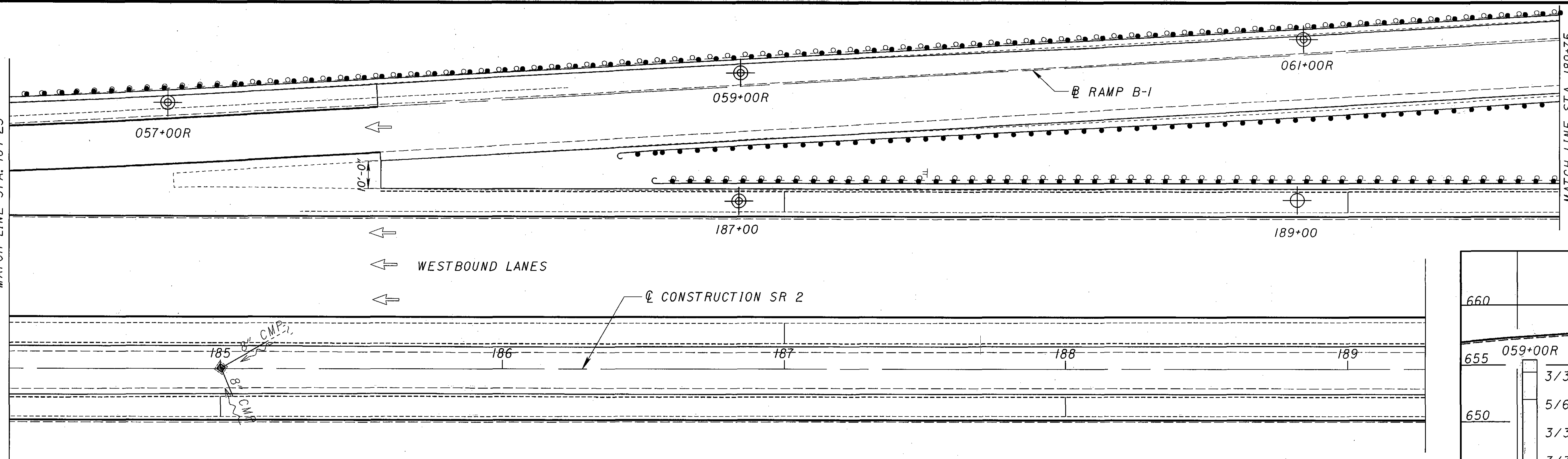
STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

26/89



MATCH LINE STA. 184+25



0 20 40
HORIZONTAL SCALE IN METERS

DRAWN	N.S.	CHECKED	W.N.	DATE	08/28/05
REVIEWED	M.B.	S.M.	W.N.	CALCULATED	

STRUCTURE FOUNDATION INVESTIGATION
 LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

27/89



0 20 40
HORIZONTAL
SCALE IN METERS

CALCULATED
DATE 09/28/05
S.M.
CHECKED
W.N.

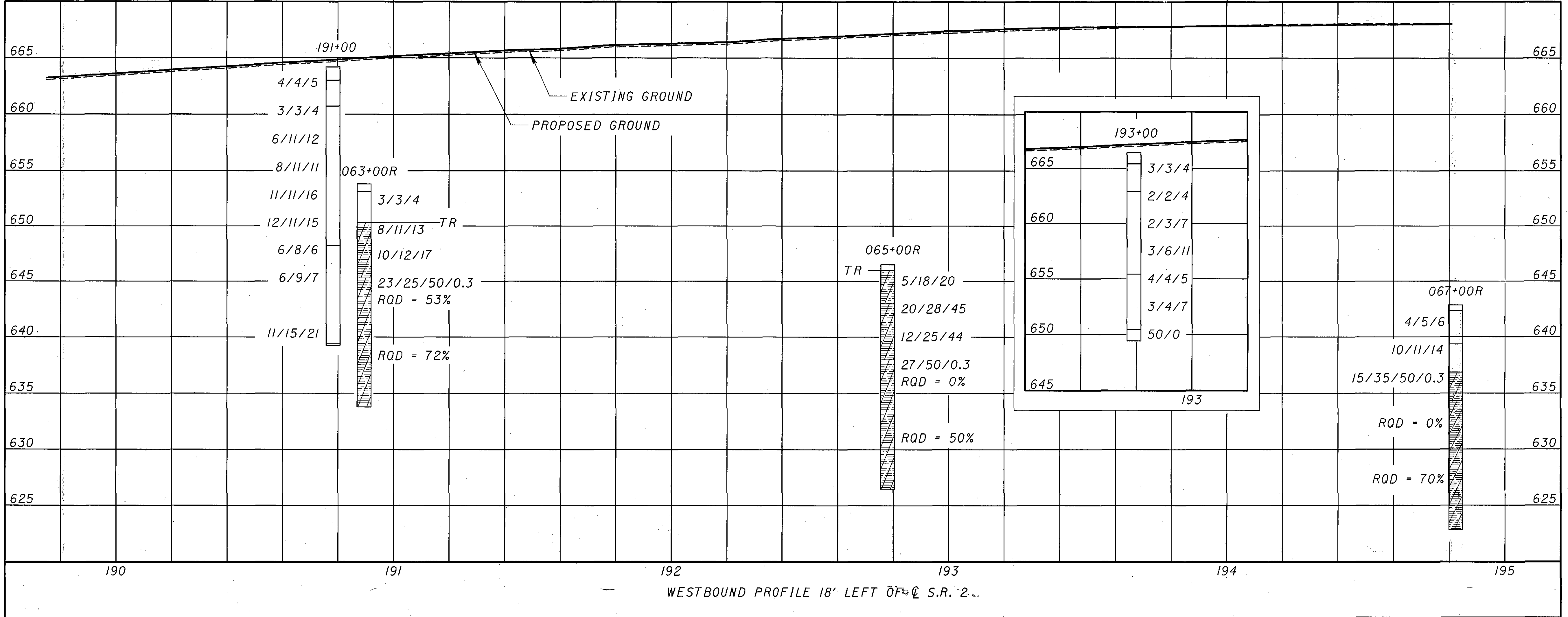
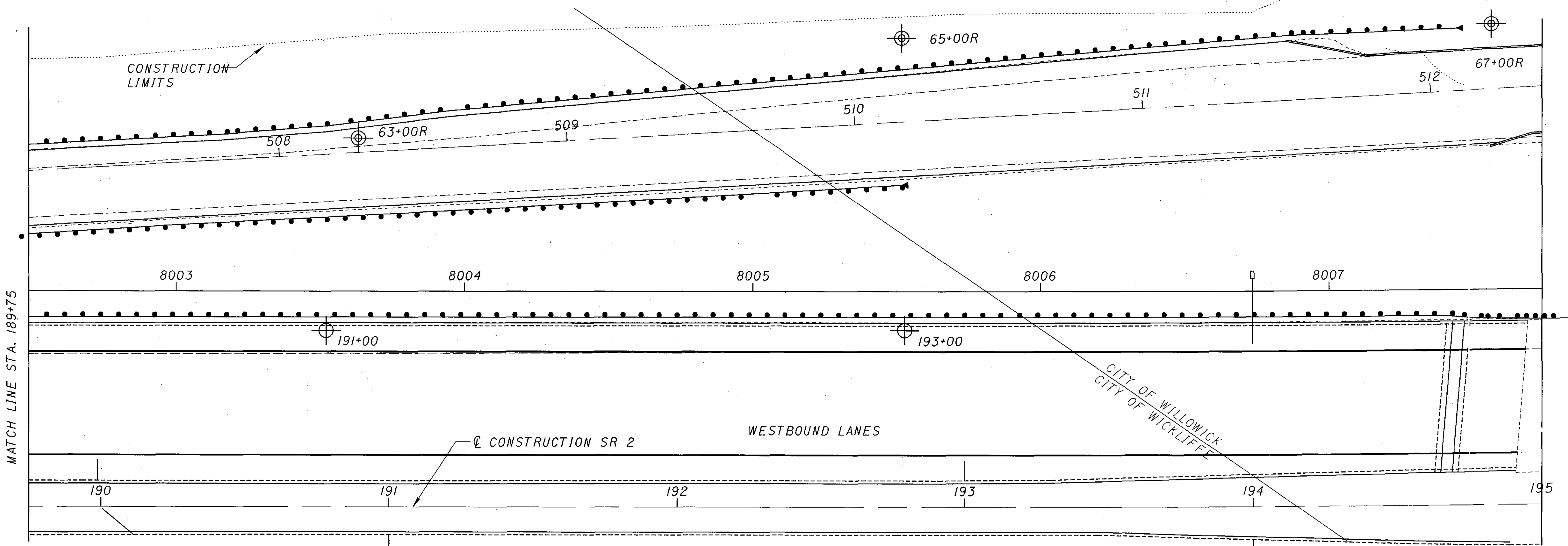
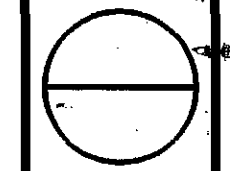
REVIEWED
M.B.

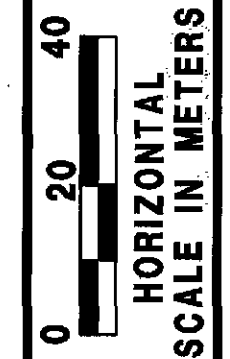
DRAWN
N.S.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

28/89



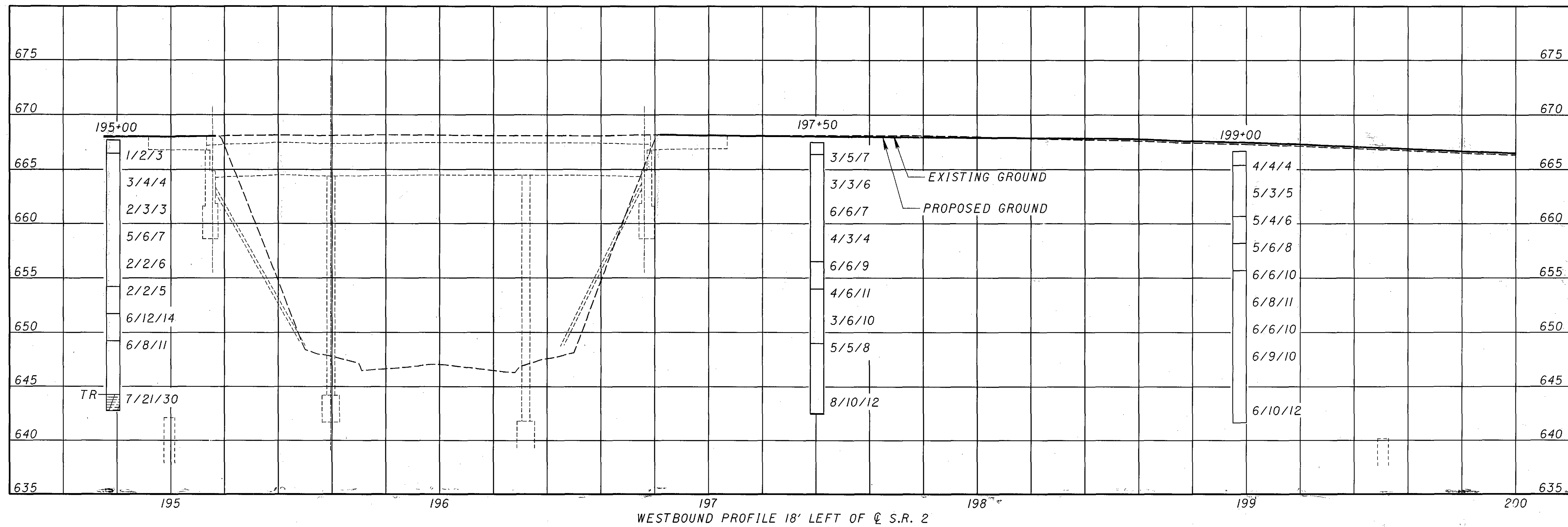
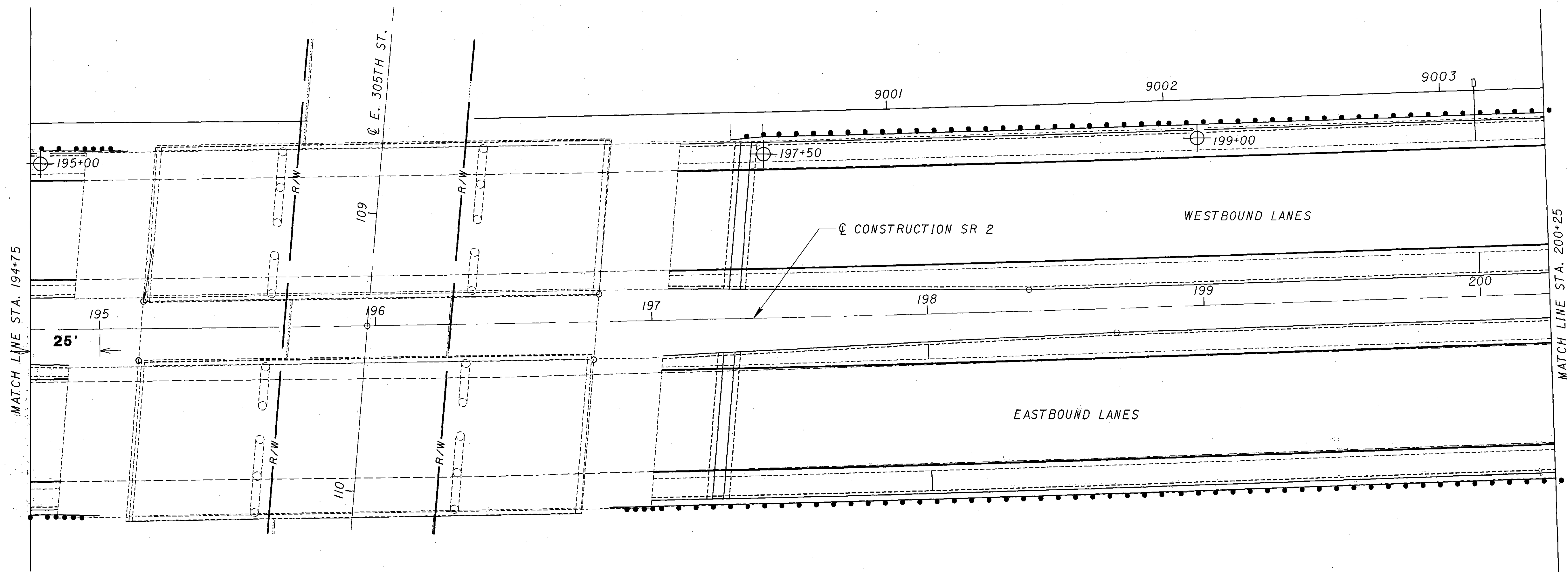
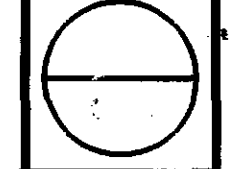


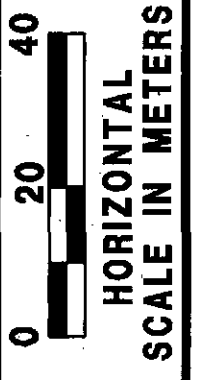
CALCULATED	S.M.	CHECKED	W.N.
DATE	08/28/05		
REVIEWED	M.B.		
DRAWN	N.S.		

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

29/89





CALCULATED S.M. CHECKED W.N.

DATE 08/28/05

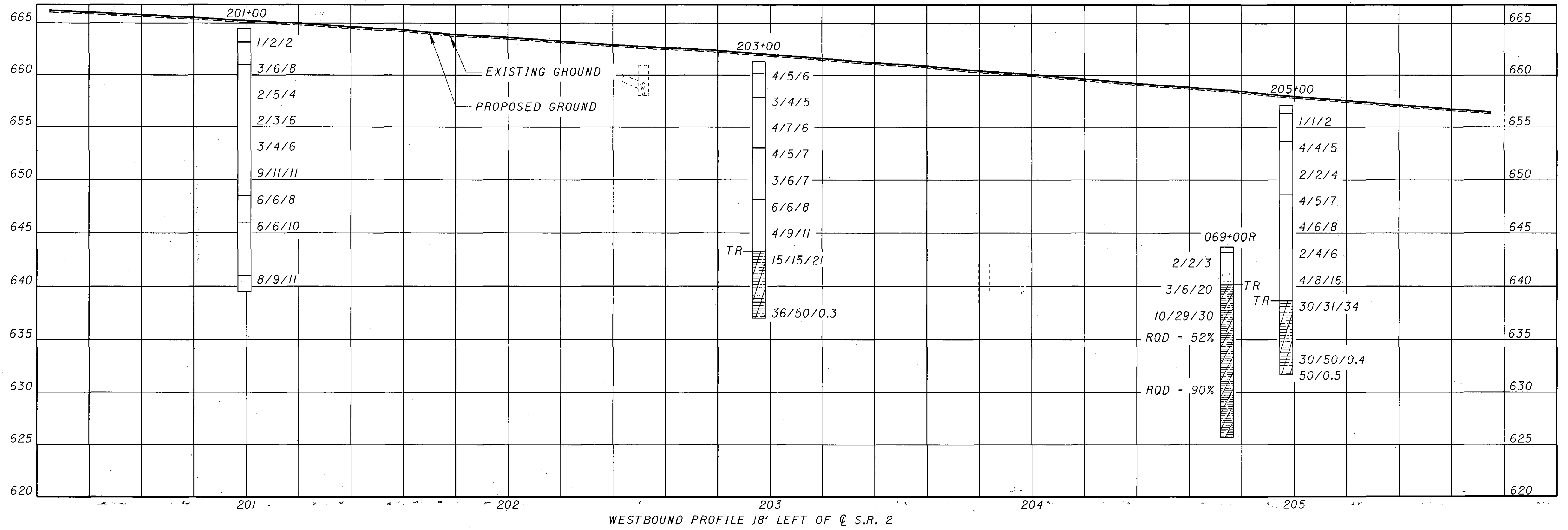
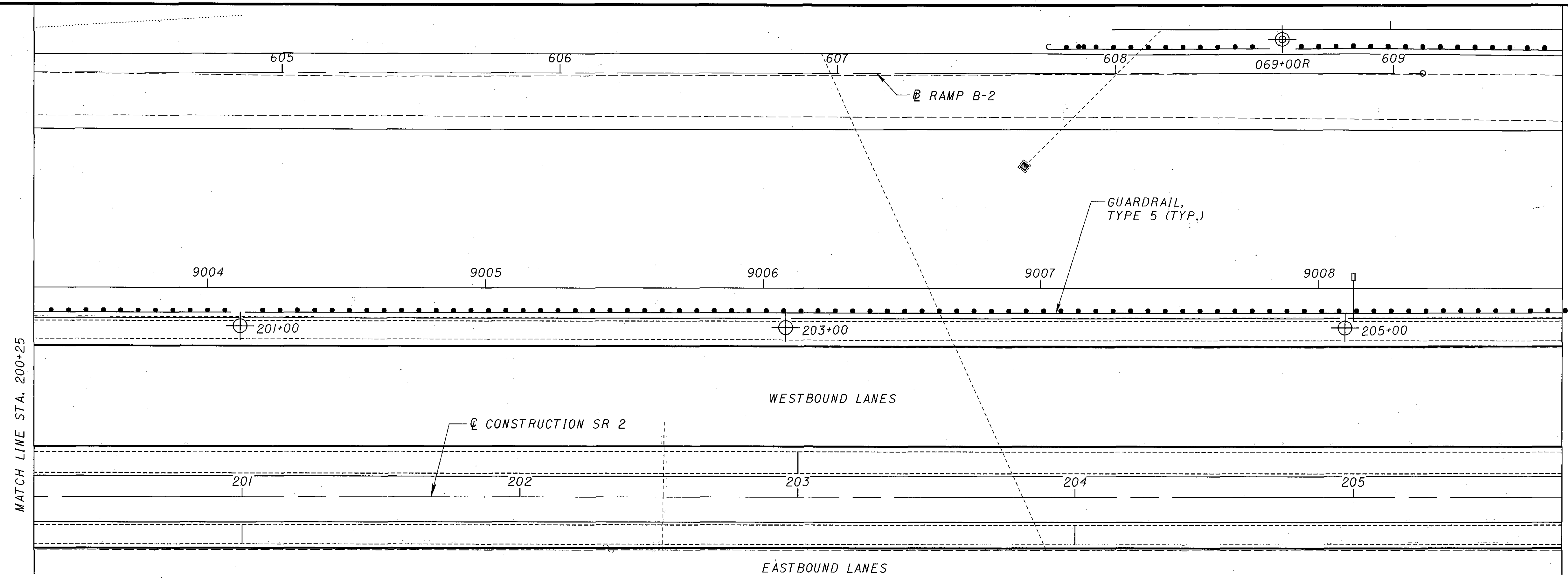
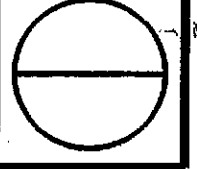
REVIEWED M.B.

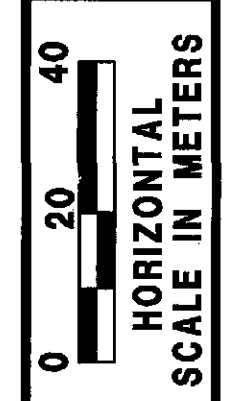
DRAWN N.S.

**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

30/89



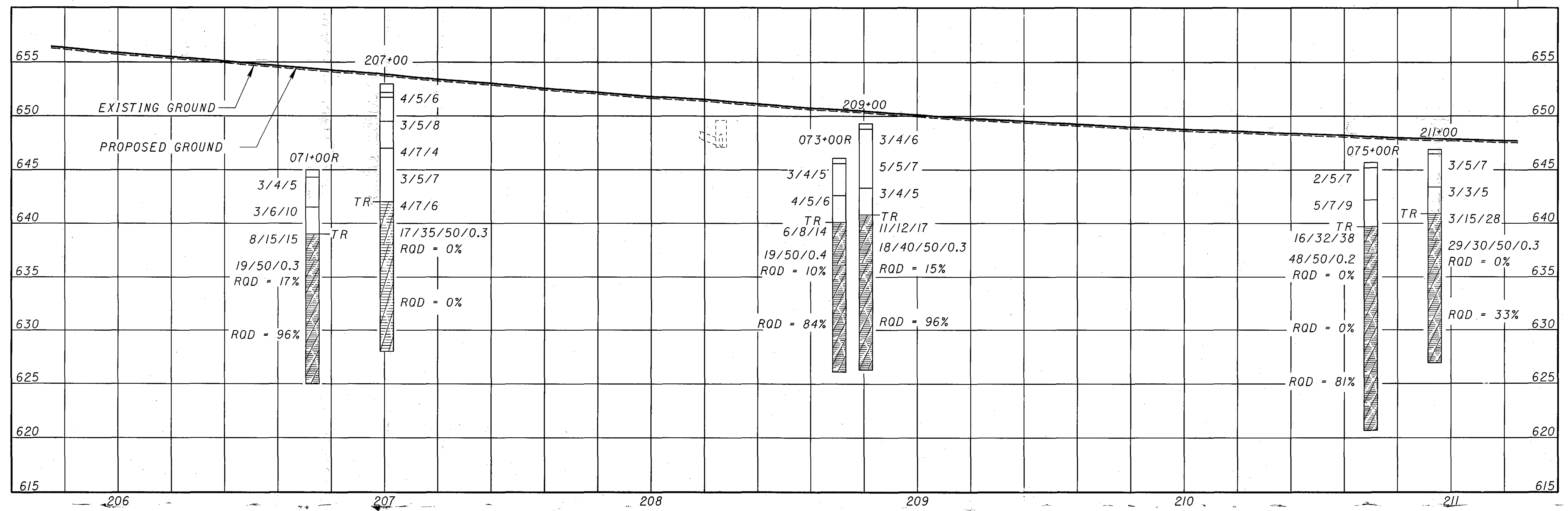
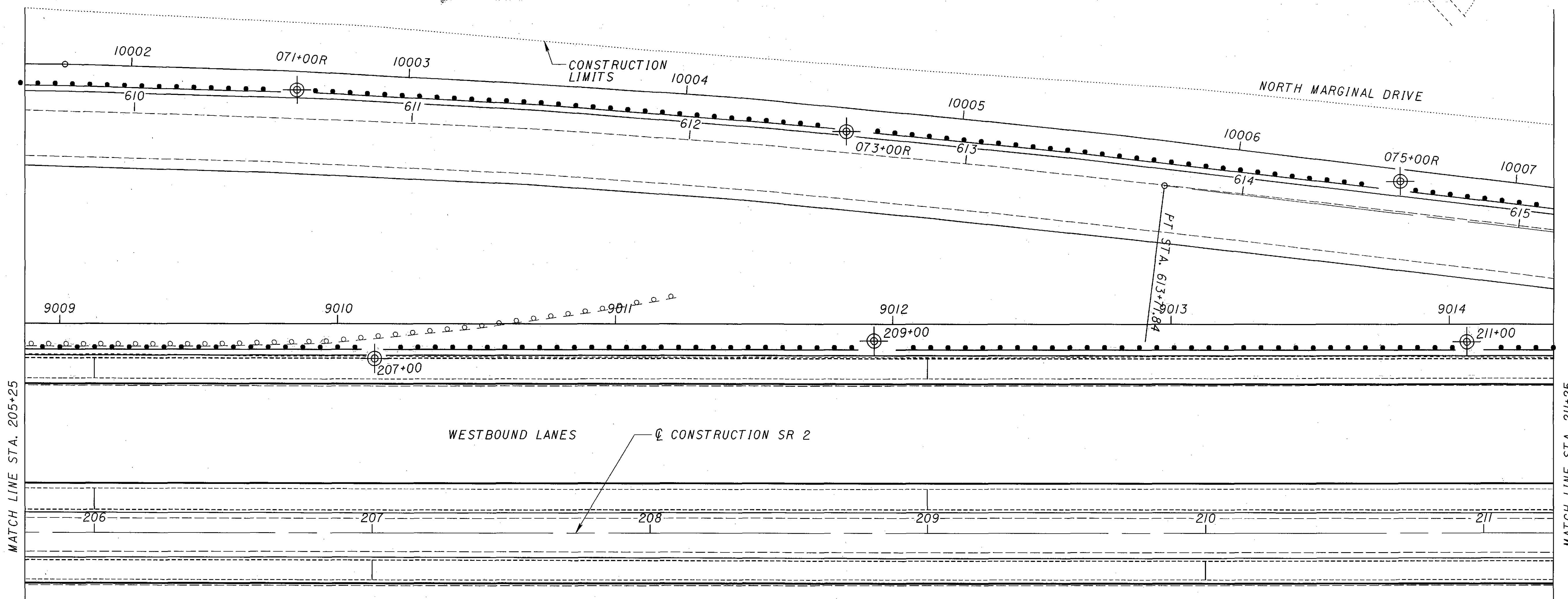


DATE	09/28/05	CALCULATED	S.M.
REVIEWED	M.B.	CHECKED	W.N.
DRAWN	N.S.		

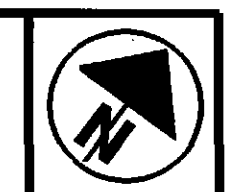
**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS**

LAK-2-0.00

31/89



WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2



0 20 40
HORIZONTAL
SCALE IN METERS

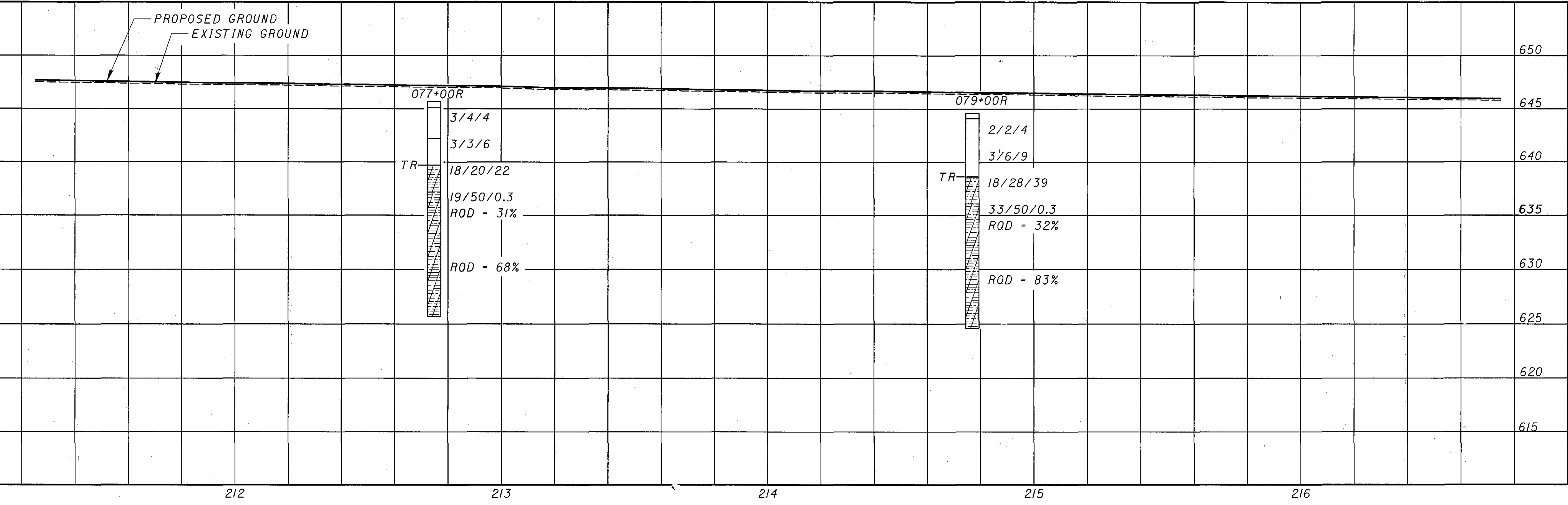
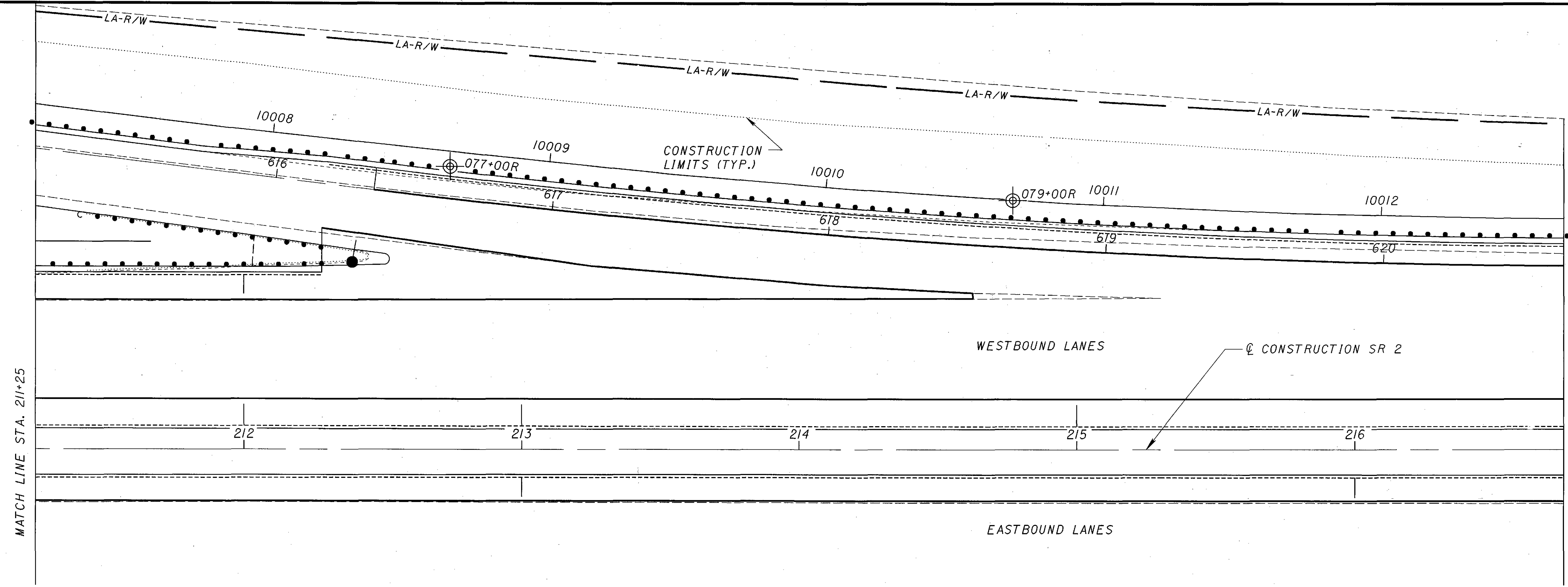
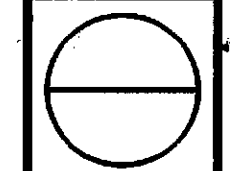
CALCULATED
DATE 09/28/05
S.M.
CHECKED
W.N.

REVIEWED
M.B.

DRAWN
N.S.

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00



WESTBOUND PROFILE 18' LEFT OF C S.R. 2



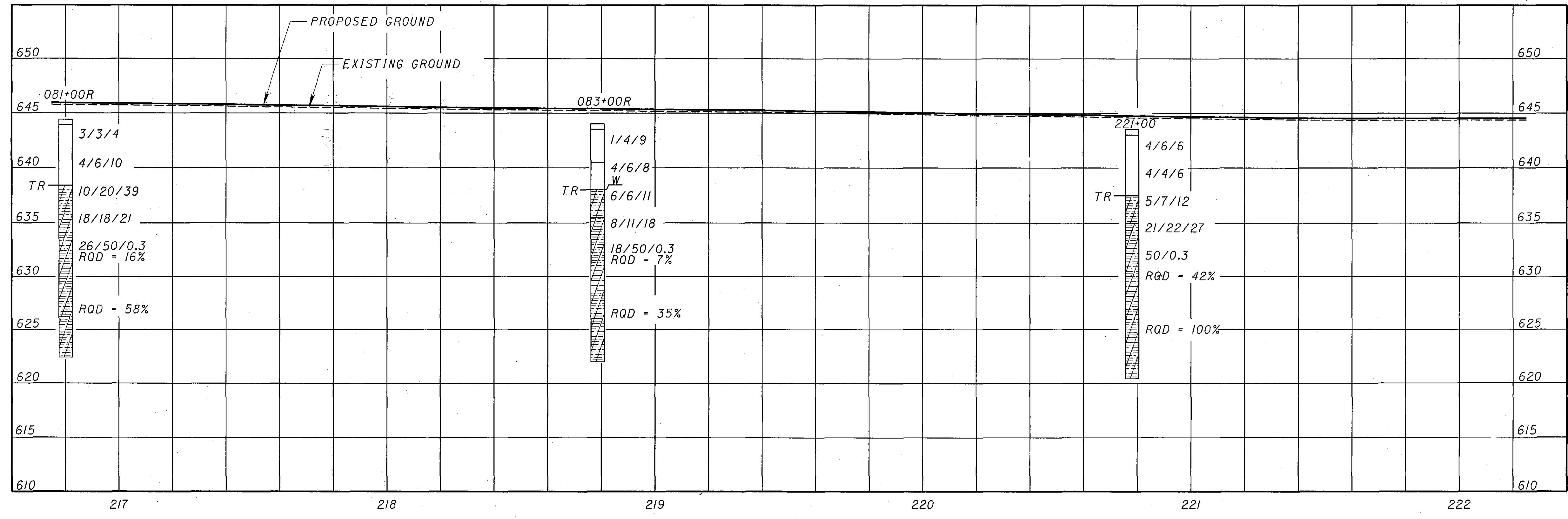
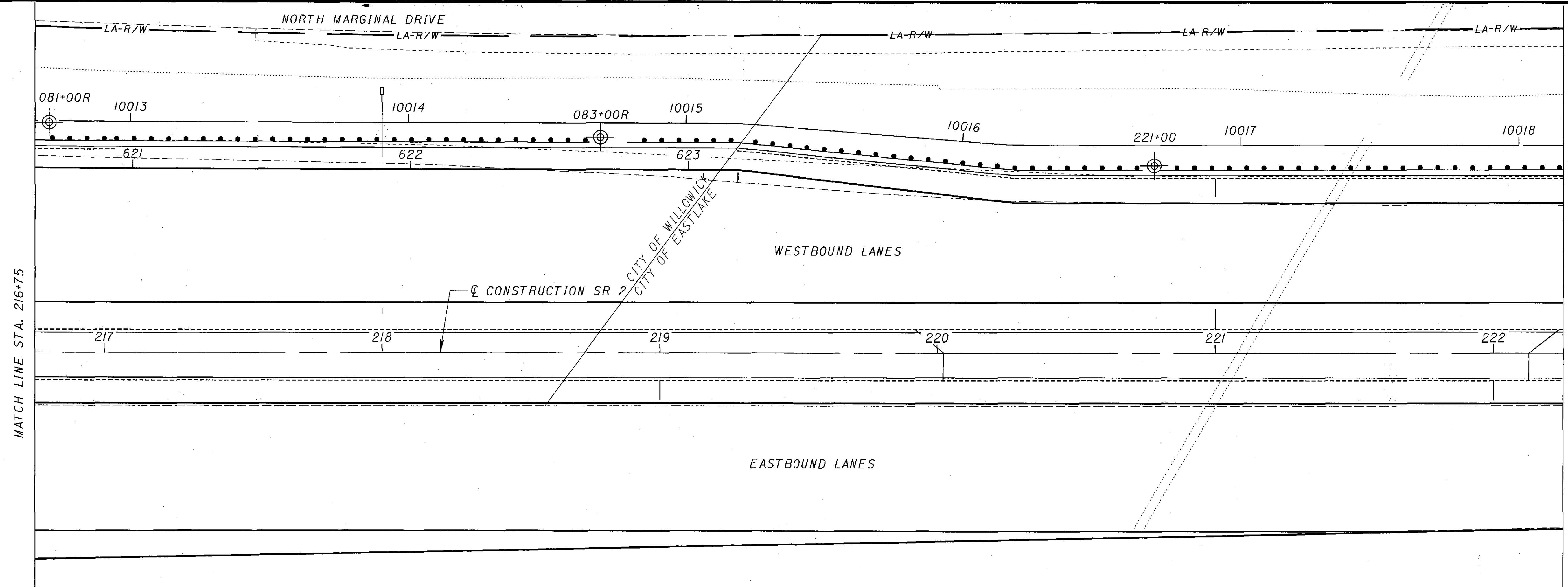
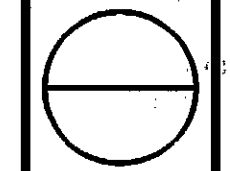
0 20 40
HORIZONTAL
SCALE IN METERS

REVIEWED DATE CALCULATED
M.B. 09/28/05 S.M.
DRAWN N.S. CHECKED W.N.

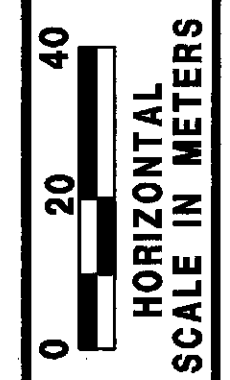
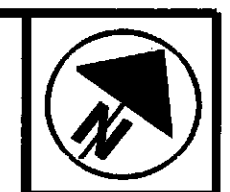
**STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0-00 NOISE BARRIERS**

LAK-2-0-00

33/89



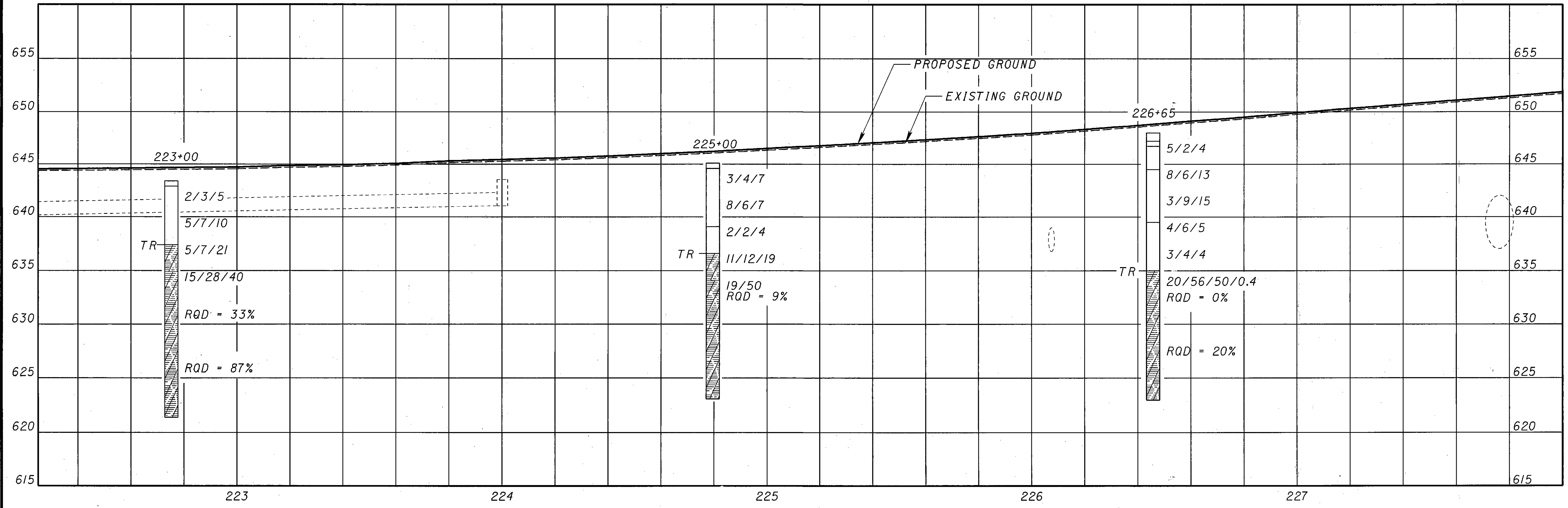
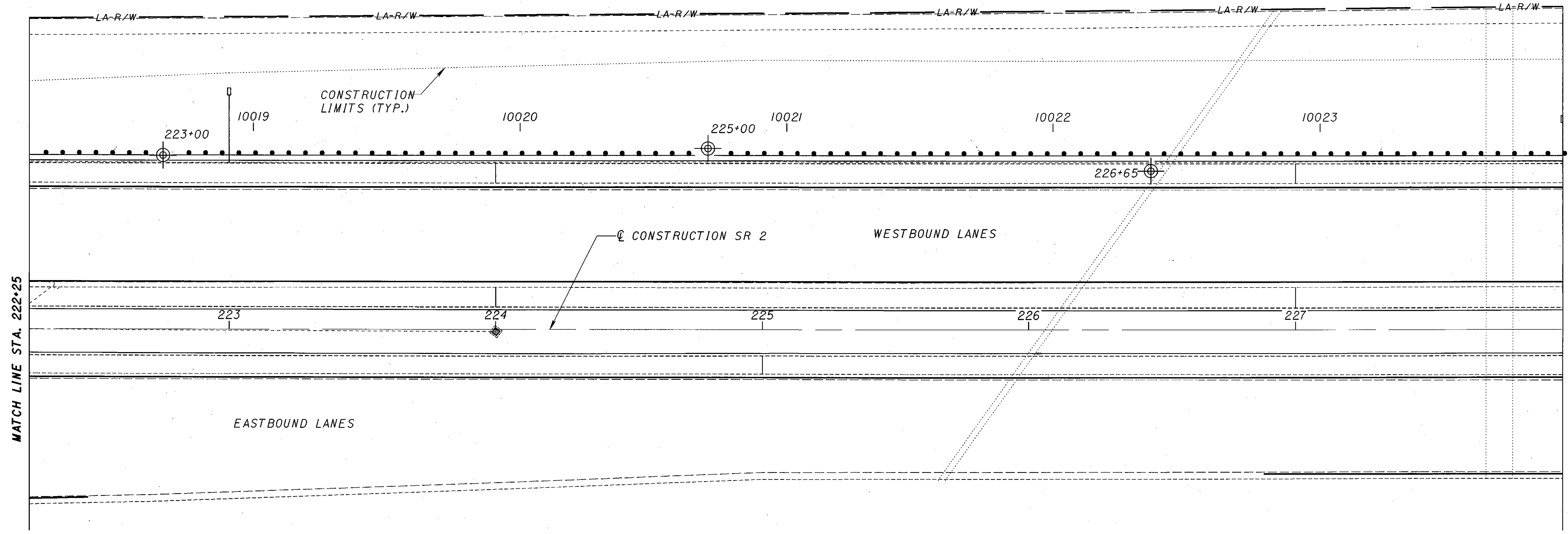
WESTBOUND PROFILE 18' LEFT OF Q S.R. 2



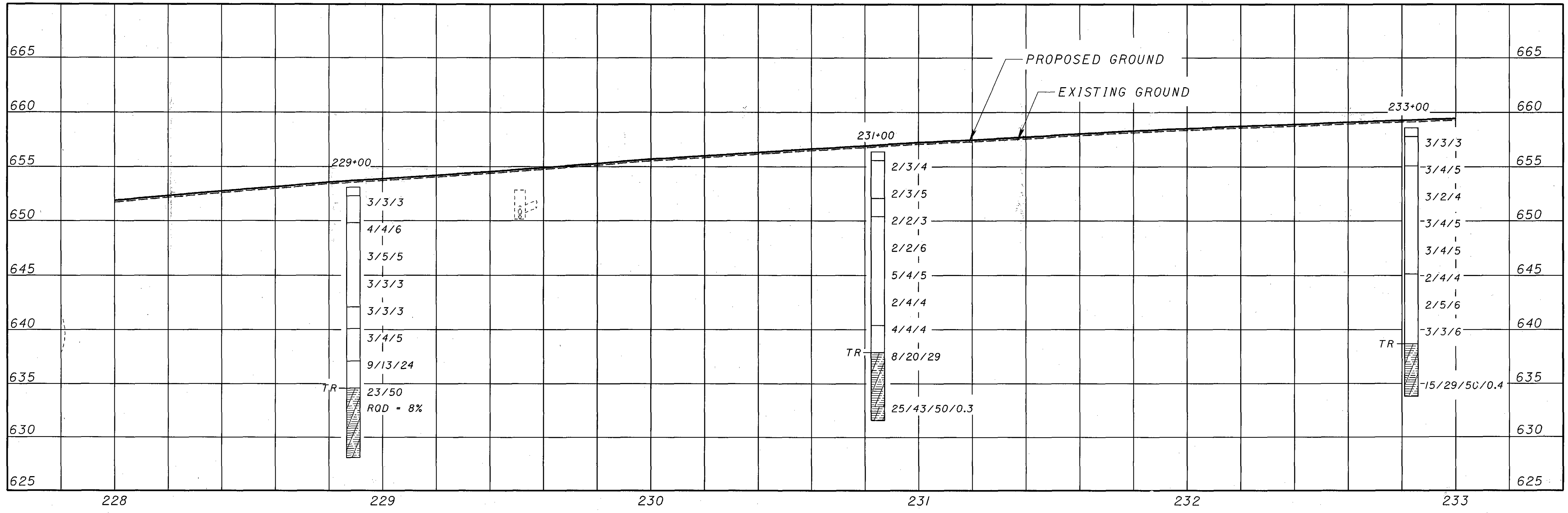
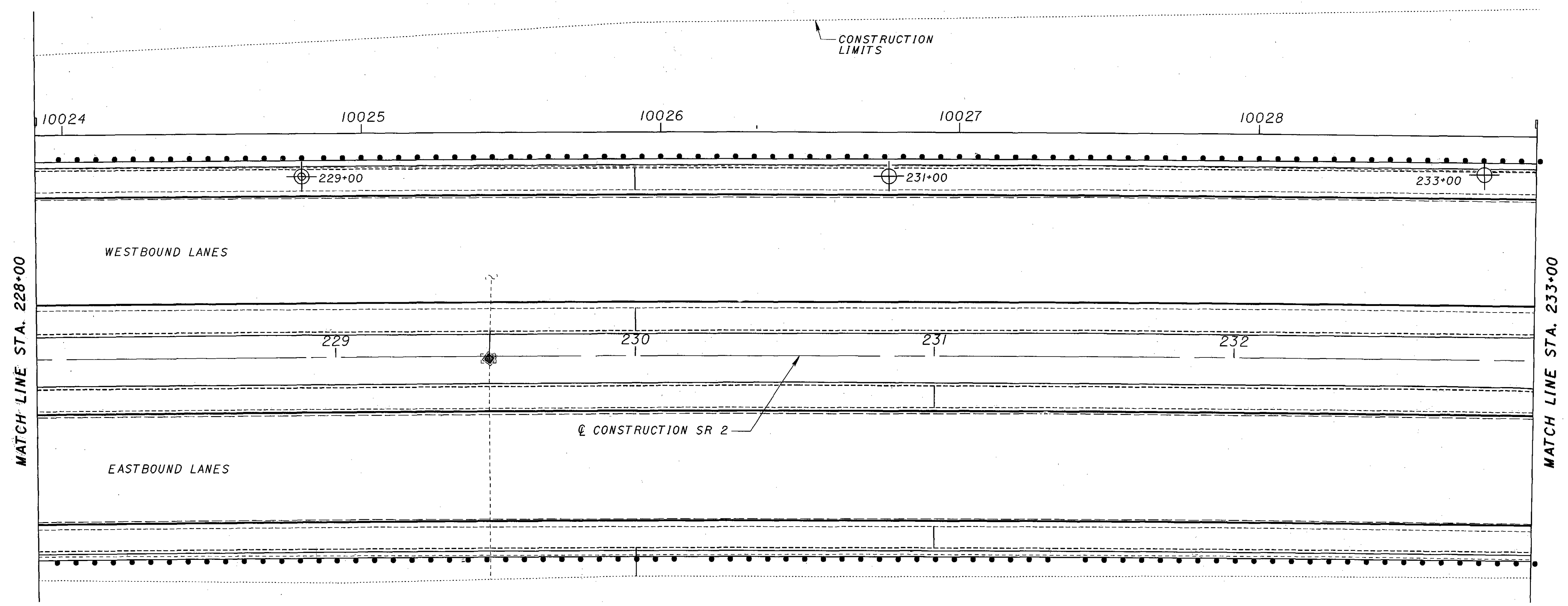
CALCULATED	S.M.	CHECKED	W.N.
DATE	09/28/05	REVIEWED	M.B.
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00



WESTBOUND PROFILE 18' LEFT OF CL S.R. 2



WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2

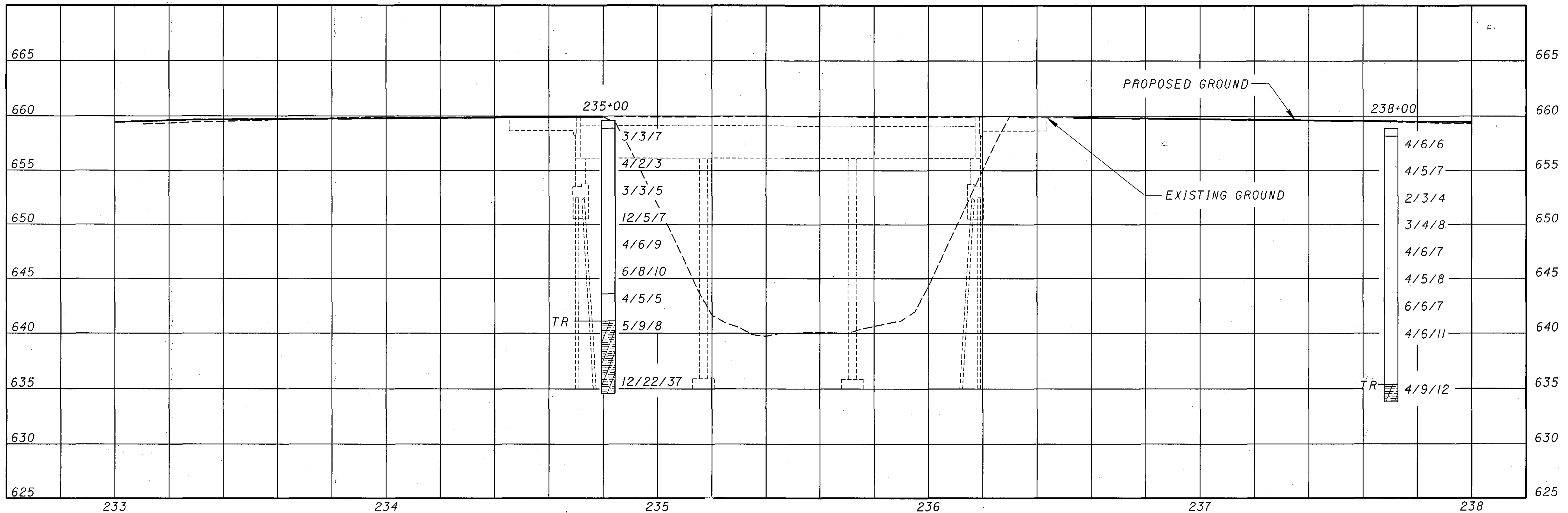
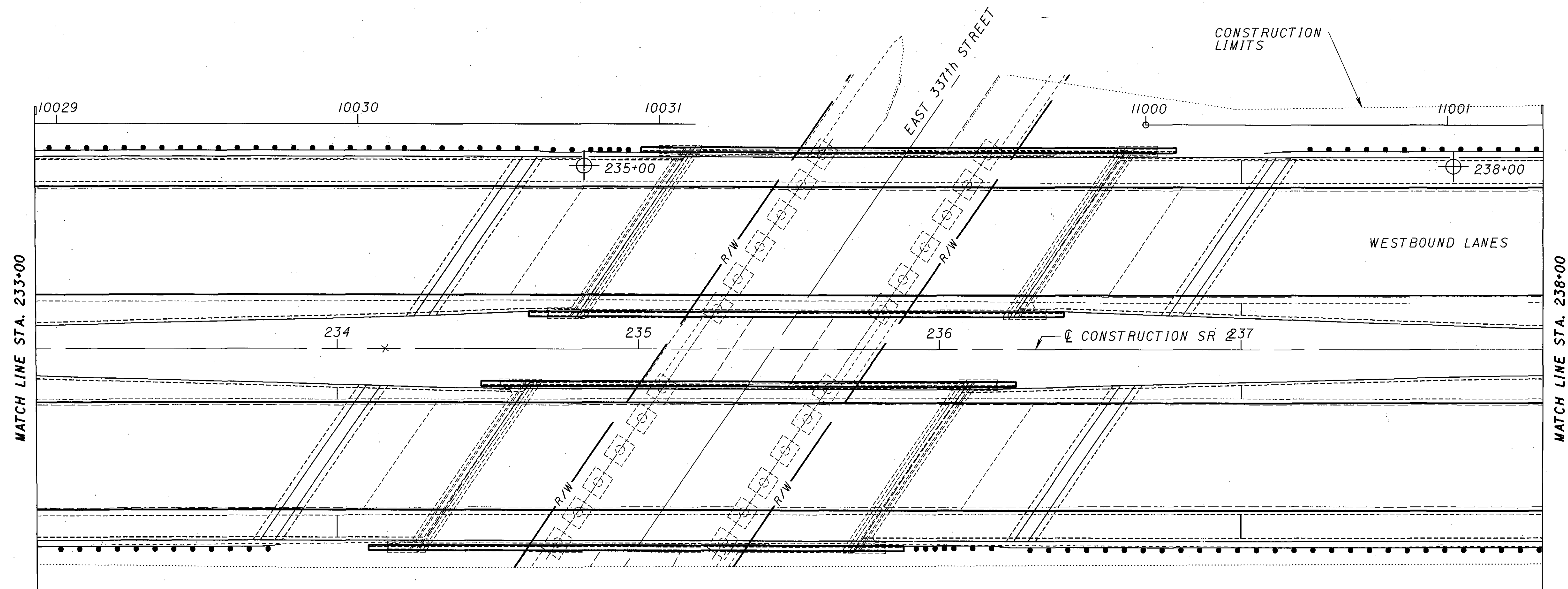
STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

35/89

DRAWN: N.S. REVIEWED: M.B. DATE: 09/28/05 CALCULATED: S.M. CHECKED: W.N.

0 20 40
HORIZONTAL SCALE IN METERS



WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2

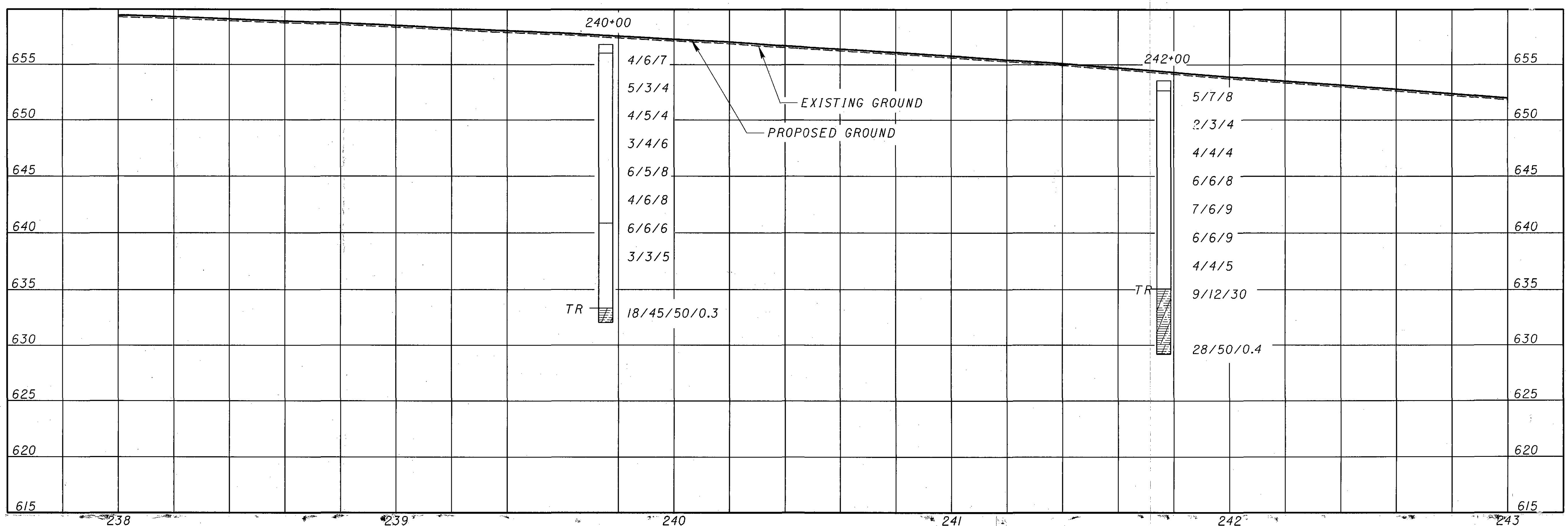
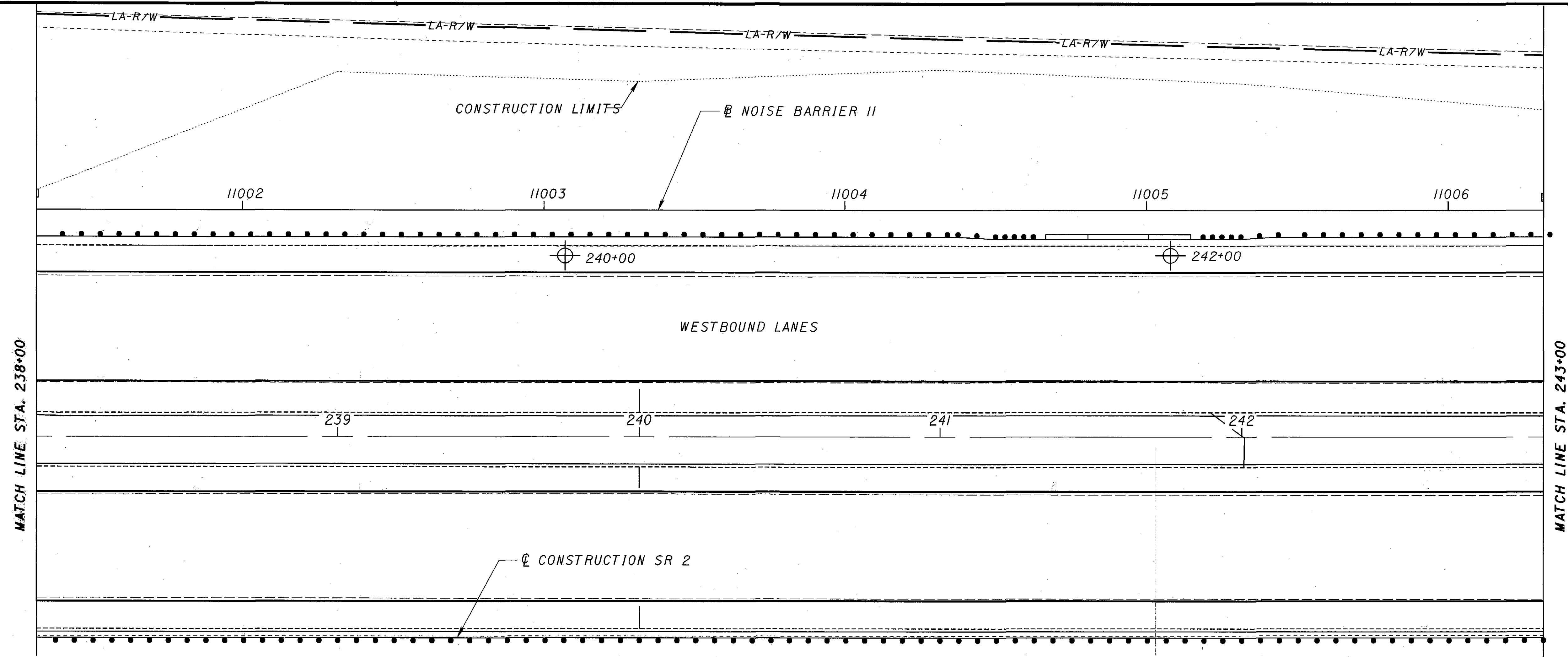
0 20 40
HORIZONTAL SCALE IN METERS

CALCULATED	S.M.	CHECKED	W.N.
DATE	M.B.		
09/28/05			
DRAWN	N.S.		

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

36/89



WESTBOUND PROFILE 18' LEFT OF ϕ S.R. 2


 0 20 40
 HORIZONTAL
 SCALE IN METERS

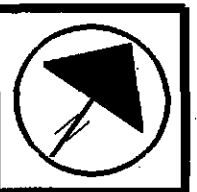
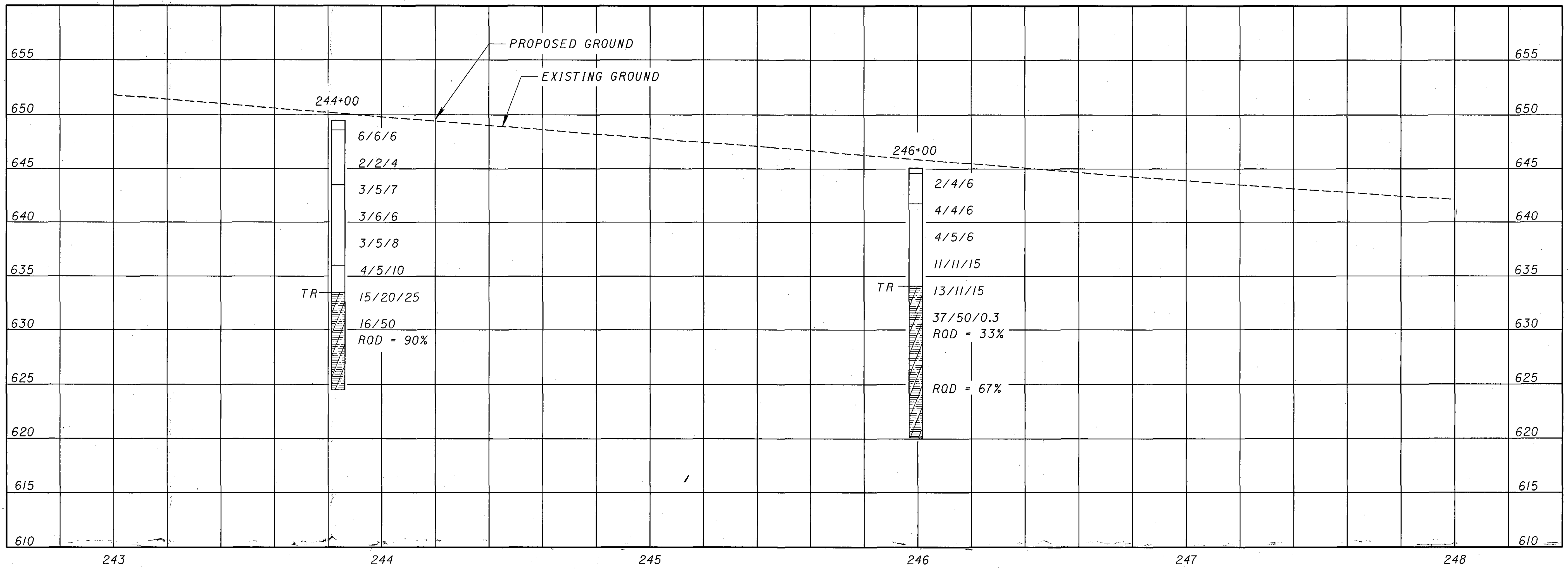
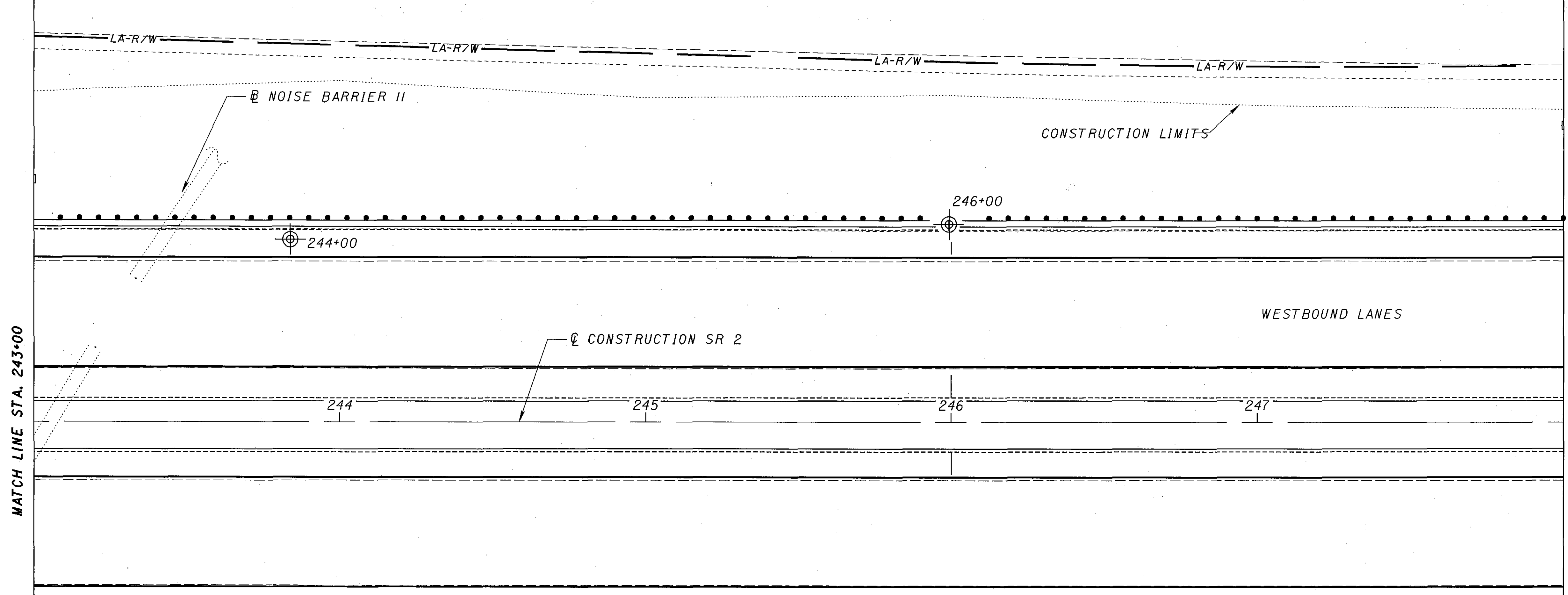
DRAWN N.S.	REVIEWED M.B.	DATE 08/28/05
CALCULATED S.M.	CHECKED W.N.	

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

LAK-2-0.00

37/89





HORIZONTAL SCALE IN METERS
0 20 40

DATE	09/28/05	CALCULATED	S.M.	CHECKED	W.N.
REVIEWED	M.B.				
DRAWN	N.S.				

STRUCTURE FOUNDATION INVESTIGATION
LAK-2-0.00 NOISE BARRIERS

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/29/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/29/05 Casing Length 3.25"
 Project: LAK-2-0.0
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 053+40 Station & Offset 53+75.10, 71.96' LT. Surface Elev. 659.20ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay			LL	PL		
659.2	0																
658.9 658.6	2	2 - 1 - 2			ASPHALT (4.0 inches thick) ROAD BASE (3.0 inches thick) Very loose, brown GRAVEL WITH SAND AND SILT (A-2-4), wet. (FILL) Note: Groundwater seepage was encountered at 1.0 foot during drilling operations.	1								20	VISUAL		
655.7	4	2 - 3 - 3			Medium stiff, gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL)	2									16	VISUAL	
	6	2 - 3 - 4				3									14	VISUAL	
	8	2 - 4 - 3				4									14	VISUAL	
	10					5									14	VISUAL	
	12	3 - 2 - 4				6									14	VISUAL	
645.7	14	2 - 3 - 4			Medium stiff to very stiff, brown to mottled brown and gray SILT AND CLAY (A-6a), little sand, trace rock fragments, trace organics, moist. (FILL)	6									14	VISUAL	
	16	3 - 4 - 8				7									16	VISUAL	
	18	6 - 5 - 9			Note: Color change to mottled brown and gray at 18.5 feet.	8									14	VISUAL	
	20					9											
	22																
634.2	24	5 - 10 - 13														25	VISUAL

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/29/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/29/05 Casing Length 3.25"
 Project: LAK-2-0.0
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 055+40 Station & Offset 55+62.53, 76.37' LT. Surface Elev. 657.8ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay			LL	PL				
657.2	0																		
656.9 656.7	2	2 - 2 - 2			ASPHALT (4.0 inches thick) BASE (3.0 inches thick) Soft to medium stiff, gray to brown SILT AND CLAY (A-6a), some sand, some rock and concrete fragments, moist. (FILL)	1										12	VISUAL		
	4	1 - 3 - 3			Note: Color change to brown at 3.5 feet. Groundwater seepage observed at 3.5 feet during drilling operations.	2											17	VISUAL	
651.2	6	1 - 2 - 3			Medium stiff to stiff, gray to mottled brown and gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)	3											15	VISUAL	
	8	2 - 5 - 4				4											10	VISUAL	
	10					5											12	VISUAL	
	12	3 - 2 - 5				6											13	VISUAL	
	14	3 - 3 - 4			Note: Color change to mottled brown and gray at 13.5 feet.	7											15	VISUAL	
641.2	16	4 - 4 - 6			Stiff to very stiff, gray SILTY CLAY (A-6b), little sand, little shale fragments, moist. (FILL)	8											13	VISUAL	
	18	3 - 7 - 12				9													
	20																		
	22																		
633.7	24	5 - 7 - 10			Very stiff, mottled brown and gray SILT AND CLAY (A-6a), little sand, trace rock fragments, moist. (FILL)													24	VISUAL
632.2																			

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/29/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/29/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 058-00 Station & Offset 58+31.75, 89.29' LT. Surface Elev. 653.63ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		PL	W.C.			
653.6	0																	
653.4 653.1	2 4	2 - 2 - 3 3 - 7 - 9			ASPHALT (3.0 inches thick) BASE (3.0 inches thick) Medium stiff to very stiff, mottled brown and gray SILT AND CLAY (A-6a), little rock fragments, little sand, moist. (FILL) Note: Encountered wood during sampling at 3.5 foot sample	1										18	VISUAL	
647.6	6	1 - 3 - 3			Medium stiff, gray SILT AND CLAY (A-6a), little sand, trace rock fragments, moist. (FILL)	2												VISUAL
642.6	10	2 - 2 - 4				3												VISUAL
637.6	12	4 - 4 - 9			Stiff, mottled brown and gray SANDY SILT (A-4a), little clay, trace rock fragments, moist. (FILL)	4												VISUAL
637.6	14	4 - 7 - 5				5												VISUAL
637.6	16	5 - 5 - 6			Stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL) Note: Groundwater seepage observed at 17.4 feet during drilling operations.	6												VISUAL
637.6	18	4 - 7 - 8				7												VISUAL
630.1 629.2	24	18 - 50/0.4		TR	Very soft, gray, oxidized, highly weathered SHALE. TERMINATION DEPTH = 24.4 FEET	8												VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/29/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/29/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 060+00 Station & Offset 60+30.75, 106.38' LT. Surface Elev. 650.18ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		PL	W.C.			
650.2 649.9	0 2																	
641.7	2	2 - 3 - 2			ASPHALT (3.0 inches thick) Medium stiff, mottled brown and gray to gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL) Note: Color change to gray at 3.5 feet.	1												VISUAL
636.7	4	2 - 3 - 3				2												VISUAL
636.7	6	2 - 2 - 3				3												VISUAL
636.7	8	3 - 5 - 4			Stiff, gray SILT AND CLAY (A-6a), little sand, trace rock fragments, moist. (FILL)	4												VISUAL
636.7	10	6 - 4 - 6				5												VISUAL
636.7	12	4 - 6 - 7			Stiff, gray SILTY CLAY (A-6b), some organics, little sand, trace rock fragments, moist. (FILL)	6												VISUAL
636.7	14	4 - 6 - 8				7												VISUAL
636.7	16					8												VISUAL
636.7	18	9 - 45 - 47		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	9												VISUAL
626.7 626.2	24	50/0.5			Very soft to soft, gray, highly weathered SHALE. TERMINATION DEPTH = 24.0 FEET	9												VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
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LOG OF BORING

Date Started 3/24/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/24/05 Casing Length 3.25"
Boring No. 062+00 Station & Offset 62+54.19, 138.97' LT. Surface Elev. 646.61ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class									
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		P.I.	W.C.							
646.6	0																					
646.6	2	3 - 3 - 3			TOPSOIL (6.0 inches thick) Medium stiff, gray SILT AND CLAY (A-6a), some sand, some to little shale fragments, moist. (FILL)	1										12					VISUAL	
640.5	4	2 - 3 - 3			Stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	2										15					VISUAL	
638.1	6	3 - 4 - 9			Stiff to very stiff, gray ELASTIC CLAY (A-7-5), little sand, little silt, trace organics and roots, moist.	3										20					VISUAL	
634.3	8	4 - 5 - 6			Note: Presence of organics in 8.5 foot sample elevated the moisture content. A 2.0 inch seam of organics present at 11.5 feet.	4	0	2	11	87*	53	20	41								A-7-5	
633.1	10	9 - 9 - 14			Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	4B															VISUAL	
	12				Very soft, brown and gray, oxidized, highly weathered SHALE.	5															VISUAL	
	14	20-28-50/0.3		TR		6															VISUAL	
	16																					
629.6	18	ROD = 27%	4.0	1.0	Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, poor quality as per ROD. Note: U.C. Strength of Shale at 17.3 feet = 392 psi (very low strength) Note: Small vertical fractures throughout run.	Run 1																
624.6	20																					
	22																					

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 (*Indicates silt & clay combined)

TERMINATION DEPTH = 22.0 FEET

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 3/18/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/18/05 Casing Length 3.25"
Boring No. 064+00 Station & Offset 64+30.78, 163.87' LT. Surface Elev. 646.13ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class									
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		P.I.	W.C.							
646.1	0																					
645.6	2	4 - 6 - 8			TOPSOIL (6.0 inches thick) Stiff, gray SANDY SILT (A-4a), little gravel, trace clay, moist. (FILL)	1	18	16	22	--		NP	NP	10								A-4a
642.6	4	4 - 8 - 13			Very stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace shale fragments, moist.	2	4	0	16	--	80*	37	16	20								A-6b
637.6	6	3 - 6 - 14				3								24								VISUAL
	8			TR		4																VISUAL
	10	16 - 18 - 21			Very soft, brown and gray, oxidized, highly weathered SHALE.	5																VISUAL
632.6	12	20 - 21 - 24				6																VISUAL
	14	50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD. Note: Oxidation present in 13.5 foot sample. Note: U.C. Strength of Shale at 16.2 feet = 223 psi (very low strength)	Run 1																
	16	ROD = 60%	5.0	0.0																		
	18																					
626.1	20																					

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 (*Indicates silt & clay combined)

TERMINATION DEPTH = 20.0 FEET

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Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 3/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/18/05 Casing: Length 3.25"
Boring No. 066+00 Station & Offset 66+32.50, 203.07' LT. Surface Elev. 645.61ft
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.	
645.6	0															
645.1	2	50/0			TOPSOIL (6.0 inches thick) Medium stiff to stiff, gray SILT AND CLAY (A-6a) trace sand, little shale fragments, moist. (FILL) Note: Encountered piece of concrete with first spoon, which elevated the blow counts.	1	13	0	9	--	76*	37	14	14	14	A-6a
638.8	4	3 - 3 - 4				2	--	--	--	--	--	--	--	--	--	VISUAL
638.8	6	6 - 8 - 11				3	--	--	--	--	--	--	--	--	--	VISUAL
636.2	8	11 - 20 - 23		TR	Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	4	--	--	--	--	--	--	--	--	--	VISUAL
632.1	10				Very soft, brown and gray, oxidized, highly weathered SHALE.	5	--	--	--	--	--	--	--	--	--	VISUAL
632.1	12	19 - 50/0.3				6	--	--	--	--	--	--	--	--	--	VISUAL
632.1	14	26 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.	Run 1	--	--	--	--	--	--	--	--	--	VISUAL
625.6	16	ROD = 68%	4.3	0.7	Note: U.C. Strength of Shale at 16.2 feet = 120 psi (very low strength)											
625.6	18															
625.6	20															

TERMINATION DEPTH = 20.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 3/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/18/05 Casing: Length 3.25"
Boring No. 068+00 Station & Offset 68+31.88, 249.03' LT. Surface Elev. 646.27ft
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.	
646.3	0															
645.8	2	4 - 4 - 5			TOPSOIL (6.0 inches thick) Stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	1	19	18	11	--	53*	35	13	15	15	A-6a
637.2	4	4 - 5 - 7				2	--	--	--	--	--	--	--	--	--	VISUAL
637.2	6	SHELBY TUBE				3	--	--	--	--	--	--	--	--	--	VISUAL
637.2	8	2 - 6 - 7			Stiff to hard, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist. Note: Color change to red and tan at 9.9 feet.	4	0	1	3	--	96*	53	24	28	28	A-7-6
632.8	10			TR		5	--	--	--	--	--	--	--	--	--	VISUAL
631.8	12	11 - 16 - 20			Very soft, brown, oxidized, highly weathered SHALE.	6	--	--	--	--	--	--	--	--	--	VISUAL
631.8	14	26 - 50				Run 1										
631.8	16	ROD = 58%	4.3	0.7	Soft, gray, highly weathered SHALE, laminar bedding, moderately fractured fissile, fair quality as per ROD. Note: U.C. Strength of Shale at 15.0 feet = 142 psi (very low strength). Oxidation occurring from 15.0 to 16.8 feet.											
626.3	18															
626.3	20															

TERMINATION DEPTH = 20.0 FEET

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 (*Indicates silt & clay combined)

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Testing Laboratory

LOG OF BORING

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Date Started: 3/17/05
Date Completed: 3/17/05
Sampler: Type SS Dia. 2.0" Water Elev. ft
Casing: Length Dia. 3.25"

Boring No. 070+00 Station & Offset 70+35.90, 295.46' LT. Surface Elev. 647.90ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Physical Characteristics						ODOT Class								
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.						
647.9	0																			
647.4	2	3 - 6 - 8			TOPSOIL (6.0 inches thick) Medium dense to loose, non-plastic, gray SANDY SILT (A-4a), and shale fragments, little clay, moist. (FILL)	41	14	8	37*		NP	NP	13	A-4a						
	4	2 - 3 - 4											13	VISUAL						
	6	3 - 3 - 4											11	VISUAL						
639.4	8	6 - 6 - 9			Stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)								14	VISUAL						
636.9	12	4 - 8 - 13			Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.								22	VISUAL						
634.9	14	18 - 25 - 27	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.									VISUAL						
631.9	16	39 - 50/0.3			Soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, poor quality as per ROD.									VISUAL						
	18	50/0.3												VISUAL						
	20	ROD = 35%		4.6										VISUAL						
	22													VISUAL						
	24				Note: Weathered and few fractures from 22.7 feet. Note: U.C. Strength of Shale at 23.2 feet = 1309 psi (low strength)									VISUAL						
622.9					TERMINATION DEPTH = 25.0 FEET															

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

LOG OF BORING

Date Started: 3/17/05
Date Completed: 3/17/05
Sampler: Type SS Dia. 2.0" Water Elev. ft
Casing: Length Dia. 3.25"

Boring No. 072+00 Station & Offset 72+35.88, 319.73' LT. Surface Elev. 648.83ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Physical Characteristics						ODOT Class								
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.						
648.8	0																			
648.3	2	3 - 3 - 5			TOPSOIL (6.0 inches thick) Medium stiff to stiff, gray SILT AND CLAY (A-6a), some shale fragments, some sand, moist. (FILL)									12	VISUAL					
	4	3 - 3 - 5												14	VISUAL					
	6	3 - 3 - 4							44*		33	12	14	A-6a						
	8	3 - 5 - 6											13	VISUAL						
	10	5 - 6 - 6			Note: Oxidation present at 11.0 feet.								27	VISUAL						
635.3	14	2 - 2 - 3			Medium stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.								31	A-6a						
632.8	16	8 - 10 - 13	TR		Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, poor quality as per ROD.									VISUAL						
	18	21 - 50/0.3												VISUAL						
	20	ROD = 40%		2.5					99*		32	12	31	A-6a						
	22				Note: U.C. Strength of Shale at 20.8 feet = 357 psi (very low strength)									VISUAL						
	24				TERMINATION DEPTH = 25.0 FEET									VISUAL						

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

Date Started 3/17/05
Date Completed 3/17/05
Sampler: Type SS Dia. 2.0" Water Elev. ft
Casing: Length 3.25"
LOG OF BORING

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 074+00 Station & Offset 74+39.69, 327.07' LT. Surface Elev. 649.20ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
649.2	0															
648.7	2	3 - 3 - 3			TOPSOIL (6.0 inches thick) Medium stiff to very stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	1									13	VISUAL
	4	5 - 4 - 5				2	17	14	10	59*	34	12	16			A-6a
	6	4 - 4 - 15				3							13			VISUAL
640.7	8	6 - 8 - 11			Very stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, little shale fragments, moist. (FILL)	4	14	7	12	67*	40	17	21			A-6b
638.2	10	6 - 10 - 13				5							25			VISUAL
	12	6 - 10 - 17			Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	6							21			VISUAL
	14					7										VISUAL
633.2	16	19-29-50/0.3		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	8										VISUAL
	18					Run 1										VISUAL
630.7	20	50/0.3	3.0	2.0	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, poor quality as per ROD. Note: Decomposed shale for 2.0 inches from 20.0 feet. Weathered from 21.6 feet. Oxidation present from 20.0 to 21.6 feet. Note: U.C. Strength of Shale at 22.3 feet = 233 psi (very low strength)											VISUAL
	22	ROD = 43%														
624.2	24															
TERMINATION DEPTH = 25.0 FEET																

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

Date Started 3/17/05
Date Completed 3/17/05
Sampler: Type SS Dia. 2.0" Water Elev. ft
Casing: Length 3.25"
LOG OF BORING

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 076+00 Station & Offset 76+35.59, 319.62' LT. Surface Elev. 649.67ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
649.7	0															
649.2	2	3 - 3 - 50			TOPSOIL (6.0 inches thick) Stiff to medium stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL) Note: Hit a piece of concrete at 2.0 feet which elevated the blow counts.	1									17	VISUAL
	4	4 - 6 - 5				2	28	9	6	56*	35	13	14			A-6a
	6	2 - 2 - 4				3							13			VISUAL
	8	6 - 7 - 7				4							14			VISUAL
638.7	10	6 - 10 - 12			Very stiff, gray ELASTIC CLAY (A-7-5), little sand, little silt, moist. Note: Organic material present in sample.	5	0	3	17	81*	52	18	38			A-7-5
636.2	12	4 - 7 - 11				6							24			VISUAL
	14				Very stiff, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist.	7										VISUAL
633.7	16	11 - 8 - 18		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	8										VISUAL
	18					Run 1										VISUAL
631.2	20	28 - 50	2.8	2.3	Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD. Note: Oxidation present in upper 11.0 inches. Small vertical fractures throughout. Note: U.C. Strength of Shale at 22.1 feet = 300 psi (very low strength)											VISUAL
	22	ROD = 23%														
624.7	24															
TERMINATION DEPTH = 25.0 FEET																

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

LOG OF BORING

Date Started 3/16/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/16/05 Casing Length 3.25"
Boring No. 078+00 Station & Offset 78+28.33, 286.99' LT. Surface Elev. 649.97ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						W.C.	O.D.T. Class				
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL			P.I.			
650.0	0																
649.5	2	2 - 2 - 4			TOPSOIL (6.0 inches thick) Medium stiff to very stiff, gray SILT AND CLAY (A-6a), some shale fragments, some sand, moist. (FILL)										17	VISUAL	
	4	2 - 4 - 5														14	VISUAL
	6	3 - 8 - 12														12	VISUAL
	8	4 - 6 - 7			Note: Elevated moisture at 6.5 feet due to pieces of wood in sample.										21	A-6a	
639.0	10															23	VISUAL
	12	6 - 10 - 15			Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.												VISUAL
636.5	14	12 - 22 - 29		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.												VISUAL
634.0	16	23 - 29 - 42			Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, fair quality as per ROD.												VISUAL
	18																VISUAL
	20	50/0.3			Note: U.C. Strength of Shale at 20.1 feet = 267 psi (very low strength). Decomposed shale from 20.0 to 20.1 feet.												VISUAL
	22		4.3	0.8	Note: Vertical fractures from 22.4 feet.												VISUAL
625.0	24				Note: Vertical fractures from 23.8 to 23.9 feet.												VISUAL
TERMINATION DEPTH = 25.0 FEET																	

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

LOG OF BORING

Date Started 3/16/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/16/05 Casing Length 3.25"
Boring No. 080+00 Station & Offset 80+18.71, 241.65' LT. Surface Elev. 648.41ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						W.C.	O.D.T. Class				
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL			P.I.			
648.4	0																
647.9	2	3 - 3 - 6			TOPSOIL (6.5 inches thick) Stiff to very stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)												A-6a
	4	4 - 4 - 6															VISUAL
	6	6 - 9 - 9															VISUAL
	8	9 - 6 - 9															VISUAL
637.4	10																VISUAL
	12	4 - 7 - 11			Very stiff, mottled brown and gray ELASTIC CLAY (A-7-5), little sand, little silt, moist.												A-7-5
634.9	14	18 - 27 - 50/0.3		TR	Very soft, brown and gray oxidized, decomposed SHALE.												VISUAL
633.6	16	ROD = 23%	1.7	3.3	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, very poor to fair quality as per ROD. Note: U.C. Strength of Shale at 15.6 feet = 157 psi (very low strength)												VISUAL
	18																VISUAL
	20	ROD = 7.2%	5.0	0.0	Note: Fair quality from 20.0 feet.												VISUAL
	22																VISUAL
623.4	24				Note: U.C. Strength of Shale at 23.8 feet = 651 psi (low strength). Weathered from 23.1 feet.												VISUAL
TERMINATION DEPTH = 25.0 FEET																	

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
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Testing Laboratory

Date Started 3/16/05
Date Completed 3/16/05
Sampler Type SS Dia. 2.0" Water Elev. ft
Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.			
646.0	0																	
645.5	2	2 - 3 - 4			TOPSOIL (6.0 inches thick) Loose, non-plastic, gray SANDY SILT (A-4p), and shale fragments, trace clay, moist. (FILL)	1	42	14	5	38*	NP	NP	13				A-4p	
	4	3 - 3 - 6			Very stiff, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist.	2											VISUAL	
640.0	6	6 - 8 - 13				3												VISUAL
637.5	8	11 - 16 - 22		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	4											VISUAL	
	10				Very soft to soft, gray, highly weathered SHALE, laminar bedding, high to few fractures, fissile, very poor to good quality as per ROD. Note: U.C. Strength of Shale at 17.2 feet = 282 psi (very low strength)	5											VISUAL	
632.5	14	50/0.1				6												VISUAL
	16	ROD = 18%	3.0	2.0		Run 1												
	20	ROD = 83%	4.8	0.3		Run 2												
	22				Note: Few fractures and good quality from 20.0 feet.													
	24				Note: U.C. Strength of Shale at 20.8 feet = 1253 psi (low strength)													
621.0					TERMINATION DEPTH = 25.0 FEET													

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 (*Indicates silt & clay combined)

State of Ohio
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Date Started 3/15/05
Date Completed 3/15/05
Sampler Type SS Dia. 2.0" Water Elev. ft
Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.			
643.4	0																	
642.9	2	4 - 4 - 4			TOPSOIL (5.5 inches thick) Medium stiff to very stiff, gray SILT AND CLAY (A-6a), some shale fragments, some sand, moist. (FILL)	1												VISUAL
	4	5 - 9 - 11			Stiff, gray ELASTIC CLAY (A-7-5), little sand, little silt, moist.	2												VISUAL
637.4	6	3 - 5 - 8				3		0	5	10	85*	55	25	34				A-7-5
634.9	8	6 - 10 - 24			Hard, mottled brown and gray SILT AND CLAY (A-6a), little shale fragments, little sand, moist. (DECOMPOSED SHALE)	4											VISUAL	
632.4	10	8 - 27 - 30		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	5												VISUAL
629.9	14	18 - 25 - 27			Very soft, gray, highly weathered SHALE.	6												VISUAL
628.4					TERMINATION DEPTH = 15.0 FEET													

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

Date Started 3/15/05
Date Completed 3/15/05
Sampler Type SS Dia. 2.0" Water Elev. ft
Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.			
640.7	0																	
640.2	2	3 - 3 - 6			TOPSOIL (6.0 inches thick) Stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)	1	16	13	9	61*	38	13	18					A-6a
637.2	4	6 - 6 - 9		TR	Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	2												VISUAL
	6	15 - 29 - 50/0.2			Very soft to soft, gray, highly weathered SHALE, laminar bedding, few fractures, fissile, good quality as per ROD. Note: U.C. Strength of Shale at 12.1 feet = 261 psi (very low strength)	3												VISUAL
632.2	8	50/0.3				4												VISUAL
	10	ROD = 77%	4.4	0.6		Run 1												
	12																	
625.7	14				TERMINATION DEPTH = 15.0 FEET													

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
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Testing Laboratory

LOG OF BORING

Date Started 3/15/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/15/05 Casing: Length Dia. 3.25"

Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 098+00 Station & Offset 87+88.90, 96.83' LT. Surface Elev. 640.07ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	ODOT Class							
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL			P.I.	W.C.					
640.1	0																			
639.6	0.5	3 - 4			TOPSOIL (6.0 inches thick) Loose, light brown COARSE AND FINE SAND (A-3a), moist. (FILL)															
636.6	2				Very soft, brown and gray, oxidized, highly weathered SHALE.															
636.6	4	10 - 16			Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly to moderately fractured, fissile, poor to fair quality as per ROD.															
	6	ROD = 42%	3J	1.9	Note: Oxidation occurred in 3.5 foot sample.															
	8				Note: U.C. Strength of Shale at 6.0 feet = 287 psi (very low strength)															
	10	ROD = 63%	3.7	1.3	Note: Fair quality from 10.0 feet.															
	12																			
	14				Note: U.C. Strength of Shale at 13.3 feet = 2117 psi (medium strength)															
625.1					TERMINATION DEPTH = 15.0 FEET															

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 (*Indicates silt & clay combined)

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Testing Laboratory

LOG OF BORING

Date Started 3/15/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/15/05 Casing: Length Dia. 3.25"

Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 090+00 Station & Offset 90+05.13, 87.34' LT. Surface Elev. 640.12ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	ODOT Class							
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL			P.I.	W.C.					
640.1	0																			
639.7	0.5	2 - 6 - 7			TOPSOIL (5.0 inches thick) Stiff, brown CLAY (A-7-6), little silt, little sand, trace shale fragments, moist.															
636.6	2																			
	4	10 - 44 - 50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, poor to fair quality as per ROD.															
	6	ROD = 37%	3.0	2.0	Note: Vertical fractures throughout RUN 1.															
	8				Note: U.C. Strength of Shale at 6.0 feet = 287 psi (very low strength)															
	10	ROD = 70%	5.0	0.0	Note: Weathered, few fractures, and fair quality from 10.0 feet.															
	12				Note: U.C. Strength of Shale at 10.4 feet = 909 psi (low strength)															
	14																			
625.1					TERMINATION DEPTH = 15.0 FEET															

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 (*Indicates silt & clay combined)

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Testing Laboratory

LOG OF BORING

Date Started 3/15/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/15/05 Casing: Length Dia. 3.25"

Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 092+00 Station & Offset 92+07.93, 77.93' LT. Surface Elev. 641.26ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	ODOT Class							
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL			P.I.	W.C.					
641.3	0																			
640.8	0.5	3 - 4 - 5			TOPSOIL (6.0 inches thick) Stiff, brown CLAY (A-7-6), little silt, little sand, trace shale fragments, moist.															
637.8	2																			
	4	5 - 26 - 50/0.3			Very soft, brown and gray, oxidized, highly weathered SHALE.															
	6	ROD = 35%	3.7	1.3	Very soft, brown and gray, oxidized, highly weathered to weathered SHALE, laminar bedding, highly to moderately fractured, fissile, poor to fair quality as per ROD.															
	8				Note: U.C. Strength of Shale at 6.3 feet = 313 psi (low strength)															
	10	ROD = 65%	4.3	0.8	Note: Moderately fractured and fair quality from 10.0 feet.															
	12				Note: Weathered from 11.4 feet.															
	14				Note: U.C. Strength of Shale at 14.1 feet = 896 psi (low strength)															
626.3					TERMINATION DEPTH = 15.0 FEET															

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 (*Indicates silt & clay combined)

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Date Started 3/14/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/14/05 Casing Length _____ Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 094+00 Station & Offset 94+00.71, 70.69' LT. Surface Elev. 642.46ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					ODOT Class			
						% Agg	% C.S.	% F.S.	% Silt	% Clay		P.I.	W.C.	
642.5	0													
642.0	2	2 - 4 - 6			TOPSOIL (6.0 inches thick) Stiff, brown SILT CLAY (A-6b), little sand, trace shale fragments, moist. (FILL)	8	8	7	--	76*	40	18	21	A-6b
639.0	4	6 - 16 - 30		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	--	--	--	--	--	--	--	--	VISUAL
636.5	6	24 - 50/0.3			Very soft to soft, gray, weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.	--	--	--	--	--	--	--	--	VISUAL
	8	50/0.4				--	--	--	--	--	--	--	--	VISUAL
	10	ROD = 55%	4.3	0.8	Note: Vertical fractures throughout the run.	--	--	--	--	--	--	--	--	VISUAL
	12													
	14													
627.5					TERMINATION DEPTH = 15.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

Date Started 3/14/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/14/05 Casing Length _____ Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 096+00 Station & Offset 96+03.83, 69.9' LT. Surface Elev. 643.22ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					ODOT Class			
						% Agg	% C.S.	% F.S.	% Silt	% Clay		P.I.	W.C.	
643.2	0													
642.7	2	3 - 5 - 11			TOPSOIL (6.0 inches thick) Very stiff, mottled brown and gray SILT AND CLAY (A-6a), some sand, trace shale fragments, moist. (FILL)	5	12	13	--	70*	37	14	19	A-6a
639.7	4	33 - 50/0.3		TR	Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair to poor quality as per ROD. Note: Oxidation occurred in 3.5 foot sample.	--	--	--	--	--	--	--	--	VISUAL
	6	ROD = 58%	3.7	1.3										
	8													
	10	ROD = 50%	4.2	0.8	Note: U.C. Strength of Shale at 8.3 feet = 201 psi (very low strength)									
	12				Note: Poor quality from 10.0 feet.									
	14				Note: U.C. Strength of Shale at 10.7 feet = 398 psi (very low strength)									
628.2					TERMINATION DEPTH = 15.0 FEET									

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 (*Indicates silt & clay combined)

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Date Started 3/14/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/14/05 Casing Length _____ Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 098+00 Station & Offset 97+61.77, 72.80' LT. Surface Elev. 643.71ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					ODOT Class			
						% Agg	% C.S.	% F.S.	% Silt	% Clay		P.I.	W.C.	
643.7	0													
643.2	2	2 - 2 - 6			TOPSOIL (6.0 inches thick) Medium stiff, brown SILT AND CLAY (A-6a), little sand, little shale fragments, trace roots, moist. (FILL)	13	8	9	--	70*	32	12	16	A-6a
640.7	4	16 - 18 - 30		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	--	--	--	--	--	--	--	--	VISUAL
637.7	6	39 - 50			Very soft to soft, gray, weathered SHALE, laminar bedding, few fractures, fissile, fair quality as per ROD.	--	--	--	--	--	--	--	--	VISUAL
	8	50/0.4				--	--	--	--	--	--	--	--	VISUAL
	10	ROD = 73%	4.2	0.8	Note: U.C. Strength of Shale at 12.6 feet = 706 psi (low strength)									
	12													
	14													
628.7					TERMINATION DEPTH = 15.0 FEET									

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/11/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/11/05 Casing: Length 3.25'
 Boring No. 100+00 Station & Offset 100+01.72, 60.92' LT. Surface Elev. 645.40ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class								
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.						
645.4	0						%	%	%	%	%										
644.5	2	3 - 3 - 4	TR			ASPHALT (10.5 inches thick)															
644.0	4	29 - 50				BASE (6.0 inches thick) Very soft, brown and gray, oxidized, highly weathered, SHALE.															VISUAL
639.4	6	30 - 50/0.3				Very soft to soft, gray, weathered SHALE, laminar bedding, few fractures, fissile, fair quality as per ROD.															
	8	50/0.3				Note: Oxidation occurred in 6.0 and 8.5 foot samples.															
	10	ROD = 63%	5.0	0.0																	
	12																				
	14																				
630.4	14					Note: U.C. Strength of Shale at 13.5 feet = 1604 psi (low strength)															
						TERMINATION DEPTH = 15.0 FEET															

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/11/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/11/05 Casing: Length 3.25'
 Boring No. 102+00 Station & Offset 102+00.84, 60.50' LT. Surface Elev. 646.21ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class								
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.						
646.2	0						%	%	%	%	%										
645.2	2	4 - 2 - 3	TR			ASPHALT (11.5 inches thick)															
644.2	4	4 - 18 - 31				GRAVEL BASE (12.0 inches thick) Very soft, brown and gray, oxidized, highly weathered SHALE.															
640.2	6	29 - 50				Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly to moderately fractured, fissile, very poor to poor quality as per ROD.															
	8	50/0.3				Note: Oxidation occurred in the 6.0 foot sample.															
	10	ROD = 0%	3.8	1.2																	
	12																				
	14																				
	16	ROD = 50%	3.5	1.5		Note: Weathered and moderately fractured from 14.0 feet.															
	18					Note: Poor quality from 15.0 feet.															
626.2	20					Note: U.C. Strength of Shale at 16.2 feet = 1045 psi (low strength)															
						TERMINATION DEPTH = 20.0 FEET															

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

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Date Started 3/11/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/11/05 Casing Length 3.25" LOG OF BORING

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 104+00 Station & Offset 104+08.05, 60.80' LT. Surface Elev. 647.35ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class													
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.											
647.4	0																								
646.7	2	3 - 3 - 11			ASPHALT (8.5 inches thick) Medium dense, light brown COARSE AND FINE SAND (A-30), moist.															19	VISUAL				
645.9	4	5 - 5 - 7			(FILL) Stiff, gray SILT AND CLAY (A-60), some shale fragments, little sand, moist.																27	VISUAL			
643.9	6				(FILL) Stiff, brown and gray, oxidized, SILT AND CLAY (A-60), trace sand, moist.																		VISUAL		
641.4	8	18 - 19 - 29		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.																		VISUAL		
638.9	10	11 - 16 - 50			Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD.																		VISUAL		
	12	25 - 50/0.4																						VISUAL	
	14	28 - 50																						VISUAL	
	16	ROD = 0%	2.0	3.0	Note: Vertical fracture from 15.8 to 16.0 feet.																			VISUAL	
	18																								VISUAL
	20	ROD = 17%	2.0	3.0	Note: U.C. Strength of Shale at 20.6 feet = 234 psi (very low strength)																				VISUAL
	22																								VISUAL
	24																								VISUAL
622.4					TERMINATION DEPTH = 25.0 FEET																				

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

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Testing Laboratory

Date Started 3/9/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/9/05 Casing Length 3.25" LOG OF BORING

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 106+00 Station & Offset 105+98.52, 59.94' LT. Surface Elev. 648.24ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class															
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.													
648.2	0																										
647.5	2	2 - 3 - 3			ASPHALT (8.5 inches thick) Medium stiff to stiff, mottled brown and gray SILT AND CLAY (A-60), trace sand, trace shale fragments, moist. (FILL)																					A-60	
644.2	4	3 - 5 - 8			Note: Organics and roots in the 3.5 foot sample elevated the moisture content.																					VISUAL	
642.2	6	6 - 16 - 17		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.																					VISUAL	
	8	12 - 18 - 21																								VISUAL	
	10																									VISUAL	
637.2	12	8 - 16 - 32			Very soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD.																					VISUAL	
	14	26 - 50/0.4			Note: Oxidation occurred in 11.0 foot sample.																					VISUAL	
	16	ROD = 0%	0.5	4.5	Note: Attempted rock coring operation at 15.0 feet, shale was too soft for coring equipment so boring was terminated with a split spoon sample at 23.9 feet.																					VISUAL	
	18																										VISUAL
	20																										VISUAL
	22																										VISUAL
624.3		50/0.4			TERMINATION DEPTH = 23.9 FEET																						

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/10/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/10/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 108+00 Station & Offset 108+08.59, 60.72' LT. Surface Elev. 650.69ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.	
650.7	0														
650.0	2	4 - 5 - 6			ASPHALT (8.0 inches thick) medium dense, light brown GRAVEL WITH SAND (A-1-b), little fines, moist. (FILL)	39	29	18	--	14*	NP	NP	9	A-1-b	
648.2	4	SHELBY TUBE			Stiff, gray CLAY (A-7-6), little sand, little silt, trace shale fragments, moist.	3	5	12	--	80*	44	20	24	A-7-6	
	6				Note: U.C. Strength of soil at 4.5 feet = 2812 psf.										
641.7	8	6 - 8 - 21	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.									VISUAL	
	10														
	12	26 - 38 - 46													
	14	36 - 50			Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD.									VISUAL	
637.2	16	ROD = 15%	6J	3.9	Note: U.C. Strength of Shale at 16.7 feet = 326 psi (very low strength)										
	18														
	20														
	22														
	24														
625.7					Note: Decomposed shale from 20.0 to 25.0 feet.										
					TERMINATION DEPTH = 25.0 FEET										

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/9/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/9/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 110+00 Station & Offset 110+05.44, 60.70' LT. Surface Elev. 654.45ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class	
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.
654.5	0													
653.8	2	3 - 3 - 6			ASPHALT (8.0 inches thick) Stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace shale fragments, moist. (FILL)	4	7	6	--	84*	40	17	22	A-6b
651.0	4	5 - 5 - 6			Stiff, gray SILT AND CLAY (A-6a), some sand, some shale fragments, moist. (FILL)									VISUAL
	6	SHELBY TUBE												
646.0	8	4 - 8 - 11			Very stiff, red and brown CLAY (A-7-6), trace sand, moist.	22	14	11	--	53*	34	14	14	A-6a
	10		TR			0	0	1	--	99*	56	27	26	A-7-6
643.5	12	18 - 21 - 26			Very soft, brown and gray, oxidized, highly weathered SHALE.									VISUAL
	14	36 - 50/0.3												
641.0	16	50/0.4												VISUAL
	18	50/0.3												VISUAL
	20													VISUAL
	22													VISUAL
630.6		50/0.4			Note: Decomposed shale from 20.0 to 25.0 feet.									
					TERMINATION DEPTH = 23.9 FEET									

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/9/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/9/05 Casing Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 112-00 Station & Offset 111+99.42, 68.19' LT. Surface Elev. 658.29ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class	
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL
658.3	0						9	6	9	--	37	15	20	A-6a
657.6	2	5 - 3 - 4			ASPHALT (8.5 inches thick) Medium stiff to very stiff, gray SILT AND CLAY (A-6a), little sand, trace shale fragments, moist. (FILL)	1	--	--	--	--	--	--	--	VISUAL
649.8	4	3 - 5 - 6			Note: Brick fragments encountered in 3.5 foot sample.	2	--	--	--	--	--	--	--	VISUAL
	6	7 - 10 - 8				3	--	--	--	--	--	--	--	VISUAL
	8	6 - 7 - 11			Very stiff to hard, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist. (FILL)	4	--	--	--	--	--	--	--	VISUAL
	10					5	--	--	--	--	--	--	--	VISUAL
	12	6 - 11 - 13				6	--	--	--	--	--	--	--	VISUAL
	14	18 - 20 - 22				7	--	--	--	--	--	--	--	VISUAL
642.3	16	20 - 22 - 30		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	8	--	--	--	--	--	--	--	VISUAL
639.8	18	46 - 50/0.3			Very soft to soft, gray, highly weathered SHALE.	9	--	--	--	--	--	--	--	VISUAL
634.5	20						--	--	--	--	--	--	--	VISUAL
	22	50/0.3					--	--	--	--	--	--	--	VISUAL
							--	--	--	--	--	--	--	VISUAL

TERMINATION DEPTH = 23.8 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 3/7/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 114+00 Station & Offset 113+93.20, 72.23' LT. Surface Elev. 661.53ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class	
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL
661.5	0						--	--	--	--	--	--	--	VISUAL
660.8	2	4 - 3 - 11			ASPHALT (8.0 inches thick) Medium dense, light brown COARSE AND FINE SAND (A-3a), trace fines, moist. (FILL)	1	--	--	--	--	--	--	--	VISUAL
659.0	4	3 - 4 - 5			Loose to medium dense, gray, non-cohesive SANDY SILT (A-4a), some shale fragments, little clay, moist. (FILL)	2	--	--	--	--	--	--	--	VISUAL
	6	3 - 4 - 13				3	--	--	--	--	--	--	--	VISUAL
	8	8 - 11 - 13			Note: Brick fragments encountered in the 6.0 foot sample.	4	--	--	--	--	--	--	--	VISUAL
	10					5	4	3	20	7.3*	37	9	27	A-4a
650.5	12	6 - 7 - 10			Very stiff, dark gray cohesive SANDY SILT (A-4a), and clay, trace shale fragments, moist. (FILL)	6	--	--	--	--	--	--	--	VISUAL
648.0	14	8 - 11 - 13			Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	7	--	--	--	--	--	--	--	VISUAL
645.5	16	4 - 6 - 8		TR	Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	8	--	--	--	--	--	--	--	VISUAL
638.0	18	18 - 26 - 27				9	--	--	--	--	--	--	--	VISUAL
637.7	20				Very soft to soft, gray, highly weathered SHALE.		--	--	--	--	--	--	--	VISUAL
	22	50/0.3					--	--	--	--	--	--	--	VISUAL
							--	--	--	--	--	--	--	VISUAL

TERMINATION DEPTH = 23.8 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/7/05 Casing Length Dia. 3.25"
 Boring No. 116+00 Station & Offset 115+99.81, 71.54' L.T. Surface Elev. 664.60ft
 Project No. A0500IG Project LAK-2-0.00
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.			
664.6	0																	
664.0	2	5 - 3 - 7			ASPHALT (7.0 inches thick) Medium dense, light brown COARSE AND FINE SAND (A-3a), moist. (ROADBASE)	1												
663.1	4	4 - 5 - 7			Stiff to very stiff, gray SANDY SILT (A-4c), and clay, trace shale fragments, moist. (FILL)	2												
658.6	6	1 - 2 - 3			Loose to medium dense, gray SHALE FRAGMENTS (A-1-a), and sand, trace fines, moist. (FILL)	3	61	25			NP							
656.1	8	SHELBY TUBE			Very stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	4												
	10					5												
	12	3 - 10 - 9				6												
	14	5 - 7 - 12				7												
648.6	16	5 - 11 - 15			Very stiff, red and tan SILT AND CLAY (A-6a). Trace sand, moist.	8												
646.1	18			TR														
	20	11 - 25 - 39			Very soft to soft, brown and gray, oxidized, highly weathered SHALE.													
	22																	
640.2	24	19 - 50/0.4				9												

TERMINATION DEPTH = 24.4 FEET

Particle Sizes: Agg \Rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leq 0.005mm (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/7/05 Casing Length Dia. 3.25"
 Boring No. 119+00 Station & Offset 118+84.11, 75.35' L.T. Surface Elev. 668.51ft
 Project No. A0500IG Project LAK-2-0.00
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.			
668.5	0																	
667.8	2	5 - 4 - 6			ASPHALT (8.5 inches thick) Loose, light brown COARSE AND FINE SAND (A-3a), trace fines, moist. (FILL)	1												
667.0	4	2 - 4 - 15			Stiff to very stiff, gray SANDY SILT (A-4a), some clay, some shale fragments, moist. (FILL)	2												
663.5	6	6 - 3 - 4			Loose to medium dense, gray SHALE FRAGMENTS WITH SAND (A-1-b), some fines, moist. (FILL)	3	48	20	9		NP							
	8	3 - 4 - 4				4												
	10					5												
	12	5 - 7 - 10				6												
653.0	14	8 - 10 - 17			Very stiff to hard, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	7												
	16	8 - 16 - 22				8												
650.0	18	8 - 11 - 22			Hard, mottled brown and gray SILTY CLAY (A-6b), little shale fragments, little sand, moist.	8												
	20																	
	22																	
645.0	24	5 - 9 - 22			Hard, gray CLAY (A-7-b), little silt, little sand, trace shale fragments, moist.	9	3	5	12		43	15	25					
643.5																		

TERMINATION DEPTH = 25.0 FEET

Particle Sizes: Agg \Rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leq 0.005mm (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/7/05 Casing Length 3.25' Dia. 3.25"
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 121+00 Station & Offset 120+88.73, 75.05' LT. Surface Elev. 670.08ft

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						W.C.	P.I.	LL	O.D.T. Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	% Clay							
670.1	0																		
669.4	2	3 - 5 - 8			ASPHALT (8.5 inches thick)	1											10	VISUAL	
668.6	4	4 - 6 - 4			Loose, light brown COARSE AND FINE SAND (A-3a), trace fines, moist. (FILL)	2											10	VISUAL	
	6	1 - 5 - 3			Loose to medium dense, gray SHALE FRAGMENTS WITH SAND (A-1-b), some fines, moist. (FILL)	3	49	21	8		22*						10	A-1-b	
	8	4 - 8 - 10				4											8	VISUAL	
	10					5											9	VISUAL	
659.1	12	6 - 13 - 19			Hard to very stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	6											9	VISUAL	
656.1	14	8 - 16 - 24				7											10	VISUAL	
	16	10 - 19 - 22			Dense to medium dense, gray SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), moist.	8											11	VISUAL	
	18	11 - 12 - 15				9												12	VISUAL
	20																		
	22																		
	24	16 - 13 - 16																	

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/4/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/4/05 Casing Length 3.25' Dia. 3.25"
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Boring No. 123+00 Station & Offset 123+11.96, 96.54' LT. Surface Elev. 670.74ft

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						W.C.	P.I.	LL	O.D.T. Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	% Clay							
670.1	0																		
670.2	2	7 - 7 - 9			TOPSOIL (6.0 inches thick)	1	23	17	10		51*						16	A-4a	
669.2	4	3 - 6 - 5			CINDER BASE (12.0 inches thick)	2											8	VISUAL	
667.2	6	4 - 5 - 6			Very stiff, gray SANDY SILT (A-4a), some clay, some shale fragments, moist. (FILL)	3											37	VISUAL	
664.7	8	SHELBY TUBE			Medium dense, gray SHALE FRAGMENTS WITH SAND (A-1-b), little fines, moist. (FILL)	4	39	12	9		39*						9	A-4a	
660.7	10				Stiff, gray ELASTIC CLAY (A-7-5), little silt, moist. (FILL)	5											10	VISUAL	
	12	3 - 4 - 8			Stiff to very stiff, gray SANDY SILT (A-4a), some clay, some shale fragments, moist. (FILL)	6											10	VISUAL	
	14	3 - 7 - 14			Medium dense to dense, gray SHALE FRAGMENTS WITH SAND, SILT AND CLAY (A-2-6), moist. (FILL)	7											9	VISUAL	
	16	9 - 18 - 13				8												13	VISUAL
	18	4 - 10 - 15				9													
	20																		
	22																		
647.2	24	4 - 9 - 12		TR	Very soft, gray, highly weathered SHALE.														
645.7																			

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 1/14/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/14/05 Casing: Length 3.25'
Boring No. I24+50 Station & Offset I24+44.25, 74.85' LT. Surface Elev. 671.53ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.L.		W.C.				
671.5	0																		
671.2	2	12 - 18 - 21			TOPSOIL (3.0 inches thick) Hard, gray SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (FILL)	1													VISUAL
668.0	4	6 - 8 - 10			Medium dense to very dense, gray SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), trace clay, moist. (FILL)	2													VISUAL
	6	8 - 10 - 12				3													VISUAL
	8	8 - 8 - 10				4	41	36	15		4*	29	8	9					A-2-4
	10					5	40	37	16		8*	29	8	11					A-2-4
	12	5 - 8 - 8			Note: Brick fragments present in 11.0 foot sample.	6													VISUAL
	14	11 - 13 - 16				7													VISUAL
	16	15 - 23 - 32				8													VISUAL
	18	10 - 18 - 22				9													VISUAL
647.9	24	16 - 18 - 19			Hard, mottled light gray and brown SILT AND CLAY (A-6a), trace sand, trace gravel, trace organics, moist. TERMINATION DEPTH = 25.0 FEET														VISUAL
646.5																			

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 (*indicates silt & clay combined)

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LOG OF BORING

Date Started 1/14/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/14/05 Casing: Length 3.25'
Boring No. I26+50 Station & Offset I26+47.06, 81.07' LT. Surface Elev. 672.06ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.L.		W.C.				
672.1	0																		
671.8	2	4 - 5 - 7			TOPSOIL (3.0 inches thick) Stiff, mottled gray and brown cohesive SANDY SILT (A-6a), little clay, little gravel, moist. (FILL)	1													VISUAL
668.6	4	10 - 18 - 22			Medium dense to dense, gray SHALE FRAGMENTS WITH SAND, SILT, AND CLAY (A-2-6), moist. (FILL)	2													VISUAL
	6	10 - 9 - 10				3													VISUAL
	8	7 - 9 - 11				4	28	41	18		12*	31	11	11					A-2-6
	10					5	31	44	19		5*	31	11	11					A-2-6
	12	7 - 8 - 8				6													VISUAL
	14	11 - 15 - 19				7													VISUAL
	16	12 - 14 - 16				8													VISUAL
	18	18 - 18 - 21			Very stiff, mottled light gray and red SILT AND CLAY (A-6a), trace sand, trace gravel, trace organics, moist. TERMINATION DEPTH = 25.0 FEET	9													VISUAL
647.7	24	11 - 13 - 14																	VISUAL
647.1																			

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 (*indicates silt & clay combined)

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LOG OF BORING

Date Started 1/24/05 Sampler Type SS Dia. 2.0" Water Elev. fl
Date Completed 1/24/05 Casing Length 3.25"
Boring No. 128+50 Station & Offset 128+61.77, 72.93' LT. Surface Elev. 669.26ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay				
669.3	0														
669.0	2	5 - 7 - 8			ASPHALT (3.0 inches thick) GRAVEL BASE MATERIAL (3.0 inches thick)	1							16	VISUAL	
668.8					Medium dense, brown COARSE AND FINE SAND (A-3a), trace gravel, trace fines, moist. (FILL)	2							16	VISUAL	
667.3	4	7 - 10 - 10			Very stiff to medium stiff, gray SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (FILL)	3								VISUAL	
	6	3 - 3 - 5			Note: Brick fragments present in 3.5 foot sample.										
	8				Note: No recovery at 6.0 feet. Drove spoon into piece of brick.										
660.8	10	12 - 7 - 7			Medium dense, gray SHALE FRAGMENTS (A-1-a), and sand, trace fines, moist. (FILL)	4							11	VISUAL	
	12	9 - 9 - 11				5	56	3f	11	--	2*	NP	9	A-1-a	
655.8	14	7 - 11 - 12			Very stiff, gray CLAY (A-7-6), and sand, some shale fragments, little silt, moist. (FILL)	6	23	27	11	--	39*	42	18	A-7-6	
	16	8 - 8 - 14				7								VISUAL	
	18	7 - 7 - 10				8								VISUAL	
	20														
	22														
645.8	24	10 - 13 - 25			Hard, mottled light gray and red SILT AND CLAY (A-6a), trace sand, trace gravel, trace organics, moist.	9								24	VISUAL
644.3					TERMINATION DEPTH = 25.0 FEET										

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay $<$ 0.005mm (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 3/24/05 Sampler Type SS Dia. 2.0" Water Elev. fl
Date Completed 3/24/05 Casing Length 3.25"
Boring No. 131+00 Station & Offset 131+23.76, 71.35' LT. Surface Elev. 665.82ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class	
							% Agg	% C.S.	% F.S.	% Silt	% Clay			
665.8	0													
664.8	2	4 - 4 - 5			ASPHALT (12.0 inches thick)	1								VISUAL
664.7	4	4 - 6 - 10			Loose, light brown COARSE AND FINE SAND (A-3a), trace fines, moist. (FILL)	2								VISUAL
	6	5 - 4 - 6			Stiff to very stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	3								VISUAL
	8				Note: Some shale fragments present in 6.0 foot sample.									
	10	5 - 4 - 5				4								VISUAL
	12	2 - 4 - 5			Note: 2.0 inch thick organic seam at 11.5 feet.	5								VISUAL
	14	2 - 6 - 8			Note: Groundwater seepage observed at 13.5 feet during drilling operations.	6								VISUAL
	16	8 - 9 - 7				7								VISUAL
647.3	18	3 - 5 - 4			Stiff, gray SILT AND CLAY (A-6a), some sand, little organics, trace shale fragments, moist. (FILL)	8								VISUAL
646.5	20				Stiff, mottled brown and gray CLAY (A-7-6), trace sand, moist.									
645.8					Very soft, brown and gray, oxidized, highly weathered SHALE.									
	22													
641.0	24	12 - 22 - 50/0.3			TERMINATION DEPTH = 24.8 FEET	9								VISUAL
					Note: Samples used for corrosivity testing only									

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay $<$ 0.005mm (*Indicates silt & clay combined)

State of Ohio
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Date Started 1/24/05
Date Completed 1/24/05
Boring No. 132+00
Station & Offset 131+50.37, 72.53' LT.
Surface Elev. 665.43ft
Sampler Type SS
Casing Length
Dia. 2.0"
Water Elev. ft
LOG OF BORING
Project: LAK-2-0.00
Project No.: A0500IG
City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
665.4	0																
665.1	2	9 - 4 - 5			ASPHALT (3.5 inches thick) GRAVEL BASE MATERIAL (3.0 inches thick) Loose, brown COARSE AND FINE SAND (A-3a), trace gravel and fines, moist. (FILL)	1											VISUAL
663.1	4	4 - 5 - 6			Medium stiff to very stiff, gray CLAY (A-7-6), and to some sand, little to some shale fragments, moist. (FILL)	2											VISUAL
	6	5 - 5 - 8				3											VISUAL
	8	3 - 5 - 3			Note: Brick fragments present in 8.5 and 11.0 foot samples.	4	19	25	4	52*	59	37	12				A-7-6
	10	3 - 7 - 7				5	23	29	11	36*	59	37	14				A-7-6
	12					6											VISUAL
	14	6 - 9 - 11				7											VISUAL
	16	6 - 12 - 10				8											VISUAL
646.9	18	3 - 5 - 7			Stiff, brown ELASTIC CLAY (A-7-5), little sand, moist.	8	0	1	10	89*	57	26	32				A-7-5
	20					9											VISUAL
641.9	24	17 - 50		TR	Very soft, gray and red, highly weathered SHALE.	Run 1											VISUAL
640.9	26	ROD = 38%	9.8	0.3	Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, poor quality as per ROD.												VISUAL
	28																VISUAL
	30																VISUAL
	32																VISUAL
	34																VISUAL

TERMINATION DEPTH = 35.0 FEET
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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 3/24/05
Date Completed 3/24/05
Boring No. 133+00
Station & Offset 132+45.45, 70.48' LT.
Surface Elev. 664.08ft
Sampler Type SS
Casing Length
Dia. 2.0"
Water Elev. ft
LOG OF BORING
Project: LAK-2-0.00
Project No.: A0500IG
City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
664.1	0																
663.1	2	3 - 3 - 6			ASPHALT (2.0 inches thick) Loose, light brown COARSE AND FINE SAND (A-3a), trace fines, moist. (FILL)	1											VISUAL
	4	6 - 9 - 13			Stiff to hard, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	2											VISUAL
	6	6 - 9 - 10			Note: Some shale fragments present in 6.0 foot sample.	3											VISUAL
	8	9 - 6 - 11				4											VISUAL
	10	8 - 6 - 7				5											VISUAL
	12	6 - 6 - 11				6											VISUAL
	14	6 - 36 - 13				7											VISUAL
645.6	16	5 - 7 - 12			Note: Concrete fragments present at 16.5 feet.	8											VISUAL
644.1	18				Very stiff, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist.												VISUAL
	20				Note: Color change to red and tan at 19.3 feet. TERMINATION DEPTH = 20.0 FEET Note: Samples used for corrosivity testing only												VISUAL

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 (*Indicates silt & clay combined)

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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 1/24/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 1/24/05 Casing Length 3.25" Dia. 3.25" Project: LAK-2-0.00
 Project No. A0500IG Location: City of Wickliffe, Lake County, Ohio

Boring No. 134+00 Station & Offset 133+38.00, 65.65' LT. Surface Elev. 661.88ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.	
661.9	0					1										VISUAL
661.5	2	6 - 6 - 11			ASPHALT (4.0 inches thick) GRAVEL BASE MATERIAL (3.0 inches thick) Very stiff, gray SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (FILL)											VISUAL
658.4	4	5 - 7 - 16			Very stiff to stiff, gray SHALE FRAGMENTS WITH SAND, SILT, AND CLAY (A-2-6), moist. (FILL)	2										VISUAL
	6	SHELBY TUBE			Note: Brick fragments present at 3.5 feet and at 7.2 feet.	3	29	32	26	13*	31	13	16			A-2-6
	8	5 - 6 - 5			Note: U.C. Strength of soil at 7.2 feet = 1627 psf with a Bulk Unit Weight = 126 pcf	4										VISUAL
	10					5										VISUAL
650.9	12	SHELBY TUBE			Medium dense, gray SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), little clay, moist. (FILL)	6										VISUAL
	14	6 - 6 - 9				7										VISUAL
645.9	16	3 - 4 - 8			Stiff, mottled light gray and red ELASTIC CLAY (A-7-5), trace sand, trace gravel, trace organics, moist.	8										VISUAL
643.4	18	4 - 6 - 10		TR	Very soft, gray and red, highly weathered SHALE.	9										VISUAL
	20					Run 1										VISUAL
	22															VISUAL
638.4	24	50/0.4	4.0	1.0	Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, fair quality as per ROD.											VISUAL
	26	ROD = 65%			Note: U.C. Strength of Shale at 24.4 feet = 240 psi (very low strength)											VISUAL
632.9	28				Note: Many horizontal fractures along bedding planes throughout shale (fissile). TERMINATION DEPTH = 29.0 FEET											VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
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LOG OF BORING

Date Started 3/24/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 3/24/05 Casing Length 3.25" Dia. 3.25" Project: LAK-2-0.00
 Project No. A0500IG Location: City of Wickliffe, Lake County, Ohio

Boring No. 135+00 Station & Offset 134+42.12, 62.16' LT. Surface Elev. 659.61ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.	
659.6	0					1										VISUAL
658.8	2	3 - 9 - 12			ASPHALT (9.0 inches thick) Loose, light brown COARSE AND FINE SAND (A-3a), trace fines, moist.											VISUAL
658.5	4	4 - 6 - 7			Stiff to very stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	2										VISUAL
	6	6 - 8 - 8			Note: Some shale fragments encountered in 6.0 foot sample.	3										VISUAL
	8	6 - 8 - 10				4										VISUAL
	10	3 - 6 - 7				5										VISUAL
	12	3 - 3 - 6				6										VISUAL
643.6	16	5 - 8 - 12		TR	Very stiff, red and tan SILT AND CLAY (A-6a), trace sand, moist.	7										VISUAL
642.1	18	29 - 50/0.3			Very soft, brown and gray, oxidized, highly weathered SHALE.	8										VISUAL
640.3					TERMINATION DEPTH = 19.3 FEET											VISUAL

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 1/21/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/21/05 Casing: Length 3.25" Dia. 3.25"
Boring No. 136+00 Station & Offset 135+38.94, 60.03' LT. Surface Elev. 657.61ft

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.			
657.6	0																	
657.3	1	8 - 8 - 15			ASPHALT (3.0 inches thick)	1												VISUAL
657.0	2				GRAVEL BASE MATERIAL (3.0 inches thick)	2												VISUAL
656.3	4	3 - 3 - 8			Medium dense, brown COARSE AND FINE SAND (A-3a), trace gravel, trace fines, moist. (BASE)	3												VISUAL
	6	4 - 5 - 9			Medium dense, gray SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), trace clay, moist. (FILL)	4												VISUAL
	8	8 - 9 - 9				5												VISUAL
	10					6												VISUAL
	12	45 - 9 - 10				7												VISUAL
643.8	14	4 - 7 - 6			Stiff, mottled light gray and red ELASTIC CLAY (A-7-5), trace sand, trace gravel, trace organics, moist.	8												VISUAL
641.3	16	12 - 31 - 50/0.4		TR	Very soft, gray, highly weathered SHALE.	Run 1												VISUAL
638.6	18	50/0.4																VISUAL
	20	ROD = 52%	3.6	1.4	Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, fair quality as per ROD.													VISUAL
	22				Note: U.C. Strength of Shale at 19.2 feet = 226 psi (very low strength)													VISUAL
633.6	24				Note: Many horizontal fractures along bedding planes throughout shale fissile.													VISUAL

TERMINATION DEPTH = 24.0 FEET

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

(*Indicates silt & clay combined)

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Testing Laboratory

Date Started 1/21/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/21/05 Casing: Length 3.25" Dia. 3.25"
Boring No. 138+00 Station & Offset 137+35.88, 59.73' LT. Surface Elev. 653.79ft

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.			
653.8	0																	
653.5	1	7 - 4 - 5			ASPHALT (4.0 inches thick)	1												VISUAL
653.3	2				GRAVEL BASE MATERIAL (2.0 inches thick)	2												VISUAL
652.5	4	5 - 4 - 4			ASPHALT MILLINGS (1.0 inches thick)	3												VISUAL
652.2					Loose, brown COARSE AND FINE SAND (A-3a), trace gravel, trace fines, moist. (BASE)	4												VISUAL
650.3	6	5 - 5 - 4			Stiff, gray SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (FILL)	5												VISUAL
647.8	8	2 - 2 - 4			Loose, gray SHALE FRAGMENTS WITH SAND AND SILT (A-2-4), moist. (FILL)	6												VISUAL
645.3	10				Stiff, gray SILT AND CLAY (A-6a), little shale fragments, little sand, moist. (FILL)	Run 1												VISUAL
	12	3 - 4 - 7			Medium stiff, gray ELASTIC CLAY (A-7-5), trace sand, moist. (FILL)													VISUAL
642.5	14	7 - 10 - 50		TR	Note: Groundwater seepage encountered at 8.5 feet during drilling operations.													VISUAL
639.4	16	ROD = 9%	9.1	0.9	Note: Brick fragments present in 8.5 foot sample.													VISUAL
	18				Stiff, mottled light gray and red ELASTIC CLAY (A-7-5), trace sand, trace gravel, trace organics, moist.													VISUAL
	20				Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, very poor quality as per ROD.													VISUAL
	22				Note: Vertical fractures and iron staining present in upper 2.0 feet.													VISUAL
628.8	24				Note: Many horizontal fractures along bedding planes throughout shale fissile.													VISUAL

TERMINATION DEPTH = 25.0 FEET

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

(*Indicates silt & clay combined)

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Date Started 1/14/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/20/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 140+00 Station & Offset 139+47.12, 96.25' LT. Surface Elev. 643.53ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	O.D.T. Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.			P.I.	W.C.
643.5 643.2	0 2				TOPSOIL (3 inches thick) Stiff, mottled light gray and red SILT AND CLAY (A-60), trace sand, trace gravel, trace organics, moist.	--	--	--	--	--	--	--	33	VISUAL	
639.1 638.5	4 6	18-33-50/0.2	8.7	TR	Very soft, gray, highly weathered SHALE. Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, very poor quality as per ROD. Note: Little iron staining in upper 1 foot of shale. Note: U.C. Strength of Shale at 7.2 feet = 150 psi (very low strength) Note: U.C. Strength of Shale at 10.8 feet = 315 psi (very low strength) Note: Few vertical fractures present in rock core specimen and many horizontal fractures along bedding planes. (fissile)	--	--	--	--	--	--	--	17	VISUAL	
628.5					TERMINATION DEPTH = 15.0 FEET										

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 (*Indicates silt & clay combined)

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Date Started 1/14/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 1/20/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 142+00 Station & Offset 141+48.18, 88.42' LT. Surface Elev. 644.24ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	O.D.T. Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.			P.I.	W.C.
644.2 643.9	0 2				TOPSOIL (3 inches thick) Stiff, mottled light gray and red SILT AND CLAY (A-60), trace sand, trace gravel, trace organics, moist.	--	--	--	--	--	--	--	27	VISUAL	
640.0 639.2	4 6	18-37-50/0.2	8.6	TR	Very soft, gray, highly weathered SHALE. Very soft to soft, gray, highly weathered to weathered SHALE, highly fractured, fissile, very poor quality as per ROD. Note: Iron staining present in upper 1.8 feet. Highly fractured from 8.0 to 8.7 feet with few vertical fractures throughout shale. Note: Many horizontal fractures along bedding planes throughout shale (fissile).	--	--	--	--	--	--	--	14	VISUAL	
629.2					TERMINATION DEPTH = 15.0 FEET										

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

Date Started 4/28/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/28/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 143+50 Station & Offset 143+54.29, 69.01' LT. Surface Elev. 650.00ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						Sample No.	O.D.T. Class	
						% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.			P.I.
650.0 649.4	0 2				ASPHALT (7.0 inches thick) Stiff, gray to mottled brown and gray SILT AND CLAY (A-60), trace shale fragments, trace roots, moist. (FILL)	--	--	--	--	--	--	--	17	VISUAL
644.0 641.5	4 6	4 - 5 - 7 2 - 4 - 8		TR	Note: Color change to mottled brown and gray at 3.5 feet. Stiff, mottled brown and gray, CLAY (A-7-6), trace shale fragments, moist. Very soft, brown and gray, oxidized, highly weathered, SHALE.	--	--	--	--	--	--	--	28	VISUAL
636.5	10 12	10 - 35 - 33 35 - 39 - 42			Very soft to soft, gray, highly weathered SHALE.	--	--	--	--	--	--	--	15	VISUAL
	14 16	40 - 50/0.3			Very soft to soft, gray, highly weathered SHALE.	--	--	--	--	--	--	--		VISUAL
	18 20	50/0.4 50/0.3			Note: Groundwater seepage was encountered at 17.0 feet during drilling operations.	--	--	--	--	--	--	--		VISUAL
626.2	22	50/0.3			Note: Groundwater seepage was encountered at 23.8 feet upon completion of drilling operations. TERMINATION DEPTH = 23.8 FEET	--	--	--	--	--	--	--	15	VISUAL

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 (*Indicates silt & clay combined)

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Date Started 4/28/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/28/05 Casing: Length 3.25"
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 145+00 Station & Offset 145+00.86, 68.01' LT. Surface Elev. 651.80ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.L.	W.C.				
651.8	0																		
651.3	2	3 - 3 - 3			TOPSOIL (6.0 inches thick) Medium stiff, brown, SANDY SILT (A-4s), trace clay, trace rock fragments, moist. (FILL)	1											19	VISUAL	
648.3	4	4 - 5 - 6			Stiff, gray, SILTY CLAY (A-6s), little sand, trace rock fragments, wet. (FILL) Note: Groundwater seepage was encountered at 3.5 feet during drilling operations.	2											20	VISUAL	
643.3	6	4 - 6 - 4			Stiff, mottled brown and gray CLAY (A-7-6), little silt, little sand, trace rock fragments, wet.	3											20	VISUAL	
640.8	8	5 - 7 - 8	TR			4												26	VISUAL
638.3	10				Very soft, brown and gray, oxidized, highly weathered SHALE.	5											20	VISUAL	
	12	11 - 18 - 36				6												--	VISUAL
	14	50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, very poor to good quality as per ROD. Note: U.C. Strength of Shale at 18.3 feet = 438 psi (very low strength) Note: Good quality from 20.0 feet. Note: Weathered from 22.2 feet. Note: U.C. Strength of Shale at 22.2 feet = 1240 psi (low strength)	Run 1													
	16	ROD = 11%	0.0	5.0		Run 2													
	18																		
	20																		
	22	ROD = 76%	0.0	5.0															
	24																		
626.8																			
TERMINATION DEPTH = 25.0 FEET																			

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

Date Started 4/28/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/28/05 Casing: Length 3.25"
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 147+00 Station & Offset 146+90.96, 68.92' LT. Surface Elev. 653.55ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.L.	W.C.				
653.6	0																		
653.0	2	2 - 3 - 3			TOPSOIL (7.0 inches thick) Medium stiff to very stiff, mottled brown and gray, SILT AND CLAY (A-6s), little sand, trace rock fragments, moist. (FILL) Note: Encountered sand seam at 1.5 feet.	1												13	VISUAL
	4	3 - 4 - 5			Very soft, brown and gray, oxidized, highly weathered SHALE.	2												17	VISUAL
	6	7 - 7 - 9				3													25
642.6	8		TR		Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, few fractures, fissile, fair quality as per ROD. Note: Oxidation from 13.5 to 15.0 feet. Weathered from 15.0 feet. Note: U.C. Strength of Shale at 15.7 feet = 275 psi (very low strength) Note: Vertical fracture from 16.9 to 17.8 feet.	4											20	VISUAL	
	10	11 - 12 - 17				5												--	VISUAL
	12	13 - 17 - 20				6												--	VISUAL
	14	35 - 50/0.3			TERMINATION DEPTH = 20.0 FEET	Run 1													
	16	ROD = 75%	0.8	4.2															
	18																		
633.6	20																		

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/28/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/28/05 Casing Length Dia. 3.25"
Boring No. 149+00 Station & Offset 148+87.63, 66.05' LT. Surface Elev. 655.82ft
Project: LAK-2-0.00
Project No: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class									
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.							
655.8	0																					
655.0	2	3 - 4 - 4			TOPSOIL (9.0 inches thick) Medium stiff to stiff, gray SILT AND CLAY (A-60), little sand, trace rock fragments, moist. (FILL)	1														9	VISUAL	
649.8	4	5 - 5 - 9			Stiff, gray SILTY CLAY (A-60), little sand, little rock fragments, moist. (FILL)	2														13	VISUAL	
647.3	6	5 - 6 - 7			Very soft, brown and gray, oxidized, highly weathered SHALE.	3														19	VISUAL	
644.8	8	7 - 9 - 12		TR		4																VISUAL
	10					5																VISUAL
	12	22 - 26 - 30			Very soft to soft, gray, highly weathered SHALE, laminar bedding, high to few fractures, fissile, fair quality as per ROD.	6																VISUAL
	14	28 - 33 - 35				7																VISUAL
	16	38 - 50/0.3			Note: Few Fractures and fair quality from 17.0 feet.	8																VISUAL
	18	ROD = 7.2%	4.6	0.4	Note: U.C. Strength of Shale at 19.2 feet = 740 psi (low strength)	7																VISUAL
	20					Run 1																VISUAL
633.8	22																					

TERMINATION DEPTH = 22.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/27/05 Casing Length Dia. 3.25"
Boring No. 151+00 Station & Offset 150+89.78, 6115' LT. Surface Elev. 657.65ft
Project: LAK-2-0.00
Project No: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class											
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.									
657.7	0																							
656.8	2	2 - 2 - 3			ASPHALT (11.0 inches thick) Loose, brown, COARSE AND FINE SAND (A-3a), Trace fines, wet. (FILL)	1																	13	VISUAL
654.2	4	10 - 14 - 12			Very stiff, gray, SILT AND CLAY (A-60), some rock fragments, little sand, moist. (FILL)	2																	10	VISUAL
651.7	6	7 - 7 - 12			Very stiff, gray, SILTY CLAY (A-6b), trace rock fragments, moist. (FILL)	3																	15	VISUAL
	8					4																	15	VISUAL
	10					5																	11	VISUAL
	12	6 - 7 - 11				6																		
644.2	14	10 - 10 - 11			Very stiff, mottled brown and gray, CLAY (A-7-6), trace sand, moist.	7																	29	A-7-6
641.7	16	7 - 14 - 30		TR		8																		VISUAL
639.2	18	30 - 35 - 45			Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	9																		VISUAL
	20																							
	22																							
633.4	24	45 - 50/0.3																						

TERMINATION DEPTH = 24.3 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/28/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/28/05 Casing: Length 3.25"
 Boring No. 153+00 Station & Offset 152+97.20, 61.10' LT. Surface Elev. 658.39ft
 Project: LAK-2-0.00
 Project No.: AO500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class							
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		Pl.	W.C.					
658.4	0																			VISUAL
657.1	2	3 - 6 - 9			ASPHALT (16.0 inches thick)															VISUAL
652.4	6	5 - 10 - 8			Stiff to very stiff, gray, SILT AND CLAY (A-6a), some shale fragments, moist. (FILL)															VISUAL
649.9	8	6 - 6 - 11			Medium dense, gray SHALE FRAGMENTS (A-1-a), trace sand, moist. (FILL)	1														VISUAL
647.4	10	4 - 6 - 8			Stiff, mottled brown and gray, CLAY (A-7-6), little silt, little sand, little rock fragments, moist. (FILL)	2														VISUAL
644.9	12	6 - 11 - 13			Medium dense, gray, SHALE FRAGMENTS (A-1-a), trace sand, moist. (FILL)	3														VISUAL
	14	4 - 12 - 17		TR	Very soft, brown to gray, oxidized, decomposed to highly weathered SHALE.	4														VISUAL
642.4	16	7 - 13 - 16			Very soft to soft, gray, decomposed to highly weathered SHALE.	5														VISUAL
	18	18 - 27 - 31				6														VISUAL
	20																			VISUAL
	22																			VISUAL
	24	38 - 50/0.4				7														VISUAL

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/27/05 Casing: Length 3.25"
 Boring No. 155+00 Station & Offset 154+98.09, 60.56' LT. Surface Elev. 657.85ft
 Project: LAK-2-0.00
 Project No.: AO500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class								
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		Pl.	W.C.						
657.9	0																				VISUAL
656.8	2	4 - 4 - 8			ASPHALT (13.0 inches thick)																VISUAL
654.4	4	3 - 4 - 5			Stiff, mottled brown and gray, CLAY (A-7-6), little silt, little sand, little rock fragments, moist. (FILL)	1															VISUAL
	6	2 - 2 - 5			Medium stiff to stiff, gray to mottled brown and gray SILTY CLAY (A-6b), little sand, little rock fragments. (FILL)	2															VISUAL
	8	2 - 6 - 7			Note: Color change to mottled brown and gray at 6.0 feet.	3															VISUAL
646.9	10	9 - 9 - 12			Very stiff, mottled brown and gray, CLAY (A-7-6), little silt, little sand, trace rock fragments, moist.	4															VISUAL
	12	5 - 6 - 10				5															VISUAL
641.9	16	8 - 14 - 19		TR	Very soft, brown and gray, decomposed to highly weathered SHALE.	6															VISUAL
639.4	18	12 - 18 - 40			Very soft to soft, brown to gray, highly weathered SHALE.	7															VISUAL
	20					8															VISUAL
	22																				VISUAL
632.9	24	50/0.5			Note: Color change to gray at 23.5 feet.	9															VISUAL

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler Type SS Dia. 2.0" Water Elev. fl
Date Completed 4/27/05 Casing Length 3.25"
Boring No. 157+00 Station & Offset 157+04.20, 61.37' LT. Surface Elev. 656.89ft
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL	PL		W.C.	
656.9	0				ASPHALT (18.0 inches thick)	1										VISUAL
655.4	2	4 - 9 - 14			Medium dense, gray SHALE FRAGMENTS (A-1-a), trace sand, moist. (FILL)	2										VISUAL
653.4	4	5 - 3 - 4			Medium stiff to stiff, gray, SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (FILL)	3										VISUAL
648.4	8	3 - 4 - 6			Stiff to very stiff, mottled brown and gray, CLAY (A-7-6), trace rock fragments, moist. (FILL)	4										VISUAL
643.4	14	8 - 8 - 12			Very stiff to stiff, gray to mottled brown and gray SILTY CLAY (A-6b), trace rock fragments. Note: Fill from 13.5 to 16.0 feet. Oxidation present in 13.5 foot sample. Note: Color change to mottled brown and gray at 16.0 feet.	5										VISUAL
638.4	18	4 - 5 - 7		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	6										VISUAL
633.4	20	8 - 9 - 40			Very soft, brown and gray, oxidized, highly weathered SHALE.	7										VISUAL
632.9	24	50/0.5			Very soft to soft, gray, decomposed to highly weathered SHALE. TERMINATION DEPTH = 24.0 FEET	8										VISUAL

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler Type SS Dia. 2.0" Water Elev. fl
Date Completed 4/27/05 Casing Length 3.25"
Boring No. 159+00 Station & Offset 158+78.56, 60.32' LT. Surface Elev. 655.56ft
Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL	PL		W.C.		
655.6	0																
654.4	2	3 - 3 - 6			ASPHALT (4.0 inches thick)	1											VISUAL
652.1	4	2 - 4 - 6			Stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)	2											VISUAL
649.6	6	2 - 2 - 3			Loose, gray SHALE FRAGMENTS (A-1-a), trace sand, moist. (FILL)	3											VISUAL
647.1	8	5 - 6 - 10			Medium stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)	4											VISUAL
644.6	10	6 - 6 - 13		TR	Very stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace rock fragments, moist.	5											VISUAL
640.6	14	18 - 50/0.3			Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	6											VISUAL
635.6	18	ROD = 57%	3.3	1.7	Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per RQD. Note: Oxidation present from 15.0 to 17.0 feet. Note: U.C. Strength of Shale at 18.0 feet = 119 psi (very low strength)	Run 1											VISUAL
	20				TERMINATION DEPTH = 20.0 FEET.												

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/27/05 Casing Length 3.25"
Boring No. 161+00 Station & Offset 160+78.83, 60.98' LT. Surface Elev. 653.01ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Station & Offset		Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics							DOT Class		
			% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PL	W.C.				
653.0	0																	
651.8	2	10 - 10 - 10					ASPHALT (14.5 inches thick)	1									10	VISUAL
	4	10 - 13 - 15					Very stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)	2									12	VISUAL
	6	12 - 12 - 17						3									14	VISUAL
644.5	8	5 - 7 - 9					Very stiff, mottled brown and gray, CLAY (A-7-6), trace sand, trace rock fragments, moist.	4	0	1	8		91*	44	17		30	A-7-6
	10							5									29	VISUAL
	12	6 - 8 - 11						6										VISUAL
639.5	14	5 - 8 - 11			TR		Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	7										VISUAL
	16	8 - 15 - 30						8										VISUAL
	18	50/0.3																VISUAL
634.5	20	ROD = 18%			5.0	0.0	Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD. Note: U.C. Strength of Shale at 19.8 feet = 608 psi (low strength) Note: Decomposed from 19.0 to 19.2 and from 20.9 to 21.3 feet.	8 Run 1										VISUAL
629.0	24						TERMINATION DEPTH = 24.0 FEET											

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/27/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/27/05 Casing Length 3.25"
Boring No. 163+00 Station & Offset 162+83.09, 66.80' LT. Surface Elev. 649.78ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Station & Offset		Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics							DOT Class			
			% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PL	W.C.					
648.9	0																		
648.9	2	5 - 7 - 8					TOPSOIL (11.0 inches thick)	1											VISUAL
	4	5 - 6 - 7					Stiff, gray, SILTY CLAY (A-6b), little sand, trace rock fragments, moist. (FILL)	2									27	VISUAL	
646.3	6	2 - 4 - 6					Stiff to hard, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, trace rock fragments, moist.	3									30	VISUAL	
	8	11 - 13 - 18						4									21	VISUAL	
638.8	10				TR		Very soft, brown and gray, oxidized, highly weathered SHALE.	5											VISUAL
	12	16 - 24 - 36						6											VISUAL
636.3	14	34 - 50/0.33					Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.	6 Run 1											VISUAL
	16	ROD = 63%			4.5	0.5	Note: U.C. Strength of Shale at 16.2 feet = 330 psi (very low strength)												VISUAL
	18																		VISUAL
629.8	20						TERMINATION DEPTH = 20.0 FEET												VISUAL

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 (*Indicates silt & clay combined)

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Date Started 4/26/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/26/05 Casing Length 3.25"

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 165+00 Station & Offset 164+83.24, 71.33' LT. Surface Elev. 646.01ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
646.0	0				TOPSOIL (9.0 inches thick)	--	--	--	--	--	--	--	--	22	VISUAL
645.2	2	5 - 6 - 8			Stiff, gray, SILT AND CLAY (A-6a), some shale fragments, moist. (FILL)										
642.5	4	2 - 4 - 6			Stiff, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, trace rock fragments, moist.									25	VISUAL
640.0	6	8 - 12 - 23		TR	Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.									--	VISUAL
637.5	8	50/0.4			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.									--	VISUAL
631.0	10	ROD = 55%	4.4	0.6	Note: U.C. Strength of Shale at 10.5 feet = 302 psi (very low strength)									--	VISUAL
	12														
	14														
TERMINATION DEPTH = 15.0 FEET															

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 (*Indicates silt & clay combined)

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Date Started 4/26/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/26/05 Casing Length 3.25"

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 167+00 Station & Offset 166+84.43, 68.13' LT. Surface Elev. 644.95ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
645.0	0				TOPSOIL (9.0 inches thick)	--	--	--	--	--	--	--	--	26	VISUAL
644.2	2	2 - 2 - 5			Medium stiff, brown, SILTY CLAY (A-6b), little sand, trace rock fragments, moist.										
641.5	4	8 - 12 - 16		TR	Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE. Note: Groundwater seepage was encountered at 4.0 feet during drilling.									18	VISUAL
636.5	6	18 - 4 - 48												--	VISUAL
	8													--	VISUAL
	10	48 - 50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, moderately fractured, fissile, poor to fair quality as per ROD.									--	VISUAL
	12	ROD = 43%	4.2	0.8	Note: U.C. Strength of Shale at 12.0 feet = 99 psi (very low strength)									--	VISUAL
	14														
	16	ROD = 66%	4.7	0.3	Note: Weathered and fair quality from 15.0 feet.										
	18				Note: U.C. Strength of Shale at 16.2 feet = 524 psi (low strength)										
625.0	20														
TERMINATION DEPTH = 20.0 FEET															

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 (*Indicates silt & clay combined)

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Date Started 4/26/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/26/05 Casing Length 3.25"

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 169+00 Station & Offset 168+80.10, 68.16' LT. Surface Elev. 645.41ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
645.4	0					--	--	--	--	--	--	--	--		
644.7	2	3 - 4 - 5			TOPSOIL (8.0 inches thick)										
	4				Stiff, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, moist.										
641.9	6	9 - 12 - 15		TR	Very soft, brown to gray, oxidized, decomposed to highly weathered SHALE.									31	A-7-6
	8													--	VISUAL
	10	18 - 28 - 38												--	VISUAL
636.9	12	18 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.									--	VISUAL
	14	ROD = 52%	4.4	0.6	Note: Oxidation from 10.0 to 10.4 feet.									--	VISUAL
					Note: U.C. Strength of Shale at 13.0 feet = 312 psi (very low strength)										
630.4															
TERMINATION DEPTH = 15.0 FEET															

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 (*Indicates silt & clay combined)

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Date Started 4/26/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/26/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 171+00 Station & Offset 170+71.99, 71.16' LT. Surface Elev. 646.07ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	O.DOT Class	
							% Agg	% C.S.	% F.S.	% Sil	% Clay			LL
646.1	0				TOPSOIL (6.5 inches thick)	1	--	--	--	--	--	--	27	VISUAL
645.5	2	4 - 5 - 4			Stiff, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, moist.									
642.6	4	9 - 13 - 21		TR	Very soft, brown and gray, decomposed to highly weathered SHALE.	2								VISUAL
	6	12 - 39 - 42				3								VISUAL
637.6	8	30 - 38 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.	4								VISUAL
	10	ROD = 53%	4.8	0.2	Note: U.C. Strength of Shale at 11.1 feet = 564 psi (low strength)	Run 1								VISUAL
631.1	12													
	14													
					TERMINATION DEPTH = 15.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/25/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/25/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 173+00 Station & Offset 172+72.94, 79.07' LT. Surface Elev. 645.68ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	O.DOT Class	
							% Agg	% C.S.	% F.S.	% Sil	% Clay			LL
646.7	0				TOPSOIL (7.0 inches thick)	1	--	--	--	--	--	--	29	VISUAL
646.1	2	3 - 4 - 4			Medium stiff, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, moist.									
643.2	4	12 - 21 - 39		TR	Very soft, brown and gray, oxidized, decomposed to highly weathered SHALE.	2								VISUAL
	6	15 - 28 - 42				3								VISUAL
639.7	8	38 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, few fractures, fissile, fair quality as per ROD.	4								VISUAL
	10	ROD = 73%	4.1	0.9	Note: U.C. Strength of Shale at 12.7 feet = 271 psi (very low strength)	Run 1								VISUAL
631.7	12													
	14													
					TERMINATION DEPTH = 15.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/25/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/25/05 Casing Length Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 175+00 Station & Offset 174+82.23, 81.04' LT. Surface Elev. 647.42ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	O.DOT Class	
							% Agg	% C.S.	% F.S.	% Sil	% Clay			LL
647.4	0				TOPSOIL (7.0 inches thick)	1	--	--	--	--	--	--	14	VISUAL
646.7	2	3 - 5 - 6			Stiff, brown, SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)									
643.9	4	4 - 5 - 5			Stiff to hard, mottled brown and gray, CLAY (A-7-6), little silt, trace sand, moist.	2	0	1	5	93*	55	26	40	A-7-6
	6	5 - 12 - 36				3								VISUAL
638.9	8	16 - 39 - 50/0.3		TR	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, very poor to fair quality as per ROD.	4								VISUAL
	10	ROD = 73%	5.0	0.0	Note: Weathered, few fractures, and fair quality from 15.0 feet.	Run 1								
	12													
	14													
	16	ROD = 73%	4.0	1.0	Note: U.C. Strength of Shale at 17.5 feet = 642 psi (low strength)	Run 2								
	18													
621.4	20				TERMINATION DEPTH = 20.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/25/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/25/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 177+00 Station & Offset 176+71.44, 83.37' LT. Surface Elev. 647.89ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		P.I.	W.C.				
647.9	0					1													
647.4	2	4 - 5 - 7			TOPSOIL 16.0 inches thick Stiff to medium stiff, brown ELASTIC CLAY (A-7-5), little silt, trace sand, trace organics, moist.														24
	4	3 - 3 - 4				2	0	1	8		91*	59	28	37					A-7-5
641.9	6	3 - 8 - 31		TR	Very soft, brown, oxidized, highly weathered SHALE.	3													VISUAL
639.4	8	18 - 38 - 50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, moderate to few fractures, fissile, poor to fair quality as per ROD.	4													VISUAL
	10	ROD = 40%	3.5	1.5		Run 1													
	12																		
	14																		
	16	ROD = 70%	3.9	1.1	Note: Weathered and fair quality from 15.0 feet.	Run 2													
	18				Note: U.C. Strength of Shale at 17.2 feet = 717 psi (low strength)														
627.9	20																		

TERMINATION DEPTH = 20.0 FEET

Particle Sizes: Agg -> 2.0mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay < 0.005mm (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/22/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/22/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 179+00 Station & Offset 178+73.49, 83.84' LT. Surface Elev. 649.07ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class							
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		P.I.	W.C.					
649.1	0					1														
648.6	2	3 - 5 - 8		TR	TOPSOIL 16.0 inches thick Stiff, mottled brown and gray SILT AND CLAY (A-6a), little sand, little organics, little shale fragments, moist. (FILL) Note: Oxidation present in 1.0 foot sample. Organics present in the 1.0 foot sample slightly elevated the moisture content.															20
646.8	4	21 - 21 - 26			Very soft, brown, oxidized, highly weathered SHALE.	2														VISUAL
	6	22 - 29 - 48			Very soft, brown and gray, oxidized, highly weathered SHALE.	3														VISUAL
640.6	8	50/0.3			Very soft to soft, gray, weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.	4														VISUAL
	10	ROD = 72%	4.6	0.4	Note: Vertical fracture from 10.4 to 10.6 feet.	Run 1														VISUAL
	12																			
	14				Note: U.C. Strength of Shale at 14.5 feet = 1293 psi (low strength)															
634.1	14																			

TERMINATION DEPTH = 15.0 FEET

Particle Sizes: Agg -> 2.0mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay < 0.005mm (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/22/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/22/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 181+00 Station & Offset 180+66.77, 82.40' LT. Surface Elev. 649.93ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class									
							% Agg	% C.S.	% F.S.	% Sil	% Clay	LL		P.I.	W.C.							
649.9	0					1																
649.4	2	4 - 4 - 5			TOPSOIL 16.0 inches thick Stiff, mottled brown and gray SILT AND CLAY (A-6a), little sand, little organics, little shale fragments, moist. (FILL)																23	
646.4	4	11 - 17 - 21		TR	Very soft, brown, oxidized, highly weathered SHALE.	2															16	
	6	13 - 19 - 29				3																
641.4	8	58 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, few fractures, fissile, good quality as per ROD. Note: Vertical fractures from 10.0 to 11.9 feet.	4																
	10	ROD = 85%	4.2	0.8	Note: U.C. Strength of Shale at 13.0 feet = 263 psi (very low strength)	Run 1																
	12																					
	14																					
634.9	14																					

TERMINATION DEPTH = 15.0 FEET

Particle Sizes: Agg -> 2.0mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay < 0.005mm (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/21/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/21/05 Casing Length 3.25" Dia. 3.25"
 Boring No. 055+00R Station & Offset 182+84.20, 91.46' LT. Surface Elev. 650.75ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class							
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.					
650.8	0																		
650.1	2	2 - 2 - 3			TOPSOIL (8.0 inches thick) Medium stiff to stiff, brown CLAY (A-7-6), little silt, trace sand, moist. (FILL)													24	VISUAL
	4	3 - 4 - 3								94*								39	A-7-6
	6	3 - 3 - 7																29	VISUAL
642.3	8	3 - 7 - 10			Very stiff, brown SILTY CLAY (A-6b), trace sand, moist.					94*								16	A-6b
639.8	10																		VISUAL
	12	8 - 12 - 17		TR	Very soft, brown, highly weathered SHALE.														VISUAL
637.3	14	20 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, few fractures, fissile, good quality as per ROD.														VISUAL
	16	ROD = 78%	4.4	0.5	Note: Small vertical fractures throughout the run. Note: U.C. Strength of Shale at 19.0 feet = 928 psi (low strength)														VISUAL
630.8	20				TERMINATION DEPTH = 20.0 FEET														VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/21/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/21/05 Casing Length 3.25" Dia. 3.25"
 Boring No. 057+00R Station & Offset 184+81.27, 94.34' LT. Surface Elev. 652.75ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						ODOT Class									
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.							
652.8	0																				
651.7	2	1 - 2 - 2			ASPHALT (13.0 inches thick) Very loose, brown GRAVEL WITH SAND (A-1-b), trace fines, moist. (FILL)														14	VISUAL	
649.3	4	1 - 1 - 2			Soft to very stiff, brown CLAY (A-7-6), little silt, trace sand, trace gravel, moist. (FILL)					92*								27	A-7-6		
	6	3 - 4 - 6																28	VISUAL		
	8	3 - 6 - 10																20	VISUAL		
641.8	10																		VISUAL		
	12	11 - 16 - 22		TR	Very soft, brown, highly weathered SHALE.														VISUAL		
	14	13 - 18 - 25																	VISUAL		
636.8	16	30 - 30 - 41			Very soft to soft, gray highly weathered SHALE, laminar bedding, moderately fractured, fissile, fair quality as per ROD.														VISUAL		
	18	50/0.4																	VISUAL		
	20	ROD = 60%	4.1	0.9	Note: Groundwater seepage was encountered at 20.0 feet during drilling operations.														VISUAL		
	22																		VISUAL		
627.8	24				Note: U.C. Strength of Shale at 24.0 Feet = 729 psi (medium strength)														VISUAL		
					TERMINATION DEPTH = 25.0 FEET														VISUAL		

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/21/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/21/05 Casing Length Dia. 3.25"
Project: LAK-2-0.00
Project No: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 059+00R Station & Offset 186+84.50, 105.15' LT. Surface Elev. 655.46ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						W.C.	ODOT Class	
						% Agg	% C.S.	% F.S.	% Sil	% Clay	LL			PL
655.5	0													
654.4	2	3 - 3 - 4			ASPHALT (13.5 inches thick)	21	16	45	--	18*	NP	NP	11	A-3a
652.0	4	5 - 6 - 8			Loose, brown COARSE AND FINE SAND (A-3a), some sandstone fragments and gravel, little fines, moist. (FILL)	--	--	--	--	--	--	--	15	VISUAL
	6	3 - 3 - 3			Stiff to medium stiff, gray SILT AND CLAY (A-6a), some shale fragments, little sand, moist. (FILL)	--	--	--	--	--	--	--	19	VISUAL
	8	3 - 3 - 4				--	--	--	--	--	--	--	19	VISUAL
	10	3 - 5 - 6				--	--	--	--	--	--	--	34	VISUAL
644.5	12	6 - 6 - 7			Stiff, mottled brown and gray ELASTIC CLAY (A-7-5), little silt, little sand, moist.	--	--	--	--	--	--	--	23	VISUAL
640.8	14	11 - 11 - 13		TR	Very soft, brown, oxidized, highly weathered SHALE.	--	--	--	--	--	--	--	14	VISUAL
	16					--	--	--	--	--	--	--	--	VISUAL
637.0	18	38 - 50/0.3			Very soft to soft, gray highly weathered SHALE, laminar bedding, few fractures, fissile, excellent quality as per ROD.	--	--	--	--	--	--	--	--	VISUAL
	20	ROD = 92%	4.7	0.3	Note: U.C. Strength of Shale at 20.0 feet = 215 psi (very low strength)	--	--	--	--	--	--	--	--	VISUAL
	22													
	24													
630.5					TERMINATION DEPTH = 25.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/19/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/19/05 Casing Length Dia. 3.25"
Project: LAK-2-0.00
Project No: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 187+00 Station & Offset 186+83.87, 59.60' LT. Surface Elev. 656.71ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics						W.C.	ODOT Class	
						% Agg	% C.S.	% F.S.	% Sil	% Clay	LL			PL
656.7	0													
655.7	2	3 - 3 - 3			ASPHALT (12.0 inches thick)	--	--	--	--	--	--	--	26	VISUAL
	4	4 - 4 - 8			Medium stiff to stiff, mottled brown and gray CLAY (A-7-6), little organics, little silt, trace sand, moist. (FILL)	--	--	--	--	--	--	--	23	VISUAL
652.0	6	4 - 5 - 6			Note: Oxidation present in 1.0 foot sample.	--	--	--	--	--	--	--	14	VISUAL
	8	4 - 5 - 5			Stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	--	--	--	--	--	--	--	10	VISUAL
645.7	10	5 - 5 - 5			Stiff, brown ELASTIC CLAY (A-7-5), trace sand, trace organics, moist.	--	--	--	--	--	--	--	29	VISUAL
	12	1 - 5 - 6			Note: Oxidation present in 13.5 foot sample.	--	--	--	--	--	--	--	20	VISUAL
642.0	14	37 - 38 - 45		TR	Very soft, brown, oxidized, highly weathered SHALE.	--	--	--	--	--	--	--	--	VISUAL
	16												--	VISUAL
	18	50/0.3											--	VISUAL
636.7	20	ROD = 45%	3.5	1.5	Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderate fractures, fissile, poor quality as per ROD.	--	--	--	--	--	--	--	--	VISUAL
	22				Note: U.C. Strength of Shale at 20.8 feet = 150 psi (very low strength)									
	24													
631.7					TERMINATION DEPTH = 25.0 FEET									

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

LOG OF BORING

Date Started 4/21/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/21/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 061+00R Station & Offset 188+84.25, 117.42' LT. Surface Elev. 656.00ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class								
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.					
656.0	0																			
654.8	2	3 - 5 - 6			ASPHALT (14.0 inches thick)	1												19	VISUAL	
	4	3 - 4 - 9			Stiff to soft, gray SILT AND CLAY (A-6a), some sand, little to some shale fragments, moist. (FILL)	2													13	VISUAL
	6	5 - 5 - 8				3													20	VISUAL
	8	2 - 2 - 3				4													14	VISUAL
	10					5													19	VISUAL
643.8	12	1 - 2 - 2				6													14	VISUAL
642.5	14	6 - 18 - 40		TR	Soft, red and brown CLAY (A-7-6), trace sand, moist.	7													13	VISUAL
	16	12 - 25 - 44			Very soft, brown and gray, oxidized SHALE, highly weathered.	8													--	VISUAL
637.5	18	18 - 50/0.3				Run 1														
	20	ROD = 67%	4.6	0.4	Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderately fractured, fissile, good quality as per ROD. Note: Vertical fracture from 23.0 to 23.4 feet.															
	22																			
	24																			
631.0																				

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

LOG OF BORING

Date Started 4/19/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/19/05 Casing: Length Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 189+00 Station & Offset 188+82.06, 59.99' LT. Surface Elev. 660.83ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class														
							% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.I.	W.C.											
660.8	0																									
660.0	2	5 - 6 - 7			ASPHALT (9.5 inches thick)	1																15	VISUAL			
	4	2 - 4 - 7			Stiff, gray SILT AND CLAY (A-6a), some sand, trace shale fragments, moist. (FILL)	2																	15	VISUAL		
	6	5 - 6 - 8				3																	74*	A-6a		
	8				Note: Organics present in the 6.0 foot sample, elevated the moisture content.	4																		13	VISUAL	
649.8	10	6 - 8 - 7				5																		11	VISUAL	
	12	3 - 3 - 5			Medium stiff, gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)	6																		39	VISUAL	
647.3	14	3 - 5 - 8			Stiff, mottled brown and gray ELASTIC CLAY (A-7-5), little silt, little organics, trace sand, moist.	7																			23	VISUAL
644.8	16	3 - 5 - 6			Stiff, gray SILTY CLAY (A-6b), little sand, moist.	8																			23	VISUAL
643.5	18			TR	Very soft, brown, oxidized, highly weathered SHALE.																					
642.3	20	23 - 35 - 45			Very soft to soft, gray, highly weathered SHALE.																					
	22																									
635.8		50/0.3																								

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

Date Started 4/19/05 Sampler: Type SS Dia. 2.0" Water Elev. ft.
Date Completed 4/19/05 Casing: Length 3.25"
LOG OF BORING

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 191+00 Station & Offset 190+78.22, 61.32' LT. Surface Elev. 664.19ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Physical Characteristics					W.C.	ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay				
664.2	0													
663.0	2	4 - 4 - 5			ASPHALT (14.0 inches thick) Stiff, mottled gray and brown SILTY CLAY (A-6b), some organics, little sand, trace shale fragments, moist. (FILL) Note: Oxidation present in this sample. Organics present in this sample elevated the moisture content.							27	VISUAL	
660.7	4	3 - 3 - 4			Medium stiff to very stiff, gray SILT AND CLAY (A-6a), some sand, some shale fragments, moist. (FILL)							12	VISUAL	
	6	6 - 11 - 12										16	VISUAL	
	8	8 - 11 - 11										13	VISUAL	
	10													
	12	11 - 11 - 16												
	14	12 - 11 - 15												
648.2	16	6 - 8 - 6			Note: Small SILT seam at 14.8 feet for 2.0 inches. Stiff, mottled brown and gray CLAY (A-7-6), some sand, little silt, moist. (FILL) Note: Oxidation present in 16.0, 18.5, and 23.5 foot samples.							23	VISUAL	
	18	6 - 9 - 7											25	VISUAL
	20													
	22													
639.4	24	11 - 15 - 21			Dense, gray SHALE FRAGMENTS, trace sand, trace fines, moist. (FILL) TERMINATION DEPTH = 25.0 FEET								19	VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
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Testing Laboratory

Date Started 4/20/05 Sampler: Type SS Dia. 2.0" Water Elev. ft.
Date Completed 4/20/05 Casing: Length 3.25"
LOG OF BORING

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Boring No. 063+00R Station & Offset 190+89.40, 128.55' LT. Surface Elev. 653.83ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Physical Characteristics					W.C.	ODOT Class	
						% Agg	% C.S.	% F.S.	% Silt	% Clay			
653.8	0												
653.1	2	3 - 3 - 4			ASPHALT (8.0 inches thick) Medium stiff, mottled brown and gray SILT AND CLAY (A-6a), some sand, little organics, little shale fragments, moist. (FILL) Note: Oxidation present in 1.0 foot sample. The organics present in the 1.0 foot sample, slightly elevated the moisture content.							22	VISUAL
650.3	4	8 - 11 - 13	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.							16	VISUAL
	6	10 - 12 - 17											
645.3	8	23-25-50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, few fractures, fissile, fair quality as per ROD.							14	VISUAL
	10	ROD = 53%	0.9	41									
	12												
	14												
	16	ROD = 72%	0.0	5.0	Note: Weathered and moderately fractured from 16.0 feet.								
	18				Note: U.C. Strength of Shale at 18.0 feet = 963 psi (low strength)								
633.8	20				TERMINATION DEPTH = 20.0 FEET								

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/20/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/20/05 Casing: Length Dia. 3.25"
 Boring No. 065+00R Station & Offset 192+78.04, 163.95' LT. Surface Elev. 646.53ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.			
646.5	0																	
646.0	2	5 - 18 - 20			TOPSOIL (6.0 inches thick) Very soft, brown and gray, oxidized, highly weathered SHALE.	1	--	--	--	--	--	--	--	--	16	VISUAL		
643.0	4	20 - 28 - 45			Very soft, gray, oxidized, highly weathered SHALE.	2	--	--	--	--	--	--	--	--	14	VISUAL		
638.0	6	12 - 25 - 44			Very soft to soft, gray, weathered SHALE, laminar bedding, highly to moderately fractured, fissile, very poor quality as per ROD. Note: Moderately fractured and poor quality at 15.0 feet. Note: U.C. Strength of Shale at 17.0 feet = 1105 psi (low strength)	3	--	--	--	--	--	--	--	--	12	VISUAL		
	8	27 - 50/0.3				4	--	--	--	--	--	--	--	--	--	--	VISUAL	
	10	ROD = 0%		0.8		Run 1	--	--	--	--	--	--	--	--	--	--	--	VISUAL
	12			4.2														
	14																	
	16	ROD = 50%		4.2	Note: Moderately fractured and poor quality at 15.0 feet.	Run 2	--	--	--	--	--	--	--	--	--	--		
	18																	
626.5	20																	

TERMINATION DEPTH = 20.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/18/05 Casing: Length Dia. 3.25"
 Boring No. 193+00 Station & Offset 192+79.12, 61.45' LT. Surface Elev. 666.44ft
 Project: LAK-2-0.00
 Project No.: A0500IG
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics						ODOT Class					
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.			
666.4	0																	
665.4	2	3 - 3 - 4			ASPHALT (12.0 inches thick) Loose, dark brown GRAVEL WITH SAND (A-1-D), trace fines, moist. (FILL)	1	--	--	--	--	--	--	--	--	--	--		
662.9	4	2 - 2 - 4			Medium stiff to very stiff, mottled brown and gray, oxidized CLAY (A-7-6), little organics, little shale fragments, little silt, moist. (FILL)	2	--	--	--	--	--	--	--	--	23	VISUAL		
	6	2 - 3 - 7				3	--	--	--	--	--	--	--	--	20	VISUAL		
	8	3 - 6 - 11				4	--	--	--	--	--	--	--	--	30	VISUAL		
655.4	12	4 - 4 - 5			Stiff, gray SILT AND CLAY (A-6-0), some sand, little shale fragments, moist. (FILL)	5	--	--	--	--	--	--	--	--	14	VISUAL		
	14	3 - 4 - 7				6	--	--	--	--	--	--	--	--	21	VISUAL		
650.4	16	50/0.0				7	--	--	--	--	--	--	--	--	23	VISUAL		

Note: Auger refusal at 17.0 feet on a piece of concrete.

TERMINATION DEPTH = 17.0 FEET

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 (*Indicates silt & clay combined)

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Testing Laboratory

Date Started 4/19/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/19/05 Casing: Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 067+00R Station & Offset 194+82.33, 168.68' LT. Surface Elev. 642.85ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
								% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.	
642.9	0																
642.4	2	4 - 5 - 6				TOPSOIL (6.0 inches thick) Medium dense, brown SLAG AND GRAVEL WITH SAND AND SILT (A-2-4), trace clay, moist. (FILL)	1										VISUAL
639.4	4	10 - 11 - 14				Very stiff, mottled brown and gray SILT AND CLAY (A-6a), little sand, little shale fragments, moist. (DECOMPOSED SHALE)	2										VISUAL
636.9	6	15-35-50/0.3	TR			Very soft, gray, oxidized, highly weathered SHALE. Note: Groundwater seepage was encountered at 6.0 feet during drilling operations.	3										VISUAL
634.4	8					Very soft to soft, gray, weathered SHALE, laminar bedding, highly to few fractures, fissile, very poor to fair quality as per ROD.	Run 1										
	10	ROD = 0%	2.4														
	12																
	14					Note: Decomposed shale from 12.7 to 13.0 feet. Note: Few fractures from 13.0 feet. Note: Vertical fractures from 13.9 to 14.3 feet. Note: Fair quality from 15.0 feet.	Run 2										
	16	ROD = 70%	4.3	0.7													
	18					Note: U.C. Strength of Shale at 18.0 feet = 1208 psi (low strength)											
622.9	20					TERMINATION DEPTH = 20.0 FEET											

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/18/05 Casing: Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G
Location: City of Wickliffe, Lake County, Ohio

Boring No. 195+00 Station & Offset 194+78.57, 59.97' LT. Surface Elev. 667.72ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
								% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PL	W.C.	
667.7	0																
666.5	2	1 - 2 - 3				ASPHALT (14.0 inches thick) Medium stiff to stiff, mottled brown and gray, oxidized SILTY CLAY (A-6b), some to little shale fragments, little sand, little roots, moist. (FILL)	1										VISUAL
	4	3 - 4 - 4					2										VISUAL
	6	2 - 3 - 3					3										VISUAL
	8	5 - 6 - 7					4										VISUAL
	10	2 - 2 - 6					5										VISUAL
654.2	14	2 - 2 - 5				Medium stiff, gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL)	6										VISUAL
651.7	16	6 - 12 - 14				Very stiff, mottled brown and gray, oxidized SILTY CLAY (A-6b), some shale fragments, little sand, little roots, moist. (FILL)	7										VISUAL
649.2	18	6 - 8 - 11				Very stiff, red and tan CLAY (A-7-6), little silt, trace sand, moist.	8										VISUAL
	20																
	22																
644.2	24	7 - 21 - 30	TR			Very soft, gray, oxidized, highly weathered SHALE.	9										VISUAL
642.7						TERMINATION DEPTH = 25.0 FEET											

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/18/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/18/05 Casing Length _____ Dia. 3.25"
 Boring No. 199+00 Station & Offset 198+97.39, 61.03' LT. Surface Elev. 666.72ft
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class							
							% Agg	% C.S.	% F.S.	% Sil	% Clay		LL	P.I.	W.C.				
666.7	0																		
665.4	2	4 - 4 - 4			ASPHALT (16.0 inches thick)	1												19	VISUAL
	4	5 - 3 - 5			Medium stiff, mottled brown and gray, oxidized SILTY CLAY (A-6b), little sand, little shale fragments, moist. (FILL)	2	7	2	2		89*	44	21					24	A-7-6
660.7	6	5 - 4 - 6			Stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)	3												10	VISUAL
658.2	8	5 - 6 - 8			Stiff, red and tan CLAY (A-7-6), little silt, trace sand, moist. (FILL)	4												23	VISUAL
655.7	12	6 - 6 - 10			Very stiff, mottled brown and gray, oxidized SILT AND CLAY (A-6a), little sand, little roots, little shale fragments, moist. (FILL)	5												19	VISUAL
	14	6 - 8 - 11				6												24	VISUAL
	16	6 - 6 - 10				7												25	VISUAL
	18	6 - 9 - 10				8												20	VISUAL
	22																		
641.7	24	6 - 10 - 12				9												19	VISUAL

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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Testing Laboratory

LOG OF BORING

Date Started 4/18/05 Sampler Type SS Dia. 2.0" Water Elev. ft
 Date Completed 4/18/05 Casing Length _____ Dia. 3.25"
 Boring No. 197+50 Station & Offset 197+40.46, 60.65' LT. Surface Elev. 667.49ft
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					ODOT Class								
							% Agg	% C.S.	% F.S.	% Sil	% Clay		LL	P.I.	W.C.					
667.5	0																			
666.4	2	3 - 5 - 7			ASPHALT (13.0 inches thick)	1													25	VISUAL
	4	3 - 3 - 6			Stiff to medium stiff, mottled brown and gray CLAY (A-7-6), some to little roots and sticks, little shale fragments, little silt, trace sand, moist. (FILL)	2													19	VISUAL
	6	6 - 6 - 7				3													37	VISUAL
	8				Note: The roots and sticks elevated the moisture contents.	4													22	VISUAL
	10	4 - 3 - 4				5													18	VISUAL
656.5	12	6 - 6 - 9			Stiff, mottled brown and gray SILTY CLAY (A-6b), little shale fragments, little sand, moist. (FILL) Note: Oxidation present in the I.L.O. fac. sample.	6													14	VISUAL
654.0	14	4 - 6 - 11			Very stiff, gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)	7												19	VISUAL	
	16	3 - 6 - 10				8													23	VISUAL
649.0	18	5 - 5 - 8			Stiff to very stiff, mottled brown and gray CLAY (A-7-6), little silt, trace sand, moist.	9													23	VISUAL
	22																			
642.5	24	8 - 10 - 12																		

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/18/05 Casing: Length 60.75' LT. Surface Elev. 661.32ft
Project: LAK-2-0.00 Project No.: A05001G City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					ODOT Class	
						% Agg	% C.S.	% F.S.	% Silt	% Clay		P.I.
661.3	0											
660.1	2	4 - 5 - 6			ASPHALT (14.0 inches thick)							21
657.8	4	3 - 4 - 5			Stiff, mottled brown and gray SILTY CLAY (A-6b), little shale fragments, little sand, moist. (FILL)							12
652.8	6	4 - 7 - 6			Stiff, gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)							12
647.8	8	4 - 5 - 7			Stiff, mottled brown and gray SILTY CLAY (A-6b), little shale fragments, little sand, moist. (FILL)							17
642.8	10	3 - 6 - 7										18
637.8	12	6 - 6 - 8			Stiff to very stiff, mottled brown and gray CLAY (A-7-6), little silt, trace sand, moist.							23
636.3	14	4 - 9 - 11										21
	16	15 - 15 - 21	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.							--
	18	36 - 50/0.3			Very soft, brown and gray, highly weathered SHALE.							--
	20											
	22											
	24											
	26											

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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Testing Laboratory

LOG OF BORING
Date Started 4/18/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/18/05 Casing: Length 61.12' LT. Surface Elev. 664.50ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					ODOT Class	
						% Agg	% C.S.	% F.S.	% Silt	% Clay		P.I.
664.5	0											
663.2	2	1 - 2 - 2			ASPHALT (16.0 inches thick)							22
661.0	4	3 - 6 - 8			Soft, mottled brown and gray SILTY CLAY (A-6b), little sand, trace shale fragments, moist. (FILL)							12
	6	2 - 5 - 4			Stiff to very stiff, gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)							11
	8	2 - 3 - 6										10
	10	3 - 4 - 6										17
	12	9 - 11 - 11										13
648.5	16	6 - 6 - 8			Stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, little shale fragments, moist. (FILL)							22
646.0	18	6 - 6 - 10			Very stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)							14
	20											
	22											
641.0	24	8 - 9 - 11			Very stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, trace shale fragments, trace roots, moist.							23
639.5	26											76*

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/13/05 Date Completed 4/13/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Casing Length 3.25"
Boring No. 069+00R Station & Offset 204+74.38, 165.52' LT. Surface Elev. 643.73ft
Project: LAK-2-0.00 Project No.: A0500IG Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.	
643.7	0					1	2	2	2	93*	51	24	24	A-7-6
643.2	2	2 - 2 - 3			TOPSOIL (6.0 inches thick) Medium stiff, mottled brown and gray CLAY (A-7-6), trace sand, trace shale fragments, moist.									
640.2	4	3 - 6 - 20		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	2								VISUAL
637.7	6	10 - 29 - 30			Very soft, gray, highly weathered SHALE.	3								VISUAL
635.7	8	ROD = 92%	5.0	0.0	Very soft to soft, gray, highly weathered SHALE, laminar bedding, high to few fractures, fissile, fair to excellent quality as per ROD.	Run 1								
	10													
	12													
	14	ROD = 90%	4.9	0.1	Note: Weathered and few fractures from 12.8. Excellent quality from 13.0 feet.	Run 2								
	16													
625.7	18				Note: U.C. Strength of Shale at 17.1 feet = 958 psi (low strength)									

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 (*Indicates silt & clay combined)

TERMINATION DEPTH = 18.0 FEET

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Testing Laboratory

LOG OF BORING

Date Started 4/14/05 Date Completed 4/14/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Casing Length 3.25"
Boring No. 205+00 Station & Offset 204+97.00, 60.67' LT. Surface Elev. 637.14ft
Project: LAK-2-0.00 Project No.: A0500IG Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics							ODOT Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.	
637.1	0					1								VISUAL
636.3	2	1 - 1 - 2			ASPHALT (10.0 inches thick) Very loose, brown GRAVEL, ASPHALT FRAGMENTS, AND SHALE FRAGMENTS WITH SAND (A-1-b), trace fines, moist. (FILL)									VISUAL
653.6	4	4 - 4 - 5			Stiff to medium stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)	2								VISUAL
	6	2 - 2 - 4				3								VISUAL
648.6	8	4 - 5 - 7			Stiff to very stiff, mottled brown and gray CLAY (A-7-6), little silt, trace sand, moist.	4								VISUAL
	10					5								VISUAL
	12	4 - 6 - 8				6								VISUAL
	14	2 - 4 - 6				7								VISUAL
	16	4 - 8 - 16				8								VISUAL
638.6	18	30 - 31 - 34		TR	Very soft, gray, oxidized, highly weathered SHALE.									VISUAL
	20													
	22													
633.6	24	30 - 50/0.4			Very soft, gray, highly weathered SHALE.	9								VISUAL
631.6	26	50/0.5				10								VISUAL

TERMINATION DEPTH = 25.5 FEET

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 (*Indicates silt & clay combined)

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LOG OF BORING

Date Started 4/11/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/12/05 Casing: Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G

Location: City of Wickliffe, Lake County, Ohio

Boring No. 075+00R Station & Offset 210+69.92, 126.97' LT. Surface Elev. 645.70ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.	
645.7	0															
645.2	2	2 - 5 - 7			TOPSOIL (6.5 inches thick) Stiff, mottled brown and gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL) Note: Oxidation present in 1.0 foot sample.	1	--	--	--	--	--	--	--	--	16	VISUAL
642.2	4	5 - 7 - 9			Very stiff, mottled brown and gray CLAY (A-7-6), little silt, trace gravel, trace sand, moist.	2	3	1	1	94*	50	22	24	A-7-6	VISUAL	
639.7	6	16 - 32 - 38	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.	3	--	--	--	--	--	--	--	--	--	VISUAL
637.2	8	48 - 50/0.2			Very soft, gray, oxidized, highly weathered SHALE.	4	--	--	--	--	--	--	--	--	--	VISUAL
635.7	10	RQD = 0%	4.2	0.8	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, very poor to good quality as per ROD.	Run 1	--	--	--	--	--	--	--	--	--	VISUAL
	12															
	14															
	16	RQD = 0%	1.7	3.3	Note: U.C. Strength of Shale at 14.1 feet = 348 psi (very low strength)	Run 2										
	18															
	20	RQD = 81%	4.9	0.1	Note: Weathered and few fractures from 20.0 feet. Good quality from 20.0 feet.	Run 3										
	22															
	24															
620.7																

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

TERMINATION DEPTH = 25.0 FEET

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/13/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/13/05 Casing: Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A05001G

Location: City of Wickliffe, Lake County, Ohio

Boring No. 209+00 Station & Offset 208+80.79, 69.12' LT. Surface Elev. 649.25ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.	
649.3	0															
648.8	2	3 - 4 - 6			TOPSOIL (6.0 inches thick) Stiff, mottled brown and gray SILTY CLAY (A-6b), little sand, little shale fragments, moist. (FILL)	1	--	--	--	--	--	--	--	21	VISUAL	
	4	5 - 5 - 7			Note: Little roots present in 3.5 foot sample, elevated the moisture content.	2	--	--	--	--	--	--	--	32	VISUAL	
643.3	6	3 - 4 - 5			Stiff, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist. (FILL)	3	--	--	--	--	--	--	--	27	VISUAL	
640.8	8	11 - 12 - 17	TR		Very soft, brown and gray, oxidized, highly weathered SHALE.	4	--	--	--	--	--	--	--	--	--	VISUAL
	10															
	12	18-40-50/0.3														
636.3	14	RQD = 15%	3.5	1.5	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured to few fractures, fissile, very poor to excellent quality as per ROD.	Run 1	--	--	--	--	--	--	--	--	--	VISUAL
	16															
	18		4.9	0.1	Note: Weathered from 17.1 feet. Excellent quality from 18.0 feet.	Run 2										
	20	RQD = 96%			Note: U.C. Strength of Shale at 19.7 feet = 1155 psi (low strength)											
	22															
626.3																

Particle Sizes: Agg \rightarrow 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay \leftarrow 0.005mm (*Indicates silt & clay combined)

TERMINATION DEPTH = 23.0 FEET

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/11/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/12/05 Casing Length 3.25" Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 075+00R Station & Offset 210+69.92, 126.97' LT. Surface Elev. 645.70ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						DOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PI	W.C.	
645.7	0															
645.2	2	2 - 5 - 7			TOPSOIL (6.5 inches thick) Stiff, mottled brown and gray SILT AND CLAY (A-6a), some sand, little shale fragments, moist. (FILL) Note: Oxidation present in 1.0 foot sample.	1									16	VISUAL
642.2	4	5 - 7 - 9			Very stiff, mottled brown and gray CLAY (A-7-6), little silt, trace gravel, trace sand, moist.	2	3	1	1	94*	50	22		24	A-7-6	
639.7	6	16 - 32 - 38		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	3										VISUAL
637.2	8	48 - 50/0.2			Very soft, gray, oxidized, highly weathered SHALE.	4										VISUAL
635.7	10	ROD = 0%	4.2	0.9	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, very poor to good quality as per ROD.	Run 1										
	12															
	14															
	16	ROD = 0%	1.7	3.3	Note: U.C. Strength of Shale at 14.1 feet = 348 psi (very low strength)	Run 2										
	18															
	20	ROD = 81%	4.9	0.1	Note: Weathered and few Fractures from 20.0 feet. Good quality from 20.0 feet.	Run 3										
	22				Note: U.C. Strength of Shale at 21.5 feet = 910 psi (low strength)											
	24															
620.7																

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/13/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/13/05 Casing Length 3.25" Dia. 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 211+00 Station & Offset 210+93.87, 68.84' LT. Surface Elev. 646.87ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						DOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		PI	W.C.	
646.9	0															
646.5	2	3 - 5 - 7			TOPSOIL (5.0 inches thick) Stiff, gray SANDY SILT (A-4a), some shale fragments, trace clay, moist. (FILL)	1										VISUAL
643.4	4	3 - 3 - 5			Medium stiff, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist. (FILL)	2								23		VISUAL
640.9	6	3 - 15 - 28		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	3										VISUAL
638.4	8	29 - 30 - 50/0.3			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, very poor to poor quality as per ROD.	4										VISUAL
		ROD = 0%	5.0	0.0	Note: Oxidation present from 8.5 to 10.0 feet.	Run 1										

ROD = 33% 4.0 1.0
Note: Weathered and poor quality from 15.0 feet.

Run 2

Note: U.C. Strength of Shale at 18.7 feet = 992 psi (low strength)

TERMINATION DEPTH = 20.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/11/05 Sampler: Type SS Dia. 2.0" Water Elev. ft _____
 Date Completed 4/11/05 Casing: Length _____ Dia. 3.25"
 Boring No. 079+00R Station & Offset 214+76.95, 90.08' LT. Surface Elev. 644.57ft
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class	
							% C.S.	% F.S.	% Silt	% Clay	LL	P.L.		W.C.
644.6	0				TOPSOIL (6.0 inches thick) Medium stiff to stiff, mottled brown and gray CLAY (A-7-6), little silt, trace sand, moist.	1	0	5	94*	44	19	28	A-7-6	
638.6	2	2 - 2 - 4			Note: Little organics present in 3.5 foot sample elevated the moisture content. Very soft, brown and gray, oxidized, highly weathered SHALE.	2							VISUAL	
	4	3 - 6 - 9				3								VISUAL
	6	18 - 28 - 39	TR			4								VISUAL
636.1	8	33 - 50/0.3				Run 1								
	10	ROD = 32%	4.0	1.0	Note: Few fractures from 12.0 feet.	Run 2								
	12													
	14				Note: U.C. Strength of Shale at 18.0 feet = 829 psi (low strength)									
	16	ROD = 83%	4.8	0.3										
	18													
624.6	20					TERMINATION DEPTH = 20.0 FEET								

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/11/05 Sampler: Type SS Dia. 2.0" Water Elev. ft _____
 Date Completed 4/11/05 Casing: Length _____ Dia. 3.25"
 Boring No. 077+00R Station & Offset 212+74.31, 102.29' LT. Surface Elev. 645.67ft
 Project: LAK-2-0.00
 Project No.: A05001G
 Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class	
							% C.S.	% F.S.	% Silt	% Clay	LL	P.L.		W.C.
645.7	0				TOPSOIL (7.0 inches thick) Medium stiff, gray SILTY CLAY (A-6b) little sand, trace shale fragments, moist. (FILL)	1	8	6	75*	40	17	16	A-6b	
642.2	2	3 - 4 - 4			Note: U.C. Strength of Shale at 17.0 feet = 245 psi (very low strength)	2	5	2	89*	57	28	28	A-7-6	
639.7	4	3 - 3 - 6				3								VISUAL
	6	18 - 20 - 22	TR			4								VISUAL
637.2	8	19 - 50/0.3				Run 1								
	10	ROD = 31%	3.9	1.1	Note: Few fractures and fair quality from 15.0 feet. Weathered from 18.1 to 20.0 feet.	Run 2								
	12													
	14				Note: U.C. Strength of Shale at 17.0 feet = 245 psi (very low strength)									
	16	ROD = 66%	4.7	0.3										
	18													
625.7	20					TERMINATION DEPTH = 20.0 FEET								

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/8/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/8/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 083+00R Station & Offset 218+78.56, 77.67' LT. Surface Elev. 644.02ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					W.C.	ODOT Class			
						% C.S.	% F.S.	% Silt	% Clay	LL			P.L.		
644.0	0					% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.L.	W.C.		
643.5	2	1 - 4 - 9			TOPSOIL (6.0 inches thick) Stiff, mottled brown and gray SILT AND CLAY (A-6a), some rock fragments, little sand, moist. (FILL)	21	6	6	--	65*	37	12	16	A-6a	
640.5	4	4 - 6 - 8			Stiff, red and tan CLAY (A-7-6), trace rock fragments, trace sand, moist.	5	2	3	--	91*	41	15	18	A-7-6	
638.0	6			TR											
635.5	8	6 - 6 - 11			Very soft, brown and gray, oxidized, highly weathered SHALE. Note: Groundwater seepage was encountered at 6.0 feet during drilling operations.										
	10	8 - 11 - 18			Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor to poor quality as per ROD.										
	12	18 - 50/0.3													
	14	ROD = 7%	3.5	1.5	Note: Oxidation present in 8.5 and 11.0 foot sample.										
	16														
	18	ROD = 35%	5.0	0.0	Note: Poor quality from 17.0 feet.										
	20				Note: U.C. Strength of Shale at 19.6 feet = 225 psi (very low strength)										
	22				TERMINATION DEPTH = 22.0 FEET										

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

(*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/11/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/11/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 081+00R Station & Offset 216+80.11, 82.94' LT. Surface Elev. 644.37ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics					W.C.	ODOT Class			
						% C.S.	% F.S.	% Silt	% Clay	LL			P.L.		
644.4	0					% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.L.	W.C.		
643.9	2	3 - 3 - 4			TOPSOIL (6.0 inches thick) Medium stiff to very stiff, mottled brown and gray CLAY (A-7-6), some sand, little silt, trace shale fragments, moist.	8	10	11	--	69*	45	20	24	A-7-6	
	4	4 - 6 - 10													
638.4	6	10 - 20 - 39		TR	Very soft, brown and gray, oxidized, highly weathered SHALE.										
635.9	8	18 - 18 - 21			Very soft to soft, gray, highly weathered SHALE, laminar bedding, high to moderate fractures, fissile, very poor to fair quality as per ROD.										
	10														
	12	26 - 50/0.3													
	14	ROD = 16%	4.7	0.3	Note: U.C. Strength of Shale at 12.4 feet = 490 psi (very low strength). Vertical fracture from 12.8 to 13.1, and from 14.0 to 14.5 feet.										
	16														
	18	ROD = 58%	4.9	0.1	Note: Moderately fractured from 16.1. Fair quality from 17.0 feet.										
	20														
	22				TERMINATION DEPTH = 22.0 FEET										

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

(*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/8/05 Sampler: Type SS Dia. 2.0" Water Elev. ff _____
 Date Completed 4/8/05 Casing: Length _____ Dia. 3.25"
 Boring No. 223+00 Station & Offset 222+75.21, 65.88' LT. Surface Elev. 643.40ft Project: LAK-2-0.00
 Project No.: A0500IG City of Wickliffe, Lake County, Ohio Location:

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics								ODOT Class					
						% Agg	% C.S.	% F.S.	% Sil	% Clay	LL	PI	W.C.						
643.4	0																		
642.9	2	2 - 3 - 5			TOPSOIL (6.0 inches thick) Medium stiff to very stiff, gray CLAY (A-7-6), little sand, trace shale fragments, moist.					5		85*	43	18	19		A-7-6		
637.4	4	5 - 7 - 10			Very soft, brown and gray, SHALE, oxidized, highly weathered.														
	6	5 - 7 - 21		TR															
634.9	8	15 - 28 - 40			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, high to few fractures, fissile, poor to good quality as per ROD.														
	10																		
	12	ROD = 33%	5.0	0.0	Note: Weathered from 13.3 to 14.0 feet.														
	14																		
	16																		
	18	ROD = 87%	5.0	0.0															
	20				Note: Few fractures and good quality from 17.0 feet.														
	22																		
621.4	22				Note: U.C. Strength of Stone at 21.0 feet = 1037 psi (low strength) TERMINATION DEPTH = 22.0 FEET														

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 (*Indicates silt & clay combined)

State of Ohio
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Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/8/05 Sampler: Type SS Dia. 2.0" Water Elev. ff _____
 Date Completed 4/8/05 Casing: Length _____ Dia. 3.25"
 Boring No. 221+00 Station & Offset 220+78.10, 67.61' LT. Surface Elev. 643.53ft Project: LAK-2-0.00
 Project No.: A0500IG City of Wickliffe, Lake County, Ohio Location:

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics								ODOT Class					
						% Agg	% C.S.	% F.S.	% Sil	% Clay	LL	PI	W.C.						
643.5	0																		
643.0	2	4 - 6 - 6			TOPSOIL (6.0 inches thick) Stiff, mottled brown and gray, CLAY (A-7-6), little sand, trace shale fragments, moist.														
	4	4 - 4 - 6			Very soft, brown and gray, oxidized, highly weathered SHALE.														
637.5	6	5 - 7 - 12		TR															
	8	21 - 22 - 27			Very soft to soft, gray, highly weathered SHALE, laminar bedding, moderate to few fractures, fissile, poor to excellent quality as per ROD.														
635.0	10																		
	12	50/10.3			Note: Oxidation present in 8.5 and 11.0 foot sample.														
	14	ROD = 42%	4.6	0.4															
	16																		
	18	ROD = 100%	5.0	0.0															
	20				Note: Few fractures from 17.1 feet. Note: Excellent quality from 18.0 feet.														
	22																		
620.5	22				TERMINATION DEPTH = 23.0 FEET														

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/7/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No: AO500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 226+65 Station & Offset 226+45.77, 60.28' LT. Surface Elev. 648.04ft

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay		
648.0	0												
647.2	2	5 - 2 - 4			ASPHALT (9.0 inches thick)	1						20	VISUAL
646.7	4	8 - 6 - 13			GRAVEL BASE (13.0 inches thick) Medium stiff, red and tan silt and clay (A-6a), little sand, moist. (FILL)	2						10	VISUAL
644.5	6	3 - 9 - 15			Very stiff, gray SANDY SILT (A-4a), little shale fragments, little clay, moist. (FILL)	3	14	10	7	68*	31	17	A-4a
639.5	8	4 - 6 - 5			Medium dense to loose, brown GRAVEL WITH SAND (A-1-b), little fines, moist.	4	35	18	23	17*	NP	NP	A-1-b
635.0	10	3 - 4 - 4				5						12	VISUAL
	12					6							
	14	20 - 56 - 50/0.4		TR	Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per RQD.	Run 1							
	16	RQD = 0%	3.9	IJ									
	18												
	20	RQD = 20%	4.3	OJ	Note: Weathered from 18.4 feet.	Run 2							
	22												
	24												
623.0					Note: U.C. Strength of Shale at 21.9 feet = 698 psi (low strength)								

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/7/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/7/05 Casing Length 3.25" Dia. 3.25"

Project: LAK-2-0.00
Project No: AO500IG
Location: City of Wickliffe, Lake County, Ohio

LOG OF BORING

Boring No. 225+00 Station & Offset 224+79.57, 68.56' LT. Surface Elev. 645.06ft

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	ODOT Class	
							% Agg	% C.S.	% F.S.	% Silt	% Clay			LL
645.1	0													
644.6	2	3 - 4 - 7			TOPSOIL (6.0 inches thick) Stiff, gray silt and clay (A-6a), little sand, trace shale fragments, moist. (FILL)	1	7	9	6	79*	40	14	16	A-6a
	4	8 - 6 - 7				2							10	VISUAL
639.1	6	2 - 2 - 4			Medium stiff, mottled brown and gray SILT AND CLAY (A-6a), little sand, trace rock fragments, moist.	3							28	VISUAL
636.6	8			TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	4								VISUAL
634.1	10	11 - 12 - 19				5								VISUAL
	12	19 - 50	8.8	I.2	Very soft to soft, gray, highly weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per RQD.	Run 1								
	14	RQD = 9%												
	16													
	18													
	20													
623.1	22				Note: U.C. Strength of Shale at 16.6 feet = 508 psi (low strength)									

TERMINATION DEPTH = 22.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/16/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/16/05 Casing Length 60.35' LT. Surface Elev. 656.36ft
Boring No. 231+00 Station & Offset 230+84.82, 60.35' LT. Project: LAK-2-0.00
Project No.: A05001G City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	P.I.	LL	O.D.T. Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay				
656.4	0					1	4	8	12	--	73*	19	42	21	A-7-6
655.6	2	2 - 3 - 4			ASPHALT (9.0 inches thick) Medium stiff, brown clay (A-7-6), little silt, little sand, trace shale fragments, moist. (FILL) Note: Trace roots and asphalt fragments in 1.0 foot sample.	2	--	--	--	--	--	--	--	22	VISUAL
650.4	4	2 - 3 - 5			Medium stiff to stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)	3	--	--	--	--	--	--	--	16	VISUAL
	6	2 - 2 - 3				4	--	--	--	--	--	--	--	12	VISUAL
	8	2 - 2 - 6				5	--	--	--	--	--	--	--	12	VISUAL
	10	5 - 4 - 5				6	--	--	--	--	--	--	--	12	VISUAL
	12	5 - 4 - 5				7	0	1	2	--	97*	30	62	33	A-7-5
640.4	14	2 - 4 - 4			Medium stiff, mottled brown and gray ELASTIC CLAY (A-7-5), little silt, trace sand, trace roots, moist.	8	--	--	--	--	--	--	--	--	VISUAL
637.9	16	4 - 4 - 4				9	--	--	--	--	--	--	--	--	VISUAL
	18		TR		Very soft, brown and gray, oxidized, highly weathered SHALE.										
	20	8 - 20 - 29													
	22														
632.9	24	25 - 43 - 50/0.3			Soft, gray, highly weathered SHALE.										
631.6															
TERMINATION DEPTH = 24.8 FEET															

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/17/05 Sampler Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/17/05 Casing Length 60.58' LT. Surface Elev. 653.07ft
Boring No. 229+00 Station & Offset 228+89.12, 60.58' LT. Project: LAK-2-0.00
Project No.: A05001G City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics					W.C.	P.I.	LL	O.D.T. Class
							% Agg	% C.S.	% F.S.	% Sh	% Clay				
653.1	0					1	4	4	4	--	87*	19	44	24	A-7-6
652.3	2	3 - 3 - 3			ASPHALT (9.0 inches thick) Medium stiff, mottled brown and gray, CLAY (A-7-6), trace sand, trace fragments, moist. (FILL)	2	--	--	--	--	--	--	--	15	VISUAL
649.6	4	4 - 4 - 6			Stiff to medium stiff, gray SANDY SILT (A-4a), and shale fragments, trace clay, moist. (FILL)	3	--	--	--	--	--	--	--	10	VISUAL
	6	3 - 5 - 5				4	45	9	4	--	38*	NP	NP	10	A-4a
	8	3 - 3 - 3				5	10	5	9	--	65*	49	21	29	A-7-6
642.1	10	3 - 3 - 3			Medium stiff, gray CLAY (A-7-6), some wood, little silt, little sand, little rock fragments, little organics, moist.	6	0	1	9	85	6	25	7	26	A-4b
640.1	12	3 - 4 - 5			Stiff, gray SILT (A-4b), little sand, little organics, trace clay, moist.	7	--	--	--	--	--	--	--	23	VISUAL
637.1	14	9 - 13 - 24			Hard, mottled brown and gray SILT AND CLAY (A-6a), trace sand, moist.	8	--	--	--	--	--	--	--	--	VISUAL
634.6	16		TR												
	18														
	20	23 - 50			Very soft to soft, gray, highly weathered to weathered SHALE, laminar bedding, highly fractured, fissile, very poor quality as per ROD.										
	22	ROD = 8%	4.4	0.6	Note: Weathered from 21.8 feet.										
	24														
628.1															
TERMINATION DEPTH = 25.0 FEET															

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/6/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/6/05 Casing: Length 3.25"
Boring No. 235+00 Station & Offset 234+81.85, 60.97' LT. Surface Elev. 659.60ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Sh	% Clay	LL	P.I.		W.C.		
659.6	0																
658.9	2	3 - 3 - 7			ASPHALT (6.5 inches thick) Medium stiff to very stiff, gray SANDY SILT (A-4a), some clay, little rock fragments, moist. (FILL)	1	--	--	--	--	--	--	--	--	16	VISUAL	
	4	4 - 2 - 3				2	20	11	4	34	31	28	8	10	A-4a	VISUAL	
	6	3 - 3 - 5				3	--	--	--	--	--	--	--	11	VISUAL	VISUAL	
	8	12 - 5 - 7				4	--	--	--	--	--	--	--	16	VISUAL	VISUAL	
	10	4 - 6 - 9				5	--	--	--	--	--	--	--	13	VISUAL	VISUAL	
	12	6 - 8 - 10				6	--	--	--	--	--	--	--	18	VISUAL	VISUAL	
643.6	16	4 - 5 - 5			Stiff, gray, CLAY (A-7-6), little silt, trace sand, trace rock fragments, moist.	7	7	4	5	--	84*	41	14	30	A-7-6	VISUAL	
641	18	5 - 9 - 8	TR		Very soft to soft, gray, highly weathered SHALE, highly fractured, fissile.	8	--	--	--	--	--	--	--	--	--	VISUAL	
	20																
	22																
	24	12 - 22 - 37				9	--	--	--	--	--	--	--	--	--	VISUAL	

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/6/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/6/05 Casing: Length 3.25"
Boring No. 233+00 Station & Offset 232+83.55, 61.15' LT. Surface Elev. 658.64ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Loss (ft)	Rec. (ft)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Sh	% Clay	LL	P.I.		W.C.		
658.6	0																
657.8	2	3 - 3 - 3			ASPHALT (9.0 inches thick) Loose, brown GRAVEL WITH SAND (A-1-b), little fines, moist. (FILL)	1	32	21	21	--	18*	MP	MP	9	A-1-b	VISUAL	
655.1	4	3 - 4 - 5			Medium stiff to stiff, gray SANDY SILT (A-4a), little shale fragments, trace clay, moist. (FILL)	2	--	--	--	--	--	--	--	16	VISUAL	VISUAL	
	6	3 - 2 - 4				3	--	--	--	--	--	--	--	11	VISUAL	VISUAL	
	8	3 - 4 - 5				4	--	--	--	--	--	--	--	13	VISUAL	VISUAL	
	10	3 - 4 - 5				5	--	--	--	--	--	--	--	14	VISUAL	VISUAL	
	12	3 - 4 - 5				6	10	7	7	--	74*	39	15	24	A-6a	VISUAL	
645.1	14	2 - 4 - 4			Medium stiff to stiff, gray SILT AND CLAY (A-6a), little sand, little to trace shale fragments, moist. (FILL)	7	--	--	--	--	--	--	--	13	VISUAL	VISUAL	
	16	2 - 5 - 6				8	--	--	--	--	--	--	--	30	VISUAL	VISUAL	
638.6	18	3 - 3 - 6	TR		Medium hard, brown and gray, oxidized, highly fractured SHALE.	9	--	--	--	--	--	--	--	--	--	VISUAL	
	20																
	22																
	24	15 - 29 - 50/0.4					--	--	--	--	--	--	--	--	--	VISUAL	

TERMINATION DEPTH = 24.9 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/6/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/6/05 Casing: Length 3.25"
Boring No. 240+00 Station & Offset 239+75.42, 59.67' LT. Surface Elev. 656.85ft
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class		
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.	
656.9	0				ASPHALT (3.0 inches thick) Medium stiff to stiff, gray SANDY SILT (A-4a), some clay, little shale Fragments, moist. (FILL)	--	--	--	--	--	--	--	--	--	VISUAL
	2	4 - 6 - 7			Note: Color change to mottled brown and gray for 6.0 and 8.5 foot samples.	13	9	13	37	28	26	10	12	11	A-4a
	4	5 - 3 - 4													
	6	4 - 5 - 4													
	8	3 - 4 - 6													
	10														
	12	6 - 5 - 8													
	14	4 - 6 - 8													
	16	6 - 6 - 6													
640.9	18	3 - 3 - 5				7	1	1	--	86*	62	30	33	--	A-7-5
	20														
	22														
633.4	24	18 - 45 - 50/0.3		TR	Very soft to soft, gray, highly weathered SHALE.										VISUAL
632.1	24				TERMINATION DEPTH = 24.8 FEET										

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/6/05 Sampler: Type SS Dia. 2.0" Water Elev. ft
Date Completed 4/6/05 Casing: Length 3.25"
Project: LAK-2-0.00
Project No.: A0500IG
Location: City of Wickliffe, Lake County, Ohio
Boring No. 238+00 Station & Offset 237+70.32, 60.67' LT. Surface Elev. 658.89ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Physical Characteristics							ODOT Class			
						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	P.I.		W.C.		
658.9	0				ASPHALT (8.0 inches thick) Medium stiff to very stiff, gray to mottled brown and gray SILT AND CLAY (A-6a), little to trace sand, moist. (FILL) Note: Mottled brown and gray from 6.0 to 11.0 feet. Note: Trace sand from 11.0 to 23.5 feet. Note: Split spoon sample at 18.5 feet contained large piece of wood, which led to higher than normal moisture content.	--	--	--	--	--	--	--	--	--	VISUAL	
658.2	2	4 - 6 - 6				--	--	--	--	--	--	--	--	--	--	VISUAL
	4	4 - 5 - 7				--	--	--	--	--	--	--	--	--	--	VISUAL
	6	2 - 3 - 4				0	1	13	--	86*	32	12	21	18	15	A-6a
	8	3 - 4 - 8				--	--	--	--	--	--	--	--	--	--	VISUAL
	10	4 - 6 - 7				--	--	--	--	--	--	--	--	--	--	VISUAL
	12	4 - 6 - 7				--	--	--	--	--	--	--	--	--	--	VISUAL
	14	4 - 5 - 8				--	--	--	--	--	--	--	--	--	--	VISUAL
	16	6 - 6 - 7				--	--	--	--	--	--	--	--	--	--	VISUAL
	18	4 - 6 - 11				--	--	--	--	--	--	--	--	--	--	VISUAL
	20															
	22															
635.4	24	4 - 9 - 12		TR	Very soft to soft, gray, oxidized, highly weathered SHALE.										VISUAL	
633.9	24				TERMINATION DEPTH = 25.0 FEET											

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/5/05 Sampler Type SS Dia. 2.0" Water Elev. 11
Date Completed 4/5/05 Casing Length 59.79' LT. Surface Elev. 649.49ft
Boring No. 244+00 Station & Offset 243+83.81, 59.79' LT. Project: LAK-2-0.00
Project No.: AD500IG City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class							
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.					
649.5	0																			
648.6	2	6 - 6 - 6			ASPHALT (10.5 inches thick) Stiff to medium stiff, gray, SANDY SILT (A-4a), some clay, trace rock fragments, moist. (FILL)	1											10		VISUAL	
	4	2 - 2 - 4				2												16		A-4a
643.5	6	3 - 5 - 7			Stiff, brown, SILTY CLAY (A-6b), trace rock fragments, trace sand, moist. (FILL)	3												12		VISUAL
	8	3 - 6 - 6			Note: Color change to mottled brown and gray at 8.5 feet.	4												21		VISUAL
638.5	12	3 - 5 - 8			Stiff, mottled brown and gray CLAY (A-7-6), little silt, little sand, trace rock fragments, moist. (FILL)	5												34		VISUAL
636.0	14	4 - 5 - 10			Stiff, mottled brown and gray, SILT AND CLAY (A-6a), trace rock fragments, trace sand, moist. (FILL)	6												22		VISUAL
633.5	16			TR	Very soft, brown to gray, oxidized, highly weathered SHALE.	7														VISUAL
	18					8														VISUAL
629.5	20	RQD = 90%	5.0	0.0	Very soft to soft, gray, highly weathered SHALE, laminar bedding, few fractures, fissile, excellent quality as per RQD. Note: U.C. Strength of Shale at 20.5 feet = 496 psi (very low strength)	Run 1														VISUAL
624.5	24																			VISUAL

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4/6/05 Sampler Type SS Dia. 2.0" Water Elev. 11
Date Completed 4/6/05 Casing Length 59.88' LT. Surface Elev. 653.57ft
Boring No. 242+00 Station & Offset 241+76.40, 59.88' LT. Project: LAK-2-0.00
Project No.: AD500IG City of Wickliffe, Lake County, Ohio

Elev. (ft)	Depth (ft)	Blows/6 inch or RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class									
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.I.	W.C.							
653.6	0																					
652.7	2	5 - 7 - 8			ASPHALT (10.5 inches thick) Medium stiff to stiff, gray to brown and gray SANDY SILT (A-4a), some clay, trace rock fragments, moist. (FILL)	1														12		VISUAL
	4	2 - 3 - 4				2														14		VISUAL
	6	4 - 4 - 4				3				9	29	31	28	8						16		A-4a
	8	6 - 6 - 8				4														14		VISUAL
	10	7 - 6 - 9			Note: Color change to brown and gray at 11.0 feet.	5														17		VISUAL
635.1	18			TR	Very soft, brown and gray, oxidized, highly weathered SHALE.	6														21		VISUAL
	20	9 - 12 - 30				7														22		VISUAL
	22					8																VISUAL
630.1 629.2	24	28 - 50/0.4			Very soft to soft, gray, highly weathered SHALE. TERMINATION DEPTH = 24.4 FEET	9																VISUAL

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 (*Indicates silt & clay combined)

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

Date Started 4/5/05
Date Completed 4/5/05
Boring No. 246+00 Station & Offset 245+99.34, 64.83' LT.
Sampler: Type SS
Casing: Length
LOG OF BORING
Water Elev. ft
Dia. 2.0"
Dia. 3.25"

Project: LAK-2-0.00
Project No: A0500IG
Location: City of Wickliffe, Lake County, Ohio
Surface Elev. 645.09ft

Elev. (ft)	Depth (ft)	Blows/6 inch or ROD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	LL		P.L	W.C.		
645.1	0																
644.6	2	2 - 4 - 6			TOPSOIL (6.0 inches thick) Stiff, gray, SILTY CLAY (A-6), little sand, trace rock fragments, trace organics, moist. (FILL)	1	--	--	--	--	--	--	--	--	25	VISUAL	
641.6	4	4 - 4 - 6			Stiff to very stiff, gray, CLAY (A-7-6), little silt, little rock fragments, trace sand, trace roots, moist. Note: Color change to mottled brown and gray at 6.0 feet.	2	--	--	--	--	--	--	--	--	15	VISUAL	
	6	4 - 5 - 6				3	11	2	4	83*	49	21	26	A-7-6			
	8	11 - 11 - 15				4	--	--	--	--	--	--	19	VISUAL			
634.1	10		TR			5	--	--	--	--	--	--	--	VISUAL			
	12	13 - 11 - 15			Very soft, brown to gray, highly weathered SHALE.												
631.6	14	37 - 50/0.3			Very soft to soft, gray, highly weathered SHALE, laminar bedding, high to moderate fractures, fissile, poor to fair quality as per ROD.	6	--	--	--	--	--	--	--	VISUAL			
	16	ROD = 33%	3.0	2.0		Run 1											
	18																
	20	ROD = 67%	5.0	0.0	Note: Decomposed from 18.8 to 19.1 feet. Note: Moderately fractured and fair quality from 20.0 feet.	Run 2											
	22																
620.1	24				Note: U.C. Strength of Shale at 22.3 feet = 244 psi (very low strength)												

TERMINATION DEPTH = 25.0 FEET

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 (*Indicates silt & clay combined)

GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION OF A 3.63 +/- MILE SECTION OF STATE ROUTE 2, BEGINNING AT THE CUYAHOGA/LAKE COUNTY LINE AND EXTENDING EASTWARD TO EAST 361ST ST (LAK-2-0.00, PID# 21778). IN ADDITION TO REPLACEMENT OF THE EXISTING PAVEMENT, IMPROVEMENTS INCLUDE VARIOUS MEDIAN SHOULDER WIDENINGS.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

LAKE COUNTY OCCUPIES PARTS OF TWO PHYSIOGRAPHIC PROVINCES: THE GLACIATED ALLEGHANY PLATEAU OF THE APPALACHIAN PLATEAUS PROVINCE IN THE SOUTH AND THE EASTERN LAKE SECTION OF THE CENTRAL LOWLAND PROVINCE IN THE NORTH. THIS PROJECT IS LOCATED IN NORTHERN LAKE COUNTY THE TERRAIN IS NEARLY LEVEL AND GENTLY SLOPING, POORLY DRAINED AND SOMEWHAT POORLY DRAINED SOILS THAT FORMED IN SILTY GLACIAL TILL OR LOAMY MATERIAL OVER SILTY GLACIAL TILL.

EXPLORATION

A TOTAL OF 78 EXPLORATORY BORINGS WERE MADE BY MEANS OF A TRUCK-MOUNTED MECHANICAL SOIL AUGER AND HOLLOW-STEM ROTARY DRILL BETWEEN NOVEMBER 11 AND NOVEMBER 24, 2003.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COARSE AND FINESANDS (A-3a), SILT AND CLAYS (A-6a), SILTY CLAYS (A-6b) AND CLAYS (A-7-6).

OVERALL PAVEMENT THICKNESS, ASPHALT CONCRETE AND CONCRETE, GENERALLY RANGE FROM 12 TO 15 INCHES. HOWEVER, PAVEMENT THICKNESS APPROACHES 20 INCHES IN SOME LOCATIONS.

A LAYER OF GRANULAR FILL MATERIAL UNDERLIES THE PAVEMENT THROUGHOUT THE ENTIRE PROJECT LENGTH. THE THICKNESS OF THE GRANULAR FILL MATERIAL IS APPROXIMATELY 12". THE GRANULAR LAYER IS TYPICALLY UNDERLAIN BY COHESIVE FILL MATERIALS EXTENDING TO THE AREAS NATURAL WEATHERED SHALE FORMATION IN SOME AREAS AND TO A NATURAL BROWN AND GRAY MOTTLED CLAY IN OTHER LOCATIONS. IN OTHER AREAS, FILL MATERIALS EXTEND TO THE TERMINAL DEPTH OF THE BORINGS.

TRACES OF ORGANIC MATERIAL WERE ENCOUNTERED THROUGHOUT THE PROJECT LENGTH.

ELASTIC CLAYS WERE ENCOUNTERED AT STATIONS 175+00 AND 249+65.

WEATHERED SHALE FORMATIONS WERE ENCOUNTERED AT VARIOUS LOCATIONS THROUGHOUT THE PROJECT LENGTH.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS - 142 SAMPLES TESTED

DESCRIPTION	ODOT CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL WITH SAND	A-1-b	37	26	19	14	4	NP	NP	8	5
GRAVEL WITH SAND AND SILT	A-2-4	23	22	22	25	8	NP	NP	9	2
GRAVEL WITH SAND, SILT AND CLAY	A-2-6	39	14	18	15	14	32	15	13	12
GRAVEL WITH SAND, SILT AND CLAY	A-2-7	47	12	12	15	14	42	23	13	2
COARSE AND FINE SAND	A-3a	22	20	34	17	7	NP	NP	10	6
SANDY SILT	A-4a	15	13	15	33	24	28	10	15	5
SILT AND CLAY	A-6a	12	10	11	34	33	32	13	16	39
SILTY CLAY	A-6b	19	10	11	28	32	37	18	16	26
ELASTIC CLAY	A-7-5	0	1	1	28	70	71	41	33	2
CLAY	A-7-6	12	5	9	28	46	49	25	21	40
WEATHERED SHALE		0	4	6	35	55	42	19	12	3

(Symbol)	DRIVE SAMPLE AND/OR CORE BORING - PLAN VIEW
(Symbol)	ROADWAY OR AUGER BORING PLOTTED TO VERTICAL SCALE ONLY

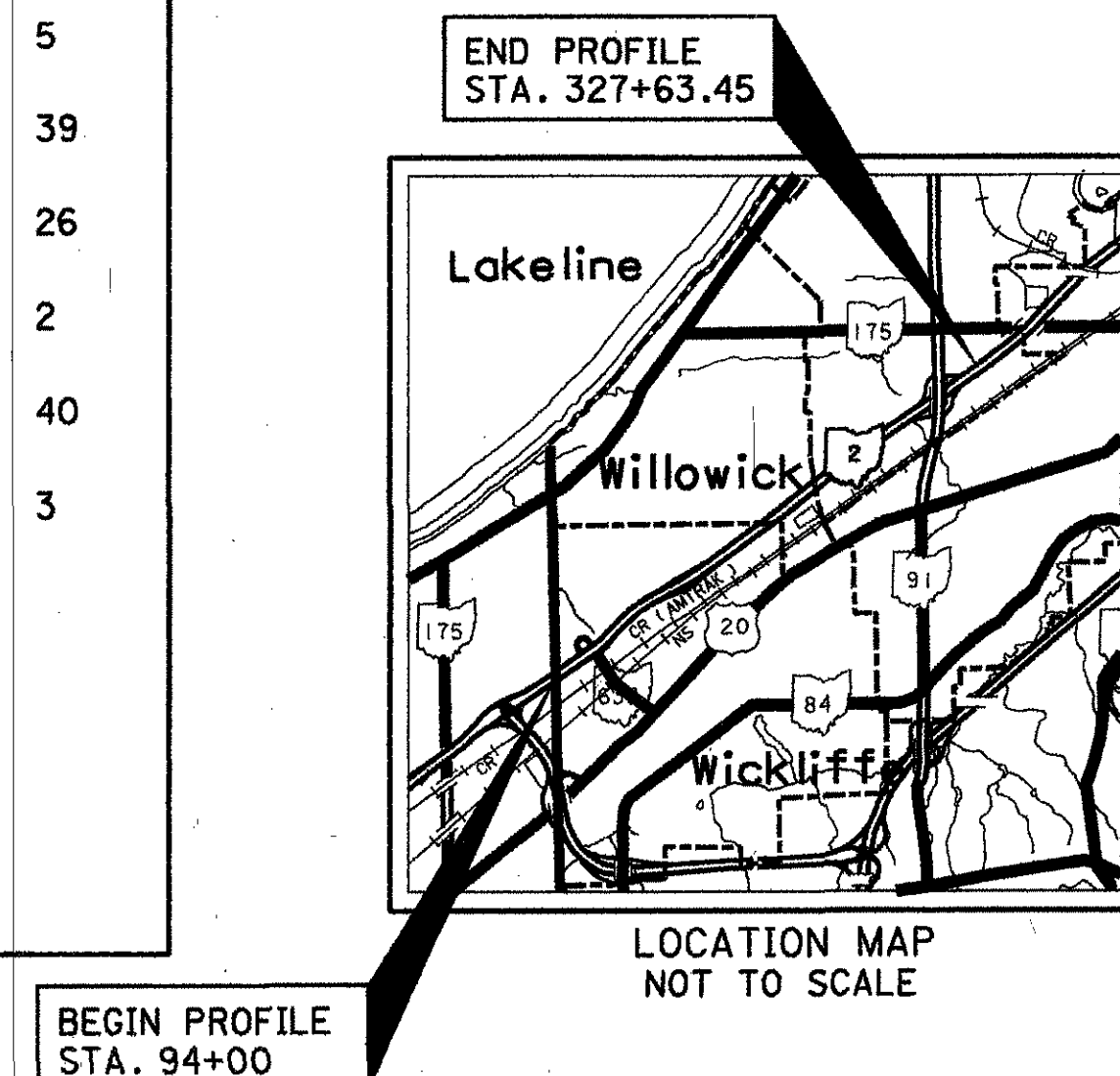
W-x-y-z

- W = NUMBER OF BLOWS FOR FIRST 0.50 FT
- X = NUMBER OF BLOWS FOR SECOND 0.50 FT
- Y = NUMBER OF BLOWS FOR THIRD 0.50 FT
- Z = NUMBER OF BLOWS FOR FOURTH 0.50 FT

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. e.g. 15

NOTE

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS, SOIL TESTS, AND BEDROCK BORINGS 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 MATERIALS MANAGEMENT AT 1600 WEST BROAD STREET, THE OFFICE OF ROADWAY ENGINEERING OR THE OFFICE OF STRUCTURAL ENGINEERING AT 25 SOUTH FRONT STREET.



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

Boring	Station	Offset	Depth (FT)	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Classification	
B-1	94+20	18.9' RT	1.3 - 2.3	Coarse and Fine Sand					Visual (Fill)				
			2.3 - 3.5	6	7	14	30	43	35	17	22	A-6b	
			3.5 - 4.8	1	5	6	35	53	43	21	16	A-7-6	
			4.8 - 7.3	Clayey Weathered Shale to Weathered Shale					9	Visual			
B-2	96+75	19.4' LT	1.4 - 2.5	Coarse and Fine Sand					Visual (Fill)				
			2.5 - 3.8	0	7	5	25	64	44	18	16	A-7-6	
			3.8 - 5.4	0	2	5	26	66	44	17	12	Weathered Shale	
B-3	100+15	18.6' RT	0.9 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 2.8	1	11	19	38	31	30	14	18	A-6a	
			2.8 - 6.9	0	6	7	42	45	38	16	12	Weathered Shale	
B-4	102+80	18.0' LT	1.0 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 4.1	3	8	26	17	46	42	23	19	A-7-6	
			4.1 - 6.0	0	3	4	39	54	43	20	20	Weathered Shale	
B-5	106+15	17.8' RT	1.7 - 4.7	9	9	7	36	39	34	13	20	A-6a (Fill)	
			4.7 - 7.7	1	2	5	30	62	46	21	28	A-7-6	
B-6	108+95	17.9' LT	1.1 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 4.0	13	11	23	20	33	40	23	21	A-6b (Fill)	
			4.0 - 7.1	32	8	10	20	30	42	20	17	A-7-6 (Fill)	
B-7	112+10	17.6' RT	1.2 - 2.8	10	12	25	30	23	27	9	18	A-4a (Fill)	
			2.8 - 7.3	22	12	9	30	27			12	Sandy Silt (Visual) (Fill)	
B-8	115+00	16.4' LT	1.0 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 7.1	34	14	20	17	15	30	15	14	A-2-6 (Fill)	
B-9	118+00	17.5' RT	1.1 - 2.0	18	17	33	24	8	NP	NP	12	A-3a (Fill)	
			2.0 - 5.1	12	9	9	28	42	36	14	20	A-6a (Fill)	
			5.1 - 7.1	Weathered Shale					7	Visual			
B-10	121+05	17.8' LT	1.0 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 7.0	22	16	37	13	12	25	12	15	A-2-6 (Fill)	
B-11	124+05	19.1' RT	1.2 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 7.1	25	14	13	30	18		13		Silt and Clay (Visual)	
B-12	127+05	18.9' LT	1.1 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 4.0	33	20	27	9	11	29	14	17	A-2-6 (Fill)	
			4.0 - 7.1	50	9	5	17	19	48	28	10	A-7-6 (Fill)	
B-13	131+00	27.0' RT	1.2 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 7.1	18	6	6	37	33		14		Silt and Clay (Visual) (Fill)	
B-14	133+20	17.9' LT	1.1 - 2.0	Coarse and Fine Sand					Visual (Fill)				
			2.0 - 2.3	Silty Clay					24	Visual (Fill)			
			2.3 - 6.5	21	10	34	18	17	26	11	9	A-2-6 (Fill)	
			6.5 - 7.1	56	11	8	12	13	39	20	9	Silty Clay	

Boring	Station	Offset	Depth (FT)	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Classification
B-15	136+75	19.2' RT	1.1 - 1.9	Coarse and Fine Sand					Visual (Fill)			
			1.9 - 6.1	11	7	11	36	35	38	14	21	A-6a (Fill)
B-16	139+15	18.3' LT	1.1 - 2.0	Coarse and Fine Sand					Visual (Fill)			
			2.0 - 4.0	51	16	9	13	11	32	13	11	A-2-6 (Fill)
			4.0 - 5.1	31	9	3	24	33	40	19	15	A-6b (Fill)
			5.1 - 6.7	Silty Clay					36	Visual (Fill)		
B-17	142+80	18.5' RT	1.1 - 1.7	Coarse and Fine Sand					Visual (Fill)			
			1.7 - 3.5	29	7	11	30	23		15		Silt and Clay (Visual) (Fill)
			3.5 - 5.1	12	7	8	31	42		8		Silty Clay (Visual) (Fill)
			5.1 - 7.1	Silty Clay					25	Visual		
B-18	145+25	17.9' LT	1.1 - 1.8	Coarse and Fine Sand					Visual (Fill)			
			1.8 - 3.5	38	11	7	20	22	40	23	12	A-6b (Fill)
			3.5 - 5.1	51	7	4	19	19	42	24	20	A-7-6 (Fill)
			5.1 - 6.6	Silty Clay					29	Visual (Fill)		
B-19	148+80	18.4' RT	1.3 - 2.2	Coarse and Fine Sand					Visual (Fill)			
			2.2 - 3.5	19	10	7	35	27	34	11	15	A-6a
			3.5 - 7.3	24	18	9	31	17	31	10	13	A-4a
				Silty Clay						Visual		
B-20	151+25	17.6' LT	1.1 - 1.8	Coarse and Fine Sand					Visual (Fill)			
			1.8 - 3.0	18	24	8	24	26	24	11	10	A-6a (Fill)
			3.0 - 5.0	42	11	4	20	23	40	20	8	A-6b (Fill)
B-21	154+80	16.8' RT	1.0 - 3.0	28	9	51	7	5	NP	NP	14	A-3a (Fill)
			3.0 - 7.1	39	7	6	21	27	40	20	15	A-6b (Fill)
				Coarse and Fine Sand						Visual (Fill)		
			2.0 - 4.0	26	14	7	27	26	42	19	8	A-7-6 (Fill)
B-22	157+15	18.7' LT	4.0 - 6.5	42	8	5	24	21	35	15	11	A-6a (Fill)
			6.5 - 7.0	Silty Clay					13	Visual		
				Coarse and Fine Sand						Visual (Fill)		
B-23	160+80	17.8' RT	1.1 - 1.9	Coarse and Fine Sand					Visual (Fill)			
			1.9 - 6.8	31	20	14	20	15	30	13	15	A-2-6 (Fill)
B-24	163+00	18.2' LT	1.1 - 1.8	Coarse and Fine Sand					Visual (Fill)			
			1.8 - 3.5	39	15	6	16	24	35	15	12	A-6a (Fill)
			3.5 - 5.0	57	8	2	19	14	39	22	13	A-6b (Fill)
			5.0 - 7.1	Silty Clay					32	Visual (Fill)		
B-25	166+80	17.6' RT	1.1 - 1.8	Coarse and Fine Sand					Visual (Fill)			
			1.8 - 4.8	0	1	4	25	70	52	27	33	A-7-6
			4.8 - 7.1	0	4	6	36	54	44	22	19	Weathered Shale

CALCULATED
CAK
CHECKED

SOIL BORING TITLE SHEET

LAK-2-0.00

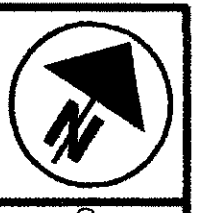
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SUMMARY OF SOIL TEST DATA CONT.

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

Boring	Station	Offset	Depth (FT)	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Classification	
B-26	169+00	17.8' LT	1.0 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 2.8	5	7	6	25	57	49	25	19		A-7-6 (Fill)
			2.8 - 4.5	1	5	4	30	60	59	33	21		A-7-6
			4.5 - 6.5	Weathered Shale									13
B-27	172+80	17.6' RT	1.6 - 2.6	Silt and Clay									Visual (Fill)
			2.6 - 7.7	0	1	1	25	73	63	34	27		A-7-6
B-28	175+00	17.6' LT	1.1 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 3.0	38	21	8	17	16	27	12	14		A-2-6 (Fill)
			3.0 - 5.0	0	1	1	29	69	59	28	38		A-7-5 (Fill)
			5.0 - 7.1	Clay									31
B-29	178+80	16.8' RT	1.2 - 2.3	Coarse and Fine Sand									Visual (Fill)
			2.3 - 3.3	2	10	11	30	47	40	20	17		A-6b (Fill)
			3.3 - 6.2	0	5	5	36	54	45	24	13		Weathered Shale
B-30	181+00	17.6' LT	1.1 - 2.0	Coarse and Fine Sand									Visual (Fill)
			2.0 - 3.1	26	12	20	19	23	42	22	14		A-7-6 (Fill)
			3.1 - 5.1	0	2	2	26	70	60	34	21		A-7-6
			5.1 - 7.1	Weathered Shale									15
B-31	184+75	17.9' RT	1.1 - 2.2	Coarse and Fine Sand									Visual (Fill)
			2.2 - 4.2	30	15	22	15	18	30	16	13		A-2-6 (Fill)
			4.2 - 6.3	1	4	11	31	53	56	32	29		A-7-6 (Fill)
			6.3 - 7.2	Silt and Clay									16
B-32	187+00	18.4' LT	1.0 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 4.8	15	7	27	29	22	42	21	13		A-7-6 (Fill)
			4.8 - 7.1	23	10	4	26	37	47	24	11		Visual
B-33	190+75	17.8' RT	1.1 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 3.5	15	18	19	26	22	30	14	16		A-6a (Fill)
			3.5 - 6.8	11	9	4	37	39	45	22	15		A-7-6 (Fill)
			6.8 - 7.2	Clay									
B-34	193+00	17.7' LT	1.1 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 4.0	17	9	21	27	26	34	15	21		A-6a (Fill)
			4.0 - 7.1	9	15	16	25	35	40	18	17		A-6b (Fill)
B-35	195+25	20.3' RT	1.4 - 7.4	37	5	5	23	30	52	26	19	A-7-6 (Fill)	
				21	5	11	28	35	42	19	22		
B-36	199+00	17.8' LT	1.5 - 2.2	Coarse and Fine Sand									Visual (Fill)
			2.2 - 4.0	24	6	16	23	31	43	21	26		A-7-6 (Fill)
			4.0 - 7.6	35	13	20	17	15	42	23	16		A-2-7 (Fill)
B-37	201+75	17.9' RT	1.6 - 4.6	8	9	9	27	47	46	22	20	A-7-6 (Fill)	
			4.6 - 7.6	33	8	5	31	23	32	17	15		A-6b
B-38	205+00	18.4' LT	1.5 - 2.0	Coarse and Fine Sand									Visual (Fill)
			2.0 - 4.0	26	11	23	21	19	40	18	27		A-6b (Fill)
			4.0 - 7.5	40	4	23	18	15	35	15	13		A-2-6 (Fill)
B-39	207+75	17.3' RT	1.2 - 2.0	Coarse and Fine Sand									Visual (Fill)
			2.0 - 4.0	11	18	13	24	34	39	18	9		A-6b (Fill)
			4.0 - 7.2	36	10	5	23	26	46	22	14		A-7-6 (Fill)
B-40	211+00	17.6' LT	1.1 - 2.0	Gravel and/or Stone Fragments W/Sand and Silt									Visual (Fill)
			2.0 - 4.1	24	6	16	23	31	40	19	12		A-6b (Fill)
			4.1 - 5.1	11	10	17	31	31	46	24	11		A-7-6 (Fill)
			5.1 - 7.2	Silt and Clay									22
B-41	213+70	17.8' RT	1.1 - 1.6	Coarse and Fine Sand									Visual (Fill)
			1.6 - 7.1	9	10	14	29	38	47	26	20		A-7-6
B-42	217+00	18.3' LT	1.1 - 2.2	Coarse and Fine Sand									Visual (Fill)
			2.2 - 3.1	21	11	18	25	25	33	16	20		A-6b (Fill)
			3.1 - 6.5	0	2	5	26	67	74	47	36		A-7-6 (Fill)
			6.5 - 7.1	Weathered Shale									27
B-43	219+60	18.0' RT	1.6 - 2.1	Coarse and Fine Sand									Visual (Fill)
			2.1 - 4.0	27	9	7	29	28	38	17	13		A-6b (Fill)
			4.0 - 5.3	13	6	6	39	36	43	20	16		A-7-6 (Fill)
			5.3 - 7.6	Clay									26
B-44	223+00	17.7' LT	1.1 - 1.9	Coarse and Fine Sand									Visual (Fill)
			1.9 - 4.6	8	9	7	38	38	37	15	18		A-6a (Fill)
			4.6 - 7.1	4	2	6	22	66	62	30	22		A-7-6
B-45	225+60	18.0' RT	1.0 - 1.7	Coarse and Fine Sand									Visual (Fill)
			1.7 - 4.0	28	20	13	18	21	34	13	14		A-6a (Fill)
			4.0 - 6.6	24	7	4	22	43	46	24	17		A-7-6 (Fill)
			6.6 - 7.1	Clay									21
B-46	229+00	17.6' LT	1.1 - 2.2	22	17	15	28	18			13	A-4a (Fill)	
			2.2 - 2.6	Silty Clay									Visual (Fill)
			2.6 - 7.1	23	8	14	27	27	36	12	12		A-6a
B-47	231+60	21.7' RT	1.0 - 1.8	Coarse and Fine Sand									Visual (Fill)
			1.8 - 7.0	34	17	13	25	11	33	16	11		A-6b (Fill)
B-48	234+50	18.5' LT	1.0 - 2.0	31	23	15	24	7	NP	NP	9	A-2-4 (Fill)	
			2.0 - 5.0	34	11	6	27	22		18			Silt and Clay (Visual) (Fill)
			5.0 - 7.0	Silt and Clay									14
B-49	238+70	19.0' RT	1.0 - 2.0	Gravel and/or Stone Fragments With Sand									Visual (Fill)
			2.0 - 7.0	12	12	10	30	36	35	19	14		A-6b
B-50	241+00	17.8' LT	1.1 - 2.0	25	24	28	18	5	NP	NP	8	A-3a (Fill)	
			2.0 - 7.1	8	10	11	38	34	28	9	17		A-4a (Fill)
B-51	243+70	18.6' RT	1.0 - 1.5	Coarse and Fine Sand									Visual (Fill)
			1.5 - 3.5	27	16	16	22	19	26	12	13		A-6a (Fill)
			3.5 - 5.0	11	11	13	34	31	33	17	12		A-6b (Fill)
			5.0 - 7.0	Silt and Clay									27

Boring	Station	Offset	Depth (FT)	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	Classification		
B-52	247+00	18.0' LT	1.1 - 2.0	48	10	8			NP	NP	8	A-1-b (Visual) (Fill)		
			2.0 - 4.6	5	6	8	33	47	31	12	17		A-6a (Fill)	
			4.6 - 5.2	Silty Clay									31	Visual (Fill)
			5.2 - 7.1	Silty Clay										Visual
B-53	249+65	17.8' RT	1.1 - 1.9	Coarse and Fine Sand									Visual (Fill)	
			1.9 - 3.1	9	16	21	25	29	31	15	15		A-6b (Fill)	
			3.1 - 5.6	0	1	1	28	70	83	53	28		A-7-5	
			5.6 - 7.1	Weathered Shale									14	Visual
B-54	253+00	18.3' LT	1.1 - 2.0	Gravel and/or Stone Fragments With Sand									Visual (Fill)	
			2.0 - 3.1	1	2	3	35	60	33	12	20		A-6a (Fill)	
			3.1 - 5.1	1	2	7	27	63	42	18	26		A-7-6 (Fill)	
			5.1 - 7.1	Silty Clay									23	Visual
B-55	255+80	17.8' RT	1.1 - 1.8	Coarse and Fine Sand									Visual (Fill)	
			1.8 - 3.6	12	18	16	29	25	30	14	19		A-6a (Fill)	
			3.6 - 7.1	49	4	3	21	23	42	25	26		A-7-6	
B-56	259+00	17.9' LT	1.1 - 1.7	45	22	13	15	5	NP	NP	11	A-1-b (Fill)		
			1.7 - 5.1	5	5	10	31	49		23			Silty Clay (Visual) (Fill)	
			5.1 - 7.1	Silty Clay									33	Visual
B-57	261+70	17.2' RT	1.1 - 2.1	Coarse and Fine Sand									Visual (Fill)	
			2.1 - 3.8	11	13	17	26	33	33	15	22		A-6a (Fill)	
			3.8 - 7.2	0	2	10	34	54	55	32	23		A-7-6	
B-58	265+00	17.3' LT	1.2 - 2.1	16	20	29	27	8	NP	NP	8	A-2-4 (Fill)		
			2.1 - 5.1	4	6	8	32	51	31	12	16		A-6a (Fill)	
			5.1 - 7.2	Silt and Clay									22	Visual
B-59	267+70	18.2' RT	1.1 - 2.2	Coarse and Fine Sand									Visual (Fill)	
			2.2 - 3.6	2	6	9	35	48	39	20	17		A-6b (Fill)	
			3.6 - 5.5	2	3	11	34	50	60	33	21		A-7-6 (Fill)	
			5.5 - 7.1	Clay									26	Visual
B-60	271+50	17.8' LT	1.2 - 1.8	Coarse and Fine Sand									Visual (Fill)	
			1.8 - 3.2	10	15	18	29	28		14	14		Silt and Clay (Visual) (Fill)	
			3.2 - 6.0	0	1	12	29	58	53	29	28		A-7-6	
			6.0 - 7.2	Silt and Clay									20	Visual
B-61	273+70	17.8' RT	1.2 - 1.7	Coarse and Fine Sand									Visual (Fill)	
			1.7 - 3.2	3	4	9	32	52	36	15	19		A-6a (Fill)	
			3.2 - 7.2	0	2	19	34	45	46	22	22		A-7-6	
B-62	276+90	18.0' LT	1.1 - 2.1	Coarse and Fine Sand									Visual (Fill)	
			2.1 - 5.1	6	10	14	39	31	30	12	16		A-6a (Fill)	
			5.1 - 7.1	6	9	13	41	31	27	11	12		Visual	
B-63	279+60	17.7' RT	1.1 - 2.0	22	26	40	11	2	NP	NP	7	A-3a (Fill)		
			2.0 - 3.1	Silt and Clay									Visual (Fill)	
			3.1 - 5.1	0	1	20	37	42	43	19	23		A-7-6	
			5.1 - 7.1	Silt and Clay									20	Visual
B-64	282+90	18.0' LT	1.0 - 2.0	Coarse and Fine Sand									Visual (Fill)	
			2.0 - 5.0	14	11	17	33	25	28	11	16		A-6a (Fill)	
			5.0 - 7.0	33	8	15	23	21		16	16		Silt and Clay (Visual)	
B-65	285+60	18.0' RT	1.1 - 1.6	11	21	42	21	5	NP	NP	10	A-3a (Fill)		
			1.6 - 7.1	0	1	3	40	57	36	13	19		A-6a (Fill)	
				Coarse and Fine Sand										Visual (Fill)
B-66	288+90	17.8' LT	1.9 - 6.1	1	2	13	50	34	31	11	14	A-6a (Fill)		
				7	10	11	50	37	30	11	18		Visual	
			6.1 - 7.1	Silt and Clay									19	Visual
B-67	291+60	20.1' RT	1.5 - 2.2	Coarse and Fine Sand									Visual (Fill)	
			2.2 - 4.5	2	3	6	38	51	38	17	20		A-6b	
			4.5 - 7.5	1	3	11	36	49	36	14	18		A-6a	
B-68	294+90	17.3' LT	1.0 - 2.1	Coarse and Fine Sand									Visual (Fill)	

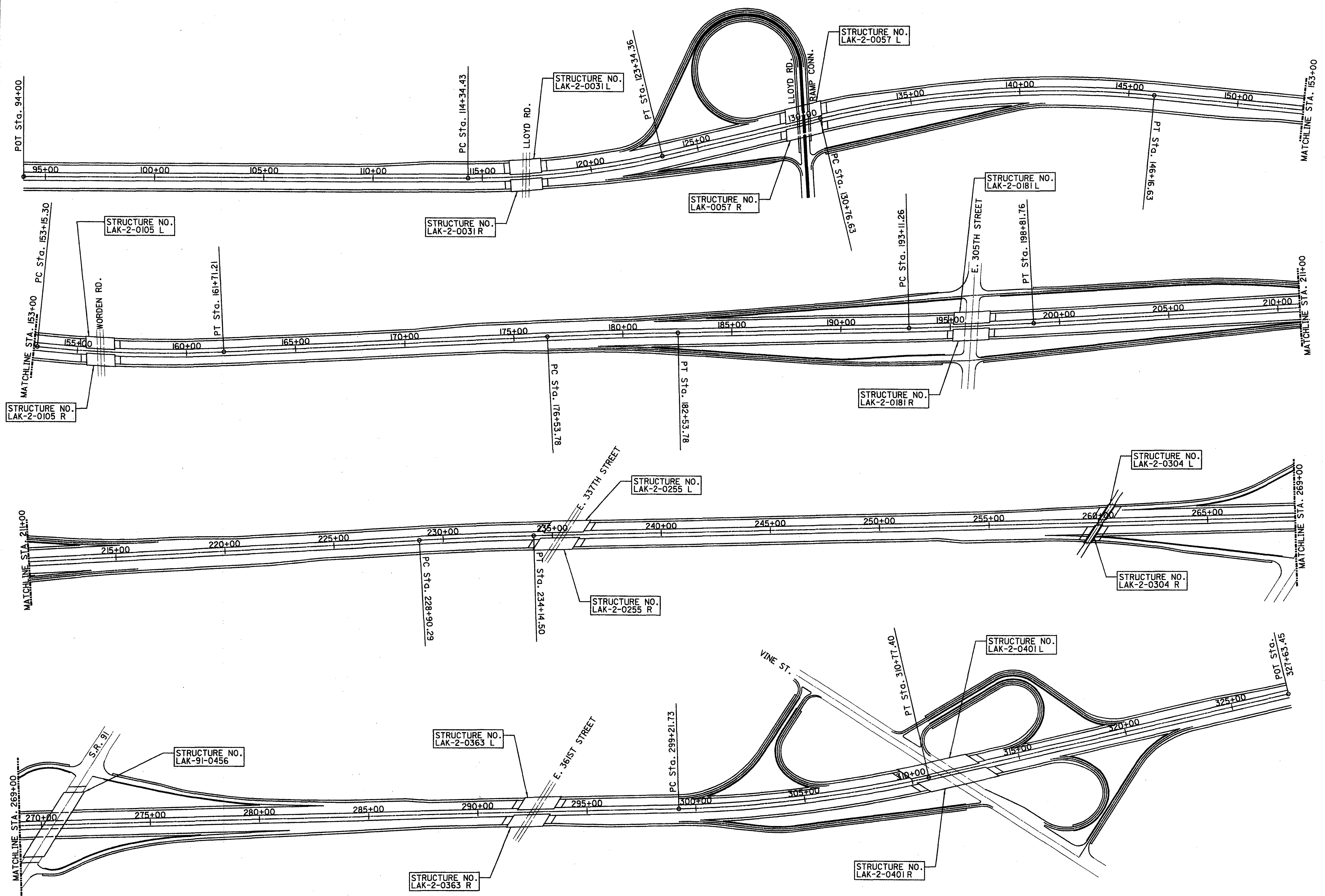


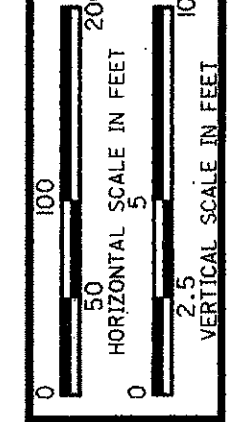
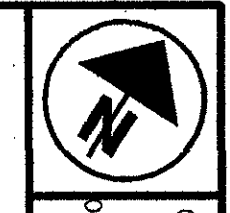
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 HORIZONTAL
 SCALE IN FEET

CALCULATED
 C.A.K.
 CHECKED

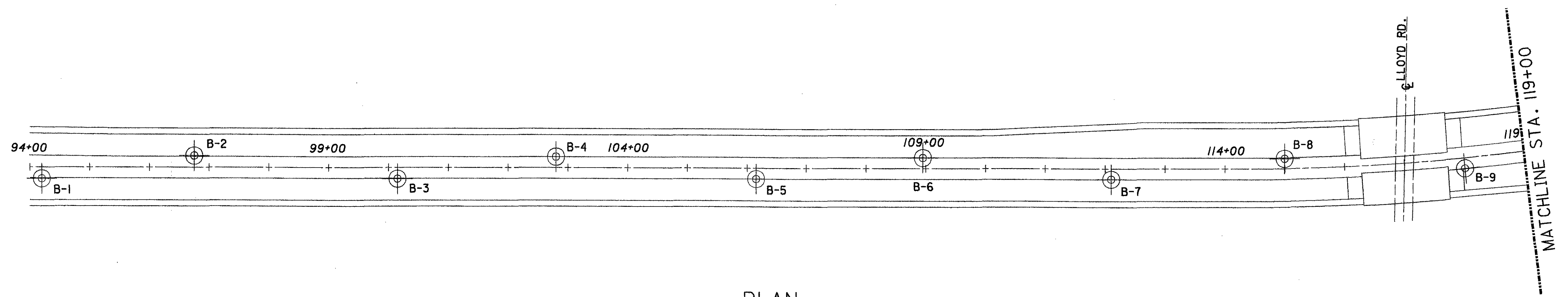
SCHEMATIC PLAN

LAK-2-0.00

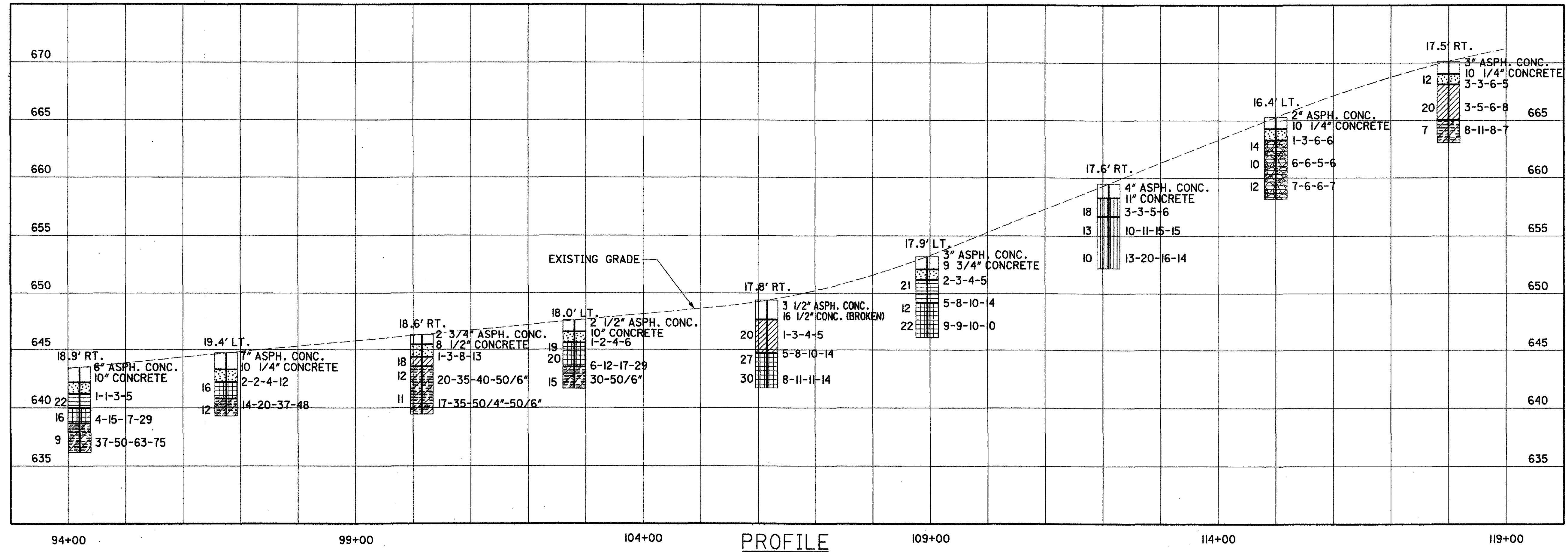




CALCULATED
CAK
CHECKED



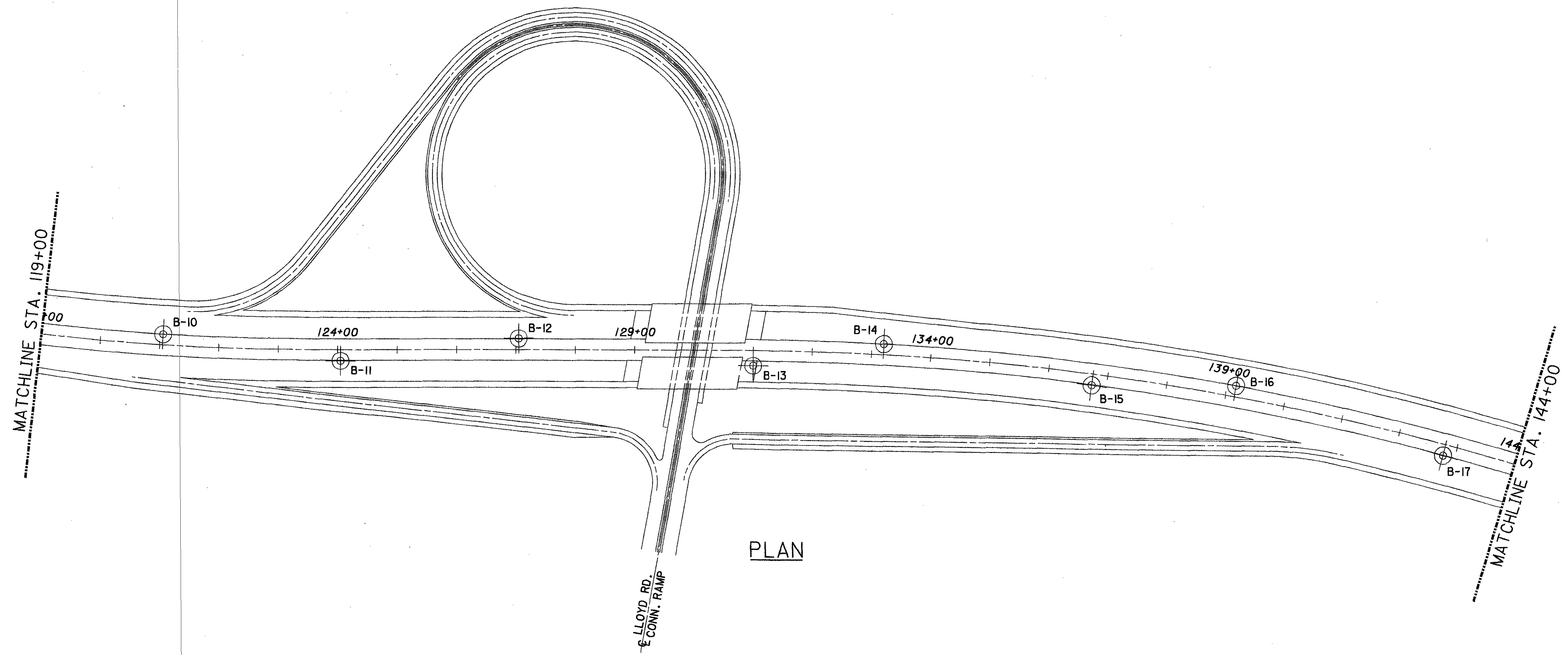
PLAN



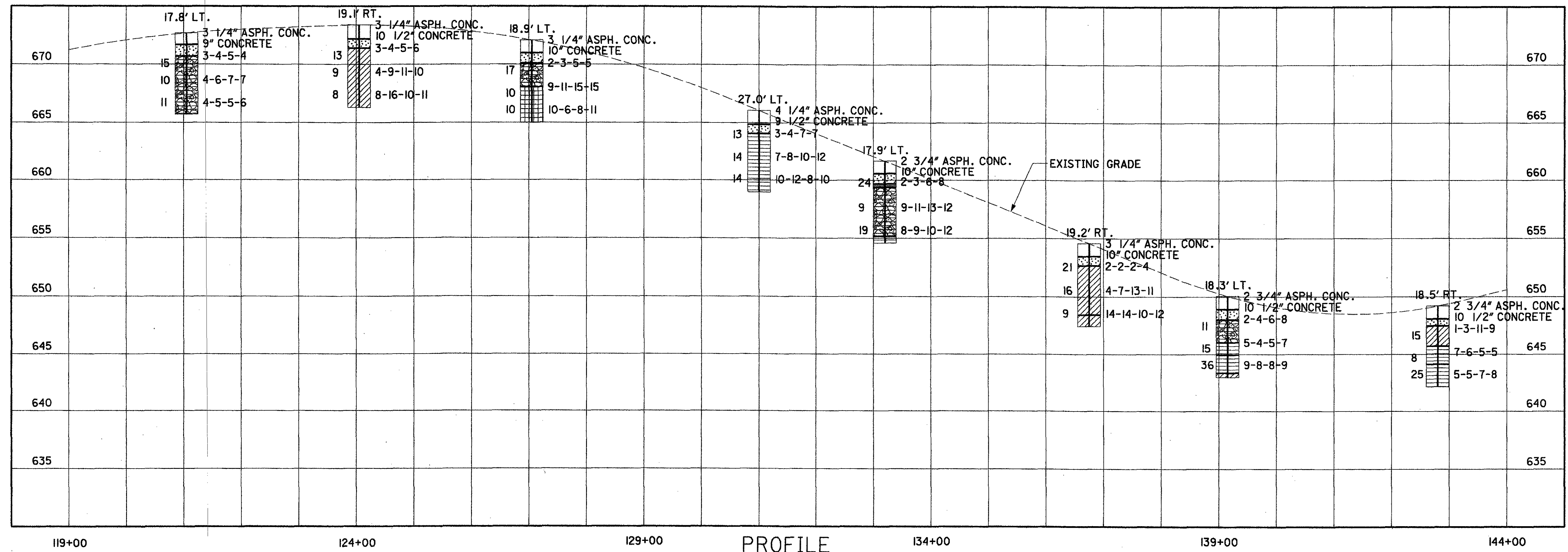
PROFILE

PLAN AND PROFILE
STA. 94+00 TO STA. 119+00

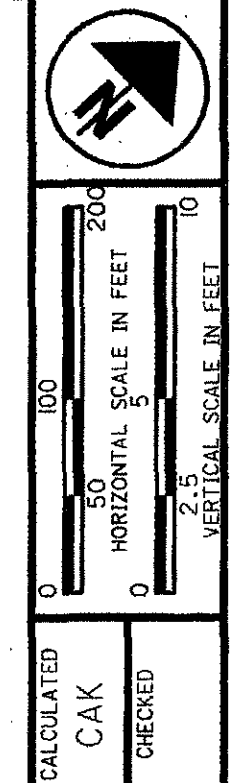
LAK-2-0.00



PLAN



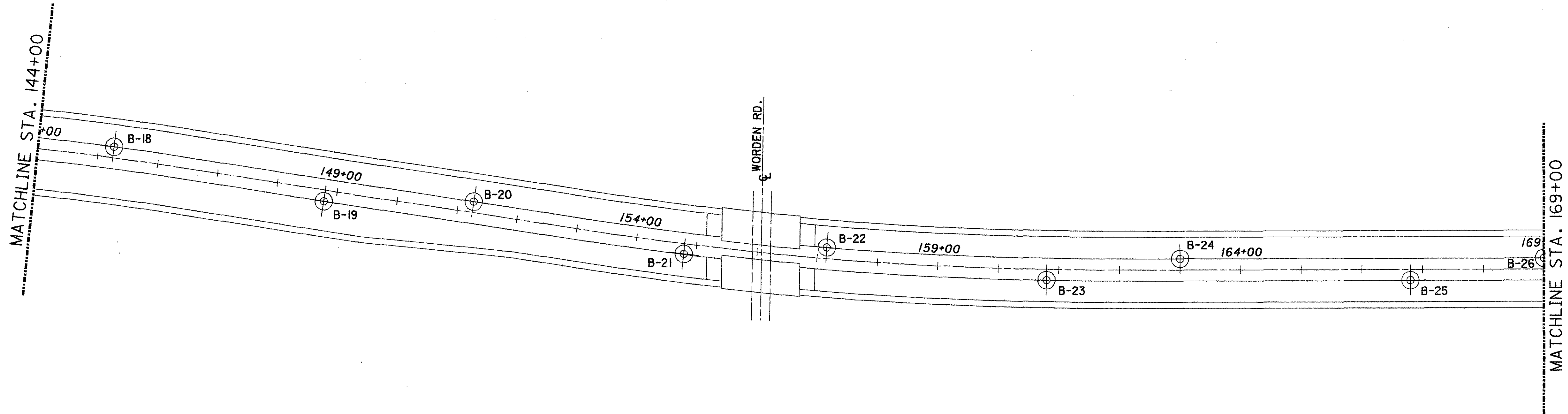
PROFILE



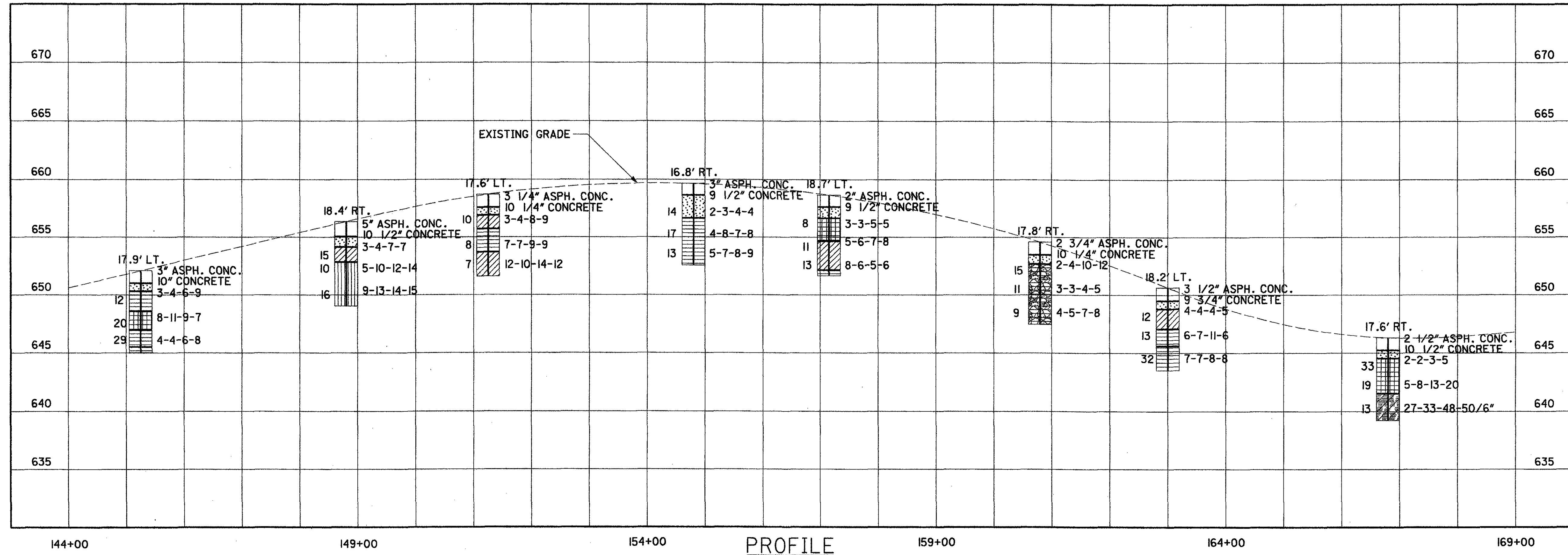
CALCULATED
CAK
CHECKED

PLAN AND PROFILE
STA. 119+00 TO STA. 144+00

LAK-2-0.00



PLAN



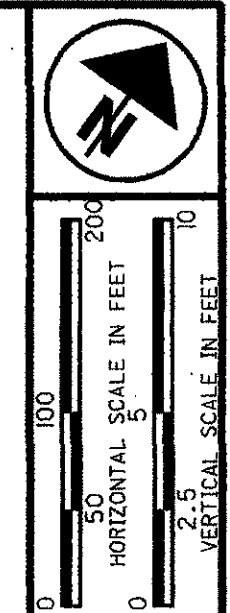
PROFILE

CALCULATED
 CAK
 CHECKED
 HORIZONTAL SCALE IN FEET: 1" = 50'
 VERTICAL SCALE IN FEET: 1" = 2.5'

PLAN AND PROFILE
 STA. 144+00 TO STA. 169+00

LAK-2-0.00

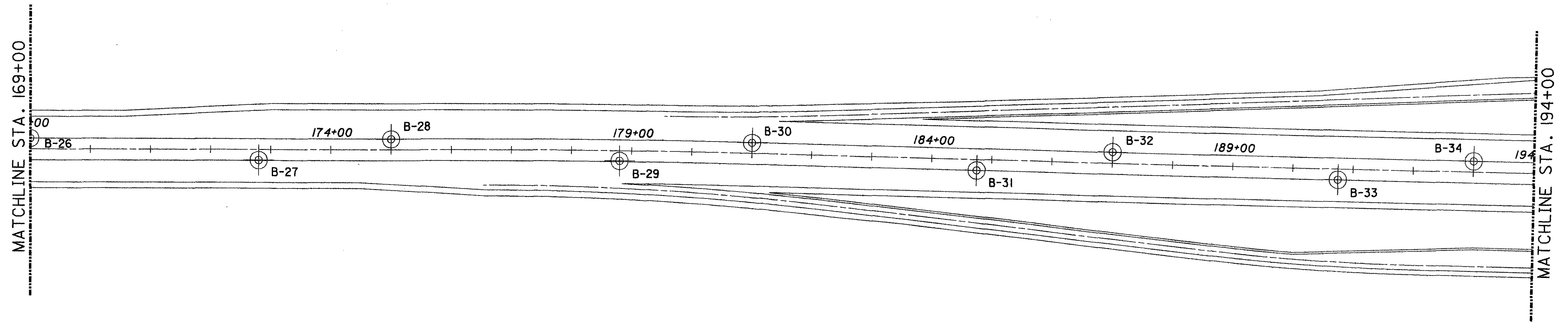
6
 13



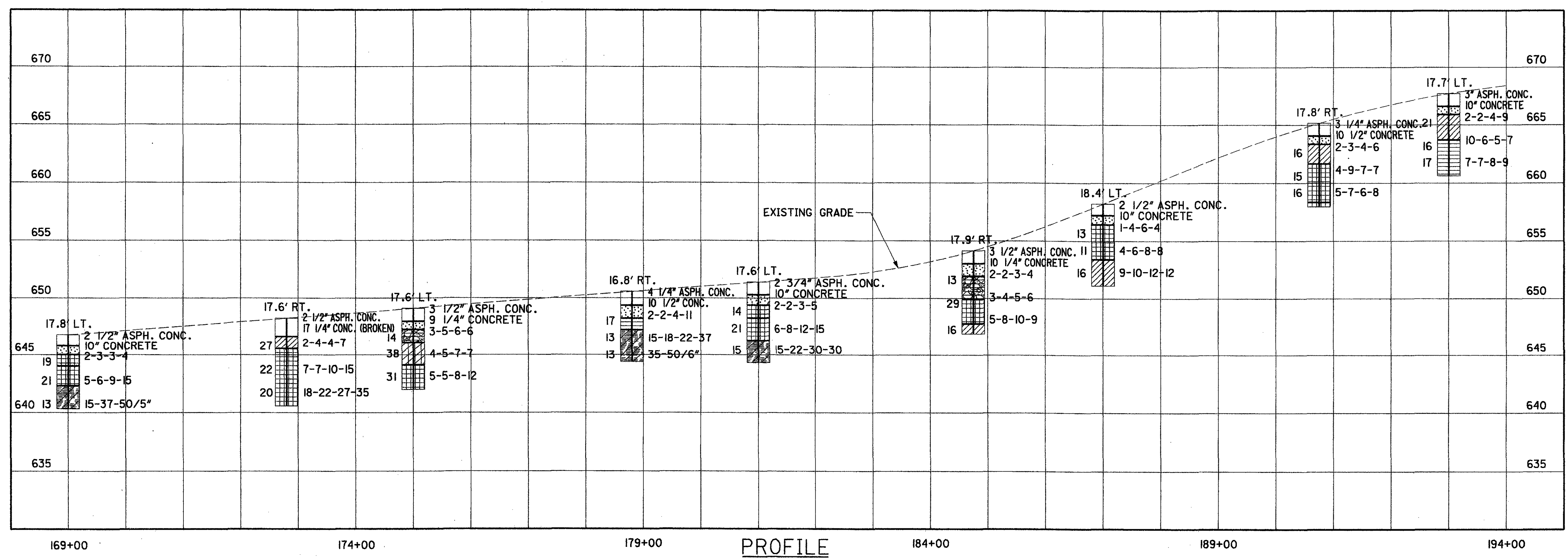
CALCULATED
CAK
CHECKED

**PLAN AND PROFILE
STA. 169+00 TO STA. 194+00**

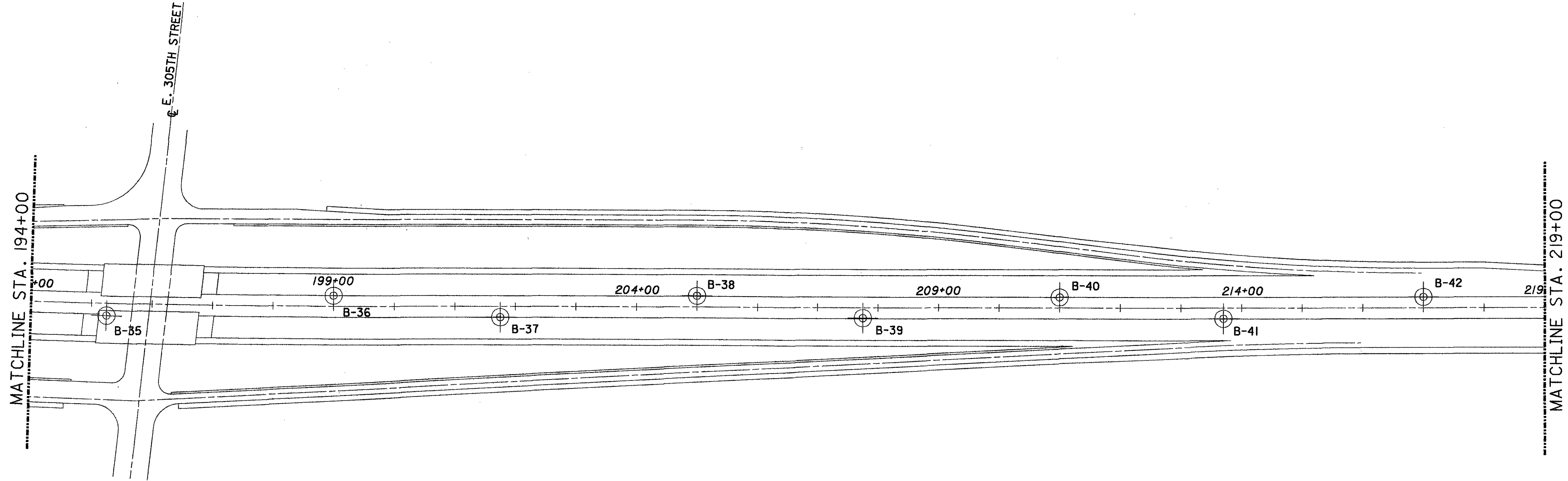
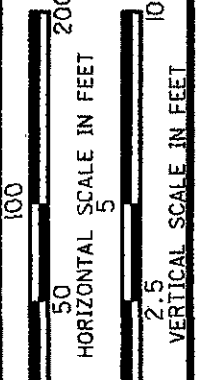
LAK-2-0.00



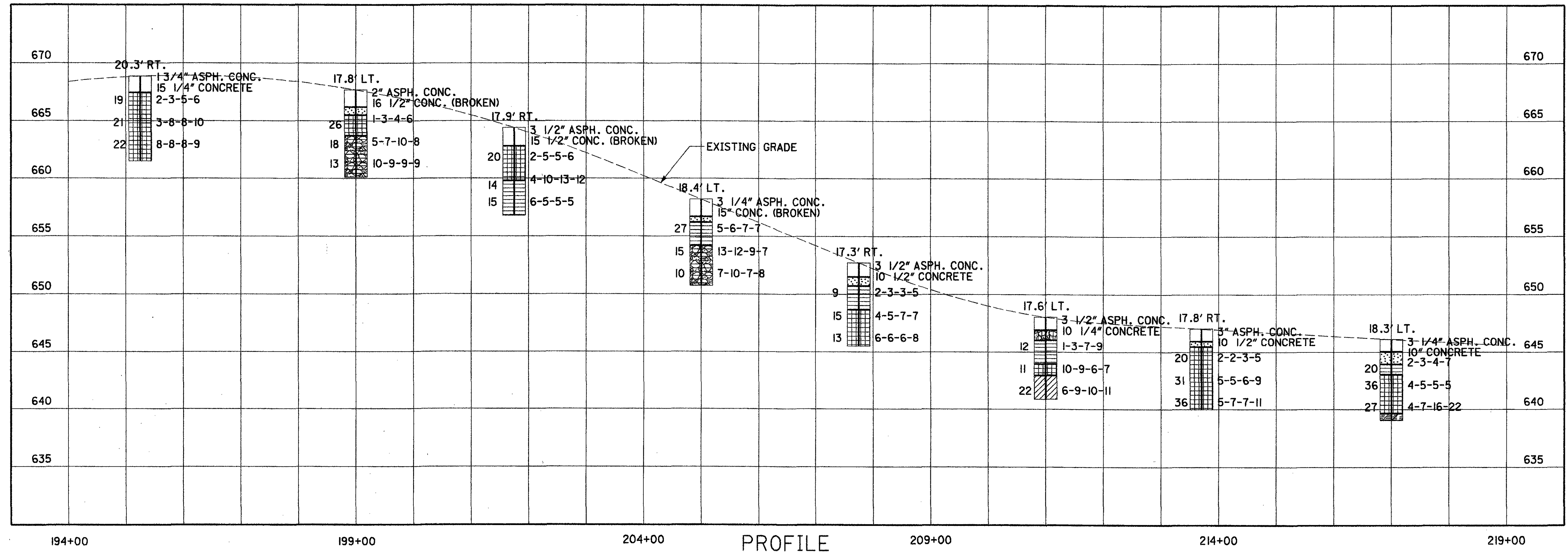
PLAN



PROFILE



PLAN

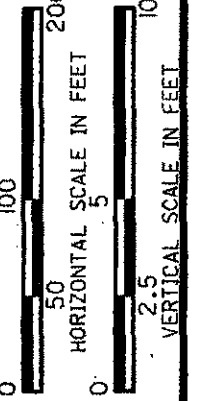
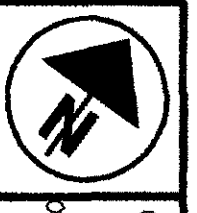


PROFILE

PLAN AND PROFILE
 STA. 194+00 TO STA. 219+00

LAK-2-0.00

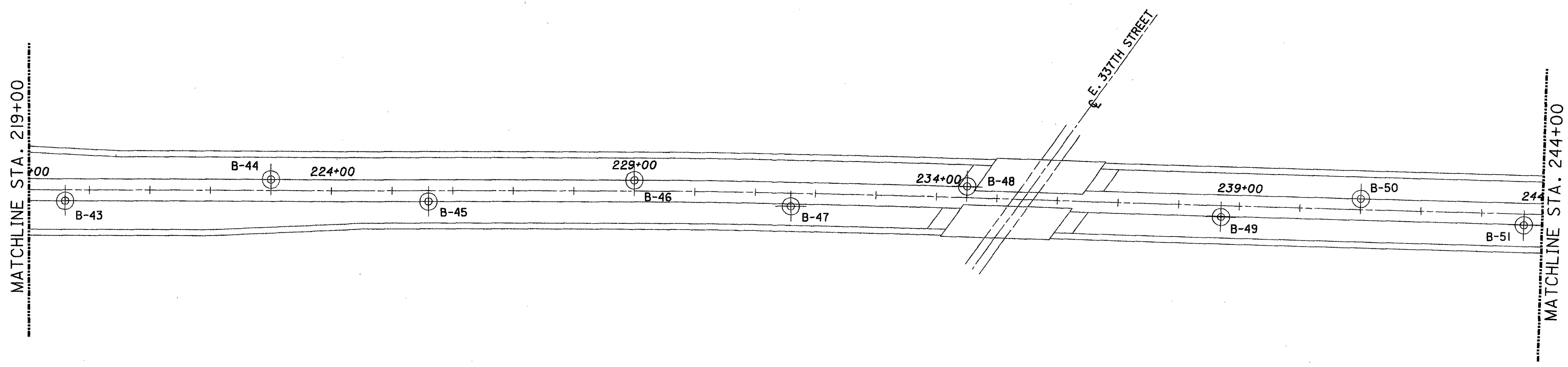
8
13



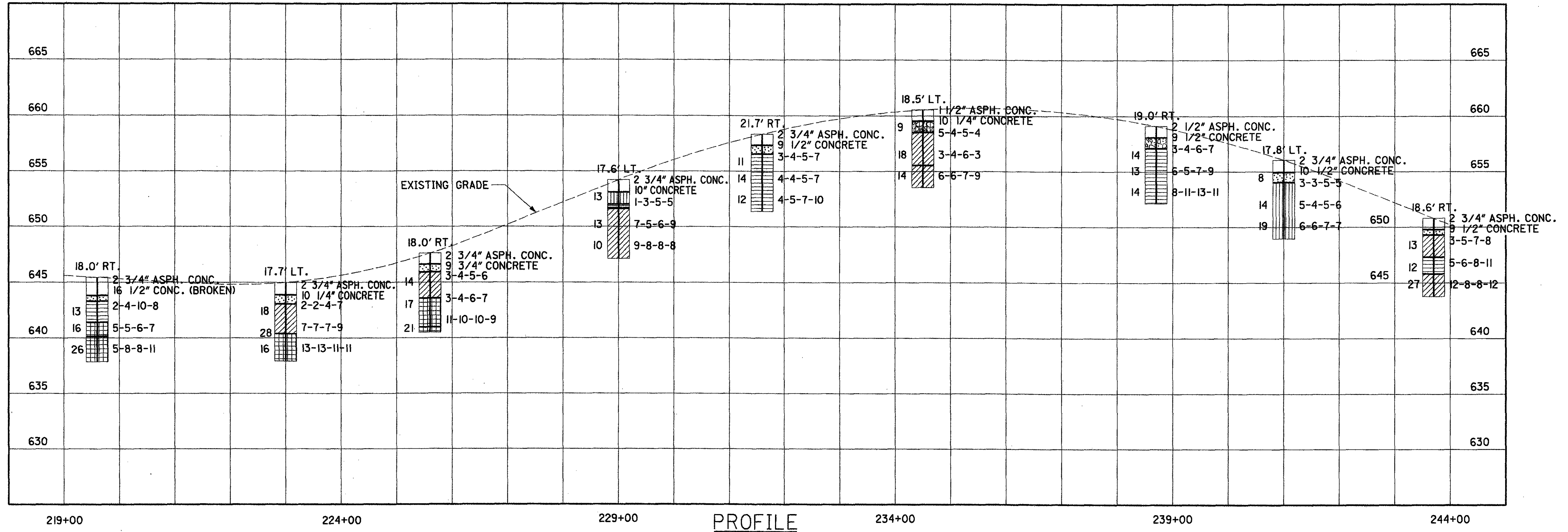
CALCULATED
CAK
CHECKED

PLAN AND PROFILE
STA. 219+00 TO STA. 244+00

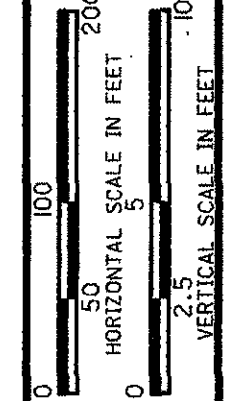
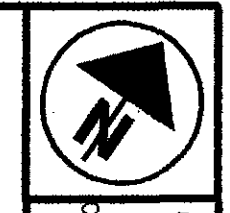
LAK-2-0.00



PLAN



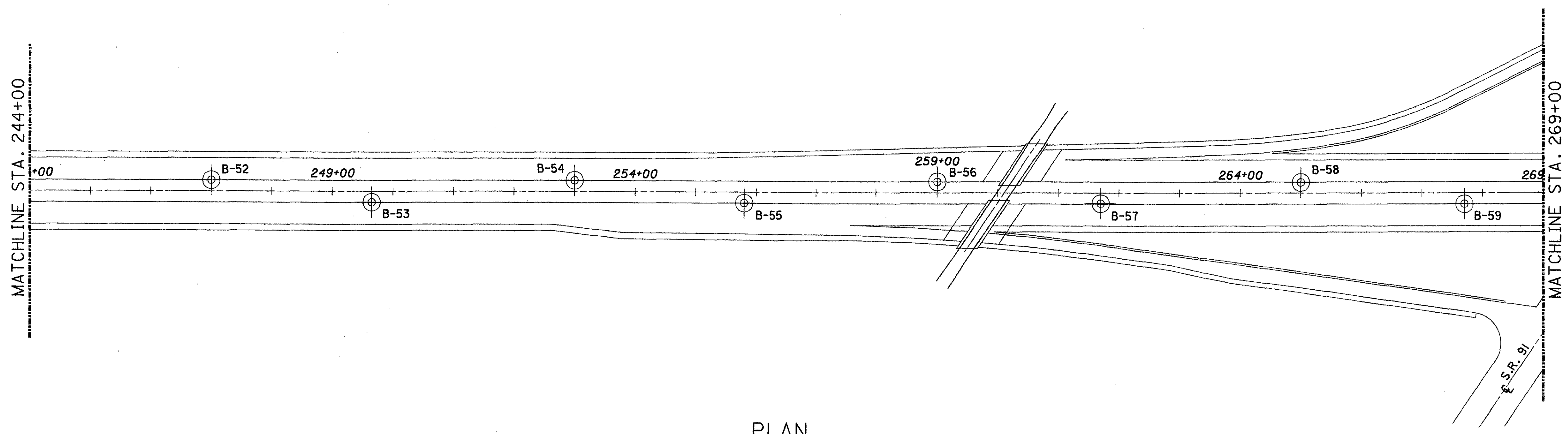
PROFILE



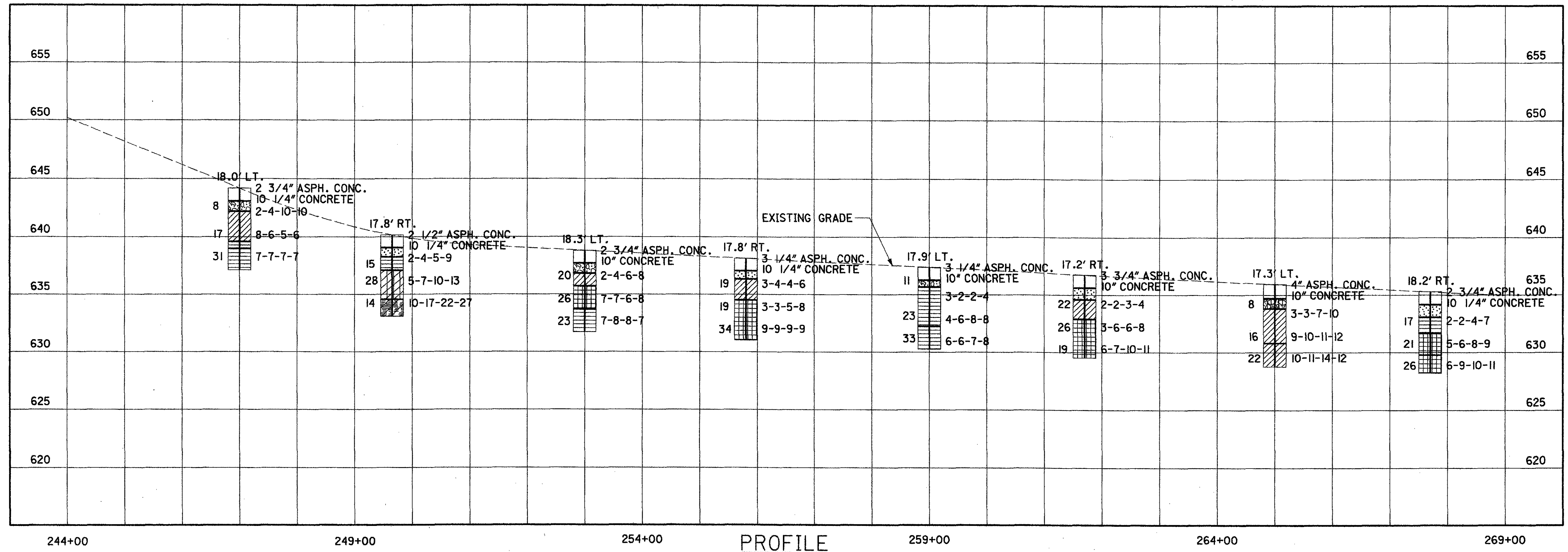
CALCULATED
CAK
CHECKED

PLAN AND PROFILE
STA. 244+00 TO STA. 269+00

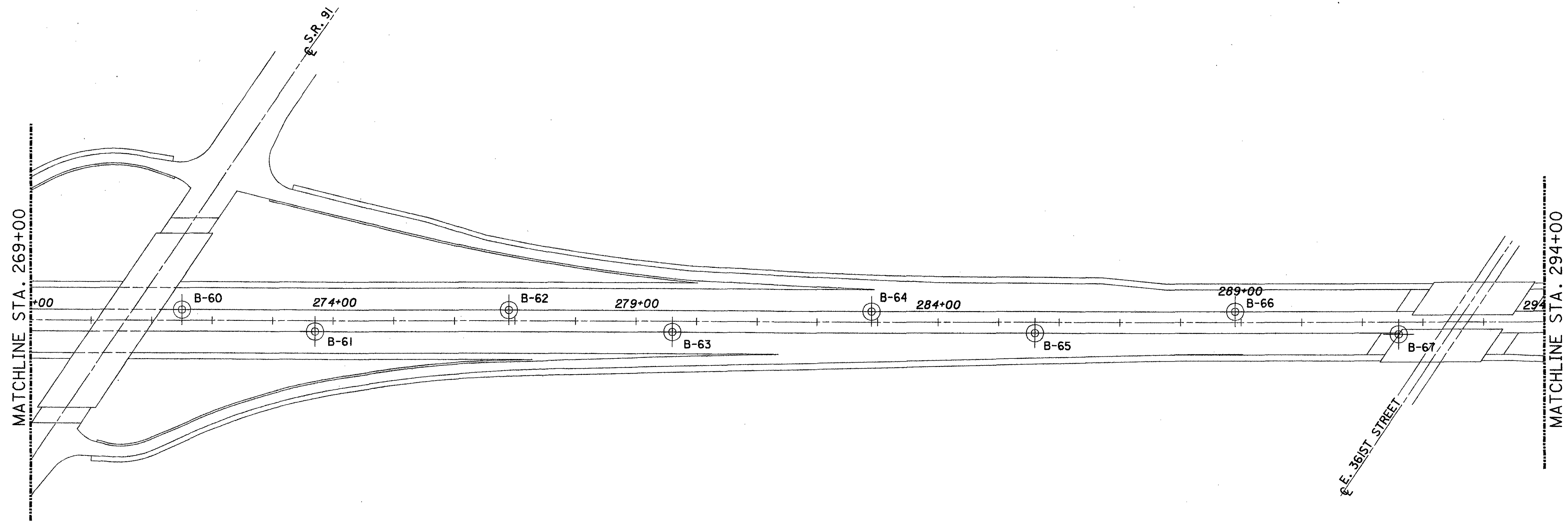
LAK-2-0.00



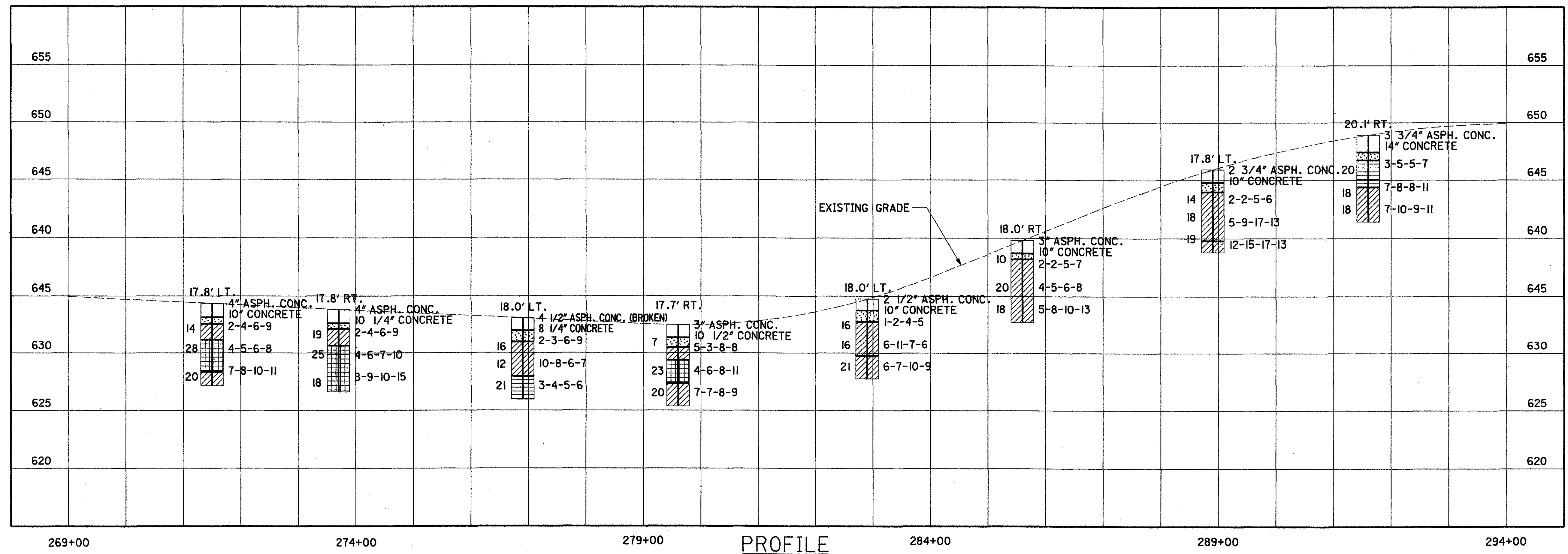
PLAN




PROFILE



PLAN



PROFILE



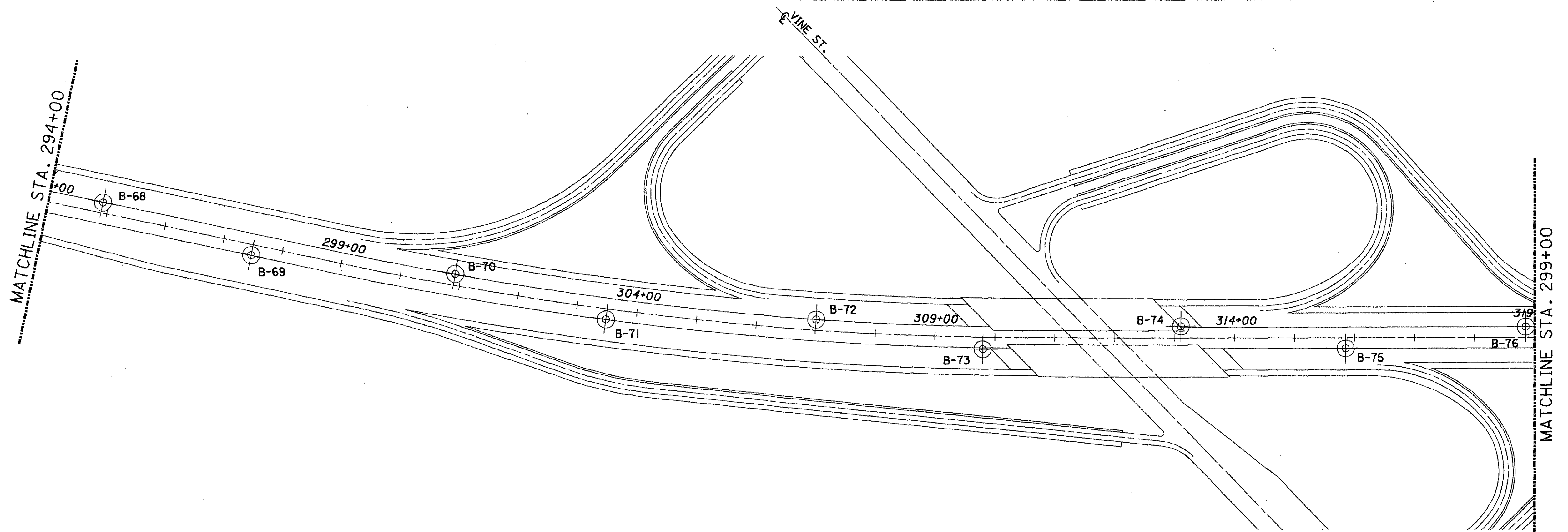
100
0
HORIZONTAL SCALE IN FEET 200
5
0
2.5
VERTICAL SCALE IN FEET 10

CALCULATED
CAK
CHECKED

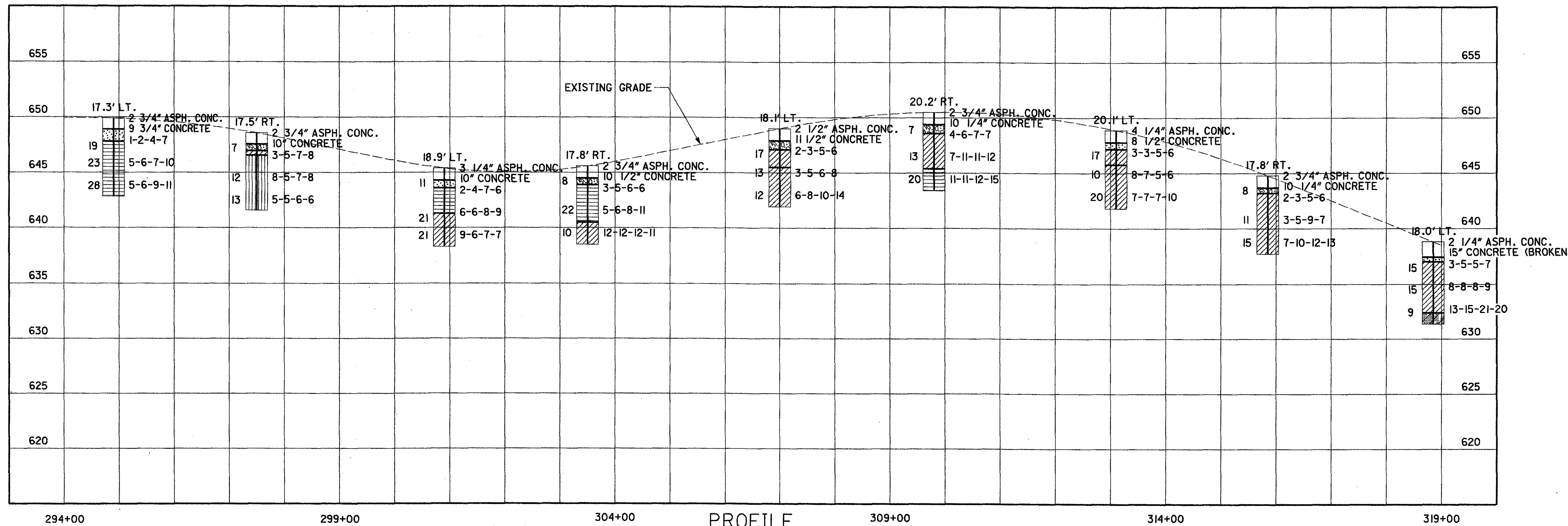
**PLAN AND PROFILE
STA. 269+00 TO STA. 294+00**

LAK-2-0.00

11
13



PLAN



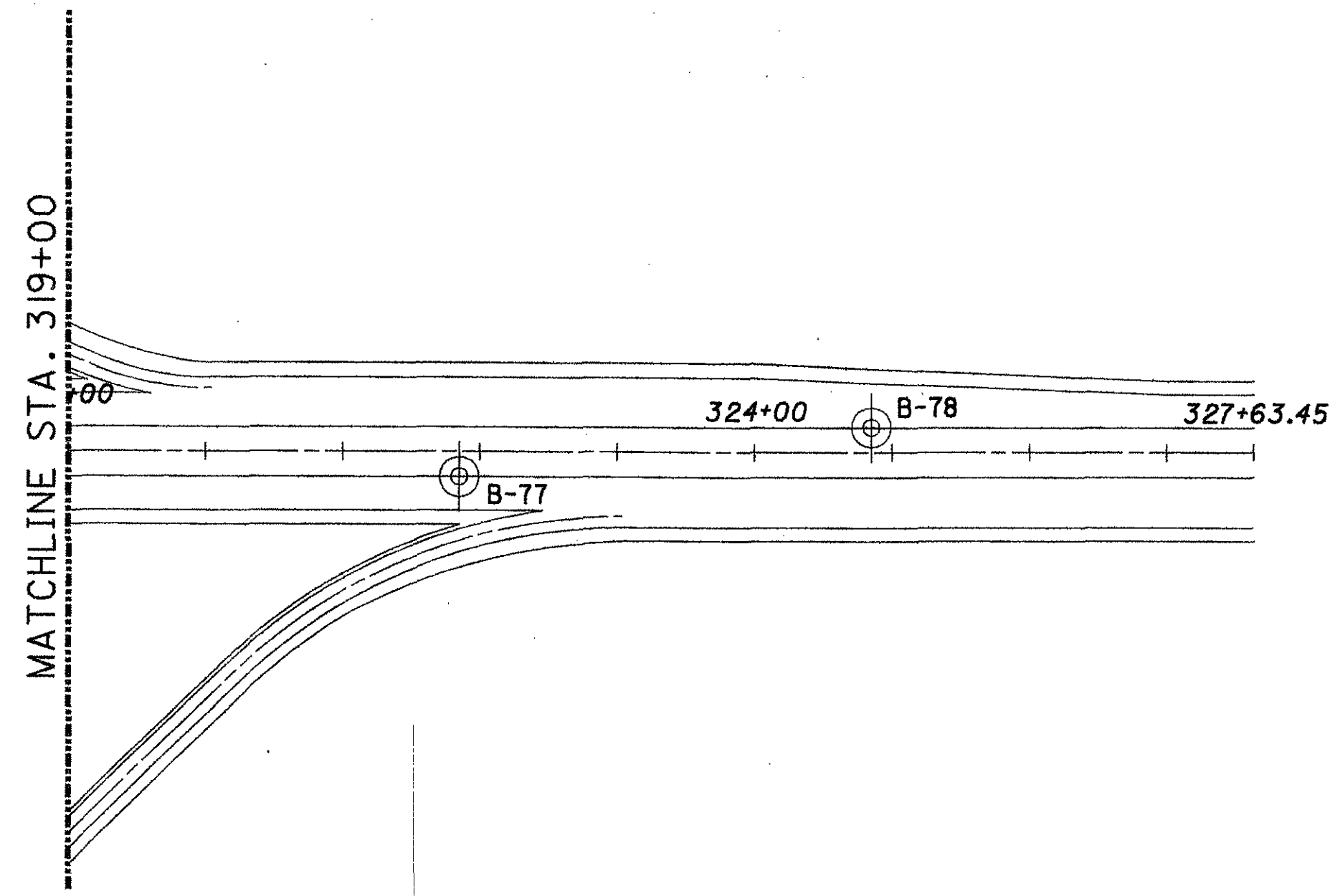
PROFILE

CALCULATED
CAK
CHECKED

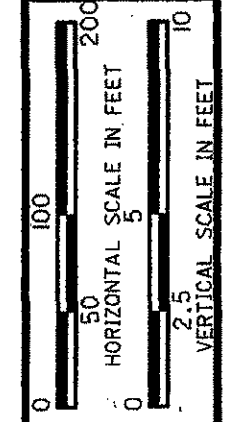
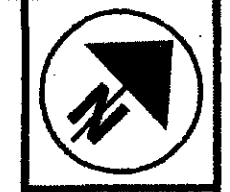
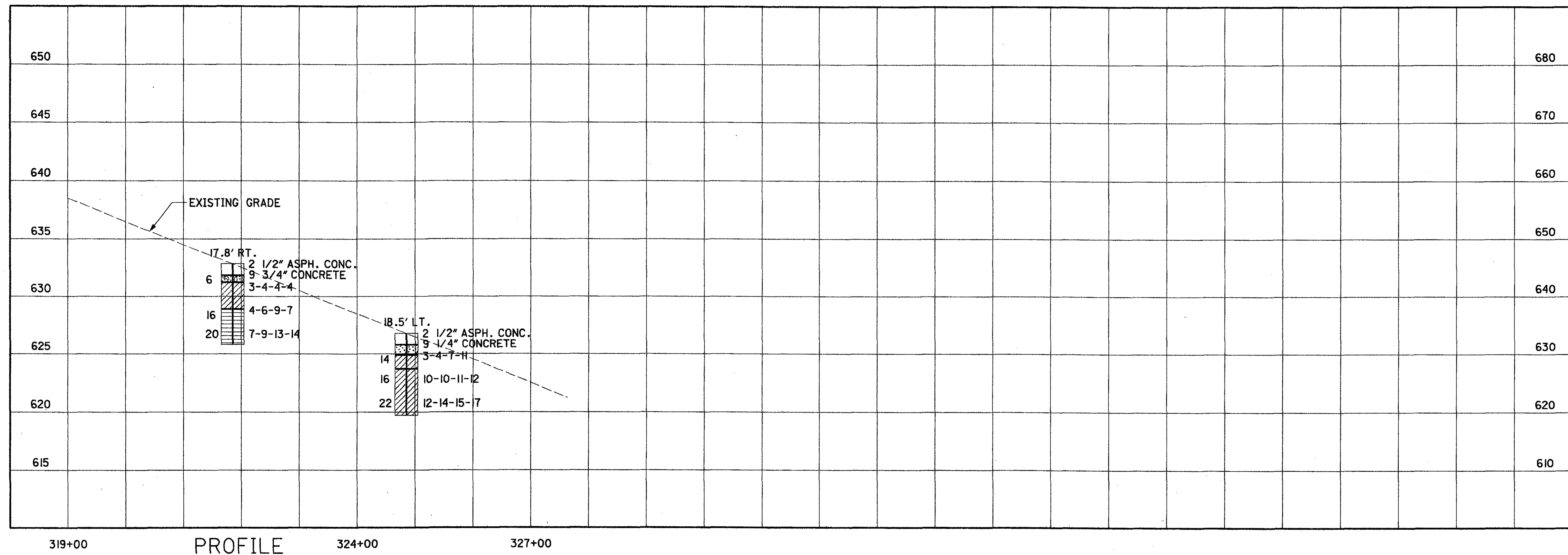
100
50
0
HORIZONTAL SCALE IN FEET
200
0
2.5
0
10
VERTICAL SCALE IN FEET

PLAN AND PROFILE
STA. 294+00 TO STA. 299+00

LAK-2-0.00



PLAN



CALCULATED
CAK
CHECKED

PLAN AND PROFILE
STA. 319+00 TO STA. 327+63.45

LAK-2-0.00