LOR-2-3.50	OHIO FHWA REGION 5
NH-73(81)	FEDERAL PROJECT

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
LOR-2-3.50
CITIES OF AMHERST & LORAIN
BROWNHELM TOWNSHIP
LORAIN COUNTY

MAR 6

DESIGN DESIGNATION

Current ADT (1994)	=	20,280
Design Year ADT (2014)	=	26,370
DHV	=	2373
D	=	57%
T	=	12%
V	=	55 MPH
Legal Speed	=	55 MPH

Functional Classification Urban Principal Freeway

DESIGN EXCEPTIONS

	REQUIRED	ACTUAL
1 - GRADED SHOULDER WIDTH	15′	12′
2 - HORIZONTAL CLEARANCE LOR-2-0742 L&R	10′	9.5′

APPROVED MAY 11, 1993

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line ——OR
Fence Line(existing) 352 (proposed) 353
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light

Limited Access (only) —— LA
Right of Way (only) —— RW
Limited Access & Right of Way —— LA&RW
Existing Right of Way
Property Line —— (in existing fence)
Railroad —— or
Guardrail (existing) —— (PROPOSED)

INDEX OF SHEETS

LINE DATA

BEGIN PROJECT - STA 185+00	
END PROJECT - STA 422+00	23700.00 LIN. FT.
NET PROJECT LENGTH	23700.00 LIN. FT. OR 4.489 MILES
ADD FOR WORK	
STA 176+87 TO STA 185+00	813.00 LIN. FT.
STA 422+00 TO STA 423+60	160.00 LIN. FT.
WORK ON SIDEROADS (SEE SHT. 4)	6960.00 LIN. FT.
NET WORK LENGTH	31633.00 LIN. FT OR 5.991 MILES

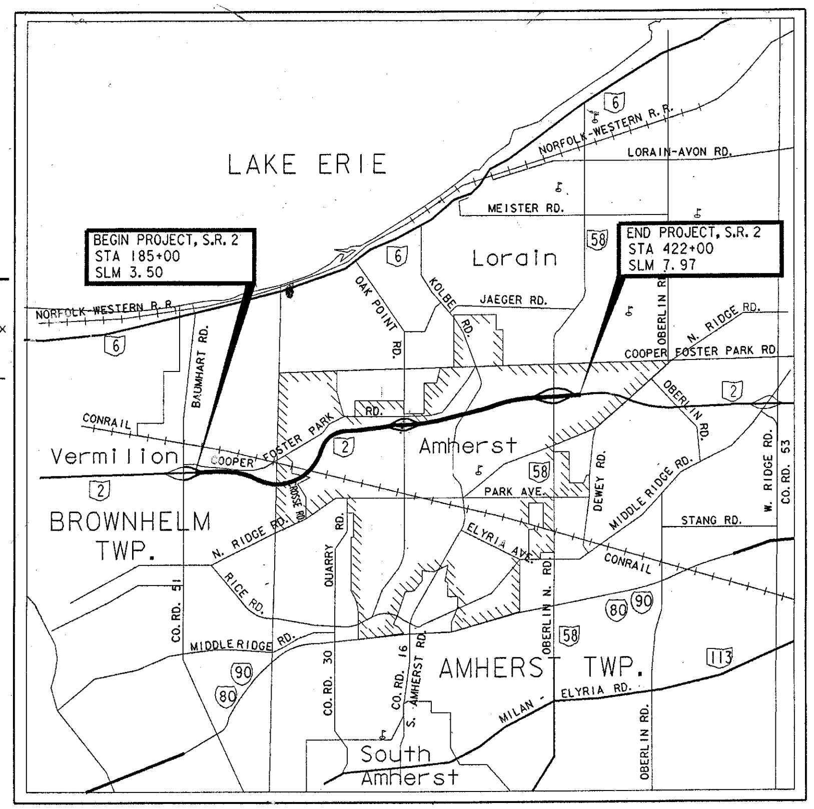
BRIDGES PREPARED BY:
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

Plan Prepared By:
DISTRICT 3 DESIGN

Project LOR-2-3.50	LORAIN COUNTY
Date of Letting ____ 19__	Contract No.__

SEAL

DESIGN FILE: c:\dgn\lor2\title.dgn DATE: 16-AUG-1994
WORKSTATION: e



LOCATION MAP
SCALE IN MILES
0 1 2 3 4

Portion to be Improved
State & Federal Routes
Other Roads

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call 800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SCALES

Plan: 0 50 100
Profile Horizontal: 0 50 100, Vertical: 0 5 10
Cross Section Horzt: 0 5 10, Vertical: 0 5 10

PROJECT DESIGNATION:
LOR-2-3.48 APPEARING THROUGHOUT
THIS PLAN SHALL BE CONSIDERED TO READ LOR-2-3.50

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, Revised Code of Ohio.

1993 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvemnet.

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 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 given notice there of are erected."

Approved Phillip A. Harwood
Date 8-29-94 District Deputy Director of Transportation

Approved B.D. Hanhilammi /WTL
Date 9/15/94 Engineer, Bureau of Bridges and Structural Design

Approved Christopher L. Runyan
Date 9-30-94 Deputy Director of Design

Approved Jerry Wray
Date 9-30-94 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS	
802 ✓ 4-13-90	910 ✓ 5-20-91
820 ✓ 3-18-92	931 ✓ 7-19-94
825 ✓ 10-2-89	933 ✓ 7-22-94
841 ✓ 5-16-84	
	942 ✓ 3-18-92
843 ✓ 7-29-88	944 ✓ 5-2-94
852 ✓ 7-30-93	962 ✓ 1-23-90
862 ✓ 12-16-88	

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

MH-1 ✓ 12-18-84				MC-9.3 ✓ 10-30-92	MC-9.4 ✓ 10-30-92
BP-2.1 ✓ 2-21-92	F-1 ✓ 11-10-83	GR-7.1 ✓ 10-30-92	MT-96.10 ✓ 9-9-88	MT-105.11 ✓ 7-1-92	TC-61.10 ✓ 4-5-82
BP-2.2 ✓ 2-21-92	F-2 ✓ 5-1-76	GR-8.1 ✓ 1-31-94	MT-96.11 ✓ 9-9-88	TC-18.24 ✓ 4-25-79	TC-65.10 ✓ 2-1-90
BP-2.3 ✓ 2-21-92	F-3 ✓ 5-1-76	HW-4B ✓ 4-1-80	MT-96.20 ✓ 9-9-88	TC-22.20 ✓ 9-1-92	TC-65.11 ✓ 2-1-90
BP-1.1 ✓ 2-21-92	F-5 ✓ 5-1-76	MC-4 ✓ 7-26-76	MT-96.25 ✓ 9-9-88	TC-31.21 ✓ 9-1-92	TC-71.10 ✓ 9-10-91
BP-2.5 ✓ 2-21-92	F-6 ✓ 5-1-76	MC-9.1 ✓ 10-30-92	MT-97.10 ✓ 4-29-88	TC-35.10 ✓ 8-29-84	TC-72.20 ✓ 2-26-82
BP-3.1 ✓ 2-21-92	GR-1.1 ✓ 5-6-91	MC-9.2 ✓ 5-6-91	MT-98.12 ✓ 6-24-93	TC-41.10 ✓ 8-29-84	A-1-69 ✓ 6-12-69
BP-5.1 ✓ 2-21-92	GR-1.2 ✓ 10-30-92	MC-10 ✓ 5-1-76	MT-98.13 ✓ 6-24-93	TC-41.20 ✓ 3-26-79	AS-1-81 ✓ 11-27-81
BR-2-82 ✓ 11-1-82	GR-1.3 ✓ 2-21-92	MC-11 ✓ 8-1-78	MT-98.14 ✓ 6-24-93	TC-41.50 ✓ 3-26-79	CPA-2-73 ✓ 4-10-73
CB-2-2A&B ✓ 5-1-79	GR-2.1 ✓ 5-6-91	HW-4A ✓ 4-1-80	MT-98.15 ✓ 6-24-93	TC-42.10 ✓ 8-19-77	CS-2-73 ✓ 4-10-73
CB-3A ✓ 5-1-79	GR-3.1 ✓ 5-6-91	MT-95.30 ✓ 10-10-88	MT-99.10 ✓ 11-14-86	TC-42.20 ✓ 3-26-79	EXJ-4-87 ✓ 1-20-94
CB-5 ✓ 11-10-83	GR-3.2 ✓ 5-6-91	MT-95.31 ✓ 10-10-88	MT-99.20 ✓ 4-29-88	TC-51.10 ✓ 1-20-84	PCB-91 ✓ 4-24-92
CB-6 ✓ 5-1-79	GR-5.3 ✓ 10-30-92	MT-95.32 ✓ 8-25-89	MT-100.00 ✓ 2-23-90	TC-51.11 ✓ 1-20-84	RB-1-55 ✓ 2-2-59
CB-8 ✓ 11-10-83	GR-4.1 ✓ 5-6-91	MT-95.40 ✓ 10-01-92	MT-101.60 ✓ 7-1-92	TC-52.10 ✓ 4-3-79	SD-1-69 ✓ 6-12-69
TC-18.26 ✓ 5-31-79	GR-4.2 ✓ 5-6-91	MT-95.70 ✓ 2-23-90	MT-105.10 ✓ 7-1-92	TC-52.20 ✓ 4-3-79	VPF-1-90 ✓ 3-24-93

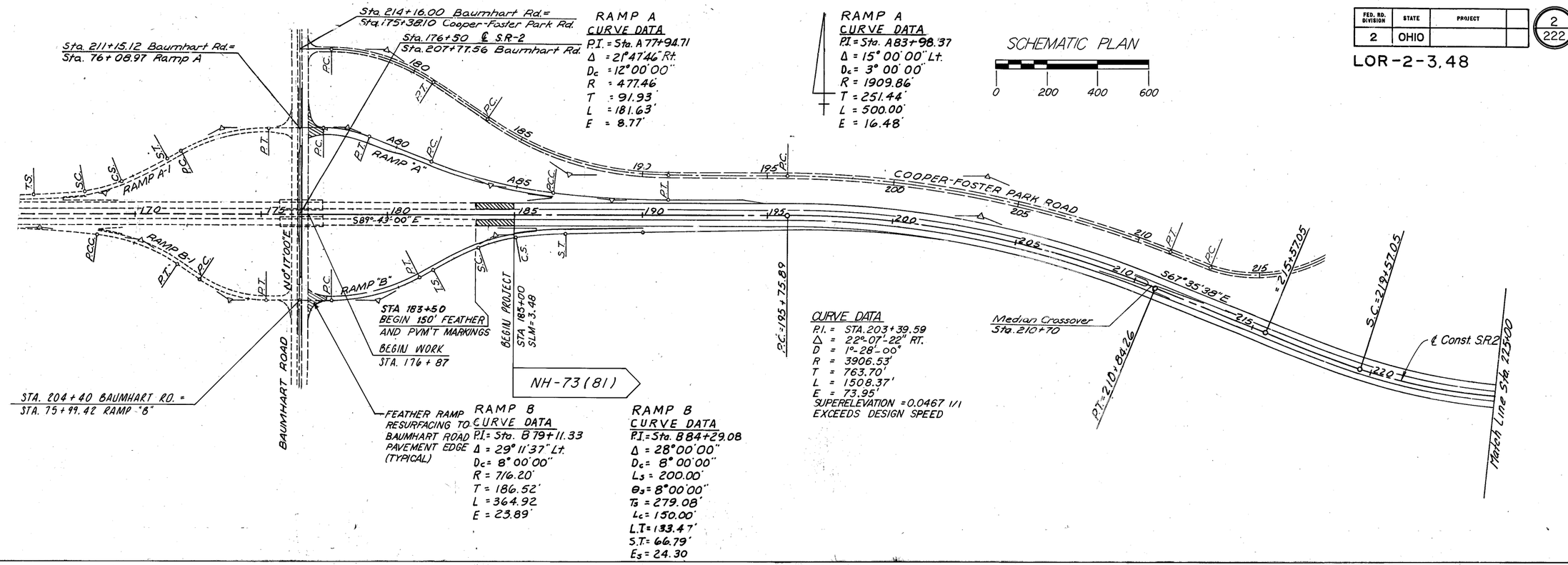
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

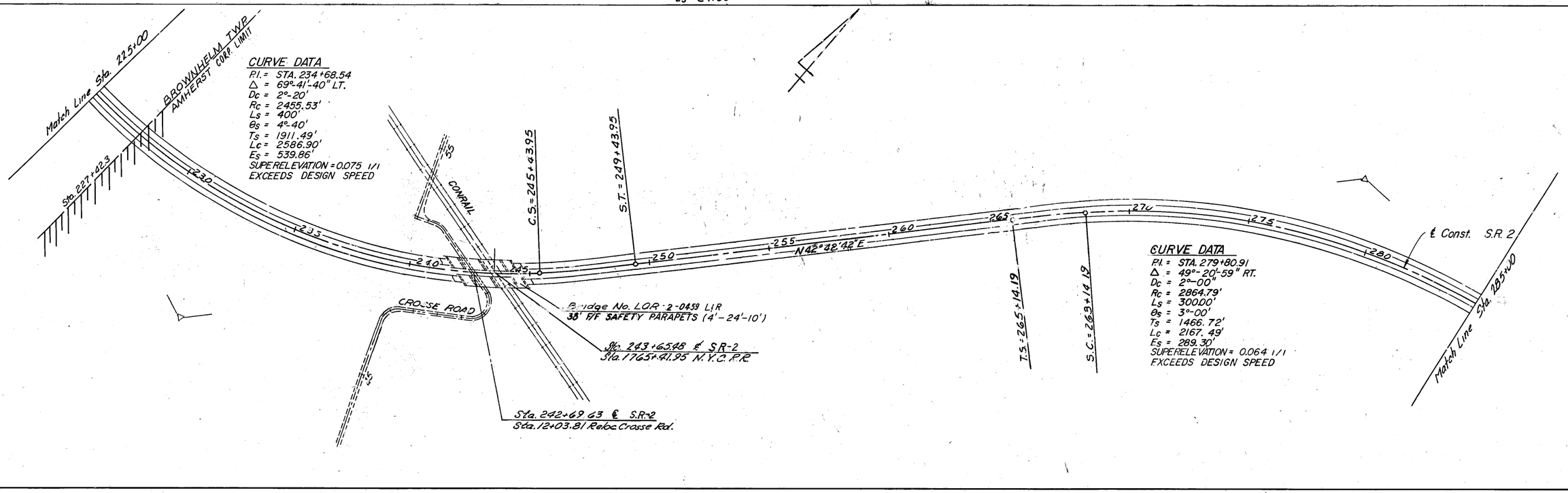
DIVISION ADMINISTRATOR DATE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
222

LOR-2-3,48





SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT		3 / 222
2	OHIO			

LOR-2-3.48

SCHEMATIC PLAN

0 200 400 600

RAMP "W" - CURVE DATA

P.I. = STA. 300 + 93.92	P.I = STA. 307 + 31.78
Δ = 22°-57'-31" LT.	Δ = 24°-38'-58" RT.
D_c = 6°-00'-00"	D_c = 8°-00'-00"
R = 954.93'	R = 716.20'
L = 382.64'	L = 308.12'
T = 193.92'	T = 156.48'
E = 19.49'	E = 16.90'

RAMP "Y" CURVE DATA

P.I = Sta. 312+00.55	P.I = Sta. 320 +05.95
Δ = 20°59'03" Rt	Δ = 24°00'00" Lt.
D_c = 12°00'00"	D_c = 3°00'00"
R = 477.46'	R = 1909.86'
L = 174.87'	L = 800.00'
T = 88.43'	T = 405.95'
E = 8.12'	E = 42.67

CURVE DATA

P.I. = STA. 326 + 91.32
Δ = 13°-31'-10" LT.
D = 1°-28'
R = 3906.53'
T = 463.04'
L = 921.78'
E = 27.35'
SUPERELEVATION = 0.0467 I/I
EXCEEDS DESIGN SPEED

END WORK STA 63+45

℄ OAK POINT RD.

CITY OF LORAIN

CITY OF AMHERST

CORP. LIMITS

CORP. LINE

Cooper Foster Park Rd.

BRIDGE NO LOR-2-0586
40' F/F CURBS W/ 6' SIDEWALKS

Sta. 343+17.27 LOR-254 =
Sta. 50+00 KOLBE ROAD
Bridge No. LOR-2-0649
32' F/F SAFETY PARAPETS
(4', 1/2"-24'-4', 1/2")

BRIDGE NO LOR-2-0646 L & R
40' F/F GUARDRAIL (4'-24'-10')

Match Line Sta. 345+00

Match Line Sta. 285+00

S.R. 2

Sta. 309+50.34 S.R. 2
Sta. 50+00 OAK POINT RD.

℄ S.R. 2

℄ KOLBE RD.

BEAVER CREEK

BEGIN WORK STA. 43+50

N 24°36'16" E

N 28°09'16" E

P.T. STA 331+50.06 S.R. 2

RAMP "Z" CURVE DATA

P.I = Sta. 311+73.28	P.I = Sta. 318+11.30
Δ = 24°38'50" Lt.	Δ = 22°57'23" Rt.
D_c = 8° 00'00"	D_c = 6° 00' 00"
R = 716.20'	R = 954.93'
T = 156.47'	T = 193.90'
L = 308.09'	L = 382.61'
E = 16.89'	E = 19.49

KOLBE RD (N. MAIN ST)
URBAN MINOR ARTERIAL
LEGAL SPEED = 35MPH
DESIGN SPEED = 35MPH

RAMP "X" CURVE DATA

P.I = Sta. 302+04.51	P.I = Sta. 308+09.68
Δ = 15°00'00" Rt.	Δ = 21°17'56" Lt.
D_c = 3° 00'00"	D_c = 12°00'00"
R = 1909.86'	R = 477.46'
T = 251.44'	T = 89.78'
L = 500.00'	L = 177.49'
E = 16.48'	E = 8.37'

C.S. = 289+81.68

S.T. = 292+81.68

Existing Waste Water Treatment Plant Rd.

OAK POINT ROAD (N. LAKE ST.)
URBAN COLLECTOR
LEGAL SPEED = 35MPH
DESIGN SPEED = 35MPH

BEGIN WORK STA 36+55

RAMP "C" CURVE DATA

P.I. = Sta. C 85+65.82	P.I. = Sta. C 90 +66.34
Δ = 26°00'00" Lt.	Δ = 20°11'37" Rt.
L_s = 200.00'	D_c = 8°00'00"
D_c = 8°00'00"	R = 716.20'
T_s = 265.82'	T = 127.54'
Θ_s = 8°00'00"	L = 252.42'
L_c = 125.00'	E = 11.27'
L.T. = 133.47'	
S.T. = 66.79'	
E_s = 21.20'	

END WORK STA 53+55

Sta 369+03.41 ℄ S.R. 2
Sta. 50+00 ℄ Terra Lane
Bridge No. LOR-2-0699
32' F/F CURBS W/ 5' SIDEWALKS

1200' Taper

Sta. 360+00

Sta. 374+00 100' Taper

P.T. = 375+22.55

P.C. = 361+69.45

℄ CONST. S.R. 2

N 78°-32'-31" E

BEGIN WORK STA 47+00

TERRA LANE

CURVE DATA

P.I. = 368+46.68
Δ = 6°-18'-52" RT.
D = 0°-28'
R = 12,277.67'
T = 677.23'
L = 1353.10'
E = 18.66'
SUPERELEVATION = N.C.
EXCEEDS DESIGN SPEED

RAMP "D" CURVE DATA

P.I. = Sta. D 84+03.62	P.I = Sta. D 87+93.69
Δ = 12° 00' 00" Rt.	Δ = 10°47'46" Lt.
D_c = 4° 00' 00"	D_c = 4° 00' 00"
R = 1432.39'	R = 1432.39'
T = 150.55'	T = 135.35'
L = 300.00'	L = 269.90'
E = 7.89'	E = 6.38'

RAMP "F" CURVE DATA

P.I. = Sta. F 94+ 14.24
Δ = 7° 11'23" Lt.
D_c = 4° 30' 00"
R = 1273.24'
T = 79.99'
L = 159.77'
E = 2.51'

BRIDGE NO. LOR-2-0742 L&R
38' F/F SAFETY PARAPETS
(5', 1"-24'-9', 6')

Sta. 92+54.95 Ramp D =
Sta. 1282+94 S.R. #58

TERRA LANE
URBAN COLLECTOR
LEGAL SPEED = 35MPH
DESIGN SPEED = 35MPH

BEGIN WORK STA 1273+35

Sta. 93+68.50 Ramp C =
Sta. 1289+41 S.R. #58

Sta. 92+68.76 Ramp F =
Sta. 1289+30 SR 58

END WORK STA 1298+50

RAMP "E" CURVE DATA

P.I = Sta E 96 +04.31	P.I = Sta. E 101+24.06
Δ = 13°31'22" Rt.	Δ = 10°00'00" Lt.
D_c = 4°00'00"	D_c = 4°00'00"
R = 1432.39'	R = 1432.39'
T = 169.82'	T = 125.32'
L = 338.07'	L = 250.00'
E = 10.07'	E = 5.47'

Structure No. Lor-2-0761

N 02°51'23" E

N 84°51'23" E

RAMP "F" CURVE DATA

P.I = Sta. F 101 + 93.76
Δ = 17°00'00"
D_c = 3° 00' 00"
R = 1909.86'
T = 285.43'
L = 566.67'
E = 21.21'

Sta. 392+70.26 ℄ S.R. 2 =
Sta. 1285+87.85 S.R. #58

Sta. 92+16.81 Ramp F =
Sta. 1282+83.00 S.R. #58

S.R. #58

Match Line Sta. 405+00

Match Line Sta. 345+00

KOLBE RD.

END WORK STA 54+50

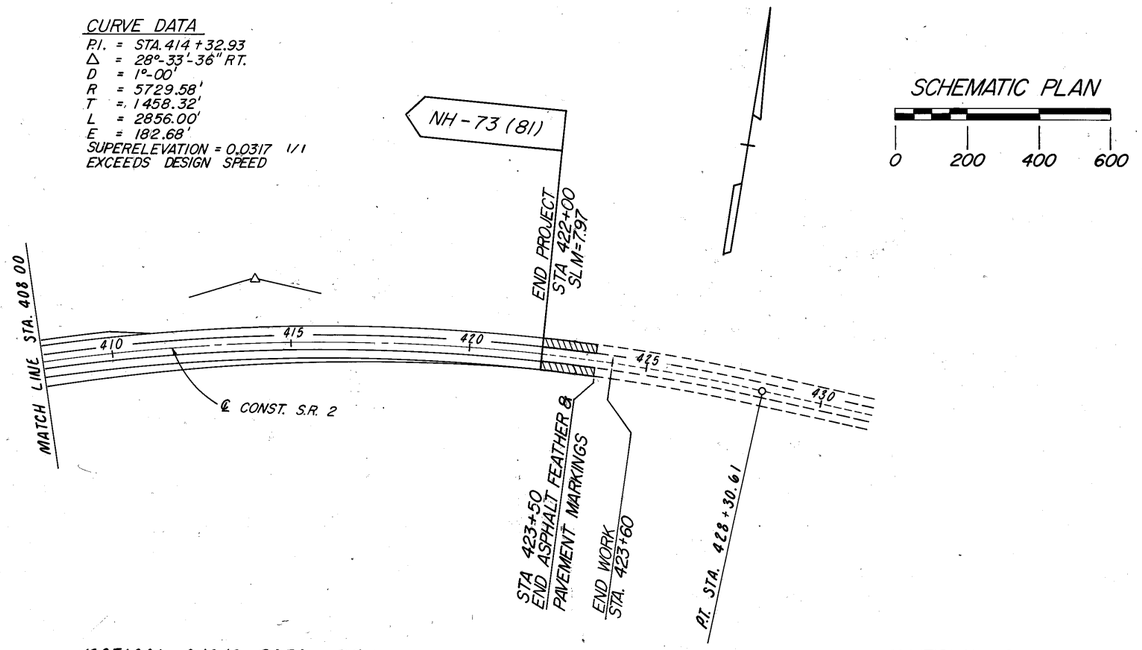
SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4
222

LOR-2-3.48

CURVE DATA
P.I. = STA. 414+32.93
Δ = 28°-33'-36" R.T.
D = 1°-00'
R = 5729.58'
T = 1458.32'
L = 2856.00'
E = 182.68'
SUPERELEVATION = 0.0317 1/1
EXCEEDS DESIGN SPEED



SCHEMATIC PLAN

VERTICAL CURVE DATA - SR 2

PVI STA.	L	G1	G2	K	DESIGN SPEED
188+00	500	-2.00	+0.68	187	▲
224+00	600	+0.68	+2.00	455	
243+75	1800	+2.00	-2.00	450	
256+25	600	-2.00	-0.32	357	▼
269+50	1000	-0.32	-2.20	532	EXCEEDS
286+00	600	-2.20	-0.61	377	DESIGN
306+00	400	-0.61	-0.30	1290	SPEED
327+00	600	-0.30	-1.16	698	▲
338+00	400	-1.16	+0.24	286	
374+25	600	+0.24	+2.00	341	
392+50	1800	+2.00	-1.99	451	
406+50	600	-1.99	+0.84	212	▼

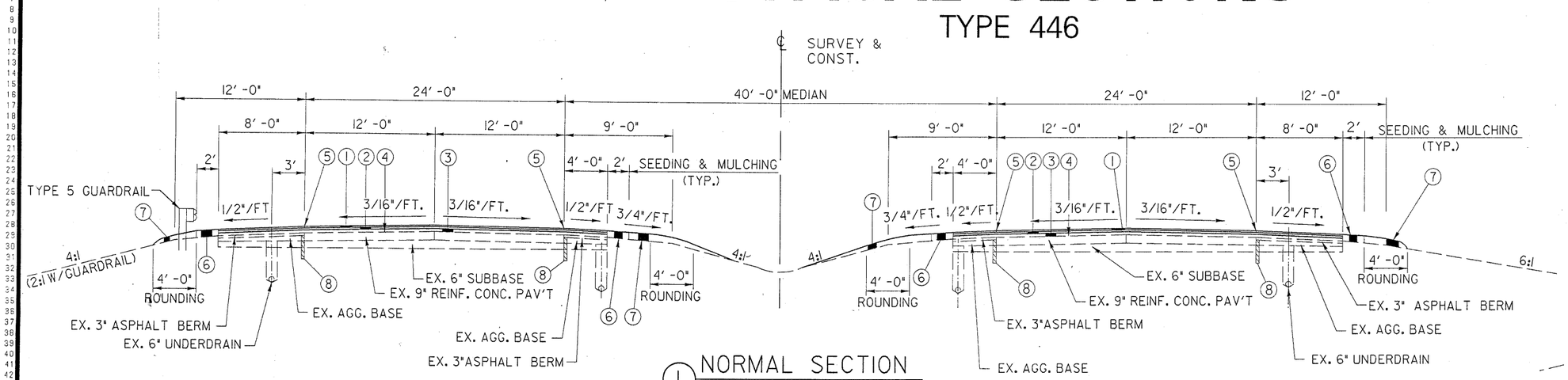
ADDITIONAL WORK

SIDE ROAD	STATION LIMITS	LENGTH (LIN. FT)
OAK POINT ROAD	36+55 TO 63+45	2690.00
KOLBE ROAD	43+50 TO 54+50	1100.00
TERRA LANE	47+00 TO 53+55	655.00
S R 58	1273+35 TO 1298+50	2515.00
TOTAL SIDE ROAD WORK = (CARRIED TO SHEET 1)		6960.00 LIN. FT.

SCHEMATIC PLAN

TYPICAL SECTIONS

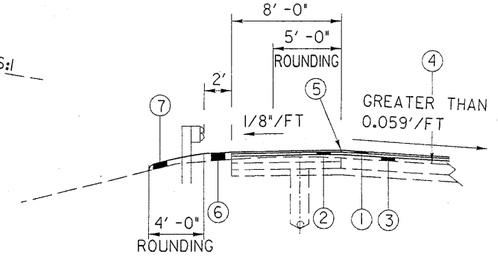
TYPE 446



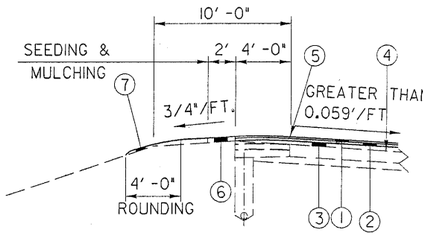
NOTE: *SEE SHEET 31 FOR PAVEMENT PLANING TYPICAL AND MAINLINE PLAN SHEETS FOR LOCATIONS*

(1) NORMAL SECTION

STA. 185+00 TO STA. 194+05.89	= 905.89 LIN.FT.
STA. 212+54.26 TO STA. 214+81.05	= 226.79 LIN.FT.
STA. 250+19.95 TO STA. 264+38.19	= 1418.24 LIN.FT.
STA. 293+57.68 TO STA. 304+00	= 1042.32 LIN.FT.
STA. 315+00 TO STA. 320+58.28	= 558.28 LIN.FT.
STA. 320+58.28 TO STA. 339+50	= 1891.72 LIN.FT.
STA. 348+50 TO STA. 398+40.81	= 4990.81 LIN.FT.
DEDUCT FOR BRIDGES & APPROACH SLABS	=-383.20 LIN.FT.
TOTAL	= 10650.85 LIN.FT.

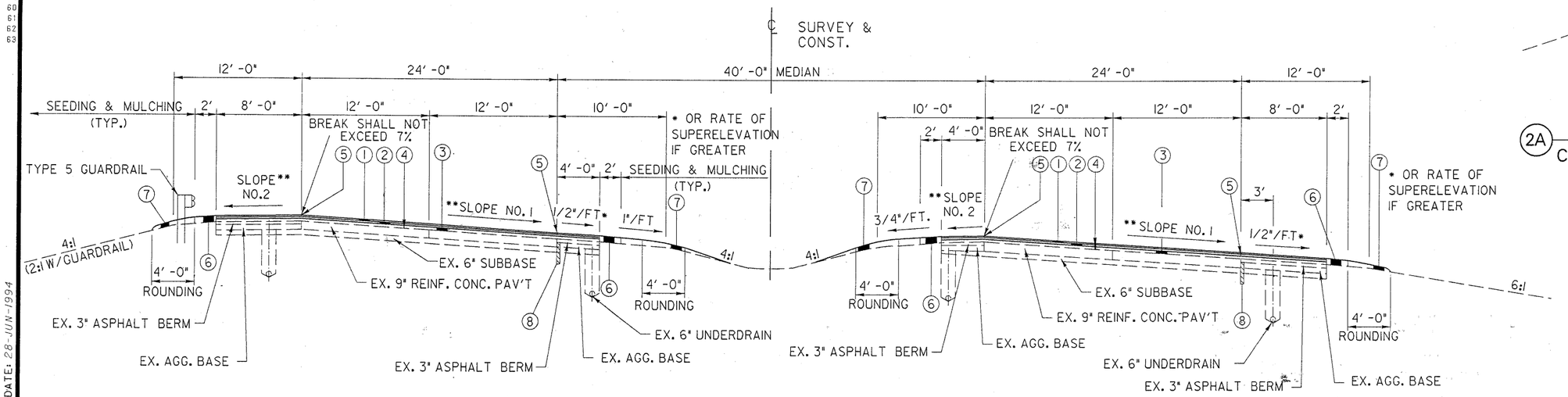


OUTSIDE SHOULDER



INSIDE SHOULDER

(2A) SHOULDER TREATMENT FOR CURVES EXCEEDING Dc = 1° - 30′



(2) SUPERELEVATED SECTION

STA. 194+05.89 TO STA. 212+54.26=	1848.37 LIN.FT.
‡ STA. 214+81.05 TO STA 250+19.95=	3538.90 LIN.FT.
DEDUCT FOR BRIDGE & APPROACH SLABS=	-352.12 LIN.FT.
‡ STA. 264+38.19 TO STA 293+57.68=	2919.49 LIN.FT.
STA. 320+58.28 TO STA 333+20.06=	1261.78 LIN.FT.
STA. 398+40.81 TO STA. 422+00.00=	2359.19 LIN.FT.
TOTAL =	11575.61 LIN.FT.

‡ SEE SECTION (2A) FOR BERM & SHOULDER TREATMENT AT HIGH SIDE OF SUPERELEVATION

** DEGREE OF CURVATURE	SLOPE NO. 1	SLOPE NO. 2
1°00′	0.032 ′/′	5/16 ′/′
1°28′	0.047 ′/′	1/8 ′/′
2°00′	0.064 ′/′	—
2°20′	0.075 ′/′	—

LEGEND

1. (1¼") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20 (SEE GENERAL NOTE)
2. (1¾") 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
3. (3") 301 - BITUMINOUS AGGREGATE BASE, AC-20
4. 407 - TACK COAT APPLIED TO EXISTING PAVEMENT & PAVED BERMS
5. HOT LONGITUDINAL JOINT
6. 617 - COMPACTED AGGREGATE, TYPE A
7. 203 - EMBANKMENT, AS PER PLAN
8. 605 - SHALLOW UNDERDRAIN, AS PER PLAN. AT LOCATIONS LISTED IN TABLE, SHEETS 87 & 88.

REVISED 11-29-94

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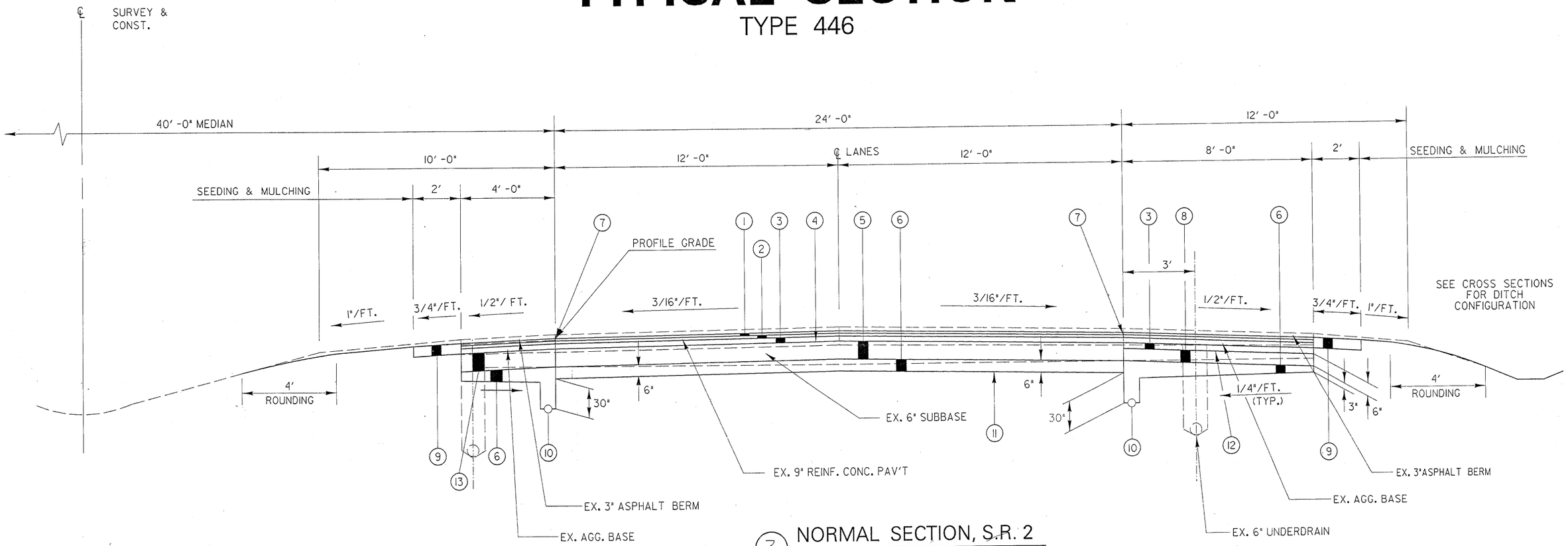
WORKSTATION: e
DATE: 28-JUN-1994

TYPICAL SECTION

TYPE 446



③ NORMAL SECTION, S.R. 2
PAVEMENT REPLACEMENT UNDER OAK POINT ROAD BRIDGE

(IN DIRECTION OF TRAVEL)

✳ STA 304+00 TO STA 315+00 EB = 1100 LIN. FT. EB
✳ STA 305+00 TO STA 314+00 WB = 900 LIN. FT. WB

TOTAL = **2000** LIN. FT.

✳ STA. 304+00 TO STA. 305+00 & STA. 314+00 TO STA. 315+00 TYPICAL THIS SHEET FOR EB AND TYPICAL ① FROM SHEET 5 FOR WB

LEGEND

① (1¼") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20 (SEE GENERAL NOTE)

② (1¾") 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

③ (3") 301 - BITUMINOUS AGGREGATE BASE, AC-20

④ 407 - TACK COAT (APPLIED TO NEW PAVEMENT)

⑤ (9") 305 - CONCRETE BASE, AS PER PLAN

⑥ 310 - SUBBASE, TYPE I, GRADING A

⑦ HOT LONGITUDINAL JOINT

⑧ 304 - AGGREGATE BASE

⑨ (6") 617 - COMPACTED AGGREGATE, TYPE A

⑩ 605 - 4" SHALLOW PIPE UNDERDRAIN 707.15, **AS PER PLAN** TABLE, SHEET 89

⑪ 203 - SUBGRADE COMPACTION

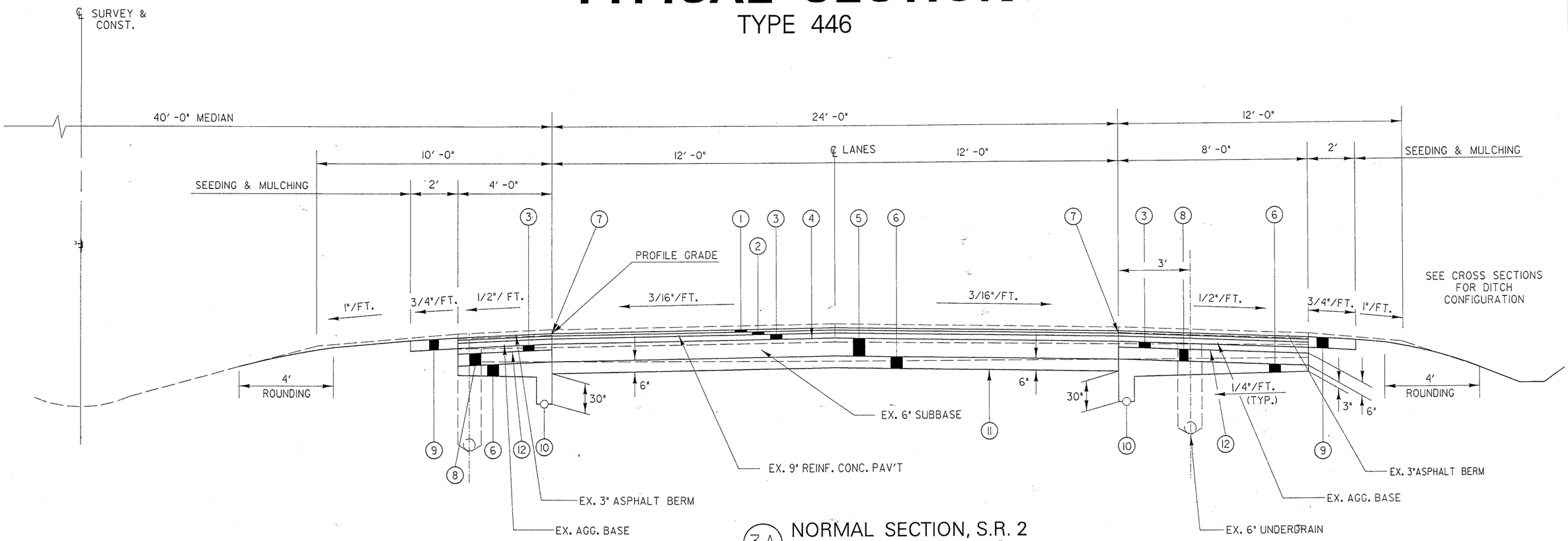
⑫ 408 - BITUMINOUS PRIME COAT APPLIED @ 0.4 GAL/SQ.YD.

⑬ (9") 301 - BITUMINOUS AGGREGATE BASE, AC-20 (TO BE USED AS TEMP. PAVEMENT)

DESIGN FILE: c:\dgn\temp\12typ6.dgn
WORKSTATION: e
DATE: 18-AUG-1994

TYPICAL SECTION

TYPE 446



(3A) NORMAL SECTION, S.R. 2 PAVEMENT REPLACEMENT

(IN DIRECTION OF TRAVEL)

STA. 339+50 TO STA. 348+50 EB = 900 LIN. FT. EB
STA. 340+00 TO STA. 348+50 WB = 850 LIN. FT. WB

TOTAL = **1750** LIN. FT.

GRAPHIC GRADES

≠ STA. 339+50 TO STA. 340+50 EB
STA. 340+00 TO STA. 341+00 WB

STA. 339+50 TO STA. 340+00
TYPICAL THIS SHEET FOR E.B.
AND TYPICAL (1) FROM SHEET 5
FOR W.B.

LEGEND

(1) (1 1/4") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20 (SEE GENERAL NOTE)

(2) (1 3/4") 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

(3) (3") 301 - BITUMINOUS AGGREGATE BASE, AC-20

(4) 407 - TACK COAT (APPLIED TO NEW PAVEMENT)

(5) (9") 305 - CONCRETE BASE, AS PER PLAN

(6) 310 - SUBBASE, TYPE 1, GRADING A

(7) HOT LONGITUDINAL JOINT

(8) 304 - AGGREGATE BASE

(9) (6") 617 - COMPACTED AGGREGATE, TYPE A

(10) 605 - 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN, AT LOCATIONS LISTED IN TABLE, SHEET 89

(11) 203 - SUBGRADE COMPACTION

(12) 408 - BITUMINOUS PRIME COAT APPLIED @ 0.4 GAL/SQ.YD.

DESIGN FILE: c:\dgn\temp\2typ6a.dgn
WORKSTATION: e
DATE: 18-AUG-1994

FHWA REGION	STATE	PROJECT	
5	OHIO	BAS	

LOR - 2 - 3.48

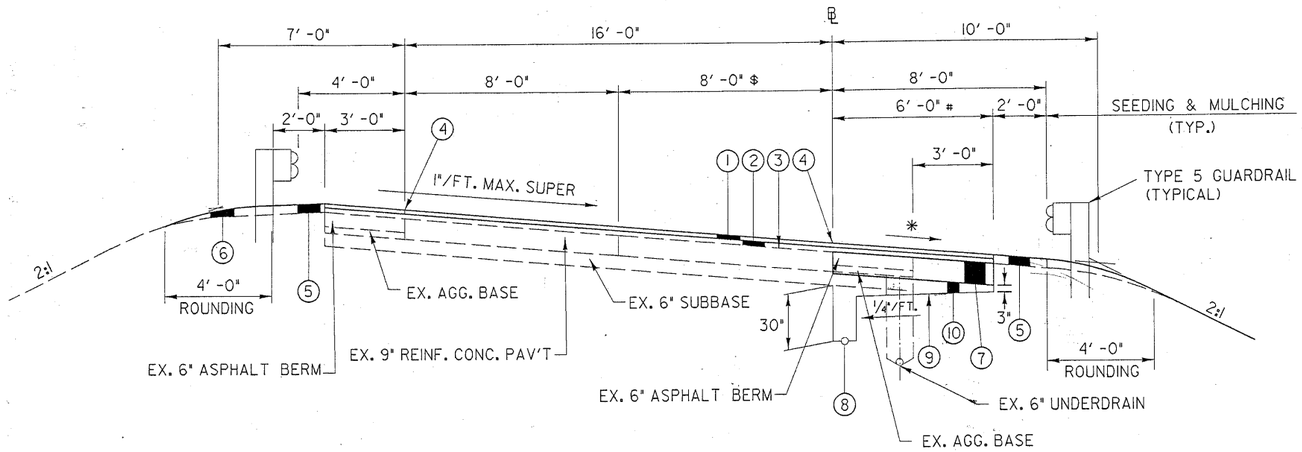
TYPICAL SECTIONS

TYPE 446

NOTE: FOR RAMPS A, C, & E
REVERSE TYPICALS

RAMP "A" STA. 79+25 TO STA. 86+46.96 = 721.96 LIN.FT.
RAMP "B" STA. 81+06.25 TO STA. 85+50 = 443.75 LIN.FT.
RAMP "C" STA. 84+50 TO STA. 88+92.3 = 442.3 LIN.FT.
RAMP "C" STA. 92+25 TO STA. 93+41.58 = 116.58 LIN.FT.
RAMP "D" STA. 82+53.07 TO STA. 86+12.82 = 359.75 LIN.FT.
RAMP "E" STA. 92+94.74 TO STA. 94+00 = 105.26 LIN.FT.
RAMP "E" STA. 98+05.8 TO STA. 102+48.74 = 442.94 LIN.FT.
RAMP "F" STA. 95+31.65 TO STA. 105+25 = 993.35 LIN.FT.

TOTAL = 3625.89 LIN.FT.



4 SUPERELEVATED RAMP SECTION RIGHT

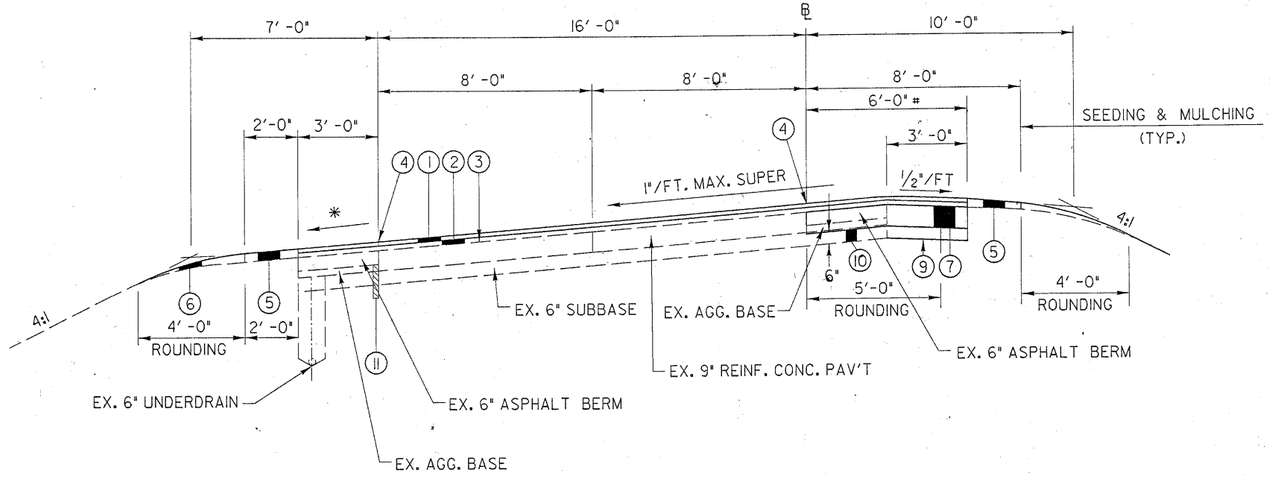
BAUMHART RD. RAMPS A & B
S.R. 58 RAMPS C, D, E, & F

* 1/2" /FT. (OR PAV'T SLOPE IF GREATER THAN 1/2"/FT.)

SEE SHEETS 28, 38 & 39 FOR NEW PAVED BERM LOCATION & WIDTH.

RAMP "A" STA. 76+40.97 TO STA. 79+25 = 284.03 LIN.FT.
RAMP "B" STA. 76+31.42 TO STA. 81+06.25 = 474.83 LIN.FT.
RAMP "C" STA. 88+92.3 TO STA. 92+25 = 332.7 LIN.FT.
RAMP "D" STA. 86+12.82 TO STA. 89+17.75 = 304.93 LIN.FT.
RAMP "E" STA. 94+00 TO STA. 98+05.8 = 405.8 LIN.FT.
RAMP "F" STA. 92+43.73 TO STA. 95+31.65 = 287.92 LIN.FT.

TOTAL = 2090.21 LIN.FT.



5 SUPERELEVATED RAMP SECTION LEFT

BAUMHART RD. RAMPS A & B
S.R. 58 RAMPS C, D, E, & F

\$ PORTION OF RAMP A HAS BEEN WIDENED FROM 16' TO 24' TO INCLUDE A LEFT TURN LANE (SEE PLAN SHEETS)

LEGEND

(1) (1 1/4") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20 (SEE GENERAL NOTE)

(2) (2 3/4") 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

(3) 407 - TACK COAT APPLIED TO EXISTING PAVEMENT, & PAVED BERM SURFACES, (SEE GENERAL NOTE)

(4) HOT LONGITUDINAL JOINT

(5) 617 - COMPACTED AGGREGATE, TYPE A

(6) 203 - EMBANKMENT, AS PER PLAN

℄ (7) (9") 301 - BITUMINOUS AGGREGATE BASE, AC-20

(8) 605 - 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN - AT LOCATIONS LISTED IN TABLE, SHEET 89.

(9) 203 - SUBGRADE COMPACTION

(10) 310 - SUBBASE, TYPE 1, GRADING A

(11) 605 - SHALLOW UNDERDRAIN, AS PER PLAN. AT LOCATIONS LISTED IN TABLE, SHEETS 87 & 88.

℄ INCLUDED UNDER ITEM 615 - TEMPORARY PAVEMENT, CLASS B, AS PER PLAN TO REMAIN AS BASE FOR PAVED BERM.
SEE MAINTENANCE OF TRAFFIC SHEETS FOR LOCATION AND WIDTH OF NEW PAVED BERMS.

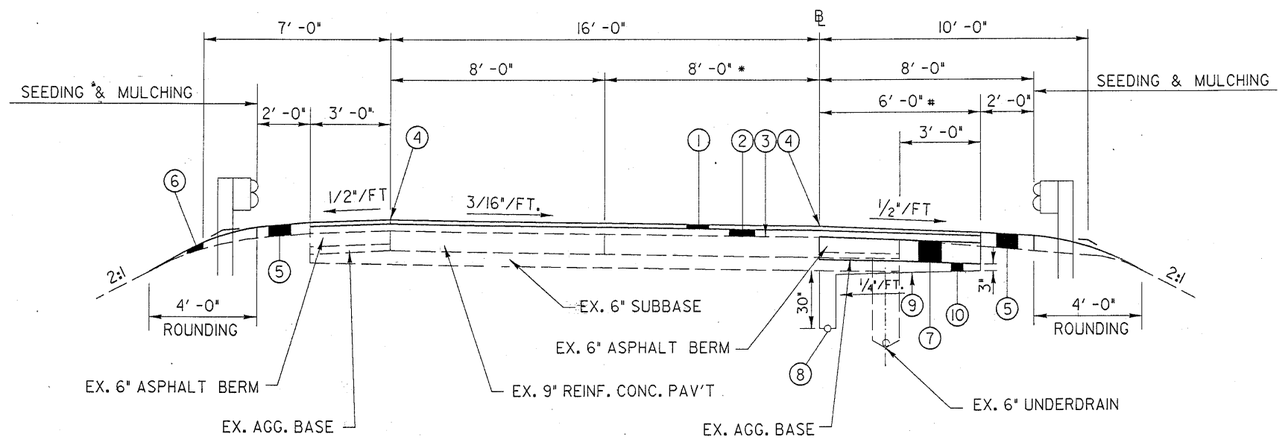
DESIGN FILE: C:\DGN\LOR2\L2TYPSE2
WORKSTATION:
DATE:

FHWA REGION	STATE	PROJECT	
5	OHIO	BAS	

LOR - 2 - 3.48

TYPICAL SECTIONS

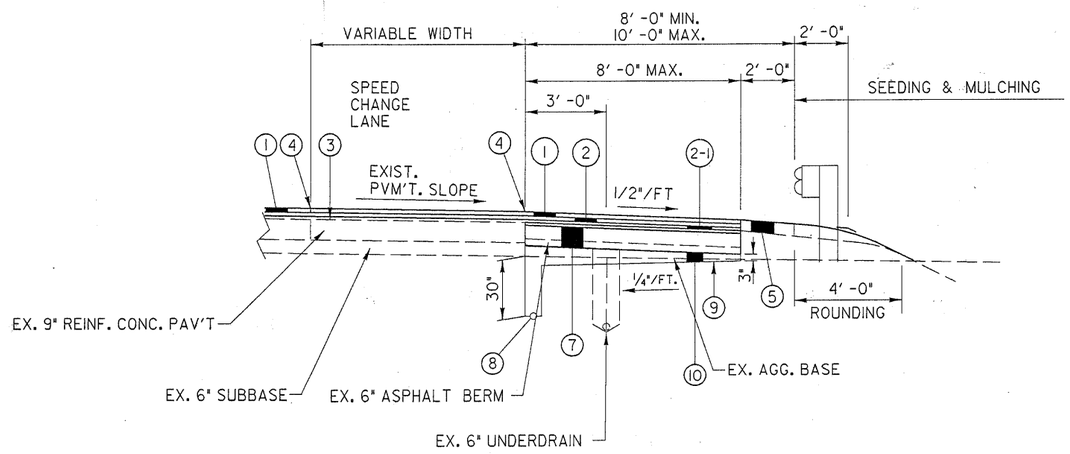
TYPE 446



6 NORMAL RAMP SECTION

S.R. 58 RAMP D

* RAMP "D" STA. 89+17.75 TO STA. 92+28.94 = 311.19 LIN.FT.



7 SPEED CHANGE LANE DETAIL

STA. A86+46.93 TO STA. 195+00 W.B.	= 853.07	LIN.FT.
STA. B85+50 TO STA. 202+00 E.B.	= 1650	LIN.FT.
STA. 284+00 TO STA. W300+00 W.B.	= 1600	LIN.FT.
STA. 291+54.31 TO STA. X299+53.07 E.B.	= 798.76	LIN.FT.
STA. Y320+07.21 TO STA. 328+03.49 W.B.	= 796.28	LIN.FT.
STA. Z319+00 TO STA. 335+00 E.B.	= 1600	LIN.FT.
STA. 368+00 TO STA. C84+50 W.B.	= 1650	LIN.FT.
STA. 374+00 TO STA. D82+53.07 E.B.	= 853.07	LIN.FT.
STA. E102+48.74 TO STA. 411+00 W.B.	= 851.26	LIN.FT.
STA. F105+25 TO STA. 421+75 E.B.	= 1650	LIN.FT.
TOTAL	= 12302.44	LIN.FT.

* PORTION OF RAMP A HAS BEEN WIDENED FROM 16' TO 24' TO INCLUDE A LEFT TURN LANE (SEE PLAN SHEETS)

\# SEE SHEET 38 FOR NEW PAVED BERM LOCATION & WIDTH

LEGEND

(1) (1 1/4") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20 (SEE GENERAL NOTE)

(2) (1 3/4") 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

(2-1) (3") 301 - BITUMINOUS AGGREGATE BASE, AC-20

(3) 407 - TACK COAT APPLIED TO EXISTING PAVEMENT & PAVED BERM SURFACES (SEE GENERAL NOTE)

(4) HOT LONGITUDINAL JOINT

(5) 617 - COMPACTED AGGREGATE, TYPE A

(6) 203 - EMBANKMENT, AS PER PLAN

≠ (7) (9") 301 - BITUMINOUS AGGREGATE BASE, AC-20

(8) 605 - 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN AT LOCATIONS LISTED IN TABLE, SHEET 89

(9) 203 - SUBGRADE COMPACTION

(10) 310 - SUBBASE, TYPE 1, GRADING A

≠ WHERE APPLICABLE SHALL BE INCLUDED UNDER ITEM 615 - TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A" TO REMAIN AS BASE FOR PAVED BERM. SEE MAINTENANCE OF TRAFFIC SHEETS FOR LOCATION AND WIDTH OF NEW PAVED BERMS.

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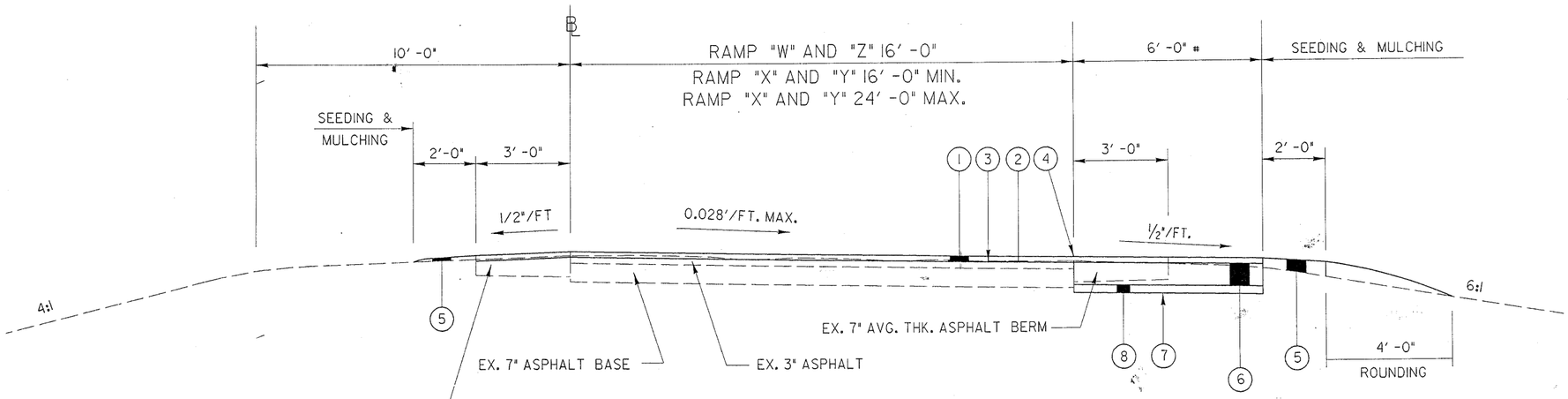
WORKSTATION: h
DATE: 19-JUL-1994

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR - 2 - 3.48

TYPICAL SECTIONS

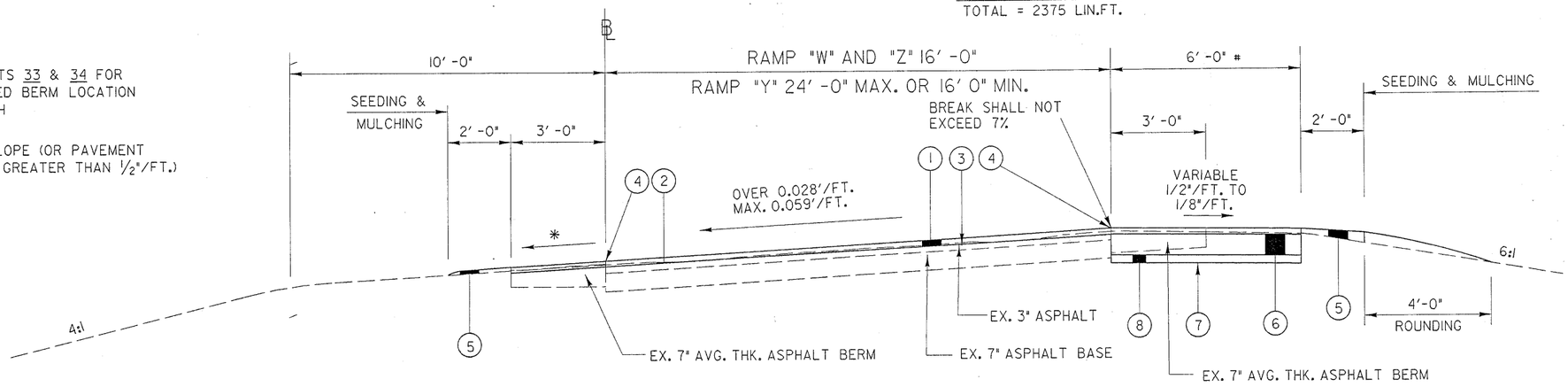
TYPE 446



8 NORMAL RAMP SECTION OAK POINT ROAD

RAMP "W"	STA. 302+96	TO STA.	305+75	= 279 LIN.FT.
RAMP "W"	STA. 307+80	TO STA.	309+73	= 193 LIN.FT.
RAMP "X"	STA. 303+00	TO STA.	309+59	= 659 LIN.FT.
RAMP "Y"	STA. 309+57	TO STA.	317+50	= 793 LIN.FT.
RAMP "Z"	STA. 309+38	TO STA.	311+25	= 187 LIN.FT.
RAMP "Z"	STA. 313+17	TO STA.	315+81	= 264 LIN.FT.

TOTAL = 2375 LIN.FT.



SEE SHEETS 33 & 34 FOR NEW PAVED BERM LOCATION AND WIDTH

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

9 SUPERELEVATED RAMP SECTION OAK POINT ROAD

RAMP "W"	STA. 301+88	TO STA.	302+96	= 108 LIN.FT.
RAMP "W"	STA. 309+73	TO STA.	309+85.59	= 12.59 LIN.FT.
RAMP "Y"	STA. 309+39.21	TO STA.	309+57	= 17.79 LIN.FT.
RAMP "Y"	STA. 317+50	TO STA.	320+07.21	= 257.21 LIN.FT.
RAMP "Z"	STA. 311+25	TO STA.	313+17	= 192 LIN.FT.

TOTAL = 587.59 LIN.FT.

LEGEND

1. (1 1/2") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20 (SEE GENERAL NOTE)
2. 254 - PAVEMENT PLANING, BITUMINOUS - 1/2" AVG.
3. 407 - TACK COAT (APPLIED TO EXISTING PAVEMENT & PAVED BERM) - SEE GENERAL NOTE.
4. HOT LONGITUDINAL JOINT
5. 617 - COMPACTED AGGREGATE, TYPE A
6. (8") 301 - BITUMINOUS AGGREGATE BASE, AC-20
7. 203 - SUBGRADE COMPACTION
8. (3") 310 - SUBBASE, TYPE 1, GRADING A

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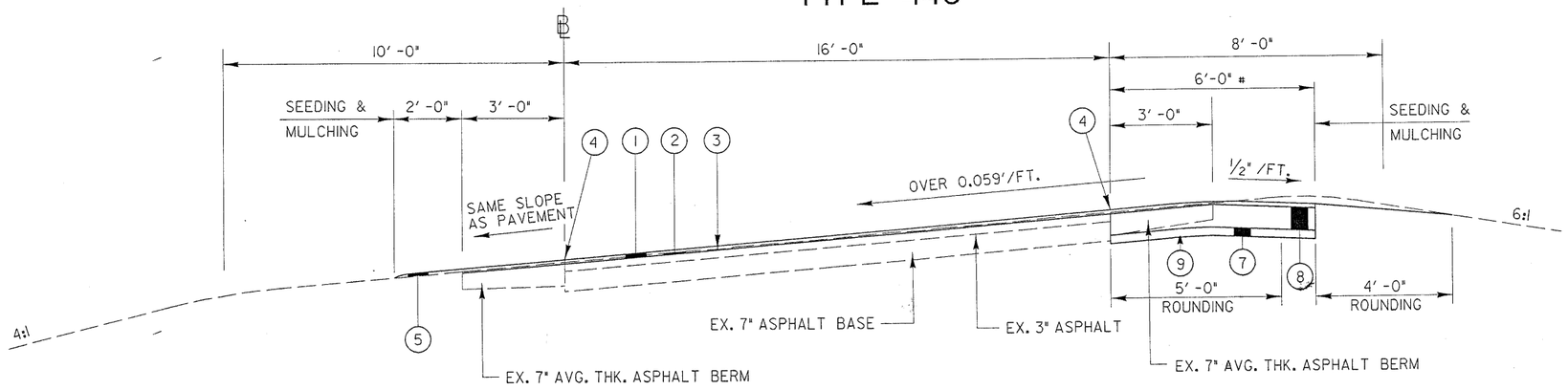
WORKSTATION: e DATE: 12-AUG-1994

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR - 2 - 3.48

TYPICAL SECTIONS

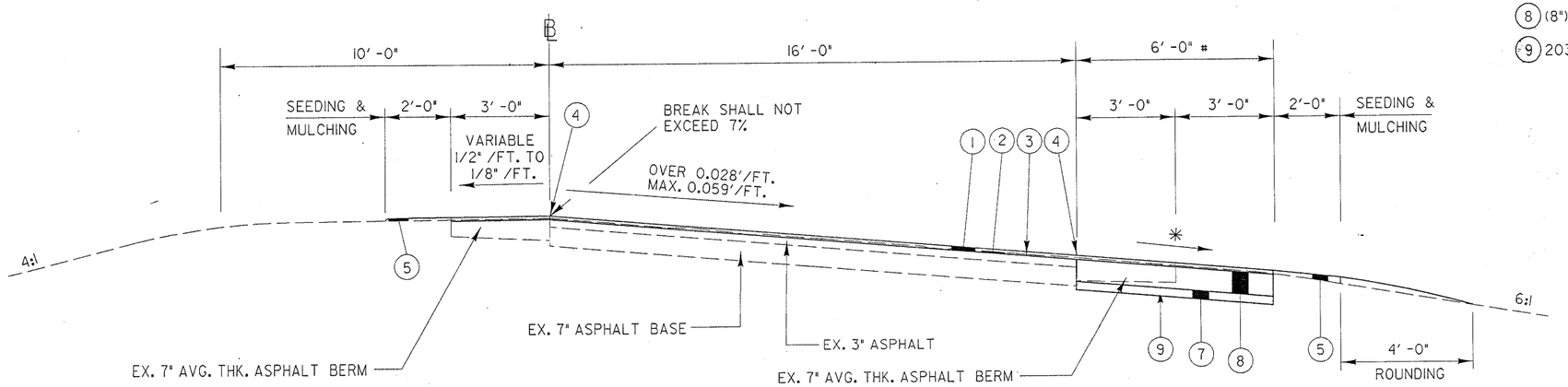
TYPE 446



10 SUPERELEVATED RAMP SECTION OAK POINT ROAD

RAMP "W" STA. 300+00 TO STA. 301+88 = 188 LIN.FT.
RAMP "Z" STA. 317+25 TO STA. 319+00 = 175 LIN.FT.
TOTAL = 363 LIN.FT.

SEE SHEETS 33 & 34 FOR NEW PAVED BERM LOCATION & WIDTH



11 SUPERELEVATED RAMP SECTION OAK POINT ROAD

RAMP "W" STA. 305+75 TO STA. 307+80 = 205 LIN.FT.
RAMP "X" STA. 299+53.07 TO STA. 303+00 = 346.93 LIN.FT.
RAMP "X" STA. 309+59 TO STA. 309+74.75 = 15.75 LIN.FT.
RAMP "Z" STA. 309+27.12 TO STA. 309+38 = 10.88 LIN.FT.
RAMP "Z" STA. 315+81 TO STA. 317+25 = 144 LIN.FT.
TOTAL = 722.56 LIN.FT.

LEGEND

1. (1½") 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20 (SEE GENERAL NOTE)
2. 254 - PAVEMENT PLANING, BITUMINOUS - ½" AVG.
3. 407 - TACK COAT (APPLIED TO EXISTING PAVEMENT & PAVED BERM) - SEE GENERAL NOTE.
4. HOT LONGITUDINAL JOINT
5. 617 - COMPACTED AGGREGATE, TYPE A
7. (3") 310 - SUBBASE, TYPE I, GRADING A
8. (8") 301 - BITUMINOUS AGGREGATE BASE, AC-20
9. 203 - SUBGRADE COMPACTION

* ½" /FT. (OR PAV'T SLOPE IF GREATER THAN ½"/FT.)

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WORKSTATION:e
DATE: 16-AUG-1994

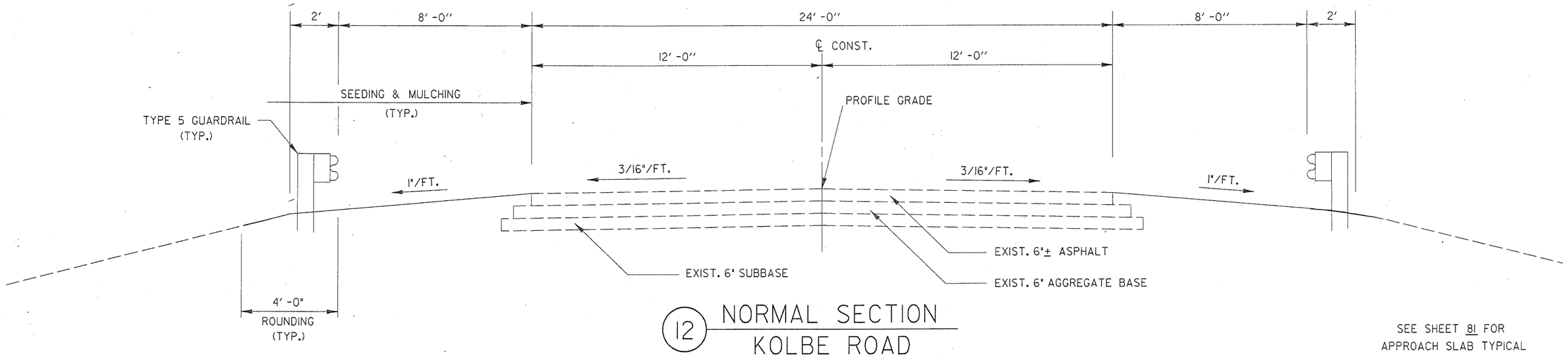
TYPICAL SECTIONS

TYPE 404

FHWA REGION	STATE	PROJECT	
5	OHIO		

12
222

LOR - 2 - 3.48

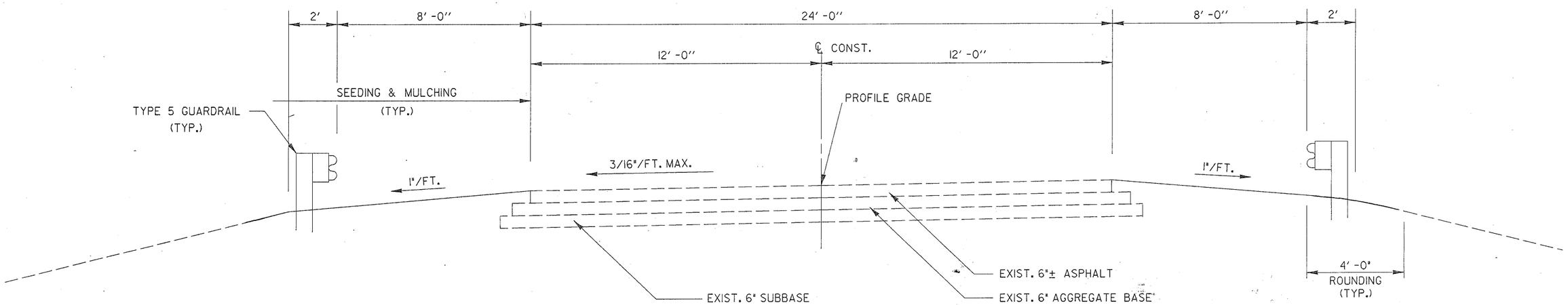


12 NORMAL SECTION
KOLBE ROAD

SEE SHEET 81 FOR
APPROACH SLAB TYPICAL

STA. 43+50 TO STA. 44+75 = 125 LIN.FT.
STA. 48+25 TO STA. 52+50 = 425 LIN.FT.
DEDUCT FOR BRIDGE & APPROACH SLABS = -298.57 LIN.FT.

TOTAL = 251.43 LIN.FT.



13 SUPERELEVATED SECTION
KOLBE ROAD

STA. 44+75 TO STA. 48+25 = 350 LIN.FT.

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KOLBE RD TYPICAL SECTIONS

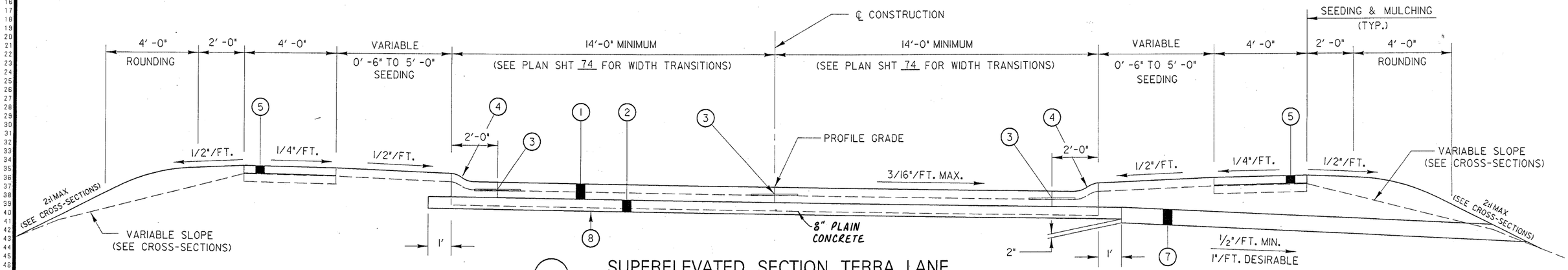
TYPICAL SECTIONS

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR - 2 - 3.48

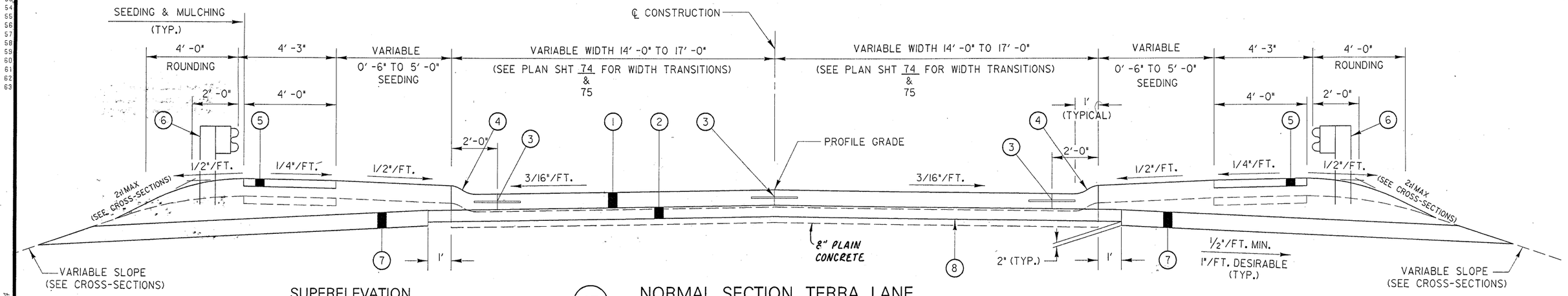
13
222

TYPE 452



14 SUPERELEVATED SECTION TERRA LANE

STA. 46+75 TO STA. 48+00 = 125 LIN.FT.



SUPERELEVATION

Dc = 12°00'00" △ = 30°05'57.5" RT. S = 0.016'/FT.

℄ STATION	LEFT GUTTER		℄ PVMT. ELEV.	RIGHT GUTTER	
	ELEVATION	OFFSET	PROFILE GRADE	OFFSET	ELEVATION
47+00	641.04	13'	640.86	13'	640.71
47+25	642.06	13'	641.86	13'	641.69
47+50	643.04	13'	642.86	13'	642.66
47+75	643.90	13.30'	643.80	13.18'	643.59
47+84.57 P.T.	644.25	13.62'	644.18	13.50'	643.97
48+00	644.60	14.14'	644.60	14.01'	644.38
48+25	645.13	14.97'	645.25	14.85'	645.02
48+50	645.55	15.80'	645.77	15.68'	645.00
48+57.74 ‡	645.61	16.10'	645.90	16.10'	645.68

‡ STATION IS AT APPROACH SLAB. SKEW = 6°20'22" R.F.

15 NORMAL SECTION TERRA LANE

STA. 48+00 TO STA. 48+57.74 (APPROACH SLAB) = 57.74 LIN.FT.
STA. 51+27.26 (APPROACH SLAB) TO STA. 53+25 = 197.74 LIN.FT.
TOTAL = 255.48 LIN.FT.

SEE SHEET 81 FOR APPROACH SLAB TYPICAL

LEGEND

1. (8") 452 - PLAIN CONCRETE PAVEMENT
2. (6") 310 - SUBBASE, TYPE II
3. LONGITUDINAL JOINT
4. 609 - CURB, TYPE 3-A
5. (4") 608 - CONCRETE WALK
6. 606 - GUARDRAIL, TYPE 5
7. 605 - AGGREGATE DRAINS
8. 203 - SUBGRADE COMPACTION

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WORKSTATION: e
DATE: 18-JUL-1994

TERRA LANE TYPICAL SECTION

Calc. by ADD
Date 1/92
Chk'd by MGA
Date 6/93

GENERAL NOTES

ROUNDING

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

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ALIGNMENT AND PROFILE

THE WORK PROPOSED BY THIS PROJECT FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE ALIGNMENT OF THIS EXISTING PAVEMENT WILL NOT BE CHANGED, AND THE PROFILE OF THE PROPOSED SURFACE WILL BE SIMILAR TO THAT OF THE EXISTING PAVEMENT EXCEPT THAT IT WILL BE RAISED AN AMOUNT EQUAL TO THE THICKNESS OF THE RESURFACING COURSES SPECIFIED IN THESE PLANS (EXCEPT IN SPECIFIC FULL DEPTH PAVEMENT AREAS SHOWN IN PLAN SHEET).

UNDERGROUND UTILITIES

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

ELECTRIC	OHIO EDISON COMPANY 237 WEST WASHINGTON, SANDUSKY OH, 44870 PHONE:(419) 625-7490 1-800-686-3344 (ENGINEERING DEPT.)
GAS	COLUMBIA GAS OF OHIO 2110 CALDWELL STREET SANDUSKY, OHIO 44870 PHONE: (419) 625-4534
TELEPHONE	AT&T COMMUNICATIONS 15821 COUNTY ROAD 15 BLUFFTON, OHIO 45817 PHONE: (419) 859-2196 CENTURY TELEPHONE COMPANY OF OHIO 1730 WEST 19th STREET LORAIN, OHIO 44052 PHONE:(216) 244-8271 WILTEL BUSINESS NETWORKS 1468 WEST 9TH STREET, SUITE 100 CLEVELAND, OHIO 44113 PHONE: (216) 579-1010
CABLE TV	CONTINENTAL CABLEVISION 162 EDGEWOOD STREET ELYRIA, OHIO 44035 PHONE: (216) 365-1861

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WORKSTATION: e
DATE: 12-AUG-1994

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 STANDARD DRAWING MT-99.10, 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 407 TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO THE REQUIREMENTS OF 407.05. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 446 - ASPHALT CONCRETE

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

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, ITEM NO. 5 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 305 - CONCRETE BASE, AS PER PLAN

THE SECOND SENTENCE IN 305.01(A) SHALL READ "LOAD TRANSFER DEVICE ARE REQUIRED AT ALL TRANSVERSE CONTRACTION, CONSTRUCTION, AND EXPANSION JOINTS."

WHERE THE NEW PAVEMENT BUTTS INTO THE EXISTING PAVEMENT, A DOWELLED TYPE Y JOINT PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER ITEM 255 AND BP-2.5. ALL WORK AND MATERIAL REQUIRED TO PROVIDE THESE JOINTS SHALL BE INCIDENTAL TO ITEM 305 CONCRETE BASE, AS PER PLAN.

ITEM 825.11 - CRACK SEALING, TYPE I

AFTER ALL PAVEMENT REPAIR WORK HAS BEEN COMPLETED IN AN AREA, ALL OPEN CRACKS AND JOINTS IN THE EXISTING PAVEMENT AND BETWEEN PAVEMENT AND BERMS SHALL BE CLEANED AND SEALED AS PER THE PROPOSAL NOTE USING MATERIAL AS PER ASTM D-3406 HOT APPLIED JOINT SEALER.

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 825 - CRACK SEALING, TYPE I 18000 LBS.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF PARTIAL DEPTH REMOVAL OF EXISTING CONCRETE PAVEMENT IN AREAS EXHIBITING DETERIORATION AT THE SURFACE, APPLYING TACK COAT, AND PLACING AND COMPACTING ASPHALT CONCRETE. SEE SHEET 79 FOR TYPICAL REPAIR AREAS.

AFTER REMOVAL OF THE PAVEMENT, TACK COAT USING AC-20 SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY COAT ALL EXPOSED SURFACES AND TO FILL CRACKS AND JOINT OPENINGS.

ASPHALT CONCRETE AS SPECIFIED IN DETAILS ON SHT. 79 SHALL THEN BE PLACED AND COMPACTED IN ONE OR MORE LIFTS AS NECESSARY TO FINISH FLUSH WITH THE ADJACENT PAVEMENT SURFACE. THE MAXIMUM LIFT THICKNESS SHALL BE THREE (3) INCHES. THE SURFACE OF THE REPAIR AREA SHALL BE SEALED BY A SQUEEGEE APPLICATION OF 409.02 BITUMINOUS MATERIAL FOLLOWED BY AN APPLICATION OF 407.02 COVER AGGREGATE.

THE NUMBER OF CUBIC YARDS TO BE PAID FOR SHALL BE AT THE ACCEPTED QUANTITY OF ASPHALT CONCRETE MATERIAL COMPLETE IN PLACE.* PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE WORK, INCLUDING TACK COAT AND ASPHALT CONCRETE. PAYMENT WILL BE UNDER:

ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN (SEE SHEET 79 FOR QUANTITY) 63 CU. YDS.

SOME OF THIS WORK SHALL BE PERFORMED IMMEDIATELY FOLLOWING PAVEMENT PLANING TO REPAIR ALL DAMAGED AND UNSTABLE AREAS AS DIRECTED BY THE ENGINEER BEFORE OPENING THE TRAFFIC TO PUBLIC.

* CALCULATED BY WEIGHT CONVERSION AS PER 401.17

ITEM SPECIAL-FLEXIBLE BERM REPAIR

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, ITEM 407 TACK COAT SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY COAT ALL ASPHALT SURFACES AND PENETRATE CRACKS. ITEM 301 BITUMINOUS 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. IN CASE OF EMERGENCY, THE OPEN EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS DIRECTED.

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 301 AND 407.

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

ITEM SPECIAL - FLEXIBLE BERM REPAIR 250 CU. YD.

GENERAL NOTES

Calc. by ADD Date 6/93
Chk'd by MGA Date 6/93

LOR-2-3.48

RAISING EXISTING ASPHALT BERMS

VARIABLE THICKNESS (0" MIN. TO 2" MAX.) 404 ASPHALT CONCRETE SHALL BE APPLIED TO AREAS OF THE EXISTING ASPHALT BERM 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 IN SUFFICIENT 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	425	CU. YD.
407 - TACK COAT	3066	GAL.

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 301 & 446 AT APPROACH SLABS

301 & 446 ARE 6" THICKNESS ON THE PAVEMENT ONLY AND NO RESURFACING MATERIAL SHALL BE PLACED ON THE BRIDGE OR NEW APPROACH SLABS. THIS TRANSITION FROM 6" TO 1-1/4" AT THE APPROACH SLAB SHALL BE MADE AS PER DETAIL ON SHEET 81 AND BUTT-JOINT DETAIL ON STD. DRWG. BP-3.1.

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 WEEKEND OR AT OTHER TIMES OF SUSPENSION OF WORK, THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA REMOVED FROM THE INTERSTATE 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.

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 622, CONCRETE BARRIER, TYPE D, AS PER PLAN

ON THIS PROJECT, THE TYPE D CONCRETE BARRIER SHALL BE LIMITED TO ONLY THE CAST-IN-PLACE OPTION. THE BARRIER SHALL BE PLACED AS PER CONSTRUCTION DRWG. GR-8.4 AND SHALL INCLUDE THE CONCRETE INSERT ANCHORS FOR CONNECTING THE BRIDGE TERMINAL ASSEMBLY. 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 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.

DURING THE PERIOD BETWEEN THE GUARDRAIL REMOVAL AND THE COMPLETION OF THE BARRIER, THE WORK AREA SHALL BE PROTECTED BY DRUMS SPACED AT 20 FOOT CENTERS, COST INCLUDED IN ITEM 614.

ITEM 606 ANCHOR ASSEMBLY, TYPE E, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING AN ANCHOR ASSEMBLY SYSTEM.

THE ANCHOR ASSEMBLY SYSTEM SHALL BE ONE OF THE FOLLOWING:

1. THE SENTRE GUARDRAIL END TREATMENT MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601 (TELEPHONE 312-467-6750). THE STRAIGHT INSTALLATION AND A CONCRETE PAD FOUNDATION ARE SPECIFIED FOR THIS PROJECT.

2. THE ET-2000, OPTION "B", GUARDRAIL END TERMINAL MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE 216-545-4373).

THE ANCHOR ASSEMBLY SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS.

PAYMENT:

1. THE SENTRE SYSTEM IS CONSIDERED TO BE 46'-3" LONG AND SHALL INCLUDE: THE THRIE BEAM TO W-BEAM TRANSITION PANEL, TENSION CABLE AND BRACKET, REDIRECTING CABLE, ALL FOUNDATIONS/ANCHORAGES, AND 25'-0" OF TYPE 5 GUARDRAIL.

2. THE ET-2000 SYSTEM IS CONSIDERED TO BE 50'-0" LONG, INCLUSIVE OF TWO 25-FEET LONG RAIL ELEMENTS.

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

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 630 - REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-18.26, AS PER PLAN

THE CONNECTION DETAIL FOR ITEM 630 - REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-18.26, AS PER PLAN, SHALL BE AS PER STANDARD DRAWING NO. TC-18.26 WITH THE FOLLOWING EXCEPTIONS:

1. THE CONNECTION OF THE LOWER SIGN SUPPORT TO THE BRIDGE AND BEAM SHALL BE BOLTED TO THE WEB AS PER THE DETAIL ON SHEET NO. 101 IN THIS PLAN.

2. THE LOCATION OF THE ANCHOR BOLTS IN THE CONCRETE PARATPET SHALL BE A MAXIMUM OF 6" LEFT OR RIGHT OF THE ORIGINAL ANCHOR BOLTS. THE NEW ANCHOR BOLTS, WASHERS, AND LOCK NUTS SHALL BE ½" STAINLESS STEEL.

ITEM SPECIAL IMPACT ATTENUATOR, TYPE I, 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 BIDRECTIONAL 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 I. 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.

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

GENERAL NOTES

CALC. BY ADB 6/93
CHK'D BY MGA 8/93

LOR-2-3.48 (16/222)

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

PLAN QUANTITIES REGARDING ITEM 255 WERE ESTIMATED BASED UPON A FIELD SURVEY AND PAVEMENT CORING.

PAVEMENT CORING DISCLOSED THE FOLLOWING FOR THIS PROJECT:

1. NO DETERIORATION WAS FOUND IN PAVEMENT CORES TAKEN AT JOINTS WHICH HAD NO DISTRESS.
2. DETERIORATION WAS FOUND BELOW THE DOWELS, IN THE VICINITY OF THE DOWELS, WITHIN PAVEMENT CORES TAKEN AT JOINTS WHICH HAD EITHER FAULTING, OR SPALLING.
3. SUFFICIENT AGGREGATE INTERLOCK WAS FOUND IN PAVEMENT CORES TAKEN AT HAIRLINE MIDPANEL CRACKS.
4. INSUFFICIENT AGGREGATE INTERLOCK WAS FOUND IN BOTH FAULTED OR SPALLED MIDPANEL CRACKS.

PLAN QUANTITIES, WHICH MAY BE IN EXCESS OF CONSTRUCTION REQUIREMENTS, HAVE BEEN PROVIDED AS PART OF THIS PLAN. IT IS THE DESIGNERS INTENT TO REPAIR, USING ITEM 255, BETWEEN 65% AND 100% OF THE EXISTING TRANSVERSE JOINTS AND A MIDPANEL CRACK(S) IN 30% TO 80% OF THE SLABS.

THE PROJECT ENGINEER SHALL BE PRESENT DURING THE REMOVAL OF THE FIRST JOINTS AND MIDPANEL CRACKS PRIOR TO THE MARKING AND SAWING FOR JOINT REPAIR. DURING THIS TIME THE PROJECT ENGINEER AND CONTRACTOR SHALL VISUALLY INSPECT THE REMOVED JOINTS AND CRACKS TO DETERMINE THE PROPER GUIDELINES FOR CHOOSING AND MARKING REPAIRS.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR ACTUAL TIME NECESSARY TO REMOVE, GRADE, AND REINSTALL GUARDRAIL IN A CONTINUOUS RUN AND OPERATION. THIS SHALL ALSO INCLUDE THE COMPLETED INSTALLATION OF THE APPROPRIATE BRIDGE TERMINAL ASSEMBLY AND ANCHOR ASSEMBLY. 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 ON THE PROJECT UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

ITEM 203 EMBANKMENT, AS PER PLAN

ADDITIONAL EMBANKMENT MATERIAL SHALL BE PLACED WHERE DIRECTED TO WIDEN AND BUILD-UP EXISTING SHOULDERS ADJACENT TO PAVED BERMS AS PER THE TYPICAL SECTIONS. EMBANKMENT MATERIAL SHALL ALSO BE PLACED AROUND CULVERT EXTENSIONS. THESE AREAS SHALL BE FIRST SCALPED PRIOR TO PLACEMENT OF EMBANKMENT.

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. THE METHOD OF MEASUREMENT FOR EMBANKMENT MATERIAL FURNISHED AND PLACED SHALL BE THE NUMBER OF CUBIC YARDS MEASURED BY LOOSE VOLUME IN THE CARRIER AT THE WORK SITE, IN LIEU OF THE REQUIREMENTS OF 203.15. PAYMENT FOR FOR ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR "ITEM 203 - EMBANKMENT, AS PER PLAN".

EROSION CONTROL

ITEMS 601 AND 670 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL 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 FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN addition, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

207	STRAW OR HAY BALES	240 EACH
207	TEMPORARY SEEDING AND MULCHING	21,450 SQ. YD.
207	FILTER FABRIC FENCE	1000 LIN. FT.
659	COMMERCIAL FERTILIZER	0.97 TON
659	WATER	46 M.GAL.

ITEM 659, SEEDING AND MULCHING

SEEDING QUANTITIES ASSOCIATED WITH 203 ITEMS SHOWN IN THE PLAN ARE ONLY APPROXIMATE AND FINAL PAYMENT WILL BE FOR THE ACTUAL NUMBER OF SQUARE YARDS OF DISTURBED AREAS SEEDED AND MULCHED AS PER 659.

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.

[(107,335 SQ. YD.) X 9 X 120 X 2 / (1000 X 1000) = 232 M GAL.]

659	WATER	232 M GAL

ITEM 659 - COMMERCIAL FERTILIZER

COMMERCIAL FERTILIZER SHALL BE APPLIED TO SEEDED AREAS AS PER 659.08.

(107,335 SQ.YD.) X 20 X 9 / (1000 X 2000) = 9.66 TON

TYPE 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO CONSTRUCT ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN AS DETAILED ON SHEET NO. 84. THIS ITEM ALSO INCLUDES ALL REINFORCEMENT, CONCRETE, EXCAVATION BACKFILL, SUBGRADE PREPARATION AND ALL INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

REINFORCING STEEL SHALL BE GRADE 60, EPOXY COATED. CONCRETE SHALL BE HIGH PERFORMANCE CONCRETE. EXCAVATION SHALL BE PER CMS 503. RAILING FOUNDATION SHALL BE PER CMS 507.

PAYMENT FOR ALL OF THE ABOVE WORK SHALL BE INCLUDED WITH ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

SEQUENCE OF CONSTRUCTION - PAVEMENT REHABILITATION AND RESURFACING

THE FOLLOWING SEQUENCE OF OPERATIONS FOR EACH 2 1/2± MILE WORK ON EACH DIRECTION AND EACH LANE SHALL APPLY TO THE REHABILITATION AND RESURFACING OF EXISTING PAVEMENT.

PHASE A:
1 - SETTING UP TRAFFIC CONTROL
2 - PAVEMENT PLANING (APPLICABLE ONLY FROM STA. 266+00 TO STA. 279+00 ON E.B.L.)
3 - FULL DEPTH AND PARTIAL DEPTH PAVEMENT REPAIRS PLUS ADJACENT BERM REPAIRS SHALL BE COMPLETED
4 - EDGE DRAINS SHALL BE PLACED ALONG THE PAVEMENT EDGES AS PER SHEETS 87-88
5 - ITEM 301 AND 446 INTERMEDIATE COURSE SHALL BE PLACED
6 - TRAFFIC CONTROL SHALL BE REMOVED

PHASE B:
SAME SEQUENCE FOR ADJACENT LANE

PHASE C:
FINAL RESURFACING COURSE

	ADDITIONAL NOTES	SHT. NO.
251	PARTIAL DEPTH PAVEMENT REPAIR	79
802	BARRIER REFLECTORS	41
255	FULL DEPTH PAVEMENT REPAIR	80
SPEC	PRESSURE RELIEF JOINT, TYPE A	81
605	SHALLOW UNDERDRAIN, AS PER PLAN	90
605	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	91
202	CURB REMOVED, AS PER PLAN	41
614	TEMP. BARRIER REFLECTORS	132
614	TEMPORARY RAISED PAVEMENT MARKERS	133
607	FENCE TYPE 47, AS PER PLAN	222
	FENCE TYPE CL, AS PER PLAN	222

DESIGN FILE: c:\dgn\julie\note3.dgn
WORKSTATION: 003_104 DATE: 29-JUN-1994

Calc. by BAS
Date 8/89
Chk'd by RJR
Date 8/89

LOR-2-3.48

17
222

GENERAL SUMMARY

SHEET 19	SHEET 20	SHEET 21	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHEET REFERENCE
							ROADWAY	
11424			202	23000	11424	SQ. YD.	PAVEMENT REMOVED	
3000			202	30000	3000	SQ. FT.	WALK REMOVED	
1313			202	32000	1313	LIN.FT.	CURB REMOVED	
1710			202	32001	1710	LIN.FT.	CURB REMOVED, AS PER PLAN	41
370			202	32600	370	LIN.FT.	GUTTER REMOVED	
50			202	35100	50	LIN.FT.	PIPE REMOVED, 24" AND UNDER	
17225			202	38000	17225	LIN.FT.	GUARDRAIL REMOVED	
1003			202	54100	1003	EACH	RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	
1			202	58100	1	EACH	CATCH BASIN REMOVED	
3			202	58600	3	EACH	CATCH BASIN OR INLET ABANDONED	
8585			203	12000	8585	CU. YD.	EXCAVATION, NOT INCL. EMBANKMENT CONSTRUCTION	
2238			203	20000	2238	CU. YD.	EMBANKMENT	
6333			203	20001	6333	CU. YD.	EMBANKMENT, AS PER PLAN	16
26007			203	50000	26007	SQ. YD.	SUBGRADE COMPACTION	
150			517	73201	150	LIN.FT.	RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN	16
14881.75			606	13000	14881.75	LIN.FT.	GUARDRAIL TYPE 5	
1550			606	15500	1550	LIN.FT.	GUARDRAIL, BARRIER DESIGN, TYPE 5	
8			606	25000	8	EACH	ANCHOR ASSEMBLY, TYPE A	
21			606	26100	21	EACH	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	15
24			606	26500	24	EACH	ANCHOR ASSEMBLY, TYPE T	
18			606	35000	18	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
11			606	35100	11	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
10			SPEC	69010360	10	EACH	IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL	15
46480			607	15001	46480	LIN.FT.	FENCE, TYPE 47, AS PER PLAN	222
3009			607	20001	3009	LIN.FT.	FENCE, TYPE CL, AS PER PLAN	222
	3000		608	10000	3000	SQ. FT.	4" CONCRETE WALK	
		267	622	24001	267	LIN.FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN	15
							EROSION CONTROL	
	21450		207	10000	21450	SQ. YD.	TEMPORARY SEEDING AND MULCHING	
	16300		207	30000	16300	LIN.FT.	FILTER FABRIC FENCE	PROPOSAL NOTE
	372		207	70000	372	EACH	STRAW OR HAY BALES	
	624		601	32100	624	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER	
	52		601	32200	52	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER	
107335			659	10000	107335	SQ. YD.	SEEDING AND MULCHING	
10.63			659	20000	10.63	TON	COMMERCIAL FERTILIZER	
278			659	35000	278	MGAL.	WATER	
301			670	40000	301	SQ. YD.	DITCH EROSION PROTECTION	

SHEET 19	SHEET 20	SHEET 21	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHEET REFERENCE
							DRAINAGE	
	2.3		602	20000	2.3	CU. YD.	CONCRETE MASONRY	
	170		603	00406	170	LIN.FT.	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D 3034 SDR 35, SS 931 OR SS 944	
	3140		603	01500	3140	LIN.FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D 3034 SDR 35, SS 931 OR SS 944	
	84		603	00900	84	LIN.FT.	6" CONDUIT, TYPE B	
	171		603	04600	171	LIN.FT.	12" CONDUIT, TYPE C, 706.01 OR 706.02	
	847		603	05200	847	LIN.FT.	12" CONDUIT, TYPE F, 707.05 TYPE C	
	175		603	07600	175	LIN.FT.	18" CONDUIT, TYPE C, 706.02	
	2		604	00800	2	EACH	CATCH BASIN, NO. 3A	
	4		604	01604	4	EACH	CATCH BASIN, NO. 5, WITHOUT APRON	
	18		604	02000	18	EACH	CATCH BASIN, NO. 6	
	31		604	02804	31	EACH	CATCH BASIN, NO. 8, WITHOUT APRON	
	1		604	04500	1	EACH	CATCH BASIN, NO. 2-2B	
	5		604	09000	5	EACH	CATCH BASIN ADJUSTED TO GRADE	
	4		604	09500	4	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
	3		604	35500	3	EACH	MANHOLE RECONSTRUCTED TO GRADE	
	65		SPEC	60436600	65	EACH	PRECAST REINFORCED CONCRETE OUTLET	90
	12530		605	05101	12530	LIN.FT.	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	91
	168		605	11100	168	LIN.FT.	6" SHALLOW PIPE UNDERDRAIN, 707.15	
	58796		605	30001	58796	LIN.FT.	SHALLOW UNDERDRAIN, AS PER PLAN	90
	652		605	31100	652	LIN.FT.	AGGREGATE DRAIN	
	1500		605	31101	1500	LIN.FT.	AGGREGATE DRAIN, AS PER PLAN	80
							PAVEMENT	
	63		251	01003	63	CU. YD.	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN	14
	34499		254	01000	34499	SQ. YD.	PAVEMENT PLANING, BITUMINOUS	
	26592		255	10001	26592	SQ. YD.	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN	16
	87348		255	20000	87348	LIN.FT.	FULL DEPTH PAVEMENT SAWING	
	18201		301	10002	18201	CU. YD.	BITUMINOUS AGGREGATE BASE, AC-20	
	973		304	20000	973	CU. YD.	AGGREGATE BASE	PROPOSAL NOTE
	9170		305	13001	9170	SQ. YD.	9" CONCRETE BASE, AS PER PLAN	14
	3120		310	12000	3120	CU. YD.	SUBBASE, TYPE I, GRADING A	
	430		404	20000	430	CU. YD.	ASPHALT CONCRETE, AC-20	
	196		310	20000	196	CU. YD.	SUBBASE, TYPE II	
	26950		407	10000	26950	GAL.	TACK COAT	
	1834		408	10000	1834	GAL.	BITUMINOUS PRIME COAT	
	11669		446	01200	11669	CU. YD.	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20	
	8535		446	01400	8535	CU. YD.	ASPHALT CONCRETE, SURFACE COURSE, TYPE I, AC-20	
	59592		SPEC	45014000	59592	LIN.FT.	SAWING & SEALING ASPHALT CONC. PAVEMENT JOINTS, 705.04	PROPOSAL NOTE
	1098		452	12000	1098	SQ. YD.	8" PLAIN CONCRETE PAVEMENT	
	711		609	20000	711	LIN.FT.	CURB, TYPE 3-A	
	747		609	26000	747	LIN.FT.	CURB, TYPE 6	
	1662		611	25000	1662	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")	
	3688		617	10100	3688	CU. YD.	COMPACTED AGGREGATE, TYPE A	
	30		617	25000	30	M-GAL	WATER	
	18000		825	00100	18000	LB.	CRACK SEALING, TYPE I	14
	156		SPEC	45130000	156	LIN.FT.	PRESSURE RELIEF JOINT, TYPE A	81
	192		SPEC	45134000	192	LIN.FT.	PRESSURE RELIEF JOINT, AS PER PLAN	81
	250		SPEC	69060000	250	CU. YD.	BERM REPAIR, FLEXIBLE	14

REVISED 11-29-94

DESIGN FILE: c:\dgn\lor2\sum1.dgn
WORKSTATION: e
DATE: 18-AUG-1994

GENERAL SUMMARY

CALC. BY B.A.S. DATE 8/89
CHKD. BY RJR DATE 8/89

SHEET 19	SHEET 20	SHEET 21	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHEET REFERENCE
							TRAFFIC CONTROL	
		219	620	10300	219	EACH	DELINEATOR, TYPE C, POST MOUNTED	
		37	620	15300	37	EACH	DELINEATOR, TYPE D, POST MOUNTED	
		154	620	31200	154	EACH	DELINEATOR REMOVED FOR DISPOSAL	
		4	620	40300	4	EACH	REFLECTOR, TYPE D	
		42.0	630	00100	42.0	CU. YD.	CONCRETE FOR EMBEDDED FOUNDATION	
		675	630	03100	675	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 3 POST	
		679	630	04100	679	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 4 POST	
		257	630	06400	257	LIN.FT.	GROUND MOUNTED SUPPORT, S4X7.7 BEAM	
		35	630	06500	35	LIN.FT.	GROUND MOUNTED SUPPORT, W6X9 BEAM	
		163	630	07000	163	LIN.FT.	GROUND MOUNTED SUPPORT, W8X18 BEAM	
		358	630	07500	358	LIN.FT.	GROUND MOUNTED SUPPORT, W10X22 BEAM	
		200	630	07600	200	LIN.FT.	GROUND MOUNTED SUPPORT, W10X12 BEAM	
		118	630	08100	118	LIN.FT.	ONE WAY SUPPORT, NO. 4 POST	
		40	630	09000	40	EACH	BREAKAWAY BEAM CONNECTION	
		856	630	80102	856	SQ. FT.	SIGN, FLAT SHEET, TYPE G	
		3183	630	80204	3183	SQ. FT.	SIGN, EXTRUSHEET, TYPE G	
		103	630	84900	103	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		1	630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
		14	630	85400	14	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
		2	630	89701	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND REERECTION, TYPE TC-18.26, AS PER PLAN	15
		91	630	86002	91	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
		23	630	86102	23	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
		10	630	87400	10	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
		23.45	644	00100	23.45	MILE	EDGE LINE	
		9.59	644	00200	9.59	MILE	LANE LINE	
		0.33	644	00300	0.33	MILE	CENTER LINE	
		5200	644	00400	5200	LIN.FT.	CHANNELIZING LINE	
		288	644	00500	288	LIN.FT.	STOP LINE	
		1995	644	00700	1995	LIN.FT.	TRANSVERSE LINE	
		11	644	01300	11	EACH	LANE ARROW	
		6	644	01410	6	EACH	WORD ON PAVEMENT, 96"	
		164	802	00100	164	EACH	BARRIER REFLECTOR, TYPE A	
		42	802	00200	42	EACH	BARRIER REFLECTOR, TYPE B	
		983	862	00100	983	EACH	RAISED PAVEMENT MARKER	

SHEET 88	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SHEET REFERENCE
					FOR BRIDGE, DECK OVERLAY AND REPAIR QUANTITIES	
					SEE SHEET 149 FOR LOR-2-0459 L/R	
					172 FOR LOR-2-0586	
					179 FOR LOR-2-0646 L/R	
					188 FOR LOR-2-0649	
					197 FOR LOR-2-0699	
					208 FOR LOR-2-0742 L/R	
					MAINTENANCE OF TRAFFIC	
					FOR MAINTENANCE OF TRAFFIC SUMMARY SEE SHEET 109	
LUMP	614	11000	LUMP		MAINTAINING TRAFFIC	
	619	15020	LUMP		FIELD OFFICE, TYPE C	
	623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
	624	10000	LUMP		MOBILIZATION	

DESIGN FILE: c:\dgn\julie\sum2.dgn DATE: 21-JUL-1994
WORKSTATION: 003_104

SUB - SUMMARY

Calc. by RLØ Date 8/89
Chk'd by AØØ Date 1/92

LOR-2-3.48

REFERENCE SHEET NUMBER	202														203				517	SPEC	606								SPEC	607			659		670			REFERENCE SHEET NUMBER
		CATCH BASIN OR INLET ABANDONED	CURB REMOVED AS PER PLAN	CURB REMOVED	GUARDRAIL REMOVED	GUTTER REMOVED		CATCH BASIN REMOVED	PAVEMENT REMOVED		RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	WALK REMOVED		PIPE REMOVED, 24" AND UNDER	EMBANKMENT, AS PER PLAN	EXCAVATION, NOT INCL. EMBANKMENT CONSTRUCTION	EMBANKMENT	SUBGRADE COMPACTION	RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN	IMPACT ATTENUATOR, TYPE1, BIDIRECTIONAL	ANCHOR ASSEMBLY, TYPE A	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 1	BRIDGE TERMINAL ASSEMBLY, TYPE 2	GUARDRAIL, BARRIER DESIGN, TYPE 5	GUARDRAIL, TYPE 5		ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	FENCE, TYPE 47, AS PER PLAN	FENCE, TYPE CL, AS PER PLAN	COMMERCIAL FERTILIZER	SEEDING AND MULCHING	WATER	DITCH EROSION PROTECTION			
		EACH	LIN.FT.					EACH	SQ.YD.		EACH	SQ.FT.			CU.YD.			SQ.YD.	LIN.FT.	EACH	EACH					LIN.FT.			EACH	LIN.FT.			TON	SQ.YD.	M.GAL	SQ.YD.			
16																																	10.63		278			16
22															6298																						22
24																		2195																81353				24
28			528		825.0																	4				1000		4									28
29					450.0																	2				531.75		2									29
30					3273.0											18	527		150	2		1	4	2	350	2774		1					2504				30
31					664.3																	1				576		1									31
33																		1439																			33
34																		1475																			34
35																																					35
36					1856.25															2		2	5	3	350	1393.75		2									36
37			528		3666.25			1						50			632			2		7	1		250	2968.75		7					1691				37
38																		2159																			38
39																		2223																			39
40			654		4358.8											19	426			2		4	4	2	350	3962.5		3					1922				40
43					818.75				5333							3088	83	8000		2		3			250	362.5		1					7609				43
50									3837							4758	291	5756																7667				50
69					800.0											73	50					4		2	2		737.5							2407				69
74				344.9	150.0				486			1300.0				53	97	486.0				2		1	1		150							774				74
75				421	362.5				612			1700.0				49	132	612.0				2		1	1		425							1058				75
80																100																						80
81									1156							427		1662																				81
85		3				370									35																		350		301			85
105											1003																											105
141				274																																		141
142				273																																		142
222																														46480	3009							222
TOTALS		3	1710	1312.9	17224.85	370		1	11424		1003	3000		50	6333	8585	2238	26007	150	10	8	24	18	11	1550	14881.75		21	46480	3009	10.63	107335	278	301			TOTALS

SUB - SUMMARY

* AS PER PLAN

Calc. by RLØ Date 6/89
Chk'd by AØØ Date 1/92

LOR-2-3.48

REFERENCE SHEET NUMBER	301 BITUMINOUS AGGREGATE BASE, AC-20 CU.YD.	304 AGGREGATE BASE CU.YD.	305 9" CONCRETE BASE, AS PER PLAN SQ.YD.	310 SUBBASE, TYPE I, GRADING A CU.YD.	310 SUBBASE, TYPE II CU.YD.		404 ASPHALT CONCRETE, AC-20 CU.YD.	407 TACK COAT GAL.	408 BITUMINOUS PRIME COAT @ 0.4 GAL./SQ.YD. GAL.	446 ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20	446 ASPHALT CONCRETE, SURFACE COURSE, TYPE I, AC-20	452 8" PLAIN CONCRETE PAVEMENT SQ.YD.		609 CURB, TYPE 6 LIN.FT.	609 CURB, TYPE 3-A LIN.FT.	611 REINFORCED CONCRETE APPROACH SLAB (T=15") SQ.YD.	617 COMPACTED AGGREGATE, TYPE A CU.YD.	254 PAVEMENT PLANING, BITUMINOUS SQ.YD.	255 FULL DEPTH PAVEMENT REMOVAL & RIGID RE-PLACEMENT, CLASS C * SQ.YD.	255 FULL DEPTH PAVEMENT SAWING LIN.FT.		617 WATER M.GAL.	SPECIAL CRACK SEALING, TYPE I LB.	SPECIAL FLEXIBLE BERM REPAIR CU.YD.	SPECIAL PRESSURE RELIEF JOINT, AS PER PLAN LIN.FT.	SPECIAL PRESSURE RELIEF JOINT, TYPE A LIN.FT.	251 PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN CU.YD.		SPECIAL SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04 LIN. FT.		602 CONCRETE MASONRY CU.YD.	608 4" CONCRETE WALK SQ.FT.					REFERENCE SHEET NUMBER
14																							18000	250			63								14
15							425	3066																												15
22	17643							23389		11507	8382						3688					30														22
23A	28							471		162	153							1423																		23A
24				288.9																																24
31																		33076																		31
33				123.7																																33
34				126.6																																34
37																																				37
38				282.0																																38
39				282.9																																39
43	370	296	5333	1173					1067																											43
50	160	319	3837	843					767																											50
69							5	24																												69
74					86.8							486			315.5																					74
75					109.3							612			395.5																					75
80		75																		26592	87348															80
81		283														1662										192	156									81
86														216																						86
141														266																						141
142														265																						142
TOTALS	18201	973	9170	3120.1	196.1		430	26950	1834	11669	8535	1098		747	711	1662	3688	34499	26592	87348		30	18000	250	192	156	63		59592		2.3	3000					TOTALS

REFERENCE SHEET NUMBER	603 6" CONDUIT, TYPE B LIN.FT.	603 12" CONDUIT, TYPE F, 707.05 TYPE C LIN.FT.	603 12" CONDUIT, TYPE C, 706.01 OR 706.02 LIN.FT.	603 4" TYPE F CONDUIT, 707.17 NONPERFORATED ASTM D 3034 SDR 35, S.S. 931 OR S.S. 944 LIN.FT.	603 6" TYPE F CONDUIT, 707.17 NONPERFORATED ASTM D 3034 SDR 35, S.S. 931 OR S.S. 944 LIN.FT.	603 18" CONDUIT, TYPE C, 706.02 LIN.FT.	604 CATCH BASIN, NO. 2-2B EACH	604 CATCH BASIN, NO.5, WITHOUT CONCRETE APRON EACH	604 CATCH BASIN, NO.8, WITHOUT CONCRETE APRON EACH	604 CATCH BASIN, TYPE 3-A EACH	604 CATCH BASIN ADJUSTED TO GRADE EACH	604 MANHOLE RECONSTRUCTED TO GRADE EACH	604 CATCH BASIN RECONSTRUCTED TO GRADE EACH	604 CATCH BASIN NO. 6 EACH	605 AGGREGATE DRAINS LIN.FT.	605 AGGREGATE DRAIN, AS PER PLAN LIN.FT.	605 SHALLOW UNDERDRAIN, AS PER PLAN LIN.FT.	605 6" SHALLOW PIPE UNDERDRAIN, 707.15 LIN.FT.	207 STRAW OR HAY BALES EACH	207 TEMPORARY SEEDING AND MULCHING SQ.YD.	601 ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER CU.YD.	SPEC PRECAST REINFORCED CONCRETE OUTLET EACH	605 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN LIN.FT.	601 ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER CU.YD.	207 FILTER FABRIC FENCE LIN.FT.											REFERENCE SHEET NUMBER
16																					240	21450					1000										16
25																					16						3900										25
26																					116						11400										26
30													2																								30
36			150						1		1																										36
37			8			175			2			1																										37
40			13				1						2																										40
50																										554												50
69		139								2													2															69
74												1				140																						74
75												1				160																						75
80																	1500																					80
81				170												352			168					6														81
85								4	28		4																											85
86		708												18									50															86
87					1345													29997						28														87
88					963													28799						15														88
89	84				832																			16	12530													89
222																										70												222
TOTALS	84	847	171	170	3140	175	1	4	31	2	5	3	4	18		652	1500	58796	168	372	21450	52	65	12530	624		16300											TOTALS

REVISED 11-29-94

DESIGN FILE: C:\DGN\LOR2\L2SUM01.DGN WORKSTATION: 03-386E
DATE: JUNE-14-1994

SUB - SUMMARY

Calc. by RLO Date 6/89
Chk'd by APO Date 1/92

LOR-2-3.48

REFERENCE SHEET NUMBER	630 SIGNS		630 REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL		630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION		630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	630 GROUND MOUNTED SUPPORTS								630 CONCRETE FOR EMBEDDED FOUNDATIONS	630 BREAKAWAY BEAM CONNECTION	620 REFLECTORS, TYPE "D"	620 DELINEATOR, TYPE C, POST MOUNTED	620 DELINEATOR, TYPE D, POST MOUNTED	620 DELINEATOR REMOVED FOR DISPOSAL	630 REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-18.26, AS PER PLAN	802 BARRIER REFLECTOR, TYPE A	802 BARRIER REFLECTOR, TYPE B	862 RAISED PAVEMENT MARKERS	REFERENCE SHEET NUMBER
		EXTRUSHEET, TYPE G	FLAT SHEET, TYPE G	POST	BEAM	MINOR	MAJOR	MINOR	MAJOR		1-WAY #4 PST	NO. 3 POST	NO. 4 POST	S4x7.7 BEAM	W6x9 BEAM	W10x12 BEAM	W8x18 BEAM	W10x22 BEAM									
	SQ.FT.			EACH							LIN FT								CU.YD.	EACH	EACH				EACH	EACH	EACH	EACH	
41																													41
92		1414.5	249.0	28	14	26	8					193.2	285.1	135.8	34.7	113.8	162.8	199.5	28.06	22	2					164	42		92
93		1075.0	303.5	33	9	31	6	1		4	29.0	209.8	279.3	63.0		86.0		158.3	12.9	14	2								93
94		693.0	303.7	30		46				6	89.0	271.5	115.0	57.8					1.08	4					2				94
102																						**219**	37	154					102
105																												983	105
TOTALS		3182.5	856.2	91	23	103	14	1		10	118.0	674.5	679.4	256.6	34.7	199.8	162.8	357.8	42.04	40	4	**219**	37	154	2	164	42	983	TOTALS

REFERENCE SHEET NUMBER	644 CHANNELIZING LINE	644 STOP LINE	644 TRANSVERSE LINES WHITE	644 TRANSVERSE LINES YELLOW	644 CENTERLINE	644 LANE ARROWS	644 WORD "ONLY" ON PAVEMENT, 96"	644 EDGE LINE WHITE	644 EDGE LINE YELLOW	644 LANE LINE	622 CONCRETE BARRIER, TYPE D, AS PER PLAN	REFERENCE SHEET NUMBER
	LIN.FT.		LIN.FT.		L.F./MI.	EACH		LIN.FT./MI.			LIN.FT.	
36											203	36
37											64	37
107	5200	288	1785	210	1765	11	6	64123	59717	50627		107
					1765 / 0.33			64123 / 12.14	59717 / 11.31	50627 / 9.59		
TOTALS	5200	288	1785	210		11	6				267	TOTALS

DESIGN FILE: C:\DGN\LOR2\L2SUM2.DGN DATE: JUNE-14-94 WORKSTATION: D3-386E

SEE SHEET 23A FOR FEATHER QUANTITIES

RESURFACING CALCULATIONS

Calc. by GS Date 3/92
Chk'd by ADB Date 3/93

LOR-2-3.48

STATION LIMITS	SIDE	LENGTH	PAVEMENT QUANTITIES										BERM QUANTITIES										659
			PAVEMENT WIDTH	PAVEMENT AREA	407	301	446 ASPHALT CONCRETE						TOTAL BERM WIDTH	BERM AREA	407	301	446 ASPHALT CONCRETE				617	203	617	SEEDING & MULCHING (DISTURBED AREAS ONLY)
							SURFACE COURSE TYPE 1		INTERMEDIATE COURSE TYPE 2								SURFACE COURSE TYPE 1		INTERMEDIATE COURSE TYPE 2					
					TACK COAT AT 0.1 GAL. PER SQ. YD.	BITUMINOUS AGGREGATE BASE, AC-20 3"	THICKNESS	QUANTITY	THICKNESS	QUANTITY					TACK COAT AT 0.1 GAL. PER SQ. YD.	BITUMINOUS AGGREGATE BASE, AC-20 3"	THICKNESS	QUANTITY	THICKNESS	QUANTITY	WATER	EMBANKMENT, AS PER PLAN	COMPACTED AGGREGATE	
		LIN. FT.	FT.	SQ. YD.	GAL.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.			FT.	SQ. YD.	GAL.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.	M-GAL	CU. YD.		SQ. YD.
185+00 TO 422+00	EBL	23700	24	63200	6320	5266.7	1-1/4	2194.4	1-3/4	3072.2			12	31600	3160	2633.3	1-1/4	1097.2	1-3/4	1536.1		3511	1756	42133
185+00 TO 422+00	WBL	23700	24	63200	6320	5266.7	1-1/4	2194.4	1-3/4	3072.2			12	31600	3160	2633.3	1-1/4	1097.2	1-3/4	1536.1		3511	1756	42133
RAMP "A"		1006	VAR.	2271	227	-	1-1/4	78.9	2-3/4	173.5			VAR.	1059	106	-	1-1/4	36.8	2-3/4	80.9		37	50	1118
RAMP "A" SPEED CHANGE LANE		853	VAR.	1725	173	144.0	1-1/4	59.9	1-3/4	83.9			VAR.	33	3	2.8	1-1/4	1.1	1-3/4	1.6				
RAMP "B"		919	VAR.	1834	183	-	1-1/4	63.7	2-3/4	140.1			VAR.	936	94	-	1-1/4	32.5	2-3/4	71.5		34	45	1021
RAMP "B" SPEED CHANGE LANE		1650	VAR.	2450	245	204.2	1-1/4	85.1	1-3/4	119.1			VAR.	730	73	60.8	1-1/4	25.3	1-3/4	35.5				
CROSS OVER @ 210+70				378	38	31.5	1-1/4	13.1	1-3/4	18.4														
RAMP "X"		1022	VAR.	2179	218	-	1-1/2	90.8					VAR.	1088	109	-	1-1/2	45.3					25	1136
RAMP "X" SPEED CHANGE LANE		799	VAR.	1514	151	126.2	1-1/4	52.6	1-3/4	73.6														
RAMP "W"		983	VAR.	1955	196	-	1-1/2	81.5					VAR.	1053	105	-	1-1/2	43.9					23	1092
RAMP "W" SPEED CHANGE LANE		1603	VAR.	2356	236	196.3	1-1/4	81.8	1-3/4	114.5			VAR.	710	71	59.2	1-1/4	24.7	1-3/4	34.5				
RAMP "Y"		1068	VAR.	2274	227	-		94.8					VAR.	1135	114	-	1-1/2	47.3					26	1187
RAMP "Y" SPEED CHANGE LANE		796	VAR.	1391	139	115.9	1-1/4	48.3	1-3/4	67.6														
RAMP "Z"		973	VAR.	1931	193	-		80.5					VAR.	1045	105	-	1-1/2	43.5					23	1081
RAMP "Z" SPEED CHANGE LANE		1600	VAR.	2356	236	196.3	1-1/4	81.8	1-3/4	114.5			VAR.	706	71	58.9	1-1/4	24.5	1-3/4	34.3				
RAMP "F"		1281	VAR.	2442	244	-	1-1/4	84.8	2-3/4	186.5			VAR.	1412	141	-	1-1/4	49.0	2-3/4	107.9		47	63	1286
RAMP "F" SPEED CHANGE LANE		1650	VAR.	2450	245	204.2	1-1/4	85.1	1-3/4	119.1			VAR.	617	62	51.4	1-1/4	21.4	1-3/4	30.0				
RAMP "D"		977	VAR.	1882	188	-	1-1/4	65.3	2-3/4	143.8			VAR.	1024	102	-	1-1/4	35.6	2-3/4	78.2		36	48	1086
RAMP "D" SPEED CHANGE LANE		853	VAR.	1560	156	130.0	1-1/4	54.2	1-3/4	75.8			VAR.	33	3	2.8	1-1/4	1.1	1-3/4	1.6				
RAMP "C"		893	VAR.	1765	177	-	1-1/4	61.3	2-3/4	134.8			VAR.	932	93	-	1-1/4	32.4	2-3/4	71.2		33	44	992
RAMP "C" SPEED CHANGE LANE		1650	VAR.	2450	245	204.2	1-1/4	85.1	1-3/4	119.1			VAR.	726	73	60.5	1-1/4	25.2	1-3/4	35.3				
RAMP "E"		955	VAR.	1855	186	-	1-1/4	64.4	2-3/4	141.7			VAR.	1002	100	-	1-1/4	34.8	2-3/4	76.5		35	47	1061
RAMP "E" SPEED CHANGE LANE		851	VAR.	1477	148	123.1	1-1/4	51.3	1-3/4	71.8			VAR.	33	3	2.8	1-1/4	1.1	1-3/4	1.6				
DEDUCT FOR BRIDGE DECKS & APPROACH SLABS (STRUCTURES 0459, 0646, AND 0742)	EB & WB	1471	24	-3923	-392		1-1/4	-136.2	1-3/4	-190.7			12	-1961	-196	-163.4	1-1/4	-68.1	1-3/4	-95.3		-218	-218	-5230
DEDUCT FOR NEW PAVEMENT UNDER OAK POINT ROAD:																								
305+00 TO 314+00	WBL	900													-120 (USE 408 INSTEAD - SEE QUANTITY ON SHT. 43)							-133		-1600
304+00 TO 315+00	EBL	1100													-147 (USE 408 INSTEAD - SEE QUANTITY ON SHT. 43)							-163		-1956
CROSS OVER @ 362+80				378	38	31.5	1-1/4	13.1	1-3/4	18.4														
DEDUCT FOR NEW PAVEMENT UNDER KOLBE ROAD:																								
359+50 TO 348+50	EBL	900													-120 (USE 408 INSTEAD - SEE QUANTITY ON SHT. 50)							-133		-1600
340+00 TO 348+50	WBL	850													-113 (USE 408 INSTEAD - SEE QUANTITY ON SHT. 50)							-126		-1511
DEDUCT FOR ADDITIONAL MEDIAN WORK		2335																				-173		-2076
TOTALS					16337	12240.8		5730		7869.9					7052	5402.4		2651.8		3637.5	30	6298	3688	81353

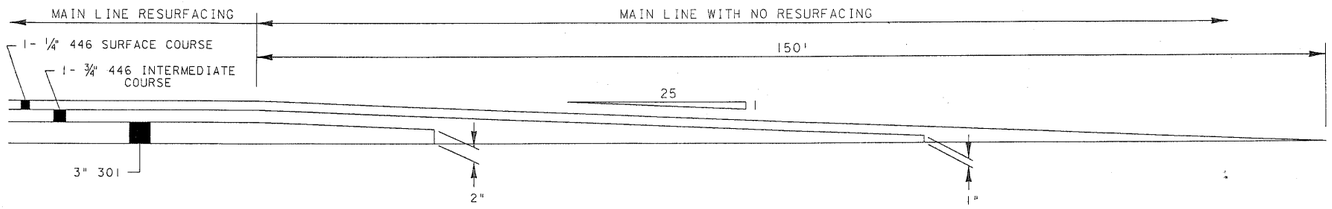
CALCULATION FORMULAS FOR E.B.L. & W.B.L.
EMBANKMENT AS PER PLAN:
(16' WIDE)(3"/12 AVG. THICKNESS)(LENGTH)/27
COMPACTED AGGREGATE:
(4' WIDE)(6"/12 THICKNESS)(LENGTH)/27
SEEDING AND MULCHING:
(16' WIDE)(LENGTH)/9

DESIGN FILE: c:\dgn\julie\resurf.dgn DATE: 29-JUN-1994
WORKSTATION: 003_104

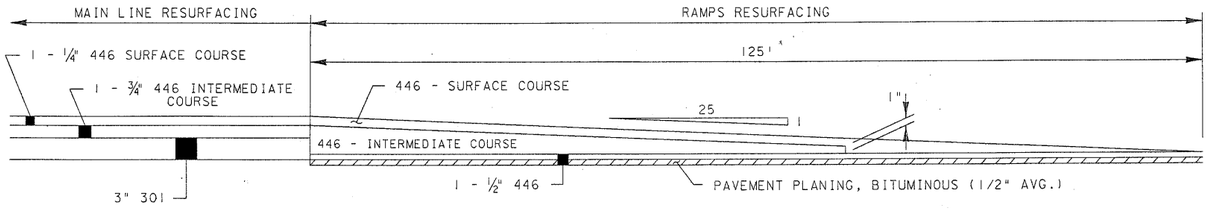
FHWA REGION	STATE	PROJECT	
5	OHIO		

23
222

LOR-2-3.48

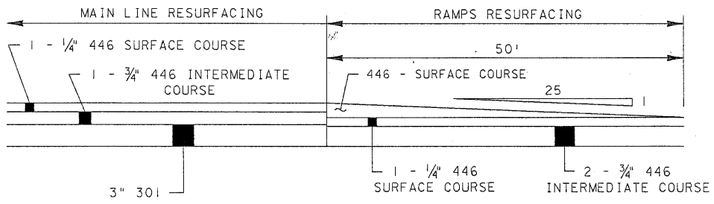


TRANSITIONING RESURFACING TO EXISTING PAVEMENT ON MAINLINE

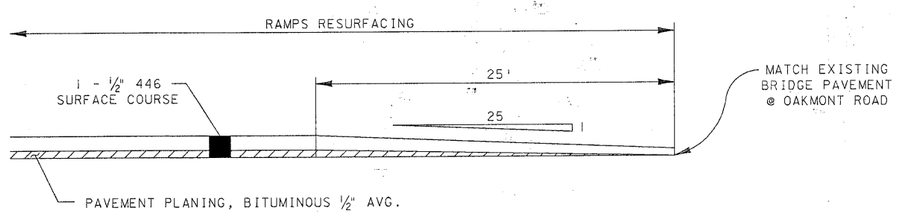


TRANSITIONING RESURFACING ON MAINLINE TO RESURFACING ON OAKPOINT ROAD RAMPS X,W,Y & Z

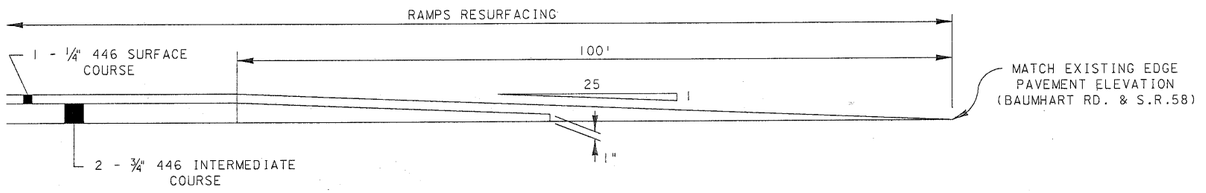
SEE SHEET 23A FOR PAVEMENT TRANSITIONING CALCULATIONS AND QUANTITIES



TRANSITIONING RESURFACING ON MAINLINE TO RESURFACING ON BAUMHART ROAD RAMPS A & B, S.R. 58 RAMPS C,D,E & F



TRANSITIONING RESURFACING ON OAKPOINT ROAD RAMPS W,X,Y & Z



TRANSITIONING RESURFACING ON RAMPS A & B TO BAUMHART ROAD AND RAMPS C,D,E & F TO S.R. 58

DESIGN FILE: C:\DGN\LOR2\PVMTTRAN.DGN .PRF NAME:
DATE: JUNE 12, 1994

PAVEMENT TRANSITIONING DETAILS

Calc. by ADO
Date 3/94
Chk'd by JLB
Date 8/94

FHWA REGION	STATE	PROJECT	
5	OHIO		

23A
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LOR-2-3.48

PAVEMENT TRANSITIONING QUANTITIES

MAINLINE (EB OR WB)

STA. 183+50 TO STA. 185+00
301 - (25' LONG)[(3"+2")/(2x12) THICK](36' WIDE)/27 = 6.9 CU.YD.
446 - INTERMEDIATE COURSE
(25)(1.75"/12) + (68.75)[(3.75"+1")/(2x12)] = 17.25 SQ.FT.
(17.25 SQ.FT.)(36' WIDE)/27 = 23 CU.YD.
446 - SURFACE COURSE
(93.75')(1.25"/12) + (56.25')[2.25"/(2x12)] = 15 SQ.FT.
(15 SQ.FT.)(36' WIDE)/27 = 20 CU.YD.
407 - TACK COAT
(150' LONG)(36' WIDE)(0.1 GAL./SQ.YD.)/9 = 60 GAL.
STA. 422+00 TO 423+50
301 - SAME AS ABOVE = 6.9 CU.YD.
446 - INTERMEDIATE COURSE - SAME AS ABOVE = 23 CU.YD.
446 - SURFACE COURSE - SAME AS ABOVE = 20 CU.YD.
407 - TACK COAT - SAME AS ABOVE = 60 GAL.

MAINLINE TO RAMP "A"

STA. A85+96.93 TO STA. A86+46.93
AREA = (50' LONG)[(29'+27')/2 WIDE] = 1400 SQ.FT.
446 - SURFACE COURSE
(1400 SQ.FT.)[2"/(2x12)]/27 = 4.3 CU.YD.
407 - TACK COAT
(1400 SQ.FT.)(0.1 GAL./SQ.YD.)/9 = 15.6 GAL.

MAINLINE TO RAMP "B"

STA. B85+00 TO STA. B85+50
AREA = (50' LONG)[(25'+25.5')/2 WIDE] = 1262.5 SQ.FT.
446 - SURFACE COURSE
(1262.5 SQ.FT.)[2"/(2x12)]/27 = 3.9 CU.YD.
407 - TACK COAT
(1262.5 SQ.FT.)(0.1 GAL./SQ.YD.)/9 = 14 GAL.

MAINLINE TO RAMP "C"

STA. C84+50 TO STA. C85+00
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "B" = 3.9 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "B" = 14 GAL.

MAINLINE TO RAMP "D"

STA. D82+53 TO STA. D83+03
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "A" = 4.3 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "A" = 15.6 GAL.

MAINLINE TO RAMP "E"

STA. E101+98.75 TO STA. E102+48.75
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "A" = 4.3 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "A" = 15.6 GAL.

MAINLINE TO RAMP "F"

STA. F104+75 TO STA. F105+25
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "B" = 3.9 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "B" = 14 GAL.

MAINLINE TO RAMP "W"

STA. W300+00 TO STA. W301+25
446 - INTERMEDIATE COURSE
(93.75' LONG)[(3.75" + 1")/(2x12) THICK](25.5' WIDE)/27 = 17.5 CU.YD.
446 - SURFACE COURSE
[(93.75')(1.25"/12) + (31.25')[2.25"/(2x12)](25.5' WIDE)/27 = 12.0 CU.YD.
407 - TACK COAT
(125' LONG)(25.5'AVG. WIDTH)(0.1 GAL./SQ.YD.)/9 = 35.4 GAL.

MAINLINE TO RAMP "X"

STA. X299+53.07 TO STA. X300+78.07
446 - INTERMEDIATE COURSE
(93.75' LONG)[(3.75"+1")/(2x12) THICK)(26'WIDE)/27 = 17.9 CU.YD.
446 - SURFACE COURSE
[(93.75' LONG)(1.25"/12) + (31.25' LONG)(2.25"/(2x12)](26'WIDE)/27 = 12.2 CU.YD.
407 - TACK COAT
(125' LONG)(26' WIDE)(0.1 GAL./SQ.YD.)/9 = 36.1 GAL.

MAINLINE TO RAMP "Y"

STA. Y318+82.21 TO STA. Y320+07.21
446 - INTERMEDIATE COURSE - SAME AS MAINLINE TO RAMP "W" = 17.5 CU.YD.
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "W" = 12.0 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "W" = 35.4 GAL.

MAINLINE TO RAMP "Z"

STA. Z317+75 TO STA. Z319+00
446 - INTERMEDIATE COURSE - SAME AS MAINLINE TO RAMP "W" = 17.5 CU.YD.
446 - SURFACE COURSE - SAME AS MAINLINE TO RAMP "W" = 12.0 CU.YD.
407 - TACK COAT - SAME AS MAINLINE TO RAMP "W" = 35.4 GAL.

QUANTITIES FOR RAMPS TO SIDE ROADS ARE INCLUDED WITH RAMP RESURFACING QUANTITIES.

STATION LIMITS	301 BITUMINOUS AGGREGATE BASE, AC-20	407 TACK COAT AT 0.1 GAL. PER SQ.YD.	446 SURFACE COURSE, TYPE 1	446 INTERMEDIATE COURSE, TYPE 2	254 PAVEMENT PLANING, BITUMINOUS, 1/2" AVG.
	CU.YD.	GAL.	CU.YD.	CU.YD.	SQ.YD.
183+50 EB TO 185+00 EB	6.9	60	20	23	
183+50 WB TO 185+00 WB	6.9	60	20	23	
422+00 EB TO 423+50 EB	6.9	60	20	23	
422+00 WB TO 423+50 WB	6.9	60	20	23	
A85+96.93 TO A86+46.93		15.6	4.3		
B85+00 TO B85+50		14	3.9		
C84+50 TO C85+00		14	3.9		
D82+53 TO D83+03		15.6	4.3		
E101+98.75 TO E102+48.75		15.6	4.3		
F104+75 TO F105+25		14	3.9		
W300+00 TO W301+25		35.4	12	17.5	354
X299+53.07 TO X300+78.07		36.1	12.2	17.9	361
Y318+82.21 TO Y320+07.21		35.4	12	17.5	354
Z317+75 TO Z319+00		35.4	12	17.5	354
TOTALS	27.6	471.1	152.8	162.4	1423

TOTALS TO SHT. 20

SEE SHEET 23 FOR
PAVEMENT TRANSITIONING
DETAILS.

DESIGN FILE: C:\DGN\LOR2\PVMTTRAN.DGN .PRF NAME: DATE: JUNE 12, 1994

CALCULATIONS

PAVEMENT REPLACEMENT UNDER OAK POINT ROAD

E.B.L.

202 - PAVEMENT REMOVED
1100'x24'/9 = 2933 S.Y.

305 - 9" CONCRETE BASE, AS PER PLAN
SAME AREA AS PAVEMENT REMOVED = 2933 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
[(24')(6"/12)+(8')(4"/12)+(4')(3.5"/12)](1100')/27 = 645.1 C.Y.

304 - AGGREGATE BASE
(8')(6"/12)(1100')/27 = 163.0 C.Y.

301 - BITUMINOUS AGGREGATE BASE, AC-20
(8')(3"/12)(1100')/27 = 81.5 C.Y.
(4')(9"/12)(1100')/27 = 122.2 C.Y.

203 - SUBGRADE COMPACTION
(24'+8'+4')(1100')/9 = 4400 S.Y.

408 - BITUMINOUS PRIME COAT @ 0.4 GAL/SQ.YD.
(8'+4')(1100')(0.4 GAL/SQ.YD.)/9 = 586.6 GAL.

W.B.L.

202 - PAVEMENT REMOVED
900'x24'/9 = 2400 S.Y.

305 - 9" CONCRETE BASE, AS PER PLAN
SAME AREA AS PAVEMENT REMOVED = 2400 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
[(24')(6"/12)+(8')(4"/12)+(4')(3.5"/12)](900')/27 = 527.8 C.Y.

304 - AGGREGATE BASE
(8')(6"/12)(900')/27 = 133.3 C.Y.

301 - BITUMINOUS AGGREGATE BASE, AC-20
(8')(3"/12)(900')/27 = 66.7 C.Y.
(4')(9"/12)(900')/27 = 100 C.Y.

203 - SUBGRADE COMPACTION
(24'+8'+4')(900')/9 = 3600 S.Y.

408 - BITUMINOUS PRIME COAT @ 0.4 GAL/SQ.YD.
(8'+4')(900')(0.4 GAL/SQ.YD.)/9 = 480 GAL.

PAVEMENT REPLACEMENT UNDER KOLBE ROAD

E.B.L.

202 - PAVEMENT REMOVED
900 - 155.6 (BRIDGE & APPROACH SLABS) = 744.4'
(744.4')(24')/9 = 1985.1 S.Y.

305 - 9" CONCRETE BASE, AS PER PLAN
SAME AREA AS PAVEMENT REMOVED = 1985.1 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
[(24')(6"/12)+(8')(4"/12)+(4')(3.5"/12)](744.4')/27 = 436.5 C.Y.

304 - AGGREGATE BASE
(8'+4')(6'/12)(744.4')/27 = 165.4 C.Y.

301 - BITUMINOUS AGGREGATE BASE, AC-20
(8'+4')(3'/12)(744.4')/27 = 82.7 C.Y.

203 - SUBGRADE COMPACTION
(24'+8'+4')(744.4')/9 = 2977.6 S.Y.

408 - BITUMINOUS PRIME COAT @ 0.4 GAL/SQ.YD.
(8'+4')(744.4')(0.4 GAL/SQ.YD.)/9 = 397.0 GAL.

W.B.L.

202 - PAVEMENT REMOVED
850'-(155.6' BRIDGE & APPROACH SLABS) = 694.4'
(694.4')(24')/9 = 1851.7 S.Y.

305 - 9" CONCRETE BASE, AS PER PLAN
SAME AREA AS PAVEMENT REMOVED = 1851.7 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
[(24')(6"/12)+(8')(4"/12)+(4')(3.5"/12)](694.4')/27 = 407.2 C.Y.

304 - AGGREGATE BASE
(8'+4')(6"/12)(694.4')/27 = 154.3 C.Y.

301 - BITUMINOUS AGGREGATE BASE, AC-20
(8'+4')(3"/12)(694.4')/27 = 77.2 C.Y.

203 - SUBGRADE COMPACTION
(24'+8'+4')(694.4')/9 = **2777.6** S.Y.

408 - BITUMINOUS PRIME COAT @ 0.4 GAL/SQ.YD.
(8'+4')(694.4')(0.4 GAL/SQ.YD.)/9 = 370.3 GAL.

KOLBE RD.

FEATHER QUANTITIES:
STA. 48+02± TO STA. 48+51± &
STA. 51+49± TO STA. 51+98±

407 - TACK COAT (EACH FEATHER)
A = 1/2(24')(8.74')+(24')(40') = 1065 SQ.FT.
(1065/9)(0.1 GAL./SQ.YD.) = 11.8 GAL.

404 - ASPHALT CONCRETE AC-20 (EACH FEATHER)
(1065 SQ.FT.)(0.75/12 AVG. THICKNESS)/27 = 2.5 CU.YD.

ROCK CHANNEL PROTECTION
(6' LONG)(6' WIDE)(15"/12 THICK)/27 = 2 CU.YD.

TERRA LANE - SHEET 74

STA. 47+00 TO STA. 47+67.85(AVG. RT. AND LT.) = 67.85'
(67.85')(26' WIDE)/9 = 196 S.Y.
STA. 47+67.85 TO STA. 48+57.74 = 89.89'
(89.89')(29' WIDE)/9 = 289.6 S.Y.
A_{TOTAL} = 196+289.6 = 485.6 S.Y.

202 - PAVEMENT REMOVED
SAME AREA AS A_{TOTAL} = 486 S.Y.

202 - WALK REMOVED
STA. 47+00 RT. TO STA. 48+74.9 RT. = 174.9 L.F.
(174.9')(4' WIDE) = 700 S.F.
STA. 47+20 LT. TO STA. 48+70 LT. = 150 L.F.
(150')(4' WIDE) = 600 S.F.

203 - SUBGRADE COMPACTION
SAME AREA AS A_{TOTAL} ABOVE = 486 S.Y.

310 - SUBBASE, TYPE II
[(486 SQ.YD.)+(67.85+89.89)(1'+1')/9][6"/(3x12)] = 86.8 C.Y.

452 - 8" PLAIN CONCRETE PAVEMENT
SAME AREA AS A_{TOTAL} ABOVE = 486 S.Y.

608 - 4" CONCRETE WALK
SAME QUANTITIES AS 202 - WALK REMOVED

TERRA LANE - SHEET 75

STA. 51+27.26 TO STA. 52+47.26 = 120'
(120')(29' WIDE)/9 = 387 S.Y.
STA. 52+47.26 TO STA. 53+25 = 77.74'
(77.74')(26' WIDE)/9 = 224.6 S.Y.
A_{TOTAL} = 387+224.6 = 611.6 S.Y.

202 - PAVEMENT REMOVED
SAME AREA AS A_{TOTAL} = 612 S.Y.

202 - WALK REMOVED
STA. 51+15 RT. TO STA. 53+25 RT. = 210 L.F.
(210')(4' WIDE) = 840 S.F.
STA. 51+10.1 LT. TO STA. 53+25 LT. = 214.9 L.F.
(214.9')(4' WIDE) = 859.6 S.F.

203 - SUBGRADE COMPACTION
SAME AREA AS A_{TOTAL} ABOVE = 612 S.Y.

310 - SUBBASE, TYPE II
[(612 SQ.YD.)+(120+77.74)(1'+1')/9][6"/(3x12)] = 109.3 C.Y.

452 - 8" PLAIN CONCRETE PAVEMENT
SAME AREA AS A_{TOTAL} ABOVE = 612 S.Y.

608 - 4" CONCRETE WALK
SAME QUANTITIES AS 202 - WALK REMOVED

NEW PAVED SHOULDER CALCULATION FOR RAMP "A" & RAMP "B"

RAMP "A"

A86+47 TO 191+00 = 453' @ 8' = 3624 S.F.
A85+47 TO A86+47 = 100' @ 7' = 700 S.F.
A77+03 TO A85+47 = 844' @ 6' = 5064 S.F.
RADIUS = 75' @ 6' = 450 S.F.
TAPER = 37' @ 5' = 185 S.F.
10023 S.F.

203 - SUBGRADE COMPACTION
(**9838** SQ.FT.)/9 = **1093** S.Y.
310 - SUBBASE, TYPE 1, GRADING A
(**10023** SQ.FT.)(4.4"/12 AVG. THICKNESS)/27 = **136.1** C.Y.

RAMP "B"

187+00 TO 191+00 = 400' @ 8' = 3200 S.F.
B85+00 TO B87+00 = 200' @ 7' = 1400 S.F.
B76+89 TO B85+00 = 811' @ 6' = 4866 S.F.
RADIUS = 75' @ 6' = 450 S.F.
TAPER = 37' @ 5' = 185 S.F.
10101 S.F.

203 - SUBGRADE COMPACTION
(9916 SQ.FT.)/9 = 1102 S.Y.
310 - (10101 SQ.FT.)(4.9"/12 AVG.THICKNESS)/27 = 152.8 C.Y.

TOTAL RAMP "A" & RAMP "B" QUANTITIES CARRIED TO SUB-SUMMARY SHEET. SEE SHEET 135 FOR ADDITIONAL QUANTITIES.

APPROACH SLAB QUANTITIES

STRUCTURE LOR-2-0459:

202 - PAVEMENT REMOVED
(24' WIDE)(25' LONG)/9 = 66.7 S.Y.
611 - REINFORCED CONCRETE APPROACH SLAB
241+90.90 TO 242+15.58 RT.
(38')(25')/9 =105.6 S.Y.
245+11.72 TO 245+36.40 RT.
(38.5')(25')/9 = 106.9 S.Y.
241+36.42 TO 241+61.74 LT.
(38.5')(25')/9 = 106.9 S.Y.
244+70.18 TO 244+95.51 LT.
(38')(25')/9 =105.6 S.Y.
203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(105.6-66.7)(15'/36)+[(40')(25')(6"/12)]/27 = 34.7 C.Y.
(106.9-66.7)(15'/36)+[(40')(25')(6"/12)]/27 = 35.3 C.Y.
203 - SUBGRADE COMPACTION
SAME AREA AS 611ITEM
304 - AGGREGATE BASE
(40')(25')(6"/12)/27 = 18.5 C.Y.

STRUCTURE LOR-2-6.46:

202 - PAVEMENT REMOVED
(24' WIDE)(25' LONG)/9 = 66.7 S.Y.
611 - REINFORCED CONCRETE APPROACH SLAB
(39')(25')/9 = 108 S.Y.
203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(108-66.7)(15'/36)+(40')(25')(6"/12)/27 = 35.7 C.Y.
203 - SUBGRADE COMPACTION
SAME AREA AS 611ITEM = 108 S.Y.
304 - AGGREGATE BASE
(40')(25')(6"/12)/27 = 18.5 C.Y.

STRUCTURE LOR-2-0742:

202 - PAVEMENT REMOVED
(24' WIDE)(25' LONG)/9 = 66.7 S.Y.
611 - REINFORCED CONCRETE APPROACH SLAB
(39.17')(25')/9 = 108.8 S.Y.
203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(108.8-66.7)(15'/36)+(40.17')(25')(6"/12)/27 = 36.1 C.Y.
203 - SUBGRADE COMPACTION
SAME AREA AS 611ITEM = 108.8 S.Y.
304 - AGGREGATE BASE
(40.17')(25')(6"/12)/27 = 18.6 C.Y.

STRUCTURE LOR-2-0649:

202 - PAVEMENT REMOVED
(32')(25')/9 = 88.9 S.Y.
611 - REINFORCED CONCRETE APPROACH SLAB
(33.1')(25')/9 = 91.9 S.Y.
203 - SUBGRADE COMPACTION
SAME AREA AS 611ITEM = 91.9 S.Y.
304 - AGGREGATE BASE
(34.1')(25')(6"/12)/27 = 15.8 C.Y.

STRUCTURE LOR-2-0699:

202 - PAVEMENT REMOVED
(32')(25')/9 = 88.9 S.Y.
611 - REINFORCED CONCRETE APPROACH SLAB
(33')(25')/9 = 91.6 S.Y.
203 - SUBGRADE COMPACTION
SAME AREA AS 611ITEM = 91.6 S.Y.
304 - AGGREGATE BASE
(34')(25')(6"/12)/27 = 15.7 C.Y.

DESIGN FILE: C:\DGN\LOR2\CALCULAT.DGN . PRF NAME:
DATE: JUNE 17, 1994

CALC. BY AMB 7/94
CHK'D. BY JLB 8/94

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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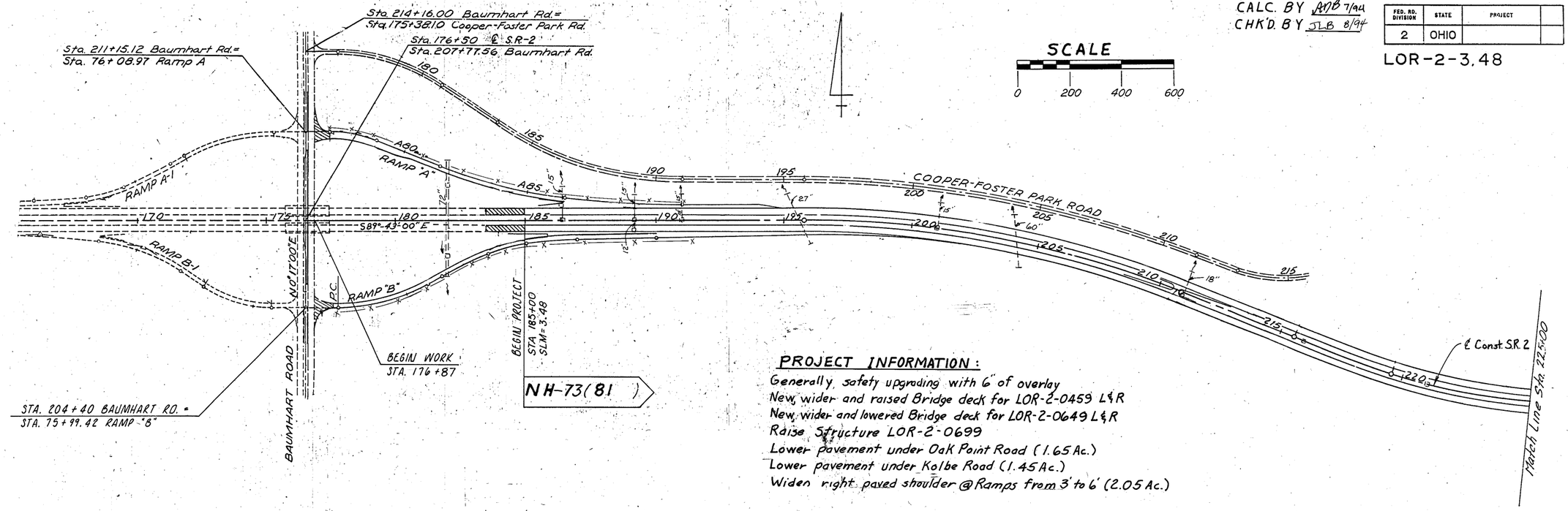
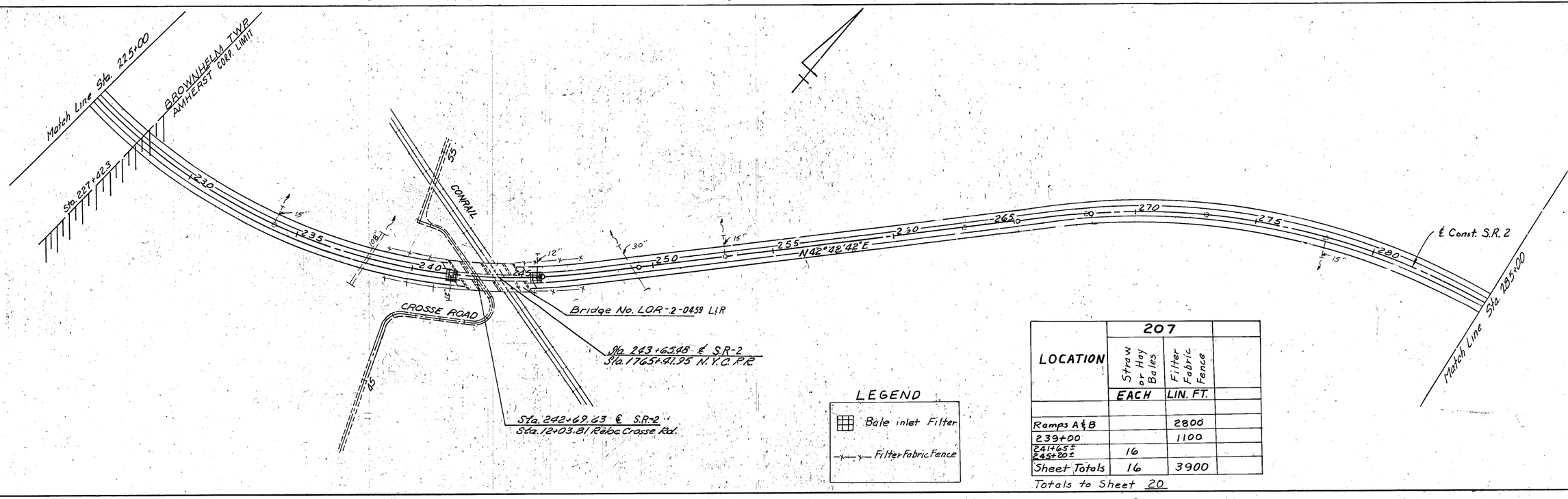
LOR-2-3.48



PROJECT INFORMATION:

Generally, safety upgrading with 6" of overlay
New wider and raised Bridge deck for LOR-2-0459 L&R
New wider and lowered Bridge deck for LOR-2-0649 L&R
Raise Structure LOR-2-0699
Lower pavement under Oak Point Road (1.65 Ac.)
Lower pavement under Kolbe Road (1.45 Ac.)
Widen right paved shoulder @ Ramps from 3' to 6' (2.05 Ac.)



LEGEND

Bale inlet Filter

Filter Fabric Fence

LOCATION	207 Straw or Hay Bales EACH	207 Filter Fabric Fence LIN. FT.	
Ramps A & B		2800	
239+00		1100	
241+65± 245+20±	16		
Sheet Totals	16	3900	

Totals to Sheet 20

STORM WATER POLLUTION PREVENTION PLAN

CALC. BY ANB 7/94
CHK'D. BY JLB 8/94

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

26/222

LOR-2-3.48

SCALE
0 200 400 600

New Pavement

END WORK STA 63+45

℄ OAK POINT RD.

BRIDGE NO LOR-2-0586

CITY OF AMHERST

CITY OF LORAIN

CORP. LIMITS

CORP. LINE

PT 5 Equation

Cooper Foster Park Rd.

CITY OF AMHERST

Ramp W

Ramp Y

Ramp X

Ramp Z

Sta. 309+56.34 S.R. 2
Sta. 50+00 OAK POINT RD.

Match Line Sta. 285+00

S.R. 2

C.S. = 289+81.68

Existing Waste Water Treatment Plant Rd.

BEGIN WORK STA 36+55

℄ S.R. 2

Sta. 343+17.27 LOR-254 =
Sta. 50+00 KOLBE ROAD
Bridge No. LOR-2-0649

BRIDGE NO LOR-2-0646 L & R

N12°30'16"E

Match Line Sta. 343+00

BEAVER CREEK

PC

℄ KOLBE RD.

BEGIN WORK STA 43+50

N29°09'16"E

END WORK STA 1298+50

Sta. 93+68.50 Ramp C =
Sta. 1289+41 S.R. #58

Sta. 92+68.76 Ramp F =
Sta. 1289+30 SR 58

N10°51'23"E

Structure No. Lor-2-0761

Twin 16 X 12'

RAMP C

RAMP E

RAMP D

RAMP F

KOLBE RD.

END WORK STA 54+50

Match Line Sta. 345+00

N78°32'31"E

℄ CONST. S.R. 2

Sta 369+03.41 ℄ S.R. 2
Sta. 50+00 ℄ Terra Lane
Bridge No. LOR-2-0699

END WORK STA 53+65

N10°41'37"W

BEGIN WORK STA 47+00

TERRA LANE

N84°51'23"E

BRIDGE NO. LOR-2-0742 L&R
38' F/F SAFETY PARAPETS

Sta. 92+54.95 Ramp D =
Sta. 1282+94 S.R. #58

Sta. 392+70.26 ℄ S.R. 2 =
Sta. 1285+87.85 S.R. #58

Sta. 92+16.81 Ramp F =
Sta. 1282+83.00 S.R. #58

S.R. #58

BEGIN WORK STA 1273+35

Match Line Sta. 403+00

LEGEND

- Bale Inlet Filter
- Filter Fabric Fence
- Bale Ditch Check

LOCATION	207 Straw or Hay Bales EACH	207 Filter Fabric Fence LIN.FT.	
Ramps W & X		2000	
Ramps Y & Z		2200	
Ramps C & D		2700	
Ramps E & F		2700	
340+00		1800	
Catch Basins	96		
Bale Ditch Check	20		
Totals	116	11,400	

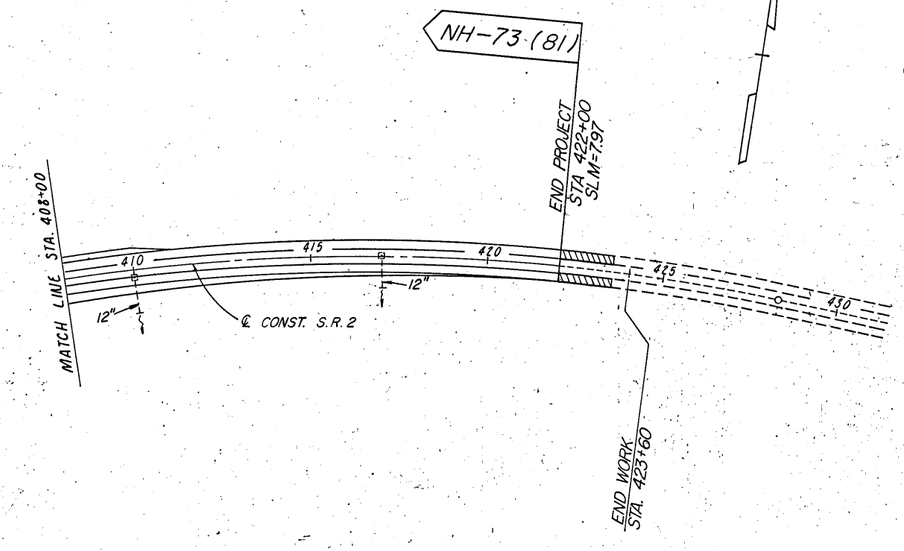
Totals to Sheet 20.

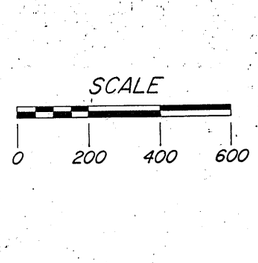
STORM WATER POLLUTION PREVENTION PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR-2-3.48

FEATHER AREA





CALC. BY RJR 3/09
CHK'D BY RLL 7/09

FHWA REGION	STATE	PROJECT		
5	OHIO			

28/222

LOR-2-3.48

SEE SHEET 24 FOR NEW PAVED SHOULDER CALCULATIONS

SEE SHEET 89 FOR UNDERDRAIN QUANTITIES

FEATHER AREA- SEE SHEETS 23 & 23A FOR DETAILS AND QUANTITIES

NEW PAVED SHOULDER

STA A76+08.97 ℄ RAMP A = STA 211+15.12 ℄ BAUMHART RD.

STA. 212+00

SEE SHEET 101A FOR RAMP A INTERSECTION DETAILS

4" SHALLOW UNDERDRAIN

NO WORK BAUMHART RD. SOUTH / NORTH VERMILION / LORAIN A81+00

100' FEATHER +41

+41.25

EXISTING TYPE 5 GUARDRAIL (NO WORK)

EXIST. 72" PIPE

M-40-36 WEST (2B)

M-2-36 STA 182+00

GR-2 +90

REMOVE (2) STA 184+00

NO WORK EXPERIMENTAL PAVEMENT NEXT 3 MILES STA 185+00

BEGIN PROJECT S.R.2 STA 185+00, SLM = 3.48

REMOVE STOP AHEAD (1)

W-45-48 STA A84+50± STOP AHEAD (1)

W-45-48 STA A84+50 STOP AHEAD (1)

NH-73 (81)

REMOVE EXIT STA 186+00 (4)

GF 72"X 60" EXIT STA 185+75

TAPER PAVED SHOULDER 6' TO 8' IN 100' +96

150' FEATHER

50' FEATHER

℄ CONST. S.R. 2

EX. 15"

EX. 12"

MATCH LINE STA 190+00

STA 176+55.36 ℄ SR 2
STA 207+77.56 ℄ BAUMHART RD.

176+87 BEGIN WORK

W-49R-48 STA 185+00

4" SHALLOW UNDERDRAIN

+98.75

REMOVE EXIST. CURB ALONG RAMP AS PER DETAILS ON SHT. 41

50' FEATHER +00

R-1

TAPER PAVED SHOULDER 8' TO 6' IN 200'

REMOVE Baumhart Rd

LEVEL II GE Baumhart Rd 17' x 6' STA 195+00 (5)

STA B75+99.42 ℄ RAMP B
STA 204+40
℄ BAUMHART RD.

100' FEATHER +31.4

GR-1 +00

SEE SHEET 101A FOR RAMP B INTERSECTION DETAILS

203+60

TAPER FROM 6' TO 4' IN 23'

℄ SURVEY BAUMHART ROAD

GR-4 +30.5

GR-3 +04

EX. 72"

+37.5

MATCH LINE STA 190+00

REFERENCE MARK	STATION LIMITS OR LOCATION	202 GUARDRAIL REMOVED * LIN. FT.	202 CURB REMOVED, AS PER PLAN LIN. FT.	606 GUARDRAIL, TYPE 5 LIN. FT.	606 ANCHOR ASSEMBLY, TYPE T EACH		SPEC. ANCHOR ASSEMBLY, TYPE E, AS PER PLAN EACH
GR-1	B79+17.5 TO B82+00 RAMP B, RT	200.0		218.75	1		1
GR-2	A81+40 TO A84+22.5 RAMP A, LT	150.0		218.75	1		1
GR-3	193+00 TO 196+41.5 S.R.2, RT	237.5		275.0	1		1
GR-4	194+93 TO 198+46.25 S.R.2, LT	237.5		287.75	1		1
R-1	B84+75 RAMP B, LT TO 190+00 S.R.2, RT		528				
	TOTALS	825.0	528	1000	4		4

* ALL EXISTING GUARDRAIL TO BE REMOVED ARE TYPE 4

SEE SHEET 92 FOR SIGNING QUANTITIES

STA 175+00 TO STA 198+00

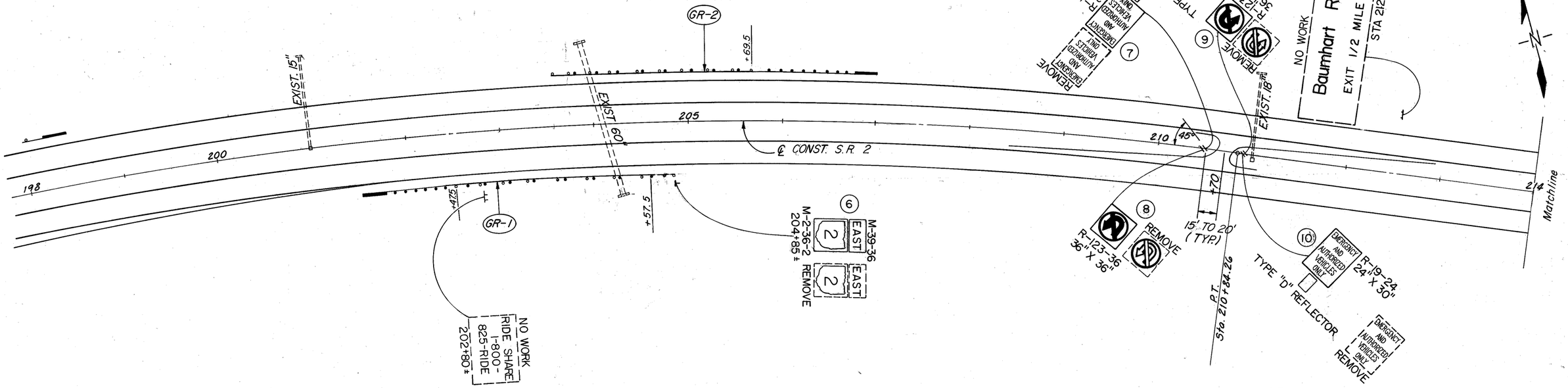
CALC. BY RJR 3/89
CHK'D BY RJR 7/89

FHWA REGION	STATE	PROJECT	
5	OHIO		

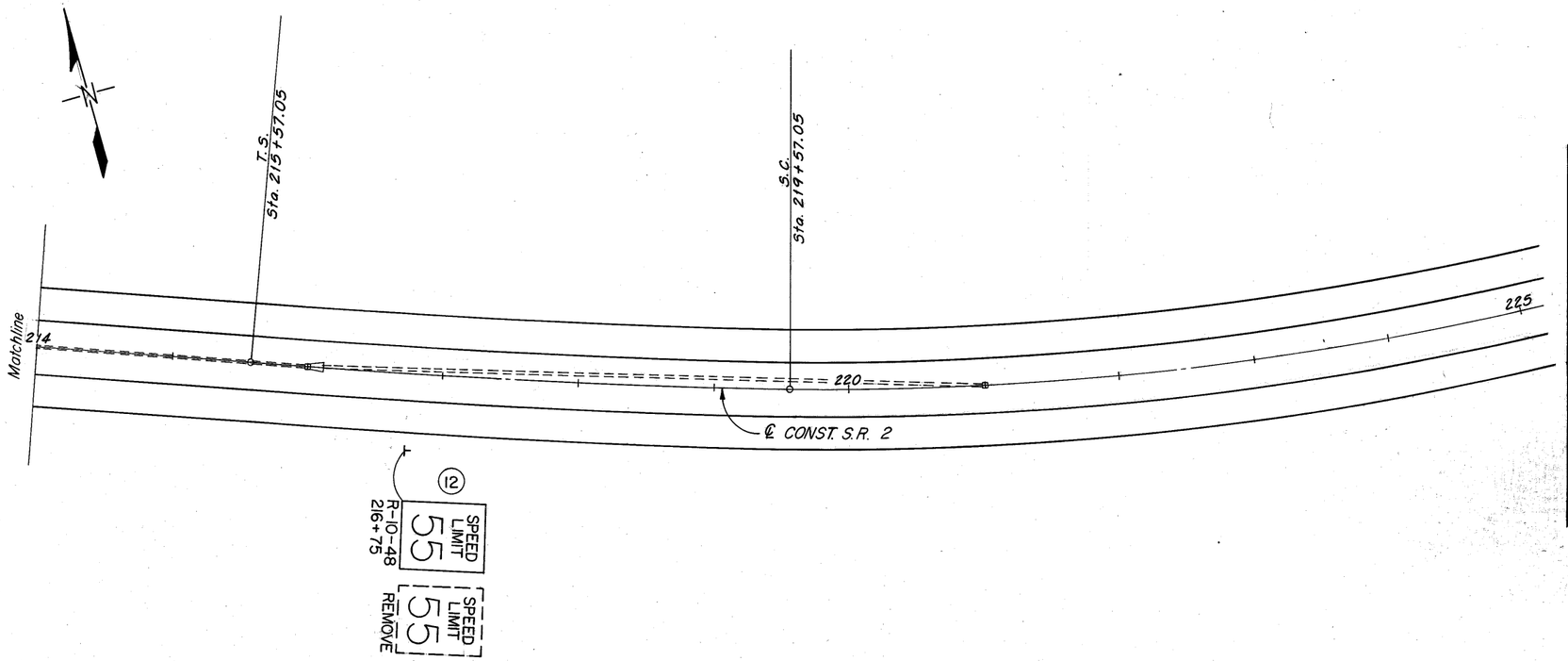
29/222

LOR-2-3.48

ALL EXISTING GUARDRAIL ON THIS SHEET ARE TYPE 4 ON WOOD POSTS



NOTE: CROSS OVER SHALL BE RESURFACED AS PER TYPICAL MAINLINE



REFERENCE MARK	STATION LIMITS OR LOCATION	202 GUARDRAIL REMOVED LIN.FT.	606 GUARDRAIL, TYPE 5 LIN.FT.	606 ANCHOR ASSEMBLY, TYPE T EACH		SPEC. ANCHOR ASSEMBLY, TYPE E, AS PER PLAN EACH		
GR-1	201+45 TO 204+85 RT.	237.5	250	1		1		
GR-2	203+57 TO 207+09.25 LT.	212.5	281.75	1		1		
	TOTALS	450.0	531.75	2		2		

SEE SHEET 92 FOR SIGNING QUANTITIES

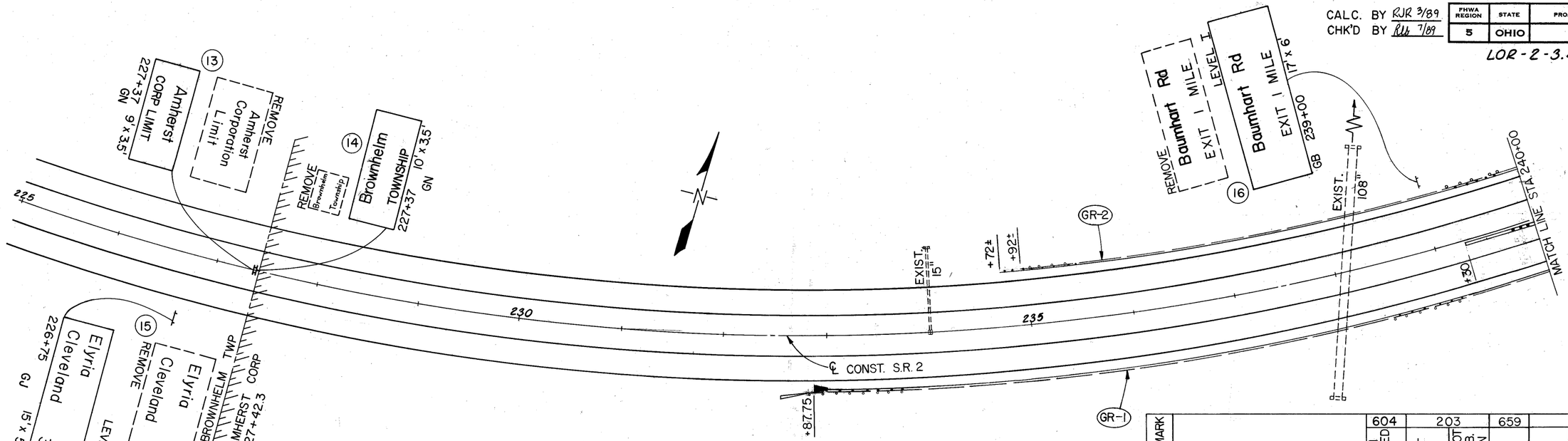
STA 198+00 TO STA 225+00

CALC. BY RJR 3/89
CHK'D BY RLL 7/89

FHWA REGION	STATE	PROJECT		
5	OHIO			

30
222

LOR-2-3.48



REFERENCE MARK	STATION LIMITS OR LOCATION		604 CATCH BASIN RECONSTRUCTED TO GRADE EACH	203 EMBANKMENT CU.YD.	203 EXCAVATION NOT INCLUDING EMB. CONSTRUCTION CU.YD.	659 SEEDING & MULCHING SQ.YD.		
DR-1	241+65±	MED.	1					
DR-2	245+20±	MED.	1					
	FROM SHEET 42			83		334		
	FROM SHEET 57			444	18	2170		
	TOTALS		2	527	18	2504		

REFERENCE MARK	STATION LIMITS OR LOCATION		202 GUARDRAIL REMOVED LIN. FT.	517 RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN * LIN. FT.	606 GUARDRAIL, TYPE 5 LIN. FT.	606 GUARDRAIL BARRIER DESIGN, TYPE 5 LIN. FT.	SPEC 606 ANCHOR ASSEMBLY, TYPE E, AS PER PLAN EACH	SPEC 606 ANCHOR ASSEMBLY, TYPE T EACH	SPEC IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH
GR-1	232+55± TO 242+65±	RT.	1006.25	25	875.00		1			1	
GR-2	234+72± TO 241+48±	LT.	656.25	25	637.50			1			1
GR-3	239+81± TO 242+28±	MED.	193.75	25	43.75	175			1	1	
GR-4	244+30± TO 251+00±	LT.	670.0	25	622.00					1	
GR-5	244+55± TO 247+53±	MED.	168.75	25	43.75	175			1	1	
GR-6	245+22± TO 251+00±	RT.	578.0	25	552.00						1
	TOTALS		3273.0	150	2774.0	350	1	1	2	4	2

* SEE SHEET 16 FOR NOTE AND SHEET 84 FOR DETAILS

STRUCTURE NO. LOR-2-0459 LT & RT
NEW CONCRETE DECKS, WIDEN AND RAISE RT. & LT. BRIDGES (@" EACH) SEE BRIDGE SHEETS FOR DETAILS (SEE SHEET 83 FOR APPROACH SLAB DETAILS)

SEE SHEET 57 THRU 60 FOR MEDIAN CROSS-SECTIONS W/GUARDRAIL

≠ SEE SHEET 84A FOR INSTALLATION OF GUARDRAIL DETAILS

SEE SHEET 86 FOR ADDITIONAL DETAILS AND QUANTITIES

NOTE: EXISTING GUARDRAIL SHOWN ON THIS PLAN SHEET IS TYPE 4 ON WOOD POSTS W/ SHORT SECTIONS OF TYPE 5 GUARDRAIL @ ENDS OF BRIDGE AND TYPE A ANCHORS @ APPROACH ENDS OF TYPE 4 GUARDRAIL

SEE SHEET 92 FOR SIGNING QUANTITIES

REVISED 11-29-94

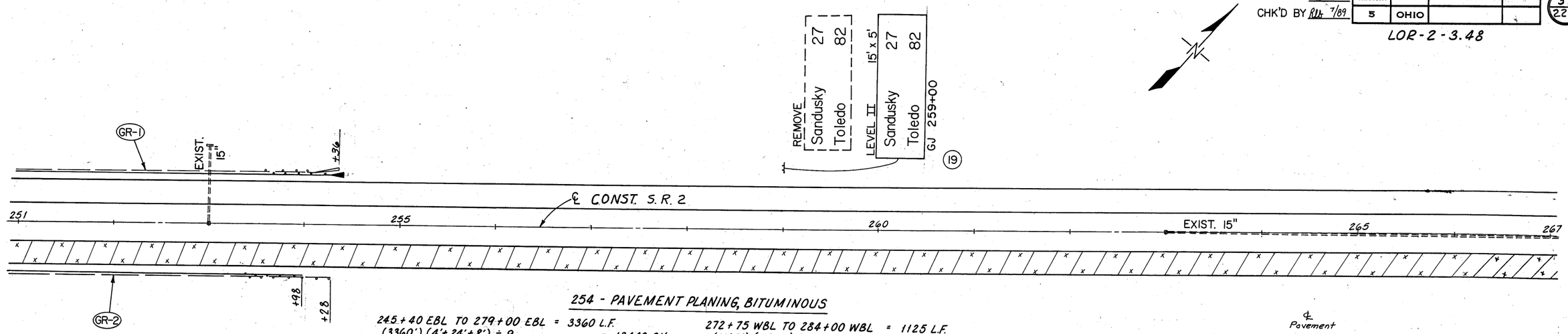
STA 225+00 TO STA 251+00

CALC BY RJR 3/89 | CHK'D BY RLL 7/89

FHWA REGION	STATE	PROJECT	
5	OHIO		

31
222

LOR-2-3.48

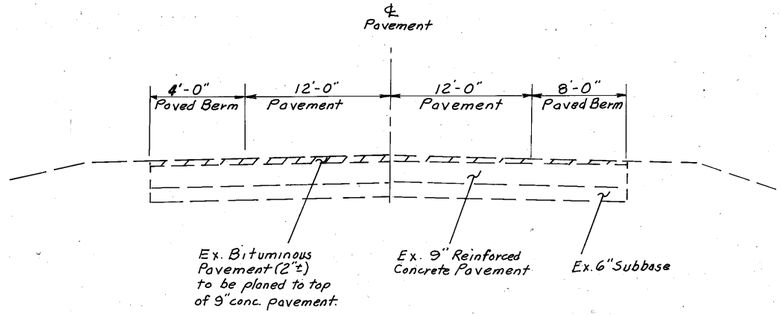


254 - PAVEMENT PLANING, BITUMINOUS

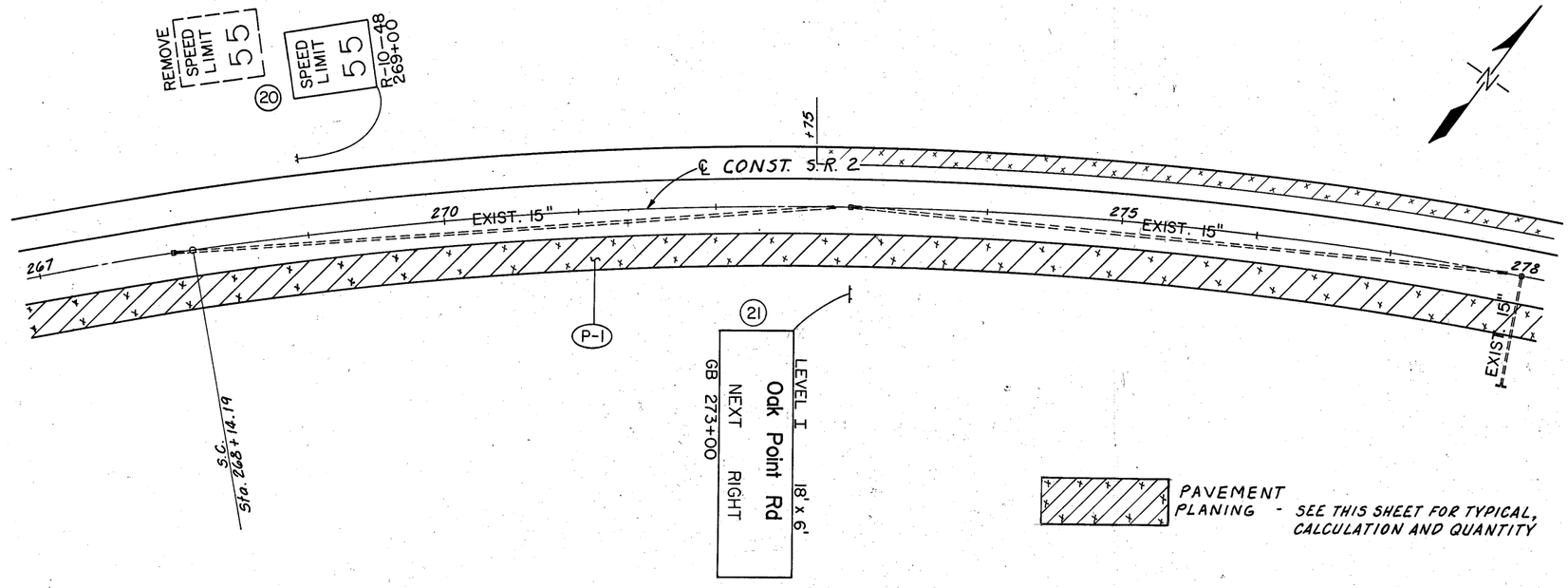
245+40 EBL TO 279+00 EBL = 3360 L.F.
(3360') (4'+24'+8') ÷ 9 = 13440 S.Y.
279+00 EBL TO 291+50 EBL = 1250 L.F.
(1250') (2'+24'+4') ÷ 9 = 4167 S.Y.
291+50 EBL TO 299+53 EBL = 803 L.F.
(803') (12') ÷ 9 = 1071 S.Y.
299+53 EBL TO 304+00 EBL = 447 L.F.
(447') (4'+24'+3') ÷ 9 = 1540 S.Y.
315+00 EBL TO 317+50 EBL = 250 L.F.
(250') (4'+24'+4') ÷ 9 = 889 S.Y.
323+00 EBL TO 335+00 EBL = 1200 L.F.
(1200') (12') ÷ 9 = 1600 S.Y.

272+75 WBL TO 284+00 WBL = 1125 L.F.
(1125') (12'+1') ÷ 9 = 1625 S.Y.
284+00 WBL TO 296+00 WBL = 1200 L.F.
(1200') (12') ÷ 9 = 1600 S.Y.
314+00 WBL TO 320+07 WBL = 607 L.F.
(607') (4'+24'+8') ÷ 9 = 2428 S.Y.
320+07 WBL TO 322+65 WBL = 258 L.F.
(258') (24'+4') ÷ 9 = 803 S.Y.
322+65 WBL TO 328+00 WBL = 535 L.F.
(535') (12') ÷ 9 = 713 S.Y.
328+00 WBL TO 333+00 WBL = 500 L.F.
(500') (4'+24'+8') ÷ 9 = 2000 S.Y.
337+00 WBL TO 340+00 WBL = 300 L.F.
(300') (4'+24'+8') ÷ 9 = 1200 S.Y.

TOTAL = 33076 S.Y.



PAVEMENT PLANING TYPICAL



REFERENCE MARK	STATION LIMITS OR LOCATION		202 GUARDRAIL REMOVED	254 PAVEMENT PLANING, BITUMINOUS		606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY, TYPE T	SPEC. ANCHOR ASSEMBLY TYPE E, AS PER PLAN
			LIN. FT.	SQ. YD.		LIN. FT.	EACH	EACH
GR-1	251+00± TO 254+40 ±	LT.	336.0			290.5		1
GR-2	251+00± TO 254+28 ±	RT.	328.25			285.5	1	
P-1	266+00+ TO 279+00 ±	RT.		33076				
	TOTALS		664.25	33076		576.0	1	1

SEE SHEET 92 FOR SIGNING QUANTITIES

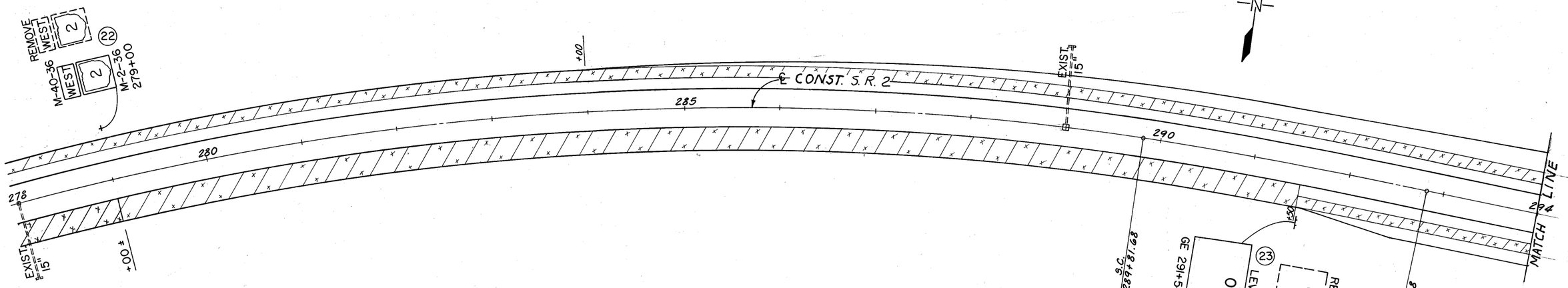
REVISED 11-29-94

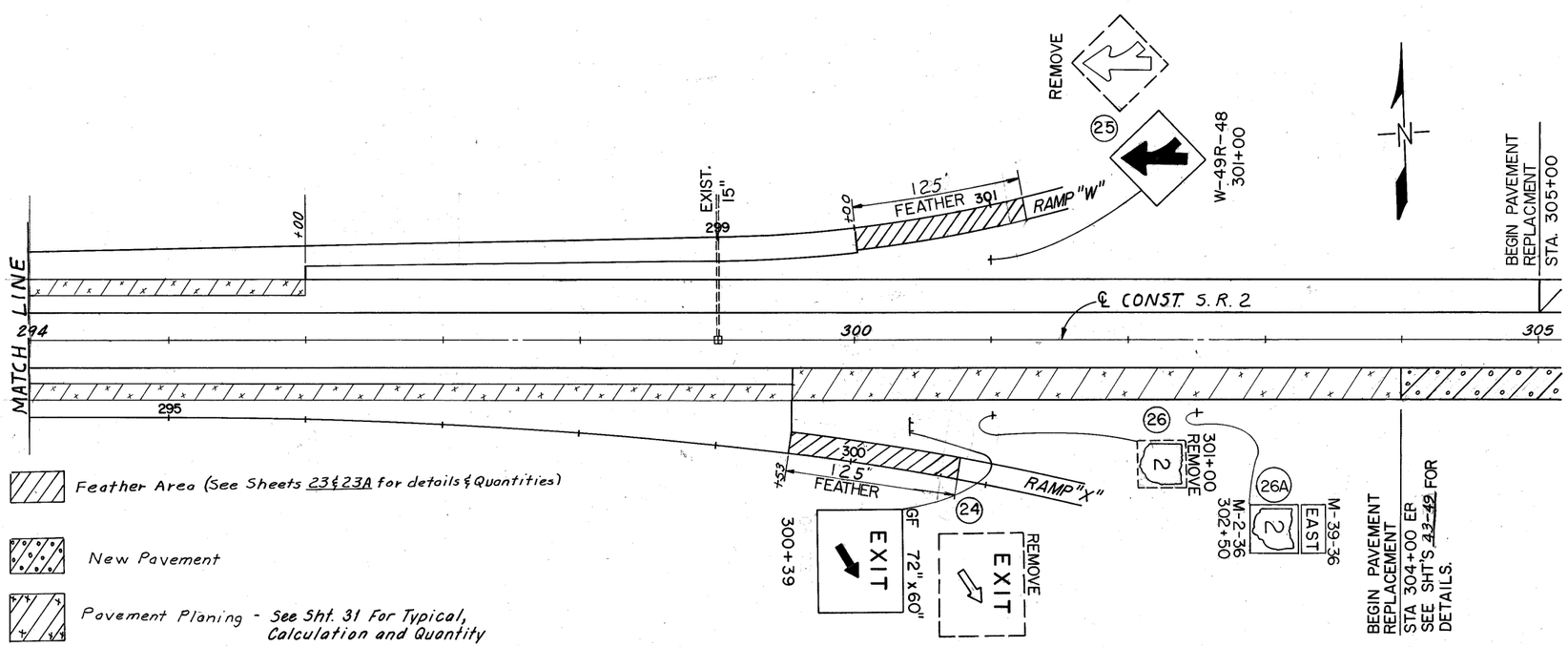
STA 251+00 TO STA 278+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

32 / 222





SEE SHEET 33 FOR CONTINUATION OF RAMPS
SEE SHEET 92 FOR SIGNING QUANTITIES

REVISED 11-29-94

STA 278+00 TO STA 305+00

Calc. by A. D. B. Date 4/94
Chk'd by T. G. F. Date 4/94

LOR-2-3.48

CALCULATIONS FOR NEW PAVED SHOULDER

RAMP "W":

W299+00 TO W300+50	= 150' @ 7'	= 1050 S.F.
W300+50 TO W309+28	= 878' @ 6'	= 5268 S.F.
RADIUS	= 78' @ 6'	= 468 S.F.
TAPER	= 40' @ 4.5'	= 180 S.F.
		6966 S.F.

203 - SUBGRADE COMPACTION
(6786 S.F.) / 9 = 754 S.Y.

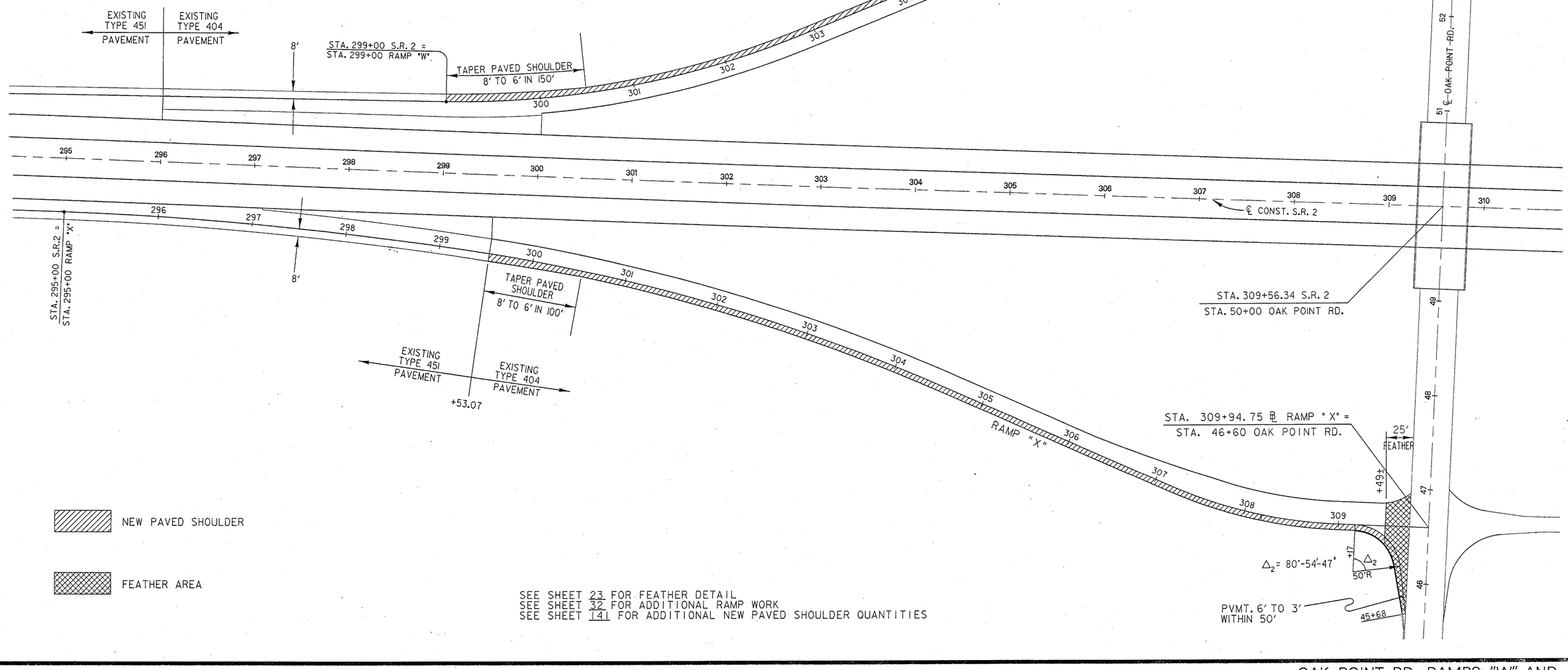
310 - SUBBASE, TYPE 1, GRADING A
(6966 S.F.)(3"/12 THICK) / 27 = 64.5 C.Y.

RAMP "X":

X299+53 TO X300+53	= 100' @ 7'	= 700 S.F.
X300+53 TO X309+17	= 864' @ 6'	= 5184 S.F.
RADIUS	= 47' @ 6'	= 282 S.F.
TAPER	= 50' @ 4.5'	= 225 S.F.
		6391 S.F.

203 - SUBGRADE COMPACTION
(6166 S.F.) / 9 = 685 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
(6391 S.F.)(3"/12 THICK) / 27 = 59.2 C.Y.



NEW PAVED SHOULDER

FEATHER AREA

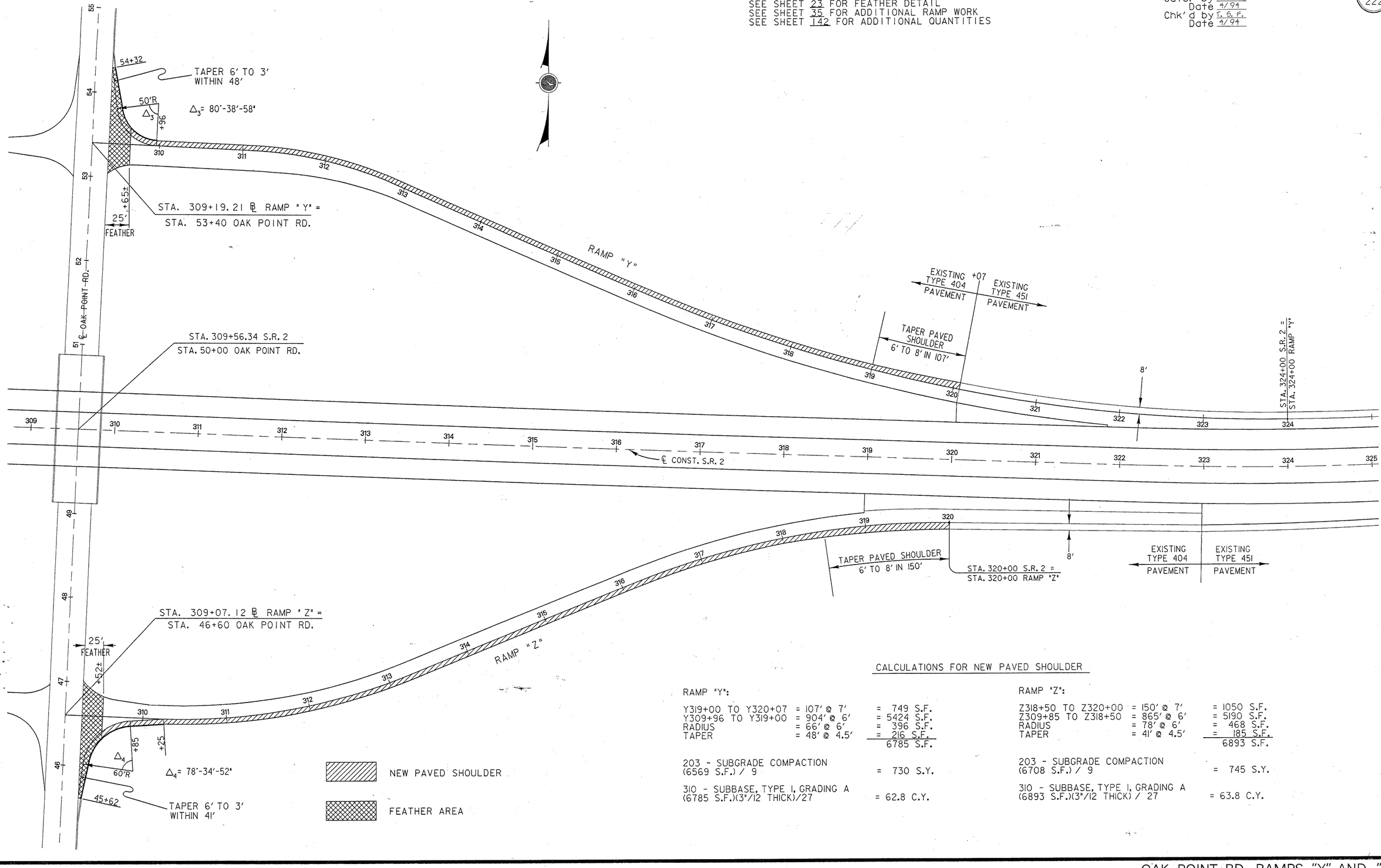
SEE SHEET 23 FOR FEATHER DETAIL
SEE SHEET 32 FOR ADDITIONAL RAMP WORK
SEE SHEET 141 FOR ADDITIONAL NEW PAVED SHOULDER QUANTITIES

DESIGN FILE: c:\dgn\temp\oakptwx.dgn
DATE: 18-JUL-1994
WORKSTATION: e

OAK POINT RD., RAMPS "W" AND "X"

SEE SHEET 23 FOR FEATHER DETAIL
SEE SHEET 35 FOR ADDITIONAL RAMP WORK
SEE SHEET 142 FOR ADDITIONAL QUANTITIES

Calc. by A. D. D.
Date 4/94
Chk'd by T. G. F.
Date 4/94



CALCULATIONS FOR NEW PAVED SHOULDER

RAMP "Y":

Y319+00 TO Y320+07	= 107' @ 7'	= 749 S.F.
Y309+96 TO Y319+00	= 904' @ 6'	= 5424 S.F.
RADIUS	= 66' @ 6'	= 396 S.F.
TAPER	= 48' @ 4.5'	= 216 S.F.
		6785 S.F.

203 - SUBGRADE COMPACTION
(6569 S.F.) / 9 = 730 S.Y.

310 - SUBBASE, TYPE I, GRADING A
(6785 S.F.)(3"/12 THICK)/27 = 62.8 C.Y.

RAMP "Z":

Z318+50 TO Z320+00	= 150' @ 7'	= 1050 S.F.
Z309+85 TO Z318+50	= 865' @ 6'	= 5190 S.F.
RADIUS	= 78' @ 6'	= 468 S.F.
TAPER	= 41' @ 4.5'	= 185 S.F.
		6893 S.F.

203 - SUBGRADE COMPACTION
(6708 S.F.) / 9 = 745 S.Y.

310 - SUBBASE, TYPE I, GRADING A
(6893 S.F.)(3"/12 THICK) / 27 = 63.8 C.Y.

OAK POINT RD., RAMPS "Y" AND "Z"

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

35/222

CALC. BY RJR 3/89
CHK'D. BY RLL 7/89

BEGIN PAVEMENT REPLACMENT STA. 305+00 WB

NO WORK
[ADOPT-A-HIGHWAY | LITTER CONTROL | NEXT 2.5 MILES | HICKORY TREE GRANGE #881]
310+00±

Oak Point Rd.

SEE SHEET 100 FOR SIGNING ON OAK POINT ROAD

SEE SHEET'S 43-49 FOR DETAILS OF PAVEMENT REPLACEMENT UNDER OAK POINT ROAD.

SEE SHEET 43 FOR GUARDRAIL REPLACEMENT DETAILS

SUSPEND PAVEMENT REPLACEMENT STA 314+00 WB

See Sheet 43 For Guardrail Replacement

M-40-36 WEST 2 — 27C — REMOVE 2 — M-2-36 317+00

REMOVE EXIT 72"x60" — 27A — EXIT GF 319+45 — 27

RAMP "Y" 318 — 125' FEATHER — 320 ±0Z

41.5

EXIST. 15"

305 — 310 — 315 — 321

EXIST. 72"

38.5

℄ CONST. S.R. 2

MATCH LINE

EXIST. 15"

STRUCTURE NO. LOR-2-0586
DECK OVERLAY
MINIMUM CLEARANCE AFTER RESURFACING 15'-6"

SUSPEND PAVEMENT REPLACMENT STA 315+00 EB

27B — 318+00 W-49R-48 — REMOVE

RAMP "Z" 318 — 125' FEATHER — +75 — +50 — 320

EX/SY 15"

Pavement Planing - See Sht. 31 For Typical, Calculation and Quantity

New Pavement

Feather Area (See Sheets 23&23A for Details & Quantities)

P.C. Sta. 322+28.28

REMOVE Oak Point Rd — 18' x 6' — LEVEL I — Oak Point Rd

GE 328+00 — 28

P.T. Sta. 331+50.06

321 — +65 — 324 — 325 — +00 — 330 — 332

EXIST 15"

MATCH LINE

℄ CONST. S.R 2

SEE SHEET 34 FOR ADDITIONAL RAMP WORK
SEE SHEET 92 FOR SIGNING QUANTITIES

REVISED 11-29-94

STA 305+00 TO STA 332+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

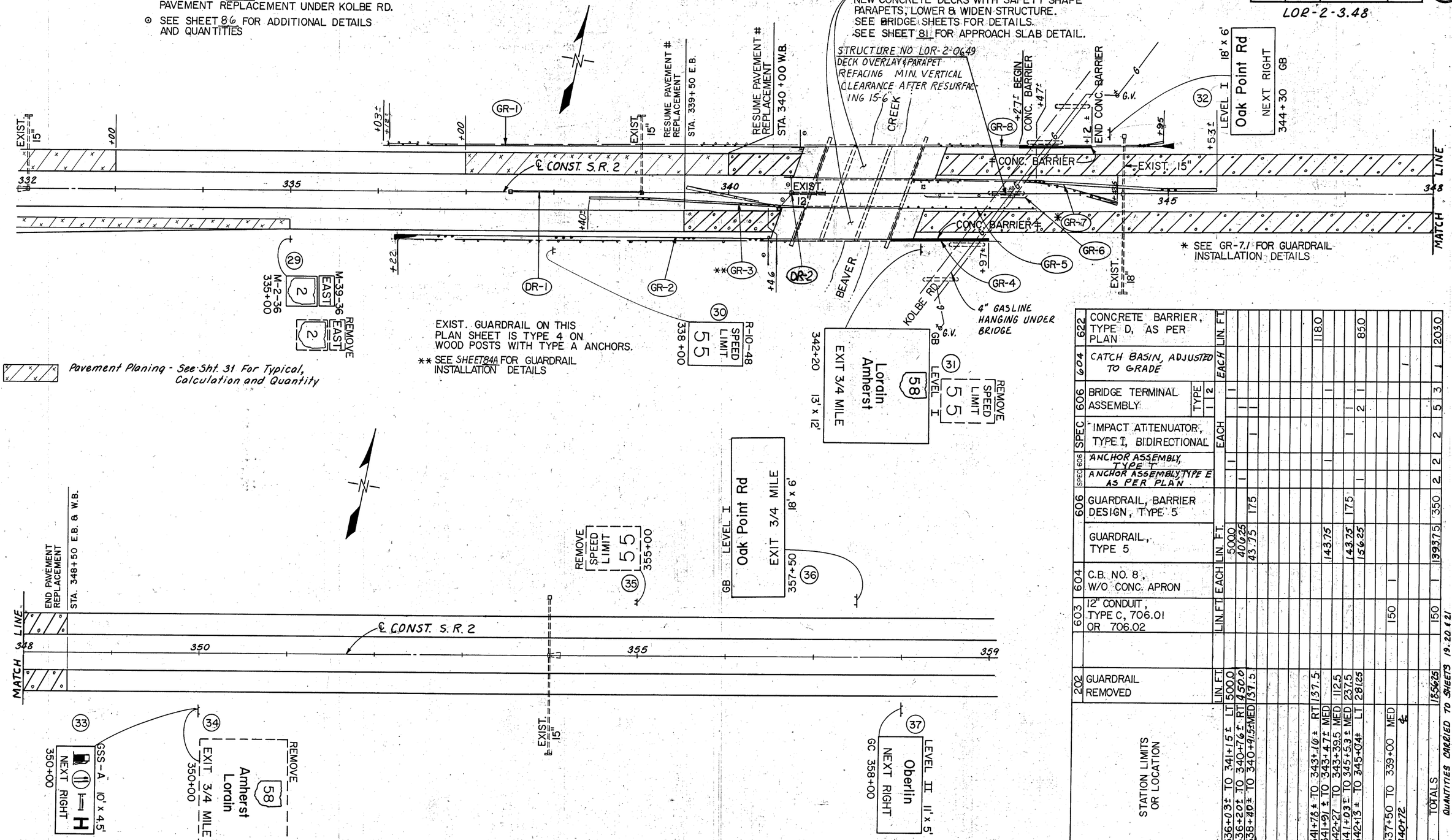
LOR-2-3.48

- ‡ CONC. BARRIER TYPE D, AS PER PLAN.
- # SEE SHEETS 51-56 FOR DETAILS OF PAVEMENT REPLACEMENT UNDER KOLBE RD.
- ⊙ SEE SHEET 86 FOR ADDITIONAL DETAILS AND QUANTITIES

▨ NEW PAVEMENT

STRUCTURE NO. LOR-2-0646 L & R
NEW CONCRETE DECKS WITH SAFETY SHAPE PARAPETS, LOWER & WIDEN STRUCTURE.
SEE BRIDGE SHEETS FOR DETAILS.
SEE SHEET 81 FOR APPROACH SLAB DETAIL.

STRUCTURE NO LOR-2-0649
DECK OVERLAY & PARAPET REFACING MIN. VERTICAL CLEARANCE AFTER RESURFACING 15-6



* SEE GR-7.1 FOR GUARDRAIL INSTALLATION DETAILS

EXIST. GUARDRAIL ON THIS PLAN SHEET IS TYPE 4 ON WOOD POSTS WITH TYPE A ANCHORS.

** SEE SHEET 84A FOR GUARDRAIL INSTALLATION DETAILS

▨ Pavement Planing - See Sht. 31 For Typical, Calculation and Quantity

622	CONCRETE BARRIER, TYPE D, AS PER PLAN	LIN. FT.									118.0				85.0							203.0
604	CATCH BASIN, ADJUSTED TO GRADE	EACH																	1			1
606	BRIDGE TERMINAL ASSEMBLY TYPE 2	EACH	1									1			1							3
	TYPE 1			1	1									1	2							5
SPEC	IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL				1									1								2
606	ANCHOR ASSEMBLY, TYPE T		1									1										2
SPEC	ANCHOR ASSEMBLY, TYPE E AS PER PLAN			1											1							2
606	GUARDRAIL, BARRIER DESIGN, TYPE 5	LIN. FT.			175									175								350
	GUARDRAIL, TYPE 5		500.0	406.25	43.75							143.75		143.75	156.25							1393.75
604	C.B. NO. 8, W/O CONC. APRON	EACH																1				1
603	12" CONDUIT, TYPE C, 706.01 OR 706.02	LIN. FT.																150				150
202	GUARDRAIL REMOVED	LIN. FT.	500.0	450.0	137.5						137.5		112.5	237.5	281.25							1856.25
	STATION LIMITS OR LOCATION		336+03± TO 341+15± LT	336+20± TO 340+76± RT	338+40± TO 340+91.5± MED						341+78± TO 343+10± RT	341+91± TO 343+47± MED	342+27 TO 343+39.5 MED	341+03± TO 345+53± MED	342+13± TO 345+04± LT			337+50 TO 339+00 MED	340+72 ℄			TOTALS
	REFERENCE MARK		GR-1	GR-2	GR-3						GR-4	GR-5	GR-6	GR-7	GR-8			DR-1	DR-2			

QUANTITIES CARRIED TO SHEETS 19.20 & 21

SEE SHEET 69 FOR ADDITIONAL QUANTITIES
SEE SHEET 92 FOR SIGNING QUANTITIES

REVISED 11-29-94

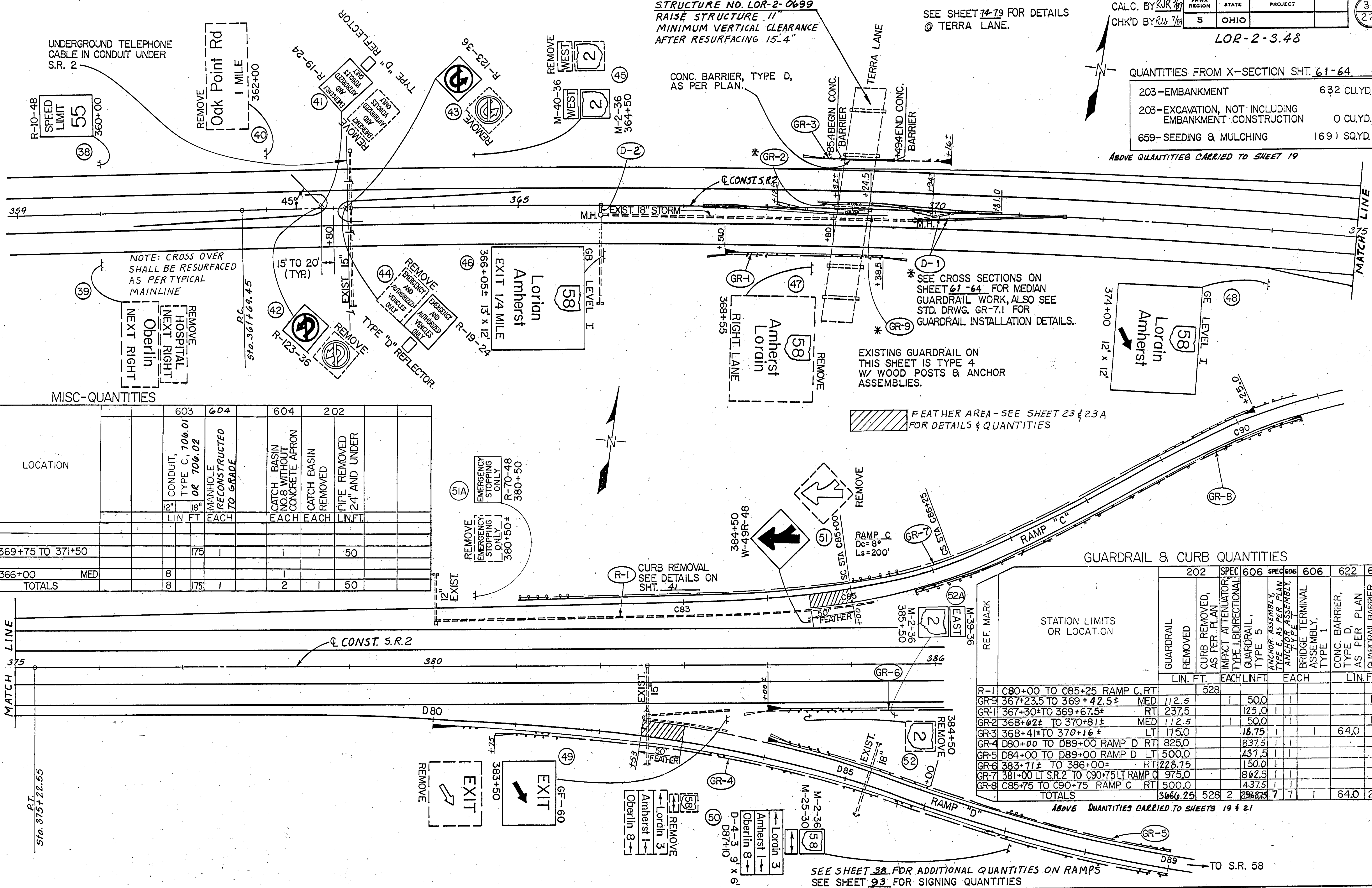
STA 332+00 TO STA 359+00

LOR-2-3.48

QUANTITIES FROM X-SECTION SHT. 61-64

203-EMBANKMENT	632 CU.YD.
203-EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	0 CU.YD.
659-SEEDING & MULCHING	1691 SQ.YD.

ABOVE QUANTITIES CARRIED TO SHEET 19


STRUCTURE NO. LOR-2-0699
RAISE STRUCTURE 11"
MINIMUM VERTICAL CLEARANCE
AFTER RESURFACING 15'-4"
SEE SHEET 74-79 FOR DETAILS @ TERRA LANE.
TERRA LANE
UNDERGROUND TELEPHONE CABLE IN CONDUIT UNDER S.R. 2
CONC. BARRIER, TYPE D, AS PER PLAN.
854 BEGIN CONC. BARRIER
494 END CONC. BARRIER
℄ CONST. S.R.2
EXIST. 18" STORM
M.H.
NOTE: CROSS OVER SHALL BE RESURFACED AS PER TYPICAL MAINLINE
P.C. Sta. 361+69.45
15' TO 20' (TYP.)
EXIST. 15"
TYPE "D" REFLECTOR
REMOVE
R-10-48
SPEED LIMIT 55
360+00
Oak Point Rd
1 MILE
362+00
R-19-24
R-123-36
M-40-36
WEST
M-2-36
364+50
EMERGENCY AND AUTHORIZED VEHICLES ONLY
366+05± 13' x 12'
EXIT 1/4 MILE
Lorian Amherst
58
GB LEVEL I
HOSPITAL NEXT RIGHT
Oberlin NEXT RIGHT
368+55
RIGHT LANE
Amherst Lorain
374+00 12' x 12'
Lorain Amherst
GE LEVEL I
MATCH LINE
*SEE CROSS SECTIONS ON SHEET 61-64 FOR MEDIAN GUARDRAIL WORK, ALSO SEE STD. DRWG. GR-7.1 FOR GUARDRAIL INSTALLATION DETAILS.
* EXISTING GUARDRAIL ON THIS SHEET IS TYPE 4 W/ WOOD POSTS & ANCHOR ASSEMBLIES.
FEATHER AREA - SEE SHEET 23 & 23A FOR DETAILS & QUANTITIES
EMERGENCY STOPPING ONLY
R-70-48
380+50
384+50
W-49R-48
RAMP C
Dc= 8°
Ls=200'
SC STA C85+00
CS STA C86+25
RAMP "C"
CURB REMOVAL SEE DETAILS ON SHT. 41
12" EXIST.
FEATHER
M-2-36
385+50
EAST
M-39-36
RAMP "D"
EXIT
383+50
GF-60
Lorain 3
Amherst 1
Oberlin 8
D-4-3 9' x 6'
D87+10
M-2-36
M-25-30
EXIST. 18"
384+50 REMOVE
P.T. Sta. 375+22.55
TO S.R. 58

MISC-QUANTITIES

REF. MARK	LOCATION			603 CONDUIT, TYPE C, 706.01 OR 706.02 12" (LIN. FT.)		603 CONDUIT, TYPE C, 706.01 OR 706.02 18" (LIN. FT.)	604 MANHOLE RECONSTRUCTED TO GRADE (EACH)		604 CATCH BASIN NO.8 WITHOUT CONCRETE APRON (EACH)	202 CATCH BASIN REMOVED (EACH)	202 PIPE REMOVED 24" AND UNDER (LIN.FT.)		
D-1	369+75 TO 371+50					175	1		1	1	50		
D-2	366+00 MED			8					1				
	TOTALS			8		175	1		2	1	50		

GUARDRAIL & CURB QUANTITIES

REF. MARK	STATION LIMITS OR LOCATION	202 GUARDRAIL REMOVED (LIN. FT.)	202 CURB REMOVED, AS PER PLAN (LIN. FT.)	SPEC IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL (EACH)	606 GUARDRAIL, TYPE 5 (LIN.FT.)	SPEC ANCHOR ASSEMBLY, TYPE E, AS PER PLAN (EACH)	606 ANCHOR ASSEMBLY, TYPE T (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 (EACH)	622 CONC. BARRIER, TYPE D, AS PER PLAN (LIN. FT.)	606 GUARDRAIL BARRIER DESIGN, TYPE 5 (LIN. FT.)
R-1	C80+00 TO C85+25 RAMP C, RT		528							
GR-9	367+23.5 TO 369+42.5± MED	112.5		1	50.0		1			125
GR-1	367+30± TO 369+67.5± RT	237.5			125.0	1	1			
GR-2	368+62± TO 370+81± MED	112.5		1	50.0		1			125
GR-3	368+41± TO 370+16± LT	175.0			18.75	1		1	64.0	
GR-4	D80+00 TO D89+00 RAMP D RT	825.0			837.5	1	1			
GR-5	D84+00 TO D89+00 RAMP D LT	500.0			437.5	1	1			
GR-6	383+71± TO 386+00± RT	228.15			150.0	1				
GR-7	381+00 LT S.R.2 TO C90+75 LT RAMP C	975.0			862.5	1	1			
GR-8	C85+75 TO C90+75 RAMP C RT	500.0			437.5	1	1			
	TOTALS	3666.25	528	2	2968.75	7	7	1	64.0	250

ABOVE QUANTITIES CARRIED TO SHEETS 19 & 21

SEE SHEET 38 FOR ADDITIONAL QUANTITIES ON RAMPS
SEE SHEET 93 FOR SIGNING QUANTITIES

Calc. by ADD
Date 4-21-94
Chk'd by TSF
Date 4-94

CALCULATIONS FOR NEW PAVED SHOULDER (QUANTITIES CARRIED TO SHT. 19 & 20)

RAMP "C":

379+00 TO 383+00	= 400' @ 8'	= 3200 S.F.
C83+00 TO C85+00	= 200' @ 7'(AVG)	= 1400 S.F.
C85+00 TO C92+99	= 799' @ 6'	= 4794 S.F.
RADIUS	= 62' @ 6'	= 372 S.F.
TAPER	= 23' @ 4.5'	= 104 S.F.
		9870 S.F.

203 - SUBGRADE COMPACTION
(9766 S.F.) / 9 = 1085 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
(9870 S.F.)(4.6"/12 AVG. THICKNESS)/27 = 140.1 C.Y.

RAMP "D":

D78+00 TO D82+53	= 453' @ 8'	= 3642 S.F.
D82+53 TO D83+53	= 100' @ 7'	= 700 S.F.
D83+53 TO D91+67	= 814' @ 6'	= 4884 S.F.
RADIUS	= 74' @ 6'	= 444 S.F.
TAPER	= 38' @ 4.5'	= 171 S.F.
		9841 S.F.

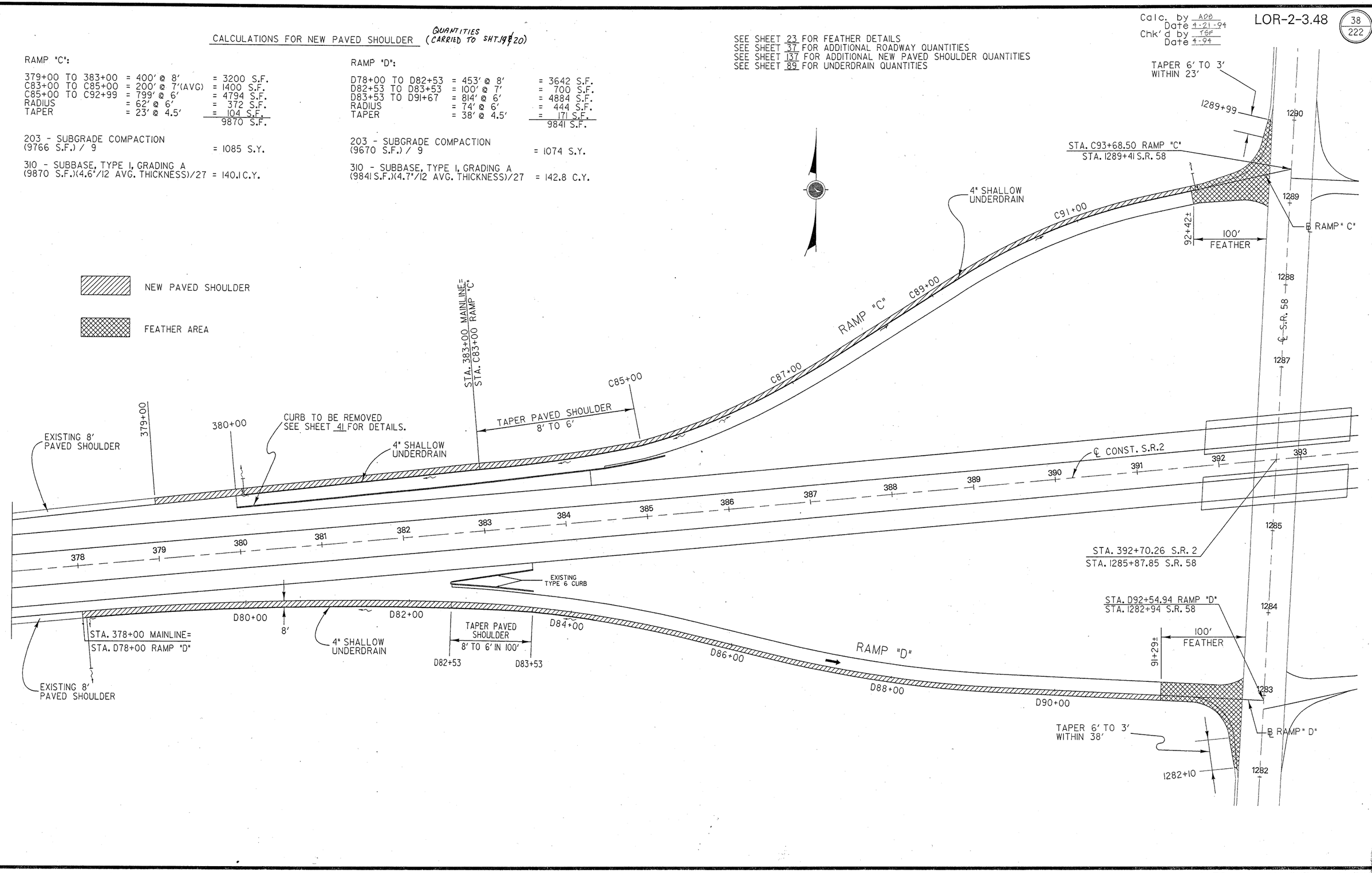
203 - SUBGRADE COMPACTION
(9670 S.F.) / 9 = 1074 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
(9841 S.F.)(4.7"/12 AVG. THICKNESS)/27 = 142.8 C.Y.

SEE SHEET 23 FOR FEATHER DETAILS
SEE SHEET 37 FOR ADDITIONAL ROADWAY QUANTITIES
SEE SHEET 137 FOR ADDITIONAL NEW PAVED SHOULDER QUANTITIES
SEE SHEET 89 FOR UNDERDRAIN QUANTITIES

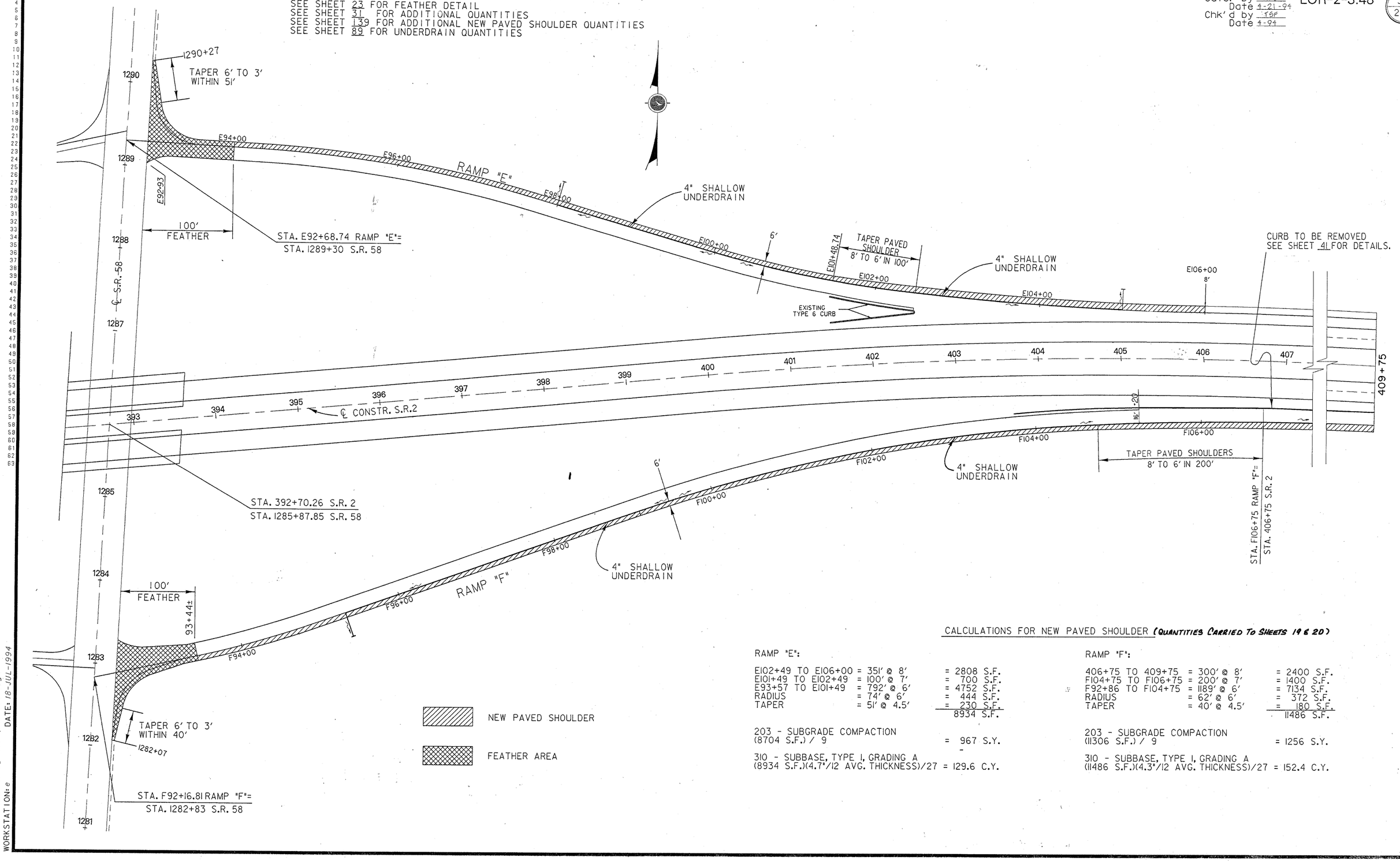
NEW PAVED SHOULDER

FEATHER AREA



DESIGN FILE: c:\dgn\temp\sr-58cd.dgn
WORKSTATION: e
DATE: 18-JUL-1994

SEE SHEET 23 FOR FEATHER DETAIL
SEE SHEET 31 FOR ADDITIONAL QUANTITIES
SEE SHEET 139 FOR ADDITIONAL NEW PAVED SHOULDER QUANTITIES
SEE SHEET 89 FOR UNDERDRAIN QUANTITIES



CALCULATIONS FOR NEW PAVED SHOULDER (QUANTITIES CARRIED TO SHEETS 19 & 20)

RAMP "E":

E102+49 TO E106+00 = 351' @ 8'	= 2808 S.F.	
E101+49 TO E102+49 = 100' @ 7'	= 700 S.F.	
E93+57 TO E101+49 = 792' @ 6'	= 4752 S.F.	
RADIUS = 74' @ 6'	= 444 S.F.	
TAPER = 51' @ 4.5'	= 230 S.F.	
	8934 S.F.	

203 - SUBGRADE COMPACTION
(8704 S.F.) / 9 = 967 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
(8934 S.F.)(4.7"/12 AVG. THICKNESS)/27 = 129.6 C.Y.

RAMP "F":

406+75 TO 409+75 = 300' @ 8'	= 2400 S.F.	
F104+75 TO F106+75 = 200' @ 7'	= 1400 S.F.	
F92+86 TO F104+75 = 1189' @ 6'	= 7134 S.F.	
RADIUS = 62' @ 6'	= 372 S.F.	
TAPER = 40' @ 4.5'	= 180 S.F.	
	11486 S.F.	

203 - SUBGRADE COMPACTION
(11306 S.F.) / 9 = 1256 S.Y.

310 - SUBBASE, TYPE 1, GRADING A
(11486 S.F.)(4.3"/12 AVG. THICKNESS)/27 = 152.4 C.Y.

DESIGN FILE: c:\dgn\temp\sr58ef.dgn
WORKSTATION: e
DATE: 18-JUL-1994

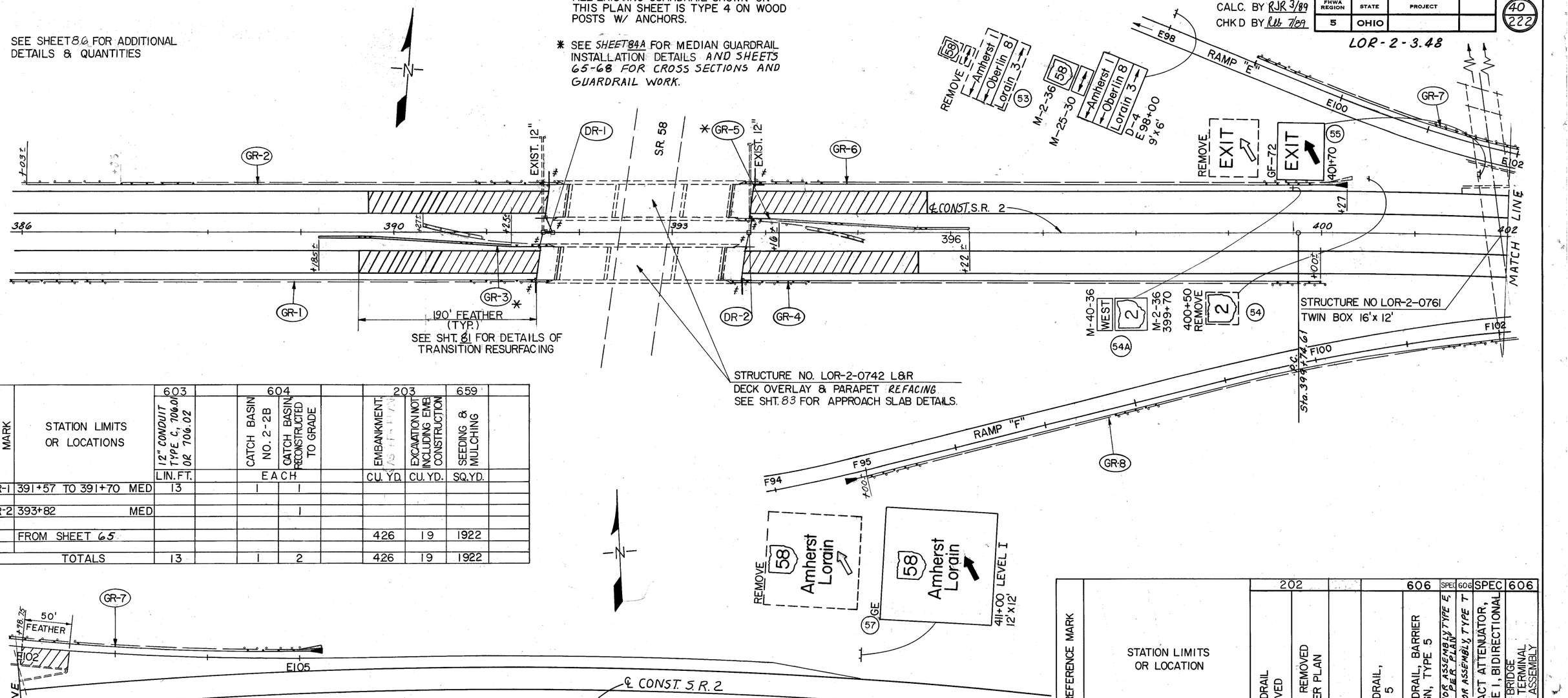
CALC. BY RJR 3/89	FHWA REGION	STATE	PROJECT		40
CHK'D BY RLB 7/89	5	OHIO			222

LOR-2-3.48

SEE SHEET 86 FOR ADDITIONAL DETAILS & QUANTITIES

ALL EXISTING GUARDRAIL SHOWN ON THIS PLAN SHEET IS TYPE 4 ON WOOD POSTS W/ ANCHORS.

* SEE SHEET 84A FOR MEDIAN GUARDRAIL INSTALLATION DETAILS AND SHEETS 65-68 FOR CROSS SECTIONS AND GUARDRAIL WORK.



REFERENCE MARK	STATION LIMITS OR LOCATIONS	603 12" CONDUIT TYPE C, 706.01 & 706.02	604 CATCH BASIN NO. 2-2B	604 CATCH BASIN RECONSTRUCTED TO GRADE	203 EMBANKMENT	203 EXCAVATION NOT INCLUDING EMB. CONSTRUCTION	659 SEEDING & MULCHING
		LIN. FT.	EACH		CU. YD.	CU. YD.	SQ. YD.
DR-1	391+57 TO 391+70 MED	13	1	1			
DR-2	393+82 MED			1			
	FROM SHEET 65				426	19	1922
	TOTALS	13	1	2	426	19	1922

REFERENCE MARK	STATION LIMITS OR LOCATION	202 GUARDRAIL REMOVED	202 CURB REMOVED AS PER PLAN		606 GUARDRAIL, TYPE 5	606 GUARDRAIL, BARRIER DESIGN, TYPE 5	SPEC 606 ANCHOR ASSEMBLY TYPE E AS PER PLAN	SPEC 606 ANCHOR ASSEMBLY, TYPE T	SPEC IMPACT ATTENUATOR, TYPE I, BIDIRECTIONAL	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2
		LIN. FT.			LIN. FT.		EACH				
R-1	F103+25 TO F109+75 RAMP F, LT		654								
GR-1	386+00±TO 391+65± RT	565.0			562.5					1	
GR-2	385+99±TO 391+80± LT	581.25			562.5			1			1
GR-3	389+20± TO 391+70.5± MED	143.75			43.75	175			1	1	
GR-4	393+62± TO 400+00± RT	643.75			625.00			1			1
GR-5	393+72±TO 396+22± MED	143.75			43.75	175			1	1	
GR-6	393+77± TO 400+33± LT	656.25			600.00		1			1	
GR-7	E99+00 TO E105+25 RAMP E, LT	625.0			562.50		1	1			
GR-8	F94+75 TO F105+00 RAMP F, RT	1000.0			962.50		1	1			
	TOTALS	4358.75	654	10	3962.5	350	3	4	2	4	2

SEE SHEET 39 FOR ADDITONAL QUANTITIES ON RAMPS
SEE SHEET 93 FOR SIGNING SUMMARY

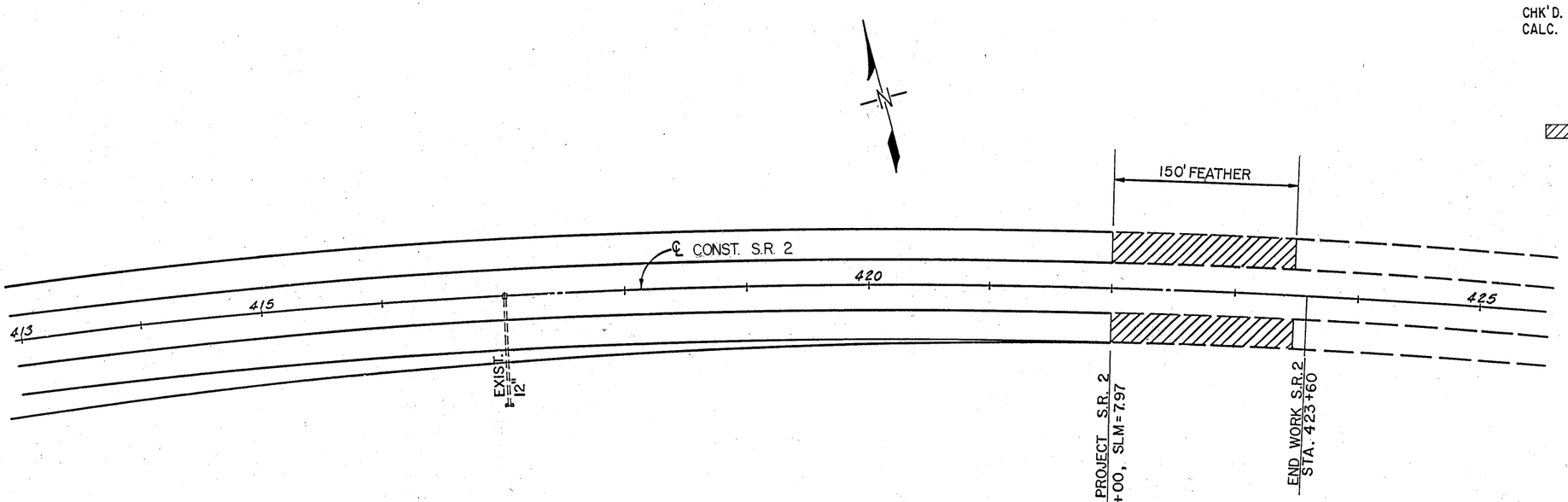
STA 386+00 TO STA 413+00

CHK'D. BY: AOB 6/93
CALC. BY: MGA 3/93

FHWA REGION	STATE	PROJECT	
5	OHIO		

41
222

LOR-2-3.48



ITEM 802 - BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802.

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE, AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

ITEM	UNIT	DESCRIPTION
802	EACH	BARRIER REFLECTOR, TYPE A
802	EACH	BARRIER REFLECTOR, TYPE B

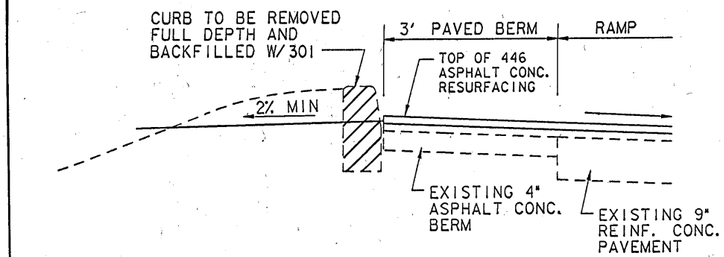
* SPACING SHALL BE 50' C/C ALONG CURVES OF 5 DEGREES OR GREATER.

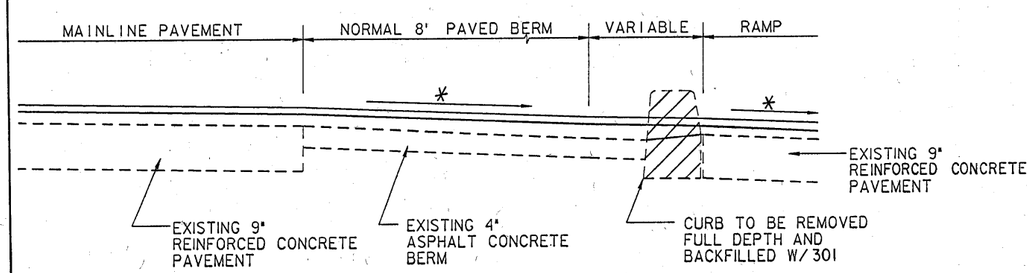
SHT. REF.	STATIONING FROM	STATIONING TO	SIDE	LOCATION	TYPE A W	TYPE A Y	TYPE B W	TYPE B Y
25-26	232+88	253+98	RT	SR 2	19		3	
25-26	234+72	254+40	LT		17		3	
25	239+30	245+00±	EB,MED			3		4
25	241+79 ±	247+53	WB,MED			3		4
33	307+73.5	310+05	EB,MED			3		
33	309+07	311+38.5	WB,MED			3		
29	336+73	342+96	RT		4		3	
29	338+41	343+50.5	EB,MED			5		1
29	340+81.9	345+55.5	WB,MED			4		1
29	336+05.5	345+07	LT		8		2	
30	367+51	369+38.5	RT		3			
30	367+23.5	369+42.5	EB,MED			3		
30	368+62	370+81	WB,MED			3		
30	368+85.4	369+66	LT	SR 2	1		1	
30	381+00	C90+25	LT	SR2/RAMP C	13*			
30	D84+00	D86+00	LT	RAMP D		3		
30-31	384+02.5	399+99.5	RT	SR 2	15		2	
31	387+05	400+27	LT	SR 2	12		2	
31	389+20	393+69±	EB,MED	SR 2		3		2
31	391+72±	396+22	WB,MED	SR 2		3		2
31	E99+00	E105+25	LT	RAMP E	7			
31	F94+75	F105+00	RT	RAMP F	11			
41	43+77±	52+12	LT	KOLBE RD	7		3	
41	47+76	52+23	RT	KOLBE RD	3		3	
45-46	48+02	53+25.5	RT.	TERRA LANE	4		3	
45-46	47+97	53+20.5	LT.	TERRA LANE	4		3	
TOTALS (Carried to Sht. 21)					128	36	28	14
					164		42	

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 BELOW 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 BELOW. THE COST OF THE 301 ASPHALT CONCRETE BACKFILL 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 PAVEMENT AND/OR PAVED BERM.





*EXIST. PAVEMENT SLOPE

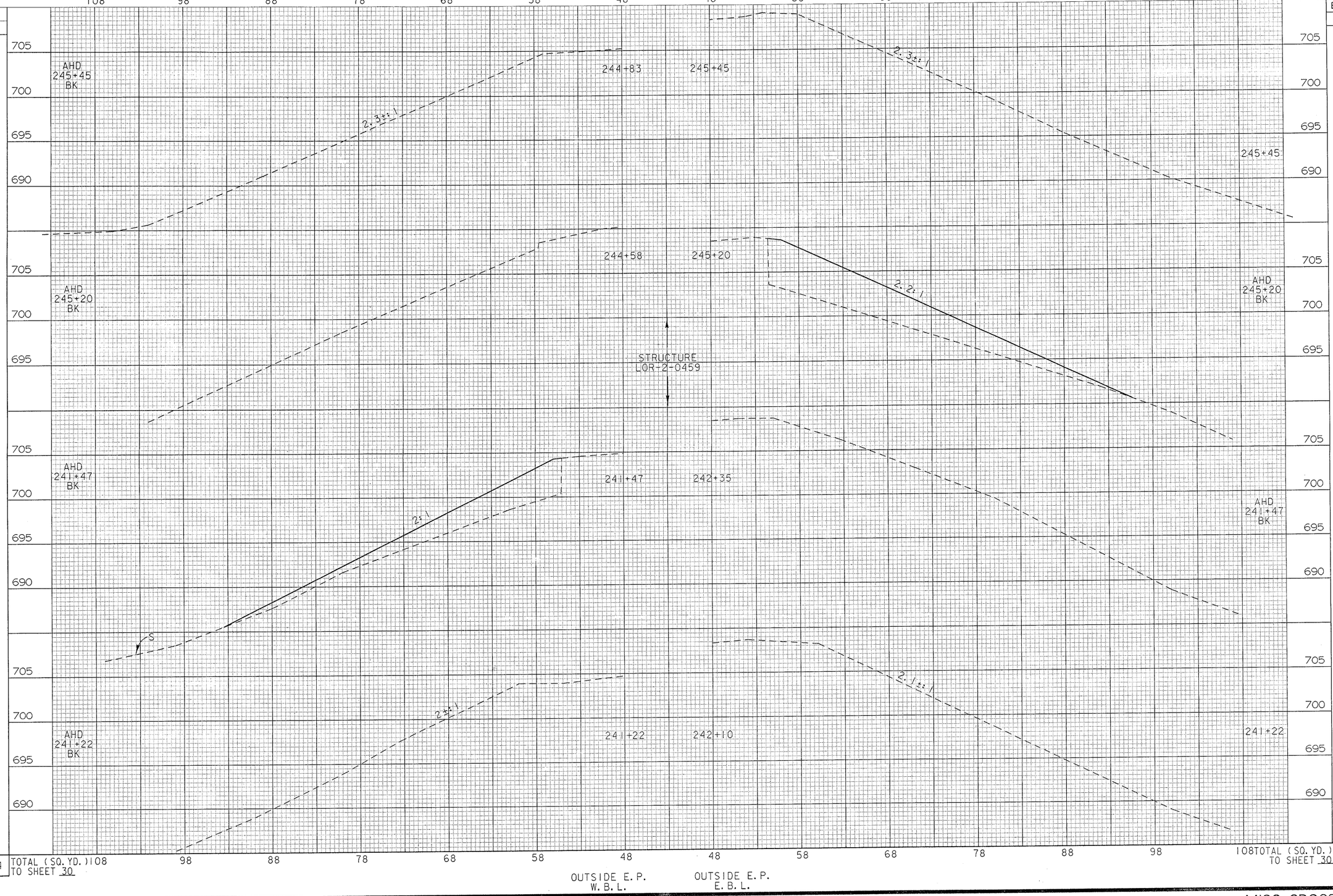
CURB REMOVAL DETAILS

STA 413+00 TO STA 425+00

Calc. by ADB Date 4/94
Chk'd by JJB Date 8/94

LOR-2-3.48

SEEDING END WIDTH	SEEDING SQ. YDS.
0	
64	
	178
64	
0	
0	
56	
	156
56	
0	
	334

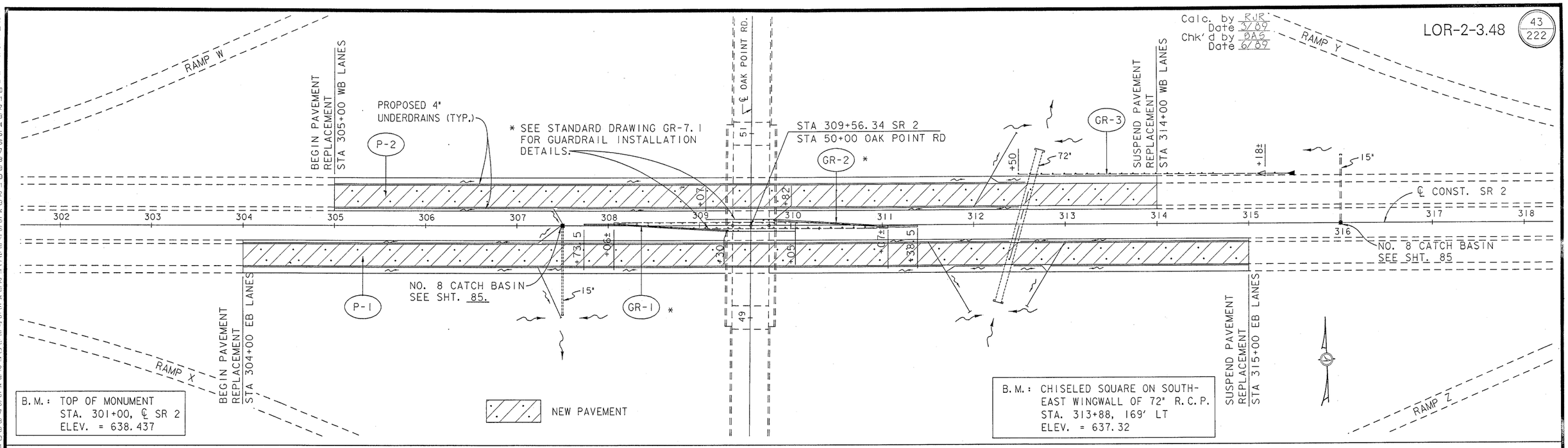


END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		0	56
0	120		
0	0		
0	0		
0	59		
		0	27
0	0		
		0	83

DESIGN FILE: c:\dgn\temp\12x5\s21.dgn
WORKSTATION: e DATE: 21-JUL-1994

MISC. CROSS SECTIONS

Calc. by RJR
Date 3/89
Chk'd by DAS
Date 6/89

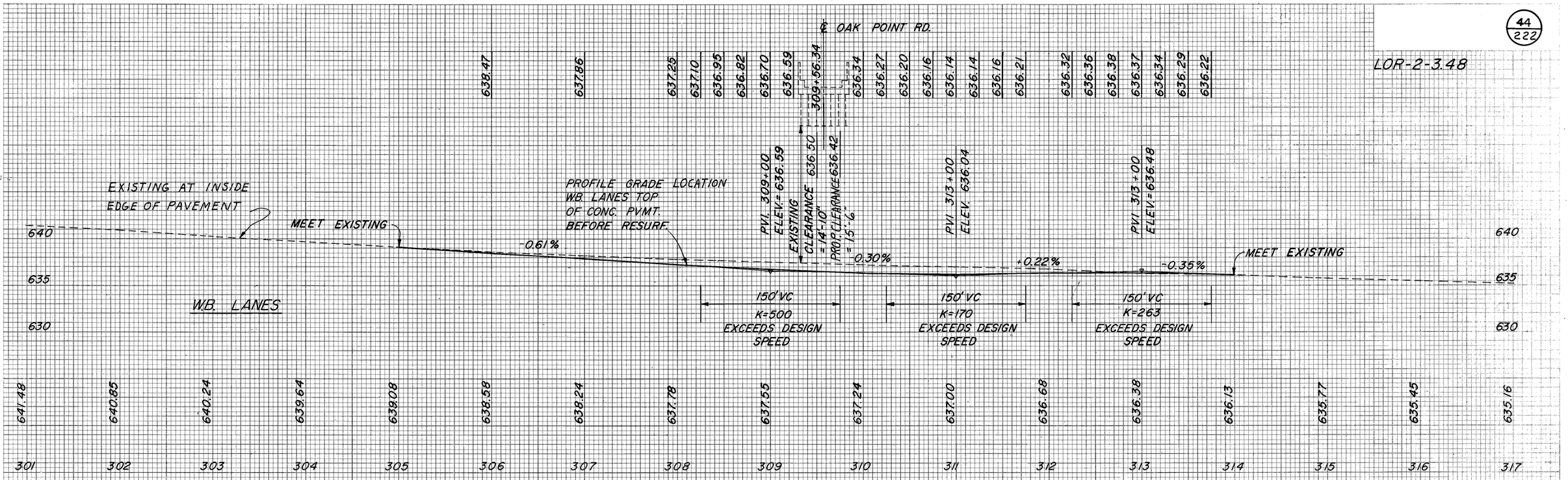


REFERENCE MARK	STATION LIMITS OR LOCATION		202 PAVEMENT REMOVED SQ.YD.	202 GUARDRAIL REMOVED LIN.FT.	202	203 SUBGRADE COMPACTION SQ.YD.	203 EMBANKMENT CU.YD.	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION CU.YD.	301 BITUMINOUS AGGREGATE BASE, AC-20 CU.YD.	304 AGGREGATE BASE (6" THICK) CU.YD.	305 9" CONCRETE BASE, AS PER PLAN SQ.YD.	606 ANCHOR ASSEMBLY, TYPE E, AS PER PLAN EACH	310 SUBBASE, TYPE 1, GRADING A CU.YD.	408 BITUMINOUS PRIME COAT APPLIED @ 0.4 GAL/SQ.YD. GAL	606 GUARDRAIL, TYPE 5 LIN.FT.	606 GUARDRAIL, TYPE 5 BARRIER DESIGN LIN.FT.	659 SEEDING AND MULCHING SQ.YD.	606 ANCHOR ASSEMBLY, TYPE T EACH	SPEC. IMPACT ATTENUATOR, TYPE I BIDIRECTIONAL EACH
GR-1	307+73.5 TO 310+05	MED.		550.0											62.5	125		1	1
GR-2	309+07 TO 311+38.5	MED.													62.5	125		1	1
GR-3	312+49 TO 315+50	LT.		268.75								1			237.5			1	
P-1	304+00 TO 315+00	E.B.	2933			4400			203.7	163	2933		645	587					
P-2	305+00 TO 314+00	W.B.	2400			3600			166.7	133.3	2400		528	480					
	FROM CROSS-SECTION SHEET 45						50	189									1033		
	FROM CROSS-SECTION SHEET 46						17	811									1839		
	FROM CROSS-SECTION SHEET 47						1	948									1615		
	FROM CROSS-SECTION SHEET 48						13	1077									2772		
	FROM CROSS-SECTION SHEET 49						2	63									350		
	TOTALS (Carried to Shts. 19 & 20)		5333	818.75		8000	83	3088	370.4	296.3	5333	1	1173	1067	362.5	250	7609	3	2

NOTE:
1) SEE PLAN SHEET 35 FOR ADDITIONAL DETAILS AND SIGNING.
2) SEE SHEETS 45 TO 49 FOR CROSS-SECTIONS.
3) SEE SHEET 44 FOR PROFILE
4) SEE SHEET 24 FOR PAVEMENT CALCULATIONS
5) SEE SHEET 89 FOR UNDERDRAIN QUANTITIES

DESIGN FILE: c:\dgn\lor2\oakpnt1.dgn
WORKSTATION: e
DATE: 18-AUG-1994

LOR-2-3.48



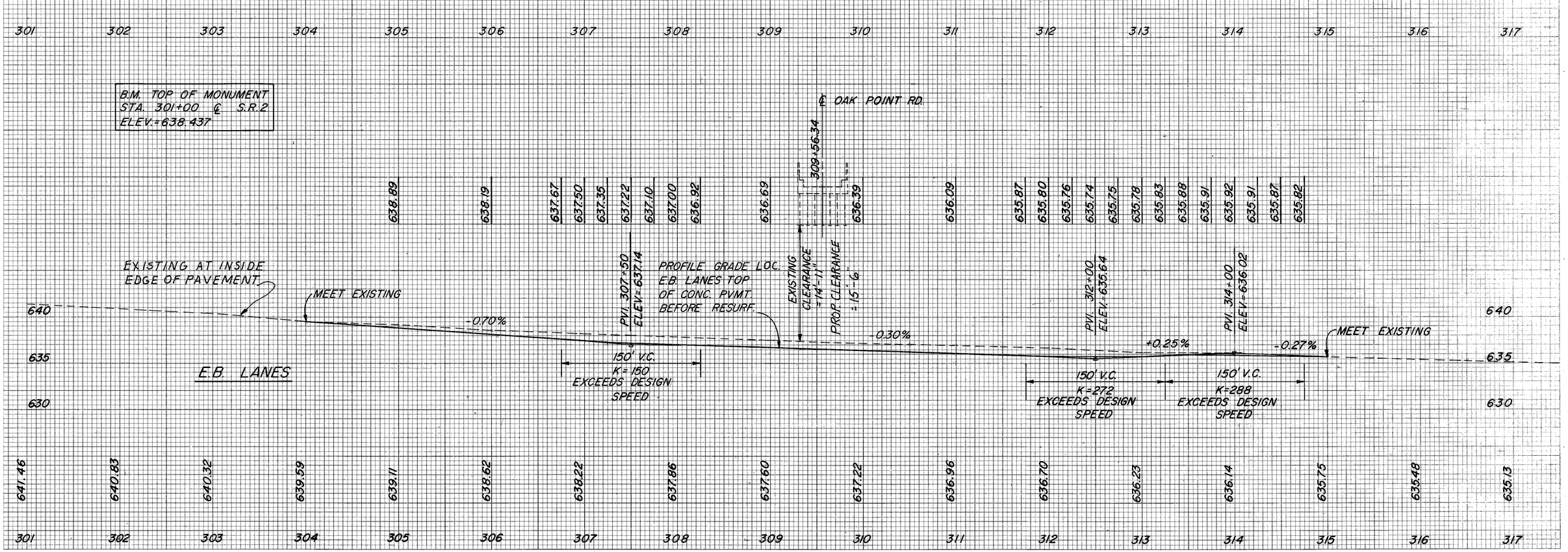


PLATE 3 - CROSS SECTION

S.R. 2 PROFILE UNDER OAK POINT RD.

Calc. by KJK Date 3/89
Chk'd by DAS Date 7/89

LOR-2-3.48

SEEDING END WIDTH	SEEDING SQ. YDS.
53	672
*33	361
32	*0
0	1033

70 60 50 40 30 20 10 ℄ 10 20 30 40

640
635
630
645

STA 306+00
636.1

+00 WB LT
BEGIN 4" UNDERDRAIN
℄ 635.1

+00 WB RT
BEGIN 4" UNDERDRAIN
℄ 635.2

STA 305+00
636.5
636.2
(BEGIN NEW PAVEMENT WB LANES)

+00 EB LT
BEGIN 4" UNDERDRAIN
℄ 635.5

+00 EB RT
BEGIN 4" UNDERDRAIN
℄ 635.5

STA 304+00
636.8
(BEGIN NEW PAVEMENT EB LANES)

EXISTING 6" UNDERDRAIN

EXISTING 6" UNDERDRAIN

STA 303+00
637.5

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
52	3		
		137	31
22	14		
10	*7		
		52	19
20	3		
0	*0		

* ADDITIONAL EMBANKMENT & SEEDING INCLUDED IN RESURFACING QUANTITIES SHEET 22.

TOTAL (SQ.YD.) TO SHEET 43

TOTAL (CU. YD.) TO SHEET 43 | 189 | 50

DESIGN FILE: c:\brett\dgn\lor_dir\002\i2xsec04
WORKSTATION: 003_104 DATE: 29-JUN-1994

Cross-Sections STA. 303+00 to STA. 306+00

Calc. by RJR
Date 3/89
Chk'd by DAS
Date 7/89

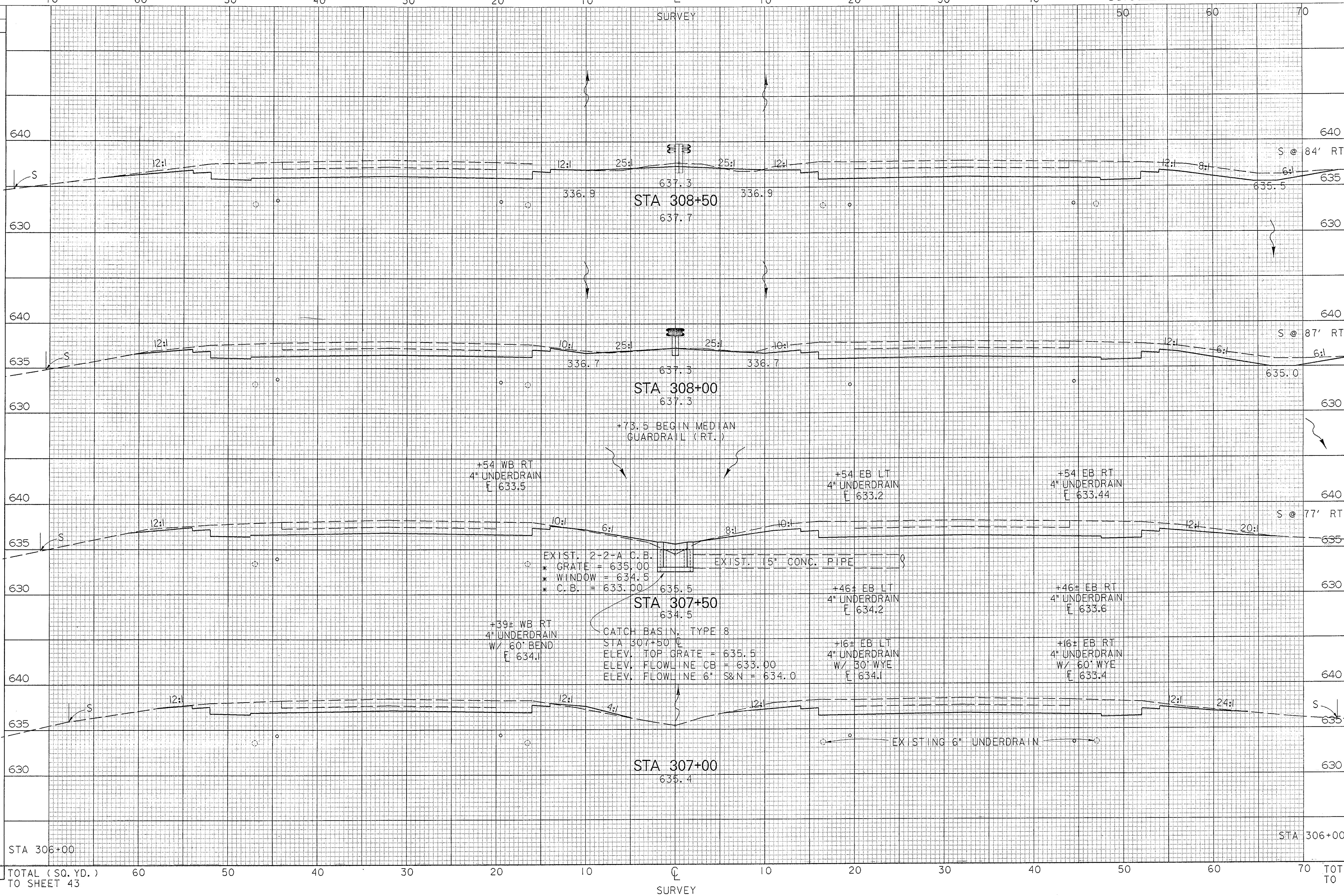
LOR-2-3.48

46
222

SEEDING

END WIDTH	SQ. YDS.
78	
	433
78	
	406
68	
	361
62	
	639
55	
0	1839

TOTAL (SQ. YD.) TO SHEET 43

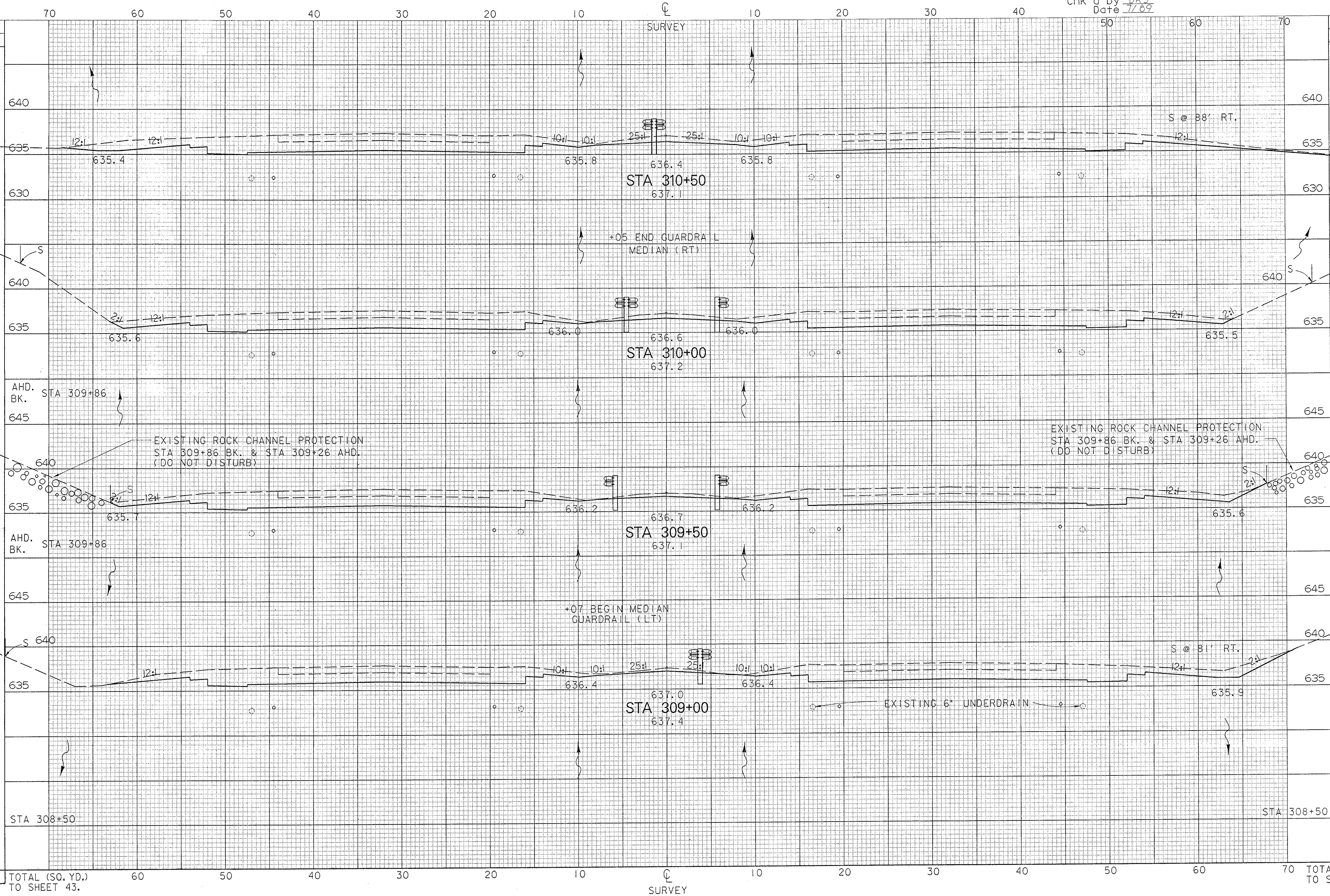


END AREA / VOLUME

STA	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
308+50	119	1		
			211	1
308+00	109	0		
			189	2
307+50	101	2		
			167	5
307+00	80	2		
			244	9
306+00	52	3		
TOTAL (CU. YD.) TO SHEET 43			811	17

DESIGN FILE: c:\brett\dgn\lorain\1002\12xsec05
WORKSTATION: D03_104 DATE: 29-JUN-1994

S.R. 2 Cross-Sections STA. 307+00 to STA. 308+50


℄ SURVEY
70 60 50 40 30 20 10 10 20 30 40 50 60 70
S @ 88' RT.
12:1 12:1 10:1 10:1 25:1 25:1 10:1 10:1 12:1
640 635 630
635.4 635.8 636.4 635.8 634.1
STA 310+50
637.1
+05 END GUARDRAIL MEDIAN (RT)
2:1 12:1 12:1 2:1
635.6 636.0 636.6 636.0 635.5
STA 310+00
637.2
AHD. BK. STA 309+86
645
EXISTING ROCK CHANNEL PROTECTION
STA 309+86 BK. & STA 309+26 AHD.
(DO NOT DISTURB)
635.7 636.2 636.7 636.2 635.6
STA 309+50
637.1
AHD. BK. STA 309+86
+07 BEGIN MEDIAN GUARDRAIL (LT)
S @ 81' RT.
636.4 637.0 636.4 635.9
STA 309+00
637.4
EXISTING 6" UNDERDRAIN
STA 308+50

SEEDING

END WIDTH	SQ. YDS.
87	
	453
76	
	124
83 / 63 (AHD. / BK.)	
	228
51	
	152
63 / 83 (AHD. / BK.)	
	230
76	
	428
78	
0	1615

TOTAL (SQ. YD.) TO SHEET 43.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
139	0		
		249	0
130	0		
		237	0
126	0		
		234	0
127	0		
		228	1
119	1		
TOTAL (CU. YD.) TO SHEET 43		948	1

DESIGN FILE: c:\brett\dgn\lorain\002\l2xsec06 DATE: 29-JUN-1994
WORKSTATION: D03_I04

Calc. by RJR
Date 3/89
Chk'd by ØAS
Date 7/89

LOR-2-3.48

48
222

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 SURVEY				
		*ADDITIONAL QUANTITIES INCLUDED ON RESURFACING QUANTITIES SHEET 22				
		640				
30		AHD 635	20	1		
56		BK 630	33	1		
	628	STA 314+00 633.9 (SUSPEND NEW PAVEMENT WB LANES)				
		640				
		635			150	7
57		630	48	3		
		STA 313+00 634.2				
	606	+55± WB LT END 4" UNDERDRAIN ℄ 631.6				
		+50± WB RT END 4" UNDERDRAIN ℄ 632.1				
		+00 EB LT 4" UNDERDRAIN W/ 60° WYE ℄ 631.4				
		+85± EB RT 4" UNDERDRAIN W/ 60° BEND ℄ 631.3				
		+52 EB LT 4" UNDERDRAIN ℄ 631.5				
		+40± EB RT 4" UNDERDRAIN ℄ 631.4				
		+14± WB LT 4" UNDERDRAIN W/ 60° WYE ℄ 631.5				
		+00 WB RT 4" UNDERDRAIN W/ 60° WYE ℄ 632.0				
		+40± EB LT 4" UNDERDRAIN ℄ 632.3				
		+30± EB RT 4" UNDERDRAIN ℄ 632.3				
		640			274	6
		635				
52		634.5				
		630	100	0		
		STA 312+00 634.9				
	672	+50 EB LT 4" UNDERDRAIN W/ 60° WYE ℄ 632.0				
		+65± EB RT 4" UNDERDRAIN W/ 60° WYE ℄ 631.9				
		+38.5 END MEDIAN GUARDRAIL (LT.)				
		640			411	0
		635				
69		635.5 636.2 635.5				
		STA 311+00 636.6				
		EXISTING 6" UNDERDRAIN	122	0		
		630				
	866				242	0
87		STA 310+50	STA 310+50	139	0	
0	2772	TOTAL (SQ. YD.) TO SHEET 43	70 TOTAL (CU. YD.) TO SHEET 43		1077	13

DESIGN FILE: c:\brett\dgn\lorain\1002\12xsec07
WORKSTATION: D03_104 DATE: 01-JUL-1994

S. R. 2 Cross-Sections STA. 311+00 to STA. 314+00✓

Calc. by RJR
Date 3/89
Chk'd by BAS
Date 7/89

LOR-2-3.48

49
222

SEEDING		
	END WIDTH	SQ. YDS.
AHD	0	
BK	33	
		350
STA 314+00	30	
TOTAL (SQ. YD.) TO SHEET 43		350

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
AHD	0	*0		
BK	14	0		
			63	2
STA 314+00	20	1		
TOTALS (CU. YD.) TO SHEET 43			63	2

DESIGN FILE: c:\brett\dgn\lorain\002\l2xsec8.
WORKSTATION: D03_104 DATE: 29-JUN-1994

S.R. 2 Cross-Sections STA. 315+00 to STA. 316+00 ✓

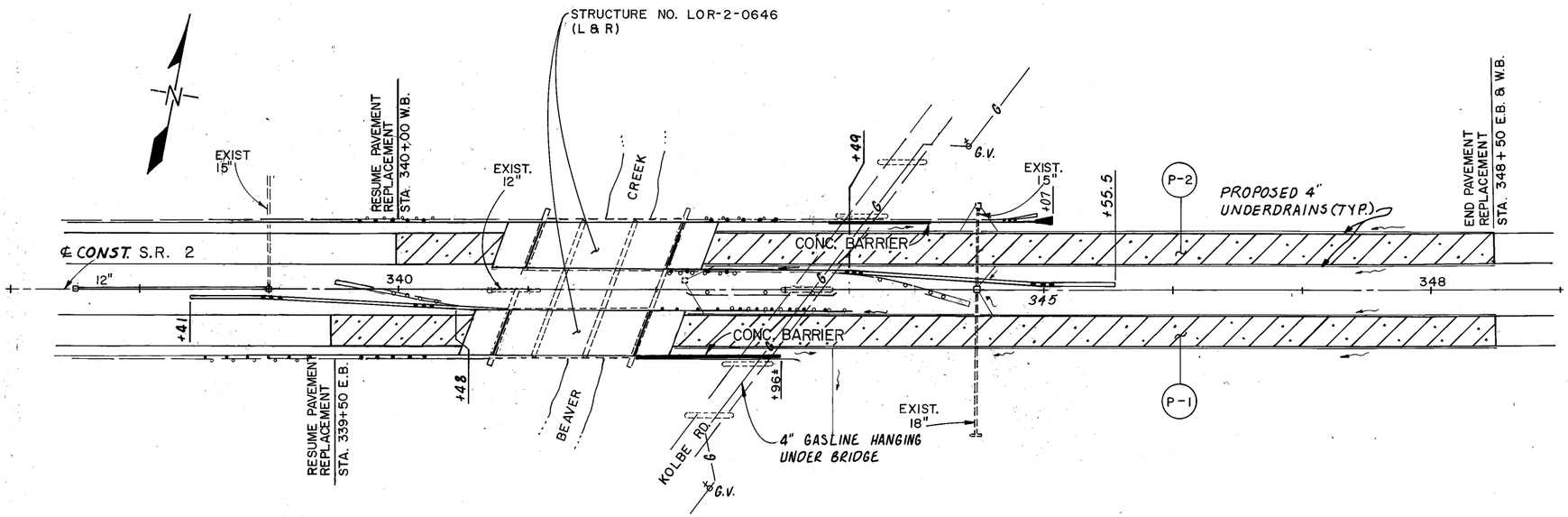
B.M. Top of Monument
Sta. 340+50 ℄ S.R. 2
Elev. 617.96

Calc. by AMB
Date 1/92
Chk'd by MGA
Date 1/93

FHWA REGION	STATE	PROJECT	
5	OHIO		

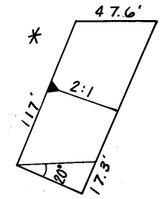
50
222

LOR-2-3.48



NEW PAVEMENT

REFERENCE MARK	STATION LIMITS OR LOCATION	202 PAVEMENT REMOVED SQ. YD.		203 EMBANKMENT, CU. YD.	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION CU. YD.	203 SUBGRADE COMPACTION SQ. YD.	301 BITUMINOUS AGGREGATE BASE, AC-20 (3" THICK) CU.	304 AGGREGATE BASE (6" THICK) CU. YD.	305 9" CONCRETE BASE, AS PER PLAN SQ. YD.	601 ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER CU.	310 SUBBASE, TYPE 1, GRADING A	408 BITUMINOUS PRIME COAT APPLIED @ 0.46 GAL/SQ. YD. GAL.	659 SEEDING AND MULCHING SQ. YD.
P-1	339+50 TO 348+50 EBL	1985				2978	83	165	1985		436	397	
P-2	340+00 TO 348+50 WBL	1852				2778	77	154	1852		407	370	
	FROM SHEET 52			291	4758								7667
	*									554			
	TOTALS (Carried to Shts. 19 & 20)	3837		291	4758	5756	160	319	3837	554	843	767	7667



A = (47.6')(117') + 1/2 (17.3')(47.6') = 5981 Sq. Ft.
V = (5981 Sq. Ft.) (30"÷12)/27 = 554 Cu. Yds.
See Sheet 177 for R.C.P. location.

NOTE: 1) SEE PLAN SHEET 36 FOR ADDITIONAL DETAILS AND SIGNING.
2) SEE SHEETS 52 TO 56 FOR CROSS-SECTIONS.
3) SEE SHEET 51 FOR PROFILE.
4) SEE SHEET 24 FOR PAVEMENT CALCULATIONS.
5) SEE SHEET 89 FOR UNDERDRAIN QUANTITIES.

S.R. 2 PAVEMENT REPLACEMENT UNDER KOLBE ROAD

SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR-2-3.48

51
222

℄ KOLBE ROAD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

B.M. TOP OF MONUMENT
STA. 340+50 ℄ SR.2
ELEV. 617.96

SR2 PROFILE UNDER KOLBE RD.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

52
222

LOR.—2—3.48

Calc. by ADB
Date 5/93
Chkd by MGA
Date 6/93

SEEDING				END AREA		VOLUME	
END WIDTH	SQ. YDS.			CUT	FILL	CUT	FILL
31		620					
		615					
			618.5 338+50				
	172		617.1				
			+39± BEGIN MEDIAN GUARDRAIL (RT.)				
31		620					
		615					
			618.7 338+00				
			617.2				
	172						
31		620					
		615					
	43		PROP. NO. 8 C.B. ELEV. TOP GRATE = 617.5 Ø 12" PIPE = 614.75 (SEE SHEET 36 FOR QUANTITIES).				
			337+50 617.4				
0		337+25	337+25 RESUME EARTH WORK				

		620		620	0	28	
		615		615			
						0	50
		620		620	0	26	
		615		615			
						0	24
		620		620	0	0	
		615		615			

7667	TOTAL TO SHT. 50 (SQ. YD.)	TOTALS TO SHT. 50 (CU. YD)	4758 291

Median Cross-Section STA. 337+50 to STA. 338+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR.-2-3.48

53
222

Calc. by GFS Date 3/92
Chk'd by AHB Date 3/92

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		AHD. 0	0		
		X COS 20°			
		BK 108	34		
		620			
		615			
		610			
	791	620		329	72
		615			
		610			
	72	620 84	8		
	308	615		107	15
		610			
	39	AHD 32	8		
	0	BK 0	0	0	31
	86	620			
	31	620 0	28		
		615		0	56
	172	610			
	31	338+50 0	28		

AHD
X COS 20°
BK
SEEDING @ 87' LT.
1.5:1 (Norm)
12:1 (Norm)
4:1 (Norm)
4:1 (Norm)
12:1 (Norm)
2:1 (Norm)
SEEDING @ 83' RT.
617.0
340+92.5
20° SKEW
+ 90± END MEDIAN
GUARDRAIL (RT.)
12:1
4:1
5:1
12:1
EXIST. 2-2B C.B. (TO BE ADJUSTED TO GRADE)
EXIST. ℄ GRATE = 616.58
PROP ℄ GRATE = 617.50
℄ C.B = 613.89
340+72
8:1
6:1
10:1
618.0
SEEDING @ 79' RT.
340+00
RESUME NEW PAVEMENT
W.B. LANES
EXIST. 6" UNDERDRAIN
EXIST. 6" UNDERDRAIN
339+50
RESUME NEW PAVEMENT
E.B. LANES
8:1
10:1
PROP. NO. 8 C.B.
ELEV. TOP GRATE = 618.3
ELEV. ℄ C.B. = 613.7
℄ 12" PIPE = 614.0
(SEE SHEET 85 FOR QUANTITIES)
EXIST. 2-2A C.B.
℄ GRATE = 616.7
℄ WINDOW = 616.20
℄ C.B. = 613.70
339+00

Cross-Section STA. 339+00 to STA. 340+92.5

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

54
222

LOR.-2-3.48

Calc. by GJS Date 3/92
Chk'd by AJB Date 3/92

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS	CUT	FILL	CUT	FILL
87	956	241	0	709	39
85		AHD 142	21		
0		BK 0	0		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

+47± END MEDIAN GUARDRAIL (RT.)

+25 E.B. RT.
4"X4"X6" TEE
℄ = 614.8

SEEDING @ 83.5' LT.

SEEDING @ 82.5' RT.

625 620 615

2:1 8:1 12:1 4:1 12:1 6:1 2:1

617.5 618.0 617.3

EXIST. 6" UNDERDRAIN

EXIST. 6" UNDERDRAIN

343+00

+44± W.B. RT.
4" UNDERDRAIN
W/30° WYE
℄ = 615.47

+36± E.B. LT.
4" UNDERDRAIN
W/60° WYE
℄ = 615.48

12:1

EXIST. 2-2B C.B. (TO BE ADJUSTED TO GRADE)
EX.-℄ GRATE=617.76
℄ 6" S IN = 615.4
℄ C.B. = 615.08

342+21

+42 W.B. LT.
BEGIN 4" UNDERDRAIN
℄ 616.27

+20± E.B. LT.
BEGIN 4" UNDERDRAIN
℄ = 615.6

+10 E.B. RT.
BEGIN 4" UNDERDRAIN
℄ = 615.1

SEEDING @ 87' LT.

SEEDING @ 86' RT.

2:1 (Norm) 4:1 (Norm) 4:1 (Norm) 7:1 (Norm) 12:1 (Norm) 12:1 (Norm) 6:1 (Norm) 4:1 (Norm) 4:1 (Norm) 1.5:1 (Norm)

AHD X COS 20° 617.0 BK

618.5 618.2

617.0 AHD X COS 20° BK

342+00
20° SKEW, L.F.

+03 BEGIN MEDIAN GUARDRAIL (L.T.)

+91± BEGIN MEDIAN GUARDRAIL (RT.)

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

Cross-Section STA. 342+00 to STA. 343+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

55
222

LOR.-2-3.48

Calc. by GS Date 3/92
Chk'd by APB Date 3/92

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
88	1000	190	0	743	0
92	516	211	0	415	0
92	501	233	0	435	0
90	983	241	0	893	0
87		241	0		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

625 / 620 / 615

SEEDING @ 82' LT.
2:1 4:1
618.5
EXIST. 6" UNDERDRAIN
10:1 10:1
619.0
346+00
+53± END MEDIAN GUARDRAIL (LT.)
SEEDING @ 85' RT.
12:1 24:1

SEEDING @ 85.5' LT.
2:1 5:1
618.0
10:1 10:1
618.5
345+00
SEEDING @ 85' RT.
12:1 40:1

+62 W.B. LT.
4" UNDERDRAIN
W/60° WYE
℄=615.78

+61 E.B. LT.
4" UNDERDRAIN
W/60° WYE
℄=615.4

+61± E.B. LT.
4" UNDERDRAIN
W/60° WYE
℄=615.4

+52± E.B. LT.
4" UNDERDRAIN
℄=615.8

+52± E.B. LT.
4" UNDERDRAIN
℄=615.5

+52± E.B. LT.
4" UNDERDRAIN
℄=615.5

SEEDING @ 89.5' LT.
2:1 5:1
SEEDING @ 87' RT.
12:1 24:1

EX. 2-2A C.B. 66' LT
℄ GRATE=618.69
℄ WINDOW=618.19
℄ C.B.=614.67

PROP. NO. 5 C.B. 66' LT
℄ GRATE=617.5
℄ C.B.=614.7
℄ 4" E ℄ W=615.7

EXIST. 15" PIPE

PROP. NO. 8
℄ GRATE=618.0
℄ C.B.=614.3
℄ G S ℄ N=615.3

344+49.50

EX. 2-2A C.B.
℄ GRATE=617.97
℄ WINDOW=617.47
℄ C.B.=614.03

EXIST. 18" PIPE

+47 W.B. LT.
4" UNDERDRAIN
℄=615.8

+47 W.B. RT.
4" UNDERDRAIN
℄=615.98

+47 E.B. LT.
4" UNDERDRAIN
℄=615.99

+37 W.B. LT.
4" UNDERDRAIN
W/60° BEND
℄=615.78

SEEDING @ 82' LT.
2:1 8:1
618.0
10:1 10:1
618.2
344+00
SEEDING @ 87' RT.
12:1 40:1

EXIST. 6" UNDERDRAIN
EXIST. 6" UNDERDRAIN

343+00
343+00

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

Cross-Section STA. 344+00 to STA. 346+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

56
222

LOR.-2-3.48

Calc. by GS
Date 3/92
Chk'd by ADB
Date 3/92

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0		AHD.		0	0
68		348+50			
		BK.		91	1
	378				169 2
68				91	1
	739				388 2
65				118	0
	850				570 0
88		346+00		190	0

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

625
620
615

349+00

AHD.
348+50
BK.

+50 W.B. LT.
END 4" UNDERDRAIN
℄ = 617.4

+50 W.B. RT.
END 4" UNDERDRAIN
℄ = 617.2

348+50
END NEW PAVEMENT
E.B. & W.B. LANES
MATCH EXISTING

+50 E.B. LT.
END 4" UNDERDRAIN
℄ = 617.2

+50 E.B. RT.
END 4" UNDERDRAIN
℄ = 617.4

AHD.
348+50
BK.

S
12:1
4:1
12:1
12:1
24:1

SEEDING @ 76' RT

EXIST. 6" UNDERDRAIN

348+00

EXIST. 6" UNDERDRAIN

S
12:1
12:1
12:1
12:1
24:1

SEEDING @ 77' RT

619.0

621.24

347+00

346+00

Cross-Section STA. 347+00 to STA. 349+00

Calc. by BAS
Date 6/93
Chk'd by APP
Date 6/93

LOR-2-3.48

SEEDING END WIDTH	SEEDING SQ. YDS.
31	175
32	175
31	86
0	
	2170

TOTALS (SQ. YD.) CARRIED TO SHT. 30

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

705
700

8:1 2:1 10:1

704.4
240+00
702.8

705
700

8:1 12:1

704.1
239+50
702.2

+31± BEGIN MEDIAN GUARDRAIL (RT)

705
700

8:1 10:1

703.2
239+00
701.9

705
700

238+50
701.3

705
700

238+00
700.6

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	24		
		0	51
0	31		
		0	53
0	26		
		0	24
0	0		
TOTALS (CU. YD.) CARRIED TO SHT 30		18	444

DESIGN FILE: c:\dgn\temp\12xsec09.dgn
WORKSTATION: e
DATE: 05-JUL-1994

Median Cross-Sections STA. 238+00 to STA. 240+00

Calc. by BAS Date 6/93
Chk'd by ADB Date 6/93

LOR-2-3.48

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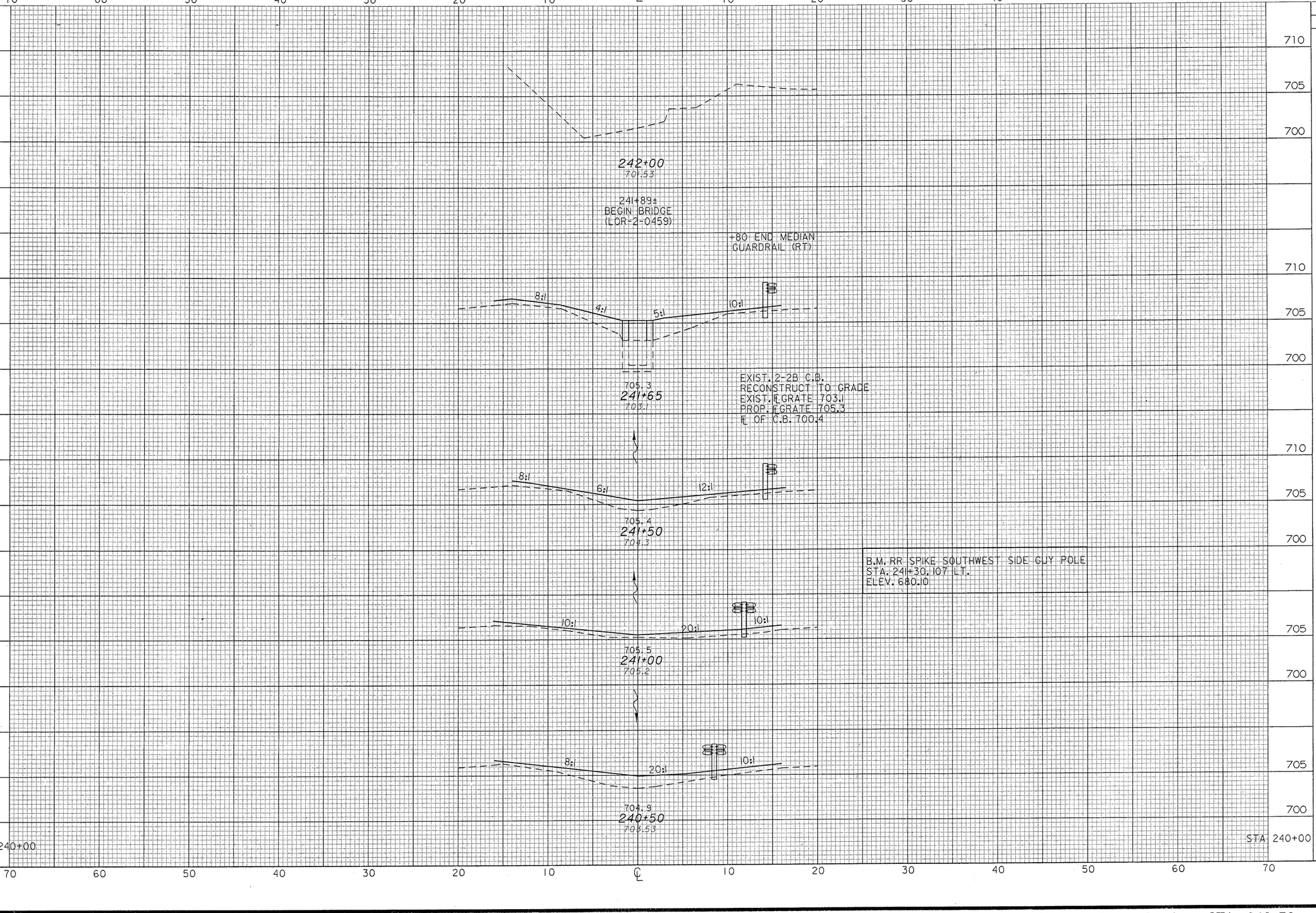
222

SEEDING END WIDTH	SEEDING SQ. YDS.
0	56
29	50
31	175
32	177
32	175
31	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		0	15
0	23		
		0	11
0	16		
		0	25
0	11		
		0	34
0	26		
		0	46
0	24		



DESIGN FILE: c:\dgn\temp\12xsec10.dgn
WORKSTATION: e
DATE: 21-JUL-1994

Median Cross-Sections STA. 240+50 to STA. 242+00

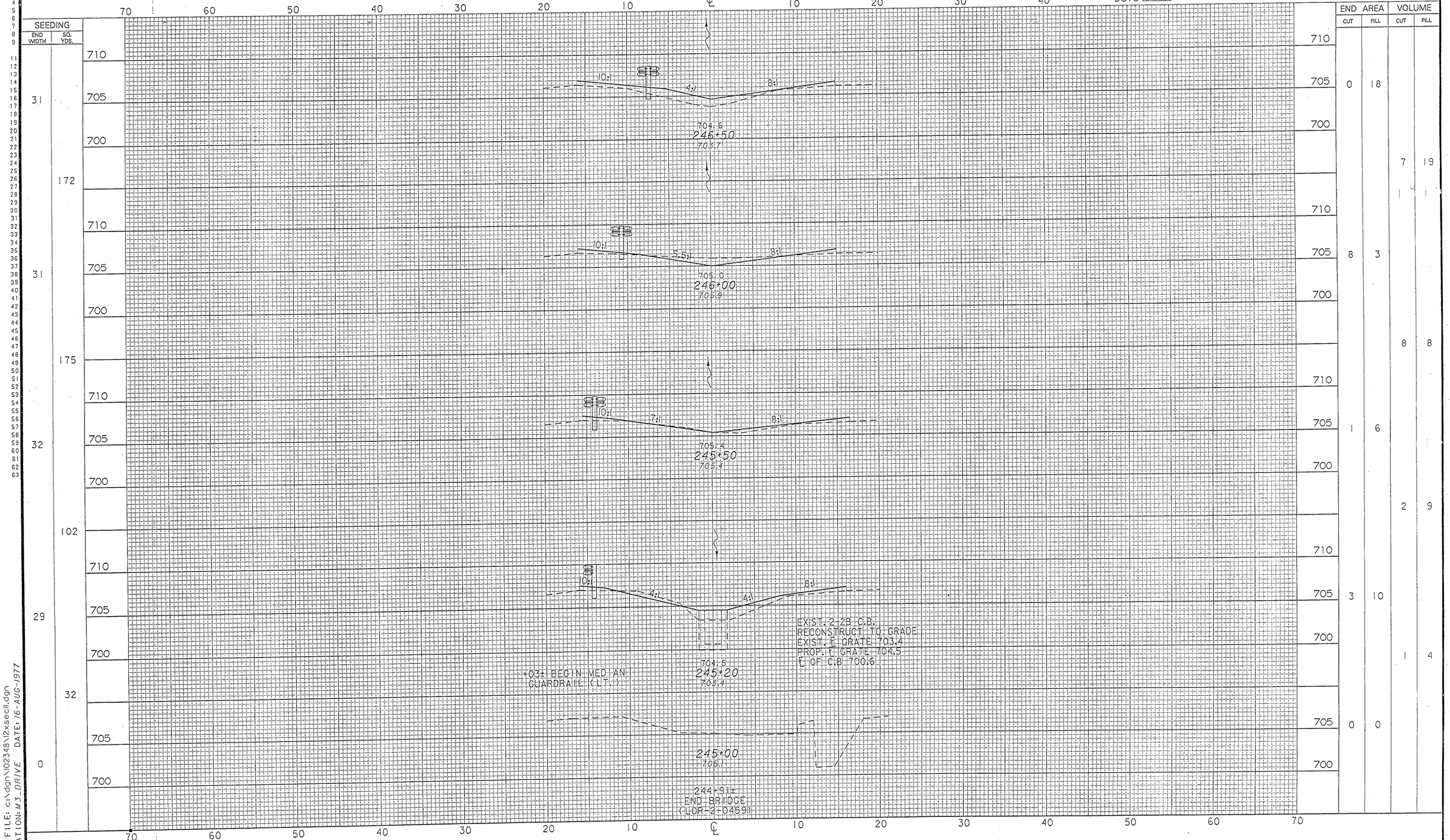
Calc. by BAS
Date 6/93
Chk'd by ADD
Date 6/93

LOR-2-3.48

59
222

SEEDING END WIDTH	SEEDING SQ. YDS.
31	172
31	175
32	102
29	32
0	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	18		
		7	19
8	3		
		8	8
1	6		
		2	9
3	10		
		1	4
0	0		



Median Cross-Sections STA. 245+00 to STA. 246+50

DESIGN FILE: c:\dgn\02348\12xsec11.dgn
WORKSTATION: M3_DRIVE DATE: 16-AUG-1977

Calc. by BAG
Date 6/93
Chk'd by ADP
Date 6/93

LOR-2-3.48

60
222

70 60 50 40 30 20 10 ℄ 10 20 30 40

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		710				
		705				
0		700	0	0		
		248+50 70.7				
	89				0	17
		710				
		705				
32		700	0	18		
		703.4 248+00 702.3				
	178				0	42
		710				
		705				
32		700	0	27		
		704.1 247+50 702.6				
	178				0	47
		710				
		705				
32		700	0	24		
		704.4 247+00 702.9				
	175				0	39
31	STA 246+50		0	18		

+53± END MEDIAN GUARDRAIL (L.T.)

10:1 6:1 8:1

10:1 8:1

10:1 4:1 8:1

70 60 50 40 ℄ 30 20 10 ℄ 10 20 30 40 50 60 70

DESIGN FILE: c:\dgn\temp\12xsecl2.dgn
WORKSTATION: e
DATE: 06-JUL-1994

Median Cross-Sections STA. 247+00 to STA. 248+50

Calc. by DAS
Date 6/93
Chk'd by ADB
Date 7/93

LOR-2-3.48

61
222

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
28	78	0	36	0	29
28	78	0	27	0	22
28	78	0	21	0	17
28	78	0	16	0	13
28	54	0	11	0	6
11		0	1		
	1691			0	632

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

625 / 620

10:1 25:1 25:1 10:1
626.4 626.4
367+25
624.3
+23.5 BEGIN MEDIAN GUARDRAIL (RT.)

10:1 10:1
625.6
367+00
624.3

6:1 6:1
625.0
366+75
624.3

6:1 6:1
624.7
366+50
624.2

5:1 5:1
366+25
624.3

B.M. RR SPIKE NORTH SIDE OF POWER POLE
STA. 364+40, 198' RT
ELEV. 632.49

5:1 5:1
366+00, ℄
NO. 8 C.B.
TOP GRATE = 624.0
℄ 12" PIPE = 621.0
8 L.F. 12"
366+00
624.0
102 L.F. 18" STORM
@ 0.29 %

EXISTING NO. 1 MANHOLE
ELEV. TOP COVER 625.33
℄ 18" PIPE 619.7
℄ PROP. 12" PIPE 620.7

365+75
RESUME EARTH WORK

1691 TOTALS (SQ. YD.)
TO SHEET 37

TOTALS (CU. YD.) 0 632
TO SHEET 37

DESIGN FILE: c:\dgn\temp\12xsec17.dgn
WORKSTATION: e
DATE: 21-JUL-1994

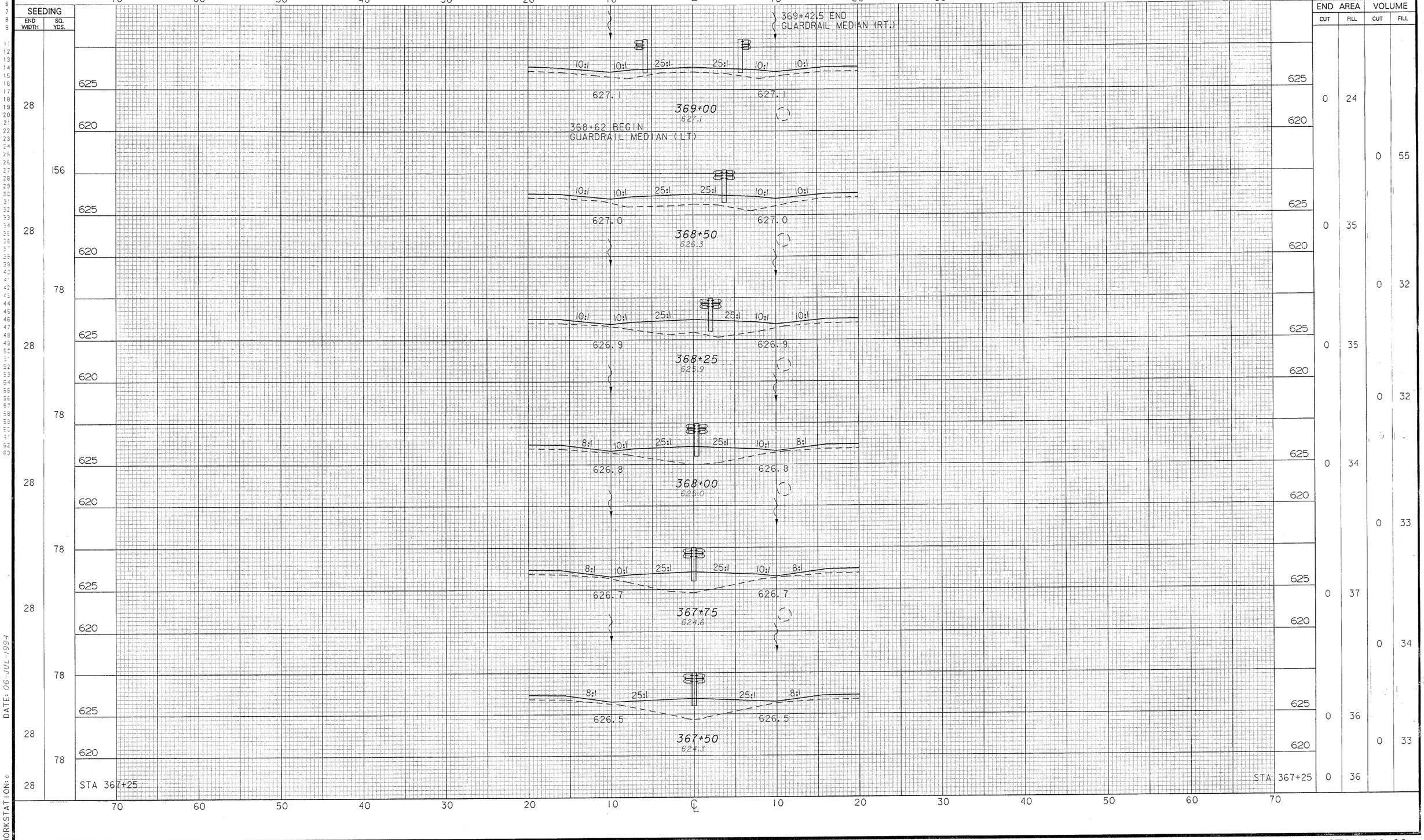
Median Cross-Sections STA. 366+00 to STA. 367+25

Calc. by RJR
Date 7/89
Chk'd by ADB
Date 1/92

LOR-2-3.48

62
222

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		625				
28	156	620	0	24	0	55
		625				
28	78	620	0	35	0	32
		625				
28	78	620	0	35	0	32
		625				
28	78	620	0	34	0	33
		625				
28	78	620	0	37	0	34
		625				
28	78	620	0	36	0	33
28		STA 367+25	0	36		



DESIGN FILE: c:\dgn\temp\12x..\cl8.dgn
WORKSTATION: e
DATE: 06-JUL-1994

Median Cross-Sections STA. 367+50 to STA. 369+00

Calc. by BAS Date 6/93
Chk'd by AOO Date 7/93

LOR-2-3.48

63
222

SEEDING END WIDTH	SEEDING SQ. YDS.	STA	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		625				
28		620	0	53		
	78				0	52
		625				
28		620	0	59		
	78				0	50
		625				
28		620	0	48		
	78				0	35
		625				
28		620	0	27		
	78				0	23
		625				
28		620	0	23		
	78				0	22
		625				
28		620	0	24		
	156				0	44
28		STA 369+00 620	0	24		

+81 END MEDIAN GUARDRAIL (LT.)

14:1 10:1 25:1 25:1 10:1 14:1

627.6 627.6

370+75
624.8

PROPOSED 18" CONDUIT, TYPE C

15:1 13:1

627.5 627.5

370+50
624.5

12:1 12:1

627.4 627.4

NO. 2-2-A CATCH BASIN STA 370+25, ℄ (TO BE REMOVED)

370+25
624.5

13:1 16:1

627.4 627.4

370+00
626.8

PROP. 18" CONDUIT, TYPE C

EXIST. 18" PIPE TO BE REMOVED

12:1 12:1

627.3 627.3

369+75
627.3

369+75, 11' RT.
EXISTING NO. 1 MANHOLE
TO BE RECONSTRUCTED TO GRADE
EXIST. TOP COVER 626.2±
PROP. TOP COVER 627.5±
℄ 18" 621.55

10:1 10:1 25:1 25:1 10:1 11:1

627.2 627.2

369+50
627.1

EXISTING 18" PIPE

DESIGN FILE: c:\brett\dgn\lordi\1002\12xsec19
WORKSTATION: 003_104 DATE: 05-JUL-1994

Median Cross-Sections STA. 369+50 to STA. 370+75

Calc. by DAS Date 6/93
Chk'd by ADB Date 7/93

LOR-2-3.48

64
222

SEEDING END WIDTH	SEEDING SQ. YDS.	STA	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		625				
		620				
		625				
		620				
		625				
0		620	0	0		
	19	625			0	1
14		620	0	1		
	58	625			0	14
28		620	0	30		
	78	625			0	37
28		620	0	50		
	78	625			0	48
28		STA 370+75	0	53		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

372+25
625.8

B.M.: CHISLED SQUARE ON E. CORN. OF HEADWALL CULVERT (48" R.C.P.) STA. 378+57± APPROX. 157' RT ELEV. 652.72

372+00
625.5

625.4
371+75
625.4

SUSPEND EARTH WORK

5:1 5:1

371+50
625.4

371+50 ℄
NO. 8 C.B.
TOP GRATE 625.6
E 18" 622.4

20:1 7:1 8:1 12:1

626.4
371+25
625.1

10:1 10:1 25:1 25:1 10:1 11:1

627.5 627.5

628.1
371+00
624.9

DESIGN FILE: c:\dgn\temp\12xse320.dgn
WORKSTATION: e
DATE: 06-JUL-1994

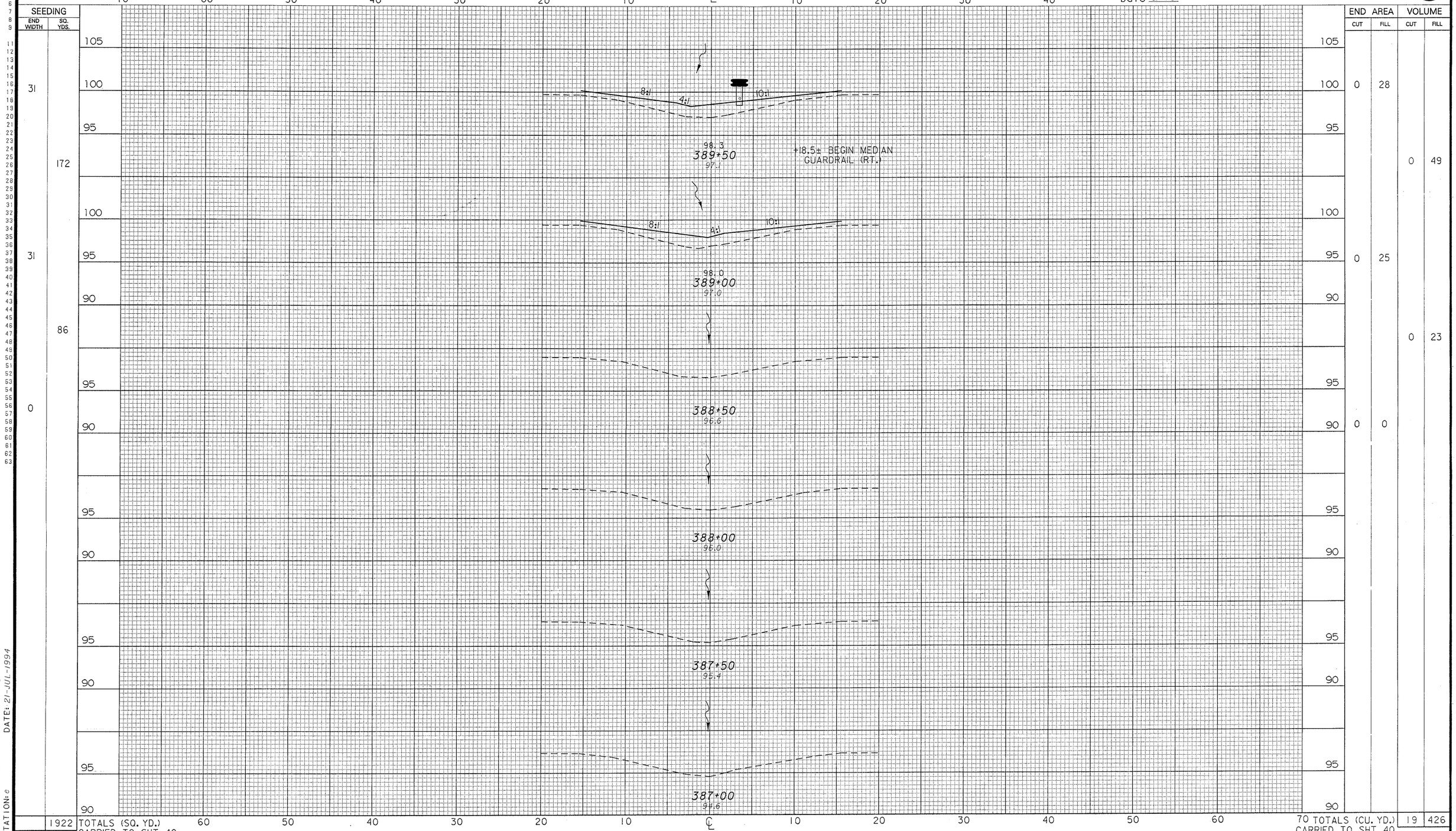
Median Cross-Sections STA. 371+00 to STA. 372+25

Calc. by DAS Date 6/93
Chk'd by ADD Date 6/93

LOR-2-3.48

65
222

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		105				
31		100	0	28		
		95				
	172				0	49
		100				
31		95	0	25		
		90				
	86				0	23
		95				
0		90	0	0		



1922	TOTALS (SQ. YD.) CARRIED TO SHT 40	70	TOTALS (CU. YD.) CARRIED TO SHT 40	19	426

DESIGN FILE: c:\dgn\temp\12x_jcl3.dgn DATE: 21-JUL-1994
WORKSTATION: e

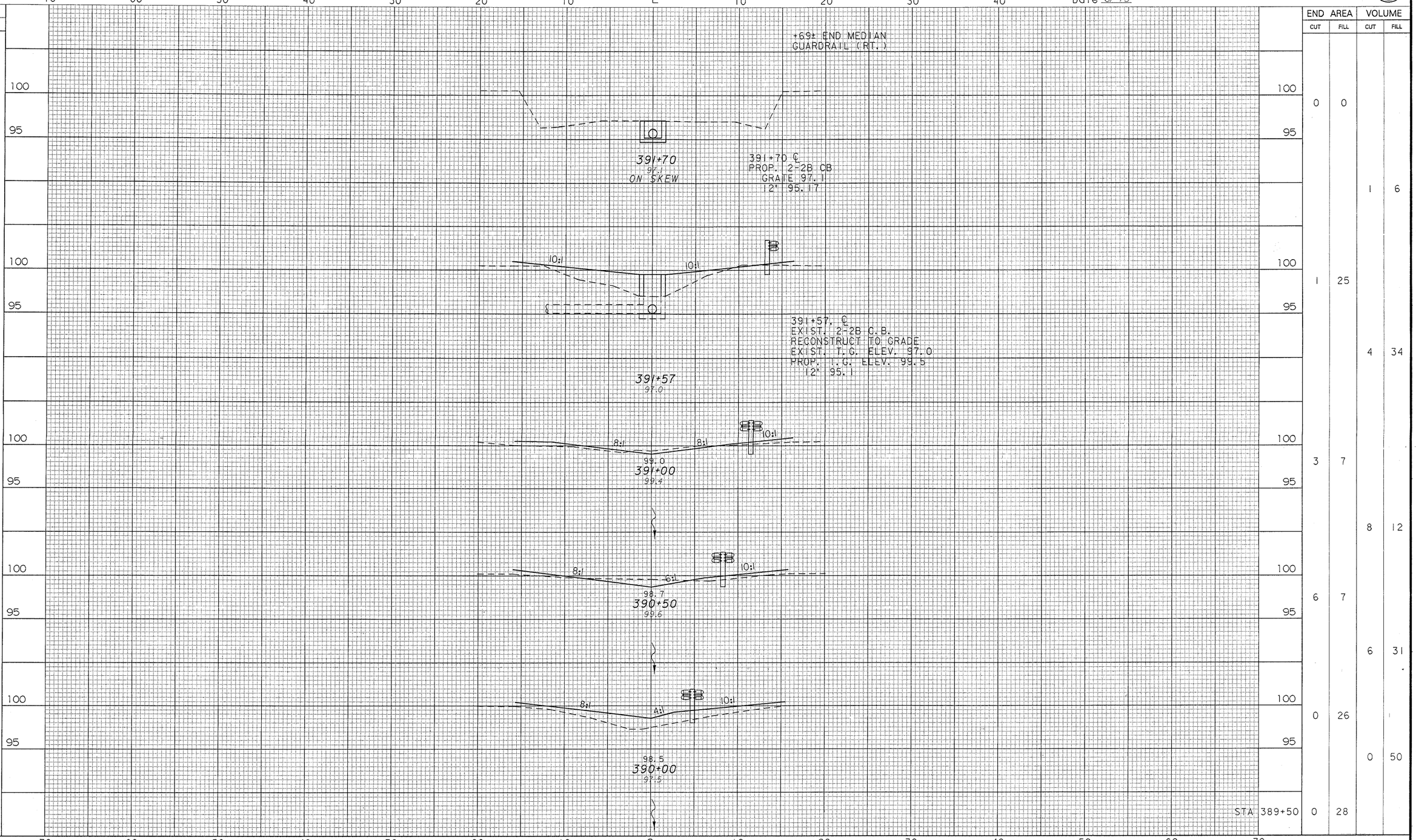
Median Cross-Sections STA. 387+00 to STA. 389+50

Calc. by DAG Date 6/95
Chk'd by ADD Date 6/95

LOR-2-3.48

66
222

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0	22	0	0	1	6
30	196	1	25	4	34
32	178	3	7	8	12
32	178	6	7	6	31
32		0	26	0	50
		STA 389+50	0	28	



DESIGN FILE: c:\brett\dgn\lor_fn\002\12xsec14
WORKSTATION: 003_104 DATE: 05-JUL-1994

Median Cross-Sections STA. 390+00 to STA. 391+70 ✓

Calc. by BAS
Date 6/93
Chk'd by ADB
Date 6/93

LOR-2-3.48

SEEDING	
END WIDTH	SQ. YDS.
33	
	183
33	
	183
33	
	181
32	
	61
29	
	40
0	

393+82, ℄
EXIST. NO. 2-2B C.B.
RECONSTRUCT TO GRADE
EXIST T.G. ELEV. 97.39
PROP. T.G. ELEV. 99.5
℄ 12" 95.37

+72± BEGIN MEDIAN
GUARDRAIL (LT.)

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	23		
		0	34
0	14		
		0	32
0	20		
		0	30
0	12		
		0	11
0	20		
		0	9
0	0		

DESIGN FILE: c:\brettdgn\lor..\l002\l2xsec5
WORKSTATION: D03_I04 DATE: 05-JUL-1994

Median Cross-Sections STA. 393+57.5 to STA. 395+50

Calc. by ØAS Date 6/93
Chk'd by ADØ Date 6/93

LOR-2-3.48

68
222

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		95				
		90				
		95				
		90				
		95				
0		90	0	0		
					0	18
	86	100				
		95	0	19		
31		90				
					0	42
	175	100				
		95	0	26		
32						
	181	90			0	45
33	STA 395+50		STA 395+50	0	23	

B.M. CHISLED SQUARE ON SOUTH CONC.
BASE ELEC. TRANSMISSION TOWER
STA 407+54±, 191' LT
ELEV. 639.13

398+00
94.6

397+50
95.4

397+00
96.2

END EARTH WORK

8:1 8:1

97.6
396+50
96.6

+22 END MEDIAN GUARDRAIL (LT.)

10:1 4:1 8:1

98.0
396+00
96.8

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

DESIGN FILE: c:\dgn\temp\12x_bc16.dgn
WORKSTATION: e
DATE: 21-JUL-1994

Median Cross-Sections STA. 396+00 to STA. 398+00

Calc. by ADB Date 1/92
Chk'd by GB Date 3/92

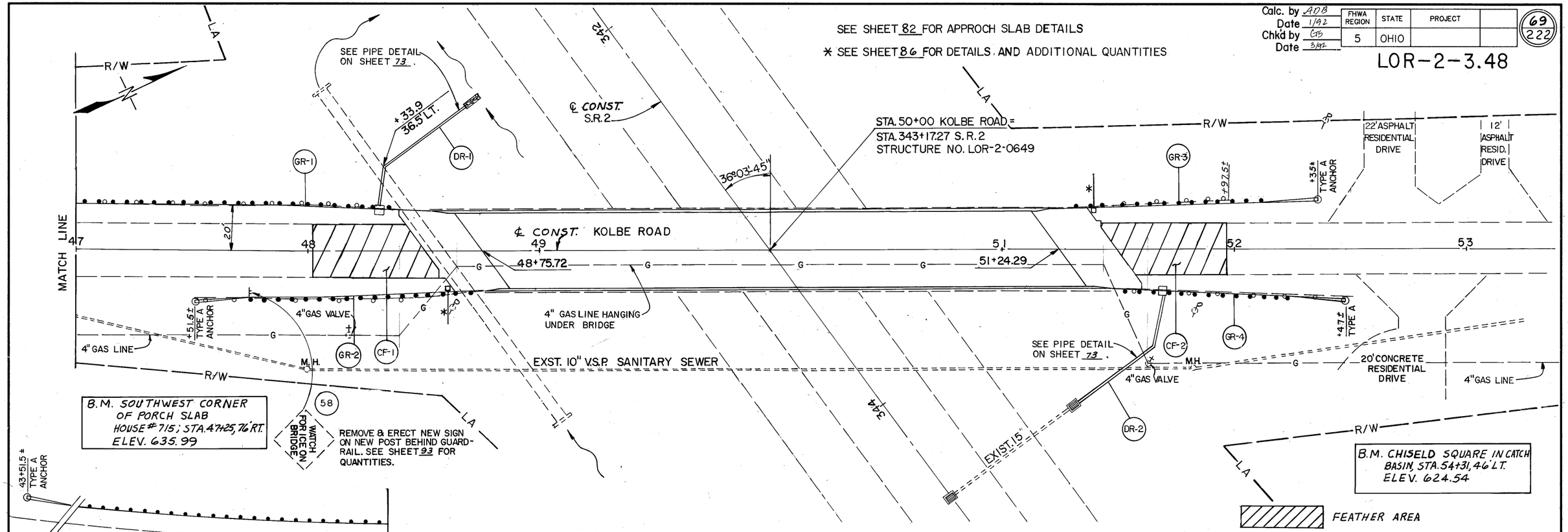
FHWA REGION	STATE	PROJECT	
5	OHIO		

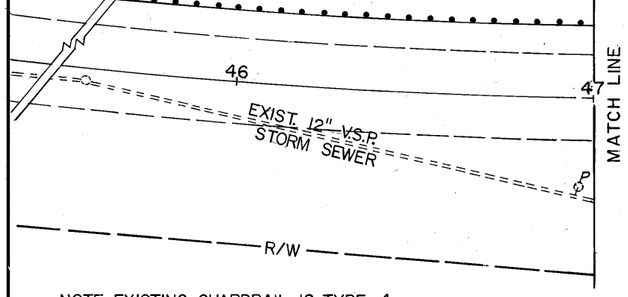
69 / 222

LOR-2-3.48

SEE SHEET 82 FOR APPROCH SLAB DETAILS

* SEE SHEET 86 FOR DETAILS AND ADDITIONAL QUANTITIES





NOTE: EXISTING GUARDRAIL IS TYPE 4 ON WOOD POSTS

REF.	STATION LIMITS	202 GUARDRAIL REMOVED			404 ASPHALT CONCRETE AC-20	407 TACK COAT	601 ROCK CHANNEL PROTECTION, TYPE C, W/FILTER	602 CONCRETE MASONARY	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY, TYPE A	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	603 12" CONDUIT, TYPE P, 707.05 TYPE C	604 CATCH BASIN, TYPE 3A	45° BEND	30° BEND
		LIN.FT.			CU. YD.	GAL.	CU. YD.	CU. YD	LIN.FT.	EACH			LIN.FT.	EACH		
GR-1	43+51.5± TO 48+54.5±	500							475	1		1				
GR-2	47+51.5± TO 48+76.5±	125							100	1	1					
GR-3	51+22.5± TO 52+35±	75							87.5	1	1					
GR-4	51+47 TO 52+47±	100							75	1		1				
CF-1	48+02± TO 48+51±				2.5	12										
CF-2	51+49± TO 51+98±				2.5	12										
DR-1	48+31 ± LT. ≠						2	0.2					67	1	1	2
DR-2	51+69 ± RT. ≠												72	1	1	2
	TOTALS	800			5	24	2	0.2	737.5	4	2	2	139	2		

≠ SEE SHT. 73 FOR PIPE DETAIL

SEE SHEET 24 FOR QUANTITY CALCULATIONS

FROM SHT. 70

659 -	SEEDING & MULCHING	2407 SQ.YD.
203 -	EMBANKMENT	50 CU.YD.
203 -	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	73 CU.YD.

KOLBE ROAD

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR.-2-3.48

70 222

Calc. by AWB Date 1/92
Chk'd by CJS Date 3/92

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		635				
19		630	1	1		
	89				1	2
13		630	0	1		
		625				
	83				0	4
17		630	0	3		
		625				
	100				4	6
19		630	4	3		
		625				
	97				5	3
16		630	1	0		
		625				
	111				2	1
24		630 AHD	1	1		
0		BK				
		625				
	2407	TOTAL TO SHT. 69 (SQ.YD.)			73	50
		TOTALS TO SHT. 69 (CU. YD)				

S

12:1

46+00
632.39

45+50
631.04

45+00
629.79

44+50
628.88

44+00
628.57

+51.5±TYPE A
ANCHOR ASSEMBLY (LT.)

43+50
629.03

BEGIN WORK

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

KOLBE ROAD STA. 43+50 to STA. 46+00

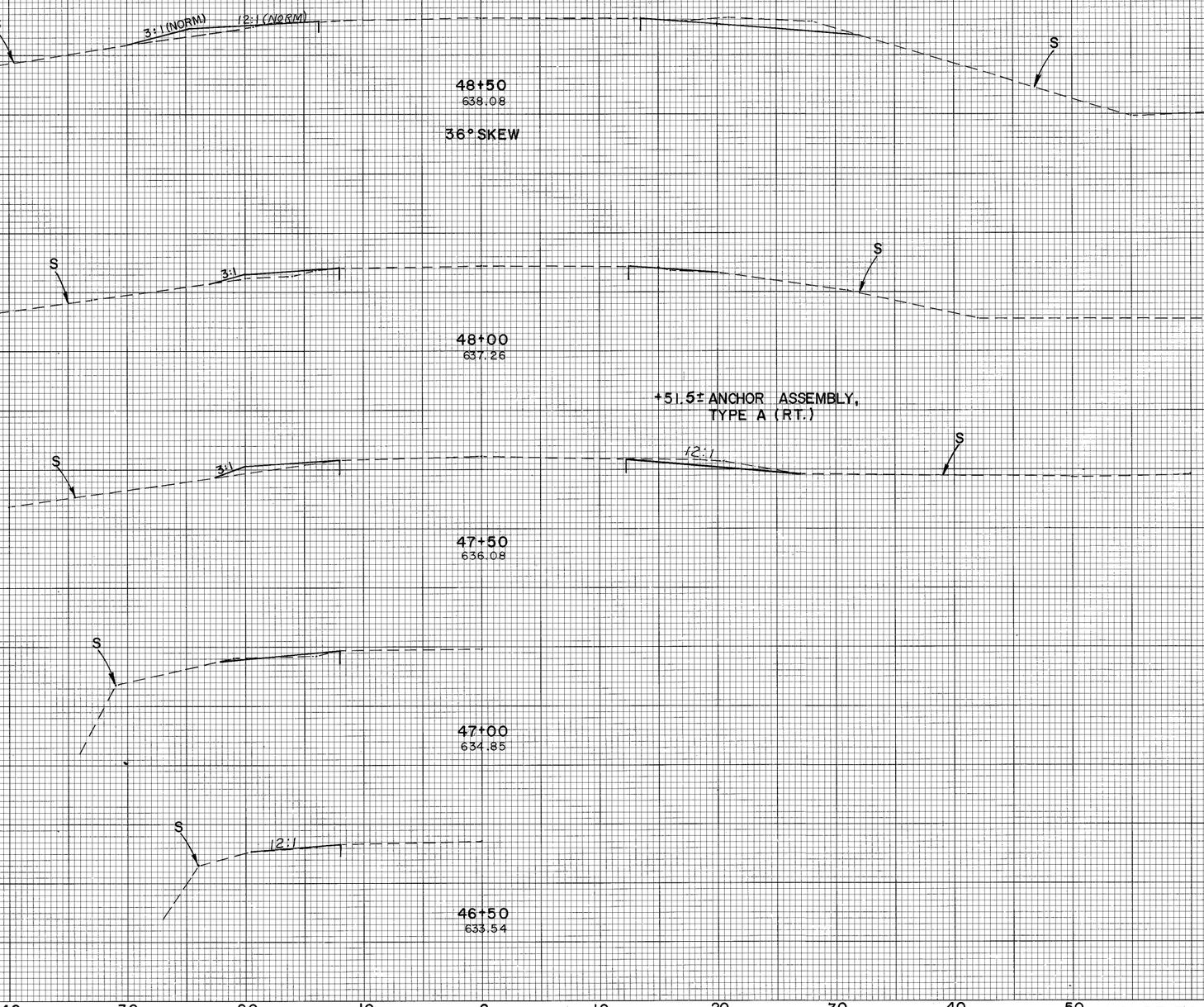
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

71
222

LOR.-2-3.48

Calc. by AMB
Date 1/92
Chk'd by GD
Date 3/92

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0		AHD	0	0		
		49+00				
53		BK	9	4		
	294	640			17	7
53		X COS. 36°	9	4		
		48+50				
		638.08				
		630				
		36° SKEW				
	267				8	7
43		635	0	4		
		48+00				
		637.26				
		630				
	258				5	7
		+51.5± ANCHOR ASSEMBLY, TYPE A (RT.)				
50		635	5	4		
		47+50				
		636.08				
		630				
	192				6	5
19		635	1	1		
		47+00				
		634.85				
		630				
	86				1	1
12		635	0	0		
		46+50				
		633.54				
		630				
	86				1	1
19		46+00	1	1		



KOLBE ROAD STA. 47+00 STA. 48+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

72
222

LOR.-2-3.48

Calc. by AMB
Date 1/92
Chkd by GS
Date 3/92

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0	AHD				
43	BK	0	0		
	244			2	3
45		2	3		
	250			8	3
45	X COS 36°	7	0		
				13	0
45	AHD	7	0		
0	BK	0	0		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

640
635
630

52+50
637.02
END EARTHWORK

+35± ANCHOR ASSEMBLY, TYPE A (LT.)

+47± ANCHOR ASSEMBLY, TYPE A (RT.)

S 12:1 12:1 S

52+00
638.28

S 12:1 12:1 S

X COS 36°

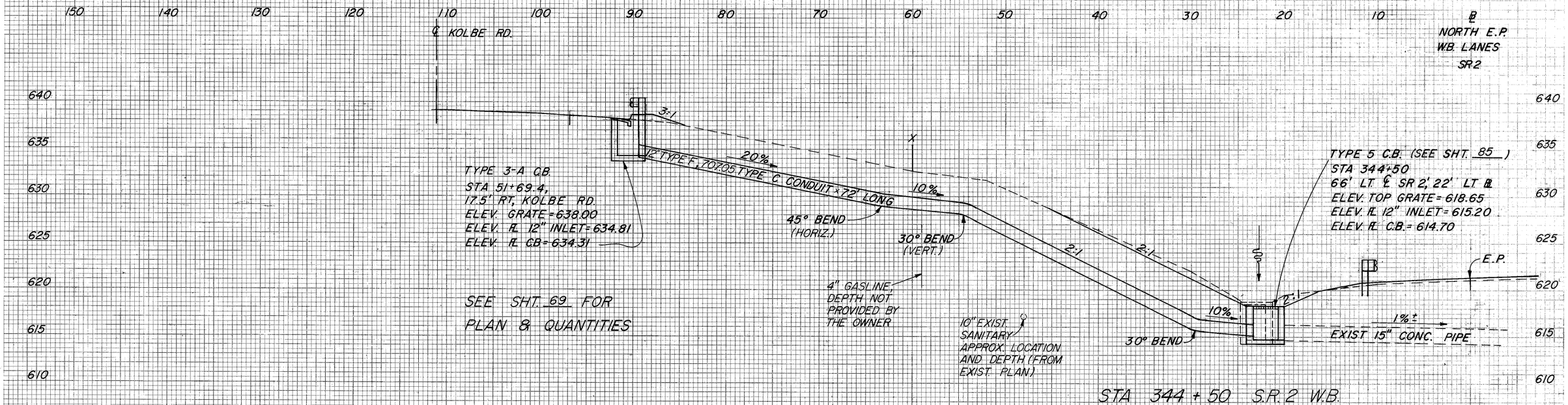
51+50
639.20
36° SKEW

X COS. 36°

AHD
51+00
BK

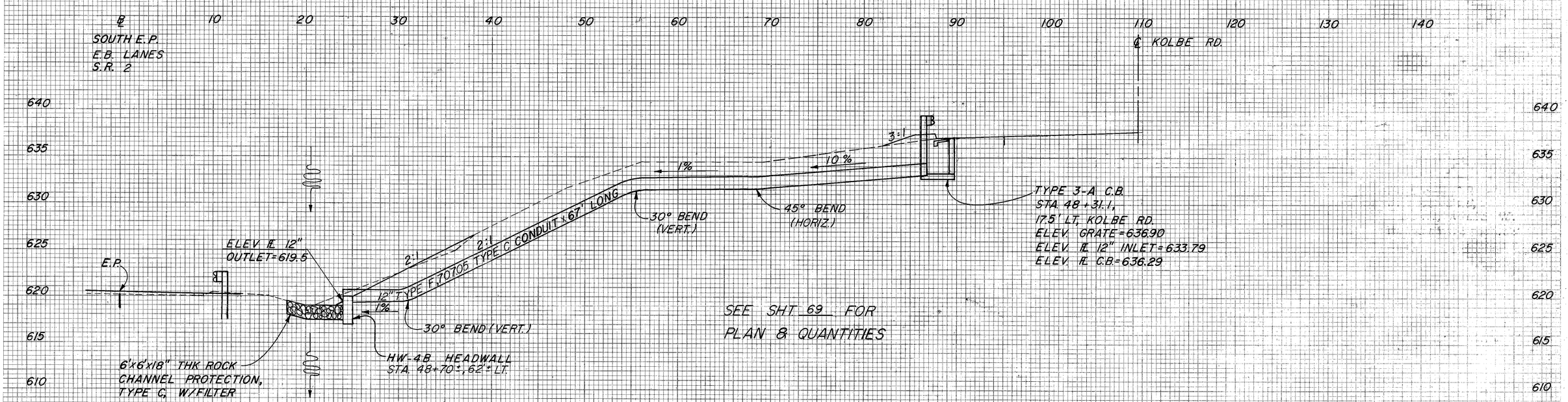
KOLBE ROAD STA. 51+50 to STA. 52+50

LOR-2-3.48



SEE SHT. 69 FOR PLAN & QUANTITIES

STA 344 + 50 S.R. 2 W.B.

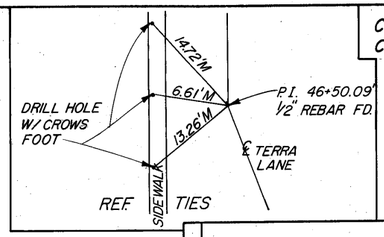


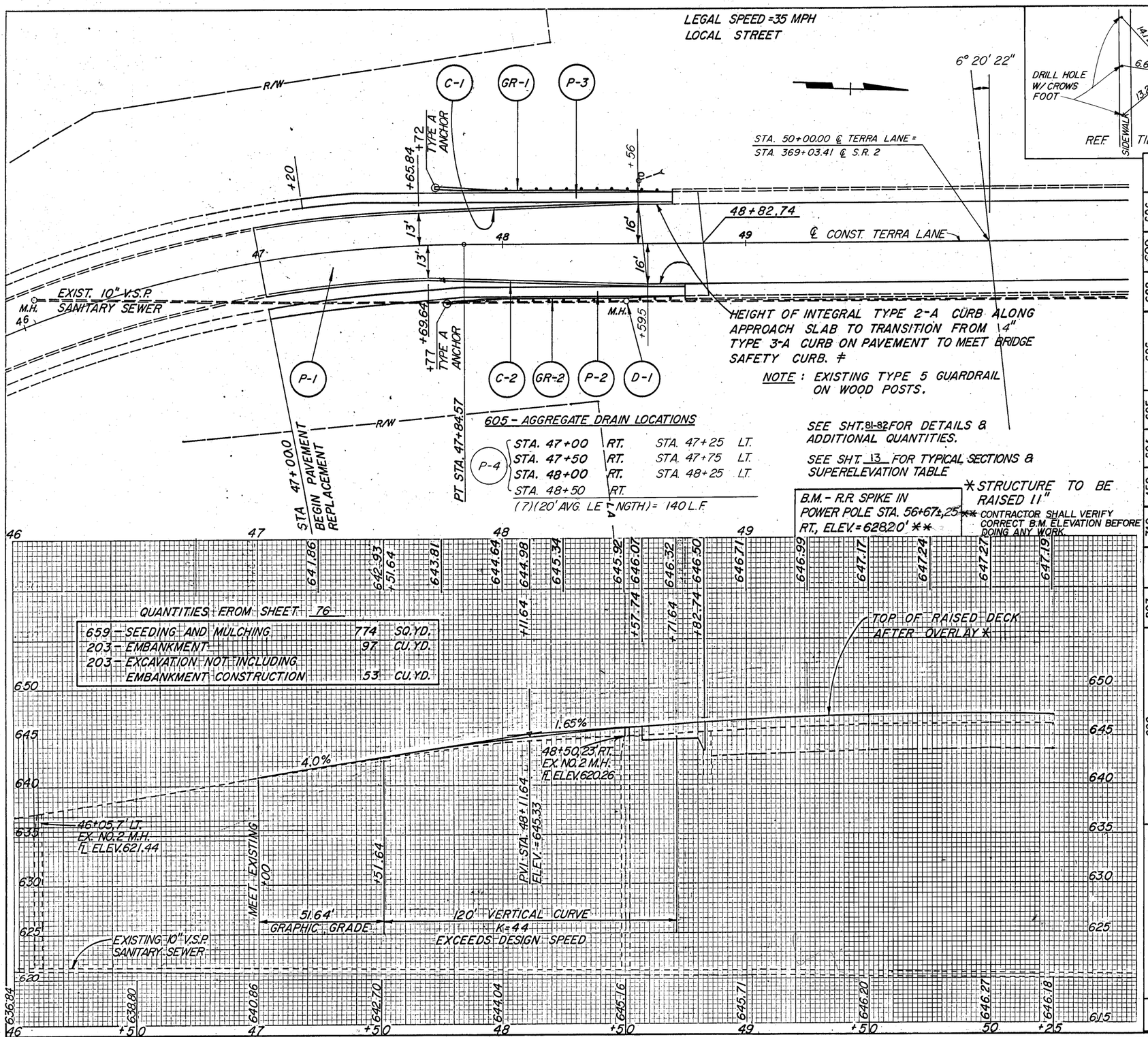
SEE SHT 69 FOR PLAN & QUANTITIES

STA 341+90, SR 2 EB

PLATE 3 - CROSS SECTION
Made in U.S.A.

KOLBE ROAD CATCH BASIN DETAILS





CALC. BY: RJR 1/89
CHK'D. BY: RW 7/89

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR - 2 - 3.48

HEIGHT OF INTEGRAL TYPE 2-A CURB ALONG APPROACH SLAB TO TRANSITION FROM 4" TYPE 3-A CURB ON PAVEMENT TO MEET BRIDGE SAFETY CURB. ≠

NOTE: EXISTING TYPE 5 GUARDRAIL ON WOOD POSTS.

605 - AGGREGATE DRAIN LOCATIONS

P-4				
	STA. 47+00	RT.	STA. 47+25	LT.
	STA. 47+50	RT.	STA. 47+75	LT.
	STA. 48+00	RT.	STA. 48+25	LT.
	STA. 48+50	RT.		

(7)(20' AVG. LENGTH) = 140 L.F.

SEE SHT. 81-82 FOR DETAILS & ADDITIONAL QUANTITIES.

SEE SHT. 13 FOR TYPICAL SECTIONS & SUPERELEVATION TABLE

* STRUCTURE TO BE RAISED 11"

B.M. - R.R. SPIKE IN POWER POLE STA. 56+67±, 25' RT., ELEV. = 628.20' **

** CONTRACTOR SHALL VERIFY CORRECT B.M. ELEVATION BEFORE DOING ANY WORK.

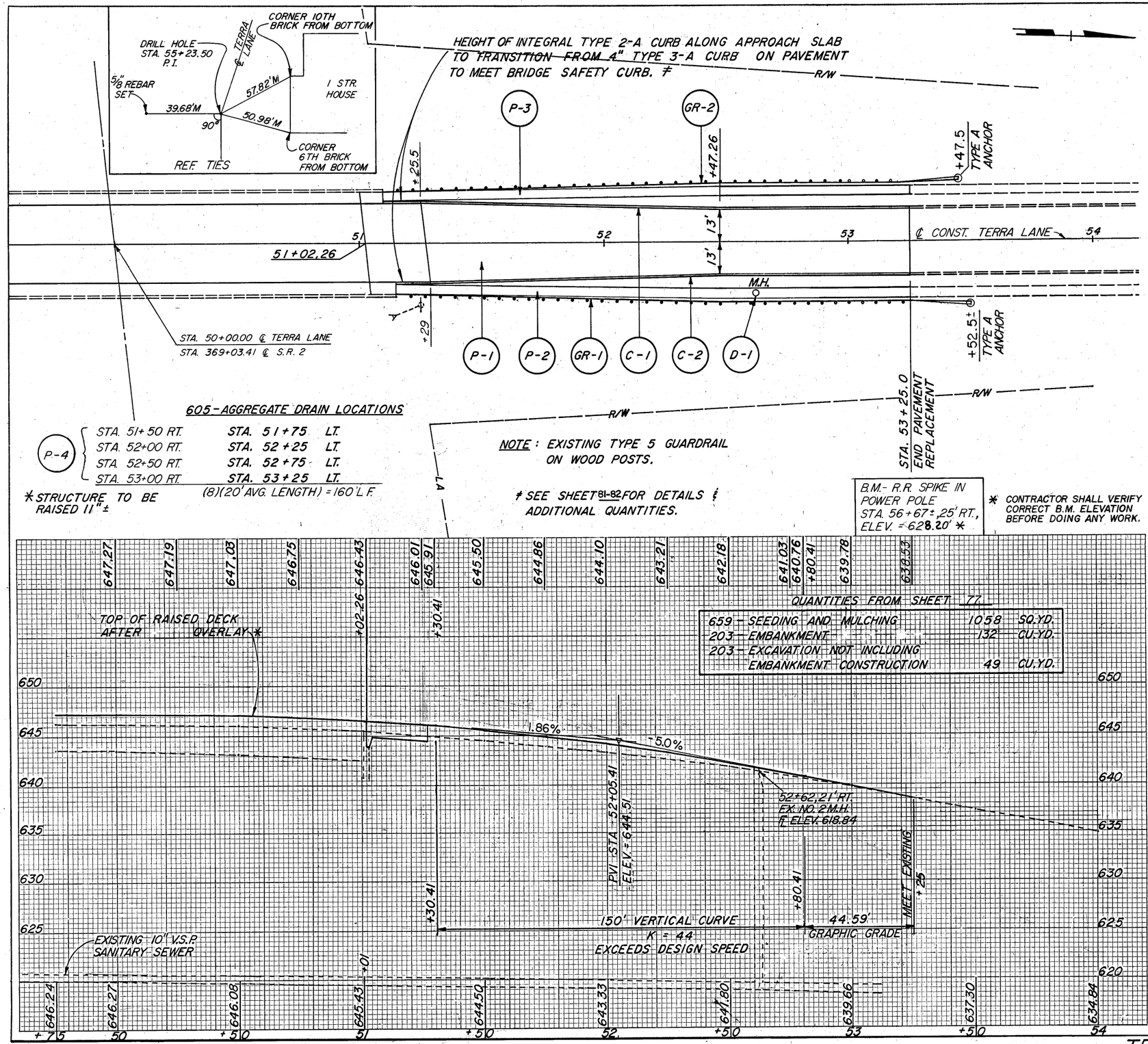
QUANTITIES FROM SHEET 76

659	SEEDING AND MULCHING	774	SQ.YD.
203	EMBANKMENT	97	CU.YD.
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	53	CU.YD.

			GR-1	GR-2	D-1	P-1	P-2	P-3	P-4	C-1	C-2	TOTALS
STATION LIMITS OR LOCATION			47+72± TO 48+72± LT.	47+77 ± TO 48+77 ± RT.	48+50, 23' RT.	47+00.0 TO 48+57.74	47+00.0 TO 48+74.9 RT.	47+20.0 TO 48+70.0 LT.	47+00 TO 48+50	47+00.0 TO 48+70± LT.	47+00.0 TO 48+75± RT.	
606	ANCHOR ASSEMBLY, TYPE A	EACH	1	1								2
609	CURB TYPE 3-A	LIN.FT.								156.0	159.5	315.5
608	4" CONCRETE WALK	SQ.FT.					700	600				1300
606	BRIDGE TERMINAL ASSEMBLY TYPE 2	EACH	1									1
	BRIDGE TERMINAL ASSEMBLY TYPE 1	EACH		1								1
	GUARDRAIL, TYPE 5	LIN.FT.	75.00	75.00								150.00
605	AGGREGATE DRAINS	LIN.FT.							140			140
604	MANHOLE RECONSTRUCTED TO GRADE	EACH			1							1
452	8" PLAIN CONCRETE PAVEMENT	SQ.YD.				486						486
310	SUBBASE, TYPE II	CU.YD.				86.8						86.8
203	SUBGRADE COMPACTION	SQ.YD.				486						486
202	WALK REMOVED	SQ.FT.					700	600				1300
	CURB REMOVED	LIN.FT.								170	174.9	344.9
	PAVEMENT REMOVED	SQ.YD.				486						486
	GUARDRAIL REMOVED	LIN.FT.	75.0	75.0								150.0
REFERENCE MARK			GR-1	GR-2	D-1	P-1	P-2	P-3	P-4	C-1	C-2	

SEE SHEET 24 FOR QUANTITY CALCULATIONS

TERRA LANE - STA. 46+00 TO STA. 50+00



CALC. BY: RJR 1/89
CHK'D. BY: RLB 7/89

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR - 2 - 3.48

HEIGHT OF INTEGRAL TYPE 2-A CURB ALONG APPROACH SLAB TO ~~TRANSITION FROM 4"~~ TYPE 3-A CURB ON PAVEMENT TO MEET BRIDGE SAFETY CURB. ≠

605-AGGREGATE DRAIN LOCATIONS

P-4	STA. 51+50 RT.	STA. 51+75 LT.
	STA. 52+00 RT.	STA. 52+25 LT.
	STA. 52+50 RT.	STA. 52+75 LT.
	STA. 53+00 RT.	STA. 53+25 LT.

(8)(20' AVG. LENGTH) = 160' L.F.

* STRUCTURE TO BE RAISED 11"±

NOTE: EXISTING TYPE 5 GUARDRAIL ON WOOD POSTS.

≠ SEE SHEET 81-82 FOR DETAILS & ADDITIONAL QUANTITIES.

B.M.- R.R. SPIKE IN POWER POLE
STA. 56+67±, 25' RT.,
ELEV. = 628.20' *

* CONTRACTOR SHALL VERIFY CORRECT B.M. ELEVATION BEFORE DOING ANY WORK.

QUANTITIES FROM SHEET 77

659 - SEEDING AND MULCHING		1058	SQ.YD.
203 - EMBANKMENT		132	CU.YD.
203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION		49	CU.YD.

606	ANCHOR ASSEMBLY, TYPE A	EACH	1	1												2
609																
	CURB TYPE 3-A	LIN.FT.												199.5	196.0	395.5
608	4" CONCRETE WALK	SQ.FT.								840	860					1700
606	BRIDGE TERMINAL ASSEMBLY TYPE 2	EACH	1													1
	BRIDGE TERMINAL ASSEMBLY TYPE 1	EACH		1												1
	GUARDRAIL, TYPE 5	LIN.FT.	212.5	212.5												425
605	AGGREGATE DRAINS	LIN.FT.										160				160
604	MANHOLE RECONSTR. TO GRADE	EACH					1									1
452	8" PLAIN CONCRETE PAVEMENT	SQ.YD.							612							612
310	SUBBASE, TYPE II	CU.YD.							109.3							109.3
203	SUBGRADE COMPACTION	SQ.YD.							612							612
202	WALK REMOVED	SQ.FT.								840	860					1700
	CURB REMOVED	LIN.FT.												213	208	421
	PAVEMENT REMOVED	SQ.YD.							612							612
	GUARDRAIL REMOVED	LIN.FT.	175.0	187.5												362.5
	STATION LIMITS OR LOCATION		51+15± TO 53+52.5± RT.	51+10± TO 53+47.5± LT.			52+53, 21' RT.		51+27.26 TO 53+25	51+15.0 TO 53+25 RT.	51+10.1 TO 53+25 LT.	51+50 TO 53+25		51+12± TO 53+25 LT.	51+17± TO 53+25 RT.	TOTALS
	REFERENCE MARK		GR-1	GR-2			D-1		P-1	P-2	P-3	P-4		C-1	C-2	

SEE SHEET 24 FOR QUANTITY CALCULATIONS

TERRA LANE - STA. 50+00 TO STA. 54+00

Calc. by RJR Date 1/89
Chk'd by ADD Date 1/92

LOR-2-3.48

76
222

Construction

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		650				
		645	3	13		
43		640			11	19
	231					
		645				
		640	9	7		
40						
		635				
	175				21	11
		645				
		640	14	5		
23						
	63	635			14	3
23		AHD. STA 46+75 BK.	16	2		
0			0	0		
		645				
		640				
		635				
774	TOTAL **			TOTAL **	53	97

644.64
STA 48+00
644.04

+72± (LT.) TYPE A ANCHOR

+77± (RT.) TYPE A ANCHOR

642.93
STA 47+50
642.65

BEGIN SIDEWALK REPLACEMENT
@ STA 47+20 AHD., LT.

640.86
STA 47+00
640.86

BEGIN PAVEMENT REPLACEMENT

605-AGGREGATE DRAINS
50' C/C. (TYPICAL)
SEE PLAN SHT. 74
FOR LOCATIONS.

BEGIN SIDEWALK REPLACEMENT
@ STA 47+00 AHD., RT.

EARTHWORK @ STA 46+75 AHD.

STA 46+50
638.80

NOTE: FOR SUPERELEVATION TABLE
SEE TYPICAL SECTION SHT. 13.

** TOTALS CARRIED TO PLAN SHEET 74

DESIGN FILE: c:\brea1\dgn\lordrn\l002\l2xsec01
WORKSTATION: 003_104 DATE: 05-JUL-1994

Terra Lane Cross-Sections STA. 46+50 to STA. 48+00

Calc. by RJR Date 1/89
Chk'd by ADD Date 1/92

LOR-2-3.48

77
222

Construction

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		650				
		645				
36		AHD.	1	19		
		BK.	1	25		
		640				
					1	12
	61	AHD.	3	16		
		STA 51+12± BK.	10	12		
		650				
36		AHD. STA 51+12±				
0		BK. 645			0	4
		645				
		640	0	12		
		640				
		635				
	1058	** TOTALS			49	132
		650				
		645				
		AHD.	0	0		
		BK.	0	13		
		640			0	5
		AHD. STA 48+73±	0	13		
0		BK.	3	17		
34		650				
		645			2	12
	58	645				
34		AHD.	4	26		
		BK.	3	30		
		640				
	247				5	47
43		STA 48+00	3	13		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

6:1 4:1 — BOTTOM OF 6"-310 SUBBASE (AHD) — BOTTOM OF 4"-304 AGGREGATE BASE (BK) — 646.01 — STA 51+27.26 — 644.97 — (SKEW = 6°20'22" R.F.) — BOTTOM OF EXIST. PAVEMENT (AHD) — BOTTOM OF EXIST. APPROACH SLAB (BK)

TRANSITION 4" TYPE 3-A CURB TO MATCH BRIDGE SAFETY CURB ALONG APPROACH SLAB WITH TYPE 2-A CURB.

STA 51+02.26 — 645.43 — (SKEW = 6°20'22" R.F.)

** TOTALS CARRIED TO PLAN SHEET 75

TRANSITION 4" TYPE 3-A CURB TO MATCH BRIDGE SAFETY CURB ALONG APPROACH SLAB WITH TYPE 2A CURB.

646.50 — STA 48+82.74 — 645.51 — (SKEW = 6° 20' 22" R.F.)

8:1 6:1 — BOTTOM OF 6"-310 SUBBASE (BK) — BOTTOM OF 4"-304 ACG. BASE (AHD) — 646.07 — STA 48+57.74 — 645.17 — (SKEW = 6° 20' 22" R.F.) — BOTTOM OF EXIST. PVM'T. (BK) — BOTTOM OF EXIST. APPROACH SLAB (AHD)

EX. NO. 2 M.H. STA. 48+50, 23' RT. TO BE RECONSTRUCTED TO GRADE TOP COVER EXIST. 644.7± TOP COVER PROP. 646.0± ℄ 10" 620.3±

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Construction

DESIGN FILE: c:\brett\dgn\lordfn\1002\12xsec01
WORKSTATION: 003_04 DATE: 05-JUL-1994

Terra Lane Cross-Sections STA. 48+57.7 to STA. 51+27.2 ✓

Calc. by RJR
Date 1/89
Chk'd by ADO
Date 1/92

LOR-2-3.48

78
222

SEEDING END WIDTH	SEEDING SQ. YDS.		
0			
24			
	12		
24			
42			
	231		
42			
	231		
41			
	219		
38			
	211		
38			
	93		
36			

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Construction

640 635 630 645 640 635 645 640 635 645 640 635 645 650 645 640 645 640

AHD. STA 53+54 BK.

53+47.5 (LT) TYPE A ANCHOR

53+52.5 (RT) TYPE A ANCHOR

STA 53+50
637.31

AHD. STA 53+49.5 BK.

END PAVEMENT REPLACEMENT @ STA 53+25 MEET EXISTING ELEVATIONS

END SIDEWALK REPLACEMENT @ STA 53+25, LT. & RT. MEET EXISTING ELEVATIONS

6:1 S

639.78
STA 53+00
639.66

605-AGGREGATE DRAINS SEE PLAN SHT. 75 FOR LOCATIONS.

2:1 S 2:1 S

642.18
STA 52+50
641.76

EX. NO. 2 M.H. STA. 52+62. 21' RT. TO BE RECONSTRUCTED TO GRADE TOP COVER EXIST. 640.8± TOP COVER PROP. 642.0± Ø 10" 618.8±

4:1 S 2:1 S

644.10
STA 52+00
643.33

℄

6:1 S 4:1 S

645.50
STA 51+50
644.54

AHD. STA 51+27.26

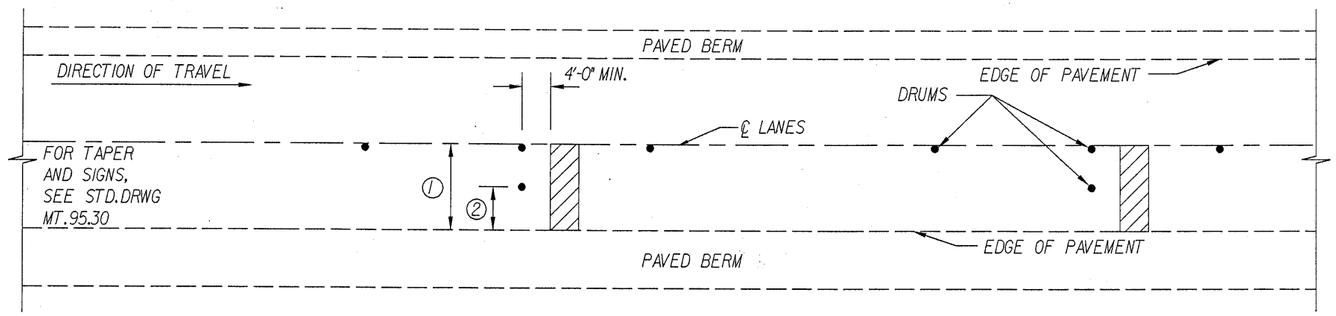
	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
AHD. STA 53+25 BK.	0 18	0 2		
	18	5	17	3
	4	24	20	27
	2	17	6	38
	2	18	4	32
AHD. STA 51+27.26	1	19	1	16

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Construction

DESIGN FILE: c:\brett\dgn\lordin\002\12xsec01
WORKSTATION: 003_104 DATE: 05-JUL-1994

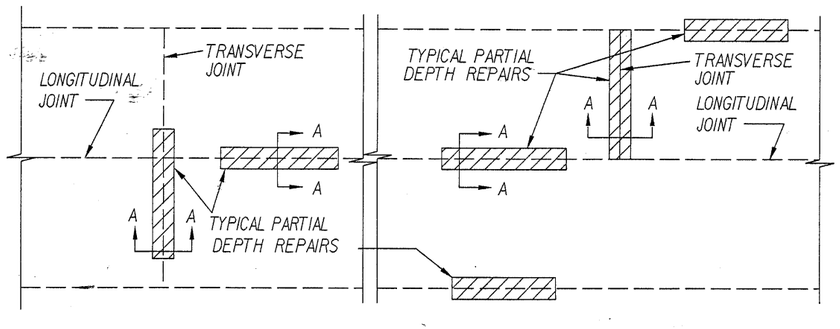
Terra Lane Cross-Sections STA. 51+50 to STA. 53+50



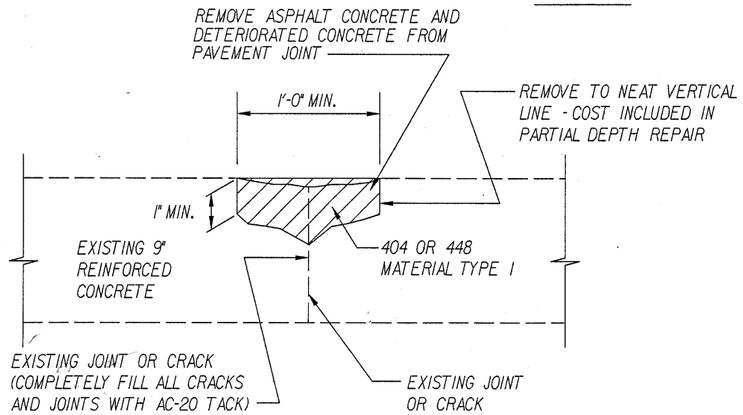
TRAFFIC MAINTENANCE DETAIL FOR LANE CLOSURE FOR PAVEMENT REPAIR (FULL DEPTH)

① THE CONTRACTOR SHALL PLACE AN ADDITIONAL DRUM AT EACH PAVEMENT REMOVAL. THE FACE OF THIS DRUM SHALL BE EVEN WITH THE OUTSIDE EDGE OF THE REMOVAL. THE DRUM SHALL REMAIN IN PLACE UNTIL TRAFFIC IS RETURNED TO THIS LANE OF PAVEMENT.

② AN ADDITIONAL DRUM SHALL BE PLACED ONE HALF THE DISTANCE FROM THE EDGE OF REMOVAL TO THE EDGE OF PAVEMENT. THE DRUM SHALL REMAIN IN PLACE UNTIL TRAFFIC IS RETURNED TO THIS LANE OF PAVEMENT. LANE CLOSURES SHALL BE KEPT TO A MINIMUM AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RESTRICT THE SAWING OPERATION TO ONLY THE REMOVAL AND REPLACEMENT AREAS WHICH CAN BE COMPLETED IN ONE WEEK OR AS DIRECTED BY THE ENGINEER.



PLAN



SECTION A-A

PARTIAL DEPTH PAVEMENT REPAIR DETAILS

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, SEE GENERAL NOTE FOR DESCRIPTION OF WORK REQUIRED	63 CU.YD.

FULL DEPTH PAVEMENT REPAIR

100% JOINT REPAIR
STA.185+00 TO STA.422+00 = 23,700 LIN.FT.
23,700 / 60 (JOINT INTERVAL) + 1 = 396 JOINTS (EACH SIDE)
ADD 1 MID PANEL CRACK REPAIR PER SLAB = 395 (EACH SIDE)
TOTAL REPAIR = 396 + 395 = 791 REPAIRS (EACH SIDE)

255 - FULL DEPTH PAVEMENT SAWING:
(24' LONG)X791 EACH)X2 SIDES)X2 E.B.& W.B.)+(6' WIDE)X791 EACH)X2 E.B.& W.B.) = 85,428 LIN.FT.

ADD FOR JOINT REPAIRS IN RAMPS
6 RAMPS × 20 REPAIRS (AVG) EACH RAMP = 120 JOINTS
(16' LONG) * (120 EACH) **1,920** LIN.FT.
87,348 LIN.FT.

255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN:
(24' LONG) (6' WIDE) (791 EACH) (2 E.B.& W.B.) / 9 = 25,312 SQ.YD.

255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN (FOR RAMPS):
(16' LONG) (6' WIDE) (120 EACH) / 9 = 1,280 SQ.YD.
26,592 SQ.YD.

SPECIAL - SAWING AND SEALING
ASPHALT CONCRETE PAVEMENT JOINTS, 705.04
(791 EACH) (2 E.B.& W.B.) (36' LONG) = 56,952 LIN.FT.
(120 EACH) (22' LONG) = 2,640 LIN.FT.
59,592 LIN.FT.

605 - AGGREGATE DRAIN, AS PER PLAN
100 LOCATIONS (ESTIMATED) × 15 LIN.FT. = 1,500 LIN.FT.

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION = 100 CU.YD. (ESTIMATED) ×

304 - AGGREGATE BASE = 75 CU.YD. (ESTIMATED) ×

× QUANTITIES TO BE USED AS DIRECTED BY THE ENGINEER TO REPLACE POOR SUBBASE & SUBGRADE MATERIALS.
QUANTITIES CARRIED TO SHEET 80.

DESIGN FILE: c:\dgn\temp\partdepth.dgn
DATE: 26-JUL-1994
WORKSTATION: e

CALC. BY RJR 7/89
CHK'D. BY ADB 5/93

LOR-2-3.48

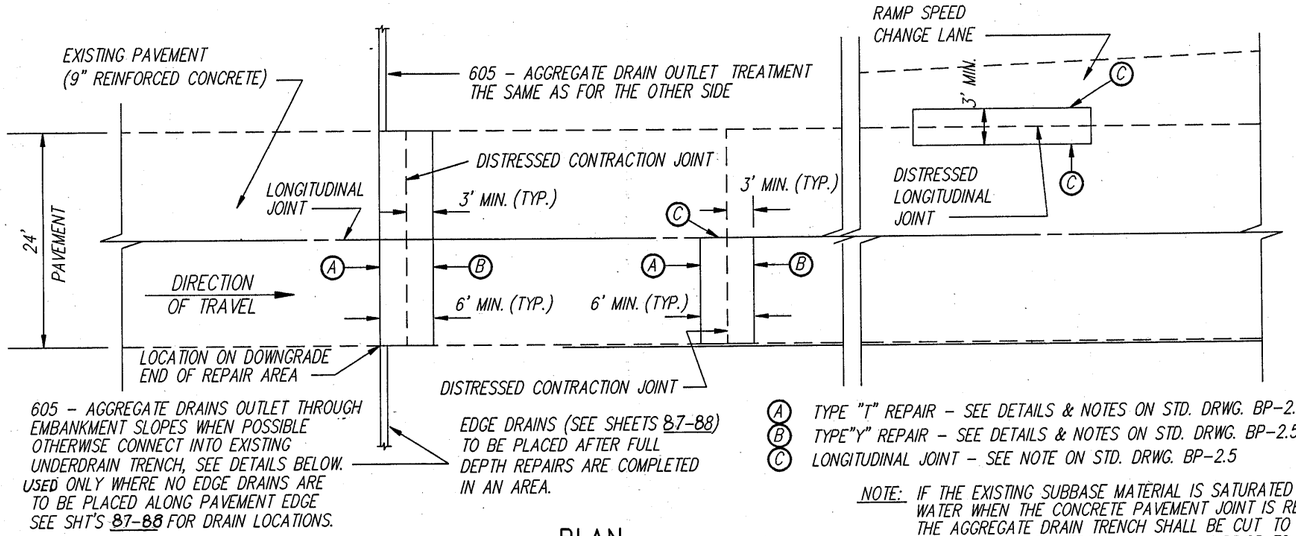
THIS TYPE OF PAVEMENT REPAIR SHALL BE USED FOR DISTRESSED TRANSVERSE CONTRACTION JOINT REPAIRS IN THE EXISTING REINFORCED CONCRETE PAVEMENT AS SHOWN ON DETAILS THIS SHEET. SEE STD. DRWG. BP-2.5 FOR ADDITIONAL DETAILS. THE LOCATIONS AND SIZES OF THESE REPAIRS SHALL BE AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR THIS PAVEMENT JOINT REPAIR WORK:

QUANTITIES CARRIED FROM SHEET 79

		UNITS
ITEM 255 – FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN	26,592	SQ. YD.
ITEM 255 – FULL DEPTH PAVEMENT SAWING	87,348	LIN. FT.
ITEM 605 – AGGREGATE DRAIN, AS PER PLAN	1500	LIN. FT.
ITEM 203 – EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION *	100	CU. YD.
ITEM 304 – AGGREGATE BASE *	75	CU. YD.
ITEM SPEC. – SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04	59,592	LIN. FT.

* QUANTITIES TO BE USED AS DIRECTED BY ENGINEER TO REPLACE POOR SUBBASE AND SUBGRADE MATERIALS

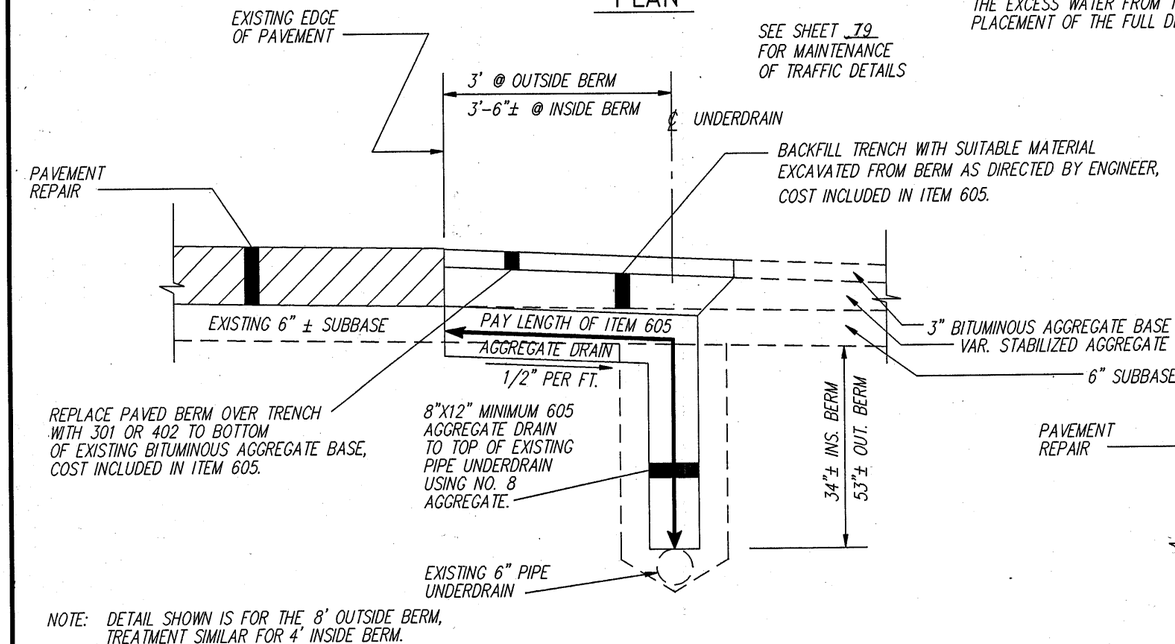


Ⓐ TYPE "T" REPAIR – SEE DETAILS & NOTES ON STD. DRWG. BP-2.5
Ⓑ TYPE"Y" REPAIR – SEE DETAILS & NOTES ON STD. DRWG. BP-2.5
Ⓒ LONGITUDINAL JOINT – SEE NOTE ON STD. DRWG. BP-2.5

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.

PLAN

SEE SHEET 79 FOR MAINTENANCE OF TRAFFIC DETAILS

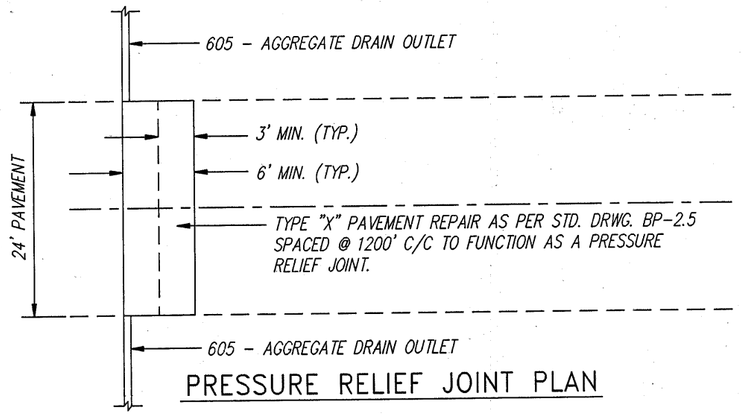


NOTE: DETAIL SHOWN IS FOR THE 8' OUTSIDE BERM, TREATMENT SIMILAR FOR 4' INSIDE BERM.

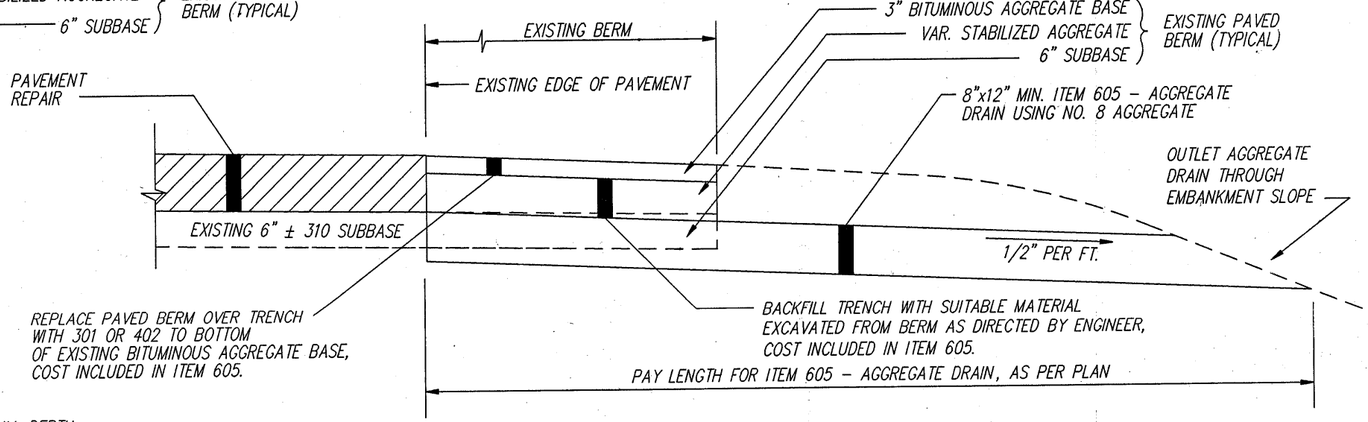
DETAIL FOR AGGREGATE DRAIN OUTLET INTO UNDERDRAIN TRENCH

(CUT SECTIONS)

NOTE: AGGREGATE DRAINS SHALL BE PLACED ONLY AT FULL DEPTH REPAIRS WHERE EDGE DRAINS (SEE SHEETS 87 & 88) ARE NOT TO BE PLACED, EXCEPT AS NOTED IN PLAN VIEW AT TOP.



PRESSURE RELIEF JOINT PLAN



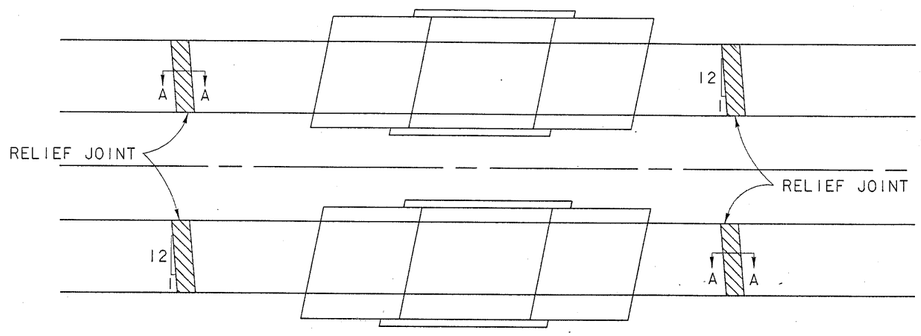
DETAIL FOR AGGREGATE DRAIN OUTLET THROUGH EMBANKMENT SLOPE

(FILL SECTIONS)

FULL DEPTH RIGID PAVEMENT REPAIR AND RIGID REPLACEMENT

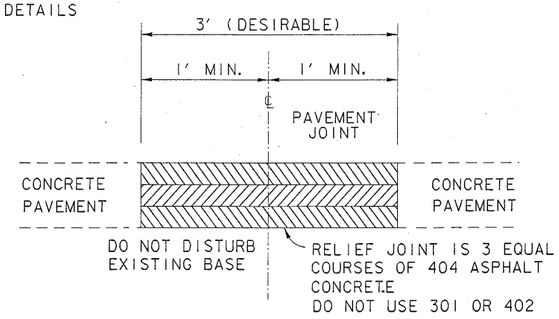
LS/FULDEPTH

Calc. by ADB Date 6/93
Chk'd by MGA Date 8/93



TYPICAL RELIEF JOINT LOCATION PLAN

SEE STD. DRWG. BP-2.4 FOR ADDITIONAL DETAILS



SECTION A-A

PRESSURE RELIEF JOINT AS PER PLAN

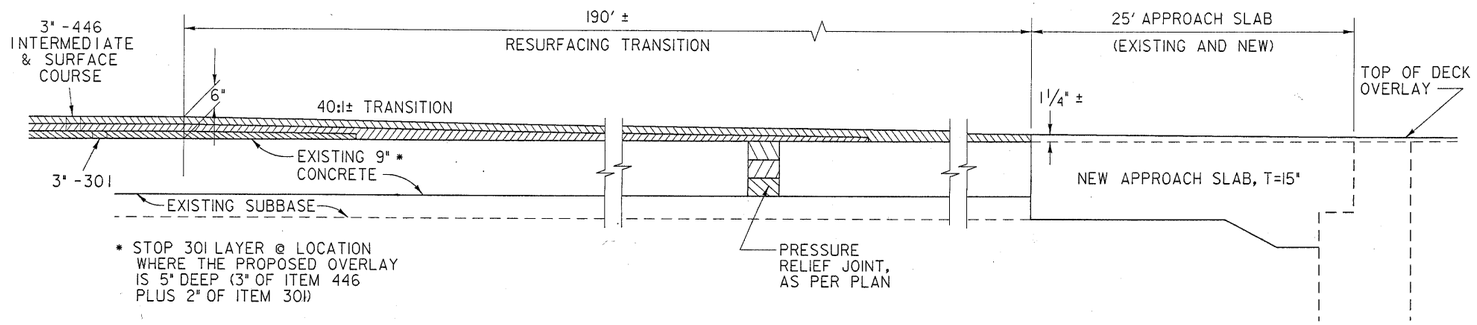
STRUCTURE	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	SPECIAL PRESSURE RELIEF JOINT, TYPE A	SPECIAL PRESSURE RELIEF JOINT, AS PER PLAN	605 AGGREGATE DRAIN	605 6" SHALLOW PIPE UNDER DRAIN 707.15	603 4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D 3034 SDR 35, SS 931, OR SS 944
	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
LOR-2-0459 LT & RT			96	60		
LOR-2-0646 LT & RT	4	96			104	100
LOR-2-0699	2	60			64	70
LOR-2-0742 LT & RT			96	60		
TOTALS	6	156	192	120	168	170

ITEM SPECIAL-PRESSURE RELIEF JOINT, TYPE A

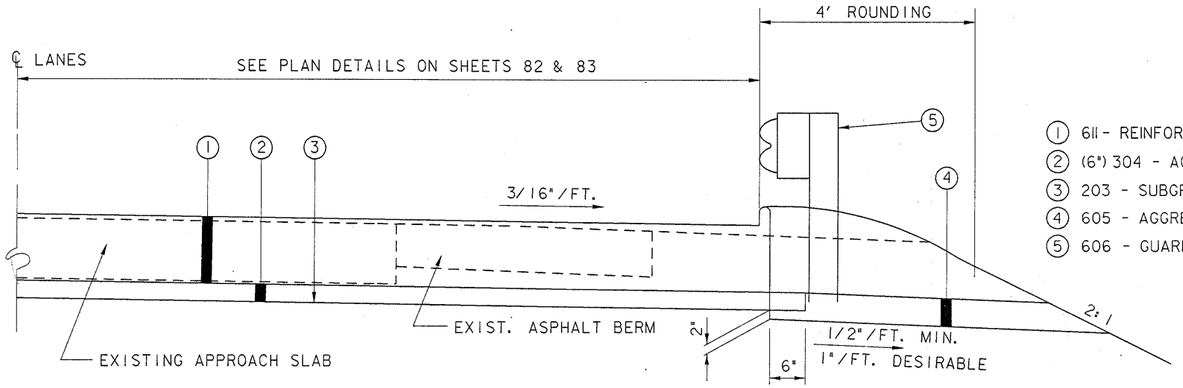
TYPE A PRESSURE RELIEF JOINTS SHALL BE INSTALLED IN PAVEMENT @ EACH END OF STRUCTURES NO. LOR-2-646 AND LOR-2-0699 AS PER STD. DRWG. BP-2.3.

ITEM SPECIAL - PRESSURE RELIEF JOINT, AS PER PLAN

PRESSURE RELIEF JOINTS AS PER PLAN SHALL BE CONSTRUCTED AS PER DETAIL ON THIS SHEET.



DETAIL FOR TRANSITIONING RESURFACING TO NEW APPROACH SLAB



LEGEND

1. 611 - REINFORCED CONCRETE APPROACH SLAB, T =15"
2. (6") 304 - AGGREGATE BASE
3. 203 - SUBGRADE COMPACTION
4. 605 - AGGREGATE DRAIN
5. 606 - GUARDRAIL, TYPE 5

HALF APPROACH SLAB TYPICAL SECTION

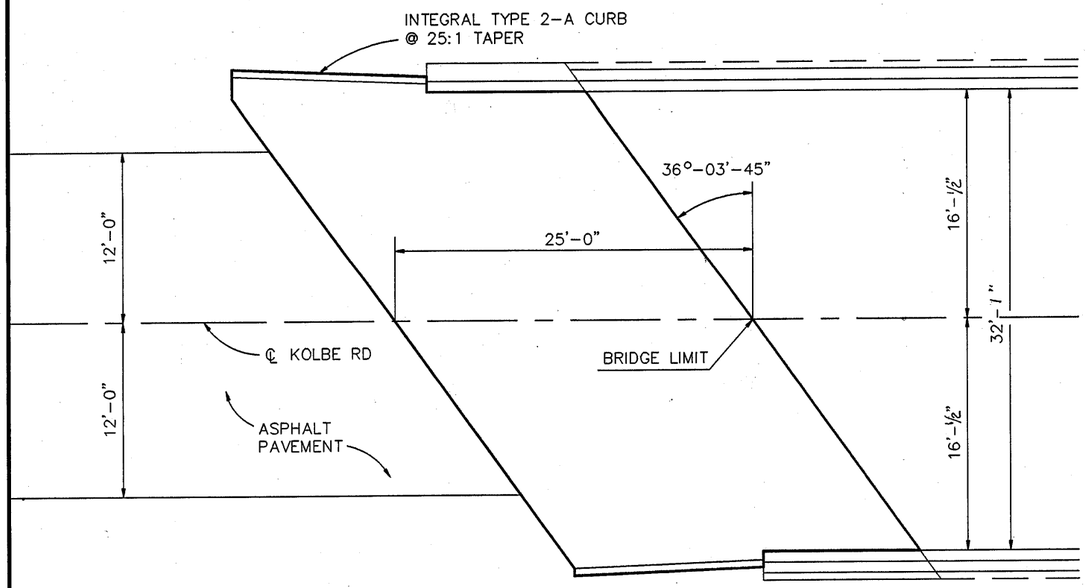
APPROACH SLAB QUANTITIES

STATION LIMITS	202 PAVEMENT REMOVED	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	203 SUBGRADE COMPACTION	304 AGGREGATE BASE	605 AGGREGATE DRAINS	611 REINFORCED CONCRETE APPROACH SLAB (T=15")		
	SQ. YD.	CU. YD.	SQ. YD.	CU. YD.	LIN. FT.	SQ. YD.		
S.R. 2 LOR-2-0459								
241+36.41 TO 241+61.74 LT	66.7	35.3	107	18.5	12	107		
241+90.90 TO 242+15.58 RT	66.7	34.7	106	18.5	12	106		
244+70.18 TO 244+95.51 LT	66.7	34.7	106	18.5	12	106		
245+11.72 TO 245+36.40 RT	66.7	35.3	107	18.5	12	107		
LOR-2-0646								
340+80.17 TO 341+05.17 LT	66.7	35.7	108	18.5	16	108		
340+56.87 TO 340+81.87 RT	66.7	35.7	108	18.5	16	108		
342+10.77 TO 342+35.77 LT	66.7	35.7	108	18.5	20	108		
341+87.47 TO 342+12.47 RT	66.7	35.7	108	18.5	20	108		
LOR-2-0742								
391+51.99 TO 391+76.99 RT	66.7	36.1	109	18	16	109		
391+60.99 TO 391+85.99 LT	66.7	36.1	109	18	16	109		
393+54.53 TO 393+79.53 RT	66.7	36.1	109	18	16	109		
393+63.53 TO 393+88.53 LT	66.7	36.1	109	18	16	109		
KOLBE RD: LOR-2-0649								
48+50.72 TO 48+75.72	89	-	92	15.8	12	92		
51+24.29 TO 51+49.29	89	-	92	15.8	12	92		
TERRA LANE: LOR-2-0699								
48+57.74 TO 48+82.74	89	*	92	15.7	12	92		
51+02.26 TO 51+27.26	89	*	92	15.7	12	92		
TOTALS	1156.4	427.2	1662	283	232	1662		

* INCLUDED WITH ROADWAY WORK

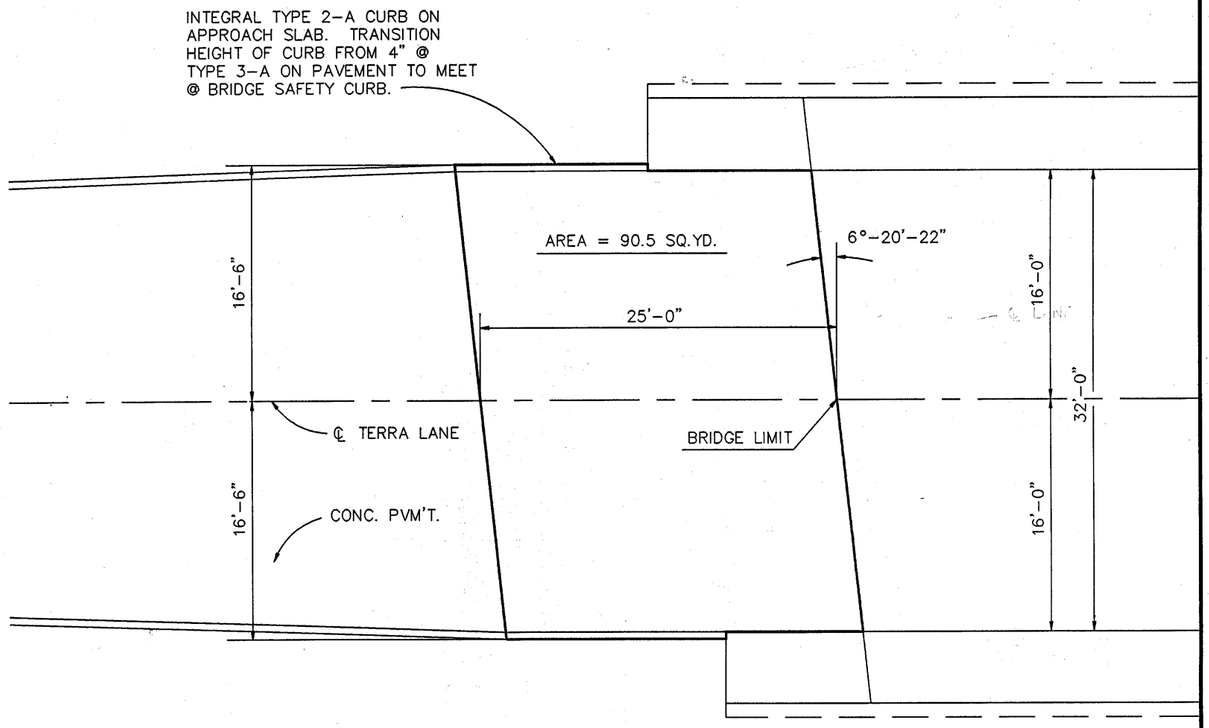
DESIGN FILE: C:\DGN\LOR2\L2APSLAB.DGN
DATE:
WORKSTATION:

APPROACH SLAB & RELIEF JOINT DETAILS



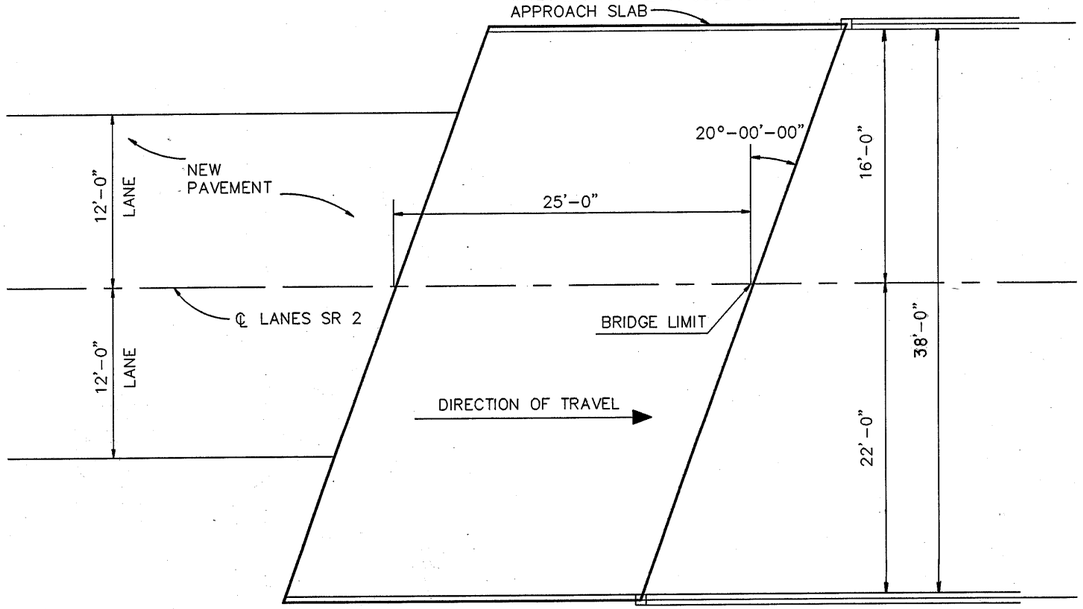
STRUCTURE NO. LOR-2-0649

KOLBE ROAD



STRUCTURE NO. LOR-2-0699

TERRA LANE



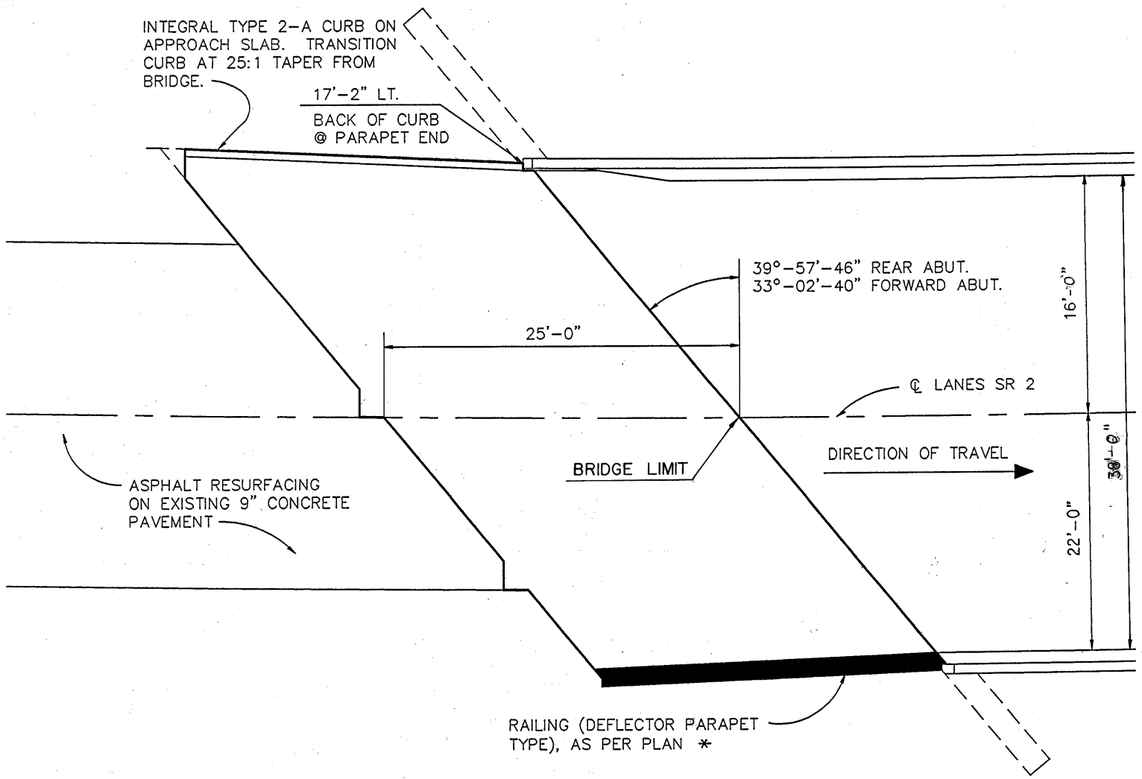
STRUCTURE NO. LOR-2-0646 LT & RT

OVER BEAVER CREEK

NOTE:
1) SEE STANDARD DRAWING AS-1-81 FOR ADDITIONAL DETAILS
2) SEE SHEET 81 FOR QUANTITIES.
3) SEE SHEET 83 FOR ADDITIONAL APPROACH SLAB DETAILS.

L2/APPSLAB1

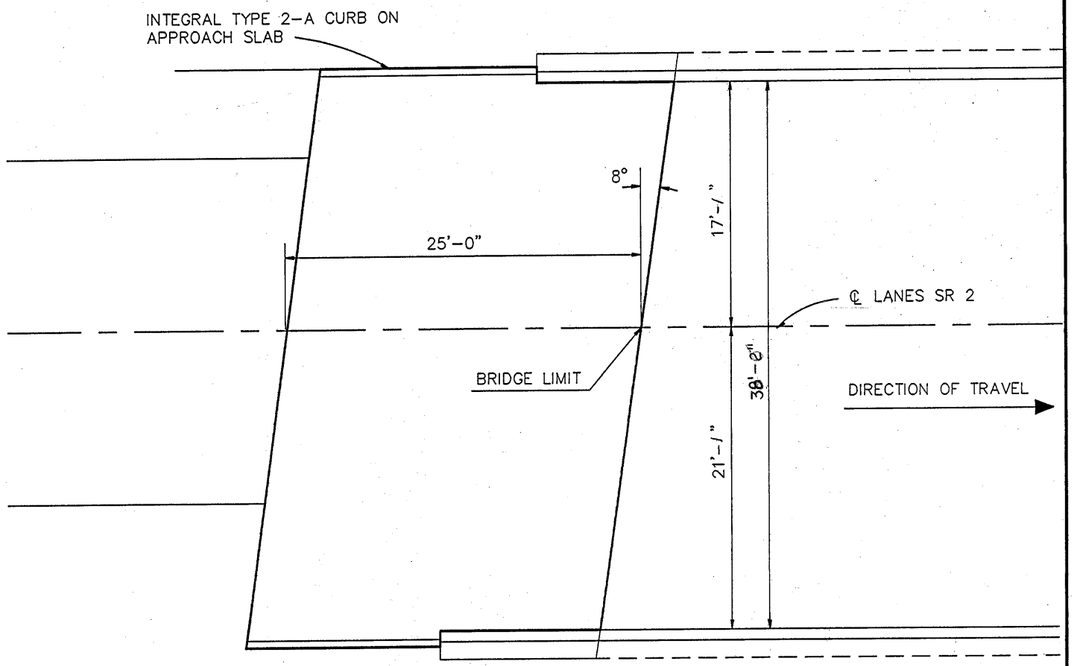
APPROACH SLAB DETAILS



STRUCTURE NO. LOR-2-0459 LT. & RT.

OVER CROSSE RD. AND RAILROAD

* SEE SHEET 84 FOR DETAILS
* SEE SHEET 16 FOR NOTE
* SEE SHEET 30 FOR LOCATIONS



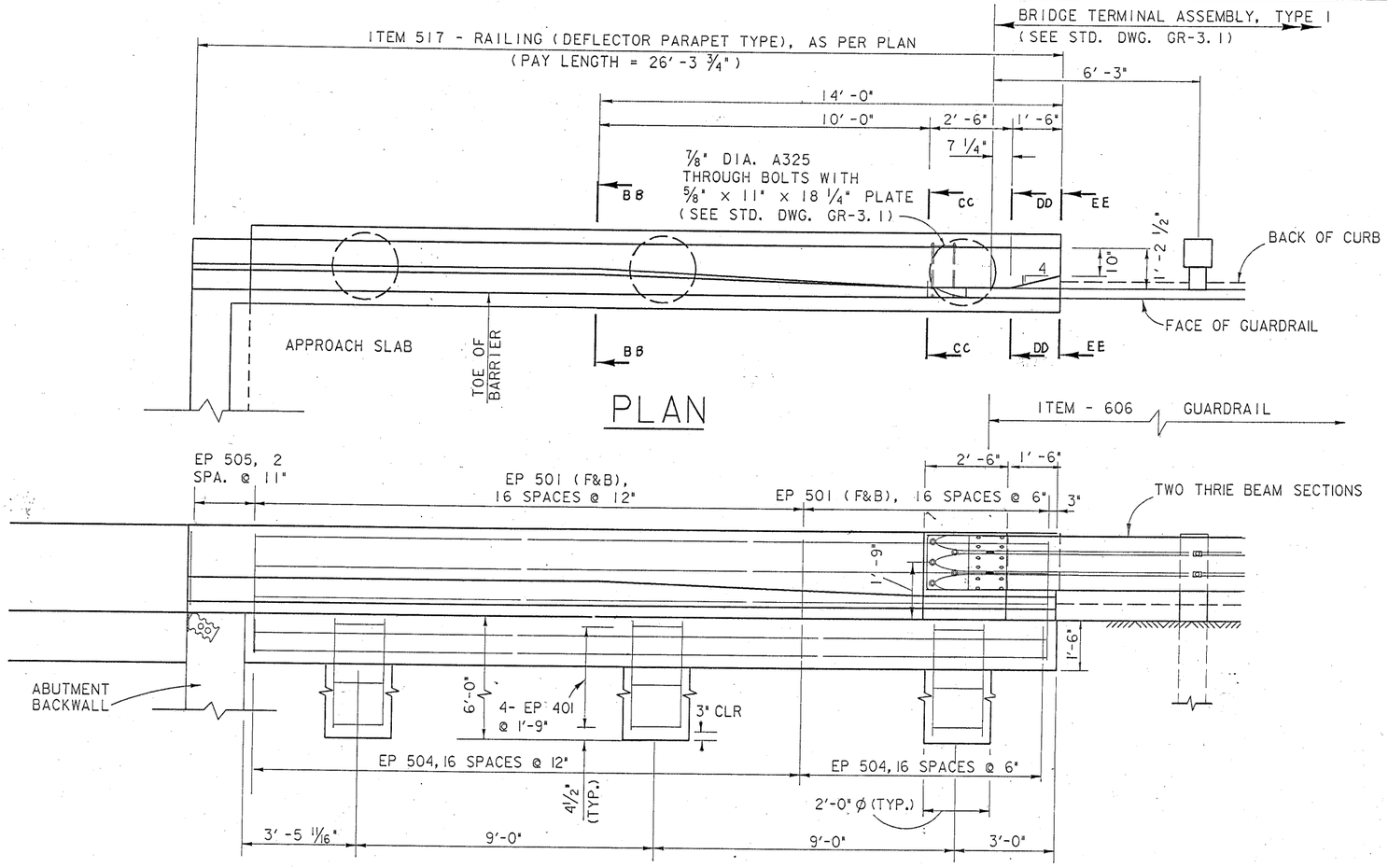
STRUCTURE NO. LOR-2-0742 LT. & RT.

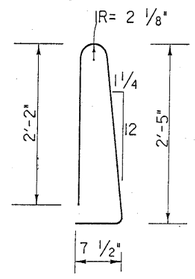
OVER S.R. 58

NOTE:
1) SEE STANDARD DRAWING AS-1-81 FOR ADDITIONAL DETAILS
2) SEE SHEET 81 FOR QUANTITIES.
3) SEE SHEET 82 FOR ADDITIONAL APPROACH SLAB DETAILS.

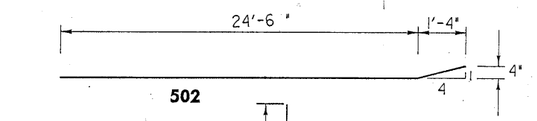
L2/APPSLAB2

APPROACH SLAB DETAILS

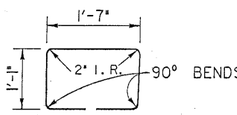




505



502



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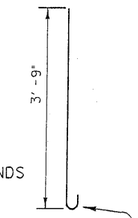
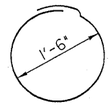


STD. 180° HOOK
501



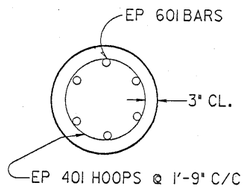
401

BENDING DIAGRAMS

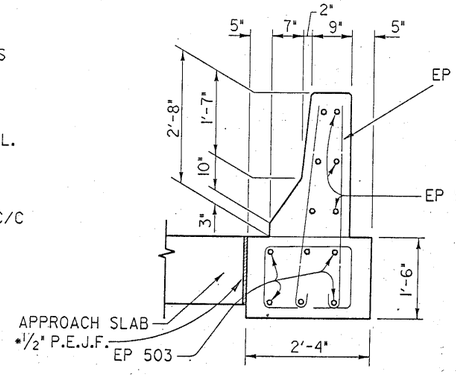
GENERAL NOTES

DESIGN DATA: CONCRETE SHALL BE HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE. REINFORCING STEEL SHALL BE GRADE 60, EPOXY COATED.

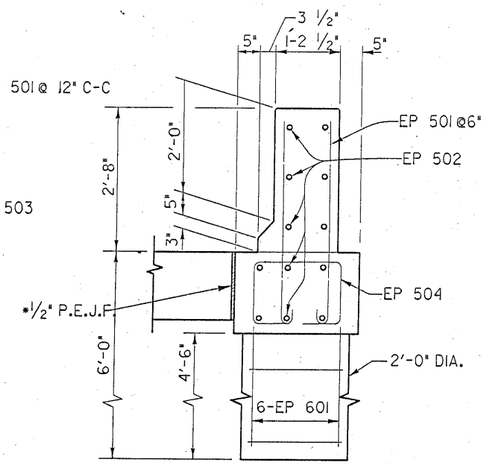
PARAPET: SEE PLAN NOTE FOR ITEM 517- RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN ON SHEET NO. 16.



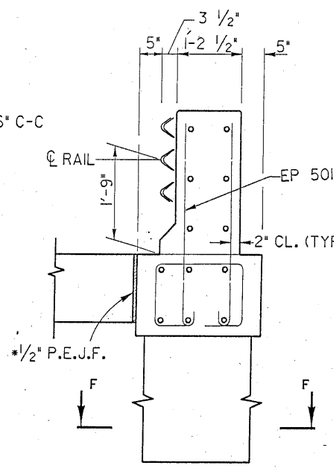
SECTION F-F



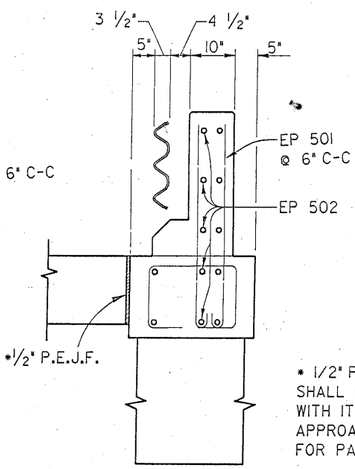
SECTION BB- BB



SECTION CC- CC



SECTION DD- DD



SECTION EE- EE

REINFORCING BAR LIST

MARK	NO.	LENGTH	TYPE
EP 401	48	6'-0"	BT.
EP 501	264	4'-4"	BT.
EP 502	20	25'-10"	BT.
EP 503	28	25'-10"	STR.
EP 504	132	5'-0"	BT.
EP 505	8	5'-3"	BT.
EP 601	72	5'-6"	STR.

ALL REINFORCING BARS SHALL BE EPOXY COATED AND INCLUDED FOR PAYMENT WITH ITEM 517- RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN.

* 1/2" P.E.J.F. SHALL BE INCLUDED WITH ITEM 611- APPROACH SLAB FOR PAYMENT.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

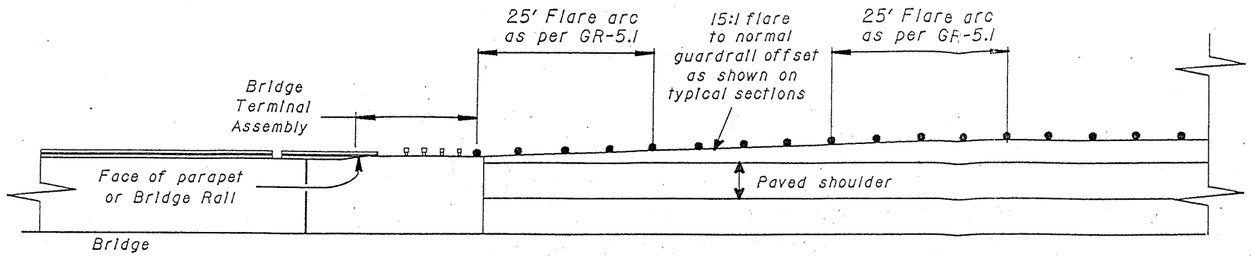
APPROACH SLAB PARAPET DETAILS

BRIDGE NO. LOR-2-0459
OVER CONRAIL R. R, AND CROSS ROAD

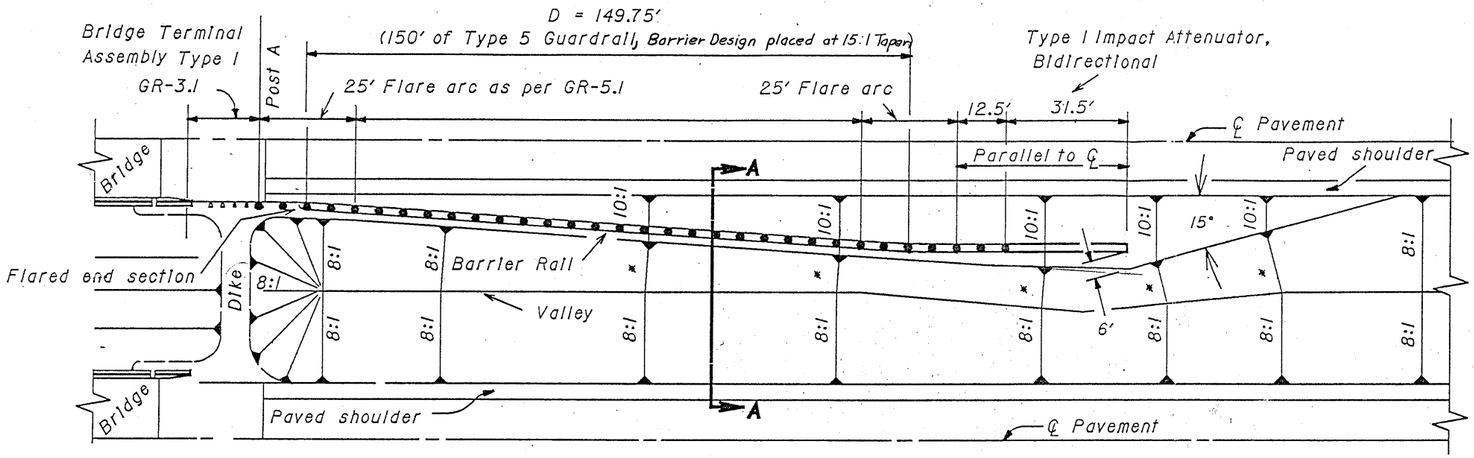
LORAIN COUNTY S. R. 2

DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISED
RDN	DRA	KW	FC 6/2/92	12/92

DESIGN FILE: c:\dgn\denny\brrailc.dgn
WORKSTATION: D3_386.1 DATE: 16-AUG-1977

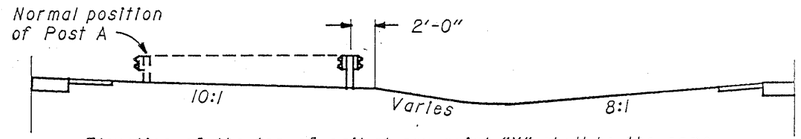


CONTINUOUS GUARDRAIL APPROACH INSTALLATION



* Slope Varies

PAYMENT ITEMS (Carried to Sht.30)	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

CATCH BASIN REPLACEMENT QUANTITIES

CALC. BY KAA 2/89
CHK'D BY MGA 9/93

SHEET REFERENCE	STATION	EXISTING CATCH BASIN OR MANHOLE NUMBER	EXIST. C.B. DEPTH AS MEASURED FROM WINDOW ELEV. DOWN TO FLOWLINE OF CATCH BASIN	202 GUTTER REMOVED	202 CATCH BASIN OR INLET ABANDONED: CONNECT PIPES THROUGH	202 CATCH BASIN OR INLET ABANDONED: SEALING EXISTING PIPES	203 EMBANKMENT, AS PER PLAN	604 CATCH BASINS NO. 5 WITHOUT CONCRETE APRON	604 CATCH BASINS NO. 8 WITHOUT CONCRETE APRON	604 CATCH BASINS ADJUSTED TO GRADE	670 DITCH EROSION PROTECTION: LENGTH	670 DITCH EROSION PROTECTION: SQ YD	659 SEEDING AND MULCHING	FLOW LINE: UNDERDRAIN, RT.	FLOW LINE: UNDERDRAIN, LT.	FLOW LINE: 12" CONDUIT	FLOW LINE: 15" CONDUIT	FLOW LINE: 18" CONDUIT
			FT	LIN FT	EACH	EACH	CU. YD.	EACH	EACH	EACH	FT	SQ YD	SQ YD					
	186+42.47 ℄	2-2-A	2'-0"	10			1		1		10	8	10		650.75		650.0	
	186+42.47 56.94' LT	6								1				650.2			649.45	
	189+25 ℄	2-2-A	2'-0"	20			2		1		10+10	17	20	648.83 649.0	648.83 649.0	648.20	647.95	
	189+25 54.26' RT	6				1										650.4		
	191+00 ℄	2-2-A	3'-3"	10			1		1		10	8	10				647.5	
	201+00 ℄	2-2-A	2'-6"	10			1		1		10	8	10	655.75	655.75		655.0	
	211+00 4' RT	2-2-A	2'-8"	10			1		1		10	8	10	662.7	662.7			661.7 661.7
	216+00 ℄	2-2-A	2'-7"	10			1		1		10	8	10					665.1 665.1
	221+00 ℄	2-2-A	2'-6"	10			1		1		10	8	10	669.5	669.5			668.5
	234+00 ℄	2-2-A	2'-6"	10			1		1		10	8	10	691.25	691.25		690.5	
	253+00 ℄	2-2-A	2'-6"	10			1		1		10	8	10	692.45	692.45		691.7	
	263+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10	683.83	683.83		683.08	
	268+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10		680.97		680.24	
	273+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10				673.0	
	278+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10	662.95	662.95		662.2	
	289+00 ℄	2-2-A	2'-1"	10			1		1		10	8	10	643.85	643.85		643.10	
	299+00 ℄	2-2-A	1'-9"	10			1		1		10	8	10	638.1	638.1		637.4	
46	307+50 ℄	2-2-A	1'-6"‡	20			‡		1		10+10	17	‡	634.0	634.0		633.0	
	316+00 ℄	2-2-A	1'-6"	10			1		1		10	8	10		630.84		630.4	
	320+75 52' RT	6								1							631.0	
	327+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10	626.25	626.25		625.5	
	332+00 ℄	2-2-A	2'-5"	10			1		1		10	8	10				620.4	
53	339+00 ℄	2-2-A	2'-7"	20			‡		1		10+10	17	‡	614.45	614.45 614.45		613.7	
55	344+50 ℄	2-2-A	3'-6"‡	10			‡		1		10	8	‡	615.3	615.3		613.86	613.86
55	344+50 66' LT	2-2-A	3'-8"‡	10			‡	1			10	8	‡	614.6 614.6			614.5	
	354+00 ℄	2-2-A	1'-11"	10			1		1		10	8	10	618.5	618.5		617.75 617.75	
	354+00 66' LT	2-2-A	1'-5"**	10			2	1			10	8	20				619.03	
	363+00 ℄	2-2-A	1'-10"	10			1		1		10	8	10	621.0	621.0		620.0 620.0	
	363+00 66' LT	2-2-A	1'-5"**	10			2	1			10	8	20				621.19	
	380+04 54' LT	6				1										635.82		
	382+57.53 ℄	2-2-A	2'-3"	10			1		1		10	8	10	639.75	639.75		639.0	
	382+57.53 56.67' RT	6					—	—		1					639.21		638.46 638.46	
	406+00 ℄	2-2-A	2'-7"	10			1		1		10	8	10			633.02		
	407+75 ℄	2-2-A	1'-4"*	20			4		1		10+10	17	40	634.0 634.0	634.0 634.0	633.6		
	407+75 56' RT	6			1											633.10		
	410+00 ℄	2-2-A	1'-6"	10			1		1		10	8	10	635.0		634.6		
	417+00 ℄	2-2-A	1'-6"	10			1		1		10	8	10	640.9		640.46		
	D91+92 28' RT	2-2-A	2'-9"	20			2	1			10+10	17	20		632.0	631.5		
	342+21 6' LT.	2-2-B	2'-8"							1				615.4	615.4	615.10		
	TOTALS			370	1	2	35	4	28	4		301	350					

(QUANTITIES CARRIED TO SHTS. 19 & 20)

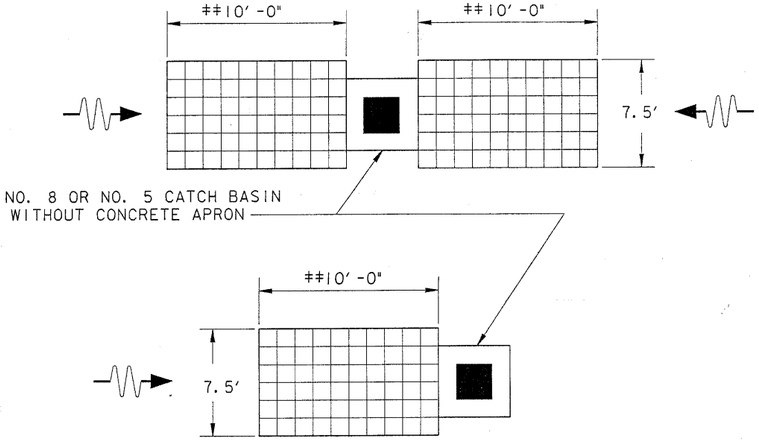
* NEW NO. 8 CATCH BASIN TO BE 1'-7" MIN. IN DEPTH TO ACCOMMODATE 12" OUTLET PIPE. MAINTAIN EXISTING FLOWLINE ELEVATION OF THE CATCH BASIN AND REGRADE SURROUNDING AREA TO INSURE POSITIVE DRAINAGE TO THE NEW CATCH BASIN.

** NEW NO. 8 CATCH BASIN TO BE 1'-10" MIN. IN DEPTH TO ACCOMMODATE 15" OUTLET PIPE. MAINTAIN EXISTING FLOWLINE ELEVATION OF THE CATCH BASIN AND REGRADE SURROUNDING AREA TO INSURE POSITIVE DRAINAGE TO THE NEW CATCH BASIN.

‡ SEE SHEET REFERENCE FOR DETAILS OF NEW CATCH BASIN.

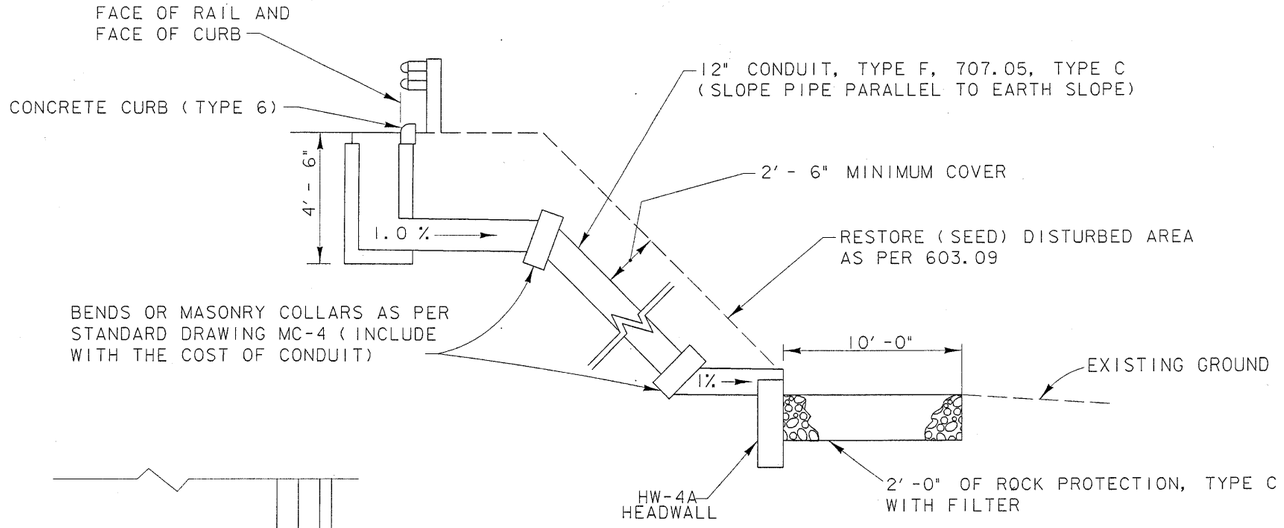
THE ELEVATIONS GIVEN IN TABLE WERE OBTAINED FROM THE ORIGINAL PLAN (LOR-254-00-B) AND SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.

‡‡ 10'-0" LENGTH IS TYPICAL AT ALL LOCATIONS EXCEPT AS NOTED IN TABLE.

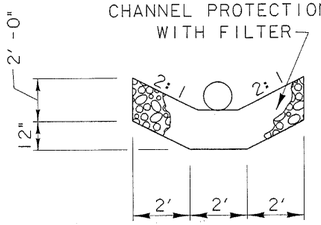


DITCH EROSION PROTECTION DETAILS

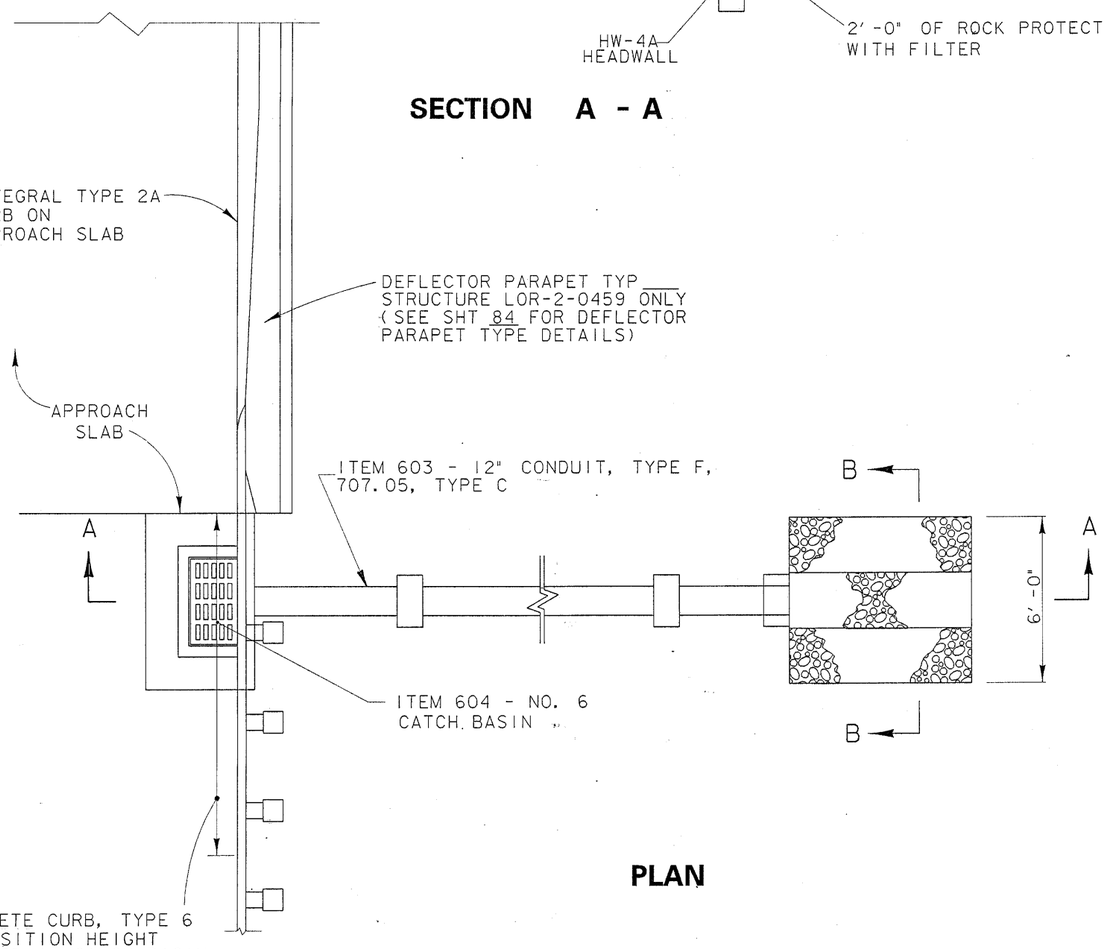
DESIGN FILE: C:\DGN\LOR2\CTABLE.DGN
WORKSTATION:
DATE:



SECTION A - A



SECTION B - B



PLAN

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

STRUCTURE			601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER CU. YD.	602 CONCRETE MASONRY CU. YD.	603 12" CONDUIT, TYPE F, 707.05, TYPE C LIN. FT.	604 CATCH BASIN NO. 6 EACH	609 CURB TYPE 6 LIN. FT.		
0459	R.A. LT *	E.B.L.	-	-	20	1	12		
	F.A. LT *	E.B.L.	-	-	20	1	12		
	R.A. RT	W.B.L.	5	0.21	68	1	12		
	F.A. RT	W.B.L.	5	0.21	56	1	12		
0646	R.A. RT	E.B.L.	5	0.21	54	1	12		
	R.A. LT*	E.B.L.	-	-	18	1	12		
	F.A. LT*	W.B.L.	-	-	18	1	12		
	F.A. RT	W.B.L.	5	0.21	54	1	12		
0649	R.R.A. RT		5	0.21	42	1	12		
	L.F.A. LT		5	0.21	40	1	12		
0742	R.A. RT	E.B.L.	5	0.21	62	1	12		
	R.A. LT*	E.B.L.	-		16	1	12		
	F.A. RT	E.B.L.	5	0.21	62	1	12		
	F.A. LT*	E.B.L.	-		16	1	12		
	R.A. LT*	W.B.L.	-		16	1	12		
	R.A. RT	W.B.L.	5	0.21	64	1	12		
	F.A. LT*	W.B.L.	-		18	1	12		
	F.A. RT	W.B.L.	5	0.21	64	1	12		
TOTALS			50	2.1	708	18	216		

* DISCHARGE INTO MEDIAN CATCH BASIN WITH 1.0% DESIRABLE SLOPE

DESIGN FILE: c:\dgn\temp\12drains.dgn
WORKSTATION: e
DATE: 18-JUL-1994

EB LANES EDGE DRAIN QUANTITIES

INSIDE EDGE OF PAVEMENT

STATION LIMITS "X" DENOTES DRAIN OUTLET BEGIN	STATION LIMITS "X" DENOTES DRAIN OUTLET END	SIDE	LOCATION	TYPE OF OUTLET	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SUPP. SPEC 931 * LIN. FT.	605 SHALLOW UNDERDRAIN AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	BENDS & BRANCHES 4" X4" X45° WYE	BENDS & BRANCHES 6" X 90° BEND	BENDS & BRANCHES 6" X 6" X 6" TEE
X B76+68	B81+25	LT MED	RAMP B S.R. 2	ON SLOPE	16	457	1		1	
185+00	189+25	X		EX. C. B.	20	425				1
X 189+25	194+82				20	557				
194+82	211+00			HIGH SIDE OF SUPER						
X 211+00	215+98			EX. C. B.	16	498			1	
X 216+00	220+98			EX. C. B.	20	498			1	
X 221+00	233+98			EX. C. B.	20	1298			1	
X 234+00	241+62			EX. C. B.	20	762			1	
241+89	244+91			BRIDGE LIMITS						
245+16	253+00	X		EX. C. B.	20	784			1	
253+02	263+00	X		EX. C. B.	20	998				1
X 263+00	265+14				20	214				
265+14	292+82			HIGH SIDE OF SUPER						
292+82	299+00	X		EX. C. B.	20	618			1	
299+02	304+00	X		(N.U.D.)	20	498		1		
315+00	327+00	X		EX. C. B.	20	1200			1	
327+02	332+00	X		EX. C. B.	20	498			1	
332+02	339+00	X		EX. C. B.	20	698				1
X 339+00	340+72				20	172				
340+93	341+99			BRIDGE LIMITS						
X 348+50	353+98			(N.U.D.)	20	548		1		
X 354+00	362+98			EX. C. B.	20	898			1	
X 363+00	370+23			EX. C. B.	20	723			1	
X 370+25	382+55			EX. C. B.	20	1230			1	
X 382+57	391+58			EX. C. B.	20	901			1	
391+81	393+59			BRIDGE LIMITS						
393+84	399+17	X		ON SLOPE	17	533	1		1	
D85+75	D91+00	X	LT RAMP D	ON SLOPE	19	525	1		1	
X F93+00	D96+00		LT RAMP F	ON SLOPE	15	300	1		1	
TOTALS					463	15833	4			

N.U.D. = NEW UNDERDRAIN

OUTSIDE EDGE OF PAVMENT

* OR 944

STATION LIMITS "X" DENOTES DRAIN OUTLET BEGIN	STATION LIMITS "X" DENOTES DRAIN OUTLET END	SIDE	LOCATION	TYPE OF OUTLET	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SUPP. SPEC 931 * LIN. FT.	605 SHALLOW UNDERDRAIN AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	BENDS & BRANCHES 4" X4" X45° WYE	BENDS & BRANCHES 6" X 90° BEND	BENDS & BRANCHES 6" X 6" X 6" TEE
X 189+25	194+25		S.R. 2	(N.U.D.)	17	500		1		
X 194+27	199+98			ON SLOPE	18	571	1		1	
X 200+00	204+98			ON SLOPE	18	498	1		1	
X 205+00	209+98			ON SLOPE	21	498	1		1	
X 210+00	215+55			ON SLOPE	21	555	1		1	
215+57	249+44			HIGH SIDE OF SUPER						
249+44	256+00	X		ON SLOPE	19	656	1		1	
256+00	272+00			NOT DEEP ENOUGH FOR OUTLET						
272+00	277+00	X		ON SLOPE	20	500	1		1	
277+02	282+00	X		ON SLOPE	18	498	1		1	
282+02	287+00	X		ON SLOPE	21	498	1		1	
287+02	292+00	X		ON SLOPE	19	498	1		1	
292+02	297+50	X	RAMP X AND	ON SLOPE	20	548	1		1	
297+50	299+53	X	DECEL. LANE	ON SLOPE	52	203	1		1	
299+50	304+00	X	S.R. 2	(N.U.D.)	52	450		1	1	
315+00	321+34			NOT DEEP ENOUGH FOR OUTLET						
321+34	332+44			HIGH SIDE OF SUPER						
332+44	339+50	X		ON SLOPE	18	706	1			1
X 339+50	340+79			ON SLOPE	16	129				
340+93	341+98			BRIDGE LIMIT						
X 348+50	353+98			(N.U.D.)	66	548		1		
X 354+00	358+98			ON SLOPE	66	498	1		1	
X 359+00	363+98			ON SLOPE	66	498	1		1	
X 364+00	368+98			ON SLOPE	66	498	1		1	
X 369+00	373+98			ON SLOPE	20	498	1		1	
X 374+00	377+98			ON SLOPE	66	398	1		1	
X 384+00	388+98		S.R. 2	ON SLOPE	22	498	1		1	
X 389+00	391+57			ON SLOPE	18	257	1		1	
391+81	393+59			BRIDGE LIMIT						
393+84	399+00	X		ON SLOPE	20	516	1		1	
399+02	404+00	X		ON SLOPE	20	498	1			
404+02	407+75	X		EX. C. B.	12	498	1			1
X 407+75	410+00				12	225				
X 407+70	412+98			(N.U.D.)	26	528			1	
X 413+00	417+98			ON SLOPE	26	498	1		1	
X 418+00	422+00			ON SLOPE	26	409	1		1	
TOTALS					882	14164	24			

N.U.D. = NEW UNDERDRAIN

DESIGN FILE: c:\dgn\temp\ed_ain.dgn
WORKSTATION: e
DATE: 25-JUL-1994

WB LANES EDGE DRAIN QUANTITIES

Calc. by RJR Date 6/89
Chk'd by ADD Date 1/92

INSIDE EDGE OF PAVEMENT

"X" DENOTES DRAIN OUTLET	STATION LIMITS BEGIN	STATION LIMITS END	SIDE	LOCATION	TYPE OF OUTLET	603: 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D 3034 SDR 35, SS 931 , OR SS 944 (LIN. FT.)	605: SHALLOW UNDERDRAIN AS PER PLAN (LIN. FT.)	SPECIAL: PRECAST REINFORCED CONCRETE OUTLET (EACH)	BENDS & BRANCHES: 4" X4" X45° WYE	BENDS & BRANCHES: 6" X90° BEND	BENDS & BRANCHES: 6" X6" X6" TEE
X	A76+78	A79+50	RT	RAMP A	ON SLOPE	14	272			1	
	185+00	189+25	X MED	S.R. 2	EX. C.B.	20	425				1
X	189+25	190+98				20	173				
X	191+00	200+98			EX. C.B.	20	998			1	
X	201+00	210+98			EX. C.B.	20	998			1	
X	211+00	215+57			EX. C.B.	26	457			1	
	215+57	249+44			HIGH SIDE OF SUPER						
	249+44	253+00	X		EX. C.B.	20	356			1	
	253+02	263+00	X		EX. C.B.	20	998			1	
	263+02	268+00	X		EX. C.B.	20	498			1	
	268+02	273+00	X		EX. C.B.	20	498			1	
	273+02	278+00	X		EX. C.B.	20	498			1	
	278+02	289+00	X		EX. C.B.	20	1098			1	
	289+02	299+00	X		EX. C.B.	20	998			1	
	299+02	305+00	X		N.U.D.	20	598		1	1	
	312+60	316+00	X		EX. C.B.	20	340			1	
	316+00	321+34	X		ON SLOPE	17	534	1		1	
	321+34	332+44			HIGH SIDE OF SUPER						
	332+44	339+00	X		EX. C.B.	20	656				1
X	339+00	340+68				20	168				
	340+93	341+99			BRIDGE LIMITS						
X	348+50	353+98			N.U.D.	20	548		1		
X	354+00	362+98			EX. C.B.	20	898			1	
X	363+00	370+23			EX. C.B.	20	723			1	
X	370+25	382+55			EX. C.B.	20	1230			1	
X	382+57	391+60			EX. C.B.	20	903			1	
	391+81	393+59			BRIDGE LIMITS						
	393+84	406+00	X		EX. C.B.	20	1216			1	
	406+02	407+75	X		EX. C.B.	20	173				1
X	407+75	409+98				20	223				
X	410+00	416+98			EX. C.B.	20	698			1	
X	417+00	422+00			EX. C.B.	20	500			1	
	C88+92	C93+05	X RT	RAMP C	ON SLOPE	20	413	1		1	
	E93+28	E98+05			ON SLOPE	15	477	1		1	
TOTALS						**592**	18565	3			

N.U.D. = NEW UNDERDRAIN

OUTSIDE EDGE OF PAVEMENT

"X" DENOTES DRAIN OUTLET	STATION LIMITS BEGIN	STATION LIMITS END	SIDE	LOCATION	TYPE OF OUTLET	603: 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D 3034 SDR 35, SS 931 , OR SS 944 (LIN. FT.)	605: SHALLOW UNDERDRAIN AS PER PLAN (LIN. FT.)	SPECIAL: PRECAST REINFORCED CONCRETE OUTLET (EACH)	BENDS & BRANCHES: 4" X4" X45° WYE	BENDS & BRANCHES: 6" X90° BEND	BENDS & BRANCHES: 6" X6" X6" TEE
X	189+22	194+82		S.R. 2	N.U.D.	20	560		1	1	
	194+82	211+78			HIGH SIDE OF SUPER						
X	211+78	222+00			ON SLOPE	24	1022	1		1	
	222+00	234+00			NOT DEEP ENOUGH FOR OUTLET						
X	234+00	241+64			ON SLOPE	20	764	1		1	
	241+89	244+91			BRIDGE LIMITS						
	245+16	250+00	X		ON SLOPE	18	484	1		1	
	250+02	255+00	X		ON SLOPE	20	498	1		1	
	255+00	264+14			NOT DEEP ENOUGH FOR OUTLET						
	265+14	292+82			HIGH SIDE OF SUPER						
	292+82	298+00	X		ON SLOPE	18	518	1		1	
	298+02	303+00	X		ON SLOPE	20	498	1		1	
	303+02	305+00	X		N.U.D.	20	198		1	1	
	312+65	316+00	X		ON SLOPE	18	335	1		1	
	316+00	325+00			NOT DEEP ENOUGH FOR OUTLET						
	325+02	330+00	X		ON SLOPE	20	498	1		1	
	330+02	335+00	X		ON SLOPE	20	498	1		1	
	335+02	339+25	X		ON SLOPE	16	423	1			1
X	339+25	340+68				16	143				
	340+93	341+99			BRIDGE LIMITS						
X	348+50	353+98			N.U.D.	22	548		1		
X	354+00	362+98			EX. C.B.	22	898			1	
X	363+00	373+00			EX. C.B.	22	1000			1	
	373+00	378+00			NOT DEEP ENOUGH FOR OUTLET						
X	378+00	380+10			N.U.D.	20	210		1		
X	385+50	391+56			ON SLOPE	18	606	1		1	
	391+81	393+59			BRIDGE LIMITS						
	393+84	399+17	X		ON SLOPE	17	533	1		1	
	399+17	422+00			HIGH SIDE OF SUPER						
TOTALS						371	10234	**12**			

N.U.D. = NEW UNDERDRAIN

DESIGN FILE: c:\dgn\temp\wdrain.dgn
WORKSTATION: e
DATE: 05-AUG-1994

UNDERDRAIN QUANTITIES

Calc. by ADB
Date 3/94
Chk'd by JLB
Date 8/94

LOR-2-3.48

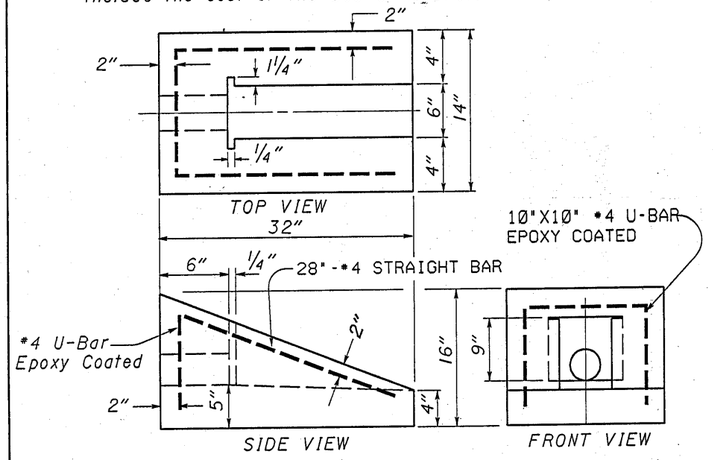
STATION LIMITS				SIDE	LOCATION	TYPE OF OUTLET	603	605	SPECIAL	BENDS & BRANCHES					603
							6" TYPE F CONDUIT 707.17 NONPERFORATED. ASTM D 3034, SDR 35, SS931, OR SS944	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	PRECAST REINFORCED CONCRETE OUTLET	60° WYE (4" x 4" x 6")	60° BEND (4" x 6")	4" x 4" x 6" TEE	30° WYE (4" x 4" x 6")	90° BEND (4" x 6")	6" TYPE B CONDUIT
'X' DENOTES DRAIN OUTLET	BEGIN	END													
	304+00	307+46	X	E.B. RT.	S.R. 2	ON SLOPE	62	346	1	1					
	304+54	312+30	X	E.B. RT.	S.R. 2	ON SLOPE	60	776	1	1	1	1			
X	312+40	315+00		E.B. RT.	S.R. 2	ON SLOPE	52	260	1	1	1	1			
	304+00	307+46	X	E.B. MED.	S.R. 2	EX. C.B.	40	346					1		
	307+54	312+40	X	E.B. MED.	S.R. 2			486		1					28
X	312+52	315+00		E.B. MED.	S.R. 2			248		1					28
	305+00	307+50	X	W.B. MED.	S.R. 2	EX. C.B.	24	239			1				
	307+54	312+50	X	W.B. MED.	S.R. 2			496		1					28
	305+00	312+55	X	W.B. LT.	S.R. 2	ON SLOPE	52	755	1	1	1	1			
	342+10	343+25	X	E.B. RT.	S.R. 2	ON SLOPE	68	115	1			1			
X	343+25	348+50		E.B. RT.	S.R. 2			525							
X	342+20	344+47		E.B. MED.	S.R. 2	EX. C.B.	30	227		1					
X	344+52	348+50		E.B. MED.	S.R. 2	EX. C.B.	23	398		1					
X	342+42	344+47		W.B. MED.	S.R. 2	EX. C.B.	26	205					1		
X	344+52	348+50		W.B. MED.	S.R. 2	EX. C.B.	23	398		1					
	342+42	344+47	X	W.B. LT.	S.R. 2	EX. C.B.	25	205		1					
X	344+52	348+50		W.B. LT.	S.R. 2	EX. C.B.	25	398		1					
X	A78+00	A84+00		LT.	RAMP "A"	ON SLOPE	26	600	1					1	
	A84+02	189+20	X	LT.	RAMP "A"	ON SLOPE	26	518	1					1	
X	B81+00	B85+50		RT.	RAMP "B"	ON SLOPE	24	450	1					1	
	B85+52	189+25	X	RT.	RAMP "B"	ON SLOPE	25	373	1					1	
X	380+10	C85+50		LT.	RAMP "C"	ON SLOPE	22	540	1					1	
	C85+52	C92+50	X	LT.	RAMP "C"	ON SLOPE	24	698	1					1	
X	378+05	D86+12		RT.	RAMP "D"	ON SLOPE	56	807	1					1	
X	1290+00 S.R.58	E94+50		LT.	RAMP "E"	EX. C.B.	10	185			1				
X	E98+00	E100+25		LT.	RAMP "E"	ON SLOPE	25	225	1					1	
	E100+27	405+00	X	LT.	RAMP "E"	ON SLOPE	28	473	1					1	
X	F95+30	F99+50		RT.	RAMP "F"	ON SLOPE	26	420	1					1	
	F99+52	407+70	X	RT.	RAMP "F"	ON SLOPE	30	818	1					1	
TOTALS							832	12530	16						84

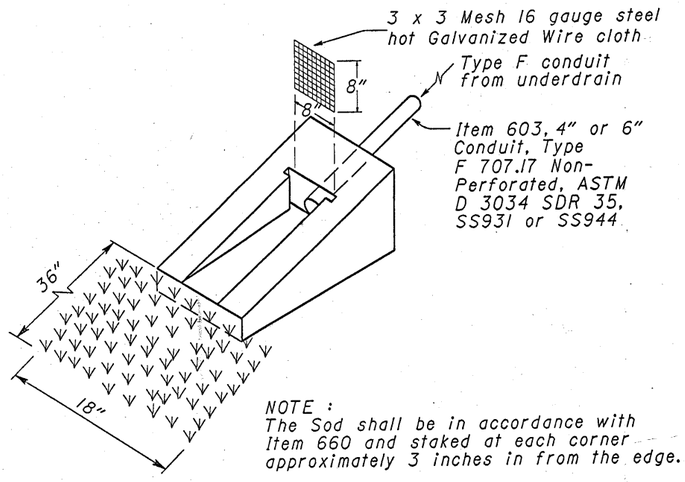
DESIGN FILE: C:\DGN\LOR2\DRAIN0.DGN DATE: JUNE-14-1994 WORKSTATION: 03-386E

FHWA REGION	STATE	PROJECT		90
5	OHIO	LOR-2-3.48		222

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.

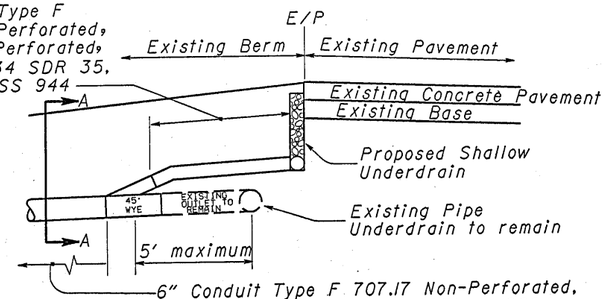




NOTE :
The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

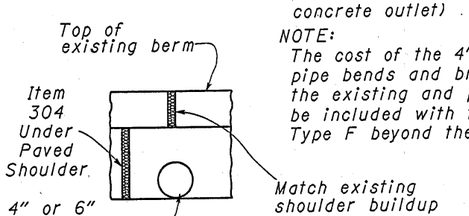
OUTLET DETAILS

4" Conduit Type F
707.15 Non-Perforated,
707.17 Non-Perforated,
ASTM D 3034 SDR 35,
SS 931, or SS 944

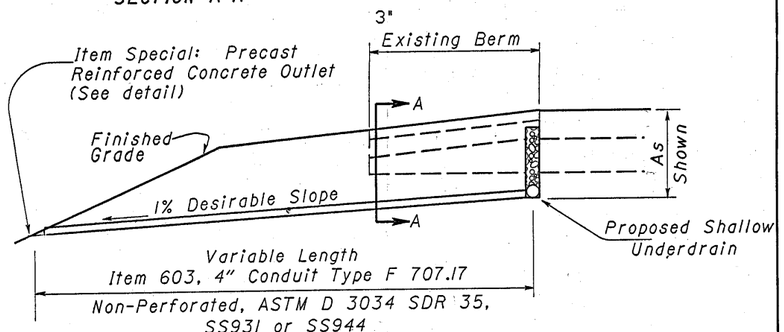


6" Conduit Type F 707.17 Non-Perforated, ASTM D 3034 SDR 35, SS931 or SS944 (outlet into catch basin or precast reinforced concrete outlet)

NOTE:
The cost of the 4" conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains shall be included with the cost of the 6" conduit Type F beyond the existing underdrain.

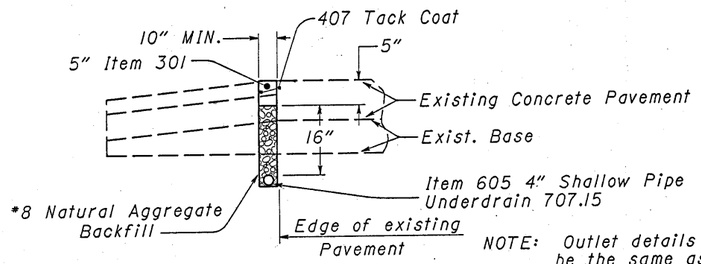


SECTION A-A



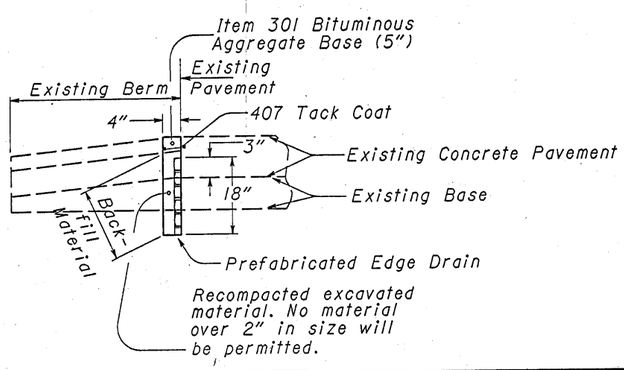
NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used entirely between the underdrain & catch basin.

PIPE UNDERDRAIN SYSTEM



NOTE: Outlet details to be the same as shown above.

PREFABRICATED EDGE DRAIN SYSTEM



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

MATERIALS: The underdrain shall 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 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, natural occuring soil chemicals, and road de-icing agents.

The core shall provide a minimum of 100 square inches unobstructed (one side only) drainage area per foot of width. Side walls of the core shall provide at least 5% open area to permit unobsfructed flow through the filter and wall to the core.

The prefabricated edge drain shall have a minimum compressive strength of 6000 pounds per square foot with a maximum 20% compression in a parallel plate compression test (ASTM-D 695). The minimum (single side) core flow capacity shall be 10 gallons per minute per foot of width for a 0.1 gradient at 10 pounds per square inch bladder load per ASTM D 4716

CONSTRUCTION: The prefabricated edge drain shall be installed in a trench as shown on the plans and in accordance with the manufacturer's recommendations. The contractor has the optiion to backfill the trench with the excavated material or No. 8 natural aggregate. If the excavated material is used for the backfill it shall be placed in three (3) lifts minimum with each lift of uncompacted material not exceeding 8" in thickness. Each lift shall be compacted to 95% of the maximum dry weight density as determined by AASHTO T99. If No. 8 natural aggregate is used it shall be placed in one (1) 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 seperation 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 the underdrain system 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: Work completed and accepted under this item and measured will be paid for at the contract unit price bid per linear foot for item 605 - Shallow Underdrain, as per plan. Which price shall be full compensation for excavation and backfill; removing and disposing all surplus excavation in accordance with 203; for furnishing materials, including material for splices; outlet fittings and Item 301; for all labor, tools, equipment, and incidentals necessary to complete the work.

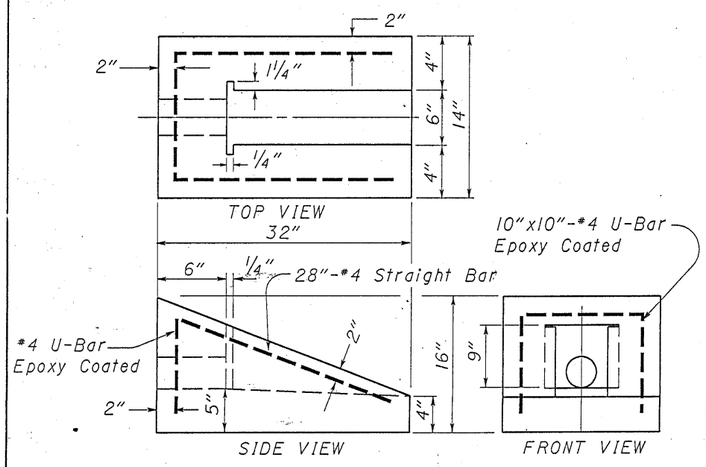
ITEM 605-SHALLOW UNDERDRAIN, AS PER PLAN

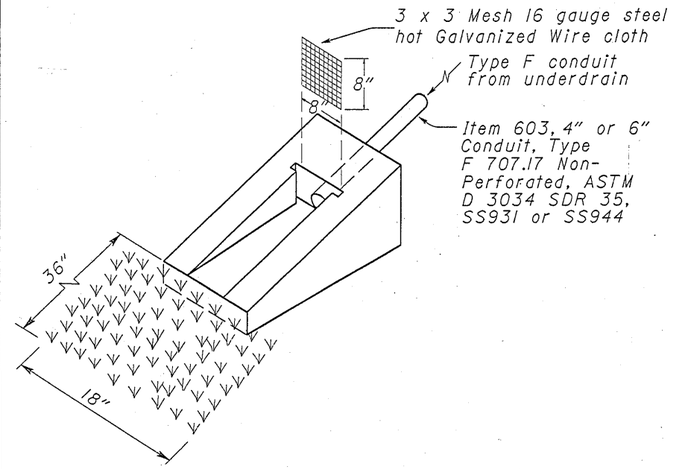
DATE 2-5-93

FHWA REGION	STATE	PROJECT	
5	OHIO	LOR-2-3.48	

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

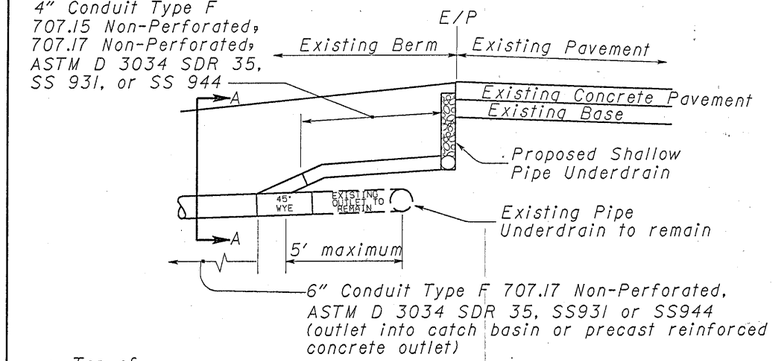
The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.

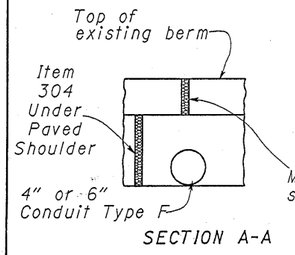




NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

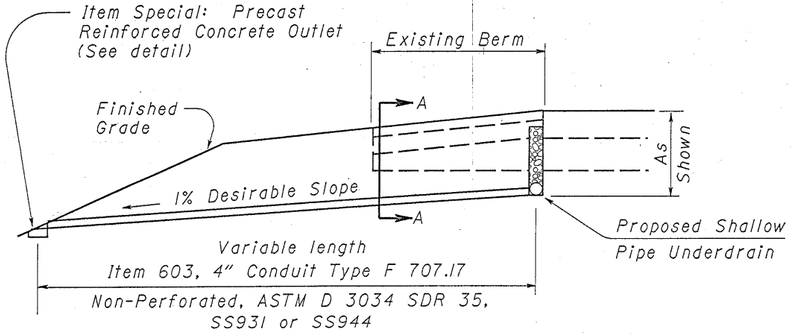
OUTLET DETAILS





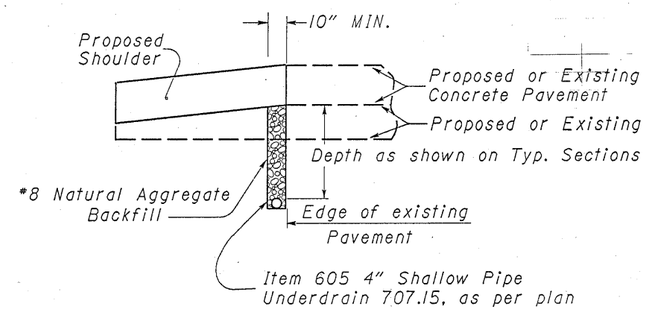
SECTION A-A

NOTE: The cost of the 4" conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains shall be included with the cost of the 6" conduit Type F beyond the existing underdrain.



NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used between the underdrain & catch basin.

PIPE UNDERDRAIN DETAIL



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

MATERIALS: The underdrain shall be a pipe underdrain system per Item 605

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase & 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 and measured will be paid for at the contract unit price bid per linear foot 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 material for outlet fittings, for all labor, tools, equipment, and incidentals necessary to complete the work.

ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN

DATE 2-5-93

*BEHIND GUARDRAIL

SIGNING QUANTITIES

Calc. by RJR Date 7/89
Chk'd by RLØ Date 7/89

SHEET REFERENCE	SIGN NUMBER	SIGN ELEVATION NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ.FT.)	630 SIGNS EXTRUSHEET, TYPE G (SQ. FT.)	630 SIGNS FLAT SHEET, TYPE G (SQ. FT.)	630 REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL POST (EACH)	630 REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL BEAM (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL MINOR (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL MAJOR (EACH)	630 GROUND MOUNTED SUPPORTS NO. 3 POST	630 GROUND MOUNTED SUPPORTS NO. 4 POST (LIN. FT.)	630 GROUND MOUNTED SUPPORTS S4 X 7.7 BEAM (LIN. FT.)	630 GROUND MOUNTED SUPPORTS W6 X 9 BEAM (LIN. FT.)	630 GROUND MOUNTED SUPPORTS W10 X 12 BEAM (LIN. FT.)	630 GROUND MOUNTED SUPPORTS W8 X 18 BEAM (LIN. FT.)	630 GROUND MOUNTED SUPPORTS W10x22 BEAM (LIN. FT.)	620 CONCRETE FOR EMBEDDED FOUNDATIONS (CU. YD.)	620 BREAKAWAY BEAM CONNECTION (EACH)	620 REFLECTORS, TYPE D (EACH)
28	1		RAMP A	A84+50± RT	W-45-48	48X48	16.0		16.0	1		1			15.7/16.0								
	1		RAMP A	A84+50± LT	W-45-48	48X48	16.0		16.0						15.7/16.0								
	2		SR 2	184+00 WB						1		1											
	2-A		SR 2	185+00 EB	W-49R-48	48X48	16.0		16.0	1		1			15.2/15.5								
	2-B		SR 2	182+00 WB	M-40-36 M-2-36	36X18 36X36	4.5 9.0		4.5 9.0					16.0/16.2									
	3	3	SR 2	185+75 WB GORE	GF	72X60	30	30								16.1/16.2					0.54	2	
	4		SR 2	186+00 WB GORE						2		1											
28	5	5	SR 2	195+00 WB	GE	204X72	102.0	102.0			2		1							22.1/24.9	2.46	*	
29	6		SR 2	204+85 EB	M-39-36 M-2-36-2	36X18 36X36	4.5 9.0		4.5 9.0	1		2		16.0/16.2								1	
	7		SR 2	210+50±MED WB	R-19-24	24X30	5.0		5.0	1		2			15.0								
	8		SR 2	210+50±MED EB	R-123-36	36X36	9.0		9.0														
	9		SR 2	210+90±MED WB	R-123-36	36X36	9.0		9.0	1		2			15.0								
	10		SR 2	210+90±MED EB	R-19-24	24X30	5.0		5.0													1	
29	12		SR 2	216+75 EB	R-10-48	48X60	20.0		20.0	2		1			16.5/16.7								
30	13	13	SR 2	227+37 MED EB	GN	108X42	31.5	31.5		2		2				17.2/17.1				0.54	2		
30	14	13	SR 2	227+37 MED WB	GN	120X42	35.0	35.0															
30	15	15	SR 2	226+75 EB	GJ	180X60	75.0	75.0					1										
30	16	16	SR 2	239+00 WB	GB	204X72	102.0	102.0			2		1							22.7/26.8	2.46	*	
30	17	17	SR 2	247+00 EB	GB	216X72	108.0	108.0												23.4/27.1	2.46	*	
						180X60	75.0				2		1						18.9/17.8		2.20	2	
31	19	19	SR 2	259+00 WB	GJ	180X60	75.0	75.0			2		1										
31	20		SR 2	269+00 WB	R-10-48	48X60	20.0		20.0	2		1			16.5/16.7								
31	21	21	SR 2	273+00 EB	GB	216X72	108.0	108.0											19.0/19.2		2.20	2	
32	22		SR 2	279+00 WB	M-40-36 M-2-36	36X18 36X36	4.5 9.0		4.5 9.0	1		2		16.0/16.2									
	23	23	SR 2	291+54 EB	GE	216X72	108.0	108.0			2		1						20.9/21.9		2.20	2	
	24	24	SR 2	300+39 EB GORE	GF	72X60	30.0	30.0		2		1				17.5/18.0					0.54	2	
	25		SR 2	301+00 WB	W-49R-48	48X48	16.0		16.0	1		1			15.2/15.5								
	26		SR 2	301+00 EB						1		1											
32	26A		SR 2	302+50 EB	M-39-36 M-2-36	36X18 36X36	4.5 9.0		4.5 9.0					16.0/16.2									
35	27	27	SR 2	319+45 WB GORE	GF	72X60	30.0	30.0								16.7/17.0					0.54	2	
	27A		SR 2	319+90 WB GORE						2		1											
	27B		SR 2	318+00 WB	W-49R-48	48X48	16.0		16.0	1		1			15.2/15.5								
	27C	28	SR 2	317+00 WB	M-40-36 M-2-36	36X18 36X36	4.5 9.0		4.5 9.0	1		1		16.0/16.2									
35	28		SR 2	328+00 WB	GE	216X72	108.0	108.0			2		1						19.3/18.9		2.20	2	
36	29		SR 2	335+00 EB	M-39-36 M-2-36	36X18 36X36	4.5 9.0		4.5 9.0	1		2		16.0/16.2									
	30		SR 2	338+00 EB	R-10-48	48X60	20.0		20.0						16.5/16.7								
	31	31	SR 2	342+20 EB	GB	156X144	156.0	156.0		2		1								26.5/26.0	2.46	*	
	32	32	SR 2	344+30 WB	GB	216X72	108.0	108.0											20.2/18.7		2.20	*	
	33	33	SR 2	350+00 EB	GSS-A	120X54	45.0	45.0									17.2/17.5				0.66	2	
	34		SR 2	350+00 EB							2		1										
	35		SR 2	355+00 WB						2		1											
	36	36	SR 2	357+50 WB	GB	216X72	108.0	108.0											23.0/19.9		2.20	2	
36	37	37	SR 2	358+00 EB	GC	132X60	55.0	55.0											19.3/19.6		2.20	2	
SUBTOTALS (CITY)								1414.5	249	28	14	26	8	193.2	285.1	135.8	34.7	113.8	162.8	199.5	28.06	22	2

DESIGN FILE: c:\dgn\Nor2\signsign
WORKSTATION: e
DATE: 16-AUG-1994

* INCLUDES 12" GLARE SHIELD NOTCHED FOR EXISTING LUMINAIRE SUPPORTS. ERECT NEW SIGN IN SAME POSITION AS EXISTING SIGN.

SIGNING QUANTITIES

Calc. by RJR Date 7/89
Chk'd by RLO Date 7/89

SHEET REFERENCE	SIGN NUMBER	SIGN ELEVATION NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ.FT.)	630 SIGNS EXTRUSHEET, TYPE G (SQ. FT.)	630 SIGNS FLAT SHEET, TYPE G (SQ. FT.)	630 REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL POST (EACH)	630 REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL BEAM (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL MINOR (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL MAJOR (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION MINOR (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION MAJOR (EACH)	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL (EACH)	630 GROUND MOUNTED SUPPORTS ONE-WAY NO. 4 (LIN. FT.)	NO. 3 POST (LIN. FT.)	NO. 4 POST (LIN. FT.)	S4 X 7.7 BEAM (LIN. FT.)	W6 X 9 BEAM (LIN. FT.)	W10 X 12 BEAM (LIN. FT.)	W8 X 18 BEAM (LIN. FT.)	W10x22 BEAM (LIN. FT.)	620 CONCRETE FOR EMBEDDED FOUNDATIONS (CU. YD.)	620 BREAKAWAY BEAM CONNECTION (EACH)	620 REFLECTORS, TYPE D (EACH)
37	38		SR 2	360+00 WB	R-10-48	48X60	20.0		20.0		2	1	1						16.5/16.7							
	39		SR 2	360+00 EB							3		1														
	40		SR 2	362+00 WB																							1
	41		SR 2	362+60±MED WB	R-19-24	24X30	5.0		5.0	1		2								15.0							
	42		SR 2	362+60±MED EB	R-123-36	36X36	9.0		9.0																		
	43		SR 2	363+00±MED WB	R-123-36	36X36	9.0		9.0	1		2								15.0							1
	44		SR 2	363+00±MED EB	R-19-24	24X30	5.0		5.0																		
	45		SR 2	364+50 WB	M-40-36	36X18	4.5		4.5	1		2							16.0/16.2								
					M-2-36	36X36	9.0		9.0															25.8/26.4	2.46	2	
	46	46	SR 2	366+05 EB	GB	156X144	156.0	156.0																			
	47		SR 2	368+55 EB							2		1											25.8/25.9	2.46	2	
	48	48	SR 2	374+00 EB	GE	144X144	144.0	144.0																	0.54	2	
	49	49	SR 2	383+50 EB GORE	GF	72X60	30.0	30.0		2		1								15.7/15.7							
	50	50	RAMP D	D87+10 RT	M-2-36-2	36X36	9.0		9.0	3		2	1									21.3/23.4			2.20	2	
					M-25-30	30X24	5.0		5.0																		
					D-4-3	108X72	54.0	54.0																			
	51		SR 2	384+50 WB	W-49R-48	48X48	16.0		16.0	1		1								15.2/15.5							
	51A		SR 2	380+50 WB	R-70-48	48X36	12.0		12.0	2		1							14.5/14.7								
	52		SR 2	384+50 EB						1		1															
37	52A		SR 2	385+50 EB	M-39-36	36X18	4.5		4.5										16.0/16.2								
					M-2-36	36X36	9.0		9.0																		
40	53		RAMP E	E98+00 LT	M-2-36-2	36X36	9.0		9.0	3		2	1									19.9/21.4			2.20	2	
					M-25-30	30X24	5.0		5.0																		
					D-4-3	108X72	54.0	54.0																			
	54		SR 2	400+50 WB						1		1															
	54A		SR 2	399+70 WB	M-40-36	36X18	4.5		4.5										16.0/16.2								
					M-2-36	36X36	9.0		9.0																		
	55		SR 2	401+70 WB GORE	GF	72X60	30.0	30.0		2		1									15.8/15.8				0.54	2	
	56		SR 2	403+50 EB	W-49R-48	48X48	16.0		16.0	1		1								15.2/15.5							
40	57		SR 2	411+00 WB	GE	144X144	144.0	144.0			2		1											27.2/27.2	2.46	2	
50	58		KOLBE RD.	47+75± RT NB	W-68-36	36X36	9.0		9.0	2		1								15.5							
100	59		OAK PT RD	36+60 RT NB	M-17-24	24X12	2.0		2.0											14.5							
					M-2-24-2	24X24	4.0		4.0																		
	60	60	OAK PT RD	39+60 RT NB	M-52A-108	108X30	22.5	22.5		2		1								12.5/12.5							
	61		RAMP Z	310+75 RT	R-15A-36	36X36	9.0		9.0					1						14.5							
	62		OAK PT RD	47+00 RT NB	GH-1	132X114*	104.5	104.5								2											
				47+00 LT SB	GH-1	132X114*	104.5	104.5																			
	63		RAMP X	307+25 RT						1		1															
	64		RAMP X	307+25 LT						1		1															
	65		RAMP X	307+78 RT	R-31A-36	36X30	7.5		7.5										15.0/15.5								
					R-41A-36	36X24	6.0		6.0																		
	66		RAMP X	307+78 LT	R-31A-36	36X30	7.5		7.5										13.5/14.0								
					R-41A-36	36X24	6.0		6.0																		
	67		RAMP X	309+45 RT	R-1-48	48X48	16.0		16.0	2		2						14.5		14.5							
					M-41B-36	36X36	9.0		9.0																		
					M-43R-36	36X12	3.0		3.0																		
					M-43L-36	36X12	3.0		3.0																		
	68		RAMP X	309+45 LT	R-1-48	48X48	16.0		16.0	2		4						14.5		14.5							
					R-41B-36	36X36	9.0		9.0																		
					R-43R-36	36X12	3.0		3.0																		
					R-43L-36	36X12	3.0		3.0																		
	69		OAK PT RD	48+58 LT SB	R-31Q-36	36X30	7.5		7.5										13.0/13.0								
	70		OAK PT RD	48+80 LT SB						1		1															
	71		OAK PT RD	51+25 RT NB						1																	
	72		OAK PT RD	51+40 RT NB	R-31Q-36	36X30	7.5		7.5																		
	73		OAK PT RD	53+00 LT SB	GH-1	132X114*	104.5	104.5								2											
				53+00 LT NB	GH-1	132X114*	104.5	104.5																			
	74		RAMP W	308+85 LT	R-15A-36	36X36	9.0		9.0	1		1								14.5							
	75	75	OAK PT RD	60+95 LT SB	M-52A-108	108X30	22.5	22.5												13.5/13.7							
100	76		OAK PT RD	63+40 LT SB	R-17-24	24X12	2.0		2.0	1		1								14.5							
					R-2-24-2	24X24	4.0		4.0																		
SUBTOTALS (CITY)								1075.0	303.5	33	9	31	6	1		4	29	209.8	279.3	63		86		158.3	12.9	14.0			2

DESIGN FILE: c:\dgn\Vor2\sign2.dgn
DATE: 10-AUG-1994
WORKSTATION: e

*INCLUDES 12" GLARE SHIELD NOTCHED FOR EXISTING LUMINAIRE SUPPORTS. ERECT NEW SIGN IN SAME POSITION AS EXISTING SIGN.

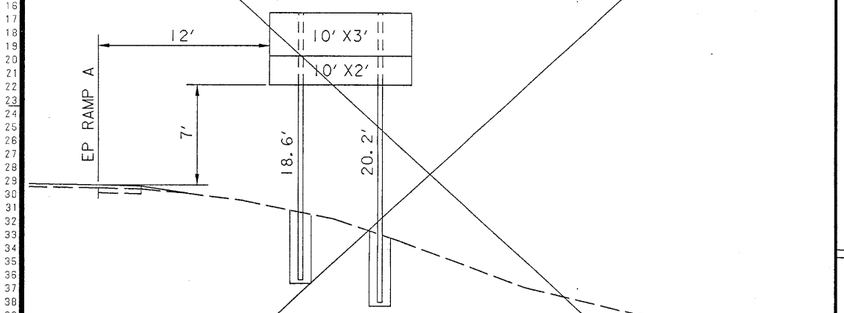
SIGNING QUANTITIES

Calc. by RJR Date 7/89
Chk'd by RLØ Date 7/89

630

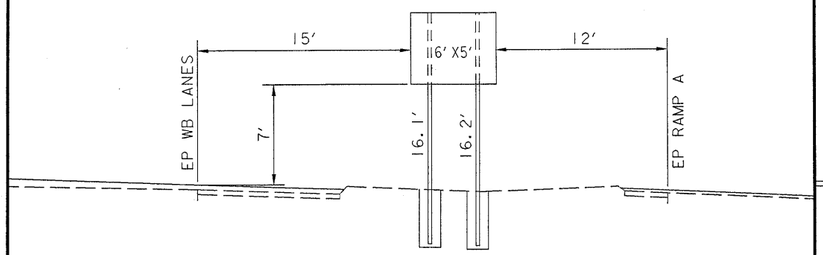
SHEET REFERENCE	SIGN NUMBER	SIGN ELEVATION NUMBER	LOCATION	STATION	CODE NUMBER	SIGN SIZE (INCHES)	SIGN AREA (SQ. FT.)	SIGNS: EXTRUSHEET, TYPE G (SQ. FT.)	SIGNS: FLAT SHEET, TYPE G (SQ. FT.)	REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL: POST (EACH)	REMOVAL OF GROUND MOUNTED SUPPORT AND DISPOSAL: BEAM (EACH)	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL: MINOR (EACH)	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL: MAJOR (EACH)	REMOVAL OF OVERPASS STRUCTURE MOUNTED SIGN SUPPORT AND REERECTION, TYPE TC-18.26 AS PER PLAN (EACH)	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL (EACH)	GROUND MOUNTED SUPPORTS: ONE-WAY NO. 4 (LIN. FT.)	GROUND MOUNTED SUPPORTS: NO. 3 POST (LIN. FT.)	GROUND MOUNTED SUPPORTS: NO. 4 POST (LIN. FT.)	GROUND MOUNTED SUPPORTS: S4 X 7.7 BEAM (LIN. FT.)	GROUND MOUNTED SUPPORTS: W6 X 9 BEAM (LIN. FT.)	GROUND MOUNTED SUPPORTS: W10 X 12 BEAM (LIN. FT.)	GROUND MOUNTED SUPPORTS: W8 X 18 BEAM (LIN. FT.)	GROUND MOUNTED SUPPORTS: W10x22 BEAM (LIN. FT.)	CONCRETE FOR EMBEDDED FOUNDATIONS (CU. YD.)	BREAKAWAY BEAM CONNECTION (EACH)
100	77		RAMP Y	309+75 RT	R-1-48 R-41B-36 R-43L-36 R-43R-36	48X48 36X36 36X12 36X12	16.0 9.0 3.0 3.0		16.0 9.0 3.0 3.0	1		4				14.5		14.5							
	78		RAMP Y	309+75 LT	R-1-48 R-41B-36 R-43L-36 R-43R-36	48X48 36X36 36X12 36X12	16.0 9.0 3.0 3.0		16.0 9.0 3.0 3.0	1		4				14.5		14.5							
	79		RAMP Y	311+12 RT	R-31A-36 R-41A-36	36X30 36X24	7.5 6.0		7.5 6.0								15.0/15.5								
	80		RAMP Y	311+12 LT	R-31A-36 R-41A-36	36X30 36X24	7.5 6.0		7.5 6.0								14.0/14.5								
	81		RAMP Y	311+90 RT						1		1													
100	82		RAMP Y	311+90 LT						1		1													
101	83		SR 58	1273+40 RT, NB	M-17-24 M-2-24-2	24X12 24X24	2.0 4.0		2.0 4.0	1		2						14.5							
	84	84	SR 58	1276+20 RT, NB	M-52B-120	120X48	40.0	40.0		2		1							14.6/14.3					0.54	2
	85		SR 58	1283+55 RT, NB 1283+55 RT, SB	GH-1 GH-1	132X114* 132X114*	104.5 104.5	104.5 104.5							2										
	86		SR 58	1285+30 RT, NB	GH	156X90*	97.5	97.5						1	1										
	87		SR 58	1286+40 LT, SB	GH	156X90*	97.5	97.5						1	1										
	88		SR 58	1288+69 LT, NB 1288+69 LT, SB	GH-1 GH-1	132X114* 132X114*	104.5 104.5	104.5 104.5							2										
	89	89	SR 58	1295+90 LT, SB	M-52B-120	120X48	40.0	40.0											14.6/14.3					0.54	2
	89A		SR 58	1296+00 LT, SB						2		1													
101	90		SR 58	1298+45 LT, SB	M-17-24 M-2-24-2	24X12 24X24	2.0 4.0		2.0 4.0	1		2						14.5							
101A	91		RAMP D	D90+00 LT	R-41A-36	36X24	6.0		6.0	1		1					14.0/14.5								
	92		RAMP D	D90+00 RT	R-41A-36	36X24	6.0		6.0	1		1					13.5/14.0								
	93		RAMP D	D91+90± RT						1		2													
	94		RAMP D	D92+00 RT	N-18H-18 N-15-24 R-41B-36	18X18 24X6 36X36	2.3 1.0 9.0		2.3 1.0 9.0	1		3						13.5							
	95		RAMP D	D92+00 LT	R-41B-36 R-43L-48 R-43R-48	36X36 36X12 36X12	9.0 3.0 3.0		9.0 3.0 3.0	1		2				15.5									
	96		RAMP F	F92+80 RT	R-15D-30	30X30	6.3		6.3	1		1					14.0								
	97		RAMP C	C92+80 LT	R-15D-30	30X30	6.3		6.3	1		1					14.0								
	98		RAMP E	E93+25 LT	R-41B-36 R-43L-36 R-43R-36	36X36 36X12 36X12	9.0 3.0 3.0		9.0 3.0 3.0	1		3				15.5									
	99		RAMP E	E93+25 RT						1		2													
	100		RAMP E	E93+10 RT	R-31B-36	36X30	7.5		7.5																
	101		RAMP E	E95+10 RT	R-41A-36 R-31B-36	36X24 36X30	6.0 7.5		6.0 7.5	1		1					14.0/14.5								
	102		RAMP E	E95+10 LT	R-41A-36 R-31B-36	36X24 36X30	6.0 7.5		6.0 7.5	1		2					14.0/14.5								
	103		RAMP E	E96+50 RT	N-18H-18 N-15-24	18X18 24X6	2.3 1.0		2.3 1.0								14.5								
101A	104		RAMP B	B77+35 RT	R-15A-36	36X36	9.0		9.0	1		1						14.5							
101A	105		RAMP A	A76+89 LT	R-1-48 R-41B-36 R-43L-48 R-43R-48	48X48 36X36 36X12 36X12	16.0 9.0 3.0 3.0		16.0 9.0 3.0 3.0	2		2				14.5		14.5							
	106		RAMP A	A76+89 RT	R-1-48 R-41B-36 R-43L-48 R-43R-48	48X48 36X36 36X12 36X12	16.0 9.0 3.0 3.0		16.0 9.0 3.0 3.0	2		4				14.5		14.5							
	107		RAMP A	A79+00 RT	R-41A-36 R-31B-36	36X24 36X30	6.0 7.5		6.0 7.5	2		2					14.0/14.5								
101A	108		RAMP A	A79+00 LT	R-41A-36 R-31B-36	36X24 36X30	6.0 7.5		6.0 7.5	2		2					14.0/14.5								
TOTALS								693.0	303.7	30		46		2	6.0	89	271.5	115	57.8				1.08	4.0

DESIGN FILE: c:\dgn\lor-2\sign3.dgn
WORKSTATION:e DATE: 16-AUG-1994



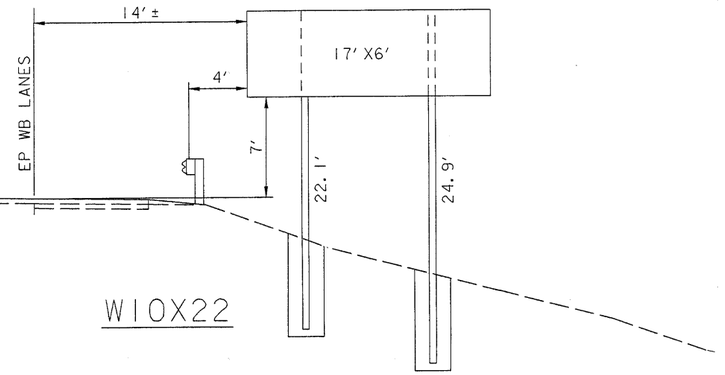
W6X9

1 STA A81+00 RAMP A



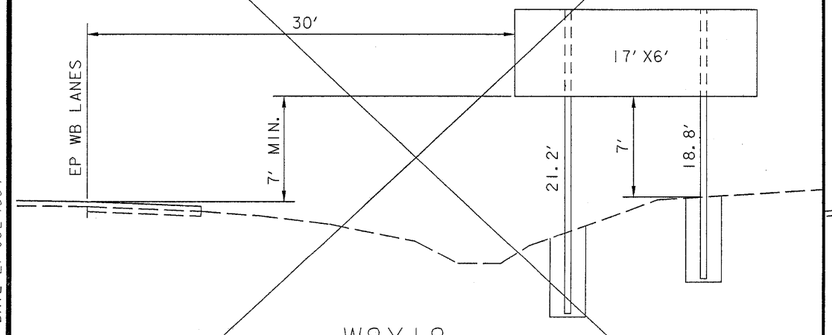
S4X7.7

3 STA 185+75 WB GORE



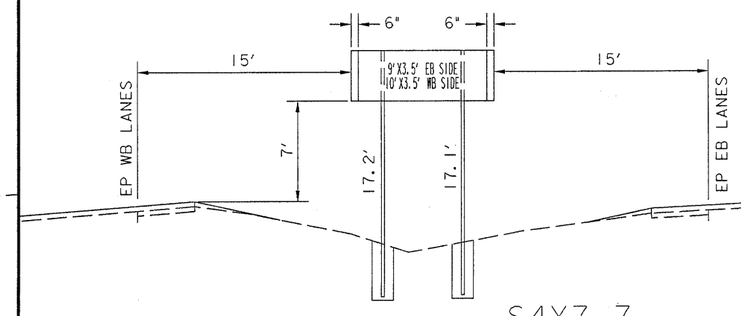
W10X22

5 STA 195+00 WB
LEVEL I



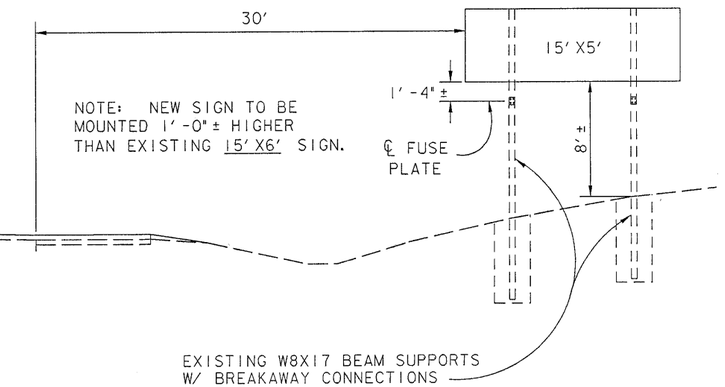
W8X18

11 STA 212+50 WB
LEVEL I



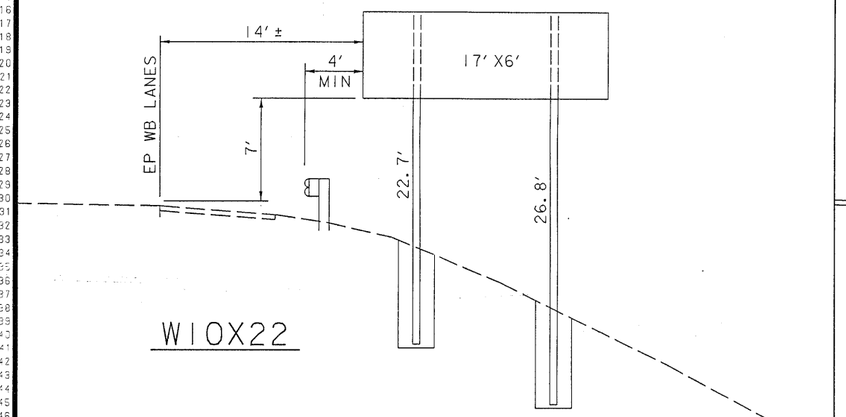
S4X7.7

13 STA 227+37 MED. EB

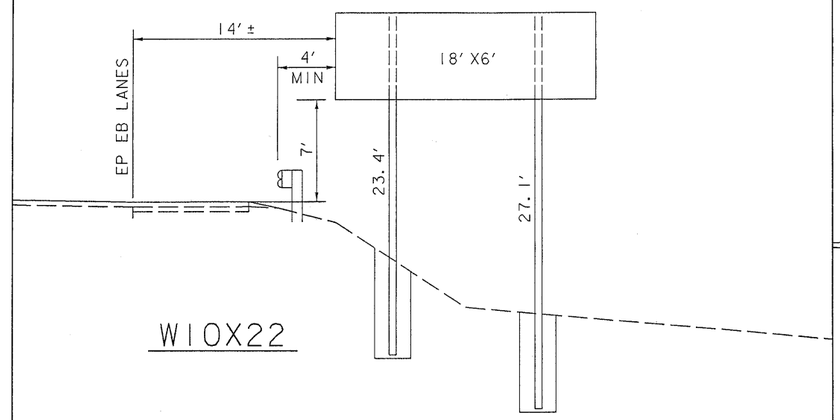


15 STA 226+75 EB
LEVEL II

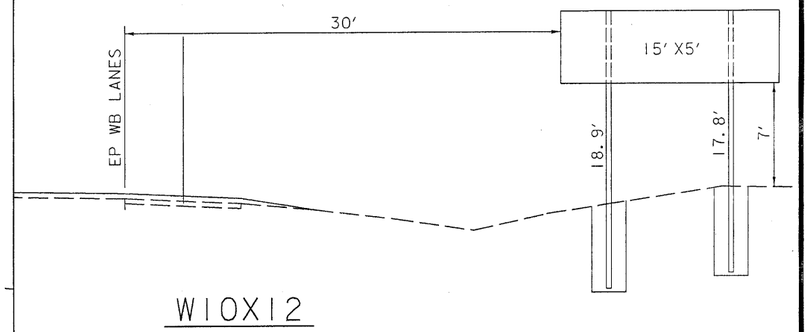
DESIGN FILE: c:\dgn\julie\elevl.dgn
WORKSTATION: 003_104
DATE: 27-JUL-1994



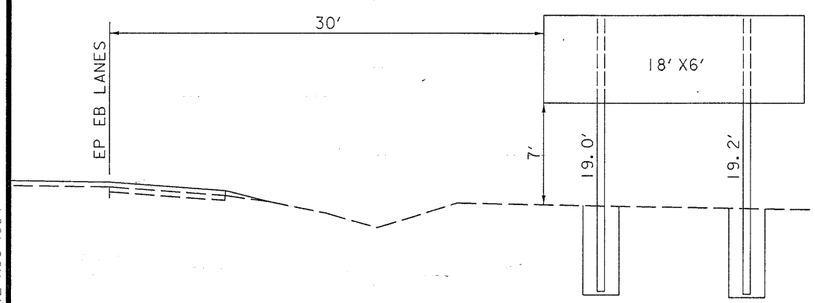
16 STA 239+00 WB
LEVEL I



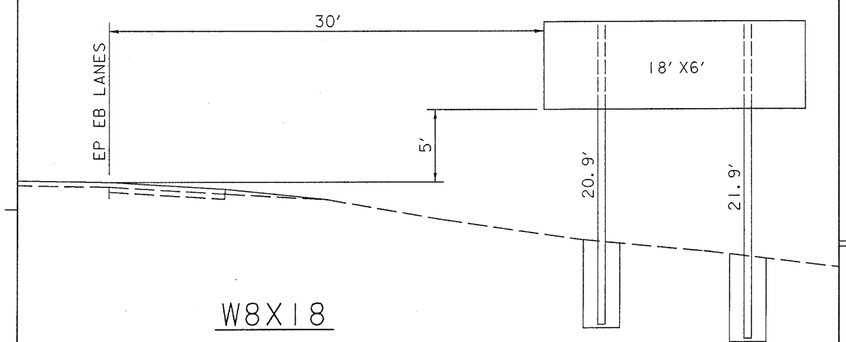
17 STA 247+00 EB
LEVEL I



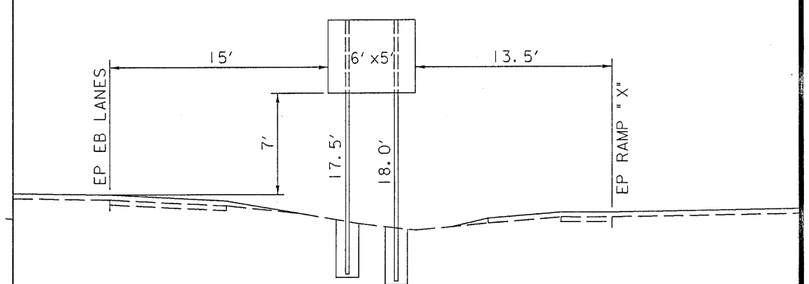
19 STA 259+00 WB
LEVEL II



21 STA 273+00 EB
LEVEL I

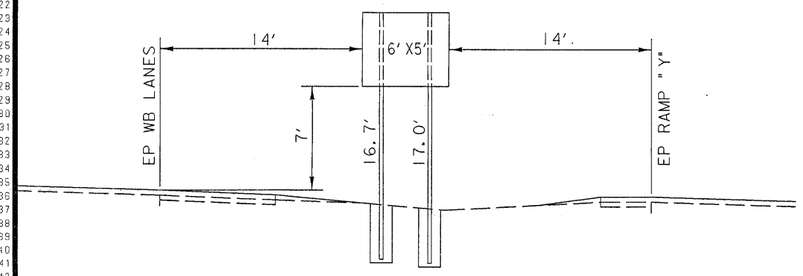


23 STA 291+54 EB
LEVEL I



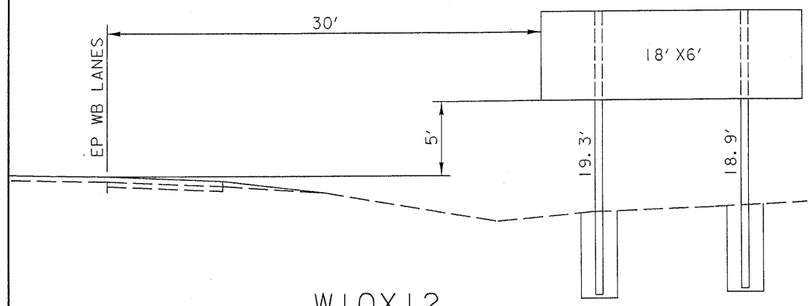
24 STA 300+39 EB GORE

DESIGN FILE: c:\dgn\lor2\elev2.dgn
WORKSTATION: e
DATE: 12-AUG-1994



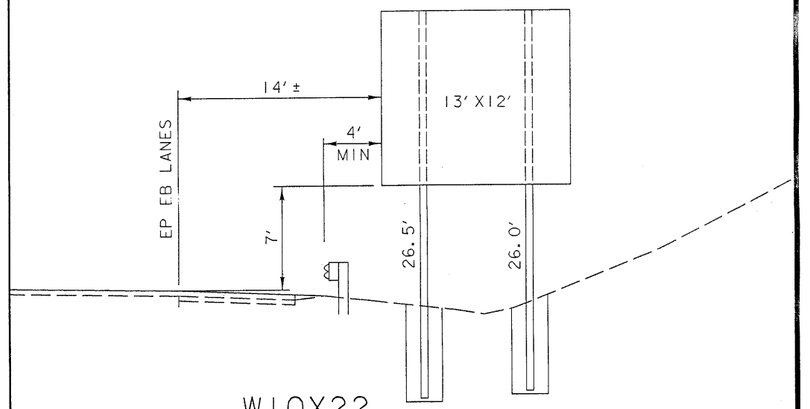
S4X7.7

27 STA 319+45 WB GORE



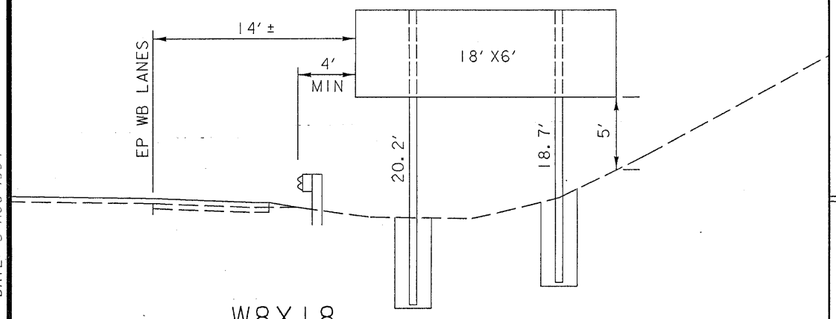
W10X12

28 STA 328+00 WB
LEVEL 1



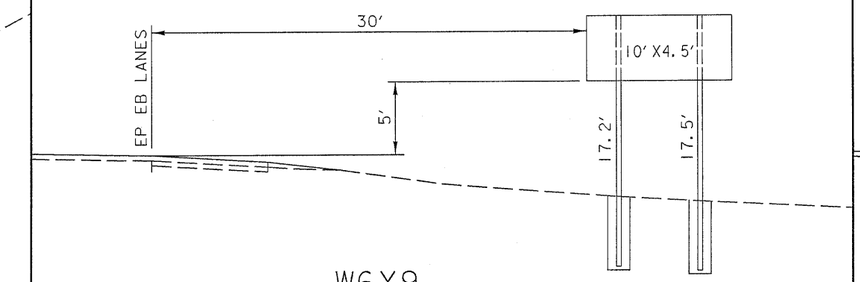
W10X22

31 STA 342+20 EB
LEVEL 1



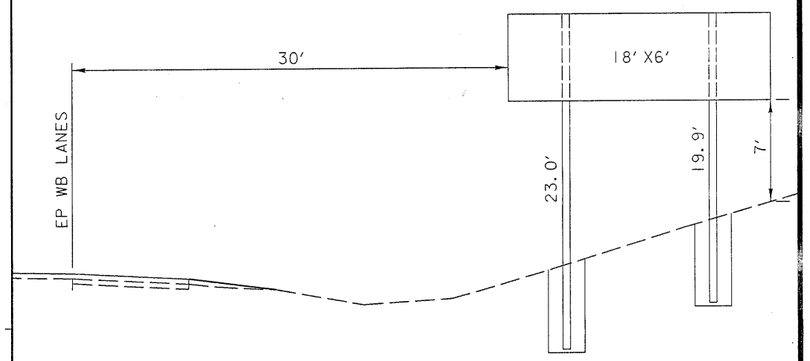
W8X18

32 STA 344+30 WB
LEVEL 1



W6X9

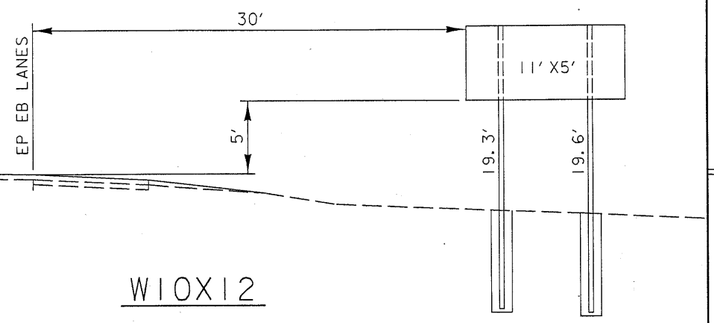
33 STA 350+00 EB



W8X18

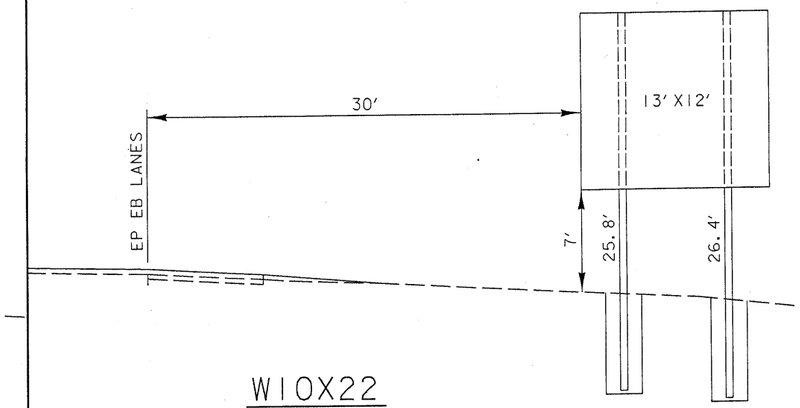
36 STA 357+50 WB
LEVEL 1

DESIGN FILE: c:\dgn\lor2\elev3.dgn
WORKSTATION: e
DATE: 5-AUG-1994



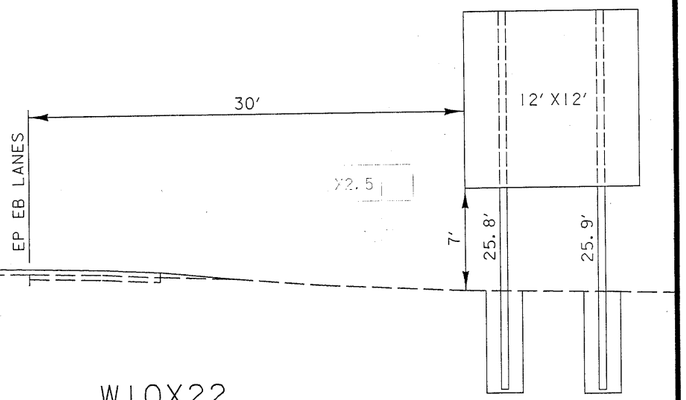
W10X12

37 STA 358+00 EB
LEVEL II



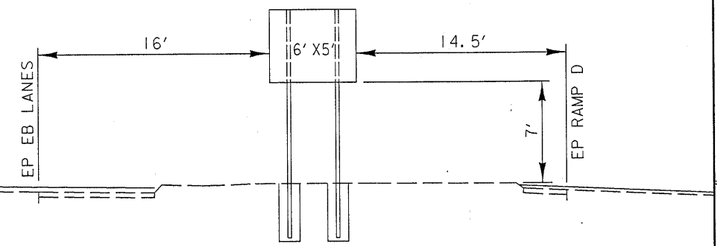
W10X22

46 STA 366+05 EB
LEVEL I



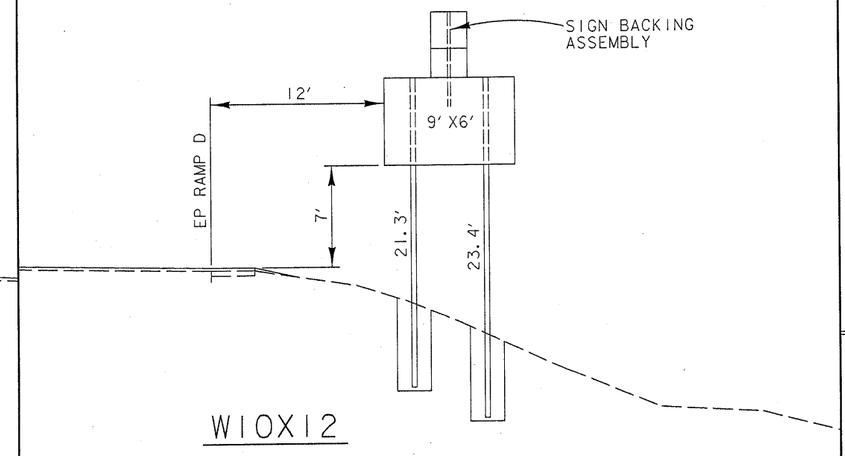
W10X22

48 STA 374+00 EB
LEVEL I



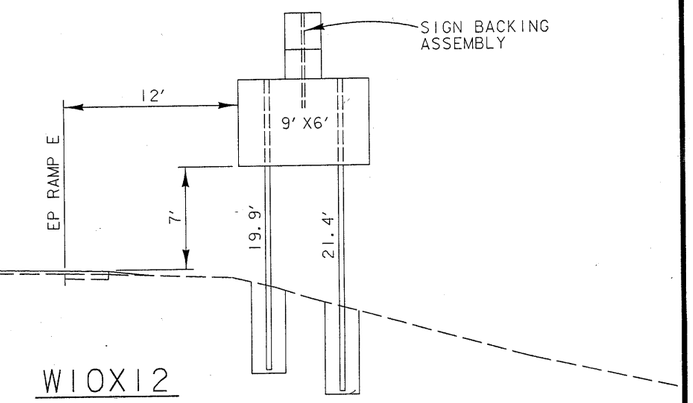
S4X7.7

49 STA 383+50 EB GORE



W10X12

50 STA D87+10 RAMP D

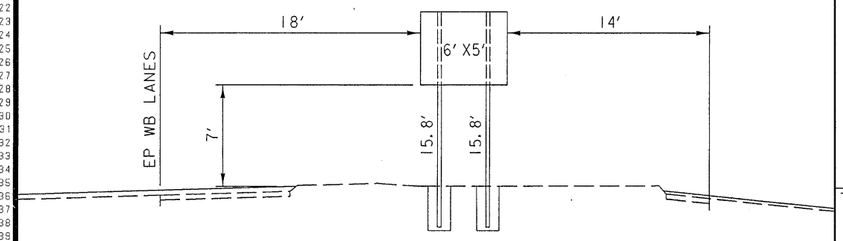


W10X12

53 STA E98+00 RAMP E

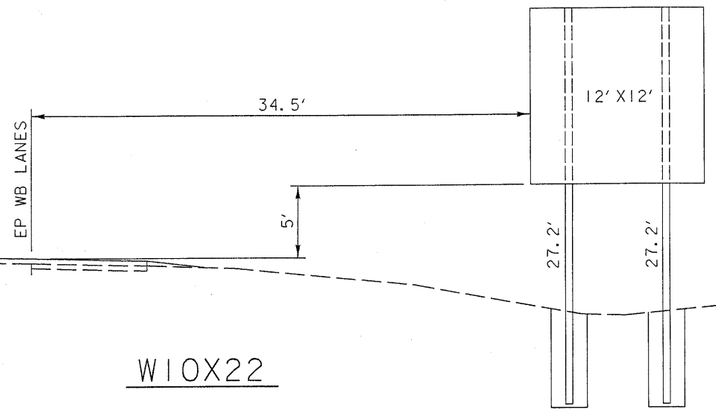
DESIGN FILE: c:\dgn\lor2\elev4.dgn
WORKSTATION: e
DATE: 15-AUG-1994

SIGN ELEVATIONS



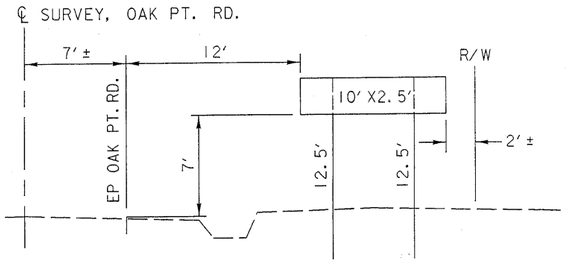
S4X7.7

55 STA 401+70 WB GORE



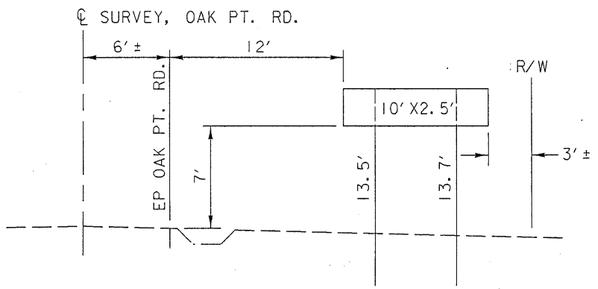
W10X22

57 STA 411+00 WB
LEVEL I



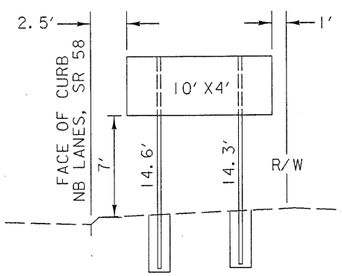
NO. 4 POSTS DRIVEN

60 STA 39+60 NB, OAK PT. RD.



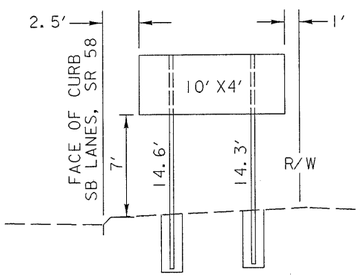
NO. 4 POSTS DRIVEN

75 STA 60+95 SB, OAK PT. RD.



S4X7.7

84 STA 1276+20 NB SR 58
LEVEL II



S4X7.7

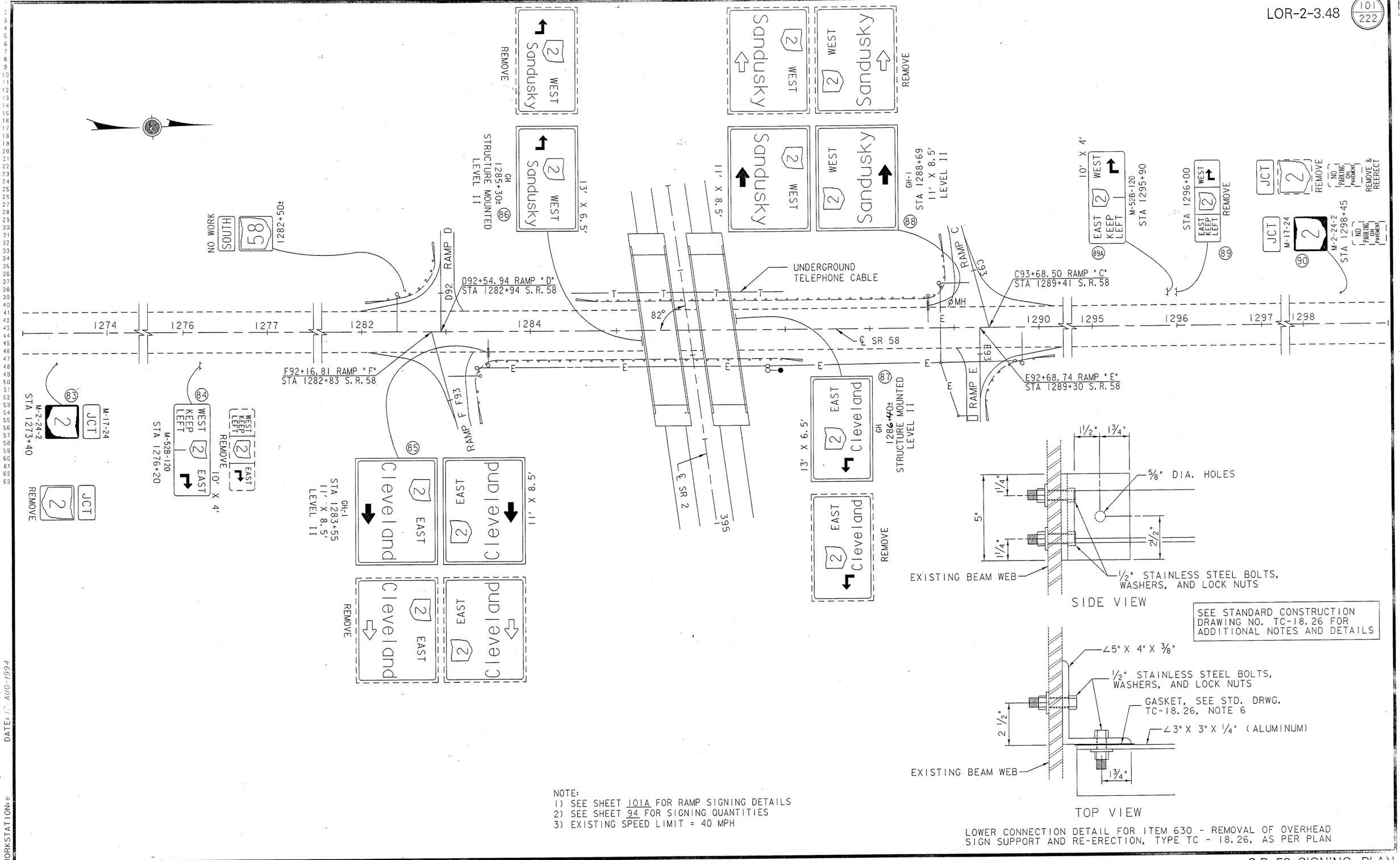
89 STA 1295+90 SB SR 58
LEVEL II

DESIGN FILE: c:\dgn\lor2\elev5.dgn
WORKSTATION:e DATE: 16-AUG 1994

NOTE:
1) SEE SHEET 107 FOR PAVEMENT MARKING QUANTITIES
2) SEE SHEET 93 & 94 FOR SIGNING QUANTITIES
3) EXISTING SPEED LIMIT = 35 MPH

OAK POINT ROAD INTERCHANGE TRAFFIC CONTROL PLAN

DESIGN FILE: c:\dgn\lor2\pmoakpnt.dgn
WORKSTATION: e
DATE: 12-AUG-1994



SIDE VIEW

SEE STANDARD CONSTRUCTION DRAWING NO. TC-18.26 FOR ADDITIONAL NOTES AND DETAILS

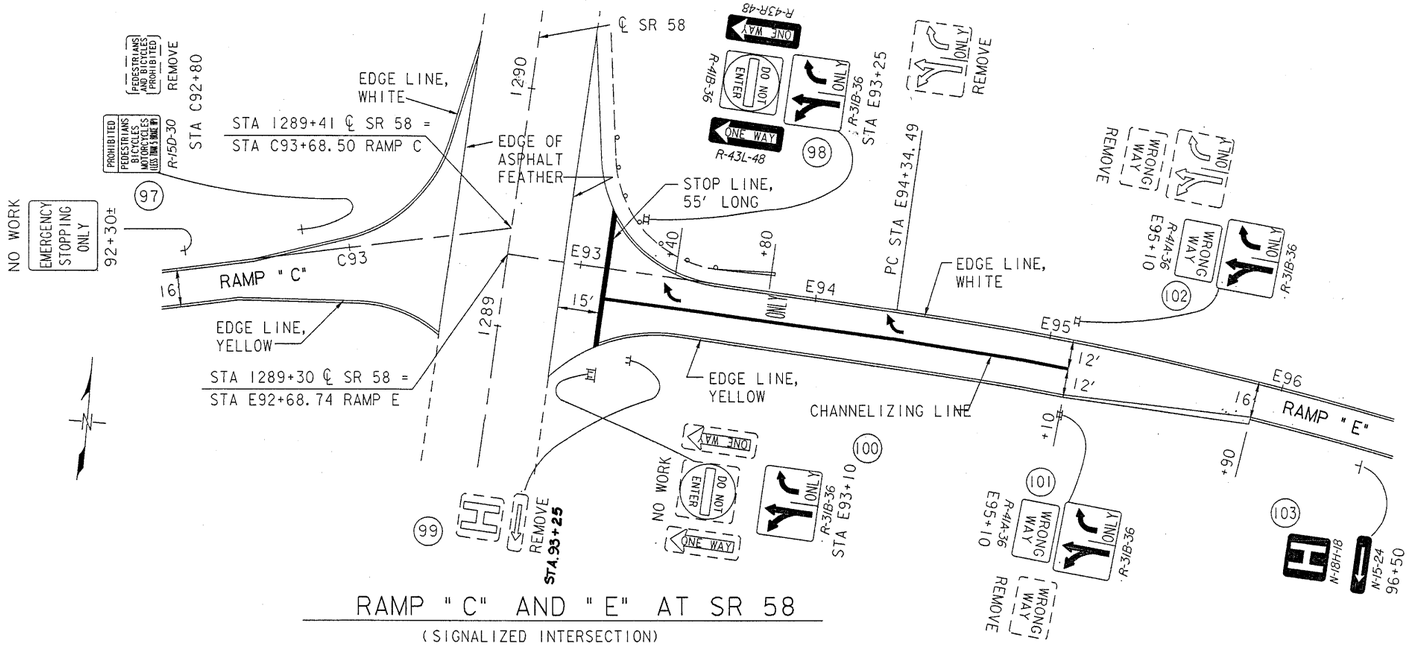
TOP VIEW

LOWER CONNECTION DETAIL FOR ITEM 630 - REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC - 18.26, AS PER PLAN

NOTE:
1) SEE SHEET 101A FOR RAMP SIGNING DETAILS
2) SEE SHEET 94 FOR SIGNING QUANTITIES
3) EXISTING SPEED LIMIT = 40 MPH

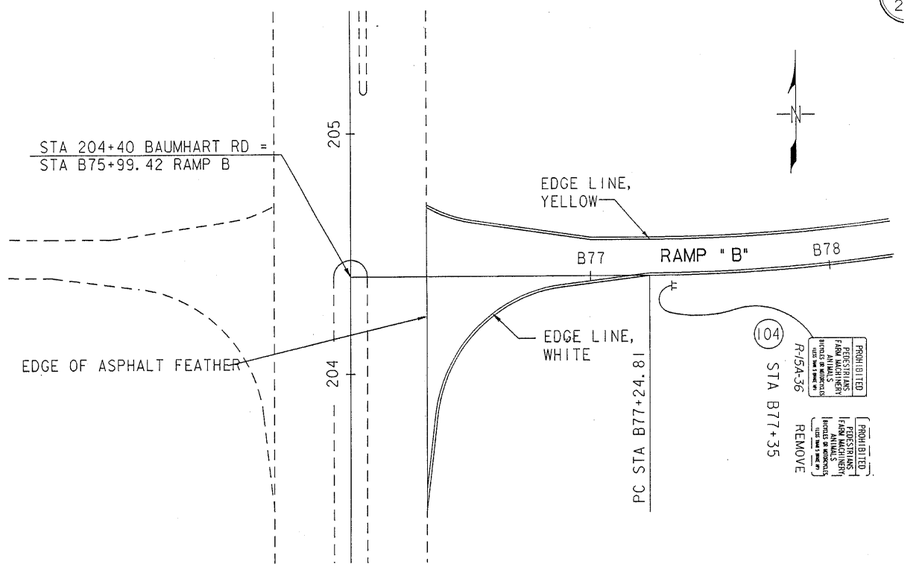
DESIGN FILE: c:\dgn\lor2\sr58sign.dgn
WORKSTATION: e
DATE: 17-AUG-1994

S.R. 58 SIGNING PLAN



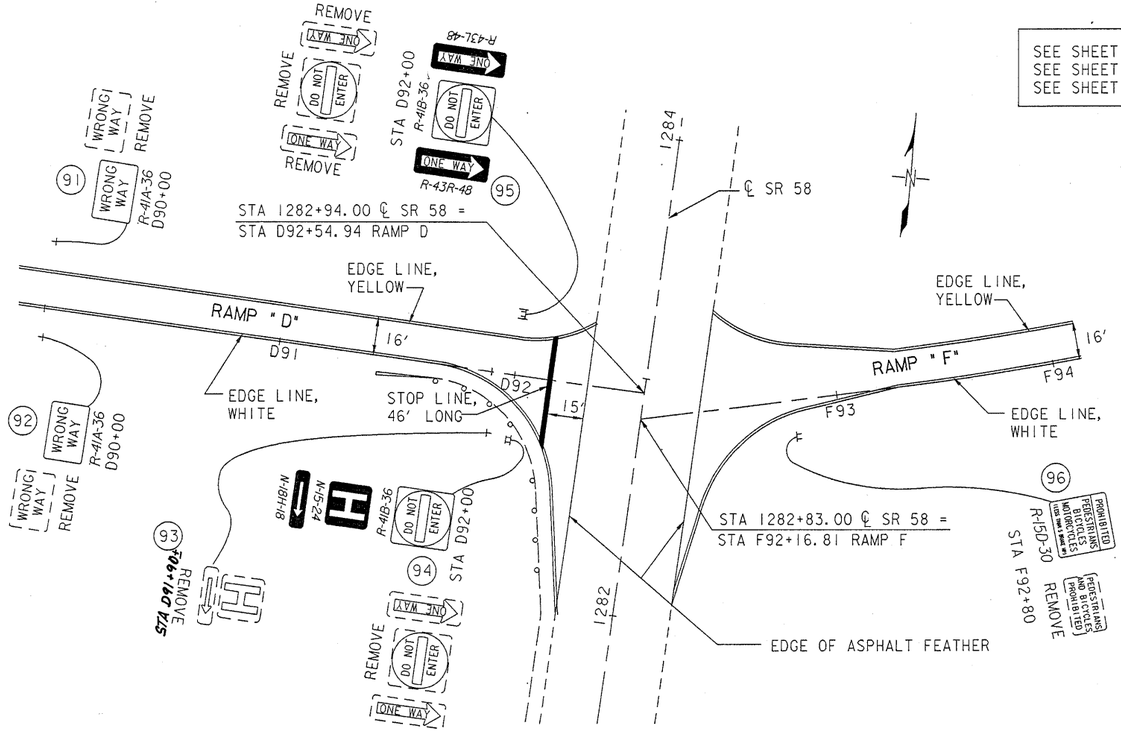
RAMP "C" AND "E" AT SR 58

(SIGNALIZED INTERSECTION)



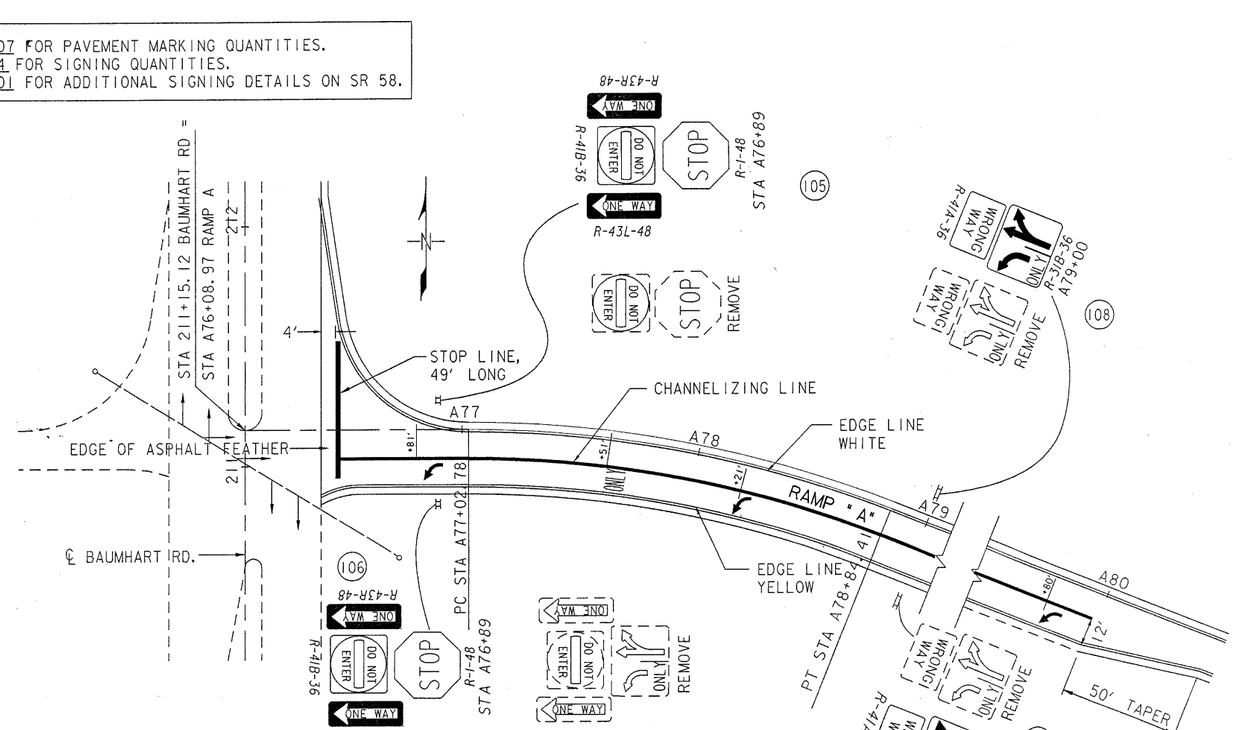
RAMP "B" AT BAUMHART ROAD

SEE SHEET 107 FOR PAVEMENT MARKING QUANTITIES.
SEE SHEET 94 FOR SIGNING QUANTITIES.
SEE SHEET 101 FOR ADDITIONAL SIGNING DETAILS ON SR 58.



RAMP "D" AND RAMP "F" AT SR 58

(SIGNALIZED INTERSECTION)



RAMP "A" AT BAUMHART ROAD

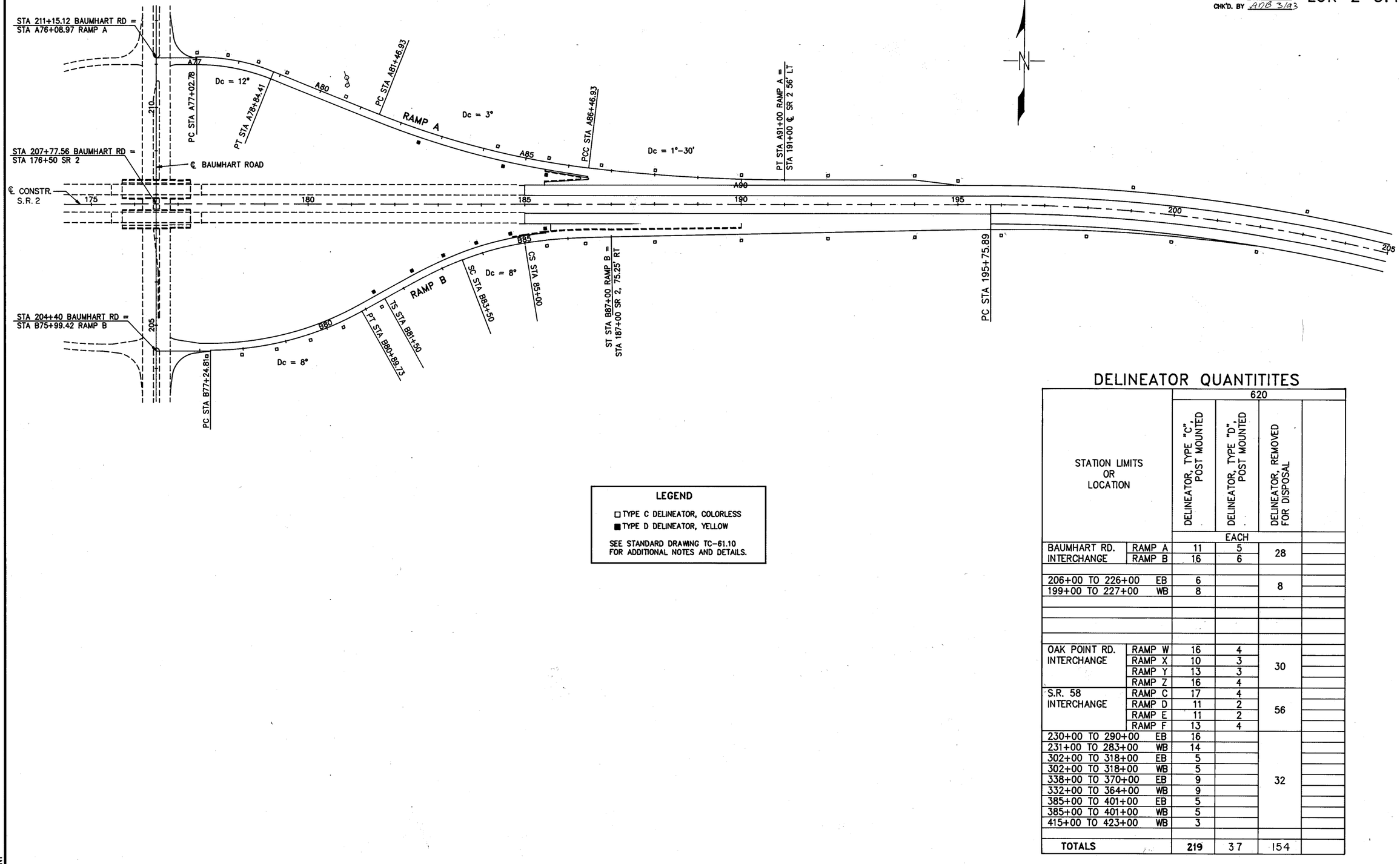
(SIGNALIZED INTERSECTION OPERATING AS FLASHING SIGNAL)

RAMP TRAFFIC CONTROL DETAILS

DESIGN FILE: c:\dgn\julie\ramp_ctrl.dgn
WORKSTATION: D03_104 DATE: 03 AUG 1994

CALC. BY RJR 4/89
CHK'D. BY ADB 3/93

LOR-2-3.48



LEGEND

□ TYPE C DELINEATOR, COLORLESS
■ TYPE D DELINEATOR, YELLOW

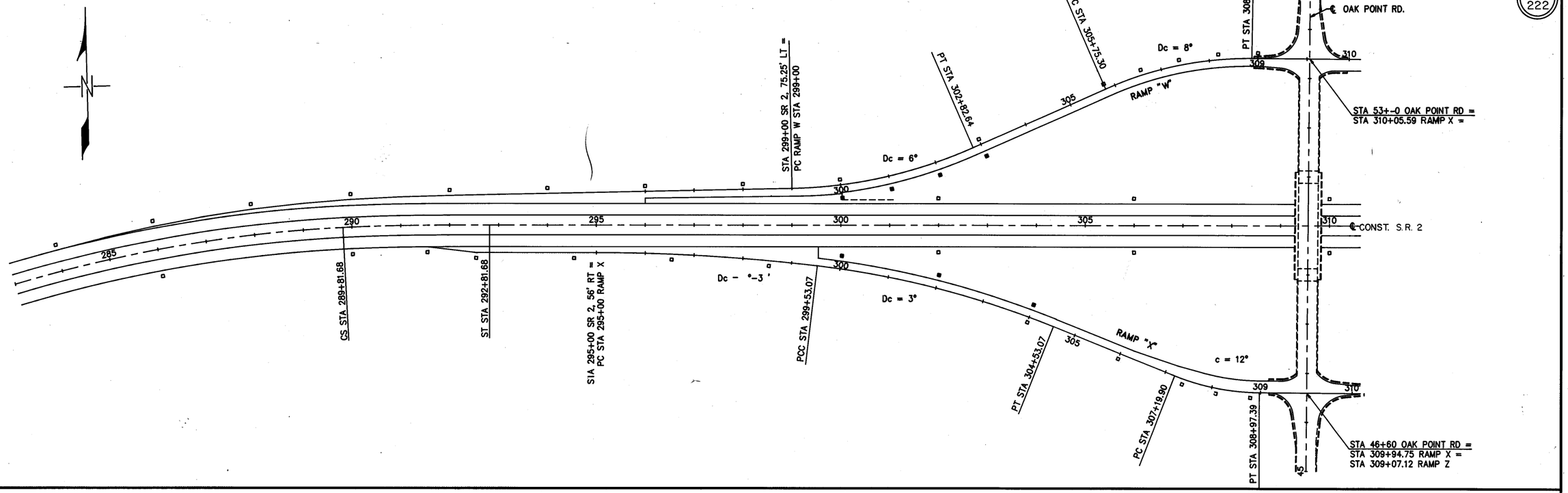
SEE STANDARD DRAWING TC-61.10 FOR ADDITIONAL NOTES AND DETAILS.

DELINEATOR QUANTITITES

STATION LIMITS OR LOCATION		620 DELINEATOR, TYPE "C", POST MOUNTED	620 DELINEATOR, TYPE "D", POST MOUNTED	620 DELINEATOR, REMOVED FOR DISPOSAL	
		EACH			
BAUMHART RD. INTERCHANGE	RAMP A	11	5	28	
	RAMP B	16	6		
206+00 TO 226+00	EB	6		8	
199+00 TO 227+00	WB	8			
OAK POINT RD. INTERCHANGE	RAMP W	16	4	30	
	RAMP X	10	3		
	RAMP Y	13	3		
	RAMP Z	16	4		
S.R. 58 INTERCHANGE	RAMP C	17	4	56	
	RAMP D	11	2		
	RAMP E	11	2		
	RAMP F	13	4		
230+00 TO 290+00	EB	16		32	
231+00 TO 283+00	WB	14			
302+00 TO 318+00	EB	5			
302+00 TO 318+00	WB	5			
338+00 TO 370+00	EB	9			
332+00 TO 364+00	WB	9			
385+00 TO 401+00	EB	5			
385+00 TO 401+00	WB	5			
415+00 TO 423+00	WB	3			
TOTALS		**219**	37	154	

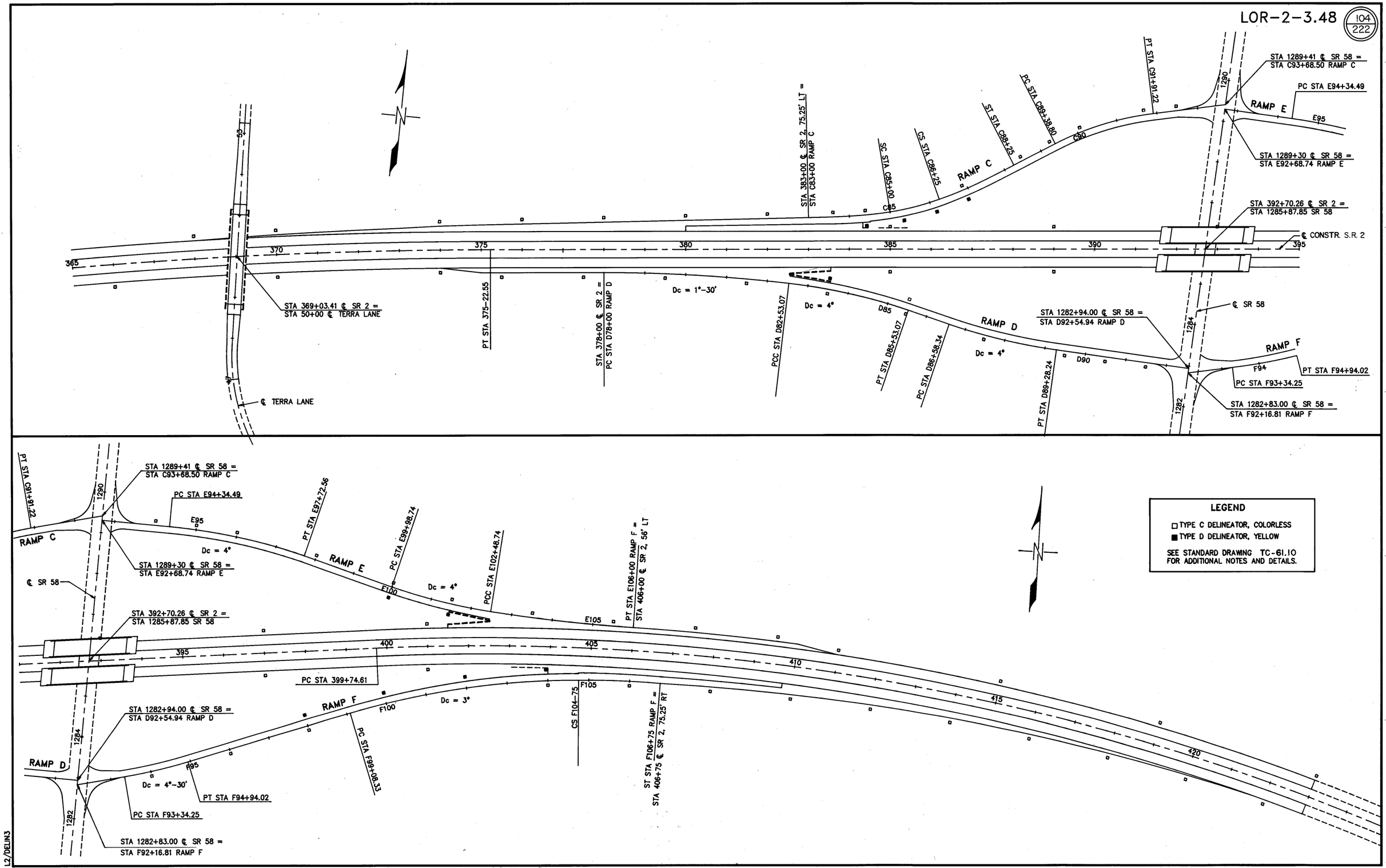
L2/DELIN1

BAUMHART ROAD INTERCHANGE DELINEATOR PLAN



L2/DELIN2

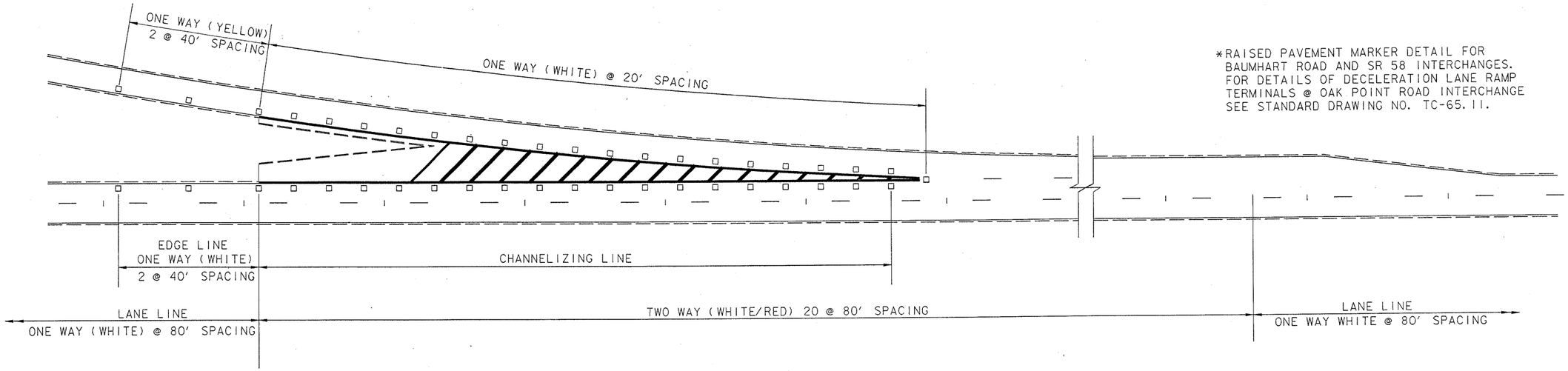
OAK POINT ROAD INTERCHANGE DELINEATOR PLAN



L2/DELIN3

SR 58 INTERCHANGE DELINEATOR PLAN

CALC. BY RJR 4/89
CHK'D. BY ADB 1/92



*RAISED PAVEMENT MARKER DETAIL FOR BAUMHART ROAD AND SR 58 INTERCHANGES. FOR DETAILS OF DECELERATION LANE RAMP TERMINALS @ OAK POINT ROAD INTERCHANGE SEE STANDARD DRAWING NO. TC-65.11.

RAISED PAVEMENT MARKER PLAN DETAIL FOR DECELERATION LANE *

RPM LOCATION SUB-SUMMARY

DETAIL	DESCRIPTION
1	TAPERED ACCELERATION LANE ON STANDARD DRAWING TC-65.11
2	DECELERATION LANE ON STANDARD DRAWING TC-65.11
3	MULTILANE DIVIDED EXPRESSWAY ON STANDARD DRAWING TC-65.11
4	SEE DETAIL THIS SHEET

STATION LIMITS OR LOCATION	DETAIL	202	862			PRISMATIC RETRO-REFLECTORS			
						ONE-WAY		TWO-WAY	
		RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	RAISED PAVEMENT MARKERS			WHITE	YELLOW		WHITE/RED
		EACH	EACH			EACH			
184+67 TO 189+25 RAMP A DECEL LANE	4		43			41	2		
184+80 TO 192+40 RAMP B ACCEL LANE	1		40			27	13		
184+00 TO 423+00 SR 2 EB LANES	3		299			279			20
184+00 TO 423+00 SR 2 WB LANES	3		299			259			40
293+60 TO 301+20 RAMP W	1		40			27	13		
296+75 TO 299+54 RAMP X	2		33			31	2		
319+63 TO 322+27 RAMP Y	2		27			25	2		
318+20 TO 325+40 RAMP Z	1		38			26	12		
377+60 TO 385+20 RAMP C	1		40			27	13		
379+75 TO 383+55 RAMP D	4		43			41	2		
400+70 TO 404+25 RAMP E	4		33			31	2		
402+95 TO 412+15 RAMP F	1		48			31	17		
TOTALS		1003	983						

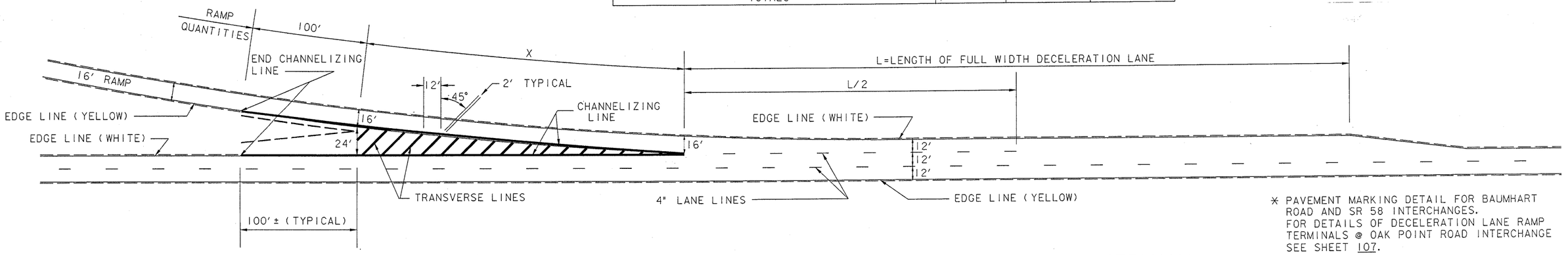
DESIGN FILE: c:\dgn\julie\rpm.dgn
WORKSTATION: 003-104 DATE: 28 JUL 1994

LOR-2-3.48

106
222

CALC. BY RJR 4/89
CHK'D. BY AØØ 1/92

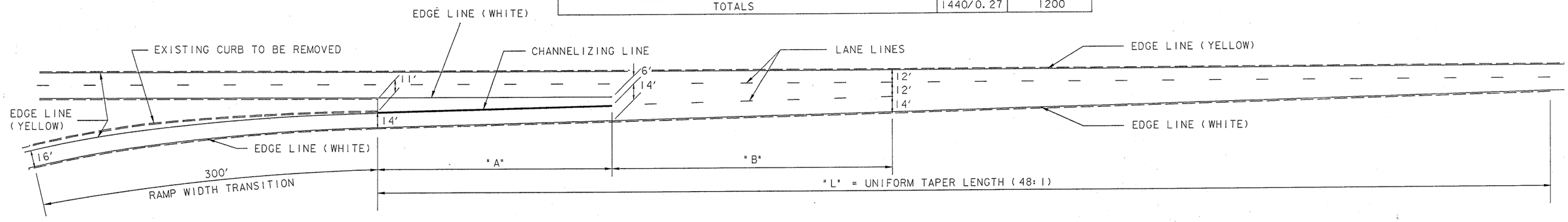
LOCATION	LENGTH "X"	LENGTH "L/2"	644 LANE LINES	644 CHANNELIZING LINES	644 TRANSVERSE LINES
			LIN. FT./MILE	LIN. FT.	
BAUMHART ROAD: RAMP A	278	238	238	756	394
SR 58: RAMP D	278	238	238	756	394
RAMP E	225	263	263	650	319
TOTALS			739/0.14	2162	1107



* PAVEMENT MARKING DETAIL FOR BAUMHART ROAD AND SR 58 INTERCHANGES. FOR DETAILS OF DECELERATION LANE RAMP TERMINALS @ OAK POINT ROAD INTERCHANGE SEE SHEET 107.

TYPICAL PAVEMENT MARKINGS DETAIL FOR EXIT DECELERATION RAMP TERMINAL *

LOCATION	LENGTH "A"	LENGTH "B"	LENGTH "L"	644 LANE LINES	644 CHANNELIZING LINES
				LIN. FT./MILE	LIN. FT.
BAUMHART ROAD: RAMP B	240	288	1200	288	240
OAK POINT ROAD: RAMP W	240	288	1200	288	240
RAMP Z	240	288	1200	288	240
SR 58: RAMP C	240	288	1200	288	240
RAMP F					
TOTALS				1440/0.27	1200



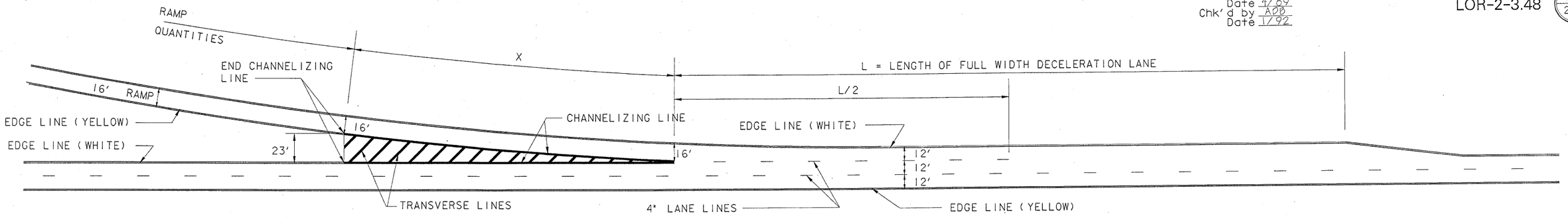
TYPICAL PAVEMENT MARKING DETAILS FOR ENTRANCE ACCELERATION RAMP TERMINAL

DESIGN FILE: c:\dgn\lor2\markingl.dgn
WORKSTATION: e
DATE: 17-AUG-1994

Calc. by RJR Date 4/89
Chk'd by ADD Date 1/92

LOR-2-3.48

107
222



TYPICAL PAVEMENT MARKINGS DETAIL FOR EXIT DECELERATION RAMP TERMINAL @ OAK POINT ROAD INTERCHANGE

LOCATION	LENGTH "X"	LENGTH "L/2"	644 LANE LINES	644 CHANNELIZING LINES	644 TRANSVERSE LINES
			LIN.FT./MILE	LIN. FT.	
OAK POINT ROAD: RAMP X	279	210	210	558	379
RAMP Y	220	238	238	440	299
TOTALS (CITY)			448/0.08	998	678

PAVEMENT MARKING SUB-SUMMARY

644

SHEET REFERENCE NO.	STATION LIMITS OR LOCATION	EDGE LINES WHITE	EDGE LINES YELLOW	LANE LINES	CENTERLINES (SOLID DOUBLE)				TRANSVERSE LINES WHITE	TRANSVERSE LINES YELLOW	CHANNELIZING LINES	STOP LINES	LANE ARROWS	WORD "ONLY" ON PAVEMENT, 96"	
		LIN. FT./MILE							LIN. FT.		LIN. FT.		EACH	EACH	
	183+50 TO 423+50 EB&WB	48000	48000	48000											
101A	RAMP "A"	912	912									57	3	1	
101A	RAMP "B"	1609	1369												
101A	RAMP "C"	1583	1343												
101A	RAMP "D"	860	860									46			
101A	RAMP "E"	839	839								200	55	2	1	
101A	RAMP "F"	1972	1732												
100	RAMP "W"	1539	1299												
100	RAMP "X"	1018	1018								193	65	2	1	
100	RAMP "Y"	1064	1064								169	65	2	1	
100	RAMP "Z"	1521	1281												
100	OAK POINT ROAD	1200			762					210	278		2	2	
100	KOLBE ROAD	756			378										
100	TERRA LANE	1250			625										
100	ACCELERATION LANES			1440							1200				
100	DECELERATION LANES			1187					1785		3160				
	Totals	64123	59717	50627	1765				1785	210	5200	288	11	6	
		123840 LIN. FT. = 23.45MI		9.59	0.33				1995						

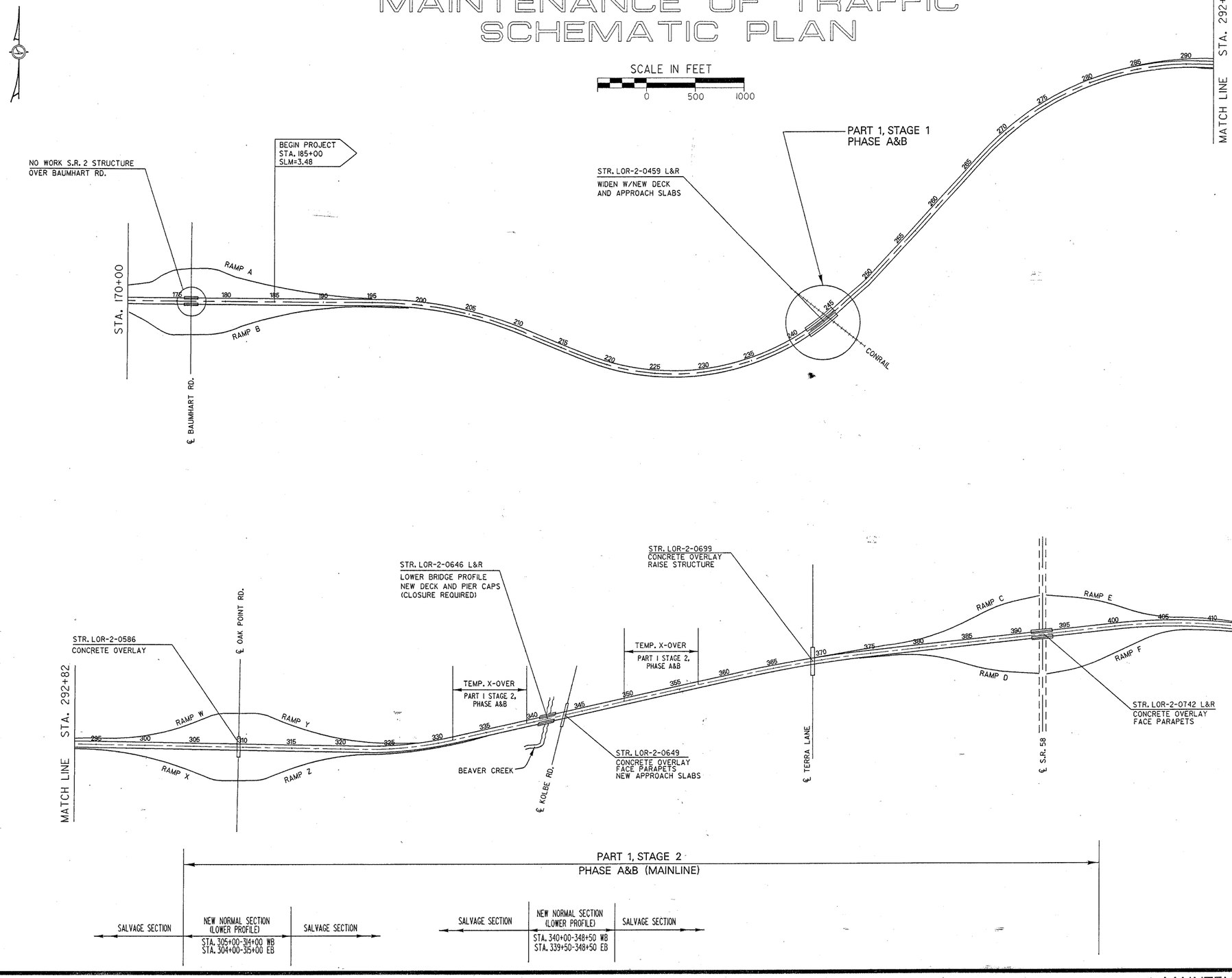
DESIGN FILE: c:\dgn\julie\marking2.dgn DATE: 03-AUG-1994
WORKSTATION: 003_104

RAMP TERMINAL MARKING DETAILS & PAVEMENT MARKING SUB-SUMMARY

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

MAINTENANCE OF TRAFFIC SCHEMATIC PLAN



DESIGN FILE: c:\dgn\julie\mtsh1108.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

MAINTENANCE OF TRAFFIC GENERAL SUMMARY

QUANTITIES	
CALCULATED BY	TSF 11/93
CHECKED BY	ADB 11/93

FHWA REGION	STATE	PROJECT	
5	OHIO		

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SPECIAL, AS PER PLAN SHEET NO.
110	111	114	115	116	131	132	133	134	135	137	139	141	142						
																		MAINTENANCE OF TRAFFIC	
300														404	35000	300	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
	275													SPECIAL	61411100	275	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	111
					600									SPECIAL	61412200	600	LIN. FT.	TEMPORARY GUARDRAIL, TYPE 5	131
	15													614	12460	15	EACH	WORK ZONE MARKING SIGN	
	15													614	12470	15	EACH	WORK ZONE SPEED LIMIT SIGN	
	750													SPECIAL	61412500	750	SQ. FT.	REPLACEMENT SIGN	111
	200													SPECIAL	61412600	200	EACH	REPLACEMENT DRUM	111
								2						614	12756	2	EACH	TEMPORARY CROSSOVER LIGHTING SYSTEM	
							1701							614	12800	1701	EACH	TEMPORARY RAISED PAVEMENT MARKER	
						42								614	13200	42	EACH	BARRIER REFLECTOR, TYPE A	
						704								614	13300	704	EACH	BARRIER REFLECTOR, TYPE B	
						120								614	13302	120	EACH	BARRIER REFLECTOR, TYPE B2	
		74		54				644						614	13350	772	EACH	OBJECT MARKER	
																		MAINTAINING TRAFFIC MISC.:	
					2									SPECIAL	61418000	2	EACH	TEMPORARY ANCHOR ASSEMBLY, TYPE E	131
					1									SPECIAL	61418000	1	EACH	TEMPORARY BRIDGE TERMINAL ASSEMBLY, TYPE I	131
						18.18								614	20400	18.18	MILE	TEMPORARY LANE LINE, CLASS II	
			0.02	0.06										614	21300	0.08	MILE	TEMPORARY CENTER LINE, CLASS I, 740.05, TYPE C	
			0.11	0.06										614	21400	0.17	MILE	TEMPORARY CENTER LINE, CLASS II	
		1.52						6.36	0.13	0.13	0.13			614	22000	8.27	MILE	TEMPORARY EDGE LINE, CLASS I	
		0.13	0.04	0.04				0.15						614	22300	0.36	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	
						2100		3386						614	23000	5486	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I	
			126											614	23600	126	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	
			28	24										614	26600	52	LIN. FT.	TEMPORARY STOP LINE, CLASS I, 740.05, TYPE C	
						2000								614	28000	2000	LIN. FT.	TEMPORARY GORE MARKING, CLASS II	
														615	10000	LUMP		TEMPORARY ROADS	
								2782						615	20000	2782	SQ. YD.	TEMPORARY PAVEMENT, CLASS A	
								893						615	25001	893	SQ. YD.	TEMPORARY PAVEMENT, CLASS B, AS PER PLAN	111
		2932		209				4117	2711	2782	2982	1484	1520	615	25001	**18737**	SQ. YD.	TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"	111
		1660		960				9470						622	40020	12090	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
								3020						622	40030	3020	LIN. FT.	PORTABLE CONCRETE BARRIER, 50"	
		1460												622	40040	1460	LIN. FT.	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	

DESIGN FILE: c:\dgn\julie\mtsht09.dgn DATE: 18-JUL-1994
WORKSTATION: D03_104

MAINTENANCE OF TRAFFIC

614 - MAINTAINING TRAFFIC

A) GENERAL

TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES ON SR 2 AND ON ALL RAMPS. 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. 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 COORDINATE THE MAINTENANCE OF TRAFFIC OPERATIONS WITH THE LOCAL STATE HIGHWAY PATROL.

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 FIFTEEN (15) MINUTES AFTER A CALL AND HAVE SUFFICIENT INVENTORY ON HAND TO REPAIR OR REPLACE THE DAMAGED OR MISSING TRAFFIC CONTROL DEVICE.

B) SEQUENCE OF CONSTRUCTION

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

PART I: STRUCTURE REHABILITATION AND/OR ROADWAY GRADE CHANGE
STAGE 1, PHASE A & B
REHAB. STR 0459 L&R (PHASE A: OUTSIDE, PHASE B: INSIDE)

STAGE 2, PHASE A & B
REHAB. STR 0646 R/L & STR 0742 R/L, CONSTRUCT ROADWAY GRADE CHANGE UNDER OAK POINT RD. AND KOLBE RD.

PART II: REHABILITATION OF RAMPS A-F
PHASE A: INSIDE, PHASE B: OUTSIDE

PART III: LOCAL ROAD OVERPASSES
SEE NOTE "F - MAINTENANCE OF TRAFFIC - LOCAL ROAD OVERPASSES" THIS SHEET

PART IV: REHABILITATION AND RESURFACING OF EXISTING PAVEMENT

PHASE A:
1 - SET UP MAINTENANCE OF TRAFFIC
2 - PAVEMENT PLANING (APPLICABLE ONLY FROM STA. 266+00 TO STA. 279+00 ON E.B.L.)
3 - FULL DEPTH AND PARTIAL DEPTH PAVEMENT REPAIRS PLUS ADJACENT BERM REPAIRS SHALL BE COMPLETED
4 - EDGE DRAINS SHALL BE PLACED ALONG THE PAVEMENT EDGES AS PER SHEET 87-88
5 - ITEM 301 AND 446 INTERMEDIATE COURSE SHALL BE PLACED
6 - MAINTENANCE OF TRAFFIC SHALL BE REMOVED

PHASE B:
SAME SEQUENCE FOR ADJACENT LANE

PHASE C:
FINAL RESURFACING COURSE

THE FOLLOWING GUIDELINES SHALL BE FOLLOWED:

THE FIRST AREA OF WORK SHALL BE PART I - STAGE 1, REHABILITATION OF STR 0459 L/R OR PART I - STAGE 2, REHABILITATION OF STR 0646 L/R & STR 0742 L/R AND CONSTRUCTION OF ROADWAY GRADE CHANGE UNDER OAK POINT RD. & KOLBE RD. THE PARTICULAR STAGE CHOSEN FIRST SHALL BE COMPLETED AND OPEN TO TRAFFIC BEFORE THE OTHER STAGE BEGINS. PART II, REHABILITATION OF RAMPS B-F, SHALL BE DONE AT ANY TIME EXCEPT DURING PART I - STAGE 2 CONSTRUCTION. PART III, LOCAL ROAD OVERPASSES, CAN BE UNDER CONSTRUCTION AT THE SAME TIME AS ANY OTHER PART. PART IV - PHASE A & B (1-4), PAVEMENT REHABILITATION, SHALL BE BUILT DURING THE LANE CLOSURES OF PART I AND ANY ADDITIONAL CLOSURE REQUIRED AND AT ALL TIMES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

C) MAINTENANCE OF TRAFFIC 4-LANE SECTIONS

A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES DURING WORKING HOURS. ALL TRAFFIC SHALL BE RETURNED TO ITS NORMAL PATTERN AFTER THE COMPLETION OF EACH WORK DAY, EXCEPT DURING THE REQUIRED PERIODS FOR THE PAVEMENT REPAIRS AND THE REPAIR AND OVERLAY OF VARIOUS BRIDGE DECKS ON THE PROJECT.

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 DIRECTED BY THE ENGINEER.

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 STD. DRWGS. MT-98.12 THRU 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.

D) MAINTENANCE OF S.R.2 TRAFFIC - OVERPASS CLOSURES

IF NO WORK IS BEING PERFORMED ON MAINLINE S.R.2 DURING THE RAISING AND/OR REHABILITATION OF THE EXISTING STRUCTURES (OAK POINT, KOLBE, TERRA LANE), A LANE CLOSURE ON S.R.2 IS NOT REQUIRED. A LANE CLOSURE SHALL BE REQUIRED ON S.R.2 DURING THE FOLLOWING OPERATIONS OR AS DIRECTED BY THE ENGINEER:

1) DEMOLITION OF THE EXISTING BRIDGE PARAPETS.

2) DURING THE CONSTRUCTION OF THE PROPOSED PARAPET OVER S.R. 2 WHERE THE ENGINEER BELIEVES TEMPORARY CLOSURE OF A TRAFFIC LANE IS WARRANTED.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT S.R. 2 DURING REMOVAL AND CONSTRUCTION OF EXISTING CONCRETE PARAPETS. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND HAVE APPROVAL FROM ODOT BRIDGE BUREAU AND SHALL REMAIN IN PLACE UNTIL WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE OVER THE INTERSTATE HIGHWAY SHALL BE MAINTAINED AT ALL TIMES.

IN THE EVENT A LANE RESTRICTION ON S.R. 2 IS NECESSARY, THE METHOD OF INSTALLATION AND DESIGN OF TEMPORARY LANE CLOSURE AS PER STD. DRWG. MT-95.30 THRU MT-95.32 SHALL BE APPLIED. COST FOR THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

E) MAINTENANCE OF TRAFFIC - RAMPS

TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON ALL RAMPS BY USE OF THE EXISTING PAVEMENT, PAVED BERMS, AND TEMPORARY PAVEMENT.

F) MAINTENANCE OF TRAFFIC - LOCAL ROAD OVERPASSES

1) OAK POINT ROAD (NORTH LAKE ST.) TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON STRUCTURE NO. LOR-2-0586. DURING THE DECK OVERLAY OPERATIONS, ONE-LANE TRAFFIC SHALL BE MAINTAINED WITH A TRAFFIC SIGNAL SYSTEM AS PER THE DETAILS ON SHT 115.

2) KOLBE ROAD (NORTH MAIN STREET) TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON STRUCTURE NO. LOR-2-0649. DURING DECK OVERLAY, PARAPET RETROFITTING AND APPROACH SLAB REPLACEMENT WORK, ONE LANE TRAFFIC SHALL BE MAINTAINED WITH A TRAFFIC SIGNAL AS PER THE DETAIL ON SHEET 116.

ONE LANE OF TRAFFIC WITH FLAGGER AS PER STD. DRWG. MT-97.10 SHALL BE MAINTAINED DURING WORKING HOURS FOR THE GUARDRAIL REPLACEMENT WORK.

3) TERRA LANE
ONE LANE OF TRAFFIC WITH FLAGGER (SEE STD.SRWG.MT-97.10) WILL BE PERMITTED DURING WORKING HOURS FOR THE GUARDRAIL REPLACEMENT WORK. DURING PAVEMENT REPLACEMENT, RAISING OF THE BRIDGE, AND DECK OVERLAY OPERATIONS THE STREET SHALL BE CLOSED TO THROUGH TRAFFIC FOR A PERIOD NOT TO EXCEED 90 CONSECUTIVE CALENDAR DAYS. THROUGH TRAFFIC WILL BE DETOURED AS SHOWN ON SHEET 112.

THE 90 CONSECUTIVE CALENDAR DAYS SHALL BE CONSIDERED AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 90 CONSECUTIVE CALENDAR DAYS THAT THE STREET REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES AS PER SECTION 108.07 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND AMHERST SERVICE DIRECTOR IN WRITING A MINIMUM OF SEVEN (7) DAYS PRIOR TO THE CLOSURE OF TERRA LANE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE GATES AND BARRICADES ON EITHER SIDE OF THE TERRA LANE STRUCTURE AND THE ADVANCE WARNING SIGNS AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-101.60.

THE CONTRACTOR SHALL ALSO PROVIDE, ERECT, MAINTAIN, AND REMOVE ALL SIGN INSTALLATIONS ON SHEET 112.

SIGN SUPPORTS AND LIGHTS FOR THE R-76C SIGNS SHALL BE AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL PERMANENT TRAFFIC CONTROL ITEMS SUCH AS SIGNING AND PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO REOPENING ANY ROAD TO TRAFFIC.

THE COST TO PROVIDE, ERECT, MAINTAIN, AND REMOVE ALL TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID ITEM 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

G) MAINTENANCE OF TRAFFIC - PAVEMENT REPLACEMENT UNDER OAK POINT RD.

A MINIMUM OF 1-LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON SR 2 IN THE AREAS OF THE PAVEMENT REPLACEMENT ON SR 2 UNDER OAK POINT ROAD. TRAFFIC SHALL BE MAINTAINED BY USE OF THE EXISTING PAVEMENT, TEMPORARY PAVEMENT, DRUMS, AND PORTABLE CONCRETE BARRIER.

H) MAINTENANCE OF TRAFFIC - PAVEMENT REPLACEMENT UNDER KOLBE RD.

PAVEMENT REPLACEMENT ON S.R.2 UNDER KOLBE RD. SHALL BE COMPLETED WHILE THE TEMPORARY CROSSOVER IS IN EFFECT. FEATHERS AS PER BP-3.1 SHALL BE PROVIDED TO TRANSITION TRAFFIC ACROSS EACH SIDE OF STR. 0646.

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

404 -	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	300 CU.YDS.

ALTERNATE METHODS

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

DESIGN FILE: c:\dgn\julie\mtsht110.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

MAINTENANCE OF TRAFFIC

Calc. by ADB
Date 9/93
Chk'd by TSF
Date 9/93

LOR-2-3.48

III
222

ITEM SPECIAL - 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: (216) 466-2660

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED IN THE GENERAL SUMMARY:

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR	275 HOURS

HOLIDAYS AND SPECIAL EVENT WEEKENDS

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR SPECIAL EVENT WEEKENDS.

FOURTH OF JULY LABOR DAY THANKSGIVING MEMORIAL DAY

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

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 12:00N MONDAY
MONDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 12:00N MONDAY
FRIDAY	12:00N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH 12:00N MONDAY

THERE SHALL NOT BE ANY EXTENSIONS DUE TO WEATHER OR MATERIAL DELAYS WHAT SO EVER.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

ITEM 614 WORK ZONE SIGNS

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

ITEM 614 WORK ZONE MARKING SIGNS (OW-167-48) 15 EACH

A QUANTITY OF 15 SIGNS, OW-167-48, "NO EDGE LINES," HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS PER STANDARD DRAWING MT-99.10.

615 - TEMPORARY PAVEMENT, CLASS B, AS PER PLAN

ITEM 615 - TEMPORARY PAVEMENT, CLASS B, AS PER PLAN SHALL BE REMOVED FOLLOWING THE COMPLETION OF THE CONSTRUCTION PHASES. THIS PAVEMENT SHALL CONSIST OF 8" OF 301 - BITUMINOUS AGGREGATE BASE, AC-20 AND 1-1/4" OF 404 ASPHALT CONCRETE, AC-20 SURFACE COURSE.

615 - TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"

THE TEMPORARY PAVEMENT BUILDUP SHALL BE 9"-301 BITUMINOUS AGGREGATE BASE. PAYMENT SHALL INCLUDE ANY ADDITIONAL COST OF ITEM 203 EXCAVATION AND/OR EMBANKMENT TO PLACE THE ITEM 301. THIS PAVEMENT SHALL REMAIN IN PLACE.

TRENCH FOR TEMPORARY PAVEMENTS

EXCAVATION FOR TEMPORARY PAVEMENTS SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH DRUMS. PLACEMENT OF THE PROPOSED 301 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.

614 WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND REMOVE WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS (R-10-48) (45 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 IS INCIDENTAL TO THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED AND COVERED PRIOR TO STARTING WORK OR MAY BE ERECTED 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 WHICH IS 1/2 MILE OR MORE IN LENGTH AND WHICH IS EXPECTED TO LAST AT LEAST 30 CONSECUTIVE 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 1/2 MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH 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. 4 POSTS.

WORK ZONE SPEED LIMIT SIGN AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION 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, ERECTION, MAINTENANCE, COVERING DURING SUSPENSION OF WORK, AND REMOVAL OF THE SIGNS AND SUPPORTS.

ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE SPEED LIMIT SIGN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE SUBSUMMARY SHEET TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 WORK ZONE SPEED LIMIT SIGNS 15 EACH

SPECIAL - REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATION 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 BID 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.

622 - PORTABLE CONCRETE BARRIER, 32"
622 - PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED

TONGUE AND GROOVE SECTIONS WILL NOT BE PERMITTED ON THIS PROJECT. SURFACE PREPARATION FOR THE PORTABLE CONCRETE BARRIER, 32" SHALL BE AS DETAILED ON STANDARD DRAWING PCB-91.

THE COST OF PROVIDING, ERECTING, MAINTAINING AND REMOVING ALL PORTABLE CONCRETE BARRIER AS CALLED FOR IN THE PLANS AND THE APPROPRIATE STANDARD DRAWINGS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF THE APPROPRIATE ITEM 622.

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 BID PRICE PER SQUARE FOOT FOR "ITEM SPECIAL - REPLACEMENT SIGN" AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS; HARDWARE AND SUPPORTS; AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC..

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

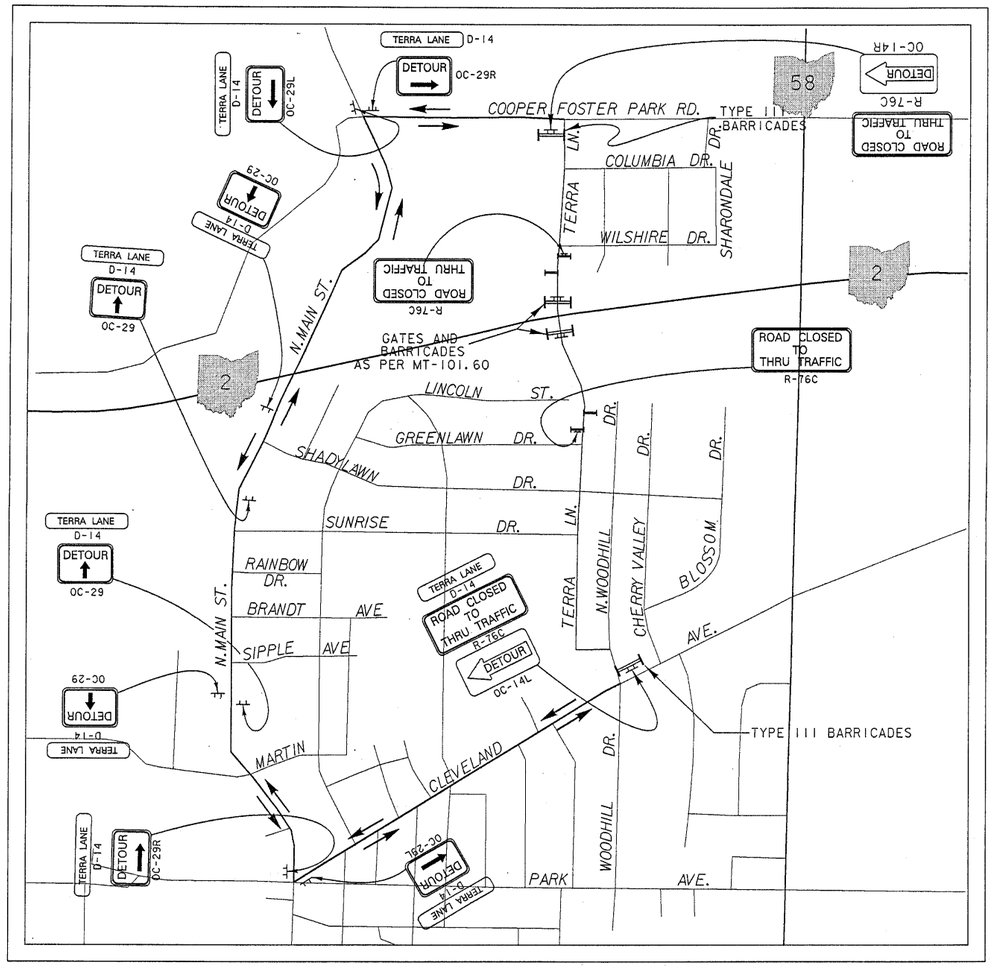
DESIGN FILE: c:\dgn\julie\mtshtlll.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

112
222

DETOUR FOR TERRA LANE

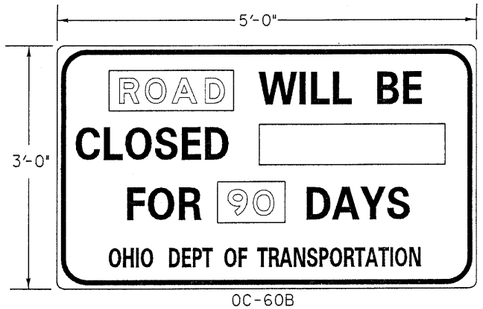


DETOUR

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, MAINTIANING AND REMOVING THE SIGNS INCLUDING SUPPORTS.



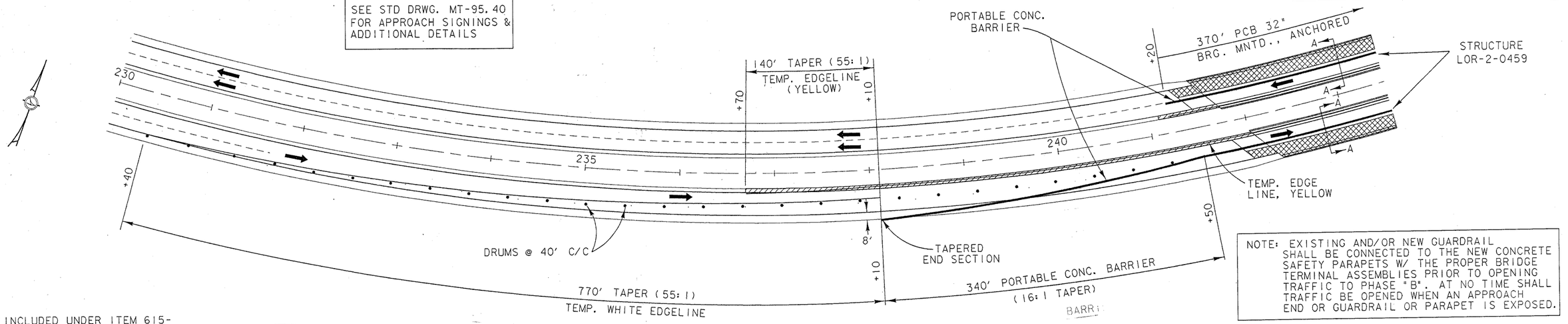
OC-60B

DESIGN FILE: c:\dgn\julie\mtsh112.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

SEE STD DRWG. MT-95.40 FOR APPROACH SIGNINGS & ADDITIONAL DETAILS



NOTE: EXISTING AND/OR NEW GUARDRAIL SHALL BE CONNECTED TO THE NEW CONCRETE SAFETY PARAPETS W/ THE PROPER BRIDGE TERMINAL ASSEMBLIES PRIOR TO OPENING TRAFFIC TO PHASE "B". AT NO TIME SHALL TRAFFIC BE OPENED WHEN AN APPROACH END OR GUARDRAIL OR PARAPET IS EXPOSED.

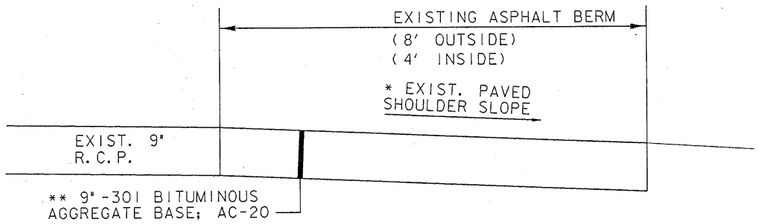
** INCLUDED UNDER ITEM 615-TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A" - TO REMAIN IN PLACE AS NEW PAVED BERM

* SEE EXISTING TYPICAL SECTION FOR SLOPE INFORMATION

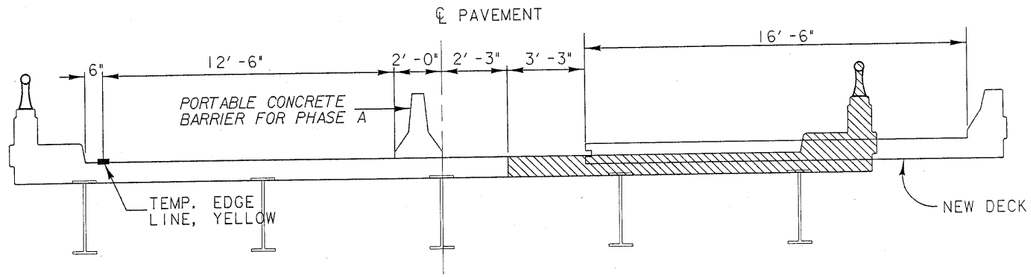
WORK AREA

CALCULATIONS
ITEM 615-TEMPORARY PAVEMENT
CLASS B, AS PER PLAN "A"

236+70 - 242+05=535'@4'	= 2140SF/9=	238SY
241+10 - 241+75= 65'@4'	= 260SF/9=	29SY
244+80 - 250+30=550'@4'	= 2200SF/9=	244SY
245+05 - 245+60= 55'@4'	= 220SF/9=	24SY
	TOTAL =	535SY



SECTION THRU TEMP. PAV'T.



DETAIL A-A

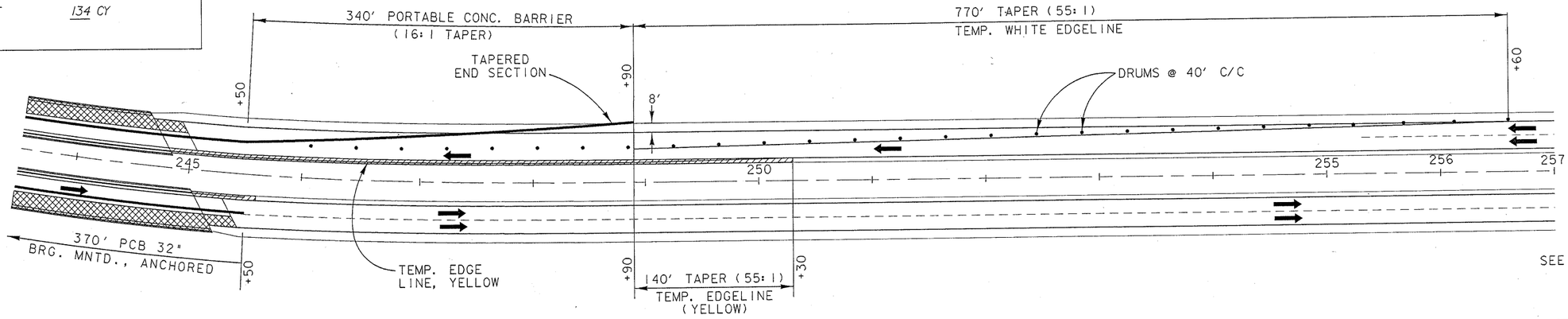
(NEW CONCRETE DECK AND FULL WIDTH APPROACH SLABS)

REMOVED

TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (TEMP.PAVEMENT CONSTRUCTION)

CUT *134* *CY*



SEE SHEET 114 FOR QUANTITIES

STR. LOR-2-0459 L&R

MAINTENANCE OF TRAFFIC PART 1, STAGE 1, PHASE A

DESIGN FILE: c:\dgn\julie\mtsht13.dgn DATE: 15-JUL-1994
WORKSTATION: D03_104

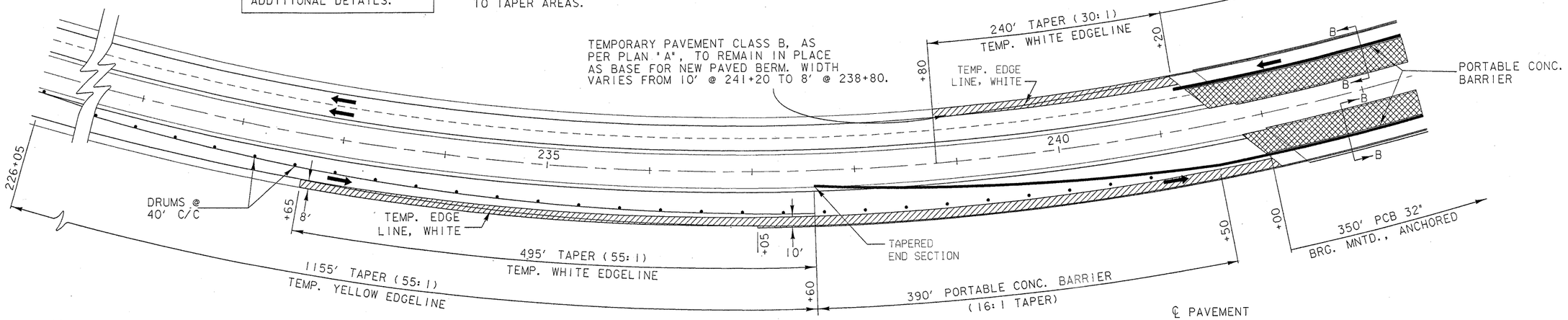
LOR-2-3.48

114/222

Calc. by T. S. F. Date 9/93
Chk'd by A. D. B. Date 9/93

SEE STD. DRWG. MT-95.40 FOR APPROACH SIGNINGS & ADDITIONAL DETAILS.

NOTE:
BARRIER DELINEATION SHALL ONLY APPLY TO PARALLEL SECTIONS, NOT TO TAPER AREAS.



PHASE	STATION LIMITS	614 TEMPORARY EDGELINE, CLASS 1 YELLOW	614 TEMPORARY EDGELINE, CLASS 1 WHITE	614 TEMPORARY EDGELINE, CLASS 1, TYPE C ** YELLOW	614 TEMPORARY EDGELINE, CLASS 1, TYPE C ** WHITE	614 OBJECT MARKER	615 TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"	615 TEMPORARY ROADS	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, ANCHORED *
		LIN. FT./MILE				EACH	SQ. YD.	LUMP	LIN. FT.	
A	230+40 TO 245+50 EB	880	770	-	-	19	262		370	370
	241+20 TO 256+60 WB	910	770	-	-	18	273		400	370
B	226+05 TO 247+90 EB	1155	1178	-	355	18	1189		440	350
	238+80 TO 260+95 WB	1155	1190	-	355	19	1208		450	370
TOTALS		4100	3908		710	74	2932	LUMP	1660	1460
		8008/1.52		710/0.13						

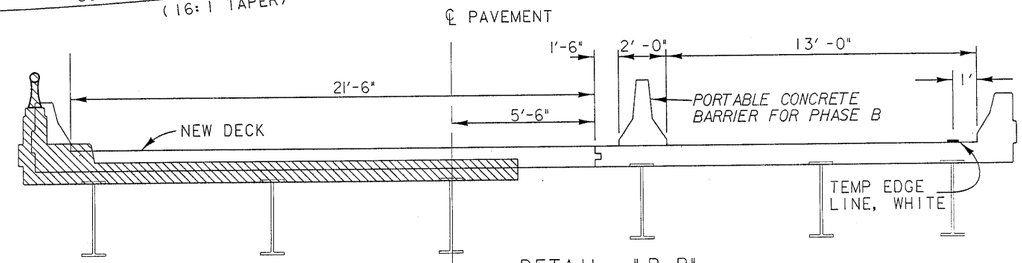
QUANTITIES CARRIED TO SHT 109.

FOR BARRIER REFLECTOR QUANTITIES SEE SHT. 109

* INCLUDE 2 ANCHORS PER 10' SECTION SEE STANDARD DRWG. PCB-91 FOR INSTALLATION DETAILS

** QUANTITY TO BE USED FOLLOWING COMPLETION OF NEW BRIDGE DECK WORK AND PRIOR TO PLACEMENT OF RESURFACING COURSE

NOTE: EXISTING AND/OR NEW GUARDRAIL SHALL BE CONNECTED TO THE NEW CONCRETE SAFETY PARAPETS W/ THE PROPER BRIDGE TERMINAL ASSEMBLIES PRIOR TO OPENING TRAFFIC TO PHASE "B". AT NO TIME SHALL TRAFFIC BE OPENED WHEN AN APPROACH END OR GUARDRAIL OR PARAPET IS EXPOSED.



DETAIL "B-B"

REMOVED

CALCULATIONS
ITEM 615-TEMPORARY PAVEMENT
CLASS B, AS PER PLAN, "A"

238+80 - 241+20=240'@9' ave.	= 2160SF/9	= 240 SY
244+85 - 250+40=555'@10'	= 5550SF/9	= 617 SY
250+40 - 254+35=395'@8'	= 3160SF/9	= 351 SY
232+65 - 237+05=440'@8'	= 3520SF/9	= 391 SY
237+05 - 242+03=498'@10'	= 4980SF/9	= 553 SY
245+45 - 247+90=245'@9' ave.	= 2205SF/9	= 245 SY
	TOTAL	2397 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY.
(TEMP. PAVEMENT CONSTRUCTION)

CUT	599 CY
FILL	15 CY

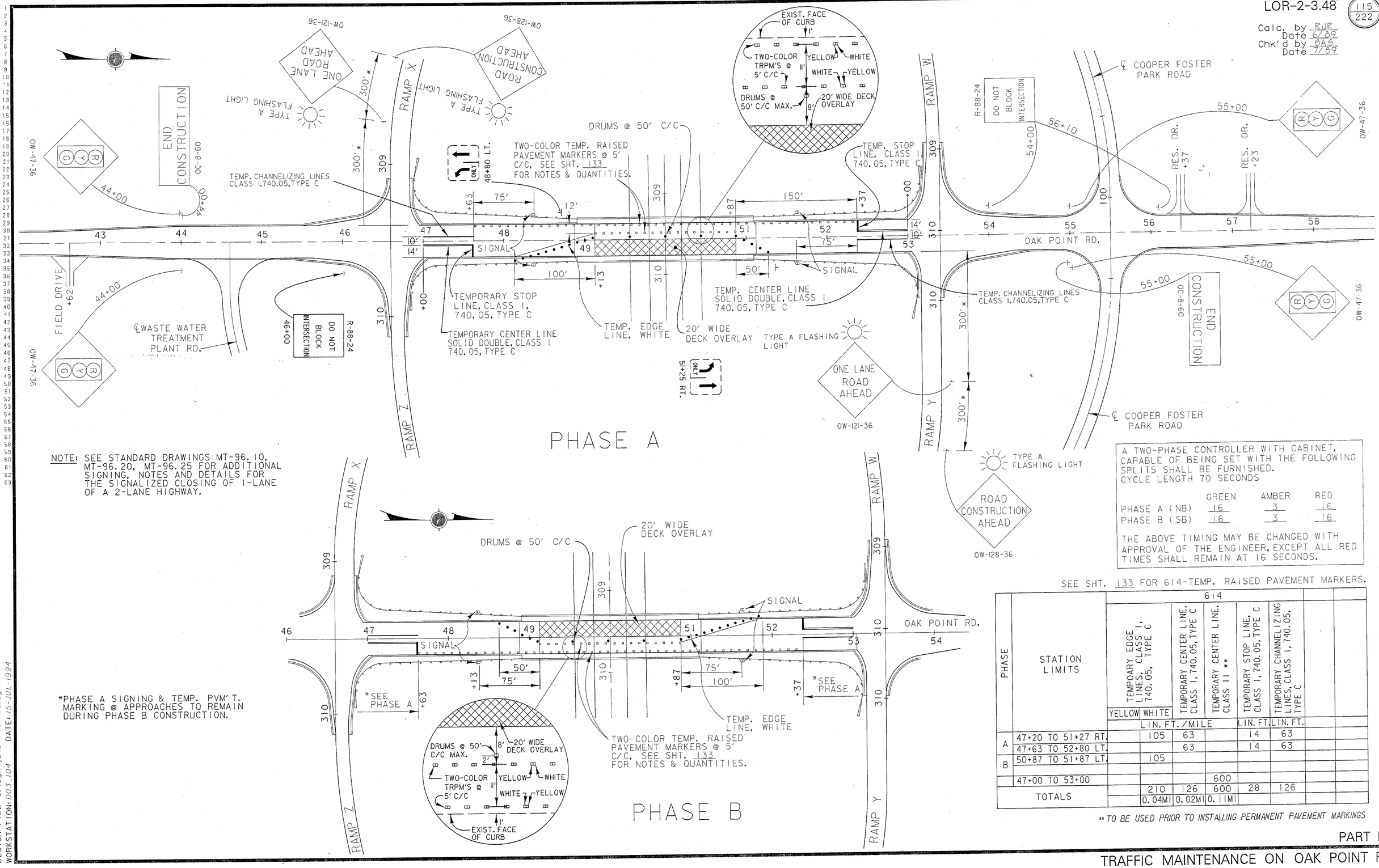
TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"

STR. LOR-2-0459 L&R

MAINTENANCE OF TRAFFIC PART1, STAGE 1, PHASE B

DESIGN FILE: c:\dgn\julie\mtsh1i1.dgn
WORKSTATION: 003_104
DATE: 11 JUL 1994

Calc. by RJR
Date 6/89
Chk'd by DAG
Date 7/89



NOTE: SEE STANDARD DRAWINGS MT-96.10, MT-96.20, MT-96.25 FOR ADDITIONAL SIGNING, NOTES AND DETAILS FOR THE SIGNALIZED CLOSING OF 1-LANE OF A 2-LANE HIGHWAY.

*PHASE A SIGNING & TEMP. PVM'T. MARKING @ APPROACHES TO REMAIN DURING PHASE B CONSTRUCTION.

A TWO-PHASE CONTROLLER WITH CABINET, CAPABLE OF BEING SET WITH THE FOLLOWING SPLITS SHALL BE FURNISHED.
CYCLE LENGTH 70 SECONDS

	GREEN	AMBER	RED
PHASE A (NB)	16	3	16
PHASE B (SB)	16	3	16

THE ABOVE TIMING MAY BE CHANGED WITH APPROVAL OF THE ENGINEER, EXCEPT ALL RED TIMES SHALL REMAIN AT 16 SECONDS.

SEE SHT. 133 FOR 614-TEMP. RAISED PAVEMENT MARKERS.

PHASE	STATION LIMITS	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C YELLOW	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C WHITE	614 TEMPORARY CENTER LINE, CLASS I, 740.05, TYPE C	614 TEMPORARY CENTER LINE, CLASS II **	614 TEMPORARY STOP LINE, CLASS I, 740.05, TYPE C	614 TEMPORARY CHANNELIZING LINES, CLASS I, 740.05, TYPE C		
		LIN. FT./MILE				LIN. FT.	LIN. FT.		
A	47+20 TO 51+27 RT.		105	63		14	63		
	47+63 TO 52+80 LT.			63		14	63		
B	50+87 TO 51+87 LT.		105						
	47+00 TO 53+00				600				
TOTALS			210	126	600	28	126		
			0.04MI	0.02MI	0.11MI				

** TO BE USED PRIOR TO INSTALLING PERMANENT PAVEMENT MARKINGS

PART III

TRAFFIC MAINTENANCE ON OAK POINT RD

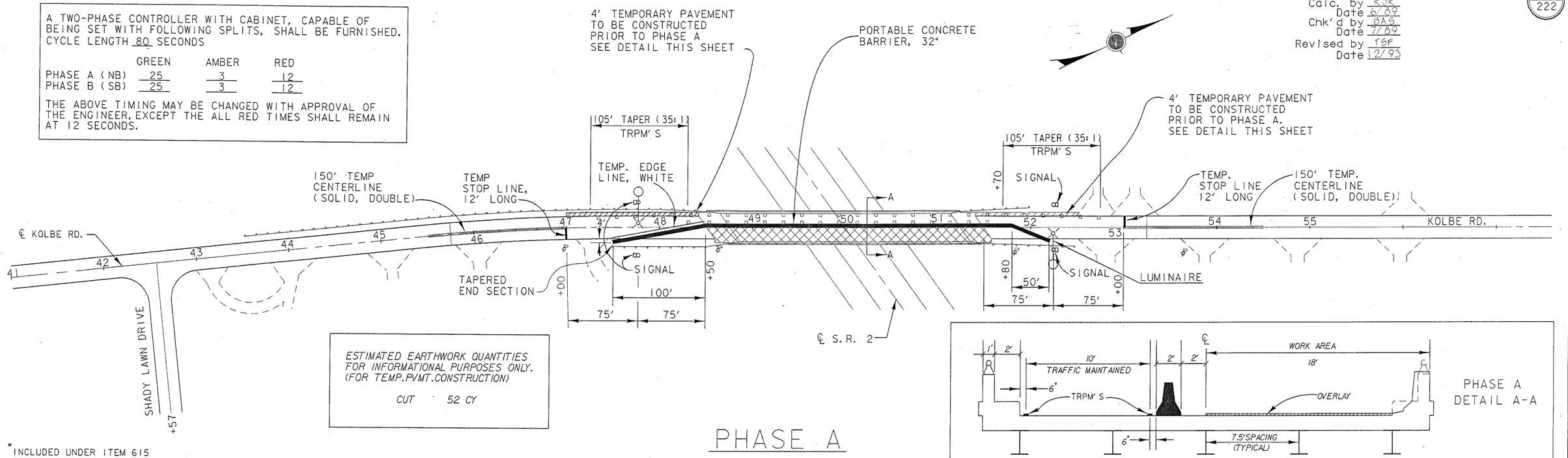
DESIGN FILE: c:\dgn\julie\mtsht15.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

Calc. by RJR
Date 6/09
Chk'd by DAG
Date 7/09
Revised by TSF
Date 12/93

A TWO-PHASE CONTROLLER WITH CABINET, CAPABLE OF BEING SET WITH FOLLOWING SPLITS, SHALL BE FURNISHED. CYCLE LENGTH 80 SECONDS

	GREEN	AMBER	RED
PHASE A (NB)	25	3	12
PHASE B (SB)	25	3	12

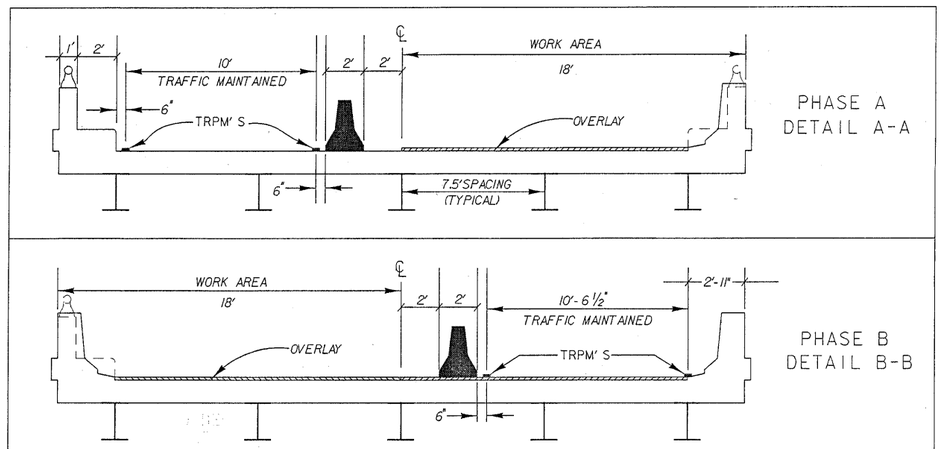
THE ABOVE TIMING MAY BE CHANGED WITH APPROVAL OF THE ENGINEER, EXCEPT THE ALL RED TIMES SHALL REMAIN AT 12 SECONDS.



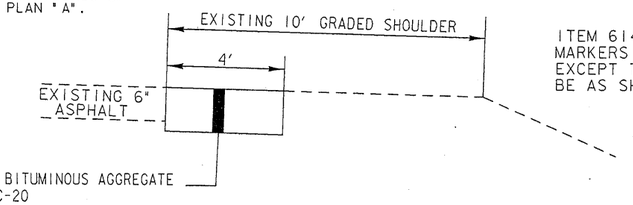
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. (FOR TEMP.PVMT.CONSTRUCTION)

CUT 52 CY

PHASE A



* INCLUDED UNDER ITEM 615 TEMP. PVMT., CLASS B. AS PER PLAN "A".



SECTION THRU TEMP. PVMT.

ITEM 614-TEMP. RAISED PVMT MARKERS SHALL CONFORM TO SS 862 EXCEPT THAT THE SPACING SHALL BE AS SHOWN ON SHEET 133.

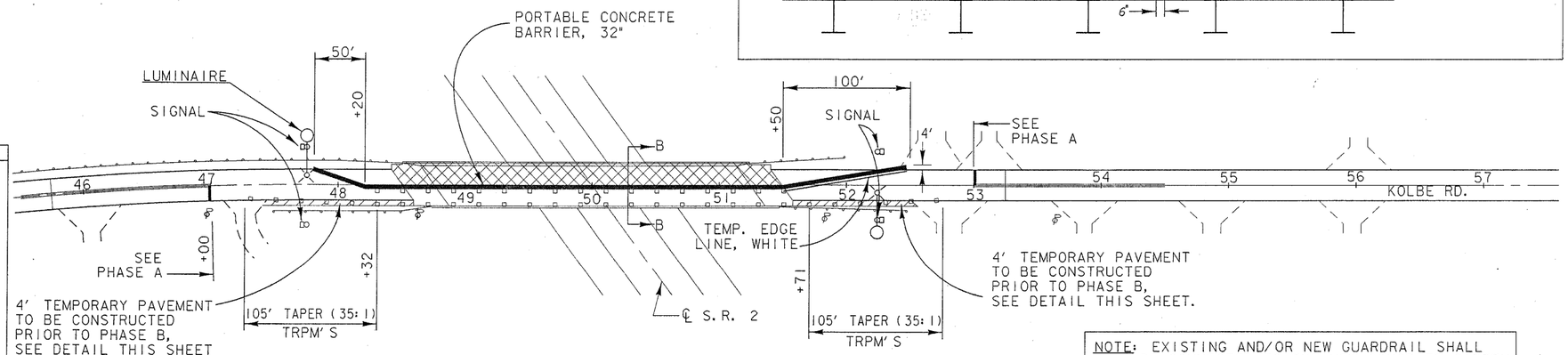
DECK OVERLAY, FACE EXISTING PARAPET & APPROACH SLAB REPLACEMENT

SEE SHT. 132 FOR 614-BARRIER REFLECTORS

SEE SHT. 133 FOR 614-TEMP. RAISED PAVEMENT MARKERS

PHASE	STATION LIMITS	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C YELLOW	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C WHITE	614 TEMPORARY CENTER LINE, CLASS I, 740.05, TYPE C	614 TEMPORARY CENTER LINE, CLASS II **	614 TEMPORARY STOP LINE, CLASS I, 740.05, TYPE C	614 OBJECT MARKER	615 TEMP. PAVEMENT, CLASS B AS PER PLAN "A"	622 PORTABLE CONCRETE BARRIER, 32"
		LIN. FT./MILE				LIN. FT.	EACH	SQ. YD.	L.F
A	45+50 TO 52+40 RT		100	150		12	27	113	480
	47+25 TO 54+50 LT			150		12			
B	47+25 TO 52+75 RT		100				27	96	480
	47+80 TO 52+50 LT								
	48+50 TO 51+50				300				
TOTALS			200	300	300	24	54	209	960
		200/0.04		0.06	0.06				

**TO BE USED PRIOR TO INSTALLING PERMANENT PAVEMENT MARKINGS



PHASE B

NOTE: SEE STD. DRWG. MT-96.11, MT-96.20, MT-96.25 FOR APPROACH SIGNING AND ADDITIONAL DETAILS.

NOTE: EXISTING AND/OR NEW GUARDRAIL SHALL BE CONNECTED TO THE NEW CONCRETE SAFETY PARAPETS W/ THE PROPER BRIDGE TERMINAL ASSEMBLIES PRIOR TO OPENING TRAFFIC TO PHASE "B". AT NO TIME SHALL TRAFFIC BE OPENED WHEN AN APPROACH END OR GUARD-RAIL OR PARAPET IS EXPOSED.

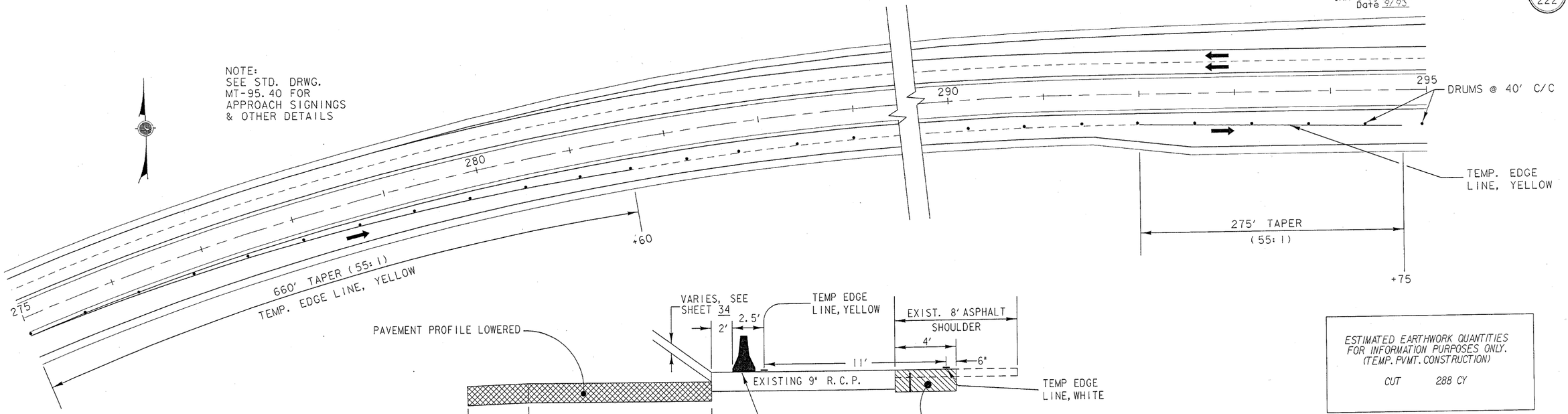
DESIGN FILE: c:\dgn\julie\mtsht16.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

Calc. by T.S.F. Date 9/93
Chk'd by A.D.P. Date 9/93

LOR-2-3.48

117
222

NOTE:
SEE STD. DRWG. MT-95.40 FOR APPROACH SIGNINGS & OTHER DETAILS



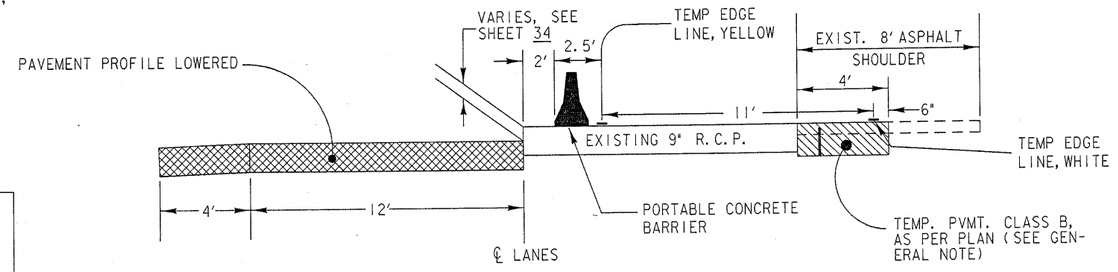
ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS B, AS PER PLAN

304+00 - 310+00=600'@4' = 2400SF (EB)
305+00 - 310+00=500'@4' = 2000SF (WB)
4400 SF/9 = 489 SY

TEMP. PVMT. CLASS B, AS PER PLAN "A"

302+65 - 304+00= 135'@4' = 540SF (EB)
299+54 - 304+00= 446'@8' = 3568SF (EB)
303+70 - 305+00= 130'@4' = 520SF (WB)
303+70 - 305+00= 130'@8' = 1040SF (WB)
5668 SF/9= 630 SY

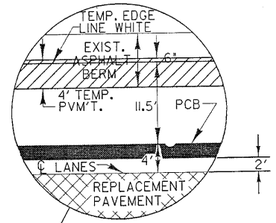


DETAIL A-A

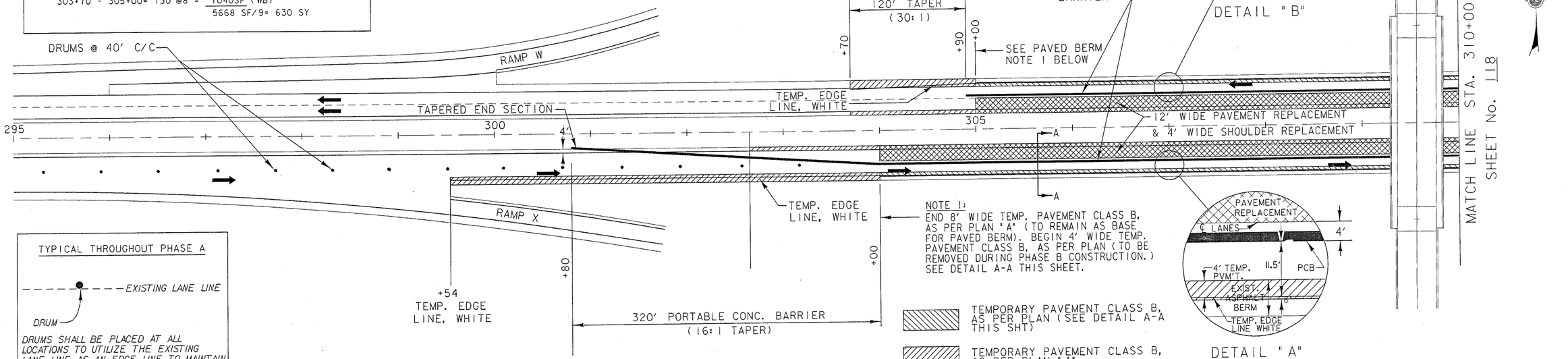
(EASTBOUND SHOWN, WESTBOUND OPPOSITE HAND)

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (TEMP. PVMT. CONSTRUCTION)

CUT 288 CY



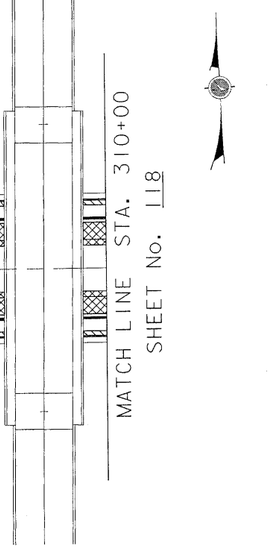
DETAIL "B"



TYPICAL THROUGHOUT PHASE A

DRUMS SHALL BE PLACED AT ALL LOCATIONS TO UTILIZE THE EXISTING LANE LINE AS AN EDGE LINE TO MAINTAIN TRAFFIC.(WHEN APPLICABLE)

DETAIL "A"



SEE SHT. 134 FOR QUANTITIES

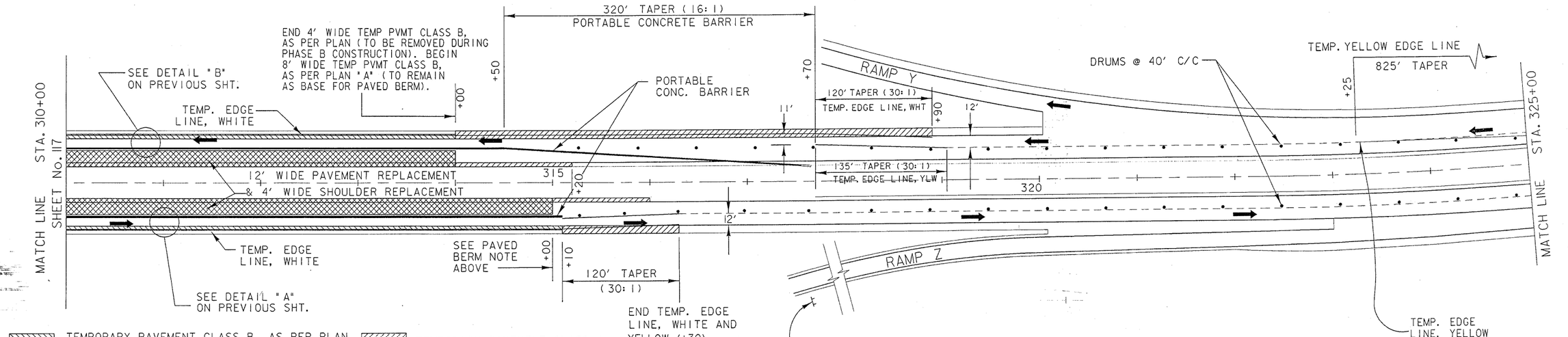
PART I

MAINTENANCE OF TRAFFIC STAGE 2, PHASE A

DESIGN FILE: c:\dgn\julie\mtsh117.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48



TEMPORARY PAVEMENT CLASS B, AS PER PLAN (SEE DETAIL A-A SHEET 117.)

TEMPORARY PAVEMENT CLASS A

TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"

NEW PAVEMENT

IN ADDITON TO THE DETAILS SHOWN, THE CROSSOVER SHALL BE MAINTAINED AND CONSTRUCTED AS PER STD. DRWG(S) MT-95.70, MT-100.00, AND MT-95.30.

THE OC-8-60 SIGNS AS SHOWN ON STD. DRW. MT-95.70, SHALL NOT BE REQUIRED.

FOR TEMPORARY RAISED PAVEMENT MARKER DETAILS WITHIN THE CROSSOVER AREA, SEE SHEET No. 133

ITEM 615 CALCULATIONS

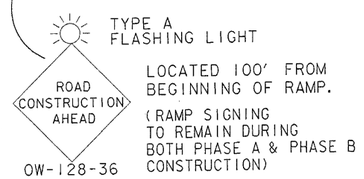
TEMP. PVMT. CLASS A
TEMP. CROSSOVER FROM COMPUTER=6817.6SF/9= 758 SY

TEMP. PVMT. CLASS B, AS PER PLAN
310+00 - 314+00=400'@4' = 1600SF
310+00 - 315+10=510'@4' = 2040SF
3640SF/9= 404 SY

TEMP. PVMT. CLASS B, AS PER PLAN "A"

314+00	- 315+20=	120'@4' =	480SF
315+00	- 316+00=	100'@4' =	400SF
314+00	- 318+90=	490'@8' =	3920SF
315+10	- 316+30=	120'@8' =	960SF
330+00	- 331+50=	150'@4' =	600SF
337+66	- 339+50=	184'@4' =	736SF

7096SF/9= 788 SY



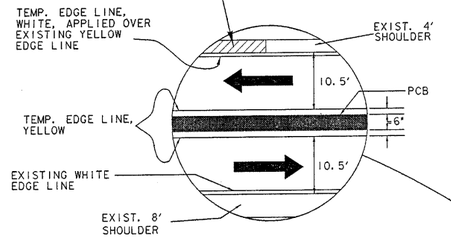
TYPE A FLASHING LIGHT

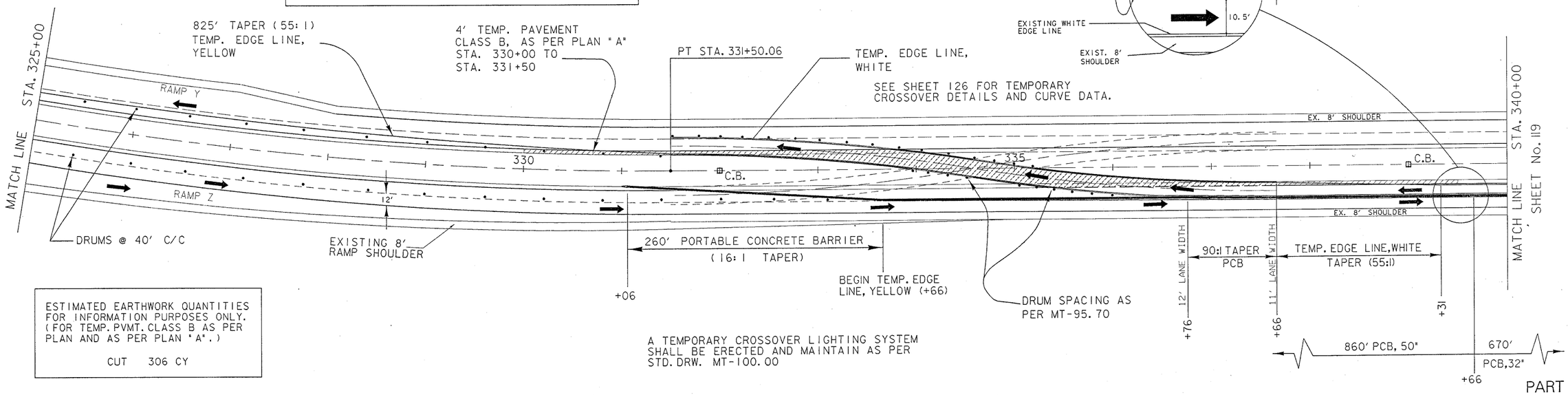
LOCATED 100' FROM BEGINNING OF RAMP.

(RAMP SIGNING TO REMAIN DURING BOTH PHASE A & PHASE B CONSTRUCTION)

FOR BARRIER REFLECTOR QUANTITIES AND SPACING SEE SHEET 132.

FOR ADDITIONAL QUANTITIES SEE SHEET 134.





ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP. PVMT. CLASS B AS PER PLAN AND AS PER PLAN "A".)

CUT 306 CY

A TEMPORARY CROSSOVER LIGHTING SYSTEM SHALL BE ERECTED AND MAINTAIN AS PER STD. DRW. MT-100.00

PART I

MAINTENANCE OF TRAFFIC STAGE 2, PHASE A

DESIGN FILE: c:\dgn\Julie\mt\sht118.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

Calc. by TSF
Date 10/93
Chk'd by ADB
Date 10/93

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

119
222

TEMPORARY PAVEMENT CLASS A

TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"

NEW PAVEMENT

SEE SHEET 128 FOR TEMPORARY CROSSOVER DETAILS & CURVE DATA.

SEE SHEET 131 FOR GENERAL MAINTENANCE OF TRAFFIC FOR REVERSIBLE TRAFFIC PATTERNS.

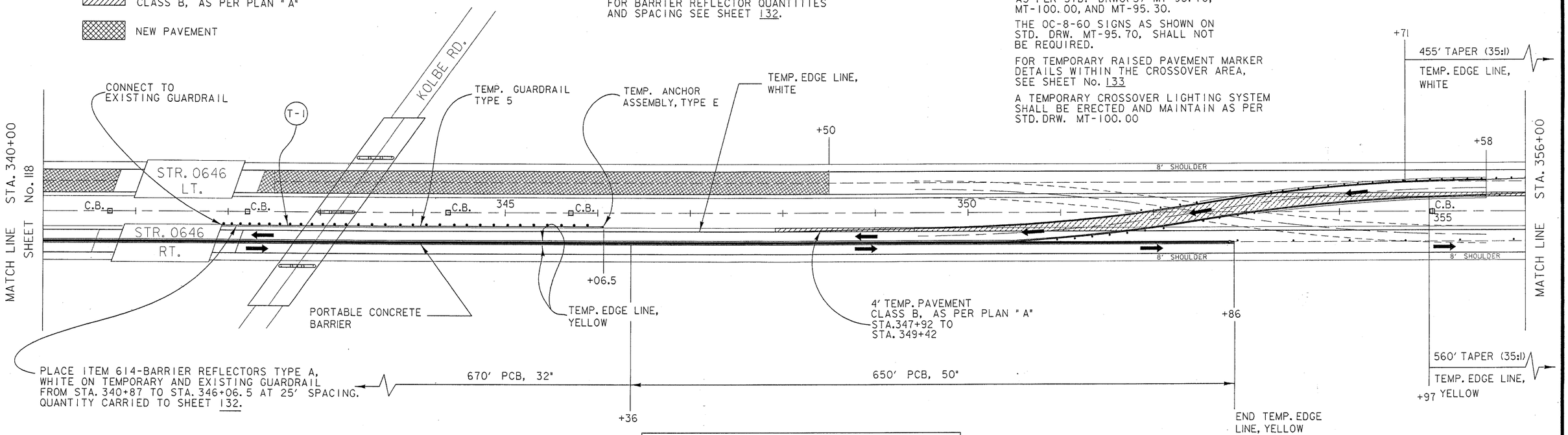
FOR BARRIER REFLECTOR QUANTITIES AND SPACING SEE SHEET 132.

IN ADDITON TO THE DETAILS SHOWN, THE CROSSOVER SHALL BE MAINTAINED AS PER STD. DRWG(S) MT-95.70, MT-100.00, AND MT-95.30.

THE OC-8-60 SIGNS AS SHOWN ON STD. DRW. MT-95.70, SHALL NOT BE REQUIRED.

FOR TEMPORARY RAISED PAVEMENT MARKER DETAILS WITHIN THE CROSSOVER AREA, SEE SHEET No. 133

A TEMPORARY CROSSOVER LIGHTING SYSTEM SHALL BE ERECTED AND MAINTAIN AS PER STD. DRW. MT-100.00



ITEM 615 CALCULATIONS

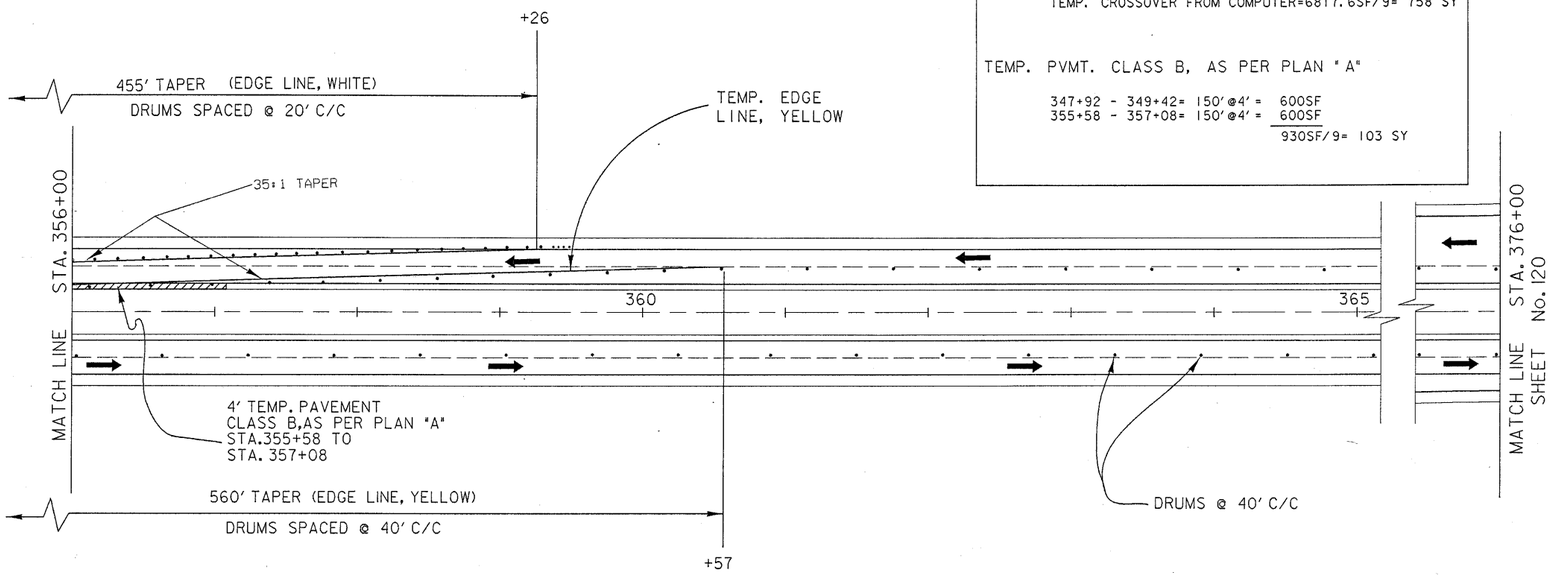
TEMP. PVMT. CLASS A
TEMP. CROSSOVER FROM COMPUTER=6817.6SF/9= 758 SY

TEMP. PVMT. CLASS B, AS PER PLAN "A"

347+92 - 349+42= 150'@4' = 600SF
355+58 - 357+08= 150'@4' = 600SF
930SF/9= 103 SY

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP. PVMT. CLASS B, AS PER PLAN "A".)

CUT 26 CY



REF.	STATION	SIDE	614 TEMPORARY GUARDRAIL, TYPE 5	614 TEMPORARY ANCHOR ASSEMBLY, TYPE E	
			LIN. FT.	EACH	
T-1	341+94-346+06.5	RT.	362.5	1	
			QUANTITIES CARRIED TO SHT. 131		

FOR ADDITIONAL QUANTITIES SEE SHEET 134

PART 1

MAINTENANCE OF TRAFFIC STAGE 2, PHASE A

DESIGN FILE: c:\dgn\julie\mtsht119.dgn
WORKSTATION: 003_104 DATE: 15-JUL-1994

Calc. by TSF
Date 10/93
Chk'd by AD B
Date 10/93

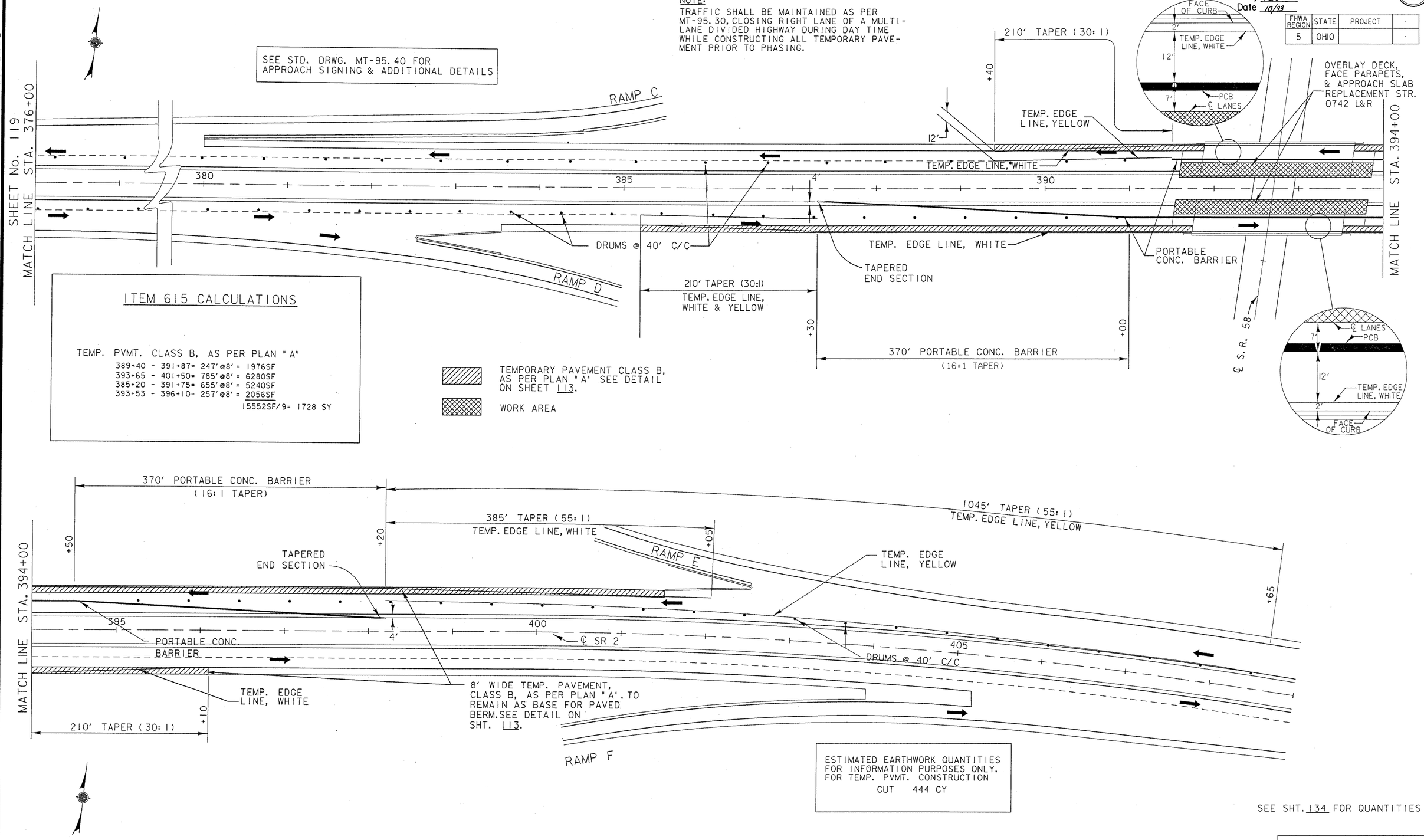
LOR-2-3.48

120
222

FHWA REGION	STATE	PROJECT	
5	OHIO		

NOTE:
TRAFFIC SHALL BE MAINTAINED AS PER MT-95.30, CLOSING RIGHT LANE OF A MULTI-LANE DIVIDED HIGHWAY DURING DAY TIME WHILE CONSTRUCTING ALL TEMPORARY PAVEMENT PRIOR TO PHASING.

SEE STD. DRWG. MT-95.40 FOR APPROACH SIGNING & ADDITIONAL DETAILS



ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS B, AS PER PLAN "A"

389+40 - 391+87= 247'@8' = 1976SF
393+65 - 401+50= 785'@8' = 6280SF
385+20 - 391+75= 655'@8' = 5240SF
393+53 - 396+10= 257'@8' = 2056SF
15552SF/9= 1728 SY

TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SEE DETAIL ON SHEET 113.

WORK AREA

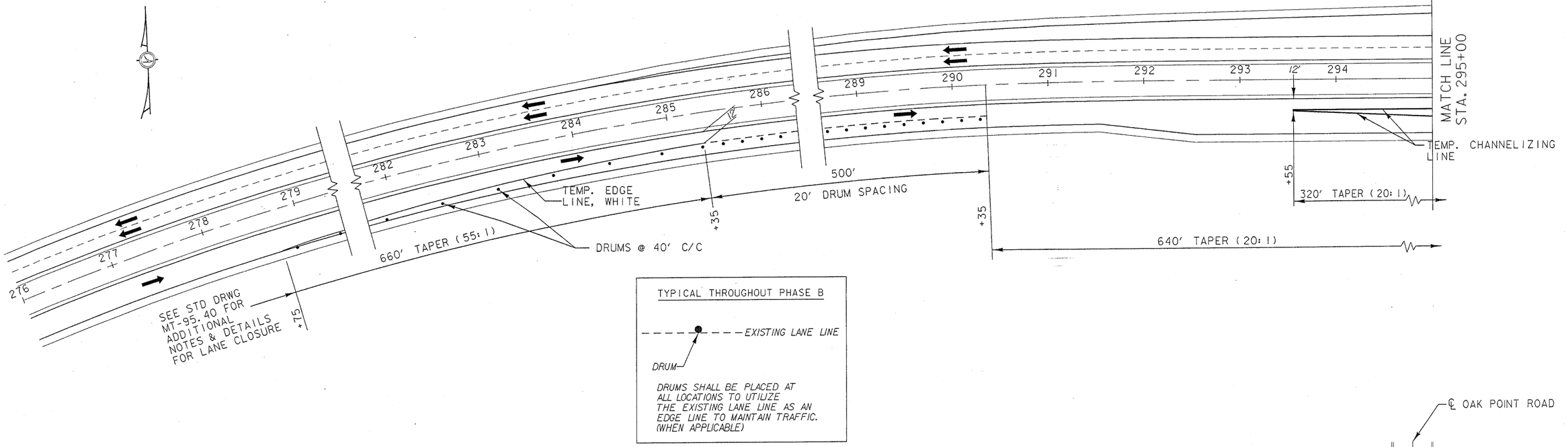
ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY.
FOR TEMP. PVMT. CONSTRUCTION
CUT 444 CY

SEE SHT. 134 FOR QUANTITIES

DESIGN FILE: c:\dgn\julie\mtsh_97.dgn
WORKSTATION: 003_104
DATE: 21-JUL-1994

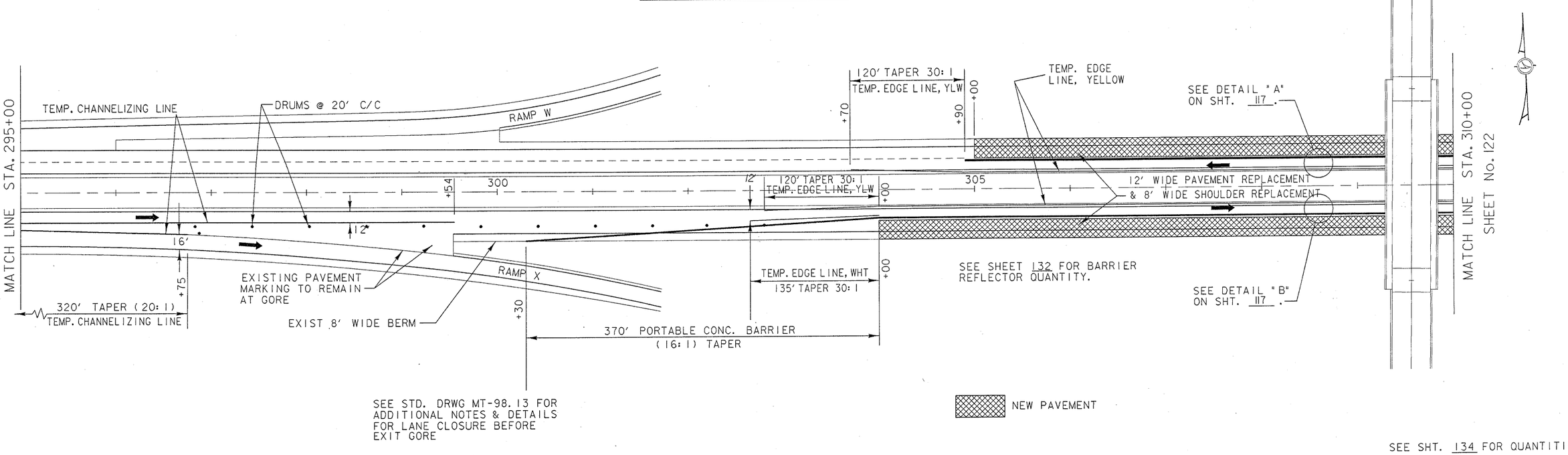
PART I | STR. LOR-2-0742 L&R

MAINTENANCE OF TRAFFIC STAGE 2. PHASE A



TYPICAL THROUGHOUT PHASE B

DRUMS SHALL BE PLACED AT ALL LOCATIONS TO UTILIZE THE EXISTING LANE LINE AS AN EDGE LINE TO MAINTAIN TRAFFIC. (WHEN APPLICABLE)



SEE SHT. 134 FOR QUANTITIES

PART I

MAINTENANCE OF TRAFFIC STAGE 2, PHASE B

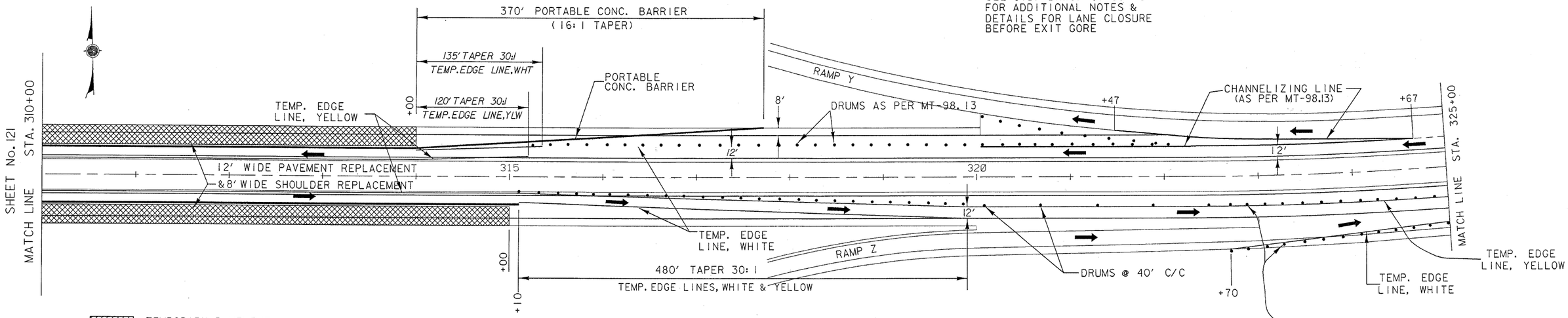
DESIGN FILE: c:\dgn\julie\mtsht121.dgn
WORKSTATION: D03_104 DATE: 18-JUL-1994

Calc. by TSF	FHWA REGION	STATE	PROJECT	
Date 10/93				
Chk'd. by ADB	5	OHIO		
Date 10/93				

LOR-2-3.48

122
222

SEE STD. DRWG. MT-98.13 FOR ADDITIONAL NOTES & DETAILS FOR LANE CLOSURE BEFORE EXIT GORE



SEE STD. DRWG. MT-98.15 FOR LANE CLOSURE AT ENTRANCE RAMP

TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"

NEW PAVEMENT

TEMPORARY PAVEMENT CLASS A.

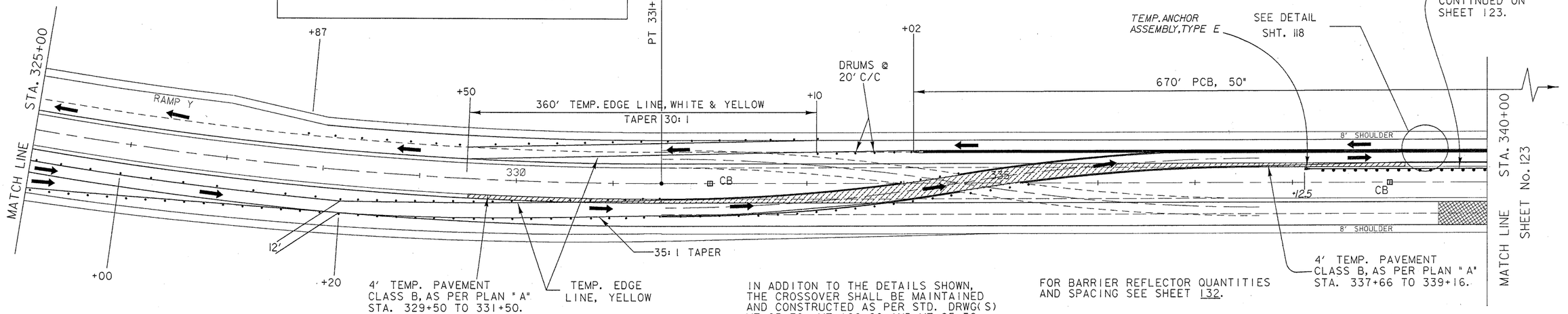
ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS A

TEMP. CROSSOVER FROM COMPUTER=6817.6SF/9= 758 SY
LESS COMMON AREA FROM PHASE "A" = -125 SY
633 SY

TEMP. PVMT. CLASS B, AS PER PLAN "A"

329+50 - 331+50= 200'@4' = 800SF
337+66 - 339+16= 150'@4' = 600SF
1400SF/9= 156 SY



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP.PVMT.CLASS B, AS PER PLAN "A")

CUT 40 CY

IN ADDITON TO THE DETAILS SHOWN, THE CROSSOVER SHALL BE MAINTAINED AND CONSTRUCTED AS PER STD. DRWG(S) MT-95.70, MT-100.00, AND MT-95.30.

THE OC-8-60 SIGNS AS SHOWN ON STD. DRW. MT-95.70, SHALL NOT BE REQUIRED.

FOR TEMPORARY RAISED PAVEMENT MARKER DETAILS WITHIN THE CROSSOVER AREA, SEE SHEET 133.

FOR BARRIER REFLECTOR QUANTITIES AND SPACING SEE SHEET 132.

SEE SHEET 127 FOR TEMPORARY CROSSOVER DETAILS AND CURVE DATA.

A TEMPORARY CROSSOVER LIGHTING SYSTEM SHALL BE ERECTED AND MAINTAIN AS PER STD. DRW. MT-100.00

FOR ADDITIONAL QUANTITIES SEE SHEET 134.

PART 1

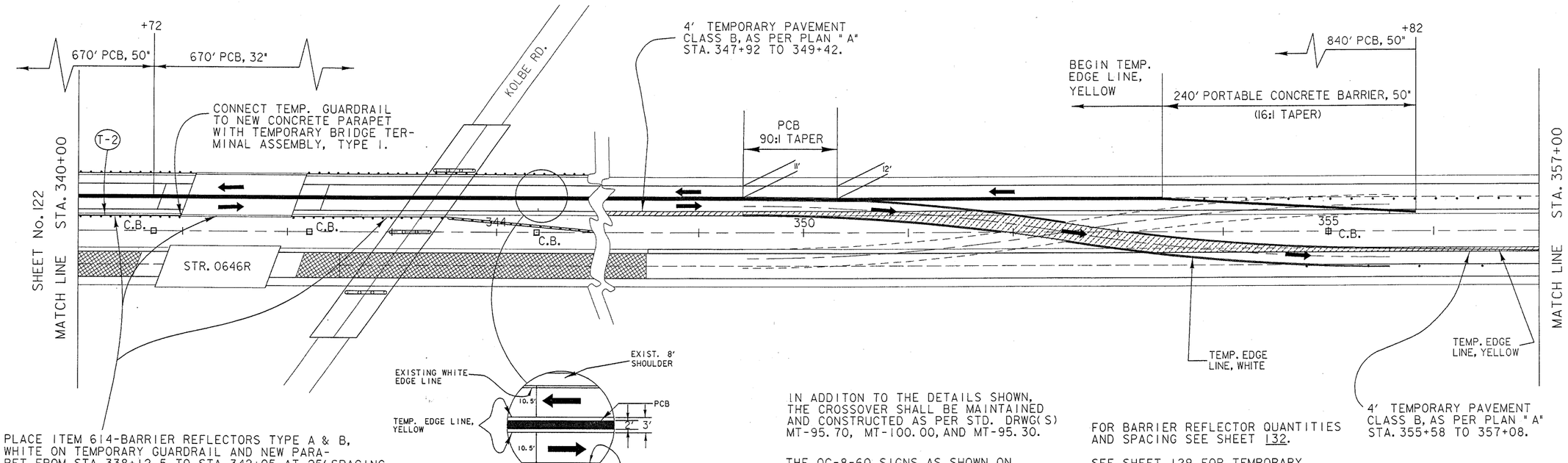
MAINTENANCE OF TRAFFIC STAGE 2, PHASE B

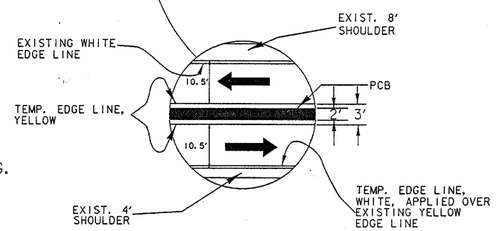
DESIGN FILE: c:\dgn\julie\mtsht122.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

Calc. by TSE	FHWA REGION	STATE	PROJECT	
Date 10/93				
Chk'd. by ADB	5	OHIO		
Date 10/93				

LOR-2-3.48

123
222





PLACE ITEM 614-BARRIER REFLECTORS TYPE A & B, WHITE ON TEMPORARY GUARDRAIL AND NEW PARAPET FROM STA. 338+12.5 TO STA. 342+05 AT 25' SPACING. QUANTITY CARRIED TO SHEET 132.

ALSO PLACE ITEM 614-BARRIER REFLECTORS TYPE A, WHITE ON PERMANENT GUARDRAIL FROM STA. 342+05 TO STA. 343+50 AT 25' SPACING. QUANTITY CARRIED TO SHEET 132.

IN ADDITON TO THE DETAILS SHOWN, THE CROSSOVER SHALL BE MAINTAINED AND CONSTRUCTED AS PER STD. DRWG(S) MT-95.70, MT-100.00, AND MT-95.30.

THE OC-8-60 SIGNS AS SHOWN ON STD. DRW. MT-95.70, SHALL NOT BE REQUIRED.

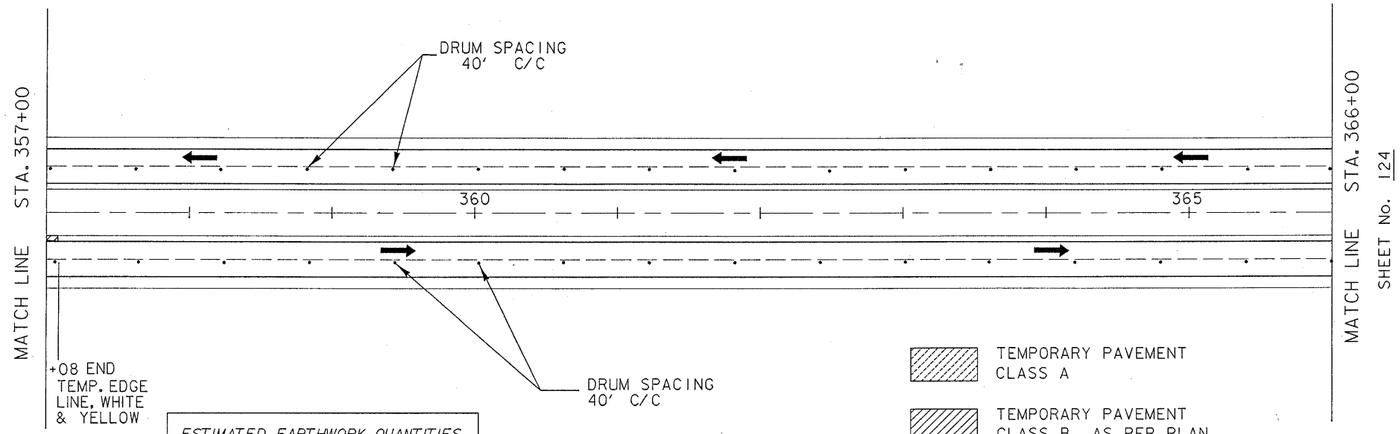
FOR TEMPORARY RAISED PAVEMENT MARKER DETAILS WITHIN THE CROSSOVER AREA, SEE SHEET 133.

SEE SHEET 131 FOR GENERAL MAINTENANCE OF TRAFFIC FOR REVERSIBLE TRAFFIC PATTERN.

FOR BARRIER REFLECTOR QUANTITIES AND SPACING SEE SHEET 132.

SEE SHEET 129 FOR TEMPORARY CROSSOVER DETAILS AND CURVE DATA

A TEMPORARY CROSSOVER LIGHTING SYSTEM SHALL BE ERECTED AND MAINTAIN AS PER STD. DRW. MT-100.00



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP.PVMT.CLASS B,AS PER PLAN "A".)

CUT 34 CY

TEMPORARY PAVEMENT CLASS A

TEMPORARY PAVEMENT CLASS B, AS PER PLAN

NEW PAVEMENT

ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS A

TEMP. CROSSOVER FROM COMPUTER=6817.6SF/9= 758 SY
LESS COMMON AREA FROM PHASE "A" = -125 SY
633 SY

TEMP. PVMT. CLASS B, AS PER PLAN "A"

347+92 - 349+42= 150'@4' = 600SF
355+58 - 357+08= 150'@4' = 600SF
1200SF/9= 133 SY

REF.	STATION	SIDE	614 TEMPORARY GUARDRAIL, TYPE 5	614 TEMPORARY ANCHOR ASSEMBLY, TYPE E	614 TEMP. BRIDGE TERMINAL ASSEMBLY, TYPE I
			LIN. FT.	EACH	
T-2	338+12.5-341+00	LT.	237.5	1	1
QUANTITIES CARRIED TO SHT. 108					

FOR ADDITIONAL QUANTITIES SEE SHEET 134.

PART I

MAINTENANCE OF TRAFFIC STAGE 2, PHASE B

DESIGN FILE: c:\dgn\julie\mtsht123.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

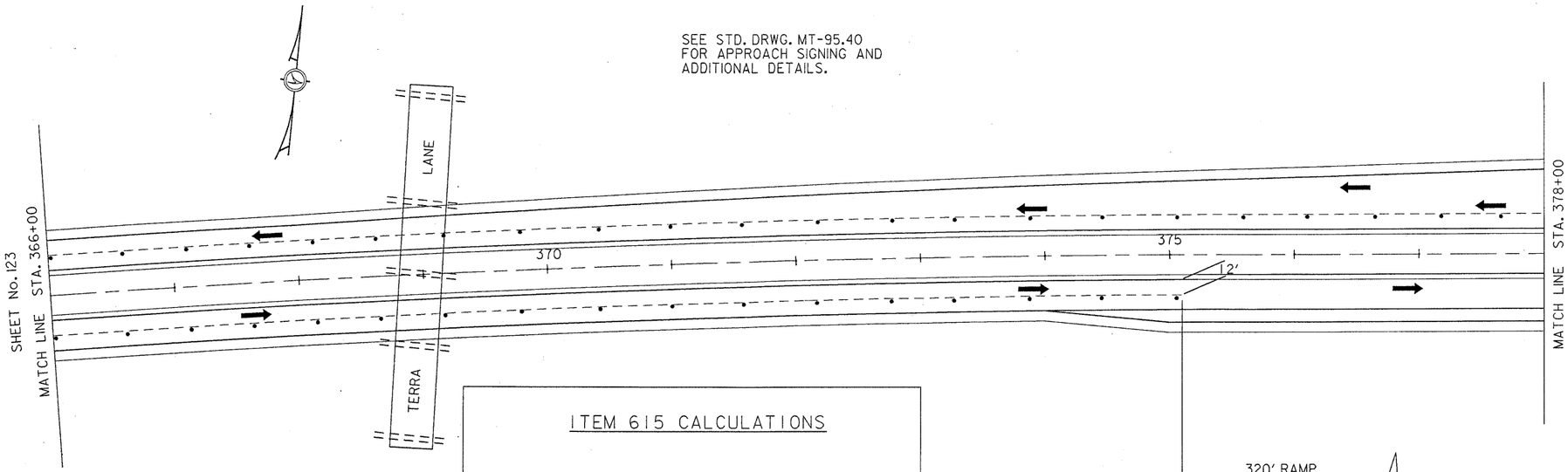
LOR-2-3.48

124
222

Calc. by TSF
Date 10/93
Chk'd by ADB
Date 10/93

FHWA REGION	STATE	PROJECT	
5	OHIO		

SEE STD. DRWG. MT-95.40
FOR APPROACH SIGNING AND
ADDITIONAL DETAILS.



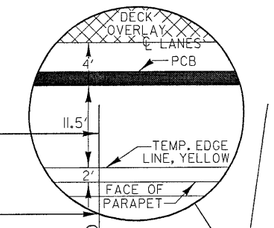
TEMPORARY PAVEMENT CLASS B,
AS PER PLAN "A" SEE DETAIL
ON SHEET 113.

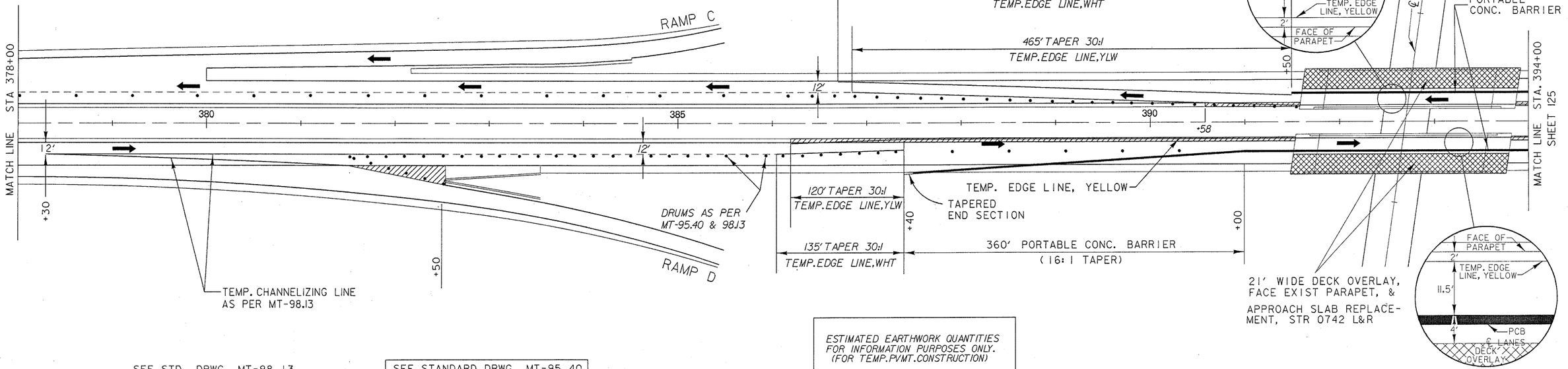
WORK AREA

ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS B, AS PER PLAN "A"

386+20 - 391+53=	533'@4' =	2132SF
390+58 - 391+58=	100'@4' =	400SF
393+87 - 394+00=	13'@4' =	52SF
393+82 - 394+00=	18'@4' =	72SF
		2656SF/9= 295SY





SEE STD. DRWG. MT-98.13
FOR LANE CLOSURE
BEFORE EXIT GORE

SEE STANDARD DRWG. MT-95.40
FOR APPROACH SIGNING AND
ADDITIONAL DETAILS

ESTIMATED EARTHWORK QUANTITIES
FOR INFORMATION PURPOSES ONLY.
(FOR TEMP.PVMT.CONSTRUCTION)

CUT 76 CY

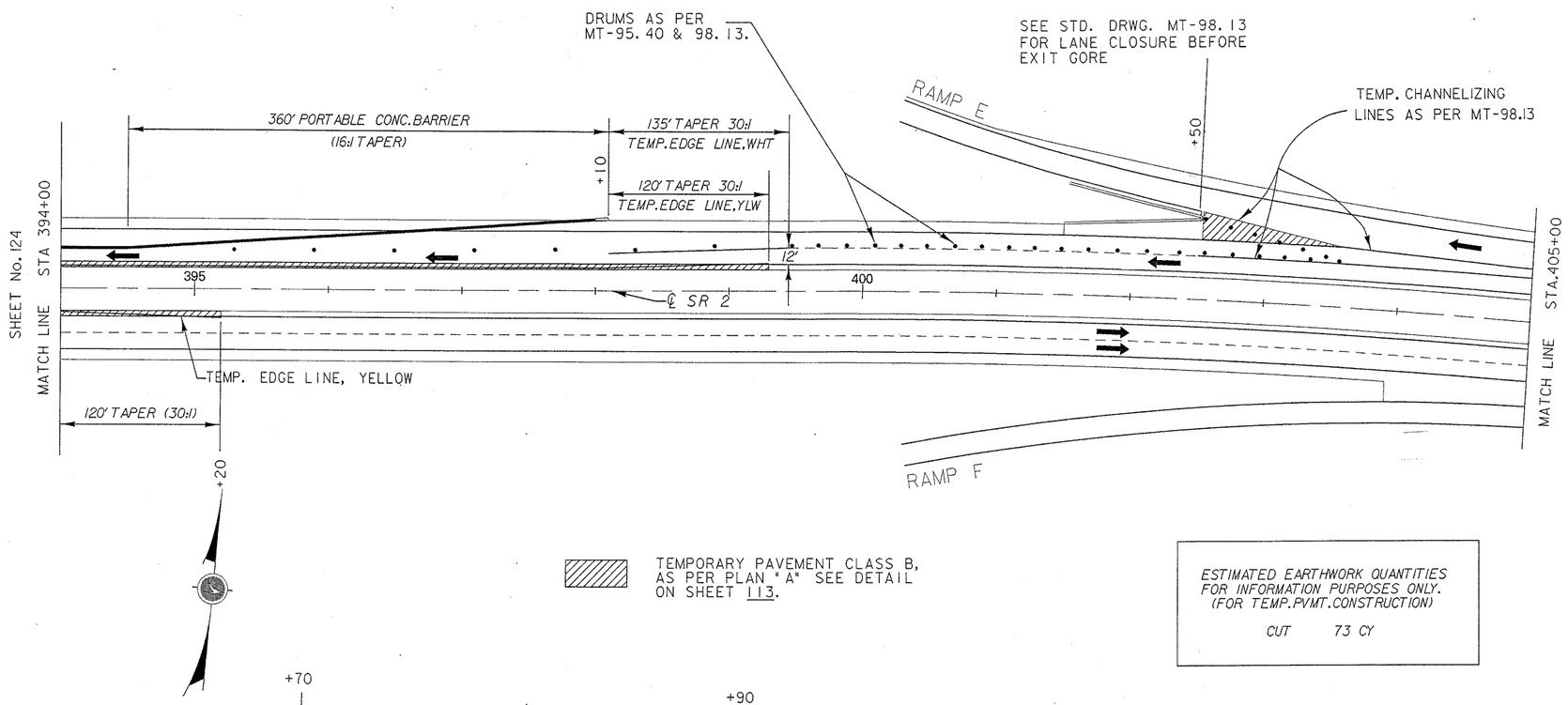
SEE SHT. 134 FOR QUANTITIES

PART I

MAINTENANCE OF TRAFFIC STAGE 2, PHASE B

DESIGN FILE: c:\dgn\julie\mtsh_124.dgn
WORKSTATION: 003_104
DATE: 21-JUL-1994

Calc. by 19F
Date 10/93
Chk'd by AØØ
Date 10/93



TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SEE DETAIL ON SHEET 113.

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP. PVMT. CONSTRUCTION)

CUT 73 CY

NOTE: EXISTING AND/OR NEW GUARDRAIL SHALL BE CONNECTED TO THE NEW CONCRETE SAFETY PARAPETS W/ THE PROPER BRIDGE TERMINAL ASSEMBLIES PRIOR TO OPENING TRAFFIC TO PHASE "B". AT NO TIME SHALL TRAFFIC BE OPENED WHEN AN APPROACH END OR GUARD-RAIL OR PARAPET IS EXPOSED.

SEE STD. DRWG. MT-95.40 FOR APPROACH SIGNING AND ADDITIONAL DETAILS.

SEE STD. DRWG. MT-98.13 FOR ADDITIONAL DETAILS FOR THE LANE CLOSURE BEFORE THE EXIT GORE.

ITEM 615 CALCULATIONS

TEMP. PVMT. CLASS B, AS PER PLAN "A"

394+00 - 399+30= 530'@4' = 2120SF
394+00 - 395+20= 120'@4' = 440SF
2560SF/9= 284 SY

SEE SHEET 134 FOR QUANTITIES

DESIGN FILE: c:\dgn\julie\mtsh125.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

CURVE 3	
△	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

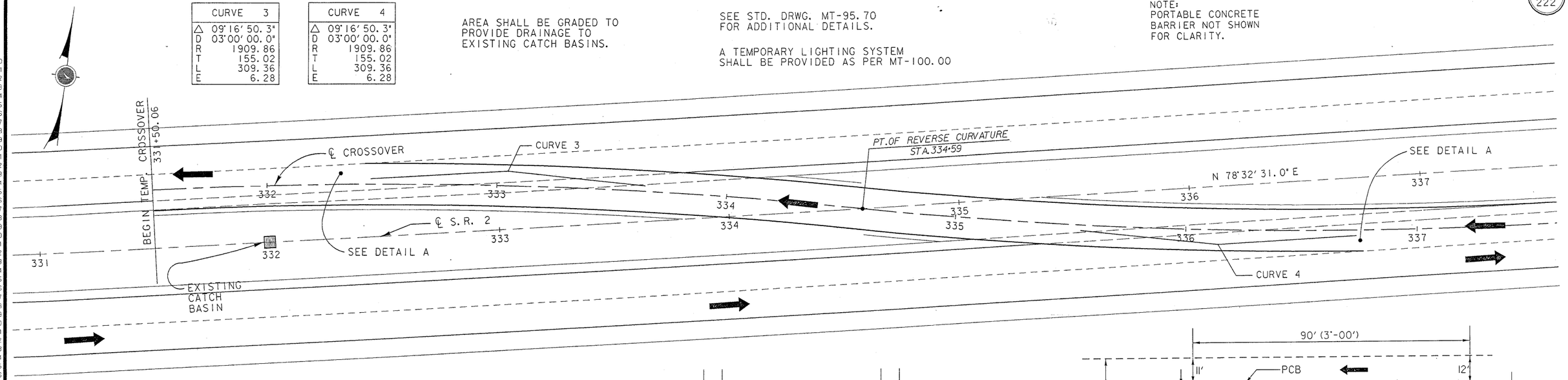
CURVE 4	
△	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

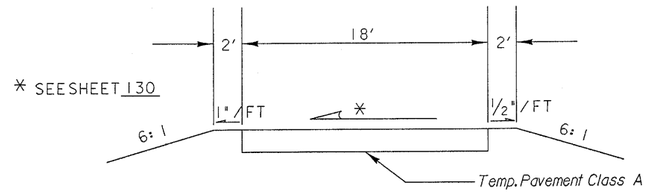
AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.

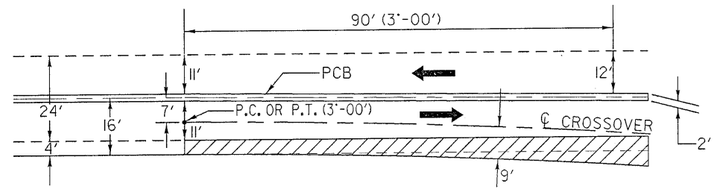
A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00

NOTE:
PORTABLE CONCRETE BARRIER NOT SHOWN FOR CLARITY.





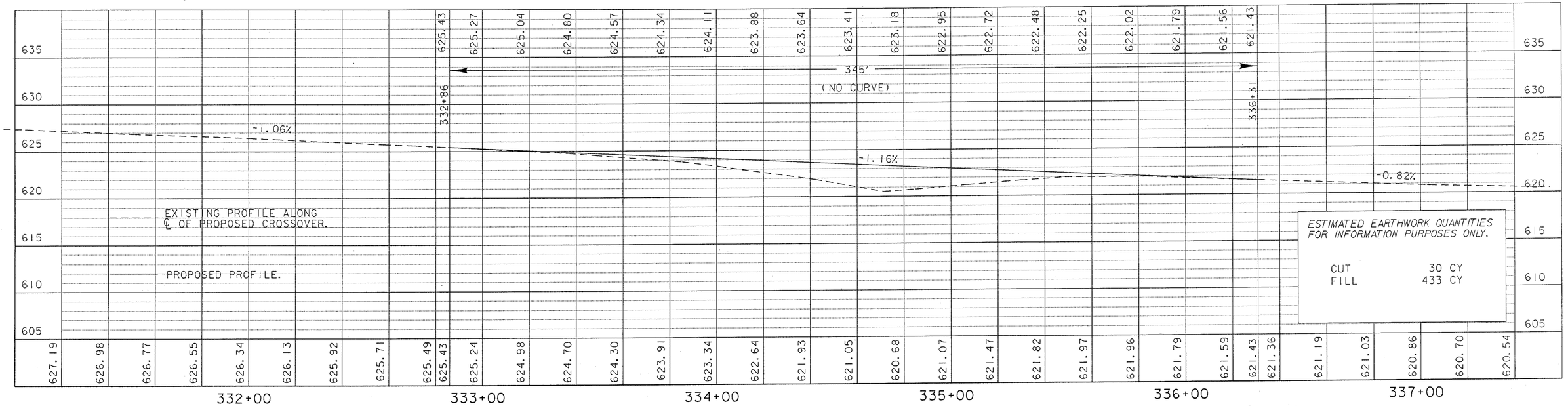
TYPICAL SECTION



DETAIL A

End of two way operation shown.
Beginning of two way operation opposite hand.

Temp. Pavement Class A



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY.

CUT	30 CY
FILL	433 CY

TEMPORARY CROSSOVER DETAILS

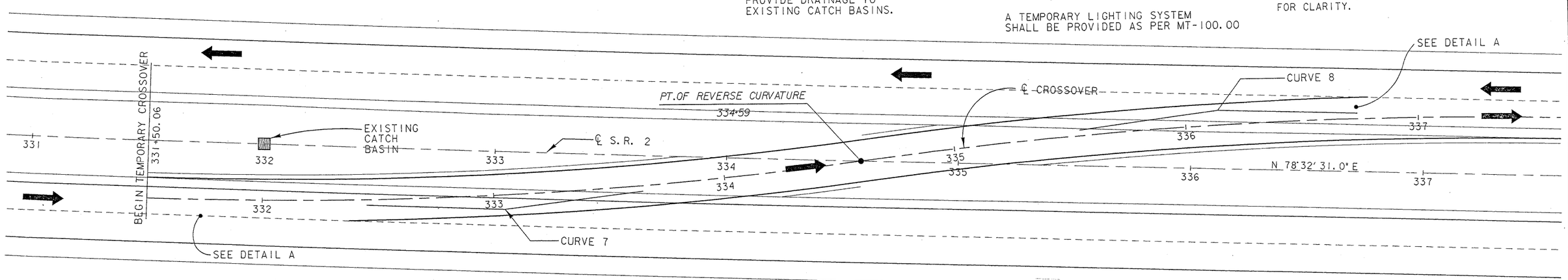
DESIGN FILE: c:\dgn\julie\mtsht126.dgn DATE: 18-JUL-1994
WORKSTATION: 003_104

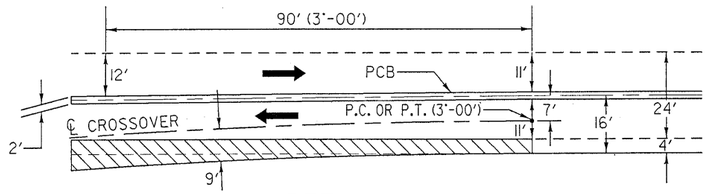
AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.

A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00

NOTE:
PORTABLE CONCRETE BARRIER NOT SHOWN FOR CLARITY.

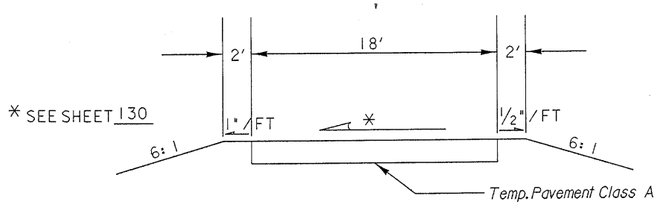




DETAIL A

End of two way operation shown.
Beginning of two way operation opposite hand.

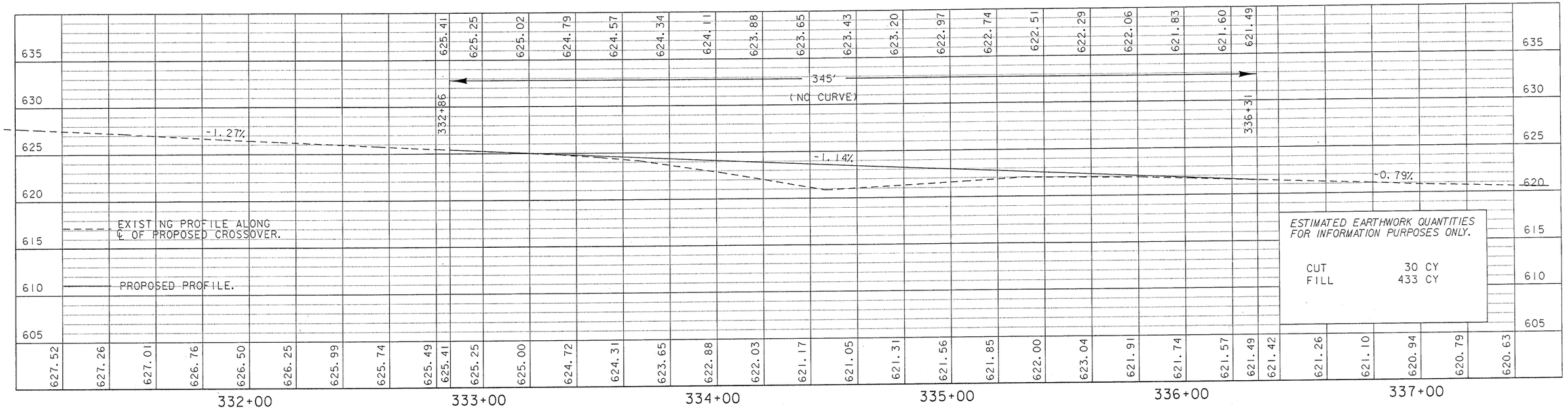
Temp. Pavement Class A



TYPICAL SECTION

CURVE 8	
Δ	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

CURVE 7	
Δ	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY.

CUT	30 CY
FILL	433 CY

TEMPORARY CROSSOVER DETAILS

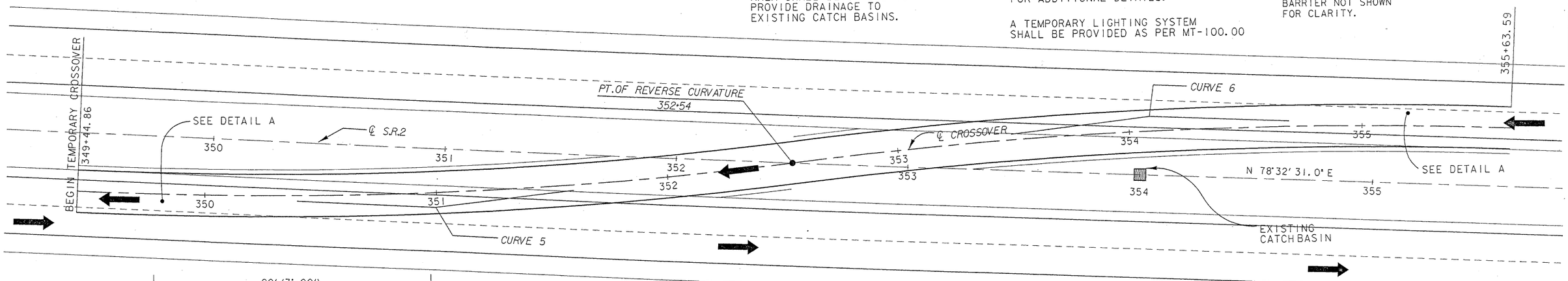
DESIGN FILE: c:\dgn\julie\mtsht127.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

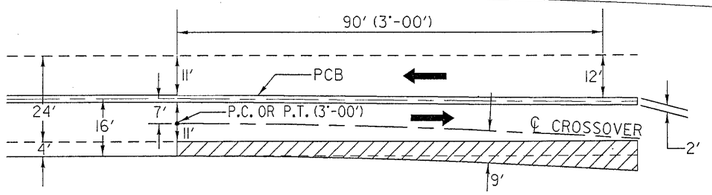
AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.

A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00

NOTE:
PORTABLE CONCRETE BARRIER NOT SHOWN FOR CLARITY.

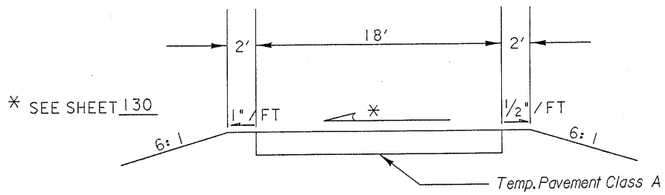




DETAIL A

End of two way operation shown.
Beginning of two way operation opposite hand.

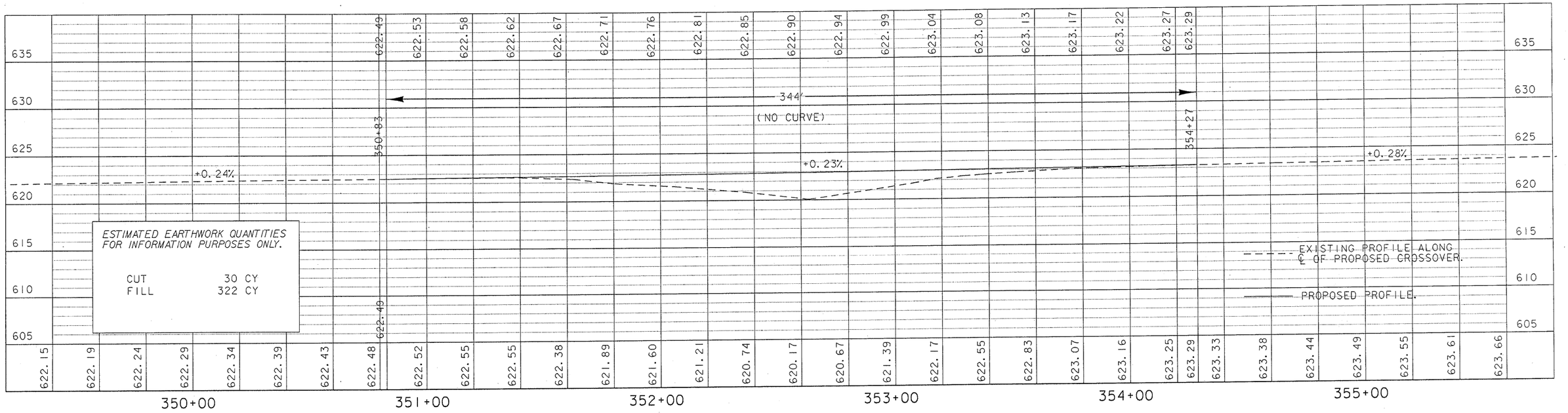
Temp. Pavement Class A



TYPICAL SECTION

CURVE 5	
Δ	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

CURVE 6	
Δ	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28



TEMPORARY CROSSOVER DETAILS

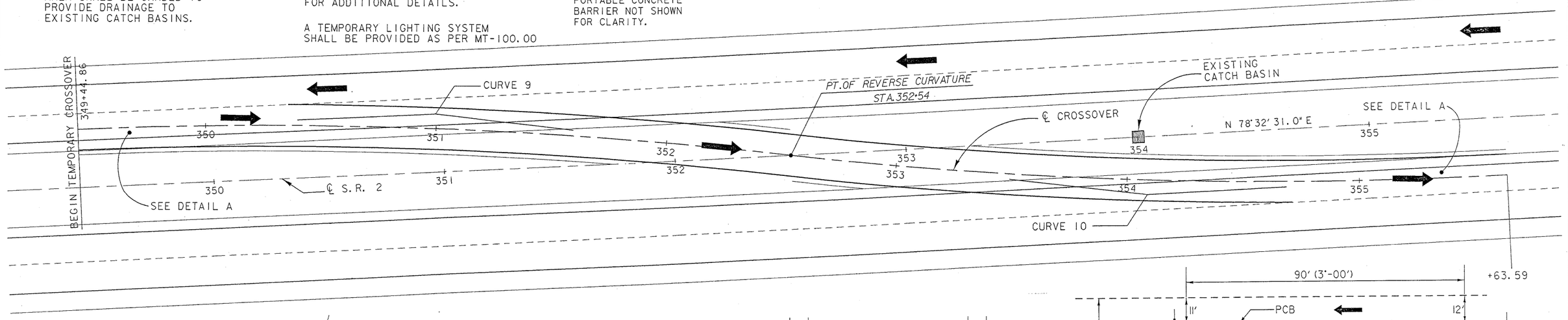
DESIGN FILE: c:\dgn\julie\mtsh128.dgn DATE: 18-JUL-1994
WORKSTATION: D03_104

AREA SHALL BE GRADED TO PROVIDE DRAINAGE TO EXISTING CATCH BASINS.

SEE STD. DRWG. MT-95.70 FOR ADDITIONAL DETAILS.

A TEMPORARY LIGHTING SYSTEM SHALL BE PROVIDED AS PER MT-100.00

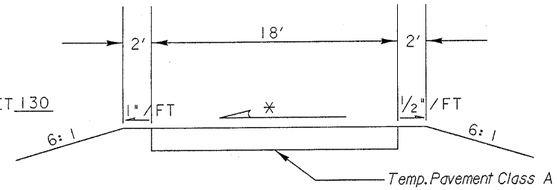
NOTE:
PORTABLE CONCRETE BARRIER NOT SHOWN FOR CLARITY.



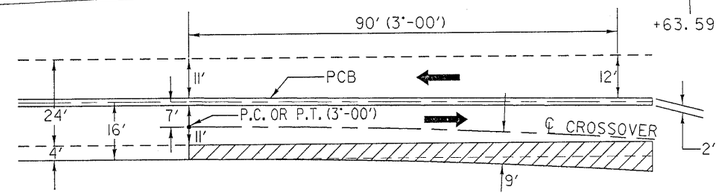
CURVE 9	
△	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

CURVE 10	
△	09°16'50.3"
D	03°00'00.0"
R	1909.86
T	155.02
L	309.36
E	6.28

* SEE SHEET 130



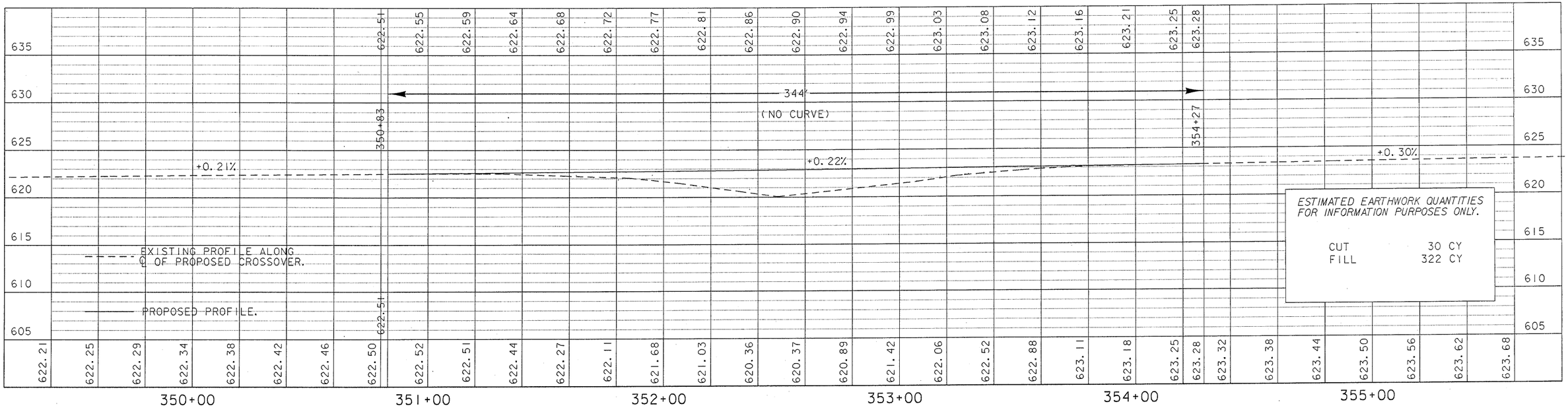
TYPICAL SECTION



DETAIL A

End of two way operation shown.
Beginning of two way operation opposite hand.

Temp. Pavement Class A



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY.

CUT	30 CY
FILL	322 CY

DESIGN FILE: c:\dgn\julie\mfsht129.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

TEMPORARY CROSSOVER DETAILS

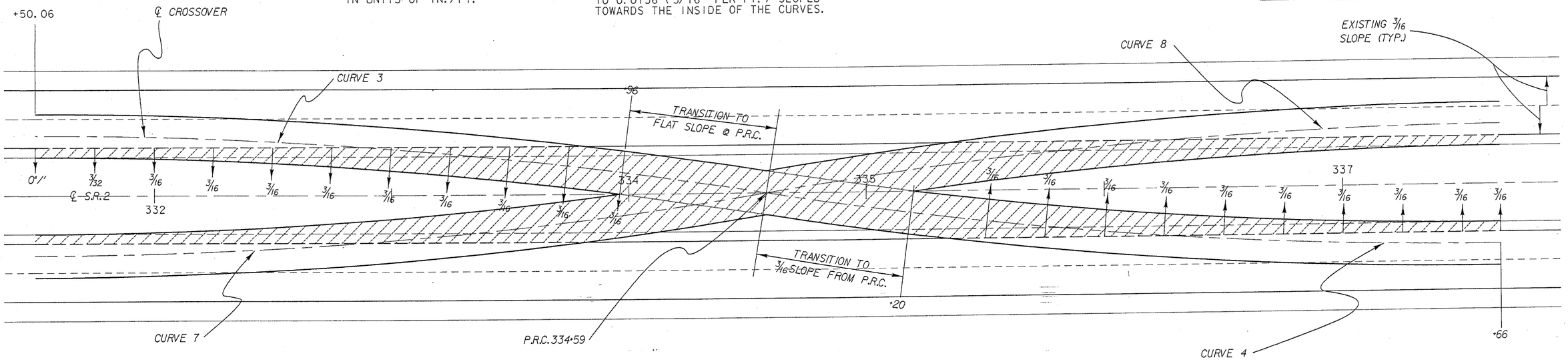
FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-2-3.48

130
222

ALL SLOPES SHOWN ARE IN UNITS OF IN./FT.

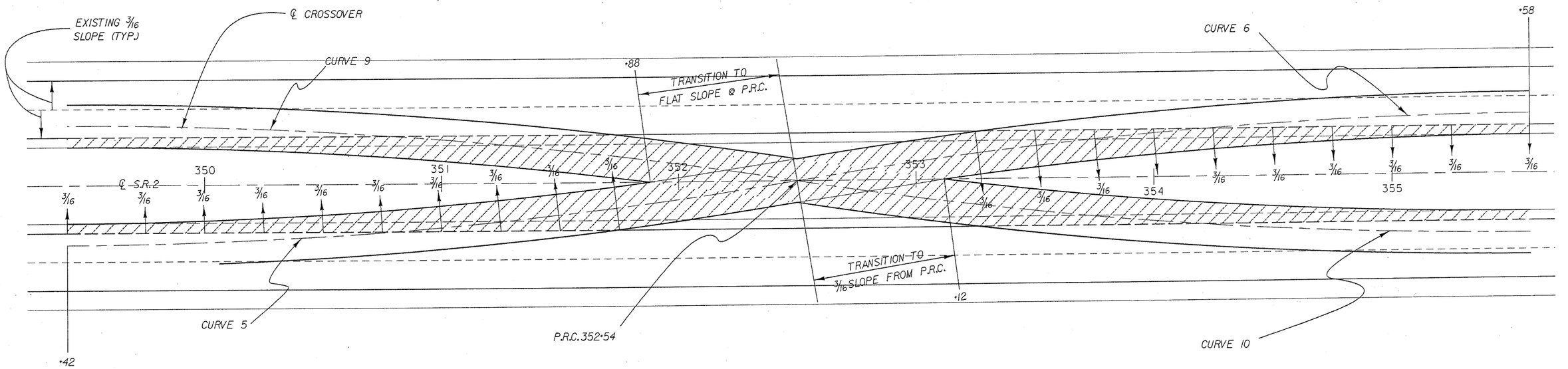
SUPERELEVATION SHALL BE LIMITED TO 0.0156 (3/16" PER FT.) SLOPED TOWARDS THE INSIDE OF THE CURVES.



CURVE 7 SIMILAR TO CURVE 3 BUT OPPOSITE HAND.
CURVE 8 SIMILAR TO CURVE 4 BUT OPPOSITE HAND.

TEMPORARY PAVEMENT SLOPES ARE AT 25' INTERVALS UNLESS OTHERWISE SHOWN.

TEMPORARY PAVEMENT, CLASS A



CURVE 9 SIMILAR TO CURVE 5 BUT OPPOSITE HAND.
CURVE 10 SIMILAR TO CURVE 6 BUT OPPOSITE HAND.

TEMP CROSSOVER PAVEMENT TRANSITION DETAIL

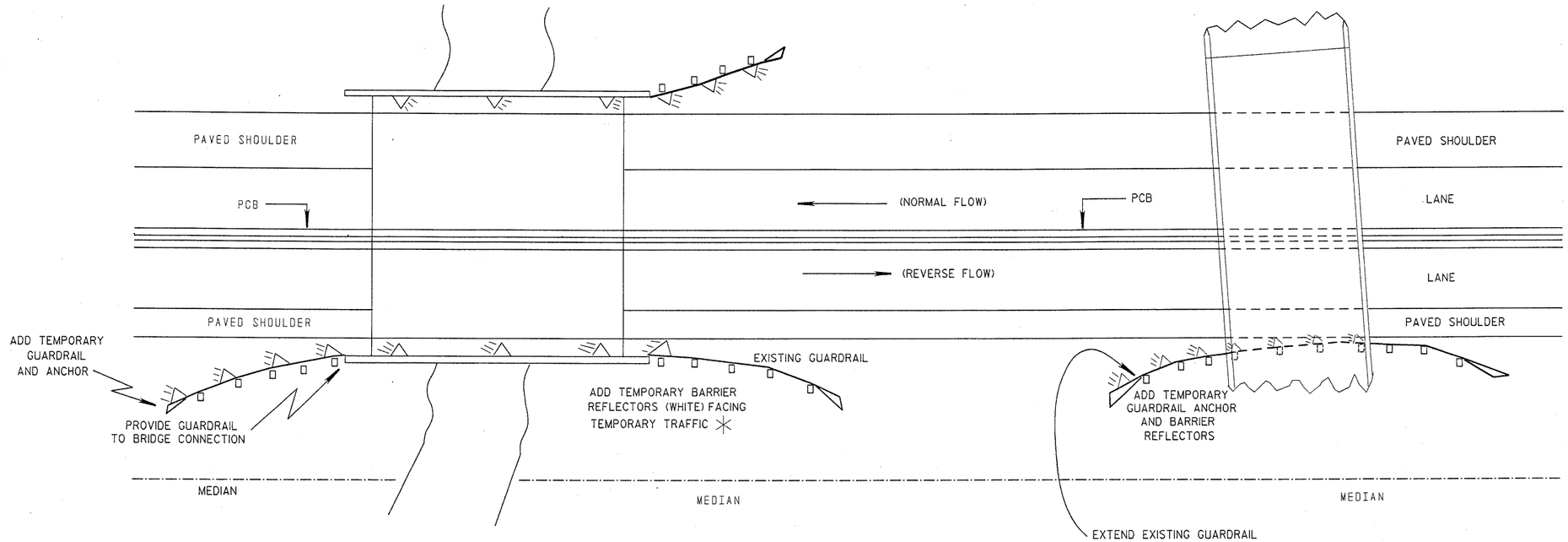
DESIGN FILE: c:\dgn\julie\mtsh1130.dgn
WORKSTATION: D03_104 DATE: 18-JUL-1994

Calc. by T.S.F.
Date 10/93
Chk'd by A.D.B.
Date 11/93

LOR-2-3.48

ITEMS 614 - TEMPORARY GUARDRAIL, TEMPORARY BRIDGE TERMINAL ASSEMBLY, AND TEMPORARY ANCHOR ASSEMBLY SHALL CONFORM TO ITEM 606 OF THE CMS EXCEPT USED MATERIAL IN GOOD CONDITION, AS JUDGED BY THE ENGINEER, MAY BE USED.

SEE SHEETS 119, 122, 123
FOR ADDITIONAL DETAILS.



✳ 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.

SHEET	STATION	PHASE	614		
			TEMPORARY GUARDRAIL, TYPE 5	TEMPORARY ANCHOR ASSEMBLY, TYPE E	TEMP. BRIDGE TERMINAL ASSEMBLY, TYPE I
			LIN. FT.	EACH	EACH
96	341+94-346+06.5	A	362.5	1	
100	338+12.5-341+00	B	237.5	1	1
TOTAL			600	2	1
QUANTITIES CARRIED TO SHT. 109					

TEMPORARY BARRIER REFLECTOR QUANTITIES CARRIED TO SHT. 132.

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 OMUTCD. 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.

REVISED BY: T.S.F. DATE: 10/28/93

209582

DATE 05/01/90

TWO-LANE, TWO-WAY OPERATION FOR USE ON FOUR LANE DIVIDED ROADWAYS PORTABLE CONCRETE BARRIER (PCB)

PLAN INSERT SHEET

WCC

DESIGN FILE: c:\dgn\julie\mtsh131.dgn
WORKSTATION: 003_104
DATE: 18-JUL-1994

Calc. by TSP Date 10/93
Chk'd by ADD Date 11/93

614 - BARRIER REFLECTORS

STATIONING			SPACING	TYPE A		TYPE B		TYPE A2		TYPE B2		REMARKS
FROM	TO	SIDE	(FT)	W	Y	W	Y	W	Y	W	Y	
241+50	245+50	EB	25			17						PHASE A
241+20	245+50	WB	25			19						PHASE A
241+50	245+50	EB	25				17					PHASE B
241+20	245+50	WB	25				19					PHASE B
304+00	315+10	EB	25				46					PHASE A
304+90	314+50	WB	25				40					PHASE A
333+66	339+66	EB	12.5				49					PHASE A
339+66	346+36	EB	25				28					PHASE A
346+36	352+86	EB	12.5				53					PHASE A
337+66	339+66	WB	12.5				17					PHASE A
339+66	346+36	WB	25				28					PHASE A
346+36	349+61	WB	12.5				27					PHASE A
391+00	394+00	EB	25				13					PHASE A
391+50	394+50	WB	25				13					PHASE A
304+00	315+10	EB	25			46						PHASE B
304+90	314+00	WB	25			38						PHASE B
337+66	340+72	EB	12.5				26					PHASE B
340+72	347+42	EB	25				28					PHASE B
347+42	349+42	EB	12.5				17					PHASE B
334+02	340+72	WB	12.5				55					PHASE B
340+72	347+42	WB	25				28					PHASE B
347+42	353+42	WB	12.5				49					PHASE B
391+00	394+00	EB	25			13						PHASE B
391+50	394+50	WB	25			13						PHASE B
340+87	346+06.5	***	25	22								*** SEE SHT 96
338+12.5	341+00	***	25	13								*** SEE SHT 100
341+00	342+05	***	25			5						*** SEE SHT 100
342+05	343+50	***	25	7								*** SEE SHT 100
KOLBE RD.												
47+50	48+50		10							11	11	PHASE A
48+50	51+80		25							14	14	PHASE A
51+80	52+30		10							5	5	PHASE A
47+70	48+20		10							6	6	PHASE B
48+20	51+50		25							14	14	PHASE B
51+50	52+50		10							10	10	PHASE B
TOTALS				42		151	553			60	60	
				42		704				120		

QUANTITIES CARRIED TO SHEET 109

THE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THE SPACING SHALL BE AS SHOWN.

614 - WORK ZONE PAVEMENT MARKINGS

(SEE STANDARD DRAWING MT-99.10)

* GORE MARKING SHALL EXTEND 100' FROM NOSE * *LENGTH OF CHANNELIZING LINE TO BE 150 FEET AT ACCEL LANES (INTERMEDIATE & SURFACE COURSE) LOCATION	614					
	TEMPORARY LANE LINES, CLASS II	*TEMPORARY GORE MARKINGS, CLASS II	**TEMPORARY CHANNELIZING LINES, CLASS I			
	LIN.FT./MILE	LIN.FT.				
RAMP A AND DECEL LANE		400				
RAMP B AND ACCEL LANE			300			
183+50 TO 423+50 EB & WB LANES	96000					
RAMP W AND ACCEL LANE			300			
RAMP X AND DECEL LANE		400	200			
RAMP Y AND DECEL LANE		400	200			
RAMP Z AND ACCEL LANE			300			
RAMP C AND ACCEL LANE			300			
RAMP D AND DECEL LANE		400				
RAMP E AND DECEL LANE		400	200			
RAMP F AND ACCEL LANE			300			
Totals	96000 / 18.18	2000	2100			

QUANTITIES CARRIED TO SHEET 109

DESIGN FILE: c:\dgn\julie\mtsht132.dgn DATE: 18-JUL-1994
WORKSTATION: 003_104

614 TEMPORARY RAISED PAVEMENT MARKERS

LOR-2-3.48

133/222

Calc. by TSF Date 10/93
Chk'd by APO Date 11/93

GENERAL

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMENT MARKERS (TRPM'S). THE TRPM'S SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL

ALL UNITS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH UNIT AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATED FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCH FOR TYPE A OR 3.0 SQUARE INCH FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

SPECIFIC INTENSITY

TYPE A			TYPE B		
INCIDENCE ANGLE (DEGREES)	WHITE	YELLOW	INCIDENCE ANGLE (DEGREES)	WHITE	YELLOW
0	1.0	0.6	0	3.0	1.8
20	0.4	0.24	20	1.2	0.72
45	—	—	45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH AT NIGHT AND DURING DAYLIGHT. THEIR DAY TIME VISIBILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

1) THE UNITS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.

2) WHEN VIEWED FROM ABOVE, THE UNITS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.

3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE UNIT SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETROREFLECTING AUTOMOTIVE HEADLIGHT BACK TO DRIVER.

INSTALLATION

THEY SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, A BITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE UNIT UNDER THE ABOVE CONDITIONS. WHEN IT IS NECESSARY TO ATTACH UNITS TO NEW CONCRETE WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS COST, ANY UNITS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

TRPM'S ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY, AT HIS COST, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING LIGHT AND DARK AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE UNITS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING LINES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY MAY BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATION SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES LATERALLY TO AVOID PLACEMENT ON JOINTS, CRACKS OR DETERIORATED PAVEMENT. THEY SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS WILL DISTRACT FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING, THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20' C/C
LANE LINE	A OR B	40' C/C*
CENTER LINE (SINGLE/BROKEN)	A OR B	40' C/C*
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20' C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10' C/C

* CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4 @ 3.33' C/C 30' GAP (40') CYCLE
CENTER LINE (DOUBLE/SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE/BROKEN)	A	4 @ 3.33' C/C 30' GAP (40') CYCLE
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW TRPM'S USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW TRPM'S AND WHITE TRPM'S SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION.

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT AND PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH TRPM AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TRPM'S WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXCEPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS

STATIONING			SPACING	TYPE A				TYPE B				REMARKS
FROM	TO	SIDE	(FT)	W	Y	Y/Y		W	Y	Y/Y		(LINE TYPE)
OAK POINT RD. PHASE A												
47+63	52+37	19' LT	5'	96	66							TWO COLOR EDGE LINE
49+13	50+87	8' LT	5'	36	36							TWO COLOR EDGE LINE
OAK POINT ROAD. PHASE B												
47+63	52+37	19' RT	5'	96	66							TWO COLOR EDGE LINE
49+13	50+87	8' RT	5'	36	36							TWO COLOR EDGE LINE
KOLBE RD. PHASE A												
47+25	52+75	14.5' LT	5'	111	84							TWO COLOR EDGE LINE
48+30	51+70	4.5' LT	5'	69	69							TWO COLOR EDGE LINE
KOLBE RD. PHASE B												
47+25	52+75	15.0' RT	5'	111	84							TWO COLOR EDGE LINE
48+30	51+70	4.5' RT	5'	69	69							TWO COLOR EDGE LINE
TEMPORARY CROSSOVER PHASE A												SEE STANDARD DRAWING MT-95.70, SHEET 118-119, SHEET 122-123.
331+50	359+26	RT.	20'	140								
331+50	361+57	LT.	20'		151							
TEMPORARY CROSSOVER PHASE B												
328+20	355+58	RT/LT	20'	138	138							
TOTALS				902	799							
				1701								

DESIGN FILE: c:\dgn\julie\m+sh133.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

Calc. by MER Date 1/94
Chk'd by TGF Date 1/94

STAGE 2

SHEET	PHASE	STATION LIMITS FROM	STATION LIMITS TO	SIDE	614 TEMPORARY EDGE LINES, CLASS 1 YELLOW	614 TEMPORARY EDGE LINES, CLASS 1 WHITE	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C ** YELLOW	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C ** WHITE	614 TEMPORARY CROSSOVER LIGHTING SYSTEM	614	614 OBJECT MARKER	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"	615 TEMPORARY PAVEMENT CLASS A	622 PORTABLE CONCRETE BARRIER, 32"	622	622 PORTABLE CONCRETE BARRIER, 50"
					LIN.FT./MILE		LIN.FT./MILE		EACH		EACH	SQ. YD.			LIN. FT.		
117	A	275+00	281+60	RT	660												
117	A	292+00	294+75	RT	275												
118	A	317+70	319+05	LT	135												
118, 119	A	323+25	360+57	LT, RT	3732												
118	A	315+10	316+30	RT	120												
118, 119	A	333+66	352+86	RT	1920												
120	A	385+20	387+30	RT	210												
120	A	389+40	391+50	LT	210												
120	A	398+20	408+65	LT	1045												
117, 118	A	303+70	318+90	LT		1520											
117, 118	A	299+54	316+30	RT		1676											
118, 119	A	331+50	359+26	LT, RT		2776											
120	A	385+20	396+10	RT		1090											
120	A	389+40	402+05	LT		1265											
117, 118	A	300+80	315+10	RT							46				1430		
117, 118	A	304+90	317+70	LT							40				1280		
118	A	331+06	339+66	RT							69						860
118, 119	A	339+66	346+36	RT							56				670		
119	A	346+36	352+86	RT							80						650
120	A	387+30	394+00	RT							15				670		
120	A	391+50	398+20	LT							15				670		
117	A	299+54	310+00	LT, RT								489	630				
118	A	310+00	340+00	LT, RT								404	788	758			
119	A	347+92	357+08	LT, RT									103	758			
120	A	385+20	401+50	LT, RT									1728				
118	A	330+50	338+00						1								
119	A	348+00	357+00						1								
TOTALS					8307	8327			2		321	893	3249	1516	4720		1510
					1.57	1.58											

STAGE 2

SHEET	PHASE	STATION LIMITS FROM	STATION LIMITS TO	SIDE	614 TEMPORARY EDGE LINES, CLASS 1 YELLOW	614 TEMPORARY EDGE LINES, CLASS 1 WHITE	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C ** YELLOW	614 TEMPORARY EDGE LINES, CLASS I, 740.05, TYPE C ** WHITE	614 TEMPORARY CROSSOVER LIGHTING SYSTEM	614 TEMPORARY CHANNELIZING LINES, CLASS I	614 OBJECT MARKER	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"	615 TEMPORARY PAVEMENT CLASS A	622 PORTABLE CONCRETE BARRIER, 32"	622	622 PORTABLE CONCRETE BARRIER, 50"
					LIN.FT./MILE		LIN.FT./MILE		EACH	LIN. FT.	EACH	SQ. YD.			LIN. FT.		
121, 122, 123	B	302+80	357+08	RT	5318		110										
121, 122	B	303+70	315+20	LT	1150												
122, 123	B	329+50	353+42	LT	2282		110										
124, 125	B	386+20	395+20	RT	672		228										
124, 125	B	386+85	399+30	LT	1017		228										
121	B	278+75	285+35	RT		660											
121	B	302+65	304+00	RT		135											
122	B	315+10	319+90	RT		480											
122	B	314+00	315+35	LT		135											
122	B	329+50	333+10	LT		360											
122, 123	B	322+70	357+08	RT		3328		110									
124	B	386+05	387+40	RT		135											
124	B	386+70	391+50	LT		480											
125	B	398+10	399+45	LT		135											
125	B	414+90	421+50	LT		660											
121	B	293+55	299+54	RT						919							
122	B	320+00	324+67	LT						787							
124	B	378+30	382+50	RT						840							
125	B	402+50	406+70	LT						840							
121, 122	B	300+30	315+10	RT							48				1480		
121, 122	B	304+90	317+70	LT							40				1280		
122, 123	B	334+02	340+72	LT							81						670
123	B	340+72	347+42	LT							56				670		
123	B	347+42	355+82	LT							68						840
124	B	387+40	394+00	RT							15				660		
124, 125	B	391+50	398+10	LT							15				660		
122	B	329+50	339+16	LT, RT										156	633		
123	B	347+92	357+08	LT, RT										133	633		
124	B	386+20	394+00	LT, RT										295			
125	B	394+00	399+30	LT, RT										284			
TOTALS					10439	6508	676	110		3386	323		868	1266	4750		1510
					1.98	1.23	0.13	0.02									
GRAND TOTALS					6.36		0.15		2	3386	644	893	4117	2782	9470		3020

** QUANTITY TO BE USED FOLLOWING COMPLETION OF NEW DECK WORK AND PRIOR TO PLACEMENT OF RESURFACING COURSE.

QUANTITIES CARRIED TO GENERAL SUMMARY SHEET 109.

DESIGN FILE: c:\dgn\julie\mtsht134.dgn DATE: 19-JUL-1994
WORKSTATION: D03_104

CALCULATIONS:

(ITEMS 203 & 615)

RAMP "A"

A80+50 - A86+47 = 597′ @ 3′	= 1791 SF		
A86+47 - A91+00 = 453′ @ 8′	= 3624 SF		
A85+47 - A86+47 = 100′ @ 7′ (AVE)	= 700 SF		
A77+03 - A85+47 = 844′ @ 6′	= 5064 SF		
RADIUS = 75′ @ 6′	= 450 SF		
TAPER = 37′ @ 5′ (AVE)	= 185 SF		
	11814 SF/9=		
	1313 SY		

RAMP "B"

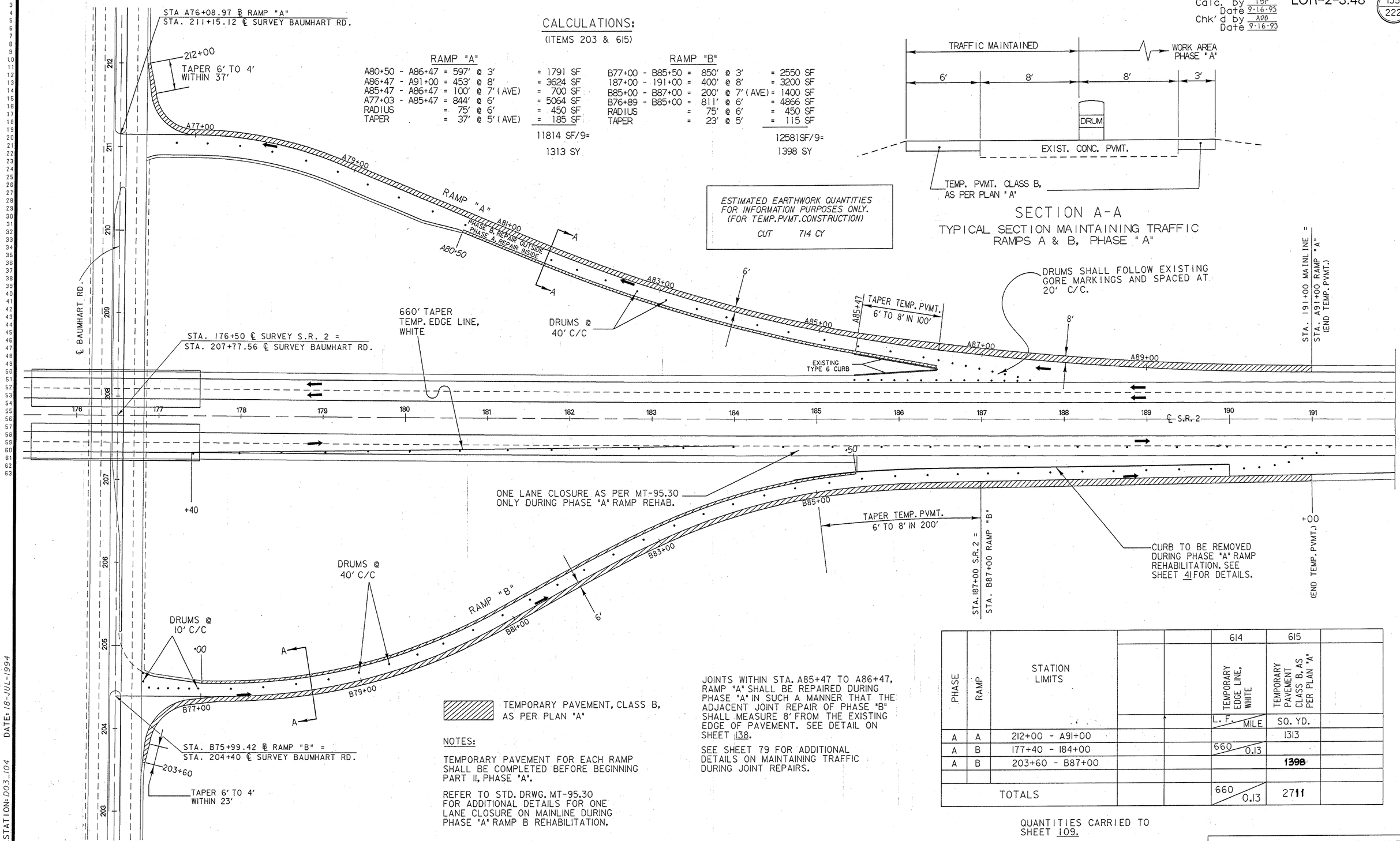
B77+00 - B85+50 = 850′ @ 3′	= 2550 SF		
187+00 - 191+00 = 400′ @ 8′	= 3200 SF		
B85+00 - B87+00 = 200′ @ 7′ (AVE)	= 1400 SF		
B76+89 - B85+00 = 811′ @ 6′	= 4866 SF		
RADIUS = 75′ @ 6′	= 450 SF		
TAPER = 23′ @ 5′	= 115 SF		
	12581SF/9=		
	1398 SY		

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP.PVMT.CONSTRUCTION)

CUT 714 CY

SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC RAMPS A & B, PHASE "A"



TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"

NOTES:

TEMPORARY PAVEMENT FOR EACH RAMP SHALL BE COMPLETED BEFORE BEGINNING PART II, PHASE "A".

REFER TO STD. DRWG. MT-95.30 FOR ADDITIONAL DETAILS FOR ONE LANE CLOSURE ON MAINLINE DURING PHASE "A" RAMP B REHABILITATION.

JOINTS WITHIN STA. A85+47 TO A86+47, RAMP "A" SHALL BE REPAIRED DURING PHASE "A" IN SUCH A MANNER THAT THE ADJACENT JOINT REPAIR OF PHASE "B" SHALL MEASURE 8′ FROM THE EXISTING EDGE OF PAVEMENT. SEE DETAIL ON SHEET 138.

SEE SHEET 79 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.

PHASE	RAMP	STATION LIMITS			614 TEMPORARY EDGE LINE, WHITE L.F. / MILE	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SQ. YD.	
A	A	212+00 - A91+00				1313	
A	B	177+40 - 184+00			660 / 0.13		
A	B	203+60 - B87+00				**1398**	
TOTALS					660 / 0.13	2711	

QUANTITIES CARRIED TO SHEET 109.

BAUMHART RD. RAMPS "A" AND "B"

MAINTENANCE OF TRAFFIC PART II, PHASE A

DESIGN FILE: c:\dgn\julie\mtsht135.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

STA A76+08.97 ℄ RAMP "A"
STA. 211+15.12 ℄ SURVEY BAUMHART RD.

212+00

A77+00

A79+00

RAMP "A"

A81+00

PHASE B, REPAIR OUTSIDE
PHASE A, REPAIR INSIDE

A

A

DRUMS @
40' C/C

A83+00

6'

A85+00

A85+47

A86+47

A87+00

480' TAPER 30:1
DRUMS @ 40' C/C

A89+00

EXISTING
TYPE 6 CURB

8'

27'

STA. 191+00 MAINLINE =
STA. A91+00 RAMP "A"

℄ BAUMHART RD.

STA. 176+50 ℄ SURVEY S.R. 2 =
STA. 207+77.56 ℄ SURVEY BAUMHART RD.

176 177 178 179 180 181 182 183 184 185 186 187 188 189 ℄ S.R. 2 190 191

208 209 210 211 212

207 206 205 204 203

DRUMS @
40' C/C

DRUMS @
10' C/C

RAMP "B"

B77+00

B79+00

B81+00

B83+00

B85+00

6'

A

A

STA. B75+99.42 ℄ RAMP "B" =
STA. 204+40 ℄ SURVEY BAUMHART RD.

203+60

STA. 187+00 S.R. 2 =
STA. B87+00 RAMP "B"

EXISTING GORE MARKINGS
TO REMAIN.

WORK AREA
PHASE "B"

TRAFFIC MAINTAINED

6' 8' 8' 3'

DRUM

EXIST. CONC. PVMT.

TEMP. PVMT. CLASS B, AS PER PLAN "A"
(PLACED PRIOR TO PART II, PHASE A)

SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS A & B, PHASE "B"

* SEE SHEET 138 FOR DETAIL OF JOINT REPAIR FROM STA. A85+47 TO STA. A86+47.

NOTES:

JOINTS WITHIN STA. A85+47 TO A86+47, RAMP "A" SHALL BE REPAIRED DURING PHASE "A" IN SUCH A MANNER THAT THE ADJACENT JOINT REPAIR OF PHASE "B" SHALL MEASURE 8' FROM THE EXISTING EDGE OF PAVEMENT. SEE DETAIL ON SHEET 138.

SEE SHEET 79 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.

DESIGN FILE: c:\dgn\julie\mfsht136.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

BAUMHART RD., RAMPS "A" AND "B"

MAINTENANCE OF TRAFFIC PART II, PHASE B

TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"

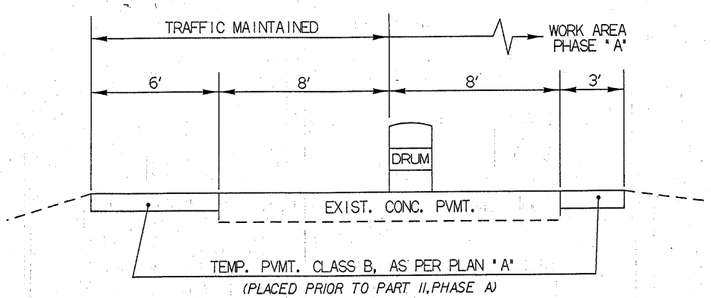
NOTES:

TEMPORARY PAVEMENT FOR EACH RAMP SHALL BE COMPLETED BEFORE BEGINNING PART II, PHASE "A".

REFER TO STD. DRWG. MT-95.30 FOR ADDITIONAL DETAILS FOR ONE LANE CLOSURE ON MAINLINE DURING PHASE "A" RAMP C REHABILITATION.

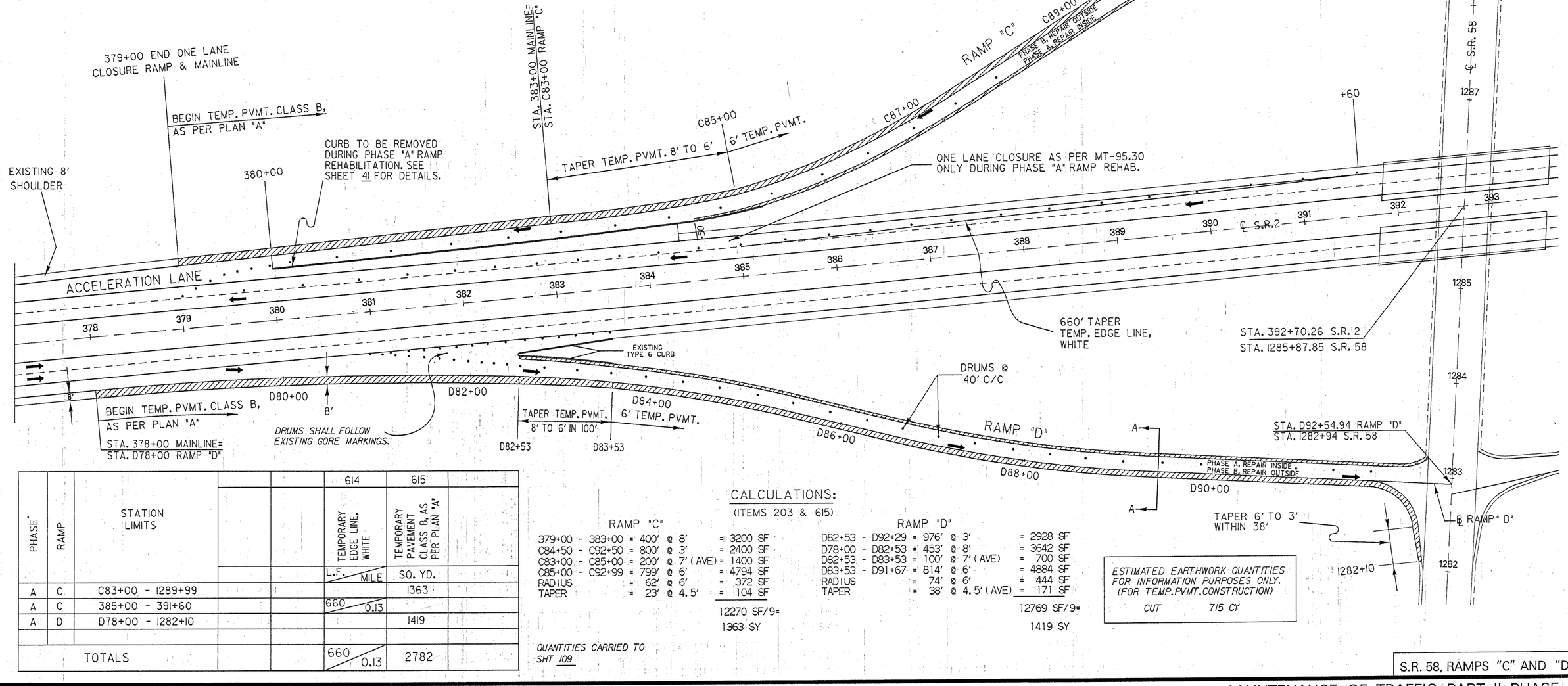
SEE SHEET 80 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.

JOINTS WITHIN STA. D82+53 TO D83+53, RAMP "D" SHALL BE REPAIRED DURING PHASE "A" IN SUCH A MANNER THAT THE ADJACENT JOINT REPAIR OF PHASE "B" SHALL MEASURE 8' FROM THE EXISTING EDGE OF PAVEMENT. SEE DETAIL ON SHEET 138.



SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS C & D, PHASE "A"



PHASE	RAMP	STATION LIMITS			614 TEMPORARY EDGE LINE, WHITE L.F. / MILE	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SQ. YD.	
A	C	C83+00 - 1289+99				1363	
A	C	385+00 - 1391+60			660 / 0.13		
A	D	D78+00 - 1282+10				1419	
TOTALS					660 / 0.13	2782	

CALCULATIONS:
(ITEMS 203 & 615)

RAMP "C"

379+00 - 383+00	= 400' @ 8'	= 3200 SF
C84+50 - C92+50	= 800' @ 3'	= 2400 SF
C83+00 - C85+00	= 200' @ 7' (AVE)	= 1400 SF
C85+00 - C92+99	= 799' @ 6'	= 4794 SF
RADIUS	= 62' @ 6'	= 372 SF
TAPER	= 23' @ 4.5'	= 104 SF
		12270 SF/9=
		1363 SY

RAMP "D"

D82+53 - D92+29	= 976' @ 3'	= 2928 SF
D78+00 - D82+53	= 453' @ 8'	= 3642 SF
D82+53 - D83+53	= 100' @ 7' (AVE)	= 700 SF
D83+53 - D91+67	= 814' @ 6'	= 4884 SF
RADIUS	= 74' @ 6'	= 444 SF
TAPER	= 38' @ 4.5' (AVE)	= 171 SF
		12769 SF/9=
		1419 SY

QUANTITIES CARRIED TO SHT 109

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP. PVMT. CONSTRUCTION)

CUT 715 CY

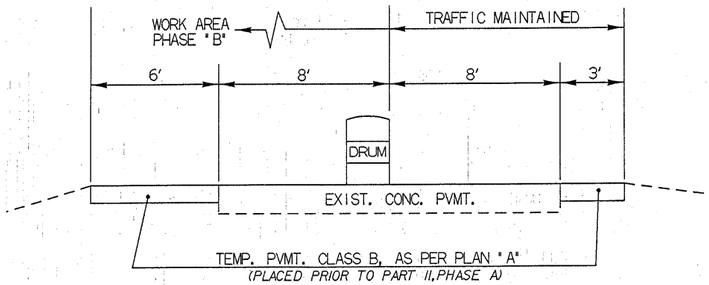
S.R. 58, RAMPS "C" AND "D"

MAINTENANCE OF TRAFFIC PART II, PHASE A

DESIGN FILE: c:\dgn\julie\mtsht137.dgn
WORKSTATION: 003_104 DATE: 18-JUL-1994

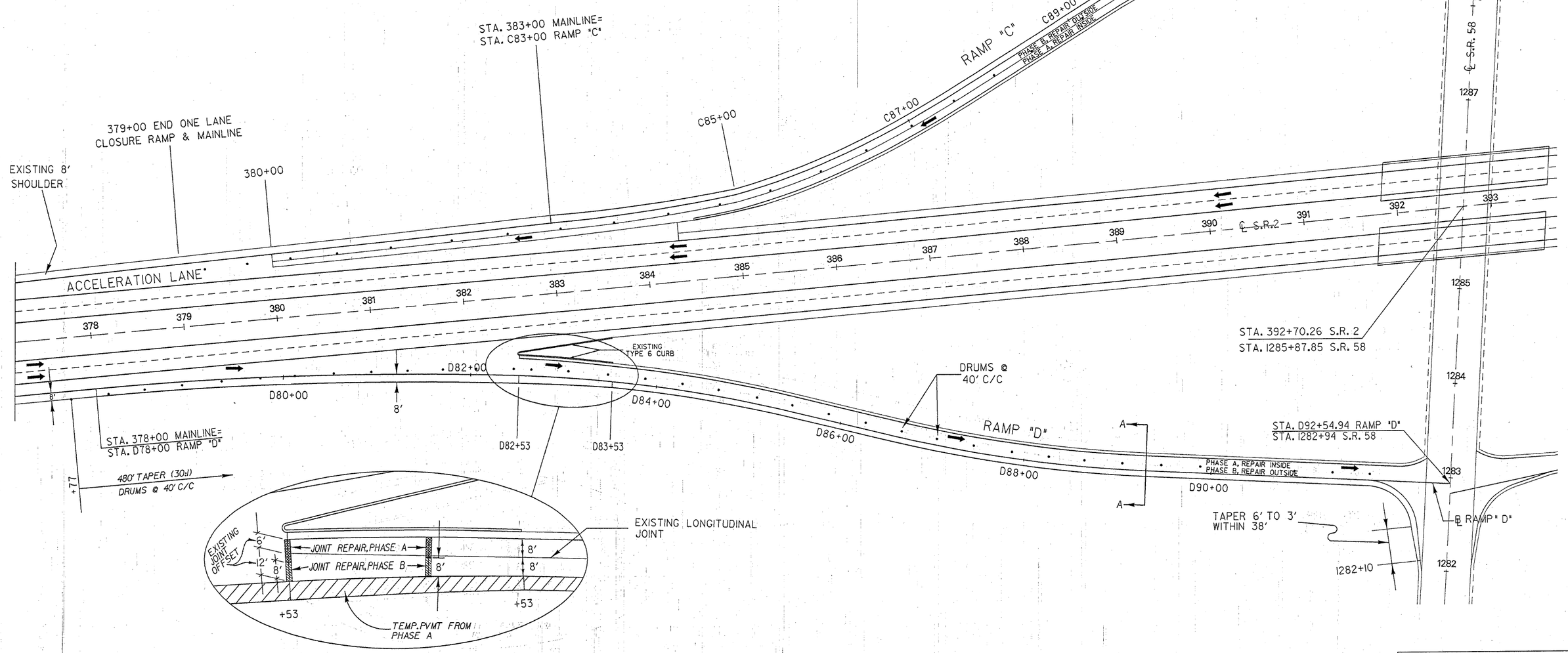
SEE STANDARD DRAWING MT-95.31 CLOSING RIGHT LANE OF A MULTI-LANE UNDIVIDED HIGHWAY WITH DRUMS WHILE CONSTRUCTING THE TEMPORARY PAVEMENT AT THE INTER-SECTION OF S.R.58 & RAMPS C&D.

SEE SHEET 79 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.



SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS C & D, PHASE "B"



S.R. 58, RAMPS "C" AND "D"

MAINTENANCE OF TRAFFIC PART II, PHASE B

DESIGN FILE: c:\dgn\julie\mtsht138.dgn
WORKSTATION: D03_104 DATE: 18-JUL-1994

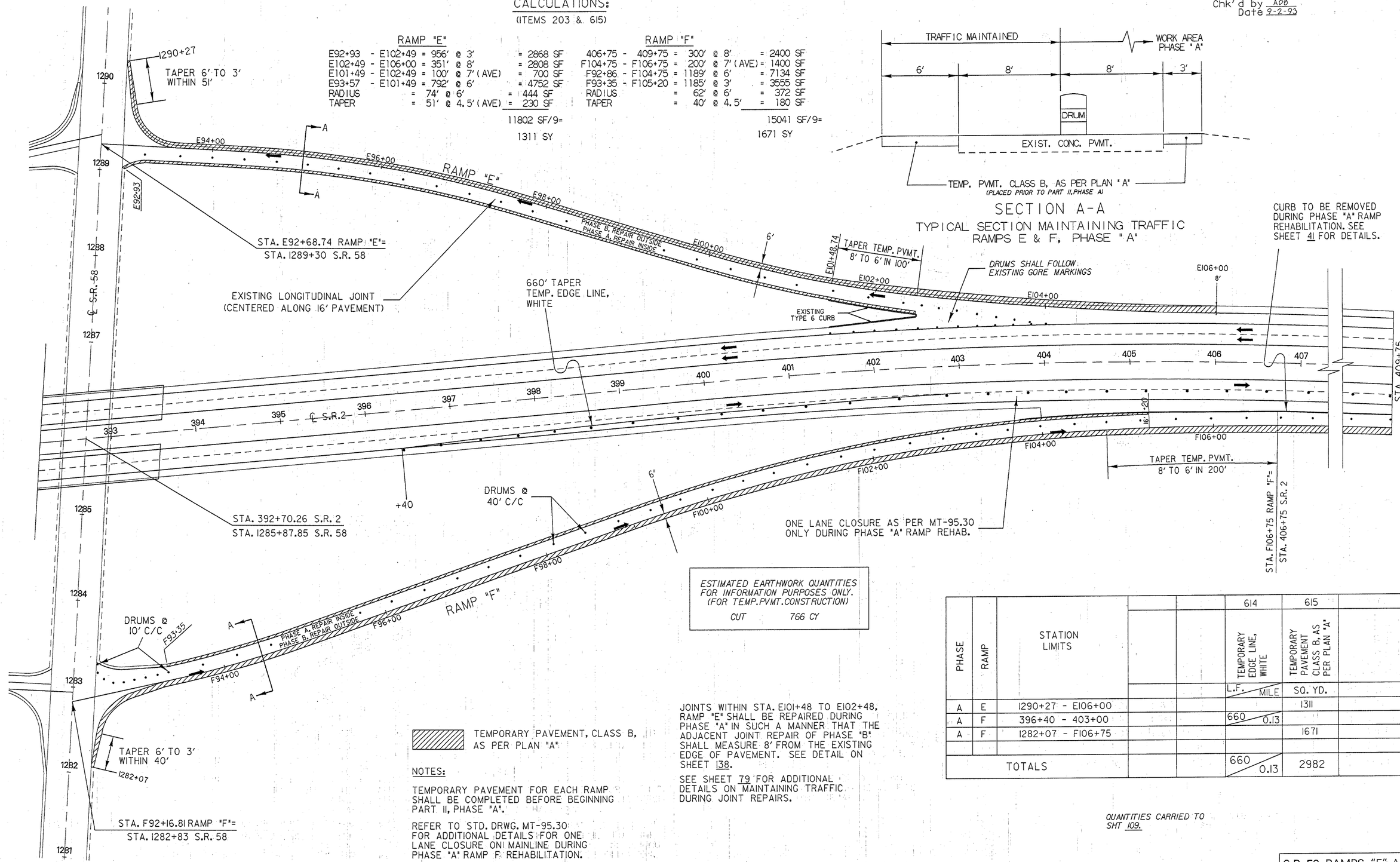
CALCULATIONS:

(ITEMS 203 & 615)

RAMP "E"			RAMP "F"		
E92+93 - E102+49 = 956′ @ 3′	= 2868 SF		406+75 - 409+75 = 300′ @ 8′	= 2400 SF	
E102+49 - E106+00 = 351′ @ 8′	= 2808 SF		F104+75 - F106+75 = 200′ @ 7′ (AVE)	= 1400 SF	
E101+49 - E102+49 = 100′ @ 7′ (AVE)	= 700 SF		F92+86 - F104+75 = 1189′ @ 6′	= 7134 SF	
E93+57 - E101+49 = 792′ @ 6′	= 4752 SF		F93+35 - F105+20 = 1185′ @ 3′	= 3555 SF	
RADIUS = 74′ @ 6′	= 444 SF		RADIUS = 62′ @ 6′	= 372 SF	
TAPER = 51′ @ 4.5′ (AVE)	= 230 SF		TAPER = 40′ @ 4.5′	= 180 SF	
	11802 SF/9=			15041 SF/9=	
	1311 SY			1671 SY	

SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS E & F, PHASE "A"



ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP.PVMT.CONSTRUCTION)

CUT 766 CY

PHASE	RAMP	STATION LIMITS			614 TEMPORARY EDGE LINE, WHITE L.F. / MILE	615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SQ. YD.	
A	E	1290+27 - E106+00				1311	
A	F	396+40 - 403+00			660 / 0.13		
A	F	1282+07 - F106+75				1671	
TOTALS					660 / 0.13	2982	

QUANTITIES CARRIED TO SHT 109.

TEMPORARY PAVEMENT, CLASS B, AS PER PLAN "A"

NOTES:

TEMPORARY PAVEMENT FOR EACH RAMP SHALL BE COMPLETED BEFORE BEGINNING PART II, PHASE "A".

REFER TO STD. DRWG. MT-95.30 FOR ADDITIONAL DETAILS FOR ONE LANE CLOSURE ON MAINLINE DURING PHASE "A" RAMP F REHABILITATION.

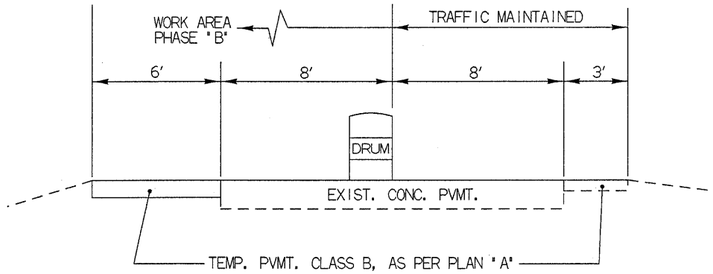
JOINTS WITHIN STA. E101+48 TO E102+48, RAMP "E" SHALL BE REPAIRED DURING PHASE "A" IN SUCH A MANNER THAT THE ADJACENT JOINT REPAIR OF PHASE "B" SHALL MEASURE 8′ FROM THE EXISTING EDGE OF PAVEMENT. SEE DETAIL ON SHEET 138.

SEE SHEET 79 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.

DESIGN FILE: c:\dgn\julie\mtsht139.dgn DATE: 18-JUL-1994
WORKSTATION: D03_104

S.R. 58, RAMPS "E" AND "F"

MAINTENANCE OF TRAFFIC PART II, PHASE A



SECTION A-A

TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS E & F, PHASE "B"

SEE SHEET 138 FOR DETAIL OF JOINT REPAIR FROM STA. E101+49 TO STA. E102+49.

STA. E92+68.74 RAMP "E"=
STA. 1289+30 S.R. 58

STA. 392+70.26 S.R. 2
STA. 1285+87.85 S.R. 58

STA. F92+16.81 RAMP "F"=
STA. 1282+83 S.R. 58

STA. F106+75 RAMP "F"=
STA. 406+75 S.R. 2

NOTES:

JOINTS WITHIN STA. E101+48 TO E102+48, RAMP "E" SHALL BE REPAIRED DURING PHASE "A" IN SUCH A MANNER THAT THE ADJACENT JOINT REPAIR OF PHASE "B" SHALL MEASURE 8' FROM THE EXISTING EDGE OF PAVEMENT. SEE DETAIL ON SHEET 138.

SEE SHEET 79 FOR ADDITIONAL DETAILS ON MAINTAINING TRAFFIC DURING JOINT REPAIRS.

DESIGN FILE: c:\dgn\julie\mtsh_10.dgn DATE: 19-JUL-1994
WORKSTATION: 003_104

S.R. 58, RAMPS "E" AND "F"

MAINTENANCE OF TRAFFIC PART II PHASE B

Calc. by T. S. F. Date 9/93
Chk'd by A. D. D. Date 9/93

LOR-2-3.48

REF.	RAMP	STATION LIMITS	202 CURB REMOVED		609 CURB, TYPE 6		615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A"
			LIN. FT.		LIN. FT.		SQ. YD.
T-1	W	299+00 - 54+38					774
T-2	X	299+53 - 45+68					710
R-1	W	308+88 - 54+38	158				
R-2	X	309+17 - 45+68	116				
C-1	W	308+88 - 54+38			154		
C-2	X	309+17 - 45+68			112		
TOTALS			274*		266**		1484***

* QUANTITY CARRIED TO SHT 19
** QUANTITY CARRIED TO SHT 20
*** QUANTITY CARRIED TO SHT 109

CALCULATIONS:
(ITEMS 202 & 609)

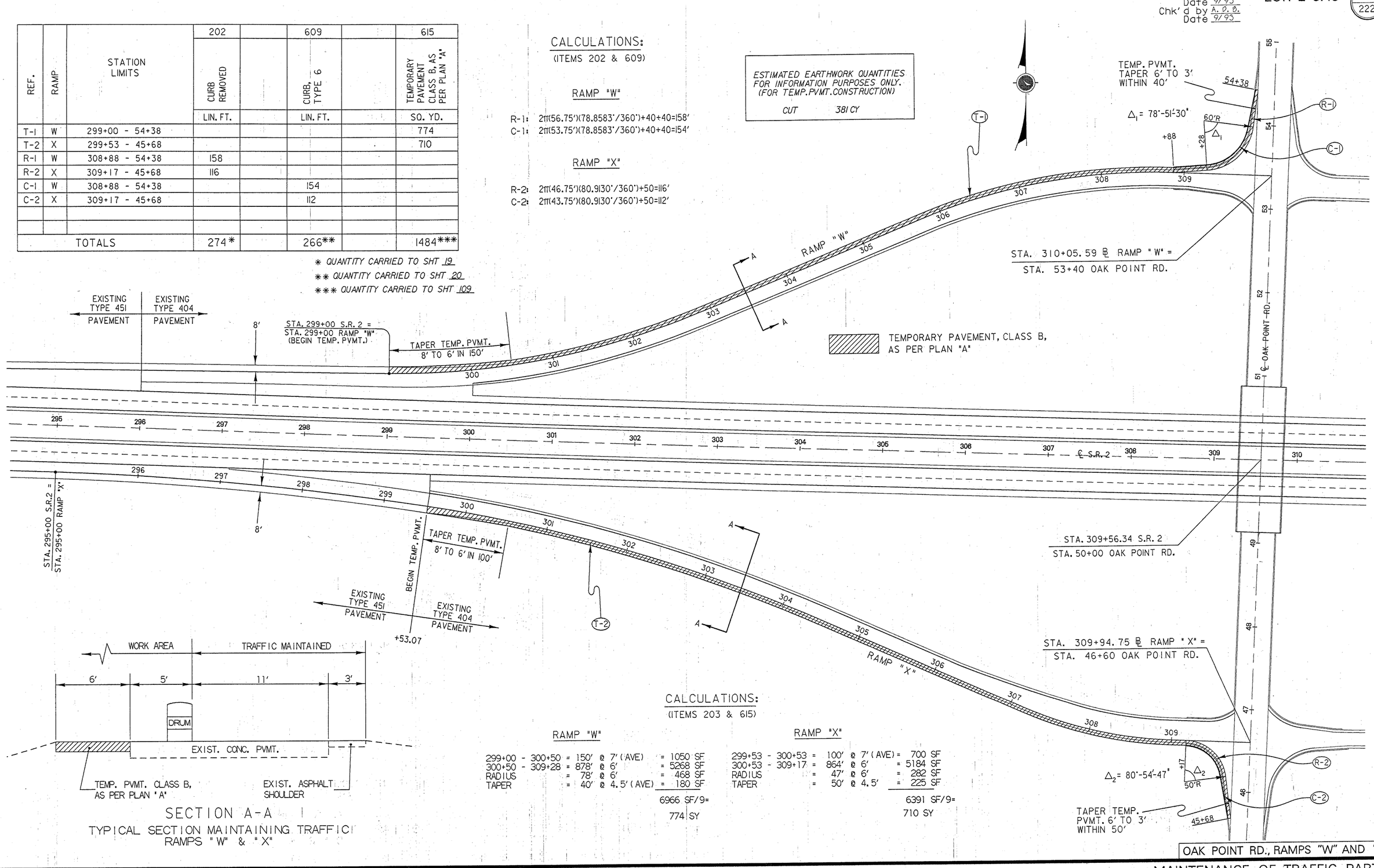
RAMP "W"

R-1: 2π(56.75')(78.8583°/360°)+40+40=158'
C-1: 2π(53.75')(78.8583°/360°)+40+40=154'

RAMP "X"

R-2: 2π(46.75')(80.9130°/360°)+50=116'
C-2: 2π(43.75')(80.9130°/360°)+50=112'

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP. PVMT. CONSTRUCTION)
CUT 381 CY



SECTION A-A
TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS "W" & "X"

CALCULATIONS:
(ITEMS 203 & 615)

RAMP "W"

299+00 - 300+50	= 150' @ 7' (AVE)	= 1050 SF	
300+50 - 309+28	= 878' @ 6'	= 5268 SF	
RADIUS	= 78' @ 6'	= 468 SF	
TAPER	= 40' @ 4.5' (AVE)	= 180 SF	
		6966 SF/9=	
		774 SY	

RAMP "X"

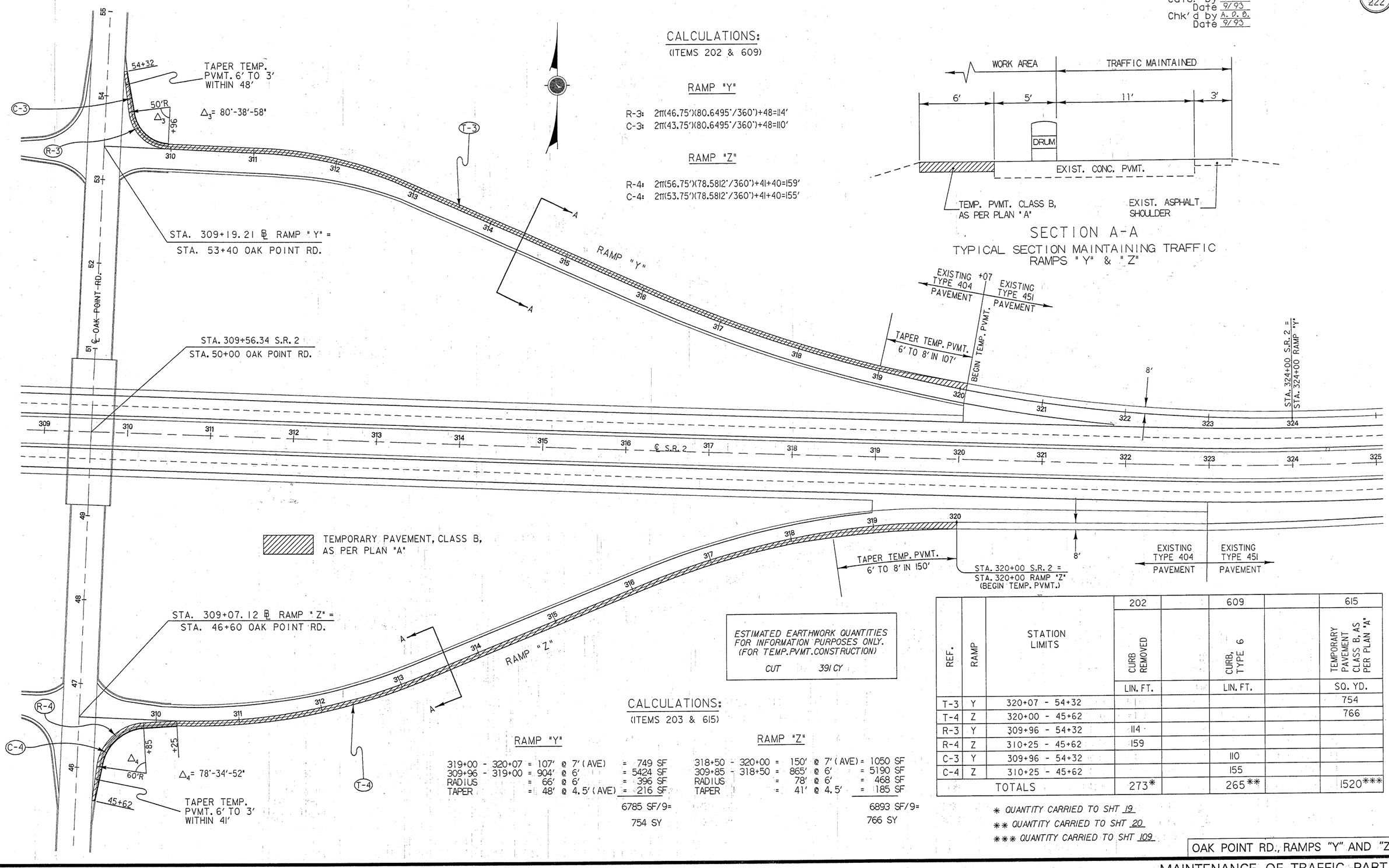
299+53 - 300+53	= 100' @ 7' (AVE)	= 700 SF	
300+53 - 309+17	= 864' @ 6'	= 5184 SF	
RADIUS	= 47' @ 6'	= 282 SF	
TAPER	= 50' @ 4.5'	= 225 SF	
		6391 SF/9=	
		710 SY	

OAK POINT RD., RAMPS "W" AND "X"

MAINTENANCE OF TRAFFIC PART II

DESIGN FILE: c:\dgn\julie\mtsht141.dgn
WORKSTATION: 003_104
DATE: 19-JUL-1994

Calc. by T. S. F.
Date 9/93
Chk'd by A. D. B.
Date 9/93



SECTION A-A
TYPICAL SECTION MAINTAINING TRAFFIC
RAMPS "Y" & "Z"

ESTIMATED EARTHWORK QUANTITIES FOR INFORMATION PURPOSES ONLY. (FOR TEMP.PVMT.CONSTRUCTION)

CUT 391 CY

CALCULATIONS:
(ITEMS 203 & 615)

RAMP "Y"

319+00 - 320+07	= 107' @ 7' (AVE)	=	749 SF
309+96 - 319+00	= 904' @ 6'	=	5424 SF
RADIUS	= 66' @ 6'	=	396 SF
TAPER	= 48' @ 4.5' (AVE)	=	216 SF
			6785 SF/9=
			754 SY

RAMP "Z"

318+50 - 320+00	= 150' @ 7' (AVE)	=	1050 SF
309+85 - 318+50	= 865' @ 6'	=	5190 SF
RADIUS	= 78' @ 6'	=	468 SF
TAPER	= 41' @ 4.5'	=	185 SF
			6893 SF/9=
			766 SY

REF.	RAMP	STATION LIMITS	202 CURB REMOVED LIN. FT.		609 CURB, TYPE 6 LIN. FT.		615 TEMPORARY PAVEMENT CLASS B, AS PER PLAN "A" SQ. YD.
T-3	Y	320+07 - 54+32					754
T-4	Z	320+00 - 45+62					766
R-3	Y	309+96 - 54+32	114				
R-4	Z	310+25 - 45+62	159				
C-3	Y	309+96 - 54+32			110		
C-4	Z	310+25 - 45+62			155		
TOTALS			273*		265**		1520***

* *QUANTITY CARRIED TO SHT 19*
** *QUANTITY CARRIED TO SHT 20*
*** *QUANTITY CARRIED TO SHT 109*

OAK POINT RD., RAMPS "Y" AND "Z"

MAINTENANCE OF TRAFFIC PART II

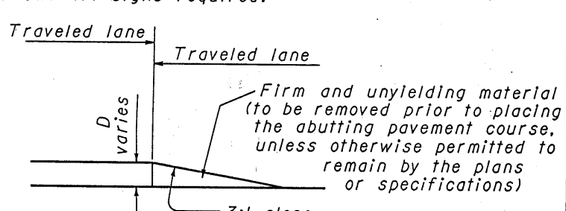
DESIGN FILE: c:\dgn\julie\mtsht142.dgn
WORKSTATION: 003_104 DATE: 19-JUL-1994

GENERAL NOTES

1. 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.
2. 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.
3. 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.
4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
5. Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC-9.2 and Item 622.
6. When drums are specified for a dropoff condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
7. 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 dropoff condition extends more than one-half mile, additional signs should be erected at intervals of one mile or less.
8. 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.
9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" and approval is granted by the Project Engineer.
10. Pavement Repairs (or similar work):
    a. Lengths greater than 60 feet - utilize appropriate treatment from Condition I.
    b. 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)

1. This treatment may be used when permitted for Condition I only.
2. OW-171 and OWP-171 signs required.

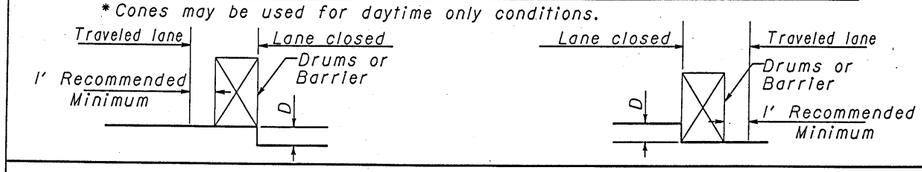


CONDITION I
DROPOFFS BETWEEN TRAVELED LANES

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

D (In.)	Treatment
≤1½	Erect OW-171 and OWP-171 signs.
>1½-3	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.

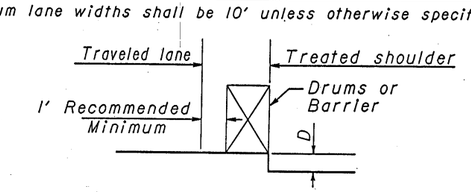


CONDITION II
DROPOFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
2. 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.

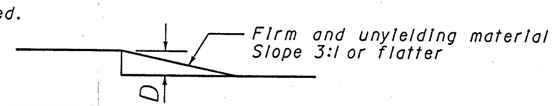
D (In.)	Treatment
≤1½	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
>1½-5	1) If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
>5-12 Daylight only	If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below.
>5-24	1) If min. lane width* requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If min. 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

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

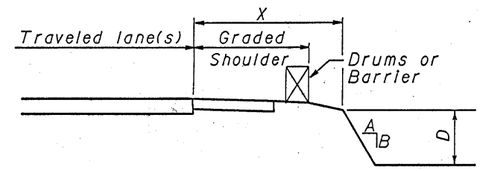


CONDITION III
DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

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

CHART A

USE FOR:
1. Uncurbed Facilities.
2. Curbed Facilities, where:
   a. Curbs are less than 6" in height.
   b. Curbs are 6" or greater in height and the legal speed is greater than 40 mph.

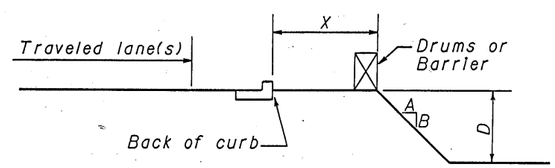


X (Ft.)	D (In.)	A/B	Treatment Required: Day	Treatment Required: Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	≤3	Steeper than 3:1	None	None
4-12	>3-≤12	Steeper than 3:1	Drums	Drums
4-12	>12	Steeper than 3:1	Drums	Barrier
>12-20	≤12	Steeper than 3:1	None	None
>12-20	>12-≤24	Steeper 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	Treatment Required: Night
0-10	<12	Any	None	Drums
0-10	>12	Any	Drums	Drums
>10	Any	Any	None	None

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN

DROPOFFS IN WORK ZONES

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

ITEM 510 – DOWEL HOLE, AS PER PLAN:
THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF GROUT INTO HOLES. EPOXY MORTAR GROUT SHALL BE USED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 852 AND CMS 705.20. ANCHORING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 852 AND CMS 705.20. PAYMENT SHALL BE INCLUDED WITH ITEM 510. THE FURNISHING AND PLACING OF STEEL FOR DOWELS IS INCLUDED WITH 509 REINFORCING STEEL.

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.

THIS ITEM PERTAINS TO ALL STRUCTURES.

REINFORCING STEEL SPLICES:
UNLESS INDICATED ON THE DRAWINGS, REINFORCING BARS SHALL BE SPLICED AS FOLLOWS:

	LAP LENGTH
BAR SIZE	EPOXY COATED
#4	2'-3"
#5	2'-9"
#6	3'-4"
#7	3'-9"
#8	4'-5"
#9	5'-7"
#10	7'-2"
#11	8'-9"

THIS ITEM PERTAINS TO ALL STRUCTURES.

ITEM 513 – TRIMMING OF BEAM END, AS PER PLAN:
THIS ITEM SHALL BE USED TO TRIM THE ENDS OF THE BEAM ON THE STRUCTURE TO PROVIDE CLEARANCE AS PER DETAILS IN THE PLAN. AREAS TRIMMED SHALL BE GROUND SMOOTH.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT UNIT PRICE BID PER EACH FOR ITEM 513 TRIMMING OF BEAM END, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0699 AND LOR-2-0742 L/R.

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 STEEL AT THEIR COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 200 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

WORK LIMITATIONS
NO CONCRETE DECK OVERLAYS 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.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0586, LOR-2-0649, LOR-2-0699 AND LOR-2-0742 L/R.

UTILITY LINES:
ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED (ABUTMENTS), AS PER PLAN
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 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. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGED, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL 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 (ABUTMENT), AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0459 L/R, LOR-2-0649, LOR-2-0699 AND LOR-2-0742 L/R.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
THIS ITEM SHALL BE USED TO REMOVE DECK EDGES, PARAPET, AND OTHER CONCRETE ITEMS AS SPECIFIED IN THE PLANS.

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 THE MANUFACTURER'S RECOMMENDATIONS. THIRTY-FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR THE FINAL FINISH WORK. A HOE RAM, CONCRETE CRUSHER OR OTHER SIMILAR TYPE IMPACTIVE DEVICE WILL NOT BE PERMITTED TO DO ANY OF THE WORK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE SALVAGED. IF EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE IS DAMAGED DURING REMOVAL OPERATIONS, DOWELED REINFORCING STEEL 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 WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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 (1) INCH PER TWENTY-FIVE (25) 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.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0586, LOR-2-0649, LOR-2-0699 AND LOR-2-0742 L/R.

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

GENERAL NOTES
BRIDGE NO. LOR-2-0459 L/R
BRIDGE NO. LOR-2-0586
BRIDGE NO. LOR-2-0646 L/R
BRIDGE NO. LOR-2-0649
BRIDGE NO. LOR-2-0699
BRIDGE NO. LOR-2-0742 L/R

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AGGREGATE FOR CONCRETE

ALL CONCRETE AGGREGATE SHALL BE LIMESTONE,

ITEM 511 – CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN

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

AGGREGATE 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., RAVENA, 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, MISCELLANEOUS (PARAPETS), AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 518 – POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN

POROUS BACKFILL SHALL BE TYPE 57 GRAVEL.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0459 L/R, LOR-2-0646 L/R, LOR-2-0649, LOR-2-0699, AND LOR-2-0742 L/R.

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 M252, TYPE SP.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0459 L/R, LOR-2-0646 L/R, LOR-2-0649, LOR-2-0699, AND LOR-2-0742 L/R.

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 252, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

THIS ITEM PERTAINS TO THE FOLLOWING STRUCTURES: LOR-2-0459 L/R, LOR-2-0646 L/R, LOR-2-0649, LOR-2-0699, AND LOR-2-0742 L/R.

ITEM 519 – PATCHING CONCRETE STRUCTURE, AS PER PLAN

THIS ITEM SHALL BE USED TO REPAIR AREAS AS INDICATED IN THE PLANS. WITHIN TWENTY-FOUR (24) HOURS BEFORE PLACING CONCRETE, THE EXISTING SURFACE AGAINST WHICH THE CONCRETE SHALL BE PLACED, AND THE EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING. ABRASIVE BLASTING SHALL BE AT LEAST EQUAL TO SA2 "COMMERCIAL BLAST CLEANING" AS OUTLINED IN ASTM D-2200 OD SSPC-SP6. ALL LOOSE AND DETERIORATED CONCRETE AND CALCIUM CARBONATE DEPOSITS SHALL BE REMOVED WITH HAND TOOLS BEFORE ABRASIVE BLASTING.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 519 PATCHING CONCRETE STRUCTURE, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

THIS ITEM PERTAINS TO ALL STRUCTURES.

THIS ITEM PERTAINS TO ALL STRUCTURES.

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

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GENERAL NOTES
BRIDGE NO. LOR-2-0459 L/R
BRIDGE NO. LOR-2-0586
BRIDGE NO. LOR-2-0646 L/R
BRIDGE NO. LOR-2-0649
BRIDGE NO. LOR-2-0699
BRIDGE NO. LOR-2-0742 L/R

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
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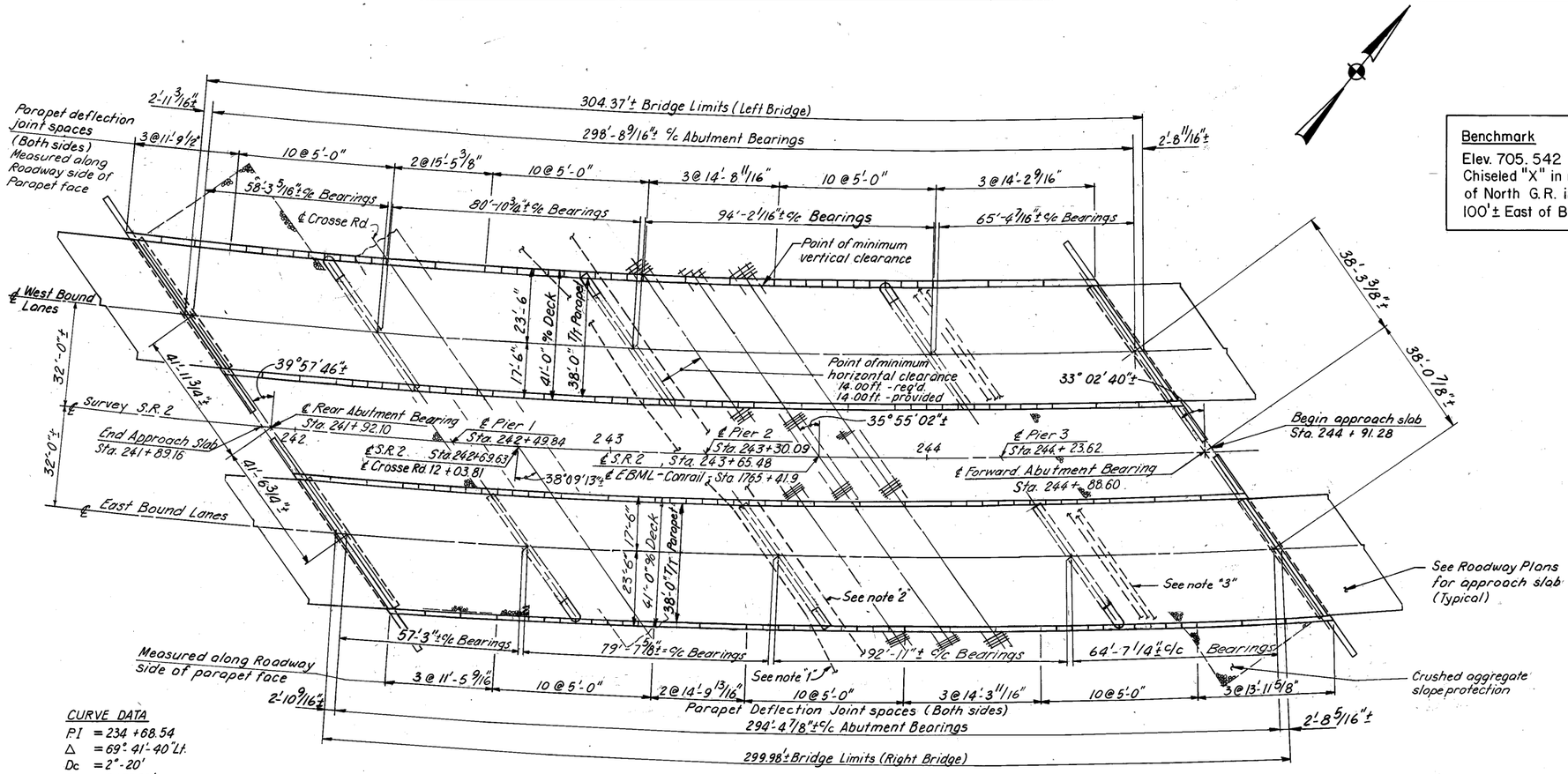
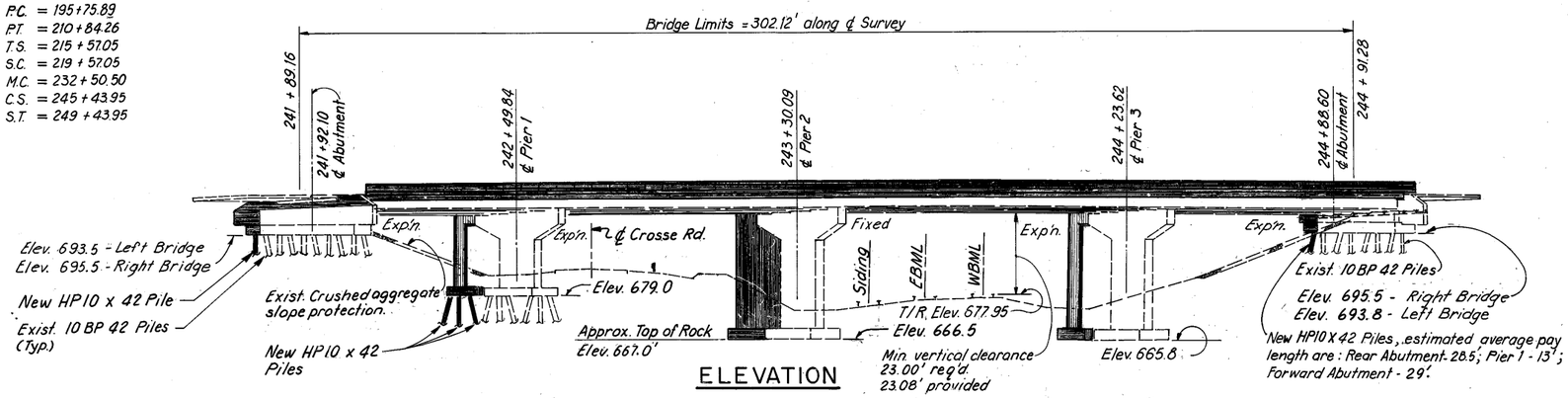


CURVE DATA
P.I. = 234+68.54
Δ = 69°-41'-40"Lt.
Dc = 2°-20'
Rc = 2455.53'
Ls = 400.00'
θs = 4°-40'
Ts = 1911.49'
Lc = 2586.90
Xc = 399.73'
Yc = 10.86'
K = 199.96'
P = 2.72'
L.T. = 266.76'
S.T. = 133.42'
Es = 539.86'
P.C. = 195+75.89
P.T. = 210+84.26
T.S. = 215+57.05
S.C. = 219+57.05
M.C. = 232+50.50
C.S. = 245+43.95
S.T. = 249+43.95

GENERAL PLAN

Notes:
1. Existing WILTEL Fiber optic cable (underground).
2. Existing AT&T Fiber optic cable (underground).
3. Existing RR Power Lines (under bridge, above ground).



ELEVATION

Benchmark
Elev. 705.542
Chiseled "X" in North G.R. Bolt of North G.R. in Median 100'± East of Bridge

EXISTING STRUCTURE

TYPE: Twin Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
SPANS: 57.74±;80.25±;93.53±;64.98'± ℄ Bearing Measured Along ℄ Survey
ROADWAY: 30'-0±f/f 2'-0" Safety Curbs
LOAD FREQUENCY: CF 400(57)
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: AS-1-54 (25' Long)
SKEW: 35°-55'-02"± To Tangent at ℄ EBML
ALIGNMENT: 2°-20'-00"± Curve to Left
SUPERELEVATION: 0.075' /ft.
DATE BUILT: 1965
STRUCTURE FILE No. 4700031, 4700066

PROPOSED STRUCTURE

PROPOSED WORK: Deck Replacement, and Superstructure and Substructure Widening.
TYPE: Twin Cont. Steel Beam with Reinf. Conc. Deck and Substructure.
SPANS: 57.74'; 80.25'; 93.53'; 64.98' ℄ Bearing Measured Along ℄ Survey.
ROADWAY: 38'-0" f/f 1'-6" Parapet
LOADING: HS20-44 & The Alternate Military Loading
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-81 (20'Long)
SKEW: 35°-55'-02" (To Tangent at ℄ EBML
ALIGNMENT: 2°-20'-00" Curve to Left
SUPERELEVATION: 0.075'/ft.
AVE. DAILY TRAFFIC: 25980 (2014)
AVE. DAILY TRUCK TRAFFIC: 3118 (2014)

Revised 12-8-94

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO
1/25

GENERAL PLAN

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	

PROPOSED WORK
THE WORK PROPOSED FOR THIS STRUCTURE SHALL BE ACCOMPLISHED IN THREE CONSTRUCTION PHASES AND IS COMPRISED OF, BUT NOT LIMITED TO THE FOLLOWING:

SEQUENCE 1

1. COMPLETE ALL ITEMS OF WORK WHICH DO NOT REQUIRE PERMANENT LANE CLOSURES ON SR2.

SEQUENCE 2 – PHASE I

2. ERECT TEMPORARY BARRIERS AND MAINTAIN TRAFFIC ON THE RIGHT SIDE OF THE LEFT BRIDGE AND THE LEFT SIDE OF THE RIGHT BRIDGE.

3. INSTALL ALL NECESSARY SHEETING AND REMOVE THE EXISTING STRUCTURE TO THE LIMITS SHOWN ON SHEETS. [5 / 25] *AND* [6 / 25] .

4. JACK EXISTING EXPOSED BEAMS AS PER SHEET [5 / 25]

5. CONSTRUCT THE LEFT PORTION OF THE LEFT BRIDGE AND THE RIGHT PORTION OF THE RIGHT BRIDGE TO THE LIMITS SHOWN, WITH THE EXCEPTION OF THE ELASTOMERIC STRIP SEALS.

SEQUENCE 3 – PHASE II

6. MOVE TEMPORARY BARRIERS TO THE OPPOSITE SIDES OF THE BRIDGES AND MAINTAIN TRAFFIC ON THE COMPLETED SIDE OF THE BRIDGES.

7. PERFORM REMAINDER OF STRUCTURE REMOVAL AS PER PLAN.

8. JACK EXISTING EXPOSED BEAMS AS PER SHEET [5 / 25]

9. CONSTRUCT THE RIGHT PORTION OF THE LEFT BRIDGE AND THE LEFT PORTION OF THE RIGHT BRIDGE TO THE LIMITS SHOWN, WITH THE EXCEPTION OF THE ELASTOMERIC STRIP SEALS.

SEQUENCE 3 – PHASE III

10. RECONNECT THE INTERMEDIATE CROSS-BRACING IN THE OPEN BAY.

11. INSTALL THE REMAINDER OF THE END FRAMES IN THE OPEN BAYS.

12. INSTALL ELASTOMERIC STRIP SEALS.

13. REMOVE BARRIERS AND OPEN BRIDGES TO FULL WIDTH TRAFFIC.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

A-1-69	DATED	6-12-69
AS-1-81	DATED (REVISED)	11-27-81
EXJ-4-87	DATED	1-**20-94**
SD-1-69	DATED	6-12-69

AND TO SUPPLEMENTAL SPECIFICATIONS:

852	DATED	7-30-93
910	DATED	5-20-91
944	DATED	**5-2-94**

DESIGN SPECIFICATIONS
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING
HS20-44 AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES
CONCRETE CLASS S – COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C – COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615, A616 OR A617
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL: ASTM A36 – YIELD STRENGTH 36,000 PSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER
SEALING OF CONCRETE SURFACES

MONOLITHIC WEARING SURFACE

THE MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES TO BE 1" THICK.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, DECK AND PARAPET, AS PER PLAN

THIS ITEM OF WORK SHALL BE USED TO REMOVE THE EXISTING CONCRETE DECK FROM THE STEEL BEAMS. 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.

THE CONCRETE DECK 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 MINIMUM 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.

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.

ALL IMPERFECTIONS AND EXISTING TACK WELDS ON THE BEAMS DISCOVERED AFTER THE DECK HAS BEEN REMOVED SHALL BE GROUND SMOOTH. ANY BOLTS OR PROJECTIONS WELDED TO THE STRUCTURAL STEEL SHALL BE CUT 1-1/2" ABOVE THE EXISTING WELDS. THE TOP FLANGE OF THE STEEL BEAMS SHALL BE ABRASIVE BLASTED TO AN SA 2.

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 CU. YD. PRICE BID FOR ITEM 202 PORTIONS OF STRUCTURE REMOVED, DECK AND PARAPET, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

RAILROAD PROTECTIVE LIABILITY INSURANCE
THE CONTRACTOR SHALL FURNISH EVIDENCE TO THE HIGHWAY DEPARTMENT THAT, WITH RESPECT TO THE OPERATIONS HE OR ANY OF HIS SUBCONTRACTORS PERFORM, HE HAS PROVIDED FOR AND IN BEHALF OF THE RAILROAD COMPANY A RAILROAD PROTECTIVE LIABILITY POLICY OF INSURANCE PROVIDING A COMBINED SINGLE LIMIT FOR DAMAGES ARISING OUT OF BODILY INJURIES TO OR DEATH OF ONE OR MORE PERSONS AND OUT OF INJURY TO OR DESTRUCTION OF PROPERTY INCLUDING SUCH PROPERTY IN THE CARE, CUSTODY AND CONTROL OF THE RAILROAD COMPANY IN THE AMOUNT OF $2,000,000.00 PER OCCURRENCE AND SUBJECT TO THAT LIMIT PER OCCURRENCE, AN AGGREGATE LIMIT IN THE AMOUNT OF $6,000,000.00 FOR EACH ANNUAL PERIOD.

THE ABOVE RAILROAD PROTECTIVE LIABILITY POLICY OF INSURANCE SHALL CONFORM TO THE RAILROAD LIABILITY REQUIREMENTS PRESCRIBED BY THE FEDERAL HIGHWAY ADMINISTRATION IN FHPM: 6-6-2-2 AS AMENDED.

COOPERATION WITH RAILROADS
THE CONTRACTOR SHALL COOPERATE AT ALL TIMES WITH THE LOCAL OFFICIALS OF THE RAILROAD COMPANY. HE SHALL USE ALL REASONABLE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR INTERFERENCE WITH THE TRAINS OR OTHER PROPERTY OF THE RAILROAD. THE CONTRACTOR SHALL NOTIFY THE LOCAL OFFICIALS OF THE RAILROAD PRIOR TO STARTING WORK THAT MAY AFFECT RAILROAD PROPERTY AND FACILITIES AND SHALL PAY THE RAILROAD COMPANY THE COST OF FLAGMEN FURNISHED BY THE RAILROAD COMPANY AND MADE NECESSARY BECAUSE OF ANY OF THE CONTRACTORS OPERATIONS OVER OR ADJACENT TO THE TRACKS.

NO SCAFFOLD, PLANKS OR OTHER EQUIPMENT SHALL BE SUSPENDED OR ERECTED ABOVE OR WITHIN 10 FEET OF A RAIL OVER WHICH TRAINS ARE OPERATING WITHOUT PRIOR WRITTEN APPROVAL OF THE CHIEF ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE OF THE RAILROAD COMPANY.

FAILURE TO NOTIFY THE RAILROAD COMPANY AS NOTED ABOVE SHALL BE CAUSE FOR STOPPING WORK UNTIL ALL PROVISIONS FOR PROTECTING RAILROAD PROPERTY HAS BEEN APPROVED.

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

2 / 25

GENERAL NOTES

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

11-24-93 [D:\83592C\GNOTE1-C] RJE
9:41AM

UTILITIES NOTIFICATION
AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

THE OWNER OF THE UNDERGROUND UTILITY FACILITY SHALL, WITHIN 48 HOURS AFTER NOTICE IS RECEIVED, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING LOCATION SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

UTILITY OWNERSHIP
RAILROAD AERIAL LINES WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

CONCRETE DECK
THE FINAL SURFACE OF THE ROADWAY SHALL CONFORM AS NEARLY AS PRACTICABLE TO THE ELEVATIONS SHOWN IN THE PLANS.

CONSTRUCTION OF THE NEW DECK SHALL BE IN ACCORDANCE WITH THESE PLANS AND SHALL INCORPORATE THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL SUBMIT A PROPOSED DECK PLACEMENT SEQUENCE TO THE ENGINEER FOR APPROVAL.

CHAMFERS
EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 1" BY 1" EXCEPT AS NOTED OTHERWISE.

WELDED ATTACHMENTS
WELDING ON FLANGES DESIGNATED "TENSION" IS STRICTLY PROHIBITED. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE IS PROHIBITED.

PILES
PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 30 TONS PER PILE FOR THE REAR ABUTMENT PILES AND 85 TONS PER PILE FOR THE FORWARD ABUTMENT PILES. THE DESIGN LOAD IS 35 TONS PER PILE FOR THE PIER 1 PILES.

MAINTENANCE OF TRAFFIC:
BRIDGE WORK SHALL BE COORDINATED WITH DISTRICT 3 ROADWAY WORK AND MAINTENANCE OF TRAFFIC REQUIREMENTS AND ALTERNATE BRIDGE CLOSURES DURING CONSTRUCTION.

CONSTRUCTION CLEARANCE
A CONSTRUCTION CLEARANCE OF 14 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 23 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 6 FEET FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

AT & T COMMUNICATIONS
15821 COUNTY RD 15
BLUFFTON, OH 45817
(419) 859-2196

WILTEL
1468 W. 9TH ST.
SUITE 100
CLEVELAND OH, 44113
PHONE (216) 579-1010

OHIO EDISON COMPANY
237 WEST WASHINGTON
SANDUSKY OH, 44870
PHONE (419) 625-7490
1-800-686-3344 (ENGINEERING DEPT.)

ITEM SPECIAL - HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK)
MIX#4 SHALL BE USED.

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

3 / 25

GENERAL NOTES

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

5

11-24-93 [O:\83592C\GNOTE2-C] RJE
4:42PM

CALC. BY. SWR DATE. 2/24/94

ESTIMATED QUANTITIES

CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	LOR-2-0459L PIERS	LOR-2-0459L SUPER.	LOR-2-0459L ABUTS	LOR-2-0459L GEN'L	LOR-2-0459R PIERS	LOR-2-0459R SUPER.	LOR-2-0459R ABUTS	LOR-2-0459R GEN'L
202	11301	729	CU. YD.	PORTIONS OF STRUCTURE REMOVED, DECK AND PARAPET, AS PER PLAN (SEE SHT. 147)		367				362		
202	11301	80	CU. YD.	PORTIONS OF STRUCTURE REMOVED (ABUTMENTS), AS PER PLAN (SEE SHT. 144)			39				41	
202	11400	10042	POUND	PORTIONS OF STRUCTURE REMOVED, STRUCTURAL STEEL		5021				5021		
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION								
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	LUMP				LUMP			
507	11100	614	LIN.FT.	STEEL PILES HP 10X42	124		181		124		185	
509	15840	212547	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	9070	91471	5108	200	10147	90822	5529	200
510	11101	244	EACH	DOWEL HOLE, AS PER PLAN (SEE SHT. 144)	82		30		98		34	
SPECIAL	51148000	721	CU. YD.	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK) (MIX #4) (SEE PROPOSAL NOTE)		361				361		
SPECIAL	51148020	118	CU. YD.	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPETS) (SEE PROPOSAL NOTE)		59				59		
SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE TESTING (SEE PROPOSAL NOTE)				LUMP				LUMP
SPECIAL	51149000	LUMP		HIGH PERFORMANCE TRIAL MIX (SEE PROPOSAL NOTE)				LUMP				LUMP
SPECIAL	85050070	2688	SQ. YD.	BRIDGE DECK GROOVING (SEE PROPOSAL NOTE)		1344				1344		
511	40501	131	CU.YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS (WALLS), AS PER PLAN (SEE SHT. 145)	63				68			
511	41001	40	CU.YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS (CAP & COLUMN), AS PER PLAN (SEE SHT. 145)	17				23			
511	44101	109	CU.YD.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN (SEE SHT. 145)			51				58	
511	46501	131	CU.YD.	CLASS C CONCRETE, FOOTING, AS PER PLAN (SEE SHT. 145)	53		12		54		12	
512	44400	15	SQ.YD.	TYPE B WATERPROOFING			7				8	
SPECIAL	51267510	1561	SQ.YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SEE PROPOSAL NOTE)	179	620	98		162	610	96	
SPECIAL	51273000	133	SQ.YD.	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN (SEE PROPOSAL NOTE)		67				66		
513	11100	114770	POUND	STRUCTURAL STEEL, AISC CATEGORY I (SEE PROPOSAL NOTE)		57782				56988		
513	15900	965	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES		579				386		
513	16590	15260	POUND	STRUCTURAL STEEL, MISC. (COVER PLATES, NEW)		7630				7630		
513	16590	17744	POUND	STRUCTURAL STEEL, MISC. (INTERMEDIATE CROSS FRAMES, NEW)		8872				8872		
513	16590	508	POUND	STRUCTURAL STEEL, MISC. (END CROSS FRAMES, NEW)		254				254		
513	20000	6732	EACH	WELDED STUD SHEAR CONNECTOR		3420				3312		
SPECIAL	51400050	32345	SQ.FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)		16285				16060		
SPECIAL	51400056	32345	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)		16285				16060		
SPECIAL	51400060	32345	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)		16285				16060		
SPECIAL	51400066	32345	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)		16285				16060		
514	00620	6469	SQ.FT.	PAINTING OF NEW STEEL, SYSTEM IZEU (SEE PROPOSAL NOTE) FIELD		3257				3212		
516	11211	206	LIN.FT.	STRUCT'L. EXPAN. JT. INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN (SEE PROPOSAL NOTE)		103				103		
516	44101	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2.38" X 7.5" X 12" LAMINATED ELASTOMERIC PAD WITH 2" X 8.5" X 13.5" STEEL LOAD PLATE), AS PER PLAN			12				12	
516	44101	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2.36" X 11" X 18" LAMINATED ELASTOMERIC PAD WITH 2" X 12" X 19" STEEL LOAD PLATE), AS PER PLAN	12				12			
516	44101	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2.08" X 10" X 19" LAMINATED ELASTOMERIC PAD WITH 2" X 11" X 25" STEEL LOAD PLATE), AS PER PLAN	6				6			
516	47000	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE (SEE PROPOSAL NOTE)								
518	21201	135	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN (SEE SHT. 145)			67				68	
518	40001	291	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN (SEE SHT. 145)			146				145	
518	40011	95	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN (SEE SHT. 145)			46				49	
519	11101	21	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SEE SHT. 145)			5				16	

Revised 12-8-94

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

4 / 25

ESTIMATED QUANTITIES

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

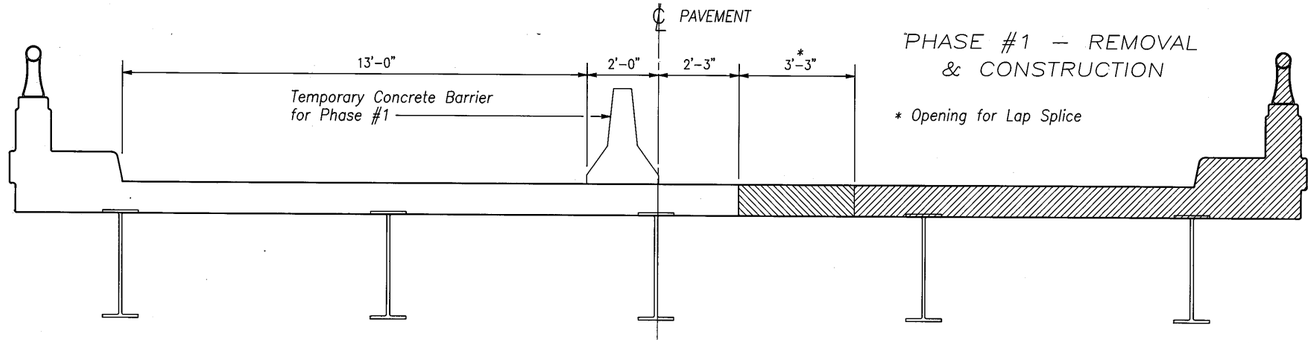
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	CCC	——	CDW	ART	2/24/94	

09-03-93 [O:\83592C\ESTQ-C] SWR
8:34AM

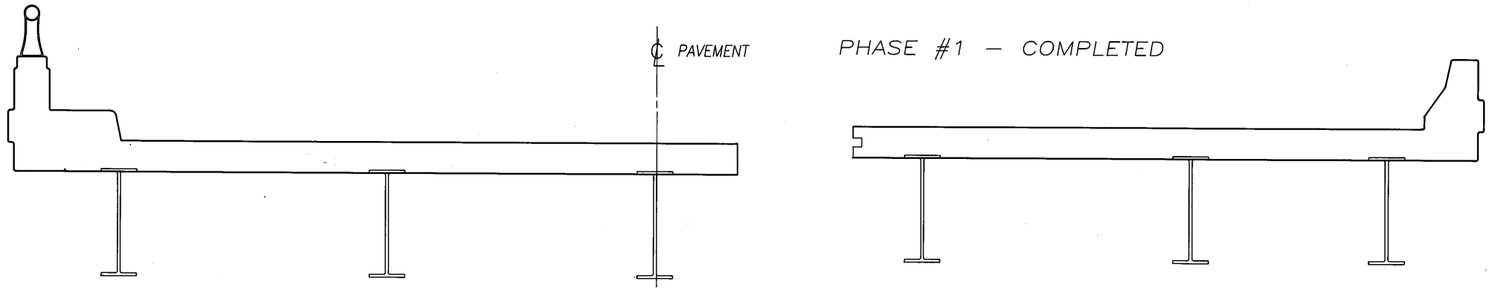
DECK CONSTRUCTION

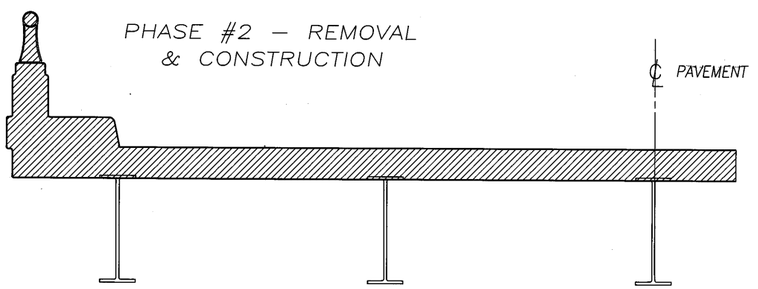
LOR-2-3.48 | OHIO | FHWA REGION 5 | 150/222

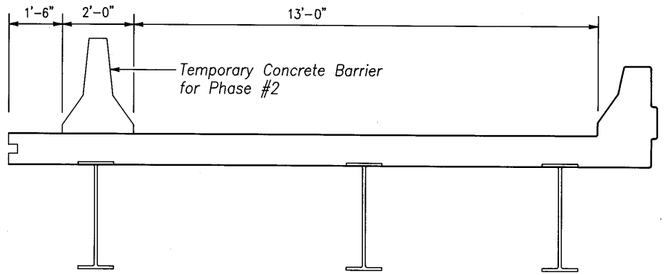
NOTE: – See sheet 6/25 for deck removal procedures.



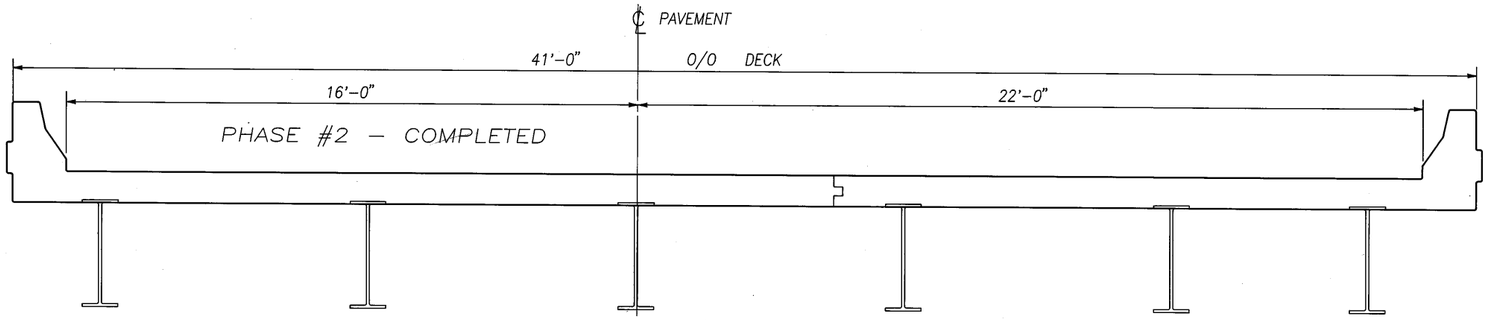
PHASE 1 – Remove existing deck, construct new deck, maintain one-way traffic on existing deck.







PHASE 2 – Remove remainder of existing deck, construct new deck, maintain one-way traffic on completed deck from Phase 1.



RIGHT BRIDGE SHOWN

(LEFT BRIDGE OPPOSITE HAND)

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

5/25

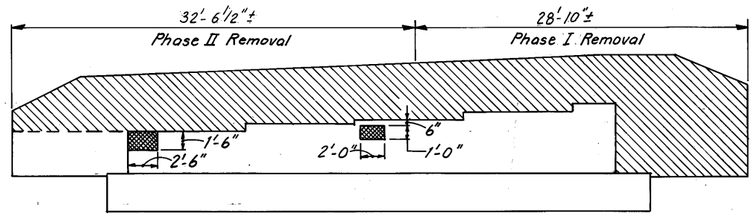
PHASE CONSTRUCTION FOR DECK

BRIDGE NO. LOR-2-0459 L/R
OVER RAILROAD AND CROSSE ROAD

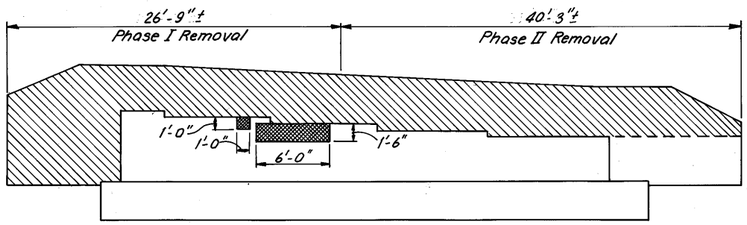
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

7

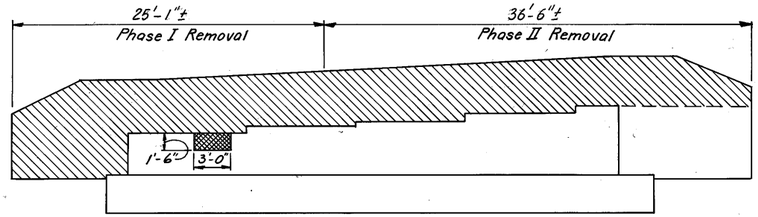
08-30-93 [O:\83592C\DECK_STG] THC
4:39PM



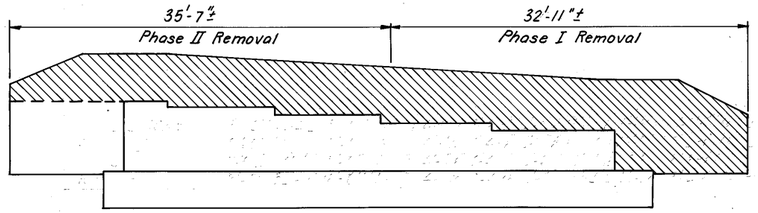
FORWARD ABUTMENT RIGHT BRIDGE



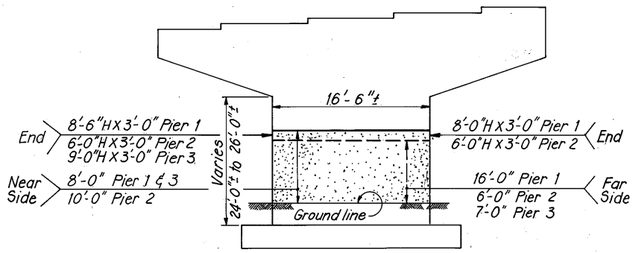
REAR ABUTMENT RIGHT BRIDGE



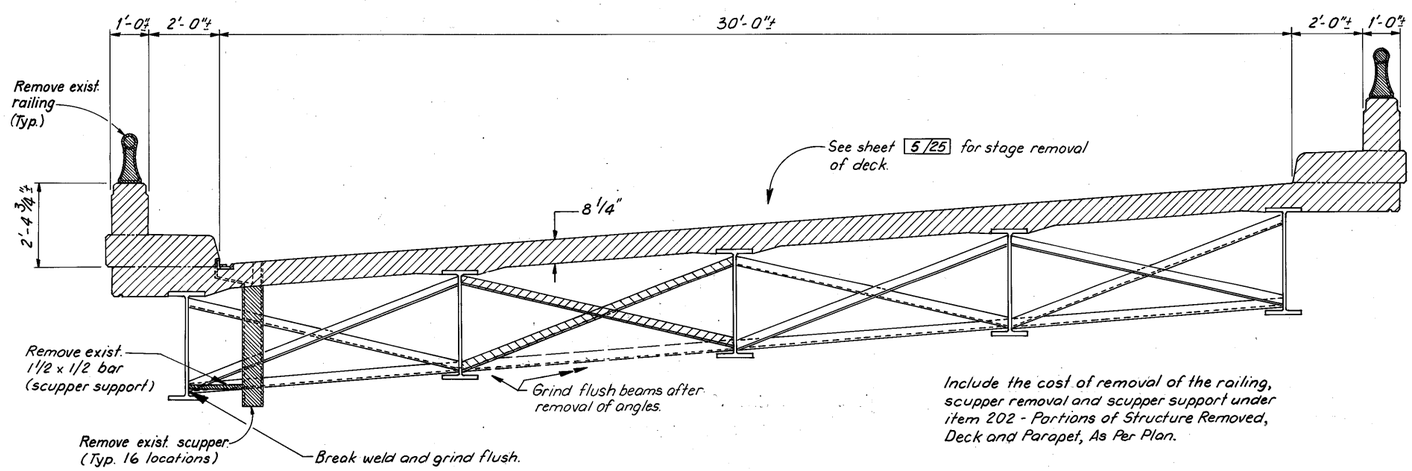
FORWARD ABUTMENT LEFT BRIDGE



REAR ABUTMENT LEFT BRIDGE

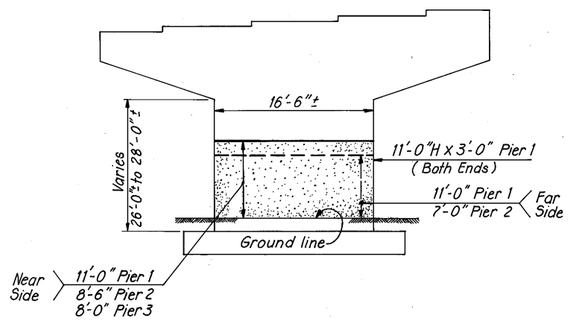


PIER ELEVATION (WEST)
LEFT BRIDGE



Include the cost of removal of the railing, scupper removal and scupper support under item 202 - Portions of Structure Removed, Deck and Parapet, As Per Plan.

TRANSVERSE SECTION
(LEFT BRIDGE SHOWN - RIGHT BRIDGE OPPOSITE HAND)



PIER ELEVATION (WEST)
RIGHT BRIDGE

Notes:
1. For general notes see sheet 2/25 and 3/25.

LEGEND:
- Hatched area indicates limit of removal.
- Cross-hatched area indicates concrete repair.
- Graffiti to be covered with epoxy-urethane sealer

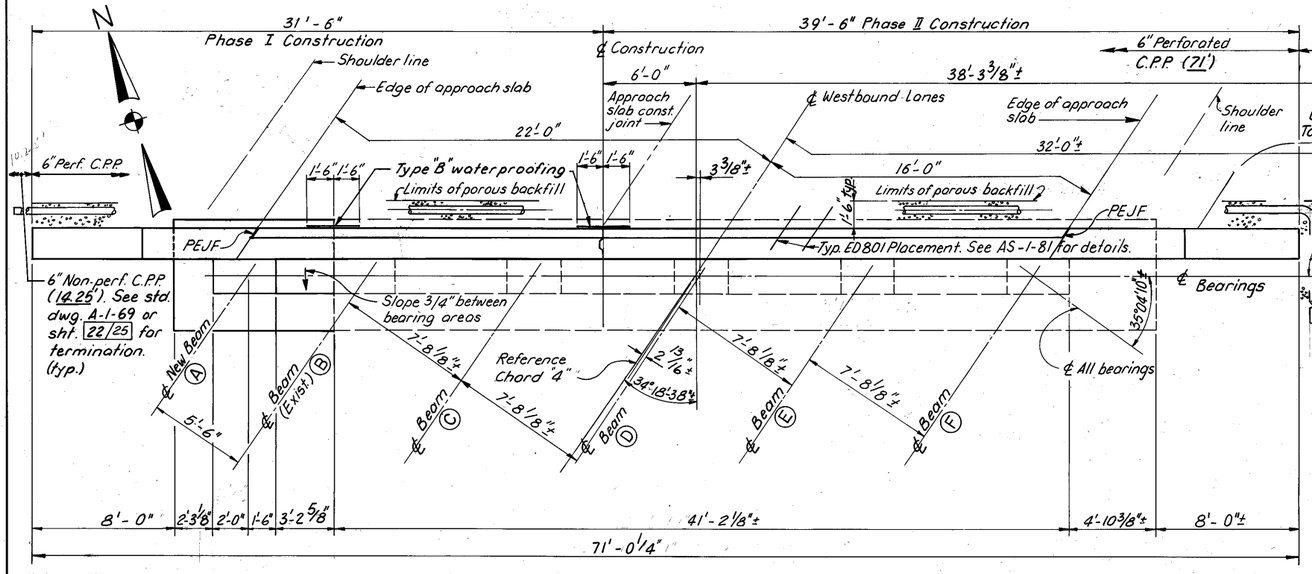
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

6/25

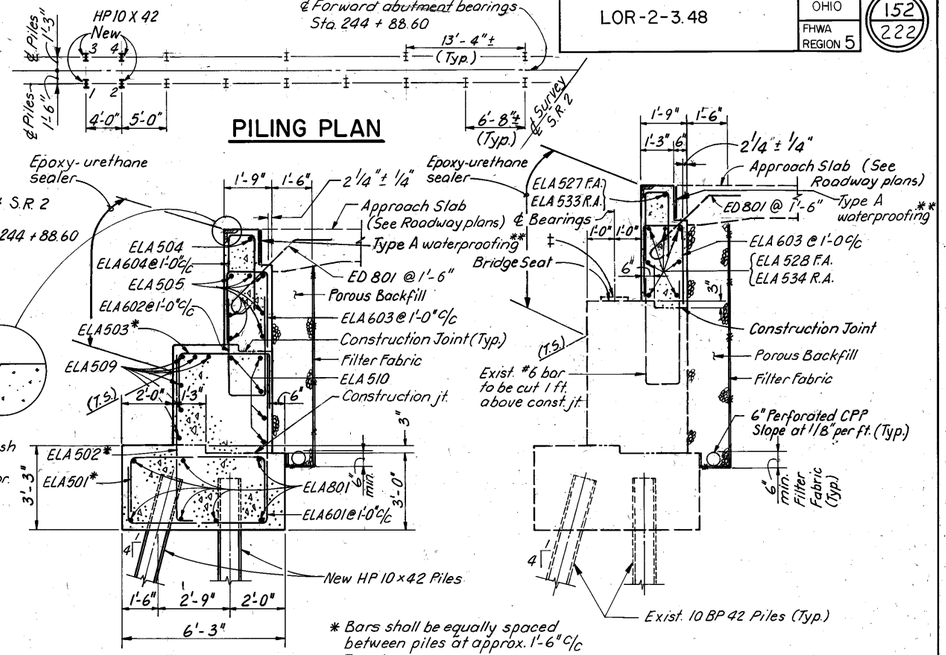
REMOVAL & REPAIR

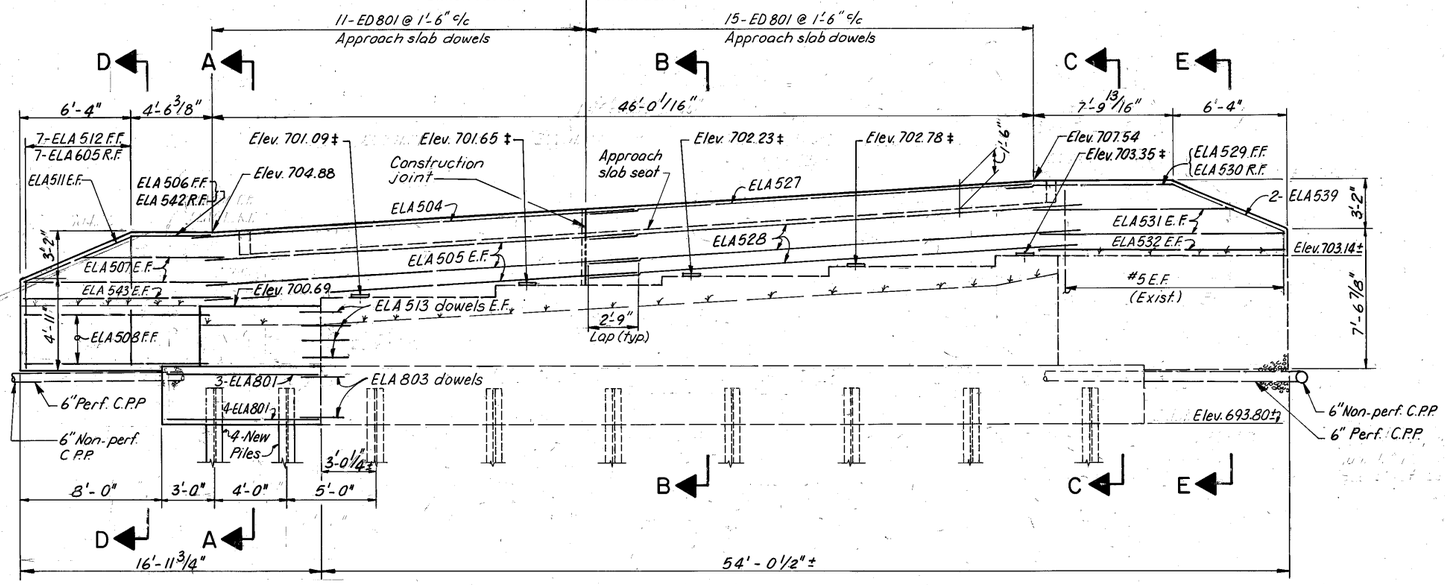
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	CCC	—	CDW	ART	2/25/94	



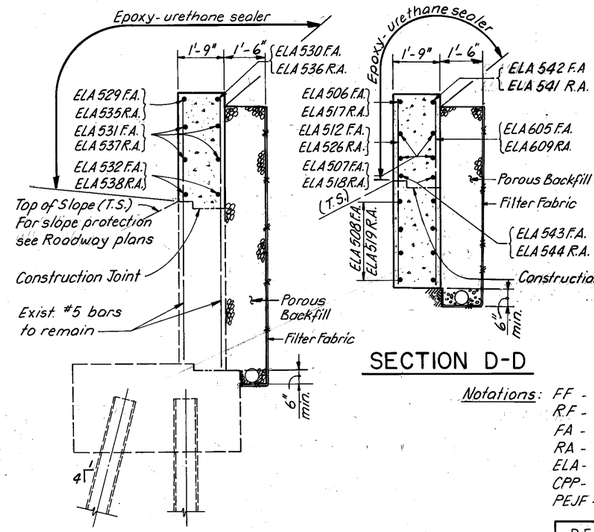
PLAN





ELEVATION

‡ Elevation shown is to top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516. See Detail "I" sht. 22/25 for shim detail.



Notations: FF - Front Face EF - Each Face
RF - Rear Face
FA - Forward Abutment
RA - Rear Abutment
ELA - Epoxy Left Abutment
CPP - Corrugated Plastic Pipe
PEJF - Preformed Expansion Joint Filler

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

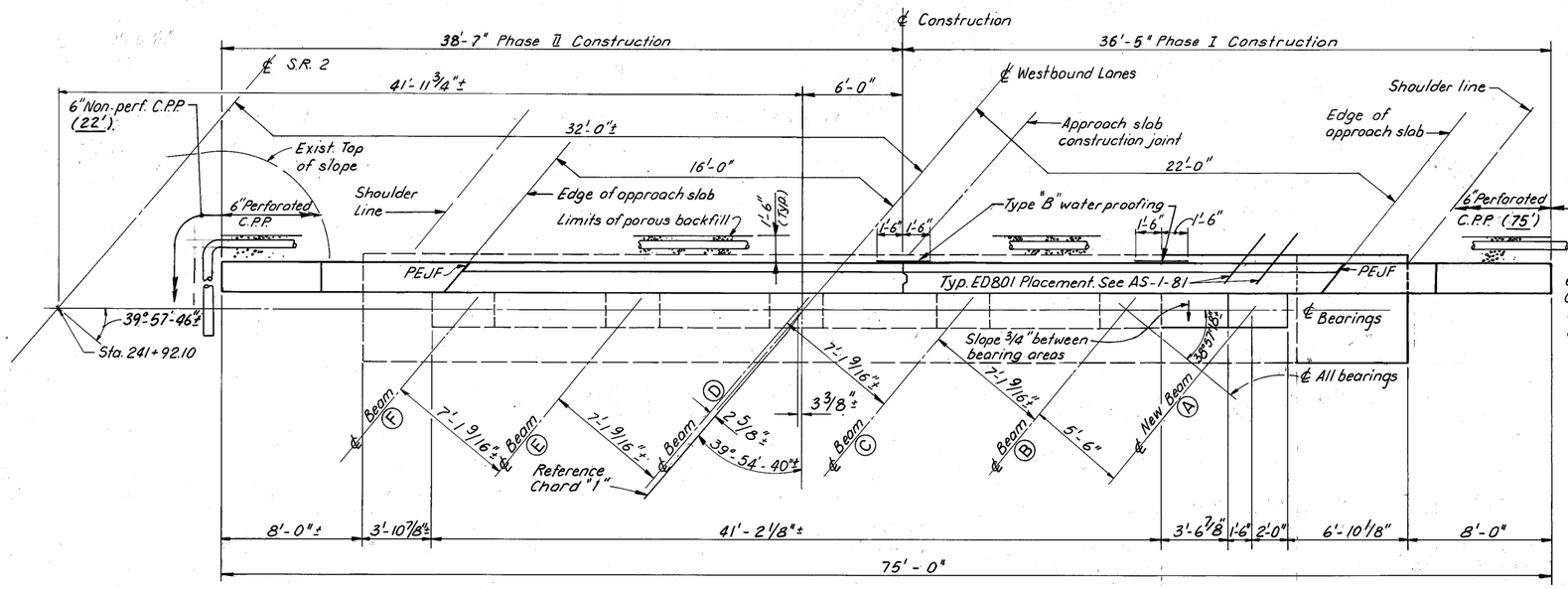
7/25

FORWARD ABUTMENT
LEFT BRIDGE

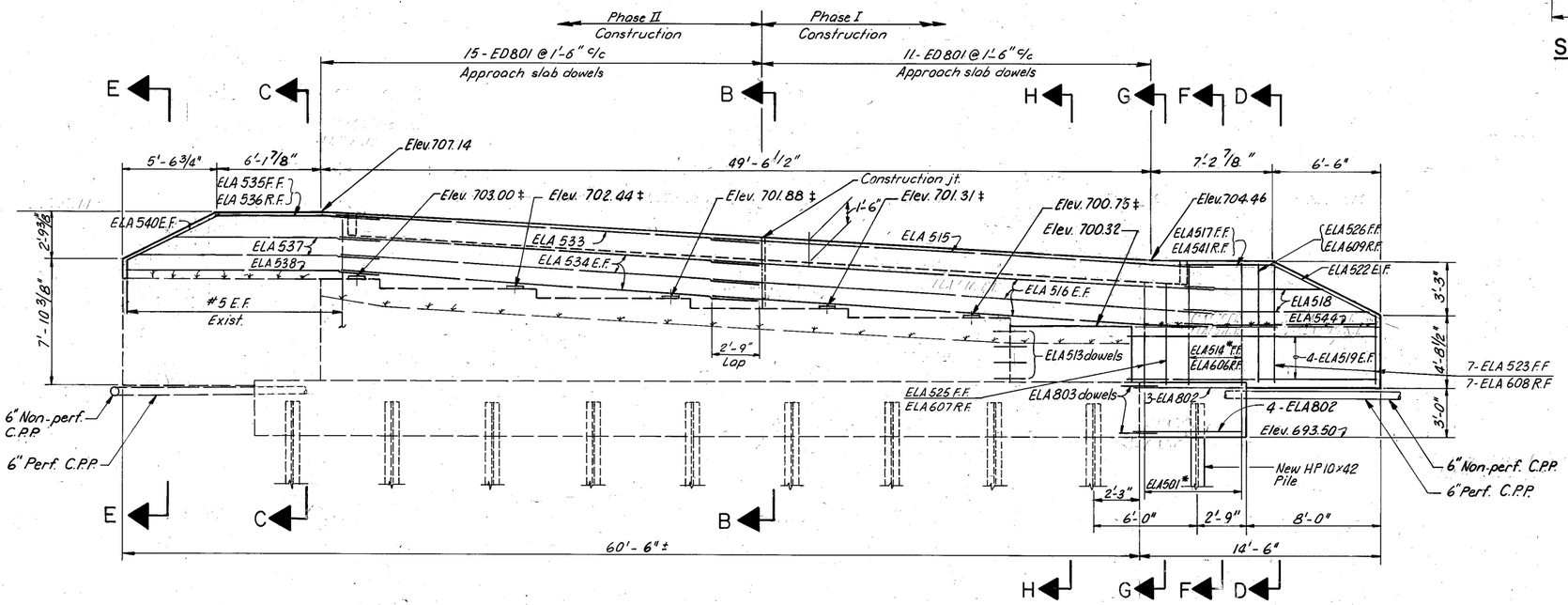
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	

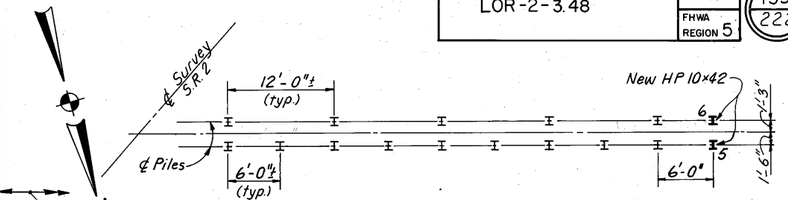
9



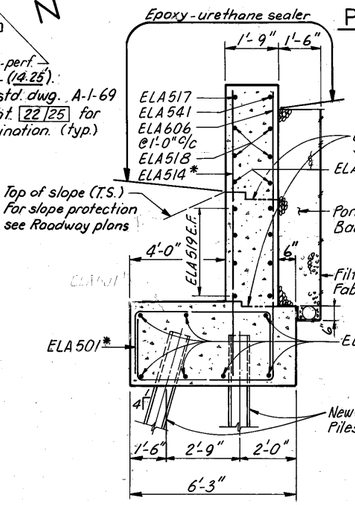
PLAN



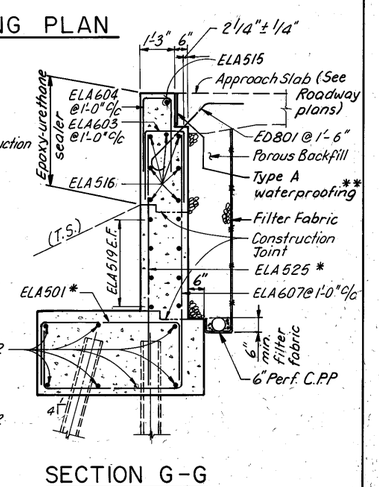
ELEVATION



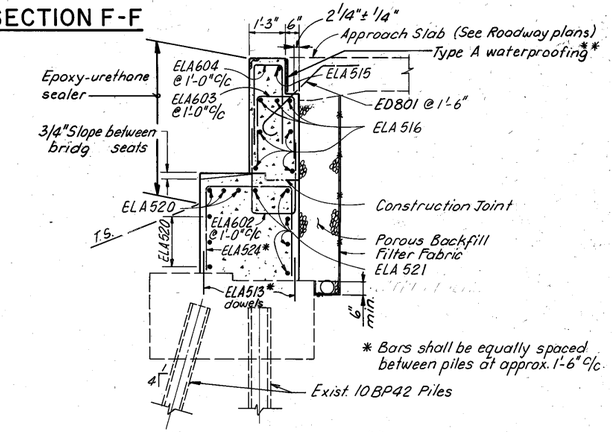
PILING PLAN



SECTION G-G



SECTION F-F



* Bars shall be equally spaced between piles at approx. 1'-6" ℄/c.

SECTION H-H

** Type A waterproofing to be included with approach slab for payment.

See Sheet 7/25 for Sections B-B, C-C, D-D & E-E.

‡ Elevation shown is top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516. See Detail "1" sht. 22/25 for shim detail.

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

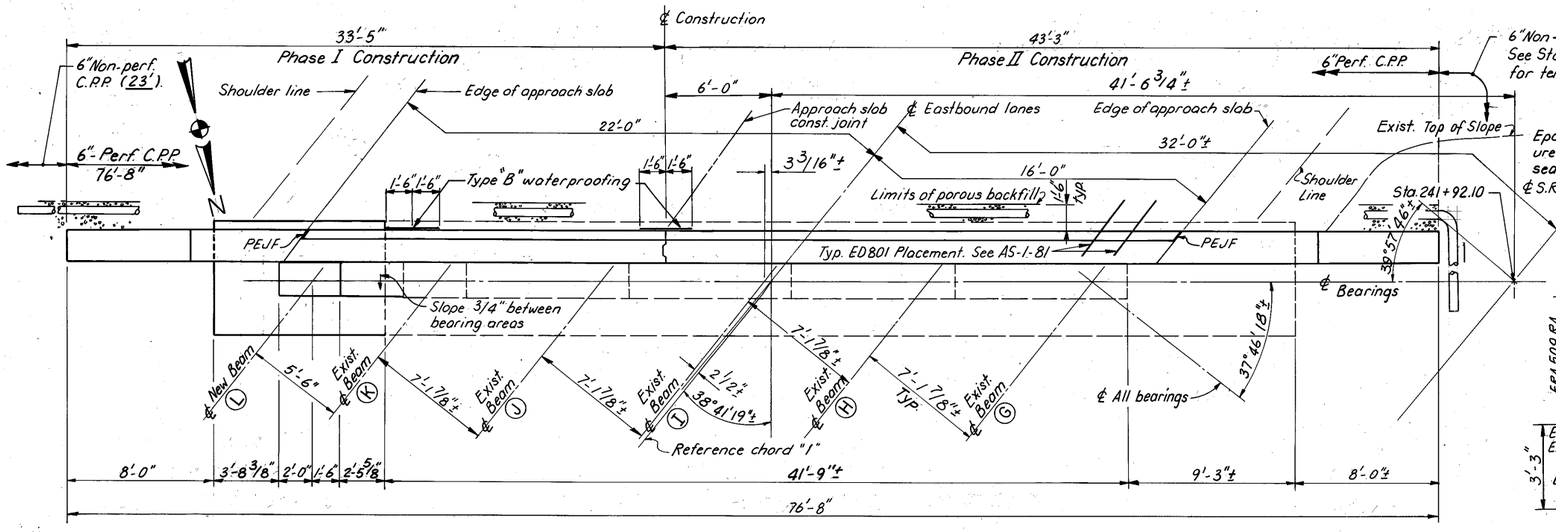
8/25

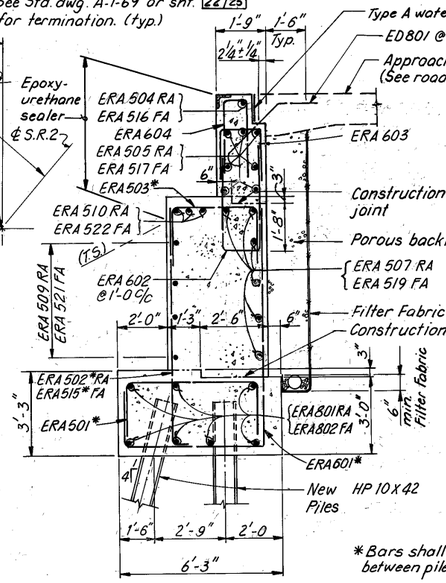
REAR ABUTMENT
LEFT BRIDGE

BRIDGE NO LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	

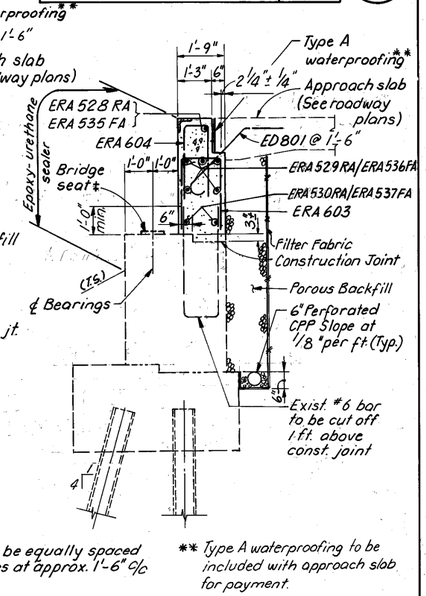
LOR-2-3.48 | OHIO | FHWA REGION 5 | 154 / 222





* Bars shall be equally spaced between piles at approx. 1'-6" c/c

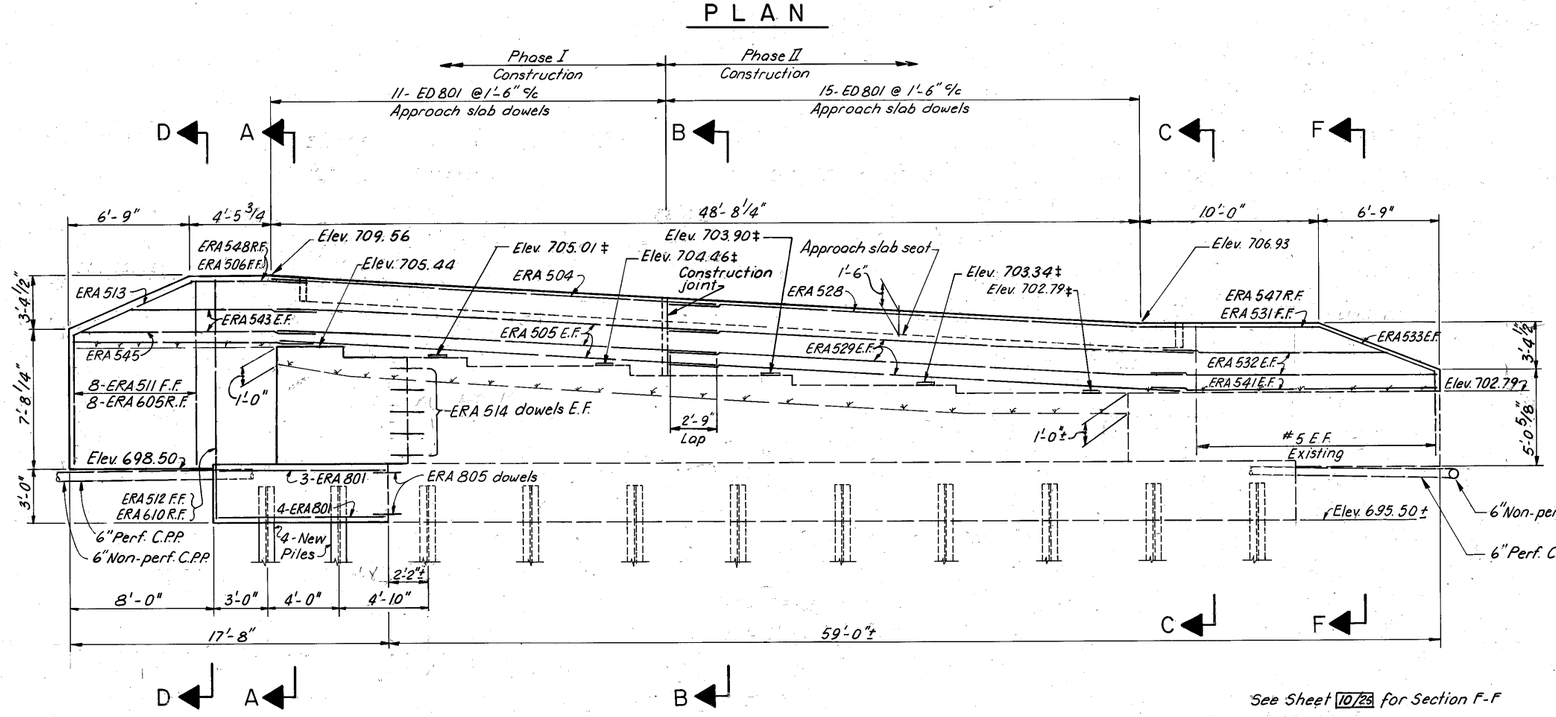
SECTION A-A



** Type A waterproofing to be included with approach slab for payment.

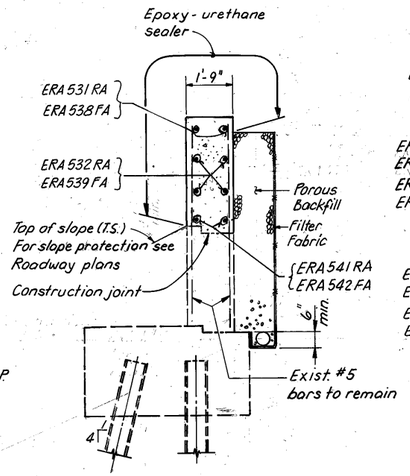
SECTION B-B

PLAN

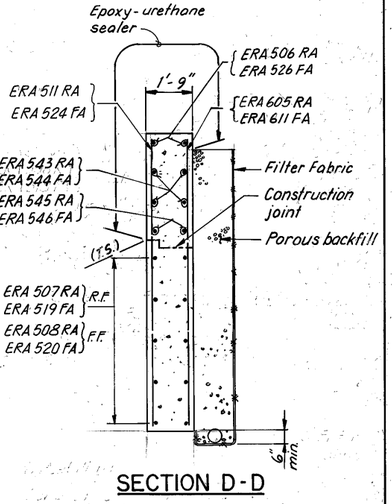


ELEVATION

‡ Elevation shown is to top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516. See Detail "1" sht. 22/25 for shim detail.



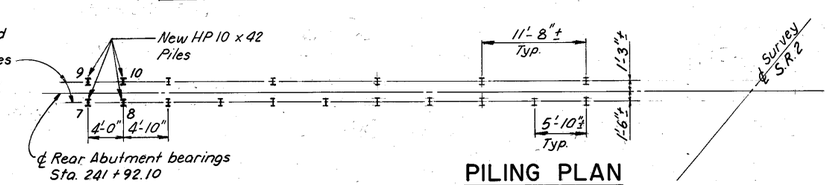
SECTION C-C



SECTION D-D

Note: For abutment notes see sheet 10/25.

See Sheet 10/25 for Section F-F



PILING PLAN

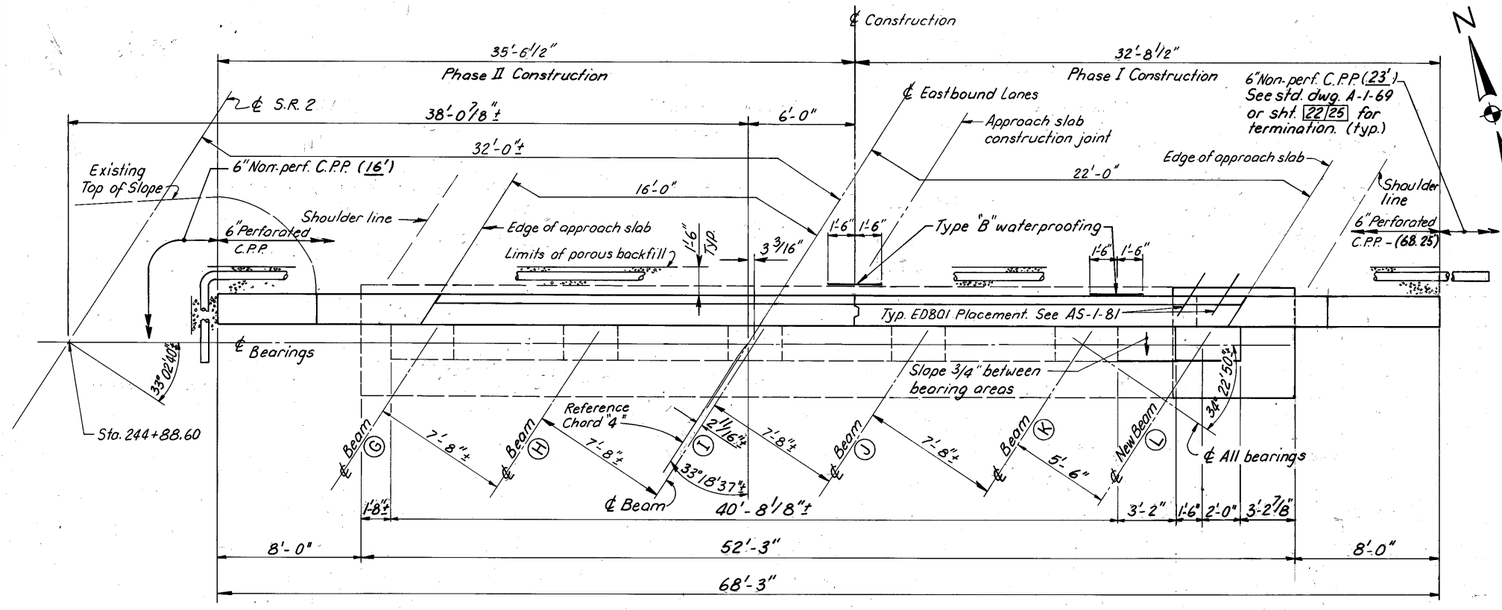
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

9/25

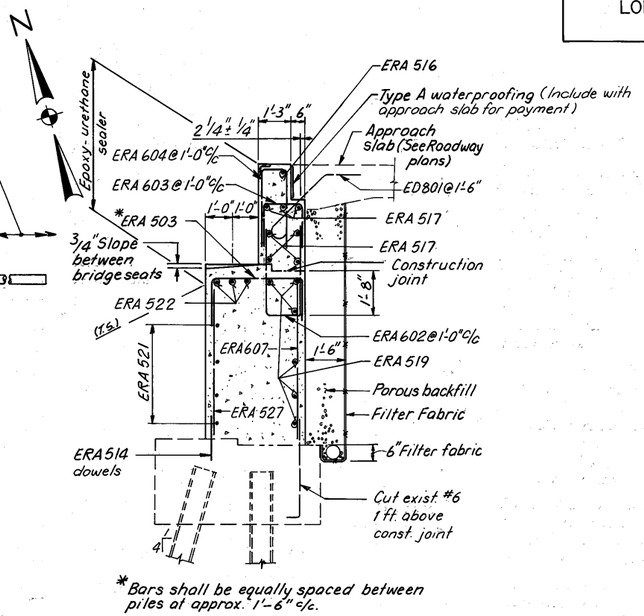
REAR ABUTMENT
RIGHT BRIDGE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	

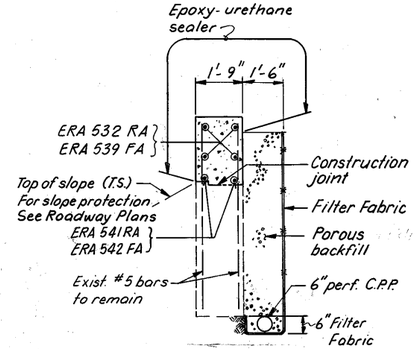


PLAN



*Bars shall be equally spaced between piles at approx. 1'-6" c/c.

SECTION E-E



SECTION F-F

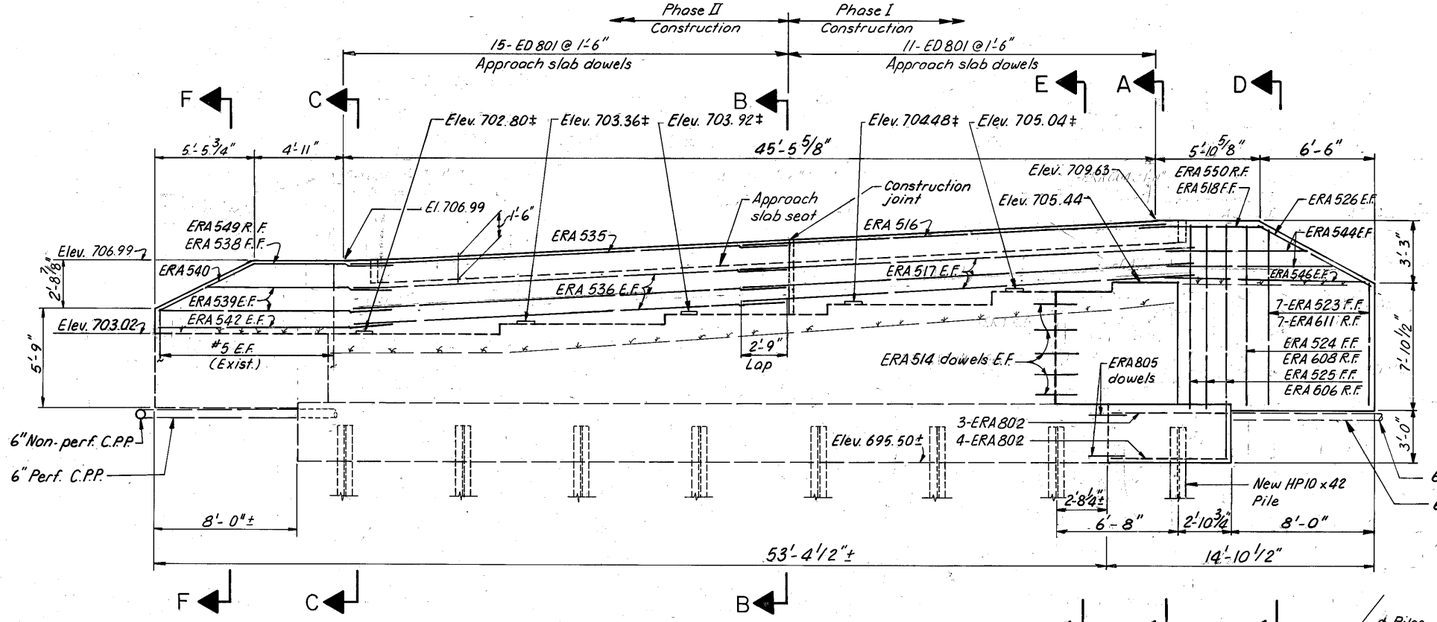
EXISTING VERTICAL BARS:
All existing vertical bars in the backwall are to remain in place. These bars are to be utilized as per plan.

NOTATION: R.F. - Rear Face; F.F. - Front Face; E.F. - Each Face; R.A. - Rear Abutment; F.A. - Forward Abutment

NOTES:
1. Field bend ends of bars to fit joint configuration. Bending to be included in item 509 for payment. Epoxy coated bars damaged by field bending shall be repaired as per manufacturer's recommendations.
2. Epoxy bonding compound (item 509) shall be placed on the surface areas of existing concrete which will be in contact with new concrete. Price included in the contract bid price for the pertinent concrete items.

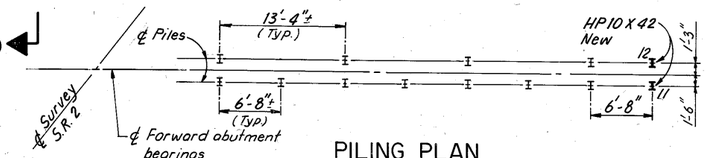
See Sheet 9/25 for Sections A-A, B-B, C-C & D-D

For Bearing Details see sheet 22/25.



ELEVATION

‡ Elevation shown is to top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516. See Detail "1" sht. 22/25 for shim detail.



PILING PLAN

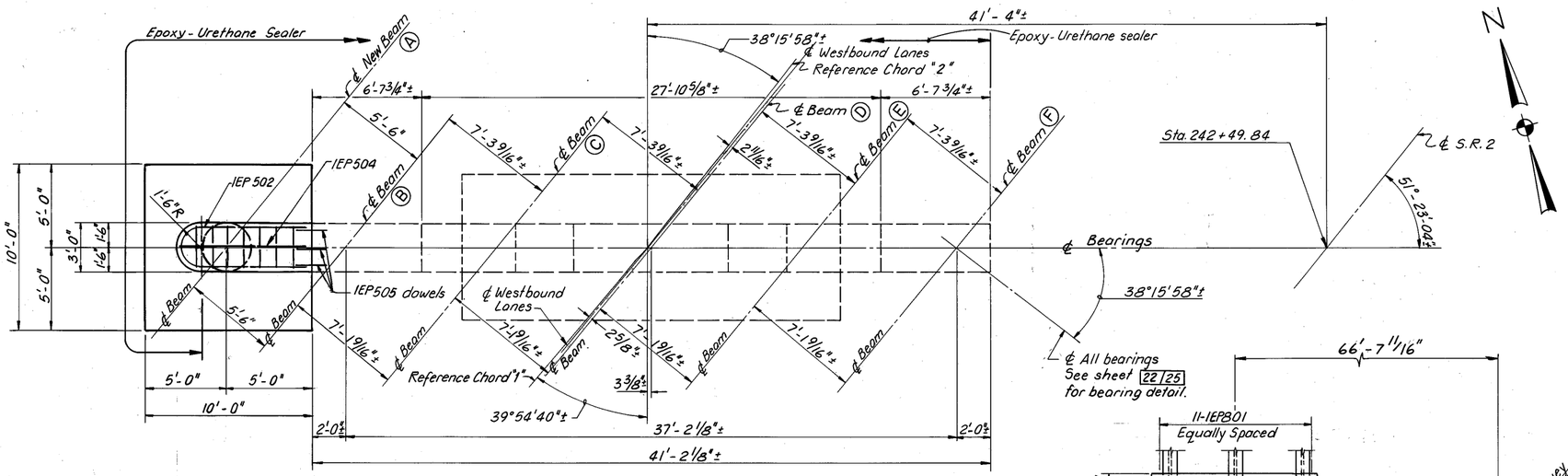
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

10/25

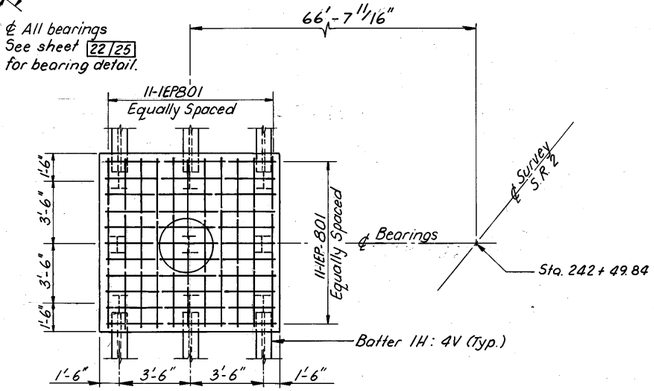
FORWARD ABUTMENT
RIGHT BRIDGE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

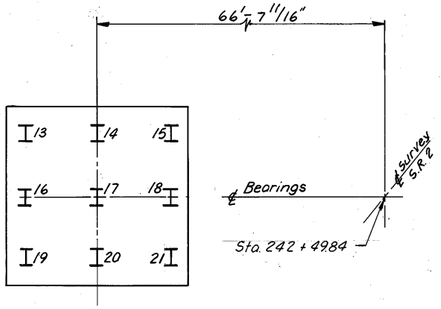
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	——	CDW	ART	2/25/94	

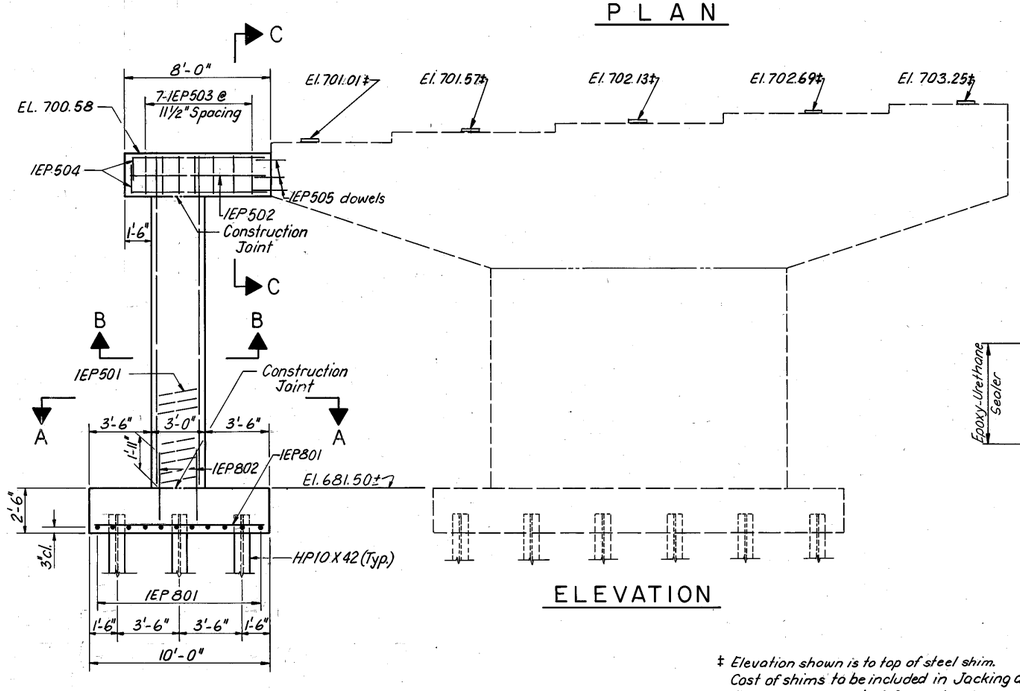


PLAN



FOUNDATION PLAN A-A





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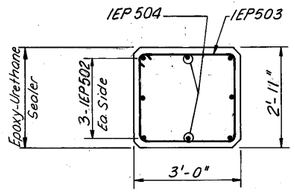
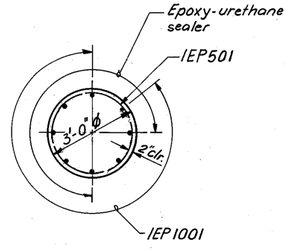


SECTION C-C

‡ Elevation shown is to top of steel shim.
Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516.
See Detail "1" sht. 22/25 for shim detail.



SECTION B-B

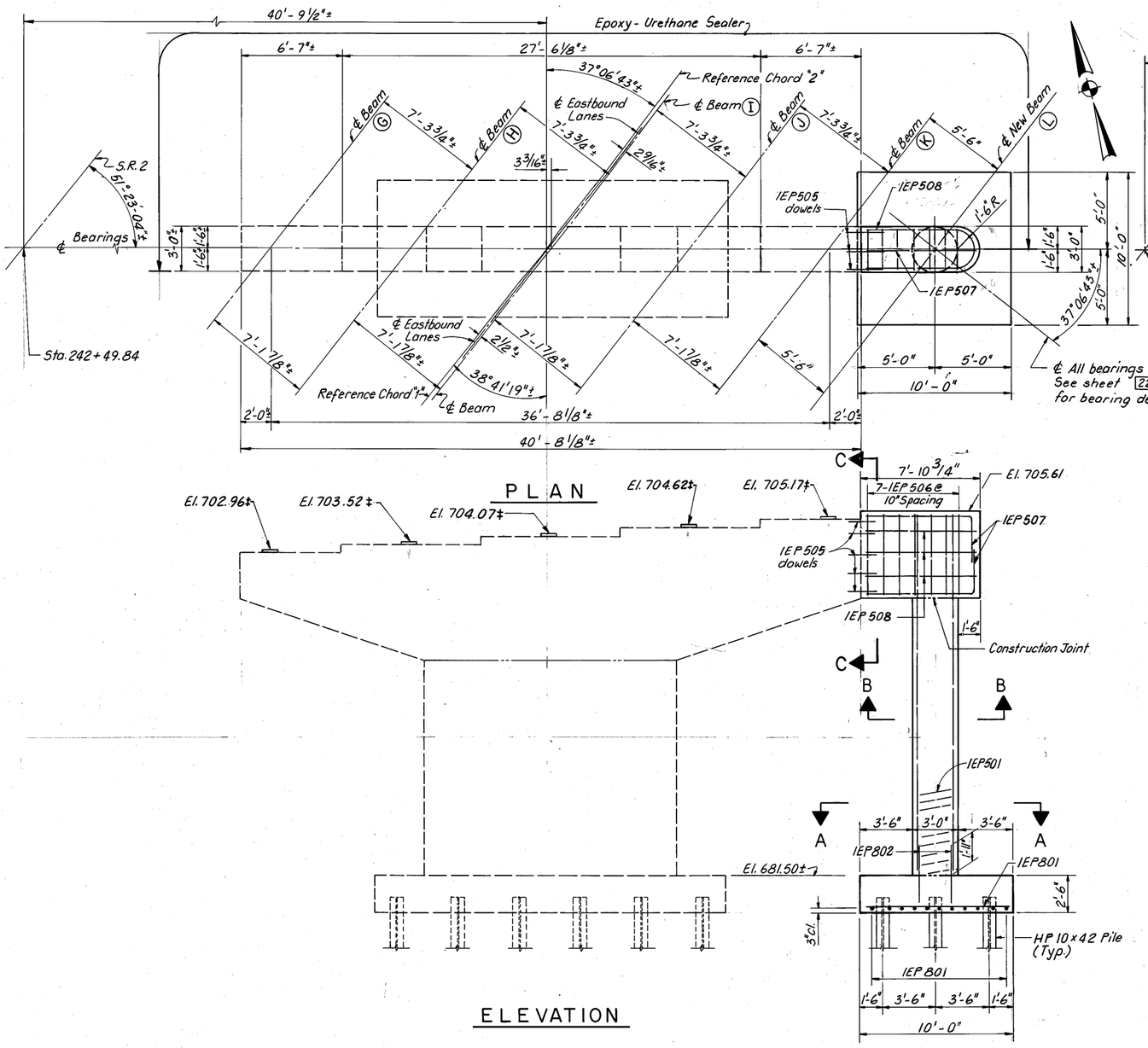
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

11/25

PIER 1
LEFT BRIDGE

BRIDGE NO. LOR-2-0459 L/R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/25/94	

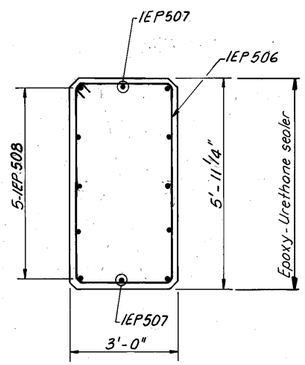


FOUNDATION PLAN A-A

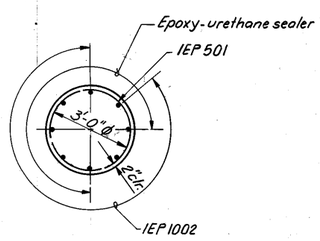
PLAN

ELEVATION

‡ Elevation shown is to top of steel shim. Cost of shims to included in Jacking and Temporary support of Superstructure Item 516. See Detail "I" sht. 22/25 for shim detail.



SECTION C-C



SECTION B-B

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

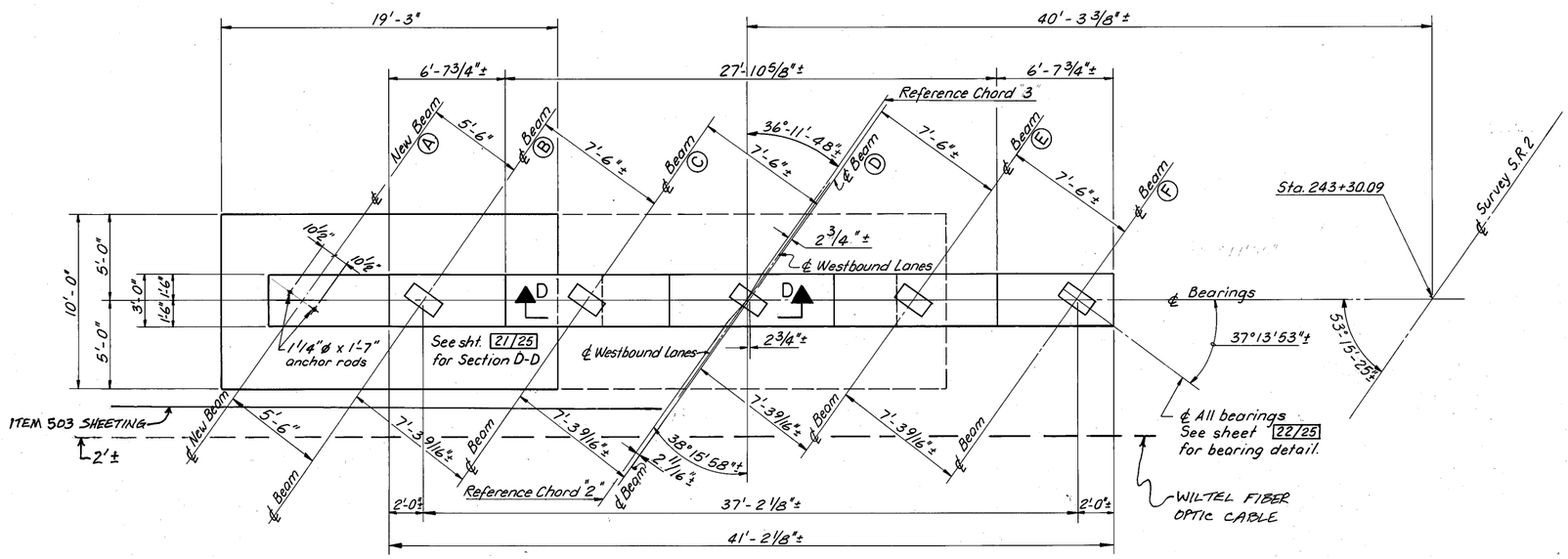
12/25

PIER 1
RIGHT BRIDGE

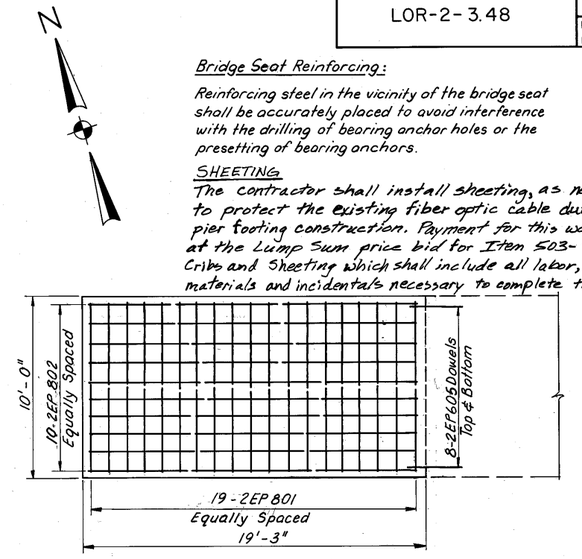
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/25/94	

12
14



PLAN



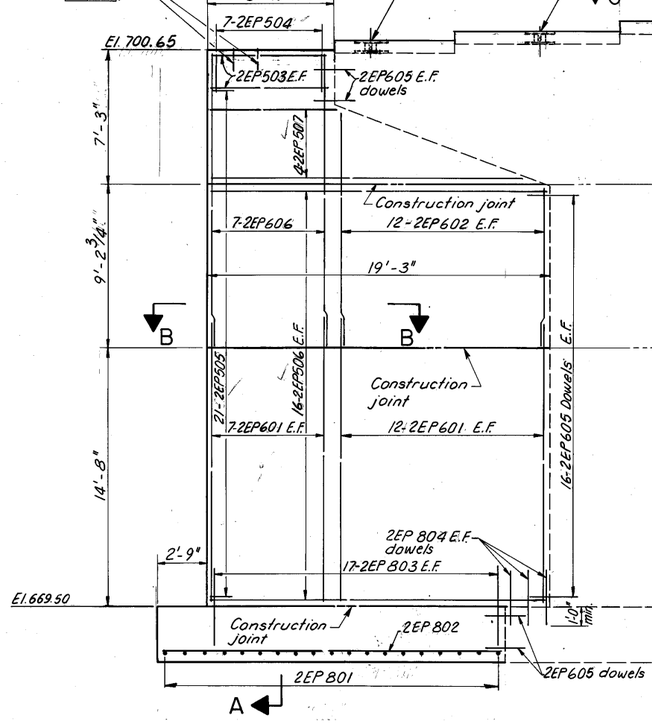
FOUNDATION PLAN

Bridge Seat Reinforcing:

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 presetting of bearing anchors.

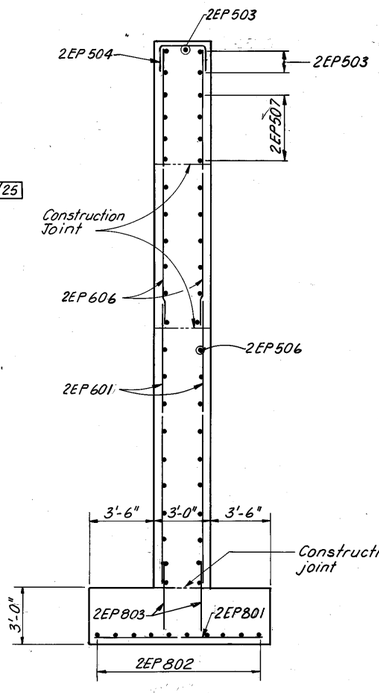
SHEETING

The contractor shall install sheeting, as necessary, to protect the existing fiber optic cable during proposed pier footing construction. Payment for this work shall be at the Lump Sum price bid for Item 503- Cofferdams, Cribs and Sheeting which shall include all labor, equipment and materials and incidentals necessary to complete this work.

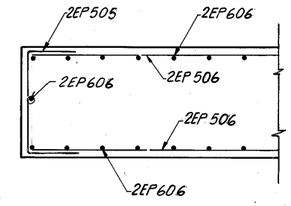


ELEVATION

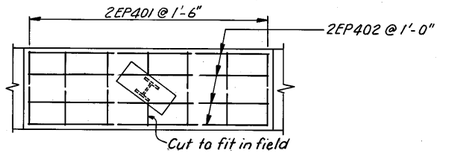
Note: See Detail "2" sht. 22/25 for pedestal detail.



SECTION A-A



SECTION B-B



SECTION C-C

Revised 12-8-94

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

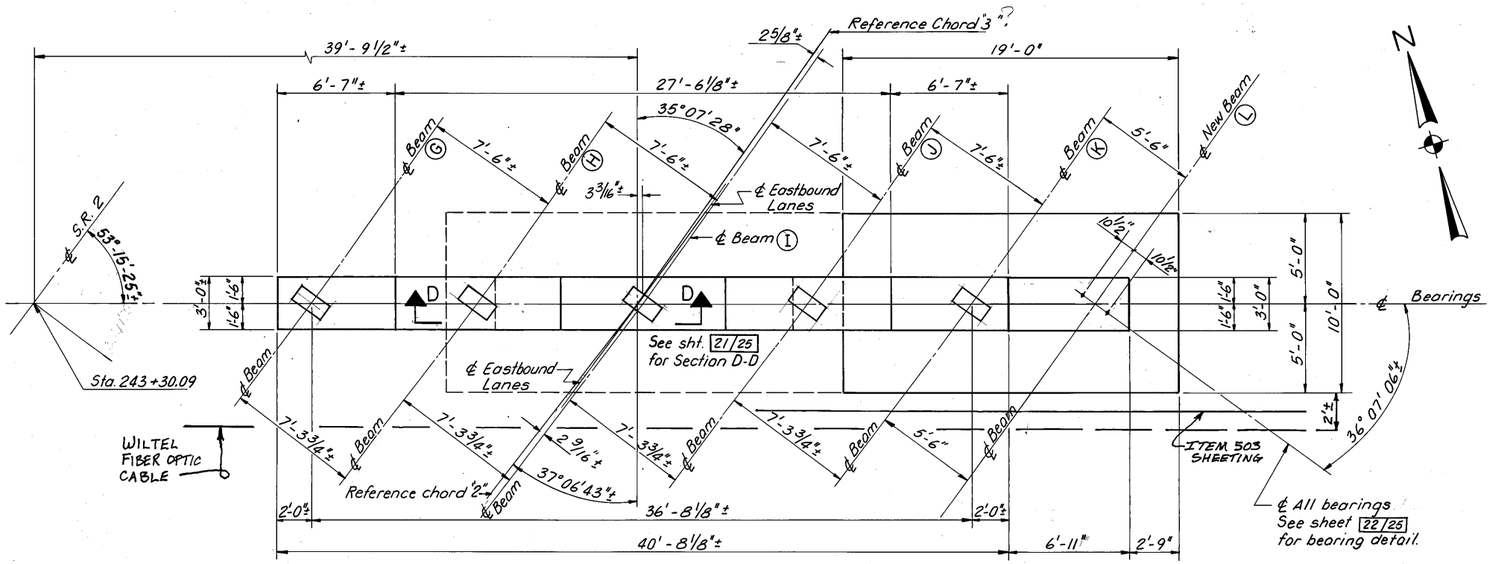
13/25

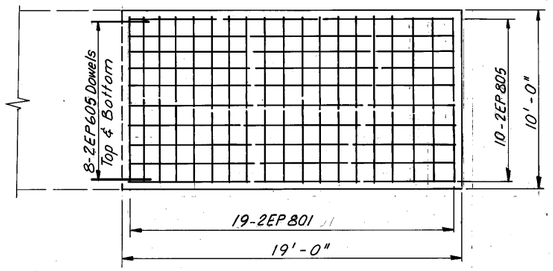
PIER 2
LEFT BRIDGE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/25/94	

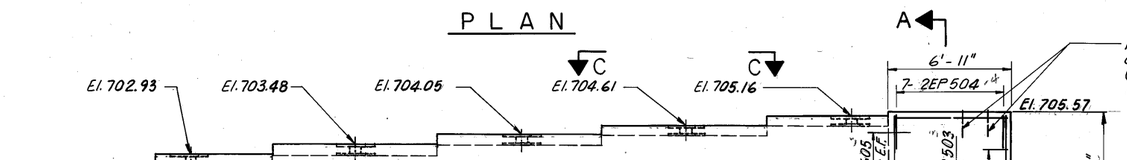
SHEETING: The contractor shall install sheeting, as necessary, to protect the existing fiber optic cable during proposed pier footing construction. Payment for this work shall be at the Lump Sum price bid for Item 503-Cofferdams, Cribs and Sheeting which shall include all labor, equipment and materials and incidentals necessary to complete this work.



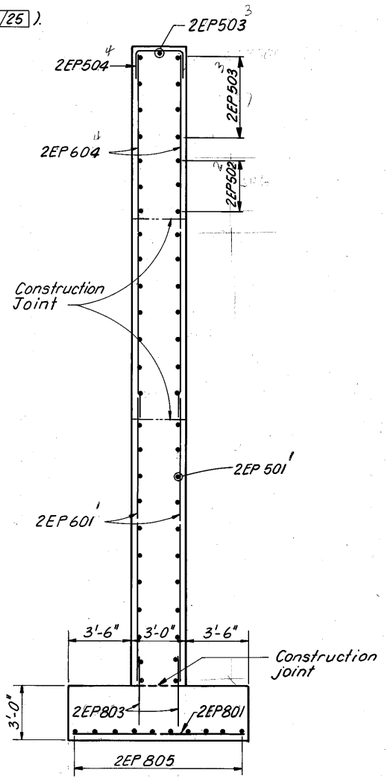


FOUNDATION PLAN

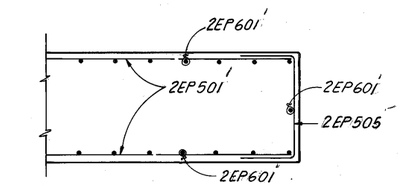
PLAN



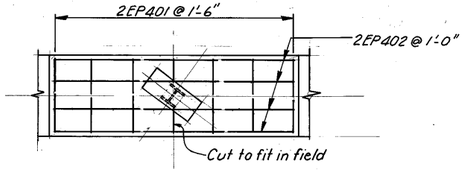
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

Note: For bridge seat reinforcing see sht. 13/25.

Revised 12-8-94

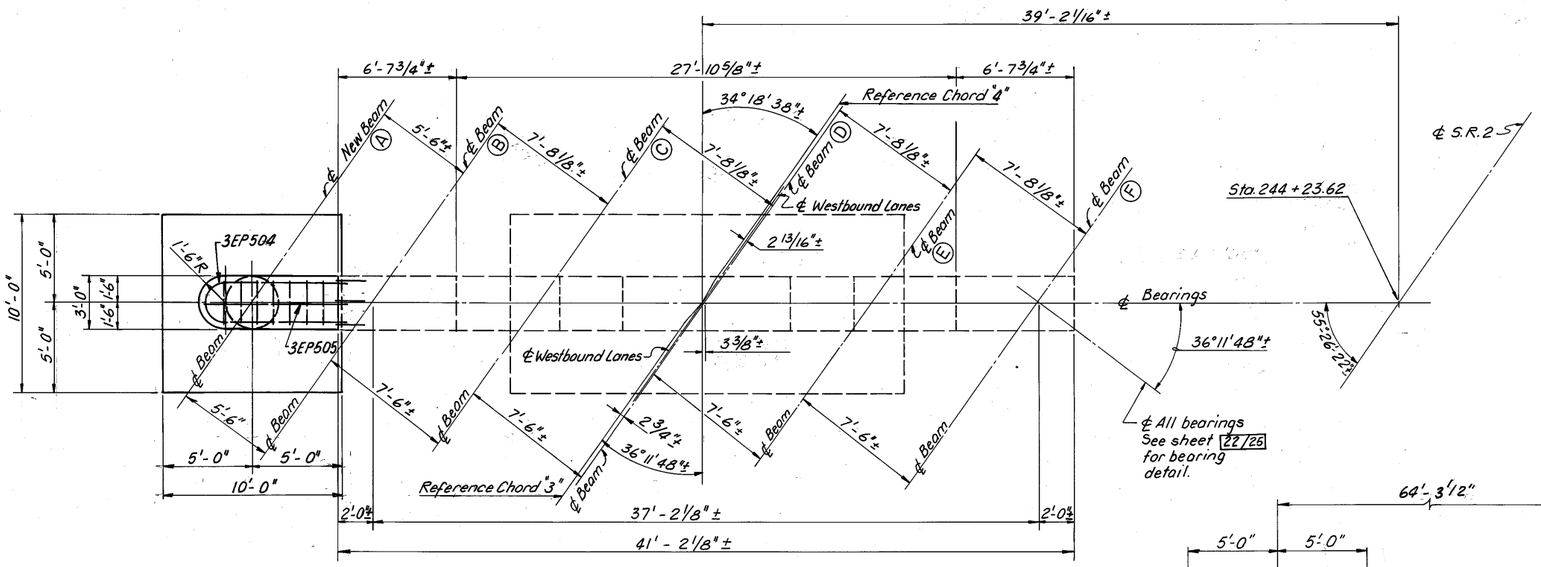
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

14/25

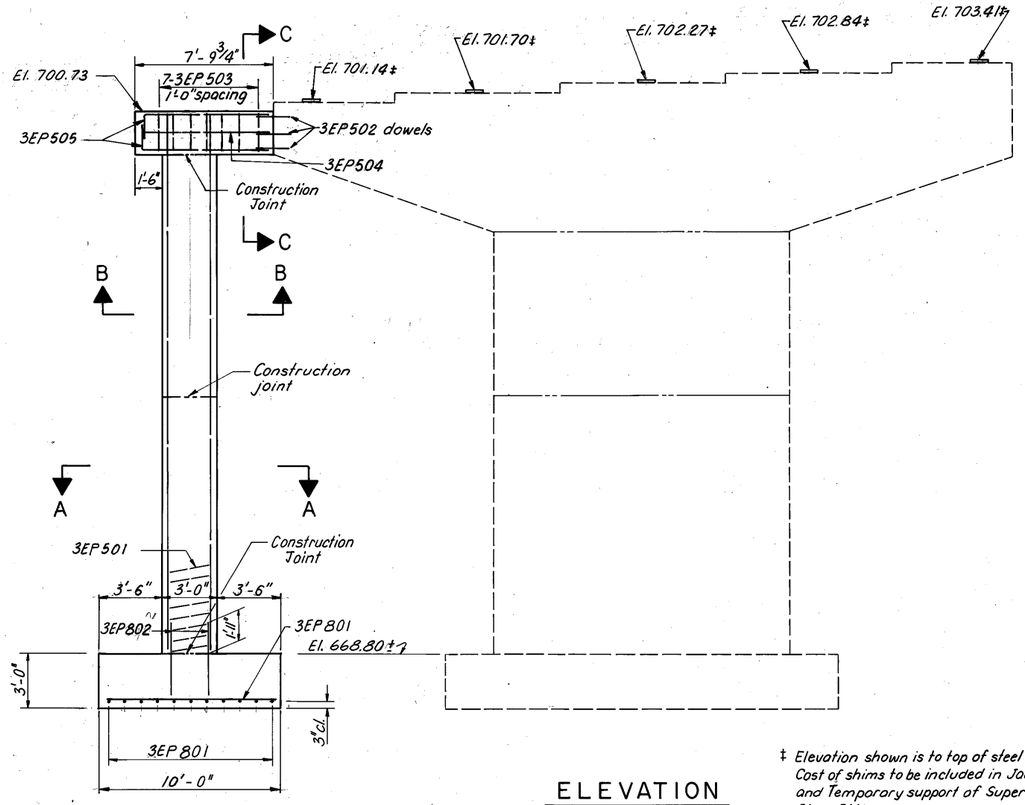
PIER 2
RIGHT BRIDGE

BRIDGE NO. LOR-2-0459 L/R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/25/94	

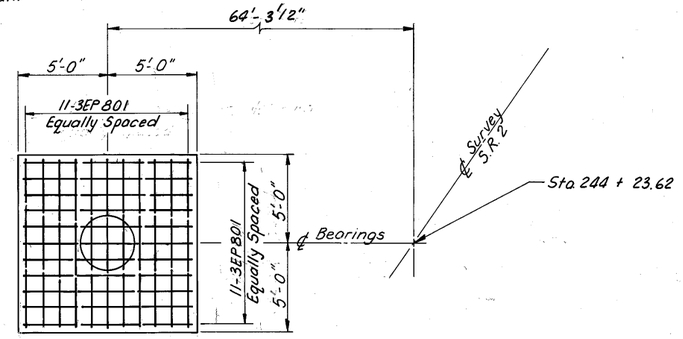


PLAN

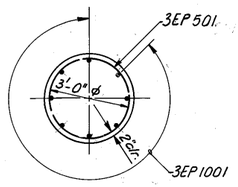


ELEVATION

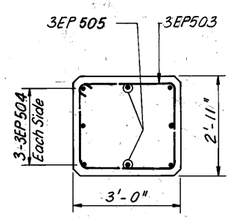
‡ Elevation shown is to top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure Item 516. See Detail "I" sht. 22/25 for shim detail.



FOUNDATION PLAN A-A



SECTION B-B



SECTION C-C

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

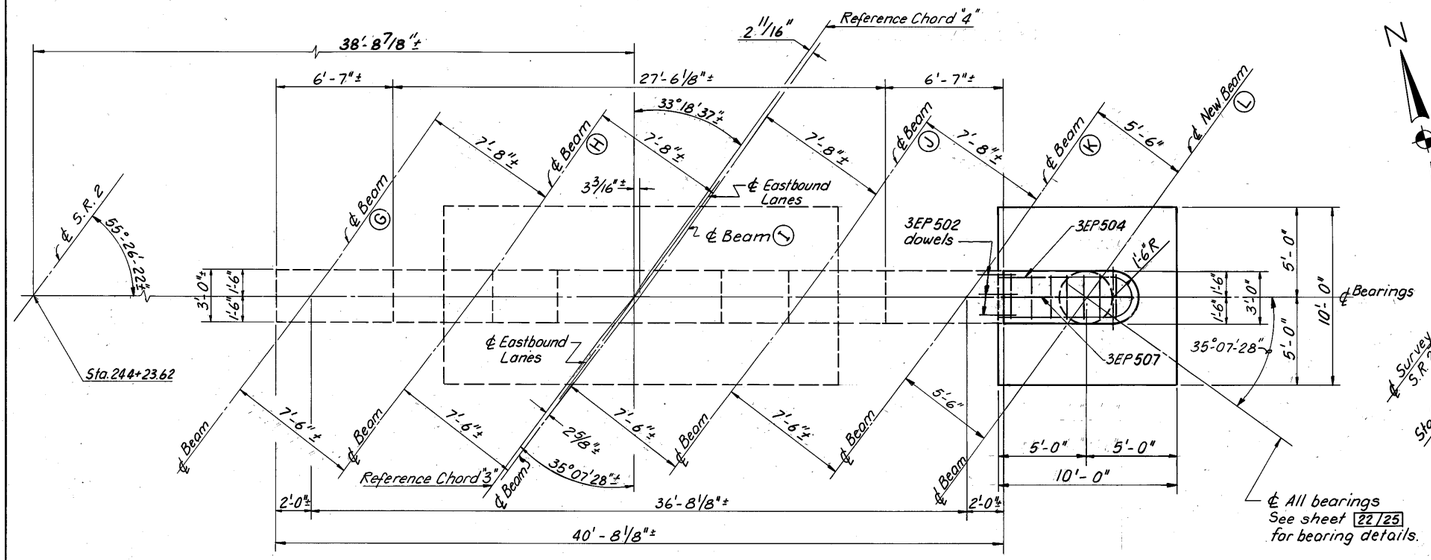
15/25

PIER 3
LEFT BRIDGE

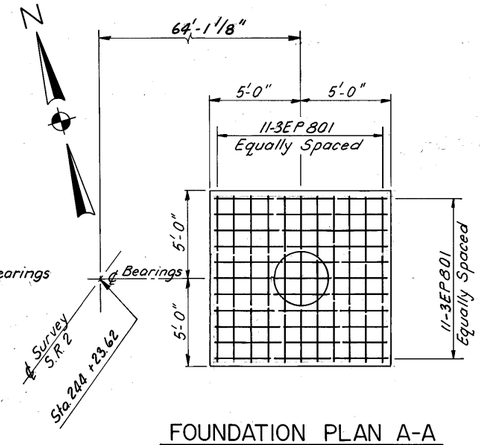
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM		CDW	ART	2/25/94	

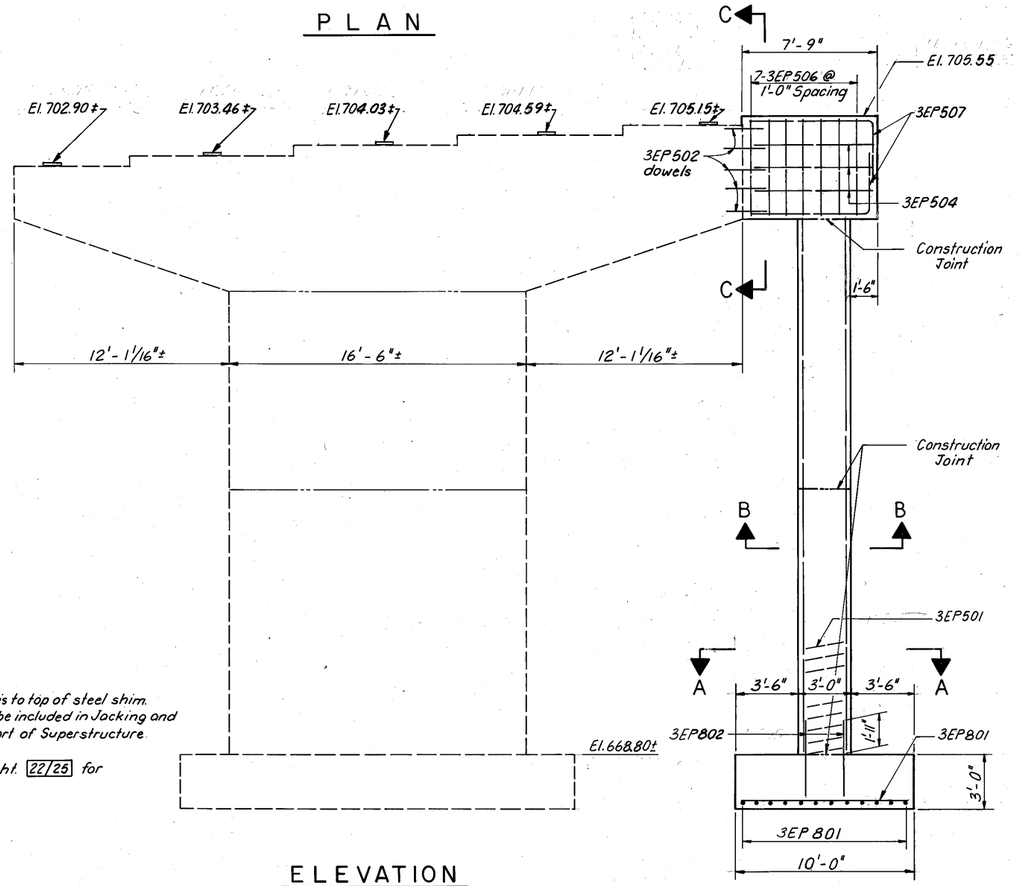
17 18



PLAN

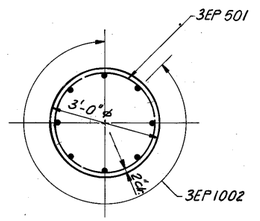


FOUNDATION PLAN A-A

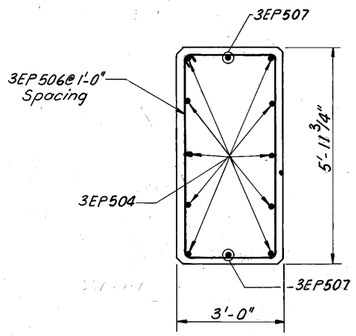


‡ Elevation shown is to top of steel shim. Cost of shims to be included in Jacking and Temporary support of Superstructure. Item 516. See Detail "1" sht. 22/25 for shim detail.

ELEVATION



SECTION B-B



SECTION C-C

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

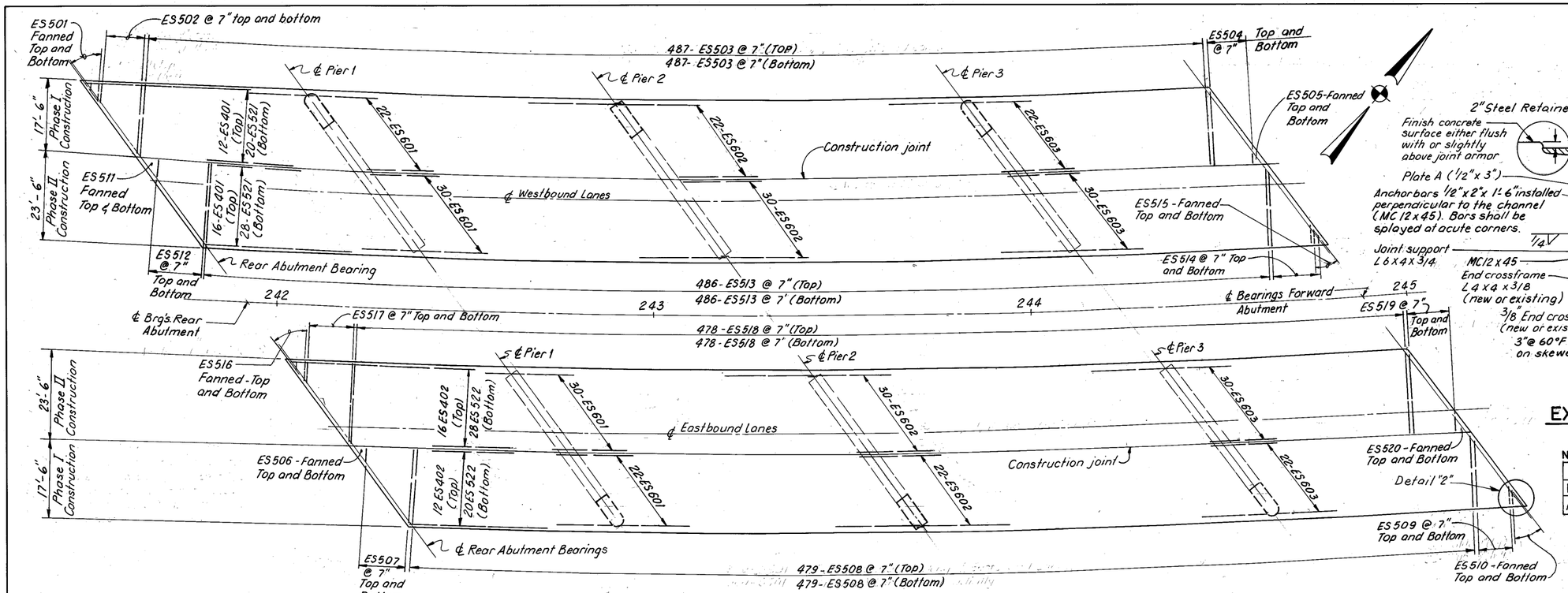
16/25

PIER 3
RIGHT BRIDGE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC		CDW	ART	2/25/94	

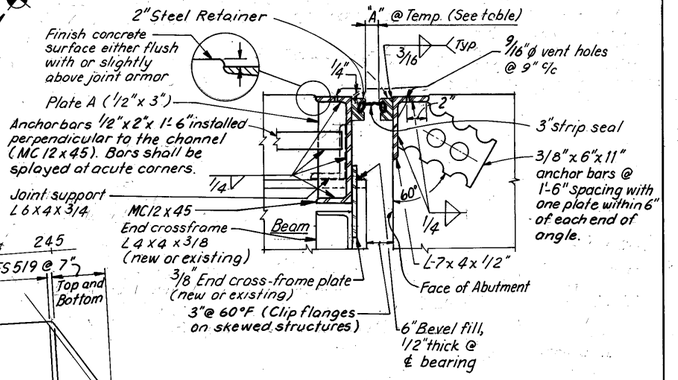
16
18



Note: Skew angle varies, see sht. 18/25.

DECK PLAN

DETAIL "2"

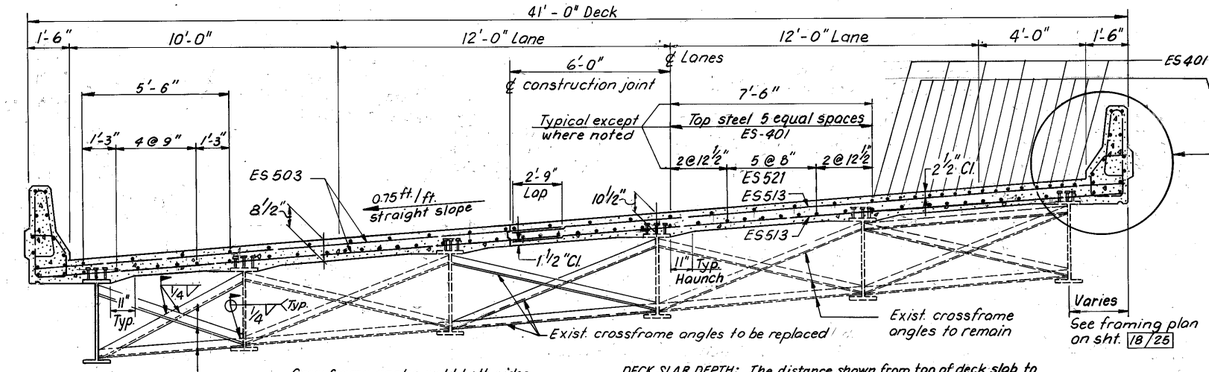


EXPANSION JOINT DETAIL

NOTE: Dimension "A" measured perpendicular to abutment bearings.

TEMPERATURE ADJUSTMENT TABLE							
LOCATION	30°F	40°F	50°F	60°F	70°F	80°F	90°F
ABUTMENT	1 15/16"	1 13/16"	1 3/4"	1 5/8"	1 1/2"	1 1/2"	1 1/2"

Note: Strip seal to be furnished and placed in one continuous piece. Placement of the seal is to occur after the superstructure is complete.



*A typical haunch width of 11" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 14" provided that the slope shall be not more than 1:4 for a haunch less than 11" in width.

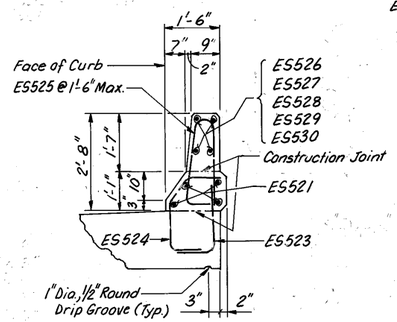
Crossfrome angles weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld. Intermediate crossfrome angles 3 x 3 x 5/16.

DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because of top flange of the beam may not have exact camber or conformation required to place it parallel to finish grade.

TRANSVERSE SECTION

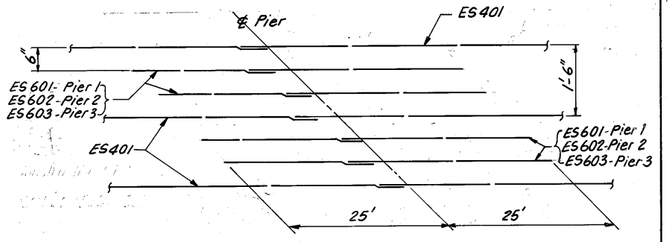
(LEFT BRIDGE SHOWN - RIGHT BRIDGE SIMILAR)

Note A: Longitudinal bars in lower part of parapet shall be similar to longitudinal bars in bridge deck. ES526 - ES530 based on parapet deflection joint spacing. See General Plan on sht. 1/25 and reinforcing bar schedule on sht. 25/25.



ES523 and ES524 Bars shall be Spaced @ 1'-6" Max.

DETAIL "1"



ADDITIONAL REINFORCING OVER PIERS

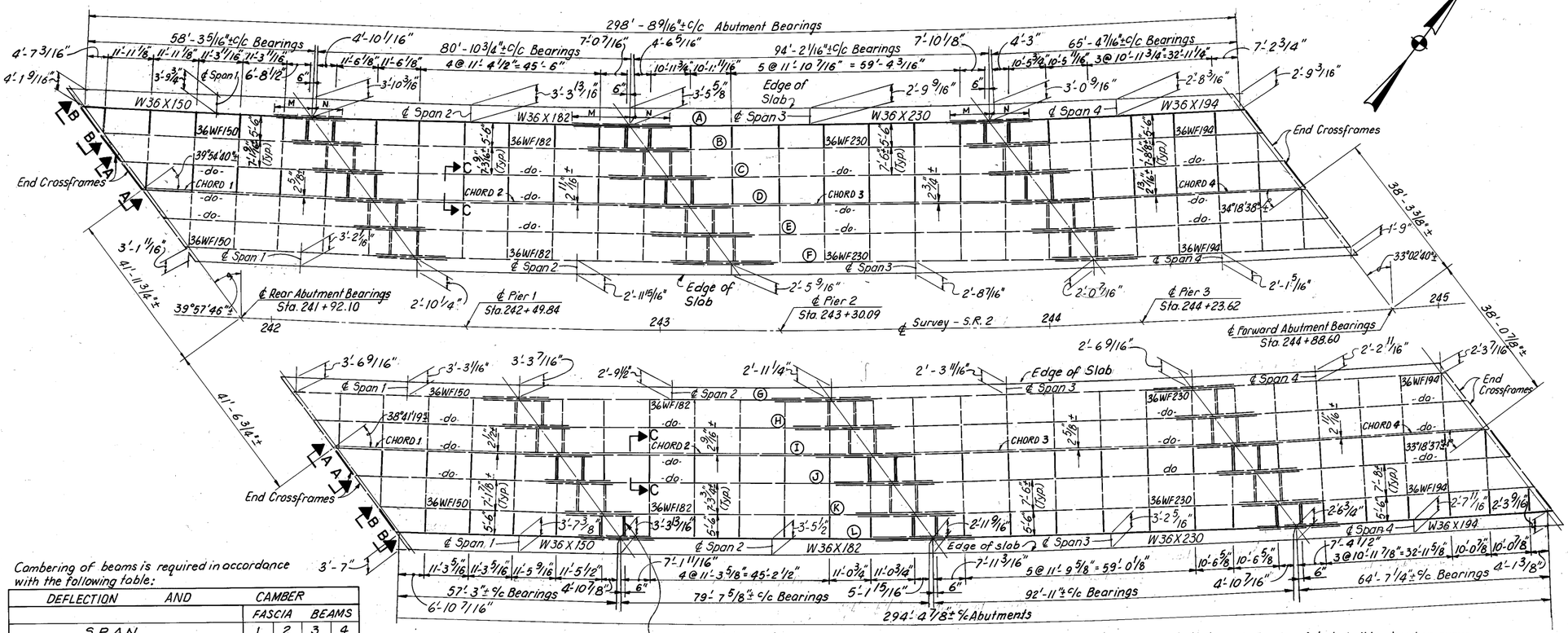
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

17/25

SUPERSTRUCTURE I

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	

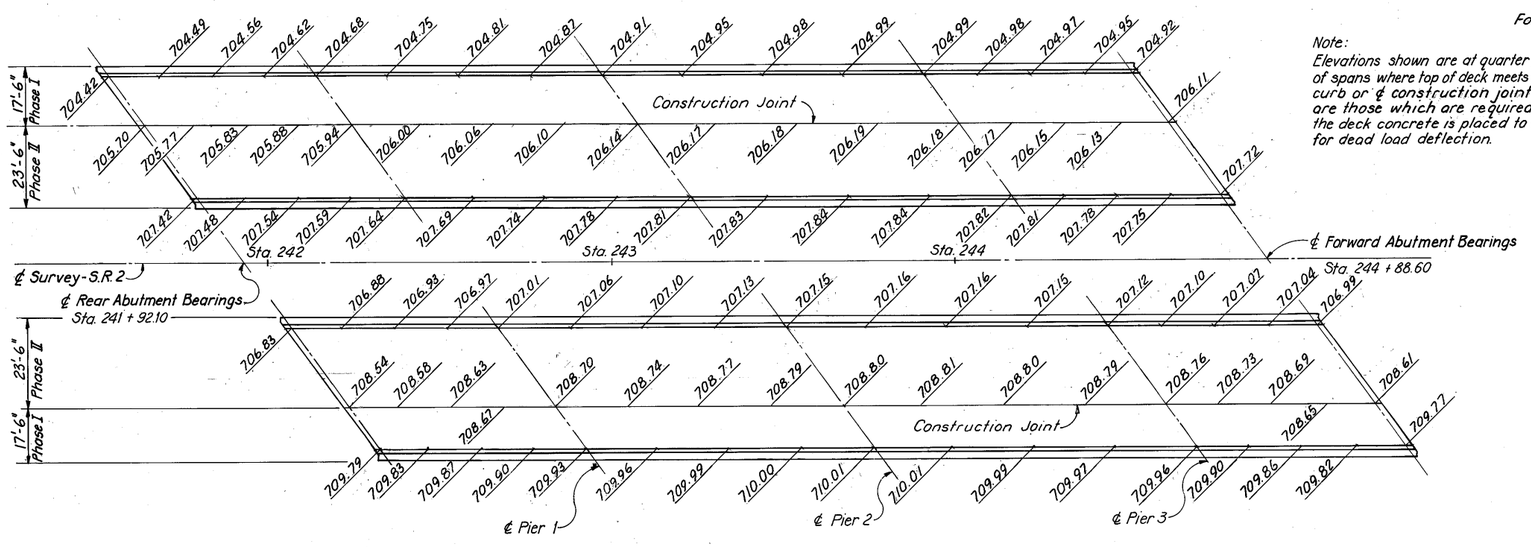


FRAMING PLAN

Combering of beams is required in accordance with the following table:

DEFLECTION AND CAMBER	FASCIA		BEAMS	
SPAN	1	2	3	4
Deflection due to weight of Steel	0	1/16	1/8	0
Deflection due to remaining dead load	1/8	3/16	1/4	1/8
Convexity required for vertical curve	1/8	3/16	1/4	1/8
Convexity required for horizontal curvature	-3/8	-3/8	+1/16	-3/8
Sum of deflection and convexity	-1/8	1/16	3/16	-1/8
Required Camber	0	0	0	0

Notes:
1. Fascias of deck shall be placed on curve. Beam shall be placed as shown.
2. For Sections A-A, B-B, & C-C, See Sheet 22/25
3. Replace end frames at the following locations:
   Rear Abutment: Ⓑ-Ⓒ, Ⓒ-Ⓓ, Ⓘ-Ⓙ
   Forward Abutment: Ⓒ-Ⓓ, Ⓘ-Ⓙ



DECK PLAN

Note:
Elevations shown are at quarter points of spans where top of deck meets face of curb or ℄ construction joint and are those which are required before the deck concrete is placed to allow for dead load deflection.

MOMENT PLATES	Pier 1		Pier 2		Pier 3	
Girder	M	N	M	N	M	N
Ⓐ	9'-6"	8'-0"	15'-6"	11'-0"	10'-0"	11'-0"
Ⓛ	9'-6"	8'-0"	15'-6"	11'-0"	10'-0"	11'-0"

For plate sizes, see sheet 20/25.

SUPERSTRUCTURE NOTES:

BEARINGS: See sheet 22/25.

GENERAL NOTES: See sht. 2/25 & 3/25.

STRIP SEAL RETAINERS & JOINT ARMOR shall be furnished in lengths as long as practicible. At all field butt joints, they shall be rigidly fastened together as required prior to placing concrete.

Item Special - High Performance Concrete Superstructure (Deck): The contractor shall obtain the elevations of the top of existing steel beams after the complete removal of existing deck slab at the locations shown in the table for the final pavement elevations, and compute the deck thickness over existing beams. If the computed deck thickness is found to be less than minimum thickness required, the top of final pavement elevations shall be adjusted as directed by the engineer. The contractor shall also compute the deck screed elevations, utilizing the dead load deflections. Payment for the above mentioned work shall be included with the unit price for Item Special - High Performance Concrete Superstructure (Deck).

FIELD BEND ends of bars adjacent to joint to fit joint configuration. Bending to be included in item 509 for payment. Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturers' recommendations.

INSTALLATION OF JOINT: 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 support angles rather than by clamping force.

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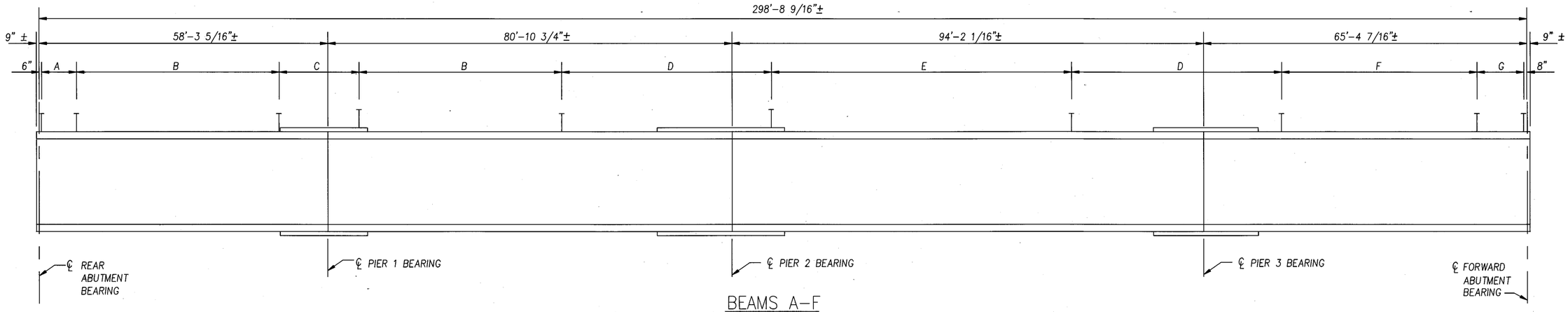
18/25

SUPERSTRUCTURE II

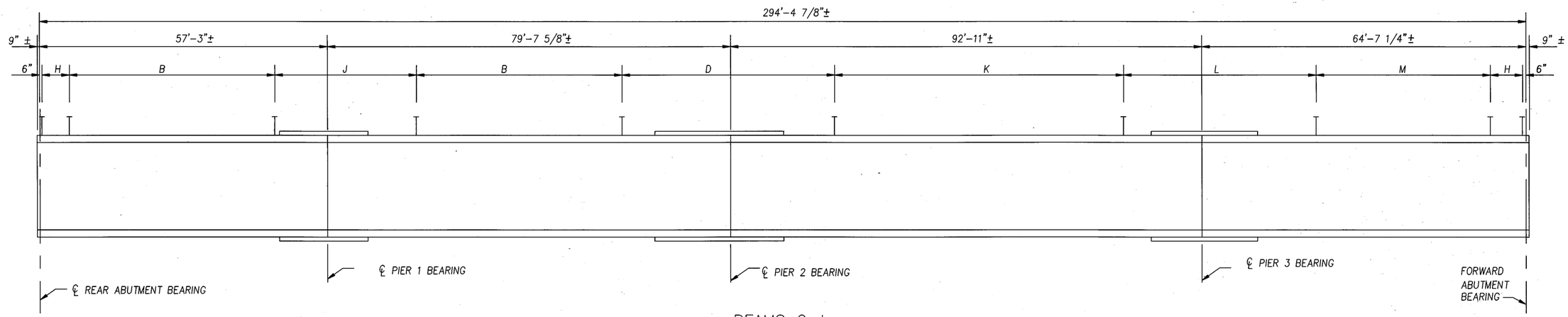
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM CCC	—	CDW	ART	2/25/94	



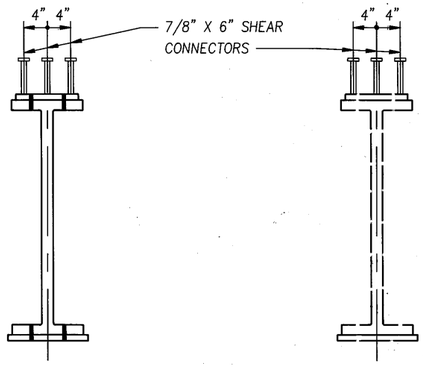
BEAMS A–F

LOR-2-0459 L



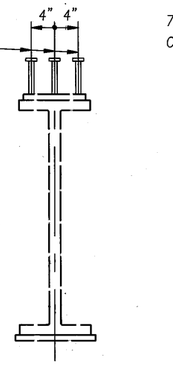
BEAMS G–L

LOR-2-0459 R



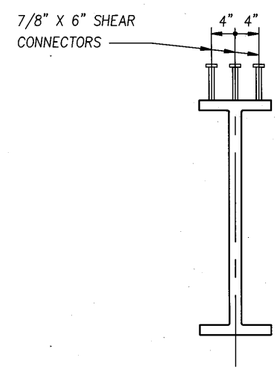
BEAMS A & L

TYP. SECT. AT NEW COVER PLATES



BEAMS B – K

TYP. SECT. AT EXIST. COVER PLATES



BEAMS A & L

TYP. SECT. W/O COVER PLATES

SHEAR STUD SPACING

A = 9 @ 10" = 7'-6"
B = 27 @ 18" = 40'-6"
C = 8 @ 24" = 16'-0"
D = 21 @ 24" = 42'-0"
E = 40 @ 18" = 60'-0"
F = 26 @ 18" = 39'-0"
G = 10 @ 12" = 10'-0"
H = 7 @ 10" = 5'-10"
J = 14 @ 24" = 28'-0"
K = 38 @ 18" = 47'-0"
L = 19 @ 24" = 38'-0"
M = 23 @ 18" = 34'-6"

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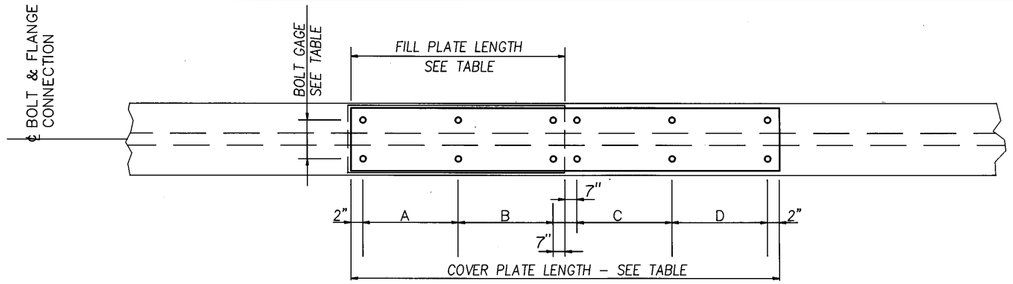
19 / 25

SHEAR CONNECTOR DETAILS

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

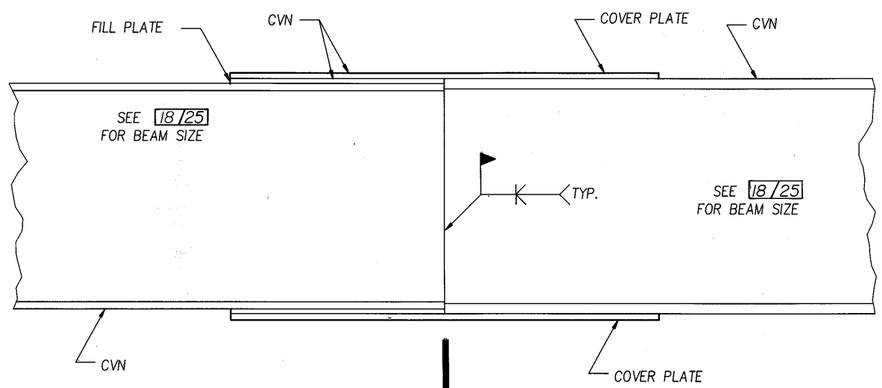
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SWR	—	CDW	ART	2/24/94	

21



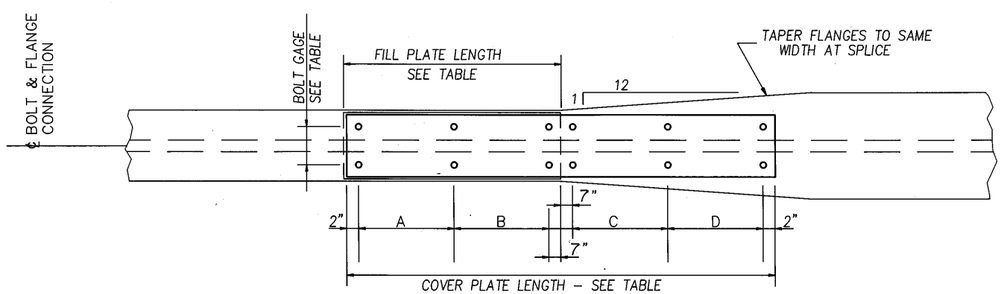
FLANGE CONNECTION DETAIL
(BEAMS OF EQUAL FLANGE WIDTH)
NO SCALE

B

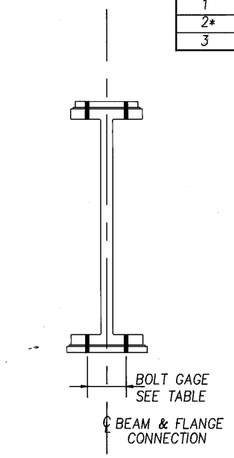


B

WEB CONNECTION DETAIL
NO SCALE



FLANGE CONNECTION DETAIL
(BEAMS OF DIFFERENT FLANGE WIDTH)
NO SCALE



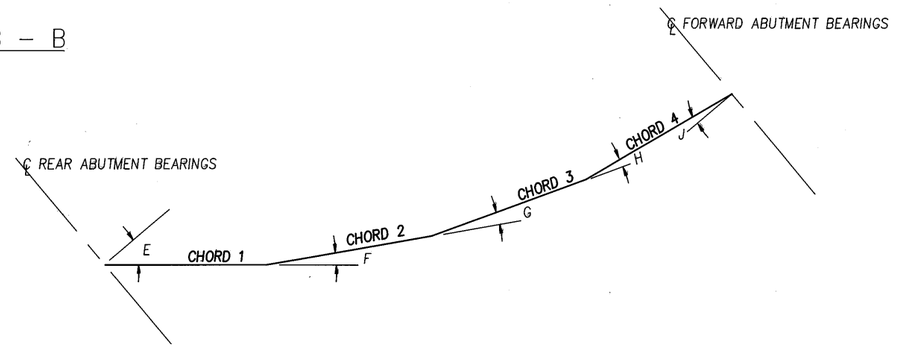
SECTION B – B

PIER #	TOP FLANGE CONNECTION										
	COVER PLATE	FILL PLATE	"A"		"B"		"C"		"D"		# BOLTS	BOLTS GAGE
			SPACES	SPACING	SPACES	SPACING	SPACES	SPACING	SPACES	SPACING		
1	PL 3/4"x10 1/2"x18'-4"	PL 1/2"x10 1/2"x9'-11"	4	3-1/2"	6	1'-4"	4	1'-7-1/2"	4	3-1/2"	40	7"
2*	PL 1 5/8"x10 1/2"x27'-4"	PL 3/8"x10 1/2"x15'-11"	8	3-1/2"	24	6-3/8"	14	6-3/8"	11	3-1/2"	118	7"
3	PL 1 1/2"x10 1/2"x21'-10"	PL 5/8"x10 1/2"x11'-5"	9	3-1/2"	8	10-1/2"	10	10"	8	3-1/2"	74	7"

PIER #	BOTTOM FLANGE CONNECTION										
	COVER PLATE (LT.)	COVER PLATE (RT.)	"A"		"B"		"C"		"D"		# BOLTS	BOLTS GAGE
			SPACES	SPACING	SPACES	SPACING	SPACES	SPACING	SPACES	SPACING		
1	PL 5/8"x13-1/2"x10'-4"	PL 5/8"x13-1/2"x8'-5"	4	3-1/2"	6	1'-4"	4	1'-7-1/2"	4	3-1/2"	40	7"
2*	PL 1-5/8"x13-1/2"x16'-4"	PL 1-5/8"x18"x11'-5"	8	3-1/2"	24	6-3/8"	14	6-3/8"	11	3-1/2"	118	7"
3	PL 1" x 18" x 10'-10"	PL 1"x13-1/2"x11'-5"	9	3-1/2"	8	10-1/2"	10	10"	8	3-1/2"	74	7"

NOTES:

1. DRAWING INDICATES SHALLOWER BEAM IS ON THE LEFT. ACTUAL ORIENTATION MAY BE OPPOSITE HAND. SEE SCHEMATIC DIAGRAM FOR ALIGNMENT.
2. ALL BOLTS SHALL BE 1" DIAMETER AASHTO M-164, TYPE A SLIP CRITICAL CONNECTIONS USING STANDARD HOLES.
3. FILL PLATES SHALL BE PROVIDED IN ONE PIECE.
4. IN TABLES, PIER # FOLLOWED BY AN "*", INDICATES A DETAIL DRAWN OPPOSITE HAND TO THE ACTUAL FIELD ORIENTATION.
5. NEW PLATES DESIGNATED "CVN" SHALL MEET THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS OF CMS 711.01.
6. SCHEMATIC DETAILS INDICATE AN ANGULAR OFFSET AT EACH SPLICE. CONNECTION PLATES SHALL BE BENT OR OFFSET ACCORDINGLY. ANGLE WORK POINT IS AT THE CENTERLINE OF SPLICE.



	E	F	G	H	J
LEFT BRIDGE	39°54'40"±	1°38'42"±	2°04'10"±	1°53'10"±	34°18'38"±
RIGHT BRIDGE	38°41'19"±	1°34'36"±	1°59'15"±	1°48'51"±	33°18'37"±
CHORD LENGTH					
	1	2	3	4	
LEFT BRIDGE	58.281±	80.889±	94.177±	65.365±	
RIGHT BRIDGE	57.251±	79.640±	92.920±	64.605±	

SCHEMATIC DIAGRAM OF REFERENCE CHORDS
NO SCALE

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CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

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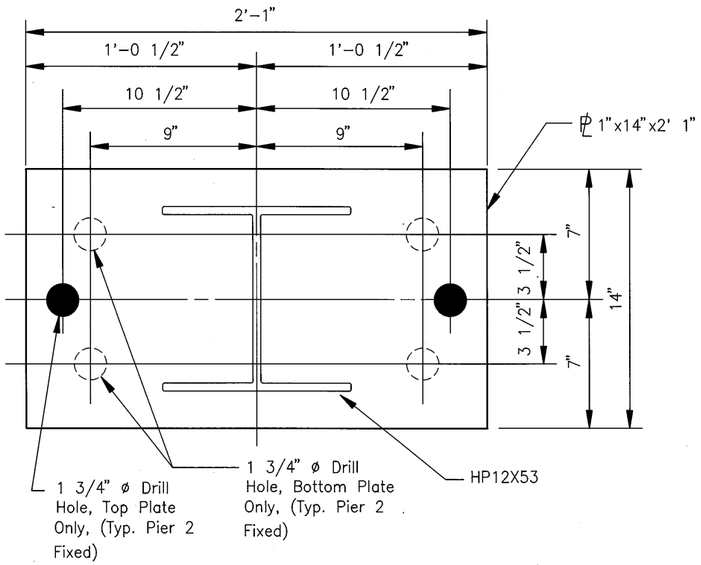
NEW GIRDER SPLICE DETAILS

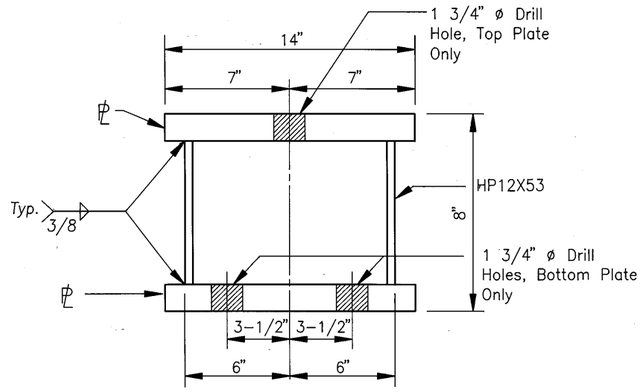
BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	LAH	——	CDW	ART	2/24/94	

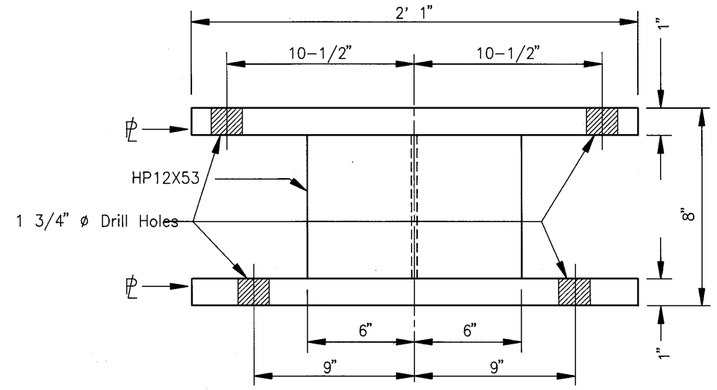
11-22-93 11:44AM
[O:\83592C\RETROFIT] SWR



PLAN VIEW
N.T.S.



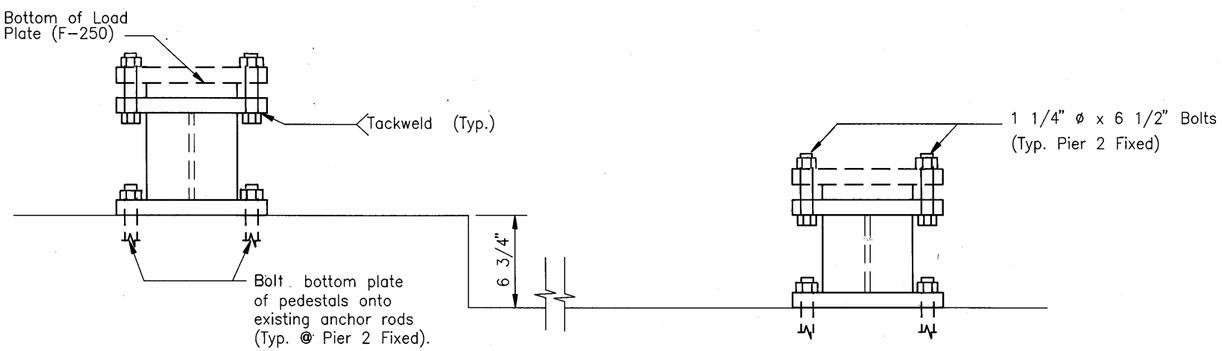
ELEVATION
N.T.S.



SIDE VIEW
N.T.S.

PEDESTAL NOTES:

1. Include the cost of pedestals under Item 516 – Jacking and Temporary Support of Structure.
2. Pedestals to be used at existing bearing points at pier 2 L/R.
3. Pedestals shall be galvanized A36 steel.



SECTION D-D
(See sht. 13/25 and 14/25)

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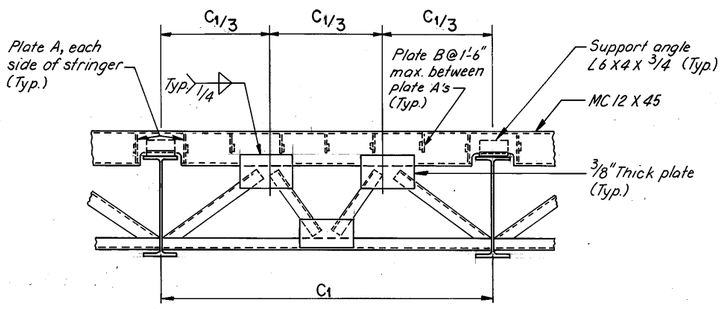
21 / 25

MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

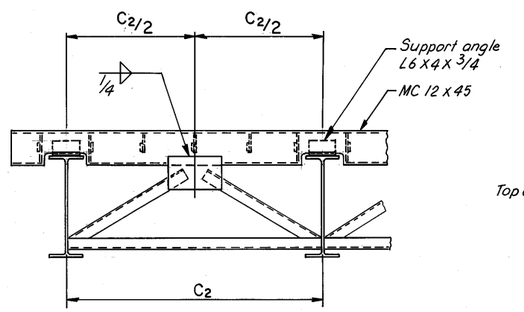
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

02-14-94
2:35PM

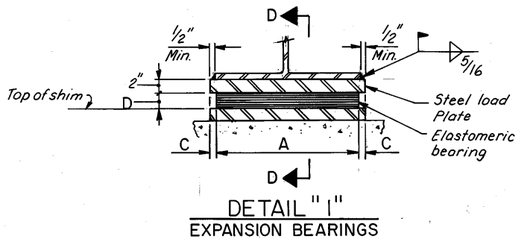


SECTION A-A

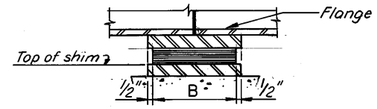
		C1	C2
LEFT	Rear Abutment	9'-3 1/2"	7'-2"
	Forward Abutment	9'-3 1/2"	6'-7 7/8"
RIGHT	Rear Abutment	9'-2"	7'-0 1/2"
	Forward Abutment	9'-2"	6'-7"



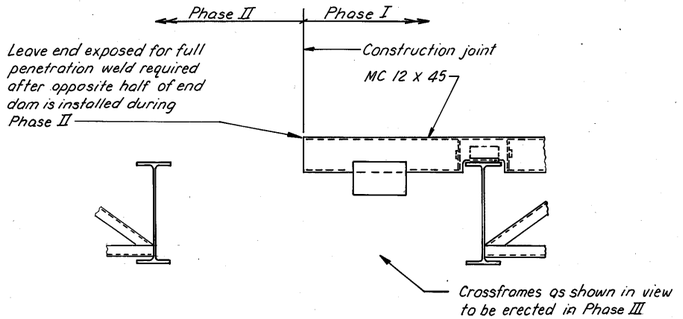
SECTION B-B



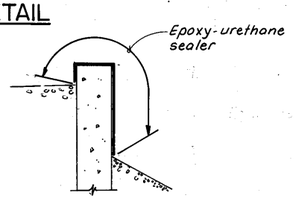
DETAIL "1"
EXPANSION BEARINGS



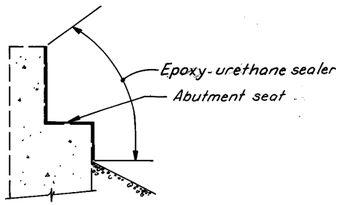
SECTION D-D



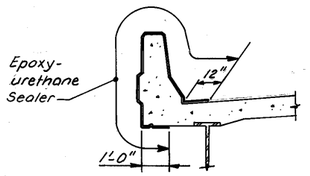
END FRAME PHASE DETAIL



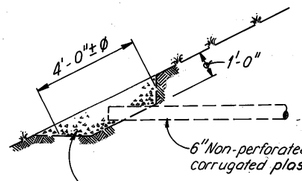
EPOXY SEALER AT WINGWALL



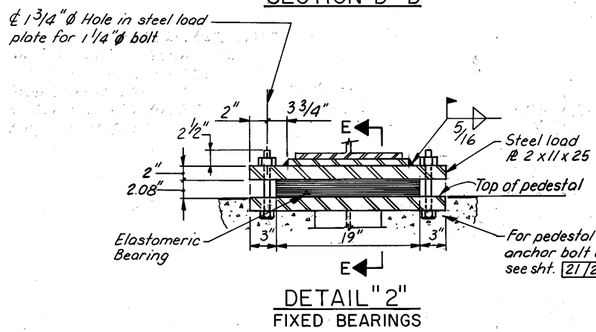
EPOXY SEALER AT ABUTMENT



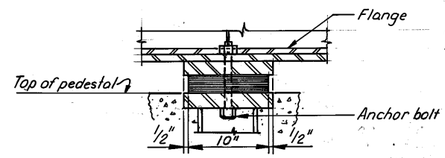
EPOXY SEALER AT PARAPET & DECK



ABUTMENT DRAINAGE DETAIL



DETAIL "2"
FIXED BEARINGS



SECTION E-E

EXPANSION BEARINGS						
	A	B	C	D	PL WIDTH	PL LENGTH
Abutments	12"	7 1/2"	3/4"	2.38"	13 1/2"	8 1/2"
Pier 1	18"	11"	1/2"	2.36"	19"	12"
Pier 3	18"	11"	1/2"	2.36"	19"	8 1/2"

Notes:

1. Durometer of the elastomer : 50 durometer
2. Thickness of elastomer layers :

	te	ti
Abutment	0.151	0.212
Expansion Piers	0.213	0.298
Fixed Piers	0.181	0.254

3. Number of internal elastomer layers :

	n
Abutment	7
Expansion Piers	5
Fixed Piers	5

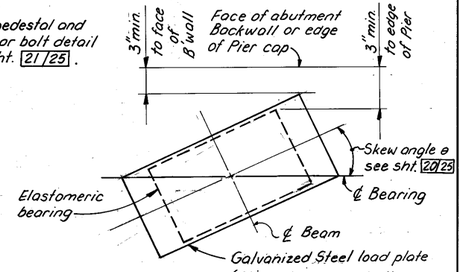
4. Dead and live load reactions without impact :

	DL	LL
Abutment	20k	40k
Expansion Piers	90k	90k
Fixed Piers	91k	90k

5. The steel load plate shall be bonded by vulcanization to the elastomer during the molding process. The steel load plates shall be 2 inches thick minimum. The thickness of this shall be increased if plan elevations of the bearings of the piers and abutments are not indicative of field measurements.

   Welding of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 300°F as determined by the use of pyrometric sticks or other temperature monitoring devices.

6. Load plate steel: Galvanized A-36 - Fy = 36000 PSI



LAMINATED ELASTOMERIC BEARING ORIENTATION AT ABUTMENTS & PIERS

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

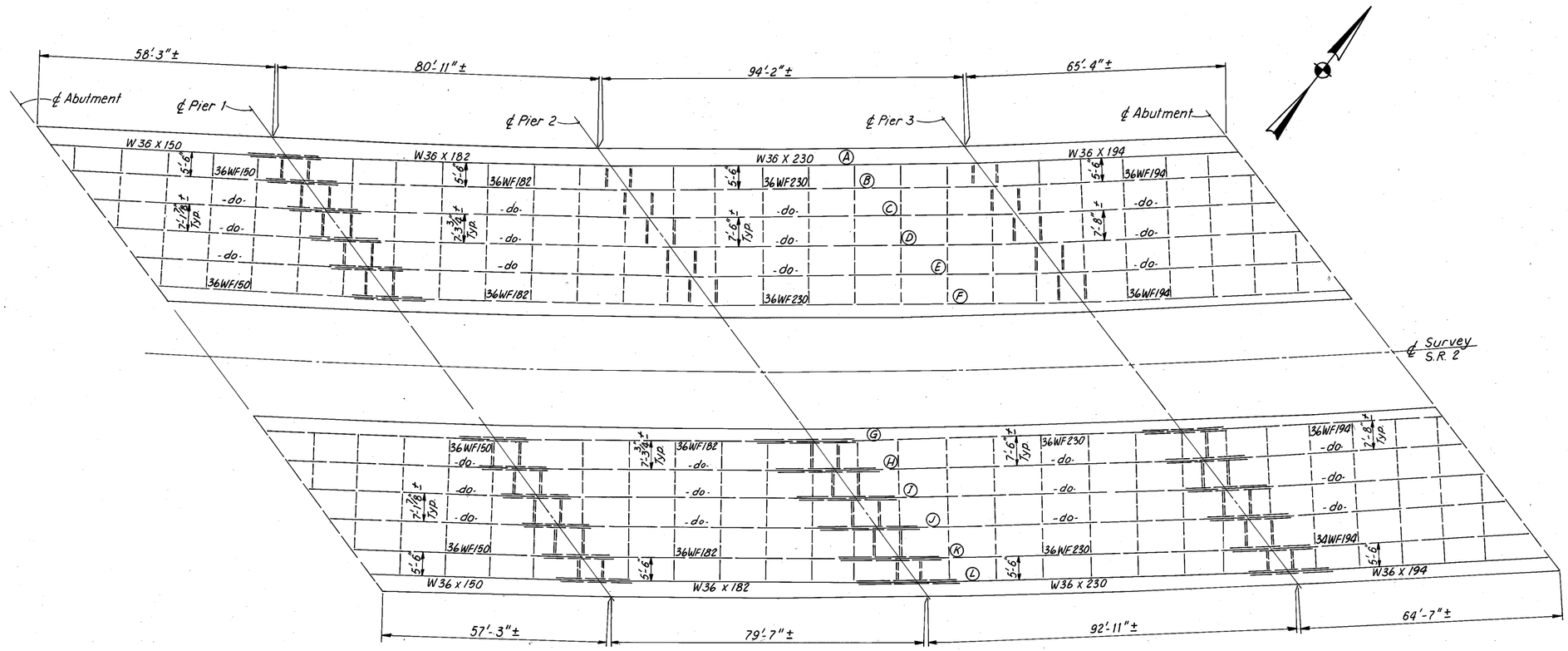
22/25

MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/25/94	

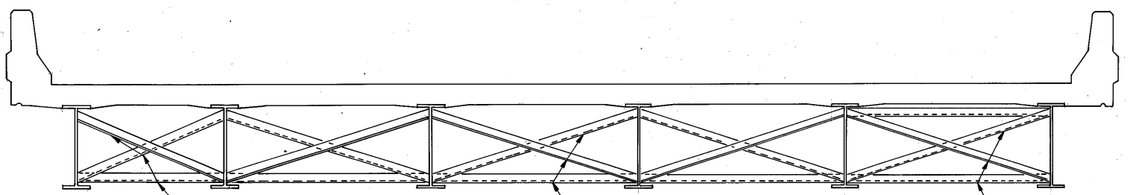
22
34



PLAN

Vertical Clearance
23.04'± Eastbound

Vertical Clearance
23.04'± Westbound



Note:
ALL new framing members to receive system IZEU paint.

ALL existing framing members to receive system OZEU paint.

TRANSVERSE SECTION

Note:
End frames in bays AB, BC, CD, IJ, and KL at the rear abutments and end frames AB, CD, IJ, and KL at the forward abutments to receive system IZEU Paint.
Remaining end frames to receive system OZEU Paint. See sht. 22/25 for end frame sizes.

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23 / 25

STRUCTURAL STEEL FOR PAINTING

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/25/94	

28
25

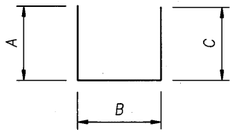
REINFORCING STEEL BAR SCHEDULE

LEFT ABUTMENT

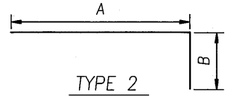
MARK	NUMBER REQUIRED REAR	NUMBER REQUIRED FORWARD	LENGTH	TYPE	A	B	C	D	WEIGHT REAR	WEIGHT FORWARD
ELA501	6	8	9'-2"	1	2'-1"	5'-3"	2'-1"		58	77
ELA502		6	7'-3"	2	6'-7"	0'-9"				46
ELA503		6	7'-2"	1	2'-1"	3'-3"	2'-1"			45
ELA504		1	22'-8"	STR						24
ELA505		7	23'-11"	STR						175
ELA506		1	7'-6"	STR						8
ELA507		4	VARIES	STR	13'-6" to 10'-6". Vary 2 each by 3'-0"					50
ELA508		4	10'-1"	STR						42
ELA509		6	6'-4"	STR						40
ELA510		5	13'-6"	STR						71
ELA511		2	6'-10"	STR						15
ELA512		7	VARIES	STR	7'-8" to 4'-6". Vary by 6 3/8"					45
ELA513	20	8	3'-11"	STR					82	33
ELA514	4		10'-6"	STR					44	
ELA515	1		23'-6"	STR					25	
ELA516	7		26'-3"	STR					192	
ELA517	1		6'-6"	STR					7	
ELA518	4		VARIES	STR	12'-8" to 9'-7". Vary 2 each by 3'-1"				47	
ELA519	8		15'-7"	STR					130	
ELA520	6		6'-7"	STR					42	
ELA521	5		18'-1"	STR					95	
ELA522	2		7'-0"	STR					15	
ELA523	7		VARIES	STR	7'-6" to 4'-5". Vary by 6 1/8"				44	
ELA524	6		6'-4"	1	3'-1 7/8"	3'-0"	3'-1 7/8"		40	
ELA525	2		9'-10"	STR					21	
ELA526	1		7'-6"	STR					8	
ELA527		1	26'-2"	STR						28
ELA528		7	24'-3"	STR						177
ELA529		1	11'-3"	STR						12
ELA530		1	6'-2"	STR						7
ELA531		4	VARIES	STR	17'-3" to 14'-3". Vary 2 each by 3'-0"					66
ELA532		2	15'-0"	STR						32
ELA533	1		27'-10"	STR					29	
ELA534	7		28'-7"	STR					209	
ELA535	1		9'-10"	STR					11	
ELA536	1		7'-11"	STR					9	
ELA537	4		VARIES	STR	15'-3" to 12'-7". Vary 2 each by 2'-8"				58	
ELA538	2		15'-5"	STR					32	
ELA539		2	6'-10"	STR						15
ELA540	2		5'-10"	STR					13	
ELA541	1		5'-0"	STR					6	
ELA542		1	6'-0"	STR						7
ELA543		2	10'-0"	STR						21
ELA544	2		12'-10"	STR					27	
ELA601		6	13'-5"	1	2'-1"	5'-3"	6'-5"			121
ELA602	7	7	8'-6"	1	3'-9"	1'-4"	3'-9"		90	90
ELA603	50	49	6'-4"	1	2'-8"	1'-4"	2'-8"		476	466
ELA604	50	49	6'-1"	1	2'-9"	0'-11"	2'-9"		457	448
ELA605		7	VARIES	STR	7'-8" to 4'-6". Vary by 6 3/8"					64
ELA606	4		17'-10"	1	2'-1"	5'-3"	10'-6 1/2"		108	
ELA607	2		16'-10"	1	2'-1"	5'-3"	9'-10"		51	
ELA608	7		VARIES	STR	7'-6" to 4'-5". Vary by 6 1/8"				64	
ELA609	1		7'-6"	STR					12	
ELA801		7	8'-7"	STR						160
ELA802	7		6'-3"	STR					117	
ELA803	4	4	4'-10"	STR					52	52
								TOTAL	2671	2437

RIGHT ABUTMENT

MARK	NUMBER REQUIRED REAR	NUMBER REQUIRED FORWARD	LENGTH	TYPE	A	B	C	D	WEIGHT REAR	WEIGHT FORWARD
ERA501	9	7	9'-2"	1	2'-1"	5'-3"	2'-1"		86	67
ERA502	6		10'-2"	2	9'-5"	0'-9"			64	
ERA503	6	6	7'-2"	1	2'-1"	3'-3"	2'-1"		45	45
ERA504	1		26'-0"	STR					26	
ERA505	7		26'-0"	STR					190	
ERA506	1		7'-6"	STR					8	
ERA507	6		18'-4"	STR					115	
ERA508	5		11'-6"	STR					60	
ERA509	4		6'-7"	STR					28	
ERA510	3		6'-7"	STR					21	
ERA511	8		VARIES	STR	10'-8" to 7'-3". Vary by 5 3/4"				75	
ERA512	3		13'-8"	STR					43	
ERA513	2		7'-2"	STR					15	
ERA514	10	13	3'-11"	STR					41	53
ERA515		3	10'-4"	2	9'-8"	0'-9"				33
ERA516		1	23'-6"	STR						30
ERA517		7	22'-9"	STR						167
ERA518		1	7'-11"	STR						9
ERA519		6	17'-2"	STR						108
ERA522		3	6'-1"	STR						19
ERA523		7	VARIES	STR	10'-7" to 7'-5". Vary by 6 3/8"					66
ERA524		1	10'-8"	STR						11
ERA525		3	13'-8"	STR						43
ERA526		2	6'-11"	STR						15
ERA527		3	5'-11"	STR						19
ERA528	1		28'-10"	STR					30	
ERA529	5		27'-8"	STR					145	
ERA530	2		27'-8"	STR					58	
ERA531	1		10'-5"	STR					11	
ERA532	4		VARIES	STR	16'-11" to 13'-8". Vary 2 each by 3'-3"				64	
ERA533	2		7'-2"	STR					15	
ERA535		1	27'-10"	STR						29
ERA536		5	27'-11"	STR						146
ERA538		1	5'-10"	STR						6
ERA539		4	VARIES	STR	11'-7" to 9'-1". Vary 2 each by 2'-6"					43
ERA540		2	5'-7"	STR						12
ERA541	2		17'-0"	STR					36	
ERA542		2	19'-0"	STR						40
ERA543	4		VARIES	STR	13'-11" to 10'-8". Vary 2 each by 3'-3"				52	
ERA544		4	VARIES	STR	13'-11" to 10'-11". Vary 2 each by 3'-0"					52
ERA545	2		14'-5"	STR					30	
ERA547	1		7'-4"	STR					8	
ERA548	1		5'-8"	STR					6	
ERA549		1	6'-2"	STR						7
ERA550		1	4'-2"	STR						5
ERA601	6	3	16'-6"	1	2'-1"	5'-3"	9'-5"		149	75
ERA602	7	7	9'-4"	1	4'-2"	1'-4"	4'-2"		98	98
ERA603	50	47	5'-8"	1	2'-4"	1'-4"	2'-4"		426	400
ERA604	50	47	7'-3"	1	3'-4"	0'-11"	3'-4"		545	512
ERA605	8		VARIES	STR	10'-8" to 7'-3". Vary by 5 3/4"				108	
ERA606		3	20'-10"	1	2'-1"	5'-3"	13'8"			94
ERA607		3	5'-11"	STR						27
ERA608		1	10'-8"	STR						16
ERA609	8		8'-3"	1	3'-8"	1'-4"	3'-8"		100	
ERA610	3		20'-8'	1	2'-1"	5'-3"	13'-8"		93	
ERA611		7	VARIES	STR	10'-7" to 7'-5". Vary by 6 3/8"					95
ERA801		7	9'-3"	STR					173	
ERA802	7		6'-4"	STR						119
ERA805	4	4	4'-10"	STR					52	52
								TOTAL	3016	2513



TYPE 1



TYPE 2

NOTE:

1. FOR CONTINUATION OF REINFORCING STEEL SCHEDULE, SEE 25/25
2. ALL REINFORCING STEEL TO BE EPOXY COATED.

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

24 / 25

REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	—	CDW	ART	2/24/94	

REINFORCING STEEL BAR SCHEDULE

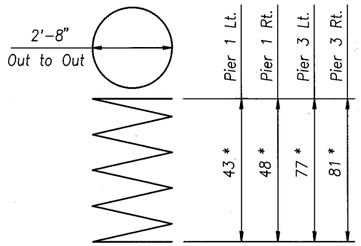
LOR-2-3.48 | OHIO | FHWA REGION 5 | 170 / 222

PIERS

MARK	NUMBER REQUIRED LEFT	NUMBER REQUIRED RIGHT	LENGTH	TYPE	A	B	C	D	WEIGHT LEFT	WEIGHT RIGHT
1EP501	1	1		7					423	473
1EP502	3		16'-0"	5	6'-4"	6'-4"	1'-4"		50	
1EP503	7		10'-11"	3	2'-6"	2'-8"			80	
1EP504	2		9'-3"	2	7'-8"	1'-9"			19	
1EP505	9	15	2'-0"	STR					33	55
1EP506		14	16'-11"	3	5'-7"	2'-8"				247
1EP507		2	10'-7"	2	7'-6"	3'-3"				22
1EP508	3	5	15'-8"	5	6'-2"	6'-2"	1'-4"		49	82
1EP801	22	22	9'-6"	STR					558	558
1EP802	2	2	4'-2"	STR					23	23
1EP1001	8		18'-8"	STR					643	
1EP1002		8	23'-8"	STR						816
2EP401	35	35	2'-6"	STR					59	59
2EP402	20	20	8'-11"	STR					119	119
2EP501		36	18'-8"	STR						701
2EP502		6	VARIES	STR	17'-0" to 8'-2". Vary 2 each by 4'-5"					80
2EP503	5	8	6'-7"	STR					35	55
2EP504	7	7	7'-7"	1	2'-4"	2'-8"	2'-4"		56	56
2EP505	21	24	7'-7"	1	2'-4"	2'-8"	2'-4"		166	190
2EP506	32		18'-11"	STR					632	
2EP507	8		VARIES	STR	17'-3" to 6'-11" Vary 2 each by 3'-5"				101	
2EP601	38	38	17'-3"	STR					985	985
2EP602	24		VARIES	STR	13'-5" to 9'-1". Vary 2 each by 4 3/4"				420	
2EP603		24	VARIES	STR	14'-11" to 10'-11". Vary 2 each by 4 3/8"					466
2EP604		14	21'-2"	STR						446
2EP605	52	60	2'-0"	STR					156	180
2EP606	14		16'-3"	STR					342	
2EP801	20	20	9'-6"	STR					508	508
2EP802	11		18'-9"	STR					551	
2EP803	34	34	4'-8"	STR					424	424
2EP804	6	6	2'-11"	STR					47	47
2EP805		11	18'-6"	STR						544
3EP501	1	1		7					757	796
3EP502	9	15	2'-0"	STR					19	31
3EP503	7		10'-11"	3	2'-6"	2'-8"			80	
3EP504	3	5	15'-8"	5	6'-2"	6'-2"	1'-4"		49	82
3EP505	2		9'-1"	2	7'-5"	1'-10"			19	
3EP506		14	16'-11"	3	5'-7"	2'-8"				247
3EP507		2	10'-8"	2	7'-5"	3'-6"				22
3EP801	22	22	9'-6"	STR					558	558
3EP802	2	2	4'-2"	STR					23	23
3EP1001	8		31'-6"	STR					1086	
3EP1002		8	36'-4"	STR						1252
								TOTAL	9070	10147

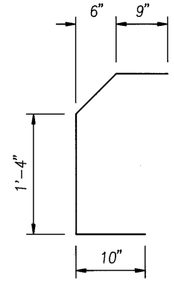
SUPERSTRUCTURE

MARK	NUMBER REQUIRED LEFT	NUMBER REQUIRED RIGHT	LENGTH	TYPE	A	B	C	D	WEIGHT LEFT	WEIGHT RIGHT
ES401	224		40'-3"	STR					6026	
ES402		224	39'-9"	STR						5945
ES501	6		10'-4"	STR					65	
ES502	18		VARIES	STR	16'-7" to 11'-1" Vary 2 each by 8 1/4"				260	
ES503	974		20'-1"	STR					20403	
ES504	18		VARIES	STR	19'-2" to 12'-2" Vary 2 each by 10 1/2"				294	
ES505	6		11'-3"	STR					71	
ES506		6	13'-1"	STR						82
ES507		18	VARIES	STR	19'-4" to 13'-10" Vary 2 each by 8 1/4"					312
ES508		958	20'-1"	STR						20067
ES509		18	VARIES	STR	16'-5" to 9'-5" Vary 2 each by 10 1/2"					244
ES510		6	8'-6"	STR						54
ES511	6		16'-4"	STR					103	
ES512	18		VARIES	STR	22'-7" to 17'-1" Vary 2 each by 8 1/4"				373	
ES513	972		23'-4"	STR					23652	
ES514	18		VARIES	STR	22'-5" to 15'-3" Vary 2 each by 10 3/4"				354	
ES515	6		14'-4"	STR					90	
ES516		6	16'-4'	STR						103
ES517		18	VARIES	STR	22'-7" to 17'-1" Vary 2 each by 8 1/4"					373
ES518		956	23'-4"	STR						23652
ES519		18	VARIES	STR	22'-5" to 15'-3" Vary 2 each by 10 3/4"					354
ES520		6	14'-4"	STR						90
ES521	448		40'-3'	STR					18808	
ES522		448	39'-9"	STR						18574
ES523	458	458	2'-6"	2	1'-9"	0'-10"			1195	1195
ES524	458	458	3'-7"	8					1712	1712
ES525	458	458	5'-3"	9					2508	2508
ES526	16	16	15'-9"	STR					264	264
ES527	240	240	4'-8"	STR					1169	1169
ES528	16	16	14'-6"	STR					242	242
ES529	24	24	14'-0"	STR					350	350
ES530	24	24	12'-10"	STR					322	322
ES601	104	104	26'-8"	STR					4166	4166
ES602	104	104	26'-8"	STR					4166	4166
ES603	104	104	26'-8"	STR					4166	4166
APPROACH SLAB										
ED801	52	52	5'-1"	6					712	712
								TOTAL	91471	90822

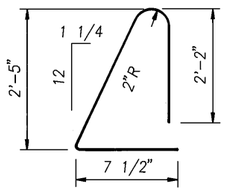


TYPE 7

* No. of Turns @ 4 1/2" Pitch Includes 1 1/2 Turns at each End.



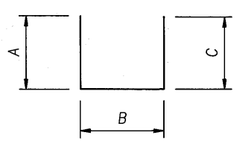
TYPE 8



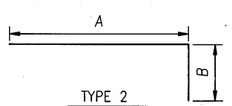
TYPE 9

NOTE:

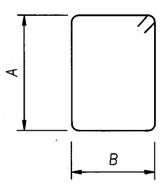
1. FOR CONTINUATION OF REINFORCING STEEL SCHEDULE, SEE SHT. 24/25
2. ALL REINFORCING STEEL TO BE EPOXY COATED.



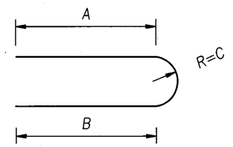
TYPE 1



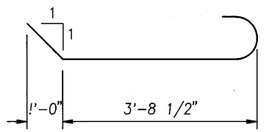
TYPE 2



TYPE 3



TYPE 5



TYPE 6

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

25 / 25

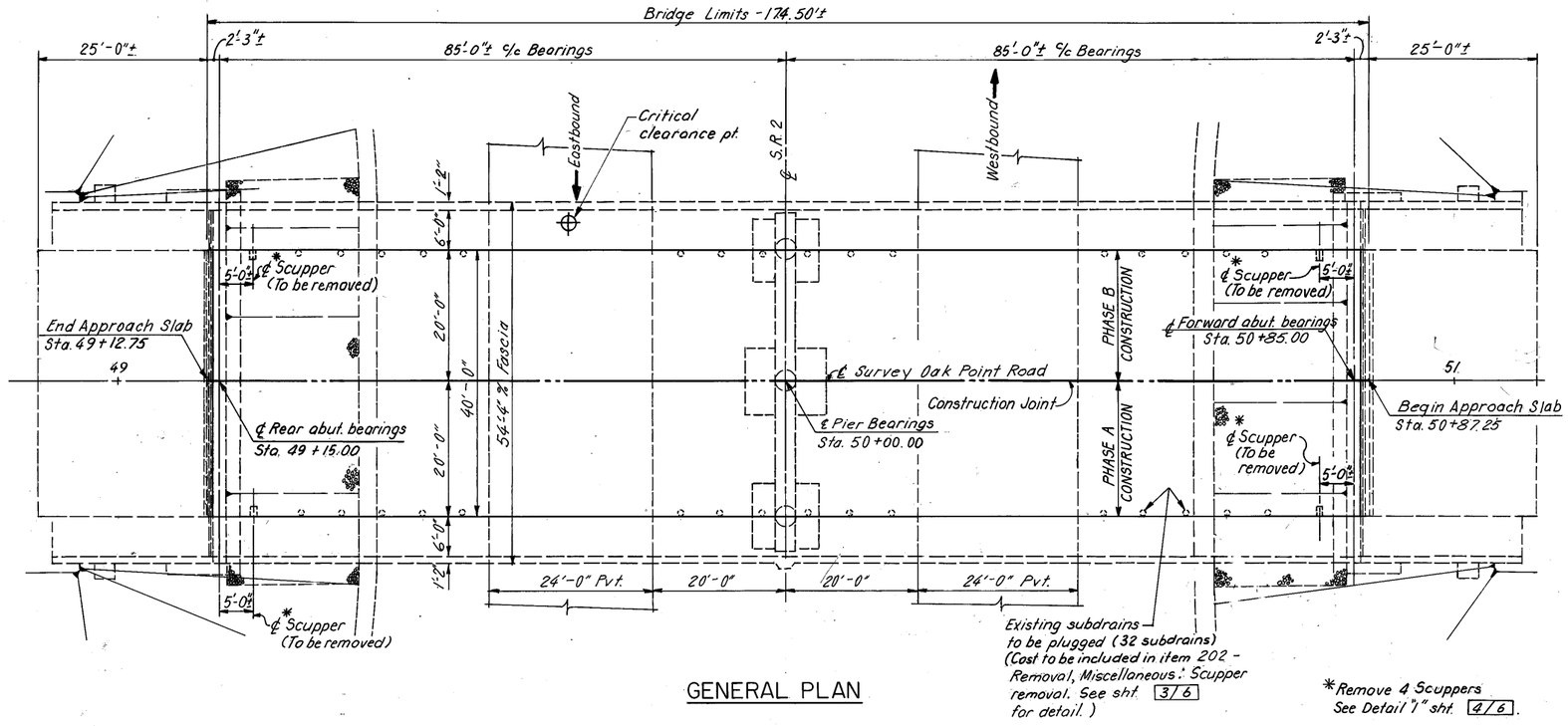
REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0459 L / R
OVER RAILROAD & CROSSE ROAD

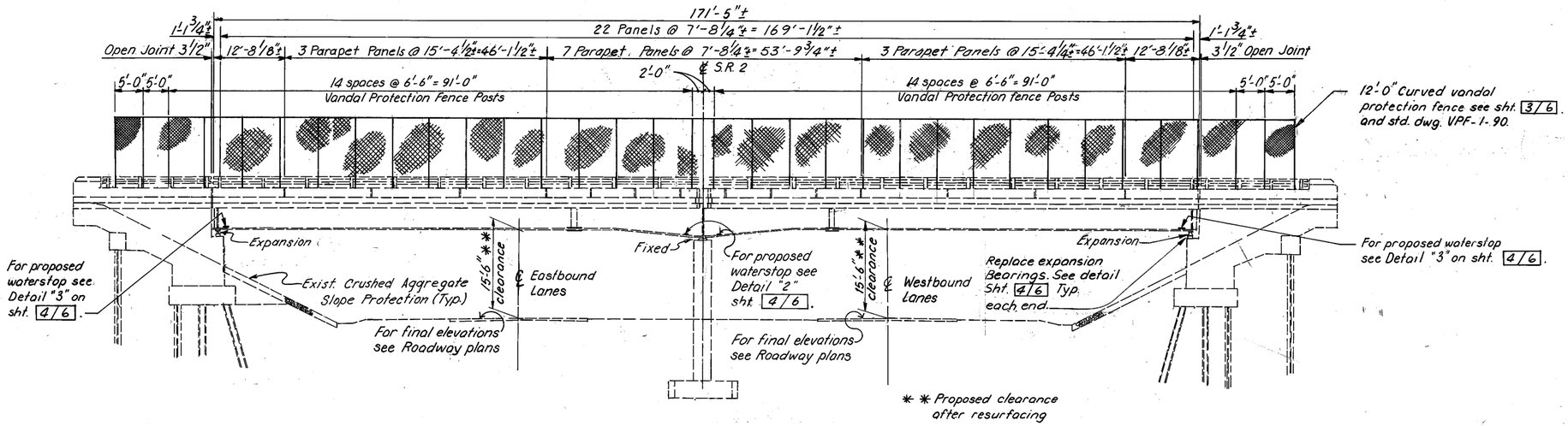
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

27

11-24-93 4:35PM [O:\83592C\REINFSS2] RJE



GENERAL PLAN



ELEVATION

N

LOR - 2 - 3.48 | OHIO | FHWA REGION 5 | 171 / 222

EXISTING STRUCTURE

TYPE: Continuous Welded Plate Girders with Reinforced Concrete Deck & Substructure
SPANS: 2 @ 85'-0" ℄ Bearings
ROADWAYS: 40'-0" f/f 2 - 6'-0" Sidewalks
SKEW: None
ALIGNMENT: Tangent
WEARING SURFACE: 1 1/2" Asphaltic Concrete
APPROACH SLABS: 25' Long (AS-1-72)
DATE BUILT: 1976
STRUCTURE FILE No. 4700082
DESIGN LOAD: HS20-44

PROPOSED STRUCTURE

PROPOSED WORK: Micro-Silica Concrete Overlay, Fence, Painting
TYPE: Continuous Welded Plate Girders with Reinforced Concrete Deck & Substructure
SPANS: 2 @ 85'-0" ℄ Bearings
ROADWAYS: 40'-0" f/f 2 - 6'-0" Sidewalks
SKEW: None
ALIGNMENT: Tangent
WEARING SURFACE: Micro - Silica Concrete Deck Overlay
APPROACH SLABS: 25' Long (AS-1-72)
AVERAGE DAILY TRUCK TRAFFIC:
DESIGN LOAD: HS20-44
AVERAGE DAILY TRAFFIC:

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

1 / 6

GENERAL PLAN AND ELEVATION

BRIDGE NO. LOR-2-0586
UNDER OAK POINT ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

08-03-92 [I:\S\C\ODOT] THC
10:17AM

PROPOSED WORK:
MAJOR WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF MICRO-SILICA CONCRETE OVERLAY, SEALING OF EXPANSION JOINTS, INSTALLING PROTECTIVE FENCE ON EXISTING PARAPETS, REPLACING ABUTMENT BEARINGS, REMOVING SCUPPERS, CONCRETE SEALER, AND PAINTING. THE DETAILS OF THIS WORK ARE SHOWN IN THE PLANS AND SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

BR-2-82	DATED	11-1-82
EXJ-4-87	DATED	1-~~20-94~~
RB-1-55	DATED	2-2-59
VPF-1-90	DATED	**3-24-93**

AND TO SUPPLEMENTAL SPECIFICATIONS

910	DATED	5-20-91

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

DECK PROTECTION METHOD:
MICRO - SILICA MODIFIED CONCRETE OVERLAY.
SEALING OF CONCRETE SURFACES.
EPOXY COATED REINFORCING.

ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL:

THIS ITEM SHALL BE USED TO PLUG AND REMOVE PORTIONS OF THE EXISTING SCUPPERS AND ALL SUBDRAINS AS PER THE DETAILS IN THE PLANS.
PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL WHICH SHALL INCLUDE ALL LABOR EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):
A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGE TO THE LIMITS AS SHOWN ON SHEET 3/6 AND 4/6 SEE PROPOSAL NOTE FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

STAGE CONSTRUCTION:
DETAILS ARE SHOWN ON SHEET 1/6.

MAINTENANCE OF TRAFFIC:
TRAFFIC MAINTENANCE INFORMATION CAN BE FOUND ON SHEET 92.

UTILITY LINES:
CARE MUST BE EXERCISED NOT TO DAMAGE AND DISTURB EXISTING LIGHTING STRUCTURE, CONDUIT AND CONNECTIONS LOCATED ON EXISTING PARAPET.(LOCATED OVER PIER ON EAST SIDE)

ANY DAMAGE TO THIS LIGHTING STRUCTURE, CONDUIT OR CONNECTIONS BECAUSE OF CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND TO THE APPROVAL OF THE ENGINEER.

ADDITIONAL NOTES:
FOR ADDITIONAL NOTES SEE SHEET 120, AND 121.

CALC. BY. SWR DATE. 2/24/94 **ESTIMATED QUANTITIES** CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	PIERS	ABUTS.	GEN' L.
202	98100	4	EACH	REMOVAL, MISC.: SCUPPER REMOVAL	4			
254	01000	765	SQ.YD.	PAVEMENT PLANING, BITUMINOUS	765			
SPECIAL	5126751**0**	583	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)(SEE PROPOSAL NOTE)	273		282	
SPECIAL	51267504	377	SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)(SEE PROPOSAL NOTE)	377			
SPECIAL	51400050	16730	SQ.FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)	16730			
SPECIAL	51400056	16730	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU(SEE PROPOSAL NOTE).	16730			
SPECIAL	51400060	16730	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, INTERMDEDIATE COAT, SYSTEM OZEU(SEE PROPOSAL NOTE).	16730			
SPECIAL	51400066	16730	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU(SEE PROPOSAL NOTE).	16730			
516	11211	108	LIN.FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMETRIC STRIP SEAL, AS PER PLAN (SEE PROPOSAL NOTE)	108			
516	46201	14	EACH	BEARING DEVICE, ROCKER, AS PER PLAN *(SEE SHT. 174)*			14	
516	47000	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE (SEE PROPOSAL NOTE)				
518	63300	LUMP		STRUCTURE DRAINAGE, MISC.: WATER STOPS ON BEAMS AT ABUTMENTS AND PIERS,AS PER PLAN. *(SEE SHT. 174)*				
519	11101	3	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN *(SEE SHT. 145)*			3	
SPECIAL	51922006	765	SQ.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 3/4" THICK) (SEE PROPOSAL NOTE)	765			
SPECIAL	51922100	16	CU.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) (SEE PROPOSAL NOTE)	16			
SPECIAL	51922300	LUMP		TEST SLAB (SEE PROPOSAL NOTE)				
SPECIAL	60739930	412	LIN.FT.	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC	412			

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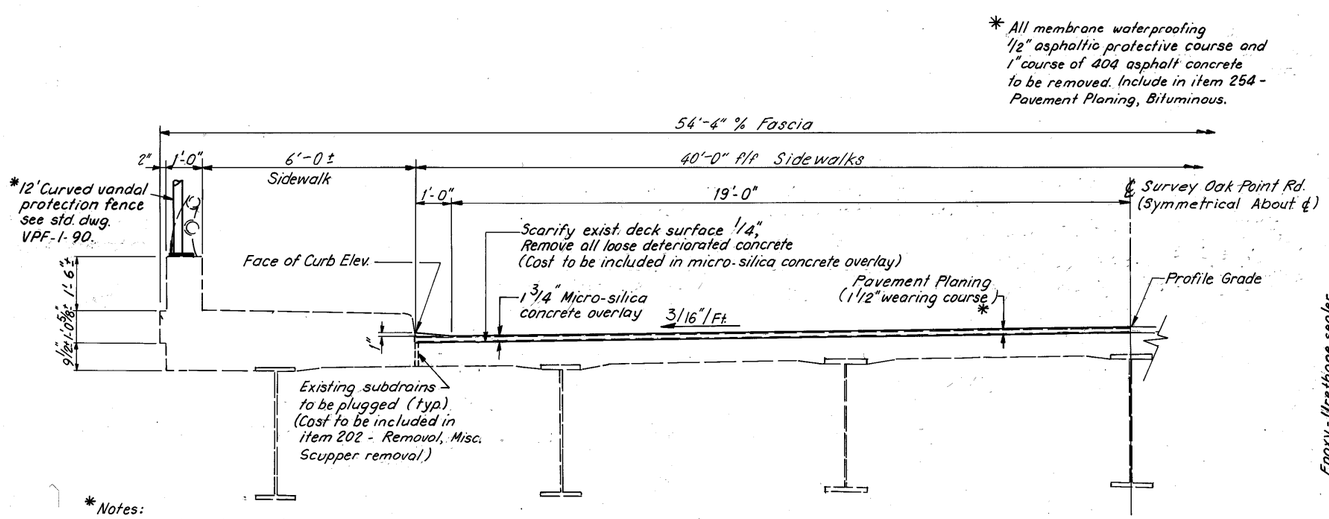
GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. LOR-2-0586
UNDER OAK POINT ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	——	CDW	ART	2/24/94	

29

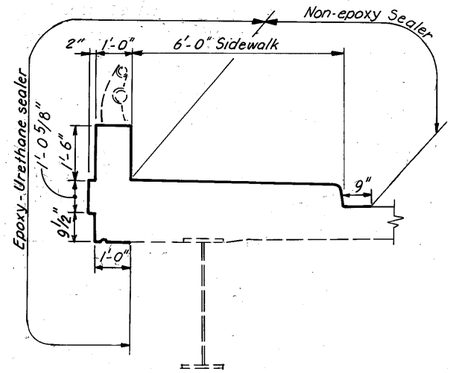


*Notes:
1. PVC coating shall be class 2B.
2. The wire shall be 9 gauge.
3. For fence post spacing see sht. 176.

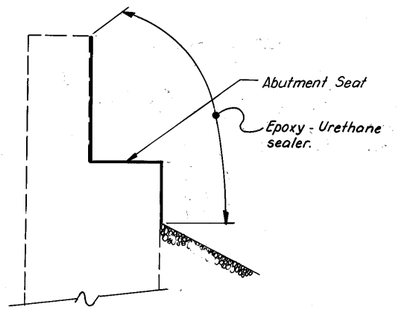
PARTIAL CROSS SECTION
(CROSS FRAMES NOT SHOWN)

NOTES:

1) Epoxy seal top and front surfaces of abutment as shown and exposed surfaces of wingwalls including beam seat ends.

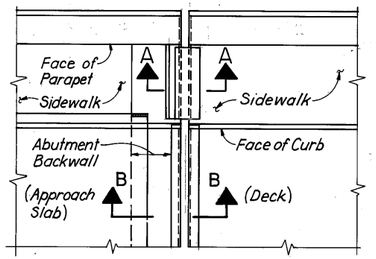


DETAIL "1"
EPOXY SEALER AT DECK

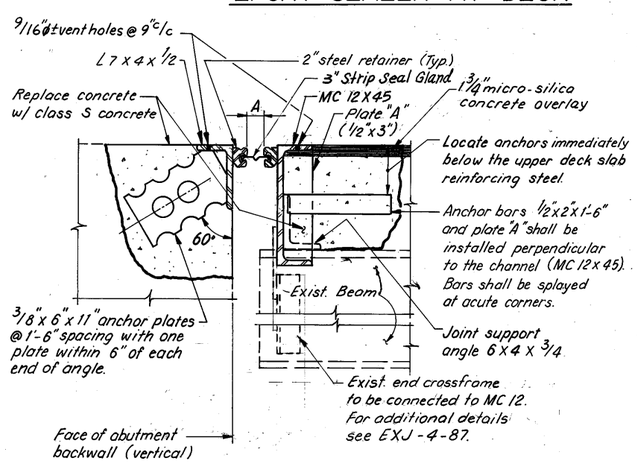


DETAIL "2"
EPOXY SEALER AT ABUTMENT

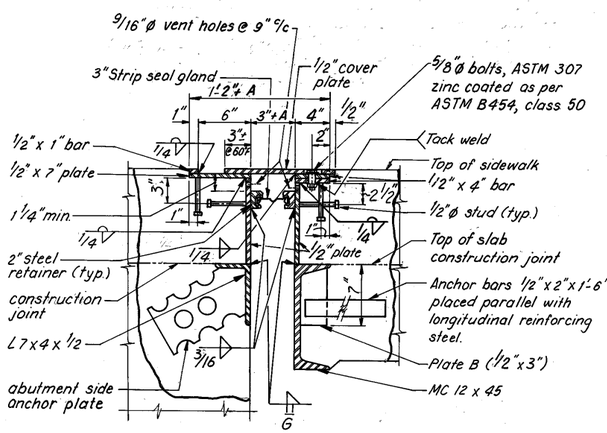
PROPOSED DECK ELEVATIONS			
STATION	FACE OF CURB ELEV. (L)	PROFILE GRADE	FACE OF CURB ELEV. (R)
49 + 15	656.74	656.97	656.74
49 + 25	656.82	657.05	656.82
49 + 50	656.96	657.19	656.96
49 + 75	657.06	657.29	657.06
50 + 00	657.15	657.38	657.15
50 + 25	657.10	657.33	657.10
50 + 50	656.98	657.21	656.98
50 + 75	656.86	657.09	656.86
50 + 85	656.78	657.01	656.78



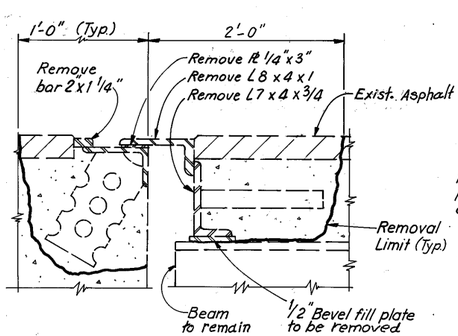
PART. PLAN AT ABUTMENT



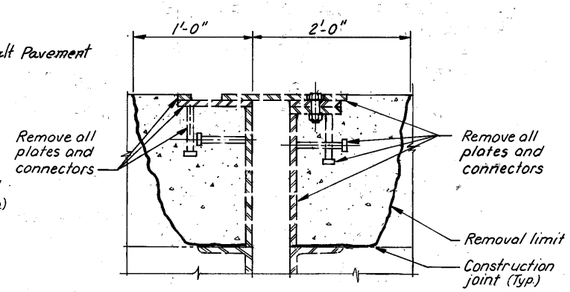
SECTION B - B
(PROPOSED)



SECTION A-A
(PROPOSED)



SECTION B-B
(EXISTING)



SECTION A-A
(EXISTING)

NOTES:

Remove and replace portions of concrete deck, sidewalk, parapet, and approach slab and expansion joint and connections as needed to facilitate new 3" strip seal expansion joint as shown on plans and std. dwg. EXJ-4-87. Preserve all exist. reinf. steel. Strip seal to be installed in one piece and after superstructure is complete.

Payment for all of the above shall be at the unit price bid per lin. ft. for item 516 structural expan. jt. including elastomeric strip seal as per plan which shall include all labor, equipment, materials, and incidentals necessary to complete the above work.

TEMPERATURE ADJUSTMENT TABLE							
TEMP	30	40	50	60	70	80	90
"A"	1 7/8"	1 13/16"	1 11/16"	1 5/8"	1 9/16"	1 1/2"	1 1/2"

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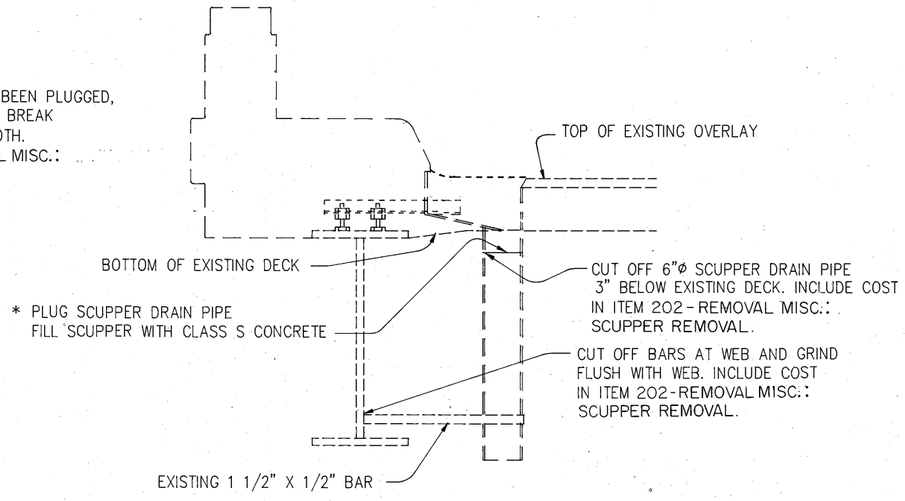
MICRO-SILICA CONCRETE OVERLAY AND MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0586
UNDER OAK POINT ROAD

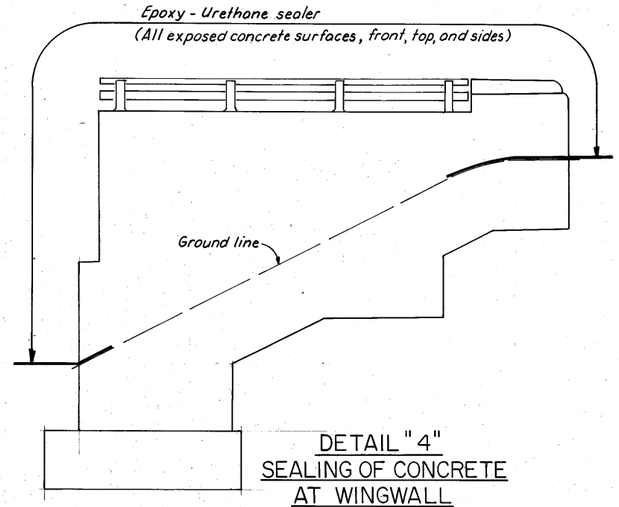
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

30

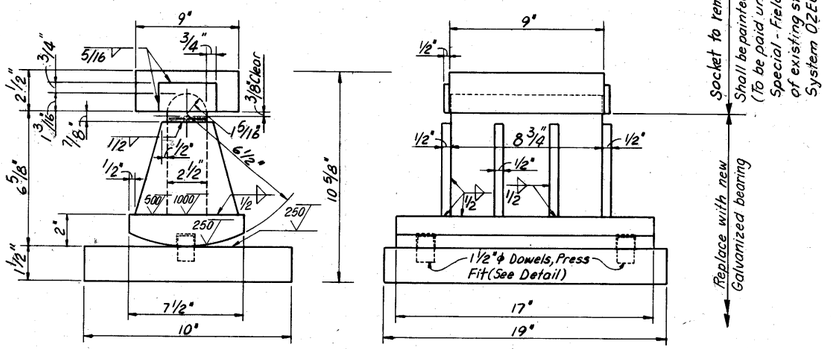
* IF ANY SCUPPER WHICH HAS ALREADY BEEN PLUGGED, HAS CONCRETE BELOW CUT OFF LEVEL, BREAK OFF CONCRETE AND PATCH AREA SMOOTH. INCLUDE COST IN ITEM 202 - REMOVAL MISC.: SCUPPER REMOVAL.



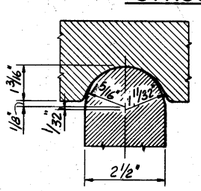
DETAIL "1"
REMOVAL AND PLUGGING EXISTING SCUPPER



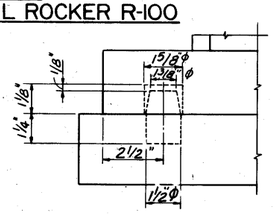
DETAIL "4"
SEALING OF CONCRETE AT WINGWALL



ELEVATION
STRUCTURAL STEEL ROCKER R-100



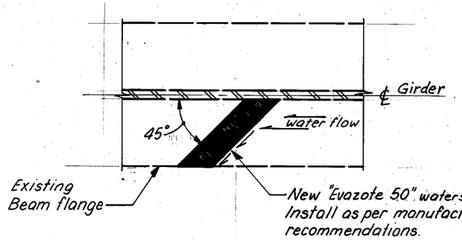
TOP BEARING DETAIL



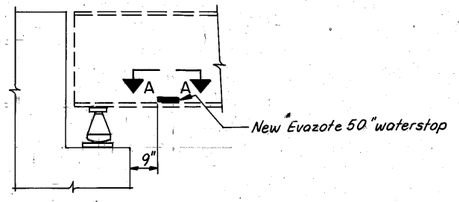
DOWEL DETAIL

BEARING DETAILS

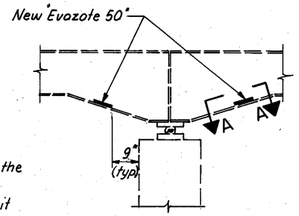
Note:
Remove all existing R-100 Rocker bearings below the socket & replace w/ new R-100 Bearings (Galv.)
Payment for all of the above shall be at the unit price bid of each for item 516 - Bearing Device, Rocker, As per plan which shall include all labor, equipment, materials, and incidentals necessary to complete the above work.



SECTION A-A



DETAIL "3"
WATERSTOPS ON BEAMS AT ABUTMENTS



DETAIL "2"
WATERSTOP ON BEAMS AT PIERS

Notes:

1. *New Evazote 50 as manufactured by Epoxy industries Inc. or equal water stop on beams over piers and abutments shall be installed only on the outside face of fascia beams as shown on detail "2" & detail "3" & Sect. A-A on this sheet, after painting is completed.*
2. *Clean and prepare surfaces as recommended by manufacturer.*
3. *Adhesive used to install the waterstop shall be as specified by the manufacturer.*
4. *Payment for all of the above shall be at the unit price bid of lump sum for the item - 518 - Structure Drainage, Miscellaneous: waterstops on beams at abutments & piers, as per plan which includes all labor, equipment, material and incidentals necessary to complete the above work.*

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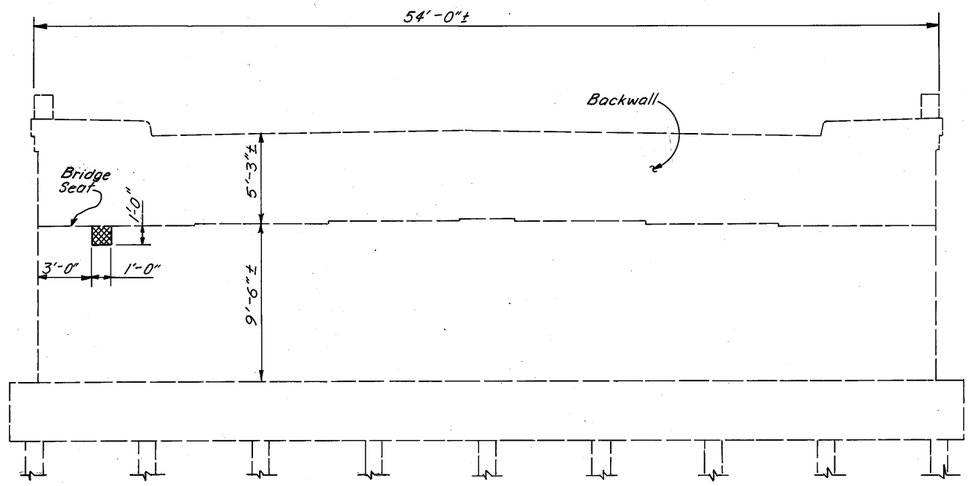
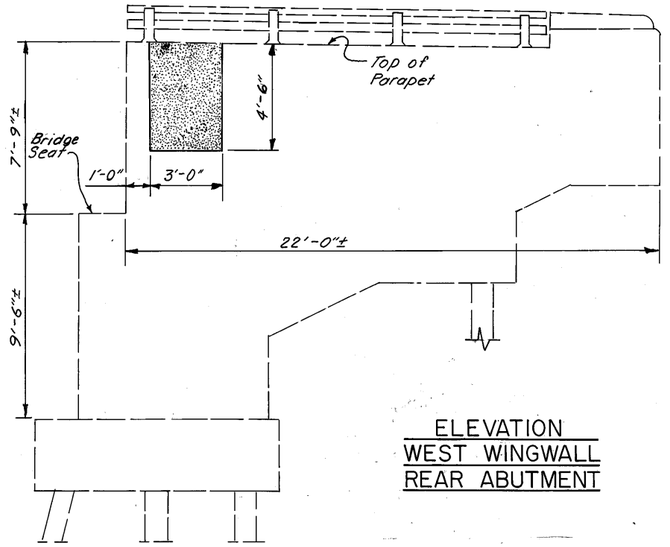
MISCELLANEOUS DETAILS

BRIDGE NO. LOR - 2 - 0586
UNDER OAK POINT ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	



ELEVATION
REAR ABUTMENT



ELEVATION
WEST WINGWALL
REAR ABUTMENT

LEGEND:

Spalled Concrete to be patched and sealed with Epoxy-Urethane sealer.

Graffiti to be covered with epoxy-urethane sealer.

Item-519 Patching Concrete Structures, As Per Plan		
Location	Unit	Measured Quantity
Rear Abutment	S.F.	1.0
Total	S.F.	1.0

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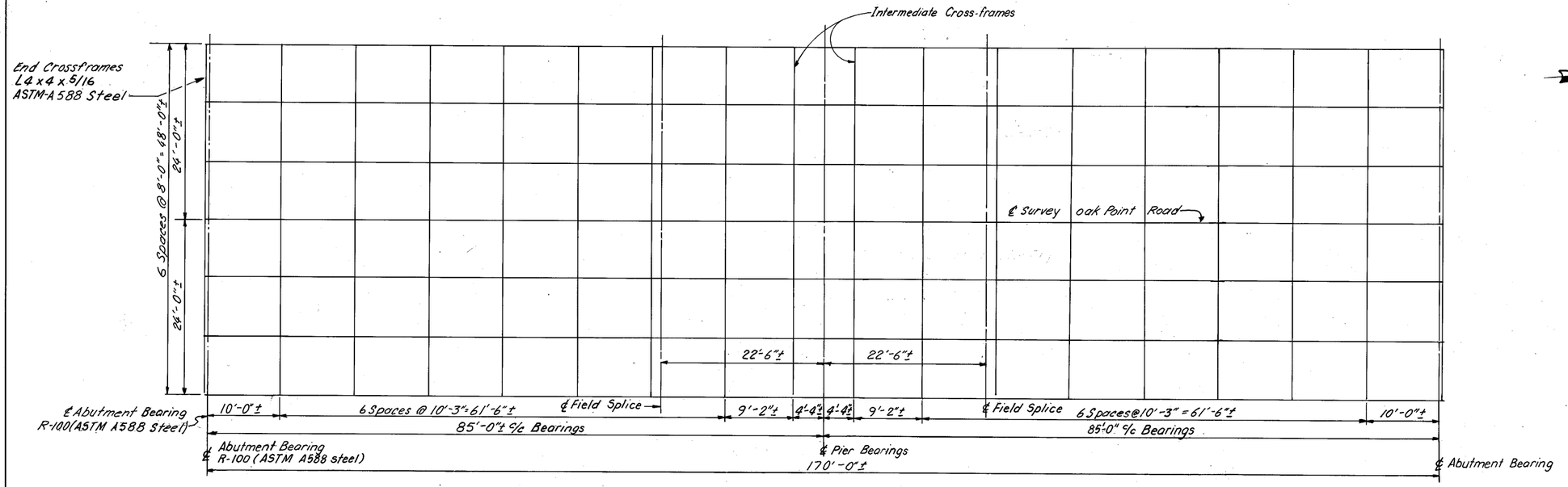
REPAIR DETAILS

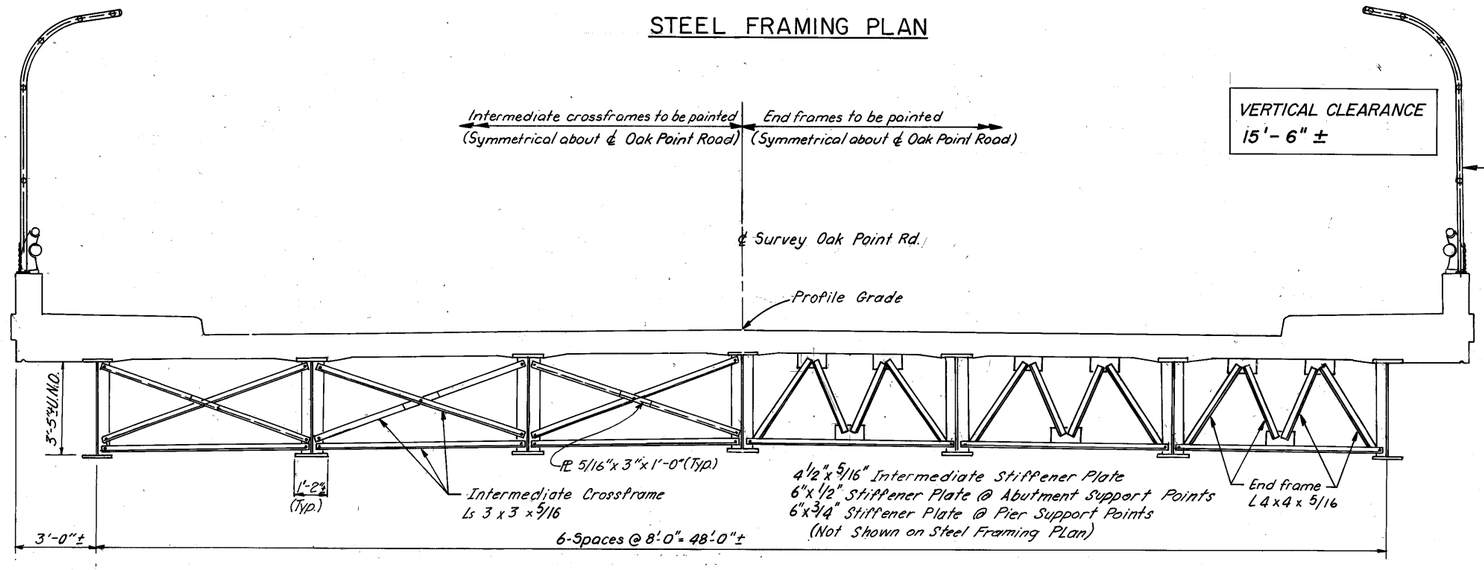
BRIDGE NO. LOR-2-0586
UNDER OAK POINT ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

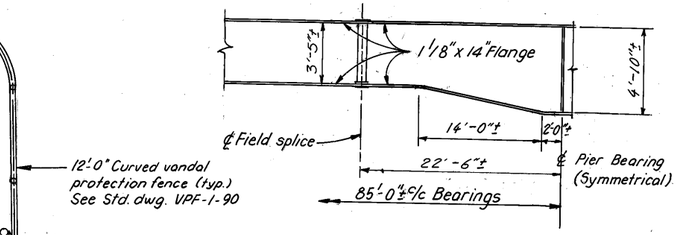
32



STEEL FRAMING PLAN



TYPICAL SECTION



PARTIAL GIRDER ELEVATION

Notes:

1. Estimated quantities: The amount of prime coat needed to fill the pits and cover the peaks of the deep profile of A-588 weathering steel will be significantly more than that needed to coat non-weathering steel.
2. Paint system: The proposal note titled Field Painting of Existing Steel, System OZEU shall be used to coat the A-588 Structural Steel in this project. Because all structural steel to be coated in this project is presently uncoated A-588 Steel the blasting waste generated will be considered non-hazardous. Evaluation of the spent abrasive will therefore be unnecessary and will not be performed.
3. Color of finish: The finish coat shall be grey matching Federal Color Standard No. FS-595A-16440.

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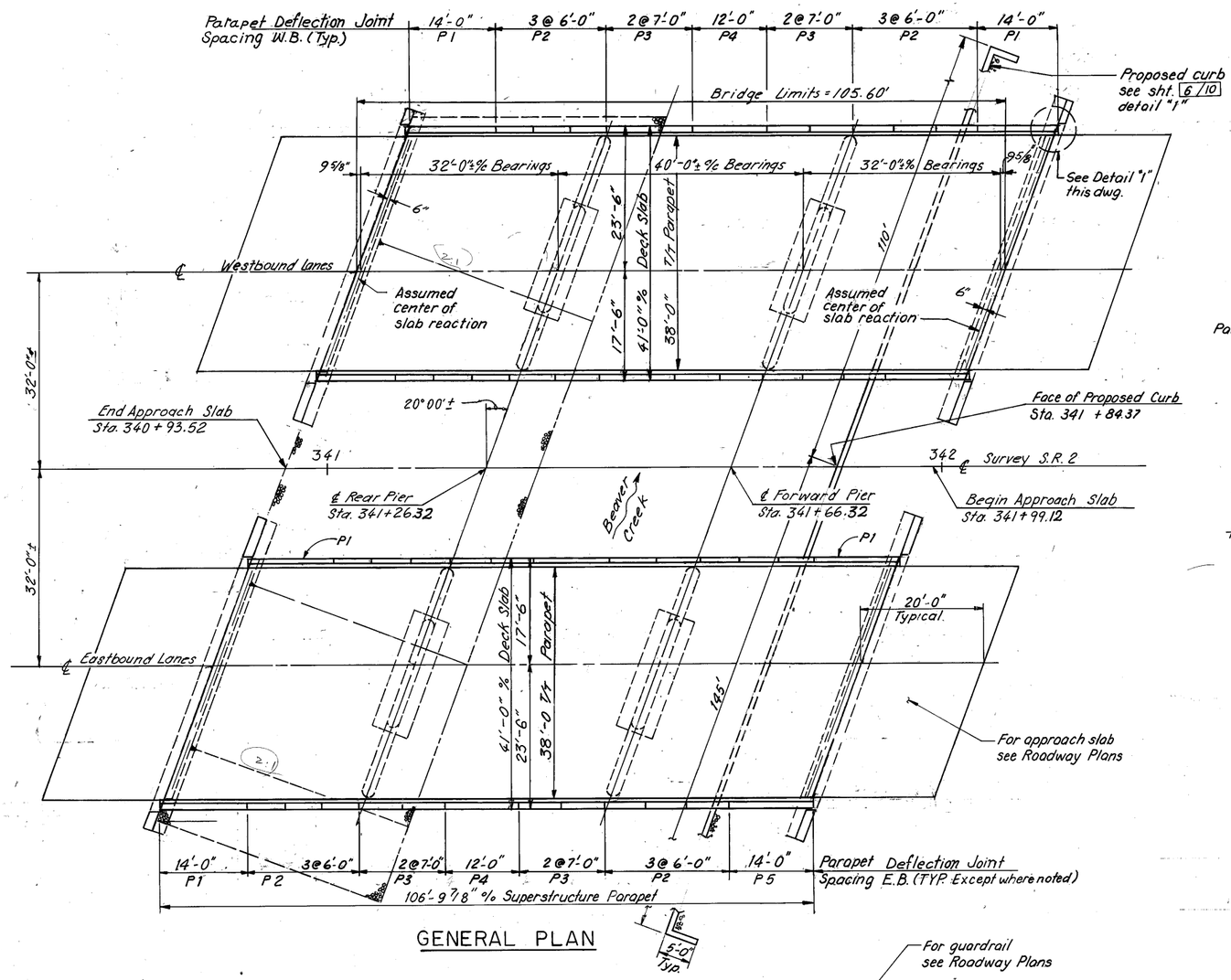
STRUCTURAL STEEL FOR PAINTING

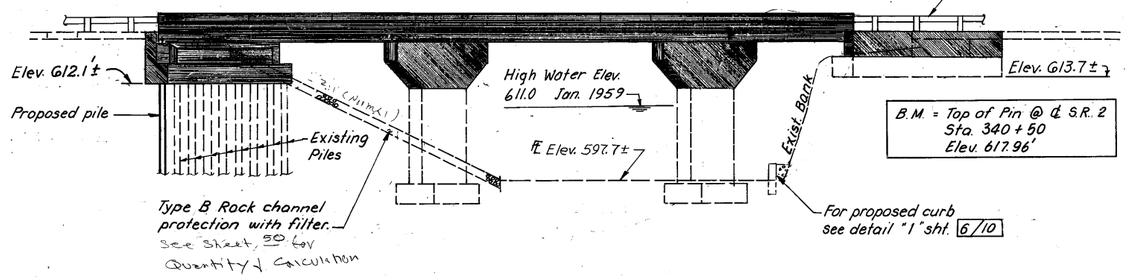
BRIDGE NO. LOR-2-0586
UNDER OAK POINT ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

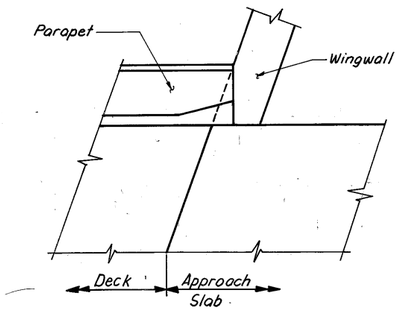
08-03-92 [R:\S\C\ODOT] THC
10:17AM



GENERAL PLAN



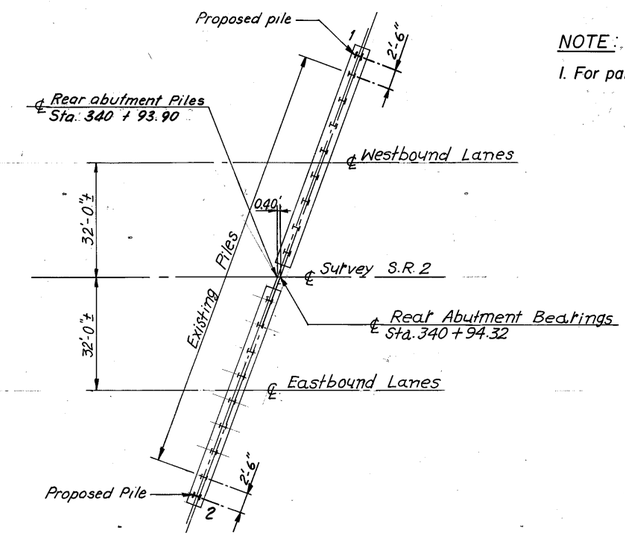
ELEVATION



DETAIL - 1

EXISTING STRUCTURE
TYPE: Continuous Reinforced Concrete Slab with Reinforced Concrete Substructure
SPANS = 32' - 40' - 32' ℄c bearings
ROADWAY = 40'-0" f/f Guardrails
SKEW = 20° L.F
ALIGNMENT: Tangent
WEARING SURFACE: Monolithic
APPROACH SLABS: AS-1-54 (25' Long)
DATE BUILT: 1965
STRUCTURE FILE NUMBER: 4700090, 4700120

PROPOSED STRUCTURE
PROPOSED WORK: Deck Replacement and Widening, Major Substructure Modifications.
TYPE: Continuous Reinforced Concrete Slab with Reinforced Concrete Substructure
SPANS = 32' - 40' - 32' ℄c bearings
SKEW: 20° L.F
ROADWAY = 38'-0" f/t Parapets
ALIGNMENT: Tangent
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-81 (20' LONG)
AVERAGE DAILY TRAFFIC: 25980 (2014)
AVERAGE DAILY TRUCK TRAFFIC: 3118 (2014)



PILE PLAN

NOTE:

1. For parapet panel details see sht. 9/10

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GENERAL PLAN

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

PROPOSED WORK:
THE EASTBOUND AND WESTBOUND BRIDGES CARRYING S.R.-2 TRAFFIC OVER BEAVER CREEK ARE TO BE RECONSTRUCTED UNDER THIS CONTRACT. A GENERAL SUMMARY OF THE MAJOR WORK TO BE PERFORMED AT EACH BRIDGE IS LISTED BELOW. THE DETAILS OF THE WORK ARE SHOWN IN THE PLANS AND SPECIFICATIONS.

A. REMOVE AND DISPOSE OF EXISTING DECK SLABS, PORTIONS OF ABUTMENTS, AND PORTIONS OF PIERS AS INDICATED ON THE PLANS.

B. REPAIR EXISTING PIER STEMS WHERE INDICATED.

C. INSTALL PROPOSED ABUTMENT PILES WHERE INDICATED.

D. CONSTRUCT ABUTMENT AND PILE ELEMENTS, AS PER PLANS.

E. CONSTRUCT BRIDGE SLABS AND PARAPETS AS PER THE PLANS.

F. INSTALL PROPOSED CURB AT TOE OF FORWARD ABUTMENT

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED	11-27-81
CPA-2-73	DATED	4-10-73
CS-2-73	DATED	4-10-73

REFERENCE SHALL BE MADE TO THE FOLLOWING SUPPLEMENTAL REFERENCE:
852 DATED 7-30-93

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

DECK PROTECTION METHOD:
EPOXY COATED REINFORCING STEEL, 2 1/2" CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

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

EMBANKMENT CONSTRUCTION:
THE REAR EMBANKMENT SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE REAR ABUTMENT AND PILES DRIVEN.

PILE INSPECTION:
AFTER ABUTMENT PILES ARE EXPOSED BY CONCRETE REMOVALS, AT LEAST ONE FOOT OF ADDITIONAL PILE LENGTH BELOW ABUTMENT BOTTOM (FOR THE TWO MOST CORRODED PILES) SHALL BE CAREFULLY UNCOVERED TO PERMIT PILE INSPECTION, PHOTOGRAPHING, EVALUATION, AND APPROVAL BY THE ENGINEER. THE DIRECTOR SHALL BE NOTIFIED IF SEVERE CORROSION IS FOUND. AFTER PILE APPROVAL, ALL EXPOSED PILES SHALL BE CLEANED PRIOR TO ENCASING THEM IN NEW ABUTMENT CONCRETE. COST OF PROVIDING PILE ACCESS AND CLEANING SHALL BE INCLUDED IN 202 FOR PAYMENT.

PILES:
PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 25 TONS PER PILE.
ESTIMATED PAY LENGTH 15 FEET.

FOOTINGS:
THE FORWARD ABUTMENT FOOTING SHALL BE PLACED IN BEDROCK AT THE ELEVATION SHOWN.

MAINTENANCE OF TRAFFIC:
BRIDGE WORK SHALL BE COORDINATED WITH DISTRICT 3 ROADWAY WORK AND MAINTENANCE OF TRAFFIC REQUIREMENTS AND ALTERNATE BRIDGE CLOSURES DURING CONSTRUCTION.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)):
A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGE TO THE LIMITS AS SHOWN ON SHEETS [5/10] AND [8/10]. SEE PROPOSAL NOTE FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

ITEM 511 CONC. MISC.: CURB:
THE PROPOSED CURB AT FORWARD ABUTMENT, INCLUDES TYPE C CONCRETE REINFORCING STEEL, TYPE C ROCK PROTECTION, AND 1/2" DIAMETER WEEPHOLES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM SPECIAL, CURB, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED (ABUTMENTS AND PIERS), AS PER PLAN:
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 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. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELLED REINFORCING STEEL 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 (ABUTMENTS AND PIERS), AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

NOTES:
1. FOR ADDITIONAL NOTES, SEE SHEETS 120 & 121.
2. FOR ESTIMATED QUANTITIES, SEE SHEET [3/10].

ITEM SPECIAL - HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK)
MIX #4 SHALL BE USED.

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WESTLAKE, OHIO
2 / 10

GENERAL NOTES

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

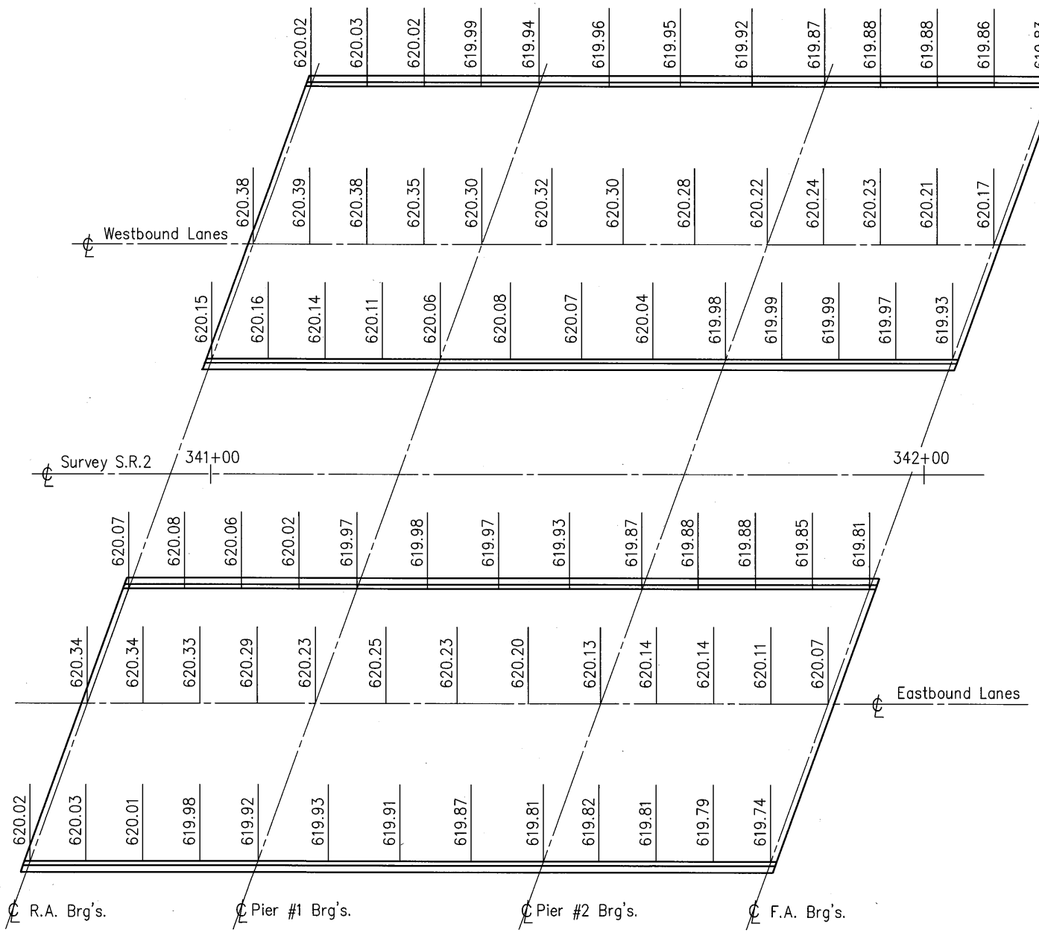
35

09-17-93 [O:\83592E\BRIGNOTE] THC
8:05AM

KEVIN M

CALC. BY. SWR DATE. 2/24/94 **E S T I M A T E D Q U A N T I T I E S** CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	D E S C R I P T I O N	ABUTS	PIERS	SUPER.	GEN'L
202	11301	166	CU. YD.	PORTIONS OF STRUCTURE REMOVED (ABUTMENTS AND PIERS), AS PER PLAN (SEE SHT. 178)	94	72		
202	11301	470	CU. YD.	PORTIONS OF STRUCTURE REMOVED, **AS PER PLAN** (SEE SHT. 144)			470	
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				
507	11100	35	LIN. FT.	STEEL PILES HP 10 X 42	35			
509	15830	128448	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	10099	8556	109793	200
SPECIAL	51148000	536	CU. YD.	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK)(MIX #4)(SEE PROPOSAL NOTE)			536	
SPECIAL	51148020	41	CU. YD.	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET) (SEE PROPOSAL NOTE)			41	
SPECIAL	51149000	LUMP		HIGH PERFORMANCE CONCRETE TRIAL MIX (SEE PROPOSAL NOTE)				
SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE TESTING (SEE PROPOSAL NOTE)				
SPECIAL	85050070	962	SQ. YD.	BRIDGE DECK GROOVING (SEE PROPOSAL NOTE)			962	
511	43201	76	CU. YD.	CLASS C CONCRETE, PIER, AS PER PLAN (SEE SHT. 145)		76		
511	43501	89	CU. YD.	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN (SEE SHT. 145)	89			
SPECIAL	51267510	549	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SEE PROPOSAL NOTE)	91		458	
518	21201	56	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN (SEE SHT. 145)	56			
518	40001	227	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN (SEE SHT. 145)	227			
518	40011	60	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN (SEE SHT. 145)	60			
519	11101	30	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SEE SHT. 145)		30		
				CONCRETE MISC:				
511	81100	264	LIN. FT.	CURB				264



DECK PLAN

Screed Elevations Given

NOTE:
Elevations shown are at the quarter points of the spans where the top of the deck meets the toe of the parapet or centerline of roadway. The elevations noted include a camfer of 1/2" in the end spans and 5/8" in the center span (in addition to that required for conformance with the profile of the highway) to allow for dead load deflection. This is the amount of camber required before false work is released. To obtain this, proper allowances shall be made for the deflection of falsework members.

LOR-2-3.48 | OHIO | FHWA REGION 5 | 179 / 222

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WESTLAKE, OHIO

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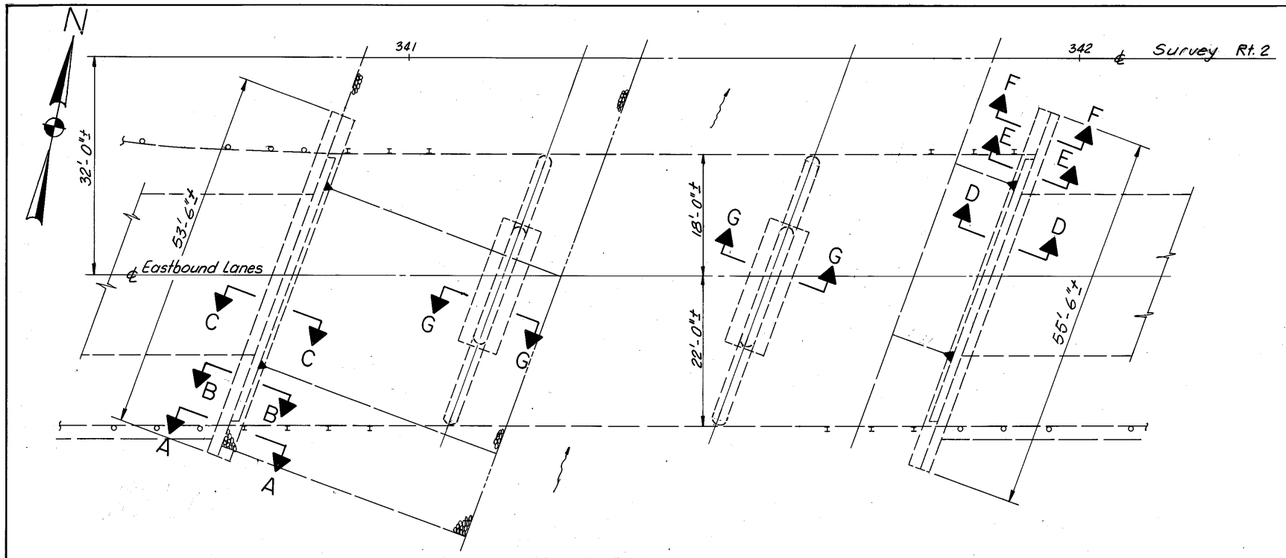
ESTIMATED QUANTITIES AND DECK ELEVATIONS

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

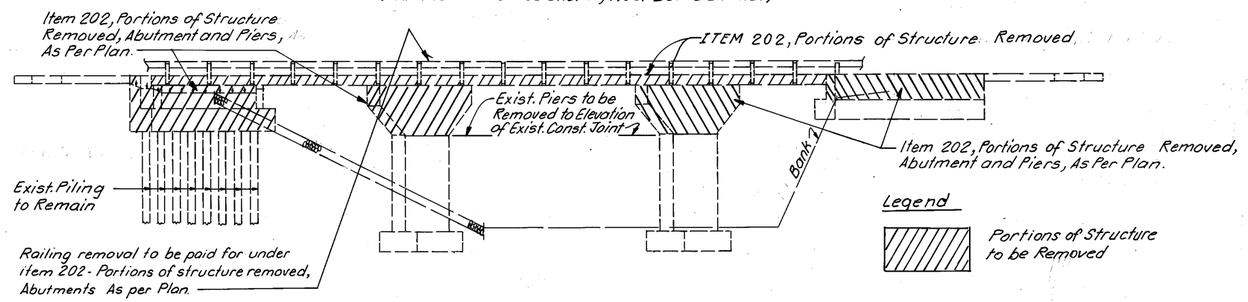
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC		CDW	ART	2/24/94	

01-05-94 [O:\83592E\ESTQ-E] THC
2:51PM



PLAN

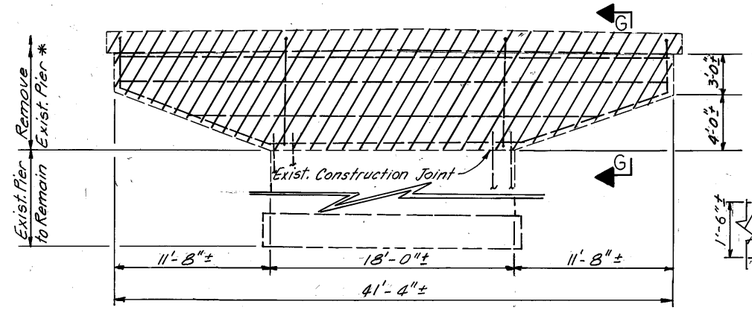
(East Bound Lanes Shown, West Bound Similar)



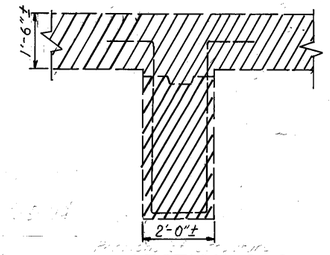
ELEVATION

Note:

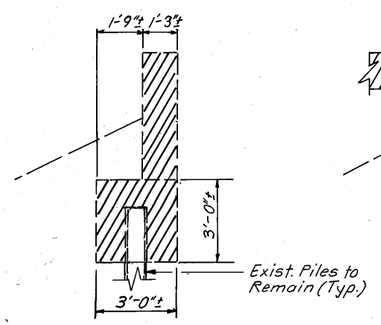
* Care Must be Taken not to Damage any Existing Vertical Reinforcement Coming From the Stem of the Piers. If any Reinforcement That is Designated to Stay is Damaged During the Contractor's Operation, it Shall be Replaced by the Contractor at the Contractor's Expense.



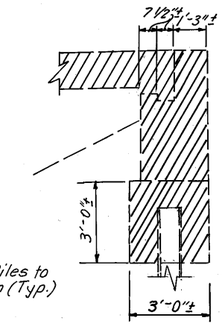
PIER ELEVATION



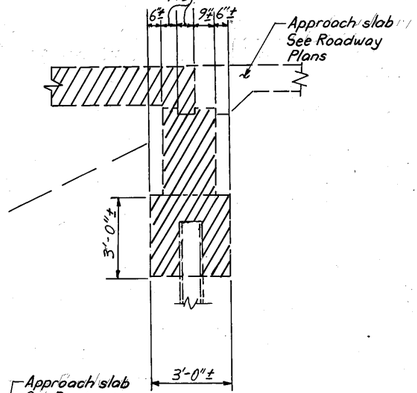
SECTION G-G



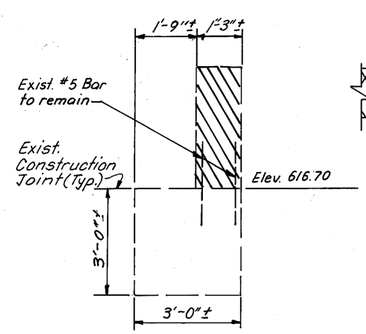
SECTION A-A



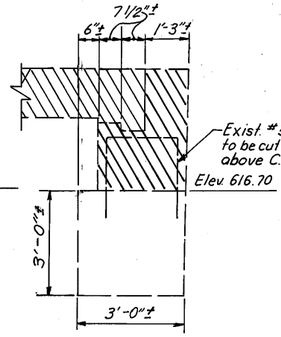
SECTION B-B



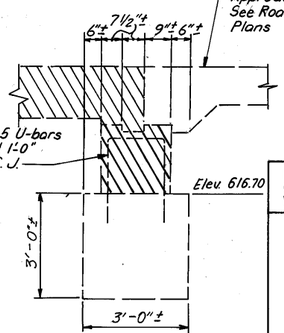
SECTION C-C



SECTION F-F



SECTION E-E



SECTION D-D

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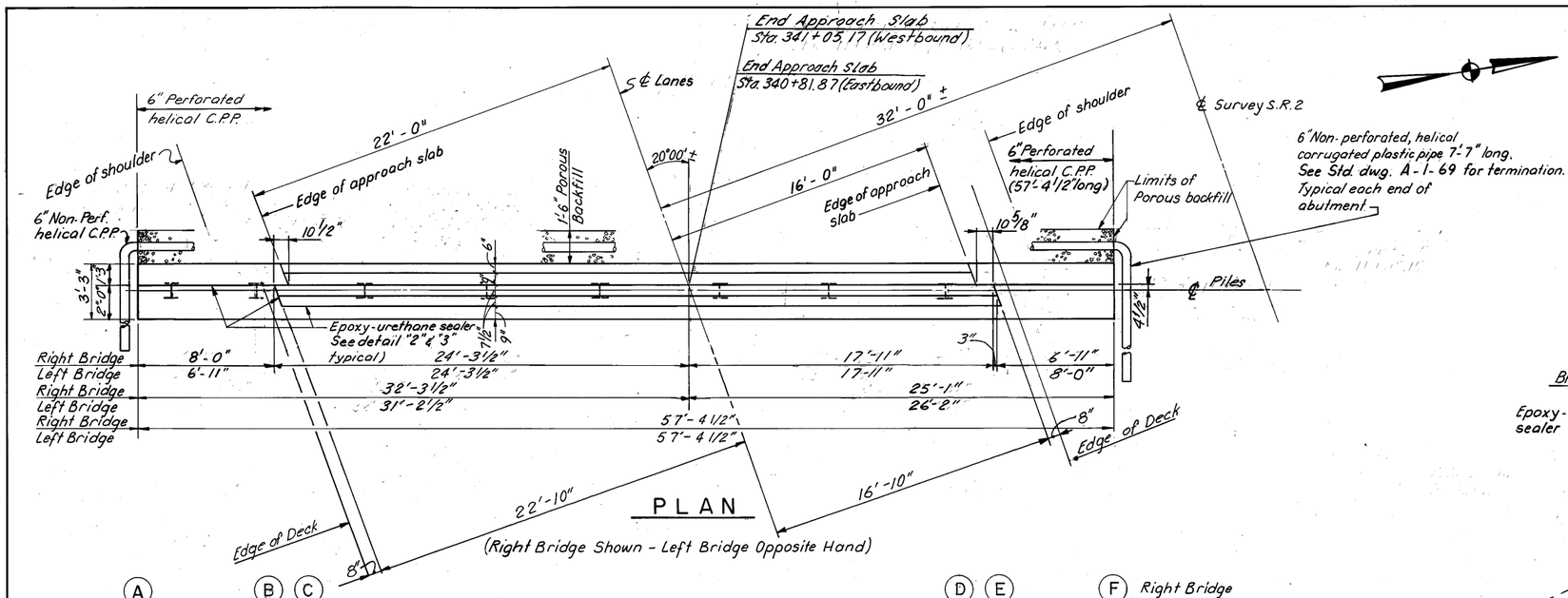
WESTLAKE, OHIO 44145

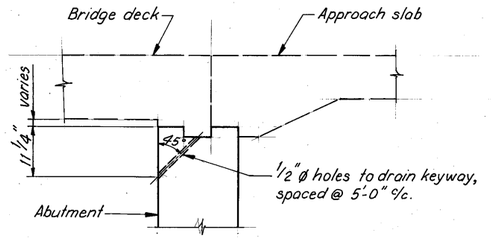
4/10

DEMOLITION PLAN

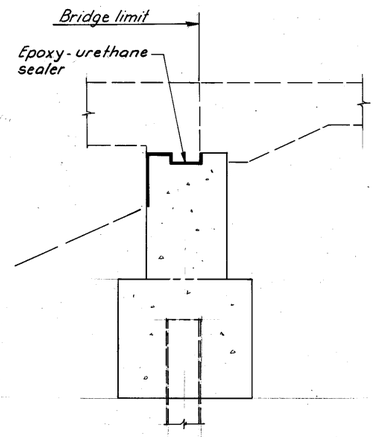
BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	-	CDW	ART	2/24/94	

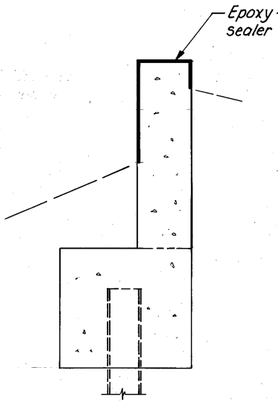




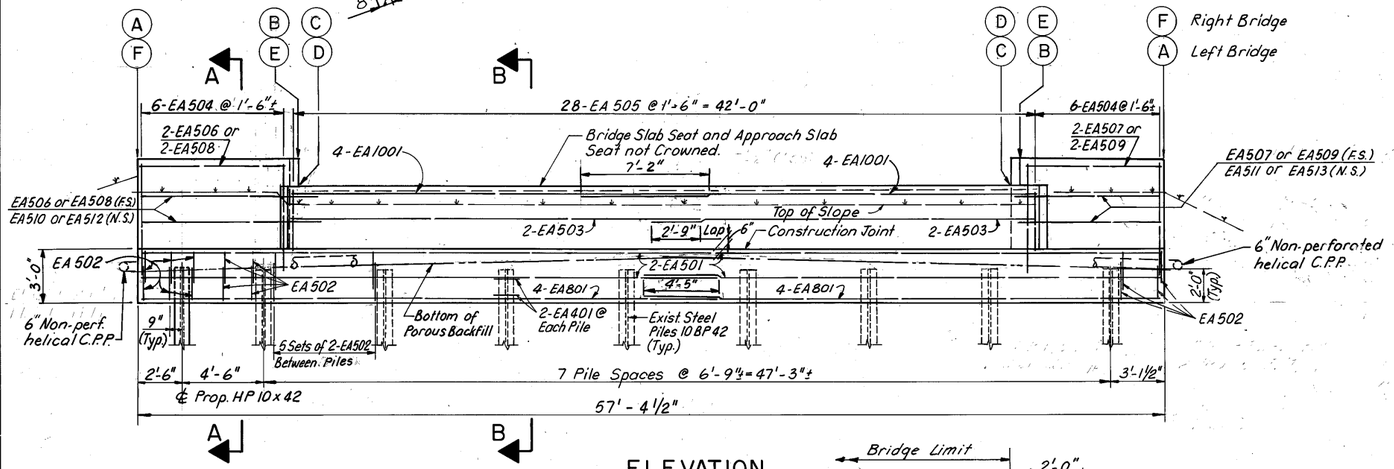
DETAIL "1"
KEYWAY DRAIN



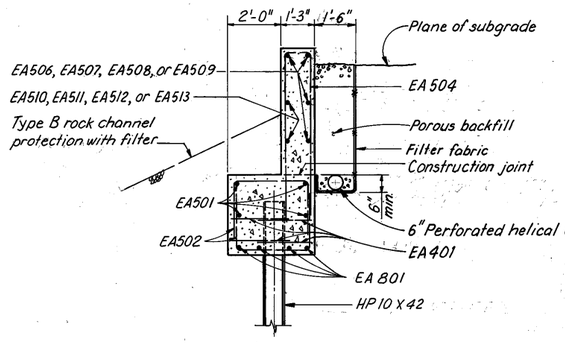
DETAIL "2"
EPOXY-URETHANE SEALER AT BRIDGE SEAT



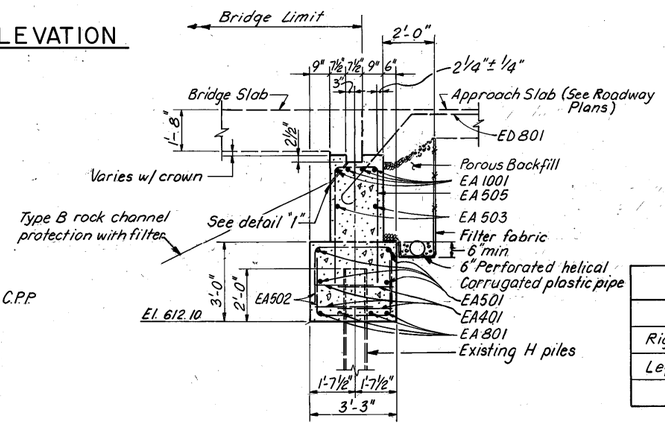
DETAIL "3"
EPOXY-URETHANE SEALER AT WINGWALLS



ELEVATION



SECTION A-A



SECTION B-B

Notes:

1.) All Abutment Reinforcing Shall be Epoxy Coated.
2.) C.P.P. = Corrugated Plastic Pipe
3.) C.J. = Construction joint.
4.) For abutment demolition limits see sht. 4/10.
5.) Epoxy-urethane seal top & front surfaces of abutments as shown in det. "2" including bridge seat ends and exposed surfaces of wingwalls as shown in detail "3".
6.) F.S. = Far side
7.) N.S. = Near side

TABLE OF ELEVATIONS

LOCATION		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ
Right Bridge	Rear Abutment	620.05	620.05	618.35	618.40	620.00	620.00
Left Bridge	Rear Abutment	620.00	620.00	618.35	618.48	620.13	620.13

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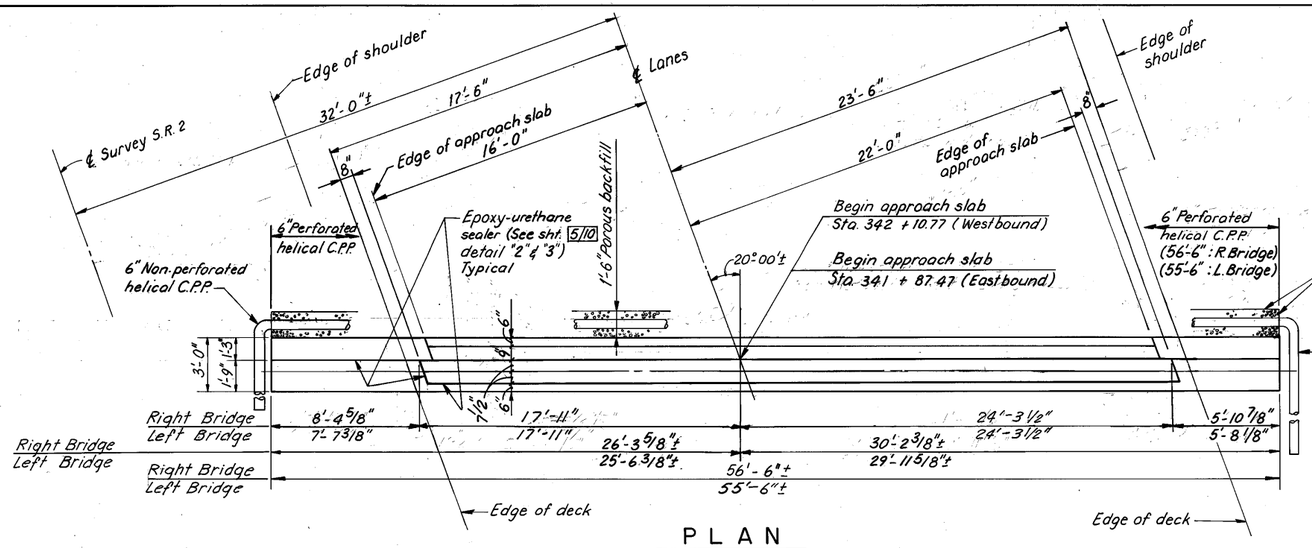
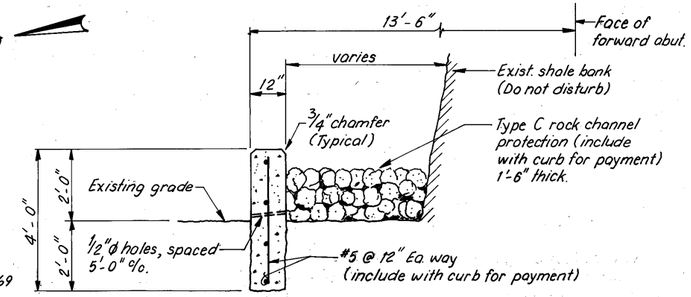
REAR ABUTMENTS

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

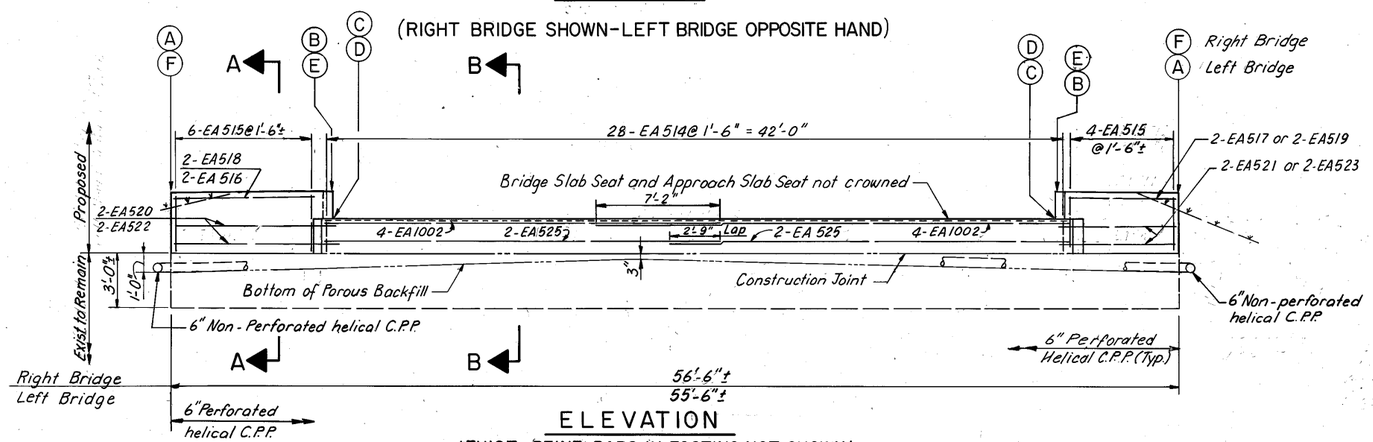


PLAN

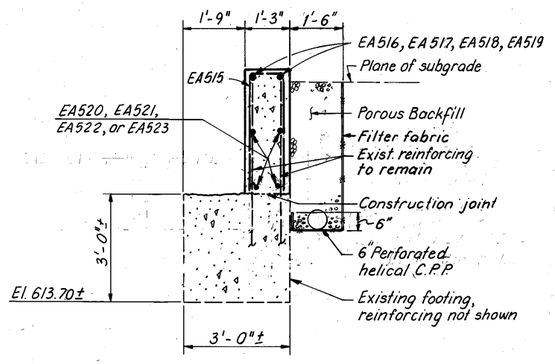


SECTION C-C
PROPOSED CURB AT FORWARD ABUTMENT

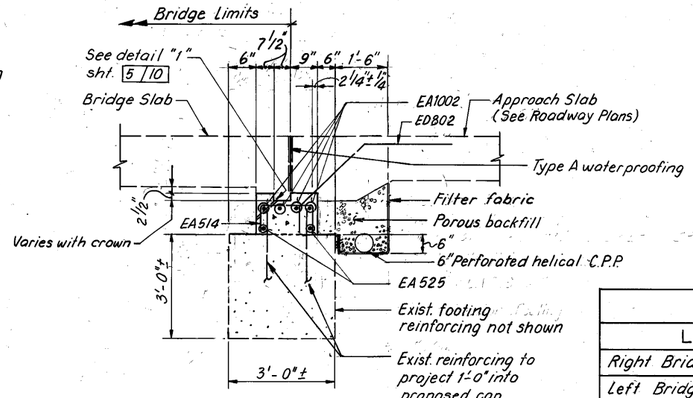
(RIGHT BRIDGE SHOWN-LEFT BRIDGE OPPOSITE HAND)



ELEVATION
(EXIST. REINF. BARS IN FOOTING NOT SHOWN)



SECTION A-A



SECTION B-B

Notes:
1. For abutment notes see sht. 5/10.
2. For epoxy-urethone sealer details see sht. 5/10.
3. C.P.P. = Corrugated plastic pipe

CURB LOCATION PLAN

TABLE OF ELEVATIONS

LOCATION		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ
Right Bridge	Forward Abutment	619.83	619.83	618.14	618.07	619.72	619.72
Left Bridge	Forward Abutment	619.85	619.85	618.16	618.26	619.91	619.91

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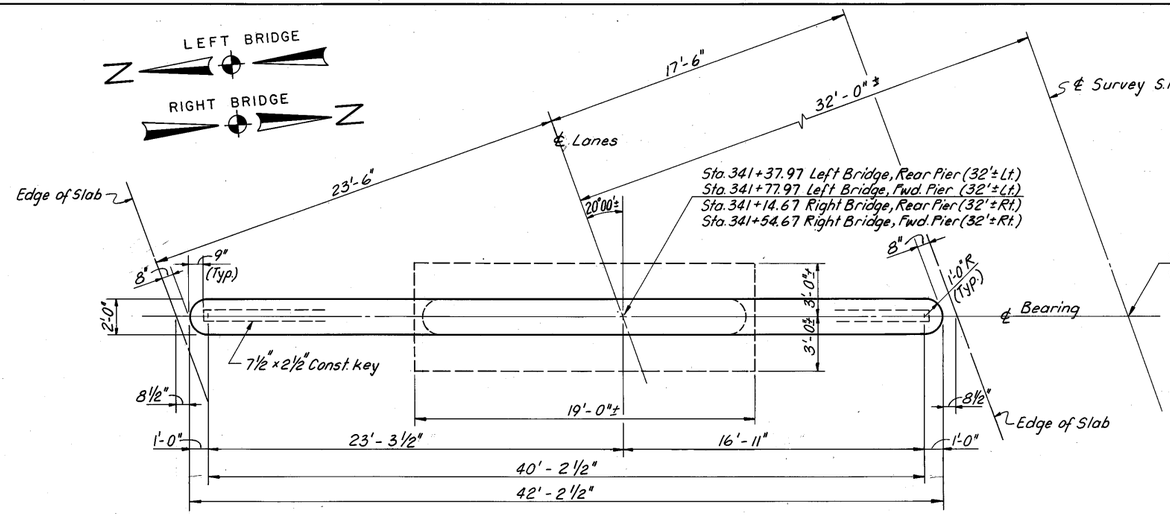
FORWARD ABUTMENTS

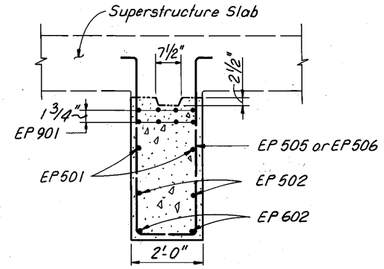
BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

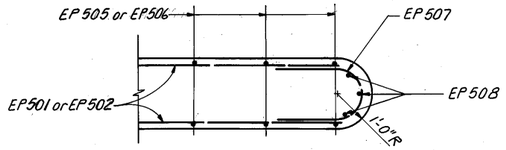


PLAN

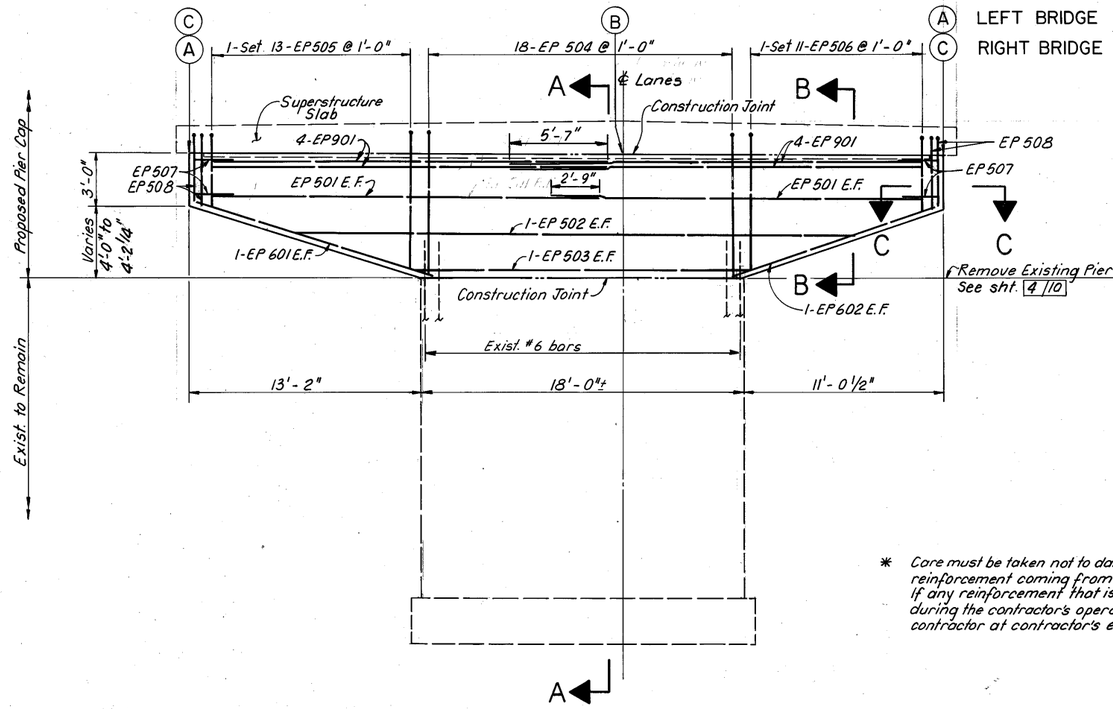
LEFT BRIDGE PIERS – AS SHOWN
RIGHT BRIDGE PIERS – OPPOSITE HAND



SECTION B-B

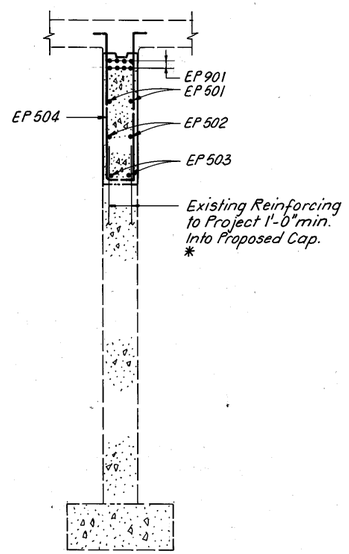


SECTION C-C



ELEVATION

* Care must be taken not to damage any existing vertical reinforcement coming from the stem of the piers. If any reinforcement that is designated to stay is damaged during the contractor's operation, it shall be replaced by the contractor at contractor's expense.



SECTION A-A

ELEVATIONS				
LOCATION		Ⓐ	Ⓑ	Ⓒ
Left Bridge	Rear Pier	618.39	618.63	618.27
	Fwd. Pier	618.31	618.55	618.20
Right Bridge	Rear Pier	618.25	618.56	618.30
	Fwd. Pier	618.14	618.46	618.20

Notes:
1. For Pier Demolition Limits, See Sheet 4/10

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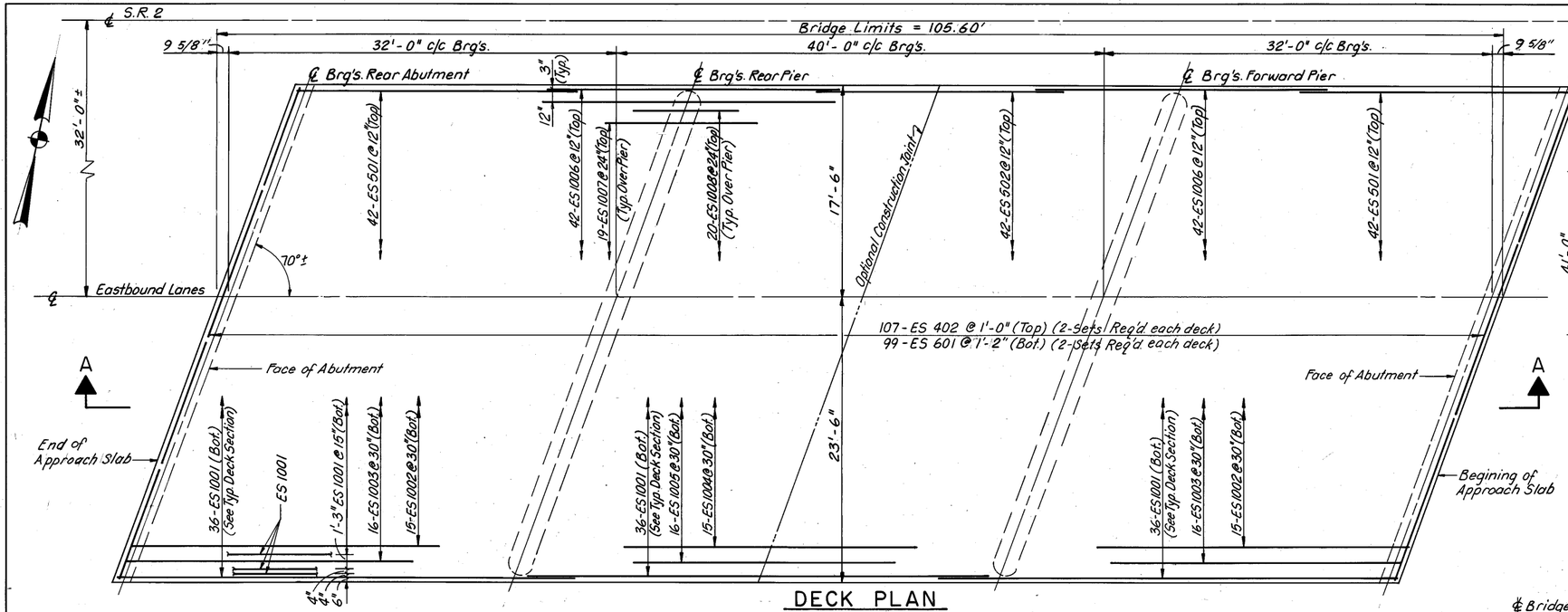
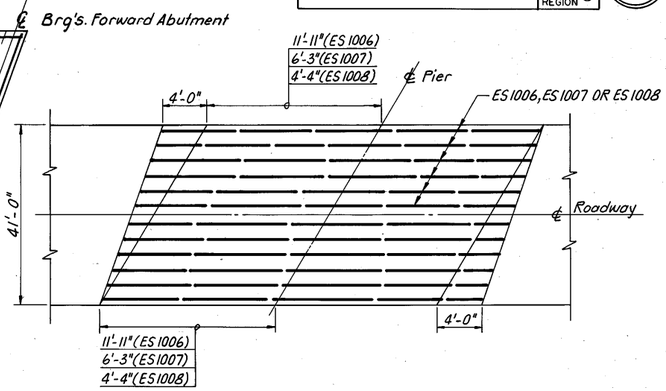
PIERS

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.P.	S.S.M.	—	C.D.W.	A.R.T.	2/24/94	

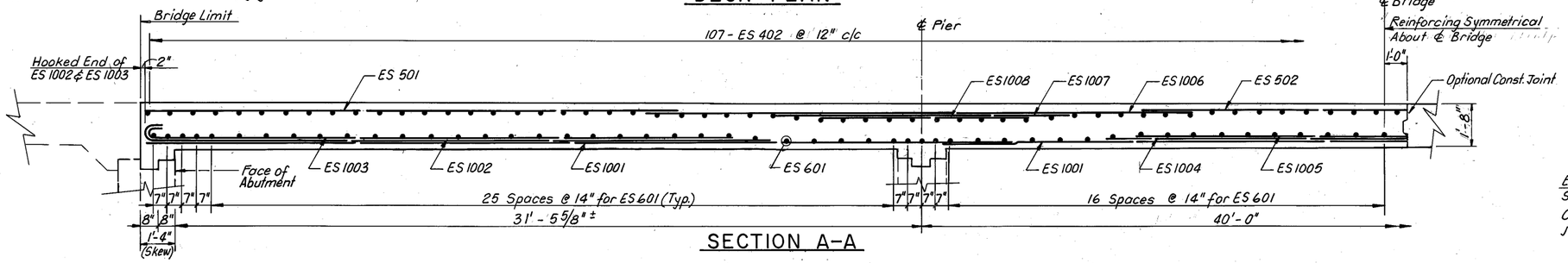


DECK PLAN

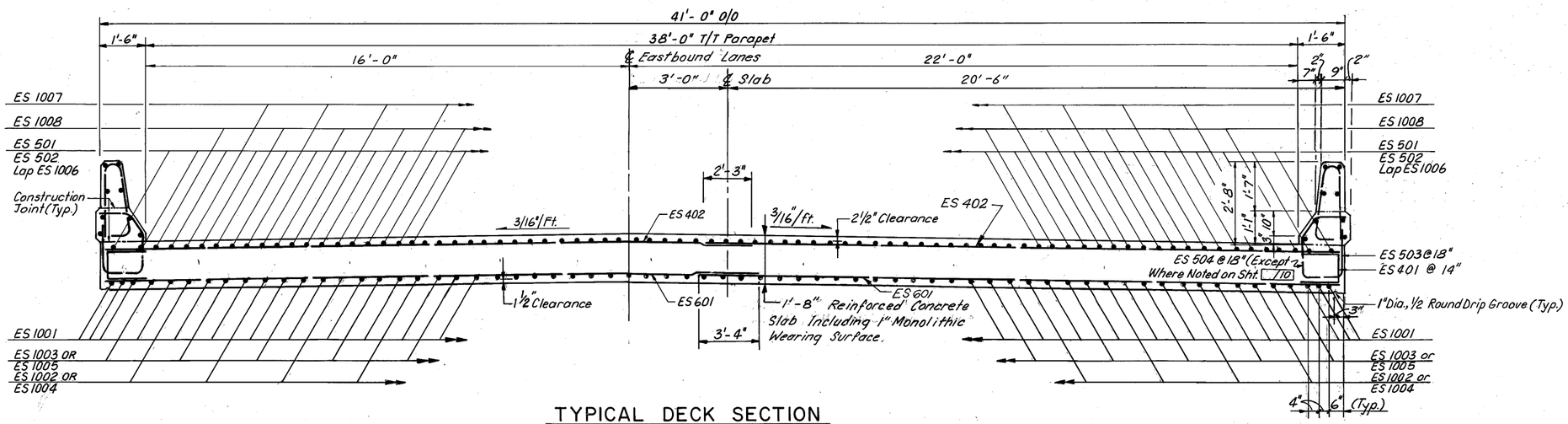


PLACEMENT DIAGRAM FOR ES1006, ES1007 & ES1008 BARS IN SKEWED STRUCTURES

NO SCALE

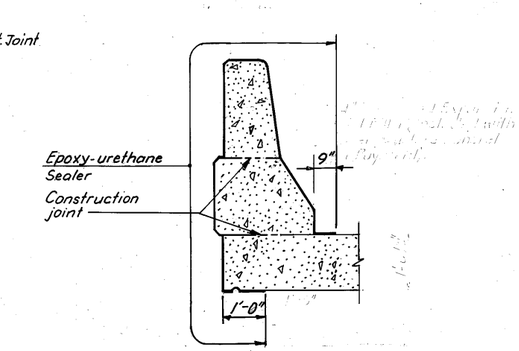


SECTION A-A



TYPICAL DECK SECTION

Right Bridge Shown, Left Bridge Similar



DETAIL "I"

Epoxy-urethane Sealer at Parapet

Note:
For Parapet Reinforcing See Sheet 9/10

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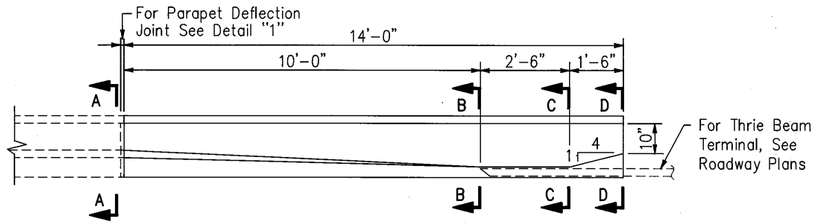
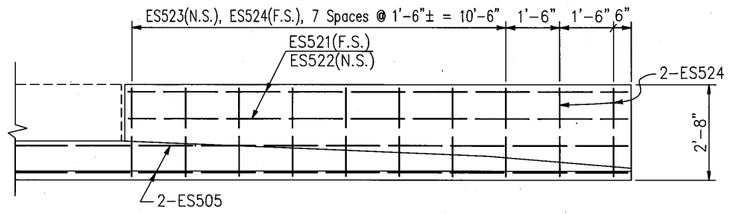
SUPERSTRUCTURE

BRIDGE NO. LOR-2-0646 L / R
OVER BEAVER CREEK

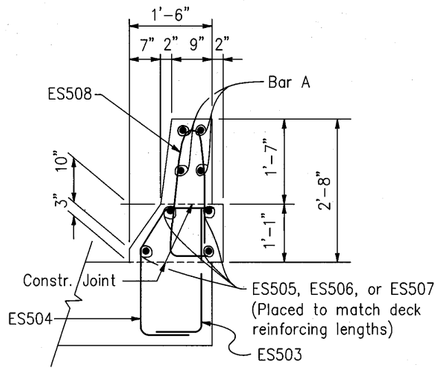
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/24/94	



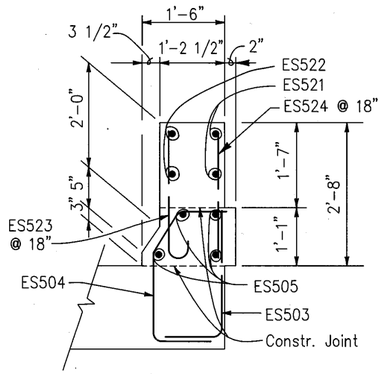
PLAN – PARAPET PANEL P1



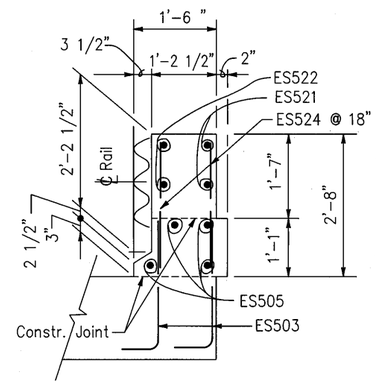
ELEVATION PARAPET PANEL P1



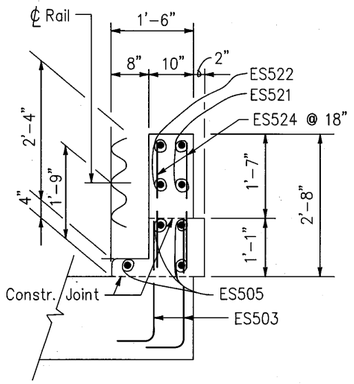
SECTION A–A



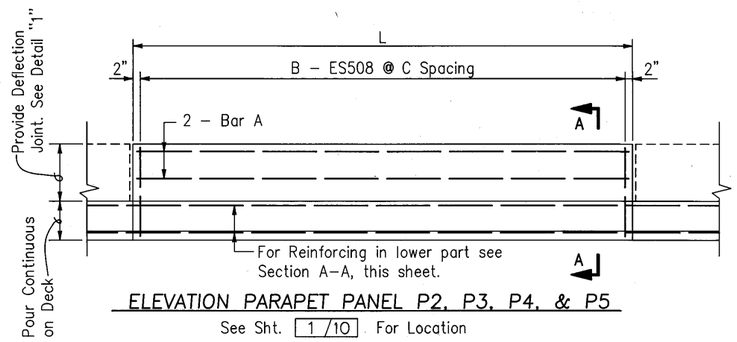
SECTION B–B



SECTION C–C



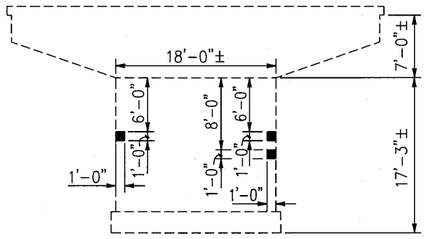
SECTION D–D



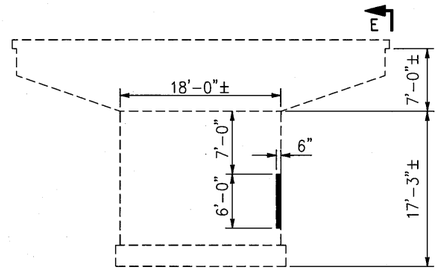
ELEVATION PARAPET PANEL P2, P3, P4, & P5

See Sht. 1/10 For Location

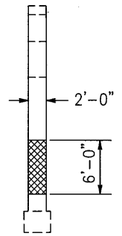
PARAPET PANEL DETAILS (P2, P3, P4, & P5)				
PARAPET MARK No.	L	BAR A	B	C
P2	6'-0"	ES509	5	1'-5"
P3	7'-0"	ES510	6	1'-4"
P4	12'-0"	ES511	9	1'-5 1/2"
P5	14'-0"	ES512	10	1'-6 1/4"



REPAIR DETAIL
LEFT BRIDGE – REAR PIER
WEST ELEVATION

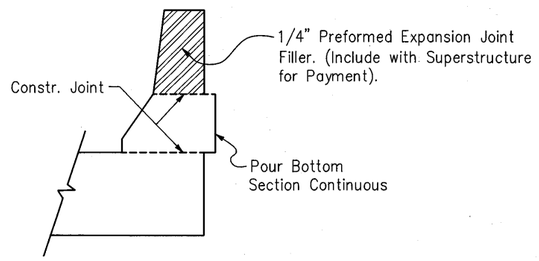


REPAIR DETAIL
RIGHT BRIDGE – FORWARD PIER
WEST ELEVATION



SECTION E–E

ITEM 519 – PATCHING CONCRETE STRUCTURES, AS PER PLAN		
LOCATION	UNIT	MEASURED QUANTITY
Rear Pier Left Bridge	Sq.Ft.	3
Forward Pier Right Bridge	Sq.Ft.	12
TOTAL	Sq.Ft.	15



DETAIL "1"
Section thru Deflection Joint

LEGEND

Spalled Concrete to be patched

Minor Cracks and Hollow Concrete to be patched

NOTES

1. For guardrail details see roadway plans.
2. N.S. = Near Side, F.S. = Far Side
3. Preformed expansion joint filler in the parapet deflection joints may be either 1/4" GRAY SPONGE RUBBER or 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC). Sponge rubber filler shall conform to AASHTO M-153, Type 1. Density of PVC sponge shall not be less than 20 lbs. per cu.ft.
4. Concrete parapets above upper construction joint shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after removal of bulkheads and after placement of expansion joint filler. Exposed edges of the filler shall be flush with the surface of concrete and shall be free of mortar. Reinforcing Bars shall not extend thru Deflection Joints.

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

9 / 10

MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0646 L/R
OVER BEAVER CREEK

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

09-15-93 [O:\83592E\MISC-DET] THC
10:06AM

REINFORCING STEEL SCHEDULE

LOR-2-3.48 | OHIO | FHWA REGION 5 | 186/222

EPOXY COATED REINFORCEMENT — ABUTMENTS

MARK	NO.	LENGTH	WEIGHT (LBS.)	SHAPE	RIGHT R.A.	LEFT R.A.	RIGHT F.A.	LEFT F.A.
EA401	36	9'-2"	221	BT.	18	18		
EA501	8	29'-9"	497	ST.	4	4		
EA502	168	6'-10"	1198	BT.	84	84		
EA503	8	22'-1"	184	ST.	4	4		
EA504	24	13'-2"	330	BT.	12	12		
EA505	58	10'-3"	620	ST.	29	29		
EA506	4	5'-7"	24	ST.		4		
EA507	4	7'-10"	33	ST.		4		
EA508	4	6'-8"	28	ST.	4			
EA509	4	6'-9"	29	ST.	4			
EA510	2	5'-7"	12	ST.		2		
EA511	2	7'-10"	17	ST.		2		
EA512	2	6'-8"	14	ST.	2			
EA513	2	6'-9"	14	ST.	2			
EA514	58	4'-1"	248	BT.			29	29
EA515	20	7'-6"	157	BT.			10	10
EA516	2	7'-0"	15	ST.			2	
EA517	2	5'-7"	12	ST.			2	
EA518	2	6'-5"	14	ST.				2
EA519	2	5'-2"	11	ST.				2
EA520	4	6'-10"	29	ST.			4	
EA521	4	5'-5"	23	ST.			4	
EA522	4	6'-2"	26	ST.				4
EA523	4	5'-0"	21	ST.				4
EA524		NOT USED						
EA525	8	21'-4"	188	ST.			4	4
EA801	16	30'-0"	1282	ST.	8	8		
ED801	56	5'-11"	885	BT.			28	28
ED802	56	5'-8"	848	BT.	28	28		
EA1001	16	21'-1"	1519	ST.	8	8		
EA1002	16	23'-3"	1600	ST.			8	8
		TOTAL	10099					

EPOXY COATED REINFORCEMENT — PIERS

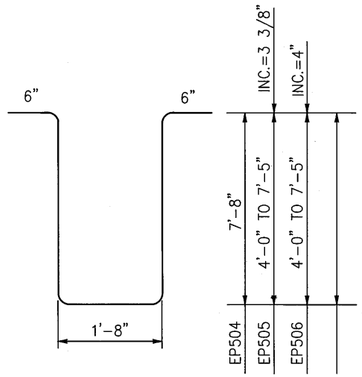
MARK	NO.	LENGTH	WEIGHT (LBS.)	SHAPE	RIGHT R.P.	LEFT R.P.	RIGHT F.P.	LEFT F.P.
EP501	16	21'-6"	359	ST.	4	4	4	4
EP502	8	29'-9"	248	ST.	2	2	2	2
EP503	8	18'-0"	150	ST.	2	2	2	2
EP504	72	17'-6"	1314	BT.	18	18	18	18
EP505	48	10'-2" to 17'-2"	684	BT.	12	12	12	12
EP506	44	10'-2" to 17'-2"	627	BT.	11	11	11	11
EP507	16	5'-10"	97	BT.	4	4	4	4
EP508	24	4'-1"	102	BT.	6	6	6	6
EP601	8	13'-4"	160	ST.	2	2	2	2
EP602	8	11'-4"	136	ST.	2	2	2	2
EP901	64	21'-6"	4679	ST.	16	16	16	16
		TOTAL	8556					

EPOXY COATED REINFORCEMENT — SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT (LBS.)	SHAPE	RIGHT BRIDGE	LEFT BRIDGE
ES401	368	3'-1"	768	BT.	184	184
ES402	428	22'-9"	6504	ST.	214	214
ES501	168	23'-0"	4030	ST.	84	84
ES502	84	21'-4"	1869	ST.	42	42
ES601	198	23'-3"	6915	ST.	99	99
ES1001	204	37'-8"	33067	ST.	102	102
ES1002	60	26'-9"	6907	BT.	30	30
ES1003	64	24'-11"	6862	BT.	32	32
ES1004	30	24'-0"	3098	ST.	15	15
ES1005	32	21'-6"	2961	ST.	16	16
ES1006	168	27'-1"	19579	ST.	84	84
ES1007	76	16'-3"	5314	ST.	38	38
ES1008	80	12'-8"	4362	ST.	16	16
		TOTAL	102236			

EPOXY COATED REINFORCEMENT — PARAPET

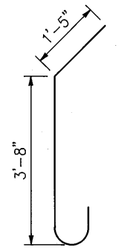
MARK	NO.	LENGTH	WEIGHT (LBS.)	SHAPE	RIGHT BRIDGE	LEFT BRIDGE
ES503	341	2'-11"	1039	BT.	167	174
ES504	299	3'-8"	1144	BT.	151	148
ES505	32	23'-0"	768	ST.	16	16
ES506	32	23'-1"	771	ST.	16	16
ES507	16	21'-0"	356	ST.	8	8
ES508	250	5'-3"	1369	BT.	130	120
ES509	32	11'-6 15/16"	387	ST.	16	16
ES510	64	7'-2"	479	ST.	32	32
ES511	32	12'-2"	406	ST.	16	16
ES512	4	13'-8"	57	ST.	4	0
ES521	14	13'-8"	200	ST.	6	8
ES522	14	13'-8"	200	BT.	6	8
ES523	56	3'-0"	176	ST.	32	24
ES524	84	2'-4"	205	ST.	48	36
		TOTAL	7557			



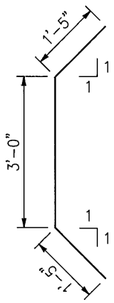
EP504, EP505, EP506

NOTES:

1. BAR MARKS with a prefix E indicate epoxy coated bars.
2. "ST" in the "SHAPE" column indicates straight bars.
3. "BT" in the "SHAPE" column indicates bent bars.
4. ALL DIMENSIONS are out to out.
5. REFER TO CMS section 509.05 for standard bend dimensions.



ED801



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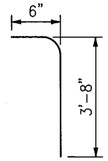

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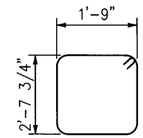
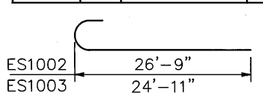
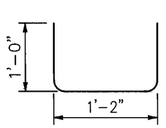


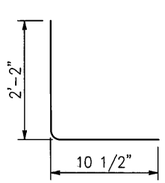
EA401



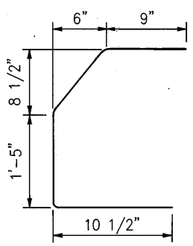
ES1002, ES1003



ES 401



ES 503



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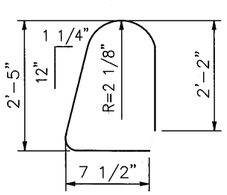

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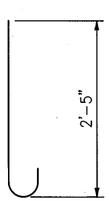
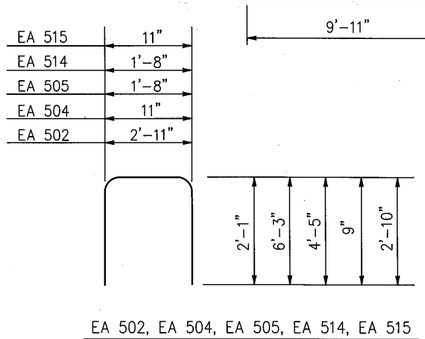
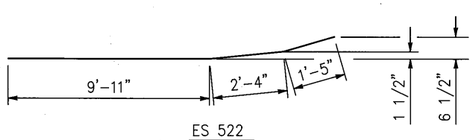


ES 523



EA 502, EA 504, EA 505, EA 514, EA 515



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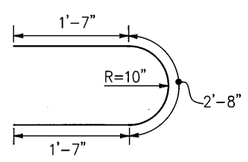


EP 507

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

10/10

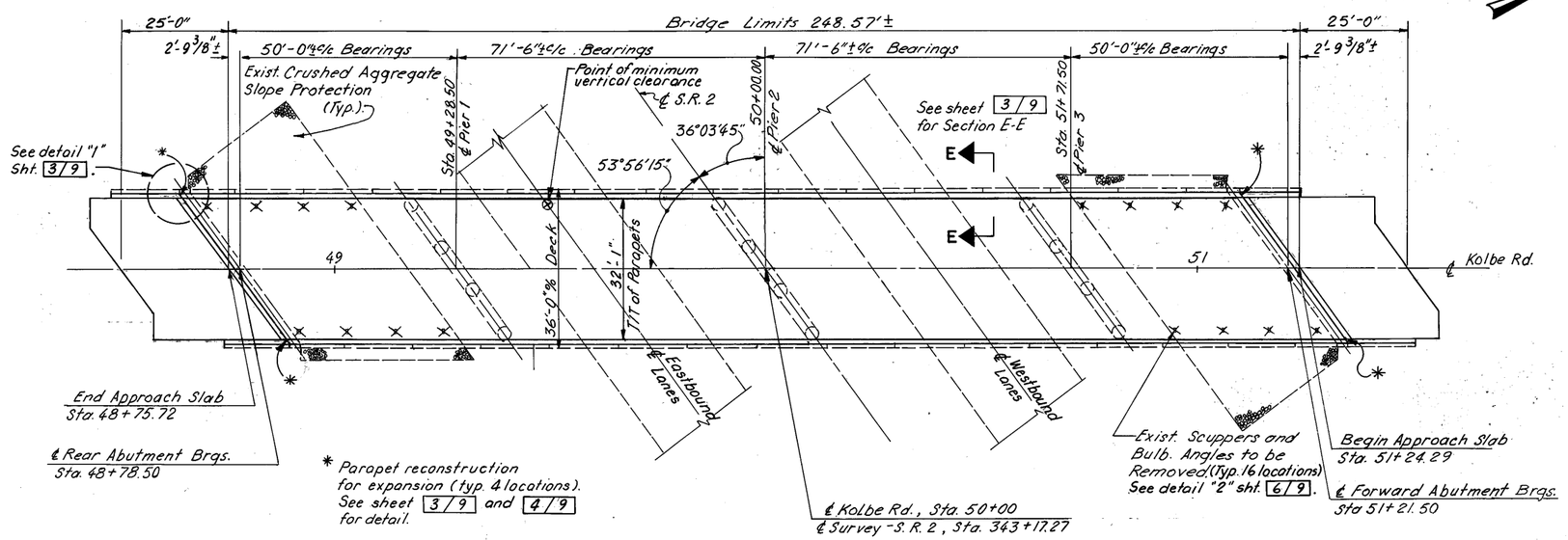
REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0646 L&R
OVER BEAVER CREEK

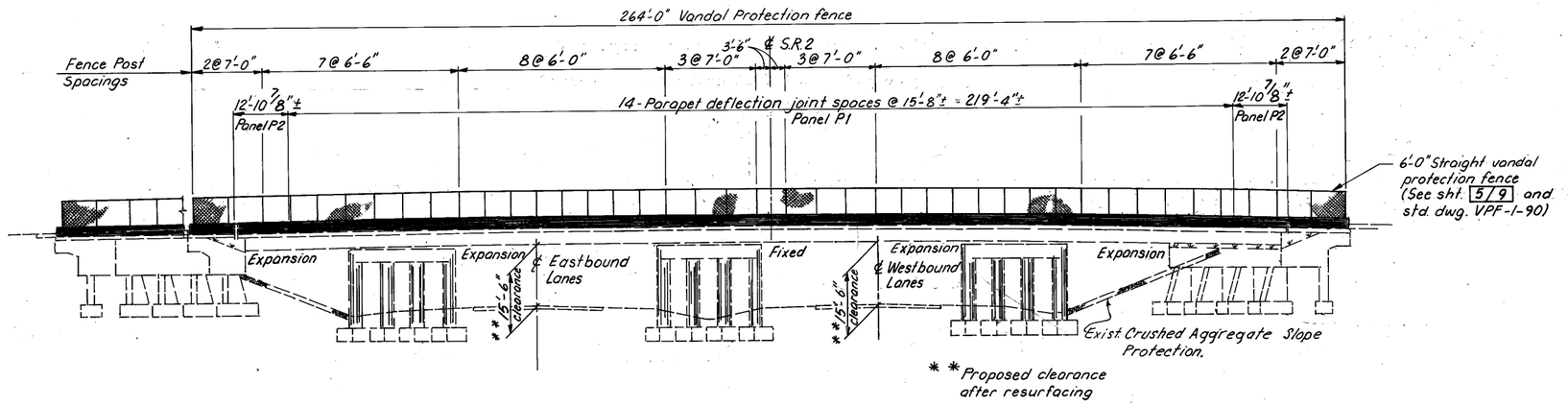
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	——	CDW	ART	2/24/94	

42

09-10-93 [O:\83592E\835RST-E] THC
3:31PM



GENERAL PLAN



ELEVATION

EXISTING STRUCTURE

TYPE: Continuous Steel Beam with Reinforced Concrete Deck & Substructure
SPANS: 50'-0"; 2@ 71'-6"; 50'-0" ℄ Bearings
ROADWAY: 30'-0" f/f 2'-0" Safety curbs
LOAD FREQUENCY: CF 400 (57)
SKEW: 36°-03'-45" R.F.
ALIGNMENT: Tangent
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-54 (25' Long, Modified)
DATE BUILT: 1965
STRUCTURE FILE NO. 4700155

PROPOSED STRUCTURE

PROPOSED WORK: Micro-Silica Conc. Overlay, Retrofit Existing Parapets, Painting, Fence
TYPE: Continuous Steel Beam with Reinforced Concrete Deck & Substructure
SPANS: 50'-0"; 2 @ 71'-6"; 50'-0" ℄ Bearings
ROADWAY: 32'-1" f/f Curb, t/t Parapets
LOAD FREQUENCY: CF 400 (57)
SKEW: 36°-03'-45" R.F.
ALIGNMENT: Tangent
WEARING SURFACE: Micro-Silica Concrete Deck Overlay
APPROACH SLABS: AS-1-81 (25' Long)
AVERAGE DAILY TRAFFIC:
AVERAGE DAILY TRUCK TRAFFIC:

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

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GENERAL PLAN AND ELEVATION

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

PROPOSED WORK:
MAJOR WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF MICRO-SILICA CONCRETE OVERLAY, INSTALLING STRIP SEAL EXPANSION JOINTS, INSTALLING PROTECTIVE FENCE ON RETROFITED PARAPETS, REMOVING SCUPPERS, CONCRETE SEALING, REMOVING CONCRETE AT PARAPET JOINTS TO PROVIDE ROOM FOR EXPANSION AND PAINTING. THE DETAILS OF THIS WORK ARE SHOWN IN THE PLANS AND SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

A-1-69	SHEET 3	DATED (REVISED)	6-12-69
AS-1-81	SHEET 2	DATED (REVISED)	11-27-81
EXJ-4-87		DATED	1-20-94
VPF-1-90		DATED	3-24-93

AND TO SUPPLEMENTAL SPECIFICATIONS:

852	DATED	7-30-93
910	DATED	5-20-91
944	DATED	5-2 -94

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:
LOAD FREQUENCY - CF 400 (57)
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

DECK PROTECTION METHOD:
MICRO - SILICA MODIFIED CONCRETE OVERLAY.
SEALING OF CONCRETE SURFACES.
EPOXY COATED REINFORCING.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY - URETHANE):
A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGE TO THE LIMITS AS SHOWN ON SHEETS [4 / 9], [5 / 9] AND [7 / 9]. SEE PROPOSAL NOTE FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

MAINTENANCE OF TRAFFIC
BRIDGE WORK SHALL BE COORDINATED WITH ROADWAY WORK AND MAINTENANCE OF TRAFFIC REQUIREMENTS. STRUCTURE IS TO BE CLOSED DURING CONSTRUCTION.

ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL
THIS ITEM SHALL BE USED TO PLUG AND REMOVE PORTIONS OF THE EXISTING SCUPPERS AS PER DETAILS IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 REMOVAL, MISC.: SCUPPER REMOVAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

UTILITITIES
THERE IS A 4" DIAMETER GAS LINE LOCATED UNDER THE BRIDGE AND THROUGH THE BACKWALL OF OF BOTH ABUTMENTS. CARE MUST BE TAKEN TO NOT DAMAGE THIS LINE AT ANY TIME.

COLUMBIA GAS OF OHIO INC.
2110 CALDWELL STREET
SANDUSKY, OH 44870
PHONE (419) 625-4534

ADDITIONAL NOTES:
FOR ADDITIONAL NOTES SEE SHEET 120, AND 121.

CALC. BY. SWR DATE. 2/24/94 — **ESTIMATED QUANTITIES** — CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIERS	SUPER.	ABUTS	GEN'L
202	11301	33	CU.YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SEE SHT. 144)		33		
202	11301	27	CU.YD.	PORTIONS OF STRUCTURE REMOVED (ABUTMENTS), AS PER PLAN (SEE SHT. 144)			27	
202	98100	16	EACH	REMOVAL, MISC.: SCUPPER REMOVAL		16		
509	15820	7685	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60		4164	3321	200
510	11101	660	EACH	DOWEL HOLE, AS PER PLAN (SEE SHT. 144)		660		
511	34450	36	CU.YD.	CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN (SEE SHT. 145)		30	6	
511	45701	20	CU.YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (SEE SHT. 145)			20	
SPECIAL	51267510	627	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY - URETHANE) (SEE PROPOSAL NOTE)		505	122	
SPECIAL	51400050	14777	SQ.FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU, (SEE PROPOSAL NOTE)		14777		
SPECIAL	51400056	14777	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU, (SEE PROPOSAL NOTE)		14777		
SPECIAL	51400060	14777	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU, (SEE PROPOSAL NOTE)		14777		
SPECIAL	51400066	14777	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU, (SEE PROPOSAL NOTE)		14777		
516	11210	88	LIN.FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL (SEE PROPOSAL NOTE)		88		
518	21201	107	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC,AS PER PLAN (SEE SHT. 145)			107	
518	40001	116	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN (SEE SHT. 145)			116	
518	40011	77	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN (SEE SHT. 145)			77	
519	11101	14	SQ.FT.	PATCHING CONCRETE STRUCTURE,AS PER PLAN (SEE SHT. 145)			14	
SPECIAL	51922000	880	SQ.YD.	MICRO - SILICA MODIFIED CONCRETE OVERLAY (1.25" THICK) (SEE PROPOSAL NOTE)		880		
SPECIAL	51922100	55	CU.YD.	MICRO - SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) (SEE PROPOSAL NOTE)		55		
SPECIAL	51922300	LUMP		TEST SLAB (SEE PROPOSAL NOTE)				
SPECIAL	60739900	528	LIN.FT.	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC		528		

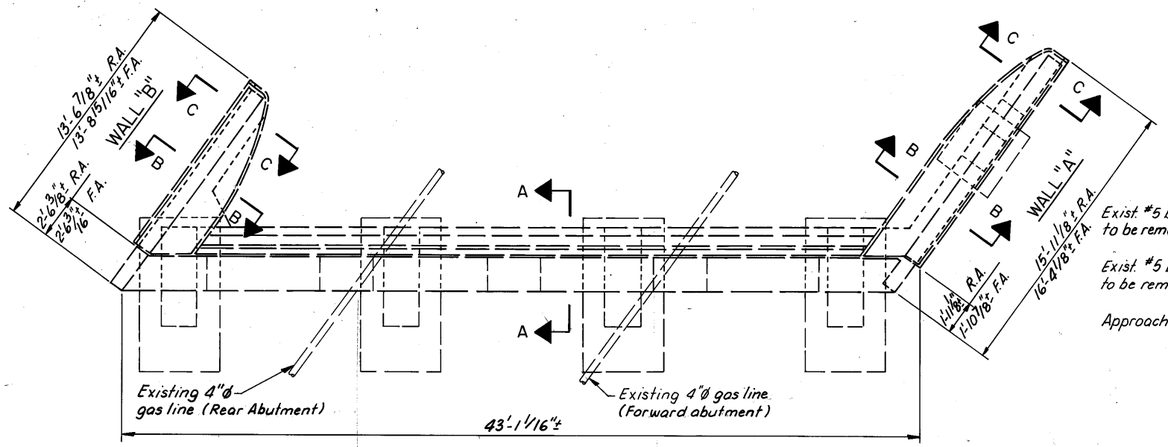
R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO
2 / 9

GENERAL NOTES AND ESTIMATED QUANTITIES

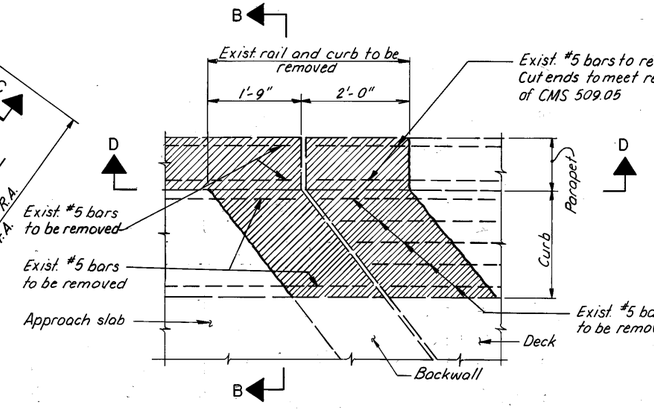
BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	——	CDW	ART	2/24/94	

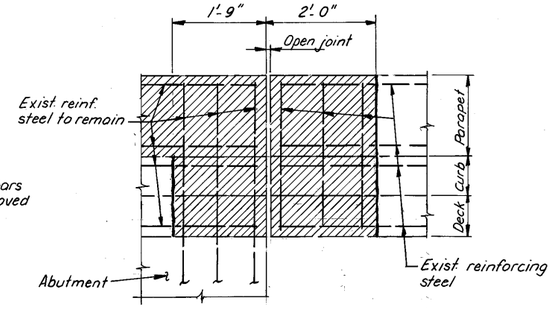
10-18-93 [O:\83592F\BRIGNOTE] SWR
2:10PM



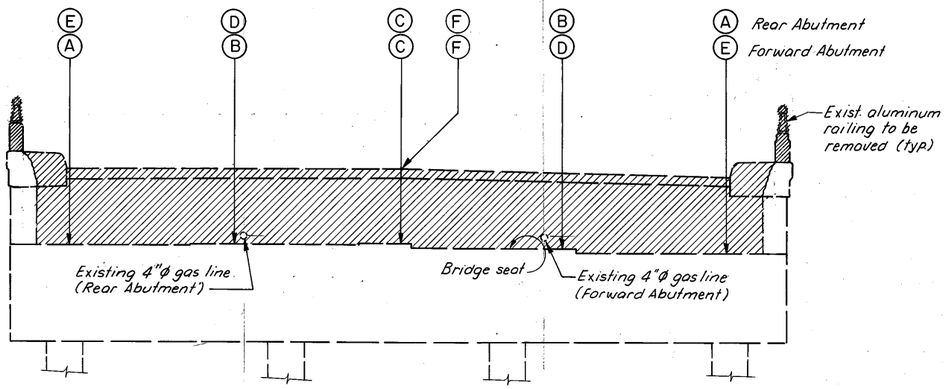
PLAN



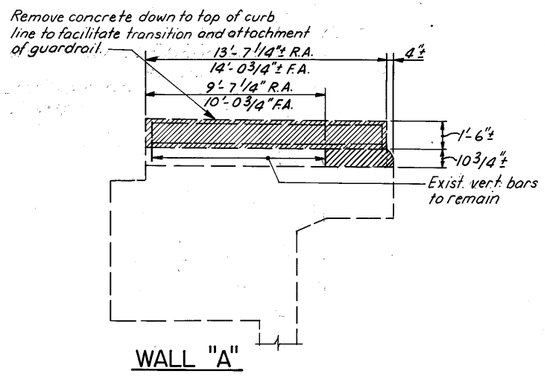
DETAIL "I"
PARAPET REMOVAL AT EXPANSION JOINT
SEE SHT. 1/9, 5/9



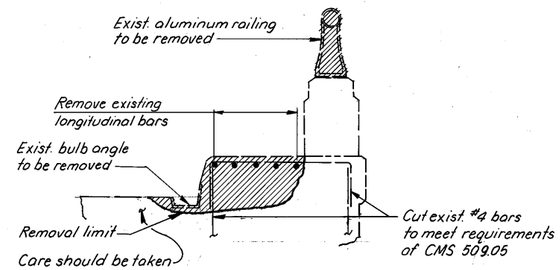
SECTION D-D



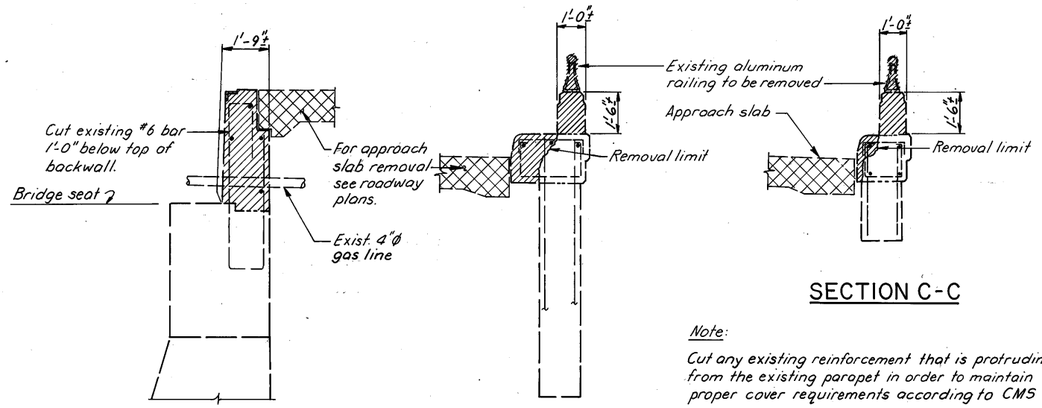
ELEVATION



WALL "A"



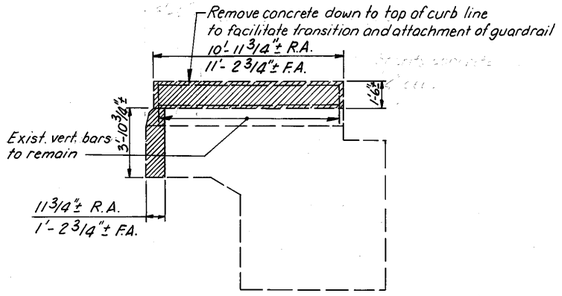
SECTION E-E
See sht. 1/9



SECTION A-A

SECTION B-B

SECTION C-C



WALL "B"

Note: For backwall demolition, concrete to be removed no further than the construction joint at the bridge seat.

Note:
Cut any existing reinforcement that is protruding from the existing parapet in order to maintain proper cover requirements according to CMS 509.05.

TABLE OF ELEVATIONS							
LOCATION	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ
REAR ABUTMENT	634.12±	634.35±	634.57±	634.56±	634.55±	638.60±
FORWARD ABUTMENT	635.28±	635.34±	635.38±	635.20±	635.00±	639.43±

LEGEND:

Indicates section to be removed

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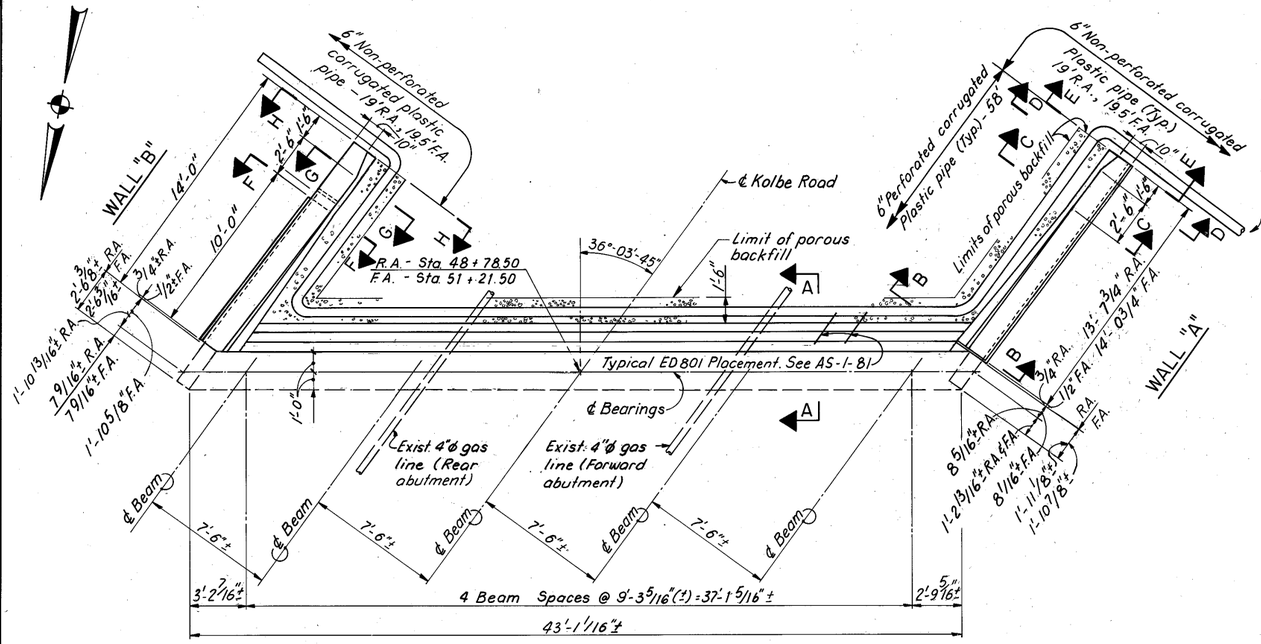
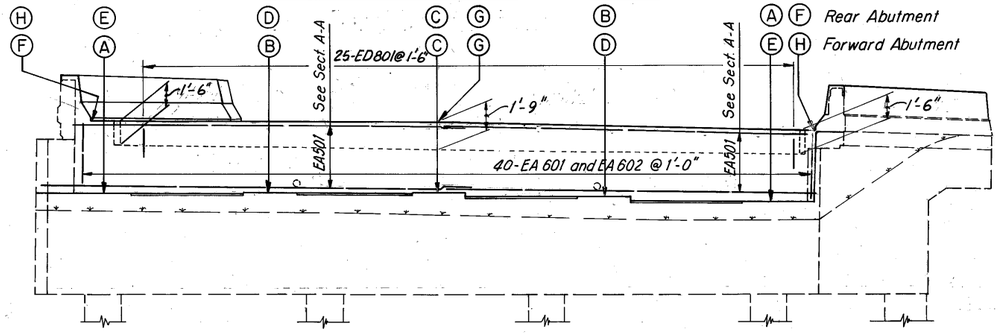
DEMOLITION PLAN

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

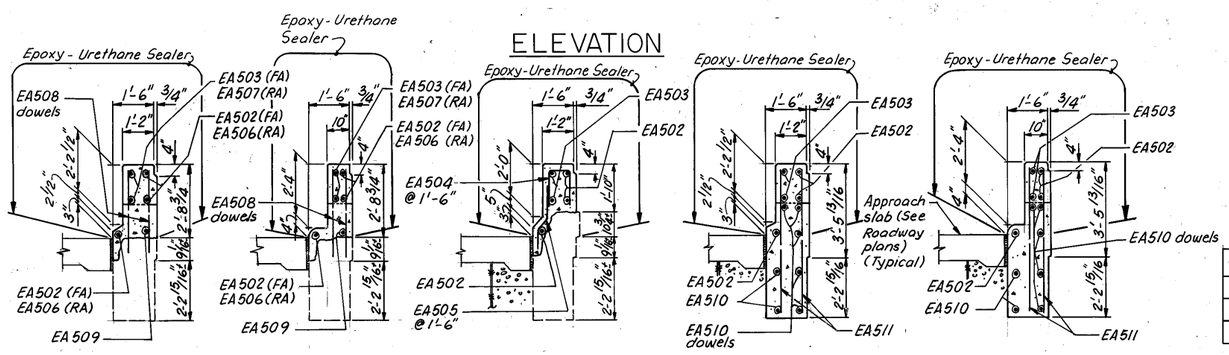
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



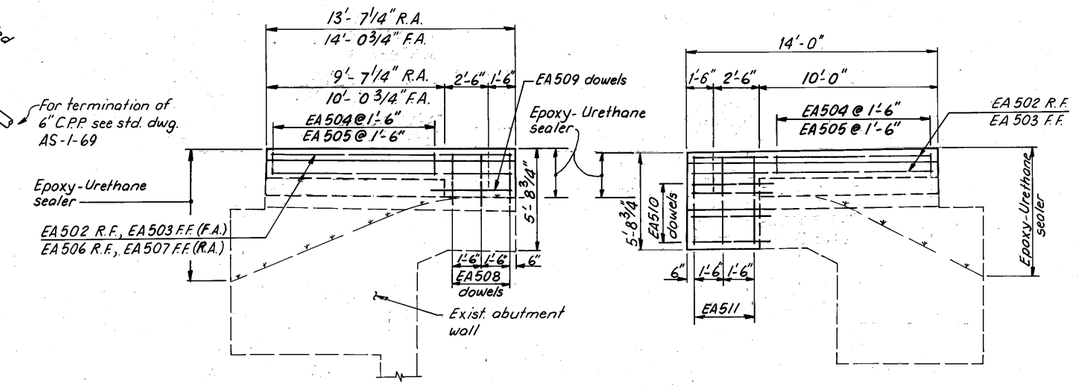
PLAN - (CONCRETE PEDESTALS NOT SHOWN)



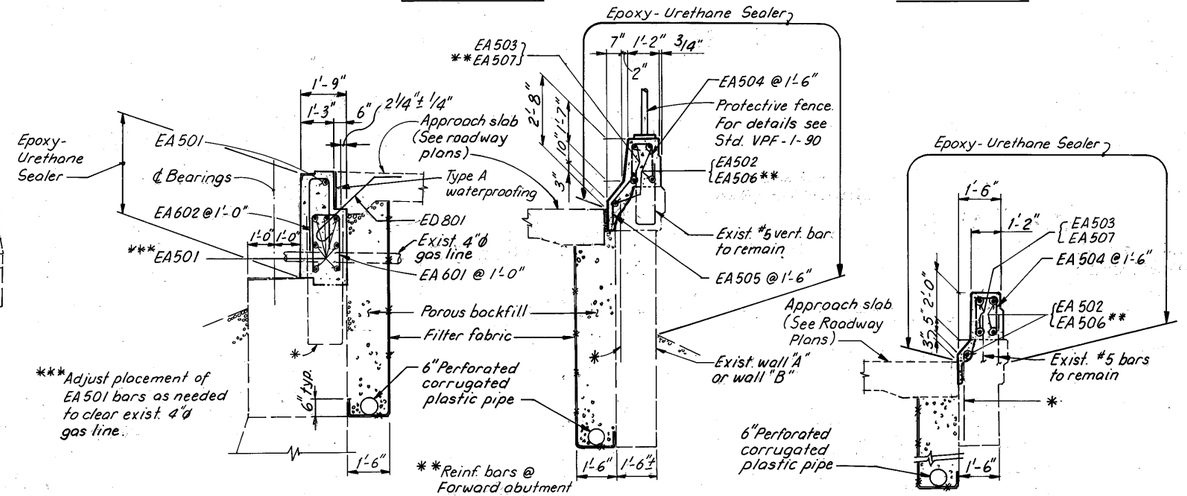
ELEVATION



SECTION D-D | SECTION E-E | SECTION F-F | SECTION G-G | SECTION H-H



WALL "A" | WALL "B"



*** Adjust placement of EA501 bars as needed to clear exist. 4"ϕ gas line.

** Reinf. bars @ Forward abutment Wall "A" only.

SECTION A-A | SECTION B-B | SECTION C-C

* Exist. reinforcing bars to remain, cut to maintain requirements of CMS 509.05. Care must be taken not to damage any existing vertical reinforcement. If any reinforcement that is designated to stay is damaged during the contractor's operation, it shall be replaced by the contractor at the contractor's expense.

Notes:

1.) Existing concrete parapet to be retrofitted see sheet 6/9.

2.) F.A. = Forward abutment

3.) R.A. = Rear abutment

TABLE OF ELEVATIONS

LOCATION	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
REAR ABUTMENT	634.12±	634.35±	634.57±	634.56±	634.55±	638.56	638.73	638.56
FORWARD ABUTMENT	635.28±	635.34±	635.38±	635.20±	635.00±	639.38	639.55	639.38

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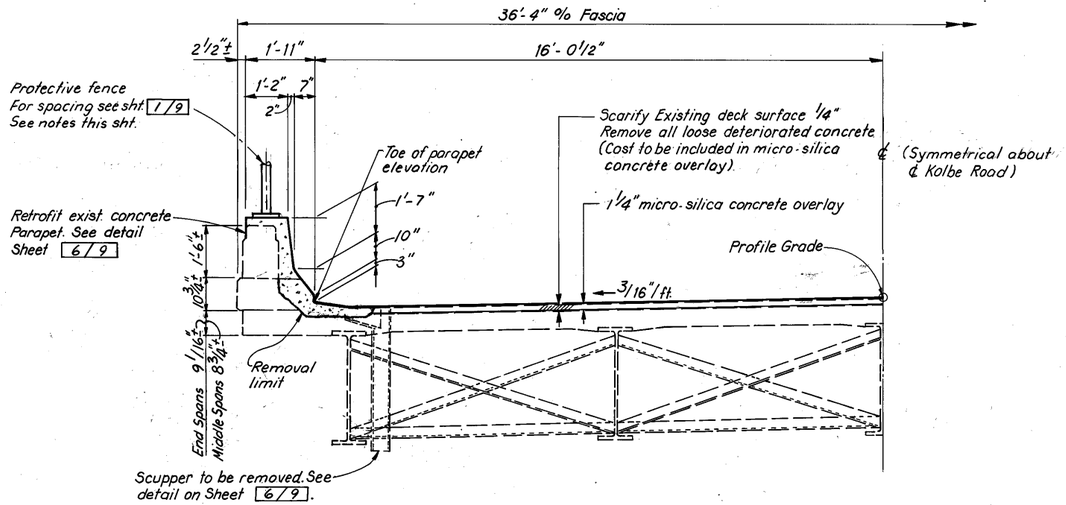
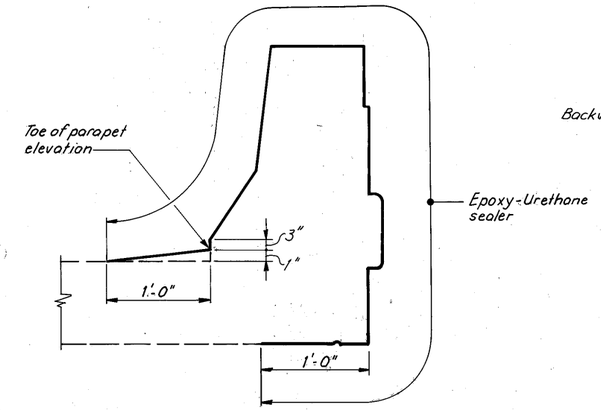
ABUTMENTS

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

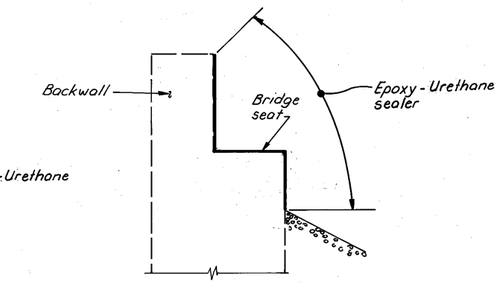
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



PARTIAL CROSS SECTION



DETAIL "1"
EPOXY SEALER AT PARAPET & DECK

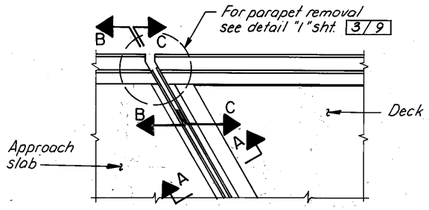


DETAIL "2"
EPOXY SEALER AT ABUTMENT

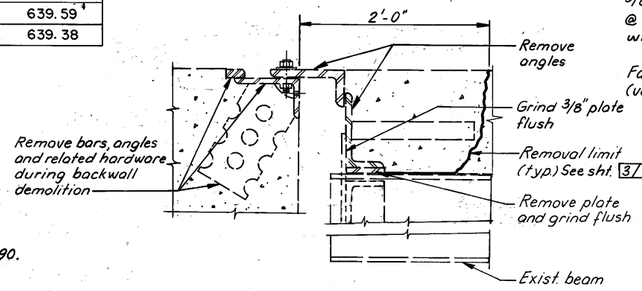
PROPOSED DECK ELEVATIONS			
STATION	TOE of PARAPET ELEV. (L)	PROFILE GRADE	TOE of PARAPET ELEV. (R)
48 + 78.50	638.56	638.73	638.56
49 + 00	638.95	639.12	638.95
49 + 25	639.32	639.49	639.32
49 + 50	639.59	639.76	639.59
49 + 75	639.82	639.99	639.82
50 + 00	639.95	640.12	639.95
50 + 25	639.99	640.16	639.99
50 + 50	639.92	640.09	639.92
50 + 75	639.80	639.97	639.80
51 + 00	639.59	639.76	639.59
51 + 21.50	639.38	639.55	639.38

Item Special - Vandal Protective Fence, 6' Straight, Coated Fabric

1. PVC coating shall be class 2B.
2. The wire shall be 9 gauge.
3. For fence post spacing see sht 1/9
4. Base plate shall be type BP-3.1 of std. dwg. VPF-1-90.



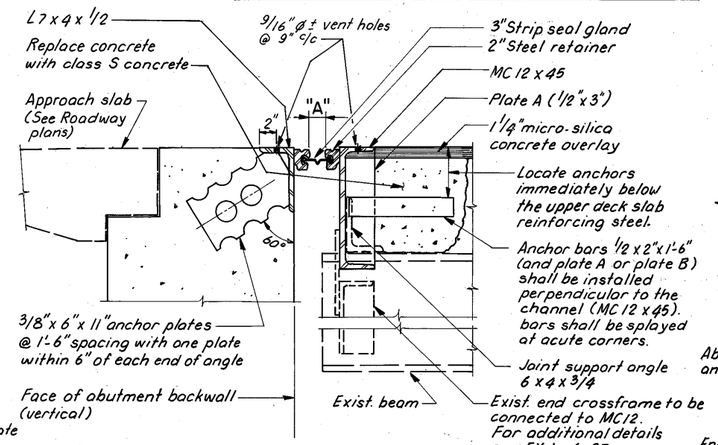
PART PLAN AT ABUTMENT



SECTION A-A
(EXISTING)

Note: Dimension "A" measured perpendicular to abutment bearings.

TEMPERATURE & ADJUSTMENT TABLE							
TEMP.	30°	40°	50°	60°	70°	80°	90°
"A"	1 7/8"	1 13/16"	1 3/4"	1 5/8"	1 1/2"	1 1/2"	1 1/2"



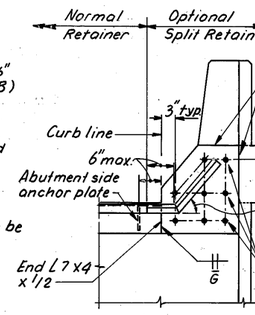
SECTION A-A
(PROPOSED)

Notes:

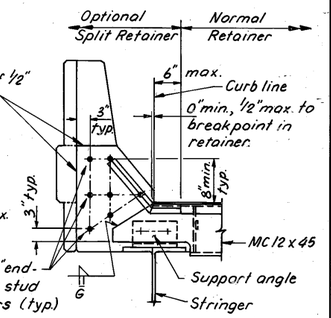
Remove and reploce portions of concrete deck, paropet, and approach slab, and expansion joint and connections as needed to facilitate new 3" strip seal expansion joint as shown on plans and standard dwg. EXJ-4-87. Preserve all existing reinforcing steel.

Payment for all of the above shall be at the unit price bid per lin ft. for item 516 structural expansion joint including elastomeric strip seal, as per plan which shall include all labor, equipment, materials, and incidentals necessary to complete the above work.

Note:
Epoxy seal top and front surfaces of abutment as shown and exposed surfaces of wingwalls including beam seat ends.



SECTION B-B



SECTION C-C

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WESTLAKE, OHIO 44145

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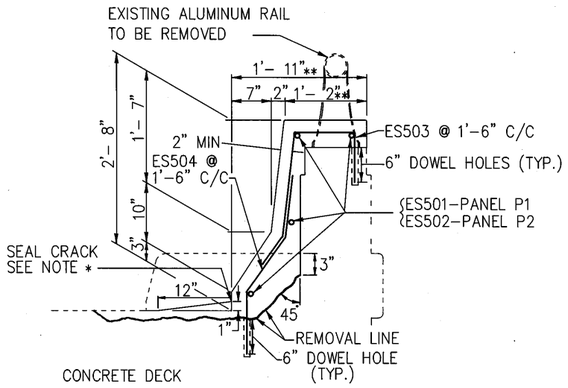
MICRO-SILICA CONCRETE OVERLAY AND MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	

47



DETAIL "1"

NOTES

* CRACK SEALING –
WHEN CURING IS COMPLETED, SEAL CRACK WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER, THE SEALER SHALL BE PREPARED AND APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INCLUDE COST WITH ITEM 511 CLASS S CONCRETE, PARAPET, AS PER PLAN.

** THESE DIMENSIONS ARE DIFFERENT THAN STANDARD DRAWINGS BECAUSE OF FACING PARAPETS.

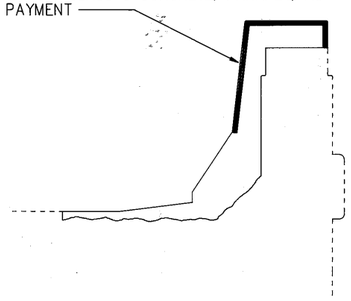
REINFORCING BARS NEAR DEFLECTION JOINTS MAY NEED TO BE MOVED TO PROVIDE 2" OF CLEARANCE ON EACH SIDE OF THE DEFLECTION JOINTS.

COST TO REMOVE EXISTING ALUMINUM RAIL SHALL BE INCLUDED IN ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE FACED, SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL THEN BE MECHANICALLY SCARIFIED 1/4" DEEP.

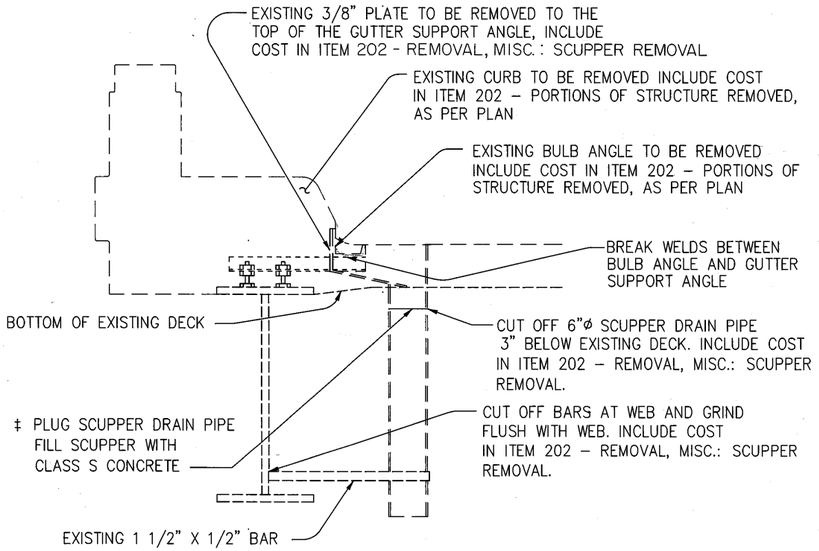
IN LIEU OF THE BONDING GROUT SPECIFIED IN ITEM 511 CLASS S CONCRETE, PARAPET, AS PER PLAN, THE CONTRACTOR MAY ELECT TO THOROUGHLY DRENCH THE CONCRETE SURFACE WITH CLEAN WATER AND ALLOW IT TO DRY TO A DAMP CONDITION JUST BEFORE PLACING THE CONCRETE.

EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED FACING AND SHALL BE MADE BY FORMING. THE 1/4" JOINTS SHALL BE SEALED 3/4" DEEP (MIN) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBUCK/USA INC. MINN. OR A LOW DENSITY CLOSED CELL CROSSLINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES, RAVENA N.Y.
INCLUDE WITH ITEM 511 CLASS S CONCRETE, PARAPET, AS PER PLAN FOR PAYMENT



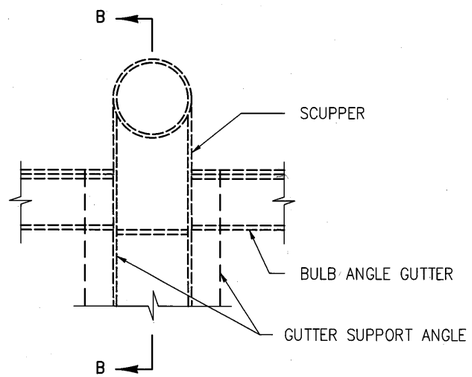
SECTION THROUGH DELECTION JOINT

RETROFIT EXISTING CONCRETE PARAPET



SECTION B – B

‡ IF ANY SCUPPER WHICH HAS ALREADY BEEN PLUGGED, HAS CONCRETE BELOW CUT OFF LEVEL, BREAK OFF CONCRETE AND PATCH AREA SMOOTH.
INCLUDE COST IN ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL



DETAIL "2"
SCUPPER AND
BULB ANGLE GUTTER

REMOVAL AND PLUGGING EXISTING SCUPPER

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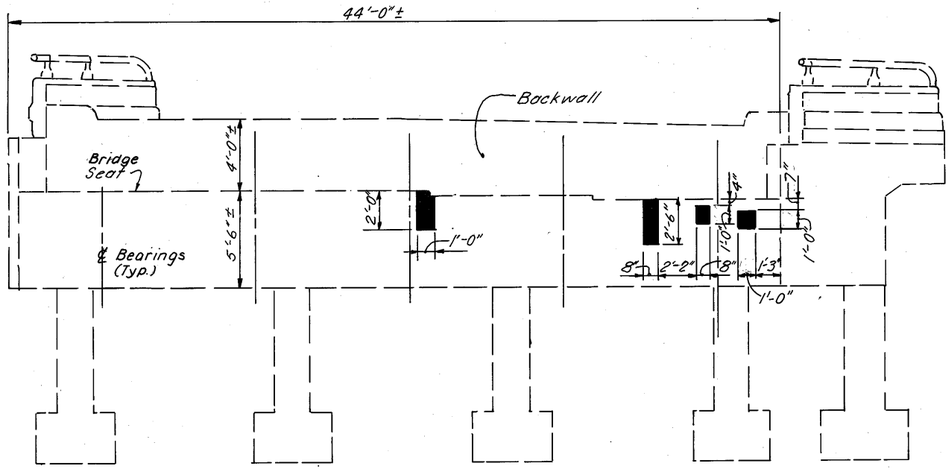
MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

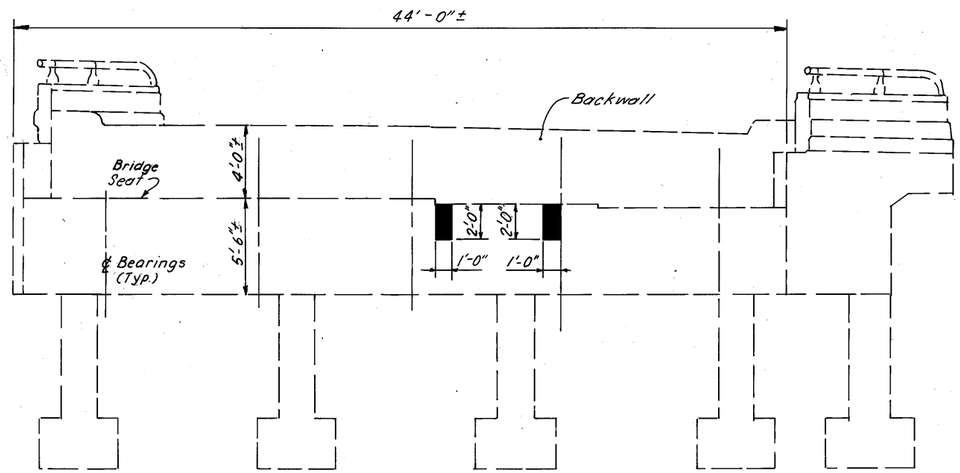
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	–	CDW	ART	2/24/94	

48

10-11-93 [C:\83592F\MISC-DET] SWR
4:21PM



ELEVATION
REAR ABUTMENT



ELEVATION
FORWARD ABUTMENT

LEGEND:

Minor cracks and hollow concrete to be patched and sealed with Epoxy-Urethane sealer.

Item 519 - Patching Conc. Struct., As Per Plan		
Location	Unit	Measured Quantity
Rear Abutment	Sq. Ft.	6
Forward Abutment	Sq. Ft.	4
Total	Sq. Ft.	10

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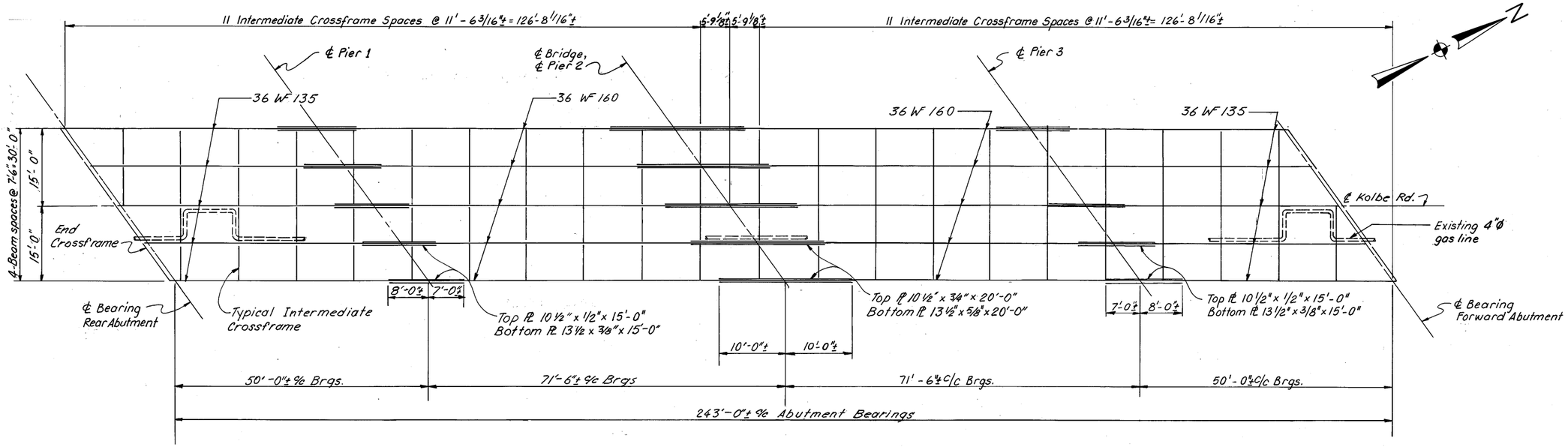
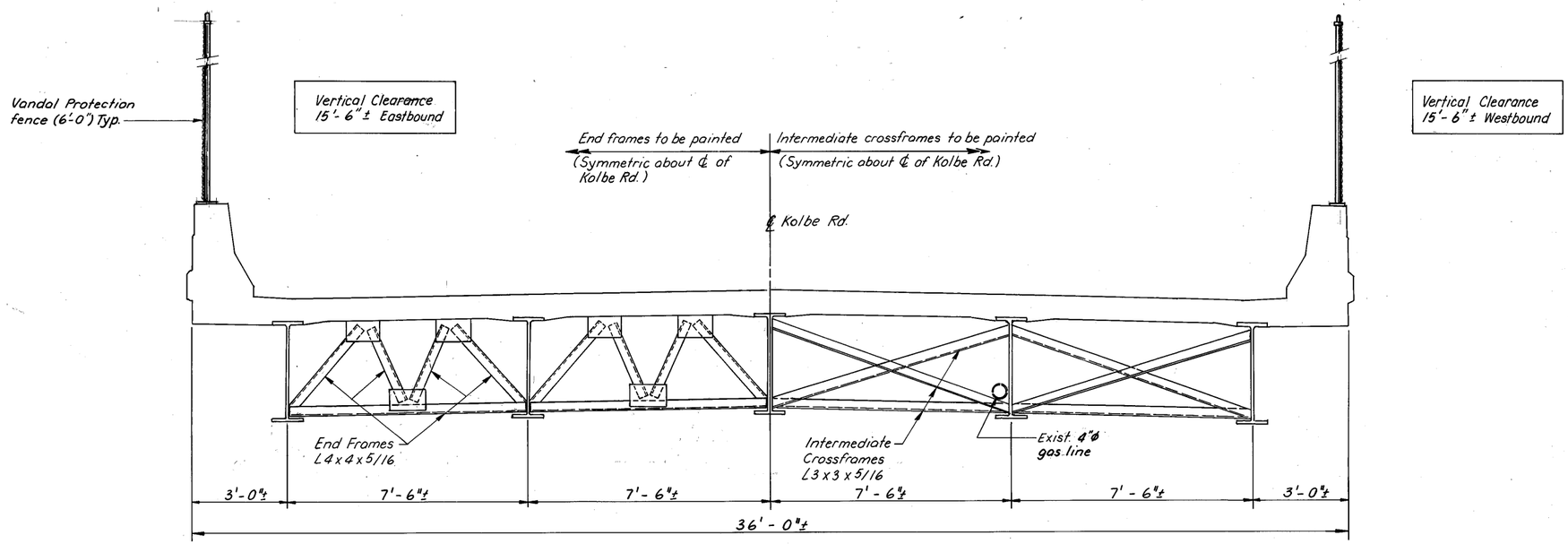
REPAIR DETAILS

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	



STEEL FRAMING PLAN



TYPICAL SECTION

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STRUCTURAL STEEL FOR PAINTING

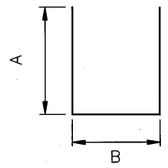
BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	SSM	—	CDW	ART	2/24/94	

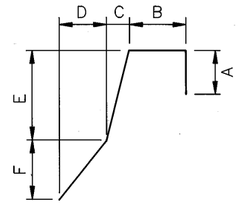
08-03-92 10:17AM [I:\S\C\ODOT] THC

REINFORCING STEEL SCHEDULE

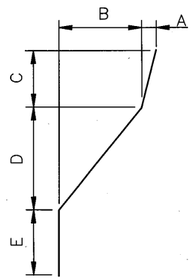
EPOXY COATED REINFORCEMENT ABUTMENTS										
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F
EA501	32	22'-7"	754	STR						
EA502	9	13'-8"	128	STR						
EA503	6	13'-8"	86	5	12'-6"	1'-6"				
EA504	28	3'-5"	100	1	1'-5"	0'-10"				
EA505	28	2'-1"	62	3	0'-6"	1'-0"	0'-9"			
EA506	3	13'-3"	42	STR						
EA507	2	13'-3"	28	5	12'-1"	1'-6"				
EA508	12	2'-9"	35	STR						
EA509	2	4'-4"	9	STR						
EA510	14	4'-4"	64	STR						
EA511	12	5'-4"	67	STR						
EA601	80	4'-9"	570	1	1'-10"	1'-5"				
EA602	80	6'-1"	730	1	2'-9"	0'-11"				
ED801	44	5'-6"	646	4	3'-3"					
		TOTAL	3321							



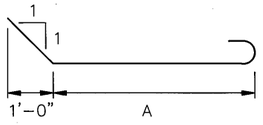
TYPE 1



TYPE 2

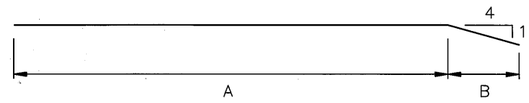


TYPE 3



TYPE 4

EPOXY COATED REINFORCEMENT SUPERSTRUCTURE										
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F
ES501	112	15'-8"	1791	STR						
ES502	16	12'-10"	209	STR						
ES503	330	3'-7"	1232	2	0'-7"	0'-10"	0'-2"	0'-3"	1'-5"	0'-5"
ES504	330	2'-8"	932	3	0'-1"	0'-7"	0'-8"	0'-10"	0'-9"	
		TOTAL	4164							



TYPE 5

NOTES:

ALL BARS ARE TO BE EPOXY COATED.

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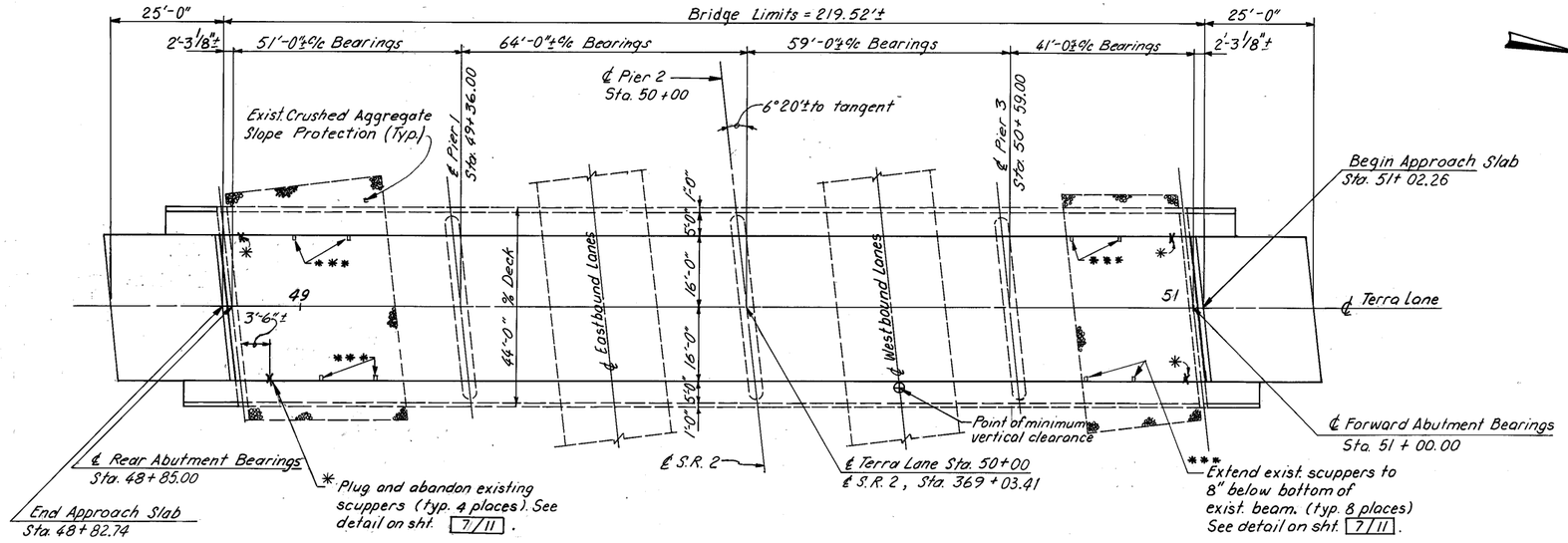
REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0649
UNDER KOLBE ROAD

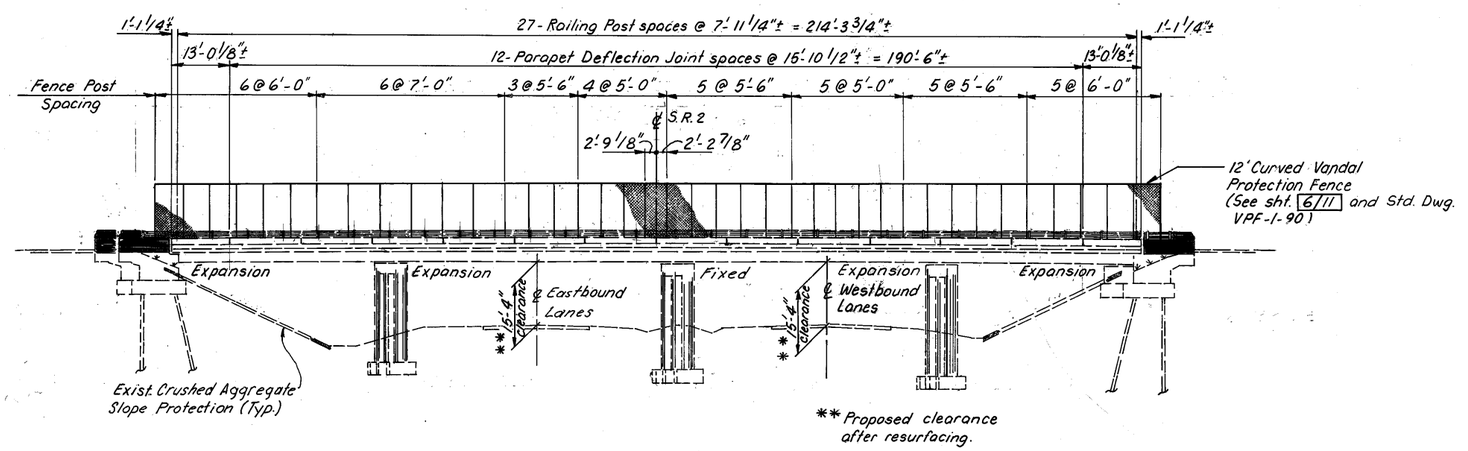
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	SWR	——	CDW	ART	2/24/94	

57

11-09-93 [O:\83592F\835RST-F] SWR
4:06PM



GENERAL PLAN



ELEVATION

LOR-2-3.48	OHIO	196
	FHWA REGION 5	222

EXISTING STRUCTURE

TYPE: Continuous Steel Beam with Reinforced Concrete Deck & Substructure
SPANS: 51.0'; 64.0'; 59.0'; 41.0' % Bearings.
ROADWAY: 32'-0" f/f of 5'-0" Sidewalks
LOAD FREQUENCY: CF 130 (57)
SKEW: 6° - 20' R.F.
ALIGNMENT: Tangent
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-54 (25' Long, Modified)
DATE BUILT: 1965
STRUCTURE FILE NO. 4700244

PROPOSED STRUCTURE

PROPOSED WORK: Micro-Silica Conc. Overlay, Fence, Patch Conc. Sidewalk, Trim Beam Ends for Expansion, Replace Abutment Bearings, Painting.
TYPE: Continuous Steel Beam with Reinforced Concrete Deck & Substructure
SPANS: 51.0'; 64.0'; 59.0'; 41.0' % Bearings
ROADWAY: 32'-0" f/f of Sidewalks
LOAD FREQUENCY: CF 130 (57)
SKEW: 6° - 20' R.F.
ALIGNMENT: Tangent
WEARING SURFACE: Micro - Silica Concrete Deck Overlay
APPROACH SLABS: AS-1-81 (25' Long)
AVERAGE DAILY TRAFFIC:
AVERAGE DAILY TRUCK TRAFFIC:

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

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GENERAL PLAN AND ELEVATION

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

PROPOSED WORK:
MAJOR WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF MICRO-SILICA CONCRETE OVERLAY, INSTALLING STRIP SEAL EXPANSION JOINTS, INSTALLING PROTECTIVE FENCE ON EXISTING PARAPETS, REPLACING ABUTMENT BEARINGS, PLUGGING AND ABANDONING EXISTING SCUPPERS, CONCRETE SEALING, TRIMMING ENDS OF BEAMS, PATCHING CONCRETE SIDEWALK AND PAINTING. DETAILS OF THIS WORK ARE SHOWN IN THE PLANS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

A-1-69	DATED	6-12-69
AS-1-81	DATED (REVISED)	11-27-81
BR-2-82	DATED	11-01-82
CPA-2-73	DATED (REVISED)	4-10-73
VPF-1-90	DATED	3-24-93

AND SUPPLEMENTAL SPECIFICATIONS:

852	7-30-93
910	5-20-91
944	5-2 -94

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE MANUAL.

DESIGN DATA:
LOAD FREQUENCY - CF 130 (57)
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

DECK PROTECTION METHOD:
SEALING OF CONCRETE SURFACES AND MICRO-SILICA CONCRETE OVERLAY.

MAINTENANCE OF TRAFFIC:
BRIDGE WORK SHALL BE COORDINATED WITH DISTRICT 3 ROADWAY WORK AND MAINTENANCE OF TRAFFIC REQUIREMENTS. CLOSE STRUCTURE DURING CONSTRUCTION.

ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL
THIS ITEM SHALL BE USED TO PLUG AND REMOVE PORTIONS OF THE EXISTING SCUPPERS AS PER DETAILS IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 - REMOVAL, MISC.: SCUPPER REMOVAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):
A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGE TO THE LIMITS AS SHOWN ON SHEETS [4 / 11] AND [6 / 11]. SEE PROPOSAL NOTE FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

ADDITIONAL NOTES:
FOR ADDITIONAL NOTES SEE SHEET 120 , AND 121 .

CALC. BY. SWR DATE. 2/24/94 — **E S T I M A T E D Q U A N T I T I E S** — CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	D E S C R I P T I O N	ABUTS	PIERS	SUPER.	GEN'L
202	11301	47	CU. YD.	PORTIONS OF STRUCTURE REMOVED (ABUTMENTS), AS PER PLAN (SEE SHT 144)	47			
202	98100	4	EACH	REMOVAL, MISC.: SCUPPER REMOVAL	4			
509	15820	6948	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	5914	834		200
510	11101	366	EACH	DOWEL HOLE, AS PER PLAN (SEE SHT. 144)	192	174		
511	34450	22	CU.YD.	CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN (SEE SHT. 145)	22			
511	43001	4	CU.YD.	CLASS C CONCRETE, PIER, AS PER PLAN (SEE SHT. 145)		4		
511	45701	32	CU.YD.	CLASS C CONCRETE, ABUTMENT AS PER PLAN (SEE SHT. 145)	32			
SPECIAL	51267504	307	SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)(SEE PROPOSAL NOTE)	307			
SPECIAL	51267510	753	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)(SEE PROPOSAL NOTE)	145	250	358	
513	21001	5	EACH	TRIMMING OF BEAM END, AS PER PLAN (SEE SHT. 144)				
SPECIAL	51400050	12405	SQ.FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)			12405	
SPECIAL	51400056	12405	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			12405	
SPECIAL	51400060	12405	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			12405	
SPECIAL	51400066	12405	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			12405	
516	11211	85	LIN. FT.	STRUCTURAL EXPAN. JT. INCLUDING ELASTOMERIC STRIP SEAL AS PER PLAN(SEE PROPOSAL NOTE)			85	
516	44101	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2-1/8" X 8-1/2" X 12" LAMINATED ELASTOMERIC PAD WITH 2" X 9-1/2" X 13" STEEL LOAD PLATE), AS PER PLAN			10	
516	46700	15	EACH	RESET BEARING		15		
516	47000	LUMP		JACKING AND TEMPORARY SUPPORT OF STRUCTURE (SEE PROPOSAL NOTE)				
517	73500	27	LIN.FT.	RAILING, PIPE	27			
518	12701	8	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN (SEE SHT. 202)			8	
518	21201	75	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN (SEE SHT. 145)	75			
518	40001	102	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN (SEE SHT. 145)	102			
518	40011	104	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN (SEE SHT.145)	104			
519	11101	15	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SEE SHT. 145)	15			
SPECIAL	51922000	1013	SQ.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1.25" THICK)(SEE PROPOSAL NOTE)			1013	
SPECIAL	51922100	71	CU.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)(SEE PROPOSAL NOTE)			71	
SPECIAL	51922300	LUMP		TEST SLAB (SEE PROPOSAL NOTE)				
SPECIAL	60739930	449	LIN. FT.	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC			449	

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WESTLAKE, OHIO

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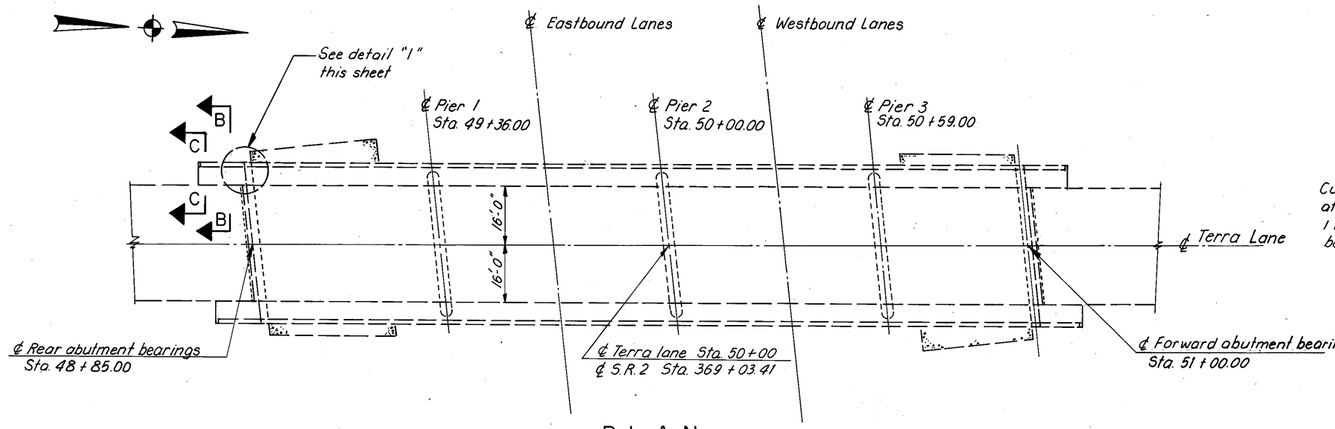
GENERAL NOTES AND ESTIMATED QUANTITIES

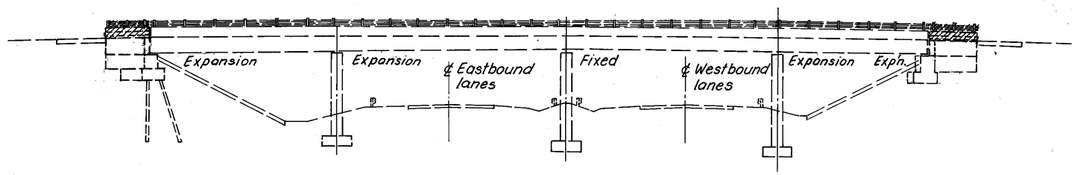
BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	____	CDW	ART	2/24/94	

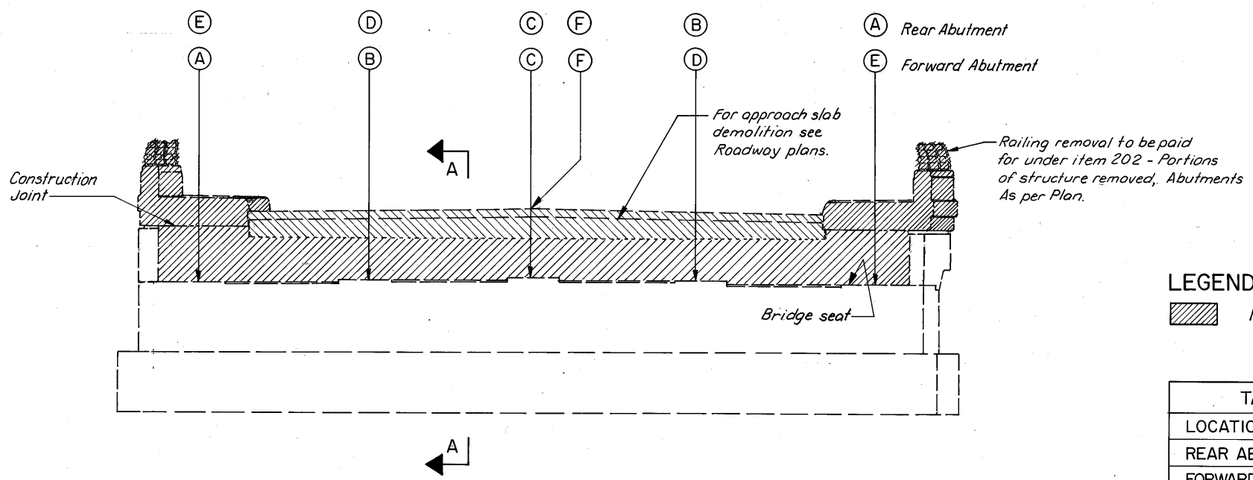
11-01-93 3:18PM [O:\835920\BRIGNOTE] GSC



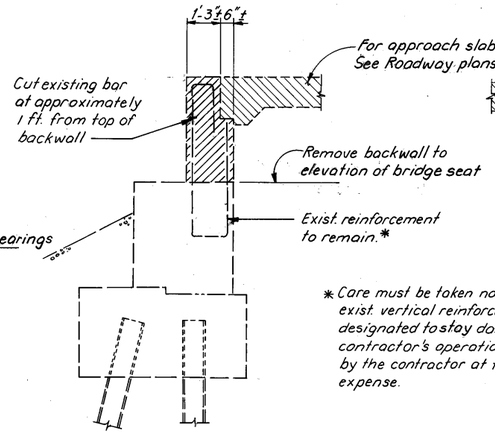
PLAN



ELEVATION

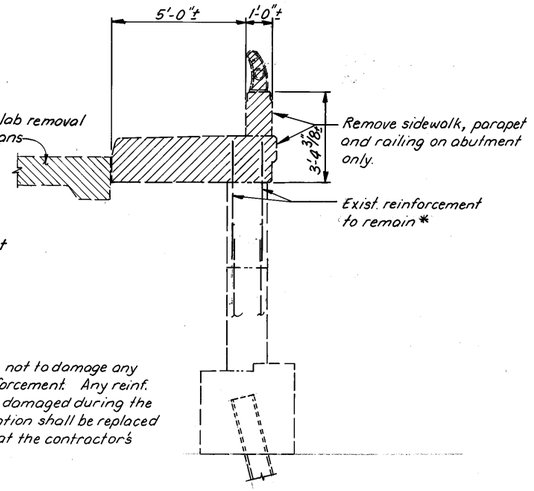


ABUTMENT ELEVATION

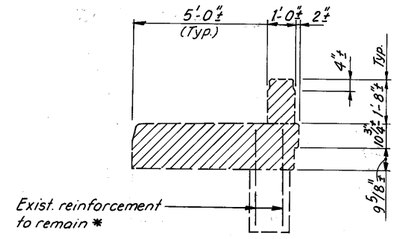


SECTION A-A

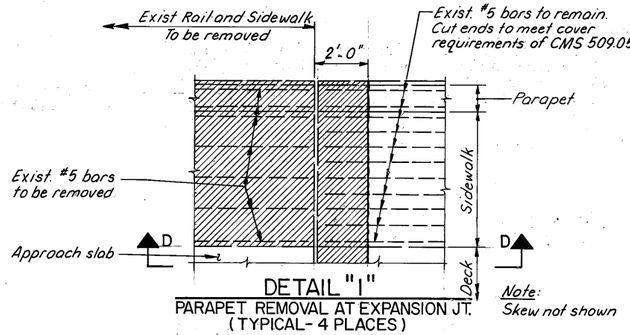
* Care must be taken not to damage any exist. vertical reinforcement. Any reinf. designated to stay damaged during the contractor's operation shall be replaced by the contractor at the contractor's expense.



SECTION B-B

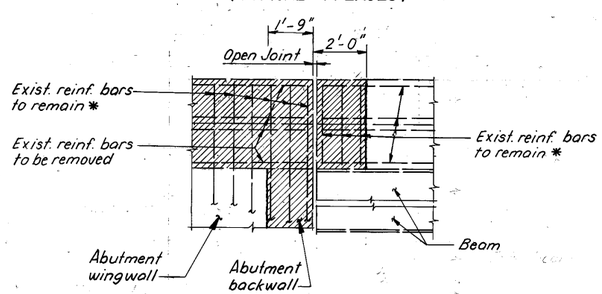


SECTION C-C
(WINGWALL)



DETAIL "1"
PARAPET REMOVAL AT EXPANSION JT.
(TYPICAL- 4 PLACES)

Note: Skew not shown



SECTION D-D

LEGEND:

Indicates section to be removed

TABLE OF EXISTING ELEVATIONS						
LOCATION	(A)	(B)	(C)	(D)	(E)	(F)
REAR ABUTMENT	641.04±	641.20±	641.36±	641.23±	641.10±	645.58±
FORWARD ABUT.	640.99±	641.13±	641.26±	641.09±	640.93±	645.48±

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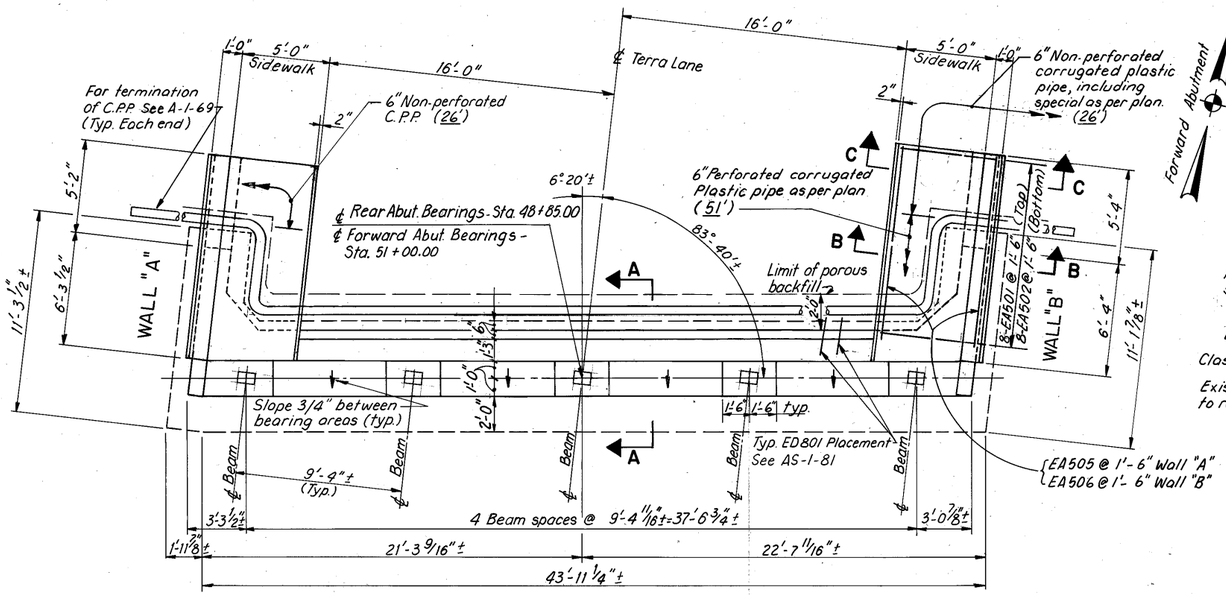
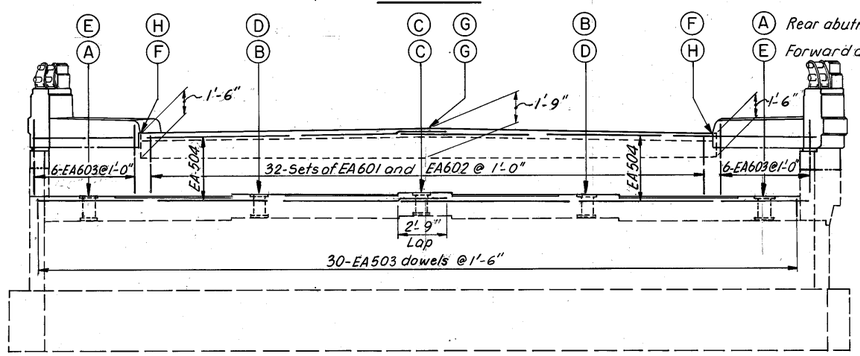
DEMOLITION

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	

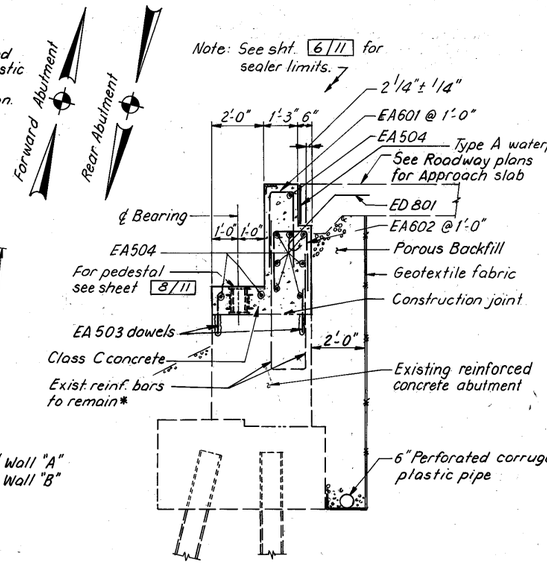


PLAN

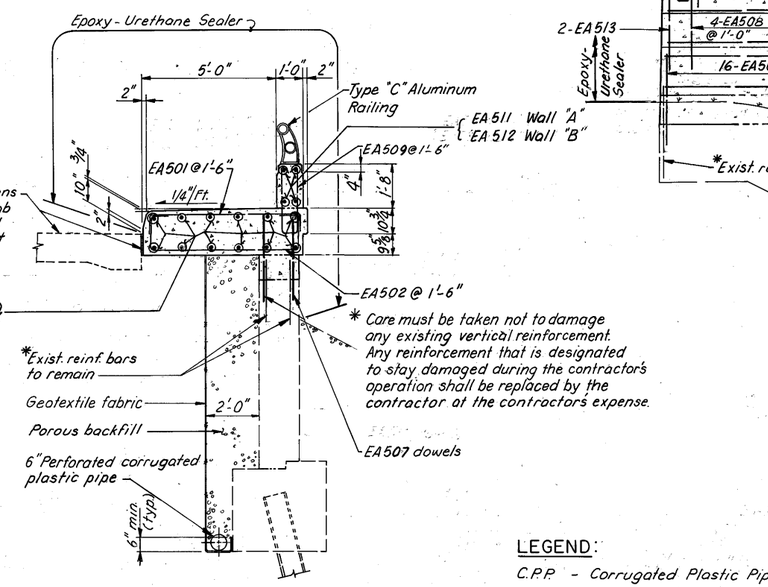


ELEVATION

(Piles and 12' Curved Vandal Protection Fence Not Shown)



SECTION A-A

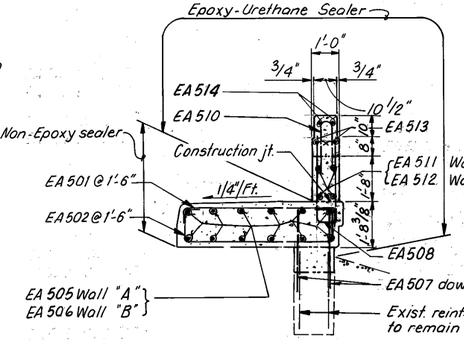


SECTION B-B

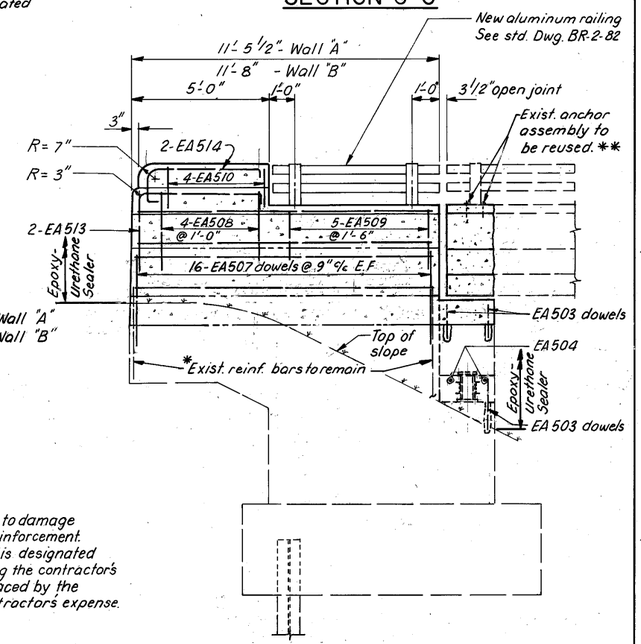
* Care must be taken not to damage any existing vertical reinforcement. Any reinforcement that is designated to stay damaged during the contractor's operation shall be replaced by the contractor at the contractors expense.

TABLE OF ELEVATIONS								
LOCATION	(A)‡	(B)‡	(C)‡	(D)‡	(E)‡	(F)	(G)	(H)
REAR ABUTMENT	642.08	642.24	642.40	642.27	642.14	646.25	646.50	646.25
FORWARD ABUT.	642.03	642.17	642.30	642.13	641.97	646.18	646.43	646.18

‡ Elevation indicated is to the top of steel pedestal. Provide shims under pedestal if necessary.



SECTION C-C



WINGWALL ELEVATION

** Anchor assembly of the railing on the bridge to be reused. The contractor is responsible for any damage done to the bridge railing or anchor assembly and shall replace these components at the contractors expense.

LEGEND:

C.P.P. - Corrugated Plastic Pipe

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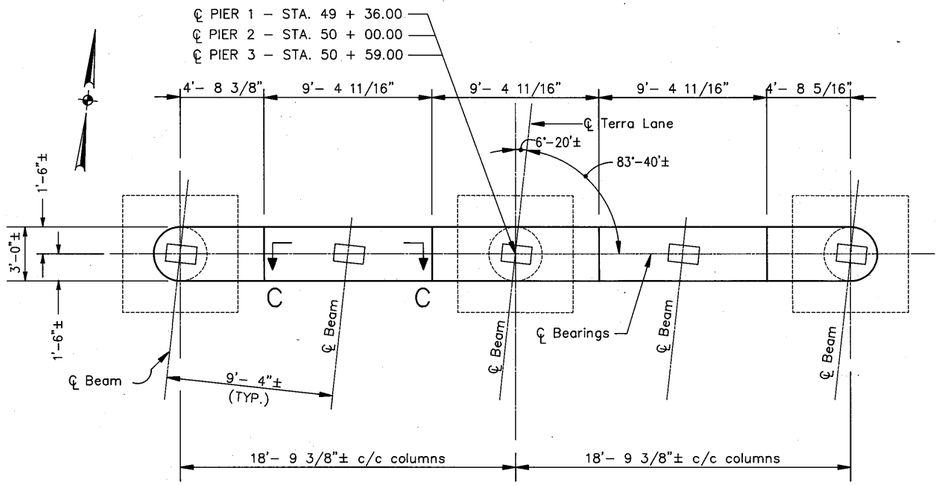
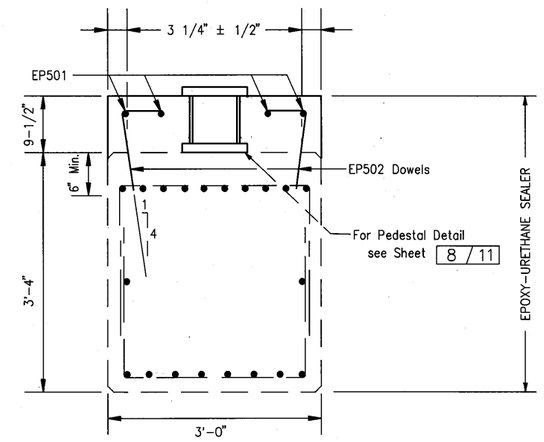
ABUTMENTS

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

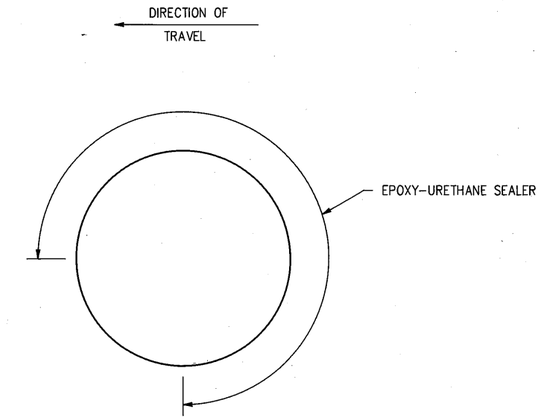
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



PLAN

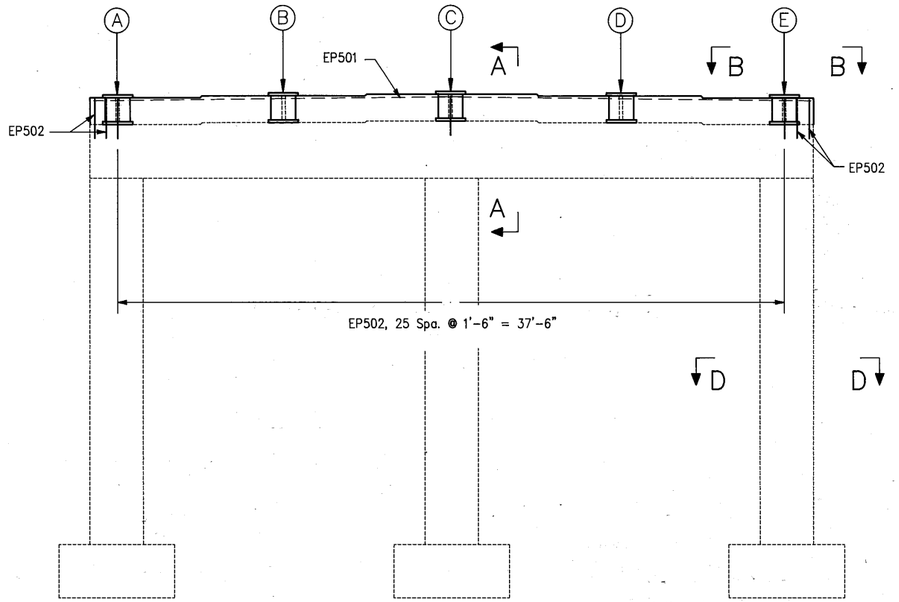


SECTION A – A

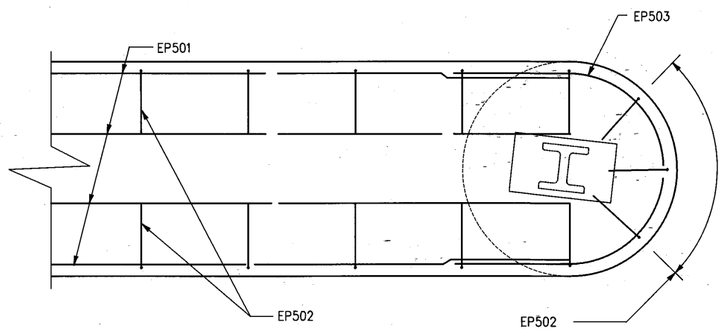


SECTION D–D

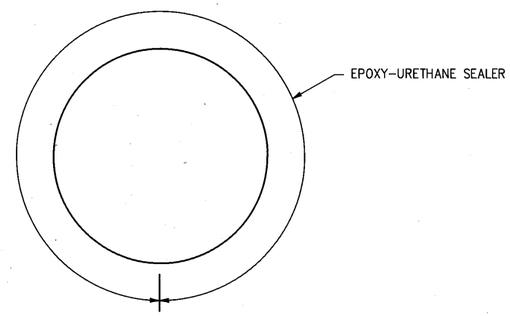
PIERS 1 & 3



ELEVATION



SECTION B – B



SECTION D–D

PIER 2

TABLE OF ELEVATIONS					
LOCATION	A	B	C	D	E
PIER 1	642.47	642.62	642.78	642.64	642.50
PIER 2	642.39	642.53	642.68	642.53	642.38
PIER 3	642.37	642.51	642.64	642.49	642.33

NOTE: SEE SHT. 8 / 11 *FOR SECTION C–C*

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CONSULTING ENGINEERS
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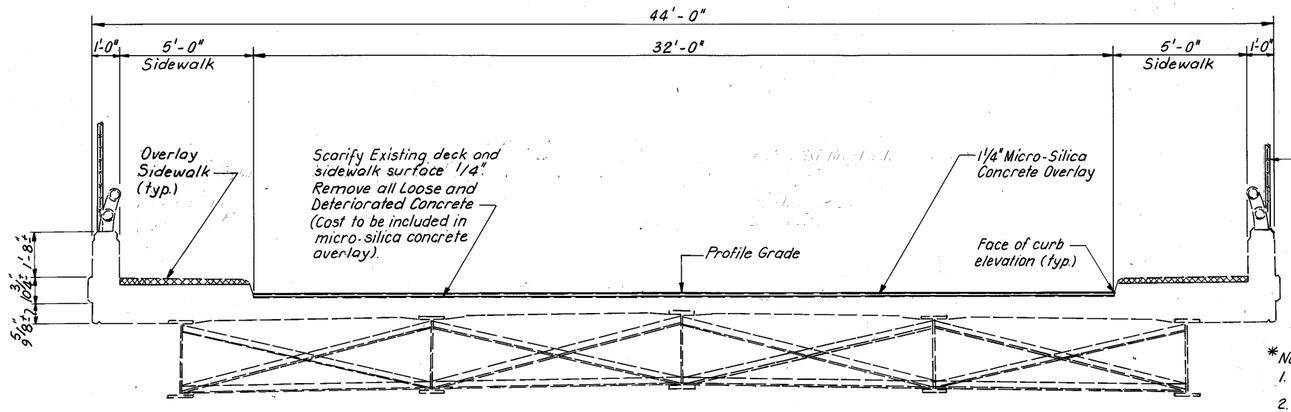
PIERS

BRIDGE NO. LOR–2–0699
UNDER TERRA LANE ROAD

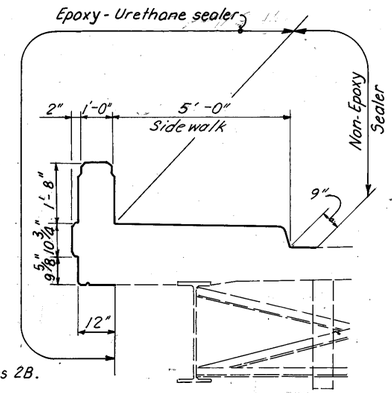
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC		CDW	ART	2/24/94	

56

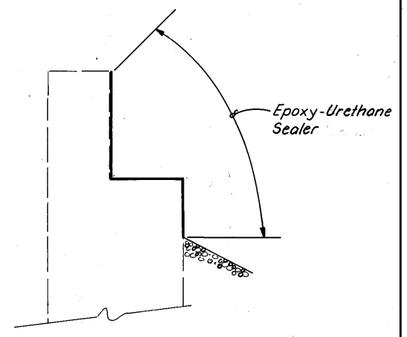
02-03-94 10:21AM [O:\83592G\PIER-DET] Y



TRANSVERSE SECTION
(Scuppers Not Shown)



DETAIL "1"



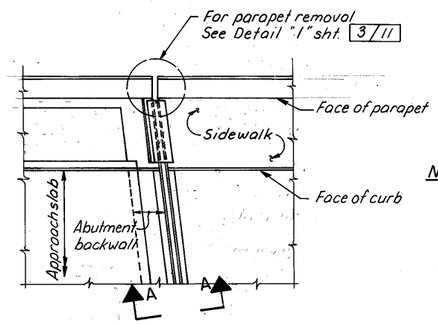
DETAIL "2"

*Notes:
1. PVC coating shall be class 2B.
2. The wire shall be 9 gauge.
3. For post spacing see sht. 7/11.

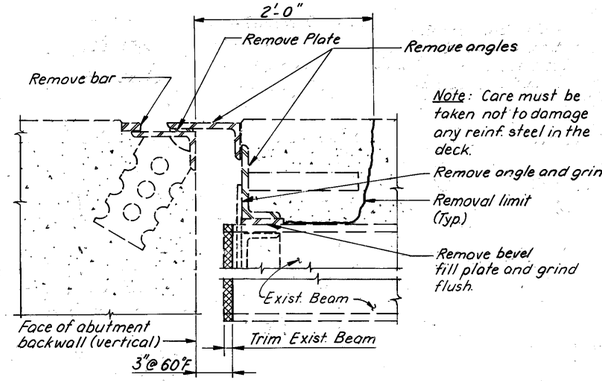
CONCRETE SEALER

Note:
Epoxy seal top and front surfaces of abutment as shown and exposed surfaces of wingwalls including beam seat ends.

PROPOSED DECK ELEVATIONS			
STATION	FACE OF CURB ELEV. (L)	PROFILE GRADE	FACE OF CURB ELEV. (R)
48 + 82.74	646.25	646.50	646.25
49 + 00	646.46	646.71	646.46
49 + 25	646.74	646.99	646.74
49 + 50	647.92	647.17	646.92
49 + 75	646.99	647.24	646.99
50 + 00	647.02	647.27	647.02
50 + 25	646.94	647.19	646.94
50 + 50	646.78	647.03	646.78
50 + 75	646.50	646.75	646.50
51 + 02.26	646.18	646.43	646.18

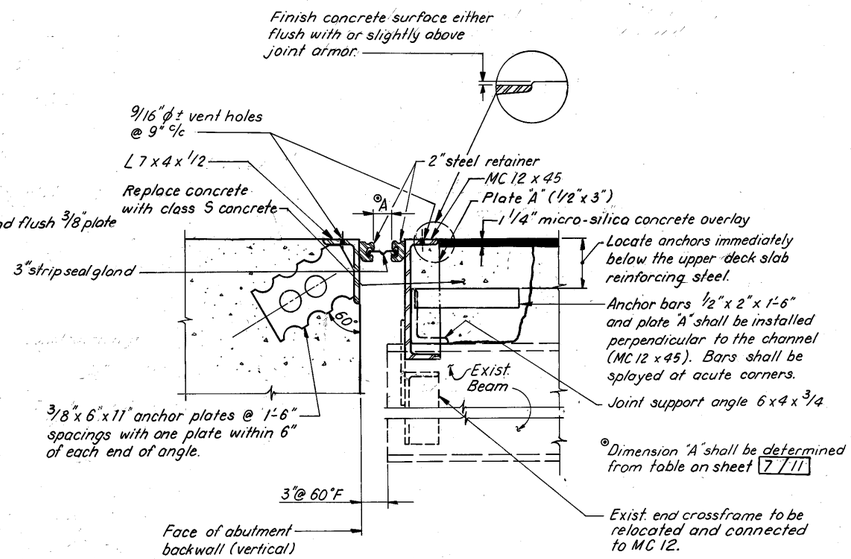


PART PLAN AT ABUTMENT



SECTION A-A
(EXISTING)

NOTE:
Remove and replace portions of concrete deck, sidewalk, parapet and expansion jt. and connections as needed to facilitate new 3" strip seal expansion jt. as shown on plans and std. dwg. EXJ-4-87. Preserve all exist. reinf. steel.
Payment for all of the above shall be at the unit price bid per linear ft. for item 516 structural expansion joint including elastomeric strip seal, as per plan w/c shall include all labor, equipment, materials and incidentals necessary to complete the above work.
Strip seal to be one strip.



SECTION A-A
(PROPOSED)

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CONSULTING ENGINEERS
WESTLAKE, OHIO 44145

6/11

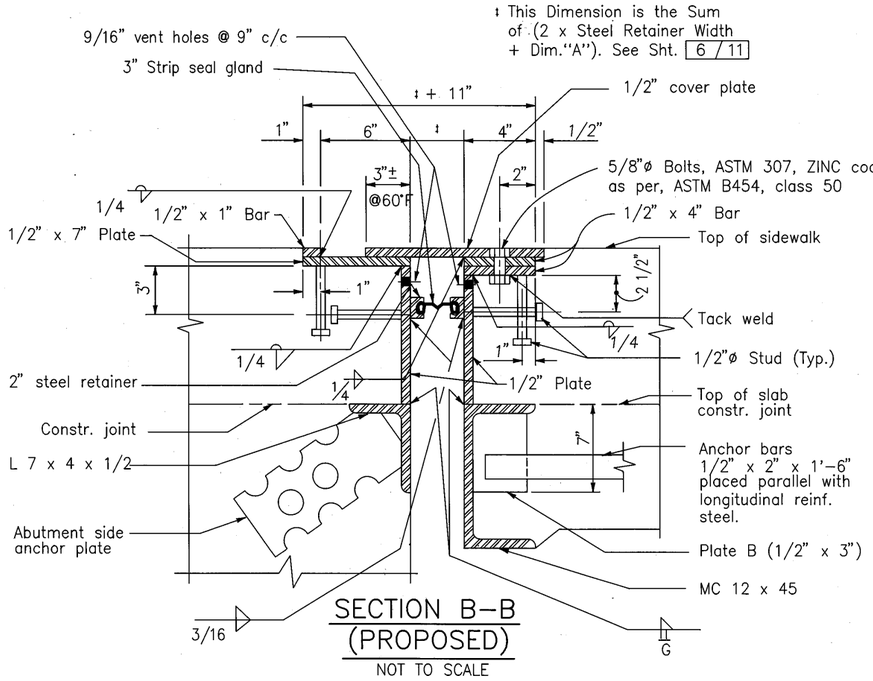
MICRO-SILICA CONCRETE OVERLAY AND MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	

NOTE: Dimension "A" measured perpendicular to abutment bearing

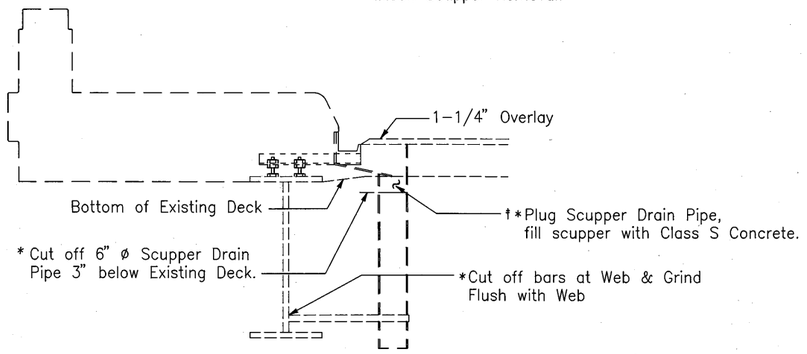
TEMPERATURE ADJUSTMENT TABLE							
TEMP	30°	40°	50°	60°	70°	80°	90°
"A"	1 13/16"	1 11/16"	1 5/8"	1 9/16"	1 1/2"	1 1/2"	1 1/2"



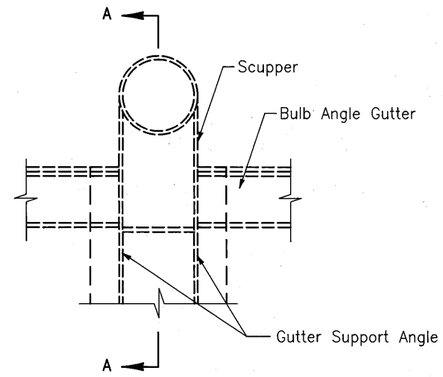
SECTION B-B
(PROPOSED)
NOT TO SCALE

† If any Scupper, which has already been plugged, has concrete below cut off level, break off concrete and patch area smooth.

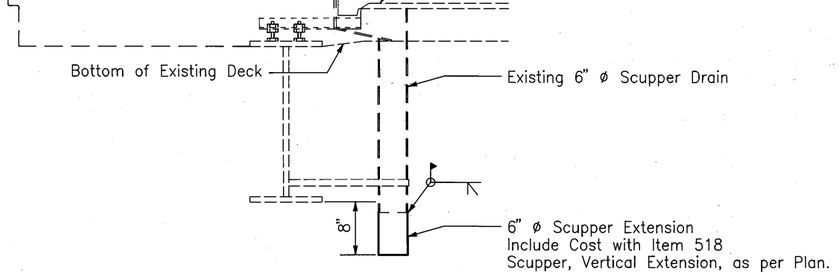
* Include cost with Item 202 - Removal, Misc.: Scupper Removal.



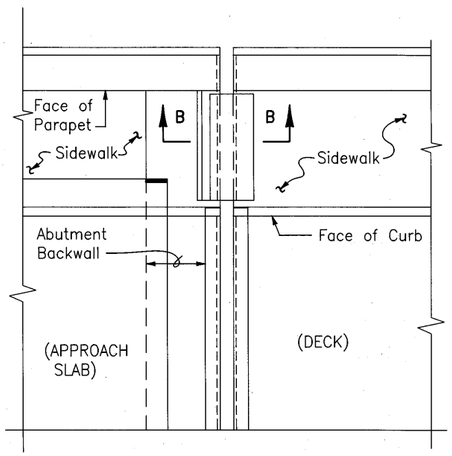
SECTION A-A
REMOVAL AND PLUGGING EXISTING SCUPPER
(Typical 4 Places)



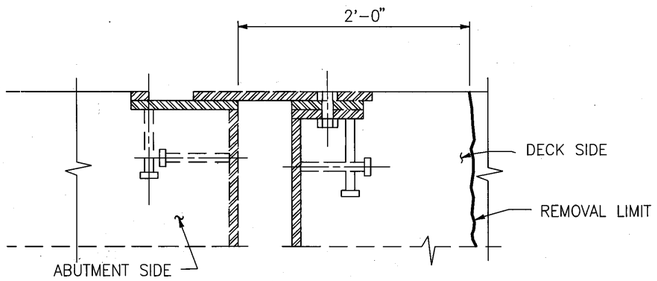
PLAN VIEW OF SCUPPER AND BULB ANGLE GUTTER



SECTION A - A
SCUPPER EXTENSION
(TYPICAL 8 PLACES)



PART PLAN AT ABUTMENT
NOT TO SCALE



FOR ABUTMENT AND DECK REMOVAL SEE SHEET 3/11

SECTION B-B (EXIST.)

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

7/11

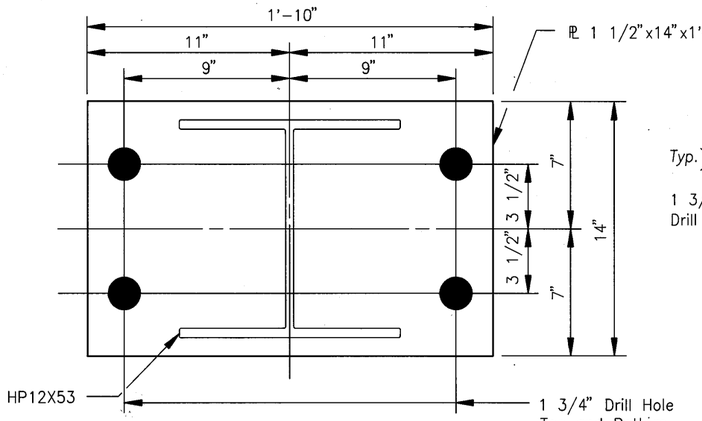
MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

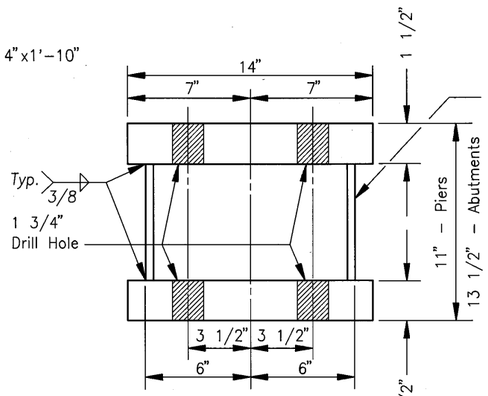
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	—	CDW	ART	2/24/94	

58

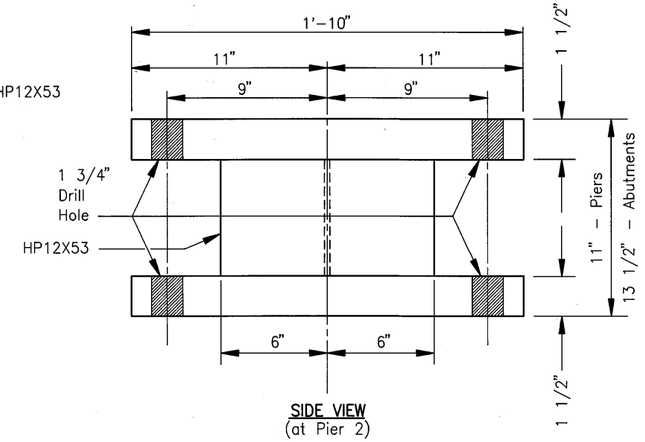
10-29-93 [O:\83592G\MISC-DET] GSC
8:20AM



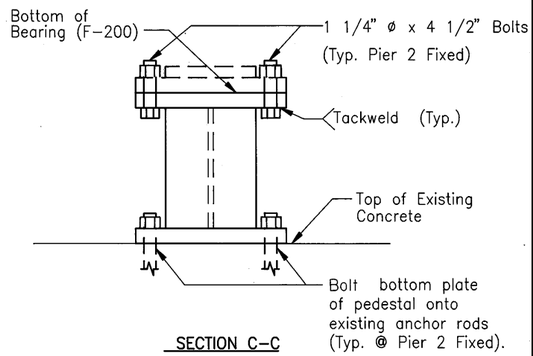
PLAN VIEW
(at Pier 2)



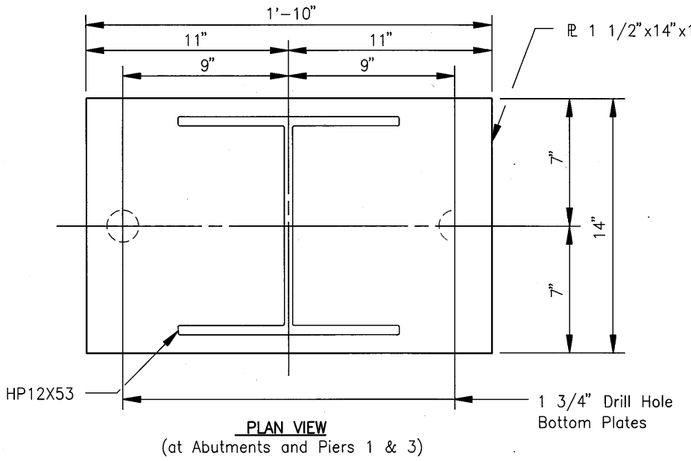
ELEVATION
(at Pier 2)



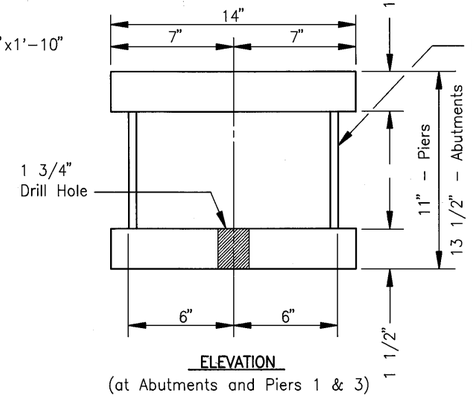
SIDE VIEW
(at Pier 2)



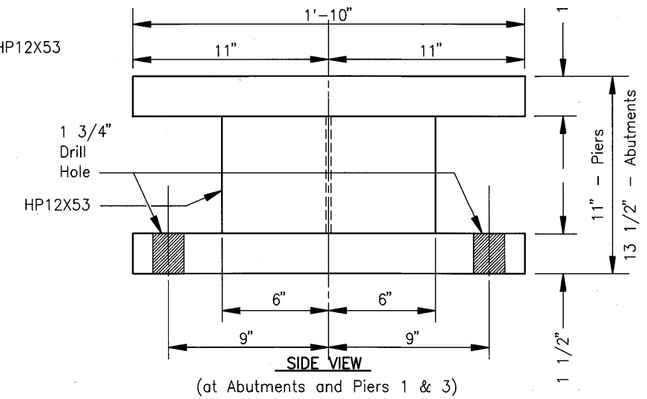
SECTION C-C



PLAN VIEW
(at Abutments and Piers 1 & 3)



ELEVATION
(at Abutments and Piers 1 & 3)



SIDE VIEW
(at Abutments and Piers 1 & 3)

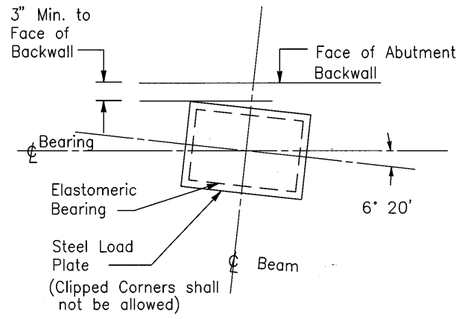
PEDESTAL NOTES:

1. Include the cost of pedestals under Item 516 – Jacking and Temporary Support of Structure
2. Include the cost of resetting bearings under item 516 – Reset Bearing.
3. All pedestals are to be galvanized A36 steel.

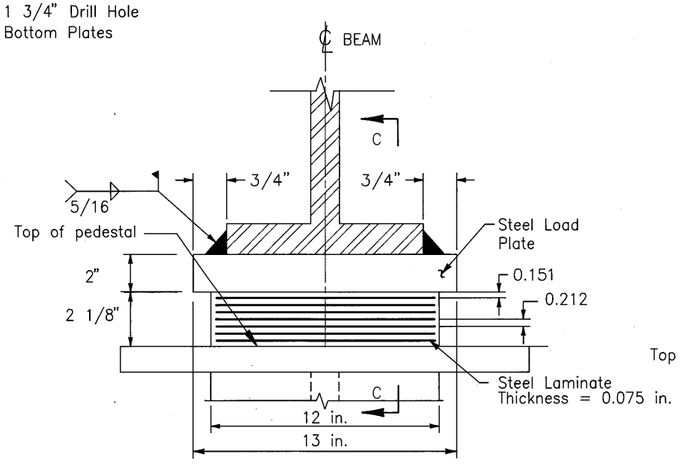
BEARING NOTES:

1. Only Abutment Bearings are to be Replaced
   6 Internal Layers
   Load Plate is Galvanized A36 Steel
   DL = 20K; LL = 56K
2. Basis of Payment: The unit bid price shall include all materials, labor and incidentals necessary to furnish and install laminated elastomeric expansion bearings. Payment will be made at the contract price for Item 516, Each, Elastomeric Bearings with Internal Laminates and Load Plate (Neoprene).
3. Load Plate: The steel load plate shall be bonded by vulcanization to the elastomer during the molding process. Steel Load Plates shall be 2 inches thick.

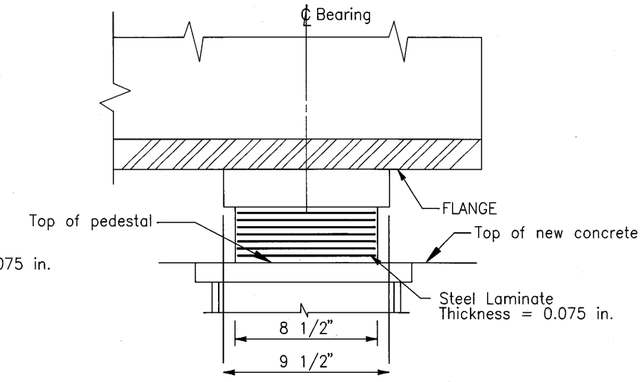
   Welding of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 300°F as determined by the use of pyrometric sticks or other temperature monitoring devices.



LAMINATED ELASTOMERIC BEARING ORIENTATION AT ABUTMENTS



LAMINATED ELASTOMERIC EXPANSION BEARING
50 DUROMETER



SECTION C-C

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

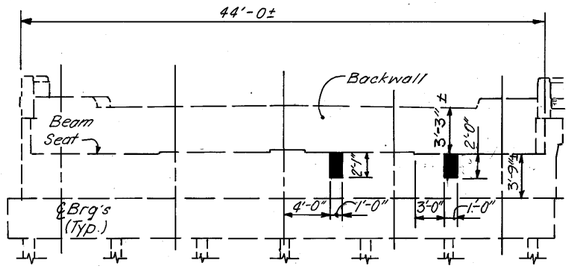
8 / 11

MISCELLANEOUS DETAILS

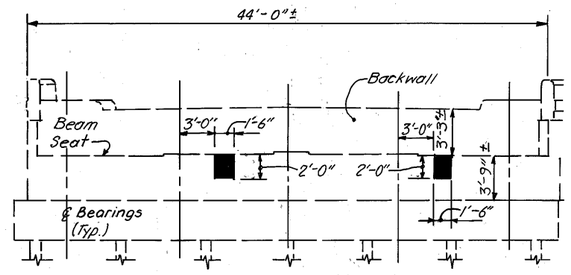
BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	THC	—	CDW	ART	2/24/94	

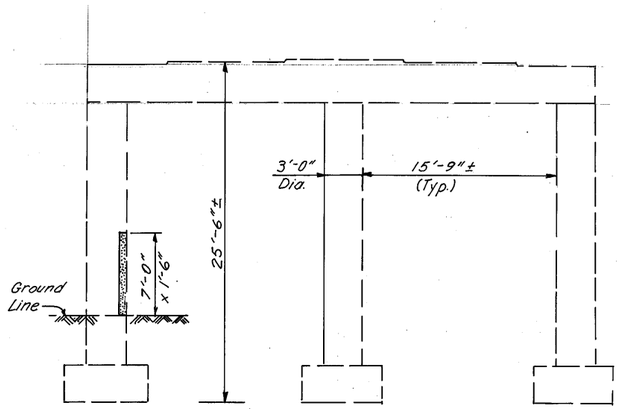
02-02-94 [O:\835920\PED-DET] CCC
2:58PM



ELEVATION
REAR ABUTMENT



ELEVATION
FORWARD ABUTMENT



ELEVATION (NORTH)
PIER № 1

LEGEND

Minor cracks and hollow concrete to be patched

Graffiti to be covered by epoxy-urethane sealer

ITEM 519 - Patching Conc. Structures		
Location	Unit	Measured Quantity
Rear Abutment	Sq. Ft.	4
Forward Abutment	Sq. Ft.	6
Total	Sq. Ft.	10

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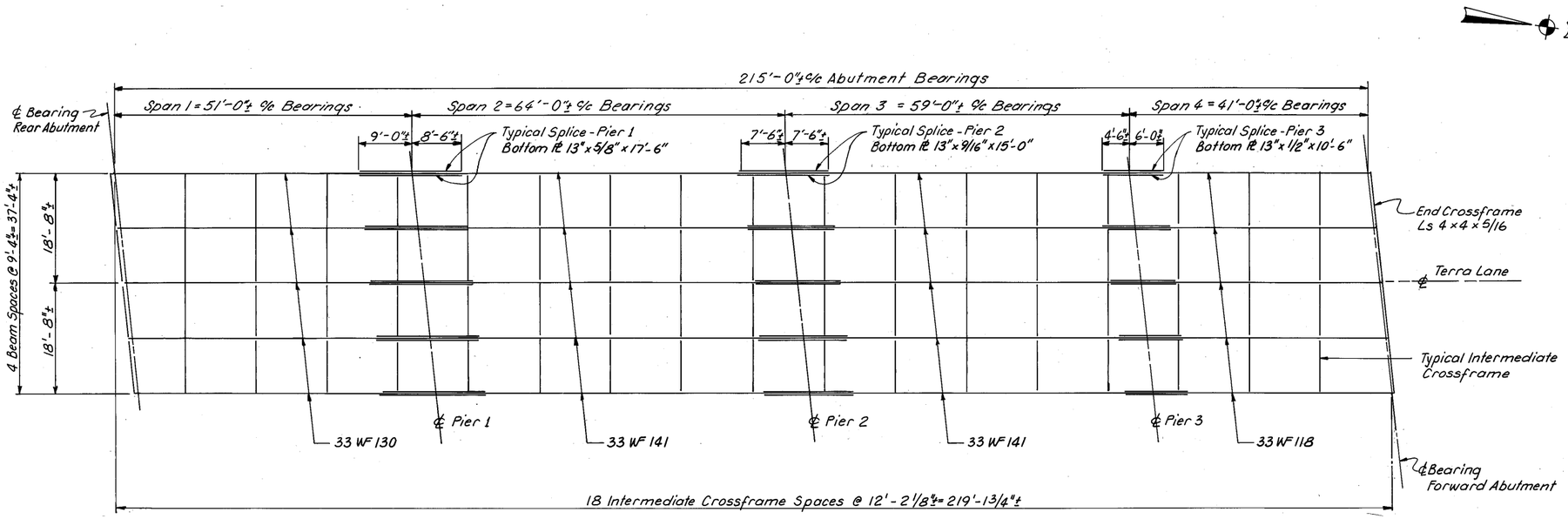
WESTLAKE, OHIO 44145

9/11

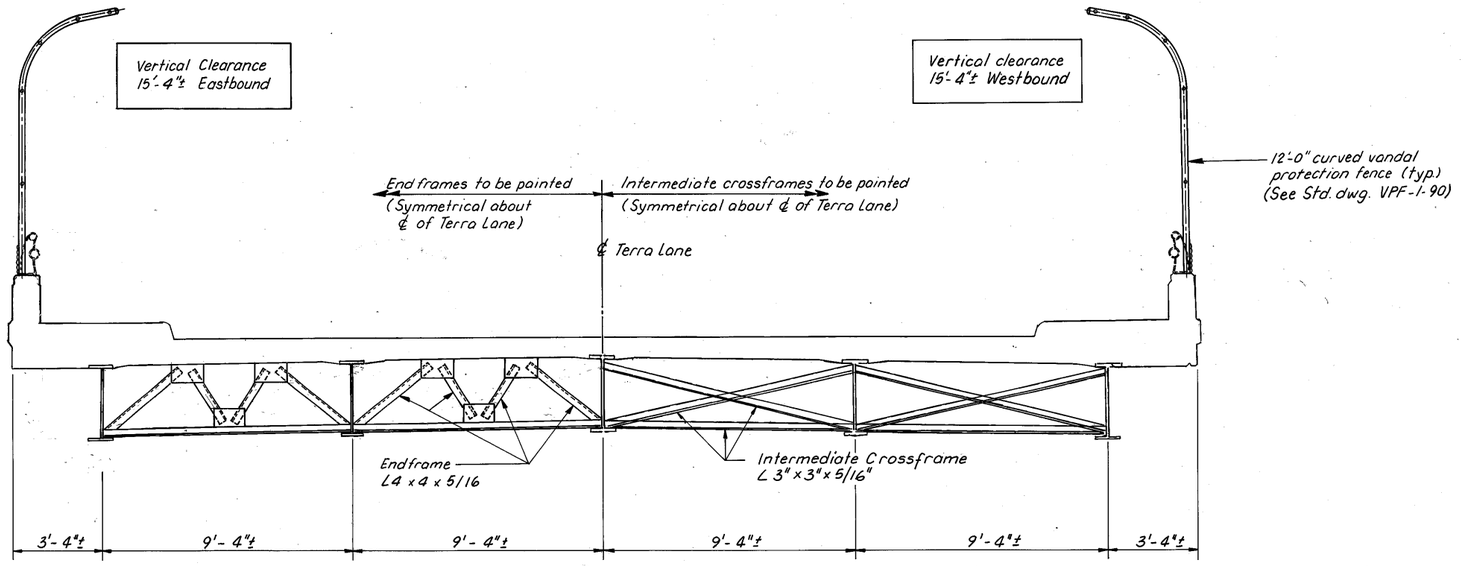
REPAIR DETAILS

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



STEEL FRAMING PLAN



TYPICAL SECTION

R.E. WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

10/11

STRUCTURAL STEEL FOR PAINTING

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	SSM	—	CDW	ART	2/24/94	

08-03-92 [I:\S\C\ODOT] THC
10:17AM

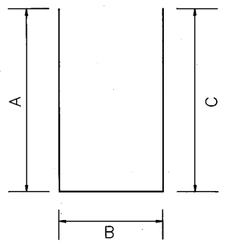
REINFORCING STEEL SCHEDULE

EPOXY COATED REINFORCEMENT ABUTMENTS									
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
EA501	32	7'-0"	234	1	0'-10"	5'-6"	0'-10"		
EA502	32	9'-4"	312	4	1'-2"	5'-6"	0'-10"		
EA503	128	1'-9"	234	STR					
EA504	36	23'-2"	870	STR					
EA505	48	11'-0"	552	STR					
EA506	48	11'-3"	564	STR					
EA507	64	3'-6"	234	STR					
EA508	20	7'-6"	156	2	3'-1"	0'-8"			
EA509	20	6'-0"	126	2	2'-4"	0'-8"			
EA510	20	4'-0"	84	3	1'-7"	0'-3"			
EA511	16	11'-0"	184	STR					
EA512	16	11'-4"	190	STR					
EA513	8	8'-6"	72	1	3'-3"	4'-8"	0'-10"		
EA514	8	5'-10"	48	5	0'-4"	0'-10"	0'-5"	3'-11"	0'-3"
EA601	64	6'-0"	576	1	2'-8"	0'-11"	2'-8"		
EA602	64	6'-6"	624	1	2'-8"	1'-5"	2'-8"		
EA603	24	4'-0"	144	STR					
ED801	44	6'-0"	710	6	3'-10"				
		TOTAL	5914						

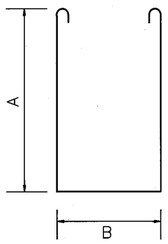
EPOXY COATED REINFORCEMENT PIERS									
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
EP501	12	37'-6"	471	STR					
EP502	174	1'-9"	303	7	0'-10"	1'-0"	0'-3"		
EP503	6	9'-8"	60	3	2'-9"	1'-4"			
		TOTAL	834						

NOTE

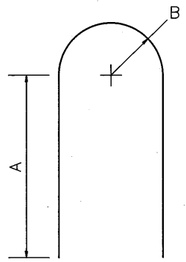
ALL STEEL REINFORCING TO BE EPOXY COATED.



TYPE 1



TYPE 2



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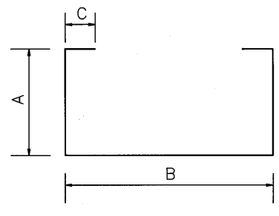
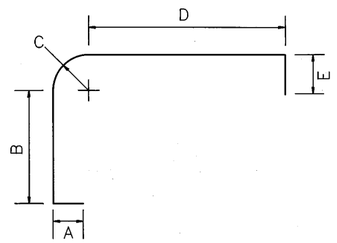
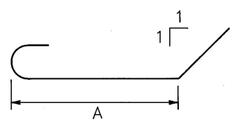


TYPE 4



TYPE 5



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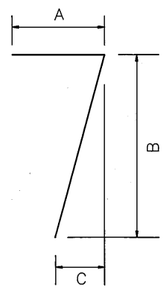

TYPE 7

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CONSULTING ENGINEERS
WESTLAKE OHIO

11 / 11

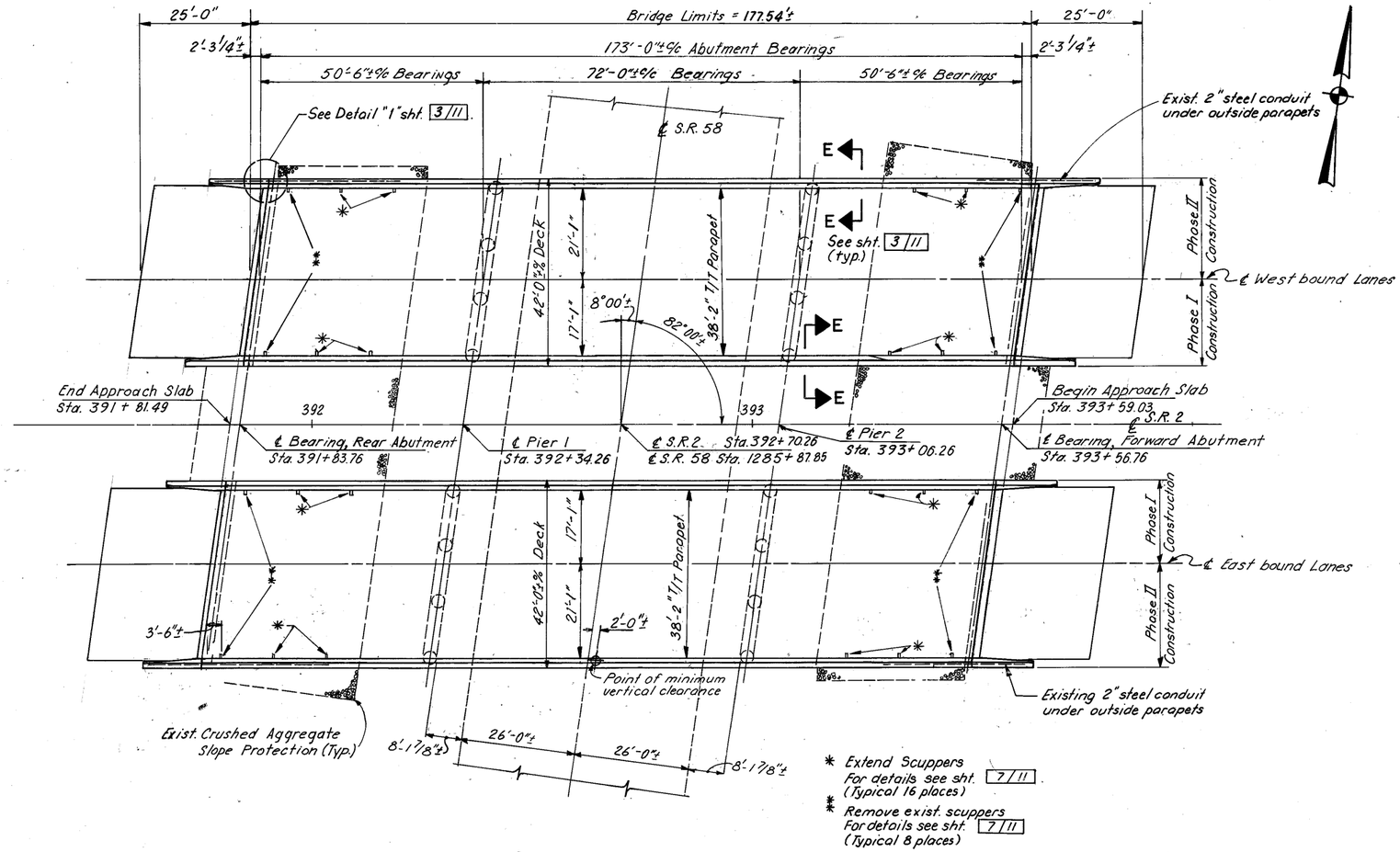
REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0699
UNDER TERRA LANE ROAD

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	RJE	——	CDW	ART	2/24/94	

62

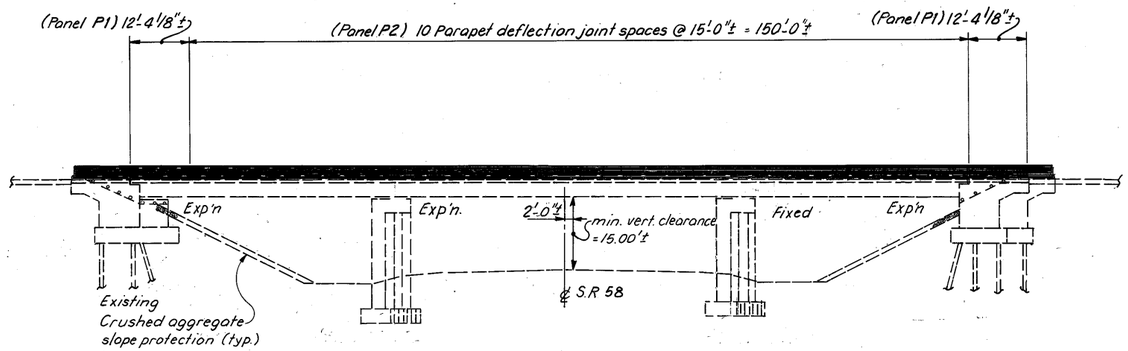
02-02-94 [o:\83592G\835RST-G] CCC
2:33PM



* Extend Scuppers For details see sht. 7/11 (Typical 16 places)

** Remove exist. scuppers For details see sht. 7/11 (Typical 8 places)

GENERAL PLAN



ELEVATION

EXISTING STRUCTURE

TYPE: Twin Continuous Steel Beam with Reinforced Concrete Deck & Substructure.
SPANS: 50'-6"; 72'-0"; 50'-6" % Bearings
ROADWAY: 40'-0" f/f Parapets
LOAD FREQUENCY: CF 400 (57)
SKEW: 8°-00' L.F.
ALIGNMENT: Tangent
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-54 (25' Long, Modified)
DATE BUILT: 1965
STRUCTURE FILE NO.: 4700279, 4700309

PROPOSED STRUCTURE

PROPOSED WORK: Concrete Overlay, Retrofit Existing Parapets, Replace Abutment Bearings, Remove Concrete at Parapet Joint to Provide Room for Expansion, Painting.
TYPE: Twin Continuous Steel Beam with Reinforced Concrete Deck & Substructure
SPANS: 50'-6" ; 72'-0" ; 50'-6" % Bearings.
ROADWAY: 38'-2" t/t Parapet
LOAD FREQUENCY: CF 400 (57)
SKEW: 8° - 00' L.F.
ALIGNMENT: Tangent
WEARING SURFACE: Micro-Silica Concrete Deck Overlay
APPROACH SLABS: AS-1-81 (25' Long)
AVERAGE DAILY TRAFFIC: 25980 (2014)
AVERAGE DAILY TRUCK TRAFFIC: 3118 (2014)

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CONSULTING ENGINEERS
WESTLAKE, OHIO

1 / 11

GENERAL PLAN AND ELEVATION

BRIDGE NO. LOR-2-0742 L / R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

63

08-03-92 [I:\S\C\ODOT] THC
10:17AM

PROPOSED WORK:
MAJOR WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF MICRO-SILICA CONCRETE OVERLAY, INSTALLING STRIP SEAL EXPANSION JOINTS, REPLACING ABUTMENT BEARINGS, PLUGGING AND ABANDONING EXISTING SCUPPERS, EXTENDING EXISTING SCUPPERS, CONCRETE SEALING, TRIMMING ENDS OF BEAMS AND PAINTING OF SUPERSTRUCTURE.
DETAILS OF THIS WORK ARE SHOWN IN THE PLANS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

A-1-69	DATED	6-12-69
AS-1-81	DATED (REVISED)	11-27-81
EXJ-4-87	DATED	1-20-94

AND SUPPLEMENTAL SPECIFICATIONS:

852	7-30-93
944	5-20-94

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE MANUAL.

DESIGN DATA:
LOAD FREQUENCY - CF 400 (57)
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

DECK PROTECTION METHOD:
SEALING OF CONCRETE SURFACES AND MICRO-SILICA CONCRETE OVERLAY.

MAINTENANCE OF TRAFFIC:
BRIDGE WORK SHALL BE COORDINATED WITH DISTRICT 3 ROADWAY WORK AND MAINTENANCE OF TRAFFIC REQUIREMENTS.

ITEM 202 - REMOVAL MISC.: SCUPPER REMOVAL
THIS ITEM SHALL BE USED TO PLUG AND REMOVE PORTIONS OF THE EXISTING SCUPPERS AS PER DETAILS IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202-REMOVAL, MISC.: SCUPPER REMOVAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES:
A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES SHOWN ON SHEETS [4/11] AND [5/11]. SEE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

UTILITY UNDER PARAPETS
THERE IS 2" GALVANIZED STEEL CONDUIT LOCATED UNDER OUTSIDE PARAPETS ON NORTH SIDE OF WESTBOUND LANES FOR ELECTRIC LIGHTING SYSTEM.

THE CONTRACTOR SHALL COMMENCE ANY WORK IN THIS AREA WITH EXTREME DUE CARE AND NOT TO DAMAGE THIS CONDUIT. ANY DAMAGE TO THIS CONDUIT BECAUSE OF CONTRACTORS NEGLIGENCE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND TO THE APPROVAL OF THE ENGINEER.

TRAFFIC SIGNS:
DUE CARE SHALL BE EXERCISED NOT TO DAMAGE EXISTING TRAFFIC SIGNS OR ANY CONNECTIONS OF TRAFFIC SIGNS THAT ARE MOUNTED ON PARAPETS.

IN CASE OF DAMAGE TO THE EXISTING STRUCTURE, PARAPET OR SIGNS BECAUSE OF CONTRACTORS NEGLIGENCE, REPAIR OR REPLACEMENT SHALL BE MADE AT THE CONTRACTORS EXPENSE AND TO THE APPROVAL OF THE ENGINEER.

ITEM - 518 SCUPPER, VERTICAL EXTENSION, AS PER PLAN
THIS ITEM SHALL INCLUDE ALL WORK NEEDED TO LENGTHEN SCUPPERS AS PER DETAILS IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 518 - SCUPPER, VERTICAL EXTENSION, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ESTIMATED QUANTITIES

CALC. BY. SWR DATE. 2/24/94 CHK'D BY CDW DATE 2/24/94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER.	GEN'L
202	11301	23	CU. YD.	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SEE SHT. 144)			23	
202	11301	60	CU. YD.	PORTIONS OF STRUCTURE REMOVED, ABUTMENTS, AS PER PLAN (SEE SHT. 144)	60			
202	98100	8	EACH	REMOVAL MISC.: SCUPPER REMOVAL			8	
509	15820	14016	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	7092		6724	200
510	11101	512	EACH	DOWEL HOLE, AS PER PLAN (SEE SHT. 144)			512	
511	34450	93	CU.YD.	CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN (SEE SHT. 145)	51		42	
511	45701	40	CU.YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (SEE SHT. 145)	40			
512	44400	6	SQ.YD.	TYPE B WATERPROOFING	6			
SPECIAL	51267510	944	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)(SEE PROPOSAL NOTE)	233		711	
513	15901	125	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN (SEE SHT. 215)	125			
513	21001	24	EACH	TRIMMING OF BEAM END, AS PER PLAN (SEE SHT. 144)			24	
SPECIAL	51400050	24280	SQ.FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)			24280	
SPECIAL	51400056	24280	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			24280	
SPECIAL	51400060	24280	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			24280	
SPECIAL	51400066	24280	SQ.FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)			24280	
516	11211	168	LIN. FT.	STRUCT'L. EXPAN. JT. INCLUDING ELASTOMERIC STRIP SEAL AS PER PLAN (SEE PROPOSAL NOTE)			168	
516	44101	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (2-3/8" X 8-1/2" X 12" LAMINATED ELASTOMERIC PAD W/ 2-1/4" X 9-1/2" X 13" STEEL LOAD PL) AS PER PLAN	24			
516	47000	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF STRUCTURE (SEE PROPOSAL NOTE) SUPER				
518	21201	144	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN (SEE SHT. 145)	144			
518	40001	180	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN (SEE SHT. 145)	180			
518	40011	228	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN (SEE SHT. 145)	228			
518	12701	16	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN (SEE SHT. 202)			16	
519	11101	140	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SEE SHT. 145)	140			
SPECIAL	51922000	1480	SQ.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1.25" THICK)(SEE PROPOSAL NOTE)			1480	
SPECIAL	51922100	82	CU.YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)(SEE PROPOSAL NOTE)			82	
SPECIAL	51922300	LUMP	LUMP	TEST SLAB (SEE PROPOSAL NOTE)				

ADDITIONAL NOTES:
FOR ADDITIONAL NOTES SEE SHEET (120), AND (121).

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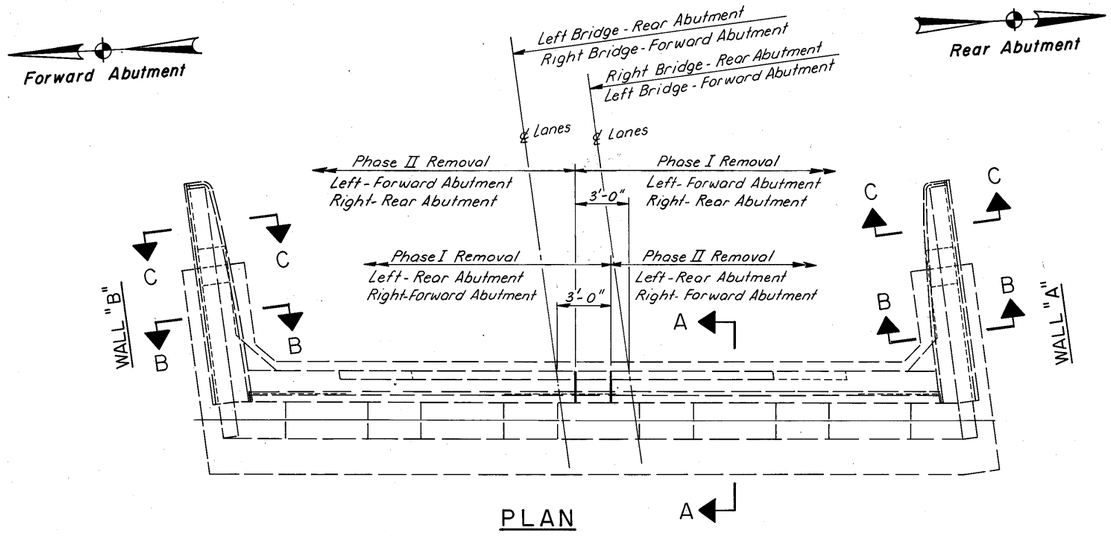
GENERAL NOTES AND ESTIMATED QUANTITIES.

BRIDGE NO. LOR-2-0742 L/R
OVER S.R. 58

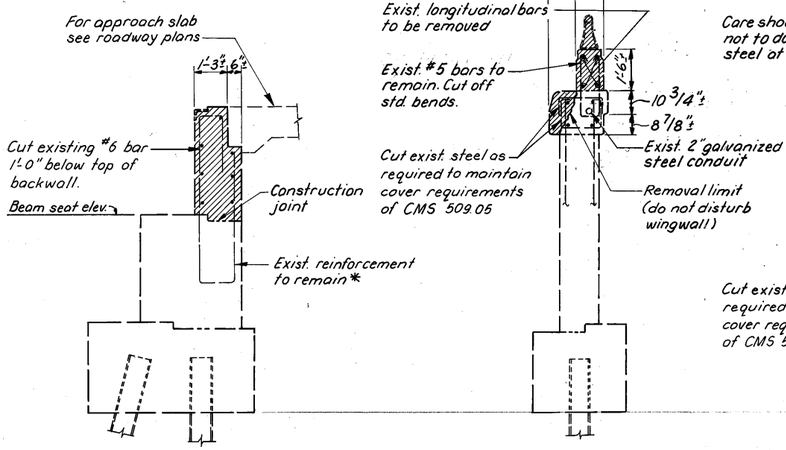
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	GSC	——	CDW	ART	2/24/94	

64

11-16-93 [O:\83592H\BRIGNOTE] LAH
4:10PM

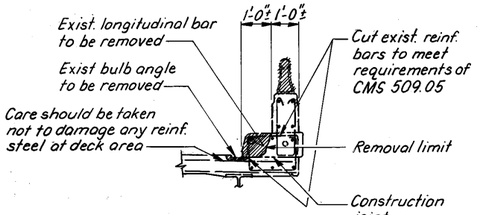


PLAN

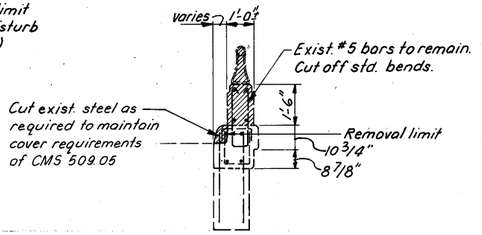


SECTION A-A

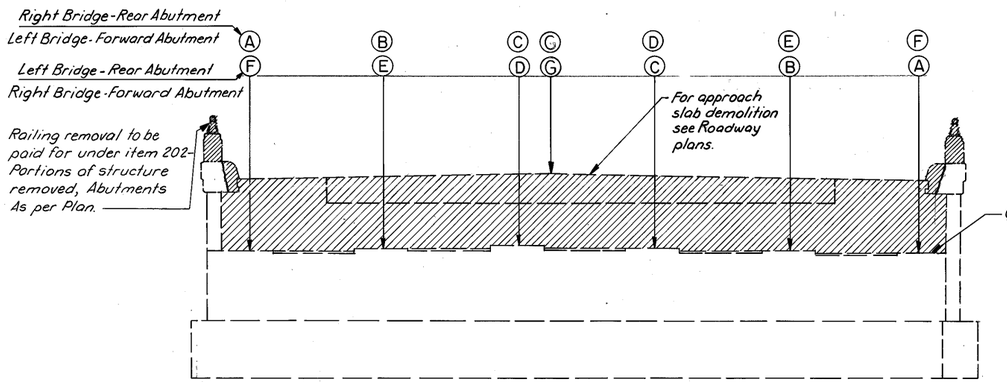
SECTION B-B



SECTION E-E
See sheet 1/11



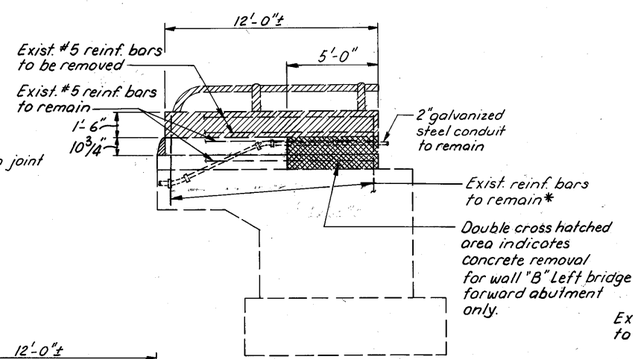
SECTION C-C



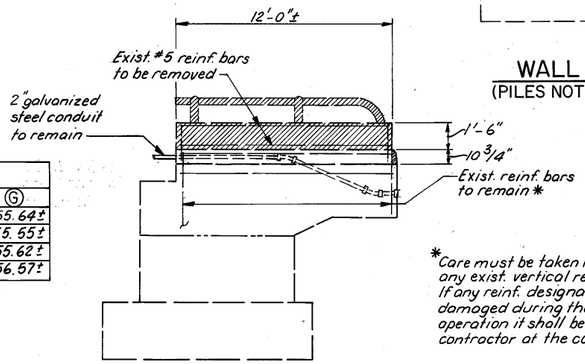
ELEVATION

TABLE OF EXISTING ELEVATIONS								
LOCATION		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ
LEFT BRIDGE	Rear Abutment	651.27±	651.38±	651.50±	651.56±	651.44±	651.32±	655.64±
	Forward Abutment	651.17±	651.29±	651.41±	651.47±	651.36±	651.24±	655.55±
RIGHT BRIDGE	Rear Abutment	651.25±	651.37±	651.48±	651.55±	651.43±	651.32±	655.62±
	Forward Abutment	651.20±	651.32±	651.43±	651.49±	651.37±	651.25±	656.57±

Note: For backwall demolition, concrete to be removed no further than the construction joint at the bridge seat.

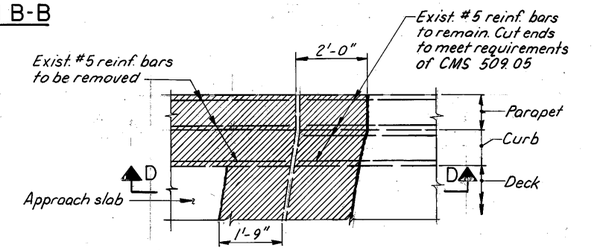


WALL "B"
(PILES NOT SHOWN)

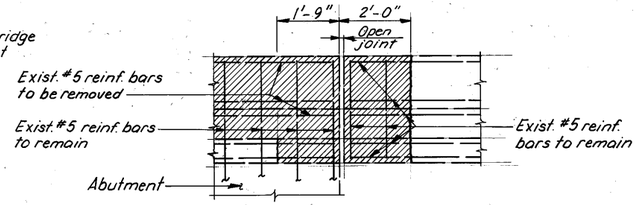


WALL A
(PILES NOT SHOWN)

*Care must be taken not to damage any exist. vertical reinforcements. If any reinf. designated to stay is damaged during the contractor's operation it shall be replaced by the contractor at the contractor's expense.



DETAIL "I"
PARAPET REMOVAL AT EXPANSION JT.
(TYPICAL 4 PLACES)



SECTION D-D

LEGEND:

Indicates sections to be removed

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DEMOLITION

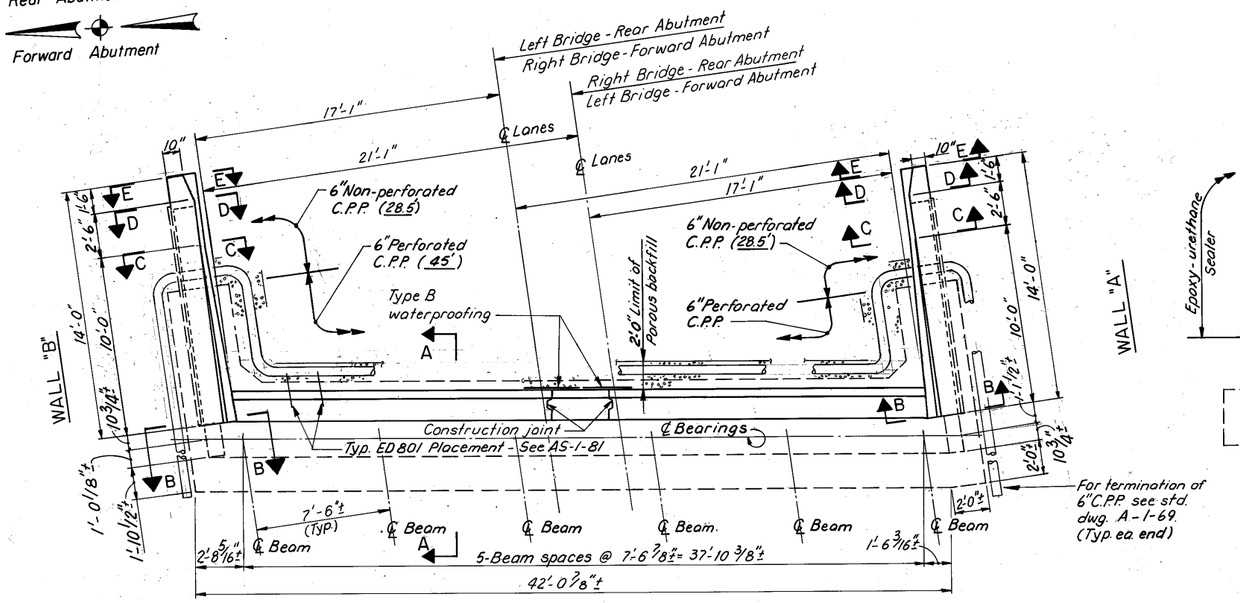
BRIDGE NO. LOR-2-0742 L / R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	—

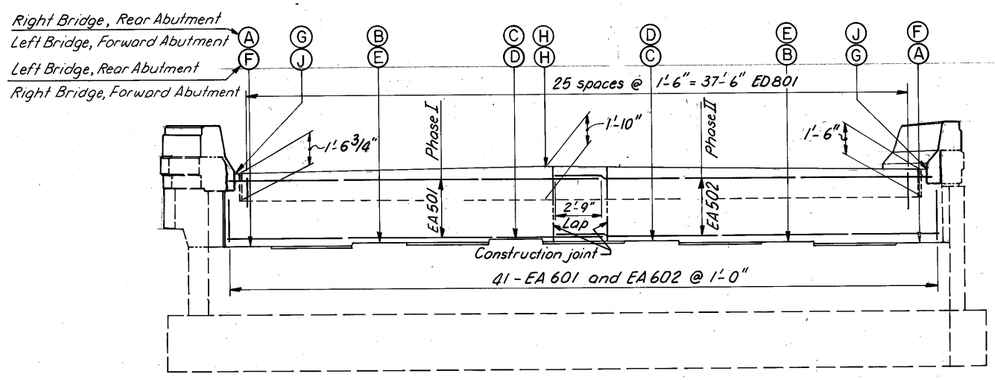
45

Rear Abutment

Forward Abutment



PLAN

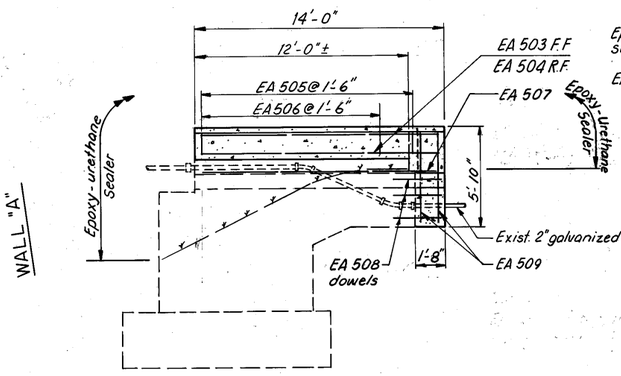


ELEVATION
(PILES NOT SHOWN)

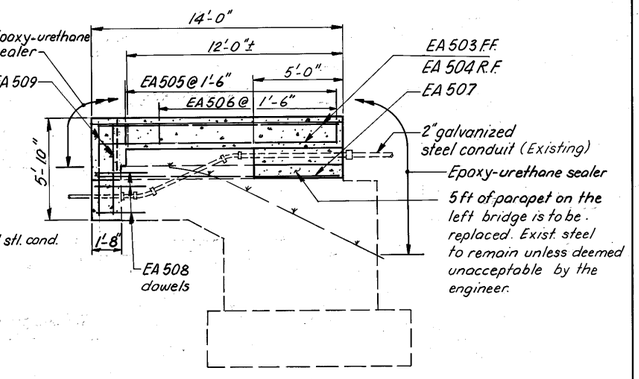
TABLE OF ELEVATIONS										
LOCATION		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓙ
LEFT BRIDGE	Rear Abutment	651.27±	651.38±	651.50±	651.56±	651.48±	651.32±	655.71	656.04	655.77
	Forward Abutment	651.17±	651.29±	651.41±	651.47±	651.36±	651.24±	655.68	656.01	655.74
RIGHT BRIDGE	Rear Abutment	651.25±	651.37±	651.48±	651.55±	651.43±	651.32±	655.84	656.11	655.78
	Forward Abutment	651.20±	651.32±	651.43±	651.49±	651.37±	651.25±	655.84	656.11	655.78

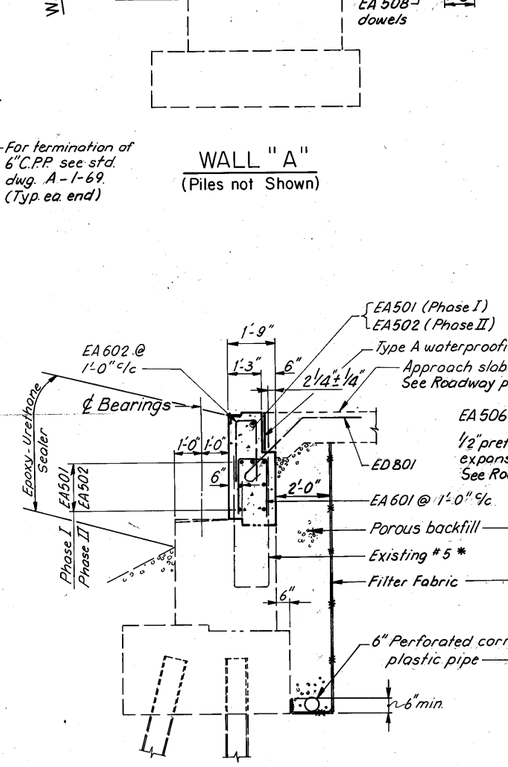
LEGEND:

F.F. - Front Face
R.F. - Rear Face

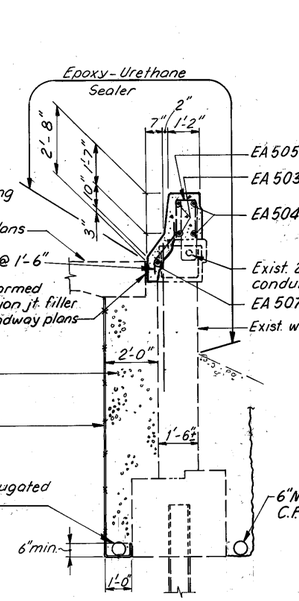


WALL "A"
(Piles not Shown)

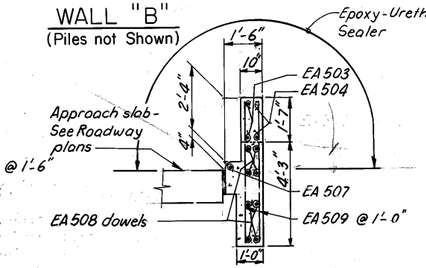




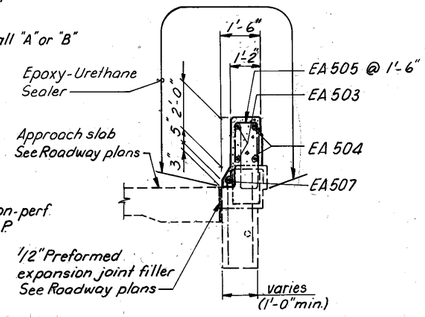
SECTION A-A



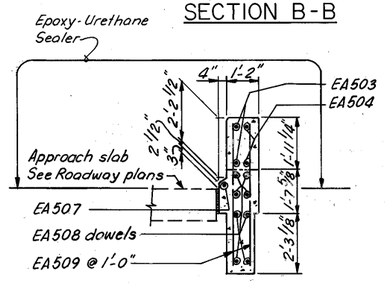
SECTION B-B



SECTION E-E



SECTION C-C



SECTION D-D

* Exist. reinforcing bars to remain. Care must be taken not to damage any exist. vertical reinforcements. If any reinforcement designated to stay is damaged during the contractor's operation, it shall be replaced by the contractor at the contractor's expense.

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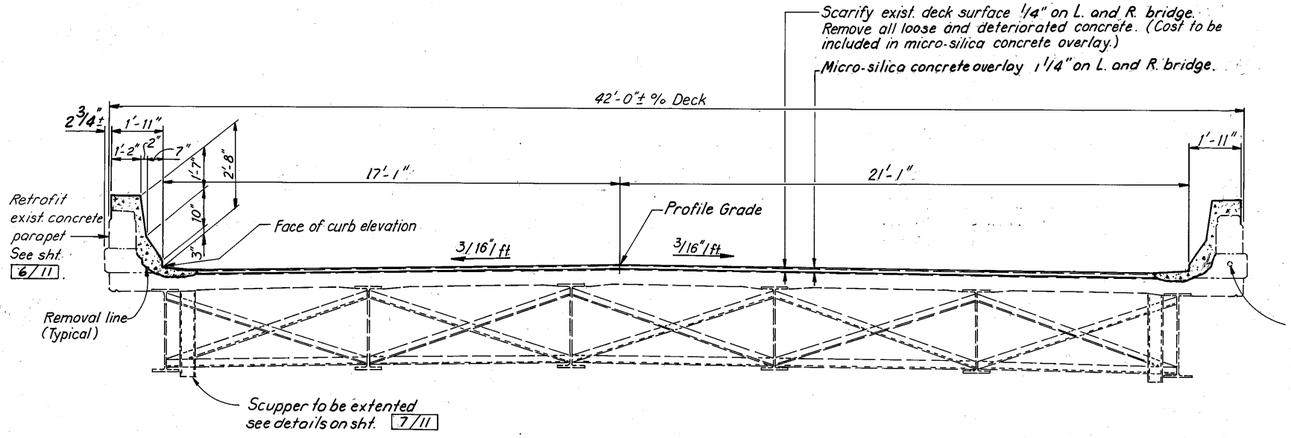
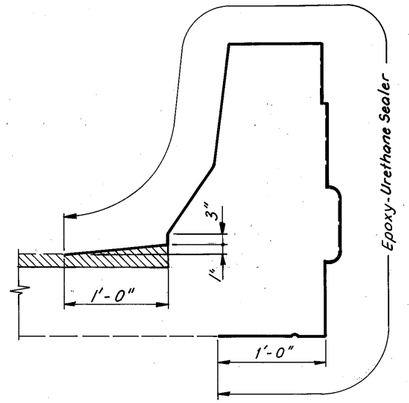
ABUTMENTS

BRIDGE NO. LOR.-2-0742 L / R
OVER S. R. 58

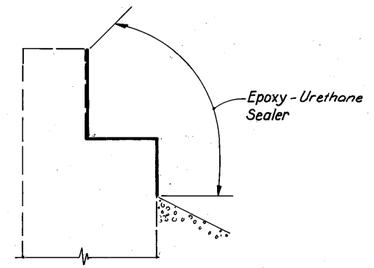
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



TRANSVERSE SECTION
RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND



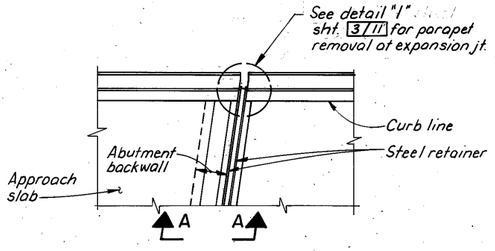
DETAIL "1"
EPOXY SEALER AT PARAPET & DECK



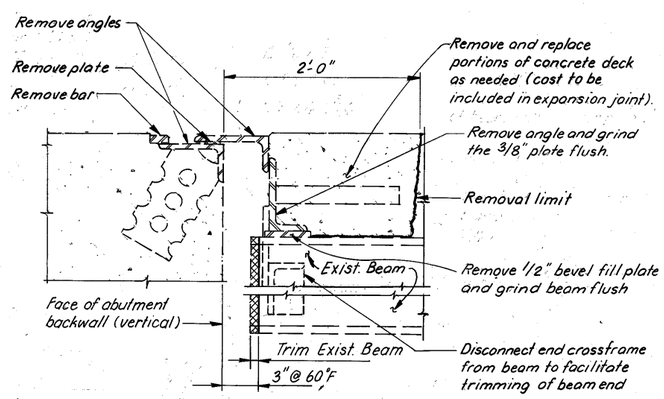
DETAIL "2"
EPOXY SEALER AT ABUTMENT

PROPOSED DECK ELEVATIONS - LEFT BRIDGE			
STATION	FACE OF CURB ELEV. (L)	PROFILE GRADE	FACE OF CURB ELEV. (R)
392 + 00	655.81	656.06	655.88
+ 25	655.83	656.08	655.90
+ 50	655.85	656.10	655.92
+ 75	655.83	656.08	655.90
393 + 00	655.81	656.06	655.88
+ 25	655.79	656.04	655.86
+ 50	655.77	656.02	655.84

PROPOSED DECK ELEVATIONS - RIGHT BRIDGE			
STATION	FACE OF CURB ELEV. (L)	PROFILE GRADE	FACE OF CURB ELEV. (R)
392 + 00	655.94	656.12	655.87
+ 25	655.95	656.13	655.88
+ 50	655.97	656.15	655.90
+ 75	655.96	656.14	655.89
393 + 00	655.95	656.13	655.88
+ 25	655.94	656.12	655.87
+ 50	655.93	656.11	—



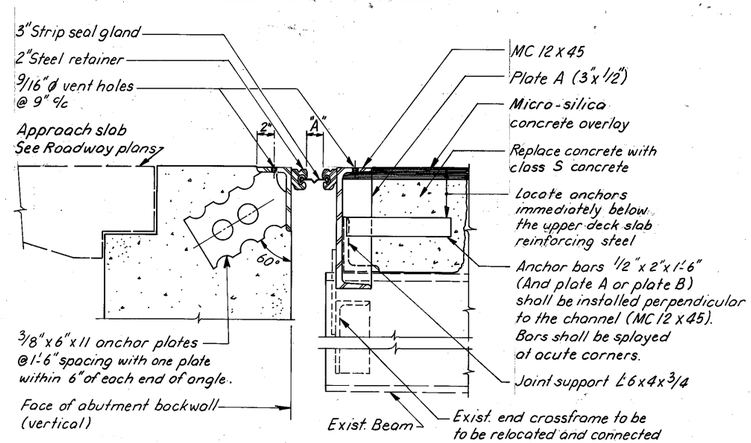
PART PLAN AT ABUTMENT



SECTION A-A
(EXISTING)

Note: Dimension "A" measured perpendicular to abutment bearings.

TEMPERATURE & ADJUSTMENT TABLE							
TEMP.	30°	40°	50°	60°	70°	80°	90°
"A"	1 7/8"	1 13/16"	1 1/16"	1 5/8"	1 1/2"	1 1/2"	1 1/2"



SECTION A-A
(PROPOSED)

Notes:

Remove and replace portions of concrete deck, parapet and approach slab, expansion joint and connections as needed to facilitate new 3" strip seal expansion joint as shown on plans and standard dwg. EXJ-4-87. Preserve all existing reinforcing steel.

Payment for all of the above shall be at the unit price bid per linear ft. for item 516 structural expansion joint as per plan including elastomeric strip seal, which shall include all labor, equipment, materials, and incidentals necessary to complete the above work.

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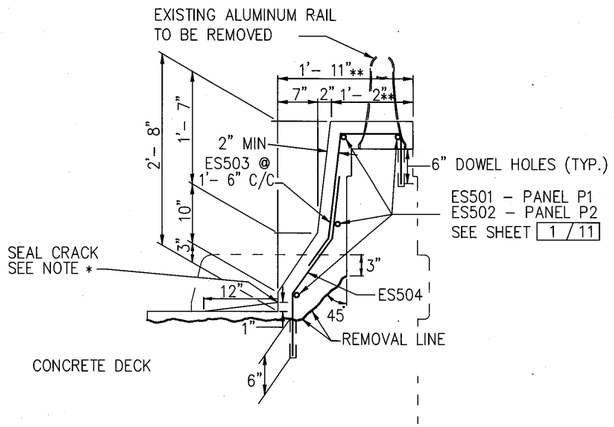
MICRO-SILICA CONCRETE OVERLAY AND MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0742 L / R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	



DETAIL "1"

NOTES

* CRACK SEALING - WHEN CURING IS COMPLETED, SEAL CRACK WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER, THE SEALER SHALL BE PREPARED AND APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INCLUDE COST WITH ITEM 511 CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN.

** THESE DIMENSIONS ARE DIFFERENT THAN STANDARD DRAWINGS BECAUSE OF FACING PARAPETS.

REINFORCING BARS NEAR DEFLECTION JOINTS MAY NEED TO BE MOVED TO PROVIDE 2" OF CLEARANCE ON EACH SIDE OF THE DEFLECTION JOINTS.

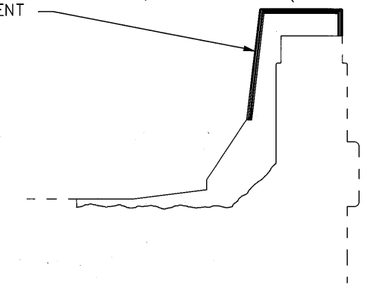
COST TO REMOVE EXISTING ALUMINUM RAIL SHALL BE INCLUDED IN ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE FACED, SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL THEN BE MECHANICALLY SCARIFIED 1/4" DEEP.

IN LIEU OF THE BONDING GROUT SPECIFIED IN ITEM 511 CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN, THE CONTRACTOR MAY ELECT TO THOROUGHLY DRENCH THE CONCRETE SURFACE WITH CLEAN WATER AND ALLOW IT TO DRY TO A DAMP CONDITION JUST BEFORE PLACING THE CONCRETE.

RETROFIT EXISTING CONCRETE PARAPET

EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED FACING AND SHALL BE MADE BY FORMING THE 1/4" JOINTS SHALL BE SEALED 3/4" DEEP (MIN) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBUCK/USA INC. MINN. OR A LOW DENSITY CLOSED CELL CROSSLINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES, RAVENA N.Y.
INCLUDE WITH ITEM 511 CLASS S CONCRETE, MISCELLANEOUS (PARAPETS), AS PER PLAN FOR PAYMENT



SECTION THROUGH DELECTION JOINT

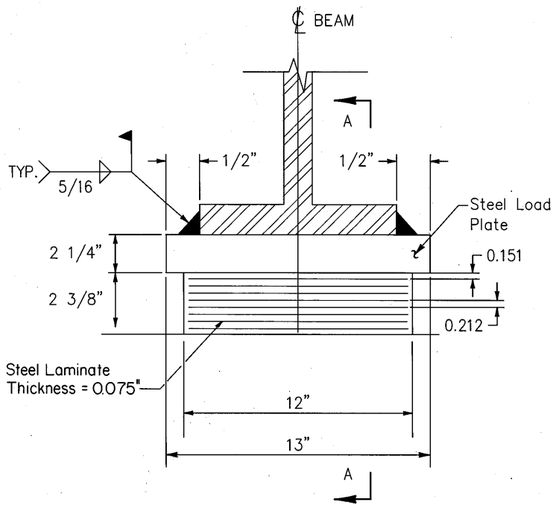
NOTES.

1. Replace abutment bearings only.
   7 Internal Layers
   Load Plate is Galvanized A36 Steel.
   DL = 20K; LL = 44K

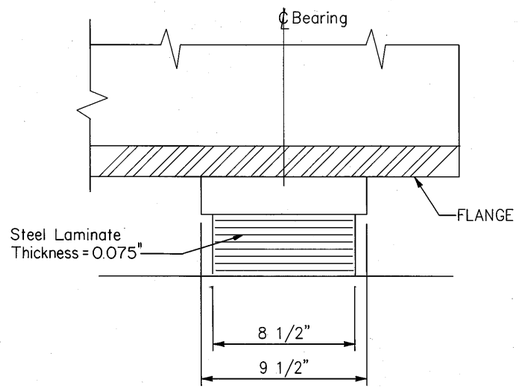
2. Basis of Payment: The unit bid price shall include all materials, labor and incidentals necessary to furnish and install laminated elastomeric bearings expansion. Payment will be made at the contract price for Item 516, Each, Elastomeric Bearings with Internal Laminates and Load Plate (Neoprene).

3. Load Plate: The steel load plate shall be bonded by vulcanization to the elastomer during the molding process. Steel Load Plates shall be 2 1/4 inches thick.

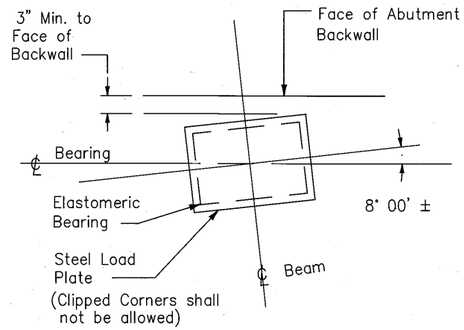
   Welding of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 300°F as determined by the use of pyrometric sticks or other temperature monitoring devices.



LAMINATED ELASTOMERIC
EXPANSION BEARING
50 DUROMETER



SECTION A-A



LAMINATED ELASTOMERIC BEARING
ORIENTATION AT ABUTMENTS

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

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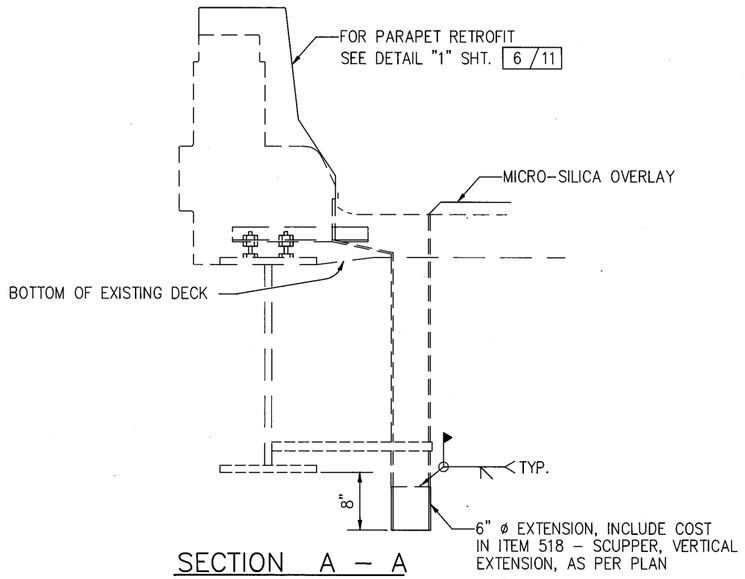
MISCELLANEOUS DETAILS

BRIDGE NO. LOR-2-0742 L/R
OVER S. R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	——	CDW	ART	2/24/94	

10-04-93 [O:\83592H\PARA] SWR
2:40PM

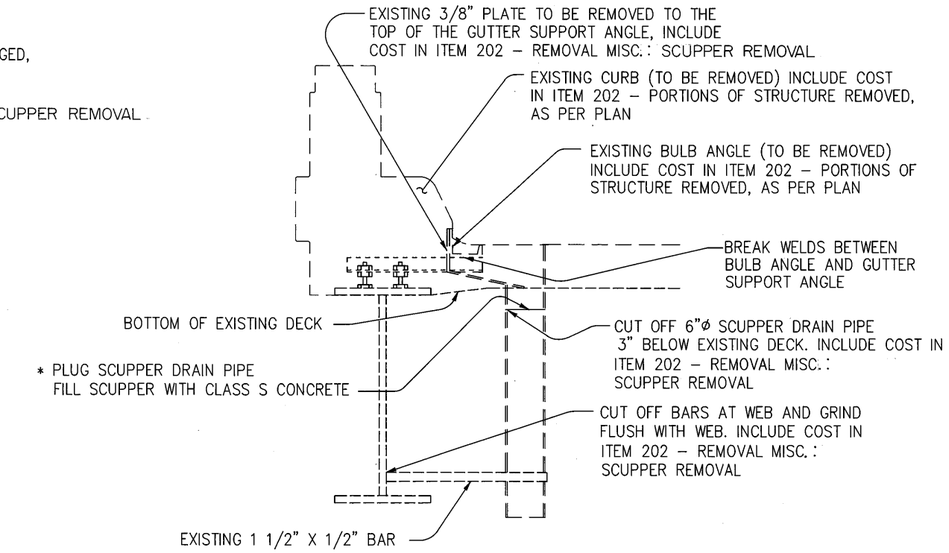


SECTION A – A

SCUPPER EXTENSION

(TYPICAL 16 PLACES)

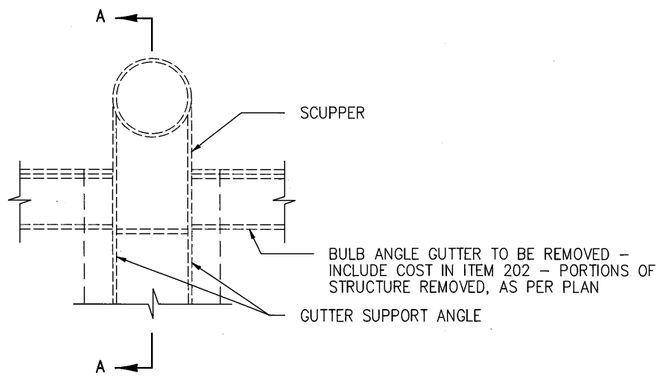
* IF ANY SCUPPER WHICH HAS ALREADY BEEN PLUGGED, HAS CONCRETE BELOW CUT OFF LEVEL, BREAK OFF CONCRETE AND PATCH AREA SMOOTH. INCLUDE COST IN ITEM 202 – REMOVAL MISC.: SCUPPER REMOVAL



SECTION A – A

REMOVAL AND PLUGGING EXISTING SCUPPER

(TYPICAL 8 PLACES)



PLAN VIEW OF SCUPPER AND BULB ANGLE GUTTER

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE, OHIO

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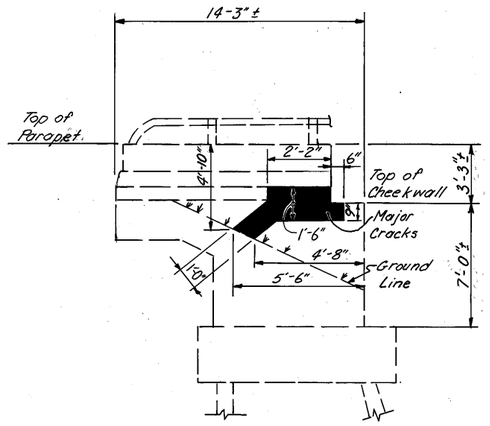
SCUPPER DETAILS

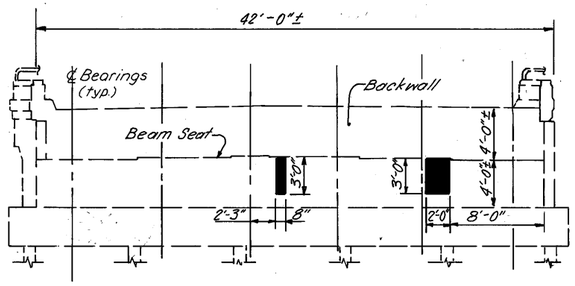
BRIDGE NO. LOR-2-0742 L/R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	–	CDW	ART	2/24/94	

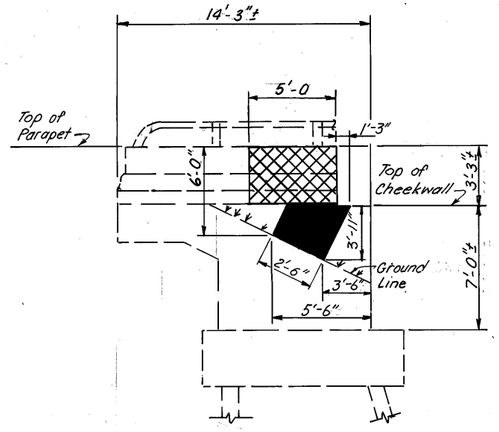
11-09-93 [O:\83592H\SCUPPER] LAH
11:01 PM



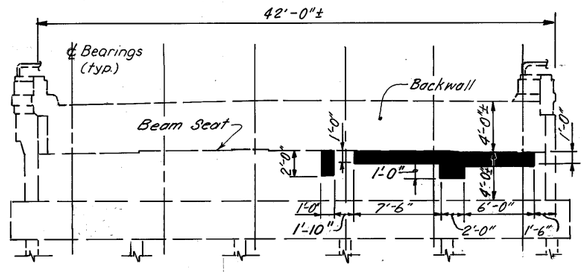
ELEVATION
SOUTH WINGWALL
REAR ABUTMENT - LEFT BRIDGE



ELEVATION
REAR ABUTMENT - LEFT BRIDGE



ELEVATION
NORTH WINGWALL
FORWARD ABUTMENT - LEFT BRIDGE



ELEVATION
FORWARD ABUTMENT - LEFT BRIDGE

LEGEND

Minor Cracks and Hollow Concrete to be Patched

Spalled Concrete to be removed. See sht. 3/11.

ITEM 519 - Patching Conc Structures As Per Plan		
Location	Unit	Measured Quantity
Rear Abutment	SQ.FT.	8
S. Wingwall, Rear Abutment	SQ.FT.	5
Forward Abutment	SQ.FT.	20
N. Wingwall, Forward Abut.	SQ.FT.	8
TOTAL	SQ.FT.	41

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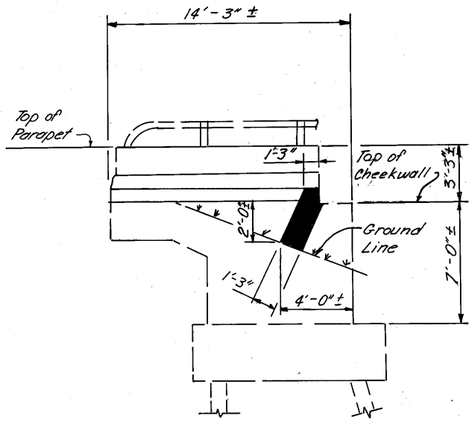
WESTLAKE, OHIO 44145

8/11

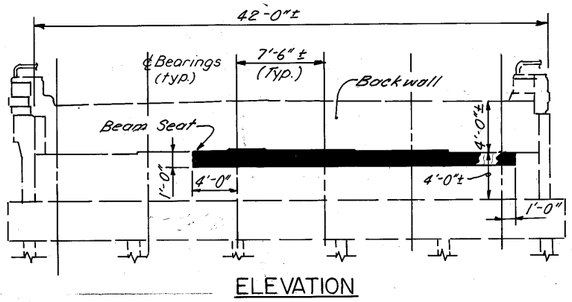
REPAIR DETAILS

BRIDGE NO. LOR-2-0742 L
OVER S.R. 58

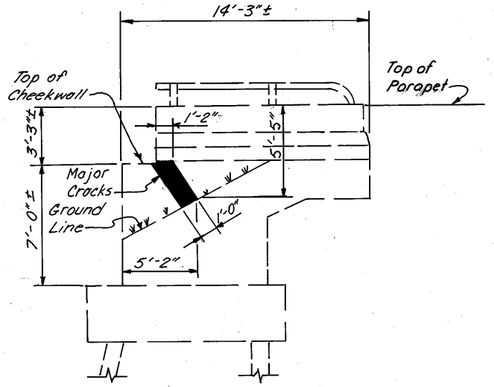
DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	.



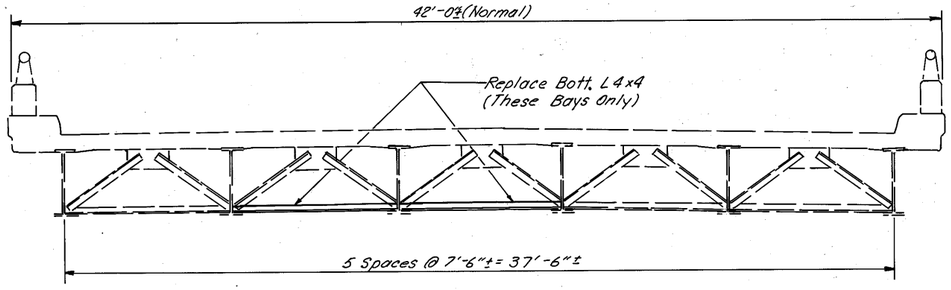
ELEVATION
SOUTH WINGWALL
REAR ABUTMENT - RIGHT BRIDGE



ELEVATION
REAR ABUTMENT - RIGHT BRIDGE



ELEVATION
NORTH WINGWALL
REAR ABUTMENT - RIGHT BRIDGE



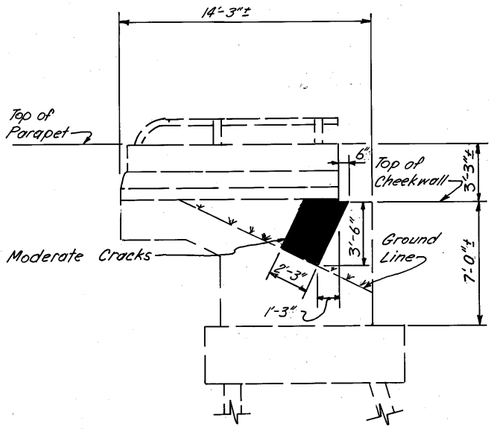
ELEVATION
END CROSSFRAME
REAR ABUTMENT RIGHT BRIDGE

Note:
Bottom chords in the bays indicated on the right rear abutment are to be replaced. Include cost in item 513 - Structural Steel, Replacement of Deteriorated End Crossframes As per plan.

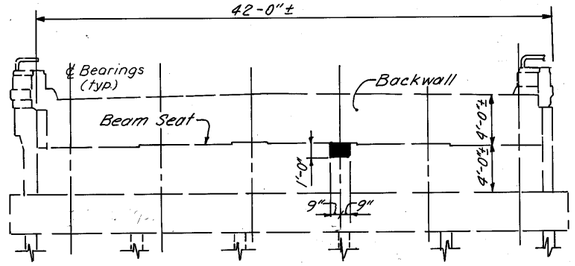
Other chords in endframe are to remain.

LEGEND

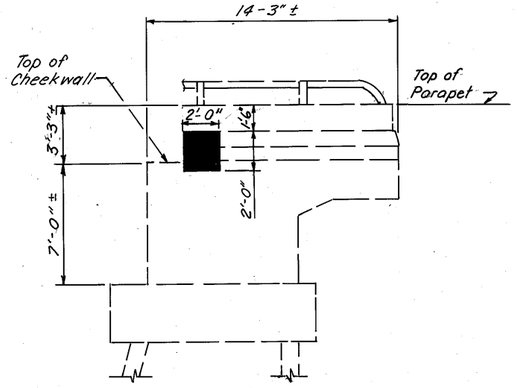
Minor Cracks and Hollow Concrete to be patched



ELEVATION
NORTH WINGWALL
FORWARD ABUTMENT - RIGHT BRIDGE



ELEVATION
FORWARD ABUTMENT - RIGHT BRIDGE



ELEVATION
SOUTH WINGWALL
FORWARD ABUTMENT - RIGHT BRIDGE

ITEM 519 - Patching Conc. Structures As Per Plan		
Location	Unit	Measured Quantity
Rear Abut. South Wingwall	Sq. Ft.	5
Rear Abut. Elevation	Sq. Ft.	28
Rear Abut. North Wingwall	Sq. Ft.	3
Fwd. Abut. North Wingwall	Sq. Ft.	9
Fwd. Abut. Elevation	Sq. Ft.	2
Fwd. Abut. South Wingwall	Sq. Ft.	4
Total	Sq. Ft.	51

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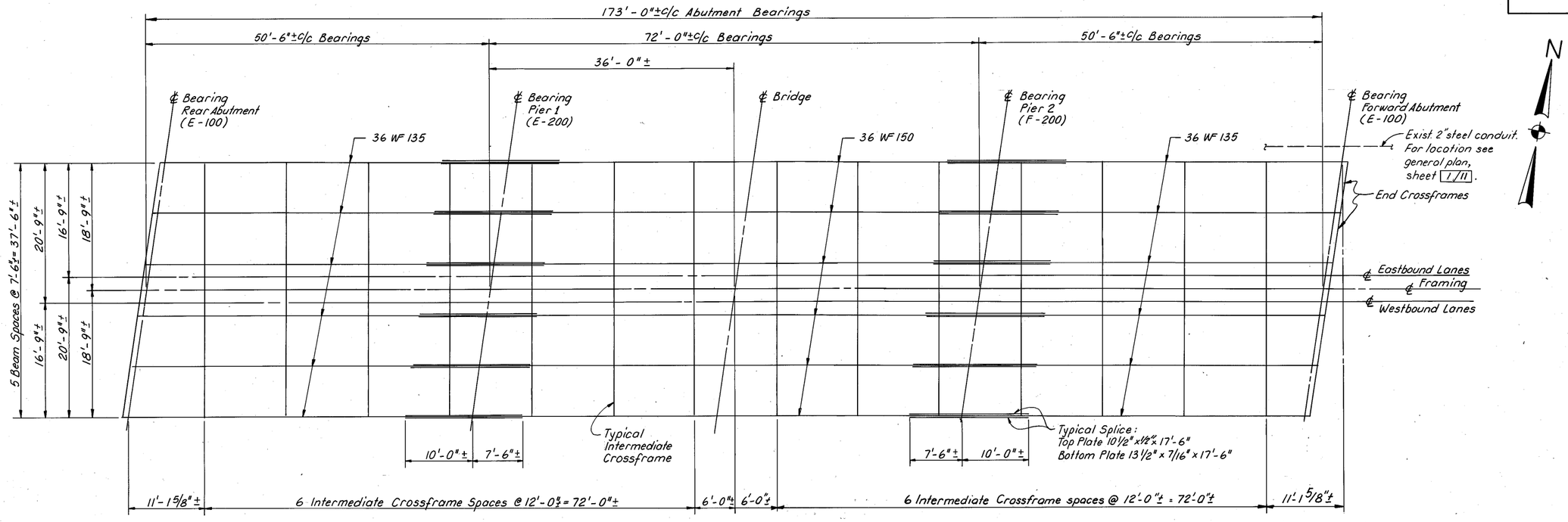
9/11

REPAIR DETAILS

BRIDGE NO. LOR-2-0742 R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	GSC	—	CDW	ART	2/24/94	

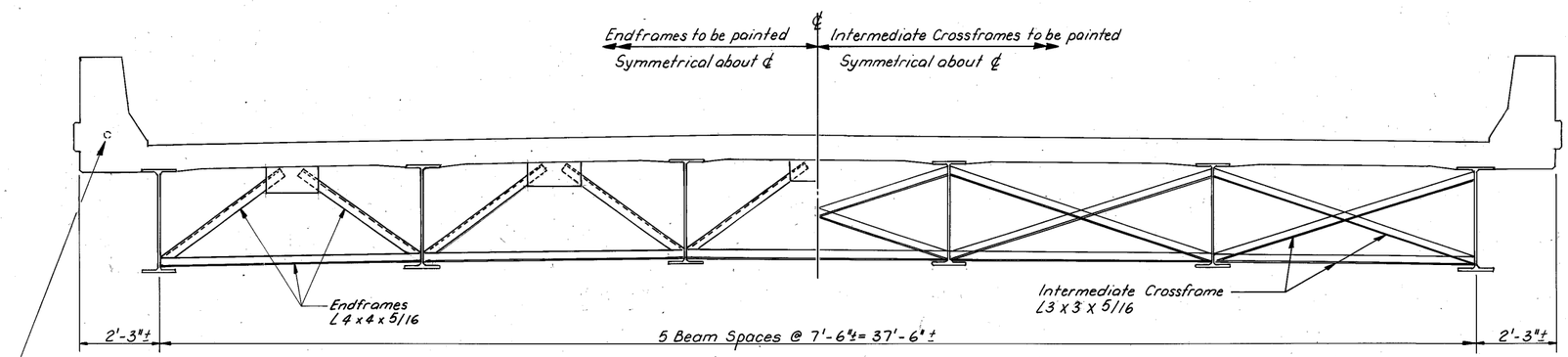


STEEL FRAMING PLAN

LEFT BRIDGE SHOWN
RIGHT BRIDGE OPPOSITE HAND

Vertical Clearance 15'-0"± Eastbound

Vertical Clearance 15'-0"± Westbound



Note:
Care shall be taken not to damage existing 2" steel conduit for electric lighting system under outside parapets (on left parapet of left bridge and on right parapet of right bridge).

TYPICAL SECTION

LEFT BRIDGE SHOWN
RIGHT BRIDGE OPPOSITE HAND

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10/11

STRUCTURAL STEEL FOR PAINTING

BRIDGE NO. LOR-2-0742 L / R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWR	CCC	—	CDW	ART	2/24/94	-

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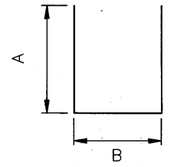
REINFORCING STEEL SCHEDULE

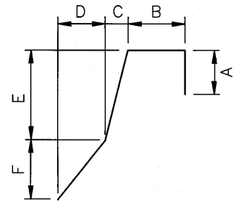
EPOXY COATED REINFORCEMENT ABUTMENTS										
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F
EA501	32	21'-3"	712	STR						
EA502	32	21'-3"	712	STR						
EA503	16	13'-2"	220	5	11'-9"	1'-4"	0'-5"			
EA504	16	13'-8"	228	STR						
EA505	72	3'-5"	260	1	1'-5"	0'-10"				
EA506	64	2'-0"	156	3	0"	0'-7"	0'-6"	0'-10"	0'-6"	
EA507	8	13'-8"	116	5	7'-0"	6'-8"	0'-5"			
EA508	64	2'-6"	168	STR						
EA509	32	5'-6"	184	STR						
EA601	164	5'-6"	1356	1	2'-2"	1'-5"				
EA602	164	6'-2"	1520	1	2'-9"	0'-11"				
ED801	104	5'-3"	1460	4	2'-11"					
		TOTAL	7092							

EPOXY COATED REINFORCEMENT SUPERSTRUCTURE										
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F
ES501	32	12'-0"	400	STR						
ES502	176	14'-8"	2696	STR						
ES503	556	3'-7"	2080	2	0'-7"	0'-10"	0'-2"	0'-3"	1'-5"	0'-5"
ES504	556	2'-8"	1548	3	0'-1"	0'-7"	0'-8"	0'-10"	0'-9"	
		TOTAL	6724							

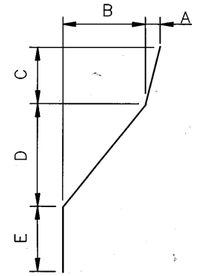
ALL REINFORCING TO BE EPOXY COATED.



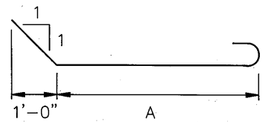
TYPE 1



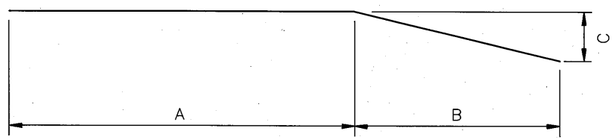
TYPE 2



TYPE 3



TYPE 4



TYPE 5

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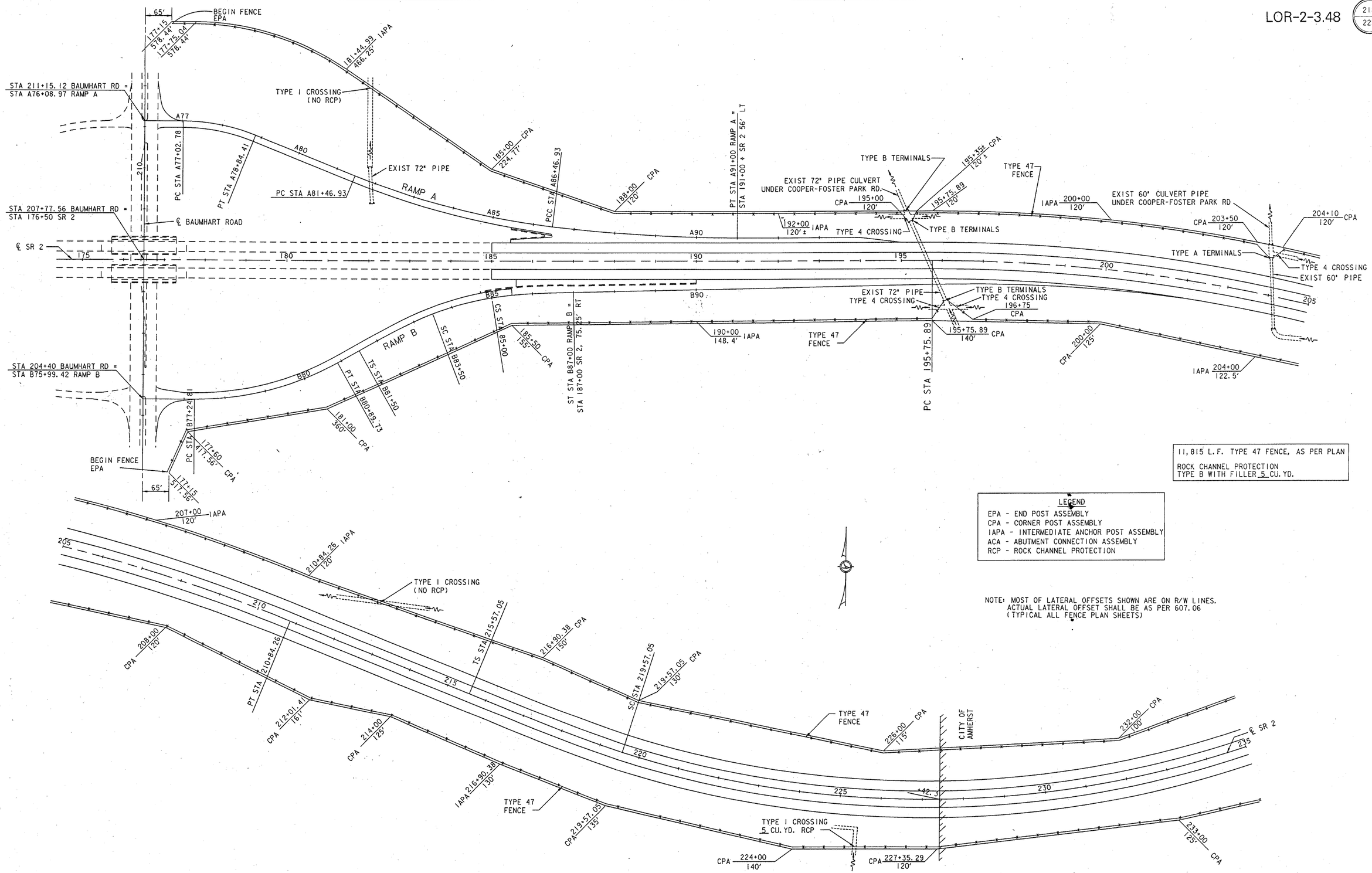
11 / 11

REINFORCING STEEL SCHEDULE

BRIDGE NO. LOR-2-0742 L/R
OVER S.R. 58

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
SWR	SWR	——	CDW	ART	2/24/94	

02-04-94 [c:\83592H\835RST-H] ccc
11:18AM



11,815 L.F. TYPE 47 FENCE, AS PER PLAN

ROCK CHANNEL PROTECTION
TYPE B WITH FILLER 5 CU. YD.

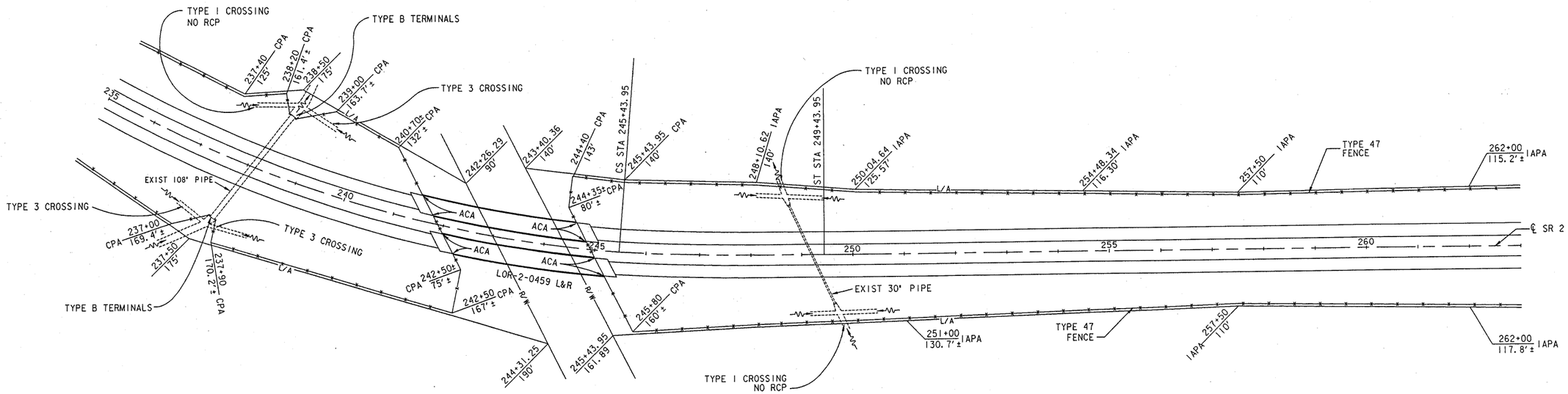
LEGEND

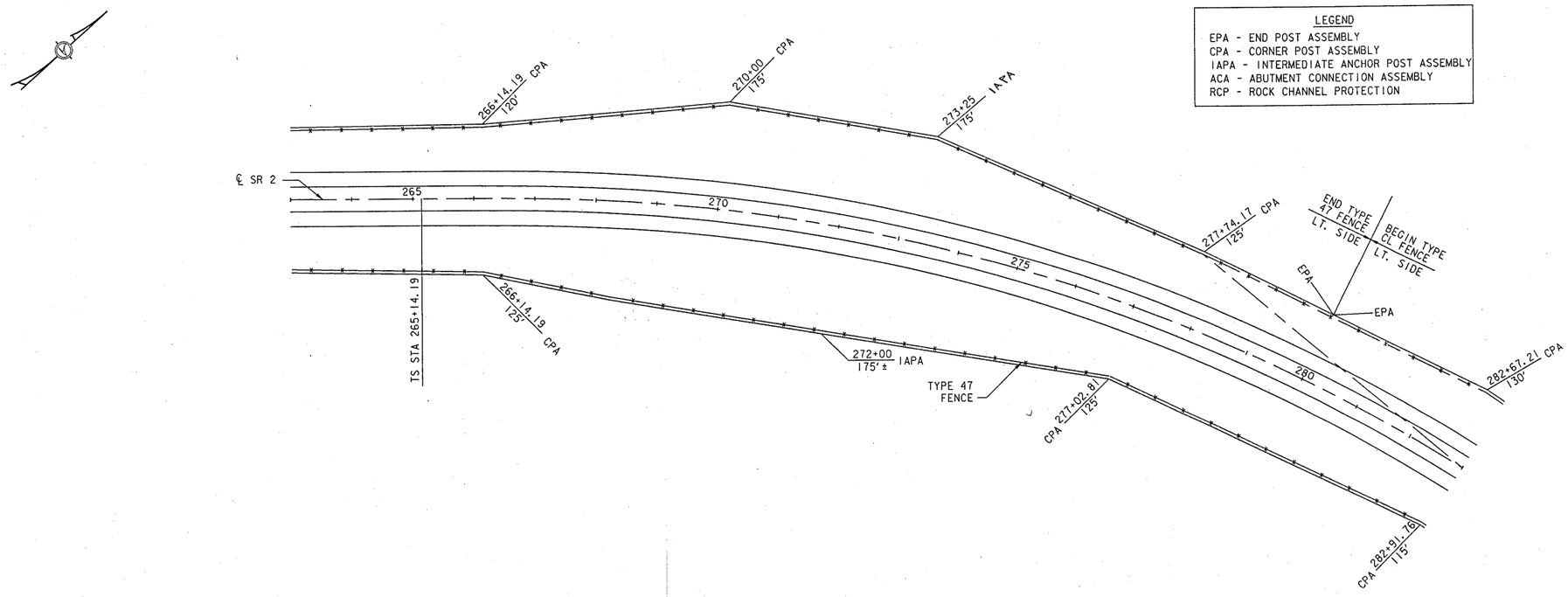
EPA - END POST ASSEMBLY
CPA - CORNER POST ASSEMBLY
IAPA - INTERMEDIATE ANCHOR POST ASSEMBLY
ACA - ABUTMENT CONNECTION ASSEMBLY
RCP - ROCK CHANNEL PROTECTION

NOTE: MOST OF LATERAL OFFSETS SHOWN ARE ON R/W LINES.
ACTUAL LATERAL OFFSET SHALL BE AS PER 607.06
(TYPICAL ALL FENCE PLAN SHEETS)

DESIGN FILE: c:\dgn\temp\rwpdnl.dgn
WORKSTATION: e
DATE: 27-JUL-1994

FENCE PLAN STA 175+00 TO STA 235+00





DESIGN FILE: c:\us5\out\dgn\rwplan2.dgn
WORKSTATION: e , DATE: 27-JUL-1994

FENCE PLAN STA 235+00 TO STA 283+00

287+00 CPA 140'
TYPE I CROSSING 5 CU. YD. RCP
291+81.68 CPA 140'
TYPE CL FENCE
295+00 IAPA 140'
TYPE I CROSSING 5 CU. YD. RCP
STA 299+00 SR 2, 75.25' LT = PC RAMP W STA 299+00
CPA 302+00 180'
PT STA 302+82.64
TYPE I CROSSING NO RCP
PC STA 305+75.30
CPA 307+94.72 482.57'
309+75± EPA END TYPE CL FENCE
309+60.01, 499.95' 155+00. ± OAK POINT RD.
℄ OAK POINT RD.
RAMP "W"
STA 53+40 OAK POINT RD = STA 310+05.59 RAMP X
STRUCTURE NO LOR-2-0586
℄ S.R. 2
285 290 295 300 305 310
CPA 287+00 110'
CS STA 289+81.68
291+00 IAPA 142'
TYPE I CROSSING 5 CU. YD. RCP
ST STA 292+81.68
TYPE 47 FENCE
STA 295+00 SR 2, 56' RT = PC STA 295+00 RAMP X
IAPA 296+00 160'±
TYPE I CROSSING 5 CU. YD. RCP
PCC STA 299+53.07
CPA 302+00 220
PT STA 304+53.07
IAPA 305+00 313.7'±
RAMP "X"
PT STA 308+97.39
309 310
53'
308+72.58± EPA 430.08' (END FENCE)
309+52.37, 454.98' 45+45 ℄ OAK POINT RD.
45'
STA 46+60 OAK POINT RD = STA 309+94.75 RAMP X = STA 309+07.12 RAMP Z

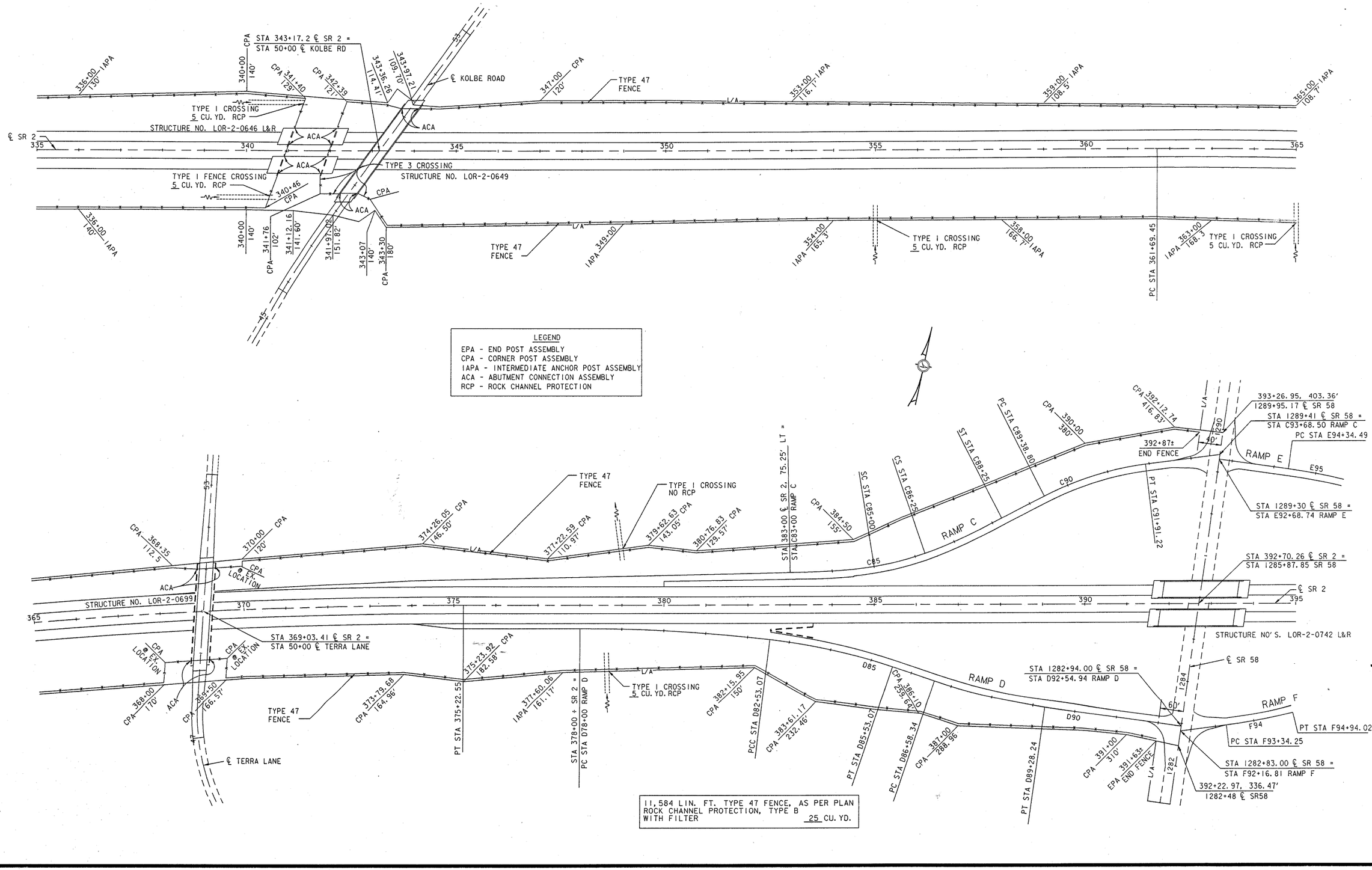
55' 35'
311+00 CPA 480'
EPA BEGIN TYPE 47 FENCE 309+95±
PT STA 312+86.99
315+00 322.5'± IAPA
PC STA 316+00
TYPE 47 FENCE
319+00 CPA 165'
PC STA 322+28.28
322+28.28 140'
PT STA 324+00 RAMP Y = STA 324+00 SR 2, 56' LT
324+00 CPA 125'
331+00 CPA 124.69'
PT STA 331+50.06
STA 53+40 OAK POINT RD = STA 309+19.21 RAMP Y
PC STA 311+12.12
RAMP "Y"
315 320 325 330 335
℄ SURVEY S.R. 2
PC STA 310+16.81
RAMP "Z"
STA 46+60 OAK POINT RD = STA 309+07.12 RAMP Z
317+00 175' CPA
PC STA 316+17.40
PT STA 320+00 RAMP Z = STA 320+00 SR 2, 75.25' RT
IAPA 321+00 152.5'±
CPA 324+00 140
TYPE 47 FENCE
IAPA 328+00 122.5'±
CPA 331+50.06 140'
TYPE 3 CROSSING
313+00 390' CPA
PT STA 313+24.90
309+52.37, 454.98' 45+45 ℄ OAK POINT RD.
310+10±, 444.2'± BEGIN FENCE EPA

7,753 LIN. FT. TYPE 47 FENCE, AS PER PLAN
2,709 LIN. FT. TYPE CL FENCE, AS PER PLAN
ROCK CHANNEL PROTECTION
TYPE B WITH FILTER 20 CU. YD.

LEGEND
EPA - END POST ASSEMBLY
CPA - CORNER POST ASSEMBLY
IAPA - INTERMEDIATE ANCHOR POST ASSEMBLY
ACA - ABUTMENT CONNECTION ASSEMBLY
RCP - ROCK CHANNEL PROTECTION

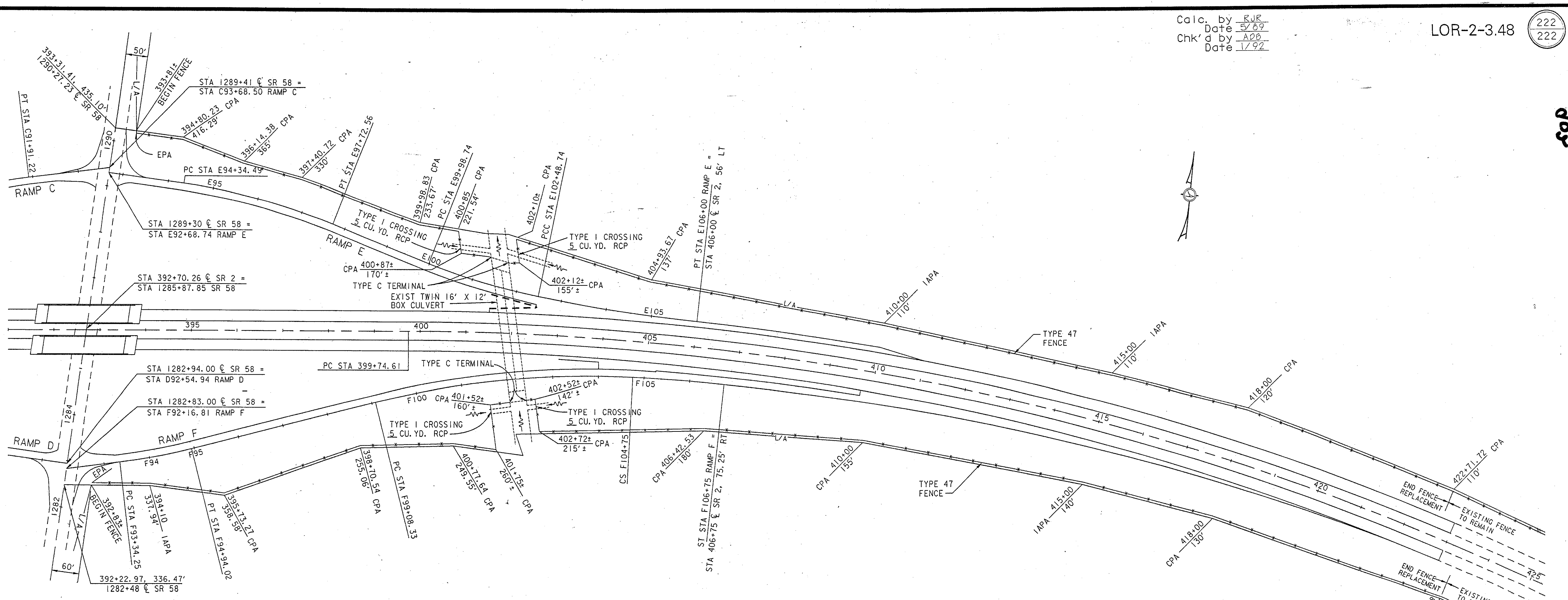
DESIGN FILE: c:\dgn\temp\rwp0m3.dgn
DATE: 01-AUG-1994
WORKSTATION: e

FENCE PLAN STA 283+00 TO STA 335+00



DESIGN FILE: c:\us5\out\dgn\wplan4.dgn
WORKSTATION: e
DATE: 01-AUG-1994

FENCE PLAN STA 335+00 TO STA 395+00



ITEM 607 - FENCE, TYPE 47, AS PER PLAN
ITEM 607 - FENCE, TYPE CL, AS PER PLAN

WORK UNDER THIS ITEM SHALL INCLUDE FURNISHING AND ERECTING FENCE, TYPE 47 OR CL 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 AND IN COMPLIANCE WITH 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 DETAILED 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 ENCASEMENTS. 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 STUMP 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.

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

6,168 LIN. FT. TYPE 47 FENCE, AS PER PLAN
ROCK CHANNEL PROTECTION
TYPE B WITH FILTER 20 CU. YD.

FENCE QUANTITIES

ITEM	DESCRIPTION	TOTALS	UNITS
607	FENCE, TYPE 47, AS PER PLAN	46,480	LIN. FT.
607	FENCE, TYPE CL, AS PER PLAN	3,009	LIN. FT.
601	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	70	CU. YD.

QUANTITIES CARRIED TO SHEET 20.

LEGEND
EPA - END POST ASSEMBLY
CPA - CORNER POST ASSEMBLY
IAPA - INTERMEDIATE ANCHOR POST ASSEMBLY
ACA - ABUTMENT CONNECTION ASSEMBLY
RCP - ROCK CHANNEL PROTECTION

DESIGN FILE: c:\dgn\temp\rwplan5.dgn DATE: 03-AUG-1994
WORKSTATION: e