

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LOR-20-12.59

CARLISLE AND EATON TOWNSHIPS
LORAIN COUNTY

PROJECT DESCRIPTION

GENERAL SAFETY UPGRADING WITH 3" OF OVERLAY, PAVEMENT REPAIR, REMOVAL OF EXISTING RAISED CONCRETE MEDIAN AND REPLACEMENT WITH CONCRETE BARRIER, WIDENING RIGHT PAVED SHOULDER AT RAMPS AND REHABILITATION OF SEVEN STRUCTURE WITH THREE STRUCTURES HAVING NEW AND WIDER DECK

PROJECT DESIGNATION

LOR-20-12.62 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ LOR-20-12.59

LIMITED ACCESS

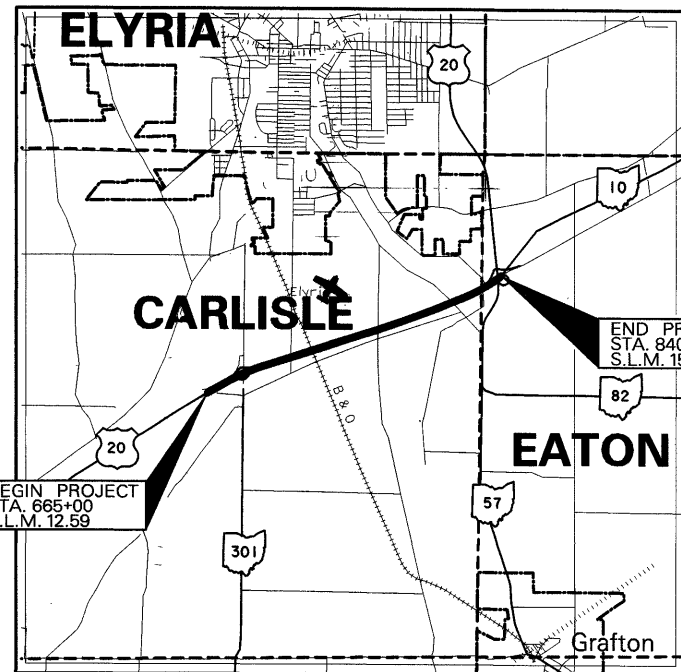
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

1995 SPECIFICATIONS

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

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

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.



USGS QUADRANT NO. N4115-W8200/7.5 GRAFTON, OHIO
LONGITUDE W82° 07' 30" *
LATITUDE N41° 18' 50" *
* LONGITUDE AND LATITUDE AT APPROXIMATE BEGINNING OF PROJECT

PORTION TO BE IMPROVED
STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (1996)	9,600
DESIGN YEAR ADT (2016)	13,200
DESIGN HOURLY VOLUME (2016)	1320
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	15%
DESIGN SPEED	65M.P.H.
LEGAL SPEED	65M.P.H.

DESIGN FUNCTIONAL CLASSIFICATION - FREEWAY

DESIGN EXCEPTION - SEE SHEET 4 .

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



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STANDARD CONSTRUCTION DRAWINGS

NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
BP-2.1	10-28-94	GR-3A	2-5-82	MT-95.40	10-1-92	TC-18.26	5-31-79	TC-51.10	1-20-84	HL-30.31	5-1-87	802	3-23-95
BP-2.2	10-28-94	GR-3.1	5-6-91	MT-95.70	2-23-90	TC-21.10	9-1-92	TC-51.11	9-30-94	HL-40.10	3-31-95	811	3-23-95
BP-2.4	2-21-92	GR-3.2	5-6-91	MT-97.10	4-29-88	TC-21.20	9-1-92	TC-52.10	4-3-79	MC-9.1	10-30-92	815	7-17-95
BP-2.5	2-21-92	GR-3.5	1-31-94	MT-98.12	6-24-93	TC-21.31	3-1-79	TC-52.20	4-3-79	LA-1	6-1-79	820	6-14-95
BP-3.1	2-21-92	GR-4.2	5-6-91	MT-98.13	6-24-93	TC-22.10	9-1-92	TC-61.10	4-5-82	A-1-69	6-12-69	845	7-17-95
BP-5.1	10-28-94	GR-5.1	10-30-92	MT-98.14	6-24-93	TC-22.20	9-1-92	TC-65.10	7-7-95	AS-1-81	9-15-94	849	6-14-95
CB-3A	5-1-79	GR-7.1	10-30-92	MT-98.15	6-24-93	TC-31.21	9-1-92	TC-65.11	7-7-95	EXJ-3-82	8-1-84	910	7-17-95
CB-8	11-10-83	GR-8.1	1-31-94	MT-98.16	6-24-93	TC-32.10	9-1-92	TC-65.12	7-7-95	EXJ-4-87	11-12-93	931	7-17-95
F-2	5-1-76	HW-4A	4-1-80	MT-99.20	4-29-88	TC-32.11	9-1-92	TC-71.10	9-10-91	PCB-91	4-24-92	933	7-17-95
F-3	5-1-76	HW-4B	4-1-80	MT-100.00	2-23-90	TC-35.10	8-29-84	TC-72.20	2-26-82	RB-1-55	2-2-59	942	
F-6	5-1-76	I-3A & B	4-1-80	MT-101.60	7-1-92	TC-41.10	8-29-84	TC-82.10	11-24-93	VPF-1-90	3-24-93	944	12-7-95
GR-1.1	5-6-91	MC-9.2	5-6-91	MT-105.10	7-1-92	TC-41.20	6-21-94	HL-10.11	5-1-87	BR-1	12-15-94	949	6-14-95
GR-1.2	10-30-92	MC-9.3	10-30-92	MT-105.11	7-1-92	TC-41.40	6-18-79	HL-10.12	5-1-87	IRJ-8-95	7-6-95	953	6-14-95
GR-1.3	2-21-92	MT-95.30	10-10-88	PCB-91	4-24-92	TC-41.50	6-21-94	HL-10.13	5-1-87	CS-1-93	6-30-95		
GR-2.1	5-6-91	MT-95.31	10-10-88	TC-7.65	3-1-79	TC-42.10	8-19-77	HL-20.14	5-1-87	SD-1-69	6-12-69		
GR-2.2	10-30-92	MT-95.32	8-25-89	TC-12.30	1-20-84	TC-42.20	3-26-79	HL-30.11	5-1-87	BS-1-93	12-19-94		

SUPPLEMENTAL SPECIFICATIONS

APPROVED *Mary Ellen Hendrich, PE, PS*
DATE 12-13-94 DISTRICT DEPUTY DIRECTOR

APPROVED *John H. King*
DATE 1-13-95 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.
NH-69(135)

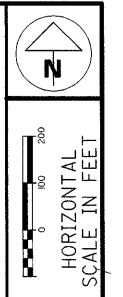
PID NO.
4009

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

LOR-20-12.59

DESK FILE: c:\dgm\lorain\201262\F11e.dgn
 WORKSTATION: jschreff
 DATE: 1/3 DEC 96
 970214 LOR-20-12.59
 351PGS
 04-09-97
 DIST. 03



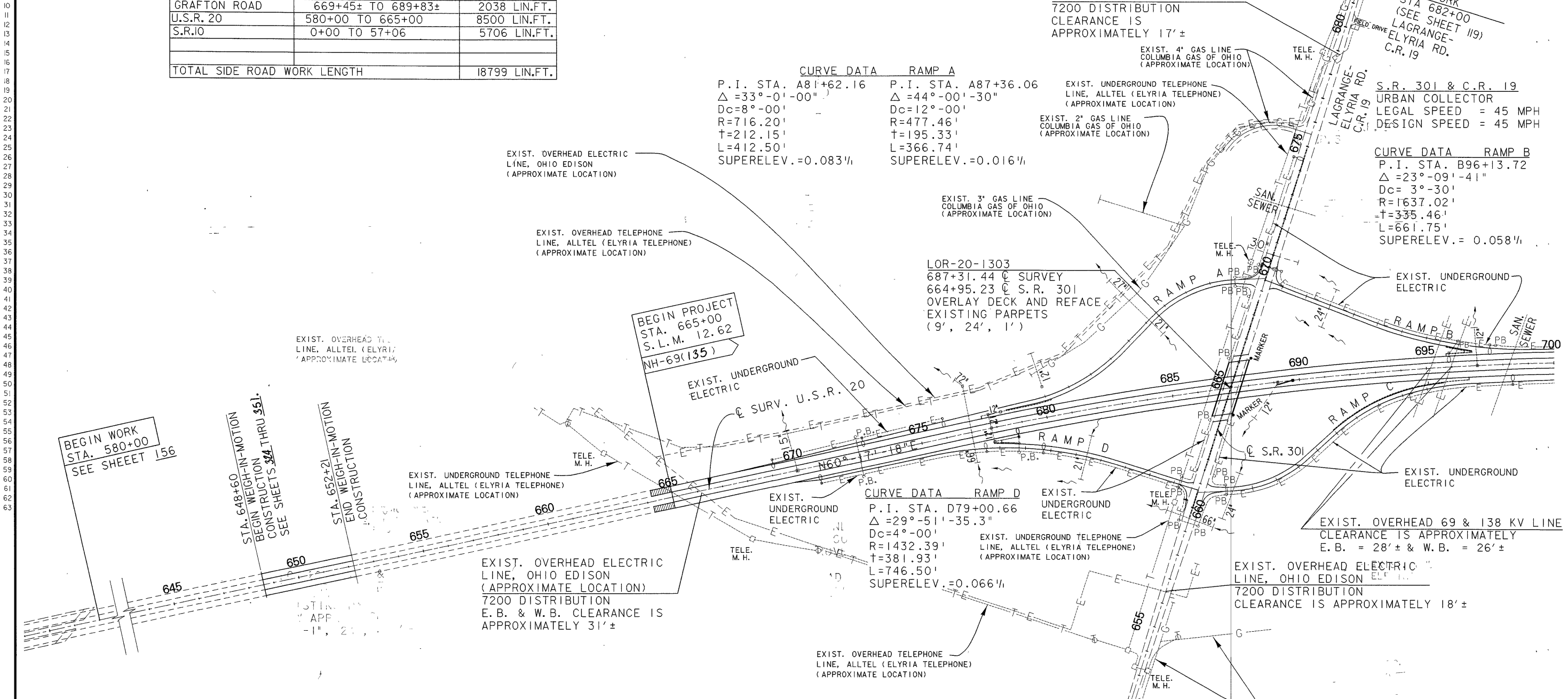
SCHEMATIC PLAN

LOR-20-12.62

ADDITIONAL WORK		
SIDE ROAD	STATION LIMIT	LENGTH
S.R. 301 & C.R. 19	654+50± TO 680+05±	2555 LIN.FT.
GRAFTON ROAD	669+45± TO 689+83±	2038 LIN.FT.
U.S.R. 20	580+00 TO 665+00	8500 LIN.FT.
S.R.10	0+00 TO 57+06	5706 LIN.FT.
TOTAL SIDE ROAD WORK LENGTH		18799 LIN.FT.

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DESIGN FILE: c:\dgn\lor20\schplan.dgn
WORKSTATION: mal/lema DATE: 07 NOV 96



CURVE DATA RAMP A	
P.I. STA. A81+62.16	P.I. STA. A87+36.06
$\Delta = 33^\circ - 0' - 00''$	$\Delta = 44^\circ - 0' - 30''$
Dc=8'-00'	Dc=12'-00'
R=716.20'	R=477.46'
T=212.15'	T=195.33'
L=412.50'	L=366.74'
SUPERELEV.=0.083 1/4	SUPERELEV.=0.016 1/4

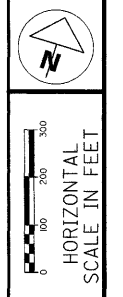
CURVE DATA RAMP B	
P.I. STA. B96+13.72	
$\Delta = 23^\circ - 09' - 41''$	
Dc= 3'-30'	
R=1637.02'	
T=335.46'	
L=661.75'	
SUPERELEV.= 0.058 1/4	

CURVE DATA RAMP D	
P.I. STA. D79+00.66	
$\Delta = 29^\circ - 51' - 35.3''$	
Dc=4'-00'	
R=1432.39'	
T=381.93'	
L=746.50'	
SUPERELEV.=0.066 1/4	

CURVE DATA RAMP C		
P.I. STA. C87+82.23	P.I. STA. C92+86.59	P.I. STA. C95+67.14
$\Delta = 39^\circ - 33' - 45''$	$\Delta = 29^\circ - 30' - 00''$	$\Delta = 8^\circ - 00' - 00''$
Dc=12'-00'	Dc=8'-00'	Dc=4'-00'
R=477.47'	R=716.20'	R=1432.39'
T=171.72'	T=188.36'	T=100.16'
L=329.69'	L=368.75'	L=200.00'
SUPERELEV.= 0.016 1/4	SUPERELEV.=0.083 1/4	SUPERELEV.= 0.016 1/4

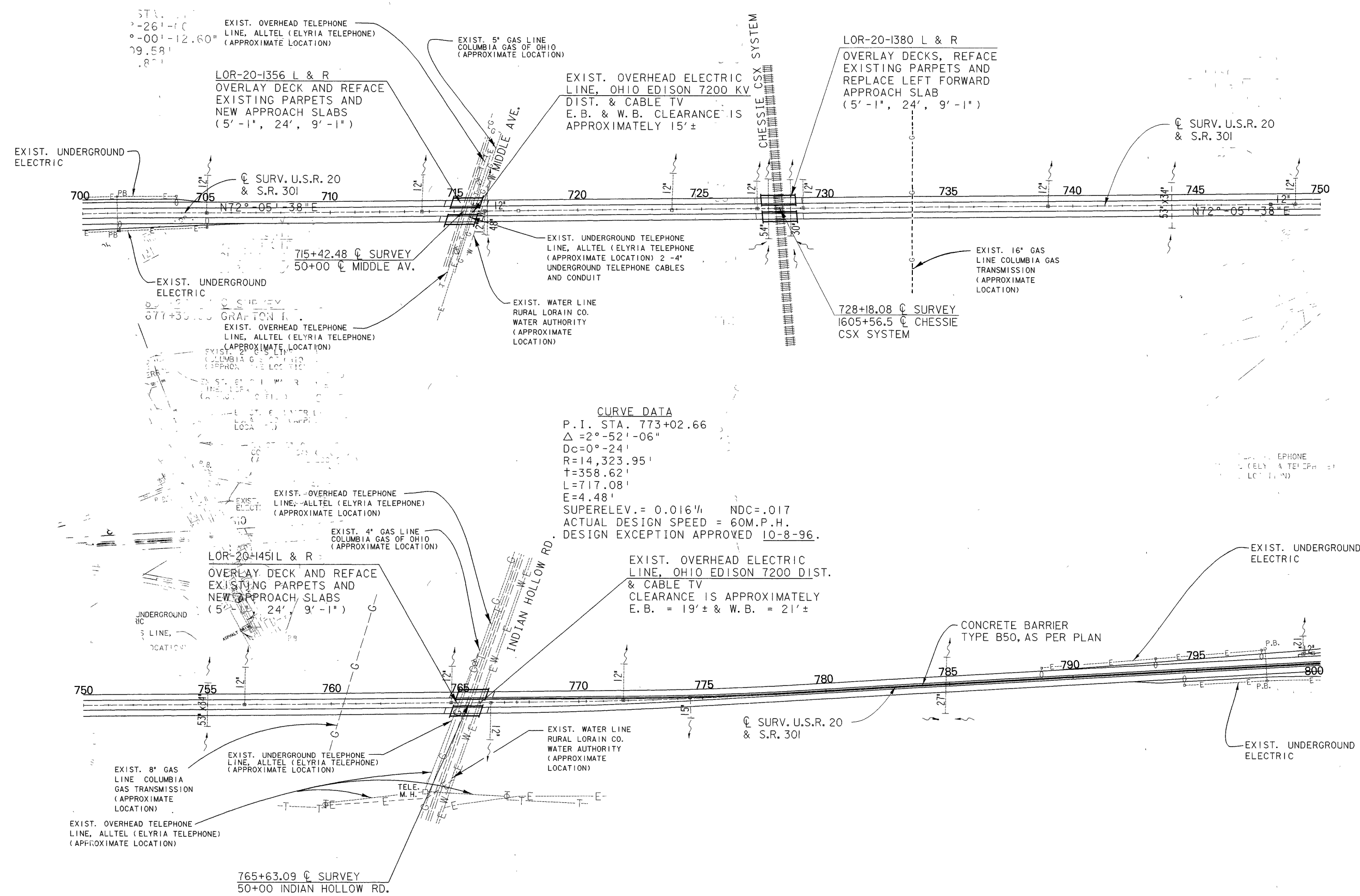
CURVE DATA	
P.I. STA. 689+58.58	
$\Delta = 11^\circ - 48' - 20''$ RT.	
Dc=0'-28'	
R=12,277.67'	
T=1269.36'	
L=2529.72'	
E=65.46'	
SUPERELEV.= 0.016 1/4	

VERTICAL ALIGNMENT DATA U.S.R. 20					
CURVE TYPE	P. V. I. LOCATION	LENGTH	G ₁	G ₂	ACTUAL DESIGN SPEED
CREST	678+00	200	+0.32%	+0.24%	EXCEEDS DESIGN SPEED
SAG	689+00	200	+0.24%	+0.52%	E.D.S.
CREST	701+00	400	+0.52%	+0.24%	E.D.S.
SAG	711+13.90	600	+0.24%	+2.98%	E.D.S.
CREST	726+50	1800	+2.98%	-3.00%	E.D.S.
SAG	740+50	600	-3.00%	-0.24%	E.D.S.
SAG	748+50	300	-0.24%	+0.24%	E.D.S.
SAG	756+50	400	+0.24%	+2.28%	E.D.S.
CREST	765+50	1400	+2.28%	-2.36%	E.D.S.
SAG	775+53	600	-2.36%	0.00%	E.D.S.
SAG	797+75	450	+0.00%	+1.48%	E.D.S.
CREST	806+25	800	+1.48%	-0.76%	E.D.S.
CREST	812+75	500	-0.76%	-2.48%	E.D.S.
SAG	821+80	800	-2.48%	+2.00%	E.D.S.
CREST	828+69	500	+2.00%	+0.42%	E.D.S.
SAG	836+00	200	+0.42%	+0.52%	E.D.S.



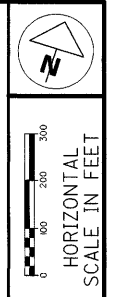
SCHEMATIC PLAN

LOR-20-12.62



DESIGN FILE: c:\dgn\lor20\schplan.dgn
 WORKSTATION: mal/eman DATE: 07 NOV 96

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SCHEMATIC PLAN

LOR-20-12.62

DESIGN FILE: c:\dgn\lor20\schplan.dgn
WORKSTATION: malleman DATE: 07 NOV 96

P.I. STA. 815+01.69
 $\Delta = 7^{\circ}-26'-00''$
 $Dc = 1^{\circ}-00'-12.60''$
 $R = 5709.58'$
 $T = 370.89'$
 $L = 740.74'$
 $E = 12.03'$
 SUPERELEV. = 0.032 1/2
 MATCHES DESIGN SPEED

P.I. STA. 828+69.44
 $\Delta = 3^{\circ}-55'-00''$
 $Dc = 0^{\circ}-45'-07.08''$
 $R = 7619.44'$
 $T = 260.53'$
 $L = 520.86'$
 $E = 4.45'$
 SUPERELEV. = 0.016 1/2
 ACTUAL DESIGN SPEED = 45 MPH
 DESIGN EXCEPTION APPROVED 10-8-96.

U.S.R. 20 CURVE DATA

P.I. STA. 837+16.83
 $\Delta = 8^{\circ}-48'-40''$ LT.
 $Dc = 0^{\circ}-45'-07.08''$
 $R = 7619.44'$
 $T = 587.06'$
 $L = 1171.81'$
 $E = 22.58'$
 SUPERELEV. = 0.016 1/2
 ACTUAL DESIGN SPEED = 45 MPH
 DESIGN EXCEPTION APPROVED 10-8-96.

CURVE DATA W.B.L

P.I. STA. 836+36.95
 $\Delta = 8^{\circ}-48'-40''$
 $Dc = 0^{\circ}-52'-13.27''$
 $R = 6583.05'$
 $T = 507.18'$
 $L = 1012.36'$
 SUPERELEVATION = 0.016 1/2
 NDC = .029
 ACTUAL DESIGN SPEED = 44 MPH
 DESIGN EXCEPTION APPROVED 10-8-96.

CURVE DATA RAMP N.W.

P.I. STA. N.E. 12+85.69
 $\Delta = 18^{\circ}-01'-14''$
 $Dc = 2^{\circ}-30'$
 $R = 2291.83'$
 $T = 363.41'$
 $L = 720.82'$
 SUPERELEV. = 0.041 1/2

CURVE DATA RAMP E

P.I. STA. E31+77.57 P.I. STA. E34+76.21
 $\Delta = 8^{\circ}-00'-00''$ $\Delta = 31^{\circ}-01'-35.61''$
 $Dc = 4^{\circ}-00'$ $Dc = 8^{\circ}-00'$
 $R = 1432.40'$ $R = 716.20'$
 $T = 100.16'$ $T = 198.80'$
 $L = 200.00'$ $L = 387.83'$
 SUPERELEV. = 0.016 1/2 SUPERELEV. = 0.083 1/2

CURVE DATA RAMP N.E.
 P.I. STA. N.E. 17.18.61
 $\Delta = 20^{\circ}-59'-14.40''$
 $Dc = 3^{\circ}-00'$
 $R = 1909.86'$
 $T = 353.75'$
 $L = 699.58'$
 SUPERELEV. = 0.049 1/2

**BRIDGE LOR-10-0001 BL +
 BRIDGE LOR-20-1587 R**
 NEW AND WIDER CONCRETE
 DECKS, NEW SAFETY SHAPE
 PARAPETS AND NEW FULL WIDTH
 APPROACH SLABS
 (4', 24', 10' LT.)
 (4', 36', 10' RT.)

BRIDGE LOR-20-1533 L & R
 NEW CONCRETE DECKS, WIDER
 RIGHT STRUCTURE AND NEW
 APPROACH SLABS
 (6.75'-24'-10' LT.)
 (6.75'-24'-10' RT.)

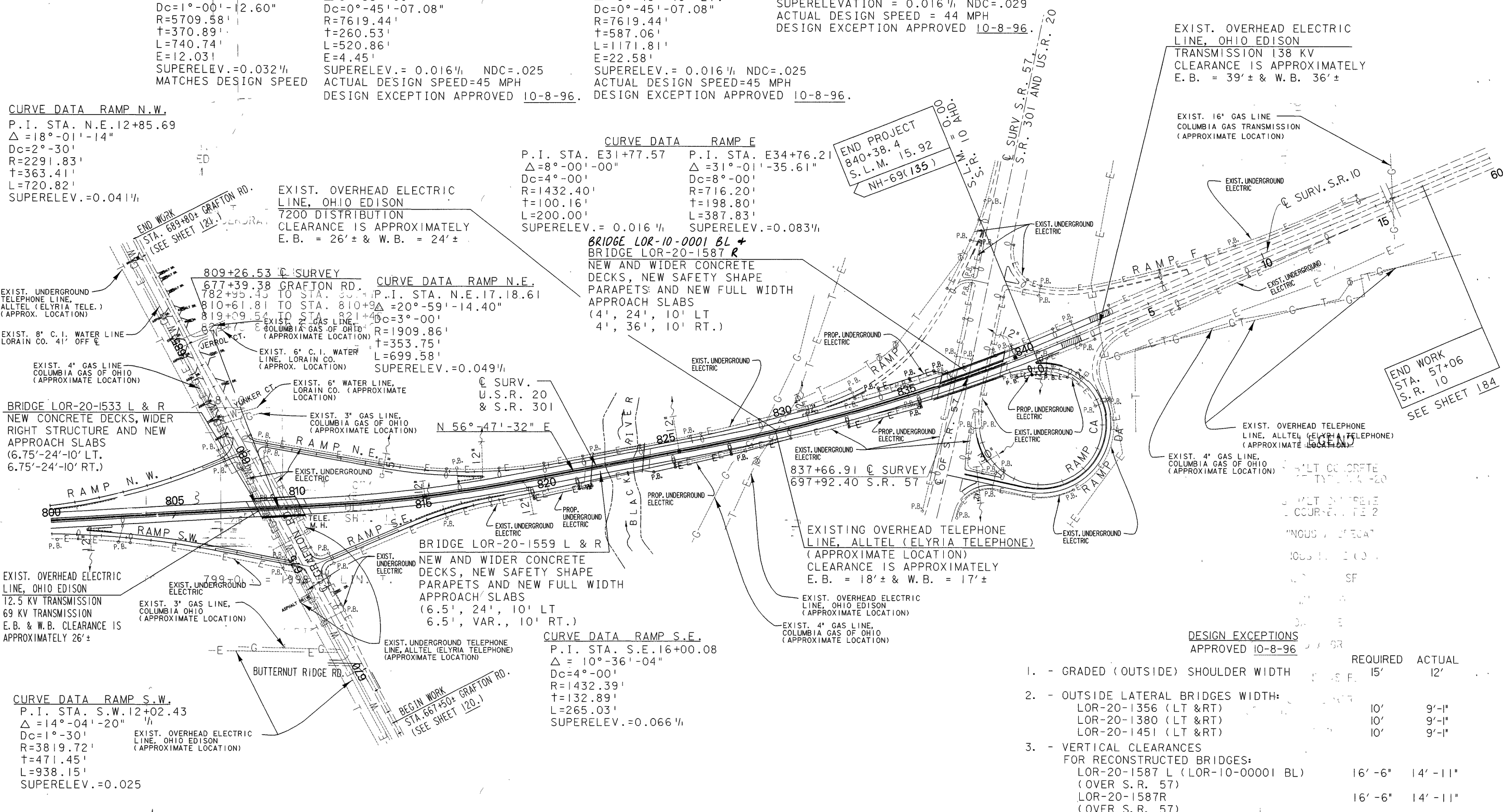
BRIDGE LOR-20-1559 L & R
 NEW AND WIDER CONCRETE
 DECKS, NEW SAFETY SHAPE
 PARAPETS AND NEW FULL WIDTH
 APPROACH SLABS
 (6.5', 24', 10' LT.)
 (6.5', VAR., 10' RT.)

CURVE DATA RAMP S.W.
 P.I. STA. S.W. 12+02.43
 $\Delta = 14^{\circ}-04'-20''$
 $Dc = 1^{\circ}-30'$
 $R = 3819.72'$
 $T = 471.45'$
 $L = 938.15'$
 SUPERELEV. = 0.025

CURVE DATA RAMP S.E.

P.I. STA. S.E. 16+00.08
 $\Delta = 10^{\circ}-36'-04''$
 $Dc = 4^{\circ}-00'$
 $R = 1432.39'$
 $T = 132.89'$
 $L = 265.03'$
 SUPERELEV. = 0.066 1/2

GRAFTON ROAD
 URBAN MINOR ARTERIAL
 LEGAL SPEED = 40 MPH
 DESIGN SPEED = 40 MPH



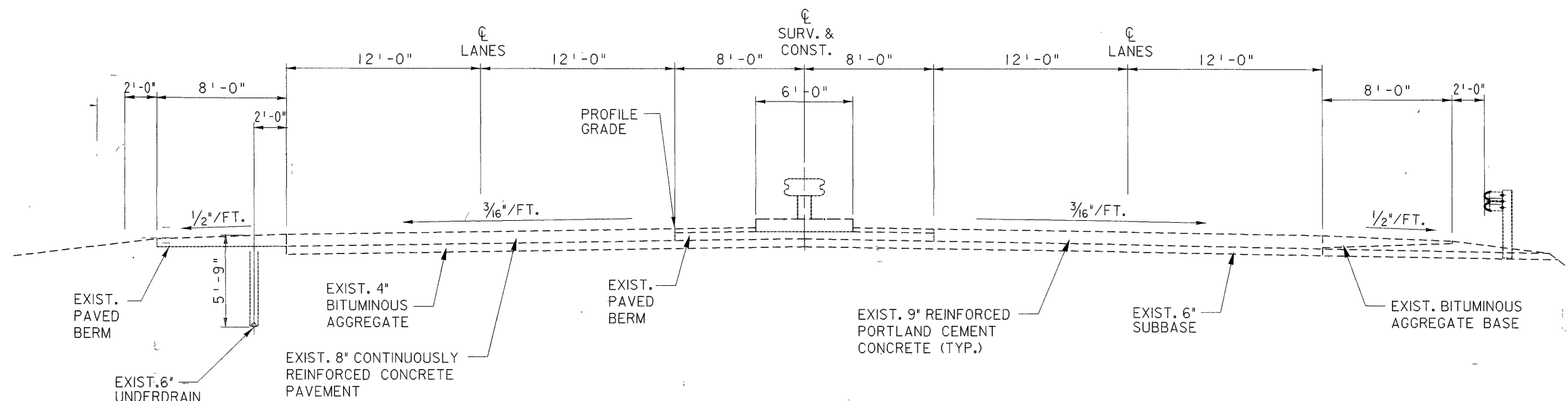
END PROJECT
 STA. 840+38.4
 S.L.M. 15.92
 NH-69(135)

END WORK
 STA. 57+06
 S.R. 10
 SEE SHEET 184

**DESIGN EXCEPTIONS
 APPROVED 10-8-96**

	REQUIRED	ACTUAL
1. - GRADED (OUTSIDE) SHOULDER WIDTH	15'	12'
2. - OUTSIDE LATERAL BRIDGES WIDTH:		
LOR-20-1356 (LT & RT)	10'	9'-1"
LOR-20-1380 (LT & RT)	10'	9'-1"
LOR-20-1451 (LT & RT)	10'	9'-1"
3. - VERTICAL CLEARANCES FOR RECONSTRUCTED BRIDGES:		
LOR-20-1587 L (LOR-10-00001 BL) (OVER S.R. 57)	16'-6"	14'-11"
LOR-20-1587R (OVER S.R. 57)	16'-6"	14'-11"
4. - SUPERELEVATION RATE - AS SHOWN ON SCHEMATIC PLAN		
5. - HORIZONTAL CLEARANCE: (UNDER LOR-20-1303)	12'	10'

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EXIT NORMAL SECTION W/CONCRETE MEDIAN

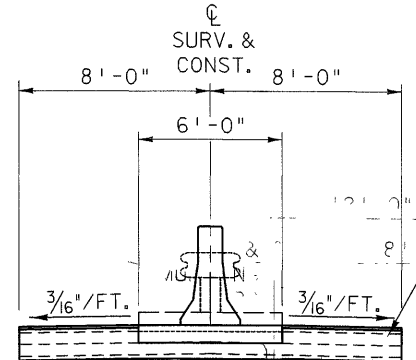
SCHEDULE OF STATIONING

STA. 782+05.451 TO STA. 807+73.50	= 2478.05 LIN.FT.
STA. 810+39.41 TO STA. 821+74.30	= 1134.89 LIN.FT.
STA. 824+36.96 TO STA. 836+07.75	= 1170.79 LIN.FT.
STA. 807+73.5 TO STA. 808+05.00	= 31.50 LIN.FT.
STA. 810+30.31 TO STA. 810+61.81	= 31.50 LIN.FT.
STA. 821+48.14 TO STA. 821+79.64	= 31.50 LIN.FT.
STA. 824+42.34 TO STA. 824+73.84	= 31.50 LIN.FT.
TOTAL	= 2834.8 LIN.FT.

BRIDGE & APPROACH SLAB LIMITS:

STA. 807+73.5 TO STA. 808+05.00	= 31.50 LIN.FT.
STA. 810+30.31 TO STA. 810+61.81	= 31.50 LIN.FT.
STA. 821+48.14 TO STA. 821+79.64	= 31.50 LIN.FT.
STA. 824+42.34 TO STA. 824+73.84	= 31.50 LIN.FT.
TOTAL	= 126.0 LIN.FT.

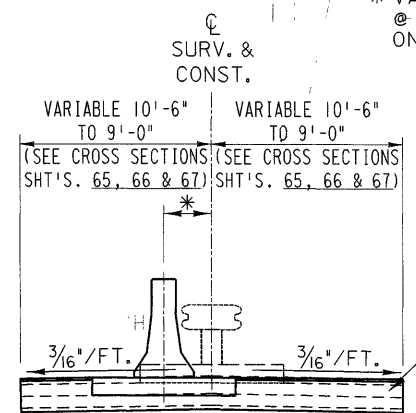
FOR AREAS LISTED BELOW SAME TYPICAL SECTION AS ② BUT EXISTING 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT CHANGES TO 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT



TEMPORARY PAVEMENT, CLASS A TO REMAIN IN PLACE AS PAVED SHOULDER (SEE GENERAL NOTE ON SHT. 143)

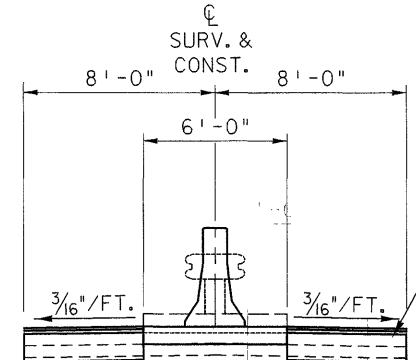
STA. 779+01.43± TO STA. 799+00± = 1998.57 LIN.FT.

* VARIES FROM 2'-3" @ STA. 775+63 TO 0" @ STA. 779+01.43 (SEE CROSS SECTIONS ON SHT'S. 65, 66 & 67)



TEMPORARY PAVEMENT, CLASS A TO REMAIN IN PLACE AS PAVED SHOULDER (SEE GENERAL NOTE ON SHT. 143)

STA. 775+63± TO STA. 779+01.43 = 338.43 LIN.FT.



TEMPORARY PAVEMENT, CLASS A TO REMAIN IN PLACE AS PAVED SHOULDER (SEE GENERAL NOTE ON SHT. 143)

STA. 799+00 TO STA. 808+13.65 = 913.65 LIN.FT.
 STA. 810+39.41 TO STA. 821+74.30 = 1134.89 LIN.FT.
 STA. 824+36.96 TO STA. 836+07.75 = 1170.79 LIN.FT.

BASE CONFIGURATION FOR CONCRETE BARRIER, TYPE B50, AS PER PLAN "A"

STA. 766+54± LT. TO STA. 762+00 ± 6" CONSTANT BASE WIDTH RIGHT SIDE OF BARRIER AND TRANSITIONING BASE WIDTH FROM 7 1/2" TO 1'-9" AT LEFT SIDE

STA. 767+00 ± TO 772+00 ± 6" CONSTANT BASE WIDTH @ RIGHT SIDE OF BARRIER AND 1'-9" @ LEFT SIDE

772+00 TO 821+84 ± CONSTANT 1'-9" BASE WIDTH @ RIGHT AND LEFT SIDE OF BARRIER

821+84 ± TO 822+00 ± TRANSITIONING OF BASE WIDTH FROM 1'-9" TO 1'3" @ BOTH SIDES OF BARRIER

824+12 ± TO 835+12 ± 1'-9" BASE WIDTH ON BOTH SIDES OF BARRIER

835+12 ± TO 835+49 ± TRANSITIONING BASE WIDTH @ RIGHT SIDE OF BARRIER FROM 1'-9" TO 6". CONSTANT 1'-9" BASE WIDTH @ LEFT SIDE

835+49± TO 836+18± 6" CONSTANT BASE WIDTH @ RIGHT AND LEFT SIDE OF BARRIER

LEGEND

- ① 446 - 1/4" ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20
- ② 446 - 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- ③ 301 - 3" BITUMINOUS AGGREGATE BASE, AC-20
- ④ 408 - BITUMINOUS PRIME COAT @ 0.4 GAL./S.Y.
- ⑤ 304 - 4" AGGREGATE BASE
- ⑥ HOT LONGITUDINAL JOINT
- ⑦ 407 - TACK COAT (SEE GENERAL NOTE)
- ⑧ 617 - COMPACTED AGGREGATE, TYPE A AND WATER
- ⑨ 203 - EMBANKMENT, AS PER PLAN
- ⑩ 605 - SHALLOW UNDERDRAIN, AS PER PLAN AT LOCATIONS LISTED IN TABLE, SHEET 88
- ⑪ 622 - CONCRETE BARRIER, TYPE B50, AS PER PLAN
- ⑫ 301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
- ⑬ 310 - SUBBASE, TYPE 1, GRADING A
- ⑭ 203 - SUBGRADE COMPACTION
- ⑮ 605 - 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN AT LOCATION LISTED IN TABLE, SHEETS 89 & 90
- ⑯ 606 - GUARDRAIL, TYPE 5
- ⑰ 605 - AGGREGATE DRAIN AS NOTED ON SHEETS 88 & 80D

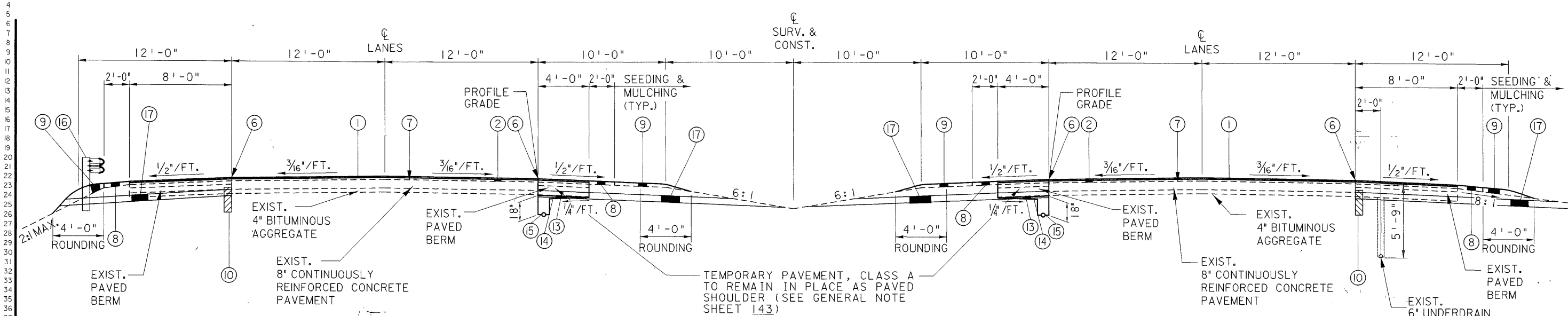
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 WORKSTATION: mal/aman DATE: 08 NOV 96

TYPICAL SECTIONS

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1 NORMAL SECTION W/DEPRESSED MEDIAN - RESURFACING

SCHEDULE OF STATIONING

STA. 665+00	TO STA. 726+90.27	= 4926.01 LIN.FT.
STA. 716+59.59	TO STA. 726+90.27	= 1030.68 LIN.FT.
STA. 729+44.28	TO STA. 764+46.29	= 3502.01 LIN.FT.
TOTAL		= 9458.70 LIN.FT.

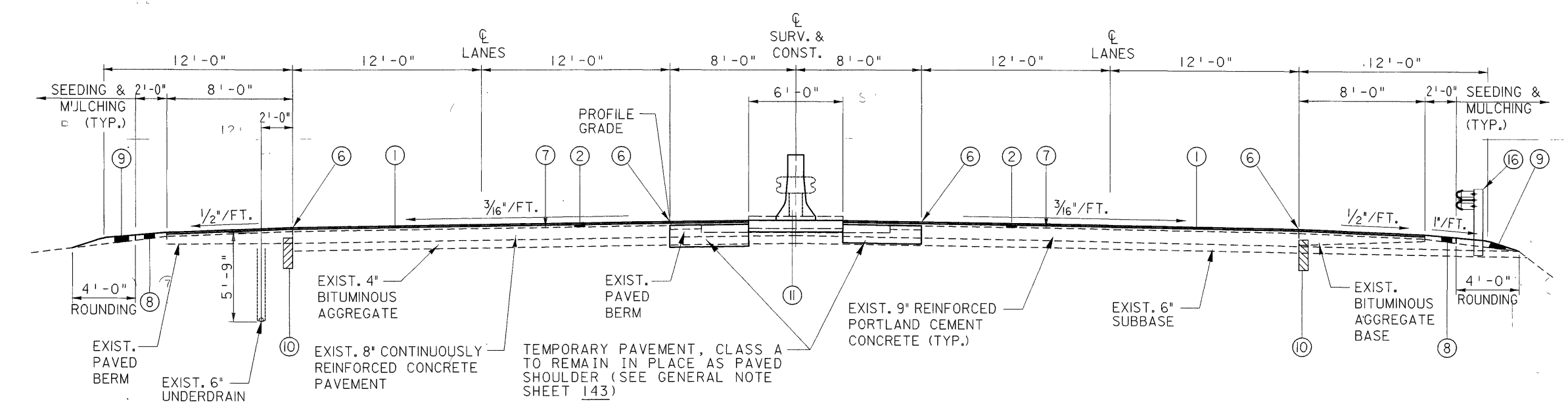
NOTE:
SEE SHEET 5 FOR LEGEND

BRIDGE & APPROACH SLAB LIMITS:

STA. 714+57.51	TO STA. 716+28.09	= 170.58 LIN.FT.
STA. 727+21.77	TO STA. 729+12.78	= 191.01 LIN.FT.
STA. 764+77.79	TO STA. 766+48.38	= 170.59 LIN.FT.
TOTAL		= 532.18 LIN.FT.

FOR AREAS LISTED BELOW SAME TYPICAL SECTION AS ① BUT EXISTING 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT CHANGES TO 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

STA. 714+26.01	TO STA. 714+57.51	= 31.50 LIN.FT.
STA. 716+28.09	TO STA. 716+59.59	= 31.50 LIN.FT.
STA. 726+90.27	TO STA. 727+21.77	= 31.50 LIN.FT.
STA. 729+12.78	TO STA. 729+44.28	= 31.50 LIN.FT.
STA. 764+46.29	TO STA. 764+77.79	= 31.50 LIN.FT.
STA. 766+48.38	TO STA. 766+79.88	= 31.50 LIN.FT.
TOTAL		= 189 LIN.FT.



2 NORMAL SECTION W/CONCRETE MEDIAN - RESURFACING

SCHEDULE OF STATIONING

STA. 782+95.45	TO STA. 807+73.50	= 2478.05 LIN.FT.
STA. 810+61.81	TO STA. 810+92.8	= 30.99 LIN.FT.
STA. 819+09.54	TO STA. 821+48.14	= 238.60 LIN.FT.
STA. 824+73.84	TO STA. 825+61.00	= 87.16 LIN.FT.
TOTAL		= 2834.8 LIN.FT.

BRIDGE & APPROACH SLAB LIMITS:

STA. 808+13.65	TO STA. 810+39.41	= 225.76 LIN.FT.
STA. 821+74.30	TO STA. 824+36.96	= 262.66 LIN.FT.
TOTAL		= 488.42 LIN.FT.

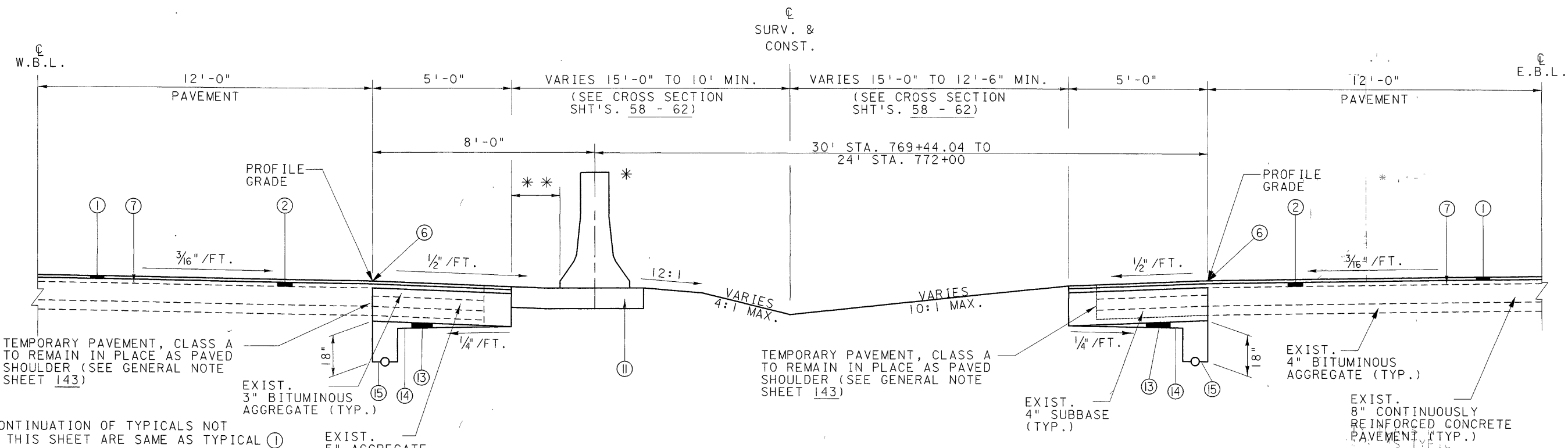
FOR AREAS LISTED BELOW SAME TYPICAL SECTION AS ② BUT EXISTING 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT CHANGES TO 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

E.B.L. & W.B.L. STA. 782+95.45	TO STA. 783+26.95	= 31.50 LIN.FT.
W.B.L. STA. 807+73.5	TO STA. 808+05.00	= 31.50 LIN.FT.
W.B.L. STA. 810+30.31	TO STA. 810+61.81	= 31.50 LIN.FT.
W.B.L. STA. 821+48.14	TO STA. 821+79.64	= 31.50 LIN.FT.
W.B.L. STA. 824+42.34	TO STA. 824+73.84	= 31.50 LIN.FT.
TOTAL		= 157.5 LIN.FT.

TYPICAL SECTIONS

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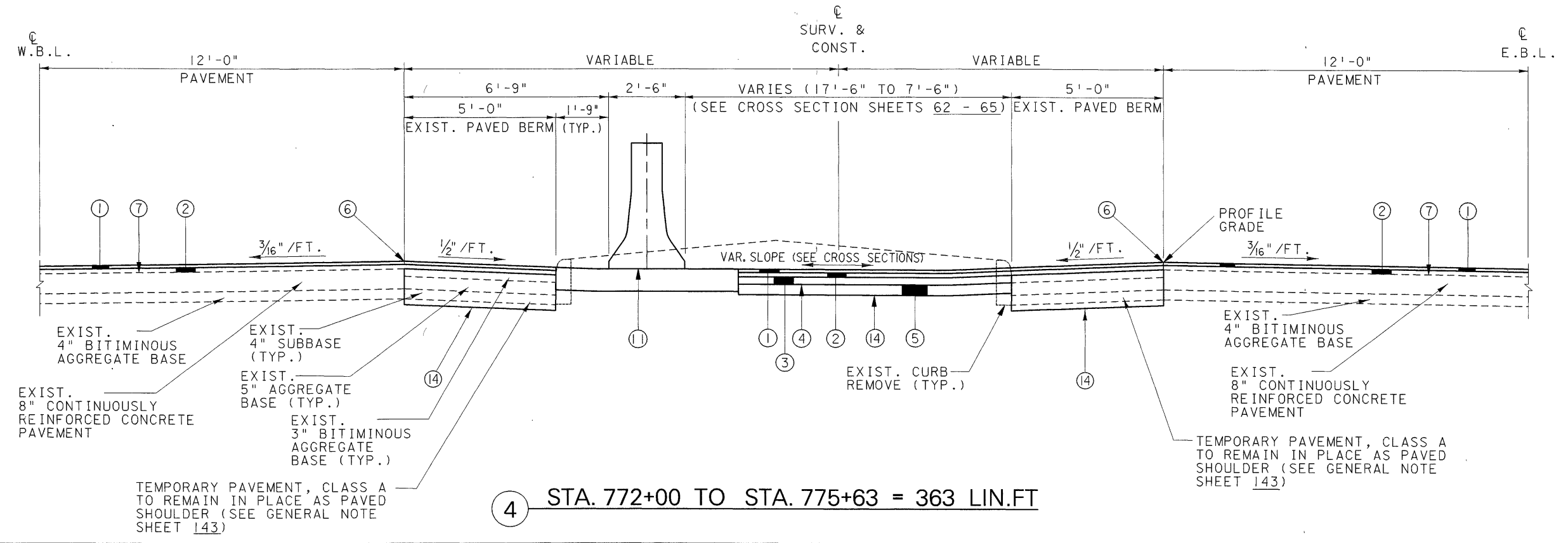
NOTE: CONTINUATION OF TYPICALS NOT SHOWN IN THIS SHEET ARE SAME AS TYPICAL ①

* TYPE B50 CONCRETE BARRIER, AS PER PLAN TO BEGIN @ STA. 766+29.64

** VARIES SEE SHEET 85A FOR DETAILS

SEE SHEET 5 FOR LEGEND

③ STA. 766+25 TO STA. 772+00± = 575.00 LIN.FT.



EXIST. 4" BITUMINOUS AGGREGATE BASE

EXIST. 4" SUBBASE (TYP.)

EXIST. 5" AGGREGATE BASE (TYP.)

EXIST. 3" BITUMINOUS AGGREGATE BASE (TYP.)

EXIST. 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

EXIST. 4" BITUMINOUS AGGREGATE BASE

EXIST. 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

EXIST. CURB REMOVE (TYP.)

TEMPORARY PAVEMENT, CLASS A TO REMAIN IN PLACE AS PAVED SHOULDER (SEE GENERAL NOTE SHEET 143)

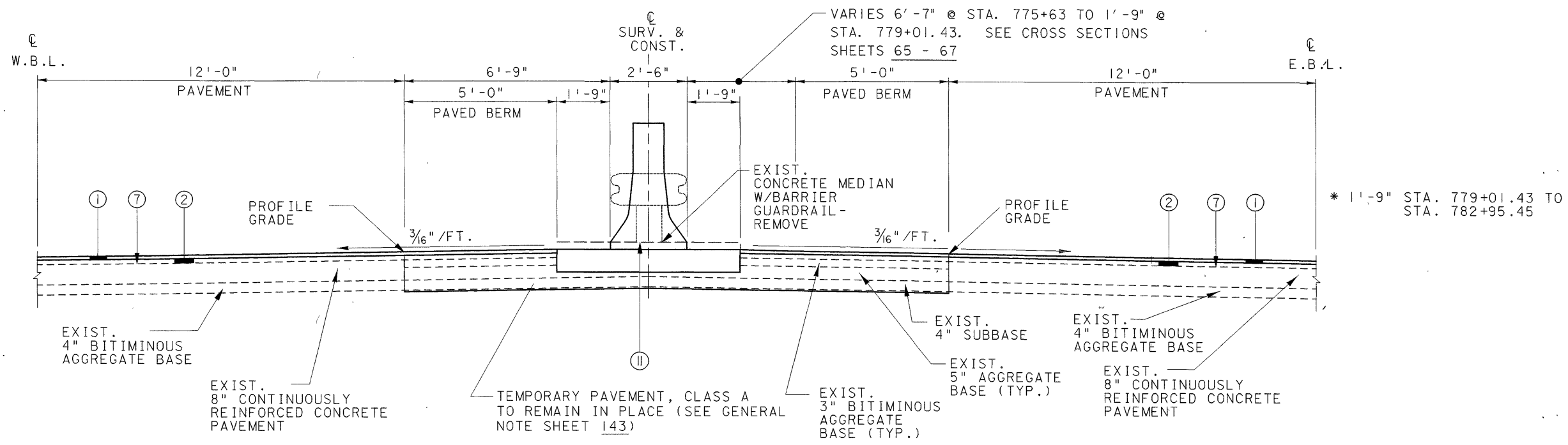
④ STA. 772+00 TO STA. 775+63 = 363 LIN.FT.

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WORKSTATION: mal/leman DATE: 12 DEC 96

TYPICAL SECTIONS

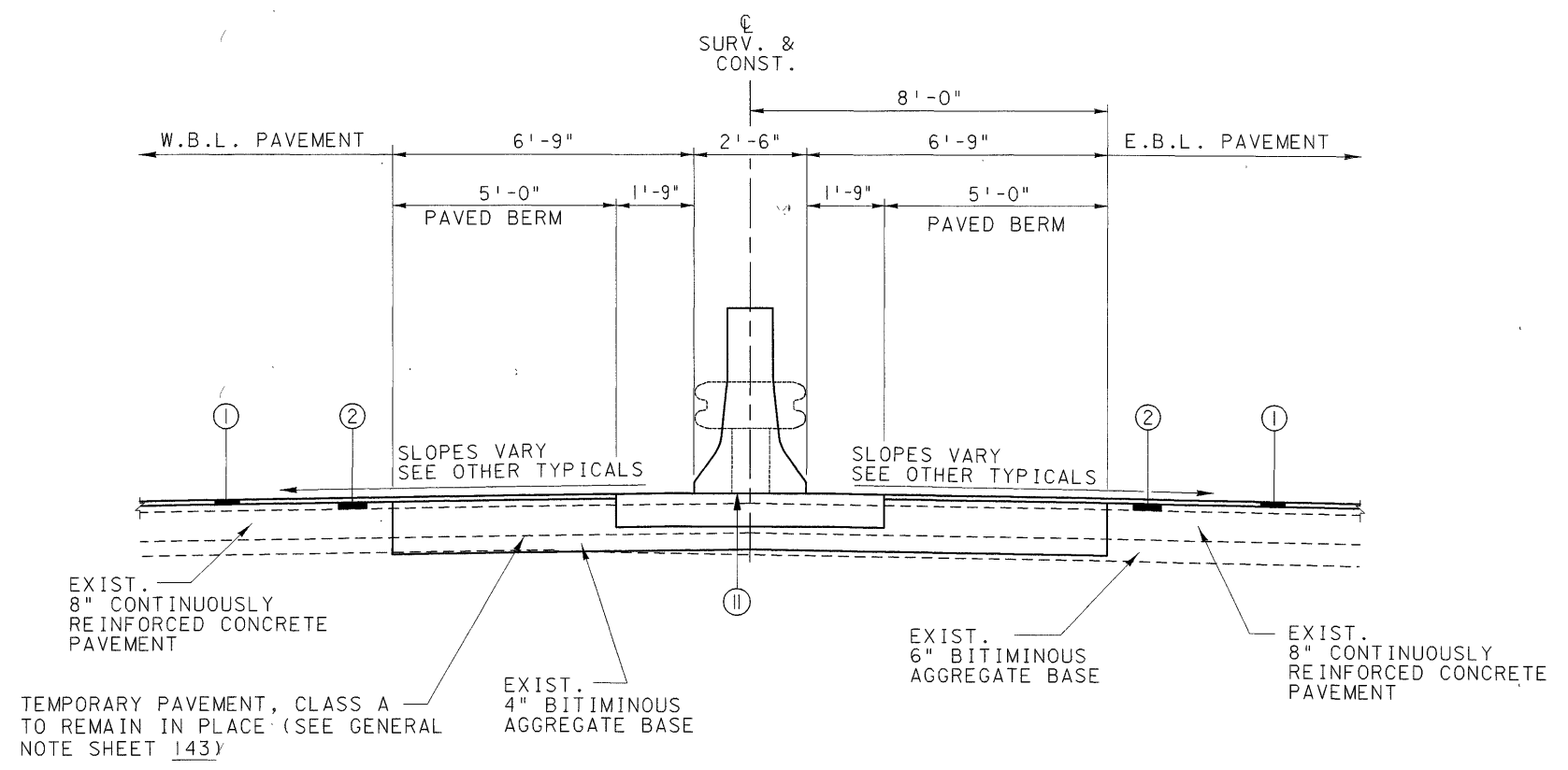
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 WORKSTATION: mal/leman DATE: 08 NOV 96



5 STA. 775+63 TO STA. 782+95.45 = 732.45 LIN.FT

NOTES:
 CONTINUATION OF TYPICALS NOT SHOWN ON THIS SHEET ARE SAME AS TYPICAL 1
 SEE SHEET 5 FOR LEGEND

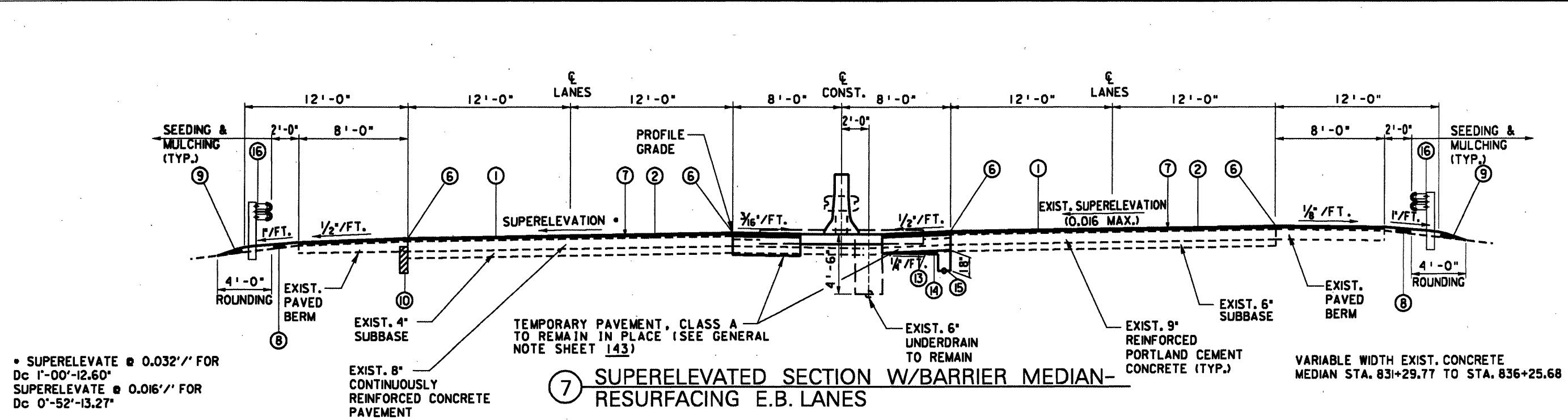


6 MEDIAN DETAIL WITH TYPE B50 BARRIER, AS PER PLAN
 STA. 782+95.45 TO STA. 836+27 = 5331.55 LIN.FT

TYPICAL SECTIONS

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• SUPERELEVATE @ 0.032'/F FOR
Dc 1'-00"-12.60'
SUPERELEVATE @ 0.016'/F FOR
Dc 0'-52"-13.27'

**7 SUPERELEVATED SECTION W/BARRIER MEDIAN-
RESURFACING E.B. LANES**

SCHEDULE OF STATIONING

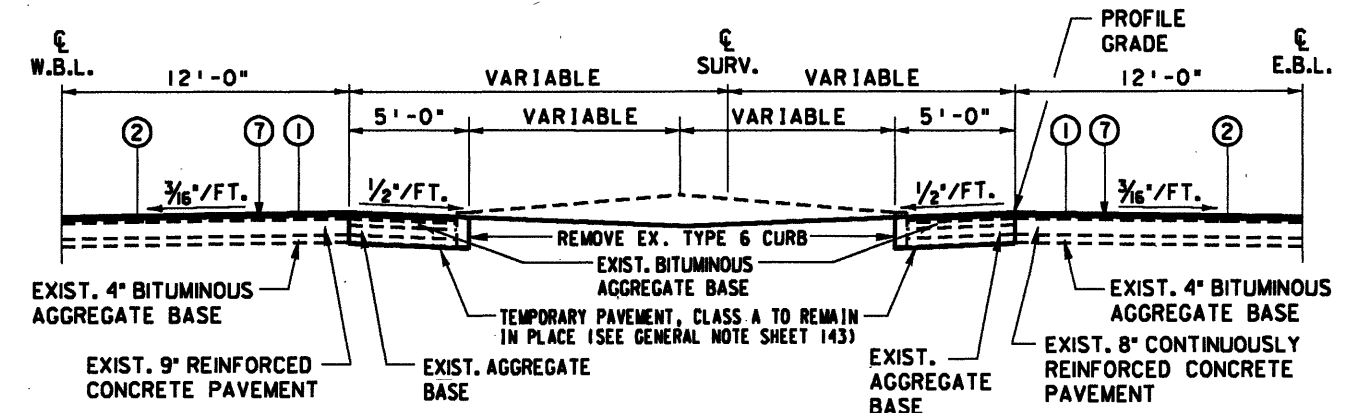
STA. 810+92.80 TO STA. 819+09.54	=	816.74 LIN.FT.
STA. 825+61.00 TO STA. 836+07.75	=	1046.75 LIN.FT.
TOTAL	=	1863.49 LIN.FT.

BRIDGE & APPROACH SLAB LIMITS:

STA. 836+07.75 TO STA. 839+26.07	=	318.32 LIN.FT.
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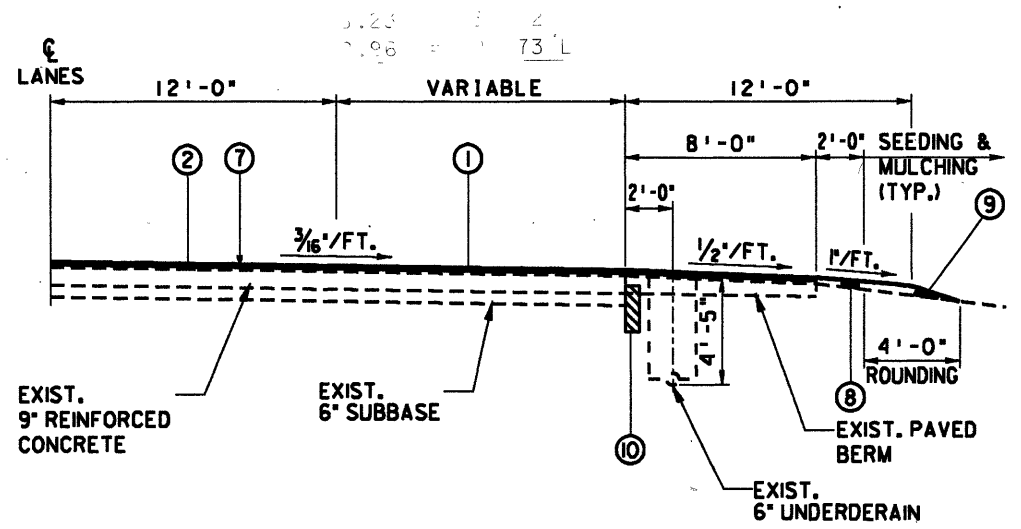
FOR AREAS LISTED BELOW SAME TYPICAL SECTION AS 7
BUT EXISTING 8" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
CHANGES TO 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

STA. 835+99.88 TO STA. 836+31.37	=	31.50 LIN.FT.
TOTAL	=	31.50 LIN.FT.

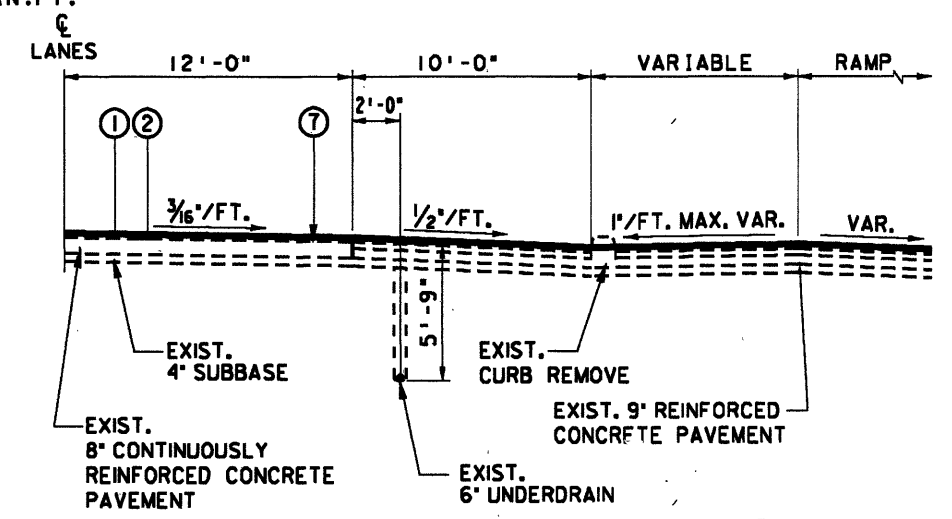


8 CURBED SECTIONS FOR MEDIAN WIDTH TRANSITION AREAS
STA. 839+26.07 TO STA 840+38.40 = 112.33 LIN.FT.

SEE SHEET 5 FOR LEGEND



9 SPEED CHANGE LANE TYPICAL



**10 RAMP TYPICAL W/CURB REMOVAL
AT ACCELERATION LANE**

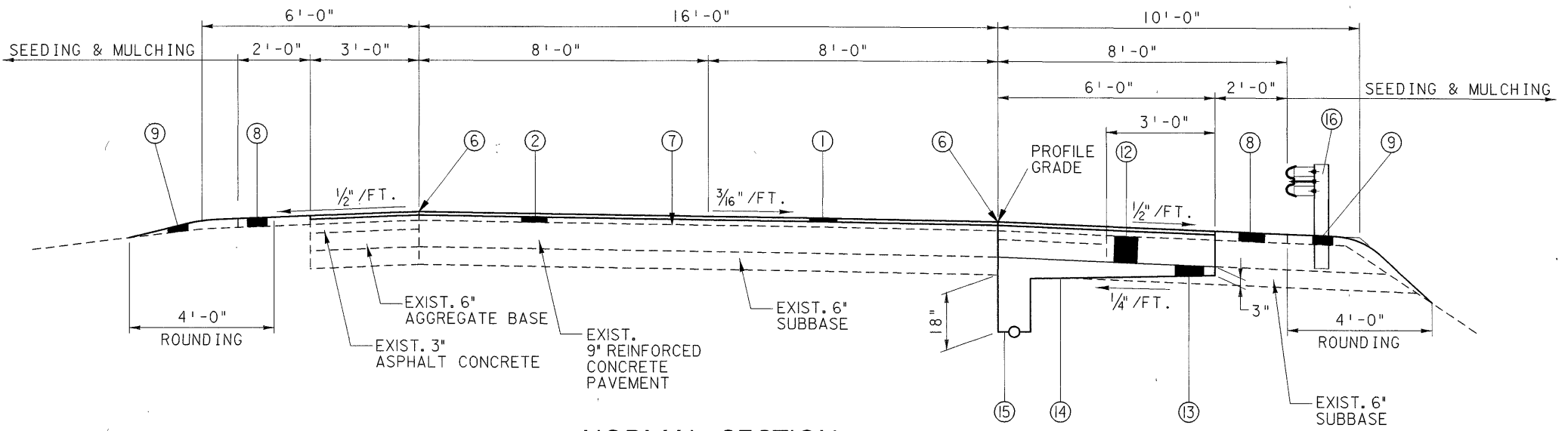
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WORKSTATION: ml/eman DATE: 29 OCT 96

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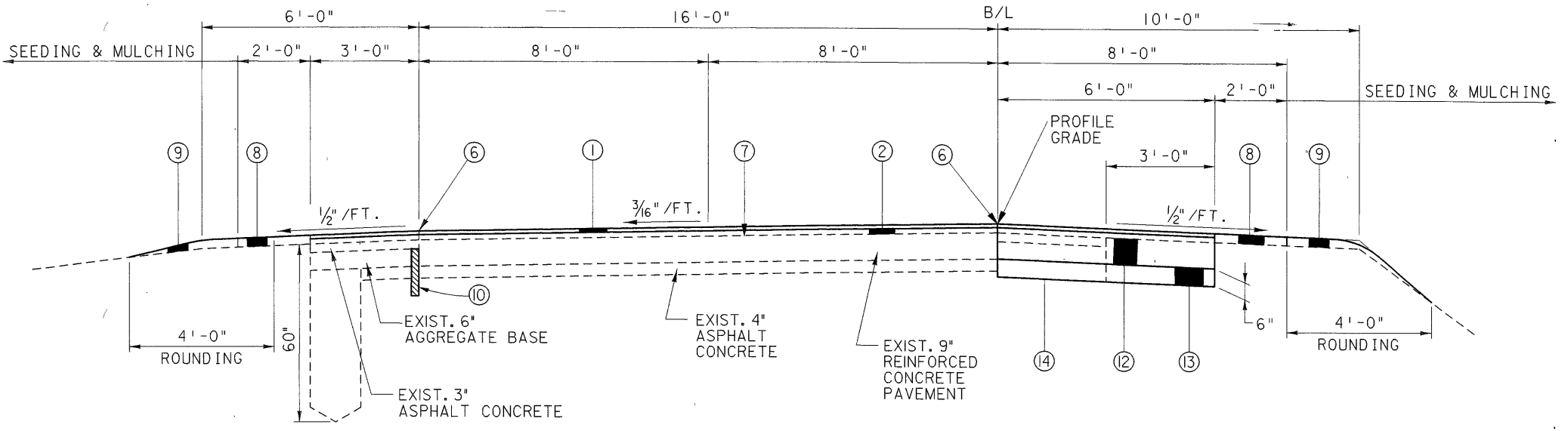
STA. NW 1+23.40 TO STA. NW 1+95.63 = 72.23 LIN.FT.
 STA. SW 0+97.50 TO STA. SW 3+88.01 = 290.51 LIN.FT.
 STA. NE 0+78.20 TO STA. NE 5+75.82 = 477.62 LIN.FT.
 STA. SE 1+23.10 TO STA. SE 3+84.17 = 261.07 LIN.FT.
 TOTAL = 1101.43 LIN.FT.



11 NORMAL SECTION

NOTES:
 SEE SHEET 5 FOR LEGEND
 ALL RAMP TYPICALS SHOWN IN DIRECTION OF TRAVEL

STA. A84+95.51 TO STA. A89+07.47 = 411.96 LIN.FT.
 STA. C86+10.51 TO STA. C89+65.23 = 354.72 LIN.FT.
 STA. D83+21.23 TO STA. D85+12.96 = 191.73 LIN.FT.
 TOTAL = 958.41 LIN.FT.

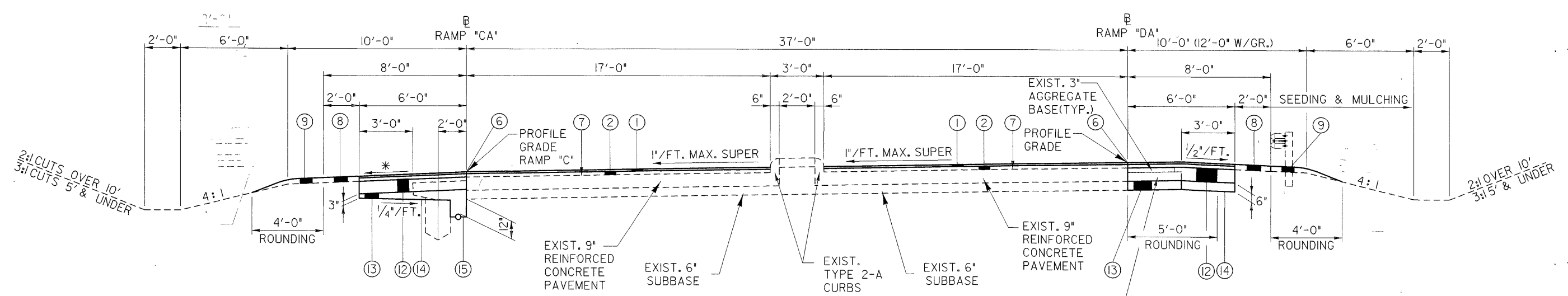


12 REVERSE NORMAL SECTION

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RAMP TYPICALS

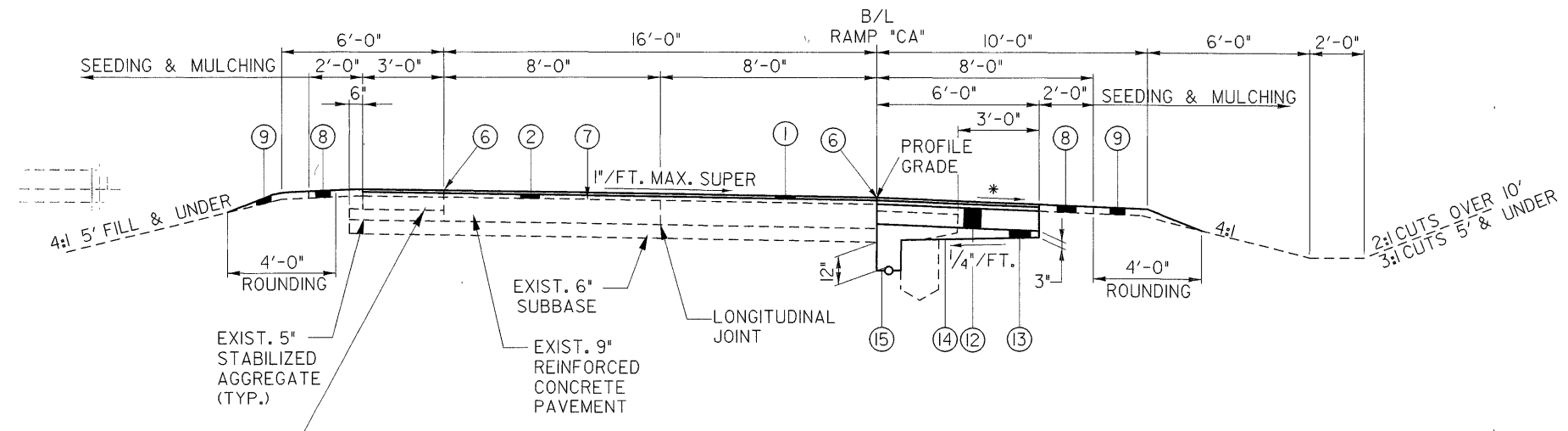
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15 RAMP "CA" & "DA" DIVIDED SECTION

STA. CA 19+13.17 TO STA. CA 24+48.66
 STA. DA 6+95.26 TO STA. DA 13+11.44

SEE SHEET 5 FOR LEGEND
 ALL RAMP TYPICALS SHOWN IN
 DIRECTION OF TRAVEL



16 RAMP "CA" SUPERELEVATED SECTION

STA. CA 16+08.30 TO STA. CA 17+08.30
 STA. CA 17+08.30 TO STA. CA 19+13.17
 STA. CA 24+48.66 TO STA. CA 26+29.69

* 1/2" / FT (OR PAVEMENT
 SLOPE IF GREATER)

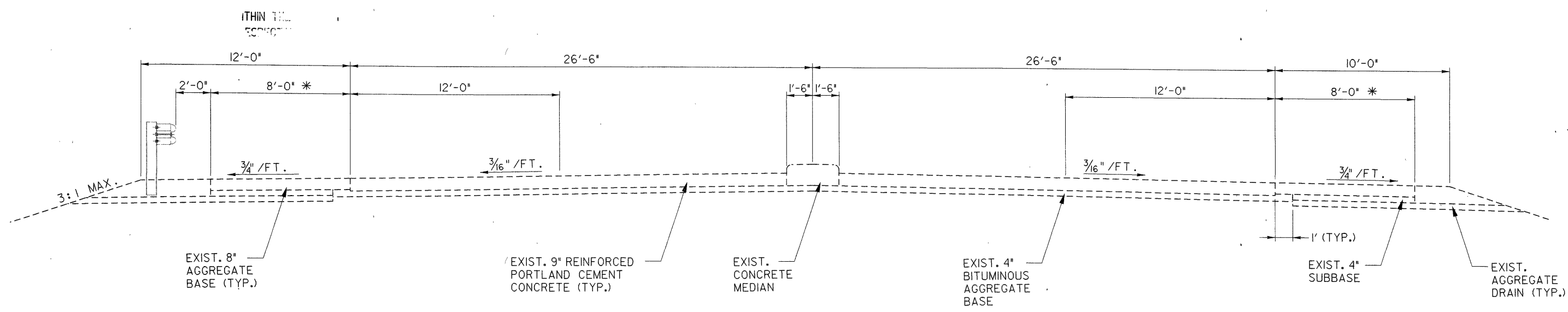
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RAMP TYPICALS

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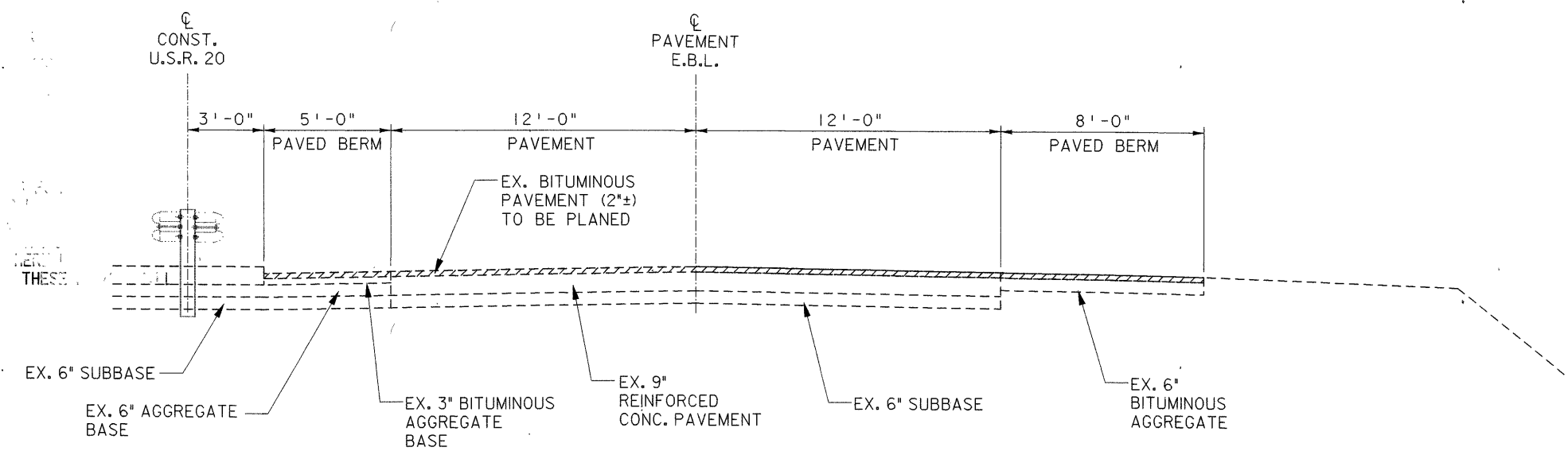
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 WORKSTATION: mallemann DATE: 12 DEC 96



S.R. 301

STA. 659+79.90 TO STA. 676+10 = 1630.10 LIN.FT.

* SOME LENGTH SHALL HAVE ITEM 615 TEMPORARY PAVEMENT TO REMAIN IN PLACE. (SEE SHEET 188 FOR LOCATIONS)



PAVEMENT PLANING TYPICAL

STA. 782+00 EBL TO STA. 836+00± EBL = 5400 LIN.FT.

EXISTING TYPICAL SECTION S.R. 301 & PAVEMENT PLANING TYPICAL ON MAINLINE

LOR-20-12.62

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:

ELECTRIC: OHIO EDISON COMPANY
6326 LAKE AVE.
ELYRIA, OHIO 44035
PHONE: (216)324-0207

TELEPHONE: ALLTEL THE ELYRIA TELEPHONE COMPANY
363 THIRD STREET
ELYRIA, OHIO 44035
PHONE: (216)329-4250
CABLE: CONTINENTAL CABLEVISION
OF NORTHEAST OHIO, INC.
576 TERNES STREET
ELYRIA, OHIO 44035
PHONE: (216)365-1861

GAS: COLUMBIA GAS OF OHIO 827 WALNUT STREET
ELYRIA, OHIO 44035
PHONE: (216)284-3126
COLUMBIA GAS TRANSMISSION CORP.
3151 LINCOLN WAY WEST
WOOSTER, OHIO 44691
PHONE: (330)264-2201

WATER: RURAL LORAIN COUNTY WATER AUTHORITY
P. O. BOX 567
LAGRANGE, OHIO 44050
PHONE: (216)355-6060

SANITARY: LORAIN COUNTY
247 HADAWAY STREET
ELYRIA, OHIO 44035
PHONE: (216)329-5589

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.

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.

EROSION CONTROL

ITEMS 601 AND 670 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS, AND TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE 670. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENTS OF 108.04.

ITEM 659, SEEDING AND MULCHING

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 ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH OF THE PERMANENT SEEDED AREAS, AS PER 659.09.
[(45,844 SQ. YD.) X 9 X 120 X 2 / (1000 X 1000) = 99 M GAL.]
659 WATER = 99 M GAL.

ITEM 659 - COMMERCIAL FERTILIZER

COMMERCIAL FERTILIZER SHALL BE APPLIED TO SEEDED AREAS AS PER 659.08.
[(45,844 SQ. YD.) X 20 X 9 / (1000 X 2000) = 4.12 TON]

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207	STRAW OF HAY BALES	200	EACH
207	TEMPORARY SEEDING & MULCHING	9,169	SQ. YD.
659	COMMERCIAL FERTILIZER	1.96	TON
207	FILTER FABRIC FENCE	1000	LIN. FT.

THESE QUANTITIES ARE IN ADDITION TO THOSE LISTED ON THE STORM WATER POLLUTION PREVENTION PLAN, SHEETS 25-27

ITEM 203, DITCH CLEANOUT

THIS WORK SHALL CONSIST OF RE-ESTABLISHING THE CROSS-SECTION OF AN EXISTING DITCH. SURPLUS OR UNSUITABLE MATERIAL, AS DETERMINED BY THE ENGINEER, SHALL BE DISPOSED OF AS PER 203.05. EMBANKMENT REQUIRED FOR ERODED CONDITIONS SHALL MEET THE REQUIREMENTS OF 203.07 EXCEPT THAT THE COMPACTION REQUIREMENTS ARE WAIVED. MEASUREMENT OF THE DITCH CLEANOUT SHALL BE THE ACTUAL LINEAR FEET MEASURED ALONG THE CENTERLINE OF THE DITCH.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, DITCH CLEANOUT. AN ESTIMATED QUANTITY OF 1000 LIN.FT. IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 606, ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B" GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 50', INCLUSIVE OF TWO 25' LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

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

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 INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

TYPE B50 BARRIER, AS PER PLAN "A"

THE WIDTH OF THE BARRIER BASE SHALL BE AS SHOWN ON THE TYPICAL SECTIONS SHEETS 5-8.

RESTORATION OF DISTURBED AREAS ASSOCIATED WITH GUARDRAIL AND SIGN WORK

THE CONTRACTOR SHALL RESTORE ALL SEEDED AND SODDED AREAS, PAVED BERMS, AND OTHER DISTURBED AREAS TO A CONDITION EQUAL TO THAT EXISTING BEFORE THIS WORK WAS STARTED. ALL RESTORATION WORK SHALL BE DONE IN ACCORDANCE WITH THE PERTINENT SPECIFICATION ITEM AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL RESTORATION WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF SURPLUS MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS 606 AND 630 ITEMS.

ITEM 622, CONCRETE BARRIER, TYPE D, AS PER PLAN

THE PLACEMENT OF THE CONCRETE BARRIER SHALL COMMENCE IMMEDIATELY AFTER THE REMOVAL OF THE EXISTING GUARDRAIL (PIER AND SIGN POLE PROTECTION) AND THE BARRIER SHALL BE CAST-IN-PLACE WITHIN THREE (3) WORKING DAYS AFTER THE GUARDRAIL IS REMOVED. ALL DISTURBED AREAS SHALL BE SEEDED, MULCHED, FERTILIZER & WATERED AS PER 659. ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR THE ITEM 622 CONCRETE BARRIER, TYPE D, AS PER PLAN. DURING THE PERIOD BETWEEN THE GUARDRAIL REMOVAL AND THE COMPLETION OF THE BARRIER, THE WORK AREA SHALL BE PROTECTED BY DRUMS SPACED AT 25 FOOT CENTERS, COST INCLUDED IN ITEM 614.

ITEM 203 - EMBANKMENT, AS PER PLAN

THIS ITEM SHALL CONSIST OF PREPARATION OF AREAS UPON WHICH EMBANKMENTS ARE TO BE PLACED AND THE CONSTRUCTION OF EMBANKMENTS WITH MATERIALS FROM OTHER SOURCES AS PER ITEM 203 OR AS MODIFIED BELOW. EMBANKMENT MATERIAL SHALL BE PLACED TO WIDEN AND BUILD-UP EXISTING SHOULDERS AS PER THE TYPICAL SECTIONS AND AS PER OTHER PLAN DETAILS. AREAS WHERE EMBANKMENT MATERIAL IS TO BE PLACED SHALL BE SCALPED FIRST. THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL AND BENCHING SHALL BE WAIVED. THE DEPTH OF LAYERS IN WHICH EMBANKMENT IS PLACED AND ITS COMPACTION SHALL, IN LIEU OF THE REQUIREMENTS OF ITEM 203, CONFORM TO ACCEPTABLE CONSTRUCTION PRACTICES AS DIRECTED BY THE ENGINEER. SPECIAL CARE SHALL BE TAKEN TO MAINTAIN EXISTING DITCH DRAINAGE. IF EXISTING DRAINAGE IS DISTURBED BY THE CONTRACTOR, IT SHALL BE RESTORED BY HIM AT NO COST TO THE STATE OF OHIO. THE SEEDING AND MULCHING AND FERTILIZING OF ALL DISTURBED AREAS OF EMBANKMENT CONSTRUCTION SHALL BE PAID FOR UNDER ITEM 659. THE METHOD OF MEASUREMENT FOR EMBANKMENT MATERIAL FURNISHED AND PLACED AS REQUIRED ABOVE SHALL BE THE NUMBER OF CUBIC YARDS MEASURED BY LOOSE VOLUME IN THE CARRIER AT THE WORK SITE, IN LIEU OF THE REQUIREMENT OF 203.15. PAYMENT FOR ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR ITEM 203 - EMBANKMENT, AS PER PLAN.

CONTRACTOR'S EQUIPMENT OPERATION AND LOCATION

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL. A FLAGGER SHALL BE USED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT.

EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN VARIOUS OPERATIONS ARE SCHEDULED TO CONTINUE THE NEXT WORKDAY. ON WEEKENDS OR AT OTHER TIMES OF SUSPENSION OF WORK, THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA REMOVED FROM THE EXISTING RIGHT-OF-WAY. THE LOCATION SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. FOR ADDITIONAL REQUIREMENTS SEE ITEM 614 - SECTION 614.03A OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

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GENERAL NOTES

LOR-20-12.62

SUSPENSION OF RESURFACING OVER WINTER

IF THIS PROJECT SHOULD CARRY OVER THE WINTER SEASON, THE INTERMEDIATE COURSE (S) SHALL NOT BE ALLOWED TO LAY, EXPOSED TO TRAFFIC OVER THE WINTER. ALL ASPHALT PAVING WORK SHALL BE SCHEDULED FOR COMPLETION BY OCTOBER 31. AFTER OCTOBER 31, IF WEATHER PERMITS AS PER 401.05, A PERMISSIVE CHANGE ORDER MAY BE WRITTEN BY THE DISTRICT CONSTRUCTION ENGINEER WHICH SHALL INCLUDE THE FOLLOWING REQUIREMENT:

ANY INTERMEDIATE COURSE LAID SHALL BE COVERED BY THE SURFACE COURSE WITHIN TWO (2) WORK DAYS.

ALSO, ALL FINAL PAVEMENT MARKINGS SHALL BE APPLIED TO THE NEW SURFACE COURSE BEFORE WINTER. IF THIS CANNOT BE ACCOMPLISHED UNDER SPECIFICATION CONDITIONS, THE CONTRACTOR SHALL APPLY "INTERIM MARKINGS" AS PER SHEET 145A, WORK ZONE PAVEMENT MARKINGS AND SIGNS, AT THE CONTRACTOR'S EXPENSE. THE PERMANENT PAVEMENT MARKINGS SHALL THEN BE APPLIED THE NEXT SPRING.

LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDER DAY THAT INTERMEDIATE COURSE(S) IS EXPOSED TO TRAFFIC BEYOND OCTOBER 31.

ITEM 446 - ASPHALT CONCRETE

ON THIS PROJECT, CONSTRUCTION SPECIFICATION 441.02, TABLE B, PROPERTIES OF MIXTURES FOR HEAVY TRAFFIC VOLUMES SHALL APPLY.

WORK WITHIN EXISTING RIGHT-OF-WAY

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LOCATIONS ON THIS PROJECT.

PROJECT FEATHERS

A BUTT JOINT AS PER STANDARD DRAWING BP-3.1 SHALL BE USED WHERE THE FEATHER IS ON EXISTING ASPHALT, UNLESS NOTED OTHERWISE IN THE PLANS.

FEATHERING 446 AT APPROACH SLABS

THE 446 COURSES ARE A TOTAL OF 3" THICK ON THE PAVEMENT ONLY. NO RESURFACING MATERIAL SHALL BE PLACED ON THE BRIDGES OR NEW APPROACH SLABS. A TRANSITION FROM 3" TO 1-1/4" AT THE APPROACH SLABS SHALL BE MADE AS PER DETAIL ON SHEET 84 AND BUTT-JOINT DETAIL ON STD. DRWG. BP-3.1.

CONSTRUCTION EQUIPMENT MEDIAN CROSSINGS

CONSTRUCTION EQUIPMENT SHALL CROSS THE MEDIAN ONLY AT THE EXISTING INTERSECTIONS AND U-TURN CROSSOVERS AND AT OTHER ADDITIONAL LOCATIONS APPROVED BY THE ENGINEER. A MAXIMUM OF TWO (2) ADDITIONAL EQUIPMENT CROSSINGS MAY BE ALLOWED.

THE CONTRACTOR SHALL BE RESPONSIBLE, AT HIS EXPENSE, FOR THE RESTORATION OF THE ADDITIONAL EQUIPMENT CROSSINGS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING PRIOR TO HIS WORK OPERATIONS. WHEN THE MEDIAN CROSSINGS ARE BEING USED IN THE AREA OF ONE-LANE TRAFFIC OPERATION, THE CONTRACTOR SHALL PROVIDE AT HIS EXPENSE THE SERVICES OF A LAW ENFORCEMENT OFFICER WITH PATROL CAR TO CONTROL TRAFFIC FLOW.

ITEM 407, TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. AREAS OF TACK COAT STRIPPED BY CONSTRUCTION SHALL BE RECOATED PRIOR TO PLACING ASPHALT CONCRETE. PLAN AREAS INDICATE AN APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY. SEE THE FOLLOWING PARAGRAPH FOR AN ADDITIONAL APPLICATION REQUIREMENT.

PRIOR TO PLACING THE SURFACE COURSE ON THE NEW INTERMEDIATE COURSE, AN ADDITIONAL APPLICATION OF TACK COAT IS REQUIRED AT AN AVERAGE RATE OF APPLICATION OF 0.05 GALLONS PER SQUARE YARD SEE SHEET 21 FOR QUANTITIES.

LONGITUDINAL JOINTS, 446 COURSE

A HOT LONGITUDINAL JOINT SHALL BE MADE BETWEEN THE PAVEMENT LANE AND THE ADJOINING BERM AS SHOWN ON THE TYPICAL SECTIONS, REF. NO. 6 FOR THE SURFACE COURSE. ALL OTHER LONGITUDINAL JOINTS BETWEEN PAVEMENT LANES AND CENTERLINE SHALL BE COLD JOINTS SEALED BY COATING THE VERTICAL FACE, AS PER 401.15.

THE LONGITUDINAL JOINT BETWEEN ADJACENT PAVEMENT LANES IN THE SAME TRAVEL DIRECTION SHALL BE MADE THE FOLLOWING WORK DAY AT THE LATEST FOR ALL COURSES.

ITEM SPECIAL IMPACT ATTENUATOR

TYPE 1, BIDIRECTIONAL

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING AN IMPACT ATTENUATOR SYSTEM.

THE IMPACT ATTENUATOR SYSTEM SHALL BE ONE OF THE FOLLOWING:

1. THE BRAKEMASTER IMPACT ATTENUATING SYSTEM MANUFACTURED BY ENERGY-ABSORPTION SYSTEMS, INC. ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601 (TELEPHONE 312-467-6750).
2. THE C.A.T. IMPACT ATTENUATING SYSTEM MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE (216-545-4373).

THE ATTENUATOR SHALL BE DESIGNED FOR BIDIRECTIONAL IMPACTS AND SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURE'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS.

THE NOSE OF THE ATTENUATOR SHALL BE MARKED WITH THREE, EVENLY SPACED, FOUR (4) INCH WIDE HORIZONTAL STRIPES OF WHITE REFLECTIVE MATERIAL MEETING THE REQUIREMENTS OF CMS 730.19.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM SPECIAL, EACH IMPACT ATTENUATOR, TYPE 1. THIS PRICE SHALL INCLUDE FULL PAYMENT FOR ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM IN PLACE, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM.

RAISING EXISTING ASPHALT BERMS

VARIABLE THICKNESS (0" MIN. TO 2" MAX.) 404 ASPHALT CONCRETE SHALL BE APPLIED TO AREAS OF THE EXISTING ASPHALT BERM IN ORDER THAT ARE LOW TO RAISE THE BERM UP FLUSH TO THE EXISTING EDGE OF PAVEMENT. THE FINAL CROSS-SLOPE OF THE BERM SHALL BE RESTORED TO THE ORIGINAL PLAN SLOPE PLUS OR MINUS 1/8 INCH PER FOOT. 407 TACK COAT SHALL BE APPLIED AT AN AVERAGE RATE OF 0.05 GAL./S.Y. QUANTITY TO ALL AREAS OF THE EXISTING BERM TO BE RAISED PRIOR TO PLACEMENT OF THE 404 ASPHALT CONCRETE.

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER TO RAISE LOW AREAS OF THE EXISTING PAVED BERM.

404 - ASPHALT CONCRETE, AC-20	400 CU. YD.
407 - TACK COAT	2500 GAL.

ITEM SPECIAL - BERM REPAIR, FLEXIBLE

THIS ITEM OF WORK SHALL CONSIST OF PARTIAL DEPTH REPAIR OF THE EXISTING ASPHALT PAVED BERM IN AREAS EXHIBITING SEVERE CRACKING, DETERIORATION, AND SURFACE DISTORTIONS. THE ENGINEER SHALL DESIGNATE THE LOCATIONS AND LIMITS OF THE AREAS TO BE REPAIRED. THE REPAIR AREAS SHALL BE ROUGHLY RECTANGULAR IN SHAPE.

THE MATERIAL WITHIN THE DESIGNATED AREAS SHALL BE REMOVED BY METHODS WHICH WILL NOT DAMAGE THE ADJACENT BERM. THE DEPTH OF REMOVAL SHALL BE SUFFICIENT TO REMOVE ALL BROKEN AND LOOSE ASPHALT OR PRIMED AGGREGATE, BUT TO A MINIMUM OF 4 (FOUR) INCHES BELOW THE ADJACENT BERM THROUGHOUT THE REPAIR AREA. THE MATERIAL SO REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH 203.05.

AFTER REMOVAL OF THE DETERIORATED MATERIALS, 407 TACK COAT SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY COAT ALL ASPHALT SURFACES AND PENETRATE CRACKS. 30IBITUMINOUS AGGREGATE BASE THEN SHALL BE PLACED AND COMPACTED TO FINISH FLUSH WITH THE ADJACENT BERM SURFACE. THE LENGTH OF EXCAVATION OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO EXCAVATION SHALL BE LEFT OPEN OVERNIGHT.

THIS WORK SHALL BE COMPLETED PRIOR TO THE PLACEMENT OF THE 446 COURSE ON THE PAVED BERM.

THE NUMBER OF CUBIC YARDS TO BE PAID SHALL BE FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK, INCLUDING THE TACK COAT AND BITUMINOUS AGGREGATE BASE.

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER TO MAKE REPAIRS ON THE PAVED BERM.

ITEM SPECIAL - BERM REPAIR, FLEXIBLE	500 CU.YD.
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ITEM SPECIAL - REMOVAL MISCELLANEOUS: AGGREGATE CROSSOVER REMOVED

AGGREGATE CROSSOVERS SHALL BE REMOVED AND/OR REGRADED AS DIRECTED BY THE ENGINEER. TOP SOIL REMOVED FROM OTHER AREAS SHALL BE SPREAD ON THESE DESIGNATED MEDIAN LOCATIONS, TO A MINIMUM DEPTH OF 6 INCHES. THE AREA SHALL THEN BE SEEDED AS PER 659. ALL THE ABOVE SHALL BE INCLUDED IN UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL, REMOVAL MISCELLANEOUS: AGGREGATE CROSSOVER REMOVED.

PROFILE AND ALIGNMENT

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING CONCRETE PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL HAVE A UNIFORM THICKNESS OF 3 INCHES. THE EXISTING VERTICAL ALIGNMENT HAS BEEN EXAMINED AND MEETS DESIGN SPEED CRITERIA. CONSTRUCTION PLANS, SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE DISTRICT THREE OFFICE: LOR-20-12.62, PROJECT - 578(68)

ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=15")

AS PER PLAN

TWO SEPARATE THICKNESSES OF CLEAR OR OPAQUE POLYETHYLENE FILM, 705.06, SHALL BE PLACED ON THE PREPARED SUBBASE AND WHERE THE APPROACH SLAB IS TO BE CONSTRUCTED. THE POLYETHYLENE FILMS SHALL COMPLETELY COVER THE FULL LENGTH AND WIDTH OF THE SUBBASE BETWEEN THE SIDEWALL FORMS FOR THE APPROACH SLAB. THE REINFORCING STEEL SHALL BE EPOXY COATED.

MATERIALS, LABOR AND INSTALLATION SHALL BE INCLUDED FOR PAYMENT IN THIS ITEM REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN.

CLEARING AND GRUBBING FOR SIGNS

CLEARING AND GRUBBING SHALL BE PERFORMED IN AREAS AS DIRECTED BY THE ENGINEER TO PROVIDE ADEQUATE CLEAR SIGHT DISTANCE TO SIGNS ERECTED AS PART OF THE PLAN. SEE SHEET NO. 132 FOR GUIDE FOR CLEARING AND GRUBBING.

ITEM 620 - DELINEATOR INSTALLED, BY TYPE, BY SUPPORT

FLEXIBLE POSTS SHALL BE INSTALLED SO THAT THE FACE OF THE REFLECTOR, OTHER THAN RED IS 90 DEGREES TO THE CENTERLINE FACING APPROACHING TRAFFIC AND TO SUCH A DEPTH THAT THE TOPS OF THE INSTALLED REFLECTORS SHALL BE 48 INCHES PLUS OR MINUS 1 INCH ABOVE THE ELEVATION OF THE ADJACENT EDGE OF PAVEMENT.

ITEM 625 - TRENCH AS PER PLAN

TRENCH SHALL BE 4'-6" DEEP

UNDERDRAINS FOR PULL BOX

REFERENCE IS MADE TO STANDARD DRAWINGS FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 100 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE E IS INCLUDED UNDER LIGHTING IN GENERAL SUMMARY FOR THIS PURPOSE.

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID**REPLACEMENT CLASS C, AS PER PLAN "B"**

1 - WHERE PAVEMENT REPAIR LENGTHS EXCEED 10 FEET AND WHERE ONE OR MORE REPAIR LIMITS ARE LOCATED MORE THAN 3 FEET FROM AN EXISTING JOINT TO REMAIN IN PLACE, THE CONTRACTOR WILL BE REQUIRED, AT THE DIRECTION OF THE ENGINEER, TO PLACE CONTRACTION JOINTS WITH DOWEL BASKET ASSEMBLIES IN ACCORDANCE WITH ITEM 451 AND BP-2.2. THE PLACEMENT AND LOCATION OF THE CONTRACTION JOINTS SHALL BE AT THE SAME LOCATION AND IN ALIGNMENT WITH EXISTING JOINT(S) WHICH ARE TO REMAIN IN PLACE. REQUIREMENTS FOR JOINT SAWING SHALL BE AS PER 451.08. REQUIREMENTS FOR JOINT SEALING AS PER SUPPLEMENTAL SPECIFICATION 801 AND SHALL BE CONSIDERED CLASS III TRANSVERSE JOINTS. THE COSTS ASSOCIATED WITH THE PLACEMENT OF DOWEL BASKET ASSEMBLIES AND THE REQUIREMENT FOR SAWING AND SEALING SHALL BE INCIDENTAL TO ITEM 255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN "B".

IN ADDITION TO THE REQUIREMENTS OF 255.09, ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL JOINT CLEANING AND SEALING.

ITEM 255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, AS PER PLAN "A"

CONTINUOUSLY REINFORCED CONCRETE REPAIRS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 255 AND STANDARD CONSTRUCTION DRAWING BP-2.5 WITH THE FOLLOWING EXCEPTIONS:

1. THE CONTRACTOR SHALL DRILL 12 INCHES INTO THE FACE OF THE FULL DEPTH TRANSVERSE SAW CUT AND GROUT 36 INCH LONG $\frac{5}{8}$ INCH DEFORMED BARS IN ACCORDANCE WITH THE LOOSE BAR STEEL REQUIREMENTS OF BP-1.2. EPOXY COATED REBAR IS REQUIRED. GROUT SHALL MEET THE REQUIREMENTS OF ITEM 510. THE DRILLING DIAMETER MUST BE AT LEAST $\frac{1}{8}$ INCH GREATER THAN THE DIAMETER OF THE LOOSE BARS TO BE GROUTED.
2. REINFORCING STEEL SHALL IN ALL CASES BE REPLACED AS PER BP-1.2 AND SHALL BE SUPPORTED BY CHAIRS.
3. FOLLOWING THE REMOVAL OF THE PAVEMENT FROM THE AREA, THE EXISTING BASE SHALL BE EXAMINED BY THE ENGINEER AND RESTORED TO GRADE. AS DIRECTED BY THE ENGINEER, CONCRETE BASE MATERIAL SHALL BE USED FOR SMOOTHING OUT THE VOIDS CREATED IN THE EXISTING BITUMINOUS BASE MATERIAL THAT STUCK TO THE PAVEMENT WHICH IS REMOVED. AGGREGATE BASE MATERIAL SHALL BE USED TO FILL VOIDS CREATED BELOW THE EXISTING BITUMINOUS MATERIAL AND REPLACE UNSUITABLE SUBGRADE MATERIAL. THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR THIS WORK (AS DIRECTED BY THE ENGINEER - MATERIAL NOT REQUIRED SHALL BE NON-PERFORMED)

ITEM 304 - 4" AGGREGATE BASE 100 CU.YD.
ITEM 305 - CONCRETE BASE, VARIABLE THICKNESS 30,000 SQ.YD.

SUBBASE/SUBGRADE FAILURES

IF AFTER THE REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH ITEM 304 AGGREGATE BASE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION = 100 CU.YD.

ITEM 304 - 4" AGGREGATE BASE = 987 CU.YD.

(29,607.4 SQ.YD. TOTAL REPAIR AREA * 6'12X3 YD. THICKNESS) * 20% ASSUME FAILURE = 987 CU.YD.

ITEM SPEC. - CRACK CLEANING AND SEALING, CLASS I, 705.04

A QUANTITY OF 10,000 LIN.FT. HAS BEEN CARRIED TO THE SUB - SUMMARY SHEET 19 TO SEAL CRACKS IN THE EXISTING PAVEMENT TO BE USED AS DIRECTED BY THE ENGINEER.

MILE MARKER LOCATION

THE LOCATION OF MILE MARKERS ON THE PLANS ARE APPROXIMATE AND A MORE PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST THIRTY (30) DAYS IN ADVANCE OF THE PLANNED DATE OF MILE MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE BUREAU OF TECHNICAL SERVICES WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY MEANS OF A PAINT MARK ON THE PAVEMENT EDGE. ALTERNATE MARKS WILL NOT BE PROVIDED ON DIVIDED HIGHWAYS AND THE CONTRACTOR SHALL SET MARKERS FOR THE OPPOSITE ROADWAY ACROSS FROM THE PROVIDED MARK. ANY EXISTING DELINEATORS FALLING WITHIN 50 FEET OF A MILE MARKER SHALL BE REMOVED. REMOVAL OF ANY DELINEATORS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201 - CLEARING AND GRUBBING.

ITEM 607 FENCE, TYPE 47, AS PER PLAN

WORK UNDER THIS ITEM SHALL INCLUDE FURNISHING AND ERECTING FENCE, TYPE 47 AND POST AND ANCHOR ASSEMBLIES IN ACCORDANCE WITH ITEM 607 AND THE APPROPRIATE STANDARD CONSTRUCTION DRAWINGS, EXCEPT AS OTHERWISE NOTED.

THE INTENT OF THE PLAN IS TO CONSTRUCT THE NEW FENCE IN THE SAME LOCATION AS THE EXISTING FENCE, EXCEPT WHERE THE OLD FENCE NEEDS MODIFICATION AT STRUCTURE. THE LOCATION SHALL BE IN COMPLIANCE WITH SECTION 607.06 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

IN ADDITION, THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING RIGHT OF WAY FENCE INCLUDING ASSEMBLIES. TREES AND BRUSH IN THE FENCE ALIGNMENT SHALL BE CLEARED FOR A DISTANCE NOT TO EXCEED TWO FEET BEHIND AND SUFFICIENT DISTANCE IN FRONT TO ADEQUATELY WORK IN ERECTING THE NEW FENCE.

TREE REMOVAL SHALL BE IN ACCORDANCE WITH ITEM 201 AND AS DESCRIBED BELOW. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL MATERIALS OFF OF THE PROJECT LIMITS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETELY REMOVE THE CORNER, END OR ANCHOR POST ASSEMBLIES INCLUDING THE CONCRETE INCASEMENTS. EXISTING METAL LINE POSTS SHALL BE REMOVED OR DRIVEN A MINIMUM OF SIX(6) INCHES BELOW THE EXISTING GROUND.

ALL TREES AND BRUSH SHALL BE CUT FLUSH TO THE GROUND WITH A HORIZONTAL CUT PARALLEL TO THE EXISTING GROUND. ALL CUT BRUSH SHALL BE REMOVED FROM THE STATE RIGHT OF WAY. NO BURNING WILL BE PERMITTED. IMMEDIATELY AFTER CUTTING, THE STUMPS SHALL BE TREATED BY SPRAYING OR PAINTING THE FRESHLY CUT STUMPS SURFACES WITH BANVEL CST (CUT STUMP TREATMENT) ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CAMBIUM AREA NEXT TO THE BARK SHOULD BE THOROUGHLY COVERED WITH THE HERBICIDE. THE HERBICIDE USED FOR THIS PROJECT SHALL BE SHIPPED IN NEW SEALED CONTAINERS AND BEAR THE MANUFACTURER'S LABEL AS REGISTERED WITH THE U.S.E.P.A. THE CONTRACTOR MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL STUMP TREATMENT, SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE CATEGORY.

ANY AREA DISTURBED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED AND SEEDED ACCORDING TO ITEM 659 AND INCLUDED IN ITEM 607 FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITY OF ITEM 601 IS CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR FENCE CROSSINGS

ITEM 601 ROCK CHANNEL PROTECTION, TYPE B, WITHOUT FILTER 50 CU.YD.
ITEM 601 ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER 50 CU.YD.

THE COST OF ALL THE ABOVE, EXCEPT ITEM 601, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607, FENCE, TYPE 47, AS PER PLAN. MEASUREMENTS FOR FINAL QUANTITIES SHALL BE IN ACCORDANCE WITH ITEM 607.10.

AIRWAY-HIGHWAY CLEARANCE

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) AND TO FILE FAA FORM 7460-1 IF ANY TEMPORARY STRUCTURE OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT PENETRATES THE NOTIFICATION SURFACE OF THE AIRPORT AS DEFINED IN PART 77 OF THE FEDERAL AVIATION REGULATIONS. IF FORM 7460-1 IS REQUIRED AS PER THE REGULATIONS, A COPY OF THE SUBMISSION AND FORM 7460-1 SHALL ALSO BE FORWARDED TO THE ODOT DIVISION OF AVIATION. NO EQUIPMENT SHALL BE MOVED TO THE JOB SITE NOR WORK COMMENCED UNTIL THE CONTRACTOR HAS: (1) ADVISED THE PROJECT ENGINEER IN WRITING THAT THROUGH COORDINATION WITH FAA IT HAS BEEN DETERMINED THAT IT WILL NOT BE NECESSARY TO FILE FORM 7469-1, OR (2) FURNISHED A COPY OF FAA'S APPROVAL AND ODOT'S DIVISION OF AVIATION PERMIT TO THE PROJECT ENGINEER.

THE CONTRACTOR IS ADVISED THAT FAA APPROVAL TYPICALLY TAKES 30 TO 90 DAYS. ALL SUBMISSIONS SHOULD BE DIRECTED TO THESE OFFICES:

THE FEDERAL AVIATION ADMINISTRATION GREAT LAKES REGIONAL OFFICE AIR TRAFFIC DIVISION AGL-530 2300 EAST DEVON AVENUE DES PLAINES, ILLINOIS 60018 (708)294-7458	OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF AVIATION 2829 WEST DUBLIN-GRANVILLE ROAD COLUMBUS, OHIO 43235 (614)793-5046
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ITEM SPEC. - FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH LEAN GROUT, CONTROLLED LOW STRENGTH MATERIAL, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE FOOTAGE OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAR FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULK HEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACKFILLED IN ACCORDANCE WITH THE PROVISIONS OF 203, OR IT MAY BE REMOVED.

THE FOOTAGE, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER LINEAR FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

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GENERAL NOTES

LOR-20-12.62

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351

GENERAL NOTES, CONTINUED

ITEM SPECIAL - ROADWAY, MISC: PATCHING OF CONCRETE PAVEMENT

DESCRIPTION: THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT FOR PARTIAL DEPTH REPAIR OF CONCRETE PAVEMENTS AT SPALL AREAS, INCLUDING THE REMOVAL OF ALL LOOSE AND UNSOUND CONCRETE, SURFACE PREPARATION, FURNISHING AND PLACING DRY NO. 57 COARSE AGGREGATE, AND THE MIXING, PLACING, FINISHING AND CURING OF THE EPOXY FILLER PATCHES. FOR INFORMATION PURPOSES, IT IS ESTIMATED THAT THE PROJECT WILL REQUIRE 800 GALLONS OF EPOXY FILLER AND 8 CUBIC YARDS OF DRY 57 AGGREGATE.

MATERIALS: MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

COARSE AGGREGATE -- DRY NO. 57 PER 703.02
EPOXY FILLER -- 721.03

EQUIPMENT: EXISTING LOOSE MATERIAL MAY BE REMOVED BY BRUSHING, BROOMING, BY HAND OR WITH DRY, OIL-FREE COMPRESSED AIR. THE APPLICATOR SHALL HAVE A METER TO MEASURE THE AMOUNT IN GALLONS OF EPOXY FILLER THAT WAS USED FOR THIS WORK.

REMOVAL OF UNSOUND CONCRETE: THE UNSOUND CONCRETE SHALL BE REMOVED BY HAND CHIPPING, BRUSHING, BY HAND OR WITH DRY, OIL-FREE COMPRESSED AIR.

PREPARATION OF PATCH AREA: CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE DRY NO. 57 COARSE AGGREGATE AND EPOXY FILLER MATERIAL. THE EXPOSED FACES OF THE CONCRETE SHALL BE FREE OF LOOSE CONCRETE. BRUSHING, BROOMING OR OTHER HAND METHODS ARE ACCEPTABLE FOR CLEANING OF THESE AREAS. FINAL CLEANING SHALL BE WITH DRY, OIL-FREE COMPRESSED AIR.

EPOXY FILLER: THE EPOXY FILLER SHALL BE THE CASTING ADHESIVE USED FOR RAISED PAVEMENT MARKERS MEETING THE REQUIREMENTS OF 721.03. IT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

PLACING PATCH MATERIAL: THE DRY NO. 57 COARSE AGGREGATE SHALL BE PLACED IN THE PATCH AREA AFTER THE EPOXY FILLER IS APPLIED TO HOLE SIDES AND BOTTOM, FILLED LEVEL TO THE PAVEMENT SURFACE. THE TEMPERATURE REQUIREMENTS OF 621.04 SHALL BE MET. THE PATCH SHALL BE FINISHED FLUSH WITH THE EXISTING CONCRETE PAVEMENT BY FILLING THE HOLE (AGGREGATE IN PLACE) WITH EPOXY FILLER.

METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE NUMBER OF GALLONS OF THE EPOXY FILLER MATERIAL USED FOR ALL PATCHES COMPLETE, IN PLACE AND ACCEPTED. THE COSTS FOR FURNISHING AND PLACING THE DRY NO. 57 COARSE AGGREGATE SHALL BE INCLUDED. THE WORK SHALL PROCEED AS DIRECTED BY THE ENGINEER.

BASIS OF PAYMENT: PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	QTY	DESCRIPTION
SPECIAL	GALLON	800	ROADWAY, MISC.: PATCHING OF CONCRETE PAVEMENT

CATCH BASIN NO. 2-2B, AS PER PLAN

THE METHOD OF CONSTRUCTION FOR THESE CATCH BASINS SHALL BE CAST-IN-PLACE.

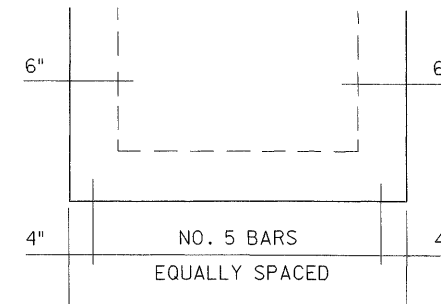
ADDITIONAL NOTES

255	PAVEMENT REPAIR	80E
SPEC	PRESSURE RELIEF JOINT, AS PER PLAN	85
605	SHALLOW UNDERDRAIN, AS PER PLAN	90A
202	CURB REMOVED, AS PER PLAN	84

SEE SHEETS 142 THRU 144 FOR MAINTENANCE OF TRAFFIC NOTES

BAR LOCATION DETAIL

FOR NO. 5 CB AND NO. 8 CB



THE NUMBER OF BARS NEEDED ALONG EACH SIDE OF A NO. 5 AND NO. 8 CATCH BASIN WITH A CONCRETE APRON IS 4.

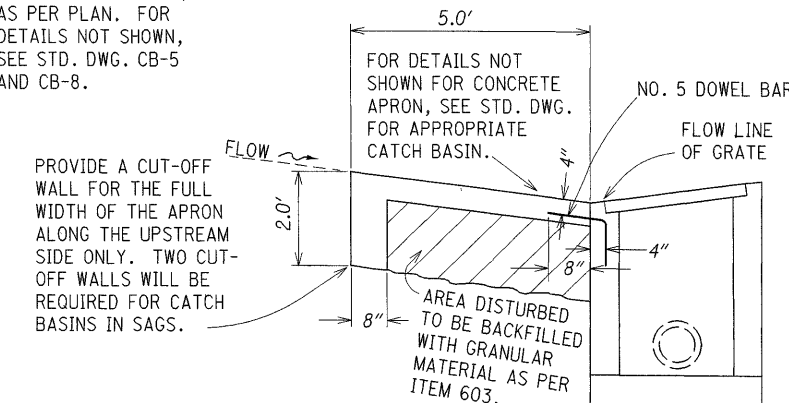
CATCH BASIN NO.	TOTAL # OF BARS FOR	
	STD. APRON	SEG. APRON
5	7	14
8	12	16

THE FURNISHING AND PLACING OF STEEL FOR THE 5/8" X 1/2" DOWEL BARS SHALL BE PER 509 REINFORCING STEEL. THE DOWEL BARS SHALL BE EPOXY COATED PER 509.10. THE DOWEL BARS SHALL BE INSTALLED PER 510 OR CAST INTO THE BASIN. BOLT IN INSERTS MAY BE USED. THE CATCH BASIN SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE. BRICK OR CONCRETE BLOCK WILL NOT BE PERMITTED. THE 6" CONCRETE APRON SHALL BE REINFORCED PER 601.04(3).

CATCH BASIN NO. 5, AS PER PLAN
CATCH BASIN NO. 8, AS PER PLAN

THIS DETAIL SHALL BE USED FOR NO. 8 AND NO. 5 CATCH BASINS, AS PER PLAN. FOR DETAILS NOT SHOWN, SEE STD. DWG. CB-5 AND CB-8.

THE METHOD OF CONSTRUCTION OF THESE CATCH BASINS SHALL BE CAST-IN-PLACE.



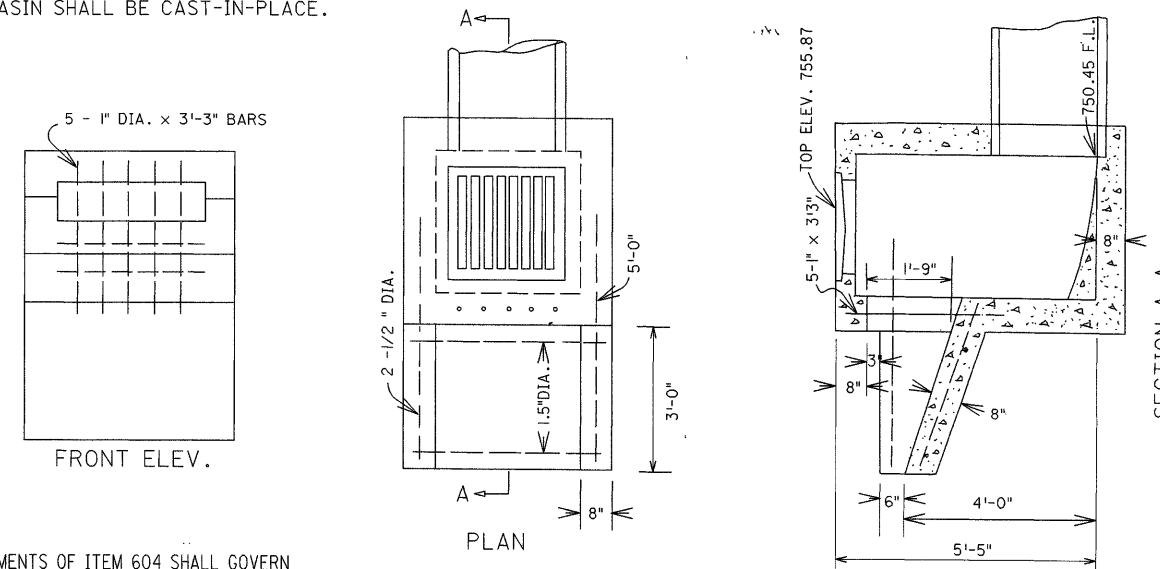
THE REQUIREMENTS OF ITEM 604 SHALL GOVERN THE REPLACEMENT OF THE EXISTING CATCH BASIN. THE WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING CATCH BASIN AND ITS SUBSEQUENT REPLACEMENT. THE CONCRETE APRON SHALL BE REPLACED AND BACKFILLED AS SHOWN HERE AND IN THE STANDARD DRAWING FOR THE PERTINENT CATCH BASIN.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604 CATCH BASIN, NO. 5 OR NO. 8, AS PER PLAN, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

CATCH BASIN NO. 2-3, AS PER PLAN

STA. 1+10 LT ON S.W. RAMP
(NOTE: THIS CB IS ON RIGHT SIDE OF OFF RAMP)

THE METHOD OF CONSTRUCTION OF THIS CATCH BASIN SHALL BE CAST-IN-PLACE.



THE REQUIREMENTS OF ITEM 604 SHALL GOVERN THE REPLACEMENT OF THE EXISTING CATCH BASIN. THE WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL AND SUBSEQUENT REPLACEMENT OF THE EXISTING CATCH BASIN AND WINGWALLS. THE EXCAVATION SURROUNDING THE CATCH BASIN AND WINGWALLS SHALL BE BACKFILLED PER 604.04 TO PROVIDE POSITIVE DRAINAGE INTO THE CATCH BASIN INLET.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604 CATCH BASIN, NO. 2-3, AS PER PLAN AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

THIS MODIFICATION IS FOR THE SIDE INLET. REINFORCING BARS SHOWN ARE IN ADDITION TO THOSE REQUIRED BY STD. CATCH BASIN. ALL REINFORCING BARS SHALL BE EPOXY COATED. FOR ADDITIONAL NOTES AND DETAILS SEE STD. CONST. DWG. CB-2.3.

GENERAL SUMMARY

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GENERAL SUMMARY

LOR-20-12.62

SHEET		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHT. REF.	SHEET		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHT. REF.
18	19							18	19						
ROADWAY															
LUMP		201	11000	LUMP		CLEARING AND GRUBBING									
								3.00		602	20000	3.00	CU. YD.	CONCRETE MASONRY, AS PER PLAN	15
1548		202	23000	1548	SQ. YD.	PAVEMENT REMOVED		2183		603	01500	2183	LIN. FT.	6" CONDUIT, TYPE F, 707J7 NON-PERFORATED, ASTM D3034, SDR 35, SS 931OR SS 944	
4050		202	30600	4050	SQ. YD.	CONCRETE MEDIAN REMOVED		82		603	04600	82	LIN. FT.	12" CONDUIT, TYPE C	
1465		202	32000	1465	LIN. FT.	CURB REMOVED		660		603	05200	660	LIN. FT.	12" CONDUIT, TYPE F, 707.05 TYPE C	
1654		202	32001	1654	LIN. FT.	CURB REMOVED, AS PER PLAN	84	80		603	96600	80	LIN. FT.	CONDUIT, BORED OR JACKED: 15" TYPE B	
10		202	32600	10	LIN. FT.	GUTTER REMOVED									
								13		604	00800	13	EACH	CATCH BASIN, NO. 3A	
12,097		202	38000	12,097	LIN. FT.	GUARDRAIL REMOVED		2		604	01601	2	EACH	CATCH BASIN, NO. 5, AS PER PLAN	15A
5982		202	38300	5982	LIN. FT.	GUARDRAIL REMOVED, BARRIER DESIGN		11		604	02801	11	EACH	CATCH BASIN, NO. 8, AS PER PLAN	15A
651		202	54000	651	EACH	RAISED PAVEMENT MARKER REMOVED		7		604	04501	7	EACH	CATCH BASIN, NO. 2-2B, AS PER PLAN	15A
1		202	58400	1	EACH	INLET ABANDONED		1		604	04901	1	EACH	CATCH BASIN, NO. 2-3, AS PER PLAN	15A
4		202	58500	4	EACH	CATCH BASIN ABANDONED									
								12		604	09000	12	EACH	CATCH BASIN ADJUSTED TO GRADE	
22		SPEC.	20270000	22	LIN. FT.	FILL AND PLUG EXISTING CONDUIT	15	5		604	14602	5	EACH	INLET, NO. 3B50	
574		SPEC.	20298300	574	SQ. YD.	REMOVAL MISC. AGGREGATE CROSS-OVER REMOVED	14	58		SPEC.	60436600	58	EACH	PRECAST REINFORCED CONCRETE OUTLET	90A
440		203	12000	440	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION		28,571		605	05101	28,571	LIN. FT.	4" SHALLOW PIPE UNDERDRAIN, AS PER PLAN 707.15	90A
989		203	20000	989	CU. YD.	EMBANKMENT		26,085		605	30001	26,085	LIN. FT.	SHALLOW UNDERDRAIN, AS PER PLAN	90A
1983		203	20001	1983	CU. YD.	EMBANKMENT, AS PER PLAN	13								
								1560		605	31100	1560	LIN. FT.	AGGREGATE DRAIN	
10,181		203	50000	10,181	SQ. YD.	SUBGRADE COMPACTION		1500		605	31101	1500	LIN. FT.	AGGREGATE DRAIN, AS PER PLAN	80E
1000		203	55000	1000	LIN. FT.	DITCH CLEANOUT	13								
9332.25		606	13000	9332.25	LIN. FT.	GUARDRAIL, TYPE 5									
37.5		606	13050	37.5	LIN. FT.	GUARDRAIL, TYPE 5A									
1300		606	15500	1300	LIN. FT.	GUARDRAIL, BARRIER DESIGN, TYPE 5		23,334		254	01000	23,334	SQ. YD.	PAVEMENT PLANING, BITUMINOUS	
								21,027		255	10001	21,027	SQ. YD.	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN 'A'	15
14		606	26100	14	EACH	ANCHOR ASSEMBLY, TYPE E	13	8580		255	10001	8580	SQ. YD.	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN 'B'	15
12		606	26500	12	EACH	ANCHOR ASSEMBLY, TYPE T		12,272		255	20000	12,272	LIN. FT.	FULL DEPTH PAVEMENT SAWING	
25		606	35000	25	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1		1727		301	10002	1727	CU. YD.	BITUMINOUS AGGREGATE BASE, AC-20	
15		606	35100	15	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2									
	35,518	607	15001	35,518	LIN. FT.	FENCE, TYPE 47, AS PER PLAN	15	1584		304	20000	1584	CU. YD.	AGGREGATE BASE	
								30,000		305	18000	30,000	SQ. YD.	CONCRETE BASE, VARIABLE THICKNESS	
	50	622	23405	50	LIN. FT.	CONCRETE BARRIER, TYPE B50, AS PER PLAN 'C'	85B	2603		310	12000	2603	CU. YD.	SUBBASE, TYPE I, GRADING 'A'	
	6383	622	23405	6383	LIN. FT.	CONCRETE BARRIER, TYPE B50, AS PER PLAN 'A'	5 & 13	421		404	20000	421	CU. YD.	ASPHALT CONCRETE, AC-20	
	75	622	23405	75	LIN. FT.	CONCRETE BARRIER, TYPE B50, AS PER PLAN 'B'	85A & 85B	29,594		407	10000	29,594	GAL.	TACK COAT	
	350	622	24001	350	LIN. FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN	13								
	24	625	32000	24	EACH	GROUND ROD		202		408	10000	202	GAL.	BITUMINOUS PRIME COAT	
								8669		446	01200	8669	CU. YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	
	8	SPEC.	69010360	8	EACH	IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL	14	6268		446	01400	6268	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20	
EROSION CONTROL															
									749	SPEC.	45135001	749	LIN. FT.	PRESSURE RELIEF JOINT, AS PER PLAN	85
9169		207	10000	9169	SQ. YD.	TEMPORARY SEEDING AND MULCHING		156		609	26000	156	LIN. FT.	CURB, TYPE 6	
4350		207	30000	4350	LIN. FT.	FILTER FABRIC FENCE		2540		611	25001	2540	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN	14
401		207	70000	401	EACH	STRAW OR HAY BALES		1308		617	10100	1308	CU. YD.	COMPACTED AGGREGATE, TYPE A	
158		601	32100	158	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER		20		617	25000	20	M-GAL.	WATER	
1674		601	32104	1674	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER		500		SPEC.	69060000	500	CU. YD.	BERM REPAIR, FLEXIBLE	14
		601	32200	66	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		800		SPEC.	69098900	800	GAL.	ROADWAY, MISC.: PATCHING OF CONCRETE PAVEMENT	15A
50		601	34100	50	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITHOUT FILTER		10,000		SPEC.	45035000	10,000	LIN. FT.	CRACK CLEANING AND SEALING, CLASS 1, 705.04	
	45,844	659	10000	45,844	SQ. YD.	SEEDING AND MULCHING									
	6.08	659	20000	6.08	TON	COMMERCIAL FERTILIZER									
	99	659	35000	99	M-GAL	WATER									
	190	670	40000	190	SQ. YD.	DITCH EROSION PROTECTION									

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WORKSTATION: jschlett DATE: 16 DEC 96

GENERAL SUMMARY

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GENERAL SUMMARY

LOR-20-12.62

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SHEET		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHT. REF.	SHEET		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHT. REF.
19	20							19	20						
TRAFFIC CONTROL															
	210	620	10500	210	EACH	DELINEATOR, TYPE C, DESIGN 2, POST MOUNTED									
	64	620	15500	64	EACH	DELINEATOR, TYPE D, DESIGN 2, POST MOUNTED		0.38	642	00102	0.38	MILE	EDGE LINE, TYPE 2		
	294	620	31200	294	EACH	DELINEATOR REMOVED FOR DISPOSAL		0.08	642	00202	0.08	MILE	LANE LINE, TYPE 2		
	8	620	40301	8	EACH	REFLECTOR, TYPE D, AS PER PLAN		0.39	642	00302	0.39	MILE	CENTER LINE, TYPE 2		
	20	620	70000	20	EACH	DELINEATOR, MISC: 36" YELLOW TUBULAR MARKER, SURFACE MOUNTED		18.13	644	00100	18.13	MILE	EDGE LINE		
								7.42	644	00200	7.42	MILE	LANE LINE		
550		621	00300	550	EACH	PRISMATIC RETROREFLECTOR									
550		621	00600	550	EACH	RAISED PAVEMENT MARKER CASTING, INSTALLATION ONLY		4050	644	00400	4050	LIN. FT.	CHANNELIZING LINE		
	2	625	00500	2	EACH	CONNECTOR KIT, TYPE II		244	644	00500	244	LIN. FT.	STOP LINE		
	2	625	00600	2	EACH	CONNECTOR KIT, TYPE III		2311	644	00700	2311	LIN. FT.	TRANSVERSE LINE		
	2	625	18200	2	EACH	BRACKET ARM, 15'		195	644	00900	195	SQ. FT.	ISLAND MARKING		
								5	644	01300	5	EACH	LANE ARROW		
	200	625	23400	200	LIN. FT.	NO. 10 AWG POLE AND BRACKET CABLE									
	2	625	26250	2	EACH	LUMINAIRE, CONVENTIONAL, STYLE B, TYPE II, 200 WATT H.P.S., 713.11, 480 VOLT		3	644	01410	3	EACH	WORD ON PAVEMENT, 96"		
	5	625	32000	5	EACH	GROUND ROD	140		802	00100	140	EACH	BARRIER REFLECTOR, TYPE A		
	5	625	34000	5	EACH	POWER SERVICE	187		802	00200	187	EACH	BARRIER REFLECTOR, TYPE B		
	15.4	630	00000	15.4	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION									
LIGHTING															
	7.4	630	00100	7.4	CU. YD.	CONCRETE FOR EMBEDDED FOUNDATION									
	257	630	02100	257	LIN. FT.	GROUND MOUNTED SUPPORT, NO. 2 POST	100		603	00400	100	LIN. FT.	4" CONDUIT, TYPE E		
	2462	630	03100	2462	LIN. FT.	GROUND MOUNTED SUPPORT, NO. 3 POST	5		625	00500	5	EACH	CONNECTOR KIT, TYPE II		
	31	630	04100	31	LIN. FT.	GROUND MOUNTED SUPPORT, NO. 4 POST	5		625	00600	5	EACH	CONNECTOR KIT, TYPE III		
	317	630	06400	317	LIN. FT.	GROUND MOUNTED SUPPORT, S4X7.7 BEAM	26		625	01500	26	EACH	CABLE SPLICING KIT		
							5		625	06600	5	EACH	LIGHT POLE, DESIGN AT20B 41.7		
	110	630	06500	110	LIN. FT.	GROUND MOUNTED SUPPORT, W6X9 BEAM									
	132	630	08004	132	LIN. FT.	ONE WAY SUPPORT, NO. 3 POST	5		625	14100	5	EACH	LIGHT POLE FOUNDATION, 24" X 8" DEEP		
	26	630	09000	26	EACH	BREAKAWAY BEAM CONNECTION	750		625	23400	750	LIN. FT.	NO. 10 AWG POLE AND BRACKET CABLE		
	2	630	25601	2	EACH	COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 6, AS PER PLAN	1805		625	24100	1805	LIN. FT.	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES		
	1	630	36000	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 64.5' SPAN	5		625	26250	5	EACH	LUMINAIRE, CONVENTIONAL, STYLE B, TYPE II, 200 WATT HIGH PRESSURE SODIUM, 713.11, 480V		
							1650		625	29002	1650	LIN. FT.	TRENCH, 24" DEEP		
	35	630	75106	35	EACH	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21									
	2	630	77700	2	EACH	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.26, DESIGN 7	13		625	30700	13	EACH	PULL BOX, 713.08, 18"		
	1134	630	80100	1134	SQ. FT.	SIGN, FLAT SHEET, TYPE F	8		625	31510	8	EACH	PULL BOX REMOVED		
	481	630	80102	481	SQ. FT.	SIGN, FLAT SHEET, TYPE G	6		625	32000	6	EACH	GROUND ROD		
	4367	630	80204	4367	SQ. FT.	SIGN, EXTRUSHEET, TYPE G	5		625	34900	5	EACH	LIGHT POLE REMOVED		
MAINTENANCE OF TRAFFIC															
	2	630	84300	2	EACH	BARRIER WALL ASSEMBLY, TYPE TC-21.41, DESIGN 3									
	194	630	84900	194	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL								SEE SHEET 145 FOR GENERAL SUMMARY	
	19	630	85400	19	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL									
	127	630	86002	127	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL									
	23	630	86102	23	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL									
BRIDGES, OVER 20 FOOT SPAN															
	2	630	86204	2	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND STORAGE								SEE SHEET 216 FOR LOR-20-1356 L&R	
	2	630	86310	2	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL								SEE SHEET 216 FOR LOR-20-1380 L&R	
	24	630	87400	24	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL								SEE SHEET 216 FOR LOR-20-1451 L&R	
	5	630	89702	5	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL								SEE SHEET 245 FOR LOR-20-1533 L&R	
	2	630	89902	2	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC CONTROL ITEM: STRUCTURE MOUNTED SIGN SUPPORT AND DISPOSAL								SEE SHEET 264 & 265 FOR LOR-20-1559 L&R SEE SHEET 288 & 289 FOR LOR-20-1587 L&R SEE SHEET 216 FOR LOR-20-1587 L&R	
WEIGH IN MOTION															
	257	630	97900	257	LIN. FT.	SIGNING, MISC.: GROUND MOUNTED SUPPORT, TYPE M WOOD BEAM								SEE SHEET 333 FOR GENERAL SUMMARY	
	297	630	97900	297	LIN. FT.	SIGNING, MISC.: GROUND MOUNTED SUPPORT, TYPE L WOOD BEAM									
	5	631	84000	5	EACH	SIGN SERVICE			614	11000	LUMP			MAINTAINING TRAFFIC	
	22	631	84300	22	EACH	SIGN WIRED			619	15020	LUMP			FIELD OFFICE, TYPE C	
	5	631	85100	5	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X			SPEC	61925Q10	LUMP			COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE	
	33	631	87202	33	EACH	BALLAST, TYPE CMRI-175-480, INTEGRAL			623	10000	LUMP			CONSTRUCTION LAYOUT STAKES	
	35	631	89200	35	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP			624	10000	LUMP			MOBILIZATION	

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WORKSTATION: /sch/eff DATE: 18 DEC 96

SUB - SUMMARY

DESIGN FILE: c:\dgn\lor\ain\0201262\subsum.dgn
 WORKSTATION: jsch/est DATE: 16 DEC 96
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REFERENCE SHEET NUMBER	201				202				SPEC.	203				207		254	301	304	305	310	404	407	408	446		REFERENCE SHEET NUMBER					
	CLEARING AND GRUBBING	GUTTER REMOVED	CURB REMOVED	CURB REMOVED, AS PER PLAN	CATCH BASIN ABANDONED	GUARDRAIL REMOVED	GUARDRAIL REMOVED, BARRIER DESIGN	CONCRETE MEDIAN CONCRETE REMOVED	RAISED PAVEMENT MARKER REMOVED	INLET ABANDONED	PAVEMENT REMOVED	REMOVAL MISC. AGGREGATE CROSS-OVER REMOVED	DITCH CLEANOUT	EMBANKMENT	EMBANKMENT AS PER PLAN	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	SUBGRADE COMPACTION	TEMPORARY SEEDING & MULCHING	FILTER FABRIC FENCE	STRAW OR HAY BALES	PAVEMENT PLANING, BITUMINOUS	BITUMINOUS AGGREGATE BASE, AC-20	AGGREGATE BASE	CONCRETE BASE, VARIABLE THICKNESS	SUBBASE TYPE I GRADING "A"		ASPHALT CONCRETE, AC-20	TACK COAT	BITUMINOUS PRIME COAT	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
	LUMP	LIN.FT.	LIN.FT.	EACH	LIN.FT.	SQ.YD.	SQ.YD.	EACH	SQ.YD.	LIN.FT.	SQ.YD.	LIN.FT.	CU.YD.	CU.YD.	SQ.YD.	SQ.YD.	LIN.FT.	EACH	SQ.YD.	CU.YD.	SQ.YD.	SQ.YD.	CU.YD.	CU.YD.	CU.YD.	GAL.	GAL.	CU.YD.	CU.YD.		
13										1000																				13	
14	LUMP													100												400	2500			14	
15													1949										1087	30,000		26,867	6206.8	8634.1		15	
21														2764.1	7136.9										1612					21	
22																														22	
24																														24	
27			623			600					258																			27	
29						1200																								29	
30						4928.5	150				135															62		13		30	
31						1625	75				125																			31	
32						550	2017.35	1399			56																			32	
33						1093.25	1237	825																						33	
34						1462.25	1287	858																						34	
35						637.5	877	418																						35	
35A		583	303			338.4	300.8																			165		48.2	34.8	35A	
36		726																									202			36	
37													246		3															37	
42													58		36															42	
44													90		33															44	
46													11		89															46	
49													164		274															49	
55													34		38															55	
68													23		172															68	
72													129		16															72	
83										1547.9					854.6	2540.2														83	
85													134.3																	85	
85A																														85A	
85B																														85B	
86		10												34																86	
134A						249.4																								134A	
136								65																						136	
TOTALS	LUMP	10	1465	1654	4	12,096.5	5981.75	4050.2	651	1	1547.9	574	1000	989.3	1983	4409.7	10,181.1	9169	4350	401	23,334	1726.5	1584.2	30,000	2603.2	421	29,594	202	6268	8668.9	TOTALS

REFERENCE SHEET NUMBER	601		602		603		SPEC.	604				SPEC.	605			606				REFERENCE SHEET NUMBER											
	ROCK CHANNEL PROTECTION, TYPE C W/FILTER	ROCK CHANNEL PROTECTION, TYPE B W/FILTER	ROCK CHANNEL PROTECTION, TYPE B W/OUT FILTER	ROCK CHANNEL PROTECTION, TYPE B, WITH FABRIC FILTER	CONCRETE MASONRY, AS PER PLAN	12" CONDUIT, TYPE F, 707.05 TYPE C	12" CONDUIT, TYPE C	CONDUIT, BORED OR JACKED: 15" TYPE "B"	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM D3034 SDR 35 SS 9310R SS 944	FILL AND PLUG EXISTING CONDUIT	INLET, NO. 3B50	CATCH BASIN, NO. 3A	CATCH BASIN, NO. 8, AS PER PLAN	CATCH BASIN, NO. 2-2B, AS PER PLAN	CATCH BASIN, NO. 2-3, AS PER PLAN	CATCH BASIN ADJUSTED TO GRADE	CATCH BASIN, NO. 5, AS PER PLAN	PRECAST REINFORCED CONCRETE OUTLET	SHALLOW UNDERDRAIN, AS PER PLAN		AGGREGATE DRAIN	4" SHALLOW PIPE UNDERDRAIN, AS PER PLAN 707.15	AGGREGATE DRAIN, AS PER PLAN	GUARDRAIL, TYPE 5A	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 1	BRIDGE TERMINAL ASSEMBLY, TYPE 2	ANCHOR ASSEMBLY, TYPE E	
	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.		
15		50	50																											15	
29																														29	
31							64																							31	
32							10																							32	
33																														33	
34																														34	
35																														35	
35A																														35A	
36																														36	
80D																														80D	
83																														83	
85																														85	
86																														86	
87																														87	
88																														88	
89																														89	
90																														90	
199																														199	
TOTALS	66	158	50	1674	3.00	660	82	80	2183	22	5	13	11	7	1	12		2	58	26,085	1560	28,571	1500	37.5	9332.25	1300	12	25	15	14	TOTALS

SUB - SUMMARY

CALCULATED
MGA
CHECKED
ADB

SUB-SUMMARY

LOR-20-12.62

20
351

REFERENCE SHEET NUMBER	SIGN,										GROUND MOUNTED SUPPORT,										REFERENCE SHEET NUMBER												
	SIGN,			REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL		REMOVAL OF GROUND MOUNTED SUPPORT AND STORAGE		REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL	REMOVAL OF MISCELLANEOUS TRAFFIC CONTROL ITEM STRUCTURE MOUNTED SIGN SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 6, AS PER PLAN	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.26, DESIGN 7	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 64.5' SPAN	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL																	
	EXTRUSHEET, TYPE G	FLAT SHEET, TYPE G	FLAT SHEET, TYPE F	POST	BEAM	POST	BEAM	MINOR	MAJOR	DISPOSAL	DISPOSAL	DISPOSAL	DISPOSAL	DISPOSAL	DISPOSAL	DISPOSAL	DISPOSAL	ONE WAY NO. 3 POST	NO. 2 POST	NO. 3 POST		NO. 4 POST	S4x7.7 BEAM	W6x9 BEAM	TYPE M WOOD BEAM	TYPE L WOOD BEAM	BARRIER WALL ASSEMBLY, TYPE TC-21.41, DESIGN 3	CONCRETE FOR EMBEDDED FOUNDATION	BREAKAWAY BEAM CONNECTIONS	CONCRETE FOR ANCHOR BASE FOUNDATION	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21		
SQ. FT.			EACH														LIN. FT.										CU. YD.	EACH	CU. YD.	EACH			
33																																33	
35																																35	
91	306	12	109.8	11	2			8	3	1								11	210.5			34.5			42	58				0.54	2		91
92	306	12	96.3	5				5	1	1								11	180			32.5			41	64				0.54	2		92
93	204	54	59.8	15	2			15	2									55	88					43		68.5				0.66	2		93
94	374		56.5	11	7			7	3									63	87						87.5	63.5						94	
95	382		106.8	10	2		2	10	2									16	179						45.5	42.5					4	95	
96	30	24	124	2	4			4	2									22	181			96.5							1.62	6		96	
97	455.5		64	6				5										41	96			32.5							0.54	2		7	97
98	72	12	125	6	2			17	1									22	125						41							98	
99	563.5	126	53.5	18				17	1									16	352.5			64							1.08	4		6	99
100	198.5	18	91.5	9				11	2										231														100
101		46	53.9	9				12										33			162.5												101
102	22.5	10	62	4	2			12	1										111	15.5	28.5								0.54	2			102
103	22.5	5	56	4	2			14	1										99.5	15.5	28.5								0.54	2			103
104	45	60	43.4	6				11										33		185				32					0.66	2			104
105	340	56	9	5				27										33		85.5											4		105
106	45	46	22	6				19										33		88.5				35					0.66	2			106
107	1000.5									3		2	6	2	2	1	2														15.38	14	107
TOTALS	4367	481	1133.5	127	23		2	194	19	5		2	24	2	2	1	2	132	257	2462	31	317	110	257	296.5	2	7.38	26	15.38	35	TOTALS		

REFERENCE SHEET NUMBER	620	625				631				620				642(TYPE 2)				644								REFERENCE SHEET NUMBER							
	REFLECTOR, TYPE D, AS PER PLAN	LUMINAIRE CONVENTIONAL STYLE B, TYPE II, 200 WATT H.P.S., 713.11, 480 VOLT	BRACKET ARM, 15'	POWER SERVICE	CONNECTOR KIT	GROUND ROD	NO. 10 AWG POLE AND BRACKET CABLE	BALLAST, TYPE CMR1-175-480, INTEGRAL	SIGN SERVICE	SIGN WIRED	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP	DELINEATOR, TYPE C, DESIGN 2, POST MOUNTED	DELINEATOR, TYPE D, DESIGN 2, POST MOUNTED	DELINEATOR, MISC. 36" YELLOW TUBULAR MARKER, SURFACE MOUNTED	DELINEATOR REMOVED FOR DISPOSAL	LANE LINE	CENTER LINE (SOLID, DOUBLE)	EDGE LINE		LANE ARROW	WORD ON PAVEMENT, 96"	ISLAND MARKING	EDGE LINE			LANE LINE	TRANSVERSE LINE		CHANNELIZING LINE	STOP LINE		
	EACH						LIN. FT.										LIN. FT./MILE		WHITE	YELLOW			SQ. FT.	WHITE	YELLOW		LANE LINE	WHITE	YELLOW	LIN. FT.			
93	4																															93	
95																																	95
97																																	97
99																																	99
100	4																															100	
105																																	105
107		2	2	5	2	2	5	200	12	5	8	5	14																			107	
133																																	133
140																																	140
TOTALS	8		2	2	5	2	2	5	200	33	5	22	5	35	210	64	20	294	400	2037	801	1193	5	3	195	48261.5	47463	39179	1306	1005	4050	244	TOTALS

DESIGN FILE: c:\dgn\lor\ain\0201262\subsum.dgn
WORKSTATION: jsch/ef DATE: 16 DEC 96

RESURFACING CALCULATIONS

CALCULATED
ADB
CHECKED
MGA

STATION LIMITS	SIDE	LENGTH	PAVEMENT QUANTITIES										BERM QUANTITIES								203	659
			PAVEMENT WIDTH	PAVEMENT AREA	407		446 ASPHALT CONCRETE				TOTAL BERM WIDTH	BERM AREA	407		446 ASPHALT CONCRETE				617		EMBANKMENT, AS PER PLAN	SEEDING & MULCHING (DISTURBED AREAS ONLY)
					TACK COAT AT 0.1 GAL. PER SQ. YD.	TACK COAT AT 0.05 GAL. PER SQ. YD.	SURFACE COURSE		INTERMEDIATE COURSE				TACK COAT AT 0.1 GAL. PER SQ. YD.	TACK COAT AT 0.05 GAL. PER SQ. YD.	SURFACE COURSE		INTERMEDIATE COURSE		COMPACTED AGGREGATE TYPE A	WATER		
							THICKNESS	QUANTITY	THICKNESS	QUANTITY					THICKNESS	QUANTITY	THICKNESS	QUANTITY				
LIN. FT.	FT.	SQ. YD.	GAL.	IN.	CU. YD.	IN.	CU. YD.	FT.	SQ. YD.	GAL.	IN.	CU. YD.	IN.	CU. YD.	CU. YD.	M-GAL.	CU. YD.	SQ. YD.				
STA. 665+00 TO STA. 772+00	EBL	10700	24	28533	2853	1427	1-1/4"	990.7	1-3/4"	1387.0	12	14267	1427	713	1-1/4"	495.4	1-3/4"	693.5	396	661	11889	
STA. 772+00 TO STA. 779+01.43	EBL	701.43	24	1871	187	94	1-1/4"	64.9	1-3/4"	90.9	VAR.	1734	173	87	1-1/4"	60.2	1-3/4"	84.3	13	17	312	
STA. 665+00 TO STA. 769+44.04	WBL	10444.04	24	27851	2785	1393	1-1/4"	967.0	1-3/4"	1353.9	12	13925	1393	696	1-1/4"	483.5	1-3/4"	676.9	387	645	11604	
STA. 779+01.43 TO STA. I+11.6	EBL	6248.57	24	16663	1666	833	1-1/4"	578.6	1-3/4"	810.0	14.25	9863	986	493	1-1/4"	342.5	1-3/4"	479.4	116	154	2777	
STA. 769+44.04 TO STA. 2+63.2	WBL	7357.56	24	19620	1962	981	1-1/4"	681.3	1-3/4"	953.8	14.25	11598	1160	580	1-1/4"	402.7	1-3/4"	563.8	136	182	3270	
RAMP 'D' SPEED CHANGE LANE	EBL	540.28	VAR.	654	65	33	1-1/4"	22.7	1-3/4"	31.8					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'D'		1052	VAR.	2224	222	111	1-1/4"	77.2	1-3/4"	108.1	VAR.	881	88	44	1-1/4"	30.6	1-3/4"	42.8	28	34	607	
RAMP 'C'		1156.05	VAR.	2299	230	115	1-1/4"	79.8	1-3/4"	111.8	VAR.	1181	118	59	1-1/4"	41.0	1-3/4"	57.4	41	48	869	
RAMP 'C' SPEED CHANGE LANE	EBL	1000	VAR.	1389	139	70	1-1/4"	48.2	1-3/4"	67.5					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'SW' SPEED CHANGE LANE	EBL	380.19	VAR.	440	44	22	1-1/4"	15.3	1-3/4"	21.4					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'SW'		1286.95	VAR.	2696	270	135	1-1/4"	93.6	1-3/4"	131.1	VAR.	906	91	45	1-1/4"	31.5	1-3/4"	44	31	36	650	
RAMP 'SE'		919.41	VAR.	1778	178	89	1-1/4"	61.7	1-3/4"	86.4	VAR.	1137	114	57	1-1/4"	39.5	1-3/4"	55.3	30	36	640	
RAMP 'SE' SPEED CHANGE LANE	EBL	1000	VAR.	1389	139	70	1-1/4"	48.2	1-3/4"	67.5					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'CA' (S.R. 57) SPEED CHANGE LANE	EBL	696.77	VAR.	875	88	44	1-1/4"	30.4	1-3/4"	42.5					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'CA' (S.R. 57 INTERCHANGE)		1041.7	VAR.	1992	199	100	1-1/4"	69.2	1-3/4"	96.8	VAR.	780.2	78	39	1-1/4"	27.1	1-3/4"	37.9	25	31	564	
RAMP 'CA' (S.R. 57 INTERCHANGE)-FEATHER		75	VAR.	169	17	9	1(AVE.)	4.7	1(AVE.)	4.7					INCLUDED IN PAVEMENT AREA							
RAMP 'DA' FEATHER WITH S.R. 57		75	VAR.	537	54	27	1(AVE.)	14.9	1(AVE.)	14.9					INCLUDED IN PAVEMENT AREA							
RAMP 'DA' (S.R. 57 INTERCHANGE)		804	VAR.	1824	182	91	1-1/4"	63.3	1-3/4"	88.7	6	565	57	28	1-1/4"	19.6	1-3/4"	27.5	16	21	385	
RAMP 'DA' (S.R. 57 INTERCHANGE)-FEATHER		75	VAR.	167	17	8	1(AVE.)	4.6	1(AVE.)	4.6					INCLUDED IN PAVEMENT AREA							
RAMP 'A' (S.R. 30 INTERCHANGE) SPEED CHANGE LANE	WBL	1000	VAR.	1389	139	70	1-1/4"	48.2	1-3/4"	67.5					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'A' (S.R. 30 INTERCHANGE)		1249.1	VAR.	2318	232	116	1-1/4"	80.5	1-3/4"	112.7	VAR.	1508	151	75	1-1/4"	52.4	1-3/4"	73.3	42	50	901	
RAMP 'B' (S.R. 30 INTERCHANGE)		1085.11	VAR.	2171	217	109	1-1/4"	75.4	1-3/4"	105.5	VAR.	915	92	46	1-1/4"	31.8	1-3/4"	44.5	31	36	656	
RAMP 'B' (S.R. 30 INTERCHANGE) SPEED CHANGE LANE	WBL	542.44	VAR.	657	66	33	1-1/4"	22.8	1-3/4"	31.9					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'NW' SPEED CHANGE LANE	WBL	1000	VAR.	1400	140	70	1-1/4"	48.6	1-3/4"	68.1					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'NW'		884.45	VAR.	1716	172	86	1-1/4"	59.6	1-3/4"	83.4	VAR.	1070	107	54	1-1/4"	37.2	1-3/4"	52.0	31	37	657	
RAMP 'NE'		1244.9	VAR.	2401	240	120	1-1/4"	83.4	1-3/4"	116.7	VAR.	980	98	49	1-1/4"	34	1-3/4"	47.6	34	40	723	
RAMP 'NE' SPEED CHANGE LANE	WBL	492.97	VAR.	657	66	33	1-1/4"	22.8	1-3/4"	31.9					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'E' SPEED CHANGE LANE	WBL	520	VAR.	1069	107	54	1-1/4"	37.1	1-3/4"	52.0					INCLUDED IN MAINLINE CALCULATIONS							
RAMP 'E'		593.98	VAR.	1034	103	52	1-1/4"	35.9	1-3/4"	50.3	VAR.	729	73	37	1-1/4"	25.3	1-3/4"	35.4	18	22	395	
RAMP 'E'-FEATHER		75	VAR.	208	21	10	1(AVE.)	5.8	1(AVE.)	5.8					INCLUDED IN MAINLINE CALCULATIONS							
DEDUCT FOR BRIDGE DECKS & APPROACH SLABS	EBL & WBL	1313.92	VAR.	8314	-831	-416	1-1/4"	-288.7	1-3/4"	-404.1	VAR.	3869	-387	-194	1-1/4"	-134.3	1-3/4"	-188.1	-67	-101	-1816	
STA. 664+25 TO STA. 665+00 - FEATHER	EBL & WBL	75	VAR.	400	40	20	VAR.	12.9	VAR.	3.8	24	200	20	10	VAR.	6.4	VAR.	1.9				
STA. I+11.6 TO STA. I+86.6 - FEATHER	EBL	75	VAR.	200	20	10	VAR.	6.4	VAR.	1.9	13	108	11	5	VAR.	3.5	VAR.	1.0				
STA. 2+63.2 TO STA. 3+38.2 - FEATHER	WBL	75	VAR.	200	20	10	VAR.	6.4	VAR.	1.9	13	108	11	5	VAR.	3.5	VAR.	1.0				
TOTALS (TO SHEET 18 & 19)					12,049	6,029		4,173.4		5,802.7			5,861	2,928		2,033.4		2,831.4	1,308	20	1,949	35,083

DESIGN FILE: *****.DGNFILESPECIFICATIONS*****
WORKSTATION: \$TERMINAL\$ DATE: \$\$\$\$\$\$

CALCULATION FORMULAS FOR MAINLINE (EACH BOND)

W/O MEDIAN BARRIER		W/MEDIAN BARRIER	
617 - COMPACTED AGGREGATE, TYPE A	(2'+2' WIDE)(3"/12 THICK)(LENGTH)/27	(2' WIDE)(3"/12 THICK)(LENGTH)/27	
203 - EMBANKMENT AS PER PLAN	(4'+6' WIDE)(2"/12 AVE. THICK)(LENGTH)/27	(4' WIDE)(2"/12 AVE. THICK)(LENGTH)/27	
659 - SEEDING & MULCHING	(4'+6' WIDE)(LENGTH)/9	(4' WIDE)(LENGTH)/9	
617 - WATER	(COMPACTED AGGREGATE, TYPE A)(0.015 MGAL./C.Y.)		

NOTE:
SINCE DEDUCTION FOR FEATHER AREAS WITHIN THE PROJECT LIMITS COMPARE TO TOTAL PAVEMENT QUANTITIES WAS NEGLIGIBLE, THEY WERE DISREGARDED IN RESURFACING CALCULATIONS. (SEE PLAN SHEETS FOR FEATHER AREAS)

RESURFACING CALCULATIONS

LOR-20-12.6.2

CALCULATIONS

SHEET 30

FEATHER QUANTITIES
 STA. 663+44 S. R. 301 TO STA. 663+84 S. R. 301 = 40 LIN. FT.
 A = (35'+35')(40')/9 = 311 SQ. FT.

407 - TACK COAT
 (311 S. Y.)(0.1 GAL/S. Y.) = 31 GAL.

404 - ASPHALT CONCRETE, AC-20
 (311 S. Y.)(1.5' AVE. THICK/2(12)(3) = 6.5 CU. YD.

STA. 666+06 S. R. 301 TO STA. 666+46
 (311 S. Y.)(0.1 GAL/S. Y.) = 31 GAL.
 (311 S. Y.)(1.5' AVE. THICK/2(12)(3) = 6.5 CU. YD.

202 - GUARDRAIL REMOVED (@ MEDIAN)
 STA. 685+62.69 TO 689+00.19 = 337.5 LIN. FT.
 (337.5)(2 SIDES) = 675 LIN. FT.

SHEET 33

STA. 779+01.43 TO STA. 800+00 = 2098.57 LIN. FT.
 (2098.57')(1.25' + 1.25)/9 = 582.9 SQ. YD.

202 - CONCRETE MEDIAN REMOVED
 (2098.57')(6' WIDE)/9 = 1399 SQ. YD.

202 - GUARDRAIL REMOVED (@ MEDIAN)
 STA. 799+24.75 TO STA. 800+00 = 81.25 LIN. FT.
 (81.25')(2 SIDES) = 162.5 LIN. FT.

SHEET 34

202 - GUARDRAIL REMOVED (@ MEDIAN)
 STA. 800+00 TO STA. 800+87.25 = 87.25 LIN. FT.
 (87.25')(2 SIDES) = 174.5 LIN. FT.
 STA. 800+87.25 TO STA. 808+38.65 = 751.4 LIN. FT.

202 - CONCRETE MEDIAN REMOVED
 (751.4')(6' WIDE)/9 = 501 SQ. YD.

202 - CONCRETE MEDIAN REMOVED
 STA. 810+14.41 TO STA. 815+00 = 485.59 LIN. FT.
 (485.59)(6' WIDE)/9 = 323.7 SQ. YD.

SHEET 35

202 - GUARDRAIL REMOVED, BARRIER DESIGN
 STA. 815+00 TO STA. 821+99 = 699 LIN. FT.

202 - CONCRETE MEDIAN REMOVED
 (699')(6' WIDE)/9 = 466 SQ. YD.

202 - GUARDRAIL REMOVED, BARRIER DESIGN
 STA. 824+12 TO STA. 830+00 = 588 LIN. FT.

202 - CONCRETE MEDIAN REMOVED
 (588')(6' WIDE)/9 = 392 SQ. YD.

SHEET 35A

202 - GUARDRAIL REMOVED, BARRIER DESIGN (@ MEDIAN)
 STA. 830+00 TO STA. 836+27 = 627 LIN. FT.

202 - CONCRETE MEDIAN REMOVED
 (627')(6' WIDE)/9 = 418 SQ. YD.

SHEET 36

STA. 772+00 MED. RT. TO STA. 779+01.43 MED. RT. = 701.43 LIN. FT.
 A = 1/2(15.75)(701.43)/9 = 613.8 SQ. YD.

202 - CURB REMOVED
 STA. 772+00 TO STA. 775+63 = 363 LIN. FT.
 (363')(2 SIDES) = 726 LIN. FT.

202 - GUARDRAIL REMOVED, BARRIER DESIGN
 STA. 775+63 TO STA. 779+01.43 = 338.4 LIN. FT.

202 - CONCRETE MEDIAN REMOVED
 1/2(10+6)(338.4)/9 = 300.8 SQ. YD.

601 - ROCK CHANNEL PROTECTION TYPE C WITH FILTER
 (5' LONG)(4' WIDE)(1.5' THICK)/27 = 1 CU. YD.

STA. 772+00 MED. RT. TO STA. 775+63 MED. RT. = 363 LIN. FT.
 A = 1/2(17.5+7.5')(363)/9 = 504.2 SQ. YD.

301 - 3" BITUMINOUS AGGREGATE BASE, AC-20
 (504.2 SQ. YD.)(3"/(3)(12)) = 42.0 CU. YD.

304 - 4" AGGREGATE BASE
 (504.2 SQ. YD.)(4"/(3)(12)) = 56.0 CU. YD.

408 - BITUMINOUS PRIME COAT @ 0.4 GAL./SQ. YD.
 (504.2 SQ. YD.)(0.4 GAL./SQ. YD.) = 201.7 GAL.

203 - SUBGRADE COMPACTION
 (504.2 SQ. YD.) = 504.2 SQ. YD.

310 - VAR. THICKNESS(FOR UNDERDRAINS ON MAINLINE)

21,766 LIN. FT.(TOTALS FROM SHEET 89) X 4" WIDE (3")/12 (2)/27 = 1612 CU. YD.

QUANTITY CARRIED TO SHEET 18

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CALCULATIONS

LOR-20-12.62

22
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CALCULATIONS

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CALCULATIONS FOR NEW PAVED SHOULDER ON THE RAMPS

S. R. 301 INTERCHANGE

RAMP "D"

STA. D77+75.5 TO STA. 659+80 S.R. 301
 $A = 1/2(8+6)(100') + (6')(637.46) + [(2)(TT)(50)(80)/360](6) + (10)(6) + 1/2(6+8)(40)$
 = 5284 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5284)(15'/12)/27 = 244.67 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5284)(9'/12)/27 = 146.8 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5284)(5'/12)/27 = 81.5 CU. YD.

203 - SUBGRADE COMPACTION
 (5284)/9 = 587 SQ. YD.

RAMP "A"

STA. A77+50 TO STA. 670+20.98 S.R. 301
 $A = 1/2(8+6)(200') + (6')(1010.43) + [(2)(TT)(60)(58.5)/360](6) + 1/2(6+8)(40)$
 = 8110 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (8110)(15'/12)/27 = 375.5 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (8110)(9'/12)/27 = 225.3 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (8110)(5'/12)/27 = 125 CU. YD.

203 - SUBGRADE COMPACTION
 (8110)/9 = 901 SQ. YD.

RAMP "C"

STA. 659+93 S.R. 301 TO STA. C96+67
 $A = 1/2(40)(8+6) + [(2)(TT)(60)(59)/360](6) + (917.42)(6) + 1/2(6+8)(200)$
 = 7555.2 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (7555)(15'/12)/27 = 349.8 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (7555)(9'/12)/27 = 209.9 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (7555)(5'/12)/27 = 116.6 CU. YD.

203 - SUBGRADE COMPACTION
 (7555)/9 = 839.4 CU. YD.

RAMP "B"

STA. 670+31.63 S.R. 301 TO STA. 96+84
 $A = 1/2(8+6)(50') + [(2)(TT)(50)(76.5)/360](6) + (675)(6) + 1/2(6+8)(100)$
 = 5501 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5501)(15'/12)/27 = 254.6 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5501)(9'/12)/27 = 152.8 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5501)(5'/12)/27 = 84.9 CU. YD.

203 - SUBGRADE COMPACTION
 (5501)/9 = 611 SQ. YD.

GRAFTON ROAD INTERCHANGE

RAMP "SW"

STA. SW 11+49 TO STA. SW 0+97.5
 $A = 1/2(100)(8+6) + [(2)(TT)(40)(50)/360](6) + (754.33)(6)$
 = 5435 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5435)(15'/12)/27 = 51.6 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5435)(9'/12)/27 = 51.0 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5435)(5'/12)/27 = 83.9 CU. YD.

203 - SUBGRADE COMPACTION
 (5435)/9 = 603.9 SQ. YD.

RAMP "SE"

STA. SE 1+3 TO STA. SE 19+32
 $A = (6)(608.17) + 1/2(6+8)(200)$
 = 5049.8 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5049)(15'/12)/27 = 223.8 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5049)(9'/12)/27 = 140.3 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5049)(5'/12)/27 = 77.9 CU. YD.

203 - SUBGRADE COMPACTION
 (5049)/9 = 561 SQ. YD.

RAMP "NW"

STA. NW 9+22 TO STA. NW 17+23.4
 $A = 1/2(200)(8+6) + (592.39)(6) + (2)(TT)(150)(18.195)/360(6) + (2)(TT)(50)(58.61)/360(6) + (2)(TT)(150)(18.195)/360(6+3)$
 = 5761.4 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5761)(15'/12)/27 = 266.7 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5761)(9'/12)/27 = 160.0 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5761)(5'/12)/27 = 88.9 CU. YD.

203 - SUBGRADE COMPACTION
 (5761)/9 = 640.1 SQ. YD.

RAMP "NE"

STA. NE 0+98 TO STA. NE 17+63
 $A = (6)(819.65) + 1/2(6+8)(100)$
 = 5778.1 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
 (5778)(15'/12)/27 = 267.5 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
 (5778)(9'/12)/27 = 160.5 CU. YD.

310 - SUBBASE, TYPE 1, GRADING A (ASSUME 5" AVE. THICK)
 (5778)(5'/12)/27 = 89.2 CU. YD.

203 - SUBGRADE COMPACTION
 (5778)/9 = 642 SQ. YD.

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CALCULATIONS

LOR-20-12.62

CALCULATIONS

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S. R. 57 INTERCHANGE

RAMP *E*
STA. E 30+77 TO STA. E 36+71.39
A = 1/2(200)(8+6)+(393.98)(6) = 3763.9 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(3764)(15'/12)/27 = 174.3 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
(3764)(9'/12)/27 = 104.6 CU. YD.

310 - SUBBASE, TYPE I, GRADING A (ASSUME 5" AVE. THICK)
(3764)(5'/12)/27 = 58.1 CU. YD.

203 - SUBGRADE COMPACTION
(3764)/9 = 418.2 SQ. YD.

RAMP *CA*
STA. CA 14+70 TO STA. CA 26+50
A = (6)(1041.7) = 7218.3 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(7218)(15'/12)/27 = 334.2 CU. YD.

301 - 9" BITUMINOUS AGGREGATE, AC-20
(7218)(9'/12)/27 = 200.5 CU. YD.

310 - SUBBASE, TYPE I, GRADING A (ASSUME 5" AVE. THICK)
(7218)(5'/12)/27 = 111.4 CU. YD.

203 - SUBGRADE COMPACTION
(7218)/9 = 802 SQ. YD.

RAMP *DA*
STA. DA 5+17 TO STA. DA 13+14
A = (6)(797) = 4782 SQ. FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(4782)(15'/12)/27 = 221.4 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20
(4782)(9'/12)/27 = 132.8 CU. YD.

310 - SUBBASE, TYPE I, GRADING A (ASSUME 5" AVE. THICK)
(4782)(5'/12)/27 = 73.8 CU. YD.

203 - SUBGRADE COMPACTION
(4782)/9 = 531.3 SQ. YD.

TOTAL QUANTITIES FOR NEW PAVED SHOULDER ON THE RAMPS

TOTALS CARRIED TO SHEET 18

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION = 2764.1 CU. YD.

301 - 9" BITUMINOUS AGGREGATE BASE, AC-20 = 1684.5 CU. YD.

310 - SUBBASE, TYPE I, GRADING A (ASSUME 5" AVE. THICK) = 991.2 CU. YD.

203 - SUBGRADE COMPACTION = 7136.9 SQ. YD.

254 - PAVEMENT PLANING, BITUMINOUS
STA. 782+00± TO STA. 836+00±

= 5400 LIN. FT.
A=(5400')(37')/9 = 22,200 SQ. YD.

ADD FOR SPEED CHANGE LANE AREAS:

RAMP SW:
STA. 793+51± TO STA 794+51± A=1/2(100')(12')/9 = 66.7 SQ. YD.
STA. 794+51± TO STA 797+31± A=(280')(12')/9 = 373.3 SQ. YD.
STA. 797+31± TO STA 801+51± A=1/2(420')(12+35')/9 = 1096.7 SQ. YD.

RAMP SE:
STA. 819+32± TO STA 829+32± A=1/2(1000')(25')/9 = 1388.9 SQ. YD.

DEDUCT FOR STRUCTURES:

LOR-20-1533 RT. A=(175.76')(30')/9 = -585.9 SQ. YD.
LOR-20-1559 RT. A=1/2(212.66)(53.66'+48.38')/9 = -1205.5 SQ. YD.

TOTAL CARRIED TO SHEET 18 = 23,334.2 SQ. YD.

BARRIER REFLECTOR QUANTITIES

SHT. REF.	STATIONING			LOCATION	TYPE A		TYPE B	
	FROM	TO	SIDE		W	Y	W	Y
30	684+96±	687+46±	EB RT.	U.S.R. 20	2		2	
30	685+29±	689+34±	MED.	U.S.R. 20		8		
30	687+17±	689+67±	WB LT.	U.S.R. 20	2		2	
30	663+28±	666+27±	LT.	S.R. 301	2		2	
30	663+63±	666+62±	RT.	S.R. 301	2		2	
31	714+00±	737+96±	WB LT.	USR20 & SR301	22		3	
31	713+13±	740+31.5±	EB RT.	USR20 & SR301	26		3	
31	712+32.5	715+97±	EB LT.	USR20 & SR301		3		2
31	714+88±	718+52±	WB RT.	USR20 & SR301		3		2
31	725+05.5	728+88±	EB LT.	USR20 & SR301		3		2
31	727+46±	731+29.5	WB RT.	USR20 & SR301		3		2
32	761+07.5	769+05.5	EB RT.	USR20 & SR301	8		1	
32	762+53.5	766+07±	EB LT.	USR20 & SR301	3		2	
32	760+96.5	769+94.5	WB LT.	USR20 & SR301	9		1	
32	765+19±	770+00	WB RT.	USR20 & SR301				6
33	SW8+28±	SW10+37.5	RAMP SW RT	RAMP SW	2		1	
33	797+50±	800+00±	RAMP NW LT	RAMP NW	4			
33	770+00±	800+00±	MED.	USR20 & SR301				60
34	800+00±	815+00±	MED.	USR20 & SR301				30
34	806+92.5	811+50.5	WB LT.	USR20 & SR301	4		2	
34	804+83±	812+17.5±	EB RT.	USR20 & SR301	6		2	
34	800+00	NW11+00	RAMP NW LT	RAMP NW	2			
35	819+38±	828+03±	EB RT.	USR20 & SR301	7		3	
35	818+66±	828+61±	WB LT.	USR20 & SR301	8		3	
35	815+00±	830+00±	MED.	USR20 & SR301				30
35A	834+53±	839+47±	EB RT.	USR20 & SR301	3		3	
35A	835+06±	1+52± S.R.10	WB LT.	USR20,SR301&SR10	4		3	
35A	830+00±	839+47.5	MED. RT.	USR20 & SR301		1		15
35A	836+42±	1+40± S.R.10	MED. LT.	USR20,SR301&SR10		3		3
TOTALS (TO SHEET 19)					116	24	35	152

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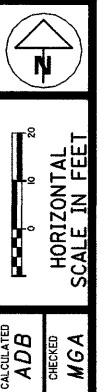
CALCULATIONS

LOR-20-12.62

PROJECT DESCRIPTION
 GENERAL SAFETY UPGRADING WIHT 3" OF OVERLAY,
 PAVEMENT REPAIR, REMOVAL OF EXISTING RAISED CONCRETE
 MEDIAN AND REPLACEMENT WITH CONCRETE BARRIER,
 WIDENING RIGHT PAVED SHOULDER AT RAMP FROM 3' TO
 6', REHABILITATION OF 7 STRUCTURES WITH NEW
 AND WIDER DECK FOR STRUCTURES LOR-20-1533 L&R,
 LOR-20-1599 L&R AND LOR-20-1587 L&R.

PROJECT DATA

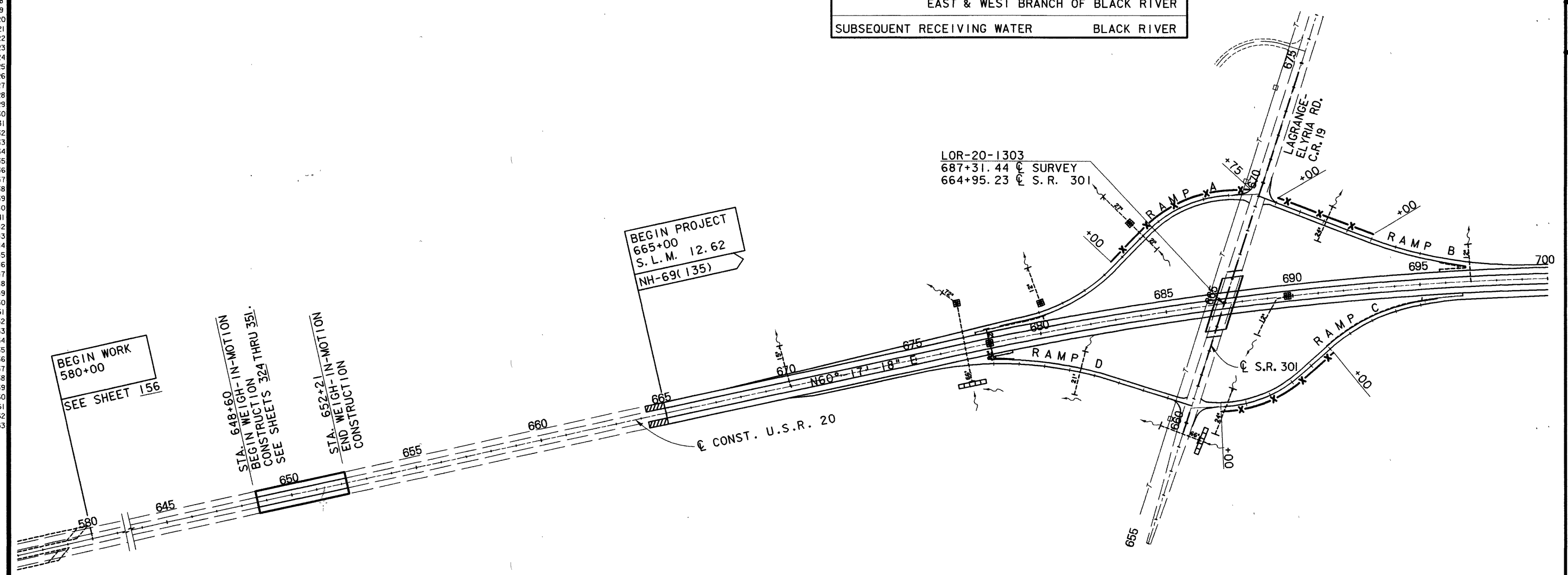
TOTAL AREA (RIGHT OF WAY)	156 AC
AREA TO UNDERGO EXCAVATION (SHOULDER WIDENING FOR RAMP)	6 AC
RUNOFF COEFFICIENT FOR PRE AND POST CONSTRUCTION SITE	0.4 & 0.9
IMMEDIATE RECEIVING WATER EAST & WEST BRANCH OF BLACK RIVER	
SUBSEQUENT RECEIVING WATER	BLACK RIVER



STORM WATER POLLUTION PREVENTION PLAN

LOR-20-12.62

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BEGIN WORK
580+00
SEE SHEET 156

STA. 648+60
BEGIN WEIGH-IN-MOTION
CONSTRUCTION
SEE SHEETS 324 THRU 351.

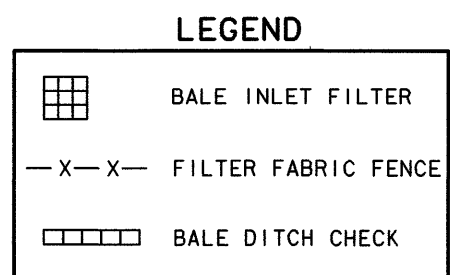
STA. 652+21
END WEIGH-IN-MOTION
CONSTRUCTION

BEGIN PROJECT
665+00
S. L. M. 12.62
NH-69(135)

LOR-20-1303
687+31.44 @ SURVEY
664+95.23 @ S.R. 301

USGS QUANRANT NO. N4115-W8200/7.5
 GRAFTON, OHIO
 LONGITUDE W82°-07'-30" *
 LATITUDE N41°-18'-50" *
 * LONGITUDE AND LATITUDE AT APPROXIMATE
 BEGINNING OF PROJECT.

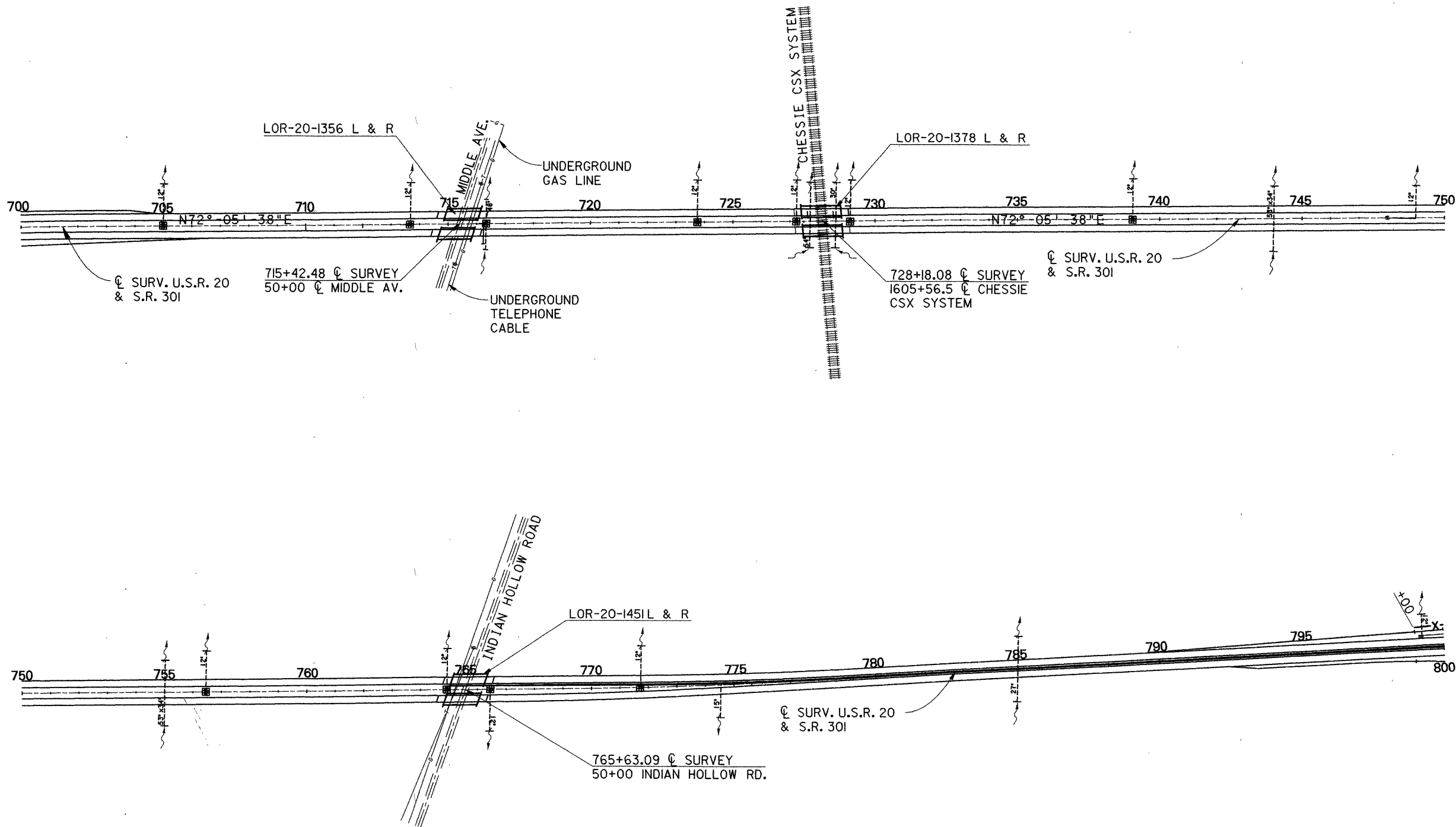
- 207 - STRAW OR HAY BALES = (5 C.B.)(8 BALES/C.B.) = 40 EACH
 - 207 - BALE DITCH CHECK = (2 LOCATIONS)(5 BALES/LOCAT.) = 10 EACH
 - 207 - FILTER FABRIC FENCE = 1550 LIN.FT.
- QUANTITIES CARRIED TO SHEET 27.



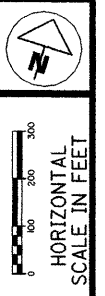
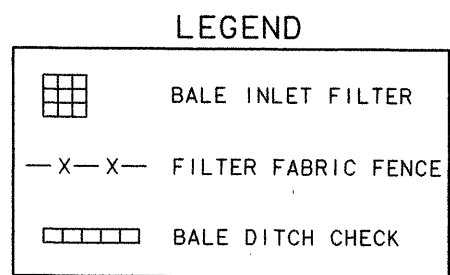
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207 - STRAW OR HAY BALES = (11 C.B.)(8 BALES/C.B.) = 88 EACH
 207 - FILTER FABRIC FENCE = 100 LIN.FT.
 QUANTITIES CARRIED TO SHEET 27.



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STORM WATER POLLUTION PREVENTION PLAN

LOR-20-12.62

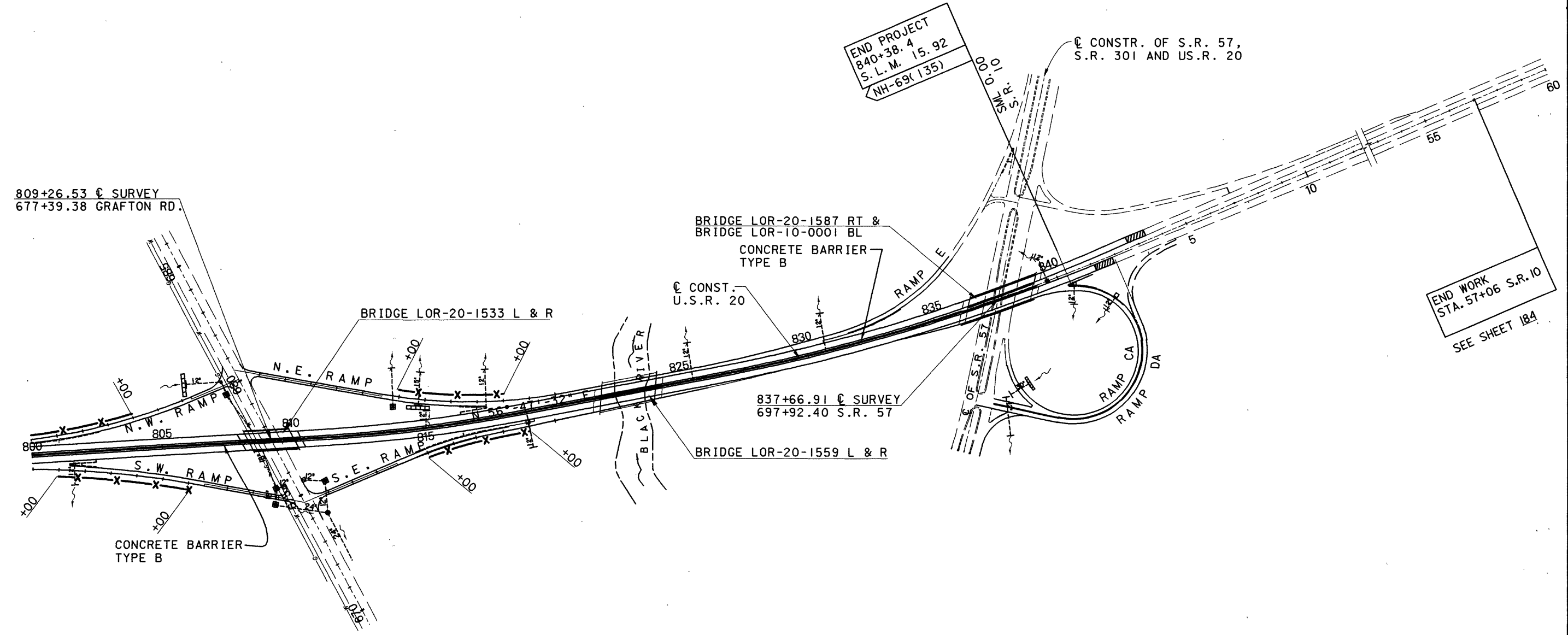
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HORIZONTAL SCALE IN FEET

STORM WATER POLLUTION PREVENTION PLAN

LOR-20-12.62



809+26.53 @ SURVEY
677+39.38 GRAFTON RD.

END PROJECT
840+38.4
S.L.M. 15.92
NH-69(135)

@ CONSTR. OF S.R. 57,
S.R. 301 AND US.R. 20

END WORK
STA. 57+06 S.R. 10
SEE SHEET 184

SHEET NO.	207		
	STRAW OR. HAY BALES EACH	FILTER FABRIC FENCE LIN.FT.	BALE DITCH CHECK
25	40	1550	10
26	88	100	
27	48	1700	15
TOTALS	176	3350	25

QUANTITIES CARRIED TO SHEET 18.

207 - STRAW OR HAY BALES = (6 C.B.)(8 BALES/C.B.) = 48 EACH
 207 - BALE DITCH CHECK = (3 LOCATIONS)(5 BALES/LOCAT.) = 15 EACH
 207 - FILTER FABRIC FENCE = 1700 LIN.FT.
 QUANTITIES CARRIED TO THIS SHEET.

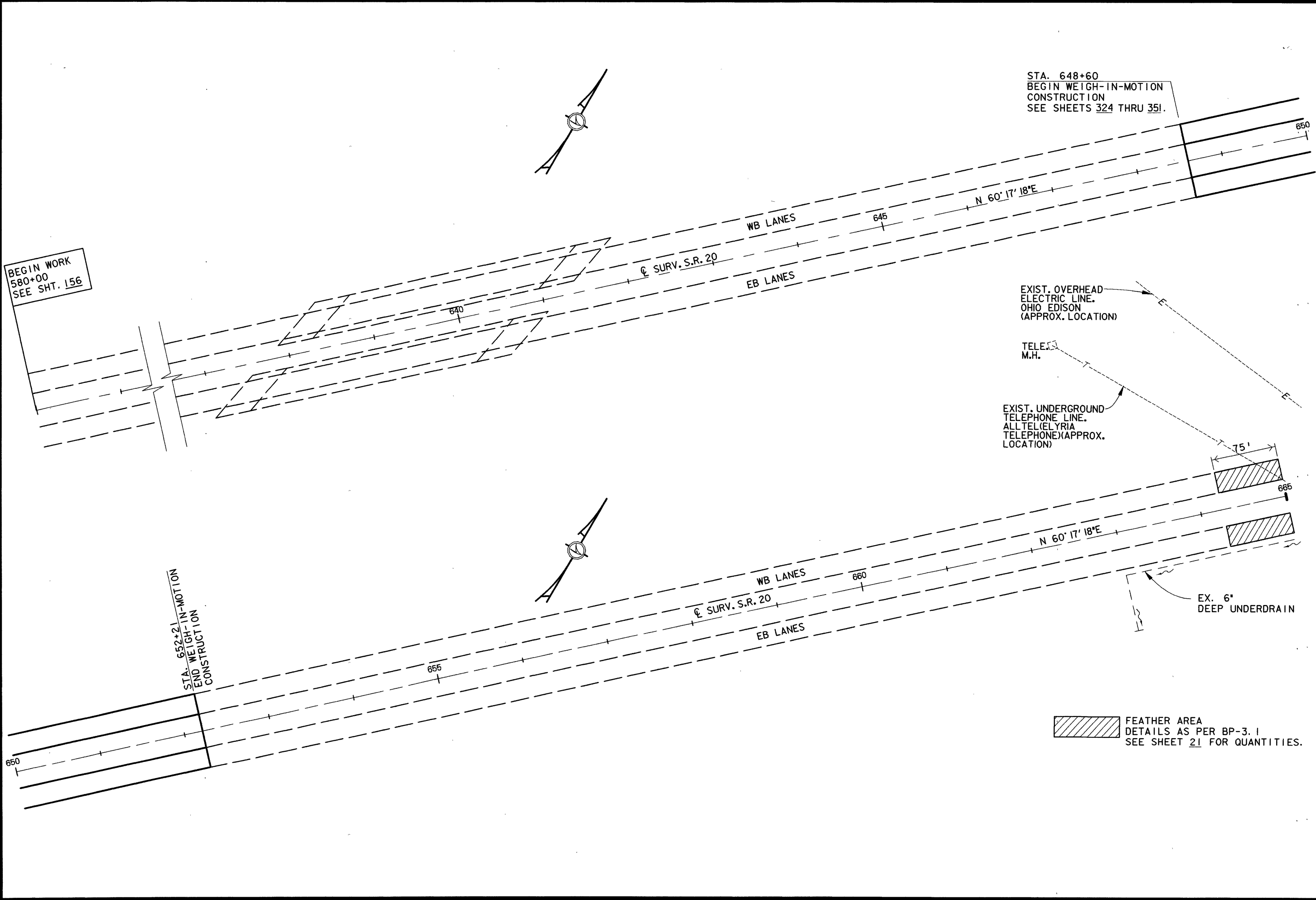
LEGEND

- BALE INLET FILTER
- FILTER FABRIC FENCE
- BALE DITCH CHECK

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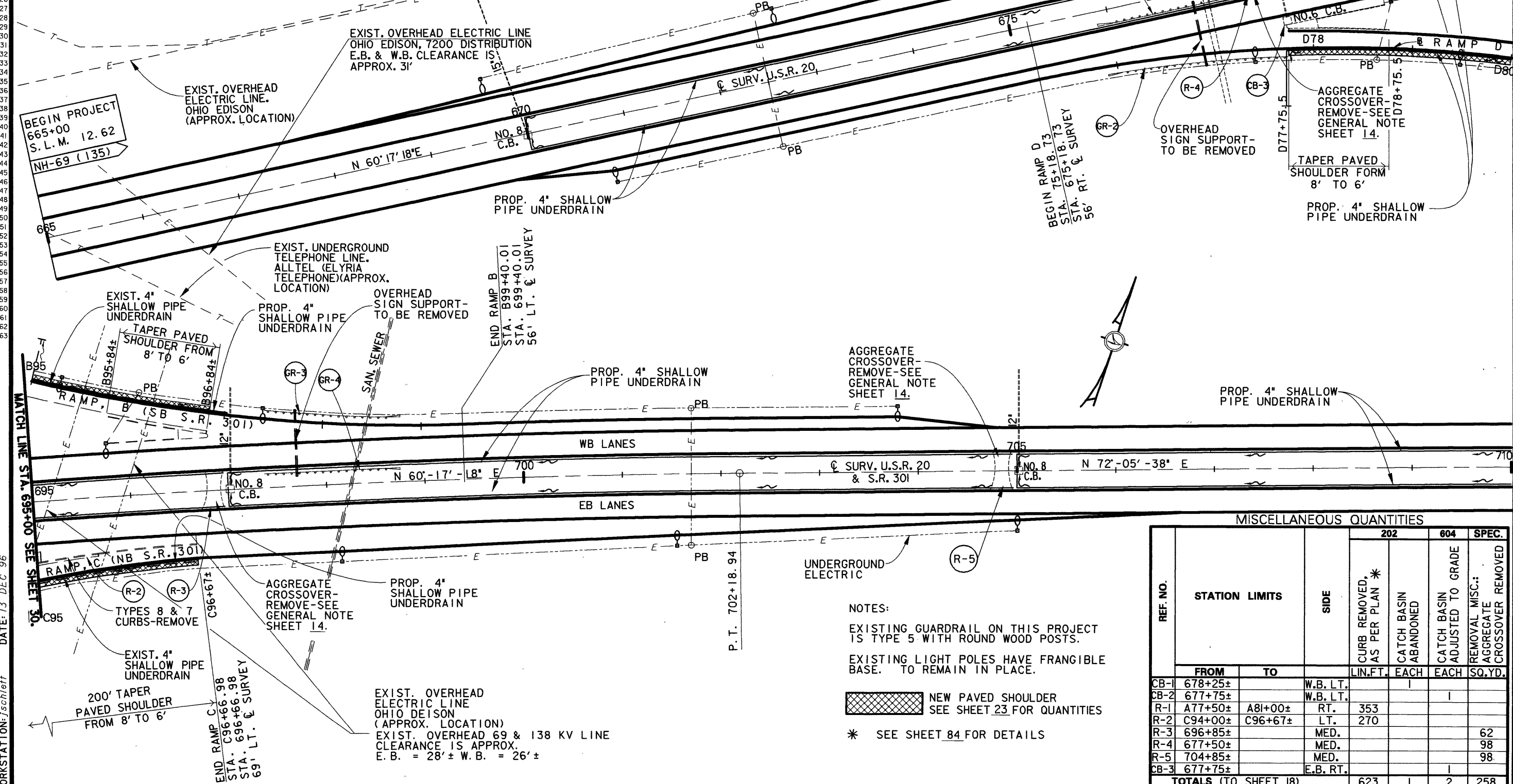
STA. 580+00 TO STA. 650+00
STA. 650+00 TO STA. 665+00

LOR-20-12.62

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351

GUARDRAIL QUANTITIES

REF. NO.	STATION LIMITS		SIDE	GUARDRAIL REMOVED
	FROM	TO		
GR-1	675+87.5'	677+25±	E.B. LT.	137.5
GR-2	675+87.5±	677+75±	E.B. RT.	187.5
GR-3	697+37.5±	698+75±	W.B. LT.	137.5
GR-4	697+37.5±	698+75±	W.B. RT.	137.5
TOTALS (TO SHEET 18)				600



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NOTES:
 EXISTING GUARDRAIL ON THIS PROJECT IS TYPE 5 WITH ROUND WOOD POSTS.
 EXISTING LIGHT POLES HAVE FRANGIBLE BASE. TO REMAIN IN PLACE.
 [Hatched Box] NEW PAVED SHOULDER SEE SHEET 23 FOR QUANTITIES
 * SEE SHEET 84 FOR DETAILS

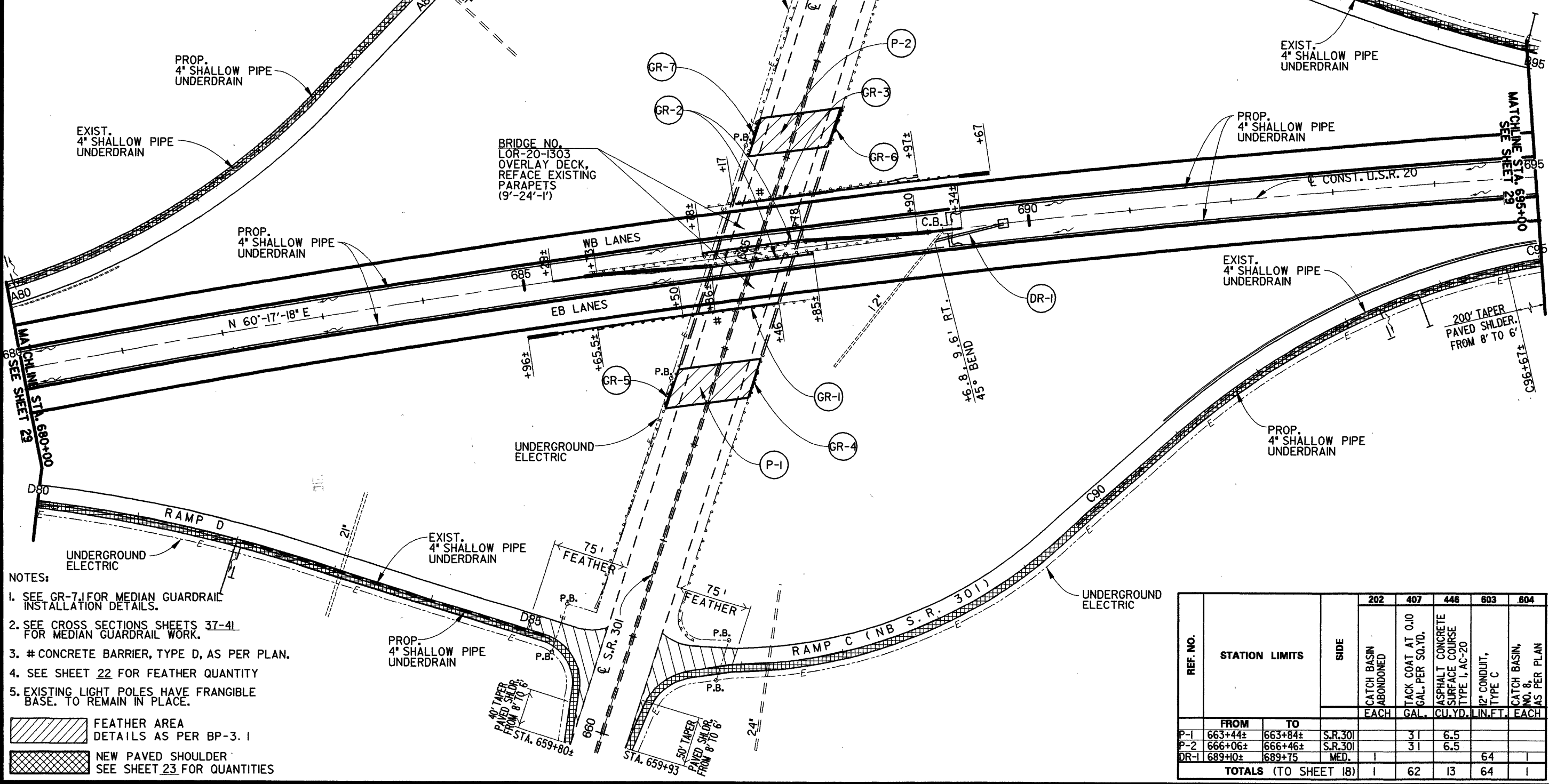
MISCELLANEOUS QUANTITIES

REF. NO.	STATION LIMITS		SIDE	202		604	SPEC.
	FROM	TO		CURB REMOVED, AS PER PLAN *	CATCH BASIN ABANDONED	CATCH BASIN ADJUSTED TO GRADE	REMOVAL MISC.: AGGREGATE CROSSOVER REMOVED
				LIN. FT.	EACH	EACH	SQ. YD.
CB-1	678+25±		W.B. LT.		1		
CB-2	677+75±		W.B. LT.			1	
R-1	677+50±	681+00±	RT.	353			
R-2	694+00±	696+67±	LT.	270			
R-3	696+85±		MED.				62
R-4	677+50±		MED.				98
R-5	704+85±		MED.				98
CB-3	677+75±		E.B. RT.		1		
TOTALS (TO SHEET 18)				623	1	2	258

CALCULATED: ABB
 CHECKED: MGA
 STA. 665+00 TO STA. 680+00 & STA. 695+00 TO STA. 710+00
 LOR-20-12.62
 29
 351

REF. NO.	STATION LIMITS		SIDE	202		606				622		SPEC
	FROM	TO		GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	GUARDRAIL BARRIER DESIGN, TYPE 5	ANCHOR ASSEMBLY, TYPE T	ANCHOR ASSEMBLY, TYPE E	BRIDGE TERMINAL ASSEMBLY TYPE	CONCRETE BARRIER TYPE D	AS PER PLAN	
GR-1	684+96±	687+78±	E.B. RT.	212.5	106.25							96
GR-2	685+29±	689+34±	MED.	67.5	150	250	2					2
GR-3	686+85±	689+67±	W.B. RT.	212.5	106.25							96
GR-4	663+63±	663+88±	S.R.301T.	25	27.7							
GR-5	663+28±	663+53±	S.R.301T.	25	27.6							
GR-6	666+37.25±	666+62.25±	S.R.301T.	25	27.6							
GR-7	666+02.25±	666+27.25±	S.R.301T.	25	27.7							
TOTALS	(TO SHEET 18 & 19)			1200	473	250	2	2	4	2	192	2

FOR STRUCTURE LOR-20-1303 DETAILS
SEE SHEETS 213-242



- NOTES:
- SEE GR-7 FOR MEDIAN GUARDRAIL INSTALLATION DETAILS.
 - SEE CROSS SECTIONS SHEETS 37-41 FOR MEDIAN GUARDRAIL WORK.
 - # CONCRETE BARRIER, TYPE D, AS PER PLAN.
 - SEE SHEET 22 FOR FEATHER QUANTITY
 - EXISTING LIGHT POLES HAVE FRANGIBLE BASE. TO REMAIN IN PLACE.

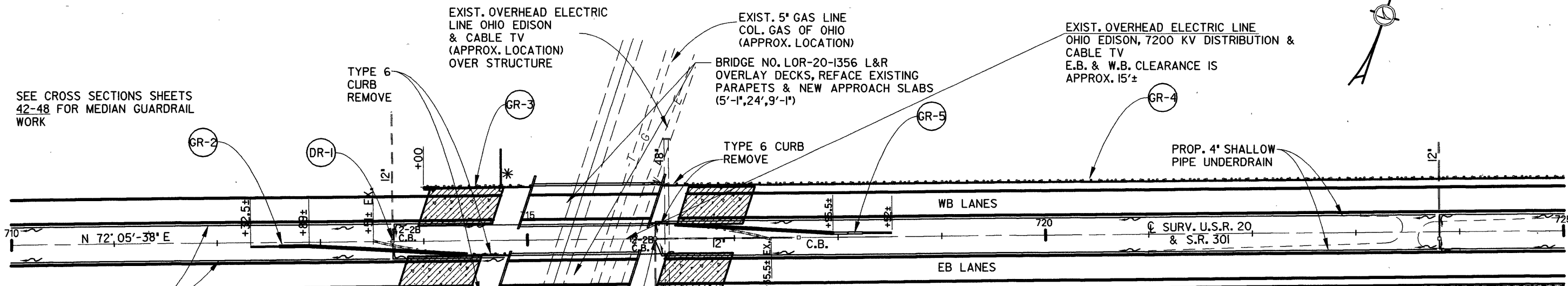
FEATHER AREA
DETAILS AS PER BP-3.1

NEW PAVED SHOULDER
SEE SHEET 23 FOR QUANTITIES

REF. NO.	STATION LIMITS		SIDE	202	407	446	603	604
	FROM	TO		CATCH BASIN ABANDONED EACH	TACK COAT AT 0.10 GAL. PER SQ.YD.	ASPHALT CONCRETE SURFACE COURSE TYPE I, AC-20 CU.YD.	12" CONDUIT, TYPE C LIN.FT.	CATCH BASIN, NO. 8, AS PER PLAN EACH
P-1	663+44±	663+84±	S.R.301		31	6.5		
P-2	666+06±	666+46±	S.R.301		31	6.5		
DR-1	689+0±	689+75	MED.				64	
TOTALS	(TO SHEET 18)			1	62	13	64	1

DESIGN FILE: es\dgn\lor-20-1303\plansht1.dgn
 WORKSTATION: jschier DATE: 13 DEC 96

SEE CROSS SECTIONS SHEETS
42-48 FOR MEDIAN GUARDRAIL
WORK

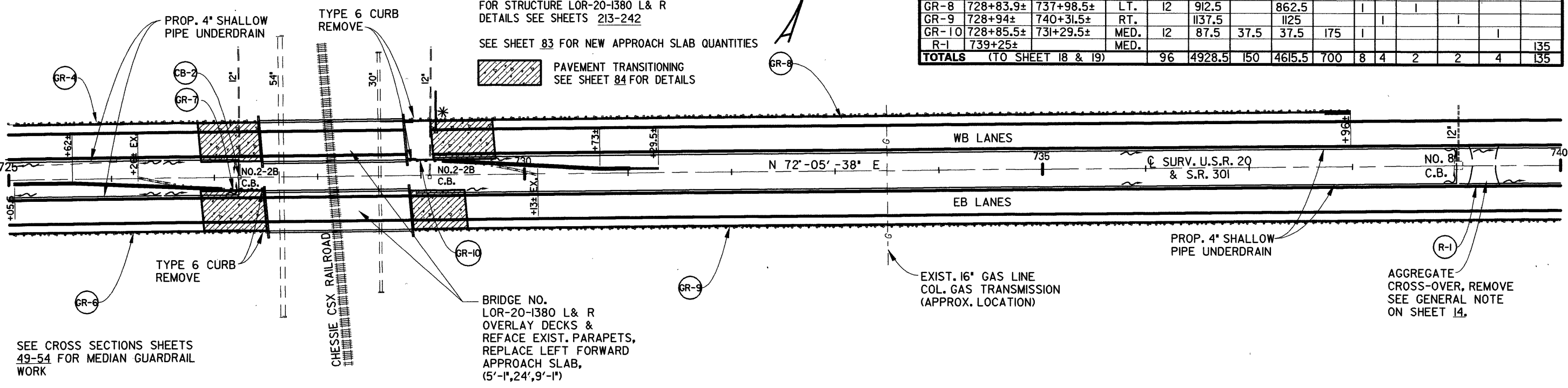


REF. NO.	STATION LIMITS	SIDE	202		604		603	
			CATCH BASIN ABANDONED	CATCH BASIN ADJUSTED TO GRADE	NO. 2-2B CATCH BASIN, AS PER PLAN	12" CONDUIT, TYPE C		
			EACH		NO. 2-2B	12" CONDUIT, TYPE C		
DR-1	713+73± 7' LT.	MED.	1				10	
CB-1	716+27± 1' RT.	MED.		1				
CB-2	727+25± 1' RT.	MED.						
TOTALS (TO SHEET 18)					2		10	

* SEE SHEET 87 FOR DETAILS AND ADDITIONAL QUANTITIES.
SEE SHEET 77A FOR MEDIAN G.R. INSTALLATION DETAILS AT BRIDGES.
EXISTING GUARDRAIL IS TYPE 5 WITH ROUND WOOD POSTS.
FOR STRUCTURE LOR-20-1356 L & R
DETAILS SEE SHEETS 213-242
FOR STRUCTURE LOR-20-1380 L & R
DETAILS SEE SHEETS 213-242
SEE SHEET 83 FOR NEW APPROACH SLAB QUANTITIES
PAVEMENT TRANSITIONING
SEE SHEET 84 FOR DETAILS

GUARDRAIL QUANTITIES

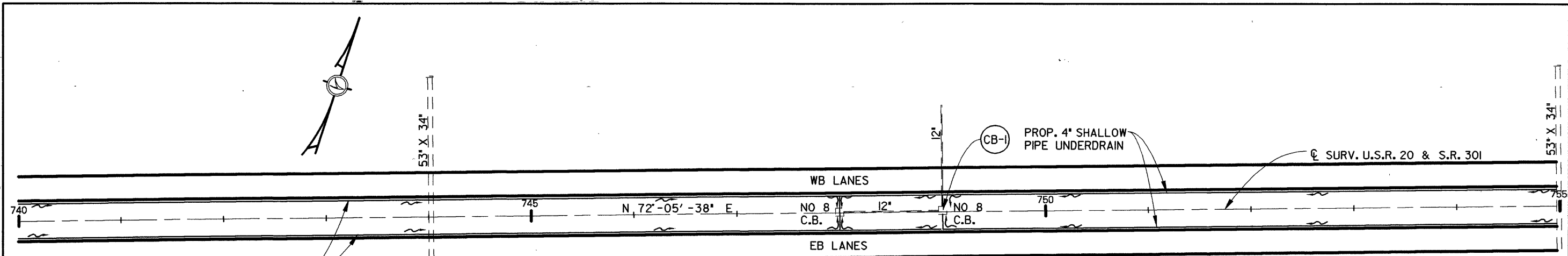
REF. NO.	STATION LIMITS		SIDE	SPEC.											
	FROM	TO		CURB REMOVED	GUARDRAIL REMOVED	GUARDRAIL REMOVED, BARRIER DESIGN	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE 2	ANCHOR ASSEMBLY, TYPE E	ANCHOR ASSEMBLY, TYPE T	IMPACT ATTENUATOR TYPE 1	BIDIRECTIONAL REMOVAL MISC. AGGREGATE CROSS OVER REMOVED		
			LIN. FT.										SQ. YD.		
GR-1	713+11±	714+63±	RT.	12	150		100								
GR-2	712+32.5±	714+76.5±	MED.	12	87.5	37.5	37.5	175							
GR-3	713+97.5±	715+00±	LT.		100		87.5								
GR-4	716+24±	727+41.5±	LT.	12	117.5		1125								
GR-5	716+08±	718+52±	MED.	12	87.5	37.5	37.5	175							
GR-6	715+85.5±	727+51±	RT.	12	1161		1165.5								
GR-7	725+05.5±	727+49.5±	MED.	12	87.5	37.5	37.5	175							
GR-8	728+83.9±	737+98.5±	LT.	12	912.5		862.5								
GR-9	728+94±	740+31.5±	RT.		1137.5		1125								
GR-10	728+85.5±	731+29.5±	MED.	12	87.5	37.5	37.5	175							
R-1	739+25±		MED.												135
TOTALS (TO SHEET 18 & 19)				96	4928.5	150	4615.5	700	8	4	2	2	4		135



SEE CROSS SECTIONS SHEETS
49-54 FOR MEDIAN GUARDRAIL
WORK

AGGREGATE
CROSS-OVER, REMOVE
SEE GENERAL NOTE
ON SHEET 14.

DESIGN FILE: c:\dgn\lorain\0201262\plansht1.dgn
WORKSTATION: /schlett
DATE: 13 DEC 96

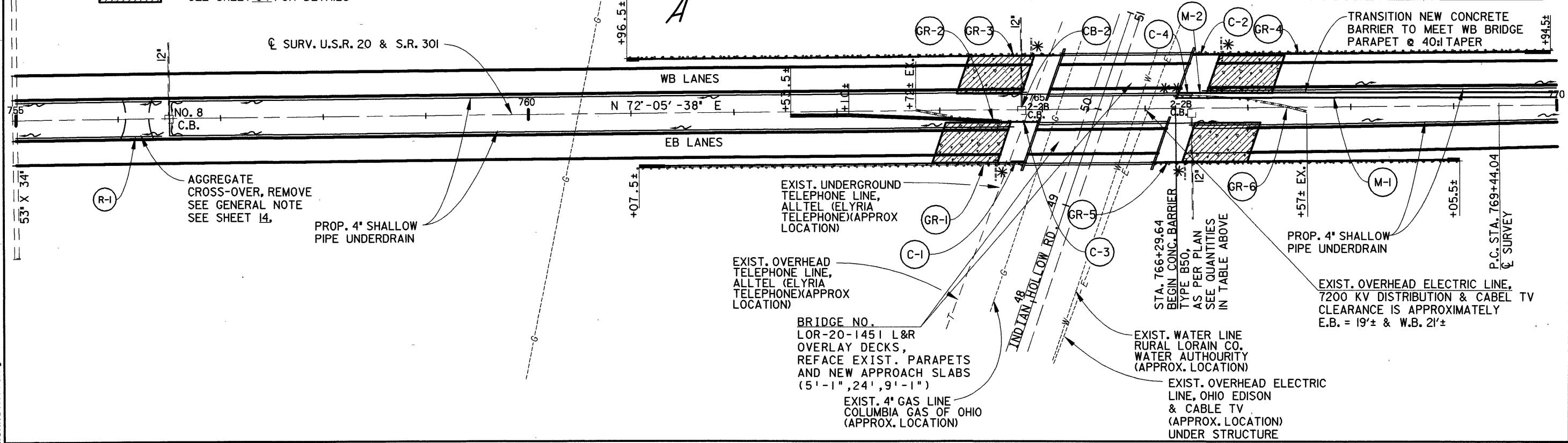


* SEE SHEET 87 FOR DETAILS AND ADDITIONAL QUANTITIES
SEE SHEET 77A FOR MEDIAN GUARDRAIL INSTALLATION DETAILS AT BRIDGES
FOR STRUCTURE LOR-20-1451 L&R DETAILS SEE SHEETS 213-242
SEE SHEET 83 FOR NEW APPROACH SLAB QUANTITIES AND DETAILS
** SEE SHEET 85A FOR DETAILS AND NOTES TO ATTACH MEDIAN BARRIER TO BRIDGE PARAPET
SEE SHEET 36 FOR MEDIAN DETAILS AND ADDITIONAL QUANTITIES.
STA. 770+00 TO STA. 779+01.43

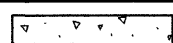
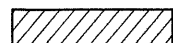
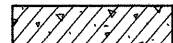

 PAVEMENT TRANSITIONING
SEE SHEET 84 FOR DETAILS

EXIST. 8" GAS LINE COLUMBIA GAS TRANSMISSION (APPROX. LOCATION)

REF. NO.	STATION LIMITS		SIDE	202		606		SPEC.		604		622					
	FROM	TO		CURB REMOVED	GUARDRAIL REMOVED	GUARDRAIL REMOVED BARRIER DESIGN	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE	ANCHOR ASSEMBLY, TYPE E	ANCHOR ASSEMBLY, TYPE T	IMPACT ATTENUATOR TYPE I, BIDIRECTIONAL	REMOVAL MISC.: AGGREGATE CROSS OVER REMOVED	CATCH BASIN ADJUSTED TO GRADE	CONCRETE BARRIER, TYPE B50, AS PER PLAN 'A'	CONCRETE BARRIER, TYPE B50, AS PER PLAN 'B'	
	LINEAL FT.	LINEAL FT.															SQ. YD.
GR-1	761+05±	764+82.5±		375		325											
GR-2	762+53.5±	764+97.5±		87.5	37.5	37.5	175										
GR-3	760+94±	765+21.5±		425		412.5											
GR-4	766+44.5±	769+97±		350		300											
GR-5	766+05.5±	769+08±		300		287.5											
GR-6	766+32±	767+57±		87.5	37.5												
R-1	756+20±		MED.														
M-1	766+54.64	770+00	LT.								125			345.4			
C-1	764+72±	764+84±	RT.	12													
C-2	766+47±	766+59±	LT.	12													
C-3	764+83±	764+95±	MED.	12													
C-4	766+32±	766+44±	MED.	12													
CB-1	749+00		MED.														
CB-2	764+85±		MED.														
M-2	766+29.64±	766+54.64±	MED.													25	
TOTALS (TO SHEET 18 & 19)				48	1625	75	1400	175	3	2	2	2	1	125	2	345.4	25



DESIGN FILE: c:\dgn\lora\lora\0201262\plan\h1.dgn
WORKSTATION: jeh1eff DATE: 13 DEC 96

-  PAVEMENT PLANING AREA - SEE SHEET 12 FOR TYPICAL AND SHEET 24 FOR CALCULATION
-  FEATHER AREA, DETAILS AS PER BP-3.1
-  PAVEMENT TRANSITIONING SEE SHEET 84 FOR DETAILS
-  NEW PAVED SHOULDER SEE SHEET 23 FOR QUANTITIES.

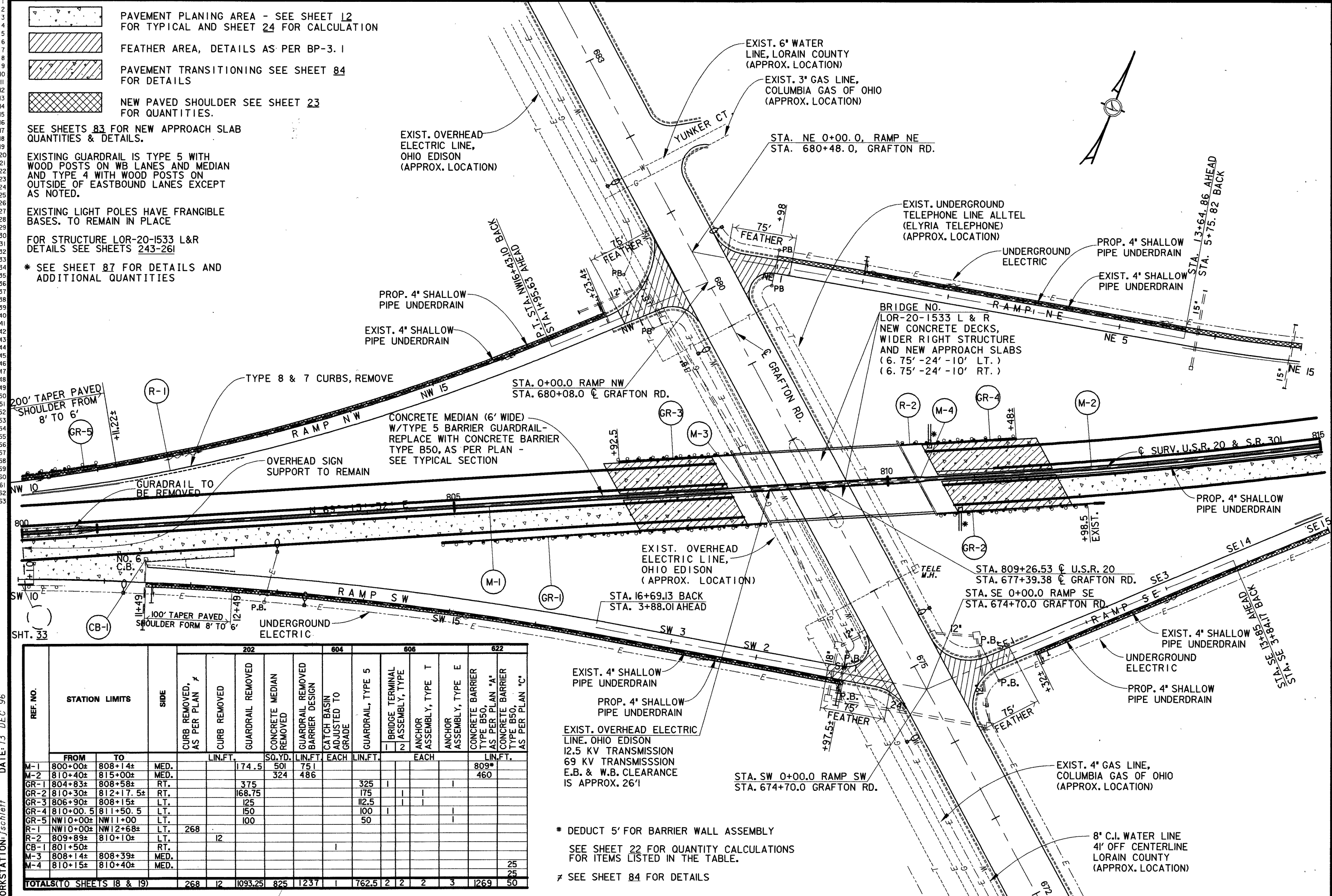
SEE SHEETS 83 FOR NEW APPROACH SLAB QUANTITIES & DETAILS.

EXISTING GUARDRAIL IS TYPE 5 WITH WOOD POSTS ON WB LANES AND MEDIAN AND TYPE 4 WITH WOOD POSTS ON OUTSIDE OF EASTBOUND LANES EXCEPT AS NOTED.

EXISTING LIGHT POLES HAVE FRANGIBLE BASES. TO REMAIN IN PLACE

FOR STRUCTURE LOR-20-1533 L&R DETAILS SEE SHEETS 243-261

* SEE SHEET 87 FOR DETAILS AND ADDITIONAL QUANTITIES



REF. NO.	STATION LIMITS		SIDE	202										604										606										622									
				CURB REMOVED, AS PER PLAN	CURB REMOVED	GUARDRAIL REMOVED	CONCRETE MEDIAN REMOVED	GUARDRAIL REMOVED	CATCH BASIN ADJUSTED TO GRADE	GUARDRAIL, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE	ANCHOR ASSEMBLY, TYPE T	ANCHOR ASSEMBLY, TYPE E	CONCRETE BARRIER AS PER PLAN 'A'	CONCRETE BARRIER AS PER PLAN 'C'	LIN. FT.		SQ. YD.		LIN. FT.		EACH		LIN. FT.		EACH		LIN. FT.															
	FROM	TO																																									
M-1	800+00±	808+14±	MED.				174.5		501		751																	809*															
M-2	810+40±	815+00±	MED.						324		486																	460															
GR-1	804+83±	808+58±	RT.				375																																				
GR-2	810+30±	812+17.5±	RT.				168.75																																				
GR-3	806+90±	808+15±	LT.				125																																				
GR-4	810+00.5	811+50.5	LT.				150																																				
GR-5	NW10+00±	NW11+00	LT.				100																																				
R-1	NW10+00±	NW12+68±	LT.	268																																							
R-2	809+89±	810+10±	LT.		12																																						
CB-1	801+50±		RT.																																								
M-3	808+14±	808+39±	MED.																									25															
M-4	810+15±	810+40±	MED.																									25															
TOTALS (10 SHEETS 18 & 19)				268	12	1093.25	825	1237	1	762.5	2	2	2	3														1269	50														

EXIST. 4" SHALLOW PIPE UNDERDRAIN
 PROP. 4" SHALLOW PIPE UNDERDRAIN
 EXIST. OVERHEAD ELECTRIC LINE, OHIO EDISON
 12.5 KV TRANSMISSION
 69 KV TRANSMISSION
 E.B. & W.B. CLEARANCE IS APPROX. 26'1"

* DEDUCT 5' FOR BARRIER WALL ASSEMBLY
 SEE SHEET 22 FOR QUANTITY CALCULATIONS FOR ITEMS LISTED IN THE TABLE.
 † SEE SHEET 84 FOR DETAILS

DESIGN FILE: c:\dgn\lorain\0201262\plansht2.dgn
 WORKSTATION: tscrleft DATE: 13 DEC 96

CALCULATED
 ADB
 CHECKED
 MGA

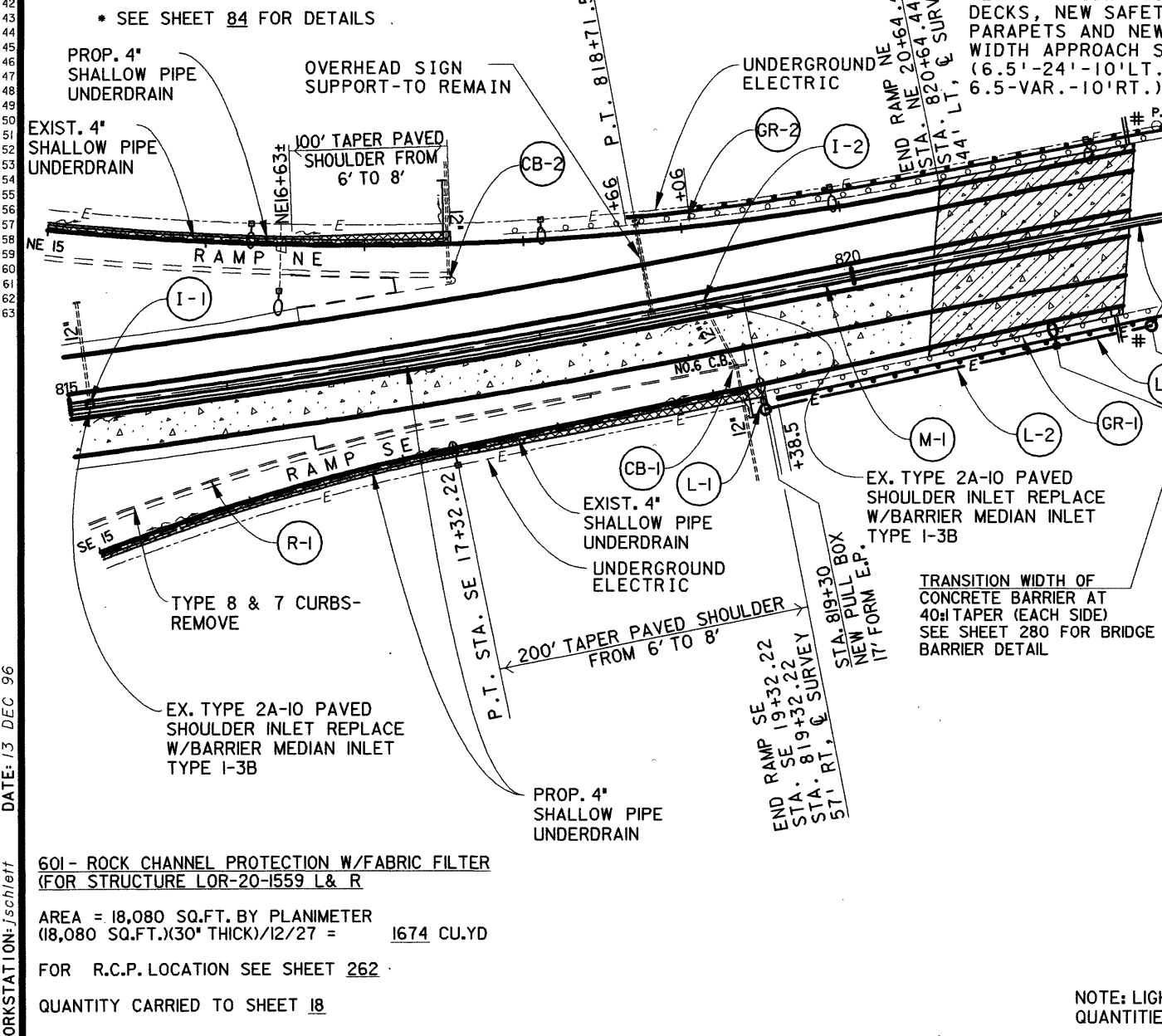
STA. 800+00 TO STA. 815+00

LOR-20-12.62

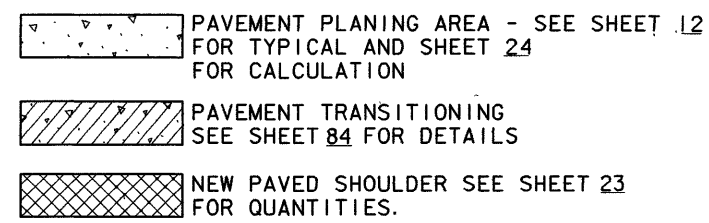
34
 351

REF. NO.	STATION LIMITS		SIDE	202		604		606		622		630					
	FROM	TO		LIN. FT.	SQ. YD.	EACH	LIN. FT.	EACH	LIN. FT.	EACH	LIN. FT.	EACH					
M-1	815+00±	821+74±	MED.		699	466				624	0						
M-2	824+37±	830+00±	MED.		588	392				543	0						
M-3	821+74±	821+99±	MED.									25					
M-4	824+12±	824+37±	MED.									25					
GR-1	819+33±	821+88.5±	RT.		253			200									
GR-2	NE17+86±	822+16±	LT.		428			312.5			40						
GR-3	824+23±	828+61±	LT.		356.25			350			48						
GR-4	823+96±	828+23±	RT.		425			375			36						
R-1	SE15+50	SE19+32±	LT.		382												
CB-1	819+25±		RT.														
I-1	815+08±		MED.														
I-2	819+08±		MED.														
I-3	825+61±		MED.														
CB-2	817+57±		LT.														
TOTALS (TO SHEETS 18, 19 & 20)				382	1462.25	1287	858	2	3	1237.5	4	2	2	124	1167	50	

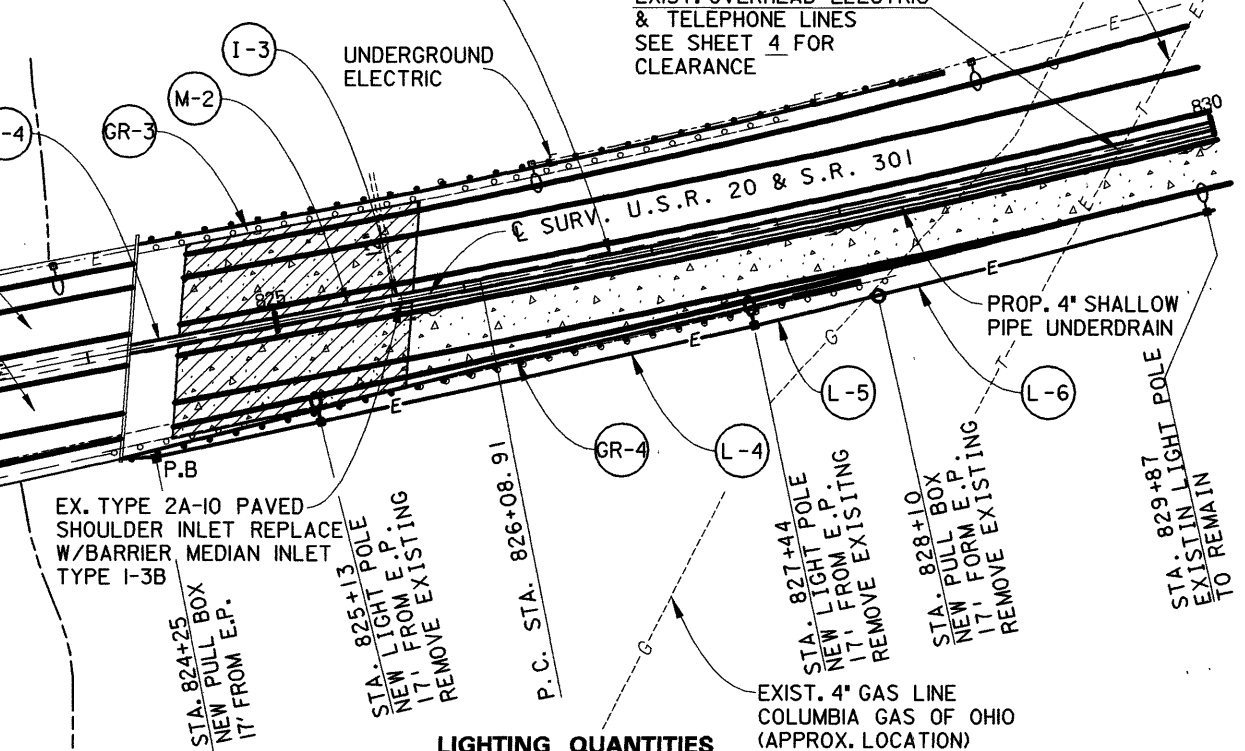
○ 50' DEDUCTION FOR MEDIAN INLETS & BARRIER WALL ASSEMBLY, AS PER MC-9
 ○ 20' DEDUCTION FOR MEDIAN INLET, AS PER MC-9
 * SEE SHEET 84 FOR DETAILS



NOTES:
 ALL EXISTING GUARDRAIL ON THIS SHEET IS TYPE 5 WITH WOOD POST.
 EXISTING LIGHT POLES HAVE FRANGIBLE BASES.
 SEE SHEET 22 FOR QUANTITY CALCULATIONS FOR ITEMS LISTED IN THE TABLE



** INCLUDES REMOVAL OF EXISTING INLET
 # SEE SHEET 87 FOR DETAILS AND ADDITIONAL QUANTITIES (TYP.)
 FOR STRUCTURE LOR-20-1559 L & R DETAILS SEE SHEETS 262-285



LIGHTING QUANTITIES

REF. NO.	STATION LIMITS		SIDE	625												
	FROM	TO		PULL BOX REMOVED	LIGHT POLE REMOVED	LIGHT POLE, DESIGN AT 208417	LIGHT POLE FOUNDATION, 24" X 8" DEEP	LUMINAIRE, CONVENTIONAL, STYLE B, TYPE II, 200 WATT H.P.S., 713.11, 480V	TRENCH, 24" DEEP	NO. 10 AWG POLE AND BRACKET	1/2" DUCT, CABLE WITH TWO NO. 4 AWG 5000 V CABLE	CONNECTOR KIT, TYPE II	CONNECTOR KIT TYPE III	PULL BOX 713.08, 18"	CABLE SPLICING KIT	GROUND ROD
L-1	819+30		EBL		1	1	1	1	15	125	25	1	1	1	2	1
L-2	819+30	821+17	EBL						187	125	197					
L-3	821+17	821+78	EBL	1					61		71			1	2	1
L-4	824+25	827+44	EBL		1	1	1	1	319	125	339	1	1	1	2	1
L-5	827+44	828+10	EBL		1	1	1	1	66	125	76	1	1	1	2	1
L-6	828+10	829+87	EBL	1					177		187			1	2	
L-7	832+39		EBL						5		10			1	2	
L-8	832+39	835+29	EBL						290		300			1	2	
L-9	835+29		EBL	1					5		10			1	2	
L-10	835+29	835+39	EBL		1	1	1	1	10	125	20	1	1	1	2	1
L-11	839+40	840+00	EBL	1					60		70			1	2	1
L-12	840+00	C16+33	EBL		1	1	1	1	60	125	70	1	1	1	2	1
L-13	C16+33	C17+55	RAMP	1					122		132			1	2	
L-14	833+95		WBL						5		10			1	2	
L-15	833+95	835+29	WBL						134		144			1	2	
L-16	835+29		WBL	1					5		10			1	2	
L-17	835+29	836+52	WBL	1					123		133			1	2	
L-18	839+57	839+63	WBL	1					6		11			1	2	
TOTALS (TO SHEET 19)				8	5	5	5	5	1650	750	1805	5	5	13	26	6

NOTE: LIGHTING TABLE COVERS ALSO QUANTITIES FROM SHEET 35A

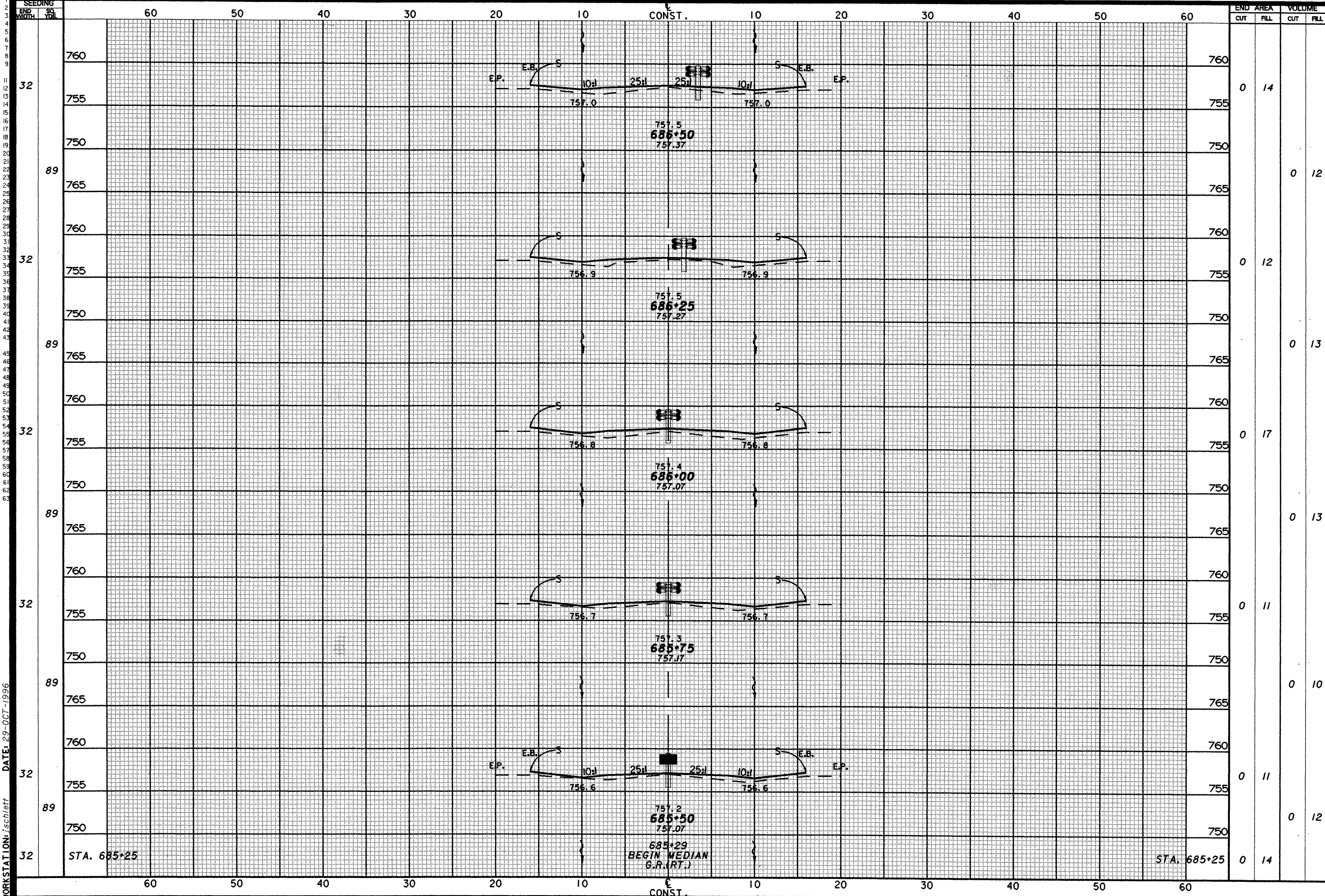
STA. 815+00 TO STA. 830+00

LOR-20-12.62

DESIGN FILE: c:\dgn\lor\din\0201262\plansht2.dgn
 WORKSTATION: ischleft
 DATE: 13 DEC 96

601- ROCK CHANNEL PROTECTION W/FABRIC FILTER (FOR STRUCTURE LOR-20-1559 L & R)
 AREA = 18,080 SQ.FT. BY PLANIMETER (18,080 SQ.FT.)X(30" THICK)/12/27 = 1674 CU.YD
 FOR R.C.P. LOCATION SEE SHEET 262
 QUANTITY CARRIED TO SHEET 18

DESIGN FILE: c:\dgn\loraln\020262\ssocl.dgn
 WORKSTATION: ischiett DATE: 29-OCT-1996

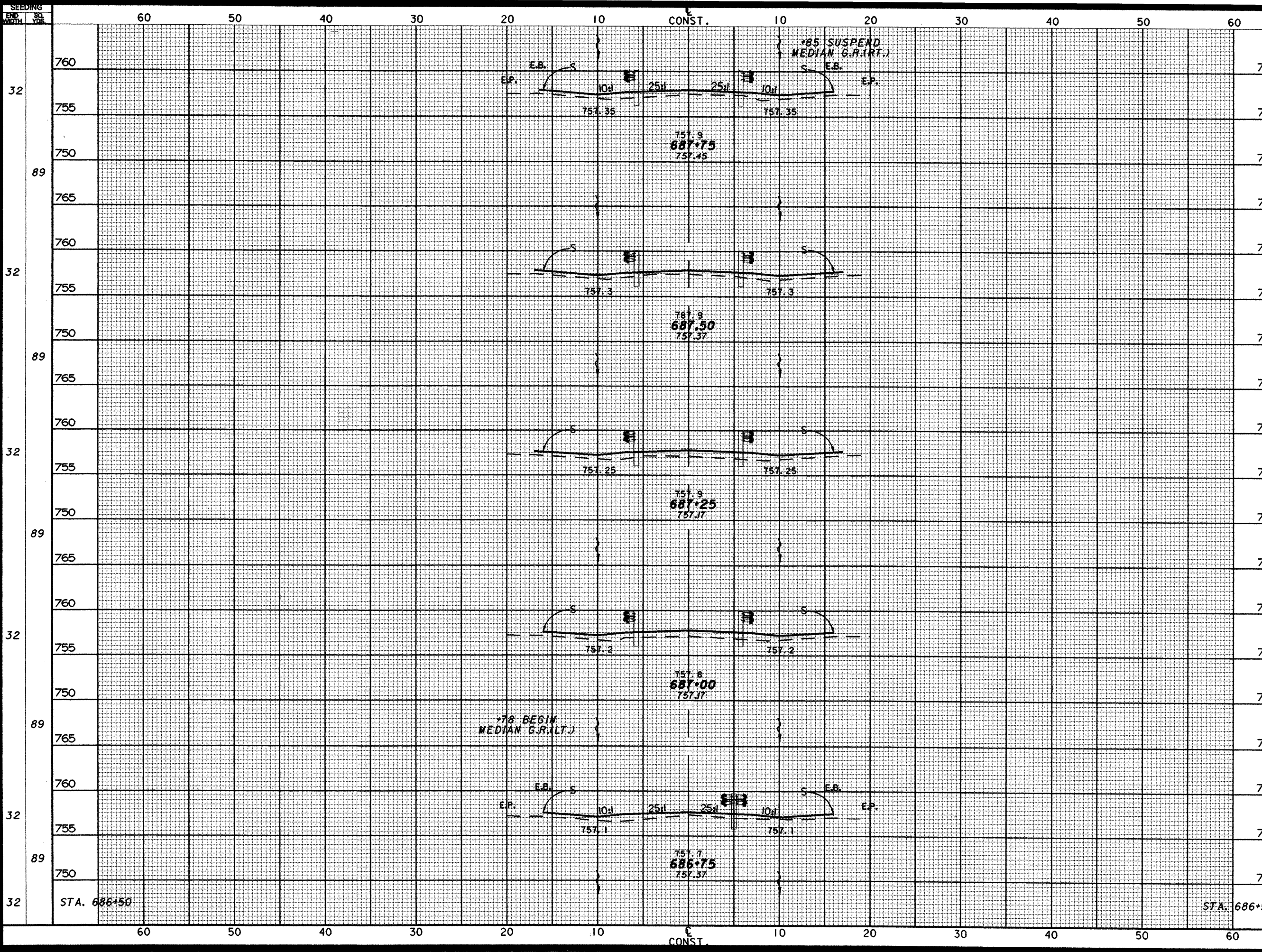


END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	14		
0	12		
0	12		
0	13		
0	17		
0	13		
0	11		
0	10		
0	11		
0	12		
0	14		

MEDIAN CROSS SECTIONS STA. 685+50 TO STA. 686+50

LOR-20-12.62

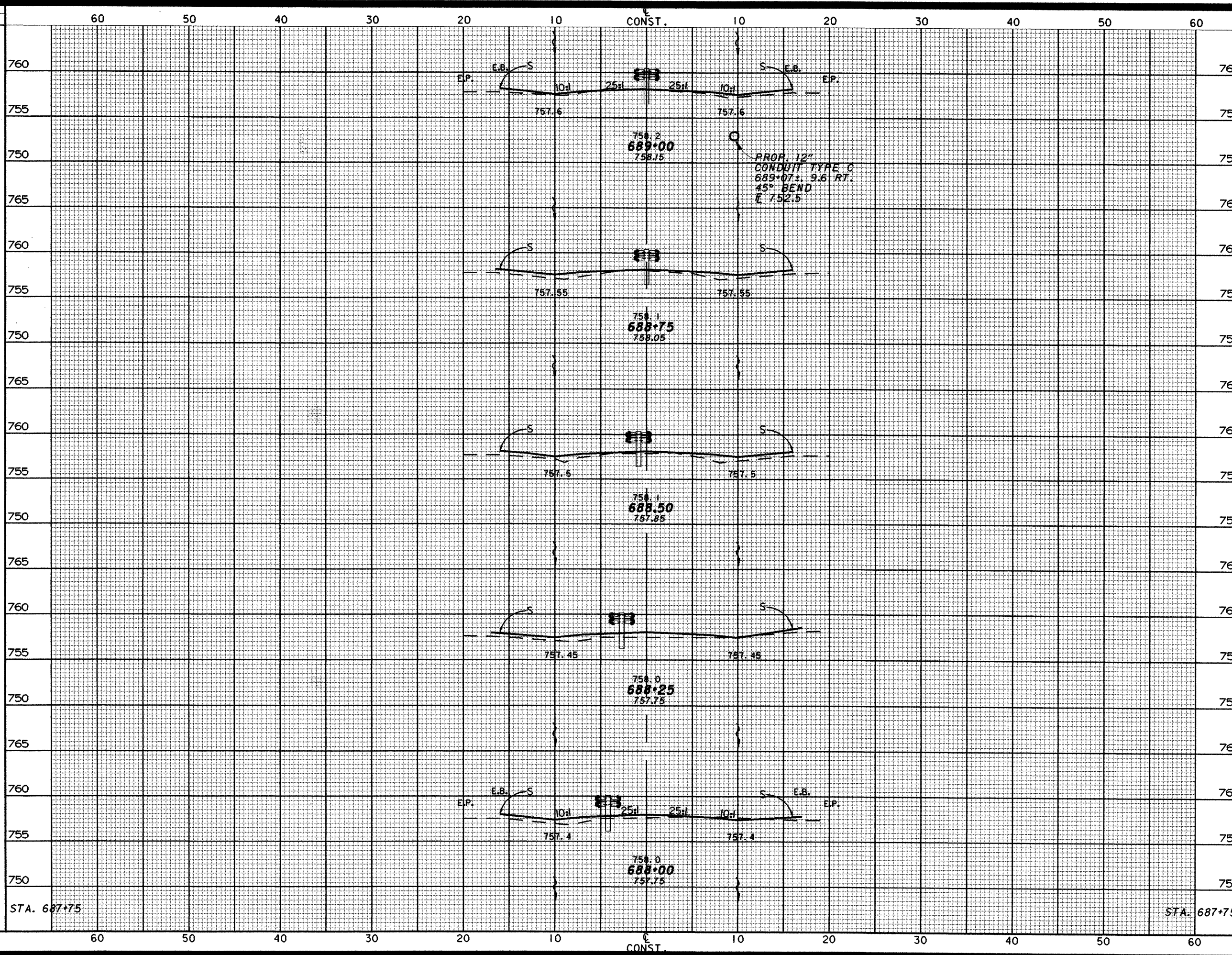
SEEDING
 END WIDTH 30.00
 DATE: 29-OCT-1996
 DESIGN FILE: c:\dgn\lorain\0201262\lsec1.dgn
 WORKSTATION: lsec1/eff



STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
760				
755	0	14		
750				
765			0	13
760				
755	0	13		
750				
765			0	15
760				
755	0	19		
750				
765			0	17
760				
755	0	18		
750				
765			0	15
760				
755	0	14		
750				
765			0	13
STA. 686+50	0	14		

CALCULATED
 ADB
 CHECKED
 GTS
MEDIAN CROSS SECTIONS STA. 686+75 TO STA. 687+75
LOR-20-12.6.2
 39
 351

SEEDING
END SO.
WIDTH YDS.
60 50 40 30 20 10 CONST. 10 20 30 40 50 60



END STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
760				
755	1	6		
750				
765			1	8
760				
755	0	11		
750				
765			0	10
760				
755	0	11		
750				
765			0	10
760				
755	0	11		
750				
765			0	9
760				
755	1	9		
750			1	11
750	0	14		

CALCULATED
ADB
CHECKED
GTS

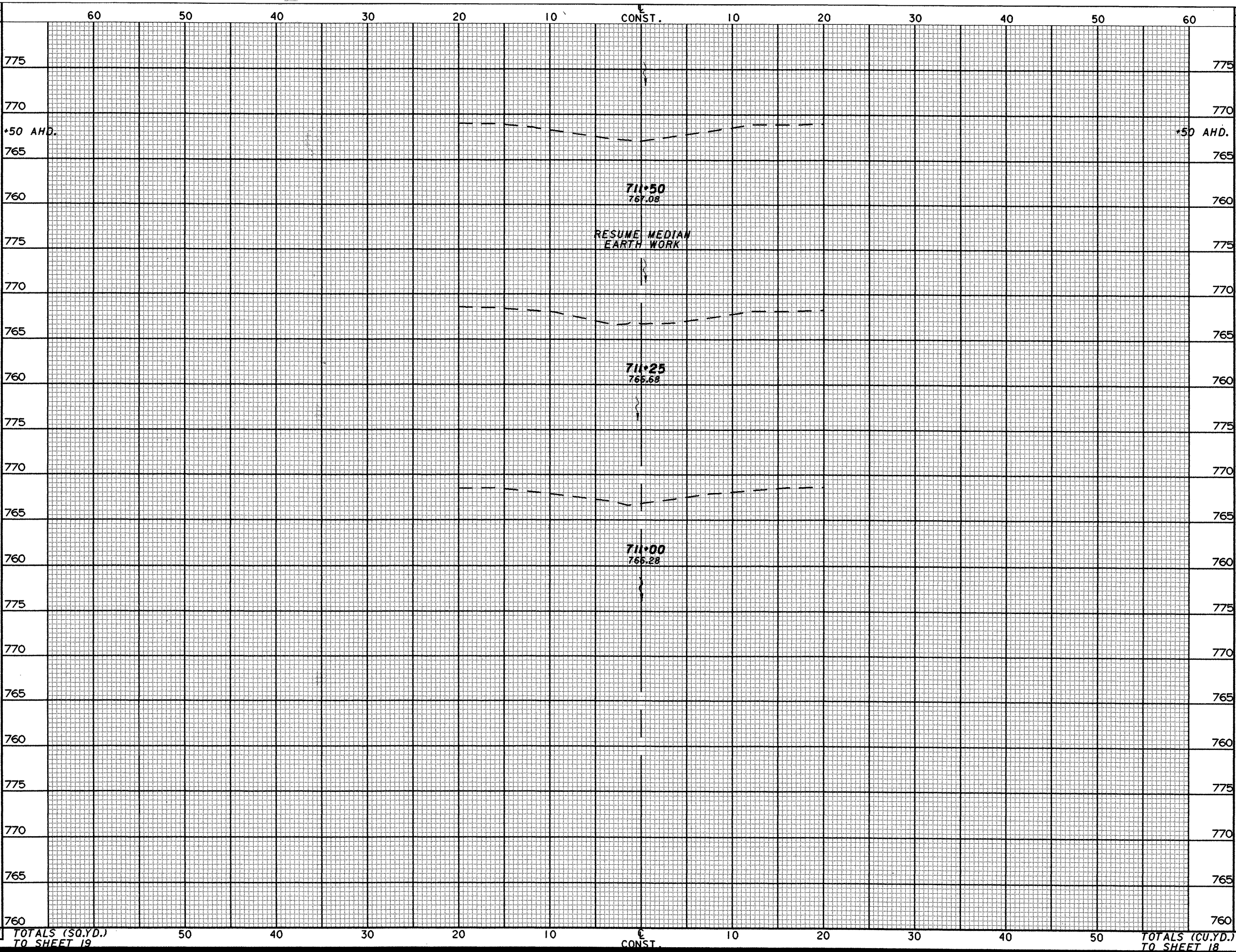
MEDIAN CROSS SECTIONS STA. 688+00 TO STA. 689+00

LOR-20-12.62

40
351

DESIGN FILE: c:\dgn\lor alm\02012621\sect1.dgn
WORKSTATION: jschreff
DATE: 30-OCT-1996

SEEDING
 END SQ. YDS.
 WIDTH



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
66	58		

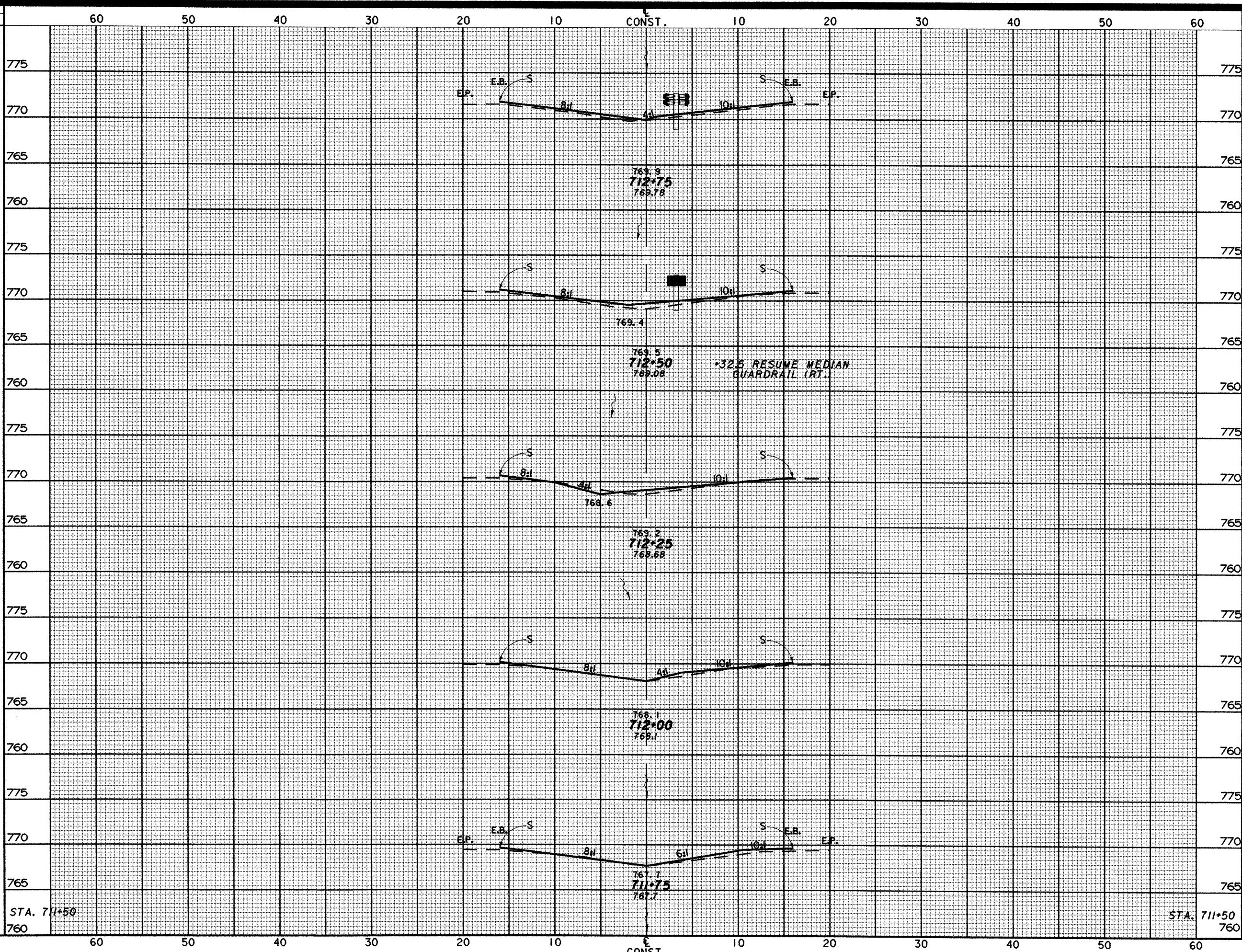
CALCULATED BY
 ADB
 CHECKED BY
 GTS
MEDIAN CROSS SECTIONS STA. 711+00 TO STA. 711+50
LOR-20-12.62
 42
 351

DESIGN FILE: c:\dgn\loraln\020262\sssec2.dgn
 WORKSTATION: /schlett
 DATE: 29-OCT-1996

1067 TOTALS (SQ.YD.)
 TO SHEET 19

TOTALS (CU.YD.)
 TO SHEET 18

SEEDING
 END WIDTH 30 YRS
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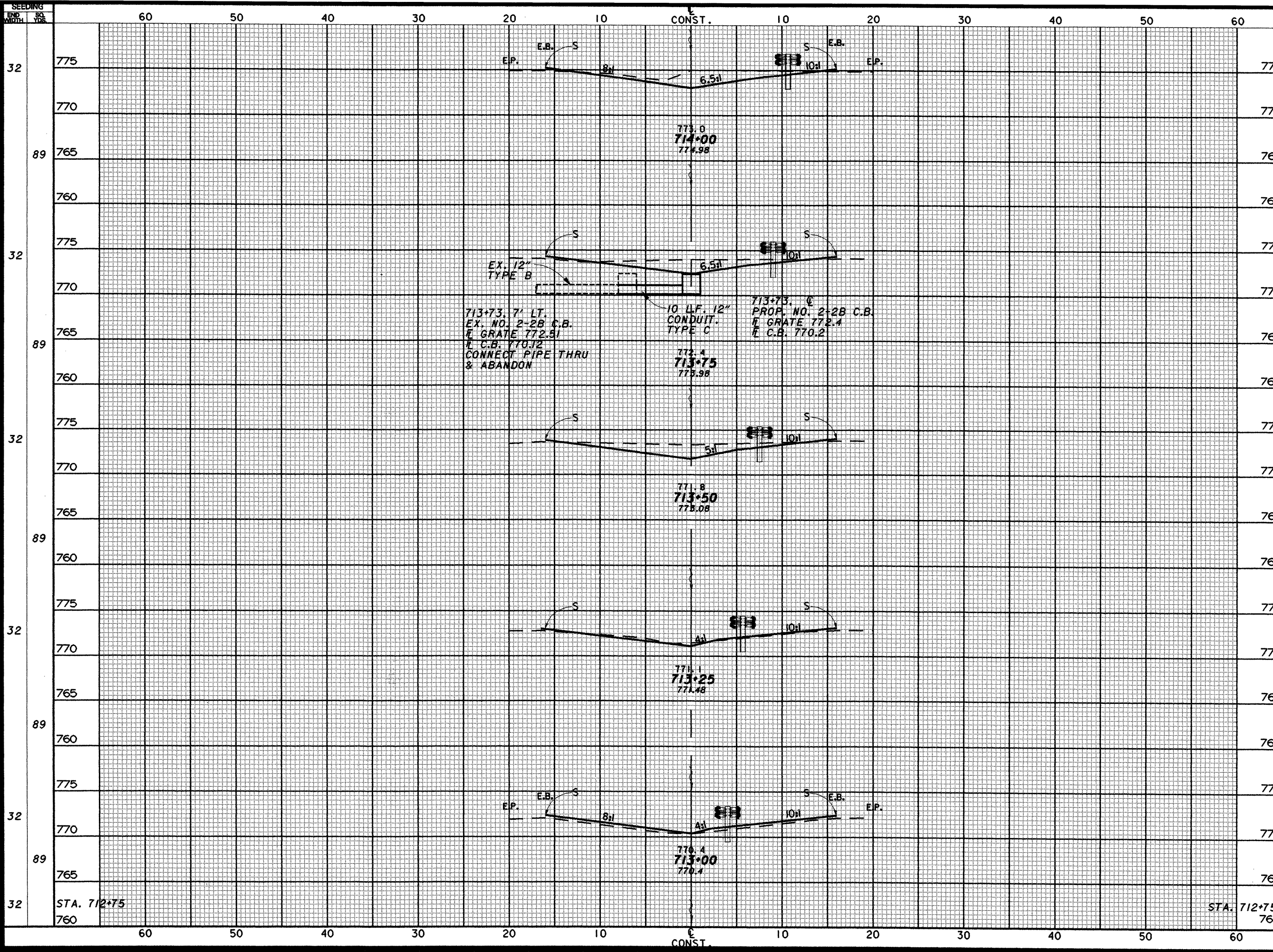


END ELEVATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
775				
770	0	10		
765				
760			0	10
775				
770	0	11		
765				
760			1	7
775				
770	3	5		
765				
760			1	5
775				
770	0	5		
765				
760			0	5
775				
770	0	6		
765			0	3
760	0	0		

CALCULATED
 ADB
 CHECKED
 GTS
MEDIAN CROSS SECTIONS STA. 711+75 TO STA. 712+75
LOR-20-12.62
 43
 351

DESIGN FILE: c:\dgn\lor-a\in\0201262\lsec2.dgn
 WORKSTATION: lsec/eff DATE: 29-OCT-1996

SEEDING
 END WIDTH SQ. YDS.
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STA.	ELEV.	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
775	775				
770	770	19	2		
765	765			17	2
760	760				
775	775				
770	770	17	2		
765	765			16	2
760	760				
775	775				
770	770	18	2		
765	765			9	3
760	760				
775	775				
770	770	2	5		
765	765			1	7
760	760				
775	775				
770	770	0	10		
765	765			0	9
760	760				
STA. 712+75	760	0	10		

CALCULATED
 ADB
 CHECKED
 GTS

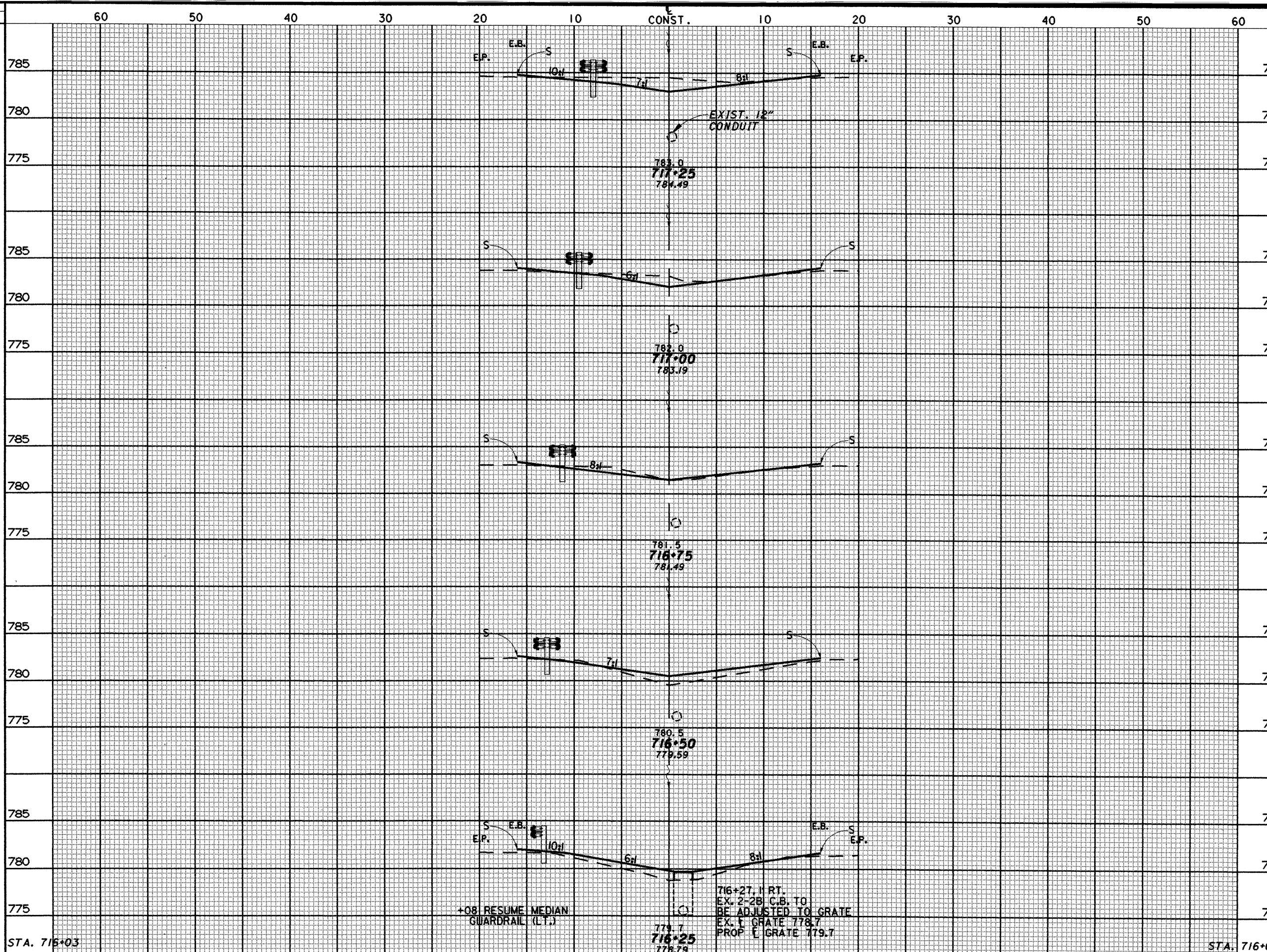
MEDIAN CROSS SECTIONS STA. 713+00 TO STA. 714+00

LOR-20-12.62

44
 351

DESIGN FILE: c:\dgn\loralm\0201262\1xsec2.dgn
 WORKSTATION: ischleft
 DATE: 29-OCT-1998

SEEDING
END WIDTH SQ. YDS.
32
785
780
775
32
785
780
775
89
785
780
775
32
785
780
775
89
785
780
775
32
785
780
775
89
785
780
775
39
775
0
STA. 716+03



END AREA	VOLUME	
	CUT	FILL
785	14	2
780		
775		10
785	7	3
780		
775		5
785	4	4
780		
775		2
785	1	11
780		
775		
785		1
780	0	14
775		0
775	0	0
TOTALS (CU.YD.) TO SHEET 18	33	90

CALCULATED
ADD
CHECKED
GTS

MEDIAN CROSS SECTIONS STA. 716+25 TO STA. 717+25

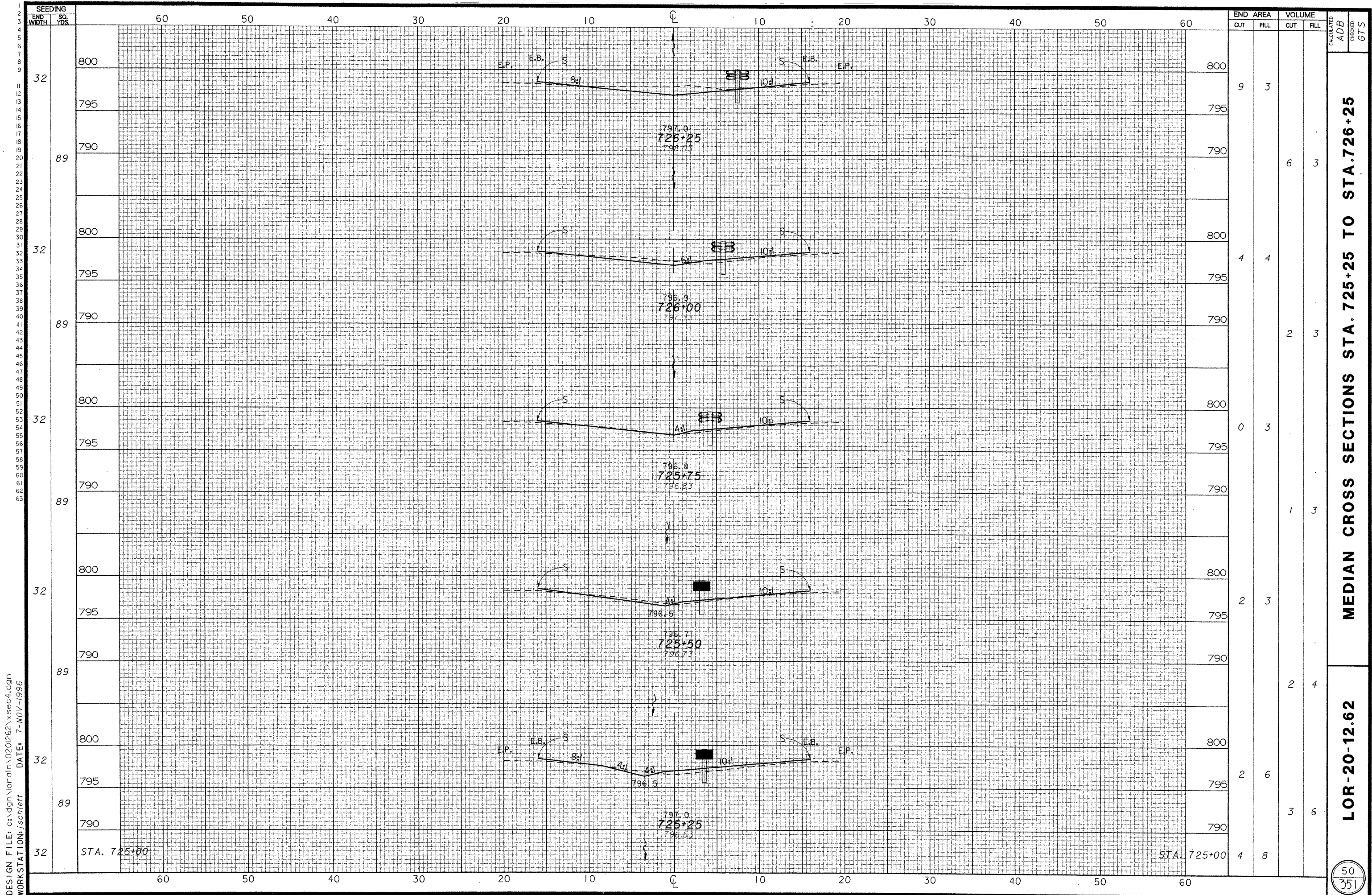
LOR-20-12.62

46
351

DESIGN FILE: c:\dgn\lor\alm\0201262\lsec3.dgn
WORKSTATION: ischreff
DATE: 29-OCT-1996

1062 TOTALS (SQ.YD.) TO SHEET 19

TOTALS (CU.YD.) TO SHEET 18



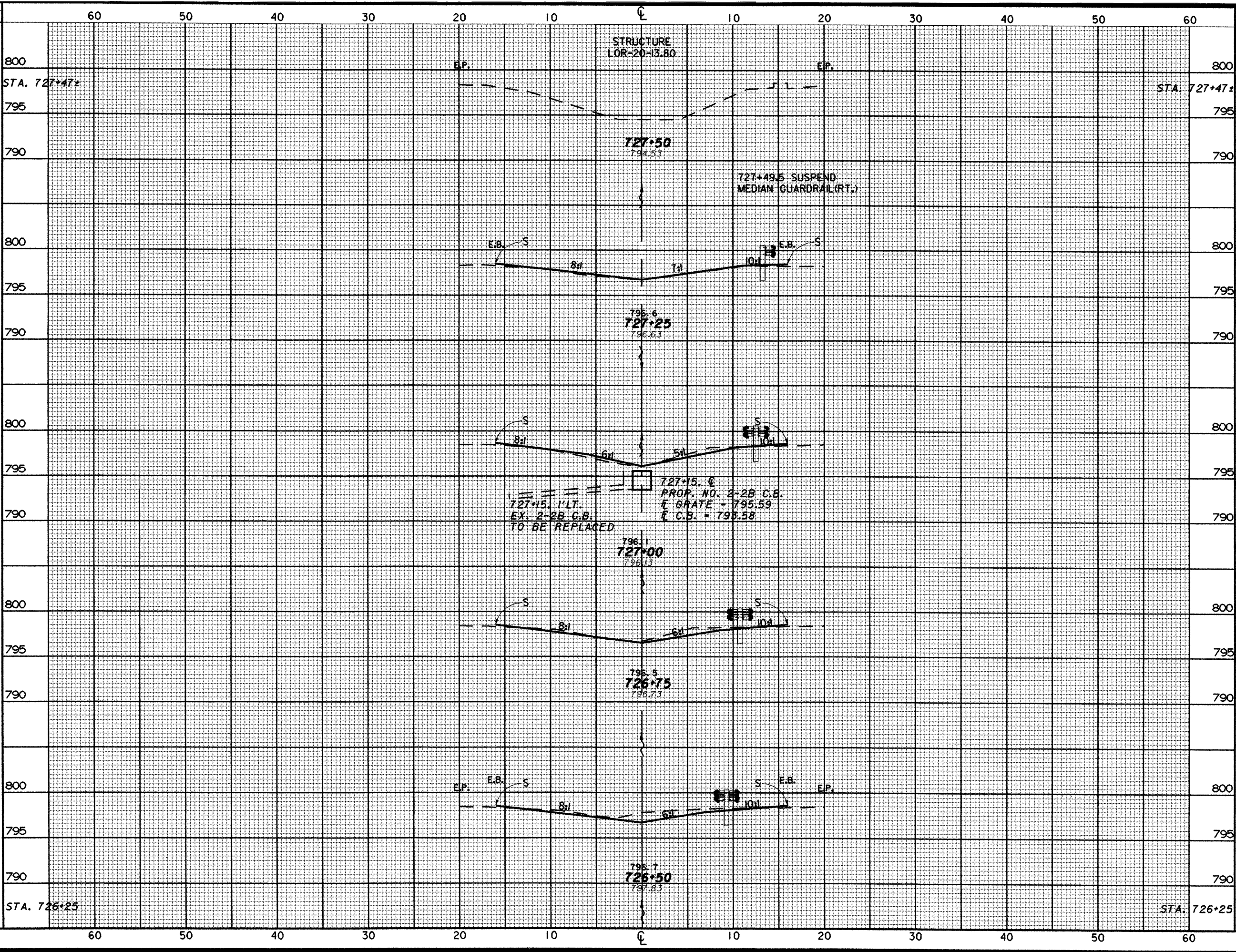
DESIGN FILE: c:\dgn\lor\ain\0201262\sec4.dgn
 WORKSTATION: jschlett DATE: 7-NOV-1996

STATION	END WIDTH SQ. YDS.	END AREA		VOLUME		CALCULATED ADB CHECKED GTS
		CUT	FILL	CUT	FILL	
726+25	800	9	3			
726+00	800			6	3	
725+75	800	4	4			
725+50	800	0	3			
725+00	800	2	3	1	3	
725+00	800	2	3			
725+00	800	2	6	2	4	
725+00	800	2	6	3	6	
725+00	800	4	8			

MEDIAN CROSS SECTIONS STA. 725+25 TO STA. 726+25

LOR-20-12.62

SEEDING
 END WIDTH 80 YDS
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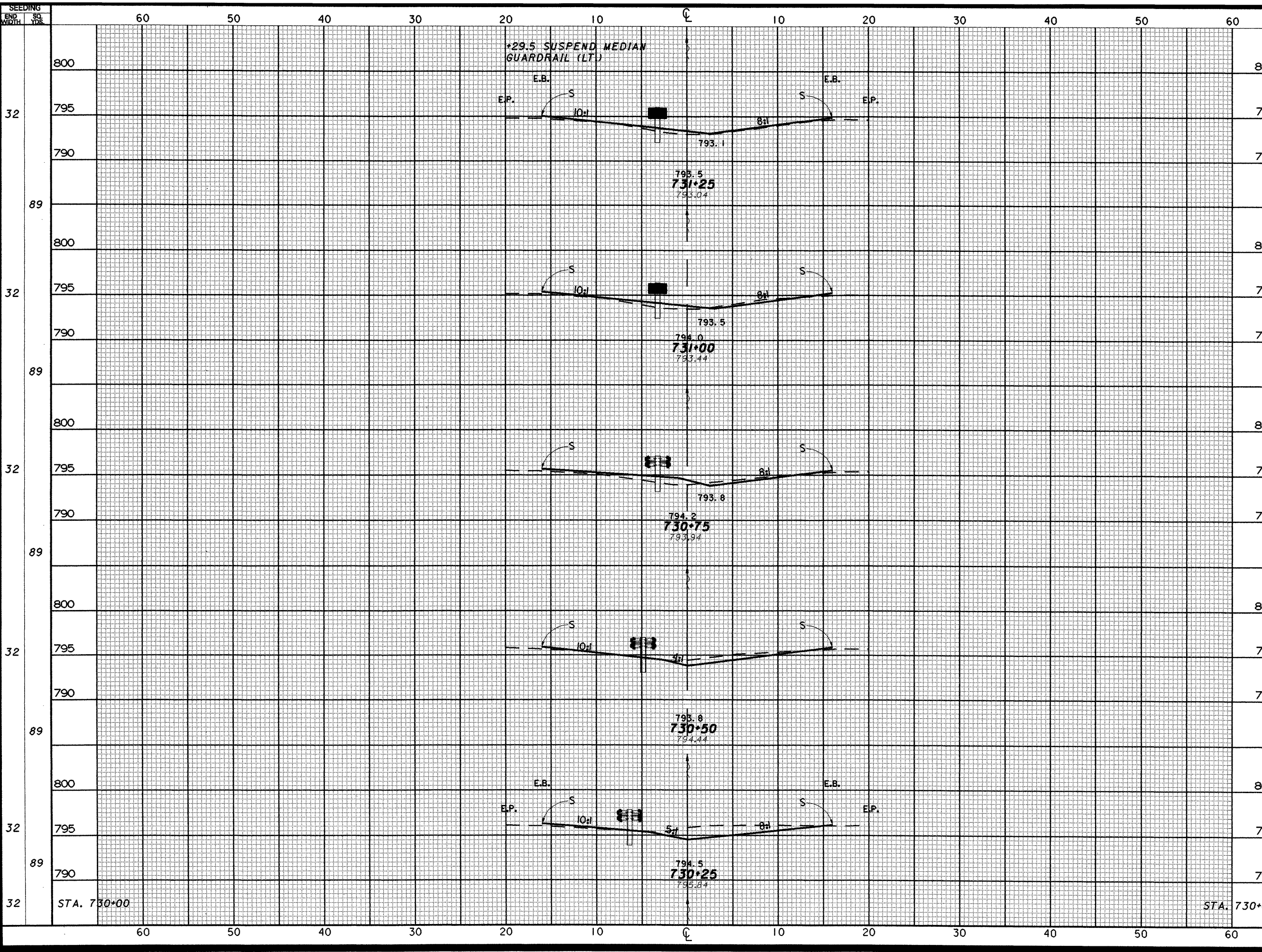
END STA	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
800				
STA. 727+47±	0	0		
795				
790			0	2
800				
795	0	4		
790			2	3
800				
795	4	3		
790			6	2
800				
795	9	1		
790			9	1
800				
795	11	2		
790			9	2
STA. 726+25	9	3		

DESIGN FILE: c:\dgn\lorain\0201262\1xsec4.dgn
 WORKSTATION: ischlett
 DATE: 29-OCT-1996

MEDIAN CROSS SECTIONS STA. 726+50 TO STA. 727+50

LOR-20-12.62

SEEDING
 END WIDTH SQ YDS
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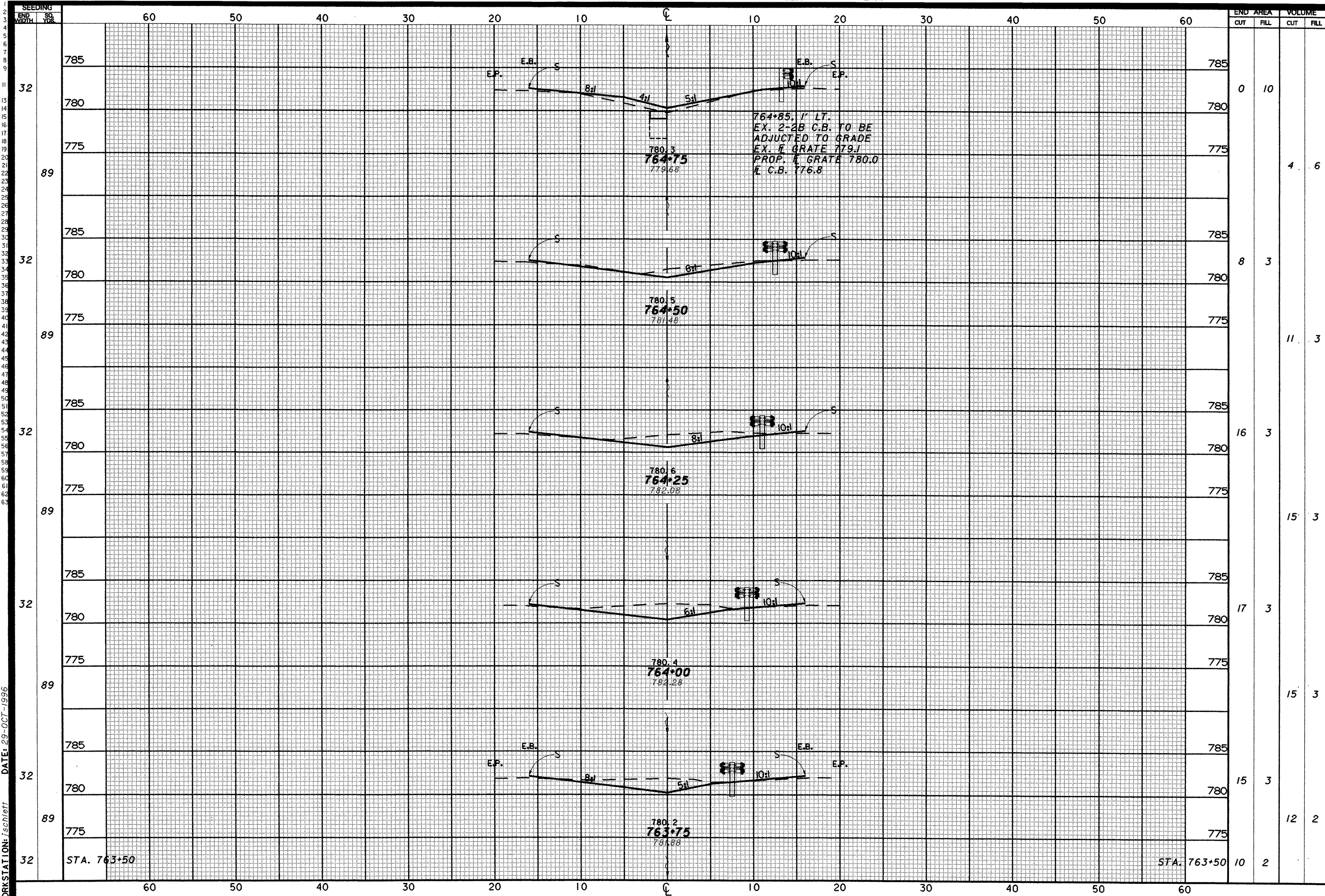


END CUT	AREA		VOLUME	
	CUT	FILL	CUT	FILL
0		7		
			1	8
2		10		
			2	9
2		10		
			2	9
2		10		
			7	6
14		3		
			14	2
16		2		

CALCULATED
 ADB
 53
 351
 MEDIAN CROSS SECTIONS STA. 730+25 TO STA. 731+25
 LOR-20-12.62

DESIGN FILE: c:\dgn\lorain\0201262\lsec5.dgn
 WORKSTATION: lsec5
 DATE: 29-OCT-1996

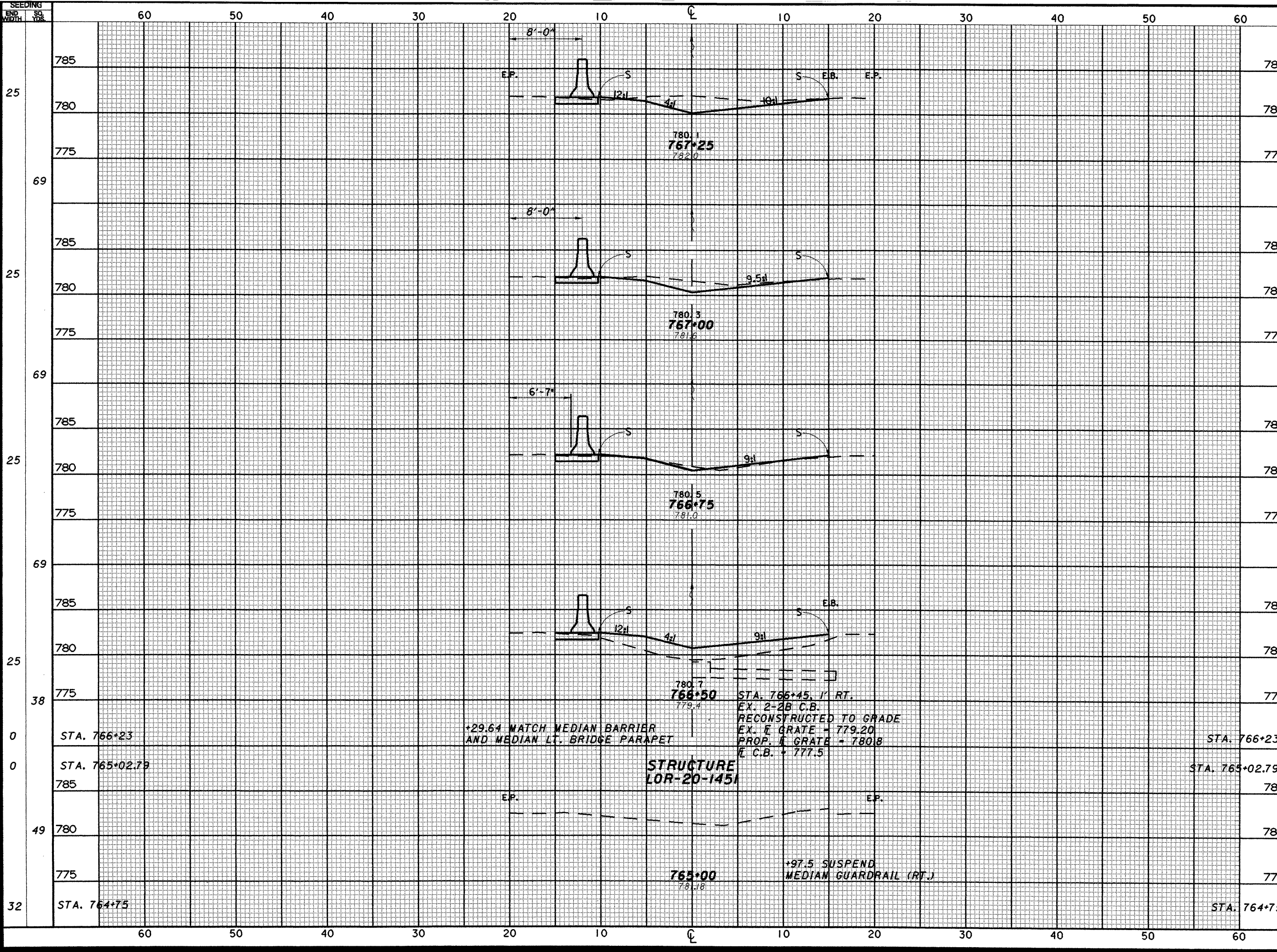
DESIGN FILE: c:\dgn\lor\din\020262\xsec6.dgn
 WORKSTATION: /sch/lett
 DATE: 29-OCT-1996



MEDIAN CROSS SECTIONS STA. 763+75 TO STA. 764+75

LOR-20-12.62

SEEDING
END WIDTH SQ. YDS.
DESIGN FILE: c:\dgn\lor\ain\0201262\lxsec6.dgn
WORKSTATION: /schleff DATE: 29-OCT-1996



STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
785				
780	18	1		
775			14	1
785				
780	12	1		
775			6	1
785				
780	2	2		
775			1	16
785				
780	0	33		
775			0	17
STA. 766+23	0	0		
785				
780	0	0		
775			0	5
STA. 764+75	0	10		

+29.64 MATCH MEDIAN BARRIER
AND MEDIAN LT. BRIDGE PARAPET

STA. 766+45, 1' RT.
EX. 2-2B C.B.
RECONSTRUCTED TO GRADE
EX. E GRATE = 779.20
PROP. I GRATE = 780.8
E.C.B. = 777.5

STRUCTURE
LOR-20-1451

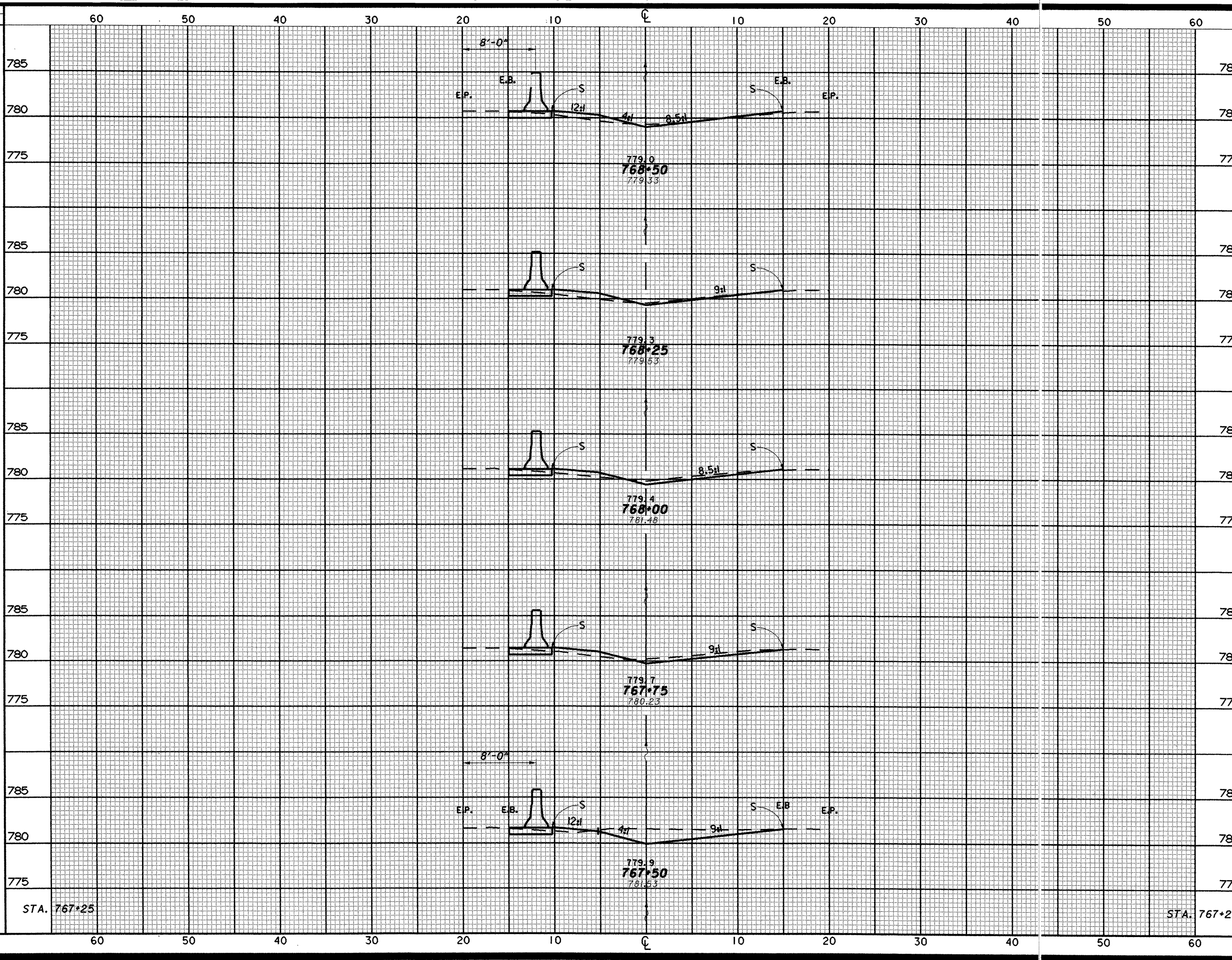
+97.5 SUSPEND
MEDIAN GUARDRAIL (RT.)

MEDIAN CROSS SECTIONS STA. 765+00 TO STA. 767+25

LOR-20-12.62

SEEDING
END WIDTH
SOL YDS

DESIGN FILE: c:\dgn\lor-a\in\0201262\xsec6.dgn
 WORKSTATION: isch/eff DATE: 29-OCT-1996



END AREA	VOLUME	
	CUT	FILL
785		
780	1	5
775		
785		
780	2	5
775		
785		
780	5	4
775		
785		
780	6	4
775		
785		
780	17	2
775		
STA. 767+25	18	1

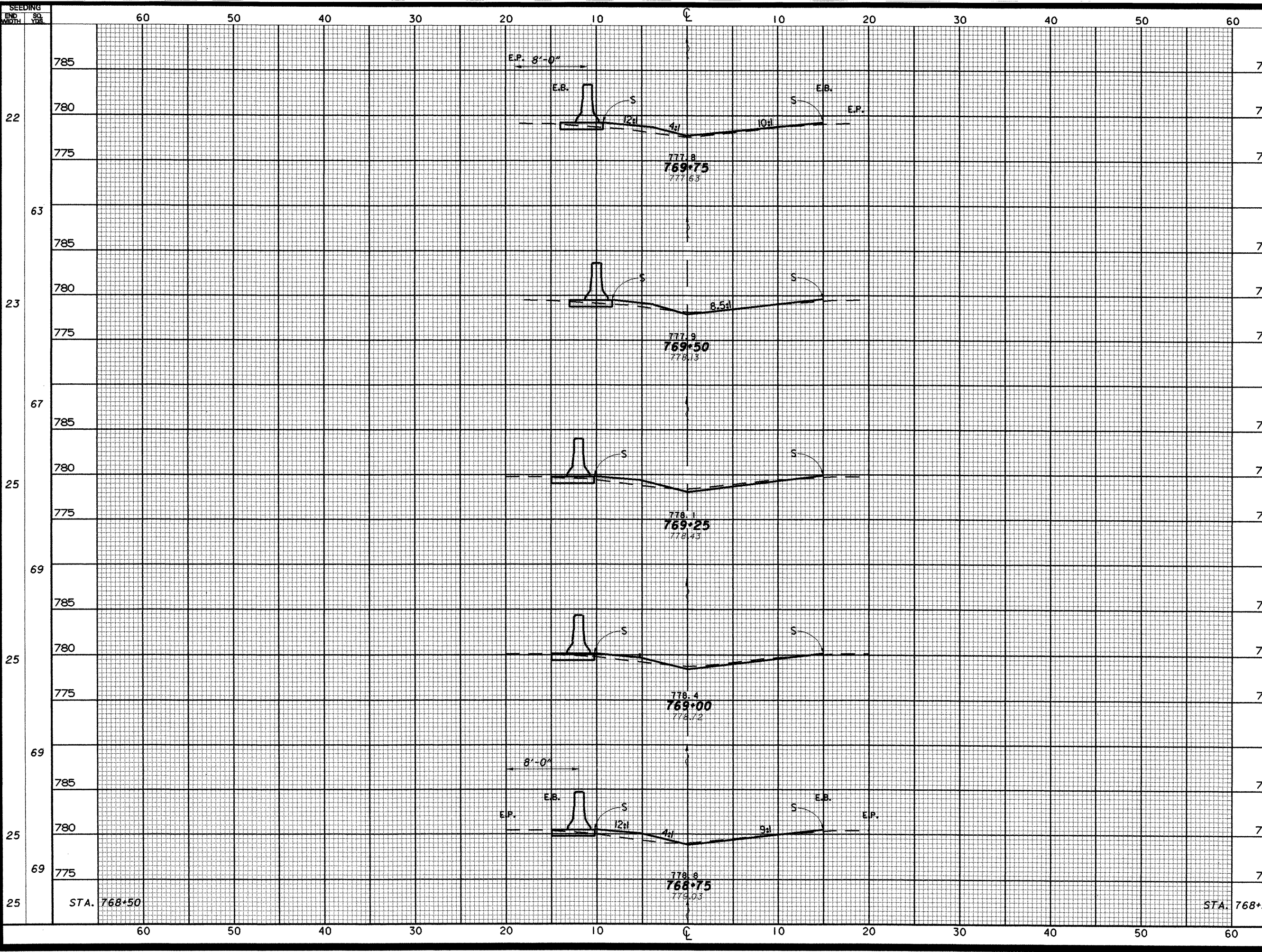
CALCULATED
 ADB
 CHECKED
 GTS

MEDIAN CROSS SECTIONS STA. 767+50 TO STA. 768+50

LOR-20-12.62

59
351

SEEDING
 END AREA
 CUT FILL
 VOLUME
 CUT FILL
 CALCULATED
 ADB
 GTS



STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
785				
780	0	6		
775			1	4
785				
780	1	3		
775			2	4
785				
780	3	5		
775			3	4
785				
780	3	4		
775			2	5
785				
780	1	7		
775			1	6
STA. 768+50	1	5		

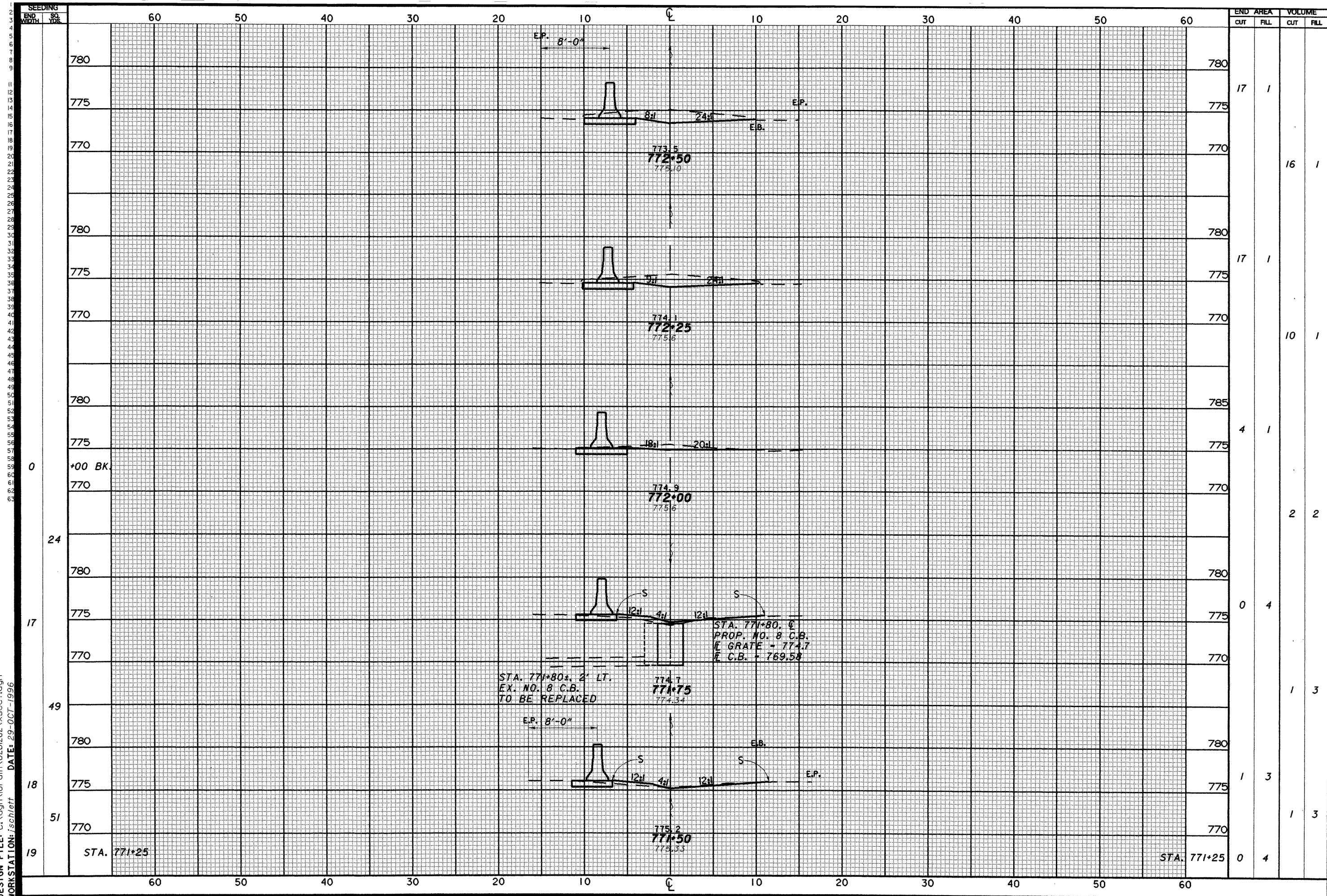
MEDIAN CROSS SECTIONS STA. 768+75 TO STA. 769+75

LOR-20-12.62

60
351

DESIGN FILE: c:\dgn\lor\ain\0201262\1xsec6.dgn
 WORKSTATION: ischleft DATE: 30-OCT-1996

DESIGN FILE: c:\dgn\lor\lor\din\0201262\sect7.dgn
 WORKSTATION: /sch/leff DATE: 29-OCT-1996

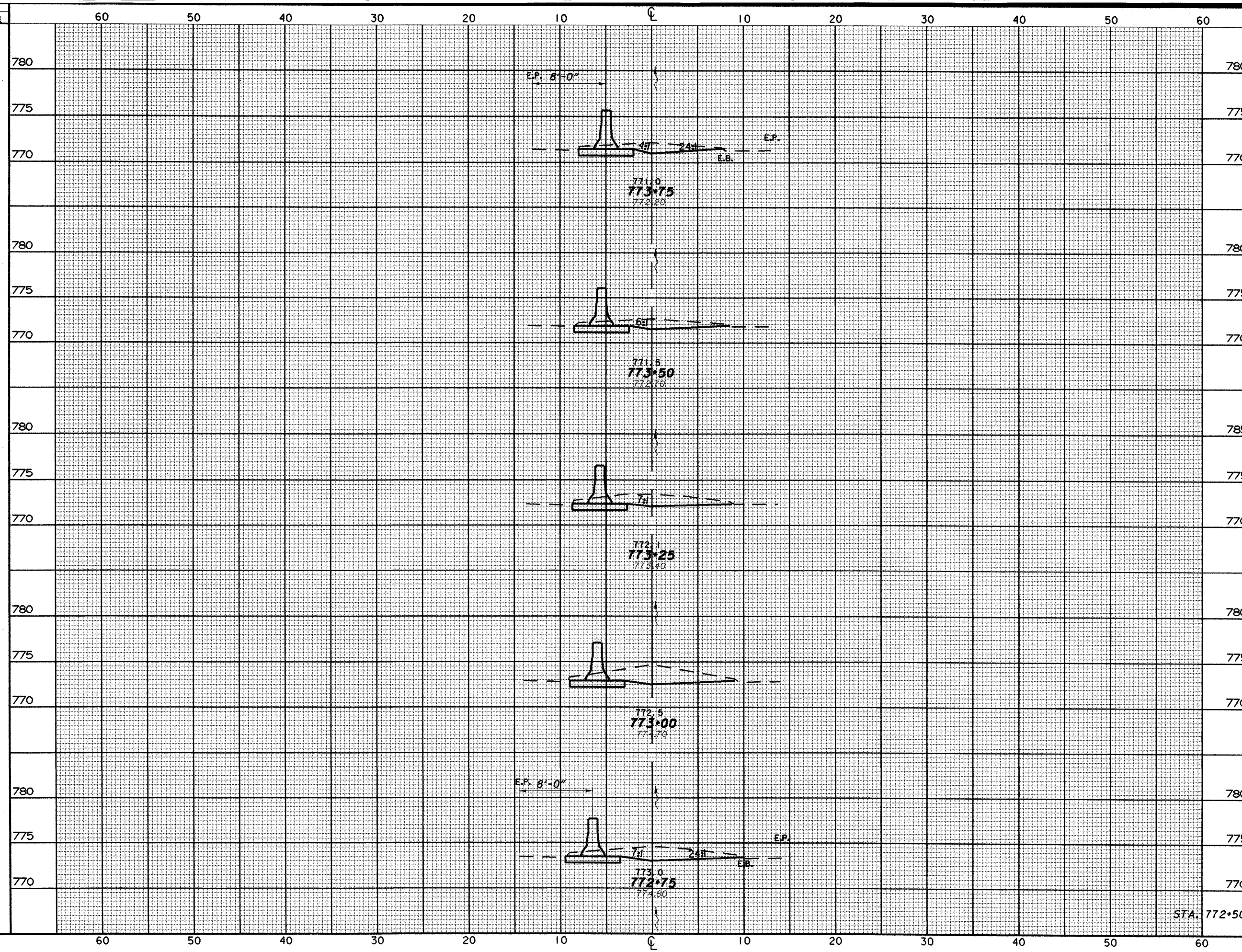


STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
780				
775	17	1		
770			16	1
780				
775	17	1		
770			10	1
780				
775	4	1		
+00 BK				
770			2	2
780				
775	0	4		
770				
780				
775	1	3		
770				
780				
775	1	3		
770				
STA. 771+25	0	4		

CALCULATED
 ADB
 CHECKED
 GTS
MEDIAN CROSS SECTIONS STA. 771+50 TO STA. 772+50

LOR-20-12.62

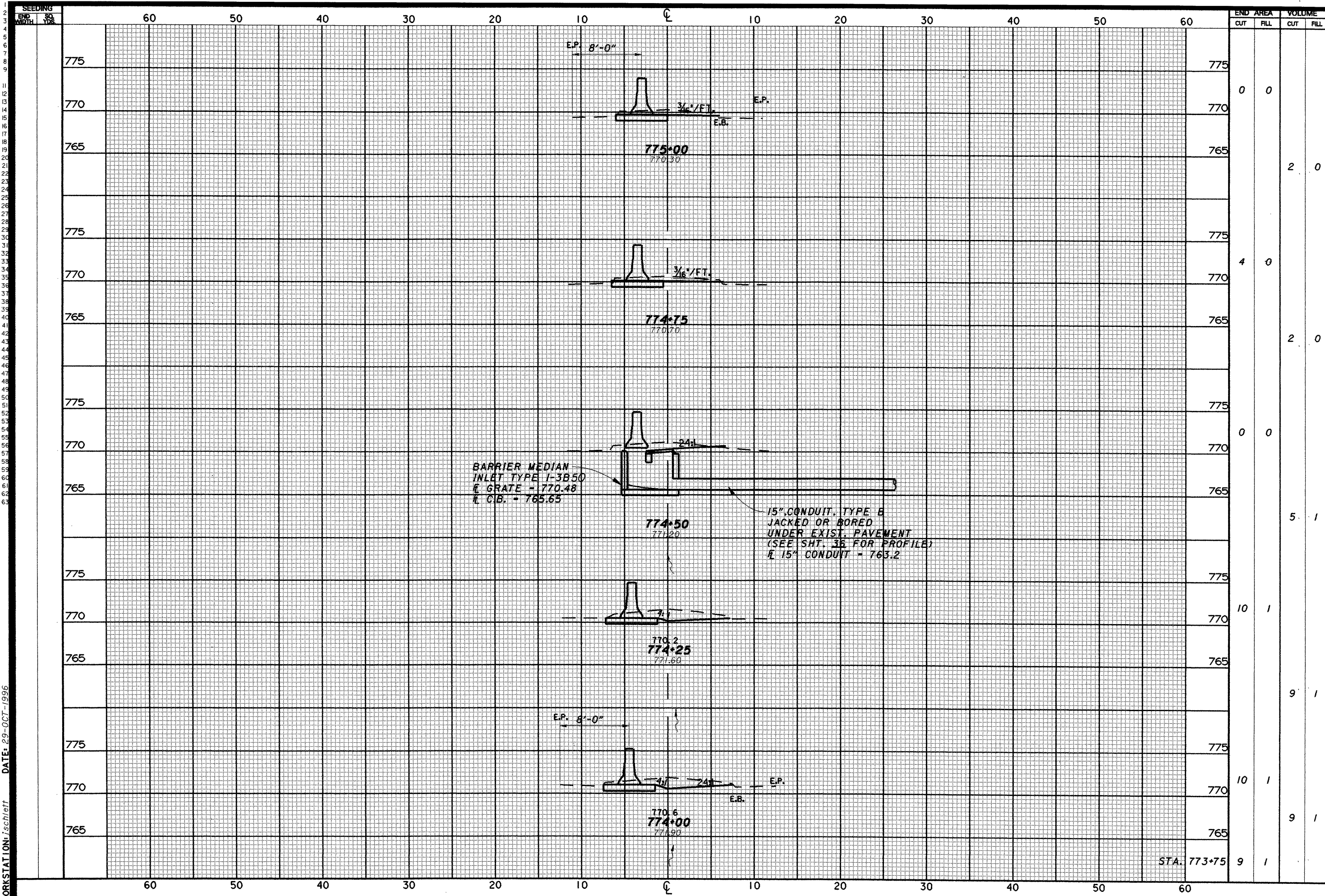
SEEDING
 END WIDTH 80 YDS
 DESIGN FILE: c:\dgn\lorain\020262\sect7.dgn
 WORKSTATION: /schlett DATE: 29-OCT-1996



STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
780				
775				
770	9	1		
780			9	1
775				
770	10	1		
780			11	1
775				
770	13	1		
780			15	1
775				
770	20	1		
780			17	1
775				
770	16	1	15	1
STA. 772+50	17	1		

CALCULATED BY: **ADD**
 CHECKED BY: **GTS**
MEDIAN CROSS SECTIONS STA. 772+75 TO STA. 773+75
LOR-20-12.62
 63
 351

DESIGN FILE: c:\dgn\lorain\020262\xsec7.dgn
 WORKSTATION: /schlett DATE: 29-OCT-1996

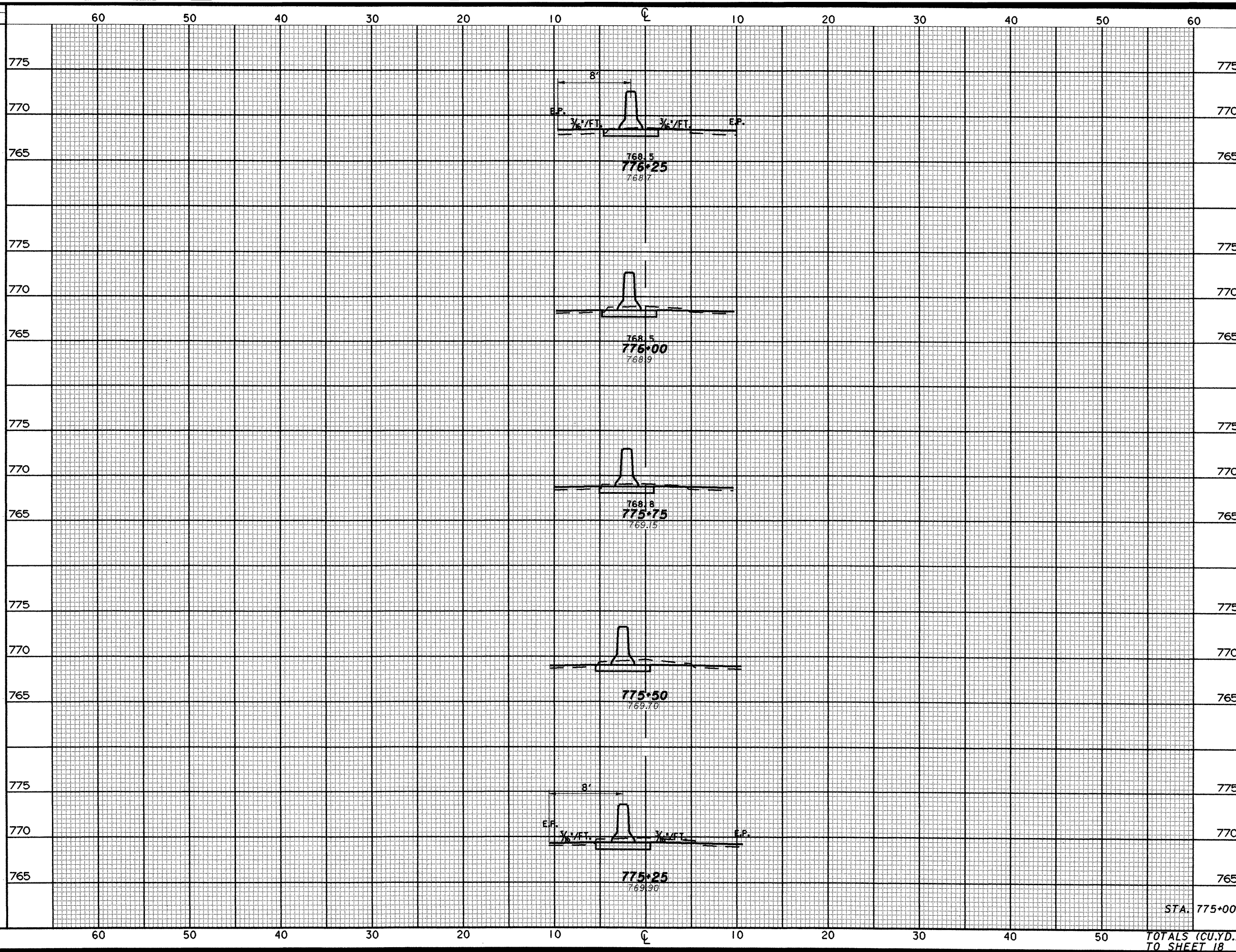


STATION	END AREA		VOLUME		CALCULATED CHECKED	ADB CHECKED	GTS
	CUT	FILL	CUT	FILL			
775							
770	0	0					
765			2	0			
775							
770	4	0					
765			2	0			
775							
770	0	0					
765			5	1			
775							
770	10	1					
765			9	1			
775							
770	10	1					
765			9	1			
STA. 773+75	9	1					

MEDIAN CROSS SECTIONS STA. 774+00 TO STA. 775+00

LOR-20-12.62

SEEDING
 END WIDTH 60 50 40 30 20 10 0 10 20 30 40 50 60
 STA. YDS.



STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
775				
770	2	3		
765			2	2
775				
770	3	2		
765			2	2
775				
770	2	3		
765			3	2
775				
770	4	2		
765			4	2
775				
770	5	2		
765			2	1
STA. 775+00	0	0		
TOTALS (CU.YD.) TO SHEET 18			38	34

CALCULATED
 ADB
 CHECKED
 GTS

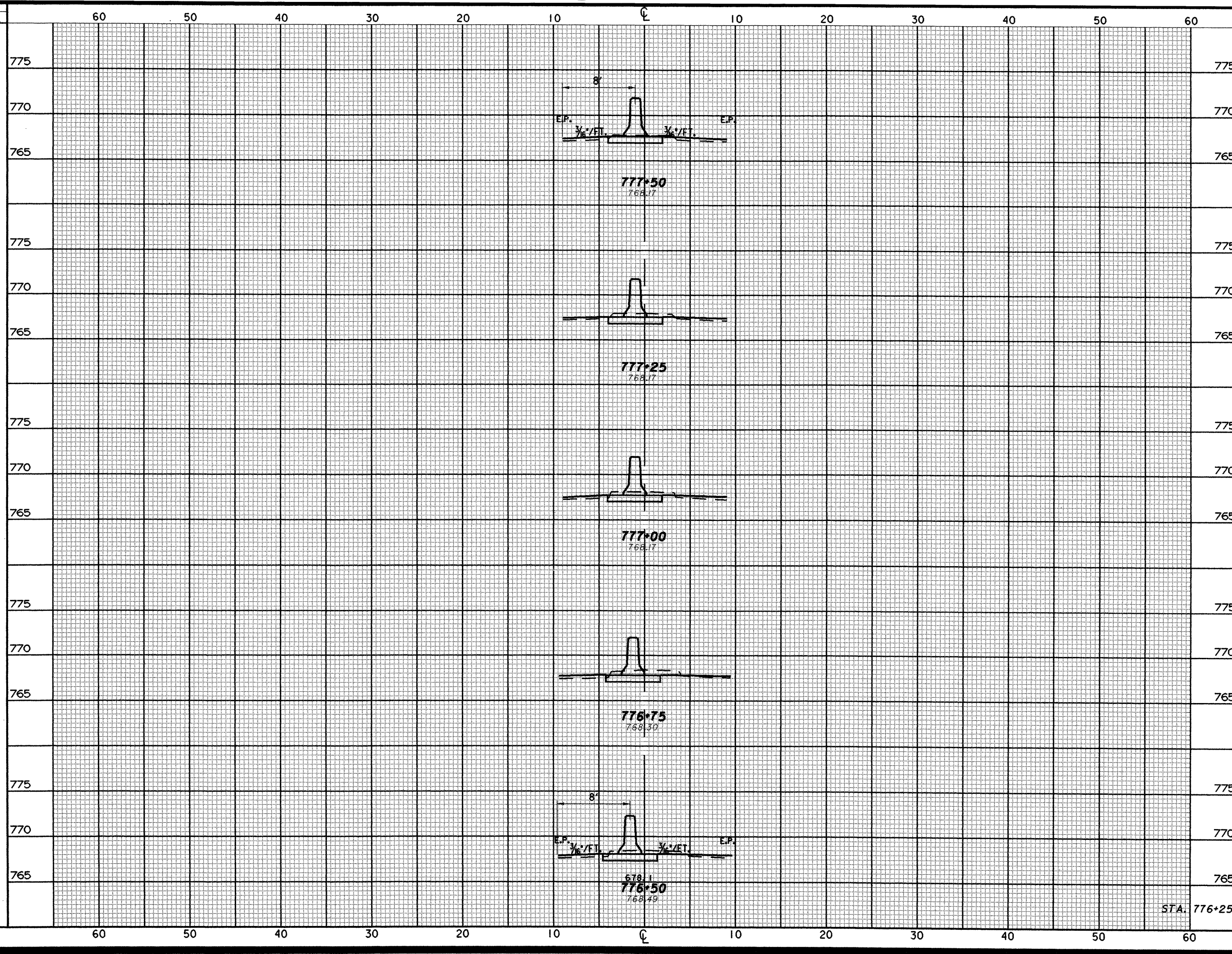
MEDIAN CROSS SECTIONS STA. 775+25 TO STA. 776+25

LOR-20-12.62

65
351

DESIGN FILE: c:\dgn\lor\ain\0201262\lsec010.dg
 WORKSTATION: tschlerr DATE: 29-OCT-1996

SEEDING
 END WIDTH SQ. YDS
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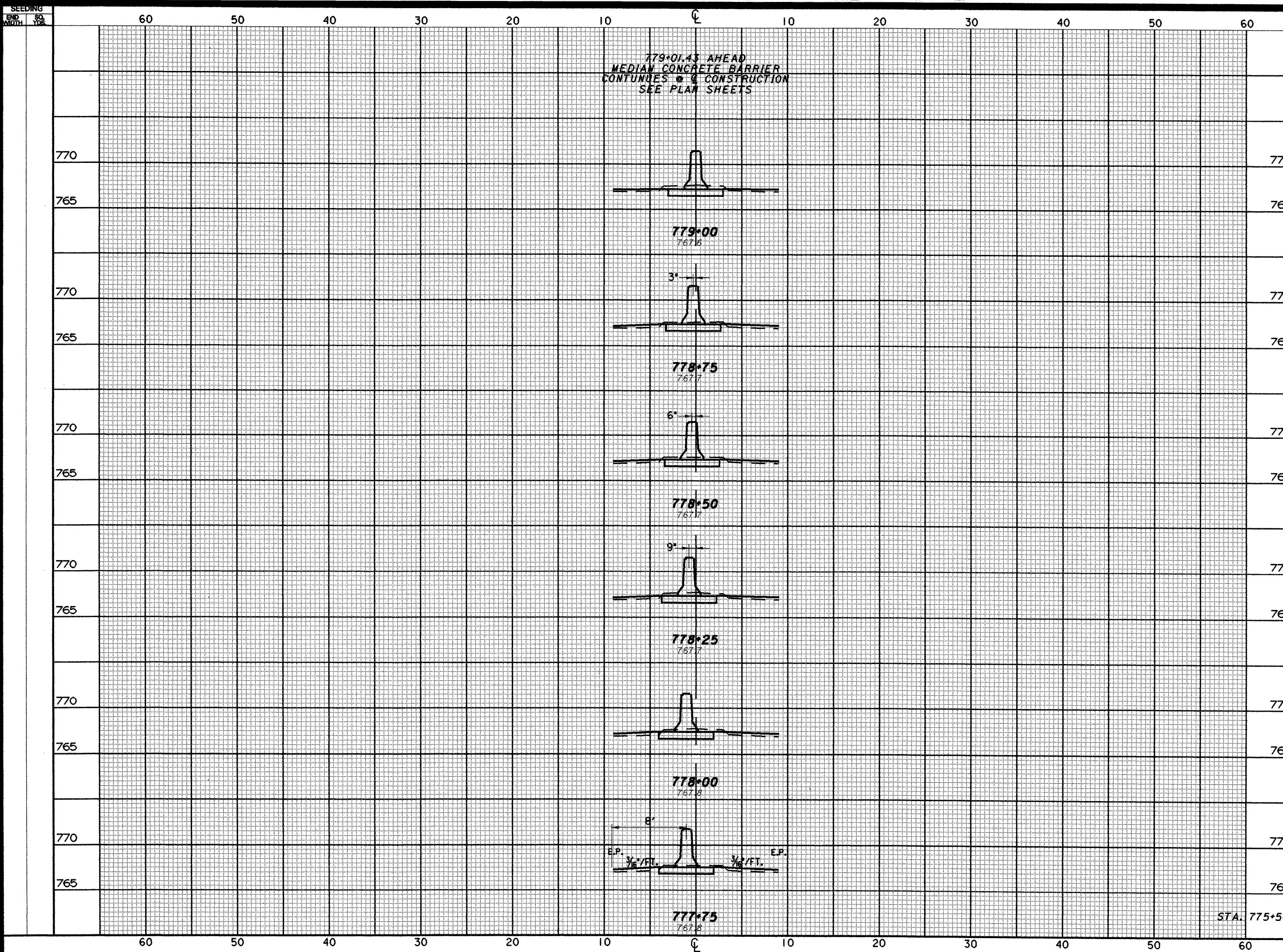


STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
775				
770	2	3		
765			2	2
775				
770	3	2		
765			3	2
775				
770	3	2		
765			3	2
775				
770	4	2		
765			3	2
775				
770	3	2		
765			2	2
STA. 776+25	2	3		

CALCULATED
 ADB
 CHECKED
 GTS
MEDIAN CROSS SECTIONS STA. 776+50 TO STA. 777+50
LOR-20-12.62
 66
 351

DESIGN FILE: c:\dgn\lor\din\0201262\xsecc0.dg
 WORKSTATION: tschlerr DATE: 29-OCT-1996

DESIGN FILE: c:\dgn\lor-a\in\0201262\sect0.dg
 WORKSTATION: isch/eff DATE: 29-OCT-1996



SEEDING		END AREA		VOLUME	
END WIDTH	SO. YRS.	CUT	FILL	CUT	FILL
770					
765		2	2		
770				2	2
765		2	3		
770				2	3
765		2	3		
770				2	2
765		2	2		
770				2	2
765		2	3		
770				2	3
765		2	3		
770				2	3
765		2	3		
		2	3		

CALCULATED
 ADB
 CHECKED
 GTS

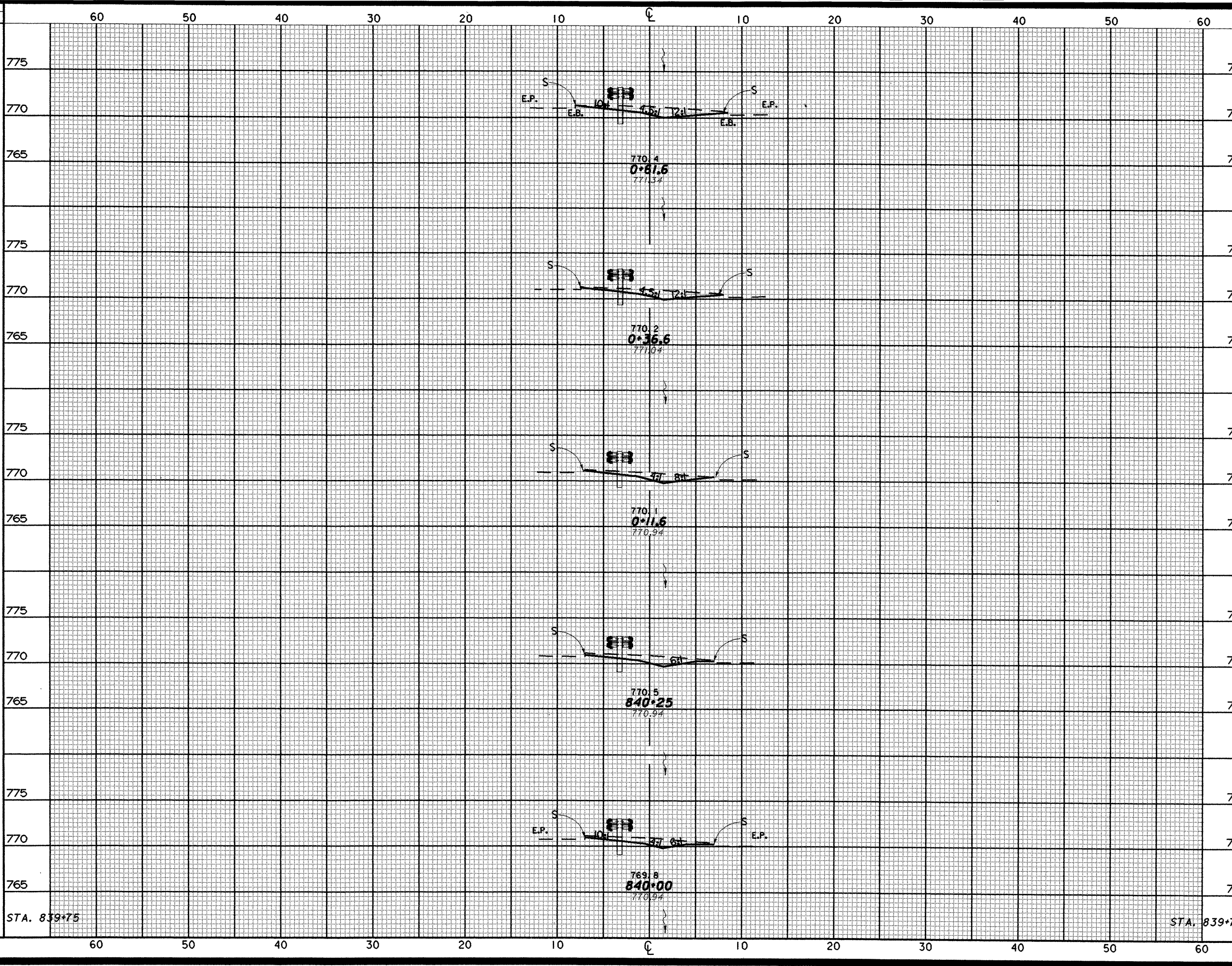
MEDIAN CROSS SECTIONS STA. 777+75 TO STA. 779+01.43

LOR-20-12.62

67
351

SEEDING
END WIDTH SQ. YDS.

DESIGN FILE: c:\dgn\loraln\0201262\1xseccli.dg
WORKSTATION: isch/eff DATE: 30-OCT-1996



STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
775				
770	9	2		
765			8	2
775				
770	8	2		
765			7	2
775				
770	7	3		
765			7	2
775				
770	8	2		
765			7	2
775				
770	7	2		
765			8	1
STA. 839+75	10	1		

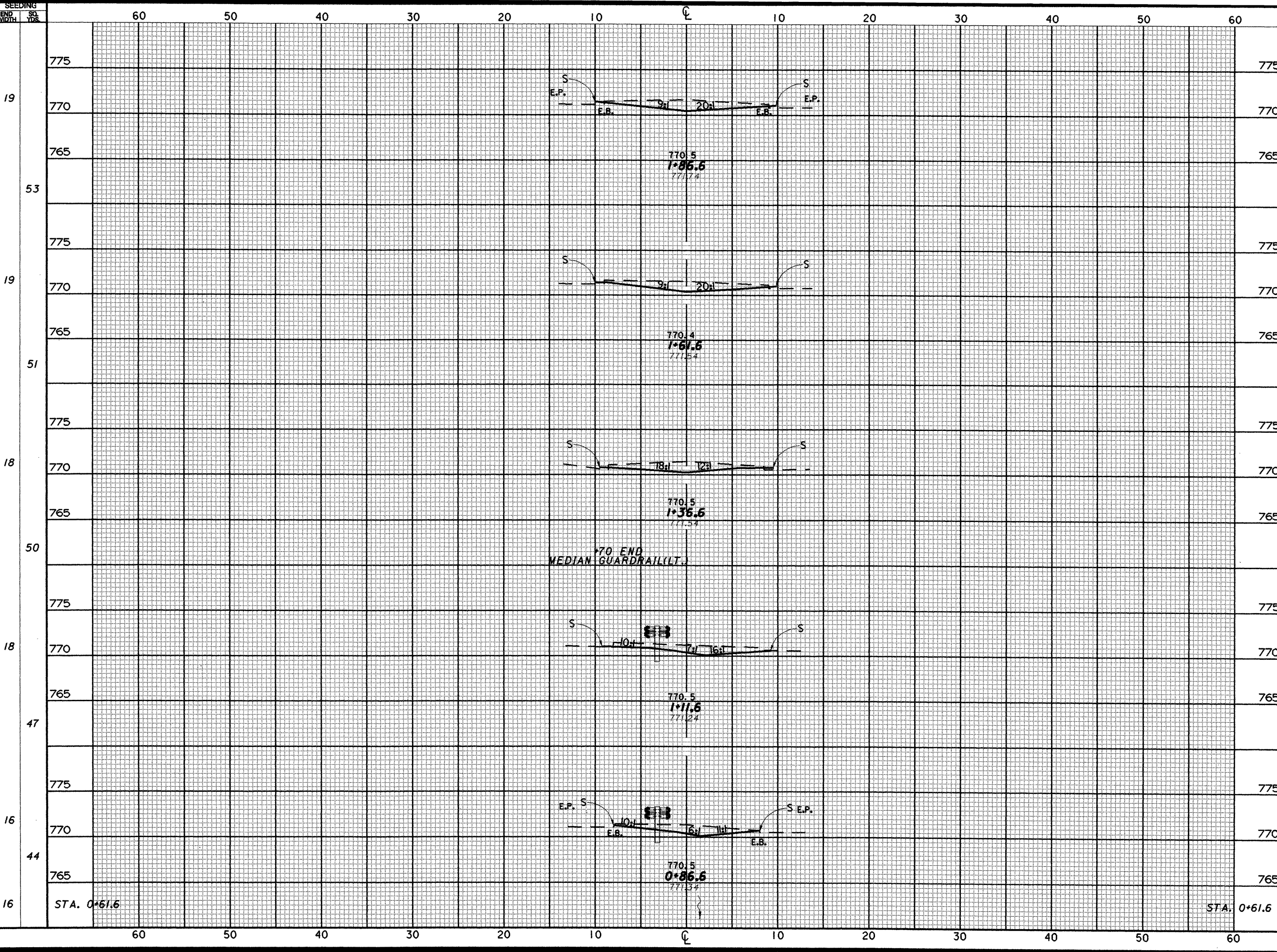
CALCULATED
ADB
CHECKED
GTS

MEDIAN CROSS SECTIONS STA. 840+00 TO STA. 0+61.6

LOR-20-12.62

69
351

SEEDING
 END WIDTH SQ. YDS
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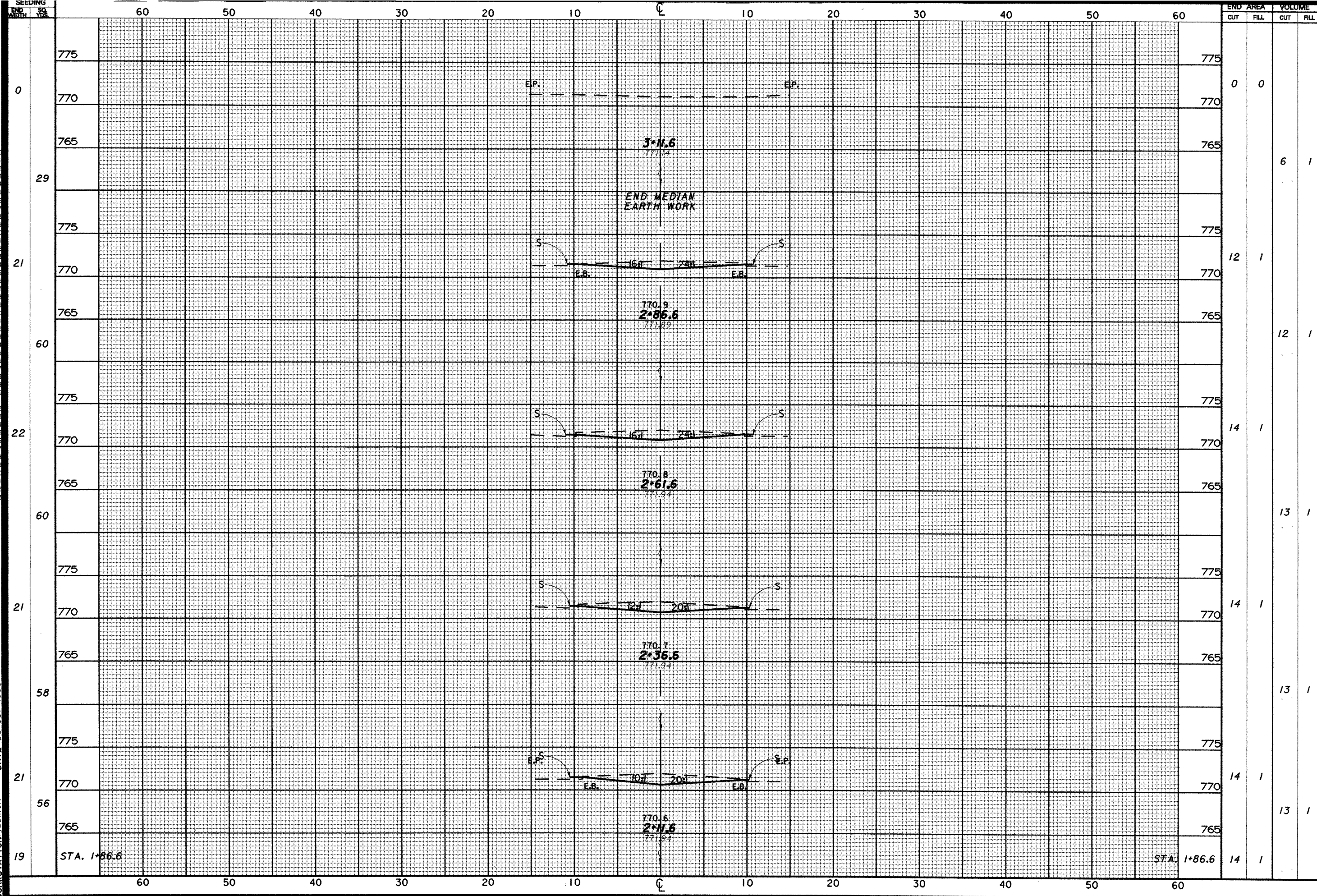


STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
775				
19 770	14	1		
53 765			13	1
775				
19 770	13	2		
765				
51 765			12	2
775				
18 770	12	3		
765				
50 765			11	2
775				
18 770	11	2		
765				
47 765			10	2
775				
16 770	10	3		
44 765			9	2
16 STA. 0+61.6	9	2		

DESIGN FILE: c:\dgn\lor\alm\020262\lxsocall.dg
 WORKSTATION: /schierf DATE: 30-OCT-1996

CALCULATED ADB CHECKED GTS
MEDIAN CROSS SECTIONS STA. 0+86.6 TO STA. 1+86.6
LOR-20-12.62
 70
 351

DESIGN FILE: c:\dgn\lorain\020262\ssccll.dg
 WORKSTATION: jschiff DATE: 30-OCT-1996

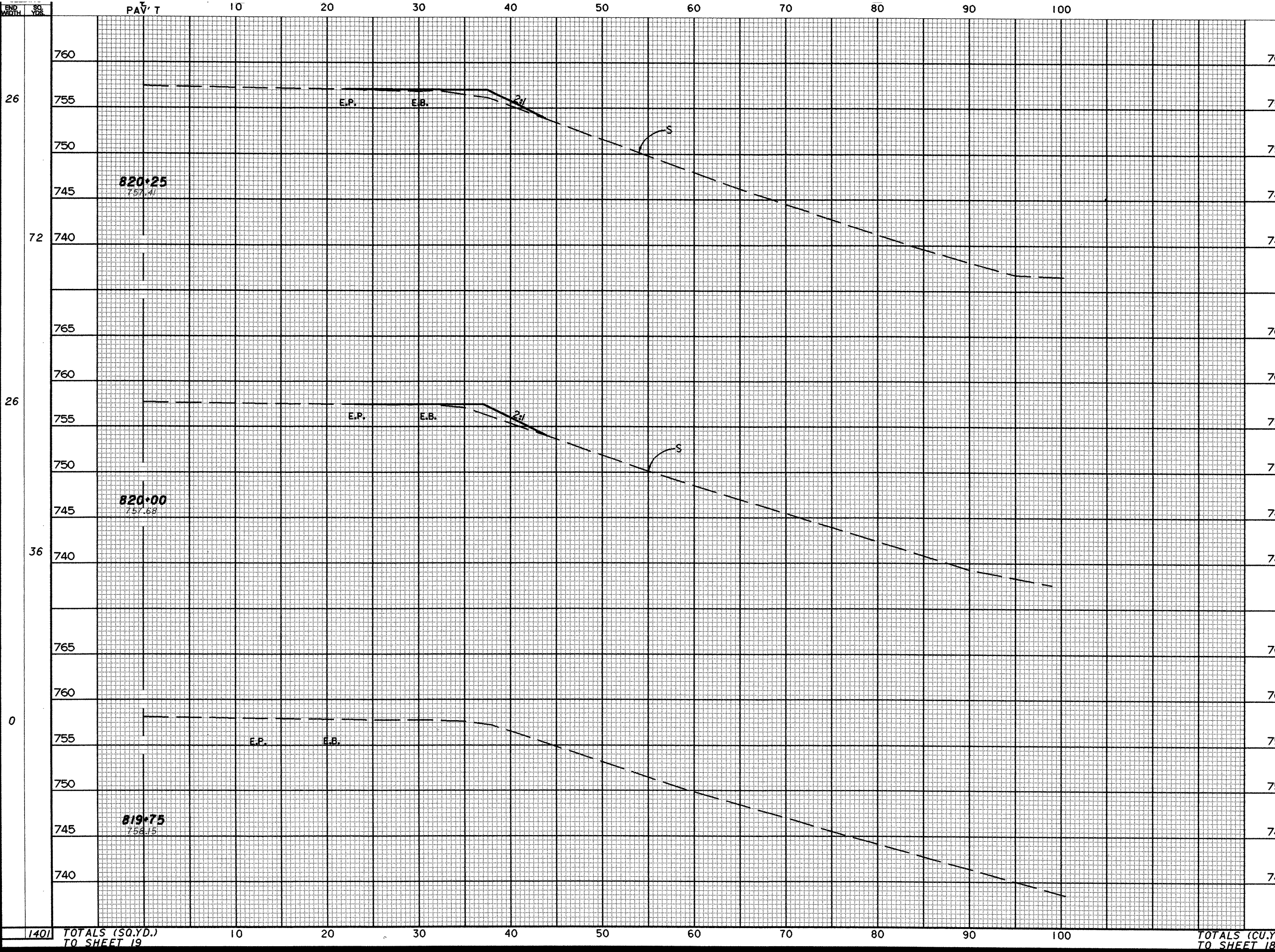


END CUT	AREA		VOLUME	
	CUT	FILL	CUT	FILL
0	0			
12		1	6	1
14		1	12	1
14		1	13	1
14		1	13	1
14		1	13	1
14		1	14	1

MEDIAN CROSS SECTIONS STA. 2+11.6 TO STA. 3+11.6

LOR-20-12.62

END WIDTH 80 YDS
 2
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 6
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 63



END WIDTH	AREA		VOLUME	
	CUT	FILL	CUT	FILL
26	0	5		
72			0	5
26	0	6		
36			0	3
0	0	0		
140	TOTALS (SQ.YD.)	TOTALS (CU.YD.)	16	129

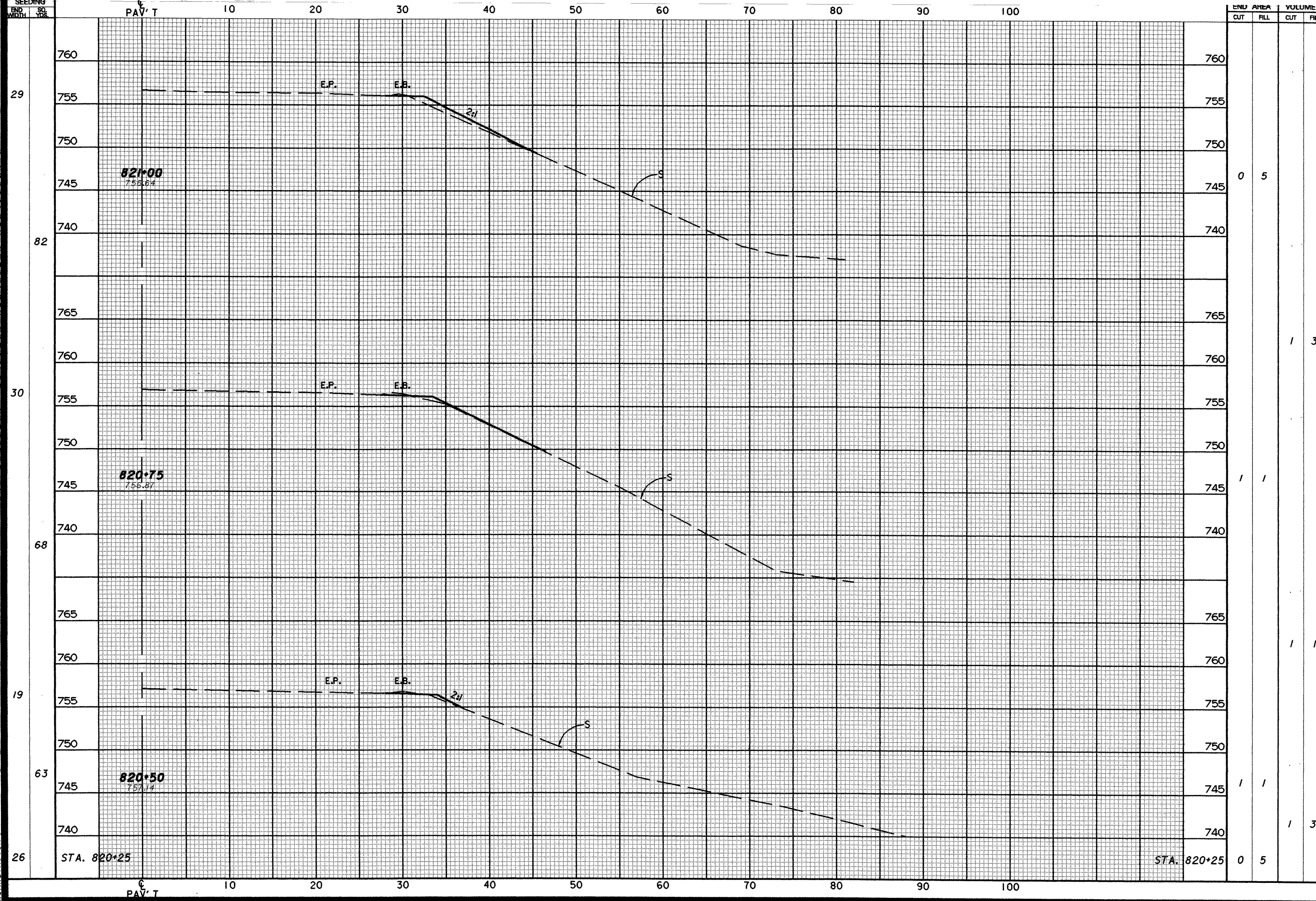
CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
 LOR-20-1559R STA. 819+75 TO STA. 820+25
 LOR-20-12.62
 72
 351

DESIGN FILE: c:\dgn\lor\ain\0201262\asecc2.dg
 WORKSTATION: /sch/eff DATE: 30-OCT-1996

TOTALS (SQ.YD.) TO SHEET 19

TOTALS (CU.YD.) TO SHEET 18

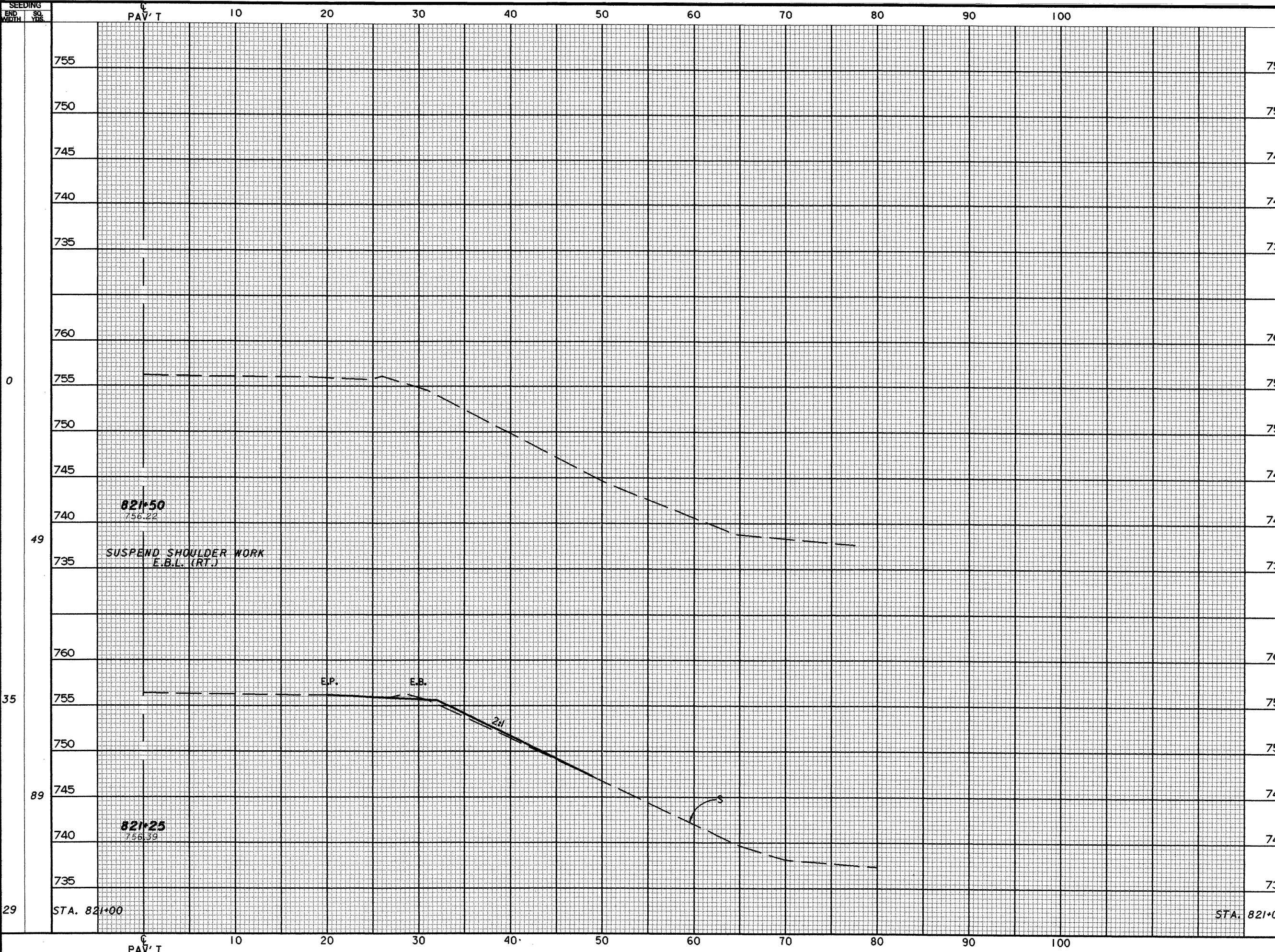
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 WORKSTATION: /sch/eff DATE: 30-OCT-1996



CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
 LOR-20-1559R STA. 820+50 TO STA. 821+00

LOR-20-12.62

SEEDING
END WIDTH SQ. YDS
0
1
2
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96
97
98
99
100



END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
755				
750				
745				
740				
735				
760				
755				
750				
745				
740	0	0		
735				
760				
755				
750				
745				
740				
735				
760				
755				
750				
745				
740	2	4		
735				
STA. 821+00	0	5		

DESIGN FILE: c:\dgn\lorain\0201262\sscccl2.dg
WORKSTATION: schlett DATE: 30-OCT-1996

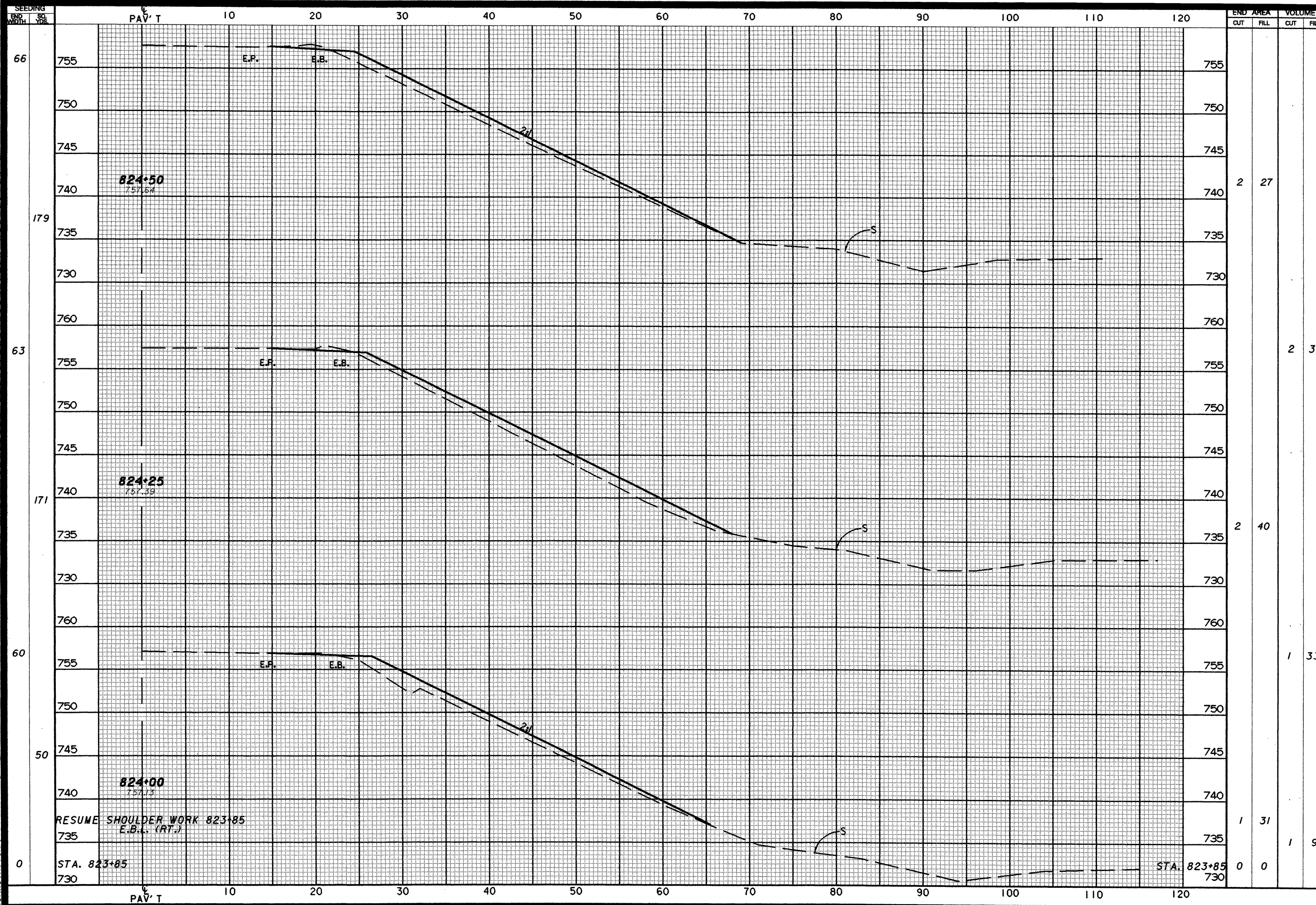
CALCULATED
ADD
CHECKED
GTS

**CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
LOR-20-1559R STA. 821+25 TO STA. 821+50**

LOR-20-12.62

74
351

DESIGN FILE: c:\dgn\lor\ain\020262\secccl2.dgn
 WORKSTATION: /sch/eff DATE: 30-OCT-1996

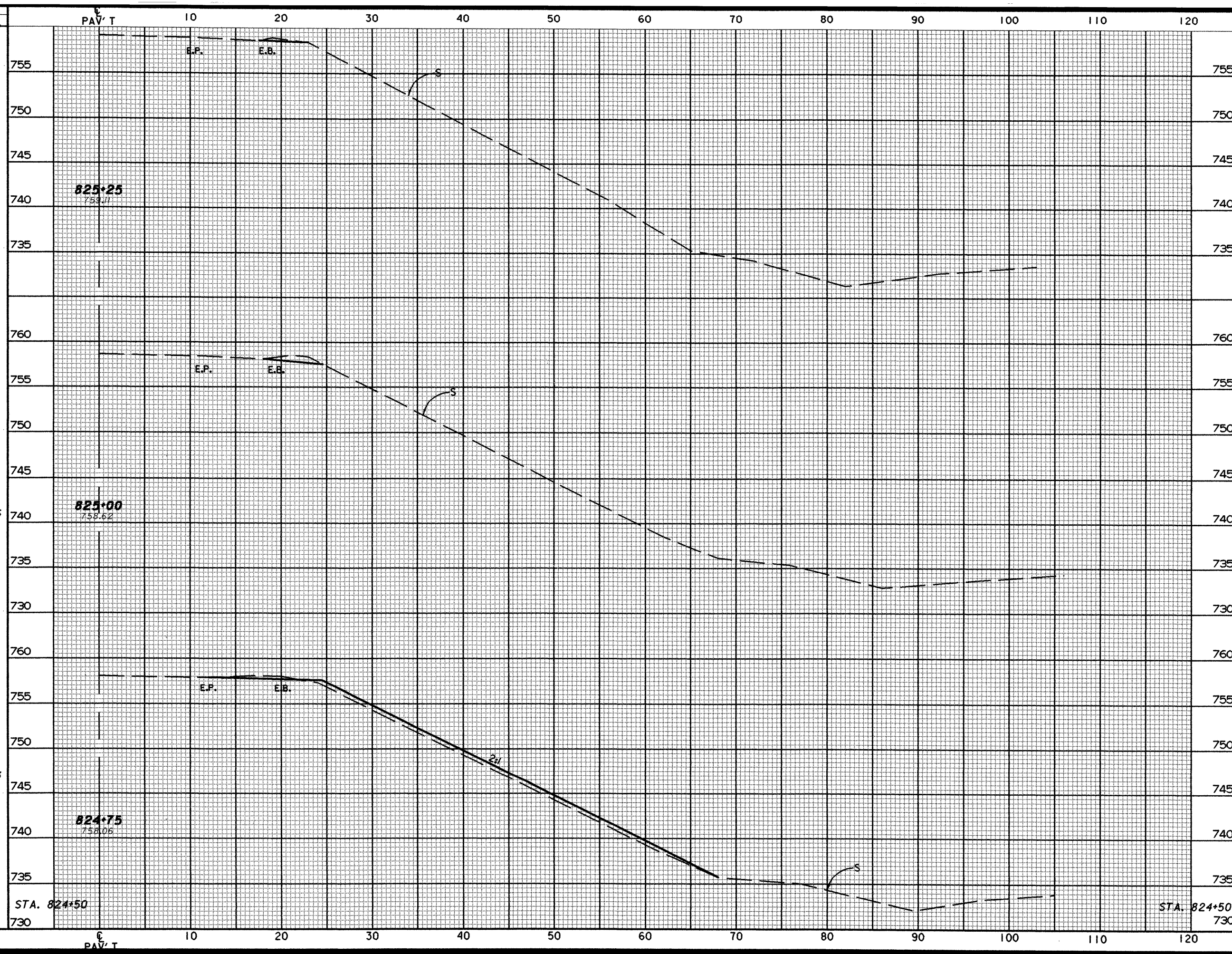


CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
 LOR-20-1559R STA. 824+00 TO STA. 824+50

LOR-20-12.62

75
351

SEEDING
 END MONTH SQ. YDS.
 17
 49
 18
 126
 73
 193
 66

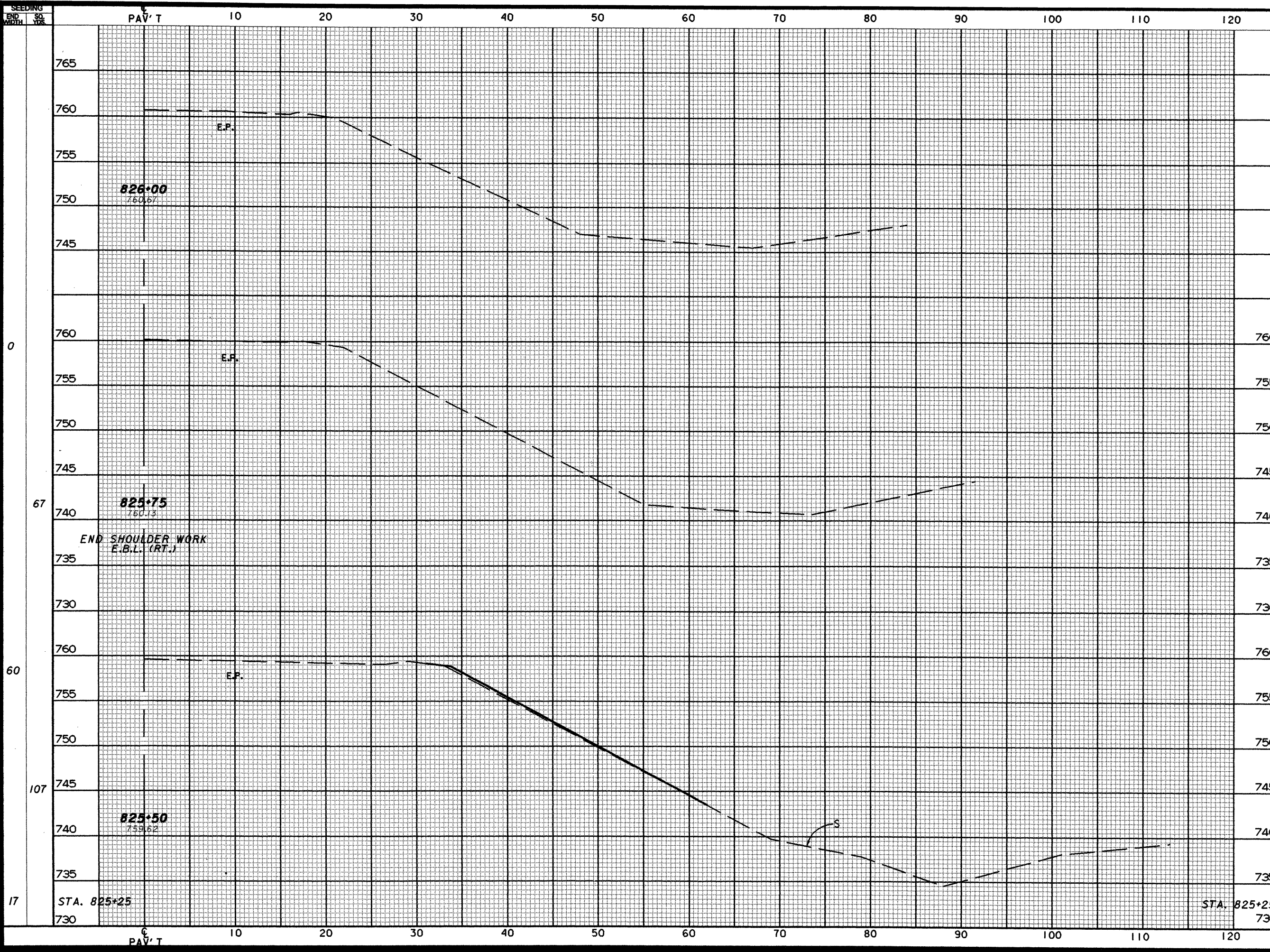


END CUT	AREA FILL	VOLUME	
		CUT	FILL
1	0		
		2	0
3	0		
		2	9
2	20		
		2	22
2	27		

CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
 LOR-20-1559R STA. 824+75 TO STA. 825+25
 LOR-20-12.62
 76
 351

DESIGN FILE: c:\dgn\lor\ain\0201262\seccol2.dg
 WORKSTATION: /sch/1gft DATE: 30-OCT-1996

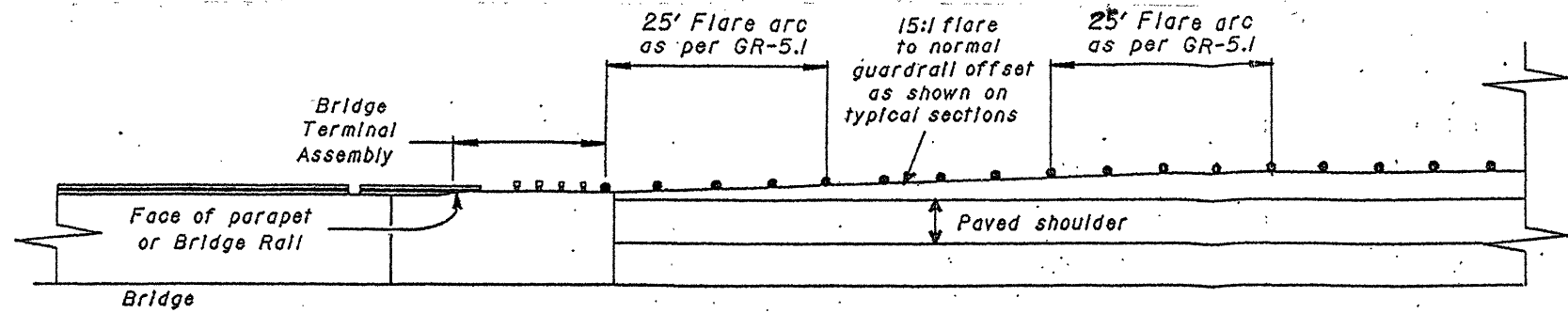
DESIGN FILE: c:\dgn\lor\dlm\0201262\secccl2.dg
 WORKSTATION: /sch/eff DATE: 30-OCT-1996



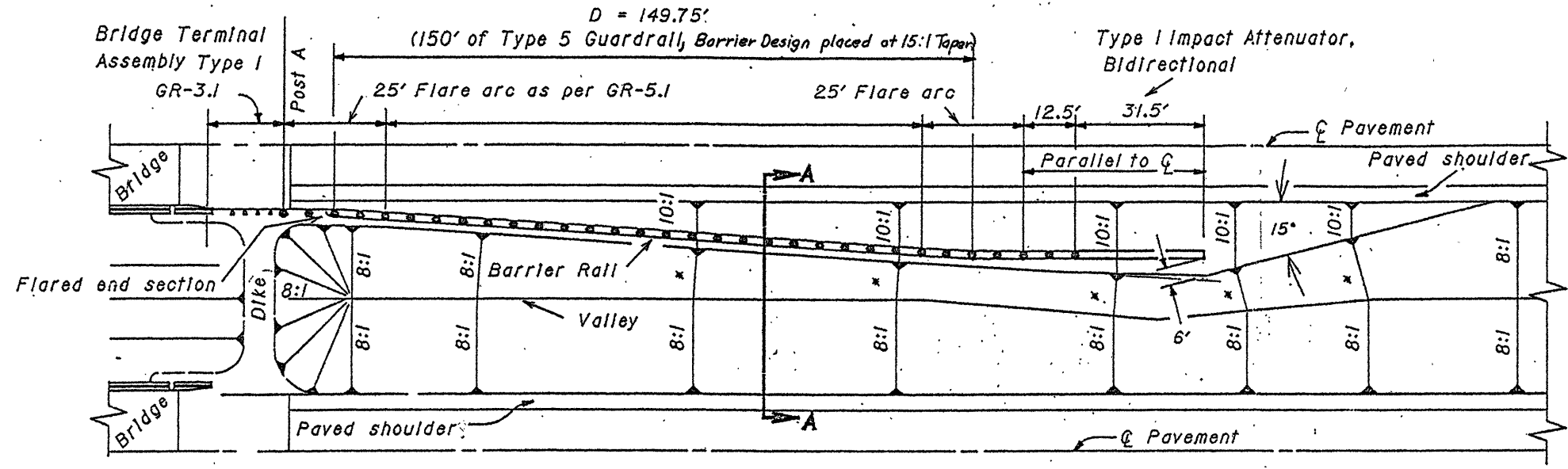
END STA	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
765				
760				
755				
750				
745				
760				760
755				755
750				750
745				745
740	0	0		740
735				735
730				730
760				760
755			0	755
750				750
745				745
740				740
735				735
730				730
740	0	4		740
735			1	735
730	1	0		730

CALCULATED ADB CHECKED GTS
CROSS SECTIONS FOR BRIDGE WIDENING STRUCTURE
LOR-20-1559R STA. 825+50 TO STA. 826+00
LOR-20-12.62
 77
 351

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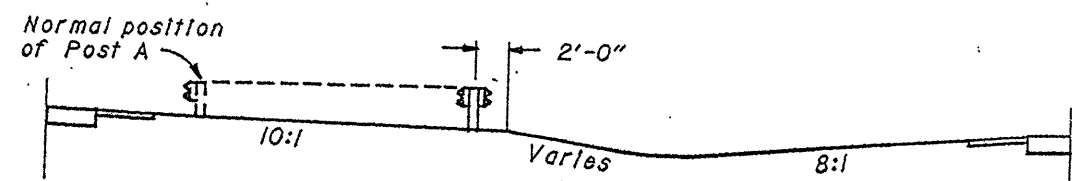


CONTINUOUS GUARDRAIL APPROACH INSTALLATION



* Slope Varies

PAYMENT ITEMS	UNIT	QUANTITY
Bridge Terminal Assembly, Type I	EA	1
Guardrail, Type 5	Lin. FT	43.75
Type 5 Guardrail, Barrier Design	Lin. FT	175
Impact Attenuator, Type I, Bidirectional	EA	1



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at Post A is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

SECTION A-A

DESIGN FILE: *****DGNFILESPECIFICATIONS*****
WORKSTATION: \$TERMINALS\$ DATE: \$\$\$\$\$DATE\$\$\$\$\$

MEDIAN GUARDRAIL DETAILS AT BRIDGES

LOR-20-12.62

P = PASSING LANE
 D = DRIVING LANE
 B = BOTH LANES

CONTINUOUS PAVEMENT REPAIR
 EASTBOUND ON MAINLINE

Note: Locations are approximate

CALCULATED
 SCJ
 CHECKED
 ADB

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C, APP. 'A'	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	B	665+00	665+69	69	24	184.00	48
	P	666+13	666+26	13	12	17.33	37
	D	666+13	667+29	116	12	154.67	140
	D	667+92	670+73	281	12	374.67	305
	P	668+42	668+75	33	12	44.00	57
	P	671+64	671+92	28	12	37.33	52
	D	672+26	673+20	94	12	125.33	118
	D	676+70	682+04	534	12	712.00	558
	P	681+83	682+60	77	12	102.67	100
	D	683+09	686+76	367	12	489.33	391
	D	688+19	689+59	140	12	186.66	164
	D	693+08	693+99	91	12	121.33	115
	B	694+18	694+71	53	24	141.33	48
	D	695+60	695+94	34	12	45.33	58
	D	697+08	697+46	38	12	50.67	62
	P	699+73	700+30	57	12	76.00	81
	P	702+97	703+56	59	12	78.67	83
	D	703+65	703+95	30	12	40.00	54
	D	706+29	706+39	10	12	13.33	34
	D	706+78	711+91	513	12	684.00	537
	D	713+65	714+65	100	12	133.33	124
	B	716+74	717+18	44	24	117.33	48
	B	717+62	717+82	20	24	53.33	48
	D	718+74	719+52	78	12	104.00	102
	P	719+47	719+57	10	12	13.33	34
	B	720+52	720+72	20	24	53.33	48
	D	720+96	721+04	8	12	10.67	32
	B	727+44	727+88	44	24	117.33	48
	B	729+74	730+06	32	24	85.33	48
	P	736+16	736+54	38	12	50.67	62

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C, APP. 'A'	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	P	737+11	737+50	39	12	52.00	63
	P	743+34	743+63	29	12	38.67	53
	B	744+34	744+64	30	24	80.00	48
	D	744+85	746+65	180	12	240.00	204
	B	750+70	751+07	37	24	98.67	48
	D	752+91	757+29	438	12	584.00	462
	P	755+08	755+24	16	12	21.33	40
	D	755+24	755+62	38	12	50.67	62
	P	755+93	756+21	28	12	37.33	52
	D	756+21	756+79	58	12	77.33	82
	B	760+69	760+81	12	24	32.00	48
	P	761+30	761+75	45	12	60.00	69
	P	762+06	763+00	94	12	125.33	118
	D	762+65	762+71	6	12	8.00	30
	B	765+10	765+58	48	24	128.00	48
	B	767+28	767+88	60	24	160.00	48
	D	770+80	771+22	42	12	56.00	66
	P	776+32	778+99	267	12	356.00	291
	D	778+08	778+41	33	12	44.00	57
	P	781+42	781+62	20	12	26.67	44
	P	782+27	782+35	8	12	10.67	32
TOTAL THIS SHEET						6703.98	5601

H20PRI.DGN

CONTINUOUS PAVEMENT REPAIRS -- E.B.L.

LOR-20-12.62

P = PASSING LANE
 D = DRIVING LANE
 B = BOTH LANES

CONTINUOUS PAVEMENT REPAIR
 WESTBOUND ON MAINLINE

Note: Locations are approximate

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT CLASS C, APP. 'A'	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	B	664+90	670+63	573	24	1528.00	48
	B	671+08	671+48	40	24	106.67	48
	D	676+99	678+47	148	12	197.33	172
	B	678+47	678+77	30	24	80.00	48
	D	678+77	685+77	700	12	933.33	724
	B	688+37	689+03	66	24	176.00	48
	B	689+85	690+32	47	24	125.33	48
	B	693+66	694+69	103	24	274.67	48
	B	695+61	695+86	25	24	66.67	48
	D	696+47	696+95	47	12	62.67	71
	B	698+58	700+07	149	24	397.33	48
	D	704+34	709+34	500	12	666.67	524
	D	709+80	713+43	363	12	484.00	385
	B	714+73	715+58	85	24	226.67	48
	B	717+29	717+63	34	24	90.67	48
	D	717+63	717+95	32	12	42.67	56
	P	717+95	718+66	71	12	94.67	95
	B	718+66	721+25	259	24	690.67	48
	B	724+33	725+25	92	24	245.33	48
	B	725+92	726+41	49	24	130.67	48
	B	727+61	727+94	33	24	88.00	48
	B	730+07	733+96	389	24	1037.33	48
	D	733+96	735+12	116	12	154.67	140
	D	735+57	735+73	16	12	21.33	40
	P	738+69	739+12	43	12	57.33	67
	P	740+17	740+37	20	12	26.67	44
	B	750+17	750+32	15	24	40.00	48
	P	752+00	752+29	29	12	38.66	53
	B	752+99	753+09	10	24	26.67	48
	B	755+74	756+30	56	24	149.33	48
	B	765+88	767+28	42	24	112.00	48
US-20	B	768+02	768+39	37	24	98.67	48

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT CLASS C, APP. 'A'	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	P	769+87	771+58	171	12	228.00	195
	P	772+65	773+83	118	12	157.33	142
	B	774+53	775+86	133	24	354.67	48
	P	777+30	777+70	40	12	53.33	64
	B	778+06	778+86	80	24	213.33	48
	D	791+39	791+61	22	12	29.33	46
	B	799+13	802+18	305	24	813.33	48
	B	803+29	804+80	151	24	402.67	48
	P	804+80	805+92	112	12	149.33	136
	B	805+92	807+60	168	24	448.00	48
	P	807+39	808+40	101	12	134.67	124
	B	809+48	809+82	34	24	90.67	48
	B	812+10	812+64	54	24	144.00	48
	B	816+22	816+33	11	24	29.33	48
	B	816+74	817+04	30	24	80.00	48
	D	820+59	821+26	67	12	89.33	91
	P	822+46	823+06	60	12	80.00	84
	B	823+35	823+60	25	24	66.67	48
	B	826+46	826+76	30	24	80.00	48
	B	834+55	834+76	21	24	56.00	48
	B	833+95	836+62	267	24	712.00	48
	B	837+74	838+03	29	24	77.33	48
SR-10	B	2+20	2+26	6	24	16.00	48
	B	2+57	2+63	6	24	16.00	48
	B	3+01	3+07	6	24	16.00	48
	B	3+40	3+46	6	24	16.00	48
	B	3+81	4+65	84	24	224.00	48
	B	8+42	9+12	70	24	186.67	48
	B	10+12	10+43	31	24	82.67	48
TOTAL THIS SHEET						1357.35	5221

L20PR2.DGN

CALCULATED
 SCJ
 CHECKED
 ADB

CONTINUOUS PAVEMENT REPAIRS -- W.B.L.

LOR-20-12.62

P = PASSING LANE
 D = DRIVING LANE
 B = BOTH LANES

JOINTED PAVEMENT REPAIRS
 EASTBOUND ON MAINLINE

Note: Locations are approximate

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	B	784+04	784+10	6	24	16.00	48
	B	784+46	784+52	6	24	16.00	48
	B	784+53	784+59	6	24	16.00	48
	B	784+66	784+72	6	24	16.00	48
	B	784+99	785+05	6	24	16.00	48
	B	785+41	785+47	6	24	16.00	48
	B	785+58	785+64	6	24	16.00	48
	B	785+76	785+82	6	24	16.00	48
	B	785+93	785+99	6	24	16.00	48
	B	786+23	786+29	6	24	16.00	48
	B	786+80	786+86	6	24	16.00	48
	B	787+40	787+46	6	24	16.00	48
	B	787+63	787+69	6	24	16.00	48
	B	788+02	788+08	6	24	16.00	48
	B	788+64	788+70	6	24	16.00	48
	B	788+93	788+99	6	24	16.00	48
	B	789+25	789+31	6	24	16.00	48
	B	789+84	789+90	6	24	16.00	48
	B	790+44	790+50	6	24	16.00	48
	B	791+04	791+10	6	24	16.00	48
	B	791+68	791+74	6	24	16.00	48
	B	792+28	792+34	6	24	16.00	48
	B	792+88	792+94	6	24	16.00	48
	B	793+51	793+57	6	24	16.00	48
	B	794+11	794+17	6	24	16.00	48
	B	794+69	794+75	6	24	16.00	48
	B	795+34	795+40	6	24	16.00	48
	B	795+95	796+01	6	24	16.00	48
	B	796+55	796+61	6	24	16.00	48
	B	797+14	797+20	6	24	16.00	48
	B	797+73	797+79	6	24	16.00	48

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	B	798+33	798+39	6	24	16.00	48
	B	798+94	799+00	6	24	16.00	48
	B	799+28	799+35	6	24	16.00	48
	B	799+54	799+60	6	24	16.00	48
	B	800+18	800+24	6	24	16.00	48
	B	800+78	800+84	6	24	16.00	48
	B	801+40	801+46	6	24	16.00	48
	B	801+99	802+05	6	24	16.00	48
	B	802+65	802+71	6	24	16.00	48
	B	803+22	803+28	6	24	16.00	48
	B	803+84	803+90	6	24	16.00	48
	B	804+45	804+51	6	24	16.00	48
	B	804+60	804+66	6	24	16.00	48
	B	804+78	804+84	6	24	16.00	48
	B	805+06	805+12	6	24	16.00	48
	B	805+67	805+73	6	24	16.00	48
	B	806+11	806+17	6	24	16.00	48
	B	806+31	806+94	63	24	168.00	48
	B	807+49	807+56	6	24	16.00	48
	B	808+10	808+16	6	24	16.00	48
	B	808+54	808+60	6	24	16.00	48
	B	808+94	809+00	6	24	16.00	48
	B	812+07	813+40	133	24	354.67	48
	B	813+88	813+94	6	24	16.00	48
	B	814+50	814+56	6	24	16.00	48
	B	815+09	815+15	6	24	16.00	48
	B	816+32	816+38	6	24	16.00	48
	B	816+93	816+99	6	24	16.00	48
	B	817+54	817+60	6	24	16.00	48
TOTAL THIS SHEET						1450.67	2880

H20PR3.DGN

CALCULATED
 SCJ
 CHECKED
 ADB

JOINTED PAVEMENT REPAIRS -- E.B.L.

LOR-20-12.62

80
 351

JOINTED PAVEMENT REPAIRS
EASTBOUND ON RAMPS D,C,SW

Note: Locations are approximate

CALCULATED
SCJ
CHECKED
ADB

LOC.	LANE	STATION		LENGTH	WIDTH	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C, A.P.P., "B"	FULL DEPTH PAVT SAWING
		LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.		
US-20	RAMP D	D77+86	D78+91	105	16	186.67	32
	RAMP D	D79+24	D79+30	6	16	10.67	32
	RAMP D	D79+65	D79+71	6	16	10.67	32
	RAMP D	D80+05	D80+48	43	16	76.44	32
	RAMP D	D80+84	D80+90	6	16	10.67	32
	RAMP D	D83+26	D83+32	6	16	10.67	32
	RAMP D	D83+66	D83+72	6	16	10.67	32
	RAMP D	D84+06	D84+12	6	16	10.67	32
	RAMP D	D85+17	D85+23	6	16	10.67	32
	RAMP D	D85+48	D85+80	32	30	106.67	92
	RAMP D	D85+92	D86+58	66	30	220.00	125
	RAMP C	C87+25	C87+31	6	16	10.67	32
	RAMP C	C87+70	C87+76	6	16	10.67	32
	RAMP C	C88+07	C88+13	6	16	10.67	32
	RAMP C	C88+55	C88+62	6	16	10.67	32
	RAMP C	C88+95	C89+01	6	16	10.67	32
	RAMP C	C89+19	C89+25	6	16	10.67	32
	RAMP C	C89+71	C89+77	6	16	10.67	32
	RAMP C	C89+94	C90+00	6	16	10.67	32
	RAMP C	C90+35	C90+41	6	16	10.67	32
	RAMP C	C90+52	C90+58	6	16	10.67	32
	RAMP C	C90+75	C90+81	6	16	10.67	32
	RAMP C	C90+95	C91+01	6	16	10.67	32
	RAMP C	C91+35	C91+41	6	16	10.67	32
	RAMP C	C91+56	C91+62	6	16	10.67	32
	RAMP C	C92+12	C92+18	6	16	10.67	32
	RAMP C	C92+50	C92+56	6	16	10.67	32
	RAMP C	C92+72	C92+78	6	16	10.67	32
	RAMP C	C92+97	C93+03	6	16	10.67	32
	RAMP C	C93+33	C93+39	6	16	10.67	32
	RAMP C	C93+69	C93+75	6	16	10.67	32

LOC.	LANE	STATION		LENGTH	WIDTH	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C, A.P.P., "B"	FULL DEPTH PAVT SAWING
		LIN. FT.	LIN. FT.	SQ. YD.	LIN. FT.		
US-20	RAMP C	C94+13	C94+19	6	16	10.67	32
	RAMP C	C94+30	C94+46	16	16	28.44	32
	RAMP C	C94+68	C94+75	6	16	10.67	32
	RAMP C	C94+94	C95+00	6	16	10.67	32
	RAMP C	C95+22	C95+35	13	16	23.11	32
	RAMP C	C96+64	C96+70	6	16	10.67	32
	RAMP C	C97+15	C97+21	6	16	10.67	32
	RAMP C	C97+41	C97+47	6	16	10.67	32
	RAMP C	C98+07	C98+66	59	8	52.44	75
	RAMP C	C99+95	C101+32	137	18	274.00	173
	RAMPSW	11+05	11+11	19	4	8.44	27
	RAMPSW	11+59	11+65	6	8	5.33	22
	RAMPSW	14+17	14+23	6	16	10.67	32
	RAMPSW	14+42	14+48	6	16	10.67	32
	RAMPSW	14+82	14+88	6	16	10.67	32
	RAMPSW	15+08	15+14	6	16	10.67	32
	RAMPSW	15+67	15+73	6	16	10.67	32
	RAMPSW	15+81	15+87	6	16	10.67	32
	RAMPSW	16+13	16+19	6	16	10.67	32
	RAMPSW	16+44	16+50	6	16	10.67	32
	RAMPSW	3+84	3+78	6	16	10.67	32
	RAMPSW	3+68	3+62	6	16	10.67	32
	RAMPSW	3+08	3+02	6	24	16.00	54
	RAMPSW	3+94	3+88	6	16	10.67	32
	RAMPSW	2+32	2+26	6	16	10.67	32
	RAMPSW	1+87	1+81	6	16	10.67	32
	RAMPSW	1+33	1+27	6	16	10.67	32
	RAMPSW	0+67	0+61	6	16	10.67	32
	RAMPSW	0+30	0+24	6	16	10.67	32
TOTAL THIS SHEET						1520.37	2264

H20PR5.DGN

JOINTED PAVEMENT REPAIRS -- E.B. RAMPS

LOR-20-12.62

JOINTED PAVEMENT REPAIRS
EASTBOUND RAMPS SE,CA,DA

Note: Locations are approximate

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	RAMPSE	1+00	1+06	6	16	10.67	32
	RAMPSE	1+77	1+83	6	16	10.67	32
	RAMPSE	2+57	2+63	6	16	10.67	32
	RAMPSE	2+94	3+00	6	16	10.67	32
	RAMPSE	3+21	3+27	6	16	10.67	32
	RAMPSE	3+38	3+44	6	16	10.67	32
	RAMPSE	3+60	3+66	6	16	10.67	32
	RAMPSE	19+34	19+40	6	16	10.67	32
	RAMPSE	20+41	20+47	6	16	10.67	32
	RAMPSE	21+01	21+07	6	16	10.67	32
	RAMPSE	21+29	21+56	27	16	48.00	32
	RAMPSE	21+99	22+05	6	16	10.67	32
	RAMPSE	22+50	22+79	29	16	51.56	32
	RAMPSE	24+72	24+78	6	16	10.67	32
	RAMPSE	26+65	26+99	34	16	60.44	32
	RAMPSE	27+37	27+43	6	16	10.67	32
	RAMPSE	27+67	27+73	6	24	16.00	54
	RAMPSE	27+93	27+99	6	24	16.00	54
	RAMPSE	28+23	28+43	20	22	48.89	64
	RAMPSE	28+63	28+79	16	22	39.11	60
	RAMPSE	16+00	16+69	69	6	46.00	81
	RAMPSE	22+52	22+58	6	16	10.67	32
	RAMPSE	22+82	23+09	27	16	48.00	32
	RAMPSE	23+50	23+56	6	16	10.67	32
	RAMPSE	23+72	24+42	69	16	122.67	32
	RAMPSE	24+76	24+91	15	16	26.67	32
	RAMPSE	25+27	26+96	169	16	300.44	32
	RAMPSE	27+28	27+34	6	16	10.67	32
	RAMPSE	27+85	29+56	171	16	304.00	32
	RAMPSE	30+05	30+11	6	16	10.67	32
	RAMPSE	30+62	30+68	6	16	10.67	32

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING
						SQ. YD.	LIN. FT.
US-20	RAMPSE	31+19	31+25	6	24	16.00	54
	RAMPSE	31+74	31+80	6	48	32.00	102
	RAMPSE	4+50	4+56	6	16	10.67	32
	RAMPSE	7+52	7+58	6	24	16.00	54
	RAMPSE	7+64	7+70	6	16	10.67	32
	RAMPSE	7+93	7+99	6	16	10.67	32
	RAMPSE	8+87	10+71	184	16	327.11	32
	RAMPSE	11+71	12+54	83	16	147.56	32
	RAMPSE	13+12	13+18	6	16	10.67	32
TOTAL THIS SHEET						1901.9	1547

L20PR6.DGN

CALCULATED
SCJ
CHECKED
ADB

JOINTED PAVEMENT REPAIRS--E.B. RAMPS

LOR-20-12.62

80C
351

JOINTED PAVEMENT REPAIRS
WESTBOUND RAMPS A,B,NW,NE

Note: Locations are approximate

CALCULATED
SCJ
CHECKED
ADB

LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255	
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING	
						SQ. YD.	LIN. FT.	
US-20	RAMP A	81+67	81+73	6	16	10.67	32	
	RAMP A	82+07	82+13	6	16	10.67	32	
	RAMP A	82+47	82+53	6	16	10.67	32	
	RAMP A	82+65	82+71	6	16	10.67	32	
	RAMP A	83+05	83+11	6	16	10.67	32	
	RAMP A	83+45	83+51	6	16	10.67	32	
	RAMP A	83+88	83+94	6	16	10.67	32	
	RAMP A	84+28	84+34	6	16	10.67	32	
	RAMP A	84+68	84+74	6	16	10.67	32	
	RAMP A	84+83	84+89	6	16	10.67	32	
	RAMP A	85+23	85+29	6	16	10.67	32	
	RAMP A	85+63	85+69	6	16	10.67	32	
	RAMP A	87+57	87+63	6	50	33.33	106	
	RADII	88+08	88+14	8	24	21.33	56	
	RAMP B	88+38	88+44	6	16	10.67	32	
	RAMP B	88+78	88+84	6	16	10.67	32	
	RAMP B	89+18	89+24	6	16	10.67	32	
	RAMP B	89+26	90+11	86	16	152.89	32	
	RAMP B	90+90	90+96	6	16	10.67	32	
	RAMP B	91+35	91+41	6	16	10.67	32	
	RAMP B	91+70	91+76	6	16	10.67	32	
	RAMP B	92+15	92+22	6	16	10.67	32	
	RAMP B	92+51	92+57	6	16	10.67	32	
	RAMP B	92+90	92+96	6	16	10.67	32	
	RAMP B	93+30	93+36	6	16	10.67	32	
	RAMP B	93+70	93+76	6	16	10.67	32	
	RAMP B	94+11	94+17	6	16	10.67	32	
	RAMP B	94+51	94+57	6	16	10.67	32	
	RAMP B	94+90	95+10	20	16	35.56	32	
	GORE	96+82	96+88	6	200	133.33	404	
	GORE	805+15	805+21	8	400	355.56	808	

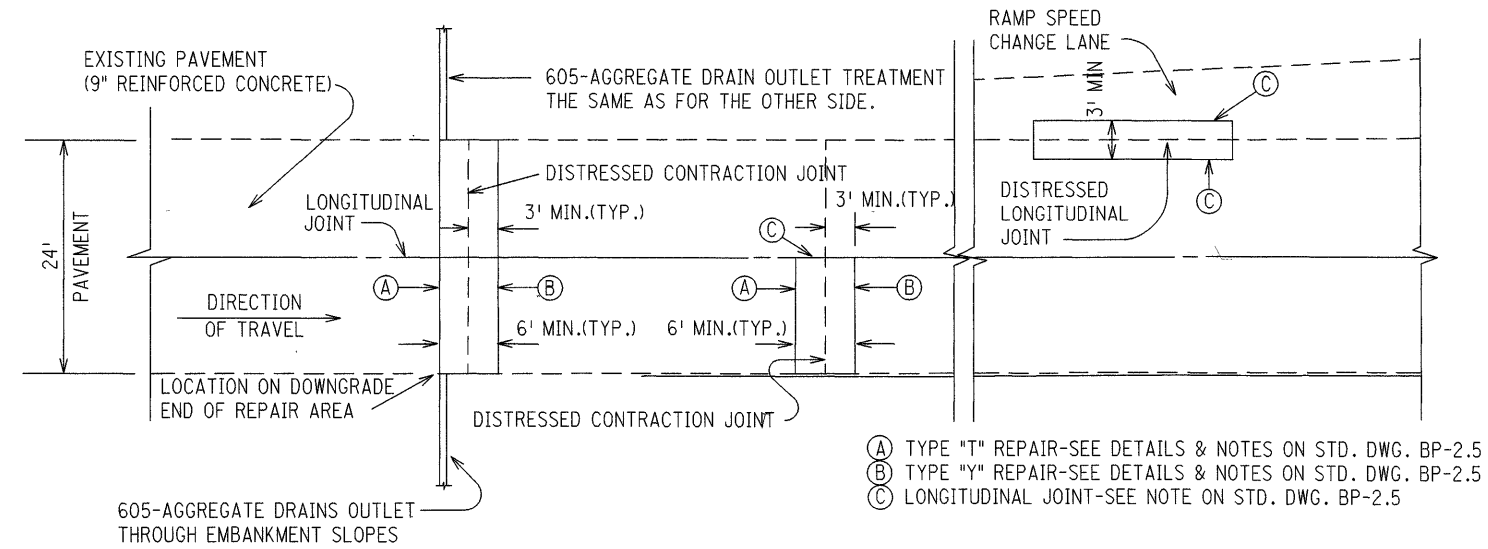
LOC.	LANE	STATION		LENGTH LIN. FT.	WIDTH LIN. FT.	ITEM 255	ITEM 255	ITEM 255	ITEM 605
		FROM	TO			FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."B"	FULL DEPTH PAVT SAWING	FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C,APP."A"	AGGREGATE DRAIN, AS PER PLAN
						SQ. YD.	LIN. FT.	SQ. YD.	LIN. FT.
US-20	RAMPNW	9+64	9+70	6	16	10.67	32		
	RAMPNW	10+88	11+26	38	16	67.56	32		
	RAMPNW	12+50	12+94	44	16	78.22	32		
	RAMPNW	13+70	13+76	6	16	10.67	32		
	RAMPNW	14+10	14+16	6	16	10.67	32		
	RAMPNW	14+50	14+56	6	16	10.67	32		
	RAMPNW	14+90	14+96	6	16	10.67	32		
	RAMPNW	16+64	17+58	94	16	167.11	32		
	RAMPNE	0+81	2+06	125	16	222.22	32		
	RAMPNE	2+62	5+55	293	16	520.89	32		
	RAMPNE	16+84	16+90	6	16	10.67	32		
	RAMPNE	17+25	17+31	6	16	10.67	32		
	GORE	19+25	19+31	8	200	177.78	408		
	GORE	31+01	31+07	8	400	355.56	808		
	RAMP E	35+44	35+50	6	16	10.67	32		
	RAMP E	35+84	35+90	6	16	10.67	32		
	RAMP E	36+24	36+30	6	16	10.67	32		
	RAMP E	36+64	36+70	6	16	10.67	32		
JOINTED TOTAL THIS SHEET						2705.46	3966		
JOINTED TOTAL (SHEETS 80 TO 80D)						8580.36	12529		
CONTINUOUS TOTAL (SHEETS 78 TO 79)							10822	20221.33	
ESTIMATED QUANTITY TO BE USE AS NOTED ON SHEET 80E BASED ON 100 LOCATIONS @ 15 LIN.FT.EACH, THIS TOTAL CARRIED TO SHEET 18									1500

JOINTED PAVEMENT REPAIRS -- W, B, RAMPS

LOR-20-12.62

L20PRT.DGN

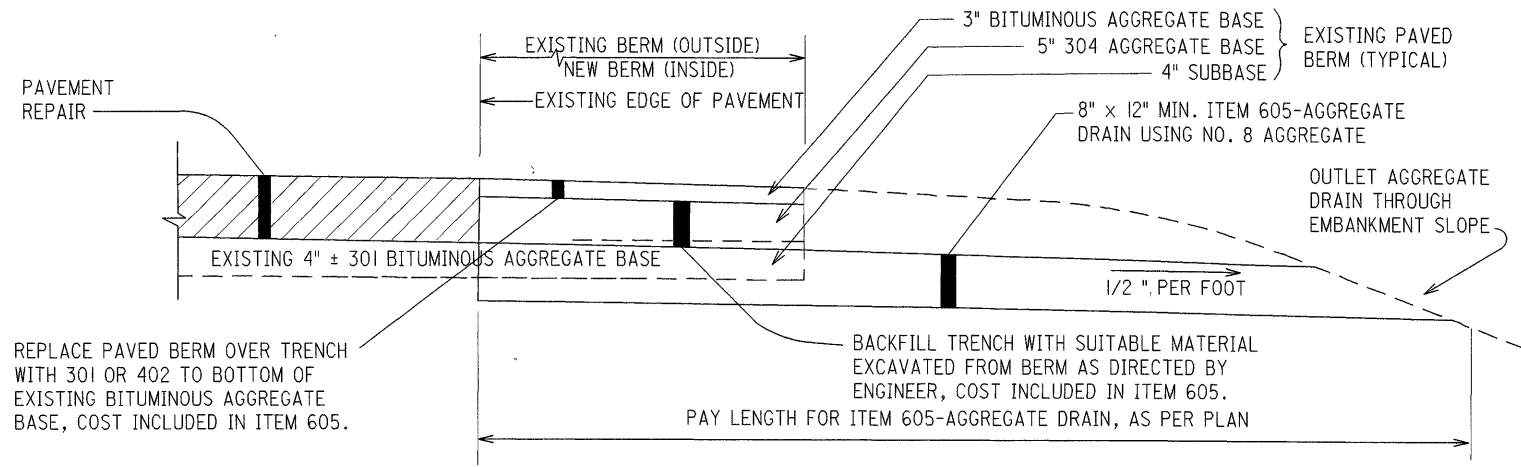
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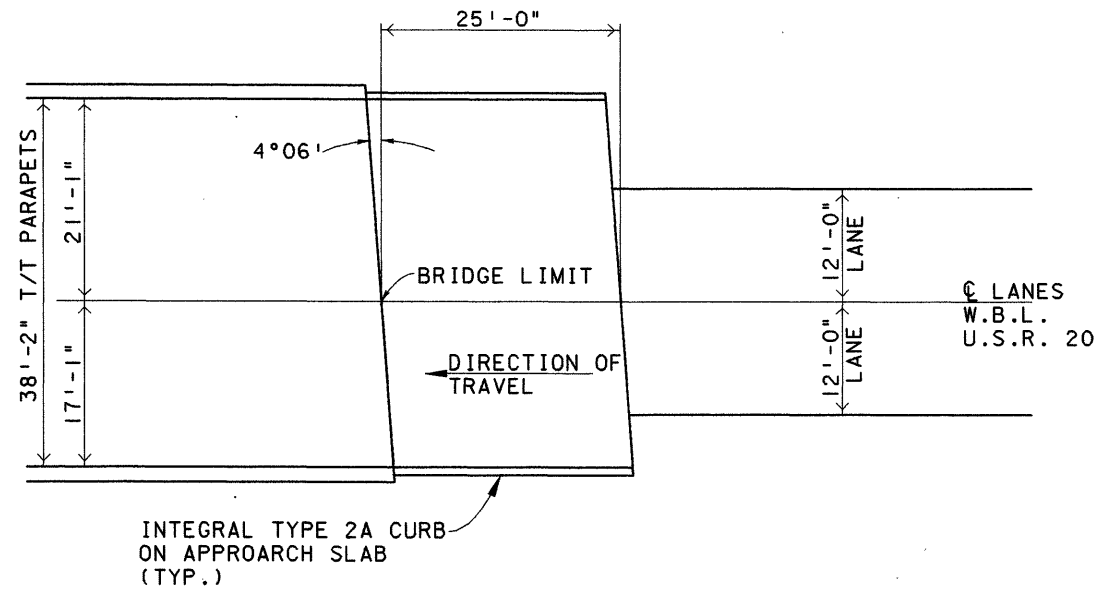
EDGE DRAINS (SEE SHEET 88) TO BE PLACED AFTER FULL DEPTH REPAIRS ARE COMPLETED IN AN AREA.

PLAN

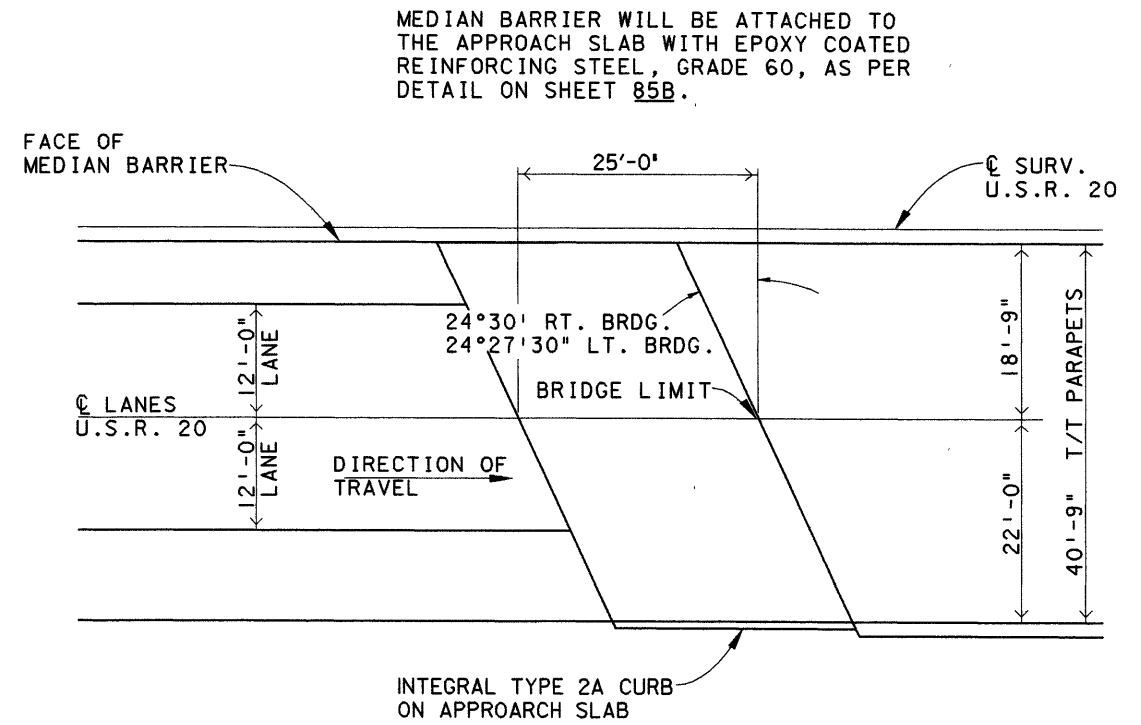
NOTE: IF THE EXISTING SUBBASE MATERIAL IS SATURATED WITH WATER WHEN THE CONCRETE PAVEMENT JOINT IS REMOVED, THE AGGREGATE DRAIN TRENCH SHALL BE CUT TO DRAIN THE EXCESS WATER FROM THE SUBBASE PRIOR TO THE PLACEMENT OF THE FULL DEPTH REPAIR



DETAIL FOR AGGREGATE DRAIN OUTLET THROUGH EMBANKMENT SLOPE

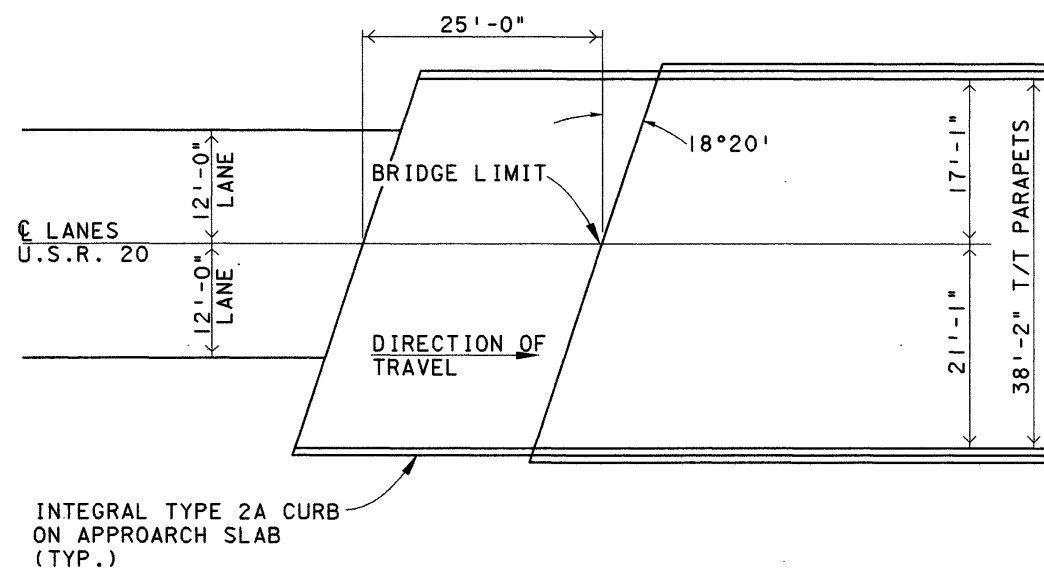


**STRUCTURE NO. LOR-20-1380 (LEFT FORWARD)
OVER CHESSIE CSX RAILROAD**

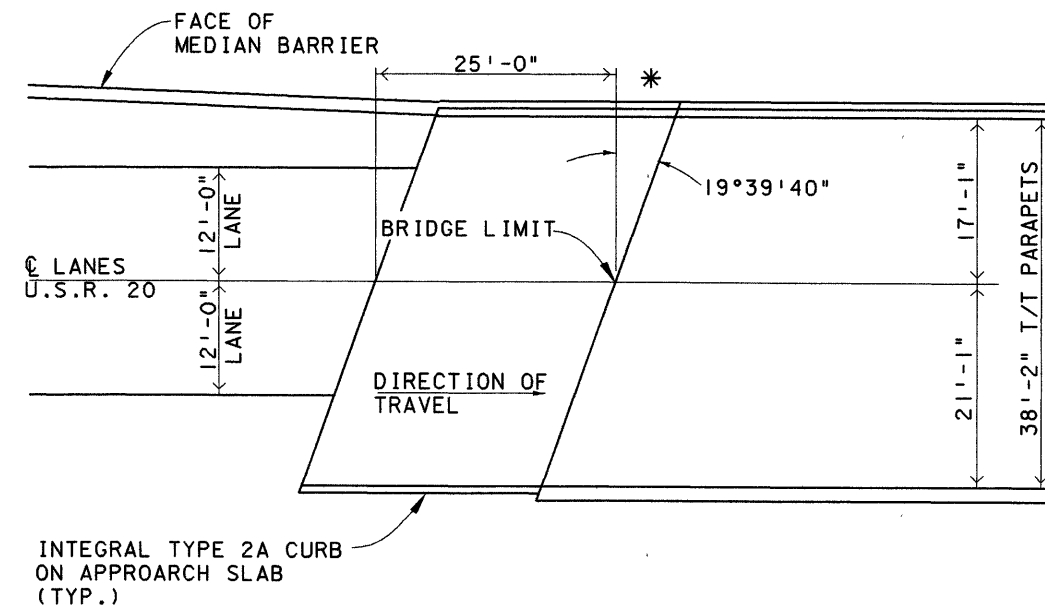


**STRUCTURE NO. LOR-20-1533 LT. & RT.
OVER GRAFTON ROAD**

NOTE: SEE DETAIL FOR TYPE 6 CURB AND CATCH BASIN AT APPROACHES TO GUARDRAIL, SHEET 87



**STRUCTURE NO. LOR-20-1356 LT. & RT.
OVER MIDDLE AVENUE**



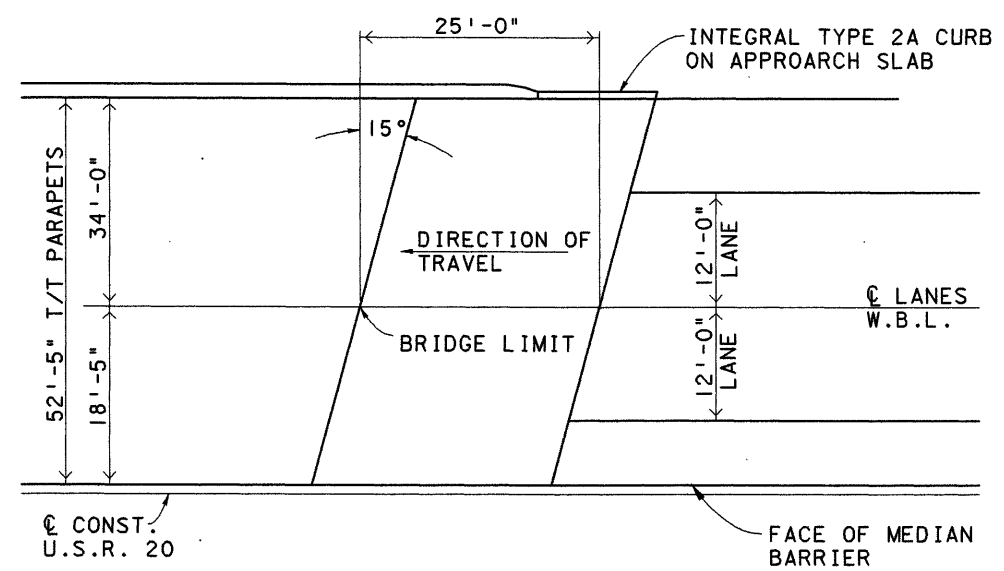
**STRUCTURE NO. LOR-20-1451 LT. & RT.
OVER INDIAN HOLLOW**

* EXTEND APPROACH SLAB 1'-6" ON LT.

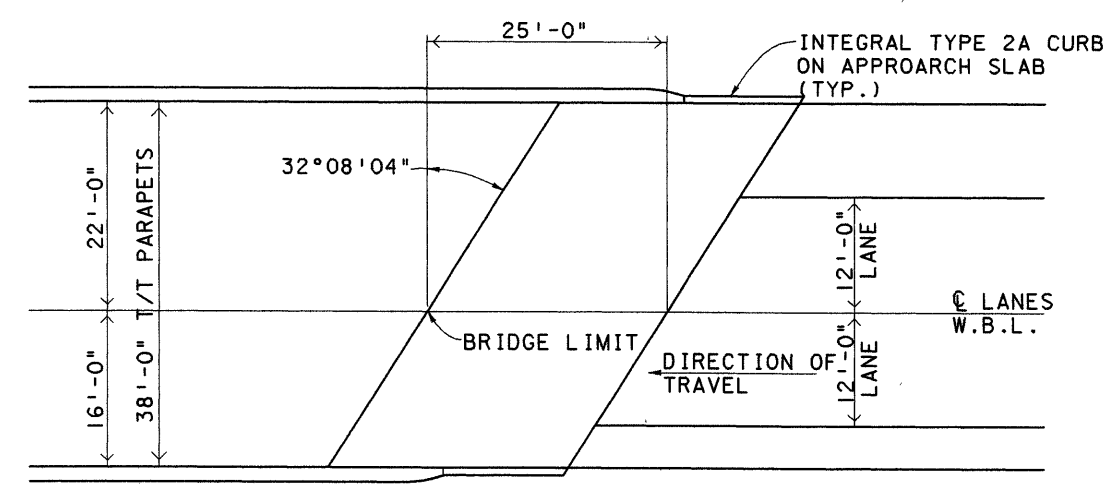
NOTE: MEDIAN BARRIER TO BE TAPERED TO MATCH BRIDGE PARAPET AND TO BE ATTACHED TO THE APPROACH SLAB USING NO. 8 EPOXY COATED REINFORCING STEEL, GRADE 60. SEE SHEET 85A FOR DETAILS.

DESIGN FILE: c:\dgn\lor\din\0201262\misc.dgn
WORKSTATION: /sch/leff DATE: 12 DEC 96

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 WORKSTATION: /schiff DATE: 12 DEC 96

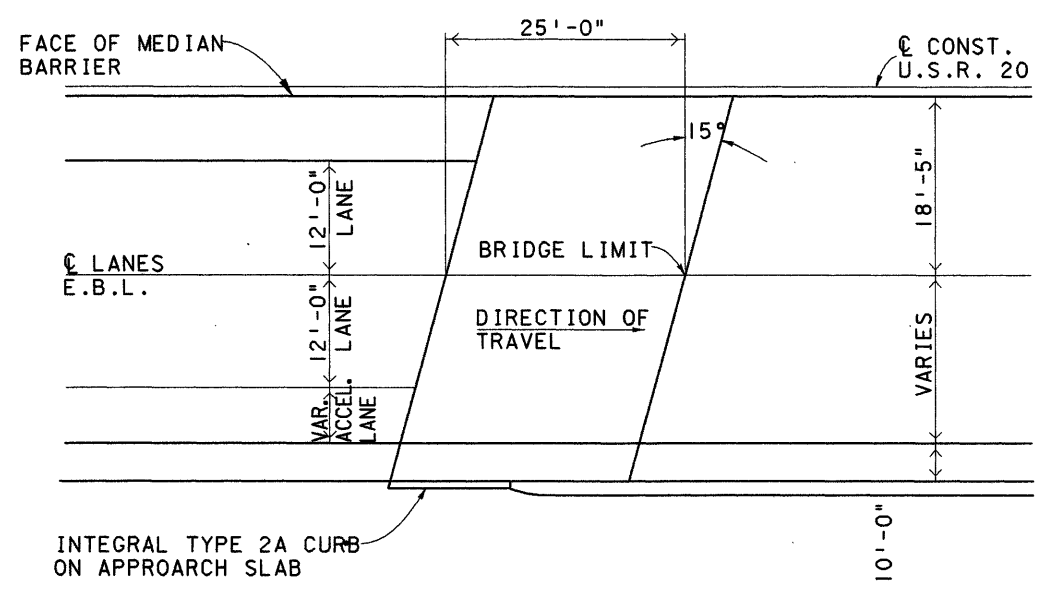


**STRUCTURE NO. LOR-20-1559 LT.
 OVER EAST BRANCH OF BLACK RIVER**

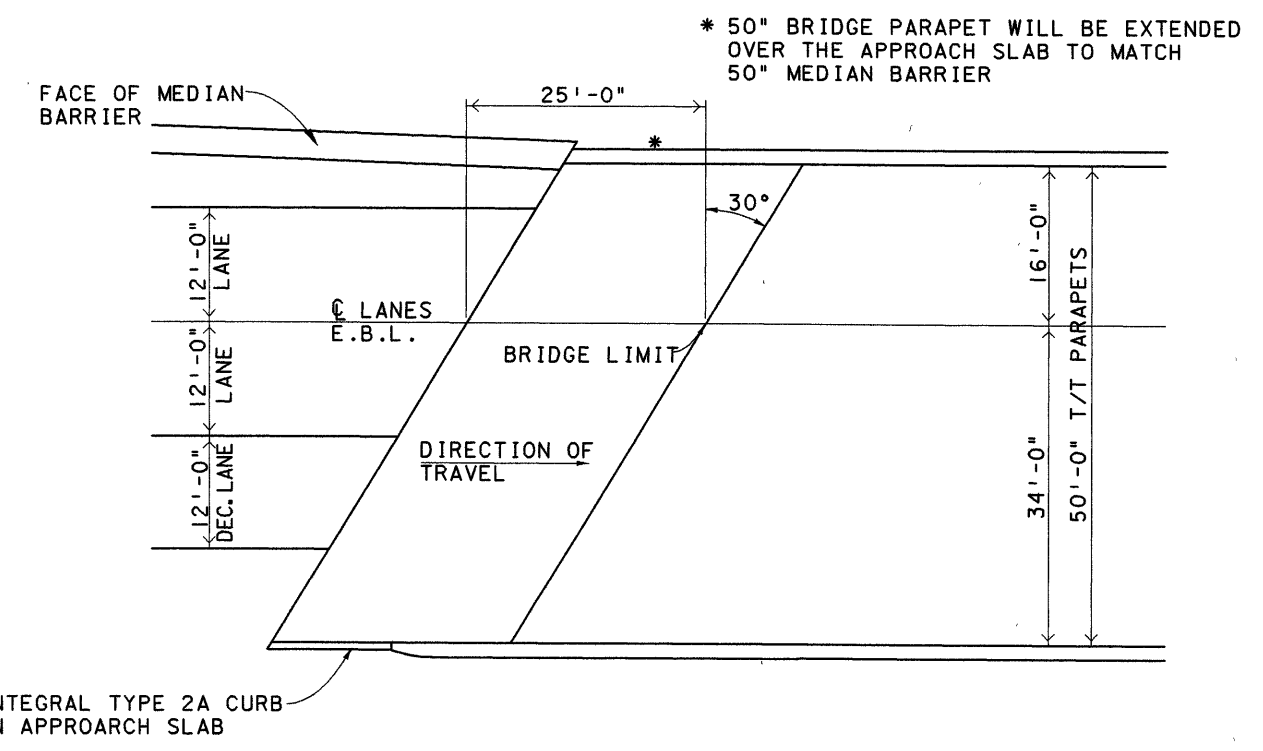


**STRUCTURE NO. LOR-10-0001 BL
 OVER S.R. 57**

MEDIAN BARRIER TO BE TRANSITIONED
 AT STRUCTURE LOR-20-1559 LT. & RT.
 TO MATCH PARAPET ON STRUCTURES,
 AS PER DETAIL ON SHEET 85B



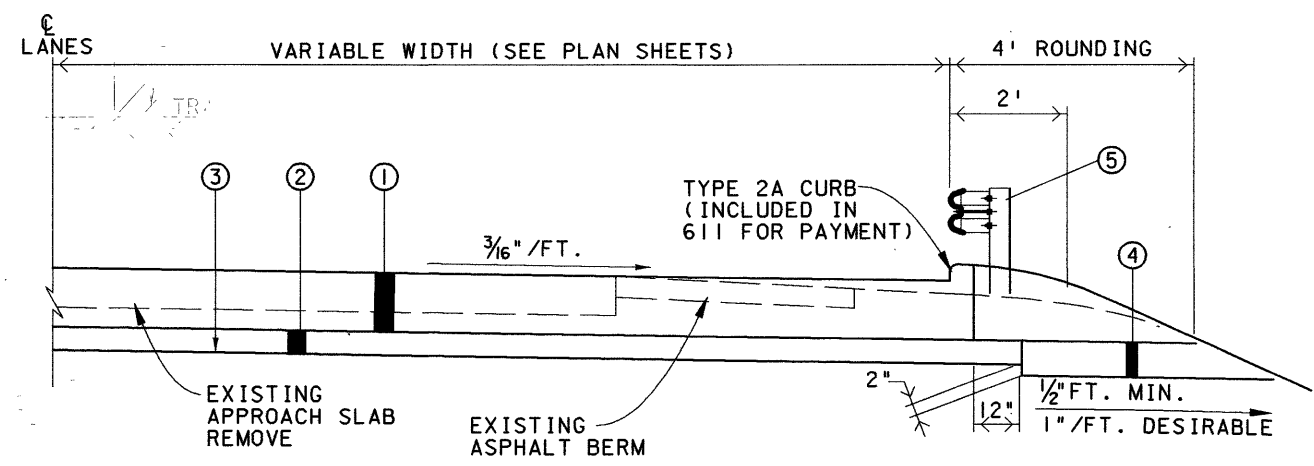
**STRUCTURE NO. LOR-20-1559 RT.
 OVER EAST BRANCH OF BLACK RIVER**



**STRUCTURE NO. LOR-20-1587 RT.
 OVER S.R. 57**

APPROACH SLAB DETAILS

LOR-20-12.62

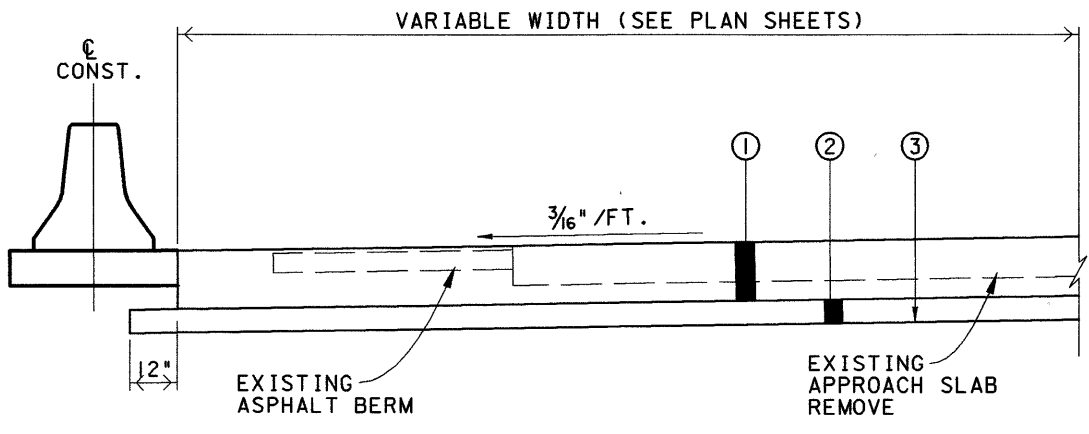


**OUTSIDE HALF AND INSIDE HALF W/O
 MEDIAN BARRIER APPROACH SLAB TYPICAL SECTION**

LEGEND

- ① 611 - REINFORCED CONCRETE APPROACH SLAB, (T=15') AS PER PLAN
- ② 6" 304 - AGGREGATE BASE
- ③ 203 - SUBGRADE COMPACTION
- ④ 605 - AGGREGATE DRAIN
- ⑤ 606 - GUARDRAIL, TYPE 5 (BRIDGE TERMINAL ASSEMBLY)

SEE SHEET 81 & 82 FOR ADDITIONAL APPROACH SLAB DETAILS



**INSIDE HALF APPROACH SLAB WITH
 MEDIAN BARRIER TYPICAL SECTION**

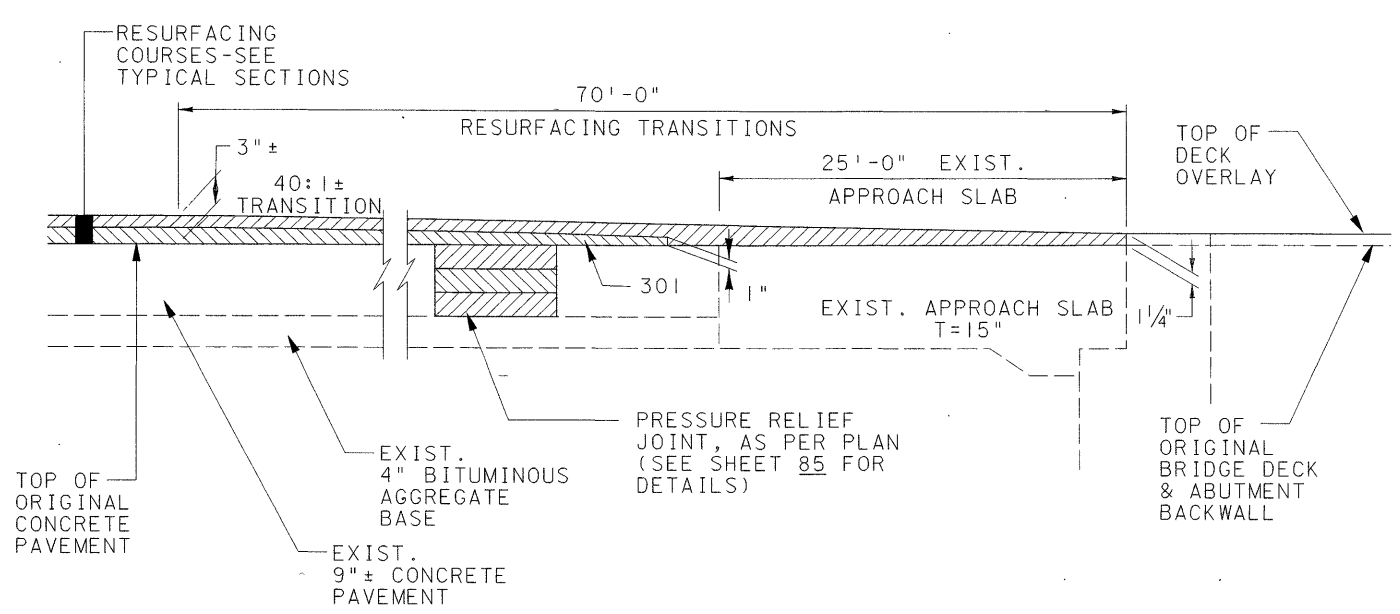
APPROACH SLAB QUANTITIES

R. R. A. RIGHT REAR APPROACH L. R. A. LEFT REAR APPROACH
 R. F. A. RIGHT FORWARD APPROACH L. F. A. LEFT FORWARD APPROACH

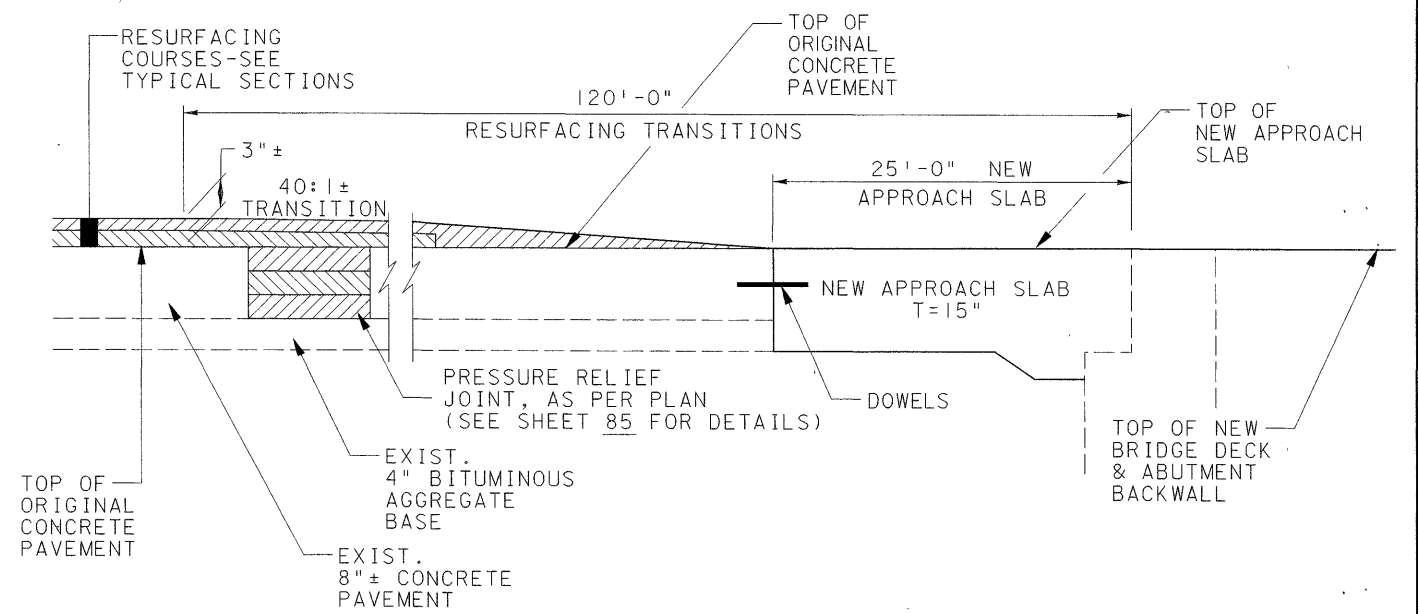
STRUCTURE		202		203		304		605		611		
		PAVEMENT REMOVED	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	SUBGRADE COMPACTION	4" AGGREGATE BASE	AGGREGATE DRAINS	REINFORCED CONCRETE APPROACH SLAB(T=15'), AS PER PLAN					
								SQ.YD.	CU.YD.	SQ.YD.	CU.YD.	LIN.FT.
LOR-20-1356	R. R. A.	66.7	36.6	108.8	19.1	15	108.8					
	R. F. A.	66.7	36.6	108.8	19.1	15	108.8					
	L. R. A.	66.7	36.6	108.8	19.1	15	108.8					
	L. F. A.	66.7	36.6	108.8	19.1	15	108.8					
LOR-20-1380	L. F. A.	66.7	36.6	108.8	19.1	15	108.8					
LOR-20-1451	R. R. A.	66.7	36.6	108.8	19.1	15	108.8					
	R. F. A.	66.7	36.6	108.8	19.1	15	108.8					
	L. R. A.	66.7	36.6	108.8	19.1	15	108.8					
	L. F. A.	66.7	38.3	111.7	19.5	15	111.7					
LOR-20-1533	R. R. A.	66.7	40	114.6	20	15	114.6					
	R. F. A.	66.7	40	114.6	20	15	114.6					
	L. R. A.	66.7	40	114.6	20	15	114.6					
	L. F. A.	66.7	40	114.6	20	15	114.6					
LOR-20-1559	R. R. A.	110.2	46.9	157.4	27.2	15	157.4					
	R. F. A.	103.8	45.8	151.1	26.1	15	151.1					
	L. R. A.	66.7	58	147.0	24.5	15	147.0					
	L. F. A.	66.7	58	147.0	24.5	15	147.0					
LOR-20-1587	R. R. A.	100.0	41.1	140.3	24.3	15	140.3					
	R. F. A.	100.0	41.1	140.3	24.3	15	140.3					
	L. R. A.	66.7	36.3	108.3	19	15	108.3					
	L. F. A.	66.7	36.3	108.3	19	15	108.3					
TOTALS (TO SHEETS 18 & 19)		1547.9	854.6	2540.2	441.2	315	2540.2					

DESIGN FILE: c:\dgm\lorain\0201262\constdet.dgn
 WORKSTATION: jschleff DATE: 19 DEC 96

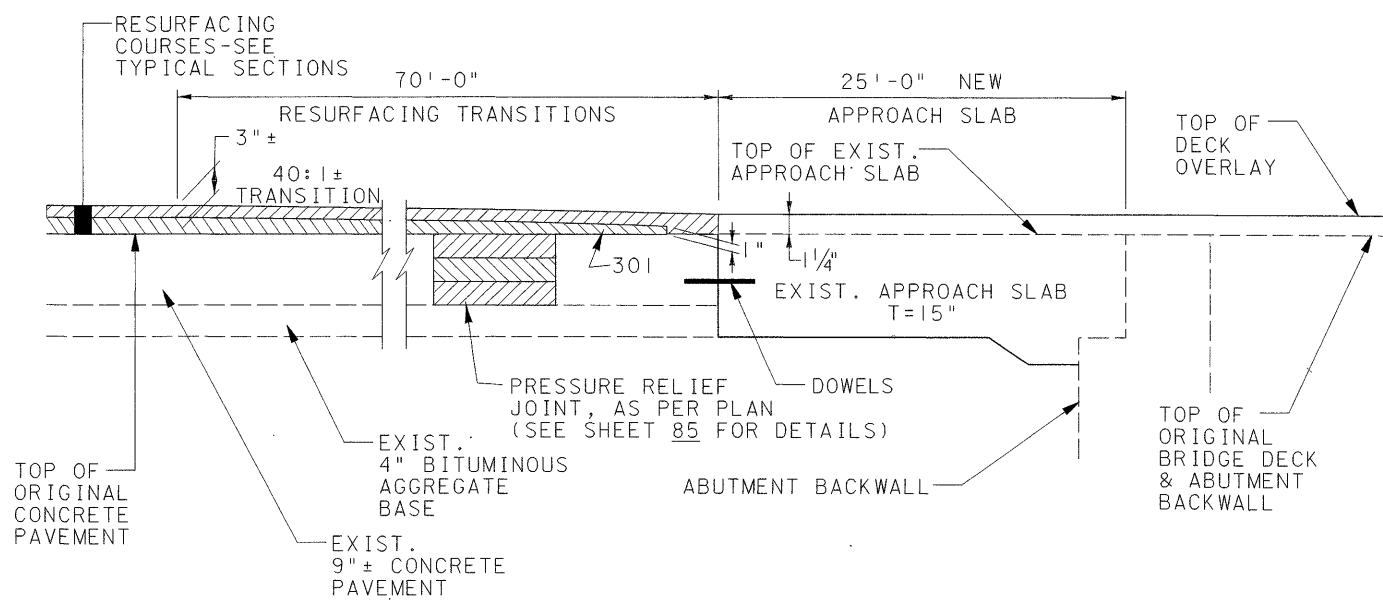
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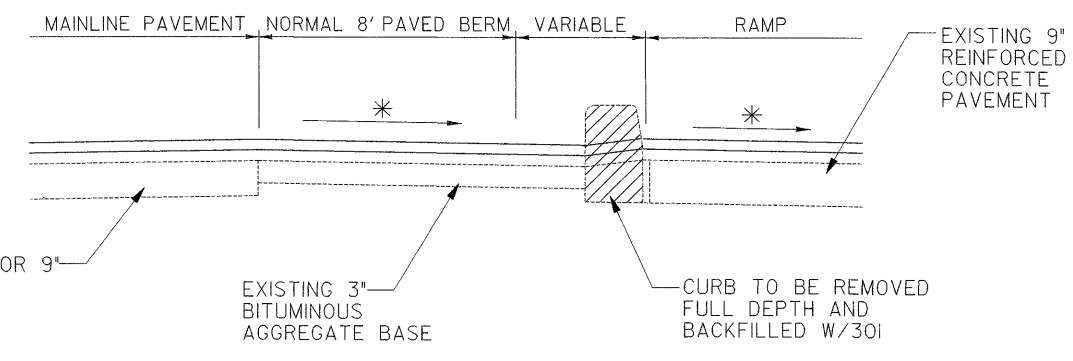
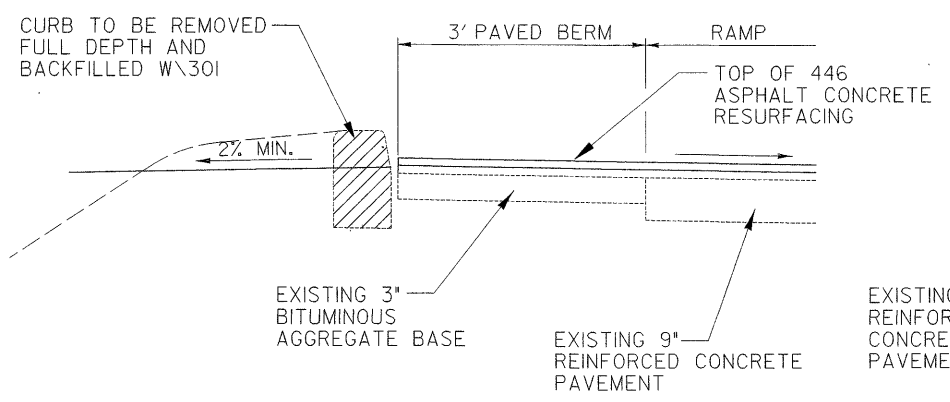
DETAIL FOR TRANSITIONING RESURFACING TO BRIDGE WITH DECK OVERLAY



DETAIL FOR TRANSITIONING RESURFACING TO NEW APPROACH SLAB AND NEW BRIDGE DECK



TRANSITIONING RESURFACING TO NEW APPROACH SLABS AND DECK OVERLAY



CURB REMOVAL DETAILS

202 - CURB REMOVED, AS PER PLAN

AFTER THE CONCRETE CURBS ARE REMOVED, THE REMAINING TRENCH SHALL BE BACKFILLED WITH 301 ASPHALT CONCRETE AND COMPACTED TO THE LEVEL OF THE ADJACENT PAVEMENT AND/OR PAVED BERM SEE DETAIL AT LEFT. IN ADDITION, SOME MINOR GRADING WORK MAY BE NECESSARY ON THE EMBANKMENT BEHIND THE PORTION OF THE CURB REMOVAL BEYOND THE MAINLINE PAVED BERM, SEE DETAIL LEFT. THE COST OF THE 301 ASPHALT CONCRETE BACKFILL AND MINOR GRADING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 CURB REMOVED, AS PER PLAN.

ALL CURB REMOVAL AND BACKFILL WORK SHALL BE COMPLETED PRIOR TO THE PLACING OF THE 446 ON THE ADJACENT SHOULDER

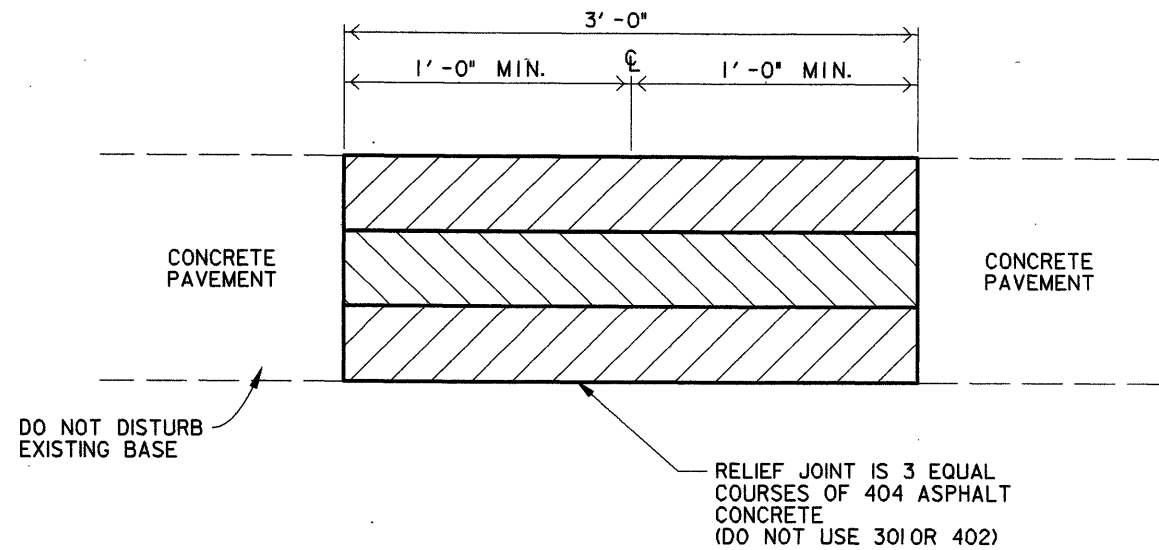
* EXISTING PAVEMENT SLOPE

DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$
WORKSTATION: #TERMINAL# DATE: \$\$\$DATE\$\$\$

RESURFACING TRANSITIONING AND CURB REMOVAL DETAILS

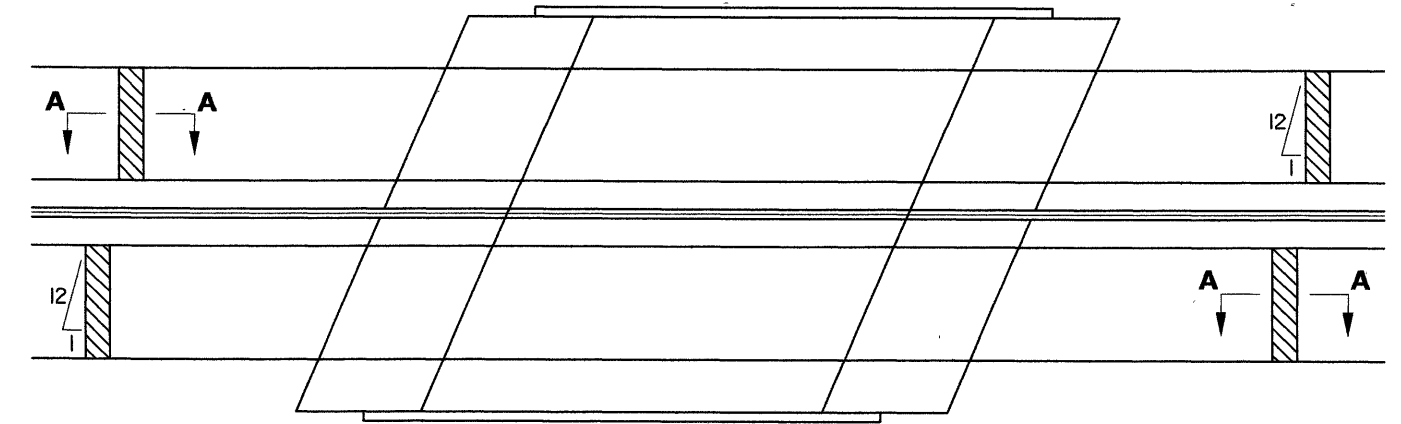
LOR-20-12.6.2

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SECTION A-A
PRESURE RELIEF JOINT
AS PER PLAN

SEE STD. DRWG.
BP-2.4 FOR ADDITIONAL
DETAIL

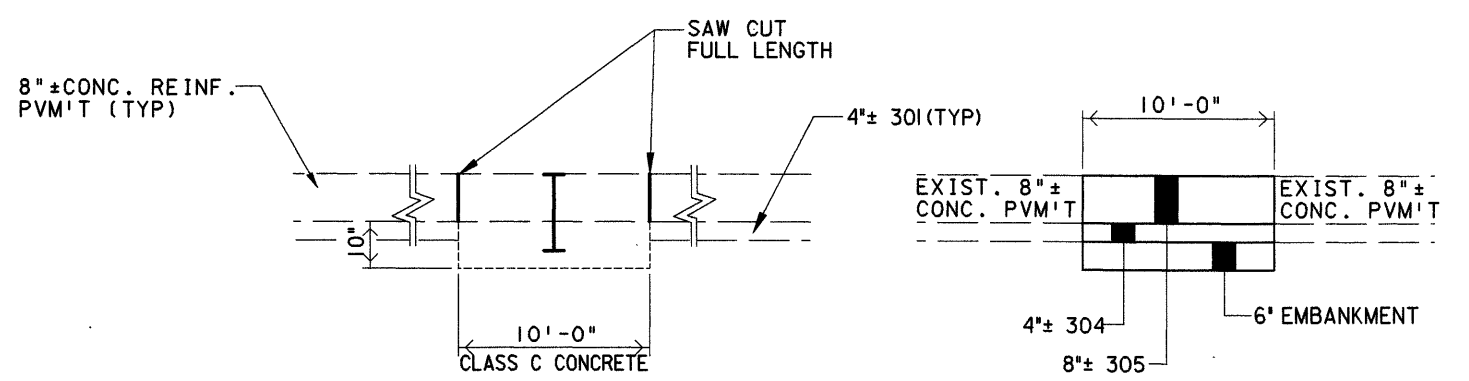


TYPICAL RELIEF JOINT LOCATION PLAN

STRUCTURE	SPECIAL		605	
	PRESSURE RELIEF JOINT, AS PER PLAN		AGGREGATE DRAIN	
	LIN.FT.		LIN.FT.	
LOR-20-1303	100		60	
LOR-20-1356 LT. & RT.	96		100	
LOR-20-1380 LT. & RT.	96		100	
LOR-20-1451 LT. & RT.	96		100	
LOR-20-1533 LT. & RT.	96		60	
LOR-20-1559 LT. & RT.	149		60	
LOR-20-1587 & LOR-10-0001 BL.	116		45	
TOTALS (TO SHEETS 18 & 19)	749		525	

ITEM SPECIAL - PRESSURE RELIEF JOINT, AS PER PLAN

PRESSURE RELIEF JOINT AS PER PLAN SHALL BE CONSTRUCTED AS PER DETAIL ON THIS SHEET AND SHALL INCLUDE FULL DEPTH SAWING, REMOVAL AND DISPOSAL OF EXISTING AND PLACEMENT OF NEW 404 ASPHALT CONCRETE MATERIAL.



FULL DEPTH PAVEMENT REPAIR DETAILS AS PER PLAN "A"
FOR EXISTING FLANGE BEAM JOINTS

STRUCTURE	255		203	
	FULL DEPTH PAVEMENT SAWING	FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT CLASS C AS PER PLAN "A"	EMBANKMENT	
	LIN.FT.	SQ.YD.	CU.YD.	
LOR-20-1303	200	111.1	18.5	
LOR-20-1356 LT. & RT.	192	106.7	17.8	
LOR-20-1380 LT. & RT.	144	80	13.3	
LOR-20-1451 LT. & RT.	192	106.7	17.8	
LOR-20-1533 LT. & RT.	192	106.7	17.8	
LOR-20-1559 LT. & RT.	298	165.6	27.6	
LOR-20-1587 & RT. & LOR-120-0001 BL.	232	128.9	21.5	
TOTALS (TO SHEETS 18 & 19)	1450	805.7	134.3	

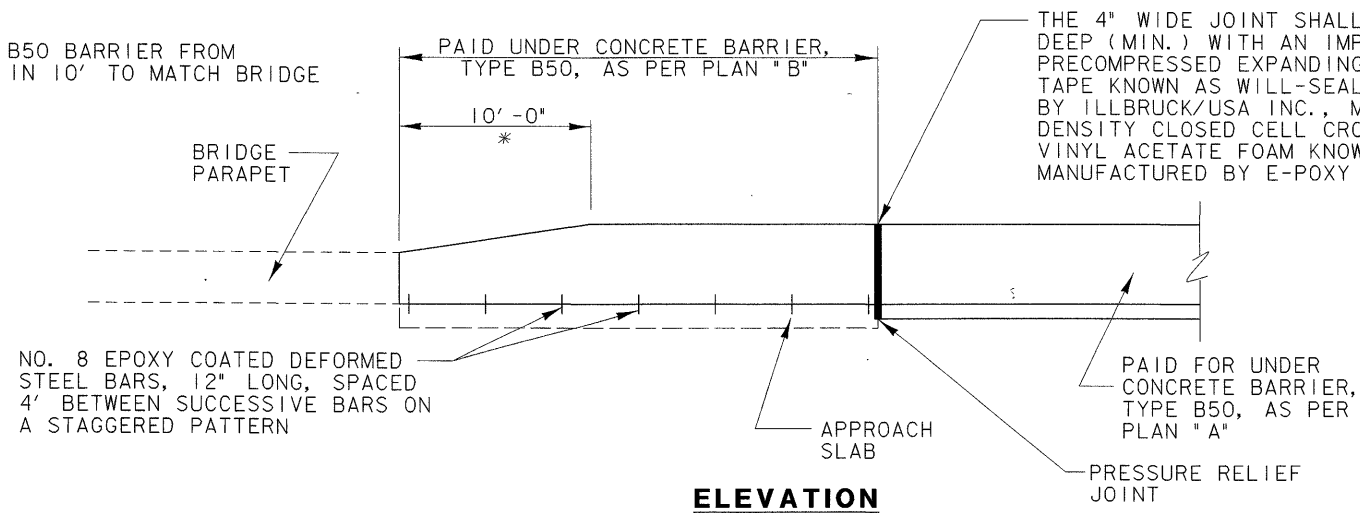
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PRESSURE RELIEF JOINT AND MISC. PAVEMENT REPAIR DETAIL AND QUANTITIES

LOR-20-12.62

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* TAPER TYPE B50 BARRIER FROM 50" TO 32" IN 10' TO MATCH BRIDGE PARAPET



THE 4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..

EPOXY COATED REINFORCING STEEL, GRADE 60
(13 BARS)(12' LONG)(2.670 LBS. PER L.F.) = 417 LBS.
(INCLUDED IN COST FOR 611 FOR PAYMENT)

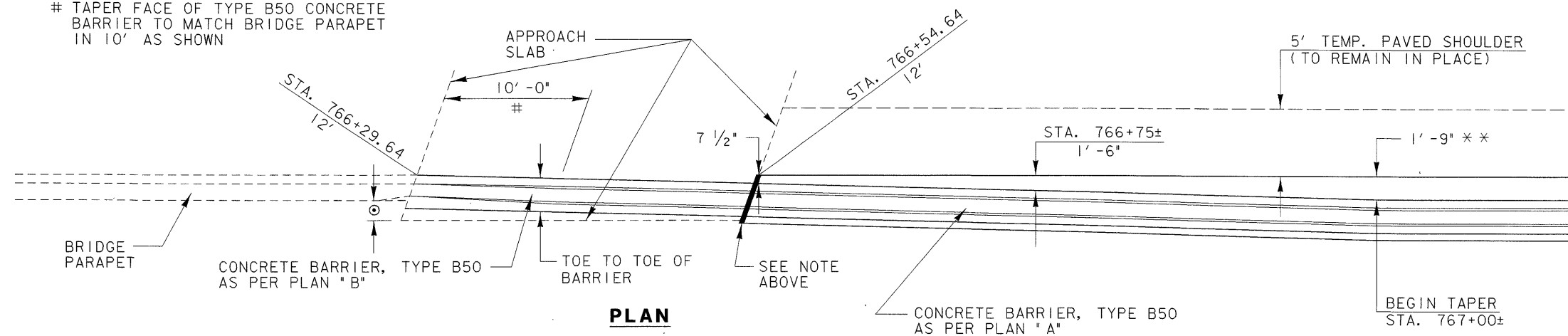
4" WIDE JOINT AS PER ELEVATION VIEW LEFT SHALL BE PLACED IN CONC. BARRIER AT PRESSURE RELIEF JOINT LOCATION.

NO. 8 EPOXY COATED DEFORMED STEEL BARS, 12" LONG, SPACED 4' BETWEEN SUCCESSIVE BARS ON A STAGGERED PATTERN

ELEVATION

** AN ADDITIONAL 1'-3" OF CONC. WAS ADDED TO THE INSIDE 6" OF THE B50 BARRIER BASE, AHD.

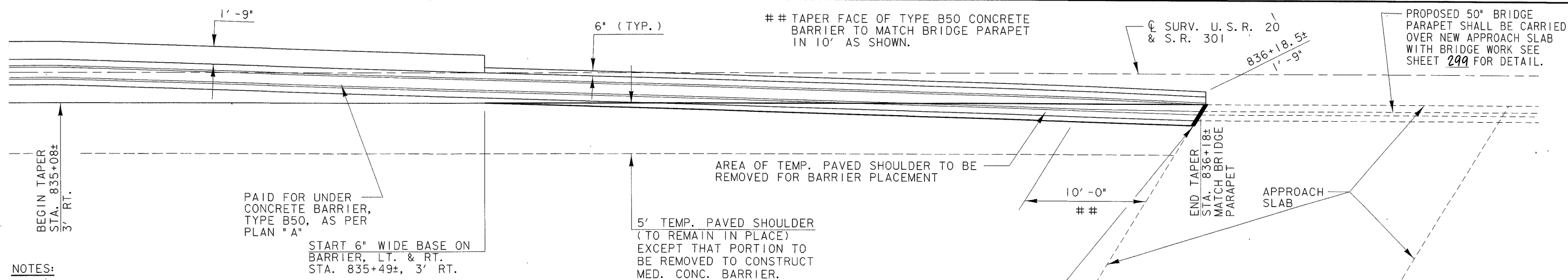
TAPER FACE OF TYPE B50 CONCRETE BARRIER TO MATCH BRIDGE PARAPET IN 10' AS SHOWN



PLAN

STRUCTURE LOR-20-1451 LT.
(OVER INDIAN HOLLOW RD.)
FORWARD MEDIAN APPROACH

⊙ EXTEND APPROACH SLAB 1'-6"



PLAN

STRUCTURE LOR-20-1587 RT.
(OVER S.R. 57)
REAR MEDIAN APPROACH

NOTES:
NO ELEVATION VIEW SHOWN MATCH 50" CONC. BARRIER TO 50" BRIDGE PARAPET ON THE LOR-20-1587 RT. STRUCTURE.

PAID FOR UNDER CONCRETE BARRIER, TYPE B50, AS PER PLAN "A"

START 6" WIDE BASE ON BARRIER, LT. & RT. STA. 835+49±, 3' RT.

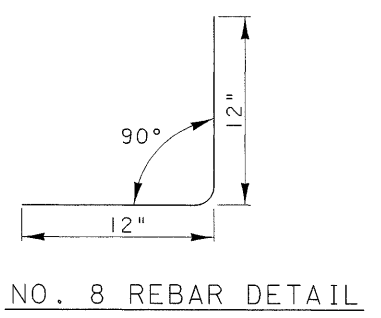
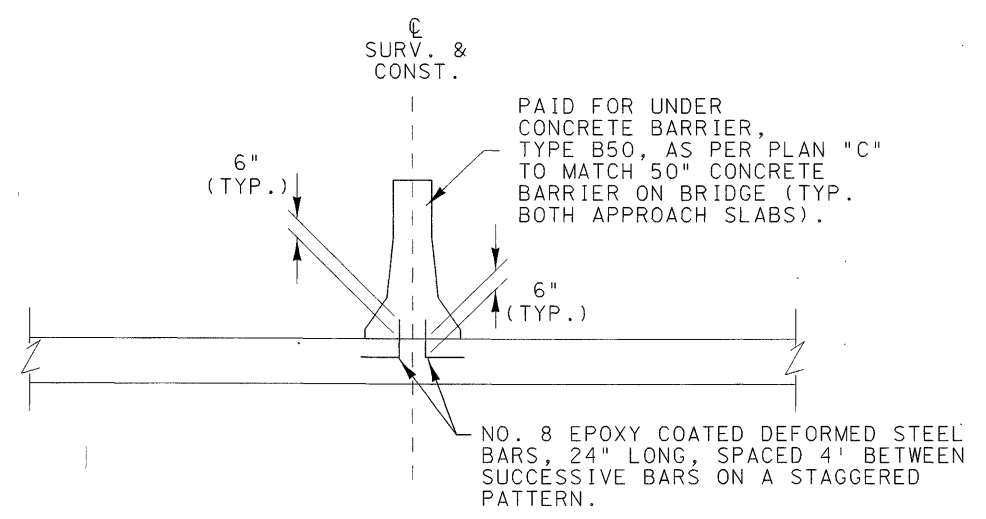
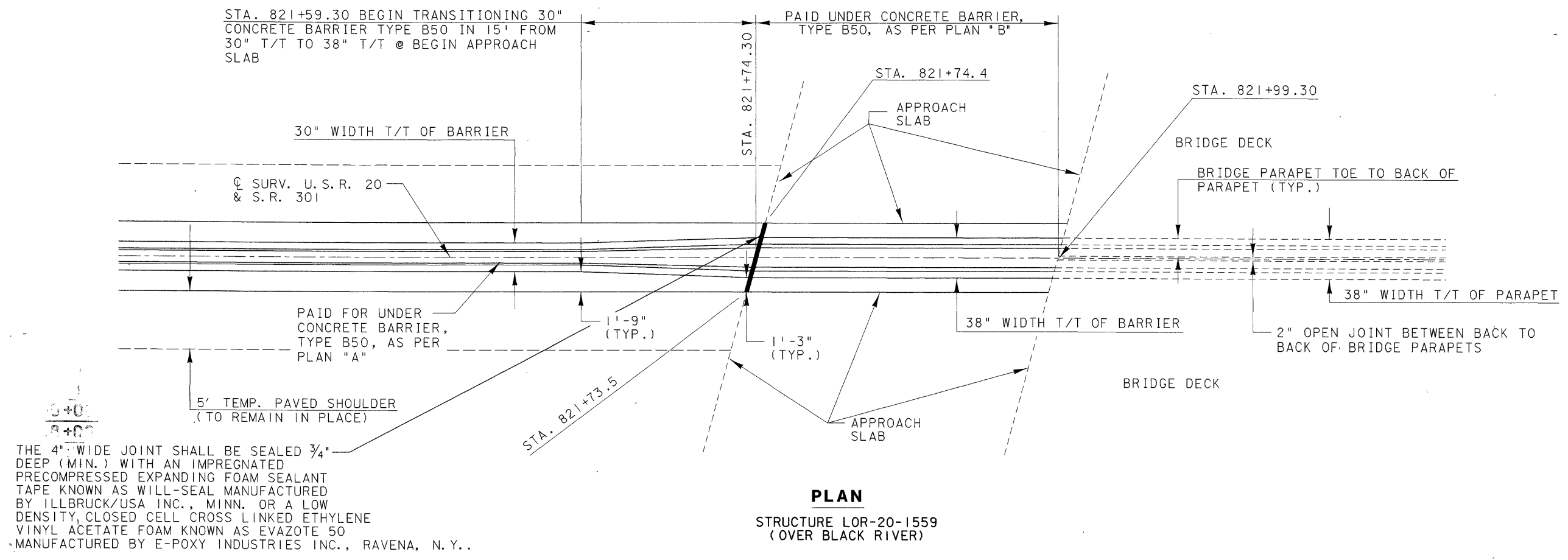
THE 4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..

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MISC. BARRIER PLACEMENT DETAILS

LOR-20-12.62

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THE 4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N. Y.. (TO BE PLACED WHERE THE ROADWAY MEETS THE APPROACH SLAB).

DETAIL FOR BARRIER PLACEMENT ON APPROACH SLABS
@ BRIDGE LOR-20-1533 L&R
(OVER GRAFTON ROAD)

EPOXY COATED REINFORCING STEEL, GRADE 60
(24 BARS) (24" LONG) (2.670 LBS. PER L.F.) = 1538 LBS.
(INCLUDED IN COST OF 611 FOR PAYMENT)

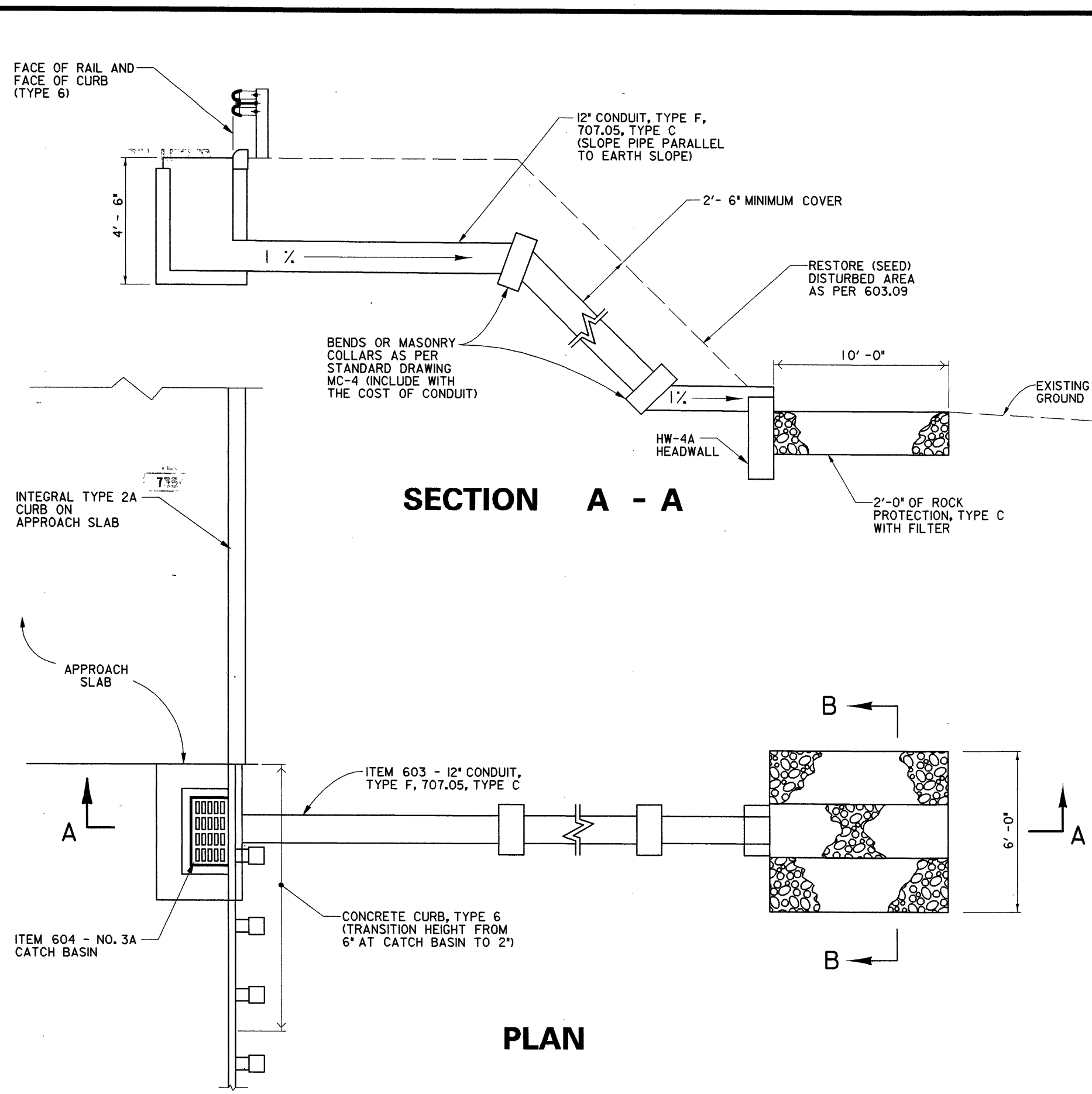
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WORKSTATION: malleman DATE: 11 DEC 96

MISC. BARRIER PLACEMENT DETAILS

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STRUCTURE		601	602	603	604	609			
		ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY, AS PER PLAN	12" CONDUIT, TYPE F, 707.05, TYPE C	CATCH BASIN NO. 3A	CURB, TYPE 6			
		CU.YD.		LIN.FT.	EACH	LIN.FT.			
LOR-20-1356	R. R. A. RT.	5	0.21	58	1	12			
	L. F. A. LT.	5	0.21	42	1	12			
LOR-20-1380	L. F. A. LT.	5	0.21	94	1	12			
LOR-20-1451	R. R. A. RT.	5	0.21	56	1	12			
	R. R. A. LT.	5	0.21	40	1	12			
	L. F. A. LT.	5	0.21	44	1	12			
LOR-20-1533	L. F. A. RT.	5	0.21	56	1	12			
	R. F. A. RT.	5	0.21	32	1	12			
LOR-20-1559	L. F. A. LT.	5	0.21	36	1	12			
	R. R. A. RT.	5	0.21	68	1	12			
LOR-20-1587	L. R. A. LT.	5	0.21	62	1	12			
	R. R. A. RT.	5	0.21	36	1	12			
LOR-20-1587	L. R. A. LT.	5	0.21	36	1	12			
	R. R. A. RT.	5	0.21	36	1	12			
TOTALS (TO SHEETS 18 & 19)		65	2.73	660	13	156			

EB & WB OUTSIDE EDGE DRAIN QUANTITIES

CALCULATED
ADD
CHECKED
MGA

STATION LIMITS	E.B. SIDE	LOCATION	TYPE OF OUTLET	603	605	SPECIAL	BENDS & BRANCHES	605	
				LIN.FT.	LIN.FT.	EACH	6' X 90° BEND		6' X 6' X 6' TEE
"X" DENOTES DRAIN OUTLET									
X 665+10±		D75+73±H.P.	RT. RAMP D & U.S.R. 20	EXIST. U.D.	20	1063			
X 677+80±		688+03±	RT. U.S.R. 20	C.B.	10	1023			
X 688+05±		696+67±	RT. U.S.R. 20	ON SLOPE	80	862			
X 696+70±		701+98±	RT. U.S.R. 20	ON SLOPE	26	528			
X 702+00±		708+98±	RT. U.S.R. 20	ON SLOPE	26	698			
X 709+00±		714+43±	RT. U.S.R. 20	ON SLOPE	28	543			
		714+43±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1356)						
X 716+20±		721+48±	RT. U.S.R. 20	ON SLOPE	18	528			
X 721+50±		726+50 H.P.	RT. U.S.R. 20	ON SLOPE	18	500			
		726+50 H.P.	RT. U.S.R. 20	ON SLOPE	18	100			
		727+50±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1380)						
		728+91±	RT. U.S.R. 20	ON SLOPE	18	609			
		735+02±	RT. U.S.R. 20	ON SLOPE	26	498			
		740+02±	RT. U.S.R. 20	ON SLOPE	26	498			
		745+02±	RT. U.S.R. 20	ON SLOPE	26	300			
X 748+00±L.P.		753+98±	RT. U.S.R. 20	ON SLOPE					
X 754+00±		758+98±	RT. U.S.R. 20	ON SLOPE	22	498			
X 759+00±		764+60±	RT. U.S.R. 20	ON SLOPE	24	560			
		764+62±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1451)						
		766+33±	RT. U.S.R. 20	ON SLOPE	26	567			
		772+02±	RT. U.S.R. 20	ON SLOPE	24	648			
X 778+50±L.P.		795+50±L.P.	OZ. GRADE						
X 795+50±L.P.		SW11+50±	RT. RAMP SW & U.S.R. 20	ON SLOPE	24	600			
X 801+54±		807+50±H.P.	RT. U.S.R. 20	C.B.	10	596			
		807+50±H.P.	RT. U.S.R. 20	C.B.	10	65			
		808+28±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1533)						
		810+93±	HIGH SIDE OF SUPER						
		SE19+30±	RT. RAMP SE & U.S.R. 20	ON SLOPE	18	220			
		821+62±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1559)						
X 824+30±		825+60±	RT. U.S.R. 20	ON SLOPE	18	130			
		825+61±	HIGH SIDE OF SUPER						
		835+87±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1587)						
TOTAL - EASTBOUND LANES					516	11,634	18		

NOTE:
LOCATIONS OF OUTLET DETERMINED OFF OLD PLAN - ADJUSTMENT FOR OUTLETS MAY BE REQUIRED IN FIELD.

* 93 + 50 = 2 (EACH) X 20 LIN. FT. (AVG. LENGTH) = 40 LIN. FT.
* 698 + 50 = 14 (EACH) X 20 LIN. FT. (AVG. LENGTH) = 280 LIN. FT.

ALL WORK INCLUDES REMOVAL OF EXISTING PAVED BERM OVER THE TRENCH & REPLACEMENT W/402 ITEM.

STATION LIMITS	W.B. SIDE	LOCATION	TYPE OF OUTLET	603	605	SPECIAL	BENDS & BRANCHES	605	
				LIN.FT.	LIN.FT.	EACH	6' X 90° BEND	6' X 6' X 6' TEE	AGGREGATE DRAINS
"X" DENOTES DRAIN OUTLET									
				NOT DEEP ENOUGH FOR OUTLET				40	
X 665+05±		665+98±							
X 666+00±	LT.	U.S.R. 20	C.B.	26	360				
X 669+62±	LT.	U.S.R. 20	ON SLOPE	50	788				
X 677+75±	LT.	U.S.R. 20	C.B.	12	925				
		687+00±	NOT DEEP ENOUGH FOR OUTLET				280		
X 687+00±		693+98±							
X 694+00±	LT.	U.S.R. 20	ON SLOPE	34	282				
X 697+02±	LT.	U.S.R. 20	ON SLOPE	24	596				
X 703+00±	LT.	U.S.R. 20	ON SLOPE	24	598				
X 709+00±	LT.	U.S.R. 20	ON SLOPE	24	572				
		714+72±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1356)						
		716+43±							
X 716+50±	LT.	U.S.R. 20	ON SLOPE	18	498				
X 721+50±	LT.	U.S.R. 20	ON SLOPE	18	500				
		726+50±H.P.	LT.	U.S.R. 20	ON SLOPE	18	69		
		727+45±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1380)						
		728+87±	X LT.	U.S.R. 20	ON SLOPE	18	513		
		734+02±	X LT.	U.S.R. 20	ON SLOPE	20	498		
		739+02±	X LT.	U.S.R. 20	ON SLOPE	22	498		
		744+02±	X LT.	U.S.R. 20	ON SLOPE	22	448		
X 748+50±L.P.		753+98±	LT.	U.S.R. 20	ON SLOPE		548		
X 754+00±	LT.	758+98±	LT.	U.S.R. 20	ON SLOPE	22	498		
X 759+00±	LT.	764+90±	LT.	U.S.R. 20	ON SLOPE	22	590		
		764+94±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1456)						
		766+65±							
		766+65±	X LT.	U.S.R. 20	ON SLOPE	24	535		
		772+02±	X LT.	U.S.R. 20	ON SLOPE	24	648		
		778+50±	OZ. GRADE						
X 795+50±	LT.	NW9+23±	LT. RAMP NW & U.S.R. 20	ON SLOPE	26	373			
X 799+35±	LT.	807+50±H.P.	LT. U.S.R. 20	C.B.	10	815			
		807+50±H.P.	X LT.	U.S.R. 20	ON SLOPE	10	65		
		808+03±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1533)						
		810+29±							
		810+29±	X LT.	U.S.R. 20	ON SLOPE	24	571		
		NE17+60±H.P.	X LT.	RAMP NE & U.S.R. 20	ON SLOPE	20	423		
		821+84±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1559)						
X 824+50±	LT.	E31+50±	LT. RAMP E & U.S.R. 20	ON SLOPE	18	627			
X 831+25±	LT.	836+42±	LT. U.S.R. 20	C.B.	10	517			
		836+42±	BRIDGE & APPROACH SLAB LIMITS(LOR-20-1587)						
		839+60±	LT. S.R. 10 & U.S.R. 20	ON SLOPE	22	342			
TOTAL - WESTBOUND LANES					562	13,697	22	320	
TOTAL - EASTBOUND LANES					516	11,634	18	0	
GRAND TOTALS (TO SHEET 18)					1,078	25,331	40	320	

EB & WB OUTSIDE EDGE DRAIN QUANTITIES

LOR-20-12.62

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WORKSTATION: mallem DATE: 03 DEC 96

EB & WB INSIDE UNDERDRAIN QUANTITIES

CALCULATED
ADB
CHECKED
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STATION LIMITS	W.B. SIDE	LOCATION	TYPE OF OUTLET	603		605		BENDS & BRANCHES		605	
				BEGIN	END	BEGIN	END	6" X 90° BEND	6" X 6" X 6" TEE	AGGREGATE DRAINS *	
"X" DENOTES DRAIN OUTLET											
				LIN.FT.							
				NOT DEEP ENOUGH FOR OUTLET							200
X				665+00±	669+98±						
X				670+00±	677+76±	MED.	U. S. R. 20	C.B.	23	776	
X				677+78±	689+13±	MED.	U. S. R. 20	C.B.	24	1135	
X				689+15±	696+98±	MED.	U. S. R. 20	C.B.	23	783	
X				697+00±	704+98±	MED.	U. S. R. 20	C.B.	23	798	
X				705+00±	714+65±	MED.	U. S. R. 20	C.B.	24	965	
				BRIDGE & APPROACH SLAB (LOR-20-1356)							
				714+65±	716+36±						
X				716+24±	723+78±	MED.	U. S. R. 20	C.B.	24	754	
X				723+80±	726+50±H.P.	MED.	U. S. R. 20	C.B.	20	270	
			X	726+50±H.P.	727+25±	MED.	U. S. R. 20	C.B.	22	70	
				BRIDGE & APPROACH SLAB (LOR-20-1380)							
				727+46±	729+12±						
			X	729+12±	739+00±	MED.	U. S. R. 20	C.B.	22	988	
			X	739+02±	748+00±L.P.	MED.	U. S. R. 20	C.B.	22	898	
X				748+00±L.P.	748+98±	MED.	U. S. R. 20	C.B.		98	
X				749+00±	756+48±	MED.	U. S. R. 20	C.B.	22	748	
X				756+50±	764+85±	MED.	U. S. R. 20	C.B.	22	835	
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				764+85±	766+56±						
			X	766+56±	771+80±	MED.	U. S. R. 20	C.B.	20	524	
				HIGH SIDE OF SUPER							
				771+82±	2+63±S.R.10						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
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				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
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				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						
				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
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				HIGH SIDE OF SUPER							
				771+82±	771+82±						
				BRIDGE & APPROACH SLAB (LOR-20-1451)							
				771+82±	771+82±						

RAMP UNDERDRAIN & EDGE DRAIN QUANTITIES

CALCULATED
ADD
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MGA

STATION LIMITS	SIDE	LOCATION	TYPE OF OUTLET	603		605		SPECIAL	BENDS & BRANCHES			
				6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D3034 SDR 35, S.S. 931, OR S.S. 944	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	SHALLOW UNDERDRAIN, AS PER PLAN	PRECAST REINFORCED CONCRETE OUTLET	60° BEND (4"X6")	4"X4"X6" TEE	90° BEND (4"X6")		
"X" DENOTES DRAIN OUTLET												
BEGIN	END					LIN.FT.			EACH			
A 77+50±	A80+00± L.P.	X	LT.	RAMP "A"	EXIST. C.B.	24	250					
X A80+00± L.P.	A85+00±		LT.	RAMP "A"			500					
X D77+75±	D81+98±		RT.	RAMP "D"	ON SLOPE	58	423					
X D82+00±	D85+25±		RT.	RAMP "D"	ON SLOPE	64	325					
B89+00±	B95+00± L.P.	X	LT.	RAMP "B"	ON SLOPE	28	600					
X B95+00± L.P.	B97+02±		LT.	RAMP "B"			202					
C89+65±	C93+75± L.P.	X	RT.	RAMP "C"	ON SLOPE	28	410					
X C93+75± L.P.	C96+67±		RT.	RAMP "C"			292					
X NW9+25±	NW12+00±		LT.	RAMP "NW"	ON SLOPE	12	275					
NW12+02±	NW1+25±	X	LT.	RAMP "NW"	ON SLOPE	32	512					
X SW11+55±	SW12+75±		RT.	RAMP "SW"	ON SLOPE	16	120					
SW12+77±	SW1+00±	X	RT.	RAMP "SW"	ON SLOPE	16	680					
X NE2+00±	NE15+00±		LT.	RAMP "NE"	ON SLOPE	18	511					
NE15+02±	NE17+58±	X	LT.	RAMP "NE"	ON SLOPE	24	256					
X SE1+35±	SE15+50±		RT.	RAMP "SE"	ON SLOPE	14	414					
SE15+52±	SE19+28±	X	RT.	RAMP "SE"	ON SLOPE	16	378					
RAMP "E"						NOT DEEP ENOUGH FOR OUTLET						
CA14+70±	CA16+05±	X	RT.	RAMP "CA"	ON SLOPE	18	135					
CA16+10±	CA17+95±	X	RT.	RAMP "CA"	ON SLOPE	20	185					
CA18+02±	CA26+45±	X	RT.	RAMP "CA"	ON SLOPE	20	843					
X CA26+45±	CA27+25±		RT.	RAMP "CA"	ON SLOPE	18	80					
RAMP DA						HIGH SIDE OF SUPER						
X A85+00±	A89+00±		RT.	RAMP "A"	ON SLOPE	28	400					
C86+11±	C89+65±	X	LT.	RAMP "C"	ON SLOPE	20	354					
RAMP TOTALS (TO SHEET 18)						474	7391	754	18			

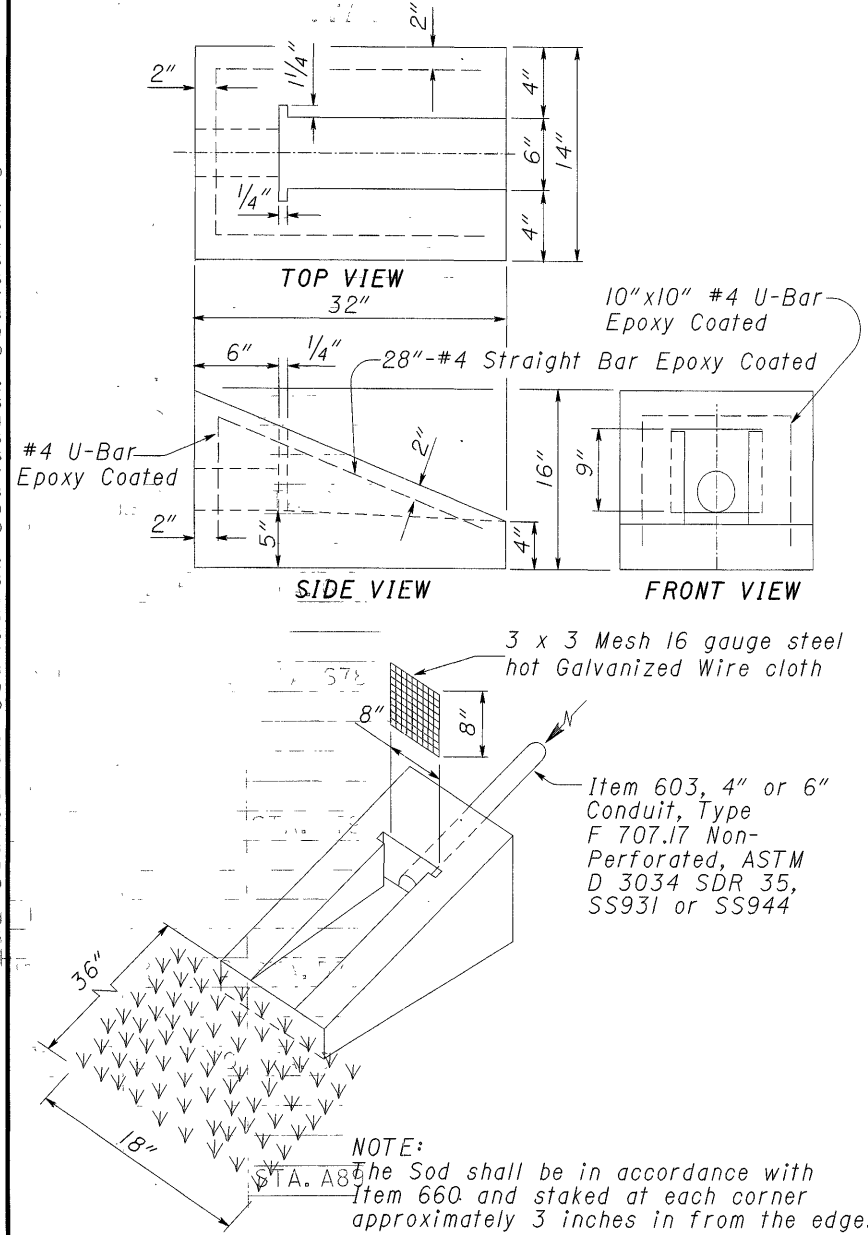
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WORKSTATION: mallemar DATE: 13 NOV 96

RAMP UNDERDRAIN EDGE DRAIN QUANTITIES

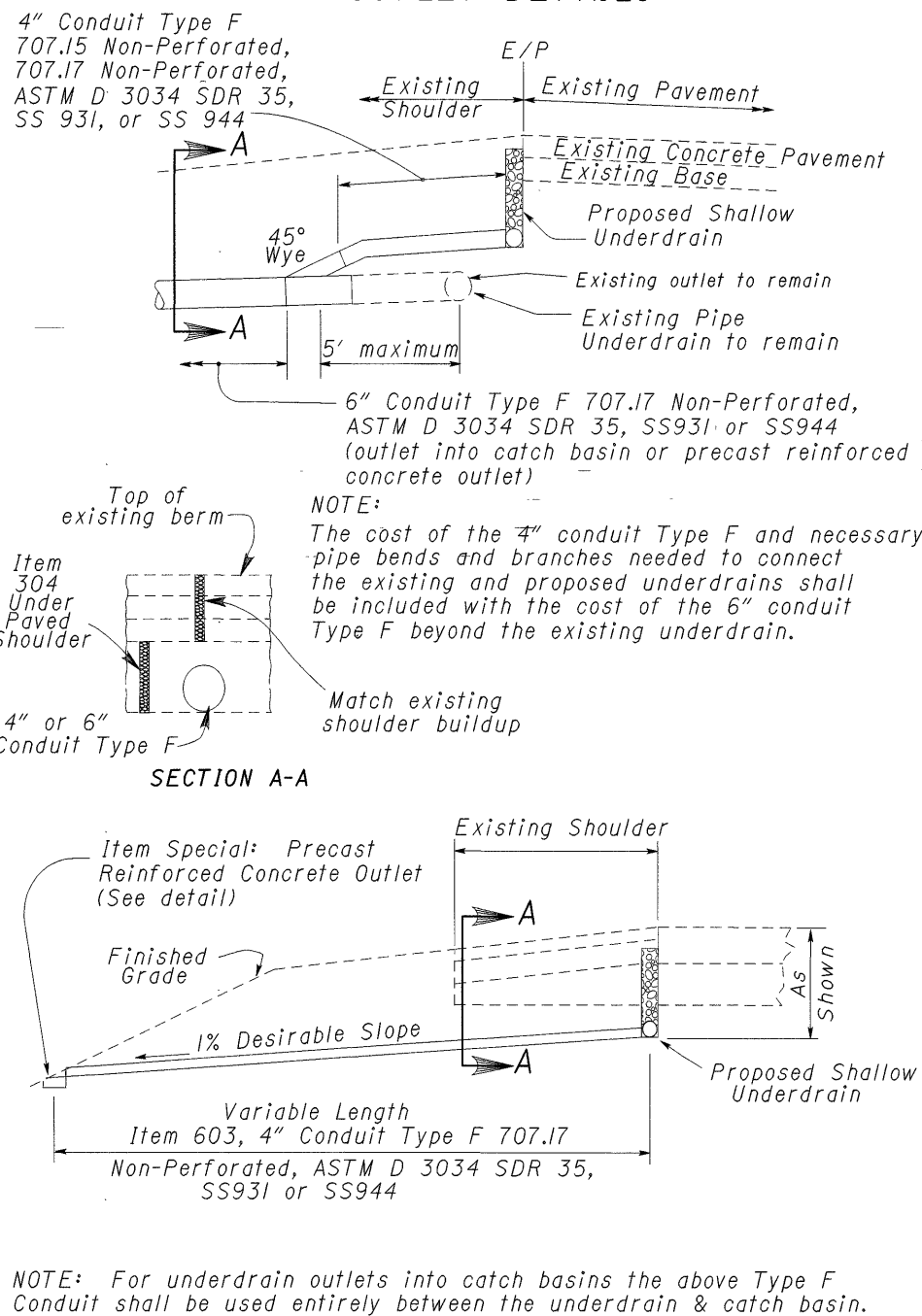
LOR - 20 - 12.62

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

The Concrete outlet shall meet the requirements of CMS 604. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



OUTLET DETAILS



DESCRIPTION: This item shall consist of furnishing and installing either a pipe underdrain system or a prefabricated edge drain system in accordance with the specifications and with the details, as shown on the plans, and as directed by the Engineer.

MATERIALS: The underdrain shall either be a pipe underdrain system per Item 605 or a prefabricated edge drain system meeting the following requirements. The prefabricated edge drain shall consist of a polymeric core with a minimum thickness of one inch wrapped in fabric meeting CMS 712.09 Type A. The drain shall be flexible, rectangular in shape and of hollow construction. The core material shall be resistant to petroleum based chemicals, naturally occurring soil chemicals, and road de-icing agents.

bending and handling without damage. Side walls of the core shall provide at least 5% open area to permit unobstructed flow through the filter and wall to the core.

The core shall have a minimum open area (in the plane of flow) of 10.5 square inches.

The prefabricated edge drain manufacturer's certified test results shall be furnished in accordance with CMS 101.061.

CONSTRUCTION: The prefabricated edge drain shall be installed against the outside wall of the trench as shown and backfilled adjacent to the pavement

or more lifts with a vibratory compactor run over the final lift to consolidate the aggregate prior to placing the asphalt plug. The first layer of the backfill material shall be placed simultaneously with the trenching operation to hold the edge drain flush against the trench wall.

The prefabricated edge drain shall be spliced as required prior to placement in the trench, using material furnished by the manufacturer and in accordance with the manufacturer's directions. All material required for the splices will be supplied by the manufacturer, but any equipment required shall be furnished by the Contractor. Splices shall prevent separation of adjoining sections of the prefabricated edge drain panels.

The underdrain outlets shall be placed in accordance with Item 603 using outlet fittings. The manufacturer shall supply outlet fittings which will make the transition between the prefabricated edge drain and the outlet pipe.

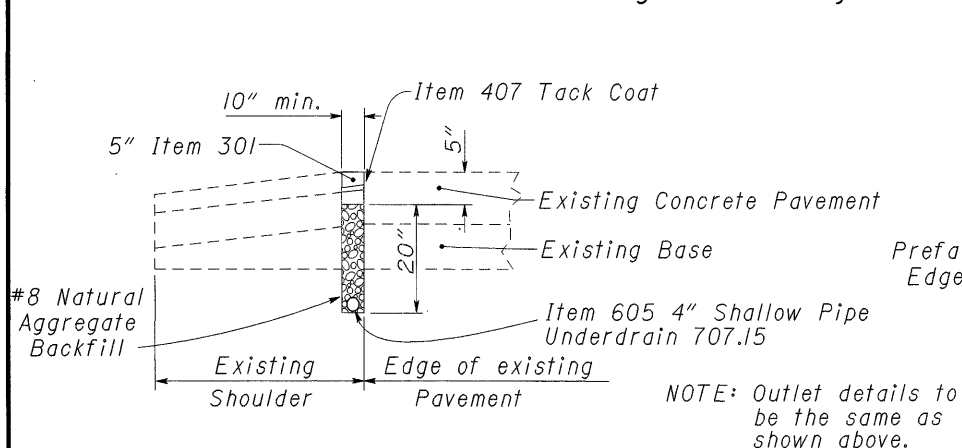
The outlets for both underdrain systems shall be constructed as soon as possible after placement of the underdrain. The underdrain and outlets on crack & seat projects shall be in place and functional prior to cracking and seating the existing pavement.

METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

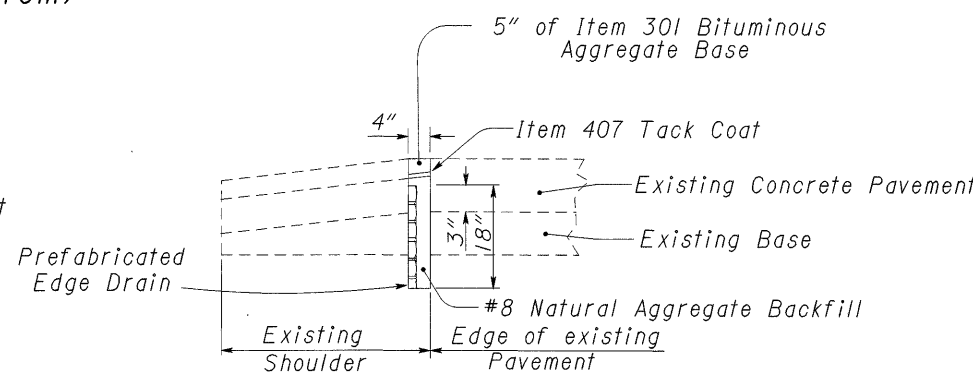
BASIS OF PAYMENT FOR PIPE UNDERDRAIN SYSTEM: Work completed, accepted and measured under this item shall be paid for at the contract unit price bid for Item 605 - 4" Shallow Pipe Underdrain 707.15, As Per Plan. The price shall be full compensation for excavation and backfill; for furnishing materials, including materials for outlet fittings; and for all labor, tools, equipment and incidentals necessary to complete the work.

BASIS OF PAYMENT FOR PREFABRICATED EDGE DRAIN SYSTEM: Work completed, accepted and measured under this item shall be paid for at the contract unit price bid for Item 605 - Shallow Underdrain, As Per Plan. The price shall be full compensation for excavation and backfill; for removing and disposing of all surplus excavation in accordance with CMS 203; for furnishing materials, including materials for splices, outlet fittings, and Item 301; and for all labor, tools, equipment and incidentals necessary to complete the work. The price shall also include all costs associated with pipe underdrains, as specified above, which are installed as alternates to the prefabricated edge drain system.

PIPE UNDERDRAIN SYSTEM (Alternate to Prefabricated Edge Drain System)



PREFABRICATED EDGE DRAIN SYSTEM



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WORKSTATION: mal/lemcn DATE: 08 NOV 96

ITEM 605-SHALLOW UNDERDRAIN, AS PER PLAN DATE: 3-10-95
LOR-20-12.62
90A
351

DESIGN FILE: c:\dgn\lor20\signqty.dgn
 WORKSTATION: malleman
 DATE: 08 NOV 96

SHEET REFERENCE	SIGN NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ.FT.)	SIGN			REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	630			CONCRETE FOR EMBEDDED FOUNDATION	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	BREAKAWAY BEAM CONNECTION	SIGN BACKING ASSEMBLY	631						
							EXTRUSHEET, TYPE G	FLAT SHEET, TYPE G	FLAT SHEET, TYPE F				NO. 2 POST	NO. 3 POST	S4X7.7 BEAM						CU.YD.	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	BREAKAWAY BEAM CONNECTION	BALLAST TYPE CMRI-175 - 480, INTEGRAL	SIGNS WIRED	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP
							SQ.FT.	SQ.FT.	SQ.FT.				POST	BEAM	MINOR						MAJOR	LIN.FT.	EACH	EACH	EACH	EACH	
I 116	11	S.R. IO	STA. 0+24± E.B.	GF N-44B-18	72 X 60 18 X 12	30 1.5	30		1.5						16/16	0.54				2	1						
	12	S.R. IO	STA. 0+20± E.B.	N-45-12	12 X 12	1		1						8													
	13	RAMP CA	STA. CA23+00± RT.	R-41A-36	36 X 24	6		6																			
	15	S.R. IO	STA. 1+77± E.B.	W-49R W-49R-48	48 X 48	16		16	2	1					15.5/15.5												
	16	RAMP DA & G	STA. DA13+89± LT. TO STA. G3+00± LT. (QUANT. INCL. 8 SIGNS & 8 POSTS)	W-33 W-33-30	30 X 36	60		60	8	8					116												
	17	S.R. IO	STA. 1+50± E.B.	M-39-36 M-2-36-2	36 X 18 36 X 36	4.5 9		4.5 9							15/15.5												
	18	RAMP CA	STA. CA19+50± RT.	N-45-12	12 X 12	1		1						8													
I 116	19	RAMP DA	STA. DA6+70± RT. TO STA. DA13+20± RT. (QUANT. INCL. 8 SIGNS & 8 POSTS)	W-33 W-33-30	30 X 36	60		60	8	8					116												
	1	S.R. IO	STA. 6+25± W.B.	GF N-44B-18	72 X 60 18 X 12	30 1.5	30		1.5						16/16	0.54				2	1						
	2	RAMP F	STA. F7+00± LT.	W-45-48	48 X 48	16		16							15.5/15.5												
	3	S.R. IO	STA. 9+00± W.B.	GG GB GE N-44B-18	144 X 102* 156 X 84* 192 X 126* 18 X 12	102 91 168 1.5	102 91 168					1 1 1								2 2 2		2 2 2	1 1 1				
I 117	4	S.R. IO	STA. 23+80± W.B.	GB GB N-44B-18	180 X 114 18 X 12	142.5 1.5	142.5		1.5													1					
TOTALS CARRIED TO SHEET 20							563.5	126	53.5	18	17	1	3	16	352.5	64	1.08	6		4		6	3	6			

SIGNING QUANTITIES

LOR-20-12.62

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 WORKSTATION: malleman DATE: 08 NOV 96

SHEET REFERENCE	SIGN NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ.FT.)	SIGN			GROUND MOUNTED SUPPORT,				CONCRETE FOR EMBEDDED FOUNDATION	BREAKAWAY BEAM CONNECTION	SIGN BACKING ASSEMBLY			
							EXTRUSHEET, TYPE G	FLAT SHEET, TYPE G	FLAT SHEET, TYPE F	NO. 3 POST	NO. 4 POST	S4X7.7 BEAM	POST				BEAM	MINOR	MAJOR
							SQ.FT.												
119	1	S.R. 30I	STA. 668+85± LT.	M-8 M-2 M-26															
	2	S.R. 30I	STA. 669+00± LT.	M-38 M-2 M-24															
			STA. 668+85± LT.	M-38-24 M-2-24-3 M-24-2I	24 X 12 30 X 24 21 X 15	2 5 2.19		2 5 2.19											
	3	S.R. 30I	STA. 668+80± MED.	R-37R-24	24 X 30	5		5											
	4	LAG-ELY	STA. 669+50± LT.	N-29 N-15 N-29-24 IM-24-2I	24 X 24 21 X 15	4 2.19		4 2.19											
	5	LAG-ELY	STA. 673+50± LT.	M-8 M-2 M-26 D-3 M-37-24 M-2-24-3 M-26-2I M-52A-108 N-44B-18	24 X 12 30 X 24 21 X 15 108 X 30 18 X 12	2 5 2.19 22.5 1.5		2 5 2.19		2 5 2.19									
	6	LAG-ELY	STA. 677+00± LT.	R-36R-30	30 X 36	7.5		7.5											
	7	LAG-ELY	STA. 680+00± LT.	M-17 M-1 M-2 M-17-24 M-1-24-2 M-17-24 M-2-24-3	21 X 15 24 X 24 21 X 15 30 X 24	2.19 4 2.19 5		2.19 4 2.19 5											
119	8	LAG-ELY	STA. 682+00± LT.	W-85-36	36 X 36	9		9											
TOTALS CARRIED TO SHEET 20							22.5	5	55.95	4	2	14	1						
											99.5	15.5	28.5						
											0.54	2							

630

GROUND MOUNTED SUPPORT,

SIGNING QUANTITIES

LOR-20-12.62

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351

SHEET REFERENCE	SIGN NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ.FT.)	SIGN			REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	GROUND MOUNTED SUPPORT,				LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21	BALLAST TYPE CMRI-175 - 480, INTEGRAL	SIGN WIRED	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP		
							EXTRUSHEET, TYPE G	FLAT SHEET, TYPE G	FLAT SHEET, TYPE F				ONE WAY NO. 3	NO. 3 POST	LIN.FT.						CU.YD.	EACH
							POST	BEAM	MINOR				MAJOR	POST	POST	POST					POST	
120	3	GRAFTON	STA. 674+80± LT.	R-1 R-4IB R-1-48 R-4IB-36 R-43L-36 R-43R-36	48 X 48 36 X 36 36 X 12 36 X 12	16 9 3 3	16 9 3 3															
	4	GRAFTON	STA. 675+45± LT.	R-43R R-43L R-4IB R-43R-36 R-43L-36 R-4IB-36	36 X 12 36 X 12 36 X 36	3 3 9	3 3 9							16	14.5							
	5	GRAFTON	STA. 676+90± MED.	R-37R-24	24 X 30	5	5								13							
	7	GRAFTON	STA. 677+50± RT.	W-85-36	36 X 36	9	9								14.5/15							
	8	GRAFTON	STA. 675+15± RT.	M-2 M-8 M-24						2 2 2												
	9	GRAFTON	STA. 675+15± RT. 83+15± L	M-39 M-1 M-37 M-2 M-24						2 2 2 2 2												
	10	GRAFTON	STA. 674+93± RT.	GH GH GH	120 X 102 * 120 X 102 *	85 85	85 85					2										
120	11	GRAFTON	STA. 677+85± MED.	R-37R-24	24 X 30	5	5								13							
121	1	GRAFTON	STA. 679+90± LT.	M-2 M-8 M-26						2 2 2												
121	2	GRAFTON	STA. 679+85± LT.	GH GH GH	120 X 102 * 120 X 102 *	85 85	85 85					2										
TOTALS CARRIED TO SHEET 20							340	56	9	5		27		4	33	85.5		4		4	4	4

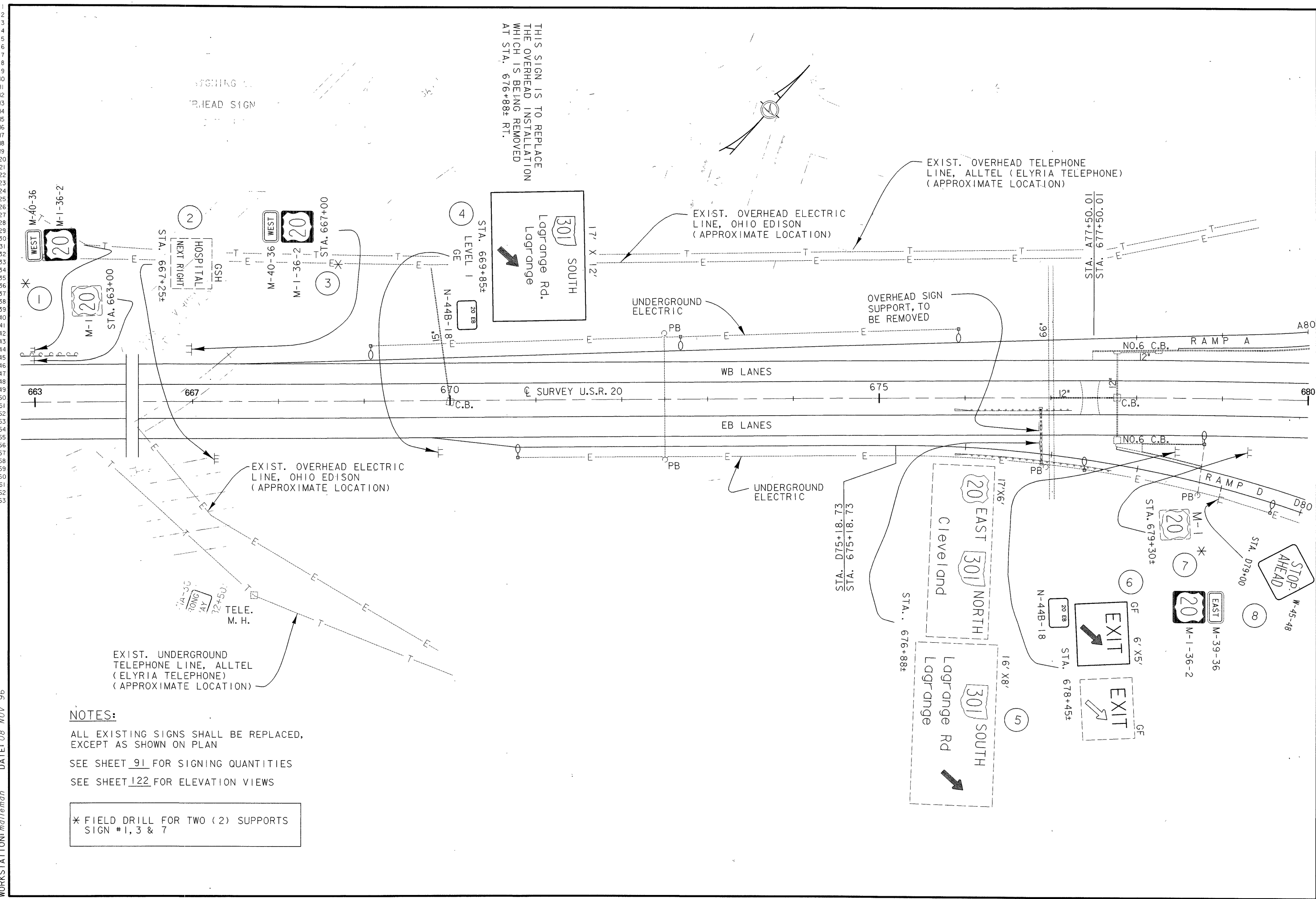
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WORKSTATION: malleman DATE: 08 NOV 96

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THIS SIGN IS TO REPLACE THE OVERHEAD INSTALLATION WHICH IS BEING REMOVED AT STA. 676+88± RT.

EXIST. OVERHEAD TELEPHONE LINE, ALLTEL (ELYRIA TELEPHONE) (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC LINE, OHIO EDISON (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC LINE, OHIO EDISON (APPROXIMATE LOCATION)

EXIST. UNDERGROUND TELEPHONE LINE, ALLTEL (ELYRIA TELEPHONE) (APPROXIMATE LOCATION)

NOTES:

- ALL EXISTING SIGNS SHALL BE REPLACED, EXCEPT AS SHOWN ON PLAN
- SEE SHEET 91 FOR SIGNING QUANTITIES
- SEE SHEET 122 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS SIGN #1, 3 & 7

SIGNING PLAN SHEETS
 STA. 663+00 TO STA. 680+00

LOR-20-12.62

NOTES:

SEE SHEETS 118 & 119 FOR ADDITIONAL SIGNS ON S.R. 301, LAGRANGE - ELYRIA RD. AND RAMP TERMINALS.

SEE SHEETS 91&92 FOR SIGNING QUANTITIES

SEE SHEET 107 FOR OVERHEAD SIGNING QUANTITIES

OVERHEAD SIGN SUPPORTS TO BE REPLACED

SEE SHEET 122 & 123 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS SIGN # 2, 5, 7, 9 & 12

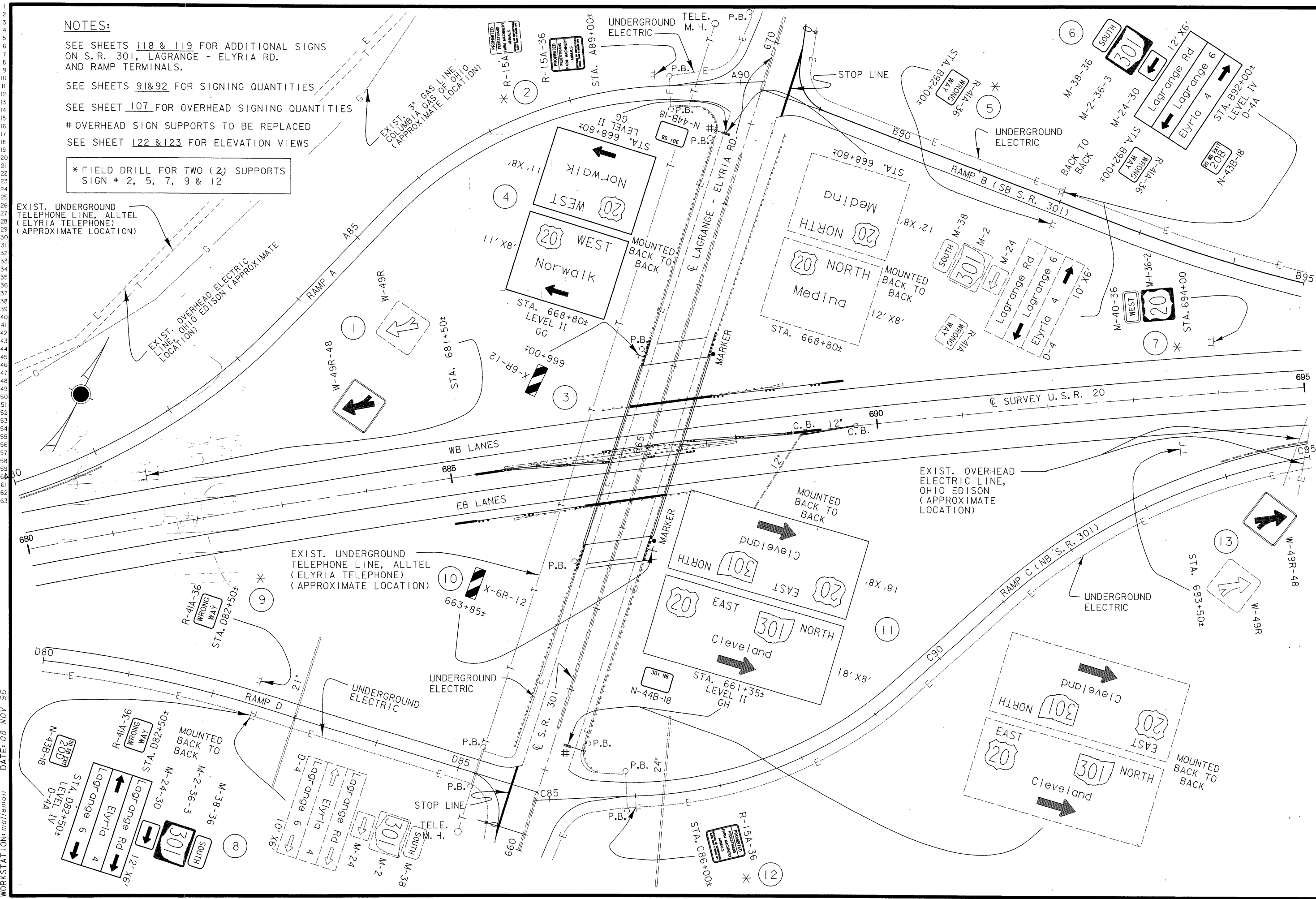
EXIST. UNDERGROUND TELEPHONE LINE, ALLTEL (ELYRIA TELEPHONE) (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC LINE, OHIO EDISON (APPROXIMATE LOCATION)

EXIST. UNDERGROUND TELEPHONE LINE, ALLTEL (ELYRIA TELEPHONE) (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC LINE, OHIO EDISON (APPROXIMATE LOCATION)

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WORKSTATION: mallemann DATE: 08 NOV 96



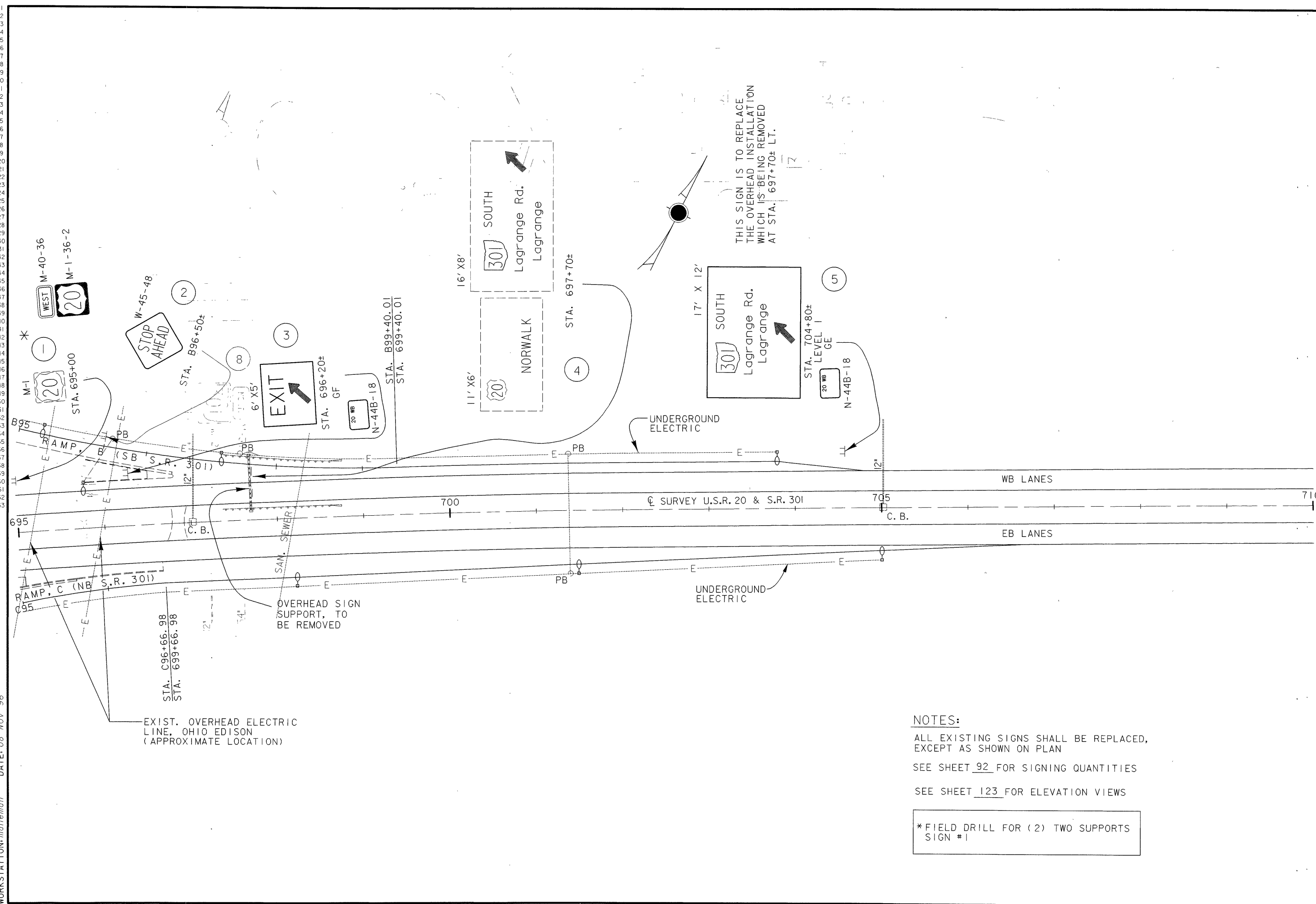
SIGNING PLAN SHEETS
STA. 680+00 TO STA. 695+00

LOR-20-12.62

109
351

DESIGN FILE: c:\dgn\lor20\fencel.dgn
 WORKSTATION: ml/eman DATE: 08 NOV 96

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THIS SIGN IS TO REPLACE THE OVERHEAD INSTALLATION WHICH IS BEING REMOVED AT STA. 697+70± LT.

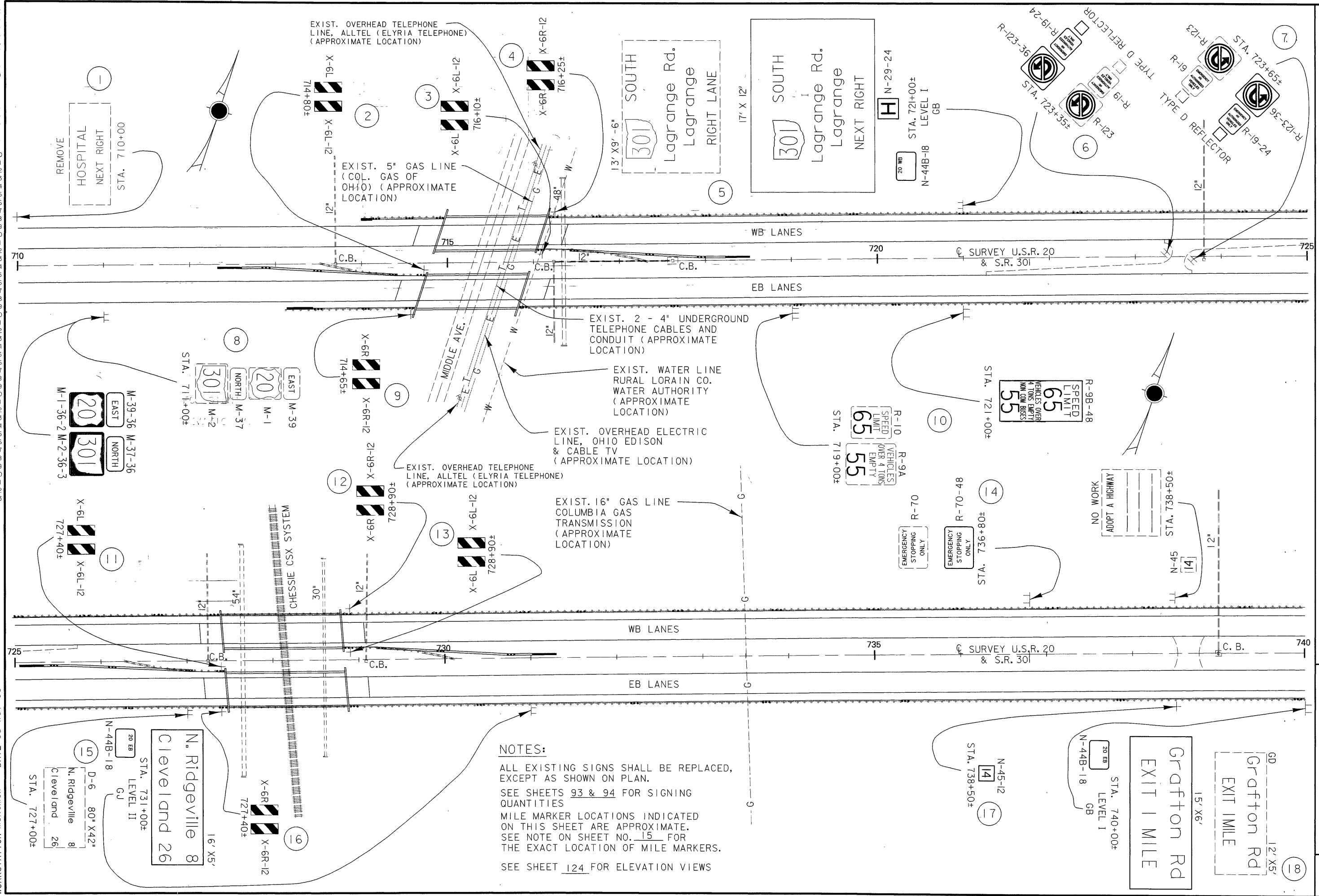
NOTES:
 ALL EXISTING SIGNS SHALL BE REPLACED, EXCEPT AS SHOWN ON PLAN
 SEE SHEET 92 FOR SIGNING QUANTITIES
 SEE SHEET 123 FOR ELEVATION VIEWS

* FIELD DRILL FOR (2) TWO SUPPORTS SIGN #1

SIGNING PLAN SHEET
 STA. 695+00 TO STA. 710+00

LOR-20-12.62

110
351



NOTES:
 ALL EXISTING SIGNS SHALL BE REPLACED, EXCEPT AS SHOWN ON PLAN.
 SEE SHEETS 93 & 94 FOR SIGNING QUANTITIES
 MILE MARKER LOCATIONS INDICATED ON THIS SHEET ARE APPROXIMATE. SEE NOTE ON SHEET NO. 15 FOR THE EXACT LOCATION OF MILE MARKERS.
 SEE SHEET 124 FOR ELEVATION VIEWS

DESIGN FILE: c:\dgn\lor20\encel.dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96

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REMOVE
 HOSPITAL
 NEXT RIGHT
 STA. 710+00

M-1-36-2 M-2-36-3
 EAST 20 NORTH 301
 M-39-36 EAST 20 NORTH 301
 M-37-36 NORTH 301
 M-1 M-37
 STA. 711+00±

5
 N. Ridgeville 8
 Cleveland 26
 STA. 727+00±
 D-6 80° X42'
 N. Ridgeville 8
 Cleveland 26
 STA. 731+00±
 LEVEL II
 N-44B-18
 GJ

6
 N. Ridgeville 8
 Cleveland 26
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

7
 SOUTH Lagrange Rd. Lagrange NEXT RIGHT
 STA. 721+00±
 LEVEL I
 N-44B-18
 GB

8
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

9
 Grafton Rd EXIT 1 MILE
 STA. 740+00±
 LEVEL I
 N-44B-18
 GB

10
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

11
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

12
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

13
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

14
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

15
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

16
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

17
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

18
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

19
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

20
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

21
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

22
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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23
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

24
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

25
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

26
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

27
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

28
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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29
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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30
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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31
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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32
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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33
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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34
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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35
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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36
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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37
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

38
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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39
 Grafton Rd EXIT 1 MILE
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 LEVEL I
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 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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 GB

41
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

42
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

43
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

44
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

45
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

46
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

47
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

48
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

49
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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50
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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51
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

52
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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53
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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54
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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 GB

55
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
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 GB

56
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

57
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
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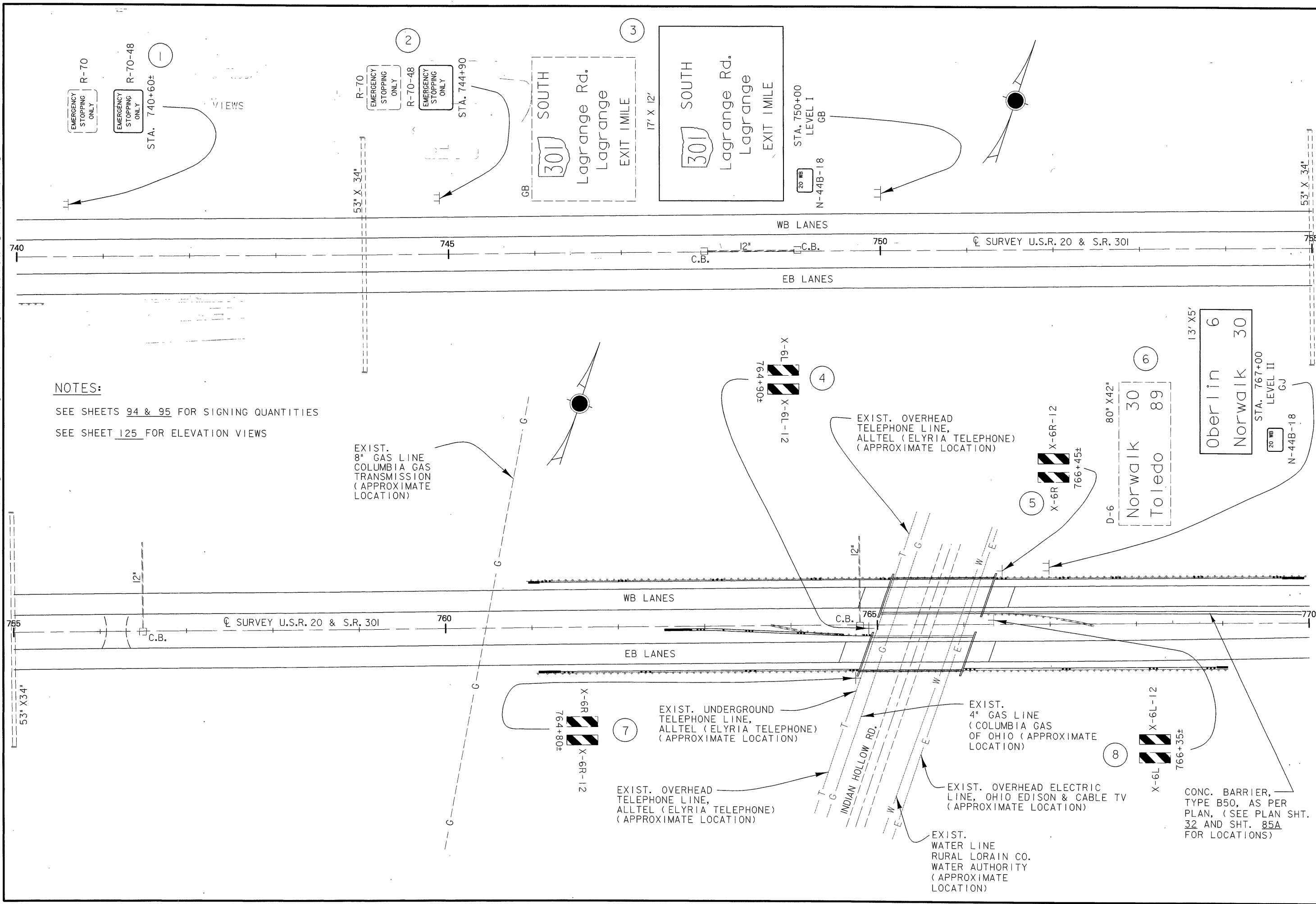
58
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

59
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

60
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

61
 Grafton Rd EXIT 1 MILE
 STA. 738+50±
 LEVEL I
 N-44B-18
 GB

DESIGN FILE: c:\dgn\lor20\fence1.dgn
 WORKSTATION: mallemann DATE: 11 DEC 96

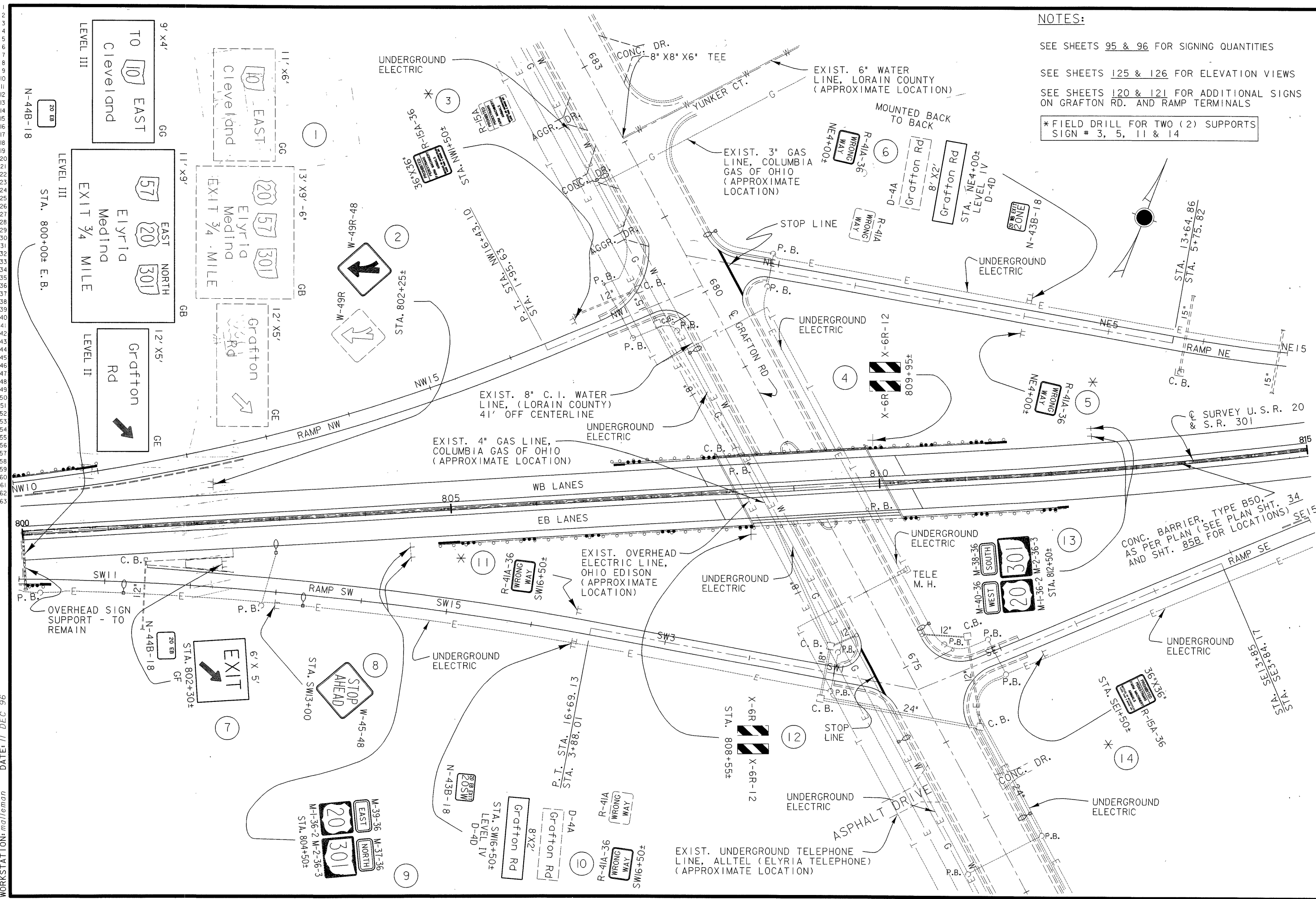


NOTES:
 SEE SHEETS 94 & 95 FOR SIGNING QUANTITIES
 SEE SHEET 125 FOR ELEVATION VIEWS

SIGNING PLAN SHEETS
STA 740+00 TO STA.770+00

LOR-20-12.62

DESIGN FILE: c:\dgn\lor20\lance2.dgn
WORKSTATION: mal/lema DATE: 11 DEC 96



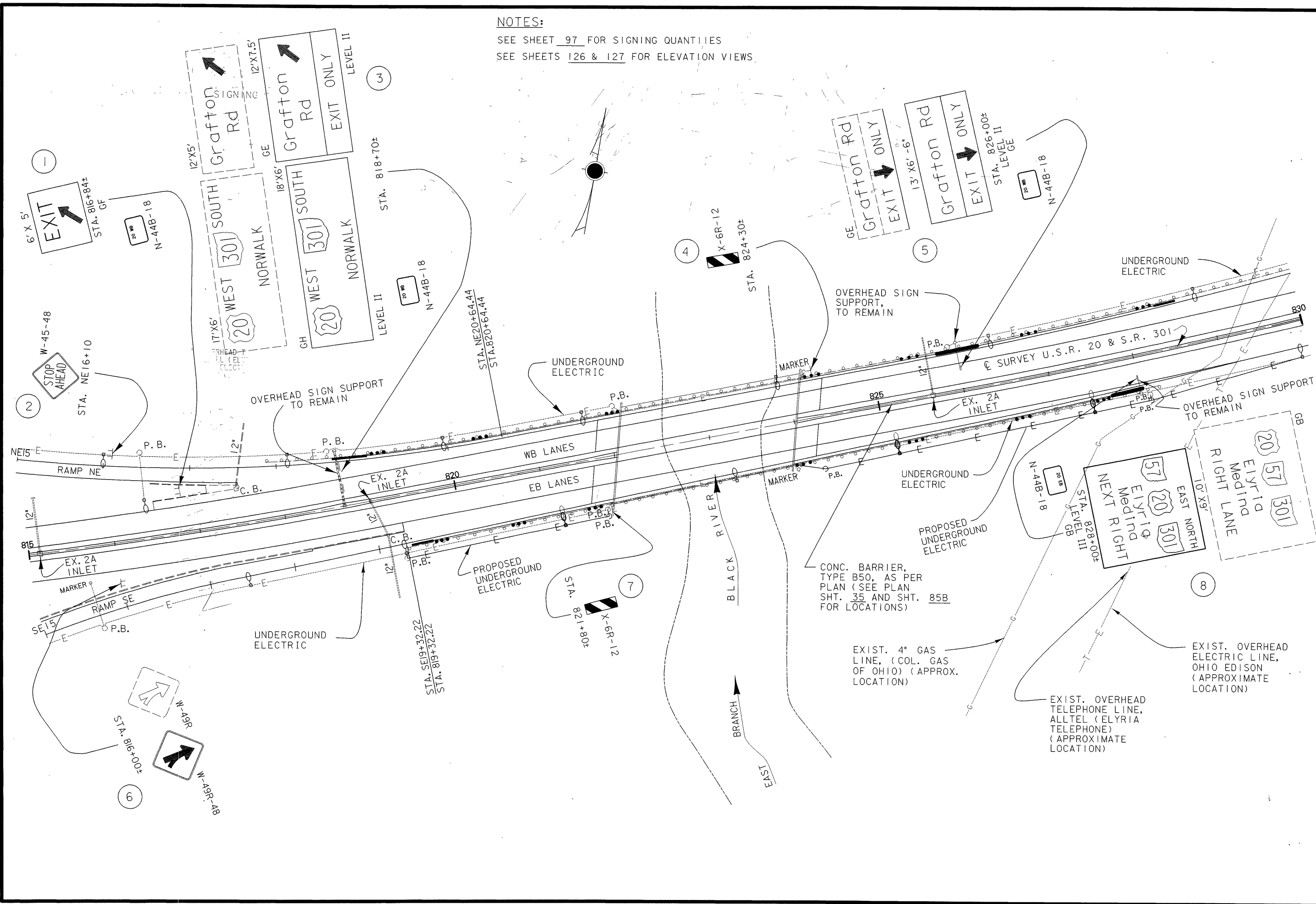
NOTES:
SEE SHEETS 95 & 96 FOR SIGNING QUANTITIES
SEE SHEETS 125 & 126 FOR ELEVATION VIEWS
SEE SHEETS 120 & 121 FOR ADDITIONAL SIGNS ON GRAFTON RD. AND RAMP TERMINALS
* FIELD DRILL FOR TWO (2) SUPPORTS SIGN # 3, 5, 11 & 14

SIGNING PLAN SHEET
STA. 800+00 TO STA. 815+00

LOR-20-12.62
114
351

DESIGN FILE: c:\dgn\lor20\ fence2.dgn
WORKSTATION: mal/lema DATE: 11 DEC 96

NOTES:
SEE SHEET 97 FOR SIGNING QUANTITIES
SEE SHEETS 126 & 127 FOR ELEVATION VIEWS



SIGNING PLAN SHEET
STA. 815+00 TO STA. 830+00

LOR-20-12.62

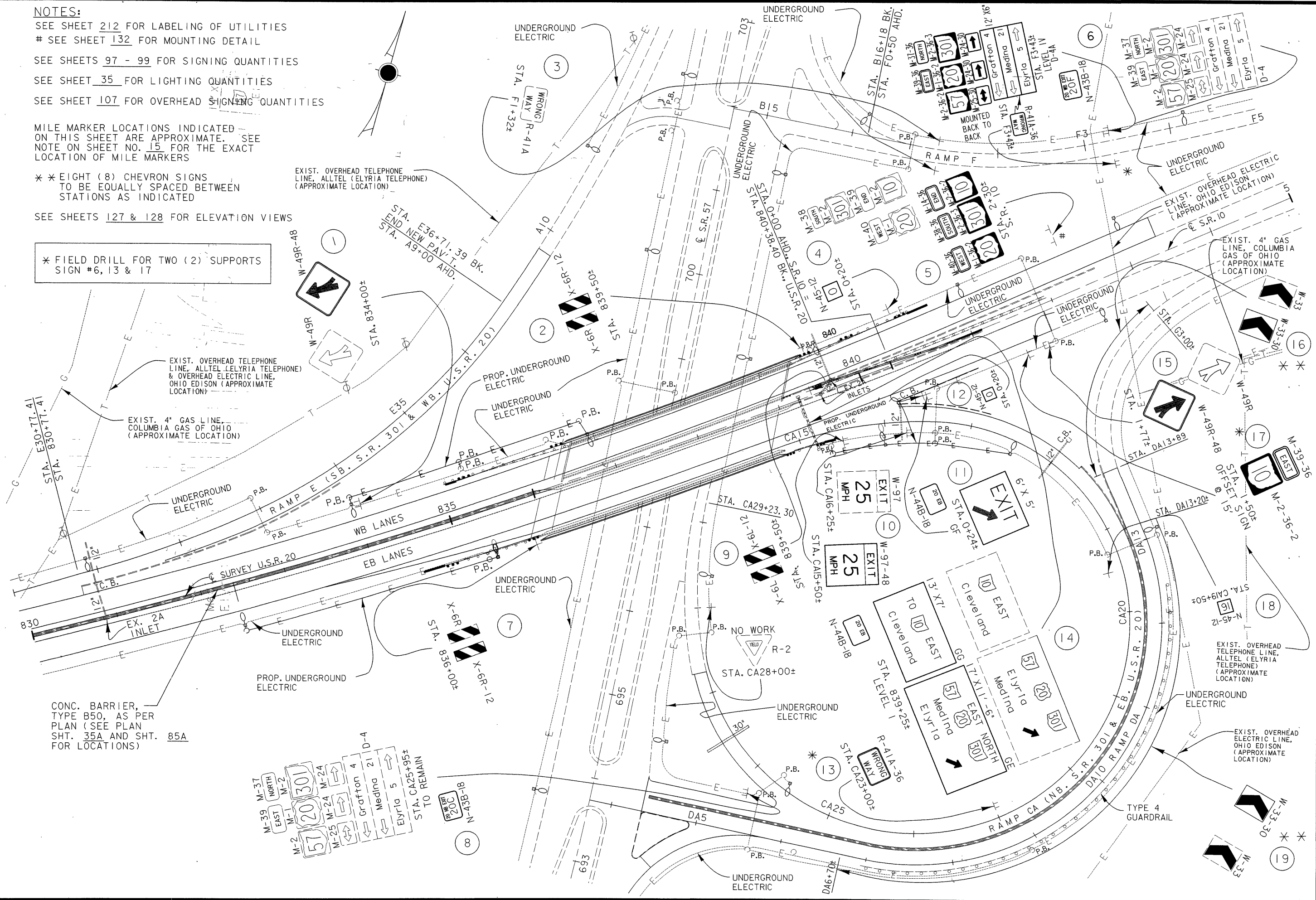
NOTES:
 SEE SHEET 212 FOR LABELING OF UTILITIES
 # SEE SHEET 132 FOR MOUNTING DETAIL
 SEE SHEETS 97 - 99 FOR SIGNING QUANTITIES
 SEE SHEET 35 FOR LIGHTING QUANTITIES
 SEE SHEET 107 FOR OVERHEAD SIGNING QUANTITIES

MILE MARKER LOCATIONS INDICATED ON THIS SHEET ARE APPROXIMATE. SEE NOTE ON SHEET NO. 15 FOR THE EXACT LOCATION OF MILE MARKERS

** EIGHT (8) CHEVRON SIGNS TO BE EQUALLY SPACED BETWEEN STATIONS AS INDICATED

SEE SHEETS 127 & 128 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS SIGN #6, 13 & 17



DESIGN FILE: cs\dgn\lor20\lence2.dgn
 WORKSTATION: malleman DATE: 11 DEC 96

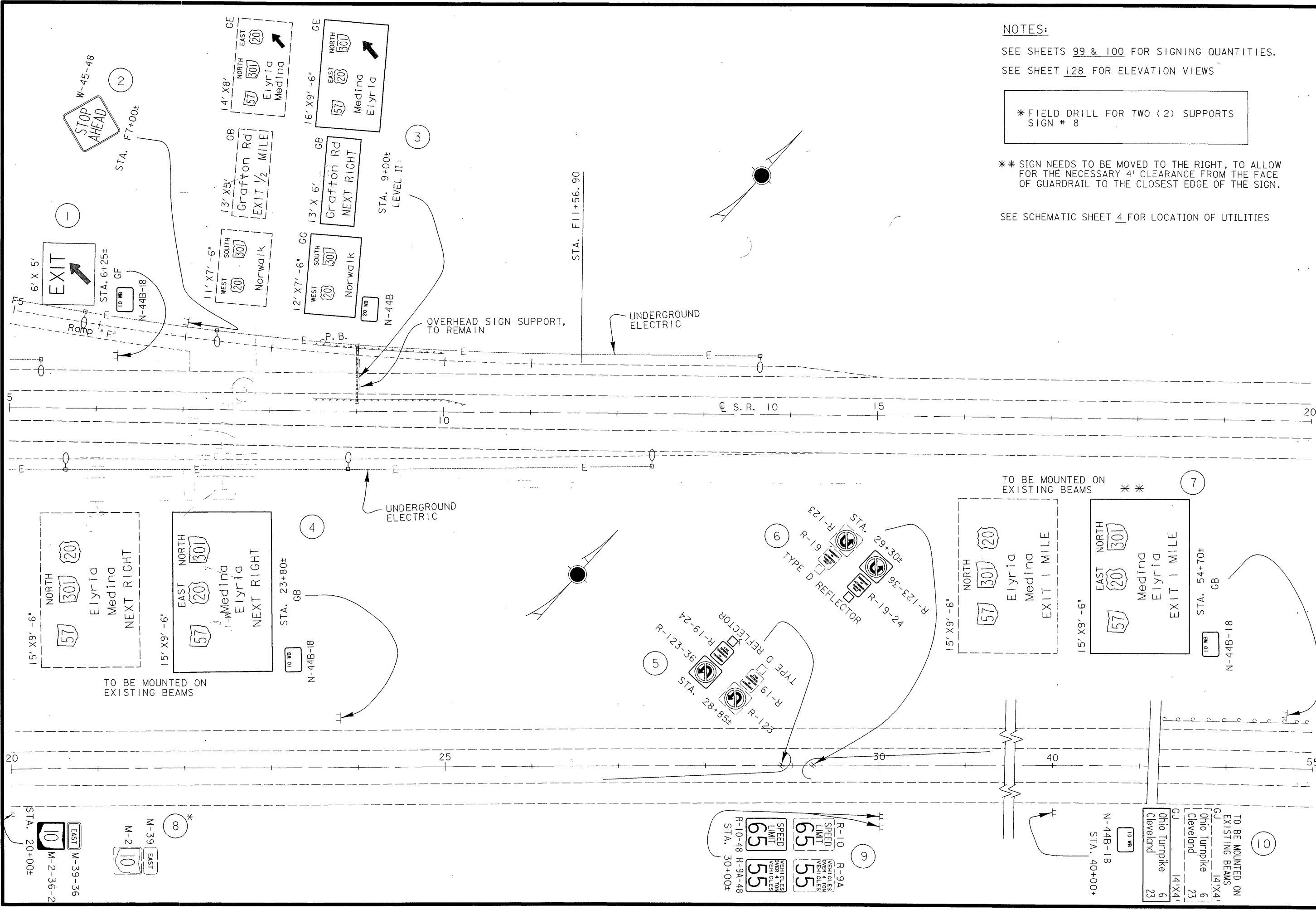
SIGNING PLAN SHEET
 STA. 830+00 U.S.R. 20 TO STA. 5+00 S.R. 10

LOR-20-12.62

116
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DESIGN FILE: c:\dgn\lor20\mike.dgn
 WORKSTATION: malleman DATE: 08 NOV 96

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NOTES:
 SEE SHEETS 99 & 100 FOR SIGNING QUANTITIES.
 SEE SHEET 128 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS
 SIGN # 8

** SIGN NEEDS TO BE MOVED TO THE RIGHT, TO ALLOW
 FOR THE NECESSARY 4' CLEARANCE FROM THE FACE
 OF GUARDRAIL TO THE CLOSEST EDGE OF THE SIGN.

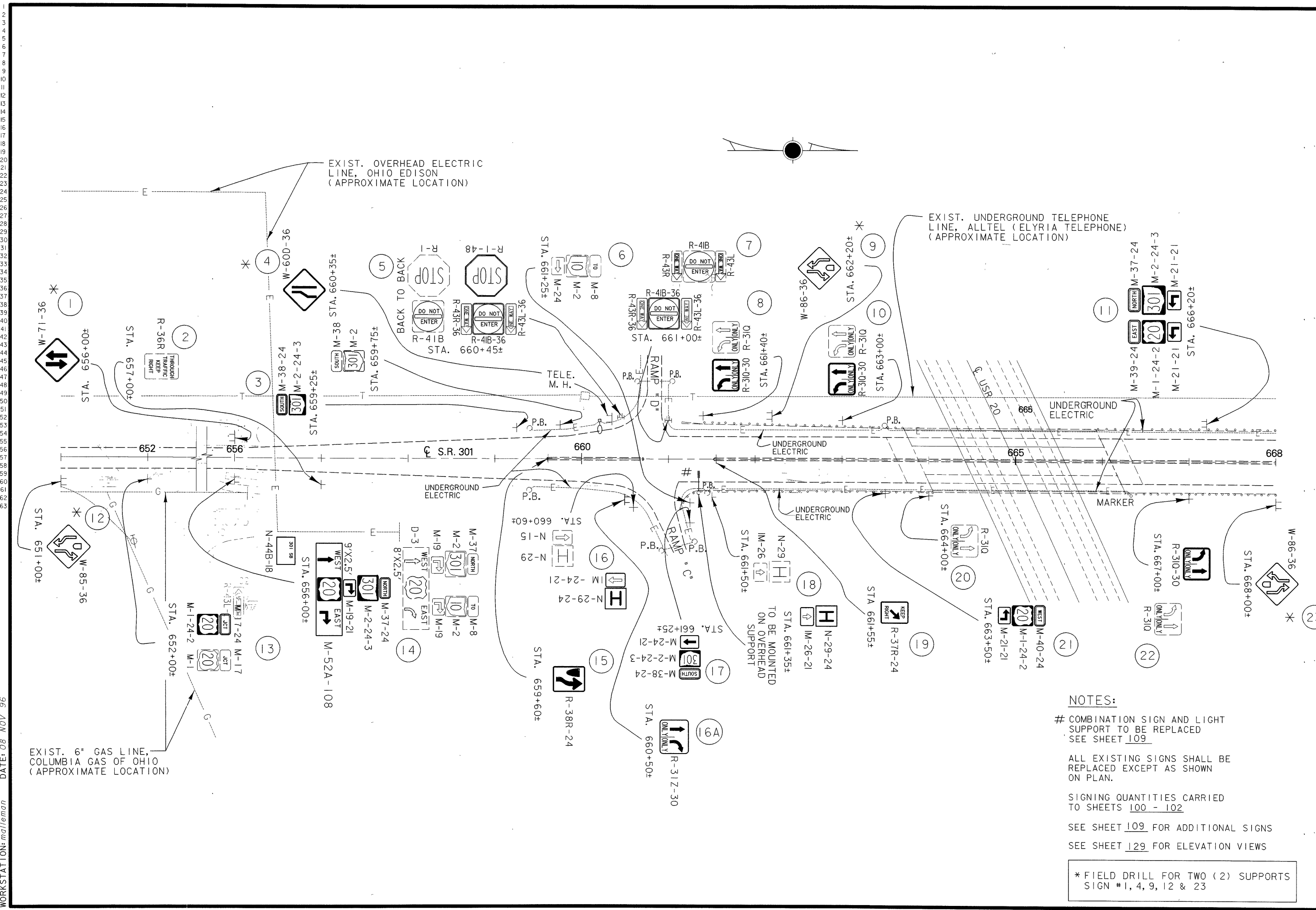
SEE SCHEMATIC SHEET 4 FOR LOCATION OF UTILITIES

SIGNING PLAN SHEET
 STA. 5+00 TO STA. 55+00, S.R. 10

LOR - 20 - 12.62

117
351

DESIGN FILE: c:\dgn\lor20\sign301.dgn
 WORKSTATION: mal\eman DATE: 08 NOV 96

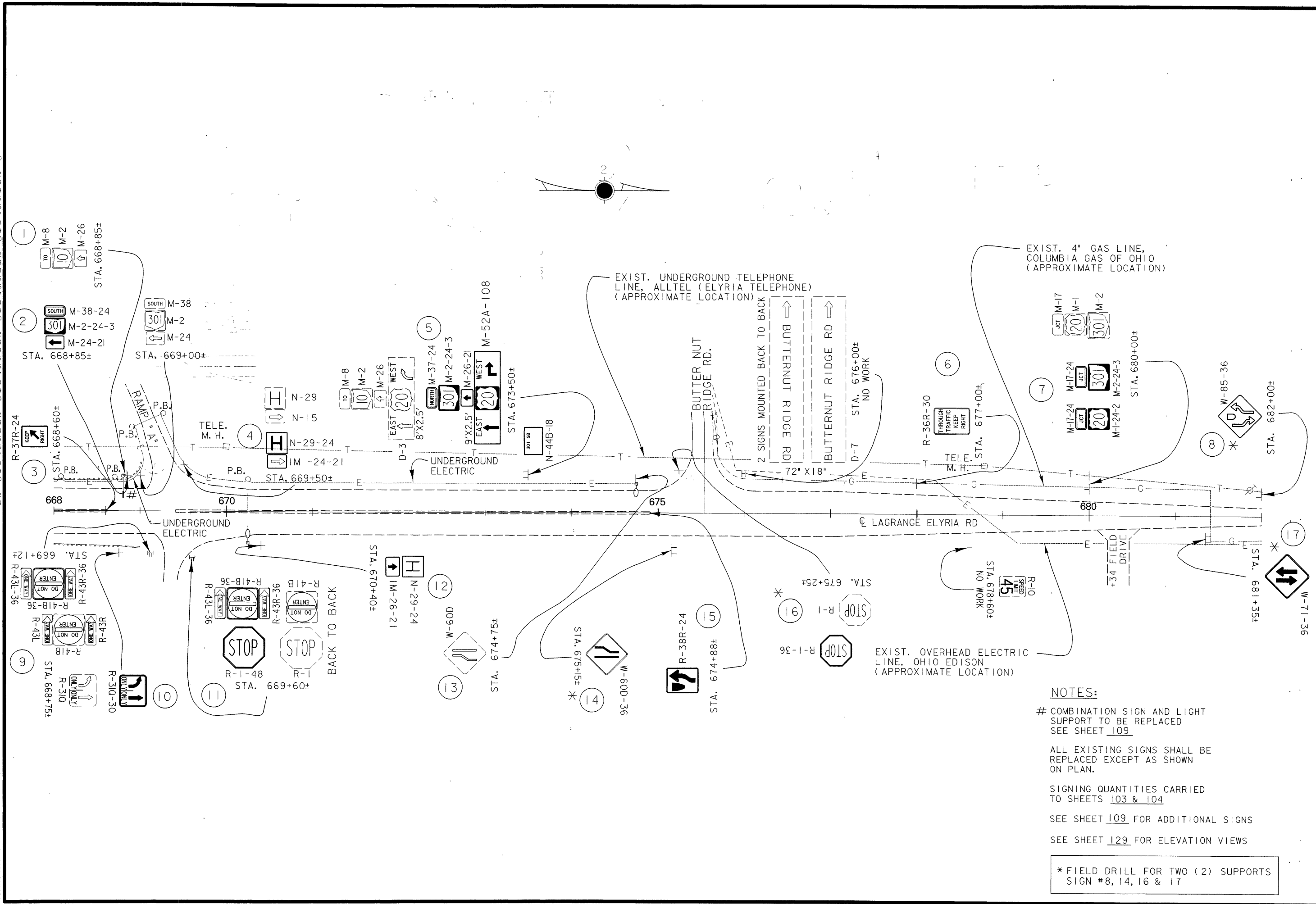


NOTES:

- # COMBINATION SIGN AND LIGHT SUPPORT TO BE REPLACED SEE SHEET 109
- ALL EXISTING SIGNS SHALL BE REPLACED EXCEPT AS SHOWN ON PLAN.
- SIGNING QUANTITIES CARRIED TO SHEETS 100 - 102
- SEE SHEET 109 FOR ADDITIONAL SIGNS
- SEE SHEET 129 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS SIGN #1, 4, 9, 12 & 23

DESIGN FILE: c:\dgn\lor20\sign301.dgn
 WORKSTATION: malleman DATE: 08 NOV 96



EXIST. 4" GAS LINE,
 COLUMBIA GAS OF OHIO
 (APPROXIMATE LOCATION)

EXIST. UNDERGROUND TELEPHONE
 LINE, ALLTEL (ELYRIA TELEPHONE)
 (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC
 LINE, OHIO EDISON
 (APPROXIMATE LOCATION)

NOTES:

- # COMBINATION SIGN AND LIGHT SUPPORT TO BE REPLACED SEE SHEET 109
- ALL EXISTING SIGNS SHALL BE REPLACED EXCEPT AS SHOWN ON PLAN.
- SIGNING QUANTITIES CARRIED TO SHEETS 103 & 104
- SEE SHEET 109 FOR ADDITIONAL SIGNS
- SEE SHEET 129 FOR ELEVATION VIEWS

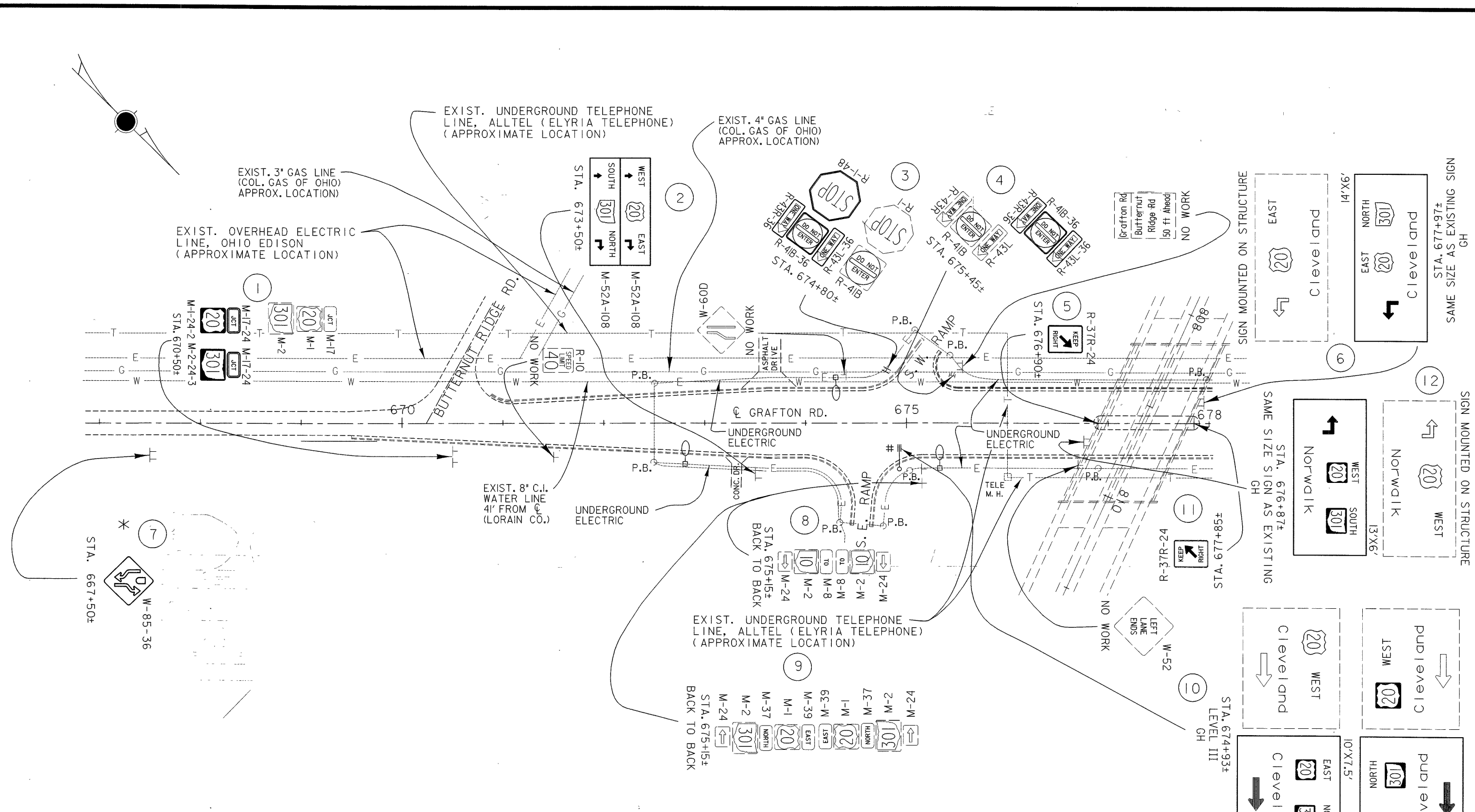
* FIELD DRILL FOR TWO (2) SUPPORTS
 SIGN #8, 14, 16 & 17

**SIGNING SHEET S.R. 301 & LAGRANGE ELYRIA RD.
 STA. 668+00 TO STA. 682+00**

LOR-20-12.62

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DESIGN FILE: c:\dgn\lor20\signgraf.dgn
 WORKSTATION: malleman DATE: 08 NOV 96

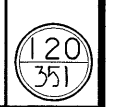


NOTES:
 ALL EXISTING SIGNS SHALL BE REPLACED,
 EXCEPT AS SHOWN ON PLAN
 SEE SHEETS 104 & 105 FOR SIGNING QUANTITIES
 SEE SHEET 107 FOR STRUCTURE MOUNTED SIGNING QUANTITIES
 # OVERHEAD SIGN SUPPORT TO REMAIN
 SEE SHEETS 129 & 130 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS
 SIGN #7

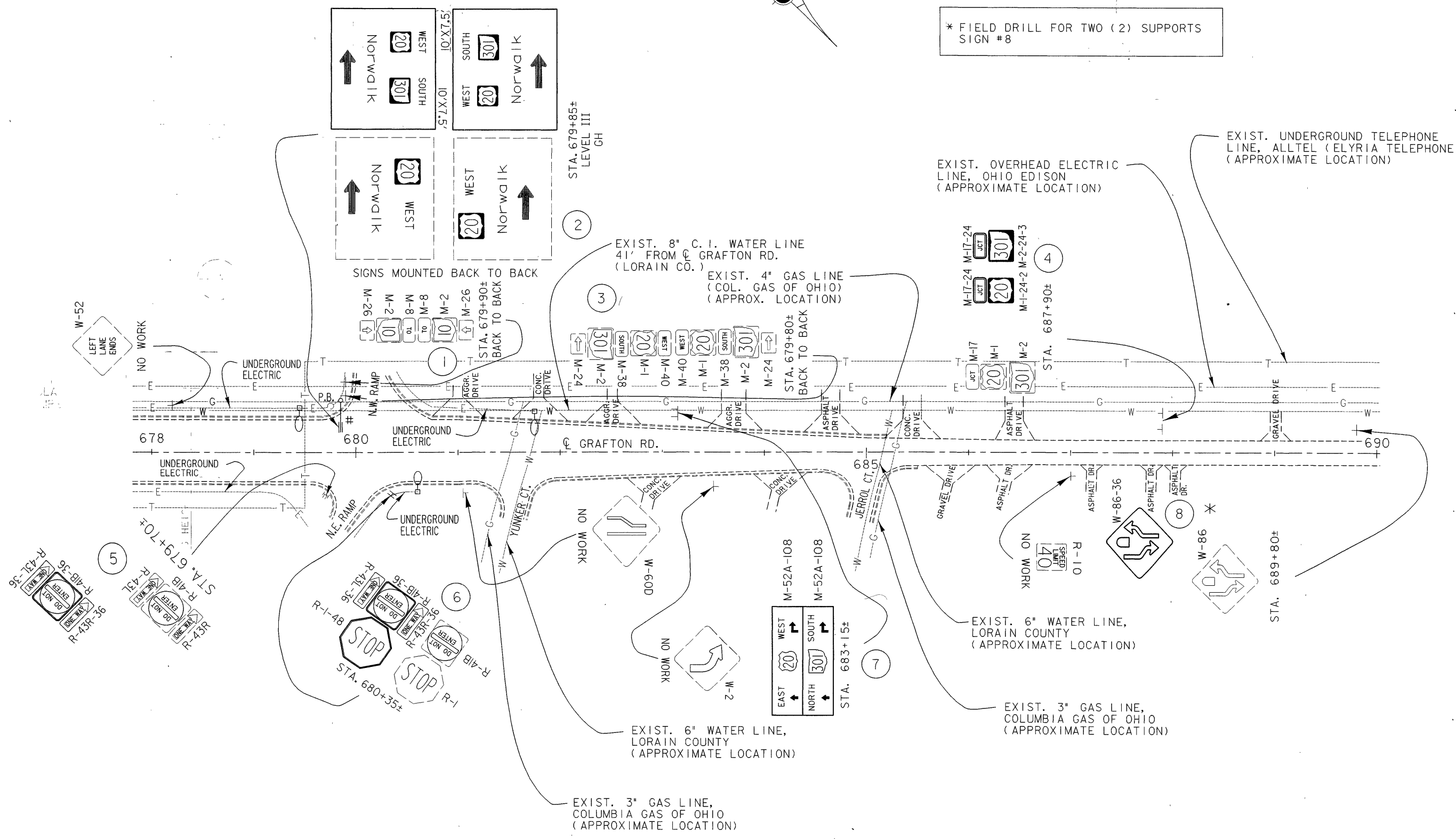
**SIGNING SHEET GRAFTON ROAD
 STA. 667+00 TO STA. 678+00**

LOR-20-12.62



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DESIGN FILE: c:\dgn\lor20\signgraf.dgn
 WORKSTATION: mallemann DATE: 08 NOV 96



NOTES:
 ALL EXISTING SIGNS SHALL BE REPLACED,
 EXCEPT AS SHOWN ON PLAN
 SEE SHEETS 105 & 106 FOR SIGNING QUANTITIES
 SEE SHEET 105 FOR OVERHEAD SIGNING QUANTITIES
 # OVERHEAD SIGN SUPPORT TO REMAIN
 SEE SHEET 130 FOR ELEVATION VIEWS

* FIELD DRILL FOR TWO (2) SUPPORTS
 SIGN #8

**SIGNING SHEET GRAFTON ROAD
 STA. 678+00 TO STA. 690+00**

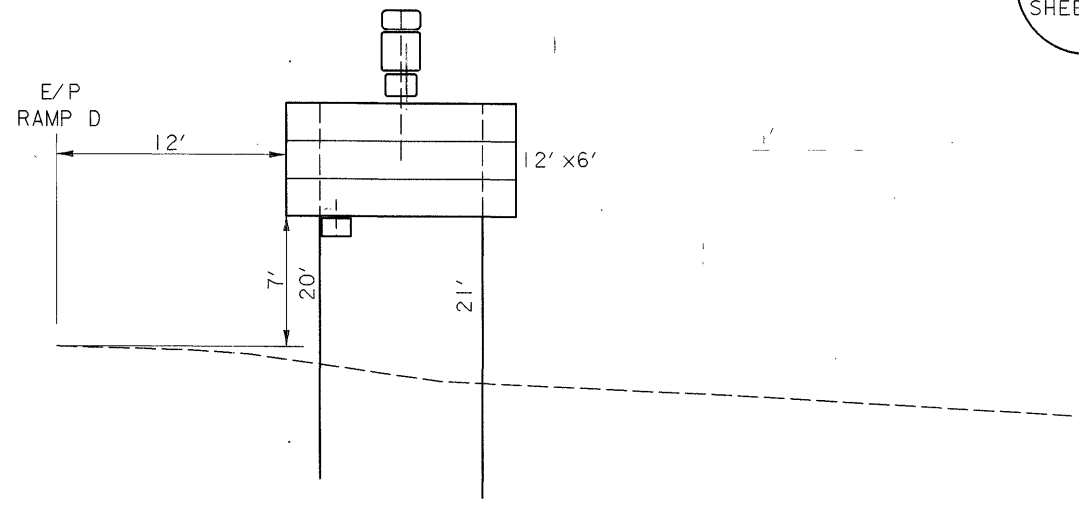
LOR-20-12.62

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351

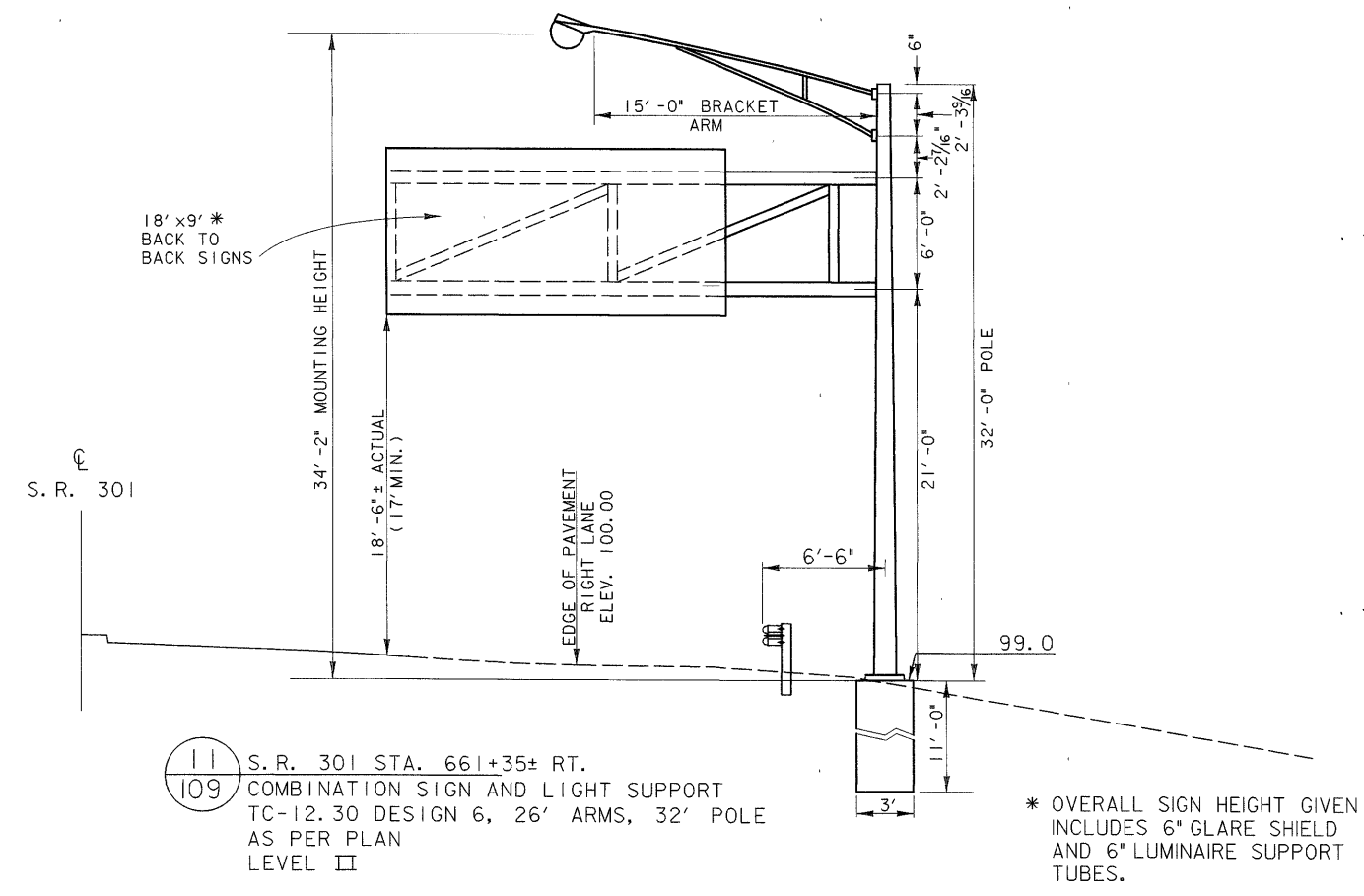
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DESIGN FILE: c:\dgn\lor20\signsl.dgn
WORKSTATION: mal/leman DATE: 08 NOV 96

SYMBOLOLOGY: SIGN NO.
SHEET NO.

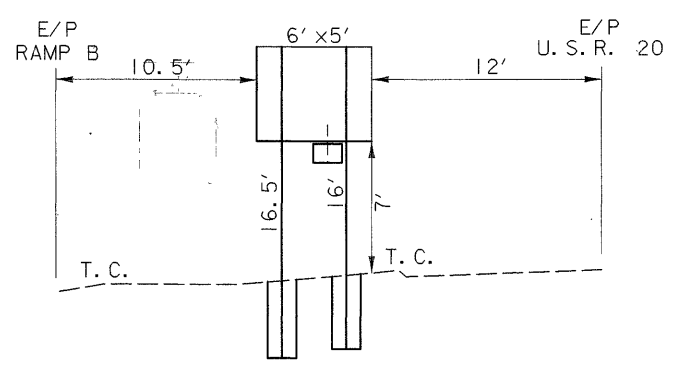


8
109 STA. 82+50± RT., RAMP "D"
TYPE "M", EMBEDMENT DEPTH 6'
LEVEL IV

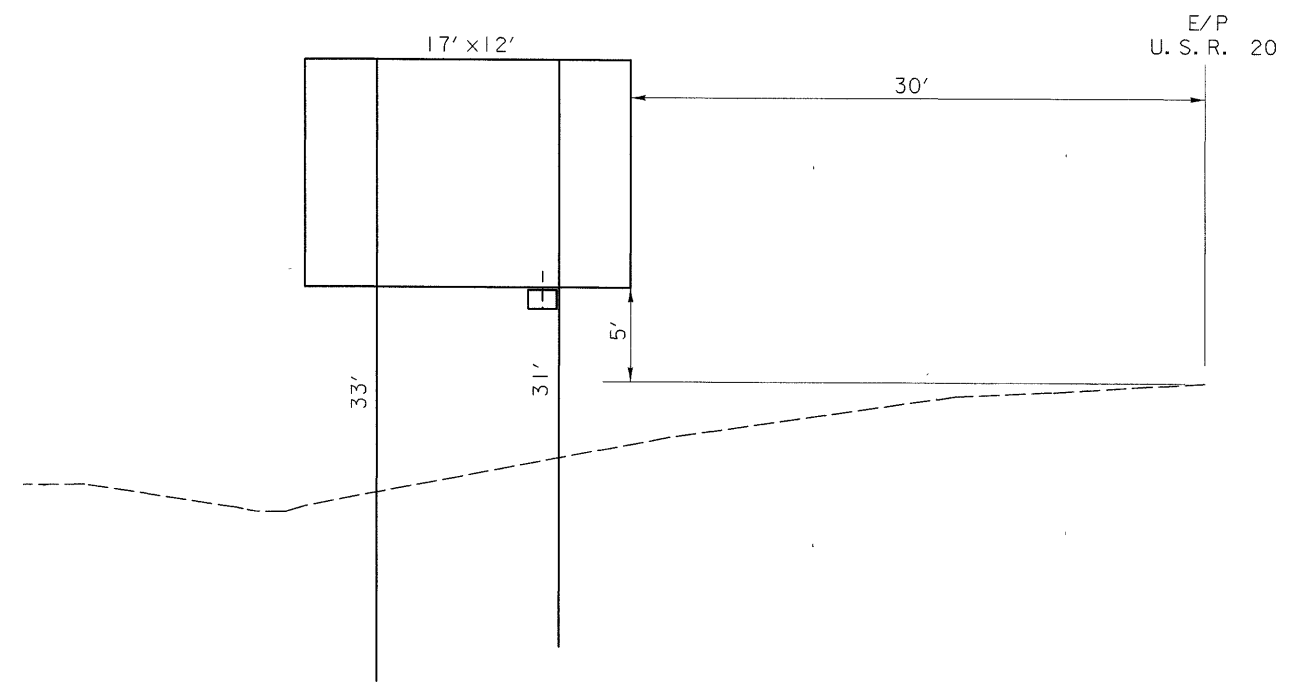


11
109 S.R. 301 STA. 661+35± RT.
COMBINATION SIGN AND LIGHT SUPPORT
TC-12.30 DESIGN 6, 26' ARMS, 32' POLE
AS PER PLAN
LEVEL II

* OVERALL SIGN HEIGHT GIVEN
INCLUDES 6" GLARE SHIELD
AND 6" LUMINAIRE SUPPORT
TUBES.



3
110 STA. 696+20± LT., W.B. U.S.R. 20
S4X7.7



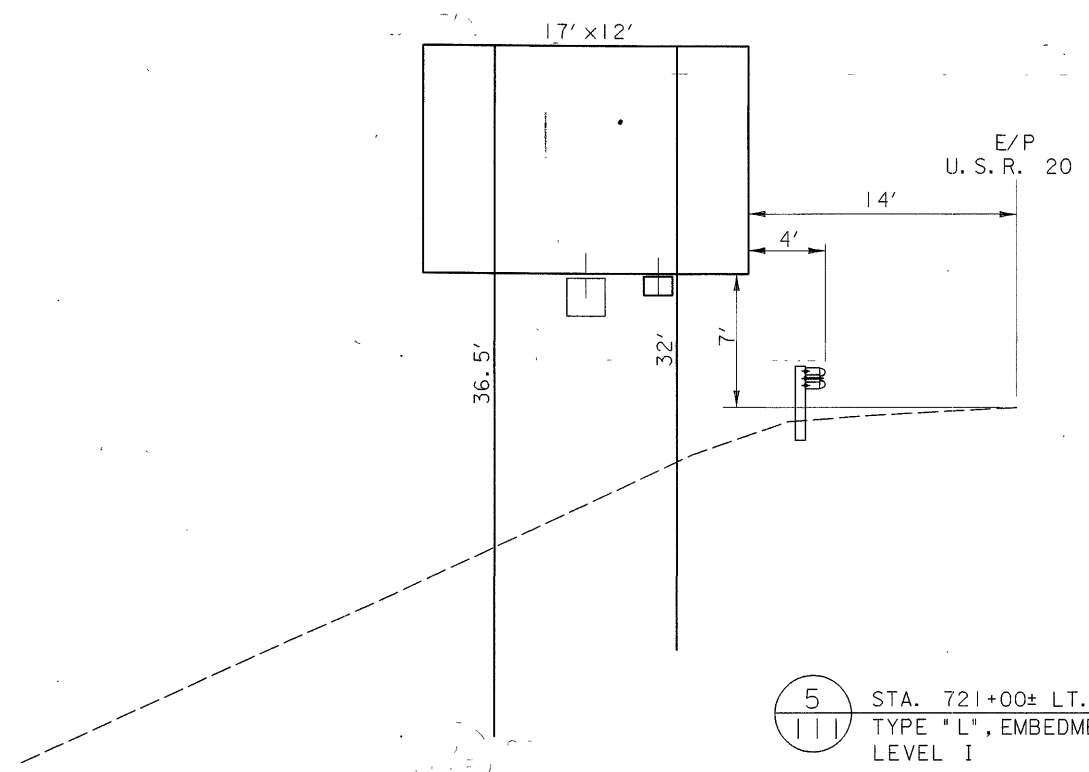
5
110 STA. 704+80± LT., W.B. U.S.R. 20
TYPE "L", EMBEDMENT DEPTH 10'
LEVEL I

SIGN ELEVATIONS

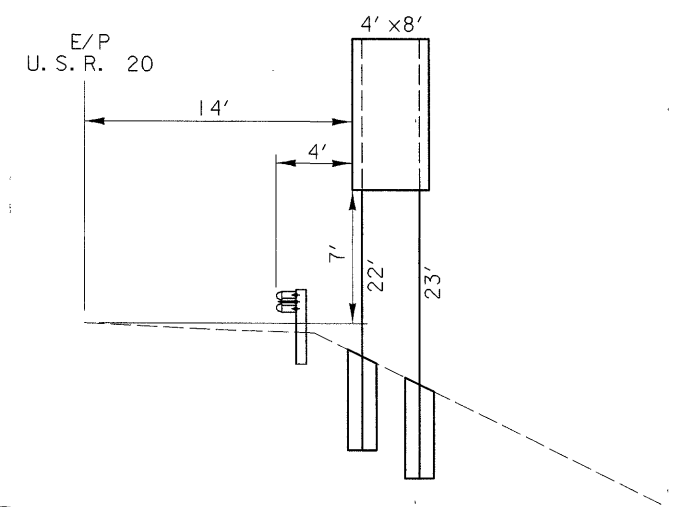
LOR-20-12.62

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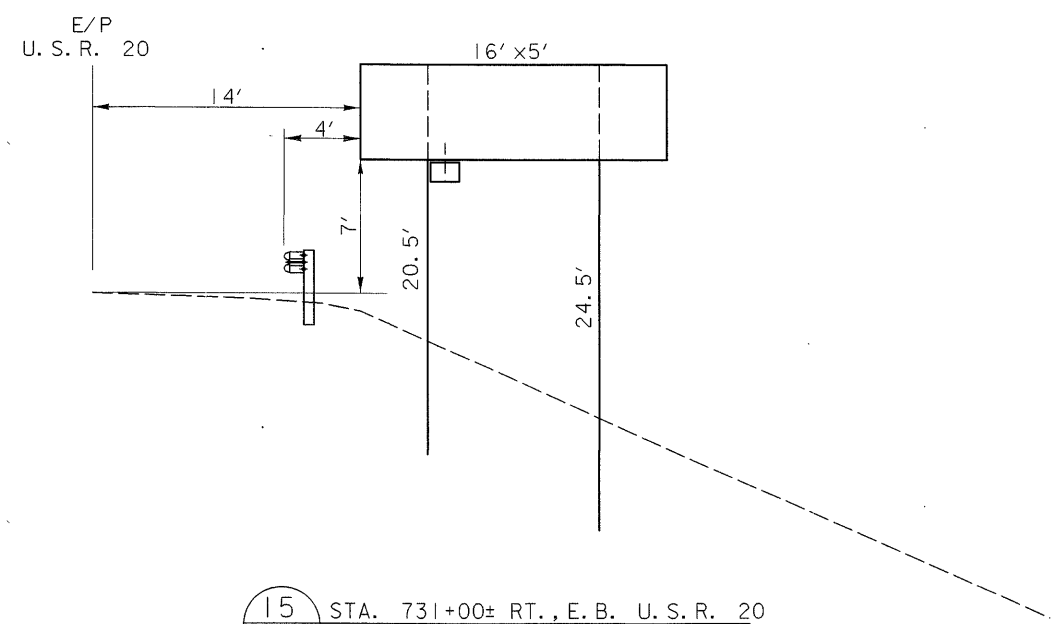
DESIGN FILE: c:\dgn\lor20\signs\dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96



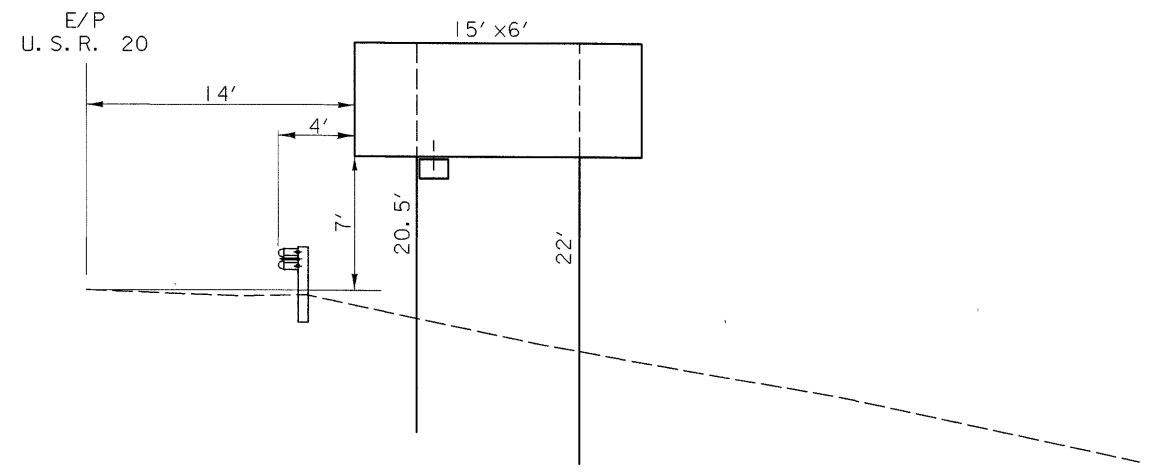
5 STA. 721+00± LT., W.B. U.S.R. 20
 TYPE "L", EMBEDMENT DEPTH 10'
 LEVEL 1



10 STA. 721+00± RT., E.B. U.S.R. 20
 TYPE "W6x9"



15 STA. 731+00± RT., E.B. U.S.R. 20
 TYPE "M", EMBEDMENT DEPTH 6'
 LEVEL 1



18 STA. 740+00± RT., E.B. U.S.R. 20
 TYPE "M", EMBEDMENT DEPTH 6'
 LEVEL 1

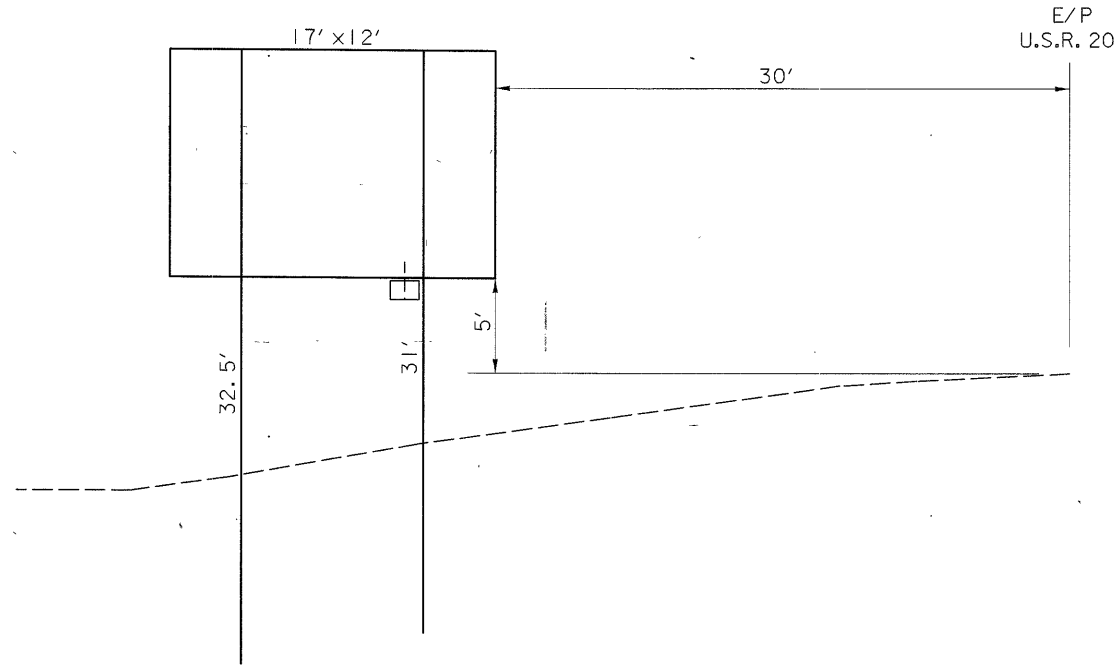
SYMBOLGY: SIGN NO.
 SHEET NO.

SIGN ELEVATIONS

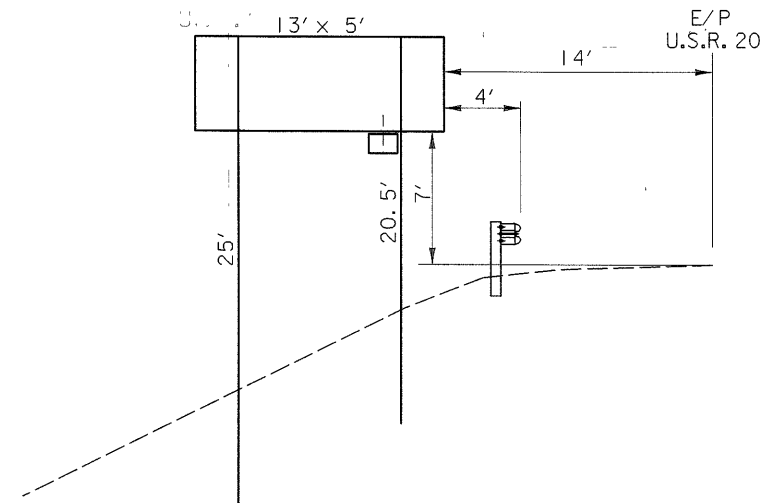
LOR-20-12.62

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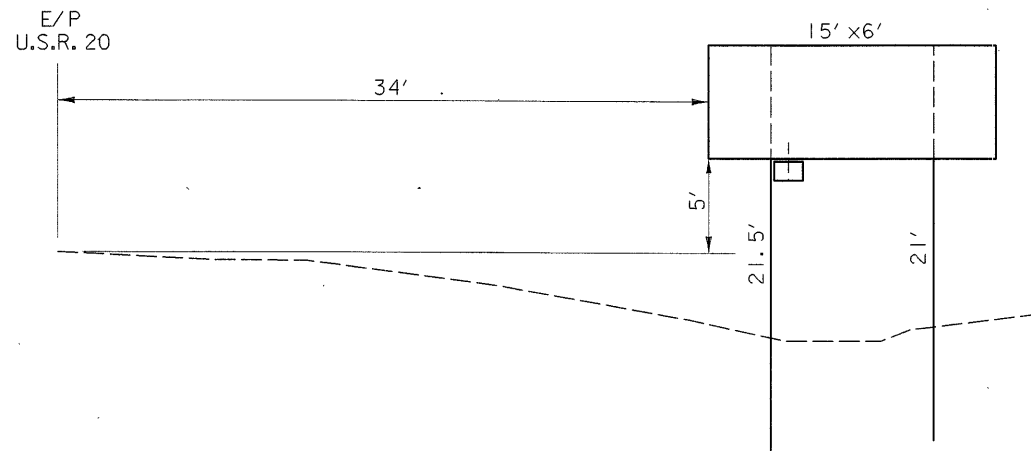


3
112 STA. 750+00± LT., W.B. U.S.R. 20
TYPE "L", EMBEDMENT DEPTH 10'
LEVEL I



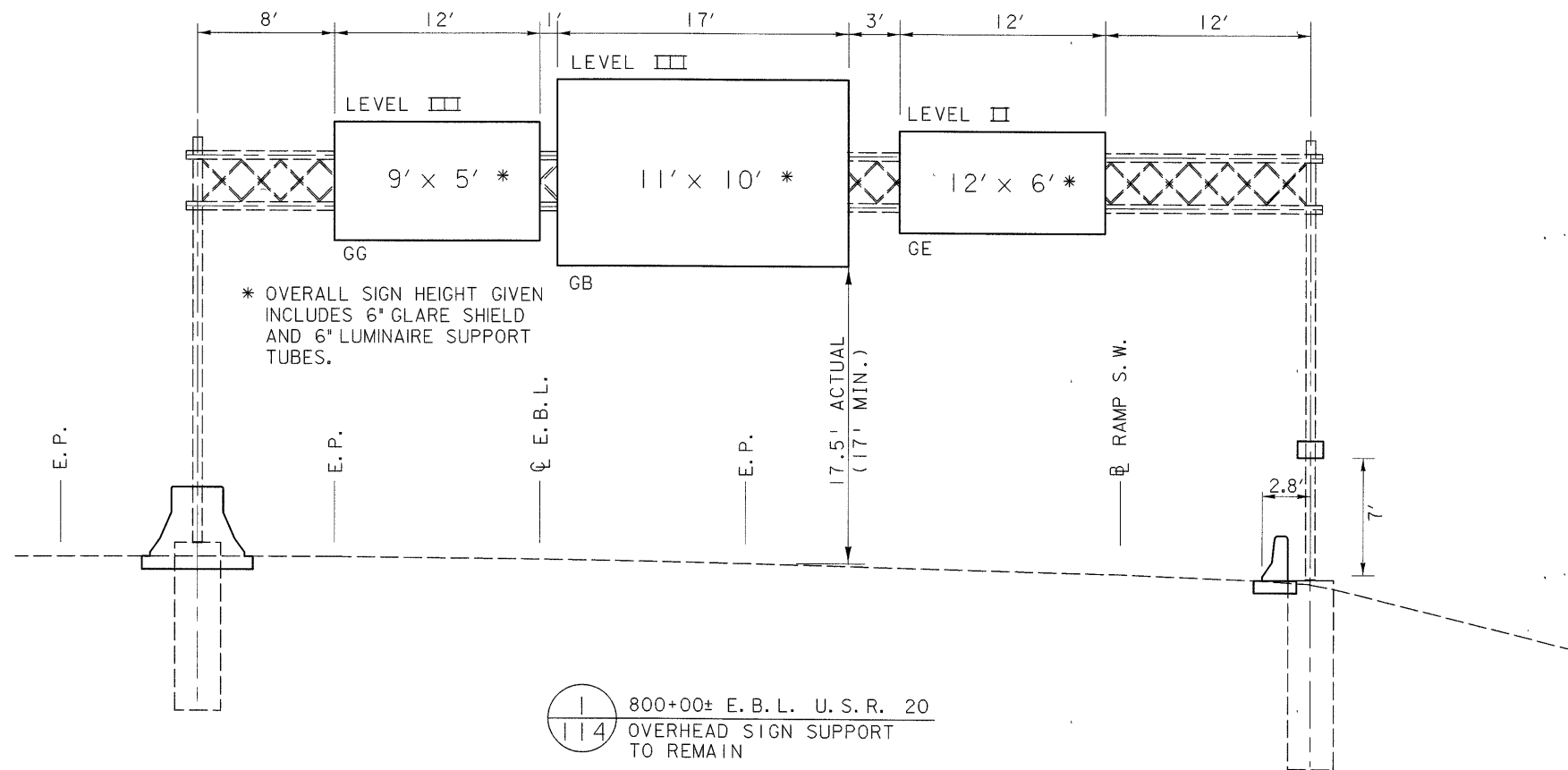
6
112 STA. 767+00± LT., W.B. U.S.R. 20
TYPE "M", EMBEDMENT DEPTH 6'
LEVEL I

SYMBOLLOGY: SIGN NO.
SHEET NO.



3
113 STA. 781+00± RT., E.B. U.S.R. 20
TYPE "L", EMBEDMENT DEPTH 6'
LEVEL I

* OVERALL SIGN HEIGHT GIVEN INCLUDES
6" GLARE SHIELD AND 6" LUMINAIRE
SUPPORT TUBES



DESIGN FILE: c:\dgn\lor-20\signs\dgn
WORKSTATION: mal/man DATE: 08 NOV 96

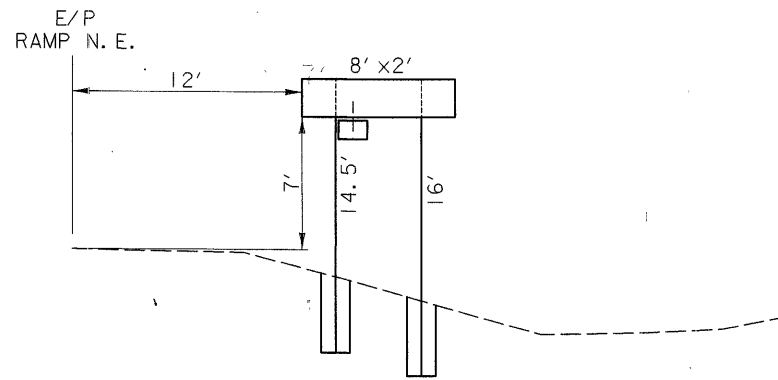
SIGN ELEVATIONS

LOR-20-12.62

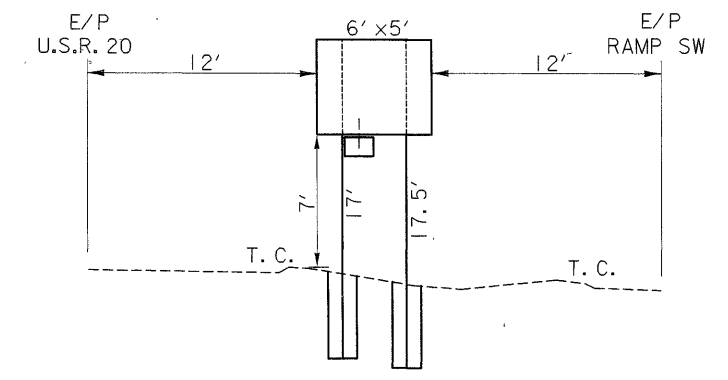
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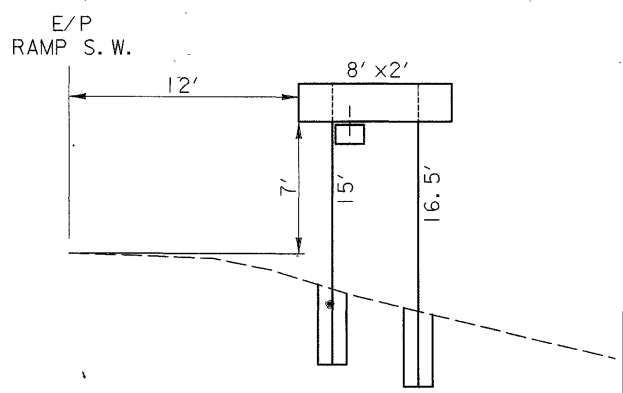
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 WORKSTATION: mal/eman DATE: 08 NOV 96



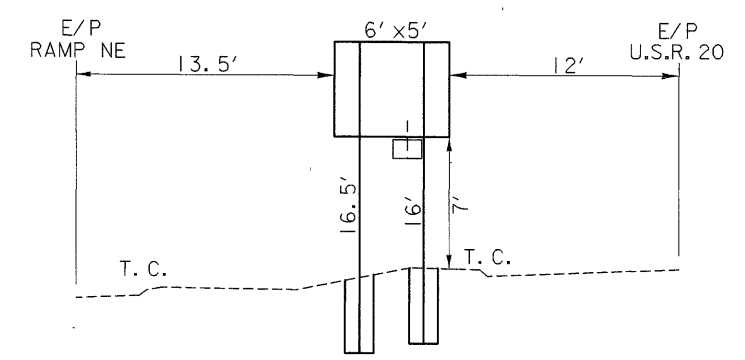
6
114 STA. 4+00± LT., RAMP "N. E."
 S4x7.7
 LEVEL IV



7
114 STA. 802+30± RT., E. B. U. S. R. 20
 S4x7.7



10
114 STA. 16+50± RT., RAMP "S. W."
 S4x7.7
 LEVEL IV



1
115 STA. 816+84± LT., W. B. U. S. R. 20
 S4x7.7

SYMBOLOLOGY:

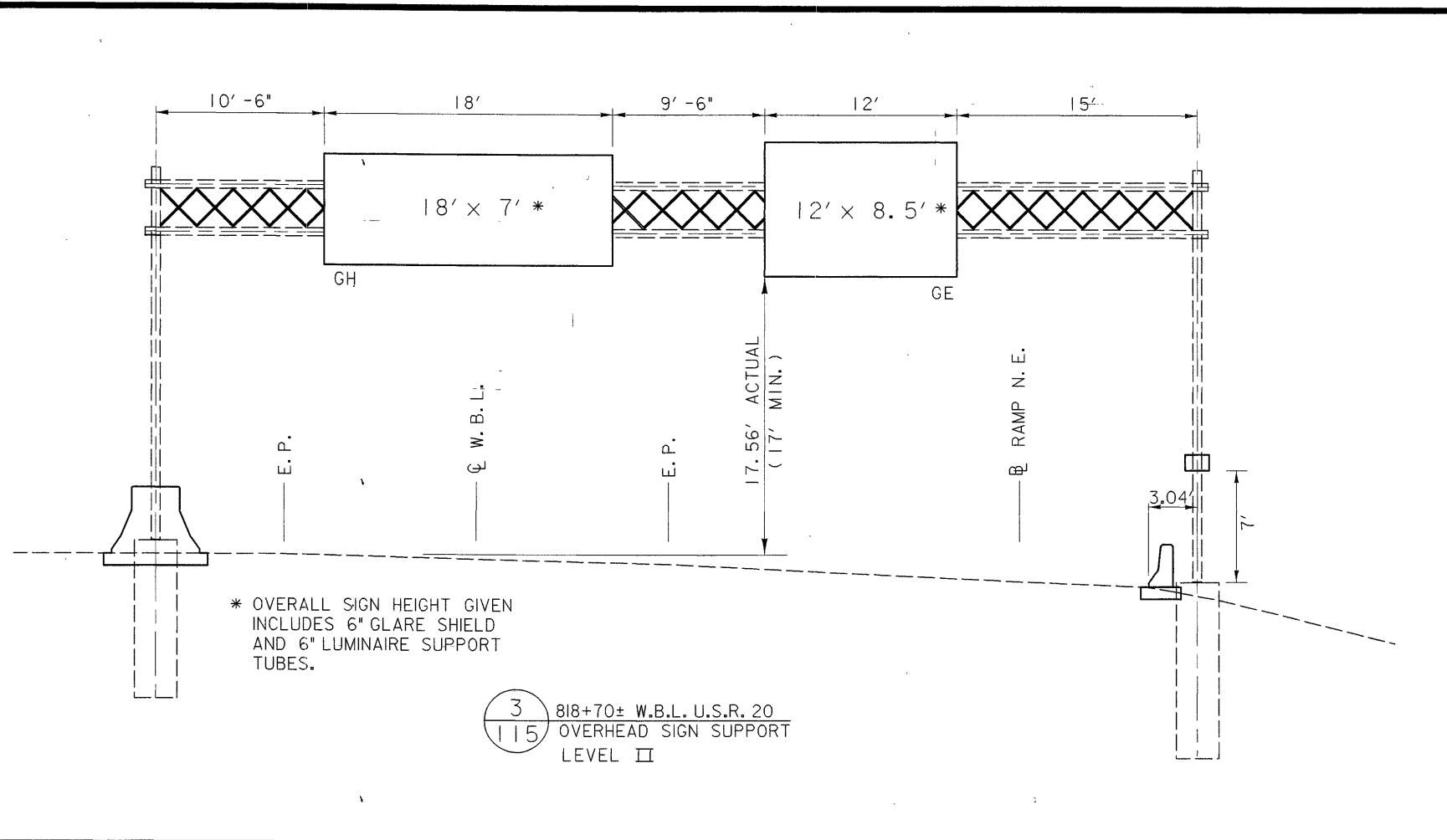


SIGN ELEVATIONS

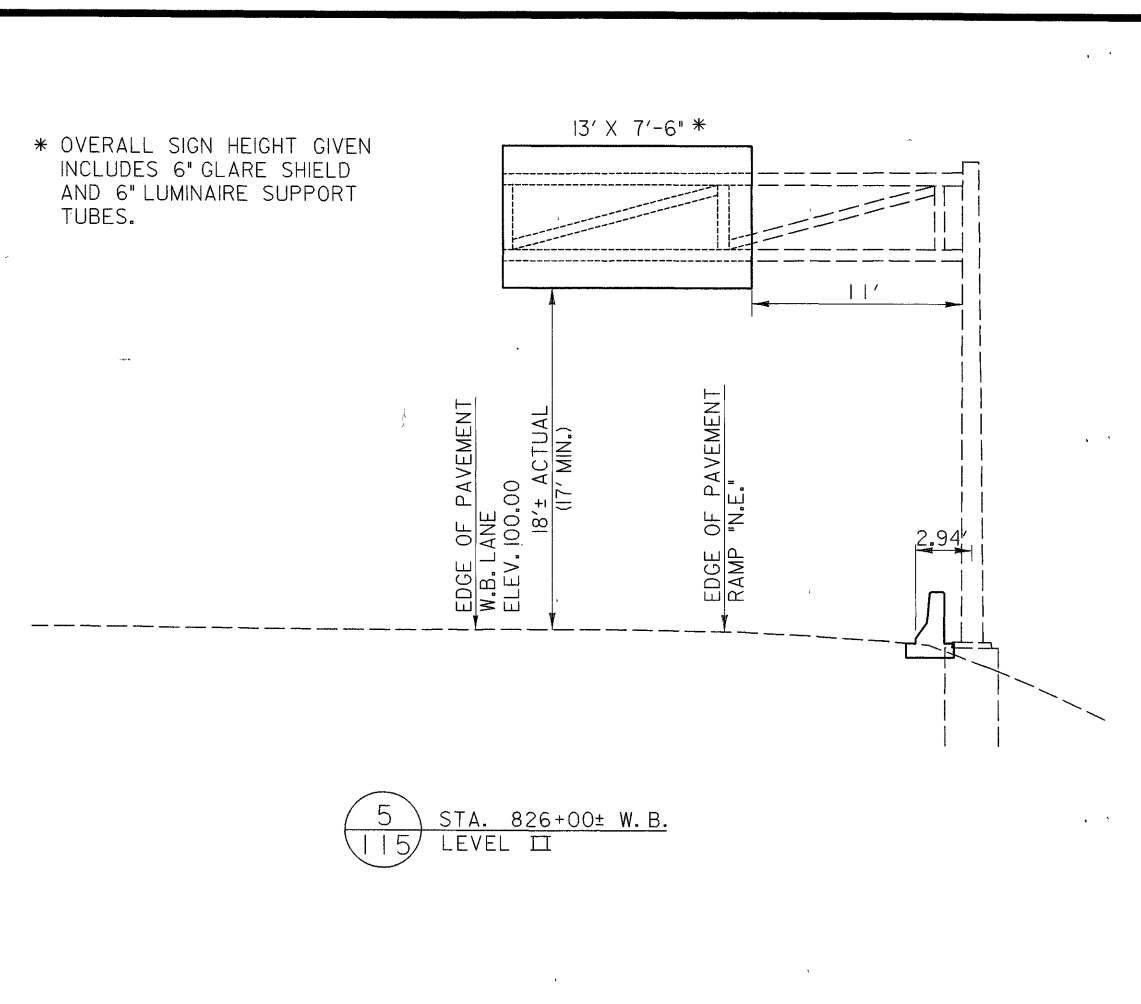
LOR-20-12.62

126
351

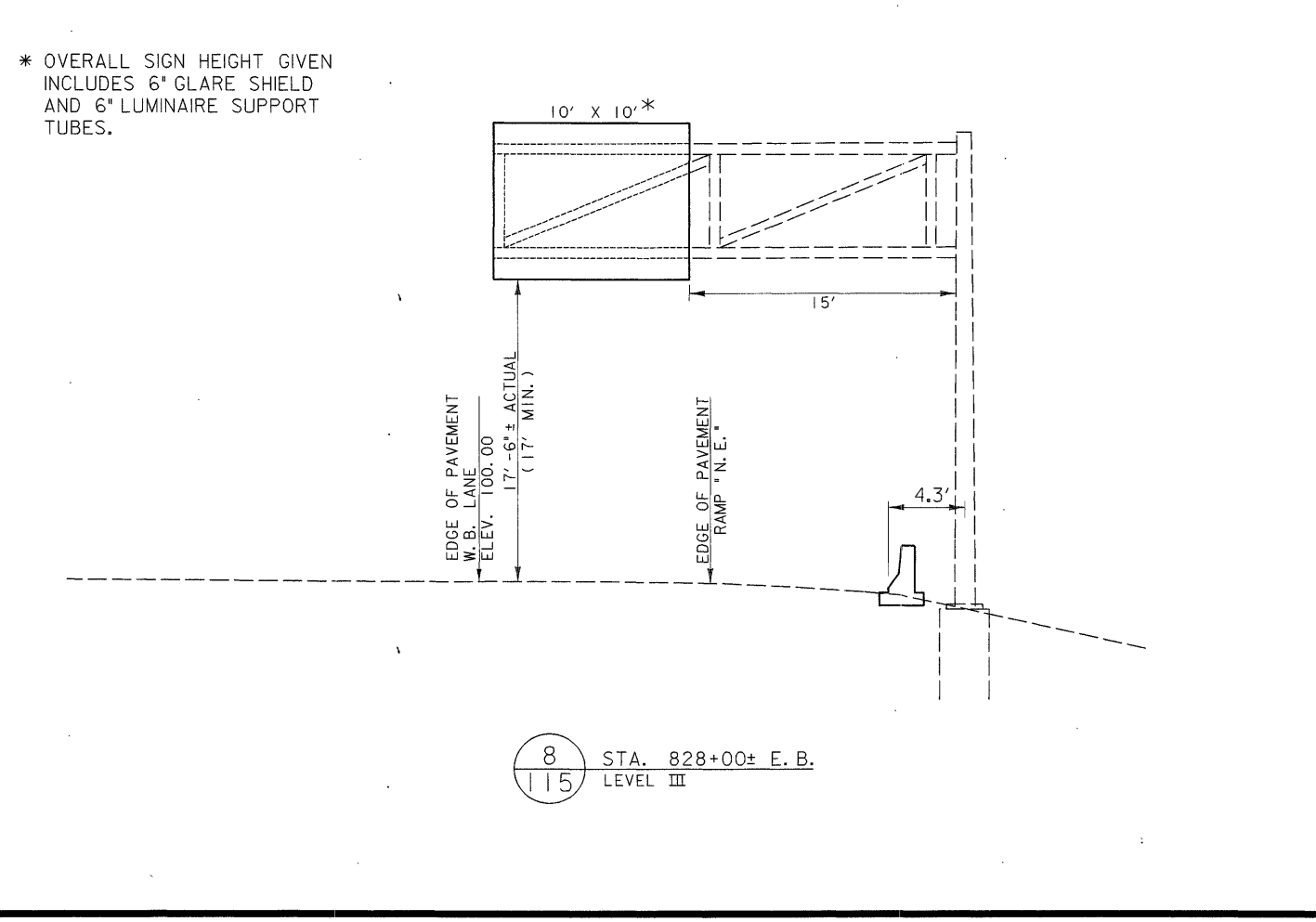
DESIGN FILE: c:\dgn\lor20\signs\dgn WORKSTATION: malliman DATE: 08 NOV 96



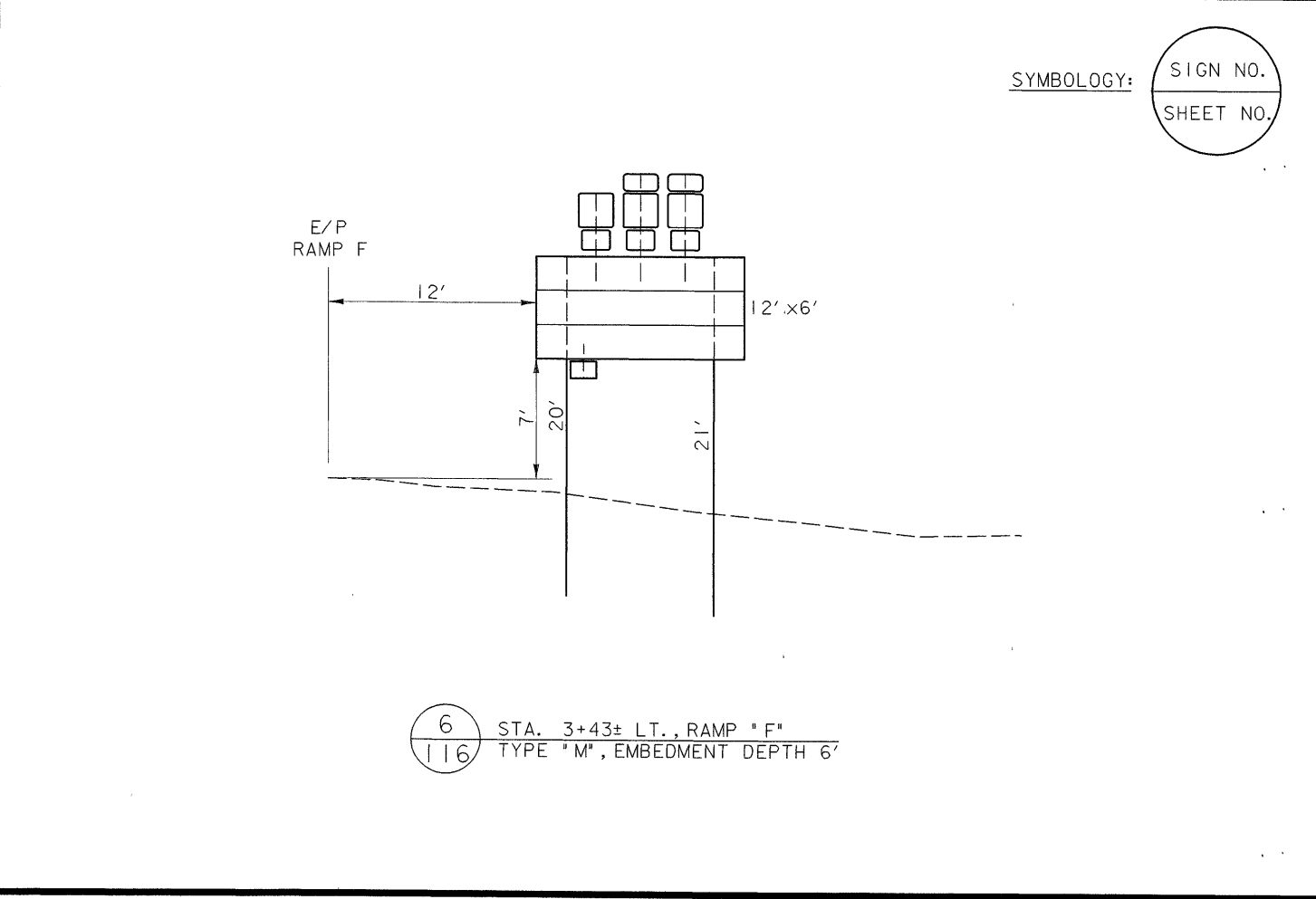
3
115 STA. 818+70± W.B.L. U.S.R. 20
OVERHEAD SIGN SUPPORT
LEVEL II



5
115 STA. 826+00± W. B.
LEVEL II



8
115 STA. 828+00± E. B.
LEVEL III



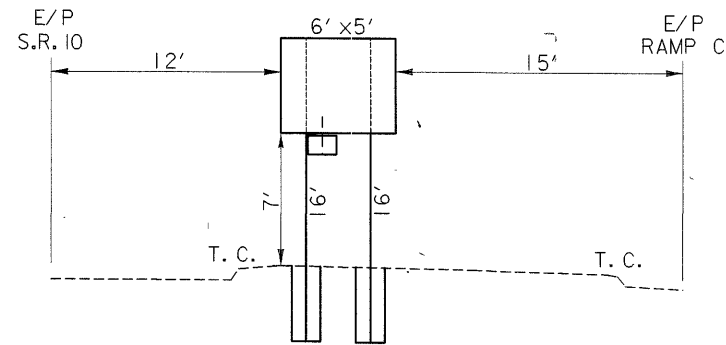
6
116 STA. 3+43± LT., RAMP "F"
TYPE "M", EMBEDMENT DEPTH 6'

SIGN ELEVATIONS

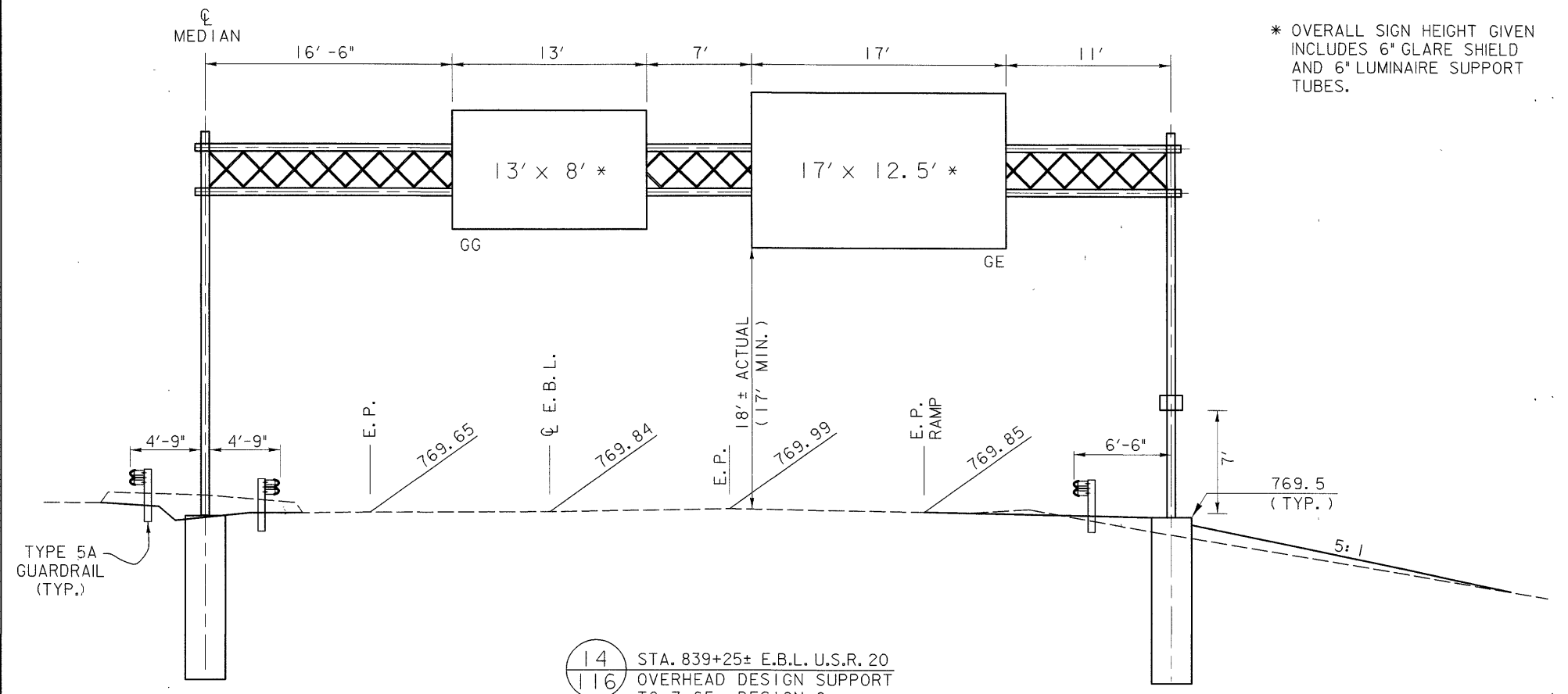
LOR-20-12.62

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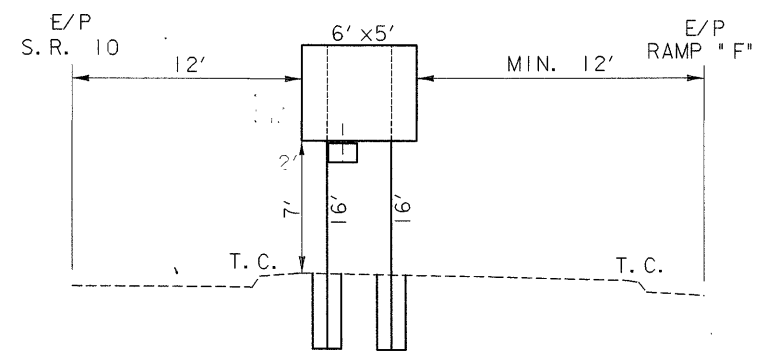


11 STA. 0+24± RT., E.B. S.R. 10
116 S4x7.7

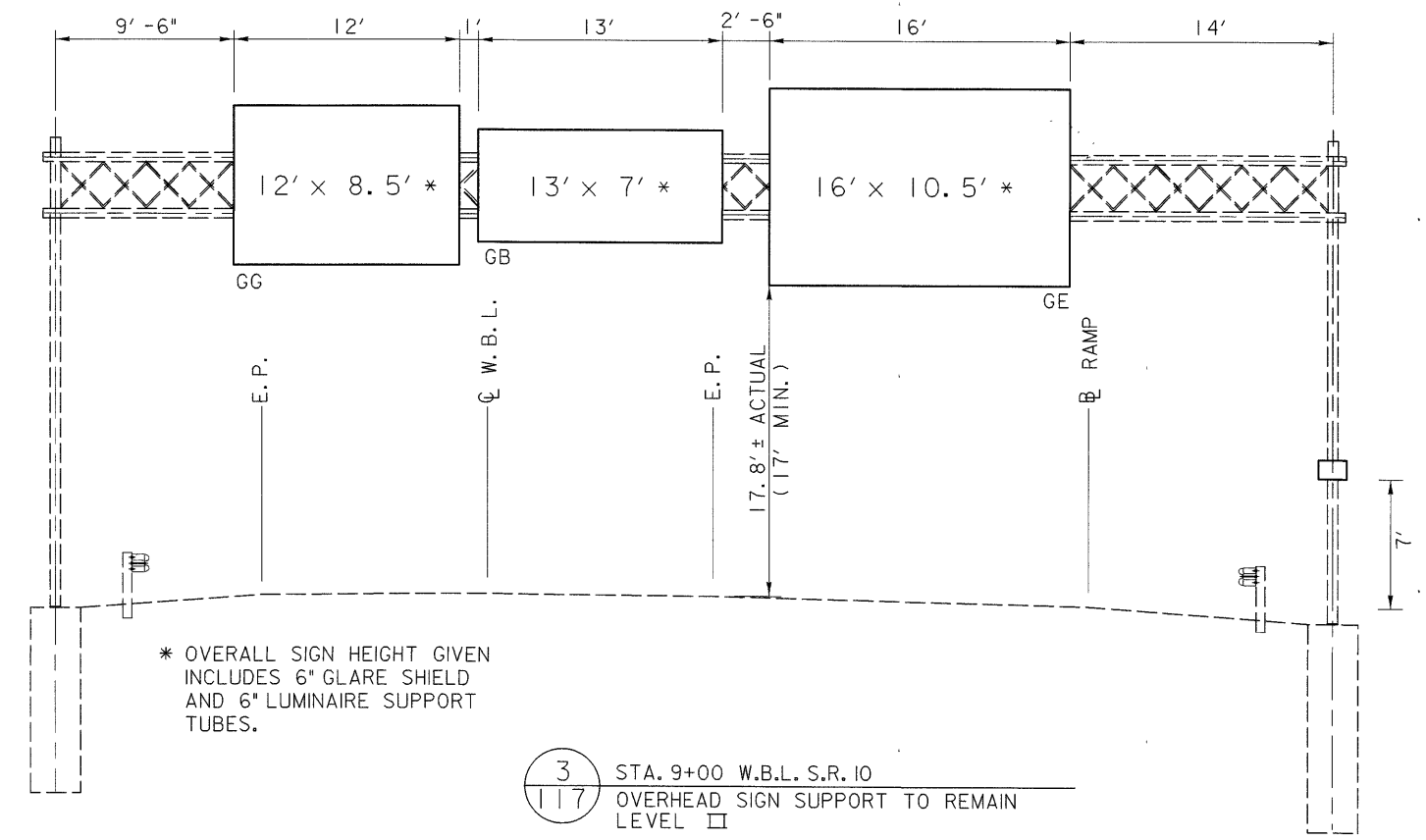


14 STA. 839+25± E.B.L. U.S.R. 20
116 OVERHEAD DESIGN SUPPORT
TC-7.65, DESIGN 8
64.5' SPAN, 27'-6" POLE LT. & RT.
LEVEL I

* OVERALL SIGN HEIGHT GIVEN INCLUDES 6" GLARE SHIELD AND 6" LUMINAIRE SUPPORT TUBES.



1 STA. 6+25± RT., W.B. S.R. 10
117 S4x7.7



3 STA. 9+00 W.B.L. S.R. 10
117 OVERHEAD SIGN SUPPORT TO REMAIN
LEVEL I

* OVERALL SIGN HEIGHT GIVEN INCLUDES 6" GLARE SHIELD AND 6" LUMINAIRE SUPPORT TUBES.

SYMBOLOLOGY: SIGN NO.
SHEET NO.

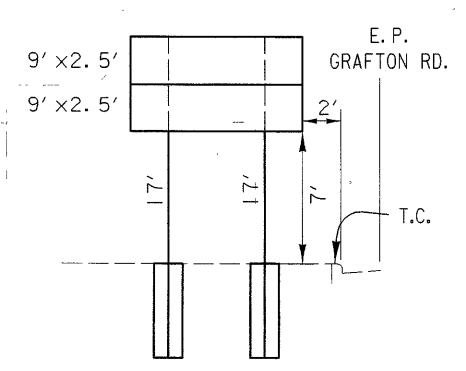
SIGN ELEVATIONS

LOR-20-12.62

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DESIGN FILE: c:\dgn\lor20\signs\ldgn
WORKSTATION: mal\eman DATE: 08 NOV 96

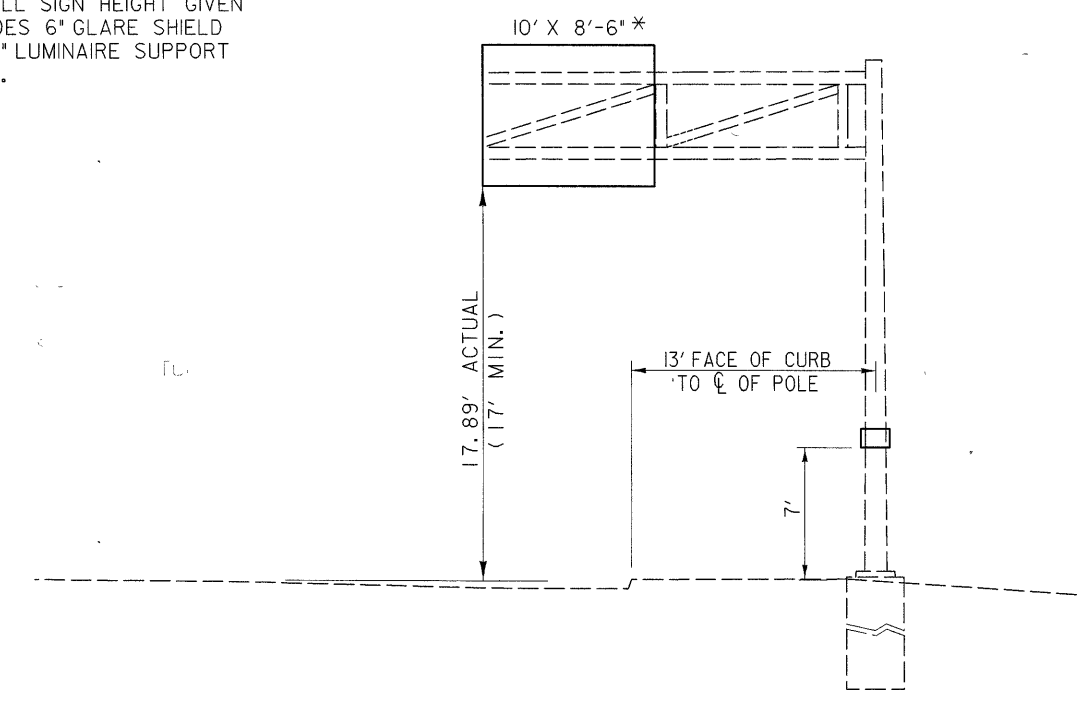
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121 STA. 683+15± LT. GRAFTON RD.
W6x9

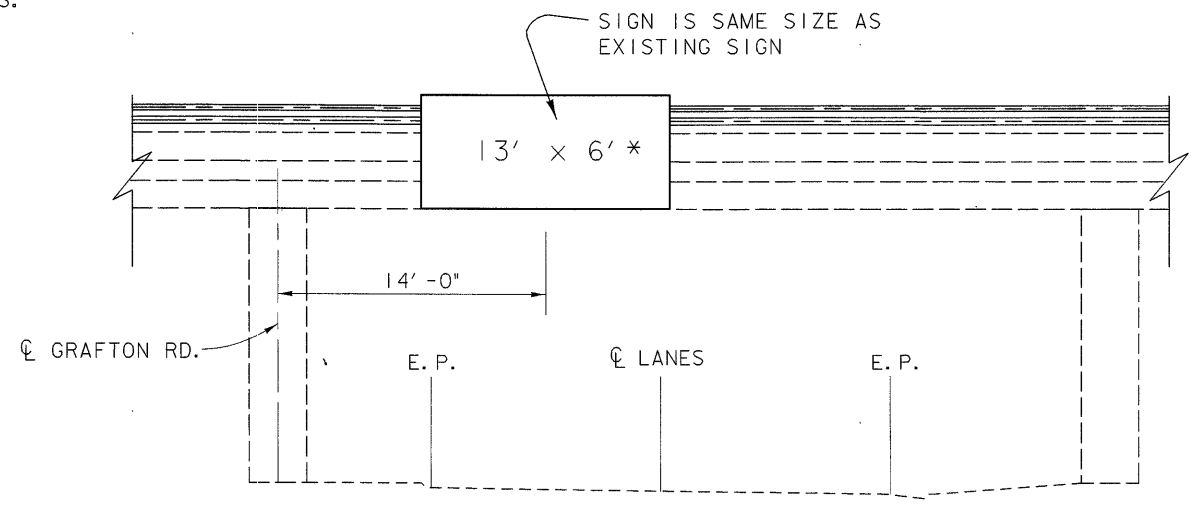
SYMBOLOLOGY: SIGN NO.
SHEET NO.

* OVERALL SIGN HEIGHT GIVEN INCLUDES 6" GLARE SHIELD AND 6" LUMINAIRE SUPPORT TUBES.



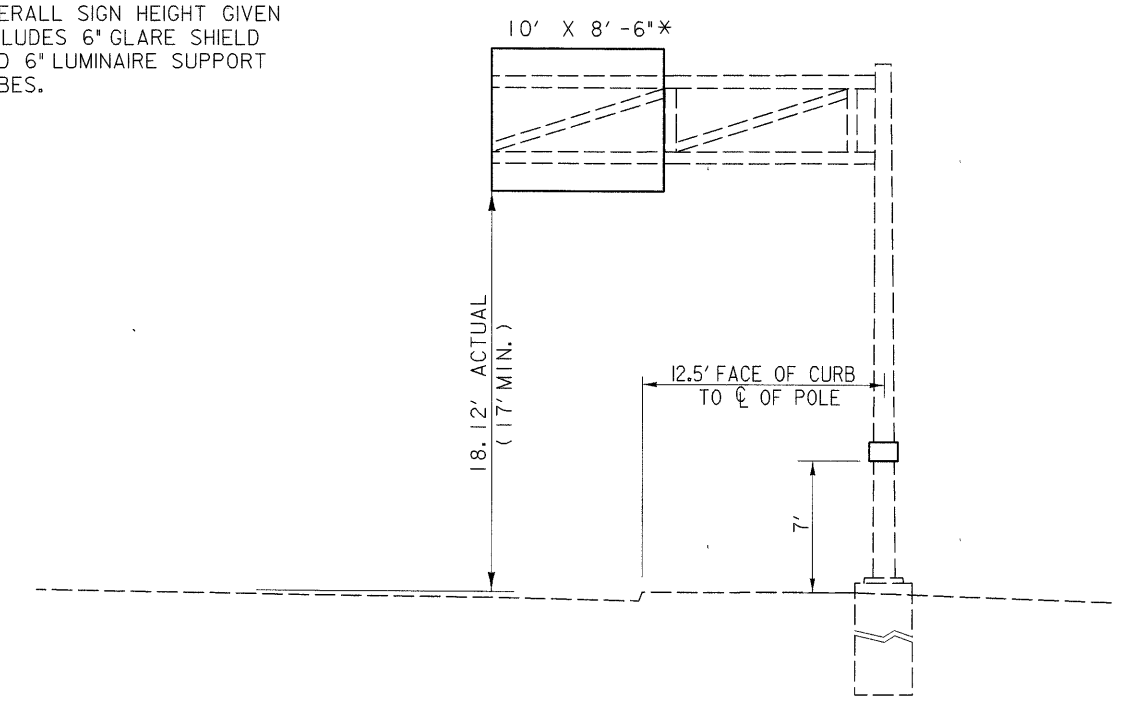
10
120 STA. 674+93± N. B. L. GRAFTON RD.
LEVEL III

* OVERALL SIGN HEIGHT GIVEN INCLUDES 6" GLARE SHIELD AND 6" LUMINAIRE SUPPORT TUBES.



12
120 STA. 676+87± N. B. L. GRAFTON RD.
STRUCTURE MOUNTED SIGN

* OVERALL SIGN HEIGHT GIVEN INCLUDES 6" GLARE SHIELD AND 6" LUMINAIRE SUPPORT TUBES.



2
121 STA. 679+85± S. B. L. GRAFTON RD.
LEVEL III

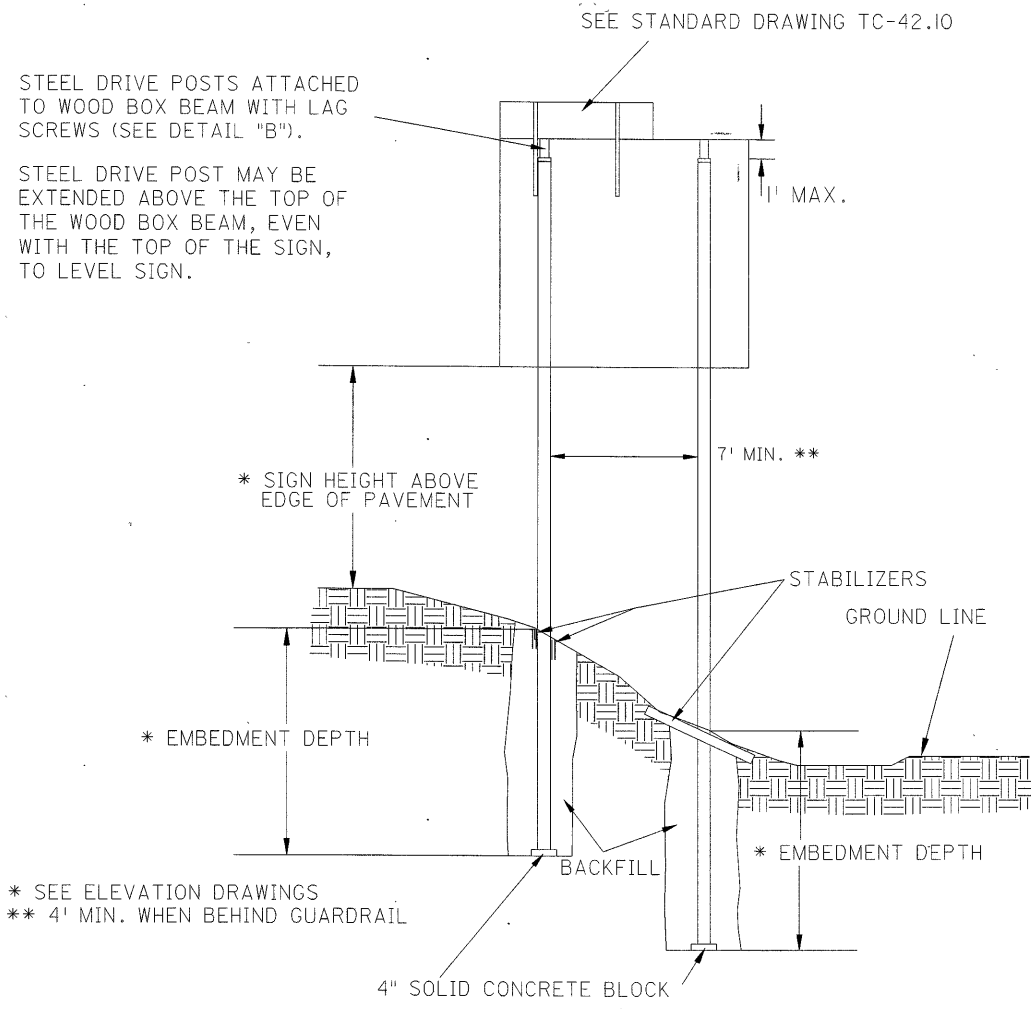
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WORKSTATION: mal/eman DATE: 08 NOV 96

SIGN ELEVATIONS

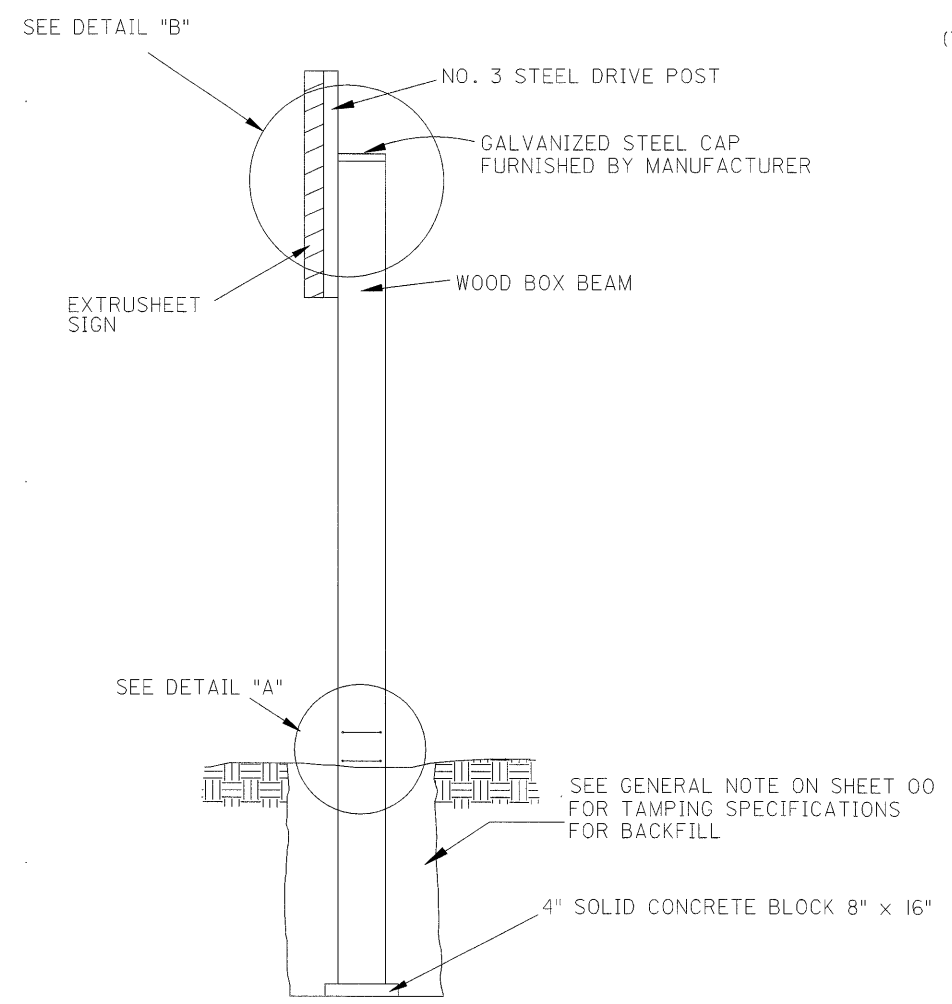
LOR-20-12.6.2

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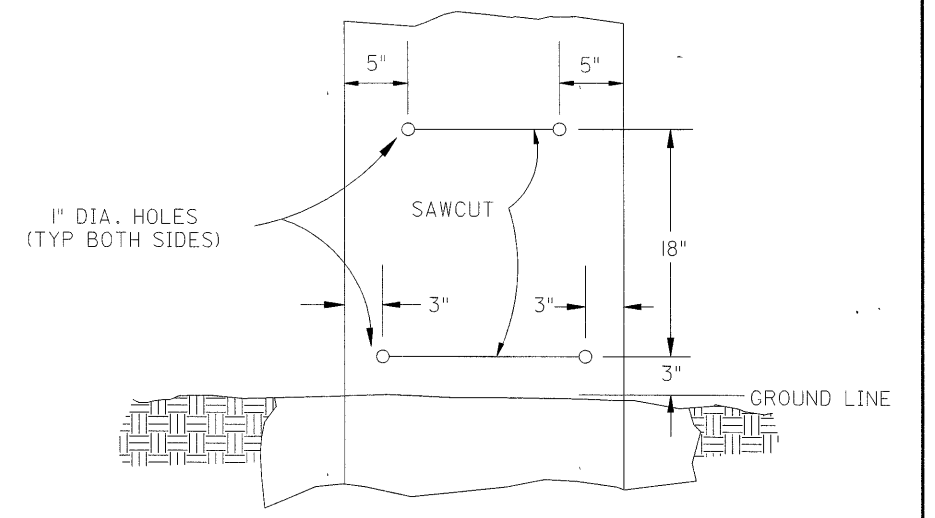
TYPICAL WOOD BOX BEAM INSTALLATION



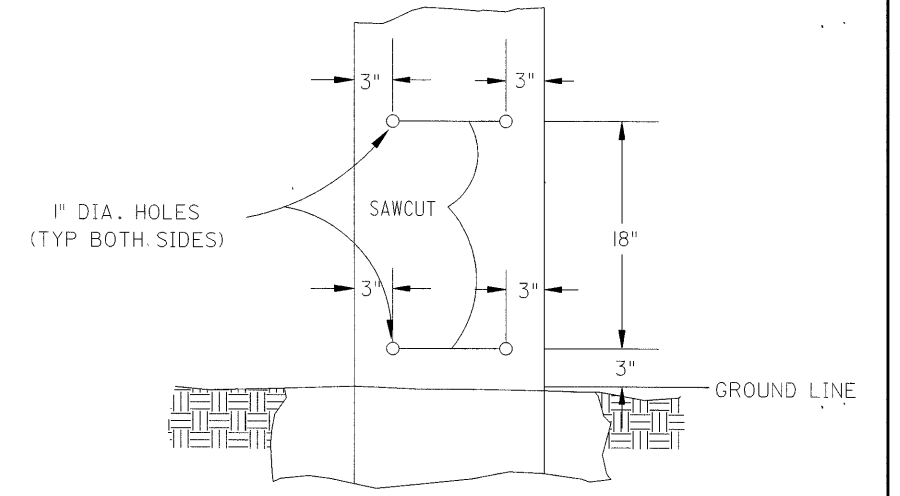
ELEVATION (REAR VIEW)



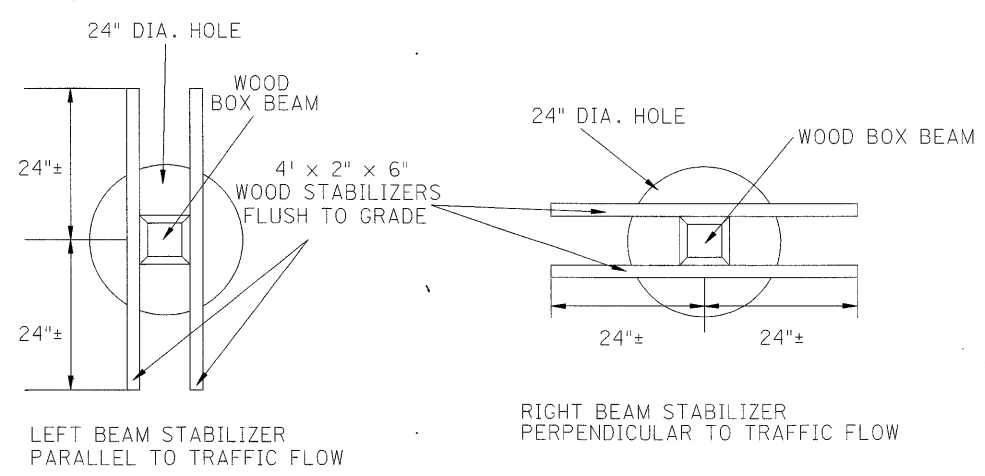
SIDE VIEW



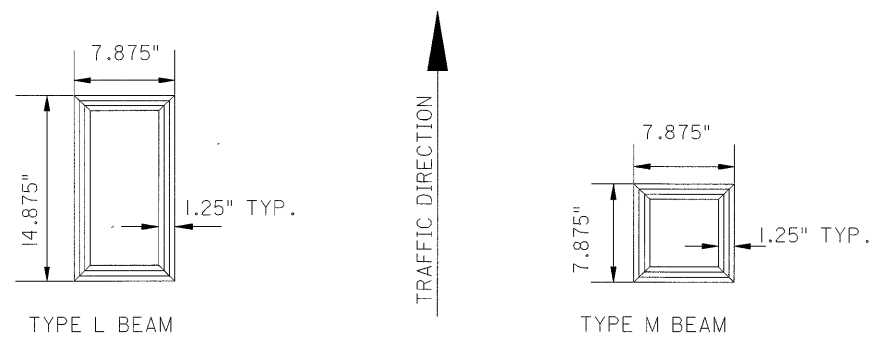
DETAIL "A" (TYPE L BEAM)



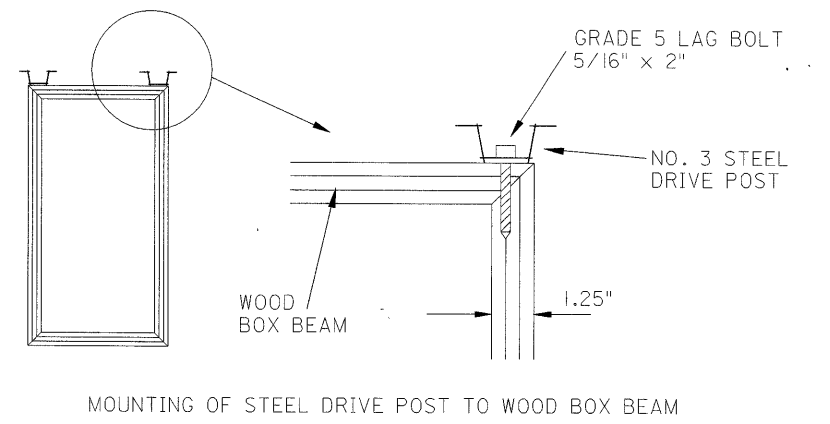
DETAIL "A" (TYPE M BEAM)



WOOD STABILIZERS



PLACEMENT OF BOX BEAMS



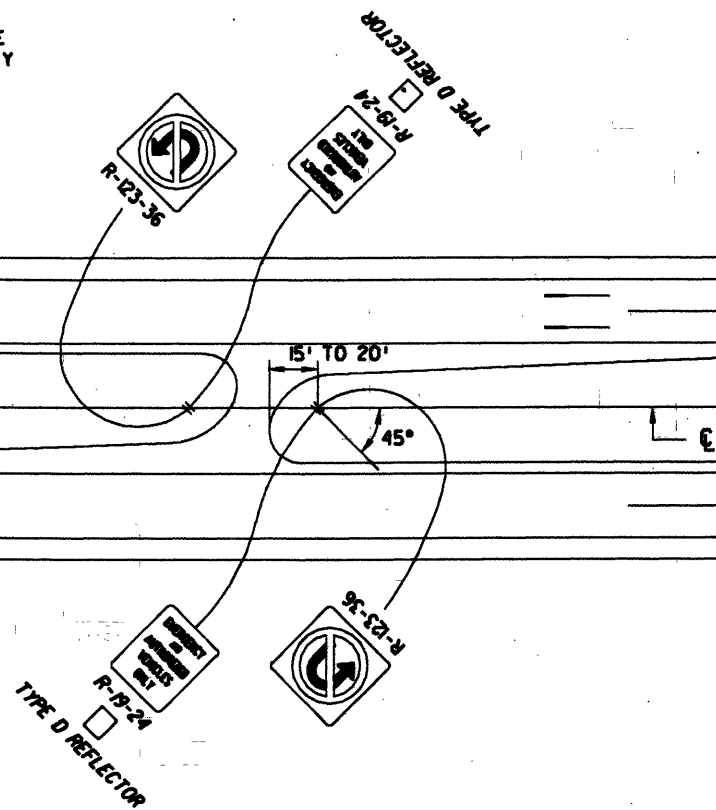
DETAIL "B"

DESIGN FILE: c:\dgn\lor20\eposts.dgn
WORKSTATION: mallemann DATE: 08 NOV 96

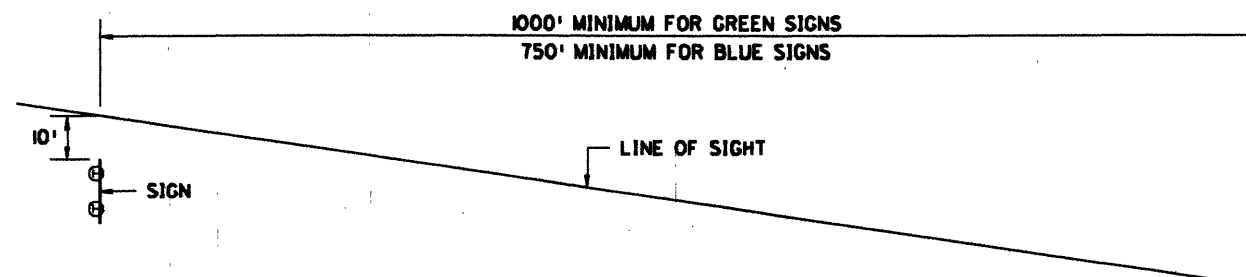
WOOD BOX BEAM INSTALLATION DETAIL

LOR-20-12.62

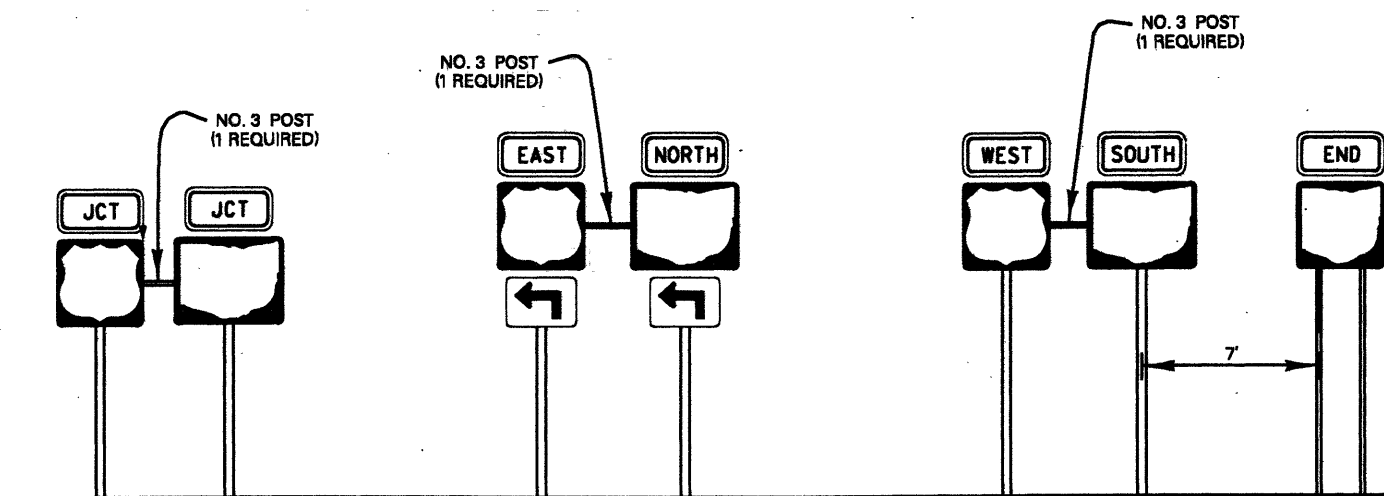
NOTE: THE R-19 AND R-123 SIGNS SHALL BE ERECTED BACK TO BACK AT APPROXIMATELY THE MIDPOINT OF THE MEDIAN WIDTH AT A 45 DEGREE ANGLE TO THE TRAFFIC FLOW.



STANDARD SIGNING FOR U-TURN MEDIAN CROSSOVER



GUIDE FOR CLEARING AND GRUBBING FOR SIGNS



SIGN 5 OF SHEET 116

TYPICAL SIGN ASSEMBLIES

FREEWAY LOCATION IDENTIFICATION SYSTEM SIGN:

THESE SIGNS CONSIST OF A MAINLINE MARKER (N-44B) OR A RAMP MARKER (N-43B), ATTACHED TO GUIDE AND DESTINATION SIGNS WITH AN ITEM 630 SIGN BACKING ASSEMBLY IF ATTACHED TO A GROUND-MOUNTED SIGN OR AN ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED IF ATTACHED TO THE VERTICAL MEMBER OF AN OVERHEAD SIGN STRUCTURE.

THE CONTRACTOR SHALL DETERMINE THE CORRECT STRAIGHT LINE MILEAGE, IN HUNDRETH'S OF A MILE, FOR EACH SIGN BASED ON THE FINAL LOCATION OF THE SIGN. THE CORRECT MILEAGE SHALL BE DETERMINED ONLY AFTER THE MILE MARKERS HAVE BEEN LOCATED BY THE DEPARTMENT. THE PLAN SHOWS THE ROUTE NUMBER, ROUTE DIRECTION AND THE RAMP CODES (WHERE APPLICABLE). SEE SHEET NO. 107 FOR DETAILS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A RECORD OF THE STRAIGHT LINE MILEAGE FOR EACH FREEWAY LOCATION IDENTIFICATION SYSTEM SIGN.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 630, SIGN, FLAT SHEET, TYPE F. THE REQUIRED ITEM 630, SIGN BACKING ASSEMBLY OR ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED ARE PAID SPARATELY AS INDICATED.

WORKING DRAWINGS:

THE REQUIREMENTS OF ITEM 625.04 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY MODIFIED TO REQUIRE TWO (2) SETS OF SHOP DRAWINGS, CATALOG CUTS, SPECIFICATIONS, PHOTOMETRIC DATA, BROCHURES, DATA SHEETS AND WIRING DIAGRAMS FOR REVIEW AND APPROVAL, AS REQUIRED BY THE DIRECTOR, OF APPARATUS AND EQUIPMENT TO BE FURNISHED. THE REQUIREMENTS OF ITEM 630.03 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY MODIFIED TO REQUIRE TWO (2) SETS OF SIGN LEGEND WORKING DRAWINGS TO BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION OF THE SIGNS. THESE MATERIALS ARE TO BE PROVIDED TO THE DISTRICT THREE CONSTRUCTION ENGINEER, 906 NORTH CLARK STREET, ASHLAND, OHIO 44805 FOR APPROVAL BEFORE THE ITEMS ARE FURNISHED.

DESIGN FILE: c:\dgn\lor20\edetail.dgn
 WORKSTATION: mll/mcm DATE: // DEC. 96

SIGNING DETAILS AND NOTES

LOR-20-12.62

PAVEMENT MARKING QUANTITIES

DESIGN FILE: c:\dgn\lor20\pavemrk.dgn
 WORKSTATION: mallemar DATE: 08 NOV 96

SHEET REFERENCE NO.	STATION LIMITS OR LOCATION	SIDE	644									
			EDGE LINE		LANE LINES	ISLAND MARKING	TRANSVERSE LINES		CHANNELIZING LINES	STOP LINES		
			WHITE	YELLOW			WHITE	YELLOW			WHITE	YELLOW
			LIN.FT./MILE	SQ.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	
MAINLINE												
30	STA. 648+60 TO STA. 652+21	EB	361	361	361							
31	STA. 648+60 TO STA. 652+21	WB	361	361	361							
E. B. L.												
37	STA. 664+25 TO STA. 1+87	EB		17725	17725							
38	STA. 664+25 TO STA. 675+18.73	EB	1094									
39	STA. 678+78.65 TO STA. 696+66.98	EB	1788									
40	STA. 696+66.98 TO STA. 797+30.98	EB	10064									
41	STA. 802+50.79 TO STA. 819+32.22	EB	1681									
42	STA. 819+32.22 TO STA. 838+99.34	EB	1967									
43	STA. 1+03.54 TO STA. 1+87	EB	83									
W. B. L.												
47	STA. 664+25 TO STA. 3+38	WB	1795	1795								
48	STA. 830+77.41 TO STA. 3+38	WB	1299									
49	STA. 820+64.34 TO STA. 830+77.41	WB	1013									
50	STA. 799+22.28 TO STA. 816+59.32	WB	1737									
51	STA. 699+40.01 TO STA. 799+22.28	WB	9982									
52	STA. 677+50.01 TO STA. 695+82.45	WB	1832									
53	STA. 664+25 TO STA. 677+50.01	WB	1325									
54	STA. 819+44 TO STA. 825+77	WB		633								
RAMPS												
RAMP D (S.R. 301)												
58	STA. D75+18.73 TO STA. 659+79.90 (301)	RT.	1123									
59	STA. D77+75.52 TO STA. 660+97.20 (301)	LT.	796								70	
60	STA. D84+26±											
RAMP C (S.R. 301)												
61	STA. C96+66.98 TO STA. 659+93 (S.R. 301)	RT.	1219									
62	STA. C96+66.98 TO STA. 661+08 (S.R. 301)	LT.	1147									
RAMP SW (GRAFTON RD.)												
63	STA. SW7+30.98 TO STA. 674+65.94 (G.R.)	RT.	1508									
64	STA. SW11+49.11 TO STA. 675+47.14 (G.R.)	LT.	863								50	
65	STA. SW0+45±											
RAMP SE (GRAFTON RD.)												
66	STA. D19+32.22 TO STA. 673+67.93 (G.R.)	RT.	953									
67	STA. D19+32.22 TO STA. 675+11.58 (G.R.)	LT.	922									
RAMP CA (S.R. 57)												
68	STA. CA14+70 TO STA. CA27+25	RT.	1255									
69	STA. CA25+58.47 TO STA. CA27+25	RT.	166.5									
70	STA. CA25+58.47 TO STA. DA4+35	LT.	242									
71	STA. CA16+08.30 TO STA. DA4+35	LT.	1117									
RAMP DA (S.R. 57)												
72	STA. DA4+35 TO STA. DA13+85	LT.	951									
73	STA. DA4+35 TO STA. DA5+10	RT.	75									
74	STA. DA4+35 TO STA. DA5+10	LT.	75		24							
75	STA. DA4+35 TO STA. DA5+10	RT.	75									
76	STA. DA5+10 TO STA. DA13+85	RT.	876									
RAMP E (S.R. 57)												
77	STA. E30+77.41 TO STA. E9+75	LT.	669									
78	STA. E30+77.41 TO STA. E9+75	RT.	669									

PAVEMENT MARKING QUANTITIES

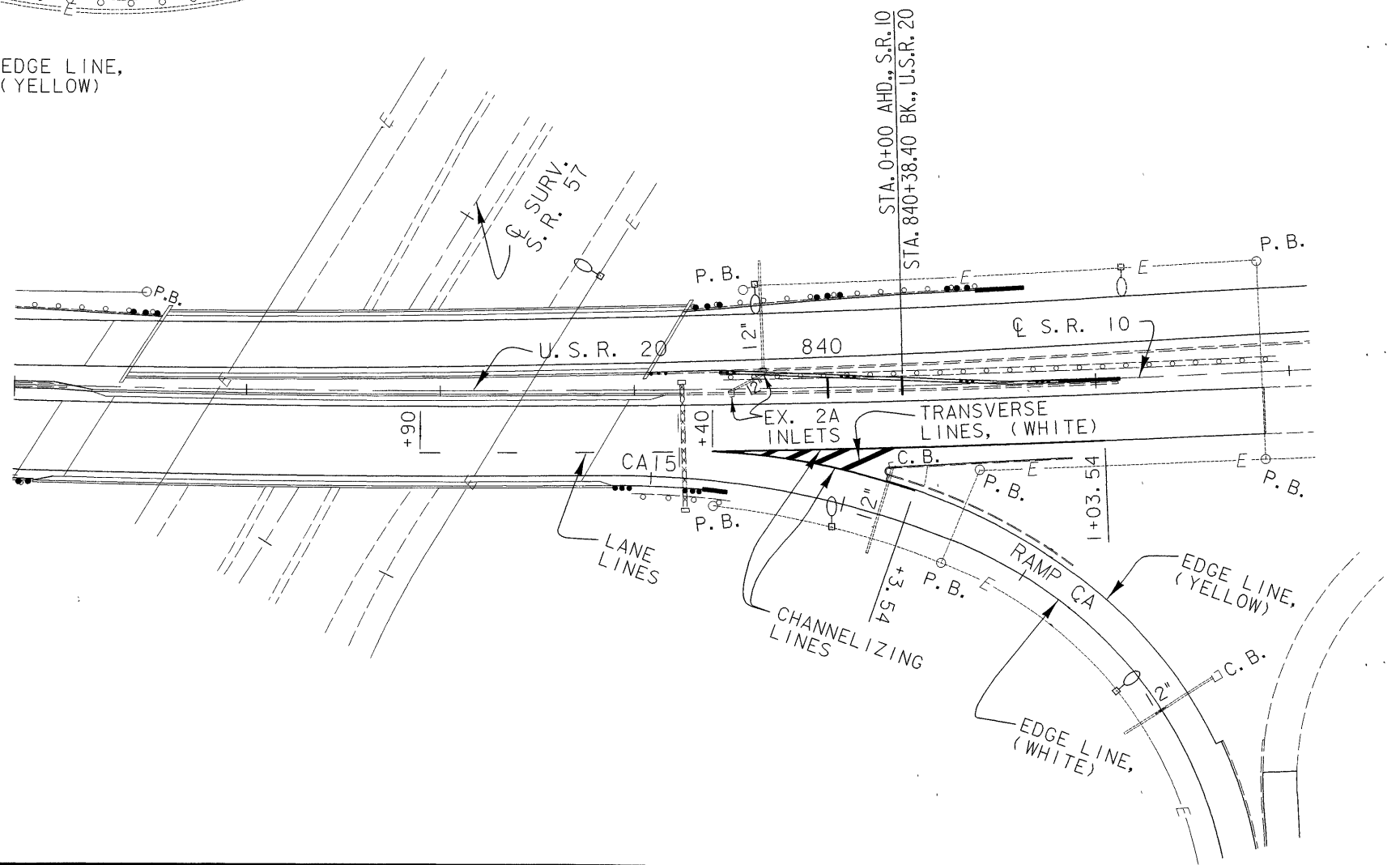
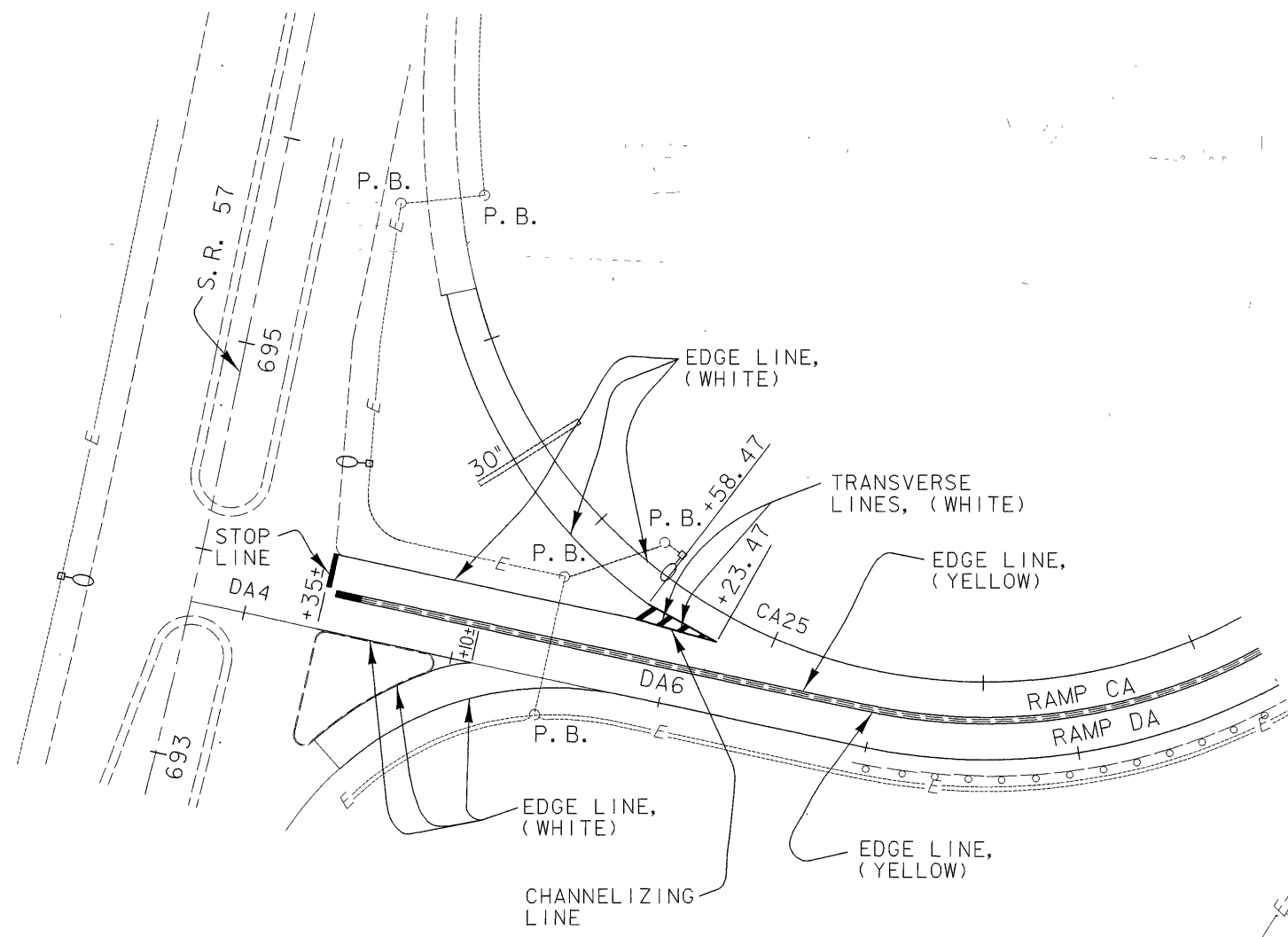
SHEET REFERENCE NO.	STATION LIMITS OR LOCATION	SIDE	644										642 (TYPE 2)			
			EDGE LINE		LANE LINES	ISLAND MARKING	TRANSVERSE LINES		CHANNELIZING LINES	STOP LINES	LANE ARROW	WORD ON PAVEMENT, '96"	LANE LINE	CENTER LINE (SOLID, DOUBLE)	EDGE LINE	
			WHITE	YELLOW			WHITE	YELLOW								WHITE
			LIN.FT./MILE	SQ.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	L.F./MI.	MILE	WHITE	YELLOW	LIN.FT.		
RAMP NE (GRAFTON RD.)																
80	STA. 680+52.66 (G.R.) TO STA. NE20+64.44	LT.	2046													
81	STA. 619+71.84 (G.R.) TO STA. NE17+62.57	RT.	1718													
82	STA. NE0+45±							48								
RAMP NW (GRAFTON RD.)																
83	STA. NW9+22.28 TO STA. 681+10.07 (G.R.)	LT.	938													
84	STA. NW9+22.28 TO STA. 679+66.12 (G.R.)	RT.	908													
RAMP B (S.R. 301)																
85	STA. 669+15.89 (S.R. 301) TO STA. B96+83.83	RT.	829													
86	STA. 670+31.63 (S.R. 301) TO STA. B99+40	LT.	1148					60								
87	STA. B88+58±															
RAMP A (S.R. 301)																
88	STA. A77+50.01 TO STA. 670+20.98 (S.R. 301)	LT.	1306													
89	STA. A77+50.01 TO STA. 669+05 (S.R. 301)	RT.	1145													
EXIT AND ENTRANCE TERMINAL RAMPS																
B, D, SW, NE, A, C, NW, SE AND E																
				1998	696	2850										
TERMINAL RAMPS CA AND DA																
			150	81	374	16										
S.R. 301 PAVEMENT MARKING QUANTITIES																
(QUANTITIES FROM SHT. 134A)																
				171	529	1005	826	5	3	400	2037	801	1193			
TOTALS (TO SHEET 20)			48261.5	47463	39179	195	1306	1005	4050	244	5	3	400	2037	801	1193
			95724.5/18.13	7.42 MI.			2311					0.08 MI.	0.39 MI.	1994/0.38 MI.		

G. R. = GRAFTON ROAD

PAVEMENT MARKING QUANTITIES

LOR-20-12.62

DESIGN FILE: c:\dgn\lor20\pavemrk1.dgn
 WORKSTATION: mallemann DATE: 08 NOV 96



PAVEMENT MARKING QUANTITIES

LOCATION	SIDE	644		
		LANE LINE	TRANSVERSE LINES, (WHITE)	CHANNELIZING LINES
		LIN.FT./MI.	LIN.FT.	
RAMP CA:				
STA. CA25+23.47 TO STA. CA25+58.47	LT.		9	70
STA. 839+40 (U.S.R. 20) TO STA. I+03.54 (S.R. 10)	RT.		72	304
STA. 837+90 TO STA. 839+40	RT.	150		
RAMP DA:				
STA. DA4+35				16
TOTALS		150	81	374

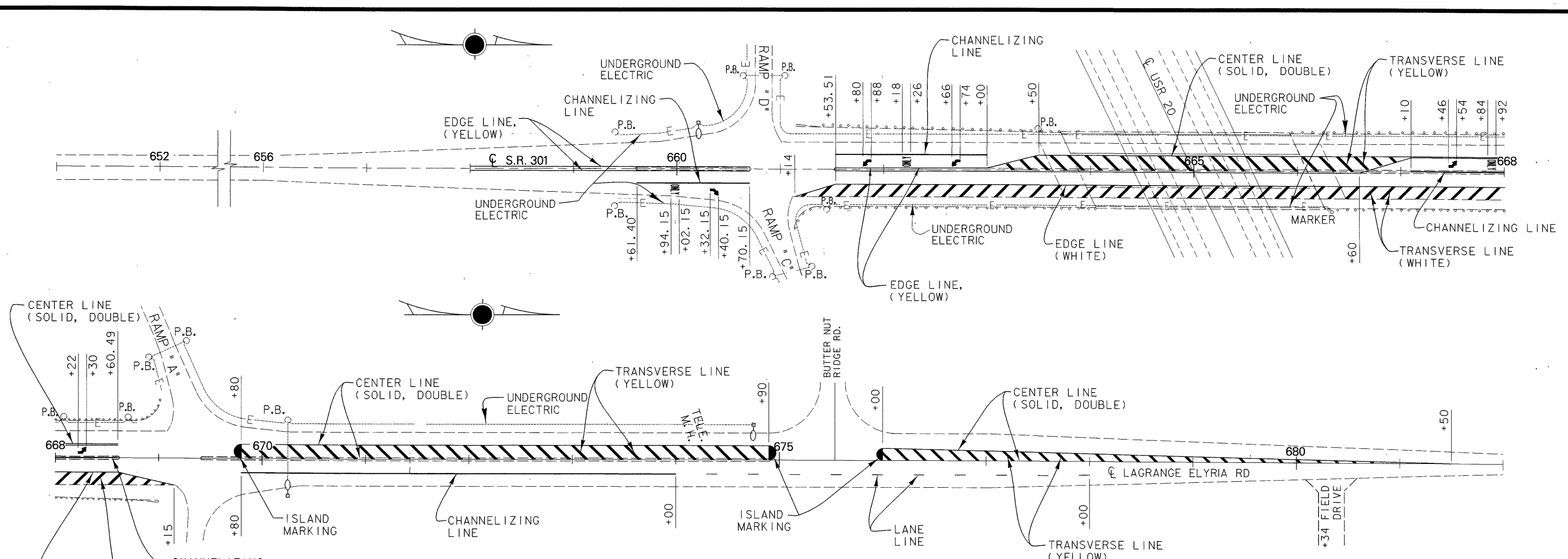
QUANTITIES CARRIED TO SHEET 133

CALCULATED
 ADB
 CHECKED
 TBC

PAVEMENT MARKING DETAILS AND QUANTITIES

LOR-20-12.62

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202 - CONCRETE MEDIAN REMOVED
 STA. 666+60 TO STA. 668+60.49 = 200.49 LIN. FT.
 (200.49 LIN. FT.)(3' WIDE)/9 66.83 SQ. YD.

STA. 669+42.35 TO STA. 674+90 = 547.65 LIN. FT.
 (547.65 LIN. FT.)(3' WIDE)/9 182.55 SQ. YD.

TOTAL = 249.38 SQ. YD.

404 - ASPHALT CONCRETE, AC-20
 STA. 666+60 TO STA. 668+60.49
 (66.83 SQ. YD.)(3" THK.)/(3)(12) 5.6 CU. YD.

STA. 669+42.35 TO STA. 674+90
 (182.55 SQ. YD.)(3" THK.)/(3)(12) 15.2 CU. YD.

TOTAL = 20.8 CU. YD.

(QUANTITIES CARRIED TO SHEET 18)

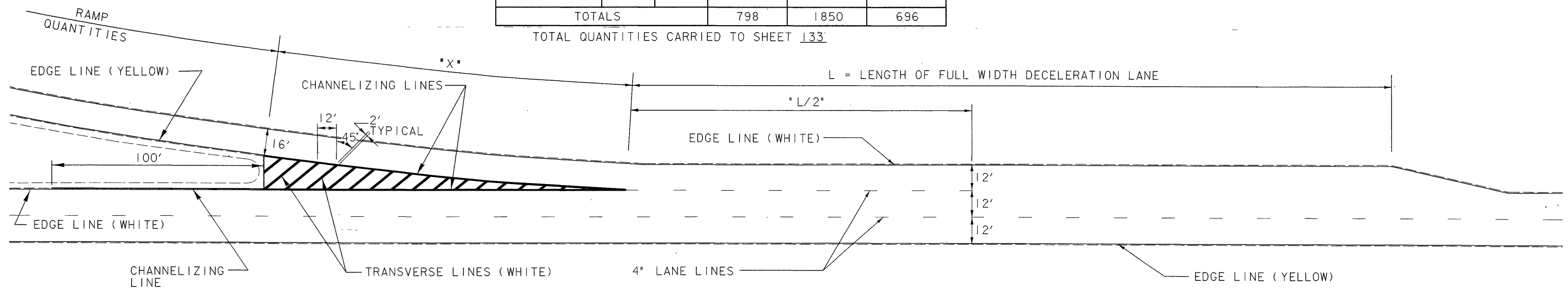
STATION	SIDE	644				642 (TYPE 2)						
		CHANNELIZING LINE	ISLAND MARKING	LANE ARROW	WORD ON PAVEMENT, 96"	TRANSVERSE LINE		LANE LINE	CENTER LINE, (SOLID, DOUBLE)	EDGE LINE		
						WHITE	YELLOW			WHITE	YELLOW	
FROM	TO	LIN. FT.	SQ. FT.	EACH	EACH	LIN. FT.	L.F./MI	MILE	LIN. FT./MILE	LIN. FT./MILE		
659+61.40	660+70.15	RT.	108.75									
661+53.51	663+00	LT.	146.49							146.49		
667+10	668+60.49	CTR.	150.49									
669+80	674+00	RT.	420									
669+80		LT.								57		
674+90		LT.								57		
676+00		LT.								57		
660+32.15	660+40.15	RT.										
661+80	661+88	LT.										
662+66	662+74	LT.										
667+46	667+54	LT.										
668+22	668+30	LT.										
659+94.15	660+02.14	RT.										
662+18	662+26	LT.										
667+84	667+92	LT.										
674+00	678+00	RT.						400				
658+00	660+70.15	CTR.										
663+00	668+60.49	LT./RT.							610.49	540.30		
669+80	674+90	LT.							510			
676+00	681+50	LT.							550			
661+14	669+15	RT.				529						
663+00	667+10	LT.					255					
669+80	674+90	LT.					361					
676+00	681+50	LT.					389					
661+14	669+15	RT.								801		
661+53.5	666+60	RT.								506.5		
TOTALS (TO SHEET 133)			825.73	171	5	3	.529	1005	400	2037.13	801	1193.29

DESIGN FILE: c:\dgn\lor20\sign301.dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96

* LANE LINES FROM RAMP E TO RAMP NE IS PAID UNDER MAINLINE QUANTITIES. SEE SHEET

LOCATION	LENGTH "X"	LENGTH "L/2"	644		
			LANE LINES	CHANNELIZING LINES	TRANSVERSE LINES (WHITE)
			LIN. FT./MI.	LIN. FT.	LIN. FT.
RAMP					
B	135	300	300	370	143
D	135	283	283	370	112
SW	270	215	215	640	223
NE	185		*	470	218
TOTALS			798	1850	696

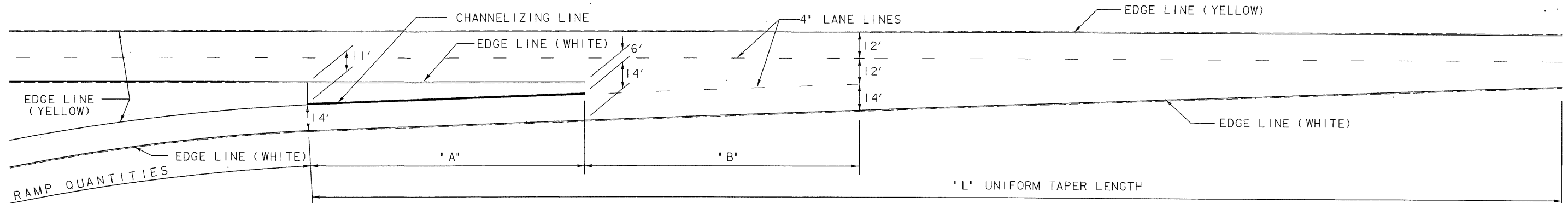
TOTAL QUANTITIES CARRIED TO SHEET 133



TYPICAL PAVEMENT MARKING DETAIL FOR EXIT DECELERATION RAMP TERMINAL

LOCATION	LENGTH "A"	LENGTH "B"	LENGTH "L"	644	
				LANE LINES	CHANNELIZING LINES
				LIN. FT./MI.	LIN. FT.
RAMP					
A	200	300	1000	300	200
C	200	300	1000	300	200
NW	200	300	1000	300	200
SE	200	300	1000	300	200
E	200		1000	*	200
TOTALS				1200	1000

TOTAL QUANTITIES CARRIED TO SHEET 133



TYPICAL PAVEMENT MARKING DETAILS FOR ENTRANCE ACCELERATION RAMP TERMINAL

RAMP A, B, C, D, SW, NW, SE, NE, E, CA TERMINALS

DESIGN FILE: c:\dgn\lor20\vrampqty.dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96

CALCULATED
 ADD
 CHECKED
 TBC

PAVEMENT MARKING DETAILS
 EXIT & ENTRANCE TERMINALS

LOR-20-12.62

135
 351

DETAIL		DETAIL		DETAIL	
1	MAINLINE UNDIVIDED	6	STOP APPROACH	12	TWO LANE NARROW BRIDGE
1	TYPICAL SPACING	7	1 LANE APPR. W/LT. LANE	13	TWO WAY LEFT TURN
2	TAPERED ACCELERATION LANE	8	THRU APPROACH	14	ONE LANE BRIDGE
3	DECELERATION LANE	9	2 LANE APPR. W/LT. LANE	15	HORIZONTAL CURVE
4	PARALLEL ACCELERATION LANE	10	4 LANE DIV. TO 2 LANE TRANS.	16	HORIZONTAL CURVE ALTERNATE
5	MULTILANE DIV./EXPRESSWAY	11	4 LANE UNDIV. TO 2 LANE TRANS.	17	STOP APPROACH ALTERNATE

COUNTY	ROUTE	LOCATION		STATION LIMITS	RPMS REMOVED	ITEM QUANTITIES			PRISMATIC RETRO REFLECTOR COLORS					
		FROM	TO			DETAIL	INSTALLATION ONLY		PRISMATIC RETRO REFLECTOR	ONE - WAY		TWO - WAY		
							RPM	RPM CASTING		WHITE	YELLOW	YELLOW/YELLOW	WHITE/RED	YELLOW/RED
LOR	20 EB	STA. 648+60	STA. 652+21	4	1		3	3	3					
LOR	20 WB	STA. 648+60	STA. 652+21	4	1		3	3	3					
LOR	20 EB	STA. 664+25	STA. 1+87	223	1		150	150	150					
LOR	20 WB	STA. 664+25	STA. 3+38	224	1		151	151	151					
LOR	20 EB	RAMP D @ 301												
LOR	20 EB	STA. 676+43.65	STA. 677+78.65	10	3		9	9				9		
LOR	20 EB	STA. D77+75.52	STA. D85+50	7	3		10	10					10	
LOR	20 EB	RAMP C @ 301												
LOR	20 EB	STA. 696+66.98	STA. 698+67	16	2		6	6				6		
LOR	20 EB	STA. C85+20	STA. C96+66.98	6	2		15	15					15	
LOR	20 EB	RAMP SW @ GRAFTON RD.												
LOR	20 EB	STA. 798+80.79	STA. 801+50.79	14	3		15	15				15		
LOR	20 EB	STA. SW11+49.11	STA. SW0+50	12	3		15	15					15	
LOR	20 EB	RAMP SE @ GRAFTON RD.												
LOR	20 EB	STA. 819+32.22	STA. 821+90	13	2		7	7				7		
LOR	20 EB	STA. SE0+50	STA. SE19+32.22	6	2		24	24					24	
LOR	20 EB	RAMP CA @ S.R. 57												
LOR	20 EB	STA. 839+40	STA. 840+42	10	3		5	5				5		
LOR	20 EB	STA. CA16+08	STA. DA4+35	3	3		20	20				3	17	
LOR	20 WB	RAMP DA @ S.R. 57												
LOR	20 WB	STA. DA4+35	STA. DA13+85	0	2		13	13					13	
LOR	20 WB	RAMP E @ S.R. 57												
LOR	20 WB	STA. 828+77	STA. 830+77	10	2		6	6				6		
LOR	20 WB	STA. E9+75	STA. E30+77.41	6	2		8	8					8	
LOR	20 WB	RAMP NE @ GRAFTON RD.												
LOR	20 WB	STA. 819+44.32	STA. 817+59.32	13	3		11	11				11		
LOR	20 WB	STA. NE17+62.57	STA. NEO+50	9	3		22	22					22	
LOR	20 WB	RAMP NW @ GRAFTON RD.												
LOR	20 WB	STA. 799+22.28	STA. 797+22	6	2		6	6				6		
LOR	20 WB	STA. NW0+50	STA. NW9+22.28	13	2		11	11					11	
LOR	20 WB	RAMP B @ 301												
LOR	20 WB	STA. 698+17.45	STA. 696+82.45	12	3		7	7				7		
LOR	20 WB	STA. B96+83.83	STA. B88+50	7	3		11	11					11	
LOR	20 WB	RAMP A @ 301												
LOR	20 WB	STA. 677+50.01	STA. 675+50	17	2		6	6				6		
LOR	20 WB	STA. A90+00	STA. A77+50.01	6	2		16	16					16	
TOTALS CARRIED TO SUB-SUMMARY SHEETS NO. 18 & 19				651			550	550				81	162	

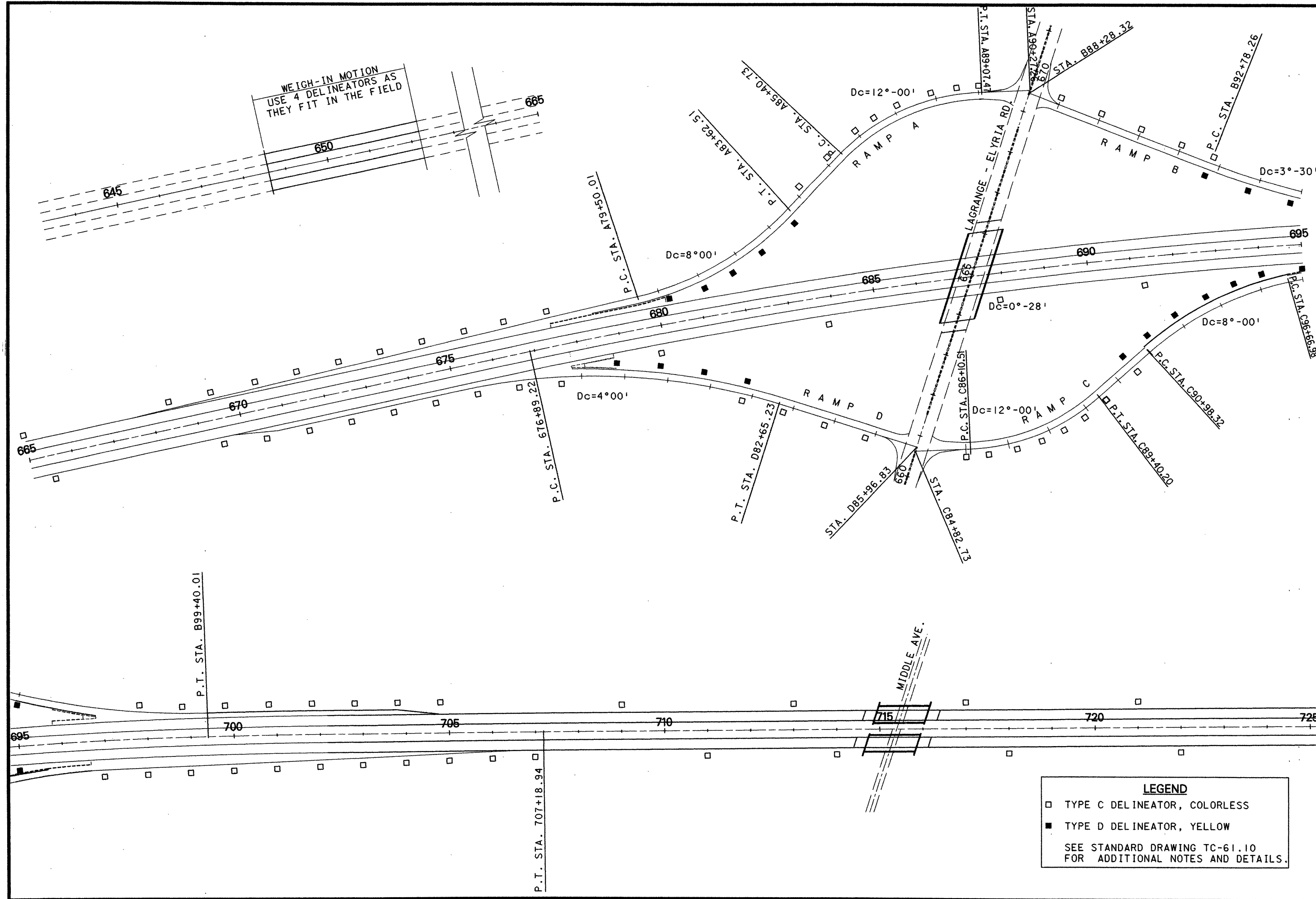
DESIGN FILE: c:\dgn\lor20\ovhndqty.dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96

CALCULATED
 ADB
 CHECKED
 TBC

RAISED PAVEMENT MARKING QUANTITIES

LOR-20-12.62

136
 351



WEIGH-IN MOTION
USE 4 DELINEATORS AS
THEY FIT IN THE FIELD

LEGEND

- TYPE C DELINEATOR, COLORLESS
- TYPE D DELINEATOR, YELLOW

SEE STANDARD DRAWING TC-61.10
FOR ADDITIONAL NOTES AND DETAILS.

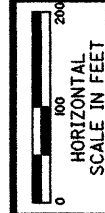
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ADD
CHECKED
TBC

HORIZONTAL
SCALE IN FEET

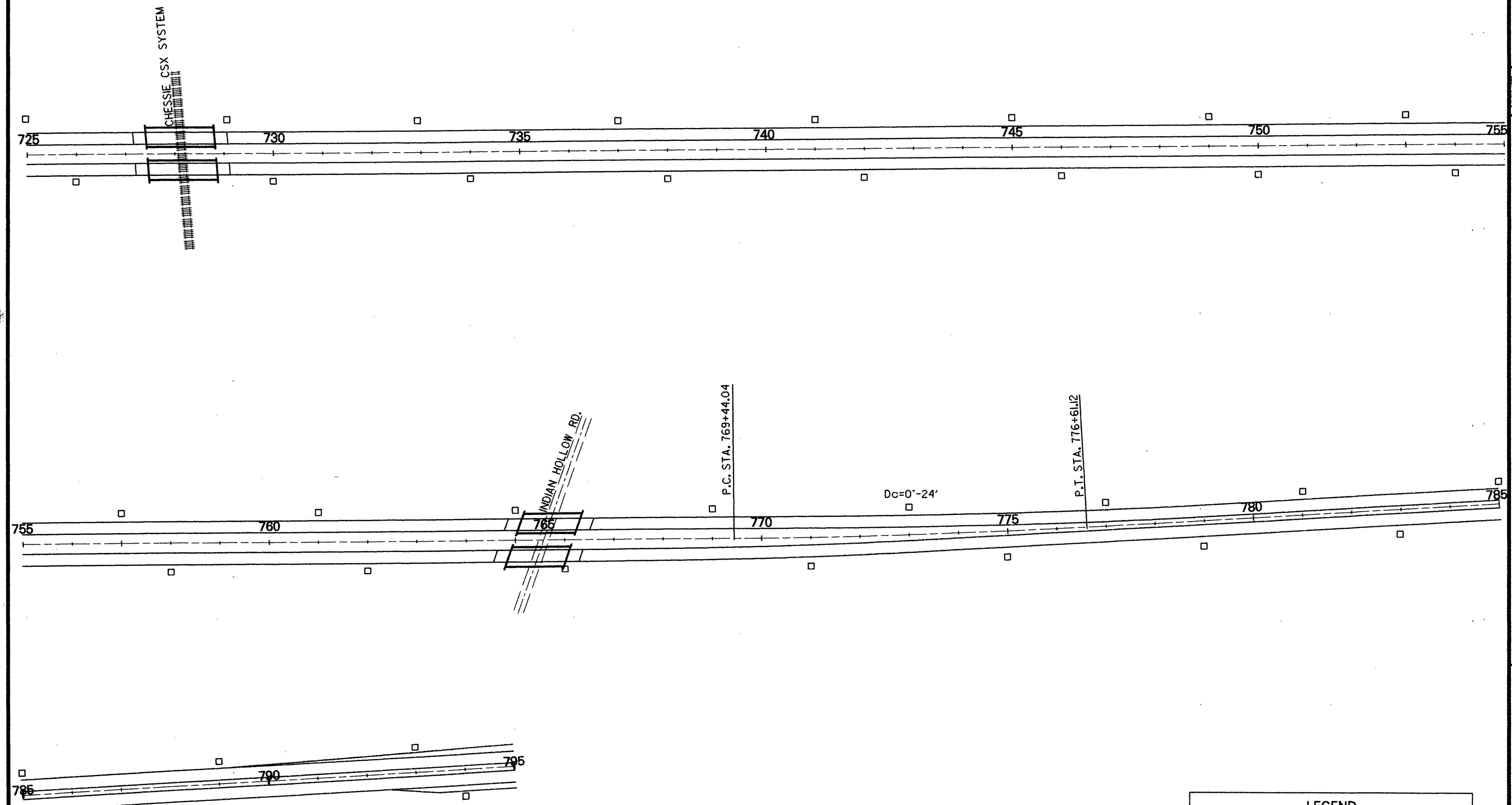
0 100 200

DELINEATOR PLAN

LOR-20-12.62



CALCULATED
ADD
CHECKED
TBC



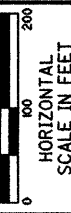
LEGEND

- TYPE C DELINEATOR, COLORLESS
- TYPE D DELINEATOR, YELLOW

SEE STANDARD DRAWING TC-61.10
FOR ADDITIONAL NOTES AND DETAILS.

DELINEATOR PLAN

LOR-20-12.62

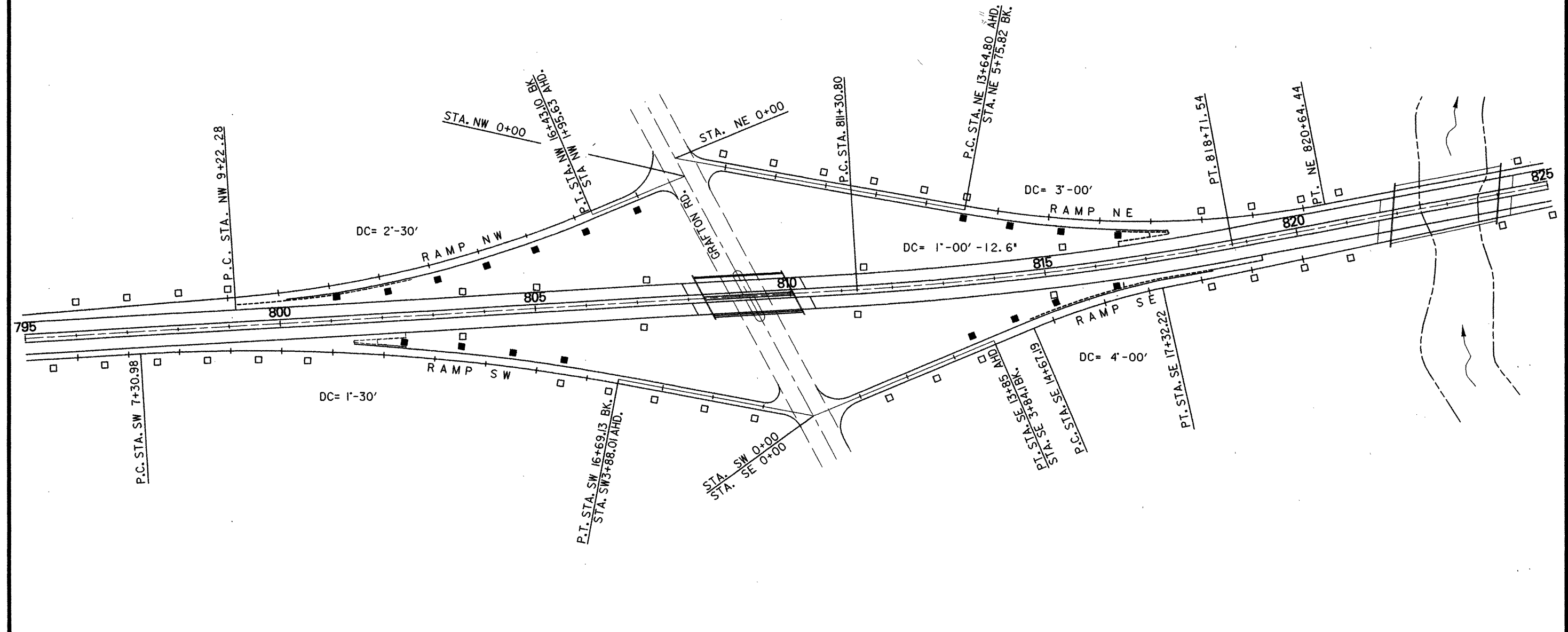


CALCULATED
ADD
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DELINEATOR PLAN

LOR-20-12.62

139
351



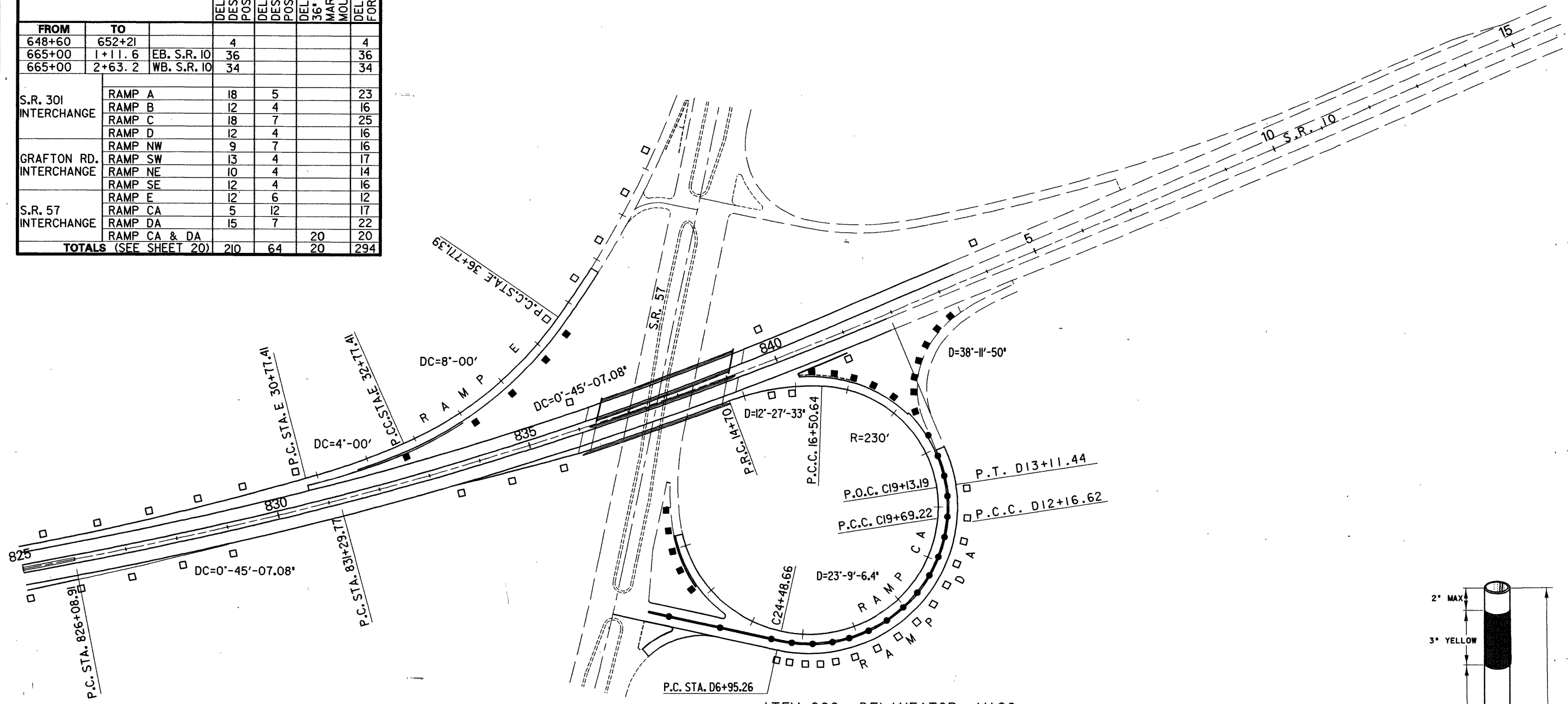
LEGEND

- TYPE C DELINEATOR, COLORLESS
- TYPE D DELINEATOR, YELLOW
- TYPE D/D DELINEATOR, YELLOW SURFACE MOUNTED

SEE STANDARD DRAWING TC-61.10 FOR ADDITIONAL NOTES AND DETAILS.

DELINEATOR QUANTITIES

STATION LIMITS OR STATION		620			
FROM	TO	DELINEATOR TYPE 'C' DESIGN 2, POST MOUNTED	DELINEATOR TYPE 'D' DESIGN 2, POST MOUNTED	DELINEATOR MISC.: 36" YELLOW TUBULAR MARKER, SURFACE MOUNTED	DELINEATOR, REMOVED FOR DISPOSAL
648+60	652+21	4			4
665+00	1+11.6 EB. S.R. 10	36			36
665+00	2+63.2 WB. S.R. 10	34			34
S.R. 301 INTERCHANGE	RAMP A	18	5		23
	RAMP B	12	4		16
	RAMP C	18	7		25
	RAMP D	12	4		16
GRAFTON RD. INTERCHANGE	RAMP NW	9	7		16
	RAMP SW	13	4		17
	RAMP NE	10	4		14
S.R. 57 INTERCHANGE	RAMP SE	12	4		16
	RAMP E	12	6		12
	RAMP CA	5	12		17
	RAMP DA	15	7		22
RAMP CA & DA				20	20
TOTALS (SEE SHEET 20)		210	64	20	294



LEGEND

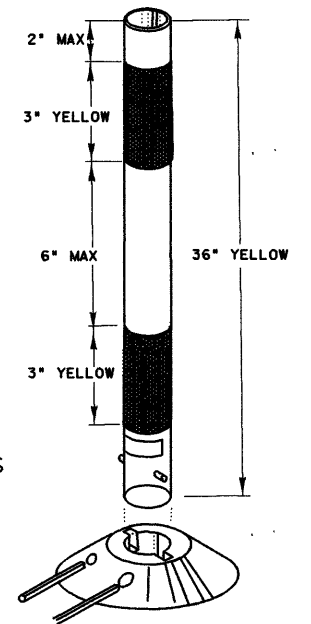
- TYPE C DELINEATOR, COLORLESS
- TYPE D DELINEATOR, YELLOW
- DELINEATOR, MISC.: 36 INCH YELLOW TUBULAR MARKER, SURFACE MOUNTED

SEE STANDARD DRAWING TC-61.10 FOR ADDITIONAL NOTES AND DETAILS.

ITEM 620, DELINEATOR, MISC.:
36 INCH YELLOW TUBULAR MARKER, SURFACE MOUNTED

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING 36 INCH YELLOW SURFACE-MOUNTED TUBULAR MARKERS AT THE LOCATIONS SHOWN IN THE PLAN. TUBULAR MARKERS SHALL BE OF NOMINAL DIAMETER, 36 INCHES IN HEIGHT WITH TWO 3 INCH BANDS OF REFLECTIVE SHEETING CONFORMING TO 730.19 LOCATED AS SHOWN ON THE ACCOMPANYING FIGURE. THE TUBULAR MARKER SHALL BE INSTALLED USING A BASE DESIGNED FOR SURFACE MOUNTING. THEY SHALL BE MOUNTED WITH A BUTYL ADHESIVE PAD IN ACCORD WITH MANUFACTURER'S RECOMMENDATIONS. THE TUBULAR MARKER SHALL BE ATTACHED TO THE BASE WITH ROLL PINS OR OTHER SUITABLE DEVICE WHICH PERMITS EASY REPLACEMENT. THE COLOR OF THE TUBULAR MARKER SHALL BE YELLOW. THE COLOR OF THE REFLECTIVE SHEETING SHALL BE YELLOW. TUBULAR MARKERS SHALL CONFORM TO THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT CONTRACT PRICE FOR ITEM 620 EACH DELINEATOR, MISC.: 36 INCH YELLOW TUBULAR MARKER, SURFACE MOUNTED

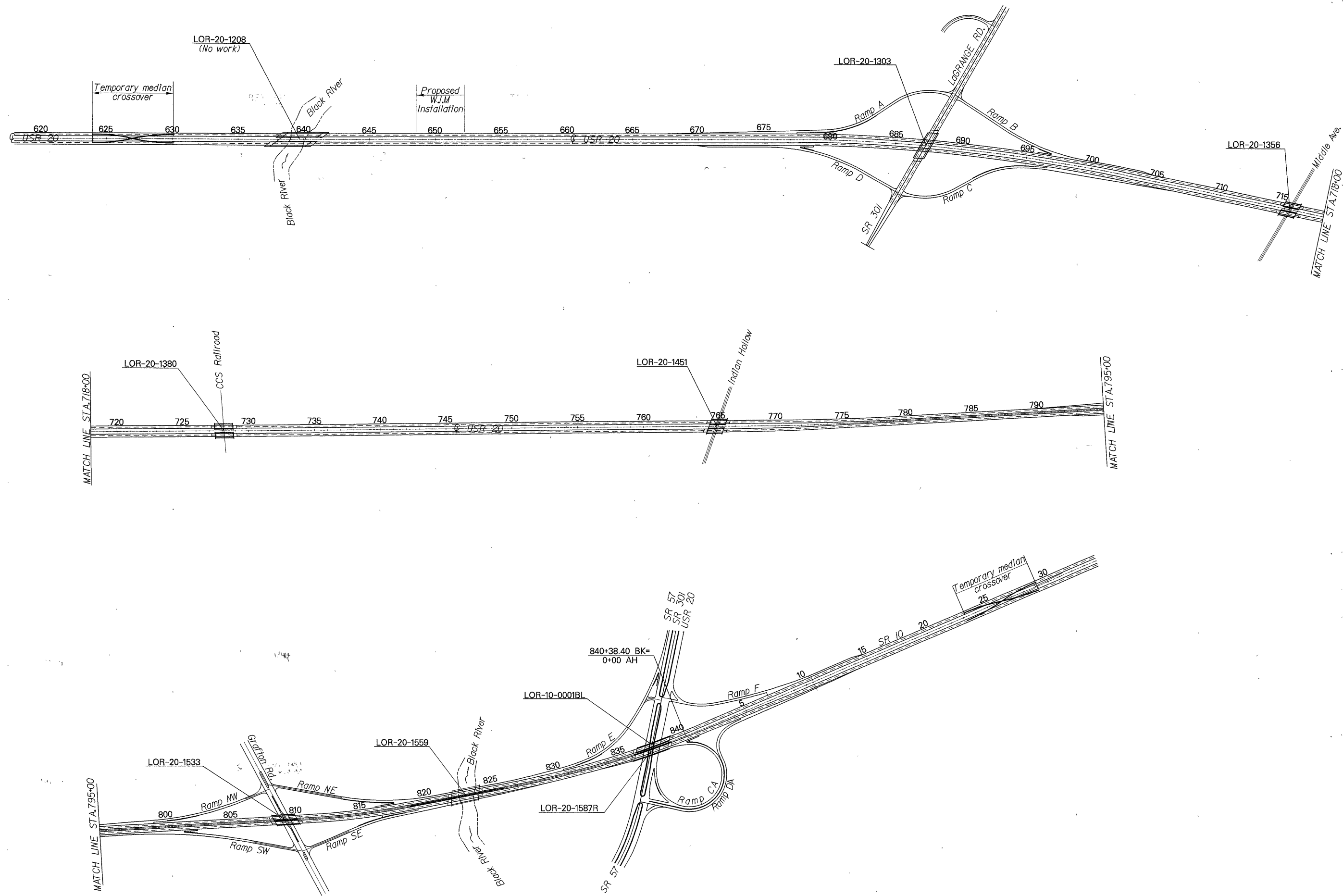


CALCULATED: ADB
 CHECKED: TBC

HORIZONTAL SCALE IN FEET

DELINEATOR PLAN

LOR-20-12.62



360
0
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC SCHEMATIC PLAN

LOR-20-12.62

614 - MAINTAINING TRAFFIC

A) GENERAL

TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES ON THIS PROJECT AND ON ALL RAMPS EXCEPT AS FOLLOWS: RAMPS 'C', 'SE' & 'CA' SHALL BE CLOSED DURING PHASE "A", ALSO RAMPS 'B', 'NE', 'NW' & 'E' SHALL BE CLOSED DURING PHASE "B".

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND MARCH 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

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

TRAFFIC SHALL BE MAINTAINED AS PER THE SPECIFICATIONS, MAINTENANCE OF TRAFFIC STANDARD DRAWINGS, PLAN DETAILS, AND AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH THE LATEST REVISIONS. 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. IN ADDITION, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1) THE CONTRACTOR SHALL SUBMIT IN WRITING, A SCHEDULE OF OPERATIONS TO THE DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL INFORM THE LOCAL STATE HIGHWAY PATROL OF THE SCHEDULE OF OPERATIONS FOR THE MAINTENANCE OF TRAFFIC, AND OF ANY CHANGES TO THE SCHEDULE THEREAFTER.

2) THE CONTRACTOR SHALL DESIGNATE A QUALIFIED INDIVIDUAL, OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO PERIODICALLY INSPECT, DOCUMENT, REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL INSPECT, DOCUMENT, REPAIR AND/OR REPLACE ALL TRAFFIC CONTROL DEVICES AT THE BEGINNING AND END OF EACH WORK DAY, AND AT LEAST ONCE EVERY TWO (2) HOURS WHILE WORK IS BEING CONDUCTED ON THE PROJECT.

THE ABOVE DESIGNATED INDIVIDUAL OR ANOTHER QUALIFIED INDIVIDUAL SUBJECT TO THE APPROVAL OF THE ENGINEER SHALL BE AVAILABLE AND ON CALL DURING THE NON-WORKING PERIODS THAT TRAFFIC IS DIVERTED FROM ITS NORMAL PATH. THIS INDIVIDUAL SHALL AT A MINIMUM OF ONCE EVERY DAY INSPECT, DOCUMENT, REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. IN ADDITION, THIS INDIVIDUAL SHALL BE ABLE TO RESPOND AND BE ON THE PROJECT WITHIN TWO (2) HOURS AFTER A CALL AND HAVE SUFFICIENT INVENTORY ON HAND TO REPAIR OR REPLACE THE DAMAGED OR MISSING TRAFFIC CONTROL DEVICE.

THE FOLLOWING QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR MAINTAINING TRAFFIC, AS DIRECTED BY THE ENGINEER.

404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 400 CU.YDS.

B) SEQUENCE OF CONSTRUCTION

TO CONSTRUCT THE VARIOUS ITEMS AS DETAILED WITHIN THIS PLAN, THE PROJECT SHALL BE DIVIDED INTO THE FOLLOWING MAJOR WORK AREAS:

PRIOR TO BEGINNING PHASE "A", THE FOLLOWING WORK ITEMS SHALL BE COMPLETED:

1. THE TEMPORARY MEDIAN CROSSOVERS SHALL BE CONSTRUCTED
2. INSTALL WESTBOUND UNDERDRAINS.
3. PLACE ANY TEMPORARY PAVEMENT WHICH WILL BE USED TO MAINTAIN TRAFFIC DURING PHASE "A".
4. MAKE TEMPORARY GUARDRAIL ATTACHMENTS AS NECESSARY.
5. REMOVE MEDIAN IN DESIGNATED AREAS AND REPLACE WITH TEMPORARY PAVEMENT AS SHOWN IN THE PLAN.

PHASE "A", PHASE "B", AND PHASE "C" MUST BE CONSTRUCTED IN THIS SEQUENTIAL ORDER AND EACH PHASE SHALL NOT BEGIN UNTIL THE PREVIOUS PHASE IS COMPLETED.

PHASE A: EASTBOUND DIRECTION

1. SET DETOURS FOR CLOSED RAMPS.
2. OVERLAY & REHABILITATE STRUCTURES EASTBOUND:
 - a. STR. 1356R (Middle Ave.)
 - b. STR. 1380R (CCS Railroad)
 - c. STR. 1451R (Indian Hollow)
3. REPLACE STRUCTURES EASTBOUND:
 - a. STR. 1533R (Grafton Rd.)
 - b. STR. 1559R (Black River)
 - c. STR. 1587R (S.R. 57)

B) SEQUENCE OF CONSTRUCTION (continued)

4. COMPLETE PAVEMENT REPAIRS EASTBOUND WHILE TRAFFIC IS CROSSED OVER.
5. INSTALL UNDERDRAINS EASTBOUND.
6. REPLACE EASTBOUND OVERHEAD SIGNS AND SIGN SUPPORTS.
7. PLACE EASTBOUND TEMPORARY PAVEMENT TO BE USED TO MAINTAIN TRAFFIC DURING PHASE "B".
8. REPLACE ALL GUARDRAIL RUNS EASTBOUND AS NECESSARY.
9. COMPLETE ASPHALT RESURFACING AND PLACE FINAL PAVEMENT MARKINGS.
10. CONSTRUCT WEIGH-IN-MOTION EASTBOUND INSTALLATION.

PHASE W: STATION 775+70 TO 822+00 (Winter treatment)

PLACE PORTABLE CONCRETE BARRIER, 32" AND APPROPRIATE END TREATMENTS AS PER SHEETS 171-173 TO PROTECT THIS AREA DURING THE WINTER SEASON BETWEEN THE COMPLETION OF PHASE "A" AND PRIOR TO BEGINNING PHASE "B".

PHASE B: WESTBOUND DIRECTION

1. SET DETOURS FOR CLOSED RAMPS.
2. OVERLAY & REHABILITATE STRUCTURES WESTBOUND:
 - a. STR. 1356L (Middle Ave.)
 - b. STR. 1380L (CCS Railroad)
 - c. STR. 1451L (Indian Hollow)
3. REPLACE STRUCTURES WESTBOUND:
 - a. STR. 1533L (Grafton Rd.)
 - b. STR. 1559L (Black River)
 - c. STR. 0001BL (S.R. 57)
4. COMPLETE PAVEMENT REPAIRS WESTBOUND WHILE TRAFFIC IS CROSSED OVER.
5. REPLACE WESTBOUND OVERHEAD SIGNS AND SIGN SUPPORTS.
6. REPLACE ALL GUARDRAIL RUNS WESTBOUND AS NECESSARY.
7. COMPLETE ASPHALT RESURFACING AND PLACE FINAL PAVEMENT MARKINGS.
8. CONSTRUCT WEIGH-IN-MOTION WESTBOUND INSTALLATION.

PHASE C:

1. CONSTRUCT PERMANENT CONCRETE MEDIAN BARRIER TYPE B50, AS PER PLAN, SEE PLAN SHEETS FOR TYPE A, B, OR C FROM STATION 769+29.64 TO STATION 836+27.4.

PHASE D: REHABILITATION OF S.R. 301 STRUCTURE OVERPASS

STAGE 1: REHABILITATE INSIDE PORTION OF STR. 1303
STAGE 2: REHABILITATE OUTSIDE PORTION OF STR. 1303

PHASE R1 & R2: REHABILITATION OF RAMPS

RAMPS SHALL BE REHABILITATED IN TWO PHASES AS PER SHEET 195, EXCEPT WHEN SPECIFIC RAMPS ARE CLOSED TO TRAFFIC, WORK SHALL BE COMPLETED FULL WIDTH.

IN ADDITION TO THE REQUIREMENTS OF 255.08, INDIVIDUAL PAVEMENT REPAIR AREAS GREATER THAN 60 FEET IN LENGTH AND NOT PROTECTED BY PORTABLE CONCRETE BARRIER SHALL BE COMPLETED WITHIN 48 HOURS OF THE PAVEMENT REMOVAL. NO REPAIR SHALL BE LEFT UNFILLED OVER A WEEKEND OR HOLIDAY IF NOT PROTECTED BY PORTABLE CONCRETE BARRIER. LIQUIDATED DAMAGES AS PER 108.07 SHALL BE APPLIED IF THE CONTRACTOR FAILS TO MEET THE ABOVE REQUIREMENTS.

REMOVING, GRADING AND INSTALLING THE REPLACEMENT CONCRETE MEDIAN BARRIER IN A CONTINUOUS OPERATION SHALL BE LIMITED TO A 3500 LINEAR FEET LENGTH AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC, AND THAT NO HAZARD IS LEFT UNPROTECTED FOR ANY AMOUNT OF TIME. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

C) MAINTENANCE OF TRAFFIC 4-LANE SECTIONS

A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES. SINGLE LANE CLOSURES MAY BE USED TO PERFORM WORK BEFORE AND AFTER THE TEMPORARY CROSSOVER PERIODS.

AT EACH RAMP THERE SHALL BE AN AREA IN THE OUTSIDE DIRECTIONAL LANE WHICH SHALL BE RESURFACED AT THE SAME TIME AS THE MEDIAN DIRECTIONAL LANE OR SHALL BE OMITTED DURING THE TIME THE OUTSIDE DIRECTIONAL LANE IS BEING RESURFACED TO MAINTAIN ACCESS TO AND FROM RAMPS AT INTERCHANGES AS PER STANDARD DRAWINGS MT-98.12 THROUGH MT-98.15 (ACCESS TO AND FROM RAMPS MUST ALSO BE MAINTAINED DURING JOINT REPAIR WORK). THESE AREAS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROVIDE SAFE FLOW OF TRAFFIC ENTERING OR LEAVING THE RAMPS WHILE THE OUTSIDE DIRECTIONAL LANE IS BEING RESURFACED. THE SPEED CHANGE LANE SHALL BE USED TO PROVIDE ONE-LANE TRAFFIC WHILE THE MEDIAN LANE IS BEING RESURFACED.

IN ALL CASES TRAFFIC SHALL BE SEPARATED FROM THE WORK AREA BY PORTABLE CONCRETE BARRIER, DRUMS, OR CONES (DAYTIME ONLY) SPACED AS PER THE PLAN DETAILS. THE LENGTH OF ALL RESTRICTED TRAFFIC ZONES SHALL BE KEPT TO A MINIMUM AS STATED ABOVE.

IF A LANE CLOSURE ON USR 20 IS DEEMED NECESSARY BY THE PROJECT ENGINEER DURING THE REHABILITATION OF STRUCTURE 1303 (S.R. 301), THIS CLOSURE SHALL BE ERRECTED AS PER STANDARD DRAWING MT-95.30. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SAFELY PROTECT THE TRAVELLING PUBLIC FROM ANY DEBRIS RESULTING FROM THIS CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED WITH THE LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, WITH ITEM 202-STRUCTURE REMOVED.

D) MAINTENANCE OF TRAFFIC - U.S.R. 20 OVER SIDEROADS

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON ALL SIDEROADS (i.e. MIDDLE RD., CSX RAILROAD, INDIAN HOLLOW RD., GRAFTON RD., BLACK RIVER, AND S.R. 57) EXCEPT DURING THE FOLLOWING OPERATIONS OR AS DIRECTED BY THE ENGINEER:

1. DURING THE REMOVAL OF THE EXISTING BRIDGE DECKS AND ASSOCIATED ITEMS AS DETAILED IN THE PLAN WHERE THE ENGINEER BELIEVES TEMPORARY CLOSURE OF A TRAFFIC LANE IS WARRANTED.
2. DURING THE REMOVAL OF PORTIONS OF THE EXISTING PARAPETS WHERE THE ENGINEER BELIEVES A HAZARD MAY EXIST.
- 3) DURING THE CONSTRUCTION OF THE PROPOSED PARAPET OVER THE LOCAL ROAD OR STATE ROUTE WHERE THE ENGINEER BELIEVES TEMPORARY CLOSURE OF A TRAFFIC LANE IS WARRANTED.

IN THE EVENT A LANE RESTRICTION ON THE LOCAL ROAD OR STATE ROUTE IS NECESSARY, THE METHOD OF INSTALLATION AND DESIGN OF TEMPORARY LANE CLOSURE AS PER STD. DRWG. MT-95.30 THRU MT-95.32 OR SHORT TERM CLOSURE USING MT-97.10 SHALL BE APPLIED. THE COST FOR THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SAFELY PROTECT THE TRAVELING PUBLIC FROM ANY DEBRIS RESULTING FROM THIS CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED WITH THE LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, WITH ITEM 202-STRUCTURE REMOVED.

E) MAINTENANCE OF TRAFFIC - RAMPS AND RELATED DETOURS

TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON ALL RAMPS EXCEPT AS FOLLOWS: RAMPS 'C', 'CA' & 'SE' SHALL BE CLOSED DURING PHASE "A". RAMPS 'B', 'NE', 'NW' & 'E' SHALL BE CLOSED DURING PHASE "B".

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING A MINIMUM OF SEVEN (7) DAYS PRIOR TO THE CLOSURE OF ANY RAMPS, AND SHALL ALSO PROVIDE, ERECT, MAINTAIN, AND REMOVE ALL SIGN INSTALLATIONS AS SHOWN ON SHEET 146 TO 154.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING, AND REMOVING THE GATES AND BARRICADES AS SHOWN ON SHEET 146 TO 154 AND THE ADVANCE WARNING SIGNS AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-101.60.

THE COST FOR THE ABOVE WORK SHALL BE INCLUDED WITH ITEM 614-MAINTAINING TRAFFIC.

CALCULATED
7/57 5/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC GENERAL NOTES

LOR - 20-12.62

142
351

ITEM 614 - TEMPORARY CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A TEMPORARY LIGHTING SYSTEM FOR A SINGLE CROSSOVER OR OVERLAPPING A PAIR OF CROSSOVERS ON A TWO LANE TWO WAY OPERATION. THE SYSTEM SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 713 EXCEPT: THE PERFORMANCE TEST OF 625.22e, AND WORKING DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION IS ACCEPTABLE.

POLES MAY BE LESS THAN 30' FROM EDGE OF PAVEMENT WHEN BEHIND GUARDRAIL. ADDITIONAL POLE LINES CABLES AND APPURTENANCE NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH TEMPORARY CROSSOVER LIGHTING SYSTEM, THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.

ITEM 614 - TEMPORARY CROSSOVER LIGHTING SYSTEM, AS PER PLAN (RAMPS)

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A TEMPORARY LIGHTING SYSTEM TO SAFELY AND ADEQUATELY ILLUMINATE THE TEMPORARY ACCESS OPENINGS FOR RAMPS 'D' & 'SW' DURING PHASE "A" AND RAMP 'F' DURING PHASE "B". THE SYSTEM SHALL BE AS SHOWN ON SHEET 159.164 & 183 AND STANDARD CONSTRUCTION DRAWING MT-100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 713 EXCEPT: THE PERFORMANCE TEST OF 625.22e, AND WORKING DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION IS ACCEPTABLE.

POLES MAY BE LESS THAN 30' FROM EDGE OF PAVEMENT WHEN BEHIND GUARDRAIL. ADDITIONAL POLE LINES CABLES AND APPURTENANCE NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH TEMPORARY CROSSOVER LIGHTING SYSTEM, AS PER PLAN (RAMPS) THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF ITEM 614, A UNIFORMED SPECIAL DUTY LAW ENFORCEMENT OFFICER AND AN OFFICIAL PATROL CAR WITH EMERGENCY FLASHERS OPERATING SHALL BE USED AS DESCRIBED BELOW.

THE LAW ENFORCEMENT OFFICERS (LEOS) WILL BE REQUIRED DURING INITIAL SETUP PERIODS AND UNTIL TRAFFIC IS STABILIZED, DURING TEAR DOWN PERIODS, AND WHERE SUBSTANTIAL SHIFTS OCCUR BETWEEN DIFFERENT PHASES OF TRAFFIC CONTROL AS OUTLINED IN THE PLANS.

IT IS NOT THE INTENT TO USE LEOS WHERE ADEQUATE TRAFFIC CONTROL AND/OR FLAGGERS WILL DO THE JOB.

THE FOLLOWING CRITERIA SHOULD BE USED FOR SCHEDULING LEOS UNDER THIS PAY ITEM:

1. FOR SHORT TERM CLOSURES (ONE DAY OR LESS WHICH WILL BE REMOVED AT NIGHT) A LEO IS NOT REQUIRED AND WILL NOT BE PAID FOR.
2. FOR LONGER TERM CLOSURES (MORE THAN ONE DAY) WHERE WORKERS ARE EXPOSED TO TRAFFIC FOR A CONSIDERABLE PERIOD OF TIME FOR SETTING UP DRUMS, PORTABLE CONCRETE BARRIER, REMOVING CONFLICTING PAVEMENT MARKINGS, ETC., A LEO WILL BE REQUIRED AND PAID FOR AS DESCRIBED BELOW.

ARRANGEMENTS AND PAYMENTS FOR THE SERVICES OF THE LEOS WITH PATROL CAR WILL BE MADE BY THE CONTRACTOR. INFORMATION REGARDING THE LEOS MAY BE OBTAINED BY CONTACTING:

THE STATE HIGHWAY PATROL HEADQUARTERS
660 EAST MAIN STREET
COLUMBUS, OHIO 43205
PHONE: (614) 466-2660

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED IN THE GENERAL SUMMARY:

ITEM 614 - LAW ENFORCEMENT OFFICER WITH 350 HOURS
PATROL CAR

COVERING OF SIGNS

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

WHEN DIRECTED IN THE PLAN, THE CONTRACTOR SHALL PLACE AN OC-SPECIAL "CLOSED" PANEL DIAGONALLY ACROSS THE AFFECTED SIGN IN A MANNER AS DESCRIBED ABOVE AND AS SHOWN IN THE PLAN. AT THE CONCLUSION OF THE CLOSURE, THE "CLOSED" PANEL SHALL BE PROMPTLY REMOVED.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

ITEM SPECIAL, REPLACEMENT SIGN

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

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

AN ESTIMATED QUANTITY OF 750 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM SPECIAL, REPLACEMENT DRUM

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

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

AN ESTIMATED QUANTITY OF 200 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

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 SIGNS AND SUPPORTS (R-10-48) (55 MPH) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED 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 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 4 HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN 4 HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER 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 DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER. 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 55 MPH ZONES AND EVERY 1/2 MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE AN R-8A.

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 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III-C SHEETING, FP-85. WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO (2) 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.

614, WORK ZONE SPEED LIMIT SIGN 36 EA.

ITEM 615 - TEMPORARY PAVEMENT CLASS A, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 615, THE TEMPORARY PAVEMENT CLASS A, AS PER PLAN SHALL REMAIN IN PLACE EXCEPT THAT PORTION OF PAVEMENT NECESSARY TO CONSTRUCT THE PROPOSED CONCRETE MEDIAN BARRIER, TYPE B50, AS PER PLAN AND RELATED FOUNDATION, THE TEMP. PVM'T. IS RESTRICTED TO THE FLEX. TYPE AS PER 615.05.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING INSTALLING, AND REMOVING AN ET-2000, OPTION "B" GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 50', INCLUSIVE OF TWO 25' LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS. WHEN THE PLAN SPECIFIES THAT THE ET-2000 ANCHOR ASSEMBLY IS TO BE ATTACHED TO AN EXISTING TYPE T ANCHOR ASSEMBLY, THE FLARED END SECTION OF THE TYPE T ANCHOR ASSEMBLY SHALL BE REMOVED AND THE ET-2000 ATTACHED TO THE EXISTING RAIL ELEMENT. WHEN THE ET-2000 IS NO LONGER NEEDED TO MAINTAIN TRAFFIC, IT SHALL BE REMOVED AND THE EXISTING TYPE T ANCHOR ASSEMBLY SHALL BE RESTORED TO ITS ORIGINAL CONDITION.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE FOR ITEM 606, EACH, ANCHOR ASSEMBLY, TYPE E AS PER PLAN AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND SUBSEQUENTLY REMOVE A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING A BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN AS PER STANDARD CONSTRUCTION DRAWING GR-3.5, MODIFIED AS FOLLOWS.

THIS ASSEMBLY SHALL BE USED TO CONNECT EXISTING TYPE 5 BARRIER DESIGN GUARDRAIL TO THE 32" PORTABLE CONCRETE BARRIER AS SHOWN IN THE PLAN. WOOD POSTS SHALL BE NEW. STEEL POSTS, RAIL ELEMENTS AND RELATED HARDWARE MAY BE USED BUT IN GOOD CONDITION. PARTIAL DEPTH RESIN-BONDED ANCHORING SYSTEMS MAY BE USED IN LIEU OF THE 3/8" ANCHORS CONFORMING TO 712.01 TYPE A TO ATTACH THE TERMINAL CONNECTORS TO THE PCB.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, AS PER PLAN WHICH SHALL INCLUDE ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE D, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING A BRIDGE TERMINAL ASSEMBLY, TYPE D, AS PER PLAN AS PER STANDARD CONSTRUCTION DRAWING GR-3A. AT THE COMPLETION OF PHASE "W" THIS ASSEMBLY SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE D, AS PER PLAN WHICH SHALL INCLUDE ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE E, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING A BRIDGE TERMINAL ASSEMBLY, TYPE E, AS PER PLAN AS PER STANDARD CONSTRUCTION DRAWING GR-3A. AT THE COMPLETION OF PHASE "W" THIS ASSEMBLY SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE E, AS PER PLAN WHICH SHALL INCLUDE ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM.

ITEM 606 - GUARDRAIL, TYPE 5, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING GUARDRAIL, TYPE 5 AS PER 606 AND STANDARD CONSTRUCTION DRAWING GR-2.1. WOOD POSTS SHALL BE NEW. STEEL POSTS, RAIL ELEMENTS AND RELATED HARDWARE MAY BE USED BUT IN GOOD CONDITION.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER LIN. FT. FOR ITEM 606 - GUARDRAIL, TYPE 5, AS PER PLAN WHICH SHALL INCLUDE ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING A BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER STANDARD CONSTRUCTION DRAWING GR-3.1, MODIFIED AS FOLLOWS.

THIS ASSEMBLY SHALL BE USED TO CONNECT TEMPORARY TYPE 5 GUARDRAIL TO THE NEW BRIDGE PARAPET CONSTRUCTED IN PHASE "A" AS SHOWN IN THE PLAN. WOOD POSTS SHALL BE NEW. STEEL POSTS, RAIL ELEMENTS AND RELATED HARDWARE MAY BE USED BUT IN GOOD CONDITION. PARTIAL DEPTH RESIN-BONDED ANCHORING SYSTEMS MAY BE USED IN LIEU OF THE 3/4" ANCHORS CONFORMING TO 712.01 TYPE A TO ATTACH THE TERMINAL CONNECTORS TO THE PARAPET END. WHEN THIS ASSEMBLY IS NO LONGER NEEDED TO MAINTAIN TRAFFIC, IT SHALL BE REMOVED AND ANY HOLES IN THE PARAPET RESULTING FROM THIS INSTALLATION SHALL BE FILLED WITH AN EPOXY NON-SHRINK GROUT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN WHICH SHALL INCLUDE ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM.

ITEM 614 - TEMPORARY IMPACT ATTENUATOR G-R-E-A-T TYPE, MODEL NUMBER 206206NF6GCZ, BIDIRECTIONAL

THIS WORK SHALL CONSIST OF FURNISHING TEMPORARY IMPACT ATTENUATORS, AS REQUIRED IN THE PLANS. THIS ITEM SHALL INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL G-R-E-A-T IMPACT ATTENUATOR SYSTEMS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601; TELEPHONE (312)-467-6750. THE ATTENUATORS SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLAN.

THE BACKUP SYSTEM SHALL BE TRANSITIONED FROM THE PORTABLE CONCRETE BARRIER OR EXISTING BARRIER GUARDRAIL AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE MANUFACTURER SHALL PROVIDE THE DETAILS FOR THIS TRANSITION. THE COSTS FOR THIS WORK NECESSARY FOR COMPLETION OF THIS ITEM SHALL BE CONSIDERED INCIDENTAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION, REPAIRING, AND OTHERWISE RESTORING THE TEMPORARY IMPACT ATTENUATOR IN ACCORDANCE WITH THE MANUFACTURER'S MAINTENANCE INSTRUCTIONS WHILE IT IS IN USE ON THE PROJECT. SUCH REPAIRS SHALL BE PERFORMED WITHIN TWELVE (12) HOURS OF THE INCIDENT WHICH CAUSED DAMAGE TO THE ATTENUATOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR. ONE (1) EXTRA COMPLETE SET OF HEX-FOAM CARTRIDGES, AS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., FOR THE ATTENUATOR FURNISHED, SHALL BE STOCKED AT ALL TIMES FOR THE ABOVE REPAIRS AND THE COST SHALL BE INCLUDED IN THE COST OF THE TEMPORARY ATTENUATOR.

THE NOSE COVER OF THE TEMPORARY IMPACT ATTENUATOR SHALL BE MARKED WITH THREE EVENLY SPACED FOUR INCH (4") WIDE HORIZONTAL STRIPS (TWO WHITE, ONE ORANGE) OF REFLECTORIZED SHEETING, TYPE G-730.19.

FOR LOCATIONS OF THE ATTENUATORS SEE PLAN SHEET 164 & 171. THESE TEMPORARY LOCATED ATTENUATORS SHALL BE BID PER EACH PER THE FOLLOWING PAY ITEM DESCRIPTION:

ITEM 614 - TEMPORARY IMPACT ATTENUATOR, G-R-E-A-T TYPE, MODEL # 206206NF6GCZ, BIDIRECTIONAL

PAYMENT FOR THE ABOVE SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, ITEM 614, AS DESCRIBED BELOW. THIS PRICE SHALL BE CONSIDERED FULL PAYMENT FOR FURNISHING, INSTALLING, AT THE SPECIFIED LOCATIONS, FURNISHING EXTRA HEX-FOAM CARTRIDGES AS SPECIFIED ABOVE, RESTORATION AFTER EACH VEHICLE IMPACT, INCLUDING ALL LABOR, TOOLS, EQUIPMENT AND MISCELLANEOUS HARDWARE AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK IN PLACE. ALSO, INCLUDED IN THE ABOVE COST SHALL BE THE REMOVAL OF THE TEMPORARY IMPACT ATTENUATOR.

ITEM 614 - TEMPORARY PAVEMENT MARKINGS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER TO PROVIDE WORK ZONE PAVEMENT MARKINGS.

ITEM 614 TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C 4.00 MI.

THESE MARKINGS SHALL BE USED TO INSTALL TAPERS AS PER MT-95.30 ON THE ONE LANE CLOSURES FOR THE WORK ZONES OF PHASE "C" OR OTHER WORK ZONES REQUIRING AN OVERNIGHT ONE LANE CLOSURE NOT SPECIFICALLY ITEMIZED IN THE PLAN. PORTIONS OF THIS ITEM MAY BE NON-PERFORMED, DEPENDENT UPON THE CONTRACTOR'S SEQUENCE OF WORK.

TRENCH FOR TEMPORARY PAVEMENTS

EXCAVATION FOR TEMPORARY PAVEMENTS SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH DRUMS. THE PLACEMENT OF THE PROPOSED MATERIALS SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF EXCAVATION OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. IN CASE OF EMERGENCY, THE OPEN EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS DIRECTED BY THE ENGINEER.

ITEM 614-DOUBLED FINES IN WORK ZONE SIGN

THIS ITEM SHALL CONSIST OF FURNISHING, ERECTING, MAINTAINING, AND/OR REPLACING AS NECESSARY AND SUBSEQUENTLY REMOVING R-180-48 (CONSTRUCTION ZONE-FINES DOUBLED) SIGNS BY THE CONTRACTOR AS DETAILED BELOW.

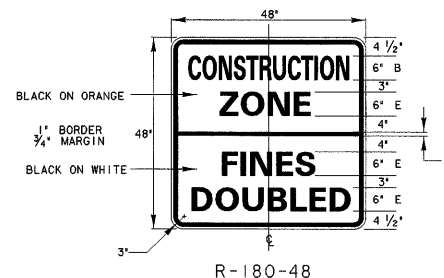
THESE SIGNS MAY BE ERECTED FOR CONSTRUCTION ZONES ONLY IF THE PLANNED WORK LENGTH IS AT LEAST ONE HALF MILE LONG AND THE WORK WILL LAST FOR AT LEAST 30 DAYS. A CONSTRUCTION ZONE SHALL BE AS DEFINED AS THAT LANE OR PORTION OF STREET OR HIGHWAY OPEN TO VEHICULAR TRAFFIC AND ADJACENT TO A LANE, BERM, OR SHOULDER OF A STREET OR HIGHWAY WITHIN WHICH LANE, BERM, OR SHOULDER CONSTRUCTION, RECONSTRUCTION, RESURFACING, OR ANY OTHER WORK OF A REPAIR OR MAINTENANCE NATURE, INCLUDING PUBLIC UTILITY WORK, IS BEING CONDUCTED, COMMENCING WITH THE POINT WHERE THE FIRST WORKER OR PIECE OF EQUIPMENT IS LOCATED AND ENDING WHERE THE LAST WORKER OR PIECE OF EQUIPMENT IS LOCATED.

THE WORK LENGTH IS DEFINED AS THE LENGTH OF ROADWAY DIRECTLY AND INDIRECTLY AFFECTED BY CONSTRUCTION ACTIVITIES INCLUDING THE TRANSITION AREA (WHERE REDIRECTION OF THE DRIVER'S NORMAL PATH OCCURS) THE ACTIVITY AREA (WHICH INCLUDES THE CONSTRUCTION ZONE AND ANY BUFFERS) AND THE TERMINATION AREA (WHERE TRAFFIC IS RETURNED TO ITS NORMAL PATH), BUT NOT INCLUDING THE ADVANCE WARNING SIGN AREA.

WHERE WORKERS AND CONSTRUCTION EQUIPMENT ARE BEYOND THE TRAFFIC LANES AND PAVED SHOULDER, THE SIGNS SHALL NOT BE PROVIDED. ALSO, IF CONSTRUCTION ACTIVITY AFFECTS ONLY ONE DIRECTIONAL ROADWAY OF A DIVIDED HIGHWAY WITH A BARRIER OR WIDE MEDIAN, SIGNS SHALL NOT BE ERECTED FOR TRAFFIC ON THE OPPOSING DIRECTIONAL ROADWAY OR RAMP.

THE SIGNS SHALL BE MOUNTED ON BOTH SIDES (DUAL) OF A DIRECTIONAL ROADWAY OF A DIVIDED HIGHWAY, AND ONLY ON THE RIGHT SIDE OF RAMPS. THE FIRST SIGN SHALL BE PLACED BETWEEN THE "ROAD CONSTRUCTION AHEAD" (OW-128) SIGN AND THE NEXT SIGN IN THE SEQUENCE. ADDITIONAL SIGNS ARE REQUIRED FOR LONG CONSTRUCTION ZONES OR WHERE RAMPS JUNCTION WITHIN THE CONSTRUCTION PROJECT WORK LIMITS. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP, AND AT LEAST ONCE EVERY TWO MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MOUNTED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

SIGNS SHALL BE COVERED OR REMOVED WHEN A CONSTRUCTION ZONE IS DISCONTINUED FOR A PERIOD OF 30 DAYS OR MORE.



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, DOUBLED FINES IN WORK ZONE SIGN 16 EA.

ITEM 622 - PORTABLE CONCRETE BARRIER, 32", AS PER PLAN

AT THE COMPLETION OF WORK, THE PORTABLE CONCRETE BARRIER UNDER THIS PAY ITEM SHALL BECOME THE PROPERTY OF THE DEPARTMENT OF TRANSPORTATION, STATE OF OHIO. THE CONTRACTOR SHALL REMOVE THE PCB FROM THE PROJECT, TRANSPORT IT TO ODOT'S LORAIN COUNTY GARAGE IN OBERLIN, UNLOAD AND STACK IT FOR STORAGE IN THE AREA DESIGNATED BY THE COUNTY MANAGER. THE CONTRACTOR SHALL NOTIFY THE COUNTY MANAGER (216-774-6681) A MINIMUM OF 7 DAYS PRIOR TO DELIVERING THE PORTABLE CONCRETE BARRIER.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 622 LIN. FT. PORTABLE CONCRETE BARRIER, 32", AS PER PLAN AND SHALL INCLUDE FURNISHING, MAINTAINING, REMOVING, TRANSPORTING, UNLOADING AND STACKING THE PCB AT THE ODOT FACILITY.

ITEM 614, BARRIER REFLECTORS

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN ON THE PLAN.

ALSO, BARRIER REFLECTORS, TYPE A2, SPACED AT 25' C/C SHALL BE PLACED ON BOTH SIDES OF THE EXISTING MEDIAN BARRIER GUARDRAIL FROM STA. 799+00 TO STA. 836+25±. THESE REFLECTORS SHALL BE IN PLACE PRIOR TO THE BEGINNING OF PHASE "A".

AN ESTIMATED QUANTITY OF 300 EACH BARRIER REFLECTOR, TYPE A2 HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

CALCULATED
TSF 5/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC GENERAL NOTES

LOR-20-12.62

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
142	143	144	155	196											
400			33			404	35000	433	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC					
			700			606	13001	700	LIN. FT.	GUARDRAIL, TYPE 5, AS PER PLAN	143				
			10			606	26101	10	EACH	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	143				
			3			606	31501	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE D, AS PER PLAN	143				
			1			606	32001	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE E, AS PER PLAN	143				
			3			606	35001	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	144				
			6			606	35005	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, BARRIER DESIGN, AS PER PLAN	143				
	350.					614	11100	350	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR					
			2			614	12350	2	EACH	TEMPORARY IMPACT ATTENUATOR, G-R-E-A-T TYPE, MODEL NO. 206206NF6GCZ, BIDIRECTIONAL					
	36					614	12470	36	EACH	WORK ZONE SPEED LIMIT SIGN					
		16				614	12480	16	EACH	DOUBLED FINES IN WORK ZONE SIGN					
	750					SPECIAL	61412500	750	SQ. FT.	REPLACEMENT SIGN	143				
	200					SPECIAL	61412600	200	EACH	REPLACEMENT DRUM	143				
			2			614	12756	2	EACH	TEMPORARY CROSSOVER LIGHTING SYSTEM					
			3			614	12756	3	EACH	TEMPORARY CROSSOVER LIGHTING SYSTEM, AS PER PLAN (RAMPS)	143				
				411		614	12800	411	EACH	TEMPORARY RAISED PAVEMENT MARKER					
			133			614	13200	133	EACH	BARRIER REFLECTOR, TYPE A					
		300				614	13202	300	EACH	BARRIER REFLECTOR, TYPE A2					
			4440			614	13300	4440	EACH	BARRIER REFLECTOR, TYPE B					
			4419			614	13350	4419	EACH	OBJECT MARKER					
			11.06			614	22000	11.06	MILE	TEMPORARY EDGE LINE, CLASS I					
		4.00	20.77			614	22300	24.77	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C					
			870			614	23000	870	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I					
			1886			614	23600	1886	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C					
			LUMP			615	10000	LUMP		TEMPORARY ROAD					
			5007			615	20000	5007	SQ. YD.	TEMPORARY PAVEMENT, CLASS A					
			26044			615	20001	26044	SQ. YD.	TEMPORARY PAVEMENT, CLASS A, AS PER PLAN	143				
			47960			622	40020	47960	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"					
			2000			622	40021	2000	LIN. FT.	PORTABLE CONCRETE BARRIER, 32", AS PER PLAN	144				
			3130			622	40030	3130	LIN. FT.	PORTABLE CONCRETE BARRIER, 50"					
			380			622	40040	380	LIN. FT.	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED					

GENERAL SUMMARY

LOR-20-12.62

GENS/MDG

CALCULATED
7/96
CHECKED
TBC 4/96

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE EVALUATED BY THE ENGINEER IN ACCORDANCE WITH THE THREE PERFORMANCE PARAMETERS CONTAINED IN SUPPLEMENT 1047. THE MARKINGS SHALL BE REPAIRED OR REPLACED WHEN THE NUMERICAL RATING OF A PARAMETER IS (a) SIX OR LOWER FOR DURABILITY, (b) FOUR OR LOWER FOR VISUAL EFFECTIVENESS AND (c) FOUR OR LOWER FOR NIGHT VISIBILITY. THE CONTRACTOR SHALL REPAIR OR REPLACE UNSATISFACTORY MARKINGS IMMEDIATELY AND AT NO ADDITIONAL COST TO THE STATE.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR TYPE C PREFORMED MATERIAL.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT (a) PARAGRAPH 621.14 SHALL NOT APPLY, (b) WHERE THE MARKINGS ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRY PAINT MAY BE USED FOR 621.02 AND (c) WHEN APPLIED TO NEW ASPHALT PAVEMENT SURFACES PLACED BY THIS PROJECT, THE SPECIFIED APPLICATION RATE SHALL BE AS FOLLOWS:

GALLONS PER MILE OF LINE	WIDTH OF LINE (INCHES)				
	4	8	12	-	-
SOLID LINE	20	40	60	-	-
10 FOOT DASHED LINE	5	-	-	-	-
4 FOOT DASHED LINE	2	-	-	-	-
DOTTED LINE	6.7	-	-	-	-

(d) WHEN APPLIED TO PLANED ASPHALT PAVEMENT SURFACES THE SPECIFIED APPLICATION RATE SHALL BE AS FOLLOWS:

GALLONS PER MILE OF LINE	WIDTH OF LINE (INCHES)				
	4	8	12	-	-
SOLID LINE	24	48	72	-	-
10 FOOT DASHED LINE	6	-	-	-	-
4 FOOT DASHED LINE	2.4	-	-	-	-
DOTTED LINE	8	-	-	-	-

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT, INCLUDING RAMPS, PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

LINE PLACEMENT TOLERANCE FOR FINAL SURFACES SHALL BE IN ACCORDANCE WITH 621.052. ON SURFACES OTHER THAN THE FINAL, THE TOLERANCE PERMITTED SHALL BE TWICE THAT IN 621.052. LAYOUT AND PREMARKING SHALL BE IN ACCORDANCE WITH 621.051.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE STANDARD DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING EXCEPTION:

1. TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
2. STOP LINES SHALL BE 12-INCHES IN WIDTH.
3. CROSSWALK LINES SHALL BE 8-INCHES IN WIDTH.

CLASS I I MARKINGS

CLASS I I MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 4 FOOT LONG DASHES SPACED AT A MAXIMUM OF 40 FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 4 FOOT LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

GORE MARKINGS SHALL BE CONTINUOUS, WHITE 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

ALLOWABLE DURATION OF CLASS II CENTER LINES

EXCEPT AS NOTED BELOW, ANYTIME EXISTING PERMANENT NO PASSING ZONE MARKINGS HAVE BEEN REMOVED OR OBLITERATED AS THE RESULT OF A CONSTRUCTION OPERATION (PAVEMENT GRINDING, ASPHALT PAVEMENT OVERLAYS, ETC.) AND THE SECTION OF PAVEMENT CONTINUES TO BE USED BY THE TRAVELING PUBLIC, THE CONTRACTOR MUST WITHIN 3 CALENDAR DAYS PLACE FINAL CENTER LINE MARKINGS AS SPECIFIED BY THE PLAN. EQUIVALENT 614 CLASS I CENTER LINE MARKINGS MAY BE USED IN LIEU OF FINAL MARKINGS. IN THIS EVENT, THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I MARKINGS AS PART OF THE LUMP SUM BID FOR MAINTAINING TRAFFIC.

IF AFTER THE ORIGINAL MARKINGS ARE REMOVED OR OBLITERATED, THE CONTRACTOR RETURNS TO THE SUBJECT NO PASSING ZONE AND PLACES A PLAN SPECIFIED PAVEMENT COURSE WITHIN THE 3 CALENDAR DAY LIMIT, OR PERFORMS WORK IN PREPARATION FOR A SUBSEQUENT PAVEMENT COURSE, THE CONTRACTOR WILL HAVE TEMPORARILY SATISFIED THE CONDITIONS OF THE PREVIOUS PARAGRAPH. IN THIS EVENT THE 3 CALENDAR DAY LIMIT WILL BEGIN AGAIN.

SECTIONS OF PAVEMENT WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS SHALL BE GOVERNED BY THE 21 DAY LIMIT DESCRIBED BELOW IN THE PARAGRAPH ENTITLED "ALLOWABLE DURATION OF CLASS II LANE LINES, GORE MARKINGS AND ABSENCE OF EDGE LINES."

FOR EACH CALENDAR DAY BEYOND 3 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE SUM OF \$200 PER CALENDAR DAY WILL BE DEDUCTED FROM ANY MONEY DUE THE CONTRACTOR, NOT AS A PENALTY BUT AS LIQUIDATED DAMAGES.

ALLOWABLE DURATION OF CLASS II LANE LINES AND GORE MARKINGS AND ABSENCE OF EDGE LINES

ANYTIME EXISTING PERMANENT LANE LINES, GORE MARKINGS OR EDGE LINES HAVE BEEN REMOVED OR OBLITERATED AS THE RESULT OF A CONSTRUCTION OPERATION (PAVEMENT GRINDING, ASPHALT PAVEMENT OVERLAYS, PAVEMENT WIDENING, ETC.) AND THE SECTION OF PAVEMENT CONTINUES TO BE USED BY THE TRAVELING PUBLIC, THE CONTRACTOR MUST WITHIN 21 CALENDAR DAYS PLACE FINAL PAVEMENT MARKINGS AS SPECIFIED BY THE PLAN. EQUIVALENT 614 CLASS I MARKINGS MAY BE USED IN LIEU OF FINAL MARKINGS. IN THIS EVENT, THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

IF, AFTER THE ORIGINAL MARKINGS ARE REMOVED OR OBLITERATED, THE CONTRACTOR RETURNS TO THE SUBJECT SECTION OF PAVEMENT AND PLACES A PLAN SPECIFIED PAVEMENT COURSE WITHIN THE 21 CALENDAR DAY LIMIT, OR PERFORMS SPECIFIED WORK WHICH REQUIRES A LANE CLOSURE, EXCEPT ROUTINE MAINTENANCE REQUIRED BY 614.02, THE CONTRACTOR WILL HAVE TEMPORARILY SATISFIED THE CONDITIONS OF THE PREVIOUS PARAGRAPH. IN THIS EVENT, THE 21 CALENDAR DAY LIMIT WILL BEGIN AGAIN.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE SUM OF \$200 PER CALENDAR DAY WILL BE DEDUCTED FROM ANY MONEY DUE THE CONTRACTOR, NOT AS A PENALTY BUT AS LIQUIDATED DAMAGES.

IF A SECTION OF PAVEMENT IS IN A CONTINUOUS PART OF THE PROJECT THEN A NEW 21 DAY LIMIT FOR RENEWED WORK ON A SECTION SHALL APPLY TO ALL SECTIONS IN THAT PART. IF THE PROJECT IS IN PARTS AND THE TRAVELING PUBLIC WOULD NOT DISCERN THE PARTS AS ONE CONTINUOUS PROJECT, THEN A NEW 21 DAY LIMIT IN ONE PART WILL NOT APPLY TO THE OTHER PARTS. THE TWO DIRECTIONAL SIDES OF A FREEWAY SHALL BE TREATED AS SEPARATE PARTS. WORK ON ONE SIDE OF A FREEWAY SHALL NOT CREATE A NEW 21 DAY LIMIT FOR THE OTHER SIDE.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

BASIS OF PAYMENT

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 PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF MARKINGS.

ITEM	UNIT	DESCRIPTION
614	MILE	TEMPORARY LANE LINES, CLASS _____, _____ *
614	MILE	TEMPORARY CENTER LINES, CLASS _____, _____ *
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, _____ *
614	MILE	TEMPORARY EDGE LINES, CLASS I, _____ *
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS I I, _____ *
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, _____ *
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, _____ *
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, _____ *

* TYPE MATERIAL (621 PAINT, 947.03 TYPE B OR 947.03 TYPE C OR LEFT BLANK TO PERMIT ANY OF THE THREE)

CALC BY _____	LOR-20-12-62	OHIO	145A 351
DATE _____		FHWA REGION 5	
CHKD BY _____			
DATE _____			

614 WORK ZONE MARKING SIGNS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS (OW-167, R-33 AND R-34) AND THEIR SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMTCD STANDARD EDGE LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167-36) SIGN. ON FREEWAYS AND EXPRESSWAYS AN OW-167-48 SIGN SHALL BE USED. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL ALSO BE ERECTED ON EACH ENTRANCE RAMP, AT INTERSECTIONS OF THROUGH ROADS TO WARN ENTERING OR TURNING TRAFFIC OF THE CONDITIONS AND AT LEAST ONCE EVERY 2 MILES ALONG THE ROADWAY. THESE SIGNS SHALL BE REMOVED WHEN THEY DO NOT APPLY.

THE CONTRACTOR SHALL AT THE BEGINNING OF EACH NO-PASSING ZONE LACKING OMTCD STANDARD CENTER LINE MARKINGS, ERECT A "DO NOT PASS" (R-33-30) SIGN AND AT THE END OF EACH NO-PASSING ZONE, ERECT A "PASS WITH CARE" (R-34-30) SIGN.

MATERIALS

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19. WORK ZONE MARKING SIGNS SHALL BE PROVIDED WITH SUITABLE YIELDING SUPPORTS OF SUFFICIENT STRENGTH AND STABILITY.

METHOD OF MEASUREMENT

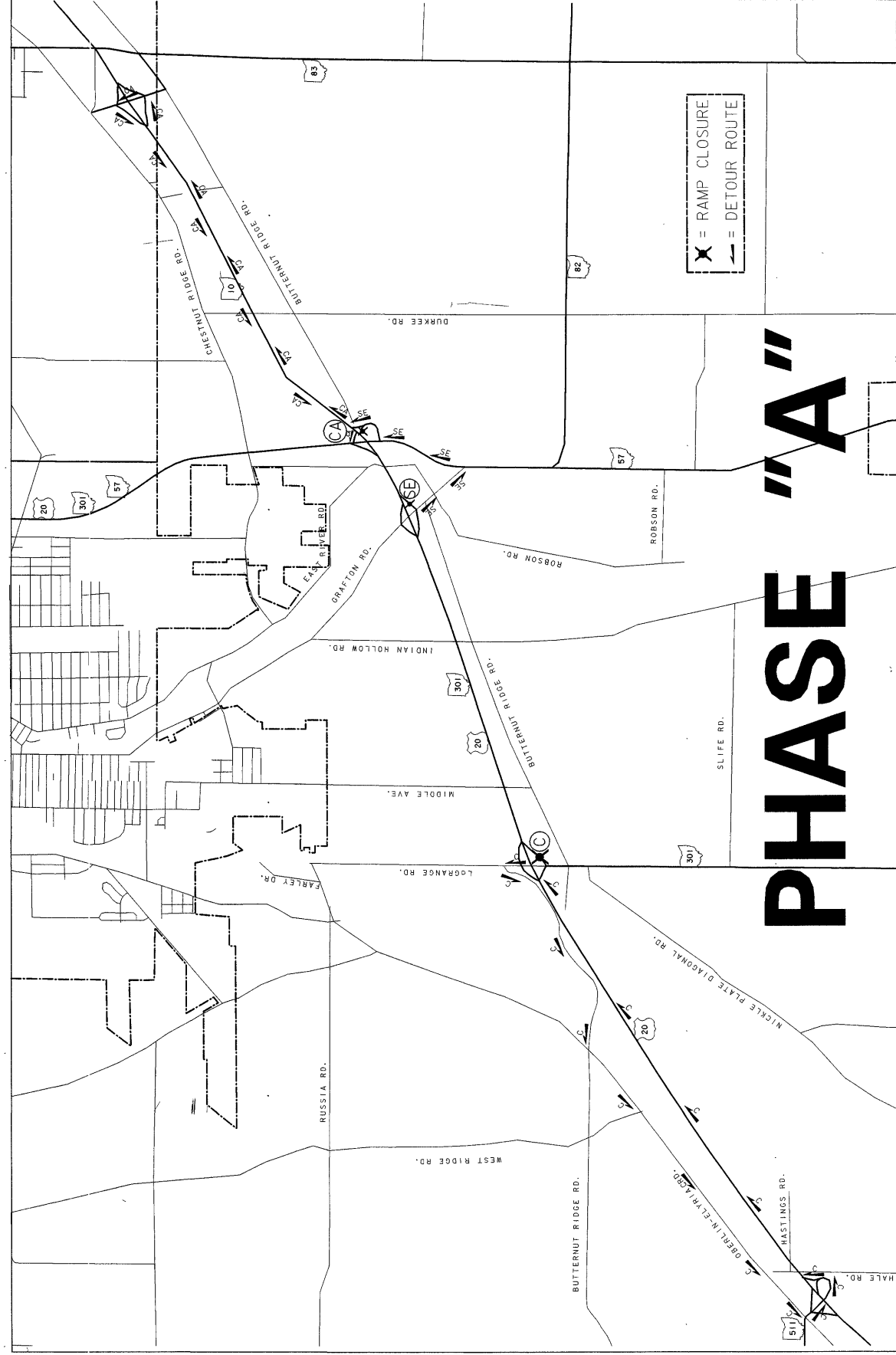
WORK ZONE MARKING SIGNS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN, NECESSARY SUPPORTS AND ALL ATTACHMENT HARDWARE. ALL OTHER WORK ZONE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

BASIS OF PAYMENT

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 PLACEMENT, MAINTENANCE AND REMOVAL OF THE SIGNS.

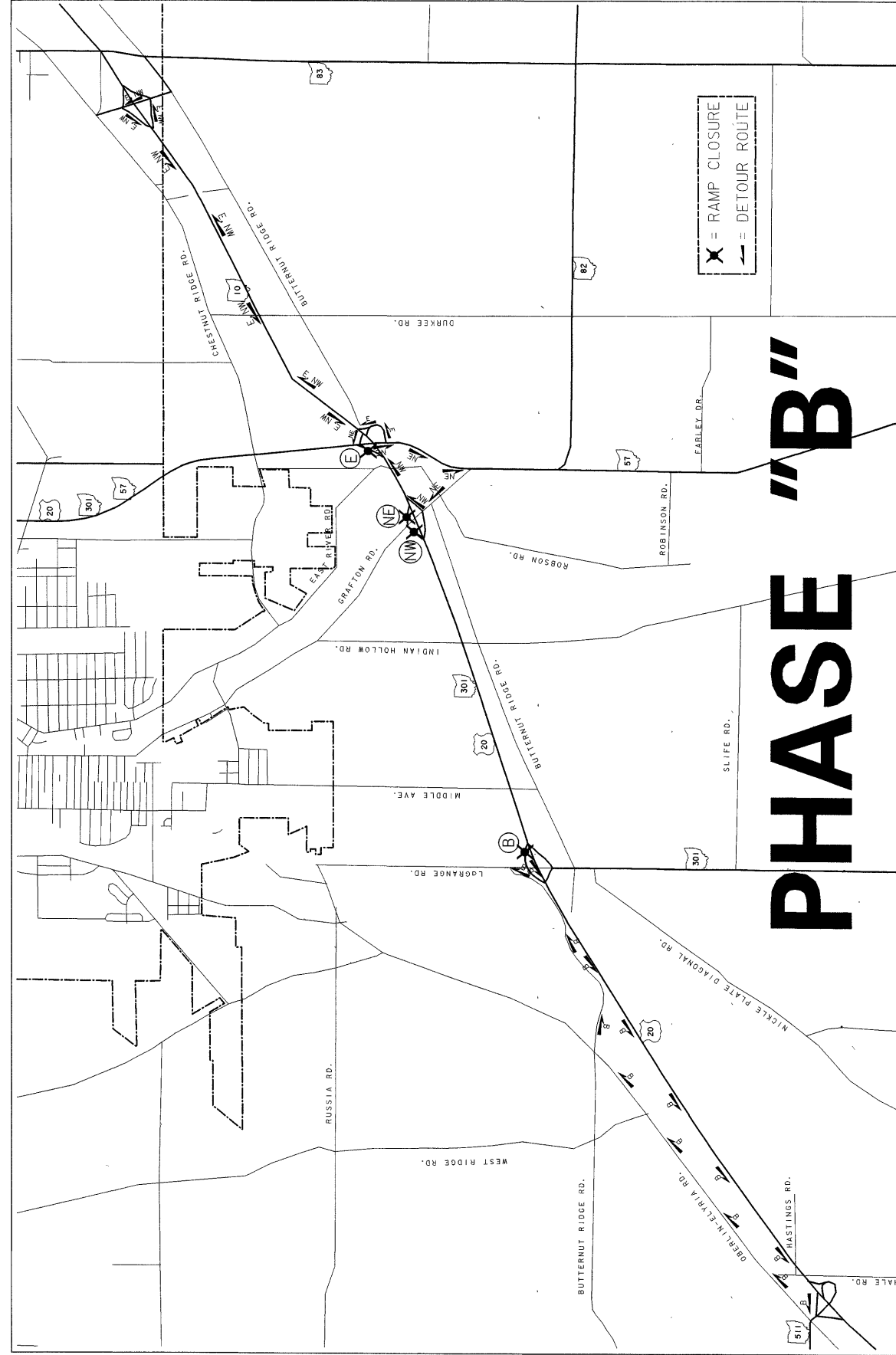
ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE MARKING SIGNS

REVISED BY:	DATE:
209910A.DGN	DATE 11/14/86 03/03/88
WORK ZONE PAVEMENT MARKINGS AND SIGNS	
PLAN INSERT SHEET	



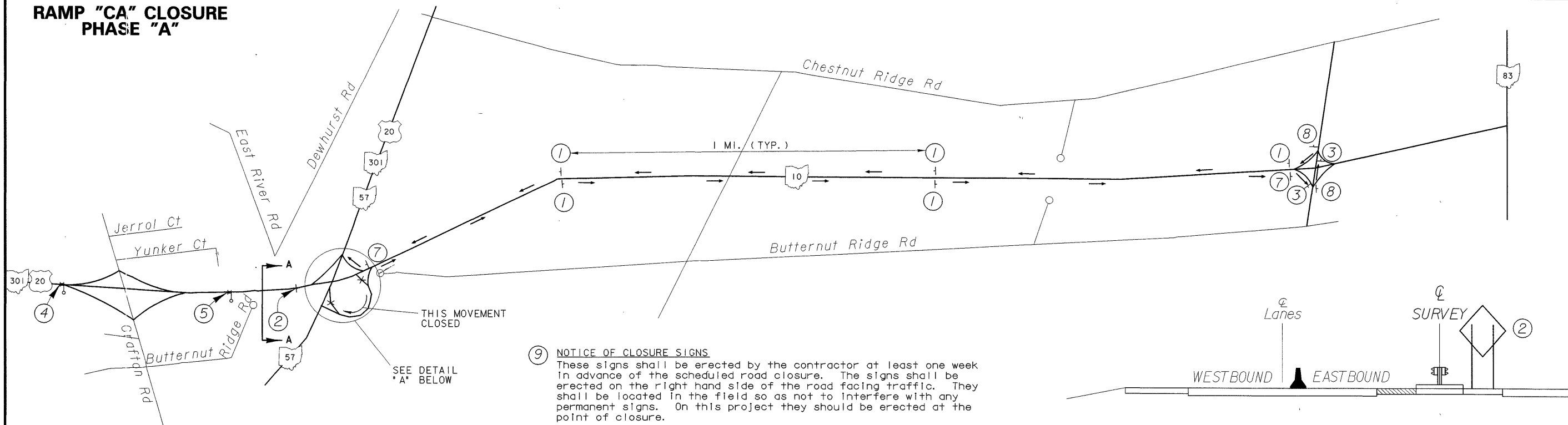
PHASE "A"

CROSS-REFERENCE	
RAMP	PHASE SHEET #
B	154
B	149
C	150-153
NE	150-153
NW	150-153
SE	148
E	150-153
CA	147



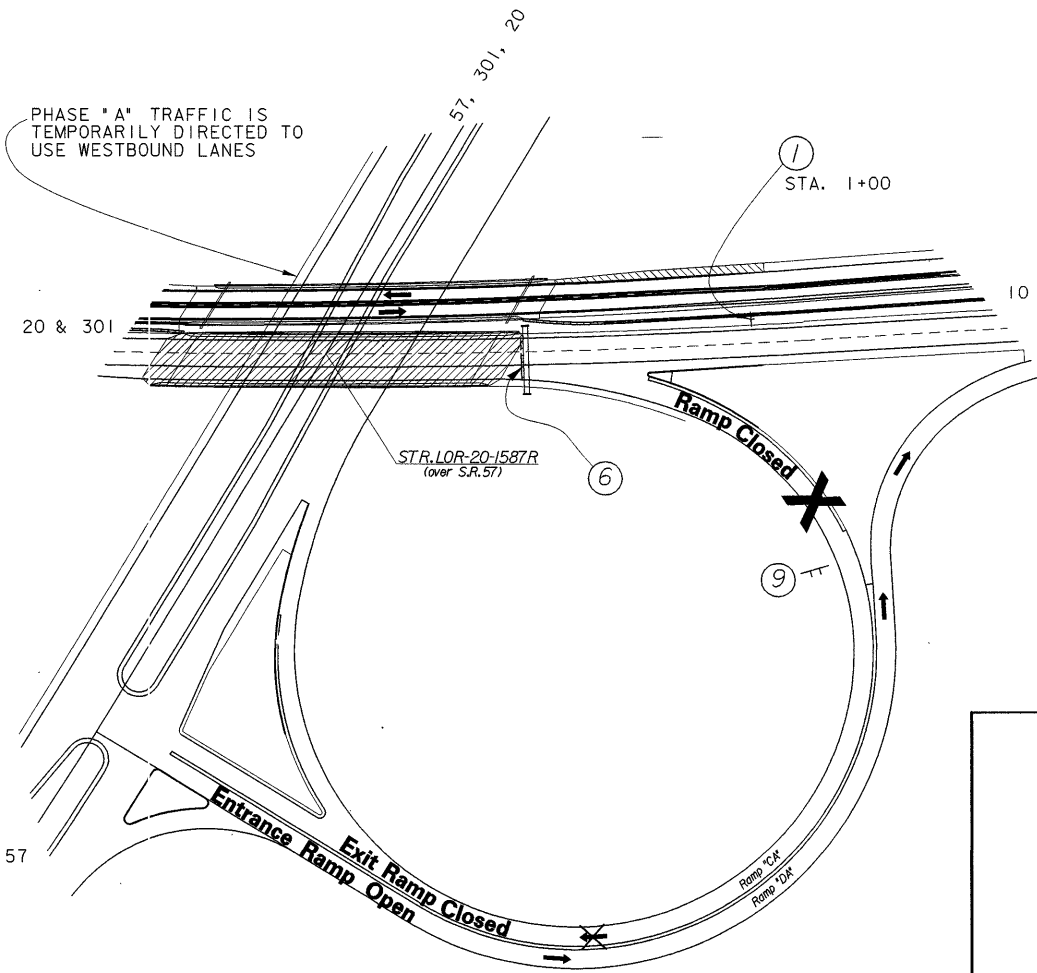
PHASE "B"

**RAMP "CA" CLOSURE
PHASE "A"**



9 **NOTICE OF CLOSURE SIGNS**
 These signs shall be erected by the contractor at least one week in advance of the scheduled road closure. The signs shall be erected on the right hand side of the road facing traffic. They shall be located in the field so as not to interfere with any permanent signs. On this project they should be erected at the point of closure.

Payment for this work shall be included in the Lump Sum bid for Item 614 Maintaining Traffic and shall include furnishing, erecting, maintaining and removing the signs including supports.

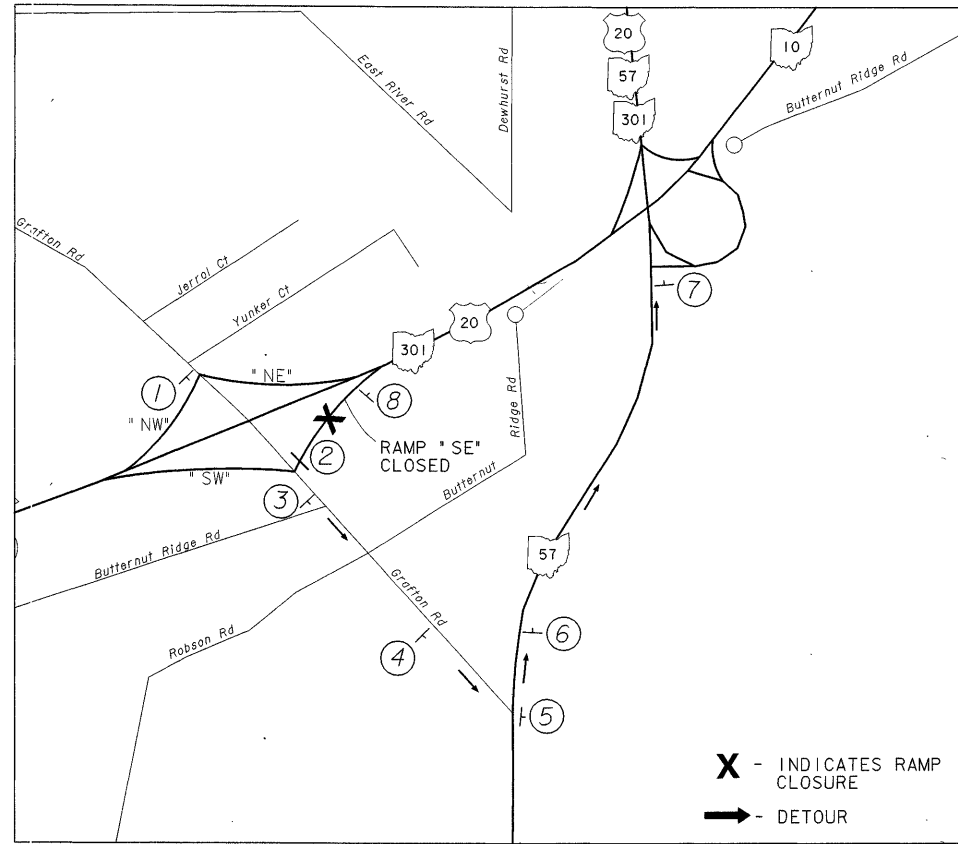


DETAIL "A"

<p>1</p>	<p>2</p> <p>SEE SECTION A-A</p> <p>STA. 829+00±</p>	<p>3</p>
<p>4</p> <p>OC-SPECIAL 9' X 3'</p>	<p>5</p> <p>OC-SPECIAL 9' X 3'</p>	<p>6</p> <p>OC-SPECIAL 9' X 3'</p>
<p>PROPOSED DIAGONAL OVERLAY SIGN</p> <p>OC-SPECIAL 9' X 3'</p>	<p>7</p>	<p>8</p>
<p>9 SEE NOTE ABOVE</p> <p>OHIO DEPT OF TRANSPORTATION OC-60B</p>		

DESIGN FILE: c:\dgn\lor20\lor20-12-62.dgn
 WORKSTATION: mallemann DATE: 08 NOV 96

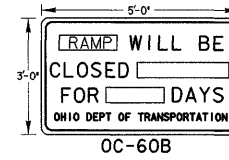
**RAMP "SE" CLOSURE
PHASE "A"**



NOTICE OF CLOSURE SIGNS

These signs shall be erected by the contractor at least one week in advance of the scheduled road closure. The signs shall be erected on the right hand side of the road facing traffic. They shall be located in the field so as not to interfere with any permanent signs. On this project they should be erected at the point of closure.

Payment for this work shall be included in the Lump Sum bid for Item 614 Maintaining Traffic and shall include furnishing, erecting, maintaining and removing the signs including supports.



<p>1</p>	<p>2</p> <p>GATES & BARRICADES AS PER MT-101.60 WITH THE FOLLOWING SIGN ADDED:</p>	<p>3</p>
<p>4</p> <p>PLACED 200' PRECEDING INTERSECTION</p>	<p>5</p>	<p>6</p>
<p>7</p>	<p>8</p>	<p>NOTES:</p> <p>ALL EXISTING SIGNS DIRECTING TRAFFIC TO USE RAMP "SE" SHALL BE COVERED FOR THE DURATION OF THIS PHASE. COST INCLUDED WITH ITEM 614 MAINTAINING TRAFFIC</p>

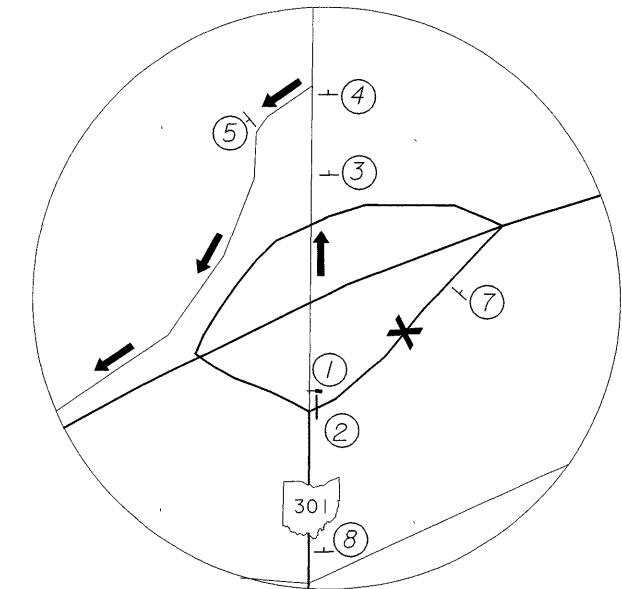
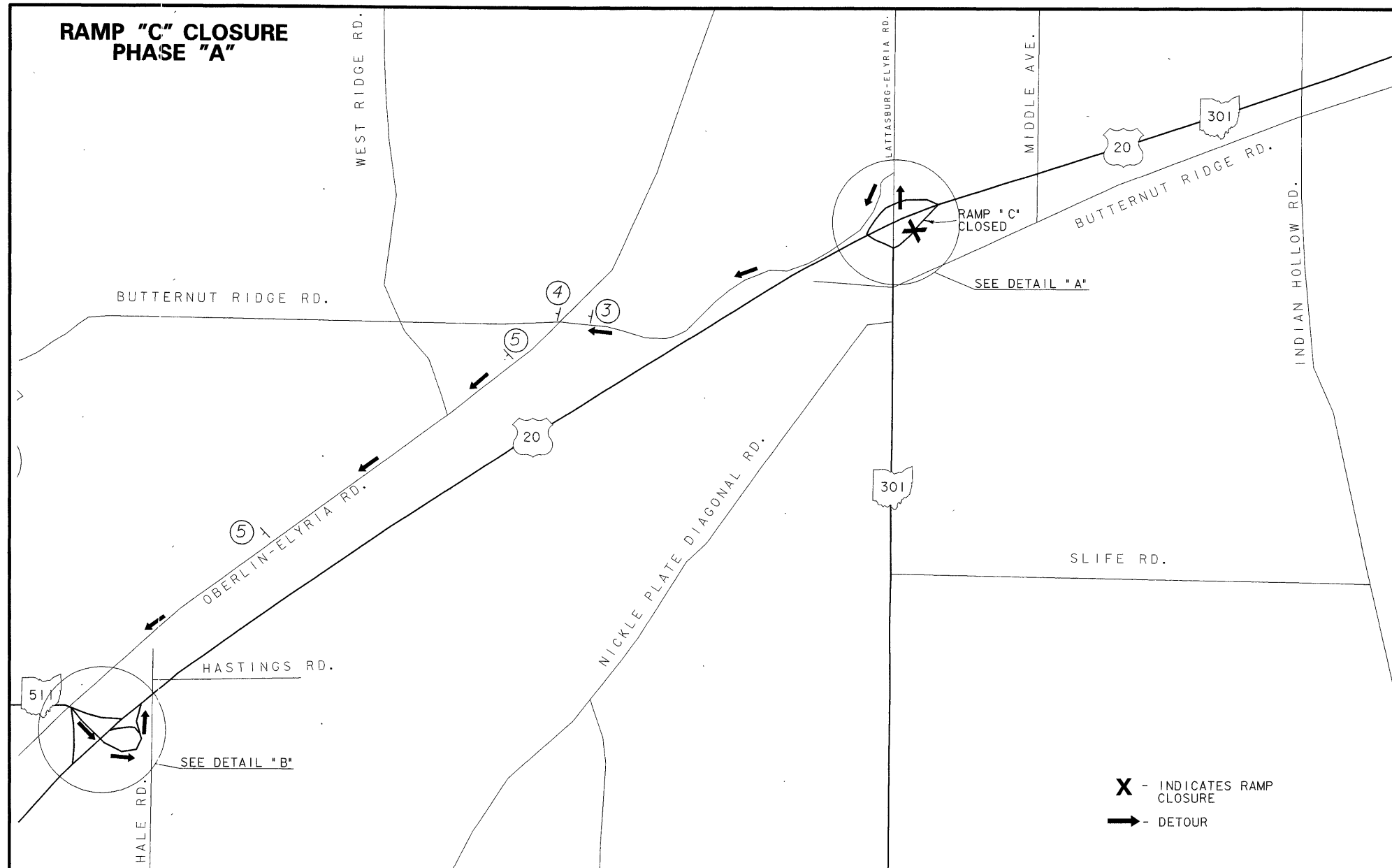
DESIGN FILE: c:\dgn\lor20\lordtr.dgn
WORKSTATION: mallemann DATE: 08 NOV 96

CALCULATED
D.R.A.
CHECKED
T.F.

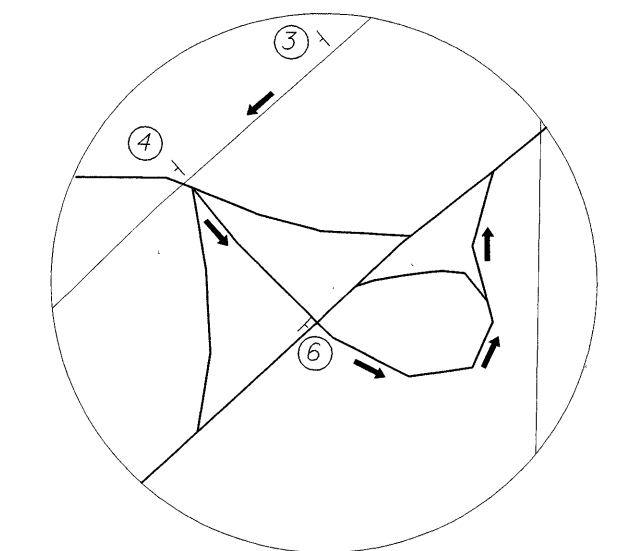
DETOUR DETAILS
MAINTENANCE OF TRAFFIC

LOR-20-12.62

**RAMP "C" CLOSURE
PHASE "A"**



DETAIL "A"



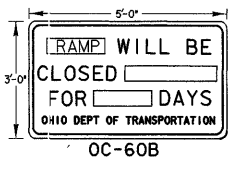
DETAIL "B"

X - INDICATES RAMP CLOSURE
→ - DETOUR

NOTICE OF CLOSURE SIGNS

These signs shall be erected by the contractor at least one week in advance of the scheduled road closure. The signs shall be erected on the right hand side of the road facing traffic. They shall be located in the field so as not to interfere with any permanent signs. On this project they should be erected at the point of closure.

Payment for this work shall be included in the Lump Sum bid for Item 614 Maintaining Traffic and shall include furnishing, erecting, maintaining and removing the signs including supports.



OC-60B

3

OM-23-24 M-39-30 M-1-30-2 M-21-24	OM-23-24 M-37-30 M-2-30-3 M-21-24	OM-23-24 M-39-30 M-2-30-2 M-21-24

PLACED 200' PRECEEDING INTERSECTION

4

OM-23-24 M-39-30 M-1-30-2 M-24-24	OM-23-24 M-37-30 M-2-30-3 M-24-24	OM-23-24 M-39-30 M-2-30-2 M-24-24

5

OM-23-24 M-39-30 M-1-30-2	OM-23-24 M-37-30 M-2-30-3	OM-23-24 M-39-30 M-2-30-2

1

OC-SPECIAL
9' X 3'

2

GATES & BARRICADES AS PER MT-101.60 WITH THE FOLLOWING SIGN ADDED:

OC-14L

6

OM-23-24 M-39-30 M-1-30-2 M-26-24	OM-23-24 M-37-30 M-2-30-3 M-26-24	OM-23-24 M-39-30 M-2-30-2 M-26-24

7

OC-60B

8

OW-127-48

NOTES:

ALL EXISTING SIGNS DIRECTING TRAFFIC TO USE RAMP "C" SHALL BE COVERED FOR THE DURATION OF THIS PHASE. COST INCLUDED WITH ITEM 614 MAINTAINING TRAFFIC

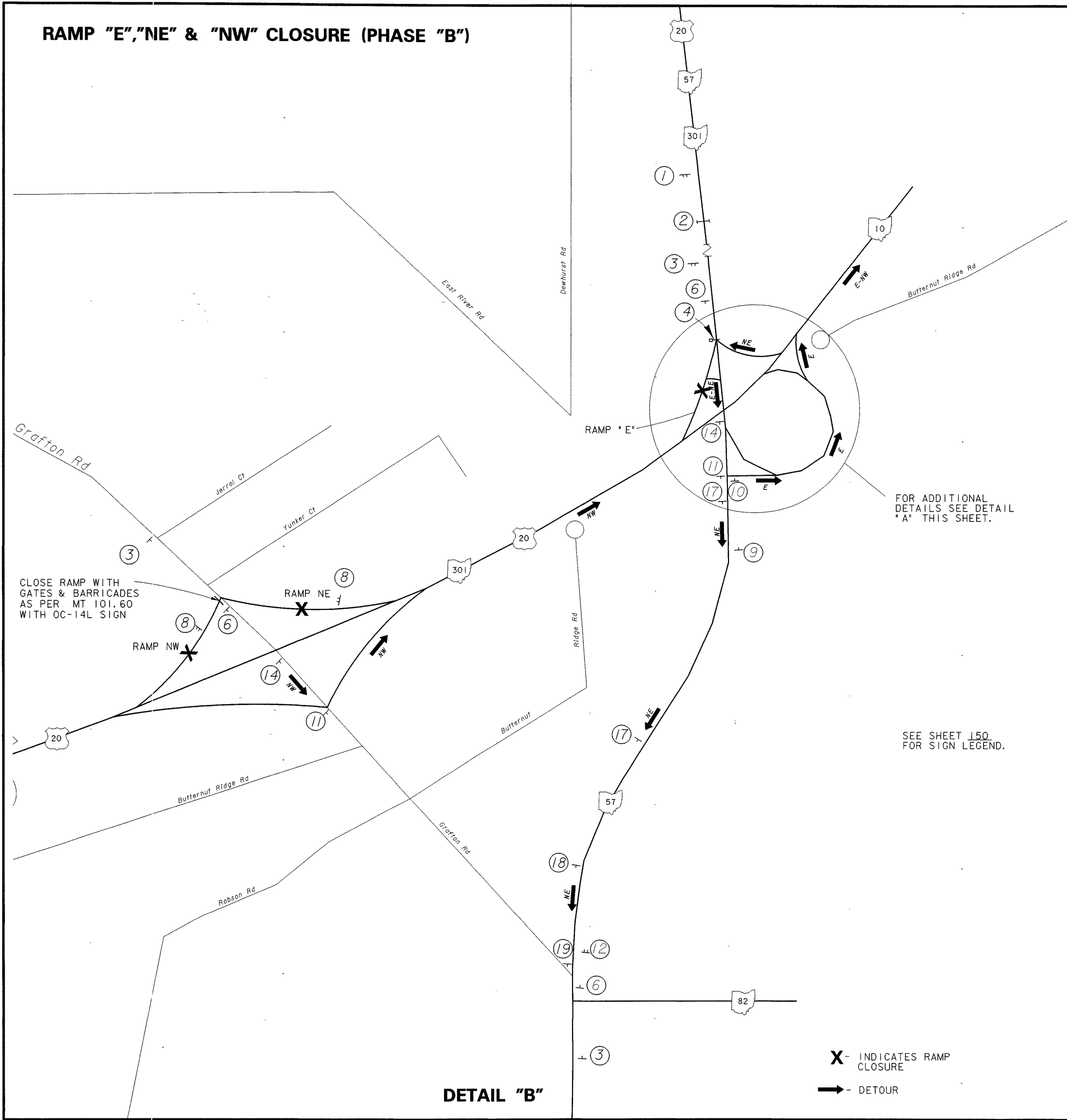
DESIGN FILE: c:\dgn\lor20\lordtr.dgn
 WORKSTATION: mallemann DATE: 08 NOV 96

CALCULATED
 D.P.A.
 CHECKED
 T.F.F.

MAINTENANCE OF TRAFFIC DETOUR DETAILS

LOR-20-12.62

RAMP "E", "NE" & "NW" CLOSURE (PHASE "B")



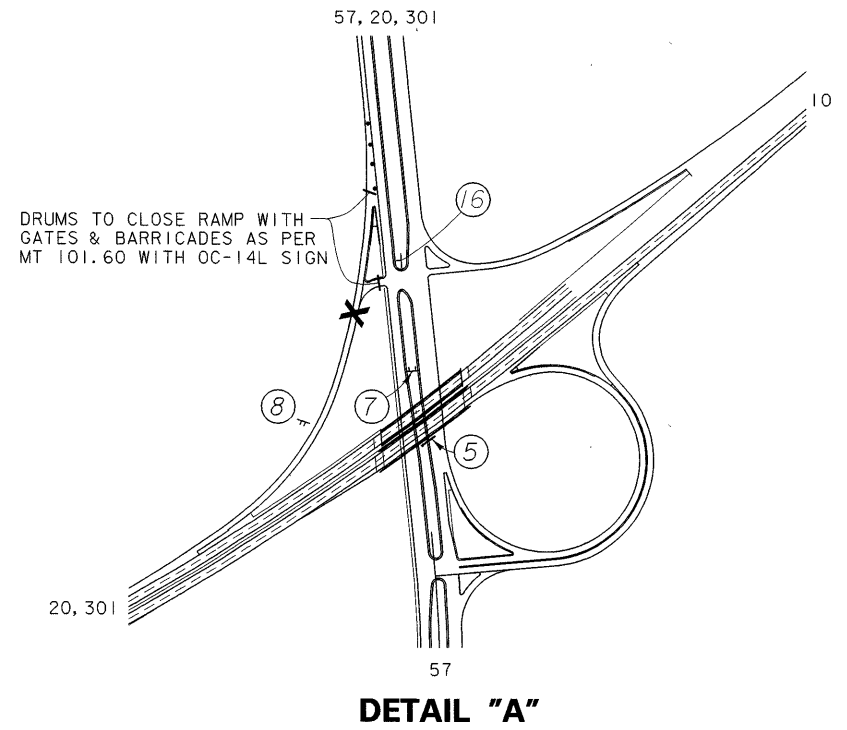
DETAIL "B"

X - INDICATES RAMP CLOSURE
 → - DETOUR

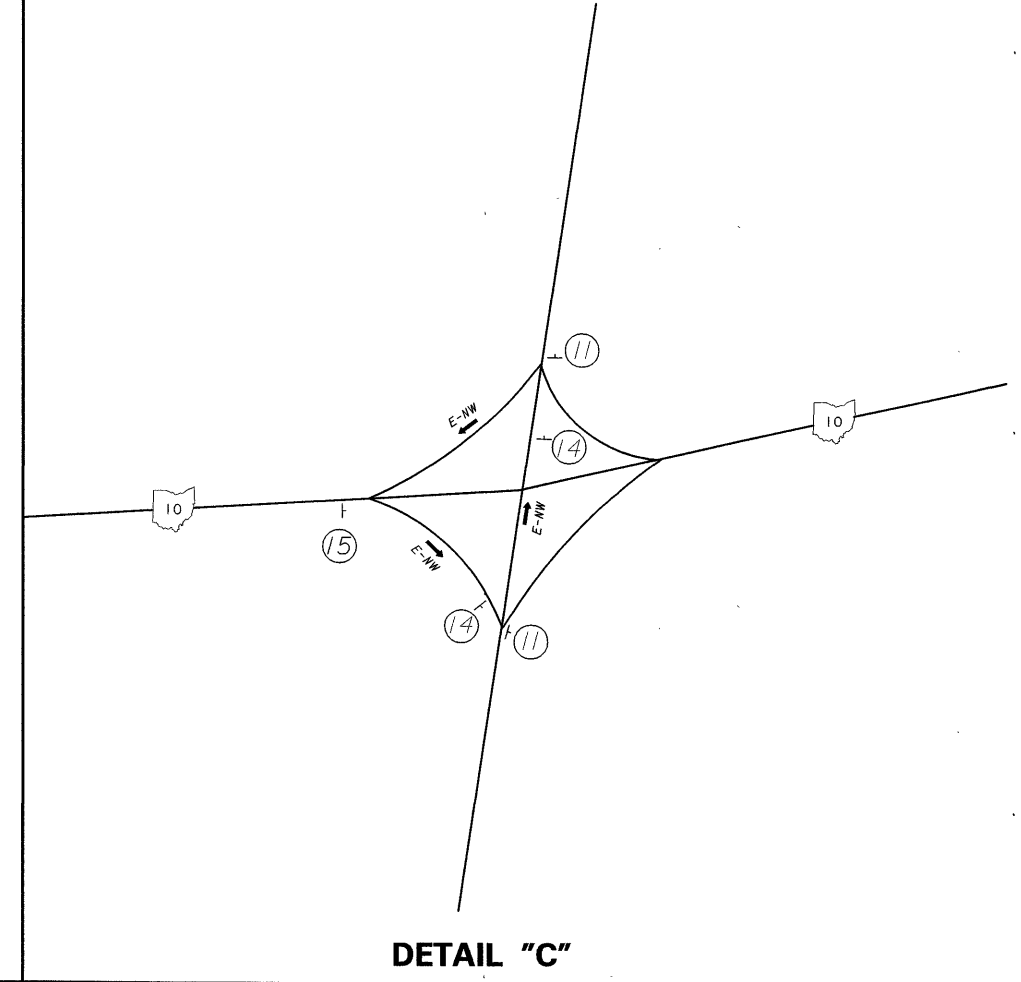
CLOSE RAMP WITH GATES & BARRICADES AS PER MT 101.60 WITH OC-14L SIGN

SEE SHEET 150 FOR SIGN LEGEND.

FOR ADDITIONAL DETAILS SEE DETAIL "A" THIS SHEET.



DETAIL "A"



DETAIL "C"

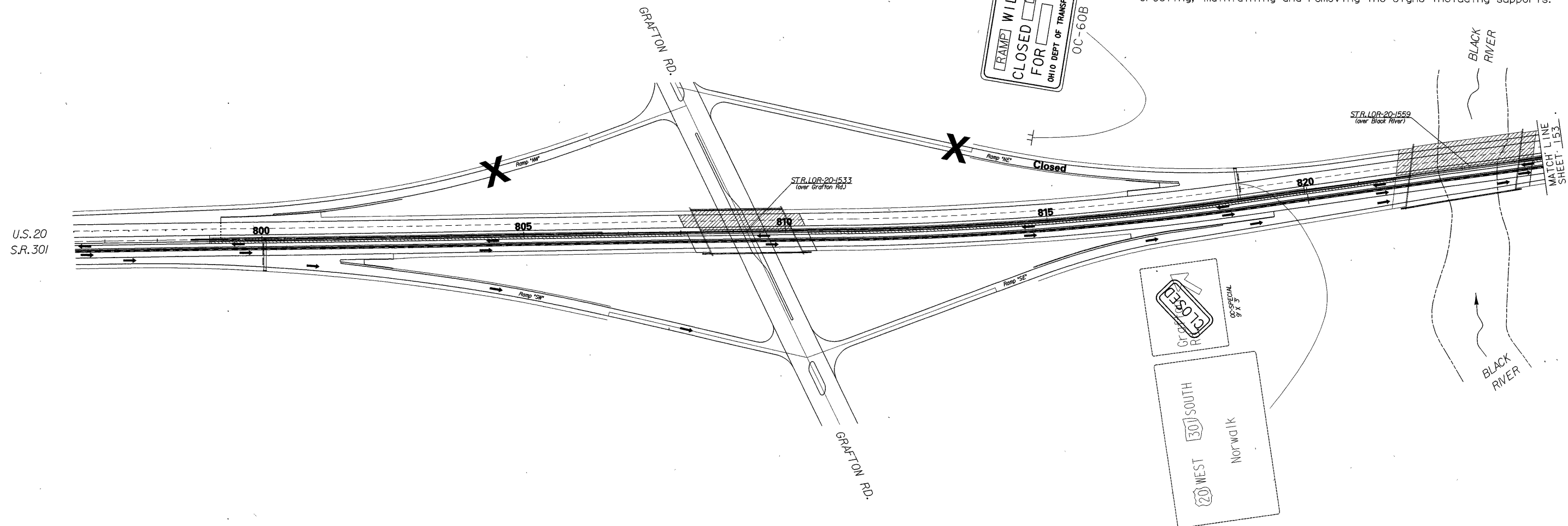
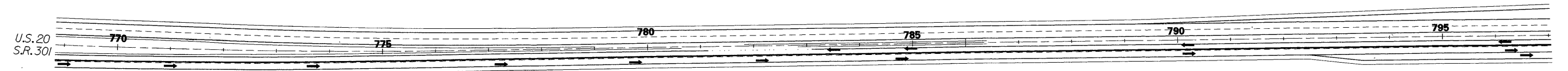
CALCULATED	DR	CHECKED	T.F.

MAINTENANCE OF TRAFFIC DETOUR DETAILS

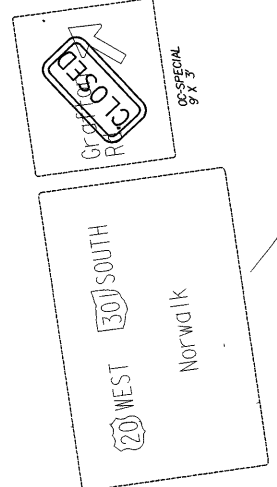
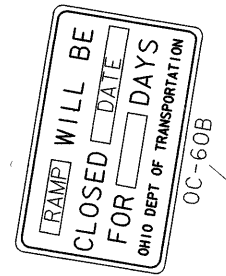
LOR-20-12.62

RAMP "E" & "NE" CLOSURE (PHASE "B")

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NOTICE OF CLOSURE SIGNS
 These signs shall be erected by the contractor at least one week in advance of the scheduled road closure. The signs shall be erected on the right hand side of the road facing traffic. They shall be located in the field so as not to interfere with any permanent signs. On this project they should be erected at the point of closure.
 Payment for this work shall be included in the Lump Sum bid for Item 614 Maintaining Traffic and shall include furnishing, erecting, maintaining and removing the signs including supports.



DESIGN FILE: c:\dgn\lor20\lor.dtr.dgn
 WORKSTATION: malleman DATE: 08 NOV 96

CALCULATED
 DRA
 CHECKED
 T.F.

DETOUR DETAILS

MAINTENANCE OF TRAFFIC

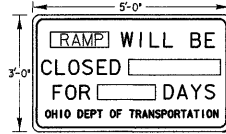
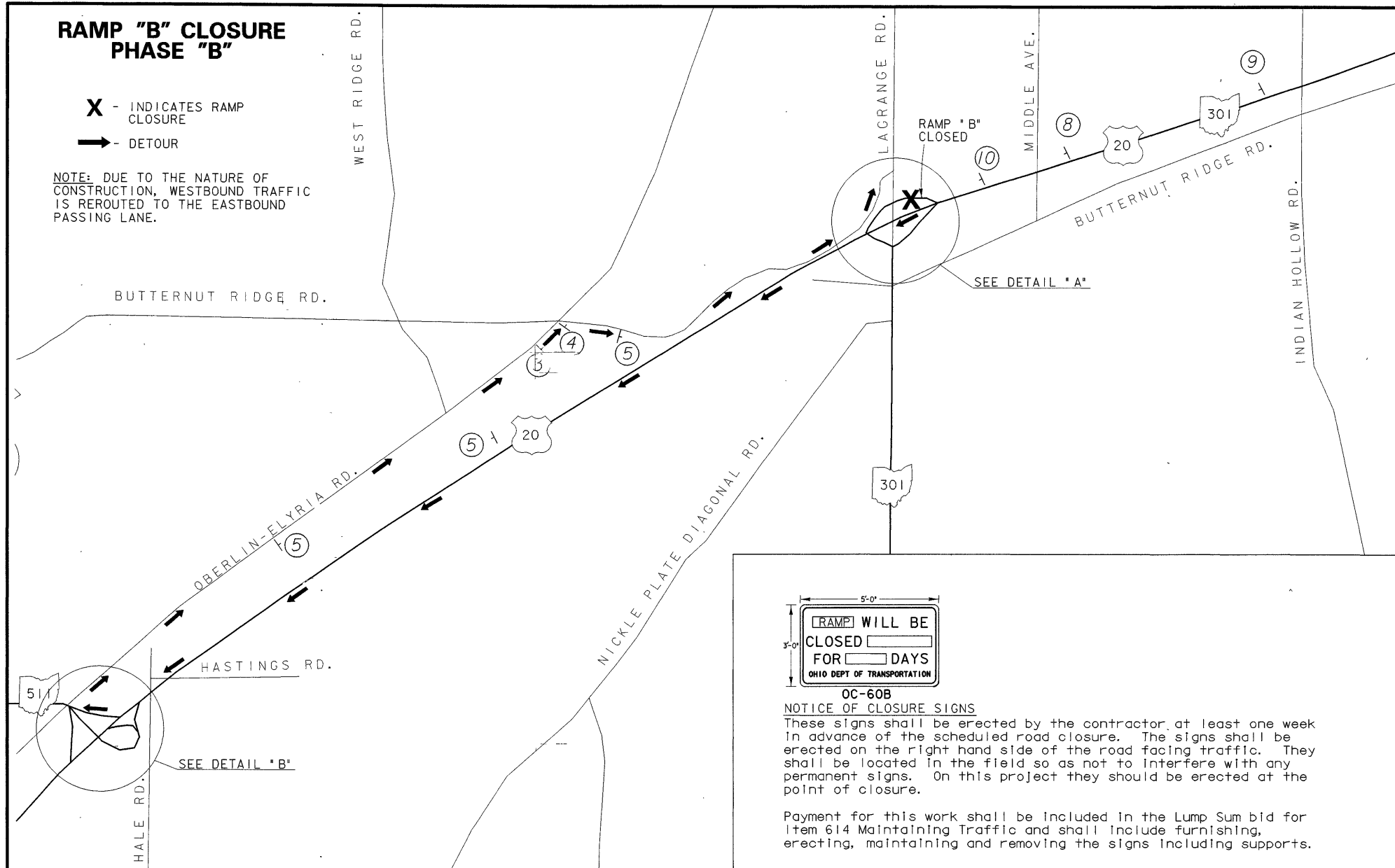
LOR-20-12.62

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RAMP "B" CLOSURE PHASE "B"

X - INDICATES RAMP
CLOSURE
→ - DETOUR

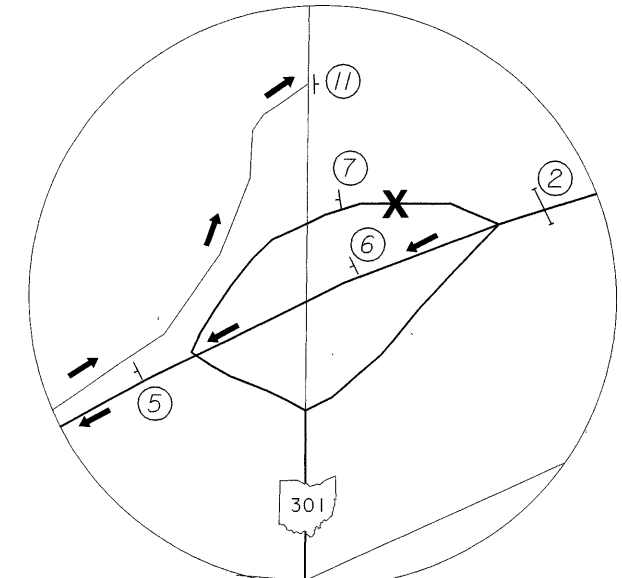
NOTE: DUE TO THE NATURE OF
CONSTRUCTION, WESTBOUND TRAFFIC
IS REROUTED TO THE EASTBOUND
PASSING LANE.



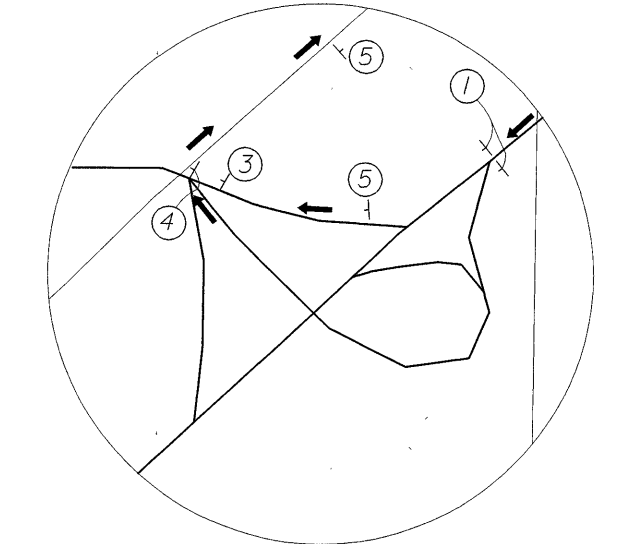
OC-60B
NOTICE OF CLOSURE SIGNS

These signs shall be erected by the contractor at least one week in advance of the scheduled road closure. The signs shall be erected on the right hand side of the road facing traffic. They shall be located in the field so as not to interfere with any permanent signs. On this project they should be erected at the point of closure.

Payment for this work shall be included in the Lump Sum bid for Item 614 Maintaining Traffic and shall include furnishing, erecting, maintaining and removing the signs including supports.



DETAIL "A"



DETAIL "B"

<p>1</p>	<p>2</p> <p>REMOVE PRIOR TO PHASE "A" SEE NOTE SHEET 18</p>	<p>3</p> <p>PLACED 200' PRECEEDING INTERSECTION</p>	<p>4</p>	<p>5</p>	<p>6</p>
<p>7</p> <p>OC-60B</p>	<p>8</p> <p>OC-SPECIAL 9' X 3'</p>	<p>9</p> <p>OC-SPECIAL 9' X 3'</p>	<p>10</p> <p>COVER OR REMOVE</p>	<p>11</p>	<p>NOTES:</p> <p>ALL EXISTING SIGNS DIRECTING TRAFFIC TO USE RAMP "B" SHALL BE COVERED FOR THE DURATION OF THIS PHASE. COST INCLUDED WITH ITEM 614 MAINTAINING TRAFFIC</p>

DESIGN FILE: c:\dgn\lor20\lordtr.dgn
WORKSTATION: mal/leman DATE: 08 NOV 96

CALCULATED
D.P.A.
CHECKED
T.F.

MAINTENANCE OF TRAFFIC DETOUR DETAILS

LOR-20-12.62

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SHEET NO.	PHASE	606						614						615			622							
		Guardrail, type 5, as per plan	Anchor assembly, type E, as per plan	Bridge terminal assembly, type D, as per plan	Bridge terminal assembly, type E, as per plan	Bridge terminal assembly, type I, as per plan	Bridge terminal assembly, type I, barrier design, as per plan	Temporary edge line, class I	Temporary edge line, class I, 740.05, type C	Temporary channelizing line, class I	Temporary channelizing line, class I, 740.05, type C	Temporary crossover lighting system	Temporary crossover lighting system, as per plan (ramps)	Temporary impact attenuator G-R-E-A-T type, model number 206206NF66CZ, bidirectional	Barrier reflector		Object marker	Temporary pavement class A	Temporary pavement class A, as per plan	Temporary road	Portable concrete barrier, 32"	Portable concrete barrier, 32", as per plan	Portable concrete barrier, 32", bridge mounted	Portable concrete barrier, 50"
		Ln. Ft.	Each	Each	Each	Each	Each	Mile	Mile	Ln. Ft.	Ln. Ft.	Each	Each	Each	Type A	Type B		Each	S.Y.	S.Y.	Lump	Ln. Ft.	Ln. Ft.	Ln. Ft.
156	A																							
157	A																							
158	A		1											124	128						190			670
159	A												18	184	186						2300			
160	A													176	178		2518	1363			2200			
161	A	200	2	2										240	242						3000			
162	A	100	1	1									26	253	242						3000			
163	A												13	222	218						2700			
164	A													168	170						2100			
165	A													255	260						3350		170	
166	A													231	236						2930		210	
167	A													154	156						1920			
170	A	100												86	88									880
170	A	100											7	13										880
TOTALS PHASE "A"		400	6	3	1	4	10.62	5.13	870	850	2	2	1	64	2106	2104	2518	16066		23690		380	1550	
171	W																							
172	W																							
173	W																							
173A	W																							
TOTALS PHASE "W"						1	0.44						1	249	232					178	2830			
174	B																							
175	B																							
176	B																							
177	B	100	1																					
178	B	100	1																					
179	B	100	1																					
180	B																							
181	B																							
182	B																							
183	B																							
184	B																							
TOTALS PHASE "B"		300	4			3		15.16		1036		1	69	2085	2083	2489	8750		21440	2000			1580	
188	D																							
TOTALS PHASE "D"								0.48											1050					
TOTALS CARRIED TO GENERAL SUMMARY		700	10	3	1	3	6	11.06	20.77	870	1886	2	3	2	133	4440	4419	5007	26044	LUMP	47960	2000	380	3130

MAINTENANCE OF TRAFFIC SUBSUMMARY

LOR-20-12.62

GENSUMDGN

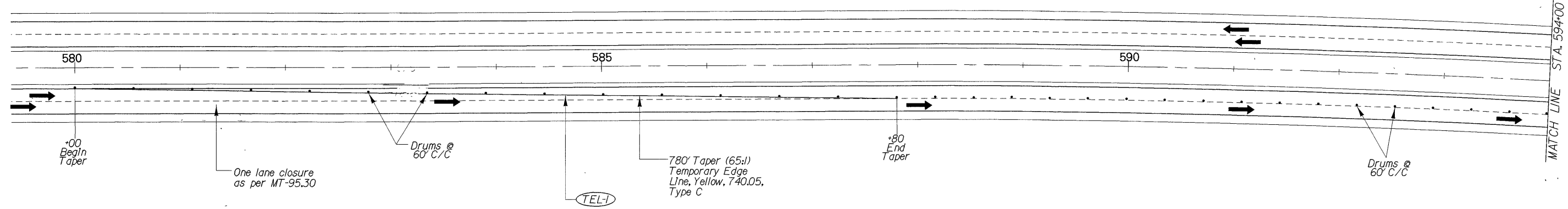
CALCULATED
TSF 7/96
CHECKED
TBC 4/96



CALCULATED
TSF 4/96
CHECKED
TBC 7/96

**MAINTENANCE OF TRAFFIC
PHASE "A"**

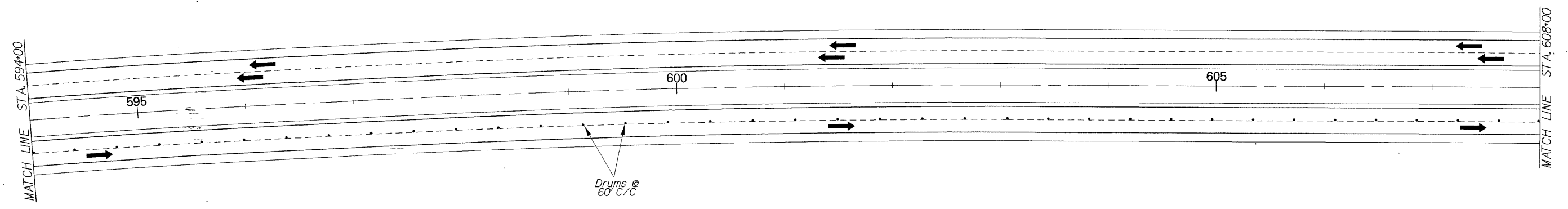
LOR-20-12.62



Extra advance warning sign groups as per standard drawing MT-95.30 shall be provided at a distance of 1 mile and 2 miles prior to the lane closure. All costs to complete this work shall be included with Item 614 - Maintaining Traffic.

ESTIMATED QUANTITIES			
PHASE "A" STA. 580+00 TO STA. 608+00			
REFERENCE	STATION LIMITS	SIDE	614
			TEMPORARY EDGE LINE, CLASS 1 740.05, TYPE C
			L.F./MILE
			YELLOW
TEL-1	580+00 TO 587+80	LT	780
TOTALS PHASE "A"			780
			780/015

Quantities carried to sheet 155.





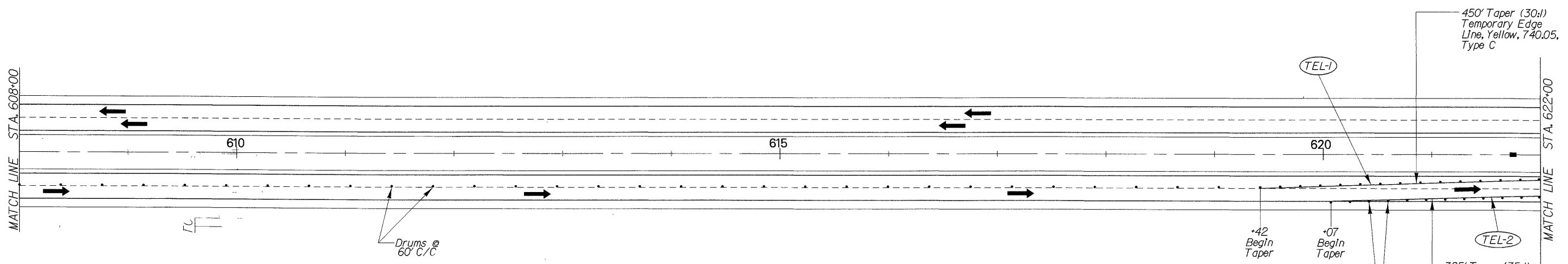
HORIZONTAL SCALE IN FEET

CALCULATED
TSF 4/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "A"

LOR-20-12.62

157
351



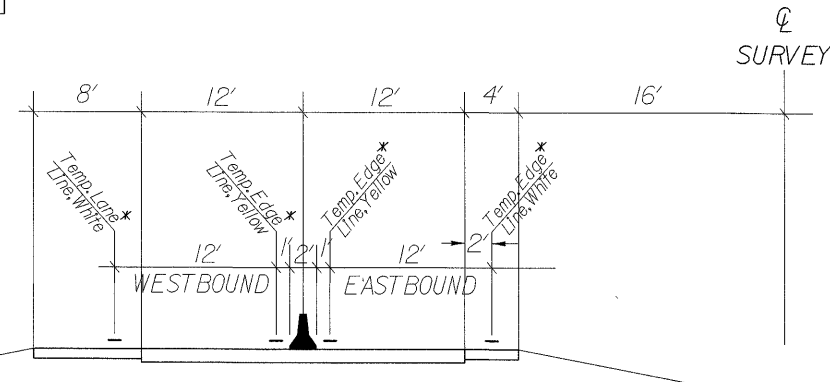
ESTIMATED QUANTITIES
PHASE "A" STA. 608+00 TO STA. 635+00

REFERENCE	STATION LIMITS	SIDE	614		BARRIER REFLECTORS TYPE B (SPACING *)	TEMPORARY CROSS-OVER LIGHTING SYSTEM	OBJECT MARKERS (SPACING *)	615		622	
			TEMPORARY EDGE LINE, CLASS A, 740.05, TYPE C					TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 50'	PORTABLE CONC. BARRIER, 32'
			WHITE	YELLOW							
TEL-1	619+42 TO 635+00	L&R		1558							
TEL-2	620+07 TO 635+00	L&R	1493								
TEL-3	625+30 TO 635+00	LT	970								
TEL-4	626+50 TO 635+00	LT		850							
TP-1	623+92 TO 630+08	L&R					563	LUMP			
PCB-1	626+40 TO 633+10	LT			108		110		670		
PCB-2	633+10 TO 635+00	LT			16		18			190	
TLS-1	622+05 TO 631+95	RT				1					
TOTALS PHASE "A"			2463	2408							
			4871/0.92		124	1	128	563	LUMP	670	190

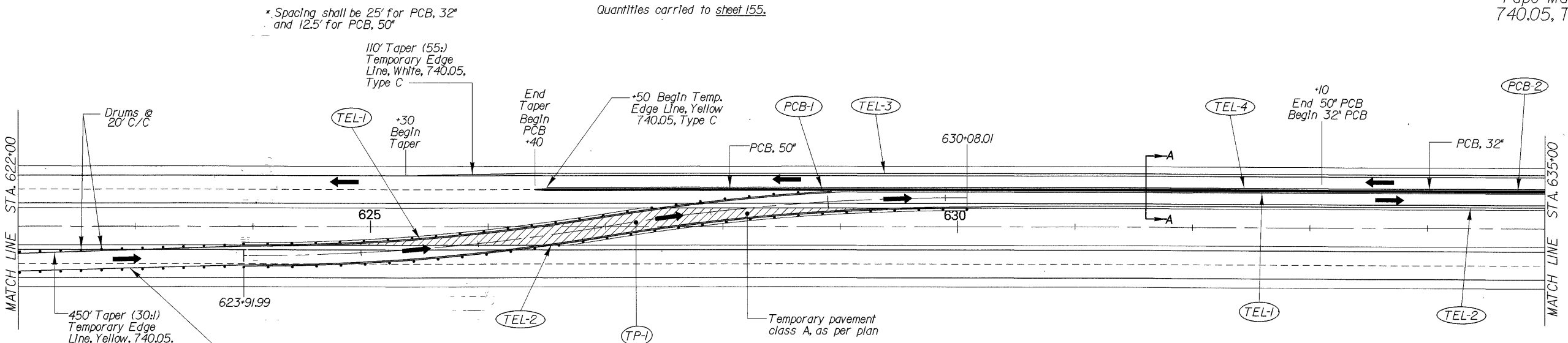
ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "A"

CLASS "A" AS PER PLAN
TP-1 623+92 - 630+08 = COMPUTER = 5067 SF
5067 SF/9 = 563 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
CLASS A AS PER PLAN
CUT 69 CY
FILL 52 CY



SECTION A-A * Tape Material 740.05, Type C



Temporary pavement, class A, as per plan

For temporary raised pavement marker locations, placement and details within the crossover area see sheet 196 and MT-95.70

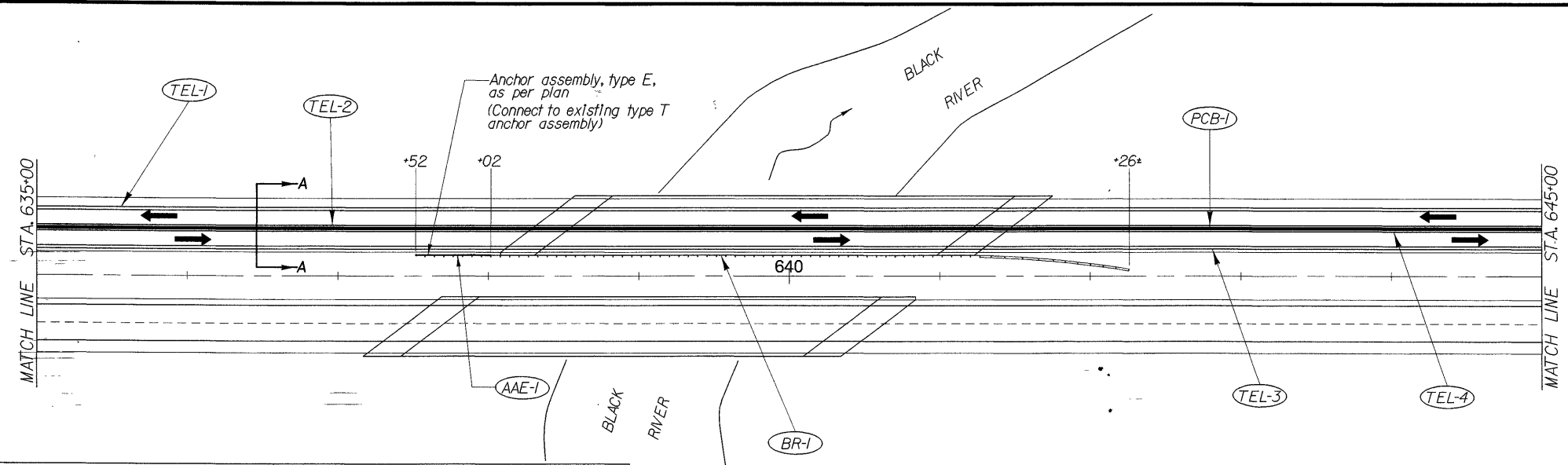
In addition to the details shown, the crossover shall be placed and maintained as per MT-95.30, MT-95.70 and MT-100.00

A temporary crossover lighting system shall be erected and maintained as per MT-100.00 (TLS-1)

See sheet 190 for temporary crossover details & curve data.

See sheet 197 for general maintenance of traffic for reversible traffic patterns.

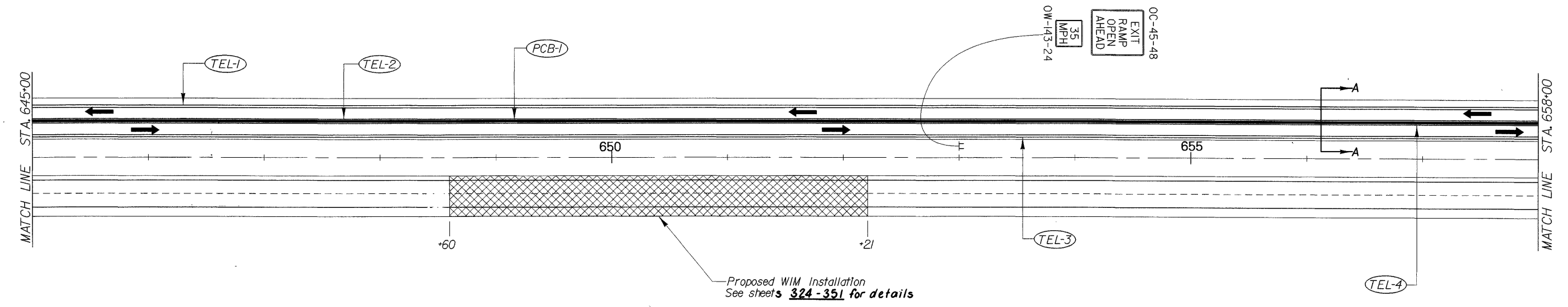
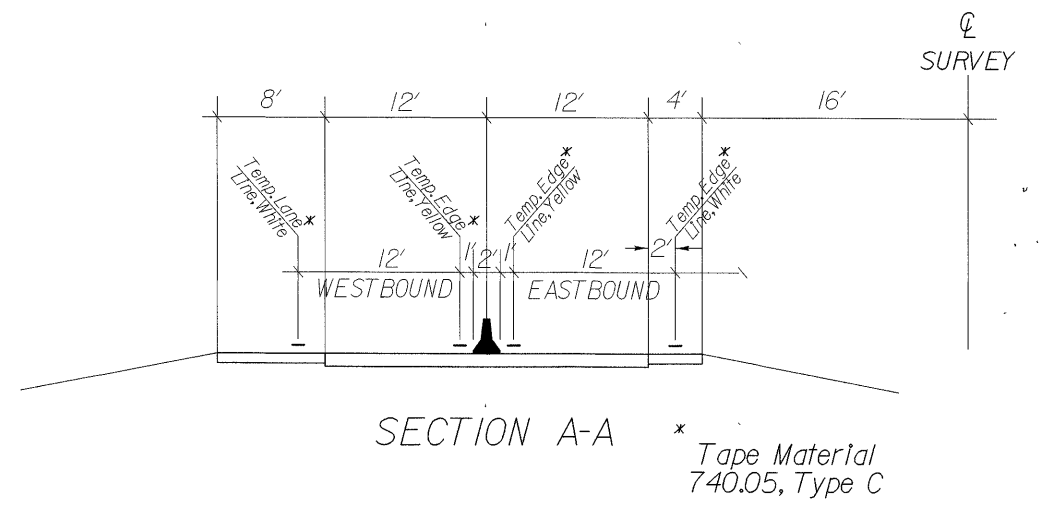
Barrier reflectors shall be placed as per SS 802 and Proposal Note No. 622-92.



ESTIMATED QUANTITIES
PHASE "A" STA. 635+00 TO STA. 658+00

REFERENCE	STATION LIMITS	SIDE	606		614		622		
			ANCHOR ASSEMBLY TYPE E, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1 740.05, TYPE C		BARRIER REFLECTORS (25' SPACING)		OBJECT MARKERS (25' SPACING)	PORTABLE CONC. BARRIER, 32"
				LF./MILE	WHITE	YELLOW	A		
EACH			WHITE	YELLOW	EACH	EACH	EACH	LF:	
TEL-1	635+00 TO 658+00	LT	2300						
TEL-2	635+00 TO 658+00	LT		2300					
TEL-3	635+00 TO 658+00	LT	2300						
TEL-4	635+00 TO 658+00	LT		2300					
PCB-1	635+00 TO 658+00	LT				184	186	2300	
AAE-1	637+52 TO 638+02	LT	1						
BR-1	EXIST. BRDG GRDRL	LT				18			
	638+02 TO 642+26								
TOTALS PHASE "A"			4600	4600	18	184	186	2300	
			9200/174						

Quantities carried to sheet 155.



Proposed WIM Installation
See sheets 324-351 for details

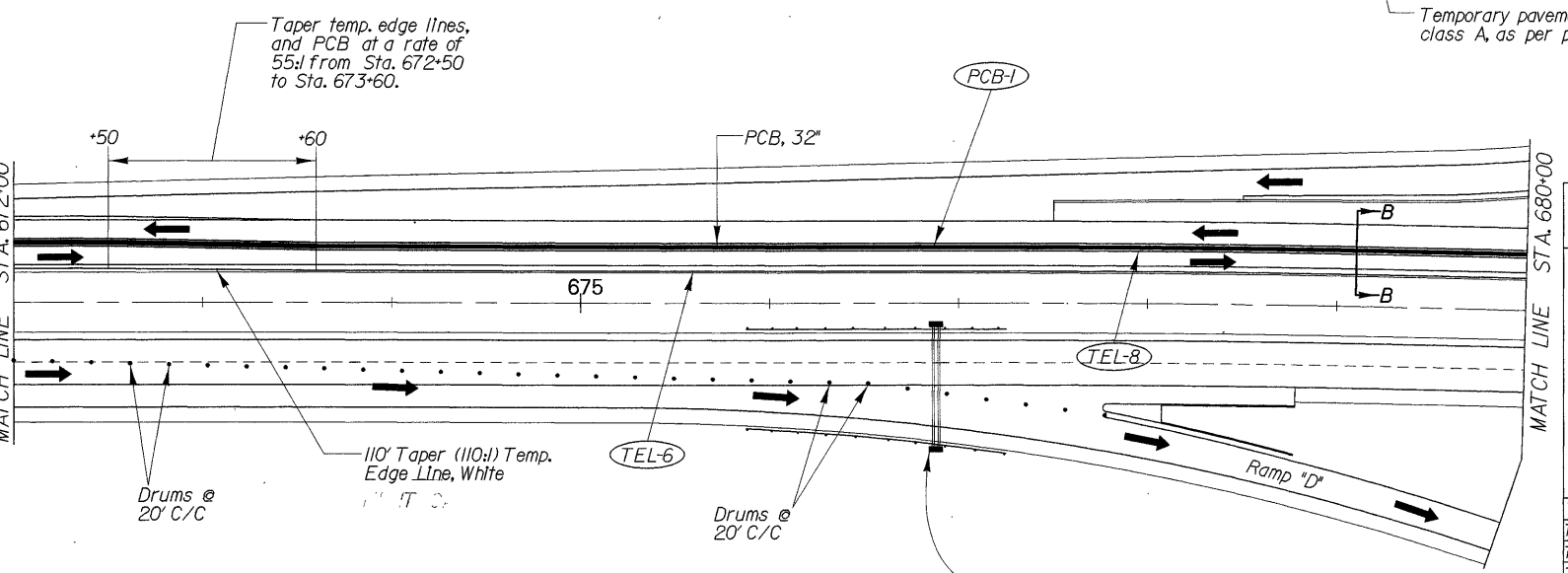
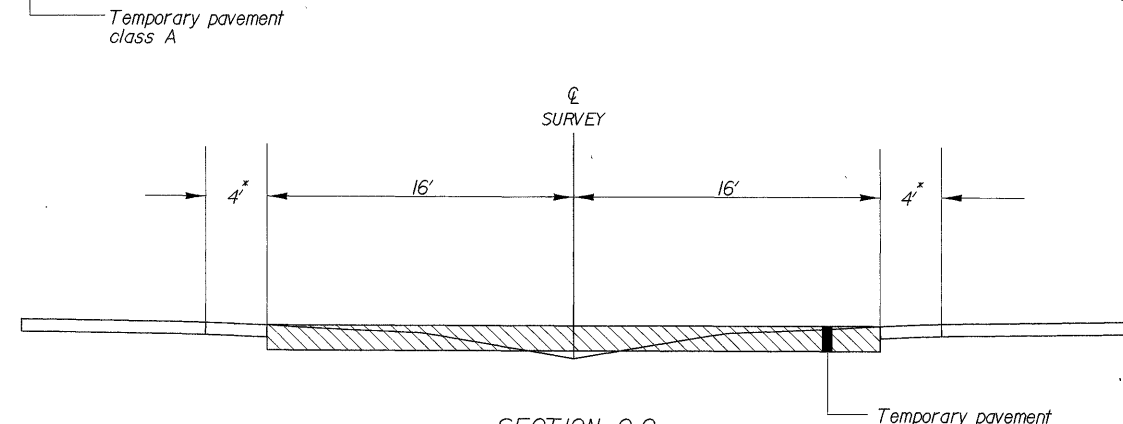
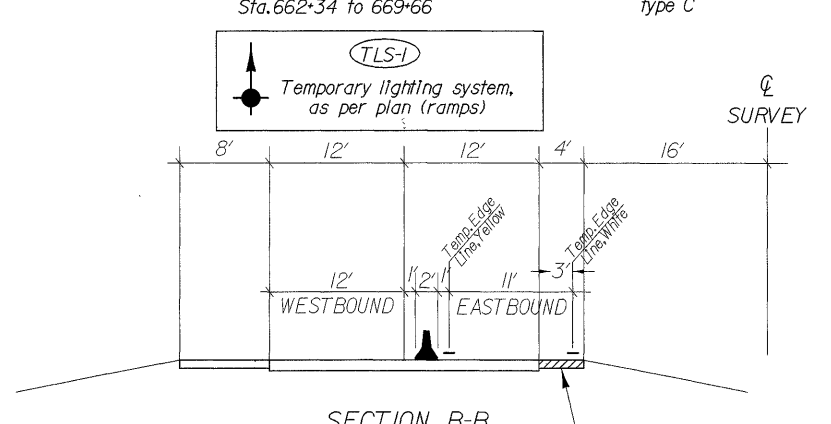
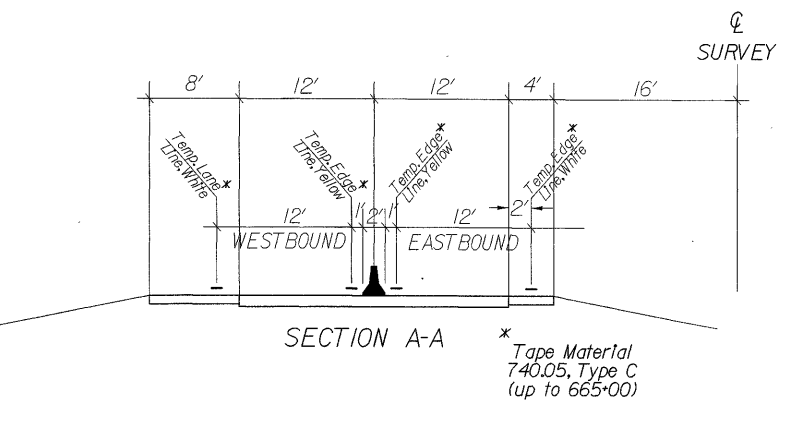
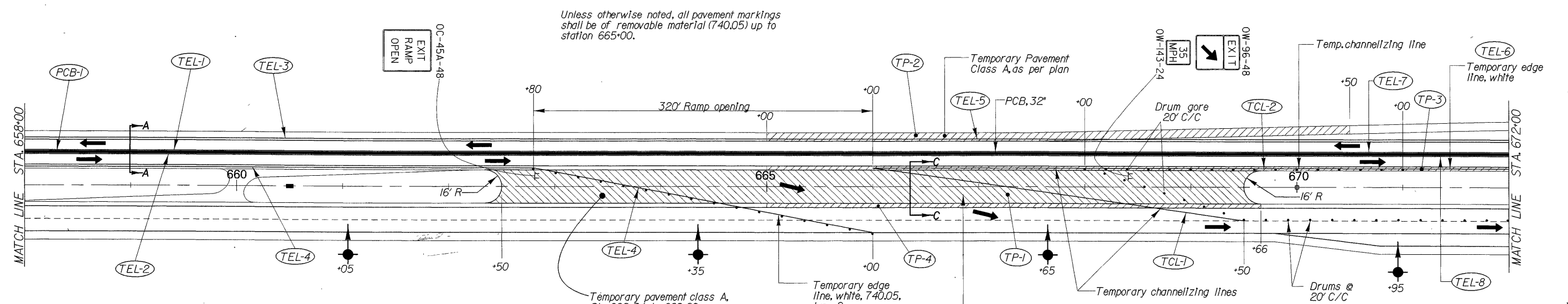


HORIZONTAL SCALE IN FEET
 0 50
 CALCULATED T/SF 4/96
 CHECKED T/BC 7/96

MAINTENANCE OF TRAFFIC PHASE "A"

LOR-20-12.62

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ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

CLASS "A"
 TP-1 662+34 - 669+66 = COMPUTER = 22662 SF
 22662 SF/9 = 2518 SY

CLASS "A", AS PER PLAN
 TP-2 665+00 - 670+50 = 550' @ 8' = 4400 SF
 TP-3 665+00 - 680+00 = 1500' @ 4' = 6000 SF
 TP-4 665+00 - 669+66 = 466' @ 4' = 1864 SF
 12264 SF

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")

CLASS A
 CUT 484 CY
 FILL 50 CY

CLASS A, AS PER PLAN
 CUT 530 CY
 FILL 0 CY

This overhead sign may be removed in its entirety by the contractor prior to this phase. If the contractor chooses to keep this sign in place, he shall erect, maintain and remove at his own expense any temporary guardrail and end assemblies as required to safely protect traffic during this and subsequent phases.

This sign assembly shall be replaced with a permanent ground mounted assembly as shown on sheet 108.

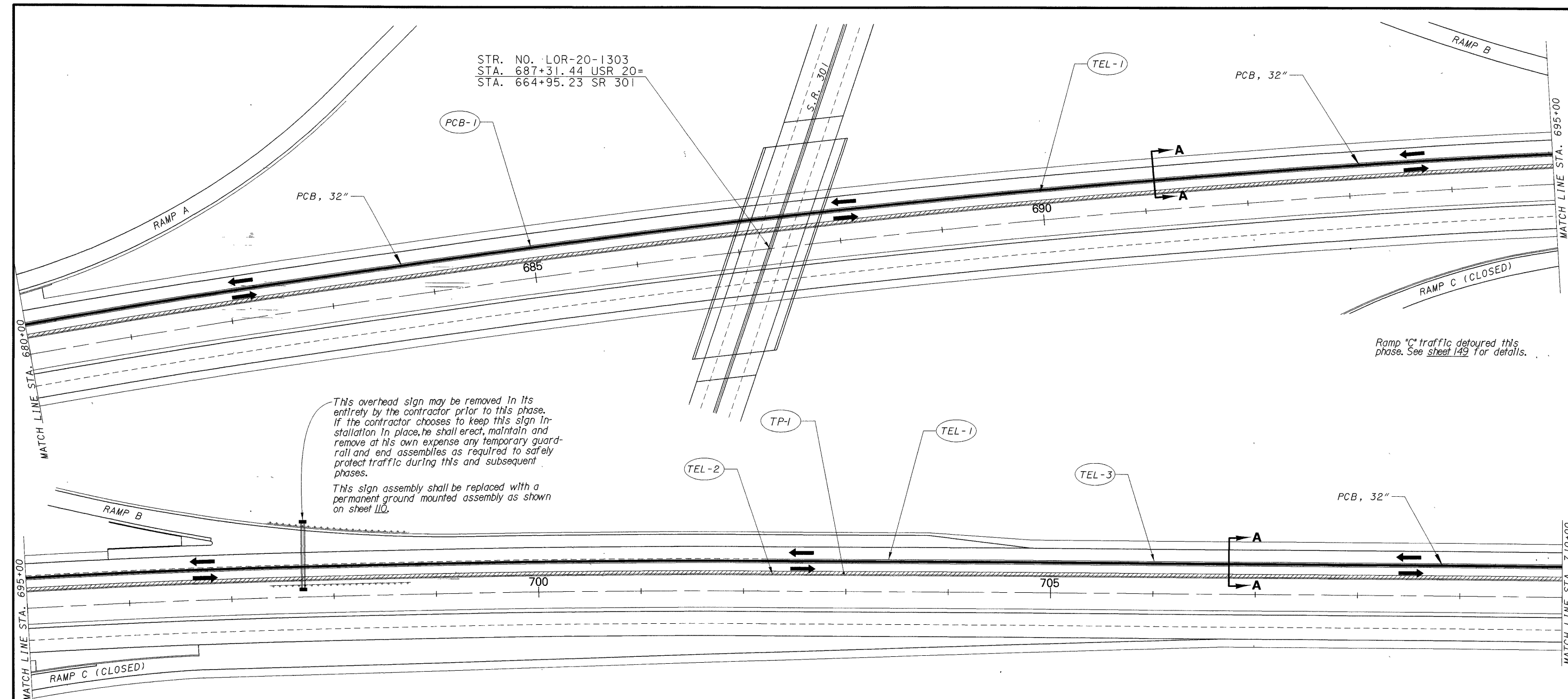
- Temporary pavement class A
- Temporary pavement class A, as per plan

* The existing 4' shoulders from Sta. 665+00 to Sta. 669+50 shall be replaced with temporary pavement class A, as per plan. The existing 4' shoulders from Sta. 662+50 to Sta. 665+00 consists of 10" plain concrete and shall not be disturbed.

ESTIMATED QUANTITIES PHASE "A" STA. 658+00 TO STA. 680+00

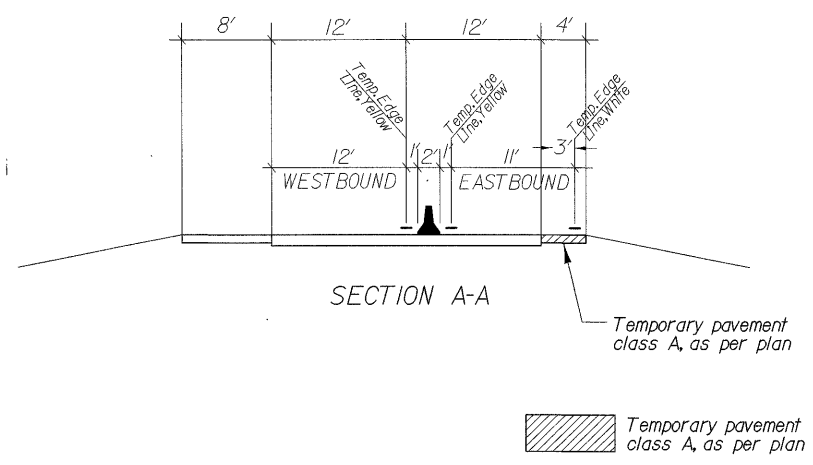
REFERENCE	STATION LIMITS	SIDE	614											615	622			
			TEMPORARY EDGE LINE, CLASS I		TEMPORARY EDGE LINE, CLASS I 740.05, TYPE C		TEMPORARY CHANN- NELING LINE, CLASS I, 740.05, TYPE C	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMPORARY CROSS- OVER LIGHTING SYSTEM, AS PER PLAN (RAMPS)	TEMP. PAVMT. CLASS A	TEMP. PAVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"				
			LF./MILE WHITE	LF./MILE YELLOW	LF./MILE WHITE	LF./MILE YELLOW									LF.	EACH	EACH	EACH
TEL-1	658+00 TO 665+00	LT				700												
TEL-2	658+00 TO 665+00	LT				700												
TEL-3	658+00 TO 665+00	LT				700												
TEL-4	658+00 TO 666+00	L&R	800															
TEL-5	665+00 TO 673+00	LT	860															
TEL-6	671+00 TO 680+00	LT	900															
TEL-7	665+00 TO 680+00	LT		1500														
TEL-8	665+00 TO 680+00	LT		1500														
TCL-1	666+00 TO 669+50	L&R					350											
TCL-2	666+00 TO 671+00	LT					500											
TP-1	662+34 TO 669+66	L&R								2518								
TP-2	665+00 TO 670+50	LT																
TP-3	665+00 TO 680+00	LT																
TP-4	665+00 TO 669+66	LT																
PCB-1	658+00 TO 680+00	LT						176	178									
TLS-1	661+05 TO 670+95	RT																2200
TOTALS PHASE "A"			2560	3000	700	1400	850	176	178	1	2518	1363	LUMP	2200				

Quantities carried to sheet 155.



ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"
 CLASS "A" AS PER PLAN
 TP-1 680+00 -710+00 = 3000' @ 4' = 12000 SF
 12000 SF/9 = 1333 SY

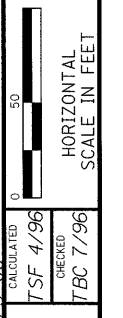
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
 CLASS "A" AS PER PLAN
 CUT 520CY



ESTIMATED QUANTITIES
PHASE "A" STA. 680+00 TO STA. 710+00

REFERENCE	STATION LIMITS	SIDE	614		615		622			
			TEMPORARY EDGE LINE, CLASS 1		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PAVT. CLASS "A" AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"	
			WHITE	YELLOW						SY.
TEL-1	680+00 TO 710+00	LT		3000						
TEL-2	680+00 TO 710+00	LT	3000							
TEL-3	680+00 TO 710+00	LT		3000						
TP-1	680+00 TO 710+00	LT					1333	LUMP		
PCB-1	680+00 TO 710+00	LT			240	242				3000
TOTALS PHASE "A"			3000	6000	240	242	1333	LUMP		3000
			9000/1.70							

Quantities carried to sheet 155.



CHECKED
TBC 7/96

CALCULATED
TSF 4/96

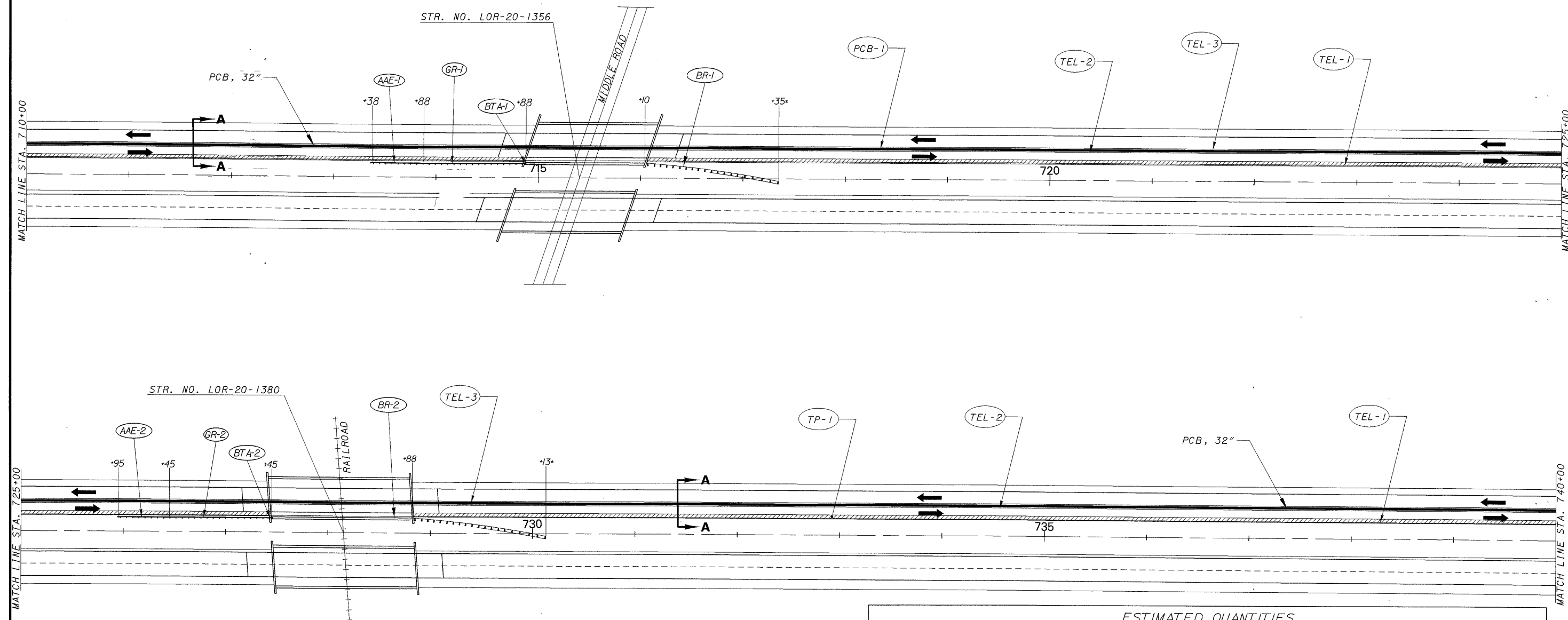
MAINTENANCE OF TRAFFIC PHASE "A"

MATCH LINE STA. 725+00

MATCH LINE STA. 740+00

LOR-20-12.62

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ITEM 615-TEMPORARY PAVEMENT (CALCULATIONS PHASE "A")

CLASS 'A', AS PER PLAN

TP-1 710+00 - 740+00 = 3000' @ 4' = 12000 SF

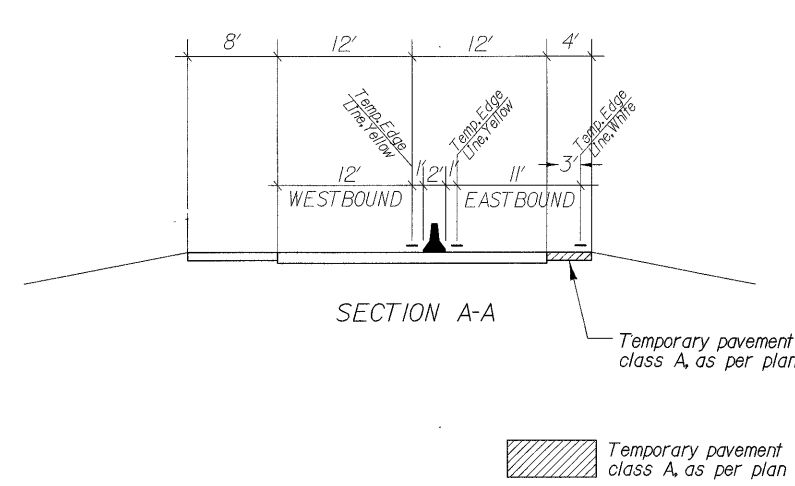
DEDUCT FOR BRIDGES 265' @ 4' = -1060 SF

10940 SF/9 = 1216 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")

CLASS 'A', AS PER PLAN

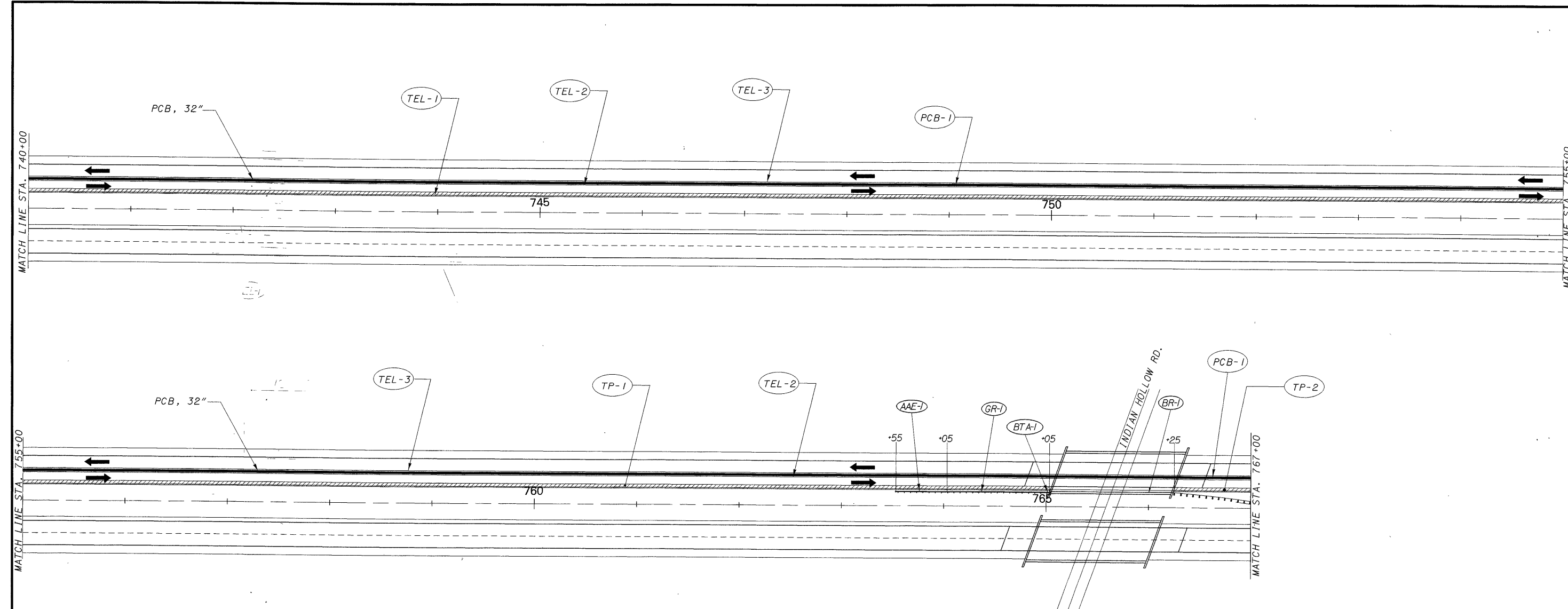
CUT 473 CY



ESTIMATED QUANTITIES PHASE "A" STA. 710+00 TO STA. 740+00

REFERENCE	STATION LIMITS	SIDE	606											614				615		622	
			ANCHOR ASSEMBLY TYPE E, AS PER PLAN	GUARDRAIL TYPE 5, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY, TYPE D, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1		BARRIER REFLECTORS (25' SPACING)		OBJECT MARKERS (25' SPACING)	TEMP. PAVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"								
						LF./MILE	WHITE	YELLOW	WHITE					WHT	YLW	EACH	SY.	LUMP	LF.		
TEL-1	710+00 TO 740+00	LT				3000															
TEL-2	710+00 TO 740+00	LT				3000															
TEL-2	710+00 TO 740+00	LT				3000															
TP-1	710+00 TO 740+00	LT												1216	LUMP						
PCB-1	710+00 TO 740+00	LT																			3000
BR-1	713+38 TO 717+35	LT										13	6								
BR-2	725+95 TO 730+13	LT										13	7								
AAE-1	713+38 TO 713+88	LT	1																		
AAE-2	725+95 TO 726+45	LT	1																		
GR-1	713+88 TO 714+88	LT		100																	
GR-2	726+45 TO 727+45	LT		100																	
BT-A-1	714+88	LT			1																
BT-A-2	727+45	LT			1																
TOTALS PHASE "A"			2	200	2	3000	6000	26	13	240	242	1216	LUMP	3000							
						9000/170	26	253	242												

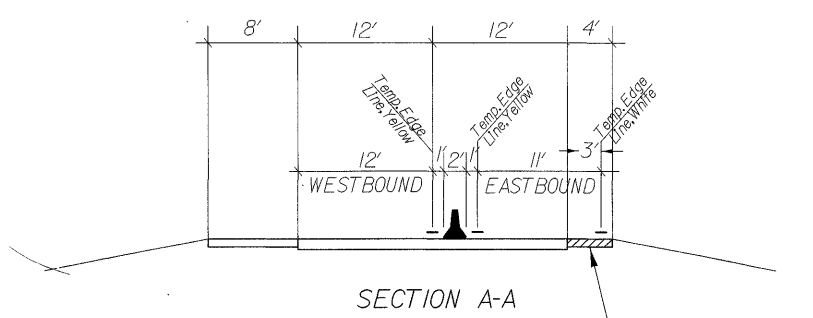
Quantities carried to sheet 155.



MAINTENANCE OF TRAFFIC PHASE "A"

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"
 CLASS "A" AS PER PLAN
 TP-1 740+00 - 765+05 = 2505' @ 4' = 10020 SF
 TP-2 766+25 - 767+00 = 75' @ 5' = 375 SF
 10395 SF/9 = 1155 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
 CLASS "A" AS PER PLAN
 CUT 449 CY



ESTIMATED QUANTITIES PHASE "A" STA. 740+00 TO STA. 767+00

REFERENCE	STATION LIMITS	SIDE	606											614		615		622
			ANCHOR ASSEMBLY TYPE E, AS PER PLAN	GUARDRAIL TYPE 5, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY TYPE D, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1		BARRIER REFLECTORS (25' SPACING)		OBJECT MARKERS (25' SPACING)	TEMP. PVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"					
						LF./MILE	WHITE	YELLOW	TYPE A					TYPE B	EACH	SY.	LUMP	LF.
TEL-1	740+00 TO 767+00	LT				2700												
TEL-2	740+00 TO 767+00	LT					2700											
TEL-3	740+00 TO 767+00	LT					2700											
TP-1	740+00 TO 765+05	LT											1113	LUMP				
TP-2	766+25 TO 767+00	LT											42					
PCB-1	740+00 TO 767+00	LT																
BR-1	763+55 TO 767+57	LT							13	6	216	218						2700
AAE-1	763+55 TO 764+05	LT	1															
GR-1	764+05 TO 765+05	LT		100														
BTA-1	765+05	LT			1													
TOTALS PHASE "A"			1	100	1	2700	5400	13	6	216	218	1155	LUMP	2700				
						8100/153		13	222									

 Temporary pavement class A, as per plan

Quantities carried to sheet 155.

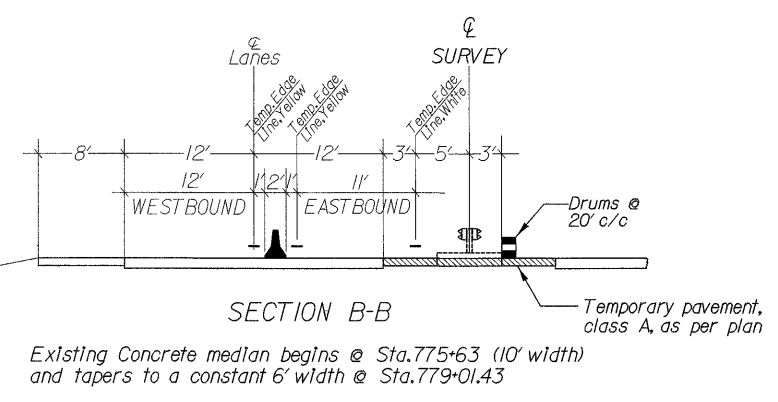
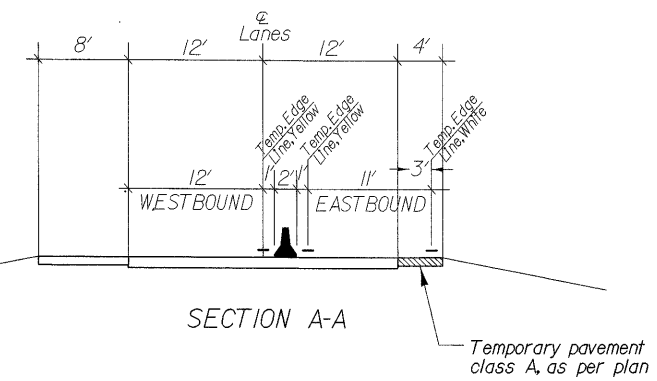
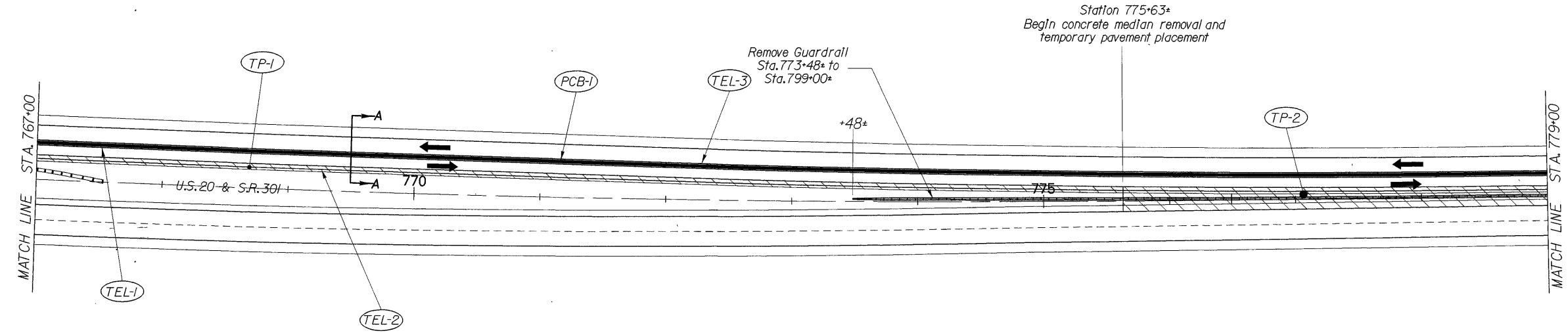


CALCULATED
T/SF 4/96
DESIGNED
T/BC 7/96

50
0
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE "A"**

LOR-20-12.62

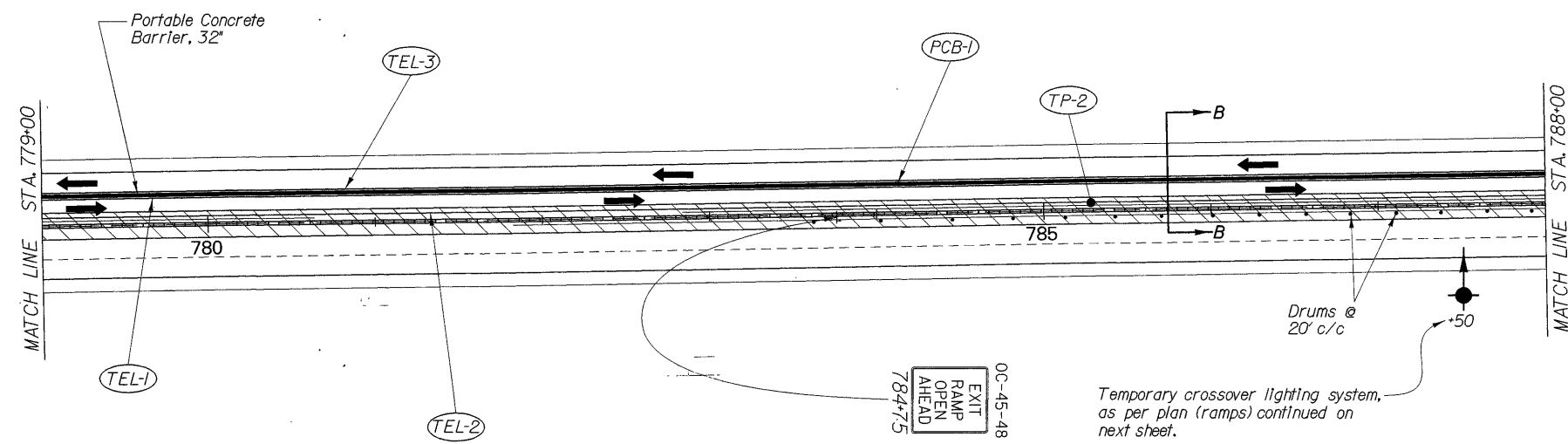


ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "A"

CLASS "A" AS PER PLAN

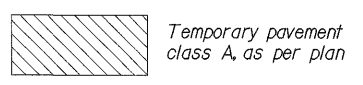
TP-1	767+00 - 775+63	= 863' @ 5'	= 4315 SF
TP-2	775+63 - 779+01	= 338' @ 18'	= 6084 SF
	779+01 - 788+00	= 899' @ 16'	= 14384 SF
		24783 SF/9	= 2753 SY

ESTIMATED EARTHWORK QUANTITIES FOR
INFORMATIONAL PURPOSES ONLY. (TEMP.
PAVEMENT CONSTRUCTION PHASE "A")
CLASS A AS PER PLAN
CUT 721 CY



ESTIMATED QUANTITIES
PHASE "A" STA. 767+00 TO STA. 788+00

REFERENCE	STATION LIMITS	SIDE	614		615		622			
			TEMPORARY EDGE LINE, CLASS 1		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (SPACING -)	TEMP. PAVEMENT CLASS A AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32'	
			LF./MILE	WHITE						YELLOW
TEL-1	767+00 TO 788+00	LT			2100					
TEL-2	767+00 TO 788+00	LT			2100					
TEL-3	767+00 TO 788+00	LT			2100					
TP-1	767+00 TO 775+63	LT					479	LUMP		
TP-2	775+63 TO 788+00	L&R					2274	LUMP		
PCB-1	767+00 TO 788+00	LT			168	170				2100
TOTALS PHASE "A"			2100	4200			2753	LUMP		2100
			6300/119							



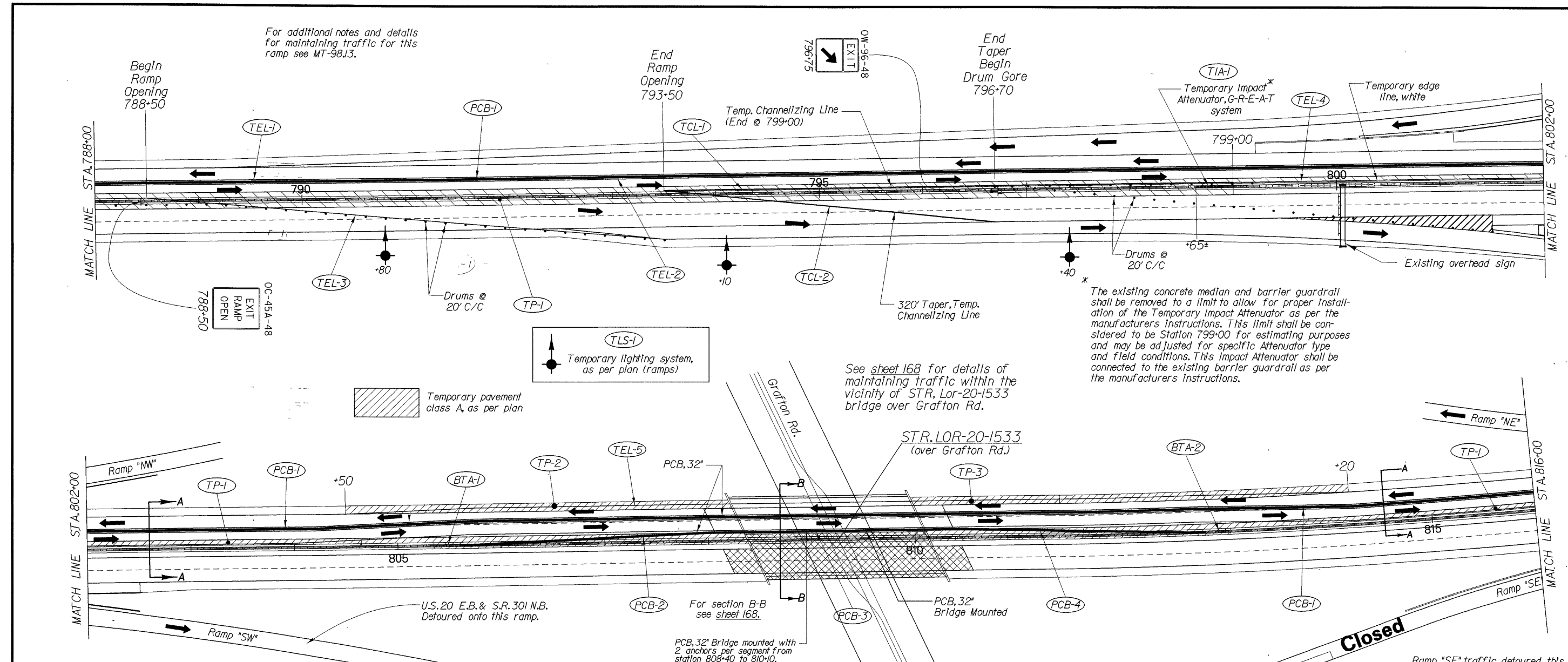
Quantities carried to sheet 155.



CALCULATED
 TFSF 4/96
 CHECKED
 TBC 7/96
 HORIZONTAL
 SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE "A"

LOR-20-12.6.2



For additional notes and details for maintaining traffic for this ramp see MT-98J3.

The existing concrete median and barrier guardrail shall be removed to a limit to allow for proper installation of the Temporary Impact Attenuator as per the manufacturers instructions. This limit shall be considered to be Station 799+00 for estimating purposes and may be adjusted for specific Attenuator type and field conditions. This Impact Attenuator shall be connected to the existing barrier guardrail as per the manufacturers instructions.

See sheet 168 for details of maintaining traffic within the vicinity of STR. Lor-20-1533 bridge over Grafton Rd.

Ramp "SE" traffic detoured this phase. See sheet 148 for details.

ESTIMATED QUANTITIES PHASE "A" STA. 788+00 TO STA. 816+00

REFERENCE	STATION LIMITS	SIDE	606		614		615		622						
			BRIDGE TERMINAL ASSEMBLY, TYPE I, BARRIER DESIGN, AS PER PLAN	TEMPORARY IMPACT ATTENUATOR, G-R-E-A-T SYSTEM MODEL #206206NF66CZ, BIDIRECTIONAL	TEMPORARY CHANNELIZING LINE	TEMPORARY EDGE LINE, CLASS 1		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMPORARY CROSS-OVER LIGHTING SYSTEM, AS PER PLAN (RAMPS)	TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"	PORTABLE CONC. BARRIER, 32" BRIDGE MOUNTED	
						LF.	WHITE								YELLOW
TEL-1	788+00 TO 816+00	LT				2800									
TEL-2	788+00 TO 816+00	LT				2800									
TEL-3	788+00 TO 793+50	L&R				550									
TEL-4	799+00 TO 816+00	LT				1700									
TEL-5	804+50 TO 814+20	LT				970									
TP-1	788+00 TO 816+00	L&R							3199	LUMP					
TP-2	804+50 TO 808+20	LT							329	LUMP					
TP-3	810+00 TO 814+20	LT							373	LUMP					
PCB-1	788+00 TO 816+00	LT						224	226		2800				
PCB-2	805+60 TO 808+40	LT						12	13		280				
PCB-3	808+40 TO 810+10	LT						7	8			170			
PCB-4	810+10 TO 812+80	LT						12	13		270				
BTA-1	806+25 TO 806+50	CL	1												
BTA-2	811+30 TO 811+55	CL	1												
TIA-1	798+65 TO 798+97	CL		1											
TCL-1	793+50 TO 799+00	LT				550									
TCL-2	793+50 TO 796+70	L&R				320									
TLS-1	787+50 TO 797+40	RT													
TOTALS PHASE "A"			2	1	870	3220	5600	31	224	260	1	3901	LUMP	3350	170
						8820/1.67		255							

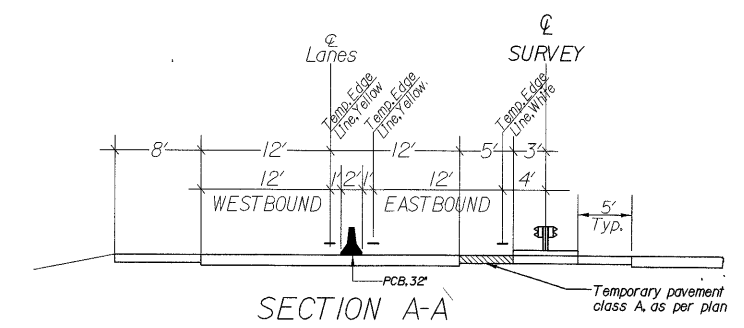
ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

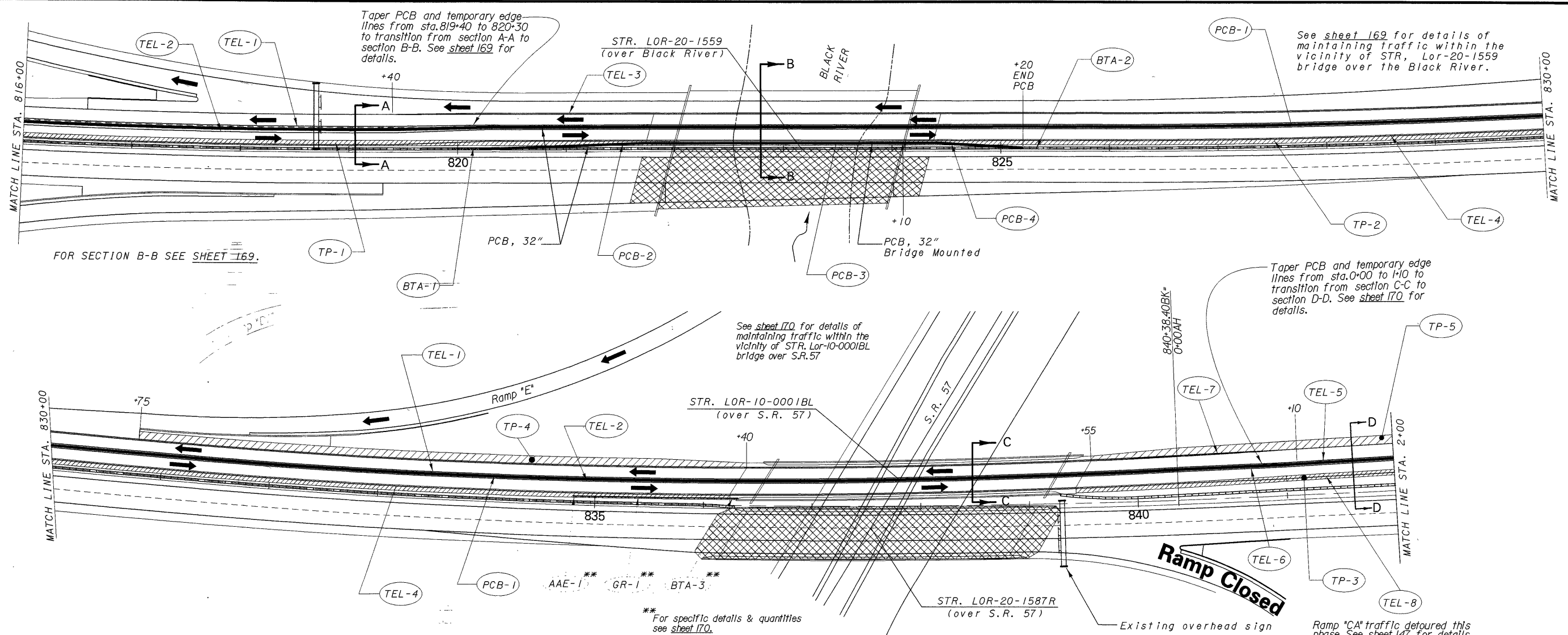
CLASS "A", AS PER PLAN

TP-1:	788+00 - 799+00 = 1100'	@ 16'	= 17600 SF
	799+00 - 805+35 = 635'	@ 5'	= 3175 SF
	805+35 - 808+40 = 305'	@ 11'	= 3355 SF
	810+15 - 813+05 = 290'	@ 11'	= 3190 SF
	813+05 - 816+00 = 295'	@ 5'	= 1475 SF
TP-2:	804+50 - 808+20 = 370'	@ 8'	= 2960 SF
TP-3:	810+00 - 814+20 = 420'	@ 8'	= 3360 SF
35115 SF/9 = 3901 SY			

Quantities carried to sheet 155.

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A") CLASS A AS PER PLAN CUT 1517 CY





FOR SECTION B-B SEE SHEET 169.

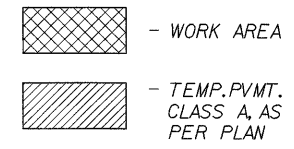
See sheet 169 for details of maintaining traffic within the vicinity of STR, Lor-20-1559 bridge over the Black River.

See sheet 170 for details of maintaining traffic within the vicinity of STR, Lor-10-0001BL bridge over S.R. 57

Taper PCB and temporary edge lines from sta. 0+00 to 1+10 to transition from section C-C to section D-D. See sheet 170 for details.

For specific details & quantities see sheet 170.
For section C-C see sheet 170.

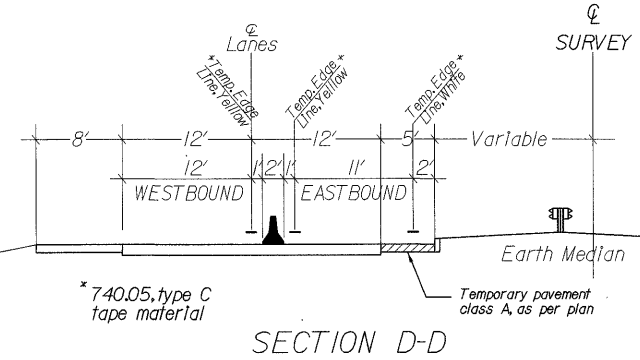
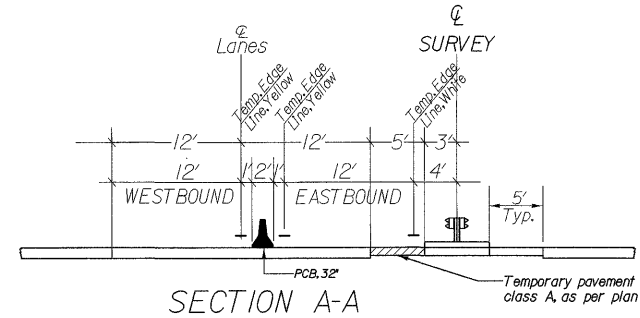
Ramp "CA" traffic detoured this phase. See sheet 147 for details.



ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

CLASS "A", AS PER PLAN

TP-1	816+00 TO 821+99.5 = 599.5' @ 5' =	2997.5 SF
TP-2	824+12 - 836+24.5 = 1212.5' @ 5' =	6062.5 SF
TP-3	839+42.7 - 1+00 = 195.7' @ 5' =	978.5 SF
TP-4	830+75 - 836+40 = 565' @ 8' =	4520 SF
TP-5	839+55 - 2+00 = 283' @ 8' =	2264 SF
16823 SF/9 =		1869 SY



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
CLASS A, AS PER PLAN
CUT 728 CY

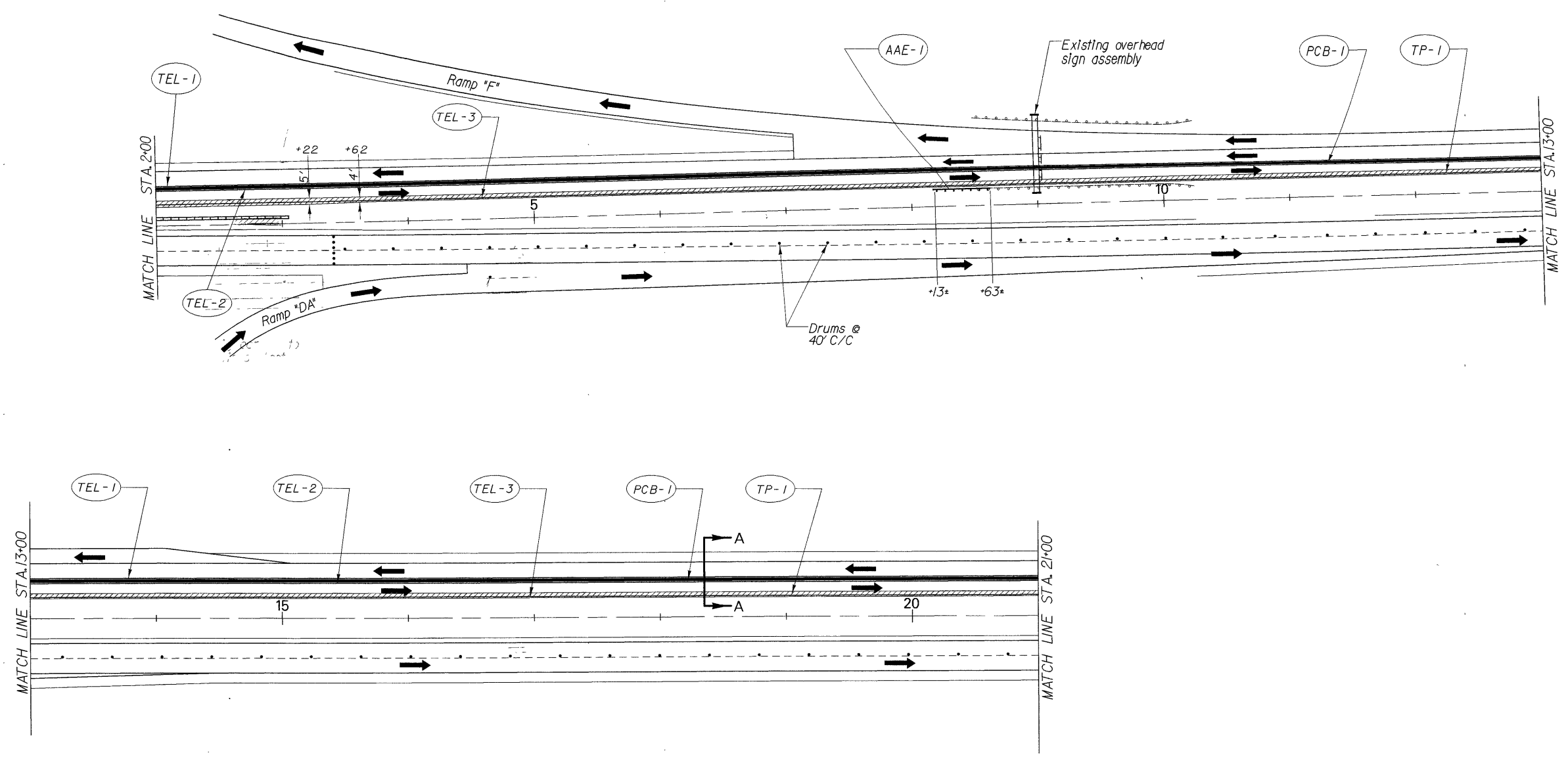
ESTIMATED QUANTITIES PHASE "A" STA. 816+00 TO STA. 2+00

REFERENCE	STATION LIMITS	SIDE	606		614		615		622					
			BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN AS PER PLAN		TEMPORARY EDGE LINE, CLASS I	TEMPORARY EDGE LINE, CLASS I 740.05, TYPE C	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PVMT. CLASS A AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"	PORTABLE CONC. BARRIER, 32", BRIDGE MOUNTED		
			EACH	LF./MILE	LF./MILE	LF./MILE	EACH	EACH	SY.	LUMP	LF.	LF.		
BTA-1	819+95 TO 820+20	LT	1											
BTA-2	824+95 TO 825+20	LT	1											
TEL-1	816+00 TO 0+00	LT		2438										
TEL-2	816+00 TO 0+00	LT		2438										
TEL-3	819+40 TO 0+00	LT		2098										
TEL-4	816+00 TO 0+00	LT		2438										
TEL-5	0+00 TO 2+00	LT				200.0								
TEL-6	0+00 TO 2+00	LT				200.0								
TEL-7	0+00 TO 2+00	LT				200.0								
TEL-8	0+00 TO 2+00	LT				200.0								
PCB-1	816+00 TO 2+00	LT					212	214		2640				
PCB-2	820+20 TO 822+00	LT					7	8		180				
PCB-3	822+00 TO 824+10	LT					8	9			210			
PCB-4	824+10 TO 825+20	LT					4	5		110				
TP-1	816+00 TO 821+99.5	LT							333	LUMP				
TP-2	824+12 TO 836+24.5	LT							673	LUMP				
TP-3	839+42.7 TO 1+00	LT							109	LUMP				
TP-4	830+75 TO 836+40	LT							502	LUMP				
TP-5	839+55 TO 2+00	LT							252	LUMP				
TOTALS PHASE "A"			2	4536 9412/178	4876 800/0.15	400 231	400	19	212	236	1869	LUMP	2930	210

Quantities carried to sheet 155.



50
0
HORIZONTAL
SCALE IN FEET
CALCULATED
TSF 4/96
CHECKED
TBC 7/96

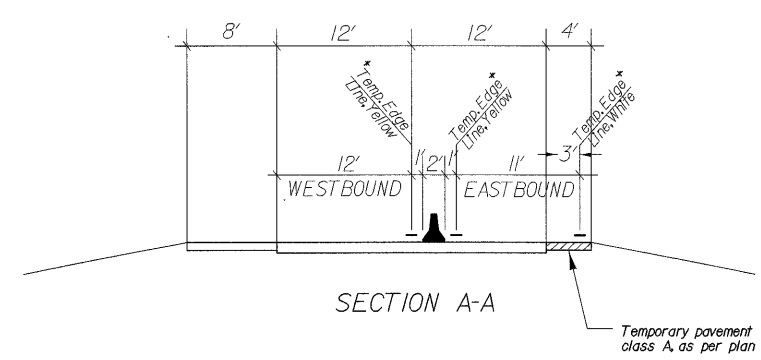


**ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "A"**

CLASS "A", AS PER PLAN

TP-1 2+00 TO 3+22 = 122' @ 5' = 610 SF
 3+22 TO 3+62 = 40' X (5+4)/2 = 180 S.F.
 3+62 TO 21+00 = 1738' @ 4' = 6952 S.F.
 7742 SF/9 = 860 SY

ESTIMATED EARTHWORK QUANTITIES FOR
INFORMATIONAL PURPOSES ONLY. (TEMP.
PAVEMENT CONSTRUCTION PHASE "A")
CLASS A AS PER PLAN
CUT 335 CY



*Tape material
740.05, type C

**ESTIMATED QUANTITIES
PHASE "A" STA. 2+00 TO STA. 21+00**

REFERENCE	STATION LIMITS	SIDE	606		614		615		622	
			ANCHOR ASSEMBLY TYPE 'E' AS PER PLAN		TEMPORARY EDGE LINE CLASS 1 740.05, TYPE C	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PAVMT. CLASS A AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"
			WHITE	YELLOW						
AAE-1	8+13* TO 8+63*	LT	1							
TEL-1	2+00 TO 21+00	LT		1900						
TEL-2	2+00 TO 21+00	LT		1900						
TEL-3	2+00 TO 21+00	LT		1900						
TP-1	2+00 TO 21+00	LT					860	LUMP		
PCB-1	2+00 TO 21+20	LT			154	156				1920
TOTALS PHASE "A"			1	1900	3800	154	156	860	LUMP	1920
				5700/1.08						

Quantities carried to sheet 155.

**MAINTENANCE OF TRAFFIC
PHASE "A"**

LOR-20-12.62

166
351

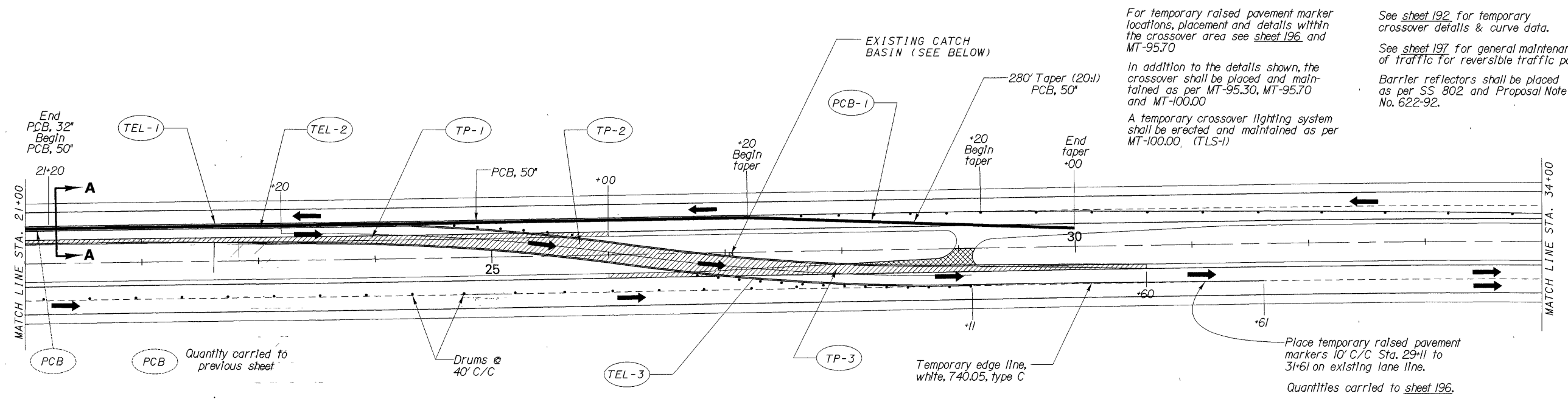


0 50
 CALCULATED
 T/SF 4/96
 CHECKED
 T/BC 7/96
 HORIZONTAL
 SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE "A"

LOR-20-12.62

167
 351



For temporary raised pavement marker locations, placement and details within the crossover area see sheet 196 and MT-95.70

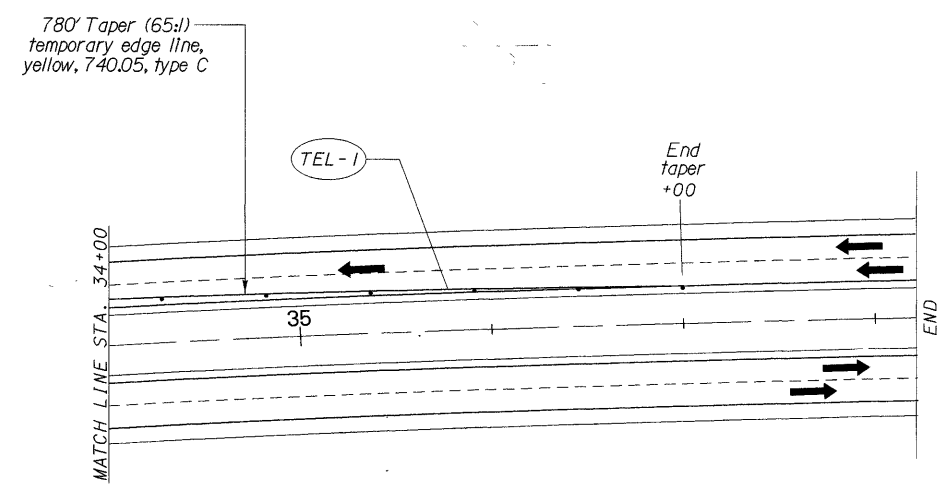
In addition to the details shown, the crossover shall be placed and maintained as per MT-95.30, MT-95.70 and MT-100.00

A temporary crossover lighting system shall be erected and maintained as per MT-100.00, (TLS-1)

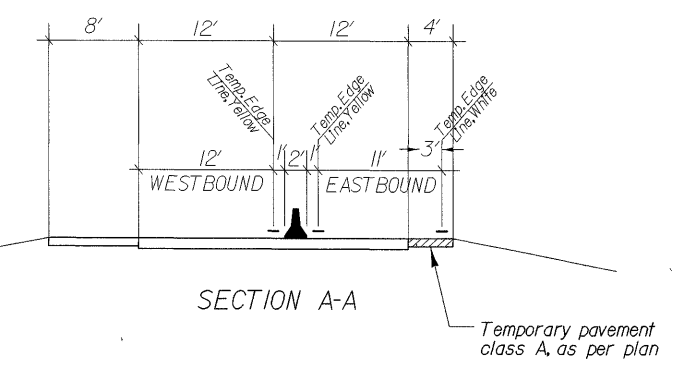
See sheet 192 for temporary crossover details & curve data.

See sheet 197 for general maintenance of traffic for reversible traffic patterns.

Barrier reflectors shall be placed as per SS 802 and Proposal Note No. 622-92.



THE EXISTING ASPHALT CROSSOVER SHALL BE REMOVED, SCARIFIED AND REGRADED TO PROVIDE POSITIVE DRAINAGE TO THE EXTENT AS SHOWN ABOVE AS DIRECTED BY THE ENGINEER. TOP SOIL REMOVED FROM OTHER AREAS MAY BE SPREAD ON THE DESIGNATED MEDIAN LOCATION. THE AREA SHALL THEN BE SEED AS PER 659. ALL THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID ITEM 615 TEMPORARY ROADS.



THE EXISTING CATCH BASIN STA. 27+05+00 SHALL BE PERMANENTLY CAPPED IN SUCH A MANNER THAT FILL MATERIAL FROM CONSTRUCTION OF TEMPORARY PAVEMENT, CLASS A, AS PER PLAN WILL NOT ENTER THE BASIN. ALL COSTS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED WITH ITEM 615-TEMPORARY ROADS.

Temporary pavement class A, as per plan
 Portion of existing U-turn removed

Extra advance warning sign groups as per standard drawing MT-95.30 shall be provided at a distance of 1 mile and 2 miles prior to the lane closure. All costs to complete this work shall be included with item 614 - Maintaining Traffic.

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

CLASS "A" AS PER PLAN

TP-1 21+00 TO 26+00 (4' WIDTH) = 2000 SF

TP-2 MEDIAN CROSS OVER = 4858 SF

TP-3 26+00 TO 30+60 = 2618 SF

(COMPUTER GENERATED QUANTITY)

9476 SF/9 = 1053 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")

CLASS A AS PER PLAN

CUT 395 CY

FILL 52 CY

		ESTIMATED QUANTITIES PHASE "A" STA. 21+00 TO STA. 38+00									
REFERENCE	STATION LIMITS	SIDE	614		615			622			
			TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C		TEMPORARY CROSS-OVER LIGHTING SYSTEM	BARRIER REFLECTORS TYPE B (12.5' SPACING)	OBJECT MARKERS (12.5' SPACING)	TEMP. PAVT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 50"	
			LF./MILE	WHITE							
TEL-1	21+00 To 31+00	LT		1600							
TEL-2	21+00 To 30+60	L&R		960							
TEL-3	21+00 To 31+61	LT	1061								
TP-1	21+00 TO 26+00±	LT					222		LUMP		
TP-2	MEDIAN CROSS OVER	MED					540		LUMP		
TP-3	26+00 TO 30+60±	RT					291		LUMP		
PCB-1	21+20 To 30+00	LT				86	88			880	
TLS-1	21+05 TO 30+95	L&R			1						
TOTALS PHASE "A"			1061	2560	1	86	88	1053	LUMP	880	
			3621/0.69								

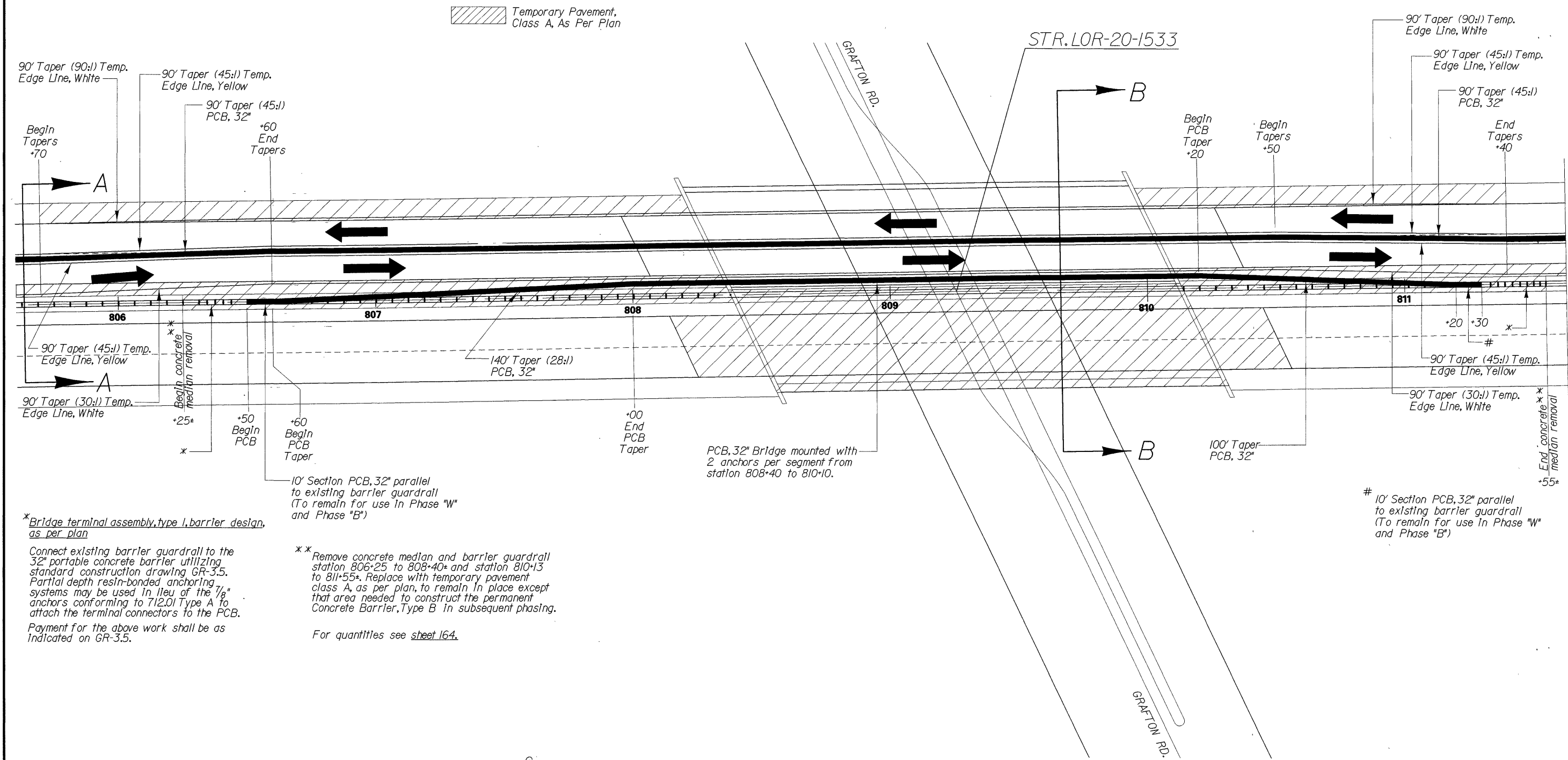
Quantities carried to sheet 155.



CALCULATED
TSF 4/96
CHECKED
TBC 7/96
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PHASE "A"
DETAILS AT STR. LOR-20-1533**

LOR-20-12.62

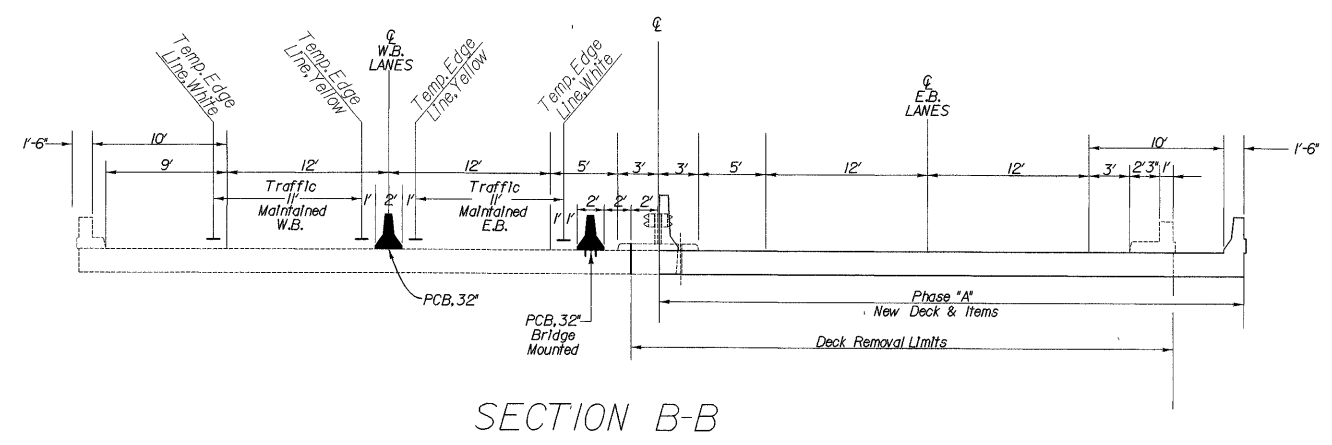
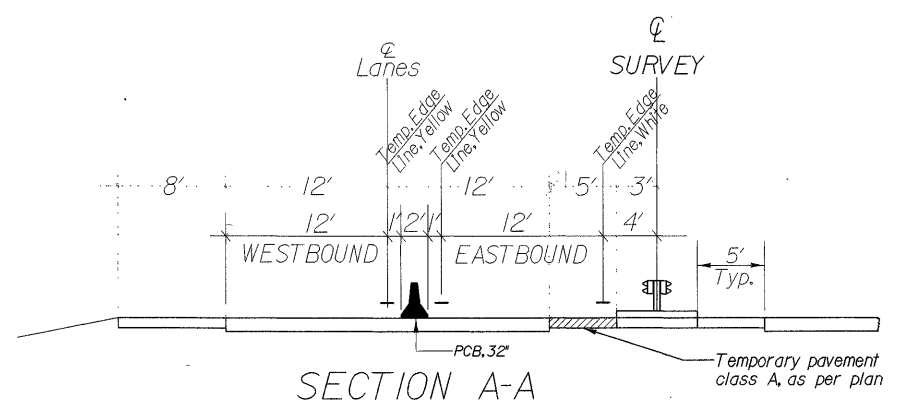


* Bridge terminal assembly, type I, barrier design, as per plan

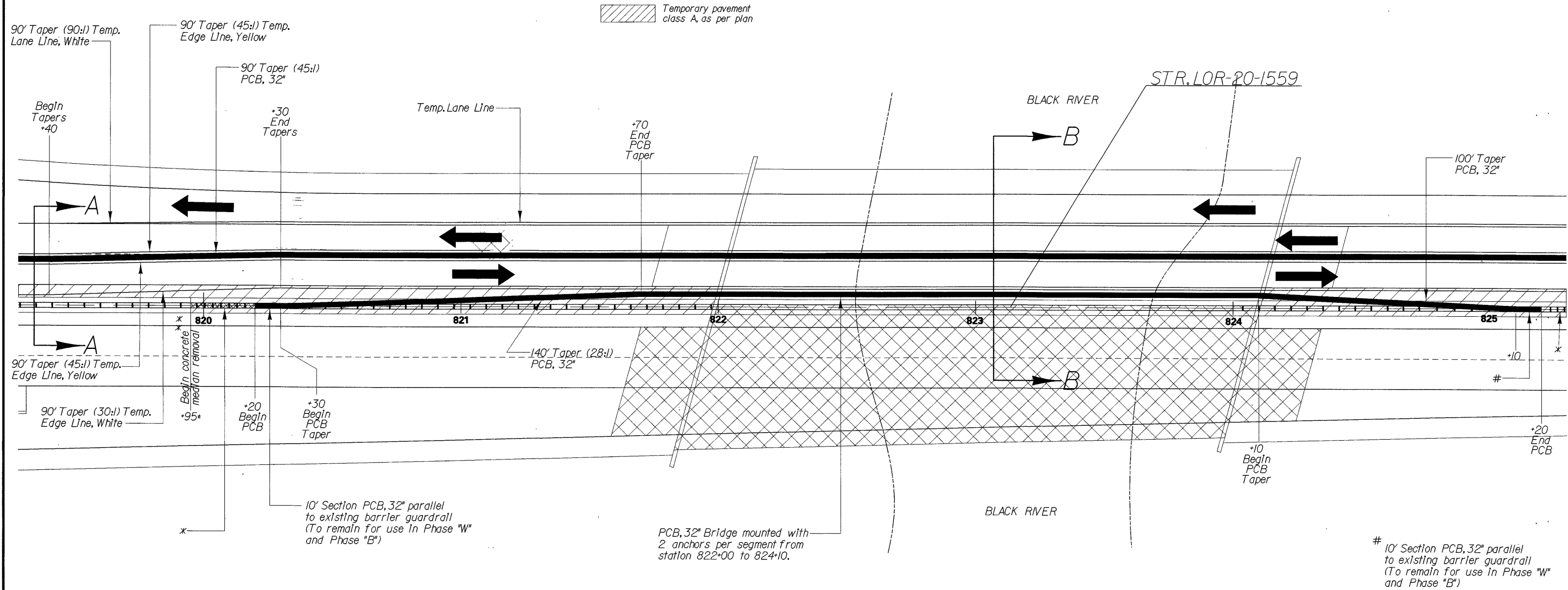
Connect existing barrier guardrail to the 32" portable concrete barrier utilizing standard construction drawing GR-3.5. Partial depth resin-bonded anchoring systems may be used in lieu of the 1/8" anchors conforming to 712.01 Type A to attach the terminal connectors to the PCB. Payment for the above work shall be as indicated on GR-3.5.

** Remove concrete median and barrier guardrail station 806+25 to 808+40 and station 810+13 to 811+55. Replace with temporary pavement class A, as per plan, to remain in place except that area needed to construct the permanent Concrete Barrier, Type B in subsequent phasing.

For quantities see sheet 164.



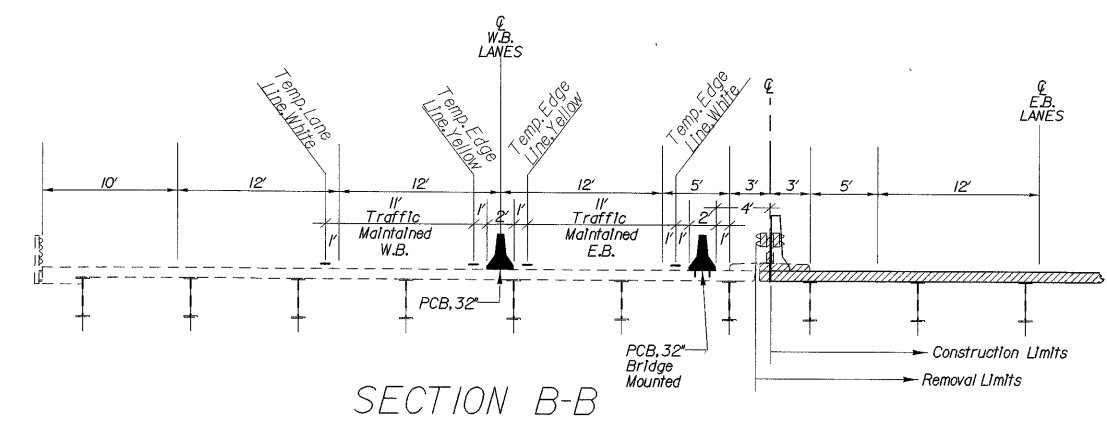
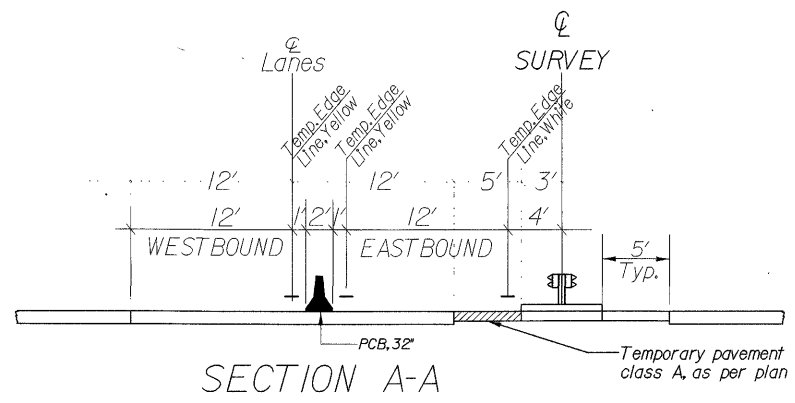
Association



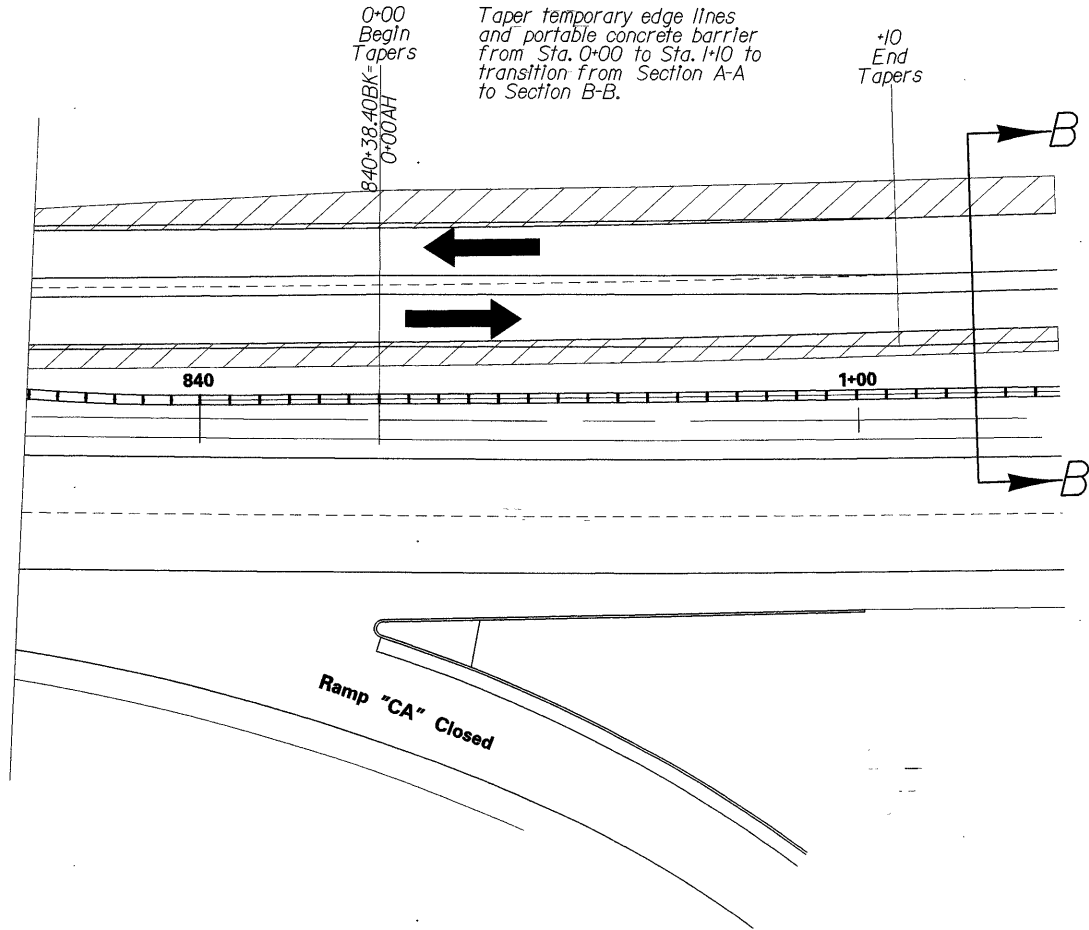
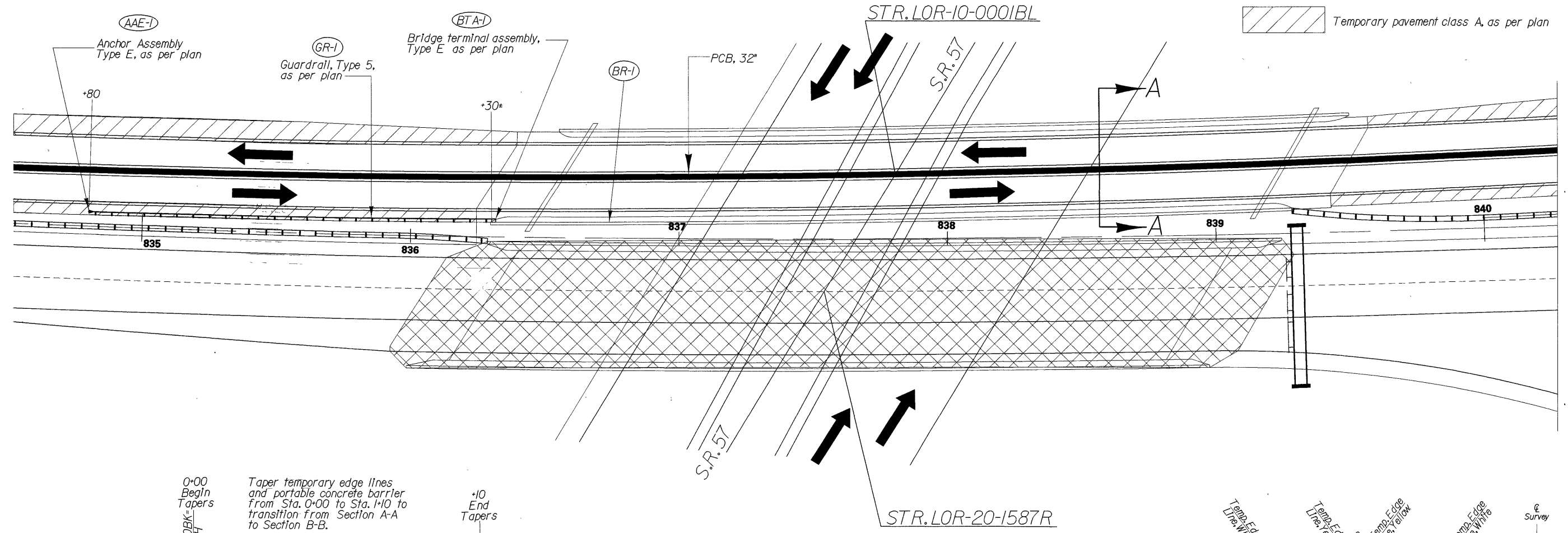
* Bridge terminal assembly, type I, barrier design as per plan
 Connect existing barrier guardrail to the 32" portable concrete barrier utilizing standard construction drawing GR-3.5. Partial depth resin-bonded anchoring systems may be used in lieu of the 7/8" anchors conforming to 712.01 Type A to attach the terminal connectors to the PCB.
 Payment for the above work shall be as indicated on GR-3.5.

** Remove concrete median and barrier guardrail station 819+95 to 822+00+ and station 824+10 to 825+45+. Replace with temporary pavement, as per plan, to remain in place except that area needed to construct the permanent Concrete Barrier, Type B50, As Per Plan in subsequent phasing.

For quantities see sheet 165.



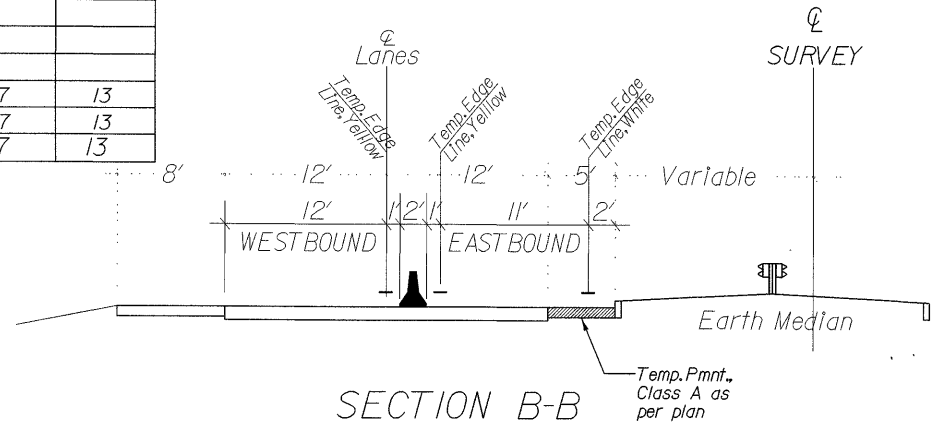
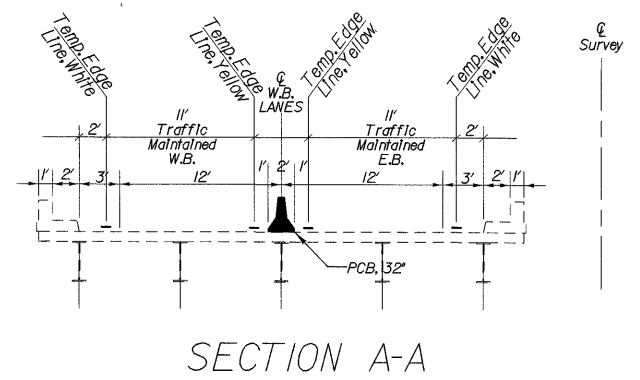
SECTION B-B



ESTIMATED QUANTITIES
PHASE "A" @ STR. LOR-10-000IBL

REFERENCE	STATION LIMITS	SIDE	606		614		
			ANCHOR ASSEMBLY TYPE E, AS PER PLAN	GUARDRAIL, TYPE 5, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY, TYPE E, AS PER PLAN	BARRIER REFLECTORS WHITE	
						A	B
			EACH	L.F.	EACH	EACH	
AAE-1	834+80 TO 835+30	LT	1				
GR-1	835+30 TO 836+30	LT		100			
BTA-1	836+30	LT			1		
BR-1	834+80 TO 839+30	LT				7	13
TOTALS PHASE "A"			1	100	1	7	13

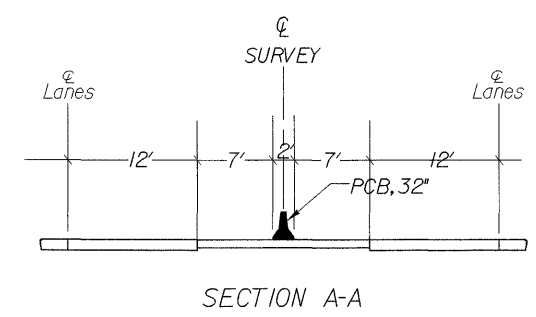
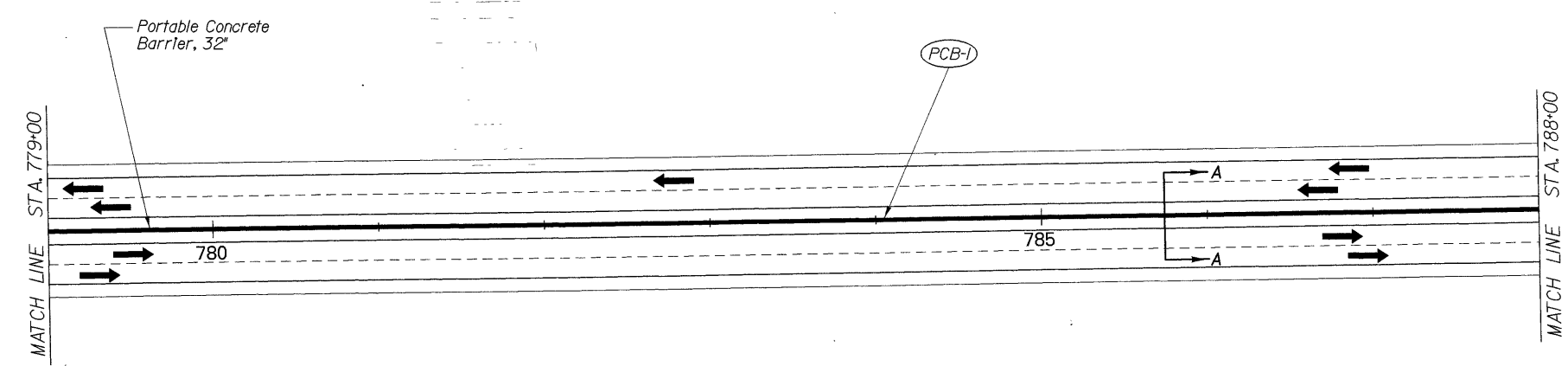
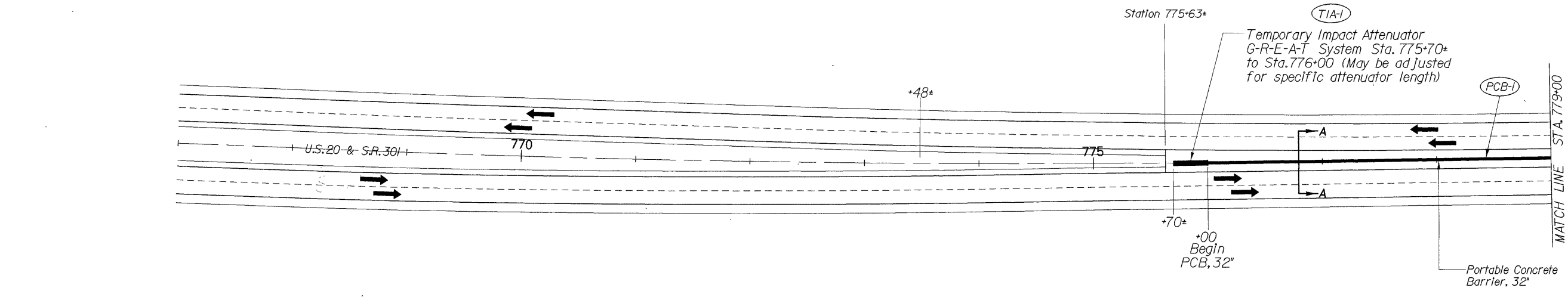
Quantities carried to sheet 155.





CALCULATED
7SF 4/96
CHECKED
TBC 7/96

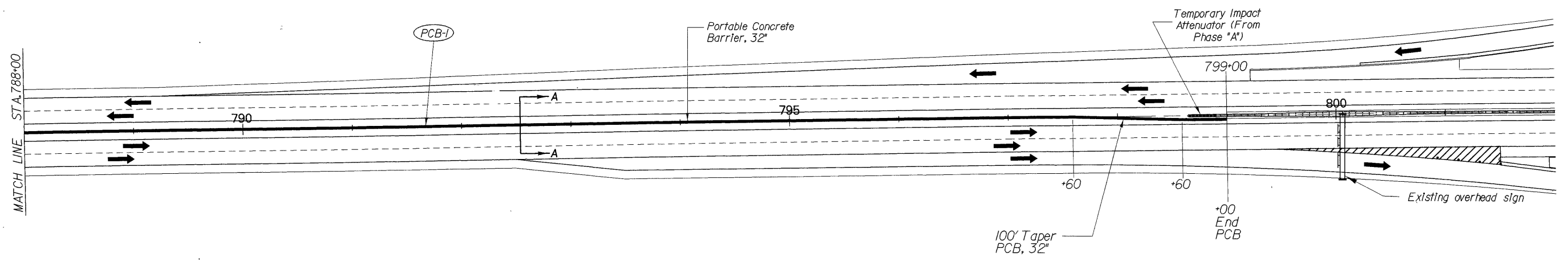
50
HORIZONTAL
SCALE IN FEET



ESTIMATED QUANTITIES
PHASE "W" STA. 775+70 TO STA. 799+00

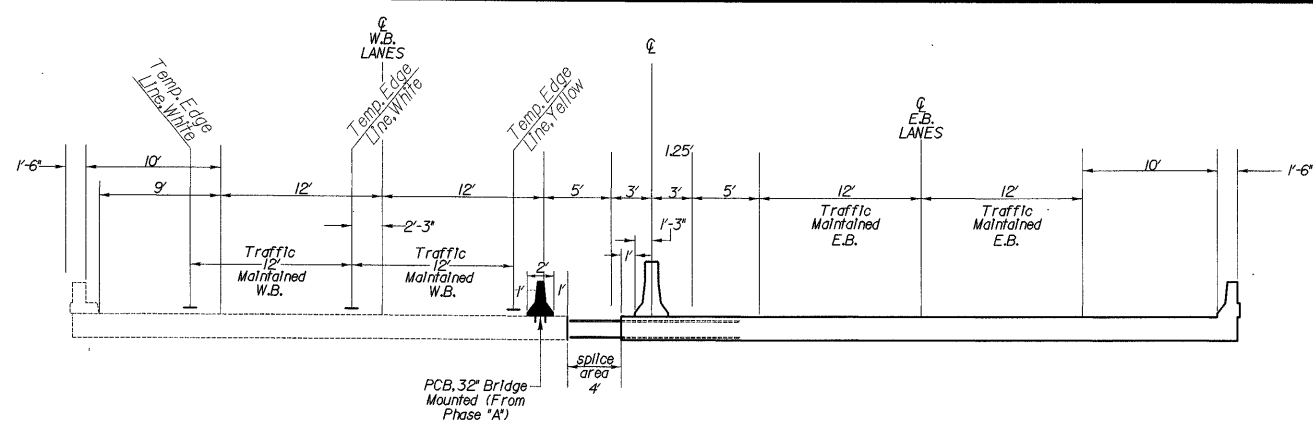
REFERENCE	STATION LIMITS	SIDE	614		622
			TEMPORARY IMPACT ATTENUATOR G-R-E-A-T SYSTEM MODEL #206208NF66CZ, BIDIRECTIONAL	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)
			EACH	EACH	PORTABLE CONC. BARRIER, 32"
TIA-I	775+70 TO 776+00	℄	1		
PCB-I	776+00 TO 799+00	℄		184	186
TOTALS PHASE "W"			1	184	186

Quantities carried to sheet 155.

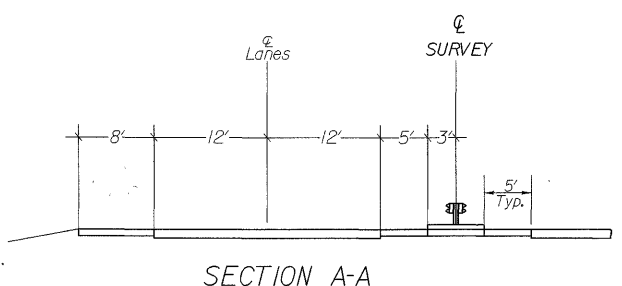
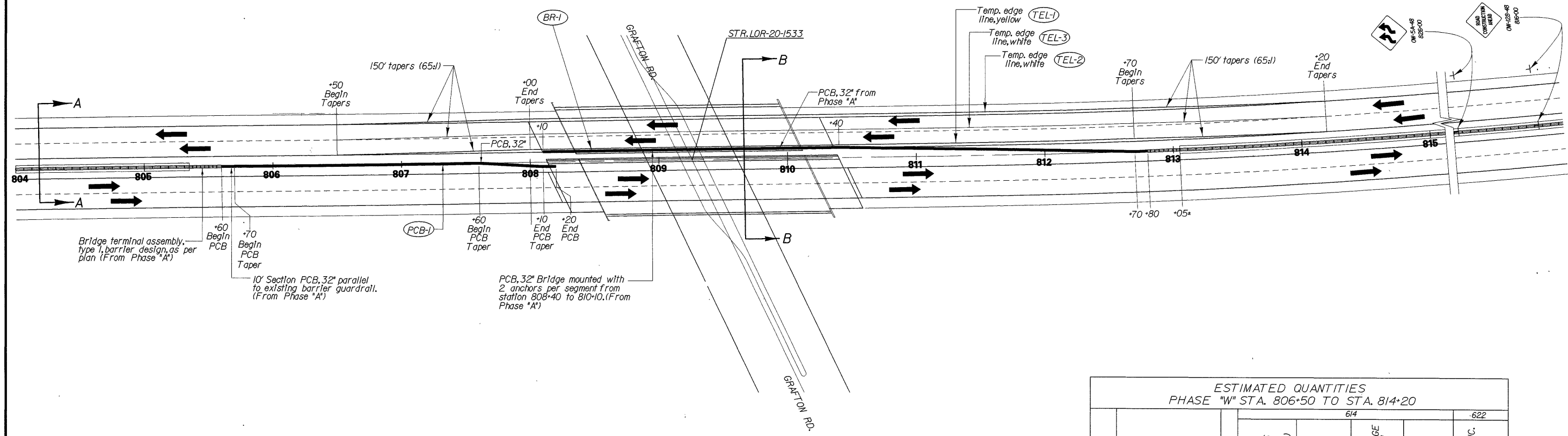


MAINTENANCE OF TRAFFIC
PHASE "W"

LOR-20-12.6.2



SECTION B-B

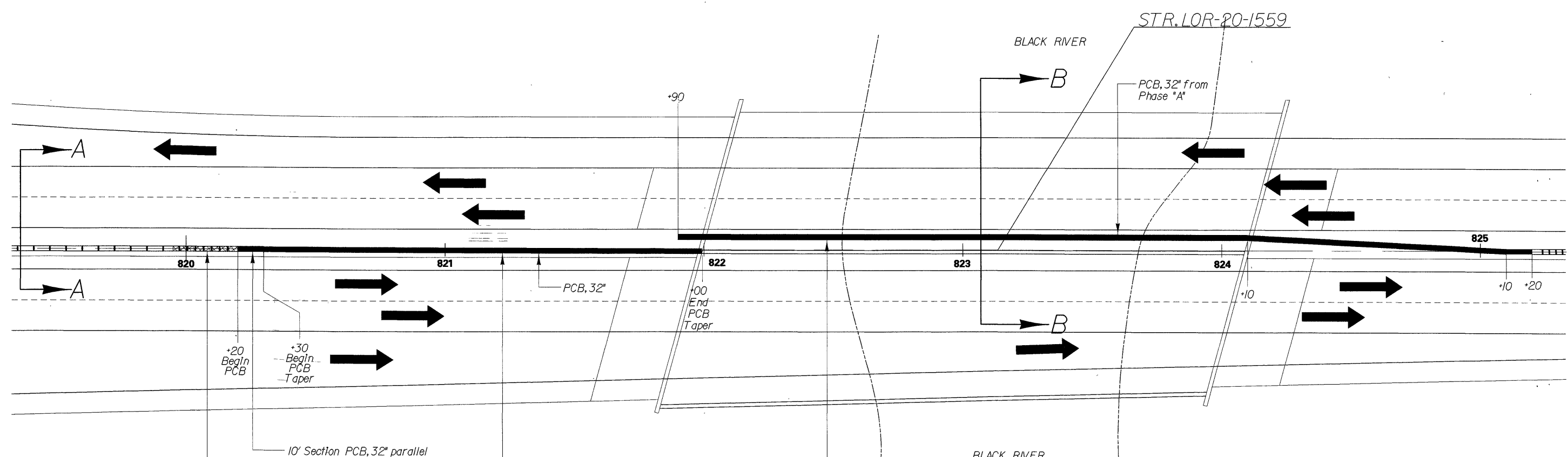


SECTION A-A

ESTIMATED QUANTITIES
PHASE "W" STA. 806+50 TO STA. 814+20

REFERENCE	STATION LIMITS	SIDE	614		PORTABLE CONC. BARRIER, 32"		
			BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)		TEMPORARY EDGE LINE, CLASS 1	
						YELLOW	WHT
PCB-1	805+70 TO 808+20	RT	22	11	250		
BR-1	808+10 TO 812+80	LT	20	21			
TEL-1	806+50 TO 814+20	LT			770		
TEL-2	806+50 TO 814+20	LT			770		
TEL-3	806+50 TO 814+20	LT			770		
TOTALS PHASE "W"			44	32	2310/0,44		

Quantities carried to steel 155.



* Bridge terminal assembly, type I, barrier design, as per plan (From Phase "A")

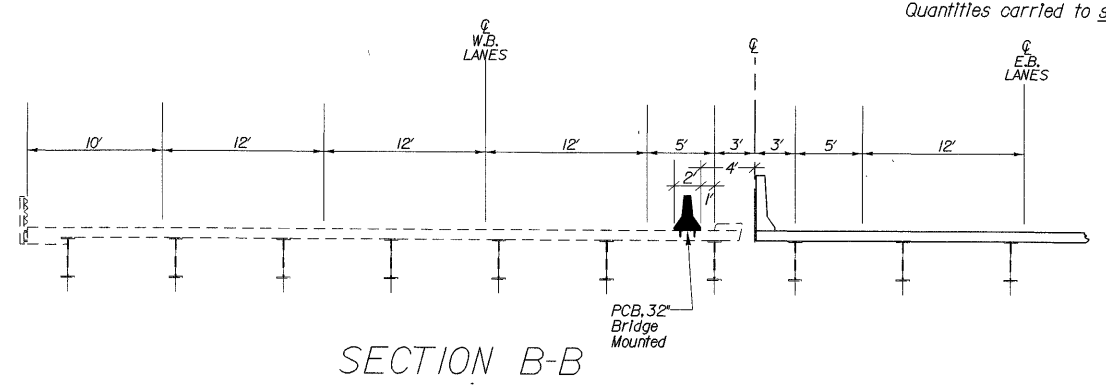
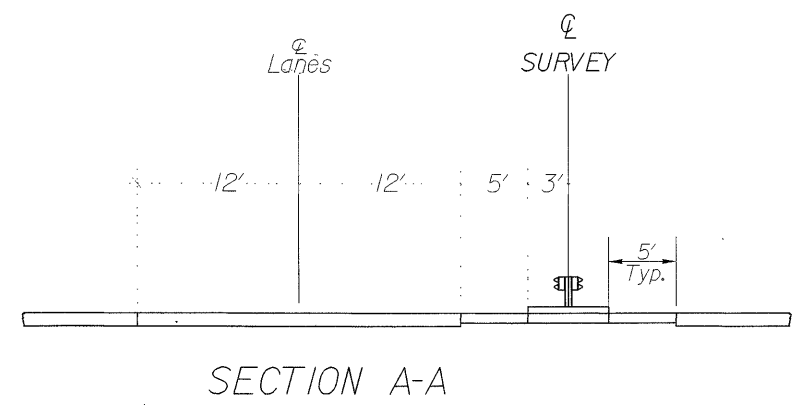
10' Section PCB, 32" parallel to existing barrier guardrail. (From Phase "A")

PCB, 32" Bridge mounted with 2 anchors per segment from station 822+00 to 824+10. (From Phase "A")

ESTIMATED QUANTITIES
PHASE "W" STA. 820+30 TO STA. 822+00

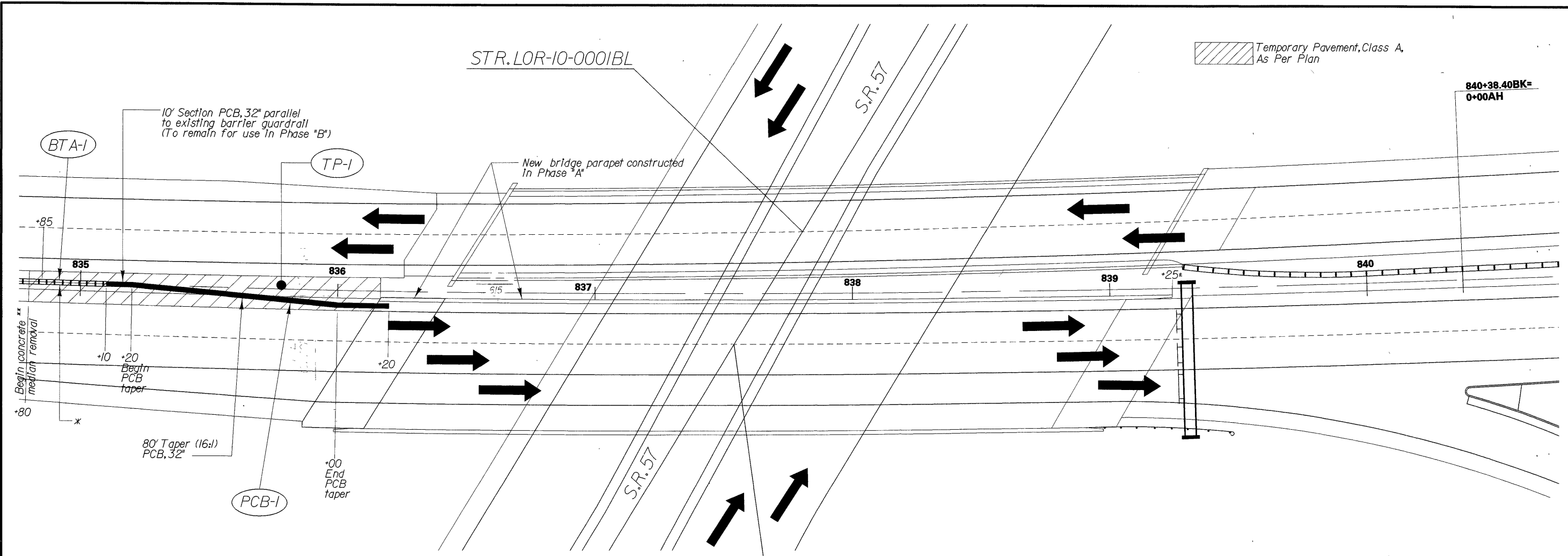
REFERENCE	STATION LIMITS	SIDE	614		622
			BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	PORTABLE CONC. BARRIER, 32"
			WHITE EACH	EACH	L.F.
PCB-1	820+30 TO 822+00	RT	16	8	170
TOTALS PHASE "W"			16	8	170

Quantities carried to sheet 155.



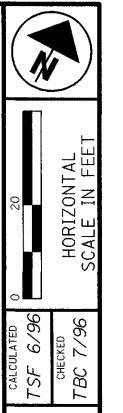
phasew.dgn

PHASEB.DGN



Temporary Pavement, Class A, As Per Plan

840+38.40BK=0+00AH



* Bridge terminal assembly, type I, barrier design, as per plan

Connect existing barrier guardrail to the 32\"/>

** Remove concrete median and barrier guardrail station 834+80 to 836+26. Replace with temporary pavement class A, as per plan, to remain in place except that area needed to construct the permanent Concrete Barrier, Type B50, as per plan in subsequent phasing.

For quantities see sheet 164.

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "W"	
CLASS "A", AS PER PLAN	
TP-1	834+80 - 836+26 = 146' @ 11' = 1606 SF
	1606 SF / 9 = 178 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "W")
 CLASS A, AS PER PLAN
 CUT 69 CY

ESTIMATED QUANTITIES PHASE "W" STA. 834+80 TO STA. 836+20								
REFERENCE	STATION LIMITS	SIDE	606	614	615	622		
			BRIDGE TERMINAL ASSEMBLY, TYPE I, BARRIER DESIGN, AS PER PLAN	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"
			EACH	WHITE EACH	EACH	SY.	LUMP	LF.
PCB-I	835+10 TO 836+20	CL		5	6			110
BTA-I	834+85 TO 835+10	CL	1					
TP-I	834+80 TO 836+26	CL				178	LUMP	
TOTALS PHASE "W"			1	5	6	178	LUMP	110

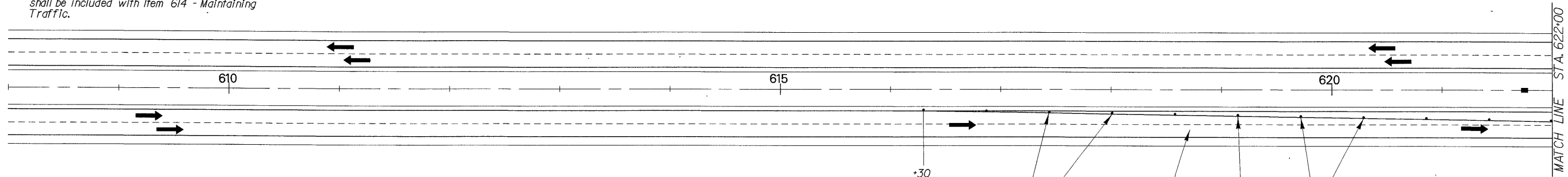
Quantities carried to sheet 155.

MAINTENANCE OF TRAFFIC PHASE "W" DETAILS AT STR. LOR-20-1587R

LOR-20-12.62

173A
351

Extra advance warning sign groups as per standard drawing MT-95.30 shall be provided at a distance of 1 mile and 2 miles prior to the lane closure. All costs to complete this work shall be included with Item 614 - Maintaining Traffic.



ESTIMATED QUANTITIES
PHASE "B" STA. 608+00 TO STA. 635+00

REFERENCE	STATION LIMITS	SIDE	614		OBJECT MARKERS (SPACING **)	TEMP. PAVEMENT CLASS A AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 50'	PORTABLE CONC. BARRIER, 32' AS PER PLAN
			TEMPORARY EDGE LINE, CLASS 1 740.05, TYPE C						
			WHITE	YELLOW					
TEL-1	623+92 TO 635+00	L&R	1108		EACH	SY.	LUMP	LF.	LF.
TEL-2	616+30 TO 635+00	L&R		1870					
TEL-3	623+92 TO 635+00	LT		1108					
TEL-4	622+80 TO 635+00	RT	1220						
TP-1	623+92 TO 630+08	L&R				439	LUMP		
PCB-1	622+90 TO 632+10	RT			90			920	
PCB-2	632+10 TO 635+00	RT			24				290
TOTALS PHASE "B"			2328	2978	114			920	290
			5306/1100						

** Spacing shall be 25' for PCB, 32' and 12.5' for PCB, 50'

Quantities carried to sheet 155.

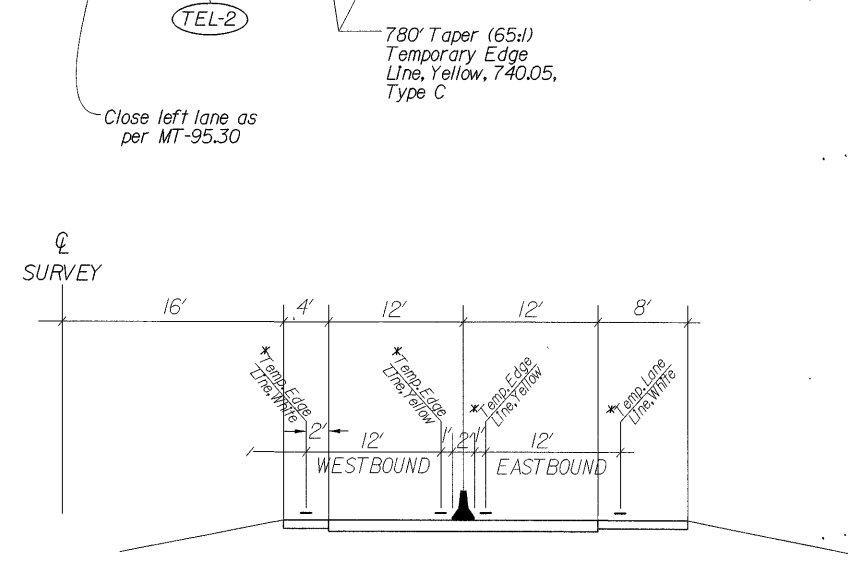
ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "B"

CLASS "A" AS PER PLAN
TP-1 623+92 - 630+08 = COMPUTER = 5067 SF
LESS COMMON AREA FROM PHASE "A" (1120 SF) =
3947 SF/9 = 439 SY

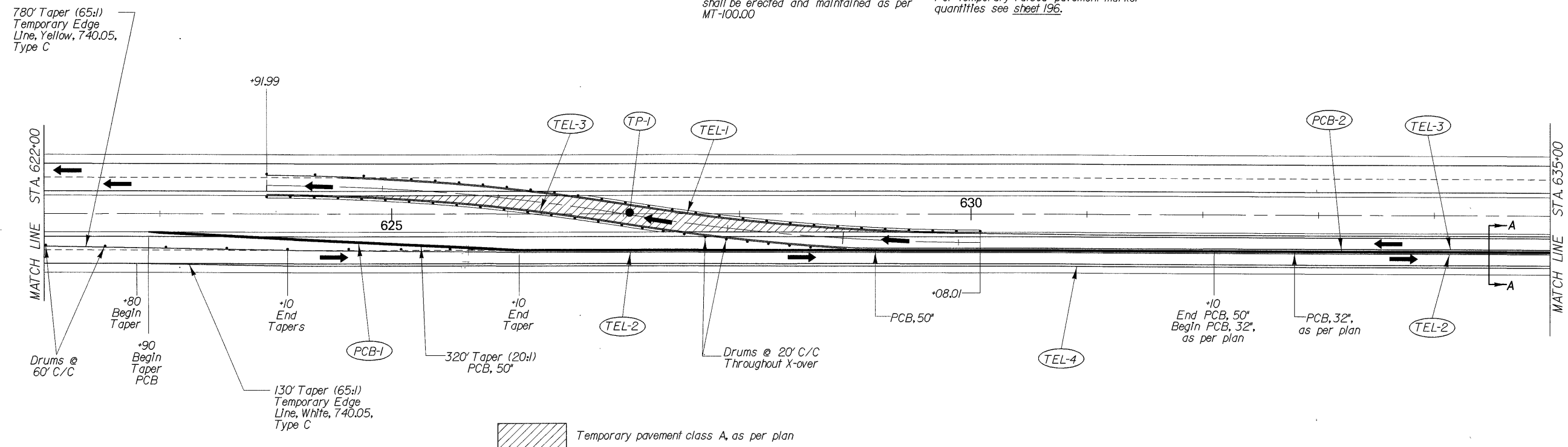
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "B")
CLASS "A" AS PER PLAN
CUT 69 CY
FILL 52 CY

For temporary raised pavement marker locations, placement and details within the crossover area see sheet 196 and MT-95.70
In addition to the details shown, the crossover shall be placed and maintained as per MT-95.30, MT-95.70 and MT-100.00
A temporary crossover lighting system shall be erected and maintained as per MT-100.00

See sheet 191 for temporary crossover details & curve data.
See sheet 197 for general maintenance of traffic for reversible traffic patterns.
Barrier reflectors shall be placed as per SS 802 and Proposal Note No. 622-92.
For temporary raised pavement marker quantities see sheet 196.



SECTION A-A



Temporary pavement class A, as per plan

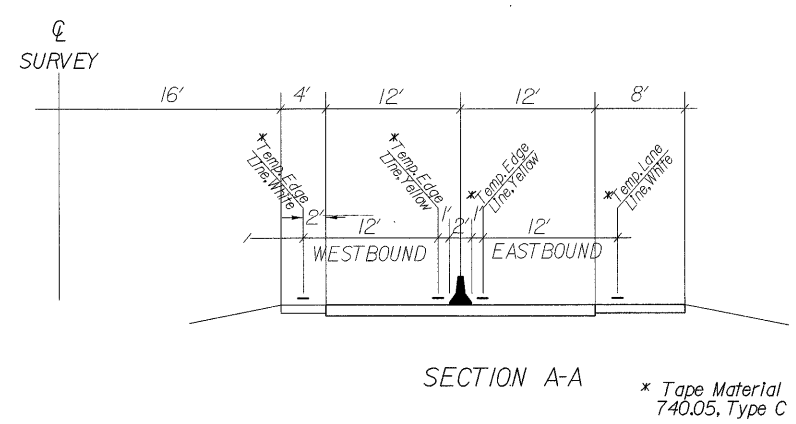
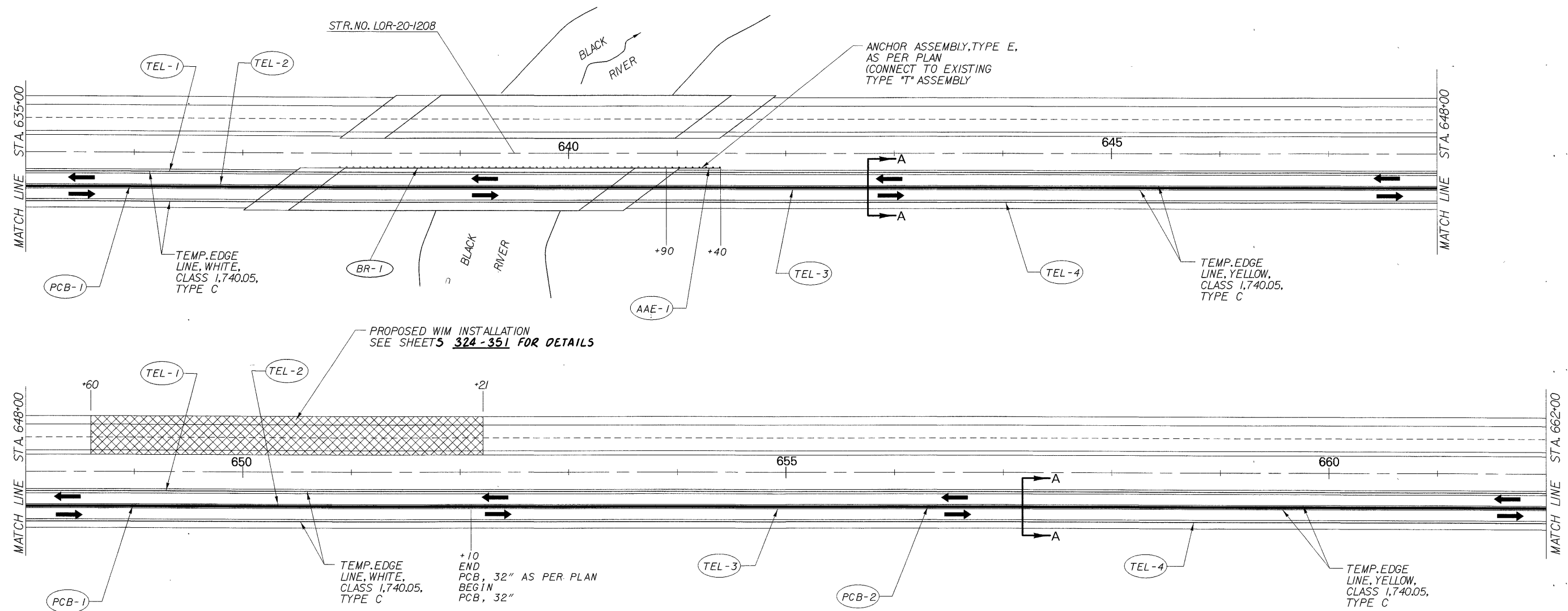


MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.62

PHASEBOOK

DESIGN FILE: c:\dgn\lor20\mot\phaseb.dgn
 WORKSTATION: malieman DATE: 12 NOV 96



ESTIMATED QUANTITIES
 PHASE "B" STA. 635+00 TO STA. 662+00

REFERENCE	STATION LIMITS	SIDE	606		614		622				
			ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS (25' SPACING)		OBJECT MARKERS (25' SPACING)	PORTABLE CONC. BARRIER, 32", AS PER PLAN	PORTABLE CONC. BARRIER, 32"	
				LF./MILE	WHITE	YELLOW	TYPE A				TYPE B
AAE-1	640+90 TO 641+40	RT	1								
TEL-1	635+00 TO 662+00	RT		2700							
TEL-2	635+00 TO 662+00	RT			2700						
TEL-3	635+40 TO 662+00	RT			2700						
TEL-4	635+00 TO 662+00	RT		2700							
BR-1	637+90 TO 641+40	RT				15					
PCB-1	635+00 TO 652+10	RT					139	139	1710		
PCB-2	652+10 TO 662+00	RT					82	82		990	
TOTALS PHASE "B"			1	5400	5400		15	221	221	1710	990
				10800/2.05			15	221			

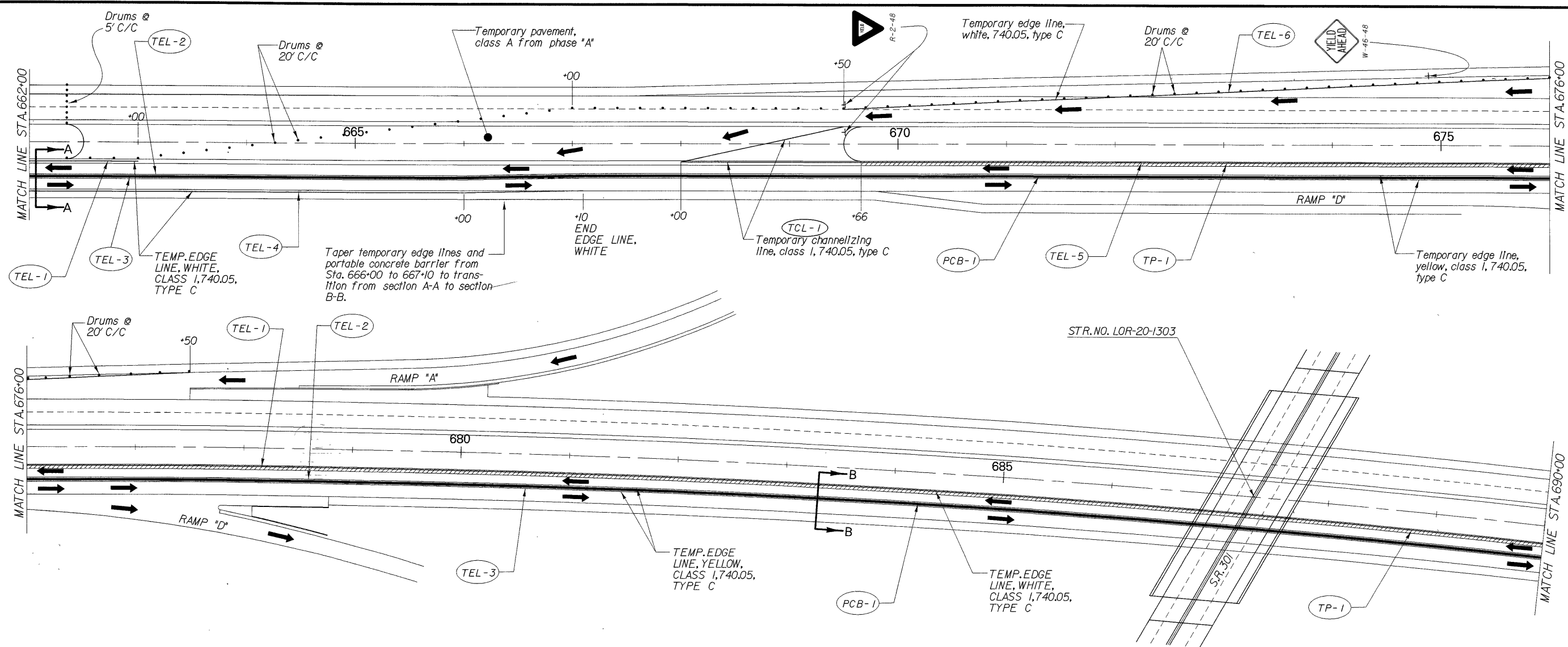
QUANTITIES CARRIED TO SHEET 155.



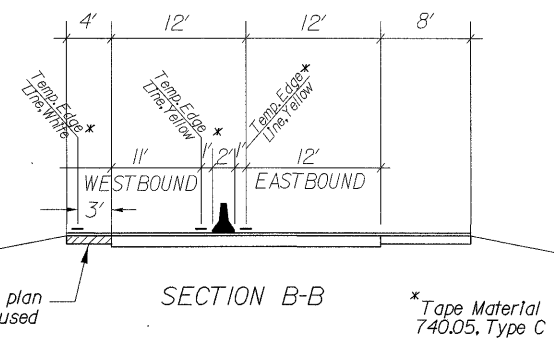
MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.62

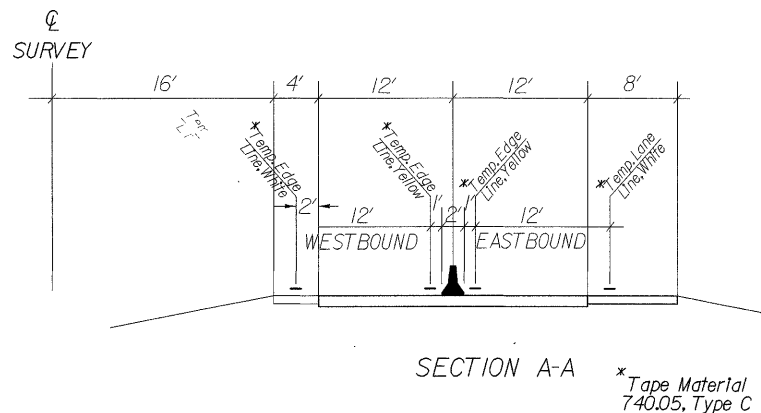
175
351



TEMP. PVMT. CLASS A, AS PER PLAN



Temporary pavement class A, as per plan (placed during phase "A" but shown, used and itemized during this phase.)



ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
 PHASE "A"
 CLASS "A", AS PER PLAN
 TP-1 669+66 TO 690+00 = 2034' @ 4' = 8136 SF
 8136 SF / 9 = 904 SY

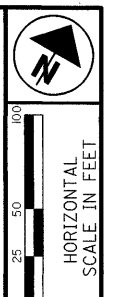
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
 CLASS "A", AS PER PLAN
 CUT 353 CY

ESTIMATED QUANTITIES
 PHASE "B" STA. 672+00 TO STA. 690+00

REFERENCE	STATION LIMITS	SIDE	614				615		622				
			TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMPORARY CHANNEL LINE, CLASS 1, 740.05, TYPE C	TEMP. PVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32'			
			LF./MILE WHITE	YELLOW							YELLOW EACH	EACH	LF.
TEL-1	662+00 TO 663+00	RT	100										
TEL-2	662+00 TO 690+00	RT		2800									
TEL-3	662+00 TO 690+00	RT		2800									
TEL-4	662+00 TO 667+10	RT	510										
TEL-5	669+66 TO 690+00	RT	2034										
TEL-6	669+50 TO 677+50	LT	800										
PCB-1	662+00 TO 690+00	RT			226	226							2800
TCL-1	668+00 TO 669+66	LR					316						
TP-1	669+66 TO 690+00	RT						904	LUMP				
TOTALS PHASE "B"			2934	5600	226	226	316	904	LUMP				2800
			8534/162										

QUANTITIES CARRIED TO SHEET 155.

DESIGN FILE: c:\dgn\lor20\mot\phaseb.dgn
 WORKSTATION: malleman DATE: 12 NOV 96

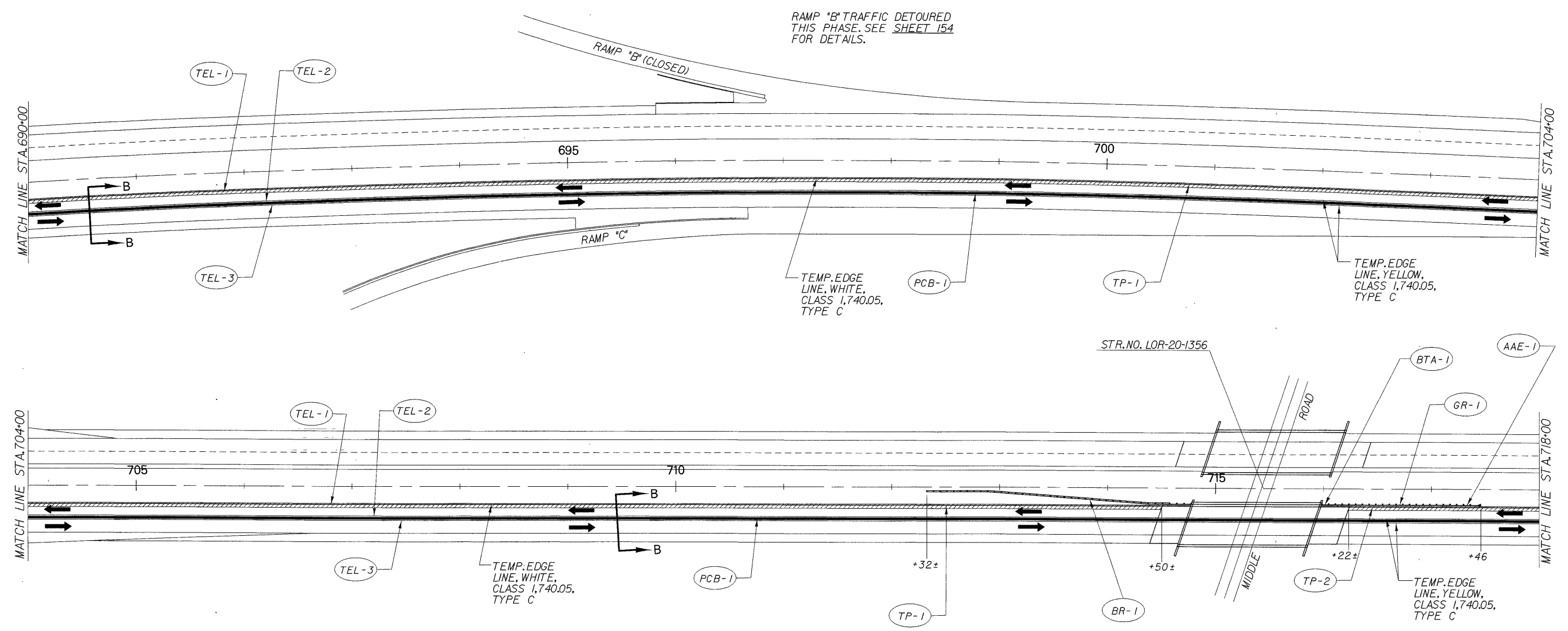


CALCULATED
7SF 6/96
CHECKED
TBC 7/96

**MAINTENANCE OF TRAFFIC
PHASE "B"**

LOR-20-12.62

177
351

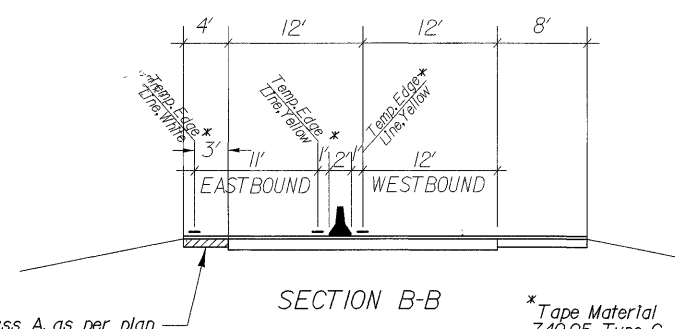


RAMP "B" TRAFFIC DETOURED
THIS PHASE. SEE SHEET 154
FOR DETAILS.

▨ - TEMP. P.VMT.
CLASS A, AS
PER PLAN

**ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "A"**
CLASS "A", AS PER PLAN
TP-1 690+00 TO 714+50 = 2450' @ 4' = 9800 SF
TP-2 716+22 - 718+00 = 178' @ 4' = 712 SF
10512 SF/9 = 1168 SY

ESTIMATED EARTHWORK QUANTITIES FOR
INFORMATIONAL PURPOSES ONLY. (TEMP.
PAVEMENT CONSTRUCTION PHASE "A")
CLASS A AS PER PLAN
CUT 456 CY



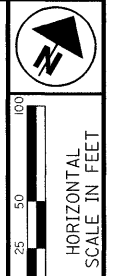
Temporary pavement class A, as per plan
(placed during phase "A" but shown, used
and itemized during this phase.)
*Tape Material
740.05, Type C

**ESTIMATED QUANTITIES
PHASE "B" STA. 690+00 TO STA. 718+00**

REFERENCE	STATION LIMITS	SIDE	606		614				615		622			
			GUARDRAIL, TYPE 5, AS PER PLAN	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. P.VMT., CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"		
						LF./MILE	WHITE						YELLOW	WHT
AAE-1	716+96* TO 717+46*	RT		1										
BTA-1	715+96*	RT			1									
GR-1	715+96* TO 716+96*	RT	100											
BR-1	712+32* TO 717+46*	RT					18	6						
TEL-1	690+00 TO 718+00	RT				2800								
TEL-2	690+00 TO 718+00	RT				2800								
TEL-3	690+00 TO 718+00	RT				2800								
PCB-1	690+00 TO 718+00	RT							226	226		2800		
TP-1	690+00 TO 714+50*	RT								1089	LUMP			
TP-1	716+22* TO 718+00	RT								79	LUMP			
TOTALS PHASE "B"			100	1	1	2800	5600	18	6	226	226	1168	LUMP	2800

QUANTITIES CARRIED TO SHEET 155.

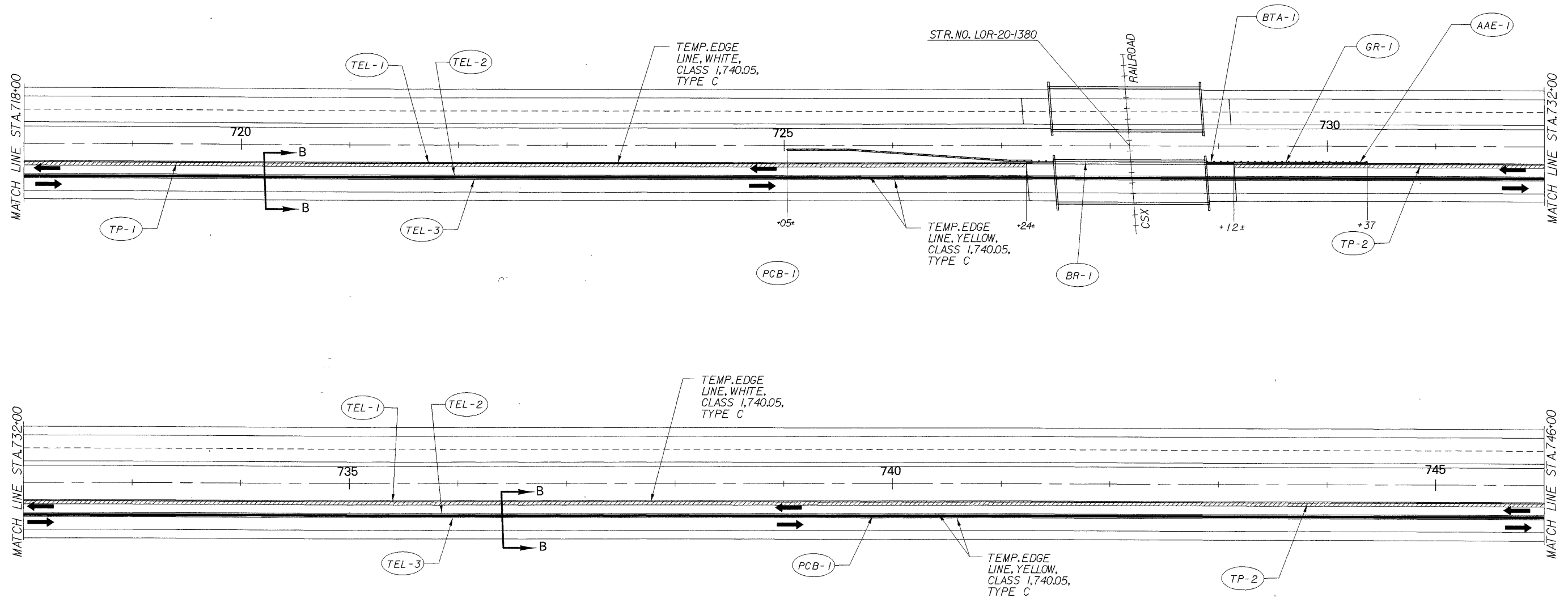
DESIGN FILE: c:\dgn\lor-20\mot\phaseb.dgn
WORKSTATION: malleman DATE: 12 NOV 96



CALCULATED
7SF 6/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.6.2



- TEMP. PVMT. CLASS A, AS PER PLAN

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

CLASS "A", AS PER PLAN

TP-1 718+00 TO 727+24* = 924' @ 4' = 3696 SF

TP-2 729+12* - 746+00 = 1688' @ 4' = 6752 SF

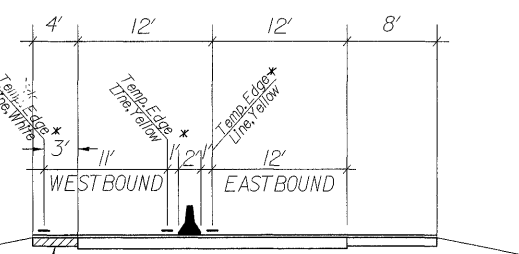
10448 SF/9 = 1161 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")

CLASS A, AS PER PLAN

CUT 451 CY

Temporary pavement class A, as per plan (placed during phase "A" but shown, used and itemized during this phase.)



SECTION B-B
* Tape Material 740.05, Type C

ESTIMATED QUANTITIES PHASE "B" STA. 718+00 TO STA. 746+00

REFERENCE	STATION LIMITS	SIDE	ITEMS											
			606		614			615		622				
			GUARDRAIL, TYPE 5, AS PER PLAN	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS (25' SPACING)		OBJECT MARKERS (25' SPACING)	TEMP. PVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32'	
LF.	EACH	EACH	LF./MILE		TYPE		EACH	SY.	LUMP	LF.				
			WHITE	YELLOW	WHT	WHT/YLW								
AAE-1	729+87* TO 730+37*	RT		1										
BTA-1	728+87*	RT			1									
GR-1	728+87* TO 728+87*	RT	100											
BR-1	725+05* TO 730+37*	RT					18	7						
TEL-1	718+00 TO 746+00	RT				2800								
TEL-2	718+00 TO 746+00	RT				2800								
TEL-3	718+00 TO 746+00	RT				2800								
PCB-1	718+00 TO 746+00	RT						226	226			2800		
TP-1	718+00 TO 727+24*	RT								411	LUMP			
TP-2	729+12* TO 746+00	RT								750	LUMP			
TOTALS PHASE "B"			100	1	1	2800	5600	18	7	226	226	1161	LUMP	2800
					8400/159		18		233					

QUANTITIES CARRIED TO SHEET 155.

DESIGN FILE: c:\dgn\lor20\mot\phaseb.dgn
WORKSTATION: mallemann DATE: 12 NOV 96

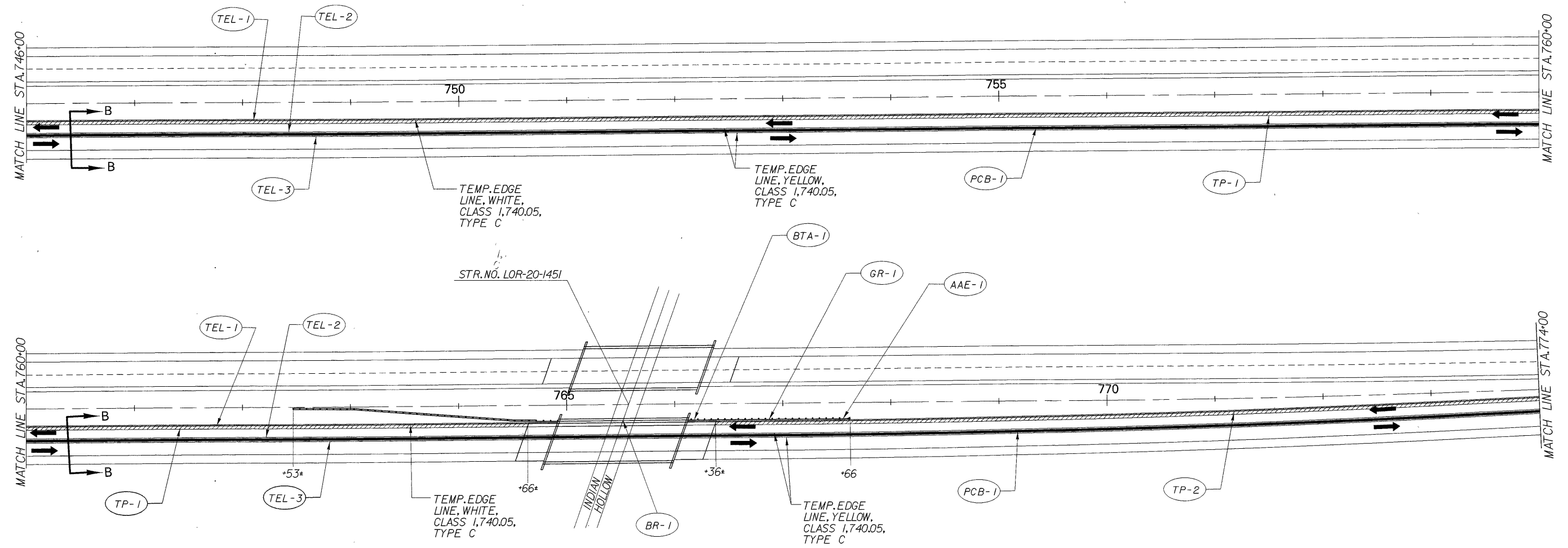


CALCULATED
7/9/96
CHECKED
7/8/96

MAINTENANCE OF TRAFFIC
PHASE "B"

LOR-20-12.6.2

179
351



- TEMP. PVMT. CLASS A, AS PER PLAN

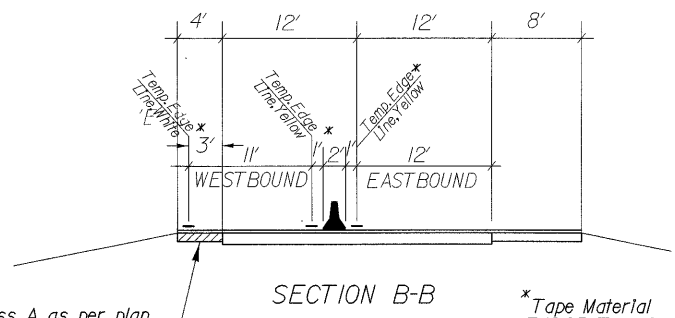
ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "A"

CLASS "A", AS PER PLAN

TP-1	746+00 - 764+66± = 1866'	@ 4'	= 7464 SF
TP-2	766+36± - 774+00 = 764'	@ 5'	= 3820 SF
			11284 SF/9 = 1254 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
CLASS A, AS PER PLAN
CUT 488 CY

Temporary pavement class A, as per plan (placed during phase "A" but shown, used and itemized during this phase.)

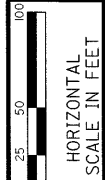


ESTIMATED QUANTITIES
PHASE "B" STA. 746+00 TO STA. 774+00

REFERENCE	STATION LIMITS	SIDE	606		614			615		622				
			GUARDRAIL, TYPE 5, AS PER PLAN	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PVMT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"		
						LF./MILE	WHITE						YELLOW	WHT
AAE-1	767+16± TO 767+66±	RT		1										
BTA-1	766+16±	RT			1									
GR-1	766+16± TO 767+16±	RT	100											
BR-1	762+53± TO 767+66±	RT					18	6						
TEL-1	746+00 TO 774+00	RT				2800								
TEL-2	746+00 TO 774+00	RT				2800								
TEL-3	746+00 TO 774+00	RT				2800								
PCB-1	746+00 TO 774+00	RT							226	226		2800		
TP-1	746+00 TO 764+66±	RT								829	LUMP			
TP-2	766+36± TO 774+00	RT								425	LUMP			
TOTALS PHASE "B"			100	1	1	2800	5600	18	6	226	226	1254	LUMP	2800
						8400/159		18	232					

QUANTITIES CARRIED TO SHEET 155.

DESIGN FILE: c:\dgn\lor20\mot\phaseb.dgn
WORKSTATION: mallemar DATE: 12 NOV 96

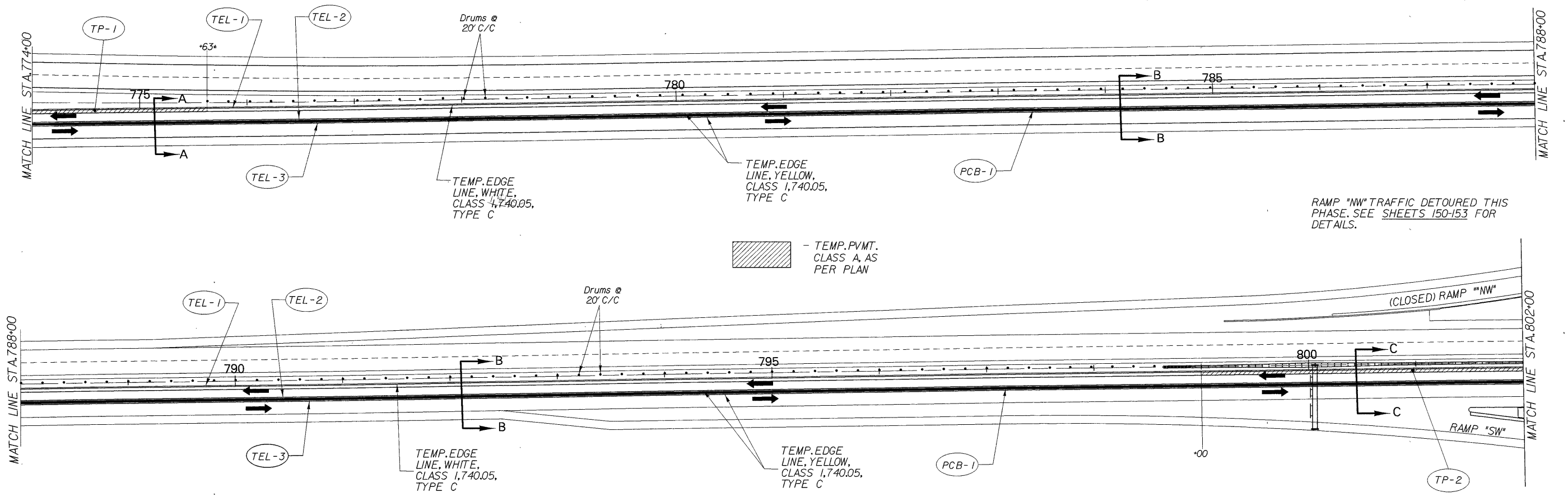


CALCULATED
7SF 6/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "B"

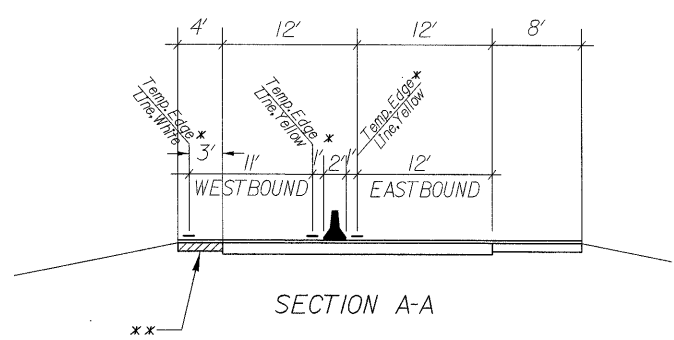
LOR-20-12.6.2

180
351



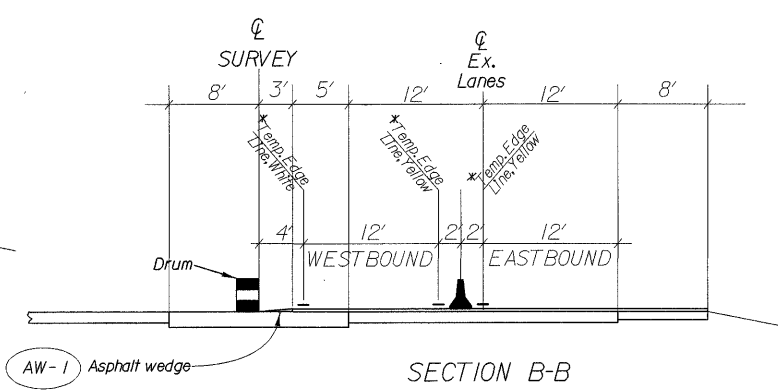
RAMP "NW" TRAFFIC DETOURED THIS PHASE. SEE SHEETS 150-153 FOR DETAILS.

TEMP. PAVT. CLASS A, AS PER PLAN

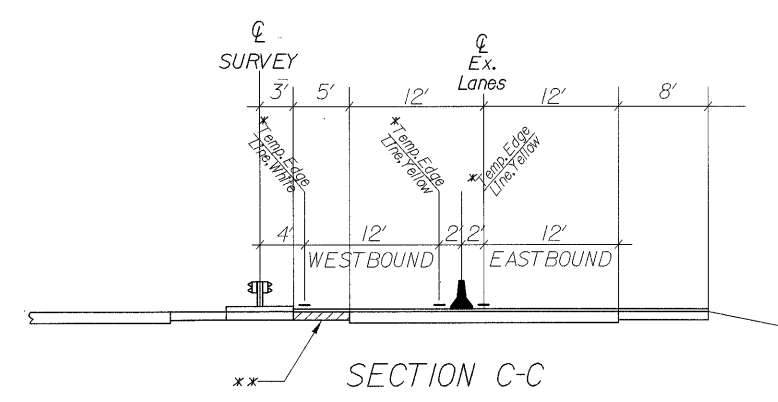


** Temporary pavement class A, as per plan (placed during phase "A" but shown, used and itemized during this phase.)

*Tape Material 740.05, Type C



An asphalt wedge of Item 404 bituminous concrete for maintaining traffic shall be provided from Station 775+63 to 799+00 as shown above.



ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "A"

CLASS "A", AS PER PLAN

TP-1 774+00 TO 775+63 = 163' @ 4' = 652 SF

TP-2 799+00 TO 802+00 = 300' @ 5' = 1500 SF

2152 SF / 9 = 239 SY

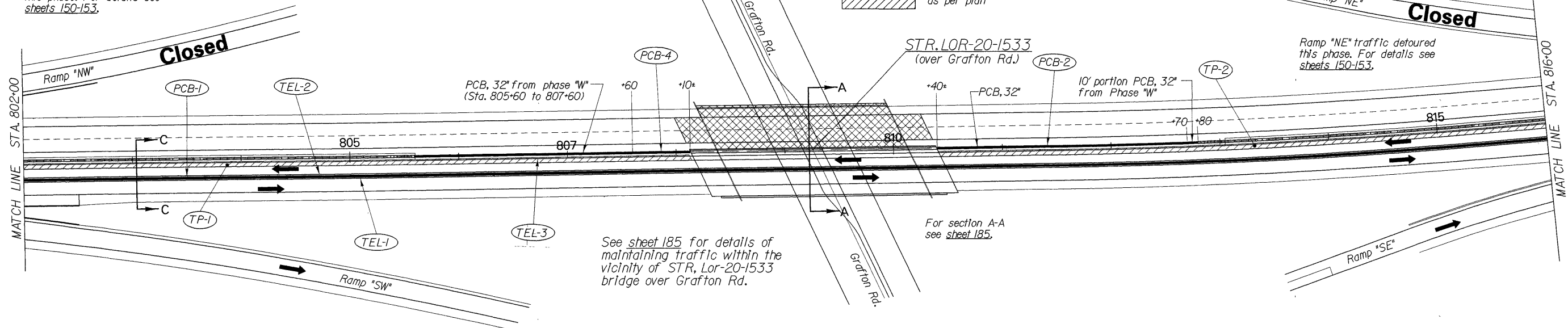
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A") CLASS A, AS PER PLAN CUT 93 CY

		ESTIMATED QUANTITIES PHASE "B" STA. 774+00 TO STA. 802+00								
REFERENCE	STATION LIMITS	SIDE	404	614		615	622			
			BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C	BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMP. PAVT. CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"	
			LF./MILE	WHITE	YELLOW	EACH	EACH	SY.	LUMP	LF.
			C.Y.							
TEL-1	774+00 TO 802+00	RT		2800						
TEL-2	774+00 TO 802+00	RT			2800					
TEL-3	774+00 TO 802+00	RT			2800					
AW-1	775+63 TO 799+00	RT	33							
PCB-1	774+00 TO 802+00	RT				226	226			2800
TP-1	774+00 TO 775+63	RT						72	LUMP	
TP-2	799+00 TO 802+00	RT						167	LUMP	
TOTALS PHASE "B"			33	2800	5600	226	226	239	LUMP	2800
				8400/159						

QUANTITIES CARRIED TO SHEET 155.

DESIGN FILE: c:\dgn\lor20\mot\phaseb.dgn
WORKSTATION: malleman DATE: 12 NOV 96

Ramp "NW" traffic detoured this phase. For details see sheets 150-153.



See sheet 185 for details of maintaining traffic within the vicinity of STR. Lor-20-1533 bridge over Grafton Rd.

For section A-A see sheet 185.

ESTIMATED QUANTITIES
PHASE "B" STA. 802+00 TO STA. 830+00

REFERENCE	STATION LIMITS	SIDE	614		615		PORTABLE CONC. BARRIER, 32"			
			TEMPORARY EDGE LINE, CLASS I 740.05, TYPE C		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)		TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMPORARY ROADS	
			LF./MILE	EACH						SY.
			WHITE	YELLOW	WHITE/YELLOW	EACH				
TEL-1	802+00 TO 830+00	RT		2800						
TEL-2	802+00 TO 830+00	RT		2800						
TEL-3	802+00 TO 830+00	RT	2800							
TP-1	802+00 TO 808+12	RT						340	LUMP	
TP-2	810+42 TO 821+71	RT						627	LUMP	
TP-3	824+35 TO 830+00	RT						314	LUMP	
PCB-1	802+00 TO 830+00	LT			224	226				2800
PCB-2	810+40 TO 812+70	L&R			10	11				230
PCB-3	824+10 TO 825+10	L&R			4	5				100
PCB-4	807+60 TO 808+10	L&R			3	4				50
TOTALS PHASE "B"			2800	5600	17	224		1281	LUMP	3180
			8400/1.59		241					

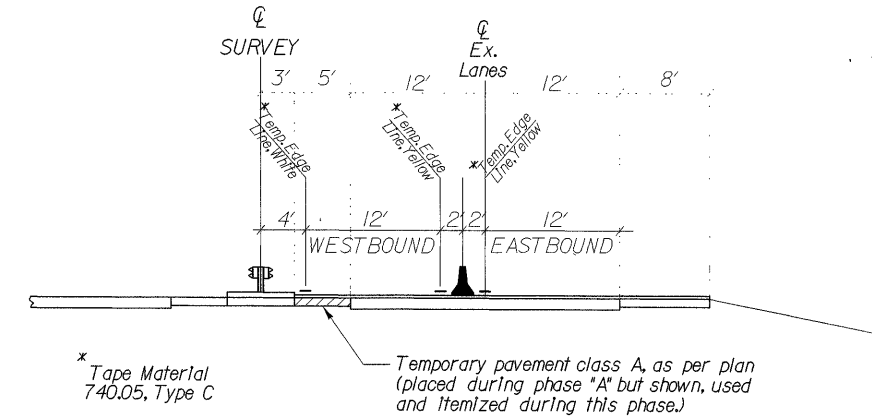
Quantities carried to sheet 155.

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "B"

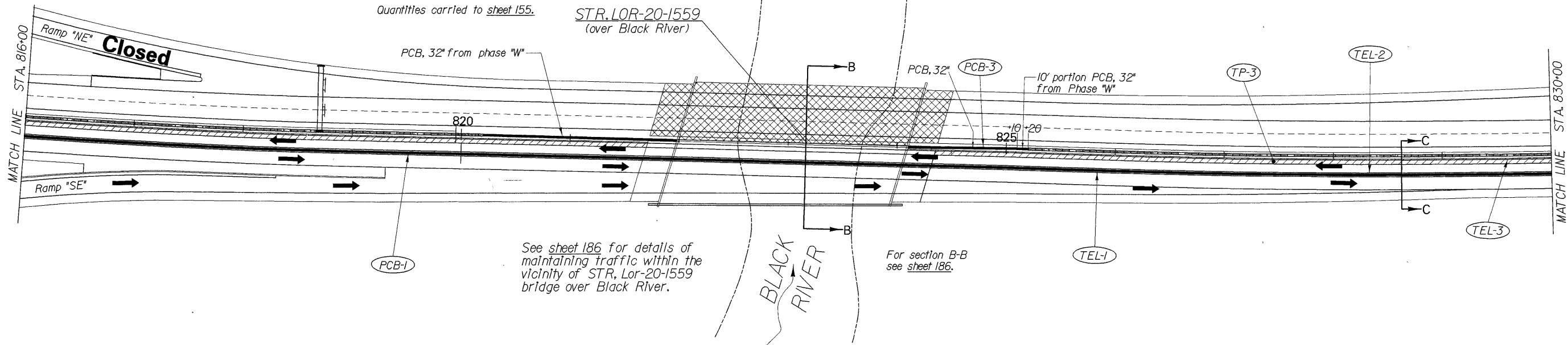
CLASS "A", AS PER PLAN

TP-1	802+00 - 808+12	= 612'	@ 5'	= 3060 SF
TP-2	810+42 - 821+71	= 1129'	@ 5'	= 5645 SF
TP-3	824+35 - 830+00	= 565'	@ 5'	= 2825 SF
		11530 SF/9		= 1281 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "B")
CLASS A, AS PER PLAN
CUT 498 CY



SECTION C-C



See sheet 186 for details of maintaining traffic within the vicinity of STR. Lor-20-1559 bridge over Black River.

For section B-B see sheet 186.



HORIZONTAL SCALE IN FEET

CALCULATED 7/5/96
CHECKED 7/6/96

MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.6.2

181
351



HORIZONTAL SCALE IN FEET

CALCULATED
7/5/6/96
CHECKED
7/8/7/96

MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.6.2

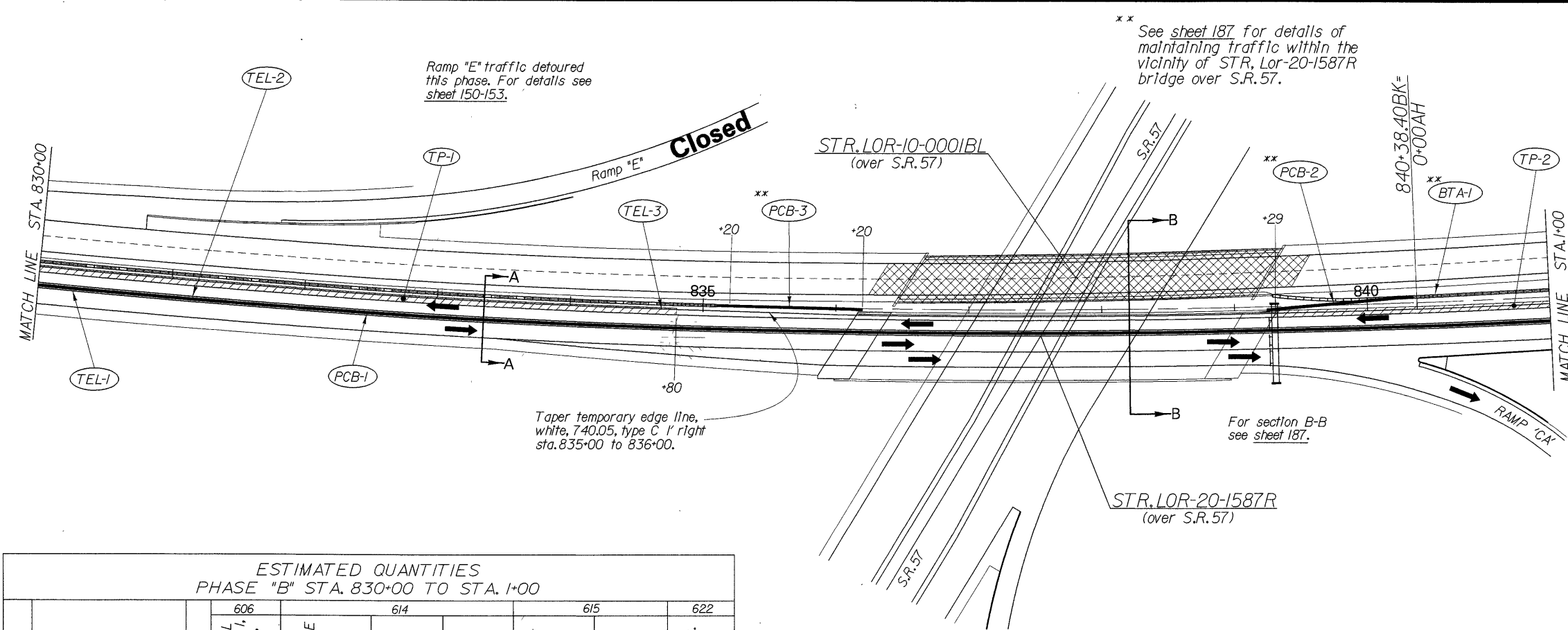
182
351

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "B"

CLASS "A", AS PER PLAN

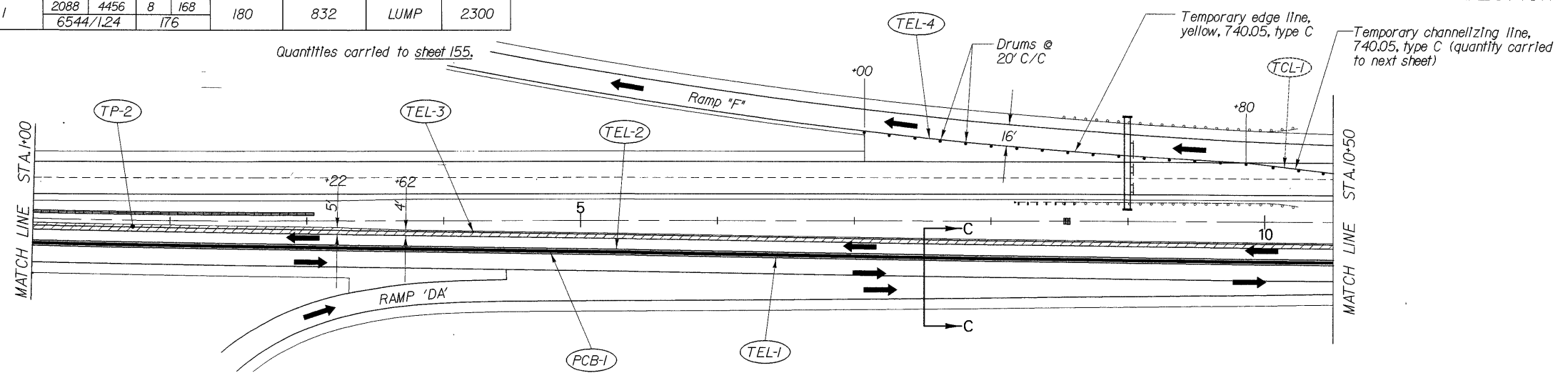
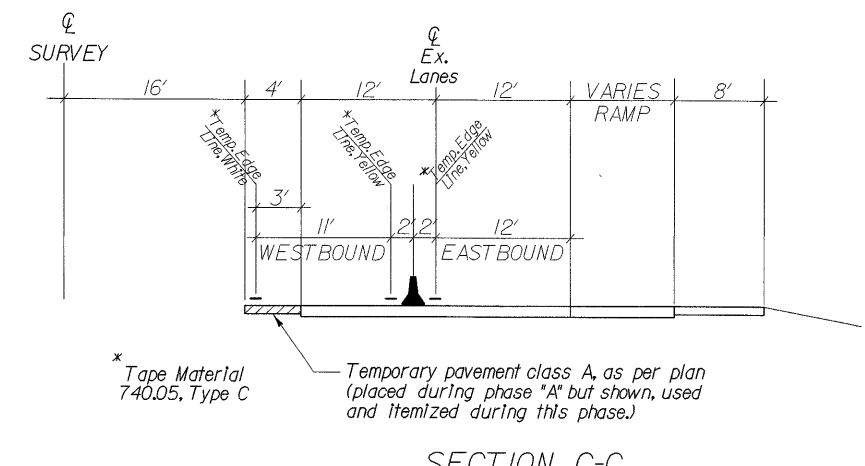
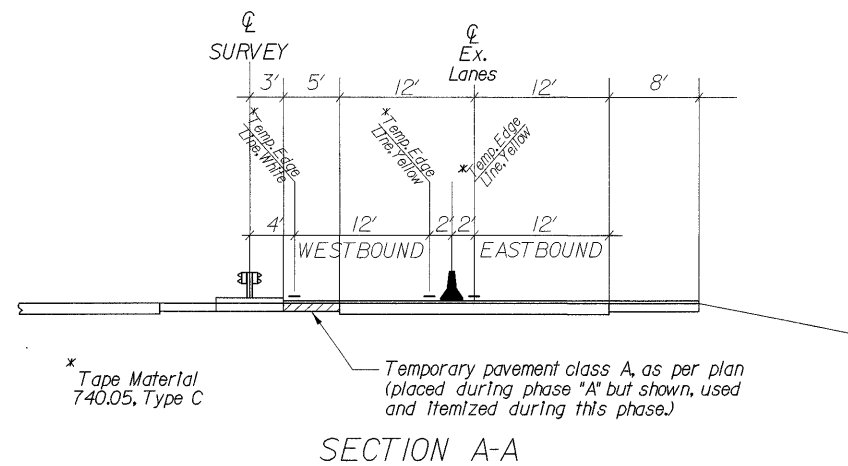
TP-1	830+00 - 834+80 = 480'	@ 5.0'	= 2400 SF
TP-2	839+29 - 3+22 = 431'	@ 5.0'	= 2155 SF
	3+22 - 3+62 = 40'	@ 4.5'	= 180 SF
	3+62 - 10+50 = 688'	@ 4.0'	= 2752 SF
			7487 SF/9 = 832 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "B")
CLASS A, AS PER PLAN
CUT 324 CY



ESTIMATED QUANTITIES
PHASE "B" STA. 830+00 TO STA. 1+00

REFERENCE	STATION LIMITS	SIDE	606		614		615		622		
			TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C		BARRIER REFLECTORS TYPE B (25' SPACING)		OBJECT MARKERS (25' SPACING)	TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"	
			LF./MILE	EACH	WHITE	YELLOW					WHITE
TEL-1	830+00 TO 10+50	RT		2088							
TEL-2	830+00 TO 10+50	RT		2088							
TEL-3	830+00 TO 10+50	RT	2088								
TEL-4	7+00 TO 9+80	LT		280							
TP-1	830+00 TO 836+16	RT					267	LUMP			
TP-2	839+29 TO 10+50	RT					565	LUMP			
BTA-1	840+35 TO 0+22	LT	1								
PCB-1	830+00 TO 10+50	RT			168	170			2090		
PCB-2	839+25 TO 840+35	L&R			4	5			110		
PCB-3	835+20 TO 836+20	L&R			4	5			100		
TOTALS PHASE "B"			1	2088	4456	8	168	180	832	LUMP	2300
				6544/124		176					





CALCULATED
7SF 6/96
CHECKED
TBC 7/96

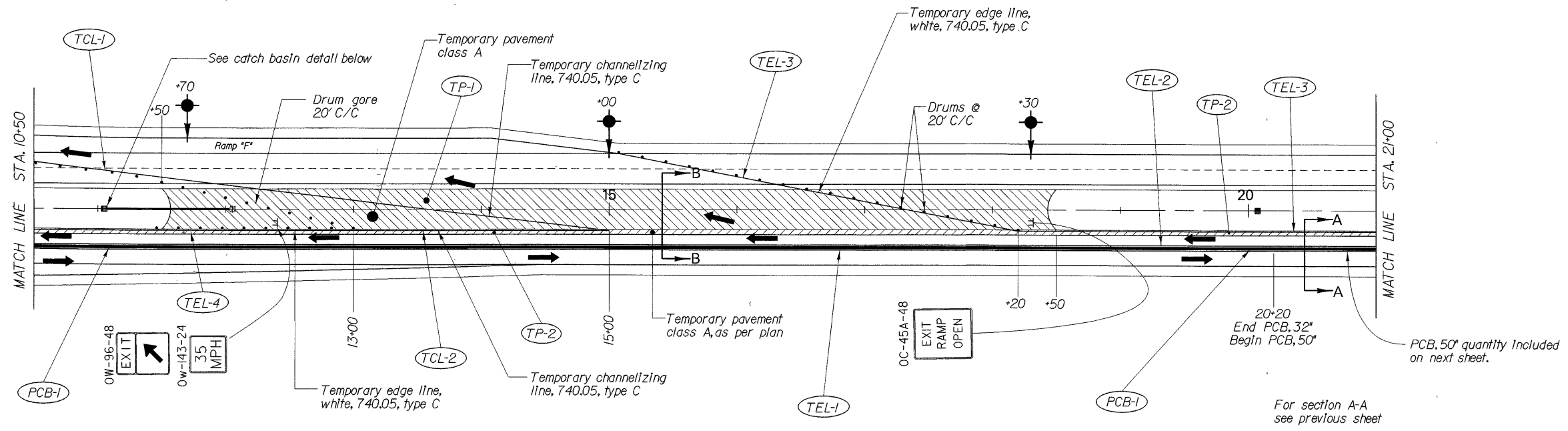
HORIZONTAL
SCALE: 1" = 40'

MAINTENANCE OF TRAFFIC
PHASE "B"

LOR-20-12.6.2

Temporary pavement class A, as per plan
 Temporary pavement class A

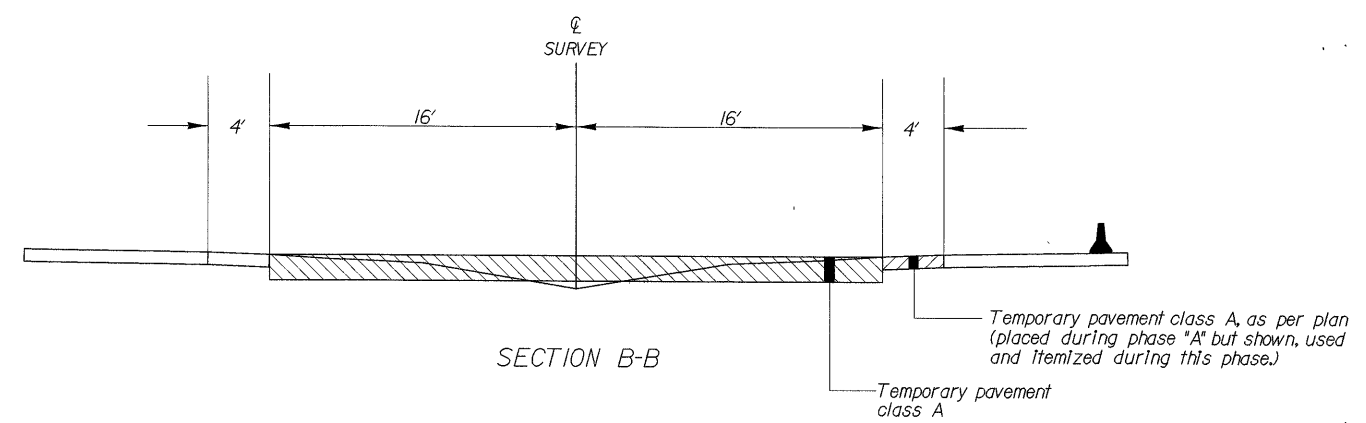
(TLS-1)
Temporary lighting system, as per plan (ramps)



**ESTIMATED QUANTITIES
PHASE "B" STA. 10+50 TO STA. 21+00**

REFERENCE	STATION LIMITS	SIDE	614				615			622		
			TEMPORARY CHANN- NELIZING LINE, 740.05, TYPE C	TEMPORARY EDGE LINE, CLASS I 740.05, TYPE C		BARRIER REFLECTORS TYPE B (25' SPACING)	OBJECT MARKERS (25' SPACING)	TEMPORARY CROSS- OVER LIGHTING SYSTEM, AS PER PLAN (RAMPS)	TEMP. PAVEMENT CLASS A, AS PER PLAN	TEMP. PAVEMENT CLASS A	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 32"
				LF./MILE	WHITE							
TEL-1	10+50 TO 21+00	RT										
TEL-2	10+50 TO 21+00	RT										
TEL-3	15+00 TO 21+00	R&L		600								
TEL-4	10+50 TO 13+00	RT		250								
TP-1	11+50 TO 18+50	R&L										
TP-2	10+50 TO 21+00	RT					467	2489	LUMP			
PCB-1	10+50 TO 20+20	RT				78	80					970
TCL-1	9+80 TO 15+00	R&L	520									
TCL-2	13+00 TO 15+00	RT	200									
TLS-1	11+70 TO 18+30	LT										
TOTALS PHASE "B"			720	850	2100	78	80	1	467	2489	LUMP	970
				2950/0.56		78						

Quantities carried to sheet 155.



Item 615 - Temporary Roads
This item shall include the cost to provide, install, maintain and subsequently remove the proposed temporary catch basin No. 8, temporary conduit type C, and capping and covering of the existing catch basin, and restoring the site to its original condition at the completion of work.

**ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "B"**

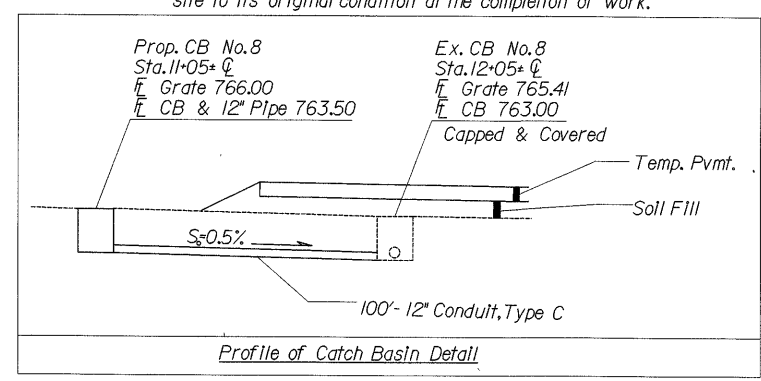
CLASS "A"
TP-1 11+50 - 18+50 = 700' @ 32.0' = 22400 SF
22400 SF/9 = 2489 SY

CLASS "A, AS PER PLAN"
TP-2 10+50 - 21+00 = 1050' @ 4.0' = 4200SF
4200 SF/9 = 467 SY

**ESTIMATED EARTHWORK QUANTITIES FOR
INFORMATIONAL PURPOSES ONLY. (TEMP.
PAVEMENT CONSTRUCTION PHASE "B")**

CLASS A
CUT 478 CY
FILL 48 CY

CLASS A, AS PER PLAN
CUT 181 CY



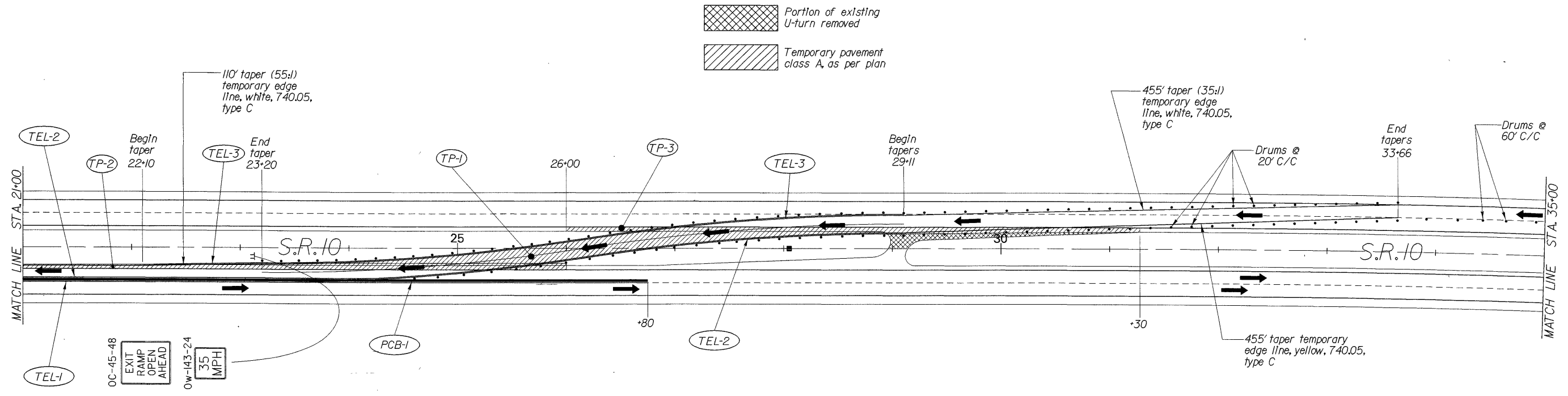


HORIZONTAL SCALE IN FEET

CALCULATED
75% 6/96
CHECKED
78% 7/96

MAINTENANCE OF TRAFFIC PHASE "B"

LOR-20-12.62



For temporary raised pavement marker locations, placement and details within the crossover area see sheet 196 and MT-95.70

In addition to the details shown, the crossover shall be placed and maintained as per MT-95.30, MT-95.70 and MT-100.00

A temporary crossover lighting system shall be erected and maintained as per MT-100.00

See sheet 193 for temporary crossover details & curve data.

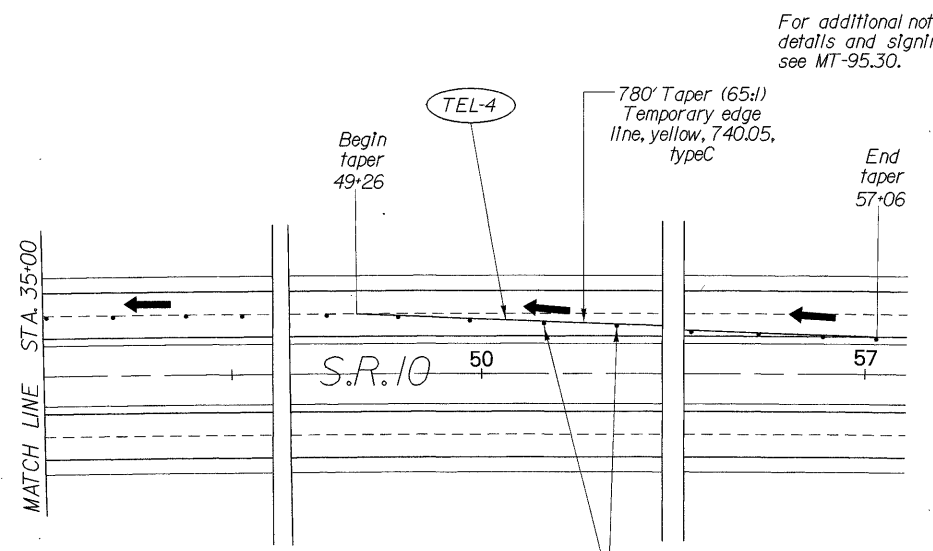
See sheet 197 for general maintenance of traffic for reversible traffic patterns.

Barrier reflectors shall be placed as per SS 802 and Proposal Note No. 622-92.

For temporary raised pavement marker quantities see sheet 196.

ITEM 615-TEMPORARY PAVEMENT CALCULATIONS PHASE "B"	
CLASS "A" AS PER PLAN	
TP-1	23+20 - 31+30 = COMPUTER = 5372 SF
	LESS COMMON AREA FROM PHASE "A" (1120 SF)
	= 4252 SF
TP-2	21+00 - 22+10 = 110' @ 4' = 440 SF
	22+10 - 23+20 = 110' @ 5' (ave.) = 550 SF
	23+20 - 26+00 = 280' @ 6' = 1680 SF
	= 2670 SF
TP-3	26+00 - 31+30 = 530' @ 4' = 2120 SF
	= 2120 SF
	9042 SF/9 = 1005 SY

THE EXISTING ASPHALT CROSSOVER SHALL BE REMOVED, SCARIFIED AND REGRADED TO PROVIDE POSITIVE DRAINAGE TO THE EXTENT AS SHOWN ABOVE AS DIRECTED BY THE ENGINEER. TOP SOIL REMOVED FROM OTHER AREAS MAY BE SPREAD ON THE DESIGNATED MEDIAN LOCATION. THE AREA SHALL THEN BE SEEDED AS PER 659. ALL THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID ITEM 615 TEMPORARY ROADS.



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "B") CLASS A AS PER PLAN	
CUT	429 CY
FILL	52 CY

Extra advance warning sign groups as per standard drawing MT-95.30 shall be provided at a distance of 1 mile and 2 miles prior to the lane closure. All costs to complete this work shall be included with item 614 - Maintaining Traffic.

ESTIMATED QUANTITIES PHASE "B" STA. 21+00 TO STA. 57+06									
REFERENCE	STATION LIMITS	SIDE	614			615		622	
			TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	BARRIER REFLECTORS TYPE B (SPACING *)	OBJECT MARKERS (SPACING *)	TEMP. PAVEMENT CLASS A AS PER PLAN	TEMPORARY ROADS	PORTABLE CONC. BARRIER, 50'	
									LF./MILE
TEL-1	21+00 TO 26+80	RT	580						
TEL-2	21+00 TO 33+66	L&R	1266						
TEL-3	21+00 TO 33+66	L&R	1266						
TEL-4	49+26 TO 57+06	LT	780						
TP-1	23+20 TO 28+90	L&R				472	LUMP		
TP-2	21+00 TO 26+00	RT				297	LUMP		
TP-3	26+00 TO 31+30	LT				236	LUMP		
PCB-1	20+20 TO 26+80	RT		106	108				660
TLS-1	21+05 TO 30+95	L&R							
TOTALS PHASE "B"			1266	2626	106	108	1005	LUMP	660
			3892/0.74						

* Spacing shall be 25' for PCB, 32' and 12.5' for PCB, 50' Quantities carried to sheet 155.

PHASE B

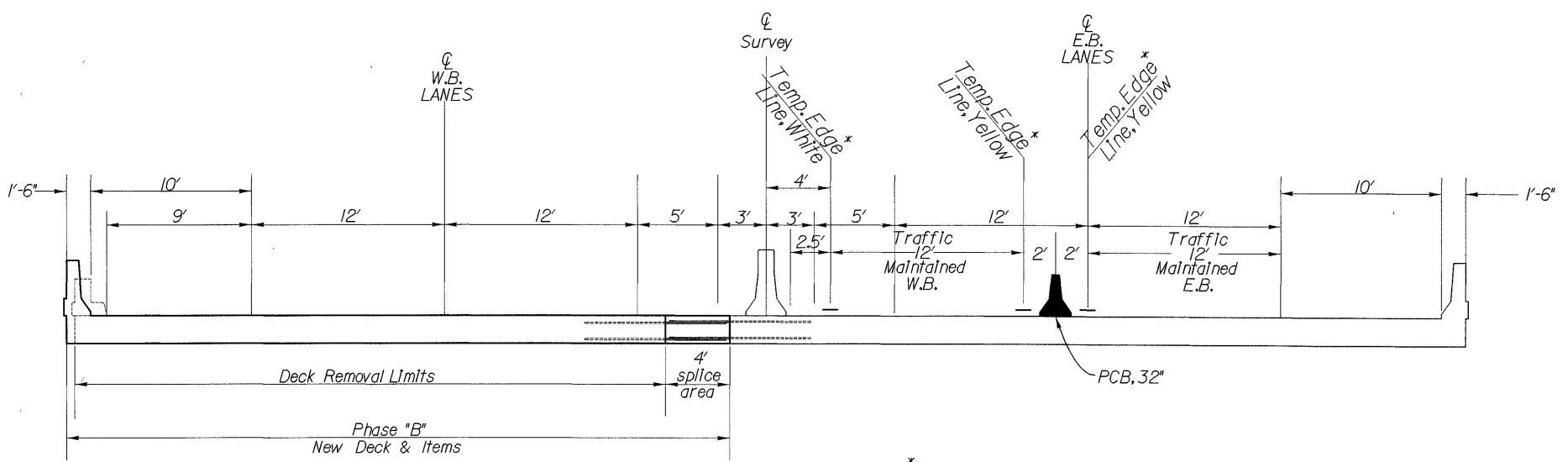
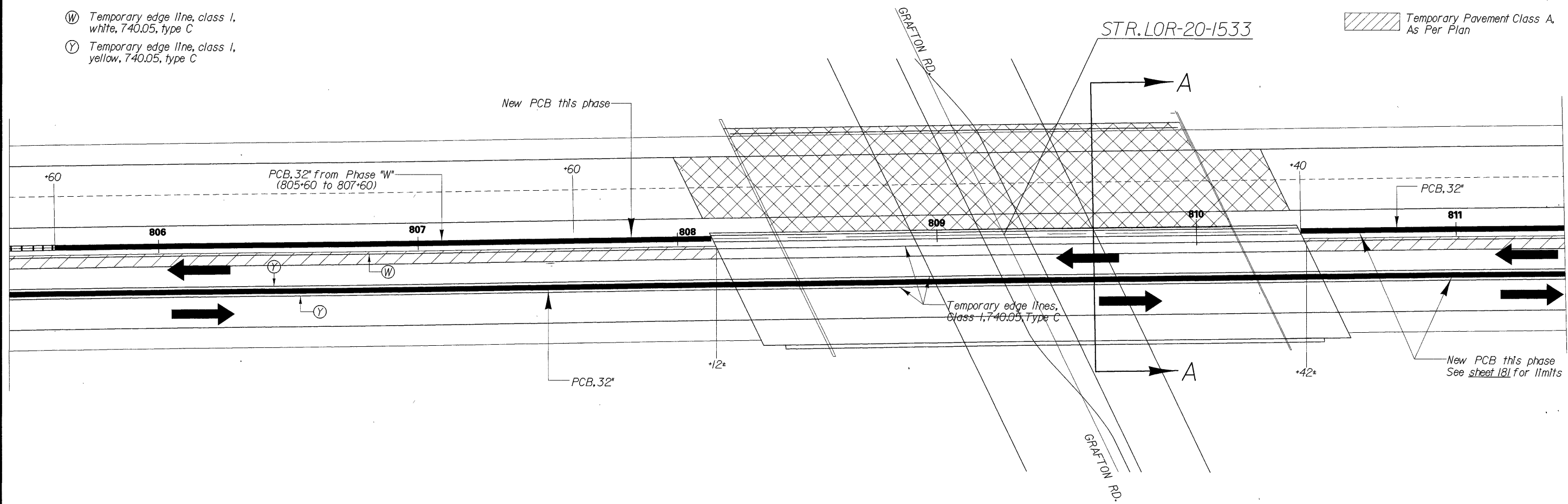
- Ⓜ Temporary edge line, class 1, white, 740.05, type C
- Ⓨ Temporary edge line, class 1, yellow, 740.05, type C

Temporary Pavement Class A, As Per Plan



HORIZONTAL SCALE IN FEET

CALCULATED BY T/SF 6/96
CHECKED BY TBC 7/96



*Tape material 740.05, Type C

SECTION A-A

MAINTENANCE OF TRAFFIC PHASE "B"
DETAILS AT STR. LOR-20-1553

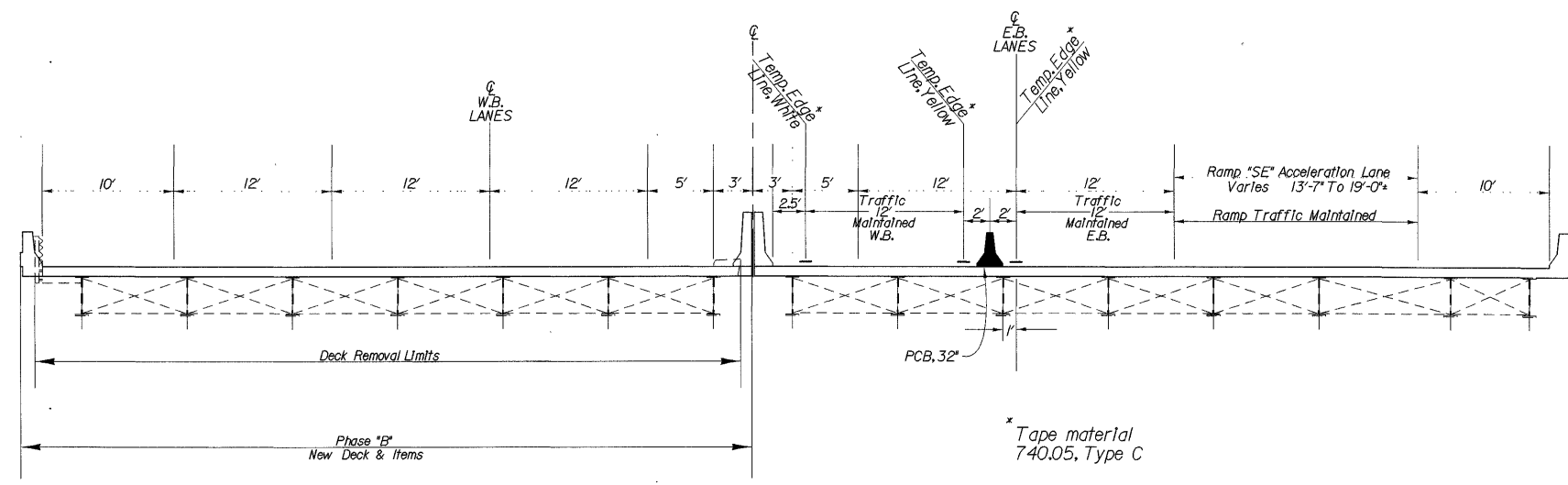
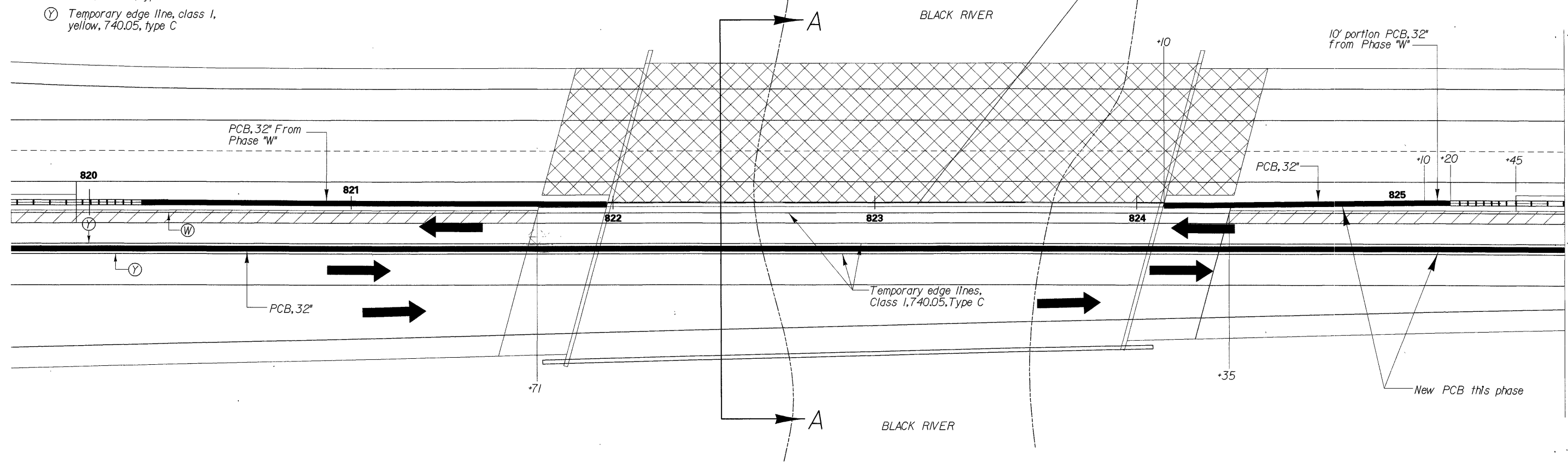
LOR-20-12.62

PHASE "B"

- Ⓜ Temporary edge line, class I, white, 740.05, type C
- Ⓨ Temporary edge line, class I, yellow, 740.05, type C

Temporary Pavement Class A, As Per Plan

STR. LOR-20-1559



SECTION A-A

0 20
HORIZONTAL SCALE IN FEET

CALCULATED
TSF 6/96

CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "B"
DETAILS AT STR. LOR-20-1559

LOR-20-12.6.2

PHASEDOWN



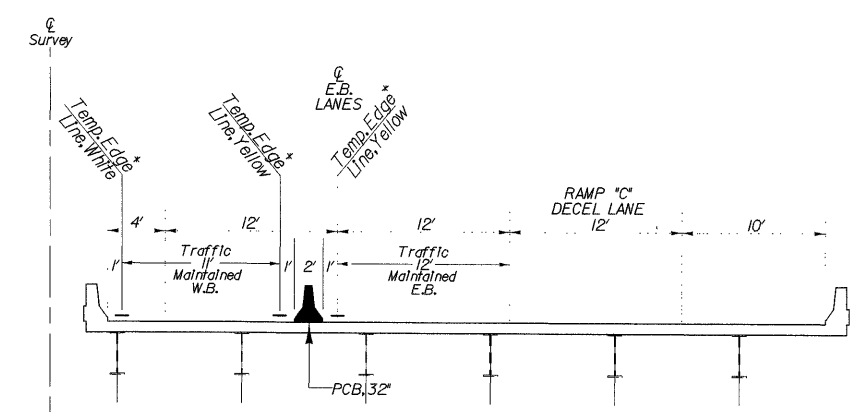
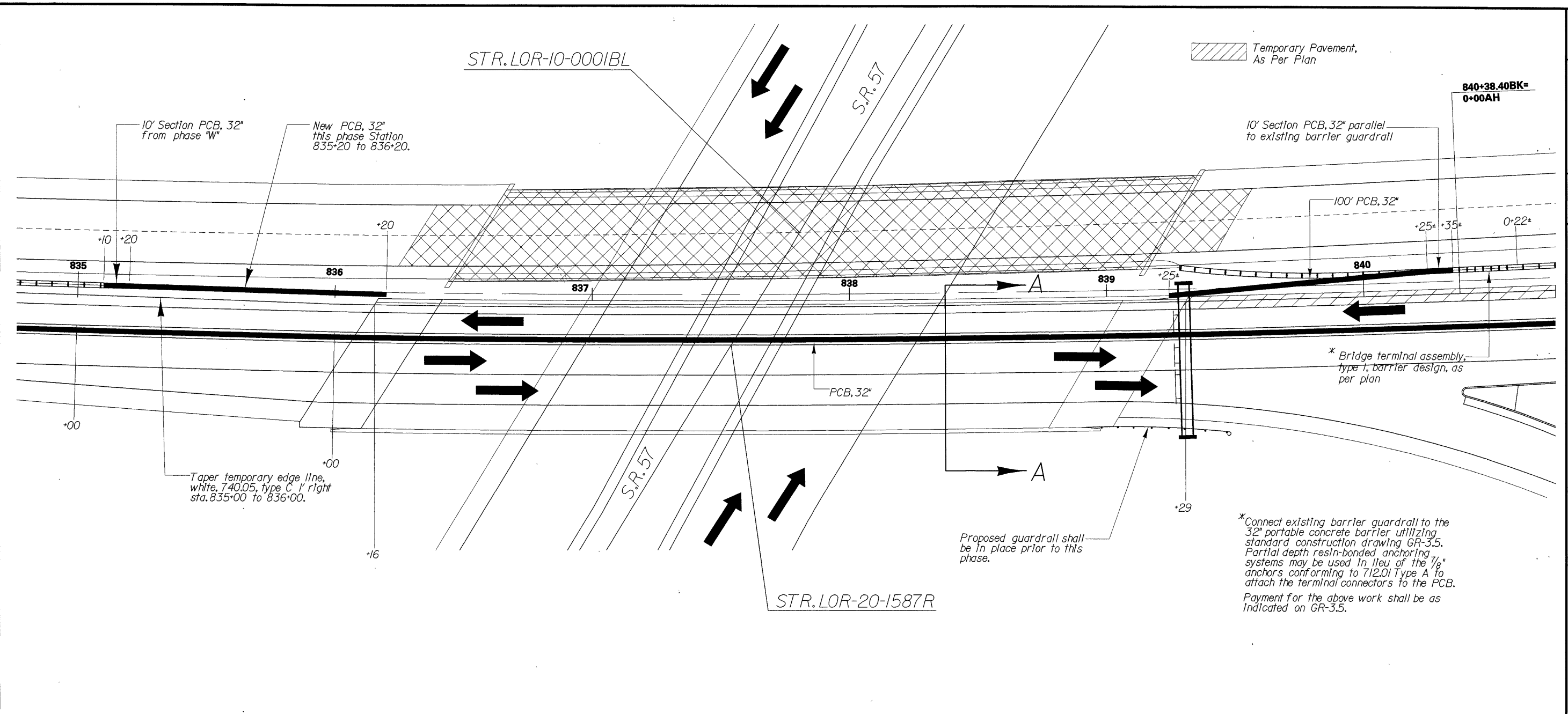
HORIZONTAL SCALE IN FEET

CALCULATED
TSF 6/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "B"
DETAILS AT STR. LOR-20-1587R

LOR-20-12.6.2

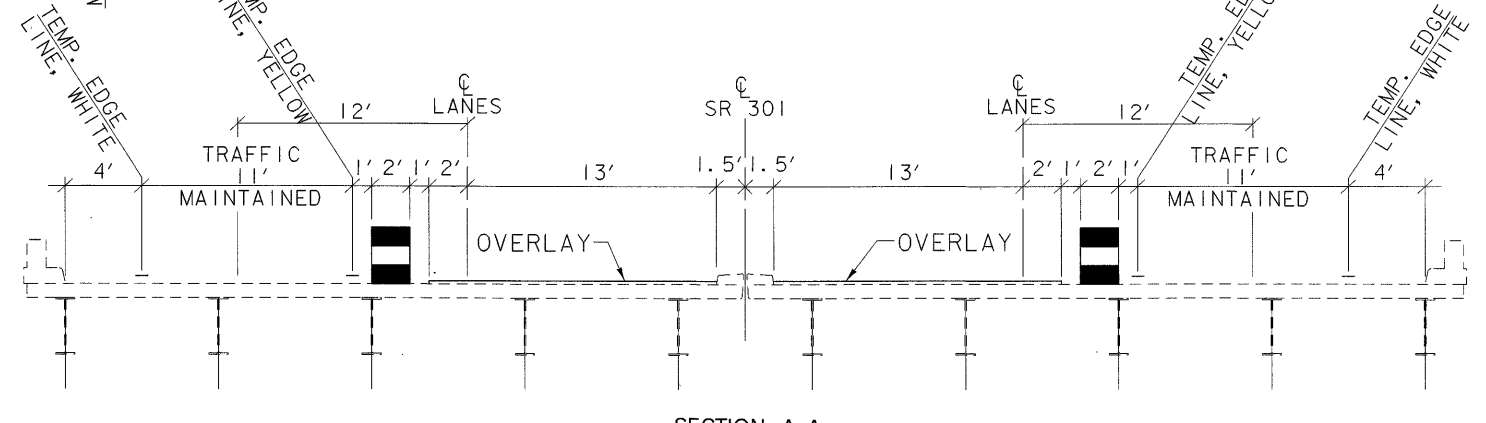
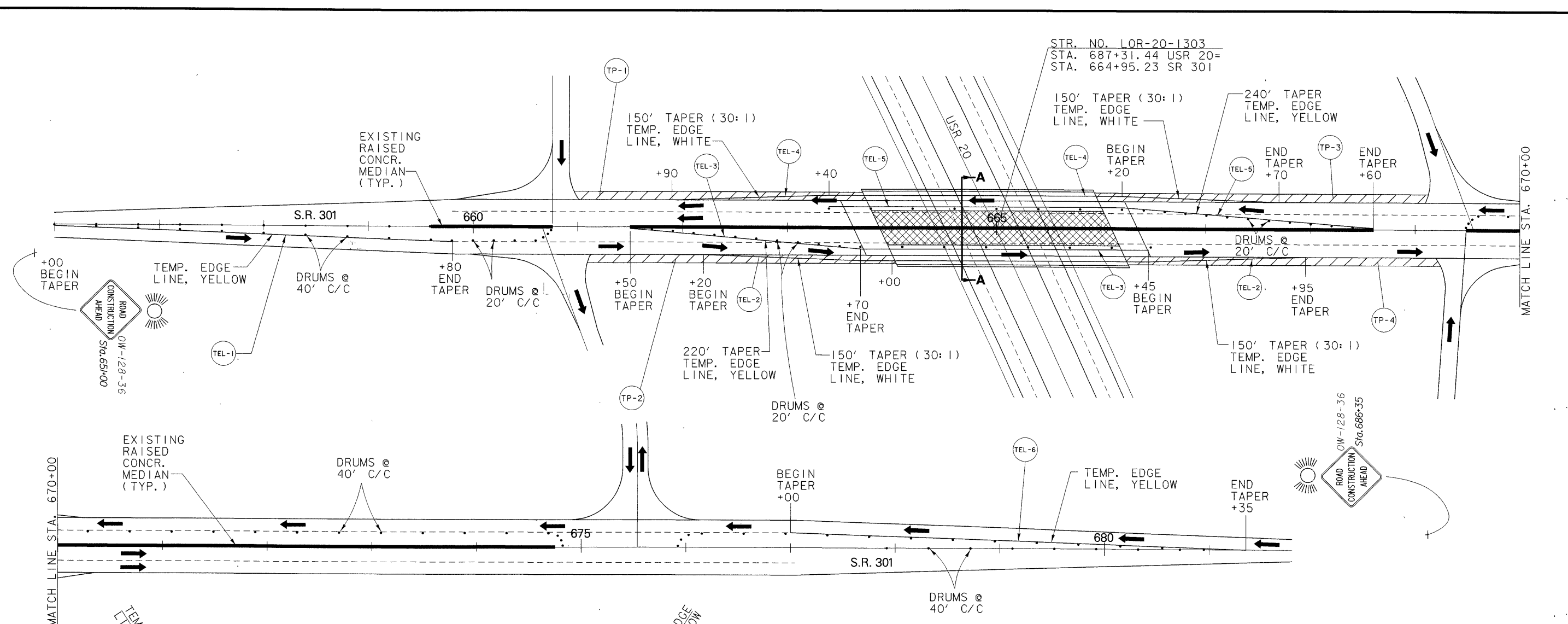
187
351



* Tape material 740.05, Type C

SECTION A-A

mot/vp
VTE: /



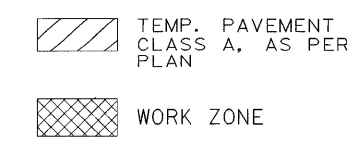
ITEM 615-TEMPORARY PAVEMENT CALCULATIONS
PHASE "D"

CLASS "A", AS PER PLAN (8' WIDTH)

TP-1	* 660+99± TO 663+74± =	2203.2 SF
TP-2	* 661+10± TO 664+03± =	2336.6 SF
TP-3	* 665+95± TO 669+10± =	2526.6 SF
TP-4	* 666+24± TO 669+22± =	2386.4 SF
9452.8 SF/9 =		1050.3 SY

* = COMPUTER GEN. QTY.

NOTE: ALL TEMP. EDGE LINE SHALL BE REMOVABLE (740.05 TYPE-C) TAPE.



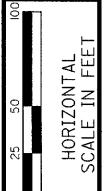
ESTIMATED QUANTITIES
PHASE "D" STA. 656+00 TO STA. 681+79

REFERENCE	STATION LIMITS	SIDE	614		615		SY.	LUMP
			TEMPORARY EDGE LINE, CLASS 1 740.05, TYPE C		TEMP. PAVT. CLASS A AS PER PLAN	TEMPORARY ROADS		
			LF./MILE	WHITE				
TEL-1	656+00 TO 663+80	RT	380					
TEL-2	662+20 TO 667+95	RT	575					
TEL-3	661+50 TO 666+45	RT	495					
TEL-4	661+90 TO 667+70	LT	580					
TEL-5	663+40 TO 668+60	LT	520					
TP-1	660+99± TO 663+74±	LT				245	LUMP	
TP-2	661+10± TO 664+03±	RT				259	LUMP	
TP-3	665+95± TO 669+10±	LT				281	LUMP	
TP-4	666+24± TO 669+22±	RT				265	LUMP	
TOTALS PHASE "D" (STAGE 1)			1155	1395		1050	LUMP	
			2550/0.48					

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP. PAVEMENT CONSTRUCTION PHASE "A")
CLASS A AS PER PLAN
CUT 410 CY

Quantities carried to Sheet 155.

DESIGN FILE: c:\dgn\lor20\mot\phased.dgn
WORKSTATION: mallemm DATE: 12 NOV 96
PHASED.DGN

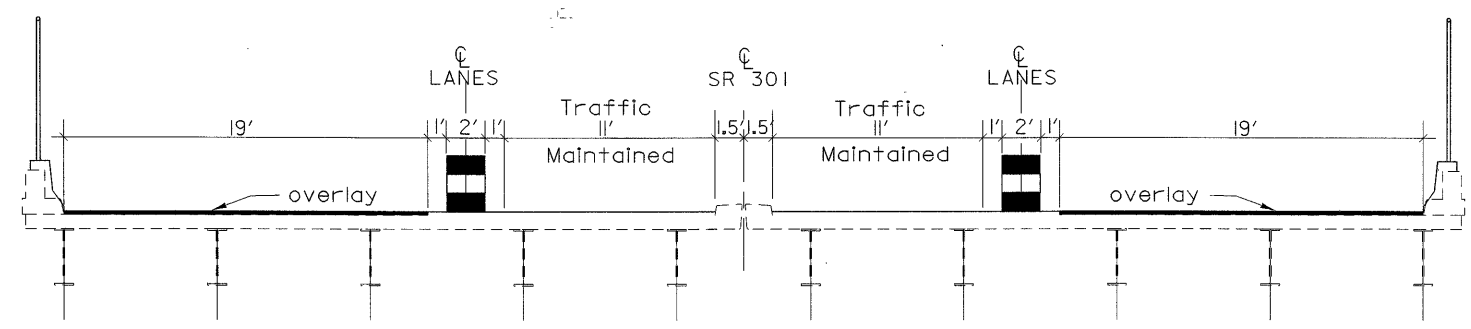
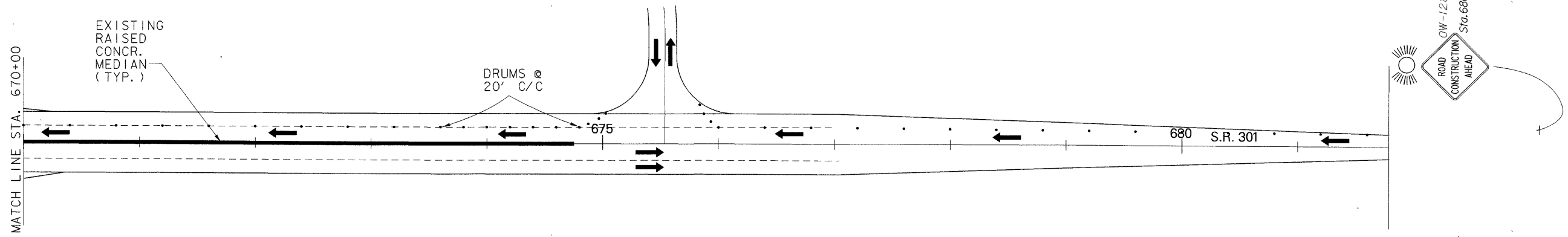
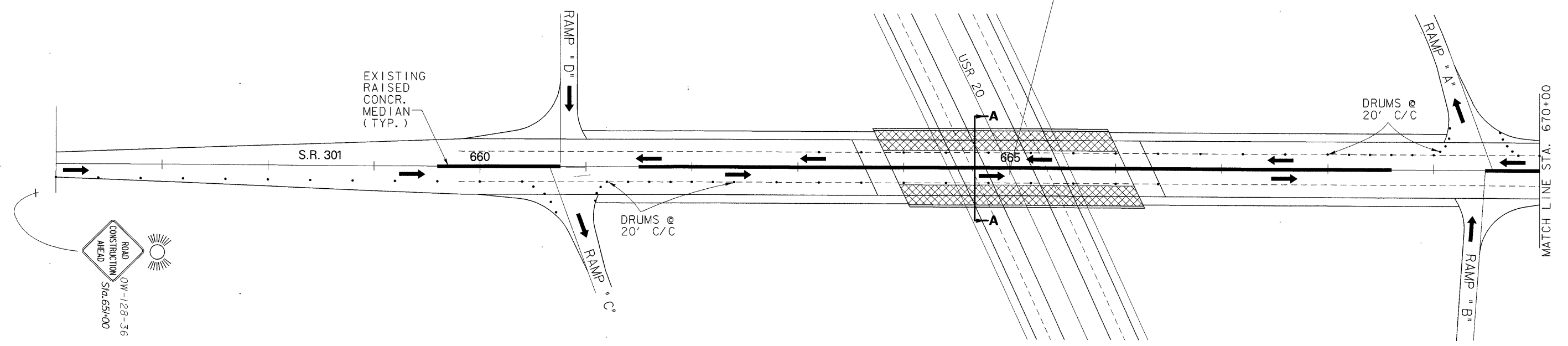


CALCULATED
TSF 4/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC PHASE "D" (STAGE 2)

LOR-20-12.62

STR. NO. LOR-20-1303
STA. 687+31.44 USR 20=
STA. 664+95.23 SR 301



SECTION A-A

WORK ZONE

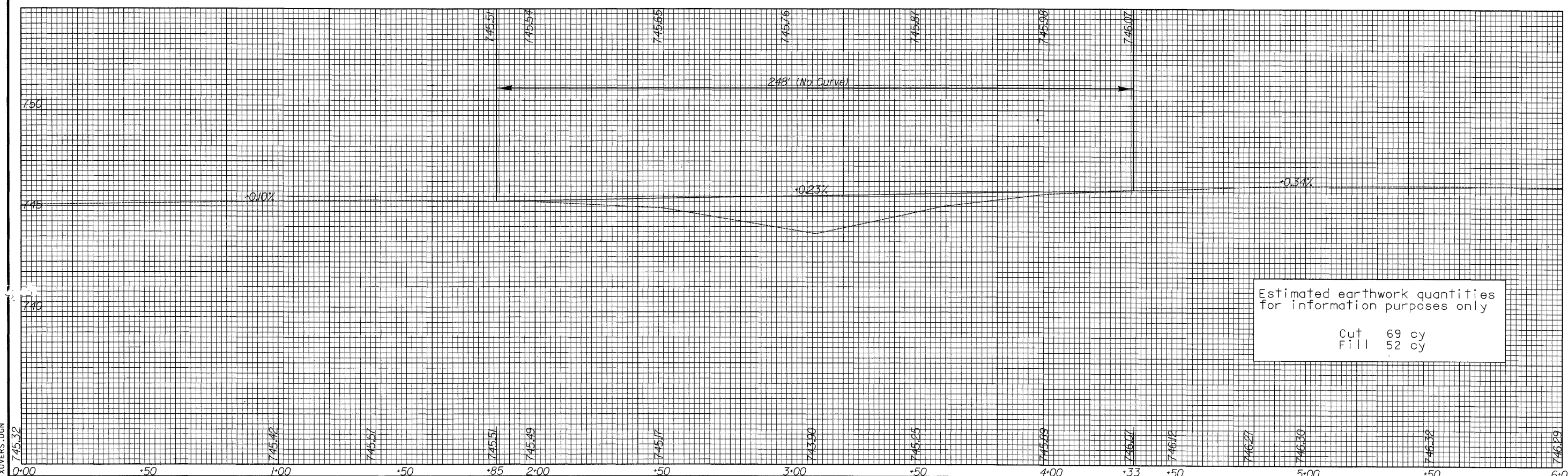
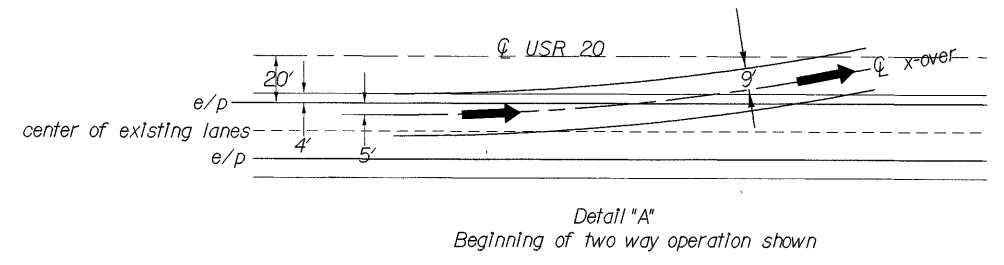
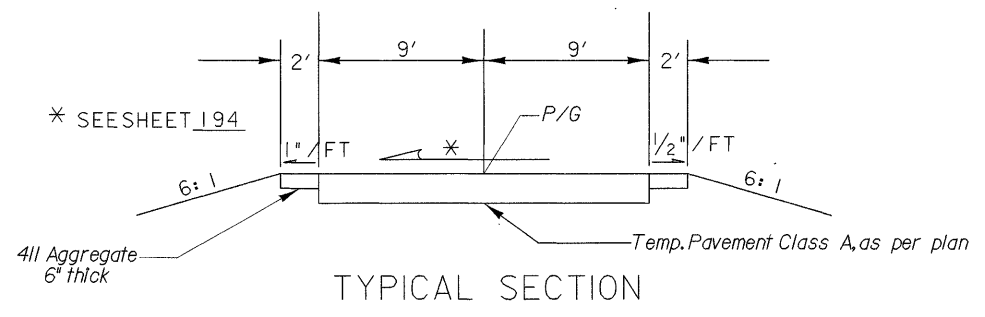
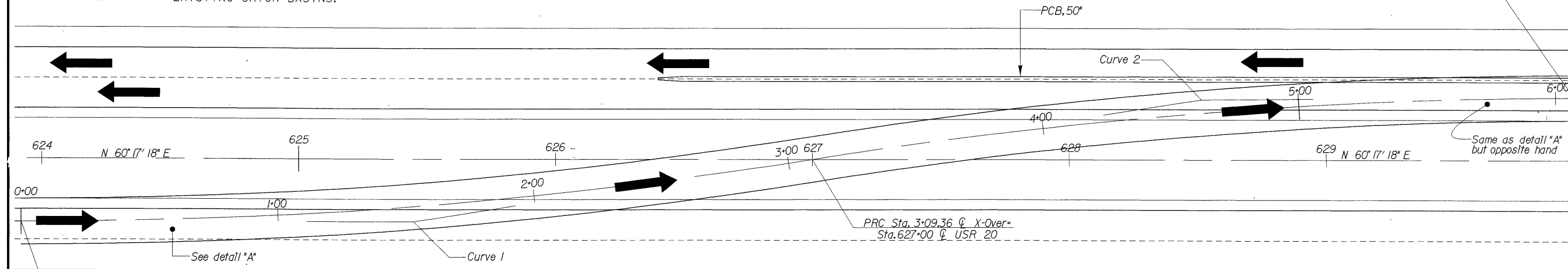
DRUMS @ 40' C/C
UNLESS OTHERWISE NOTED.

DESIGN FILE: c:\dgn\lor20\moi\phased.dgn
WORKSTATION: mal/eman DATE: 12 NOV 96

CURVE	1	2
Δ	09' 16' 51"	
D	03' 00' 00"	
R	1909.86	
T	155.02	
L	309.36	
E	6.28	

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.
 A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00
 AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

All temporary traffic control devices shall be placed as shown on standard drawing MT-95.70 unless otherwise shown in the plans.



Estimated earthwork quantities for information purposes only
 Cut 69 cy
 Fill 52 cy



HORIZONTAL SCALE IN FEET

CALCULATED TSF 4/96
 CHECKED TBC 7/96

MAINTENANCE OF TRAFFIC
 TEMPORARY CROSSOVER DETAILS "A"

LOR-20-12.62

190
 351

XOVERS.DGN



HORIZONTAL SCALE IN FEET

CALCULATED
TSF 4/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC
TEMPORARY CROSSOVER DETAILS PHASE "B"

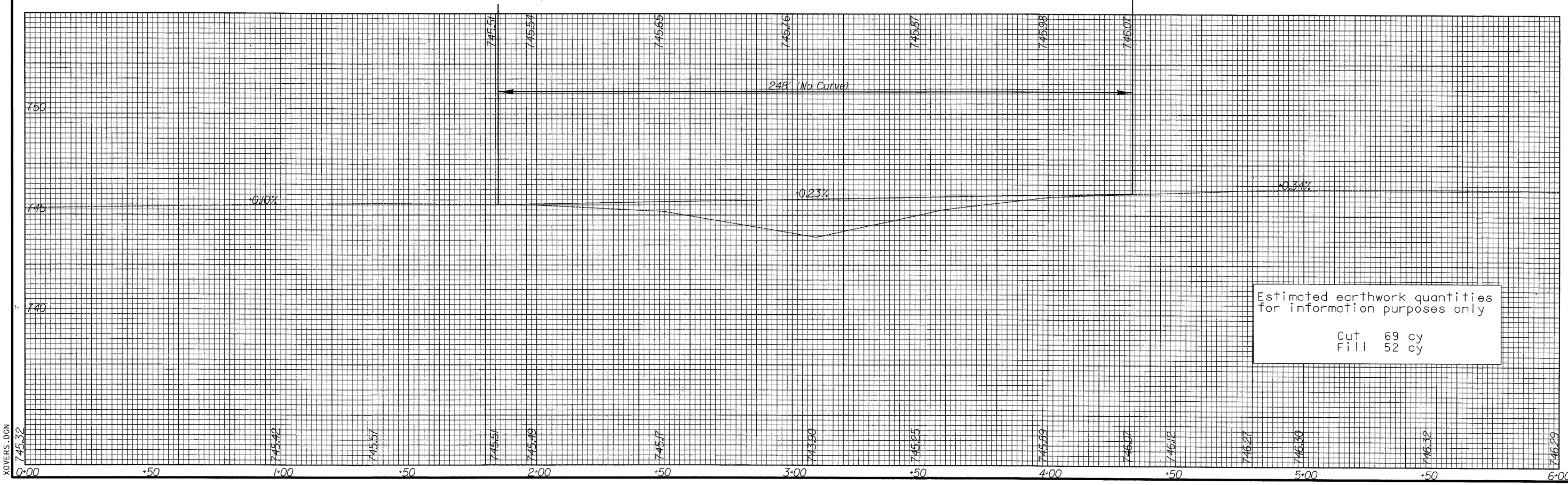
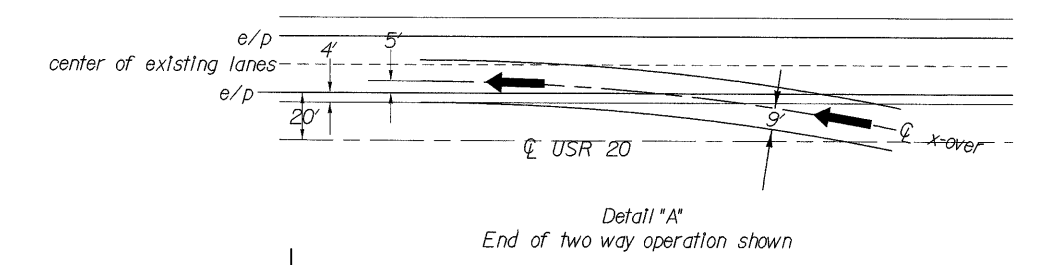
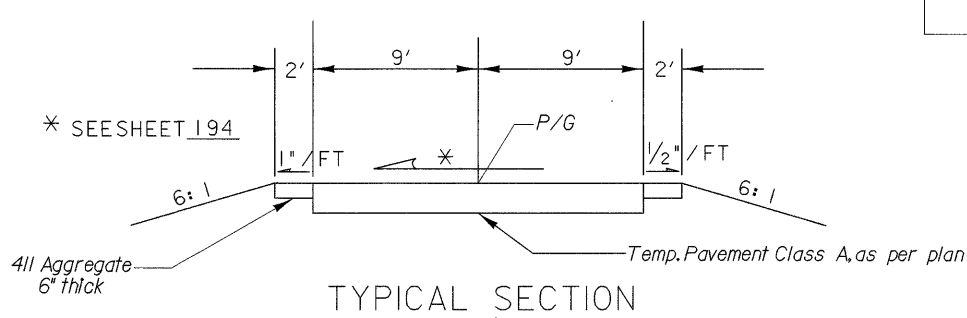
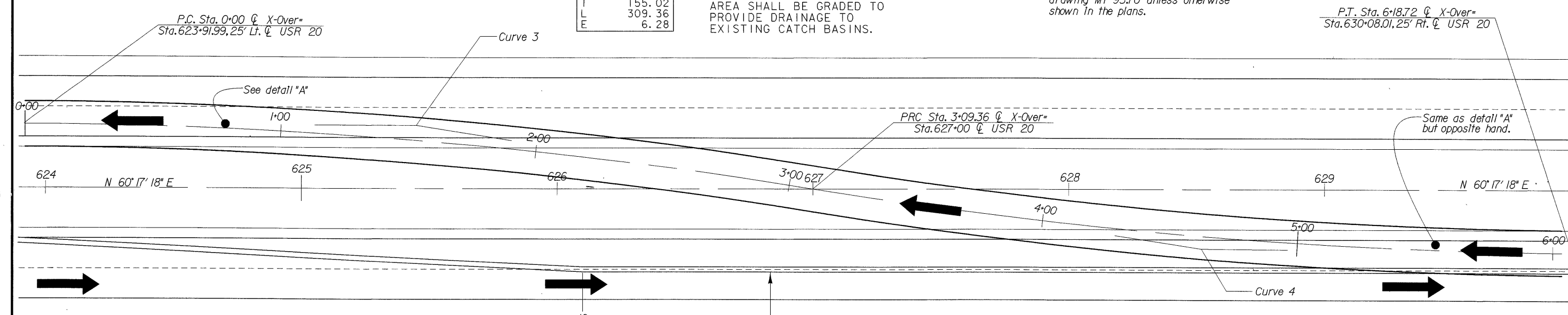
LOR-20-12.62

191
351

CURVE	3
CURVE	4
Δ	09°16'51"
D	03'00'00"
R	1909.86
T	155.02
L	309.36
E	6.28

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.
A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00
AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

All temporary traffic control devices shall be placed as shown on standard drawing MT-95.70 unless otherwise shown in the plans.



Estimated earthwork quantities for information purposes only
Cut 69 cy
Fill 52 cy

XOVERS.DGN



CALCULATED
TSF 4/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC
TEMPORARY CROSSOVER DETAILS PHASE "A"

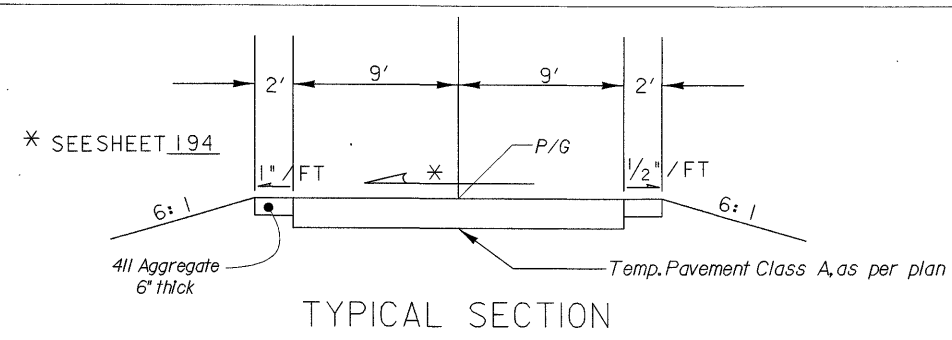
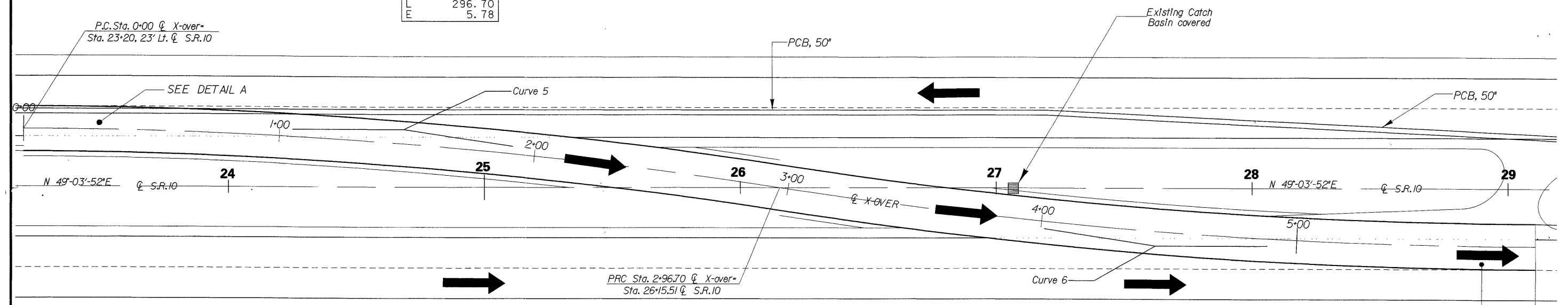
LOR-20-12.62

192
351

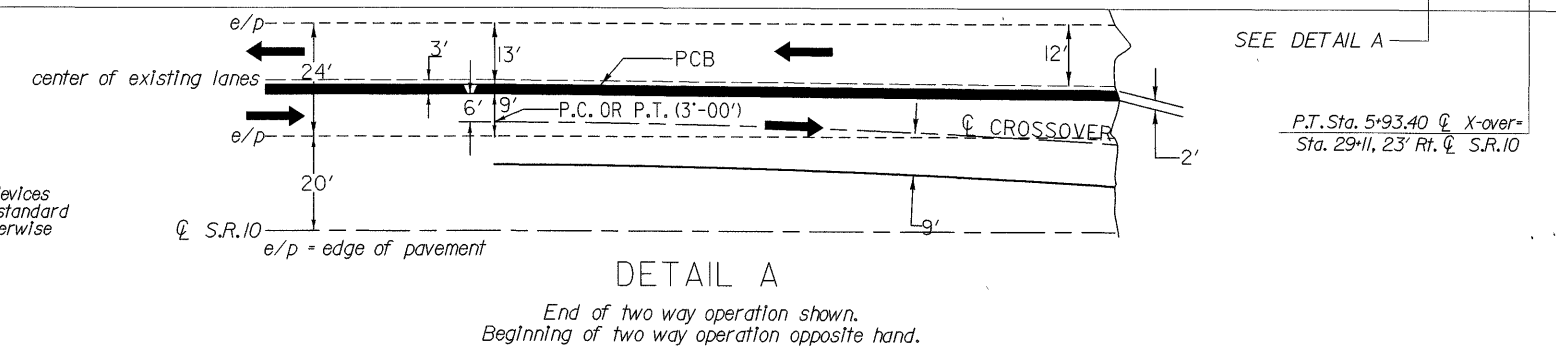
CURVE	5
CURVE	6
Δ	08°54'03.5"
D	03°00'00.0"
R	1909.86
T	148.65
L	296.70
E	5.78

SEE STD. DRWG. MT-95.70
FOR ADDITIONAL DETAILS.
A TEMPORARY LIGHTING SYSTEM
SHALL BE PROVIDED AS PER MT-100.00

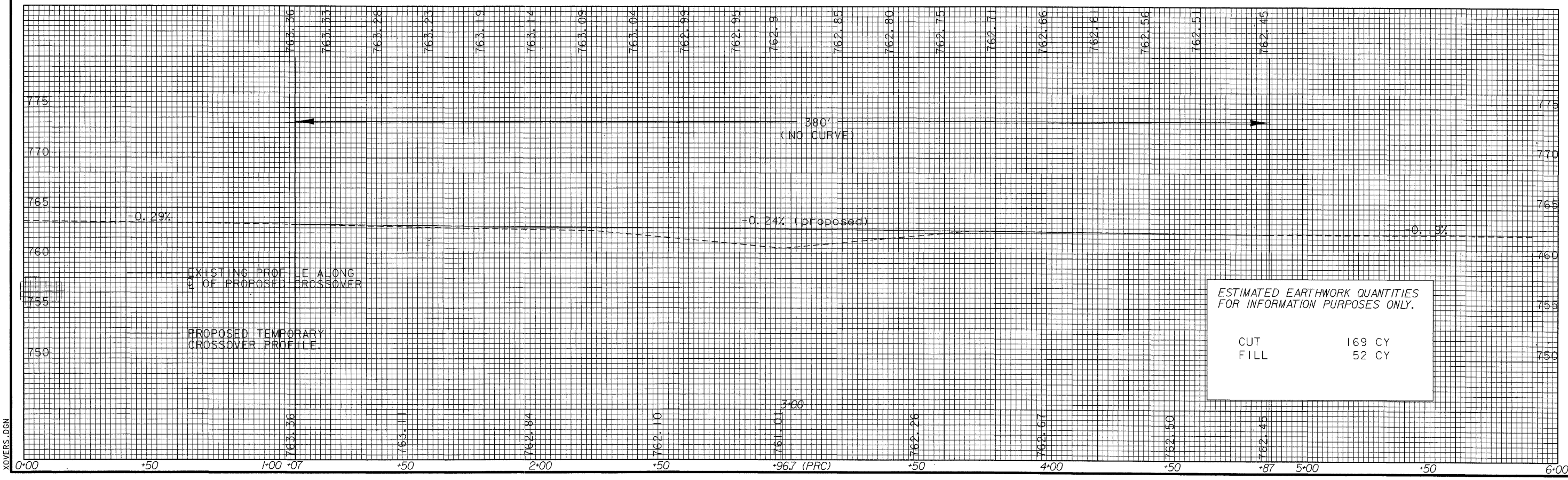
AREA SHALL BE GRADED TO
PROVIDE DRAINAGE TO
EXISTING CATCH BASINS.



All temporary traffic control devices shall be placed as shown on standard drawing MT-95.70 unless otherwise shown in the plan.



DETAIL A
End of two way operation shown.
Beginning of two way operation opposite hand.

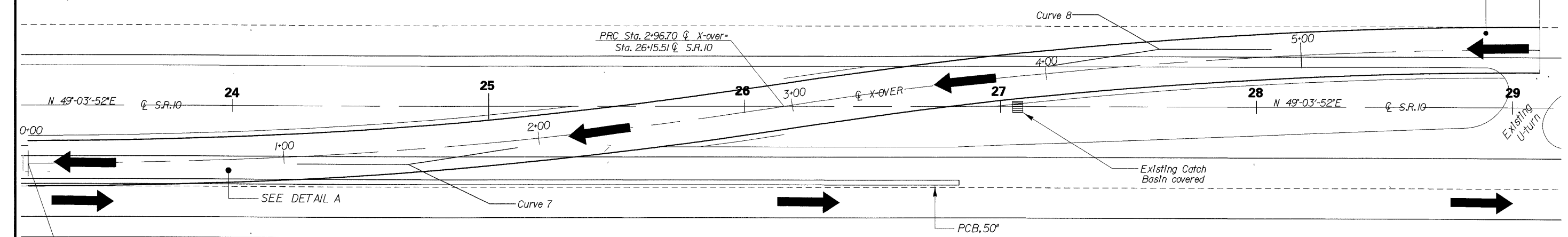


XOVERS.DGN

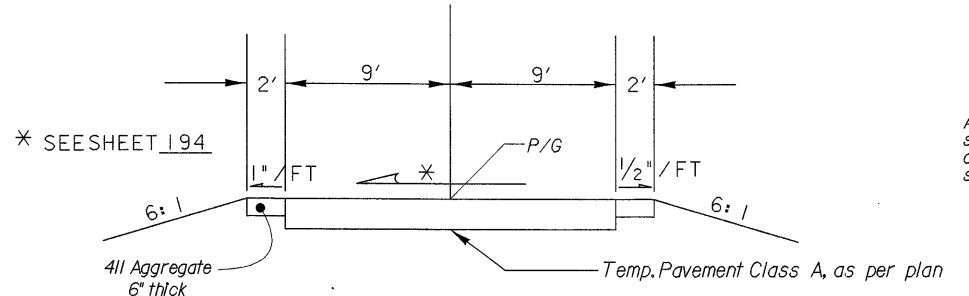
CURVE	7
CURVE	8
Δ	08°54'03.5"
D	03°00'00.0"
R	1909.86
T	148.65
L	296.70
E	5.78

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.
 A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00
 AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

P.C. Sta. 0+00 ϕ X-over = Sta. 29+11.23' Lt. ϕ S.R.10

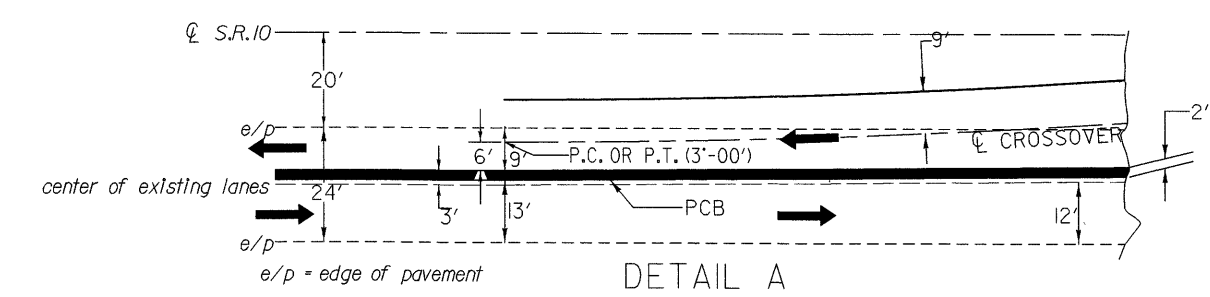


P.C. Sta. 0+00 ϕ X-over = Sta. 23+20.23' Rt. ϕ S.R.10

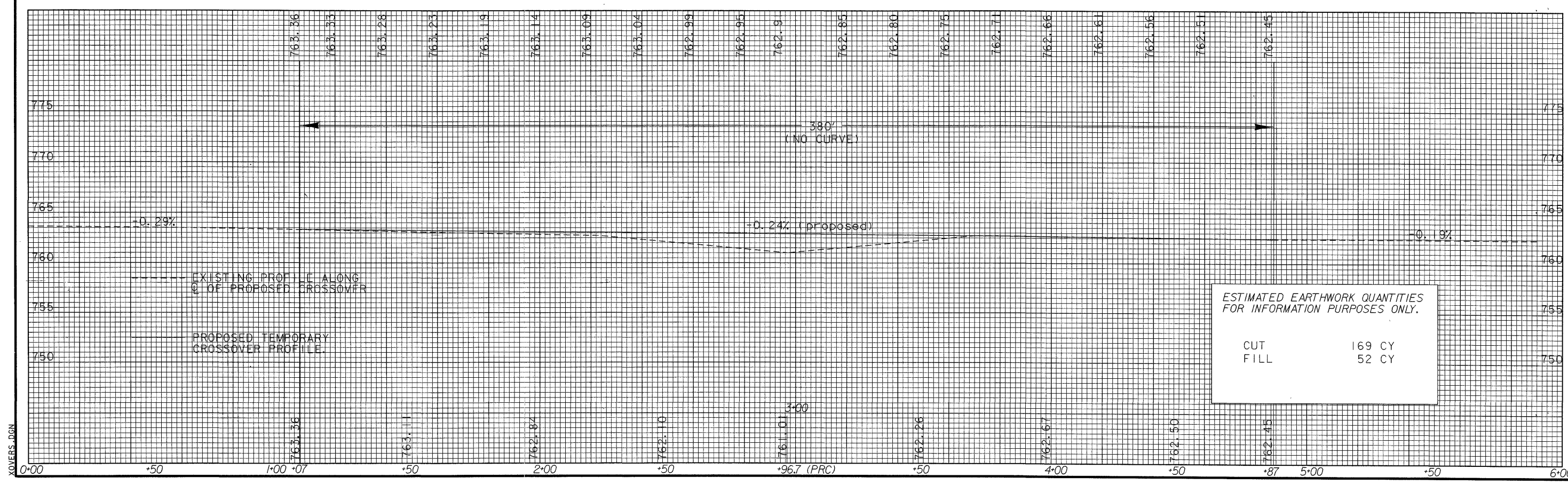


TYPICAL SECTION

All temporary traffic control devices shall be placed as shown on standard drawing MT-95.70 unless otherwise shown in the plan.



DETAIL A
 Beginning of two way operation shown. End of two way operation opposite hand.





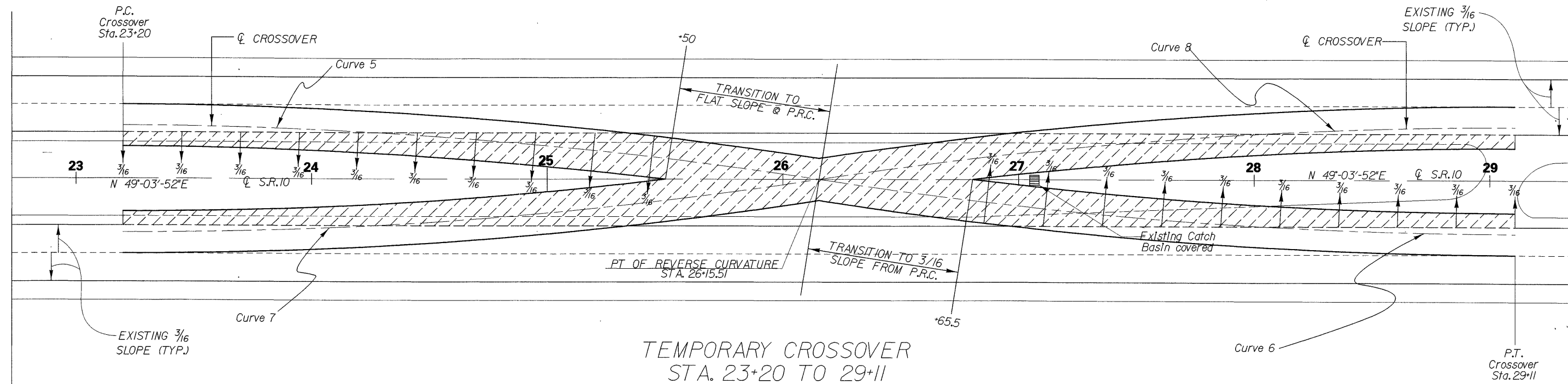
CALCULATED
TFSF 4/96
CHECKED
TBC 7/96

TEMPORARY CROSSOVER PAVEMENT TRANSITION DETAIL

LOR-20-12.62

194
351

CURVE 7 SIMILAR TO CURVE 5 BUT OPPOSITE HAND.
CURVE 8 SIMILAR TO CURVE 6 BUT OPPOSITE HAND.



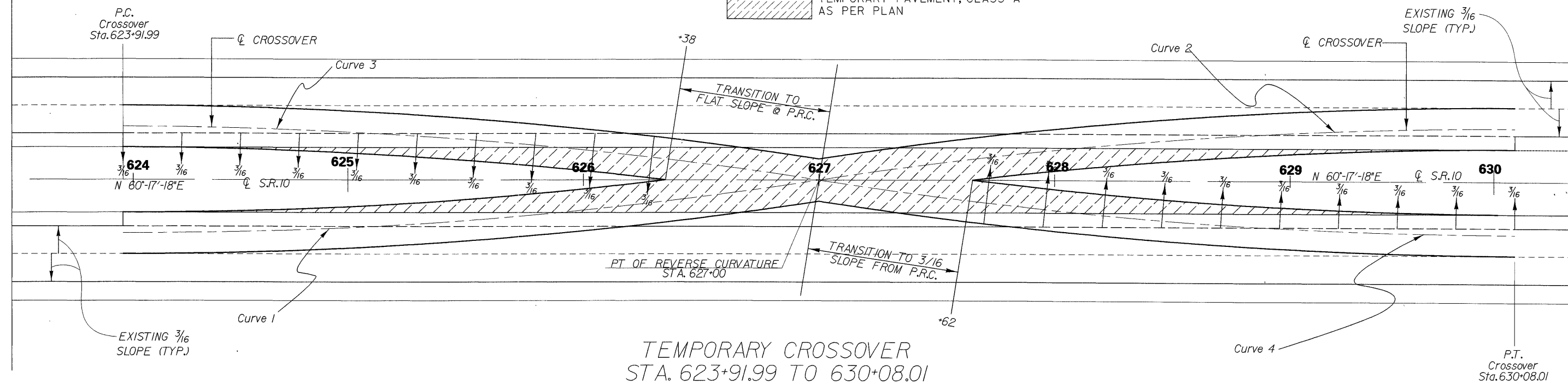
TEMPORARY CROSSOVER
STA. 23+20 TO 29+11

ALL SLOPES SHOWN ARE
IN UNITS OF IN./FT.

TEMPORARY PAVEMENT SLOPES ARE
AT 25' INTERVALS UNLESS OTHER-
WISE SHOWN.

CURVE 1 SIMILAR TO CURVE 3 BUT OPPOSITE HAND.
CURVE 2 SIMILAR TO CURVE 4 BUT OPPOSITE HAND.

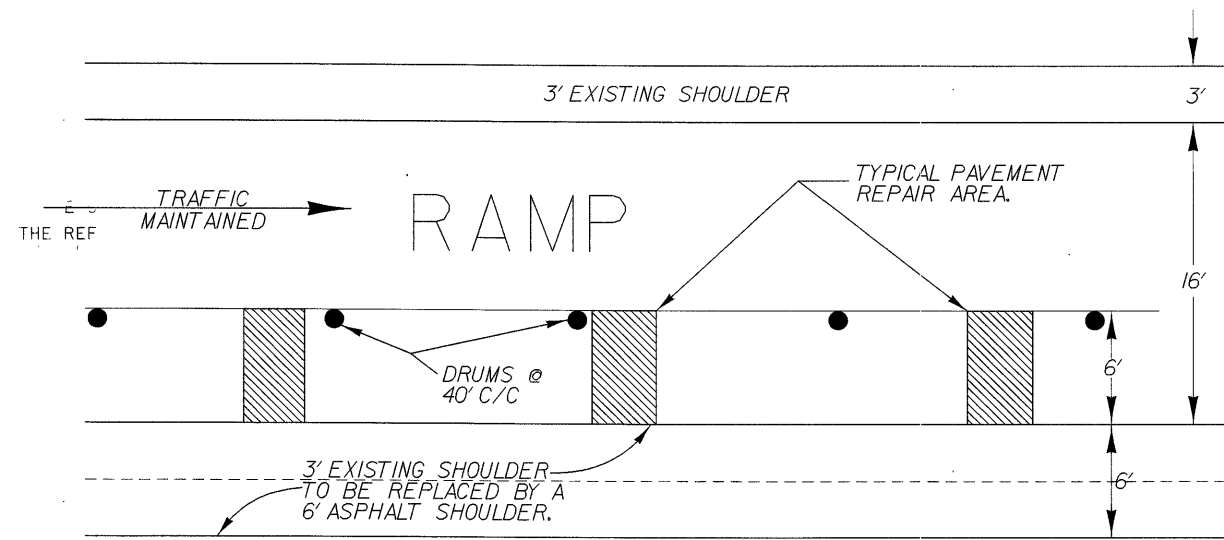
TEMPORARY PAVEMENT, CLASS A
AS PER PLAN



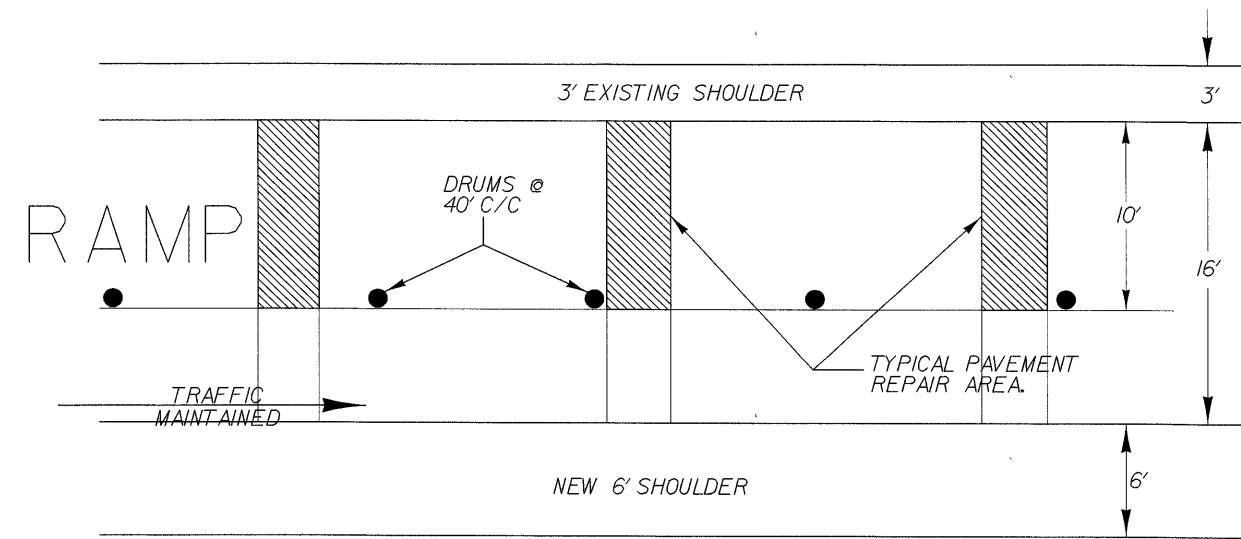
TEMPORARY CROSSOVER
STA. 623+91.99 TO 630+08.01

DESIGN FILE: c:\dgn\lor20\mot\slopes.dgn
WORKSTATION: mallemann DATE: 12 NOV 96
SLOPES.DGN

PHASE "R1"



PHASE "R2"



ALL RAMPS SHALL BE MAINTAINED AS SHOWN ABOVE WHILE THE PROPOSED PAVEMENT REPAIRS AND ASPHALT SHOULDERS ARE BEING CONSTRUCTED.

THE EXISTING OUTSIDE SHOULDER SHALL BE WIDENED PRIOR TO BEGINNING PHASE "R2". THE CONTRACTOR SHALL AVOID SAWING INTO THE NEW ASPHALT SHOULDERS.

EXCAVATION FOR THE PROPOSED ASPHALT RAMP SHOULDERS SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH DRUMS. THE PLACEMENT OF THE PROPOSED ASPHALTIC SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF EXCAVATION OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. IN CASE OF EMERGENCY, THE OPEN EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS DIRECTED BY THE ENGINEER.

ADHESIVE GRADE AT SUITABLE

CALCULATED
7SF 4/96
CHECKED
TBC 7/96

MAINTENANCE OF TRAFFIC RAMPS

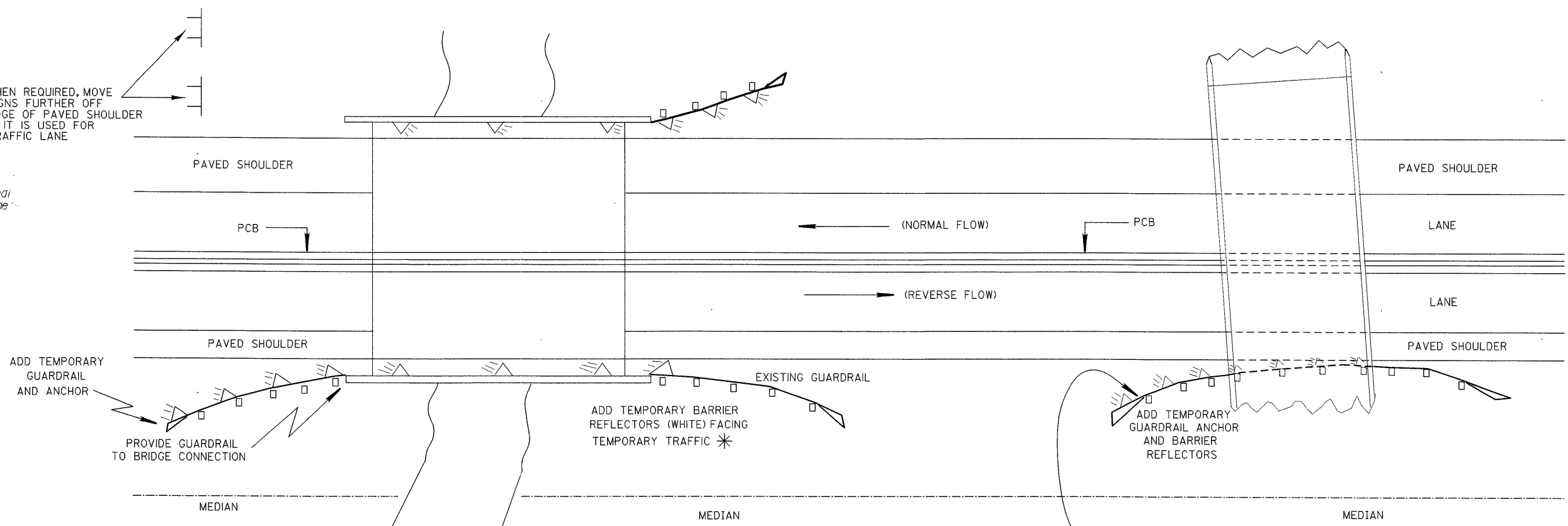
LOR-20-12.62

195
351

RAMPS.DGN

WHEN REQUIRED, MOVE SIGNS FURTHER OFF EDGE OF PAVED SHOULDER IF IT IS USED FOR TRAFFIC LANE

ditional
wn he



ADD TEMPORARY GUARDRAIL AND ANCHOR

PROVIDE GUARDRAIL TO BRIDGE CONNECTION

MEDIAN

ADD TEMPORARY BARRIER REFLECTORS (WHITE) FACING TEMPORARY TRAFFIC *

MEDIAN

ADD TEMPORARY GUARDRAIL ANCHOR AND BARRIER REFLECTORS

MEDIAN

EXTEND EXISTING GUARDRAIL AND ANCHOR TO PROTECT:
1. BRIDGE PIERS
2. OVERHEAD SIGN SUPPORT
3. OTHER OBSTRUCTION

* TEMPORARY BARRIER REFLECTORS SHALL BE LOCATED TO ASSURE THEY DO NOT BLOCK VISIBILITY, NOR ARE THEY BLOCKED BY EXISTING PERMANENT BARRIER REFLECTORS. REFLECTORS FACING REVERSE FLOW TRAFFIC SHALL BE REMOVED AT THE END OF THE PROJECT.

dition 1 a.
land

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

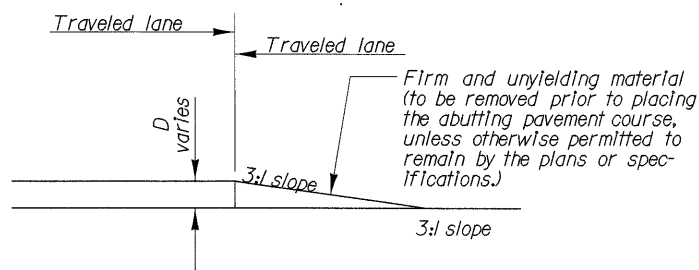
TWO-LANE, TWO-WAY OPERATION FOR USE ON FOUR LANE DIVIDED ROADWAYS PORTABLE CONCRETE BARRIER (PCB)

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. 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 Standard Construction Drawing MC-9.2 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-171 (Uneven Lanes) and OWP-171 signs are required, they shall be placed 750' 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 one-half mile, additional signs should be erected at intervals of one mile or less.
- For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any 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 widths designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the drop-off depth does not exceed 5' and approval is granted by the Project Engineer.
- Pavement Repairs (or similar work):
 - Lengths greater than 60 feet - utilize appropriate treatment from condition I.
 - Lengths of 60 feet or less - repairs shall be effected in accordance with 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 and OWP-171 signs required.

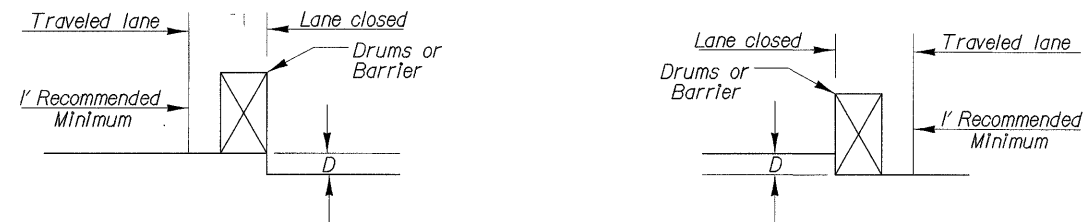


CONDITION I DROPOFFS BETWEEN TRAVEL LANES

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

D (In.)	Treatment
≤ 1/2	Erect OW-171 and OWP-171 signs.
> 1/2-3	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
> 3-5	Lane closure utilizing drums as shown below.
> 5	Lane closure utilizing portable concrete barrier as shown below.

*Cones may be used for daytime only conditions.

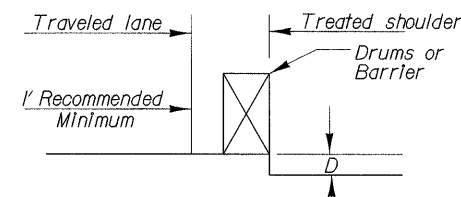


CONDITION II DROPOFFS WITHIN GRADED SHOULDER AREA

- 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 purposes herein, its maximum width shall be considered to be twelve (12) feet.

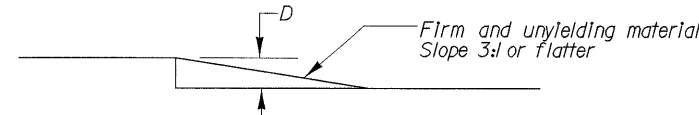
D (In.)	Treatment
≤ 1/2	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
> 1/2-5	1) If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If minimum lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
> 5-12 Daylight only	If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below
> 5-24	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	Lane closure utilizing portable concrete barrier as shown below.

*Minimum lane widths shall be 10' 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 401.15 is required.
- OW-151 signs required.

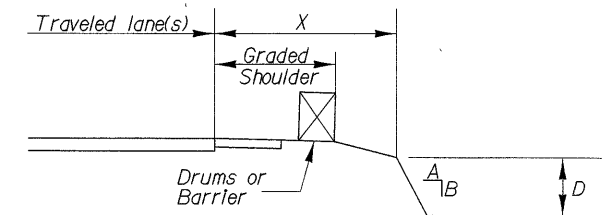


CONDITION III DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

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

CHART A

- USE FOR:
- Uncurbed Facilities.
 - Curbed Facilities, where:
 - Curbs are less than 6" in height.
 - Curbs are 6" or greater in height and the legal speed is greater than 40 mph.

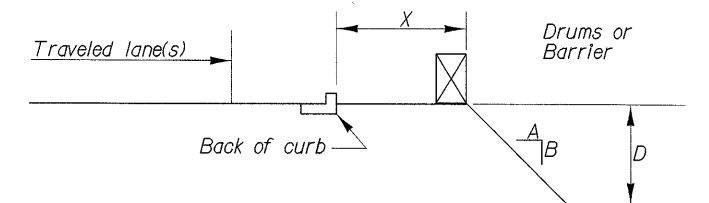


X Ft.	D In.	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	< 3	Steeper than 3:1	None	None
4-12	> 3-12	Steeper than 3:1	Drums	Drums
4-12	> 12	Steeper than 3:1	Drums	Barrier
> 12-20	< 12	Steeper than 3:1	None	None
> 12-20	> 12-24	Steeper than 3:1	Drums	Drums
> 12-20	> 24	Steeper than 3:1	Drums	Barrier
> 20-30	< 24	Steeper than 3:1	None	Drums
> 20-30	> 24	Steeper than 3:1	Drums	Barrier
> 30	Any	Any	None	None

(a) Use treatment specified under Condition II.

CHART B

- USE FOR: Curbed facilities, where the curb is 6" or greater in height and the legal speed is 40 mph or less.

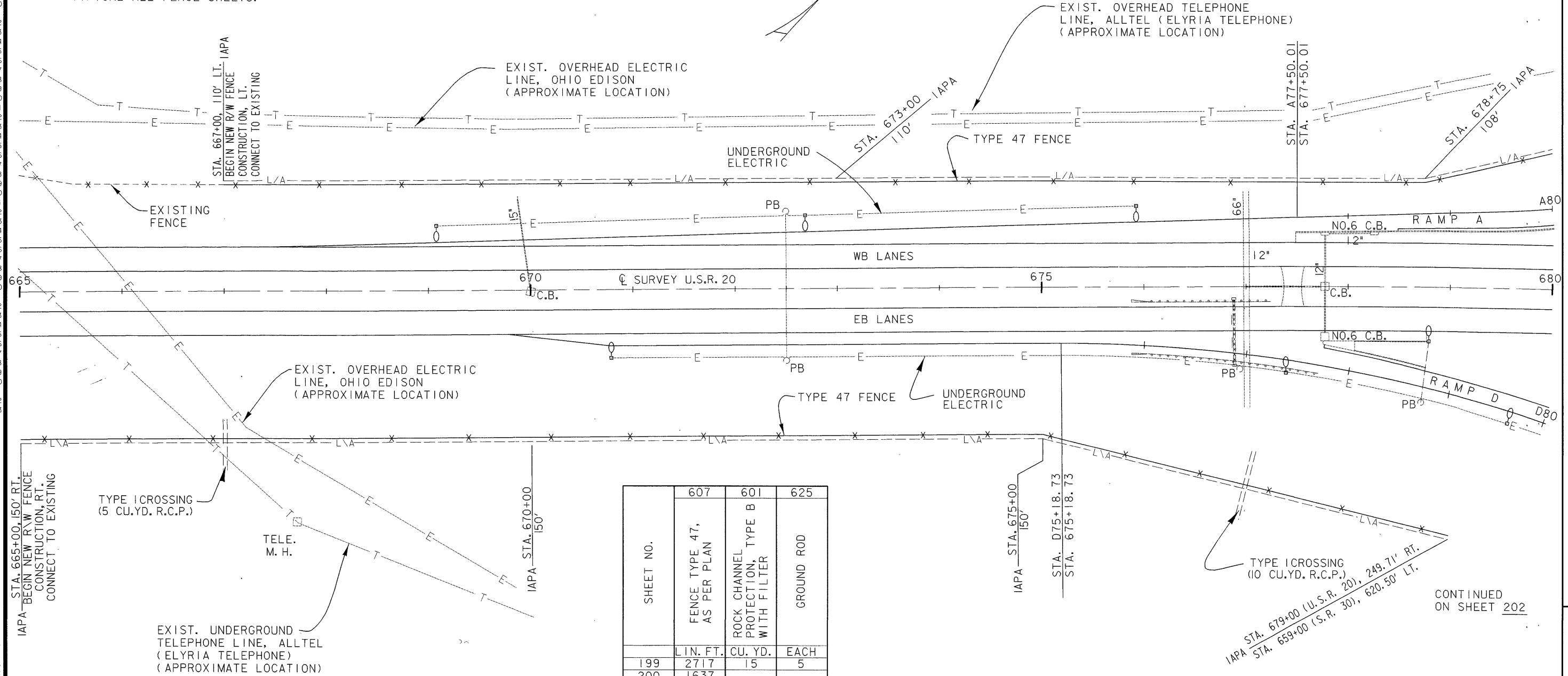


X Ft.	D In.	A/B	Treatment Required	
			Day	Night
0-10	< 12	Any	None	Drums
0-10	> 12	Any	Drums	Drums
> 10	Any	Any	None	None

LEGEND
 EPA - END POST ASSEMBLY
 CPA - CORNER POST ASSEMBLY
 IAPA - INTERMEDIATE ANCHOR POST ASSEMBLY
 ACA - ABUTMENT CONNECTION ASSEMBLY
 RCP - ROCK CHANNEL PROTECTION

GROUND ROD (625)
 STA. 667+35± RT. | EA.
 STA. 667+00 LT. | EA.
 STA. 670+00 LT. | EA.
 STA. 673+00 LT. | EA.
 STA. 676+00 LT. | EA.
 TOTAL = 5 EA.

NOTE: MOST OF LATERAL OFFSETS ARE ON R/W LINES. ACTUAL LATERAL OFFSET SHALL BE AS PER 607.06, SEE GENERAL NOTE ON SHEET 15 - TYPICAL ALL FENCE SHEETS.



IAPA STA. 665+00, 150' RT.
 BEGIN NEW R/W FENCE CONSTRUCTION, RT. CONNECT TO EXISTING

TYPE 1 CROSSING (5 CU.YD. R.C.P.)

TELE. M.H.

EXIST. UNDERGROUND TELEPHONE LINE, ALLTEL (ELYRIA TELEPHONE) (APPROXIMATE LOCATION)

IAPA STA. 670+00 150'

IAPA STA. 675+00 150'
 STA. 675+18.73
 STA. 675+18.73

TYPE 1 CROSSING (10 CU.YD. R.C.P.)
 IAPA STA. 679+00 (U.S.R. 20), 249.71' RT.
 STA. 669+00 (S.R. 30), 620.50' LT.

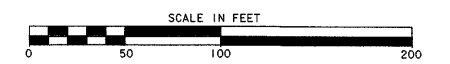
CONTINUED ON SHEET 202

607 - FENCE, TYPE 47, AS PER PLAN 2717 LIN. FT.
 601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER 15 CU. YD.
 625 - GROUND ROD 5 EACH

SHEET NO.	607	601	625
	FENCE TYPE 47, AS PER PLAN LIN. FT.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER CU. YD.	GROUND ROD EACH
199	2717	15	5
200	1637		
201	1874		
202	1602	10	3
203	3002		4
204	3023	20	2
205	3115	20	
206	2886	18	
207	3321	25	6
208	3014		
209	3057		
210	2785		2
211	2522		2
212	963		
TOTALS	35,518	108	24

(TOTALS TO SHEET 18 & 19)

QUANTITIES CARRIED TO THIS SHEET



DESIGN FILE: c:\dgn\lor20\ fence1.dgn
 WORKSTATION: mallemann DATE: 08 NOV 96

CALCULATED ADB CHECKED MGA
FENCE PLAN
STA. 665+00 TO STA. 680+00

LOR-20-12.62

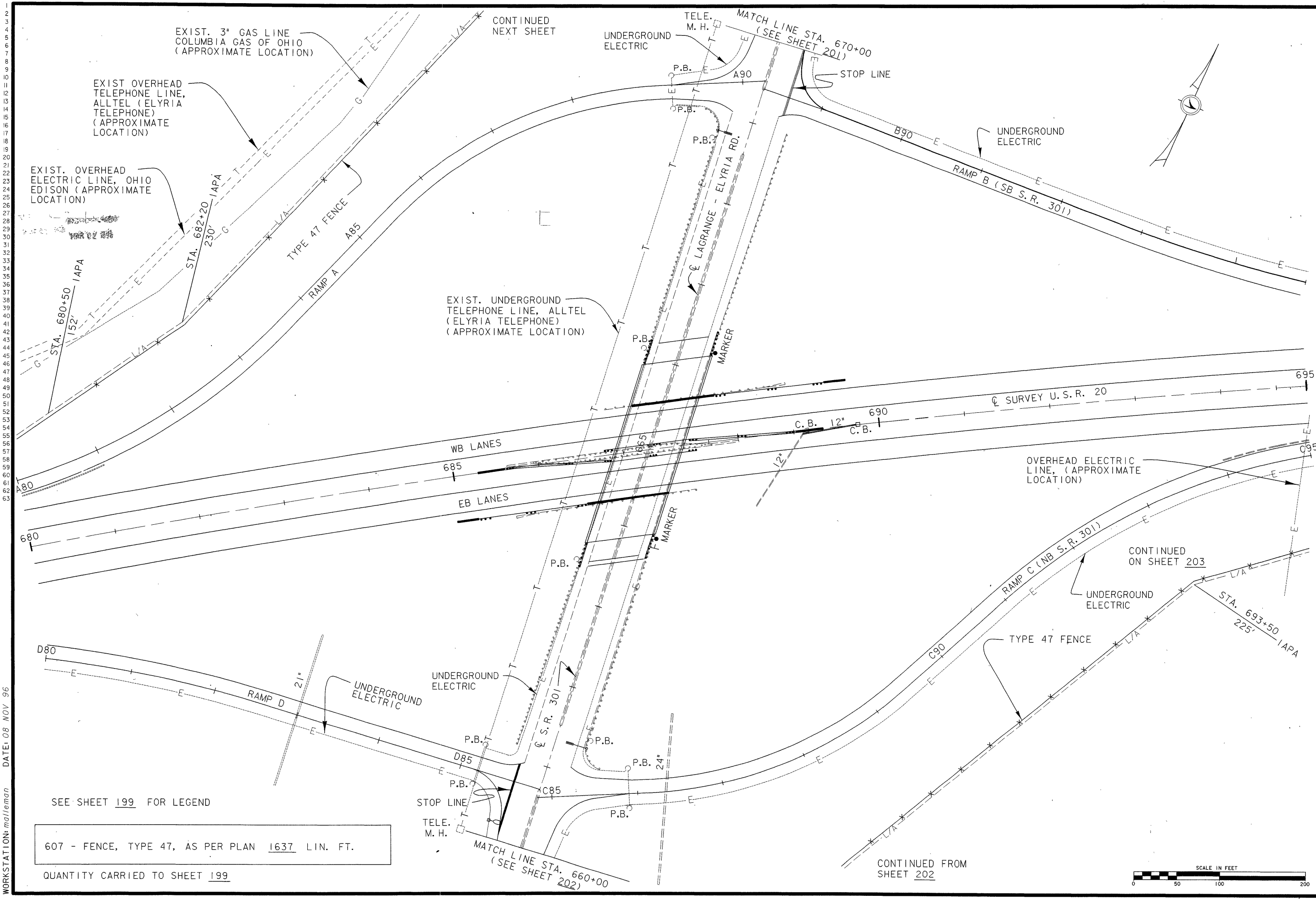
199
 351

CALCULATED
ADD
CHECKED
MGA

FENCE PLAN
STA. 680+00 TO STA. 695+00

LOR-20-12.62

200
351



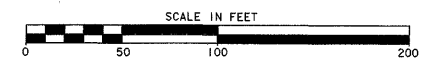
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DESIGN FILE: c:\dgn\lor20\lencel.dgn
WORKSTATION: mal/eman DATE: 08 NOV 96

SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN 1637 LIN. FT.

QUANTITY CARRIED TO SHEET 199



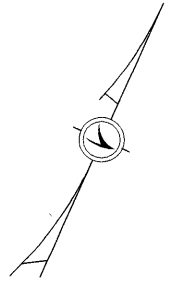
CONTINUED FROM SHEET 202

CONTINUED ON SHEET 203

CONTINUED NEXT SHEET

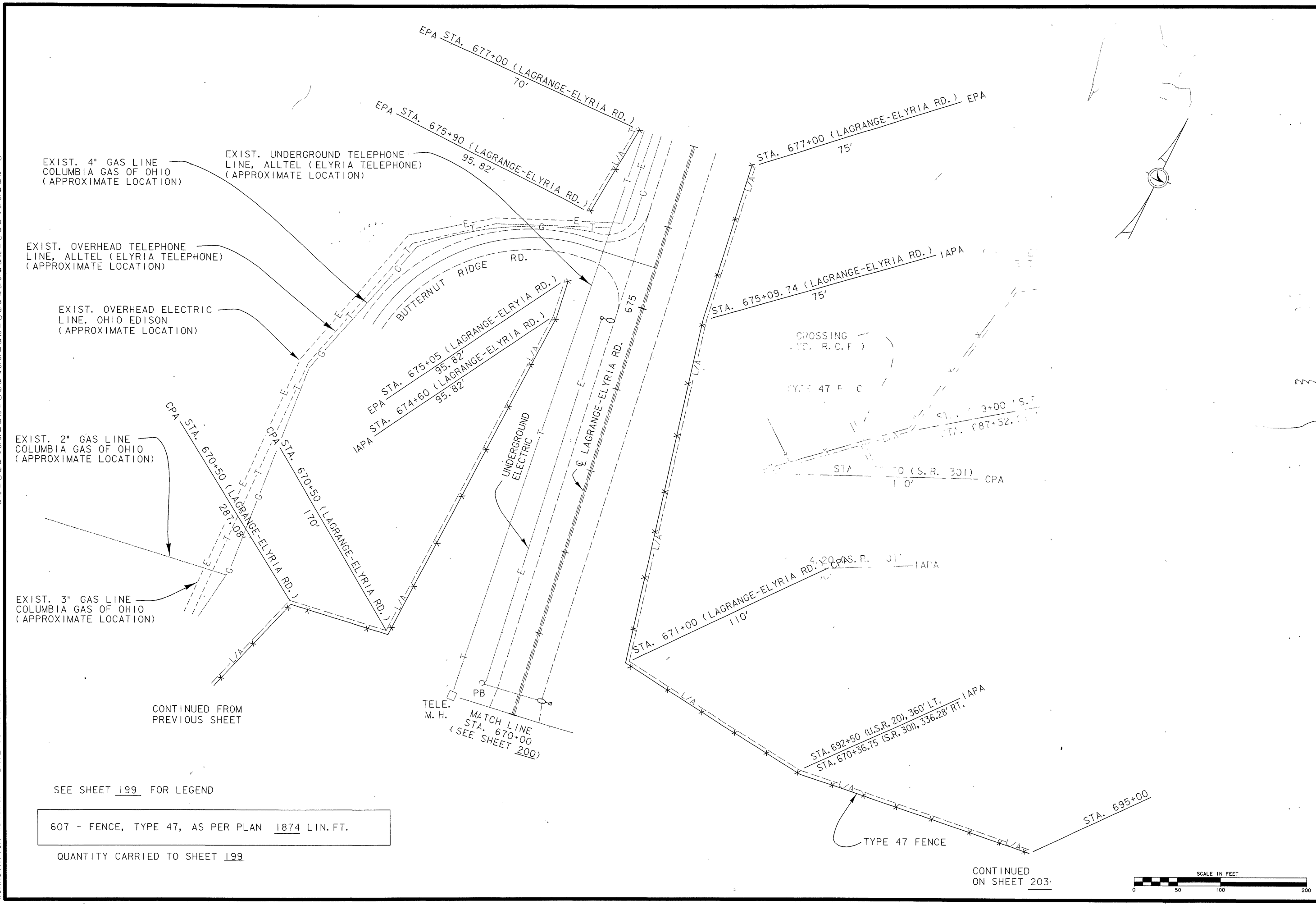
MATCH LINE STA. 670+00
(SEE SHEET 201)

MATCH LINE STA. 660+00
(SEE SHEET 202)



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 WORKSTATION: mal/eman DATE: 08 NOV 96



EXIST. 4" GAS LINE
 COLUMBIA GAS OF OHIO
 (APPROXIMATE LOCATION)

EXIST. UNDERGROUND TELEPHONE
 LINE, ALLTEL (ELYRIA TELEPHONE)
 (APPROXIMATE LOCATION)

EXIST. OVERHEAD TELEPHONE
 LINE, ALLTEL (ELYRIA TELEPHONE)
 (APPROXIMATE LOCATION)

EXIST. OVERHEAD ELECTRIC
 LINE, OHIO EDISON
 (APPROXIMATE LOCATION)

EXIST. 2" GAS LINE
 COLUMBIA GAS OF OHIO
 (APPROXIMATE LOCATION)

EXIST. 3" GAS LINE
 COLUMBIA GAS OF OHIO
 (APPROXIMATE LOCATION)

CONTINUED FROM
 PREVIOUS SHEET

SEE SHEET 199 FOR LEGEND

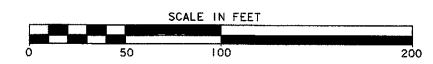
607 - FENCE, TYPE 47, AS PER PLAN 1874 LIN. FT.

QUANTITY CARRIED TO SHEET 199

TELE.
 M. H.
 MATCH LINE
 STA. 670+00
 (SEE SHEET 200)

STA. 692+50 (U.S.R. 20), 360' LT.
 STA. 670+36.75 (S.R. 301), 336.28' RT. IAPA

CONTINUED
 ON SHEET 203



CALCULATED
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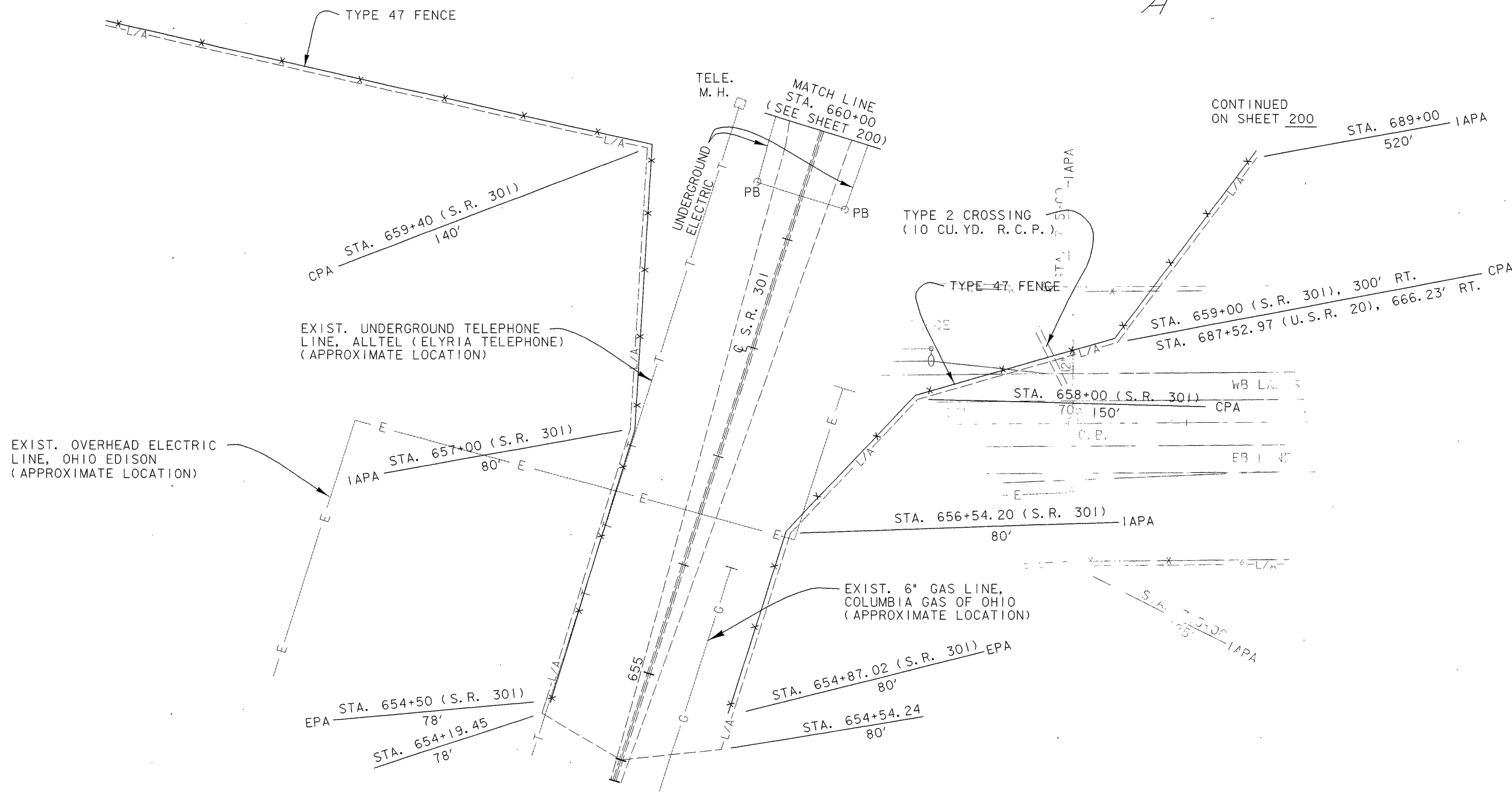
FENCE PLAN
 STA. 670+00 TO STA. 677+00 (LAGRANGE-ELYRIA RD.)

LOR-20-12.62

201
 351

GROUND ROD (625)			
STA. 656+50±	LT.		EA.
STA. 656+50±	RT.		EA.
STA. 656+75±	RT.		EA.
TOTAL			= 3 EA.

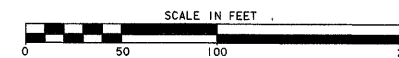
CONTINUED FROM SHEET 199



SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN	1602 LIN. FT.
601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	10 CU. YD.
625 - GROUND ROD	3 EA.

QUANTITIES CARRIED TO SHEET 199



DESIGN FILE: c:\dgn\lor20\ fence1.dgn
 WORKSTATION: mallemar DATE: 08 NOV 96

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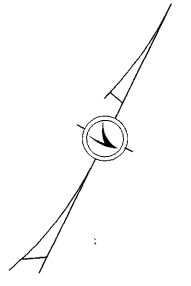
FENCE PLAN
STA. 654+00 TO STA. 660+00 (S.R. 301)

LOR-20-12.62

202
 251

GROUND ROD (625)

STA. 694+65±	RT.	1 EA.
STA. 695+35±	RT.	1 EA.
STA. 695+85±	LT.	1 EA.
STA. 696+55±	LT.	1 EA.
TOTAL		= 4 EA.

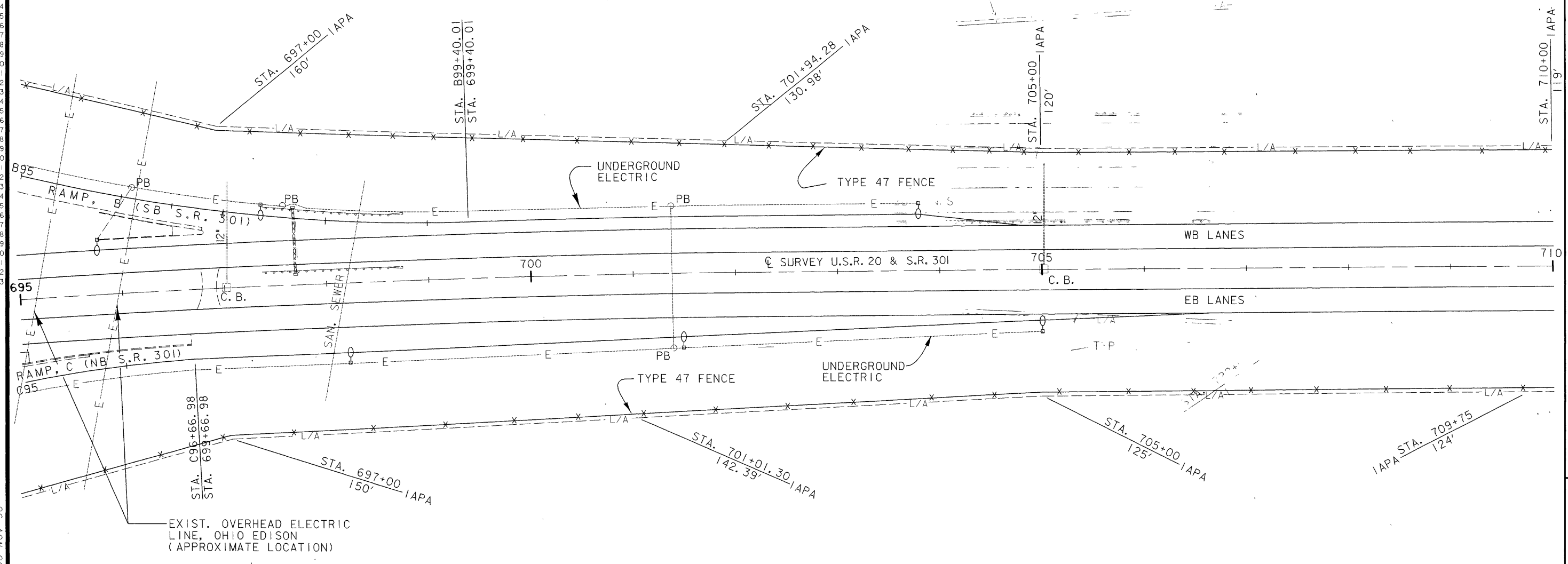


FENCE PLAN
STA. 695+00 TO STA. 710+00

LOR-20-12.62

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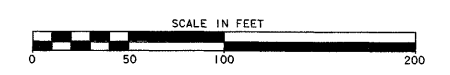
DESIGN FILE: c:\dgn\lor20\fence.dgn
 WORKSTATION: mal\eman DATE: 08 NOV 96



SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN 3002 LIN. FT.
625 - GROUND ROD 4 EA.

QUANTITY CARRIED TO SHEET 199

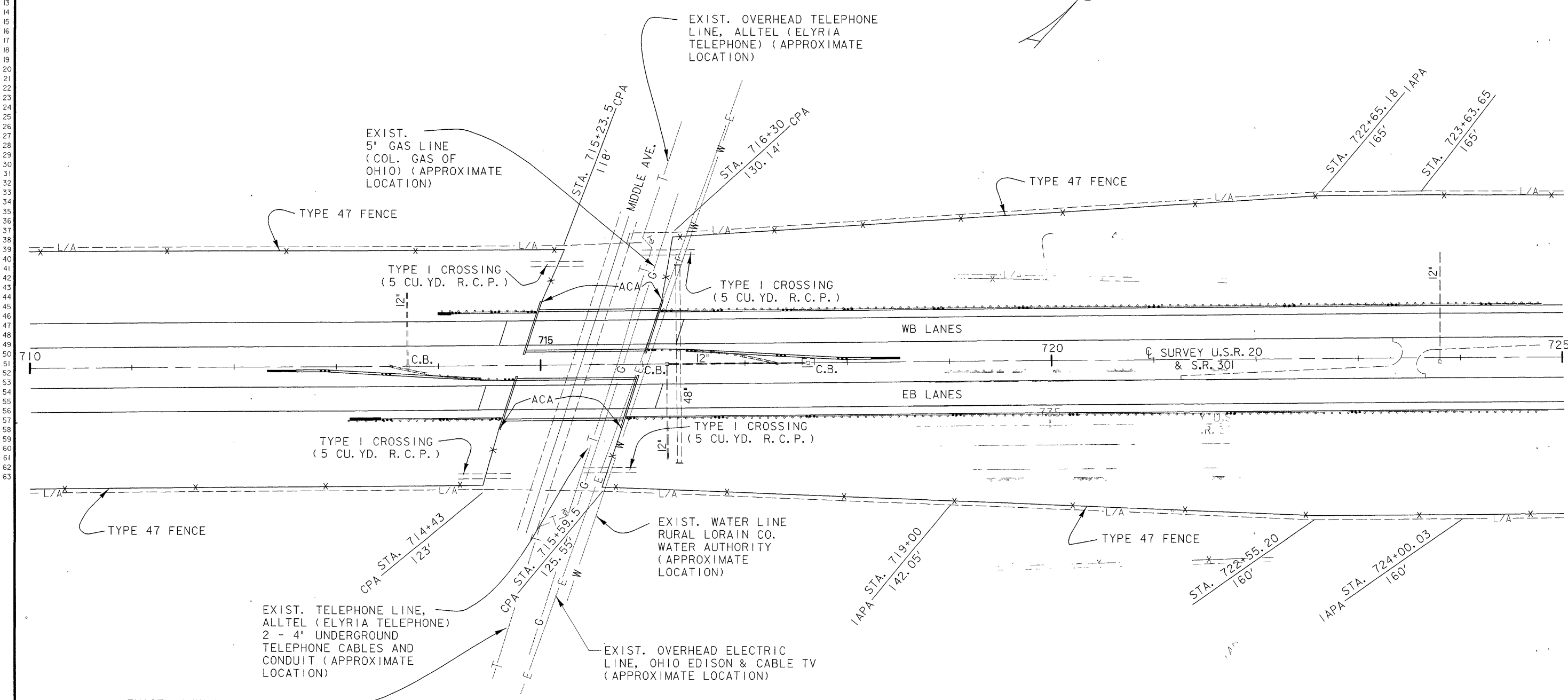


GROUND ROD (625)		
STA. 715+59.5	RT.	1 EA.
STA. 716+30	LT.	1 EA.
TOTAL	=	2 EA.

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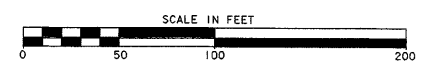
DESIGN FILE: c:\dgn\lor20\ fence.dgn
WORKSTATION: mallemann DATE: 08 NOV 96



SEE SHEET 199 FOR LEGEND

607	-	FENCE, TYPE 47, AS PER PLAN 3023	LIN. FT.
601	-	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	20 CU. YD.
625	-	GROUND ROD	2 EA.

QUANTITIES CARRIED TO SHEET 199

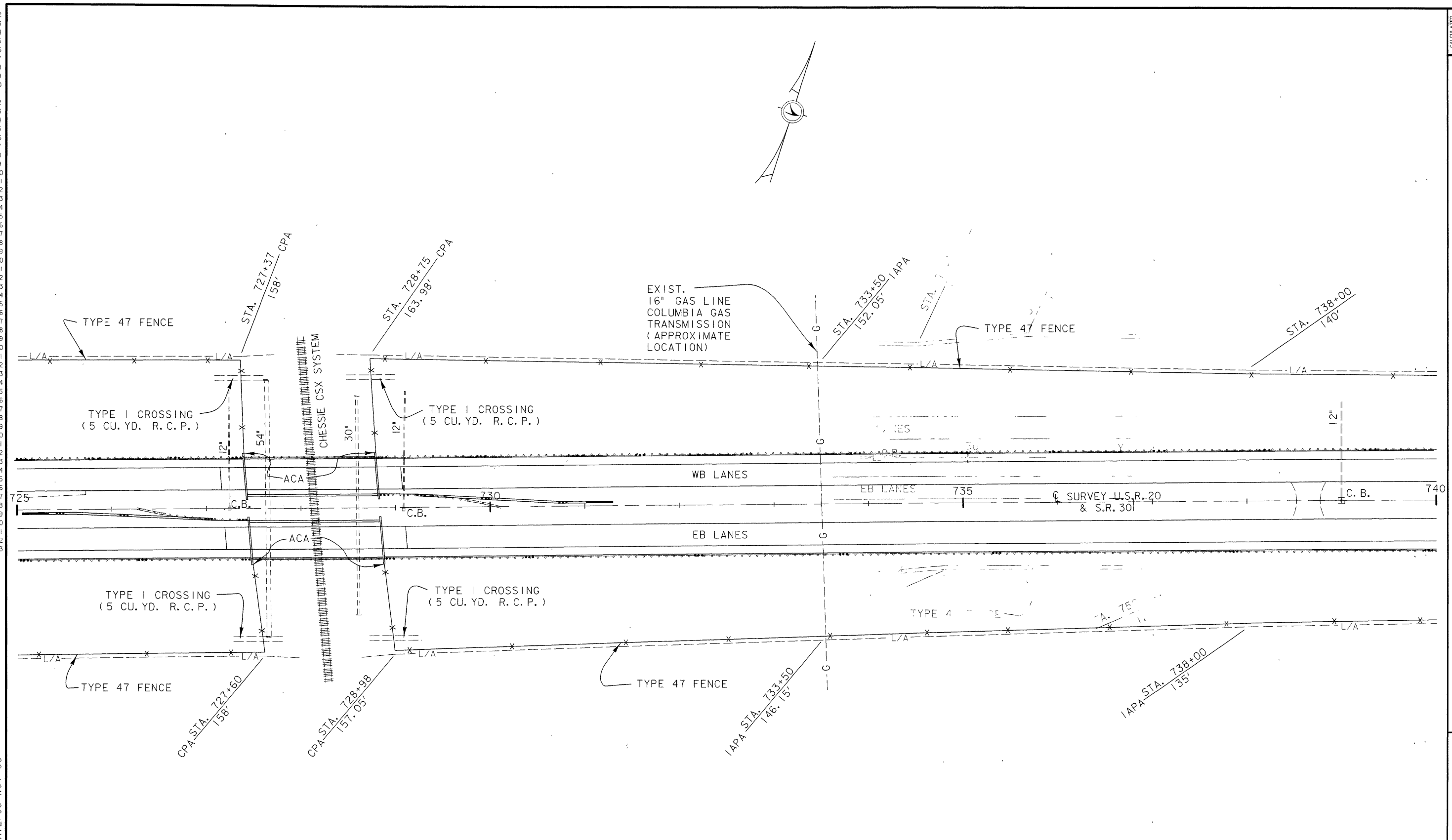


FENCE PLAN
STA. 710+00 TO STA. 725+00

LOR-20-12.62

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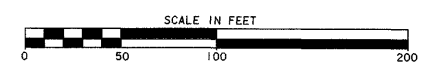
DESIGN FILE: c:\dgn\lor20\lencel.dgn
 WORKSTATION: mal/eman DATE: 08 NOV 96



SEE SHEET 199 FOR LEGEND

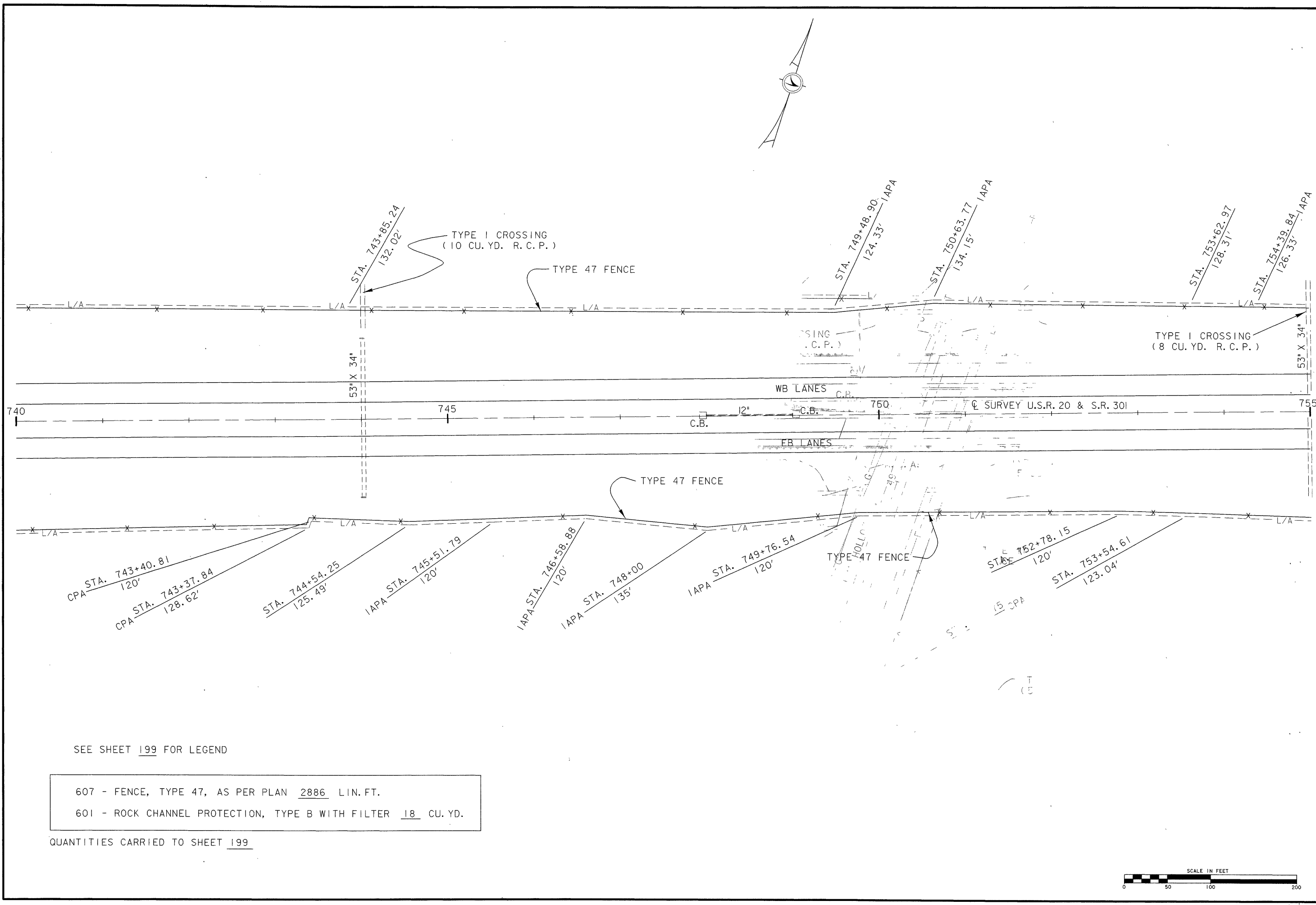
607 - FENCE, TYPE 47, AS PER PLAN 3115 LIN. FT.
601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER 20 CU. YD.

QUANTITIES CARRIED TO SHEET 199



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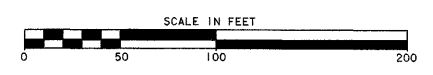
DESIGN FILE: c:\dgn\lor20\fence.dgn
 WORKSTATION: malleman DATE: 08 NOV 96



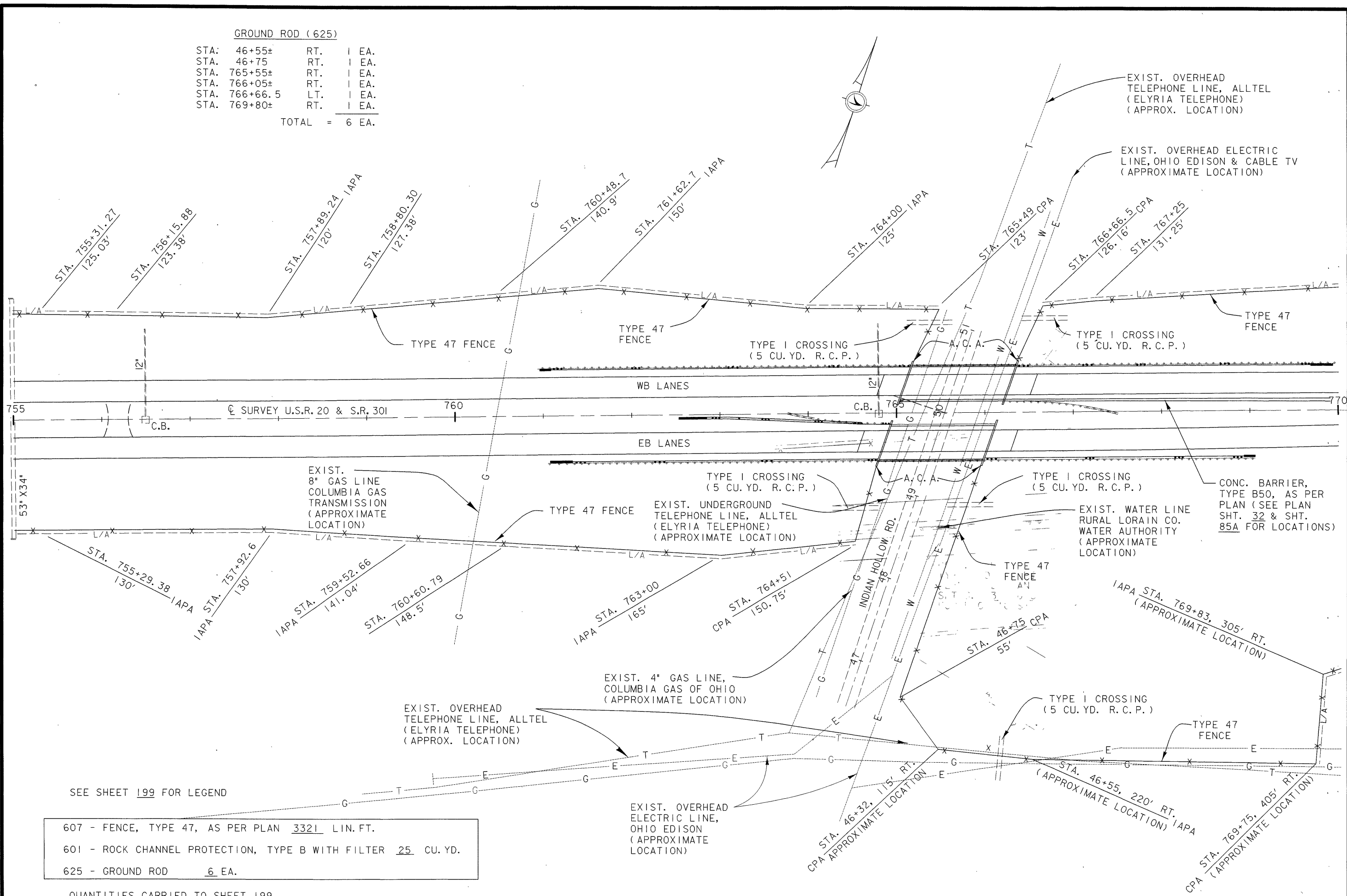
SEE SHEET 199 FOR LEGEND

- 607 - FENCE, TYPE 47, AS PER PLAN 2886 LIN. FT.
- 601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER 18 CU. YD.

QUANTITIES CARRIED TO SHEET 199



GROUND ROD (625)			
STA: 46+55±	RT.	1	EA.
STA. 46+75	RT.	1	EA.
STA. 765+55±	RT.	1	EA.
STA. 766+05±	RT.	1	EA.
STA. 766+66.5	LT.	1	EA.
STA. 769+80±	RT.	1	EA.
TOTAL = 6 EA.			

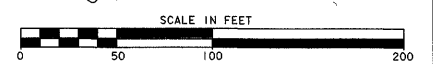


SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN 3321 LIN. FT.
601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER 25 CU. YD.
625 - GROUND ROD 6 EA.

QUANTITIES CARRIED TO SHEET 199

DESIGN FILE: c:\dgn\lor20\ fence.dgn
 WORKSTATION: mal/lema DATE: 11 DEC 96

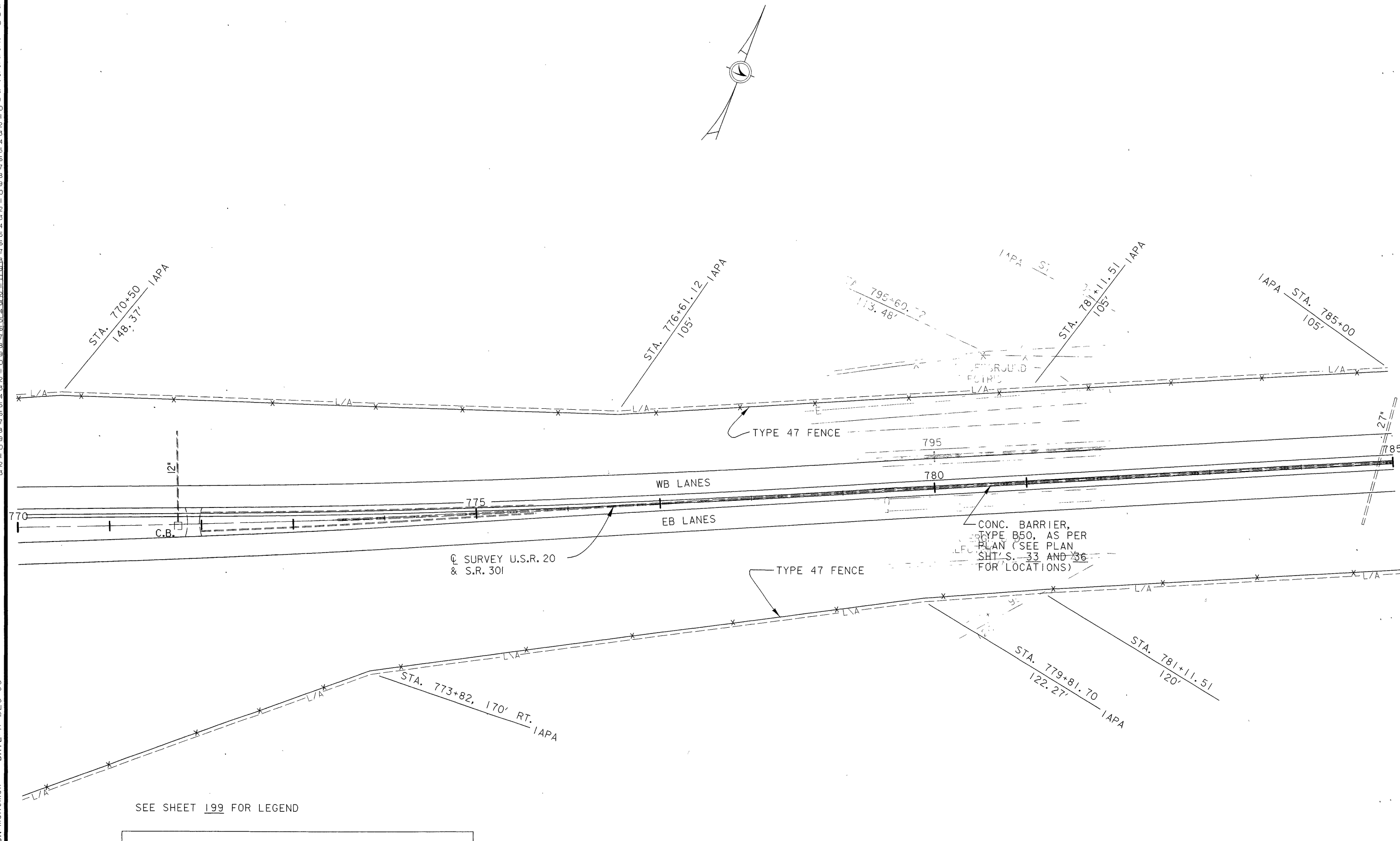


FENCE PLAN
STA. 755+00 TO STA. 770+00

LOR-20-12.62

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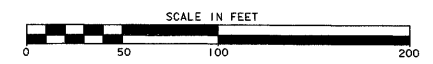
DESIGN FILE: c:\dgn\lor20\lence2.dgn
WORKSTATION: mal/eman DATE: 11 DEC 96



SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN 3014 LIN. FT.

QUANTITY CARRIED TO SHEET 199

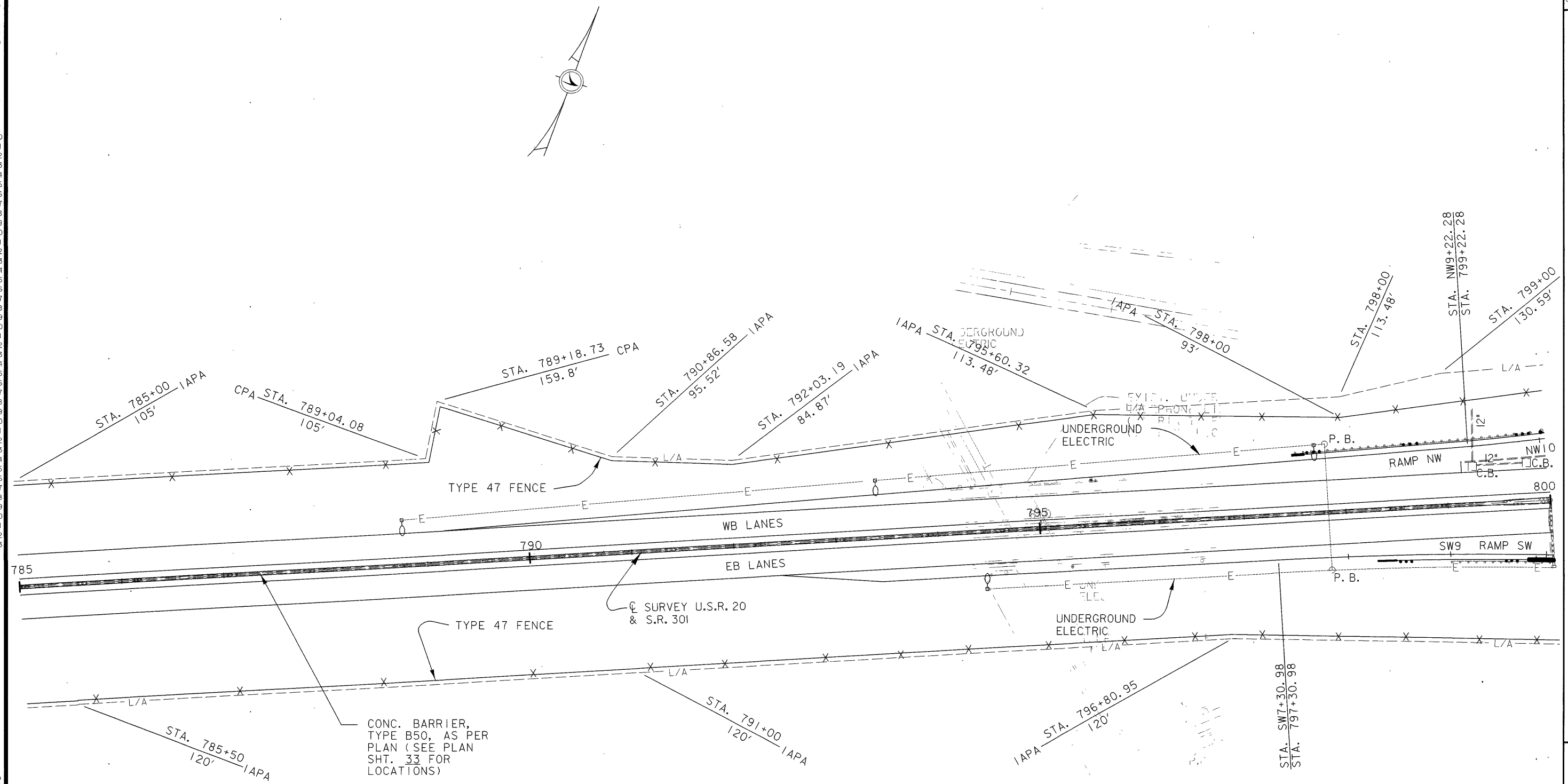


FENCE PLAN
 STA. 785+00 TO STA. 800+00

LOR-20-12.62

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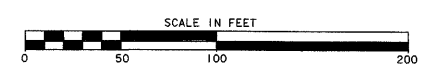
DESIGN FILE: c:\dgn\lor20_fence2.dgn
 WORKSTATION: malleman DATE: 11 DEC 96



SEE SHEET 199 FOR LEGEND

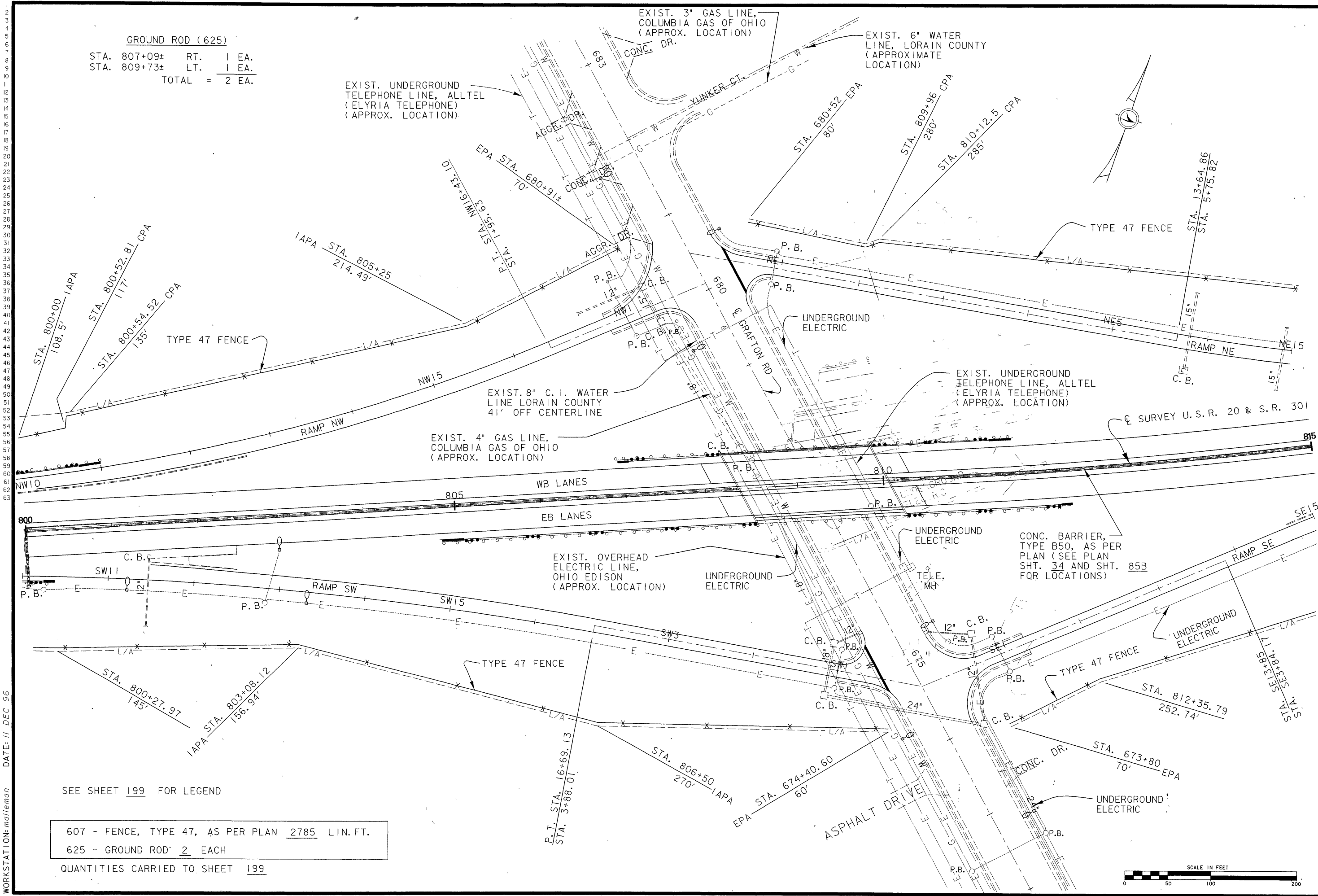
607 - FENCE, TYPE 47, AS PER PLAN 3057 LIN. FT.

QUANTITY CARRIED TO SHEET 199



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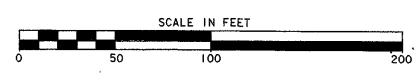
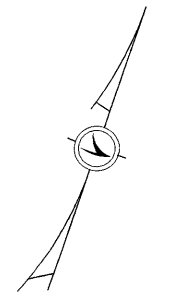
GROUND ROD (625)
 STA. 807+09± RT. 1 EA.
 STA. 809+73± LT. 1 EA.
 TOTAL = 2 EA.



SEE SHEET 199 FOR LEGEND

607 - FENCE, TYPE 47, AS PER PLAN 2785 LIN. FT.
625 - GROUND ROD 2 EACH

QUANTITIES CARRIED TO SHEET 199



DESIGN FILE: c:\dgn\lor20\lfence2.dgn
 WORKSTATION: mal\eman DATE: 11 DEC 96

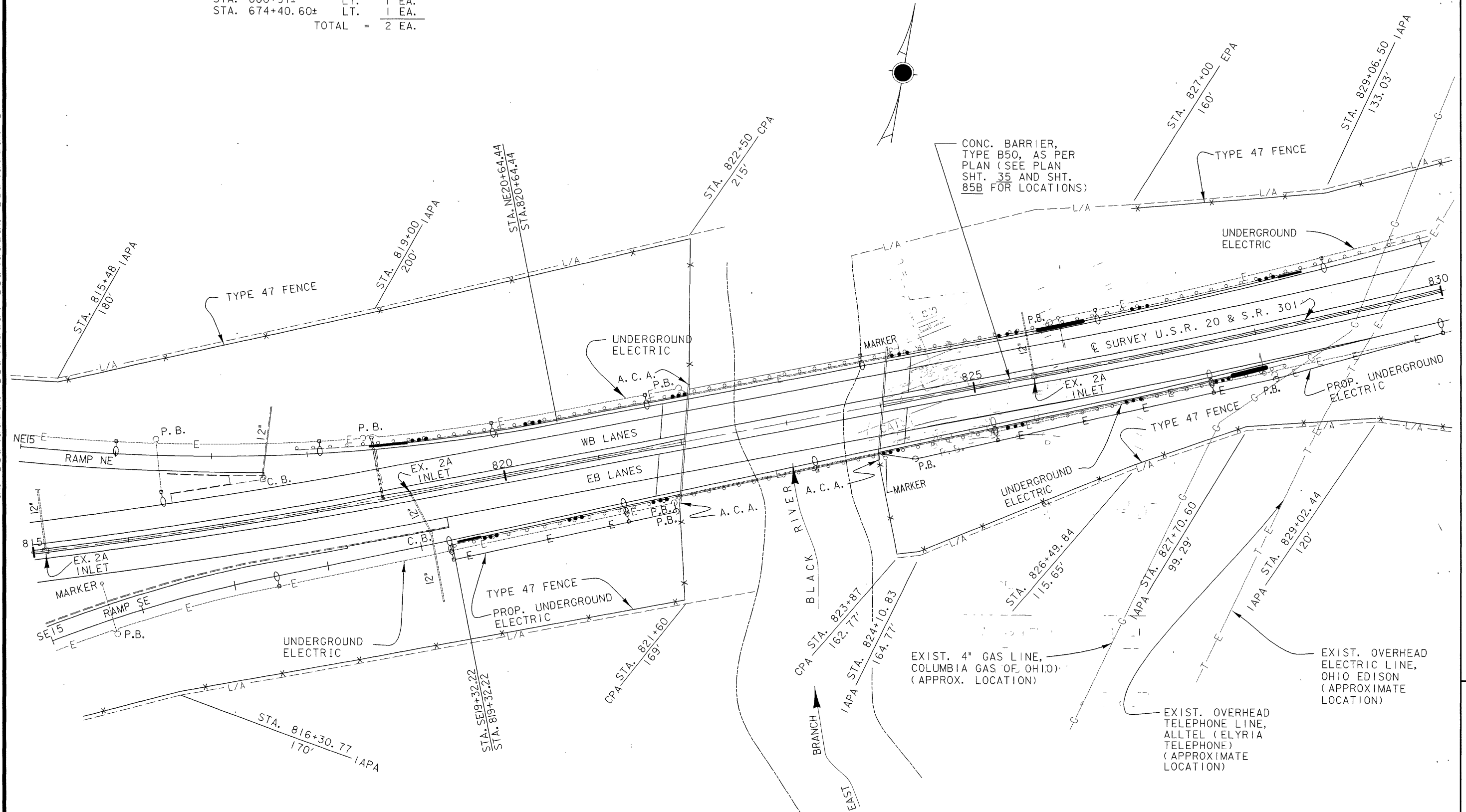
CALCULATED ADB CHECKED MGA

FENCE PLAN
STA. 800+00 TO STA. 815+00

LOR-20-12.62

210
351

GROUND ROD (625)
 STA. 680+91± LT. 1 EA.
 STA. 674+40.60± LT. 1 EA.
 TOTAL = 2 EA.



CONC. BARRIER,
 TYPE B50, AS PER
 PLAN (SEE PLAN
 SHT. 35 AND SHT.
 85B FOR LOCATIONS)

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DESIGN FILE: c:\dgn\lor20\ fence2.dgn
 WORKSTATION: mallemann DATE: 11 DEC 96

SEE SHEET 199 FOR LEGEND

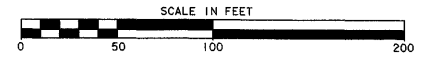
607 - FENCE, TYPE 47, AS PER PLAN 2522 LIN. FT.
625 - GROUND ROD 2 EA.

QUANTITY CARRIED TO SHEET 199

EXIST. 4" GAS LINE,
 COLUMBIA GAS OF OHIO
 (APPROX. LOCATION)

EXIST. OVERHEAD
 TELEPHONE LINE,
 ALLTEL (ELYRIA
 TELEPHONE)
 (APPROXIMATE
 LOCATION)

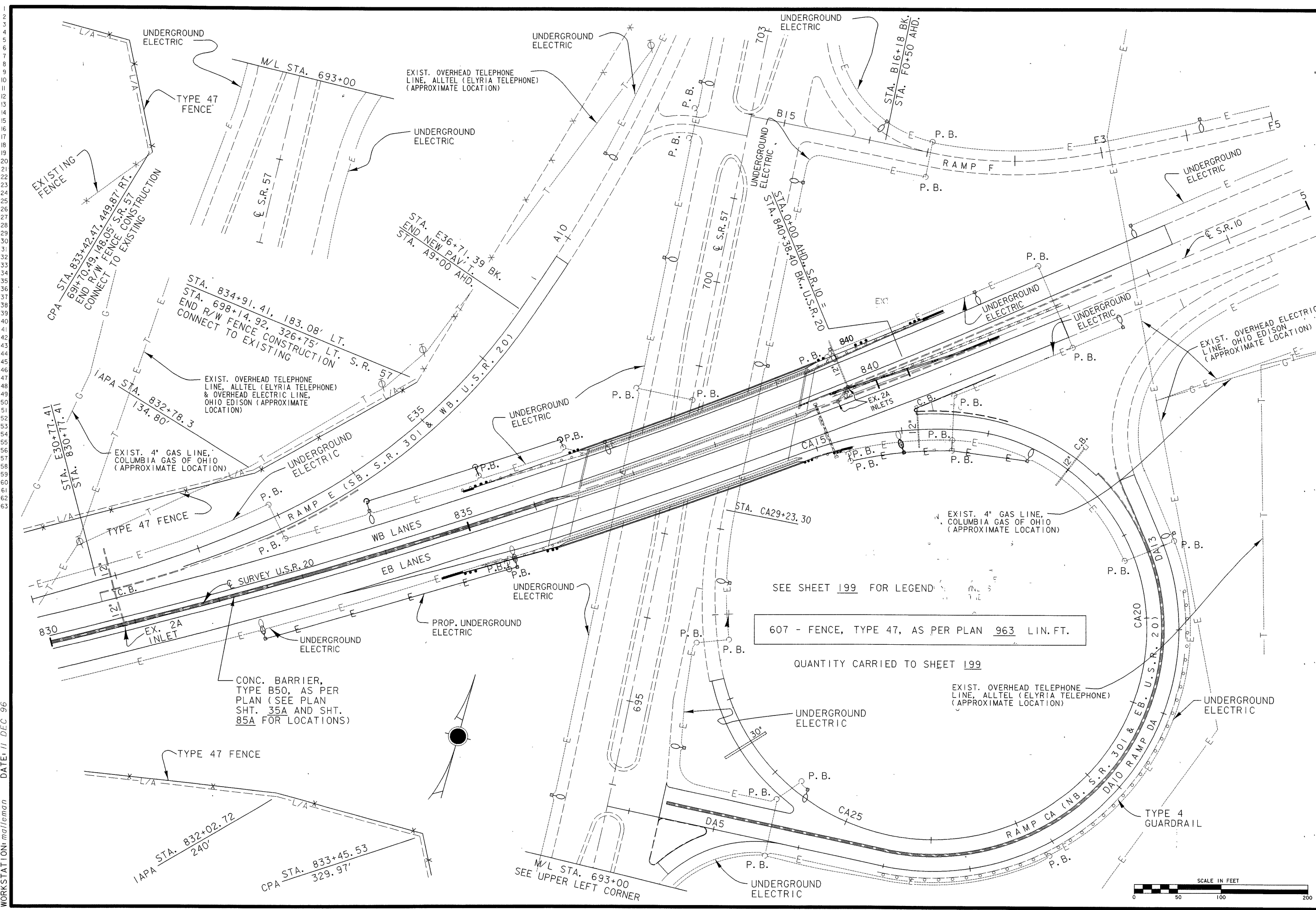
EXIST. OVERHEAD
 ELECTRIC LINE,
 OHIO EDISON
 (APPROXIMATE
 LOCATION)



FENCE PLAN
 STA. 815+00 TO STA. 830+00

LOR-20-12.62

DESIGN FILE: c:\dgn\lor20\lence2.dgn
WORKSTATION: malleman DATE: 11 DEC 96



FENCE PLAN
STA. 830+00 (U.S.R. 20) TO STA. 5+00 (S.R. 10)

LOR-20-12.62

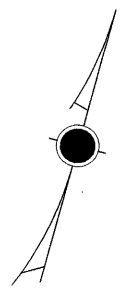
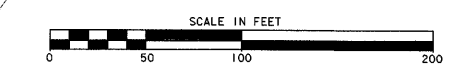
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CALCULATED
ADB
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607 - FENCE, TYPE 47, AS PER PLAN 963 LIN. FT.

QUANTITY CARRIED TO SHEET 199

SEE SHEET 199 FOR LEGEND



GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

213
351

LORAIN COUNTY
LOR-20-12.62

1. REFERENCE DRAWINGS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS :

A-1-69	DATED	6/12/69
AS-1-81	DATED	9/15/94 (REV.)
BP-5.1	DATED	10/28/94
EXJ-3-82	DATED	8/1/84 (REV.)
EXJ-4-87	DATED	11/12/93 (REV.)
PCB-91	DATED	4/24/92
RB-1-55	DATED	2/2/59
VPF-1-90	DATED	3/24/93
SD-1-69	DATED	6/12/69

2. SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS :

815	DATED	7/17/95
849	DATED	6/14/95
933	DATED	7/17/95
944	DATED	12/7/95
949	DATED	6/14/95

3. DESIGN DATA

CONCRETE CLASS S - COMPRESSIVE STRENGTH $F'_c = 4,500$ PSI FOR SUPERSTRUCTURE

CONCRETE CLASS C - UNIT STRESS $F_c = 1,333$ PSI FOR SUBSTRUCTURE

REINFORCING STEEL - ASTM A615, A616 OR A617

GRADE 60 MINIMUM YIELD STRENGTH $F_y = 60,000$ PSI.

STRUCTURAL STEEL - ASTM A36 - YIELD STRENGTH 36,000 PSI.

4. DECK PROTECTION METHOD

- MICRO-SILICA MODIFIED CONCRETE OVERLAY
- SEALING OF CONCRETE SURFACES

5. EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE. 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 513.02.

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

THE PLANS OF THE EXISTING BRIDGES ARE AVAILABLE FOR PERUSAL AT THE OHIO DEPARTMENT OF TRANSPORTATION'S DISTRICT 3 OFFICE, ASHLAND, OHIO.

6. ITEM 202 - PORTIONS OF STRUCTURE REMOVED

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING RAILING, RAILING POST, PART OF THE EXISTING PARAPET AS SHOWN IN THE PLANS. ALL LOOSE OR UNSOUND CONCRETE SHALL BE REMOVED. ALSO TO BE REMOVED SHALL BE ANY SOUND CONCRETE NECESSARY TO OBTAIN A MINIMUM 4" THICKNESS OF NEW CONCRETE.

THE FINAL CONCRETE REMOVAL SHALL BE PERFORMED USING THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS. A HOE RAM, CONCRETE CRUSHER OR OTHER SIMILAR TYPE IMPACTIVE DEVICE, WILL NOT BE PERMITTED FOR ANY OF THE REMOVAL WORK. EXISTING SMOOTH CONSTRUCTION JOINTS OR SAW CUTS SHALL BE MECHANICALLY SCARIFIED 1/4" DEEP TO ENSURE BONDING OF THE NEW CONCRETE.

DISPOSAL:

ALL MATERIALS REMOVED FROM THE STRUCTURE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE SITE. UNDER NO CIRCUMSTANCES SHALL THE MATERIALS BE PERMITTED TO REMAIN ON THE PREMISES, RIGHT-OF-WAY OR STREETS PENDING DISPOSAL OF SAME OR FOR ANY OTHER PURPOSES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

PAYMENT:

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED", WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

7. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE ABUTMENTS AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY A HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND A HYDRAULIC SPLITTER USED AS PER MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE PRESERVED. IF EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE. THE LENGTH INTO THE ABUTMENT SHALL BE 6 INCHES. ALL DOWEL HOLES SHALL BE GROUTED AS PER ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT. THE GROUT SHALL BE AN EPOXY GROUT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

8. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END

THIS ITEM OF WORK SHALL BE USED TO REMOVE PARAPET ENDS AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY A HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND A HYDRAULIC SPLITTER USED AS PER MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE PRESERVED. IF EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE. THE LENGTH INTO THE ABUTMENT SHALL BE 6 INCHES. ALL DOWEL HOLES SHALL BE GROUTED AS PER ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT. THE GROUT SHALL BE AN EPOXY GROUT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

9. ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

10. ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:

ALL DOWEL HOLES SHALL BE CORED DRILLED AND GROUTED WITH AN EPOXY MORTAR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

11. ITEM 511 - CLASS S CONCRETE, MISC.: PARAPETS

THIS ITEM SHALL BE USED TO RETROFIT THE EXISTING PARAPETS AS PER DETAILS IN THE PLAN.

ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE RETROFITTED, SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL THEN BE MECHANICALLY SCARIFIED 1/4" DEEP.

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND ALL OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

THE CONCRETE SURFACES TO BE RETROFITTED SHALL BE THOROUGHLY DRENCHED WITH CLEAN WATER AND ALLOWED TO DRY TO A DAMP CONDITION JUST BEFORE PLACING THE CONCRETE.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

QUANTITIES PER CUBIC YARD				
FINE (LB)	AGGREGATE COARSE (LB)	TOTAL (LB)	CEMENT CONTENT	WATER/CEMENT RATIO
1555	1100	2655	715	0.44

AIR CONTENT = 8% PLUS OR MINUS 2%
TYPE A CHEMICAL ADMIXTURE SHALL BE USED.

EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE FORMED JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED, IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE SAWED 1/4" WIDE JOINTS SHALL BE SEALED 3/4" DEEP (MINIMUM) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINNEAPOLIS OR A LOW DENSITY CLOSED CELL, CROSSLINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50, MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENNA, N.Y.

ALL OTHER PROVISIONS OF ITEM 511 SHALL REMAIN IN EFFECT.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A OR B.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511 "CLASS S CONCRETE, PARAPETS, AS PER PLAN" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

12. ITEM 511 - CLASS S CONCRETE MISC.: PIER ENCASUREMENT

PIER COLUMNS SHALL BE ENCASED AS PER DETAILS IN THE PLAN. ALL LOOSE AND DISINTEGRATED CONCRETE AND CALCIUM CARBONATE DEPOSITS SHALL BE REMOVED WITH HAND TOOLS. WITHIN FORTY EIGHT (48) HOURS BEFORE PLACING CONCRETE, THE SURFACE OF THE EXISTING PIERS AGAINST WHICH THE CONCRETE SHALL BE PLACED AND THE EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING. THE EXISTING CONCRETE SURFACE AGAINST WHICH CONCRETE WILL BE POURED SHALL BE KEPT WET FOR AT LEAST ONE (1) HOUR BEFORE PLACING CONCRETE, AND BE APPROACHING DRYNESS AT THE TIME OF THE PLACING OF THE CONCRETE TO FACILITATE THE BOND.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE CEMENT USED SHALL BE EXPANSIVE HYDRAULIC CEMENT CONFORMING TO ASTM C845, TYPE K AS PER 701.08.

QUANTITIES PER CUBIC YARD				
FINE (LB)	AGGREGATE COARSE (LB)	TOTAL (LB)	CEMENT CONTENT	WATER/CEMENT RATIO
1300	1275	2575	715	0.50

AIR CONTENT = 8% PLUS OR MINUS 2%
TYPE D CHEMICAL ADMIXTURE SHALL BE USED.

THE SLUMP AT THE TIME OF CONCRETE PLACEMENT SHALL BE BETWEEN 5 AND 7 INCHES.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A WATER CURING.

A CEMENT COMPANY REPRESENTATIVE SHALL BE ON HAND DURING THE MIXING AND PLACING OPERATION THE FIRST POUR IF THE REDI-MIX PRODUCER HAS NOT HAD PREVIOUS EXPERIENCE WITH TYPE K CEMENT.

REDI-MIX PRODUCERS WHO HAVE HAD PREVIOUS EXPERIENCES SHALL HAVE ON HAND A PERSON WHO HAS BEEN FACTORY TRAINED IN THE USE OF TYPE K CEMENT.

ALL OTHER PROVISIONS OF ITEM 511 SHALL REMAIN IN EFFECT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511 "CLASS S CONCRETE MISC.: PIER ENCASUREMENT" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

13. ITEM 511 - CLASS C CONCRETE, ABUTMENT, AS PER PLAN

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511 EXCEPT THAT THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

14. ITEM 516 - REFURBISH AND RESET BEARING, AS PER PLAN

THIS ITEM SHALL CONSIST OF REFURBISHING AND RESETTING ALL OF THE EXISTING ROCKER BEARINGS AT ABUTMENTS.

REFURBISH BEARING :

THE WORK SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING AS REQUIRED BY SYSTEM "OZEU", REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARING ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARING.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORKS SHALL BE TO THE SATISFACTION OF THE ENGINEER.

RESET BEARING :

THE FOLLOWING PROCEDURE SHALL BE USED TO RESET THE ROCKER BEARINGS.

1. RAISE THE ENTIRE SUPERSTRUCTURE AT THE ABUTMENT UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATES AND THE BEARINGS. MAXIMUM LIFT OF SUPERSTRUCTURE SHALL BE 1". ALL BEAMS SHALL BE RAISED SIMULTANEOUSLY. HOWEVER, BEAMS SHALL NOT BE RAISED AT THE REAR ABUTMENT AND AT THE FORWARD ABUTMENT AT THE SAME TIME.
2. RESET ROCKERS AND/OR BASE PLATES IN FINAL POSITION BY CENTERING THE BASE PLATES UNDER THE SOLE PLATES BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION AT 60° F (+10° F, -0° F).
3. LOWER ENTIRE SUPERSTRUCTURE SIMULTANEOUSLY.

PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH AND RESET BEARING, AS PER PLAN.

POLYTECH, INC.						1 / 23
CONSULTING ENGINEERS						CLEVELAND, OHIO
GENERAL NOTES						
BRIDGE NO. LOR-20-1303						
BRIDGE NO. LOR-20-1356 L & R						
BRIDGE NO. LOR-20-1380 L & R						
BRIDGE NO. LOR-20-1451 L & R						
LORAIN COUNTY						OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	-	VB	BS	8/96	

DRAWING = G-NOTE1 DATE = JULY 22, 1996

DRAWING = G-NOTE2 DATE = JULY 26, 1996

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		



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15. ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THE WORK SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

IF, DURING THE JACKING OPERATIONS, ANY DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. COST OF REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

16. ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A (OR B)

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO MODIFY THE EXISTING END DAMS AS PER DETAILS IN THE PLAN. THE WORK INCLUDES TRIMMING EXISTING ANGLES, PROVIDE NEW ANGLES WITH ANCHOR PLATES, STEEL RETAINERS, STEEL BARS, STRIP SEAL GLAND, FIELD WELDING AND METALLIZING (AS PER STD.DWG. EXJ-4-87 SHEET 5 OF 5), AND ANY OTHER MATERIALS NEEDED, AS SHOWN ON THE PLANS.

THE STEEL RETAINER AND STRIP SEAL GLAND SHALL PROVIDE A MOVEMENT RATING OF 3" AND SHALL BE PER STANDARD DRAWING EXJ-4-87. THE STEEL RETAINER SHALL BE PROVIDED IN MAXIMUM LENGTHS POSSIBLE TO ALLOW FOR TRAFFIC MAINTENANCE AND SHALL BE WELDED TOGETHER TO FORM A WATERTIGHT JOINT. THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 516 "VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A (OR B)" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED ABOVE.

17. ITEM 516 - HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO COMPLETE THE MODIFICATION OF EXISTING END DAMS AS PER DETAILS IN THE PLAN. THE WORK INCLUDES EXTENDING STEEL RETAINERS AND STRIP SEAL GLAND INTO THE RETROFIT/NEW PARAPET, PROVIDE CURB PLATES, STUDS, FIELD WELDING AND PAINTING, AND ANY OTHER MATERIALS NEEDED, AS SHOWN ON THE PLANS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 516 "HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED ABOVE.

18. ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

18A. ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN

THE MATERIAL SHALL BE NO. 57 GRAVEL.

19. ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES, AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

20. ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN

SEE SHEET 20/23 FOR ALL DETAILS AND NOTES.

21. ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING

SEE SHEET 20/23 FOR ALL DETAILS AND NOTES.

22. ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF PATCHING EXISTING CONCRETE AT THE LOCATIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH ITEM 519 AND THE FOLLOWING ADDITIONAL REQUIREMENTS.

- A. SURFACE PREPARATION UNDER 519.04 SHALL INCLUDE THE THOROUGH ABRASIVE BLASTING AND AIR CLEANING OF ALL SURFACES WHICH ARE TO BE IN CONTACT WITH THE PATCHING MATERIAL.
- B. CLEANING SHALL PRECEDE THE APPLICATION OF THE PATCHING MATERIAL OR THE ERECTION OF THE FORMS BY LESS THAN 24 HOURS.
- C. REMOVAL DEPTH SHALL BE 3 INCHES MINIMUM OR TO SOUND CONCRETE.
- D. NO STEEL WIRE FABRIC SHALL BE REQUIRED.
- E. THE CONCRETE MAY BE TROWELLED IN PLACE, PROVIDING THAT AN ACCEPTABLE SMOOTH APPEARANCE CAN BE ACHIEVED AS DETERMINED BY THE ENGINEER.

PAYMENT SHALL BE MADE UNDER THE SQUARE FOOT UNIT PRICE FOR ITEM 519, "PATCHING CONCRETE STRUCTURES, AS PER PLAN".

23. ITEM 815 - FIELD PAINTING OF EXISTING STEEL

ALL FIELD PAINTING OF EXISTING STEEL SHALL BE PERFORMED AS DESCRIBED HEREIN AND IN THE SUPPLEMENTAL SPECIFICATION 815.

THE FIELD PAINTING SHALL BE APPLIED TO ALL EXPOSED SURFACES OF EXISTING STRUCTURAL STEEL INCLUDING ALL BEAMS, CROSS FRAMES, BEARINGS, END DAMS (EXISTING AND NEW) AND SCUPPERS.

ALL EXPOSED SURFACES OF EXISTING STRUCTURAL STEEL SHALL BE CLEANED, PRIMED AND FIELD PAINTED IN CONFORMANCE TO THE SPECIFICATION.

SEE ALSO THE SPECIFICATION FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

24. ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY

MICRO-SILICA MODIFIED CONCRETE OVERLAY SHALL BE IN ACCORDANCE WITH THE PROPOSAL NOTE EXCEPT THAT THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

25. ITEM SPECIAL - KEYWAY DRAIN

HOLES SHALL BE DRILLED IN THE ABUTMENT FOR KEYWAY DRAINS AS SHOWN IN THE PLAN DETAILS. THE HOLES SHALL BE SPACED AT APPROXIMATELY FIVE FOOT CENTERS AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL, KEYWAY DRAIN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

26. TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES

A. GENERAL

THIS WORK SHALL CONSIST OF CONSTRUCTING AND REMOVING RIGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK IN ADDITION TO THE FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE WORK INCLUDES TEMPORARY PLATFORMS OR OTHER MEANS TO PREVENT LOOSE MATERIALS FROM FALLING DURING REMOVAL, MODIFICATION OF SUPERSTRUCTURE AND FIELD PAINTING OF EXISTING STEEL WORK.

B. REQUIREMENTS

IN ORDER TO PROTECT AGAINST DAMAGE FROM FALLING MATERIAL AND DEBRIS, WHILE SUPERSTRUCTURE CONCRETE IS BEING PLACED OR WHILE WORK IS IN PROGRESS OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT TEMPORARY PROTECTIVE STRUCTURES. THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXTERIOR STRINGERS A SUFFICIENT DISTANCE TO PROTECT UNDER THE BRIDGE RAILINGS.

AFTER THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

DETAILS OF THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES INCLUDING THE PROPOSED TEMPORARY UNDERCLEARANCES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

C. PAYMENT

TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE PRICE BID FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED".

27. CONSTRUCTION JOINT PREPARATION

THE CONCRETE SHALL BE REMOVED TO A ROUGH SURFACE. 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 MATERIALS BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS TO THE ENGINEER. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

28. REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL INCLUDING DOWEL HOLES (IF NECESSARY) AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 100 POUNDS PER BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE. THE DOWEL HOLES IN THE EXISTING CONCRETE TO ACCOMMODATE THE NEW REINFORCEMENT WILL BE PAID SEPARATELY.

29. BAR LAP LENGTHS

UNLESS OTHERWISE SHOWN, BAR LAPS SHALL BE NOT LESS THAN:

BAR NO.	5	6	7	8	9	10
LENGTH FOR EPOXY COATED	2'-0"	2'-5"	3'-0"	3'-11"	5'-0"	6'-4"

POLYTECH, INC. 2 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

GENERAL NOTES

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
PSS	PSS	-	VB	BS	8/96	

GENERAL NOTES

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30. DOWEL HOLES AND REINFORCING STEEL

DOWEL HOLES SHALL BE DRILLED WHERE SHOWN IN THE PLANS. REINFORCING STEEL SHALL BE INSTALLED USING NONSHRINK, NONMETALLIC GROUT. ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE DOWEL HOLE SHALL BE LOCATED WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER) PRIOR TO DRILLING THE HOLES. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE EXISTING BAR.

DOWEL HOLES AND GROUTING SHALL BE INCLUDED WITH ITEM 510, "DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT" FOR PAYMENT.

31. MECHANICAL CONNECTORS FOR REINFORCING STEEL

AN APPROVED TYPE OF MECHANICAL CONNECTOR REINFORCING BARS SHALL BE PROVIDED AT THE LOCATIONS SHOWN IN THE PLANS. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER POUND FOR ITEM 509.

32. TEMPORARY WEDGE

AFTER THE CONCRETE OVERLAY HAS BEEN PLACED AND BEFORE THE BRIDGE IS OPENED TO TRAFFIC, A TEMPORARY WEDGE WILL BE INSTALLED TO MAINTAIN TRAFFIC IF THE PERMANENT ASPHALT IS NOT IN PLACE. THE TEMPORARY WEDGE WILL BE 404 ASPHALT CONCRETE BUILT AS PER STANDARD DRAWING BP-5, EXCEPT NO TACK COAT WILL BE REQUIRED. THE TEMPORARY WEDGE WILL BE FEATHERED AT ONE INCH PER TWENTY-FIVE FEET OR AS DIRECTED BY THE ENGINEER. THE TEMPORARY WEDGE WILL BE COMPLETELY REMOVED JUST BEFORE ANY NEW ROADWAY ASPHALT IS INSTALLED AND IN NO CASE SHALL TRAFFIC BE ALLOWED TO CROSS A BRIDGE WITHOUT AN APPROVED TEMPORARY WEDGE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

33. WORK LIMITATIONS

NO CONCRETE DECK OVERLAY SHALL BE PLACED BEFORE APRIL 15. THE CONTRACTOR SHALL SCHEDULE THE WORK SO THAT ALL DECK OVERLAYS ARE PLACED BEFORE OCTOBER 15. IF FOR SOME UNFORSEEN CIRCUMSTANCES THE DECK OVERLAYS OR PORTIONS OF DECK OVERLAY ARE NOT PLACED BY OCTOBER 15, REGARDLESS OF THE WORK REMAINING, THE FULL DEPTH REPAIRS SHALL BE COMPLETED AS PER 511 AND THE UNFINISHED DECK SHALL BE RESURFACED WITH ITEM 404 ASPHALT CONCRETE AND OPENED TO TRAFFIC. THE CONTRACTOR SHALL PLACE AND MAINTAIN AT HIS EXPENSE THE ASPHALT WEARING SURFACE UNTIL REMOVED AT HIS EXPENSE THE FOLLOWING SPRING WHEN THE DECK OVERLAY CAN BE PLACED AFTER APRIL 15.

34. ITEMS NOT INCLUDED IN BRIDGE PLANS

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THE BRIDGE PLANS. SEE ROADWAY PLANS FOR DETAILS.


GRADING, APPROACH SLAB, APPROACH PAVEMENT, AND MAINTENANCE OF TRAFFIC.


35. PROPOSED WORK NOTE


IN GENERAL, THE PROPOSED WORK INCLUDES :


- REMOVING ALL LOOSE AND UNSOUND CONCRETE, SCARIFYING 1/4" DEEP SOUND CONCRETE, LAYING 1 1/2" (MIN.) THICK MICRO-SILICA MODIFIED CONCRETE OVER BRIDGE DECK AND SOME DESIGNATED APPROACH SLABS.
- RETROFITTING/REPLACING EXISTING BRIDGE DEFLECTOR PARAPET.
- REPLACING EXISTING BACKWALL AND INSTALLING POROUS BACKFILL WITH FILTER FABRIC AND OUTLET DRAINAGE PIPE AT SIDES.
- INSTALLING APPROACH SLAB ANCHOR BARS TO THE ABUTMENT BACKWALL.
- MODIFYING EXISTING END DAMS WITH STRIP SEAL FOR STEEL BEAM BRIDGES.
- REFURBISHING AND RESETTING ABUTMENT BEARINGS.
- PLUGGING/RAISING EXISTING SCUPPERS.
- TRIMMING ENDS OF BEAM.
- CONCRETE REPAIR AND SEALING OF PARAPETS AND PIER COLUMNS.
- PAINTING THE STRUCTURAL STEEL.
- ENCASING PIER COLUMNS.

LEGEND

 REMOVE PORTION OF EXIST. DECK SLAB, SAFETY CURB, APPROACH SLAB, APPROACH CURB, PARAPET AND/OR BRIDGE RAILING

 TRIM EXIST. BEAM

 PLUG EXISTING SCUPPER

 MODIFY EXISTING SCUPPER

 ENCASE PIER COLUMN

NOTE:

IN THESE PLANS, ALL EXISTING FEATURES ARE SHOWN WITH DASH LINES AND WITH LIGHT PEN WEIGHT WHILE THE PROPOSED WORKS ARE SHOWN WITH FULL LINES AND HEAVY PEN WEIGHT.

ABBREVIATIONS

N.S.	=	NEAR SIDE
F.S.	=	FAR SIDE
E.S.	=	EACH SIDE
P.E.J.F.	=	PREFORMED EXPANSION JOINT FILLER
C.J.	=	CONSTRUCTION JOINT
TYP.	=	TYPICAL
MIN.	=	MINIMUM
EXIST.	=	EXISTING
CONC.	=	CONCRETE
℄	=	CENTERLINE
STD.	=	STANDARD
DWG.	=	DRAWING
DIA.	=	DIAMETER
C/C	=	CENTER TO CENTER
F/F	=	FACE TO FACE
T/T	=	TOE TO TOE

DRAWING = G-NOTE3 DATE = JULY 26, 1996

POLYTECH, INC.					3 / 23
CONSULTING ENGINEERS					CLEVELAND, OHIO
GENERAL NOTES					
BRIDGE NO. LOR-20-1303					
BRIDGE NO. LOR-20-1356 L & R					
BRIDGE NO. LOR-20-1380 L & R					
BRIDGE NO. LOR-20-1451 L & R					
LORAIN COUNTY					OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	PSS	-	VB	BS	8/96

STRUCTURE SUMMARY

CALC. BY PSS 8/96
 CHECKED VKB 8/96

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5	OHIO	

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LORAIN COUNTY
 LOR-20-12.62

ITEM	BRIDGE NUMBER							PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL**	UNIT	DESCRIPTION	SEE SHEET NO.
	LOR-20-1303	LOR-20-1356L	LOR-20-1356R	LOR-20-1380L	LOR-20-1380R	LOR-20-1451L	LOR-20-1451R	I	II						
202	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP			202	11200		LUMP	PORTIONS OF STRUCTURE REMOVED	1/23
202	3	3	3	3	3	3	3			202	11301		CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END	1/23
202				11						202	11301		CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT	1/23
503		LUMP	LUMP	LUMP		LUMP	LUMP			503	21301		LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN	1/23
509	9,029	3,378	3,378	4,256	3,184	3,380	3,378			509	15840		POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	
510	764	438	438	488	468	438	438			510	10001		EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	1/23
511	30	16	16	18	18	16	16			511	34450		CU YD	CLASS S CONCRETE, MISC.: PARAPETS	1/23
511	34									511	34450		CU YD	CLASS S CONCRETE, MISC.: PIER ENCASMENT	1/23
511				11						511	45701		CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	1/23
SPECIAL	222	107	107	127	127	107	107			SPECIAL	51267504		SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
SPECIAL	101	63	63			59	59			SPECIAL	51267510		SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
513				10	10					513	21000		EACH	TRIMMING OF BEAM END	
516	117			24	48					516	10900		LIN FT	ELASTOMERIC COMPRESSION SEAL	
516	218									516	10901		LIN FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN	5/23
516				39						516	11801		LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A	2/23
516	152			39	78					516	11801		LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B	2/23
516	8			8	8					516	11901		LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN	2/23
516				10	10					516	46801		EACH	REFURBISH AND RESET BEARING, AS PER PLAN	1/23
516				LUMP	LUMP					516	47001		LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	2/23
518				16	16					518	12801		EACH	SCUPPER MODIFICATION, AS PER PLAN	2/23
518		29	29	26		26	26			518	21201		CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	2/23
518		115	115	59		115	115			518	40001		LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	2/23
518		40	40	20		40	40			518	40011		LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	2/23
SPECIAL		18	18			18	18			SPECIAL	51861400		EACH	KEYWAY DRAIN	2/23
518	16	16	16			16	16			518	62200		EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING	2/23
519	18									519	11101		SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	2/23
SPECIAL	578		24	12	111	30	9			SPECIAL	51911502		SQ FT	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	
SPECIAL										SPECIAL	51922100		LIN FT	CONCRETE REPAIR BY EPOXY INJECTION INCLUDING SURFACE PREPARATION	
SPECIAL	1,722	511	511	609	620	511	511			SPECIAL	51922006		SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1/2 INCHES THICK)	
SPECIAL	36	11	11	16	17	11	11			SPECIAL	51922100		CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)	
SPECIAL	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP			SPECIAL	51922300		LUMP	TEST SLAB	
SPECIAL	443									SPECIAL	60739900		LIN FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	
815	22,800			8,000	8,000					815	00050		SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	2/23
815	22,800			8,000	8,000					815	00056		SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	2/23
815	22,800			8,000	8,000					815	00060		SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	2/23
815	22,800			8,000	8,000					815	00066		SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	2/23
815	50			25	25					815	00504		MAN HOUR	GRINDING FINS, TEARS, SLIVERS	
815	5,100									815	00508		LIN FT	GRINDING FLANGE EDGES	

** QUANTITIES APPLY TO BRIDGE AS SHOWN

POLYTECH, INC. 4 / 23
 CONSULTING ENGINEERS CLEVELAND, OHIO

STRUCTURE SUMMARY

BRIDGE NO. LOR-20-1303
 BRIDGE NO. LOR-20-1356 L & R
 BRIDGE NO. LOR-20-1380 L & R
 BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

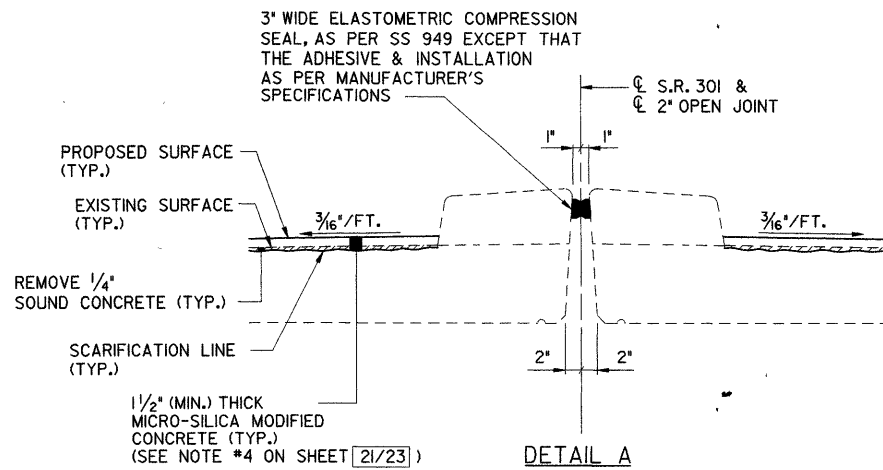
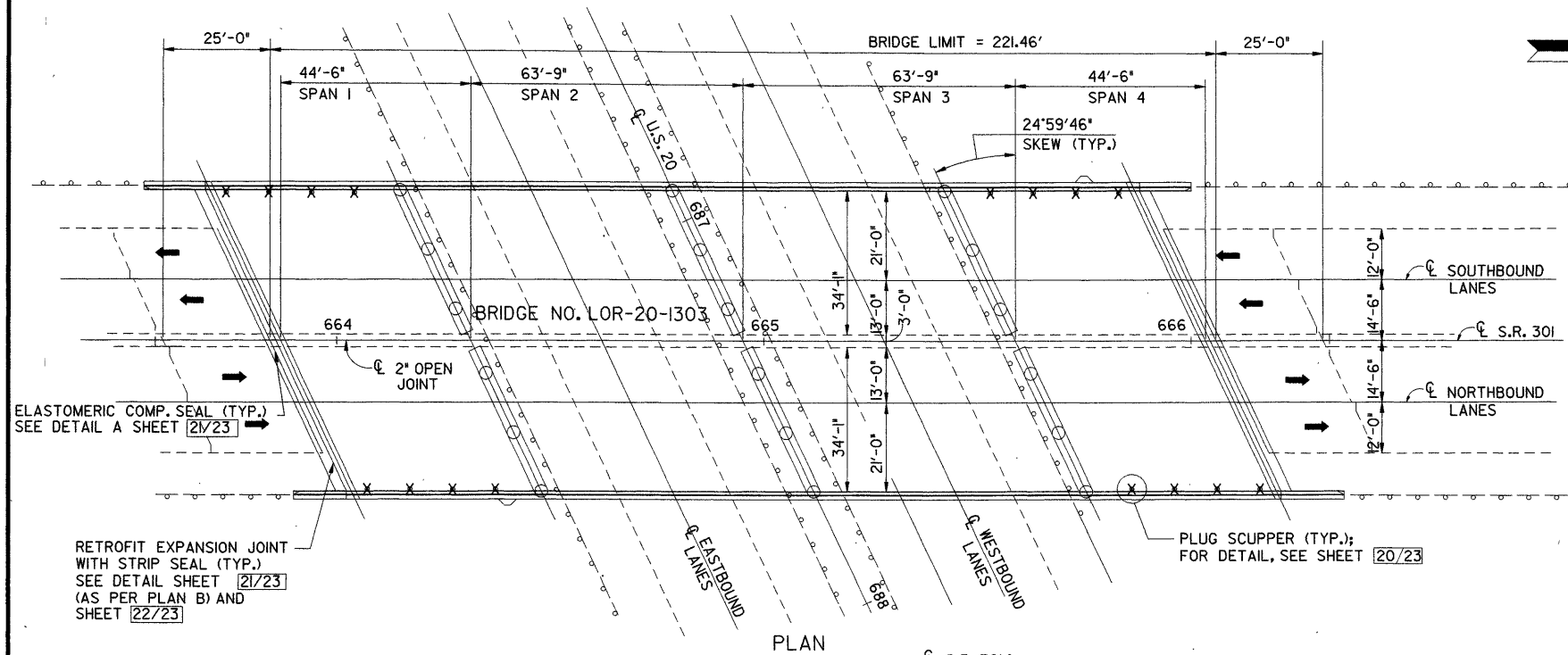
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PSS	PSS	-	VB	BS	8/96	DRA 9/96

DESIGN FILE: c:\dgm\lor20\qtn\new.dgn
 WORKSTATION: ddrmsrtr DATE: 23 SEP 96

FHWA REGION	STATE	PROJECT
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NOTE: THE ELASTOMERIC COMPRESSION SEAL SHALL BE TYPE 3W AS MANUFACTURED BY HYDROZO/JEENE INC. OR TYPE 3W-300 AS MANUFACTURED BY WATSON-BOWMAN ACME CORP. OR TYPE SF-225 AS MANUFACTURED BY R.J. WATSON, INC.

EXISTING STRUCTURE

TYPE: FOUR SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 44'-6", 63'-9", 63'-9" & 44'-6"

ROADWAY WIDTH: 34'-0" F/F CURB, SOUTHBOUND AND NORTHBOUND LANES

ALIGNMENT: TANGENT

SKEW: 25° 00' 00" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

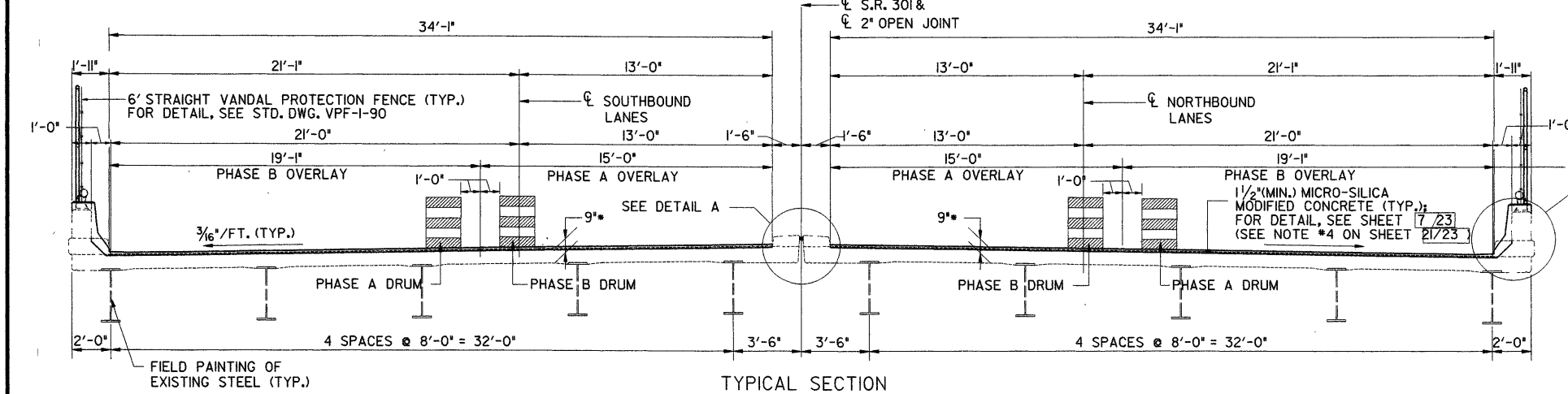
APPROACH SLABS: 25'-0" LONG (AS-I-67)

YEAR BUILT: 1970*

STRUCTURE FILE NO.: 4706609

PROPOSED WORK

1. REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET [21/23])
2. RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET.
3. INSTALL PROTECTIVE FENCE ON PARAPET.
4. RETROFIT EXPANSION JOINT WITH STRIP SEAL.
5. SEAL MEDIAN JOINT WITH COMPRESSION SEAL.
6. PLUG EXISTING SCUPPERS.
7. ENCASE SHOULDER PIER COLUMNS.
8. CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
9. FIELD PAINTING OF EXISTING STEEL.
10. SUBSTRUCTURE PATCHING, SEE SHEET [9A/23].



ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED			LUMP SUM	
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
509	15840	9,029	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60		3,727	5,202	100
510	10001	764	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			764	
511	34450	30	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			30	
511	34450	34	CU YD	CLASS S CONCRETE, MISC.: PIER ENCASEMENT		34		
SPECIAL	51267504	222	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			222	
SPECIAL	51267510	101	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		101		
516	10900	117	LIN FT	ELASTOMERIC COMPRESSION SEAL			117	
516	10901	218	LIN FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			218	
516	11801	152	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			152	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	

ESTIMATED QUANTITIES (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	1,722	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2 INCHES THICK)			1,722	
SPECIAL	51922100	36	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			36	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB*				LUMP SUM
SPECIAL	60739900	443	LIN FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			443	
815	00050	22,800	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			22,800	
815	00056	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			22,800	
815	00060	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			22,800	
815	00066	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			22,800	
815	00504	50	MAN HOUR	GRINDING FINES, TEARS, SLIVERS			50	
815	00508	5,100	LIN FT	GRINDING FLANGE EDGES			5,100	

NOTE: THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET [4/23]

SEE PROPOSAL NOTE

MODIFIED STRUCTURE

TYPE: FOUR SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 44'-6", 63'-9", 63'-9" & 44'-6"

ROADWAY WIDTH: 34'-1" T/T SAFETY SHAPE PARAPET & MEDIAN CURB, SOUTHBOUND AND NORTHBOUND LANES

ALIGNMENT: TANGENT

SKEW: 25° 00' 00" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-I-81)

POLYTECH, INC. 5/23
CONSULTING ENGINEERS CLEVELAND, OHIO

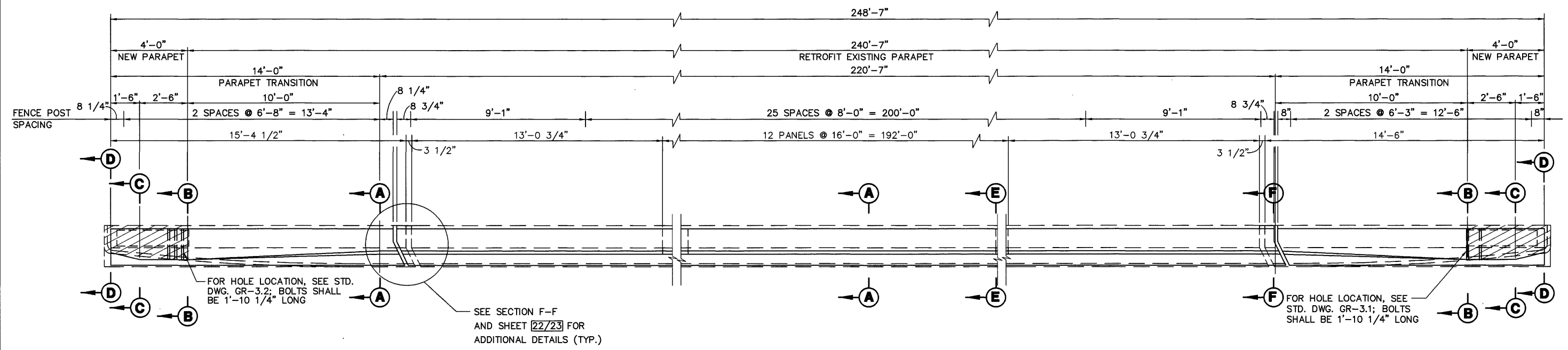
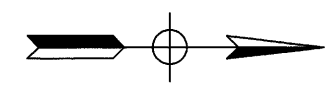
PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

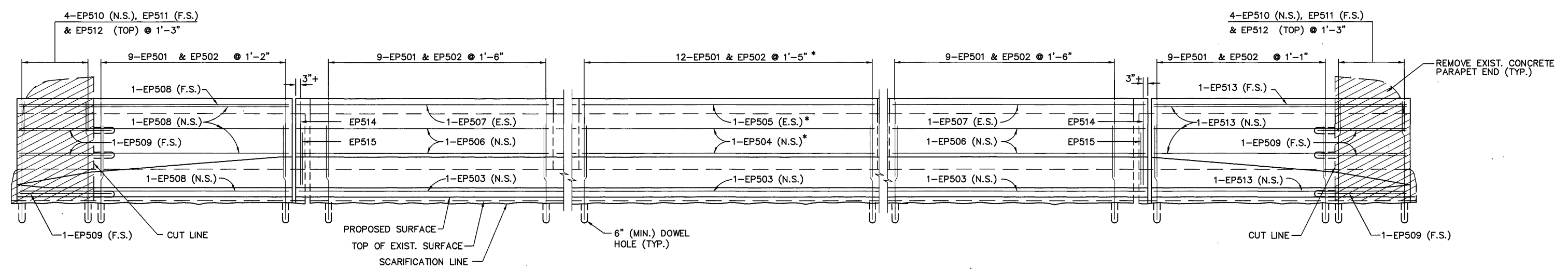
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PSS	RG	-	VB	BS	8/96	DRA 9/96

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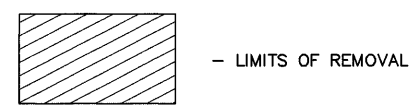
LORAIN COUNTY
LOR-20-12.62



PLAN



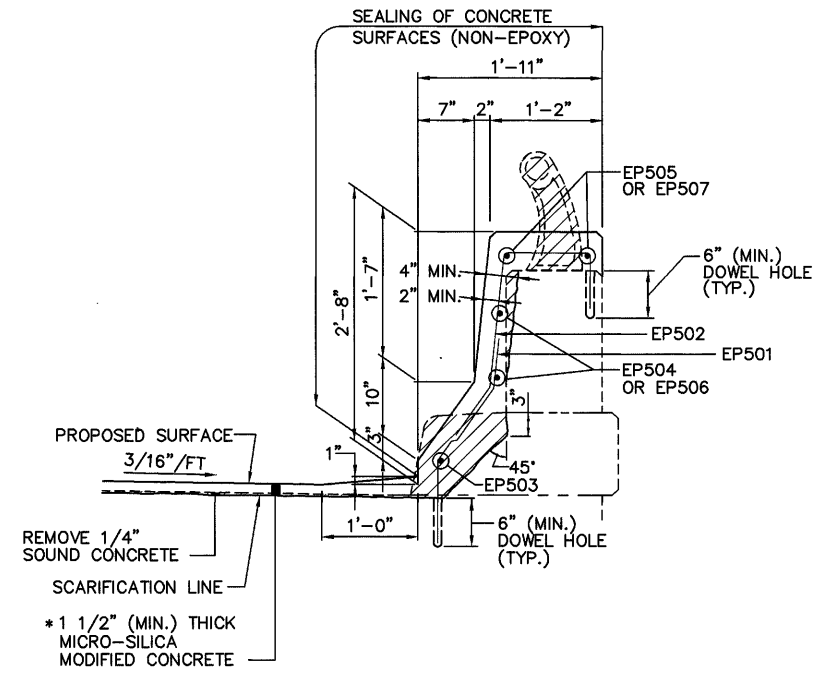
ELEVATION
(FENCE IS NOT SHOWN)



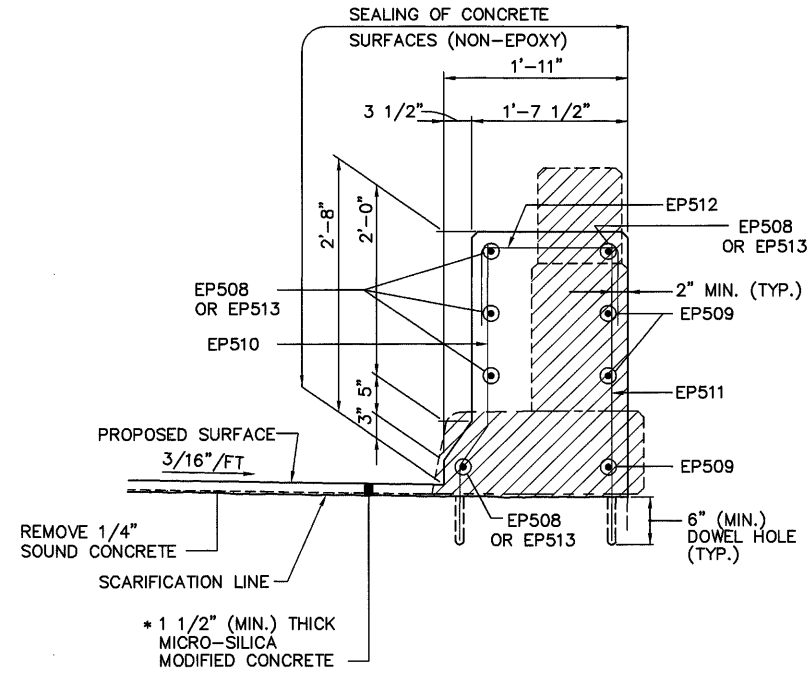
- NOTE:
1. MODIFICATION DETAILS TO LEFT PARAPET IS SHOWN. MODIFICATION DETAILS TO RIGHT PARAPET FOR THIS BRIDGE WILL BE SIMILAR.
 2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET [7723].
 3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
 4. 6' STRAIGHT VANDAL PROTECTION FENCE, POST SECTIONS AND DETAILS SHALL BE AS PER STD. DWG. VPF-1-90.
 5. FOR REINFORCEMENT SCHEDULE, SEE SHEET [23723].

DRAWING = 301PRPT DATE = AUGUST 2, 1996

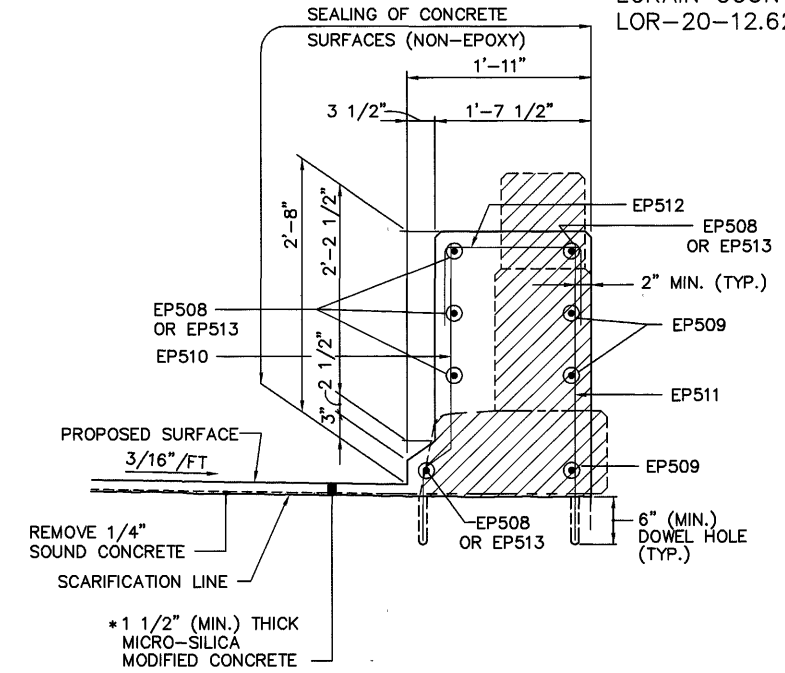
POLYTECH, INC.					6 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO					
PARAPET PLAN & ELEVATION					
BRIDGE NO. LOR-20-1303 UNDER S.R. 301					
LORAIN COUNTY					OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	MAC	-	VB	BS	8/96



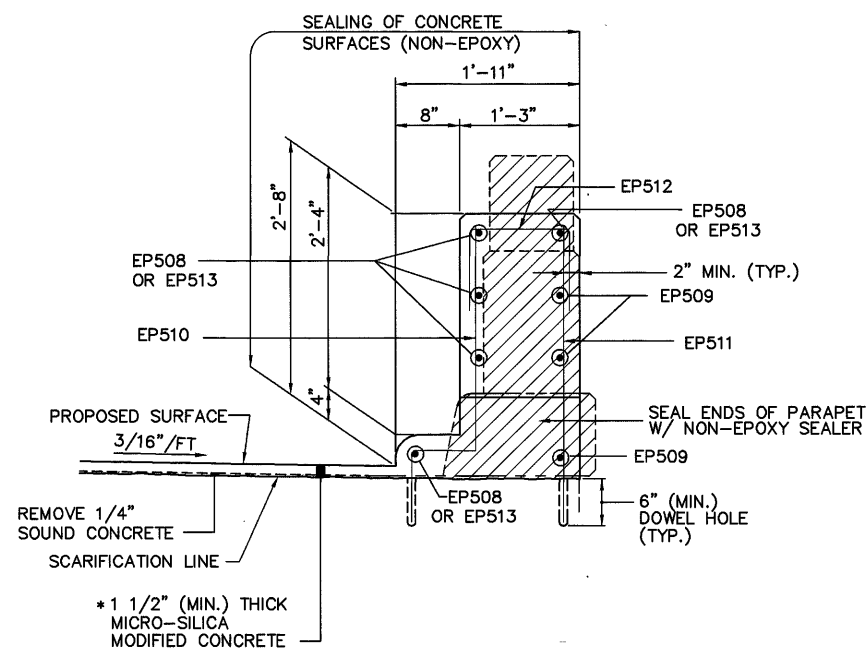
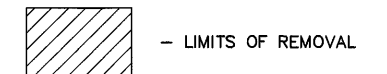
SECTION A-A



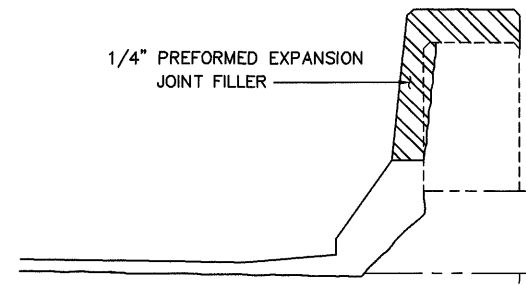
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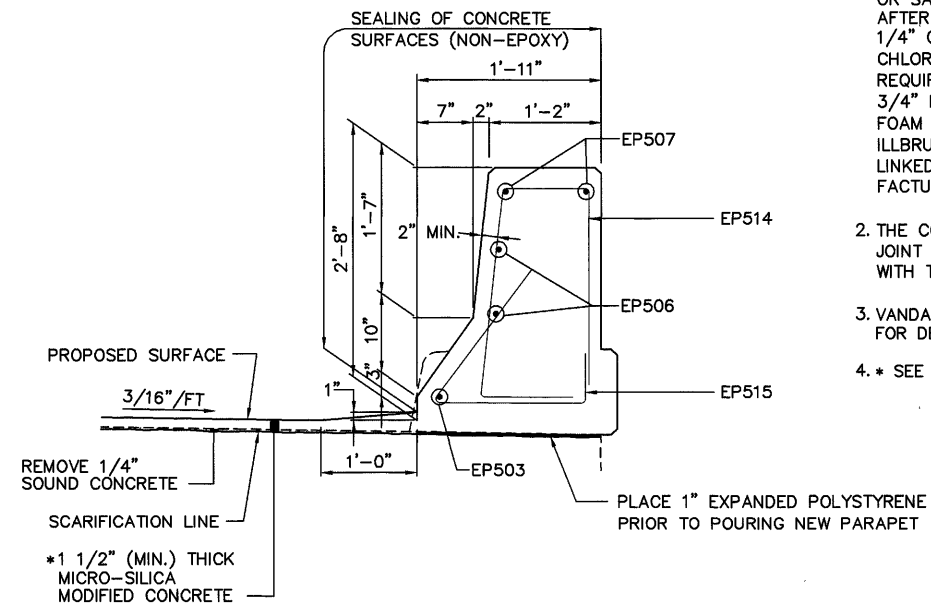
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

NOTES:

- EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
- THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
- VANDAL PROTECTION FENCE ON PARAPET IS NOT SHOWN ON THIS SHEET. FOR DETAILS, SEE SHEET 23/23.
- * SEE NOTE #4 ON SHEET 21/23.

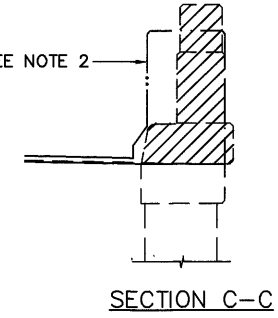
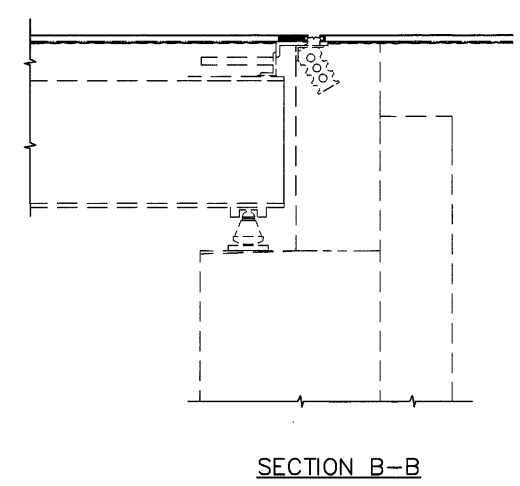
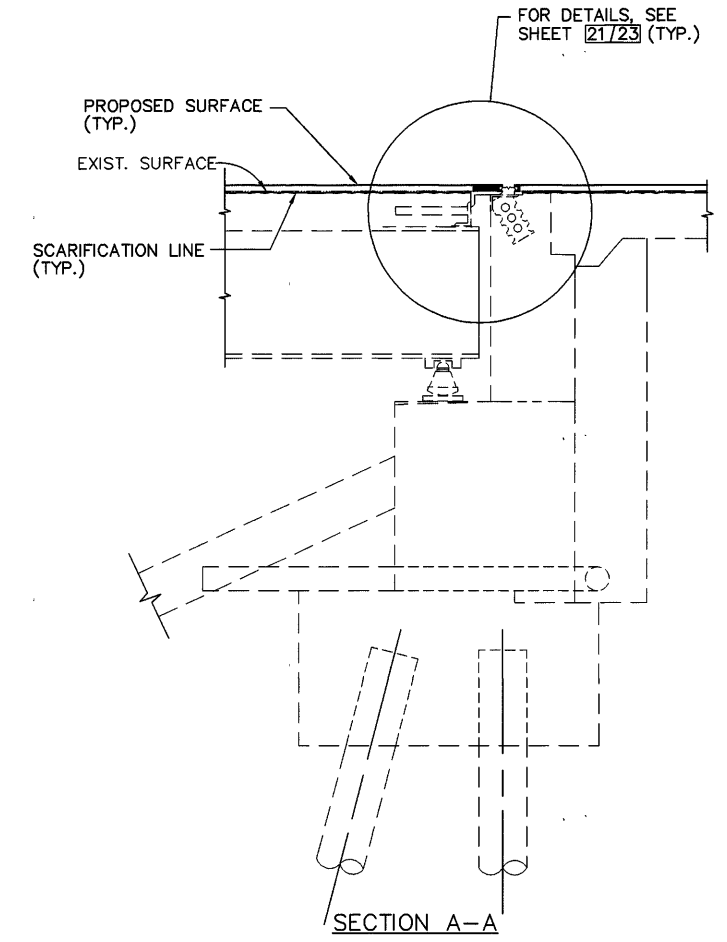
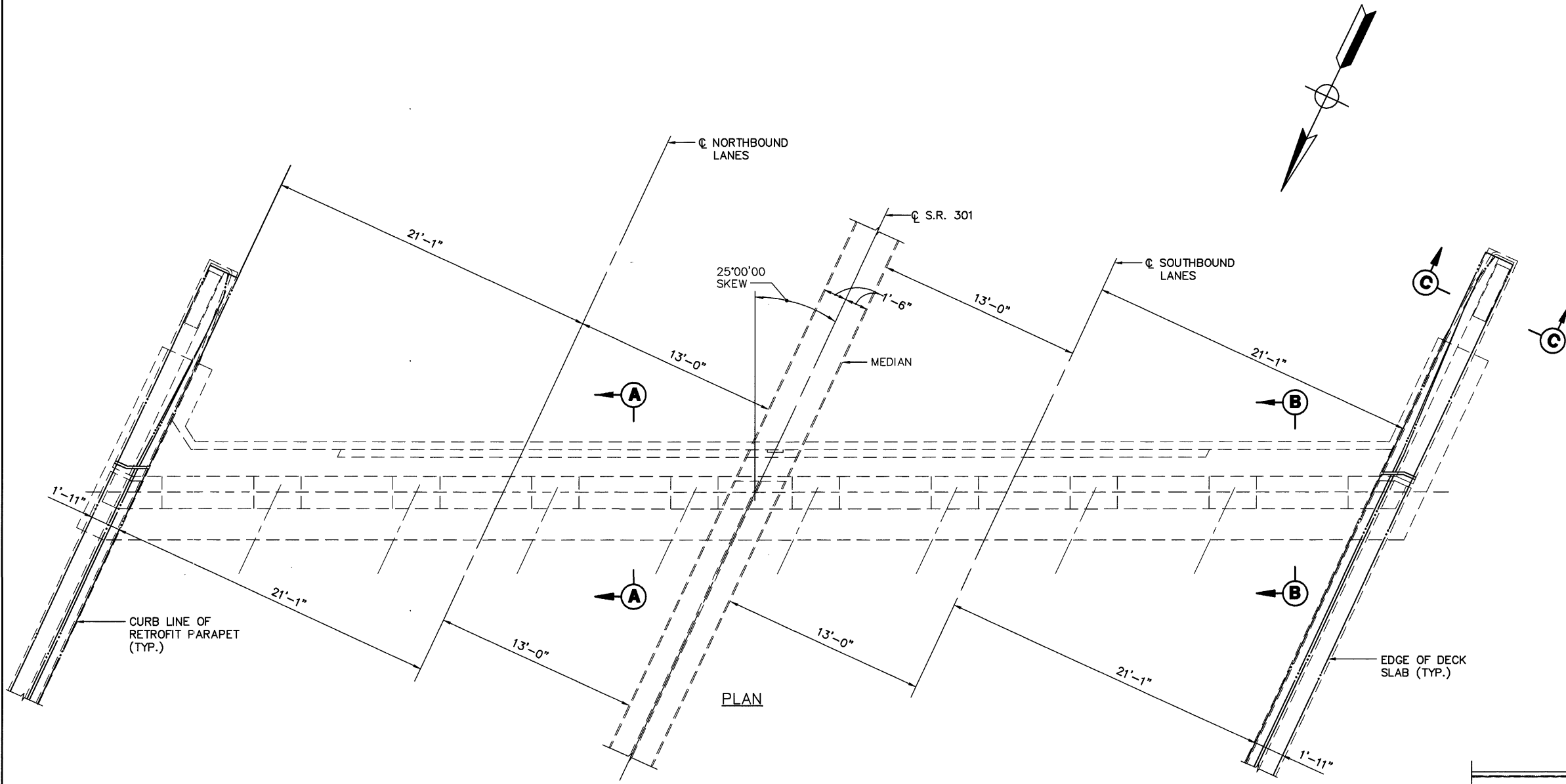
DRAWING = 301SEC DATE = JULY 29, 1996

POLYTECH, INC.		7 / 23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
PARAPET SECTIONS			
BRIDGE NO. LOR-20-1303			
UNDER S.R. 301			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
PSS	RG	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		

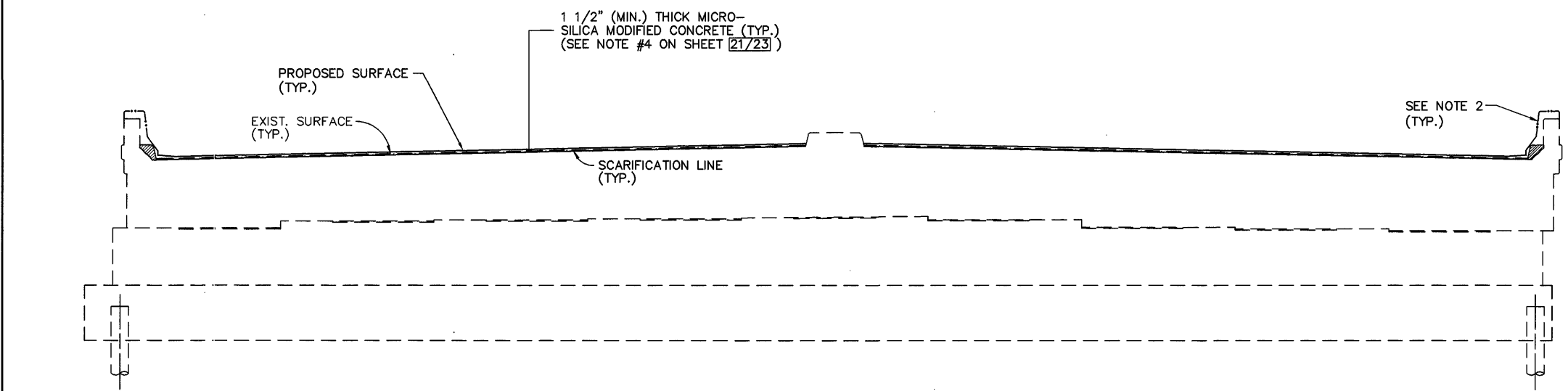
FHWA REGION	STATE	PROJECT	
5	OHIO		

220
351

LORAIN COUNTY
LOR-20-12.62



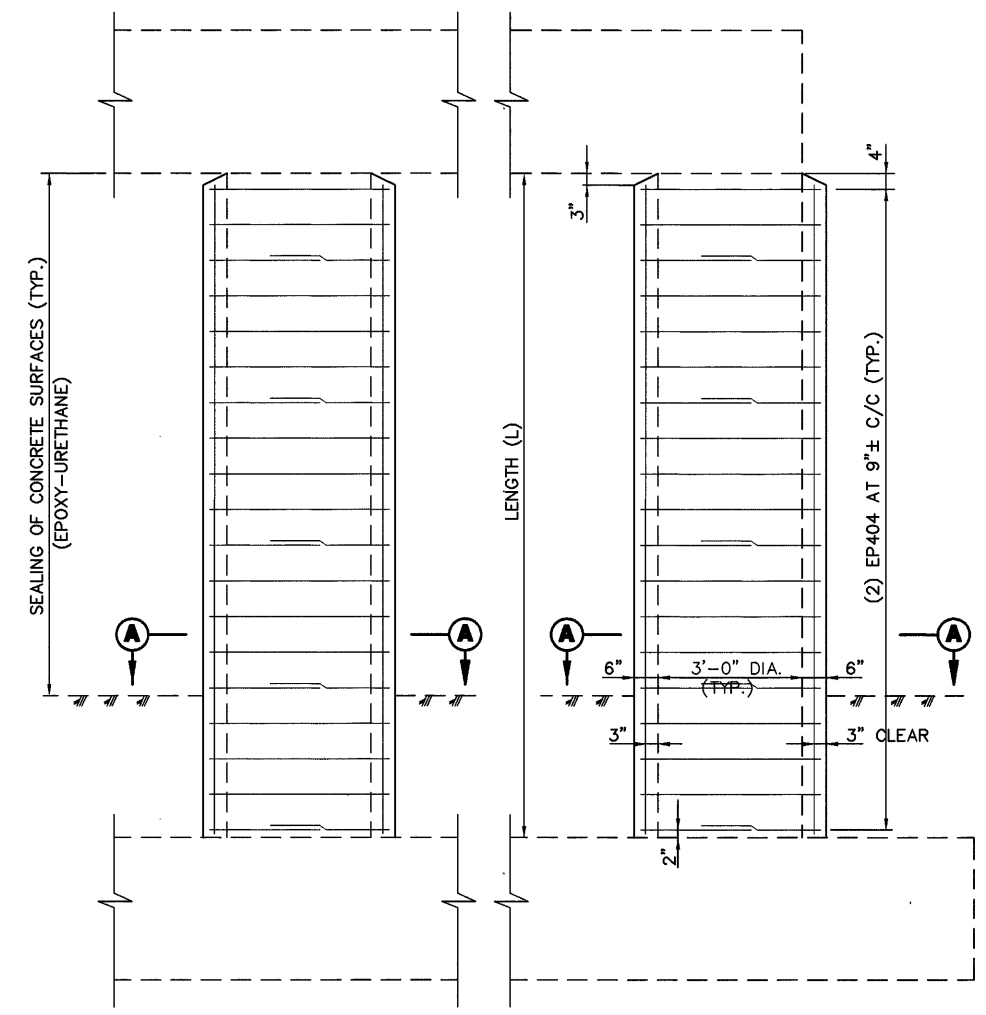
- NOTES:
1. PLAN, ELEVATION AND SECTIONS OF THE REAR ABUTMENT ARE SHOWN. THE FORWARD ABUTMENT WILL BE SIMILAR.
 2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 7/23.



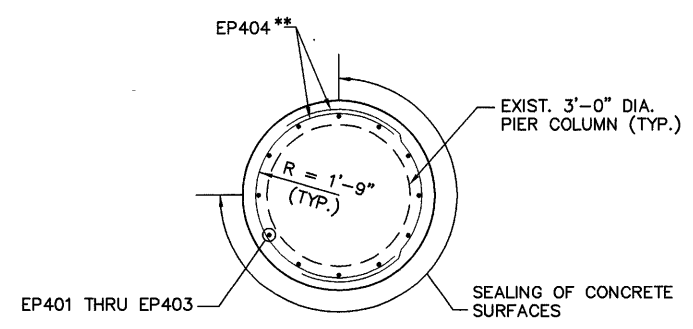
DRAWING = 301ABUT DATE = JULY 26, 1996

POLYTECH, INC.		8 / 23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
REAR ABUTMENT			
BRIDGE NO. LOR-20-1303 UNDER S.R. 301			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
PSS	MAC	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		

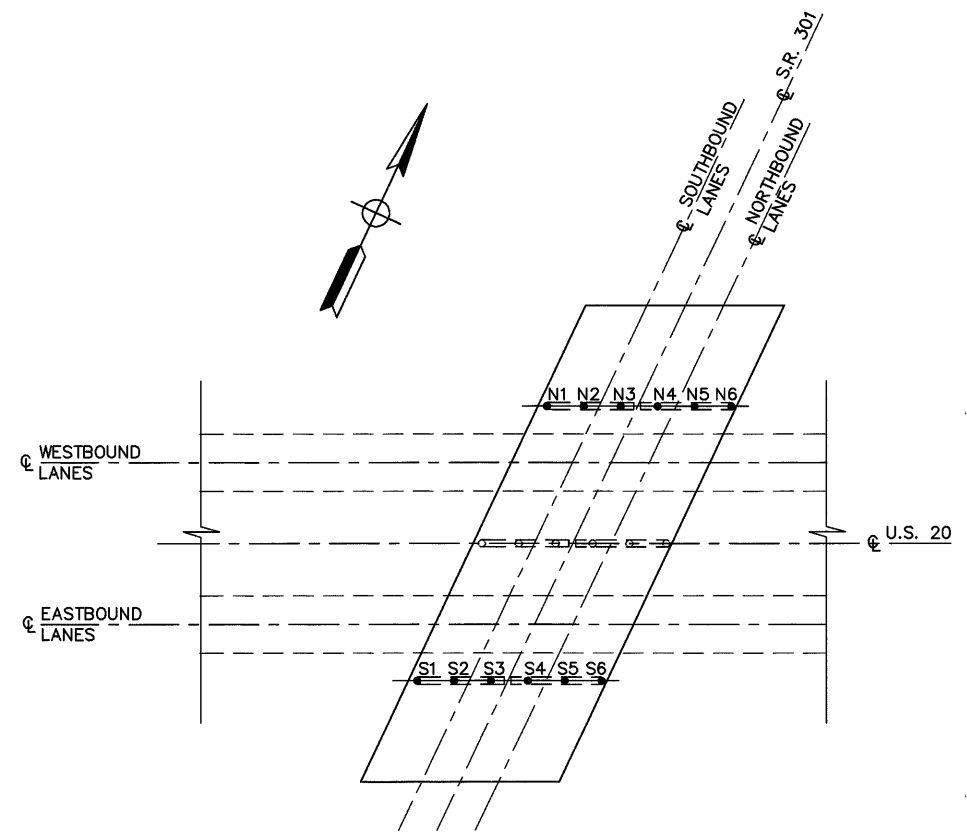
LORAIN COUNTY
LOR-20-12.62



PARTIAL ELEVATION



SECTION A-A
** STAGGER LAPS AROUND COLUMNS



LOCATION OF PIER ENCASEMENTS

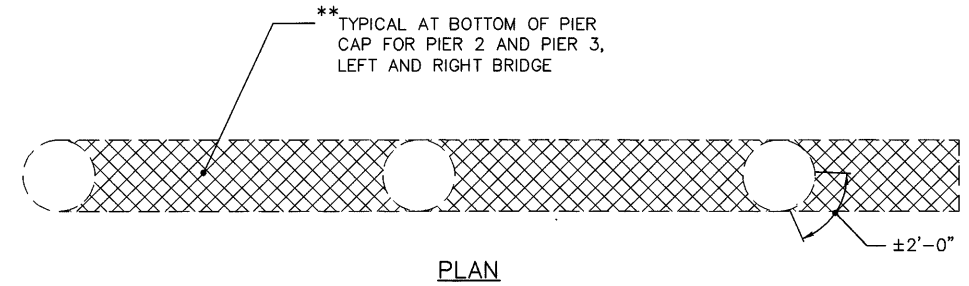
PIER ENCASEMENT QUANTITIES

BRIDGE NO.	PIER COLUMNS TO BE ENCASED	PIER COLUMNS ENCASEMENT LENGTH (L)	511	509 - EPOXY COATED REINFORCING STEEL											
			CLASS S CONCRETE, MISC.: PIER ENCASEMENT	MARK	NUMBER		LENGTH	SHAPE	WEIGHT	MARK	NUMBER		LENGTH	SHAPE	WEIGHT
					CU. YD.	PER PIER COLUMN					TOTAL	PER PIER COLUMN			
LOR-20-1303	N1 TO N6	14'-0"	17.1	EP401	12	72	13'-6"	STR.	649	EP404	38	228	8'-0"	BENT	1218
LOR-20-1303	S1 TO S3	13'-9"	8.4	EP402	12	36	13'-3"	STR.	319	EP404	38	114	8'-0"	BENT	609
LOR-20-1303	S4 TO S6	13'-11"	8.5	EP403	12	36	13'-5"	STR.	323	EP404	38	114	8'-0"	BENT	609
									SUB TOTAL						1,291
TOTAL			34.0*											TOTAL	3,727*

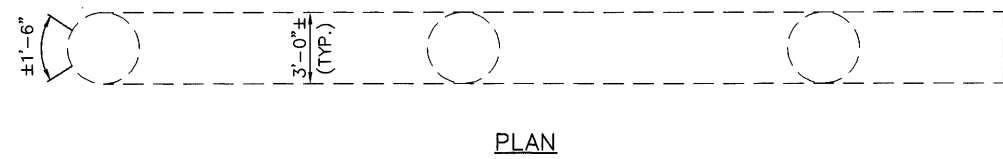
* THESE QUANTITIES ARE CARRIED TO THE ESTIMATED QUANTITIES SHEET [5/23].

DRAWING = 301PIER DATE = JULY 26, 1996

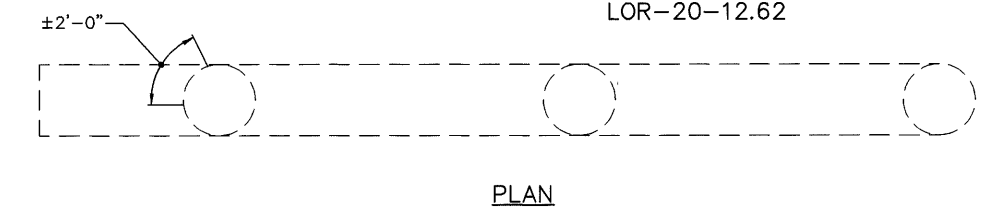
POLYTECH, INC.						9 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO						
PIER ENCASEMENT DETAILS						
BRIDGE NO. LOR-20-1303 UNDER S.R. 301						
LORAIN COUNTY						OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MAC	-	VB	BRS	8/96	



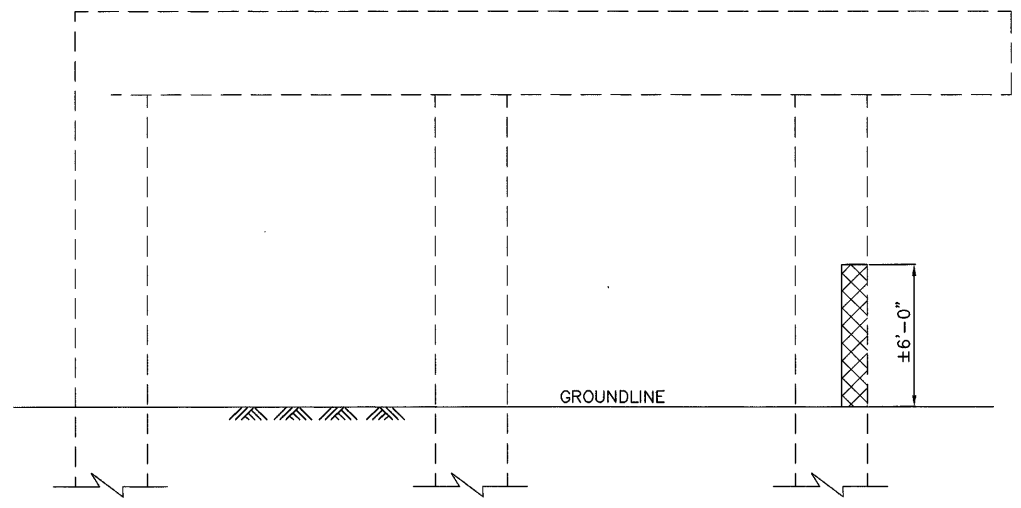
PLAN



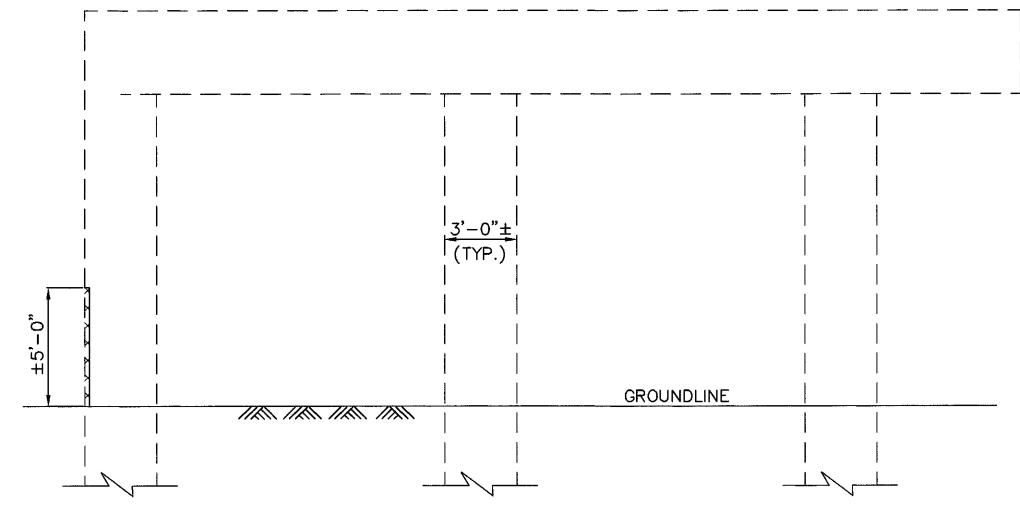
PLAN



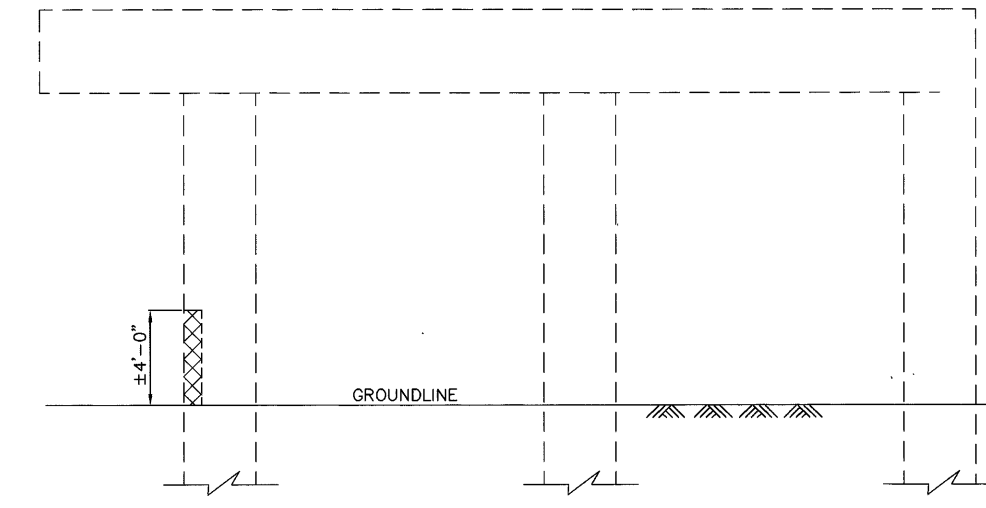
PLAN



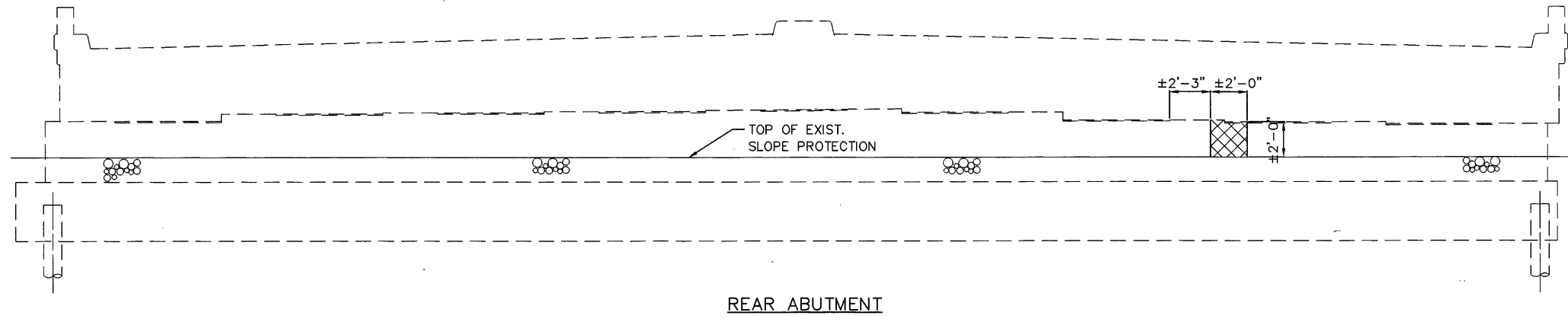
ELEVATION
PIER 3, LEFT BRIDGE
LOOKING NORTH



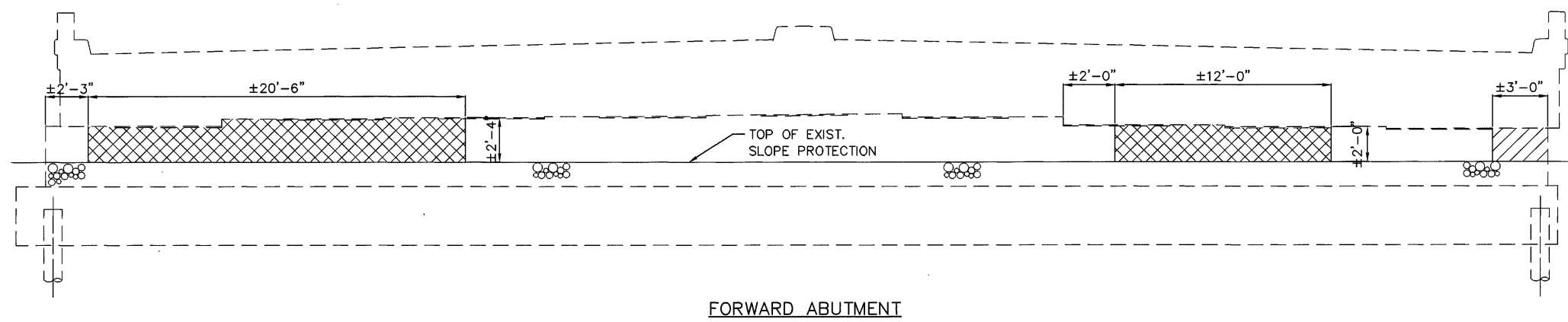
ELEVATION
PIER 1, LEFT BRIDGE
LOOKING NORTH



ELEVATION
PIER 1, RIGHT BRIDGE
LOOKING NORTH



REAR ABUTMENT



FORWARD ABUTMENT

LOCATION	ITEM SPECIAL	ITEM 519
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN SQ. FT.
ABUTMENTS	74	6
PIER COLUMNS	28	-
200% EXPANSION FACTOR	204	12
** PIER CAPS	374	-
* TOTAL	578	18

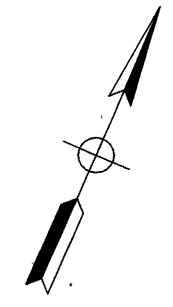
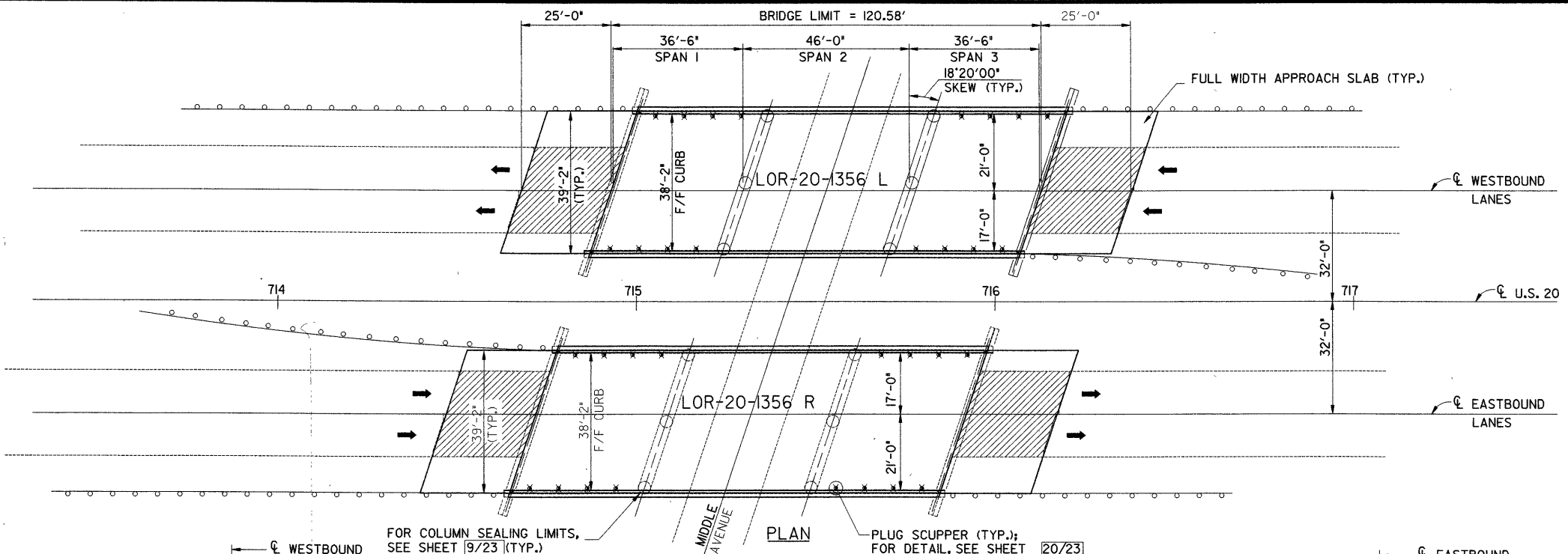
- ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR
- ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN

* THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET [4/23].

DRAWING = 301PATCH DATE = AUGUST 9, 1996

POLYTECH, INC.		9A/23
CONSULTING ENGINEERS		CLEVELAND, OHIO
SUBSTRUCTURE PATCHING		
BRIDGE NO. LOR-20-1303 UNDER S.R. 301		
LORAIN COUNTY		OHIO
DESIGNED	DRAWN	TRACED
NK	NK	-
CHECKED	REVIEWED	DATE
VB	BS	8/96

LORAIN COUNTY
LOR-20-12.62



EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

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

ALIGNMENT: TANGENT

SKEW: 18' 20' 00" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

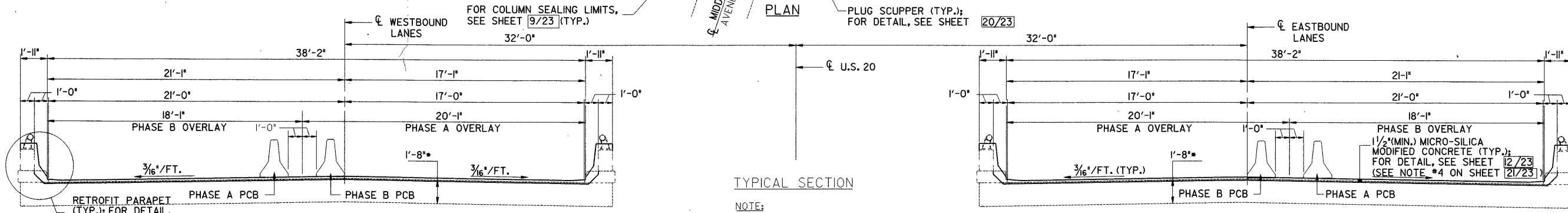
APPROACH SLABS: 25'-0" LONG (AS-I-67)

YEAR BUILT: 1968* LEFT BRIDGE, 1971* RIGHT BRIDGE

STRUCTURE FILE NO.: 4701089 & 4701119

PROPOSED WORK

1. REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET 21/23).
2. DRILL HOLES TO DRAIN ABUTMENT KEYWAY.
3. RETROFIT EXISTING PARAPET WITH SAFETY PARAPET.
4. CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
5. PLUG EXISTING SCUPPERS.
6. REPLACE EXISTING APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
7. INSTALL APPROACH SLAB DOWEL BARS.
8. INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE.
9. SUBSTRUCTURE PATCHING, SEE SHEET 13A/23.



NOTE: THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

ESTIMATED QUANTITIES (LOR-20-1356 L)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			107	
SPECIAL	51267510	63	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		63		
518	21201	29	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	29			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2" THICK)			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB				LUMP SUM

ESTIMATED QUANTITIES (LOR-20-1356 R)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			107	
SPECIAL	51267510	63	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		63		
518	21201	29	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	29			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2" THICK)			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB				LUMP SUM

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET

ALIGNMENT: TANGENT

SKEW: 18' 20' 00" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE

APPROACH SLABS: 25'-0" LONG, FULL WIDTH (AS-I-81)

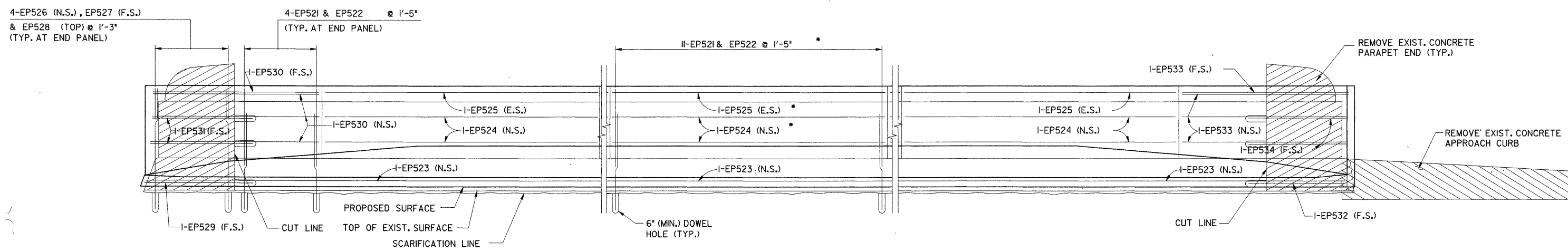
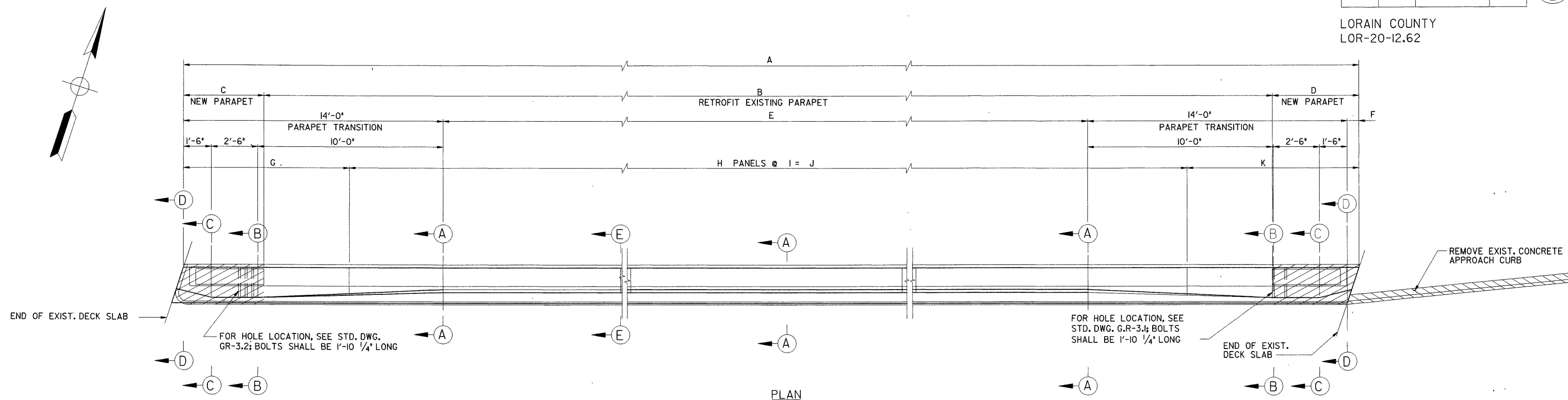
POLYTECH, INC. 10/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION
BRIDGE NO. LOR-20-1356 L & R
OVER MIDDLE AVENUE

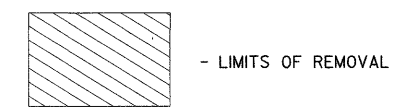
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

* SEE PROPOSAL NOTE

DESIGN FILE: c:\dgn\lor20\midpinew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96



* TYPICAL AT INTERIOR PANEL
UNLESS NOTED OTHERWISE



PARAPET LENGTHS

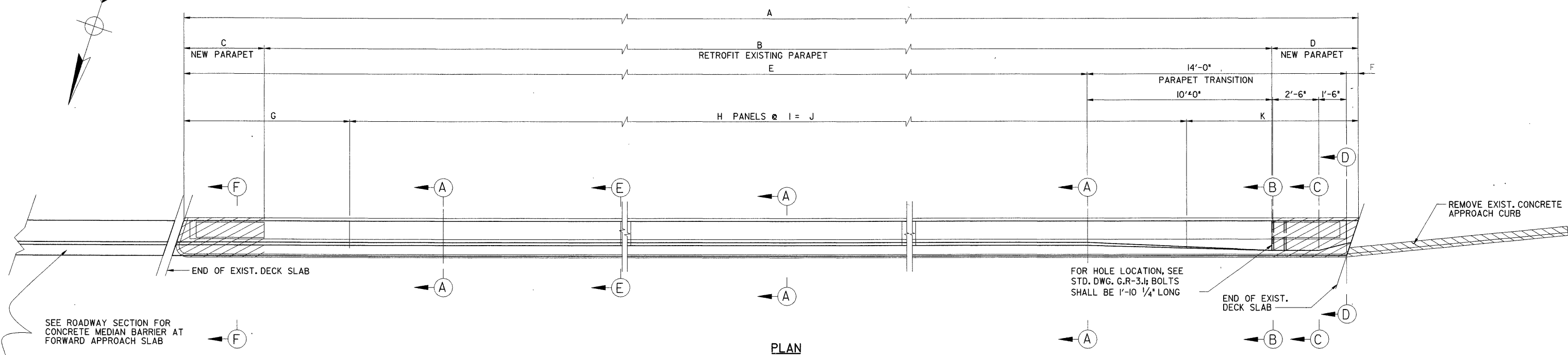
BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-1356 L & R OVER MIDDLE AVENUE	LEFT & RIGHT	120'-7"	111'-7"	4'-4"	4'-8"	91'-11 3/8"	0'-7 5/8"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 1/4"

NOTE:

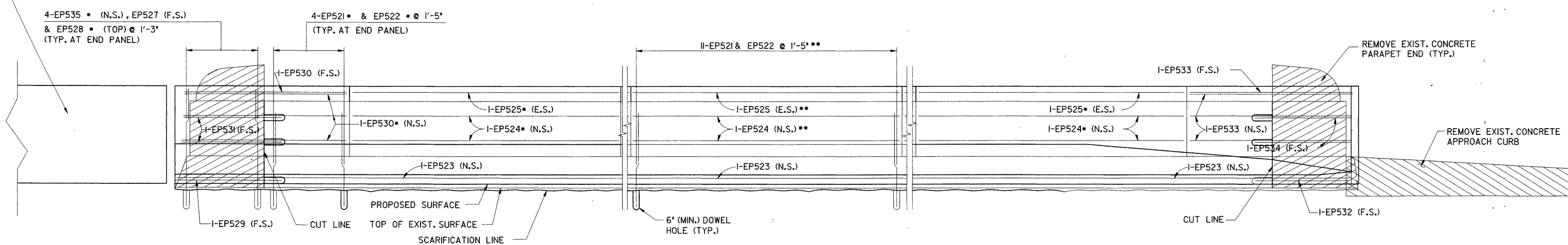
1. MODIFICATION DETAILS TO LEFT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER THREE PARAPETS FOR THIS BRIDGE WILL BE SIMILAR.
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 12/23.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
4. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

POLYTECH, INC.		11 / 23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
PARAPET PLAN & ELEVATION			
BRIDGE NO. LOR-20-1356 L & R OVER MIDDLE AVENUE			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
PSS	RG	-	VB
REVIEWED	DATE	REVISED	DRA
BS	8/96		9/96

DESIGN FILE: c:\dgn\lor20\midprpt.dgn
 WORKSTATION: darmsfro DATE: 23 SEP 96



PLAN



ELEVATION

* FIELD BEND TO FIT TRANSITION

** TYPICAL AT INTERIOR PANEL UNLESS NOTED OTHERWISE

- LIMITS OF REMOVAL

PARAPET LENGTHS

BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-1451 L OVER INDIAN HOLLOW ROAD	RIGHT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	105'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"

NOTE:

1. MODIFICATION DETAILS TO RIGHT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER PARAPETS FOR THESE BRIDGES ARE ON SHEET **11B/23**.
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET **11A/23**.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE PRODUCTION DEPARTMENT

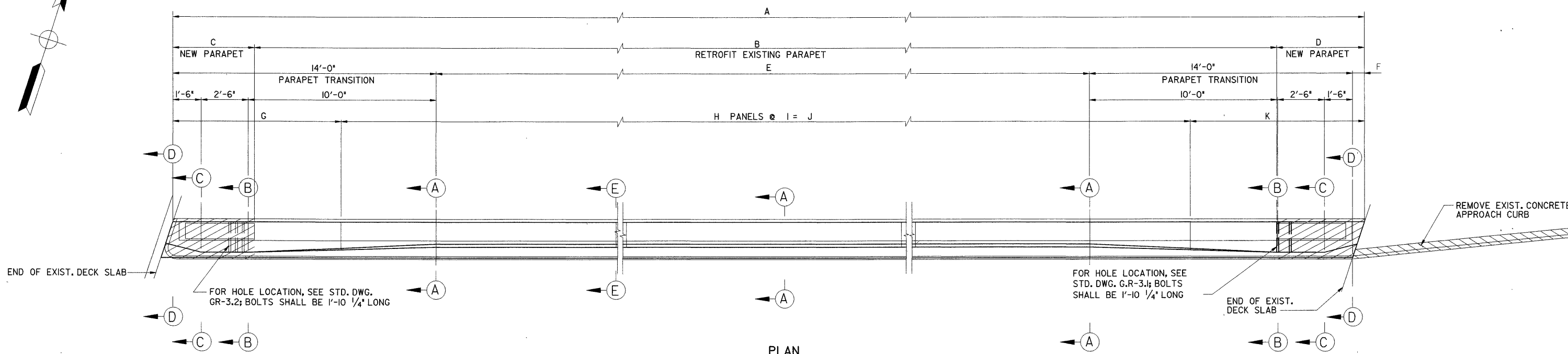
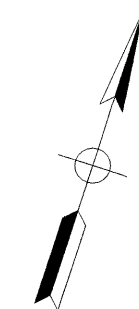
RIGHT PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1451 L
OVER INDIAN HOLLOW ROAD

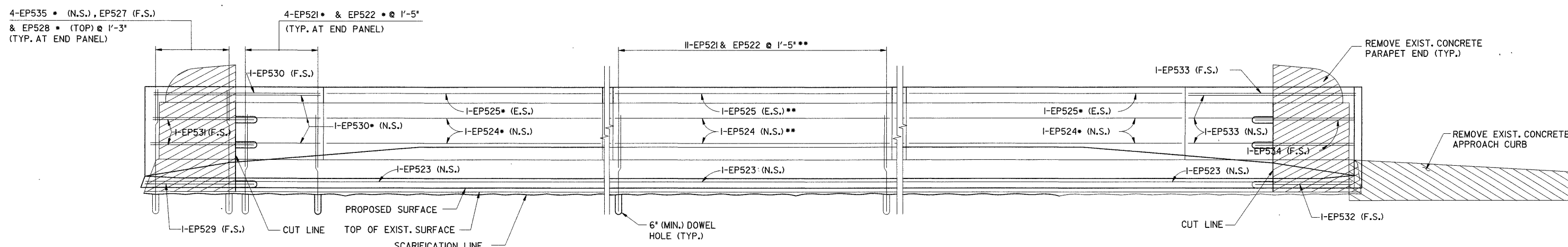
LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DM	DRA 9/96		DPA 9/96	RDN	9/96	

DESIGN FILE: c:\dgn\lor20\p1prnew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96



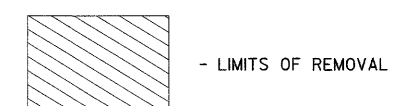
PLAN



ELEVATION

* FIELD BEND TO FIT TRANSITION

** TYPICAL AT INTERIOR PANEL UNLESS NOTED OTHERWISE



PARAPET LENGTHS

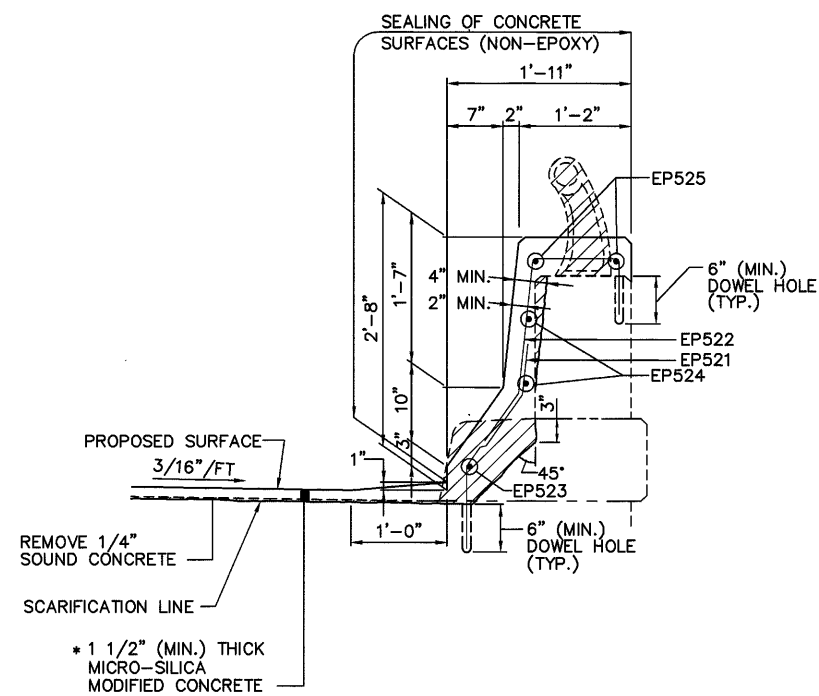
BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-145I R OVER INDIAN HOLLOW ROAD	LEFT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"
	RIGHT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"
LOR-20-145I L OVER INDIAN HOLLOW ROAD	LEFT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"

NOTE:

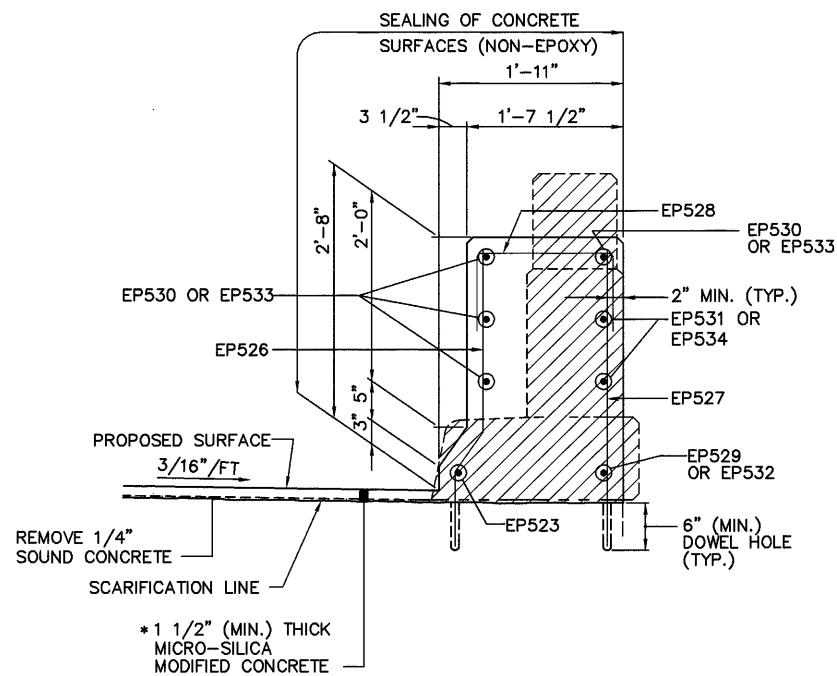
- MODIFICATION DETAILS TO LEFT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO LEFT AND RIGHT PARAPETS OF RIGHT STRUCTURE WILL BE SIMILAR.
- FOR MODIFICATION DETAILS TO RIGHT PARAPET OF LEFT STRUCTURE SEE SHEET 11A/23 FOR DETAILS.
- FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 12A/23.
- FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT THREE PRODUCTION DEPARTMENT						IIB / 23
RIGHT PARAPET PLAN & ELEVATION						
BRIDGE NO. LOR-20-145I L&R OVER INDIAN HOLLOW ROAD						
LORAIN COUNTY						OHIO
DESIGNED DM	DRAWN DRA 9/96	TRACED	CHECKED DRA 9/96	REVIEWED RDW	DATE 9/96	REVISED

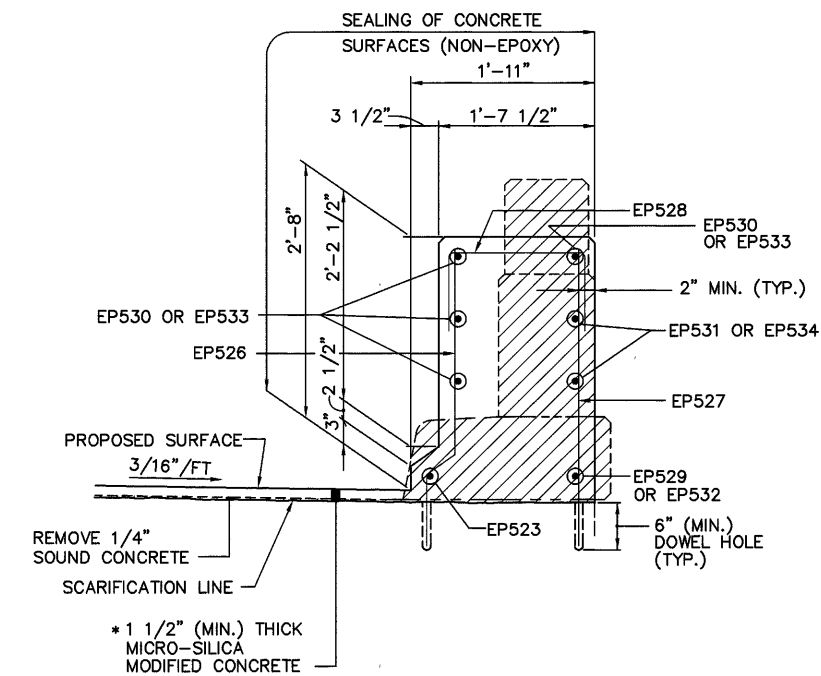
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 WORKSTATION: darmsfro DATE: 24 SEP 96



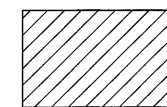
SECTION A-A



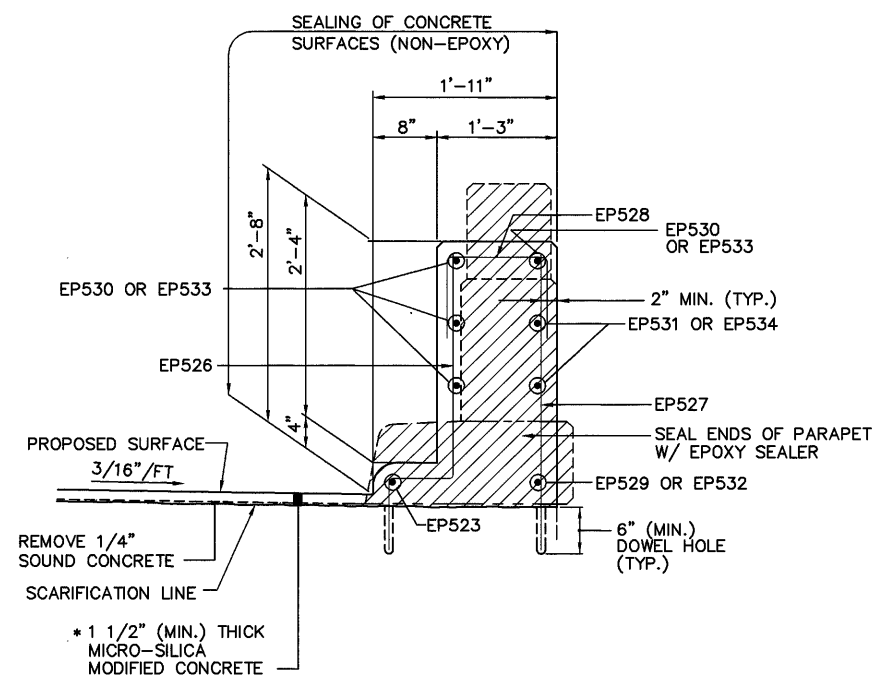
SECTION B-B



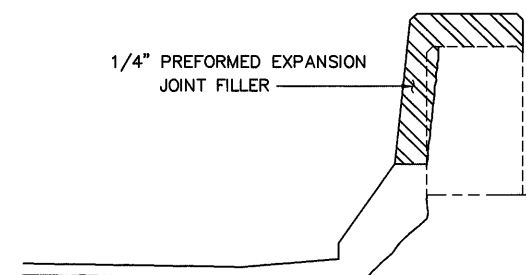
SECTION C-C



- LIMITS OF REMOVAL



SECTION D-D



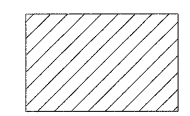
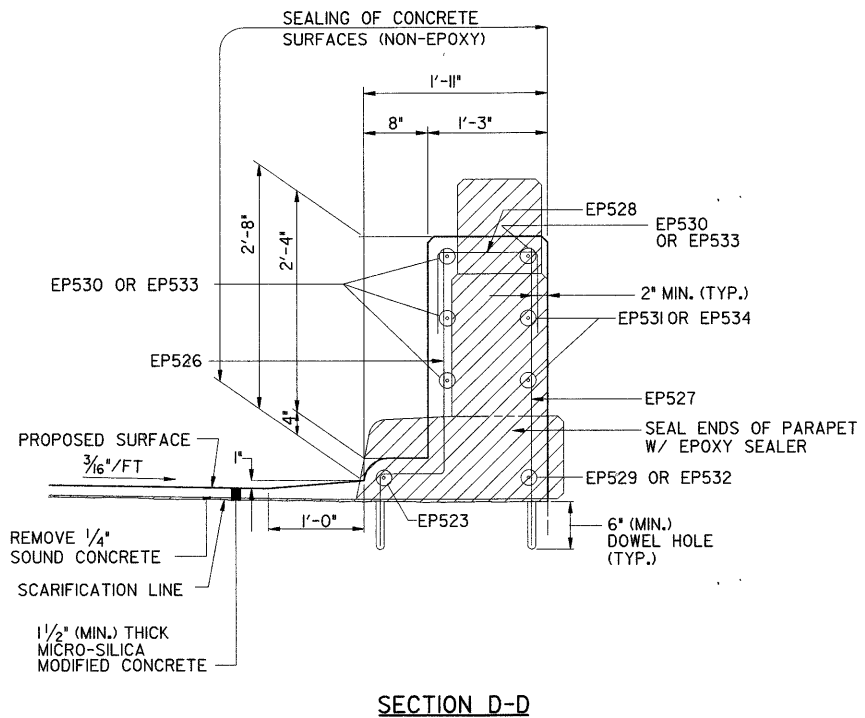
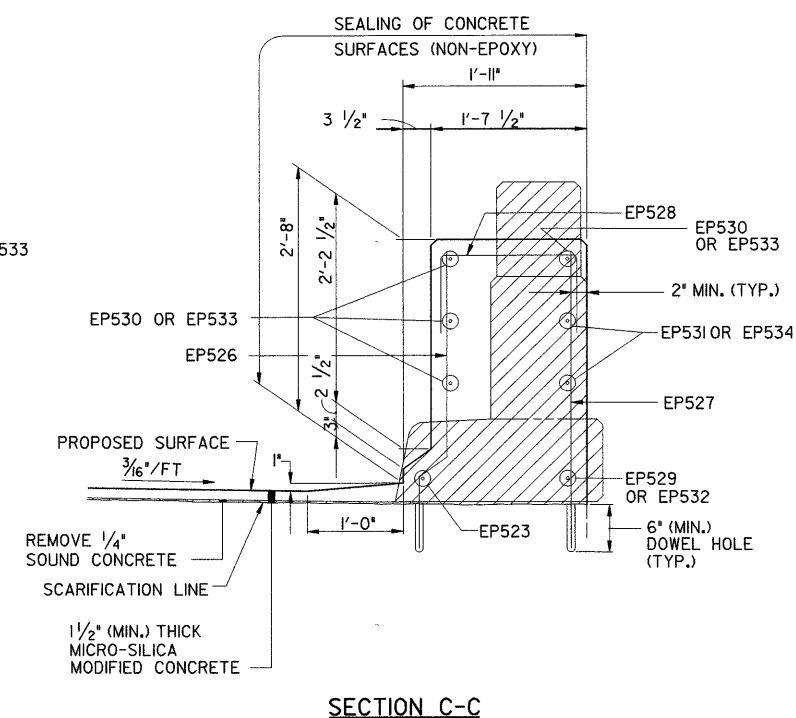
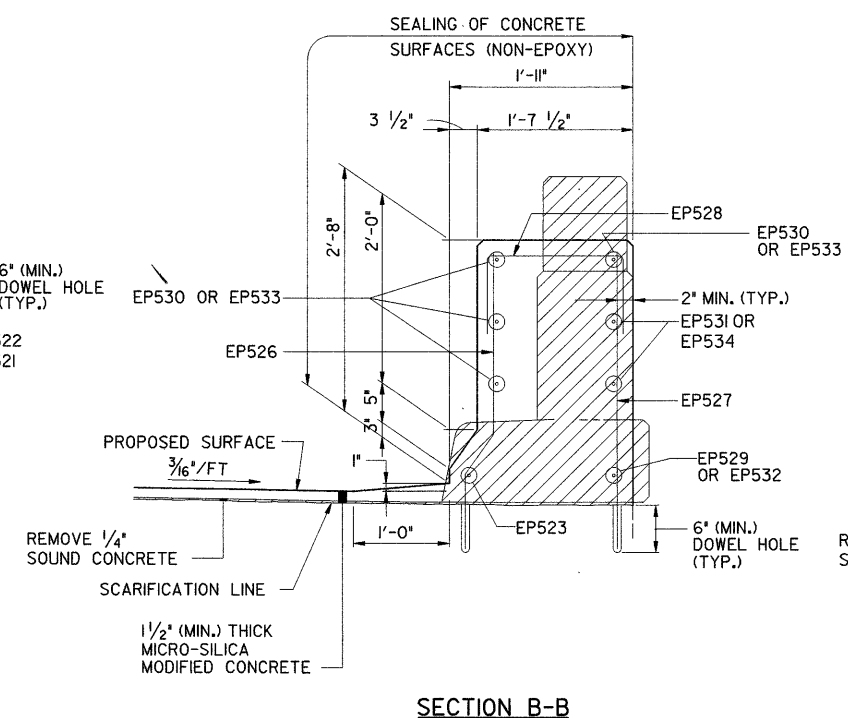
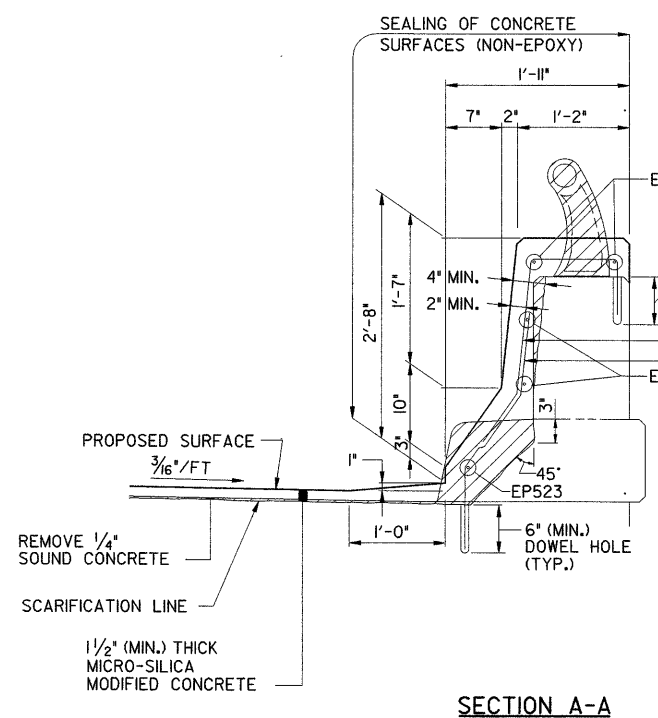
SECTION E-E

NOTES:

- EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
- THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
- SEE NOTE #4 ON SHEET 21/23.

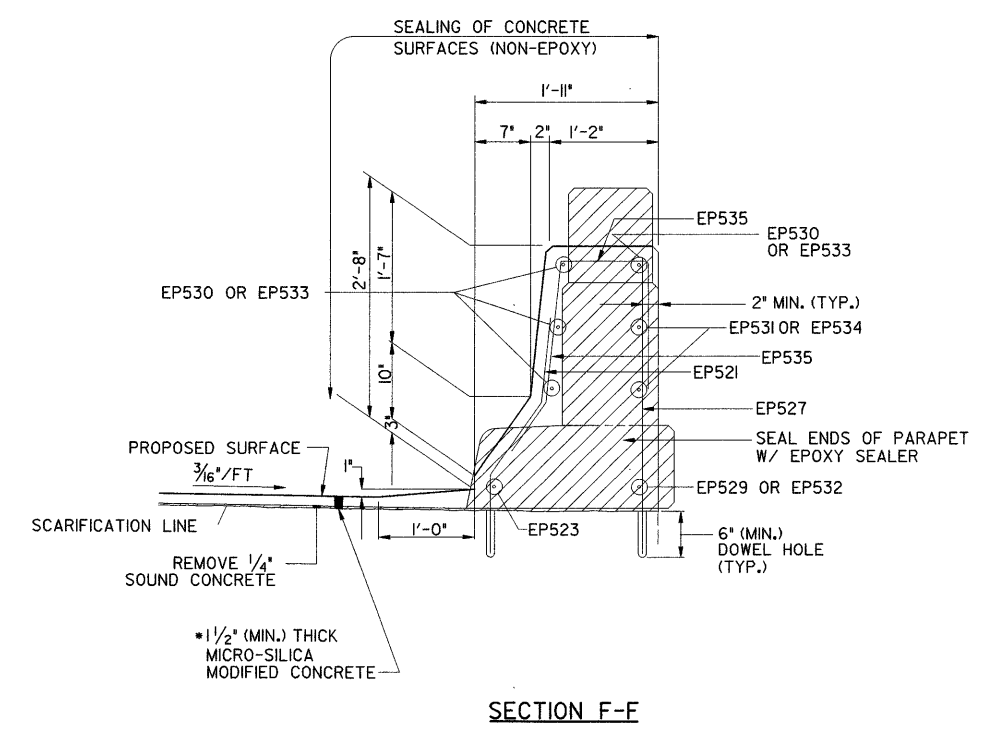
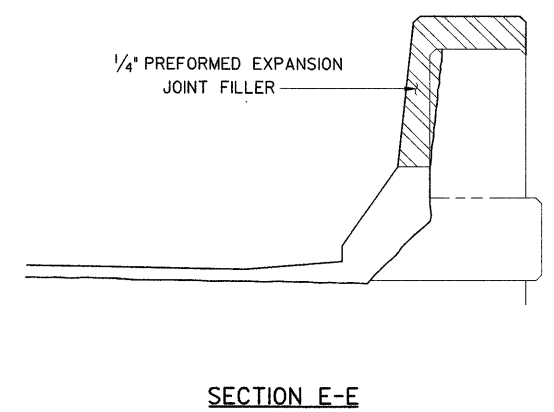
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POLYTECH, INC.		12/23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
PARAPET SECTIONS			
BRIDGE NO. LOR-20-1356 L & R OVER MIDDLE AVENUE			
LORAIN COUNTY			OHIO
DESIGNED	DRAWN	TRACED	CHECKED
PSS	RG	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		



NOTES:

- EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
- THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.



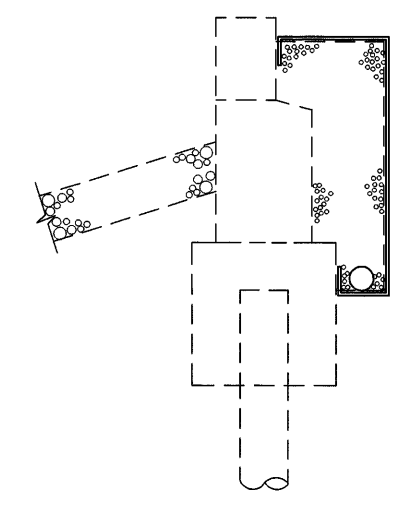
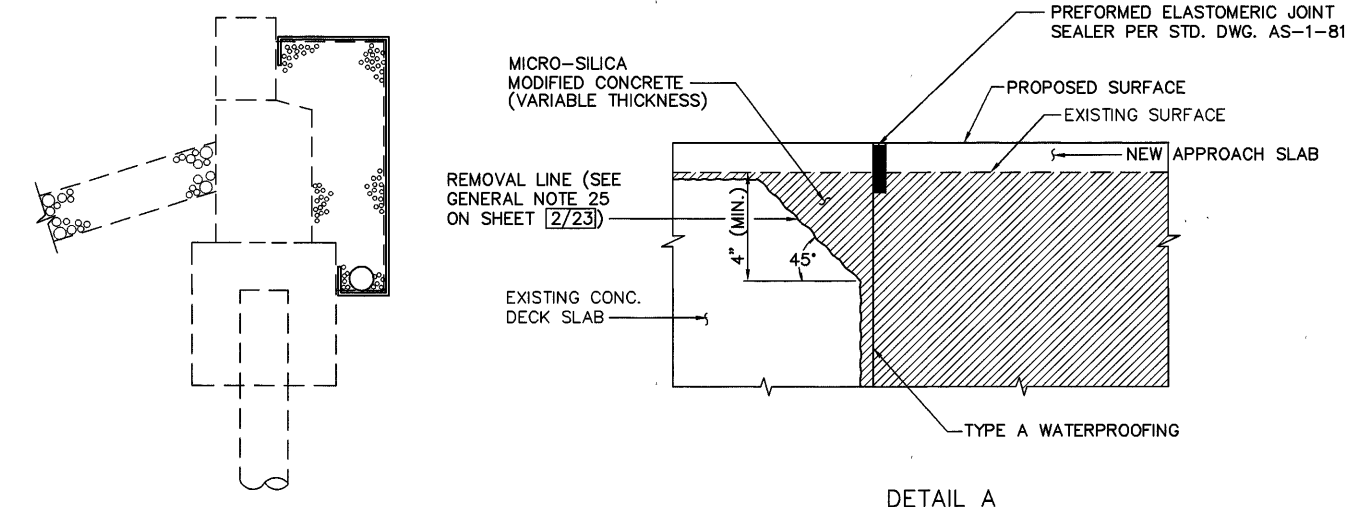
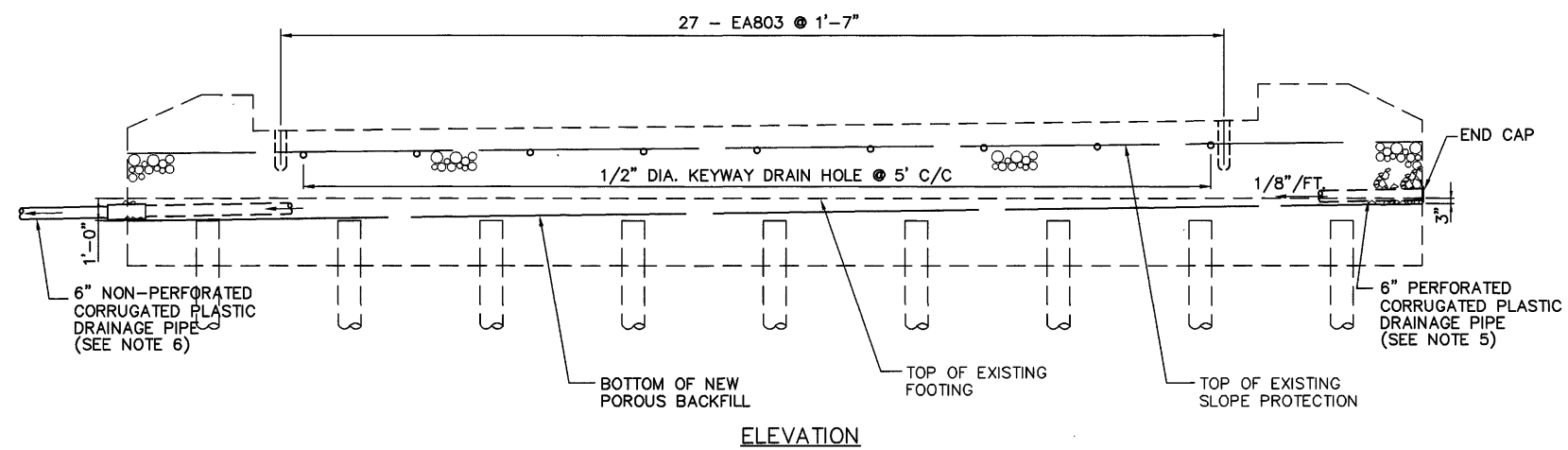
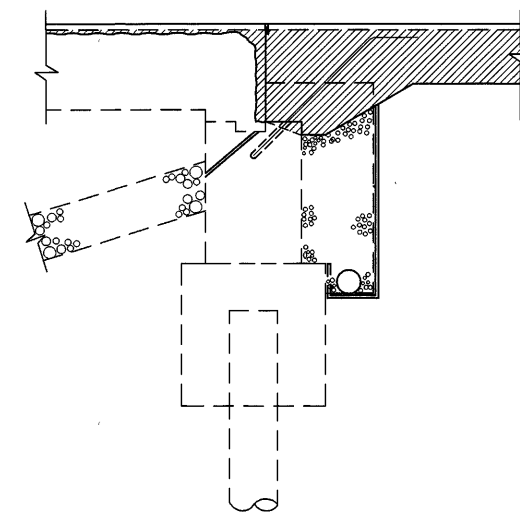
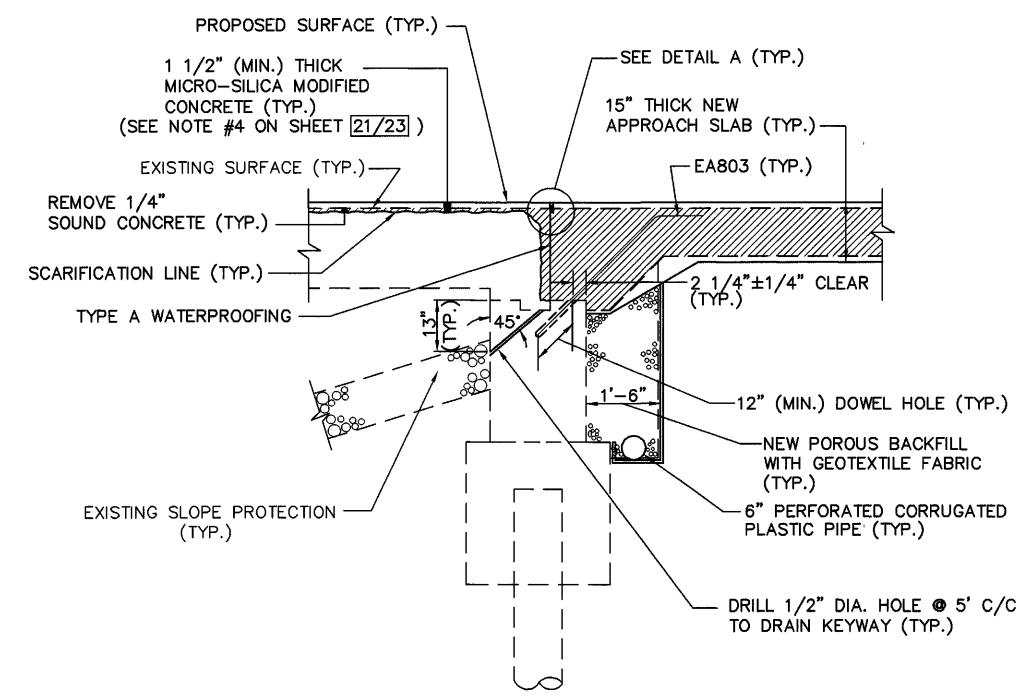
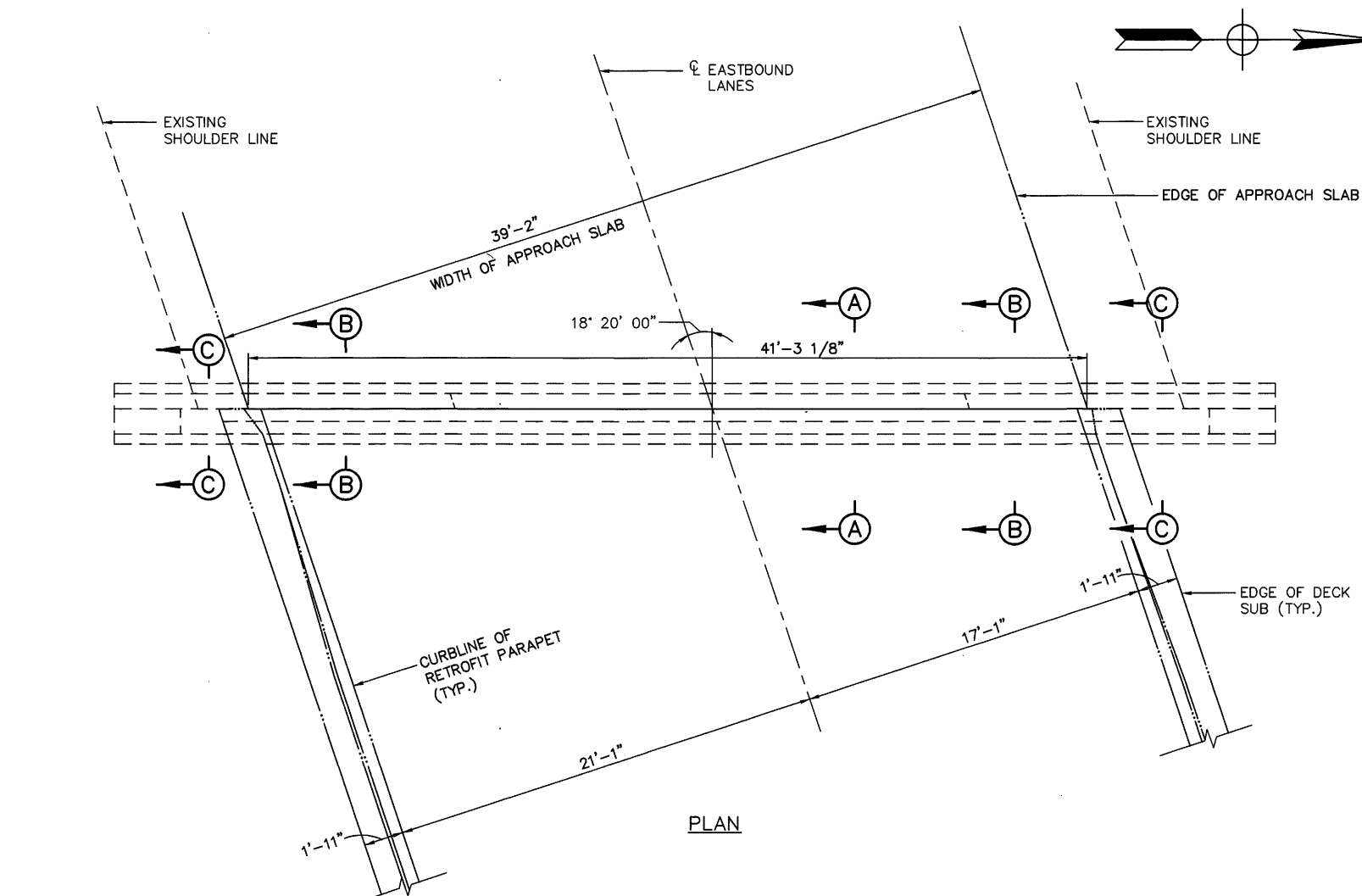
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WORKSTATION: darmstro DATE: 24 SEP 96

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT THREE PRODUCTION DEPARTMENT						12A / 23
PARAPET SECTIONS						
BRIDGE NO. LOR-20-1451 L & R OVER INDIAN HOLLOW RD.						
LORAIN COUNTY						OHIO
DESIGNED DM	DRAWN DRA 9/96	TRACED -	CHECKED DRA 9/96	REVIEWED RDN	DATE 946	REVISED

FHWA REGION	STATE	PROJECT
5	OHIO	

229
351

LORAIN COUNTY
LOR-20-12.62



- NOTES:
- MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE RIGHT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER ABUTMENTS FOR THIS BRIDGE WILL BE SIMILAR.
 - MODIFICATIONS TO ALL FOUR ABUTMENTS FOR BRIDGE NO. LOR-20-1451 L & R OVER INDIAN HOLLOW ROAD WILL BE SIMILAR TO THE DETAILS SHOWN ON THIS SHEET. THE SKEW ANGLE FOR THE BRIDGE OVER INDIAN HOLLOW ROAD IS 19° 39' 40" AND THE LENGTH OF JOINT BETWEEN APPROACH SLAB AND DECK SLAB IS 41'-7 1/8".
 - PAYMENT WILL BE MADE FOR PROVIDING 1/2" DIA. HOLES TO DRAIN ABUTMENT KEYWAYS UNDER ITEM SPECIAL, "KEYWAY DRAIN".
 - FOR PARAPET MODIFICATION DETAILS, SEE SHEET 11/23.
 - THE APPROACH SLAB CONCRETE AND THE MICRO-SILICA MODIFIED CONCRETE, TO REPLACE THE DETERIORATED CONCRETE AT THE END OF THE DECK SLAB, SHOWN IN DETAIL A, SHALL BE POURED SEPARATELY.
 - THE 6" PERFORATED CORRUGATED PLASTIC PIPE SHALL BE SLOPED AWAY FROM THE CL U.S. 20. FOR THE EXTENSION OF THE NON-PERFORATED CORRUGATED PLASTIC PIPE BEYOND THE ABUTMENT WALL AND ITS TERMINATION DETAILS, SEE STD. DWG. A-1-69.
 - THE COST OF REMOVING THE EXISTING POROUS BACKFILL AND PROVIDING GEOTEXTILE FABRIC, TYPE A, PER ITEM 712.09, SHALL BE INCLUDED WITH ITEM 518, "POROUS BACKFILL WITH FILTER FABRIC" FOR PAYMENT.
 - POROUS BACKFILL WITH FILTER FABRIC, 1'-6" THICK SHALL EXTEND FROM THE ELEVATION SHOWN IN THE PLANS TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
 - THE COST OF INSTALLING APPROACH SLAB DOWEL BARS SHALL BE INCLUDED WITH ITEM 510, "DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT" FOR PAYMENT.
 - POROUS BACKFILL SHALL BE # 57 GRAVEL.
 - THE COST TO MOVE AND REPLACE EXISTING SLOPE PROTECTION IN ORDER TO DRILL KEYWAY HOLES IS TO BE INCIDENTAL TO ITEM SPECIAL, "KEYWAY DRAIN".

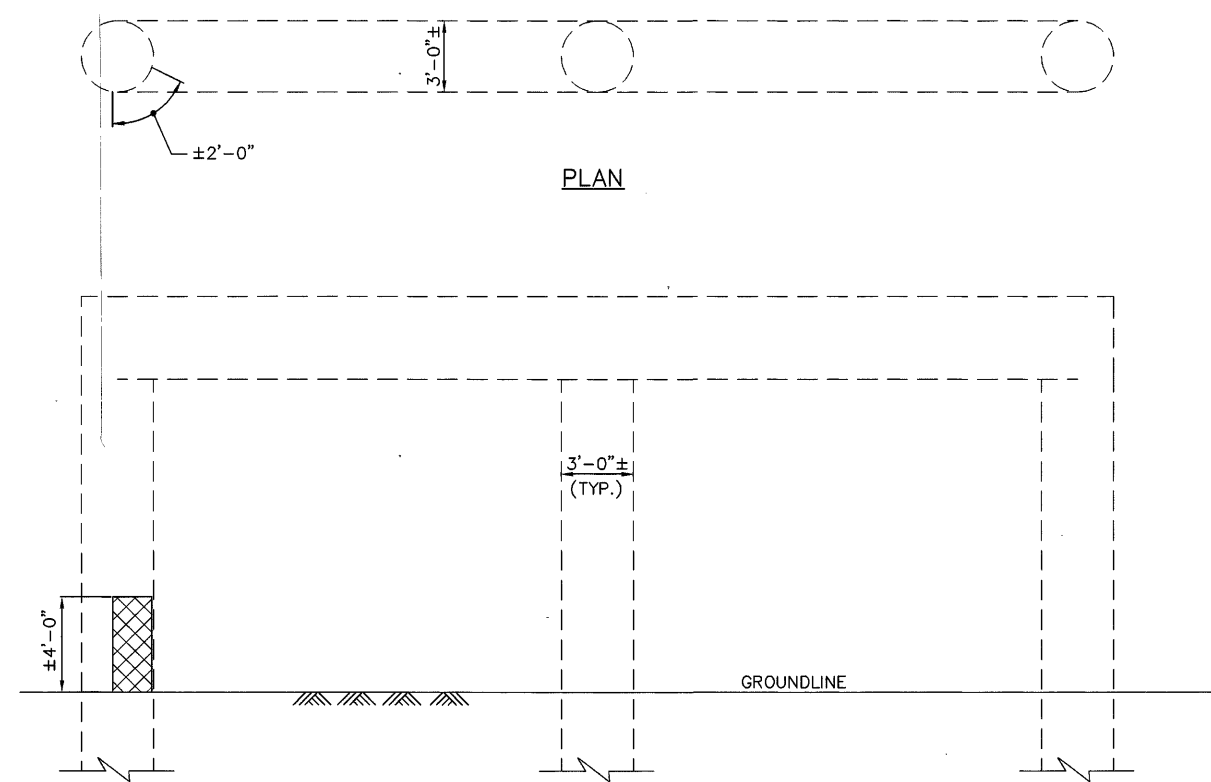
POLYTECH, INC.				13 / 23	
CONSULTING ENGINEERS				CLEVELAND, OHIO	
ABUTMENT MODIFICATION DETAILS					
BRIDGE NO. LOR-20-1356 L & R OVER MIDDLE AVENUE					
BRIDGE NO. LOR-20-1451 L & R OVER INDIAN HOLLOW ROAD					
LORAIN COUNTY				OHIO	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	RG	-	VB	BS	8/96

DRAWING = MIDABUT DATE = AUGUST 12, 1996

FHWA REGION	STATE	PROJECT	
5	OHIO		



LORAIN COUNTY
LOR-20-12.62



PLAN

ELEVATION

PIER 2, RIGHT BRIDGE
LOOKING EAST

LOCATION	RIGHT BRIDGE
	ITEM SPECIAL
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
PIER COLUMNS	8
200% EXPANSION FACTOR	16
* TOTAL	24

ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

* THIS QUANTITY IS CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

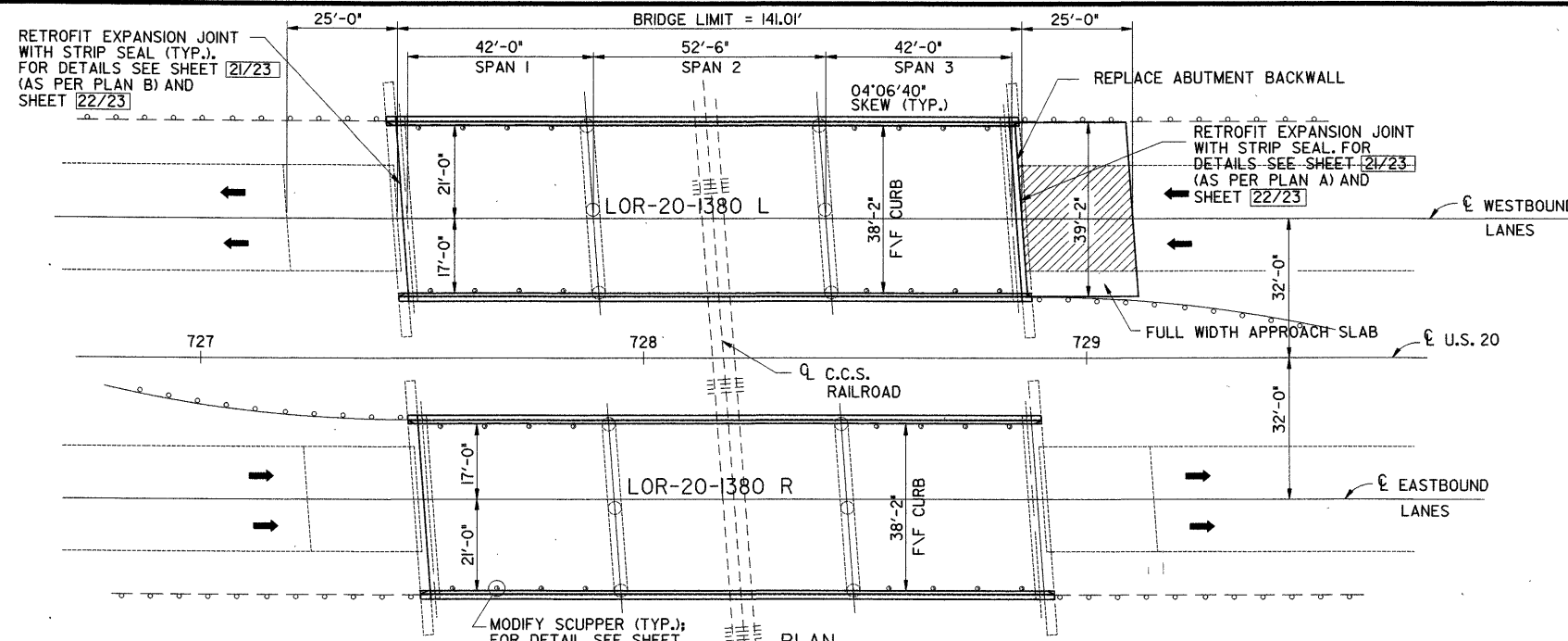
POLYTECH, INC.		13A/23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
SUBSTRUCTURE PATCHING			
BRIDGE NO. LOR-20-1356 L & R OVER MIDDLE AVENUE			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
NK	NK	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		

DRAWING = MIDPATCH DATE = AUGUST 9, 1996

FHWA REGION	STATE	PROJECT
5	OHIO	

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351

LORAIN COUNTY
LOR-20-12.62



EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 42'-0", 52'-6" & 42'-0"
ROADWAY WIDTH: 38'-0" F/F CURB
ALIGNMENT: TANGENT
SKEW: 04' 06' 40" RIGHT FORWARD
LOAD FREQUENCY: CF 2000 (57)
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: 25'-0" LONG (AS-I-67)
YEAR BUILT: 1968*
STRUCTURE FILE NO.: 470143 & 470178

PROPOSED WORK

- REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET [21/23]).
- RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET.
- RETROFIT EXPANSION JOINT WITH STRIP SEAL.
- TRIM ENDS OF BEAMS.
- REPLACE LEFT FORWARD BACKWALL.
- MODIFY EXISTING SCUPPERS.
- RESET ABUTMENT BEARINGS.
- CONCRETE SEALER ON PARAPET.
- FIELD PAINTING OF EXISTING STEEL.
- REPLACE EXISTING LEFT FORWARD APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
- INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE.
- SUBSTRUCTURE PATCHING, SEE SHEET [18A/23]

NOTE:
THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET [4/23].

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

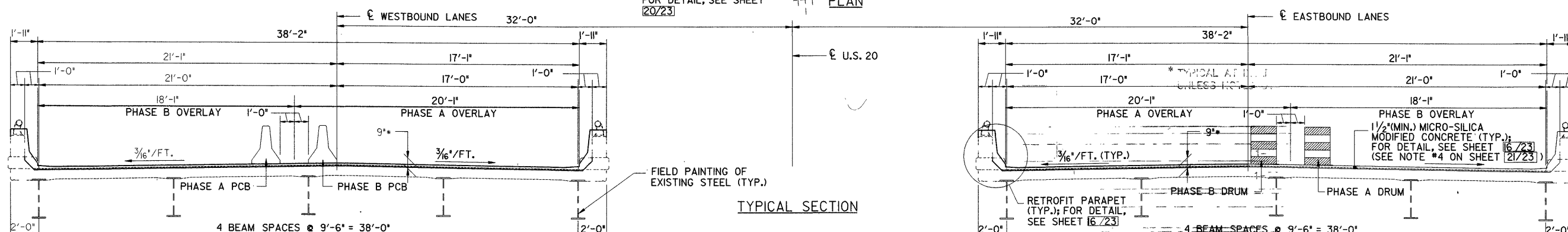
SPANS: 42'-0", 52'-6" & 42'-0"
ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET
ALIGNMENT: TANGENT
SKEW: 04' 06' 40" RIGHT FORWARD
LOAD FREQUENCY: CF 2000 (57)
WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE
APPROACH SLABS: 25'-0" LONG, FULL WIDTH, LEFT FORWARD (AS-I-8)

POLYTECH, INC. 14 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1380 L & R
OVER C.C.S. RAILROAD

LORAIN COUNTY				OHIO	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	RC	-	VB	BS	8/96
				DRA	9/96



ESTIMATED QUANTITIES (LOR-20-1380 L) (ALSO SEE SHEET [15/23])

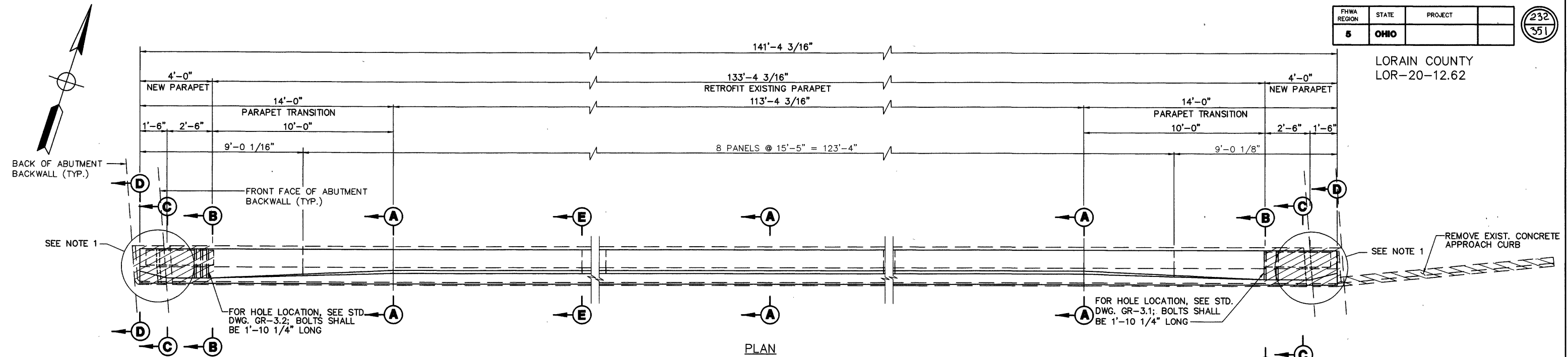
ESTIMATED QUANTITIES (LOR-20-1380 R) (ALSO SEE SHEET [15/23])

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
202	11301	11	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT	11			
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	4,256	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	1,072		3,084	100
510	10001	488	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	20		468	
511	34450	18	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			18	
511	45701	11	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	11			
SPECIAL	51267504	127	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			127	
513	21000	10	EACH	TRIMMING OF BEAM END			10	
516	10900	24	LIN FT	ELASTOMERIC COMPRESSION SEAL			24	
516	11801	39	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A			39	
516	11801	39	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			39	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	
516	46801	10	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	10			

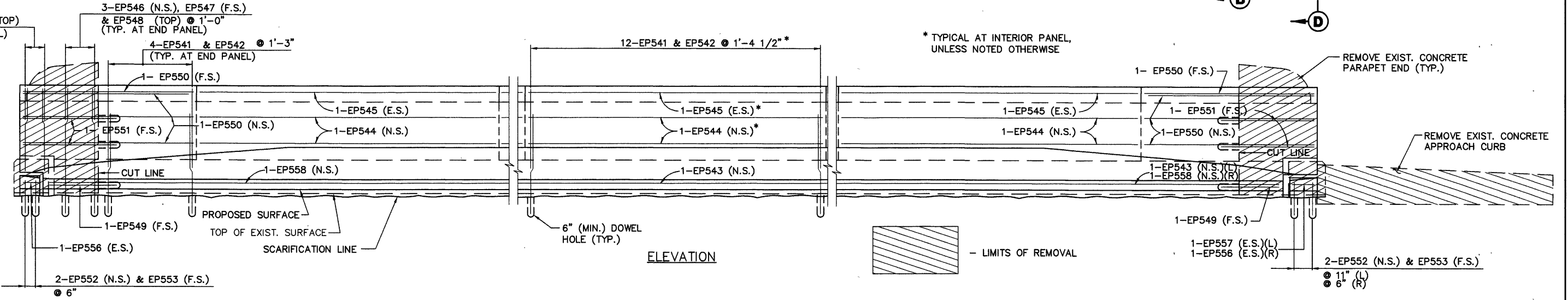
ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
509	15840	3,184	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,084	100
510	10001	468	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			468	
511	34450	18	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			18	
SPECIAL	51267504	127	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			127	
513	21000	10	EACH	TRIMMING OF BEAM END			10	
516	10900	48	LIN FT	ELASTOMERIC COMPRESSION SEAL			48	
516	11801	78	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			78	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	
516	46801	10	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	10			

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WORKSTATION: darmstro DATE: 23 SEP 96

LORAIN COUNTY
LOR-20-12.62



PLAN



ELEVATION

ESTIMATED QUANTITIES (LOR-20-1380 L) (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
516	47001	LUMP SUM	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP SUM
518	12801	16	EACH	SCUPPER MODIFICATION, AS PER PLAN			16	
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	59	LIN FT	6\"/>				

ESTIMATED QUANTITIES (LOR-20-1380 R) (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
516	47001	LUMP SUM	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP SUM
518	12801	16	EACH	SCUPPER MODIFICATION, AS PER PLAN			16	
SPECIAL	51922006	620	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2 INCHES THICK)†			620	
SPECIAL	51922100	17	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)†			17	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB†				LUMP SUM
815	00050	8,000	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			8,000	
815	00056	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			8,000	
815	00060	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			8,000	
815	00066	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			8,000	
815	00504	25	MAN HR	GRINDING FINNS, TEARS, SLIVERS			25	

NOTE: THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23

NOTES:

- MODIFICATION DETAILS SHOWN ARE TYPICAL FOR LEFT BRIDGE PARAPETS. RIGHT BRIDGE PARAPET MODIFICATION DETAILS AT ABUTMENTS SHALL BE SIMILAR TO THOSE SHOWN FOR LEFT BRIDGE REAR ABUTMENT. SEE SHEET 22/23 FOR ADDITIONAL DETAILS.
- FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 16/23.
- FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
- FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

POLYTECH, INC. 15 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET PLAN & ELEVATION

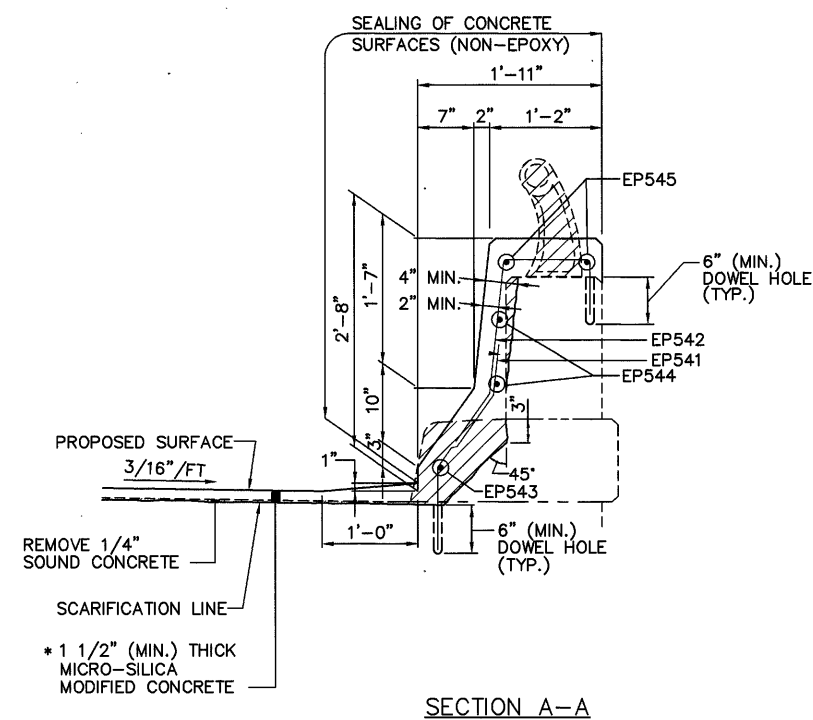
BRIDGE NO. LOR-20-1380 L & R
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

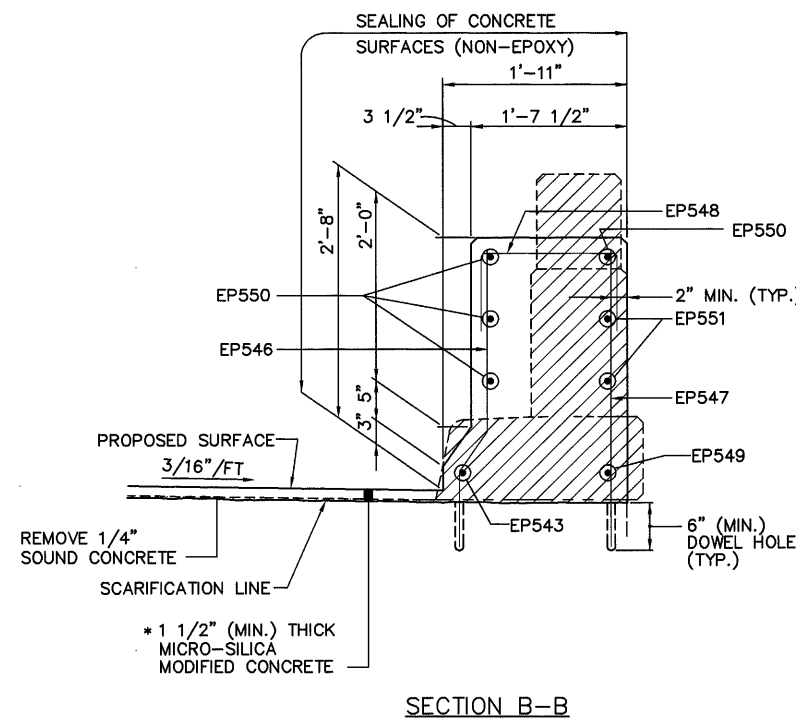
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PSS	MR	-	VB	BS	8/96	

† SEE PROPOSAL NOTE

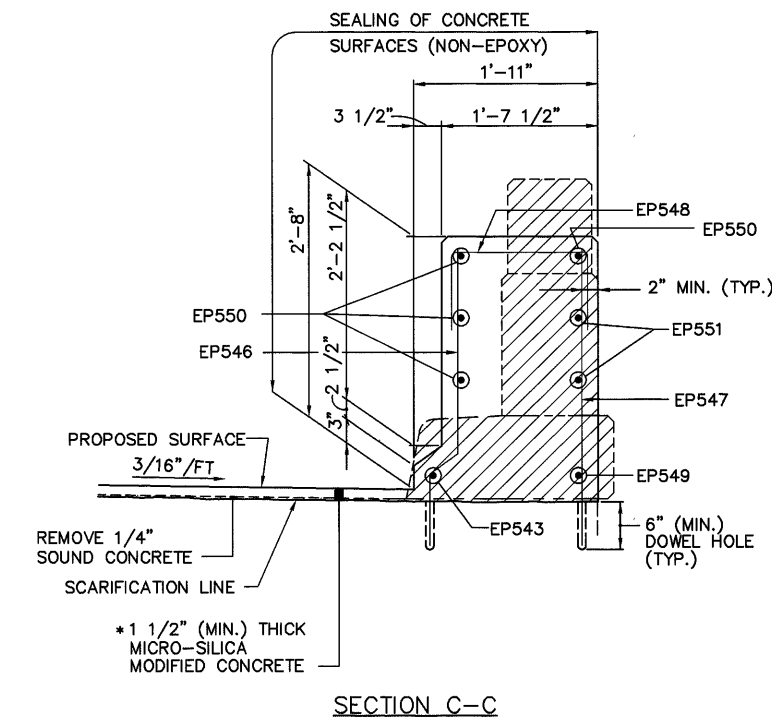
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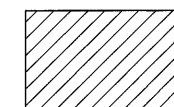
SECTION A-A



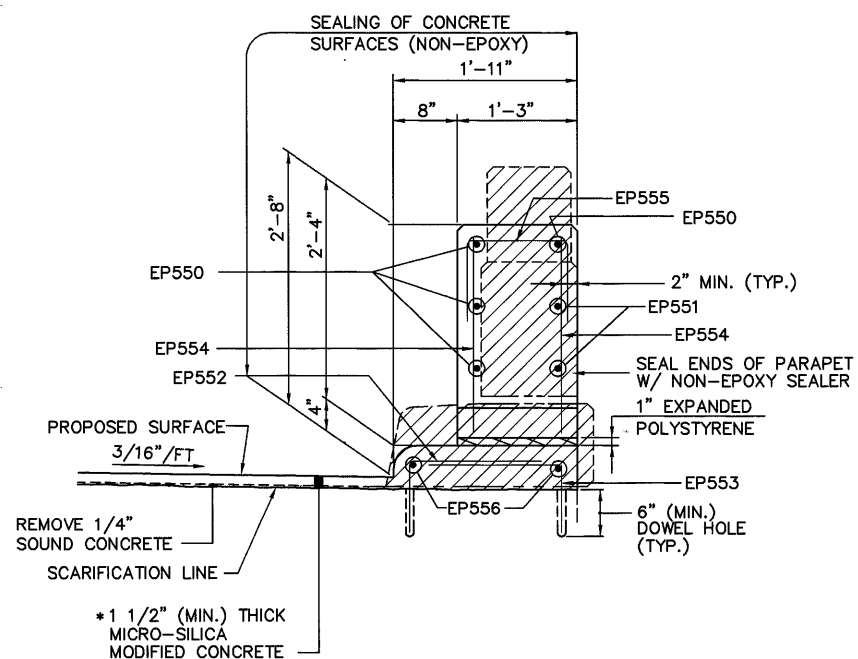
SECTION B-B



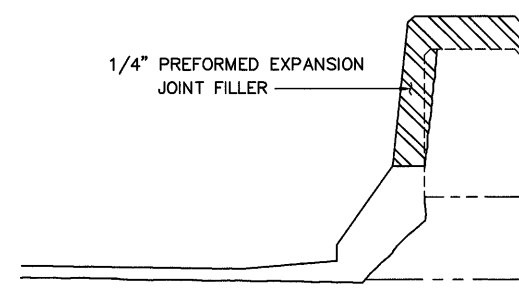
SECTION C-C



- LIMITS OF REMOVAL



SECTION D-D



SECTION E-E

NOTES:

- EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
- THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
- * SEE NOTE #4 ON SHEET 21/23.

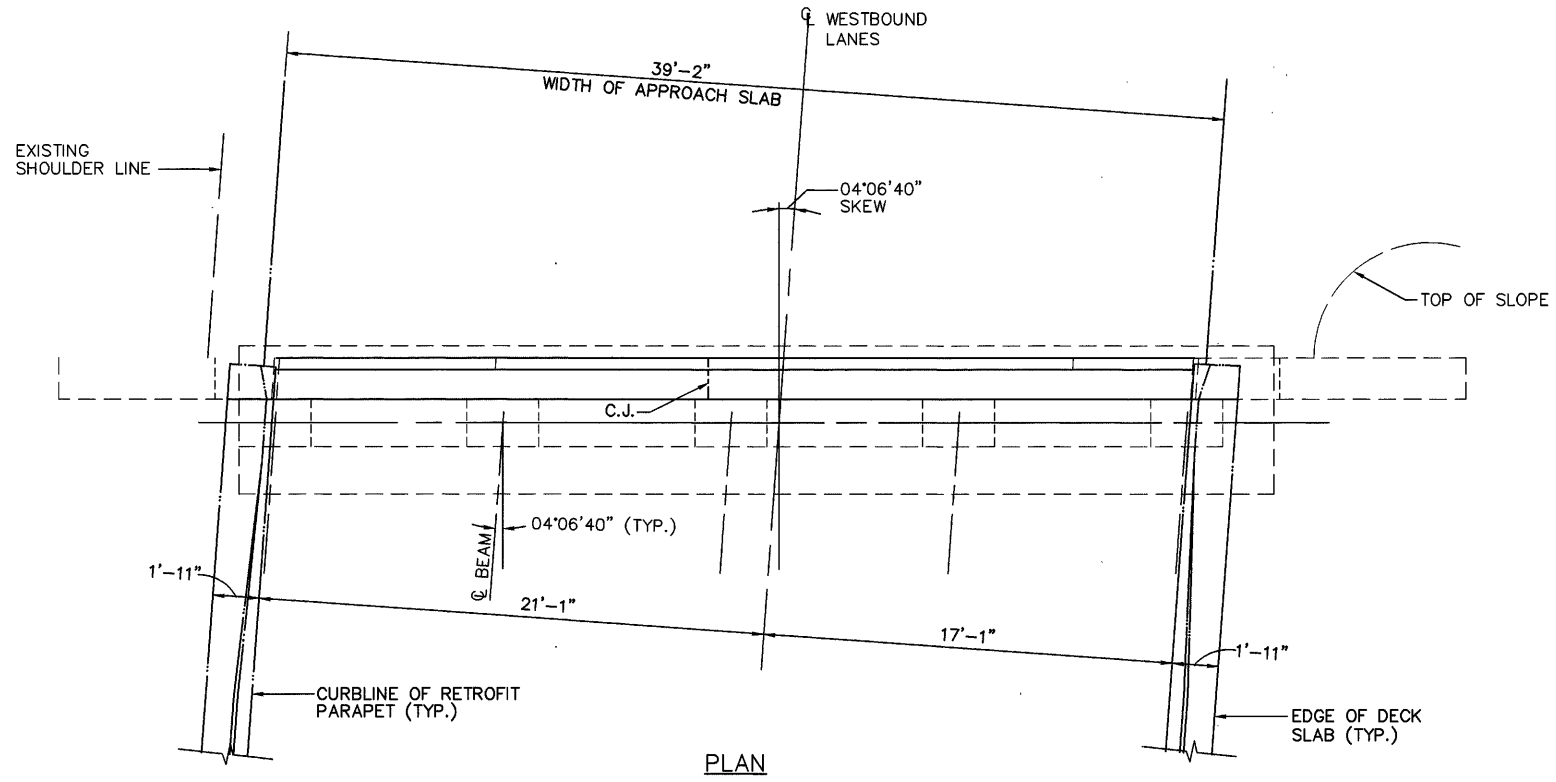
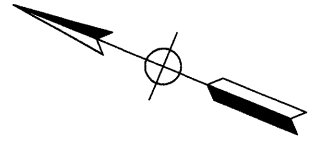
DRAWING = RRSEC DATE = JULY 30, 1996

POLYTECH, INC.						16 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO						
PARAPET SECTIONS						
BRIDGE NO. LOR-20-1380 L & R OVER C.C.S. RAILROAD						
LORAIN COUNTY						OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	

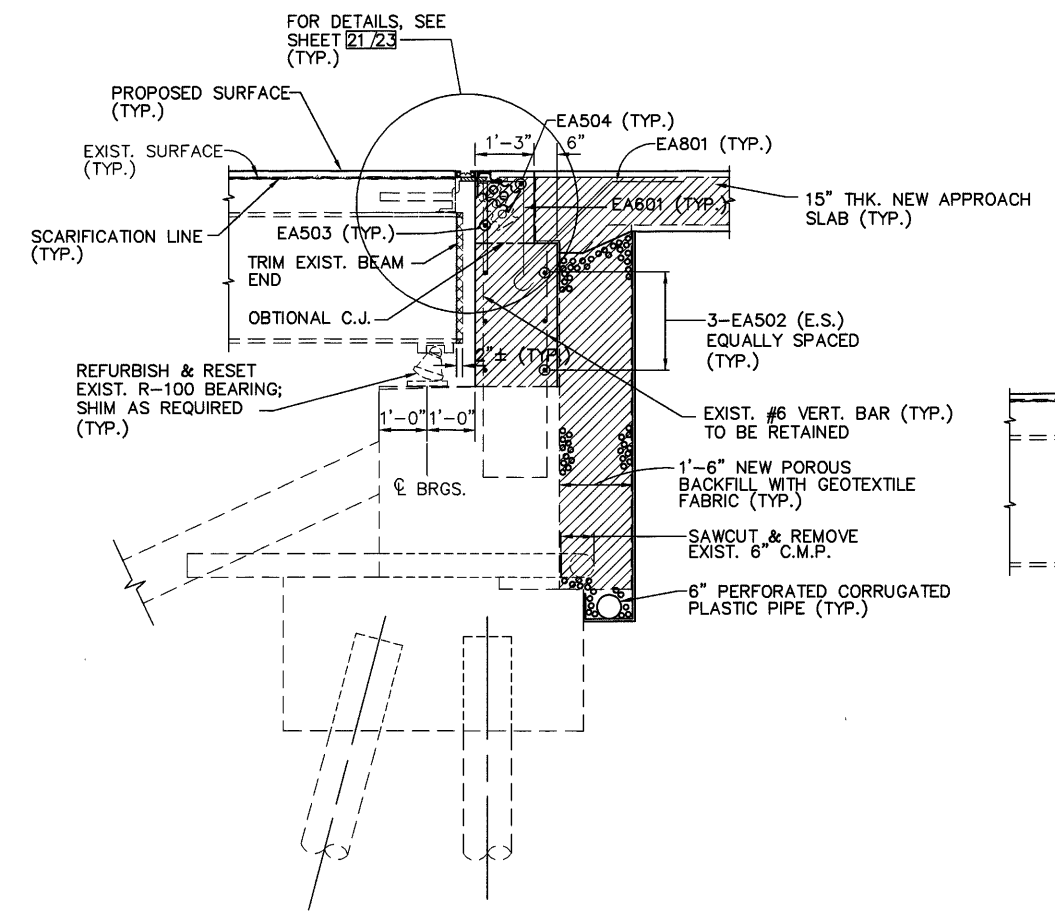
FHWA REGION	STATE	PROJECT
5	OHIO	

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351

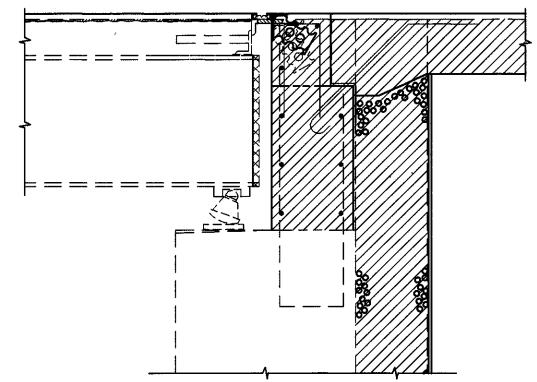
LORAIN COUNTY
LOR-20-12.62



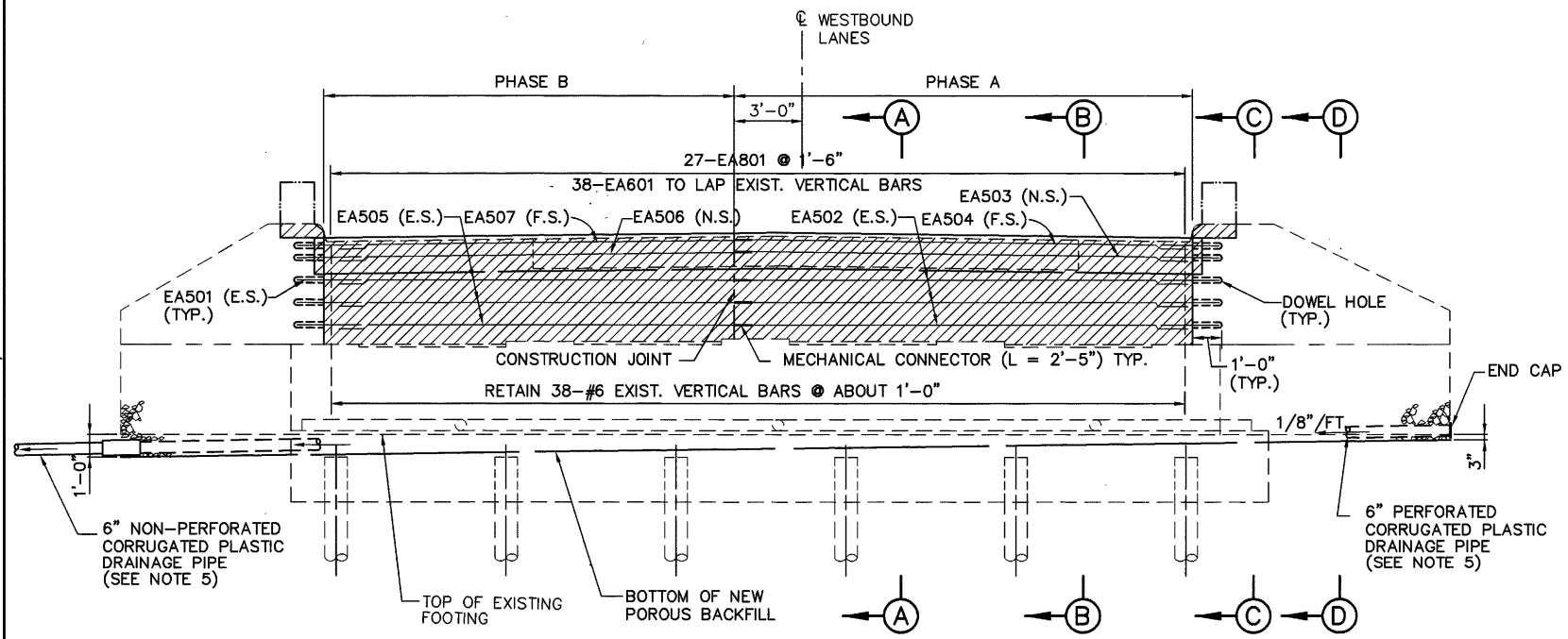
PLAN



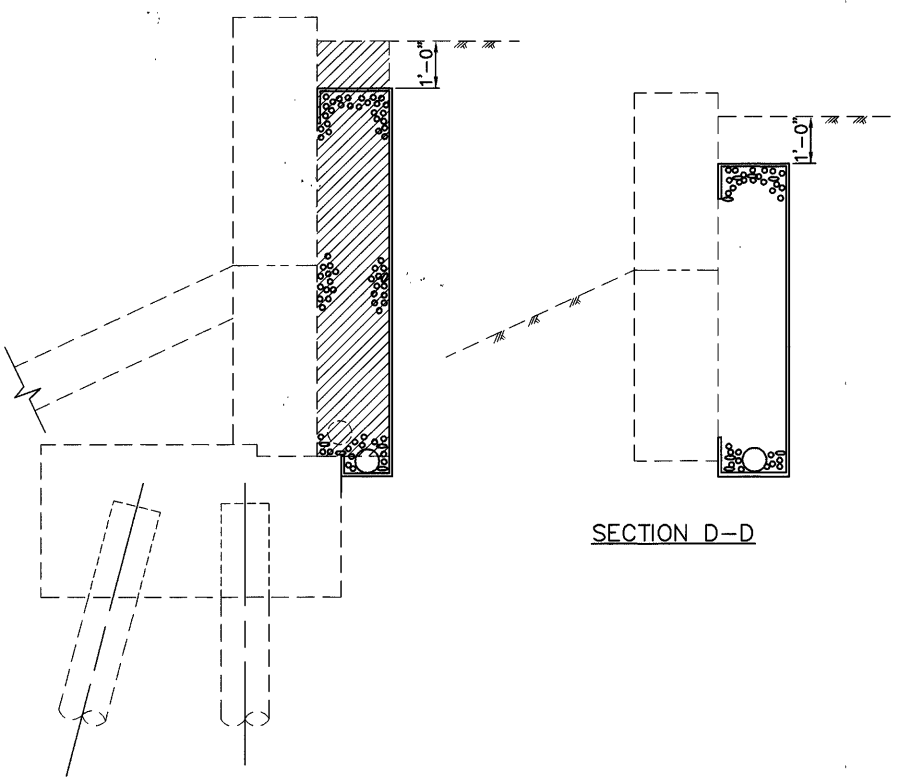
SECTION A-A



SECTION B-B



ELEVATION



SECTION C-C

SECTION D-D

NOTES

1. MODIFICATION DETAILS TO THE FORWARD ABUTMENT OF THE LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE LEFT BRIDGE WILL BE SIMILAR TO THE DETAILS SHOWN ON SHEET 18/23.
2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 15/23.
3. THE COST OF REMOVING EXIST. POROUS BACKFILL INCLUDING SAWCUTTING & REMOVING EXIST. 6" C.M.P. AS SHOWN ON SECTION A-A AND PROVIDING GEOTEXTILE FABRIC, TYPE A, PER ITEM 712.09, SHALL BE INCLUDED WITH ITEM 518, "POROUS BACKFILL WITH FILTER FABRIC" FOR PAYMENT.
4. POROUS BACKFILL WITH FILTER FABRIC, 1'-6" THICK SHALL EXTEND FROM THE ELEVATION SHOWN IN THE PLANS TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
5. THE 6" PERFORATED CORRUGATED PLASTIC PIPE SHALL BE SLOPED AWAY FROM THE C U.S. 20. FOR THE EXTENSION OF THE NON-PERFORATED CORRUGATED PLASTIC PIPE BEYOND THE ABUTMENT WALL AND ITS TERMINATION DETAILS, SEE STD. DWG. A-1-69.
6. THE POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
7. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

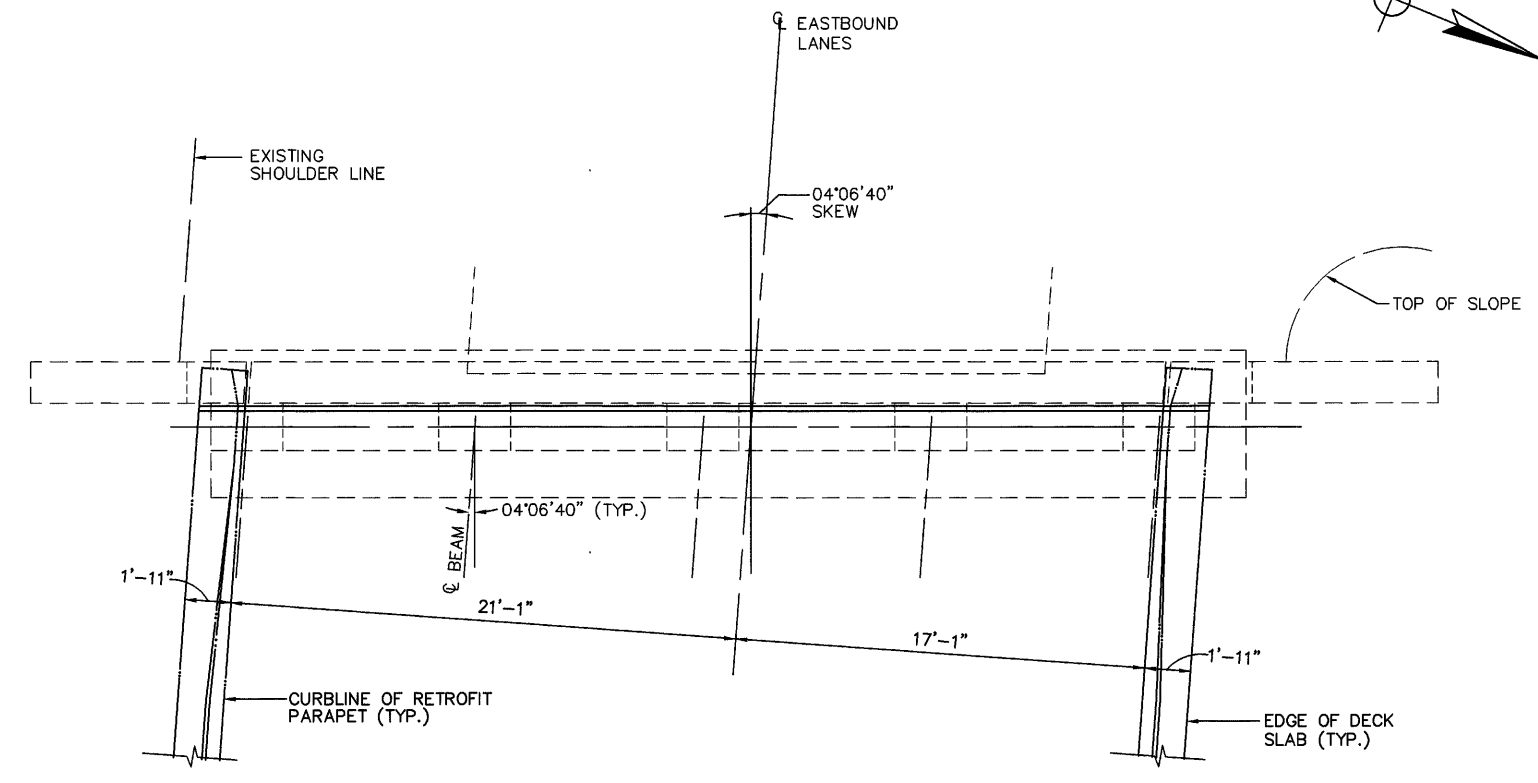
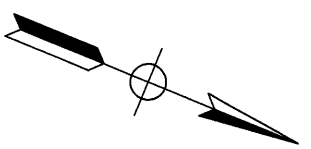
DRAWING = RRABUT-L DATE = JULY 30, 1996

POLYTECH, INC.		17 / 23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
ABUTMENT MODIFICATION DETAILS			
BRIDGE NO. LOR-20-1380 L OVER C.C.S. RAILROAD			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
PSS	RG	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		

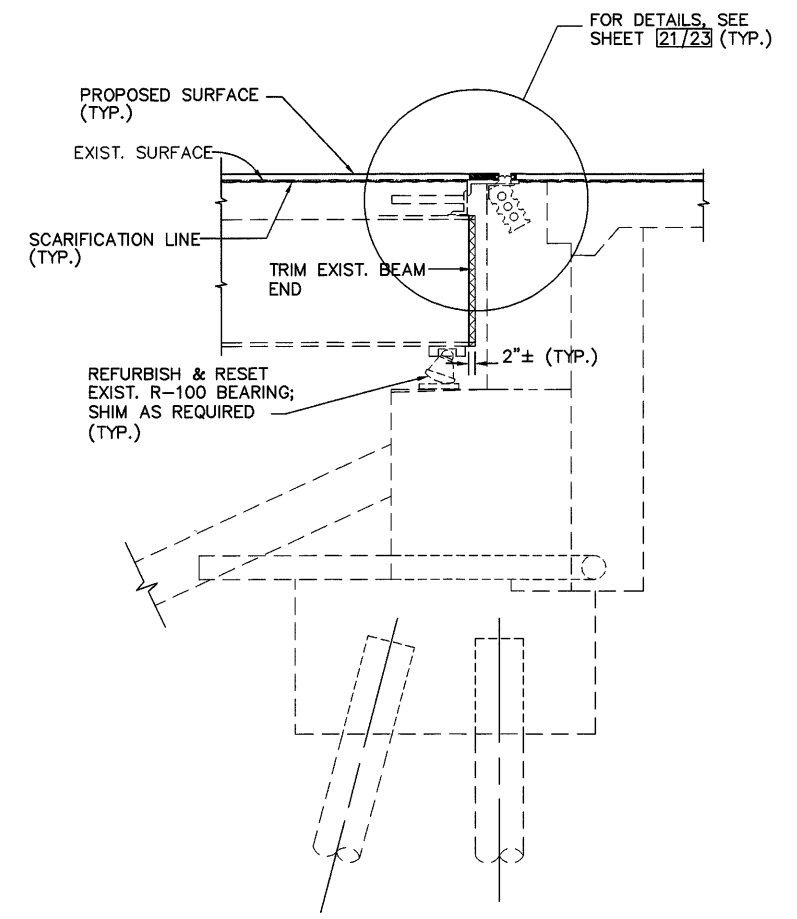
FHWA REGION	STATE	PROJECT
5	OHIO	

233
351

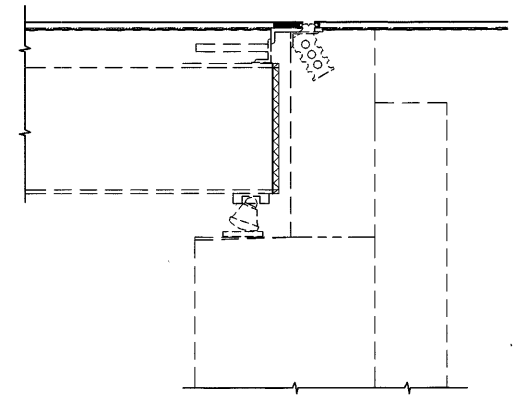
LORAIN COUNTY
LOR-20-12.62



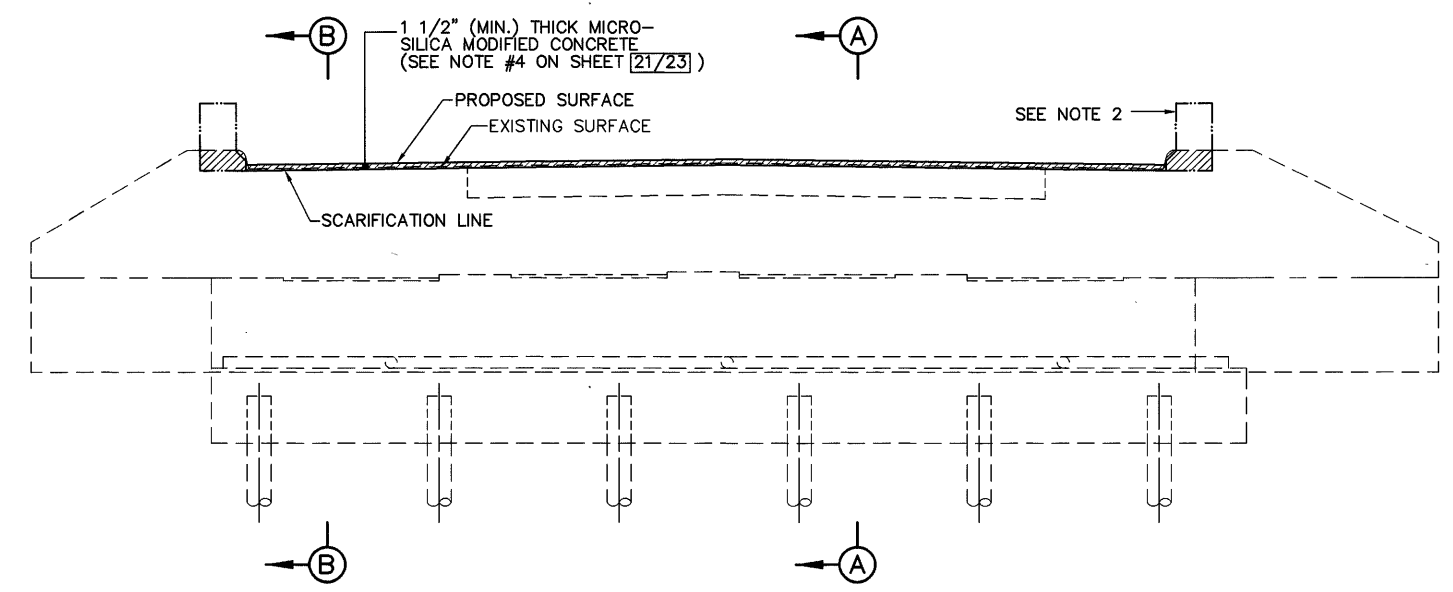
PLAN



SECTION A-A



SECTION B-B



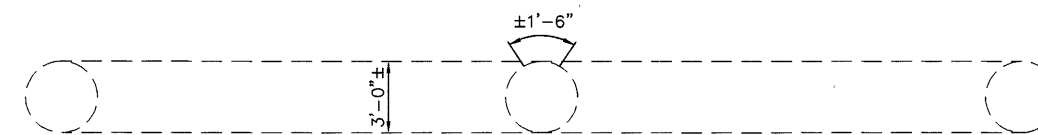
ELEVATION

NOTES

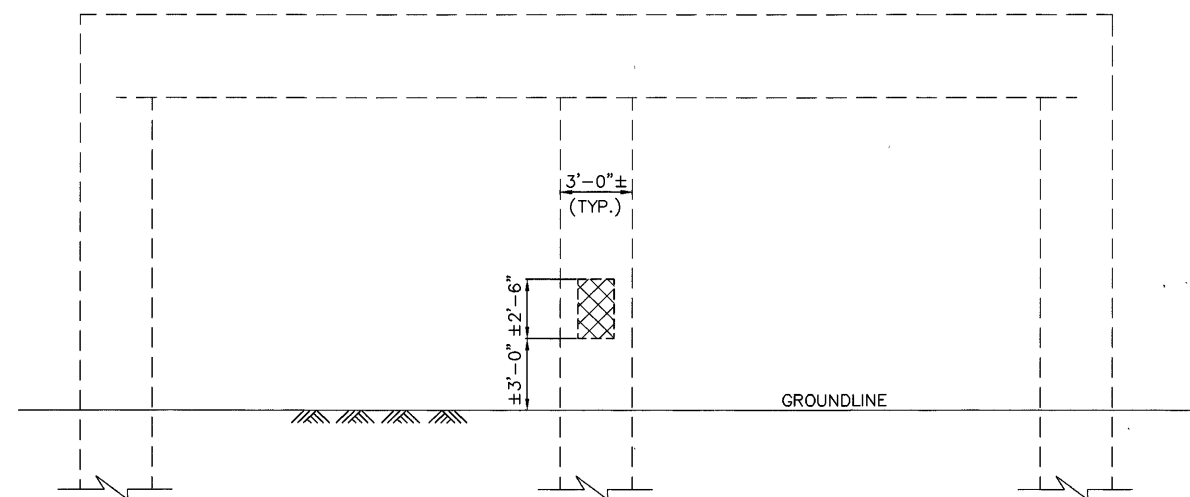
1. MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE RIGHT BRIDGE IS SHOWN. MODIFICATION DETAILS TO THE FORWARD ABUTMENT THE RIGHT BRIDGE WILL BE SIMILAR.
2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 15/23.

DRAWING = RRABUT-R DATE = JULY 30, 1996

POLYTECH, INC.		18 / 23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
ABUTMENT MODIFICATION DETAILS			
BRIDGE NO. LOR-20-1380 R OVER C.C.S. RAILROAD			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
PSS	RG	-	VB
REVIEWED	DATE	REVISED	
BS	8/96		



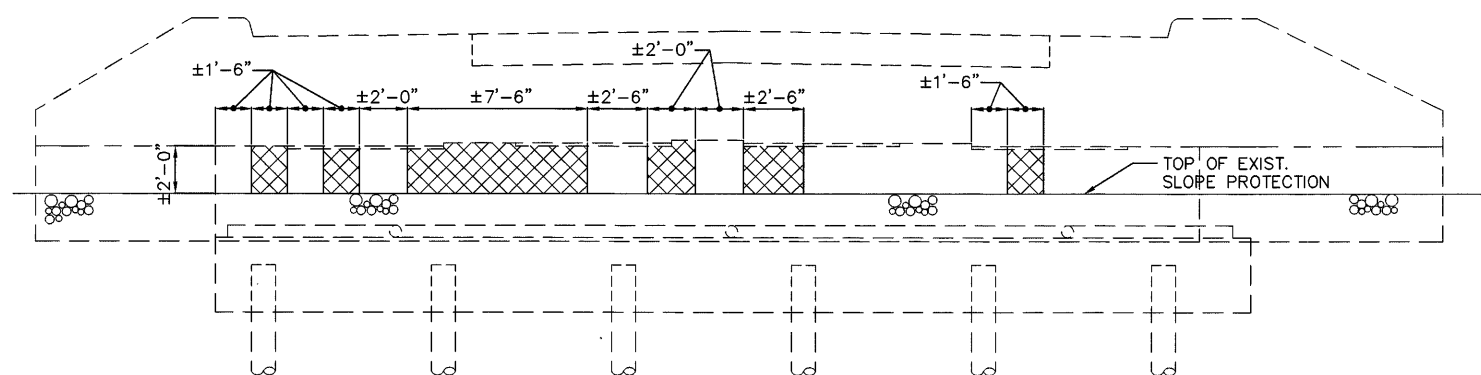
PLAN



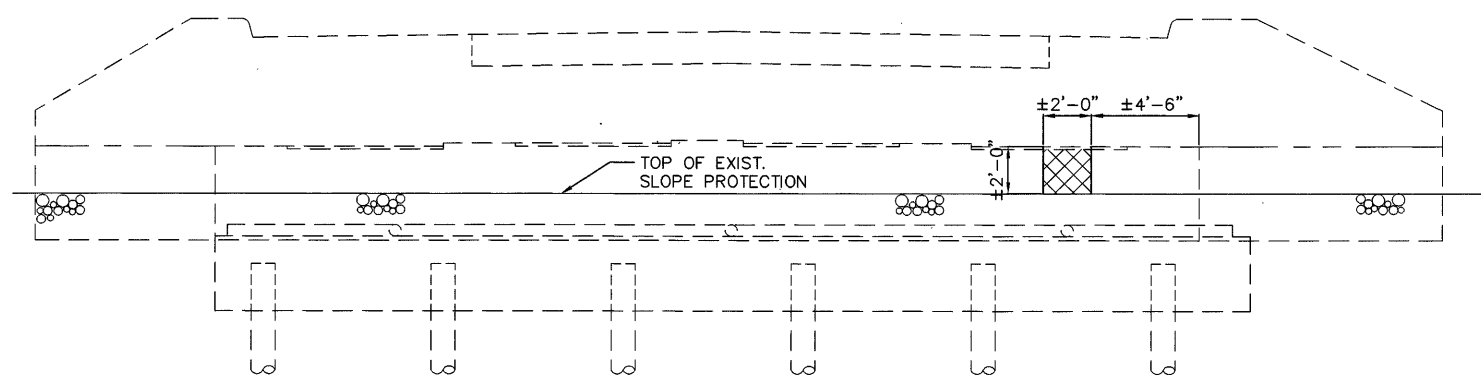
ELEVATION

PIER 1, RIGHT BRIDGE

LOOKING EAST




FORWARD ABUTMENT, RIGHT BRIDGE



REAR ABUTMENT, LEFT BRIDGE

LOCATION	RIGHT BRIDGE	LEFT BRIDGE
	ITEM SPECIAL PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	ITEM SPECIAL PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
ABUTMENTS	33	4
PIER COLUMNS	4	-
200% EXPANSION FACTOR	74	8
* TOTAL	111	12

 ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

* THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

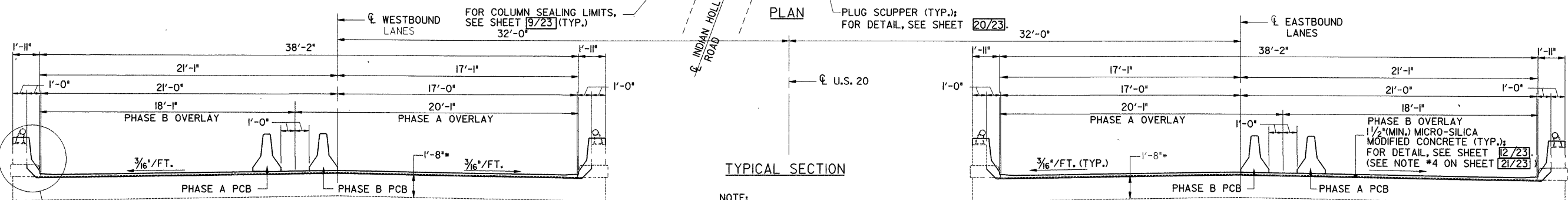
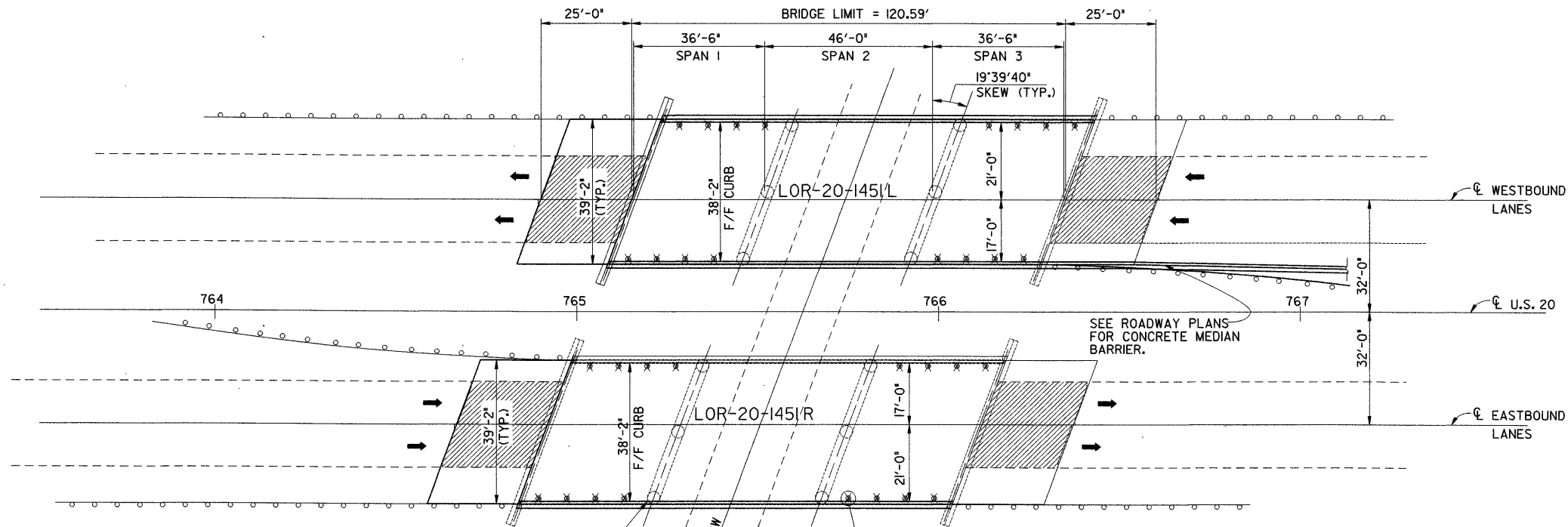
POLYTECH, INC.		18A/23
CONSULTING ENGINEERS		CLEVELAND, OHIO
SUBSTRUCTURE PATCHING		
BRIDGE NO. LOR-20-1380 L & R OVER C.C.S. RAILROAD		
LORAIN COUNTY		OHIO
DESIGNED	DRAWN	TRACED
NK	NK	-
CHECKED	REVIEWED	DATE
VB	BS	8/96

DRAWING = RRPATCH DATE = AUGUST 9, 1996

FHWA REGION	STATE	PROJECT
5	OHIO	



LORAIN COUNTY
LOR-20-12.62



NOTE:
THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

ESTIMATED QUANTITIES (LOR-20-145L)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,380	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,280	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			107	
SPECIAL	51267510	59	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		59		
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, A.P.P.	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1/2 INCHES THICK)			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB				LUMP SUM

ESTIMATED QUANTITIES (LOR-20-145R)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			107	
SPECIAL	51267510	59	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		59		
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, A.P.P.	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1/2 INCHES THICK)			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB				LUMP SUM

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

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

ALIGNMENT: TANGENT

SKEW: 19' 39' 40" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-I-67)

YEAR BUILT: 1968*

STRUCTURE FILE NO.: 4701208 & 4701232

PROPOSED WORK

- REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET 2/23).
- DRILL HOLES TO DRAIN ABUTMENT KEYWAY. SEE SHEET 13/23.
- RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET. FOR DETAILS, SEE SHEET 11/23.
- CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
- PLUG EXISTING SCUPPERS.
- REPLACE EXISTING APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
- INSTALL APPROACH SLAB DOWEL BARS, SEE SHEET 13/23.
- INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE, SEE SHEET 13/23.
- SUBSTRUCTURE PATCHING, SEE SHEET 19A/23.

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET

ALIGNMENT: TANGENT

SKEW: 19' 39' 40" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE

APPROACH SLABS: 25'-0" LONG, FULL WIDTH (AS-I-8)

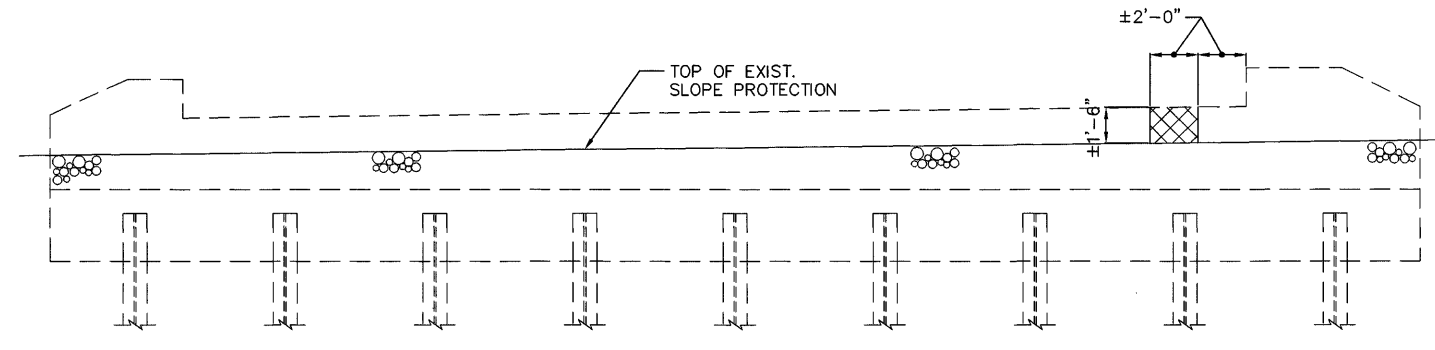
POLYTECH, INC. 19 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

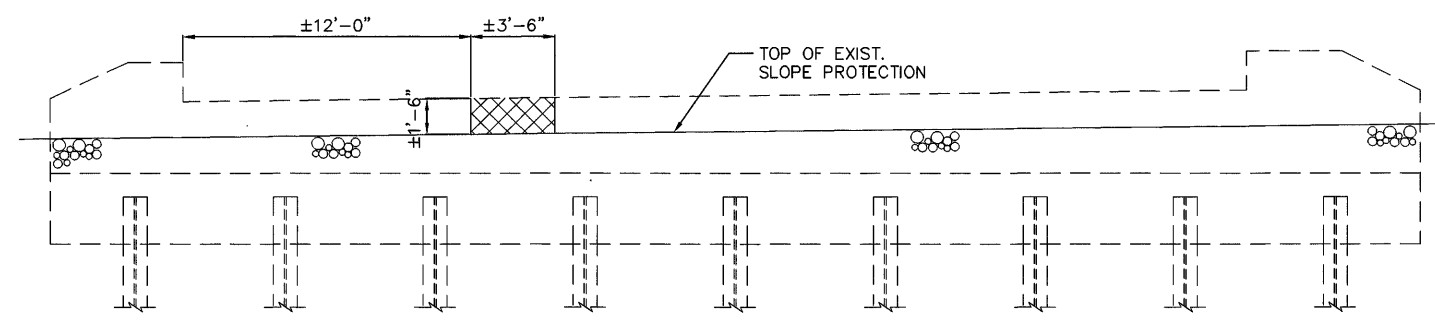
BRIDGE NO. LOR-20-145L & R
OVER INDIAN HOLLOW ROAD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

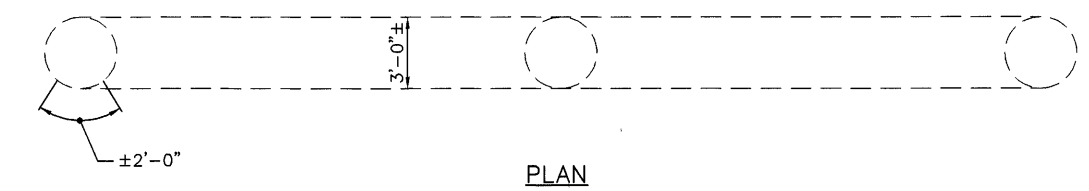
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WORKSTATION: darmstro DATE: 23 SEP 96



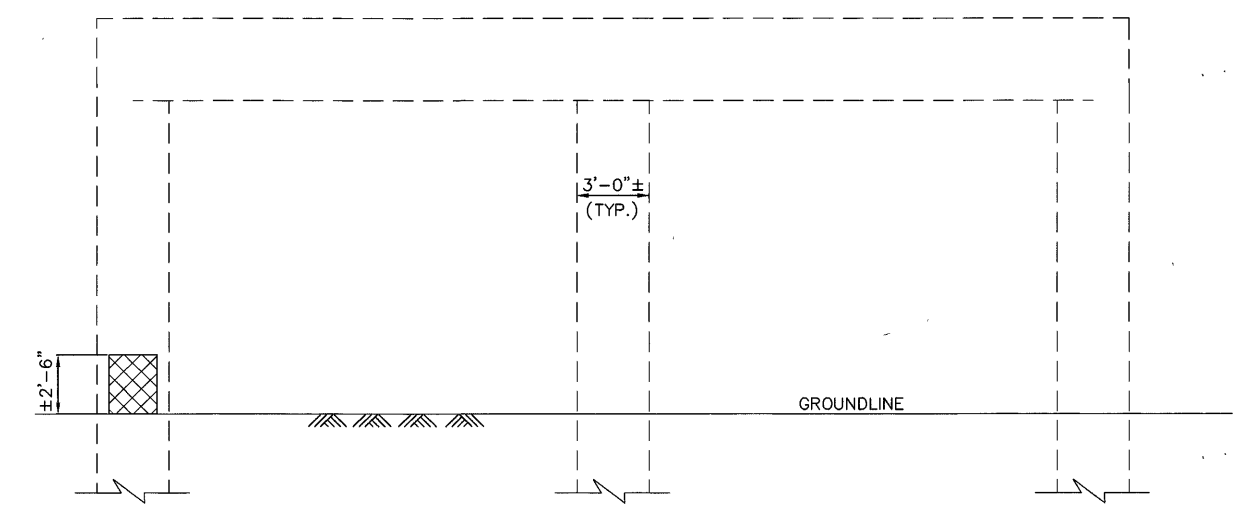
REAR ABUTMENT, RIGHT BRIDGE



FORWARD ABUTMENT, LEFT BRIDGE



PLAN

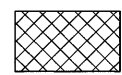


ELEVATION

PIER 2, LEFT BRIDGE

LOOKING EAST

LOCATION	RIGHT BRIDGE	LEFT BRIDGE
	ITEM SPECIAL	ITEM SPECIAL
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
ABUTMENTS	3	5
PIER COLUMNS	-	5
200% EXPANSION FACTOR	6	20
* TOTAL	9	30

 ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

* THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

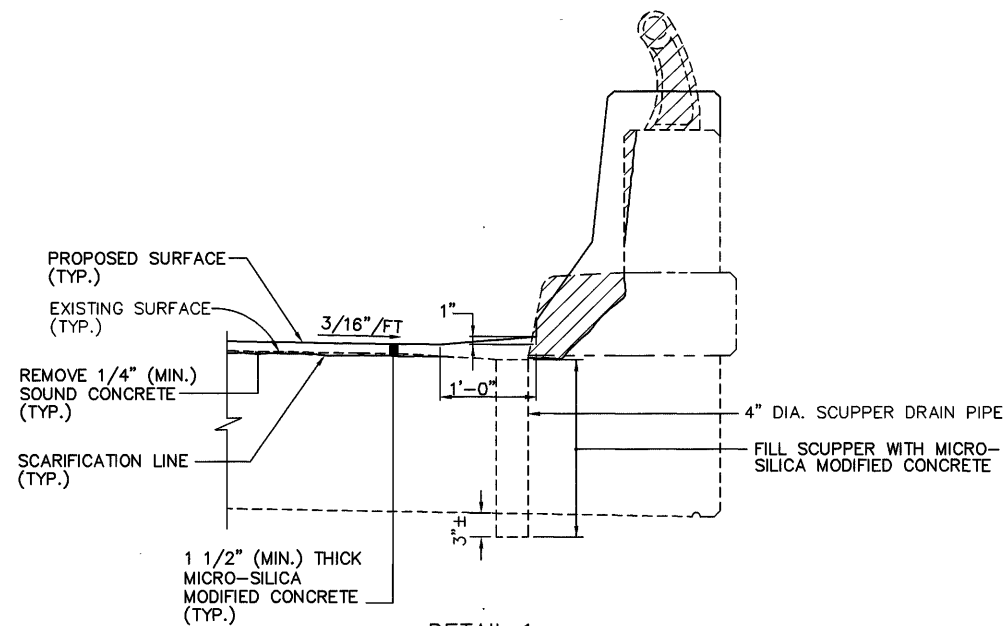
POLYTECH, INC.		19A/23	
CONSULTING ENGINEERS		CLEVELAND, OHIO	
SUBSTRUCTURE PATCHING			
BRIDGE NO. LOR-20-1451 L & R OVER INDIAN HOLLOW ROAD			
LORAIN COUNTY		OHIO	
DESIGNED	DRAWN	TRACED	CHECKED
NK	NK	-	VB
REVIEWED	DATE	REVISED	DATE
BS	8/96		

DRAWING = INDPATCH DATE = AUGUST 9, 1996

FHWA REGION	STATE	PROJECT
5	OHIO	

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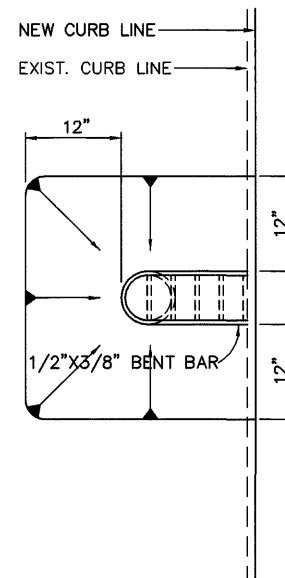
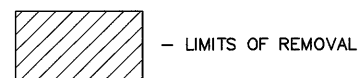
LORAIN COUNTY
LOR-20-12.62



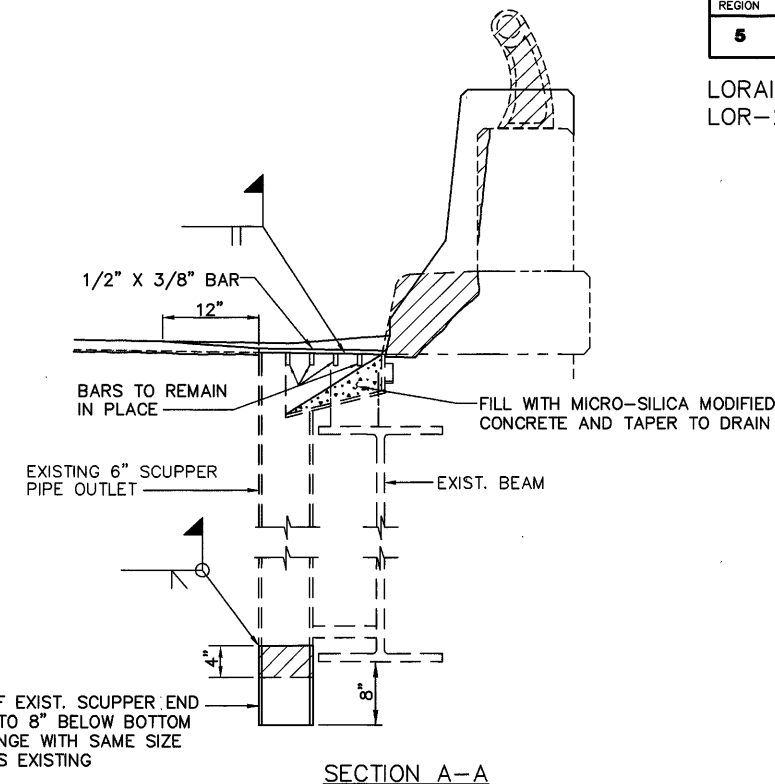
DETAIL 1

EXISTING SCUPPER PLUGGING DETAILS
FOR SLAB BRIDGES NO. LOR-20-1356 L & R
AND LOR-20-1451 L & R.

NOTE: THE COST OF FILLING EXISTING SCUPPER WITH MICRO-SILICA MODIFIED CONCRETE, AS SHOWN ABOVE, SHALL BE INCLUDED WITH ITEM 518, "STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING" FOR PAYMENT.



PLAN



SECTION A-A

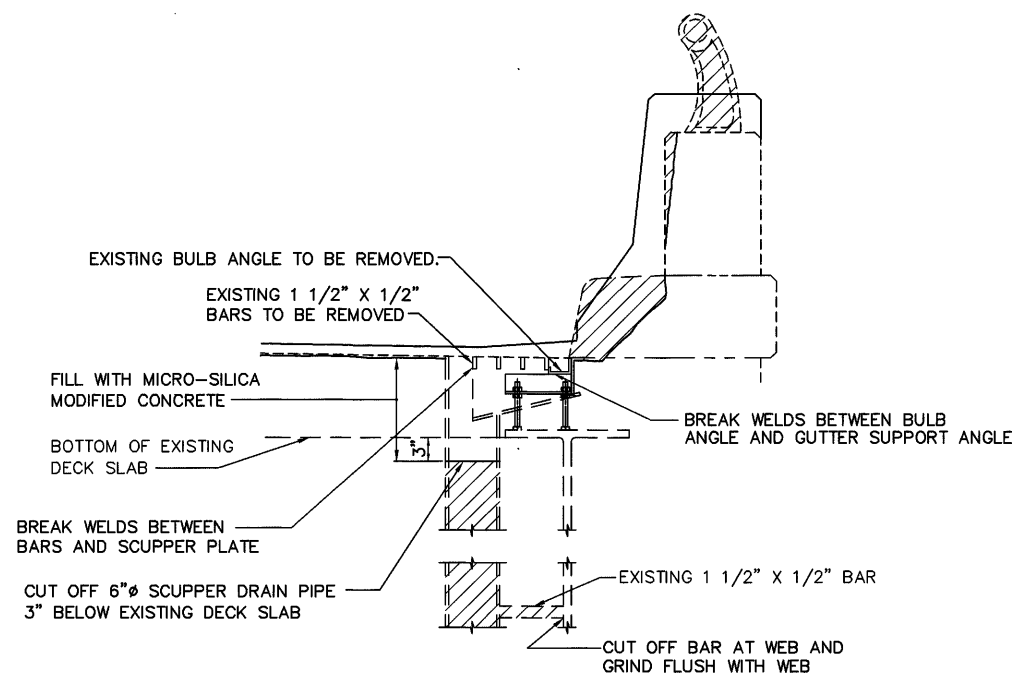
REMOVE 4" OF EXIST. SCUPPER END AND EXTEND TO 8" BELOW BOTTOM OF BEAM FLANGE WITH SAME SIZE STEEL PIPE AS EXISTING

DETAIL 3

EXISTING SCUPPER MODIFICATION DETAILS
FOR BEAM BRIDGE NO. LOR-20-1380 L & R.

NOTE:

1. A 1/2" X 3/8" BAR SHALL BE BENT TO CONFORM WITH SCUPPER EDGE AND WELDED IN PLACE AFTER THE EXISTING SURFACE HAS BEEN CLEANED TO THE ENGINEER'S SATISFACTION. THE SCUPPER EDGE SHALL BE FIELD MEASURED TO DETERMINE THE LENGTH OF THE BENT BAR.
2. ALL SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED BY THE CONTRACTOR TO THE ENGINEER'S SATISFACTION.
3. THE ABOVE WORK AND ALSO EXTENDING THE SCUPPER DRAIN PIPE BELOW THE BOTTOM OF THE BEAM AS SHOWN ABOVE SHALL BE INCLUDED WITH THE ITEM 518 "SCUPPER MODIFICATION, AS PER PLAN" FOR PAYMENT.



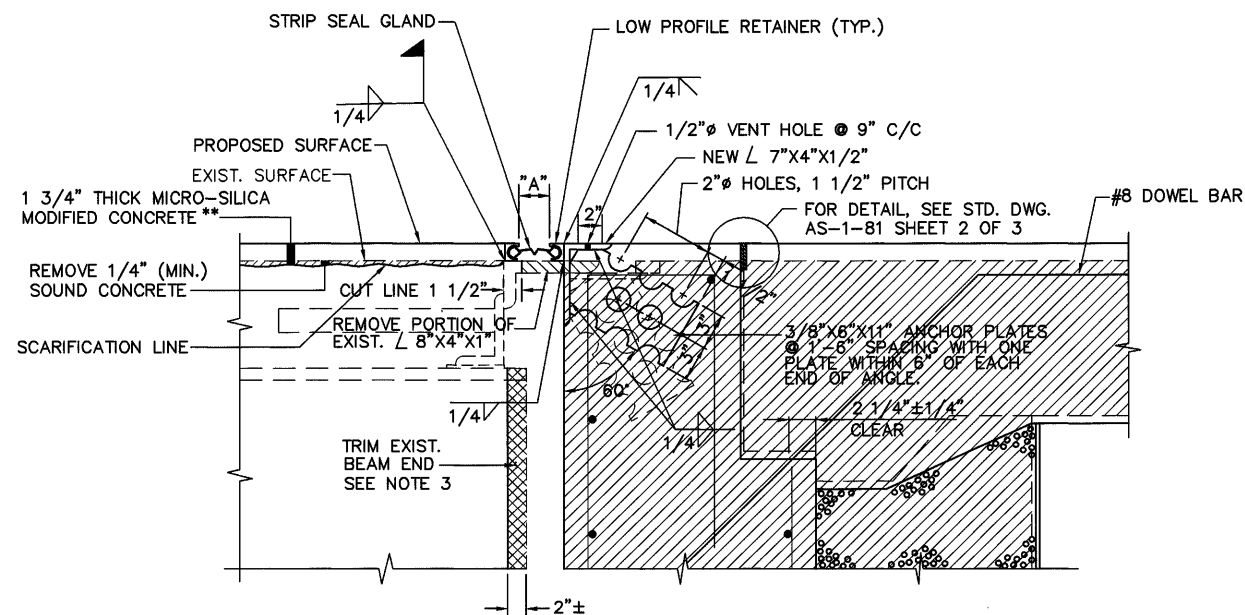
DETAIL 2

EXISTING SCUPPER PLUGGING DETAILS
FOR BEAM BRIDGE NO. LOR-20-1303.

NOTE: REMOVAL OF EXISTING BULB ANGLE, 1 1/2" X 1/2" BAR, CUTTING & REMOVING 6" SCUPPER DRAIN PIPE 3" BELOW BOTTOM OF EXISTING DECK SLAB, GRINDING WEB AND FILLING SCUPPER DRAIN WITH MICRO-SILICA MODIFIED CONCRETE, AS SHOWN ABOVE SHALL BE INCLUDED WITH ITEM 518, "STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING" FOR PAYMENT.

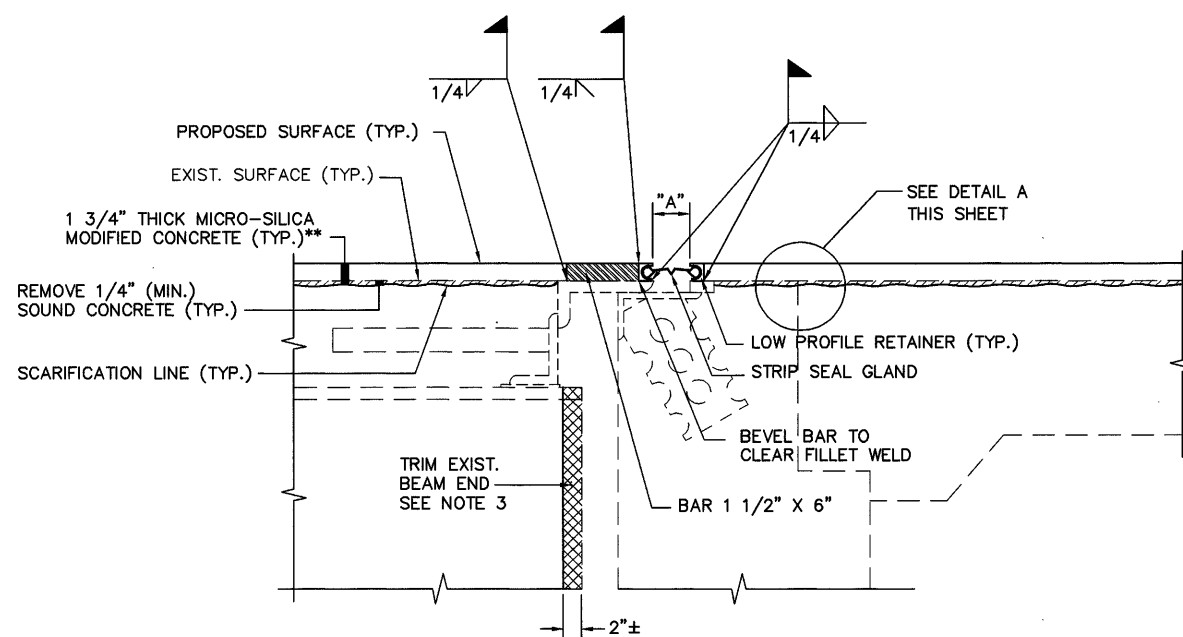
DRAWING = SCUPPER DATE = JULY 30, 1996

POLYTECH, INC.					20 / 23
CONSULTING ENGINEERS					CLEVELAND, OHIO
SCUPPER MODIFICATION DETAILS					
BRIDGE NO. LOR-20-1303					
BRIDGE NO. LOR-20-1356 L & R					
BRIDGE NO. LOR-20-1380 L & R					
BRIDGE NO. LOR-20-1451 L & R					
LORAIN COUNTY					OHIO
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	RG	-	VB	BS	8/96



SECTION E-E

(VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A)
BRIDGE NO. LOR-20-1380 L (FORWARD ABUTMENT)



SECTION A-A

(VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B)
BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1380 L (REAR ABUTMENT) AND LOR-20-1380 R

NOTE

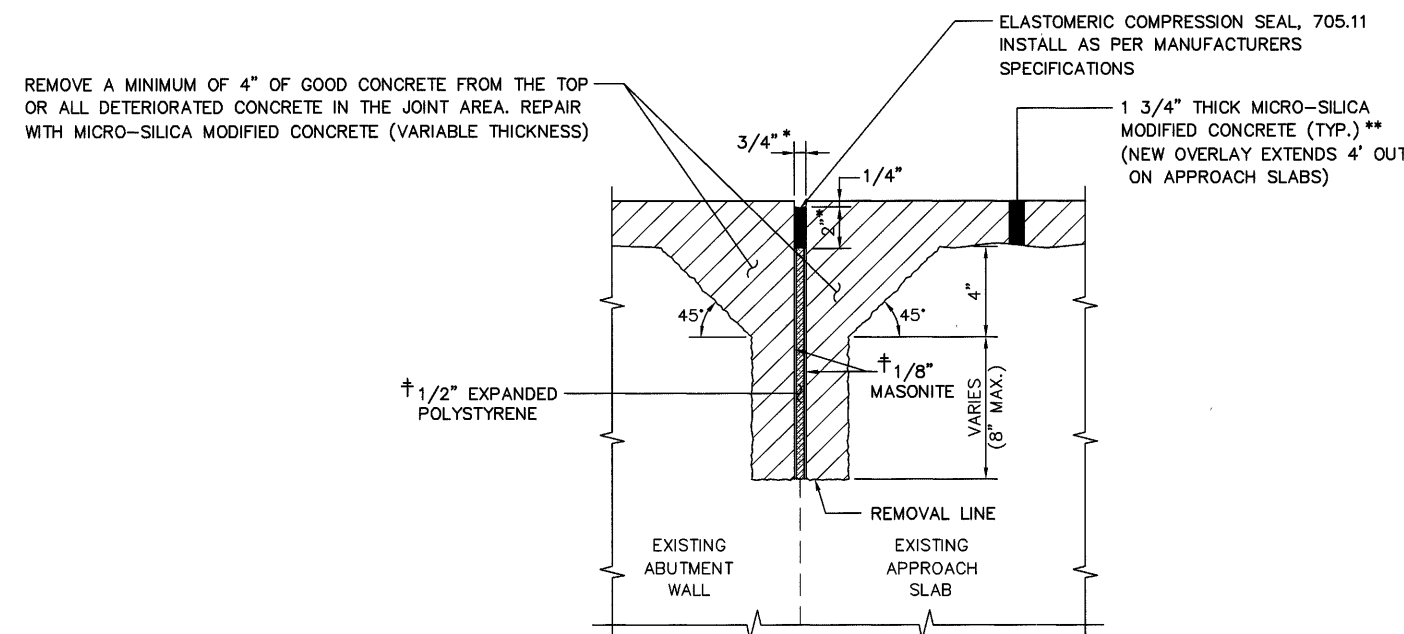
1. THE STRIP SEAL GLAND SHALL BE CONTINUOUS AND INSTALLED IN ONE PIECE. THE GLAND SHALL BE TYPE 300L AS MANUFACTURED BY D.S. BROWN COMPANY OR TYPE SE-300 AS MANUFACTURED BY WATSON-BOWMAN & ACME CORPORATION OR EQUAL.
2. PROVIDE A COMPLETE PENETRATION BUTT WELD AT THE ARMOR JOINTS AND A PARTIAL PENETRATION BUTT WELD AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES OF THE RETAINER (NOT IN THE AREA IN CONTACT WITH THE GLAND).
3. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING END CROSSFRAME, EXISTING ANGLE, BEVEL FILL PLATE AND WELDS CONNECTING THEM TO THE BEAM TOP FLANGE.
4. ** TRANSITION THICKNESS OF MICRO-SILICA MODIFIED CONCRETE FROM 1 3/4" TO 1 1/2" THICK 50' ON BRIDGE SIDE. THE EXTRA AMOUNT OF CONCRETE IS INCLUDED IN ITEM "MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)".

NOTE

FOR LOCATIONS OF SECTION A-A AND SECTION E-E, SEE SHEET 22/23.

BRIDGE NO.	REAR ABUTMENT							FORWARD ABUTMENT								
	STRIP SEAL SIZE (IN.)	DIMENSION "A" AT TIME OF CONSTRUCTION (IN.)							STRIP SEAL SIZE (IN.)	DIMENSION "A" AT TIME OF CONSTRUCTION (IN.)						
		30F	40F	50F	60F	70F	80F	90F		30F	40F	50F	60F	70F	80F	90F
LOR-20-1303	3	1.86	1.79	1.71	1.66	1.57	1.48	1.41	3	1.86	1.79	1.71	1.66	1.57	1.48	1.41
LOR-20-1380 L & R	3	1.81	1.78	1.74	1.71	1.67	1.64	1.61	3	1.86	1.79	1.72	1.65	1.57	1.49	1.43

NOTE: MAXIMUM JOINT OPENING (DIMENSION "A") AT THE TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1 1/2". IF THE JOINT OPENING IS LESS, INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1 1/2" OPENING.



DETAIL A

(COMPRESSION SEAL SHALL BE ONE CONTINUOUS PIECE AND SHALL SEAL THE JOINT THE FULL WIDTH OF THE APPROACH SLAB)

* DIMENSIONS SHOWN ARE FOR WATSON BOWMAN ACME INC. WJ-125, STRUCTURAL ACCESSORIES SA1250 OR D.S. BROWN H-1250. USE ANY OF THE ABOVE OR APPROVED EQUAL AS PER 705.11.

† GLUE 1/2" EXPANDED POLYSTYRENE BETWEEN TWO PIECES OF 1/8" MASONITE, INSTALL TOTAL DEPTH OF REPAIRED AREA. THE MASONITE AND POLYSTYRENE SHALL BE IN PLACE BEFORE ANY CONCRETE IS PLACED, AND SHALL BE BELOW THE FINAL ROADWAY GRADE TO FACILITATE FINISHING OF THE CONCRETE ON BOTH SIDES OF THE JOINT.

IF THE CONCRETE ON BOTH SIDES OF THE JOINT IS NOT FINISHED TO THE SAME HEIGHT, THE JOINT SURFACE SHALL BE GROUND SMOOTH AS DIRECTED BY THE ENGINEER.

SAW OUT ENOUGH MASONITE AND POLYSTYRENE TO INSTALL THE COMPRESSION SEAL AFTER THE JOINT HAS BEEN REPAIRED.

PAYMENT FOR ALL MATERIALS, EXCEPT THE CONCRETE, AND LABOR TO REPAIR THE JOINT AS PER DETAILS ON THIS SHEET SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF ITEM 516, "ELASTOMERIC COMPRESSION SEAL".

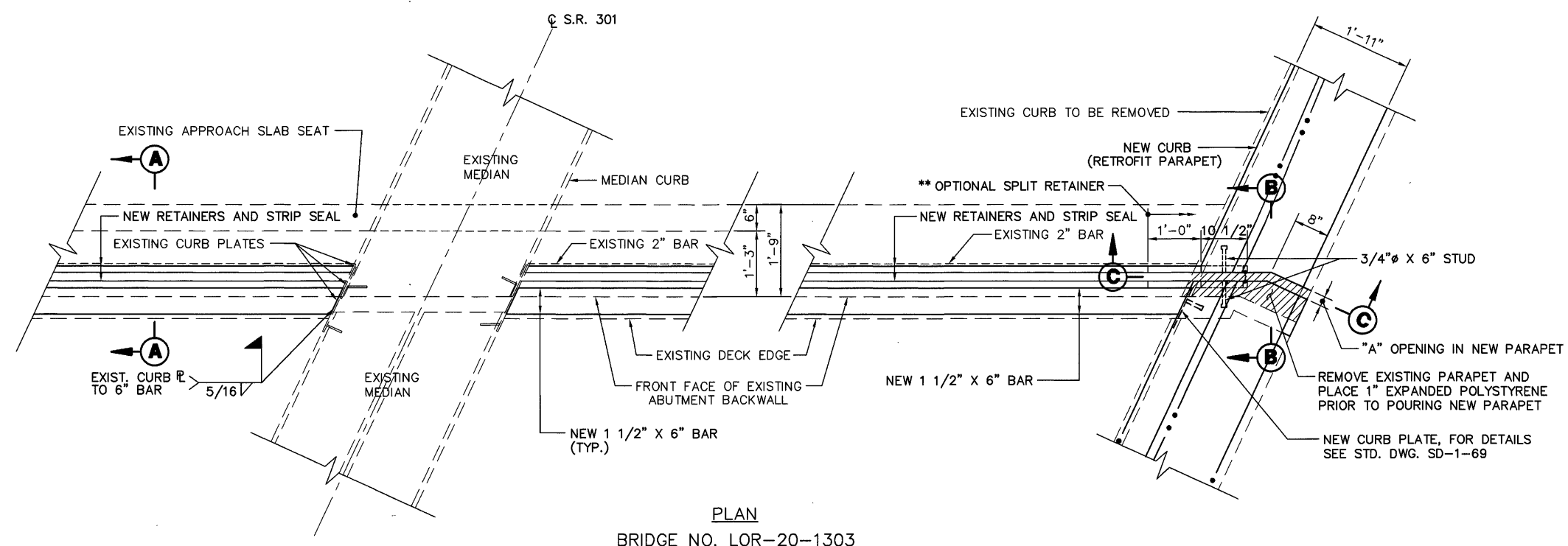
DRAWING = XJOINT DATE = AUGUST 2, 1996

POLYTECH, INC.					21 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO					
MODIFICATION OF STRUCTURAL EXPANSION JOINT					
BRIDGE NO. LOR-20-1303 BRIDGE NO. LOR-20-1380 L & R					
LORAIN COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	RG	-	VB	BS	8/96

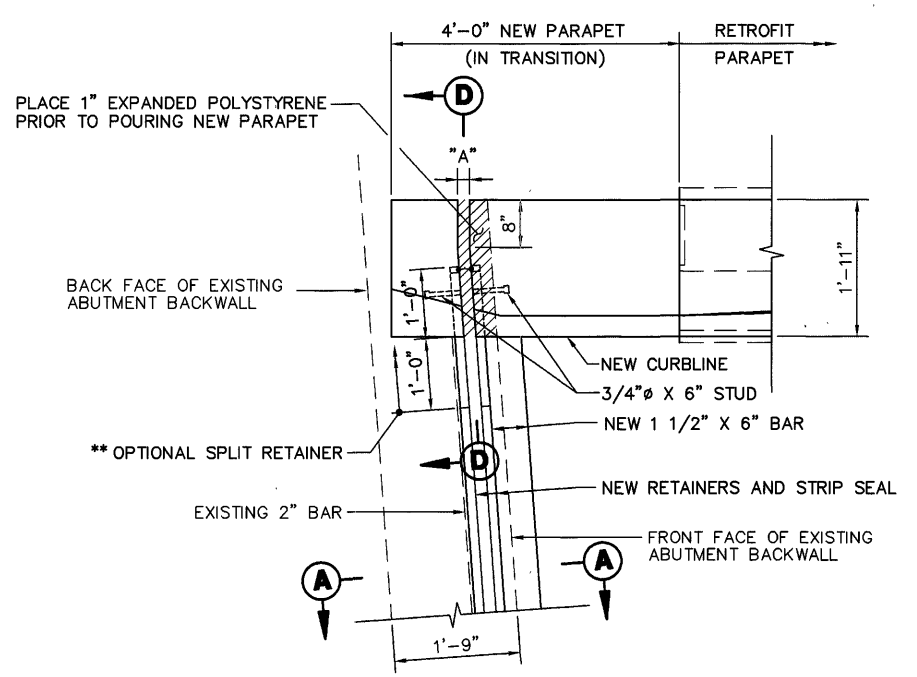
FHWA REGION	STATE	PROJECT
5	OHIO	

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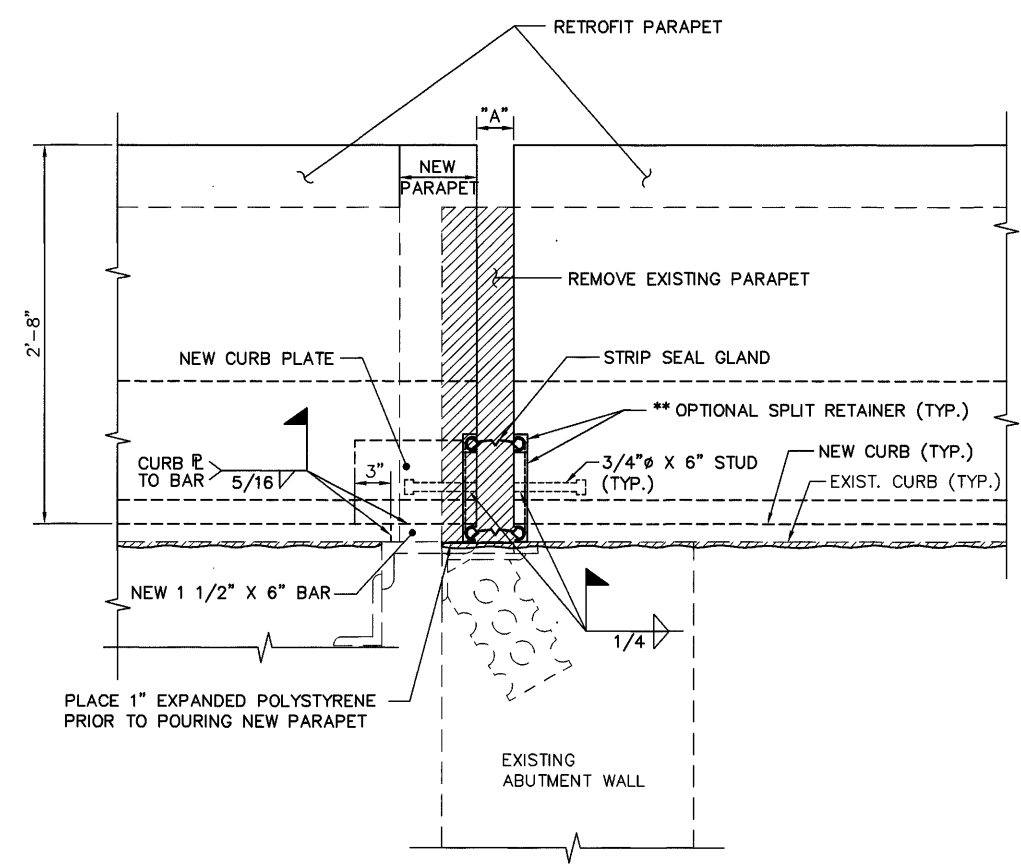
LORAIN COUNTY
LOR-20-12.62



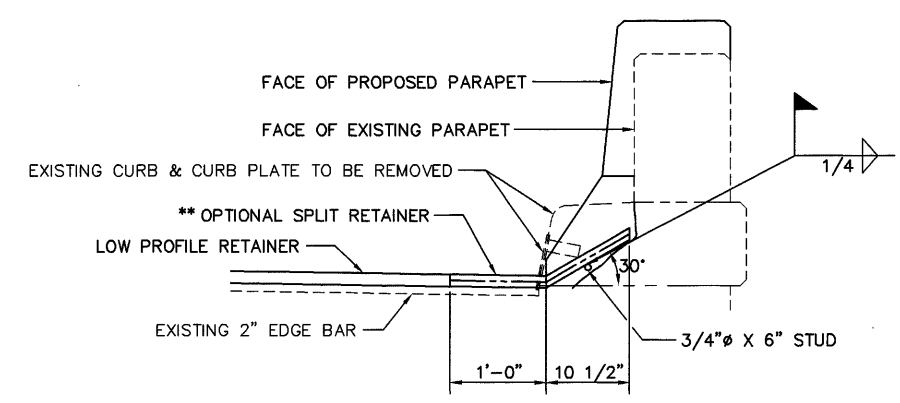
PLAN
BRIDGE NO. LOR-20-1303



PLAN
BRIDGE NO. LOR-20-1380 L (REAR ABUTMENT) AND LOR-20-1380 R

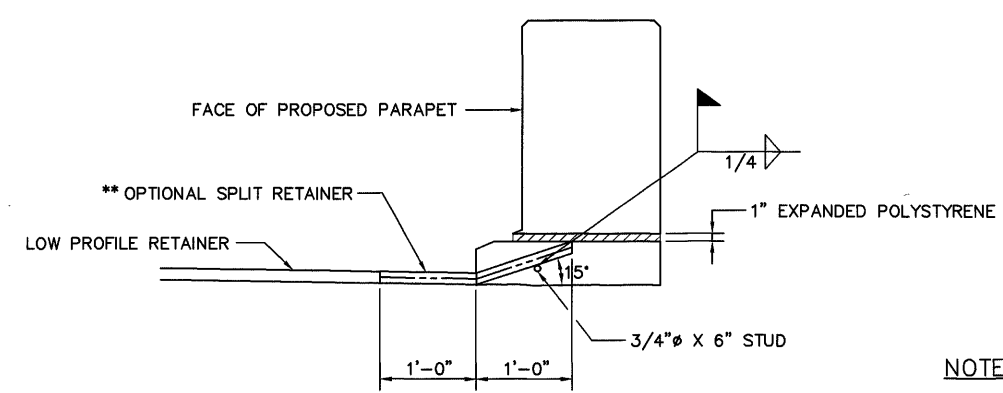


SECTION B-B
BRIDGE NO. LOR-20-1303

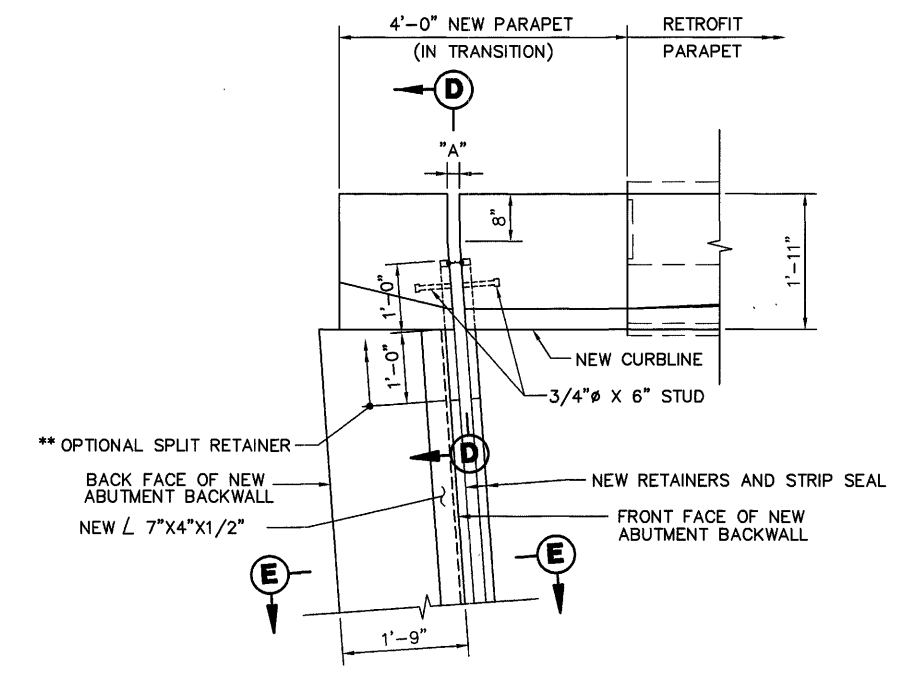


SECTION C-C
(HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT)
BRIDGE NO. LOR-20-1303

** CONTRACTOR MAY UTILIZE SPLIT RETAINERS AS SHOWN AT HIS OPTION (AT NO ADDITIONAL COST TO THE STATE) IF REQUIRED TO FACILITATE PLACEMENT OF STRIP SEAL.



SECTION D-D
(HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT)
BRIDGE NO. LOR-20-1380 L & R



PLAN
BRIDGE NO. LOR-20-1380 L (FORWARD ABUTMENT)

NOTE
FOR SECTION A-A AND SECTION E-E,
SEE SHEET 21/23.

POLYTECH, INC. 22/23					
CONSULTING ENGINEERS CLEVELAND, OHIO					
MODIFICATION OF STRUCTURAL EXPANSION JOINT					
BRIDGE NO. LOR-20-1303					
BRIDGE NO. LOR-20-1380 L & R					
LORAIN COUNTY OHIO					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
PSS	MAC	-	VB	BS	8/96

DRAWING = XJOINT1 DATE = AUGUST 2, 1996

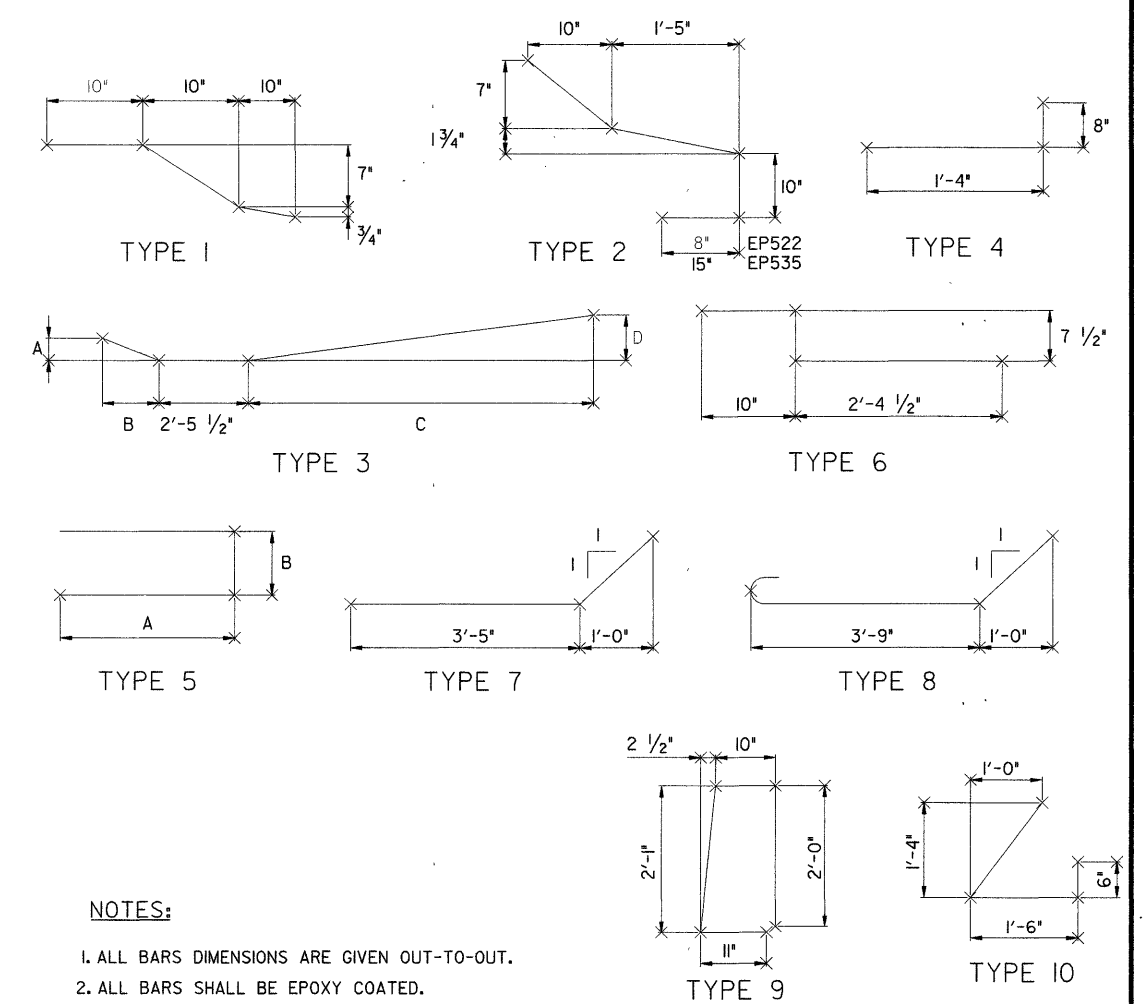
LORAIN COUNTY
LOR-20-12.62

BRIDGE NO. LOR-20-1356 L									BRIDGE NO. LOR-20-1356 R										
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP521	170	2'-8"	1						473	EP521	170	2'-8"	1						473
EP522	170	3'-8"	2						650	EP522	170	3'-8"	2						650
EP523	10	25'-8"	STR.						268	EP523	10	25'-8"	STR.						268
EP524	28	14'-3"	STR.						416	EP524	28	14'-3"	STR.						416
EP525	28	14'-3"	STR.						416	EP525	28	14'-3"	STR.						416
EP526	16	3'-9"	6						63	EP526	16	3'-9"	6						63
EP527	16	3'-2"	STR.						53	EP527	16	3'-2"	STR.						53
EP528	16	2'-8"	5	10"	1'-3"				45	EP528	16	2'-8"	5	10"	1'-3"				45
EP529	2	4'-8"	STR.						10	EP529	2	4'-8"	STR.						10
EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76	EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76
EP531	4	4'-8"	STR.						19	EP531	4	4'-8"	STR.						19
EP532	2	5'-0"	STR.						10	EP532	2	5'-0"	STR.						10
EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73	EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73
EP534	4	5'-0"	STR.						21	EP534	4	5'-0"	STR.						21
EA803	54	4'-9"	7						685	EA803	54	4'-9"	7						685
TOTAL									3,278	TOTAL									3,278

BRIDGE NO. LOR-20-1303										
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	
EP501	360	2'-8"	1						1003	
EP502	360	3'-8"	2						1,377	
EP503	16	29'-0"	STR.						484	
EP504	48	15'-8"	STR.						784	
EP505	48	15'-8"	STR.						784	
EP506	8	13'-5"	STR.						112	
EP507	8	13'-5"	STR.						112	
EP508	10	14'-7"	3	4"	1'-4 1/2"	10'-7 1/2"	5 7/8"		152	
EP509	12	4'-4"	STR.						54	
EP510	16	3'-9"	6						63	
EP511	16	3'-2"	STR.						53	
EP512	16	2'-8"	5	10"	1'-3"				45	
EP513	10	13'-7"	3	4"	1'-4 1/2"	9'-7 1/2"	5 1/4"		142	
EP514	4	5'-5"	9						23	
EP515	4	3'-5"	10						14	
PIER ENCASEMENT									3,727	
TOTAL									8,929	

BRIDGE NO. LOR-20-1380 L									BRIDGE NO. LOR-20-1380 R										
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP541	208	2'-8"	1						579	EP541	208	2'-8"	1						579
EP542	208	3'-8"	2						795	EP542	208	3'-8"	2						795
EP543	8	29'-2"	STR.						243	EP543	8	29'-2"	STR.						243
EP544	32	15'-1"	STR.						503	EP544	32	15'-1"	STR.						503
EP545	32	15'-1"	STR.						503	EP545	32	15'-1"	STR.						503
EP546	12	3'-9"	6						47	EP546	12	3'-9"	6						47
EP547	12	3'-2"	STR.						40	EP547	12	3'-2"	STR.						40
EP548	12	2'-7"	5	10"	1'-3"				32	EP548	12	2'-7"	5	10"	1'-3"				32
EP549	4	2'-10"	STR.						12	EP549	4	2'-10"	STR.						12
EP550	16	8'-8"	3	4"	1'-4 1/2"	4'-10"	2 3/4"		145	EP550	16	8'-8"	3	4"	1'-4 1/2"	4'-10"	2 3/4"		145
EP551	8	4'-4"	STR.						36	EP551	8	4'-4"	STR.						36
EP552	8	1'-10"	4						15	EP552	8	1'-10"	4						15
EP553	8	1'-10"	4						15	EP553	8	1'-10"	4						15
EP554	16	1'-11"	STR.						32	EP554	16	1'-11"	STR.						32
EP555	8	2'-4"	5	10"	11"				19	EP555	8	2'-4"	5	10"	11"				19
EP556	4	0'-7"	STR.						2	EP556	4	0'-7"	STR.						2
EP557	4	1'-0"	STR.						4	EP557	4	1'-0"	STR.						4
EP558	2	29'-7"	STR.						62	EP558	2	29'-7"	STR.						123
EA501	20	3'-0"	STR.						63										
EA502	6	20'-1"	STR.						126										
EA503	1	20'-1"	STR.						21										
EA504	1	20'-1"	STR.						21										
EA505	6	18'-1"	STR.						113										
EA506	1	18'-1"	STR.						19										
EA507	1	18'-1"	STR.						19										
EA601	38	4'-6"	5	2'-0"	10"				257										
EA801	27	6'-0"	8						433										
TOTAL									4,156	TOTAL									3,084

BRIDGE NO. LOR-20-1451L									BRIDGE NO. LOR-20-1451R										
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP521	170	2'-8"	1						473	EP521	170	2'-8"	1						473
EP522	170	3'-8"	2						650	EP522	170	3'-8"	2						650
EP523	10	25'-8"	STR.						268	EP523	10	25'-8"	STR.						268
EP524	28	14'-3"	STR.						416	EP524	28	14'-3"	STR.						416
EP525	28	14'-3"	STR.						416	EP525	28	14'-3"	STR.						416
EP526	12	3'-9"	6						47	EP526	12	3'-9"	6						63
EP527	16	3'-2"	STR.						53	EP527	16	3'-2"	STR.						53
EP528	16	2'-8"	5	10"	1'-3"				45	EP528	16	2'-8"	5	10"	1'-3"				45
EP529	2	4'-8"	STR.						10	EP529	2	4'-8"	STR.						10
EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76	EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76
EP531	4	4'-8"	STR.						19	EP531	4	4'-8"	STR.						19
EP532	2	5'-0"	STR.						10	EP532	2	5'-0"	STR.						10
EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73	EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73
EP534	4	5'-0"	STR.						21	EP534	4	5'-0"	STR.						21
EP535	4	4'-3"	2						18										
EA803	54	4'-9"	7						685	EA803	54	4'-9"	7						685
TOTAL									3,280	TOTAL									3,278



- NOTES:**
- ALL BARS DIMENSIONS ARE GIVEN OUT-TO-OUT.
 - ALL BARS SHALL BE EPOXY COATED.
 - THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER.
 - REINFORCING STEEL UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH FOR PAYMENT IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

POLYTECH, INC. 23/23
CONSULTING ENGINEERS CLEVELAND, OHIO

REINFORCEMENT SCHEDULE

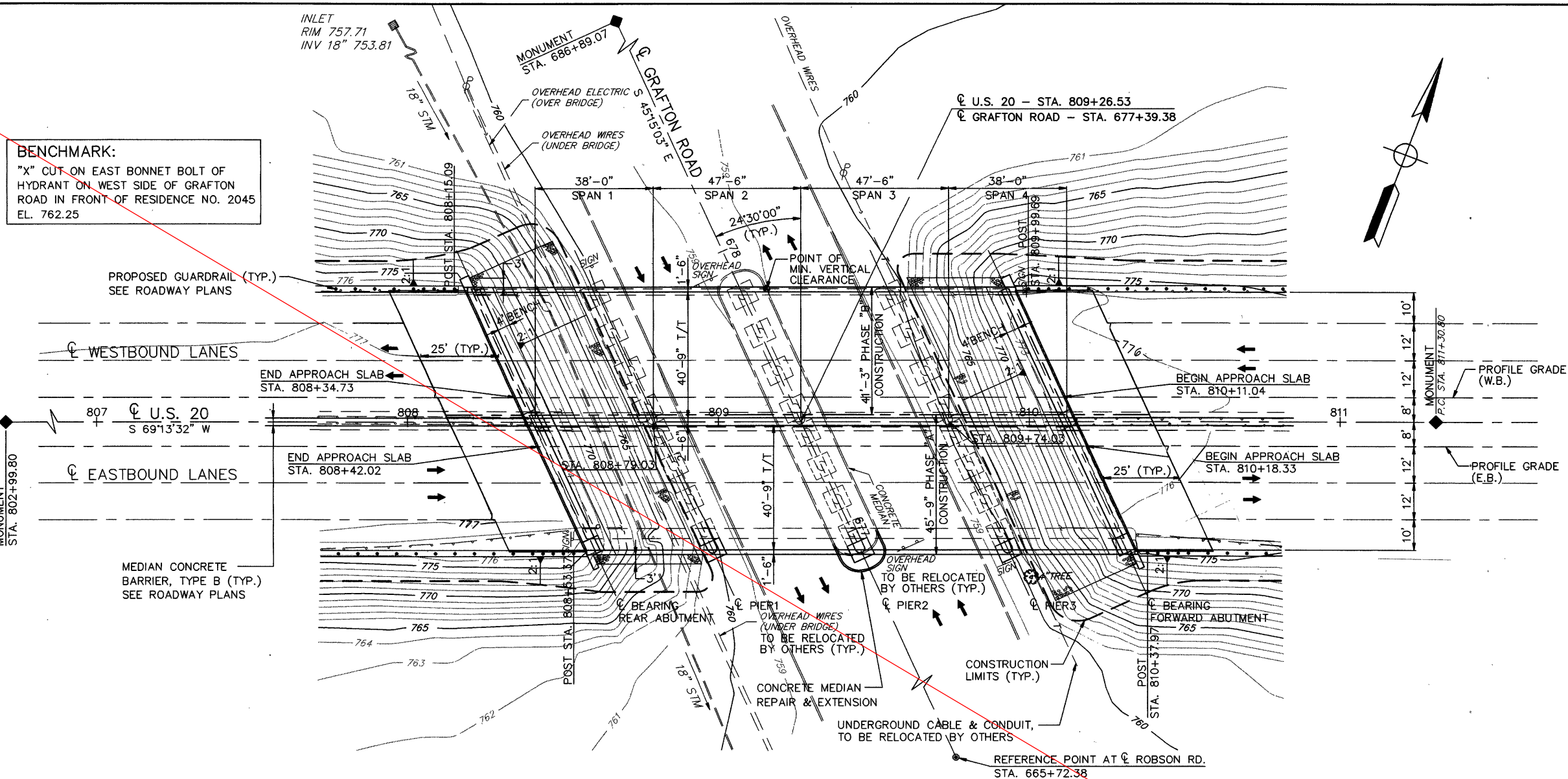
BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

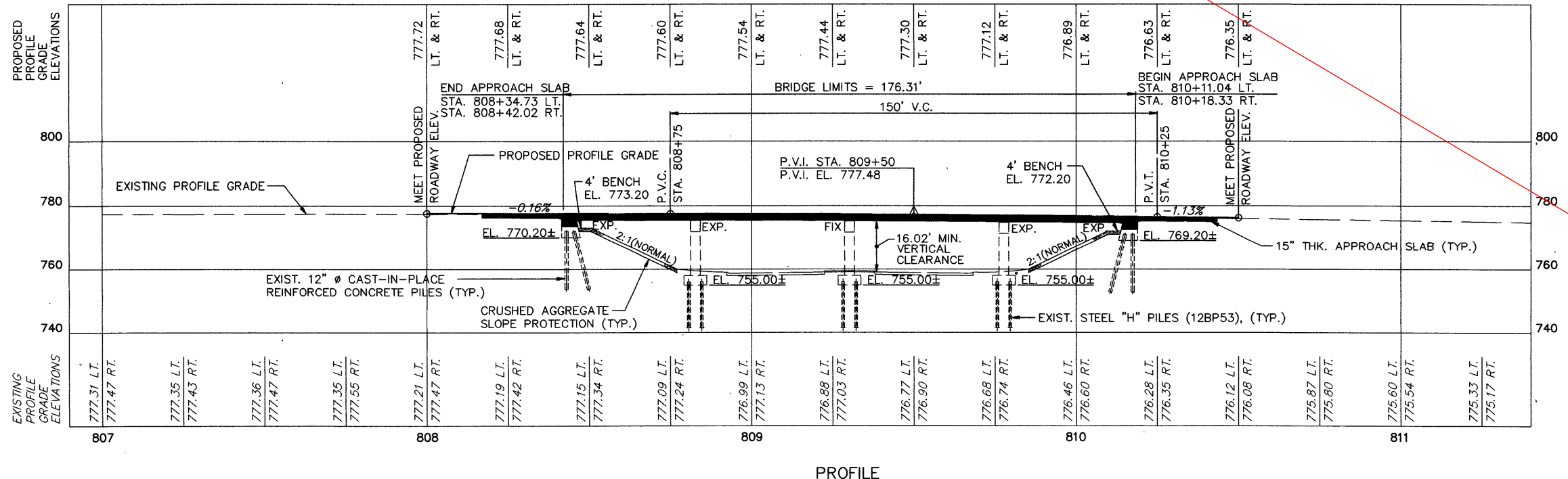
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	-	VB	BRS	8/96	DRA 9/96

DESIGN FILE: c:\dgn\lor20\rebornnew.dgn
 WORKSTATION: dar.mstro DATE: 23 SEP 96

DRAWING = S-SITE DATE = NOVEMBER 22, 1996



PLAN



PROFILE

EXISTING STRUCTURES	
TYPE:	CONTINUOUS REINFORCED CONC. SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SPANS:	38'-0"±, 47'-6"±, 47'-6"±, 38'-0"± C/C BEARINGS
ROADWAY WIDTH:	LOR-20-1533 R 32'-0" F/F CURBS LOR-20-1533 L 38'-0" F/F CURBS
LOAD FREQUENCY:	CF 2000(57)
SKIEW:	24'-30'-00" RIGHT FORWARD
ALIGNMENT:	TANGENT
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	LOR-20-1533 R AS-1-54 (25' LONG) LOR-20-1533 L AS-1-67 (25' LONG)
YEAR BUILT:	LOR-20-1533 R : 1958 LOR-20-1533 L : 1970
STRUCTURE FILE NO.:	LOR-20-1533 R : 4701267 LOR-20-1533 L : 4701291

PROPOSED STRUCTURE	
PROPOSED WORK:	CONSTRUCT NEW REINFORCED CONCRETE SLAB BRIDGE, WIDEN SUBSTRUCTURE, REPLACE ABUTMENT BACKWALLS WITH SEMI-INTEGRAL ABUTMENTS.
TYPE:	CONTINUOUS REINFORCED CONC. SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE.
SPANS:	38'-0", 47'-6", 47'-6", 38'-0" C/C BEARINGS
ROADWAY WIDTH:	40'-9" TOE/TOE PARAPETS
DESIGN LOADING:	HS20-44 AND ALTERNATE MILITARY LOADING
SKIEW:	24'-30'-00" RIGHT FORWARD
ALIGNMENT:	TANGENT
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-81 (25'-0" LONG)
LATITUDE:	41°-19'-43"
LONGITUDE:	82°-04'-33"

TRAFFIC DATA	
CURRENT ADT (1997)	= 14,500
DESIGN YEAR ADT (2017)	= 20,300
DESIGN YEAR ADTT (2017)	= 2,233

FOUNDATION DATA
 ALL ABUTMENT EXTENSIONS SHALL BE SUPPORTED BY 12" DIA. CAST-IN-PLACE REINFORCED CONCRETE PILES. ESTIMATED AVERAGE PAY LENGTH FOR EACH PILE:
 REAR ABUTMENT = 35', FORWARD ABUTMENT = 38'
 ALL PIER EXTENSIONS SHALL BE SUPPORTED BY STEEL "H" PILES (HP 12X53). ESTIMATED AVERAGE PAY LENGTH FOR EACH PILE = .32'

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

POLYTECH, INC.
 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

DESIGN AGENCY	DATE	REVIEWED	DATE
POLYTECH, INC.	11/96	BRS	11/96
DRAWN	DATE	DESIGNED	DATE
NK	11/96	NK	11/96
CHECKED	DATE	CHECKED	DATE
VKB	11/96	VKB	11/96

LORAIN COUNTY
 LT.: STA. 808+34.73 TO STA. 810+11.04
 RT.: STA. 808+42.02 TO STA. 810+18.33

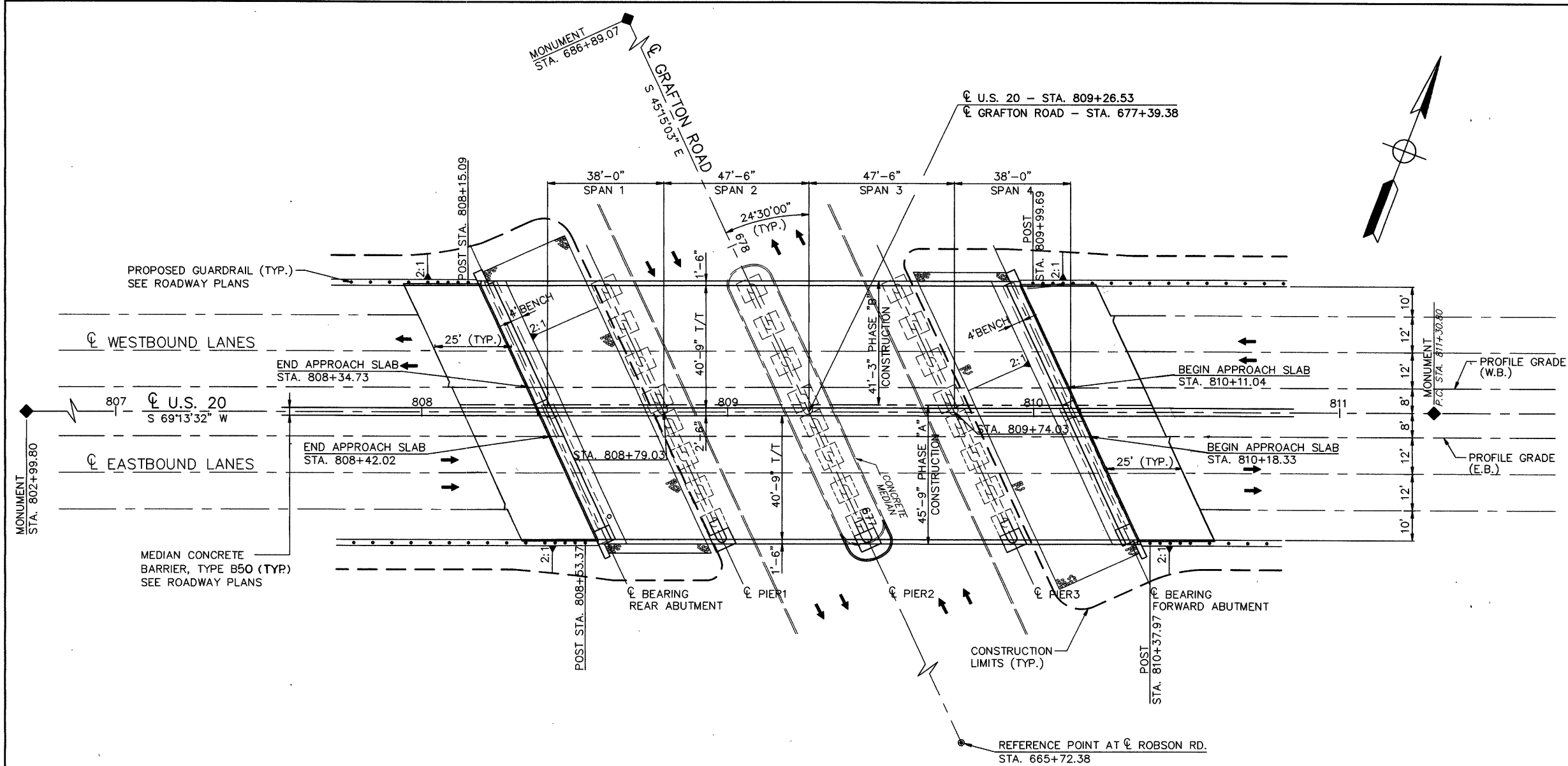
SITE PLAN
 BRIDGE NO. LOR-20-1533 L & R
 OVER GRAFTON ROAD

LOR-20-12.62

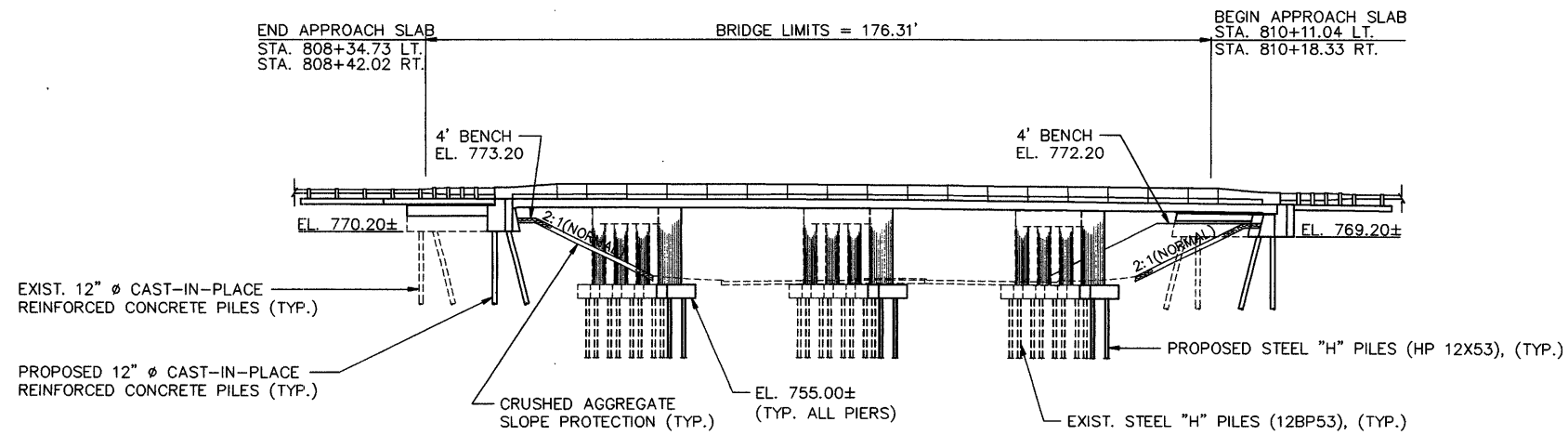
1/18

243
357

DRAWING = S-GENPLN DATE = NOVEMBER 11, 1996



PLAN



ELEVATION

DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114	
DATE 11/96	REVIEWED BRS
STRUCTURE FILE NUMBER 4701267	DRAWN NK
DESIGNED NK	CHECKED VKB
GENERAL PLAN AND ELEVATION BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD	
LOR-20-12.62	
2/18	
244 351	

ESTIMATED QUANTITIES

QUANTITY CALCULATIONS		
	BY	DATE
CALC.	NK	11/96
CHKD.	VKB	11/96

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P. REF. SHT.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	4/18
202	11301	94	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE	93	1			4/18
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP			4/18
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	14400	192	LIN. FT.	STEEL PILES HP 12X53		192			
507	21100	146	LIN. FT.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES	146				
509	15840	238,089	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	4,385	11,338	221,866	500	
510	10001	263	EACH	DOWEL HOLES WITH NON SHRINK, NON METALLIC GROUT, AS PER PLAN	23	240			4/18
511	43001	47	CU. YD.	CLASS C CONCRETE, PIER, AS PER PLAN		47			5/18
511	45501	69	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	69				4,5/18
SPECIAL	511 48000	1,101	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), MIX #4			1,101		
SPECIAL	511 48020	82	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), MIX #4			82		
SPECIAL	511 49000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX				LUMP	
SPECIAL	511 49010	LUMP		HIGH PERFORMANCE CONCRETE TESTING				LUMP	
511	71100	3	CU. YD.	CONCRETE, MISC.: PIER ENCASEMENT		3			
SPECIAL	512 67510	344	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	59	285			
SPECIAL	512 67520	661	SQ. YD.	SEALING OF CONCRETE SURFACES WITH TINTED SILANE			661		
516	44000	28	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1 3/4" X 7" X 11" WITH 1 1/2" X 8" X 12" LOAD PLATE)	28				
518	21201	93	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	93				5/18
518	40001	209	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	209				5/18
518	40011	66	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	66				5/18
SPECIAL	519 11502	135	SQ. FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR		135			
601	20001	725	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN				725	5/18

DRAWING = S-QUAN DATE = NOVEMBER 11, 1996

DESIGN AGENCY
POLYTECH, INC.
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

REVIEWED
BRS
DATE
11/96
STRUCTURE FILE NUMBER
4701267

DRAWN
RS
REVISED

DESIGNED
NK
CHECKED
VKB

ESTIMATED QUANTITIES
BRIDGE NO. LOR-20-1533 L & R
OVER GRAFTON ROAD

LOR-20-12.62

3/18

245
351

GENERAL NOTES

1. DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, DATED 1992, INCLUDING THE 1993, 1994 AND 1995 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

2. REFERENCE DRAWINGS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS

AS-1-81, DATED 9/15/94 GR-3.1 DATED 5/6/91
 BR-1, DATED 12/15/94 IRJ-8-95, DATED 7/6/95
 CS-1-93, DATED 6/30/95 PCB-91, DATED 4/24/92

AND SUPPLEMENTAL SPECIFICATION
 944, DATED 12/7/95

3. DESIGN DATA:

DESIGN LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, A616 OR A617 GRADE 60 - MIN. YIELD STRENGTH 60,000 P.S.I.

4. DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
 2 1/2" CONCRETE COVER
 SEALING OF CONCRETE SURFACES

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

6. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN:

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING CURBS, RAILINGS, DECK JOINTS. CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. NO HOE RAMS, ROCK CRUSHERS OR HEADACHE BALLS WITHIN 5' OF PIER #2. ROCK SPLITTER OR 90# HAMMERS ONLY SHALL BE PERMITTED WITHIN 5' OF PIER #2.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

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.

7. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS INDICATED IN THE PLANS.
METHOD A: THE CONCRETE MAY BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK.
METHOD B: FULL DEPTH SAW CUTTING.

HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

8. CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" 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. THEN, 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.

9. PILE DRIVING CONSTRAINTS:

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

11. ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

12. PILES:

ALL PIER PILES SHALL BE OF SIZE HP 12 X 53 AND DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 56 TONS PER PILE FOR PIER PILES.

13. UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

14. 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 BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

15. REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 500 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

16. MECHANICAL CONNECTORS FOR REINFORCING STEEL:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON IN THE PLANS. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER POUND FOR ITEM 509.

17. BAR LAP LENGTHS :

UNLESS OTHERWISE SHOWN, BAR LAPS SHALL BE NOT LESS THAN:

BAR	#4	#5	#6	#7	#8	#9	#10
LAP LENGTH	1'-11"	2'-5"	2'-11"	3'-8"	4'-11"	6'-2"	7'-10"

18. ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT UNIT PRICE BID PER EACH FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

19. ITEM 511 - CLASS C CONCRETE, ABUTMENT, AS PER PLAN:

INSTALL A 3 FOOT WIDE STRIP, 3/32 INCH THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 3 FOOT WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X 3/32" (LENGTH X SHANK, DIAMETER) #10 GALVANIZED BUTTON HEAD SPIKE THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

DRAWING = S-GNOTE1 DATE = NOVEMBER 11, 1996

DESIGNED NK	CHECKED VKB	DRAWN RS	REVIEWED BRS	DATE 11/96
		STRUCTURE FILE NUMBER 4701267		
DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114				
GENERAL NOTES BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD				
LOR-20-12.62				
4 / 18				
246 351				

GENERAL NOTES

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS, AT 6 INCHES CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS WHERE THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST ONE FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32 INCH THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPOINT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094 ± .01
BREAKING STRENGTH, GRAB WXF, LBS, MINIMUM	D 751	700 X 700
ADHESIVE 1" STRIP, 2" MINIMUM, LBS, MINIMUM	D 751	9
BURST STRENGTH(MULLEN) PSI, MINIMUM	D 751	1400
HEAT AGING 70 HOURS T 212 °F, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40 °F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 511, CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

20. ITEM 511 - CLASS C CONCRETE, AS PER PLAN:

ALL COARSE AGGREGATE FOR THE CLASS C CONCRETE ITEMS SHALL BE #8 LIMESTONE ONLY.

21. ITEM 511 - CLASS C CONCRETE MISC.: PIER ENCASMENT

PIER COLUMNS SHALL BE ENCASED AS PER THE DETAILS IN THE PLAN. ALL LOOSE AND DISINTEGRATED CONCRETE AND CALCIUM CARBONATE DEPOSITS SHALL BE REMOVED WITH HAND TOOLS. WITHIN FORTY-EIGHT (48) HOURS BEFORE PLACING CONCRETE, THE SURFACE OF THE EXISTING PIERS AGAINST WHICH THE CONCRETE SHALL BE PLACED AND THE EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING THE EXISTING CONCRETE SURFACE AT LEAST ONE (1) HOUR BEFORE PLACING CONCRETE, AND BE APPROACHING DRYNESS AT THE TIME OF THE PLACING OF THE CONCRETE TO FACILITATE THE BOND.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE. THE CEMENT USED SHALL BE EXPANSIVE HYDRAULIC CEMENT CONFORMING TO ASTM C845, TYPE K AS PER 701.08.

QUANTITIES PER CUBIC YARD				
AGGREGATE	TOTAL		CEMENT	WATER/CEMENT
FINE	COARSE	(LB)	CONTENT	RATIO
(LB)	(LB)	(LB)		
1300	1275	2575	715	0.50

AIR CONTENT - 8% PLUS OR MINUS 2%

TYPE D CHEMICAL ADMIXTURE SHALL BE USED.

THE SLUMP AT THE TIME OF CONCRETE PLACEMENT SHALL BE BETWEEN 5 AND 7 INCHES.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A WATER CURING.

A CEMENT COMPANY REPRESENTATIVE SHALL BE ON HAND DURING THE MIXING AND PLACING OPERATION THE FIRST POUR IF THE REDI-MIX PRODUCER HAS NOT HAD PREVIOUS EXPERIENCE WITH TYPE K CEMENT.

REDI-MIX PRODUCERS WHO HAVE HAD PREVIOUS EXPERIENCE SHALL HAVE ON HAND A PERSON WHO HAS BEEN FACTORY TRAINED IN THE USE OF TYPE K CEMENT.

ALL OTHER PROVISIONS OF ITEM 511 SHALL REMAIN IN EFFECT.

PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511, CLASS C CONCRETE, MISC.: PIER ENCASMENT WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, EXCAVATION AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

22. ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

THE MATERIAL SHALL BE NO. 57 GRAVEL.

23. ITEMS 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN:

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

24. ITEMS 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

25. CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1 INCH DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT THE LOCATIONS AS SHOWN ON PLANS. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4". THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1 INCH WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

26. CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN:

AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES SHALL BE RESTORED TO A UNIFORM PLANE SURFACE WITH CRUSHED AGGREGATE SLOPE PROTECTION. NEW EMBANKMENT SURFACES SHALL BE PROTECTED AS SPECIFIED IN 601.05. PROTECTION SHALL EXTEND LONGITUDINALLY FROM FACE OF ABUTMENTS TO THE TOE OF SLOPE AND Laterally TO AT LEAST 3'-0" BEYOND DECK FASCIAS. THE MINIMUM TOTAL THICKNESS OF PROPOSED PROTECTION (RESTORED AND NEW) SHALL BE 1'-0".

27. ABBREVIATIONS: THE FOLLOWING ABBREVIATIONS ARE USED IN THIS PROJECT.

&	- AND	EXP.	- EXPANSION
⊙	- AT	F.F	- FAR FACE
BRG.	- BEARING	FIX.	- FIXED
C/C	- CENTER TO CENTER	MAX.	- MAXIMUM
C.I.P.	- CAST IN PLACE	MIN.	- MINIMUM
C.J.	- CONSTRUCTION JOINT	N.F.	- NEAR FACE
Ⓢ	- CENTER LINE	P.E.J.F.	- PREFORMED EXPANSION JOINT FILLER
CLR.	- CLEAR, CLEARANCE	SPA.	- SPACING
DIA.	- DIAMETER	SER.	- SERIES
E.F.	- EACH FACE	TYP.	- TYPICAL
EL.	- ELEVATION		
EXIST.	- EXISTING		

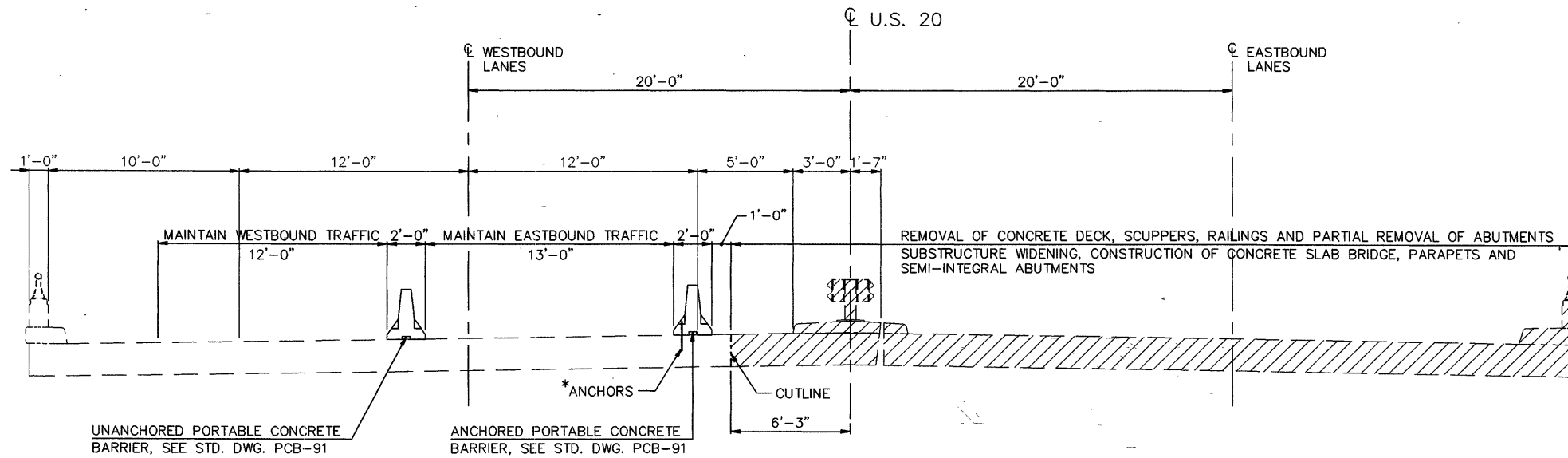
28. ITEM SPECIAL - HIGH PERFORMANCE CONCRETE

HIGH PERFORMANCE CONCRETE SHALL NOT BE POURED BETWEEN OCTOBER 15 AND APRIL 30.

DRAWING = S-GNOTE2 DATE = NOVEMBER 11, 1996

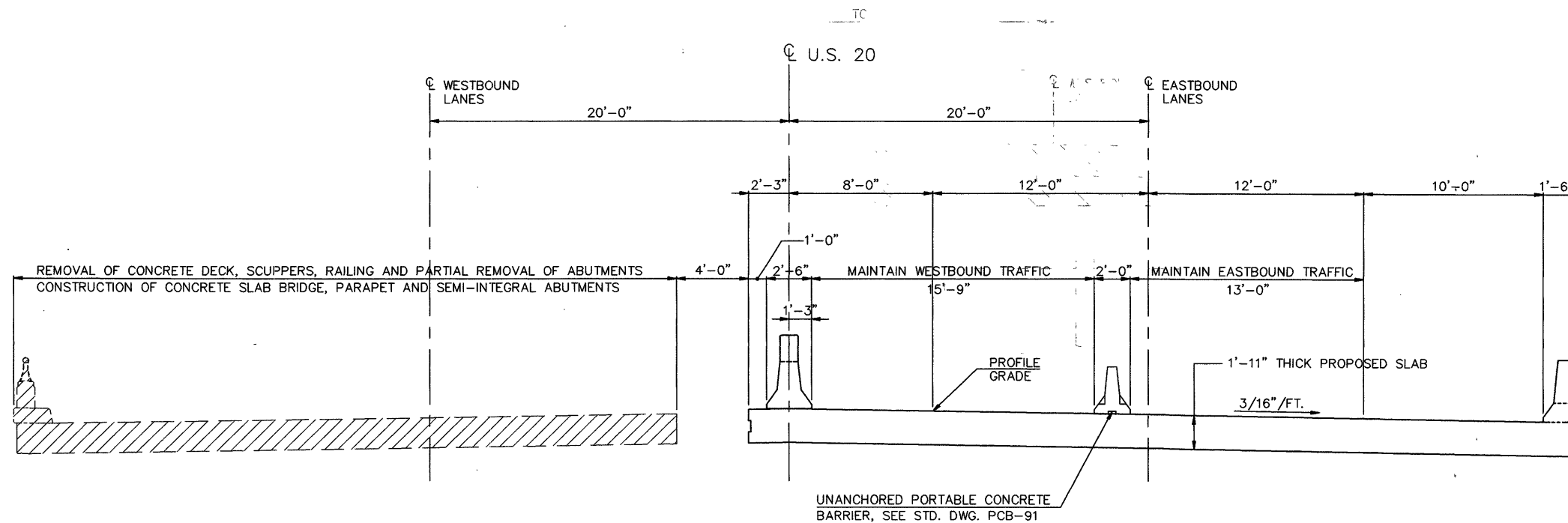
GENERAL NOTES BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD	DESIGN AGENCY POLYTECH INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114
DESIGNED NK	CHECKED VKB
DRAWN RS	REVISIONS
REVISIONS BRS	DATE 11/96
STRUCTURE FILE NUMBER 4701267	
LOR-20-12.62	5/18
247 351	

DRAWING = S-PHASE DATE = NOVEMBER 11, 1996



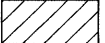
TYPICAL SECTION FOR PHASE "A" CONSTRUCTION

* A MINIMUM OF TWO ANCHORS SHALL BE PROVIDED ON TRAFFIC SIDE FOR EACH PORTABLE CONCRETE BARRIER WITH THE ANCHOR PATTERN SYMMETRICAL ABOUT THE CENTER OF EACH SEGMENT.

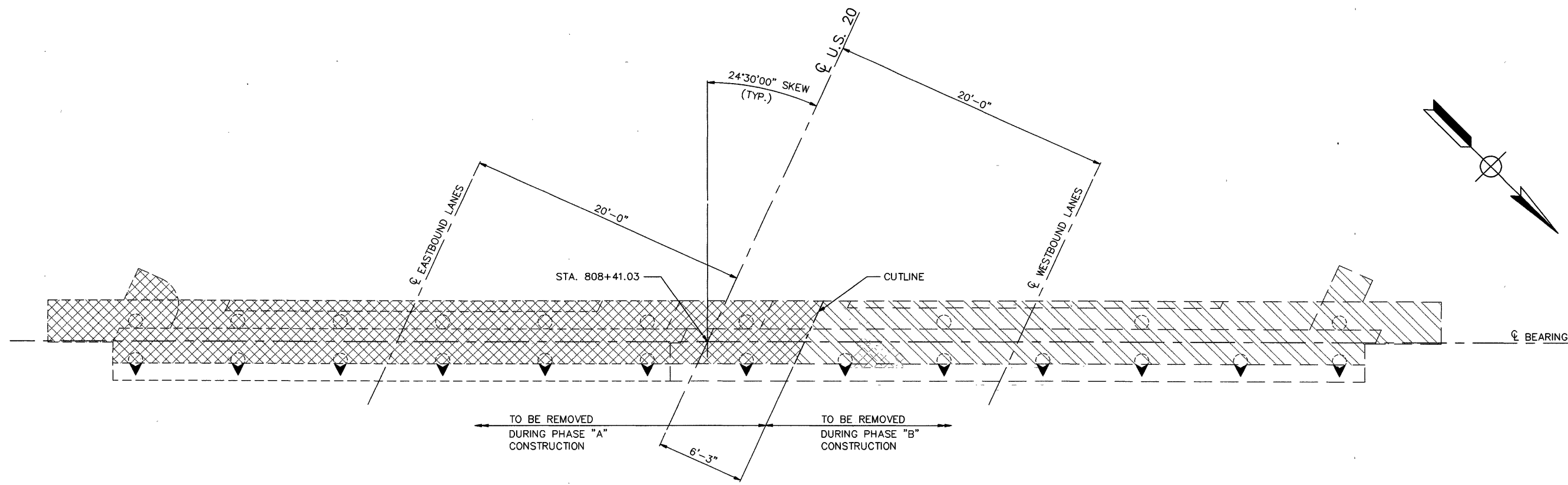


TYPICAL SECTION FOR PHASE "B" CONSTRUCTION

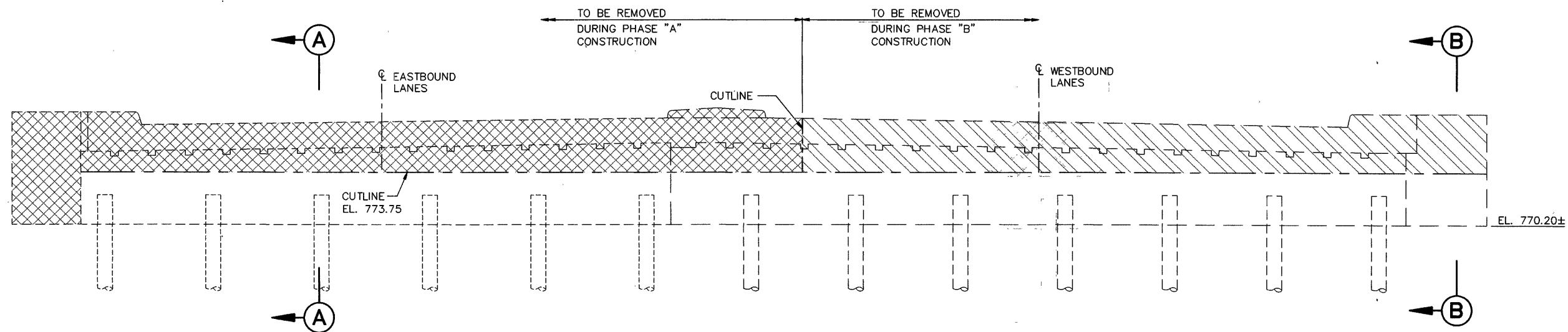
NOTES:

1. FURNISHING, INSTALLING, MAINTAINING, AND REMOVING PORTABLE CONCRETE BARRIER, INCLUDING THE COMPLETE OR PARTIAL REMOVAL OF ANCHOR HARDWARE SHALL BE INCLUDED IN ITEM 622 (ROADWAY PLANS) FOR PAYMENT.
2. FOR COMPLETED TYPICAL SECTION, SEE SHEET [14/18].
3.  INDICATES PORTIONS TO BE REMOVED, AS PART OF ITEM 202.

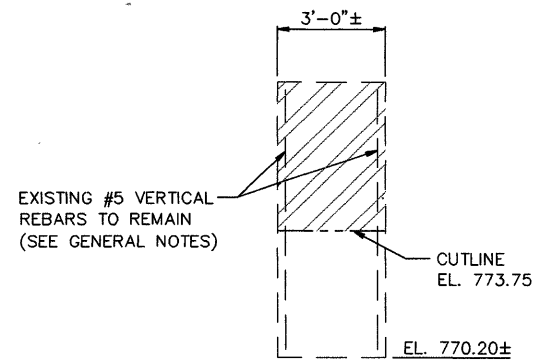
DRAWING = S-RDEMOL DATE = NOVEMBER 13, 1996



PLAN



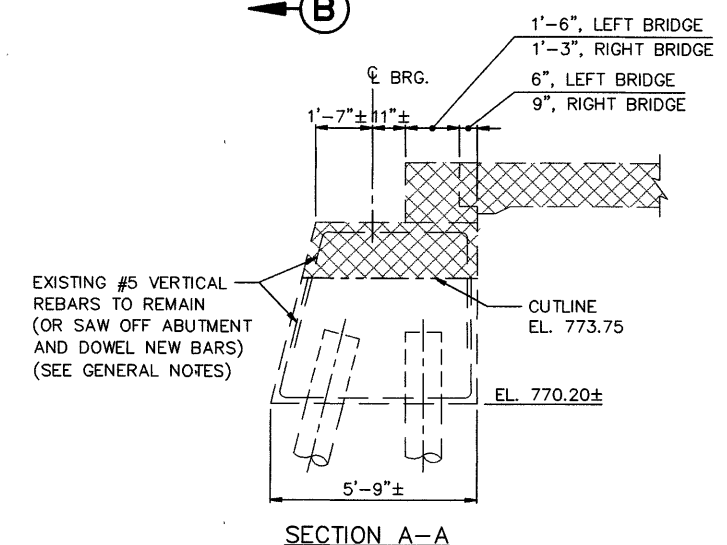
ELEVATION



SECTION B-B

LEGEND:

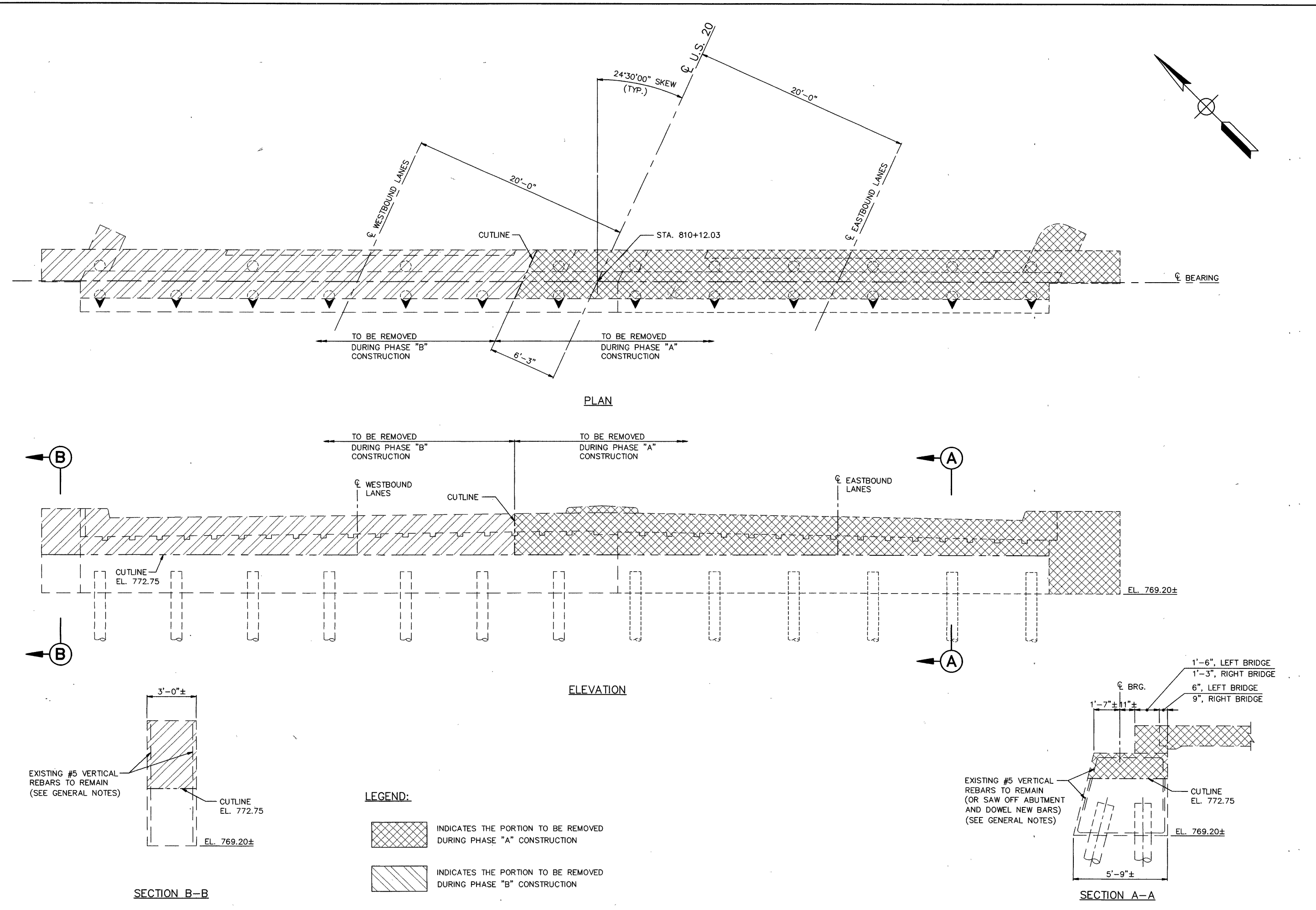
- INDICATES THE PORTION TO BE REMOVED DURING PHASE "A" CONSTRUCTION
- INDICATES THE PORTION TO BE REMOVED DURING PHASE "B" CONSTRUCTION



SECTION A-A

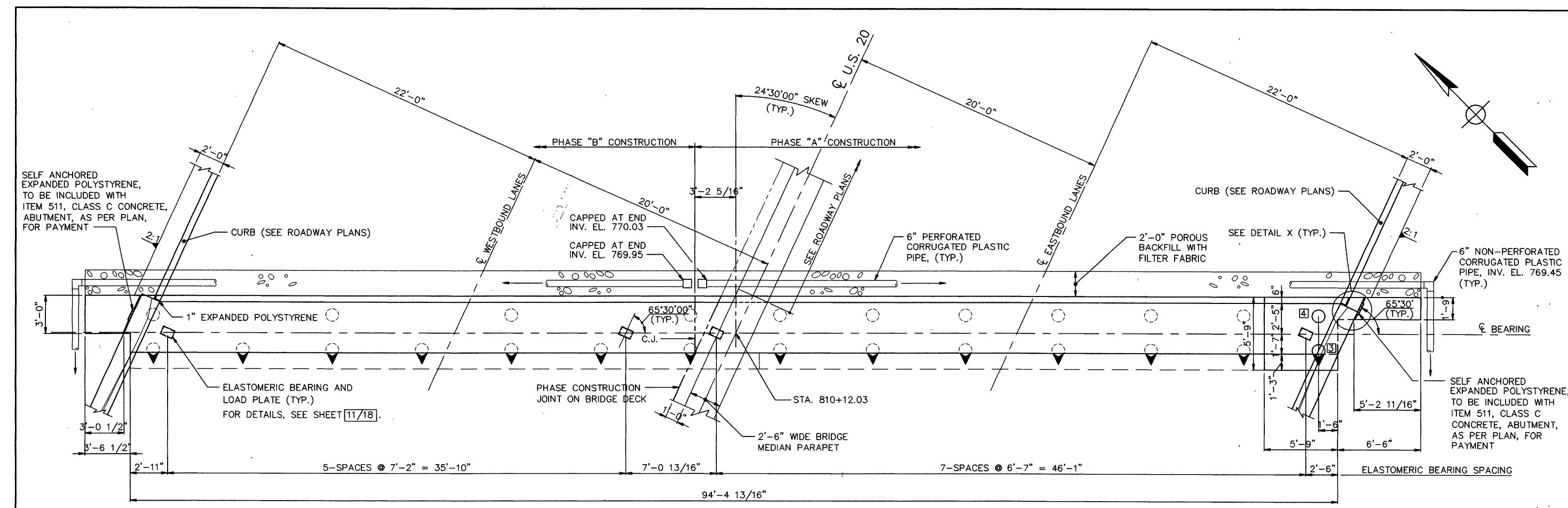
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<p>DATE 11/96</p> <p>REVIEWED BRS</p> <p>STRUCTURE FILE NUMBER 4701267</p>	<p>DESIGNED NK</p> <p>CHECKED VKB</p>
<p>LOR-20-12.62</p>	
<p>7/18</p>	
<p>249 351</p>	

DRAWING = S-DEMOL DATE = NOVEMBER 11, 1996



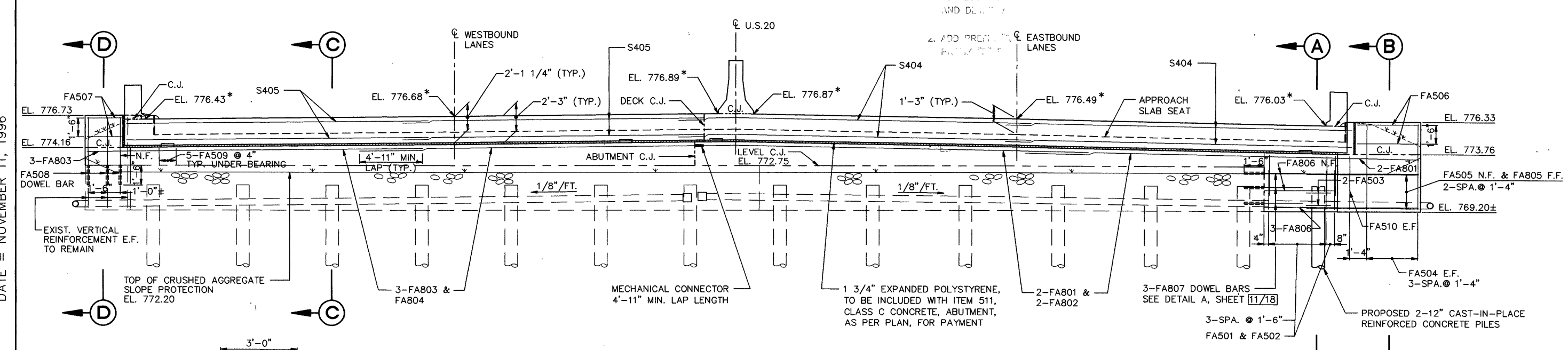
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FORWARD ABUTMENT DEMOLITION DETAILS BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD						
LOR-20-12.62						
8 / 18						
<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: auto;"> 250 351 </div>						

DESIGN AGENCY
POLYTECH, INC.
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

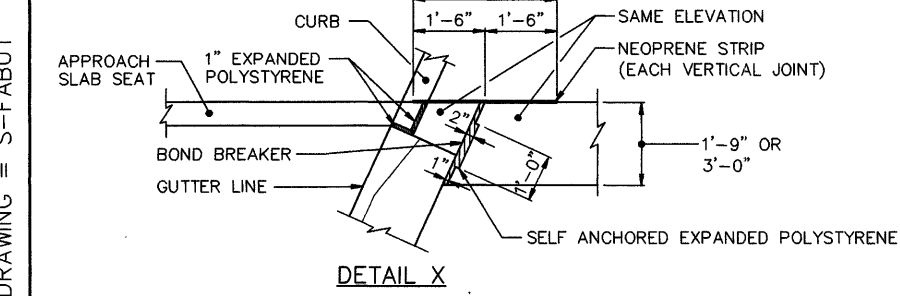


PLAN

*ELEVATIONS GIVEN AT ϕ BEARING



ELEVATION



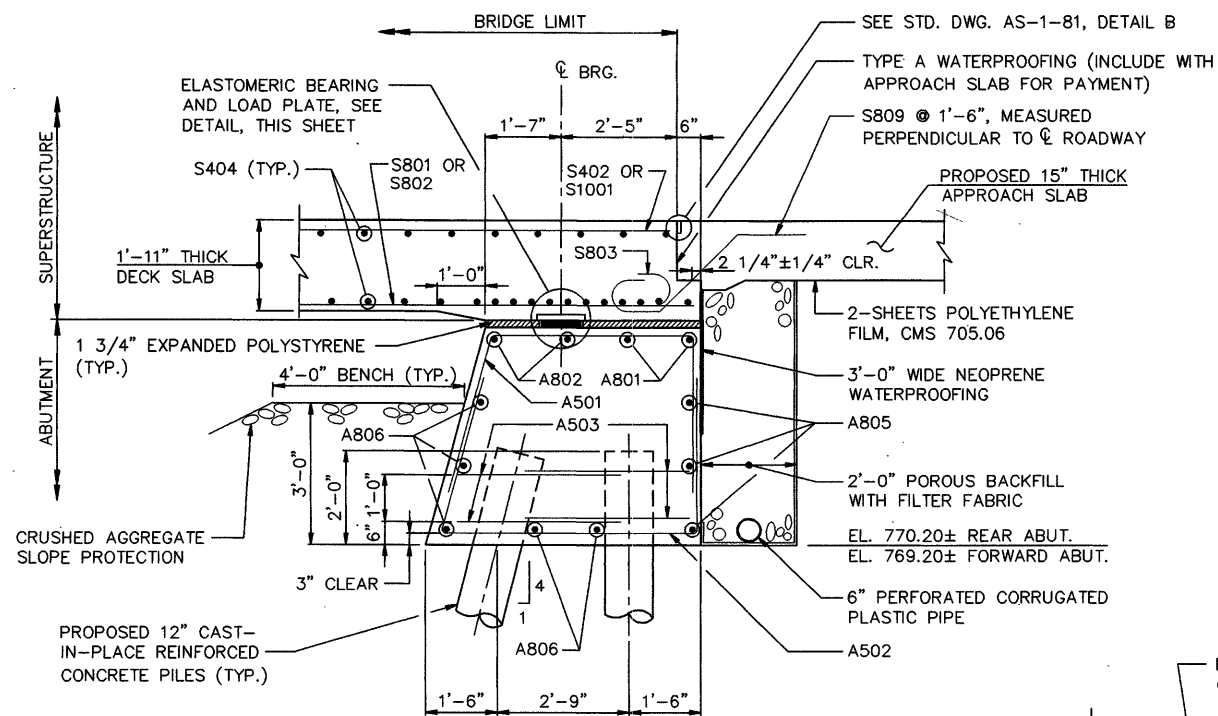
DETAIL X

NOTES:

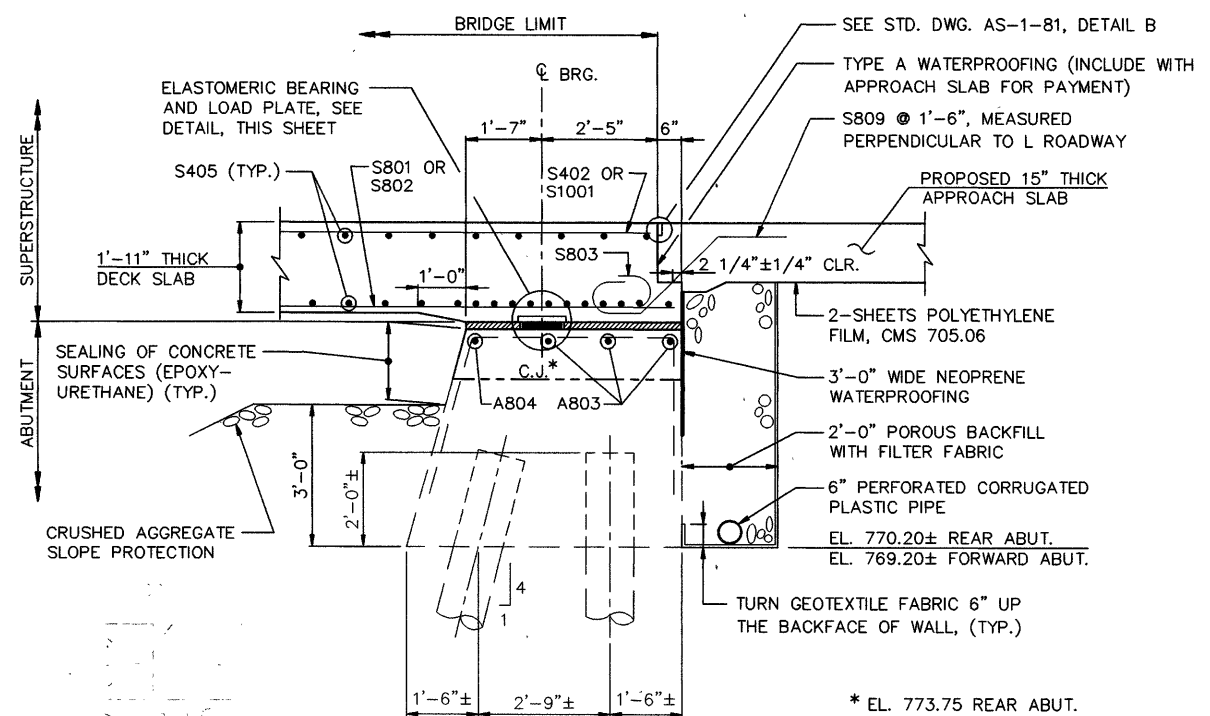
- FOR LOADING AND DESIGN...
- ADD REINFORCEMENT FOR EASTBOUND LANES...
- \square DENOTES ABUTMENT PILE NUMBER.
- WINGWALL CONCRETE ABOVE THE CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL AT LEAST 48 HOURS AFTER THE PLACEMENT OF DECK CONCRETE.

DRAWING = S-FABUT DATE = NOVEMBER 11, 1996

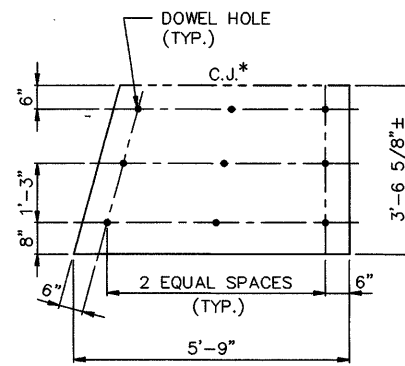
DRAWING = S-ABUTS DATE = NOVEMBER 11, 1996



SECTION A-A



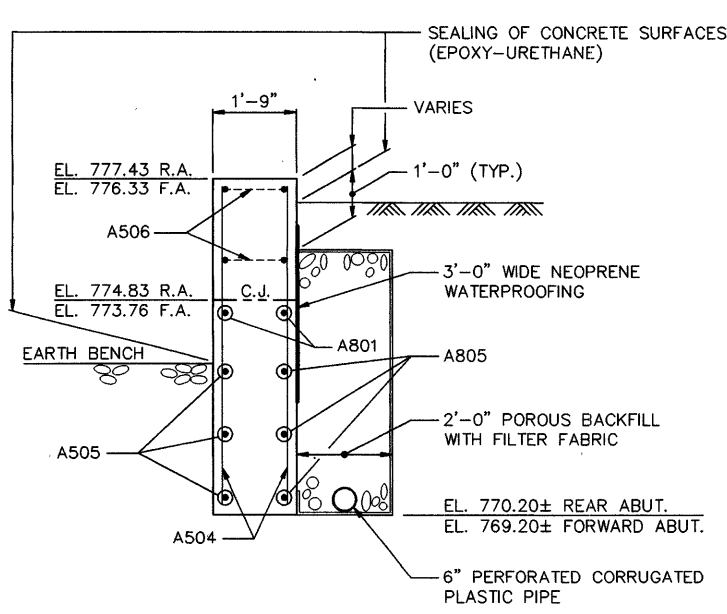
SECTION C-C



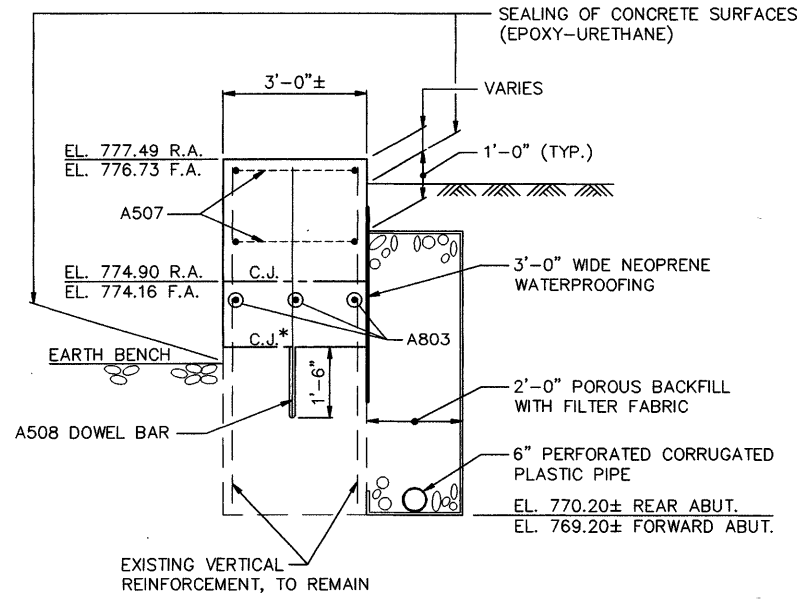
DETAIL A
DOWEL HOLE LOCATIONS

NOTES:

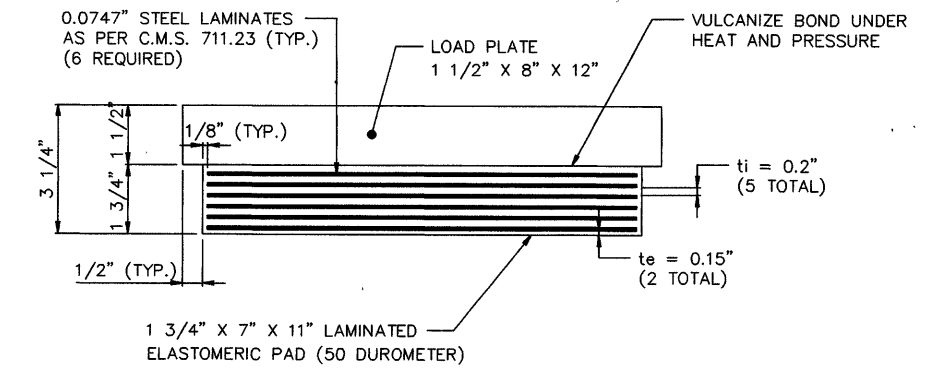
- FOR LOCATION OF SECTIONS A-A, B-B, C-C & D-D AND DETAIL A, SEE SHEETS 9/18 AND 10/18.
- ADD PREFIX "R" FOR REAR ABUTMENT REBARS AND PREFIX "F" FOR FORWARD ABUTMENT REBARS.
- ELASTOMERIC BEARINGS SHALL COMPLY WITH 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50-DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, EACH.



SECTION B-B



SECTION D-D

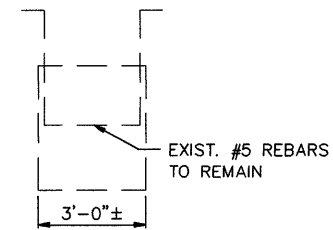
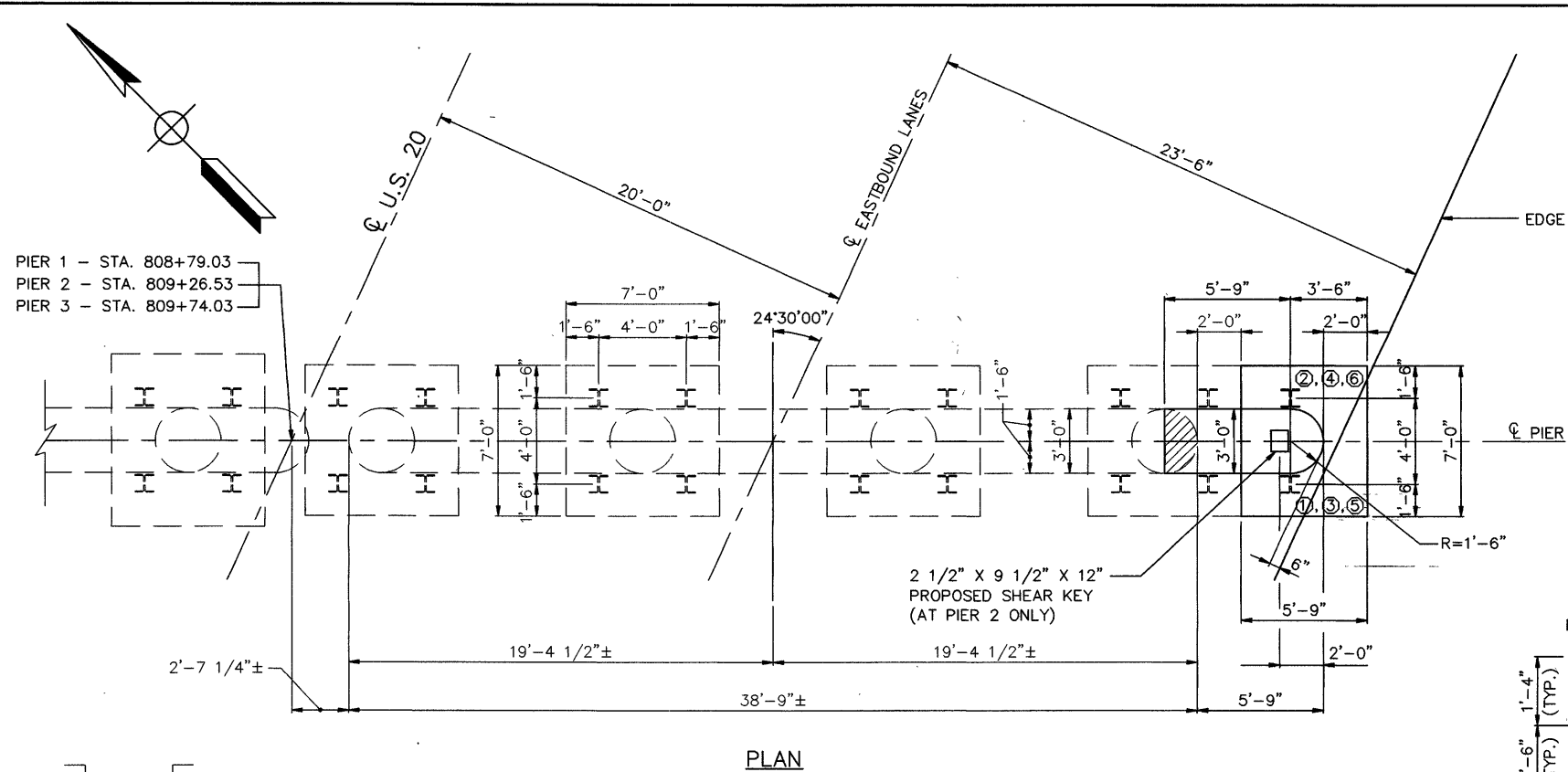


LAMINATED ELASTOMERIC EXPANSION
BEARING DETAIL AT ABUTMENTS

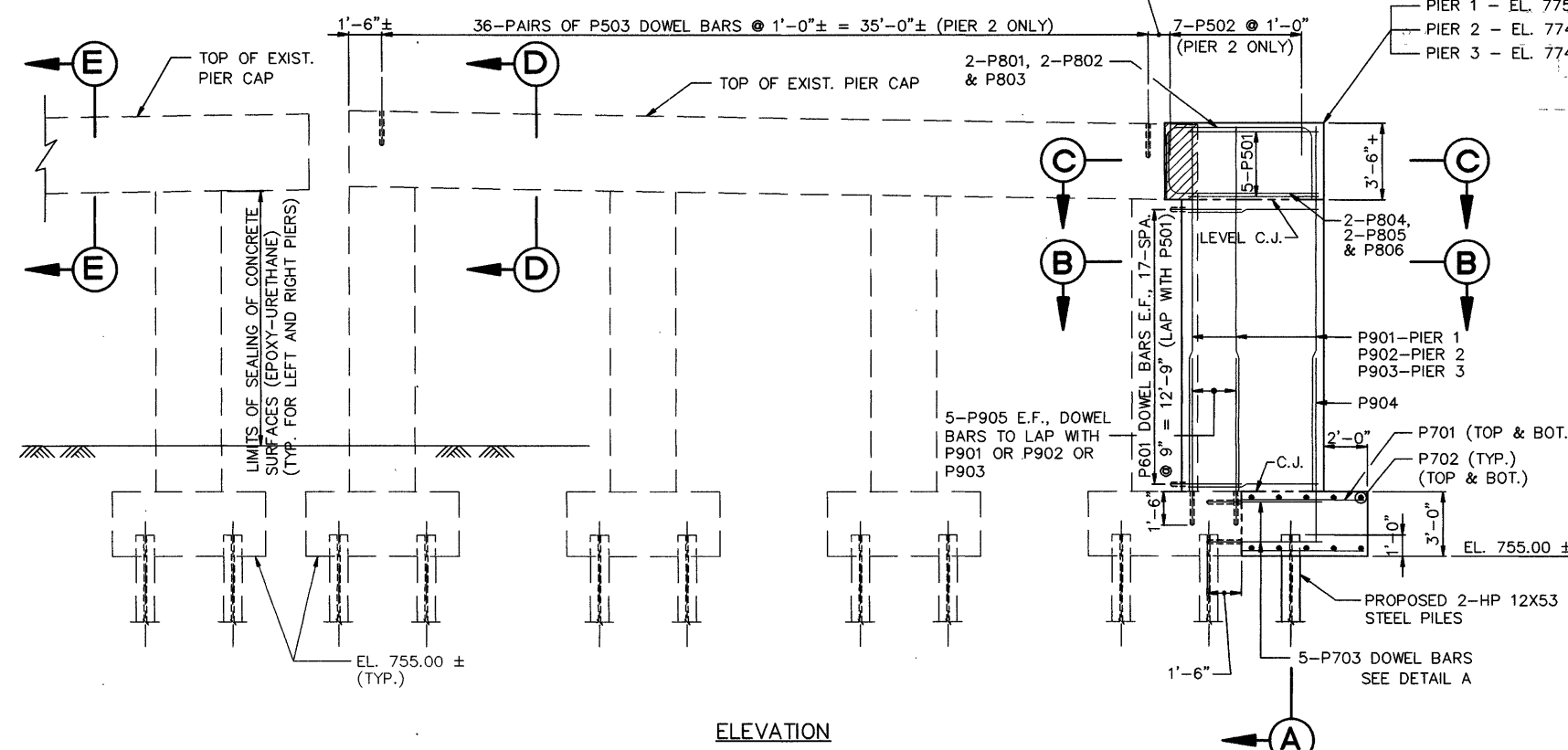
BEARING LIVE LOAD REACTION	=	48 K
BEARING DEAD LOAD REACTION	=	28 K
MAXIMUM DESIGN LOAD	=	76 K

DRAWING = S-PIER DATE = NOVEMBER 22, 1996

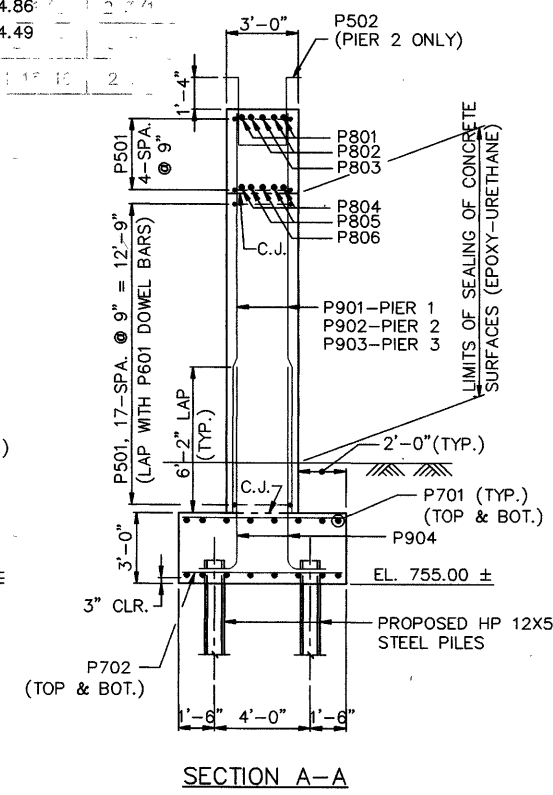
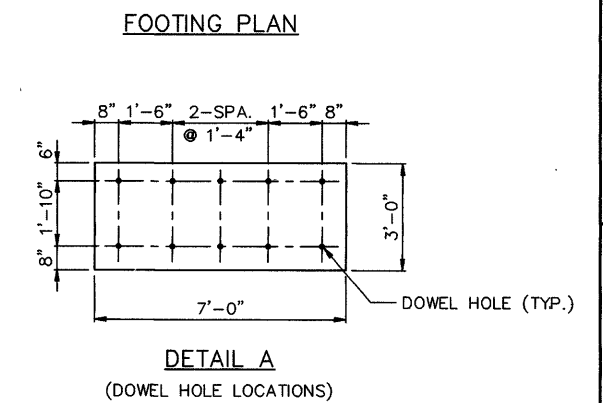
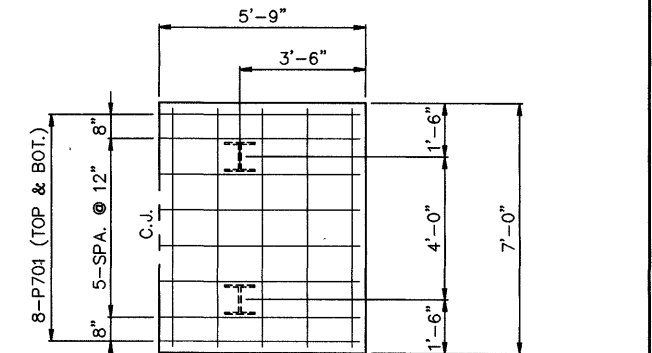
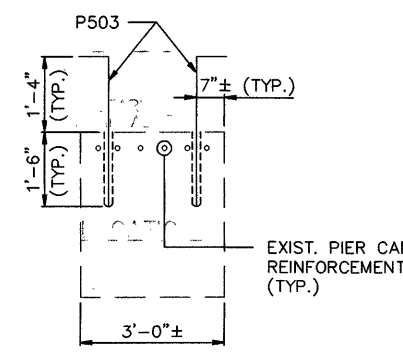
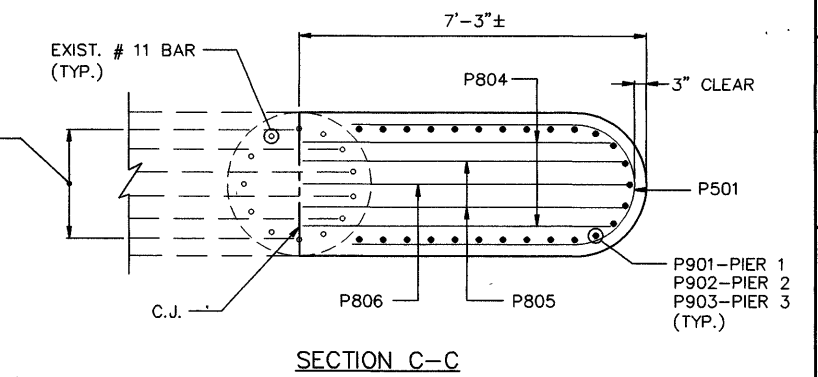
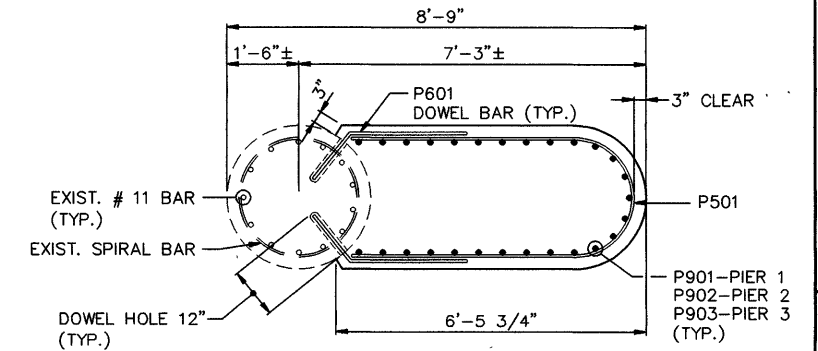
PIER 1 - STA. 808+79.03
 PIER 2 - STA. 809+26.53
 PIER 3 - STA. 809+74.03



SECTION E-E
(AT PIER 2 ONLY)

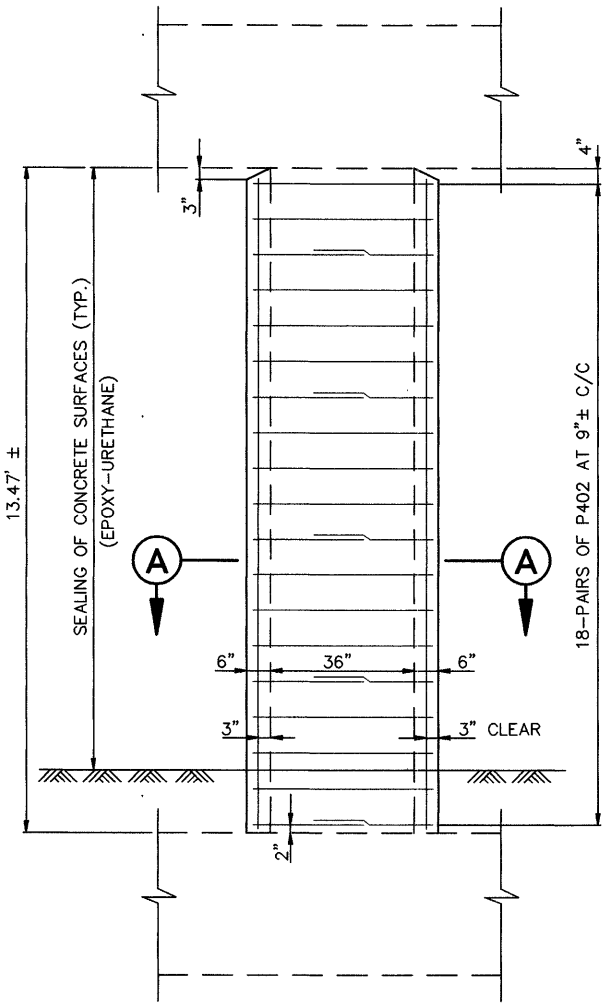


PIER	PILE NUMBER
1	① AND ②
2	③ AND ④
3	⑤ AND ⑥



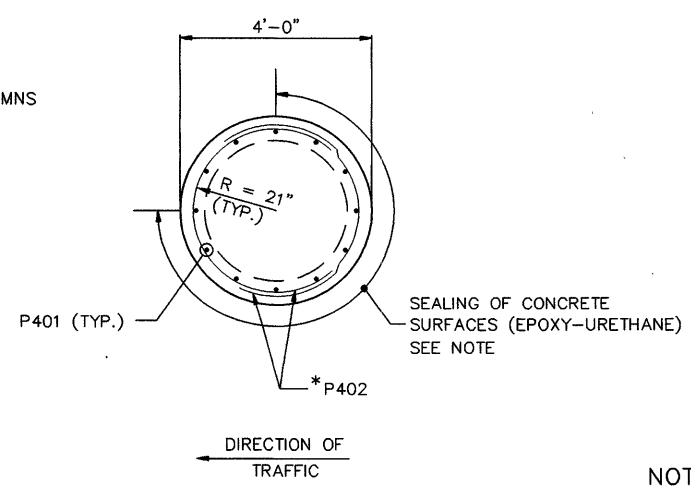
- NOTES:
- INDICATES PORTIONS OF CONCRETE TO BE REMOVED, EXISTING REBARS TO REMAIN.
 - DENOTES PIER PILE NUMBER.

DRAWING = S-ENCASE DATE = NOVEMBER 13, 1996



PARTIAL ELEVATION

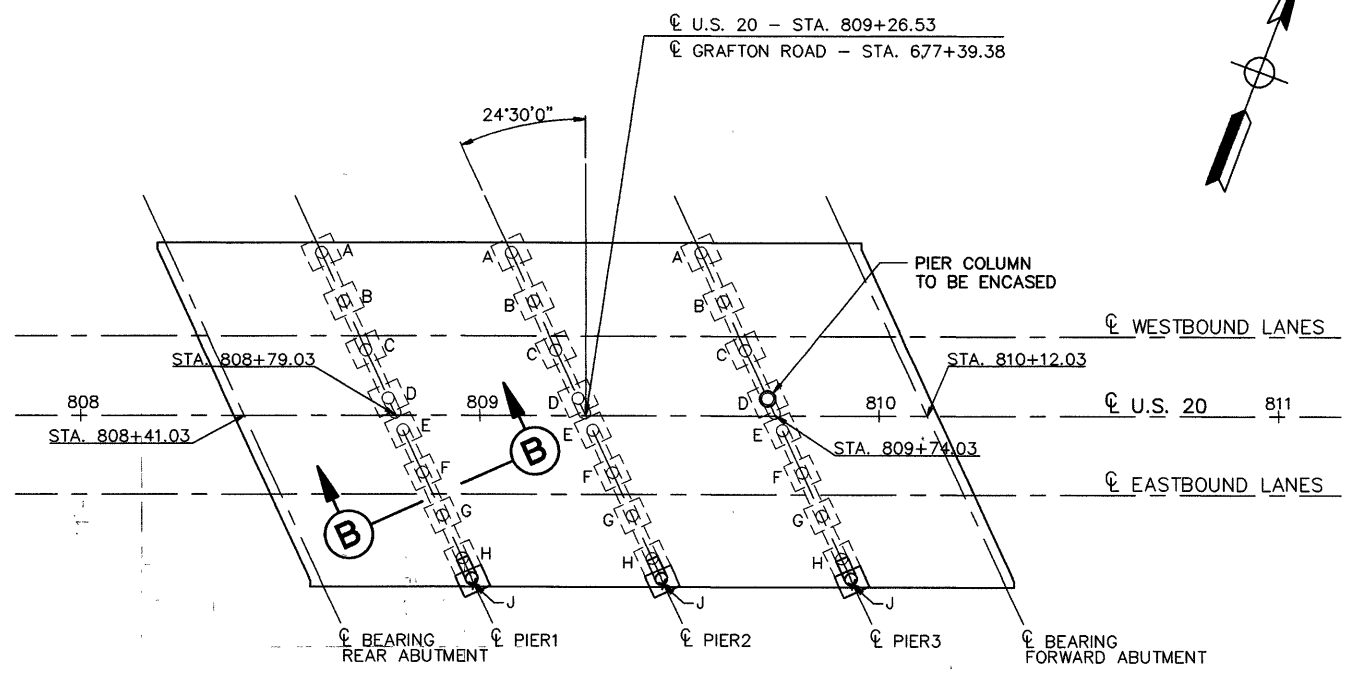
*STAGGER LAPS AROUND COLUMNS



SECTION A-A

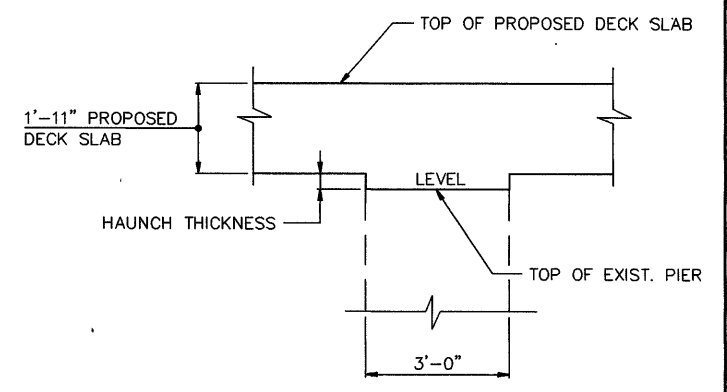
NOTE

LIMITS OF SEALING OF CONCRETE SURFACE SHOWN ARE TYPICAL FOR ALL COLUMNS IN PIER 1 AND PIER 3. PIER 2 COLUMNS SHALL BE SEALED ALL AROUND.



LOCATION OF DECK HAUNCH POINTS AND PIER ENCASEMENT

DECK HAUNCH THICKNESS AT PIER COLUMNS (INCHES)									
LOCATION	A	B	C	D	E	F	G	H	J
PIER 1	3 13/16	3 15/16	3 7/8	3 7/8	1 1/2	2 3/16	2	2	-
PIER 2	4 3/8	4 5/8	4 3/8	4 15/16	3 1/8	3 3/8	3 7/16	3 1/8	-
PIER 3	4 13/16	4 3/4	4 1/4	3 7/8	1 15/16	2 1/8	1 3/4	1 3/8	-



SECTION B-B

DECK HAUNCH AND PIER ENCASEMENT DETAILS

BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD

LOR-20-12.62

13/18

255
357

DESIGNED: NK
CHECKED: VKB

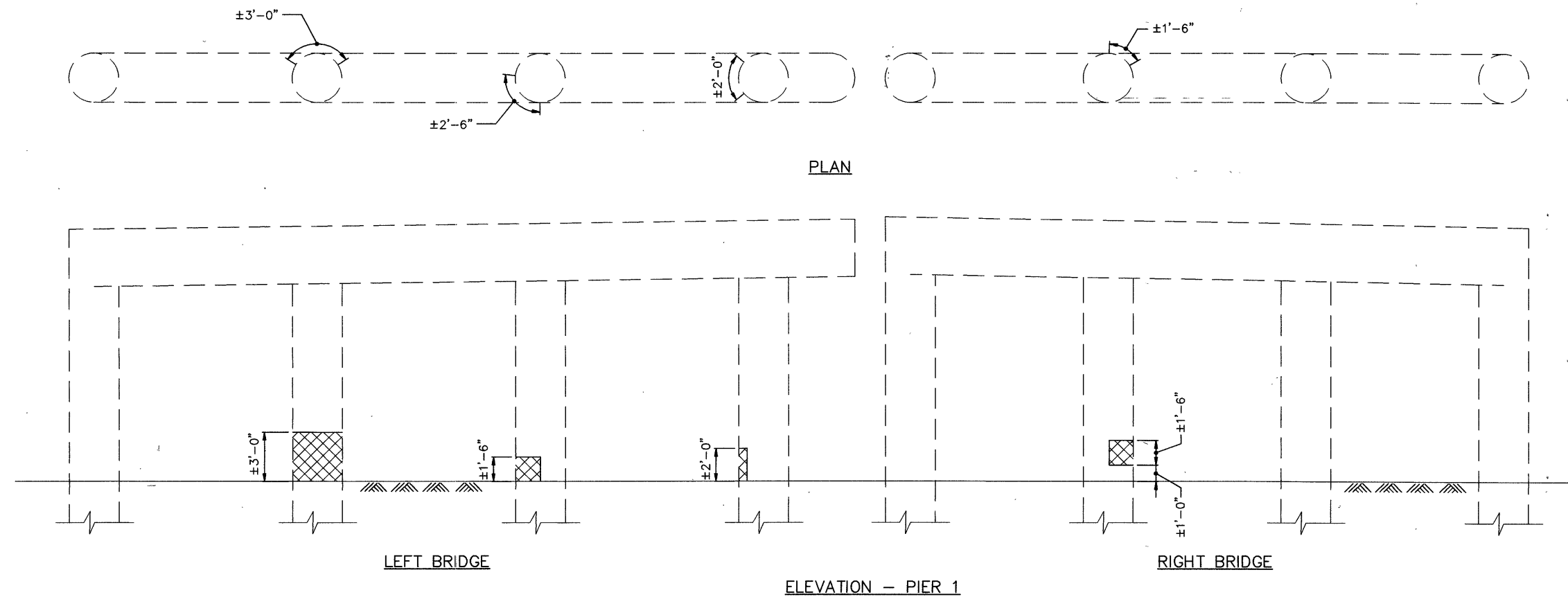
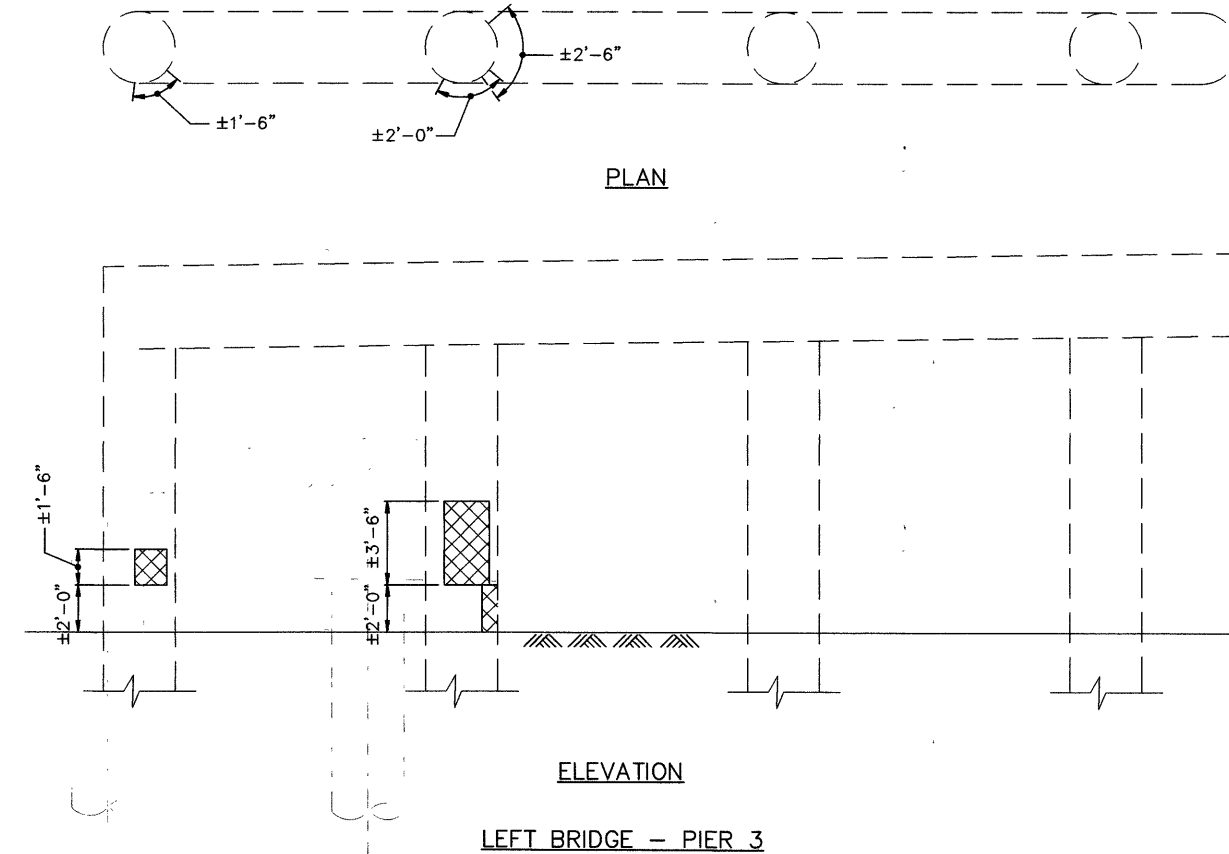
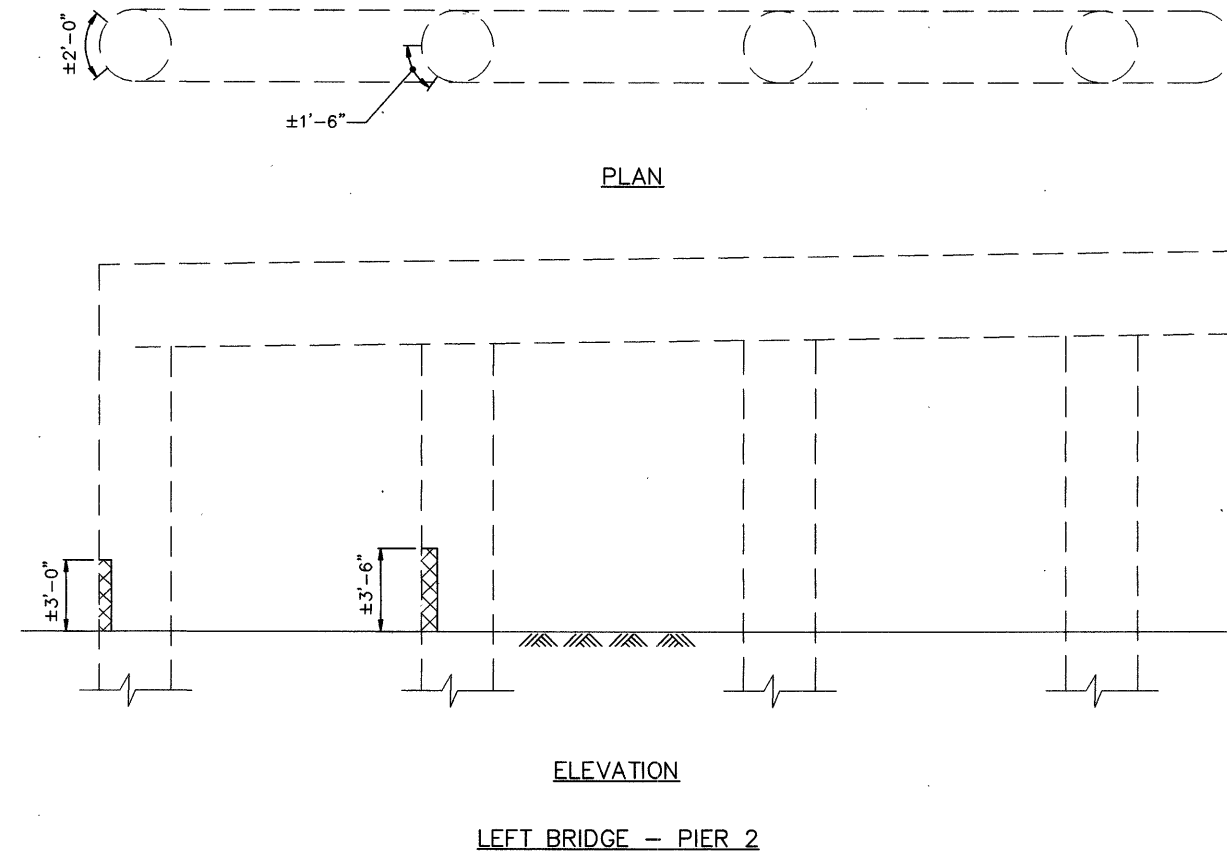
DRAWN: NK
REVISED:


REVIEWED: BRS
STRUCTURE FILE NUMBER: 4701267

DATE: 11/96

DESIGN AGENCY: POLYTECH, INC.
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

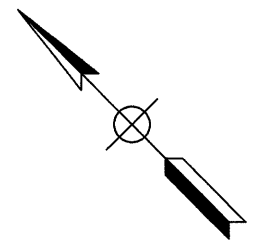
DRAWING = S-PATCH DATE = NOVEMBER 11, 1996



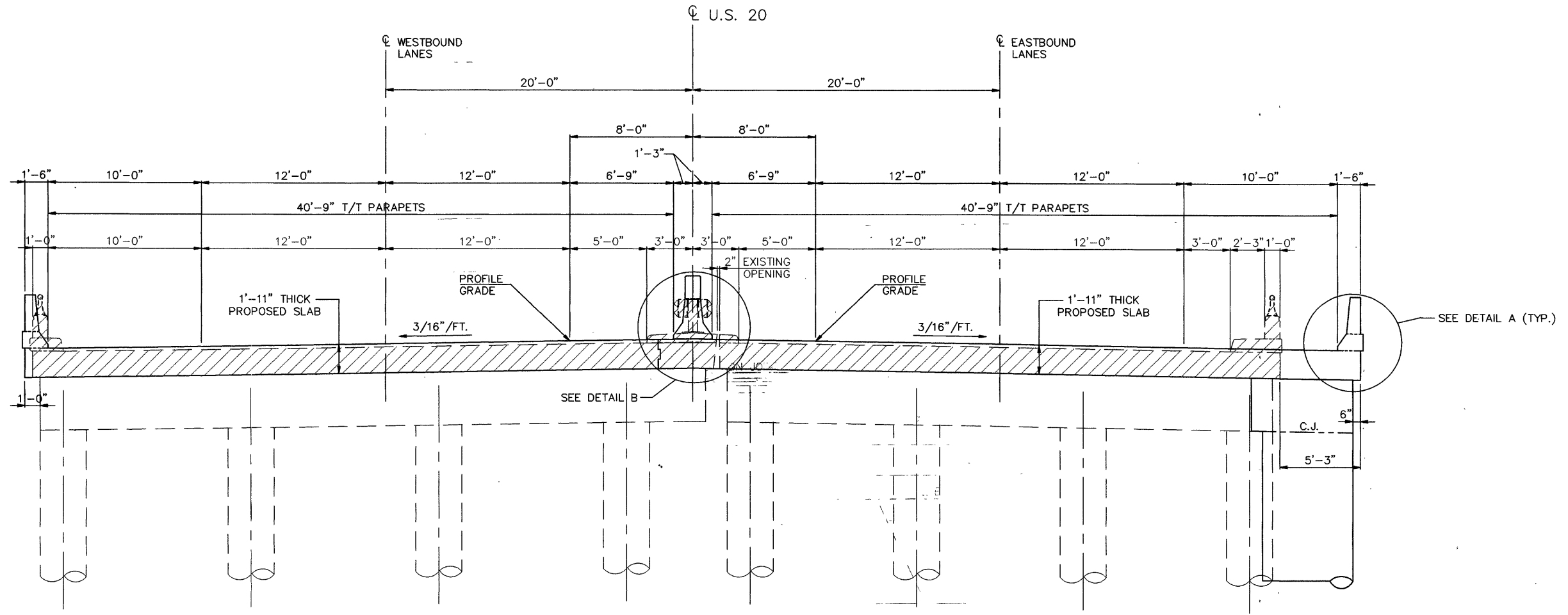
 ITEM SPECIAL, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

LOCATION	ITEM SPECIAL
	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR SQ. FT.
PIERS	45
200% EXPANSION FACTOR	90
* TOTAL	135

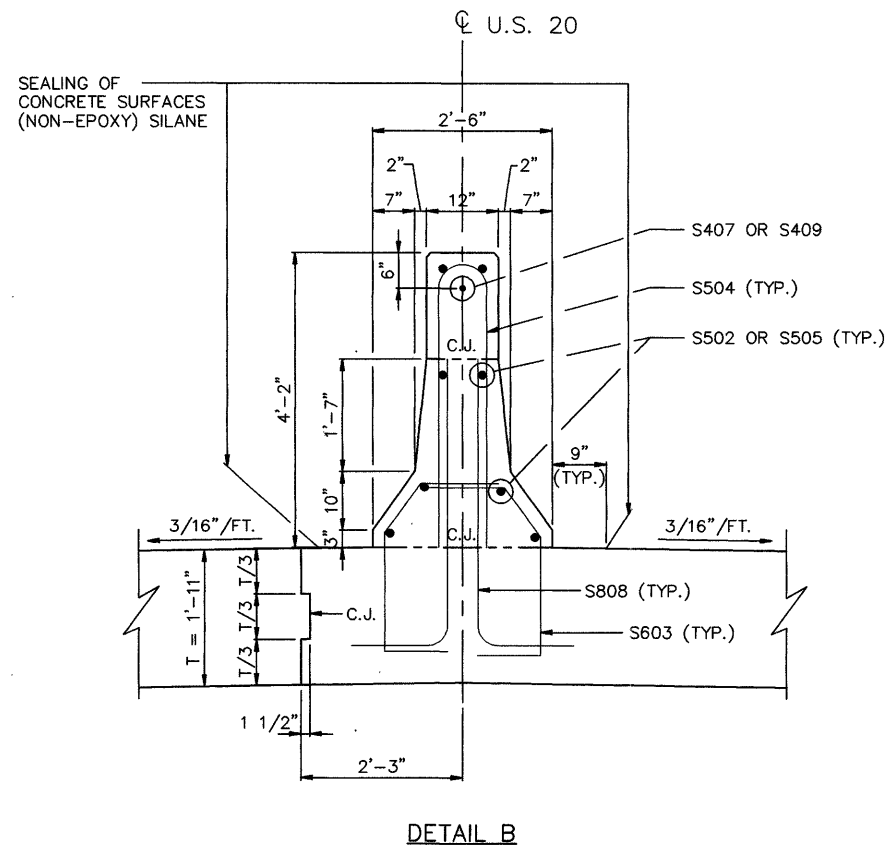
* THIS QUANTITY IS CARRIED TO THE ESTIMATED QUANTITY SHEET [3/18].



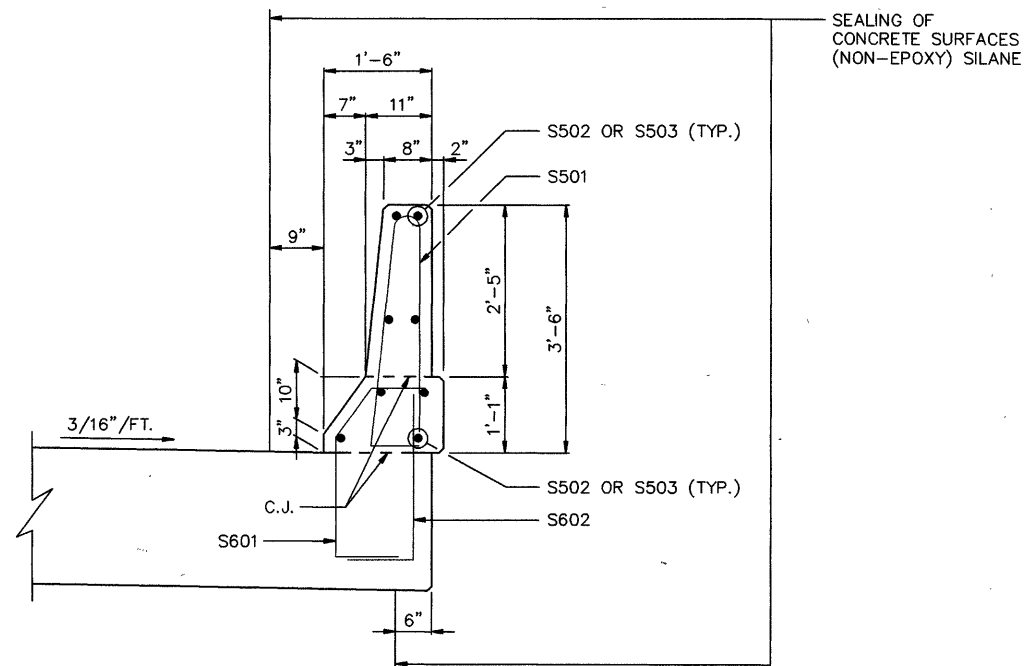
DRAWING = S-TYPSEC DATE = NOVEMBER 11, 1996



TYPICAL SECTION




DETAIL B

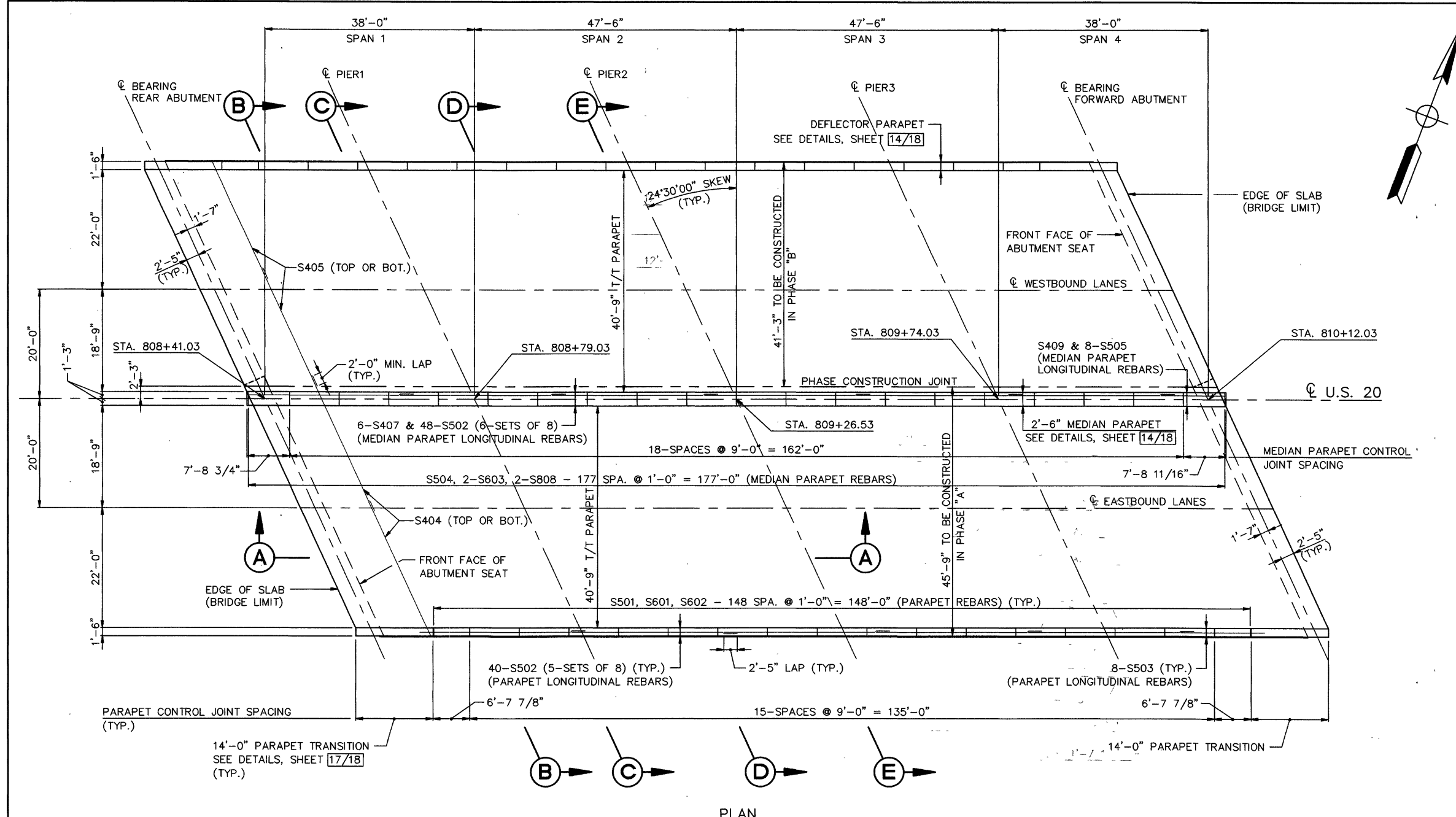


DETAIL A

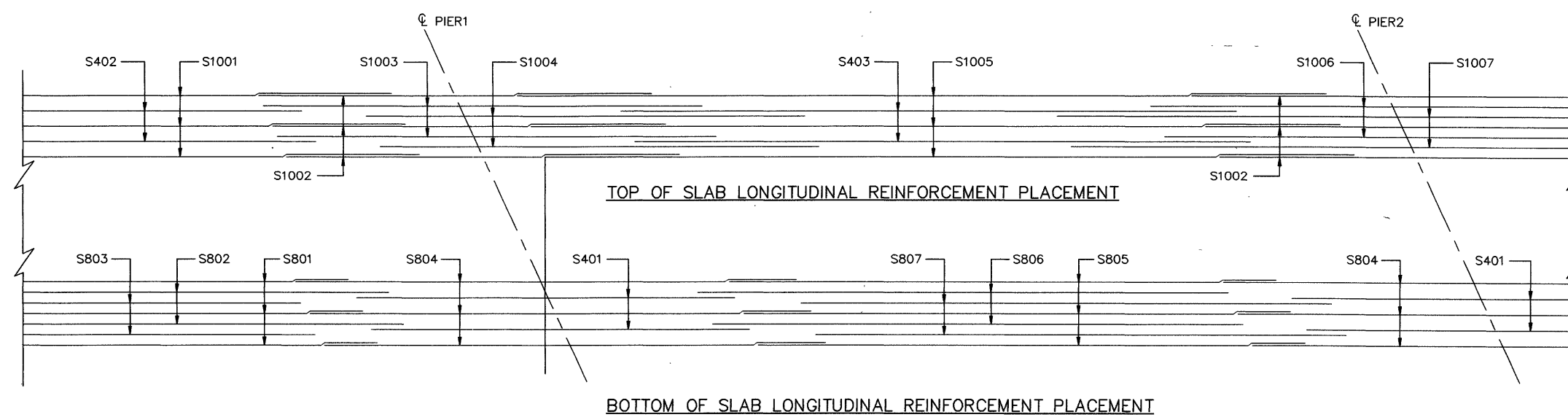
NOTES:

1. SEE SHEETS 15/18 AND 16/18, FOR DECK SLAB DETAILS.
2.  INDICATES PORTIONS TO BE REMOVED, AS PART OF ITEM 202.

DRAWING = S-DECK DATE = NOVEMBER 11, 1996



PLAN



TOP OF SLAB LONGITUDINAL REINFORCEMENT PLACEMENT

BOTTOM OF SLAB LONGITUDINAL REINFORCEMENT PLACEMENT

- NOTES:
1. FOR SECTIONS A-A, B-B, C-C, D-D AND E-E, SEE SHEET 16/18.
 2. CAMBER OF 3/4" FOR SPAN 1 AND SPAN 4, AND 1" FOR SPAN 2 AND SPAN 3 SHALL BE PROVIDED TO ALLOW FOR THE DEAD LOAD DEFLECTION.
 3. FOR ADDITIONAL DETAILS, SEE STD. DWG. CS-1-93.

DESIGN AGENCY: POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

DATE: 11/96

REVIEWED: BRS

STRUCTURE FILE NUMBER: 4701267

DRAWN: NK

CHECKED: VKB

DESIGNED: NK

DECK SLAB DETAILS

BRIDGE NO. LOR-20-1533 L & R

OVER GRAFTON ROAD

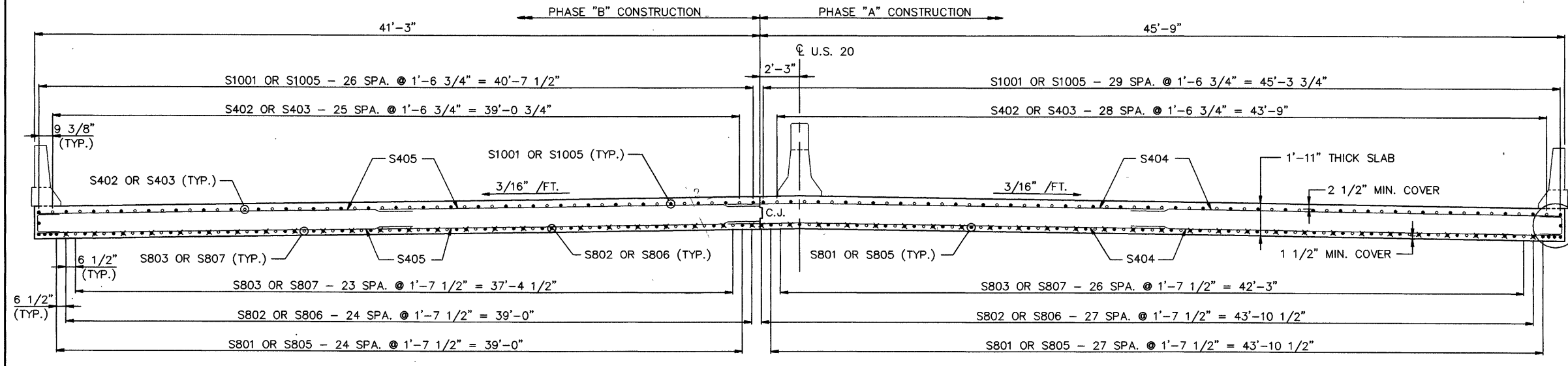
LOR-20-12.62

15/18

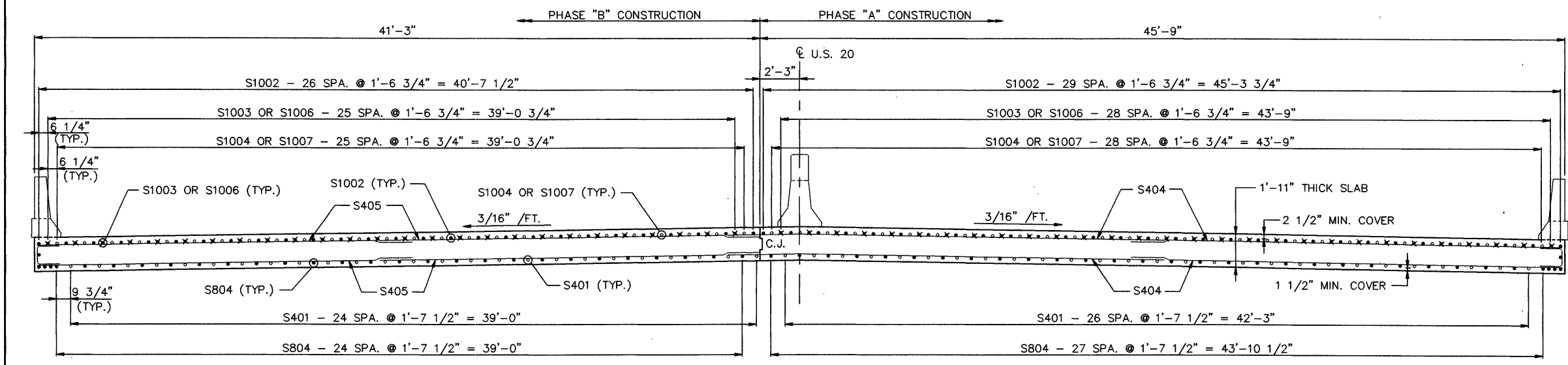
258

351

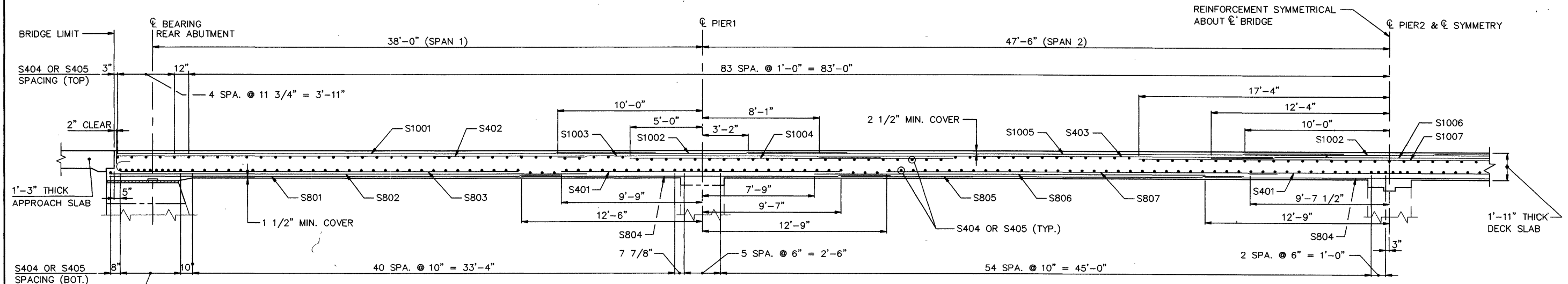
DATE	11/96
REVIEWED	BRS
STRUCTURE FILE NUMBER	4701267
DRAWN	NK
REVIEWED	
DESIGNED	NK
CHECKED	VKB



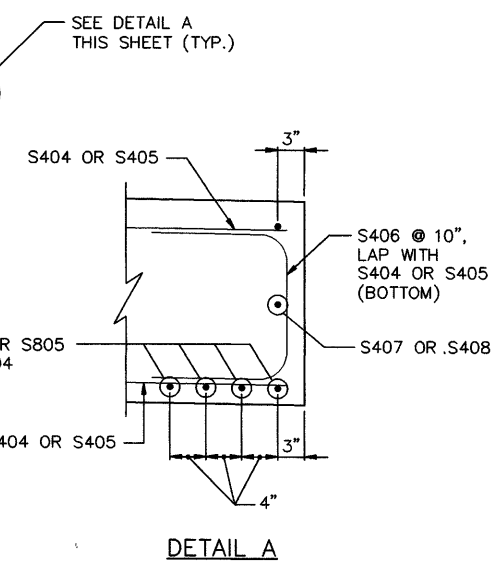
SECTION B-B OR SECTION D-D



SECTION C-C OR SECTION E-E



SECTION A-A

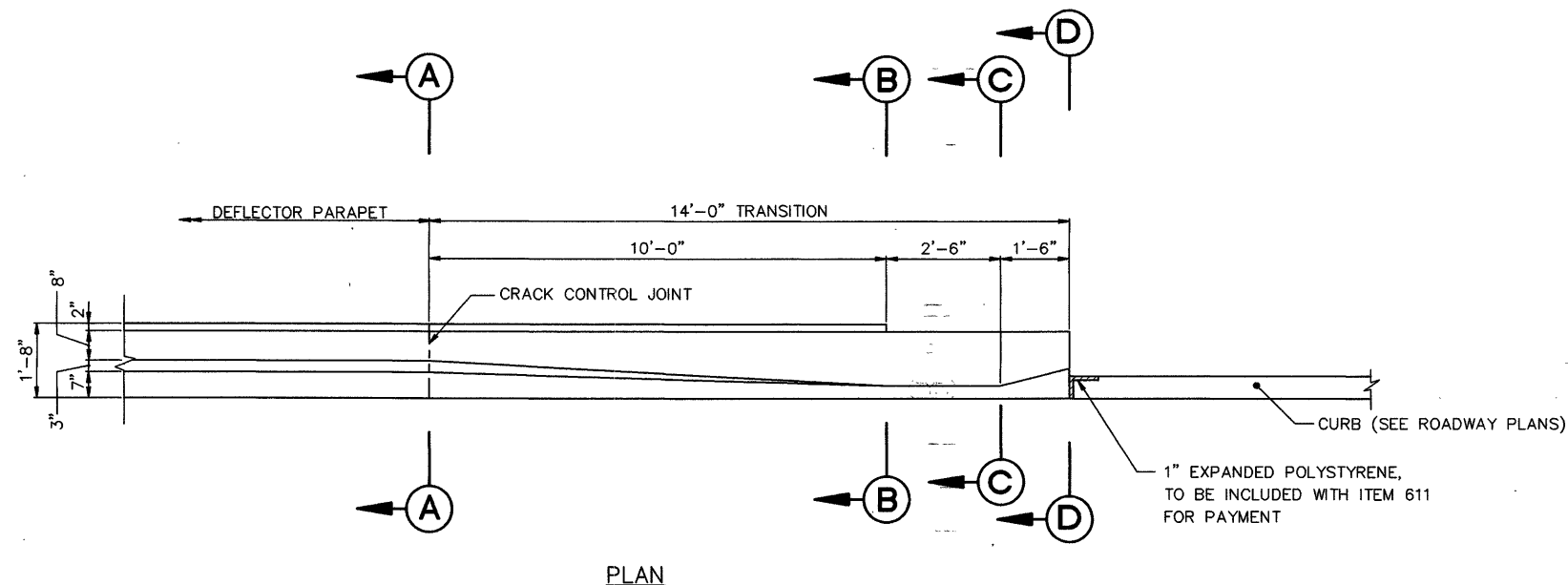


NOTE:
 FOR LOCATION OF SECTIONS A-A, B-B, C-C, D-D AND E-E, SEE SHEET 15/18.

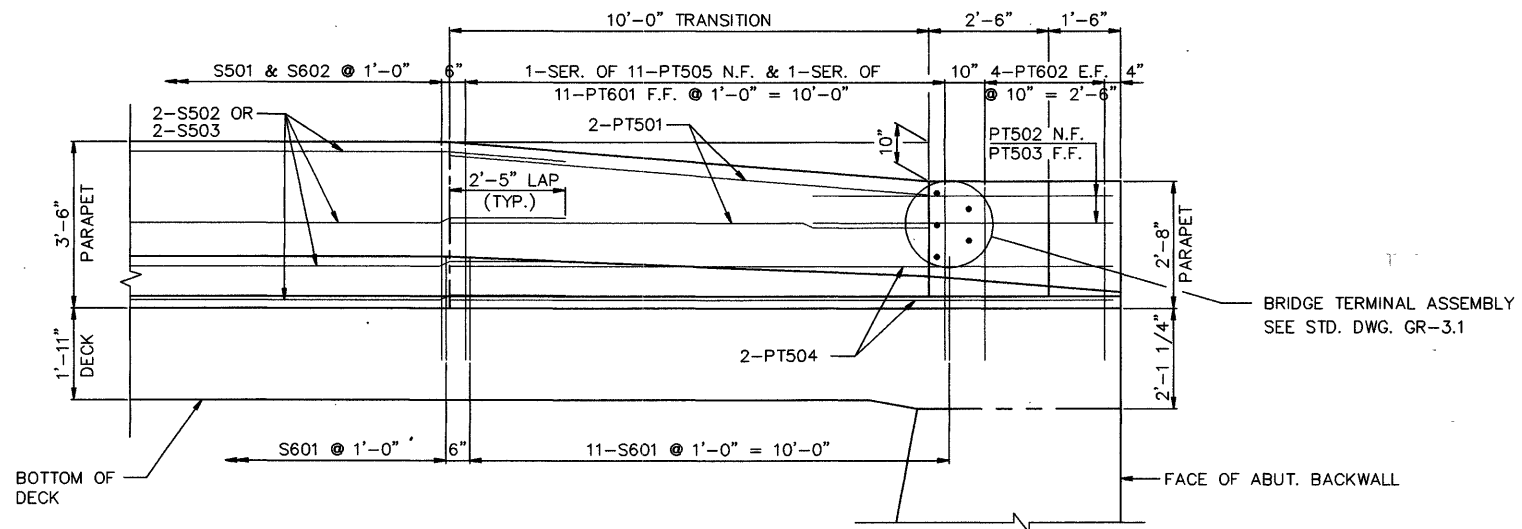
DRAWING = S-DECK1 DATE = NOVEMBER 11, 1996

SEE DETAIL A THIS SHEET (TYP.)

DRAWING = S-PARAPT DATE = NOVEMBER 11, 1996



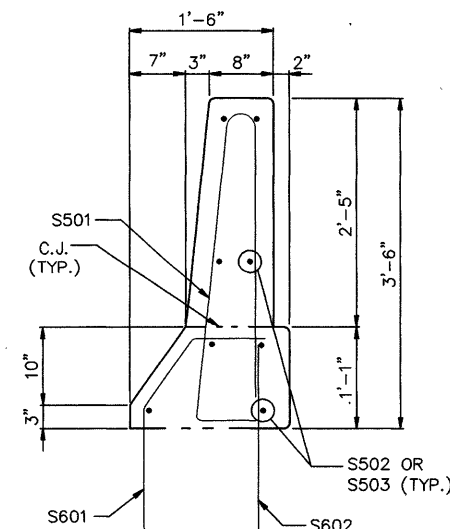
PLAN



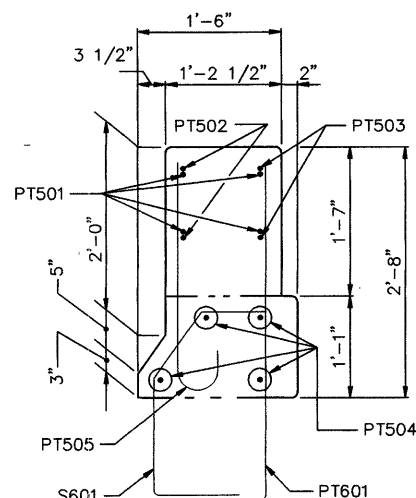
ELEVATION
PARAPET TRANSITION DETAILS

NOTES:

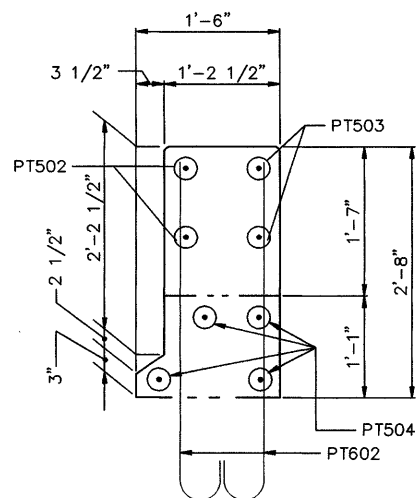
1. ANCHOR BOLTS FOR BRIDGE TERMINAL ASSEMBLY SHALL BE 7/8" DIA. 1'-5 3/4" LONG A325 THROUGH BOLTS WITH 5/8" X 11" X 18 1/4" PLATE.
2. GUARDRAIL ATTACHMENT: HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO TERMINAL CONNECTORS AT ENDS OF PARAPETS SHALL BE SLOTTED 29/32" X 3" AND ALL BOLTS SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS IN 606.05.



SECTION A-A

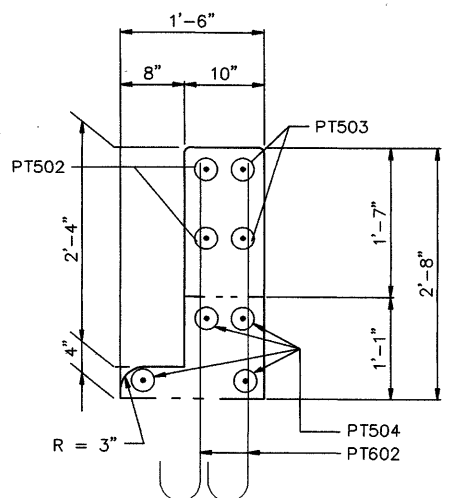


SECTION B-B



SECTION C-C

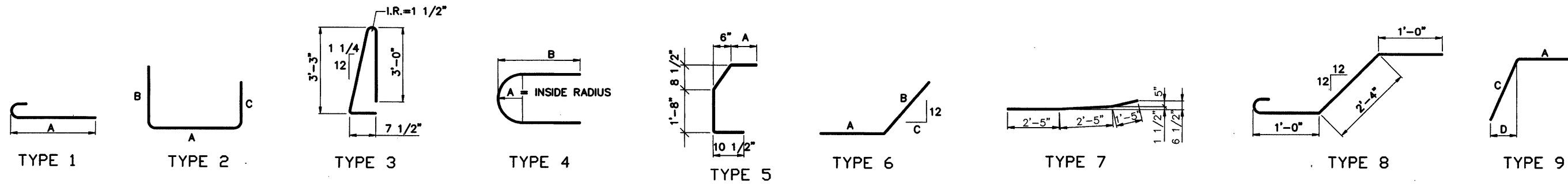
GUARD RAIL ANCHOR BOLTS NOT SHOWN



SECTION D-D

DESIGNED NK CHKD VKB		DRAWN NK REVISED		REVIEWED BRS	DATE 11/96	STRUCTURE FILE NUMBER 4701267
POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114						
PARAPET TRANSITION DETAILS BRIDGE NO. LOR-20-1533 L & R OVER GRAFTON ROAD						
LOR-20-12.62 17/18 260 351						

DRAWING = S-REBAR DATE = NOVEMBER 13, 1996



SUPERSTRUCTURE										REAR ABUTMENT										PIERS									
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
S401	104	19'-3"	STR.						1,337	RA501	5	10'-8"	9	4'-2"	3'-4"	3'-5"	10 3/4"		56	P401	12	13'-3"	STR.						106
S402	110	32'-4"	STR.						2,376	RA502	5	11'-10"	10	5'-4"	3'-4"	3'-5"	10 3/4"		62	P402	36	8'-0"	12						192
S403	110	31'-4"	STR.						2,302	RA503	4	8'-6"	2	1'-11"	3'-5"	3'-5"			35										
S404	814	27'-1"	STR.						14,727	RA504	8	6'-10"	STR.						57										
S405	814	23'-7"	STR.						12,824	RA505	3	6'-9"	STR.						21	P501	69	12'-11"	4	1'-2 3/8"	5'-11"				930
S406	460	3'-9"	2	1'-5"	1'-3"	1'-3"			1,152	RA506	2	10'-0"	2	1'-3 3/4"	4'-9 1/2"	4'-2"			21	P502	7	8'-5"	11	2'-0"	2'-10"	7 1/2"			61
S407	18	30'-0"	STR.						361	RA507	2	8'-6"	2	2'-6 3/4"	3'-8 1/2"	2'-6"			18	P503	72	3'-4"	6	2'-10"	7 1/2"	0			250
S408	2	10'-6"	STR.						14	RA508	2	5'-1"	STR.						11										
S409	1	11'-7"	STR.						8	RA509	70	6'-1"	2	4'-2"	1'-1"	1'-1"			444										
S501	298	7'-1"	3						2,202											P601	108	3'-8"	6	2'-5 3/8"	1'-3"	10			595
S502	128	30'-0"	STR.						4,005	RA801	2	30'-2"	STR.						161	P701	48	5'-7"	STR.						548
S503	16	15'-3"	STR.						255	RA801	2	30'-2"	STR.*						161	P702	30	6'-8"	STR.						409
S504	178	8'-1"	4	3 3/8"	4'-0"				1,501	RA802	2	27'-11"	STR.						149	P703	30	5'-2"	STR.						317
S505	8	11'-7"	STR.						97	RA802	2	27'-11"	STR.*						149										
S601	342	3'-10"	5	9"					1,969	RA803	3	26'-6"	STR.						212	P801	6	12'-6"	2	6'-5"	3'-3"	3'-3"			200
S602	298	3'-1"	6	2'-4"	11"	0			1,380	RA804	1	23'-9"	STR.						64	P802	6	12'-9"	2	6'-8"	3'-3"	3'-3"			204
S603	356	4'-2"	5	1'-1"					2,228	RA804	1	23'-9"	STR.*						64	P803	3	12'-10"	2	6'-9"	3'-3"	3'-3"			103
S801	118	31'-2"	STR.						9,819	RA805	3	9'-6"	STR.						76	P804	6	9'-3"	6	6'-5"	3'-0 1/2"	0			148
S802	106	33'-0"	STR.						9,340	RA806	5	5'-0"	STR.						67	P805	6	9'-6"	6	6'-8"	3'-0 1/2"	0			152
S803	102	28'-11"	1	27'-9"					7,875	RA807	9	4'-6"	STR.						108	P806	3	9'-7"	6	6'-9"	3'-0 1/2"	0			77
S804	118	25'-6"	STR.						8,034																				
S805	118	27'-10"	STR.						8,769																				
S806	106	27'-0"	STR.						7,642																				
S807	102	27'-0"	STR.						7,353																				
S808	356	5'-3"	6	4'-1"	1'-4"	0			4,990																				
S809	57	5'-2"	8						786																				
S1001	114	37'-3"	STR.						18,273	FA501	5	10'-8"	9	4'-2"	3'-4"	3'-5"	10 3/4"		56										
S1002	228	20'-0"	STR.						19,622	FA502	5	11'-10"	10	5'-4"	3'-4"	3'-5"	10 3/4"		62										
S1003	110	22'-4"	STR.						10,571	FA503	4	8'-6"	2	1'-11"	3'-5"	3'-5"			35										
S1004	110	22'-4"	STR.						10,571	FA504	8	6'-9"	STR.						56										
S1005	114	41'-2"	STR.						20,194	FA505	3	8'-9"	STR.						27										
S1006	110	24'-8"	STR.						11,675	FA506	2	9'-10"	2	1'-3 3/4"	4'-8 1/2"	4'-1"			21										
S1007	110	34'-8"	STR.						16,409	FA507	2	8'-11"	2	2'-6 3/4"	3'-10 3/4"	2'-8 3/4"			19										
PT501	16	10'-0"	STR.						167	FA508	3	5'-4"	STR.						17										
PT502	8	6'-3"	7						52	FA509	70	6'-7"	2	4'-2"	1'-4"	1'-4"			481										
PT503	8	6'-3"	STR.						52	FA510	2	4'-2"	STR.						9										
PT504	16	13'-10"	STR.						231																				
PT505	4-SER. OF 11	3'-0" TO 3'-10"	1	2'-5" TO 3'-3"				1"	157																				
PT601	4-SER. OF 11	4'-7" TO 5'-5"	6	3'-10" TO 4'-8"	11"	0		1"	330																				
PT602	32	4'-6"	1	3'-11"					216																				

FHWA REGION	STATE	PROJECT
5	OHIO	

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351

**LORAIN COUNTY
LOR-20-12.62**

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPAN: 64', 80', 64' C/C BEARINGS

ROADWAY WIDTH: LEFT BRIDGE- 51'-0" FACE OF GUARD RAIL (OUTSIDE) TO FACE OF 3'-0" RAISED MEDIAN (INSIDE).
RIGHT BRIDGE- VARIES FROM 53.66' TO 48.42' FROM FACE OF 3'-0" RAISED MEDIAN (INSIDE) TO FACE OF GUARD RAIL (OUTSIDE).

LOAD FREQUENCY: CF 2000 (S7)

SKEW: 15° 00' 00" LEFT FORWARD

ALIGNMENT: TANGENT

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: AS - 1 - 67 (25' LONG)

YEAR BUILT: 1970± (LEFT BRIDGE) 1957± (RIGHT BRIDGE) & 1970± (RIGHT BRIDGE WIDENED)

STRUCTURE FILE NO.: 4701356 LEFT BRIDGE 4701321 RIGHT BRIDGE

PROPOSED STRUCTURE

PROPOSED WORK: *

TYPE: THREE SPAN CONTINUOUS COMPOSITE STEEL BEAM WITH REINFORCED CONC. DECK AND SUBSTRUCTURE.

SPANS: 64'; 80'; 64' C/C BEARINGS

ROADWAY WIDTH: 52'-5" T/T OF SAFETY SHAPE PARAPET (LEFT BRIDGE); VARIES FROM 59'-1 1/4" TO 53'-9 1/2" T/T OF SAFETY SHAPE PARAPET (RIGHT BRIDGE)

DESIGN LOADING: HS20 - 44 CASE II & INTERSTATE ALTERNATE MILITARY LOADING

SKEW: 15° 00' 00" LEFT FORWARD

ALIGNMENT: TANGENT

WEARING SURFACE: MONOLITHIC CONCRETE

APPROACH SLABS: AS - 1 - 81 (25'-0" LONG)

CROSS SLOPE: 3/16" /FT.

LATITUDE 41° 19' - 49" **LONGITUDE** 82° - 04' - 14"

TRAFFIC DATA

CURRENT ADT (1997) = 14,500
DESIGN YEAR ADT (2017) = 20,300
DESIGN YEAR ADTT (2017) = 2,233

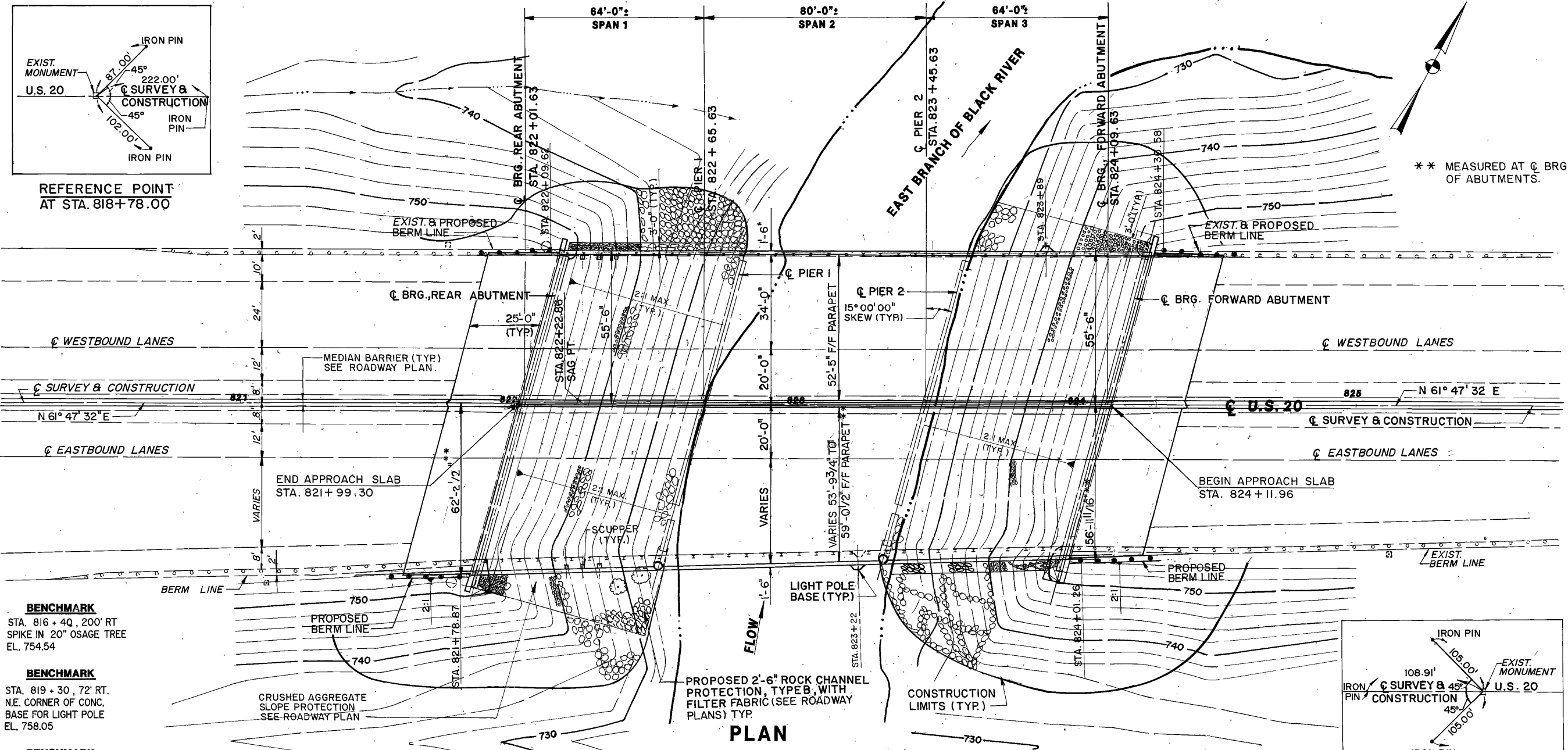
FOUNDATION DATA

ALL ABUTMENT EXTENSIONS SHALL BE SUPPORTED BY STEEL "H" PILES (HP 10X42), ESTIMATED AVERAGE PILE LENGTH FOR EACH PILE = 30'

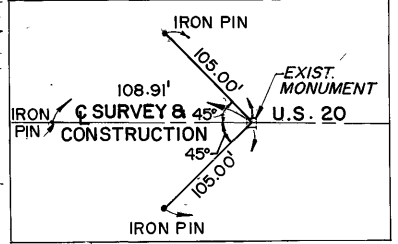
POLYTECH, INC. 1/22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

SITE PLAN
BRIDGE NO. LOR-20-1559 L & R
OVER EAST BRANCH OF BLACK RIVER
LORAIN COUNTY STA. 821+99.30
STA. 824+11.96

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JWN	GS	GS	VKB	BS	12/96	

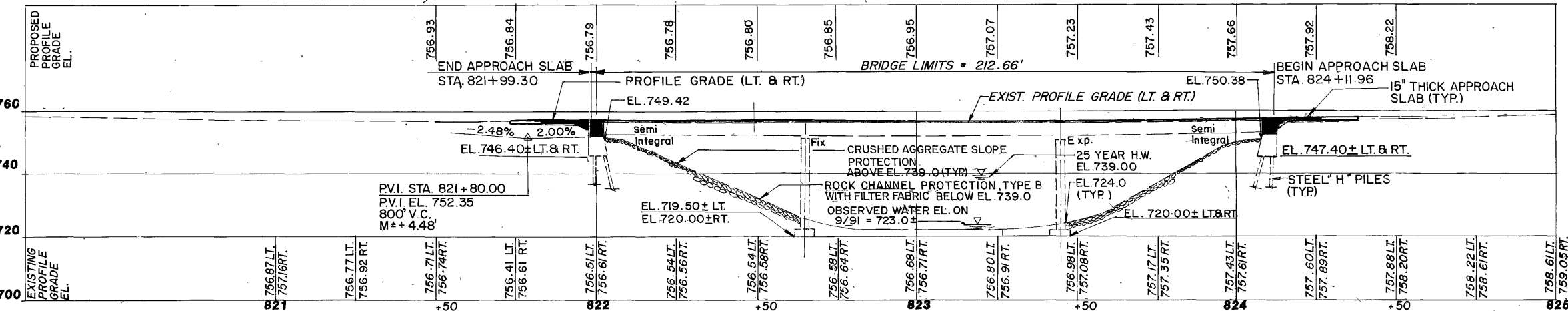


- BENCHMARK**
STA. 816 + 40, 200' RT
SPIKE IN 20" OSAGE TREE
EL. 754.54
- BENCHMARK**
STA. 819 + 30, 72' RT.
N.E. CORNER OF CONC.
BASE FOR LIGHT POLE
EL. 758.05
- BENCHMARK**
STA. 825 + 12, 57' RT.
S.W. CORNER OF CONC.
BASE FOR LIGHT POLE
EL. 757.84



**REFERENCE POINT
AT STA. 826+08.91**

NOTE:
EARTHWORK LIMITS SHOWN ARE APPROXIMATE,
ACTUAL SLOPES SHALL CONFORM TO PLAN
CROSS SECTIONS



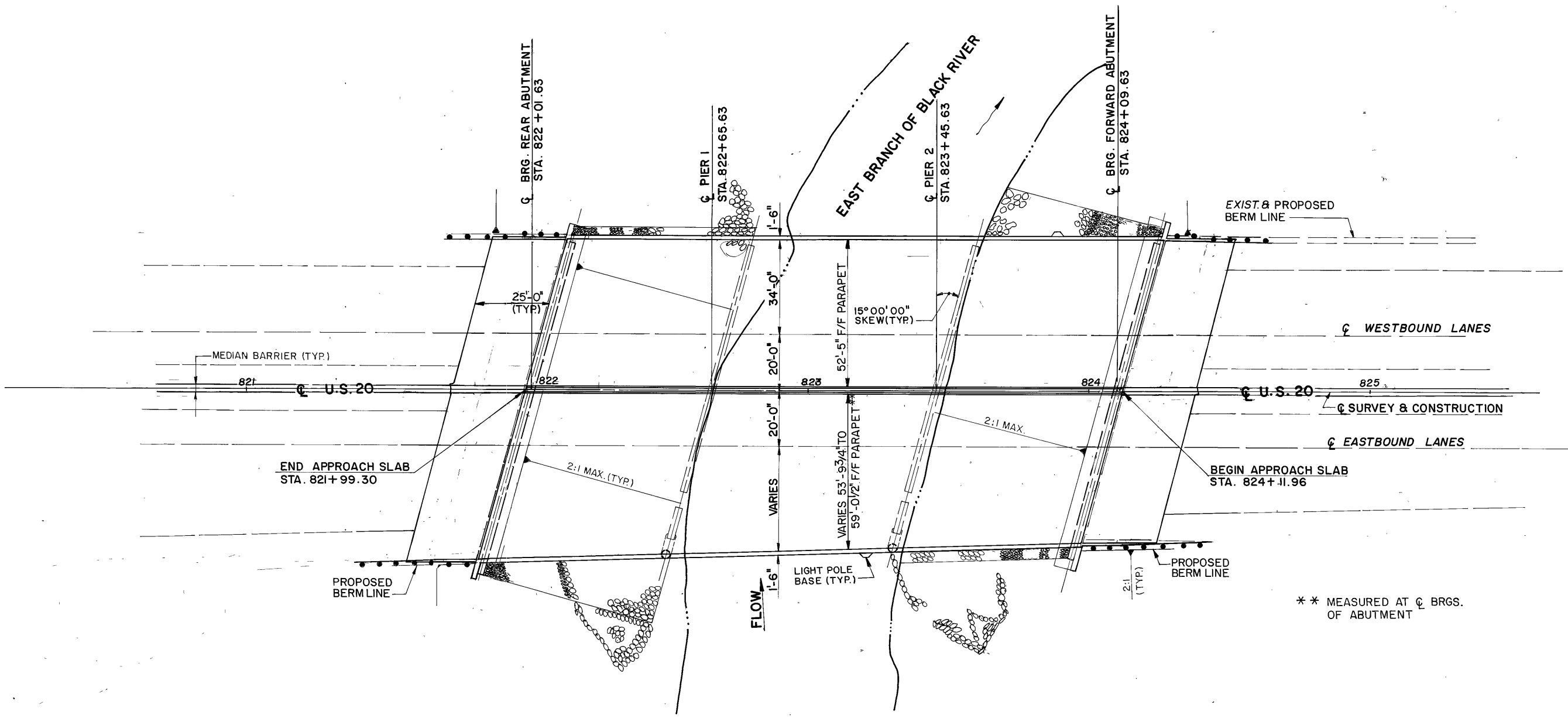
PROFILE

* REMOVE EXISTING DECK SLABS AND APPROACH SLABS, WIDEN THE PIERS AND ABUTMENTS ON THE SOUTH SIDE OF THE RIGHT STRUCTURE, PROVIDE NEW BEAM AND NECESSARY CROSS FRAMES ON THE SOUTH SIDE OF THE RIGHT STRUCTURE, PROVIDE SHEAR STUDS FOR ALL THE BEAMS, REPLACE THE ABUTMENT BACKWALL WITH SEMI INTEGRAL ABUTMENT AND POUR CONCRETE FOR NEW DECK SLABS AND APPROACH SLABS.

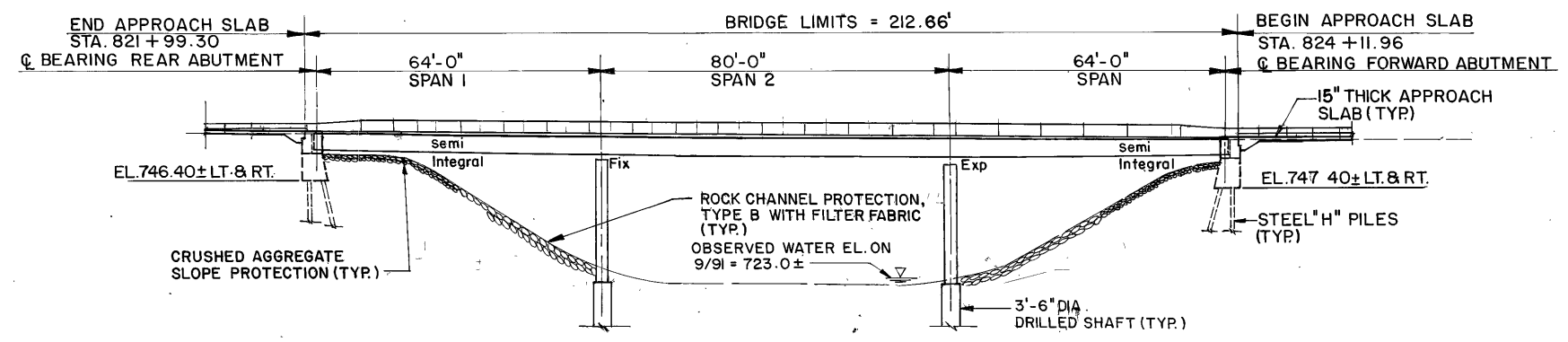
FHWA REGION	STATE	PROJECT
5	OHIO	

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351

LORAIN COUNTY
LOR-20-12.62



GENERAL PLAN



ELEVATION

POLYTECH, INC. 2/22

**GENERAL PLAN & ELEVATION
OVER EAST BRANCH OF BLACK RIVER**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MR	GS	GS	VKB	BRS	12/96	

ESTIMATED QUANTITIES

QUANTITY CALCULATIONS
 BY DATE
 CALC. VKB 11/96
 CHKD. YSS 11/96

FHWA REGION	STATE	PROJECT
5	OHIO	

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LORAIN COUNTY
 LOR-20-12.62

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER-STRUCTURE	GENERAL	A.P.P. REF. SHT.
202	11301	38	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE	38			4/22
202	11305	1,254	SQ. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE		1,254		4/22
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING			LUMP	
509	15840	102,793	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	312	102,481		
510	10001	16	EACH	DOWEL HOLES WITH NON SHRINK, NON METALLIC GROUT, AS PER PLAN	16			5/22
511	45501	4	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	4			4/22
SPECIAL	511 48000	415	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), MIX #4		415		
SPECIAL	511 48020	50	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), MIX #4		50		
SPECIAL	511 49000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX			LUMP	
SPECIAL	511 49010	LUMP		HIGH PERFORMANCE CONCRETE TESTING			LUMP	
SPECIAL	512 67504	337	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)		337		
SPECIAL	512 67510	88	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	88			
513	20000	3,206	EACH	WELDED STUD SHEAR CONNECTOR		3,206		

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER-STRUCTURE	GENERAL	A.P.P. REF. SHT.
516	10901	108	LIN. FT.	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN		108		5/22
516	44000	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1 3/8" X 8 1/2" X 12" WITH 1 1/2" X 9 1/2" X 13" LOAD PLATE)	7			
516	44100	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2 5/8" X 8 1/2" X 12" WITH 1 1/2" X 9 1/2" X 13" LOAD PLATE)	7			
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP	6/22
518	12201	3	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN		3		5/22
518	21201	82	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	82			5/22
518	40001	124	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	124			5/22
518	40011	32	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	32			5/22
519	11101	6	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN	6			5/22
815	00050	17,080	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU		17,080		
815	00056	17,080	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU		17,080		
815	00060	17,080	SQ. FT.	FIELD PAINTING OF EXIST. STEEL, INTERMEDIATE COAT, SYSTEM OZEU		17,080		
815	00066	17,080	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU		17,080		

DATE=NOVEMBER 22, 1996

DRAWING = S-QUANL

POLYTECH, INC.						3 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114						
ESTIMATED QUANTITIES						
BRIDGE NO. LOR-20-1559 L OVER EAST BRANCH OF BLACK RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

ESTIMATED QUANTITIES

QUANTITY CALCULATIONS
 BY DATE
 CALC. VKB 11/96
 CHKD. YSS 11/96

FHWA REGION	STATE	PROJECT	
5	OHIO		



LORAIN COUNTY
 LOR-20-12.62

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P. REF. SHT.
202	11301	38	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE	38				4/22
202	11305	1,294	SQ. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE			1,294		4/22
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP			5/22
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	11100	240	LIN. FT.	STEEL PILES HP10X42	240				
SPECIAL	507 94802	4	LIN. FT.	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK		4			
SPECIAL	507 94804	16	LIN. FT.	DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK		16			
509	15840	125,891	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	2,921	6,535	116,435		
510	10001	150	EACH	DOWEL HOLES WITH NON SHRINK, NON METALLIC GROUT, AS PER PLAN	30	120			5/22
511	40500	54	CU. YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS		54			
511	45501	27	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	27				4/22
SPECIAL	511 48000	443	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), MIX #4			443		
SPECIAL	511 48020	51	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), MIX #4			51		
SPECIAL	511 49000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX				LUMP	
SPECIAL	511 49010	LUMP		HIGH PERFORMANCE CONCRETE TESTING				LUMP	
511	81100	20	LIN. FT.	CONCRETE, MISC.: CONCRETE PUMPING		20			
SPECIAL	512 67504	338	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)			338		
SPECIAL	512 67510	94	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	94				
513	11101	50,243	POUND	STRUCTURAL STEEL, AISC CATEGORY I, AS PER PLAN			50,243		5/22
513	20000	3,760	EACH	WELDED STUD SHEAR CONNECTOR			3,760		

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P. REF. SHT.
516	10901	108	LIN. FT.	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			108		5/22
516	44000	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1 3/8" X 8 1/2" X 12" WITH 1 1/2" X 9 1/2" X 13" LOAD PLATE)	8				
516	44100	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2 5/8" X 8 1/2" X 12" WITH 1 1/2" X 9 1/2" X 13" LOAD PLATE)	8				
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	6/22
518	12201	3	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN			3		5/22
518	21201	90	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	90				5/22
518	40001	138	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	138				5/22
518	40011	32	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	32				5/22
519	11101	6	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN	6				5/22
815	00050	20,730	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			18,120	2610	5/22
815	00056	20,730	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			18,120	2610	5/22
815	00060	20,730	SQ. FT.	FIELD PAINTING OF EXIST. STEEL, INTERMEDIATE COAT, SYSTEM OZEU			18,120	2610	5/22
815	00066	20,730	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			18,120	2610	5/22

POLYTECH, INC.					3A/22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114					
ESTIMATED QUANTITIES					
BRIDGE NO. LOR-20-1559 R OVER EAST BRANCH OF BLACK RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
VKB	VKB	-	YSS	BRS	12/96

FHWA REGION	STATE	PROJECT	
5	OHIO		



LORAIN COUNTY
LOR-20-12.62

GENERAL NOTES

1. DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, DATED 1992, INCLUDING THE 1993, 1994 AND 1995 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

2. REFERENCE DRAWINGS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS

- | | |
|------------------------|------------------------|
| AS-1-81, DATED 9/15/94 | PCB-91, DATED 4/24/92 |
| GR-3.1 DATED 5/6/91 | RB-1-55, DATED 2/2/59 |
| HL-10.13, DATED 5/1/87 | SD-1-69, DATED 6/12/69 |
| HL-20.14, DATED 5/1/87 | |
| HL-30.31, DATED 5/1/87 | |
| IRJ-8-95, DATED 7/6/95 | |

AND SUPPLEMENTAL SPECIFICATIONS

- 815, DATED 7/17/95
- 910, DATED 7/17/95
- 944, DATED 12/7/95
- 949, DATED 6/14/95

3. DESIGN DATA:

DESIGN LOADING: HS20-44 (CASE II) AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE - UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)

CONCRETE CLASS C - UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, A616 OR A617
GRADE 60 - UNIT STRESS 24,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS,
ASTM A82 OR A615

STRUCTURAL STEEL
ASTM A36 - UNIT STRESS 20,000 P.S.I.

4. DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER
SEALING OF CONCRETE SURFACES

5. WEARING SURFACE:

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

6. 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 513.02.

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

7. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS INDICATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNED FOR SALVAGE. IF DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL, AS PER 510 MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

8. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE

THIS ITEM OF WORK SHALL BE USED TO REMOVE THE EXISTING CONCRETE DECK, SAFETY CURBS, RAILINGS & POSTS, END DAMS, END CROSSFRAMES AND ABUTMENT BEARINGS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS, HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC : PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

A CONCRETE DECK ON STEEL BEAMS MAY BE REMOVED BY SAWING WITH THE FOLLOWING RESTRICTIONS:

1. BEFORE ANY SAWING IS PERMITTED: THE OUTLINES OF THE TOP FLANGES OF ALL STRINGERS ARE TO BE DRAWN ON THE BRIDGE DECK AND ONE (1) INCH ± DIAMETER PILOT HOLES SHALL BE DRILLED OUTSIDE THESE LINES TO CONFIRM THE WIDTH OF THE FLANGES. PILOT HOLES SHALL NOT BE DRILLED OVER THE BEAM FLANGES.
2. ALL SAWING SHALL BE CONFINED TO THE AREAS BETWEEN THE FLANGE EDGES MINUS FOUR (4) INCHES (2 INCHES± EACH SIDE).
3. THE DRILLING OF PILOT HOLES AND THE GENERAL SAWING PATTERN SHALL BE APPROVED BY THE ENGINEER.
4. HAND SAWS MAY BE USED IN THE FLANGE AREAS IF THE OPERATION IS OBSERVED AND APPROVED BY THE ENGINEER; AND THEN ONLY TO A DEPTH NOT PENETRATING THE LOWER REINFORCING STEEL MAT. THE ENGINEER MAY TERMINATE THE HAND SAWING OPERATION OVER THE FLANGES IF HE FEELS THE BRIDGE INTEGRITY IS IN JEOPARDY.
5. AS AN ALTERNATIVE TO USING HAND SAWS; THE LARGE CUTTING SAWS MAY BE USED FOR THE TRANSVERSE CUTS ACROSS THE FLANGES WITH THE CUT RESTRICTED TO A MAXIMUM DEPTH OF FOUR (4) INCHES OVER THE FLANGES. THIS SHALL BE ACCOMPLISHED BY MAKING AN INITIAL TRANSVERSE PRECUT TO A MAXIMUM DEPTH OF FOUR (4) INCHES CONTINUOUSLY ACROSS THE ENTIRE DECK. THE SECOND CUT SHALL BE RESTRICTED TO THE AREAS BETWEEN THE BEAMS IN ACCORDANCE WITH NUMBER 2 ABOVE.

9. ITEM 511 - CLASS C CONCRETE, ABUTMENT, AS PER PLAN

INSTALL A 3 FOOT WIDE STRIP, 3/32 INCH THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 3 FOOT WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X 3/32" (LENGTH X SHANK DIAMETER) #10 GALVANIZED BUTTON HEAD SPIKE THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES(+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS, AT 6 INCHES CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS WHERE THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

DRAWING = S-NOTE(A) DATE = NOVEMBER 21, 1996

POLYTECH, INC.						4 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114						
GENERAL NOTES						
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

GENERAL NOTES

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST ONE FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32 INCH THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPOINT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094 ± .01
BREAKING STRENGTH, GRAB WXF, LBS, MINIMUM	D 751	700 X 700
ADHESIVE 1" STRIP, 2" MINIMUM, LBS, MINIMUM	D 751	9
BURST STRENGTH(MULLEN) PSI, MINIMUM	D 751	1400
HEAT AGING 70 HOURS T 212 °F, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40 °F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 511 CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

10. ITEM 511 - CLASS C CONCRETE, AS PER PLAN

ALL COARSE AGGREGATE FOR THE CLASS C CONCRETE ITEMS SHALL BE #8 LIMESTONE ONLY.

11. ITEM 516 - ELASTOMERIC COMPRESSION SEAL, AS PER PLAN

THE ELASTOMERIC COMPRESSION SEAL SHALL BE TYPE 2 1/2W AS MANUFACTURED BY HYDROZO/JEENE INC. OR TYPE 3W-300 AS MANUFACTURED BY WATSON-BOWMAN ACME CORP. OR TYPE SF-225 AS MANUFACTURED BY R.J. WATSON INC..

12. ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN

THE MATERIAL SHALL BE NO. 57 GRAVEL.

13. END-DIAPHRAGM CONCRETE SHALL BE PLACED DURING DAYS WHEN SUDDEN TEMPERATURE CHANGES ARE UNLIKELY AND BE COMPLETED AT LEAST 4 HOURS PRIOR TO THE CONCRETE PLACEMENT DAY'S PEAK AMBIENT TEMPERATURE.

14. APPROACH SLAB CONCRETE SHALL BE PLACED TOWARDS THE SUPERSTRUCTURE DURING DAYS WHEN SUDDEN TEMPERATURE CHANGES ARE UNLIKELY AND BE COMPLETED AT LEAST 4 HOURS PRIOR TO THE CONCRETE PLACEMENT DAY'S PEAK AMBIENT TEMPERATURE.

15. ABUTMENT BACKFILL ABOVE THE BRIDGE SEAT SHALL NOT BE PLACED UNTIL AFTER THE CONCRETE DECK SLAB HAS CURED FOR AT LEAST 48 HOURS. BACKFILL SHALL THEN BE PLACED SIMULTANEOUSLY AT BOTH ABUTMENTS.

16. CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" 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 DUST. THEN, 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.

17. PILE DRIVING CONSTRAINTS:

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

18. ITEM 503 UNCLASSIFIED EXAVATION, AS PER PLAN

ALL FILL MATERIAL SHALL BE PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

19. PILES:

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 26.5 TONS PER PILE FOR ABUTMENT PILES

20. INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

21. PAINTING OF STRUCTURAL STEEL

THE NEW STEEL SHALL NOT BE SHOP PRIMED. BOTH THE NEW AND EXISTING STEEL SHALL BE CLEANED AND PAINTED AS PER THE OZEU SYSTEM IN SUPPLEMENTAL SPECIFICATION 815.

22. MECHANICAL CONNECTORS FOR REINFORCING STEEL:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON IN THE PLANS. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER POUND FOR ITEM 509.

23. ITEMS 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT UNIT PRICE BID PER EACH FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

24. ITEMS 518 - SCUPPER, INCLUDING SUPPORTS, AS PER PLAN

SCUPPERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING SD-1-69 EXCEPT THAT SCUPPER PIPES SHALL EXTEND 8" BELOW THE BOTTOM OF THE BEAMS INSTEAD OF 2".

25. ITEMS 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

26. ITEMS 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

27. CONCRETE PARAPETS - SHRINKAGE CRACK CONTROL JOINTS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1 INCH DEEP CONTROL JOINTS SHALL BE SAWS INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT THE LOCATIONS AS SHOWN ON PLANS. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4". THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1 INCH WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

28. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

THIS ITEM SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPAIR DAMAGED CONCRETE AREAS. ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL BY NOT MORE THAN 24 HOURS.

DRAWING = S-NOTE(B) DATE = NOVEMBER 21, 1996

POLYTECH, INC.						5 / 22	
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GENERAL NOTES							
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
VKB	VKB	-	YSS	BRS	12/96		

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GENERAL NOTES

29. ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDED AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH.

THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

30. CONSTRUCTION SEQUENCE:

SEE PHASE CONSTRUCTION DETAILS SHEET 8/22.

PHASE 1 CONSTRUCTION - BRIDGE NO. LOR-20-1559 R

PHASE 2 CONSTRUCTION - BRIDGE NO. LOR-20-1559 L

31. ITEM SPECIAL - HIGH PERFORMANCE CONCRETE

HIGH PERFORMANCE CONCRETE SHALL NOT BE POURED BETWEEN OCTOBER 15 AND APRIL 30.

ABBREVIATIONS :

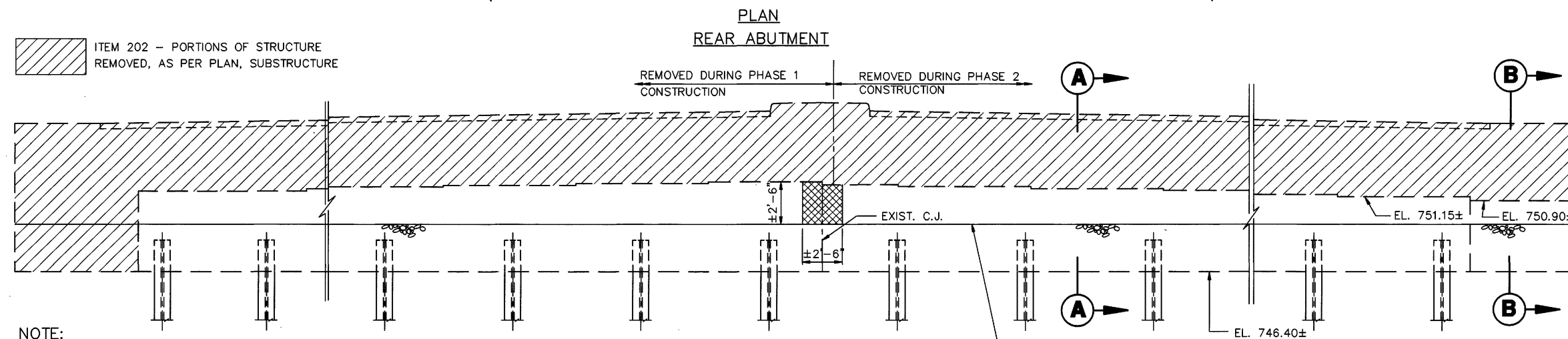
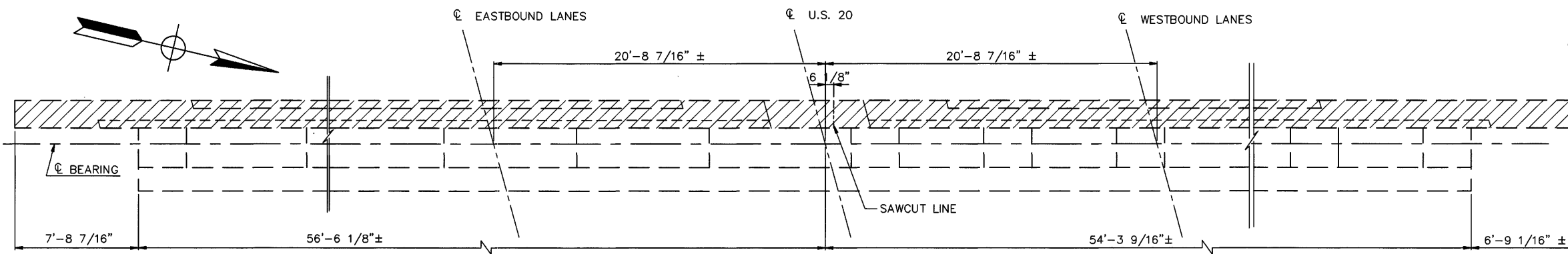
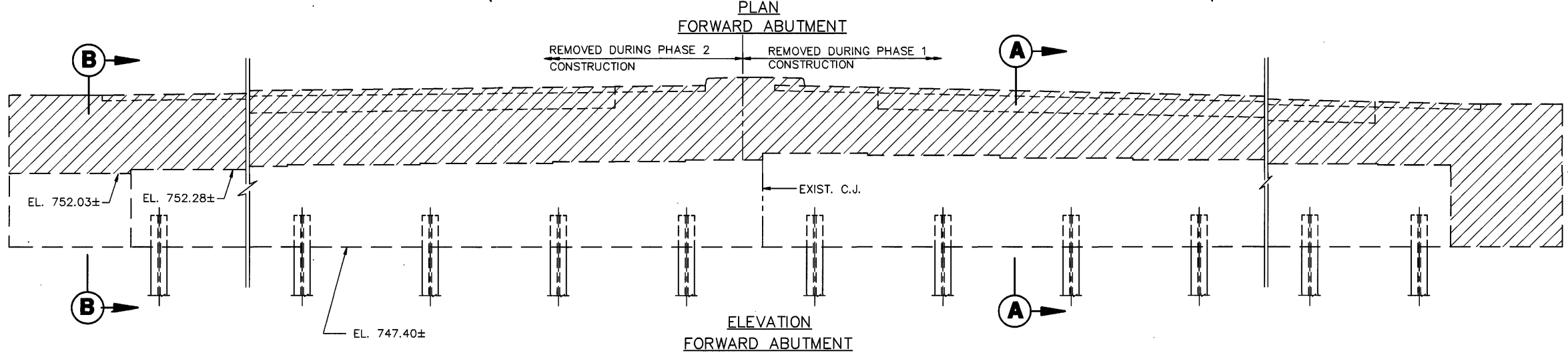
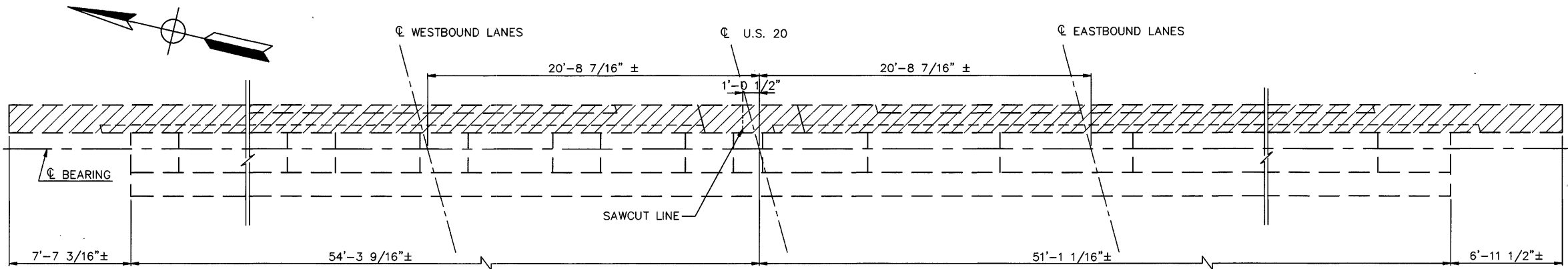
THE FOLLOWING ABBREVIATIONS ARE USED IN THIS PROJECT.

⊙	-	AT	INT.	-	INTERMEDIATE
&	-	AND	INV.	-	INVERT
A.P.P.	-	AS PER PLAN	I.R.	-	INSIDE RADIUS
BOT.	-	BOTTOM	L	-	ANGLE
BRG.	-	BEARING	MAX.	-	MAXIMUM
C/C	-	CENTER TO CENTER	M.C.	-	MECHANICAL CONNECTOR
C.J.	-	CONSTRUCTION JOINT	MIN.	-	MINIMUM
⊕	-	CENTER LINE	N.F.	-	NEAR FACE
CLR.	-	CLEAR, CLEARANCE	O/O	-	OUT TO OUT
C.M.P.	-	CORRUGATED METAL PIPE	P.E.J.F.	-	PREFORMED EXPANSION JOINT FILLER
DIA.	-	DIAMETER	ⓔ	-	PLATE
DWG.	-	DRAWING	R.C.P.	-	ROCK CHANNEL PROTECTION
E.B.	-	EASTBOUND	REF.	-	REFERENCE
E.F.	-	EACH FACE	REQ.	-	REQUIRED
E.J.	-	EXPANSION JOINT	SER.	-	SERIES
EL.	-	ELEVATION	SPA.	-	SPACING
EXIST.	-	EXISTING	STD.	-	STANDARD
EXP.	-	EXPANSION	STR.	-	STRAIGHT
F.F.	-	FAR FACE	T/T	-	TOE TO TOE
FIX.	-	FIXED	TYP.	-	TYPICAL
INCR.	-	INCREMENT	VERT.	-	VERTICAL
			W.B.	-	WESTBOUND

DRAWING = S-NOTE(C) DATE = NOVEMBER 22, 1996

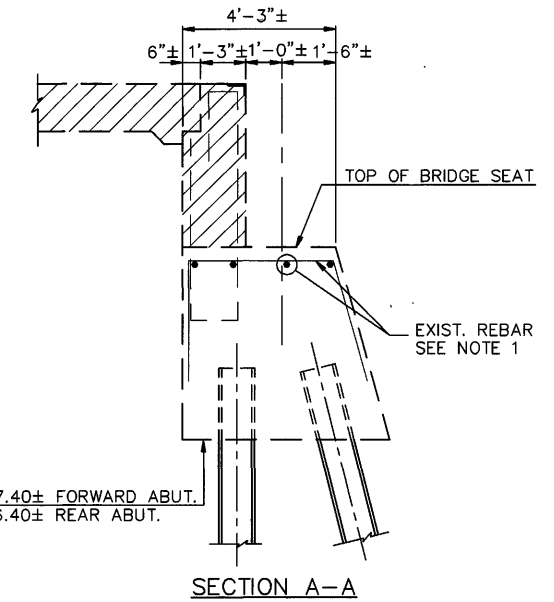
POLYTECH, INC.						6 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114						
GENERAL NOTES						
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

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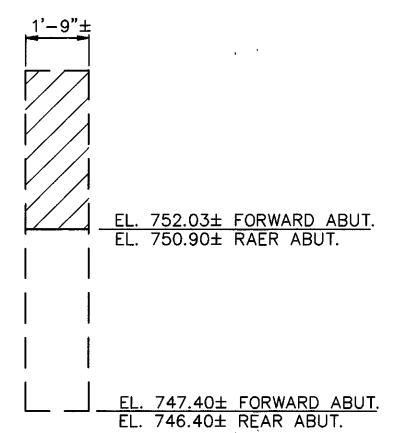


ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

NOTE:
DURING THE CONCRETE REMOVAL, CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING REBARS UNDER THE BRIDGE SEAT. SEE GENERAL NOTES UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE.



EL. 747.40± FORWARD ABUT.
EL. 746.40± REAR ABUT.



LOCATION	ITEM 519	100% EXPANSION FACTOR (SQ. FT.)	TOTAL* (SQ. FT.)
REAR ABUTMENT	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SQ. FT.)		
LEFT BRIDGE	3	3	6
RIGHT BRIDGE	3	3	6

* THIS QUANTITY IS CARRIED TO THE ESTIMATED QUANTITIES SHEETS [3/22] AND [3A/22].

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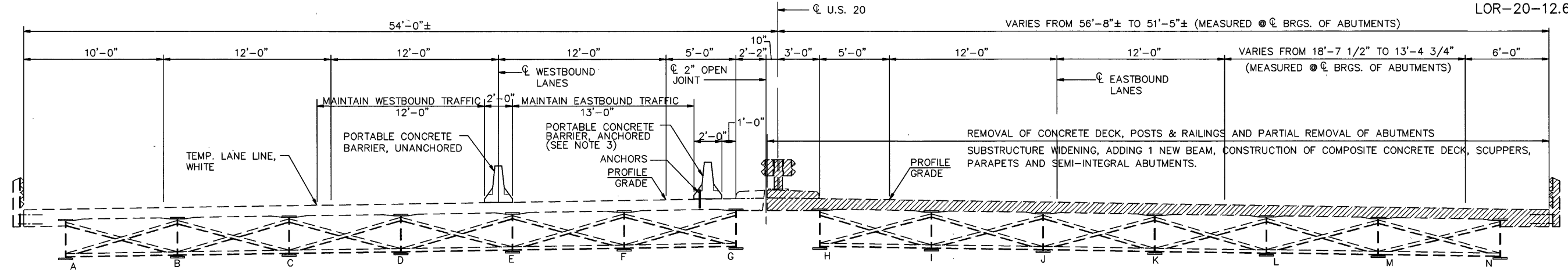
ABUTMENT DEMOLITION PLAN AND PATCHING DETAILS

BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER

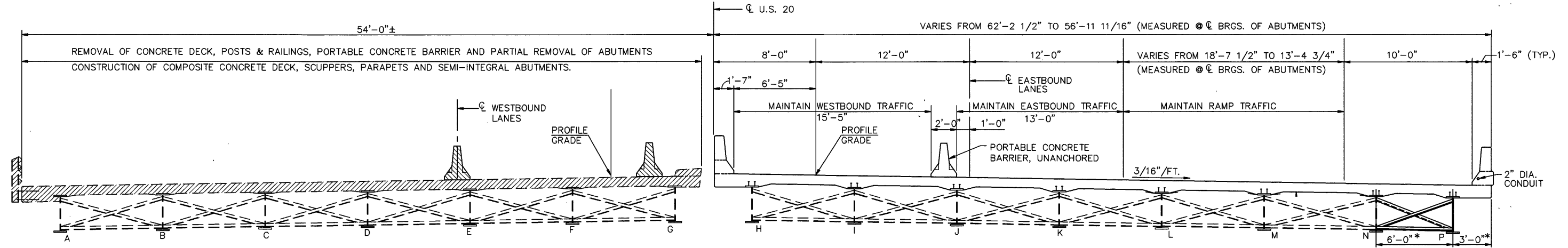
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

DRAWING = S-DEMOL DATE = NOVEMBER 20, 1996

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TYPICAL SECTION FOR PHASE 1 CONSTRUCTION



TYPICAL SECTION FOR PHASE 2 CONSTRUCTION

* MEASURED PERPENDICULAR TO CL OF BEAM N

NOTES:

1. FOR THE COMPLETED TYPICAL SECTION, SEE SHEET 18/22.
2. FURNISHING, INSTALLING, MAINTAINING AND REMOVING PORTABLE CONCRETE BARRIER SHALL BE INCLUDED IN ITEM 622 (ROADWAY PLANS) FOR PAYMENT.
3. A MINIMUM OF TWO ANCHORS SHALL BE PROVIDED ON THE TRAFFIC SIDE FOR EACH PORTABLE CONCRETE BARRIER, ANCHORED, WITH THE ANCHOR PATTERN SYMMETRICAL ABOUT THE CENTER OF EACH SEGMENT.
4. FOR DETAILS OF PORTABLE CONCRETE BARRIER, SEE STD. DWG. PCB-91.
5. SEE GENERAL NOTES UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE.

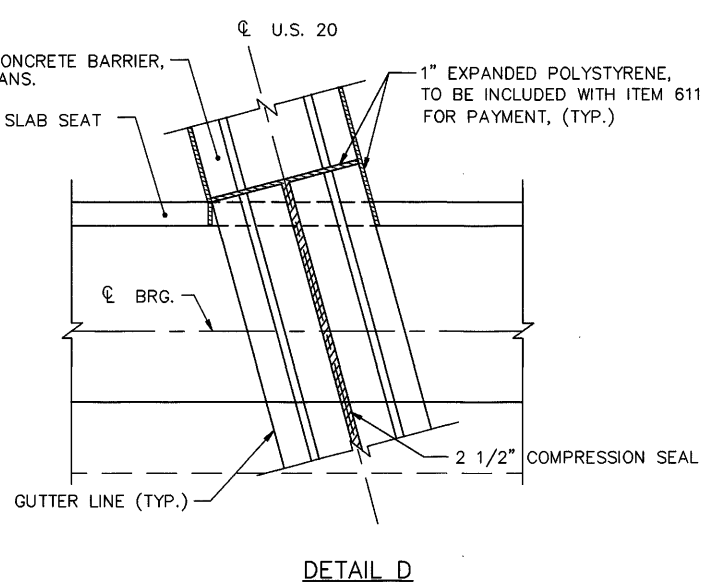
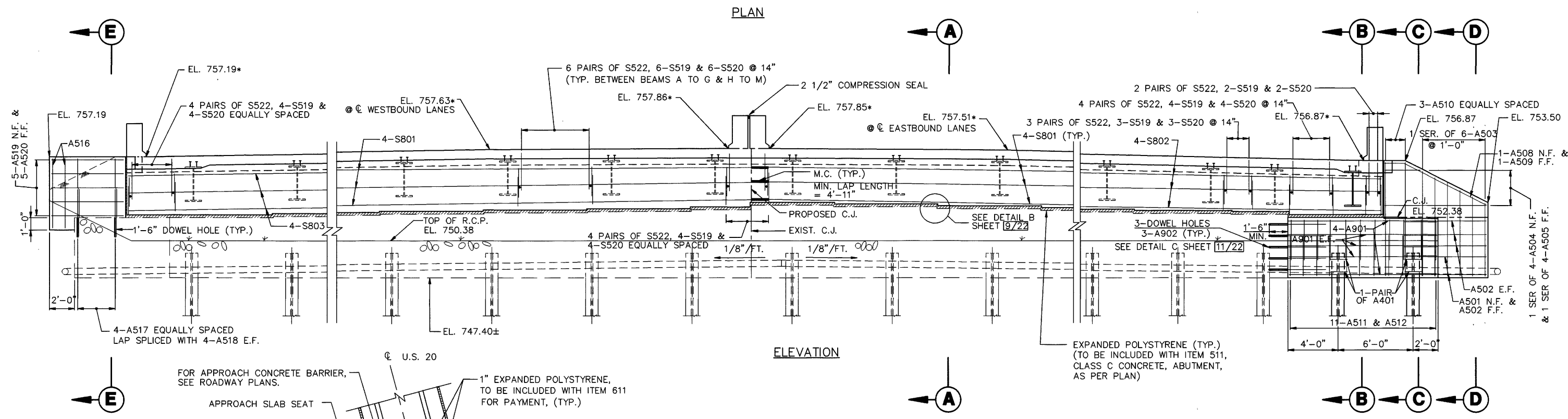
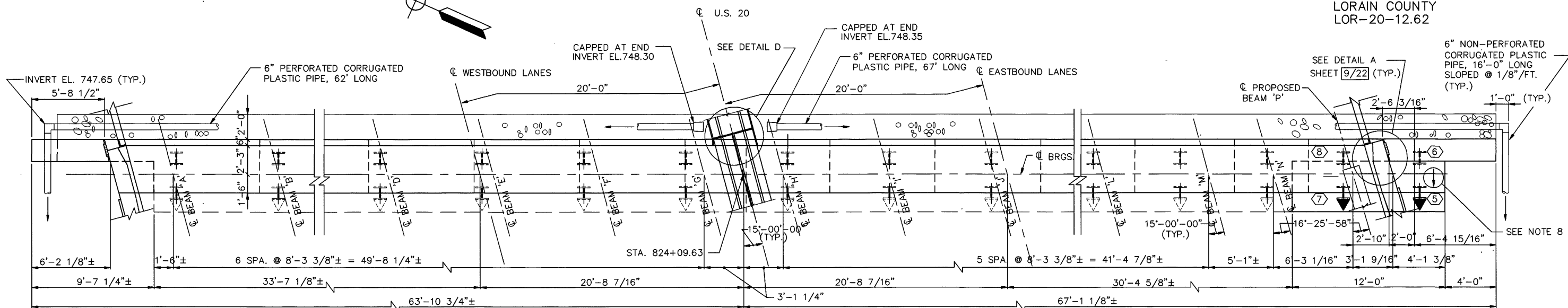
DRAWING = S-STAGE DATE = NOVEMBER 20, 1996

POLYTECH, INC.		8 / 22	
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114			
PHASE CONSTRUCTION			
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER			
DESIGNED	DRAWN	TRACED	CHECKED
VKB	VKB	-	YSS
REVIEWED	DATE	REVISED	
BRS	12/96		

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NOTES:

1. FOR SECTIONS A-A, B-B, C-C, D-D & E-E, SEE SHEET [11/22].
2. FOR PARAPET TRANSITION DETAILS, SEE SHEET [19/22].
3. FOR ABUTMENT DEMOLITION DETAILS, SEE SHEET [7/22].
4. FOR REINFORCEMENT SCHEDULE, SEE SHEETS [20/22] AND [20A/22].
5. ADD PREFIX "F" TO ALL REBARS IN FORWARD ABUTMENT.
6. FOUR 3" DIA. HOLES IN THE NEW BEAM WEB SHALL BE DRILLED TO ACCOMMODATE THE PLACEMENT OF BARS S801, S802 & S803. PAYMENT SHALL BE INCLUDED WITH ITEM 513, STRUCTURAL STEEL, AISC CATEGORY I. (SEE DETAIL SHEET [15/22]).
7. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET [9/22].
8. THE OVERHANG PORTION OF THE ABUTMENT SEAT SHALL BE SLOPED TOWARDS THE FRONT FACE OF THE ABUTMENT @ 1/2"/FT.

* ELEVATION GIVEN ALONG C/L OF BEARING

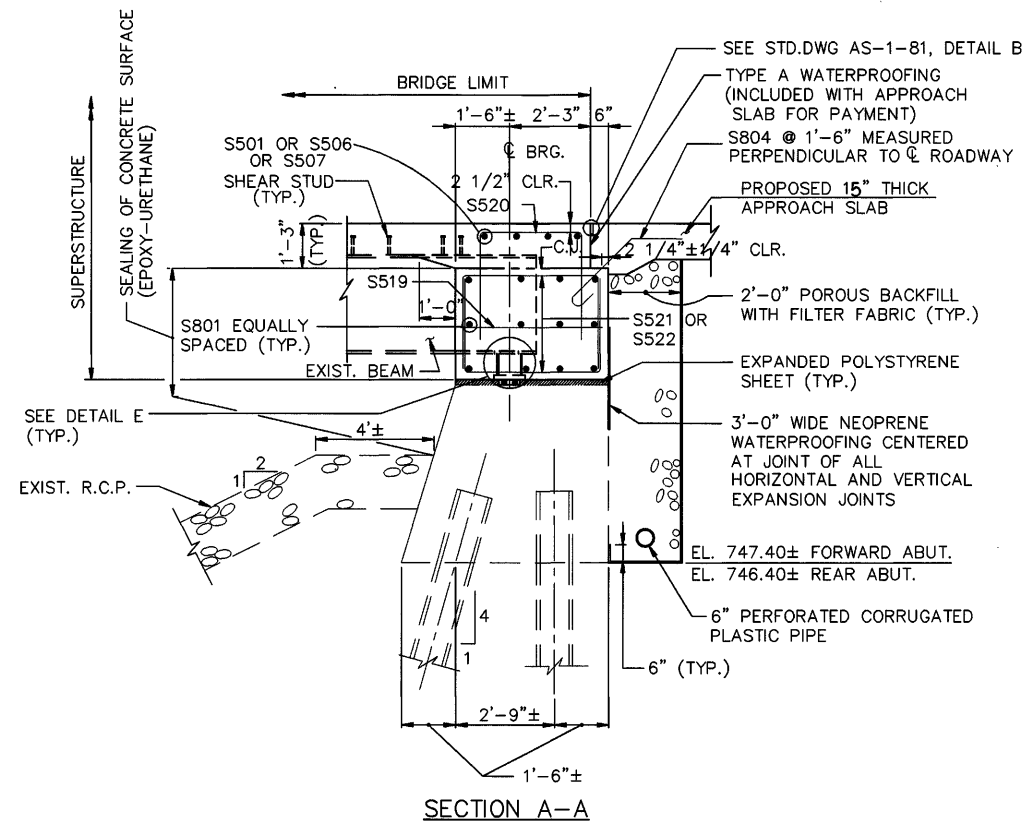
POLYTECH, INC.		10/22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114		
FORWARD ABUTMENT DETAILS		
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER		
DESIGNED	DRAWN	TRACED
VKB	VKB	-
CHECKED	REVIEWED	DATE
YSS	BRS	12/96

DRAWING = S-ABUT(F) DATE = NOVEMBER 18, 1996

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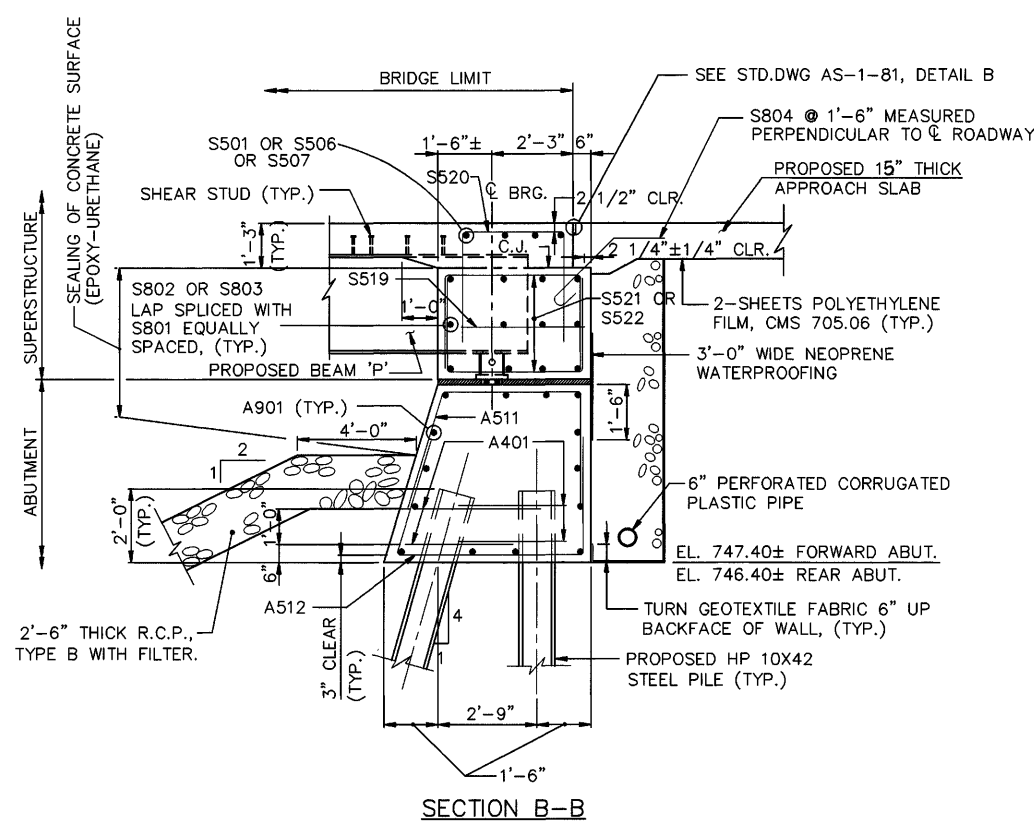
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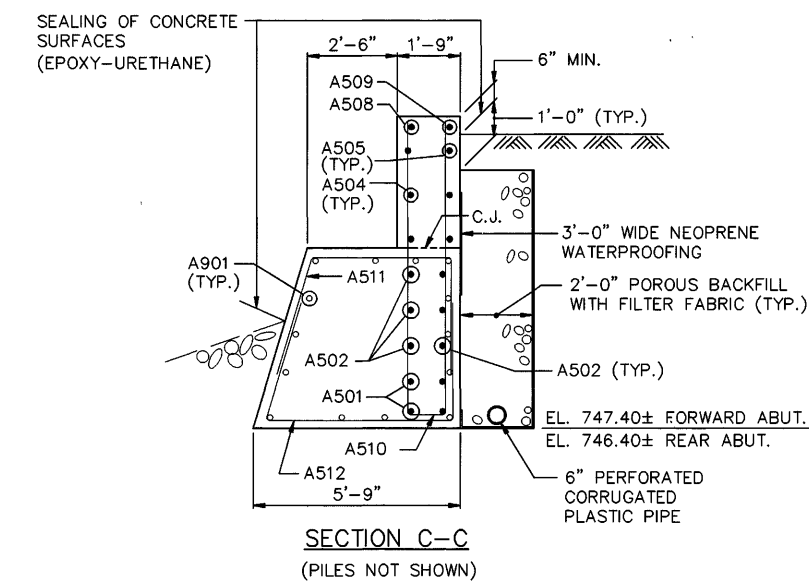


SECTION A-A

(DECK SLAB REINFORCING NOT SHOWN. IF NECESSARY HAND PACK CONCRETE UNDER BEAM FLANGES TO ACHIEVE A VOIDLESS FILL.)



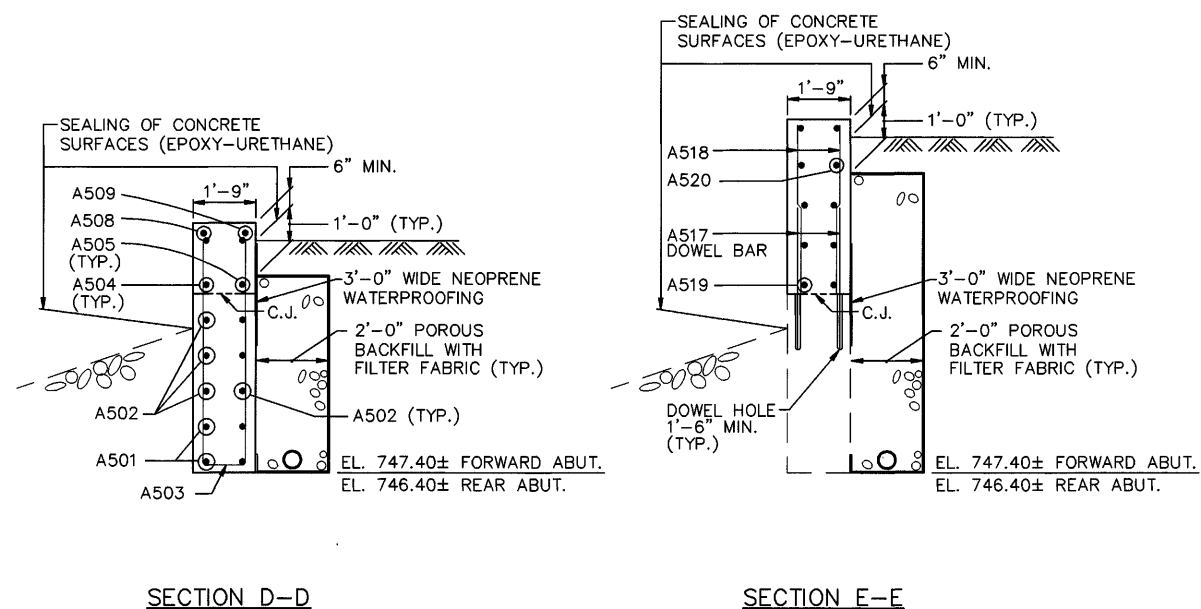
SECTION B-B



SECTION C-C
(PILES NOT SHOWN)

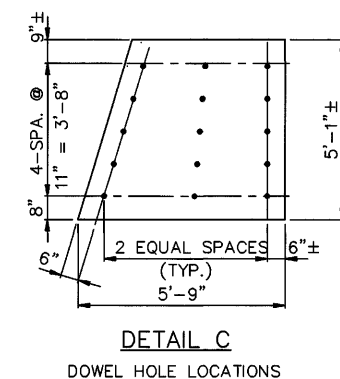
NOTES:

- FOR LOCATIONS OF SECTIONS A-A, B-B, C-C, D-D & E-E AND DETAIL C, SEE SHEETS 9/22 AND 10/22.
- DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER SECTIONS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS SHALL BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED.
- FOR REINFORCEMENT SCHEDULE, SEE SHEETS 20/22 AND 20A/22.

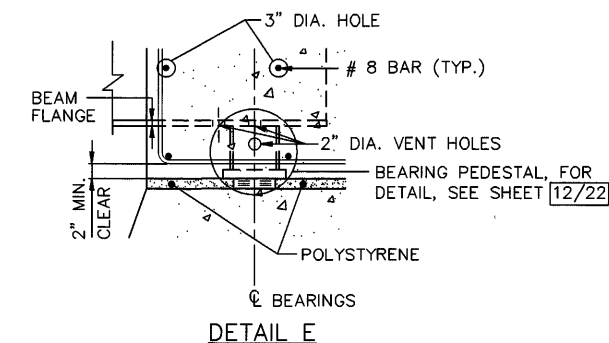


SECTION D-D

SECTION E-E



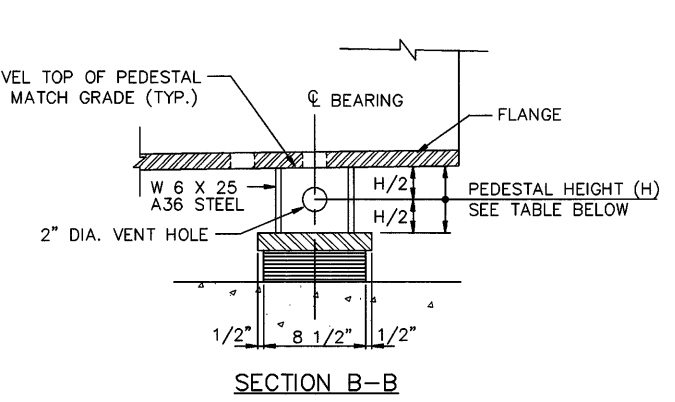
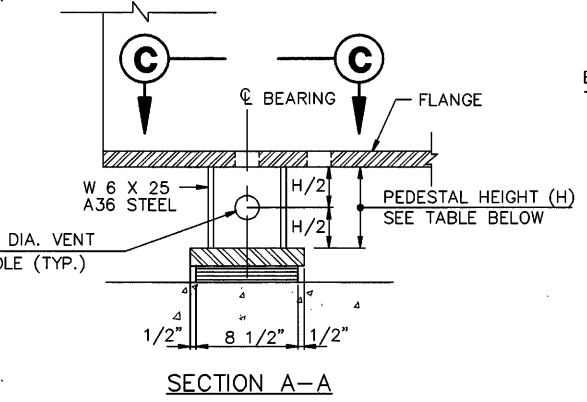
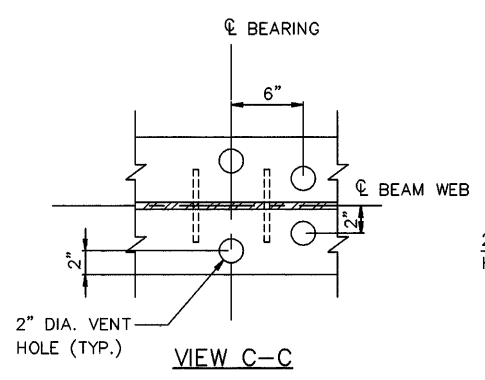
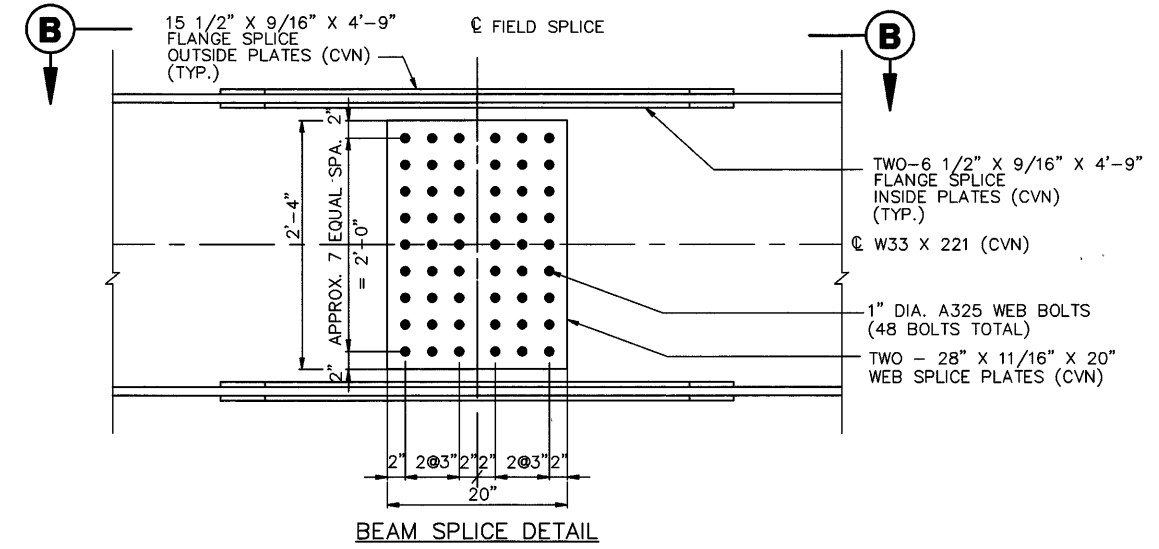
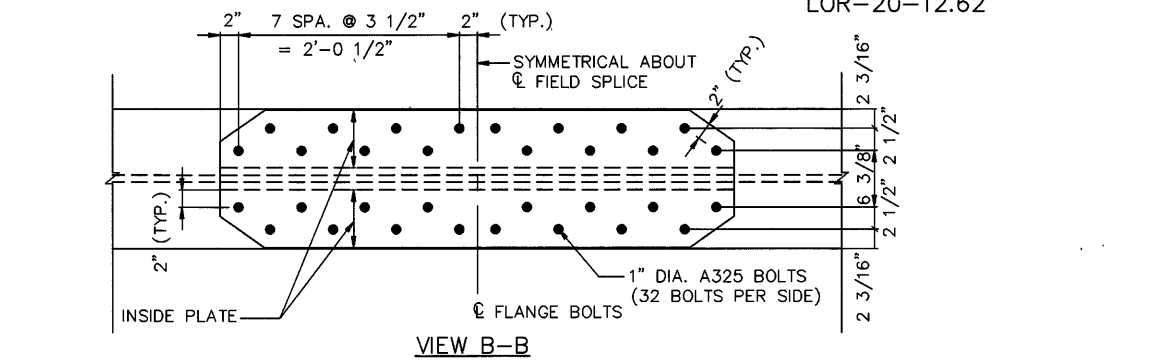
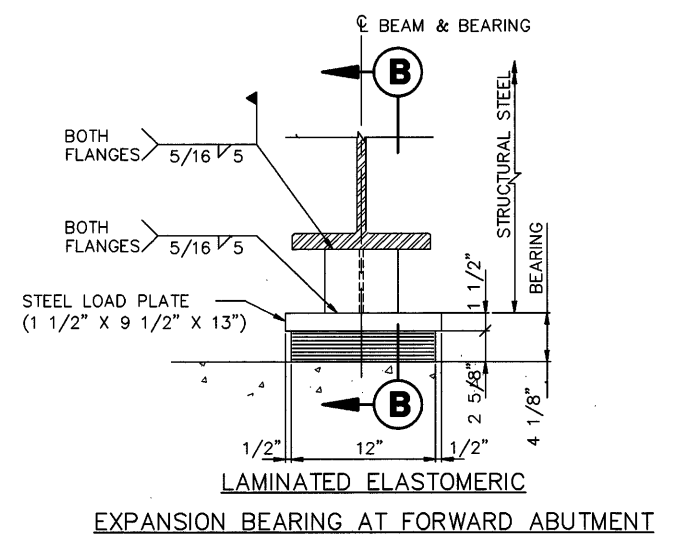
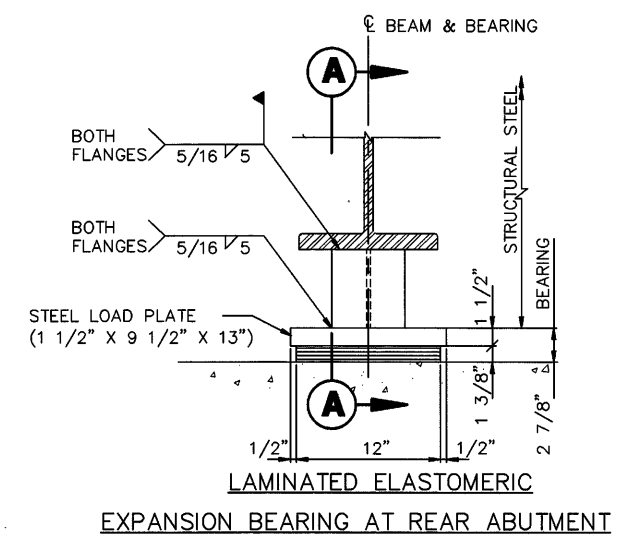
DETAIL C
DOWEL HOLE LOCATIONS



DETAIL E

DRAWING = S-ABUT(DT) DATE = NOVEMBER 18, 1996

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ABUTMENT DETAILS					
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
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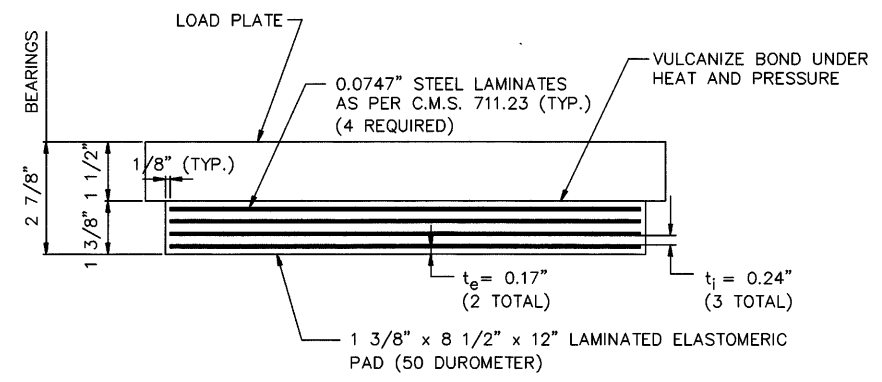


	BEAM A	BEAM B	BEAM C	BEAM D	BEAM E	BEAM F	BEAM G	BEAM H	BEAM I	BEAM J	BEAM K	BEAM L	BEAM M	BEAM N	BEAM P
REAR ABUTMENT	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"
FORWARD ABUTMENT	6 5/8"	6 5/8"	6 5/8"	6 5/8"	6 5/8"	6 5/8"	6 5/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"

PEDESTAL HEIGHT (H) UNDER BEAMS AT ABUTMENTS

NOTES:

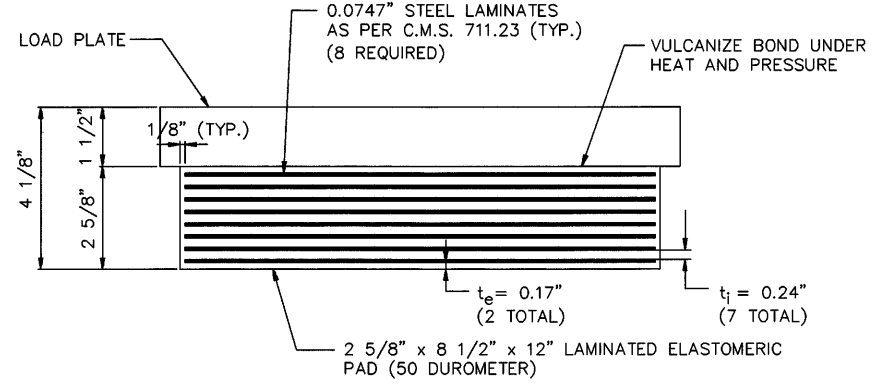
- ELASTOMERIC BEARINGS SHALL COMPLY WITH 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50-DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, EACH.
- THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL AND BE SIMILARLY CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COATS SHALL BE INCLUDED IN THE PRICE BID FOR PAINTING MAIN STRUCTURAL STEEL. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- AFTER REMOVAL OF THE EXISTING ABUTMENT BEARINGS, BOTTOM FLANGE SURFACES OF THE EXISTING BEAMS SHALL BE GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES. COST SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, FOR PAYMENT.
- VENT HOLES AS SHOWN IN VIEW C-C SHALL BE FIELD DRILLED ON THE BOTTOM FLANGE OF ALL EXISTING BEAMS. COST SHALL BE INCLUDED WITH ITEM 202. THE VENT HOLES FOR NEW BEAM SHALL BE SHOP DRILLED. COST SHALL BE INCLUDED WITH ITEM 513.
- HIGH STRENGTH BOLTS FOR BEAM SPLICES SHALL BE 1" DIAMETER A325, GALVANIZED.



LAMINATED ELASTOMERIC BEARING DETAIL AT REAR ABUTMENT

BEARING LIVE LOAD REACTION = 47.68 K
 BEARING DEAD LOAD REACTION = 39.46 K
 MAXIMUM DESIGN LOAD = 87.14 K

t_e = THICKNESS OF EXTERNAL ELASTOMER LAYER
 t_i = THICKNESS OF INTERNAL ELASTOMER LAYER



LAMINATED ELASTOMERIC BEARING DETAIL AT FORWARD ABUTMENT

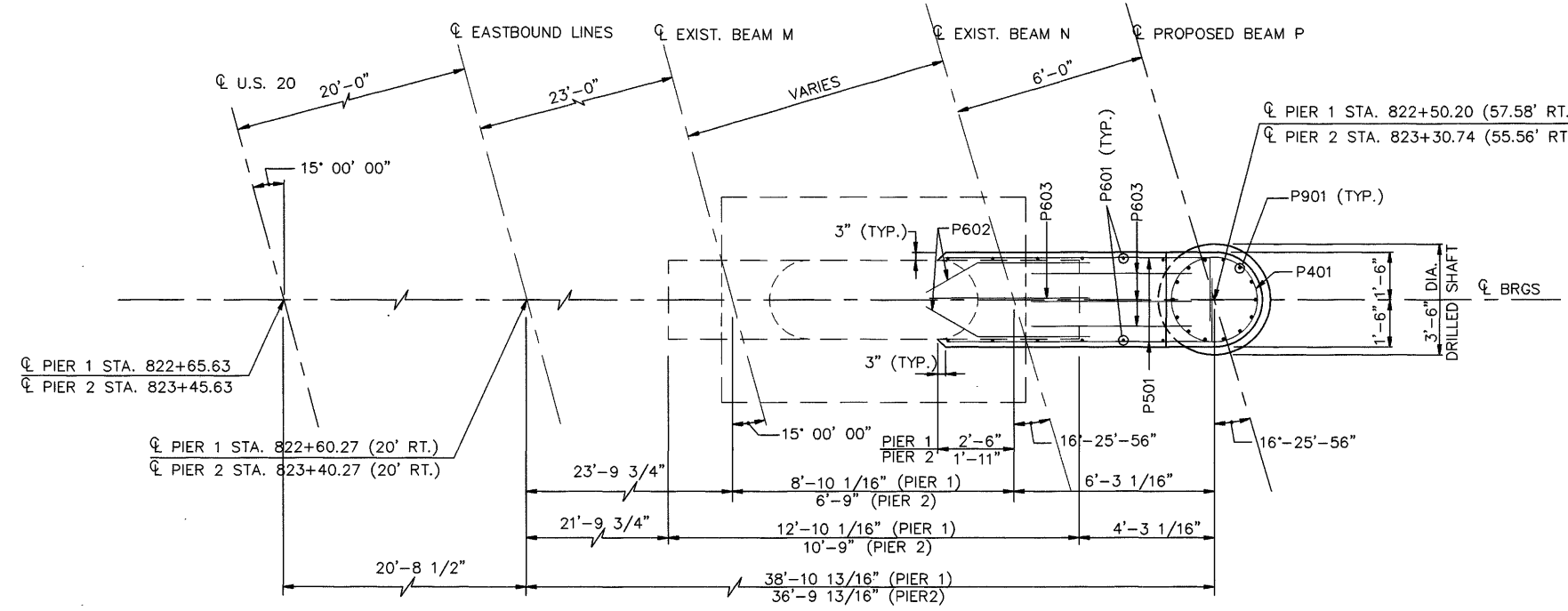
BEARING LIVE LOAD REACTION = 47.68 K
 BEARING DEAD LOAD REACTION = 39.46 K
 MAXIMUM DESIGN LOAD = 87.14 K

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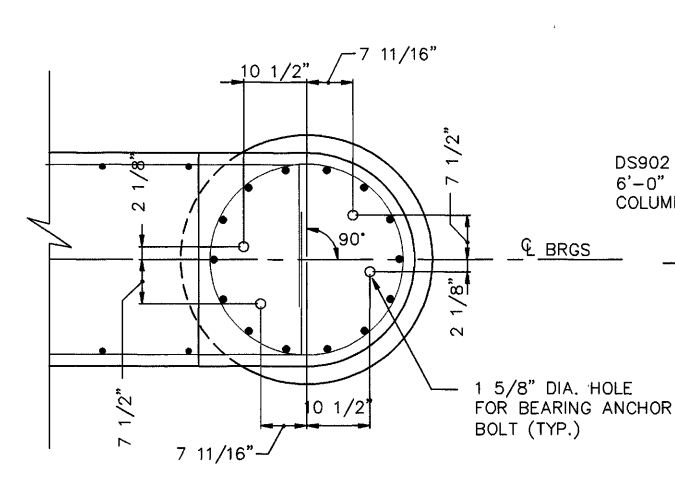
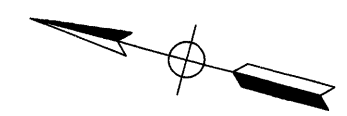
ABUTMENT BEARING AND BEAM SPLICE DETAILS
 BRIDGE NO. LOR-20-1559 L&R
 OVER EAST BRANCH OF BLACK RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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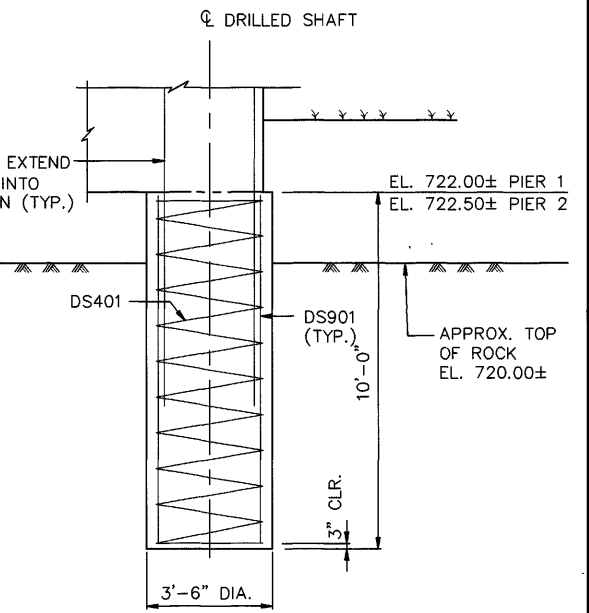
DRAWING = S-BRG DATE = NOVEMBER 19, 1996



PLAN



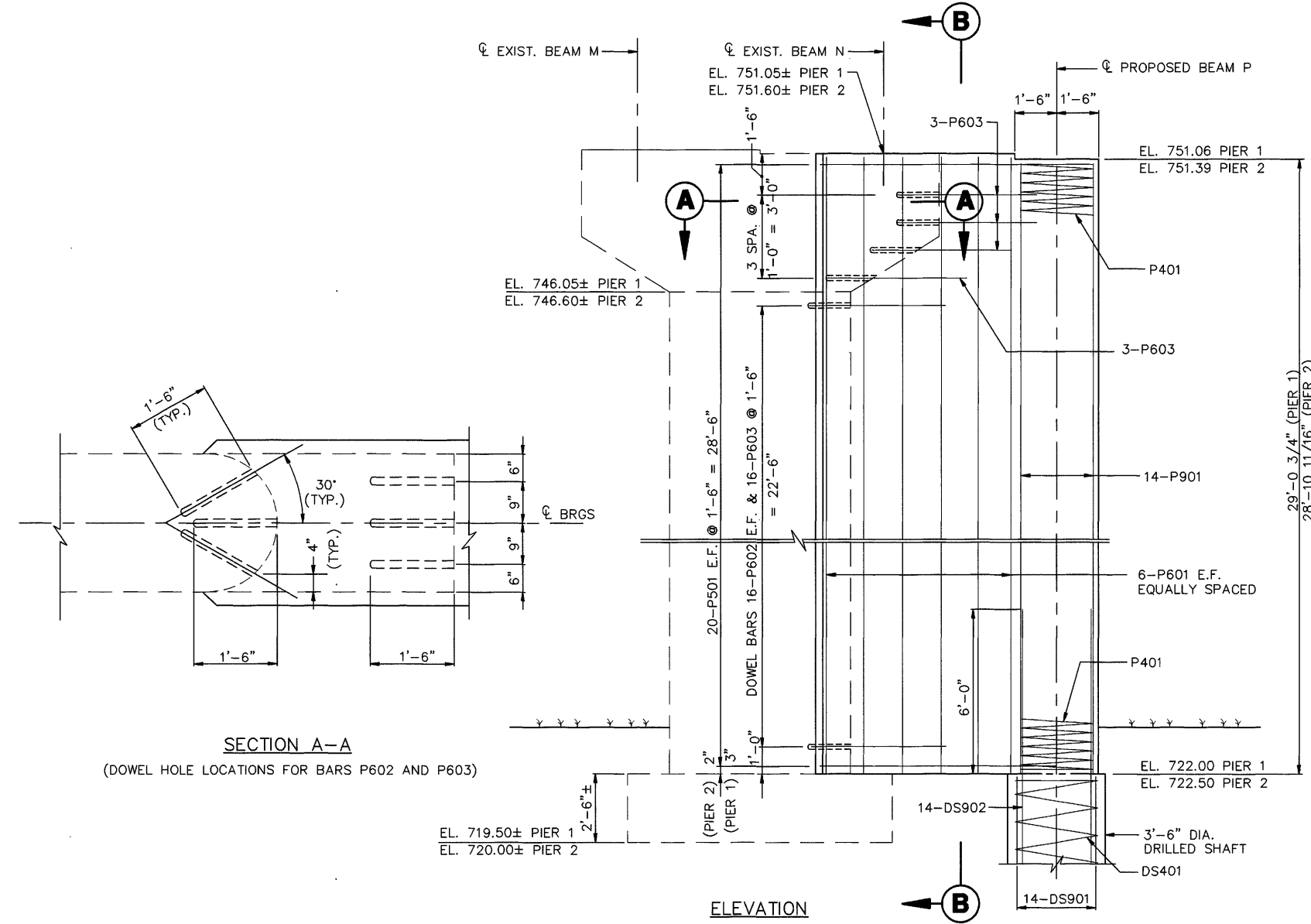
BEARING ANCHOR DETAIL
(PIER 1 ONLY)



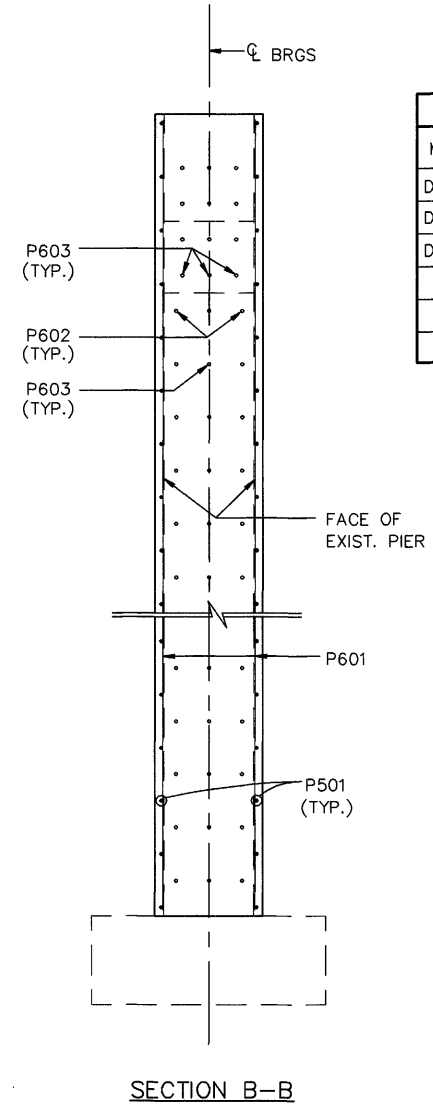
DRILLED SHAFT DETAIL

REINFORCING BARS FOR DRILLED SHAFTS (EPOXY)							
MARK	NUMBER	LENGTH	HEIGHT	TYPE	A	B	WEIGHT (LBS)
DS401	2		9'-7"	SPRAL	3'-0"	12"	220
DS901	28	9'-8"		STR.			920
DS902	28	12'-0"		STR.			1,142

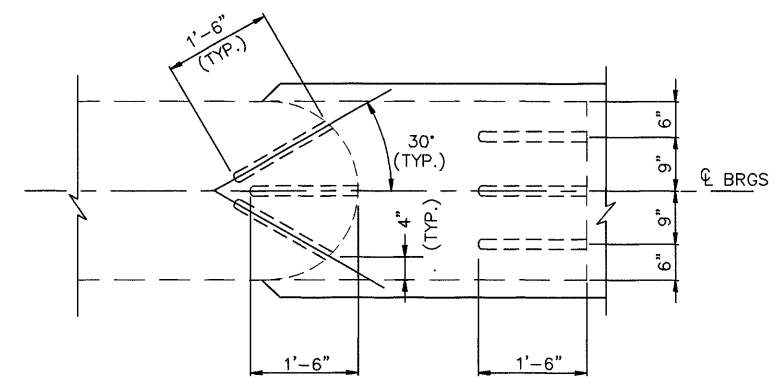
B = PITCH
A = OUTSIDE DIAMETER
SPRAL BAR



ELEVATION



SECTION B-B



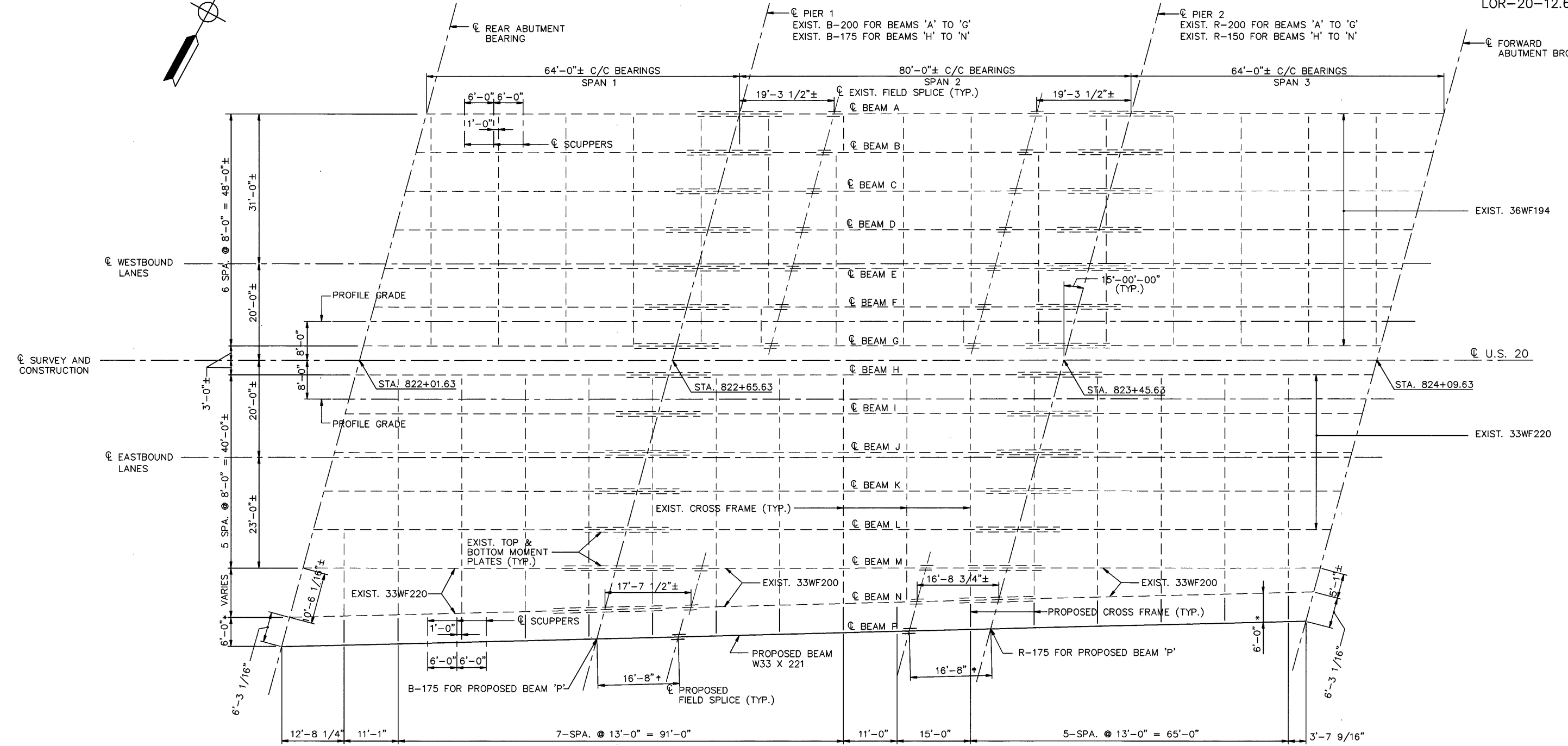
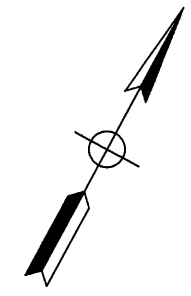
SECTION A-A
(DOWEL HOLE LOCATIONS FOR BARS P602 AND P603)

1. THE PREFIX "A" SHALL BE ADDED TO ALL PIER 1 REBARS AND THE PREFIX "B" SHALL BE ADDED TO ALL PIER 2 REBARS.
2. SPRAL REINFORCING BARS: THE "LENGTH" SHOWN IN THE STEEL LIST FOR THE SPRAL BARS IS THE LENGTH OF THE SPRAL ALONG THE AXIS OF THE SPRAL. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LINEAR FOOT OF SPACER, SHALL BE PROVIDED FOR EACH SPRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COILS. THE NUMBER OF POUNDS OF THESE SPACERS, BASED ON 3.20 PER LINEAR FOOT, IS INCLUDED IN THE TABULATED QUANTITIES OF SPRAL BARS.
3. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT OF PIER 1 SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.
4. DOWEL HOLE DRILLED INTO THE EXISTING PIER COLUMNS SHALL BE ADJUSTED ACCORDINGLY TO AVOID INTERFERENCE WITH THE EXISTING REBARS.
5. FOR REINFORCEMENT SCHEDULE, SEE SHEET 20A/22.

POLYTECH, INC.		13 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114		
PIER DETAILS		
BRIDGE NO. LOR-20-1559 R OVER EAST BRANCH OF BLACK RIVER		
DESIGNED	DRAWN	TRACED
YSS	YSS	-
CHECKED	REVIEWED	DATE
VKB	BRS	12/96

DRAWING = S-PIER DATE = JULY 2, 1996

LORAIN COUNTY
LOR-20-12.62



FRAMING PLAN

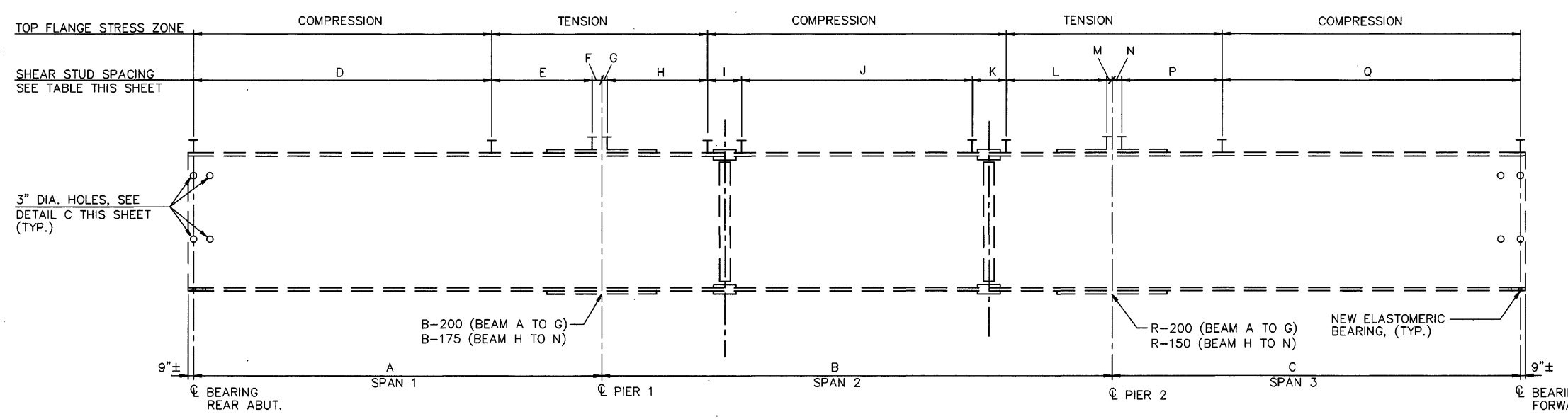
NOTES:

- * DIMENSION MEASURED PERPENDICULAR TO CL BEAM N.
+ DIMENSION MEASURED ALONG CL BEAM P.
- FOR BEAM SPLICE DETAILS, SEE SHEET 12/22.
- FOR BEAM AND INTERMEDIATE CROSSFRAME DETAILS, SEE SHEET 15/22.
- FOR ROCKER AND BOLSTER BEARING DETAILS, SEE STD. DWG. RB-1-55.
- FOR SCUPPER DETAILS, SEE STD. DWG. SD-1-69.

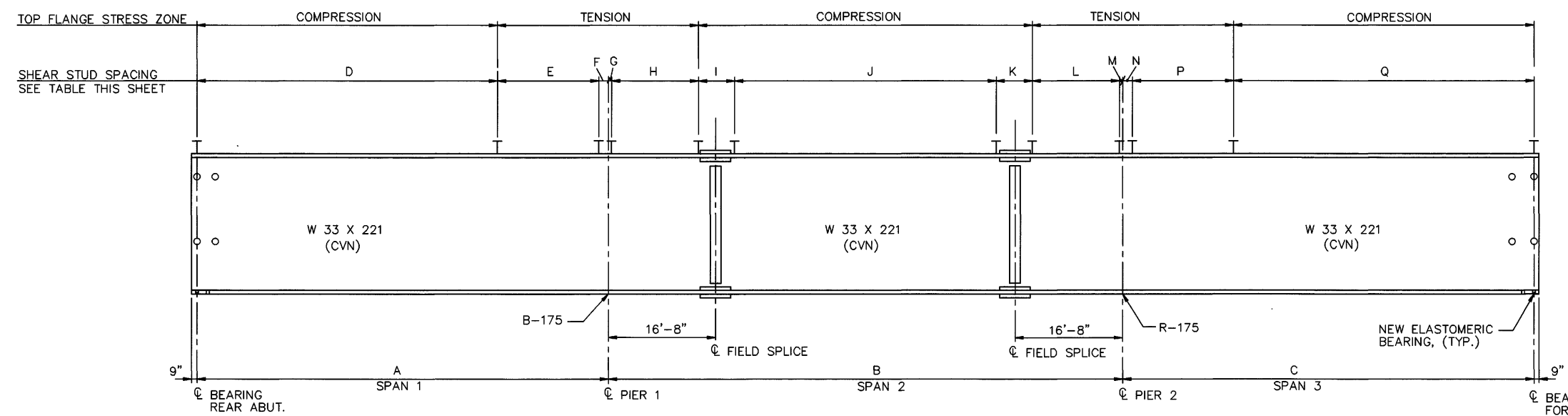
DRAWING = S-FRAME DATE = NOVEMBER 20, 1996

POLYTECH, INC.		14 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114		
FRAMING PLAN		
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER		
DESIGNED	DRAWN	TRACED
CHECKED	REVIEWED	DATE
VKB	VKB	-
YSS	BRS	12/96

LORAIN COUNTY
LOR-20-12.62



EXISTING BEAM A TO N ELEVATION
(NOT TO SCALE)



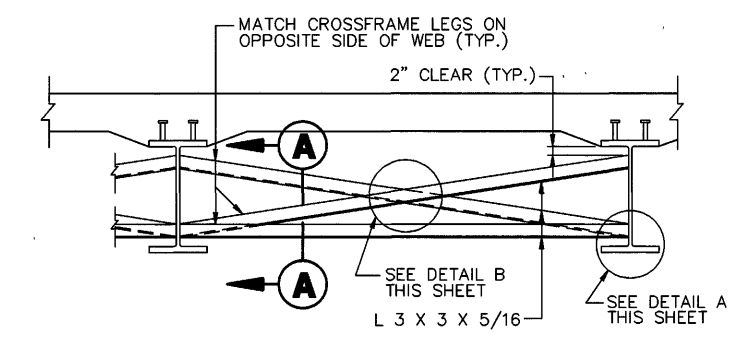
PROPOSED BEAM-P ELEVATION
(NOT TO SCALE)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
BEAM A TO G	64'-0"	80'-0"	64'-0"	66 SPA. @ 8 1/2" = 46'-9"	9 SPA. @ 1'-9" = 15'-9"	1'-6"	10"	9 SPA. @ 1'-9" = 15'-9"	5'-4"	56 SPA. @ 7 3/4" = 36'-2"	5'-4"	9 SPA. @ 1'-9" = 15'-9"	10"	1'-6"	9 SPA. @ 1'-9" = 15'-9"	66 SPA. @ 8 1/2" = 46'-9"
BEAM H TO M	64'-0"	80'-0"	64'-0"	66 SPA. @ 8 1/2" = 46'-9"	9 SPA. @ 1'-9" = 15'-9"	1'-6"	1'-4 1/2"	9 SPA. @ 1'-6" = 13'-6"	5'-6 10/16"	62 SPA. @ 7 3/4" = 40'-1/2"	5'-5 10/16"	9 SPA. @ 1'-6" = 13'-6"	6 3/4"	1'-6"	9 SPA. @ 1'-9" = 15'-9"	66 SPA. @ 8 1/2" = 46'-9"
BEAM N	64'-5 7/16"	80'-6 3/4"	64'-5 7/16"	66 SPA. @ 8 1/2" = 46'-9"	9 SPA. @ 1'-9" = 15'-9"	1'-11 7/16"	1'-4 1/2"	9 SPA. @ 1'-6" = 13'-6"	5'-10"	62 SPA. @ 7 3/4" = 40'-1/2"	5'-9"	9 SPA. @ 1'-6" = 13'-6"	6 3/4"	1'-11 7/16"	9 SPA. @ 1'-9" = 15'-9"	66 SPA. @ 8 1/2" = 46'-9"
PROP. BEAM P	64'-5 7/16"	80'-6 3/4"	64'-5 7/16"	66 SPA. @ 8 1/2" = 46'-9"	9 SPA. @ 1'-9" = 15'-9"	1'-11 7/16"	6"	9 SPA. @ 1'-6" = 13'-6"	5'-7 3/8"	62 SPA. @ 8" = 41'-4"	5'-7 3/8"	9 SPA. @ 1'-6" = 13'-6"	6"	1'-11 7/16"	9 SPA. @ 1'-9" = 15'-9"	66 SPA. @ 8 1/2" = 46'-9"

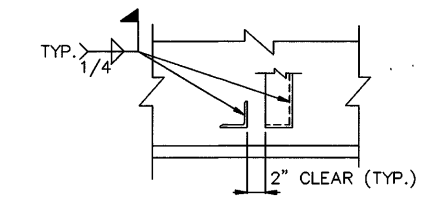
SHEAR STUD SPACINGS

NOTES:

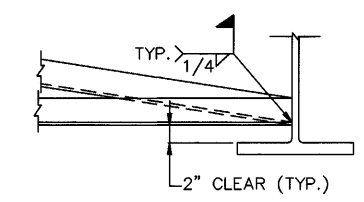
- EXISTING END CROSS FRAMES SHALL BE REMOVED PRIOR TO PLACEMENT OF END DIAPHRAGM CONCRETE.
- WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
- WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.



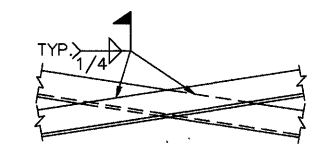
INTERMEDIATE CROSSFRAME DETAILS



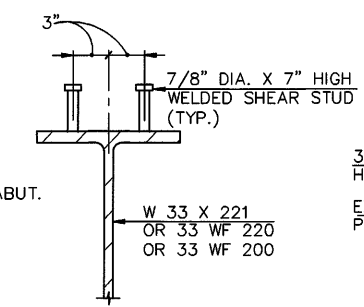
SECTION A-A



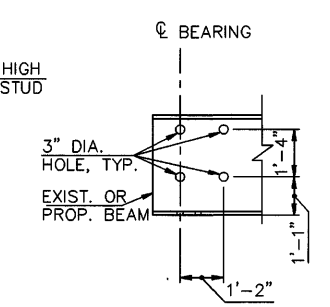
DETAIL A



DETAIL B



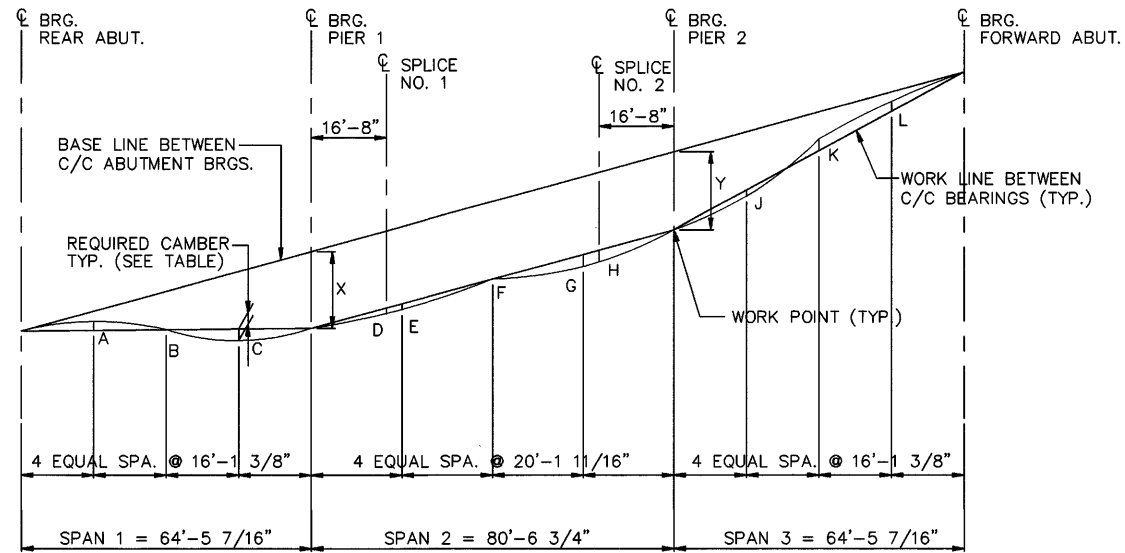
SHEAR STUD CONNECTOR DETAIL



DETAIL C

DRAWING = S-BEAMEL DATE = NOVEMBER 19, 1996

POLYTECH, INC.		15 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114		
BEAM DETAILS		
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER		
DESIGNED	DRAWN	TRACED
VKB	VKB	-
CHECKED	REVIEWED	DATE
YSS	BRS	12/96



CAMBER DIAGRAM FOR BEAM 'P'

X = 3 1/8"
Y = 3 1/8"

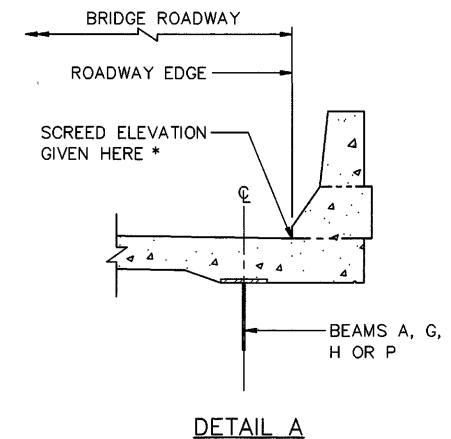
NOTES:

1. WORKPOINT IS THE TOP OF THE BEAM TOP FLANGE AT C/C BEARING OF PIER OR ABUTMENT.
2. WORKLINE IS A STRAIGHT LINE BETWEEN THE WORK POINTS.
3. BASELINE IS A STRAIGHT LINE BETWEEN THE WORK POINTS OF THE REAR AND FORWARD ABUTMENT.
4. THE TABULATED DEFLECTION AND CAMBER DATA IS MEASURED FROM THE WORK LINE.
5. TOTAL REQUIRED CAMBER FOR BEAM 'P' IS GIVEN TO THE NEAREST 1/16 INCH.
6. SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

DEFLECTION AND CAMBER FOR BEAM 'P' (INCHES)											
LOCATION	SPAN 1			SPAN 2					SPAN 3		
	A	B	C	D	E	F	G	H	J	K	L
DEFLECTION DUE TO WEIGHT OF STEEL	1/16	1/16	1/16	1/16	1/16	1/8	1/16	1/16	1/16	1/16	1/16
DEFLECTION DUE TO REMAINING DEAD LOAD	5/16	3/8	1/8	1/4	1/4	7/16	1/4	1/4	1/8	3/8	5/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	-1/4	-7/16	-5/16	-3/8	-3/8	-9/16	-7/16	-7/16	-1/4	-5/16	-3/16
SUM OF DEFLECTIONS AND ADJUSTMENTS EQUALS REQUIRED SHOP CAMBER	1/8	0	-1/8	-1/16	-1/16	0	-1/8	-1/8	-1/16	1/8	3/16

DECK SCREED ELEVATIONS													
LOCATION	C BRG. REAR ABUT.	SPAN 1			PIER 1	SPAN 2			PIER 2	SPAN 3			C BRG. FORWARD ABUT.
		1/4 SPAN	1/2 SPAN	3/4 SPAN		1/4 SPAN	1/2 SPAN	3/4 SPAN		1/4 SPAN	1/2 SPAN	3/4 SPAN	
LEFT GUTTER *	756.06	756.09	756.11	756.12	756.15	756.26	756.36	756.46	756.59	756.73	756.90	757.05	757.19
BEAM A	756.11	756.14	756.16	756.17	756.20	756.29	756.41	756.51	756.63	756.77	756.93	757.09	757.23
BEAM B	756.23	756.26	756.28	756.29	756.31	756.41	756.52	756.62	756.74	756.88	757.04	757.19	757.33
BEAM C	756.36	756.38	756.40	756.41	756.43	756.52	756.63	756.73	756.85	756.99	757.14	757.29	757.43
BEAM D	756.49	756.51	756.52	756.53	756.55	756.64	756.75	756.84	756.96	757.09	757.25	757.40	757.54
BEAM E	756.61	756.63	756.65	756.65	756.67	756.76	756.86	756.95	756.06	757.20	757.35	757.50	757.64
BEAM F	756.74	756.76	756.77	756.77	756.79	756.87	756.97	756.07	757.17	757.31	757.46	757.60	757.74
BEAM G	756.87	756.88	756.89	756.89	756.91	756.99	757.09	757.18	757.28	757.41	757.56	757.71	757.84
RIGHT GUTTER *	756.89	756.90	756.91	756.91	756.93	757.02	757.10	757.19	757.30	757.43	757.58	757.72	757.86
LEFT GUTTER *	756.89	756.90	756.91	756.91	756.93	757.01	757.11	757.19	757.30	757.43	757.57	757.72	757.85
BEAM H	756.87	756.88	756.89	756.89	756.91	756.99	757.08	757.17	757.27	757.40	757.55	757.69	757.83
BEAM I	756.75	756.76	756.77	756.76	756.78	756.86	756.95	757.04	757.13	757.26	757.41	757.55	757.68
BEAM J	756.63	756.64	756.64	756.63	756.65	756.72	756.82	756.90	756.99	757.12	757.27	757.40	757.53
BEAM K	756.50	756.51	756.51	756.51	756.52	756.59	756.68	756.76	756.86	756.98	757.12	757.26	757.38
BEAM L	756.38	756.39	756.39	756.38	756.39	756.46	756.55	756.63	756.72	756.84	756.98	757.11	757.24
BEAM M	756.26	756.27	756.26	756.25	756.26	756.32	756.41	756.48	756.58	756.70	756.84	756.97	757.09
BEAM N	756.11	756.11	756.11	756.11	756.12	756.19	756.28	756.37	756.47	756.59	756.73	756.87	757.00
BEAM P	756.02	756.02	756.02	756.01	756.03	756.10	756.18	756.26	756.36	756.48	756.62	756.76	756.89
RIGHT GUTTER *	756.00	756.00	756.00	755.99	756.00	756.07	756.16	756.24	756.34	756.46	756.60	756.73	756.86

* SEE DETAIL THIS SHEET

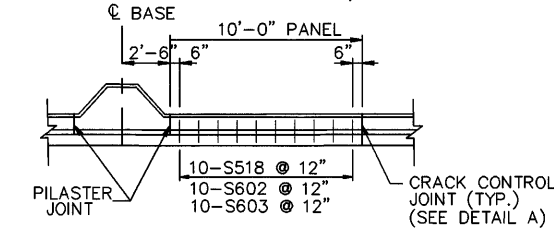


DETAIL A

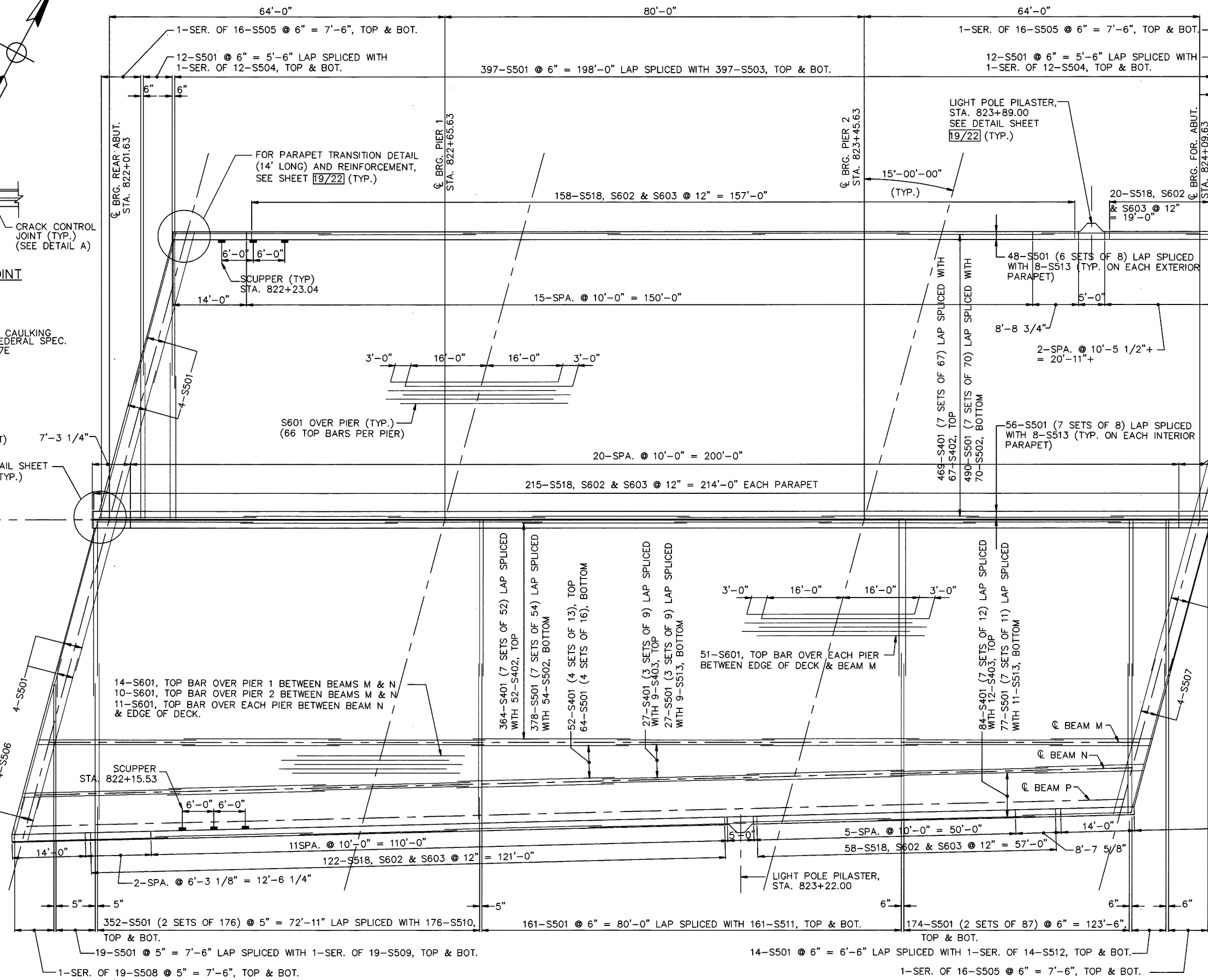
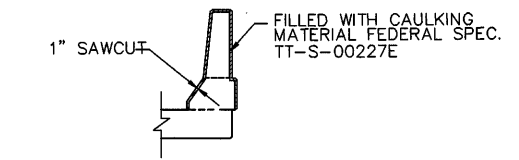
POLYTECH, INC.		16 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114		
BEAM CAMBER AND DECK SCREED ELEVATIONS		
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER		
DESIGNED	DRAWN	TRACED
VKB	VKB	-
CHECKED	REVIEWED	DATE
YSS	BRS	12/96

LORAIN COUNTY
LOR-20-12.62

TYPICAL CRACK CONTROL JOINT



DETAIL A
(SECTION THROUGH CRACK CONTROL JOINT)



NOTE:

1. THE FOLLOWING MIN. LAP LENGTHS SHALL BE USED, UNLESS NOTED OTHERWISE:
#4 BAR = 1'-11"
#5 BAR = 2'-5"
2. FOR DECK SLAB TYPICAL SECTION, SEE SHEET 18/22.
3. FOR SCUPPER DETAILS, SEE STD. DWG. SD-1-69.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 20/22 AND 20A/22.

DRAWING = S-DECK DATE = NOVEMBER 21, 1996

POLYTECH, INC. 17/22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

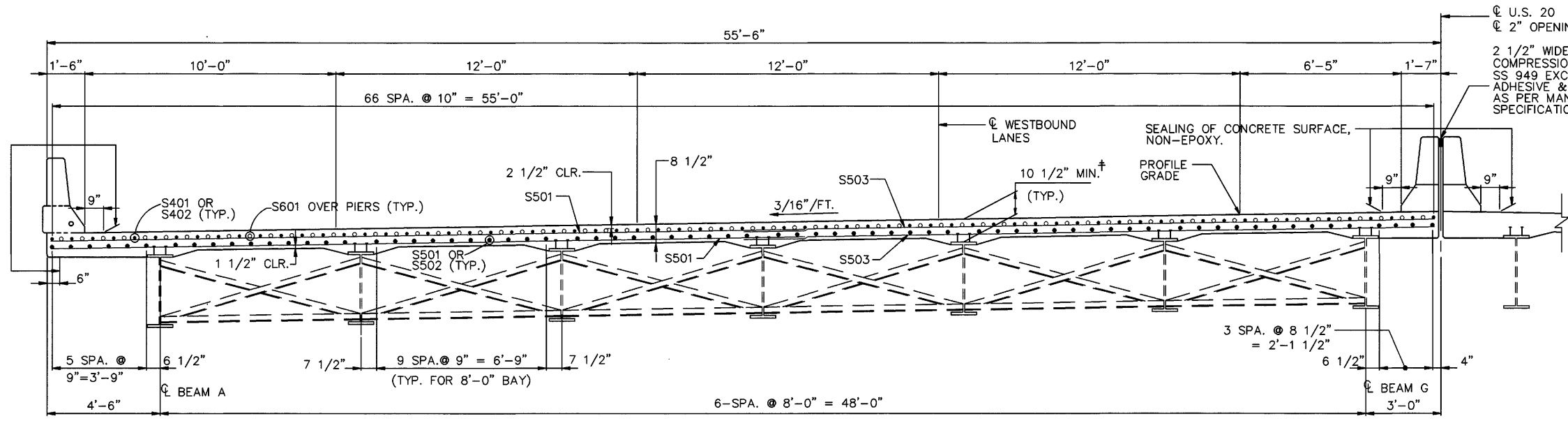
DECK PLAN					
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
YSS	YSS	-	VKB	BRS	12/96

FHWA REGION	STATE	PROJECT	
5	OHIO		

LORAIN COUNTY
LOR-20-12.62

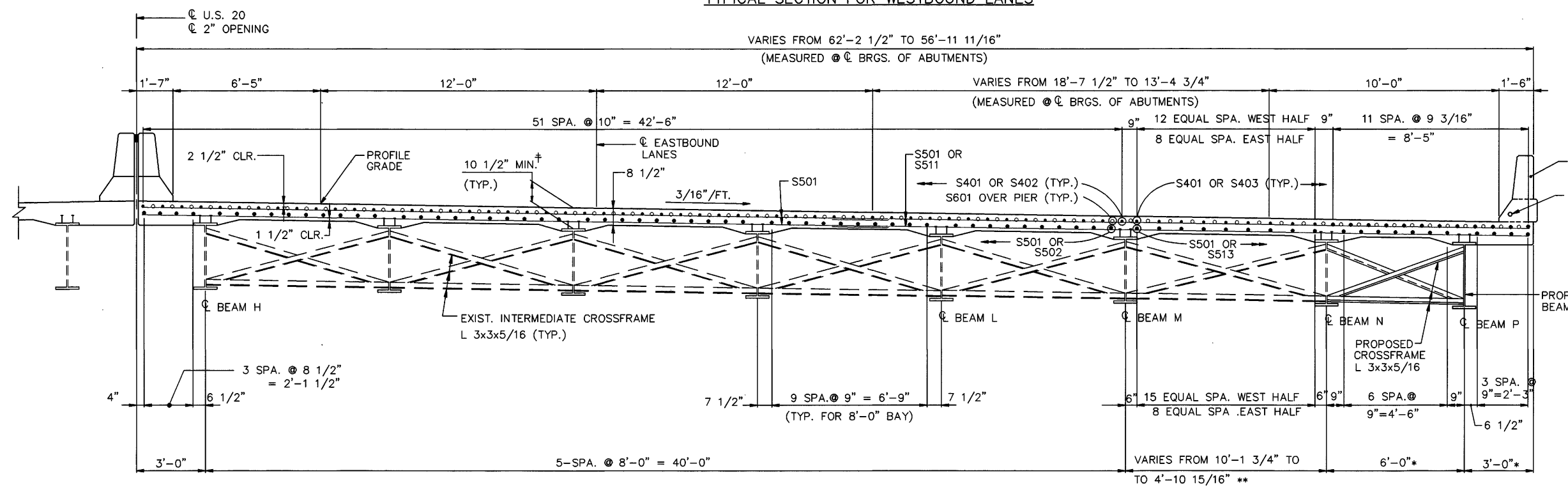
U.S. 20
2" OPENING
2 1/2" WIDE ELASTOMERIC COMPRESSION SEAL, AS PER SS 949 EXCEPT THAT THE ADHESIVE & INSTALLATION AS PER MANUFACTURER'S SPECIFICATIONS

SEALING OF CONCRETE SURFACE, NON-EPOXY (TYP.)



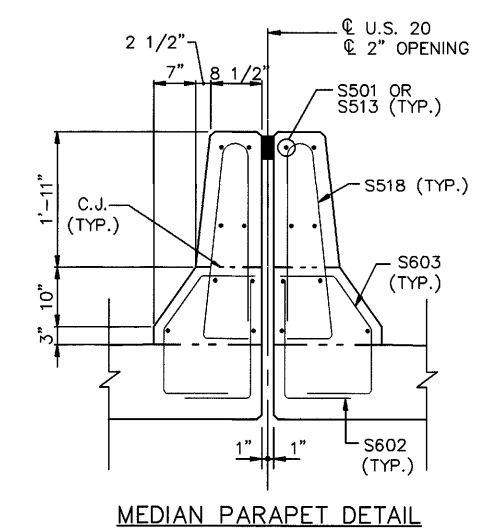
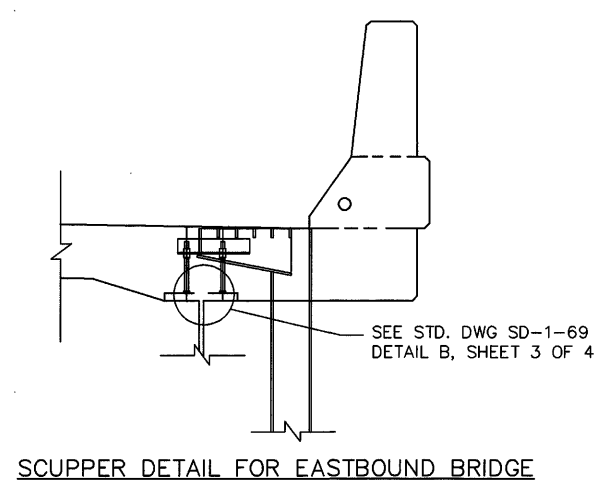
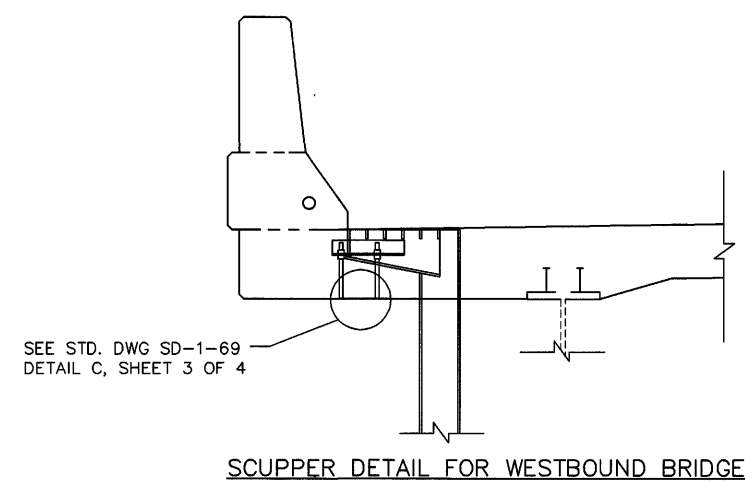
TYPICAL SECTION FOR WESTBOUND LANES

- * MEASURED PERPENDICULAR TO BEAM N
- ** MEASURED AT ABUTMENT BRG. OF BEAM N PERPENDICULAR TO BEAM M



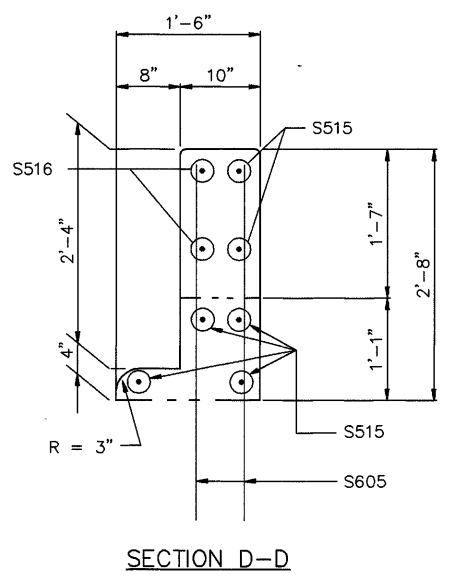
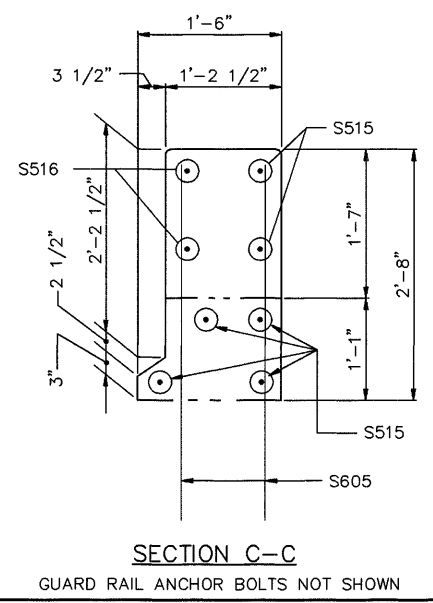
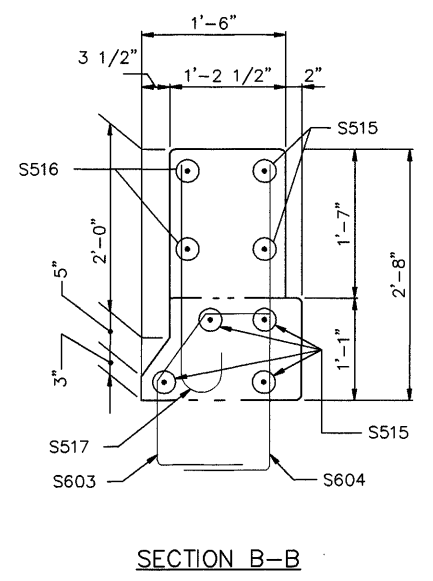
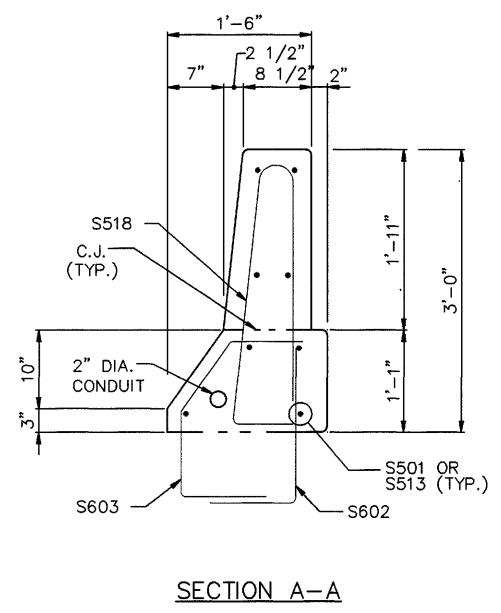
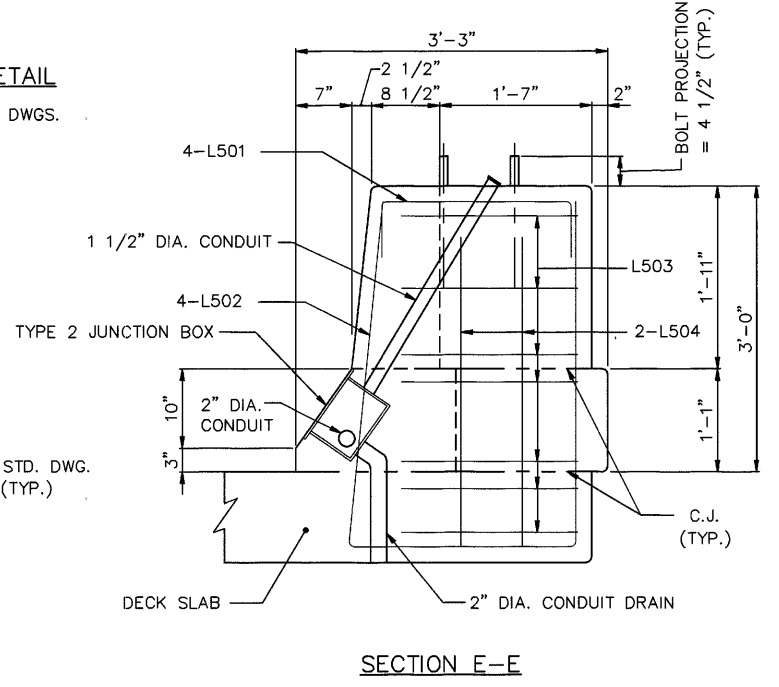
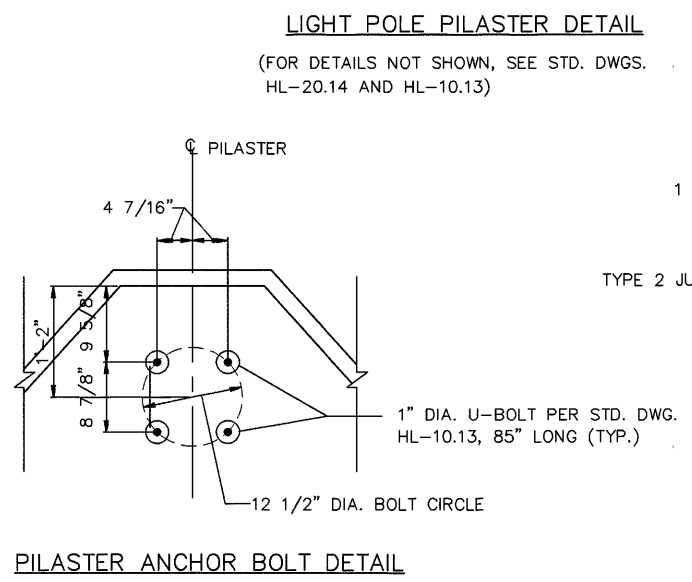
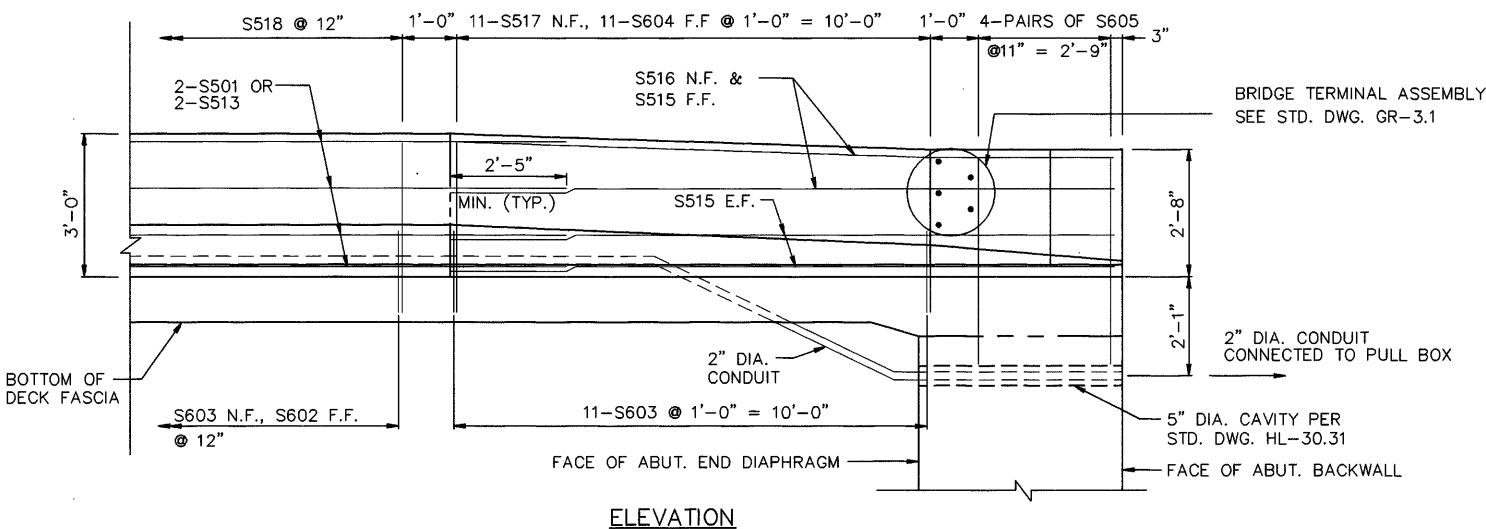
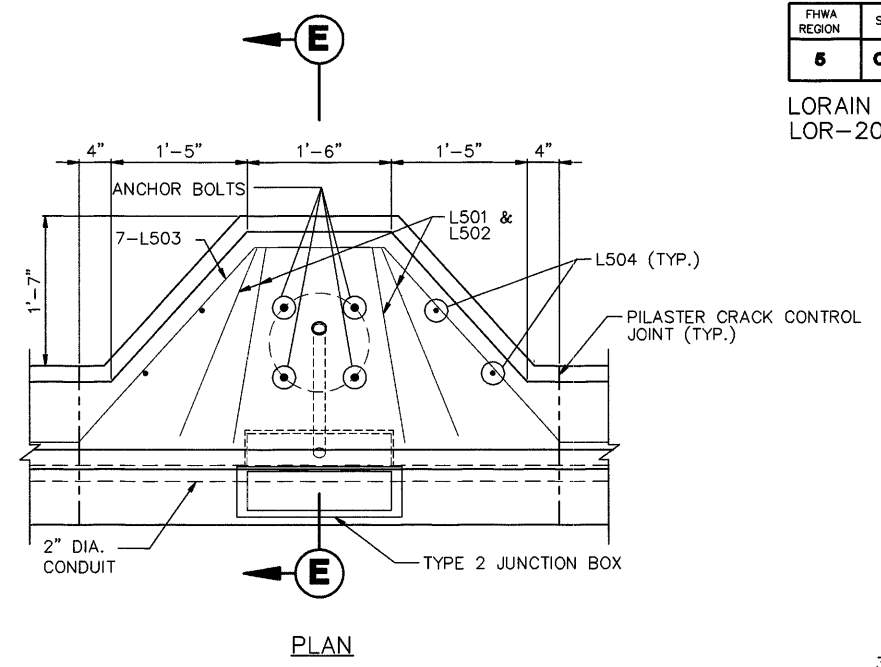
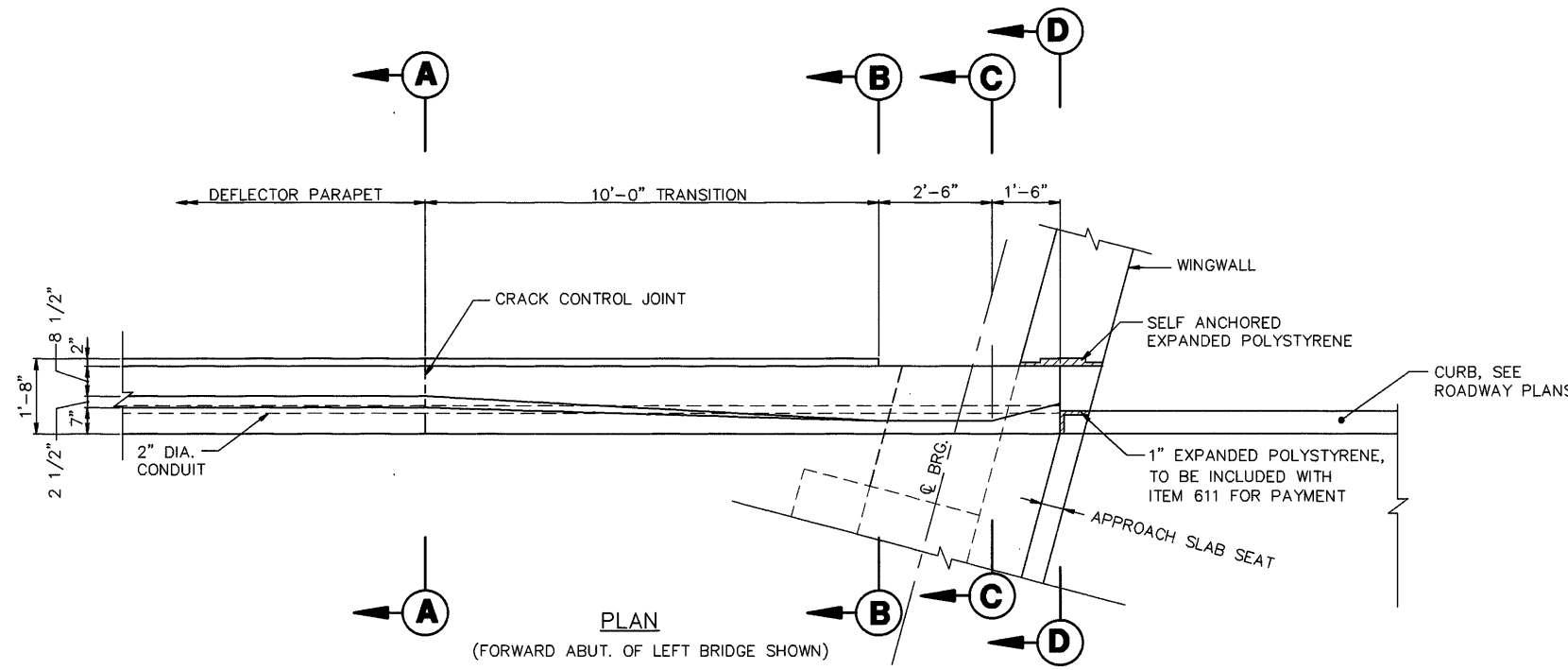
TYPICAL SECTION FOR EASTBOUND LANES

- NOTES:
- FOR LOCATION OF SCUPPERS, SEE SHEET 17/22.
 - SCUPPER SHALL BE IN ACCORDANCE WITH STANDARD DRAWING SD-1-69 EXCEPT THAT SCUPPER PIPES SHALL EXTEND 8" BELOW THE BOTTOM OF THE BEAMS INSTEAD OF 2".
 - REBARS SHALL BE FIELD ADJUSTED AND/OR FIELD CUT TO AVOID INTERFERENCE WITH THE SCUPPERS. COST SHALL BE INCLUDED WITH ITEM 509.
 - A HAUNCH WIDTH OF 9 INCHES SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6 AND 12 INCHES.
 - † THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE THEORETICAL DESIGN DIMENSION INCLUDING THE DESIGN HAUNCH THICKNESS OF 2 INCHES. THE QUANTITY OF THE CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, MINUS THE DESIGN HAUNCH THICKNESS, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.
 - FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS SEE SHEETS 20/22 AND 20A/22.



POLYTECH, INC. 18/22					
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114					
TYPICAL SECTION					
BRIDGE NO. LOR-20-1559 L&R OVER EAST BRANCH OF BLACK RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
YSS	YSS	-	VKB	BRS	12/96

DRAWING = S-SECT DATE = NOVEMBER 21, 1996



NOTES:

- ANCHOR BOLTS FOR BRIDGE TERMINAL ASSEMBLY SHALL BE 7/8" DIA. 1'-5 3/4" LONG A325 THROUGH BOLTS WITH 5/8" X 11" X 18 1/4" PLATE.
- GUARDRAIL ATTACHMENT: HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO TERMINAL CONNECTORS AT ENDS OF PARAPETS SHALL BE SLOTTED 29/32" X 3" AND ALL BOLTS SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS IN 606.05.
- JUNCTION BOXES, CONDUIT, POLE ANCHOR BOLTS AND MISCELLANEOUS ITEMS REQUIRED TO COMPLETE THE WORK SHALL BE INCLUDED IN ITEM 625 (ROADWAY PLANS) FOR PAYMENT.

POLYTECH, INC. 19 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

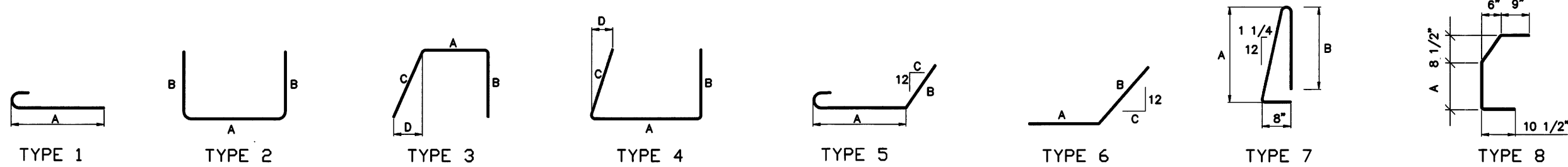
PARAPET TRANSITION AND
STRUCTURE LIGHTING DETAILS

BRIDGE NO. LOR-20-1559 L&R
OVER EAST BRANCH OF BLACK RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

DRAWING = S-PARAPT DATE = NOVEMBER 19, 1996

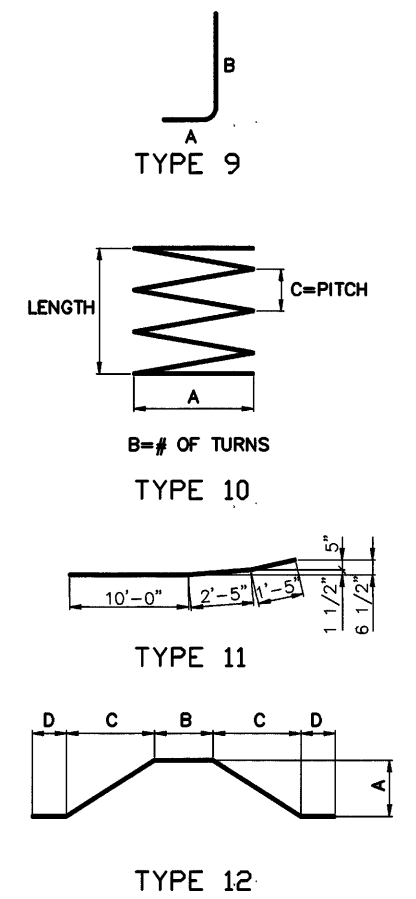
DRAWING = S-REBAR DATE = NOVEMBER 21, 1996



FHWA REGION	STATE	PROJECT	282 351
5	OHIO		

LORAIN COUNTY
LOR-20-12.62

SUPERSTRUCTURE										FORWARD ABUTMENT									
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
S401	469	30'-0"	STR.						9,399	FA401		NOT USED							
S402	67	15'-9"	STR.						705	FA501		NOT USED							
S403		NOT USED								FA502		NOT USED							
S501	1452	30'-0"	STR.						45,433	FA503		NOT USED							
S502	70	20'-3"	STR.						1,479	FA504		NOT USED							
S503	794	27'-6"	STR.						22,774	FA505		NOT USED							
S504	4-SER OF 12	4'-3" TO 24'-10"	STR.					22 1/2"	728	FA506		NOT USED							
S505	4-SER OF 16	2'-0" TO 30'-0"	STR.					22 1/2"	1,068	FA507		NOT USED							
S506		NOT USED								FA508		NOT USED							
S507		NOT USED								FA509		NOT USED							
S508		NOT USED								FA510		NOT USED							
S509		NOT USED								FA511		NOT USED							
S510		NOT USED								FA512		NOT USED							
S511		NOT USED								FA513		NOT USED							
S512		NOT USED								FA514		NOT USED							
S513	16	21'-0"	STR.						350	FA515		NOT USED							
S514		NOT USED								FA516	2	12'-4"	2	1'-5"	5'-7"				26
S515	12	13'-10"	STR.						173	FA517	8	3'-11"	STR.						33
S516	4	13'-10"	11						58	FA518	8	4'-9"	STR.						40
S517	22	3'-0"	1	2'-5"					69	FA519	5	5'-7"	STR.						29
S518	393	6'-0"	7	2'-9"	2'-6"				2,459	FA520	5	5'-3"	STR.						27
S519	83	3'-11"	STR.						339										
S520	83	9'-2"	2	3'-5"	3'-0"				794										
S521	82	9'-6"	2	3'-11"	2'-11"				813										
S522	84	9'-0"	2	3'-11"	2'-8"				789										
										REAR ABUTMENT									
S601	132	32'-0"	STR.						6,344	RA401		NOT USED							
S602	393	2'-5"	9	11"	1'-8"				1,427	RA501		NOT USED							
S603	415	3'-1"	8	11"					1,922	RA502		NOT USED							
S604	22	4'-0"	9	11"	3'-3"				132	RA503		NOT USED							
S605	16	4'-6"	STR.						108	RA504		NOT USED							
S801	24	35'-0"	STR.*						2,243	RA505		NOT USED							
S802	12	27'-9"	STR.						889	RA506		NOT USED							
S803	12	28'-2"	STR.						903	RA507		NOT USED							
S804	72	5'-0"	5	2'-8"	1'-5"	12			961	RA508		NOT USED							
										RA509		NOT USED							
										RA510		NOT USED							
										RA511		NOT USED							
										RA512		NOT USED							
										RA513		NOT USED							
										RA514		NOT USED							
										RA515		NOT USED							
										RA516	2	12'-4"	2	1'-5"	5'-7"				26
										RA517	8	3'-11"	STR.						33
										RA518	8	4'-9"	STR.						40
										RA519	5	5'-5"	STR.						28
										RA520	5	5'-9"	STR.						30
										SUBTOTAL (EPOXY)									
PILASTER																			
L501	4	2'-10"	2	1'-10"	7"				12	RA901		NOT USED							
L502	4	9'-3"	4	2'-4"	3'-7"	3'-7 1/4"	4 1/2"		39	RA902		NOT USED							
L503	7	7'-8"	12	1'-10"	1'-4"	1'-10"	6"		56										
L504	4	3'-7"	STR.						15										
										SUBTOTAL (EPOXY)									
										TOTAL (EPOXY)									



- NOTES:**
- ALL BAR DIMENSIONS ARE GIVEN OUT-TO-OUT.
 - ALL BARS OF A GIVEN SERIES VARY BY A CONSTANT INCREMENT.
 - ALL BARS SHALL BE EPOXY COATED.
 - STR.* REINFORCING BAR UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH FOR PAYMENT IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

POLYTECH, INC. 20/22

1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

REINFORCEMENT SCHEDULE

BRIDGE NO. LOR-20-1559 L
OVER EAST BRANCH OF BLACK RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VKB	VKB	-	YSS	BRS	12/96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

204
351

LORAIN COUNTY
LOR-20-12.62

ITEM SPECIAL - DRILLED SHAFTS

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DRILLED SHAFTS OF THE TYPE AND SIZE SPECIFIED IN THE PLANS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED. THE LENGTH(S) OF THE DRILLED SHAFTS SHOWN IN THESE PLANS HAS BEEN ESTIMATED FROM AVAILABLE SUBSURFACE INFORMATION. THE CONTRACTOR IS EXPECTED TO FURNISH THE PROPOSED DRILLED SHAFTS AS PER THESE PLAN REQUIREMENTS, WITH THE UNDERSTANDING THAT THE ACTUAL LENGTH REQUIRED BASED ON CONDITIONS ENCOUNTERED DURING CONSTRUCTION MAY DIFFER FROM THE ESTIMATED LENGTH SHOWN IN THE PLANS.

THE LIMITS OF EACH DRILLED SHAFT SHALL BE DEFINED AT THE TOP BY THE PLAN ELEVATION AND AT THE BOTTOM BY THE ELEVATION OF THE BOTTOM OF THE BEDROCK SOCKET AS APPROVED BY THE ENGINEER.

A CASING WILL BE NECESSARY FOR THE CONSTRUCTION OF EACH PIER DRILLED SHAFT AND THE CASING SHALL BE LEFT IN PLACE.

CONTRACTOR QUALIFICATION

THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE ENGINEER TO DOCUMENT THAT HIS PERSONNEL ARE EXPERIENCED IN THE CONSTRUCTION OF DRILLED SHAFTS OF THE TYPE AND SIZE SPECIFIED ON THE PLANS. THIS INFORMATION SHALL BE SUBMITTED AT THE PRECONSTRUCTION CONFERENCE. THE PROJECT ENGINEER IS REQUESTED TO INFORM BUREAU OF BRIDGES. ATTENTION: FOUNDATION ENGINEER (TELEPHONE 614-466-2399) OF THE DATES WHEN THE CONTRACTOR WILL BE CONSTRUCTING THE DRILLED SHAFTS.

CASING

THE CASING SHALL BE MADE OF STEEL, SHALL BE WATER TIGHT AND SHALL BE OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES AND EXTERNAL SUBSURFACE PRESSURES. THE CASINGS SHALL BE SEATED INTO THE BEDROCK, THUS ATTEMPTING TO SEAL OUT INCOMING WATER. THE CASING LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT.

CASING

THE DIAMETER OF THE FURNISHED CASING(S) SHALL BE LARGE ENOUGH TO ALLOW THE CONSTRUCTION OF A BEDROCK SOCKET WITH A DIAMETER EQUAL TO OR GREATER THAN THE PLAN DIAMETER.

EXCAVATION

WHEN OBJECTS SUCH AS LARGE BOULDERS ARE ENCOUNTERED, THEY SHALL BE REMOVED. BLASTING METHODS MAY BE USED, AND WHEN USED, SHALL BE CONDUCTED SO AS TO AVOID DISTURBANCE TO THE BEDROCK FORMATION BELOW AND OUTSIDE THE LIMITS OF THE PROPOSED DRILLED SHAFT EXCAVATIONS. THE DRILLED SHAFTS SHALL PENETRATE INTO SOLID BEDROCK TO A DEPTH THAT PROVIDES A BEDROCK SOCKET LENGTH THAT IS NOT LESS THAN THE BEDROCK SOCKET SHOWN IN THE PLANS. WHEN A CASING WHICH EXTENDS DOWN TO BEDROCK IS USED, THE BEDROCK SOCKET SHALL BE MEASURED FROM THE BOTTOM OF THE CASING TO THE BOTTOM OF THE DRILLED BEDROCK EXCAVATION. WHEN THE ENGINEER IS ASSURED THAT A PORTION OF THE METAL CASING IS EMBEDDED IN SOLID BEDROCK, UPON THE ENGINEER'S CONCURRENCE, THE EMBEDDED DISTANCE MAY BE INCLUDED AS A PART OF THE BEDROCK SOCKET.

DEWATERING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY INCOMING WATER TO THE EXTENT THAT THE SHAFT EXCAVATION IS MAINTAINED DRY ENOUGH FOR PERFORMANCE OF THE REQUIRED INSPECTION OPERATION. THE PREFERRED METHOD OF CONSTRUCTION IS TO PLACE THE CONCRETE IN A CLEAN, DRY EXCAVATION. THE CONTRACTOR IS EXPECTED TO MAKE A REASONABLE ATTEMPT TO SEAL WATER OUT OF THE DRILLED SHAFT EXCAVATION.

BOTTOM CLEANOUT

THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE AS CLEAN AS IS PRACTICABLE (NO MORE THAN ONE INCH OF LOOSE MATERIAL ON THE BOTTOM) PRIOR TO CONCRETE PLACEMENT. DRILLING SPOILS THAT ADHERE TO THE VERTICAL SIDES OF THE BEDROCK SOCKETS ARE TO BE REMOVED.

APPROVAL BEFORE CONCRETE PLACEMENT

CONCRETE SHALL NOT BE PLACED IN ANY DRILLED SHAFT EXCAVATION WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE DRILLED SHAFT EXCAVATION SHALL BE INSPECTED IMMEDIATELY BEFORE THE CONCRETE IS PLACED. A LIGHT POWERFUL ENOUGH TO THOROUGHLY INSPECT THE SIDES, BOTTOM AND REINFORCING STEEL CAGE OF THE DRILLED SHAFT IS REQUIRED. CONCRETE SHALL NOT BE PLACED DURING INCLEMENT WEATHER CONDITIONS WHICH PREVENT A THOROUGH INSPECTION.

CONCRETE PLACEMENT

THE CONCRETE FOR THE DRILLED SHAFTS SHALL BE PLACED AS PER 511, EXCEPT AS MODIFIED BY THE PLANS. THE CONCRETE PLACEMENT OPERATION SHALL BE CONTINUOUS FROM START TO FINISH. THE CONCRETE FOR THE BEDROCK SOCKET SHALL BE PLACED AGAINST THE INSITU BEDROCK AND SHALL BE PLACED PROMPTLY AFTER THE FINAL INSPECTION OF THE SHAFT. IF PRACTICABLE, THE CONCRETE SHALL BE PLACED IN A CLEAN DRY EXCAVATION. CARE SHALL BE TAKEN TO ENSURE THAT CONCRETE IS NOT BEING PLACED IN MOVING WATER. THE CONCRETE CAN BE PLACED IN A DRY DRILLED SHAFT EXCAVATION BY THE FREE FALL METHOD PROVIDED THE CONCRETE FALLS TO ITS FINAL POSITION THROUGH AIR WITHOUT STRIKING THE SIDES OF THE HOLE, THE REINFORCING STEEL CAGE, OR ANY OTHER OBSTRUCTION. THE FREE FALL METHOD ALLOWS THE CONCRETE TO BE DROPPED FROM THE TOP THROUGH A CENTERING CHUTE TO THE CONCRETE'S FINAL POSITION.

TOLERANCES

THE CONTRACTOR SHALL LOCATE AND CONSTRUCT THE TOP CENTER OF THE PIER DRILLED SHAFTS WITHIN A ONE-INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE PIER SHAFTS ARE TO BE INSTALLED VERTICALLY AND MUST BE WITHIN 1.0 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED SHAFT.

CONCRETE

CONCRETE FOR ALL DRILLED SHAFTS SHALL BE CLASS "S" CONCRETE AND SHALL BE IN ACCORDANCE WITH 511, EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN. THE REQUIRED SLUMP IS SIX (6) INCHES, PLUS OR MINUS ONE-HALF INCH. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.50. IF CONCRETE IS PLACED UNDER WATER, THE REQUIREMENTS OF ADDING 10 PERCENT MORE CEMENT TO THE CONCRETE MIX SHALL BE WAIVED. THE TOP 4 TO 5 FEET OF CONCRETE IN THE DRILLED SHAFTS ARE REQUIRED TO BE VIBRATED. ONLY A MINIMAL VIBRATORY EFFORT IS NECESSARY. SPECIAL CARE SHALL BE TAKEN NOT TO OVER-VIBRATE THE DRILLED SHAFT CONCRETE.

REINFORCING STEEL

REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL MEET THE REQUIREMENTS OF 509. THE REINFORCING STEEL SHALL BE GRADE 60. THE SPIRAL REINFORCING STEEL MAY BE PLAIN BARS ASTM A82 OR A615. THE REINFORCING STEEL CAGE SHALL BE COMPLETELY ASSEMBLED PRIOR TO PLACEMENT AND THE LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT. SEE PLAN SHEETS FOR DETAILS OF REINFORCING STEEL. NOTE THAT THE LENGTHS PROVIDED IN THE REINFORCING STEEL LIST ARE ESTIMATED LENGTHS. THE REINFORCING STEEL SHOULD BE PLACED AT PLAN LOCATION.

INSPECTION

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE MEANS FOR ACCESS AND SAFE DESCENT INTO ALL DRILLED SHAFT EXCAVATIONS THAT ARE PROTECTED BY A CASING AND HAVE A DIAMETER THAT IS LARGE ENOUGH TO ALLOW A PERSON TO SAFELY ENTER AND PERFORM THE REQUIRED INSPECTION. ACCESS MAY BE PROVIDED BY A POSITIVE FORWARD AND REVERSE HYDRAULIC WINCH OR POWER-UP AND POWER-DOWN HOIST ON A CRANE. THE METHOD CHOSEN FOR ENTERING OR LEAVING THE SHAFT SHALL BE CONVENIENT, SAFE AND NOT UNCOMFORTABLE FOR THE USER. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTIVE CLOTHING FOR THOSE MAKING AN INSPECTION OF THE SHAFT.

AN INSPECTION RECORD CHART HAS BEEN INCLUDED WITH THE PLANS ON SHEET 22 OF 22 AND SHOULD BE COMPLETED BY THE ENGINEER. MEASUREMENTS SHOULD BE OBTAINED PRIOR TO PLACING CONCRETE. THE CONTRACTOR SHOULD PROVIDE ALL NECESSARY EQUIPMENT NEEDED TO OBTAIN MEASUREMENTS FOR COMPLETING THE CHART. THE CONTRACTOR SHALL ASSIST THE ENGINEER IN OBTAINING THESE MEASUREMENTS. WHEN THE INSPECTION RECORD CHART IS COMPLETED, THE PROJECT ENGINEER SHOULD SUBMIT A COPY TO THE BUREAU OF BRIDGES. ATTENTION: FOUNDATION ENGINEER.

SAFETY PROVISIONS

THE CONTRACTOR SHALL HAVE AT THE JOB SITE ALL EQUIPMENT AND MATERIALS NEEDED TO PROVIDE SAFE CONSTRUCTION AND INSPECTION OF THE DRILLED SHAFTS AS REQUIRED BY CITY, STATE AND FEDERAL SAFETY REQUIREMENTS.

SAFETY PROVISIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE REQUIREMENTS SPECIFIED BY THE PLANS, SPECIAL PROVISIONS, AND PROPOSAL.

THE CONTRACTOR SHALL PROVIDE CONTINUOUS SURVEILLANCE OF ALL PERSONS IN THE DRILLED SHAFT EXCAVATIONS. AT ALL TIMES WHEN A PERSON IS IN THE DRILLED SHAFT EXCAVATION, PROVISIONS SHALL BE MADE FOR PUMPING FRESH AIR TO SAID PERSON. ALL LIGHTING SHALL BE WITH ELECTRICAL LIGHTS. MECHANICAL EQUIPMENT USED INSIDE THE SHAFTS SHALL BE OPERATED BY AIR OR ELECTRICITY. THE USE OF GASOLINE ENGINES OR OTHER TYPES OF EQUIPMENT PRODUCING FUMES THAT MAY ENTER THE EXCAVATION WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE GAS DETECTION AND OXYGEN ANALYZERS, AND SHALL TEST THE DRILLED SHAFT EXCAVATION ATMOSPHERE QUALITATIVELY THROUGHOUT THE COLUMN'S ENTIRE LENGTH AND ASSURE THAT THE QUANTITIES OF GASES AND OXYGEN PRESENT ARE IN SAFE AMOUNT AND SAFE PROPORTION PRIOR TO PERMITTING ANY PERSON TO ENTER THE SHAFT.

METHOD OF MEASUREMENT

THE TOTAL PAY LENGTH OF EACH DRILLED SHAFT SHALL BE THE COMPLETED AND ACCEPTED LENGTH MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM THE BOTTOM OF THE BEDROCK SOCKET TO THE PROPOSED TOP ELEVATION, AS PER PLAN. THE REINFORCING STEEL THAT PROJECTS FROM THE DRILLED SHAFT INTO THE PIER COLUMN AS SPECIFIED BY THE PLANS IS INCLUDED WITH THE DRILLED SHAFT FOR PAYMENT, BUT SHALL NOT BE INCLUDED IN THE MEASURED LENGTH OF THE DRILLED SHAFT.

THE TOTAL LENGTH OF EACH DRILLED SHAFT SHALL BE DIVIDED INTO TWO SEGMENTS. THE LENGTH OF THE LOWER SEGMENT IS THE LENGTH OF THE BEDROCK SOCKET AND THE LENGTH OF THE UPPER SEGMENT IS THE LENGTH OF THE DRILLED SHAFT ABOVE THE BEDROCK SOCKET.

BASIS OF PAYMENT

PAYMENT FOR FURNISHING AND INSTALLING DRILLED SHAFTS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ACCEPTED SHAFT LENGTH AS PER ITEM SPECIAL - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK AND ITEM SPECIAL - DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEMS AS SPECIFIED.

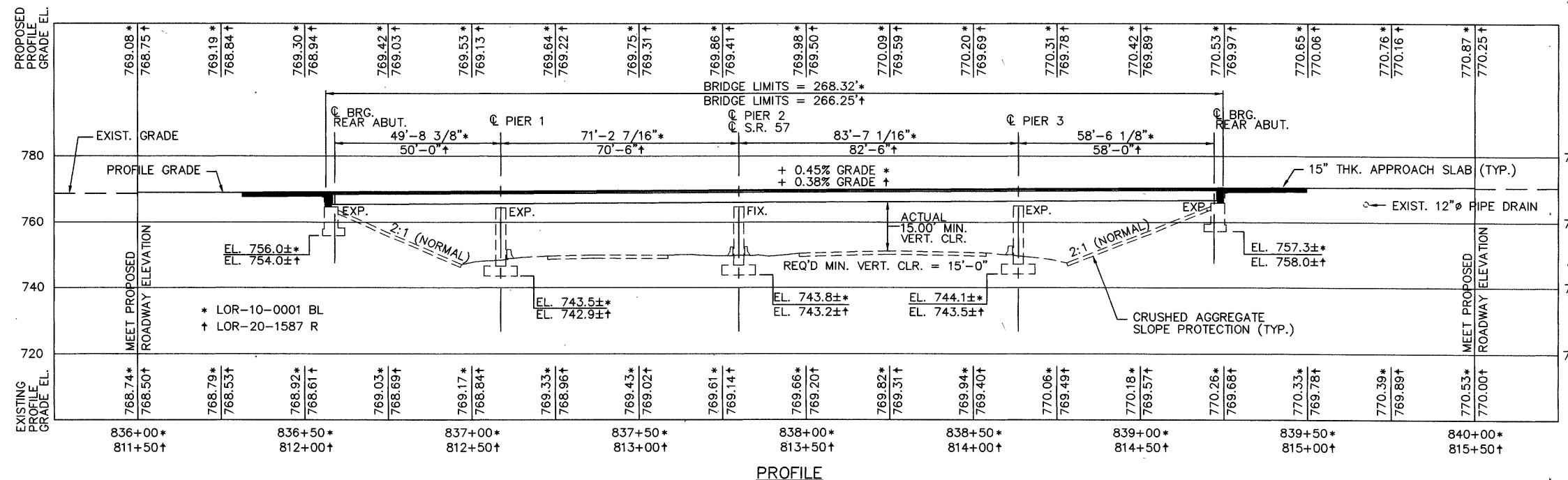
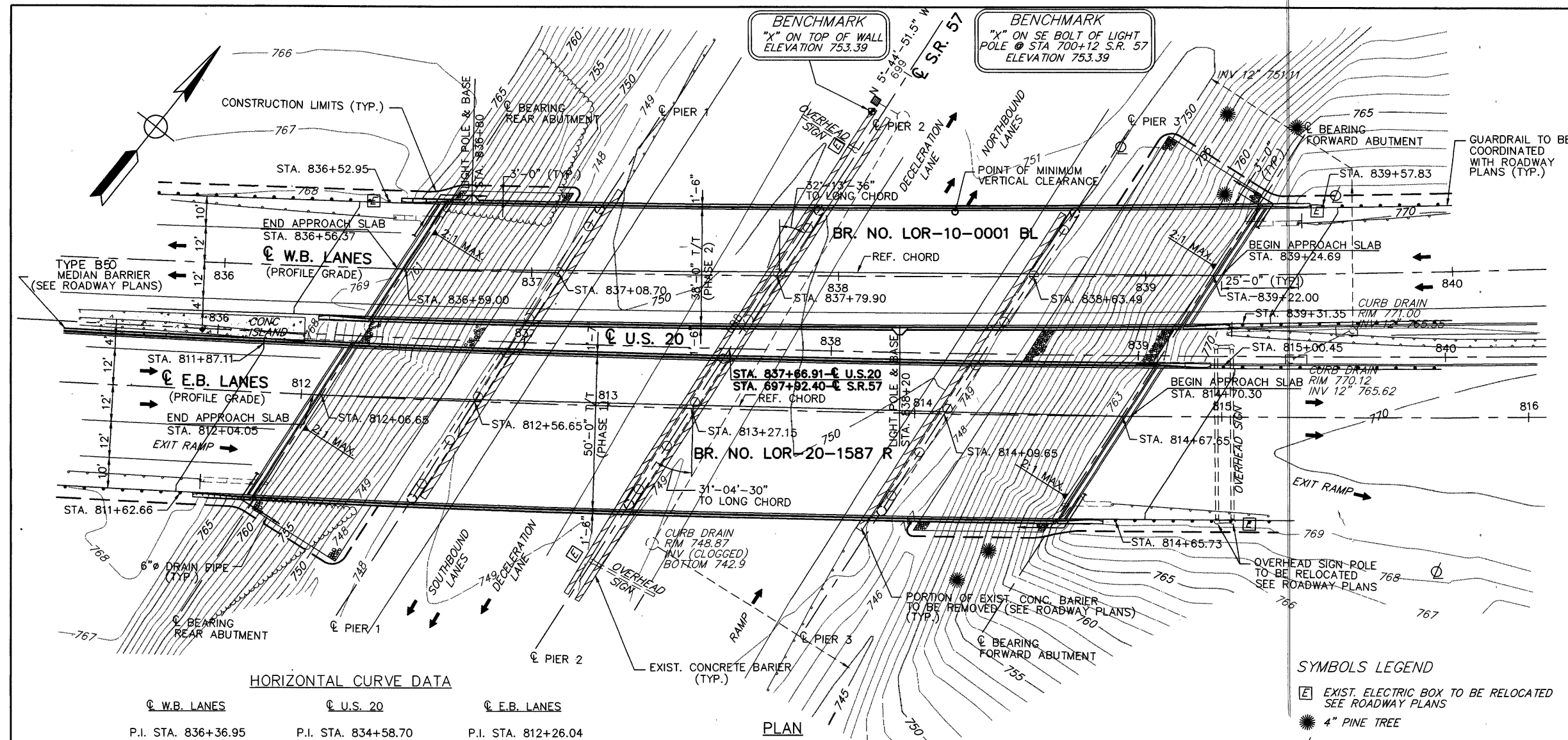
DESIGN PARAMETERS

THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 153 TONS AT THE PIER, WHICH IS ASSUMED TO BE RESISTED BY SHAFT ADHESION WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY SHAFT END BEARING PRESSURE. THE ALLOWABLE BEDROCK SOCKET ADHESION IS ONE (1) TON PER SQUARE FOOT WHICH IS ASSUMED TO ACT ALONG THE BOTTOM SIX (6) FEET OF THE BEDROCK SOCKET. THE ALLOWABLE END BEARING PRESSURE IS THIRTY (30) TONS PER SQUARE FOOT.

DRAWING = S-SHAFT1 DATE = JULY 1, 1996

POLYTECH, INC.					21 / 22
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114					
DRILLED SHAFT NOTES					
BRIDGE NO. LOR-20-1559 R OVER EAST BRANCH OF BLACK RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
VKB	VKB	-	YSS	BRS	12/96

DRAWING = S-SITE DATE = NOVEMBER 15, 1996



EXISTING STRUCTURES

TYPE: CONTINUOUS STEEL BEAM W/ REINF. CONC. DECK AND SUBSTRUCTURE

SPAN: L : 49'-8 3/8", 71'-2 7/16", 83'-7 1/16", 58'-6 1/8" C/C BRGS.

ROADWAY WIDTH: L : 50'-0", 70'-6", 82'-6", 58'-0" C/C BRGS.

LOAD FREQUENCY: CF 2000(57)

SKEW: L : 32'-13'-36" LF. TO LONG CHORD

R : 31'-04'-30" LF. TO LONG CHORD

ALIGNMENT: L : 0°-52'-13" CURVE TO LEFT

R : 0°-45'-00" CURVE TO LEFT

APPROACH SLABS: L : AS-1-67 (25' LONG MOD.)

R : AS-1-54 (25' LONG)

SUPERELEVATION: L : 0.0156 FT/FT

R : 0.0156 FT/FT

YEAR BUILT: L : 1970

R : 1964

STRUCTURE FILE NO.: L : 4701410

R : 4703456

PROPOSED STRUCTURES

TYPE: CONTINUOUS COMPOSITE STEEL BEAM W/ REINF. CONC. DECK AND SUBSTRUCTURE

SPAN: L : 49'-8 3/8", 71'-2 7/16", 83'-7 1/16", 58'-6 1/8" C/C BRGS.

ROADWAY WIDTH: L : 38'-0" T/T PARAPETS

R : 50'-0" T/T PARAPETS

DESIGN LOADING: HS20-44 CASE II AND ALTERNATE MILITARY LOADING

SKEW: L : 32'-13'-36" LF. TO LONG CHORD

R : 31'-04'-30" LF. TO LONG CHORD

ALIGNMENT: L : 0°-52'-13" CURVE TO LEFT

R : 0°-45'-00" CURVE TO LEFT

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: AS-1-81 (25' LONG)

SUPERELEVATION: L : 0.0156 FT/FT

R : 0.0156 FT/FT (CROWN)

LATITUDE: 41°-19'-58"

LONGITUDE: 82°-3'-59"

TRAFFIC DATA

CURRENT ADT (1997) = 14,500

DESIGN YEAR ADT (2017) = 20,300

DESIGN YEAR ADTT (2017) = 2,233

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

DESIGN AGENCY: **POLYTECH, INC.**
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

DATE: 12/96

REVIEWED: BRS

DRAWN: PSS

DESIGNED: PSS

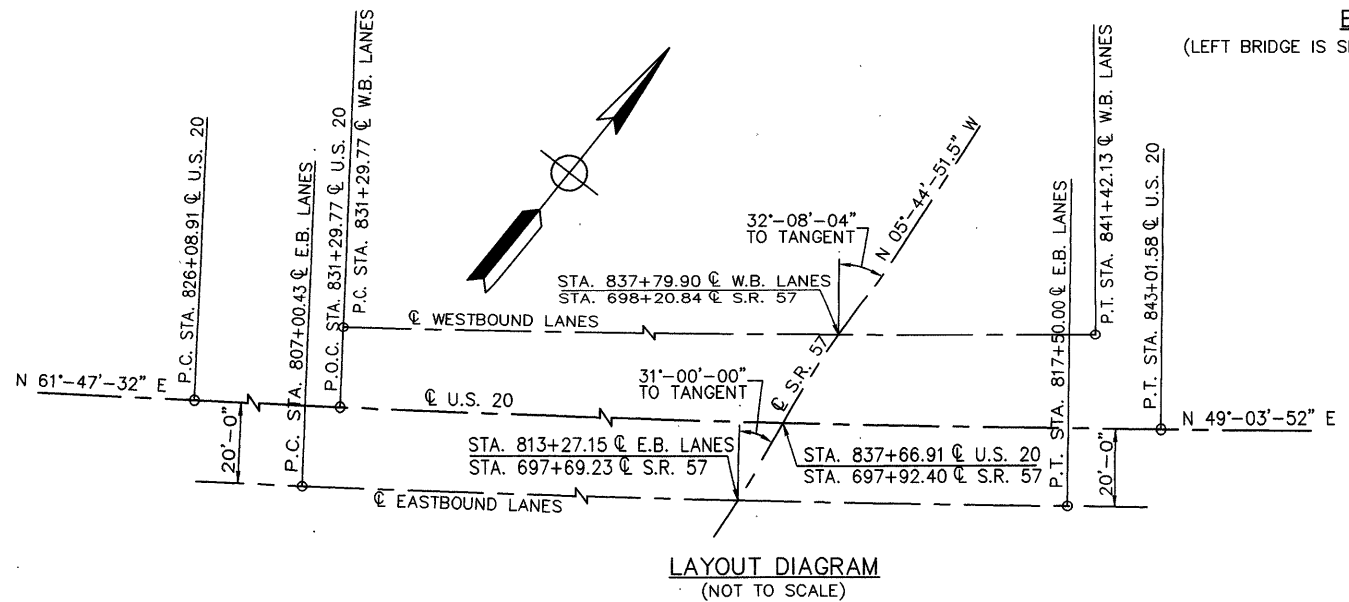
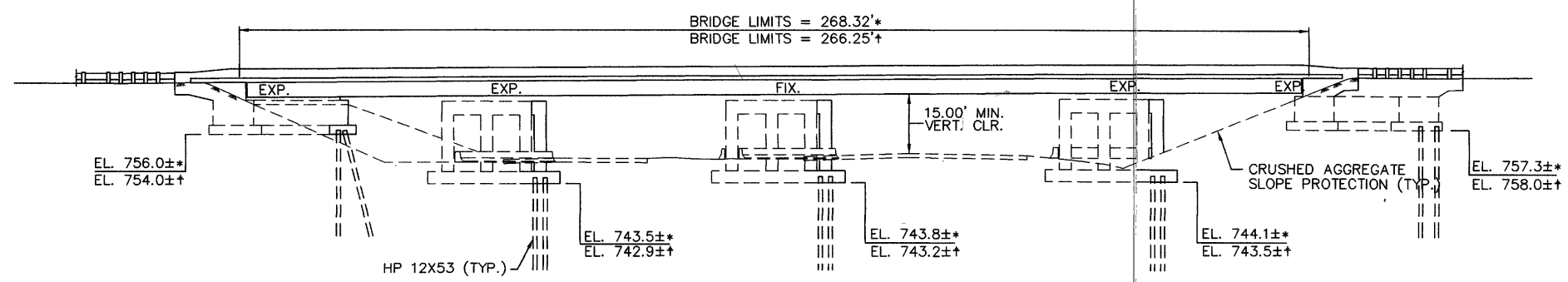
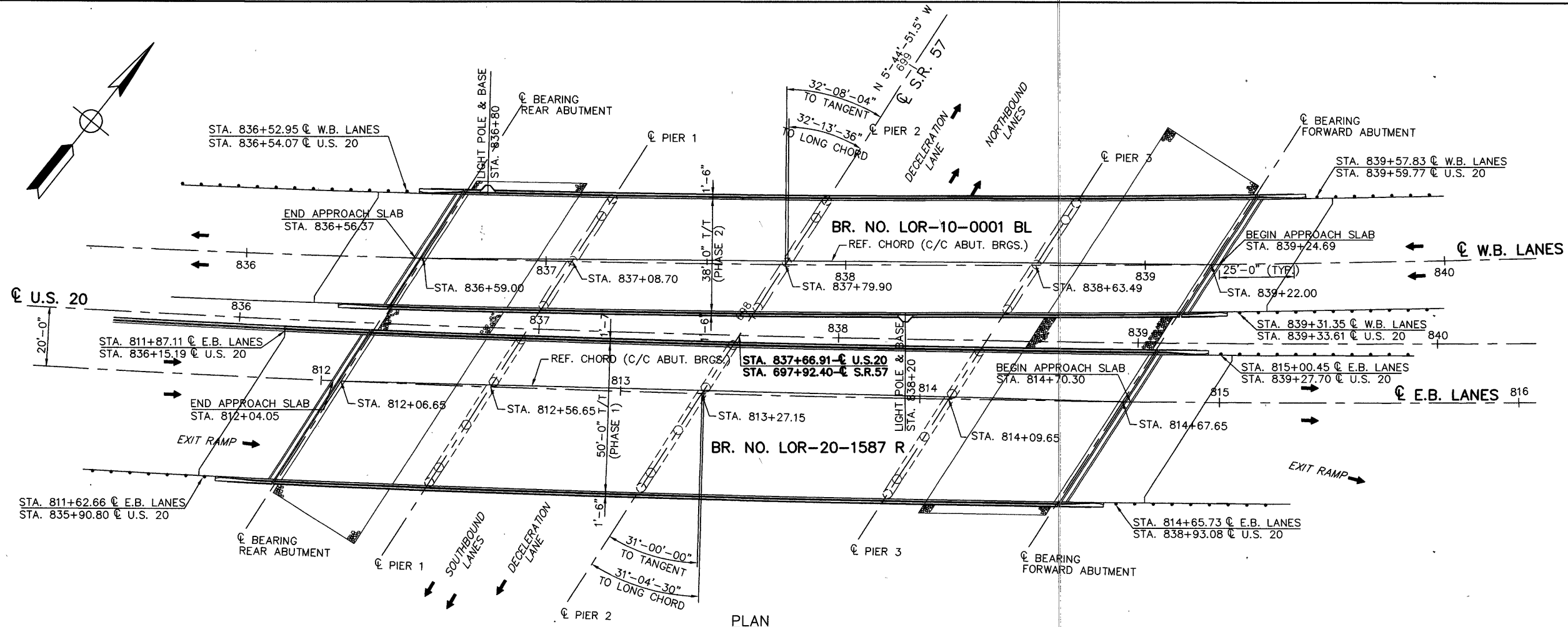
LORAIN COUNTY

BRIDGE NO. LOR-10-0001 BL AND LOR-20-1587 R OVER S.R. 57

1/36

286
351

DRAWING = S-GENPLN DATE = NOVEMBER 15, 1996



HORIZONTAL CURVE DATA

☐ W.B. LANES	☐ U.S. 20	☐ E.B. LANES
P.I. STA. 836+36.95	P.I. STA. 834+58.70	P.I. STA. 812+26.04
Δ = 8°-48'-40" LT.	Δ = 12°-43'-40" LT.	Δ = 7°-52'-18" LT.
D = 0°-52'-13.27"	D = 0°-45'-07.08"	D = 0°-45'
R = 6583.05'	R = 7619.44'	R = 7639.44'
T = 507.18'	T = 849.79'	T = 525.61'
L = 1012.36'	L = 1692.59'	L = 1049.57'
E = 19.51'	E = 47.24'	E = 18.06'

NOTE:
ALL PILES ARE HP 12X53 WITH ESTIMATED VERTICAL LENGTHS AS TABULATED:

ABUTMENTS : 49'
PIERS : 40'

ESTIMATED QUANTITIES

QUANTITY CALCULATIONS		
	BY	DATE
CALC.	RS	11/96
CHKD.	PSS	11/96

DRAWING = S-QUAN DATE = NOVEMBER 14, 1996

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P REF. SHT.	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P REF. SHT.
202	11301	42	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE	42				5/36	516	11210	94	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			94		
202	11305	1,073	SQ. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPET			1,073		5/36	516	46000	1	EACH	BEARING DEVICE, BOLSTER		1			
										516	46200	4	EACH	BEARING DEVICE, ROCKER	2	2			
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP		516	46900	10	EACH	BEARING DEVICE, MISC.: REPLACE AND SHIM ABUTMENT BEARINGS	10				
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP			6/36	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	6/36
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		518	21201	65	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	65				6/36
										518	40001	90	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	90				7/36
507	14400	779	LIN. FT.	STEEL PILES HP 12X53	539	240				518	40011	40	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40				7/36
509	15840	102,154	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	9,967	5,917	86,020	250		SPECIAL	519 11502	106	SQ. FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	48	58			
510	10001	172	EACH	DOWEL HOLES WITH NON SHRINK, NON METALLIC GROUT, AS PER PLAN	90	82			6/36	601	20001	132	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN	132				7/36
511	43001	26	CU. YD.	CLASS C CONCRETE, PIER, AS PER PLAN		26			6/36	815	00050	20,599	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			16,917	3682	7/36
511	45501	75	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	75				6/36	815	00056	20,599	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			16,917	3682	7/36
										815	00060	20,599	SQ. FT.	FIELD PAINTING OF EXIST. STEEL, INTERMEDIATE COAT, SYSTEM OZEU			16,917	3682	7/36
SPECIAL	511 48000	283	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), MIX#4			283			815	00066	20,599	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			16,917	3682	7/36
SPECIAL	511 48020	78	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), MIX#4			78												
SPECIAL	511 49000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX				LUMP											
SPECIAL	511 49010	LUMP		HIGH PERFORMANCE CONCRETE TESTING				LUMP											
SPECIAL	512 67504	681	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)			681												
SPECIAL	512 67510	196	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	96	100													
513	11101	64,105	POUND	STRUCTURAL STEEL, AISC CATEGORY I, AS PER PLAN			64,105		7/36										
513	15901	2,435	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN			2,435		6/36										
513	20000	3,696	EACH	WELDED STUD SHEAR CONNECTOR			3,696												

DESIGN AGENCY
POLYTECH, INC.
 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

DATE
 12/96

REVISIONS
 BRS
 STRUCTURE FILE NUMBER
 4701410

DRAWN
 RS
 REVISIONS

DESIGNED
 NK
 CHECKED
 PSS

ESTIMATED QUANTITIES
 BRIDGE NO. LOR-10-0001 BL

LOR-20-12.62

3 / 36

288
 351

ESTIMATED QUANTITIES

QUANTITY CALCULATIONS		
BY	DATE	
CALC. RS	11/96	
CHKD. PSS	11/96	

DESIGN AGENCY
POLYTECH, INC.
1744 PAYNE AVENUE, CLEVELAND, OHIO 44114

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P REF. SHT.	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRUCTURE	GENERAL	A.P.P REF. SHT.
202	11301	55	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE	55				5/36	516	11210	121	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			121		
202	11305	1,435	SQ. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN DECK AND PARAPET			1,435		5/36	516	46000	1	EACH	BEARING DEVICE, BOLSTER		1			
										516	46200	4	EACH	BEARING DEVICE, ROCKER	2	2			
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP		516	46900	12	EACH	BEARING DEVICE, MISC.: REPLACE AND SHIM ABUTMENT BEARINGS	12				
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP			6/36	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	6/36
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		518	21201	87	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	87				6/36
										518	40001	116	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	116				7/36
507	14400	730	LIN. FT.	STEEL PILES HP 12X53	490	240				518	40011	40	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40				7/36
509	15840	139,156	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	10,860	6,806	121,240	250		SPECIAL	519 11502	122	SQ. FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	100	22			
510	10001	179	EACH	DOWEL HOLES WITH NON SHRINK, NON METALLIC GROUT, AS PER PLAN	88	91			6/36	601	20001	118	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN	118				7/36
511	43001	34	CU. YD.	CLASS C CONCRETE, PIER, AS PER PLAN		34			6/36	815	00050	24407	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			20,669	3738	7/36
511	45501	88	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	88				6/36	815	00056	24407	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			20,669	3738	7/36
										815	00060	24407	SQ. FT.	FIELD PAINTING OF EXIST. STEEL, INTERMEDIATE COAT, SYSTEM OZEU			20,669	3738	7/36
SPECIAL	511 48000	363	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), MIX#4			363			815	00066	24407	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			20,669	3738	7/36
SPECIAL	511 48020	86	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), MIX#4			86												
SPECIAL	511 49000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX				LUMP											
SPECIAL	511 49010	LUMP		HIGH PERFORMANCE CONCRETE TESTING				LUMP											
SPECIAL	512 67504	733	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)			733												
SPECIAL	512 67510	247	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	122	125													
513	11101	66,991	POUND	STRUCTURAL STEEL, AISC CATEGORY I, AS PER PLAN			66,991		7/36										
513	15901	3,105	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN			3,105		6/36										
513	20000	4,648	EACH	WELDED STUD SHEAR CONNECTOR			4,648												

DRAWING = S-QUAN2 DATE = NOVEMBER 14, 1996

DESIGNED
INK
CHECKED
PSS

REVIEWED
BRS
REVISD

DATE
12/96

STRUCTURE FILE NUMBER
4703456

ESTIMATED QUANTITIES
BRIDGE NO. LOR-20-1587 R

LOR-20-12.62

4 / 36

289
351

GENERAL NOTES

1. DESIGN SPECIFICATIONS :

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, DATED 1992, INCLUDING THE 1993, 1994 AND 1995 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

2. REFERENCE DRAWINGS :

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS

A-1-69, DATED 6/12/69	HL-10.13, DATED 5/1/87
AS-1-81, REVISIONS 9/15/94	HL-20.14, DATED 5/1/87
BS-1-93, DATED 12/19/94	HL-30.31, DATED 5/1/87
EXJ-4-87, REVISIONS 11/12/93	IRJ-8-95, DATED 7/6/95
GR-3.1, DATED 5/6/91	RB-1-55, REVISIONS 2/2/59
	SD-1-69, DATED 6/12/69

AND SUPPLEMENTAL SPECIFICATIONS

815, DATED 7/17/95
910, DATED 7/17/95

3. DESIGN DATA :

DESIGN LOADING: HS20-44 (CASE II) AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE - UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)

CONCRETE CLASS C - UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, A616 OR A617
GRADE 60 - UNIT STRESS 24,000 P.S.I.

SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL
ASTM A36 - UNIT STRESS 20,000 P.S.I.

4. DECK PROTECTION METHOD :

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER
SEALING OF CONCRETE SURFACES

5. WEARING SURFACE :

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

6. PROPOSED WORK :

IN GENERAL, THE PROPOSED WORK INCLUDES:

- DECK REPLACEMENT WITH NEW COMPOSITE REINFORCED CONCRETE DECK ON WIDENED SUBSTRUCTURE.
- ABUTMENT AND PIER WIDENING INCLUDING FULL BACKWALL REPLACEMENT, FOUNDATION EXTENSION WITH PILES AND WINGWALL RECONSTRUCTION.
- WIDENING EXISTING STEEL FRAMING WITH NEW BEAMS AND INTERMEDIATE CROSSFRAMES.
- CONCRETE REPAIR AND SEALING OF EXPOSED CONCRETE SURFACES.
- PROVIDING ABUTMENT BACKWALL DRAINAGE WITH POROUS BACKFILL AND PIPE SYSTEM.
- REPLACE AND SHIM ABUTMENT BEARINGS.
- REPLACEMENT OF END CROSSFRAMES.
- PAINTING OF NEW AND EXISTING STEEL.
- PROVIDING LIGHTING CONDUITS IN PARAPETS FOR FUTURE CIRCUITS.

7. 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 513.02.

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

8. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS INDICATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNED FOR SALVAGE. IF DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL, AS PER 510 MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

9. ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPET

THIS ITEM OF WORK SHALL BE USED TO REMOVE THE EXISTING CONCRETE DECK, SAFETY CURBS, PARAPETS AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS, HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC : PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

A CONCRETE DECK ON STEEL BEAMS MAY BE REMOVED BY SAWING WITH THE FOLLOWING RESTRICTIONS:

1. BEFORE ANY SAWING IS PERMITTED: THE OUTLINES OF THE TOP FLANGES OF ALL STRINGERS ARE TO BE DRAWN ON THE BRIDGE DECK AND ONE (1) INCH ± DIAMETER PILOT HOLES SHALL BE DRILLED OUTSIDE THESE LINES TO CONFIRM THE WIDTH OF THE FLANGES. PILOT HOLES SHALL NOT BE DRILLED OVER THE BEAM FLANGES.
2. ALL SAWING SHALL BE CONFINED TO THE AREAS BETWEEN THE FLANGE EDGES MINUS FOUR (4) INCHES (2 INCHES ± EACH SIDE).
3. THE DRILLING OF PILOT HOLES AND THE GENERAL SAWING PATTERN SHALL BE APPROVED BY THE ENGINEER.
4. HAND SAWS MAY BE USED IN THE FLANGE AREAS IF THE OPERATION IS OBSERVED AND APPROVED BY THE ENGINEER; AND THEN ONLY TO A DEPTH NOT PENETRATING THE LOWER REINFORCING STEEL MAT. THE ENGINEER MAY TERMINATE THE HAND SAWING OPERATION OVER THE FLANGES IF HE FEELS THE BRIDGE INTEGRITY IS IN JEOPARDY.

5. AS AN ALTERNATIVE TO USING HAND SAWS; THE LARGE CUTTING SAWS MAY BE USED FOR THE TRANSVERSE CUTS ACROSS THE FLANGES WITH THE CUT RESTRICTED TO A MAXIMUM DEPTH OF FOUR (4) INCHES OVER THE FLANGES. THIS SHALL BE ACCOMPLISHED BY MAKING AN INITIAL TRANSVERSE PRECUT TO A MAXIMUM DEPTH OF FOUR (4) INCHES CONTINUOUSLY ACROSS THE ENTIRE DECK. THE SECOND CUT SHALL BE RESTRICTED TO THE AREAS BETWEEN THE BEAMS IN ACCORDANCE WITH NUMBER 2 ABOVE.

BEFORE REMOVAL OF DECK, SCUPPER AND END DAM CONNECTION TO THE BEAMS SHALL BE CUT OR THE CONCRETE REMOVED AROUND TO PREVENT DAMAGE TO THE BEAMS.

CONCRETE MAY BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL EDGED TOOLS. THE WEIGHT OF THE HAMMERS SHALL NOT EXCEED 35 POUNDS WITHIN EIGHTEEN (18) INCHES OF THE STEEL BEAMS. OUTSIDE THE EIGHTEEN (18) INCH LIMIT THE WEIGHT OF THE HAMMERS SHALL NOT EXCEED NINETY (90) POUNDS. CARE SHALL BE TAKEN NOT TO NICK OR GOUGE THE STEEL BEAMS WITH THE PNEUMATIC HAMMERS.

BOLTS AND PROJECTIONS WELDED TO THE STRUCTURAL STEEL SHALL BE REMOVED. ALL IMPERFECTIONS, TACK WELDS AND WELDS FOR BOLTS AND PROJECTIONS SHALL BE GROUND SMOOTH. THE TOP FLANGE OF THE STEEL BEAMS SHALL BE ABRASIVE BLAST CLEANED ACCORDING TO SSPC-SP10 AND AS SHOWN IN SSPC-VIS-1-89 (PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES).

ANY DAMAGE TO STEEL BEAMS, DONE BY THE CONTRACTOR, SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. THE CONTRACTOR'S PROPOSED METHOD OF REPAIR SHALL BE SUBMITTED IN WRITING FOR APPROVAL BY THE DIRECTOR. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE DIRECTOR BEFORE COMMENCEMENT OF SAID REPAIRS.

NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED BY MORE THAN ONE-THIRD THE ALLOWABLE UNIT STRESSES, AS GIVEN IN AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" DUE TO ERECTION, REMOVAL AND CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF CONSTRUCTION EQUIPMENT ONTO OR ACROSS THE STRUCTURE. WHEN EQUIPMENT HAVING A GROSS WEIGHT IN EXCESS OF 40,000 POUNDS IS TO BE PLACED ON THE STRUCTURE AND USED FOR REMOVAL AND CONSTRUCTION PURPOSES, STRUCTURAL ANALYSIS CALCULATIONS BY A REGISTERED STRUCTURAL ENGINEER SHOWING THE STRESSES PRODUCED BY THE EQUIPMENT AND ASSOCIATED LOADS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPETS, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

10. CUT LINE CONSTRUCTION JOINT PREPARATION :

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" 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. THEN, 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.

11. PILE DRIVING CONSTRAINTS :

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

DRAWING = G-NOTES1 DATE = NOVEMBER 14, 1996

DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114	DATE 12/96	REVIEWED BRS	DRAWN RS	DESIGNED PSS	STRUCTURE FILE NUMBER 4701410, 4703456	CHECKED VKB
GENERAL NOTES						
BRIDGE NO. LOR-10-0001 BL & LOR-20-1587 R						
OVER S.R. 57						
LOR-20-12.62						
5/36						
290 351						

GENERAL NOTES

13. ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04. ALSO, PLUGGING OF EXISTING WEEPHOLES AT ABUTMENTS WITH CLASS C CONCRETE IS INCLUDED IN THIS ITEM.

14. PILES :

ALL PILES SHALL BE OF SIZE HP 12 X 53 AND DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

PIER PILE DESIGN LOAD = 63.4 TONS/PILE
 ABUTMENT PILE DESIGN LOAD = 42.7 TONS/PILE

15. REPLACEMENT OF EXISTING REINFORCING STEEL :

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 500 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

16. BAR LAP LENGTHS :

UNLESS OTHERWISE SHOWN, BAR LAPS SHALL BE NOT LESS THAN:

BAR	#4	#5	#6	#7	#8	#9	#10
LAP LENGTH	1'-11"	2'-5"	2'-11"	3'-8"	4'-11"	6'-2"	7'-10"

17. ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR.

PAYMENT FOR THE ABOVE SHALL BE AT UNIT PRICE BID PER EACH FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

18. ITEM 511 - CLASS C CONCRETE, AS PER PLAN

ALL COARSE AGGREGATE FOR THE CLASS C CONCRETE ITEMS SHALL BE #8 LIMESTONE ONLY.

19. BACKWALL CONCRETE :

IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

20. INSTALLATION OF SEAL :

DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE. THE STRIP SEAL GLAND SHALL BE CONTINUOUS AND INSTALLED IN ONE PIECE. CONSIDERATION SHOULD BE GIVEN TO THE MEANS OF PERFORMING THIS ONE PIECE INSTALLATION. SEE STD. DWG. EXJ-4-87 FOR CONSTRUCTION PROCEDURE.

21. ABUTMENT BACKFILL :

ABUTMENT BACKFILL ABOVE THE BRIDGE SEAT SHALL NOT BE PLACED UNTIL AFTER THE CONCRETE DECK SLAB HAS CURED FOR AT LEAST 48 HOURS. BACKFILL SHALL THEN BE PLACED SIMULTANEOUSLY AT BOTH ABUTMENTS.

22. ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN
 THE MATERIAL SHALL BE NO. 57 GRAVEL.

23. INSPECTION OF STRUCTURAL STEEL :

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK) FOR PAYMENT.

24. ITEM 513 - STRUCTURAL STEEL REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

25. ITEM 516 - BEARING DEVICE, MISC.: REPLACE AND SHIM ABUTMENT BEARINGS

THIS ITEM SHALL CONSIST OF REPLACING AND RESETTING ALL OF THE EXISTING ROCKER BEARINGS AT ABUTMENTS.

THE WORK SHALL INCLUDE ALL WORK NECESSARY TO REPLACE THE EXISTING BEARINGS WITH NEW BEARINGS OF THE SAME TYPE, PROPERLY ALIGN THE BEARINGS AS WELL AS PAINTING BY SYSTEM "IZEU", INSTALL SHEET LEAD (711.19) AND ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REPLACE THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60° F, LUBRICATE SLIDING SURFACES, AND REASSEMBLY OF THE BEARING.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". ALL WORKS SHALL BE TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - BEARING DEVICE, MISC.: REPLACE AND SHIM ABUTMENT BEARINGS.

26. ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH.

THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

DRAWING = G-NOTES2 DATE = NOVEMBER 14, 1996

GENERAL NOTES BRIDGE NO. LOR-10-0001 BL & LOR-20-1587 R OVER S.R. 57	DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114
DESIGNED PSS CHECKED VKB	DRAWN RS REVISIONS
REVIEWED BRS DATE 12/96	STRUCTURE FILE NUMBER 4701410, 4703456
6 / 36	LOR-20-12.62 291 351

GENERAL NOTES

27. PAINING OF STRUCTURAL STEEL

THE NEW STEEL SHALL NOT BE SHOP PRIMED. BOTH THE NEW AND EXISTING STEEL SHALL BE CLEANED AND PAINTED AS PER THE OZEU SYSTEM IN SUPPLEMENTAL SPECIFICATION 815.

28. ITEMS 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

29. ITEMS 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

30. CONCRETE PARAPETS - SHRINKAGE CRACK CONTROL JOINTS :

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1 INCH DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT THE LOCATIONS AS SHOWN ON PLANS.

THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4". THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1 INCH WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

31. CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN

AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES SHALL BE RESTORED TO A UNIFORM PLANE SURFACE WITH CRUSHED AGGREGATE SLOPE PROTECTION. NEW EMBANKMENT SURFACES SHALL BE PROTECTED AS SPECIFIED IN 601.05. PROTECTION SHALL EXTEND LONGITUDINALLY FROM FACE OF ABUTMENTS TO THE TOE OF SLOPE AND Laterally TO AT LEAST 3'-0" BEYOND DECK FASCIA. THE MINIMUM TOTAL THICKNESS OF PROPOSED PROTECTION (RESTORED AND NEW) SHALL BE 1'-0".

32. CONSTRUCTION SEQUENCE :

PHASE 1 CONSTRUCTION - BRIDGE NO. LOR-20-1587 R

PHASE 2 CONSTRUCTION - BRIDGE NO. LOR-10-0001 BL

33. ABBREVIATIONS :

THE FOLLOWING ABBREVIATIONS ARE USED IN THIS PROJECT.

⊙	- AT	INT.	- INTERMEDIATE
&	- AND	INV.	- INVERT
A.P.P.	- AS PER PLAN	I.R.	- INSIDE RADIUS
BOT.	- BOTTOM	L	- ANGLE
BRG.	- BEARING	MAX.	- MAXIMUM
C/C	- CENTER TO CENTER	MIN.	- MINIMUM
C.J.	- CONSTRUCTION JOINT	N.F.	- NEAR FACE
Ⓞ	- CENTER LINE	O/O	- OUT TO OUT
CLR.	- CLEAR, CLEARANCE	P.E.J.F.	- PREFORMED EXPANSION JOINT FILLER
C.M.P.	- CORRUGATED METAL PIPE	PL	- PLATE
DIA.	- DIAMETER	REF.	- REFERENCE
DWG.	- DRAWING	REQ.	- REQUIRED
E.B.	- EASTBOUND	SER.	- SERIES
E.F.	- EACH FACE	SPA.	- SPACING
E.J.	- EXPANSION JOINT	STD.	- STANDARD
EL.	- ELEVATION	STR.	- STRAIGHT
EXIST.	- EXISTING	T/T	- TOE TO TOE
EXP.	- EXPANSION	TYP.	- TYPICAL
F.F.	- FAR FACE	VERT.	- VERTICAL
FIX.	- FIXED	W.B.	- WESTBOUND
INCR.	- INCREMENT		

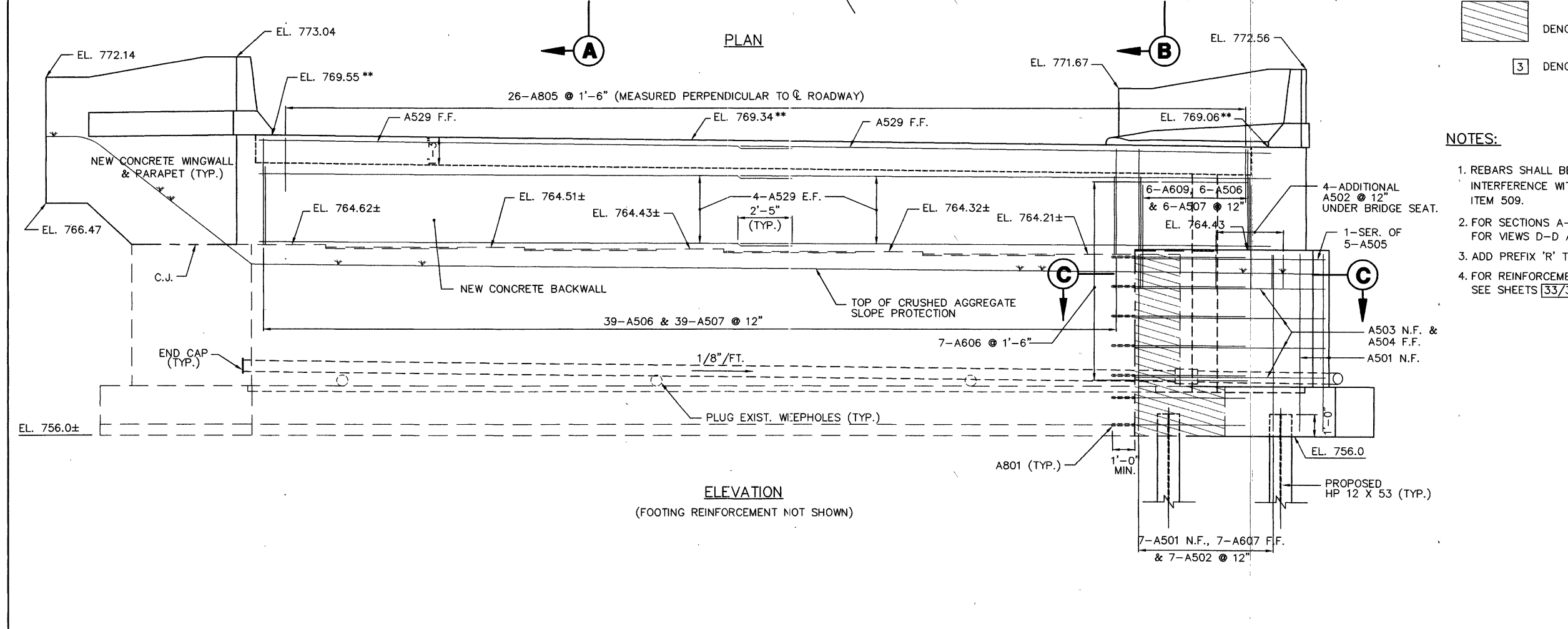
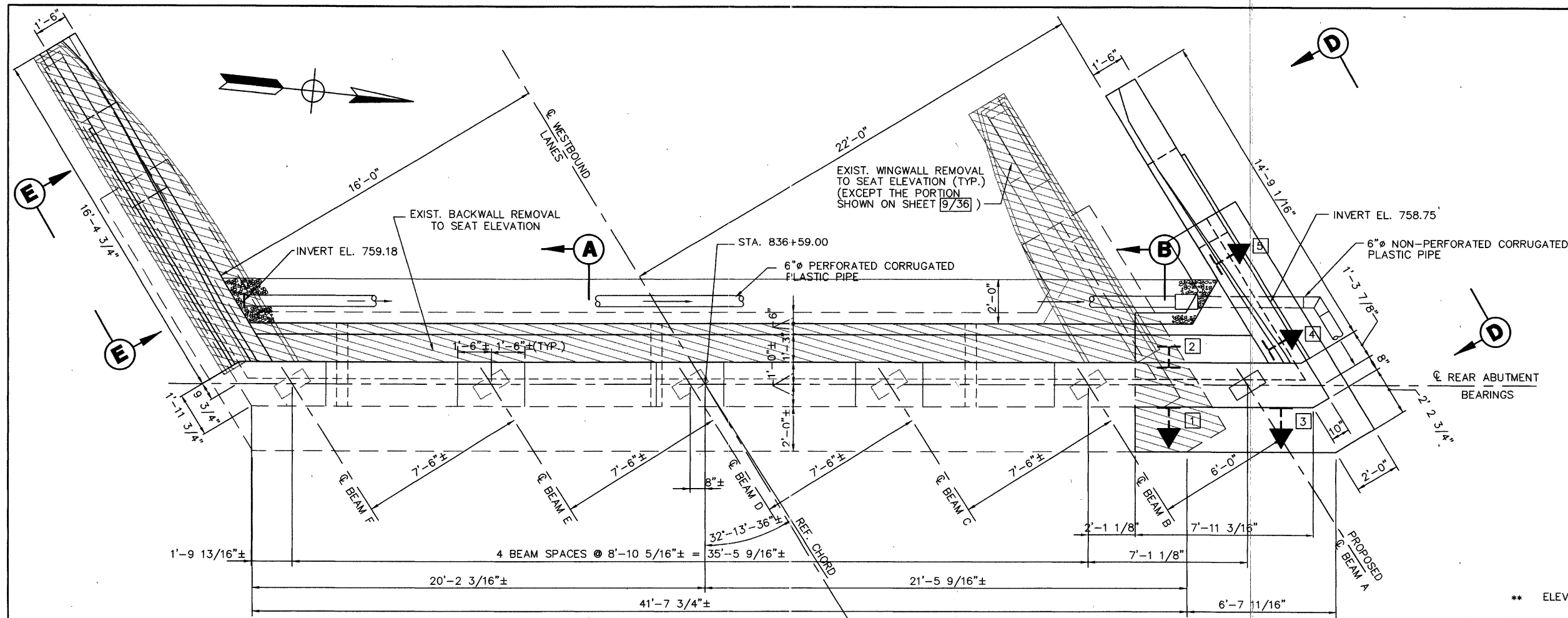
34. ITEM SPECIAL - HIGH PERFORMANCE CONCRETE

HIGH PERFORMANCE CONCRETE SHALL NOT BE POURED BETWEEN OCTOBER 15 AND APRIL 30.

DATE = NOVEMBER 14, 1996

DRAWING = G-NOTES3

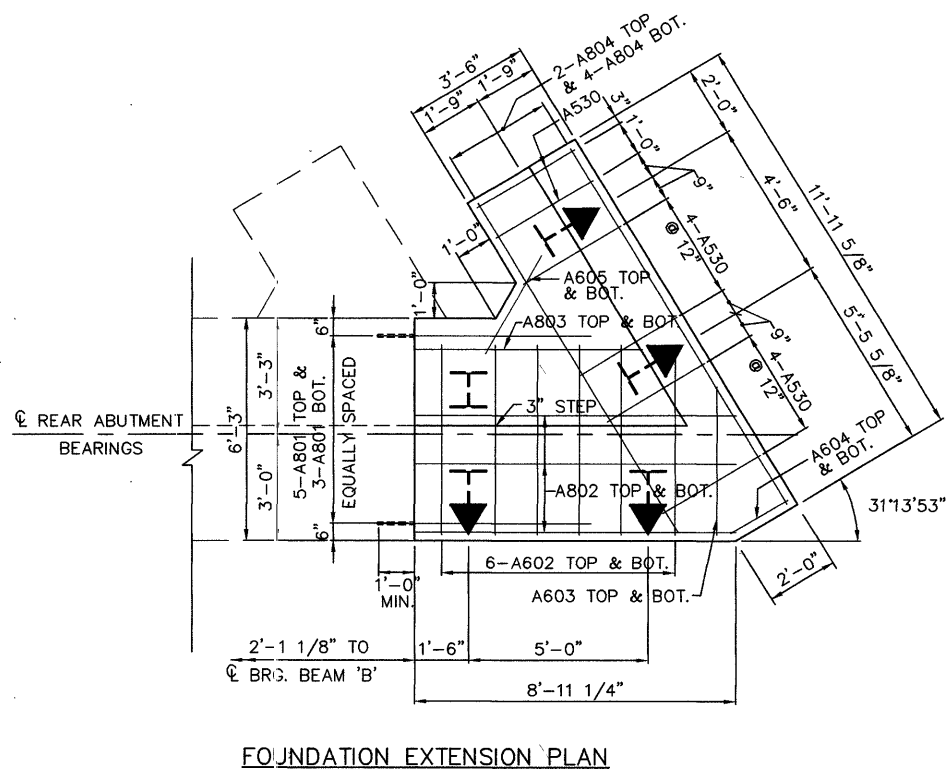
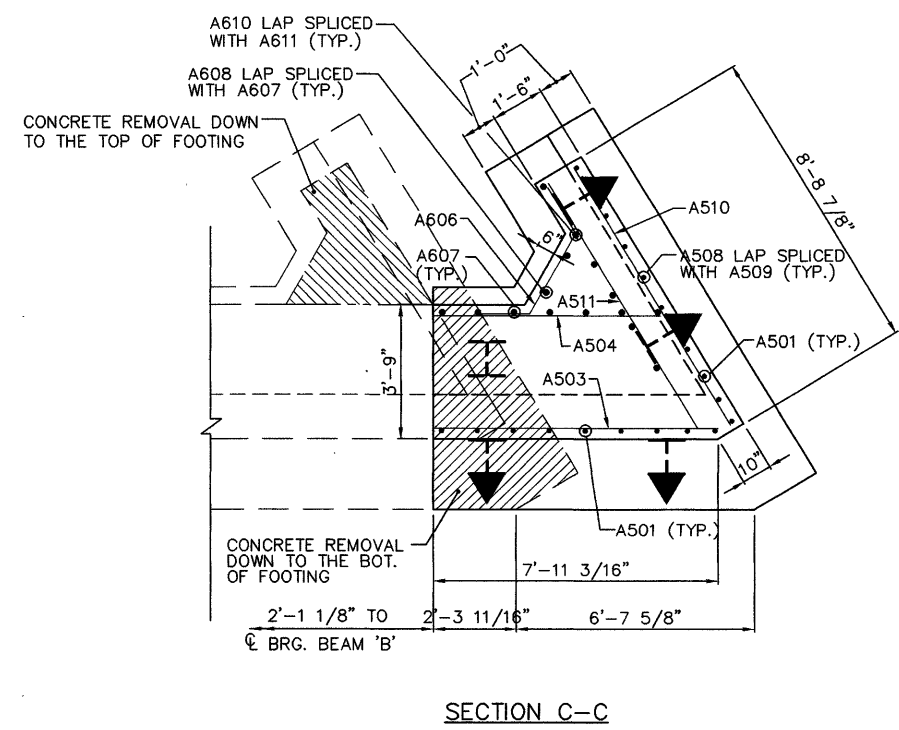
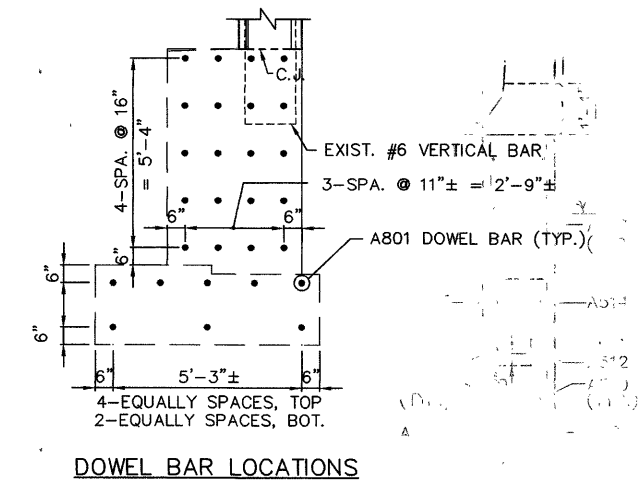
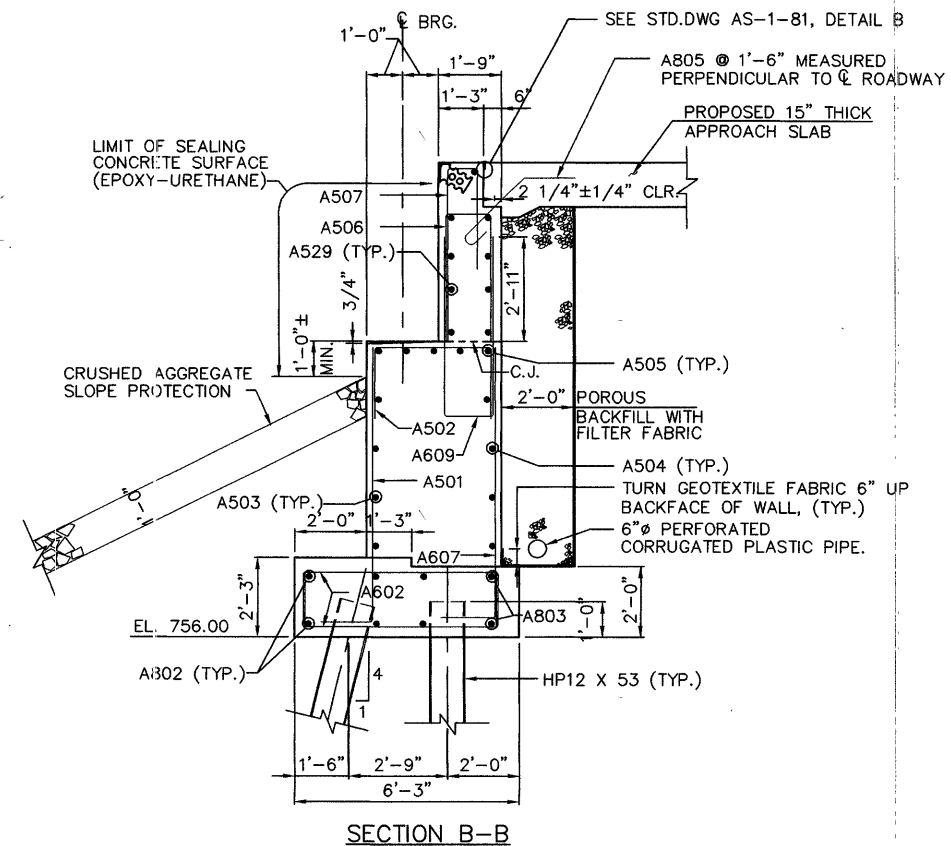
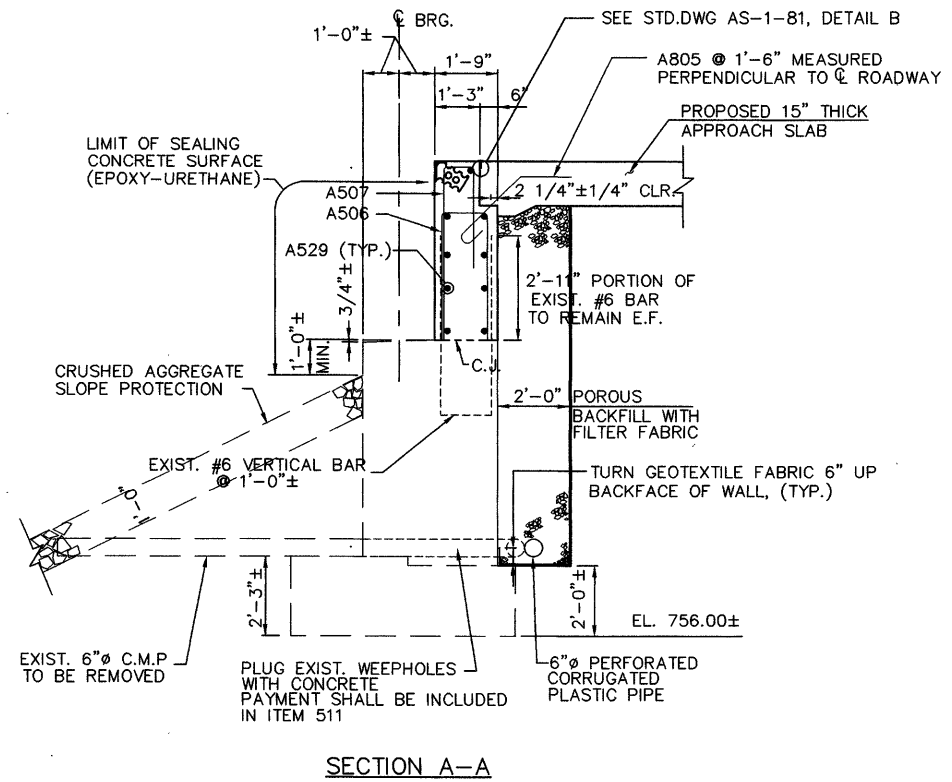
DRAWING = S-RABUTL DATE = NOVEMBER 15, 1996



- ** ELEVATION GIVEN AT FRONT FACE OF BACKWALL
- DENOTES LIMITS OF CONCRETE REMOVAL
- 3** DENOTES PILE NUMBER

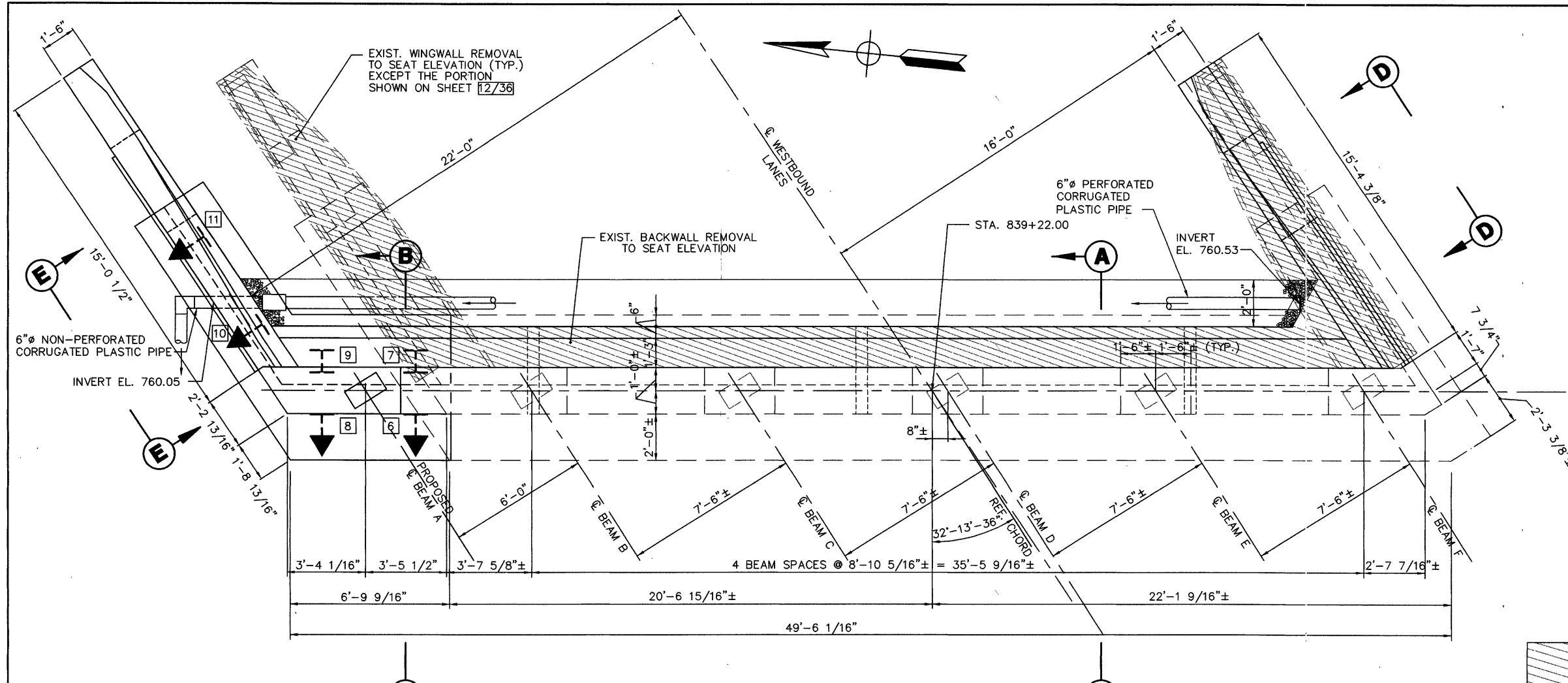
- NOTES:**
1. REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
 2. FOR SECTIONS A-A, B-B AND C-C, SEE SHEET **9/36** FOR VIEWS D-D AND E-E, SEE SHEET **10/36**
 3. ADD PREFIX 'R' TO ALL REBARS ON REAR ABUTMENT.
 4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS **33/36** AND **34/36**

DRAWING = S-RAFTGL DATE = NOVEMBER 15, 1996

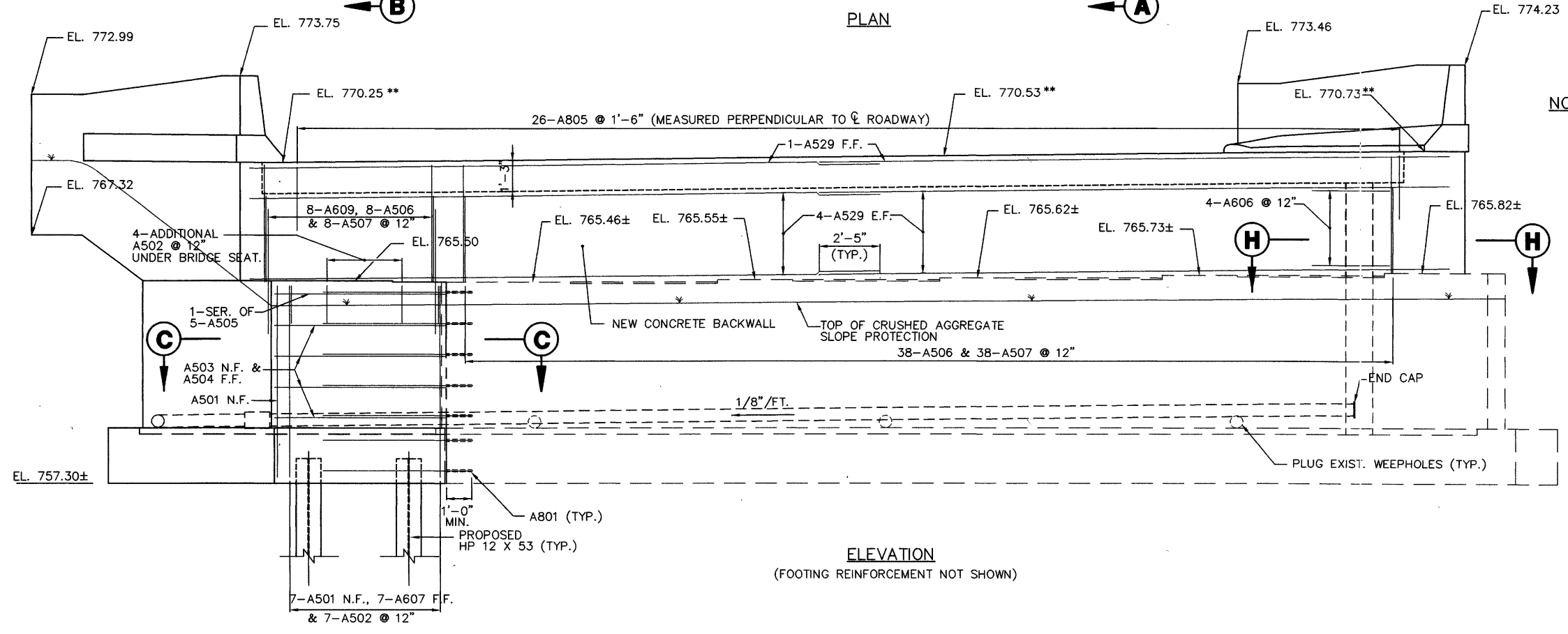


- NOTES:**
- REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
 - FOR LOCATIONS OF SECTIONS A-A, B-B AND C-C, SEE SHEET 8/36
 - ADD PREFIX 'R' TO ALL REBARS ON REAR ABUTMENT WINGWALLS.
 - FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 33/36 AND 34/36
 - POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.

DRAWING = S-FABUTL DATE = NOVEMBER 15, 1996



PLAN



ELEVATION

(FOOTING REINFORCEMENT NOT SHOWN)

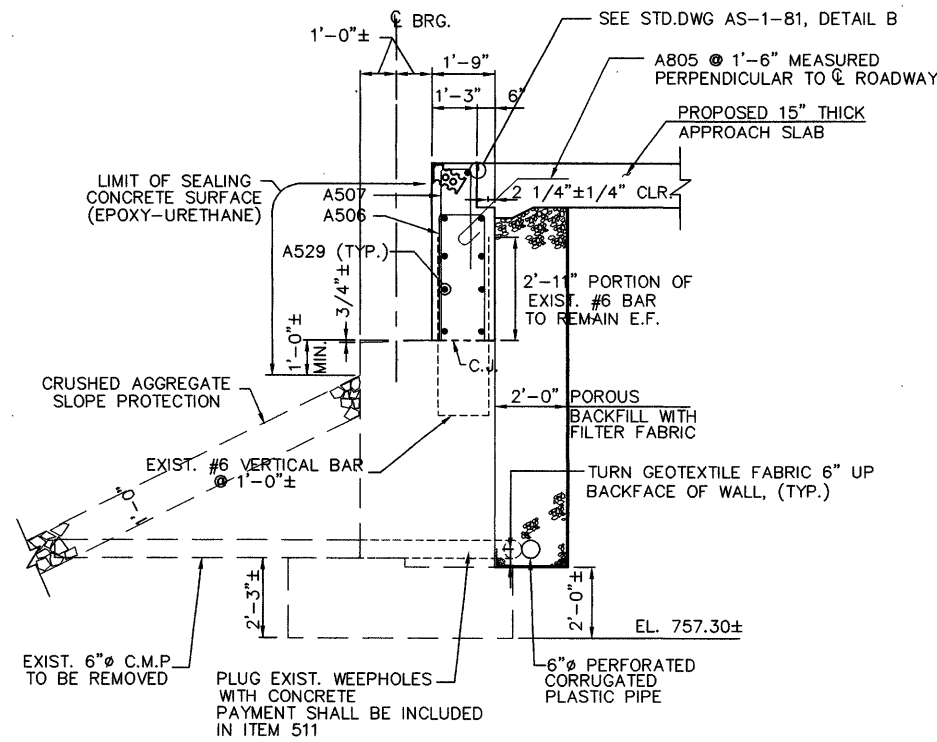
NOTE:

1. REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
2. FOR SECTIONS A-A, B-B, C-C AND H-H, SEE SHEET 12/36 FOR VIEWS D-D AND E-E, SEE SHEET 13/36
3. ADD PREFIX 'F' TO ALL REBARS ON FORWARD ABUTMENT.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 33/36 AND 34/36

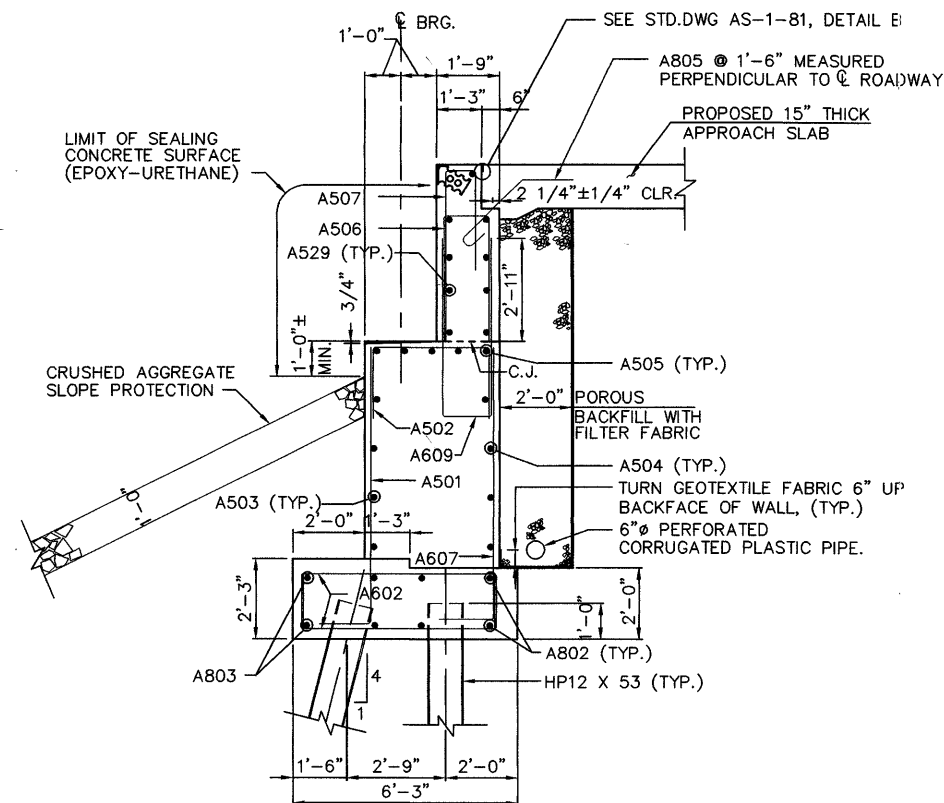
- ** ELEVATION GIVEN AT FRONT FACE OF BACKWALL
- [Hatched Box] DENOTES LIMITS OF CONCRETE REMOVAL
- [6] DENOTES PILE NUMBER

DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114	
DATE 12/96	REVIEWED VKB
DESIGNED PSS	DRAWN PSS
CHECKED YSS	REVISED
STRUCTURE FILE NUMBER 4701410	
FORWARD ABUTMENT DETAILS BRIDGE NO. LOR-10-0001 BL OVER S.R. 57	
LOR-20-12.62	
11/36	
296 351	

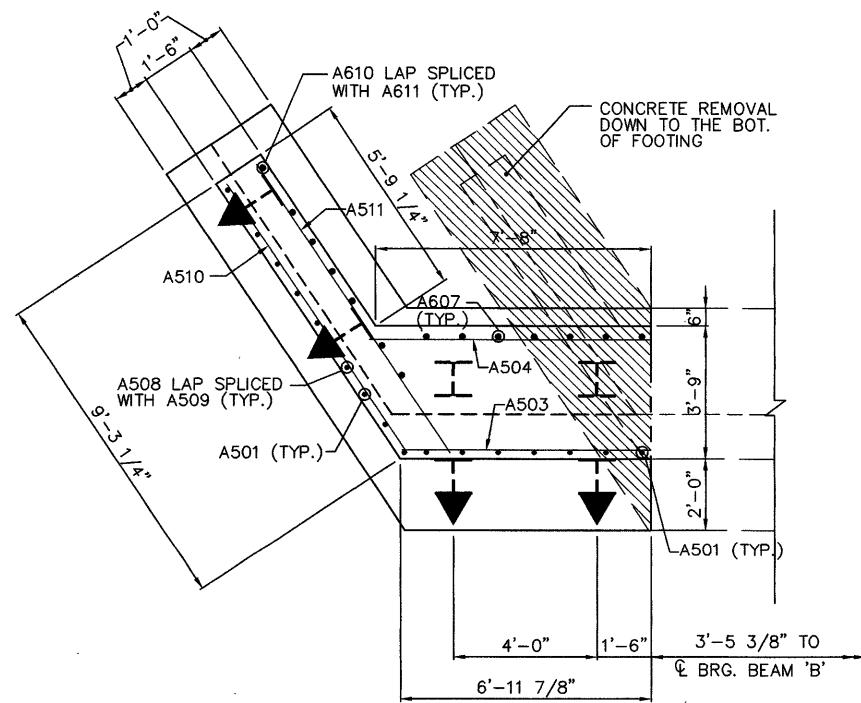
DRAWING = S-FAFTGL DATE = NOVEMBER 15, 1996



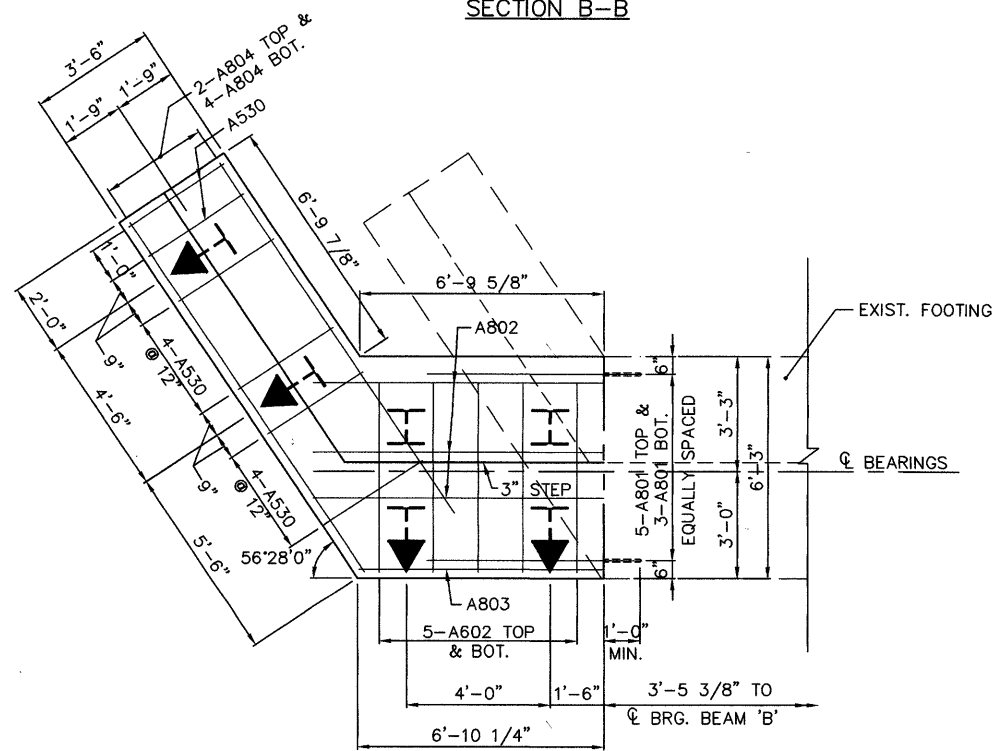
SECTION A-A



SECTION B-B



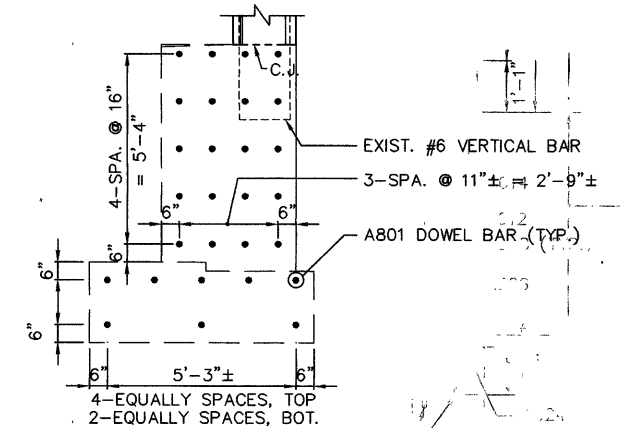
SECTION C-C



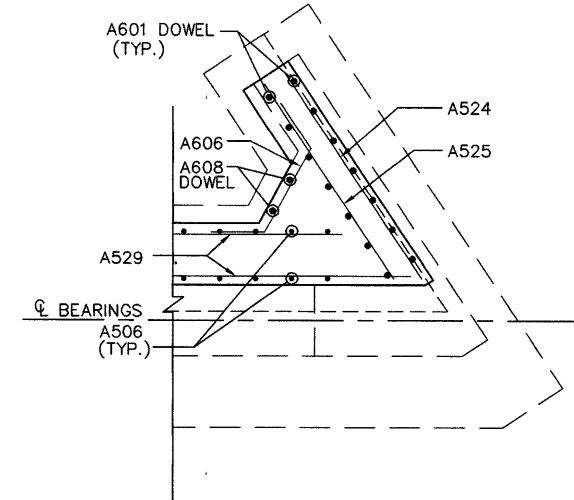
FOUNDATION EXTENSION PLAN

NOTES:

1. REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
2. FOR LOCATIONS OF SECTIONS A-A, B-B, C-C AND H-H, SEE SHEET 117/36
3. ADD PREFIX 'F' TO ALL REBARS ON FORWARD ABUTMENT.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 33/36 AND 34/36
5. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.

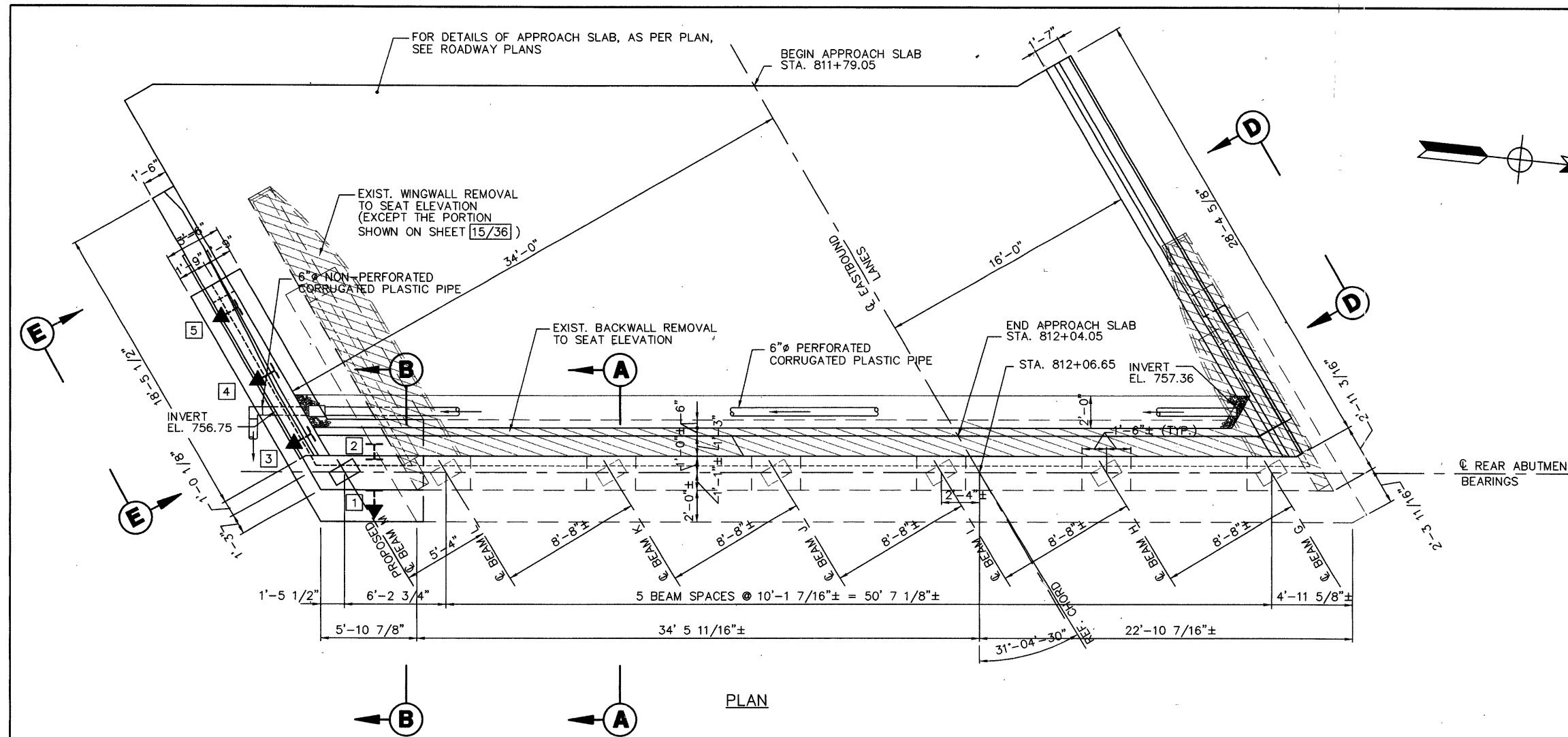


DOWEL BAR LOCATIONS

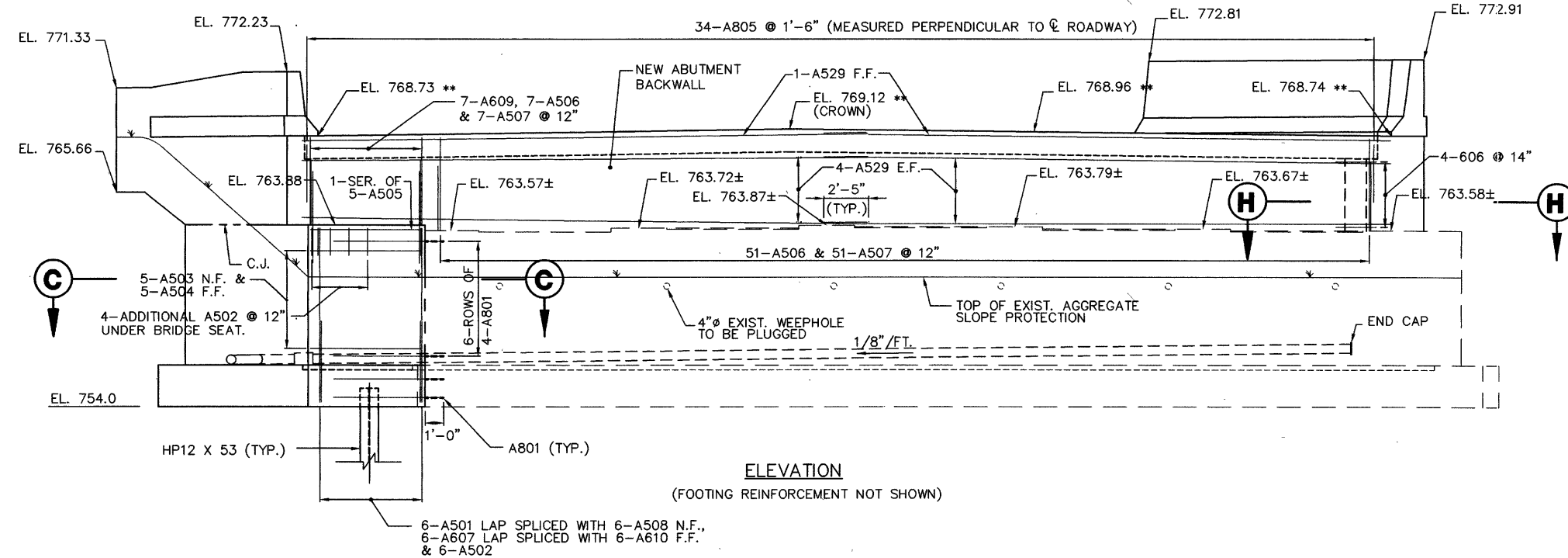


SECTION H-H

DRAWING = S-RABUTR DATE = NOVEMBER 15, 1996

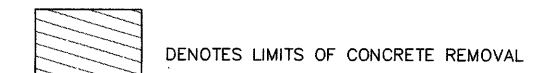


PLAN



ELEVATION
(FOOTING REINFORCEMENT NOT SHOWN)

** ELEVATION GIVEN AT FRONT FACE OF BACKWALL

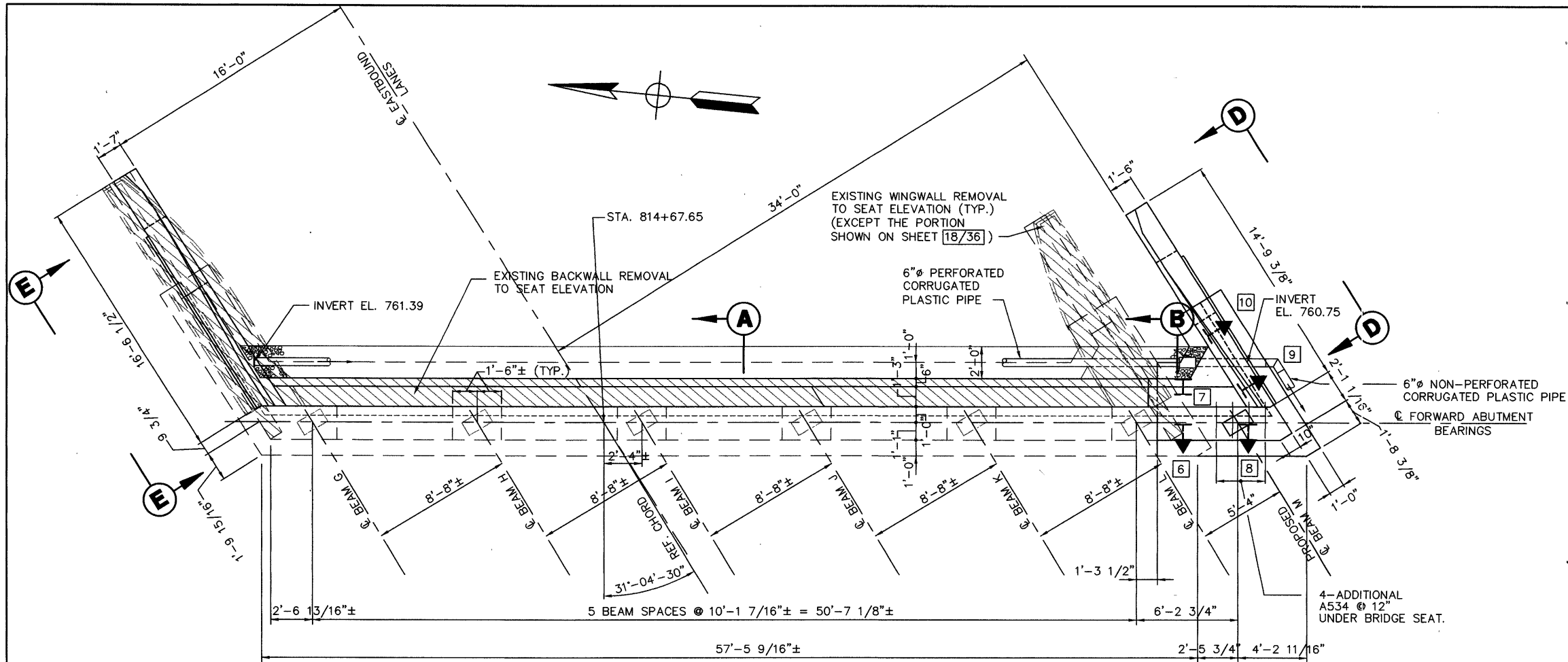


1 DENOTES PILE NUMBER

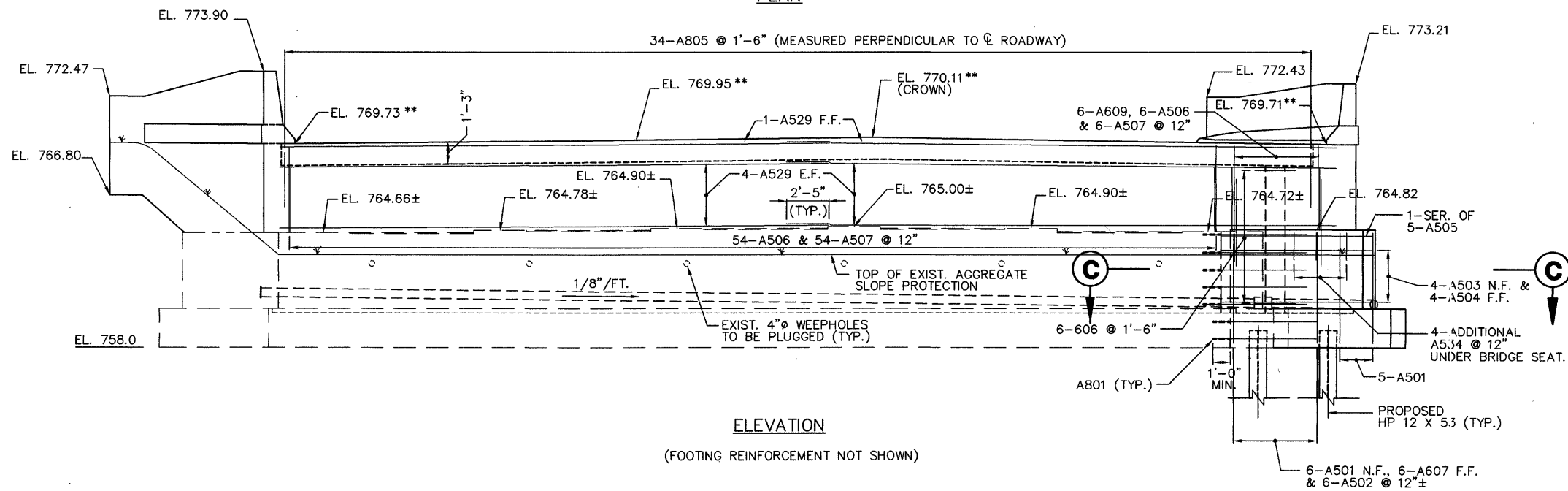
NOTE:

1. REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
2. FOR SECTIONS A-A, B-B, C-C AND H-H, SEE SHEET 15/36 FOR VIEWS D-D AND E-E, SEE SHEET 16/36
3. ADD PREFIX 'R' TO ALL REBARS ON REAR ABUTMENT.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 35/36 AND 36/36

DRAWING = S-FABUTR DATE = NOVEMBER 15, 1996



PLAN



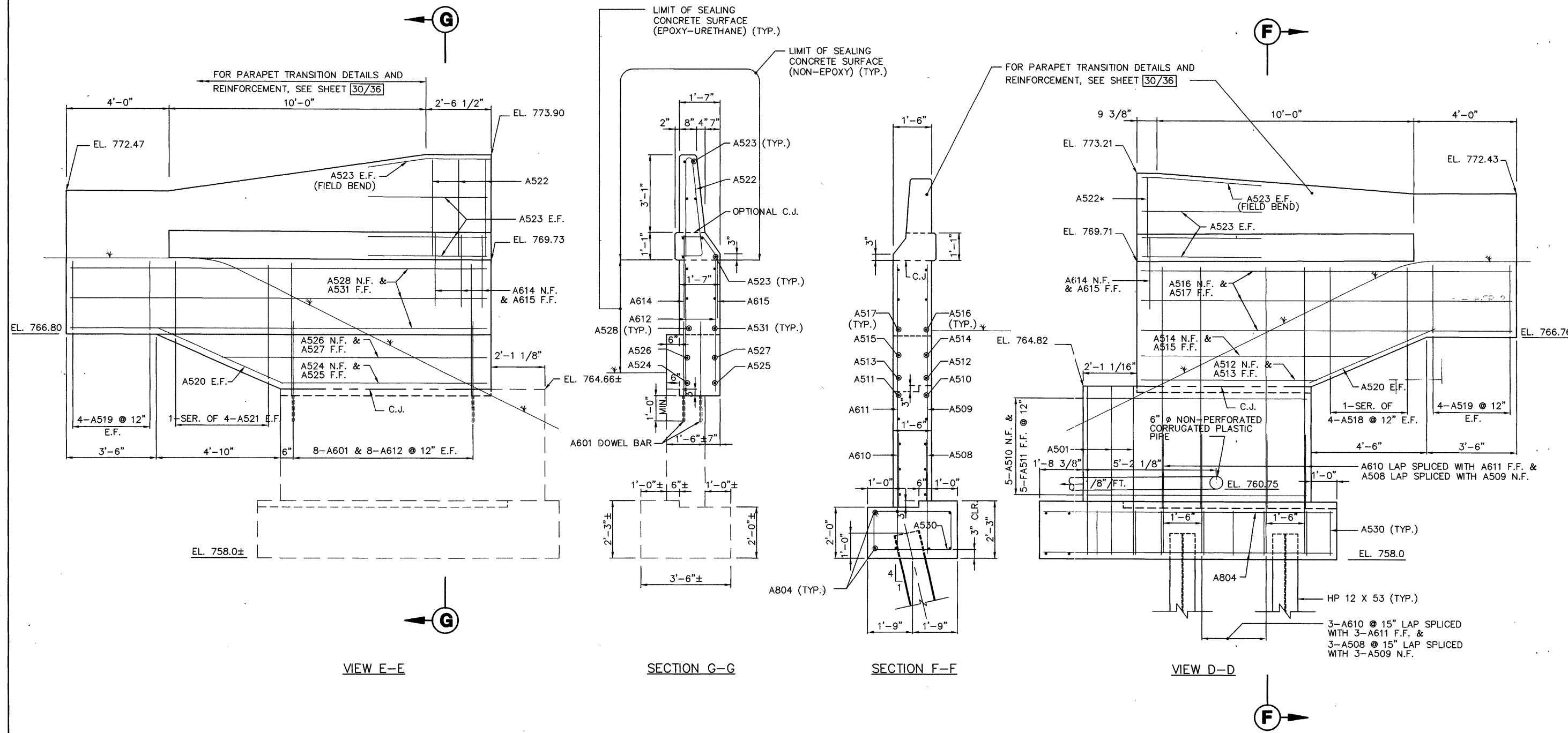
ELEVATION
(FOOTING REINFORCEMENT NOT SHOWN)

- ** ELEVATION GIVEN AT FRONT FACE OF BACKWALL
- DENOTES LIMITS OF CONCRETE REMOVAL
- DENOTES PILE NUMBER

NOTE:

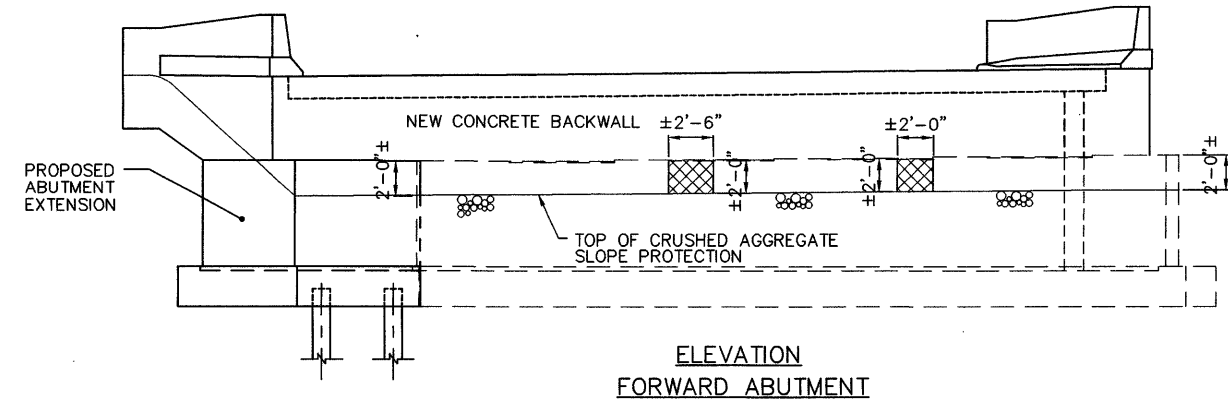
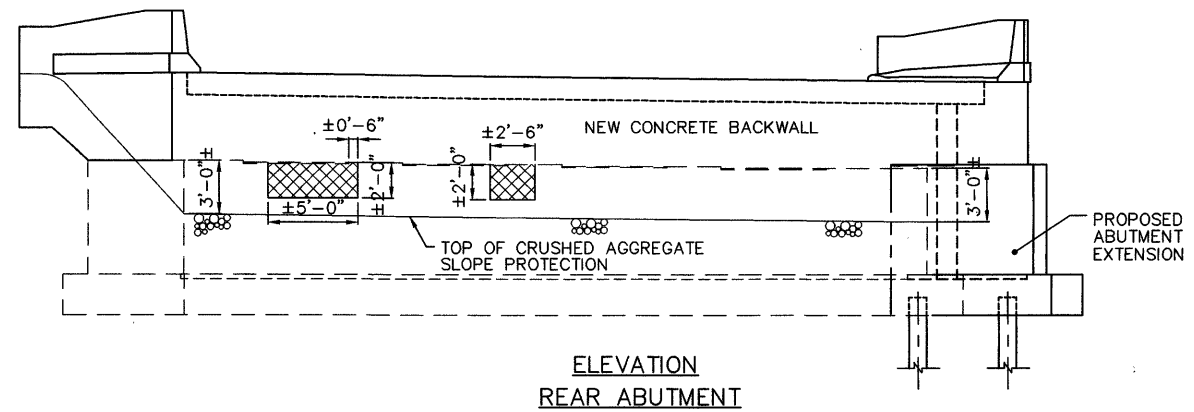
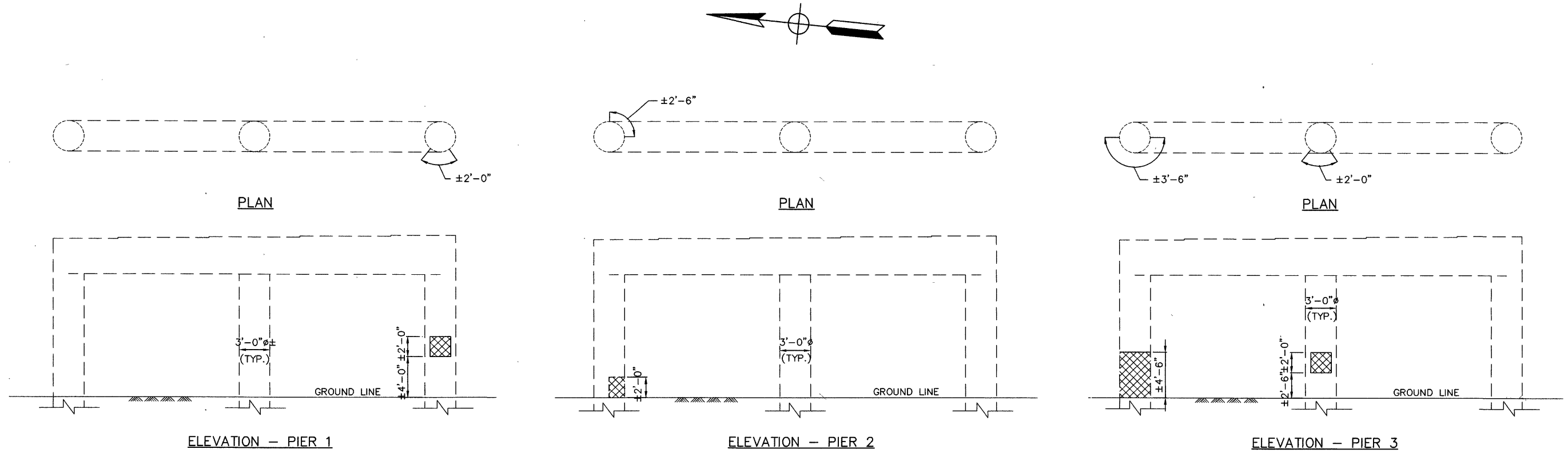
1. REBARS SHALL BE FIELD ADJUSTED OR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
2. FOR SECTIONS A-A, B-B AND C-C. SEE SHEET 18/36 FOR VIEWS D-D AND E-E, SEE SHEET 19/36
3. ADD PREFIX 'F' TO ALL REBARS ON FORWARD ABUTMENT.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 35/36 AND 36/36

DRAWING = S-FWINCR DATE = NOVEMBER 15, 1996



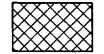
- NOTE:**
- REBARS SHALL BE FIELD ADJUSTED FOR FIELD CUT TO AVOID INTERFERENCE WITH THE PILES. COST SHALL BE INCLUDED WITH ITEM 509.
 - FOR LOCATIONS OF VIEWS D-D AND E-E, SEE SHEET 17/36
 - FOR THE EXTENSION OF THE NON-PERFORATED CORRUGATED PLASTIC PIPE BEYOND THE ABUTMENT WALL AND ITS TERMINATION DETAILS, SEE STD. DWG. A-1-69.
 - FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 35/36 AND 36/36

DRAWING = LFT-PAT DATE = NOVEMBER 14, 1996

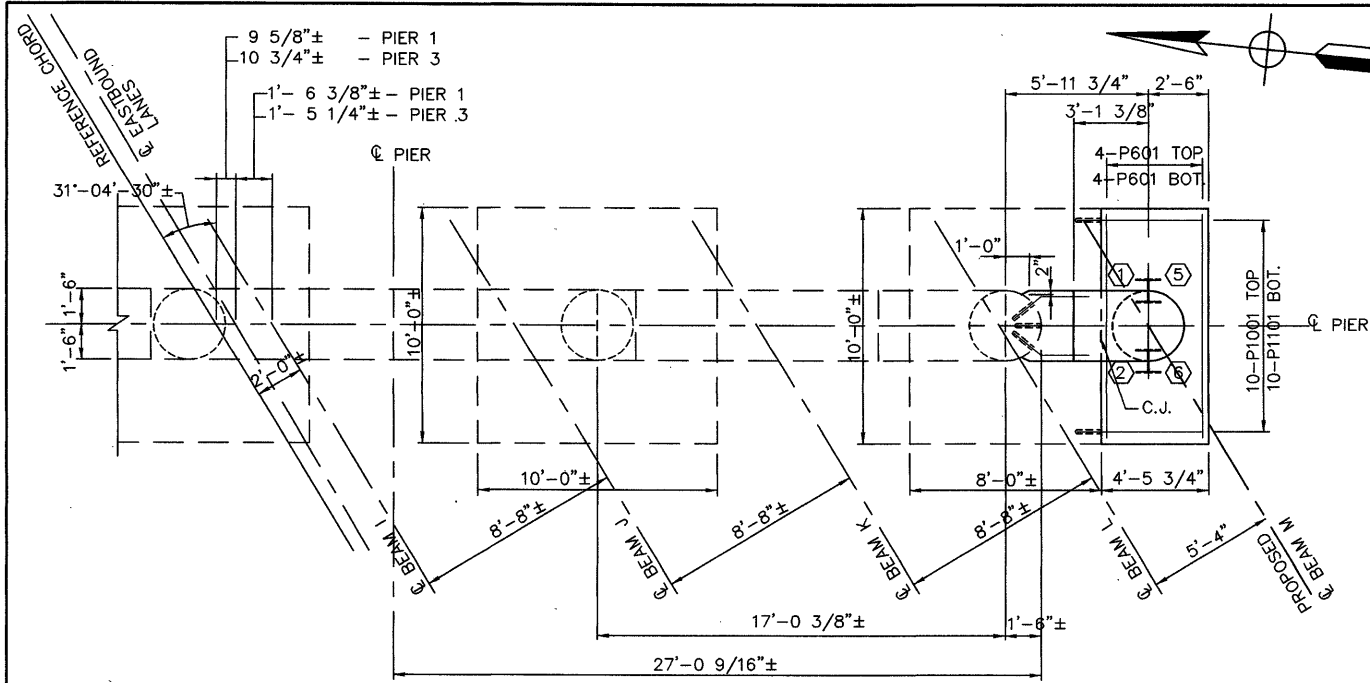


LOCATION	ITEM SPECIAL	100% EXPANSION FACTOR SQ. FT.	TOTAL* SQ. FT.
	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR SQ. FT.		
ABUTMENTS	24	24	48
PIER COLUMNS	29	29	58

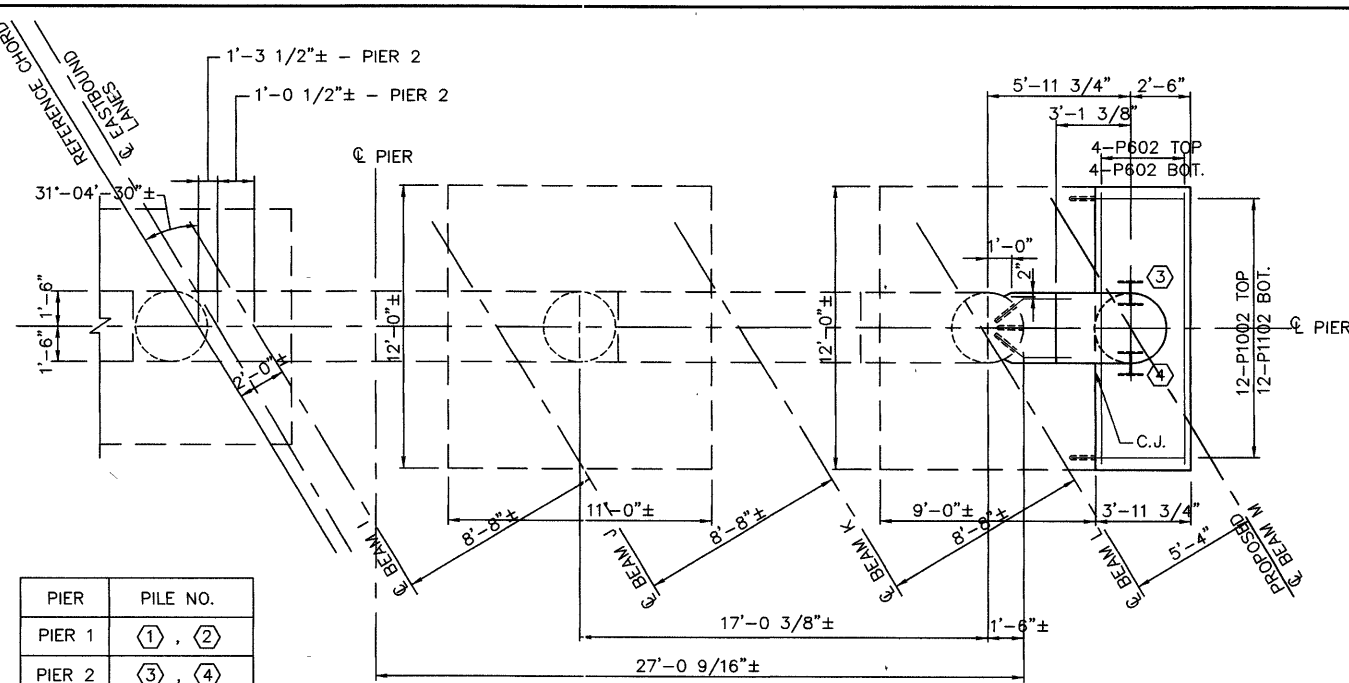
* THIS QUANTITY IS CARRIED TO THE ESTIMATED QUANTITIES SHEET 3/36

 ITEM SPECIAL, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

DRAWING = S-PIER1
 DATE = NOVEMBER 15, 1996

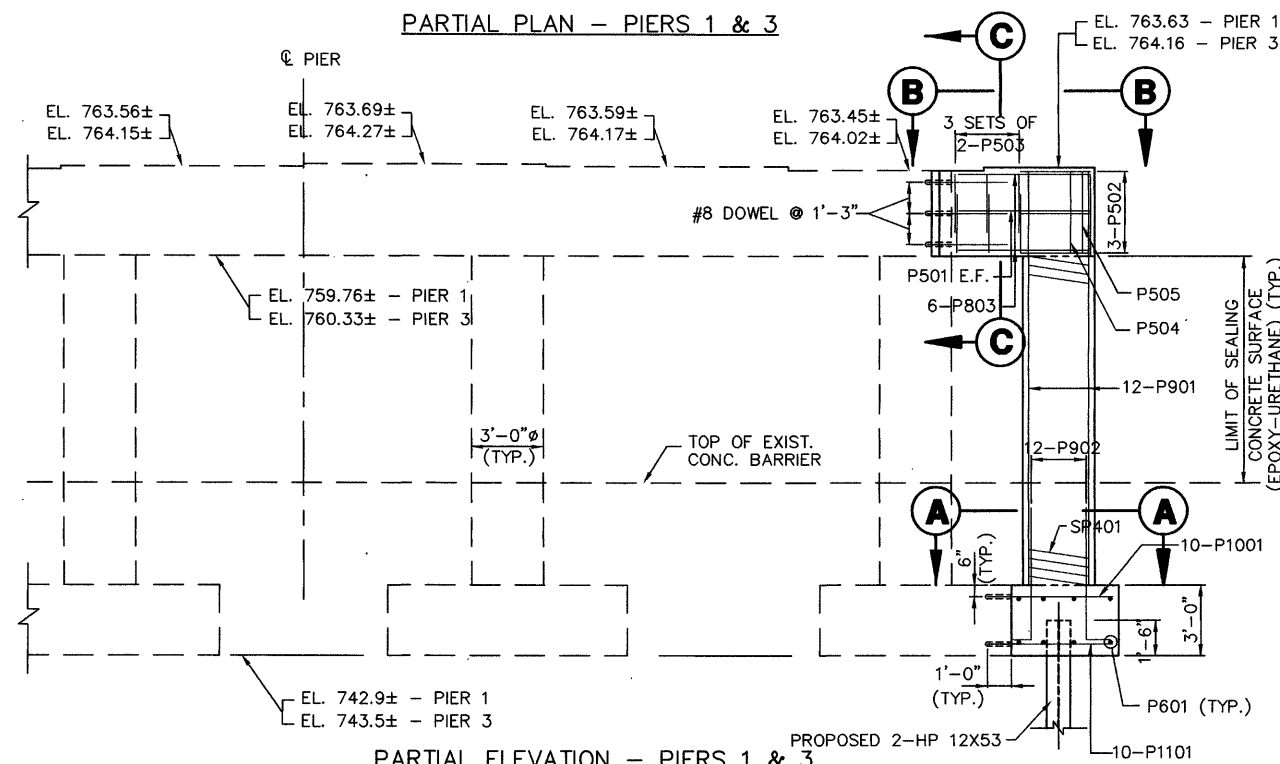


PARTIAL PLAN - PIERS 1 & 3

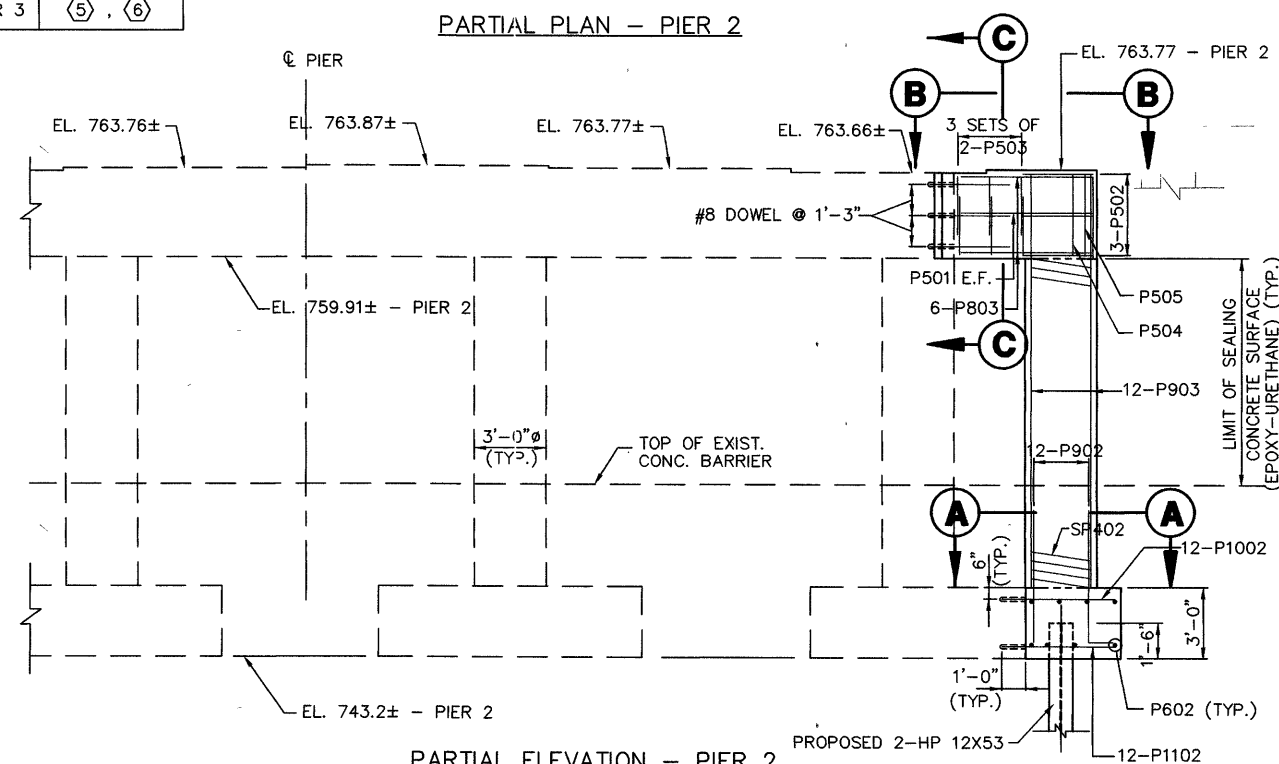


PARTIAL PLAN - PIER 2

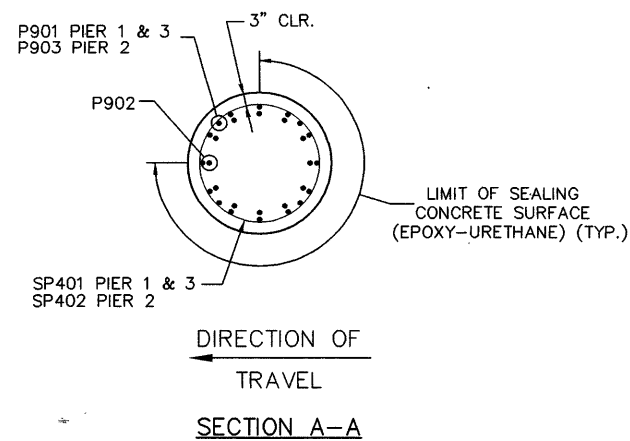
PIER	PILE NO.
PIER 1	(1), (2)
PIER 2	(3), (4)
PIER 3	(5), (6)



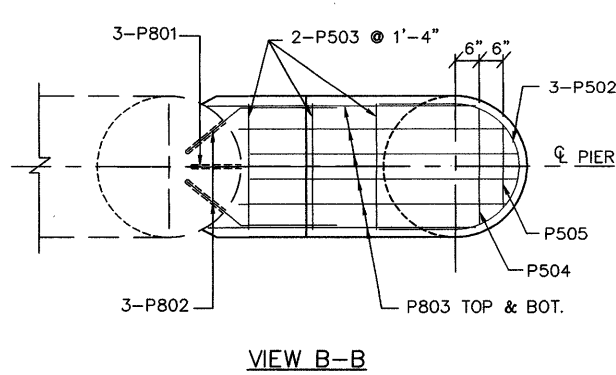
PARTIAL ELEVATION - PIERS 1 & 3



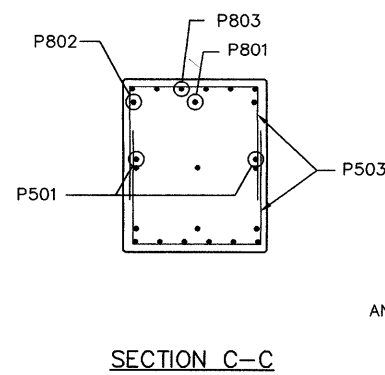
PARTIAL ELEVATION - PIER 2



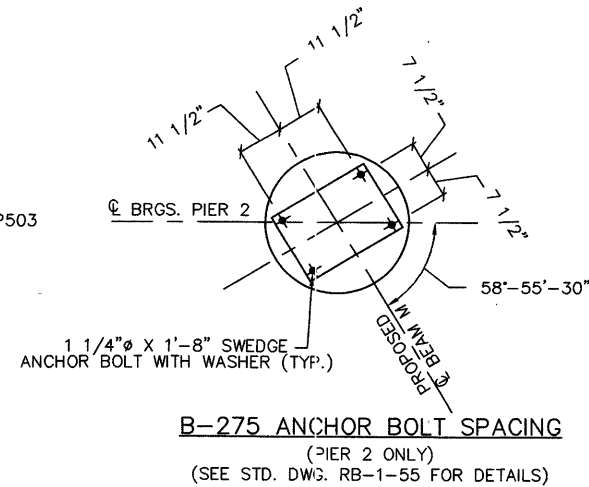
SECTION A-A



VIEW B-B



SECTION C-C



B-275 ANCHOR BOLT SPACING
 (PIER 2 ONLY)
 (SEE STD. DWG. RB-1-55 FOR DETAILS)

NOTES:

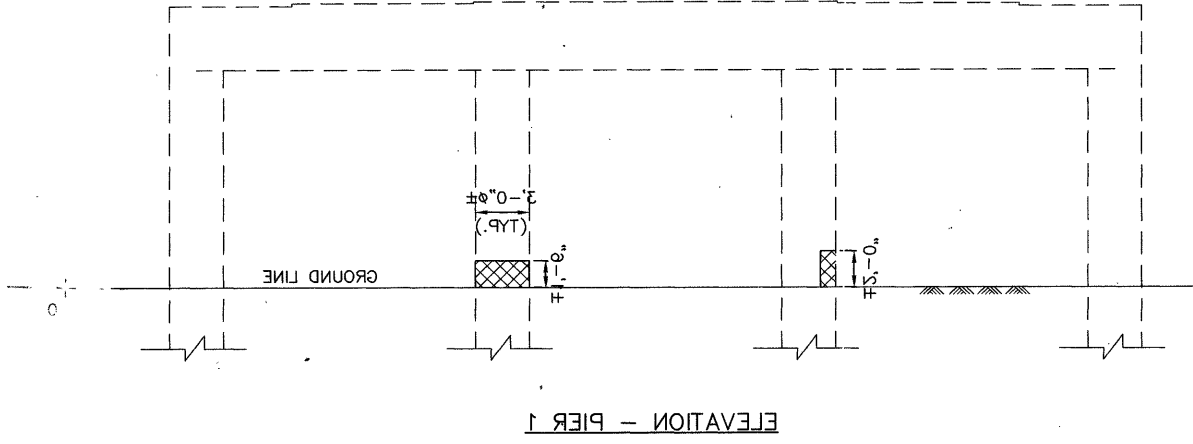
1. DIMENSIONS WITH "±" ARE OBTAINED FROM EXISTING PLANS.
2. FOR ANCHOR BOLT DETAILS SEE STD. DWG. RB-1-55.
3. REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
4. FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS SEE SHEETS 35/36 AND 36/36.
5. ○ DENOTES PILE NUMBER AT THE PIER FOOTING.

TOTAL*	20 FT.	100%	ITEM SPECIAL	
			PIER COLUMNS	ABUTMENTS
22	11	11	20 FT.	20 FT.
100	50	50	20 FT.	20 FT.
20 FT.	20 FT.	100%	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	LOCATION

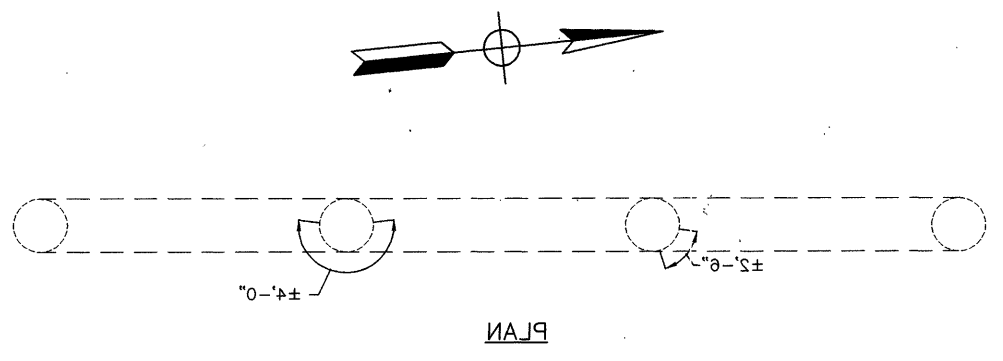
ITEM SPECIAL, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

QUANTITIES SHEET 38

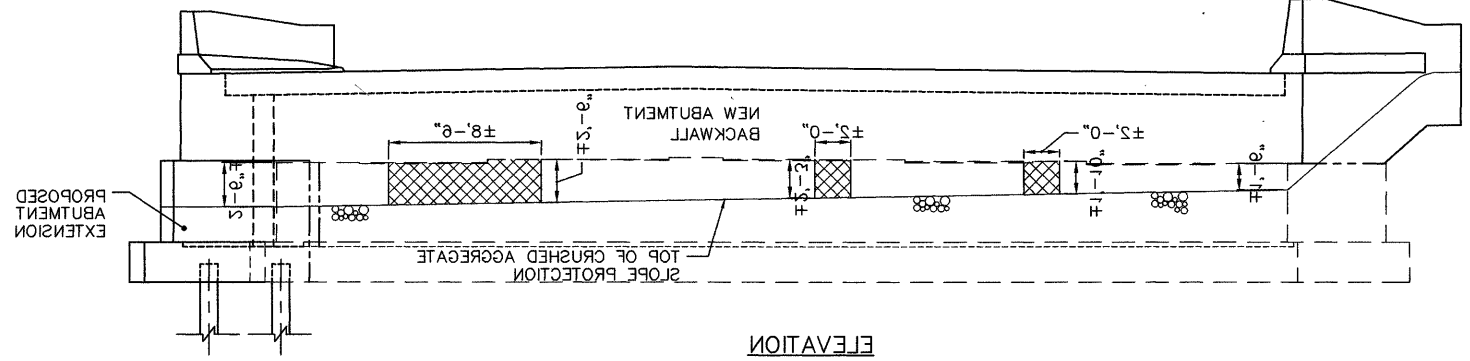
* THIS QUANTITY IS CARRIED TO THE ESTIMATED



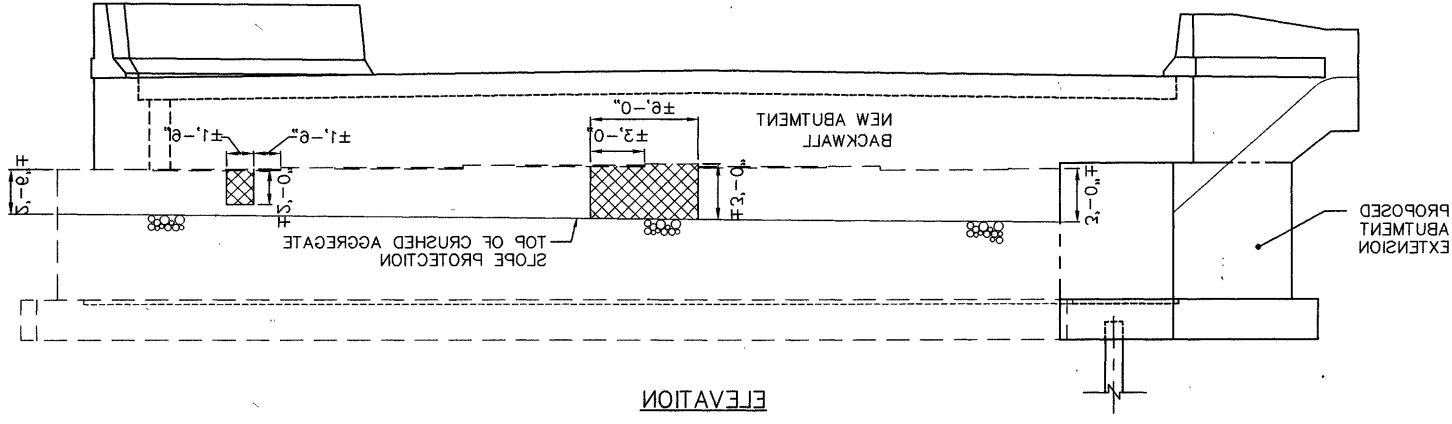
ELEVATION - PIER 1



PLAN

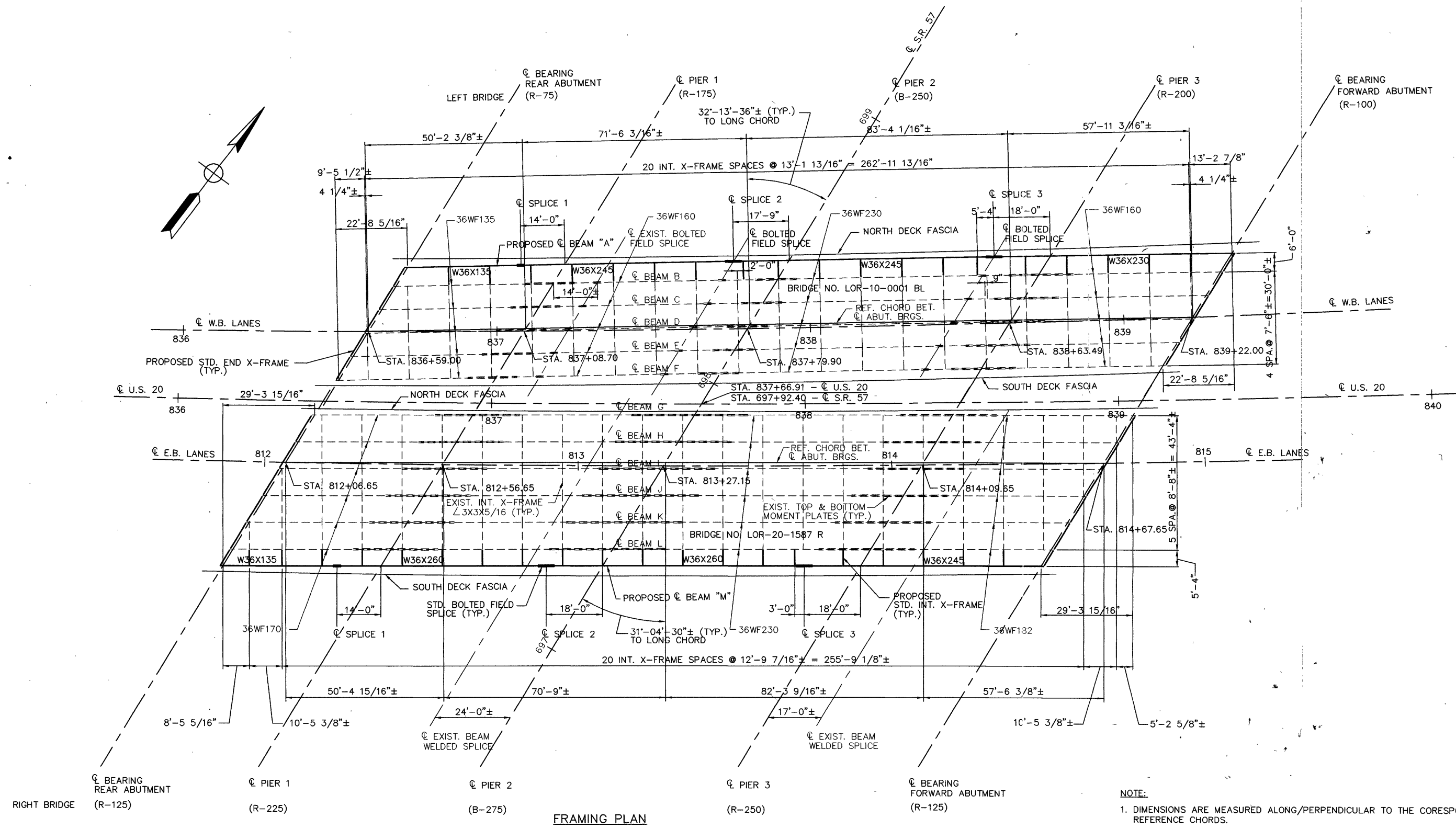


ELEVATION FORWARD ABUTMENT



ELEVATION REAR ABUTMENT

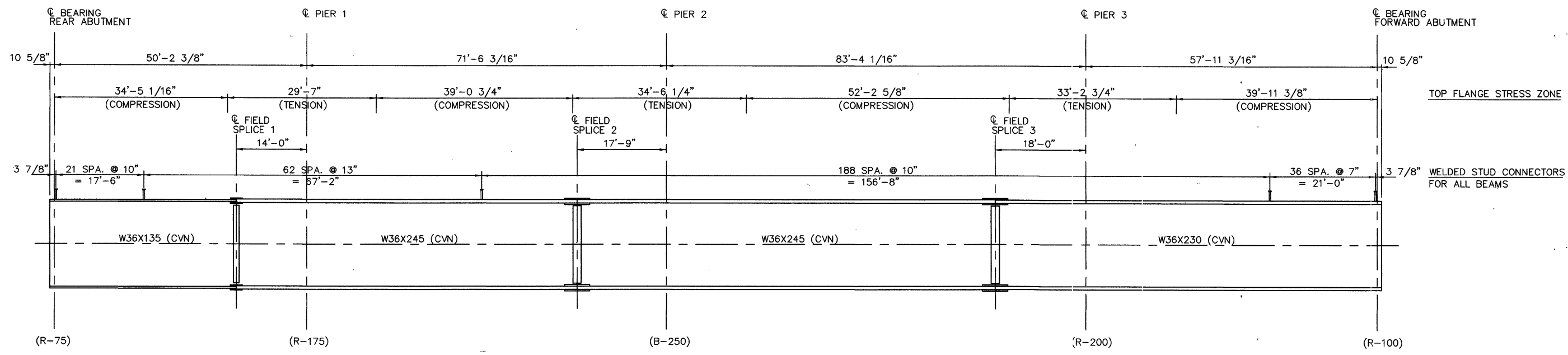
DRAWING = S-FRAME DATE = NOVEMBER 15, 1996



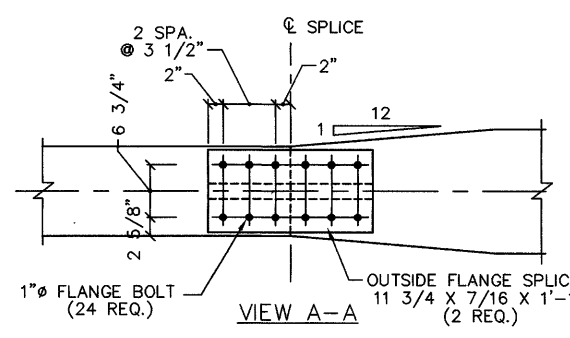
FRAMING PLAN

- NOTE:
1. DIMENSIONS ARE MEASURED ALONG/PERPENDICULAR TO THE CORRESPONDING REFERENCE CHORDS.
 2. FASCIA OF DECK SHALL BE PLACED ON CURVE. BEAMS ARE PARALLEL TO THE CORRESPONDING REFERENCE CHORD AND ARE SPACED AS SHOWN ON PLAN.
 3. FOR PROPOSED BEAM "A" AND SPLICE DETAILS, SEE SHEET [23/36].
 4. FOR PROPOSED BEAM "M" AND SPLICE DETAILS, SEE SHEET [24/36].
 5. FOR INTERMEDIATE AND END CROSSFRAME DETAILS, SEE SHEET [26/36].
 6. FOR ROCKER AND BOLLSTER BEARING DETAILS, SEE STD DWG. RB-1-55.

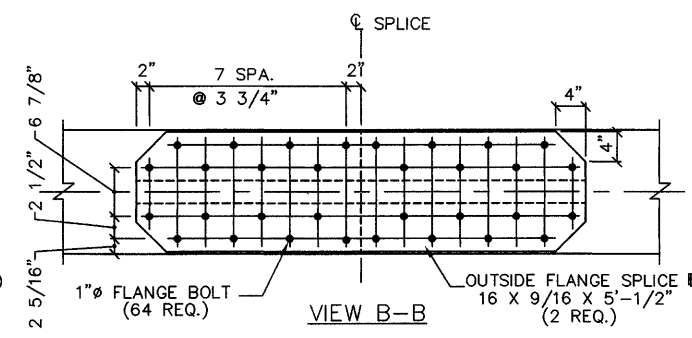
DESIGN AGENCY POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114	DATE	12/96
	REVIEWED	VKB
DRAWN	PSS	REVIS
	DESIGNED	PSS
STRUCTURE FILE NUMBER	4701410	4703456
	BRIDGE NO. LOR-10-0001 BL AND LOR-20-1587 R	OVER S.R. 57
FRAMING PLAN		
LOR-20-12.62		
22/36		
309 351		



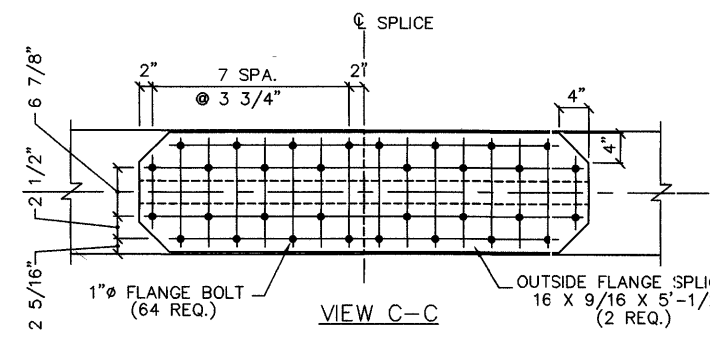
PROPOSED BEAM "A" ELEVATION
(NOT TO SCALE)



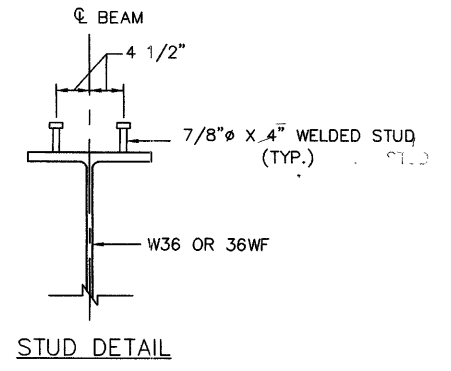
VIEW A-A



VIEW B-B

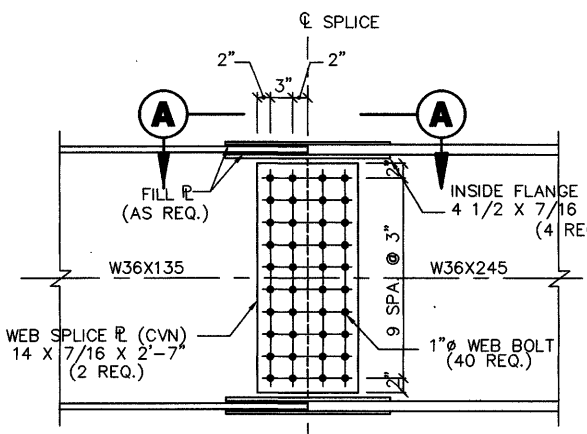


VIEW C-C

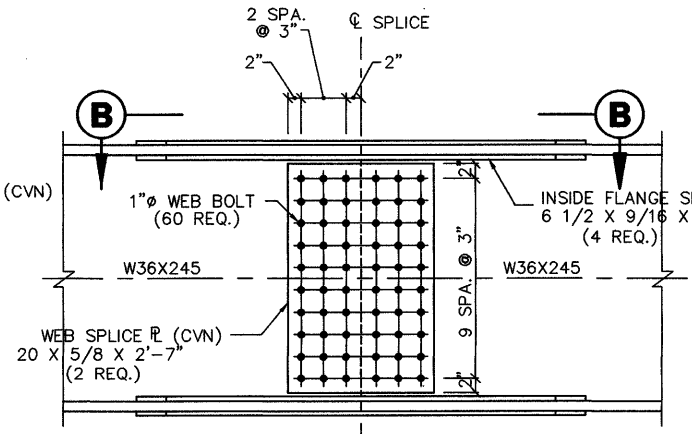


STUD DETAIL

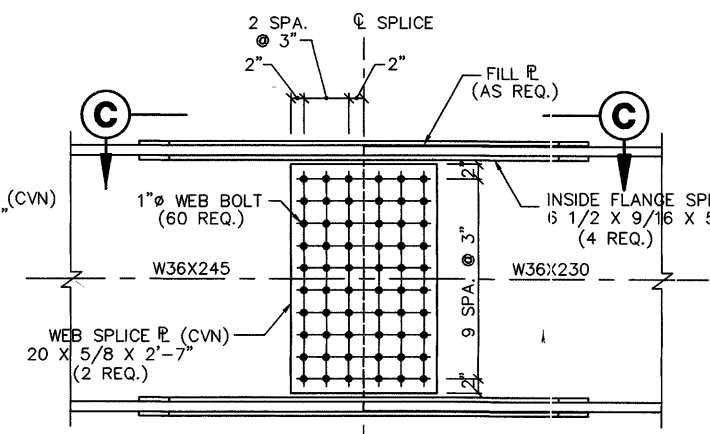
- NOTE :
- MEASUREMENTS ARE GIVEN ALONG THE BEAM CENTERLINE (OR THE REFERENCE CHORD).
 - ALL BOLTS SHALL BE 1"Ø ASTM A-325 AND GALVANIZED. THE BOLTS SHALL BE PLACED WITH THE HEADS ON THE OUTSIDE FACE OF THE EXTERIOR BEAM AND ON THE BOTTOM OF ALL BEAM FLANGES.
 - WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA BEAM FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE; BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
 - FOR MORE INFORMATION ON BOLTED BEAM SPLICE, SEE STD. DWG. BS-1-93.
 - WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.



SPLICE 1 DETAIL

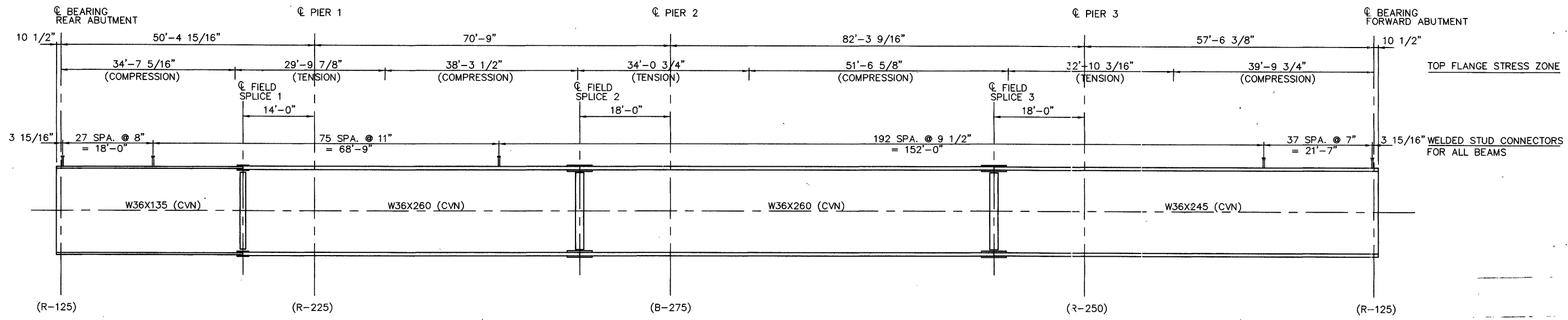


SPLICE 2 DETAIL

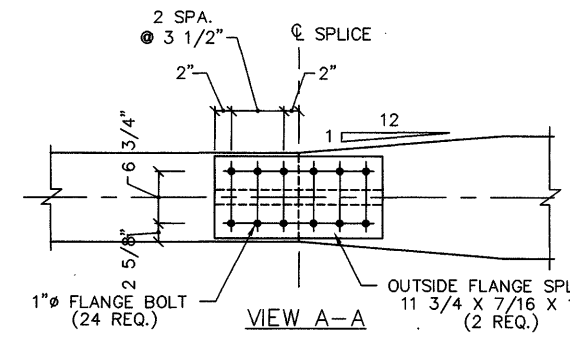


SPLICE 3 DETAIL

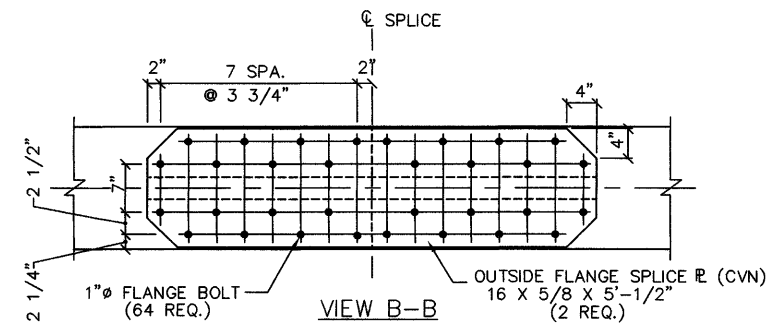
DRAWING = S-BEAMA DATE = NOVEMBER 15, 1996



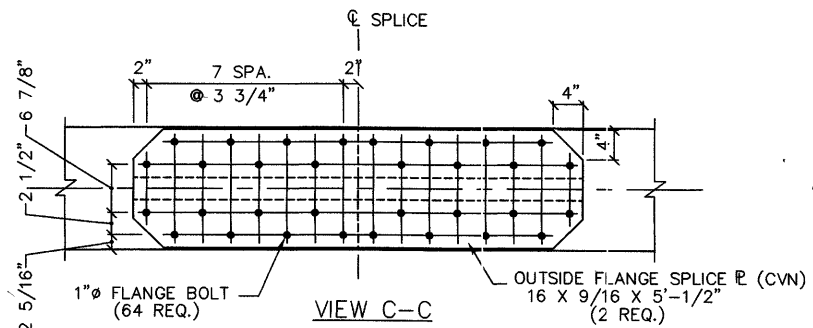
PROPOSED BEAM "M" ELEVATION
(NOT TO SCALE)



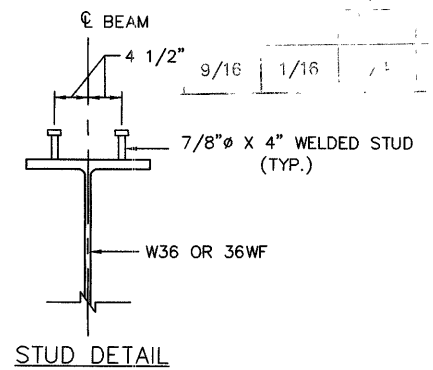
VIEW A-A



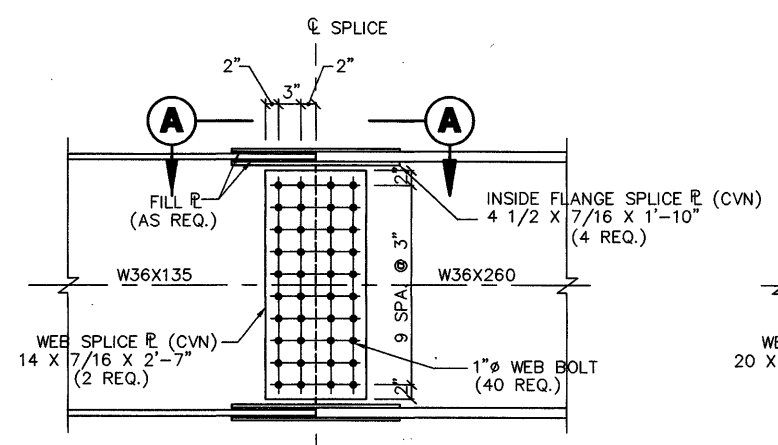
VIEW B-B



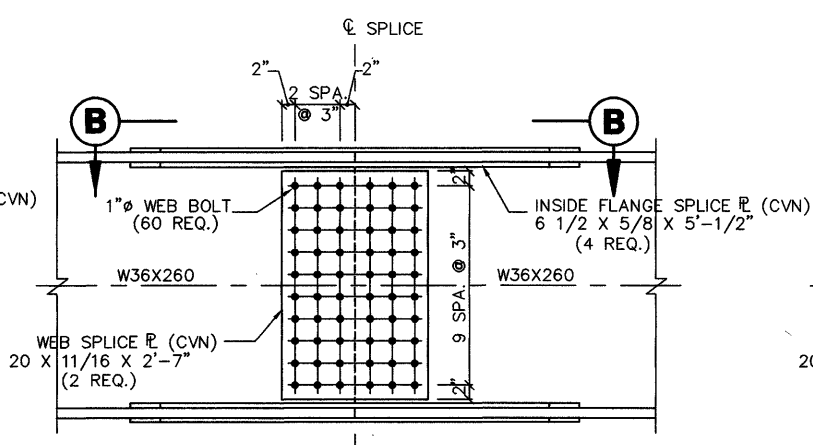
VIEW C-C



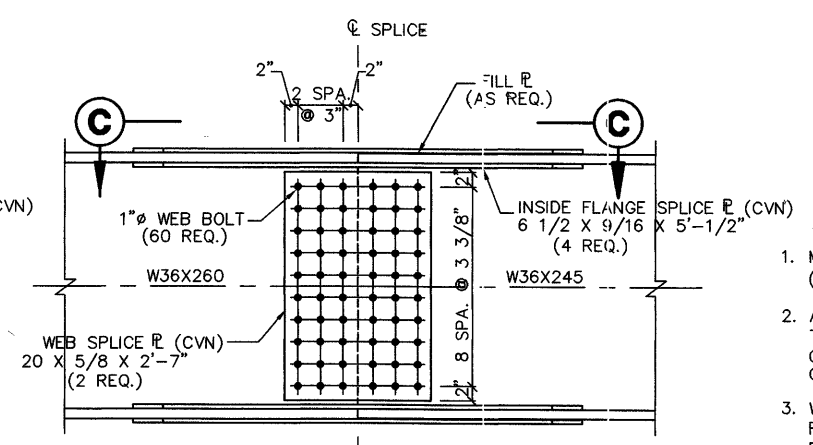
STUD DETAIL



SPLICE 1 DETAIL



SPLICE 2 DETAIL

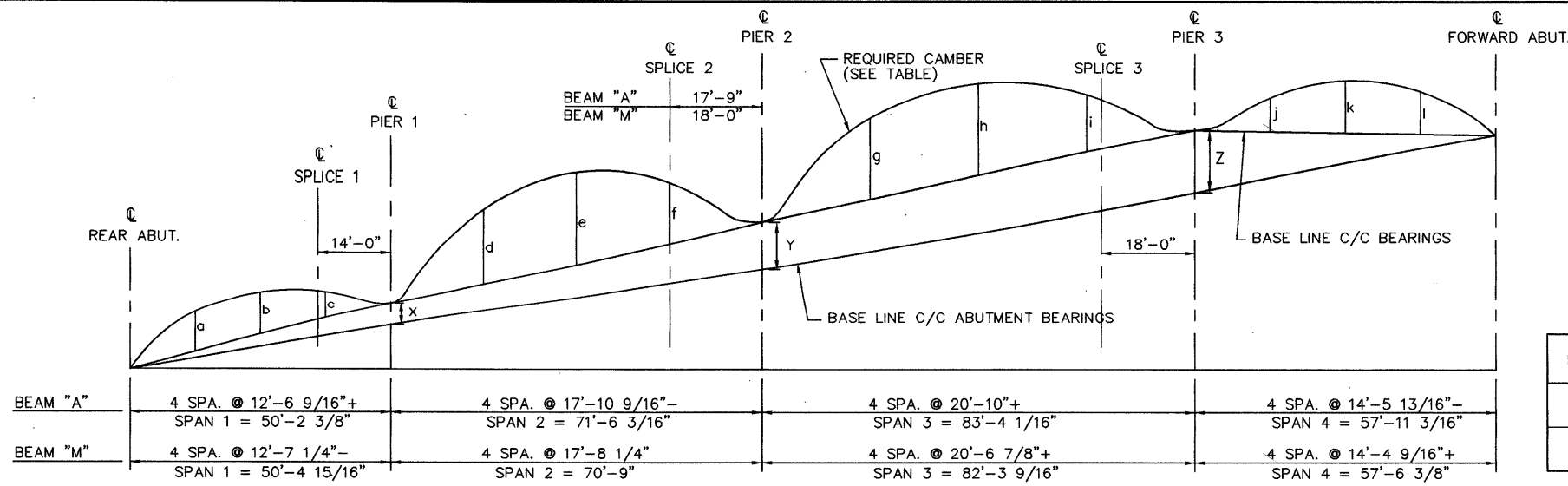


SPLICE 3 DETAIL

- NOTE:
1. MEASUREMENTS ARE GIVEN ALONG THE BEAM CENTERLINE (OR THE REFERENCE CHORD).
 2. ALL BOLTS SHALL BE 1" Ø ASTM A-325 AND GALVANIZED. THE BOLTS SHALL BE PLACED WITH THE HEADS ON THE OUTSIDE FACE OF THE EXTERIOR BEAM AND ON THE BOTTOM OF ALL BEAM FLANGES.
 3. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA BEAM FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
 4. FOR MORE BOLTED BEAM SPLICE INFORMATION, SEE STD. DWG. BS-1-93.
 5. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

DRAWING = S-BEAMM DATE = NOVEMBER 15, 1996

DRAWING = S-CAMBER DATE = NOVEMBER 15, 1996



- NOTE:**
- TOTAL REQUIRED CAMBER SHOWN IS GIVEN TO THE NEAREST 1/16 INCH.
 - SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
 - THE NEGATIVE VALUES IN THE TABLE INDICATE THAT THE BASE LINE C/C BEARINGS IS BELOW THE BASE LINE C/C OF ABUTMENT BEARINGS.

BEAM	X	Y	Z
A	-5/8"	-5/8"	-5/16"
M	-3/8"	-3/16"	1/16"

BRIDGE NO. LOR-10-0001 BL	DEFLECTION AND CAMBER (INCHES) - BEAM "A"											
	SPAN 1			SPAN 2			SPAN 3			SPAN 4		
	a	b	c	d	e	f	g	h	i	j	k	l
DEFLECTION DUE TO WEIGHT OF STEEL	1/16	1/16	1/16	1/16	1/16	1/16	1/8	3/16	1/8	-	1/16	1/16
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16	3/16	1/16	1/8	1/4	1/16	7/16	3/4	1/2	1/16	3/16	3/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	-	-	-	-	-	-	-	-	-	-	-	-
SUM OF DEFLECTIONS AND ADJUSTMENTS EQUALS REQUIRED SHOP CAMBER.	1/4	1/4	1/8	3/16	5/16	1/8	9/16	15/16	5/8	1/16	1/4	1/4

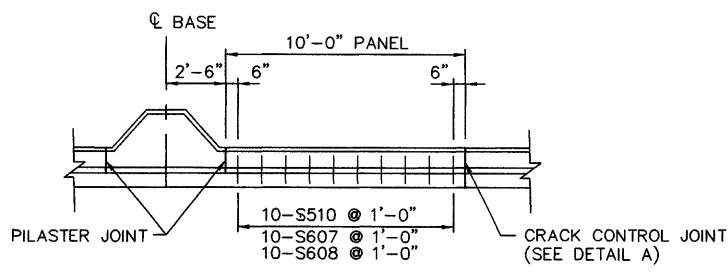
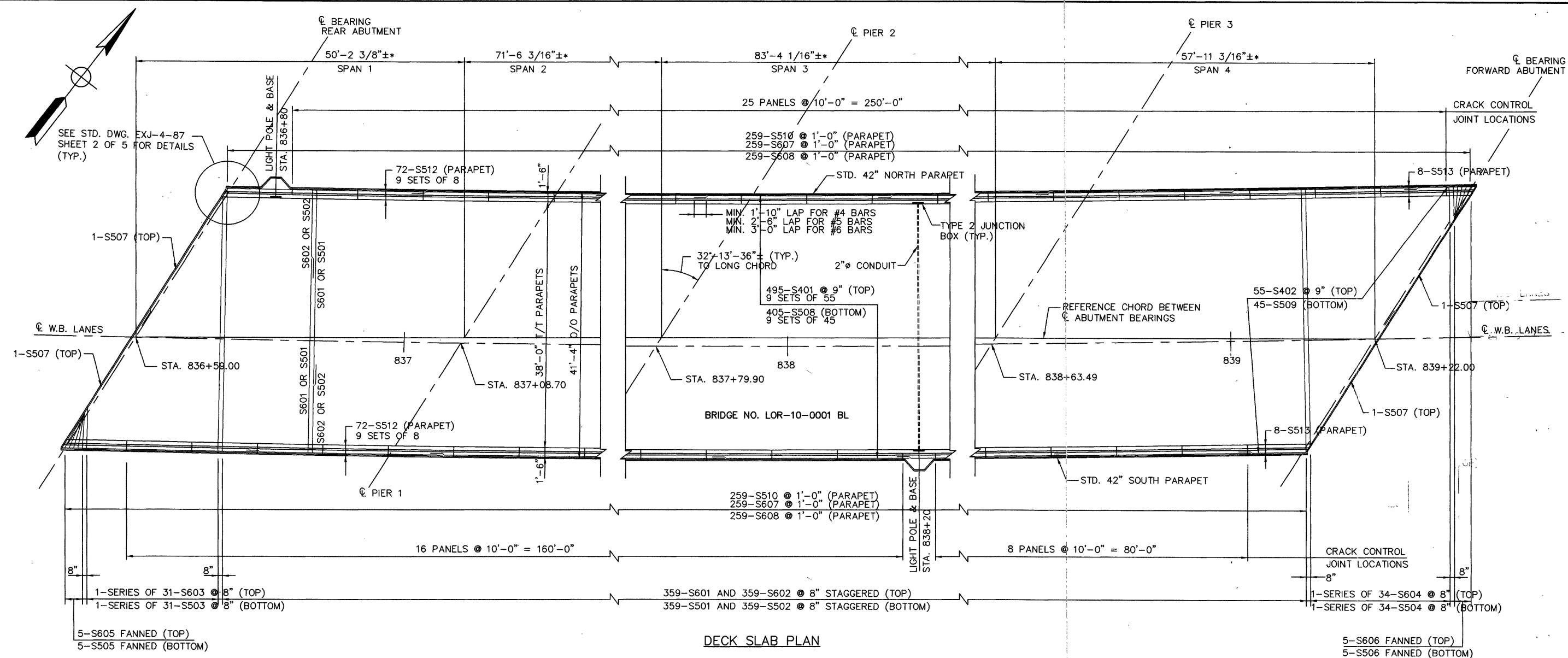
BRIDGE NO. LOR-20-1587 R	DEFLECTION AND CAMBER (INCHES) - BEAM "M"											
	SPAN 1			SPAN 2			SPAN 3			SPAN 4		
	a	b	c	d	e	f	g	h	i	j	k	l
DEFLECTION DUE TO WEIGHT OF STEEL	1/16	1/16	1/16	1/16	1/16	1/16	1/8	3/16	1/8	-	1/16	1/16
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4	1/4	1/16	1/8	1/4	1/16	7/16	3/4	7/16	1/16	3/16	3/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	-	-	-	-	-	-	-	-	-	-	-	-
SUM OF DEFLECTIONS AND ADJUSTMENTS EQUALS REQUIRED SHOP CAMBER.	5/16	5/16	1/8	3/16	5/16	1/8	9/16	15/16	9/16	1/16	1/4	1/4

BRIDGE NO. LOR-10-0001 BL	DECK SCREED ELEVATIONS																			
	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
	REAR ABUT.	1/4 SPAN	1/2 SPAN	SPLICE # 1	3/4 SPAN	PIER 1	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE # 2	PIER 2	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE # 3	PIER 3	1/4 SPAN	1/2 SPAN	3/4 SPAN	FORW. ABUT.
NORTH GUTTER	769.06	769.13	769.19	-	769.23	769.28	769.37	769.46	769.53	-	769.60	769.72	769.83	769.91	-	769.98	770.05	770.12	770.19	770.24
BEAM A	769.08	769.14	769.20	769.24	769.24	769.29	769.38	769.46	769.53	769.53	769.61	769.73	769.84	769.92	769.93	769.99	770.06	770.14	770.21	770.27
BEAM B	769.16	769.22	769.28	-	769.32	769.37	769.46	769.54	769.61	769.61	769.68	769.80	769.91	769.99	770.00	770.07	770.14	770.22	770.29	770.34
BEAM C	769.25	769.32	769.37	-	769.42	769.47	769.55	769.64	769.71	769.71	769.78	769.90	770.01	770.09	770.10	770.16	770.23	770.31	770.38	770.43
BEAM D	769.35	769.42	769.47	-	769.52	769.56	769.65	769.74	769.80	769.81	769.88	769.99	770.10	770.18	770.19	770.26	770.33	770.41	770.47	770.53
BEAM E	769.45	769.51	769.57	-	769.61	769.66	769.75	769.83	769.90	769.90	769.97	770.09	770.20	770.28	770.29	770.35	770.42	770.50	770.57	770.62
BEAM F	769.55	769.61	769.67	-	769.71	769.76	769.85	769.93	770.00	770.00	770.07	770.18	770.29	770.37	770.38	770.45	770.52	770.60	770.66	770.72
SOUTH GUTTER	769.55	769.62	769.68	-	769.72	769.77	769.86	769.95	770.02	-	770.09	770.21	770.32	770.39	-	770.46	770.53	770.61	770.67	770.72

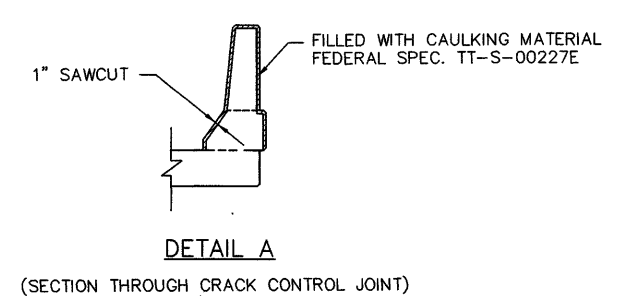
BRIDGE NO. LOR-20-1587 R	DECK SCREED ELEVATIONS																			
	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
	REAR ABUT.	1/4 SPAN	1/2 SPAN	SPLICE # 1	3/4 SPAN	PIER 1	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE # 2	PIER 2	1/4 SPAN	1/2 SPAN	3/4 SPAN	SPLICE # 3	PIER 3	1/4 SPAN	1/2 SPAN	3/4 SPAN	FORW. ABUT.
NORTH GUTTER	768.75	768.81	768.85	-	768.89	768.94	769.01	769.08	-	769.14	769.20	769.30	769.39	769.45	-	769.51	769.57	769.63	769.69	769.73
BEAM G	768.75	768.81	768.86	-	768.89	768.93	769.01	769.08	-	769.13	769.19	769.29	769.38	769.45	-	769.51	769.57	769.64	769.70	769.74
BEAM H	768.87	768.93	768.97	-	769.01	769.05	769.13	769.19	-	769.25	769.31	769.41	769.50	769.56	-	769.63	769.69	769.75	769.81	769.85
BEAM I	768.99	769.05	769.09	-	769.13	769.17	769.24	769.31	-	769.37	769.43	769.52	769.61	769.68	-	769.74	769.80	769.87	769.92	769.97
BEAM J	769.11	769.16	769.21	-	769.25	769.29	769.36	769.43	-	769.48	769.54	769.64	769.73	769.79	-	769.86	769.92	769.98	770.04	770.08
CROWN	769.12	769.18	769.23	-	769.27	769.31	769.39	769.46	-	769.52	769.58	769.67	769.76	769.83	-	769.88	769.94	770.01	770.06	770.10
BEAM K	768.99	769.05	769.10	-	769.15	769.19	769.27	769.34	-	769.40	769.46	769.56	769.65	769.71	-	769.77	769.82	769.88	769.94	769.97
BEAM L	768.83	768.90	768.95	-	768.99	769.04	769.11	769.19	-	769.25	769.31	769.40	769.50	769.56	-	769.61	769.67	769.73	769.78	769.82
BEAM M	768.74	768.80	768.86	768.89	768.90	768.94	769.02	769.09	769.15	769.15	769.21	769.32	769.41	769.47	769.48	769.52	769.57	769.63	769.68	769.72
SOUTH GUTTER	768.73	768.79	768.84	-	768.88	768.92	768.99	769.06	-	769.12	769.18	769.28	769.38	769.44	-	769.49	769.55	769.61	769.66	769.71

DESIGN AGENCY: POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114
 DATE: 12/96
 REVIEWED: VKB
 STRUCTURE FILE NUMBER: 4701410, 4703456
 DRAWN: RS
 DESIGNED: PSS
 CHECKED: YSS
 DECK SCREED ELEVATIONS & CAMBER DETAILS
 BRIDGE NO. LOR-10-0001 BL AND LOR-20-1587 R OVER S.R. 57
 LOR-20-12.62
 25/36
 312
 351

DRAWING = S-DECKL DATE = NOVEMBER 18, 1996



TYPICAL CRACK CONTROL JOINT



BRIDGE NO. LOR-10-0001 BL		FASCIA OFFSETS **	
LOCATION		CL BEAM "A" TO NORTH FASCIA	CL BEAM "F" TO SOUTH FASCIA
SPAN 1	CL BRG. REAR ABUTMENT	-	1'-8 7/8"
	1/4 POINT	2'-7 1/4"	1'-11 15 1/6"
	1/2 POINT	2'-5"	2'-2 3/4"
	3/4 POINT	2'-3"	2'-5 1/4"
SPAN 2	CL PIER 1	2'-1 1/4"	2'-7 7/16"
	1/4 POINT	1'-11 5/16"	2'-10 1/8"
	1/2 POINT	1'-9 15/16"	3'-0 1/4"
	3/4 POINT	1'-9 3/16"	3'-1 3/4"
SPAN 3	CL PIER 2	1'-9"	3'-2 11/16"
	1/4 POINT	1'-9 1/2"	3'-3"
	1/2 POINT	1'-10 13/16"	3'-2 9/16"
	3/4 POINT	2'-0 15/16"	3'-1 5/16"
SPAN 4	CL PIER 3	2'-3 13/16"	2'-11 5/16"
	1/4 POINT	2'-6 5/16"	2'-9 7/16"
	1/2 POINT	2'-9 3/16"	2'-7 3/16"
	3/4 POINT	3'-0 7/16"	2'-4 9/16"
CL BRG. FORWARD ABUTMENT		3'-4 1/16"	-

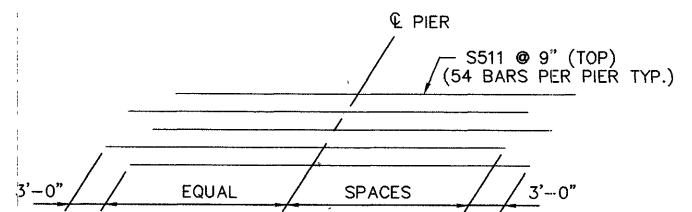
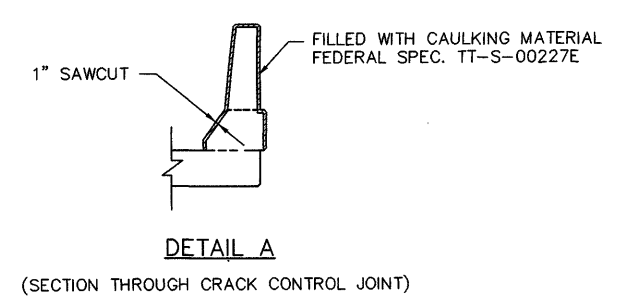
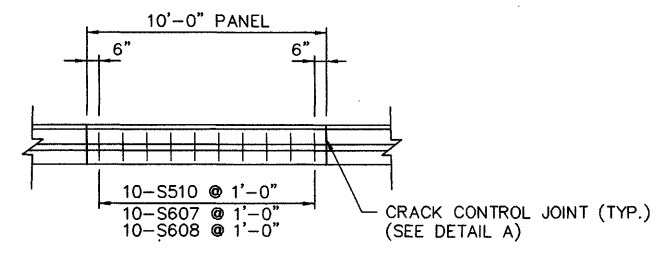
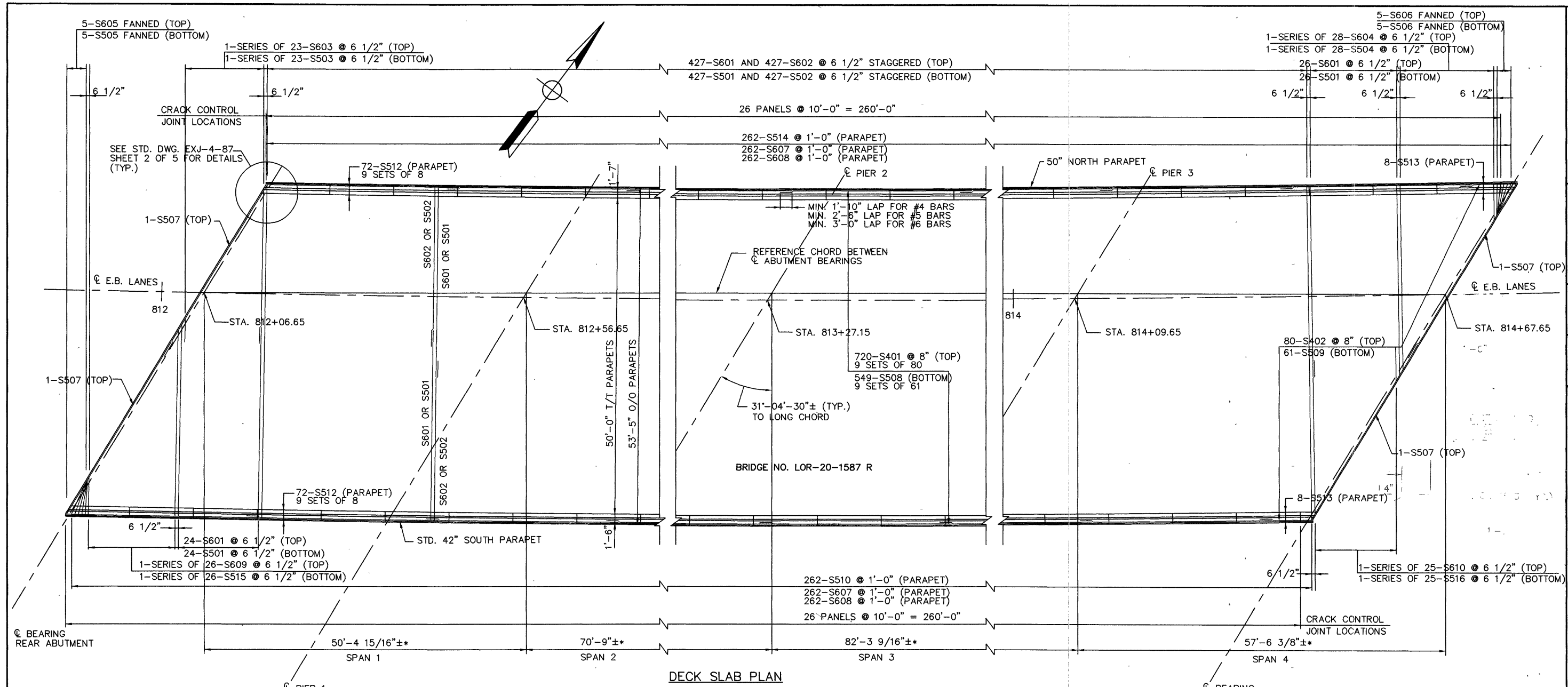


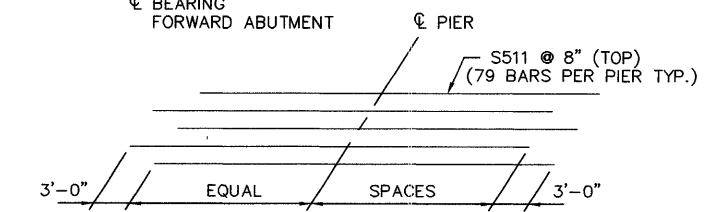
DIAGRAM SHOWING STAGGER OF S511 OVER PIERS

- NOTE:**
- LONGITUDINAL SLAB REINFORCEMENT SHALL BE PLACED PARALLEL TO THE CENTERLINE OF WESTBOUND LANES.
 - TRANSVERSE SLAB REINFORCEMENT SHALL BE MEASURED ALONG THE CENTERLINE OF WESTBOUND LANES; BARS SHALL BE PLACED RADIALLY.
 - * DIMENSIONS ARE MEASURED WITH RESPECT TO THE REFERENCE CHORD.
 - ** DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BEAM CENTERLINE.
 - FOR TYPICAL CROSS-SECTION, SEE SHEET [29/36].
 - FOR LIGHT POLE PILASTER DETAILS, SEE SHEET [32/36].
 - FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS [33/36] AND [34/36].

DRAWING = S-DECKR DATE = NOVEMBER 18, 1996



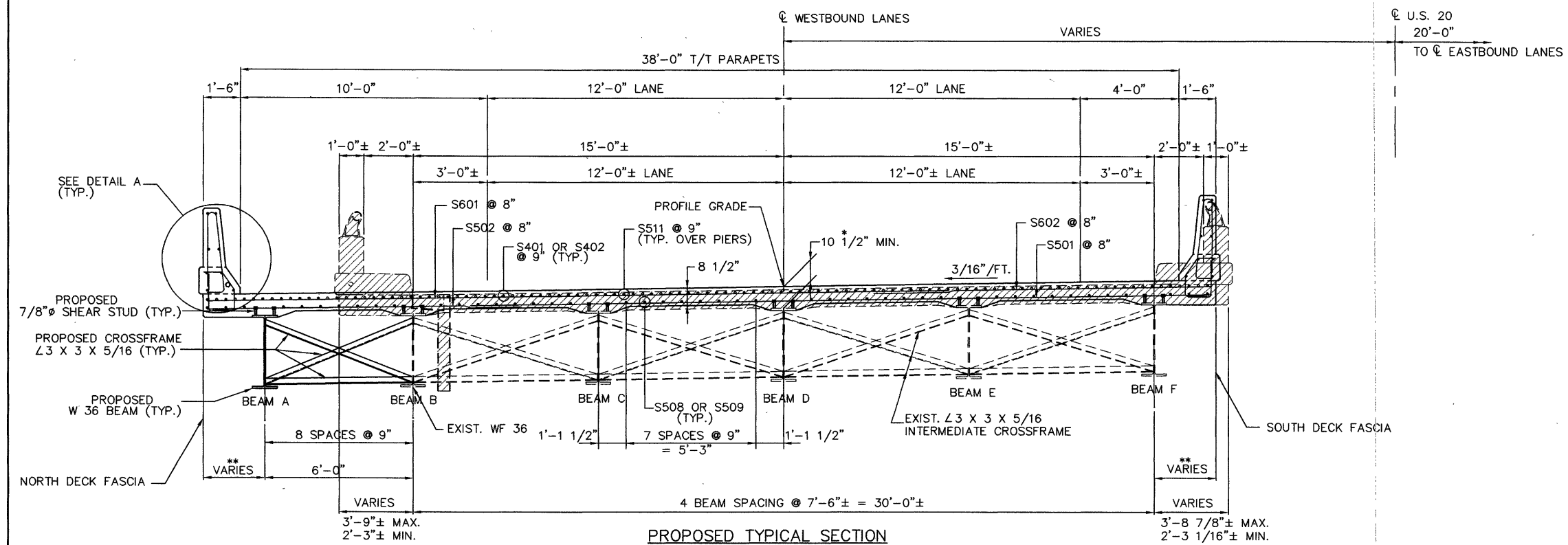
BRIDGE NO. LOR-20-1587 R		FASCIA OFFSETS **	
LOCATION		CL BEAM "G" TO NORTH FASCIA	CL BEAM "M" TO SOUTH FASCIA
SPAN 1	CL BRG. REAR ABUTMENT	-	1'-9 5/8"
	1/4 POINT	1'-10 15/16"	2'-0 1/2"
	1/2 POINT	1'-8 7/8"	2'-3 1/16"
	3/4 POINT	1'-7 1/8"	2'-5 7/16"
SPAN 2	CL PIER 1	1'-5 9/16"	2'-7 1/2"
	1/4 POINT	1'-3 7/8"	2'-10 1/16"
	1/2 POINT	1'-2 5/8"	3'-0 1/16"
	3/4 POINT	1'-1 7/8"	3'-1 5/8"
SPAN 3	CL PIER 2	1'-1 5/8"	3'-2 11/16"
	1/4 POINT	1'-1 15/16"	3'-3 5/16"
	1/2 POINT	1'-2 15/16"	3'-3 1/4"
	3/4 POINT	1'-4 5/8"	3'-2 9/16"
SPAN 4	CL PIER 3	1'-7"	3'-1 3/16"
	1/4 POINT	1'-9"	2'-11 13/16"
	1/2 POINT	1'-11 5/16"	2'-10 3/16"
	3/4 POINT	2'-2"	2'-8 3/16"
CL BRG. FORWARD ABUTMENT		2'-5"	-



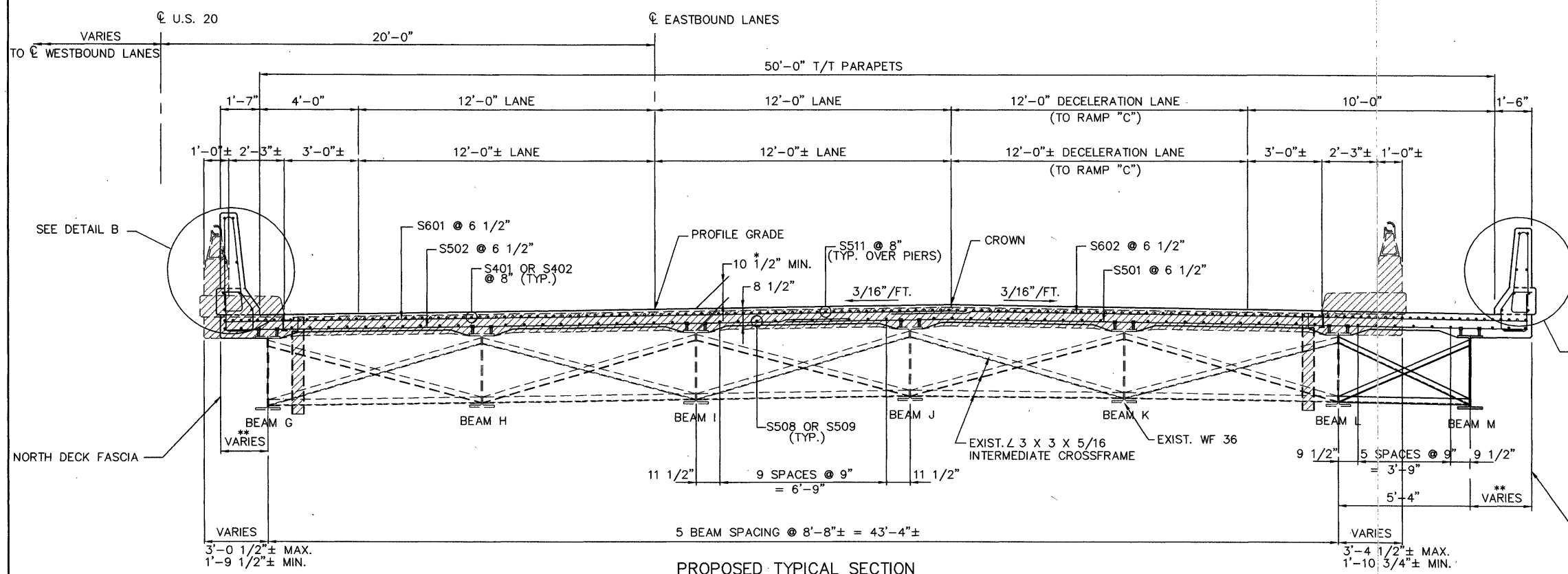
- NOTE:
- LONGITUDINAL SLAB REINFORCEMENT SHALL BE PLACED PARALLEL TO THE CENTERLINE OF EASTBOUND LANES.
 - TRANSVERSE SLAB REINFORCEMENT SHALL BE MEASURED ALONG THE CENTERLINE OF EASTBOUND LANES; BARS SHALL BE PLACED RADIALLY.
 - * DIMENSIONS ARE MEASURED WITH RESPECT TO THE REFERENCE CHORD.
 - ** DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BEAM CENTERLINE.
 - FOR TYPICAL CROSS-SECTION, SEE SHEET 29/36.
 - FOR LIGHTING DETAILS, SEE SHEET 32/36.
 - FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS, SEE SHEETS 35/36 AND 36/36.

DESIGN AGENCY: POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114
 DATE: 12/96
 REVIEWED: VKB
 DRAWN: YSS
 DESIGNED: YSS
 CHECKED: PSS
 STRUCTURE FILE NUMBER: 4703456
 DECK SLAB REINFORCEMENT
 BRIDGE NO. LOR-20-1587 R
 OVER S.R. 57
 LOR-20-12.62
 28/36
 315
 351

DRAWING = S-SECT DATE = NOVEMBER 18, 1996



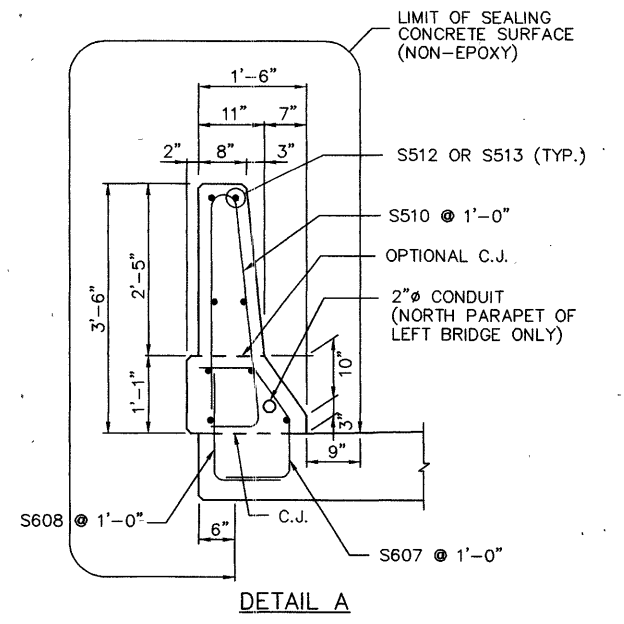
PROPOSED TYPICAL SECTION
(BRIDGE NO. LOR-10-0001 BL)
(PHASE 2 CONSTRUCTION)



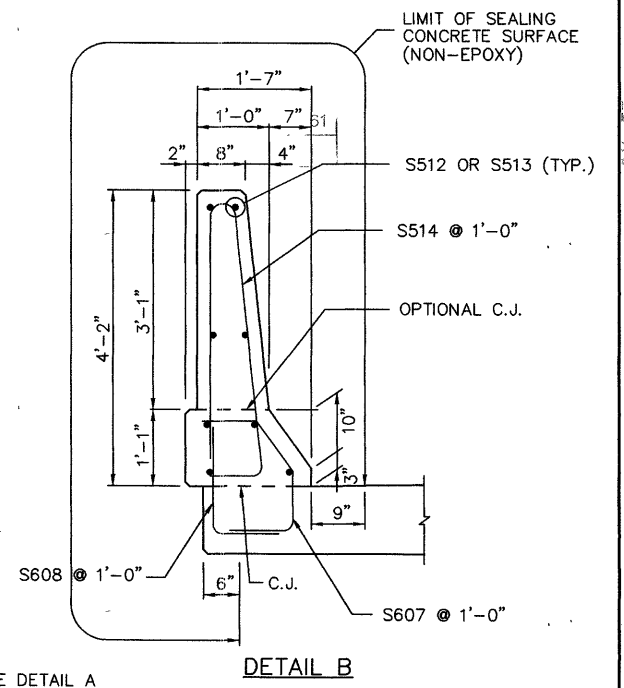
PROPOSED TYPICAL SECTION
(BRIDGE NO. LOR-20-1587 R)
(PHASE 1 CONSTRUCTION)

NOTES:

- * THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE THEORETICAL DESIGN DIMENSION INCLUDING THE DESIGN HAUNCH THICKNESS OF 2 INCHES. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, MINUS THE DESIGN HAUNCH THICKNESS, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.
- A HAUNCH WIDTH OF 9 INCHES SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6 AND 12 INCHES.
- MINIMUM CONCRETE CLEAR COVER FOR REINFORCING STEEL SHALL BE 2 INCHES UNLESS NOTED OTHERWISE.
- THE LIGHTING CONDUIT SHALL BE TRANSITIONED UPWARD NEAR THE ABUTMENTS TO AVOID INTERFERENCE WITH THE END DAMS. FOR DETAILS SEE SHEET 32/36.
- ** SEE SHEETS 27/36 AND 28/36 FOR FASCIA OFFSETS.
- FOR REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS SEE SHEETS 33/36 THRU 36/36.



DETAIL A

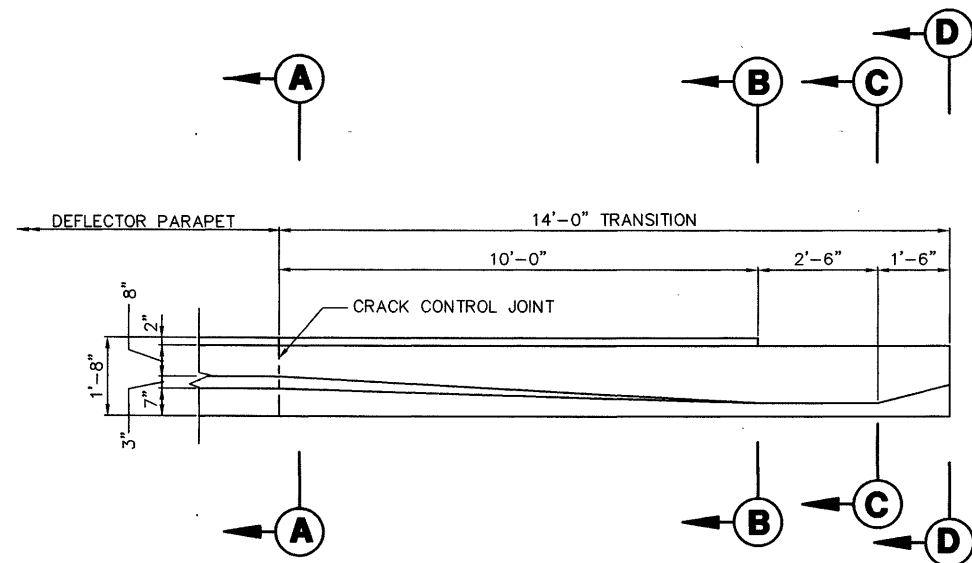


DETAIL B

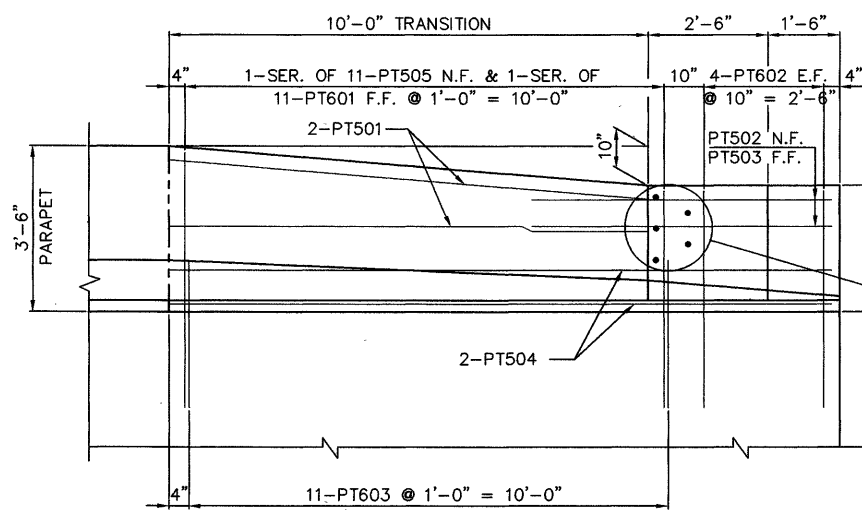
REMOVE EXISTING CONCRETE DECK, SAFTY CURB, PARAPET, RAILING AND SCUPPER.

<p>POLYTECH, INC. 1744 PAYNE AVENUE, CLEVELAND, OHIO 44114</p>
<p>DESIGN AGENCY</p>
<p>DATE 12/96</p>
<p>REVIEWED BRS</p>
<p>STRUCTURE FILE NUMBER 4701410, 4703456</p>
<p>DRAWN PSS</p>
<p>DESIGNED PSS</p>
<p>CHECKED YSS</p>
<p>DECK SLAB TYPICAL SECTION</p>
<p>BRIDGE NO. LOR-10-0001 BL AND LOR-20-1587 R OVER S.R. 57</p>
<p>LOR-20-12.62</p>
<p>29/36</p>
<p>316 351</p>

DRAWING = S-PARAPT DATE = NOVEMBER 18, 1996



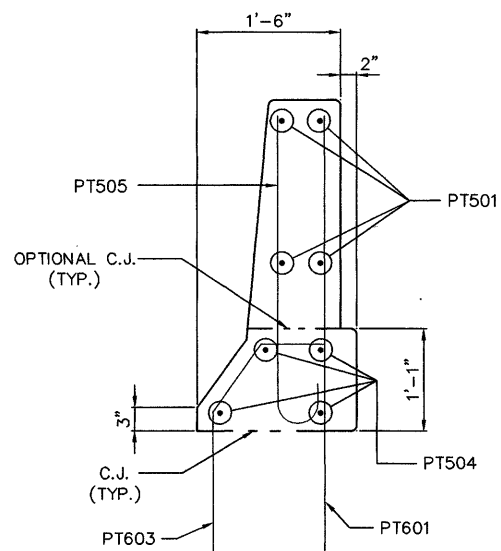
PLAN



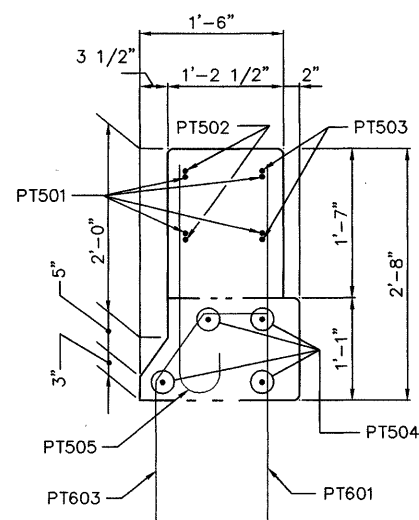
ELEVATION

PARAPET TRANSITION DETAILS

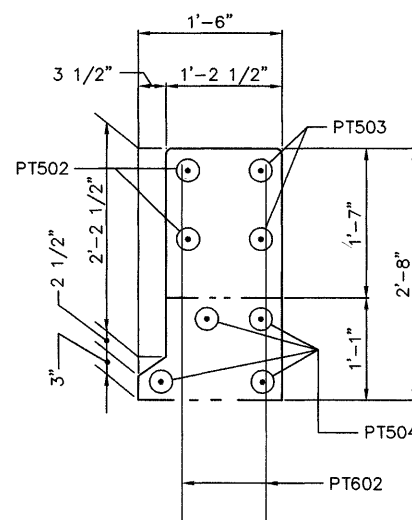
BRIDGE TERMINAL ASSEMBLY
SEE STD. DWG. GR-3.1



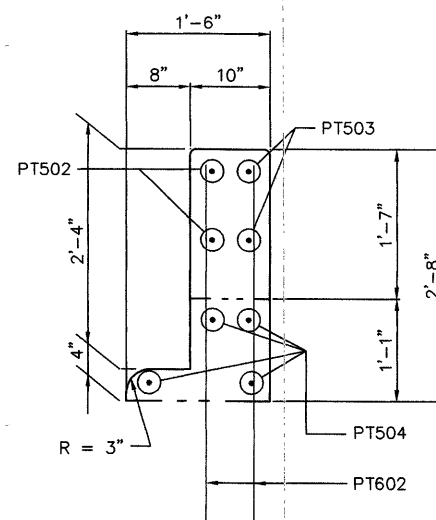
SECTION A-A



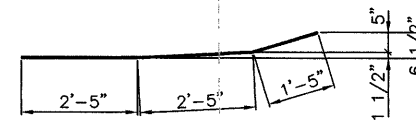
SECTION B-B



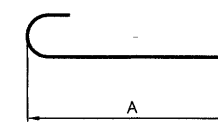
SECTION C-C



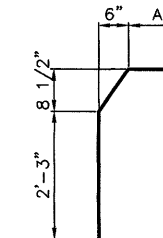
SECTION D-D



TYPE 1a



TYPE 2a



TYPE 3a

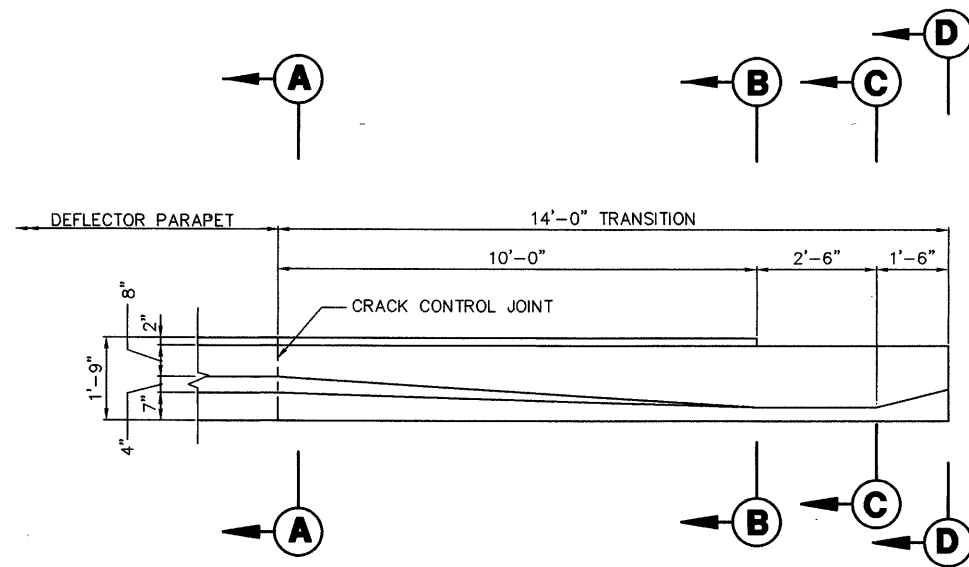
MARK	NO.	LENGTH	TYPE	A	SERIES INCR.	WEIGHT (LBS.)
PT501	4	10'-0"	STR.			42
PT502	2	6'-3"	1a			13
PT503	2	6'-3"	STR.			13
PT504	4	13'-10"	STR.			58
PT505	1-SER. OF 11	3'-0" TO 3'-10"	2a	2'-5" TO 3'-3"	1"	39
PT601	1-SER. OF 11	4'-6" TO 5'-4"	STR.		1"	81
PT602	8	4'-6"	STR.			54
PT603	11	3'-8"	3a	8"		61
* TOTAL (EPOXY)						361

* THIS QUANTITY IS CARRIED TO THE REINFORCEMENT SCHEDULE SHEETS [34/36], [36/36] AND IS INCLUDED WITH THE ABUTMENT REBARS FOR PAYMENT.

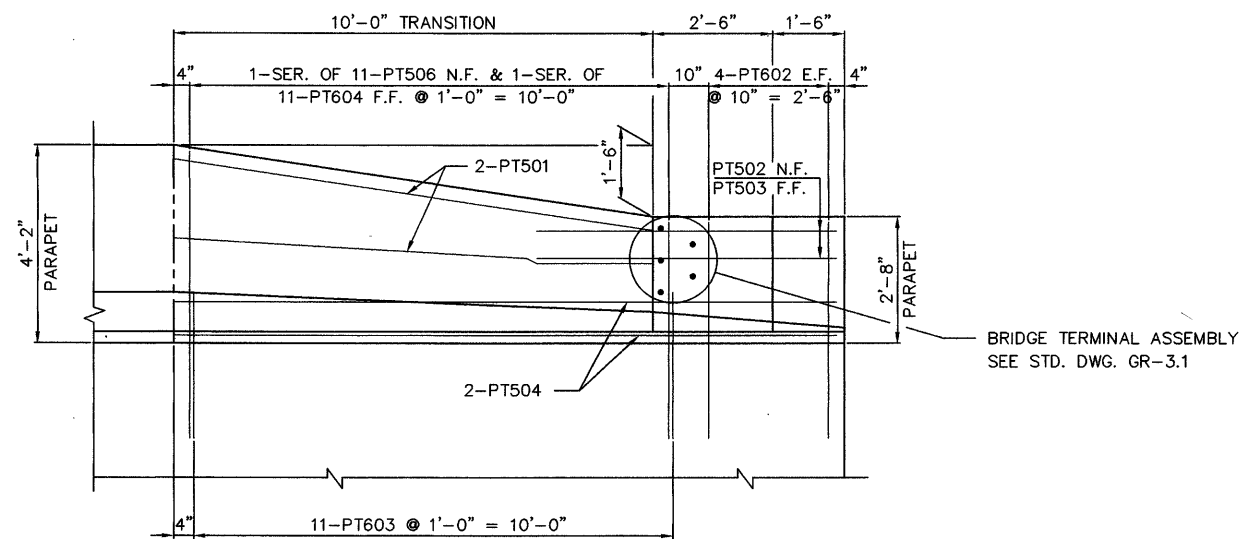
NOTES:

- ANCHOR BOLTS FOR BRIDGE TERMINAL ASSEMBLY SHALL BE 7/8" DIA. 1'-5 3/4" LONG A325 THROUGH BOLTS WITH 5/8" X 11" X 18 1/4" PLATE.
- GUARDRAIL ATTACHMENT: HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO TERMINAL CONNECTORS AT ENDS OF PARAPETS SHALL BE SLOTTED 15/16" X 3" AND ALL BOLTS SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS IN 606.05.

DRAWING = S-PARAPT2 DATE = NOVEMBER 18, 1996

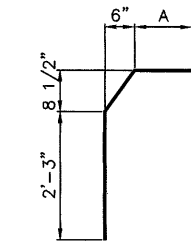
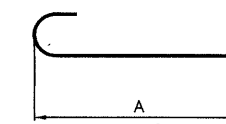
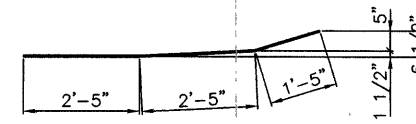
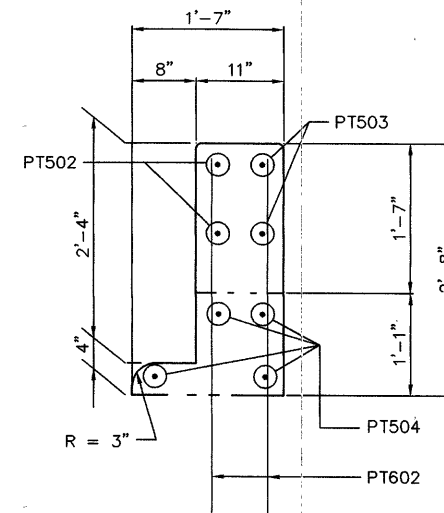
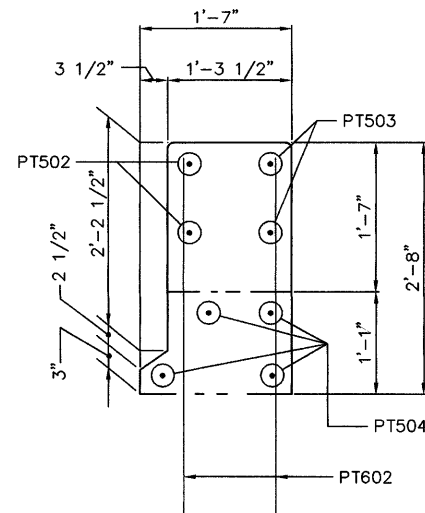
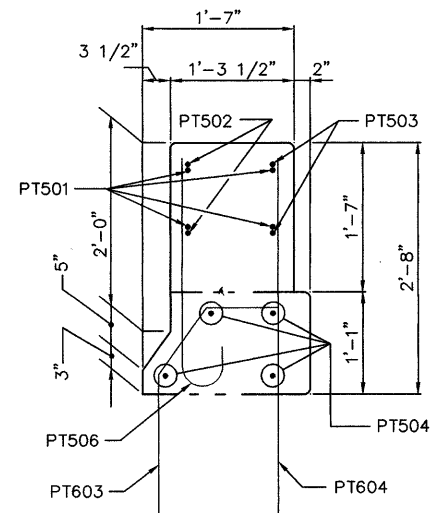
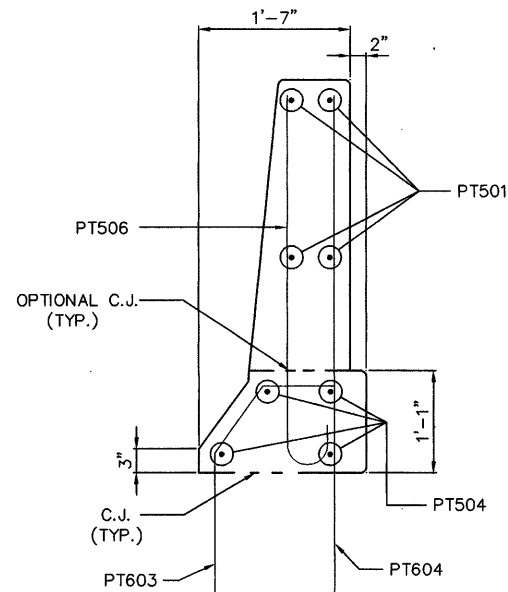


PLAN



ELEVATION

PARAPET TRANSITION DETAILS



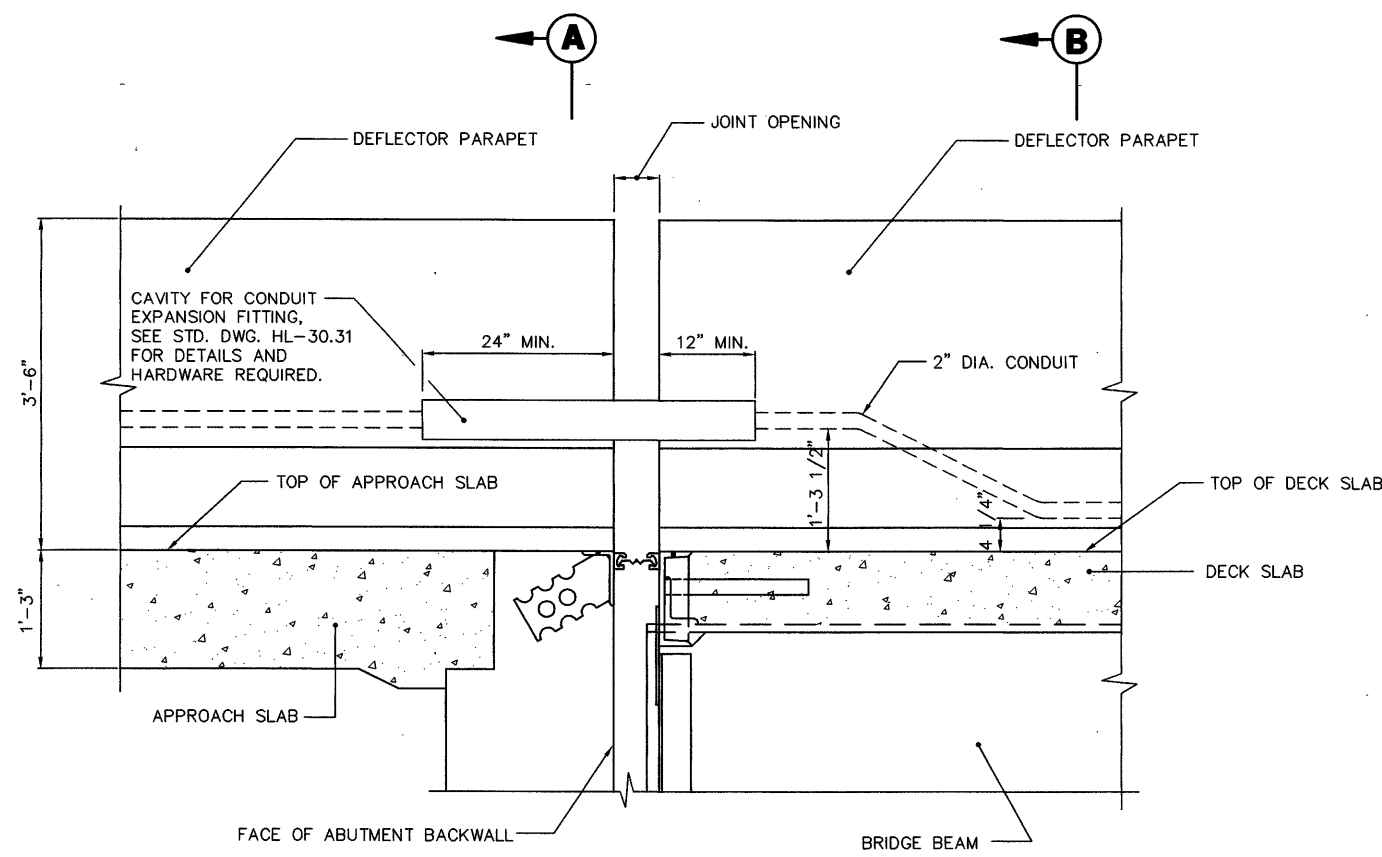
MARK	NO.	LENGTH	TYPE	A	SERIES INCR.	WEIGHT (LBS.)
PT501	4	10'-0"	STR.			42
PT502	2	6'-3"	1a			13
PT503	2	6'-3"	STR.			13
PT504	4	13'-10"	STR.			58
PT506	1-SER. OF 11	3'-0" TO 4'-6"	2a	2'-5" TO 3'-11"	1 13/16"	43
PT602	8	4'-6"	STR.			54
PT603	11	3'-9"	3a	9"		62
PT604	1-SER. OF 11	4'-6" TO 6'-0"	STR.		1 13/16"	87
* TOTAL (EPOXY)						372

* THIS QUANTITY IS CARRIED TO THE REINFORCEMENT SCHEDULE SHEET 36/36 AND IS INCLUDED WITH THE ABUTMENT REBARS FOR PAYMENT.

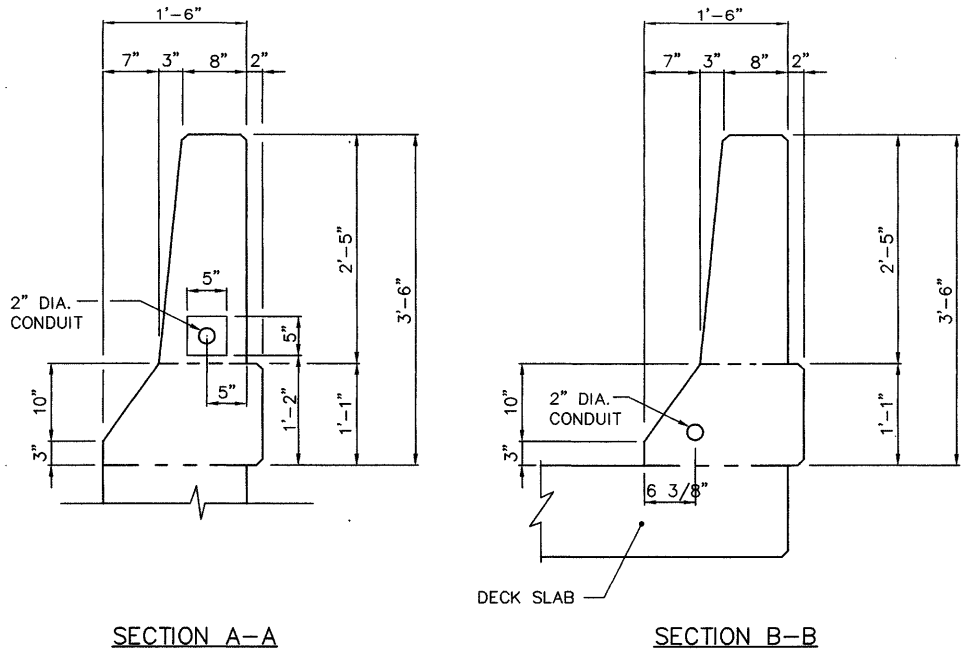
NOTES:

- ANCHOR BOLTS FOR BRIDGE TERMINAL ASSEMBLY SHALL BE 7/8" DIA. 1'-5 3/4" LONG A325 THROUGH BOLTS WITH 5/8" X 11" X 18 1/4" PLATE.
- GUARDRAIL ATTACHMENT: HOLES FOR SPLICE BOLTS ATTACHING GUARDRAIL TO TERMINAL CONNECTORS AT ENDS OF PARAPETS SHALL BE SLOTTED 15/16" X 3" AND ALL BOLTS SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS IN 606.05.

DRAWING = S-LTJCT DATE = NOVEMBER 18, 1996

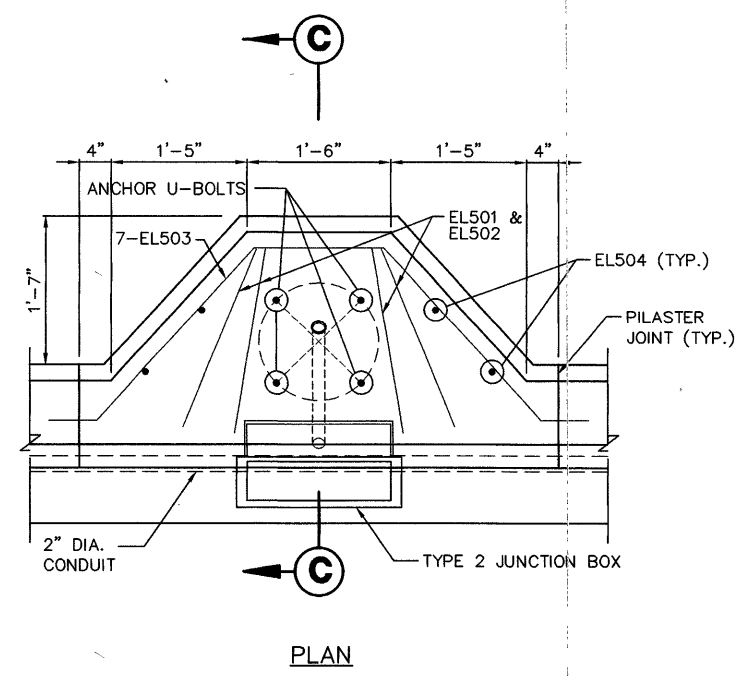


STRUCTURE LIGHTING CONDUIT TRANSITION DETAIL

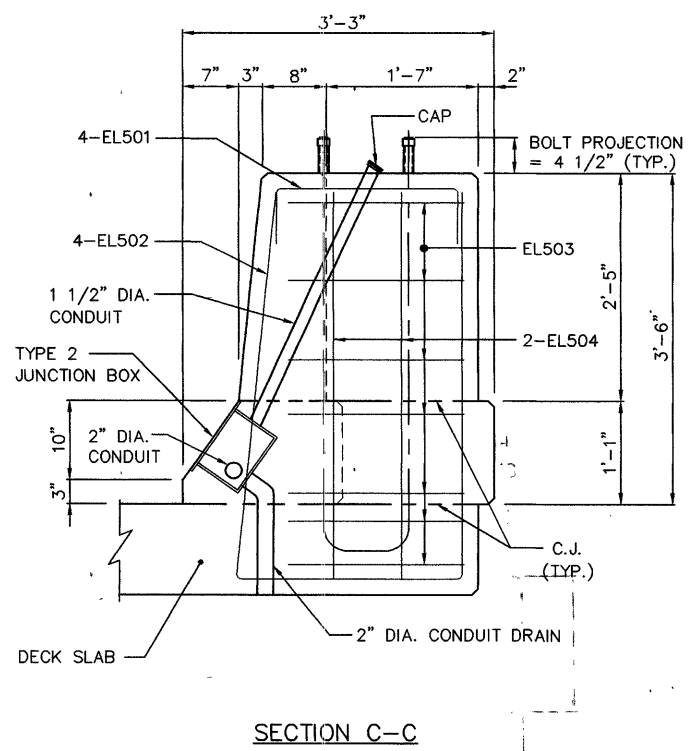


SECTION A-A

SECTION B-B



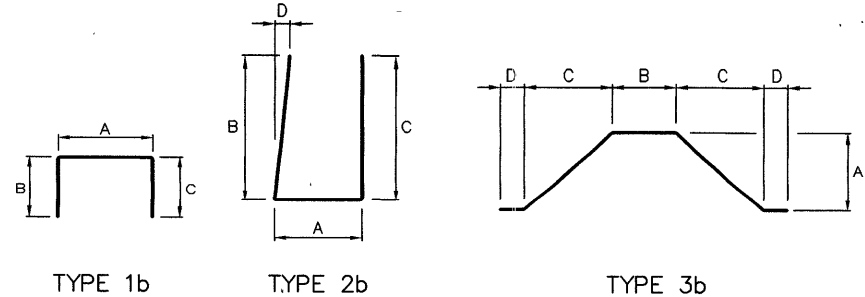
PLAN LIGHT POLE PILASTER DETAIL



SECTION C-C

MARK	NO.	LENGTH	TYPE	A	B	C	D	WEIGHT (LBS.)
EL501	4	2'-8"	1b	1'-9"	7"	7"		11
EL502	4	10'-0"	2b	2'-3"	4'-0"	4'-0"	5"	42
EL503	7	6'-8"	3b	1'-10"	1'-4"	1'-7"	6"	49
EL504	4	4'-1"	STR.					17
* TOTAL (EPOXY)								119

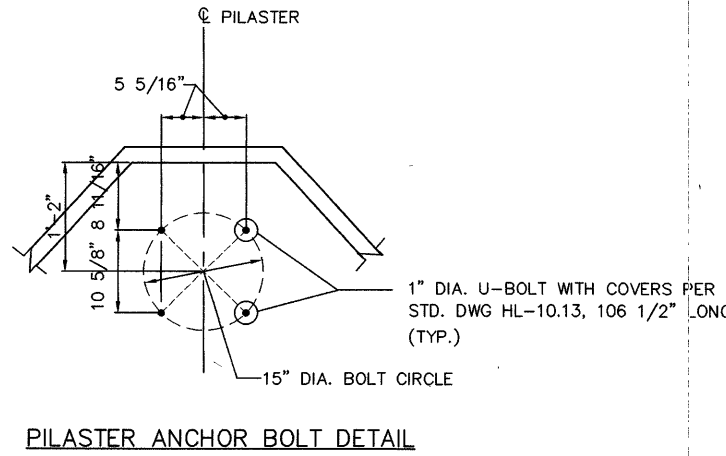
TO-OUI.



* THIS QUANTITY IS CARRIED TO THE REINFORCEMENT SCHEDULE SHEET 33/36 AND IS INCLUDED WITH THE SUPERSTRUCTURE REBARS FOR PAYMENT.

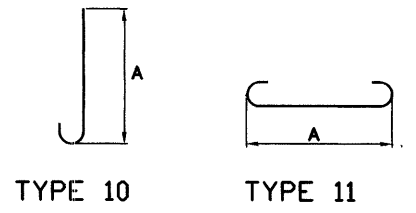
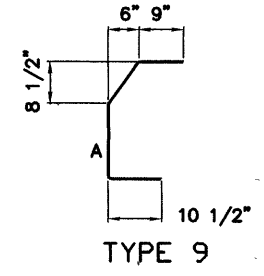
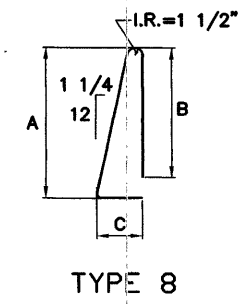
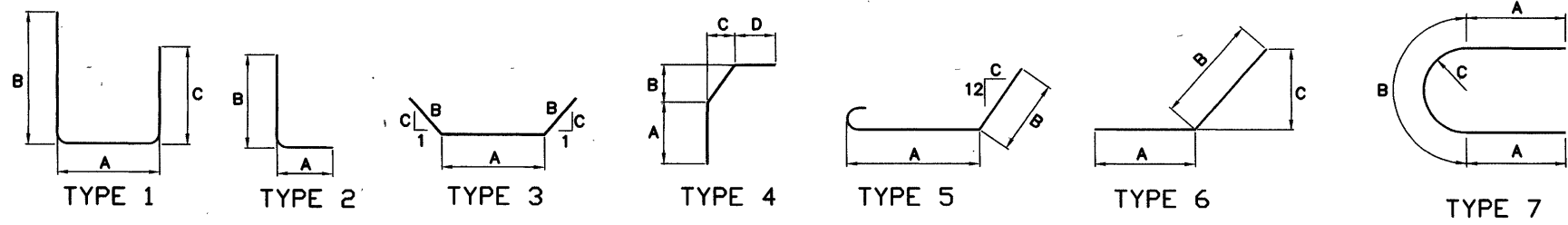
NOTES:

- FOR ADDITIONAL DETAILS ON STRUCTURE LIGHTING, SEE STD. DWG.S HL-10.13, HL-20.14 & HL-30.31.
- JUNCTION BOXES, CONDUIT, POLE ANCHOR BOLTS AND MISCELLANEOUS ITEMS REQUIRED TO COMPLETE THE WORK SHALL BE INCLUDED WITH ITEM 625 (ROADWAY PLANS) FOR PAYMENT.



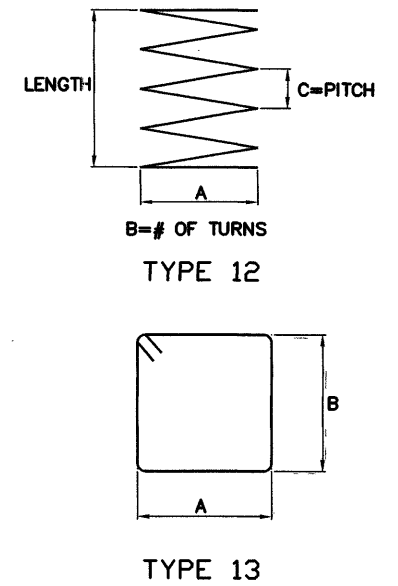
PILASTER ANCHOR BOLT DETAIL

DRAWING = S-REBAR2 DATE = NOVEMBER 15, 1996

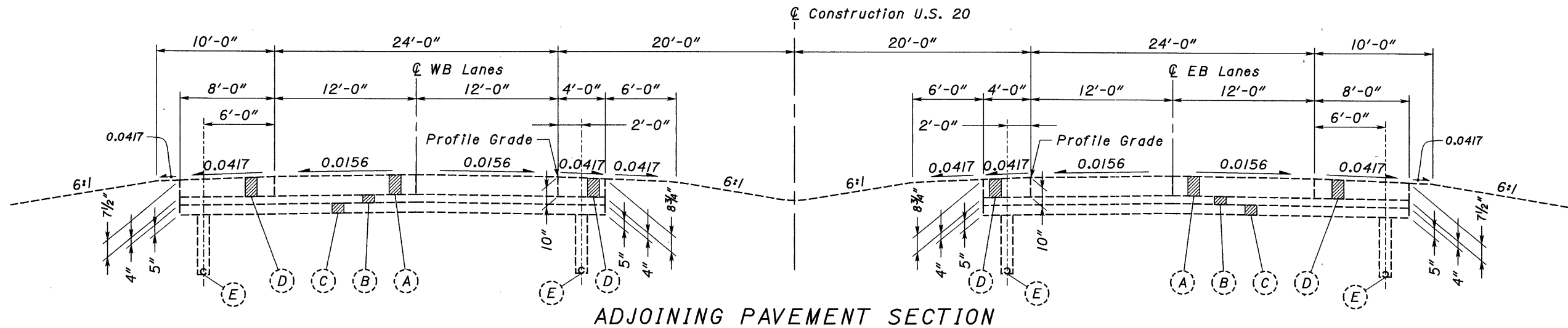


FORWARD ABUTMENT AND WINGWALLS										FORWARD ABUTMENT AND WINGWALLS										
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)	
FA501	10	8'-8"	2	1'-0"	7'-9"				90											
FA502	11	6'-3"	1	3'-5"	1'-6"	1'-6"			72											
FA503	4	6'-11"	STR.						29											
FA504	4	7'-11"	STR.						33											
FA505	1-SER. OF 5	6'-11" TO 7'-11"	STR.					3"	39											
FA506	46	7'-11"	1	1'-5"	3'-4"	3'-4"			380											
FA507	46	8'-0"	1	11"	2'-8"	4'-7"			384											
FA508	6	5'-4"	2	1'-0"	4'-5"				33											
FA509	6	10'-8"	STR.						67											
FA510	6	9'-1"	STR.						57											
FA511	6	9'-8"	STR.						61											
FA512	1	6'-10"	STR.						7											
FA513	1	7'-4"	STR.						8											
FA514	1	9'-5"	STR.						10											
FA515	1	9'-11"	STR.						10											
FA516	3	14'-8"	STR.						46											
FA517	3	15'-2"	STR.						47											
FA518	4-SER. OF 4	2'-11" TO 4'-2"	STR.					5"	59											
FA519	16	2'-8"	STR.						45											
FA520	4	5'-3"	STR.						22											
FA521	NOT USED																			
FA522	2	7'-1"	8	3'-3"	3'-0"	8"			15											
FA523	16	3'-8"	STR.						61											
FA524	1	7'-2"	STR.						7											
FA525	1	6'-8"	STR.						7											
FA526	1	9'-6"	STR.						10											
FA527	1	9'-0"	STR.						9											
FA528	3	15'-0"	STR.						47											
FA529	18	25'-2"	STR.						473											
FA530	10	9'-6"	13	3'-0"	1'-6"				99											
FA531	3	14'-6"	STR.						45											
FA601	14	3'-11"	STR.						82											
FA602	10	7'-11"	1	5'-3"	1'-6"	1'-6"			119											
FA603	NOT USED																			
FA604	NOT USED																			
FA605	NOT USED																			
FA606	4	5'-7"	3	2'-7"	1'-6"	1.75			34											
FA607	7	9'-1"	2	1'-6"	7'-9"				96											
FA608	2	4'-10"	STR.						15											
FA609	8	11'-1"	1	1'-5"	5'-0"	5'-0"			133											
FA610	7	6'-0"	2	1'-6"	4'-8"				63											
FA611	7	10'-11"	STR.						115											
FA612	7	4'-9"	STR.						50											
FA613	7	5'-0"	STR.						53											
FA614	2	2'-10"	STR.						9											
FA615	2	3'-8"	4	2'-3"	8 1/2"	6"	8"		11											
WINGWALL PARAPET TRANSITION																				
FA801	28	5'-11"	STR.						442											
FA802	6	8'-1"	STR.						130											
FA803	2	6'-9"	STR.						36											
FA804	6	11'-9"	STR.						188											
FA805	26	5'-0"	5	3'-1"	1'-5"	12			347											
										SUBTOTAL (EPOXY)										1,444
										SUBTOTAL (EPOXY)										4,195
										TOTAL (EPOXY)										101,904

NOTE
SEE SHEET 33/36 FOR NOTES.



† FOR PARAPET TRANSITION REBAR DETAILS, SEE SHEET 30/36.



ADJOINING PAVEMENT SECTION

APPLIES @
 STA. 648+60
 STA. 652+21

LEGEND

- (A) Existing 10" Continuously Reinforced Concrete Pavement
- (B) Existing 4" Bituminous Aggregate Base
- (C) Existing 5" Aggregate Base
- (D) Existing Plain Concrete Pavement
- (E) Existing 6" Deep Pipe Underdrain

SCOPE OF WORK (STA. 648+60 TO STA. 652+21)

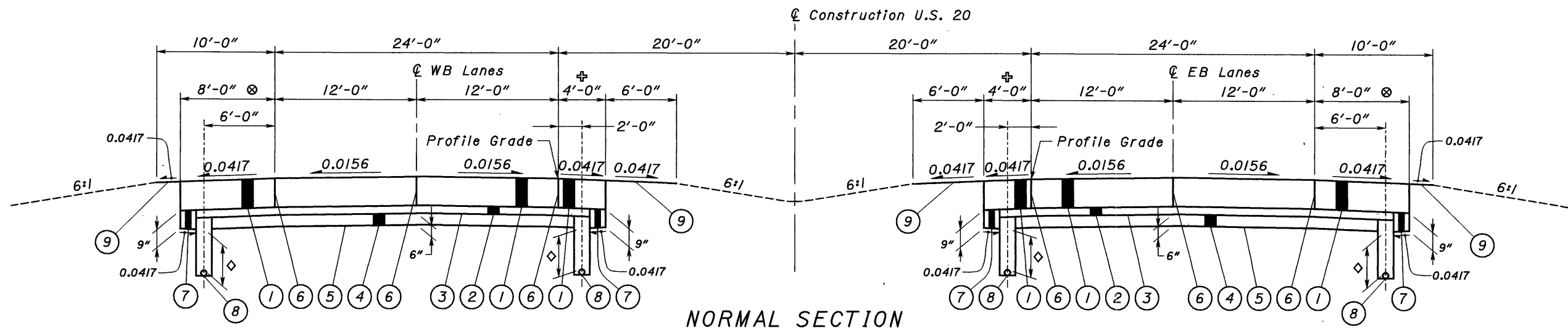
INTENT OF SHEETS 324-351 IS TO INSTALL WEIGH-IN-MOTION (WIM) SCALES IN BOTH EASTBOUND AND WESTBOUND TRAVEL LANES AND CLASSIFICATION LOOPS & PIEZO TUBES IN THE EASTBOUND AND WESTBOUND PASSING LANES. THIS INCLUDES THE FOLLOWING WORK:

THE REMOVAL OF THE EXISTING PAVEMENT AND REPLACEMENT WITH 15" AND 24" REINFORCED CONCRETE.

CONDUIT SHALL BE INSTALLED WHERE SHOWN IN THESE PLANS.

VEHICLE DETECTOR LOOPS AND PIEZO TUBES SHALL BE INSTALLED AS SHOWN.

INSTALLATION AND FURNISHING COMPLETE ELECTRICAL AND TELEPHONE SERVICE TO THE WIM SITE AS SHOWN IN THESE PLANS.



NORMAL SECTION

APPLIES @
 STA. 648+60 TO STA. 650+28 = 168.00 LIN. FT.
 STA. 650+53 TO STA. 652+21 = 168.00 LIN. FT.
 TOTAL = 336.00 LIN. FT.

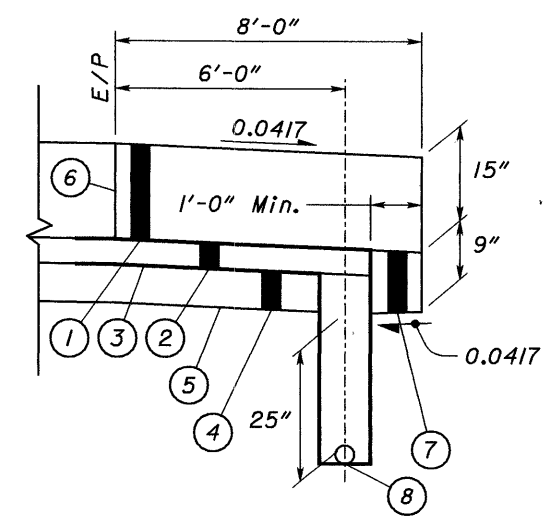
LEGEND

- ① Item 451 15" Reinforced Concrete Pavement, As Per Plan
- ② Item Special 4" Non-Stabilized Draining Base Type 'NJ' or Type 'IA'
- ③ Item 408 Bituminous Prime Coat, Applied at a Rate of 0.40 Gal/S.Y.
- ④ Item 304 6" Aggregate Base (See Proposal Note)
- ⑤ Item 203 Subgrade Compaction
- ⑥ Standard Longitudinal Joint
- ⑦ Item 304 9" Aggregate Base (See Proposal Note)
- ⑧ Item 605 6" Shallow Pipe Underdrain, 707.15, With Fabric Wrap, As Per Plan (*)
- ⑨ Item 203 Linear Grading

NOTES

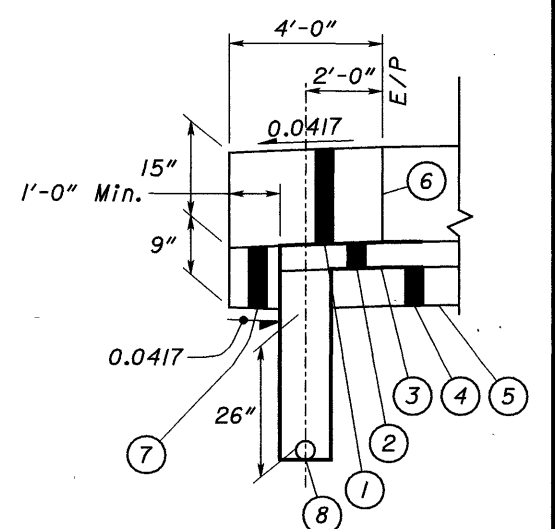
* Depth of Underdrain Remains Constant Below Pavement Surface.
 ◇ Depth of Underdrain : Inside Shoulder = 26"
 Outside Shoulder = 25"

Where Item 408 Bituminous Prime Coat is to be applied, the contractor shall exercise care to insure that the prime coat is not placed over the width of the underdrain trench.



⊗ OUTSIDE SHOULDER

STA. 648+60 TO STA. 650+28
 STA. 650+53 TO STA. 652+21

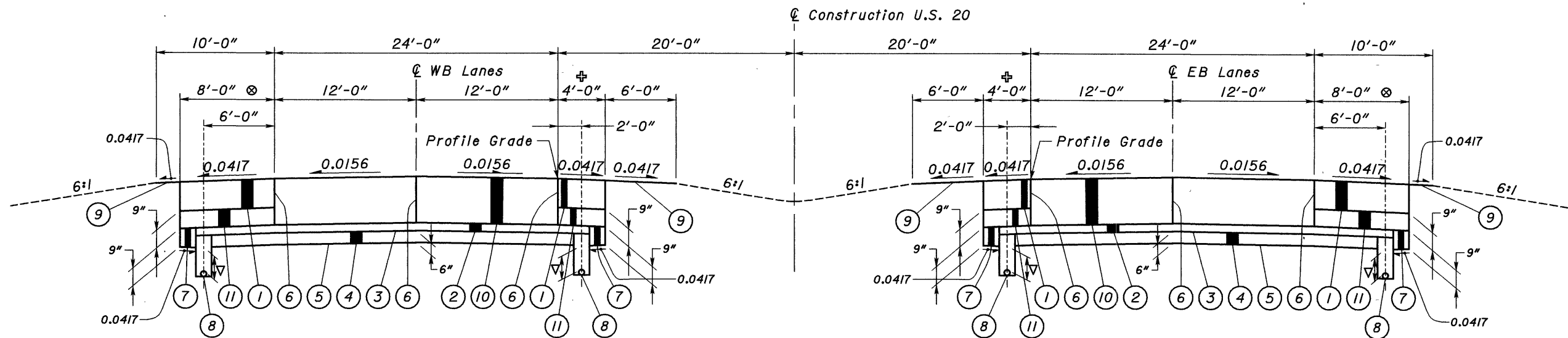


⊕ INSIDE SHOULDER

STA. 648+60 TO STA. 650+28
 STA. 650+53 TO STA. 652+21

TYPICAL SECTIONS

LOR-20-12.62



NORMAL SECTION

APPLIES @
 STA. 650+28 TO STA. 650+53 = 25.00 LIN. FT.
 TOTAL = 25.00 LIN. FT.

LEGEND

- ① Item 451 15" Reinforced Concrete Pavement, As Per Plan
- ② Item Special 4" Non-Stabilized Draining Base Type 'NJ' or Type 'IA'
- ③ Item 408 Bituminous Prime Coat, Applied at a Rate of 0.40 Gal/S.Y.
- ④ Item 304 6" Aggregate Base (See Proposal Note)
- ⑤ Item 203 Subgrade Compaction
- ⑥ Standard Longitudinal Joint
- ⑦ Item 304 9" Aggregate Base (See Proposal Note)
- ⑧ Item 605 6" Shallow Pipe Underdrain, 707.15, With Fabric Wrap, As Per Plan (*)
- ⑨ Item 203 Linear Grading
- ⊕ Item 451 24" Reinforced Concrete Pavement, As Per Plan
- ⑪ Item 301 9" Bituminous Aggregate Base AC-20

NOTES

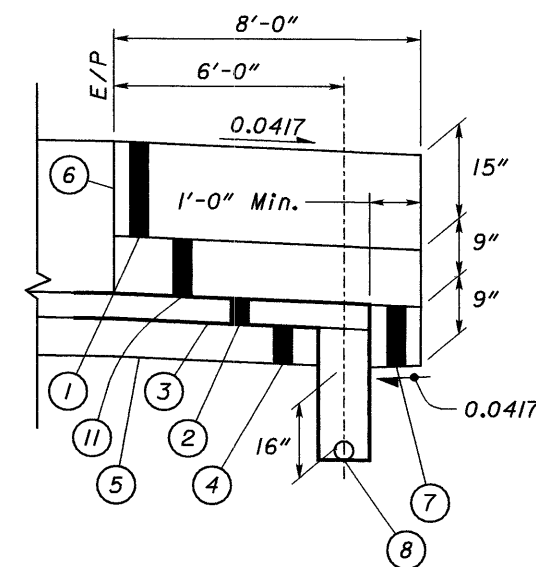
FOR WEIGH-IN-MOTION INSTALLATION DETAILS SEE SHEETS 339 - 350.

⊕ FOR DETAILS ON THE 24" REINFORCED CONCRETE PAVEMENT, AS PER PLAN SEE SHEET 342.

* Depth of Underdrain Remains Constant Below Pavement Surface.

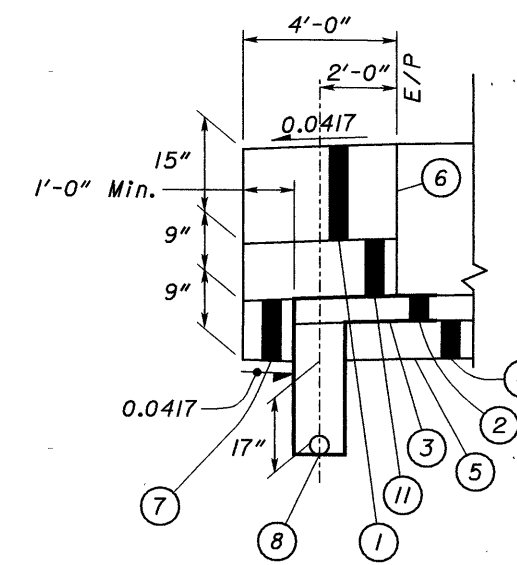
▽ Depth of Underdrain : Inside Shoulder = 17"
 Outside Shoulder = 16"

Where Item 408 Bituminous Prime Coat is to be applied, the contractor shall exercise care to insure that the prime coat is not placed over the width of the underdrain trench.



⊗ OUTSIDE SHOULDER

STA. 650+28 TO STA. 650+53



⊕ INSIDE SHOULDER

STA. 650+28 TO STA. 650+53

ITEM 203 LINEAR GRADING

THIS WORK SHALL CONSIST OF REGRADING THE EXISTING SHOULDER IN NON-GUARDRAIL AREAS ON THE MAINLINE OUTSIDE AND INSIDE SHOULDERS AS INDICATED ON THE TYPICAL SECTIONS. REGRADING WILL BE ACCOMPLISHED BY REMOVING EXCESS TURF BETWEEN THE EDGES OF THE PAVED SHOULDER TO A DISTANCE OF SIX (6) FEET INSIDE AND TWO (2) FEET OUTSIDE FROM SHOULDER EDGE USING A SLOPE OF APPROXIMATELY 0.04. EXCESS MATERIAL SHALL BE WINDROWED ON THE SHOULDER AND REMOVED BY THE CONTRACTOR. ANY VOIDS OR IRREGULARITIES BETWEEN THE EDGE OF PAVED SHOULDER AND LIMITS OF GRADING SHALL BE FILLED AND ADEQUATELY COMPACTED USING EXCESS MATERIAL. EXISTING RUTTED AREAS CAUSED BY SURFACE EROSION SHALL BE SCARIFIED PRIOR TO FILLING. AFTER GRADING OPERATION IS COMPLETED THE DISTURBED AREA SHALL BE SEEDED AND MULCHED AS PER ITEM 659. ALL COMPACTION SHALL BE AS PER ITEM 203.

THE METHOD OF MEASUREMENT SHALL BE CONSIDERED AS ON STATION EQUAL TO 100 LIN. FT. MEASURED SEPARATELY FOR EACH SIDE OF EACH DIRECTIONAL LANE AND SHALL INCLUDE ALL WORK REQUIRED AS DESCRIBED ABOVE INCLUDING NECESSARY SEEDING.

THERE MAY BE AREAS WHERE LINEAR GRADING MAY NOT BE REQUIRED IN THE FIELD. THE ENGINEER SHALL DETERMINE THESE LOCATIONS AND APPROPRIATE DEDUCTIONS MADE AS A RESULT OF THIS FIELD INVESTIGATION.

203 LINEAR GRADING 14.44 STATIONS

ITEM 625 POWER SERVICE, AS PER PLAN

POWER SERVICE EQUIPMENT SHALL BE INSTALLED AS SPECIFIED IN THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS AND ON STANDARD CONSTRUCTION DRAWING HL-40.10 EXCEPT THE CONTACTOR AND PHOTOELECTRIC CELL SHALL BE ELIMINATED. THE METER SHALL BE ORIENTATED SO IT CAN BE READ WHILE STANDING OUTSIDE THE RIGHT-OF-WAY. THE CONTRACTOR SHALL PAY ALL POWER COMPANY FEES INCLUDING INSTALLATION OF POLES, LINES, TRANSFORMERS AND ALL FEES ASSOCIATED WITH THE INSTALLATION AND CONNECTION OF THE POWER SERVICE.

ITEM 451 15" REINFORCED CONCRETE PAVEMENT, AS PER PLAN

REINFORCED CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS OF ITEM 451 AND STANDARD DRAWING BP-2.2 WITH THE FOLLOWING EXCEPTIONS:

1. THE FINAL SURFACE OF THE PAVED ROADWAY 150 FEET BEFORE AND 150 FEET AFTER THE WIM-SYSTEM SENSORS SHALL BE CONSTRUCTED IN A CONDITION SUCH THAT A FLAT 6" (150-mm) DIAMETER CIRCULAR PLATE 0.125" (3-mm) THICK CANNOT BE PASSED BENEATH A 20' (6-m) LONG STRAIGHTEDGE WHEN THE STRAIGHTEDGE IS POSITIONED AND MANEUVERED IN THE FOLLOWING MANNER:

BEGINNING AT THE LONGITUDINAL CENTER OF THE WIM-SYSTEM SENSORS, PLACE THE STRAIGHTEDGE ALONG EACH RESPECTIVE LANE EDGE WITH THE OUTER END AT THE DISTANCES FROM THE LONGITUDINAL CENTER OF THE SENSORS AS INDICATED BELOW. PIVOT THE STRAIGHTEDGE ABOUT THIS END, AND SWEEP THE INNER END BETWEEN THE LANE EDGES WHILE CHECKING CLEARANCE BENEATH THE STRAIGHTEDGE WITH THE CIRCULAR PLATE. EQUIVALENT FLATNESS MAY BE DETERMINED BY AN ALTERNATIVE MEANS SUCH AS IS DESCRIBED IN ASTM TEST METHOD E 1155.

LANE EDGE (WHEN LOOKING IN DIRECTION OF TRAFFIC)	LONGITUDINAL DISTANCE FROM CENTER OF SENSORS, FT (m)
RIGHT	20,30,44,60,76,92,108,124,140, and 156 (6,9,13,18,23,28,33,38,43, and 48)
LEFT	20,36,52,68,84,100,116,132,148, and 164 (6,11,16,21,26,30,35,40,45, and 50)

THE CONTRACTOR SHALL PROVIDE THE STRAIGHTEDGE AND PLATE.

2. GRINDING WILL BE PERMITTED TO ACHIEVE SMOOTHNESS BUT WILL BE CONSIDERED INCIDENTAL TO ITEM 451. CARBIDE TIP GRINDERS WILL NOT BE PERMITTED. IN AREAS WHERE GRINDING IS USED TO ACHIEVE SMOOTHNESS, TRANSVERSE GROOVES SHALL BE RESTORED AS REQUIRED IN 451.12, 451.121 AND 451.122. THE FILLING OF DEPRESSIONS TO ACHIEVE SMOOTHNESS WILL NOT BE PERMITTED. IN AREAS WHERE SMOOTHNESS CANNOT BE ACHIEVED BECAUSE OF DEPRESSIONS IN THE PAVEMENT, THE PAVEMENT WILL BE REMOVED AND REPLACED AT NO COST TO THE STATE.
3. AT THE LOCATIONS WERE PROPOSED PAVEMENT MEETS THE EXISTING PAVEMENT, THE ADJOINING PAVEMENT SHALL BE DOWELLED TO THE EXISTING PAVEMENT AS PER THE PAVEMENT DETAIL SHOWN ON SHEET 337, BP-2.5, AND SPECIFICATION 255.
4. THE JOINT SPACING SHALL BE AS DETAILED ON SHEET 337.
5. DOWEL DIAMETER SHALL BE 1 1/2".

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 451 15" REINFORCED CONCRETE PAVEMENT, AS PER PLAN.

ITEM 451 24" REINFORCED CONCRETE PAVEMENT, AS PER PLAN

THE REQUIREMENTS OF ITEM 451, 15" REINFORCED CONCRETE PAVEMENT, AS PER PLAN SHALL APPLY WITH THE FOLLOWING EXCEPTIONS:

1. THE REINFORCEMENT SHALL BE AS DETAILED AND SPECIFIED ON THIS PLAN.
2. THE SPACING BETWEEN CONTRACTION JOINTS SHALL BE THIRTY (30) FEET.
3. THE WIDTH OF THE 14" BOTTOM SLAB SHALL BE EQUAL TO THE WIDTH OF THE SCALE FRAME.
4. THE HOLES FOR THE SCALE ANCHORS WILL NOT BE DRILLED UNTIL THE BOTTOM SLAB HAS CURED AT LEAST 3 DAYS.
5. A WEIGH-IN-MOTION (WIM) SYSTEM SHALL BE INSTALLED AS DETAILED ON SHEETS 339-350. THE WIM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH WIM VENDOR'S RECOMMENDATIONS. FOR WIM SCALE INSTALLATION SEQUENCE OF OPERATIONS SEE SHEET 342.
6. CONTRACTOR SHALL SUPPLY A NON-SHRINK EPOXY GROUT SUCH AS U.S. 5 STAR EPOXY GROUT, POR-ROK GROUT OR EQUIVALENT FOR INSTALLATION OF THE SCALE AS DETAILED ON SHEET 342.
7. AT THE PIEZO SENSOR LOCATIONS, A 12 FOOT STRAIGHTEDGE WILL BE USED TO CHECK THE TRANSVERSE PAVEMENT SURFACE. TRANSVERSE PAVEMENT VARIATION AND EDGE OF PAVEMENT DROP SHALL NOT EXCEED 1/8".

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CONDUITS FROM DAMAGE DURING CONSTRUCTION. ANY CONDUITS DAMAGED DURING CONSTRUCTION WILL BE REMOVED AND REPLACED AT NO COST TO THE STATE.

PAYMENT FOR ALL THE ABOVE, INCLUDING SCALE INSTALLATION AND REINFORCEMENT STEEL, SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 451, 24" REINFORCED CONCRETE PAVEMENT, AS PER PLAN.

ITEM 632 POWER CABLE, MISC.

THE CONTRACTOR SHALL SUPPLY CABLE FOR THE WEIGH-IN-MOTION INSTALLATION. THE CABLE SHALL CONFORM TO THE FOLLOWING:

#10 THHN/THWN 660V 90°C CU STRANDED

THE CONTRACTOR SHALL INSTALL THE CABLE IN THE CONDUITS SHOWN ON SHEET 339 + 340. THE WIRING OF THE CONDUITS SHALL BE AS FOLLOWS:

- GREEN - BETWEEN EACH SCALE FRAME AND CABINET
- IN DATA CONDUIT BETWEEN CABINETS
- WHITE - BETWEEN CABINETS
- BLACK - BETWEEN CABINETS
- RED - BETWEEN CABINETS

ALL CABLES SHALL BE MARKED WITH COLOR MARKINGS FOR IDENTIFICATION PURPOSES AT PULLBOXES AND CABINETS. EACH CABLE SHALL HAVE AN ALLOWANCE OF 5 FEET AT EACH PULL BOX AND TERMINATING POINT FOR SLACK AND CONNECTIONS BY OTHERS. THE WIRING DIAGRAM SHALL BE NEATLY AND LEGIBLY DRAWN, REPRODUCED ON DURABLE PAPER, AND TWO COPIES SHALL BE SUPPLIED IN A PLASTIC ENVELOPE FASTENED TO THE INSIDE OF THE CABINET.

PAYMENT FOR ALL THE ABOVE, INCLUDING INSTALLATION OF THE CABLE, SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF ITEM 632 POWER CABLE, MISC.

PHONE LINE INSTALLATION

THE 2" CONDUIT INTENDED FOR THE INSTALLATION OF THE TELEPHONE LINE FOR THE WEIGH-IN-MOTION SITE SHALL HAVE A NO. 10 AWG COPPER-CLAD, ALUMINUM-CLAD OR GALVANIZED PULL WIRE INSTALLED IN IT. THE ENDS SHALL BE SEALED AS PER ITEM 625.13.

ALLTEL OHIO, INC. SHALL PROVIDE THE PHONE LINE. THE CONTRACTOR SHALL CONTACT THE FOLLOWING:

BRIAN BAKSA
363 WEST THIRD STREET, PO BOX 4033
ELYRIA, OHIO 44036-2033
(216) 329-4000

TO COORDINATE THE INSTALLATION OF THE PHONE LINE. THE CONTRACTOR SHALL INSTALL THE PHONE LINE IN THE CONDUITS SHOWN ON SHEET 351.

WEIGH-IN-MOTION
GENERAL NOTES

LOR-20-12.62

THE INTENT IS TO SUPPLY AND INSTALL A WEIGH-IN-MOTION (WIM) SYSTEM TO WEIGH AND CLASSIFY ALL INDIVIDUAL SINGLE/TANDEM WHEELS ON VEHICLES TRAVELING IN THE TRAVEL AND PASSING LANES FOR WESTBOUND AND EASTBOUND DIRECTIONS AT THE LOCATIONS SPECIFIED IN THE PLANS.

THE CONTRACTOR SHALL FURNISH ALL HARDWARE, SOFTWARE, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WIM SYSTEM. THE CONTRACTOR SHALL INSTALL WEIGH PLATFORMS AND LOOPS AS SHOWN ON SHEET 339 +340 FOR BOTH DIRECTIONS AND A DATA COLLECTION/PROCESSING UNIT AT THE SITE.

EQUIPMENT. THE WIM SYSTEM SHALL BE A TYPE I HIGH SPEED WEIGH-IN-MOTION SYSTEM MEETING THE REQUIREMENTS OF ASTM E 1318-90 WITH THE FOLLOWING ADDITIONS:

1. MEANS SHALL BE PROVIDED FOR RECORDING ALL DATA ITEMS IN TABLE 1 FOR PERMANENT RECORD.
2. PROVIDE OPTIONS 2 AND 3 UNDER 4.1.1
3. THE SYSTEM SHALL ALLOW THE USER TO CREATE AND MODIFY CLASSIFICATION SCHEMES BASED ON THE NUMBER AND SPACING OF AXLES. THE SOFTWARE WILL ALLOW DEFINITION OF AT LEAST 20 VEHICLE TYPES. THE CLASSIFICATION SCHEME SHALL BE FHWA SCHEME F AS DEFAULT.
4. THE SYSTEM SHALL USE STRAIN GAUGED LOAD CELLS TO WEIGH VEHICLES. THE LOAD CELLS MUST HAVE THE FOLLOWING CHARACTERISTICS:
 - A. THE LOAD CELLS MUST BE STAINLESS STEEL.
 - B. THE CELLS MUST BE HERMETICALLY SEALED.
5. THE SYSTEM MUST BE ABLE TO DETERMINE THE SPEED OF A VEHICLE USING THE WIM SCALE ITSELF.
6. THE SYSTEM MUST ALLOW THE USER TO RESET THE SYSTEM OVER THE PHONE LINE.
7. THE SYSTEM MUST PRODUCE THE 2, 3, 4, AND 7 CARD DATA THAT ARE SHOWN IN TABLES A, B, AND C AT THE WIM SITE TO BE PULLED INTO THE OFFICE VIA PHONE LINE.
8. SECTION 7 IS WAIVED. ACCEPTANCE SHALL BE AS DESCRIBED ON THIS SHEET.

THE WIM SCALE SHALL CONSIST OF WEIGH PLATES MOUNTED IN THE PAVEMENT. THE SCALE SHALL CONSIST OF TWO STEEL PLATES WHICH COVER THE ENTIRE 12 FOOT LANE WIDTH AND WEIGH ALL INDIVIDUAL SINGLE/TANDEM WHEELS CROSSING THE PLATES. SCALES SHALL HAVE A SAFE OVERLOAD RATING OF 120,000 POUNDS. THE MEASURED WEIGHT

SHALL RETURN TO ZERO BETWEEN TANDEM AXLES TRAVELLING AT SPEEDS UP TO 70 MPH. THE SCALE VAULTS SHALL INCORPORATE DRAINAGE TO PREVENT WATER BUILD-UP UNDER THE SCALE PLATFORMS. SCALE FRAMES, LOAD TRANSDUCERS AND MOUNTING HARDWARE SHALL BE OF STEEL CONSTRUCTION AND TREATED IN A MANNER APPROVED BY THE DEPARTMENT TO RESIST CORROSION. THE WEIGH SCALES SHALL BE FABRICATED SO THEY CAN BE EASILY REMOVED, REPAIRED AND REPLACED.

THE WIM DATA COLLECTION SYSTEM SHALL COLLECT AND SORT RAW DATA INTO SELECTED VEHICLE CLASSIFICATIONS. FOR VEHICLE CLASSES NOT SELECTED, TABULAR DATA SHALL BE STORED SHOWING THE NUMBER OF VEHICLES IN EACH UNSELECTED CLASS PER LANE. A FIXED ON-SITE SYSTEM SHALL STORE RAW RECORDS TO THE NEAREST SECOND. THE STORAGE SYSTEM SHALL PREVENT LOSS OF DATA IN THE EVENT THE SYSTEM SHUTS DOWN DUE TO A LOW POWER STATE. THE DATA COLLECTION SYSTEM SHALL, AT A MINIMUM, STORE THE MOST RECENT 500,000 VEHICLES WHICH PASS OVER THE WIM PLATFORMS AND CLASSIFICATION EQUIPMENT AT A FIELD UNIT. DATA SHALL BE STORED IN A COMPRESSED FORMAT FOR EFFICIENT DATA TRANSFER. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE COMPRESSED FORMAT THEY PROPOSE TO USE.

THE DATA COLLECTION/PROCESSING SYSTEM SHALL:

1. BE CAPABLE OF OPERATING BETWEEN TEMPERATURES OF -40 AND 158 DEGREES F.
2. CONTAIN COMPONENTS WHICH ARE SECURELY MOUNTED; FULLY PROTECTED AGAINST OVERLOADS, POWER SURGES AND LIGHTNING.
3. BE EQUIPPED WITH A READILY VISIBLE RESET BUTTON MOUNTED IN THE BOX TO RESTART THE EQUIPMENT SHOULD THE UNIT MALFUNCTION,
4. TRANSMIT DATA AUTOMATICALLY THROUGH VOICE GRADE TELEPHONE CIRCUITS TO ANY OF THREE CENTRAL OFFICE CONTROL UNITS; PROVIDE FOR REVIEW AND ADJUSTMENT OF RAW DATA THROUGH A MONITOR; EDIT AND PRINT DATA,
5. CONTAIN A TELEPHONE COMMUNICATION MODEM WHICH TRANSMITS DATA AT A MINIMUM OF 9600 BPS.
6. CAPABLE OF DOWNLOADING TO PORTABLE DATA RETRIEVAL UNITS.

THE CONTRACTOR SHALL SUPPLY ALUMINUM CABINETS TO HOUSE THE FIELD ELECTRONICS. THE CONTRACTOR SHALL OBTAIN CABINETS FROM WIM MANUFACTURER. THE CONTRACTOR SHALL INSTALL THE CABINETS AND CONSTRUCT THE CABINET FOUNDATIONS. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE CONDUIT, POWER CABLE, AXLE DETECTOR CABLES, LOOP WIRE, LOAD CELL CABLES

AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION.

THE SUPPLIED COMMUNICATION AND ANALYSIS SOFTWARE AND HARDWARE SHALL BE COMPATIBLE WITH EXISTING ODOT SOFTWARE AND HARDWARE USED FOR TOLEDO WEIGH-IN-MOTION SYSTEMS.

THE VENDOR SHALL INSTALL AT NO ADDITIONAL EXPENSE ANY SOFTWARE UPGRADES PRODUCED WITHIN 24 MONTHS AFTER ACCEPTANCE OF THIS WIM SYSTEM.

THE FIELD UNIT SHALL BE EQUIPPED WITH SURGE PROTECTION DEVICES FOR ALL CIRCUITS INCLUDING:

1. DATA LINE PROTECTION
2. LOOP DETECTOR-AMPLIFIER INPUT

THE CONTRACTOR SHALL FURNISH FOUR (4) COMPLETE SETS OF OPERATING INSTRUCTIONS, MAINTENANCE MANUALS, DIAGNOSTICS, AND OTHER DOCUMENTATION NECESSARY TO OPERATE AND MAINTAIN THE SYSTEM. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION AND TRAIN DEPARTMENT PERSONNEL IN THE OPERATION, TROUBLE SHOOTING, AND MAINTENANCE OF ALL EQUIPMENT PRIOR TO THE ACCEPTANCE OF THE UNIT. DOCUMENTATION SHALL CONTAIN:

1. MAINTENANCE MANUALS.
2. DOCUMENTATION OF ALL SOFTWARE USED WITH THE SYSTEM.
3. PROPOSED SOFTWARE LICENSING AGREEMENTS.
4. RS-232 SERVICE INTERFACING AND ANY REQUIRED INTERFACE HARDWARE CABLES AND DEVICE DRIVERS.

INSTALLATION. UPON COMPLETION OF THE PAVEMENT CONSTRUCTION AND INSTALLATION OF THE WIM SYSTEM.

THE FIELD UNIT SHALL BE INSTALLED AND SUCCESSFULLY TESTED FOR 60 CONSECUTIVE DAYS OF UNINTERRUPTED SERVICE BEFORE FINAL ACCEPTANCE BY THE DEPARTMENT.

THE CONTRACTOR SHALL CALIBRATE THE FIELD UNIT TO HIS SATISFACTION AND DECLARE IT READY FOR ACCEPTANCE TESTING. THE CONTRACTOR SHALL NOTIFY ODOT'S BUREAU OF TRANSPORTATION TECHNICAL SERVICES (PHONE NUMBER: 614-466-2852) ONE WEEK BEFORE CALIBRATION. THE SCALE SHALL MEET THE PERFORMANCE REQUIREMENTS GIVEN IN TABLE 2 OF ASTM E 1318-90, AND SHALL ALSO PROPERLY CLASSIFY A MINIMUM OF 90% OF ALL VEHICLES AND 90% OF THE 5 AXLE SEMI-TRAILER TRUCKS.

ACCEPTANCE. IN LIEU OF THE ACCEPTANCE CRITERIA SPECIFIED IN SECTION 7 OF ASTM E 1318-90, THE FOLLOWING SHALL APPLY. UPON COMPLETION OF THE CALIBRATION PROCESS AND WRITTEN NOTIFICATION FROM THE CONTRACTOR, THE FIELD DATA COLLECTION UNIT SHALL UNDERGO A 60 DAY ACCEPTANCE PERIOD. THIS CONSTITUTES A PERIOD OF 60 CONSECUTIVE DAYS WHERE NO REMEDIAL ACTION OR INTERPRETATION IS REQUIRED BY THE CONTRACTOR OR ODOT PERSONNEL TO VIEW OR OBTAIN DATA AND TABLES WHICH ARE BEING ACCUMULATED. AT THE BEGINNING OF EACH ACCEPTANCE PERIOD, THE CONTRACTOR SHALL DEMONSTRATE UNIT ACCURACY. SHOULD THE UNIT NOT PERFORM SATISFACTORILY FOR THE 60 DAY ACCEPTANCE PERIOD, IT SHALL BE SUBJECTED TO ANOTHER 60 DAY ACCEPTANCE TEST AFTER CORRECTION OF THE DEFECT. IF THE UNIT DOES NOT PERFORM SATISFACTORILY AFTER THE SECOND ACCEPTANCE TEST, ODOT WILL HAVE THE OPTION OF CONTINUING WITH FURTHER 60 DAY ACCEPTANCE PERIODS OR HAVING THE SYSTEM NONPERFORMED AND THE PAVEMENT REPLACED AT THE CONTRACTOR'S EXPENSE.

WARRANTY. THE MANUFACTURER SHALL WARRANTY ALL HARDWARE AND SOFTWARE FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE DEPARTMENT. ANY MALFUNCTIONS WITHIN THE SYSTEM DURING THE WARRANTY PERIOD SHALL BE CORRECTED BY THE MANUFACTURER AT NO COST.

PAYMENT. UNIT COST FOR THE WEIGH-IN-MOTION (WIM) SYSTEM SHALL INCLUDE COST OF ALL HARDWARE, SOFTWARE, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WEIGH-IN-MOTION SYSTEM. TOTAL HAS BEEN CARRIED TO SHEET 333.

ITEM	TOTAL	UNIT	DESCRIPTION
SPECIAL	1	EACH	WEIGH-IN-MOTION SYSTEM

NOTE CONTINUED ON NEXT SHEET

TABLE A
TRUCK WEIGHT RECORD

COLUMNS	NO. OF COLUMNS	DESCRIPTION	
1	1	Truck Weight Record Code (7)	
2-3	2	State Code	
4-5	2	Functional Classification	
6-8	3	Station Identification Number	5-6-3
9	1	Direction Of Travel	5-6-3
10-11	2	Year Of Date	5-6-4
12-13	2	Month Of Data	5-6-19
14-15	2	Date Of Month	5-6-19
16-17	2	Hour Of Day	5-6-19
18-23	6	Vehicle Type Code	5-6-19
24-25	2	Body Type (Optional)*	5-6-22
26	1	Engine Type (Optional)*	5-6-25
27-28	2	(Open)	5-6-26
29-31	3	Registered Weight (Thousands Of Pounds) Optional If One Is Coded, Both Must Be Coded	5-6-26
32	1	Basis Of Registration (Open)	5-6-26
33-35	3	Commodity Code (Optional)	5-6-26
36-40	5	Load Status Code (Optional)*	5-6-27
41	1	Total Weight Of Truck Or Combination	5-6-32
42-45	4	A-Axle Weight (Hundreds Of Pounds)	5-6-32
46-48	3	B-Axle Weight (Hundreds Of Pounds)	5-6-32
49-51	3	C-Axle Weight (Hundreds Of Pounds)	5-6-32
52-54	3	D-Axle Weight (Hundreds Of Pounds)	5-6-32
55-57	3	E-Axle Weight (Hundreds Of Pounds)	5-6-32
58-60	3	(A-B) Axle Spacing (Feet And Tenths)	5-6-32
61-63	3	(B-C) Axle Spacing (Feet And Tenths)	5-6-32
64-66	3	(C-C) Axle Spacing (Feet And Tenths)	5-6-32
67-69	3	(D-E) Axle Spacing (Feet And Tenths)	5-6-32
70-72	3	Total Wheelbase (Feet And Tenths)	5-6-32
73-76	4	Record Serial Number	5-6-32
77-79	3	(Same For Continuation Record)	
80	1	Continuation Indicator 0 - No Continuation Record 1 - Has A Continuation Record	5-6-32

*EACH INTERVIEW DATA ITEM HAS A DEFAULT VALUE WHICH MUST BE ENTERED WHEN THE DATA ITEM IS NOT COLLECTED.

CONTINUATION RECORD (USED ONLY FOR TRUCK COMBINATIONS HAVING SIX OR MORE AXLES AND IMMEDIATELY FOLLOWS THE FACE RECORD.)

COLUMNS	NO. OF COLUMNS	DESCRIPTION	TMG REF. PAGE
1-28	28	Same As Column 1-28 Of The Face Record	
29-31	3	F-Axle Weight (Hundreds Of Pounds)	5-6-32
32-34	3	G-Axle Weight (Hundreds Of Pounds)	5-6-32
35-37	3	H-Axle Weight (Hundreds Of Pounds)	5-6-32
38-40	3	I-Axle Weight (Hundreds Of Pounds)	5-6-32
41-43	3	J-Axle Weight (Hundreds Of Pounds)	5-6-32
44-46	3	K-Axle Weight (Hundreds Of Pounds)	5-6-32
47-49	3	L-Axle Weight (Hundreds Of Pounds)	5-6-32
50-52	3	M-Axle Weight (Hundreds Of Pounds)	5-6-32
53-55	3	(E-F) Axle Spacing (Feet And Tenths)	5-6-32
56-58	3	(F-G) Axle Spacing (Feet And Tenths)	5-6-32
59-61	3	(G-H) Axle Spacing (Feet And Tenths)	5-6-32
62-64	3	(H-I) Axle Spacing (Feet And Tenths)	5-6-32
65-67	3	(I-J) Axle Spacing (Feet And Tenths)	5-6-32
68-70	3	(J-K) Axle Spacing (Feet And Tenths)	5-6-32
71-73	3	(K-L) Axle Spacing (Feet And Tenths)	5-6-32
74-76	3	(L-M) Axle Spacing (Feet And Tenths)	5-6-32
77-79	3	Record Serial Number (Same As Face Record)	5-6-32
80		1 - Continuation Indicator 2 - First Continuation Record For Vehicle With More Than 13 Axles 9 - Last Continuation Record	

TABLE B
VEHICLE CLASSIFICATION RECORD

COLUMNS	NO. OF COLUMNS	DESCRIPTION	TMG REF. PAGE
1	1	Vehicle Classification Record Code (4)	5-6-2
2-3	2	State Code	5-6-2
4-5	2	Functional Classification	5-6-3
6-8	3	Station Identification Number	5-6-3
9	1	Direction Of Travel	5-6-3
10-11	2	Year Of Date	5-6-3
12-13	2	Month Of Data	5-6-4
14-15	2	Date Of Month	5-6-14
16-17	2	Hour Of Day	5-6-14
18-19	2	Number Of Motorcycles (Optional)	5-6-14
20-23	4	Number Of Passenger Cars Or All 2-Axle, 4-Tire Single Unit Vehicles	5-6-14
24-26	3	Number Of Other 2-Axle, 4-Tire Single Unit Vehicles	5-6-14
27-28	2	Number Of Buses	5-6-14
29-31	3	No. Of 2-Axle, 6-Tire Single Unit Trucks	5-6-14
32-33	2	No. Of 3-Axle Single Unit Trucks	5-6-14
34-35	2	No. Of 4 Or More Axle Single Unit Trucks	5-6-14
36-37	2	No. Of 4 Or Less Axle Single Trailer Trucks	5-6-14
38-40	3	No. Of 5-Axle Single Trailer Trucks	5-6-14
41-42	2	No. Of 6 Or More Axle Single Trailer Trucks	5-6-14
43-44	2	No. Of 5 Or Less Axle Multi-Trailer Trucks	5-6-14
45-46	2	No. Of 6-Axle Multi-Trailer Trucks	5-6-14
47-48	2	No. Of 7 Or More Axle Multi-Trailer Trucks	5-6-14
49	1	Motorcycle Reporting Indicator	
50	1	Vehicle Class Combination Indicator	5-6-14
51	1	Lane Of Travel: 0 - Combined Lanes 1 - Outside (Rightmost) Lane 2 - Next To Outside Lane 3 To 9 - Inside Lanes	5-6-15
52-55	4	Class 14	
56-59	4	Class 15	

TABLE C
STATION DESCRIPTION RECORD

COLUMNS	NO. OF COLUMNS	DESCRIPTION	TMG REF. PAGE
1	1	Station Description Record Code (2)	
2-3	2	State Code	5-6-2
4-5	2	Functional Classification	5-6-3
6-8	3	Station Identification Number	5-6-3
9	1	Direction Of Travel	5-6-3
10-11	2	Year Of Date	5-6-4
12	1	Posted Route Number Category	5-6-7
13-17	5	Posted Route Number	5-6-7
18-20	3	County Code	5-6-7
21-32	12	HPMS Sample Number	5-6-7
33	1	HPMS Sample Section Subdivision Number	5-6-7
34-35	2	Year Station Was Established	5-6-8
36	1	Type Of Site	5-6-8
37	1	Type Of Weighing Equipment	5-6-8
38	1	Method Of Vehicle Classification Counting	5-6-8
39	1	Coordination With Enforcement Activities	5-6-8
40-45	6	AADT Most Current Figure	5-6-9
46-80	35	Location Of Station (Distance And Direction From Nearest Major Intersecting Route)	5-6-9

DESCRIPTION. THIS WORK SHALL CONSIST OF CONSTRUCTING A NON-STABILIZED DRAINAGE BASE (NSDB) ON A PREPARED SUBGRADE OR BASE COURSE IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, THICKNESS, AND TYPICAL CROSS SECTIONS SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

ITEM 304, "AGGREGATE BASE," SHALL APPLY; DEVIATIONS ARE AS FOLLOWS.

AGGREGATES. THE AGGREGATES FOR THE NSDB SHALL BE CRUSHED CARBONATE STONE, CRUSHED GRAVEL, AIR-COOLED BLAST FURNACE SLAG OR GRANULATED SLAG MEETING THE REQUIREMENTS OF 703.02 AND MEETING THE FOLLOWING GRADATIONS.

SIEVE SIZE	TOTAL PERCENT PASSING	
	TYPE NJ	TYPE IA
1 1/2"	100	
1"	95-100	100
1/2"	60-80	50-80
No. 4	40-55	
No. 8	5-25	10-35
No. 16	0-8	
No. 50	0-5	0-15
No. 200		0-6

IF GRAVEL IS UTILIZED, 95 PERCENT BY COUNT OF THE AGGREGATE RETAINED ON THE NUMBER 8 SIEVE SHALL HAVE AT LEAST ONE MECHANICALLY FRACTURED FACE.

MATERIAL PASSING THE NO. 40 SIEVE SHALL BE NON-PLASTIC BY AASHTO T-90.

UNDER AASHTO T-96, LOS ANGELES ABRASION TEST, 40 PERCENT WEAR SHALL BE THE MAXIMUM ALLOWABLE FOR ALL AGGREGATES USED UNDER THIS SPECIFICATION.

COMPOSITION OF MIXTURES. CONTRACTOR SHALL SUBMIT FOR APPROVAL A GRADATION FOR THE MATERIAL AND A STATEMENT NAMING THE SOURCE OF EACH COMPONENT.

THE GRADATION SHALL ESTABLISH THE PERCENTAGE BY DRY WEIGHT OF AGGREGATE PASSING EACH REQUIRED SIEVE SIZE. THE VALUES OF PERCENT PASSING EACH SIEVE SIZE SHALL BE WITHIN THE MASTER BAND. THE SUBMITTED GRADATION SHALL BE IN EFFECT UNTIL A MODIFICATION IS APPROVED.

VERIFICATION OF DESIGN. A MINIMUM OF 30 DAYS PRIOR TO THE PRODUCTION OF THE NSDB, THE CONTRACTOR SHALL SUBMIT TO THE LABORATORY FOR APPROVAL, THE MIX DESIGN, GRADATION OF THE MIXTURE AND THE FOLLOWING QUANTITIES OF COMPONENTS FOR MATERIAL VERIFICATION THAT THE MIX DESIGN WILL RESULT IN A MIXTURE HAVING THE REQUIRED GRADATION.

BLENDED AGGREGATE	200 POUNDS
COMPONENT SIZE	100 POUNDS EACH

THE CONTRACTOR SHALL NOTIFY THE LABORATORY PRIOR TO THE DELIVERY OF ANY MATERIAL.

EQUIPMENT. ALL EQUIPMENT NECESSARY TO MIX, TRANSPORT, PLACE, COMPACT AND FINISH THIS LAYER SHALL BE APPROVED BEFORE WORK WILL BE PERMITTED TO START. SUCH EQUIPMENT SHALL INCLUDE A STATIONARY OR PORTABLE CONTINUOUS OR BATCH TYPE PUGMILL MIXER EQUIPPED WITH

BATCHING OR METERING DEVICES FOR PROPORTIONING THE BLEND, OR OTHER APPROVED UNITS CAPABLE OF PRODUCING A BLENDED MATERIAL CONSISTENTLY MEETING THE GRADATION REQUIREMENTS, A TRAVELING PLANT SUCH AS A SPREADER BOX OR ASPHALT PAVERS CAPABLE OF MAINTAINING A UNIFORM RATE OF TRAVEL WHILE SPREADING AND/OR LAYING A LIFT OF UNIFORM CONSISTENCY AND THICKNESS WITH PROPER GRADE CONTROL, MOTOR GRADERS, PNEUMATIC-TIRED OR STEEL WHEELED VIBRATORY ROLLERS AND SUCH OTHER EQUIPMENT AND TOOLS AS MAY BE REQUIRED TO PERFORM THE WORK IN A SATISFACTORY MANNER. THE ROLLERS SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATION 401.II.

MIXING AND PREWETTING. THE AGGREGATE SHALL BE MIXED AND PREWETTED TOGETHER IN THE PROPER PROPORTION AS SPECIFIED IN THE MIX DESIGN BY UTILIZING A PUGMILL MIXER.

THE PUGMILL MIXER SHALL PROVIDE AN ACCURATE CONTROL OF THE PROPORTIONS OF WATER AND AGGREGATE AND SHALL BE SO DESIGNED THAT THE MATERIAL CAN BE RETAINED IN THE MIXING CHAMBER UNDER VIGOROUS ACTION FOR AT LEAST 15 SECONDS. IF THE MIXER IS OF THE CONTINUOUS-FLOW TYPE, IT SHALL HAVE TWIN MIXING SHAFTS AND SHALL BE EQUIPPED WITH A HOPPER OR BIN AT THE DISCHARGE END OF THE MIXER SO DESIGNED AS TO MINIMIZE THE SEGREGATION OF THE MIXED MATERIALS AND OF SUCH A CAPACITY AS TO PREVENT THE NECESSITY OF STOPPING THE MIXER BETWEEN THE SUCCESSIVE TRUCK LOADS, UNDER NORMAL OPERATING CONDITIONS.

THE MIXTURE SHALL BE HANDLED IN SUCH A MANNER AS TO PREVENT CONTAMINATION, DEGRADATION, AND SEGREGATION.

TRANSPORTATION OF MIXTURE. THE BLENDED MATERIAL SHALL BE HAULED TO THE SITE IN VEHICLES THAT WILL PREVENT CONTAMINATION, DEGRADATION, AND SEGREGATION OF THE MIXTURE. THE MATERIAL SHALL CONTAIN AT LEAST 2% MOISTURE CONTENT BY WEIGHT TO MINIMIZE SEGREGATION AND DEGRADATION.

PREPARATION OF SUBBASE OR BASE COURSE. PREPARATION OF THE SUBBASE, SUBGRADE OR BASE COURSE SHALL BE IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS OF SPECIFICATIONS 310, 203, OR 304.

SPREADING. THE BLENDED MIXTURE SHALL BE DELIVERED TO THE PREPARED SUBBASE, SUBGRADE, OR BASE COURSE AND SPREAD UNIFORMLY WITH MINIMUM MANIPULATION TO PREVENT SEGREGATION. THE AGGREGATE SHALL BE IN COMPACTED LIFTS NOT TO EXCEED 4 INCHES. SPREADER BOXES OR ASPHALT PAVERS WITH AUTOMATIC GRADE CONTROL SHALL BE USED.

WHEN THE NSDB IS PLACED IN AREAS INACCESSIBLE TO SPREADERS, THE NSDB SHALL BE SPREAD UTILIZING A METHOD APPROVED BY THE ENGINEER.

COMPACTION. PNEUMATIC-TIRE ROLLERS, OR VIBRATORY ROLLERS CONFORMING TO SPECIFICATION 401.II SHALL BE USED TO COMPACT THE NSDB. WHEN THE SQUARE YARDAGE OF NSDB EXCEEDS 5,000 ON A PROJECT, ONE OR MORE CONTROL STRIPS SHALL BE CONSTRUCTED AT THE BEGINNING OF THE WORK FOR THE PURPOSE OF DETERMINING

PROJECT COMPACTION REQUIREMENTS. AN ADDITIONAL CONTROL STRIP SHALL BE CONSTRUCTED WHEN A CHANGE IS MADE IN THE SOURCE OR TYPE OF MATERIAL FROM THE SAME SOURCE, OR AS DIRECTED BY THE ENGINEER. EACH CONTROL STRIP SHALL CONSIST OF AN AREA AT LEAST 400 SQUARE YARDS, AND SHALL BE OF THE SAME MATERIAL AS THAT SPECIFIED ON THE REMAINDER OF THE PROJECT.

THE CONTROL STRIP SHALL BE COMPACTED BY A MINIMUM OF TWO PASSES FOR TYPE 'NJ' AND FOUR PASSES FOR TYPE 'IA' WITH THE COMPACTION EQUIPMENT. SURFACE APPLICATION OF WATER MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER. A PASS IS DEFINED AS ONE PASSAGE OF A ONE TIRE, COMPACTING WHEEL, A VIBRATORY UNIT OVER THE ENTIRE SURFACE OR THE LAYER. DENSITY OF THE CONTROL SECTION SHALL BE DETERMINED IN ACCORDANCE WITH THE CURRENT PROVISIONS OF AASHTO T-238 METHOD A.

UPON THE COMPLETION OF THE COMPACTION, A MINIMUM OF TEN TESTS SHALL BE MADE AT RANDOM LOCATIONS, DETERMINED BY THE ENGINEER. THIS SHALL DETERMINE THE AVERAGE IN-PLACE DENSITY OF THE CONTROL STRIP. THE VALUE OF THIS AVERAGE SHALL BE A REFERENCE MAXIMUM DENSITY FOR THE NSDB FROM THE SAME SOURCE USED ELSEWHERE ON THE PROJECT.

FOR THE PURPOSE OF MONITORING CONFORMANCE TO THE COMPACTION REQUIREMENTS, THE NSDB CONSTRUCTED ON THE PROJECT SHALL BE DIVIDED INTO LOTS CONSISTING OF APPROXIMATELY 5,000 SQUARE YARDS OR LESS IN AREA.

THE ENGINEER SHALL DETERMINE THE AVERAGE LOT DENSITY OF FIVE RANDOMLY SELECTED LOCATIONS IN THE LOT. THIS AVERAGE REFERENCE DENSITY SHALL NOT BE LESS THAN 95% OF THE AVERAGE REFERENCE DENSITY IN THE CONTROL STRIP. IF A LOT FAILS TO MEET THIS REQUIREMENT IT SHALL BE RECOMPACTED BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE DEPARTMENT, AND RESUBMITTED FOR ACCEPTANCE. THE ENGINEER SHALL DETERMINE THE NEW AVERAGE LOT DENSITY. IF THIS DENSITY STILL FAILS TO MEET 95% OF THE AVERAGE REFERENCE MAXIMUM DENSITY, A NEW CONTROL STRIP SHALL BE CONSTRUCTED.

WHEN THE NSDB IS PLACED IN AREAS INACCESSIBLE TO ROLLERS, THE NSDB SHALL BE COMPACTED UTILIZING A METHOD APPROVED BY THE ENGINEER.

SHAPING AND FINISHING. AFTER THE NSDB HAS BEEN COMPACTED THE SURFACE SHALL BE SHAPED TO THE REQUIRED CROSS SECTION.

WHEN THE SHAPING REDUCES THE DENSITY, THE SECTION SHALL BE RECOMPACTED TO CONFORM TO THE ORIGINAL TESTED DENSITY.

THE COMPACTION AND SHAPING OF THE NSDB SHALL PRODUCE UNIFORM DENSITY AND CROSS SECTION OF THE NSDB.

LIMITATIONS ON PLACING OPERATIONS. THE NSDB SHALL NOT BE PLACED WHEN RAIN IS FORECAST WITHIN THE INTENDED WORKING PERIOD. IF RAIN OCCURS DURING PLACEMENT OF THE NSDB, ALL OPERATIONS SHALL CEASE.

THE NSDB SHALL NOT BE PLACED DURING ANY WEATHER CONDITIONS THAT WOULD CAUSE ITS DEGRADATION, SEGREGATION, OR CONTAMINATION.

PROTECTION OF THE UNDERDRAINS. UNDER NO CIRCUMSTANCE SHALL THE CONTRACTOR'S EQUIP-

MENT BE ALLOWED TO CRUSH THE UNDERDRAIN PIPE OR SYSTEM, AS A RESULT OF THE PLACEMENT OR COMPACTION OF THE NSDB. DAMAGE TO THE UNDERDRAIN PIPE OR SYSTEM SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL ENSURE A POSITIVE CONNECTION BETWEEN THE UNDERDRAIN BACKFILL AND THE NSDB REGARDLESS OF THE SEQUENCE OF CONSTRUCTION CALLED FOR ON THE PLANS, NOTES AND SPECIFICATIONS.

PROTECTION OF THE NSDB. THE CONTRACTOR SHALL NOT USE THE NSDB FOR A HAUL ROAD. HAULING UNITS AND OTHER CONSTRUCTION VEHICLES WILL NOT BE ALLOWED TO OPERATE ON THE NSDB. ONLY THE EQUIPMENT USED TO PLACE THE NEXT LAYER SHALL BE ALLOWED ON THE NSDB. ALL HAULING UNITS CARRYING MATERIAL FOR THE NEXT LAYER OF PAVEMENT MUST SIDE DUMP ONTO THE NSDB.

THE NSDB SHALL BE PROTECTED FROM FINE MATERIAL CONTAMINATION AT ALL TIMES.

ADEQUATE SURFACE AND SUBSURFACE DRAINAGE SHALL BE PROVIDED FOR THE NSDB, SUBBASE, AND SUBGRADE AT ALL TIMES.

WHEN BITUMINOUS CONCRETE PAVEMENT IS CONSTRUCTED ON THE NSDB, THE FIRST COURSE SHALL BE PLACED USING A PAVER MOUNTED ON TRACKS, THE FIRST COURSE SHALL BE ALLOWED TO CURE OVERNIGHT BEFORE PLACING THE SUCCEEDING PAVEMENT COURSES, A MINIMUM OF 8" OF ASPHALT CONCRETE SHALL BE REQUIRED ON THE NSDB BEFORE ANY HAULING EQUIPMENT WILL BE ALLOWED ON THE PAVEMENT.

NSDB THICKNESS TOLERANCES. THE MAXIMUM COMPACTED DEPTH OF THE NSDB SHALL BE 4 INCHES. THE COMPACTED THICKNESS SHALL COMPLY WITH THE PLAN TYPICAL SECTION.

THE THICKNESS TOLERANCE SHALL BE ± 1/2". THIN AREAS SHALL BE CORRECTED BY ADDING MATERIAL, GRADING AND COMPACTING.

SURFACE TOLERANCE. THE CONTRACTOR SHALL CHECK THE WORK UNDER THIS ITEM WITH TEMPLATES, SLOPE BOARDS OR OTHER DEVICES SATISFACTORY TO THE ENGINEER. THE COMPLETED WORK SHALL CONFORM TO THE PLANS WITHIN THE FOLLOWING TOLERANCE:

THE FINISHED SURFACE SHALL BE UNIFORM AND AT NO PLACE VARY MORE THAN 1/4 INCH FROM A (10) TEN-FOOT STRAIGHT EDGE APPLIED TO THE SURFACE PARALLEL TO THE CENTERLINE OF THE PAVEMENT.

LOW AREAS SHALL BE CORRECTED BY ADDING MATERIAL, GRADING AND COMPACTING, AT NO ADDITIONAL COST TO THE DEPARTMENT.

EXPOSURE TO THE ELEMENTS. ANY NSDB SHALL BE COVERED BY THE NEXT PAVEMENT COURSE WITHIN 40 DAYS OF THE CONSTRUCTION OF THE NSDB.

THE SHOULDER PAVEMENT SHALL BE PLACED WITHIN 75 DAYS OF THE PLACEMENT OF THE NSDB.

THE CONTRACTOR MAY CONSTRUCT THE NSDB AT ANY TIME THAT COMPLIES WITH THE TEMPERATURE RESTRICTIONS OF THIS SPECIFICATION. HOWEVER, THE CONTRACTOR SHALL HAVE THE

EXPOSURE TO THE ELEMENTS CONTINUED.

NSDB COMPLETELY COVERED WITH THE NEXT LAYER OF PAVEMENT WITH THE UNDERDRAINS PLACED AND FUNCTIONING BEFORE THE ATMOSPHERIC TEMPERATURE IS BELOW 35°F FOR ANY LENGTH OF TIME.

ALL DAMAGE CAUSED TO THE OVERLAYING PAVEMENT, NSDB, SUBBASE, SUBGRADE AND UNDERDRAINS BY THE EXPOSURE TO TEMPERATURES BELOW 35°F SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THESE ITEMS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT.

THE NSDB SHALL BE COVERED BY THE NEXT LAYER OF PAVEMENT (MAINLINE AND SHOULDERS) AND HAVE THE UNDERDRAIN FUNCTIONING BY THE END OF THE CONSTRUCTION SEASON IN ANY GIVEN CALENDAR YEAR.

METHOD OF MEASUREMENT. THE YARDAGE UNDER THIS ITEM WILL BE THE NUMBER OF SQUARE YARDS COMPLETED AND ACCEPTED IN PLACE. THE WIDTH FOR MEASUREMENT WILL BE THE WIDTH OF THE PAVEMENT SHOWN ON THE TYPICAL SECTIONS OF THE PLANS AND ADDITIONAL WIDENING WHERE CALLED FOR, OR OTHERWISE DIRECTED IN WRITING BY THE ENGINEER. THE LENGTH WILL BE MEASURED HORIZONTALLY ALONG THE CENTERLINE OF EACH ROADWAY OR RAMP. THE PLAN QUANTITIES AS ADJUSTED FOR CHANGES, ERRORS, AND DEVIATIONS IN EXCESS OF ALLOWABLE TOLERANCES WILL BE THE METHOD OF MEASUREMENT.

PAYMENT. THE CONTRACT PRICE PAID PER SQUARE YARD FOR NON-STABILIZED DRAINAGE BASE SHALL INCLUDE FULL COMPENSTAION FOR FURNISHING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS, AND FOR DOING ALL THE WORK INVOLVED IN CONSTRUCTING THE NON-STABILIZED DRAINAGE BASE, COMPLETE IN PLACE.

<u>ITEM</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
SPECIAL	SQ. YDS.	4" NON-STABILIZED DRAINING BASE, TYPE NJ OR TYPE IA

CALCULATED
DIA
CHECKED

ITEM SPECIAL NON-STABILIZED DRAINING BASE,
TYPE NJ OR IA

LOR-20-12.62

8
28

331
351

(TOTALS CARRIED TO GENERAL SUMMARY ON SHEET 333)

STA. 648+60 to STA. 652+21

ITEM 202 PAVEMENT REMOVED

STA. 648+60 to STA. 652+21 = 361.0 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 4 ft. + 8 ft.] = 72 ft.
 LENGTH = 361.0 ft.
 AREA = 72 ft. x 361 ft. + 9 = 2888 total sq. yd.

ITEM 203 SUBGRADE COMPACTION

STA. 648+60 to STA. 652+21 = 361.0 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 4 ft. + 8 ft.] = 72 ft.
 LENGTH = 361.0 ft.
 AREA = 72 ft. x 361 ft. + 9 = 2888 total sq. yd.

ITEM SPECIAL NON-STABILIZED DRAINING BASE

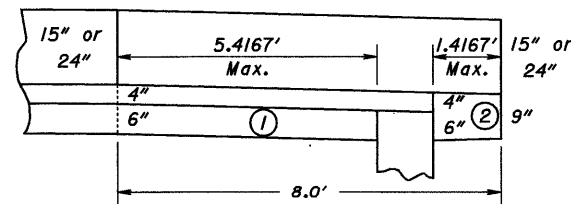
STA. 648+60 to STA. 652+21 = 361.0 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 2.5833 ft. + 6.5833 ft.] = 66.33 FT.
 LENGTH = 361.0 ft.
 AREA = 66.33 ft. x 361 ft. + 9 = 2661 total sq. yd.

ITEM 304 AGGREGATE BASE (MAINLINE)

STA. 648+60 to STA. 652+21 = 361.0 ft.
 THICKNESS = 6 in. = 0.5 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 4 ft.] = 48 ft.
 LENGTH = 361.0 ft.
 VOLUME = [0.5 ft. x 48 ft. x 361 ft.] + 27 = 321 cu. yd. sub total

(8' SHOULDER)

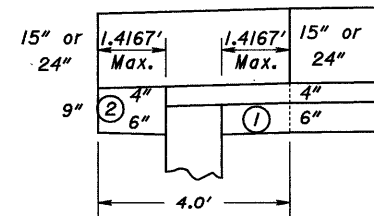
STA. 648+60 to STA. 652+21 = 361.0 ft.



AREA 1 = 6 in. x (1 ft./12 in.) x 5.4167 ft. = 2.71 sq. ft.
 AREA 2 = [(9 in. + 10 in.)/2] x (1 ft./12 in.) x 1.4167 ft. = 1.12 sq. ft.
 LENGTH = 361.0 ft.
 VOLUME = 2 x [(2.71 sq. ft. + 1.12 sq. ft.) x 361 ft.] + 27 = 102 cu. yd. sub total

ITEM 304 AGGREGATE BASE CONTINUED (4' SHOULDER)

STA. 648+60 to STA. 652+21 = 361.0 ft.



AREA 1 = 6 in. x (1 ft./12 in.) x 1.4167 ft. = 0.71 sq. ft.
 AREA 2 = [(9 in. + 10 in.)/2] x (1 ft./12 in.) x 1.4167 ft. = 1.12 sq. ft.
 LENGTH = 361.0 ft.
 VOLUME = 2 x [(0.71 sq. ft. + 1.12 sq. ft.) x 361 ft.] + 27 = 49 cu. yd. sub total

TOTAL = 321 cu. yd. + 102 cu. yd. + 49 cu. yd. = 472 cu. yd. total

ITEM 408 BITUMINOUS PRIME COAT

STA. 648+60 to STA. 652+21 = 361.0 ft.
 RATE OF APPLICATION = 0.40 gal./sq. yd.
 WIDTH - 2 x [(2 x 12 ft.) + 1.4167 ft. + 5.4167 ft.] = 61.67 FT.
 LENGTH = 361.0 ft.
 AREA = (61.67 ft. x 361 ft.) + 9 = 2474 total sq. yd.
 GALLON = (0.40 gal./sq. yd.) x 2474 sq. yd. = 990 total gallon

ITEM 451 15" REINFORCED CONCRETE PAVEMENT, AS PER PLAN MAINLINE

STA. 648+60 to STA. 650+28 = 168.0 ft.
 STA. 650+53 to STA. 652+21 = 168.0 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 4 ft.] = 48 ft.
 LENGTH = 2 x 168.0 ft. = 336 ft.
 AREA = 48 ft. x 336 ft. + 9 = 1792 sq. yd. sub total

(8' SHOULDER)

STA. 648+60 to STA. 652+21 = 361.0 ft.
 WIDTH - 2 x 8 ft. = 16 ft.
 LENGTH = 361.0 ft.
 AREA = 16 ft. x 361 ft. + 9 = 642 sq. yd. sub total

(4' SHOULDER)

STA. 648+60 to STA. 652+21 = 361.0 ft.
 WIDTH - 2 x 4 ft. = 8 ft.
 LENGTH = 361.0 ft.
 AREA = 8 ft. x 361 ft. + 9 = 321 sq. yd. sub total

TOTAL = 1792 sq. yd. + 642 sq. yd. + 321 sq. yd. = 2755 total sq. yd.

ITEM 451 24" REINFORCED CONCRETE PAVEMENT, AS PER PLAN

STA. 650+28 to STA. 650+53 = 25.0 ft.
 WIDTH - 2 x [(2 x 12 ft.) + 4 ft.] = 48 ft.
 LENGTH = 25.0 ft.
 AREA = 48 ft. x 25 ft. + 9 = 133 total sq. yd.

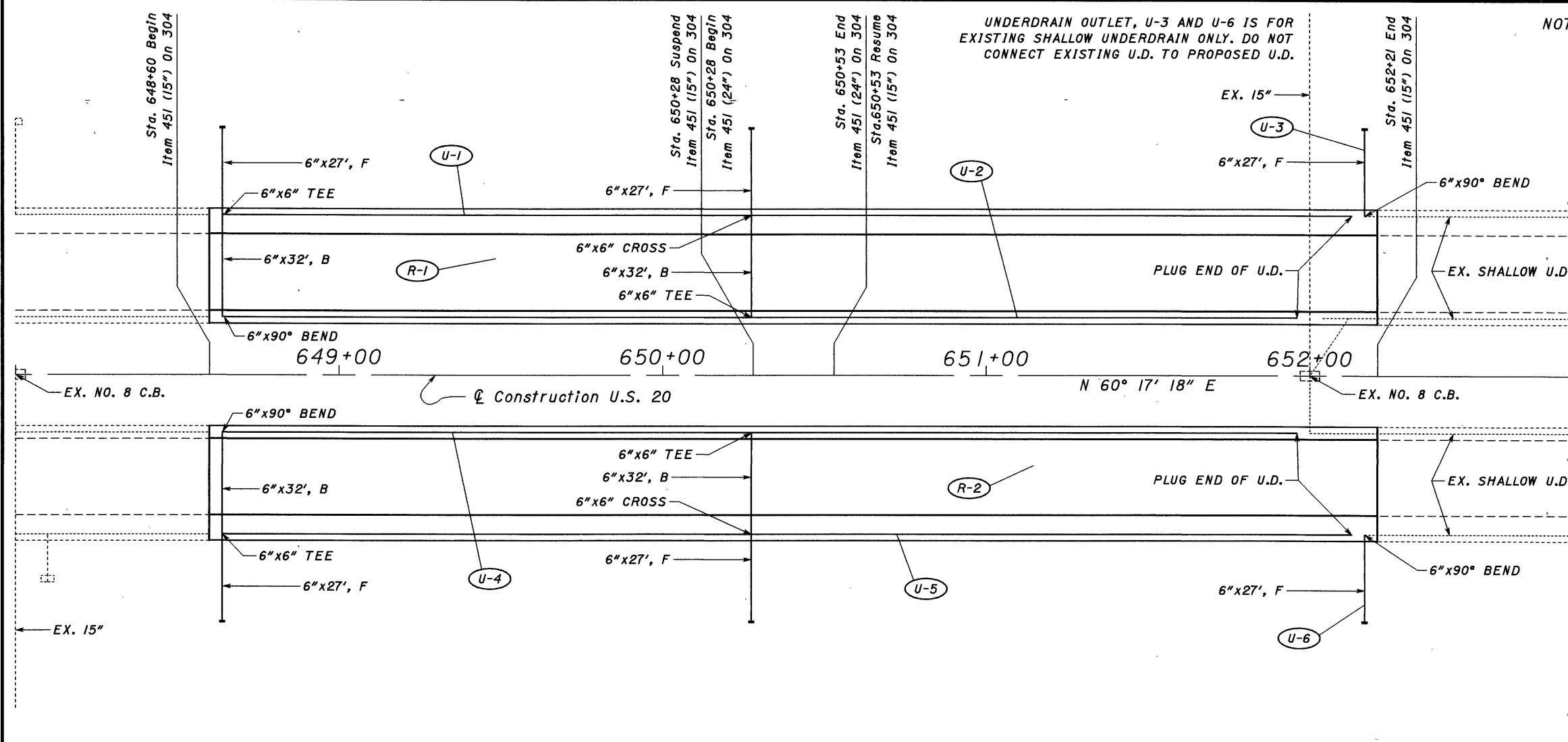
ITEM 301 BITUMINOUS AGGREGATE BASE, AC-20

STA. 650+28 to STA. 650+53 = 25.0 ft.
 THICKNESS = 9 in. = 0.75 ft.
 WIDTH - 2 x [(4 ft. + 8 ft.) + 4 ft.] = 24 ft.
 LENGTH = 25.0 ft.
 VOLUME = [0.75 ft. x 24 ft. x 25 ft.] + 27 = 17 total cu. yd.

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
327	328	332		334	335	336	339	340	345	351						
				2888							202	23000	2888	SQ. YD.	PAVEMENT REMOVED	
					867	413					203	12000	1280	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
		2888									203	50000	2888	SQ. YD.	SUBGRADE COMPACTION	
15											203	60000	15	STATION	LINEAR GRADING	327
		17									301	10002	17	CU. YD.	BITUMINOUS AGGREGATE BASE, AC-20	
		472									304	20000	472	CU. YD.	AGGREGATE BASE	
		990									408	10000	990	GALLON	BITUMINOUS PRIME COAT	
		2755									451	17001	2755	SQ. YD.	15" REINFORCED CONCRETE PAVEMENT, AS PER PLAN	327
		133									451	17501	133	SQ. YD.	24" REINFORCED CONCRETE PAVEMENT, AS PER PLAN	327
							130	106		90	603	00406	326	LIN. FT.	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM 3034 SDR35, SS931 OR SS944	
							128				603	00900	128	LIN. FT.	6" CONDUIT, TYPE B, 707.17 NON-PERFORATED, ASTM 3034 SDR35, SS931 OR SS944	
							162				603	01500	162	LIN. FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM 3034 SDR35, SS931 OR SS944	
							4	4		9	SPECIAL 60398100		17	EACH	CONDUIT, MISC.: SCREENED END CAP	338
				6			2	2			SPECIAL 60436600		10	EACH	PRECAST REINFORCED CONCRETE OUTLET	338
				1362							605	11111	1362	LIN. FT.	6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP, AS PER PLAN, 707.15	338
							19			1583	625	24320	1602	LIN. FT.	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	
							150	29			625	25100	179	LIN. FT.	CONDUIT, 1", 713.04	
							305	191		1493	625	25400	1989	LIN. FT.	CONDUIT, 2", 713.04	
							9				625	25500	9	LIN. FT.	CONDUIT, 3", 713.04	
							194	46			625	29000	240	LIN. FT.	TRENCH	
							126	39		1493	625	29002	1658	LIN. FT.	TRENCH, 24" DEEP	
							3	2		8	625	30700	13	EACH	PULL BOX, 713.08, 18"	
							3	2		1	625	30706	6	EACH	PULL BOX, 713.08, 24"	
							1	1			625	32000	2	EACH	GROUND ROD	
										1	625	34001	1	EACH	POWER SERVICE, AS PER PLAN	327
									258		632	27500	258	LIN. FT.	LOOP DETECTOR PAVEMENT CUTTING	
							491	230			632	69350	721	LIN. FT.	POWER CABLE, MISC.: #10 THHN/THWN 660 V 90 DEGREE C CU STRANDED	327
								33			632	90500	33	LIN. FT.	SIGNALIZATION, MISC.: PIEZO SENSOR PAVEMENT CUTTING	
							4.4	4.4			633	70000	8.8	CU. YD.	CONCRETE FOR CABINET FOUNDATION, 5'-0" x 6'-0" x 48"	
		2661									SPECIAL 69000100		2661	SQ. YD.	4" NON-STABILIZED DRAINAGE BASE, TYPE NJ OR IA	330-331
1											SPECIAL 69098000		1	EACH	ROADWAY, MISC.: WEIGH-IN-MOTION (WIM) SYSTEM	328-329

WEIGH-IN-MOTION GENERAL SUMMARY

LOR-20-12.62

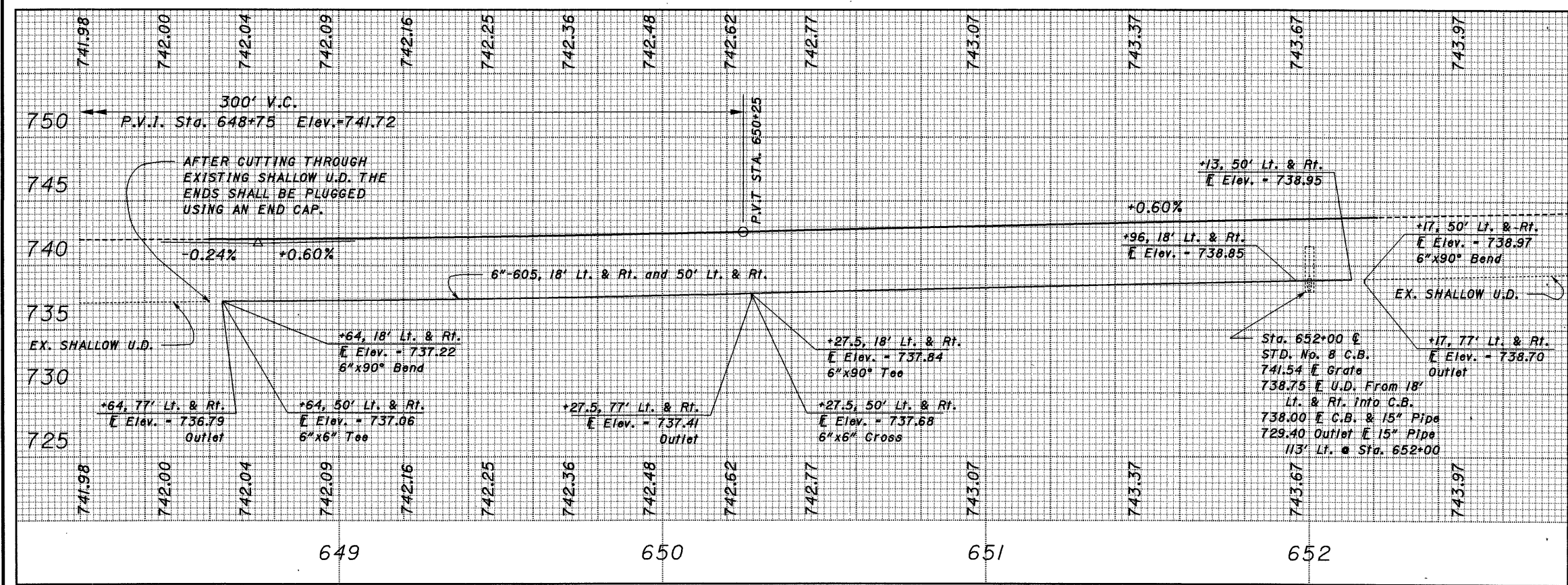


UNDERDRAIN OUTLET, U-3 AND U-6 IS FOR EXISTING SHALLOW UNDERDRAIN ONLY. DO NOT CONNECT EXISTING U.D. TO PROPOSED U.D.

NOTES: FOR DETAILS OF WEIGH-IN-MOTION SCALE INSTALLATION IN 24\"/>

FOR 4\"/>

FOR LOOP & PIEZO INSTALLATION SEE SHEET 345.



REF NO.	STATION		SIDE	PAVEMENT REMOVED	603		SPECIAL 605		TOTALS CARRIED TO SHEET 333
	FROM	TO			6\"/>				
R-1	648+60	652+21	Lt.	1444					
R-2	648+60	652+21	Rt.	1444					
U-1	648+64	652+13	Lt.		54	2	349	1	
U-2	648+64	651+96	Lt.				332	1	
U-3	652+17		Lt.		27	1	332	1	
U-4	648+64	651+96	Rt.				349	1	
U-5	648+64	652+13	Rt.		54	2	349	1	
U-6	652+17		Rt.		27	1			
TOTALS CARRIED TO SHEET 333				2888	162	128	6	1362	

* BENDS & BRANCHES (FOR INFO ONLY)
 ** WITH FABRIC WRAP, AS PER PLAN
 ● 707.17 NON-PERFORATED ASTM 3034 SDR35, SS931 OR SS944

PLAN AND PROFILE
STA. 648+00 TO STA. 653+00

LOR-20-12.62

11
28

334
351

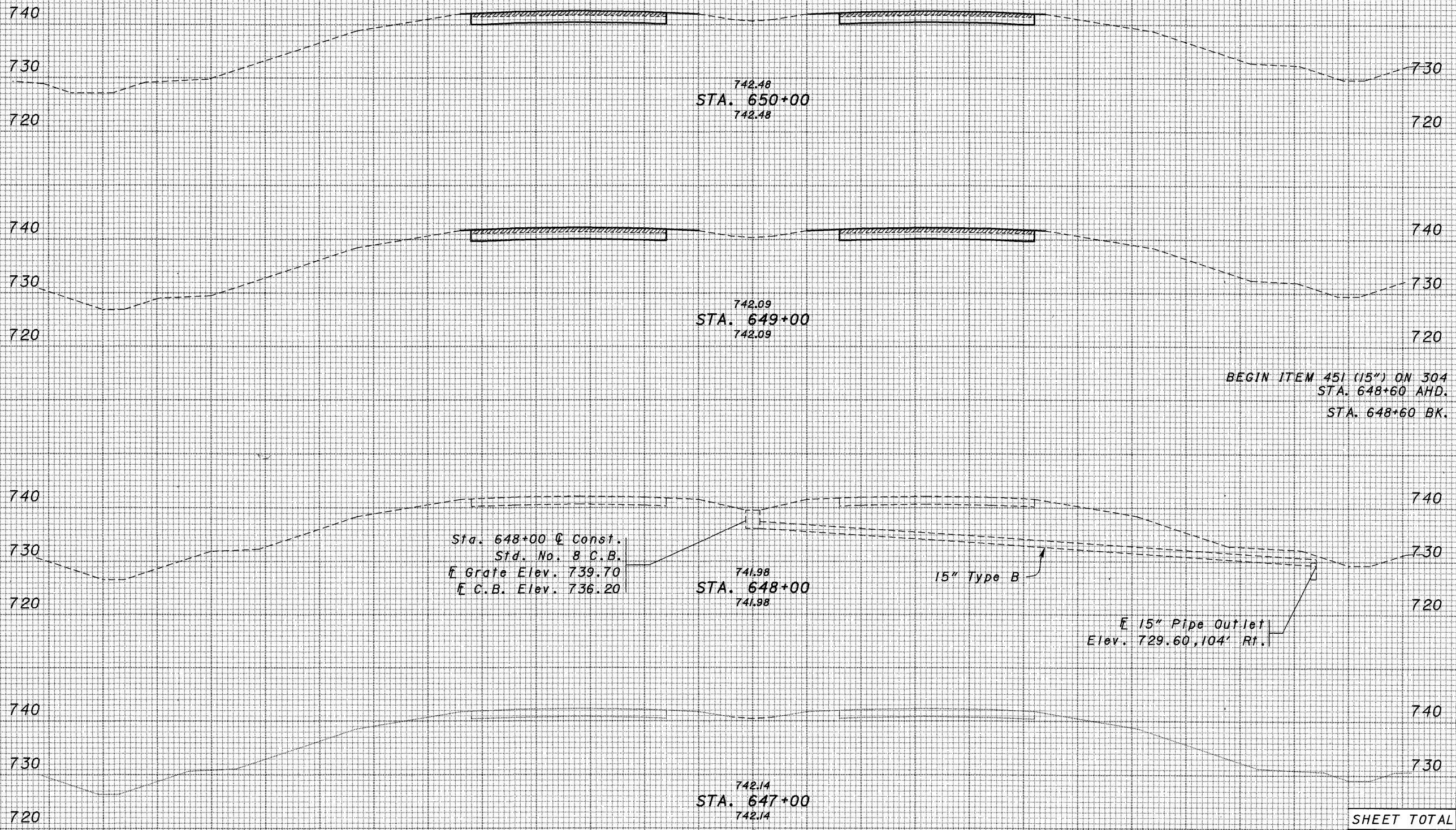
SEEDING
END WIDTH SO. YDS.

Construction

ITEM 202 PAVEMENT REMOVED

STA. 651+00 BK.

END AREA	VOLUME		CALCULATED DW /m	CHECKED
	CUT	FILL		
92				
160				
92				
146				
135				
146				
92				
95				
92				
341				
92				
136				
92				
0				
867				
12	335			
28	351			



Sta. 648+00 C Const.
Std. No. 8 C.B.
E Grate Elev. 739.70
E C.B. Elev. 736.20

15" Type B

E 15" Pipe Outlet
Elev. 729.60, 104' Rt.

SHEET TOTAL

SHEET TOTAL

100 80 60 40 20 Construction 20 40 60 80 100

CROSS SECTIONS
STA. 647+00 TO STA. 650+00

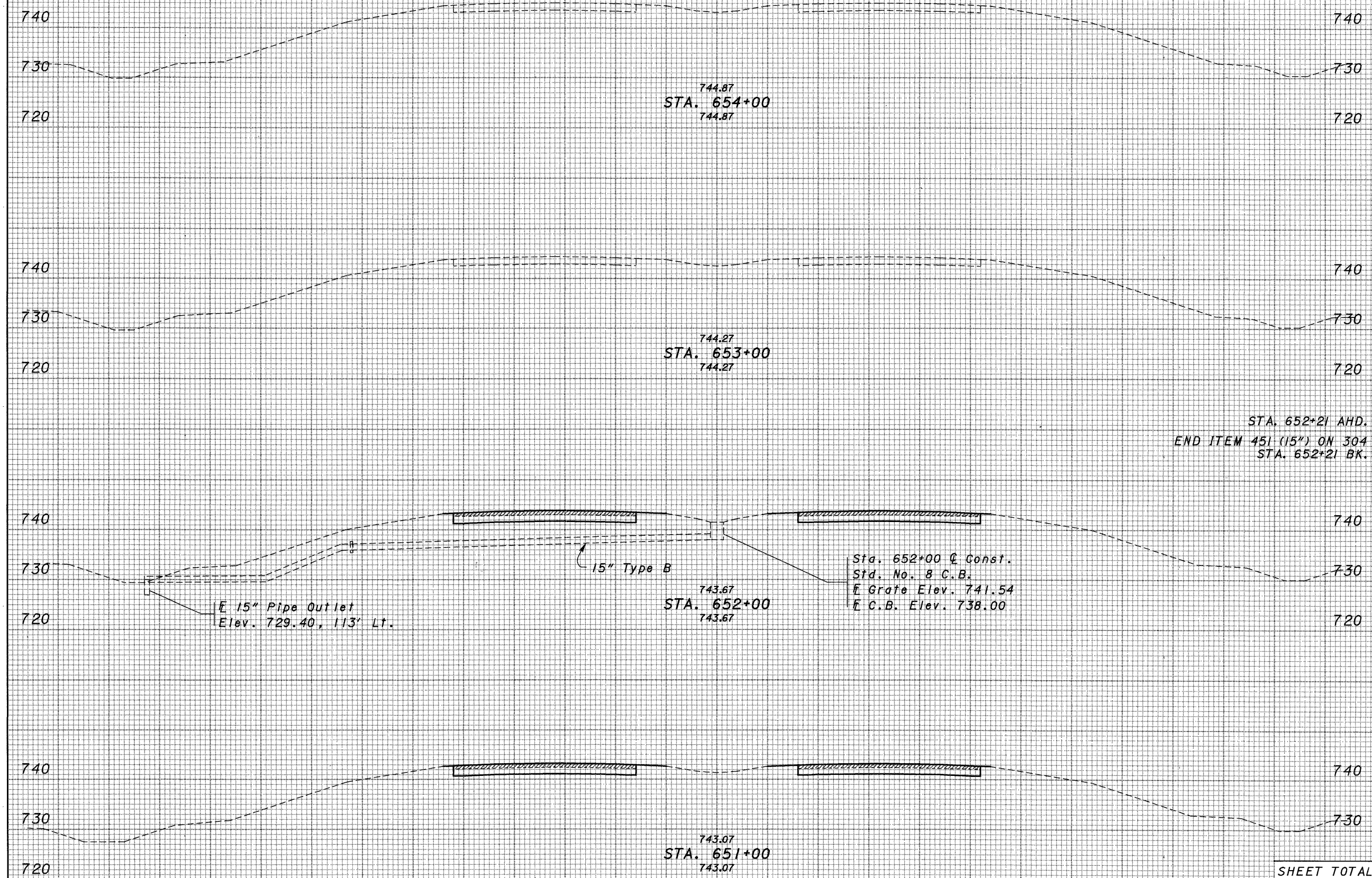
LOR-20-12.62

SEEDING
END SO.
WIDTH YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED BY
CHECKED

ITEM 202 PAVEMENT REMOVED

Construction



STA. 652+21 AHD. 0
END ITEM 451 (15") ON 304 92
STA. 652+21 BK.

Sta. 652+00 CL Const.
Std. No. 8 C.B.
E Grate Elev. 741.54
E C.B. Elev. 738.00

E 15" Pipe Outlet
Elev. 729.40, 113' Lt.

15" Type B

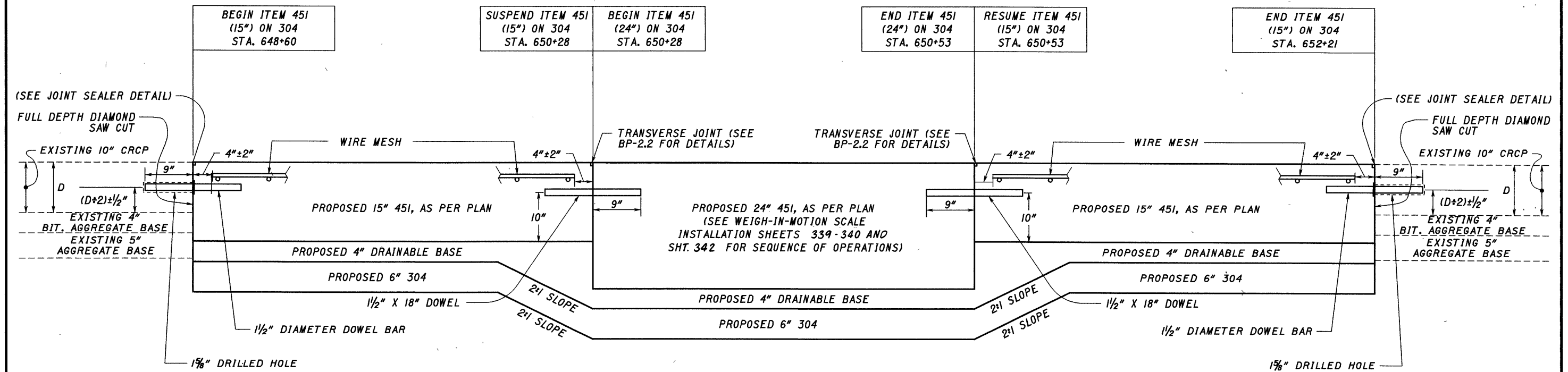
SHEET TOTAL 413

SHEET TOTAL 100 80 60 40 20 Construction 20 40 60 80 100

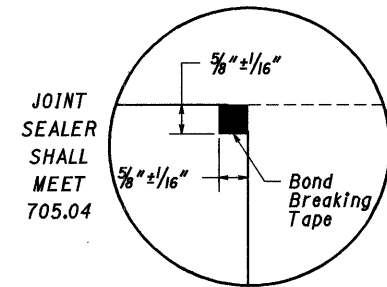
CROSS SECTIONS
STA. 651+00 TO STA. 654+00

LOR-20-12.62

13/28 336/351

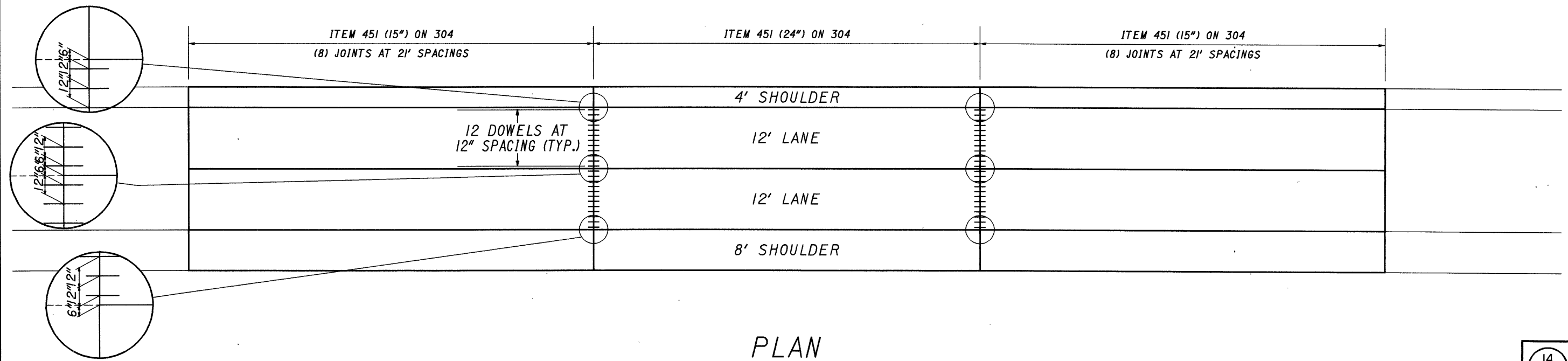


SECTION



JOINT SEALER DETAIL

NOTES:
 GROUT RETENTION DISCS SEE BP-2.5 FOR GROUT SEE BP-2.5. SPECIFICATIONS 705.20 AND 255.



PLAN

6" SHALLOW PIPE UNDERDRAIN, 707.15, WITH FABRIC WRAP, AS PER PLAN

DESCRIPTION: This item shall consist of furnishing and installing a pipe underdrain system in accordance with 605 and details as shown on the plans.

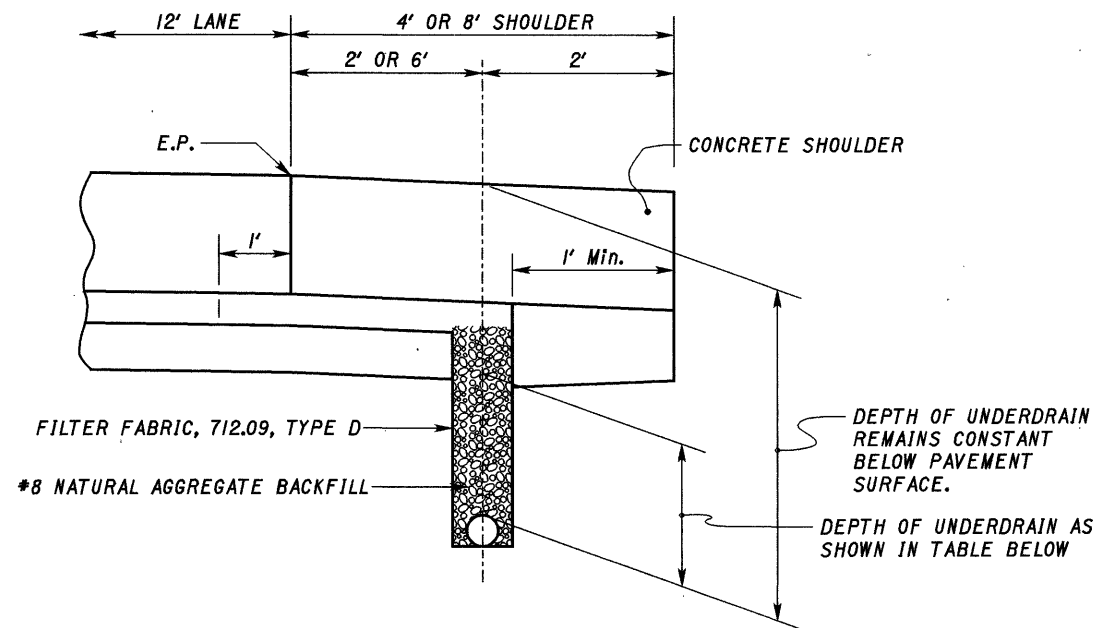
MATERIALS: The underdrain shall be a pipe underdrain system per Item 605.

Filter Fabric will be required as shown on these plans and shall meet the requirements of 712.09, Type D.

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase and subgrade. All pipe bends & branches needed to connect the proposed underdrain to the proposed outlet or to an existing underdrain shall be manufactured fittings.

METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

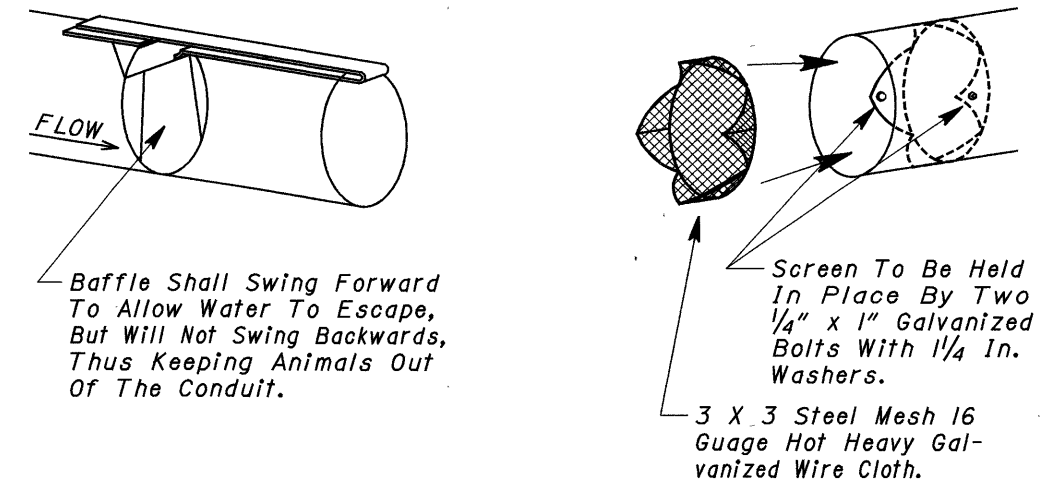
BASIS OF PAYMENT: Work completed and accepted under this item will be paid for at the contract unit price bid per linear foot for Item 605 6" Shallow Pipe Underdrain, 707.15, With Fabric Wrap, As Per Plan. The price shall be full compensation for excavation and backfill; for furnishing materials, including material for outlet fittings; for furnishing and placement of filter fabric; for all labor, tools equipment, and incidentals necessary to complete the work.



UNDERDRAIN DEPTH TABLE					
Station		DEPTH (Inches)		DEPTH (Inches)	
		Westbound		Eastbound	
From	To	50' LT.	18' LT.	18' RT.	50' RT.
648+64	650+28	25	26	26	25
650+28	650+53	16	17	17	16
650+53	651+96	25	26	26	25
650+53	652+13	25			25

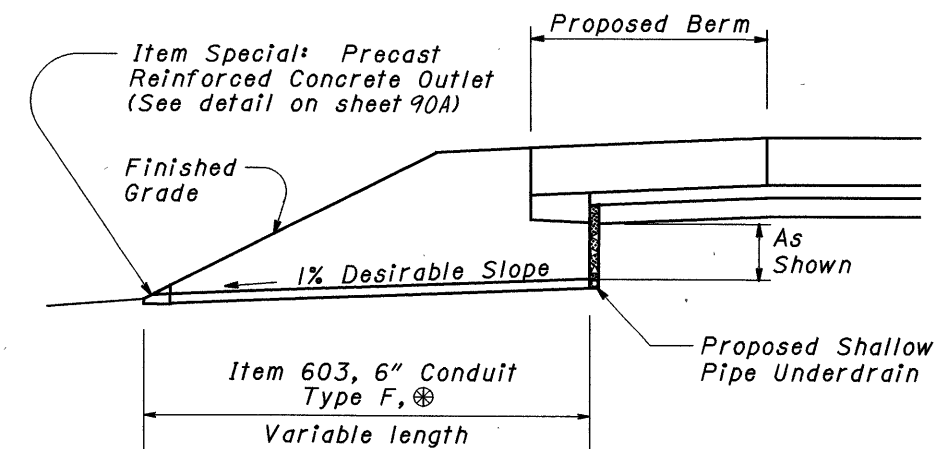
ITEM SPECIAL - SCREENED END CAP

(TO BE USED ON OUTLET FOR DRAINING PULL BOX)

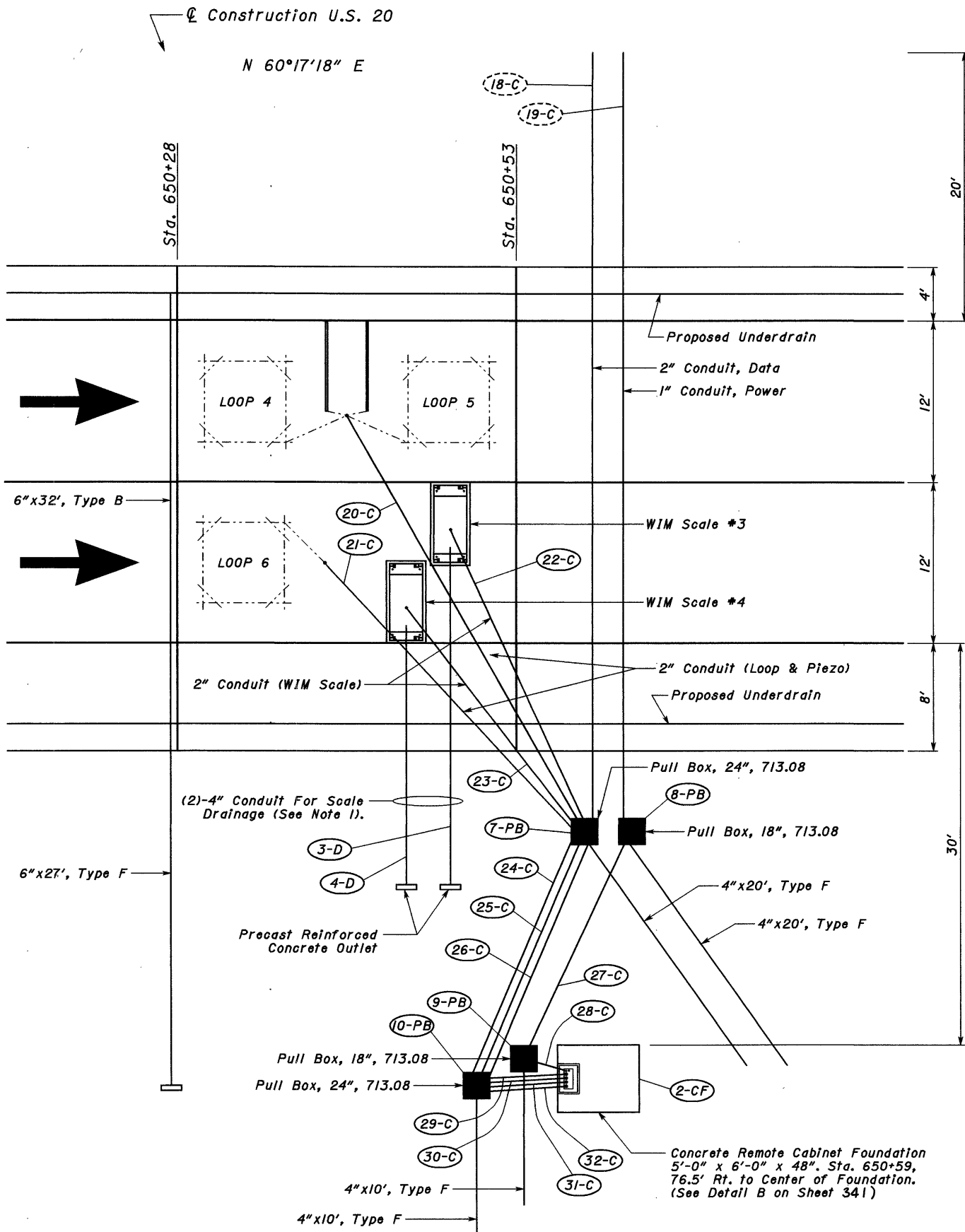


Shown Above Are Two Acceptable Animal Guard End Caps. The Contractor May Use Either One Of These Options. These Items Are To Be Used Only For Conduit That Are Used For Draining Pull Boxes. All Equipment, Labor, And Material Necessary To Complete This Item Of Work Shall Be Included In The Unit Price Bid For Item Special Screened End Cap.

UNDERDRAIN OUTLET DETAIL



⊗ 707.17 Non-Perforated ASTM 3034 SDR35, SS 931 or SS 944



REF NO.	STATION		603 SPECIAL	4" Screened Precast Conduit, End Cap Reinforced Type F, (Screen Concrete Type) Outlet	1/2" Duct Cable With Three No. 4 AWG 5000 Volt Cables	Ground Rod	Conduit, 1" 713.04	Conduit, 2" 713.04	Conduit, 3" 713.04	Trench, 24" Deep	Trench	Pull Box, 18", 713.08	Pull Box, 24", 713.08	633 Concrete For Cabinet Foundation	632 Power Cable, Misc.	Info Only																																																																																					
	FROM	TO															WIM Scale #1	WIM Scale #2	WIM Scale #3	WIM Scale #4	WIM Scale #5	WIM Scale #6	WIM Scale #7	WIM Scale #8	WIM Scale #9	WIM Scale #10	WIM Scale #11	WIM Scale #12	WIM Scale #13	WIM Scale #14	WIM Scale #15	WIM Scale #16	WIM Scale #17	WIM Scale #18	WIM Scale #19	WIM Scale #20	WIM Scale #21	WIM Scale #22	WIM Scale #23	WIM Scale #24	WIM Scale #25	WIM Scale #26	WIM Scale #27	WIM Scale #28	WIM Scale #29	WIM Scale #30	WIM Scale #31	WIM Scale #32	WIM Scale #33	WIM Scale #34	WIM Scale #35	WIM Scale #36	WIM Scale #37	WIM Scale #38	WIM Scale #39	WIM Scale #40	WIM Scale #41	WIM Scale #42	WIM Scale #43	WIM Scale #44	WIM Scale #45	WIM Scale #46	WIM Scale #47	WIM Scale #48	WIM Scale #49	WIM Scale #50	WIM Scale #51	WIM Scale #52	WIM Scale #53	WIM Scale #54	WIM Scale #55	WIM Scale #56	WIM Scale #57	WIM Scale #58	WIM Scale #59	WIM Scale #60	WIM Scale #61	WIM Scale #62	WIM Scale #63	WIM Scale #64	WIM Scale #65	WIM Scale #66	WIM Scale #67	WIM Scale #68	WIM Scale #69	WIM Scale #70	WIM Scale #71	WIM Scale #72	WIM Scale #73	WIM Scale #74	WIM Scale #75	WIM Scale #76	WIM Scale #77	WIM Scale #78	WIM Scale #79	WIM Scale #80	WIM Scale #81	WIM Scale #82	WIM Scale #83	WIM Scale #84	WIM Scale #85
20-C	Loop 4 & 5	7-PB, Sta. 650+58																																																																																																			
21-C	Loop 6	7-PB, Sta. 650+58																																																																																																			
22-C	WIM Scale #3	7-PB, Sta. 650+58																																																																																																			
23-C	WIM Scale #4	7-PB, Sta. 650+58																																																																																																			
24-C	7-PB, Sta. 650+58	10-PB, Sta. 650+50																																																																																																			
25-C	7-PB, Sta. 650+58	10-PB, Sta. 650+50																																																																																																			
26-C	7-PB, Sta. 650+58	10-PB, Sta. 650+50																																																																																																			
27-C	8-PB, Sta. 650+61.5	9-PB, Sta. 650+53.5																																																																																																			
28-C	9-PB, Sta. 650+53.5	2-CF, Remote Cabinet																																																																																																			
29-C	10-PB, Sta. 650+50	2-CF, Remote Cabinet																																																																																																			
30-C	10-PB, Sta. 650+50	2-CF, Remote Cabinet																																																																																																			
31-C	10-PB, Sta. 650+50	2-CF, Remote Cabinet																																																																																																			
32-C	10-PB, Sta. 650+50	2-CF, Remote Cabinet																																																																																																			
3-D	WIM Scale #1	+44.87 Outlet, 62' Rt.	26																																																																																																		
4-D	WIM Scale #2	+48.12 Outlet, 62' Rt.	20																																																																																																		
2-CF	Sta. 650+59, 76.5' Lt.																																																																																																				
7-PB	Sta. 650+58, 58' Rt.																																																																																																				
8-PB	Sta. 650+61.5, 58' Rt.																																																																																																				
9-PB	Sta. 650+53.5, 75' Rt.																																																																																																				
10-PB	Sta. 650+50, 77' Rt.																																																																																																				
TOTALS CARRIED TO SHEET 333			106	4	2	1	29	212	39	46	2	2	2	4.44	261																																																																																						

NOTES FOR CONDUIT INSTALLATION

- 4" Scale Drainage Conduits: Contractor Shall Field Verify Flowlines as Necessary to Provide Positive Drainage Prior to Performing Work.
- Slope Conduit to Proposed Outlet (0.0417 Min.) to Provide Ventilation as Well as Drainage.
- Do Not Connect these Conduits to Any Underdrain System.

- Drainage for Pull Box Note: Reference is Made to Standard Drawing HL-30.11 for Details of Draining Pull Boxes. Conduit for Pull Boxes Shall be Installed as Shown on These Plans or as Directed by the Engineer and Shall be Provided for the Length Required for a Satisfactory Outlet. An Estimated Quantity of 60 Linear Feet of Item 603 4" Conduit Type F, 707.17, Non-perforated, ASTM 3034 SDR35, SS931 or SS944 is Included in the Table on This Sheet for This Purpose.

NOTES FOR SCALE INSTALLATION

- SEE SHEET 346 - 350 FOR WEIGH-IN-MOTION (WIM) INSTALLATION DETAILS
- SEE SHEET 345 FOR WIM LOOP INSTALLATION DETAILS
- SEE SHEET 341 FOR CABINET DETAILS AND NOTES
- SEE SHEETS 343 - 344 FOR CONDUIT INSTALLATION
- SEE SHEET 351 FOR POWER SERVICE INSTALLATION
- SEE SHEET 351 FOR PHONE LINE INSTALLATION

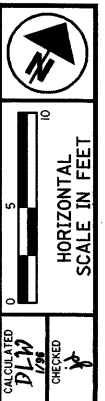
707.17 NON-PERFORATED ASTM 3034 SDR35, SS931, OR SS944
 * PROPOSED CONTROL CENTER 'N', STA. 1402+35±,
 20' LT., RAMP 'D'

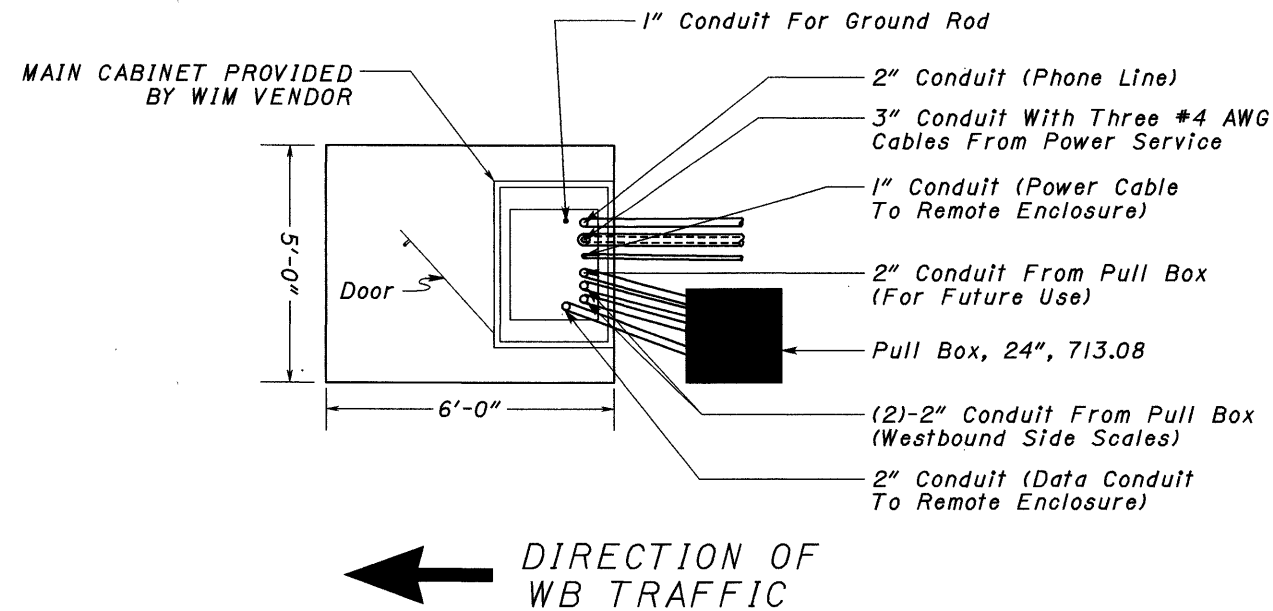
17
28

340
351

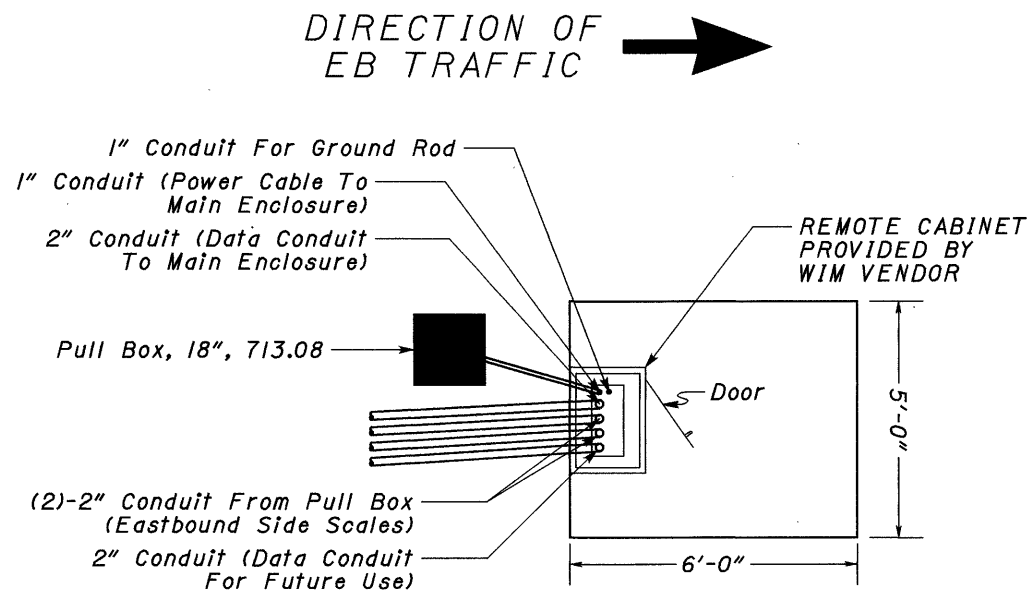
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**WEIGH-IN-MOTION SITE PLAN
EASTBOUND SIDE**

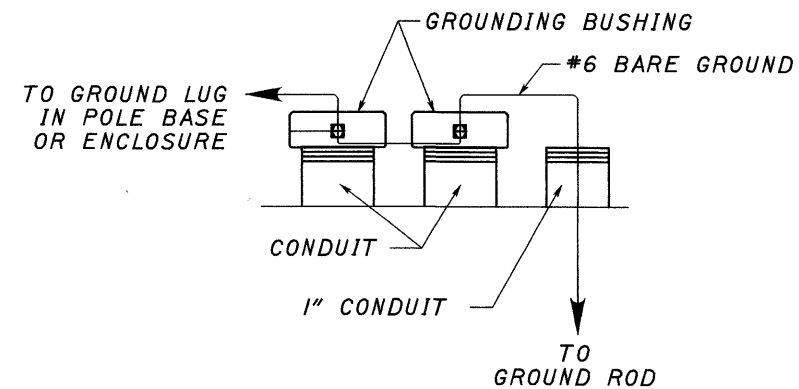




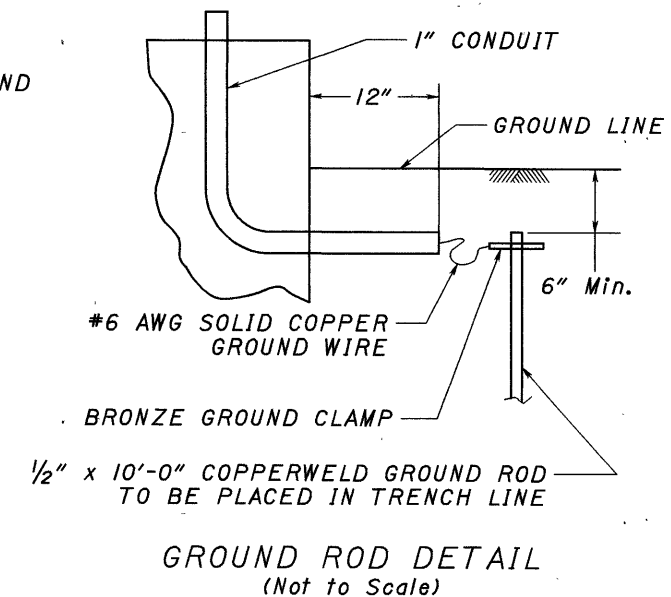
CONCRETE FOUNDATION FOR MAIN CABINET,
STA. 650+59, 76.5' LT.
DETAIL A



CONCRETE FOUNDATION FOR REMOTE CABINET,
STA. 650+59, 76.5' RT.
DETAIL B



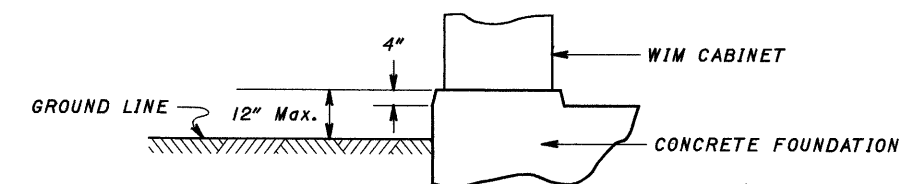
TYPICAL GROUNDING DETAIL
(Not to Scale)
Install Grounding Bushing And #6 Bare
Copper Ground Wire On Each GRS Conduit



GROUND ROD INSTALLATION

WIM CABINET INSTALLATION NOTES

1. CONDUITS FOR WIM INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR UNDER ITEM 625. LOCATIONS AND INSTALLATION OF THE CONDUIT SHALL BE AS SHOWN ON SHEETS 339 - 340 OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL NOTIFY THE PROJECT ENGINEER AT LEAST ONE WEEK PRIOR TO THE INSTALLATION. THE CONDUIT WILL BE INSPECTED AND APPROVED BY WIM MANUFACTURER'S REPRESENTATIVE PRIOR TO BACKFILLING, PLACEMENT OF CONCRETE OR ANY OPERATION THAT PREVENTS CORRECTION.
2. THE SIZE, NUMBER AND LOCATION OF ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH THE WIM MANUFACTURER'S RECOMMENDATIONS.
3. CONDUIT FOR ELECTRIC AND TELEPHONE DROPS WILL BE SUPPLIED BY THE CONTRACTOR UNDER ITEM 625.
4. CONTROLLER CABINET SHALL BE SEALED TO THE FOUNDATION WITH A FLEXIBLE WEATHERPROOF CAULKING COMPOUND.
5. THE TOP OF THE CABINET FOUNDATION SHALL BE 12" ABOVE THE GROUND LINE.
6. THE CONCRETE CABINET FOUNDATION SHALL BE CONSTRUCTED WITH A 4 INCH RISER AT THE LOCATION OF THE WIM CABINET AS SHOWN BELOW.

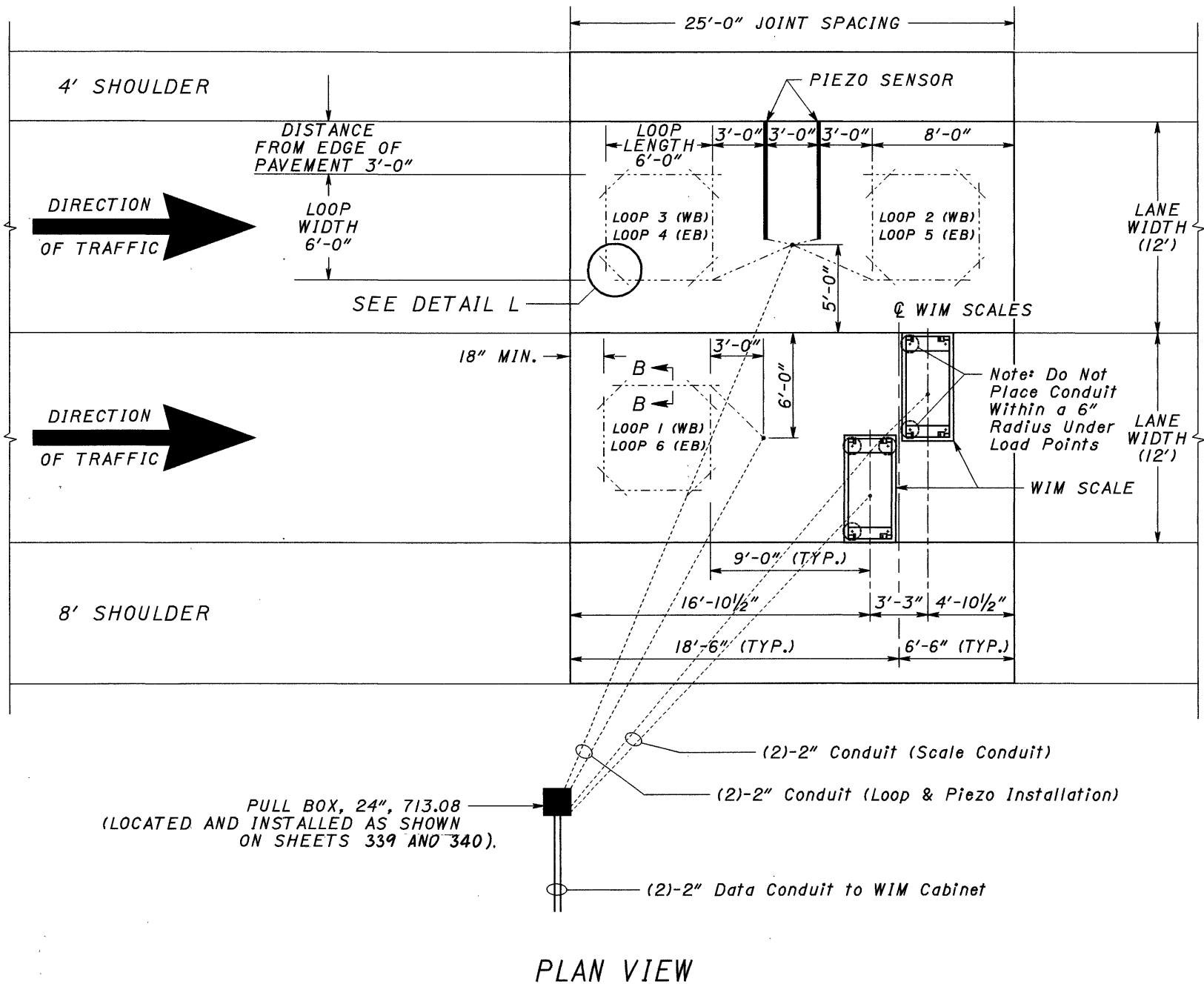


7. THE CONTRACTOR SHALL FURNISH TWO (2) COMPLETE DETAILED DRAWINGS OF THE LOCATIONS OF THE CONDUITS AND PULL BOXES UPON COMPLETION OF THE FOUNDATION AND CONDUIT INSTALLATION TO THE ENGINEER. ONE (1) SET WILL BE LEFT INSIDE THE MAIN CABINET UPON COMPLETION OF THE PROJECT.

CHECKED
DATE

WEIGH-IN-MOTION
CABINET NOTES & DETAILS

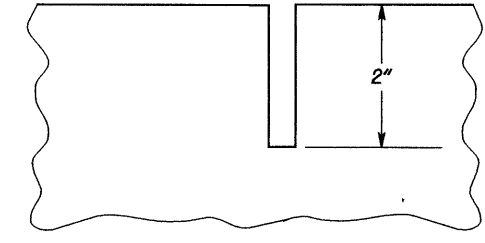
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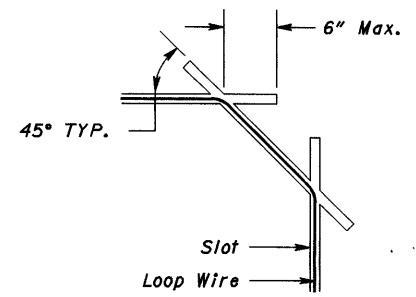
LEGEND	
---	SAW CUT
----	2" CONDUIT IN PAVEMENT
+	LOAD POINT OF SCALE
□	PULL BOX, 713.08, 36"

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAWING AND INSTALLING LOOPS AND PIEZO SENSORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. WIM VENDOR WILL SUPPLY THE ASSOCIATED HARDWARE NECESSARY FOR THE WIM SYSTEM (SEE NOTE ON SHEETS 328 AND 329).

Cut For Lead In Wire Shall Be Sawed With A 3/8" Diamond Saw Blade.
Cut For Rectangle Loop Shall Be Sawed With A 1/4" Diamond Saw Blade.



Section B-B
Saw Cut Dimensions

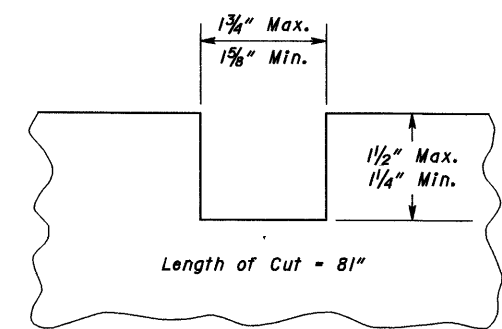


For Details And Notes Not Shown See Standard Drawing TC-82.10.

Detail L
Plan View of Corners

LOOP INSTALLATION NOTES:

- The loop width shall be centered in the width of the lane (see loop configuration). The corners of the rectangle shall be cut as shown in Detail L to avoid undue stress on the wire.
- If more than one lead-in is to be placed in the slot, add 1/4" to the minimum slot depth for each additional lead-in.
- Slots shall be washed, blown out, and thoroughly dried immediately before installation of the loop or clean to satisfaction of wim manufacturer representative.
- The distance between the side of a loop and a lead-in saw cut from adjacent detectors shall be 2 feet minimum. The distance between adjacent lead-in saw cuts shall be six (6) inches minimum.
- Contractor will notify WIM vendor at least 2 weeks before sawing for loops.

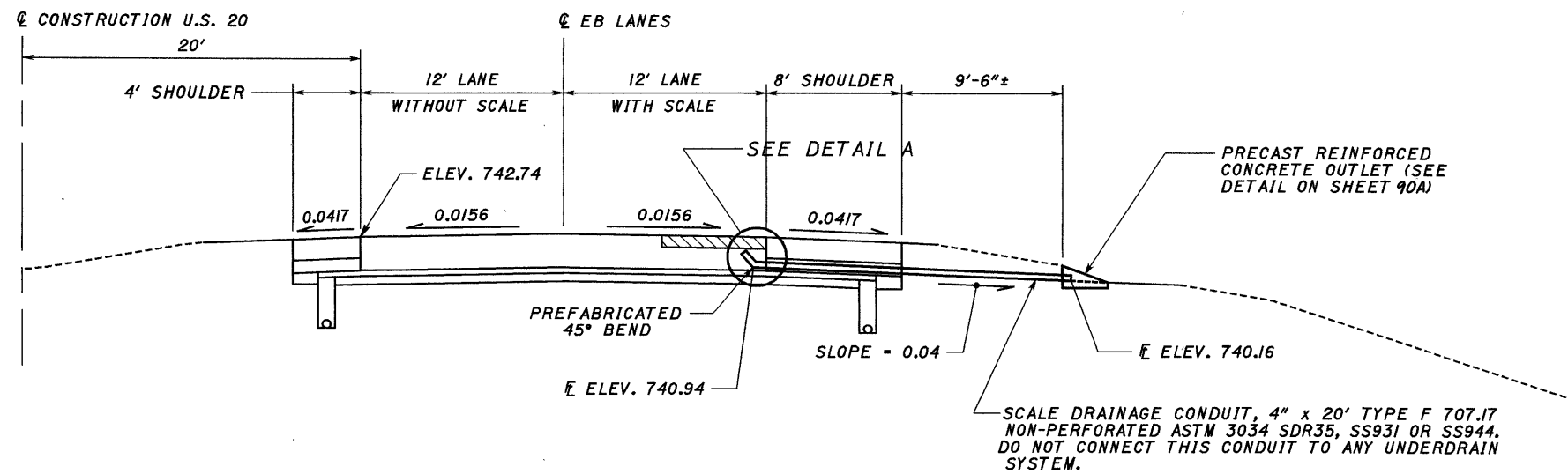


Piezo Sensor Installation
Saw Cut Dimensions

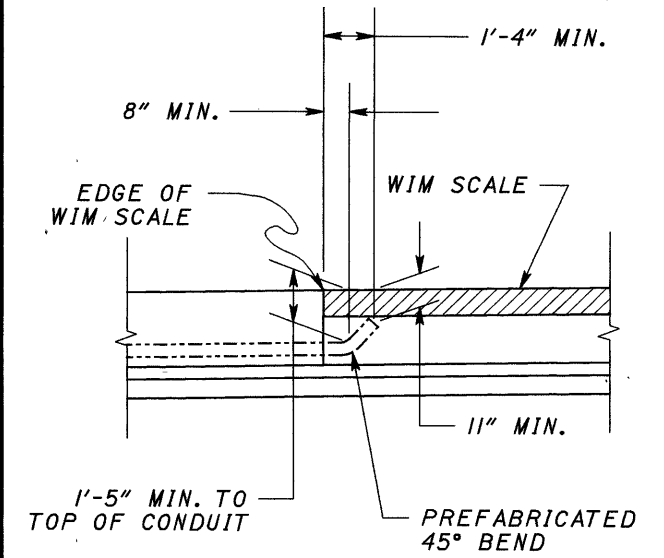
PIEZO SENSOR INSTALLATION NOTES:

- Cut the pavement with a concrete saw to a depth of 1-1/2 inches on all lines for the channel, 1/4" wide and to a depth of 1 inch for the cable slot.
- Clean away the debris and make the bottom of the slot as smooth as possible. THE OPERATION SHALL NOT DAMAGE THE SIDES OF THE SLOT.
- Use water to wash out the slot. Use an air compressor to blow all dust and debris from the channel or clean to satisfaction of wim manufacturer representative.

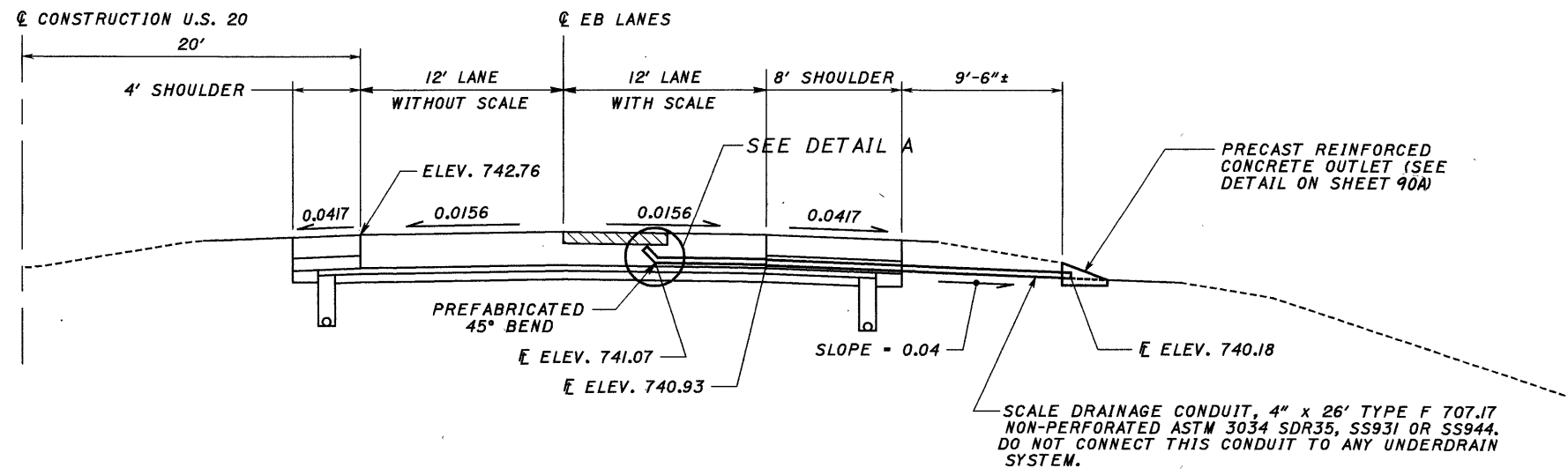
ESTIMATED QUANTITIES	
Westbound Side:	Southbound Side:
Item 632 Loop Detector Pavement Cutting Length = 3 Loops x (38 ft. for loop + 5 ft. to conduit) = 129 lin. ft.	Item 632 Loop Detector Pavement Cutting Length = 3 Loops x (38 ft. for loop + 5 ft. to conduit) = 129 lin. ft.
Item 632 Piezo Sensor Pavement Cutting Length = 2 Piezos x (6.75 ft. for piezo + 1.5 ft. to conduit) = 16.5 lin. ft.	Item 632 Piezo Sensor Pavement Cutting Length = 2 Piezos x (6.75 ft. for piezo + 1.5 ft. to conduit) = 16.5 lin. ft.
TOTALS:	
Item 632 Loop Detector Pavement Cutting Length = 129 x 2 = 258 lin. ft.	Item 632 Piezo Sensor Pavement Cutting Length = 16.5 x 2 = 33 lin. ft.
QUANTITIES CARRIED TO SHEET NO. 333	



STA. 650+44.87 RT.
 4" SCALE DRAINAGE CONDUIT
 EASTBOUND DIRECTION



DETAIL A
 4" SCALE DRAINAGE CONDUIT
 INSTALLATION AT WIM SCALE
 (TYPICAL)

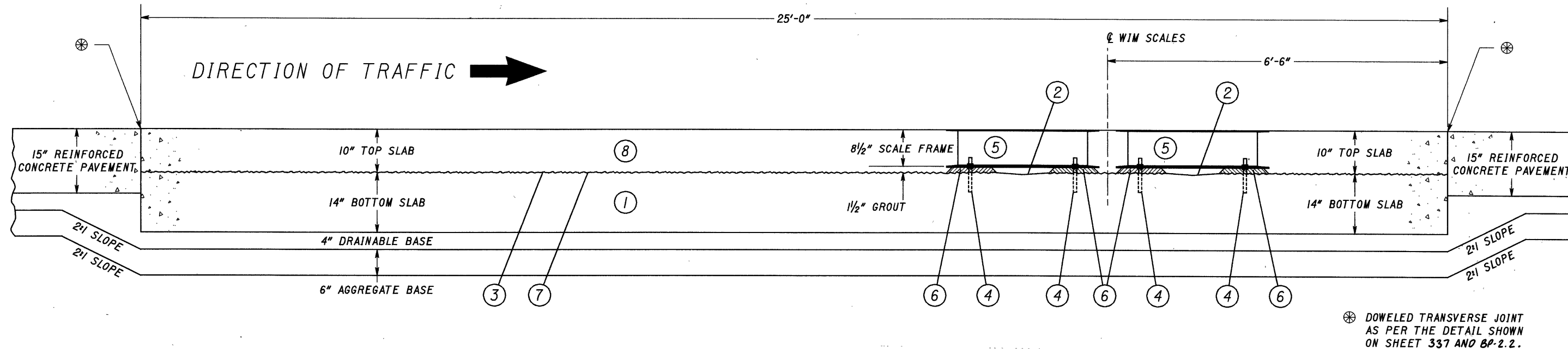


STA. 650+48.12 RT.
 4" SCALE DRAINAGE CONDUIT
 EASTBOUND DIRECTION

WIM SCALE CONDUIT INSTALLATION EASTBOUND SIDE

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21 28	344 351
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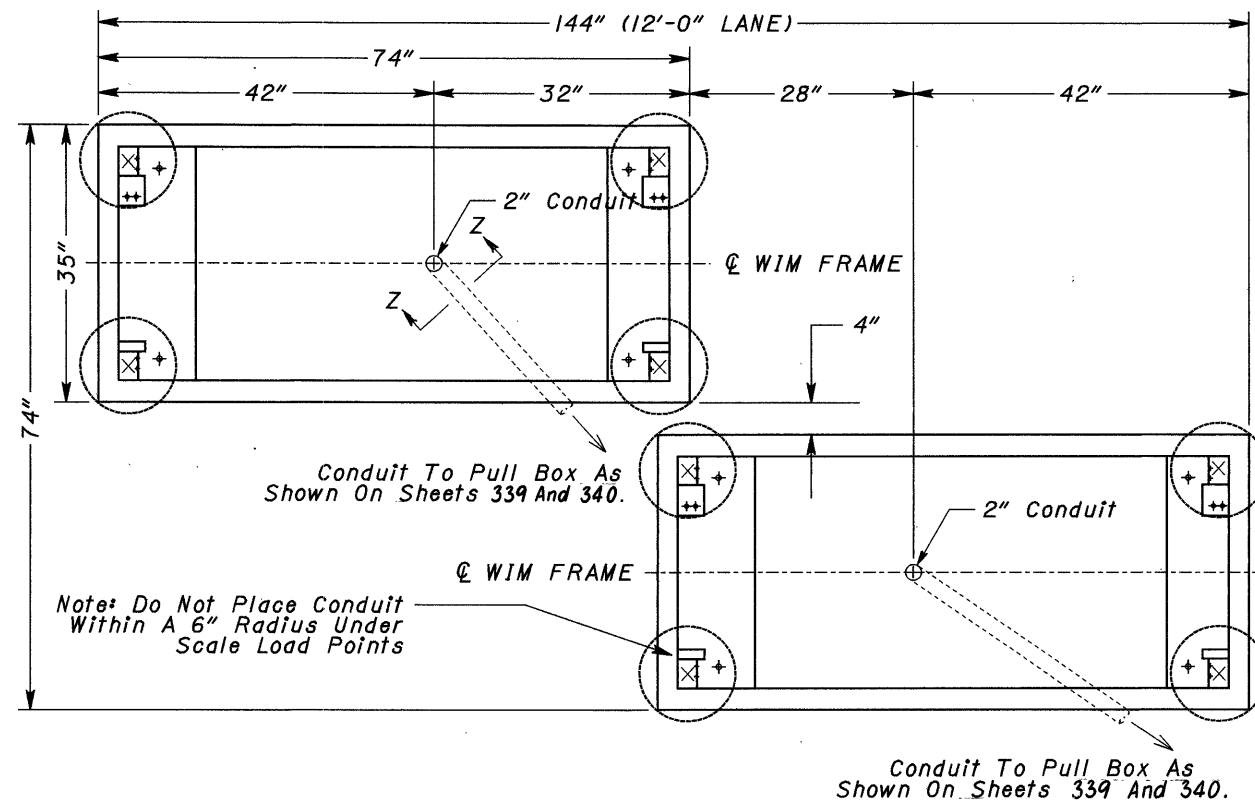


FOR REINFORCING STEEL PLACEMENT SEE SHEETS 346 THRU 350

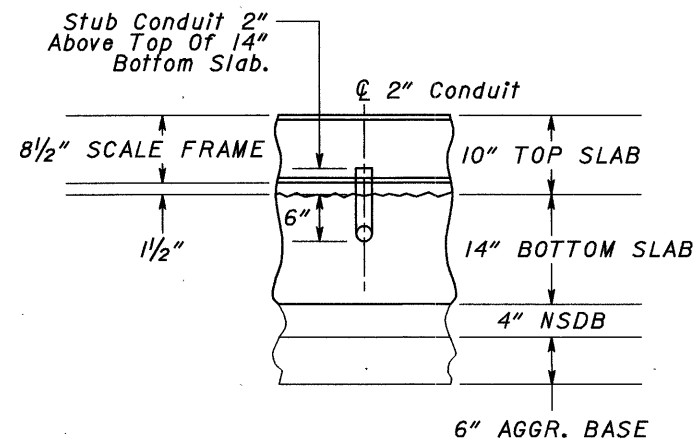
SEQUENCE OF OPERATIONS:

- ① FIRST PLACE THE 14" BOTTOM SLAB. THE CONTRACTOR SHALL PLACE THE REQUIRED REINFORCING STEEL AS SHOWN ON SHEETS 346 THRU 350. THE CONTRACTOR SHALL ALSO PLACE THE REQUIRED CONDUITS FOR THE WIM SCALE INSTALLATION. THE CONTRACTOR SHALL LOCATE THE CONDUIT AS SHOWN ON THE CONDUIT INSTALLATION SHEET AND WIM SITE PLAN SHEET. THE CONDUIT MAY BE FIELD ADJUSTED TO PROVIDE ACCESS TO THE SCALE AND PROVIDE POSITIVE DRAINAGE. CROSS SLOPE OF THE BOTTOM SLAB SHALL BE THE SAME AS FOR THE TOP SLAB.
- ② PLACE AND SLOPE THE FOUNDATION FLOOR UNDER THE SCALE FRAME AWAY FROM CORNERS TO ENSURE DRAINAGE.
- ③ FINISHING. THE SURFACE OF THE BOTTOM SLAB SHALL BE TEXTURED BY USE OF A BROOM OR OTHER DEVICE IN THE TRANSVERSE DIRECTION SO AS TO PRODUCE A GRITTY, JAGGED TEXTURE.

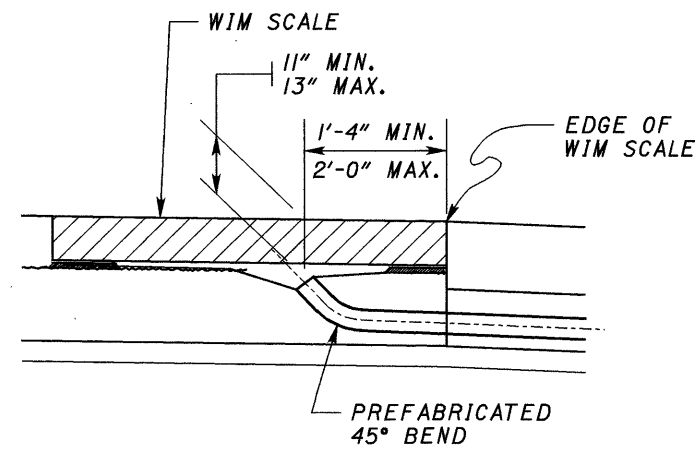
CURING. CURING SHALL BE AS SPECIFIED IN ITEM 511.14 (a) IN THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.
- ④ AFTER THE BOTTOM SLAB HAS CURED AT LEAST 3 DAYS AND USING THE FRAME AS A TEMPLATE, DRILL FOUR (4) 7/8" DIAMETER HOLES (FOR EACH FRAME) INTO FOUNDATION SLAB AND INSTALL ANCHORS PROVIDED BY THE WIM MANUFACTURER. ANCHORS SHALL PROTRUDE NO MORE THAN 2 1/2" FROM TOP OF BASEPLATES.
- ⑤ MOUNT THE SCALE FRAME PROVIDED BY THE WIM MANUFACTURER TO ANCHORS. NOTE: IT IS EXTREMELY IMPORTANT THE FRAME IS SET AT THE SAME PROFILE AS THE ADJACENT ROADWAY.
- ⑥ WITH THE FRAME SET IN THE SAME PROFILE AS THE ADJACENT ROADWAY, GROUT BENEATH THE BASE PLATES USING AN EPOXY NON-SHRINK GROUT (U.S. 5 STAR EPOXY GROUT, POR-ROK EPOXY GROUT OR EQUIVALENT).
- ⑦ CONTAMINATION OF THE SURFACE OF THE BOTTOM 14" SLAB BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED. IMMEDIATELY BEFORE THE TOP 10" SLAB IS PLACED, THE CONCRETE SURFACES SHALL BE CLEANED WITH AN AIR BLAST AND THEN COVERED WITH A COATING OF BONDING GROUT. THE TOP SLAB SHALL BE PLACED ONLY WHEN THE BOTTOM SLAB IS SURFACE DRY. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE SPRAYED ONTO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE SPRAYED ONTO SURFACE DRY BOTTOM SLAB (SURFACES WHICH ARE DRY ENOUGH TO ABSORB SOME OF THE MOISTURE FROM THE GROUT) WITH ENOUGH CARE TO ENSURE THAT ALL SURFACES ARE EVENLY COVERED AND THAT EXCESS GROUT WILL NOT COLLECT IN LOW AREAS. THE BONDING GROUT SHALL NOT BE ALLOWED TO DRY PRIOR TO PLACEMENT OF THE TOP 10" SLAB. THE SCALE FRAMES SHALL BE COVERED DURING PLACING OF THE BONDING GROUT AND THE TOP SLAB TO PREVENT ANY GROUT OR CONCRETE FROM ENTERING THE FRAME.
- ⑧ WITH THE FRAME SET IN THE SAME PROFILE AS THE ADJACENT ROADWAY, PLACE THE 10" TOP SLAB.



PLAN VIEW
SCALE CONDUIT LOCATION



VIEW Z-Z

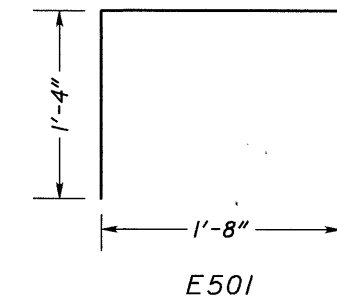


CONDUIT DETAIL
4" SCALE DRAINAGE CONDUIT
INSTALLATION AT WIM SCALE
(TYPICAL)

REINFORCING STEEL TABLE

MARK	SHAPE	LENGTH	PLACE- MENT	NUMBER			WEIGHT OF STEEL
				SCALED LANE	UNSCALED LANE	TOTAL PER SIDE	
E501	BENT	2'-10 1/2"	VERTICAL	36		36	107.95
E502	STR.	28'-0"	LONGITUDINAL	14	28	42	1226.57
E503	STR.	11'-6"	TRANSVERSE	42	34	76	911.58
E504	STR.	1'-2"	VERTICAL	42	56	98	119.25
E505	STR.	3'-11"	LONGITUDINAL	10		10	40.85
E506	STR.	7'-5"	LONGITUDINAL	4		4	30.94
E507	STR.	4'-8"	LONGITUDINAL	7		7	34.07
E508	STR.	7'-11"	LONGITUDINAL	7		7	57.80
E509	STR.	19'-11"	LONGITUDINAL	7		7	145.41
E510	STR.	16'-8"	LONGITUDINAL	7		7	121.68
E511	STR.	5'-4"	TRANSVERSE	6		6	33.38
TOTAL REINFORCING STEEL PER SIDE							2829.48
TOTAL REINFORCING STEEL FOR WIM INSTALLATION							5658.96

BENDING DIAGRAM



SEE SHEET 348 THRU 350 FOR WIM REINFORCING STEEL DETAILS

⊗ FOR PLACEMENT LOCATION OF E505 BARS SEE VIEWS B-B AND E-E ON SHEETS 346 AND 349.

CALCULATED
BY
RLG

WEIGH-IN-MOTION SCALE INSTALLATION

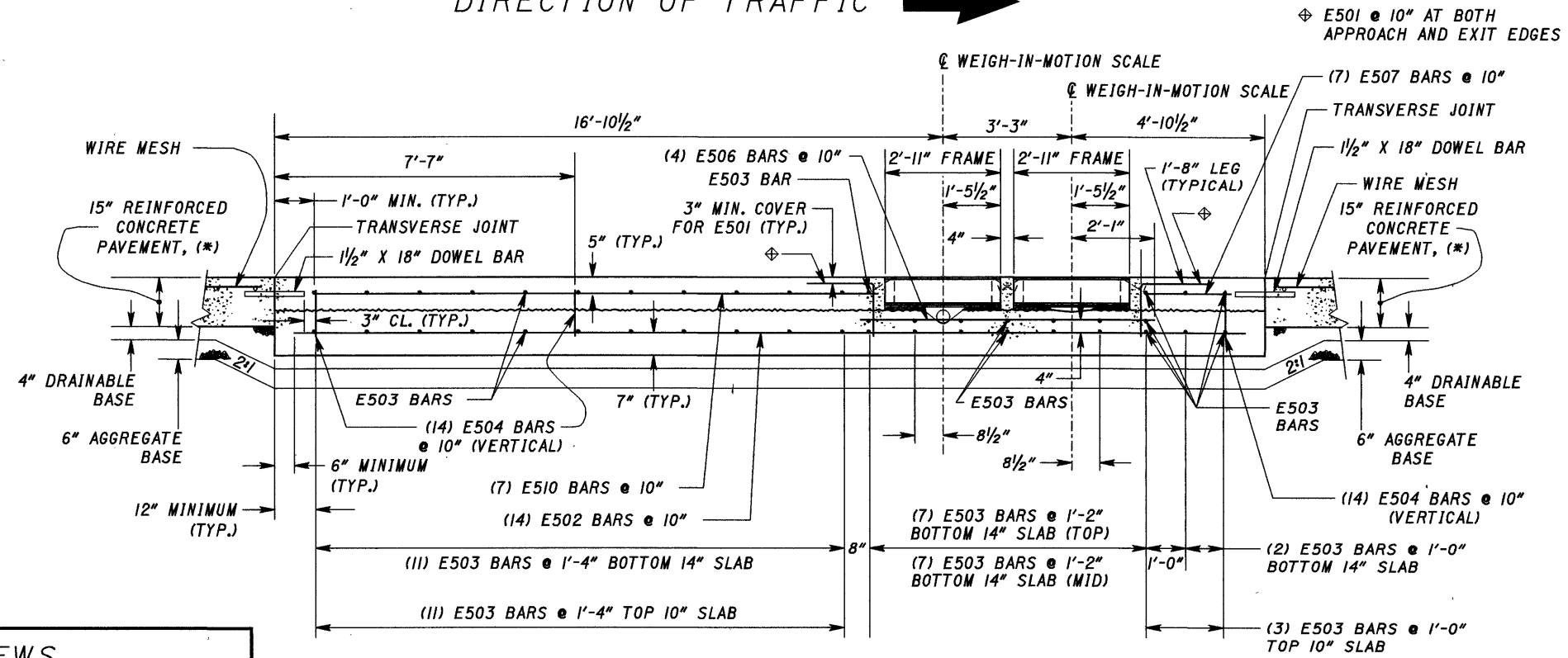
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24
28

347
351

VIEW D-D REBAR DETAIL

DIRECTION OF TRAFFIC →

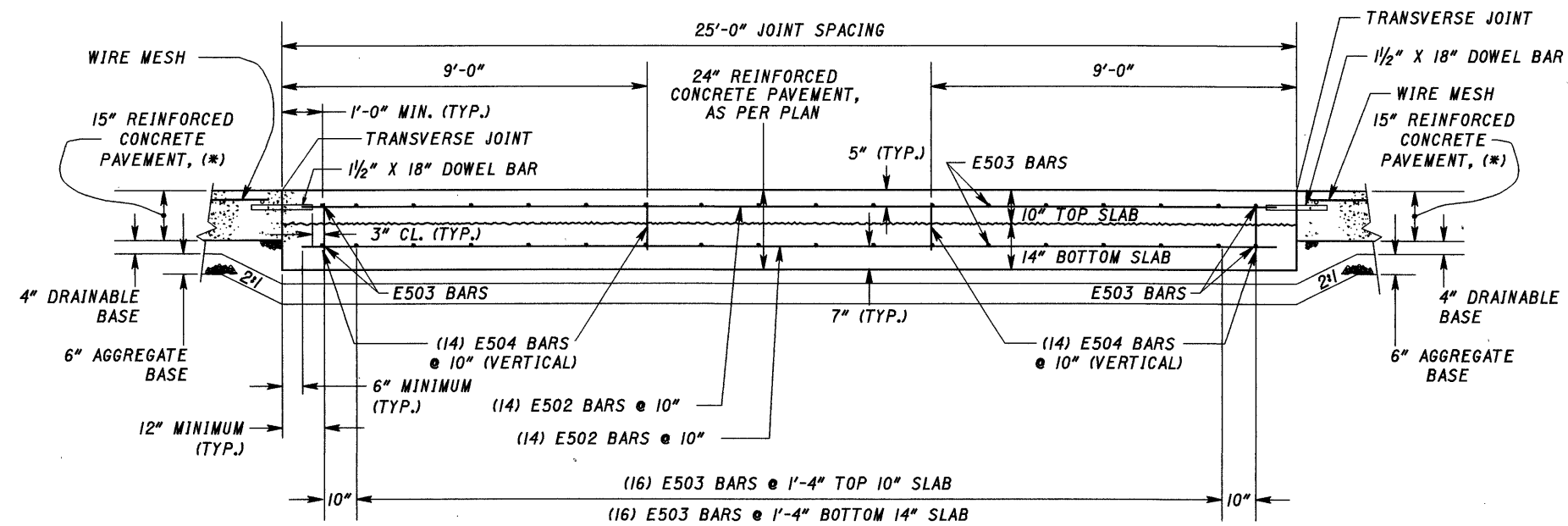


NOTE FOR VIEWS

SEE SHEET 346 FOR LOCATION OF VIEWS D-D AND F-F
 (*) : AS PER PLAN
 (**): AS PER PLAN

VIEW F-F REBAR DETAIL

DIRECTION OF TRAFFIC →



CALCULATED
 DW
 CHECKED
 RLG

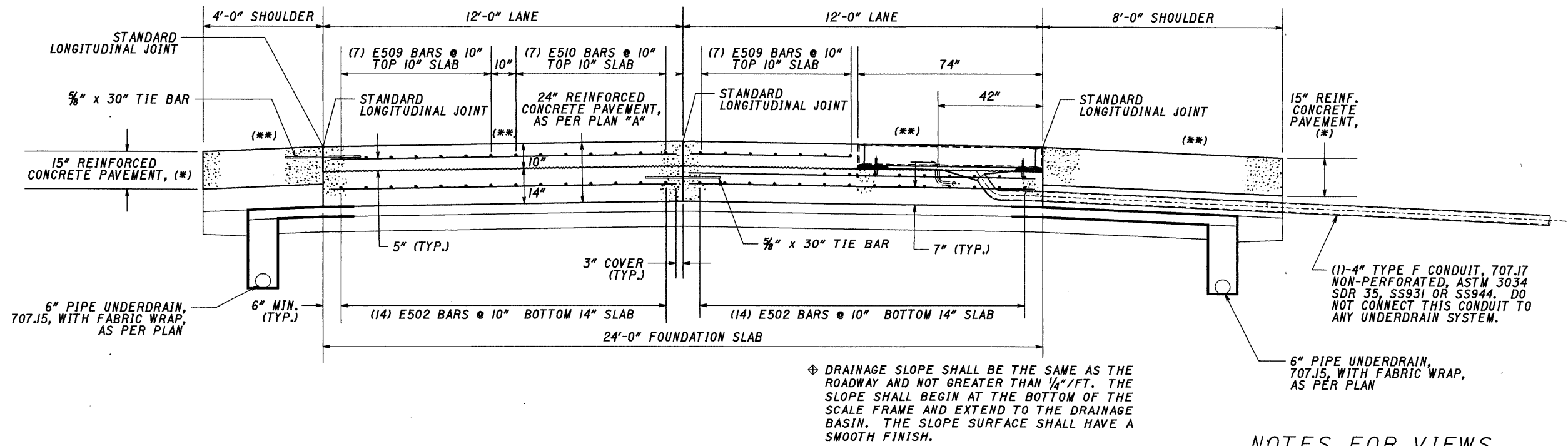
WIM SCALE INSTALLATION

LOR-20-12.62

25
 28

348
 351

VIEW E-E REBAR DETAIL WITH SCALE



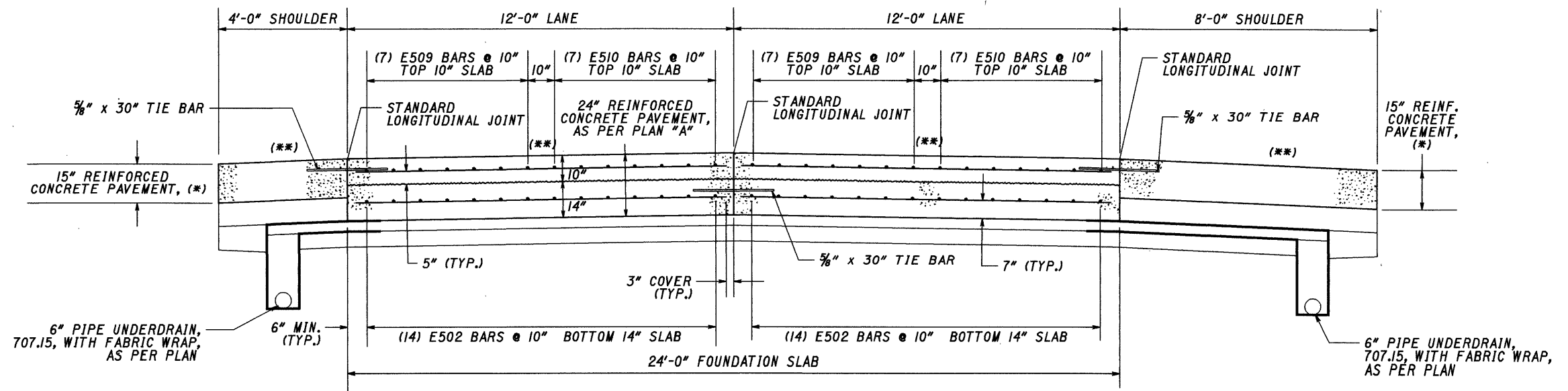
NOTES ON CONDUIT INSTALLATION

1. CONDUITS SHALL BE INSTALLED AS SHOWN ON SHEETS 339 AND 340.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING THE CONDUITS FROM DAMAGE DURING CONSTRUCTION.

NOTES FOR VIEWS

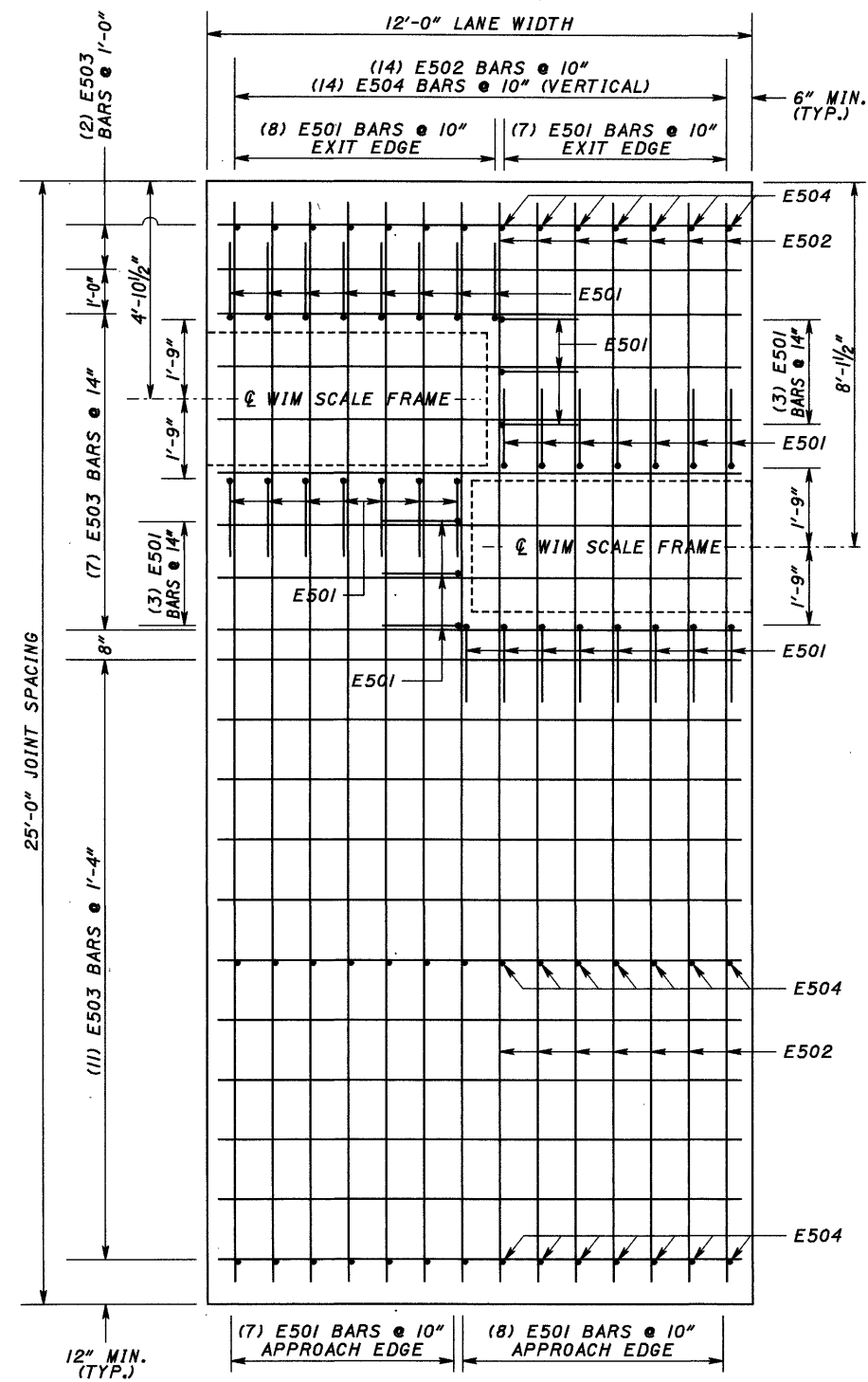
- SEE SHEET 346 FOR LOCATION OF VIEWS E-E AND G-G.
- SEE SHEET 341 FOR REINFORCING STEEL TABLE
- (*) : AS PER PLAN
- (**) : SEE TYPICAL SECTIONS ON SHEET 326 STA. 650+28 TO STA. 650+53 FOR SLOPES.

VIEW G-G REBAR DETAIL WITHOUT SCALE

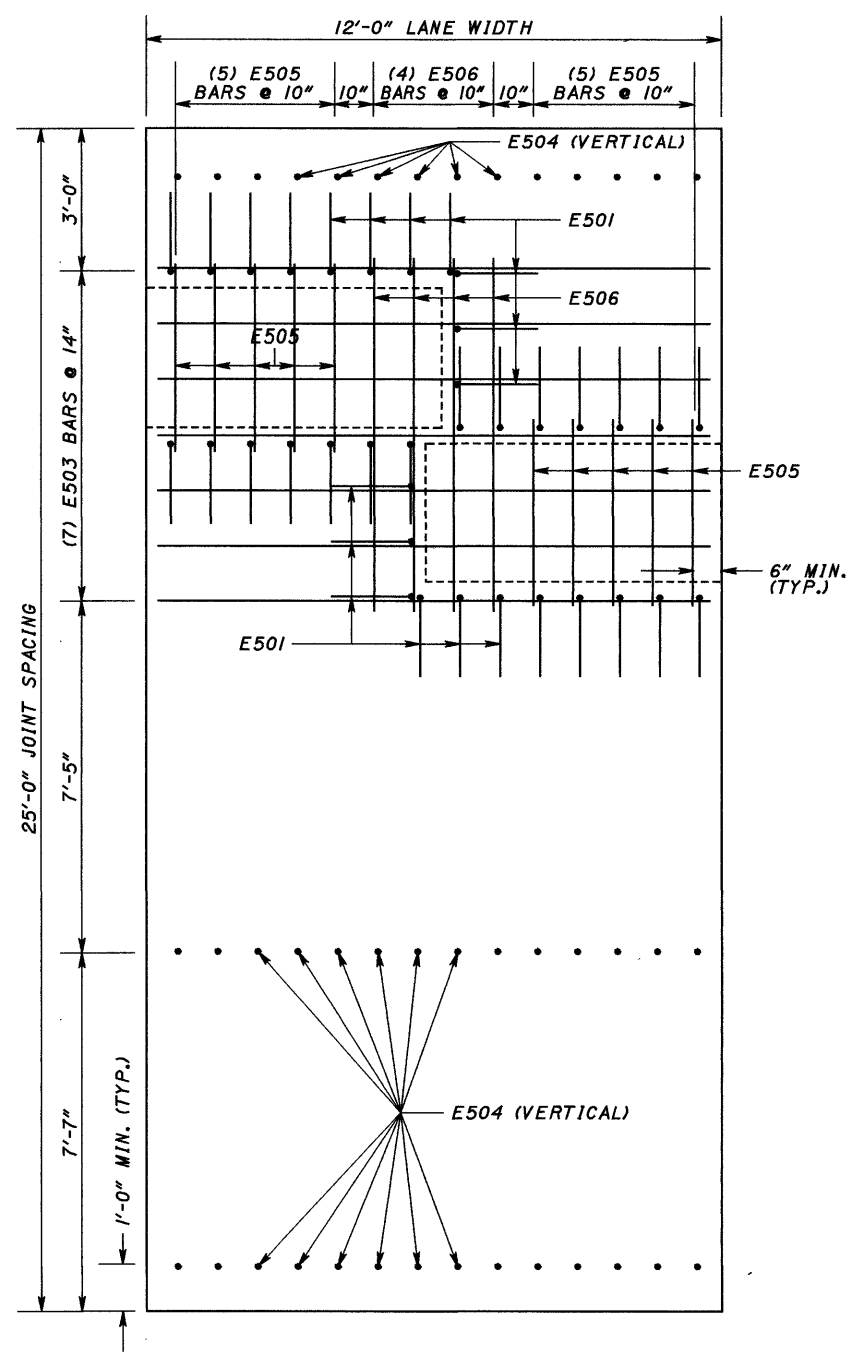


WIM SCALE INSTALLATION

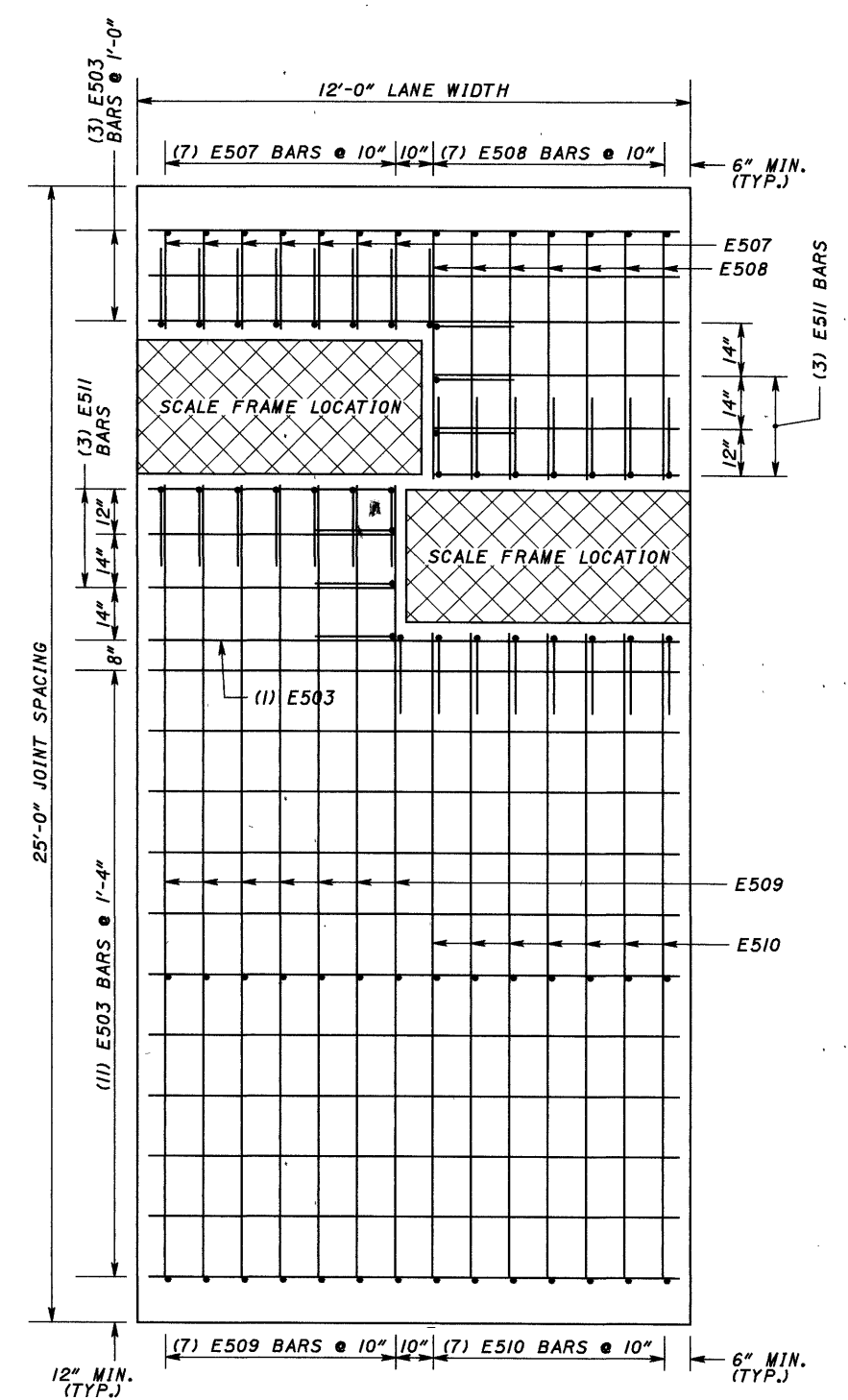
LOR-20-12.62



BOTTOM 14" SLAB



BOTTOM 14" SLAB
 BARS UNDER SCALE FRAMES

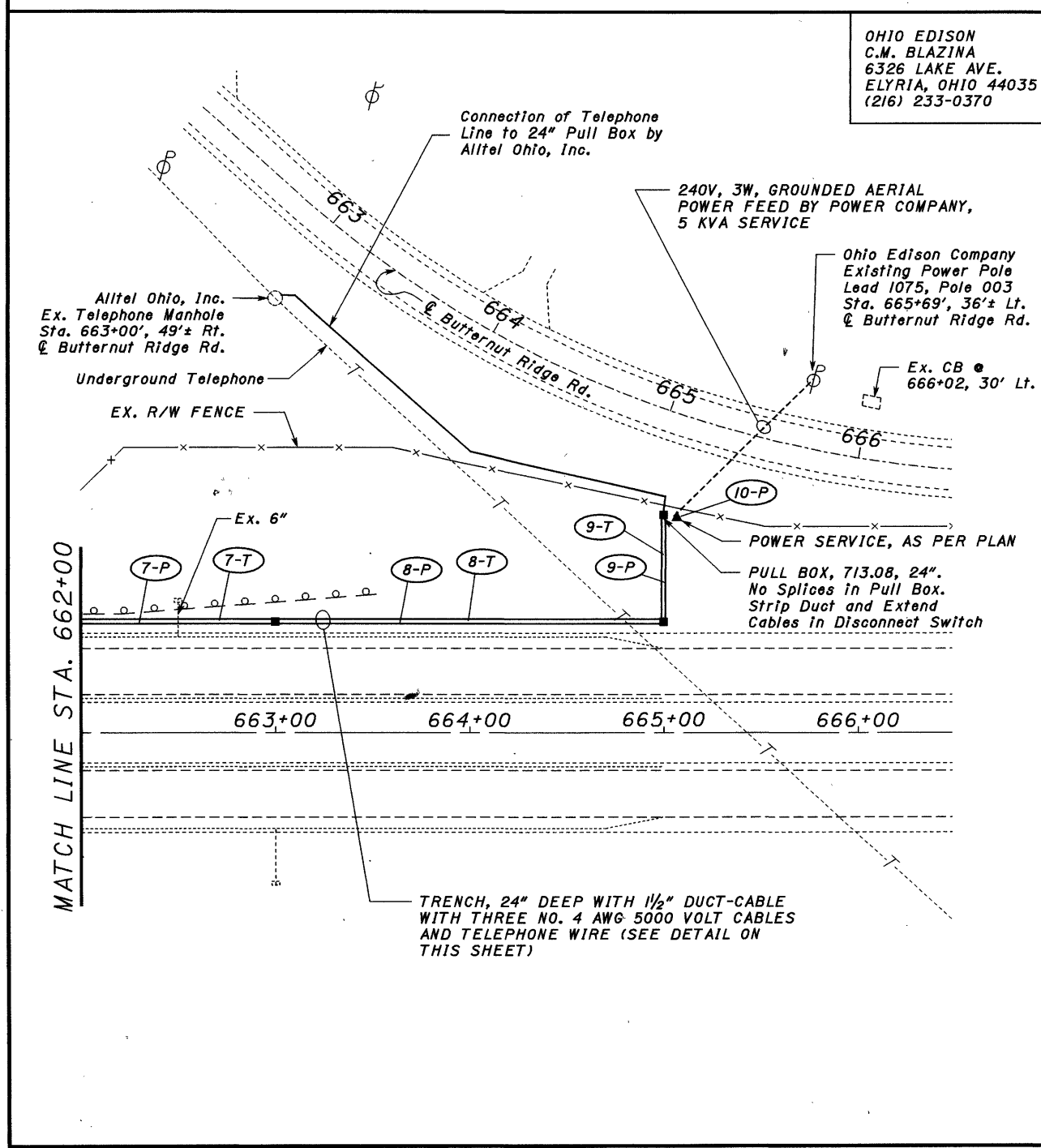
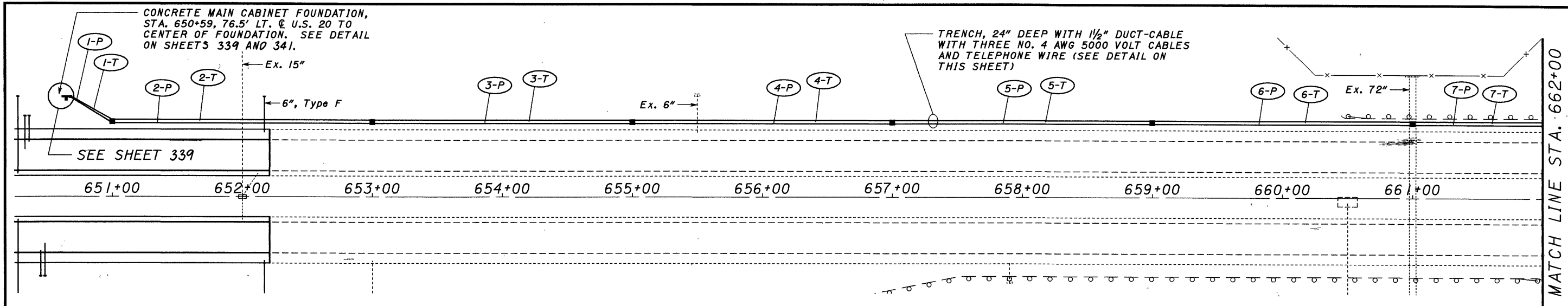


TOP 10" SLAB

WIM REINFORCING STEEL DETAILS

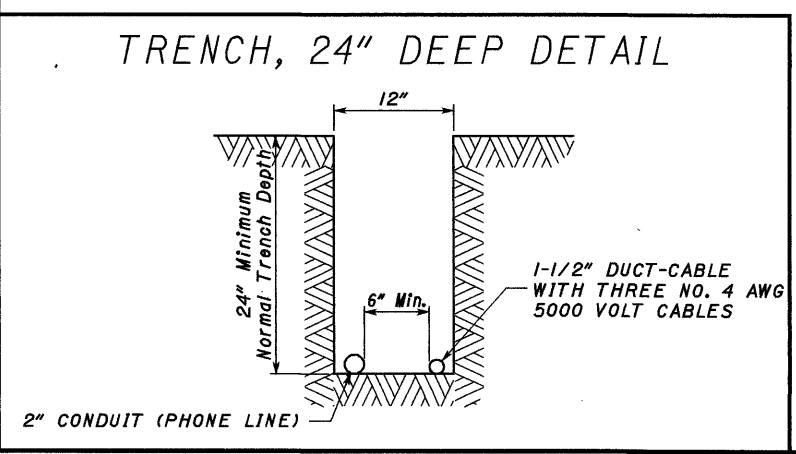
LOR-20-12.62

SEE SHEET 347 FOR WIM REINFORCING STEEL TABLE



ESTIMATED QUANTITIES FOR TELEPHONE AND POWER SERVICE FOR WIM SITE

REF No.	Station to Station		603		625		SPECIAL			
	From	To	4" CONDUIT, TYPE F	TRENCH, 24" DEEP	CONDUIT, 2" 713.04	1/2" DUCT-CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES		PULL BOX, 713.08, 18"	PULL BOX, 713.08, 24"	POWER SERVICE, AS PER PLAN
1-T	Sta. 650+68, 77± Lt.	Sta. 651+00, 58' Lt.	10	38	38					
1-P	Sta. 651+00, 58' Lt.	Sta. 653+00, 58' Lt.	10	200	200	48	1			1
2-T	Sta. 651+00, 58' Lt.	Sta. 653+00, 58' Lt.	10	200	200	210	1			1
2-P	Sta. 653+00, 58' Lt.	Sta. 655+00, 58' Lt.	10	200	200	210	1			1
3-T	Sta. 653+00, 58' Lt.	Sta. 655+00, 58' Lt.	10	200	200	210	1			1
3-P	Sta. 655+00, 58' Lt.	Sta. 657+00, 58' Lt.	10	200	200	210	1			1
4-T	Sta. 655+00, 58' Lt.	Sta. 657+00, 58' Lt.	10	200	200	210	1			1
4-P	Sta. 657+00, 58' Lt.	Sta. 659+00, 58' Lt.	10	200	200	210	1			1
5-T	Sta. 657+00, 58' Lt.	Sta. 659+00, 58' Lt.	10	200	200	210	1			1
5-P	Sta. 659+00, 58' Lt.	Sta. 661+00, 58' Lt.	10	200	200	210	1			1
6-T	Sta. 659+00, 58' Lt.	Sta. 661+00, 58' Lt.	10	200	200	210	1			1
6-P	Sta. 661+00, 58' Lt.	Sta. 663+00, 58' Lt.	10	200	200	210	1			1
7-T	Sta. 661+00, 58' Lt.	Sta. 663+00, 58' Lt.	10	200	200	210	1			1
7-P	Sta. 663+00, 58' Lt.	Sta. 665+00, 58' Lt.	10	200	200	210	1			1
8-T	Sta. 663+00, 58' Lt.	Sta. 665+00, 58' Lt.	10	200	200	210	1			1
8-P	Sta. 665+00, 58' Lt.	Sta. 665+00, 113'± Lt.	10	55	55	65		1		1
9-T	Sta. 665+00±, 113'± Lt.									
9-P										
10-P										
Quantities Carried to Sheet No. 333			90	1493	1493	1583	8	1	1	9



707.17 NON-PERFORATED ASTM 3034 SDR35, SS931 OR SS944

Drainage for Pull Box Note:
Reference is Made to Standard Drawing HL-30.11 for Details of Draining Pull Boxes. Conduit for Pull Boxes Shall be Installed as Shown on These Plans or as Directed by the Engineer and Shall be Provided for the Length Required for a Satisfactory Outlet. An Estimated Quantity of 90-Linear Feet of Item 603 4" Conduit Type F, 707.17 Non-perforated, ASTM 3034 SDR35, SS931 or SS944 is Included in the Table on This Sheet for This Purpose.

HORIZONTAL SCALE IN FEET

CHECKED

WEIGH-IN-MOTION TELEPHONE AND POWER SERVICE

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