FRA - SR 315 - 5.18
990266
DIST 06

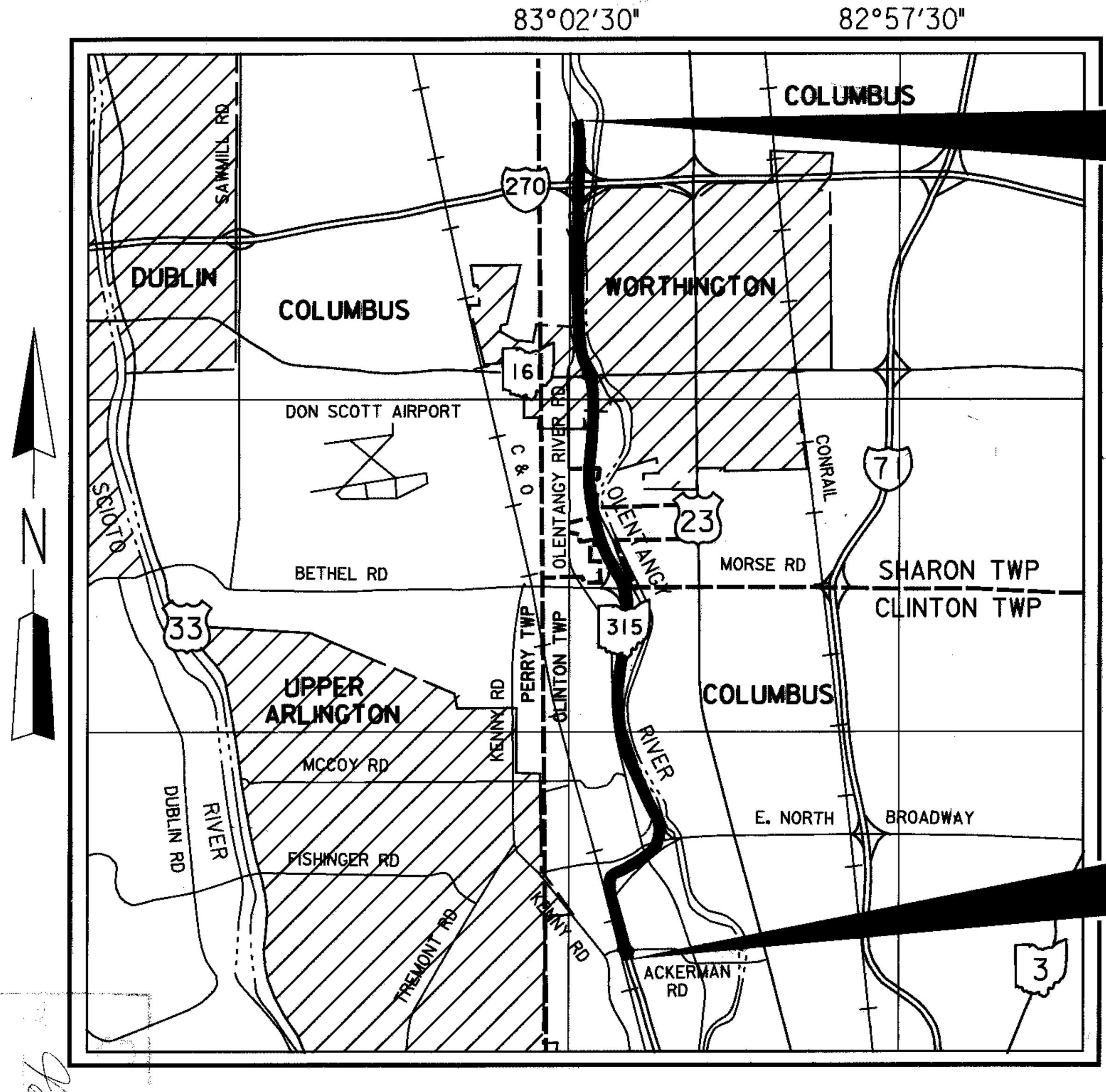
PID# 7583
04-28-99

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
FRA – 315 – 5.18

CITY OF COLUMBUS, SHARON & CLINTON TOWNSHIP
CITY OF WORTHINGTON, SHARON TOWNSHIP
FRANKLIN COUNTY

		OHIO	1 / 286
FRA-315-5.18		F.H.W.A. REGION 5	
FEDERAL PROJECT		STATE PROJECT	

P.I.D. 7583



LOCATION MAP

LATITUDE: N 40°-02'-00"   LONGITUDE: W 83°-03'-00"

0 1 2
SCALE IN MILES

PORTION TO BE IMPROVED
STATE AND FEDERAL ROUTES
OTHER ROUTES

PLAN 0' 50' 100'

PROFILE: HORIZONTAL 0' 50' 100'   VERTICAL 0' 5' 10'

CROSS SECTION: HORIZONTAL 0' 10' 20'   VERTICAL 0' 10' 20'

DESIGN EXCEPTIONS
SEE SHEET NO. 2 SCHEMATIC PLAN

DESIGN DESIGNATIONS
SEE SHEET NO. 2 SCHEMATIC PLAN

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

REVISED SPEED LIMIT

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 SPEED LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

INDEX OF SHEETS:

* THE FOLLOWING SHEETS ARE OMITTED:
16, 27, 60, 83, 127-144, 239, 249, 250, 281-286

* RAMP "H" WAS REMOVED, TO BE BUILT WITH FRA-270-27.400 PID 12495

** SHEETS ADDED: 23A, 23B, 236A, 237A

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 SECTION 5511.002 OF THE REVISED CODE OF OHIO.

1995 SPECIFICATIONS

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

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

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE OR
FENCE LINE (EXISTING) (PROPOSED)
CENTER LINE 352 353
TREES STUMPS (TO BE REMOVED)
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) X
RAILROAD OR
GUARDRAIL (EXISTING) (PROPOSED)
UTILITY POLES: TELEPHONE POWER LIGHT

APPROVED *Jack R. Marchbanks*
DATE *1/20/99* DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

PLANS CERTIFIED BY:
NAME: *Eric J. Bosco* DATE: *1/20/99*
DISTRICT 6
OHIO DEPT. OF TRANSPORTATION

APPROVED *Gordon Proctor, Jr.*
DATE *2-8-99* DIRECTOR, DEPARTMENT OF TRANSPORTATION

BENATEC ASSOCIATES
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

STATE OF OHIO
EDWARD CRUSOE
E-56543
REGISTERED
PROFESSIONAL ENGINEER

SEAL

PROJECT:
DATE OF LETTING ;
CONTRACT NO.

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

AS-1-81	9-15-94	F-2	5-1-76	GR-5.3	10-30-92	HL-20.22	5-1-87	LA-1	6-1-79	MT-95.30	10-10-88	MT-105.10	7-1-92	TC-32.10	9-1-92
BP-1.1	2-21-92	F-3	5-1-76	GR-6	2-5-82	HL-20.23	5-1-87	MC-1	6-13-69	MT-95.31	10-10-88	MT-105.11	7-1-92	TC-35.10	8-29-84
BP-2.1	10-28-94	F-4	11-10-83	GR-7.1	10-30-92	HL-30.11	5-1-87	MC-4	7-26-76	MT-95.32	8-25-89	TC-7.65	3-1-79	TC-41.10	8-29-84
BP-2.2	10-28-94	F-5	5-1-76	GR-8.1	1-31-94	HL-30.21	5-1-87	MC-7	10-15-76	MT-95.40	10-1-92	TC-12.30	3-1-79	TC-41.20	3-26-79
BP-2.3	2-21-92	GR-1.1	5-6-91	I-3A&B	4-1-80	HL-30.22	5-1-87	MC-9.1	10-30-92	MT-95.41	10-1-92	TC-15.115	1-20-84	TC-52.10	4-3-79
BP-2.4	2-21-92	GR-1.2	10-30-92	I-3C&D	4-1-80	HL-30.31	5-1-87	MC-9.2	5-6-91	MT-97.11	10-4-89	TC-18.24	4-25-79	TC-52.20	4-3-79
BP-2.5	2-21-92	GR-1.3	2-21-92	HL-50.11	5-1-87	HL-30.33	5-1-87	MC-9.3	10-30-92	MT-98.12	8-25-89	TC-18.26	5-31-79	TC-61.10	4-5-82
BP-3.1	2-21-92	GR-2.1	5-6-91	HL-10.11	5-1-87	HL-40.10	5-1-87	MC-9.4	10-30-92	MT-98.13	8-25-89	TC-21.10	9-1-92	TC-65.10	2-1-90
BP-6.1	2-21-92	GR-2.2	10-30-92	HL-10.12	5-1-87	HL-50.21	5-1-87	MC-10	5-1-76	MT-98.14	8-25-89	TC-21.20	3-1-79	TC-65.11	2-1-90
BP-8.1	10-28-94	GR-3.1	5-6-91	HL-10.13	5-1-87	HL-60.11	5-1-87	MC-11	8-1-78	MT-98.15	8-25-89	TC-21.40	9-1-92	TC-65.12	2-1-90
CB-2-2 A&B	5-1-79	GR-3.2	5-6-91	HL-10.31	5-1-87	HL-60.12	5-1-87	MH-3	12-18-84	MT-99.10	11-14-86	TC-21.41	9-1-92	TC-65.13	2-1-90
CB-4	11-10-83	GR-4.2	5-6-91	HL-20.11	5-1-87	HL-60.21	5-1-87			MT-99.20	4-29-88	TC-22.10	9-1-92	TC-71.10	9-10-91
CB-5	11-10-83	GR-5.1	10-30-92	HL-20.13	5-1-87	HL-60.31	5-1-87			MT-101.60	7-1-92	TC-22.20	9-1-92	TC-72.20	2-26-82
F-1	11-10-83	GR-5.2	10-30-92	HL-20.21	5-1-87	HW-3	6-1-65			MT-102.20	8-25-89	TC-31.21	9-1-92		
										MT-98.16	6-24-93				

SUPPLEMENTAL PROPOSAL NOTES

142(92)	6-24-92

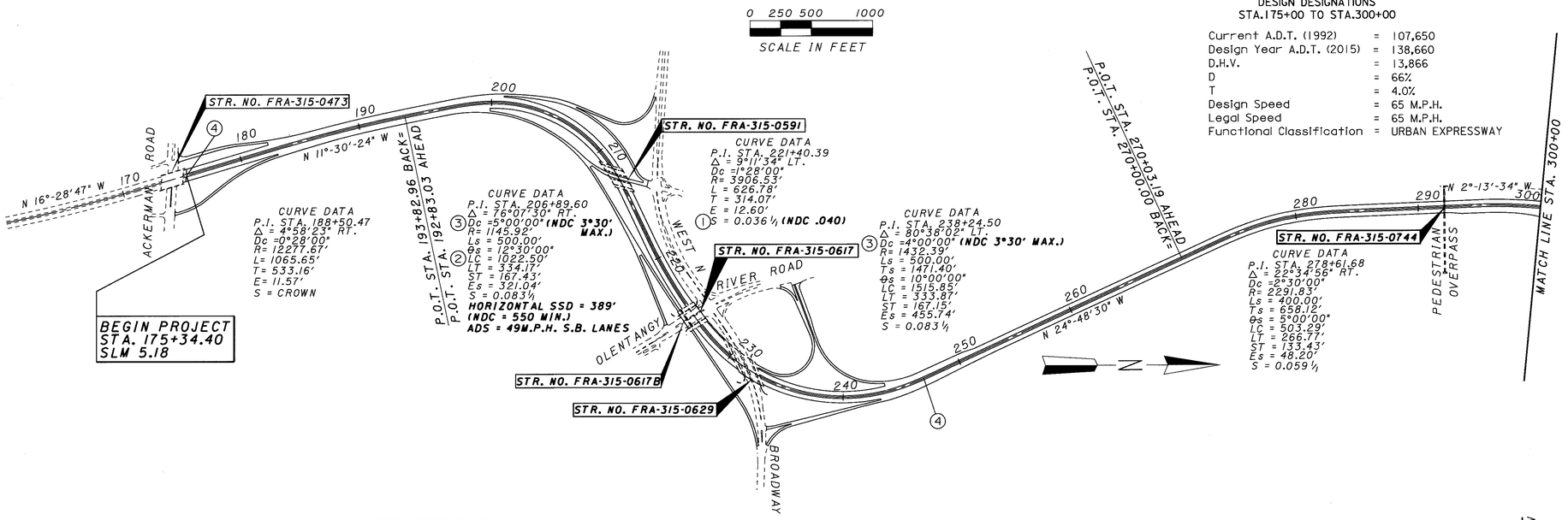
SUPPLEMENTAL SPECIFICATIONS

802	4-13-90	931	6-18-85
825	10-2-89	942	11-27-89
		944	5-2-94
850	5-31-88		
910	5-20-91		

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	2 / 286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	

SCHEMATIC PLAN

0 250 500 1000
SCALE IN FEET

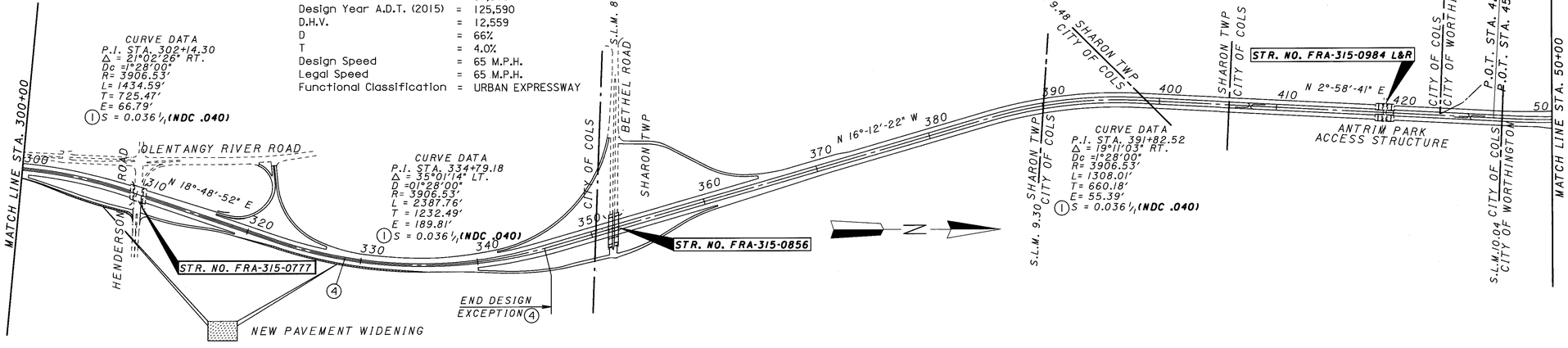


DESIGN DESIGNATIONS
STA.175+00 TO STA.300+00

Current A.D.T. (1992)	=	107,650
Design Year A.D.T. (2015)	=	138,660
D.H.V.	=	13,866
D	=	66%
T	=	4.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY

DESIGN DESIGNATIONS
STA.300+00 TO STA.50+00

Current A.D.T. (1992)	=	97,510
Design Year A.D.T. (2015)	=	125,590
D.H.V.	=	12,559
D	=	66%
T	=	4.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY



EXISTING CENTERLINE REFERENCE MONUMENTS		
STATION	Lt.	Rt.
P.O.T. 176+00	62′	62′
P.O.T. 180+00	62′	62′
P.C. 183+17.31	93′	87′
P.O.C. 187+00	74′	77′
P.O.C. 190+00	74′	74′
P.T. 193+82.96 Bk.= P.O.T. 192+83.03 Ahd.	74′	74′
T.S. 195+35.59	74′	74′
S.C. 200+35.59	86′	106′
P.O.C. 204+00	72′	72′
P.O.C. 208+00	72′	72′
C.S. 210+58.09	72′, 100′	-
S.T. 215+58+09	72′	72′
P.C. 218+26.32	72′	72′
P.O.C. 221+50	72′	107′
C.S. 224+53.10	77′	100′
S.C. 228+53.10	68′	62′
P.O.C. 235+00	62′	62′
P.O.C. 239+00	62′	62′
C.S. 243+68.95	88′	87′
S.T. 248+68.95	75′	75′
P.O.T. 254+50	62′	62′
P.O.T. 260+00	62′	62′
P.O.T. 265+00	62′	62′
P.O.T. 270+00 Bk. = 270+03.19 Ahd.	62′	62′
T.S. 272+03.56	62′	62′
S.C. 276+03.56	62′	62′
C.S. 281+06.85	62′	62′
S.T. 285+06.85	62′	62′
P.O.T. 290+00	62′	62′
P.C. 294+88.85	62′	74′
P.O.C. 300+00	62′	94′

P.O.C. 305+00	62′	62′

EXISTING CENTERLINE REFERENCE MONUMENTS ℄ OFFSET = 0′	
P.O.T. 309+23.43	P.O.T. 380+99.15
P.O.T. 317+00	P.C. 385+22.34
P.C. 322+46.69	P.O.C. 390+00
P.O.C. 327+00	P.O.C. 394+00
P.O.C. 331+00	P.T. 398+30.36
P.O.C. 336+00	P.O.T. 403+00
P.O.C. 341+00	P.O.T. 408+00
P.T. 346+34.46	P.O.T. 412+50
P.O.T. 351+00	P.O.T. 417+00
P.O.T. 356+00	P.O.T. 421+00
P.O.T. 361+00	P.O.T. 424+50
P.O.T. 366+00 P.O.T. 371+00	P.O.T. 428+53.70 Bk.= 45+00 Ahd.
P.O.T. 376+00	P.C. 46+52.65

LEGEND

ADS = ACTUAL DESIGN SPEED MET

PROPOSED PAVEMENT

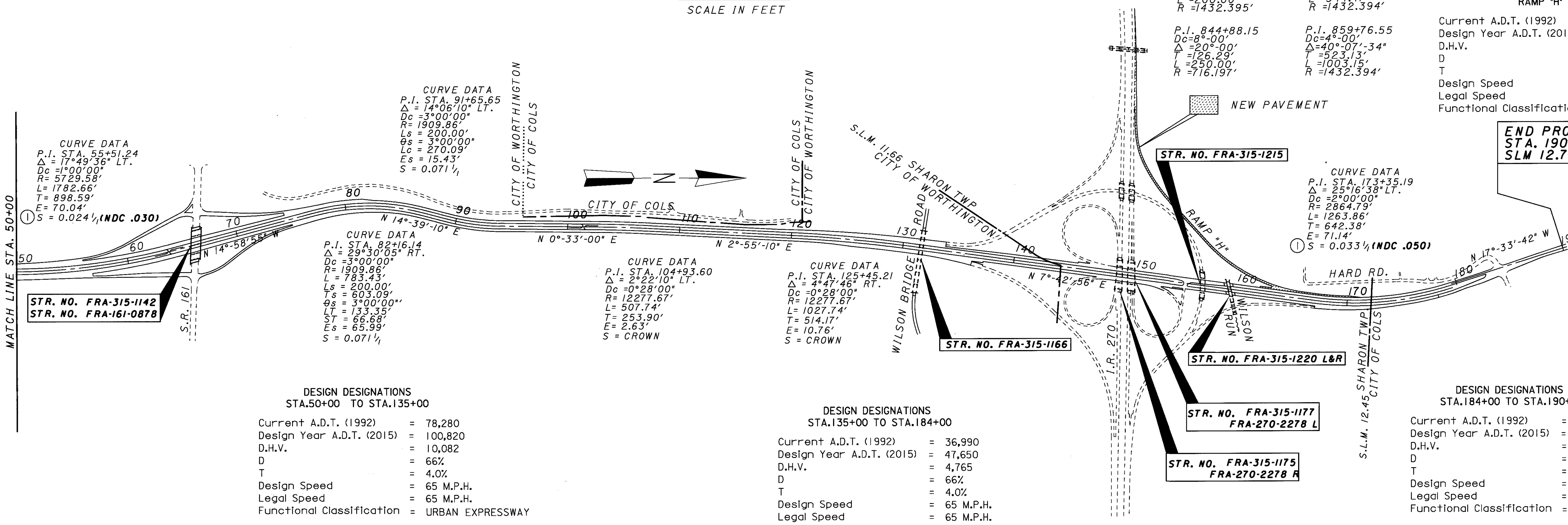
DESIGN EXCEPTIONS

① SUPERELEVATION RATE
② HORIZONTAL STOPPING SIGHT DISTANCE
③ HORIZONTAL ALIGNMENT
④ SHOULDER WIDTH

DESIGN EXCEPTIONS		
STATE ROUTE 315	APPROVAL DATE	SHEET NUMBER
SUPERELEVATION RATE	2-5-97	2,3
HORIZ. STOPPING SIGHT DISTANCE	2-5-97	2
HORIZONTAL ALIGNMENT	2-5-97	2
SHOULDER WIDTH	2-5-97	2

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

SCHEMATIC PLAN



DESIGN DESIGNATIONS
STA.50+00 TO STA.135+00

Current A.D.T. (1992)	=	78,280
Design Year A.D.T. (2015)	=	100,820
D.H.V.	=	10,082
D	=	66%
T	=	4.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY

DESIGN DESIGNATIONS
STA.135+00 TO STA.184+00

Current A.D.T. (1992)	=	36,990
Design Year A.D.T. (2015)	=	47,650
D.H.V.	=	4,765
D	=	66%
T	=	4.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY

DESIGN DESIGNATIONS
RAMP "H"

Current A.D.T. (1992)	=	1540
Design Year A.D.T. (2015)	=	2520
D.H.V.	=	252
D	=	62%
T	=	4.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY

DESIGN DESIGNATIONS
STA.184+00 TO STA.190+00

Current A.D.T. (1992)	=	21,720
Design Year A.D.T. (2015)	=	27,980
D.H.V.	=	2,518
D	=	62%
T	=	2.0%
Design Speed	=	65 M.P.H.
Legal Speed	=	65 M.P.H.
Functional Classification	=	URBAN EXPRESSWAY

EXISTING CENTERLINE REFERENCE MONUMENTS ℄ OFFSET = 0'	
P.O.C. 51+00	P.C. 102+39.16
P.O.C. 56+00	P.T. 107+46.89
P.O.C. 60+00	P.O.T. 112+00
P.T. 64+35.31	P.O.T. 116+00
P.O.T. 68+00	P.C. 120+31.04
P.O.T. 72+00	P.T. 130+58.78
T.S. 76+13.04	P.O.T. 135+00
S.C. 78+13.04	P.O.T. 140+00
P.O.C. 82+00	P.O.T. 145+00
C.S. 85+96.47	P.O.T. 150+00
S.T. 87+96.47	P.O.T. 155+00
T.S. 88+29.31	P.O.T. 160+00
S.C. 90+29.31	P.C. 166+92.81
C.S. 92+99.40	P.O.C. 172+15.25
S.T. 94+99.40	P.T. 179+56.68
P.O.T. 99+00	

EXISTING CENTERLINE MONUMENT ASSEMBLIES ℄ OFFSET = 0'	
P.O.T. 179+56.68	
P.O.T. 185+78.16	
P.O.T. 188+72.93	

LEGEND

ADS = ACTUAL DESIGN SPEED MET
PROPOSED PAVEMENT

DESIGN EXCEPTIONS

① SUPERELEVATION RATE
② HORIZONTAL STOPPING SIGHT DISTANCE
③ HORIZONTAL ALIGNMENT
④ SHOULDER WIDTH

BENCH MARKS

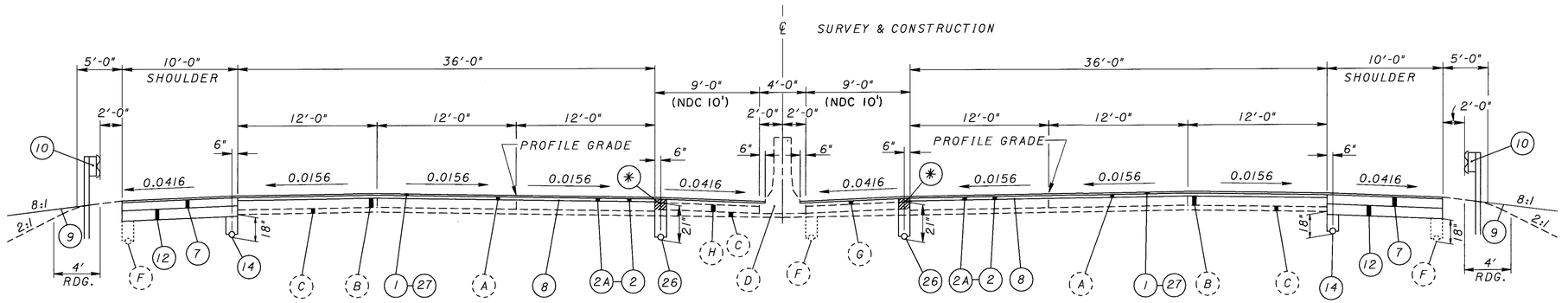
℄ S.R. 315 STA. 222+40 134' RT
CHISEL MARK ON TOP OF 36"
R.C.P. (SOUTH END) EL. 740.64

℄ S.R. 315 STA. 129+43 131' RT.
R.R. SPIKE N. SIDE 15"
HACKBERRY ELEV. 754.551

℄ I-270 STA. 854+90 545' RT.
R.R. SPIKE E. SIDE 30" SYCAMORE.
N.E. CORNER WILSON BR. RD. AND
S.R. 315 ELEV. 759.078

CALC. BY
DATE
CHKD. BY
DATE
FRA-315-5.18
OHIO
F.H.W.A. REGION 5
4
286
FRANKLIN COUNTY

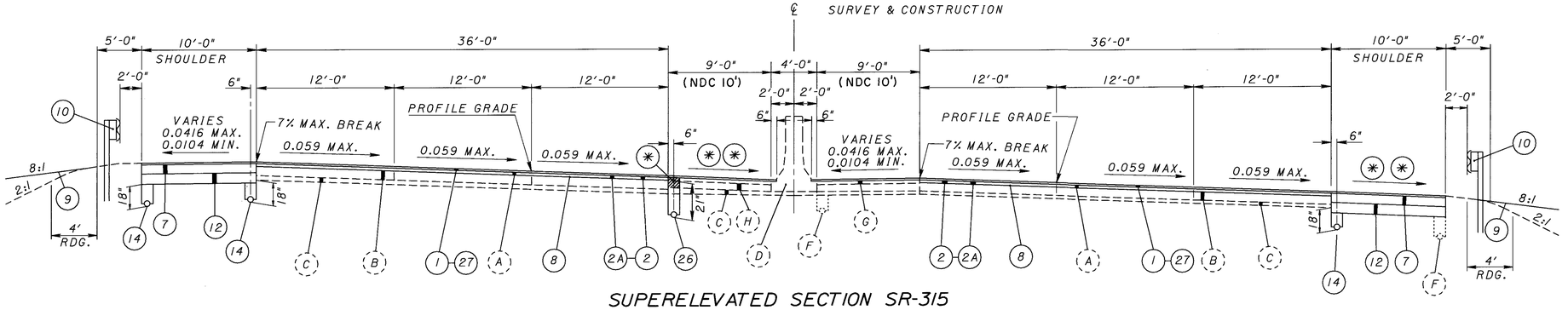
TYPICAL SECTIONS



NORMAL SECTION SR-315
LIMITING STATIONS

STA 175+34.40 TO STA 193+82.96 = 1848.56 LIN. FT. BACK
STA 192+83.03 TO STA 195+35.59 = 252.56 LIN. FT. AHEAD
STA 248+68.95 TO STA 270+00.00 = 2131.05 LIN. FT. BACK
STA 270+03.19 TO STA 272+03.56 = 200.37 LIN. FT. AHEAD
STA 285+06.85 TO STA 292+00.00 = 693.15 LIN. FT.

TOTAL = 5125.69 LIN. FT.



SUPERELEVATED SECTION SR-315
LIMITING STATIONS

STA 195+35.59 TO STA 211+57.18 = 1621.59 LIN. FT. CURVE RT.
STR. NO. FRA-315-0591 W.N. BROADWAY - RAMP DH
STA 213+79.56 TO STA 215+58.09 = 178.53 LIN. FT. CURVE RT.
STA 215+58.09 TO STA 224+58.85 = 900.76 LIN. FT. CURVE LT.
STR. NO. FRA-315-0617 OLENTANGY RIVER ROAD
STA 226+51.71 TO STA 230+23.30 = 371.59 LIN. FT. CURVE LT.
STR. NO. FRA-315-0629 NORTH BROADWAY
STA 233+01.21 TO STA 248+68.95 = 1567.74 LIN. FT. CURVE LT.
STA 272+03.56 TO STA 285+06.85 = 1303.29 LIN. FT. CURVE RT.

TOTAL = 5943.50 LIN. FT.

(*) ITEM 301 BITUMINOUS BASE. PLUG TO BE PLACED IN TWO LIFTS MINIMUM, NOT TO EXCEED 5" TOTAL.

(*)(*) - 0.0416 OR PAV'T. SLOPE WHICHEVER IS GREATER

LEGEND

(1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
(2A) ITEM 446 2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, (SEE PROPOSAL NOTE)
(7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
(8) ITEM 407 TACK COAT
(9) ITEM 659 SEEDING AND MULCHING
(10) ITEM 606 GUARDRAIL, TYPE 5
(12) ITEM 304 9" AGGREGATE BASE (SEE PROPOSAL NOTE)
(14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.152)
(16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
(26) ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN
(27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

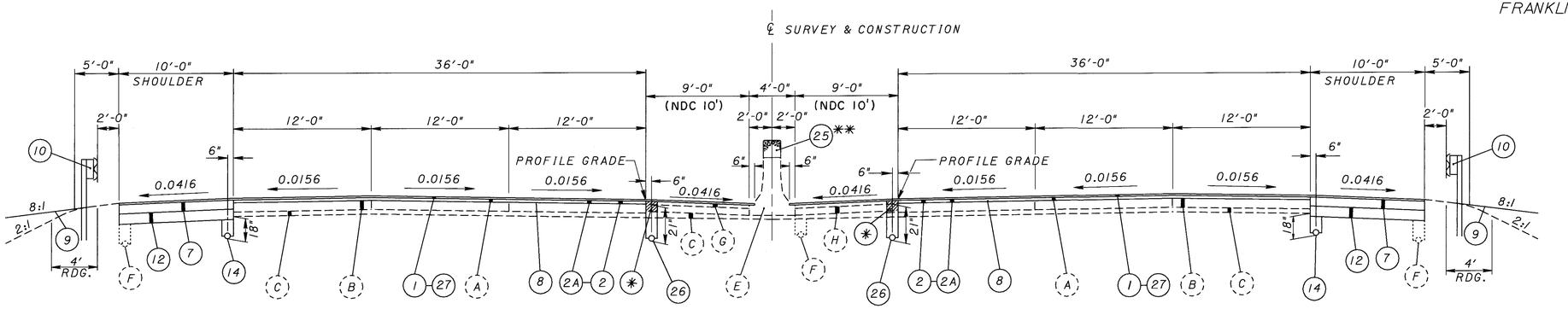
EXISTING SR 315 PAVEMENT

(A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 4"SUBBASE
(D) CONCRETE BARRIER, B-50
(F) 6" UNDERDRAIN
(G) 3" BITUMINOUS AGGREGATE BASE
(H) 6" AGGREGATE BASE

TYPICAL SECTIONS

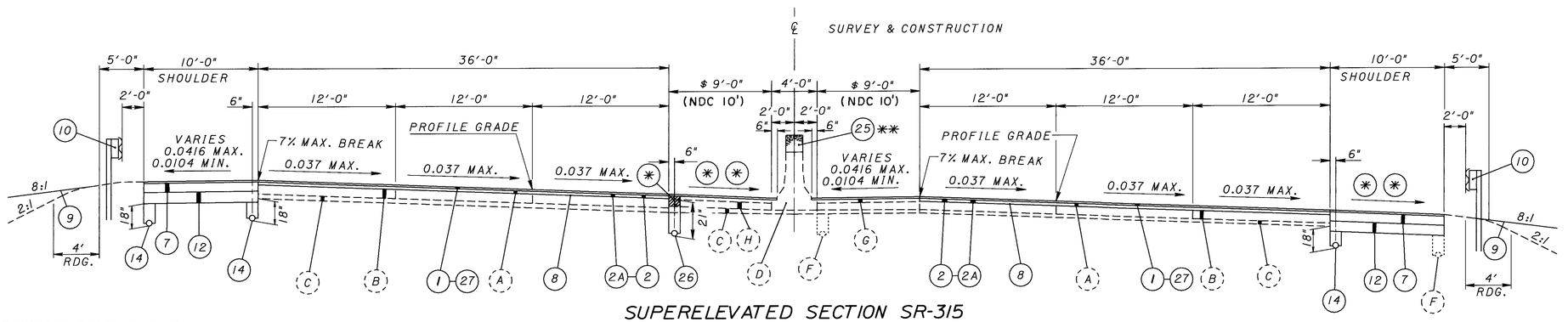
CALC. BY ____ DATE ____	FRA-315-5.18	OHIO	5 / 286
CHKD. BY ____ DATE ____		F.H.W.A. REGION 5	

FRANKLIN COUNTY



NORMAL SECTION SR-315
LIMITING STATIONS

STA 312+00 TO STA 319+75.00 = 775.00 LIN. FT.
TOTAL = 775.00 LIN.FT.



SUPERELEVATED SECTION SR-315
LIMITING STATIONS

STA 292+00.00 TO STA 309+43.59 = 1743.59 LIN.FT. CURVE RT.
STR. NO. FRA-315-0777 HENDERSON ROAD
STA 310+83.23 TO STA 312+00.00 = 116.77 LIN.FT. CURVE RT.
STA 319+75.00 TO STA 345+00.00 = 2525.00 LIN.FT. CURVE LT.
TOTAL = 4385.36 LIN.FT.

(*) - ITEM 301 BITUMINOUS BASE. PLUG TO BE PLACED IN TWO LIFTS MINIMUM, NOT TO EXCEED 5" TOTAL.

(*)(*) - 0.0416 OR PAV'T. SLOPE WHICH-EVER IS GREATER

** - ITEM 622 CONCRETE BARRIER, ADD WEDGE AT EXISTING TAPER OF BARRIER TYPE B-50 TO B-32.

$ - MEDIAN SHOULDER VARIES 9'-0" TO 14'-0" FROM STA 338+00 TO STA 345+00

LEGEND

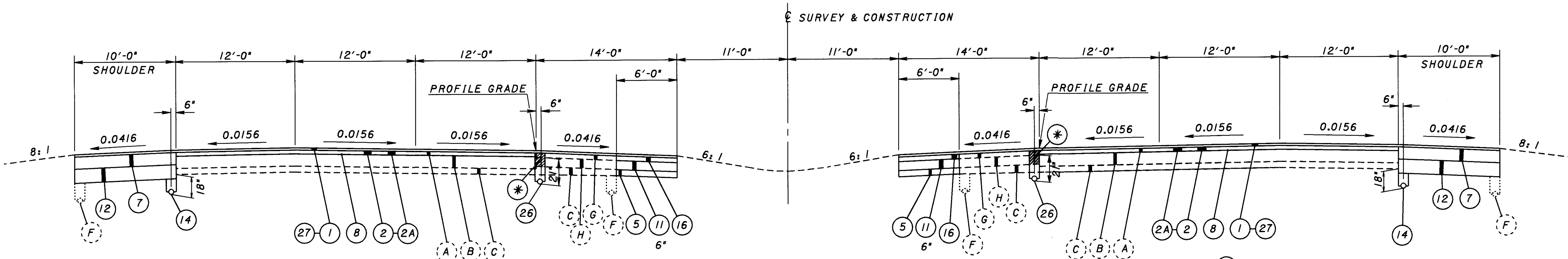
(1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
(2A) ITEM 446 2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(4) ITEM 301 8" BITUMINOUS AGGREGATE BASE, AC 20
(5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, AS PER PLAN (SEE PROPOSAL NOTE)
(7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
(8) ITEM 407 TACK COAT
(9) ITEM 659 SEEDING AND MULCHING
(10) ITEM 606 GUARDRAIL, TYPE 5
(11) ITEM 304 AGGREGATE BASE (SEE PROPOSAL NOTE)
(12) ITEM 304 9" AGGREGATE BASE (SEE PROPOSAL NOTE)
(14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO. 152)
(16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
(25) ITEM 622 CONCRETE BARRIER, CAP EXTENSION TO 50" **
(26) ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN
(27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

EXISTING SR 315 PAVEMENT

(A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 3" TO 4" SUBBASE
(E) CONCRETE BARRIER, B-32
(F) 6" UNDERDRAIN
(G) 3" BITUMINOUS AGGREGATE BASE
(H) 6" AGGREGATE BASE

TYPICAL SECTION

TYPICAL SECTIONS

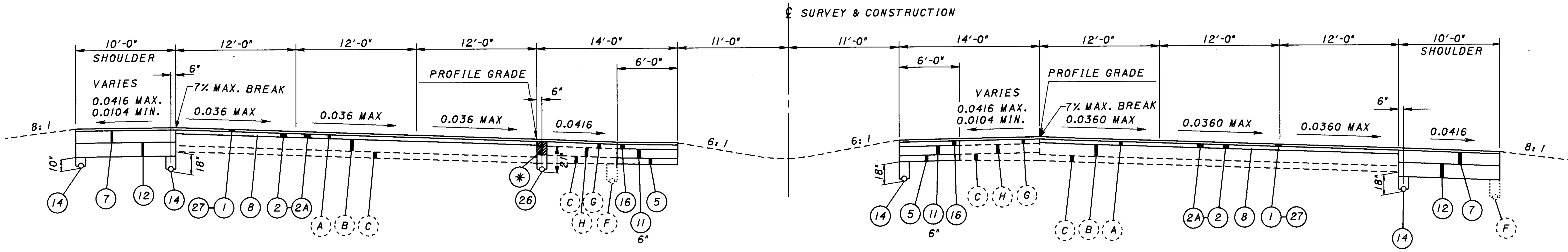


★ ITEM 301 BITUMINOUS BASE. PLUG TO BE PLACED IN TWO LIFTS MINIMUM, NOT TO EXCEED 5" TOTAL.

NORMAL SECTION SR-315

LIMITING STATIONS

STA 350+25.00 TO STA 385+22.34 = 3497.34 LIN.FT.
STA 398+30.36 TO STA 418+44.75 = 2014.39 LIN.FT.
STR. NO. FRA-315-0984 ANTRIM PARK
STA 420+05.00 TO STA 428+53.70 = 848.70 LIN.FT. BACK
STA 45+00.00 TO STA 46+52.65 = 152.15 LIN.FT. AHEAD
TOTAL = 6512.58 LIN.FT.



SUPERELEVATED SECTION SR-315

LIMITING STATIONS

STA 345+00.00 TO STA 350+25.00 = 525.00 LIN. FT. CURVE LT.
STA 385+22.34 TO STA 398+30.36 = 1308.02 LIN. FT. CURVE RT.
STA 46+52.65 TO STA 56+00.00 = 947.35 LIN. FT. CURVE LT.
TOTAL = 2780.37 LIN. FT.

EXISTING SR 315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

LEGEND

- (1) ITEM 446 1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE 1", GRADING A. (SEE PROPOSAL NOTE)
- (7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
- (8) ITEM 407 TACK COAT
- (11) ITEM 304 AGGREGATE BASE
- (12) ITEM 304 9" AGGREGATE BASE
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.)
- (16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
- (26) ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN
- (27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

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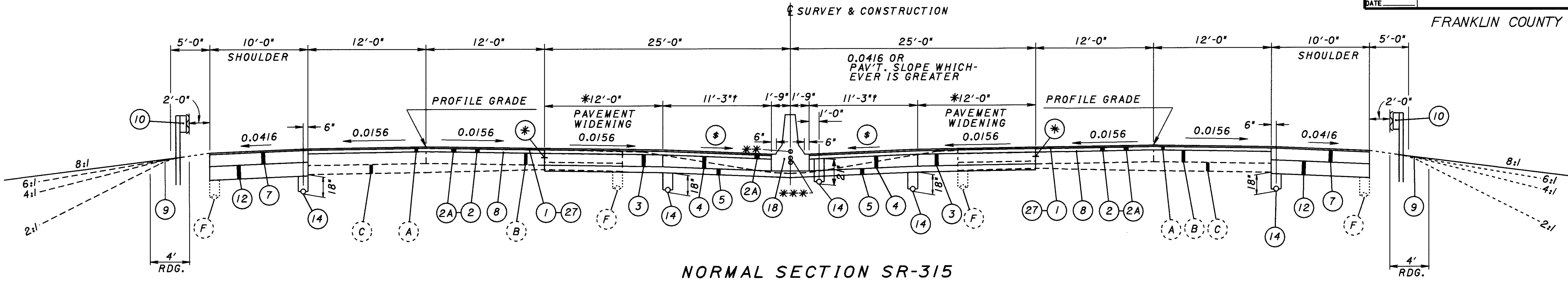
FRANKLIN COUNTY

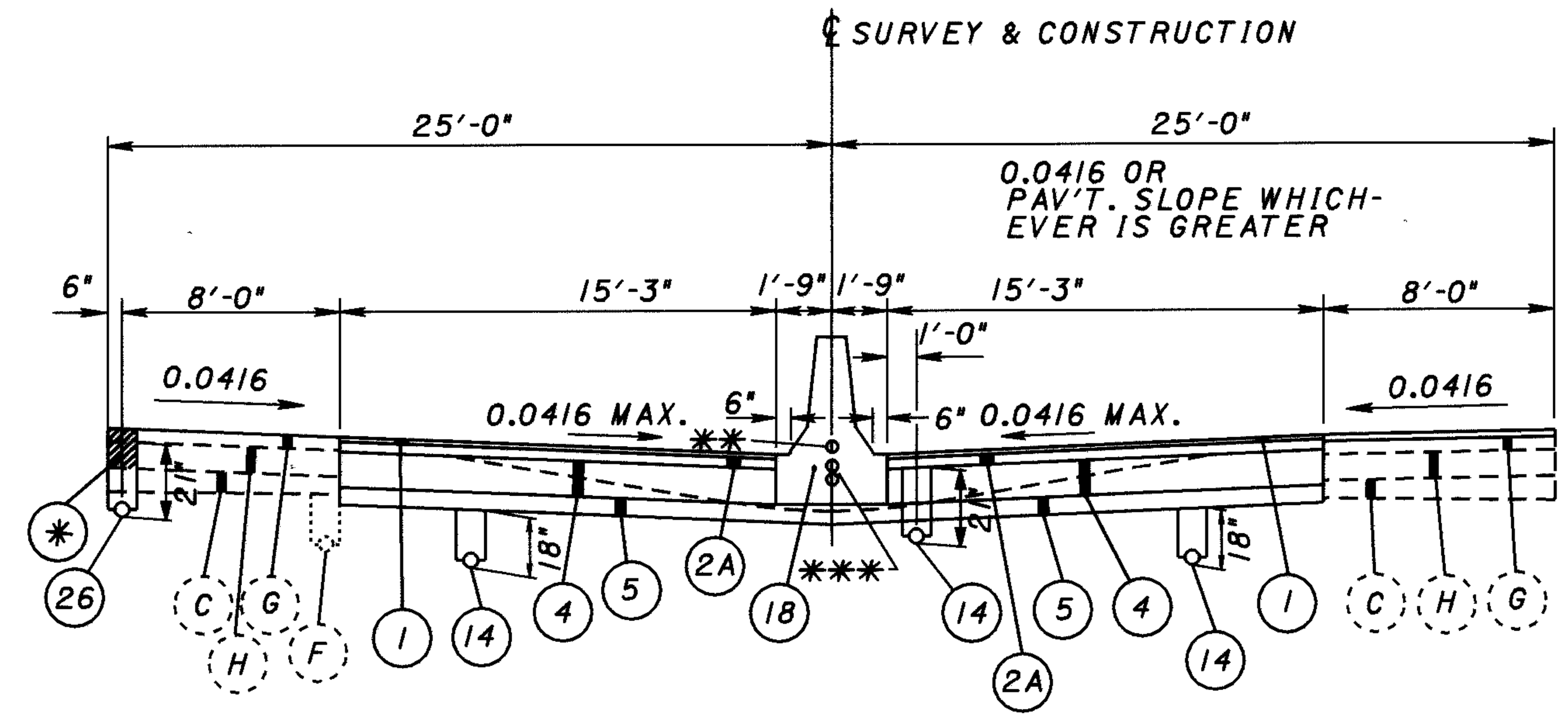
TYPICAL SECTIONS



NORMAL SECTION SR-315

LIMITING STATIONS

STA 66+10.00 TO STA 75+00.00 = 890.00 LIN. FT.
STA 96+00.00 TO STA 117+00.00 = 2100.00 LIN. FT.
TOTAL = 2990.00 LIN. FT.



NORMAL SECTION SR-315

LIMITING STATIONS

STA 56+00.00 TO STA 66+10.00 = 1010.00 LIN. FT.

NOTE: † - VARIES 23'-3" TO 11'-3" STA. 66+10 TO 75+00
* - VARIES 0'-0" TO 12'-0" STA. 66+10 TO 75+00
** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER
*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER
($) - 0.0416 OR PAVEMENT SLOPE WHICHEVER IS GREATER
(*) - TYPE D LONGITUDINAL JOINT, AS PER STD. DWG. BP-2.1

LEGEND

EXISTING SR 315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

- (1) ITEM 446 1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (3) ITEM 305 8" CONCRETE BASE, AS PER PLAN (SEE GENERAL NOTES)
- (4) ITEM 301 8" BITUMINOUS AGGREGATE BASE, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, (SEE PROPOSAL NOTE)
- (7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE
- (12) ITEM 304 9" AGGREGATE BASE
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.)
- (16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
- (18) ITEM 622 CONCRETE BARRIER, TYPE B-50
- (27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

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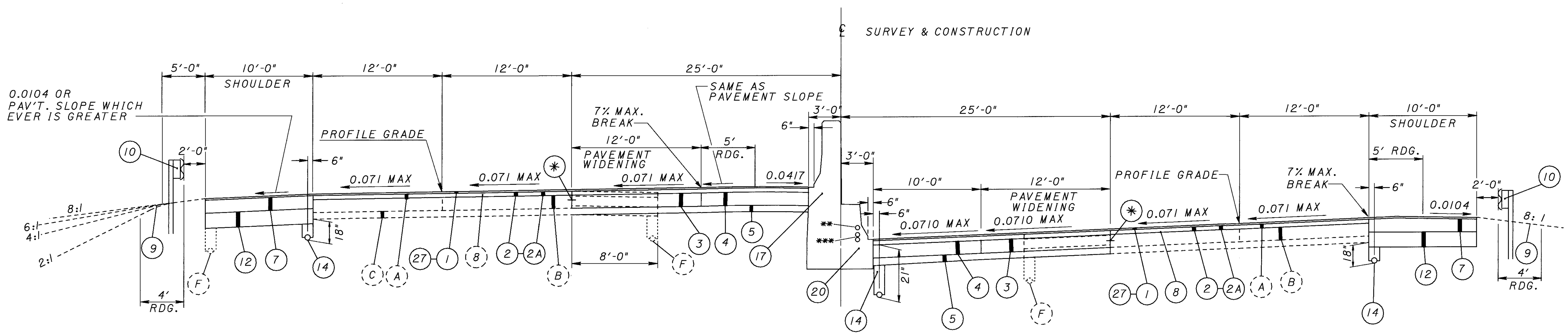
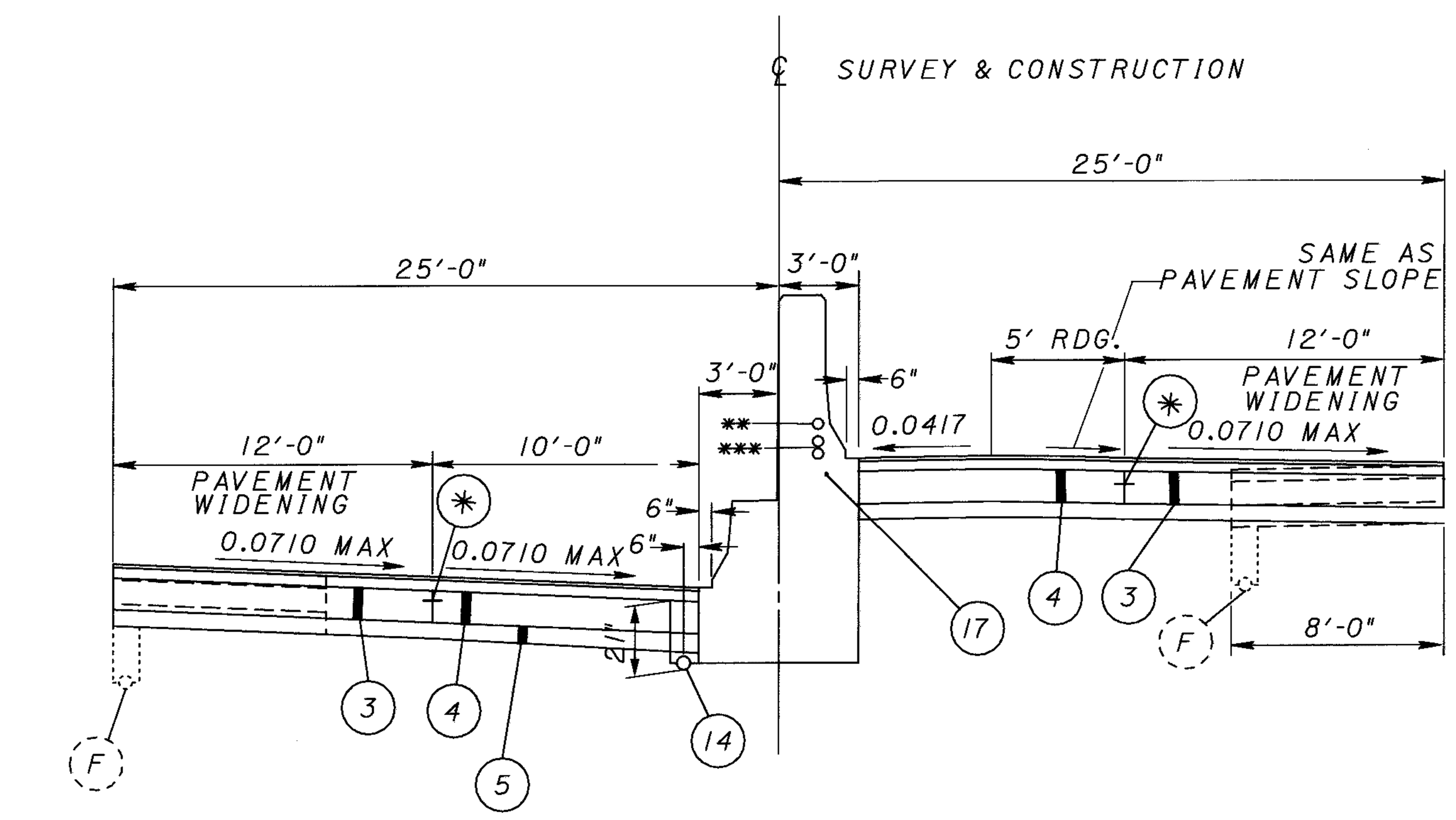
TYPICAL SECTIONS



SUPERELEVATED SECTION THRU WIDENING SR-315

LIMITING STATIONS

STA 75+00.00 TO STA 88+29.31 = 770.69 LIN. FT. CURVE RT.
STA 88+29.31 TO STA 96+00.00 = 1329.31 LIN. FT. CURVE LT.
TOTAL = 2100.00 LIN. FT



SUPERELEVATED SECTION THRU WIDENING SR-315

** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER
*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER
(*) - TYPE D LONGITUDINAL JOINT, AS PER STD. DWG. BP-2.1

EXISTING SR-315 PAVEMENT

(A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 3" TO 4" SUBBASE
(F) 6" UNDERDRAIN
(G) 3" BITUMINOUS AGGREGATE BASE
(H) 6" AGGREGATE BASE

LEGEND

(1)	ITEM 446	1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2)	ITEM 254	2½" PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
(2A)	ITEM 446	2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(3)	ITEM 305	8" CONCRETE BASE, AS PER PLAN (SEE GENERAL NOTES)
(4)	ITEM 301	8" BITUMINOUS AGGREGATE BASE, AC-20
(5)	ITEM 310	4" SUBBASE "TYPE 1" GRADING A, (SEE PROPOSAL NOTE)
(7)	ITEM 301	7" BITUMINOUS AGGREGATE BASE, AC-20
(8)	ITEM 407	TACK COAT
(9)	ITEM 659	SEEDING AND MULCHING
(10)	ITEM 606	GUARDRAIL, TYPE 5
(11)	ITEM 304	AGGREGATE BASE (SEE PROPOSAL NOTE)
(12)	ITEM 304	9" AGGREGATE BASE (SEE PROPOSAL NOTE)
(14)	ITEM 605	4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.152)
(20)	ITEM 622	CONCRETE BARRIER,TYPE C-50, AS PER PLAN, (SEE DETAIL SHEET NO.149)
(27)	ITEM 413	SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

TYPICAL SECTIONS

NORMAL SECTION SR-315

LIMITING STATIONS

STA 117+00.00 TO STA 132+00.00 = 1500.00 LIN. FT.
✱ WIDTH 12'-0"
STA 132+00.00 TO STA 139+20.00 = 720.00 LIN. FT.
✱ VARIES 12'-0" TO 0'-0"
STA 133+80.26 TO STA 139+80.26 = 600.00 LIN. FT
✱ TAPERS 2'-0" TO 12'-0"

TOTAL = 2820.00 LIN. FT.

NORMAL SECTION SR-315

LIMITING STATIONS

STA 139+20.00 TO STA 159+03.90 LT. = 1983.90 LIN. FT.
STR. NO. FRA-315-1220 WILSON RUN
STA 159+82.10 TO STA 179+56.68 LT. = 1974.58 LIN. FT.
STA 139+20.00 TO STA 159+03.90 RT. = 1983.90 LIN. FT.
STR. NO. FRA-315-1220 WILSON RUN
STA 159+82.10 TO STA 166+92.81 RT. = 710.71 LIN. FT.

TOTAL = 6653.09 LIN. FT.

EXISTING SR-315 PAVEMENT

- (C) 3" TO 4" SUBBASE
- (E) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE
- (J) 3" TO 7½" SUBBASE GRADING

(✱) TYPE D LONGITUDINAL JOINT AS PER STD. DWG. BP-2.1

(✱)(✱) STD. LONGITUDINAL JOINT PER STD. DWG. BP-2.1

✱✱ - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER
✱✱✱ - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER

LEGEND

(1)	ITEM 446	1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2A)	ITEM 446	2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(8)	ITEM 407	TACK COAT
(9)	ITEM 659	SEEDING AND MULCHING
(10)	ITEM 606	GUARDRAIL, TYPE 5
(11)	ITEM 304	AGGREGATE BASE
(13)	ITEM 452	9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
(14)	ITEM 605	4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO. 152)
(18)	ITEM 622	CONCRETE BARRIER, TYPE B-50
(19)	ITEM 451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(27)	ITEM 413	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

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TYPICAL SECTIONS

SUPERELEVATED SECTION SR-315

LIMITING STATIONS

STA 166+92.81 TO STA 179+56.68 = 1263.87 LIN. FT. CURVE LT.

TOTAL = 1263.87 LIN. FT.

LEGEND

(1)	ITEM 446	1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2A)	ITEM 446	2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(8)	ITEM 407	TACK COAT
(9)	ITEM 659	SEEDING AND MULCHING
(10)	ITEM 606	GUARDRAIL, TYPE 5
(11)	ITEM 304	AGGREGATE BASE
(13)	ITEM 452	9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
(14)	ITEM 605	4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO. 152)
(18)	ITEM 622	CONCRETE BARRIER, TYPE B-50
(19)	ITEM 451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(27)	ITEM 413	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

EXISTING SR-315 PAVEMENT

- (C) 3" TO 4" SUBBASE
- (E) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE
- (J) 3" TO 7½" SUBBASE GRADING

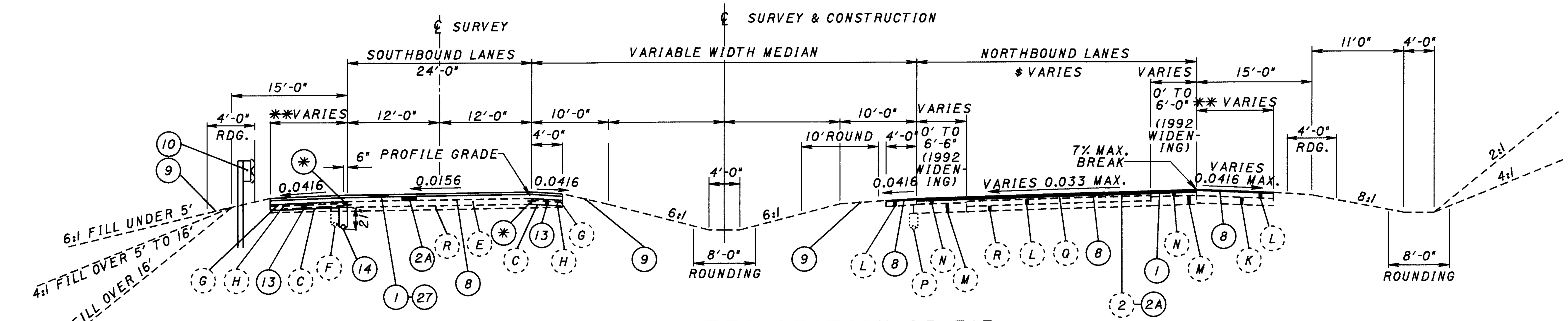
(*) TYPE D JOINT AS PER STD. DWG. BP-2.1

** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER

*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER

12-JAN-1999

TYPICAL SECTIONS



SUPERELEVATED SECTION SR-315

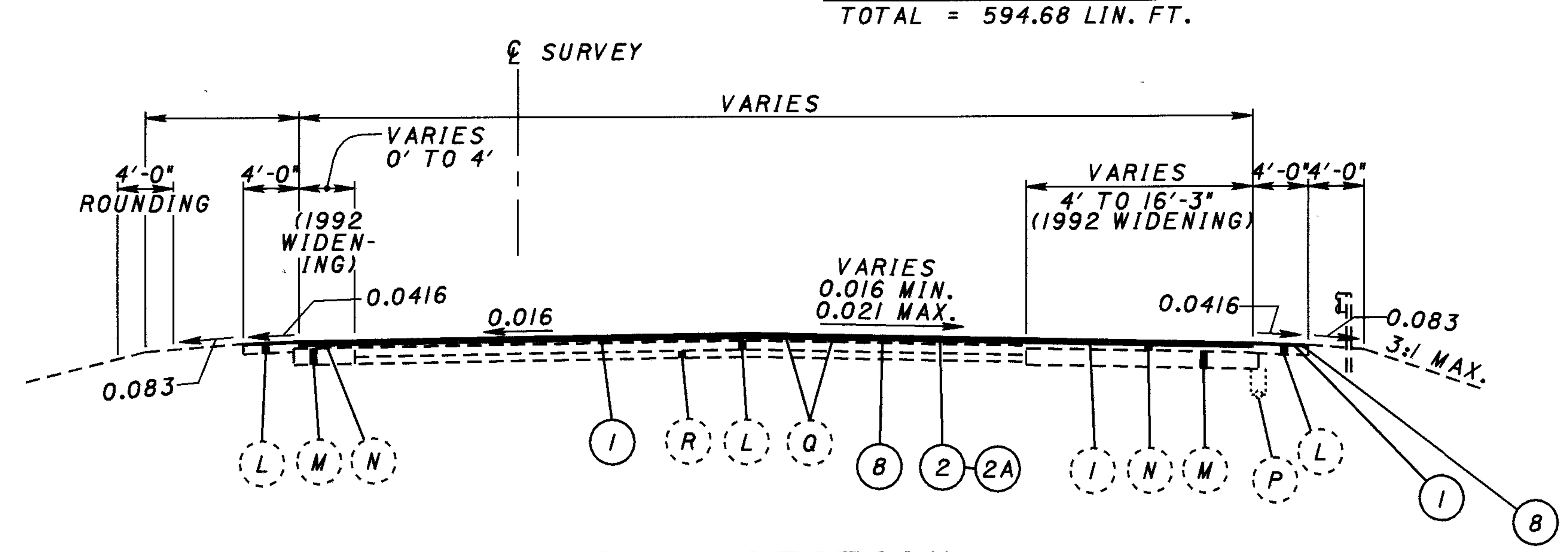
LIMITING STATIONS

STA 179+56.68 TO STA 182+54.02 LT. = 297.34 LIN. FT.
STA 179+56.68 TO STA 180+68.98 RT. = 112.30 LIN. FT.
℄ WIDTH 24'-0"
STA 180+68.98 TO STA 182+23.35 RT. = 154.37 LIN. FT.
℄ VARIES 24'-0" TO 36'-0"
STA 182+23.35 TO STA 182+54.02 RT. = 30.67 LIN. FT.
℄ WIDTH 36'-0"
TOTAL = 594.68 LIN. FT.

SHOULDER

(✱) TYPE D JOINT AS PER STD. DWG. BP-2.1

✱✱ STA 180+68.98 TO STA 182+23.35 VARIES 10'-0" TO 4'-0"



NORMAL SECTION

LIMITING STATIONS

STA 182+54.02 TO STA 187+14.00 = 459.98 LIN. FT.
VARIES 90'-0" TO 48'-0"
STA 187+14.00 TO STA 190+00.00 = 286.00 LIN. FT.
VARIES48'-0" TO 37'-0
TOTAL = 745.98 LIN. FT.

EXISTING SR-315 PAVEMENT

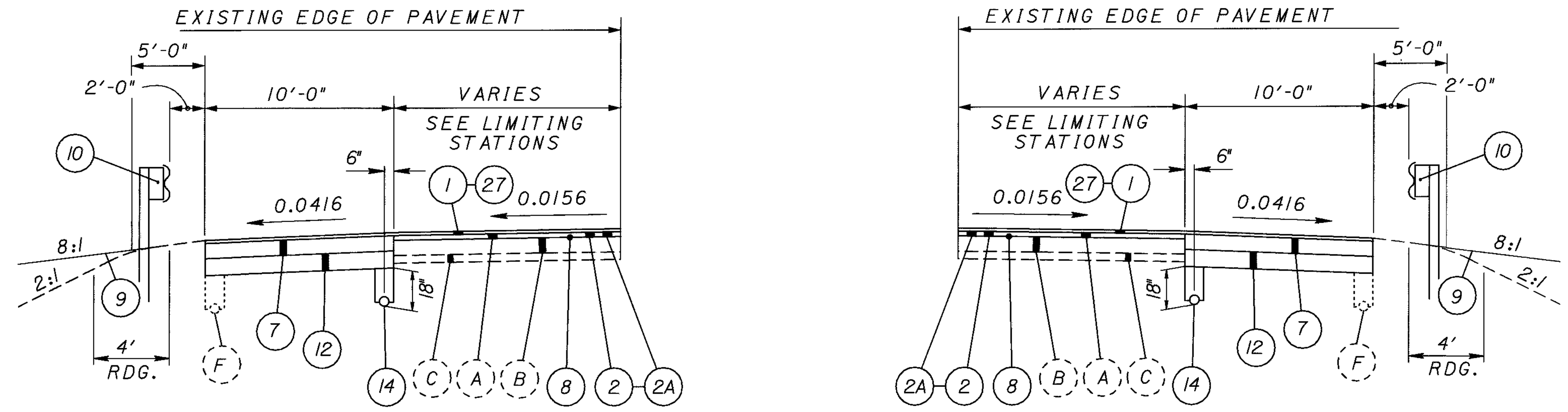
- (C) 3" TO 4" SUBBASE
- (E) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE
- (K) 4" TO 11½" SUBBASE
- (L) 8" AGGREGATE BASE
- (M) 14" AGGREGATE BASE
- (N) 5" BITUMINOUS AGGREGATE BASE
- (P) 4" UNDERDRAIN
- (Q) 2½" TO 3" ASPHALT CONCRETE
- (R) SUBBASE

LEGEND

- (1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS PHASE I
- (2A) ITEM 446 2 ½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE
- (13) ITEM 452 9" PLAIN CONCRETE PAVEMENT
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15.
- (27) ITEM 413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

12-JAN-1999

TYPICAL SECTIONS - CONVERGING AND DIVERGING MAINLINE



CONVERGING AND DIVERGING MAINLINE SECTIONS

LIMITING STATIONS

ACKERMAN ROAD	**RAMP CA**	STA. 182+45.11 TO STA. 186+00.00 = 354.89 LIN. FT. VARIES 36'-0" TO 12'-0" STA. 186+00.00 TO STA. 195+80.00 = 980.00 LIN. FT. WIDTH 12'-0"
	RAMP CB	STA. 183+00.00 TO STA. 188+20.00 = 520.00 LIN. FT. VARIES 25'-0" TO 12'-0" STA. 188+20.00 TO STA. 196+40.00 = 820.00 LIN. FT. WIDTH 12'-0"
W. NORTH BROADWAY	**RAMP DA**	STA. 243+68.82 TO STA. 246+35.00 = 266.18 LIN. FT. VARIES 36'-0" TO 12'-0" STA. 246+35.00 TO STA. 250+57.47 = 422.47 LIN. FT. WIDTH 12'-0" STA. 250+57.47 TO STA. 251+57.47 = 100.00 LIN. FT. VARIES 12'-0" TO 0'-0"
	RAMP DB	STA. 222+50.00 TO STA. 224+61.59 = 211.58 LIN. FT. VARIES 0'-0" TO 5'-2" STA. 226+58.00 TO STA. 228+63.53 = 205.53 LIN. FT. VARIES 9'-0" TO 15'-4" STA. 232+12.27 TO STA. 232+50.00 = 37.73 LIN. FT. VARIES 24'-0" TO 25'-0"
	RAMP DC	STA. 243+00.00 TO STA. 253+00.00 = 1000.00 LIN. FT. VARIES 25'-0" TO 0'-0"
	RAMP DD	STA. 196+40.00 TO STA. 199+74.38 = 334.38 LIN. FT. VARIES 12'-0" TO 36'-0"
	RAMP DF	STA. 195+80.00 TO STA. 201+00.00 = 520.00 LIN. FT. VARIES 12'-0" TO 25'-0"
HENDERSON ROAD	**RAMP EA**	STA. 326+97.29 TO STA. 330+47.43 = 350.14 LIN. FT. VARIES 39'-0" TO 12'-0"
	RAMP EB	STA. 307+00.00 TO STA. 309+28.52 = 228.52 LIN. FT. VARIES 0'-0" TO 5'-8" STA. 310+71.27 TO STA. 317+00.00 = 628.73 LIN. FT. VARIES 9'-3" TO 30'-0"
	RAMP EC	STA. 319+00.00 TO STA. 329+00.00 = 1000.00 LIN. FT. VARIES 25'-0" TO 0'-0"
	RAMP ED	STA. 292+57.36 TO STA. 300+49.62 = 792.26 LIN. FT. VARIES 0'-0" TO 36'-0"
BETHEL ROAD	**RAMP FA**	STA. 365+01.35 TO STA. 367+78.36 = 277.01 LIN. FT. VARIES 36'-0" TO 12'-0" STA. 367+78.36 TO STA. 372+00.00 = 421.64 LIN. FT. WIDTH 12'-0" STA. 372+00.00 TO STA. 373+00.00 = 100.00 LIN. FT. VARIES 12'-0" TO 0'-0"
	RAMP FC	STA. 361+00.00 TO STA. 371+00.00 = 1000.00 LIN. FT. VARIES 25'-0" TO 0'-0"
	RAMP FD	STA. 332+00.00 TO STA. 333+00.00 = 100.00 LIN. FT. VARIES 0'-0" TO 12'-0" STA. 333+00.00 TO STA. 337+00.00 = 400.00 LIN. FT. WIDTH 12'-0" STA. 337+00.00 TO STA. 340+03.75 = 303.75 LIN. FT. VARIES 12'-0" TO 39'-0"
	RAMP FE	STA. 330+47.43 TO STA. 336+60.06 = 612.63 LIN. FT. WIDTH 12'-0" STA. 336+60.06 TO STA. 341+79.71 = 519.65 LIN. FT. VARIES 12'-0" TO 25'-0"
S.R. 161	**RAMP GA**	STA. 74+48.23 TO STA. 78+13.04 = 364.81 LIN. FT. VARIES 36'-0" TO 12'-0" STA. 78+13.04 TO STA. 81+51.90 = 338.86 LIN. FT. WIDTH 12'-0" STA. 81+51.90 TO STA. 82+51.90 = 100.00 LIN. FT. VARIES 12'-0" TO 0'-0"
	RAMP GB	STA. 75+00.00 TO STA. 85+00.00 = 1000.00 LIN. FT. VARIES 25'-0" TO 0'-0"
	RAMP GC	STA. 48+75.00 TO STA. 49+75.00 = 100.00 LIN. FT. VARIES 0'-0" TO 12'-0" STA. 49+75.00 TO STA. 56+81.68 = 706.68 LIN. FT. VARIES 12'-0" TO 39'-0"
	RAMP GD	STA. 46+00.00 TO STA. 56+00.00 = 1000.00 LIN. FT. VARIES 0'-0" TO 25'-0"
I-270	**$ ROADWAY A**	STA. 118+80.26 TO STA. 133+80.26 = 1500.00 LIN. FT. VARIES 0'-0" TO 24'-0"
	$ ROADWAY D	STA. 121+76.07 TO STA. 126+28.64 = 452.57 LIN. FT. VARIES 0'-0" TO 12'-0" STA. 126+28.64 TO STA. 131+02.98 = 474.34 LIN. FT. WIDTH 12'-0" STA. 131+02.98 TO STA. 136+28.64 = 525.66 LIN. FT. VARIES 24'-0" TO 48'-0"
	$ RAMP B	STA. 167+17.04 TO STA. 175+17.04 = 800.00 LIN. FT. VARIES 20'-0" TO 0'-0"
	$ RAMP E	STA. 147+48.68 TO STA. 148+99.07 = 150.39 LIN. FT. VARIES 20'-0" TO 12'-0" STA. 148+99.07 TO STA. 151+54.16 = 255.09 LIN. FT. WIDTH 12'-0"
	$ RAMP F	STA. 151+54.16 TO STA. 153+37.12 = 182.96 LIN. FT. VARIES 12'-0" TO 36'-0"
	$ RAMP G	STA. 146+76.48 TO STA. 151+20.30 = 443.82 LIN. FT. VARIES 36'-0" TO 0'-0"

$ CONCRETE PLANING ONLY

EXISTING SR-315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 4" SUBBASE
- (F) 6" UNDERDRAIN

LEGEND

- (1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS PHASE I, AS PER PLAN
- (2A) ITEM 446 2 ½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (12) ITEM 304 9" AGGREGATE BASE (SEE PROPOSAL NOTE)
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.152)
- (27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

TYPICAL SECTIONS

CALC. BY ____ DATE ____	FRA-315-5.18	OHIO
CHKD. BY ____ DATE ____		F.H.W.A. REGION 5

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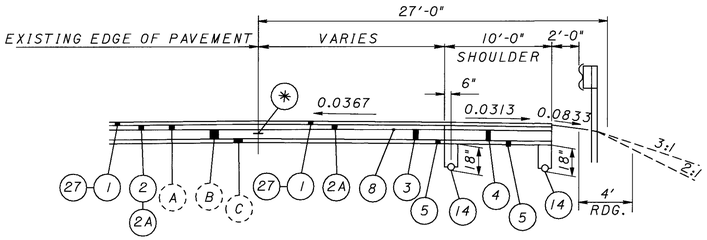
286

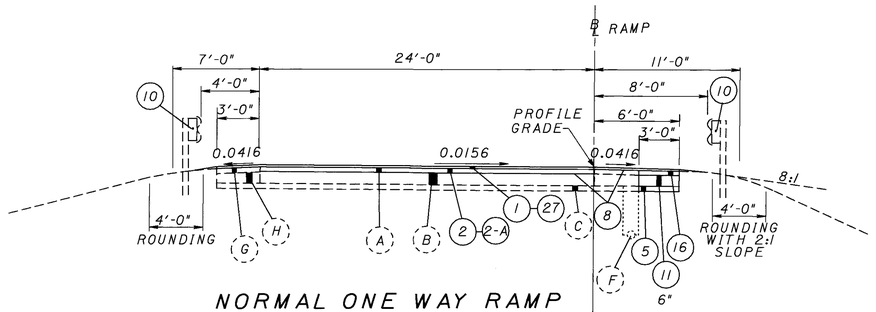
FRANKLIN COUNTY



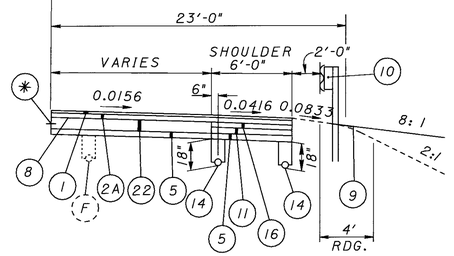
PROPOSED WEAVING LANE

LIMITING STATIONS

STA 324+20.00 TO STA 329+00.00 = 480.00 LIN. FT.
VARIES 0'-00" TO 12'-0"
STA 329+00.00 TO STA 332+00.00 = 300.00 LIN. FT.
WIDTH 12'-0'
STA 332+00.00 TO STA 333+00.00 = 100.00 LIN. FT.
VARIES 12'-0" TO 0'-0"



NORMAL ONE WAY RAMP



RAMP WIDENING

LIMITING STATIONS

RAMP ED
299+36.40 TO 304+16.40 = 480.00 LIN.FT.
VARIES 0'-0" TO 12'-0"
304+16.40 TO 310+08.62 = 592.22 LIN.FT.
WIDTH 12'-0"

(*) - TYPE D LONGITUDINAL JOINT, AS PER STD. DWG. BP-2.1

LEGEND

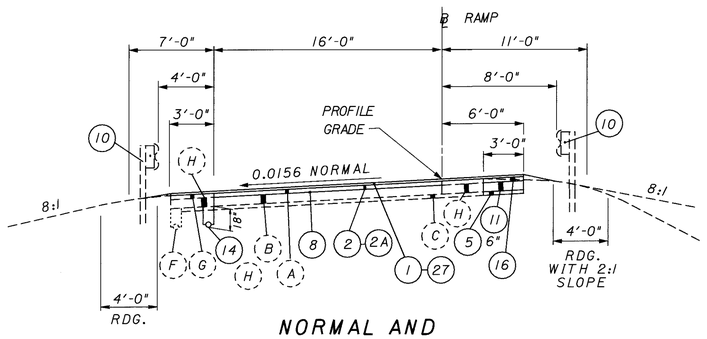
EXISTING SR-315 PAVEMENT

(A) 2½" ASPHALT CONCRETE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 4"SUBBASE
(F) 6" UNDERDRAIN
(G) 3" BITUMINOUS AGGREGATE BASE
(H) 6" AGGREGATE BASE

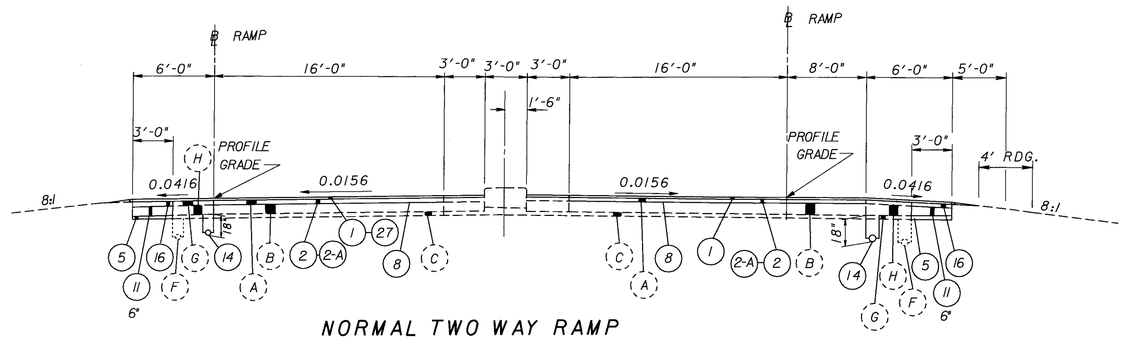
(1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS PHASE 1, AS PER PLAN .
(2A) ITEM 446 2 ½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(3) ITEM 305 8" CONCRETE BASE, AS PER PLAN (SEE GENERAL NOTES)
(4) ITEM 301 8" BITUMINOUS AGGREGATE BASE, AC-20
(5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, (SEE PROPOSAL NOTE)
(8) ITEM 407 TACK COAT
(9) ITEM 659 SEEDING AND MULCHING
(10) ITEM 606 GUARDRAIL, TYPE 5
(11) ITEM 304 AGGREGATE BASE (SEE PROPOSAL NOTE)
(14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO.152)
(16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
(22) ITEM 452 8" PLAIN CONCRETE PAVEMENT
(27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

TYPICAL SECTION

TYPICAL SECTIONS - RAMPS



NORMAL AND SUPERELEVATED SECTION LIMITING STATIONS



NORMAL TWO WAY RAMP LIMITING STATIONS

ACKERMAN ROAD

RAMP CA
STA. 174+99.52 TO STA. 175+37.02 = 37.50 LIN. FT.
VARIES 98'-0" TO 35'-0"
STA. 175+37.02 TO STA. 176+00.00 = 62.98 LIN. FT.
VARIES 35'-0" TO 24'-0"
STA. 176+00.00 TO STA. 177+60.60 = 160.60 LIN. FT.
WIDTH 24'-0"
STA. 177+60.60 TO STA. 180+02.56 = 241.96 LIN. FT.
VARIES 24-0" TO 16'-0"
STA. 180+02.56 TO STA. 182+45.11 = 242.55 LIN. FT.
WIDTH 16'-0"

RAMP CB
STA. 173+15.77 TO STA. 173+53.27 = 37.50 LIN. FT.
VARIES 55'-0" TO 16'-0"
STA. 173+53.27 TO STA. 183+00.00 = 946.73 LIN. FT.
WIDTH 16'-0"

W. NORTH BROADWAY

RAMP DA
$ STA. 231+87.71 TO STA. 232+25.21 = 37.50 LIN. FT.
VARIES 56'-0" TO 24'-0"
$ STA. 232+25.21 TO STA. 235+00.00 = 274.79 LIN. FT.
WIDTH 24'-0"
$ STA. 235+00.00 TO STA. 236+00.00 = 100.00 LIN. FT.
VARIES 24-0" TO 16'-0"
$ STA. 236+00.00 TO STA. 243+68.82 = 768.82 LIN. FT.
WIDTH 16'-0"

RAMP DB
STA. 232+50.00 TO STA. 235+58.93 = 308.93 LIN. FT.
WIDTH 16'-0"
$ STA. 235+58.93 TO STA. 239+73.50 = 414.57 LIN. FT.
VARIES 16-0" TO 30'-0"
STA. 239+73.50 TO STA. 242+18.93 = 245.43 LIN. FT.
VARIES 30'-0" TO 38'-0"
STA. 242+18.93 TO STA. 243+11.19 = 92.96 LIN. FT.
WIDTH 16'-0"
$ STA. 243+11.19 TO STA. 243+48.69 = 37.50 LIN. FT.
VARIES 16'-0" TO 16'-0"

RAMP DBB
STA. 242+18.93 TO STA. 243+47.74 = 128.81 LIN. FT.
WIDTH 18'-0"
STA. 243+47.74 TO STA. 243+85.24 = 37.50 LIN. FT.
WIDTH 18'-0"

RAMP DC
STA. 233+35.60 TO STA. 233+73.10 = 37.50 LIN. FT.
VARIES 26'-0" TO 19'-0"
STA. 233+73.10 TO STA. 234+04.63 = 41.53 LIN. FT.
VARIES 19'-0" TO 16'-0"
STA. 234+04.63 TO STA. 235+41.54 = 136.91 LIN. FT.
WIDTH 16'-0"
STA. 235+41.54 TO STA. 243+00.00 = 758.46 LIN. FT.
VARIES 36-0" TO 16'-0"

W. NORTH BROADWAY

RAMP DCC
STA. 232+88.54 TO STA. 233+26.04 = 37.50 LIN. FT.
WIDTH 16'-0"
STA. 233+26.04 TO STA. 235+41.54 = 215.50 LIN. FT.
WIDTH 16'-0"

RAMP DD
STA. 199+74.38 TO STA. 211+00.98 = 1126.60 LIN. FT.
WIDTH 16'-0"

STATION EQUATION - STA. 211+00.98 BK = STA. 212+49.38 AH

STA. 212+49.38 TO STA. 224+55.07 = 1205.69 LIN. FT.
WIDTH 16'-0"
STA. 226+47.69 TO STA. 236+93.17 = 1045.48 LIN. FT.
WIDTH 16'-0"
STA. 236+93.17 TO STA. 237+30.67 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP DE
STA. 214+00.00 TO STA. 219+00.00 = 500.00 LIN. FT.
VARIES 0'-0" TO 34'-0"
STA. 219+00.00 TO STA. 224+67.11 = 567.11 LIN. FT.
WIDTH 16'-0"
STA. 224+67.11 TO STA. 225+04.61 = 37.50 LIN. FT.
VARIES 16-0" TO 30'-0"

RAMP DF
STA. 201+00.00 TO STA. 207+00.00 = 600.00 LIN. FT.
VARIES 16-0" TO 36'-0"
STA. 207+00.00 TO STA. 213+39.76 = 639.76 LIN. FT.
WIDTH 16'-0"
STA. 213+39.76 TO STA. 214+39.76 = 100.00 LIN. FT.
VARIES 16-0" TO 18'-0"
STA. 214+39.76 TO STA. 215+39.69 = 99.93 LIN. FT.
WIDTH 18'-0"
STA. 215+39.69 TO STA. 215+77.19 = 37.50 LIN. FT.
WIDTH 18'-0"

RAMP DG
STA. 207+00.00 TO STA. 214+19.01 = 719.0 LIN. FT.
WIDTH 16'-0"
STA. 214+19.01 TO STA. 214+56.51 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP DH
STA. 205+59.34 TO STA. 208+51.06 = 292.22 LIN. FT.
VARIES 0'-0" TO 16'-0"
STA. 208+51.06 TO STA. 209+26.52 = 75.46 LIN. FT.
VARIES 16-0" TO 34'-0"
STA. 209+26.52 TO STA. 209+50.00 = 23.48 LIN. FT.
WIDTH 16'-0"
STA. 209+50.00 TO STA. 210+50.00 = 100.00 LIN. FT.
VARIES 16-0" TO 24'-0"
STA. 210+50.00 TO STA. 213+85.16 = 335.16 LIN. FT.
WIDTH 24'-0"
STA. 213+85.16 TO STA. 214+22.66 = 37.50 LIN. FT.
VARIES 24-0" TO 30'-0"

HENDERSON ROAD

RAMP EA
$ STA. 318+27.67 TO STA. 318+65.17 = 37.50 LIN. FT.
WIDTH 16'-0"
$ STA. 318+65.17 TO STA. 326+97.29 = 832.12 LIN. FT.
WIDTH 16'-0"

RAMP EB
STA. 317+00.00 TO STA. 318+00.00 = 100.00 LIN. FT.
VARIES 14'-0" TO 16'-0"
STA. 318+00.00 TO STA. 319+91.87 = 191.87 LIN. FT.
WIDTH 16'-0"
STA. 319+91.87 TO STA. 324+03.76 = 411.89 LIN. FT.
VARIES 16'-0" TO 38'-0"
STA. 324+03.76 TO STA. 325+06.47 = 102.71 LIN. FT.
WIDTH 16'-0"
STA. 325+06.47 TO STA. 325+43.97 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP EBB
STA. 324+10.04 TO STA. 324+56.03 = 45.99 LIN. FT.
WIDTH 16'-0"
STA. 324+56.03 TO STA. 324+93.53 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP EC
STA. 310+80.37 TO STA. 311+17.87 = 37.50 LIN. FT.
VARIES 93'-0" TO 25'-0"
STA. 311+17.87 TO STA. 311+45.21 = 27.34 LIN. FT.
VARIES 25'-0" TO 16'-0"
STA. 311+45.21 TO STA. 316+68.93 = 523.72 LIN. FT.
WIDTH 16'-0"
STA. 316+68.93 TO STA. 318+00.00 = 131.07 LIN. FT.
VARIES 16'-0" TO 14'-0"
STA. 318+00.00 TO STA. 319+00.00 = 100.00 LIN. FT.
WIDTH 16'-0"

RAMP ED
STA. 300+49.62 TO STA. 301+97.18 = 147.56 LIN. FT.
WIDTH 16'-0"
STA. 301+97.18 TO STA. 304+16.40 = 219.22 LIN. FT.
VARIES 16'-0" TO 24'-0"
STA. 304+16.40 TO STA. 309+40.60 = 524.20 LIN. FT.
WIDTH 24'-0"
STA. 309+40.60 TO STA. 309+58.20 = 17.60 LIN. FT.
VARIES 24'-0" TO 26'-3"
STA. 309+58.20 TO STA. 309+95.70 = 37.50 LIN. FT.
VARIES 26'-3" TO 86'-0"

NOTE:
$ - NORMAL TWO-WAY RAMP

EXISTING SR-315 PAVEMENT

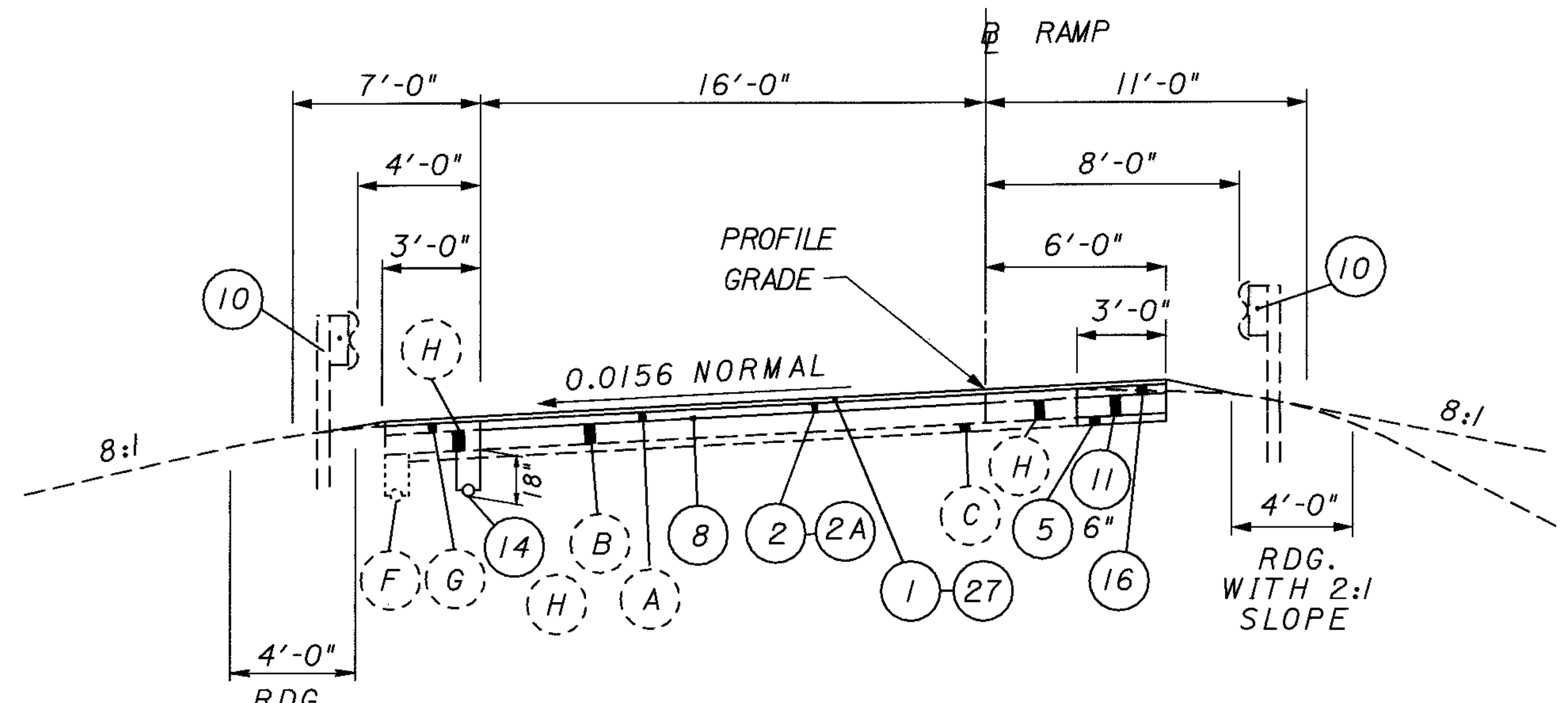
(A) 2½" ASPHALT CONCRETE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 4"SUBBASE
(F) 6" UNDERDRAIN
(G) 3" BITUMINOUS AGGREGATE BASE
(H) 6" AGGREGATE BASE

LEGEND

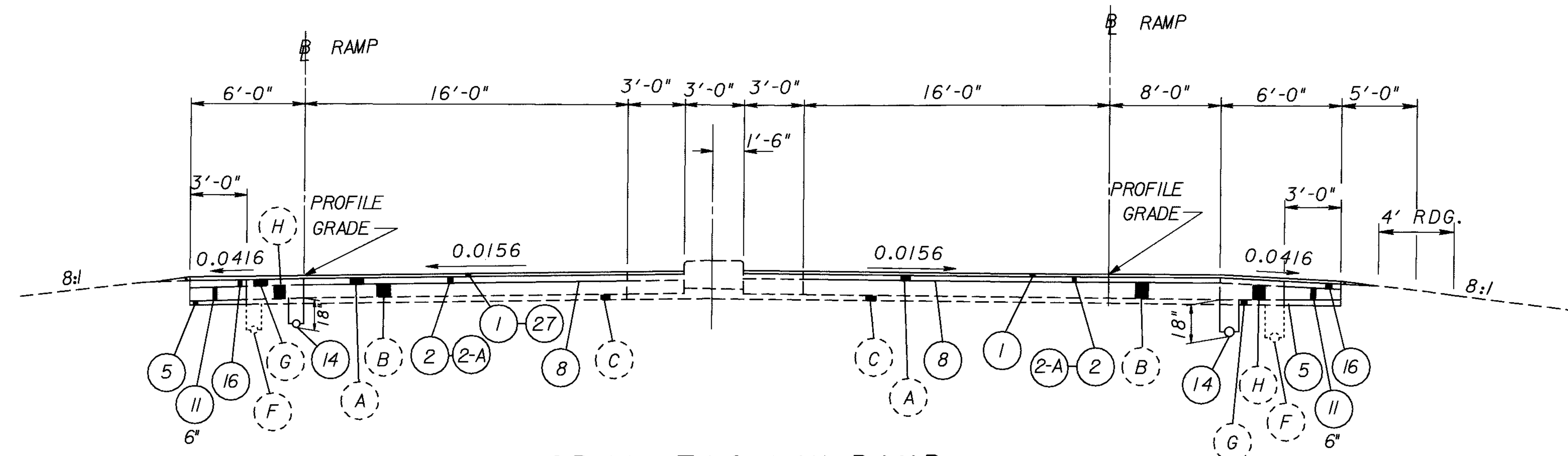
(1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS PHASE 1, AS PER PLAN
(2A) ITEM 446 2 ½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, (SEE PROPOSAL NOTE)
(8) ITEM 407 TACK COAT
(9) ITEM 659 SEEDING AND MULCHING
(10) ITEM 606 GUARDRAIL, TYPE 5
(11) ITEM 304 AGGREGATE BASE (SEE PROPOSAL NOTE)
(14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET NO. 152)
(16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
(27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

TYPICAL SECTION

TYPICAL SECTIONS - RAMPS



NORMAL AND SUPERELEVATED SECTION
LIMITING STATIONS



NORMAL TWO WAY RAMP
LIMITING STATIONS

BETHEL ROAD

RAMP FA
STA. 352+54.52 TO STA. 352+92.02 = 37.50 LIN. FT.
VARIES 56'-0" TO 28'-0"
STA. 352+92.02 TO STA. 353+11.89 = 19.87 LIN. FT.
VARIES 28'-0" TO 24'-0"
STA. 353+11.89 TO STA. 355+02.52 = 190.63 LIN. FT.
WIDTH 24'-0"
STA. 355+02.52 TO STA. 357+25.00 = 222.48 LIN. FT.
VARIES 24'-0" TO 16'-0"
STA. 357+25.00 TO STA. 365+01.35 = 776.35 LIN. FT.
WIDTH 16'-0"

RAMP FC
STA. 351+35.88 TO STA. 351+73.38 = 37.50 LIN. FT.
VARIES 40'-0" TO 30'-0"
STA. 351+73.38 TO STA. 352+31.63 = 58.25 LIN. FT.
VARIES 30'-0" TO 26'-0"
STA. 352+31.63 TO STA. 355+37.03 = 305.40 LIN. FT.
VARIES 26'-0" TO 16'-0"
STA. 355+37.03 TO STA. 361+00.00 = 562.97 LIN. FT.
WIDTH 16'-0"

RAMP FD
STA. 340+03.75 TO STA. 347+25.00 = 721.25 LIN. FT.
WIDTH 16'-0"
STA. 347+25.00 TO STA. 348+25.00 = 100.00 LIN. FT.
VARIES 16'-0" TO 24'-0"
STA. 348+25.00 TO STA. 351+00.22 = 275.22 LIN. FT.
WIDTH 24'-0"
STA. 351+00.22 TO STA. 351+37.72 = 37.50 LIN. FT.
WIDTH 24'-0"

RAMP FE
STA. 341+79.71 TO STA. 342+79.71 = 100.00 LIN. FT.
VARIES 14'-0" TO 16'-0"
STA. 342+79.71 TO STA. 343+96.70 = 116.99 LIN. FT.
VARIES 14'-0" TO 16'-0"
STA. 343+96.70 TO STA. 355+57.75 = 1161.05 LIN. FT.
WIDTH 16'-0"
STA. 355+57.75 TO STA. 355+95.25 = 37.50 LIN. FT.
WIDTH 16'-0"

S.R. 161

RAMP GA
STA. 67+04.06 TO STA. 67+41.56 = 37.50 LIN. FT.
VARIES 109'-0" TO 44'-0"
STA. 67+41.56 TO STA. 67+68.05 = 26.49 LIN. FT.
VARIES 44'-0" TO 36'-0"
STA. 67+68.05 TO STA. 69+51.91 = 183.86 LIN. FT.
WIDTH 36'-0"
STA. 69+51.91 TO STA. 73+74.20 = 422.29 LIN. FT.
VARIES 36'-0" TO 16'-0"
STA. 73+74.20 TO STA. 74+48.23 = 74.03 LIN. FT.
WIDTH 16'-0"

RAMP GB
STA. 65+34.20 TO STA. 65+71.70 = 37.50 LIN. FT.
VARIES 87'-0" TO 26'-0"
STA. 65+71.70 TO STA. 66+37.04 = 65.34 LIN. FT.
VARIES 26'-0" TO 16'-0"
STA. 66+37.04 TO STA. 75+00.00 = 862.96 LIN. FT.
WIDTH 16'-0"

RAMP GC
STA. 56+81.68 TO STA. 58+00.00 = 118.32 LIN. FT.
WIDTH 16'-0"
STA. 58+00.00 TO STA. 61+75.27 = 375.27 LIN. FT.
VARIES 16'-0" TO 36'-0"
STA. 61+75.27 TO STA. 65+08.61 = 333.34 LIN. FT.
WIDTH 36'-0"
STA. 65+08.61 TO STA. 65+21.64 = 13.03 LIN. FT.
VARIES 36'-0" TO 38'-0"
STA. 65+21.64 TO STA. 65+59.14 = 37.50 LIN. FT.
VARIES 38'-0" TO 88'-0"

RAMP GD
STA. 56+00.00 TO STA. 59+98.03 = 398.03 LIN. FT.
WIDTH 16'-0"
STA. 59+98.03 TO STA. 63+93.23 = 395.20 LIN. FT.
VARIES 16'-0" TO 30'-0"
STA. 63+93.23 TO STA. 65+13.21 = 119.98 LIN. FT.
WIDTH 30'-0"
STA. 65+13.21 TO STA. 66+35.72 = 122.51 LIN. FT.
VARIES 30'-0" TO 34'-0"
STA. 66+35.72 TO STA. 66+73.22 = 37.50 LIN. FT.
VARIES 34'-0" TO 46'-0"

RAMP GDD
STA. 65+13.21 TO STA. 66+00.00 = 86.79 LIN. FT.
VARIES 0'-0" TO 16'-0"
STA. 66+00.00 TO STA. 66+56.13 = 56.13 LIN. FT.
WIDTH 16'-0"
STA. 66+56.13 TO STA. 66+93.63 = 37.50 LIN. FT.
WIDTH 16'-0"

I-270

ROADWAY A
STA. 826+03.82 TO STA. 827+66.32 = 162.50 LIN. FT.
WIDTH 24'-0"
STA. 827+66.32 TO STA. 828+03.82 = 37.50 LIN. FT.
WIDTH 24'-0"

ROADWAY D
STA. 848+64.32 TO STA. 851+26.82 = 262.50 LIN. FT.
WIDTH 24'-0"
STA. 851+26.82 TO STA. 851+64.32 = 37.50 LIN. FT.
WIDTH 24'-0"

RAMP B
STA. 163+50.00 TO STA. 163+87.50 = 37.50 LIN. FT.
WIDTH 16'-0"
STA. 163+87.50 TO STA. 165+17.04 = 129.54 LIN. FT.
WIDTH 16'-0"
STA. 165+17.04 TO STA. 166+17.04 = 100.00 LIN. FT.
VARIES 16'-0" TO 14'-0"
STA. 166+17.04 TO STA. 167+17.04 = 100.00 LIN. FT.
VARIES 16'-0" TO 14'-0"

RAMP E
STA. 868+13.05 TO STA. 867+13.05 = 100.00 LIN. FT.
VARIES 14'-0" TO 16'-0"
STA. 867+13.05 TO STA. 866+13.05 = 100.00 LIN. FT.
VARIES 14'-0" TO 16'-0"
STA. 866+13.05 TO STA. 865+75.55 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP F
STA. 868+09.06 TO STA. 867+09.06 = 100.00 LIN. FT.
VARIES 18'-0" TO 16'-0"
STA. 867+09.06 TO STA. 866+09.06 = 100.00 LIN. FT.
WIDTH 16'-0"
STA. 866+09.06 TO STA. 865+71.56 = 37.50 LIN. FT.
WIDTH 16'-0"

RAMP G
STA. 840+77.85 TO STA. 841+77.85 = 100.00 LIN. FT.
VARIES 18'-0" TO 16'-0"
STA. 841+77.85 TO STA. 842+77.85 = 100.00 LIN. FT.
WIDTH 16'-0"
STA. 842+77.85 TO STA. 843+15.35 = 37.50 LIN. FT.
WIDTH 16'-0"

EXISTING SR-315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

LEGEND

- (1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS PHASE I, AS PER PLAN
- (2A) ITEM 446 2 ½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE I" GRADING A, (SEE PROPOSAL NOTE)
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE (SEE PROPOSAL NOTE)
- (16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
- (27) ITEM 413 SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS

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

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

TELEPHONE	OHIO BELL TEL. CO. 150 E. GAY STREET ROOM 6F COLUMBUS, OH 43215 (614) 223-8535	GAS	COLUMBIA GAS OF OHIO 939 W. GOODALE BLVD. COLUMBUS, OH 43212 (614) 460-2079
ELECTRIC	COLS. SOUTHERN POWER COLUMBUS DIVISION 215 NORTH FRONT ST. COLUMBUS, OH 43212 (614) 464-7911	WATER	DIVISION OF WATER CITY OF COLUMBUS 910 DUBLIN ROAD COLUMBUS, OH 43215 (614) 645-7677
	DIVISION OF ELECTRICITY CITY OF COLUMBUS 910 DUBLIN RD. COLUMBUS, OH 43215 (614) 645-7294	SEWERS	DIV. OF SEWERAGE & DRAINAGE CITY OF COLUMBUS 910 DUBLIN ROAD COLUMBUS, OH 43215 (614) 645-7175
	OHIO POWER CO. P.O. BOX 29400 CANTON, OH 44701 (216) 456-8173	PETROLEUM PIPELINE	THE OHIO OIL COMPANY FINDLEY, OHIO
		FREEWAY SURVEILLANCE	DIVISION OF TRAFFIC ENGINEERING CITY OF COLUMBUS 109 N. FRONT STREET COLUMBUS, OHIO 43215 (614) 645-7790
CABLE TELEVISION	WARNER CABLE COMM. 1266 DUBLIN ROAD COLUMBUS, OH (614) 481-5050		

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

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

WEATHER DETECTORS
IN THE PAVEMENT ON SR-315 AND ON THE ADJACENT SIDE ROAD ARE WEATHER DETECTORS. THESE DETECTORS ARE OWNED AND MAINTAINED BY:

DEPT. OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
109 N. FRONT STREET
COLUMBUS, OHIO 43290
(614) 654-8390

OWNERS SHALL BE NOTIFIED ONE WEEK PRIOR TO ANY WORK IN THE FOLLOWING AREAS.

SR-315 & OLENTANGY RIVER ROAD
STA. 226+00

THE CITY WILL IDENTIFY THE LOCATION OF DETECTORS AND THE CONTRACTOR WILL BE REQUIRED TO REMOVE THE CANISTERS IN HIS NORMAL PROCESS OF WORK BUT HE SHALL SALVAGE THE CANISTERS FOR REUSE BY THE CITY. THE CONTRACTOR SHALL DELIVER THE CANISTERS TO THE PROJECT ENGINEER'S TRAILER FOR RETURN TO THE CITY. THE CONTRACTOR WILL NOT BE REQUIRED TO REINSTALL THE WEATHER DETECTORS SYSTEM AS A PART OF THIS CONTRACT. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID ITEM 614 MAINTENANCE TRAFFIC.

ELEVATION DATUM
ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

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

WORK SCHEDULE
THE CONTRACTOR WILL BE REQUIRED TO PREPARE A WORK SCHEDULE OF ALL CONSTRUCTION ACTIVITIES, WITH PARTICULAR EMPHASIS ON CLOSING AND OPENING OF TRAFFIC LANES. THIS SCHEDULE WILL BE UPDATED ON A MONTHLY BASIS WITH DISTRIBUTION TO THE PROJECT ENGINEER, CITY OF COLUMBUS, AND CITY OF WORTHINGTON. IN ADDITION, THE CONTRACTOR WILL BE REQUIRED TO NOTIFY IN WRITING, THE COLUMBUS "PAVING THE WAY TRAFFIC MANAGEMENT PROGRAM", 109 N. FRONT ST., COLUMBUS,OHIO, 43215, OF ANY LANE REDUCTION 7 DAYS PRIOR TO INITIATING EACH CHANGE OF PHASES AS IDENTIFIED IN THE MAINTENANCE OF TRAFFIC NOTES. UPDATES ON THE ANTICIPATED MAINTENANCE OF TRAFFIC FOR THE FOLLOWING WEEK SHALL BE PROVIDED TO THE "TMP" COORDINATOR BY PHONE AT (614) 645-7395 OR BY FAX (614) 645-6938 EACH FRIDAY MORNING. ADDITIONAL UPDATES WILL BE REQUIRED FOR ANY CHANGES TO THE WEEKLY REPORT.

CONSTRUCTION INITIATION
THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS AT 1-(740) 363-1251, EXTENSION 469 OR BY FAX AT 1-(740) 369-7437 14 DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT MAINTENANCE OF TRAFFIC ENGINEER (EXTENSION 323) OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION PROJECT. THE PROJECT ENGINEER WILL PROVIDE CLARIFICATION FOR ANY QUESTIONS ABOUT THIS NOTIFICATION REQUIREMENT.

CLEARING AND GRUBBING
ALTHOUGH THERE ARE TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING. THIS PARTICULARLY APPLIES ON THIS CONTRACT TO THE AREAS ALONG THE EXISTING CL R/W FENCE AND DITCH CLEANOUT.
TREES AND BRUSH SHALL BE CLEARED FOR A DISTANCE OF TWO FEET IN FRONT OF THE EXISTING CHAIN LINK FENCE. PROPOSED FENCE CLEARING AND GRADING SHALL BE PERFORMED IN ACCORDANCE WITH ITEM 607 FENCE, TYPE CL.

ITEM 203, PROOF ROLLING
AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUB SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

203 PROOF ROLLING 25 HOURS

ADDITIONAL EMBANKMENT AND/OR UNSUITABLE SOIL
WHERE THE CONTRACTOR DISCOVERS THE EXISTENCE OF UNSUITABLE SOIL THROUGHOUT THE LENGTH OF THE PROJECT, QUANTITIES FOR ITEM 203 EXCAVATION OF UNSUITABLE MATERIAL, ITEM 203 EMBANKMENT, AS PER PLAN, ITEM 203 EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN, ITEM SPECIAL GEOTEXTILE FABRIC AND ITEM SPECIAL GEOGRID HAVE BEEN INCLUDED, AS SUMMARIZED BELOW, FOR REMOVAL OF THE UNSUITABLE SOIL ENCOUNTERED ON THIS PROJECT. THE ABOVE ITEMS, ESTABLISHED FOR THE REMOVAL AND REPLACEMENT OF UNSUITABLE SOIL, SHALL BE USED, AND/OR ORDERED ONLY "AS DIRECTED BY THE ENGINEER".

THE GEOTEXTILE FABRIC SHALL CONFORM TO THE ODOT C.M.S. MATERIAL SPECIFICATION 712.09 FOR TYPE D FABRIC.
THE GEOGRID USED SHALL BE IN ACCORDANCE WITH THE ODOT MATERIAL SPECIFICATIONS FOR ITEM SPECIAL-GEOGRID, TYPE S2.

SUMMARY OF ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
203	EXCAVATION OF UNSUITABLE MATERIAL	10000	CU.YD.
203	EMBANKMENT, AS PER PLAN	10000	CU.YD.
203	EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN	5000	CU.YD.
690	SPECIAL- GEOTEXTILE FABRIC	5000	SQ.YD.
690	SPECIAL-GEOGRID, TYPE S2	5000	SQ.YD.

THESE QUANTITIES ARE CARRIED TO THE GENERAL SUB-SUMMARY.

ITEM 622 - CONCRETE BARRIER TYPE B-50, APP
CONCRETE BARRIER, TYPE B-50 AND D-50, APP SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING MC-9.3... THIS ITEM SHALL ALSO INCLUDE 1-4" MULTICELL CONDUIT, FOR LIGHTING, AND 2-4" MULTICELL CONDUIT SYSTEM FOR TRAFFIC SURVELLANCE.

THE FIBER OPTIC CONDUIT MULTICELL CONDUIT SYSTEM, 4" SHALL CONSIST OF A FACTORY ASSEMBLED SYSTEM OR FOUR (4) INNERDUCTS ASSEMBLED WITHIN A PROTECTIVE OUTERDUCT.

THE OUTERDUCT SHALL BE A NOMINAL 4" PVC, TYPE C TELEPHONE DUCT, MEETING BELLCORE CA0-8546 SPECIFICATIONS, AND FUTHER DEFINED AS FOLLOWS:
4.350" AVERAGE OUTSIDE DIAMETER
.150" MINIMUM WALL THICKNESS

THE INNERDUCTS SHALL BE NOMINAL 1- 1/4 INCH PVC, FUTHER DEFINED AS FOLLOWS:
1.194" MAXIMUM INSIDE DIAMETER
.063" MINIMUM WALL THICKNESS

THE COUPLING SHALL BE DESIGNED IN A MANNER TO PERMIT EASY FIELD ASSEMBLY. THE COUPLING SHALL BE MARKED OR KEYED IN A MANNER TO ENSURE THE INNERDUCTS ARE PROPERLY ALIGNED, ANY COLOR CODES ARE CONTINUED AND THE ADJOINING SECTION IS INSERTED TO THE PROPER DEPTH IN THE BELL. ALL KEYS AND/OR MARKINGS SHALL BE VISIBLE AFTER ASSEMBLY, TO ALLOW THE INSPECTION OF EACH JOINT FOR PROPER ASSEMBLY BEFORE BURIAL. THE SEALING SYSTEM SHALL BE DESIGNED TO ASSURE AIR INTEGRITY OF EACH INDIVIDUAL INNERDUCT AND WATER INTEGRITY OF THE ENTIRE SYSTEM.

THE INNERDUCTS SHALL BE PRE-LUBRICATED AT THE FACTORY WITH A MATERIAL THAT WILL PROVIDE A LOW COEFFICIENT OF FRICTION BETWEEN THE CABLE AND THE INSIDE WALL WITHOUT THE ADDITION OF PULLING SOAP OR OTHER LUBRICANT.

WHERE A MULTICELL DUCT IS TO REMAIN EMPTY, A 1/4 NYLON PULL ROPE SHALL BE INSTALLED IN A UNIQUE COLORED INNERDUCT CHOSEN BY THE ENGINEER. THE ROPE WILL REMAIN TO BE USED FOR A FUTURE CABLE INSTALLATION.

PAYMENT FOR BARRIER SHALL BE MADE FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF BARRIER INSTALLED IN PLACE AND INCLUDE PAYMENT FOR FURNISHING AND INSTALLATION OF ALL CONDUIT NOTED ABOVE. THIS SHALL INCLUDE ALL FITTING AND APPURTENANCES, JOINTS, BENDS AND GROUNDS.

ITEM SPECIAL, IMPACT ATTENUATOR, TYPE I (BIDIRECTIONAL)
THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING TYPES OF IMPACT ATTENUATOR SYSTEMS:

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

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

THE NOSE OF THE ATTENUATOR SHALL ME 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 CONTRACT PRICE FOR ITEM SPECIAL, EACH, IMPACT ATTENUATOR TYPE I (BIDIRECTIONAL). THIS ITEM SHALL INCLUDE 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.

Item 606, Anchor Assembly, Type E-98:

This item shall consist of furnishing and installing either of the following guardrail end terminals.

1) The ET-2000 (1997) manufactured by SYRO, Inc., 1170 N. State Street, Girard, Ohio 44420 (Telephone: 330.545.4373).

The length of the ET-2000 (1997) system is considered to be 15.24 m, inclusive of two 7.62 m long rail elements. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. #	Drawing Name	Dwg./Rev. Date	ODOT Approval Date
SS265M	ET-2000 (1997) Plan, Elevation & Sections	6/20/97	3/6/98

2) The SKT-350 manufactured by Road Systems, Inc., 7631 New Castle Drive, Frankfort, IL 60423 (Telephone: 815.464.5917).

The length of the SKT-350 system is considered to be 15.24 m, inclusive of four 3.81 m long rail elements. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. #	Drawing Name	Dwg./Rev. Date	ODOT Approval Date
SKT-4M	Sequential Kinking Terminal (SKT-350) Assembly with 4 Foundation Tubes	12/11/97	3/6/98

The face of the Type E-98 impact head shall be covered with a sheet of Type G Reflective Sheeting, per CMS 730.19, approximately 450 mm x 450 mm.

Payment for the above work shall be made at the unit price bid for Item 606, Anchor Assembly, Type E-98, Each, and shall include all labor, tools, equipment and materials necessary to construct a complete and functional anchor assembly system, including all related transitions, reflective sheeting, hardware and grading, not separately specified, as required by the manufacturer.

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

GUARDRAIL REPLACEMENT
NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION.

THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

RESTORATION OF DISTURBED AREAS ASSOCIATED WITH GUARDRAIL AND SIGN WORK BEYOND NORMAL SEEDING LIMITS:
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 PRICE BID FOR THE VARIOUS 606 AND 630 ITEMS, UNLESS INCLUDED WITHIN SHOULDER SEEDING LIMITS AS PER SECTION ABOVE.

ITEM 607 - FENCE, TYPE CL, AS PER PLAN
WORK UNDER THIS ITEM SHALL INCLUDE FURNISHING AND ERECTING FENCE 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, TYPE CL, IN THE SAME LOCATION AS THE EXISTING TYPE 47 FENCE EXCEPT IN CURVES WHERE SECTION 607.06(A) OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS MAY APPLY. THE CL FENCE SHALL BE PLACED ONE (1) FOOT INSIDE THE LA&R/W LINE.

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 ONE FOOT BEHIND AND A SUFFICIENT DISTANCE IN FRONT TO ADEQUATELY WORK IN ERECTING THE NEW FENCE.

TREE REMOVAL SHALL BE IN ACCORDANCE WITH ITEM 201. 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 HERBICIDES 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 STATE OF 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 THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607-FENCE, TYPE CL, AS PER PLAN. MEASUREMENTS FOR FINAL QUANTITIES SHALL BE IN ACCORDANCE WITH ITEM 607.10.

IN ADDITION TO THE THE ABOVE QUANTITY, THE CONTRACTOR SHALL REPLACE ANY EXISTING CL FENCE NOT IN GOOD CONDITION, AS DIRECTED BY THE ENGINEER. WORK UNDER THIS ITEM SHALL INCLUDE FURNSHING AND ERECTING FENCE AND POST AND ANCHOR ASSEMBLIES IN ACCORDANCE WITH ITEM 607 AND THE APPROPRIATE STANDARD CONSTRUCTION DRAWINGS, EXCEPT AS OTHERWISE NOTED. THIS ITEM SHALL ALSO INCLUDE THE REMOVAL OF THE EXISTING RIGHT-OF-WAY FENCE INCLUDING ASSEMBLIES. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 607 FENCE, TYPE CL, AS PER PLAN 200 FT.

ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN
ON THIS PROJECT, THE TYPE D-32 CONCRETE BARRIER SHALL BE LIMITED TO ONLY THE CAST-IN-PLACE OPTION. THE BARRIER SHALL BE PLACED AS PER THE DETAIL SHEET, AND SHALL INCLUDE THE CONCRETE INSERT ANCHORS FOR CONNECTING THE BRIDGE TERMINAL ASSEMBLY. THE PLACEMENT OF THE CONCRETE BARRIER SHALL COMMENCE IMMEDIATELY AFTER REMOVAL OF THE EXISTING GUARDRAIL PIER 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 SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR THE ITEM 622-CONCRETE BARRIER, TYPE D, AS PER PLAN.

DURING THE PERIOD BETWEEN THE GUARDRAIL REMOVAL AND THE COMPLETION OF THE BARRIER, THE WORK AREA SHALL BE PROTECTED BY DRUMS SPACED AT 25 FOOT INTERVALS. THE COST OF WHICH IS INCLUDED IN ITEM 614.

ITEM 202-RAISED PAVEMENT MARKERS REMOVED FOR STORAGE
THE ESTIMATED QUANTITY FOR ITEM 202 RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, AS PER ODOT CMS SEC. 202.071 HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 202-RAISED PAVEMENT MARKERS REMOVED FOR STORAGE 4500 EA.

WATERING AND MOWING PERMANENT SEEDING AREAS
THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND CARE FOR THE PERMANENT SEEDING AREAS, AS PER 659.09

659	WATER	100	M. GAL.

EROSION CONTROL
ITEMS 601 AND 667 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS AND TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE 667. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENTS OF 108.04.

ITEM 207, TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS
THE CONTRACTOR SHALL INSTALL AND MAINTAIN THOSE TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS REQUIRED BY THE STANDARD DRAWINGS. THESE ITEMS SHALL BE INSTALLED UPON COMMENCEMENT OF ANY CLEARING AND/OR EARTHWORK OPERATIONS.

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	TEMPORARY SEEDING AND MULCHING	7000	SQ. YD.
207	STRAW OR HAY BALES	500	EACH
207	FILTER FABRIC FENCE	3500	LIN. FT.
659	MOWING	100	M. SQ. FT.
659	COMMERCIAL FERTILIZER	2	TON
659	REPAIR SEEDING AND MULCHING	2000	SQ. YD.
659	WATER	20	M. GAL.

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

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

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

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

ITEM 605 SHALLOW PIPE UNDERDRAINS
WHERE THE PLANS CALL FOR THE CONNECTION OF NEW PIPE UNDERDRAINS OR OUTLETS THROUGH EXISTING PIPE UNDERDRAINS OR OUTLETS, THE CONTRACTOR SHALL FLUSH THE EXISTING UNDERDRAIN RUN OR OUTLET BEFORE MAKING THE CONNECTION. THE COST OF THE FLUSHING OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 605, SHALLOW PIPE UNDERDRAIN.

UNTREATED SEPTIC CONNECTIONS
THIS PLAN MAKES NO PROVISION FOR CONNECTING, NOR SHALL THE ENGINEER OR CONTRACTOR CONNECT, ANY UNTREATED SEPTIC DRAINAGE INTO THE HIGHWAY DRAINAGE SYSTEM. ANY PIPE CARRYING UNTREATED SEPTIC FLOW SHALL BE PLUGGED WITH CLASS C CONCRETE AT THE RIGHT-OF-WAY LINE. PAYMENT FOR PLUGGING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203 EXCAVATION.

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

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

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

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

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED
THE CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT-OF-WAY FOR SALVAGE BY STATE FORCES.

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

ALIGNMENT AND PROFILE
THE WORK PROPOSED FOR SR-315 AT THIS PROJECT IS FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE ALIGNMENT OF THE 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 ALL VERTICAL CURVES MEET OR EXCEED THE DESIGN SPEED (60 MPH).

LONGITUDINAL JOINTS, 446 AND 301 COURSES
A HOT LONGITUDINAL JOINT SHALL BE BETWEEN THE MAINLINE PAVEMENT LANE AND THE ADJOINING SHOULDER AND ALL RAMPS AND THE ADJOINING SHOULDERS, 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.

ITEM 305 CONCRETE BASE, AS PER PLAN
THE SECOND SENTENCE IN 305.01 (a) SHALL READ: "LOAD TRANSFER DEVICES ARE REQUIRED AT ALL TRANSVERSE CONTRACTION, CONSTRCTION, AND EXPANSION JOINTS." WHERE PROPOSED 305 BASE PAVEMENT IS TIED LONGITUDINALLY TO EXISTING PAVEMENT, TRANSVERSE JOINT SPACING AS REQUIRED IN BP-2.2 SHALL BE WAIVED. TRANSVERSE JOINTS IN THE ITEM 305 BASE PAVEMENT SHALL BE LOCATED AT ALL EXISTING TRANSVERSE JOINTS IN THE ADJACENT PAVEMENT JOINTS SHALL BE CONSTRUCTED TO FORM A CONTINUOUS LINE IN THE SAME ALIGNMENT AS THE TRANSVERSE JOINT IN THE ADJACENT EXISTING PAVEMENT. WHERE PROPOSED 305 BASE PAVEMENT IS NOT TIED LONGITUDINALLY TO EXISTING PAVEMENT, JOINT SPACING IN THE PROPOSED 305 BASE SHALL BE IN ACCORDANCE WITH THE APPLICABLE STANDARD DRAWING.

ITEM 611 REINFORCED CONCRETE APPROACH SLAB(T=15"), AS PER PLAN:
THE REINFORCING STEEL FOR THE APPROACH SLABS OF THIS STRUCTURE SHALL BE EPOXY COATED IN CONFORMANCE WITH 509. TWO SEPARATE THICKNESSES OF CLEAR OR OPAQUE POLYETHYLENE FILM, 705.06, SHALL BE PLACED ON THE PREPARED SUBBASE AND WHERE THE APPROACH SLAB IS TO BE CONSTRUCTED. THE POLYETHYLENE FILMS SHALL COMPLETELY COVER THE FULL LENGTH OF AND WIDTH OF THE SUBBASE BETWEEN THE SIDEWALL FORMS FOR THE APPROACH SLAB. MATERIALS, LABOR AND INSTALLATION SHALL BE INCLUDED FOR PAYMENT IN THIS ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN.

ITEM 407 TACK COAT
THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEMS 254 - PAVEMENT PLANING, BITUMINOUS
THIS WORK SHALL CONSIST OF PLANING THE EXISTING PAVEMENT AND DISPOSING OF THE CUTTINGS IN ACCORDANCE WITH THE SPECIFICATIONS. THE LANES SHALL BE PLANED IN ONE OR MORE PASSES TO REMOVE 2½" OF THE EXISTING ASPHALT COURSES. EXCEPT 1½" WILL BE PLANED ON RAMP SHOULDER TRANSITIONS AT END OF WORK AS NOTED ON THE PAVEMENT DETAILS AND CALCULATIONS. WHEN THE PLANS CALL FOR PLANING WITHOUT RESURFACING, THE SURFACE SHALL BE PLANED TO A SMOOTHNESS OF ⅛" IN 10', AND THE SURFACES AT THE EDGES OF ADJACENT PASSES SHALL BE MATCHED WITHIN ⅛".

ITEM 446 - ASPHALT CONCRETE
ON THIS PROJECT, ITEM 446, TABLE B, PROPERTIES OF MIXTURES FOR HEAVY TRAFFIC VOLUMES SHALL APPLY.

DUST CONTROL
THE FOLLOWING ESTIMATE QUANTITIES HAVE BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.

616	WATER	20 M. GAL.
616	CALCIUM CHLORIDE	2 TONS

SHOULDER REBUILDING
IN ORDER TO FACILITATE THE THE REMOVAL OF THE EXISTING RIGHT SHOULDER IN PHASE 1, THE CONTRACTOR IS REQUIRED TO USE A GRINDER. THE GRINDER SHALL DIRECT LOAD ALL EXCAVATED MATERIAL. THE CONTRACTOR SHALL ESTABLISH A STRAIGHT, NEAT LINE AT THIS EDGE OF THE EXISTING CONCRETE BASE.

GENERAL NOTES

GEOGRID REINFORCEMENT OF NO. 57 AGGREGATE

1.0 DESCRIPTION

THIS WORK SHALL INCLUDE THE FURNISHING AND INSTALLING OF GEOGRID REINFORCEMENT TO THE LINES, GRADES,, AND ORIENTATION SHOWN IN THE PLANS, OR AS DIRECTED BY THE ENGINEER. THE GEOGRIDS SHALL BE OF THE TYPE SHOWN ON THE PLANS AND AS DETAILED HEREIN. GRANULAR EMBANKMENT AS DESCRIBED AND REQUIRED HEREIN SHALL BE PAID FOR UNDER ITEM 203.

2.0 MATERIALS

2.1 PHYSICAL PROPERTIES

THE GEOGRID SHALL BE A REGULAR NETWORK OF INTEGRALLY CONNECTED POLYMER ELEMENTS WITH APERTURE GEOMETRY SUFFICIENT TO PERMIT SIGNIFICANT MECHANICAL INTERLOCK WITH THE SURROUNDING SOIL OR ROCK. THE GEOGRID SHALL BE DIMENSIONALLY STABLE AND ABLE TO RETAIN ITS GEOMETRY UNDER CONSTRUCTION STRESSES. THE MATERIAL SHALL HAVE HIGH RESISTANCE TO ULTRAVIOLET DEGRADATION AND TO ALL FORMS OF CHEMICAL AND BIOLOGICAL DEGRADATION ENCOUNTERED IN THE SOIL BEING REINFORCED.

GEOGRIDS SHALL MEET THE FOLLOWING MINIMUM TENSILE PROPERTIES. TEST METHODS WITH THE GRI PREFIX REFER TO STANDARD PRACTICE OF THE GEOSYNTHETIC RESEARCH INSTITUTE. NO PRELOADING IS PERMITTED IN DETERMINATION OF TENSILE STRENGTH.

		TYPE					
PROPERTY	METHOD	P1	P2	P3	P4	S1	S2
TENSILE STRENGTH, 5% STRAIN (LB/FT)	ASTM D4595	1850	3160	3540	4700	800	1200
TENSILE STRENGTH, ULTIMATE (LB/FT)	ASTM D4595	.....	.....	.....	.....	1400	2100
TENSILE STRENGTH, LONG-TERM DESIGN (LB/FT)	AS DEFINED BELOW (T_A)	1100	1800	2300	3100	.....	.....

2.1.1 LONG-TERM DESIGN TENSILE STRENGTH

THE LONG-TERM DESIGN STRENGTH (T_A) SHALL BE DEFINED BY THE FOLLOWING.

$$T_A = \frac{T_{ULT}}{FS_{CR} \times FS_{ID} \times FS_{DU} \times FS_{JNT}}$$

2.1.2 ULTIMATE TENSILE STRENGTH, T_{ULT}

THE ULTIMATE TENSILE STRENGTH SHALL BE THE MINIMUM AVERAGE ROLL VALUE AS TESTED PER ASTM D4595.

2.1.3 PARTIAL FACTOR OF SAFETY FOR CREEP DEFORMATION, FS_{CR}

THIS VALUE IS THE RATIO OF T_{ULT} TO THE CREEP LIMITED STRENGTH DETERMINED IN ACCORDANCE WITH ASTM D5262. THE TEST RESULTS SHALL BE EXTRAPOLATED FOR A 75-YEAR DESIGN LIFE PER GRI:GG3a OR GRI:GG3b. CREEP PERFORMANCE TESTING AT A DESIGNATED TEMPERATURE IS LIMITED TO ONE ORDER OF MAGNITUDE IN EXTRAPOLATION. ELEVATED TEMPERATURE TESTING FOR A MINIMUM 10,000 HOURS AND EXTRAPOLATION TO A MINIMUM 100,000 HOURS IS REQUIRED. CREEP TESTING SHALL BE PERFORMED ON REPRESENTATIVE SAMPLES OF THE PRODUCT AND NOT ON A SINGLE COMPONENT OF THE GEOGRID. DEFAULT VALUES FOR FS_{CR} SHALL NOT BE ACCEPTED. THE MINIMUM VALUE PERMITTED SHALL BE 2.00.

2.1.4 PARTIAL FACTOR OF SAFETY FOR INSTALLATION DAMAGE, FS_{ID}

THIS VALUE SHALL BE DETERMINED FROM CONSTRUCTION DAMAGE TESTS CONSISTENT WITH GRI:GG4a OR GRI:GG4b. THE BACKFILL AND COMPACTION METHODS USED FOR TESTING SHALL BE EQUAL TO OR MORE SEVERE THAN THOSE FOR THE PROPOSED CONSTRUCTION. IF TESTING ACCORDING TO THIS CRITERIA HAS NOT BEEN CONDUCTED, A DEFAULT VALUE OF 2.0 SHALL BE USED. THE MINIMUM VALUE PERMITTED SHALL BE 1.10.

2.1.5 PARTIAL FACTOR OF SAFETY FOR DURABILITY, FS_{DU}

THIS VALUE IS THE PARTIAL FACTOR OF SAFETY CONSIDERING CHEMICAL AND BIOLOGICAL DEGRADATION. IT SHALL BE DEFINED BY THE EQUATION:

$$FS_{DU} = \frac{1}{1 + R}$$

WHERE R IS THE STRENGTH REDUCTION RATIO OF THE 50 DEGREE CELSIUS INCUBATION TEST AT 120 DAYS AS DETERMINED BY TEST METHOD EPA 9090. THE INCUBATION FLUID SHALL HAVE A pH OF 12 OR HIGHER. STRENGTH SHALL BE DETERMINED BY GRI:GG1 ON THE LONGITUDINAL RIB. IF TESTING ACCORDING TO THIS CRITERIA HAS NOT BEEN CONDUCTED, A DEFAULT VALUE OF 2.60 SHALL BE USED. THE MINIMUM VALUE PERMITTED FOR SPECIFIC POLYMER TYPES IS AS FOLLOWS:

HDPE	1.10
PET	2.00
PP	1.25

2.1.6 PARTIAL FACTOR OF SAFETY FOR JOINT STRENGTH, FS_{JNT}

THIS VALUE IS THE PARTIAL FACTOR OF SAFETY WHICH SHALL BE CONSIDERED WHEN SEPARATE LENGTHS OF GEOGRIDS ARE CONNECTED TOGETHER OR OVERLAPPED IN THE DIRECTOR OF THEE PRIMARY REINFORCEMENT. THE VALUE OF FS_{JNT} SHALL BE TAKEN AS THE RATIO OF THE UNJOINTED SPECIMEN STRENGTH TO THE JOINTED SPECIMEN STRENGTH. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM D4595 FOR MECHANICALLY CONNECTED JOINTS AND GRI:GG5 OR GRI:GT6 FOR OVERLAP JOINTS. SUSTAINED TENSION TEST OF 1000 HOURS MINIMUM DURATION SHALL ALSO BE CONDUCTED ON MECHANICALLY CONNECTED JOINTS IN ACCORDANCE WITH GRI:GG4 OR GRI:G57. THE LOADING SHALL BE NOT LESS THAN THE LONG-TERM DESIGN TENSILE STRENGTH. DEFAULT VALUES FOR FS_{JNT} SHALL NOT BE ACCEPTED. THE MINIMUM VALUE PERMITTED SHALL BE 1.00 IF THERE IS NO REDUCTION IN STRENGTH OF THE JOINTED SPECIMEN OR IF NO JOINTS ARE USED.

2.1.7 SOIL-REINFORCEMENT INTERACTION

THE GEOGRID SHALL DEVELOP A MINIMUM LONG-TERM INTERACTION COEFFICIENT OF 0.70 IN A FINE-GRAINED SOIL HAVING NOT LESS THAN 50 PERCENT PASSING THE NO. 200 SIEVE. THE VALUE SHALL BE DETERMINED IN ACCORDANCE WITH GRI:GG5 OR GRI:GT6.

2.2 CERTIFICATION AND TESTING

THE CONTRACTOR SHALL SUBMIT CERTIFIED TEST DATA, MEASURED IN FULL ACCORDANCE WITH THE TEST METHODS AND STANDARDS SPECIFIED, TO COVER EACH SHIPMENT OF MATERIAL. UPON REQUEST OF THE ENGINEER, THE CONTRACTOR SHALL PROVIDE DOCUMENTED TEST RESULTS FROM AN INDEPENDENT TESTING LABORATORY FOR ANY OF THE CRITERIA SPECIFIED. NO EXTRA PAYMENT WILL BE MADE FOR TESTING.

2.3 DEFECTS

DURING SHIPMENT AND STORAGE, THE GEOGRID SHALL BE PROTECTED FROM TEMPERATURES GREATER THAN 140 DEGREES F., MUD, DIRT, DUST, AND DEBRIS. THE MANUFACTURER'S RECOMMENDATIONS REGARDING PROTECTION FROM DIRECT SUNLIGHT SHALL BE FOLLOWED. THE GEOGRID SHALL BE REJECTED IF IT HAS DEFECTS, TEARS, PUNCTURES, FLAWS, DETERIORATION, OR DAMAGE INCURRED DURING MANUFACTURING, TRANSPORTATION, OR STORAGE. IF APPROVED BY THE ENGINEER, TORN OR PUNCTURED SECTIONS MAY BE RE PAIRED BY PLACING A PATCH OVER THE DAMAGED AREA.

3.0 CONSTRUCTION METHOD

3.1 INSTALLATION

THE GEOGRID SHALL BE PLACED HORIZONTALLY AT THE ELEVATIONS AND ORIENTATIONS SHOWN ON THE PLANS. THE VERTICAL POSITION OF EACH LAYER SHALL BE MAINTAINED WITHIN 2 INCHES. CORRECT ORIENTATION (ROLL DIRECTION) OF THE GEOGRID SHALL BE VERIFIED BY THE CONTRACTOR. TYPE P1, P2, P3, AND P4 GEOGRID SHALL HAVE ITS ROLL DIRECTION PERPENDICULAR TO THE SLOPE FACE AND NO OVERLAP IS REQUIRED BETWEEN ADJACENT ROLLS. TYPE S1 AND S2 GEOGRID SHALL HAVE ITS ROLL DIRECTION PARALLEL TO THE SLOPE FACE WITH OVERLAPS NOT LESS THAN 6 INCHES IN THE ROLL DIRECTION AND NO OVERLAPS ACROSS THE ROLL.

THE GEOGRID SHALL BE SECURED IN-PLACE TO PREVENT MOVEMENT DURING FILL OPERATIONS. THE GEOGRID SHALL BE SECURED WITH STAPLES, PINS, SANDBAGS, FILL, OR AS DIRECTED BY THE ENGINEER.

3.2 CONNECTIONS AND OVERLAPS

THE GEOGRID SHALL BE PLACED IN CONTINUOUS STRIPS IN THE DIRECTION SPECIFIED. IF THE CONTRACTOR IS UNABLE TO COMPLETE THE REQUIRED CONTINUOUS LENGTH, TYPE P1, P2, P3, AND P4 WILL BE PERMITTED TO BE JOINTED, WITH THE APPROVAL OF THE ENGINEER. NOT MORE THAN ONE JOINT PER LENGTH OF GEOGRID SHALL BE PERMITTED. JOINTS SHALL BE MADE BY EITHER A MECHANICAL CONNECTION OR AN OVERLAP. MECHANICAL CONNECTIONS SHALL USE A POLYMER BAR OR SEWING WITH KELVAR THREAD. BAR CONNECTIONS SHALL BE PLACED, AS A MINIMUM, ON THE SECOND ROW OF APERTURES FROM THE END OF THE ROLL AND SHALL BE HELD TAUT DURING FILL PLACEMENT. OVERLAP CONNECTIONS SHALL BE NOT LESS THAN 5 FEET IN LENGTH, WITH NOT LESS THAN 4 INCHES SEPARATING THE TWO LAYERS.

JOINTS SHALL BE SET BACK NOT LESS THAN 15 FEET BEHIND THE FINISHED SLOPE SURFACE. JOINTS SHALL BE STAGGERED NOT LESS THAN 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T99 OR OTHER APPROVED METHOD. MATERIAL SHALL BE GRANULAR AS DEFINED IN 203.02, EXCEPT THAT THE GRADATION SHALL CONFORM TO NO. 57 AGGREGATE. SLAGS SHALL BE EXCLUDED.

EMBANKMENT MATERIALS SHALL HAVE A pH IN THE RANGE OF 3 TO 9. TESTING OF THE EMBANKMENT MATERIAL WITH RESPECT TO pH MAY NOT BE REQUIRED. AT THE ENGINEER'S DISCRETION, WHEN MATERIALS POTENTIALLY CORROSIVE TO THE GEOGRID ARE SUSPECTED, THE ENGINEER MAY ELECT TO PERFORM HIS OWN pH TESTING IN ACCORDANCE WITH ASTM G51. EMBANKMENT MATERIALS HAVING A pH OUTSIDE THE ACCEPTABLE RANGES SHALL BE REJECTED.

THE MATERIAL SHALL BE PLACED, SPREAD, AND COMPACTED IN A MANNER THAT PREVENTS THE DEVELOPMENT OF WRINKLES OR MOVEMENTS OF THE GEOGRID. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID. A MINIMUM FILL THICKNESS OF 6 INCHES IN REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED VEHICLES SHALL BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOGRID AT SLOW SPEEDS,, LESS THAN 10 m.p.h. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED. DAMAGED GEOGRIDS SHALL BE REPLACED OR REPAIRED AT NO COST TO THE DEPARTMENT.

4.0 METHOD OF MEASUREMENT

MEASUREMENT OF GEOGRID SHALL BE BY SQUARE YARD AND SHALL BE COMPUTED ON THE TOTAL AREA OF GEOGRID SHOWN ON THE PLANS, EXCLUSIVE OF THE AREA OF ANY OVERLAPS. EMBANKMENT, AS PER PLAN, SHALL BE MEASURED BY THE CUBIC YARD VOLUME SHOWN ON THE PLANS.

5.0 BASIS OF PAYMENT

THE ACCEPTED QUANTITIES OF GEOGRID, BY TYPE, SHALL BE PAID FOR PER SQUARE YARD IN-PLACE. EMBANKMENT, AS PER PLAN SHALL BE PAID FOR PER CUBIC YARD IN-PLACE. PAYMENT SHALL BE MADE UNDER:

ITEM	DESCRIPTION	UNIT
690	SPECIAL-GEOGRID, TYPE P1	S.Y.
690	SPECIAL-GEOGRID, TYPE P2	S.Y.
690	SPECIAL-GEOGRID, TYPE P3	S.Y.
690	SPECIAL-GEOGRID, TYPE P4	S.Y.
690	SPECIAL-GEOGRID, TYPE S1	S.Y.
690	SPECIAL-GEOGRID, TYPE S2	S.Y.
203	EMBANKMENT, AS PER PLAN	S.Y.

PHASE	STATION	TO STATION	SIDE	ITEM 614 EDGE LINE WHITE 4"	ITEM 614 EDGE LINE YELLOW 4"	ITEM 614 LANE LINE WHITE 4"	ITEM 614 CHANNEL LINE WHITE 8"	ITEM 614 DOTTED LINE WHITE 4"	ITEM 614 TEMP. IMPACT ATTEN.	ITEM 622 PORTABLE CONCRETE BARRIER	ITEM 622 BRIDGE MOUNTED PORTABLE CONCRETE BARRIER
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.
PHASE 1	161+00	170+00	LT.&RT.	200	220	3810		0		200	
	170+00	200+00	LT.&RT.	5427	6000	6000		673	2	6709	
	200+00	230+00	LT.&RT.	6000	6000	6000		0		6868	
	230+00	260+00	LT.&RT.	5720	6000	6000		300	1	6600	
	260+00	290+00	LT.&RT.	6000	6000	6000		0		6000	
	290+00	320+00	LT.&RT.	5500	6000	6000		570	1	7960	
	320+00	350+00	LT.&RT.	5263	6000	6000		907	2	7160	
	350+00	380+00	LT.&RT.	5720	6000	6000		300	1	6340	
	380+00	410+00	LT.&RT.	6000	6000	6000		0		6000	
	410+00	56+00	LT.&RT.	5400	5900	5900		600	1	6010	750
	56+00	85+00	LT.&RT.	5530	5800	5800		300	1	6360	
	85+00	115+00	LT.&RT.	6000	6000	6000		0		6000	
	115+00	145+00	LT.&RT.	7700	6000	3760	720	0	1	7700	
	145+00	175+00	LT.&RT.	5240	6000	0		900	2	6400	600
	175+00	190+00	LT.&RT.	720	720	250		0		780	
	SUBTOTAL- PHASE 1			76,420	78,640	73,520	720	4550	12	87,087	1350
PHASE 2	161+00	170+00	LT.&RT.	290	950	3050		0		875	
	170+00	200+00	LT.&RT.	5697	6000	6000		513		5950	
	200+00	230+00	LT.&RT.	6000	6000	6000		0		6000	
	230+00	260+00	LT.&RT.	5478	6000	6000		192		6000	
	260+00	290+00	LT.&RT.	6000	6000	6000		0		6000	
	290+00	320+00	LT.&RT.	4500	6000	6000		1150		6000	
	320+00	350+00	LT.&RT.	4198	6000	6000		1040		6000	
	350+00	380+00	LT.&RT.	5347	6000	6000		213		6000	
	380+0	410+00	LT.&RT.	6000	6000	6000		0		6000	
	410+00	56+00	LT.&RT.	4700	5900	5900		1010		5150	750
	56+00	85+00	LT.&RT.	5260	5800	5800		850		5800	
	85+00	115+00	LT.&RT.	6000	6000	6000		0		6000	
	115+00	145+00	LT.&RT.	6995	6000	4525		265		6000	
	145+00	175+00	LT.&RT.	4890	6000	450		330		5400	600
	175+00	190+00	LT.&RT.	740	740	250		0		790	
	SUBTOTAL- PHASE 2			72,095	79,390	73,975		5563		77,965	1350
PHASE 3	161+00	170+00	LT.&RT.	200	220	3810		0		200	
	170+00	200+00	LT.&RT.	5427	6000	6000		673	2	6709	
	200+00	230+00	LT.&RT.	6000	6000	6000		0		6868	
	230+00	260+00	LT.&RT.	5720	6000	6000		300	1	6600	
	260+00	290+00	LT.&RT.	6000	6000	6000		0		6000	
	290+00	320+00	LT.&RT.	5500	6000	6000		570	1	7960	
	320+00	350+00	LT.&RT.	5263	6000	6000		907	2	7160	
	350+00	380+00	LT.&RT.	5720	6000	6000		300	1	6340	
	380+00	410+00	LT.&RT.	6000	6000	6000		0		6000	
	410+00	56+00	LT.&RT.	5400	5900	5900		600	1	6010	750
	56+00	85+00	LT.&RT.	5530	5800	5800		900	1	6660	
	85+00	115+00	LT.&RT.	6000	6000	6000		0		6000	
	115+00	145+00	LT.&RT.	7700	6000	3760	720	0	1	7700	
	145+00	175+00	LT.&RT.	5240	6000	0		900	2	6400	600
	175+00	190+00	LT.&RT.	720	720	250		0		780	
	SUBTOTAL- PHASE 3			76,420	78,640	73,520	720	5150	12	87,387	1350
SUBTOTAL				461,605		221,015	1440	15,263	24✱	252,439	4050

✱ TOTAL CARRIED TO GENERAL SUMMARY

PHASE	STATION	TO STATION	SIDE	ITEM 614 EDGE LINE WHITE 4"	ITEM 614 EDGE LINE YELLOW 4"	ITEM 614 CHANNEL LINE 8" WHITE	ITEM 614 TRANSVERSE LINE 12" WHITE	ITEM 614 TRANSVERSE LINE 12" YELLOW	ITEM 614 STOP LINE 20" WHITE	ITEM 614 LANE ARROW	ITEM 614 WORD	ITEM 614 LANE LINE 4" WHITE	ITEM 614 DOUBLE LINE 4" YELLOW	ITEM 614 DOTTED LINE WHITE 4"	ITEM 622 PORTABLE CONCRETE BARRIER	ITEM 622 BRIDGE MOUNTED PORTABLE CONCRETE BARRIER
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
PHASE 4	RAMP CA															
	174+99.52	190+00.00	LT.	1500	740	1335	210		60	4	1					
	RAMP DD															
	193+00.00	237+33.00	RT.	4265	3885	1135	430									
	RAMP DH															
	208+51.06	214+22.66	RT.	500	570	325		35	30	3	1	50				
	RAMP DE															
	217+32.00	225+04.61	RT.	775	605	170			45							
	RAMP DA															
	231+87.71	251+57.00	LT.	1970	1170	930	165		55	6	1					
	RAMP ED															
	292+57.36	309+95.70	RT.	1740	950	1300	240		50	9	2	530				
	RAMP EC															
	310+80.37	320+07.00	RT.	925	820	110										
	RAMP EB															
	307+00.00	325+43.97	LT.	1845	845	200						180				
	RAMP EBB															
	324+14.00	324+93.53	LT.	80	80											
	RAMP EA															
	318+27.67	372+00.00	LT.	1375	870	715	195		20							
	RAMP FD															
	335+77.00	351+37.72	RT.	1555	1130	900	225		25	6	2	60				
	RAMP FA															
	352+55.52	373+00.00	LT.	2045	1245	615	180	335					405			
	RAMP GC															
	48 +75.00	65 +59.14	RT.	1685	880	1275	270		55	6	2	325				
	RAMP GA															
	67 +04.06	82 +51.90	LT.	1550	745	1210	250		55	6	2	240				
	RAMP GB															
	65 +34.20	85 +00.00	RT.	1965	965	115						210				
	ROADWAY D															
	121+76.07	852+64.32	RT.	1755	300	950	385					1035				
	ROADWAY A															
	118+80.26	828+03.82	LT.	1700	200	1500						1700				
	RAMP G															
	843+15.35	151+20.30	LT.	685	240	320	90									
	RAMP E															
	865+75.55	150+00.00	RT.	490	240	60						190				
	RAMP F															
	150+00.00	865+71.56	RT.	580	230	275						155				
	RAMP B															
	163+50.00	175+57.04	RT.	1170	370	240						95				
SUBTOTAL- PHASE 4				30,155	17,080	13,680	2640	370	395	40	11	4770	450			
TOTALS TO THE GENERAL SUMMARY				512,140 97.0 MILES		15,120	3010		395	40	11	227,435 43.0 MILES	450 0.10 MILES	14,063	253,939	4050

MAINTENANCE OF TRAFFIC SUB-SUMMARY

GENERAL IN ADDITION TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND ITEM 614, THE FOLLOWING REQUIREMENTS SHALL APPLY.
BEFORE WORK IS STARTED ON THIS PROJECT THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF OPERATIONS, IN WRITING, TO THE DIRECTOR OF TRANSPORTATION FOR HIS APPROVAL. INCLUDED IN EACH SUBMISSION SHALL BE PROVISIONS FOR SMOOTH HANDLING OF ALL TRAFFIC. NO CHANGE IN TRAFFIC PATTERNS SHALL TAKE PLACE DURING THE PEAK HOURS OF 6:00AM - 9:00AM AND 3:00PM - 7:00PM MONDAY THRU FRIDAY.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES.
DURING THE PROJECT ALL PHASES OF WORK SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE MOTORIST.
EXISTING SPEED LIMIT SIGN LEGENDS WITHIN THE PROJECT LIMITS SHALL BE COVERED AND REGULATORY SIGNS REDUCING THE POSTED SPEED BY 10 MPH SHALL BE ERECTED IN THEIR PLACE. SEE SHEET 23.
THE ENGINEER SHALL RECORD COVERED AND UNCOVERED SIGNS IN THE PROJECT DIARY.
THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, MAINTAIN (IN PROPER POSITION, CLEAN, LEGIBLE, AND GOOD WORKING CONDITION) AND REMOVE ALL LIGHTS, SIGNS, BARRICADES, CONCRETE BARRIERS, CONES, AND ALL OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC, INCLUDING REGULATORY SIGNS AND PAVEMENT MARKINGS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48"X30" "ROAD CLOSED" SIGNS, SIGN SUPPORTS, BARRICADES, GATES, AND LIGHTS, AS DETAILED IN STANDARD CONSTRUCTION DRAWING MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC: THE FOLLOWING RAMPS SHOULD BE CLOSED WHEN THEY ARE WITHIN THE LIMITS OF OPERATION DURING PHASE 2 AND PHASE 3.

- ACKERMAN ROAD N.B. ENTRANCE, RAMP CB
- NORTH BROADWAY S.B. ENTRANCE, RAMP DF (1)
- THOMAS LANE S.B. ENTRANCE, RAMP DB (1)
- NORTH BROADWAY N.B. ENTRANCE, RAMP DC (2)
- BETHEL ROAD S.B. ENTRANCE, RAMP FE
- BETHEL ROAD N.B. ENTRANCE, RAMP FC

(1) TRAILBLAZE "TO SOUTH 315" SOUTH ON OLENTANGY TO ACKERMAN.

(2) TRAILBLAZE "TO NORTH 315" NORTH ON OLENTANGY TO HENDERSON.

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

SEQUENCE OF CONSTRUCTION

PHASE 1

THROUGH TRAFFIC ON SR-315 BEGINNING OF PROJECT TO SR-161 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE EXISTING TWO MEDIAN LANES. ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING ALL OSU HOME FOOTBALL SATURDAYS. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWING MT-95.30.

WORK INSTALL THE RIGHT UNDERDRAIN AND REBUILD THE RIGHT SHOULDER AS PER THE TYPICAL SECTION. THE CONTRACTOR'S CONSTRUCTION TRAIN PERFORMING THIS INSTALLATION SHALL BE LIMITED TO TWO (2) MILES IN LENGTH. THE WORK SHALL BE COMPLETED WITHIN THAT SEGMENT PRIOR TO OPENING UP A NEW AREA. THE LANE CLOSURE SHALL MOVE FORWARD WITH THE CONSTRUCTION TRAIN. NO UNDERDRAIN TRENCH SHALL BE LEFT OPEN AT THE CONCLUSION OF EACH WORK DAY. REMOVE THE RAISED PAVEMENT MARKERS WITHIN THE WORK ZONES. PLACE TEMPORARY PAVEMENT MARKING AS SHOWN ON THE MAINTENANCE OF TRAFFIC TYPICALS.

THROUGH TRAFFIC ON SR-315 STA 60+00 TO STA 140+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE EXISTING MEDIAN LANES. ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING ALL O.S.U. HOME FOOTBALL SATURDAYS. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWING MT-95.30.

WORK INSTALL THE RIGHT UNDERDRAIN AND REBUILD THE RIGHT SHOULDER AS PER THE TYPICAL SECTION. THE CONTRACTOR'S CONSTRUCTION TRAIN PERFORMING THIS INSTALLATION SHALL BE LIMITED TO ONE (1) MILE IN LENGTH. THE WORK SHALL BE COMPLETED WITHIN THAT SEGMENT PRIOR TO OPENING UP A NEW AREA. THE LANE CLOSURE SHALL MOVE FORWARD WITH THE CONSTRUCTION TRAIN. NO UNDERDRAIN TRENCH SHALL BE LEFT OPEN AT THE CONCLUSION OF EACH WORK DAY. REMOVE THE RAISED PAVEMENT MARKERS WITHIN THE WORK ZONES. PLACE TEMPORARY PAVEMENT MARKING AS SHOWN ON THE MAINTENANCE OF TRAFFIC TYPICALS.

PHASE 1 (CONTINUED)

THROUGH TRAFFIC ON SR-315 STA 140+00 TO STA 190+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE EXISTING LANES. ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING ALL O.S.U. HOME FOOTBALL SATURDAYS. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWING MT- 95.30.

WORK INSTALL THE RIGHT UNDERDRAIN AND REBUILD THE RIGHT SHOULDER AS PER THE TYPICAL SECTION. THE CONTRACTORS CONSTRUCTION TRAIN PERFORMING THIS INSTALLATION SHALL BE LIMITED TO (1) ONE MILE IN LENGTH. THE WORK SHALL BE COMPLETED WITHIN THAT SEGMENT PRIOR TO OPENING UP A NEW AREA. THE LANE CLOSURE SHALL MOVE FORWARD WITH THE CONSTRUCTION TRAIN. NO UNDERDRAIN TRENCH SHALL BE LEFT OPEN AT THE CONCLUSION OF EACH WORK DAY. REMOVE THE RAISED PAVEMENT MARKERS WITHIN THE WORK ZONES. PLACE THE TEMPORARY PAVEMENT MARKING AS SHOWN ON THE MAINTENANCE OF TRAFFIC TYPICALS.

PHASE 2

ALL PHASE 2 WORK SHALL BE COMPLETED BY NOV. 19, 1999. THIS DATE SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE. ALL LANES OF TRAFFIC ON SR-315 SHALL BE OPEN BETWEEN NOV. 19, 1999 AND APRIL 1, 2000.

THROUGH TRAFFIC ON SR-315 BEGINNING OF PROJECT TO SR-161 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE EXISTING RIGHT LANE AND EXISTING OUTSIDE SHOULDER. MAINTAIN A 22' WIDE ROADWAY. TRUCKS SHALL BE DIRECTED TO USE LEFT LANE. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWINGS.

WORK COMPLETE WORK REQUIRED IN THE EXISTING TWO MEDIAN LANES INCLUDING MILLING PAVEMENT, CONCRETE JOINT REPAIR, SHOULDER WIDENING, GUARDRAIL, DRAINAGE, GRADING AND SEEDING, BRIDGE DECK MICROSILICA SURFACE (PART-WIDTH), BRIDGE PAINTING AND RESURFACING OF EXISTING INSIDE LANES.
NOTE: THE SURFACE COURSES OF ASPHALT ON THE MEDIAN SHOULDER, LEFT LANES, SHALL NOT BE PLACED UNTIL THE PHASE 3 WORK IS COMPLETE.

THROUGH TRAFFIC ON SR-315 STA 60+00 TO STA 140+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE EXISTING RIGHT LANE AND EXISTING OUTSIDE SHOULDER. MAINTAIN A 22' WIDE ROADWAY. TRUCKS SHALL BE DIRECTED TO USE LEFT LANE. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWING MT-95.30.

WORK COMPLETE WORK REQUIRED IN THE EXISTING MEDIAN INCLUDING THE NEW LANE AND SHOULDER WIDENING, CONCRETE BARRIER, DRAINAGE, BRIDGE DECK WIDENING AND MICRO-SILICA SURFACE (PART-WIDTH), BRIDGE PAINTING, GRADING AND SEEDING, AND RESURFACING OF EXISTING INSIDE LANES.

NOTE: THE SURFACE COURSES OF ASPHALT ON THE MEDIAN SHOULDER, 2 MEDIAN LANES, SHALL NOT BE PLACED UNTIL THE PHASE 3 WORK IS COMPLETE.
THE NEW MICROSILICA SURFACE ON THE SR-161 STRUCTURE OVER SR-315 SHALL BE COMPLETED DURING PHASE 2 WORK.

THROUGH TRAFFIC ON SR-315 STA 140+00 TO STA 190+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION USING THE EXISTING RIGHT LANE. MAINTAIN A 11' WIDE ROADWAY. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO STANDARD DRAWING MT-95.30.

WORK COMPLETE WORK REQUIRED IN THE EXISTING INSIDE LANES INCLUDING CONCRETE JOINT REPAIR, GUARDRAIL, DRAINAGE, CONCRETE SHOULDERS, GRADING AND SEEDING, BRIDGE DECK MICRO-SILICA SURFACING, RESURFACING OF EXISTING LANES, AND BRIDGE PAINTING

PHASE 3

THROUGH TRAFFIC ON SR-315 BEGINNING OF PROJECT TO SR-161 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE LANES RESURFACED IN PHASE 2. MAINTAIN A MINIMUM 22' WIDE ROADWAY. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO ODOT STANDARD DRAWINGS.

WORK COMPLETE ALL ITEMS OF WORK ON THE OUTSIDE LANE OF THE EXISTING PAVEMENT INCLUDING THE CONCRETE JOINT REPAIR, RESURFACING OF THE EXISTING RIGHT LANE, COMPLETION OF BRIDGE DECK MICRO-SILICA SURFACING AND BRIDGE PAINTING.

THROUGH TRAFFIC ON SR-315 STA 60+00 TO STA 140+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION USING THE LANES SURFACED IN PHASE 2. MAINTAIN A MINIMUM 22' WIDE ROADWAY. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO ODOT STANDARD DRAWING MT- 95.30.

WORK COMPLETE ALL ITEMS OF WORK ON THE OUTSIDE LANE OF THE EXISTING PAVEMENT INCLUDING THE CONCRETE JOINT REPAIR, RESURFACING OF THE EXISTING RIGHT LANE, AND COMPLETION OF MAINLINE BRIDGE PAINTING.

PHASE 3 (CONTINUED)

THROUGH TRAFFIC ON SR-315 STA 140+00 TO STA 190+00 SHALL BE MAINTAINED AS FOLLOWS:

TRAFFIC MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION USING THE LANE COMPLETED IN PHASE 2. MAINTAIN A MINIMUM 11' WIDE ROADWAY. TRAFFIC CONTROL DEVICES SHALL BE PLACED ACCORDING TO ODOT STANDARD DRAWING MT-95.30.

WORK COMPLETE ALL ITEMS OF WORK ON THE OUTSIDE LANE OF THE EXISTING PAVEMENT INCLUDING THE JOINT REPAIR, RESURFACING OF THE EXISTING RIGHT LANE, CONCRETE SHOULDERS, COMPLETION OF BRIDGE DECK MICRO-SILICIA SURFACING, AND COMPLETION OF MAINLINE BRIDGE PAINTING

PHASE 4

ACCELERATION / DECELERATION LANES AND RAMP CLOSURES

TRAFFIC RAMPS ARE TO REMAIN OPEN DURING SHOULDER WIDENING AND/OR SHOULDER REPLACEMENT. EXISTING RAMPS ARE TO BE CLOSED TO THRU TRAFFIC DURING JOINT REPLACEMENT AND REPAIR. NO MORE THAN ONE RAMP PER INTERCHANGE IS TO BE CLOSED AT A TIME. WHEN EXIT RAMPS ARE CLOSED, THE ADJACENT NORTH AND SOUTH EXIT RAMPS SHALL BE KEPT OPEN. CLOSURE FOR THE WORK ON ALL OF THESE RAMPS IS TO BE FOR A PERIOD OF TIME NOT TO EXCEED TEN (10) CONSECUTIVE CALENDAR DAYS EACH. ACKERMAN, NORTH BROADWAY, AND OLENTANGY RIVER ROAD RAMPS ARE NOT TO BE CLOSED DURING OHIO STATE UNIVERSITY HOME FOOTBALL SATURDAYS. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED AS PER RAMP CLOSURE DETAIL SHEET.

WORK COMPLETE ALL SHOULDER WIDENING AND/OR SHOULDER REPLACEMENT EXCEPT FOR FINAL SURFACE COURSE. WHEN SHOULDER WORK IS COMPLETE, CLOSE OFF RAMP TO ALL TRAFFIC AND COMPLETE JOINT REPLACEMENT AND REPAIR. APPLY FINAL SURFACE COURSE TO RAMP AND SHOULDER PAVEMENT AND OPEN TO ALL TRAFFIC.
NOTE: RAMPS WHICH ARE CLOSED DURING PHASES 2 & 3 SHALL BE WORKED ON AT THAT TIME. ONLY A 3 DAY CLOSURE PERIOD WILL BE ALLOWED DURING PHASE 4 TO COMPLETE THE ACCELERATION LANE WORK.

MAINTENANCE OF TRAFFIC - INTERCHANGES AND SIDE ROADS

ACKERMAN ROAD MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES: NO CONSTRUCTION REQUIRED ON THIS ROAD. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, EXCEPT THE SB EXIT RAMP MAY BE CLOSED FOR 10 WORKING DAYS DURING REPAVING OPERATIONS AND NB ENTRANCE RAMP SHALL BE CLOSED DURING PHASE 2 AND 3.

WEST NORTH BROADWAY AND OLENTANGY RIVER ROADS MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES UNLESS OTHERWISE SHOWN IN THE PLAN. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, EXCEPT W.N. BROADWAY SB ENTRANCE RAMP, NORTH BROADWAY NB ENTRANCE RAMP, AND THE THOMAS LN./OLENTANGY RIVER RD. SB ENTRANCE RAMP SHALL BE CLOSED DURING PHASE 2 AND PHASE 3. SEE "FREEWAY STRUCTURES OVER SIDE ROADS" NOTE ON SHEET 22. WHEN RAMPS ARE CLOSED WHICH HAVE HOSPITAL SIGNING, HOSPITAL SIGNS SHALL BE PLACED ON AN APPROVED DETOUR.
THE PAINTING OF STRUCTURE NO. FRA-315-0591 (SR-315 OVER THE NORTHBOUND SR-315 RAMP TO RIVERSIDE HOSPITAL) SHALL OCCUR SIMULTANEOUSLY WITH THE 10 CONSECUTIVE DAY RAMP REPAIR CLOSURE FOR THE SR-315NB OFF RAMP TO WEST NORTH BROADWAY.

HENDERSON ROAD MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES: NO CONSTRUCTION REQUIRED ON THIS ROAD. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, EXCEPT RAMPS MAY BE CLOSED FOR 10 WORKING DAYS DURING REPAVING OPERATIONS. SEE "FREEWAY STRUCTURES OVER SIDE ROADS" NOTE ON SHEET 22.

BETHEL ROAD MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES EXCEPT AS HEREIN NOTED. DURING CONSTRUCTION OF THE NEW WEARING SURFACE ON THE SR-315 OVERPASS STRUCTURES, TRAFFIC TO BE LIMITED TO ONE LANE OF TRAFFIC IN EACH DIRECTION. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, EXCEPT THE NORTHBOUND AND THE SOUTHBOUND ENTRANCE RAMPS SHALL BE CLOSED DURING PHASE 2 AND PHASE 3.

ANTRIM LAKE ACCESS BRIDGES MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES. NO CONSTRUCTION REQUIRED ON ACCESS ROAD.

SR-161 MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES EXCEPT AS HEREIN NOTED. DURING CONSTRUCTION OF THE NEW WEARING SURFACE ON THE SR-315 OVERPASS STRUCTURES, TRAFFIC TO BE LIMITED TO ONE LANE OF TRAFFIC IN EACH DIRECTION. TEMPORARY SIGNED RELOCATION MAY BE REQUIRED. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, EXCEPT WHEN THE RAMPS MAY BE CLOSED FOR 10 CONSECUTIVE CALENDAR DAYS DURING REPAVING OPERATIONS.

WILSON BRIDGE ROAD MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES: NO CONSTRUCTION REQUIRED ON ACCESS ROAD. STRUCTURAL PAINTING AND BEAM STRAIGHTING ONLY REQUIRED WORK ON THIS STRUCTURE.

I- 270 MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION AT ALL TIMES: NO CONSTRUCTION REQUIRED ON I-270. INTERCHANGE ACCESS FROM AND TO SR-315 TO BE MAINTAINED AT ALL TIMES, TWO-LANE RAMPS MAY BE REDUCED TO ONE LANE DURING PAVING OPERATIONS. ONE LANE RAMPS SHALL BE KEPT OPEN TO TRAFFIC, INCLUDING DURING PAVING OPERATIONS.

WILSON RUN BRIDGE USE PART-WIDTH CONSTRUCTION TO BUILD NEW APPROACH SLABS AND REPLACE EXISTING CONCRETE PAVEMENT IN PHASE 2 AND PHASE 3.

HARD ROAD ACCESS TO SR-315 SHALL BE MAINTAINED AT ALL TIMES.

ROADWAY MAINTENANCE BECAUSE OF THE COMPLICATED NATURE OF THE IMPROVEMENT, THE PURPOSE OF THIS SPECIAL NOTE IS TO DEFINE THE CONTRACTOR'S MAINTENANCE RESPONSIBILITIES DURING THE LIFE OF THE CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PORTIONS OF THE ROADWAY WITHIN HIS "WORK AREA" FROM THE TIME HE MOVES INTO THIS AREA AND UNTIL THE TIME OF FINAL INSPECTION AND ACCEPTANCE BY THE OHIO DEPARTMENT OF TRANSPORTATION. EXCEPT AS INDICATED BELOW FOR THE WINTER PERIOD, THIS SHALL INCLUDE WEEKENDS AND ANY TIME BEYOND NORMAL WORKING HOURS. THE ROADWAY AREA SHALL BE KEPT IN AN ACCEPTABLE LEVEL OF MAINTENANCE AS DETERMINED BY THE ENGINEER. ANY EXISTING LIGHT POLES OR GUARDRAIL DAMAGED DURING THE LIFE OF THIS CONTRACT BY THE MOTORING PUBLIC SHALL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.
A "WORK AREA" IS DEFINED AS ONLY AREAS THAT THE CONTRACTOR HAS OCCUPIED OR IS OCCUPYING TO PERFORM ANY ITEM OF WORK. ONCE THE CONTRACTOR HAS OCCUPIED A "WORK AREA" TO PERFORM ANY ITEM OF WORK, HE SHALL BE RESPONSIBLE FOR MAINTAINING THE ROADWAY IN A SATISFACTORY CONDITION AND TO A STANDARD ACCEPTABLE TO THE ENGINEER, EXCEPT AS INDICATED BELOW FOR THE WINTER PERIOD. NECESSARY REPAIRS IN A TRAVELED LANE SHALL BE REPAIRED IMMEDIATELY, OTHERWISE IT SHALL BE REPAIRED PRIOR TO OPENING THE LANE TO TRAFFIC. DURING THE WINTER PERIOD FROM DECEMBER 15TH THROUGH APRIL 1, THE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE NEW MATERIAL PLACED AS A PART OF THIS PROJECT, AREAS IN WHICH HE IS WORKING AND ALL DEVICES IN PLACE FOR MAINTENANCE OF TRAFFIC.
SNOW REMOVAL AND OTHER MAINTENANCE WILL BE PERFORMED BY THE NORMAL MAINTAINING AGENCIES.

PAYMENT

PAYMENT FOR ALL OF THE PREVIOUSLY DESCRIBED WORK REQUIRED FOR TRAFFIC CONTROL INCLUDING PROVIDING AND ERECTING, MAINTAINING, AND REMOVING ALL LIGHTS, SIGNS, BARRICADES, DRUMS, REGULATORY SIGNS, AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THIS PLAN.

ITEM 614, MAINTAINING TRAFFIC

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.
SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 OF THE O.D.O.T. CONSTRUCTION AND MATERIALS SPECIFICATION.

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

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

ITEM 404	BITUMINOUS CONC. FOR MAINTAINING TRAFFIC	1000 CU.YD.
ITEM 410	TRAFFIC COMPACTED SURFACE, TYPE A OR B	1000 CU.YD.
ITEM 616	CALCIUM CHLORIDE	20 TONS
ITEM 616	WATER	50 M GALS.

DELAYED TRAFFIC SIGNS THERE SHALL BE AVAILABLE ON THE JOB AT ALL TIMES SIX (6) SPECIAL BLACK AND ORANGE "WATCH FOR STOPPED TRAFFIC" SIGNS (48"x48") FOR USE AT THE DIRECTION OF THE ENGINEER. THERE SHALL BE TWO FOR EACH DIRECTION OF TRAFFIC AND TWO SPARES. THESE SIGNS SHALL BE MOUNTED ON A PORTABLE SUPPORT PER STD. MT-105.11 AND ARE TO BE USED IN THE EVENT THAT TRAFFIC BACKS UP. THEY WILL BE LOCATED APPROXIMATELY 1/4 MILE IN ADVANCE OF THE BACK UP AND WILL BE MOVED BACK AS THE BACK UP INCREASES. UNLESS OTHERWISE INDICATED IN THESE PLANS.

ALL WORK REQUIRED FOR TRAFFIC MAINTENANCE SHALL BE INCLUDED WITH PAYMENT IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

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

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

ITEM 614-LAW ENFORCEMENT OFFICER (WITH PATROL CAR) CONTINUED

FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

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

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

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH: (LIST LAW ENFORCEMENT AGENCY, ADDRESS, AND TELEPHONE NUMBER).

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

LAW ENFORCEMENT OFFICERS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A HOURLY BASIS UNDER ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL, LAW ENFORCEMENT OFFICER WITH PATROL CAR 500 HOURS

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

ITEM 616	WATER	200 M-GAL.
ITEM 616	CALCIUM CHLORIDE	20 TONS

ITEM 622, PORTABLE CONCRETE BARRIER IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS PHASES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. LAW ENFORCEMENT OFFICERS WITH PATROL CARS IN ADDITION TO STANDARD LANE CLOSURES FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.
ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 622, PORTABLE CONCRETE BARRIER.

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

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

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.
ITEM SPECIAL REPLACEMENT SIGNS 200 SQ.FT.

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

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

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

ITEM SPECIAL REPLACEMENT DRUMS 500 EACH

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

FREEWAY STRUCTURES OVER SIDE ROADS

TWO LANE, TWO WAY TRAFFIC ON SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING REPLACEMENT OF BEARINGS AND REHABILITATION OF MAINLINE BRIDGES EXCEPT AS FOLLOWS:

1. DEMOLITION OF THE EXISTING BRIDGE PARAPETS.
2. CONSTRUCTION OF THE PROPOSED PARAPET OVER THE LOCAL ROAD OR STATE ROUTE WHERE THE ENGINEER BELIEVES TEMPORARY CLOSURE OF A TRAFFIC LANE IS WARRANTED.
3. PAINTING OF EXISTING BRIDGE.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE UNDERPASS ROADWAY DURING REMOVAL OF EXISTING OR CONSTRUCTION OF NEW CONCRETE PARAPETS.
THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS, SHALL HAVE APPROVAL FROM THE ODOT OFFICE OF STRUCTURAL ENGINEERING, AND SHALL REMAIN IN PLACE UNTIL WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE OVER THE UNDERPASS SHALL BE MAINTAINED AT ALL TIMES. IN THE EVENT A LANE RESTRICTION IS NECESSARY, THE METHOD OF INSTALLATION AND DESIGN OF THE TEMPORARY LANE CLOSURE SHALL CONFORM TO STANDARD DRAWINGS MT-95.30 OR MT-97.10. COST FOR THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

INTERIM COMPLETION DATES

ALL TIME RESTRICTIONS FOR RAMP CLOSURES DURING PHASE 4 AND FOR PAINTING STRUCTURES OVER SIDE ROADS WILL BE CONSIDERED INTERIM COMPLETION DATES. THE CONTRACTOR WILL INFORM THE ENGINEER OF HIS/HER BEGINNING AND ENDING DATES FOR THESE PARTS OF THE PROJECT.

WITH RESPECT TO SECTION 108.06 OF ODOT'S CONSTRUCTION AND MATERIALS SPECIFICATIONS DATED 1995, THE CONTRACTOR IS HEREBY ADVISED THAT FOR PURPOSES ALL INTERIM COMPLETION DATES, THIS SPECIFICATION SHALL BE STRICTLY INTERPRETED AND RIGIDLY FOLLOWED, WITH THE FOLLOWING MODIFICATIONS:

(A) WRITTEN SUBSTANTIATED REQUESTS FOR EXTENSIONS OF TIME SHALL BE SENT TO THE OFFICE OF THE DIRECTOR NO LATER THAN J15 DAYS FOLLOWING THE TERMINATION OF THE DELAYS (INCLUDING BUT NOT LIMITED TO THE WEATHER). FAILURE TO FOLLOW THIS REQUIREMENT FULLY SHALL RESULT IN THE DENIAL OF THE REQUEST FOR EXTENSION OF TIME. WHEN SUBMITTED PROPERLY, THE DIRECTOR SHALL GIVE DUE CONSIDERATION TO THE REQUEST.

(B) APPROVAL OF A TIME EXTENSION BY THE DIRECTOR SHALL BE GRANTED ONLY WHEN A DELAY HAS RESULTED DUE TO THE OCCURRENCE OF AN EXTRAORDINARY CIRCUMSTANCE BEYOND THE CONTROL OF THE CONTRACTOR.

LIQUIDATED DAMAGES

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS SET FORTH IN THE PLANS, INCLUDING THE DATES SET FORTH, BY THE PLANS OR THE PROPOSAL, FOR INTERIM COMPLETION OR THE DATE SET FOR FINAL COMPLETION, THE CONTRACTOR SHALL BE SUBJECT TO LIQUIDATED DAMAGES AS FOLLOWS:
$ 10,000.00 PER DAY FOR EACH DAY BEYOND FINAL COMPLETION.

IT IS ANTICIPATED BY THE DEPARTMENT THAT IN ORDER FOR THE CONTRACTOR TO MEET THE ABOVE INTERIM COMPLETION DATES, HE MAY USE ALL MEANS POSSIBLE, INCLUDING BUT NOT LIMITED TO MULTIPLE SHIFTS WORKING 24 HOURS A DAY AND 7 DAYS A WEEK, ADDITIONAL CREWS, MULTIPLE MATERIAL SOURCES, MULTIPLE SUBCONTRACTORS (NOT TO EXCEED PROVISIONS OF CMS 108.01), AND ANY OTHER PERMISSIBLE MEANS AVAILABLE.

ANY UNFORSEEN IMPACTS TO TRAFFIC SHALL BE REPORTED TO THE PROJECT ENGINEER AS SOON AS POSSIBLE. THE PROJECT ENGINEER SHALL PROVIDE THIS INFORMATION TO THE ODOT D-6 TRAFFIC MANAGEMENT ENGINEER AT EXT. 323 AND TO THE PTW PROGRAM. ALL CONSTRUCTION ACTIVITIES THAT INTERFERE WITH TRAFFIC SHALL ALSO BE REPORTED TO THE ODOT D-6 TRAFFIC MANAGEMENT ENGINEER AND THE PTWP COORDINATOR AT (614)645-3970, (614)645-6016, OR BY FAX AT (614)645-5844.

MAINTENANCE OF TRAFFIC SHEETS 29-60 ARE FOR REFERENCE ONLY.

ANY OMISSION IN THESE PLAN SHEETS OF ANY MAINTENANCE OF TRAFFIC REQUIREMENTS STATED OR IMPLIED ELSEWHERE IN THE PLAN SHALL NOT RELIEVE THE CONTRACTOR OF THOSE REQUIREMENTS.

FLOODLIGHTING FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE HIGHWAY. THE CONTRACTOR SHALL PROVIDE ADEQUATE LIGHTING TO INSURE THAT PROPER WORKMANSHIP CAN BE OBTAINED. TO INSURE THE ADEQUACY OF THE FLOODLITE PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND SHALL ADJUST THE PLACEMENT AND SHIELDING TO THE SATISIFACTION OF THE ENGINEER BEFORE WORK PROCEEDS. ANY COSTS ASSOCIATED WITH SUCH LIGHTING SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, BARRIER REFLECTORS REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN IN O.D.O.T. STANDARD CONSTRUCTION DRAWING MT-95.41.

ITEM 614	BARRIER REFLECTOR, TYPE B-2	12,720 EACH
ITEM 614	OBJECT MARKER	12,720 EACH

CONFLICTING MARKINGS THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELLING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.34. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC.

PROCEDURE FOR PAINTING STRUCTURAL STEEL FOUR LANE, TWO WAY TRAFFIC ON SR-315 SHALL BE MAINTAINED AT ALL TIMES DURING THE PAINTING OF STRUCTURAL STEEL ON OVERHEAD BRIDGES. STRUCTURES OVER SIDE ROADS SHALL BE PAINTED WITHIN 14 CONSECUTIVE CALENDAR DAYS WHILE MAINTAINING AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION. THE FINISH TIME WILL BE CONSIDERED AN INTERIM COMPLETION DATE. (SEE INTERIM COMPLETION DATES NOTE).

DROPOFFS IN WORKZONES THE CONTRACTOR SHALL MAINTAIN THE DIFFERENCES IN ROADWAY SURFACE ELEVATIONS TO COMPLY WITH THE "DROPOFFS IN WORKZONES" SHEET.

ITEM 622 - PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED, AS PER PLAN
IN ADDITION TO THE REQUIREMENTS OF ITEM 622, THE FOLLOWING SHALL APPLY TO THESE ITEMS:

1. ITEM 614, BARRIER REFLECTORS, TYPE B, SHALL BE INSTALLED ON ALL INSTALLATIONS OF TEMPORARY CONCRETE BARRIER IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT THE SPACES REQUIRED BY 802 SHALL BE REDUCED BY 50%.
2. THE ONLY ACCEPTABLE METHOD OF CONNECTING ADJOINING SECTIONS IS BY THE USE OF CONNECTING PINS.
3. THE APPROACH END OF EACH RUN OF PORTABLE BARRIER SHALL BE PRECEDED BY STANDARD BARREL SPACING.

ITEM 614, WORK ZONE SPEED LIMIT SIGNS
THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS (R-10-48, 10 MPH LOWER THAN THE POSTED SPEED) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED SIGNS WITHIN THE REDUCED SPEED ZONE. THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.
THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN 4 HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN 4 HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER.
THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 250 FEET IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE FOR 55 MPH OR 65 MPH ZONES AND EVERY ½ MILE FOR REDUCED SPEED ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE AN R-8A.

ITEM 614, WORK ZONE SPEED LIMIT SIGNS, CONTINUED
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 SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND RE-ERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.
PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS. ITEM 614, WORK ZONE SPEED LIMIT SIGNS, 75 EA.

ITEM 614, WORK ZONE SPEED LIMIT SIGNS, 75 EA.

ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES
THE FOLLOWING ITEMS ARE TO BE USED WHEN IT HAS BEEN DETERMINED BY THE ENGINEER THAT ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES NOT SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS AS REQUIRED.

DRUMS, BARRICADES OR SIGNS AND PAVEMENT MARKINGS FURNISHED WILL BE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL.

SIGNS FURNISHED UNDER THIS ITEM SHALL INCLUDE SUPPORT AND MOUNTING HARDWARE.

PAVEMENT MARKINGS FURNISHED UNDER THIS ITEM SHALL INCLUDE INSTALLATION AND REMOVAL OF BOTH TEMPORARY AND PERMANENT.

THE FOLLOWING CONTINGENCY QUANTITIES FOR THESE ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 614	MAINTAINING TRAFFIC MISC.:	
	TEMP. DRUMS OR BARRICADES	500 EACH
ITEM 630	SIGNS, FLAT SHEET, TYPE G	500 SQ. FT.
ITEM 614	TEMPORARY PAVEMENT MARKING MISC.:	
	TEMP. PAVEMENT MARKINGS, CLASS I 740.05, TYPE C	1000 LIN. FT.
ITEM 614	TEMPORARY PAVEMENT MARKING MISC.:	
	TEMP. PAVEMENT MARKINGS, TAPE, TYPE C	1000 LIN. FT.
ITEM 614	FLASHING ARROW PANEL, TYPE C	4 EACH
ITEM 622	PORTABLE CONCRETE BARRIER	1000 LIN. FT.
ITEM 614	PORTABLE CHANGABLE MESSAGE BOARDS, TYPE III	2 EACH
ITEM 614	MAINTENANCE OF TRAFFIC, MISC.:	
	HINGED, TYPE III, BARRICADE (12 FT)	20 EACH

PAYMENTS FOR THESE ITEMS WILL BE AT THE CONTRACT UNIT PRICE INCLUDING ALL NECESSARY MATERIAL, PARTS, EQUIPMENT, AND LABOR.

MAINTAINING EXISTING EXIT DIRECTIONAL SIGNS: WHEN IT IS REQUIRED BY CONSTRUCTION SEQUENCES THAT A SIGN TRUSS BE REMOVED FOR MORE THAN ONE DAY, THE INFORMATIONAL SIGNS FOR THE NEXT EXIT SHALL BE GROUND MOUNTED AS PER TC-41.10, IN A LOCATION AS CLOSE TO THE ORIGINAL TRUSS AS PRACTICAL. ANY PULL THRU SIGNS MAY BE STORED. ALL SIGN LIGHTS, LIGHT SUPPORT ARMS, SUPPORT ARM TUBES, LUMINARIES AND SIGN BRACKETS SHALL BE REMOVED PRIOR TO GROUND MOUNTING AND STORED ON THE PROJECT FOR PICKUP BY THE CITY OF COLUMBUS, DIVISION OF TRAFFIC ENGINEERING.

COORDINATION WITH THE PAVING THE WAY ... PROGRAM (PTWP)
THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES ON A WEEKLY BASIS. WHEN DETOURS ARE PLANNED THIS NOTIFICATION SHALL BE AT THE PRECONSTRUCTION MEETING OR 30 DAYS IN ADVANCE ONCE CONSTRUCTION HAS BEGUN. LANE AND RAMP CLOSURE FOR TWO OR MORE WEEKS SHALL BE REPORTED TWO WEEKS IN ADVANCE OF CLOSURE. LANE AND RAMP CLOSURE OF LESS THAN TWO WEEKS DURATION AND MORE THAN TWO DAYS SHALL BE REPORTED AT LEAST 3 WORKING DAYS IN ADVANCE. FOR SHORT-TERM LANE OR RAMP CLOSURES (TWO DAYS OR LESS) NOTIFICATION SHALL BE MADE AT LEAST ONE WORKING DAY IN ADVANCE.

INFORMATION SHALL INCLUDE BUT NOT LIMITED TO ALL CONSTRUCTION ACTIVITIES THAT IMPACT TRAFFIC AT PRESENT AND IN THE NEXT 30 DAYS. THE REPORT SHALL BE OF A FORMAT APPROVED BY THE PROJECT ENGINEER OR ONE SUPPLIED BY THE PTWP. THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL WHO WILL BE RESPONSIBLE TO PREPARE THIS REPORT AT THE PRECONSTRUCTION MEETING.

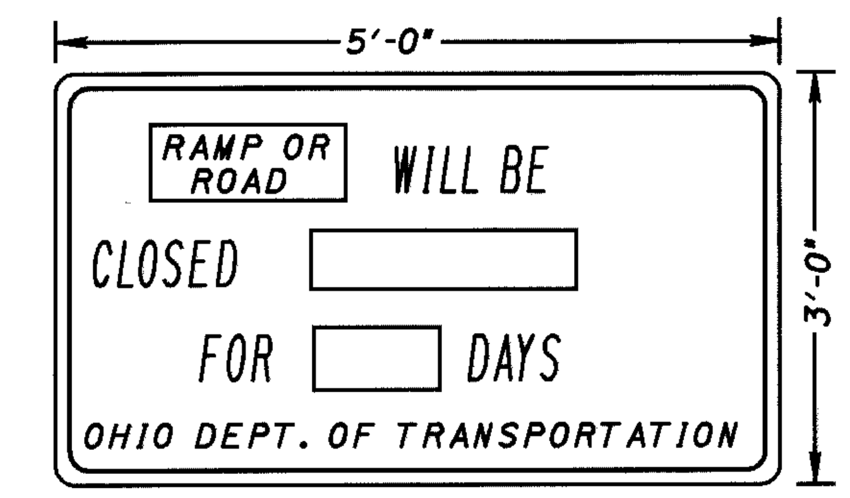
ANY UNFORSEEN IMPACTS TO TRAFFIC SHALL BE REPORTED TO THE PROJECT ENGINEER AS SOON AS POSSIBLE.

THE PROJECT ENGINEER SHALL PROVIDE THIS INFORMATION TO THE PTWP.
ALL CONSTRUCTION ACTIVITIES THAT INTERFERE WITH TRAFFIC SHALL BE REPORTED TO THE PTWP. THIS INFORMATION SHALL BE PROVIDED TO THE PROGRAM INFORMATION ASSISTANT AT 614-645-6016 OR THE PROGRAM COORDINATOR AT 614-645-3970, OR BY FAX AT 614-645-5844.

MAINTAINING MAJOR GUIDE SIGNS
ALL MAJOR GUIDE SIGNS SHALL BE MAINTAINED AT ALL TIMES, USING EITHER THE EXISTING SIGNS OR PROPOSED SIGNS. EXISTING AND PROPOSED SIGNS SHALL NOT BE MIXED IF THE COPY IS NOT THE SAME. LIGHTING SHALL BE MAINTAINED AT ALL TIMES.

IF THE CONTRACTOR ELECTS TO REMOVE A SIGN STRUCTURE, THE SIGNS SHALL BE GROUND MOUNTED AT OR NEAR THE ORIGINAL LOCATION, TO THE SATISFACTION OF THE ENGINEER. THE BOTTOM OF THE SIGN SHALL BE BETWEEN 5 FEET AND 7 FEET ABOVE THE EDGE OF THE PAVEMENT WHICH IS IN SERVICE. LIGHTING DOES NOT HAVE TO BE MAINTAINED AT GROUND MOUNT LOCATIONS, UNLESS DIRECTED BY THE ENGINEER.

NOTICE OF CLOSURE SIGNS
THESE SIGNS SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADANCE OF THE SCHEDULED ROAD OR RAMP CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE LOCATED IN THE FIELD SO AS NOT TO INTERFERE WITH ANY PERMANENT SIGNS. ON THE ROADWAYS THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE; ON RAMPS THE SIGNS MAY BE ERECTED ANYWHERE ALONG IT, AS LONG AS IT IS VISIBLE TO THE MOTORISTS USING THE RAMP; ON ENTRANCE RAMPS THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING THE MOTORISTS.
PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDE FURNISHING, ERECTING, MAINTAINING AND REMOVING THE SIGNS INCLUDING SUPPORTS.



ITEM SPECIAL - MAINTAINING TRAFFIC, MISC.: TRAFFIC CONTROL PLANNING AND IMPLEMENTATION

THIS ITEM SHALL INCLUDE THE PREPARATION AND IMPLEMENTATION OF TRAFFIC CONTROL PLANS BASED ON THE CONTRACTOR'S SCHEDULE OF WORK ACTIVITIES.

THIS WILL REQUIRE A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF OHIO, TO BE IN CHARGE OF DESIGNING TRAFFIC MAINTENANCE PLANS COORDINATED WITH THE SCHEDULE FOR THIS PROJECT. THIS ENGINEER IS HEREIN REFERRED TO AS THE TRAFFIC CONTROL ENGINEER.

THE TRAFFIC CONTROL ENGINEER AND HIS/HER TEAM SHALL HAVE EXPERIENCE IN THIS FIELD SATISFACTORY TO THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT). THIS DOCUMENTATION SHALL BE FURNISHED AT THE PRELIMINARY CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. IN ADDITION, THE TRAFFIC CONTROL ENGINEER SHALL HAVE DESIGN EXPERIENCE IN THIS FIELD ACCEPTABLE TO ODOT.

THE TRAFFIC CONTROL ENGINEER AND HIS/HER TEAM SHALL HAVE EXPERTISE AND RESOURCES TO:

1. DEVELOP AND DESIGN TRAFFIC CONTROL PLANS MEETING CURRENT STANDARDS. THESE PLANS SHALL BE SUBMITTED TO AND APPROVED BY ODOT.
2. MONITOR ACCIDENT DATA AND RECOMMEND CHANGES, IF NEEDED AFTER APPROVAL AND IMPLEMENTATION, BASED ON THIS ANALYSIS.
3. PROVIDE QUICK RESPONSE TO ON SITE PROBLEMS OR ACCIDENT DAMAGE.
4. COORDINATE THESE OPERATIONS WITH THE CITY OF COLUMBUS AND WORTHINGTON WHEN NECESSARY.

THE FOLLOWING REQUIREMENTS WILL BE INCLUDED IN THIS ITEM:

1. TRAFFIC CONTROL PLANS:
TRAFFIC CONTROL PLANS PROPOSED FOR PHASES 1 AND 2 SHALL BE SUBMITTED TO ODOT AT LEAST TWO WEEKS PRIOR TO WORK COMMENCING FOR EACH RESPECTIVE PHASE. TRAFFIC CONTROL PLANS PROPOSED FOR PHASES 3 AND 4 SHALL BE SUBMITTED BY SEPTEMBER 1999. THIS SUBMITTAL SHALL CONSIST OF 5 COPIES OF THE PLANS FOR REVIEW AND DISTRIBUTION. NO WORK SHALL BEGIN AT ANY LOCATION UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED BY ODOT.

2. PLAN CHANGES:
THE TRAFFIC CONTROL ENGINEER SHALL OBTAIN ACCIDENT DATA FROM THE COLUMBUS POLICE DIVISION, ANALYZE CAUSES AND FURNISH RECOMMENDATIONS FOR CHANGE TO REDUCE THE ACCIDENT FREQUENCY. NO CHANGES TO THE APPROVED TRAFFIC CONTROL PLAN SHALL BE MADE UNTIL APPROVAL IS OBTAINED FROM ODOT IN WRITING.

3. COORDINATION:
COORDINATION OF THE CONTRACTOR'S ACTIVITIES WITH SPECIAL EVENTS MAY BE NECESSARY. THE TRAFFIC CONTROL ENGINEER SHALL BE AVAILABLE TO ASSIST THE ENGINEER IN THIS AREA IF NECESSARY. HOWEVER, ALL INSTRUCTIONS SHALL BE FURNISHED BY THE PROJECT ENGINEER.

4. LIMITS OF OPERATION:
THE LIMITS OF OPERATION DURING PHASES 2 AND 3 SHALL BE LIMITED TO APPROXIMATELY ONE HALF OF THE LENGTH OF THE TOTAL PROJECT. THE CONTRACTOR SHALL SUBMIT DETAILS OF LIMITS OF OPERATIONS TO THE PROJECT ENGINEER AND THE DISTRICT TRAFFIC MANAGEMENT ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF WORK.
PHASE 2 WORK SHALL BEGIN AT THE NORTH END OF THE PROJECT SO THAT IT WILL BE COMPLETED IN TIME FOR THE ADJACENT NORTH OUTERBELT WIDENING PROJECT TO DO THEIR WORK.

5. PAYMENT:
PAYMENT SHALL BE MADE AS FOLLOWS: AT THE LUMP SUM BID FOR ITEM SPECIAL, MAINTAINING TRAFFIC, MISC.: TRAFFIC CONTROL PLANNING AND IMPLEMENTATION.
   - -30% UPON APPROVAL AND IMPLEMENTATION OF THE INITIAL PLAN
   - -70% PRORATED OVER THE REMAINING WORKING TIME IN THE CONTRACT. THE ENGINEER SHALL CONSIDER THE MAGNITUDE OF TRAFFIC CONTROL BEING IMPLEMENTED IN THE ESTIMATE PERIOD AND PRORATE THE COST ACCORDINGLY.

PARAMETERS FOR MAINTAINING TRAFFIC:
THE TRAFFIC CONTROL ENGINEER SHALL DESIGN PLANS TO MEET THE FOLLOWING REQUIREMENTS:

1. IT IS THE INTENTION TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO AND THE MAXIMUM SAFETY TO THE CONTRACTOR AND THE TRAVELING PUBLIC. ANY VARIANCES FROM THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN ADVANCE BY ODOT EXCEPT AS MODIFIED BELOW OR AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH LATEST REVISIONS, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY.

2. THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, PERSONNEL AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT. VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS, AND SHALL ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

3. A "ROAD CONSTRUCTION AHEAD" SIGN (OW-128) SHALL BE PLACED ON ALL RAMPS APPROACHING THE WORK AREAS.

4. IN ANY INSTANCE WHERE EITHER THE ACCELERATION LANE OR THE DECELERATION LANE IS SHORTENED OR OBSTRUCTED DUE TO WORK AND/OR STANDARD LANE CLOSURES, SUCH WORK SHALL BE COMPLETED "AS SOON AS POSSIBLE" SO AS TO PERMIT THE LANE CLOSURES TO BE MOVED TO A LOCATION WHERE SAID ACCELERATION OR DECELERATION LANES ARE NO LONGER SHORTENED.

5. NO CHANGES IN TRAFFIC PATTERNS SHALL OCCUR DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS	MEMORIAL DAY
LABOR DAY	THANKSGIVING	FOURTH OF JULY

THE PERIOD OF TIME THAT THERE ARE TO BE NO CHANGES IN TRAFFIC PATTERNS 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 WHEN TRAFFIC PATTERNS CAN'T CHANGE
SUNDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY
MONDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON TUESDAY
TUESDAY	12:00 NOON MONDAY THROUGH 12:00 NOON WEDNESDAY
WEDNESDAY	12:00 NOON TUESDAY THROUGH 12:00 NOON THURSDAY
THURSDAY	12:00 NOON WEDNESDAY THROUGH 12:00 NOON MONDAY
FRIDAY	12:00 NOON THURSDAY THROUGH 12:00 NOON MONDAY
SATURDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY

6. A PORTABLE ELECTRIC FLASHING ARROW PANEL AS DESCRIBED ON STANDARD DRAWING TC-35.10 (REVISION 8-29-84) SHALL BE PLACED AT THE FORWARD END OF ALL TAPERS.

7. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE USED AS REQUIRED FOR THE PURPOSE OF ADVANCED WARNING.

8. THE USE OF BERMS AND SHOULDER AREAS MAY BE USED TO MAINTAIN TRAFFIC, IF APPROVED. SHOULD ANY OF THE EXISTING BERM AREAS BECOME DAMAGED OR DESTROYED DUE TO THE CONTRACTOR'S NEGLIGENCE OR FAILURE TO PROVIDE ADEQUATE SIGNS, BARRICADES, FLAGGERS OR OTHER TRAFFIC CONTROL DEVICES, THE RESTORATION OF THE BERMS SHALL BE AT THE CONTRACTOR'S EXPENSE.

9. ALL OPERATIONS AFFECTING THE FLOW OF TRAFFIC SHALL BE RESTRICTED TO ONE SIDE OF DIRECTIONAL LANES UNLESS OTHERWISE APPROVED.

10. ALL NECESSARY TEMPORARY AND/OR PERMANENT SIGNING AND PAVEMENT MARKING SHALL BE IN PLACE PRIOR TO REOPENING PAVEMENT TO TRAFFIC.

UNLESS SEPARATELY ITEMIZED IN THE PLANS, THE ABOVE WORK SHALL BE PAID FOR AS LUMPSUM ITEM SPECIAL, MAINTAINING TRAFFIC, MISC., TRAFFIC CONTROL PLANNING AND IMPLEMENTATION.

ITEM SPECIAL - MAINTAINING TRAFFIC, MISC.:TRAFFIC SAFETY COORDINATOR

THE CONTRACTOR SHALL HAVE A FULL TIME, TRAFFIC SAFETY COORDINATOR OR A QUALIFIED REPRESENTATIVE OF THE TRAFFIC SAFETY COORDINATOR, ON DUTY 24 HOURS A DAY WHENEVER ACTIVE CONSTRUCTION WORK IS BEING PERFORMED AND/OR WHENEVER AN ACTIVE MAINTENANCE OF TRAFFIC ZONE IS IN PLACE WITHIN THE LIMITS OF THIS PROJECT. THE TRAFFIC SAFETY COORDINATOR SHALL BE RESPONSIBLE FOR THE CONTRACTOR'S MAINTENANCE OF TRAFFIC OPERATIONS.

THE CONTRACTOR SHALL DESIGNATE A QUALIFIED INDIVIDUAL TO THE POSITION (OTHER THAN THE SUPERINTENDENT), IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER FOR APPROVAL PRIOR TO THE PRECONSTRUCTION CONFERENCE. INCLUDED IN THIS SUBMITTAL SHALL BE THE TRAFFIC SAFETY COORDINATOR'S RESUME SHOWING TRAFFIC EXPERIENCE, LISTING PAST, PRESENT, ETC. THE TRAFFIC SAFETY COORDINATOR SHALL HAVE NO OTHER DUTIES EXCEPT WHAT APPEARS IN THIS NOTE. ANY REPRESENTATIVE OF THE TRAFFIC SAFETY COORDINATOR MUST ALSO HAVE DISTRICT APPROVAL. THE APPOINTED TRAFFIC SAFETY COORDINATOR SHALL BE PRESENT AT THE PRECONSTRUCTION CONFERENCE.

THE TRAFFIC SAFETY COORDINATOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED IN THE APPROVED TRAFFIC CONTROL PLAN AND SHALL BE RESPONSIBLE FOR THE FOLLOWING:

A. TO UNDERSTAND AND BE FAMILIAR WITH THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION, THE TRAFFIC MAINTENANCE AND SAFETY PROVISIONS OF THE CONTRACT PROPOSAL, AND THE PAVING THE WAY PROGRAM.

B. PROVIDING, INSTALLING, MAINTAINING AND THE SUBSEQUENT REMOVAL OF ALL TRAFFIC CONTROL EQUIPMENT, PAVEMENT MARKING, SIGNS, OVERLAYS OR OTHER FEATURES NECESSARY TO IMPLEMENT THE APPROVED PLAN AT EACH WORK SITE. ALL REQUIREMENTS OF ITEM 614 SHALL APPLY TO THIS CONTRACT.

C. TO PROVIDE A MEANS OF QUICK RESPONSE TO ON SITE PROBLEMS OR ACCIDENTS TO MAINTAIN THE SYSTEM 24 HOURS PER DAY AND 7 DAYS A WEEK TO THE SATISFACTION OF THE ENGINEER. THE TRAFFIC SAFETY COORDINATOR SHALL HAVE NECESSARY AUTHORITY TO PERFORM ANY WORK NECESSARY TO RECTIFY ANY PROBLEMS. THE TRAFFIC SAFETY COORDINATOR AND THE PROJECT ENGINEER SHALL HAVE A CONSTANT MEANS OF COMMUNICATION FOR THE PURPOSE OF MAINTAINING TRAFFIC CONTROL.
A REACTION PLAN SHALL BE DEVELOPED SO AS TO MINIMIZE RESPONSE TIME TO CORRECT ON SITE PROBLEMS IMMEDIATELY AFTER NOTIFICATION OF ODOT OR THE CITY OF COLUMBUS OF THE NEED. CORRECTION SHALL BE MADE WITHIN FOUR (4) HOURS OF NOTIFICATION. THIS PLAN SHALL BE FURNISHED TO THE ENGINEER PRIOR TO THE START OF WORK AND SHALL BE UPDATED AS REQUIRED BY THE ENGINEER.

D. CONSTANTLY MONITOR AND REVIEW THE TRAFFIC CONTROL DEVICES BOTH DURING THE DAY AND NIGHT FOR ASSURANCE OF CONTRACT COMPLIANCE. ANY OPERATIONAL PROBLEMS OR AREAS OF NONCOMPLIANCE WITH THE TRAFFIC CONTROL PLAN SHOULD BE IMMEDIATELY REPORTED TO THE CONTRACTOR FOR CORRECTIVE ACTION.
THE TRAFFIC SAFETY COORDINATOR SHALL MAKE RECOMMENDATIONS TO MODIFY THE TRAFFIC CONTROL PLAN FOR BETTER/SAFER TRAFFIC FLOW. THESE RECOMMENDATIONS SHALL BE MADE IN WRITING TO THE DIRECTOR. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE MADE UNTIL APPROVAL IS OBTAINED FROM THE DIRECTOR IN WRITING.

E. DAILY REVIEW THE PROJECT'S TRAFFIC CONTROL WITH A MINIMUM OF TWO REVIEWS EACH WEEK BEING PERFORMED AT NIGHT. THE FOLLOWING ITEMS SHALL BE INCLUDED IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION, PLACEMENT, VISIBILITY, TRAFFIC FLOW CONDITIONS, INCIDENTS, CONGESTION POINTS, DELAYS ADEQUACY OF ADVANCED INFORMATION SIGNS BEYOND THE PROJECT LIMITS, INTERACTION OF WORK VEHICLES AND TRAFFIC, EVIDENCE OF ACCIDENTS, PROPER STORAGE OF MATERIALS AND EQUIPMENT, CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, ADEQUACY OF THE TRAFFIC CONTROL PLAN, CONFLICTING OR NON-PERFORMING PAVEMENT MARKINGS. A DAILY RECORD REVIEW SHALL BE GIVEN TO THE PROJECT ENGINEER IN WRITING AND SHALL INCLUDE A RECORD OF DEFICIENCIES AND RESOLUTION OF THE DEFICIENCIES.

F. COORDINATE MAINTENANCE OF TRAFFIC OPERATIONS WITH THE PROJECT ENGINEER, THE DISTRICT TRAFFIC MANAGEMENT ENGINEER, AND THE PAVING THE WAY PROJECT COORDINATOR.

MAINTAINING TRAFFIC, MISC.:TRAFFIC SAFETY COORDINATOR (CONTINUED ON SHEET 23B)

MAINTAINING TRAFFIC, MISC.:TRAFFIC SAFETY COORDINATOR (CONTINUED)

G. ATTEND MONTHLY MEETINGS WITH THE PROJECT ENGINEER, THE DISTRICT TRAFFIC MANAGEMENT ENGINEER, AND THE PAVING THE WAY PROJECT COORDINATOR TO REVIEW AND RECOMMEND PROCEDURES FOR REVISIONS IN THE MAINTENANCE OF TRAFFIC OPERATIONS.

H. HOLD TRAFFIC SAFETY MEETINGS WITH THE CONTRACTORS AND SUBCONTRACTOR'S SUPERINTENDENTS AND FOREMEN PRIOR TO AND DURING CONSTRUCTION. (THE PROJECT ENGINEER, THE DISTRICT TRAFFIC MANAGEMENT ENGINEER, AND THE PAVING THE WAY PROJECT COORDINATOR SHALL BE INVITED TO ATTEND THESE MEETINGS.)

THE TRAFFIC SAFETY COORDINATOR AND HIS REPRESENTATIVE SHALL HAVE A VEHICLE EQUIPPED WITH A CELLULAR TELEPHONE AND THE TELEPHONE NUMBER SHALL BE PROVIDED TO THE PROJECT ENGINEER, THE DISTRICT TRAFFIC MANAGEMENT ENGINEER, AND THE PAVING THE WAY COORDINATOR. THE TRAFFIC SAFETY COORDINATOR SHALL BE PROVIDED WITH AN ELECTRONIC PAGER.

FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY OF THE ABOVE SHALL CONSTITUTE CAUSE FOR THE PROJECT ENGINEER TO SUSPEND ALL WORK UNTIL ALL CORRECTIONS ARE MADE.

PAYMENT FOR THIS INDIVIDUAL AND EQUIPMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM SPECIAL- MAINTAINING TRAFFIC, MISC.:TRAFFIC SAFETY COORDINATOR.

MAINTENANCE OF TRAFFIC FOR ROADS UNDER OR OVER SR-315

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC ON ALL ROADS OR RAMPS THAT THE WORK ENCROACHES ON OR NEAR. THIS INCLUDES ANY OPERATIONS THAT MAY EFFECT TRAFFIC OR PEDESTRIANS OR THEIR SAFETY.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A TRAFFIC CONTROL PLAN FOR THE MAINTENANCE OF TRAFFIC THROUGH THE WORK AREA. THE TRAFFIC CONTROL PLAN (TCP) SHALL SHOW THE ADVANCE WARNING SIGNS, PAVEMENT MARKINGS, AND ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN SAFE TRAVEL THROUGH THE AREA.

THE OHIO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION, AND ODOT'S STANDARD DRAWINGS SHALL BE MINIMUM GUIDELINES FOR THE TCP.

ALL COSTS ASSOCIATED WITH TRAFFIC CONTROL FOR ROADS OFF SR-315, INCLUDING BUT NOT LIMITED TO SIGNING, STRIPING, (PAINT OR TAPE), RELOCATION AND RETIMING ON TRAFFIC SIGNALS, LEO'S WITH/WITHOUT PATROL CAR, PORTABLE CONCRETE BARRIER, DRUMS, ETC. SHALL BE INCLUDED UNDER ITEM 614-MAINTAINING TRAFFIC, LUMP SUM. NO PLAN ITEMS WILL BE USED TO PAY FOR MAINTAINING TRAFFIC ON THE ROADS OFF SR-315 UNLESS SPECIFICALLY CALLED OUT IN THE PLANS.

OPEN EXCAVATIONS OR DROP OFFS OPEN OVERNIGHT GREATER THAN 2 FEET DEEP AND WITHIN 10 FEET OF THE TRAVELED WAY SHALL BE PROTECTED WITH PORTABLE CONCRETE BARRIER. THE COST OF THE P.C.B. SHALL BE PAID BY THE CONTRACTOR. THIS WILL INCLUDE THE OBJECT MARKERS AND BARRIER REFLECTORS.

EXCAVATIONS ALONG THE CROSS ROADWAYS MUST BE FENCED WITH PLASTIC SAFETY FENCE FOR PROTECTION OF PEDESTRIANS. SIGNS DIRECTING PEDESTRIANS AROUND THE EXCAVATIONS SHALL BE PROVIDED BY THE CONTRACTOR AT HIS COST. THE CONTRACTOR SHALL PROVIDE AT HIS COST THE ORANGE PLASTIC SAFETY FENCE AND ALL SIGNS AND SURFACES (TEMPORARY WALK) FOR THE SAFETY OF THE PEDESTRIANS.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE UNDERPASS ROADWAY DURING REMOVAL OF EXISTING AND CONSTRUCTION OF THE NEW STRUCTURES. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS, SHALL HAVE APPROVAL FROM ODOT OFFICE OF STRUCTURAL ENGINEERING AND SHALL REMAIN IN PLACE UNTIL WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE UNDER SR-315 SHALL BE MAINTAINED AT ALL TIMES.

COOPERATION WITH ADJACENT CONTRACTORS

THE CONTRACTOR SHALL COOPERATE WITH ADJACENT CONTRACTORS FOR PROJECTS FRA-270-17.10 (PID 12494 CONSTRUCTION PROJECT 491-98), FRA-270-21.40 (PID 12495, SCHEDULED TO SELL SUMMER 1999), FRA-270-39.84 (PID 12504, CONSTRUCTION PROJECT 588-97), AND FRA-315-13.05 (PID 10118, SCHEDULED TO SELL WINTER/SPRING 1999 AND WILL CLOSE SR-315 IN MT. AIR FOR 30 DAYS), AS STATED IN SECTION 105.07 OF THE CMS.

DURING THE PHASE 2 DETOUR FOR SR-315 SOUTHBOUND TO I-270 WESTBOUND, THE DETOUR SIGNING SHALL BE REMOVED IN CONJUNCTION WITH THE PLACEMENT OF FRA-270-27.400 DETOUR SIGNING WHEN NECESSARY.

RAMP CLOSURES IN FRA-315-5.18 SHALL NOT OCCUR WHEN ADJACENT CONTRACTORS ARE USING THESE RAMPS FOR THEIR DETOURS.

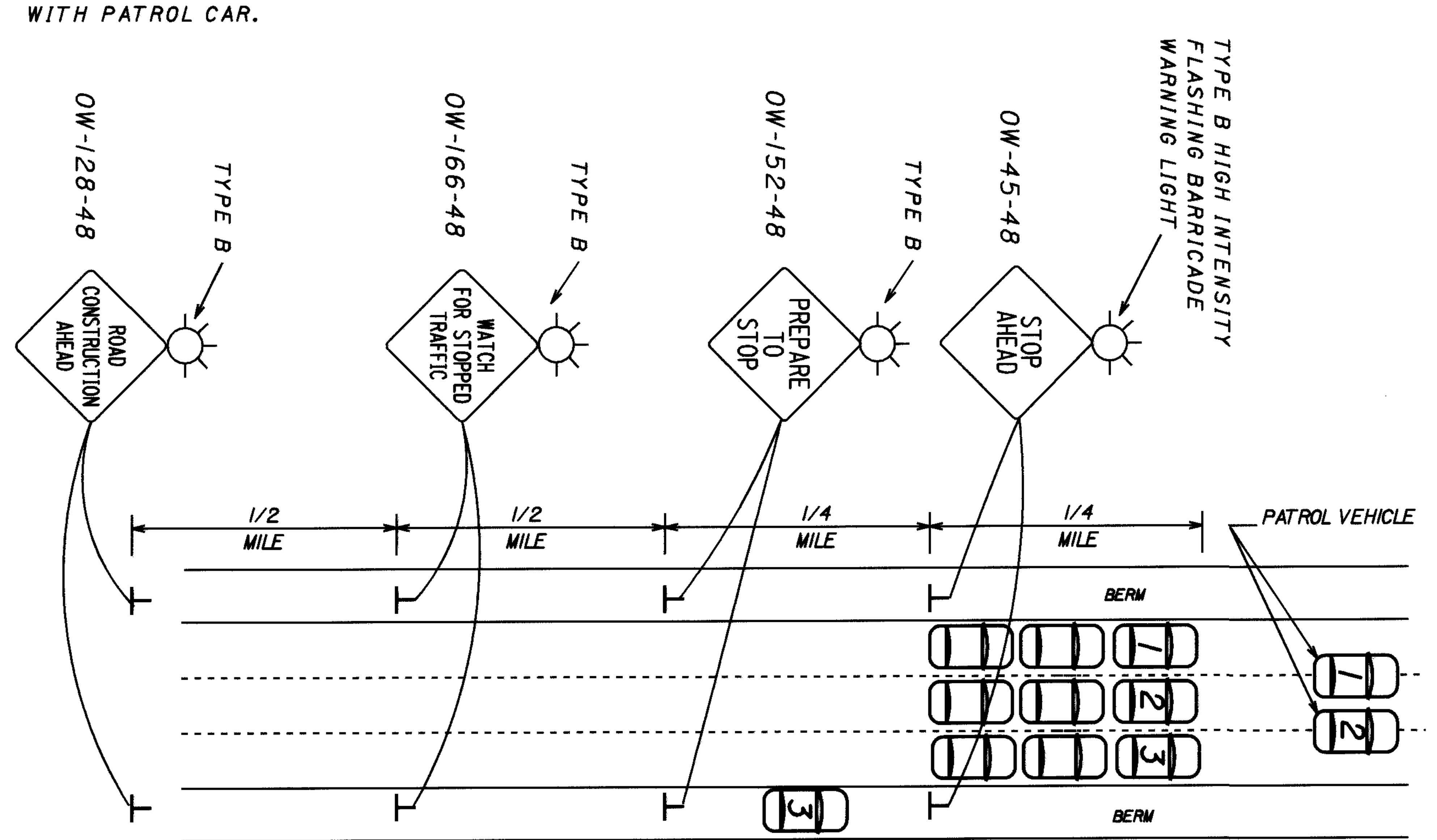
THE SOUTHBOUND SR-315 MEDIAN CROSSOVER TO THE I-270 WESTBOUND RAMP NEAR STA155+50 SHALL BE REMOVED DURING PHASE 4 ONLY IF THE PROPOSED RAMP H IN FRA-270-21.40 HAS BEEN CONSTRUCTED AND OPENED. THIS CROSSOVER TO THE RAMP FROM SR-315 SOUTH BOUND TO I-270 WEST BOUND IS TO BE CLOSED DURING PARTS OF PHASES 2 AND 3 BUT IS TO BE OPEN BETWEEN NOV. 19, 1999 TO APRIL 1, 2000.

SHORT DURATION CLOSING OF SR-315 (SEE DIAGRAM BELOW)

SHORT TERM CLOSURE OF SR-315 SHALL BE PERMITTED FOR THE PURPOSE OF REMOVING OR ERECTING OVERHEAD SIGN TRUSSES. THE ERECTION OR REMOVAL OF OVERHEAD TRUSSES SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT COMPLETE STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY IS NOT MORE THAN FIFTEEN (15) MINUTES IN ANY ONE CONSECUTIVE THIRTY (30) MINUTE PERIOD. CLOSURES WILL ONLY BE PERMITTED BETWEEN THE HOURS OF 12:00 am (MIDNIGHT) AND 5:00 AM, SUNDAY THROUGH THURSDAY.

A MINIMUM OF ONE (1) LAW ENFORCEMENT PATROL VEHICLE PER LANE SHALL BE USED TO PACE MOTORISTS TO A STOP. AFTER TRAFFIC HAS BEEN STOPPED, ONE (1) PATROL VEHICLE SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACKUP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE A FLAGGER ON THE RAMPS TO STOP TRAFFIC. PATROL VEHICLES SHALL HAVE HIGH-RISE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS. THE CONTRACTOR SHALL ERECT AND MAINTAIN THE SIGNS SHOWN IN THE FOLLOWING DETAIL

PAYMENT FOR THE ABOVE IS INCLUDED IN ITEM 614-LAW ENFORCEMENT OFFICER WITH PATROL CAR.



TYPICAL SHORT DURATION CLOSURE

COMPLAINT RESPONSE

THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AND PROVIDE A CLAIMS COORDINATOR; I.E., NAME AND TELEPHONE NUMBER, AVAILABLE TO THE PUBLIC DURING NORMAL WORKING HOURS. THIS INFORMATION SHALL BE FURNISHED AT THE PRELIMINARY CONSTRUCTION MEETING. THIS COORDINATOR SHALL BE RESPONSIBLE FOR LOGGING COMPLAINTS AS RECEIVED AND FURNISHING THE CALLER THE NECESSARY INFORMATION FOR RESOLVING THEIR COMPLAINT. THE COMPLAINT LOG SHALL INCLUDE THE LOCATION OF THE ALLEGED DAMAGE AND THE NAME AND TELEPHONE NUMBER OF THE COMPLAINANT.
A WEEKLY SUMMARY OF COMPLAINTS RECEIVED AND/OR RESPONSES GIVEN SHALL BE FURNISHED TO THE PROJECT ENGINEER BY NOON EACH MONDAY. THE CONTRACTOR SHALL RESPOND TO EACH DAMAGE CLAIM OR COMPLAINT IN A TIMELY MANNER BUT IN NO CASE SHALL THE RESPONSE TAKE LONGER THAN FOURTEEN (14) CALENDAR DAYS FROM RECEIPT. THE COMPLAINT LOG SHALL INDICATE THE RESPONSE AND DATE GIVEN TO THE COMPLAINANT. THE CONTRACTOR SHALL USE GOOD FAITH EFFORTS TO RESOLVE DAMAGE CLAIMS. FAILURE TO ACTIVELY PURSUE RESOLUTION OR RESPOND WITHIN FOURTEEN (14) CALENDAR DAYS MAY RESULT IN SUSPENSION OF PAYMENTS UNTIL THE ENGINEER DETERMINES COMPLIANCE WITH THESE NOTES.

PORTABLE CHANGEABLE MESSAGE SIGN: USE THE CURRENT VERSION OF THE DESIGN SERVICES NOTE.

FOR THE WEEK PRIOR TO START OF WORK OR THE START OF EACH SEASON, THE SIGNS SHALL BE PLACED AT APPROXIMATELY STATION 170+00 SOUTHBOUND AND STATION 120+00 NORTHBOUND, AND DISPLAY THE FOLLOWING MESSAGES, USING THE APPROPRIATE START DATE.

ROAD	MONDAY	EXPECT	
WORK	APR 1	DELAY	(BLANK)
STARTS			
.8 SEC	.8 SEC	.8 SEC	.3 SEC

NOTE:
SR-315 NORTHBOUND SIGN TO BE LOCATED NEAR KING AVENUE ON SR-315. ADDITIONAL SIGNS FOR SR-315 SOUTHBOUND ARE TO BE LOCATED ON I-270. THE FOLLOWING SIGNS LOCATED ON I-270 EASTBOUND NEAR SMOKEY ROW ROAD AND I-270 WESTBOUND NEAR WORTHINGTON STEEL SHALL HAVE THE FOLLOWING MESSAGE:

SR-315	STARTS	EXPECT	
CONST	MONDAY	DELAY	(BLANK)
	(START DATE)		
.8 SEC	.8 SEC	.8 SEC	.3 SEC

UPON START OF WORK, THE SIGNS SHALL BE LOCATED AS PROPOSED IN THE NOTE. THE MESSAGE TO BE DISPLAYED ON THE NORTHBOUND SIGN DURING WORKING HOURS ON PHASE "1" FOR WORK TAKING PLACE BETWEEN NORTHBOUND STATION 175+34 AND STATION 190+00 SHALL BE:

ROAD	ON	EXPECT	
WORK	SR-315	DELAY	(BLANK)
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE MESSAGE TO BE DISPLAYED ON THE NORTHBOUND SIGN DURING PERIODS OF NO WORK ON THE NORTHBOUND SIDE, PHASE "1", SHALL BE:

WORK	ALL	
AREA	LANES	(BLANK)
2 MILE	OPEN	
.8 SEC	.8 SEC	.3 SEC

THE MESSAGE TO BE DISPLAYED ON THE SOUTHBOUND SIGN, DURING WORKING HOURS ON PHASE "1", FOR WORK TAKING PLACE BETWEEN SOUTHBOUND STATION 175+34 TO 190+00 SHALL BE:

ROAD	ON	EXPECT	
WORK	SR-315	DELAY	(BLANK)
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE MESSAGE TO BE DISPLAYED ON THE SOUTHBOUND SIGN, DURING PERIODS OF NO WORK ON THE SOUTHBOUND SIDE, PHASE "1" SHALL BE:

WORK	ALL	
ON	LANES	(BLANK)
SR-315	OPEN	
.8 SEC	.8 SEC	.3 SEC

DURING PERIODS OF PHASE "2" AND PHASE "3" NORTHBOUND WORK, THE NORTHBOUND SIGN SHALL DISPLAY THE FOLLOWING MESSAGE:

ROAD	NEXT	2	
WORK	8	LANES	(BLANK)
	MILES	OPEN	
.8 SEC	.8 SEC	.8 SEC	.3 SEC

DURING PERIODS OF PHASE "2" AND PHASE "3" SOUTHBOUND WORK, THE SOUTHBOUND SIGN SHALL DISPLAY THE FOLLOWING MESSAGE:

WORK	I-270	2	
ON	TO	LANES	(BLANK)
SR-315	OSU	OPEN	
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE MESSAGE TO BE DISPLAYED ON THE NORTHBOUND SIGN DURING WORKING HOURS ON PHASE "2" AND PHASE "3" FOR WORK TAKING PLACE BETWEEN NORTHBOUND STATION 140+00 AND STATION 190+00 SHALL BE:

SINGLE	ON	EXPECT	
LANE	SR-315	DELAY	(BLANK)
TRAFFIC			
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE MESSAGES TO BE DISPLAYED ON THE SOUTHBOUND SIGN, DURING WORKING HOURS ON PHASE "2" AND PHASE "3" FOR WORK TAKING PLACE BETWEEN SOUTHBOUND STATION 140+00 AND STATION 190+00 SHALL BE:

SINGLE	ON	EXPECT	
LANE	SR-315	DELAY	(BLANK)
TRAFFIC			
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE FOLLOWING MESSAGES SHALL BE PROGRAMMED IN THE NORTHBOUND SIGN, FOR USE AS DIRECTED BY THE ENGINEER, THE COLUMBUS FREEWAY EMERGENCY RESPONSE TEAM OR ANY LAW ENFORCEMENT OFFICER HAVING JURISDICTION WITHIN THE PROJECT:

ACCIDENT	NORTH	EXPECT	
AHEAD	OF	LONG	(BLANK)
	ACKERMAN	DELAYS	
.8 SEC	.8 SEC	.8 SEC	.3 SEC

ACCIDENT	NORTH	EXPECT	
AHEAD	OF	LONG	(BLANK)
	HENDERSON	DELAYS	
.8 SEC	.8 SEC	.8 SEC	.3 SEC

ACCIDENT	FREEWAY	AT	
AHEAD	CLOSED	ACKERMAN	(BLANK)
.8 SEC	.8 SEC	.8 SEC	.3 SEC

THE FOLLOWING MESSAGES SHALL BE PROGRAMMED IN THE SOUTHBOUND SIGN, FOR USE AS DIRECTED BY THE ENGINEER, THE COLUMBUS FREEWAY EMERGENCY RESPONSE TEAM OR ANY LAW ENFORCEMENT OFFECER HAVING JURISDICTION WITHIN THE PROJECT:

ACCIDENT	EXPECT	
ON	LONG	(BLANK)
SR-315	DELAYS	
.8 SEC	.8 SEC	.3 SEC

ACCIDENT	SOUTH	EXPECT	
ON	OF	LONG	(BLANK)
SR-315	HENDERSON	DELAYS	
.8 SEC	.8 SEC	.8 SEC	.3 SEC

ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES
THE FOLLOWING ITEMS ARE TO BE USED WHEN IT HAS BEEN DETERMINED BY THE ENGINEER THAT ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS ARE REQUIRED. IN ADDITION, THE QUANTITY OF TEMPORARY PAVEMENT MARKINGS REFLECT QUANTITIES FOR THE REAPPLICATION OF MARKINGS DURING A PHASE. THIS REAPPLI-CATION SHALL BE DONE WHERE AND WHEN DEEMED NECESSARY BY THE ENGINEER.

DRUMS, BARRICADES, SIGNS, AND PAVEMENT MARKINGS FURNISHED WILL BE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL.

SIGNS FURNISHED UNDER THESE ITEMS SHALL INCLUDE SUPPORT AND MOUNTING HARDWARE. THE INTENT OF THE PLAN IS TO HAVE TEMPORARY SIGNING CONSISTENT THROUGHOUT THE PROJECT.

PAVEMENT MARKINGS FURNISHED UNDER THESE ITEMS SHALL INCLUDE INSTALLATION AND REMOVAL OF BOTH TEMPORARY AND PERMANENT.

THE FOLLOWING CONTINGENCY QUANTITIES FOR THESE ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL MAINTAINING TRAFFIC MISC.: SIGN, EXTRUSHEET, TYPE H	100 SQ. FT.
ITEM SPECIAL MAINTAINING TRAFFIC MISC.: SIGN, TEMPORARY OVERLAY, TYPE H	100 SQ. FT.
ITEM 614 TEMPORARY RAISED PAVEMENT MARKER	500 EACH
ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN	2 SGN MTH
ITEM 614 MAINTAINING TRAFFIC, MISC.: FLASHING ARROW PANEL, TYPE C	1440 HOURS
ITEM 614 MAINTAINING TRAFFIC MISC.: TEMPORARY DRUM	500 EACH
ITEM 614 MAINTAINING TRAFFIC MISC.: BARRICADE, HINGED, TYPE III	20 EACH
ITEM 614 TEMPORARY LANE LINE, CLASS I, 642 PAINT	15 MILE
ITEM 614 TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	5 MILE
ITEM 614 TEMPORARY EDGE LINE, CLASS I, 642 PAINT	30 MILE
ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	10 MILE
ITEM 614 TEMPORARY CHANNELIZING LINE, 642 PAINT	1000 LIN. FT.
ITEM 614 TEMPORARY CHANNELIZING LINE, 740.05, TYPE C	1000 LIN. FT.
ITEM 622 PORTABLE CONCRETE BARRIER, 32"	1000 LIN. FT.
ITEM 630 SIGN, FLAT SHEET, TYPE G	500 SQ. FT.
ITEM 630 SIGN, EXTRUSHEET, TYPE G	500 SQ. FT.
ITEM 630 SIGN, TEMPORARY OVERLAY, TYPE G	500 SQ. FT.

PAYMENT FOR THESE ITEMS WILL BE AT THE CONTRACT UNIT PRICE INCLUDING ALL NECESSARY MATERIAL, PARTS, EQUIPMENT, AND LABOR.

MAINTENANCE OF TRAFFIC NOTES

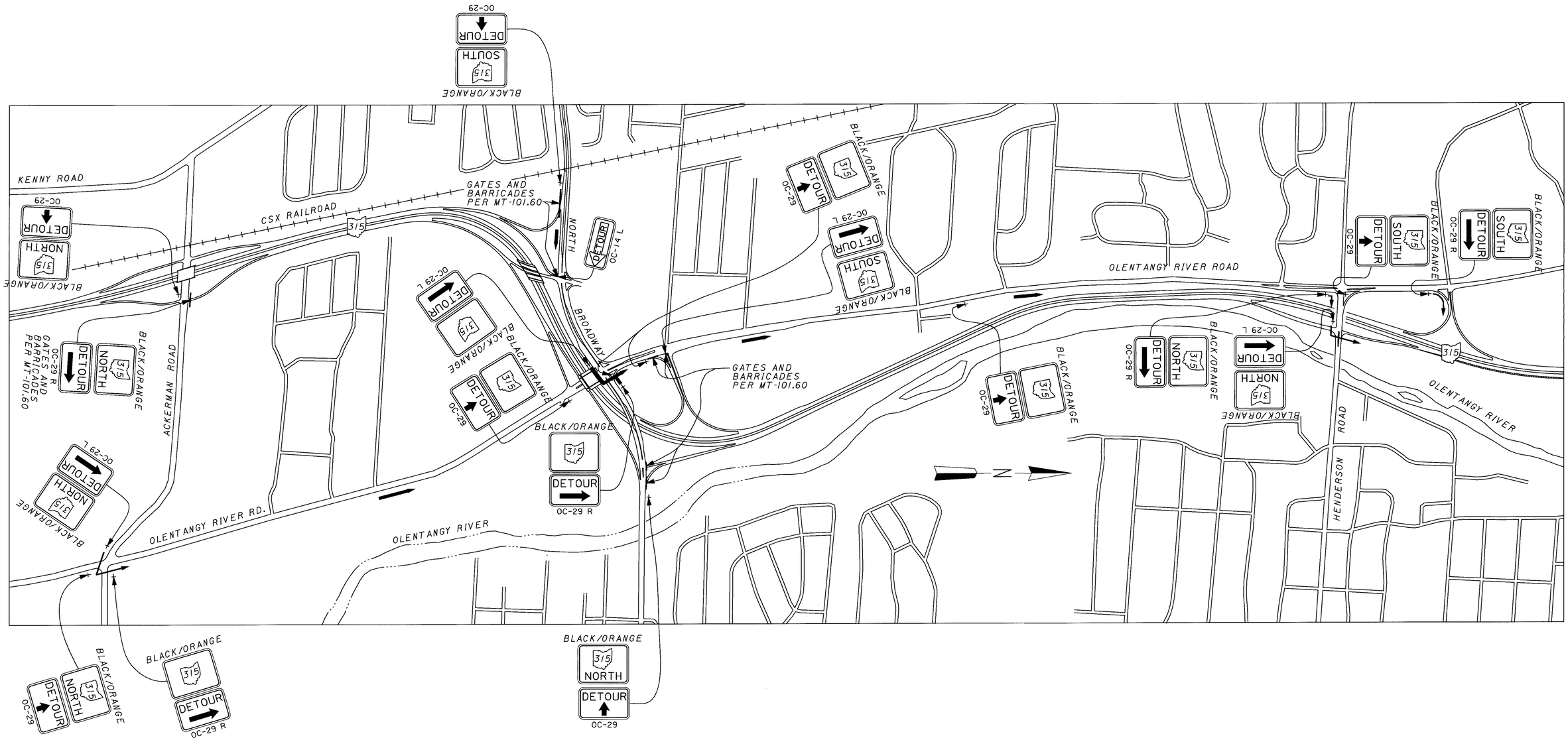
CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

25
286

DETOUR PLAN

0 250 500 1000

SCALE IN FEET



NOTE:
THE CONTRACTOR SHALL ERECT, MAINTAIN AND REMOVE THE DETOUR. PAYMENT FOR ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

ACKERMAN ROAD & NORTH BROADWAY DETOUR PLAN

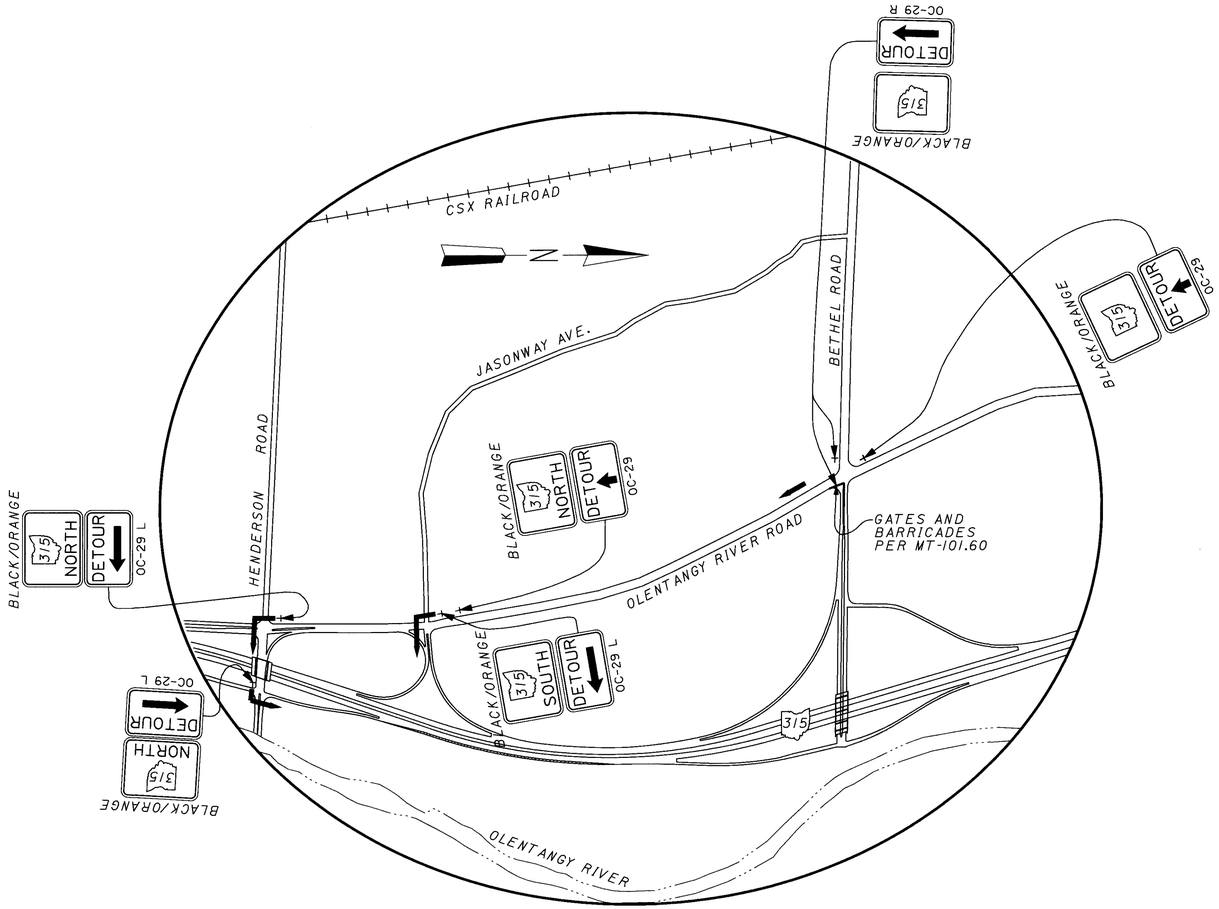
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

26
286

DETOUR PLAN

0 250 500 1000

SCALE IN FEET



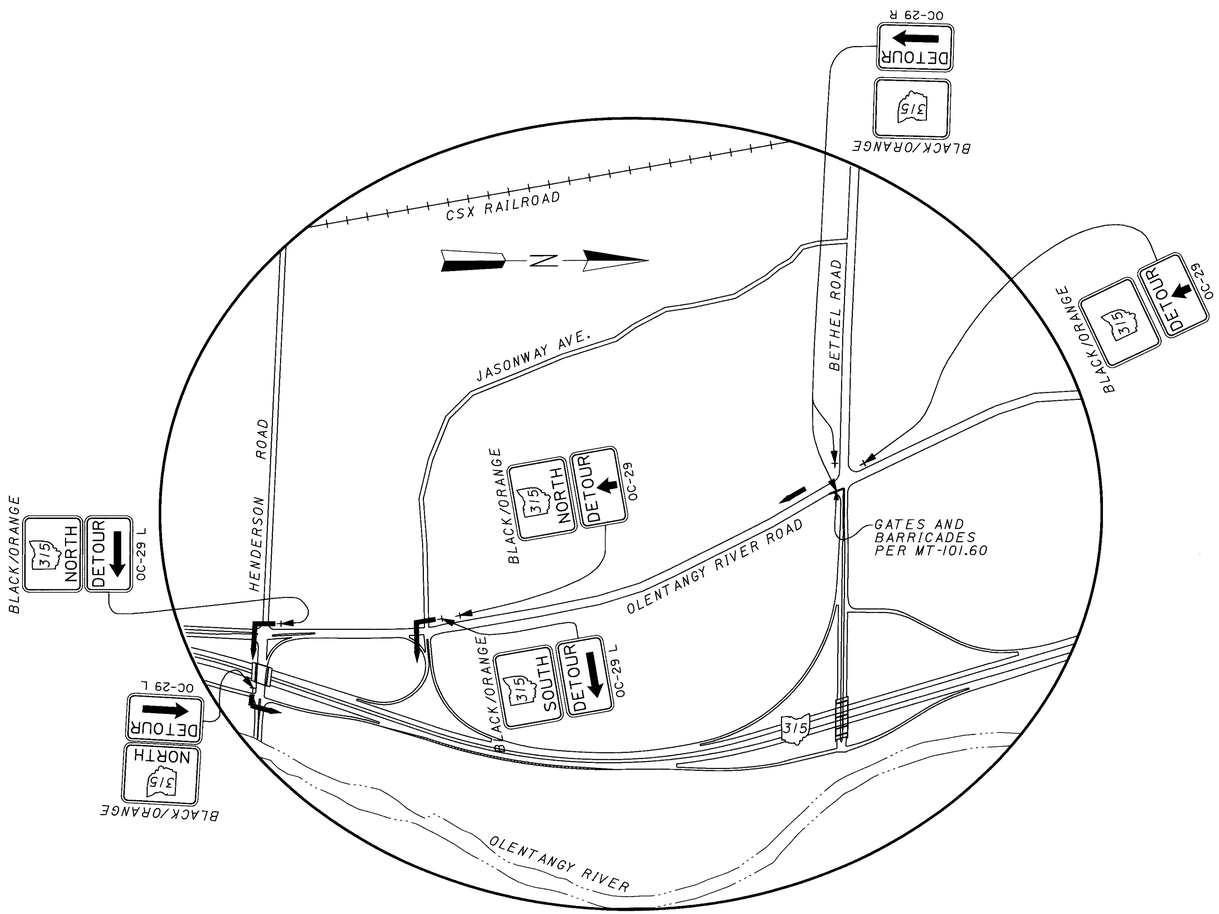
NOTE:
THE CONTRACTOR SHALL ERECT, MAINTAIN AND REMOVE THE DETOUR. PAYMENT FOR ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

BETHEL ROAD DETOUR PLAN

DETOUR PLAN

0 250 500 1000

SCALE IN FEET

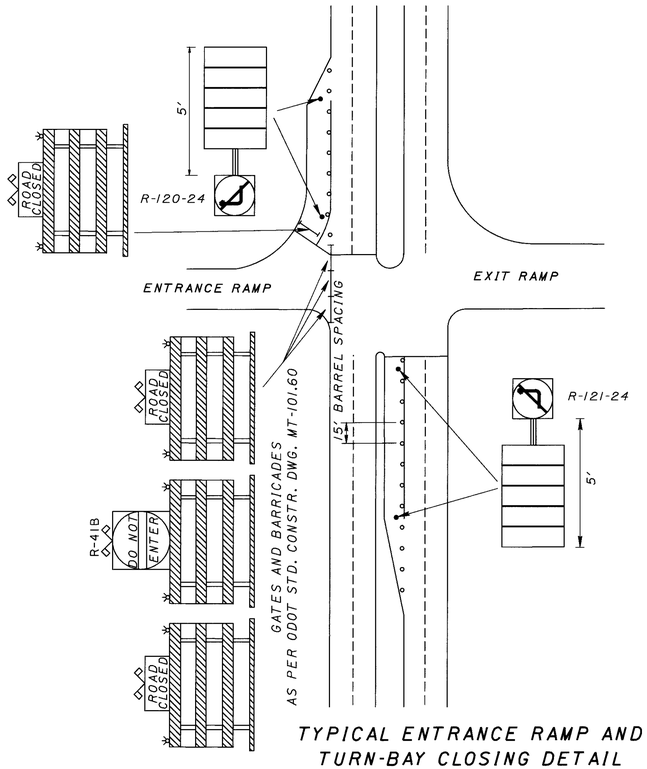


NOTE:
THE CONTRACTOR SHALL ERECT, MAINTAIN AND REMOVE THE DETOUR. PAYMENT FOR ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

BETHEL ROAD DETOUR PLAN

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	26 286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	

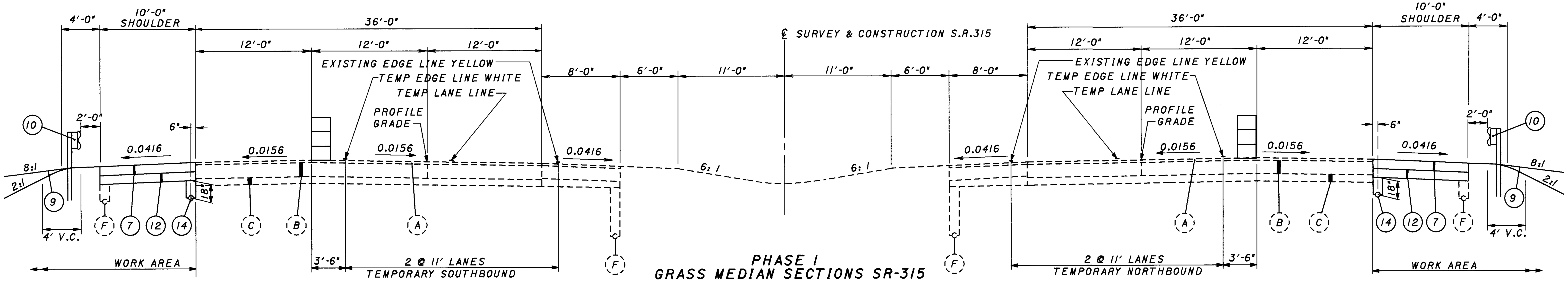
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	28 286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	



TYPICAL ENTRANCE RAMP AND TURN-BAY CLOSING DETAIL

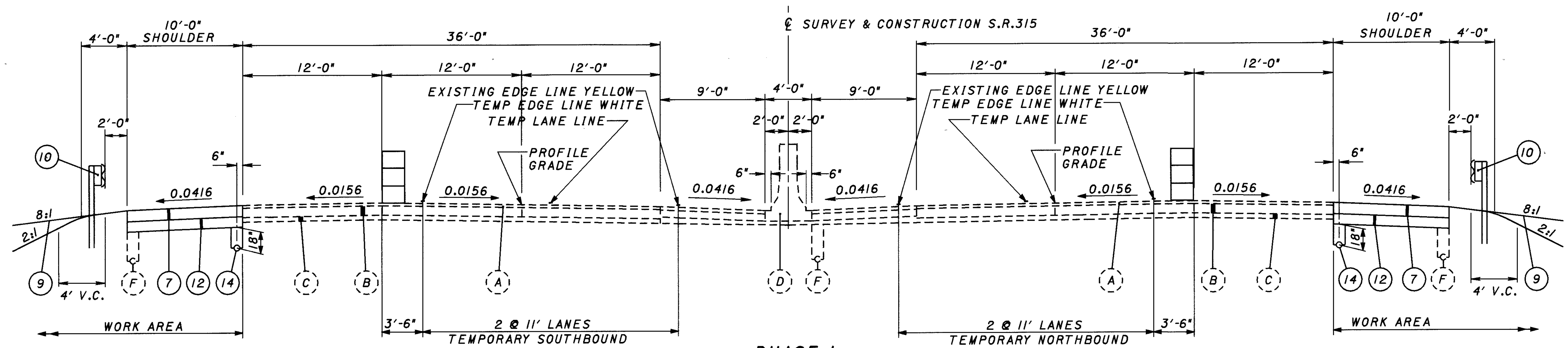
NO SCALE

FRANKLIN COUNTY



PHASE I
GRASS MEDIAN SECTIONS SR-315
LIMITING STATIONS

STA 345+00.00 TO STA 428+53.70 = 8353.70 LIN. FT.
STA 45+00.00 TO STA 66+10.00 = 2110.00 LIN. FT.
TOTAL = 10463.70 LIN. FT.



PHASE I
CONCRETE MEDIAN SECTIONS SR-315

LIMITING STATIONS

STA 175+34.40 TO STA 345+00.00 = 16965.60 LIN. FT.
TOTAL = 16965.60 LIN. FT.

LEGEND

- (7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (12) ITEM 304 9" AGGREGATE BASE
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET)

EXISTING SR-315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 4" SUBBASE
- (D) CONCRETE BARRIER, B-50
- (F) 6" UNDERDRAIN

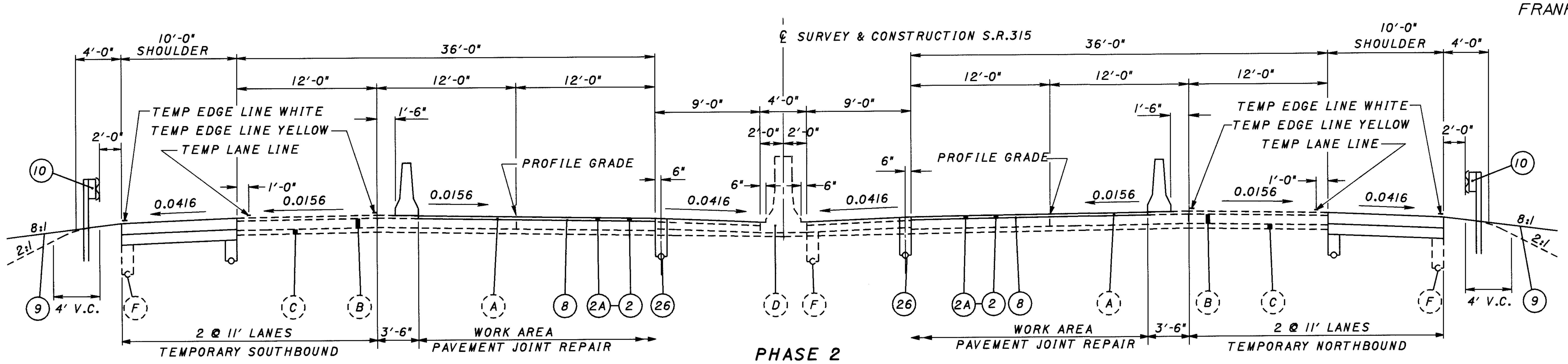
PHASE I

1 - BUILD OUTSIDE SHOULDER PAVEMENT WHILE MAINTAINING TRAFFIC IN THE TWO EXISTING MEDIAN LANES
2 - REMOVE LANE LINE. INSTALL TEMPORARY EDGE & LANE LINE (CLASS I)
3 - COMPLETE SHOULDER EXCEPT FOR FINAL SURFACE COURSE

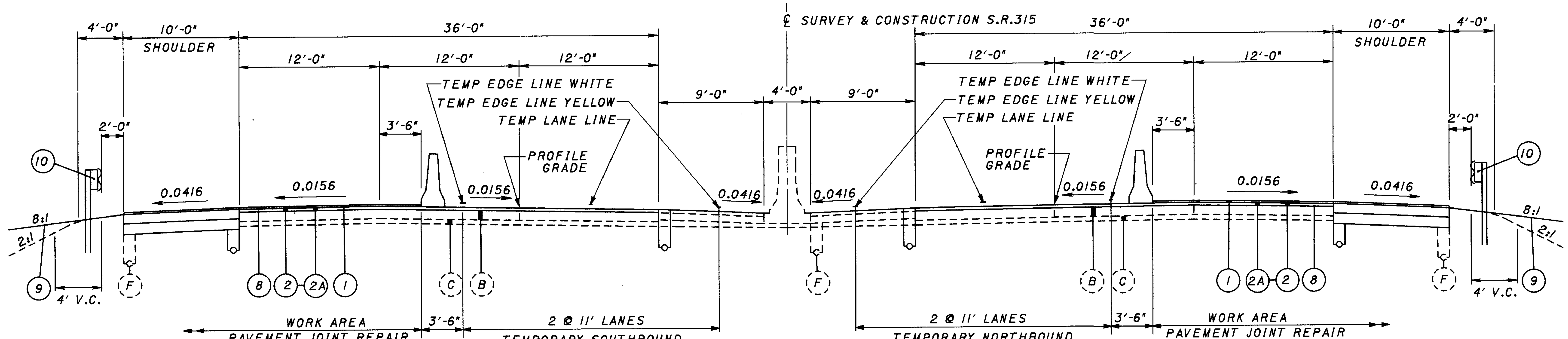
13-JAN-1999

CALC. BY / DATE — CHKD. BY / DATE	FRA-315-5.18	OHIO / F.H.W.A. REGION 5	30/286

FRANKLIN COUNTY



PHASE 2



PHASE 3

CONCRETE MEDIAN SECTIONS SR-315

LIMITING STATIONS

STA 175+34.40 TO STA 345+00.00 = 16965.60 LIN. FT.
TOTAL = 16965.60 LIN. FT.

LEGEND

- (1) ITEM 446 1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2½" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (26) ITEM 605 SHALLOW PIPE UNDERDRAIN, AS PER PLAN

EXISTING SR-315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 4" SUBBASE
- (D) CONCRETE BARRIER, B-50
- (F) 6" UNDERDRAIN

PHASE 2

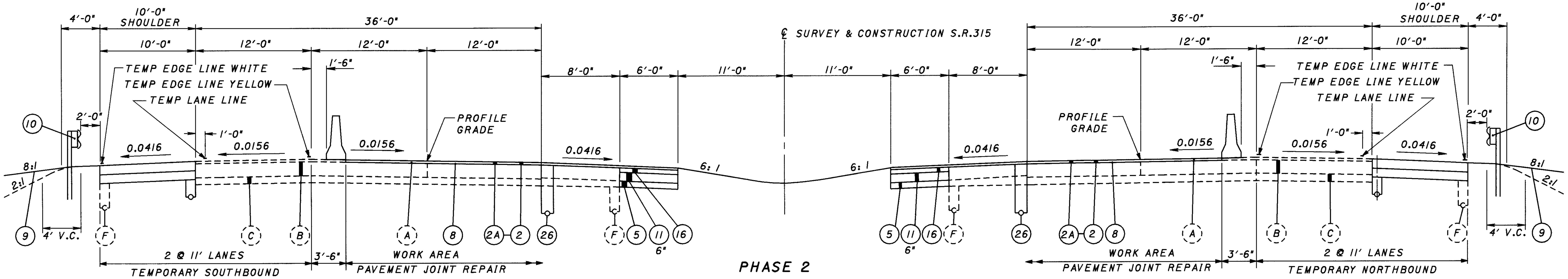
1 - REMOVE EDGE LINE AND REPLACE W/LANE LINE CLASS I
2 - REPLACE LANE LINE W/EDGE LINE CLASS I
3 - TRANSFER 2 LANE TRAFFIC AND SIGN FOR "TRUCKS USE LEFT LANE"
4 - MILL EXISTING BITUMINOUS PAVEMENT IN 2 LANES ON MEDIAN SIDE, REPAIR CONCRETE JOINTS
5 - CONSTRUCT MEDIAN UNDERDRAINS AS REQUIRED
6 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
7 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
8 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

PHASE 3

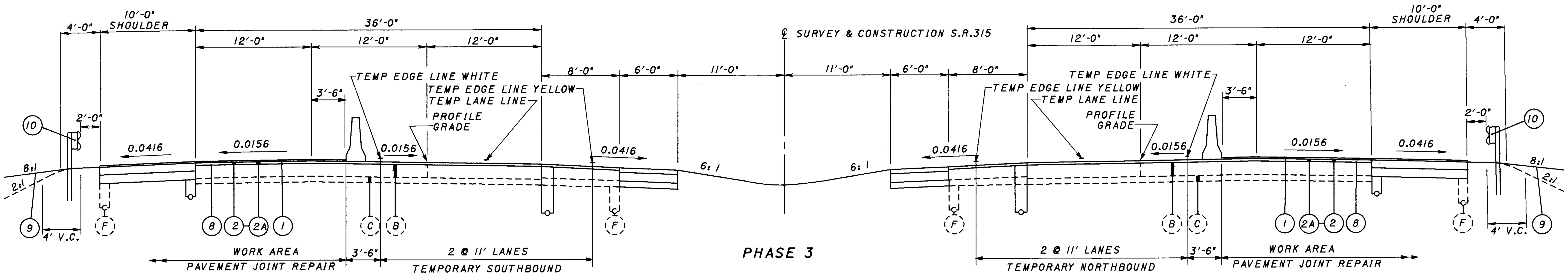
1 - TRANSFER 2 LANE TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - MILL EXISTING BITUMINOUS PAVEMENT IN OUTSIDE LANES AND REPAIR CONCRETE JOINTS
3 - COMPLETE ALL UNDERDRAINS, PAVING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - COMPLETE PAVING INCLUDING FINAL COURSE AND APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

13-JAN-1999

MAINTENANCE OF TRAFFIC - TYPICAL SECTION



PHASE 2



PHASE 3

GRASS MEDIAN SECTIONS SR-315

LIMITING STATIONS

STA 345+00.00 TO STA 428+53.70= 8353.70 LIN. FT.
STA 45+00.00 TO STA 66+10.00= 2110.00 LIN. FT.
TOTAL = 10463.70 LIN. FT.

LEGEND

- (1) ITEM 446 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2 1/2" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE 1", GRADING (SEE PROPOSAL NOTE)
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE
- (16) ITEM 301 3" BITUMINOUS AGGREGATE BASE, AC-20
- (26) ITEM 605 SHALLOW PIPE UNDERDRAIN, AS PER PLAN

EXISTING SR-315 PAVEMENT

- (A) 2 1/2" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 4"SUBBASE
- (D) CONCRETE BARRIER, B-50
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

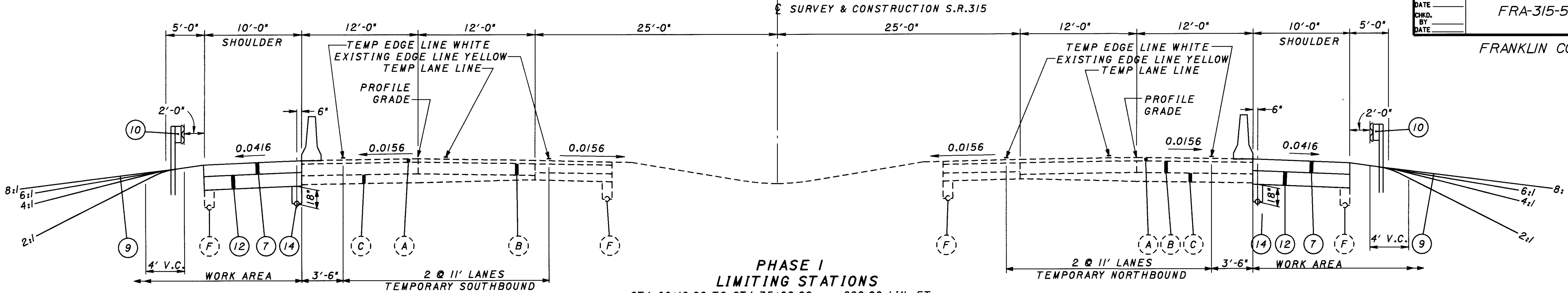
PHASE 2

1 - REMOVE EDGE LINE AND REPLACE W/LANE LINE CLASS I
2 - REPLACE LANE LINE W/EDGE LINE CLASS I
3 - TRANSFER 2 LANE TRAFFIC AND SIGN FOR "TRUCKS USE LEFT LANE"
4 - MILL EXISTING BITUMINOUS PAVEMENT IN 2 LANES ON MEDIAN SIDE, REPAIR CONCRETE JOINTS
5 - CONSTRUCT MEDIAN UNDERDRAINS AS REQUIRED
6 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
7 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
8 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

PHASE 3

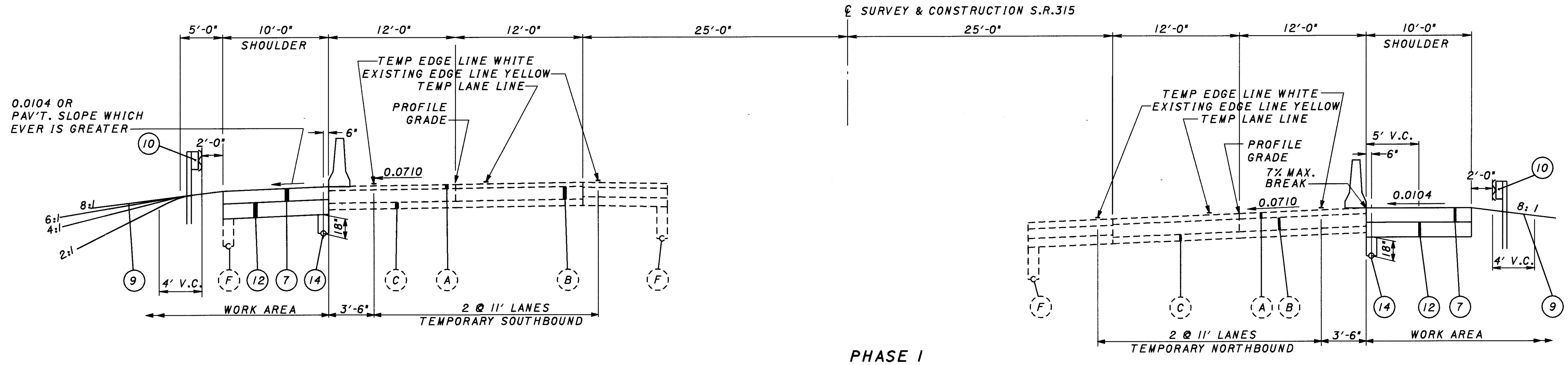
1 - TRANSFER 2 LANE TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - MILL EXISTING BITUMINOUS PAVEMENT IN OUTSIDE LANES AND REPAIR CONCRETE JOINTS
3 - COMPLETE ALL UNDERDRAINS, PAVING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - COMPLETE PAVING INCLUDING FINAL COURSE AND APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

13-JAN-1999



PHASE I
LIMITING STATIONS

STA 66+10.00 TO STA 75+00.00 = 890.00 LIN. FT.
✱ VARIES 0'-0" TO 12'-0"
STA 96+00.00 TO STA 117+00.00 = 2100.00 LIN. FT.
TOTAL = 2990.00 LIN. FT.



PHASE I
SUPERELEVATED SECTION THRU WIDENING SR-315
LIMITING STATIONS

STA 75+00.00 TO STA 88+29.31 = 770.69 LIN. FT.
STA 88+29.31 TO STA 96+00.00 = 1329.31 LIN. FT.
TOTAL = 2100.00 LIN. FT

EXISTING SR 315 PAVEMENT

(A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 3" TO 4" SUBBASE
(F) 6" UNDERDRAIN

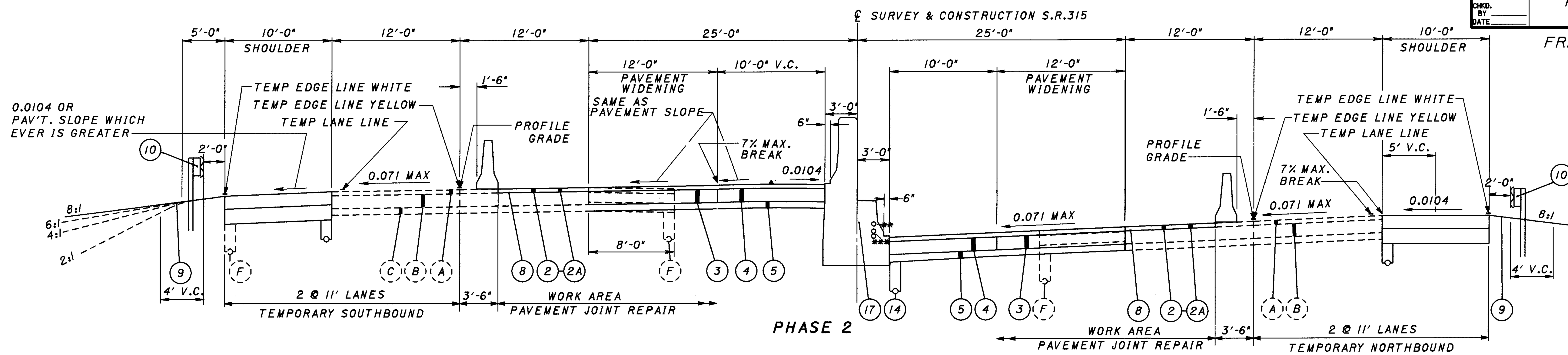
LEGEND

(7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
(9) ITEM 659 SEEDING AND MULCHING
(10) ITEM 606 GUARDRAIL, TYPE 5
(12) ITEM 304 9" AGGREGATE BASE
(14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET)

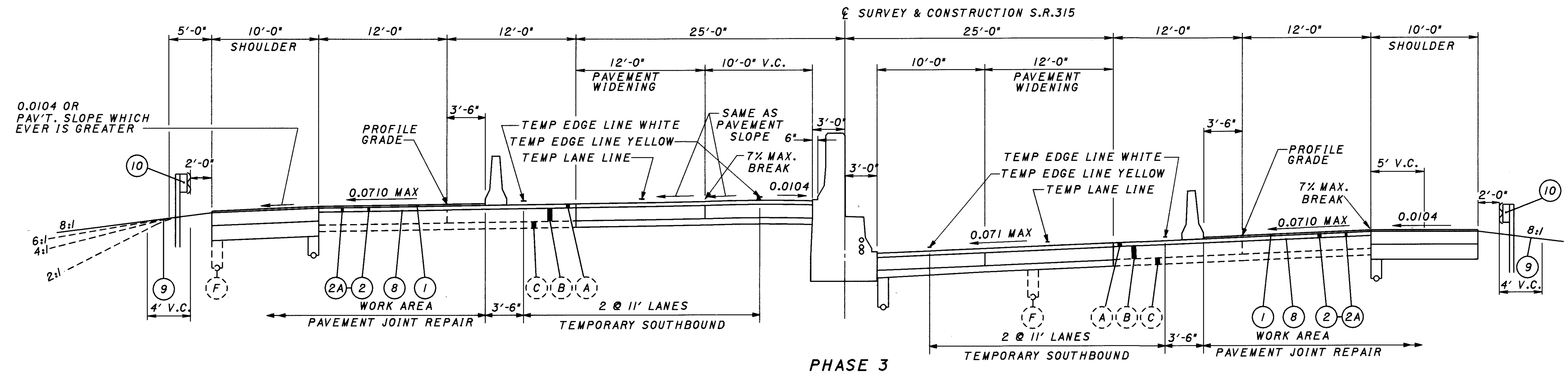
PHASE I

1 - BUILD OUTSIDE SHOULDER PAVEMENT WHILE MAINTAINING TRAFFIC IN THE TWO EXISTING MEDIAN LANES
2 - REMOVE LANE LINE. INSTALL TEMPORARY EDGE & LANE LINE (CLASS I)
3 - COMPLETE SHOULDER EXCEPT FOR FINAL SURFACE COURSE

13-JAN-1999



PHASE 2



PHASE 3

LEGEND

- (1) ITEM 446 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2 1/2" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (3) ITEM 305 8" CONCRETE BASE
- (4) ITEM 301 8" BITUMINOUS AGGREGATE BASE, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE 1" GRADING A, AS PER PLAN
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE PROPOSAL NOTE)
- (17) ITEM 622 CONCRETE BARRIER, TYPE D-50

SUPERELEVATED SECTION THRU WIDENING SR-315
LIMITING STATIONS

STA 75+00.00 TO STA 88+29.31 = 770.69 LIN. FT.
STA 88+29.31 TO STA 96+00.00 = 1329.31 LIN. FT.
TOTAL = 2100.00 LIN. FT

** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER
*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER

EXISTING SR 315 PAVEMENT

- (A) 2 1/2" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

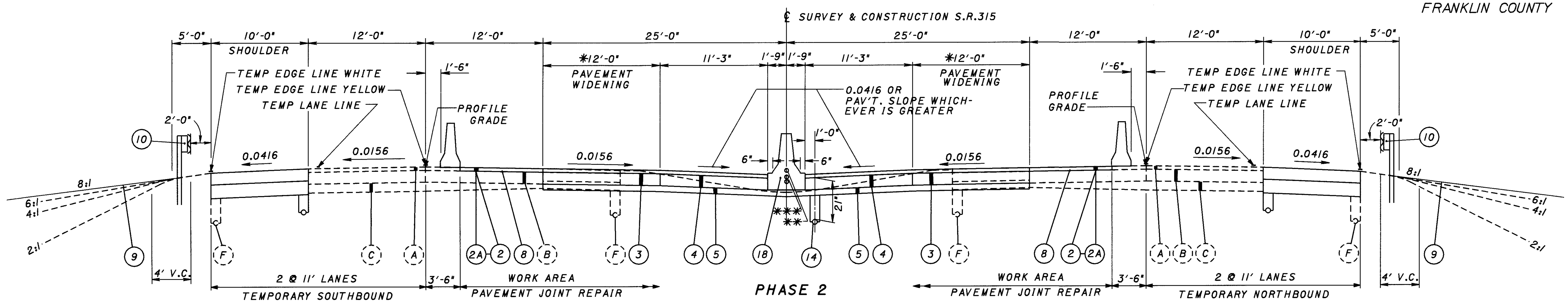
PHASE 2

1 - REMOVE EDGE LINE AND REPLACE W/LANE LINE CLASS I
2 - REPLACE LANE LINE W/EDGE LINE CLASS I
3 - TRANSFER 2 LANE TRAFFIC AND SIGN FOR "TRUCKS USE LEFT LANE"
4 - MILL EXISTING BITUMINOUS PAVEMENT IN 2 LANES ON MEDIAN SIDE, REPAIR CONCRETE JOINTS
5 - CONSTRUCT MEDIAN LANES, SHOULDER, CONCRETE BARRIER AND UNDERDRAINS AS REQUIRED
6 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
7 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
8 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

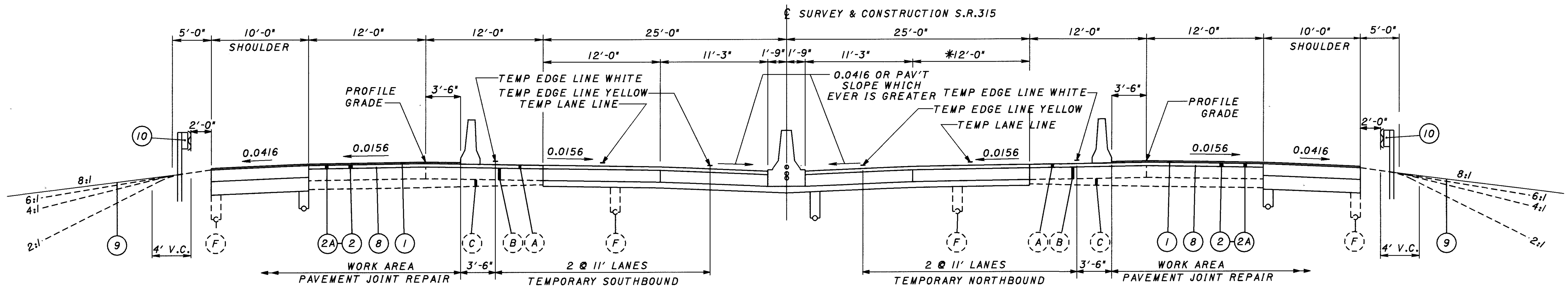
PHASE 3

1 - TRANSFER 2 LANE TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - MILL EXISTING BITUMINOUS PAVEMENT IN OUTSIDE LANES AND REPAIR CONCRETE JOINTS
3 - COMPLETE ALL UNDERDRAINS, PAVING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - COMPLETE PAVING INCLUDING FINAL COURSE AND APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

13-JAN-1999



PHASE 2



PHASE 3

LIMITING STATIONS

STA 66+10.00 TO STA 75+00.00 = 890.00 LIN. FT.
* VARIES 0'-0" TO 12'-0"
STA 96+00.00 TO STA 117+00.00 = 2100.00 LIN. FT.
TOTAL = 2990.00 LIN. FT.

LEGEND

- (1) ITEM 446 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
- (2) ITEM 254 2 1/2" PAVEMENT PLANING, BITUMINOUS
- (2A) ITEM 446 2 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
- (3) ITEM 305 8" CONCRETE BASE
- (4) ITEM 301 8" BITUMINOUS AGGREGATE BASE, AC-20
- (5) ITEM 310 4" SUBBASE "TYPE I" GRADING A, AS PER PLAN
- (7) ITEM 301 7" BITUMINOUS AGGREGATE BASE, AC-20
- (8) ITEM 407 TACK COAT
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE
- (12) ITEM 304 9" AGGREGATE BASE
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE PROPOSAL NOTE)
- (18) ITEM 622 CONCRETE BARRIER, TYPE B-50

** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER

*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER

EXISTING SR 315 PAVEMENT

- (A) 2 1/2" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

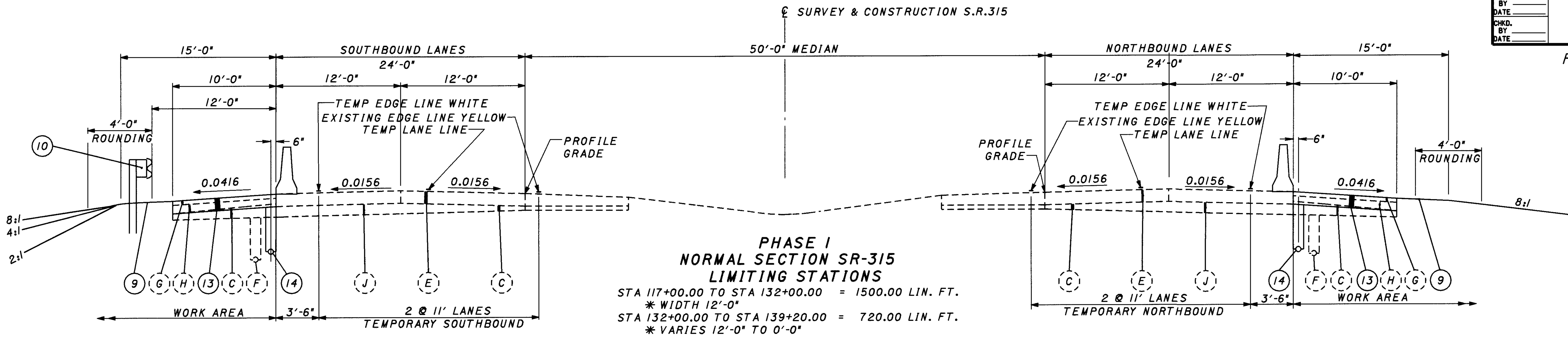
PHASE 2

1 - REMOVE EDGE LINE AND REPLACE W/LANE LINE CLASS I
2 - REPLACE LANE LINE W/EDGE LINE CLASS I
3 - TRANSFER 2 LANE TRAFFIC AND SIGN FOR "TRUCKS USE LEFT LANE"
4 - MILL EXISTING BITUMINOUS PAVEMENT IN 2 LANES ON MEDIAN SIDE, REPAIR CONCRETE JOINTS
5 - CONSTRUCT MEDIAN LANES, SHOULDER, CONCRETE BARRIER AND UNDERDRAINS AS REQUIRED
6 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
7 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
8 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

PHASE 3

1 - TRANSFER 2 LANE TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - MILL EXISTING BITUMINOUS PAVEMENT IN OUTSIDE LANES AND REPAIR CONCRETE JOINTS
3 - COMPLETE ALL UNDERDRAINS, PAVING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - COMPLETE PAVING INCLUDING FINAL COURSE AND APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

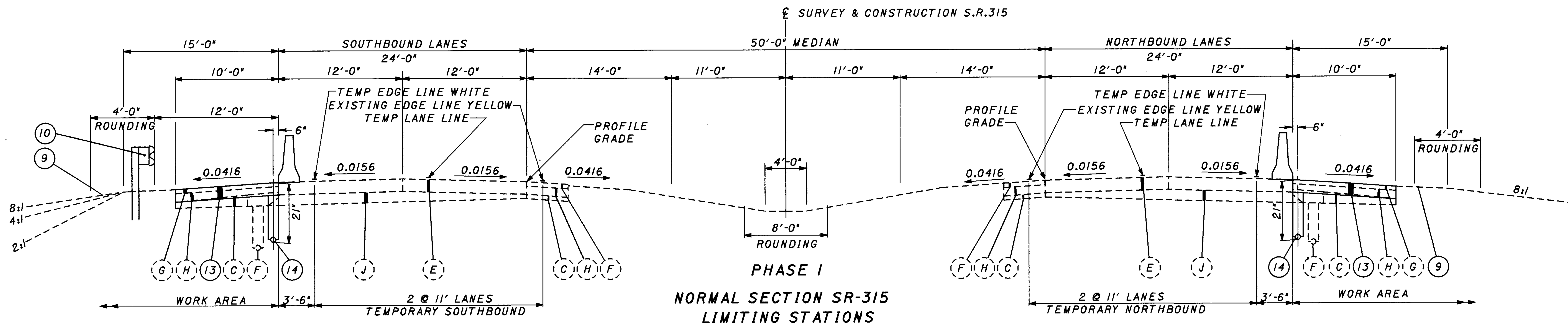
13-JAN-1999



PHASE I
NORMAL SECTION SR-315
LIMITING STATIONS

STA 117+00.00 TO STA 132+00.00 = 1500.00 LIN. FT.
* WIDTH 12'-0"
STA 132+00.00 TO STA 139+20.00 = 720.00 LIN. FT.
* VARIES 12'-0" TO 0'-0"
STA 133+80.26 TO STA 139+80.26 = 600.00 LIN. FT
* TAPERS 2'-0" TO 12'-0"

TOTAL = 2800.00 LIN. FT.



PHASE I
NORMAL SECTION SR-315
LIMITING STATIONS

STA 139+20.00 TO STA 159+03.90 LT. = 1983.90 LIN. FT.
STR. NO. FRA-315-1220
STA 159+82.10 TO STA 179+56.68 LT. = 1974.58 LIN. FT.
STA 139+20.00 TO STA 159+03.90 RT. = 1983.90 LIN. FT.
STR. NO. FRA-315-1220
STA 159+82.10 TO STA 179+56.68 RT. = 1974.58 LIN. FT.

TOTAL = 7916.96 LIN. FT.

EXISTING SR 315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

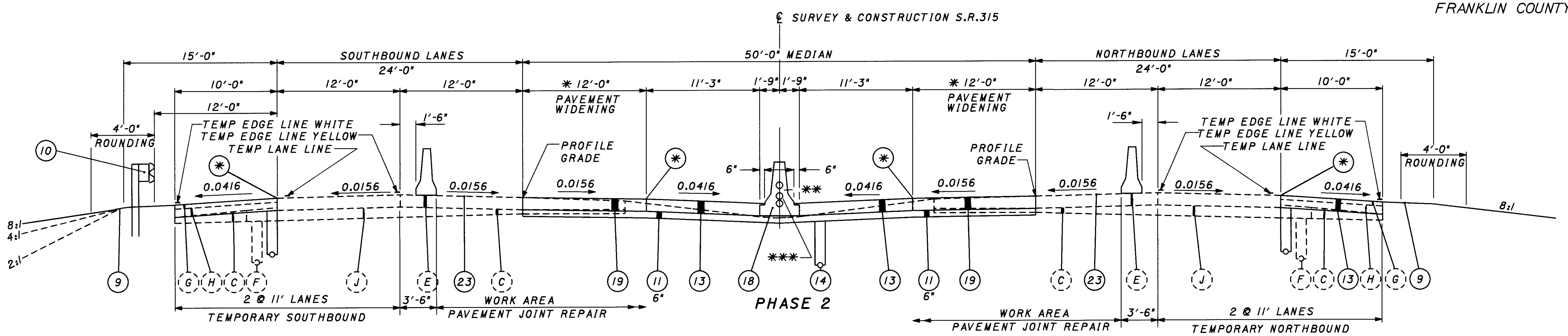
LEGEND

- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARDRAIL, TYPE 5
- (12) ITEM 304 9" AGGREGATE BASE
- (13) ITEM 452 9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET)

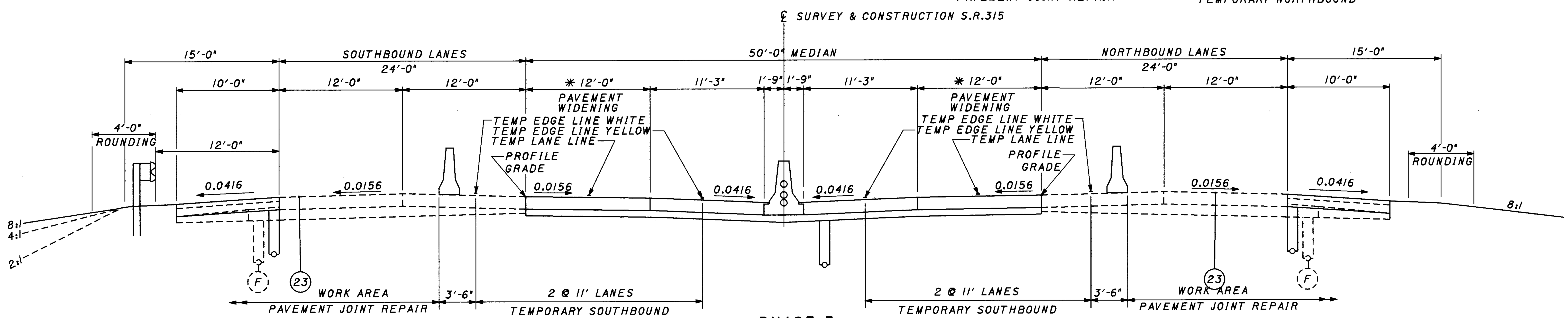
PHASE I

1 - BUILD OUTSIDE SHOULDER PAVEMENT
WHILE MAINTAINING TRAFFIC IN THE TWO EXISTING MEDIAN LANES
2 - REMOVE LANE LINE. INSTALL TEMPORARY EDGE & LANE LINE (CLASS 1)
3 - COMPLETE SHOULDER EXCEPT FOR FINAL SURFACE COURSE

MAINTENANCE OF TRAFFIC - TYPICAL SECTION



PHASE 2



PHASE 3

(*) TYPE D JOINT AS PER STD. DWG. BP-2.1

** - 4" PVC RACEWAY FOR LIGHTING, COST INCL. IN ITEM 622-CONC. BARRIER

*** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE, THE COST FOR THE ABOVE RACEWAYS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622-CONCRETE BARRIER

LEGEND

(9)	ITEM 659	SEEDING AND MULCHING
(10)	ITEM 606	GUARD RAIL, TYPE 5
(11)	ITEM 304	AGGREGATE BASE
(13)	ITEM 452	9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
(14)	ITEM 605	4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN (SEE DETAIL SHEET)
(18)	ITEM 622	CONCRETE BARRIER, TYPE B-50
(19)	ITEM 451	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(23)	ITEM 254	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE (SEE GENERAL NOTES)

NORMAL SECTION SR-315
LIMITING STATIONS

STA 117+00.00 TO STA 132+00.00 = 1500.00 LIN. FT.
* WIDTH 12'-0"
STA 132+00.00 TO STA 139+20.00 LT. = 720.00 LIN. FT.
* VARIES 12'-0" TO 0'-0"
STA 133+80.26 TO STA 139+80.26 RT. = 600.00 LIN. FT
* TAPERS 2'-0" TO 12'-0"

TOTAL = 2800.00 LIN. FT.

EXISTING SR 315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

PHASE 2

1 - REMOVE EDGE LINE
2 - INSTALL TEMPORARY EDGE LINES CLASS I
3 - PAVEMENT JOINT REPAIR IN EXISTING LANES ON MEDIAN SIDE
4 - CONSTRUCT MEDIAN LANES, SHOULDER, CONCRETE BARRIER AND UNDERDRAINS AS REQUIRED
5 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
6 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
7 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

PHASE 3

1 - TRANSFER TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - PAVEMENT JOINT REPAIR IN OUTSIDE LANES
3 - COMPLETE ALL UNDERDRAINS, PAVEMENT PLANING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

13-JAN-1999
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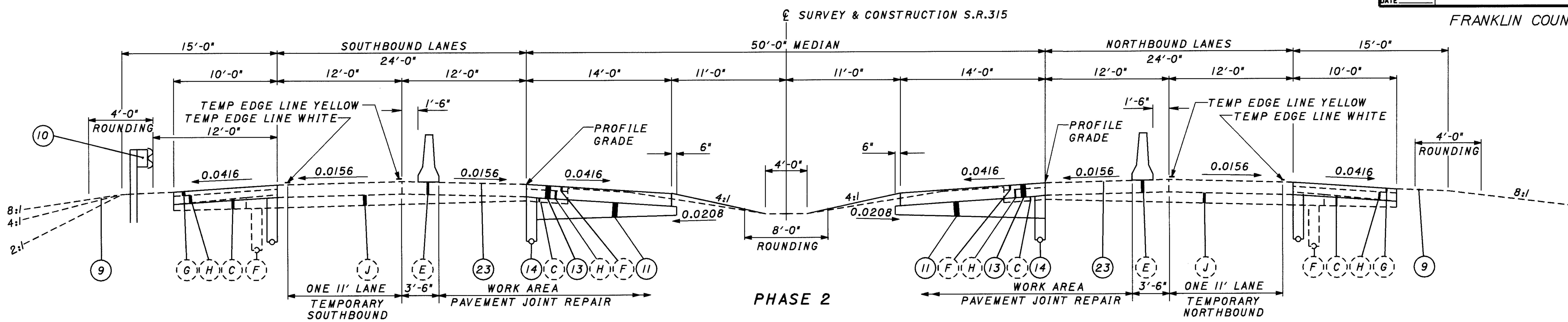
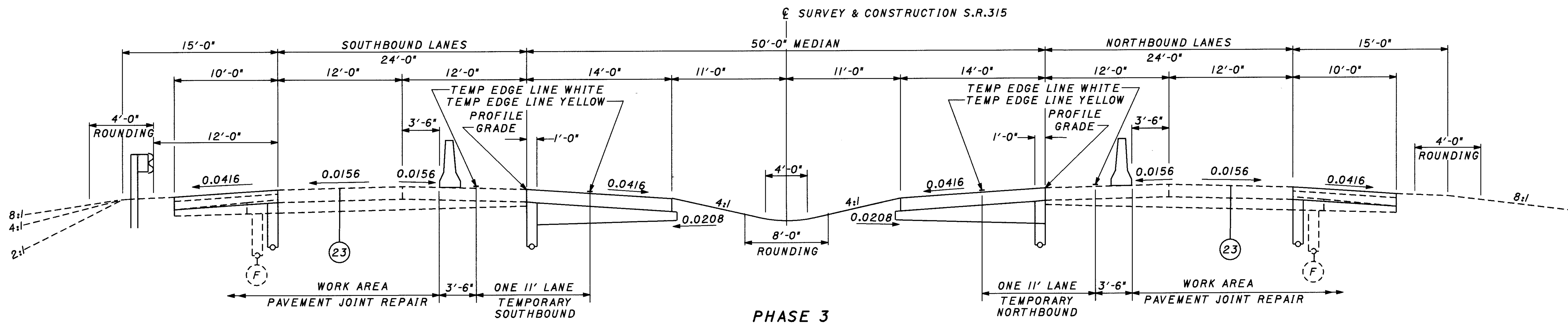


PHASE 2



PHASE 3

NORMAL SECTION SR-315
LIMITING STATIONS

STA 139+20.00 TO STA 159+03.90 LT.	=	1983.90 LIN. FT.
STR. NO. FRA-315-1220		
STA 159+82.10 TO STA 179+56.68 LT.	=	1974.58 LIN. FT.
STA 139+20.00 TO STA 159+03.90 RT.	=	1983.90 LIN. FT.
STR. NO. FRA-315-1220		
STA 159+82.10 TO STA 179+56.68 RT.	=	1974.58 LIN. FT.
TOTAL	=	7916.96 LIN. FT.

LEGEND

- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 606 GUARD RAIL, TYPE 5
- (11) ITEM 304 AGGREGATE BASE
- (13) ITEM 452 9" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT
- (14) ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15AS PER PLAN (SEE DETAIL SHEET)
- (23) ITEM 254 PAVEMENT PLANING, PORTLAND CEMENT CONCRETE (SEE GENERAL NOTES)

EXISTING SR 315 PAVEMENT

- (A) 2½" ASPHALT CONCRETE WITH RALUMAC SURFACE
- (B) 8" PORTLAND CEMENT CONCRETE BASE
- (C) 3" TO 4" SUBBASE
- (F) 6" UNDERDRAIN
- (G) 3" BITUMINOUS AGGREGATE BASE
- (H) 6" AGGREGATE BASE

PHASE 2

1 - REMOVE EDGE LINE
2 - INSTALL TEMPORARY EDGE LINES CLASS I
3 - PAVEMENT JOINT REPAIR IN EXISTING LANES ON MEDIAN SIDE
4 - CONSTRUCT MEDIAN UNDERDRAINS AS REQUIRED
5 - REBUILD MEDIAN INLETS TO NEW GRADE AND COMPLETE ALL MEDIAN WORK
6 - PAVEMENT COMPLETE EXCEPT FOR FINAL SURFACE COURSE
7 - PREPARE TEMPORARY PAVEMENT MARKING FOR OPENING ALL EXISTING LANES

PHASE 3

1 - TRANSFER TRAFFIC TO THE AREA COMPLETED UNDER PHASE 2
2 - PAVEMENT JOINT REPAIR IN OUTSIDE LANES
3 - COMPLETE ALL UNDERDRAINS, PAVEMENT PLANING AND GUARDRAIL WITHIN THE WORK AREA
4 - COMPLETE ALL BRIDGE RECONSTRUCTION REQUIRED ON THIS SIDE
5 - APPLY ALL FINAL PAVEMENT MARKING IN THE PERMANENT LOCATION

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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BEGIN PROJECT
FRA-315-5.18
STA 175+34.40

℄ S.R.315
℄ ACKERMAN RD.

℄ STA 192+83.03 AHEAD
℄ STA 193+82.96 BACK=

℄ STA 212+52.17 S.R.315=
℄ STA 211+48.07 RAMP DH

℄ STA 225+53.73 S.R.315=
℄ OLENTANGY RIVER RD.

℄ STA 231+71.30 S.R.315=
℄ STA 64+61.43 W.N. BROADWAY

MATCH LINE
STA. 244+50

M.O.T. OVERHEAD SIGNING PLAN STA. 175+34.40 TO 244+50

M.O.T. OVERHEAD SIGNING PLAN STA. 244+50 TO 379+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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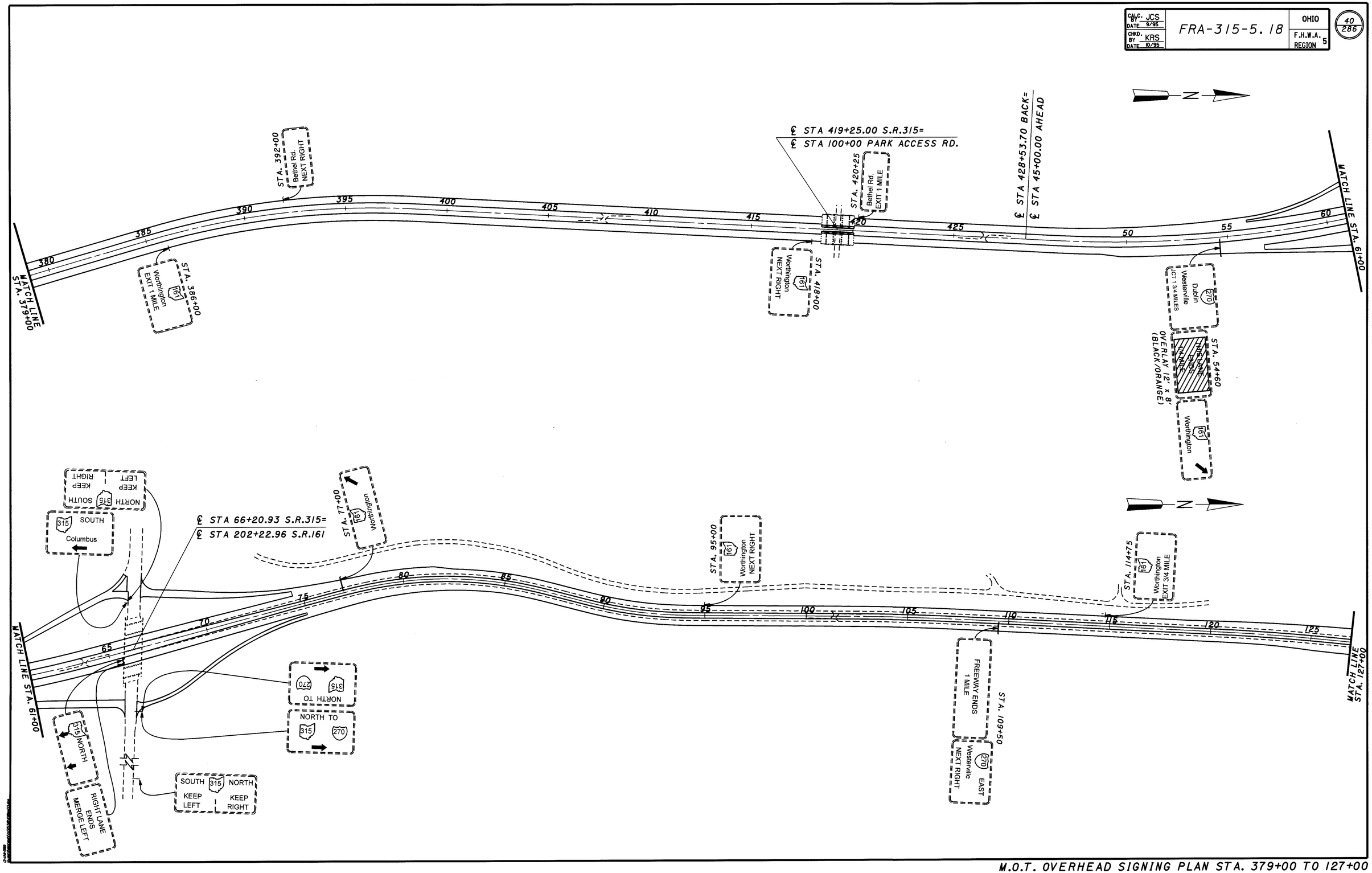
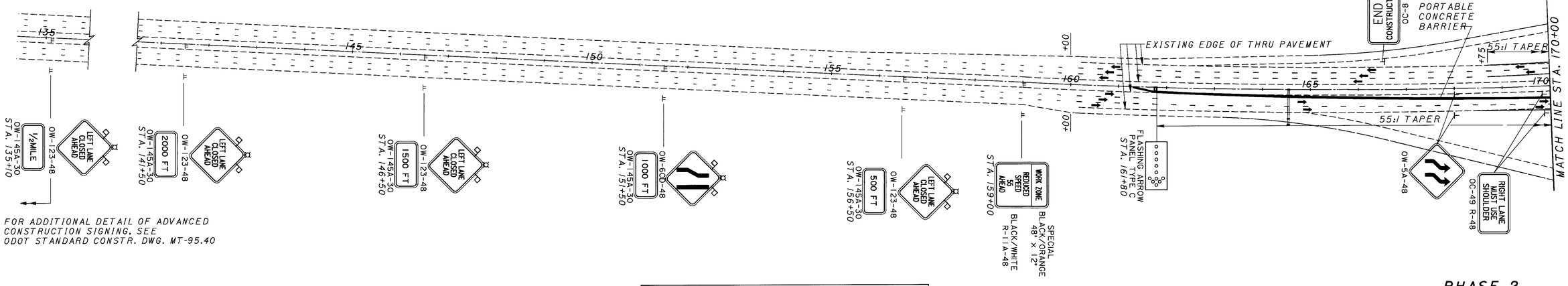


M.O.T. OVERHEAD SIGNING PLAN STA. 379+00 TO 127+00

M.O.T. OVERHEAD SIGNING PLAN STA. 127+00 TO STA. 190+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

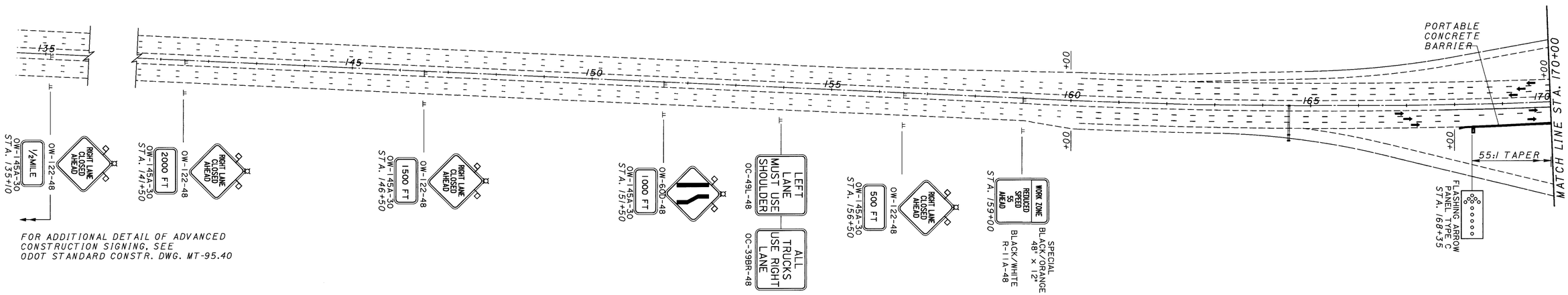
NOTE:
PROVIDE A TYPE C BARRICADE WARNING LIGHT AND TWO 24" RED FLAGS ON ALL ADVANCE WARNING SIGNS



FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.40

PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.40

PHASE 3

MAINTENANCE OF TRAFFIC STA. 135+00 TO STA. 170+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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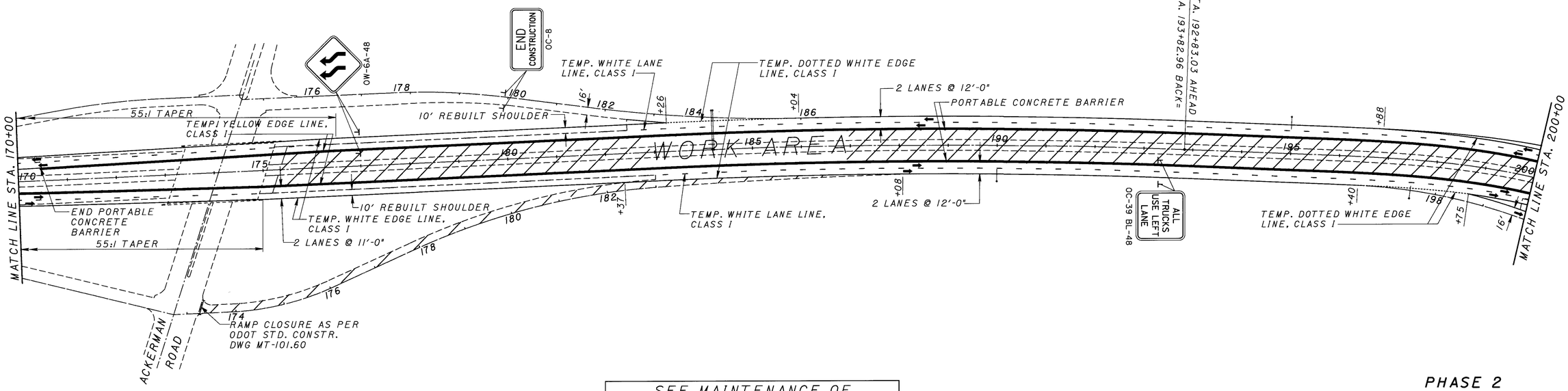
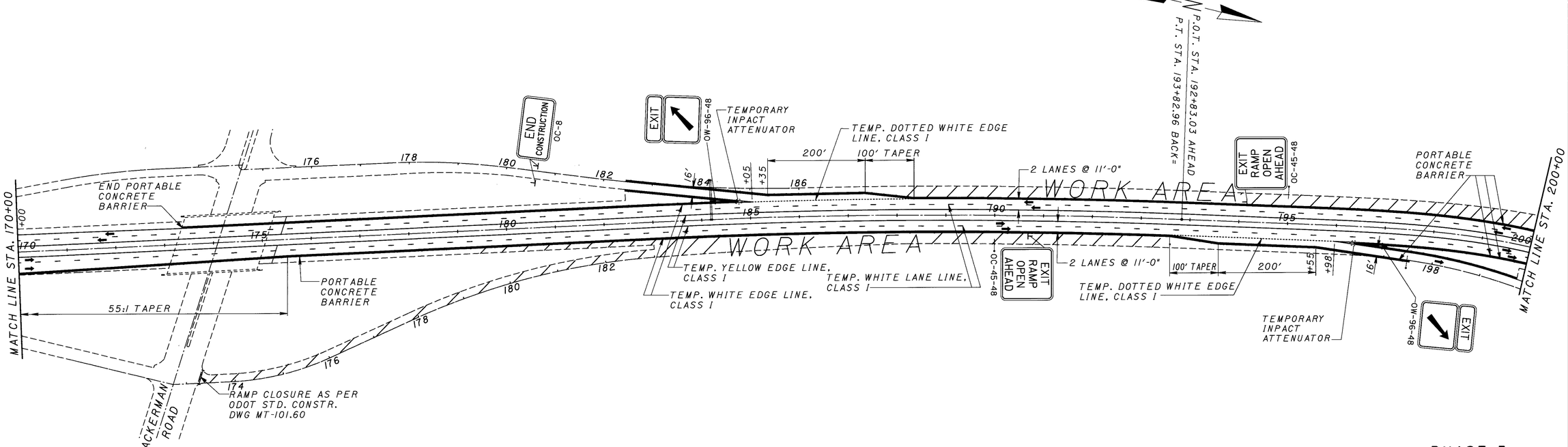


PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 170+00 TO STA. 200+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

RAMP CLOSURE AS PER ODOT STD. CONSTR. DWG MT-101.60

RAMP CLOSURE AS PER O.D.O.T. STD. CONSTR. DWG MT-101.60

2 LANES @ 11'-0"

EXISTING EDGE OF PAVEMENT

10' REBUILT SHOULDER

10' REBUILT SHOULDER

TEMPORARILY CLOSE THIS RAMP DURING BRIDGE PAINTING

TEMP. WHITE LANE LINE, CLASS I

TEMP. WHITE EDGE LINE, CLASS I

TEMP. YELLOW EDGE LINE, CLASS I

2 LANES @ 11'-0"

ENTRANCE RIVERSIDE MEMORIAL HOSPITAL

LEFT TURN LANE CLOSED

WEST NORTH BROADWAY

RIGHT LANE MUST USE SHOULDER OC-49 R-48

PORTABLE CONCRETE BARRIER

PORTABLE CONCRETE BARRIER

RIGHT LANE MUST USE SHOULDER OC-49 R-48

END CONSTRUCTION OC-8

WORK AREA

RIVER ROAD

OLENTANGY

2 LANES @ 11'-0"

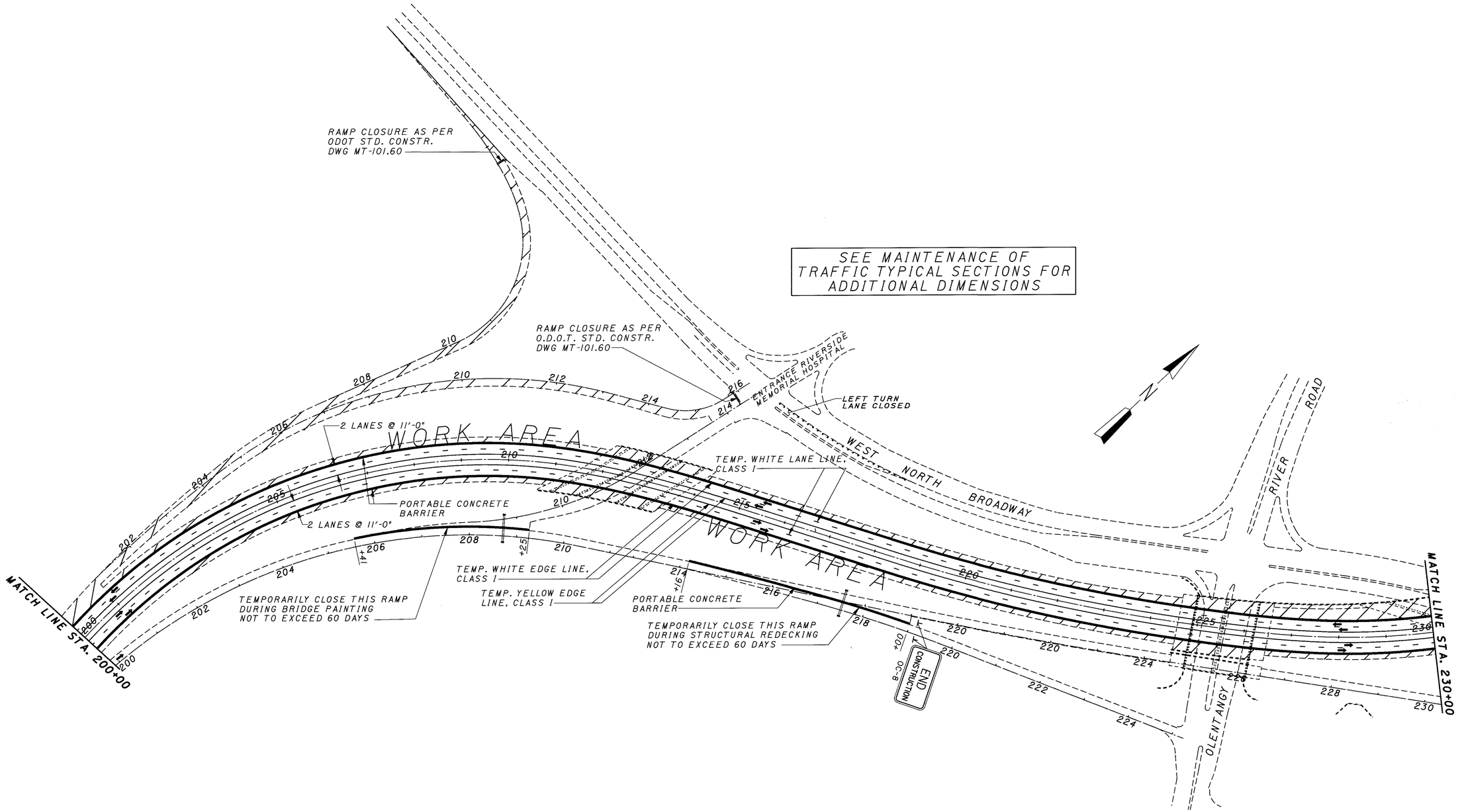
MATCH LINE STA. 200+00

MATCH LINE STA. 230+00

PHASE 2

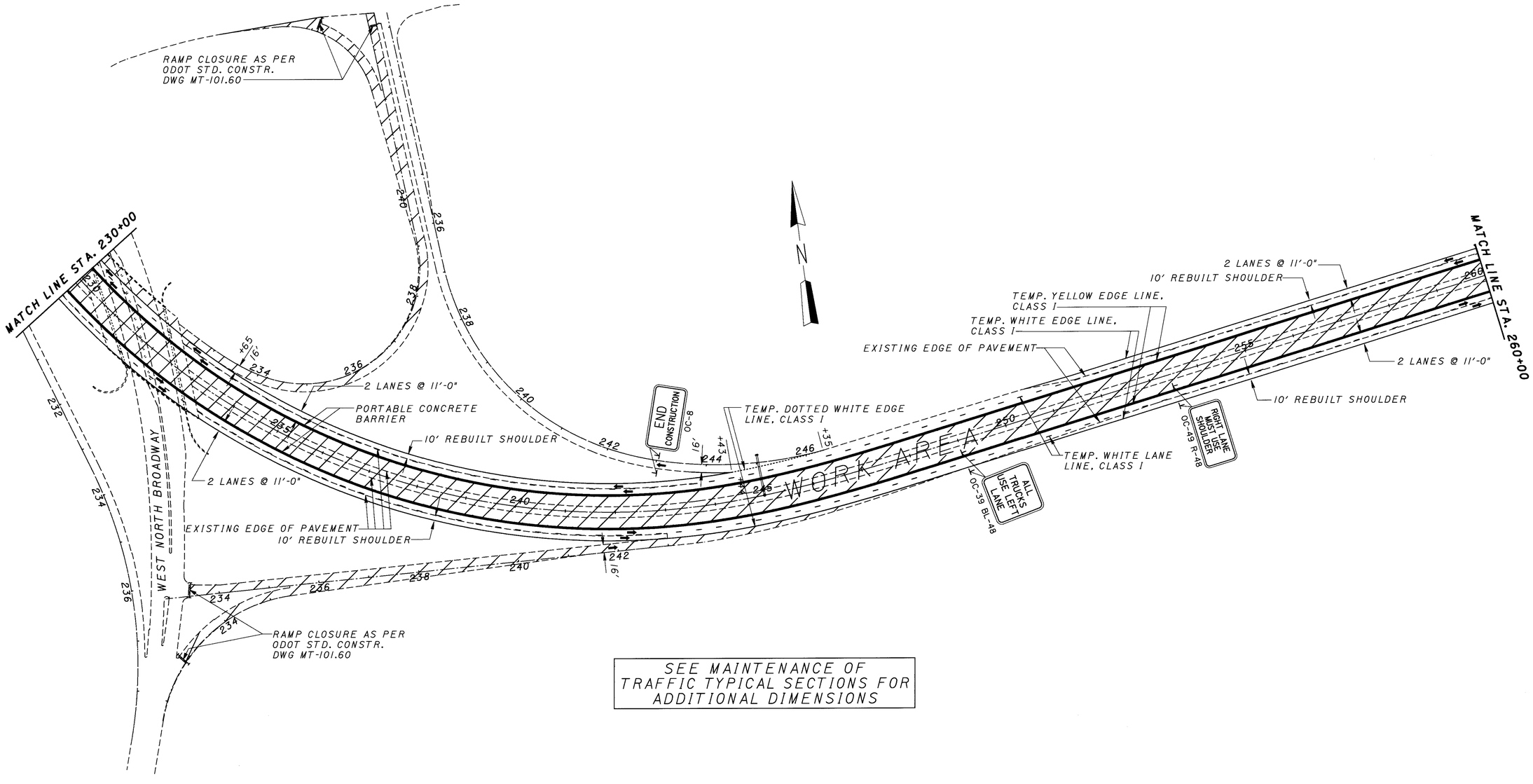
MAINTENANCE OF TRAFFIC STA. 200+00 TO STA. 230+00

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 200+00 TO STA. 230+00



SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS

PHASE 2

MAINTENANCE OF TRAFFIC STA. 230+00 TO STA. 260+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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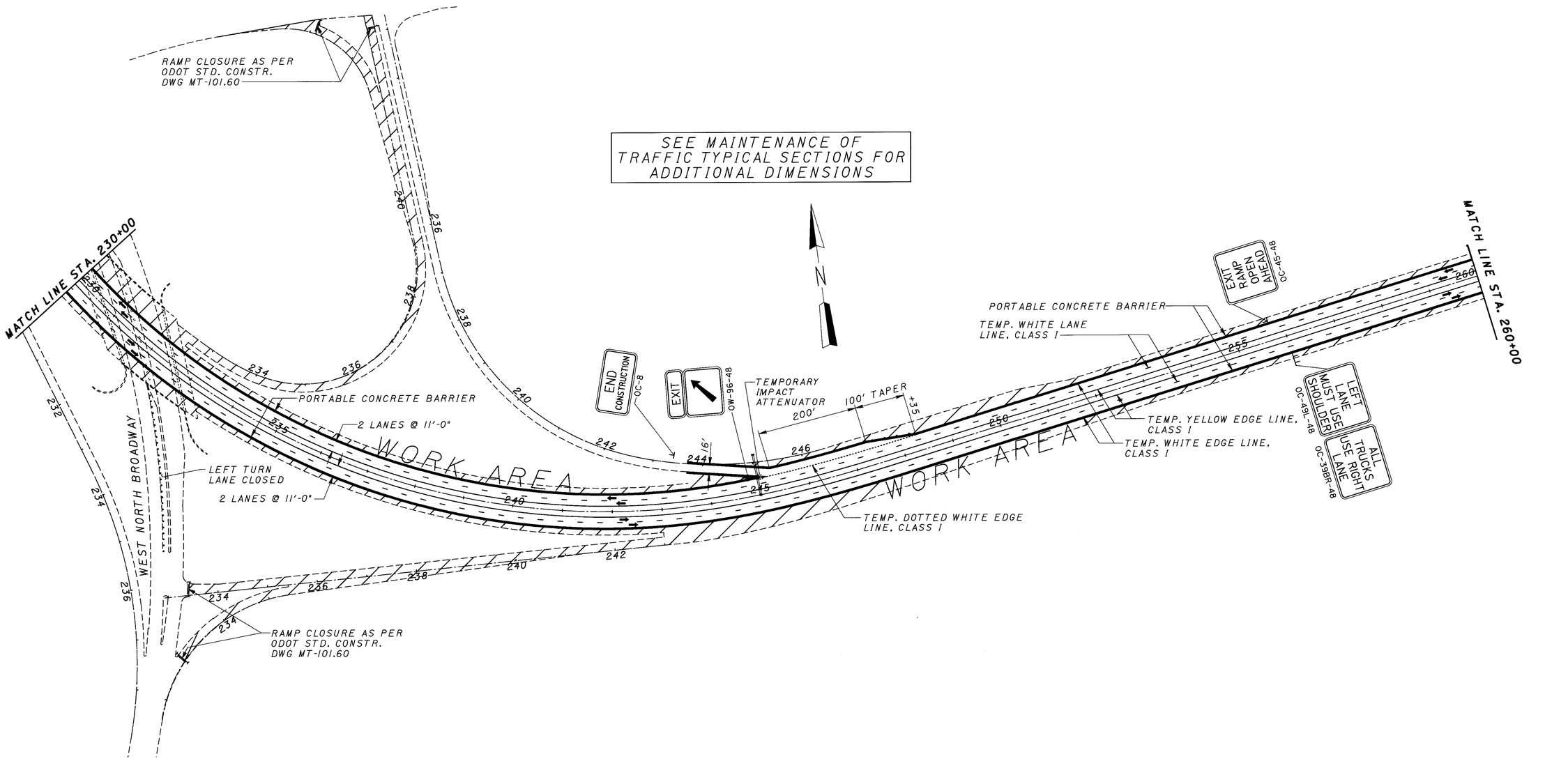
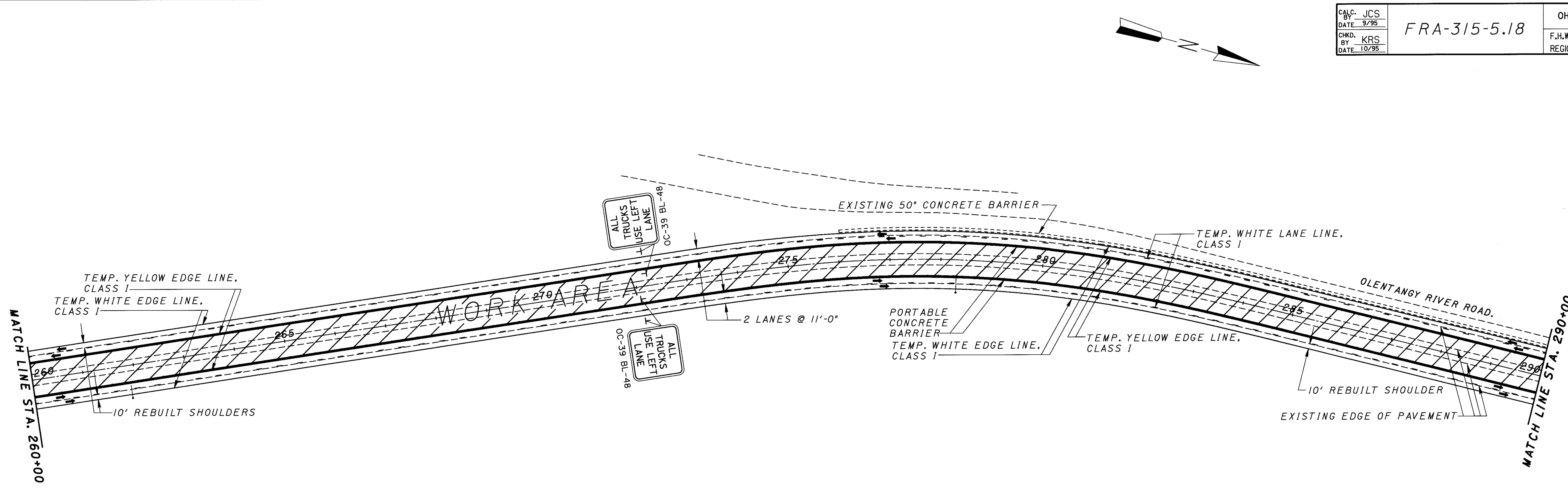
SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

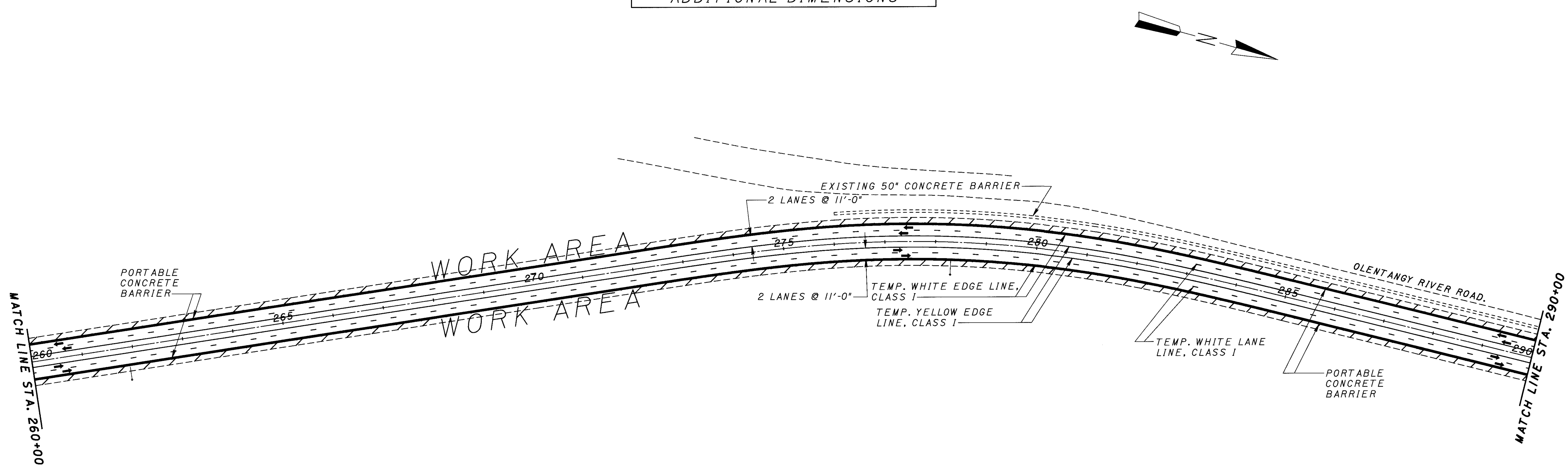
MAINTENANCE OF TRAFFIC STA. 230+00 TO STA. 260+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	48/286



PHASE 2

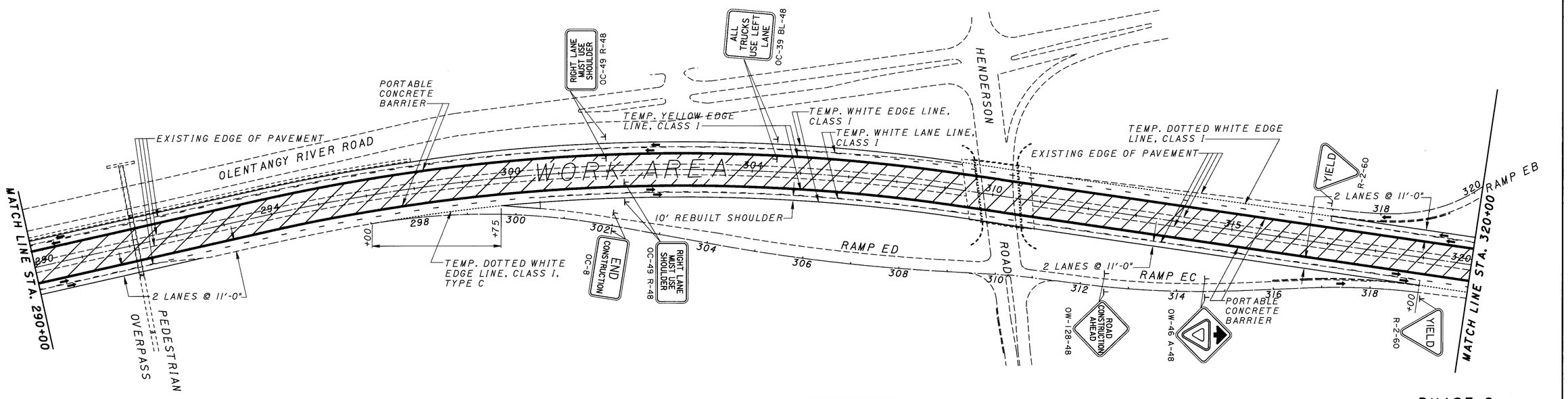
SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

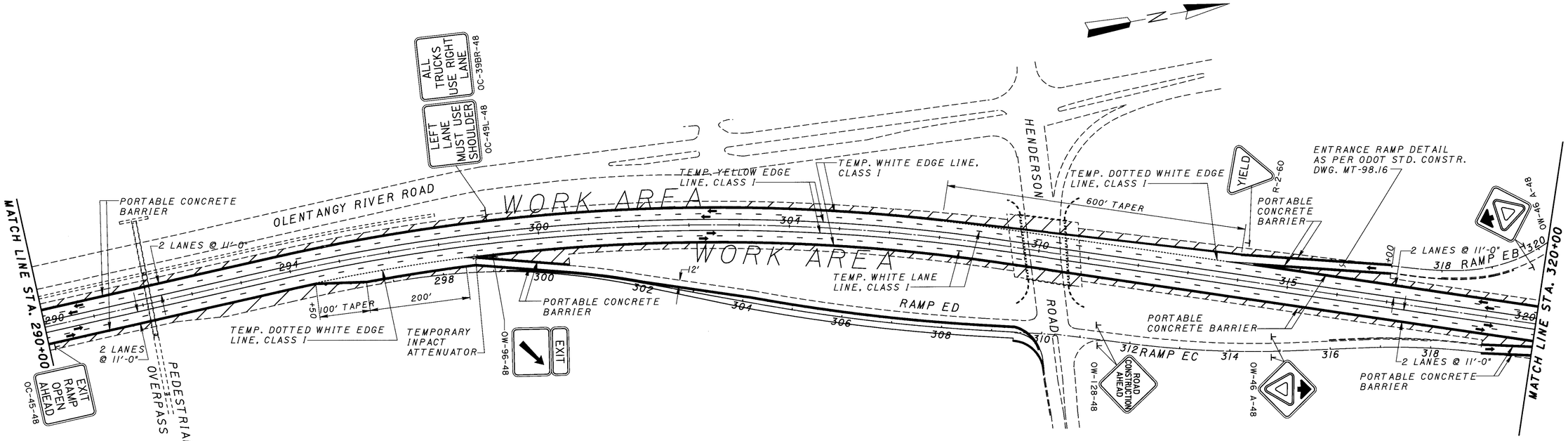
MAINTENANCE OF TRAFFIC STA. 260+00 TO STA. 290+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 290+00 TO STA. 320+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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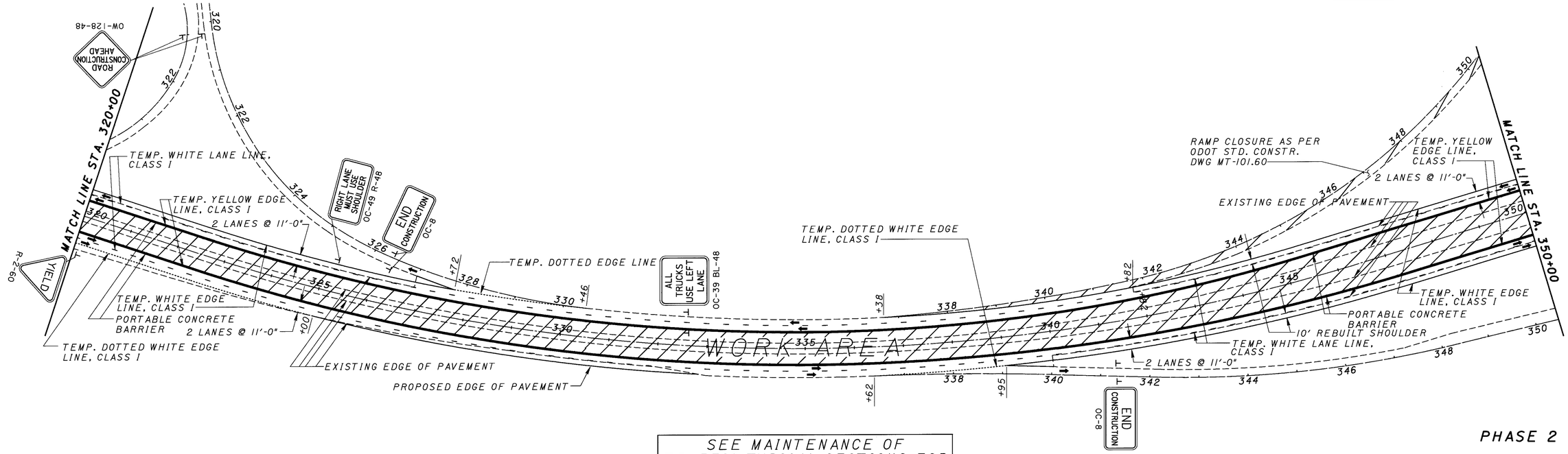
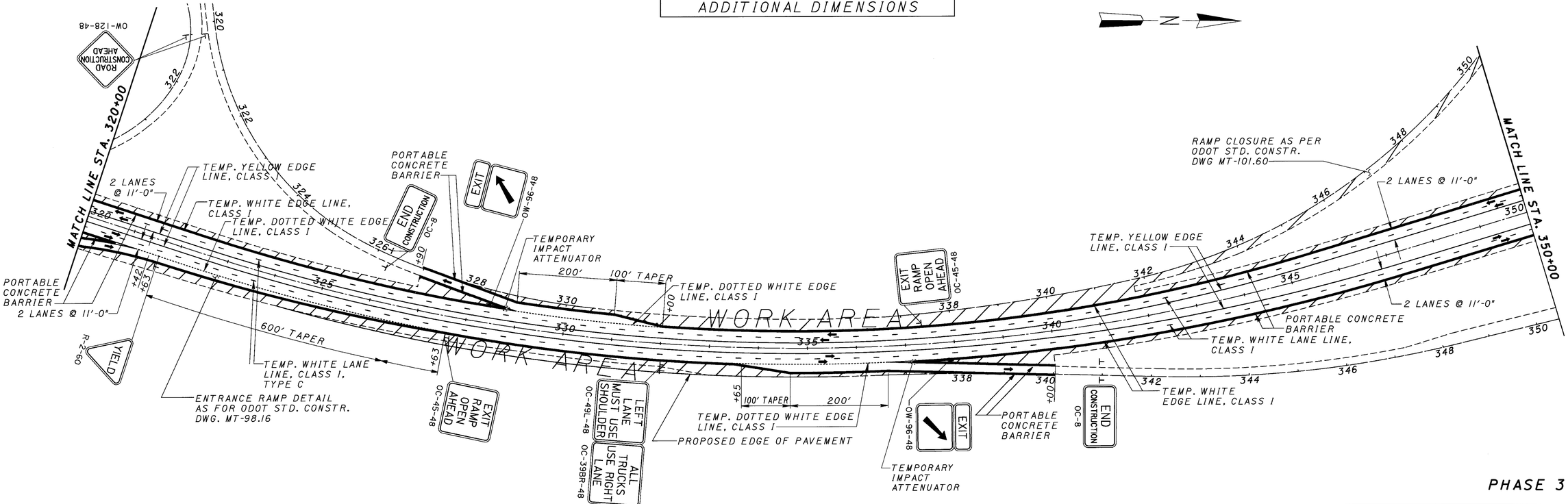


PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 320+00 TO STA. 350+00

CALC. BY JCS DATE 9/95 | CHKD. BY KRS DATE 10/95

FRA-315-5.18

OHIO F.H.W.A. REGION 5

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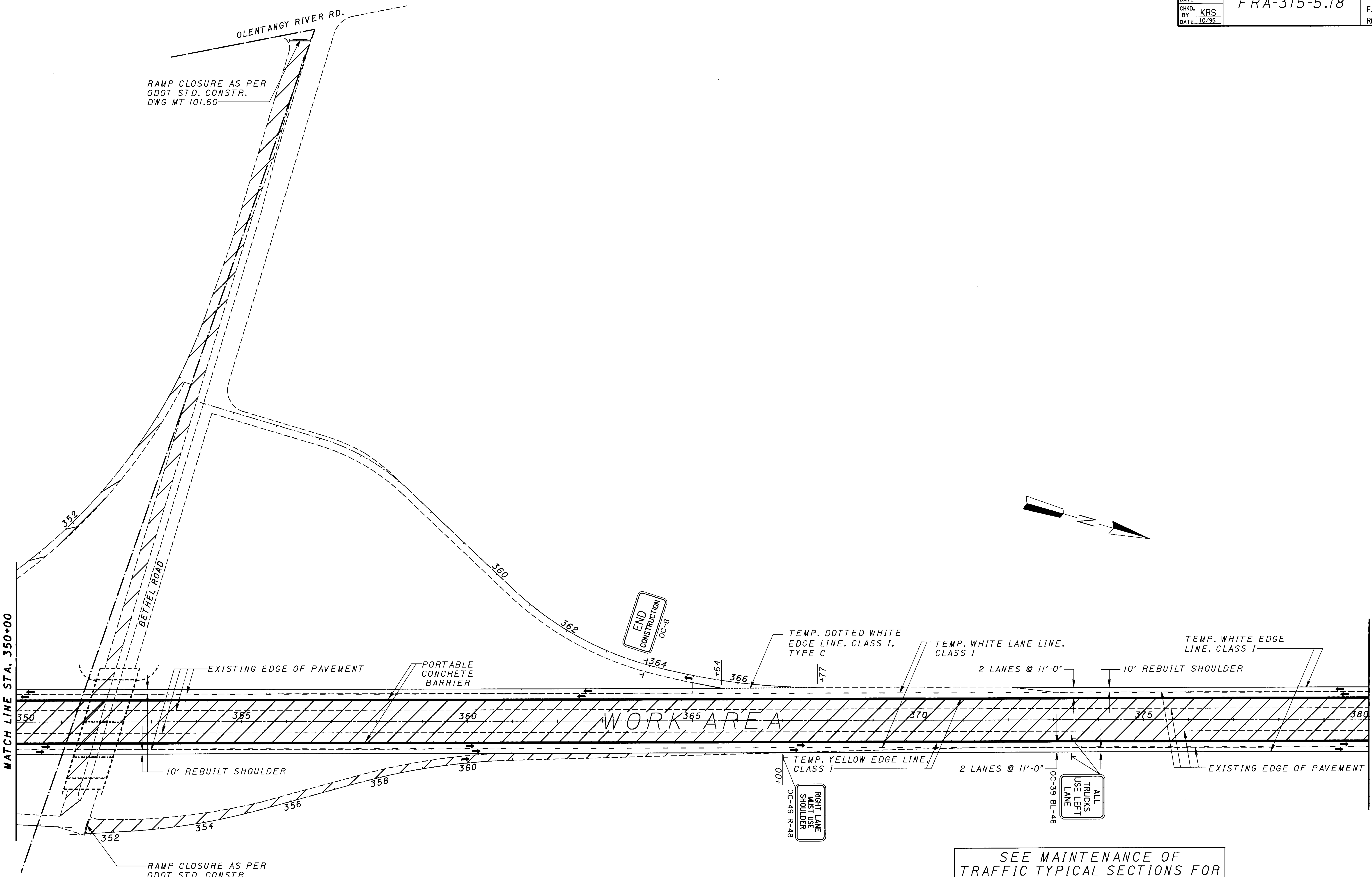
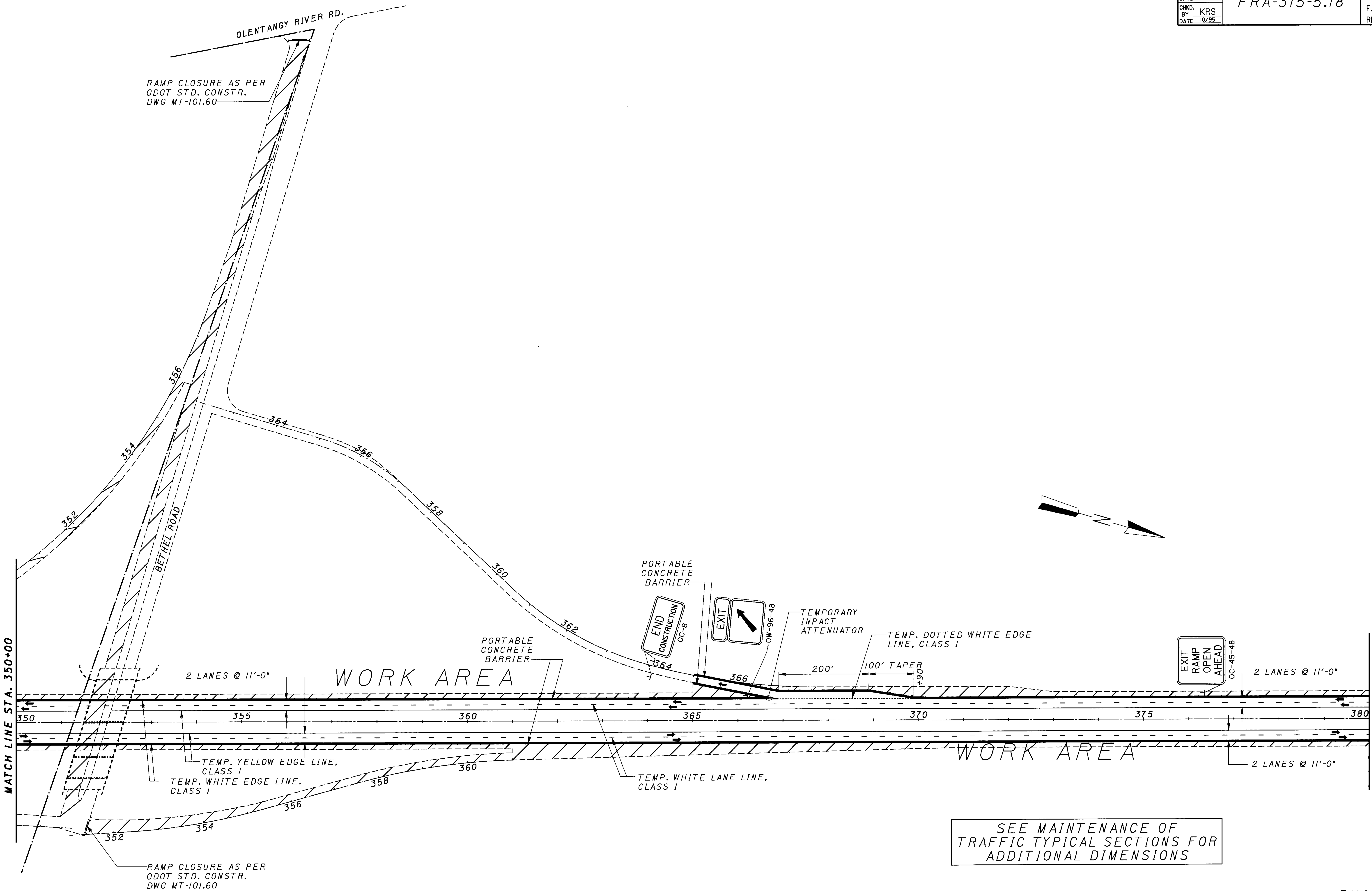


SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS

PHASE 2

MAINTENANCE OF TRAFFIC STA. 350+00 TO STA. 380+00

CALC. BY JCS DATE 9/95 / CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO / F.H.W.A. REGION 5	52/286

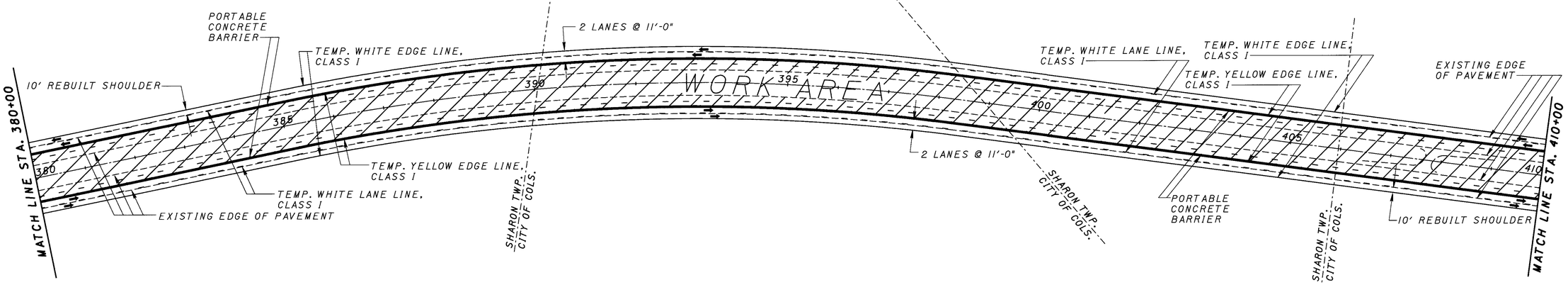


PHASE 3

MAINTENANCE OF TRAFFIC STA. 350+00 TO STA. 380+00

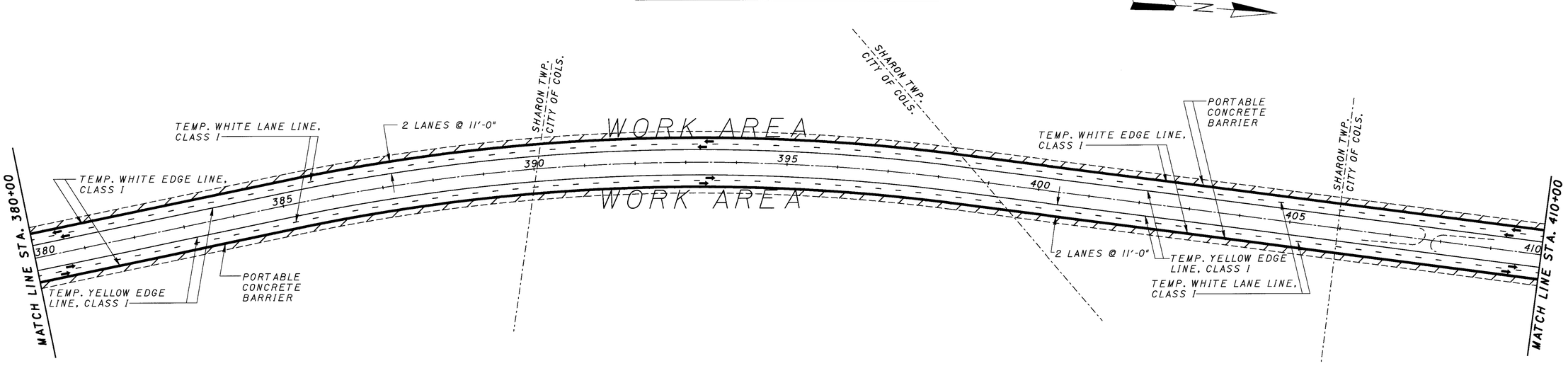
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

53
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 380+00 TO STA. 410+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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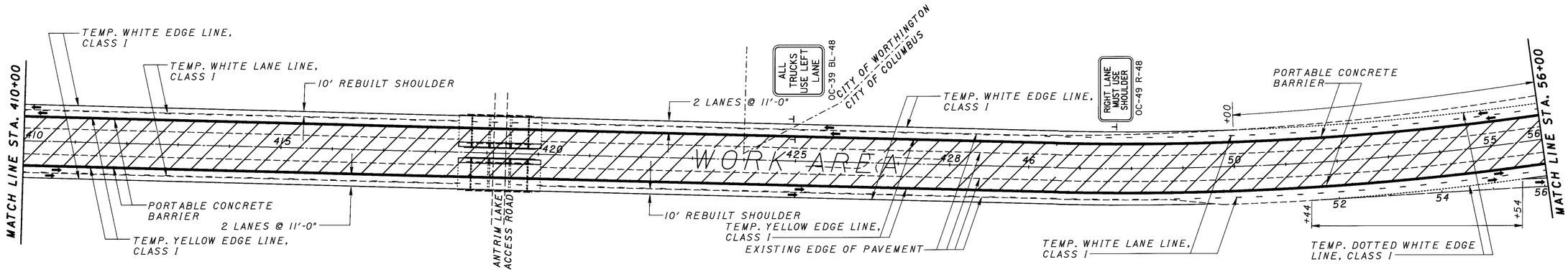
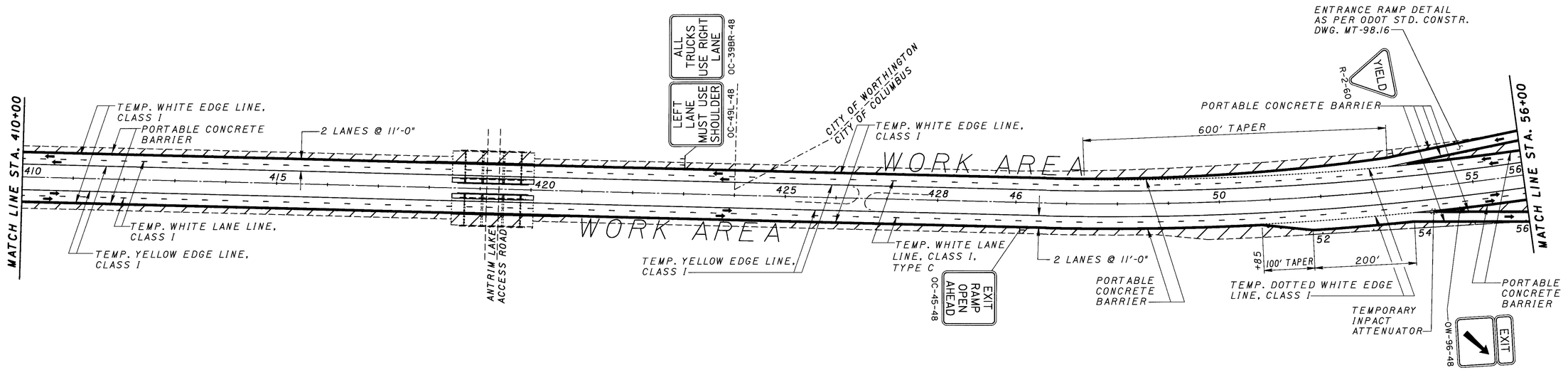
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 410+00 TO STA. 56+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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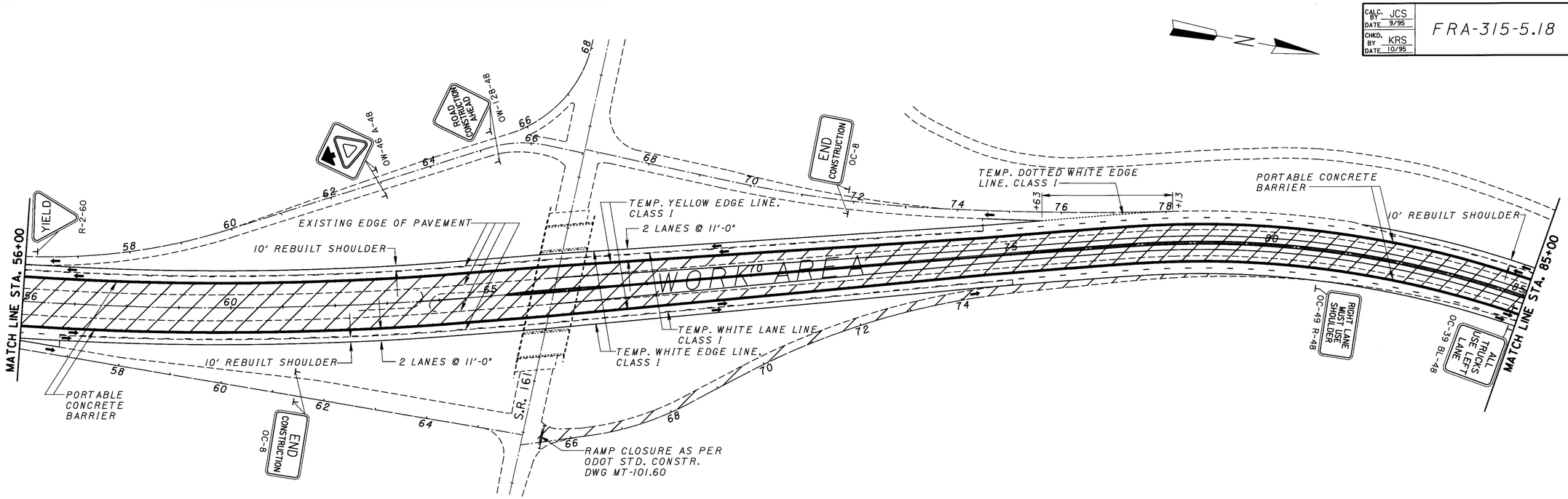
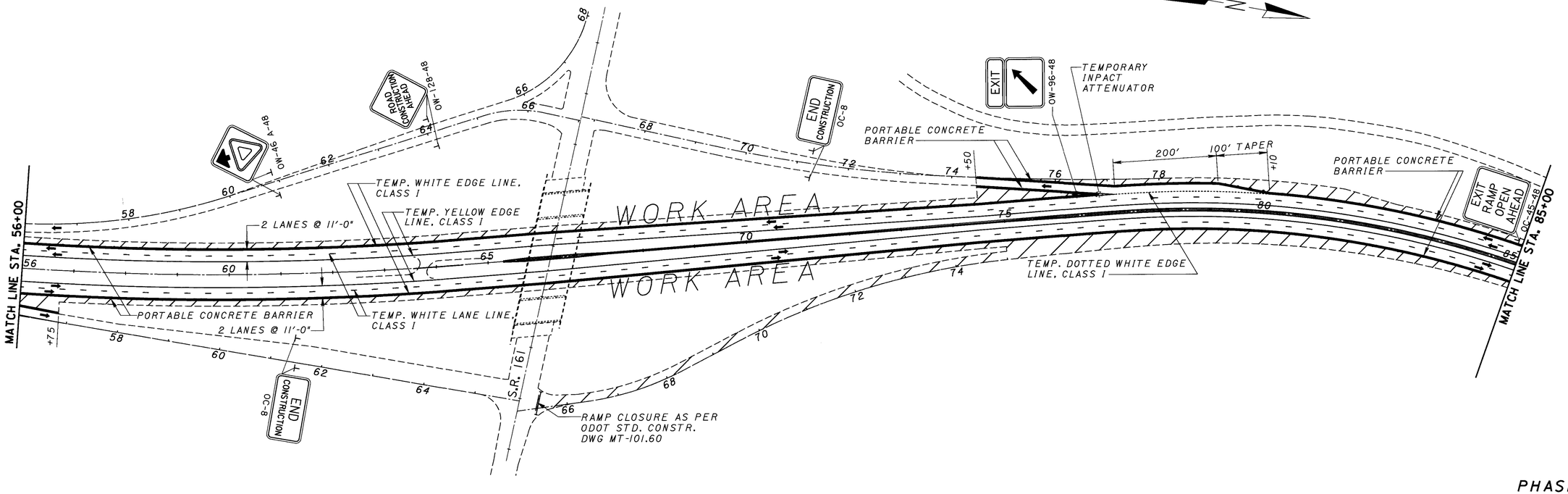
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 56+00 TO STA. 85+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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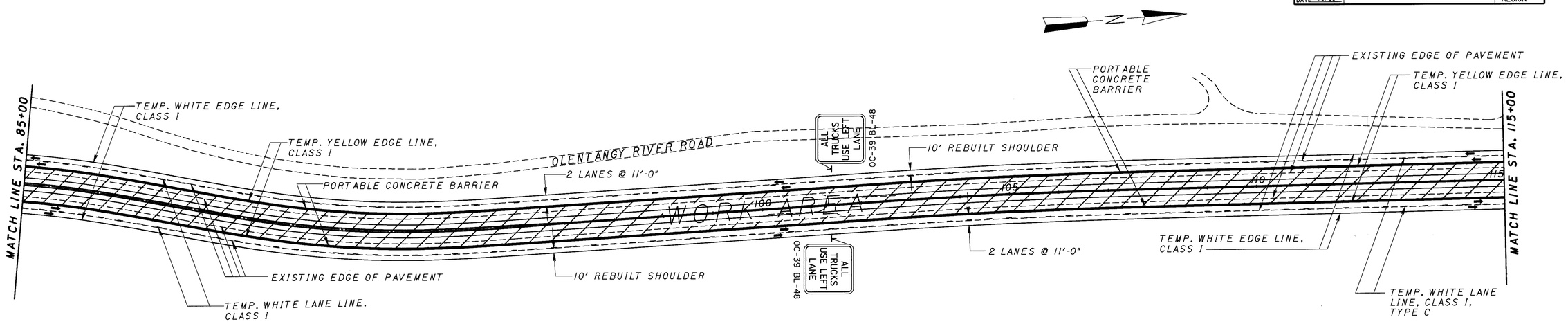
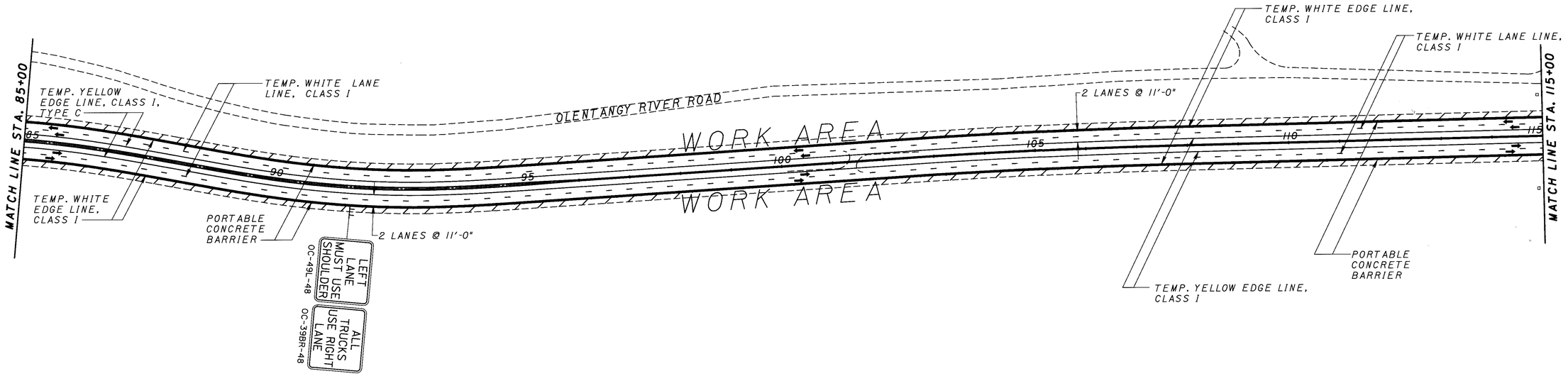
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 85+00 TO STA. 115+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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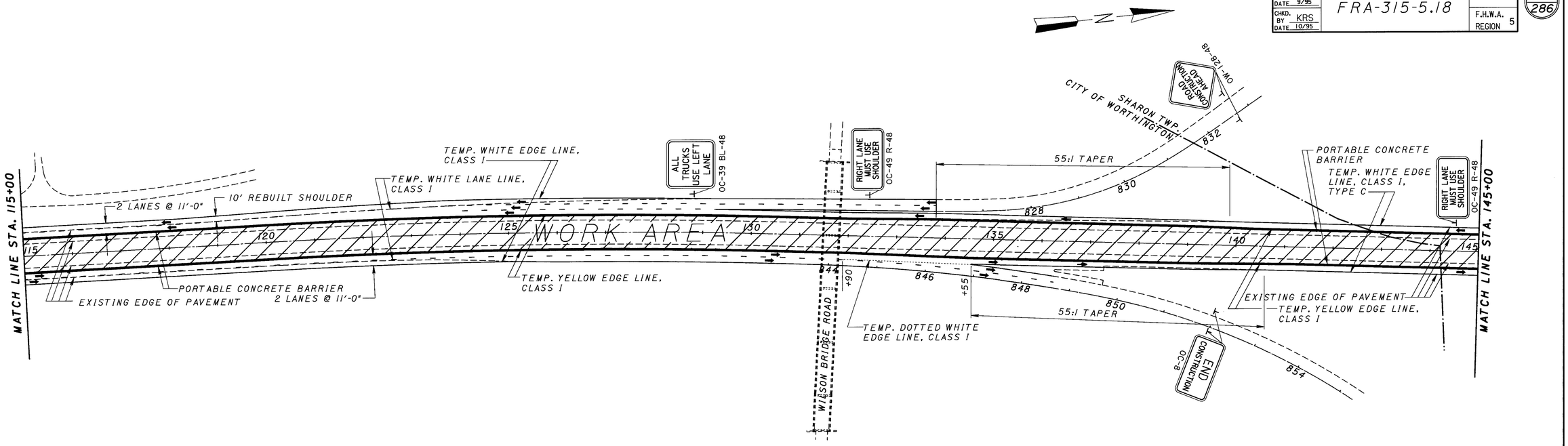
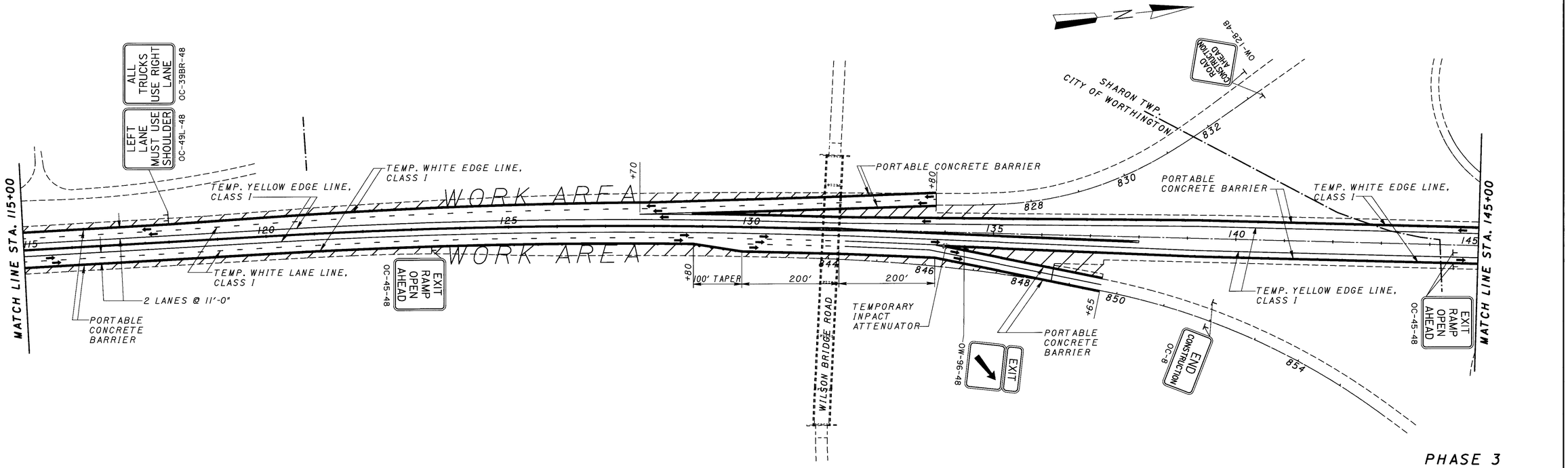
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 115+00 TO STA. 145+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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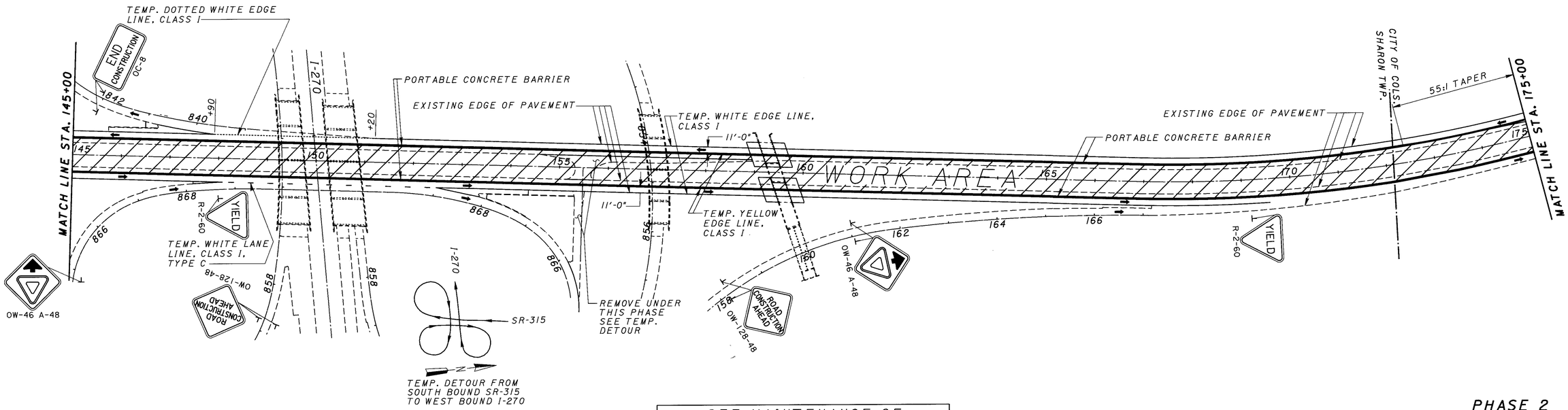
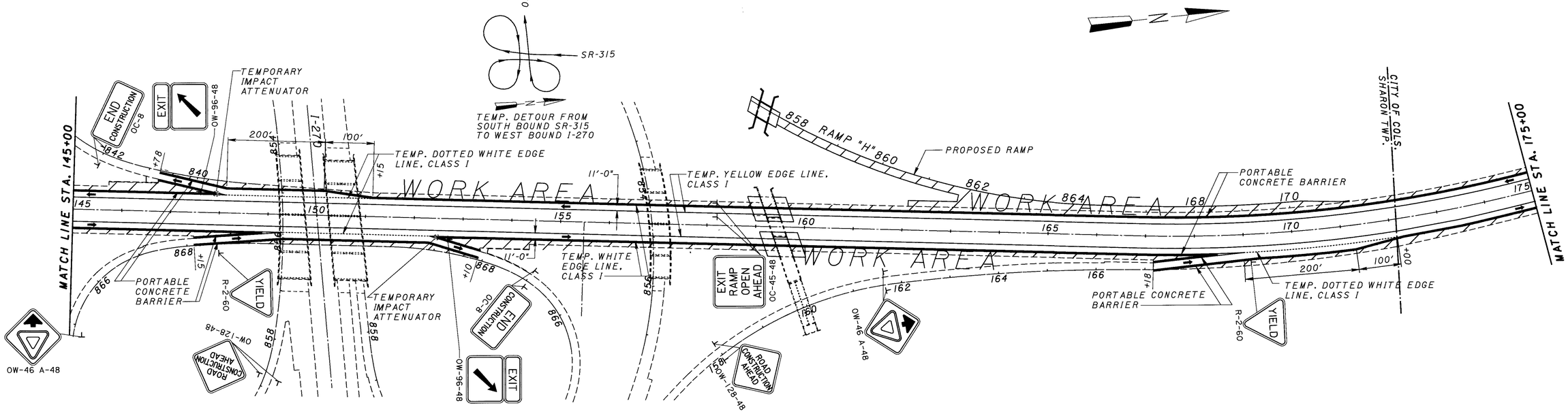
286



PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



PHASE 3

MAINTENANCE OF TRAFFIC STA. 145+00 TO STA. 175+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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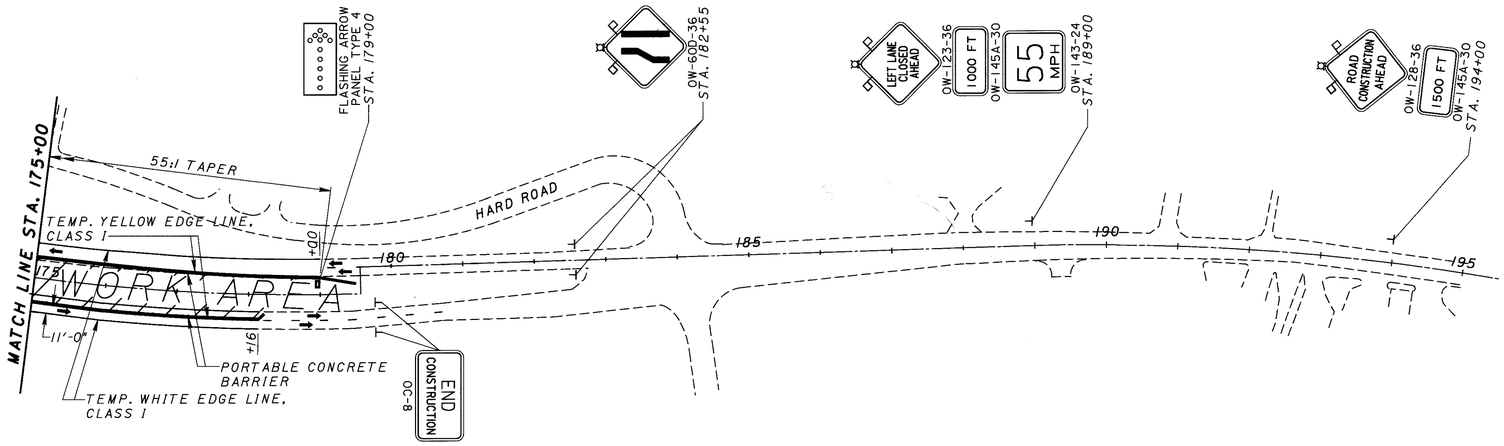
286

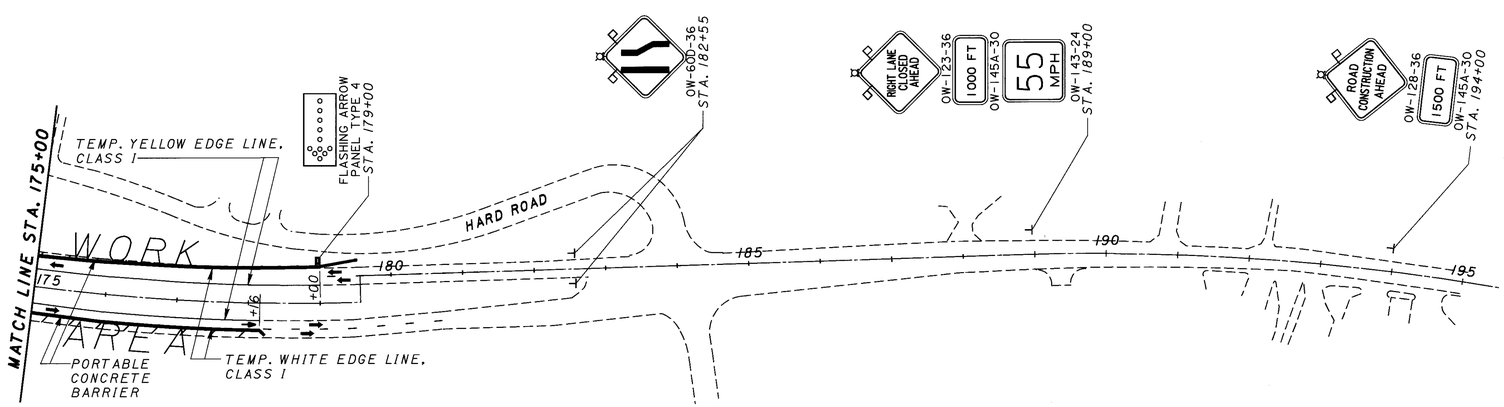


NOTE:
PROVIDE A TYPE C BARRICADE WARNING LIGHT AND TWO 24" RED FLAGS ON ALL ADVANCE WARNING SIGNS

FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.32

PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.32

PHASE 3

MAINTENANCE OF TRAFFIC STA. 175+00 TO STA. 195+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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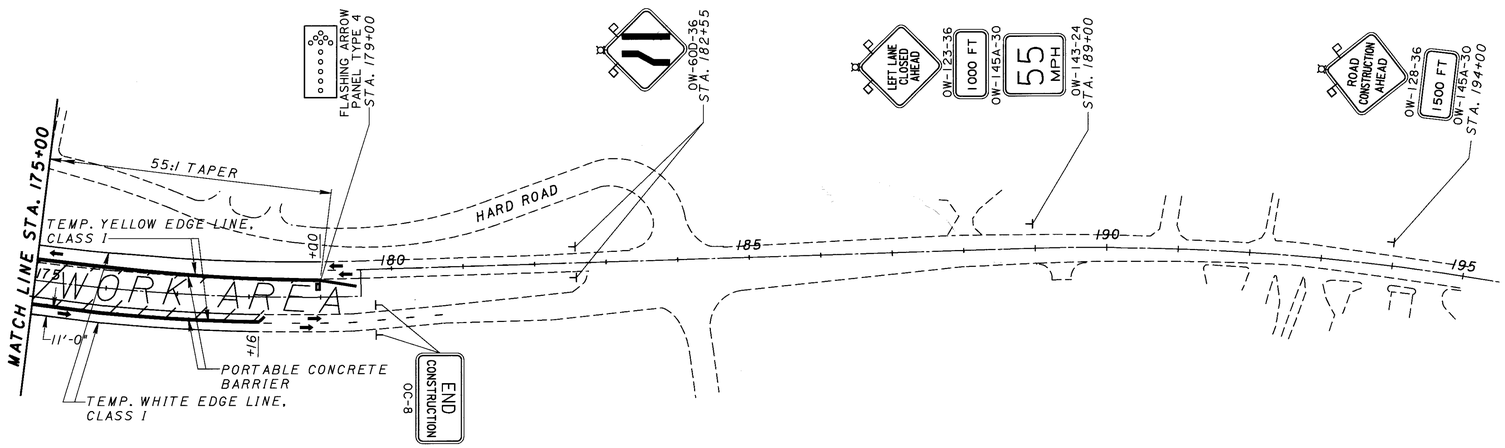
286

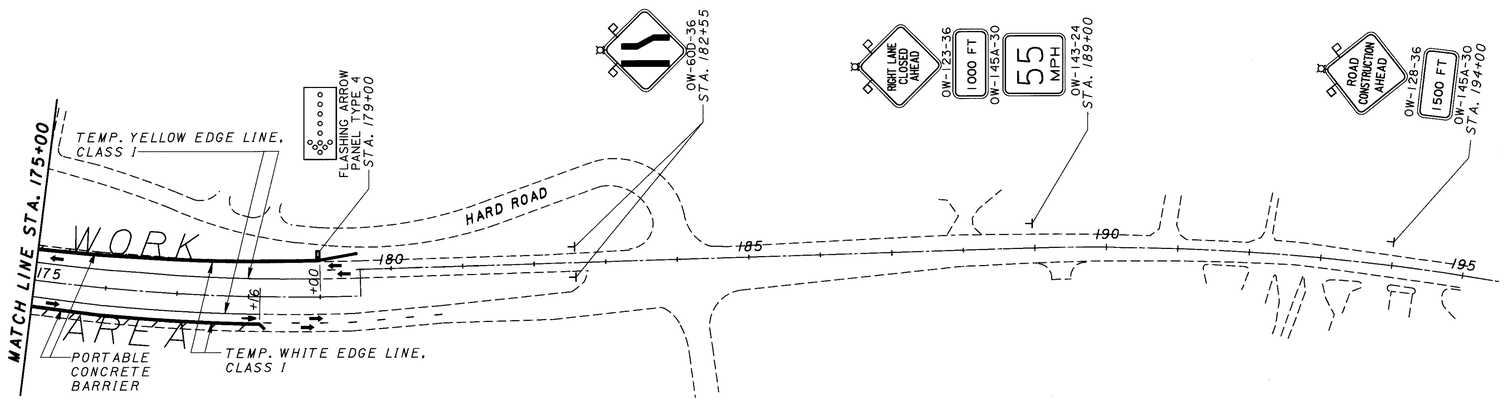


NOTE:
PROVIDE A TYPE C BARRICADE WARNING LIGHT AND TWO 24" RED FLAGS ON ALL ADVANCE WARNING SIGNS

FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.32

PHASE 2

SEE MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR ADDITIONAL DIMENSIONS



FOR ADDITIONAL DETAIL OF ADVANCED CONSTRUCTION SIGNING, SEE ODOT STANDARD CONSTR. DWG. MT-95.32

PHASE 3

MAINTENANCE OF TRAFFIC STA. 175+00 TO STA. 195+00

GENERAL SUMMARY

CALC. BY	JCS	FRA-315-5.18	OHIO
DATE	9/95		F.H.W.A. REGION 5
CHKD. BY	KRS		61/286
DATE	10/95		

SHEET NO. 63	SHEET NO. 64	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
						ROADWAY
556		202	22900	556	SQ.YD.	APPROACH SLAB REMOVED
534	919	202	23000	1453	SQ.YD.	PAVEMENT REMOVED
	66	202	30600	66	SQ.YD.	CONCRETE MEDIAN REMOVED
	1160	202	32000	1160	LIN.FT.	CURB REMOVED
20,350	8825	202	38000	29,175	LIN.FT.	GUARDRAIL REMOVED
280		202	38300	280	LIN.FT.	GUARDRAIL REMOVED, BARRIER DESIGN
4500		202	54100	4500	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE
	3	202	58300	3	EACH	CATCH BASIN OR INLET, REMOVED
10,000		203	13100	10,000	CU.YD.	EXCAVATION OF UNSUITABLE MATERIAL
	21,933	203	12000	21,933	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
	3,164	203	20000	3,164	CU.YD.	EMBANKMENT
10,000		203	20001	10,000	CU.YD.	EMBANKMENT, AS PER PLAN, SEE SHEET NO. 17
5,000		203	21001	5,000	CU.YD.	EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN, SEE SHEET NO. 17
25		203	45000	25	HOURS	PROOF ROLLING
53,537		203	50000	53,537	SQ.YD.	SUBGRADE COMPACTION
16,700	4,450	606	13000	21,150	LIN.FT.	GUARDRAIL, TYPE 5
75		606	13050	75	LIN.FT.	GUARDRAIL, TYPE 5A
600	600	606	15500	1200	LIN.FT.	GUARDRAIL, BARRIER DESIGN, TYPE 5
36	16	606	26100	52	EACH	ANCHOR ASSEMBLY, TYPE E
14	11	606	26500	25	EACH	ANCHOR ASSEMBLY, TYPE T
40	13	606	35000	53	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
	1	606	35004	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN
14	4	606	35100	18	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
	4	606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4
310	10,010	607	20000	13,320	LIN.FT.	FENCE, TYPE CL
200		607	20001	200	LIN.FT.	FENCE, TYPE CL, AS PER PLAN
5161		622	23401	5161	LIN.FT.	CONCRETE BARRIER, TYPE B, AS PER PLAN, SEE SHEET NO. 149
	5835	622	23404	5835	LIN.FT.	CONCRETE BARRIER, TYPE B-50
	2030	622	23505	2030	LIN.FT.	CONCRETE BARRIER, TYPE C-50 AS PER PLAN, SEE SHEET NO. 149
980	840	622	24000	1820	LIN.FT.	CONCRETE BARRIER, TYPE D
6	4	SPECIAL	69010360	10	EACH	IMPACT ATTENUATOR, TYPE 1, BI-DIRECTIONAL
5000		SPECIAL	69012010	5000	SQ.YD.	GEOTEXTILE FABRIC
5000		SPECIAL	69012020	5000	SQ.YD.	GEOGRID
281	91	802	00100	372	EACH	BARRIER REFLECTOR, TYPE A
62	155	802	00200	217	EACH	BARRIER REFLECTORS, TYPE B
						EROSION CONTROL
7000		207	10000	7000	SQ.YD.	TEMPORARY SEEDING AND MULCHING
7506		207	30000	7506	LIN.FT.	FILTER FABRIC FENCE
836		207	70000	836	EACH	STRAW OR HAY BALES
	50	601	32100	50	CU.YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
	9,719	659	10000	9,719	SQ.YD.	SEEDING AND MULCHING
2000		659	14000	2000	SQ.YD.	REPAIR SEEDING AND MULCHING
2		659	20000	2	TON	COMMERCIAL FERTILIZER
120		659	35000	120	M.GAL.	WATER
100		659	40000	100	M.SQ.FT.	MOWING

SHEET NO. 65	SHEET NO. 66	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
						DRAINAGE
	LUMP	202	11200	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED
	LUMP	503	11100	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING
	27	SPECIAL	51267020	27	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 2)
	25	SPECIAL	51267030	25	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 3)
	32	SPECIAL	51267502	32	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY)
	33	602	20000	33	CU.YD.	CONCRETE MASONRY
350	355	603	00406	705	LIN.FT.	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
5155	1629	603	01500	6784	LIN.FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
	150	603	05900	150	LIN.FT.	15" CONDUIT, TYPE B
	20	603	07400	20	LIN.FT.	18" CONDUIT, TYPE B
	20	603	08900	20	LIN.FT.	21" CONDUIT, TYPE B
	5	604	01201	5	EACH	CATCH BASIN, NO. 4, AS PER PLAN, SEE SHEET NO. 155
	10	604	01601	10	EACH	CATCH BASIN, NO. 5, AS PER PLAN, SEE SHEET NO. 155
	1	604	02001	1	EACH	CATCH BASIN, NO. 6, AS PER PLAN, SEE SHEET NO. 155
	18	604	02801	18	EACH	CATCH BASIN, NO. 8, AS PER PLAN, SEE SHEET NO. 155
	3	604	04500	3	EACH	CATCH BASIN NO. 2-2-B
	10	604	08600	10	EACH	CATCH BASIN, MISC. REPLACEMENT GRATES, SEE SHEET NO. 155
1		604	15101	1	EACH	INLET, NO. 3C50, AS PER PLAN, SEE SHEET NO. 150
2	6	604	15200	8	EACH	INLET, NO. 3D50
105	24	SPECIAL	60436600	129	EACH	PRECAST REINFORCED CONCRETE OUTLET
112,384	55,175	605	05101	167,559	LIN.FT.	4" SHALLOW PIPE UNDERDRAINS, AS PER PLAN, SEE SHEET NO. 152
40,452		605	30001	40,452	LIN.FT.	SHALLOW UNDERDRAINS, AS PER PLAN, SEE SHEET NO. 152
						PAVEMENT
	5014	252	01000	5014	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL & FLEXIBLE REPLACEMENT
	255,932	252	01500	255,932	LIN.FT.	FULL DEPTH PAVEMENT SAWING
2050		254	01001	2050	SQ.YD.	1½" PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
331,629		254	01001	331,629	SQ.YD.	2½ " PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
	71,562	255	10000	71,562	SQ.YD.	FULL DEPTH PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C
19,054		301	10002	19,054	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20
24,752	2500	304	20000	27,252	CU.YD.	AGGREGATE BASE (SEE PROPOSAL NOTE)
13,174		305	12001	13,174	SQ.YD.	8" CONCRETE BASE, AS PER PLAN
5789		310	12000	5789	CU.YD.	SUBBASE, TYPE 1, GRADING A (SEE PROPOSAL NOTE)
37,083		407	10000	37,083	GAL.	TACK COAT
166,936		413	14000	166,936	LIN.FT.	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
29,692		446	01200	29,692	CU.YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
25,048		446	01400	25,048	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
5494		451	14000	5494	SQ.YD.	9" REINFORCED CONCRETE PAVEMENT
2147		452	12000	2147	SQ.YD.	8" PLAIN CONCRETE PAVEMENT
31,023		452	13000	31,023	SQ.YD.	9" PLAIN CONCRETE PAVEMENT
92		609	12000	92	LIN.FT.	COMBINATION CURB & GUTTER, TYPE 2
689		611	25001	689	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN, SEE SHEET NO. 151

GENERAL SUMMARY

SHEET NO. 18	20	22	23	23 A-B	24	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
										TRAFFIC CONTROL
										FOR TRAFFIC CONTROL QUANTITIES, SEE "TRAFFIC CONTROL PLANS" (SEE SHEET 156)
										TRAFFIC SURVEILLANCE
										FOR TRAFFIC SURVEILLANCE QUANTITIES, SEE "TRAFFIC SURVEILLANCE PLANS" (SEE SHEET 192)
										LIGHTING
										FOR LIGHTING QUANTITIES, SEE "LIGHTING PLANS" (SEE SHEET 227)
										STRUCTURES
										FOR STRUCTURES QUANTITIES, SEE "STRUCTURES OVER 20 FT. SPAN" (SEE SHEET 253-280)
										MAINTENANCE OF TRAFFIC
		1000				404	35000	1000	CU.YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
		1000				410	12000	1000	CU.YD.	TRAFFIC COMPACTED SURFACE, TYPE A OR B
		500				614	11100	500	HOURS	LAW ENFORCEMENT OFFICER W/ PATROL CAR
	24					614	12350	24	EACH	TEMPORARY IMPACT ATTENUATOR
					100	SPECIAL	61418010	100	SQ FT	MAINTAINING TRAFFIC MISC.: SIGN, TEMPORARY OVERLAY, TYPE H
					100	SPECIAL	61418010	100	SQ FT	MAINTAINING TRAFFIC MISC.: SIGN, EXTRUSHEET, TYPE H
			75			614	12470	75	EACH	WORK ZONE SPEED LIMIT SIGN
		200				SPECIAL	61412500	200	SQ.FT.	REPLACEMENT SIGN
		500				SPECIAL	61412600	500	EACH	REPLACEMENT DRUMS
			4			SPECIAL	61412760	4	EACH	FLASHING ARROW PANEL, TYPE C
					500	614	12800	500	EACH	TEMPORARY RAISED PAVEMENT MARKER
			12,720			614	13302	12,720	EACH	BARRIER REFLECTOR, TYPE B-2
			12,720			614	13350	12,720	EACH	OBJECT MARKER
			20		20	614	18000	40	EACH	MAINTAINING TRAFFIC, MISC.: BARRICADE , HINGED, TYPE III
					500	614	18000	500	EACH	MAINTAINING TRAFFIC, MISC.: TEMPORARY DRUM
					1440	614	18020	1440	HOURS	MAINTAINING TRAFFIC, MISC.: FLASHING ARROW PANEL, TYPE C
			2		12	614	18600	14	SGN MTH	PORTABLE CHANGEABLE MESSAGE SIGN
			500			SPECIAL	61418000	500	EACH	MAINTAINING TRAFFIC MISC.: TEMPORARY DRUMS OR BARRICADES
	43				15	614	20100	58	MILE	4" TEMPORARY LANE LINE, CLASS I, 642 PAINT
					5	614	20300	5	MILE	TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C
	0.1					614	21100	0.10	MILE	4" TEMPORARY CENTERLINE, CLASS I, 642 PAINT
	97				30	614	22100	127	MILE	4" TEMPORARY EDGE LINE, CLASS I, 642 PAINT
					10	614	22300	10	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C
	15,120				1000	614	23000	16,120	LIN.FT.	8" TEMPORARY CHANNELIZING LINE, CLASS I, 642 PAINT
					1000	614	23600	1000	LIN FT	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C
	14,063					614	24600	14,063	LIN.FT.	4" TEMPORARY DOTTED LINE, CLASS I, 740.05, TYPE C
	3010					614	25200	3010	LIN.FT.	12" TEMPORARY TRANSVERSE LINE, CLASS I, 642 PAINT
	395					614	26200	395	LIN.FT.	20" TEMPORARY STOP LINE, CLASS I, 642 PAINT
	40					614	30200	40	EACH	TEMPORARY LANE ARROW, CLASS I, 642 PAINT
	11					614	31600	11	EACH	TEMPORARY WORD ON PAVEMENT72", CLASS I, 740.05, TYPE C
			1000			614	98100	1000	LIN.FT.	TEMPORARY PAVEMENT MARKING MISC.: CLASS I, 740.05, TYPE C
			1000			614	98100	1000	LIN.FT.	TEMPORARY PAVEMENT MARKING MISC.: TAPE, TYPE C
20		250				616	10000	270	M. GAL.	WATER
2		40				616	20000	42	TON	CALCIUM CHLORIDE
	253,939		1000		1000	622	40020	255,939	LIN.FT.	PORTABLE CONCRETE BARRIER 32"
	4050					622	40040	4050	LIN.FT.	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
			500		500	630	80102	1000	SQ.FT.	SIGN, FLAT SHEET, TYPE G
					500	630	80204	500	SQ FT	SIGN, EXTRUSHEET, TYPE G
					500	630	80306	500	SQ FT	SIGN, TEMPORARY OVERLAY, TYPE G
						614	11000	LUMP	LUMP	MAINTAINING TRAFFIC
						619	15020	LUMP	LUMP	FIELD OFFICE, TYPE C
				LUMP		SPECIAL	61418002	LUMP	LUMP	MAINTAINING TRAFFIC, MISC.: TRAFFIC CONTROL PLANNING AND IMPLEMENTATION
				LUMP		SPECIAL	61418002	LUMP	LUMP	MAINTAINING TRAFFIC, MISC.: TRAFFIC SAFETY COORDINATOR
						623	10000	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
						624	10000	LUMP	LUMP	MOBILIZATION

SUBSUMMARY

17	18	67	87	88	89	91	92	94	95	96	97	98	99	100	101	103	104	105	106	107	108	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
																										ROADWAY
		556																				202	22900	556	SQ.YD.	APPROACH SLAB REMOVED
		534																				202	23000	534	SQ.YD.	PAVEMENT REMOVED
				575	1325	1450	2837.5	1975	175	350	1475	1925	1862.5	900	2075	1837.5	325	325		612.5	325	202	38000	20,350	LIN.FT.	GUARDRAIL REMOVED
																180				100		202	38300	280	LIN.FT.	GUARDRAIL, REMOVED , BARRIER DESIGN
	4500																					202	54100	4500	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE
10000																						203	13100	10,000	CU.YD.	EXCAVATION OF UNSUITABLE MATERIAL
10000																						203	20001	10,000	CU.YD.	EMBANKMENT, AS PER PLAN, SEE SHEET NO. 17
5000																						203	21001	5,000	CU.YD.	EMBANKMENT USING GRANULAR MATERIAL, AS PER PLAN, SEE SHEET NO. 17
25																						203	45000	25	HOURS	PROOF ROLLING
		53537																				203	50000	53537	SQ.YD.	SUBGRADE COMPACTION
				375	950	1212.5	2512.5	1812.5	75	150	1362.5	1775	1687.5	1025	1712.5	1300	150	150		300	150	606	13000	16,700	LIN.FT.	GUARDRAIL, TYPE 5
																				75		606	13050	75	LIN.FT.	GUARDRAIL, TYPE 5A
																250				350		606	15500	600	LIN.FT.	GUARDRAIL, BARRIER DESIGN, TYPE 5
				2	3	4	3	2	1	2	1		2	2	4	2	2	2		2	2	606	26100	36	EACH	ANCHOR ASSEMBLY, TYPE E
							3	2					1	2	2	4						606	26500	14	EACH	ANCHOR ASSEMBLY, TYPE T
				2	3	5	4	1	1	2	2	2	2	2	1	3	2	2		4	2	606	35000	40	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
						1	4	1			1	2	1	2	1	1						606	35100	14	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
	200													110								607	20000	310	LIN.FT.	FENCE, TYPE CL
	200																					607	20001	200	LIN.FT.	FENCE, TYPE CL,AS PER PLAN
												1300	1361	1500	1000							622	23401	5161	LIN.FT.	CONCRETE BARRIER, TYPE B, AS PER PLAN, SEE SHEET NO. 149
				35	105	70	85		35	70	50	85		100	35	100	70	70			70	622	24000	980	LIN.FT.	CONCRETE BARRIER, TYPE D-32
															1	2				2	1	SPECIAL	69010360	6	EACH	IMPACT ATTENUATOR, TYPE 1, BIDIRECTIONAL
5000																						SPECIAL	69012010	5000	SQ.YD.	GEOTEXTILE FABRIC
5000																						SPECIAL	69012020	5000	SQ.YD.	GEOGRID, TYPE S2
				7	22	31	37	30	2	4	15	21	21	16	22	31	4	4		10	4	802	00100	281	EACH	BARRIER REFLECTOR, TYPE A
				1	3	12	12	2	1	2	1	2	3	2	2	9	2	2		4	2	802	00200	62	EACH	BARRIER REFLECTORS, TYPE B
																										EROSION CONTROL
	7000																					207	10000	7000	SQ.YD.	TEMPORARY SEEDING AND MULCHING
	3500		4006																			207	30000	7506	LIN.FT.	FILTER FABRIC FENCE
	500		336																			207	70000	836	EACH	STRAW OR HAY BALES
	2000																					659	14000	2000	SQ.YD.	REPAIR SEEDING AND MULCHING
	2																					659	20000	2	TON	COMMERCIAL FERTILIZER
	120																					659	35000	120	M.GAL.	WATER
	100																					659	40000	100	M.SQ.FT.	MOWING

SUBSUMMARY

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	64/286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	

SHEET NUMBER 110	111	112	113	114	115	116	117	118	121	123	126	145	154	252	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
																			ROADWAY
						919									202	23000	919	SQ.YD.	PAVEMENT REMOVED
													66		202	30600	66	SQ.YD.	CONCRETE MEDIAN REMOVED
													1160		202	32000	1160	LIN.FT.	CURB REMOVED
3350	487.5	162.5	325	162.5	1137.5	3050	150								202	38000	8825	LIN.FT.	GUARDRAIL REMOVED
2	1														202	58300	3	EACH	CATCH BASIN OR INLET, REMOVED
									18342	720	371	2500			203	12000	21,933	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
									1813	329	1022				203	20000	3,164	CU.YD.	EMBANKMENT
2200	337.5	75.0	75.0	75.0	150	1537.5									606	13000	4,450	LIN.FT.	GUARDRAIL, TYPE 5
		100				500									606	15500	600	LIN.FT.	GUARDRAIL, BARRIER DESIGN, TYPE 5
6	1	1	1	1	2	4									606	26100	16	EACH	ANCHOR ASSEMBLY, TYPE E
4	1		1			5									606	26500	11	EACH	ANCHOR ASSEMBLY, TYPE T
4	1	1		1	2	4									606	35000	13	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
															606	35004	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN
2	1					1									606	35100	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
						4									606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4
	1050	1500	1500	1650	830		3100	380							607	20000	10,010	LIN.FT.	FENCE, TYPE CL
1400	400	392.5	1417.5	1465	760										622	23404	5835	LIN.FT.	CONCRETE BARRIER, TYPE B-50
	947.5	1082.5													622	23505	2030	LIN.FT.	CONCRETE BARRIER, TYPE C-50 AS PER PLAN, SEE SHEET NO. 149
200	50	35		35	70	450									622	24000	840	LIN.FT.	CONCRETE BARRIER, TYPE D
						4									SPECIAL	69010360	4	EACH	IMPACT ATTENUATOR, TYPE 1, BI-DIRECTIONAL
34	6	2	2	2	4	41									802	00100	91	EACH	BARRIER REFLECTOR, TYPE A
8	29	31	30	31	20	6									802	00200	155	EACH	BARRIER REFLECTORS, TYPE B
																			EROSION CONTROL
														50	601	32100	50	CU.YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
									6610	1386	1723				659	10000	9,719	SQ.YD.	SEEDING AND MULCHING

SUBSUMMARY

SHEET NUMBER

67	88	89	91	92	94	95	96	97	98	99	100	101	103	104	105	106	107	108	110	111	112	122				ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
																														DRAINAGE
		10	30	30	20	10		20	20		30	20	10		62	34		34	20							603	00406	350	LIN.FT.	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
	128	201	217	123	268	315	212	216	299	217	265	358	515	254	147	332		363	370	250	105					603	01500	5155	LIN.FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
																				1						604	15101	1	EACH	INLET, NO. 3C50, AS PER PLAN, SEE SHEET NO. 150
																			2							604	15200	2	EACH	INLET, NO. 3D50
	2	1	7	4	7	6	4	4	7	4	8	10	6	4	4	7		6	4	6	4					SPECIAL	60436600	105	EACH	PRECAST REINFORCED CONCRETE OUTLET
	3538	3475	8005	6029	8159	3540	3297	4006	4790	5604	5870	7335	6430	3000	5800	3810	2676	5518	10,770	5770	4962					605	05101	112,384	LIN.FT.	4" SHALLOW PIPE UNDERDRAINS,707.15, AS PER PLAN, SEE SHEET NO.152
	1930	2536	1280	1395	1200	2630	2700	2200	2160	2274	1750	1866	3000	3000	2022	2635	2676	2008	1190							605	30001	40,452	LIN.FT.	SHALLOW UNDERDRAIN, AS PER PLAN, SEE SHEET NO. 152
																														PAVEMENT
2050																										254	01000	2050	SQ.YD.	1½" PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
331,629																										254	01000	331,629	SQ.YD.	2½ " PAVEMENT PLANING, BITUMINOUS, AS PER PLAN
19,054																										301	10002	19,054	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20
24,752																										304	20000	24,752	CU.YD.	AGGREGATE BASE
13,174																										305	12001	13,174	SQ.YD.	8" CONCRETE BASE, AS PER PLAN
5789																										310	12000	5789	CU.YD.	SUBBASE, TYPE 1, GRADING A
37,083																										407	10000	37,083	GAL.	TACK COAT
166,936																										413	14000	166,936	LIN. FT.	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
29,692																										446	01200	29,692	CU.YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
25,048																										446	01400	25,048	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
5494																										451	14000	5494	SQ.YD.	9" REINFORCED CONCRETE PAVEMENT
2147																										452	12000	2147	SQ.YD.	8" PLAIN CONCRETE PAVEMENT
31,023																										452	13000	31,023	SQ.YD.	9" PLAIN CONCRETE PAVEMENT
																						92				609	12000	92	LIN.FT.	COMBINATION CURB & GUTTER, TYPE 2
556																	133									611	25001	689	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN, SEE SHEET NO. 151

SUBSUMMARY

SHEET NUMBER 113	114	115	116	117	118	155	145	146	252	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
														DRAINAGE
									LUMP	202	11200	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED
									LUMP	503	11100	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING
									27	SPECIAL	51267020	27	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 2)
									25	SPECIAL	51267030	25	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 3)
									32	SPECIAL	51267502	32	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY)
									33	602	20000	33	CU.YD.	CONCRETE MASONRY
36	52	10	123	64	70					603	00406	355	LIN.FT.	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
358	124	175	288	109	75	500				603	01501	1629	LIN.FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034, SDR35, SS931 OR SS944
						150				603	05900	150	LIN.FT.	15" CONDUIT, TYPE B
						20				603	07400	20	LIN.FT.	18" CONDUIT, TYPE B
						20				603	08900	20	LIN.FT.	21" CONDUIT TYPE B
						5				604	01201	5	EACH	CATCH BASIN NO. 4, AS PER PLAN, SEE SHEET NO. 155
						10				604	01601	10	EACH	CATCH BASIN NO. 5, AS PER PLAN, SEE SHEET NO. 155
						1				604	02001	1	EACH	CATCH BASIN NO. 6, AS PER PLAN, SEE SHEET NO. 155
						18				604	02801	18	EACH	CATCH BASIN NO. 8, AS PER PLAN, SEE SHEET NO. 155
						3				604	04500	3	EACH	CATCH BASIN NO. 2-2-B
						10				604	08600	10	EACH	CATCH BASIN, MISC., REPLACEMENT GRATES
3	1	2								604	15200	6	EACH	INLET NO. 3D50
6	4	3	5	2	4					SPECIAL	60436600	24	EACH	PRECAST REINFORCED CONCRETE OUTLET
7500	10,500	11,113	12,135	10,385	3542					605	05101	55,175	LIN.FT.	4" SHALLOW PIPE UNDERDRAINS, AS PER PLAN, SEE SHEET NO. 152
														PAVEMENT
								5014		252	01000	5014	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL & FLEXIBLE REPLACEMENT
								255,932		252	01500	255,932	LIN.FT.	FULL DEPTH PAVEMENT SAWING
								71562		255	10000	71,562	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL & RIGID REPLACEMENT, CLASS C
							2500			304	20000	2500	CU.YD.	AGGREGATE BASE

PAVEMENT CALCULATIONS	254 PAVEMENT PLANING BITUMINOUS 1½"	254 PAVEMENT PLANING BITUMINOUS 2½"	254 PAVEMENT PLANING PORTLAND CEMENT CONCRETE	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE VAR.	446 ASPHALT CONCRETE SURFACE COURSE VAR.	301 BITUMINOUS AGGREGATE BASE AC-20 3"	301 BITUMINOUS AGGREGATE BASE AC-20 7"	301 BITUMINOUS AGGREGATE BASE AC-20 8"	304 AGGREGATE BASE 9"	304 AGGREGATE BASE 6"	407 TACK COAT @ .075 GAL/S.Y.	310 SUBBASE TYPE 1 GRADING A AS PER PLAN 4"	203 SUBGRADE COMPACTION	305 CONCRETE BASE 8"	305 CONCRETE BASE 9"	451 REINFORCED CONCRETE PAVEMENT 9"	452 PLAIN CONCRETE PAVEMENT 8"	452 PLAIN CONCRETE PAVEMENT 9"	611 REINFORCED CONCRETE APPROACH SLAB	202 REINFORCED CONCRETE APPROACH SLAB REMOVED	202 PAVEMENT REMOVED	413 SAWING AND SEALING ASPHALT CONC PAVT JOINTS
SHEET	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	CU. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.				LIN. FT.
68		119633.7		4984.4	8078.8	160.6							8973.4											53712
68		2095.3		822.9	1279.3	58.0							1481.2											4152
69		51338.0		2138.9	3398.5	116.8							3747.0											23184
69		73065.7		3762.8	6094.8	117.6							6774.8											34990
70				802.5	1337.1							826.6	1444.3	1588.5	19257.3	13173.3		5493.2	2147.1		555.6	555.6	533.2	5900
71	633.6			2019.5	1167.9		61.6	527.4		1861.1		2543.9	2579.4	1659.6	17308.6					8965.7				
72	633.6			2018.6	1158.7		61.6	527.6		1861.2		2543.9	2579.4	1636.9	17308.6					8932.7				
73				1768.3	431.2	15.4			6895.6		8865.3		524.0							6357.7				
73				1752.7	439.0	15.4			6704.3		8619.3		568.6							6766.2				
74		19841.9		827.1	1324.2	34.4							1488.6											9740
74		16497.7		687.5	1116.8	19.5							1237.4											7285
75		14070.3		588.1	940.8	29.3							1058.5											6036
75		15557.0		648.6	1048.3	21.9							1167.0											7015
76		16298.2		679.7	1058.8	50.0							1222.6											9209
76		3230.5		476.9	776.2	12.8							858.4											5713
81	110.1			147.2			7.8						273.6											
81				84.3				168.6				337.2		224.7										
78	139.6			128.2			9.9						241.6											
78				66.4	41.4			133.0				265.6		177.8										
79	150.0			74.2			10.2						144.9											
79				31.4				63.0				126.1		84.4										
80	100.0			168.1			7.2						310.2											
80				62.4				124.8				249.7		166.9										
77	112.5			138.2			8.1						258.4											
77				50.3				100.6				201.2		134.3										
82	169.8			75.9			11.7						149.2											
82				43.2				86.5				173.1		115.6										
ROUNDED TOTALS:	2050	331629		25048	29692	652	179	1732	13600	3722	17485	7267	37083	5789	53875	13174		5494	2147	31023	556	556	534	166,936

13-JAN-1999

STATION TO STATION SR 315 MAINLINE PAVEMENT SOUTHBOUND LANES		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254	446			413	407
						PAVEMENT PLANING BITUMINOUS	ASPHALT CONCRETE SURFACE CRSE	ASPHALT CONCRETE INTERMEDIATE COURSE	ASPHALT CONCRETE INTERMEDIATE COURSE	SAWING AND SEALING ASPHALT CONC PAVT JOINTS	TACK COAT @.075 GAL/SY
			FROM	TO		2½"	1½"	2½"	VAR.		
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	GAL.
175+34.40	176+09.40	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
176+09.40	193+82.96	1773.56	36.00	36.00	7095.0	7095.0	295.6	492.6		3204	532.0
192+83.03	195+35.59	252.56	36.00	36.00	1011.0	1011.0	42.1	70.2		468	75.8
195+35.59	211+07.10	1571.51	36.00	36.00	6286.0	6286.0	261.9	436.5		2844	471.5
211+07.10	211+82.10	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
211+82.10	213+99.74	217.64	BRIDGE (W. NORTH BROADWAY)								
213+99.74	214+74.74	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
214+74.74	215+58.09	83.35	36.00	36.00	333.4	333.4	13.9	23.2		144	25.0
215+58.09	223+84.85	826.76	36.00	36.00	3307.0	3307.0	137.8	229.7		1512	248.0
223+84.85	224+59.85	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
224+59.85	226+52.71	192.86	BRIDGE (W. NORTH BROADWAY)								
226+52.71	227+27.71	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
227+27.71	228+46.19	118.48	36.00	36.00	473.9	473.9	19.7	32.9		216	35.6
228+46.19	229+21.19	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
229+21.19	232+69.21	348.02	BRIDGE (W. NORTH BROADWAY)								
232+69.21	233+44.21	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
233+44.21	248+68.95	1524.74	36.00	36.00	6099.0	6099.0	254.1	423.5		2772	457.5
248+68.95	270+00.00	2131.05	36.00	36.00	8525.0	8525.0	355.2	592.0		3852	639.4
270+03.19	272+03.56	200.37	36.00	36.00	801.5	801.5	33.4	55.7		360	60.2
272+03.56	285+06.85	1303.29	36.00	36.00	5214.0	5214.0	217.2	362.1		2340	391.0
285+06.85	292+00.00	693.15	36.00	36.00	2772.0	2772.0	115.5	192.6		1260	208.0
292+00.00	308+62.19	1662.19	36.00	36.00	6649.0	6649.0	277.0	461.8		2988	498.7
308+62.19	309+37.19	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
309+37.19	310+78.36	141.17	BRIDGE (W. HENDERSON RD.)								
310+78.36	311+53.36	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
311+53.36	345+00.00	3346.64	36.00	36.00	13386.0	13386.0	557.8	929.7		6048	1004.0
345+00.00	346+34.46	134.46	36.00	36.00	537.8	537.8	22.4	37.4		252	40.4
346+34.46	385+22.34	3887.88	36.00	36.00	15552.0	15552.0	648.0	1080.0		7020	1167.0
385+22.34	398+30.36	1308.02	36.00	36.00	5233.0	5233.0	218.0	363.3		2376	392.4
398+30.36	417+69.75	1939.39	36.00	36.00	7758.0	7758.0	323.2	538.7		3492	581.9
417+69.75	418+44.75	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
418+44.75	420+05.00	160.25	BRIDGE (ANTRIM PARK)								
420+05.00	420+80.00	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
420+80.00	428+53.70	773.70	36.00	36.00	3095.0	3095.0	129.0	215.0		1404	232.1
45+00.00	46+52.65	152.65	36.00	36.00	610.6	610.6	25.4	42.4		288	45.8
46+52.65	64+35.31	1782.66	36.00	36.00	7131.0	7131.0	297.1	495.2		3024	534.8
64+35.31	66+10.00	174.19	36.00	36.00	696.8	696.8	29.0	48.4		324	52.3
66+10.00	75+00.00	890.00	36.00	24.00	2966.7	2966.7	123.6	206.0		1080	222.5
75+00.00	96+00.00	2100.00	24.00	24.00	5600.0	5600.0	233.3	388.9		2520	420.0
96+00.00	115+50.00	1950.00	24.00	24.00	5200.0	5200.0	216.7	361.0		2340	390
		TOTALS:				119633.7	4984.4	8078.8	160.6	53712	8973.4

STATION TO STATION SR 315 MAINLINE PAVEMENT SOUTHBOUND LANES		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254	446			254	407	413
						PAVEMENT PLANING BITUMINOUS	ASPHALT CONCRETE SURFACE CRSE	ASPHALT CONCRETE INTERMEDIATE COURSE	ASPHALT CONCRETE INTERMEDIATE COURSE	PAVEMENT PLANING CONCRETE	TACK COAT @.075 GAL/SY	SAWING AND SEALING ASPHALT CONC PAVT JOINTS
			FROM	TO		2½"	1½"	2½"	VAR.			
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	GAL.	LIN. FT.
115+50.00	117+00.00	150.00	24.00	24.00	400.0	400.0	16.7	27.8	13.9		30.0	180.0
117+00.00	118+80.26	180.26	24.00	24.00	481.0		20.0	33.4			36.1	108.2
118+80.26	131+80.26	13.00	24.00	26.00	3611.1		150.5	250.8			270.8	812.5
131+80.26	133+80.26	200.00	26.00	30.00	622.2		25.9	43.2			46.7	140.0
133+80.26	139+80.26	600.00	14.00	24.00	1266.7		52.8	88.0			95.0	285.0
139+80.26	146+76.48	696.22	24.00	24.00	1856.6		77.4	128.9			139.2	417.7
146+76.48	151+20.30	443.82	24.00	24.00	1183.5		49.3	82.2			88.8	266.3
151+20.30	158+76.23	755.93	24.00	24.00	2015.8		84.0	140.0			151.2	453.6
156+94.80	158+94.80	200.00	24.00	24.00	533.3		22.2		18.5		40.0	120.0
158+94.80	159+73.00	78.20		BRIDGE (WILSON RUN)								
159+73.00	161+73.00	200.00	24.00	24.00	533.3		22.2		18.5		40.0	120.0
161+73.00	182+54.02	2081.02	24.00	24.00	5549.4		231.2	385.4			416.2	1248.6
182+54.02	184+04.02	150.00	27.00	21.00	400.0	400.0	16.7	27.8			30.0	
184+04.02	187+14.00	309.98	21.00	20.00	706.0	706.0	29.4	41.0			53.0	
187+14.00	189+25.00	211.00	20.00	17.88	444.0	444.0	18.5	30.8			33.3	
189+25.00	190+00.00	75.00	17.88	17.00	145.3	145.3	6.1		7.1		10.9	
		TOTALS:				2095.3	822.9	1279.3	58.0		1481.2	4152

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STATION	TO STATION (SR 315 MAINLINE PAVEMENT NORTHBOUND LANES)	LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 2½"	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE VAR.	413 SAWING AND SEALING ASPHALT PAVT. CONC. JOINTS	407 TACK COAT @.075 GAL/SY
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	GAL.
175+34.40	176+09.40	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
176+09.40	193+82.96	1773.56	36.00	36.00	7095.0	7095.0	295.6	492.7		3204	532.1
192+83.03	195+35.59	252.56	36.00	36.00	1011.0	1011.0	42.1	70.2		468	75.8
195+35.59	210+47.84	1512.25	36.00	36.00	6049.0	6049.0	252.0	420.1		2736	453.7
210+47.84	211+22.84	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
211+22.84	213+58.97	236.13	BRIDGE (W. NORTH BROADWAY)								
213+58.97	214+33.97	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
214+33.97	215+58.09	124.12	36.00	36.00	496.5	496.5	20.7	34.5		252	37.2
215+58.09	223+82.85	824.76	36.00	36.00	3299.0	3299.0	137.5	229.0		1512	247.4
223+82.85	224+57.85	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
224+57.85	226+50.71	192.86	BRIDGE (W. NORTH BROADWAY)								
226+50.71	227+25.71	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
227+25.71	229+95.32	269.61	36.00	36.00	1078.0	1078.0	44.9	74.9		504	
229+95.32	230+70.32	75.00	36.00	36.00	300.0	300.0	12.5		14.6		
230+70.32	233+20.14	249.82	BRIDGE (W. NORTH BROADWAY)								
233+20.14	233+95.14	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
233+95.14	248+68.95	1473.81	36.00	36.00	5896.	5896.	245.6	409.4		2664	442.2
248+68.95	270+00.00	2131.05	36.00	36.00	8525.	8525.	355.2	592.0		3852	639.4
270+03.19	272+03.56	200.37	36.00	36.00	801.5	801.5	33.4	55.7		360	60.2
272+03.56	285+06.85	1303.29	36.00	36.00	5214.0	5214.0	217.2	362.1		2340	391.0
285+06.85	292+00.00	693.15	36.00	36.00	2773.0	2773.0	115.5	192.6		1260	208.0
292+00.00	308+74.99	1674.99	36.00	36.00	6700.	6700.	279.2	465.3		3024	502.5
308+74.99	309+49.99	75.00	36.00	36.00	300.0	300.0	12.5		14.6	144	22.5
309+49.99	310+88.10	138.11	BRIDGE (W. HENDERSON RD.)								
		TOTALS:				51338.0	2138.9	3398.5	116.8	23184	3747.0

STATION	TO STATION (SR 315 MAINLINE PAVEMENT NORTHBOUND LANES)	LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 2½"	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE VAR.		407 TACK COAT @.075 GAL/SY	413 SAWING AND SEALING ASPHALT PAVT. CONC. JOINTS
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.		GAL.	LIN. FT.
310+88.10	311+63.10	75.00	36.00	36.00	300.0	300.0	12.5		14.6		22.5	144
311+63.10	345+00.00	3336.90	36.00	36.00	13348	13348.0	556.2	927.0			1001.0	6012
345+00.00	346+34.46	134.46	36.00	36.00	537.8	537.8	22.4	37.4			40.4	252
346+34.46	385+22.34	3887.88	36.00	36.00	15552.0	15552.0	648.0	1080.0			1167.0	7020
385+22.34	398+30.36	1308.02	36.00	36.00	5233.0	5233.0	218.0	363.4			392.4	2376
398+30.36	417+69.75	1939.39	36.00	36.00	7758.0	7758.0	323.2	538.8			581.9	3492
417+69.75	418+44.75	75.00	36.00	36.00	300.0	300.0	12.5		14.6		22.5	144
418+44.75	420+05.00	160.25	BRIDGE (ANTRIM PARK)									
420+05.00	420+80.00	75.00	36.00	36.00	300.0	300.0	12.5		14.6		22.5	144
420+80.00	428+53.70	773.70	36.00	36.00	3095.0	3095.0	129.0	215.0			232.2	1404
45+00.00	46+52.65	152.65	36.00	36.00	610.6	610.6	25.4	42.4			45.8	288
46+52.65	64+35.31	1782.66	36.00	36.00	7131.0	7131.0	297.1	495.2			534.8	3204
64+35.31	66+10.00	174.69	36.00	36.00	699.0	699.0	29.1	48.6			52.5	324
66+10.00	75+00.00	890.00	36.00	24.00	2966.7	2966.7	123.6	206.0			222.5	1080
75+00.00	96+00.00	2100.00	24.00	24.00	5600.0	5600.0	233.3	388.9			420.0	2520
96+00.00	115+50.00	1950.00	24.00	24.00	5200.0	5200.0	216.7	361.0			390.0	2340.0
115+50.00	117+00.00	150.00	24.00	24.00	400.0	400.0	16.7	27.8	13.9		30.0	180.0
117+00.00	131+02.98	1402.98	24.00	24.00	3741.3		155.9	259.8			280.6	841.8
131+02.98	136+28.64	525.66	24.00	28.00	1518.6		63.3	105.5			113.9	341.7
136+28.64	147+48.68	1120.04	24.00	24.00	2986.8		124.4	207.4			224.0	672.0
147+48.68	148+99.07	150.39	34.00	24.00	484.6		20.2	33.7			36.3	109.0
148+99.07	157+13.00	813.93	24.00	24.00	2170.5		90.4	150.7			162.8	488.4
157+13.00	159+13.00	200.00	24.00	24.00	533.3		22.2		18.5		40.0	120.0
159+13.00	159+91.20	78.2	BRIDGE (WILSON RUN)									
159+91.20	161+91.20	200.00	24.00	24.00	533.3		22.2		18.5		40.0	120.0
161+91.20	163+50.00	158.80	24.00	24.00	423.5		17.6	29.4			31.8	95.3
163+50.00	167+17.04	367.04	48.00	28.00	1549.7		64.6	107.6			116.2	348.7
167+17.04	175+17.04	800.00	24.00	24.00	2133.3		88.9	148.1			160.0	480.0
175+17.04	179+56.68	439.64	24.00	24.00	1172.4		48.8	81.4			87.9	263.8
179+56.68	180+68.98	112.30	24.00	24.00	299.5	299.5	12.5		7.8		22.5	67.4
180+68.98	181+06.68	37.70	24.00	28.00	108.9	108.9	4.5		6.6		8.2	24.5
181+06.68	182+23.35	116.67	28.00	36.00	414.8	414.8	17.3	28.8			31.1	93.3
182+23.35	182+54.02	30.67	36.00	36.00	122.7	122.7	5.1	8.5			9.2	
182+54.02	187+14.00	459.98	63.00	28.00	2326.0	2326.0	96.9	161.5			175.0	
187+14.00	189+25.00	211.00	28.00	22.01	587.3	587.3	24.5	40.8			44.1	
189+25.00	190+00.00	75.00	22.00	20.00	175.4	175.4	7.3		8.5		13.2	
		TOTALS:				73065.7	3762.8	6094.8	117.6		6774.8	34,989.9

STATION TO STATION		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	304 AGGREGATE BASE	446 ASPHALT CONCRETE SURFACE COURSE	446 ASPHALT CONCRETE INTERMEDIATE COURSE	451 REINFORCED CONCRETE PAVEMENT	452 PLAIN CONCRETE PAVEMENT	407 TACK COAT	310 SUBBASE AGGREGATE GRADING A	305 CONCRETE BASE	305 CONCRETE BASE	611 REINFORCED CONCRETE APPROACH SLAB	202 APPROACH SLAB REMOVED	202 PAVEMENT REMOVED	203 SUBGRADE COMPACTION	413 SAWING AND SEALING ASPHALT CONC. PAVT. JOINTS
SR 315 NEW PAVEMENT			FROM	TO		6"	1½"	2½"	9"	8"	@ .075 GAL/SY	4"	8"	9"					
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	SQ. YD.	GAL.	CU. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	LIN. FT.
RAMP ED WIDENING																			
299+36.40	304+16.40	480.00	0.00	12.00	320.0		13.3	22.2		320.0	24.0	35.6						320.0	144
304+16.40	309+43.72	527.32	12.00	12.00	703.1		29.3	48.8		703.1	52.7	78.1						703.1	324
309+43.72	310+08.62	64.90	16.00	12.00	100.9		4.2	7.0		1124	7.6	11.2						100.9	56
NEW WEAVING LANE, RT. SIDE ONLY																			
324+20.00	329+00.00	480.00	0.00	12.00	320.0		13.3	22.2			24.0	35.6	320.0					320.0	144
329+00.00	332+00.00	300.00	12.00	12.00	400.0		16.7	27.8			30.0	44.4	400.0					400.0	180
332+00.00	333+00.00	100.00	12.00	0.00	66.7		2.8	4.6			5.0	7.4	66.7					66.7	30
NEW ASPHALT MEDIAN LANE LT. & RT.																			
66+10.00	75+00.00	890.00	0.00	12.00	1186.6		49.4	82.4			89.0	131.8	1186.6					1186.6	270
75+00.00	96+00.00	2100.00	12.00	12.00	5600.0		233.4	388.8			420.0	622.2	5600.0					5600.0	1260
96+00.00	117+00.00	2100.00	12.00	12.00	5600.0		233.4	388.8			420.0	622.2	5600.0					5600.0	1260
NEW CONCRETE MEDIAN LANE LT. & RT.																			
117+00.00	132+00.00	1500.00	12.00	12.00	4000.0	666.6	166.7	277.8	4000.0		300.0							4000.0	1800.0
132+00.00	139+20.00	720.00	12.00	0.00	960.0	160.0	40.0	66.7	960.0		72.0							960.0	432.0
APPROACH SLAB LT.																			
159+01.23	159+26.23	25.00	50.00	50.00	138.9										138.9	138.9			
159+51.77	159+76.77	25.00	50.00	50.00	138.9										138.9	138.9			
APPROACH SLAB RT.																			
159+09.23	159+34.23	25.00	50.00	50.00	138.9										138.9	138.9			
159+59.77	159+84.77	25.00	50.00	50.00	138.9										138.9	138.9			
TRANSITION LT.																			
158+76.23	159+01.23	25.00	48.00	48.00	133.3				133.3								133.3		
159+76.77	160+01.77	25.00	48.00	48.00	133.3				133.3								133.3		
TRANSITION RT.																			
158+84.23	159+09.23	25.00	48.00	48.00	133.3				133.3								133.3		
159+84.77	160+09.09	25.00	48.00	48.00	133.3				133.3								133.3		
		TOTALS:				826.6	802.5	1337.1	5493.2	2147.1	1444.3	1588.5	13173.3		555.6	555.6	533.2	19257.3	5900

STATION TO STATION — SR 315 MEDIAN SHOULDERS SOUTHBOUND LANE		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS	446 ASPHALT CONCRETE SURFACE CRSE	446 ASPHALT CONCRETE INTERMEDIATE COARSE	446 ASPHALT CONCRETE SURFACE CRSE	310 SUBBASE TYPE I GRADING A	407 TACK COAT @.075 GAL/SY	301 BITUMINOUS AGGREGATE BASE AC-20	301 BITUMINOUS AGGREGATE BASE AC-20	304 AGGREGATE BASE	452 PLAIN CONCRETE PAVEMENT	203 SUBGRADE COMPACTION
			FROM	TO		1½"	1½"	2½"	VAR.	4"		3"	8"	6"	9"	
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	SQ. YD.
175+34.40	210+82.18	3547.78	9.5	9.5	3745.0		156.0				280.9					
210+82.18	211+57.18	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
213+79.56	214+54.56	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
214+54.56	223+83.85	929.29	9.5	9.5	981.0		40.9				73.6					
223+83.85	224+58.85	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
226+51.71	227+26.71	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
227+26.71	229+48.30	221.59	9.5	9.5	234.0		9.8				17.6					
229+48.30	230+23.30	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
233+01.21	233+76.21	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
233+76.21	308+68.59	7492.38	9.5	9.5	7908.6		329.5				593.2					
308+68.59	309+43.59	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
310+83.23	311+58.23	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
311+58.23	338+00.00	2641.77	9.5	9.5	2788.5		116.2				209.1					
338+00.00	345+00.00	700.00	9.5	14.0	913.9		38.1				68.5					
345+00.00	417+69.75	7269.75	8.0	8.0	6462.0		269.3				484.7					
345+00.00	417+69.75	7269.75	6.0	6.0	4846.5		201.9			561.6		403.9		807.8		
417+69.75	418+44.75	75.00	14.0	14.0	116.7		4.9			13.0		9.7		19.5		
420+05.00	420+80.00	75.00	14.0	14.0	116.7		4.9			13.0		9.7		19.5		
420+80.00	428+53.70	773.70	8.0	8.0	687.7		28.6				51.6					
420+80.00	428+53.70	773.70	6.0	6.0	515.8		21.5			59.8		43.0		86.0		
45+00.00	56+00.00	1100.00	8.0	8.0	977.8		40.7				73.3					
45+00.00	56+00.00	1100.00	6.0	6.0	733.3		30.6			81.5		61.1		122.2		
56+00.00	66+10.00	1010.00	15.25	15.25	1711.4		71.3	118.8		190.2			380.3			1711.4
66+10.00	75+00.00	890.00	23.25	11.25	1705.8		71.0	118.5		189.5			379.0			1705.8
75+00.00	96+00.00	2100.00	10.00	10.00	2334.0		97.2	162.0		259.3			518.5			2334.0
96+00.00	117+00.00	2100.00	11.25	11.25	2625.0		109.4	182.3		291.7			583.3			2625.0
117+00.00	132+00.00	1500.00	11.25	11.25	1875.0		78.1	130.2			140.6			312.5	1875.0	1875.0
132+00.00	139+20.00	720.00	11.25	11.25	900.0		37.5	62.5			67.5			150.0	900.0	900.0
139+20.00	157+03.90	1783.90	14.0	14.0	2775.0		115.6	192.7			208.1			462.5	2775.0	2775.0
157+03.90	159+03.90	200.00	14.0	14.0	311.1		13.0		10.8		23.3			51.9	311.1	311.1
159+82.10	161+82.10	200.00	14.0	14.0	311.1		13.0		10.8		23.3			51.9	311.1	311.1
161+82.10	179+56.68	1774.58	14.0	14.0	2760.5		115.0	191.7			207.0			460.1	2760.5	2760.5
179+56.68	182+54.02	297.34	4.0	4.0	132.2		5.5	9.2			9.9				33.0	
		TOTALS:				633.6	2019.5	1167.9	61.6	1659.6	2579.4	527.4	1861.1	2543.9	8965.7	17308.6

13-JAN-1999

CALC. BY JCS DATE 9/95 / CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO / F.H.W.A. REGION 5	72/286

STATION TO STATION SR 315 MEDIAN SHOULDERS NORTHBOUND LANE		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 1½"	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½"	446 ASPHALT CONCRETE SURFACE COURSE VAR.	310 SUBBASE TYPE I GRADING A 4"	407 TACK COAT @.075 GAL/SY	301 BITUMINOUS AGGREGATE BASE AC 20 3"	301 BITUMINOUS AGGREGATE BASE AC 20 8"	304 AGGREGATE BASE 6"	452 PLAIN CONCRETE PAVEMENT 9"	203 SUBGRADE COMPACTION
			FROM	TO												
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	SQ. YD.
175+34.40	210+82.18	3547.78	9.5	9.5	3745.0		156.0				280.9					
210+82.18	211+57.18	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
213+79.56	214+54.56	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
214+54.56	223+83.85	929.29	9.5	9.5	981.0		40.9				73.6					
223+83.85	224+58.85	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
226+51.71	227+26.71	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
227+26.71	229+48.30	221.59	9.5	9.5	234.0		9.8				17.6					
229+48.30	230+23.30	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
233+01.21	233+76.21	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
233+76.21	308+68.59	7492.38	9.5	9.5	7908.6		329.5				593.2					
308+68.59	309+43.59	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
310+83.23	311+58.23	75.00	9.5	9.5	79.2	79.2			5.0		5.9					
311+58.23	338+00.00	2641.77	9.5	9.5	2788.5		116.2				209.1					
338+00.00	345+00.00	700.0	9.5	14.0	913.9		38.0				68.5					
345+00.00	417+69.75	7269.75	8.0	8.0	6462.0		269.3				484.7					
417+69.75	418+44.75	75.00	8.0	8.0	66.7		2.8			7.4		5.6		11.1		
420+05.00	420+80.00	75.00	8.0	8.0	66.7		2.8			7.4		5.6		11.1		
420+80.00	428+53.70	773.70	8.0	8.0	687.7		28.7				51.6					
345+00.00	417+69.75	7269.75	6.0	6.0	4846.5		201.9			538.5		403.9		807.8		
417+69.75	418+44.75	75.00	6.0	6.0	50.0		2.1			5.8		4.2		8.4		
420+05.00	420+80.00	75.00	6.0	6.0	50.0		2.1			5.8		4.2		8.4		
420+80.00	428+53.70	773.70	6.0	6.0	515.8		21.5			59.8		43.0		86.0		
45+00.00	56+00.00	1100.00	8.0	8.0	977.8		40.7				73.3					
45+00.00	56+00.00	1100.00	6.0	6.0	733.3		30.6			81.5		61.1		122.2		
56+00.00	66+10.00	1010.00	15.25	15.25	1711.4		71.3	118.8		190.2			380.3			1711.4
66+10.00	75+00.00	890.00	23.25	11.25	1705.8		70.1	118.5		189.5			379.1			1705.8
75+00.00	96+00.00	2100.00	10.00	10.00	2334.0		97.2	162.0		259.3			518.5			2334.0
96+00.00	117+00.00	2100.00	11.25	11.25	2625.0		109.4	182.3		291.7			583.3			2625.0
117+00.00	132+00.00	1500.00	11.25	11.25	1875.0		78.1	130.2			140.6			312.5	1875.0	1875.0
132+00.00	139+20.00	720.00	11.25	11.25	900.0		37.5	62.5			67.5			150.0	900.0	900.0
139+20.00	157+03.90	1783.90	14.0	14.0	2775.0		115.6	192.7			208.1			462.5	2775.0	2775.0
157+03.90	159+03.90	200.00	14.0	14.0	311.1		13.0		10.8		23.3			51.9	311.1	311.1
159+82.10	161+82.10	200.00	14.0	14.0	311.1		13.0		10.8		23.3			51.9	311.1	311.1
161+82.10	179+56.68	1774.58	14.0	14.0	2760.5		115.0	191.7			207.0			460.1	2760.5	2760.5
179+56.86	182+54.02	297.16	4.0	4.0	132.1		5.5				9.9					
		TOTALS:				633.6	2018.6	1158.7	61.6	1636.9	2579.4	527.6	1861.2	2543.9	8932.7	17308.6

13-JAN-1999 [file path illegible]

PAVEMENT CALCULATIONS

STATION TO STATION SR-315 OUTSIDE SHOULDER SOUTHBOUND		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	446 ASPHALT CONCRETE SURFACE COURSE 1½"	452 PLAIN CONCRETE PAVEMENT 9"	301 BITUMINOUS AGGREGATE BASE AC-20 7"	407 TACK COAT @ .075 GAL/SY	304 AGGREGATE BASE 9"	446 INTERMEDIATE COURSE TYPE 2 2½"	446 INTERMEDIATE COURSE TYPE 2 VAR.
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	SQ. YD.	CU. YD.	GAL.	CU. YD.		
175+34.40	201+00.00	2565.60	10.00	10.00	2851.0	118.8		554.4		712.8		
201+00.00	202+83.00	183.00	9.00	23.00	325.3	13.6		63.3		81.3		
202+83.00	211+07.10	824.10	10.00	10.00	915.7	38.2		178.0		228.9		
211+07.10	211+82.10	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
213+99.74	214+74.74	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
214+74.74	223+84.85	910.11	10.00	10.00	1011.2	42.1		196.6		252.8		
223+84.85	224+59.85	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
226+52.71	227+27.71	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
227+27.71	228+46.19	118.48	10.00	10.00	131.6	5.5		25.6		32.9		
228+46.19	229+21.19	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
232+69.21	233+44.21	75.00	23.00	12.00	145.8	6.1		28.4		36.5		
233+44.21	234+47.00	102.79	12.00	9.00	119.9	5.0		23.3		30.0		
234+47.00	292+00.00	5753.00	10.00	10.00	6392.2	266.3		1242.9		1598.0		
292+00.00	308+62.19	1662.19	10.00	10.00	1846.9	77.0		359.1		461.7		
308+62.19	309+37.19	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
310+78.36	311+53.36	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
311+53.36	317+00.00	546.64	10.00	10.00	607.4	25.3		118.1		151.9		
317+00.00	318+51.00	151.00	11.00	20.00	260.1	10.8		50.6		65.0		
318+51.00	341+80.06	2329.10	10.00	10.00	2588.0	107.8		503.2		647.0		
341+80.06	343+98.00	217.94	10.00	19.00	351.2	14.6		68.3		87.8		
343+98.00	345+00.00	102.00	10.00	10.00	113.3	4.7		22.0		28.3		
345+00.00	417+69.75	7269.75	10.00	10.00	8077.5	336.6		1570.6		2019.4		
417+69.75	418+44.75	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
420+05.00	420+80.00	75.00	10.00	10.00	83.3	3.5		16.2		20.8		
420+80.00	428+53.70	773.70	10.00	10.00	859.7	35.8		167.2		214.9		
45+00.00	56+00.00	1100.00	10.00	10.00	1222.9	50.1		237.7		305.6		
56+00.00	57+74.00	174.00	9.00	23.00	309.3	12.9		60.2		77.3		
57+74.00	66+10.00	836.00	10.00	10.00	928.9	38.7		180.6		232.2		
66+10.00	75+00.00	890.00	10.00	10.00	988.9	41.2		192.3		247.2		
75+00.00	96+00.00	2100.00	10.00	10.00	2333.3	97.2		453.7		583.3		
96+00.00	117+00.00	2100.00	10.00	10.00	2333.3	97.2		453.7		583.3		
117+00.00	132+00.00	1500.00	10.00	10.00	1667.6	69.5	1667.6		125.1		115.8	
132+00.00	133+80.26	180.26	10.00	10.00	200.3	8.3	200.3		15.0		13.9	
133+80.26	135+80.26	200.00	11.00	20.00	344.4	14.4	344.4		25.8		23.9	
135+80.26	139+20.00	339.74	10.00	10.00	377.5	15.7	377.5		28.3		26.2	
139+20.00	156+94.80	1774.80	10.00	10.00	1972.0	88.0	1972.0		158.3		146.6	
156+94.80	158+94.80	200.00	10.00	10.00	222.2	9.3	222.2		16.7			7.7
159+73.00	161+73.00	200.00	10.00	10.00	222.2	9.3	222.2		16.7			7.7
161+73.00	163+15.39	142.39	10.00	10.00	158.2	13.2	158.2		23.7		22.0	
171+15.39	179+56.68	841.29	10.00	10.00	934.8	39.0	934.8		70.1		64.9	
179+56.68	180+68.98	112.3	10.00	10.00	124.8	5.2	124.8		9.4		8.7	
180+68.98	182+23.35	154.37	10.00	4.00	120.1	5.0	120.1		9.0		8.3	
182+23.35	182+54.02	30.67	4.00	4.00	13.6	0.6	13.6		1.0		0.9	
182+54.02	190+00.00	745.98	4.00	4.00	332.0	13.8			24.9			
		TOTALS:				1768.3	6357.7	6895.6	524.0	8865.3	431.2	15.4

STATION TO STATION SR-315 OUTSIDE SHOULDER NORTHBOUND		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 INTERMEDIATE COURSE TYPE 2 2½"	452 PLAIN CONCRETE PAVEMENT 9"	301 BITUMINOUS AGGREGATE BASE AC-20 7"	301 BITUMINOUS AGGREGATE BASE 8"	407 TACK COAT @ .075 GAL/SY	304 AGGREGATE BASE 9"	310 SUBBASE TYPE I GRADING A 4"	446 INTERMEDIATE COURSE TYPE 2 VAR.
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	SQ. YD.	CU. YD.	CU. YD.	GAL.	CU. YD.	CU. YD.	
175+34.40	181+38.00	603.60	10.00	10.00	670.7	27.9			130.4			167.7		
181+38.00	183+00.00	162.00	23.00	9.00	288.0	12.0			56.0			72.0		
183+00.00	210+47.84	2747.84	10.00	10.00	3053.2	127.2			593.7			763.3		
210+47.84	211+22.84	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
213+58.97	214+33.97	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
214+33.97	223+82.85	948.88	10.00	10.00	1054.3	43.9			205.0			263.6		
223+82.85	224+57.85	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
226+50.71	227+25.71	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
227+25.71	229+95.32	269.61	10.00	10.00	299.6	12.5			58.3			74.9		
229+95.32	230+70.32	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
233+20.14	233+95.14	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
233+95.14	241+42.00	746.86	10.00	10.00	829.8	34.6			161.4			207.5		
241+42.00	243+00.00	158.00	23.00	9.00	280.9	11.7			54.6			70.2		
243+00.00	292+00.00	4900.00	10.00	10.00	5444.4	226.9			1058.6			1361.1		
292+00.00	308+74.99	1674.99	10.00	10.00	1861.1	77.5			361.9			465.3		
308+74.99	309+49.99	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
310+88.10	311+63.10	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
311+63.10	317+43.00	579.90	10.00	10.00	644.3	26.8			125.3			161.1		
317+43.00	319+00.00	157.00	19.00	10.00	252.9	10.5			49.2			63.2		
319+00.00	324+20.00	520.00	10.00	10.00	577.8	24.1			112.4			144.5		
333+00.00	345+00.00	1200.00	10.00	10.00	1334.0	55.6			259.4			333.5		
345+00.00	417+69.75	7269.75	10.00	10.00	8077.5	336.6			1570.6			2019.4		
417+69.75	418+44.75	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
420+05.00	420+80.00	75.00	10.00	10.00	83.3	3.5			16.2			20.8		
420+80.00	428+53.70	773.70	10.00	10.00	859.7	35.8			167.2			214.9		
45+00.00	66+10.00	2110.00	10.00	10.00	2344.4	97.7			455.9			586.1		
66+10.00	73+25.00	715.00	10.00	10.00	794.4	33.1			154.5			198.6		
73+25.00	75+00.00	175.00	23.00	9.00	311.1	13.0			60.5			77.8		
75+00.00	96+00.00	2100.00	10.00	10.00	2333.3	97.2			453.7			583.3		
96+00.00	117+00.00	2100.00	10.00	10.00	2333.3	97.2			453.7			583.3		
117+00.00	132+00.00	1500.00	10.00	10.00	1666.7	69.4	115.7	1666.7			125.0			
132+00.00	139+20.00	720.00	10.00	10.00	800.0	33.3	55.6	800.0			60.0			
139+20.00	146+60.63	740.63	10.00	10.00	822.9	34.3	57.1	822.9			61.7			
146+60.63	147+48.68	88.05	20.00	5.00	122.3	5.1	8.5	122.3			9.2			
147+48.68	157+13.00	964.00	10.00	10.00	1071.5	44.6	74.4	1071.5			80.4			
157+13.00	159+13.00	200.00	10.00	10.00	222.2	9.3		222.2			16.7			7.7
159+91.20	161+91.20	200.00	10.00	10.00	222.2	9.3		222.2			16.7			7.7
161+91.20	163+50.00	158.00	10.00	10.00	176.4	7.4	12.3	176.4			13.2			
163+50.00	167+17.04	367.04	20.00	5.00	509.8	21.2	35.4	509.8			38.2			
167+17.04	177+54.02	1036.98	10.00	10.00	1152.2	48.0	80.0	1152.2			86.4			
177+54.02	180+68.98	314.96	10.00	10.00	350.0	14.6					26.2			
180+68.98	182+23.35	154.37	10.00	4.00	120.1	5.0					9.0			
182+23.35	182+54.02	30.67	4.00	4.00	13.6	0.6					1.0			
182+54.02	190+00.00	745.98	4.00	4.00	331.5	13.8					24.9			
		TOTALS:				1752.7	439.0	6766.2	6704.3		568.6	8619.3		15.4

13-JAN-1999

PAVEMENT CALCULATIONS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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STATION TO STATION RAMP PAVEMENT		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 2½"	254 PAVEMENT PLANING PORTLAND CEMENT CONCRETE	446 ASPHALT SURFACE COURSE CONCRETE 1½"	446 INTERMEDIATE COURSE ASPHALT CONCRETE 2½"	446 INTERMEDIATE COURSE CONCRETE VAR.	407 TACK COAT @ .075 GAL/SY	413 SAWING AND SEALING ASPHALT CONC PAVT JOINTS
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	LIN. FT.
RAMP CA		(ACKERMAN RD.)										
174+99.52	175+37.02	37.50	98.00	35.00	220.0	220.0		9.2		10.7	16.5	133
175+37.02	176+00.00	62.98	35.00	24.00	191.4	191.4		8.0	13.3		14.4	89
176+00.00	177+60.60	160.60	24.00	24.00	426.7	426.7		17.8	29.6		32.0	192
177+60.60	180+02.56	241.96	24.00	16.00	537.7	537.7		22.4	37.3		40.3	240
180+02.56	182+45.11	242.55	16.00	16.00	431.2	431.2		18.0	29.9		32.3	192
182+45.11	186+00.00	354.89	36.00	12.00	946.4	946.4		39.4	65.7		71.0	432
186+00.00	195+80.00	980.00	12.00	12.00	1307	1307		54.4	90.7		98.0	588
RAMP CB												
173+15.77	173+53.27	37.50	55.00	16.00	147.9	147.9		6.2		1.3	11.1	71
173+53.27	183+00.00	946.73	16.00	16.00	1684.	1684		70.1	116.9		126.2	752
183+00.00	188+20.00	520.00	25.00	12.00	1069	1069		44.5	74.2		80.2	481
188+20.00	196+40.00	820.00	12.00	12.00	1094	1094		45.6	75.9		82.0	492
RAMP DA		(N. BROADWAY)										
231+87.71	232+25.21	37.50	56.00	24.00	170.0	170.0		7.1		8.3	12.8	80
232+25.21	235+00.00	274.79	24.00	24.00	732.8	732.8		30.5	50.9		55.0	336
235+00.00	236+00.00	100.00	24.00	16.00	222.2	222.2		9.3	15.4		16.7	100
236+00.00	243+68.82	768.82	16.00	16.00	1367	1367		57.0	94.9		102.5	624
243+68.82	246+35.00	266.18	36.00	12.00	709.8	709.8		29.6	49.3		53.2	336
246+35.00	250+57.47	422.47	12.00	12.00	563.3	563.3		23.5	39.1		42.2	252
250+57.47	251+57.47	100.00	12.00	0.00	66.7	66.7		2.8	4.6		5.0	30
RAMP DB												
222+50.00	224+61.59	211.58	0.00	5.17	60.8	60.8		2.5	4.2		4.6	67
226+58.00	228+63.53	205.53	9.00	15.33	277.8	277.8		11.6	19.3		20.8	122
232+12.27	232+50.00	37.73	24.00	25.00	102.7	102.7		4.3	7.1		7.7	49
232+50.00	235+58.93	308.93	16.00	16.00	549.2	549.2		22.9	38.1		41.2	240
235+58.93	242+18.93	660.00	16.00	38.00	1980.	1980		82.5	137.5		148.5	891
242+18.93	243+11.19	92.96	16.00	16.00	164.0	164.0		6.8	11.4		12.3	80
243+11.19	243+48.69	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32
RAMP DBB												
242+18.93	243+47.74	128.81	18.00	18.00	257.6	257.6		10.7	17.9		19.3	126
243+47.74	243+85.24	37.50	18.00	18.00	75.00	75.0		3.1		3.6	5.6	36
RAMP DC												
233+35.60	233+73.10	37.50	26.00	19.00	93.75	93.75		3.9		4.1	7.1	45
233+73.10	234+04.63	31.53	19.00	16.00	61.3	61.3		2.5	4.3		4.6	700
234+04.63	235+41.54	136.91	16.00	16.00	243.4	243.4		10.1	16.9		18.3	112
235+41.54	243+00.00	758.46	36.00	16.00	2192	2192		91.3	152.1		164.3	988
243+00.00	253+00.00	1000.00	25.00	0.00	1389	1389		57.9	96.5		104.2	625
RAMP DCC												
232+88.54	233+26.04	37.50	16.00	16.00	66.7	66.7		2.8	4.6	3.2	5.0	32
233+26.04	235+41.54	215.50	16.00	16.00	383.1	383.1		16.0	26.6		28.7	175
		TOTALS				19841.9		827.1	1324.2	34.4	1488.6	9740

STATION TO STATION RAMP PAVEMENT		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 2½"	254 PAVEMENT PLANING PORTLAND CEMENT CONCRETE	446 ASPHALT SURFACE COURSE CONCRETE 1½"	446 INTERMEDIATE COURSE ASPHALT CONCRETE 2½"	446 INTERMEDIATE COURSE CONCRETE VAR.	407 TACK COAT @ .075 GAL/SY	413 SAWING AND SEALING ASPHALT CONC PAVT JOINTS
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	LIN. FT.
RAMP DD												
196+40.00	199+74.38	334.38	12.00	36.00	891.7	891.7		37.2	61.9		66.9	408
199+74.38	205+59.34	584.96	16.00	16.00	1040.0	1040.0		43.3	72.2		78.0	464
205+59.34	208+75.00	315.66	16.00	16.00	561.2	561.2		23.4	39.0		42.1	256
208+75.00	211+00.98	225.00	16.00	16.00	400.0	400.0		16.7	27.8		30.0	176
212+49.38	214+00.00	150.62	16.00	16.00	267.8	267.8		11.2	18.6		20.1	128
214+00.00	218+99.44	499.44	16.00	16.00	887.9	887.9		37.0	61.7		66.6	400
218+99.44	224+55.07	555.63	16.00	16.00	987.8	987.8		41.2	68.6		74.1	448
226+47.69	236+93.17	1045.48	16.00	16.00	1859	1859		77.4	129.1		139.4	848
236+93.17	237+30.67	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32
RAMP DE												
214+00.00	219+00.00	500.00	0.00	34.00	944.4	944.4		39.4	65.6		70.8	425
219+00.00	224+67.11	567.67	16.00	16.00	1008.0	1008.0		42.0	70.1		75.7	464
224+67.11	225+04.61	37.50	16.00	30.00	95.8	95.8		4.0		4.2	7.2	46
RAMP DF												
195+80.00	201+00.00	520.00	12.00	25.00	1069.0	1069.0		44.5	74.2		80.2	481
201+00.00	207+00.00	600.00	16.00	36.00	1734.0	1734.0		72.2	120.4		130.0	780
207+00.00	213+39.76	639.76	16.00	16.00	1138.0	1138.0		47.4	79.0		85.3	512
213+39.76	214+39.76	100.00	16.00	18.00	188.9	188.9		7.9	13.1		14.2	85
214+39.76	215+39.69	99.93	18.00	18.00	199.9	199.9		8.3	13.9		15.0	90
215+39.69	215+77.19	37.50	18.00	18.00	75.0	75.0		3.1		3.6	5.6	36
RAMP DG												
207+00.00	214+19.01	719.0	16.00	16.00	1279.0	1279.0		53.3	88.8		95.9	376
214+19.01	214+56.51	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32
RAMP DH												
205+59.34	208+51.06	292.22	0.00	16.00	259.8	259.8		10.9	18.0		19.5	120
208+51.06	209+26.52	75.46	16.00	34.00	209.6	209.6		8.7	14.6		15.7	100
209+26.52	209+50.00	23.48	16.00	16.00	41.7	41.7		1.7	2.9		3.2	16
209+50.00	210+50.00	100.00	16.00	24.00	222.2	222.2		9.3	15.4		16.7	100
210+50.00	213+85.16	335.16	24.00	24.00	893.8	893.8		37.2	61.9		66.9	408
213+85.16	214+22.66	37.50	24.00	30.00	109.8	109.8		4.6		5.3	8.3	54
		TOTALS:				16497.7		687.5	1116.8	19.5	1237.4	7285

PAVEMENT CALCULATIONS

STATION TO STATION RAMP PAVEMENT		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254		446			407	413	
						PAVEMENT PLANING BITUMINOUS	PAVEMENT PLANING PORTLAND CEMENT CONCRETE	SURFACE COURSE ASPHALT CONCRETE	INTERMEDIATE COURSE ASPHALT CONCRETE	INTERMEDIATE COURSE ASPHALT CONCRETE	TACK COAT @ .075 GAL/SY	SAWING AND SEALING ASPHALT CONC PAVT JOINTS	
			FROM	TO		2½"		1½"	2½"	VAR.			
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	LIN. FT.	
HENDERSON RD.													
RAMP EA													
318+27.67	318+65.17	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32	
318+65.17	326+97.29	832.12	16.00	16.00	1480.0	1480.0		61.6	102.7		110.9	672	
326+97.29	330+47.43	350.14	39.00	12.00	992.1	992.1		41.3	68.9		74.4	459	
RAMP EB													
307+00.00	309+28.52	228.52	0.00	5.66	71.9	71.9		3.0	5.0		5.4	32	
310+71.27	317+00.00	628.73	9.25	30.0	1371.0	1371.0		57.1	95.2		102.8	609	
317+00.00	318+00.00	100.00	14.00	16.00	166.7	166.7		6.9	11.6		12.5	75	
318+00.00	319+91.87	191.87	16.00	16.00	341.1	341.1		14.2	23.7		25.6	160	
319+91.87	324+03.76	411.89	16.00	38.00	1235.7	1235.7		51.5	88.5		92.7	567	
324+03.76	325+06.47	102.71	16.00	16.00	182.6	182.6		7.6	12.7		13.7	80	
325+06.47	325+43.97	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32	
RAMP EBB													
324+10.04	324+56.03	45.99	16.00	16.00	81.8	81.8		3.4	5.7		6.1	48	
324+56.03	324+93.53	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32	
RAMP EC													
310+80.37	311+17.87	37.50	93.00	25.00	175.5	175.5		7.3		8.5	13.2	118	
311+17.87	311+45.21	27.34	25.00	16.00	1091.0	1091.0		45.5	75.8		81.8	41	
311+45.21	316+68.93	523.72	16.00	16.00	931.1	931.1		38.8	64.7		69.8	416	
316+68.93	318+00.00	131.07	16.00	14.00	218.5	218.5		9.1	15.2		16.4	105	
318+00.00	319+00.00	100.00	16.00	16.00	177.8	177.8		7.4	12.4		13.3	80	
319+00.00	329+00.00	1000.00	25.00	0.00	1338.9	1338.9		57.9	96.5		104.2	625	
RAMP ED	(RAMP WIDENING NOT INCLUDED)												
292+57.36	300+49.62	792.26	0.00	36.00	1584.0	1584.0		65.8	109.7		118.5	720	
300+49.62	301+97.18	147.56	16.00	16.00	262.3	262.3		10.9	18.2		19.6	128	
301+97.18	304+16.40	219.22	16.00	24.00	487.2	487.2		20.3	33.8		36.5	220	
304+16.40	309+40.60	524.20	24.00	24.00	1397.9	1397.9		58.8	98.1		106.0	648	
309+40.60	309+58.20	17.60	24.00	26.30	49.2	49.2		1.5	2.4		2.6	25	
309+58.20	309+95.70	37.50	26.25	86.00	233.9	233.9		9.8		11.2	17.5	112	
		TOTALS:				14070.3		588.1	940.8	29.3	1058.5	6036	

STATION TO STATION RAMP PAVEMENT		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254		446			407	413	
						PAVEMENT PLANING BITUMINOUS	PAVEMENT PLANING PORTLAND CEMENT CONCRETE	SURFACE COURSE ASPHALT CONCRETE	INTERMEDIATE COURSE ASPHALT CONCRETE	INTERMEDIATE COURSE ASPHALT CONCRETE	TACK COAT @ .075 GAL/SY	SAWING AND SEALING ASPHALT CONC PAVT JOINTS	
			FROM	TO		2½"		1½"	2½"	VAR.			
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	GAL.	LIN. FT.	
BETHEL RD.													
RAMP FA													
352+54.52	352+92.02	37.50	56.00	28.00	175.0	175.0		7.4		8.4	13.1	84	
352+92.02	353+11.89	19.87	28.00	24.00	57.4	57.4		2.4	4.0		4.3	26	
353+11.89	355+02.52	190.63	24.00	24.00	508.3	508.3		21.2	35.3		38.1	144	
355+02.52	357+25.00	222.48	24.00	16.00	494.4	494.4		20.6	34.3		37.1	220	
357+25.00	365+01.35	776.35	16.00	16.00	1380.1	1380.1		57.5	95.8		103.5	624	
365+01.35	367+78.36	277.01	36.00	12.00	738.7	738.7		30.8	51.3		55.4	336	
367+78.36	372+00.00	421.64	12.00	12.00	562.2	562.2		23.4	39.0		42.2	252	
372+00.00	373+00.00	100.00	12.00	0.00	66.7	66.7		2.8	4.6		5.0	30	
RAMP FC													
351+35.88	351+73.38	37.50	40.00	30.00	114.1	114.1		4.8		5.5	8.6	70	
351+73.38	352+31.63	58.25	30.00	26.00	181.2	181.2		7.6	12.6		13.6	84	
352+31.63	355+37.03	305.40	26.00	16.00	712.6	712.6		29.7	49.3		53.5	336	
355+37.03	361+00.00	562.97	16.00	16.00	1000.8	1000.8		41.7	69.5		75.1	448	
361+00.00	371+00.00	1000.00	25.00	0.00	1389.0	1389.0		57.9	96.5		104.2	625	
RAMP FD													
332+00.00	333+00.00	100.00	0.00	12.00	66.7	66.7		2.8	4.6		5.0	30	
333+00.00	337+00.00	400.00	12.00	12.00	533.3	533.3		22.2	37.0		40.0	240	
337+00.00	340+03.75	303.75	12.00	39.00	860.6	860.6		35.9	59.8		64.5	383	
340+03.75	347+25.00	721.25	16.00	16.00	1282.2	1282.2		53.4	89.0		96.2	576	
347+25.00	348+25.00	100.00	16.00	24.00	222.2	222.2		9.3	15.4		16.7	100	
348+25.00	351+00.22	275.22	24.00	24.00	734.0	734.0		30.6	51.0		55.1	336	
351+00.22	351+37.72	37.50	24.00	24.00	100.0	100.0		4.2		4.8	7.5	48	
RAMP FE													
330+47.43	336+60.06	612.63	12.00	12.00	816.8	816.8		34.0	56.7		61.3	372	
336+60.06	341+79.71	519.65	12.00	25.00	1068.2	1068.2		44.5	74.2		80.1	481	
341+79.71	342+79.71	100.00	14.00	16.00	166.7	166.7		7.0	11.6		12.5	75	
342+79.71	343+96.70	116.99	14.00	16.00	195.0	195.0		8.1	13.5		14.6	135	
343+96.70	355+57.75	1161.05	16.00	16.00	2064.1	2064.1		86.0	143.3		154.8	928	
355+57.75	355+95.25	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32	
		TOTALS:				15557.0		648.6	1048.3	21.9	1167.0	7015	

PAVEMENT CALCULATIONS

STATION TO STATION — RAMP PAVEMENT		LINEAR FEET (LIN. FT.)	PAVEMENT WIDTH FROM (FEET)	PAVEMENT WIDTH TO (FEET)	PAVEMENT AREA (SQ. YD.)	254 PAVEMENT PLANING BITUMINOUS 2½" (SQ. YD.)	254 PAVEMENT PLANING PORTLAND CEMENT CONCRETE (SQ. YD.)	446 ASPHALT CONCRETE SURFACE COURSE 1½" (CU. YD.)	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½" (CU. YD.)	446 ASPHALT CONCRETE INTERMEDIATE COURSE VAR. (CU. YD.)	407 TACK COAT @ .075 GAL/SY (GAL.)	413 SAWING AND SEALING ASPHALT CONC PAVT JOINTS (LIN. FT.)
S.R. 161												
RAMP GA												
67+04.06	67+41.56	37.50	109.00	44.00	318.8	318.8		13.4		15.3	23.9	153
67+41.56	67+68.05	26.49	44.00	36.00	117.7	117.7		4.9	8.2		8.8	40
67+68.05	69+51.91	183.86	36.00	36.00	735.4	735.4		30.6	51.1		55.2	324
69+51.91	73+74.20	422.29	36.00	16.00	1219.9	1219.9		50.8	84.7		91.5	546
73+74.20	74+48.23	74.03	16.00	16.00	131.6	131.6		5.5	9.1		9.8	64
74+48.23	78+13.04	364.81	36.00	12.00	972.7	972.7		40.5	67.5		72.9	456
78+13.04	81+51.90	338.86	12.00	12.00	450.5	450.5		18.8	31.3		33.8	204
81+51.90	82+51.90	100.00	12.00	0.00	66.7	66.7		2.8	4.6		5.0	30
RAMP GB												
65+34.20	65+71.70	37.50	87.00	26.00	235.4	235.4		9.9		11.3	17.7	113
65+71.70	66+37.04	65.34	26.00	16.00	152.5	152.5		6.4	10.6		11.4	84
66+37.04	75+00.00	862.96	16.00	16.00	1534.2	1534.2		63.9	106.5		115.1	704
75+00.00	79+40.00	440.00	25.00	14.00	953.3	953.3		39.7	66.2		71.5	429
79+40.00	85+00.00	560.00	14.00	0.00	435.6	435.6		18.2	30.3		32.7	196
RAMP GC												
48+75.00	49+75.00	100.00	0.00	12.00	66.7	66.7		2.8	4.6		5.0	30
49+75.00	54+17.00	442.00	12.00	18.00	736.7	736.7		30.7	51.2		55.3	330
54+17.00	56+81.68	264.68	18.00	39.00	838.2	838.2		34.9	58.2		62.9	371
56+81.68	58+00.00	118.32	16.00	16.00	210.3	210.3		8.8	14.6		15.8	96
58+00.00	61+75.27	375.27	16.00	36.00	1084.1	1084.1		45.2	75.3		81.3	494
61+75.27	65+08.61	333.34	36.00	36.00	1333.4	1333.4		55.6	92.6		100.0	612
65+08.61	65+21.64	13.03	36.00	88.00	89.7	89.7		3.7	6.2		6.7	62
65+21.64	65+59.14	37.50	38.00	88.00	262.5	262.5		11.0		12.6	19.7	126
RAMP GD												
46+00.00	51+60.60	560.00	0.00	14.00	435.6	435.6		18.2	30.3		32.7	196
51+60.60	56+00.00	440.00	14.00	25.00	953.3	953.3		39.7	66.2		71.5	429
56+00.00	59+98.03	398.03	16.00	16.00	707.6	707.6		29.8	49.1		53.1	320
59+98.03	63+93.23	395.20	16.00	30.00	1010.0	1010.0		42.1	70.1		75.8	460
63+93.23	65+13.21	119.98	30.00	30.00	400.0	400.0		16.7	27.8		30.0	180
65+13.21	66+35.72	122.51	30.00	34.00	435.6	435.6		18.2	30.2		32.7	1960
66+35.72	66+73.22	37.50	34.00	46.00	166.6	166.6		6.7		7.6	12.5	80
RAMP GDD												
65 +13.21	66+00.00	86.79	0.00	16.00	77.1	77.1		3.2	5.4		5.8	40
66+00.00	66+56.13	56.13	16.00	16.00	99.8	99.8		4.2	6.9		7.5	48
66+56.13	66+93.63	37.50	16.00	16.00	66.7	66.7		2.8		3.2	5.0	32
		TOTALS:				16298.2		679.7	1058.8	50.0	1222.6	9209

STATION TO STATION — RAMP PAVEMENT		LINEAR FEET (LIN. FT.)	PAVEMENT WIDTH FROM (FEET)	PAVEMENT WIDTH TO (FEET)	PAVEMENT AREA (SQ. YD.)	254 PAVEMENT PLANING BITUMINOUS 2½" (SQ. YD.)	446 ASPHALT CONCRETE SURFACE COURSE 1½" (CU. YD.)	446 ASPHALT CONCRETE INTERMEDIATE COURSE 2½" (CU. YD.)	446 ASPHALT CONCRETE INTERMEDIATE COURSE VAR. (CU. YD.)	407 TACK COAT @ .075 GAL/SY (GAL.)	413 SAWING AND SEALING ASPHALT CONC PAVT JOINTS (LIN. FT.)
I 270											
RDWY A											
118+80.26	131+80.26	1300.00	0.00	24.00	1733.0		72.2	120.3		130.0	780
131+80.26	133+80.26	200.00	24.00	24.00	533.3		22.2	37.0		40.0	240
826+03.82	827+66.32	162.50	24.00	24.00	433.3	433.3	18.1	30.1		32.5	216
827+66.32	828+03.82	37.50	24.00	24.00	100.0	100.0	4.2	6.9		7.5	48
RDWY D											
121+76.07	126+28.64	452.57	0.00	12.00	301.7		12.6	21.0		22.6	136
126+28.64	131+02.98	474.34	12.00	12.00	632.5		26.4	43.9		47.4	285
131+02.98	136+28.64	525.66	24.00	48.00	2102.6		87.6	146.0		157.7	946
848+64.32	849+64.32	100.00	24.00	24.00	266.6	266.6	11.1	18.5		20.0	120
849+64.32	851+26.82	162.50	24.00	24.00	433.3	433.3	18.1	30.1		32.5	192
851+26.82	851+64.32	37.50	24.00	24.00	100.0	100.0	4.2	6.9		7.5	48
RAMP B											
163+50.00	163+87.50	37.50	16.00	16.00	66.7	66.7	2.8		3.2	5.0	32
163+87.50	165+17.04	129.54	16.00	16.00	230.3	230.3	9.6	16.0		17.3	112
165+17.04	166+17.04	100.00	16.00	14.00	166.7	166.7	6.9	11.6		12.5	75
166+17.04	167+17.04	100.00	16.00	14.00	166.7	166.7	6.9	11.6		12.5	75
167+17.04	175+17.04	800.00	20.00	0.00	888.9		37.0	61.7		66.7	400
RAMP E											
147+48.68	148+99.07	150.39	20.00	12.00	267.4		11.1	18.6		20.1	120
148+99.07	151+54.16	255.09	12.00	12.00	340.1		14.2	23.6		25.5	153
865+75.55	866+13.05	37.50	16.00	16.00	66.7	66.7	2.8		3.2	5.0	32
866+13.05	867+13.05	100.00	14.00	16.00	166.7	166.7	6.9	11.6		12.5	75
867+13.05	868+13.05	100.00	14.00	16.00	166.7	166.7	6.9	11.6		12.5	75
RAMP F											
151+54.16	153+37.12	182.96	12.00	36.00	477.7		19.9	33.2		35.8	220
868+09.06	867+09.06	100.00	18.00	16.00	188.9	188.9	7.9	13.1		14.2	85
867+09.06	866+09.06	100.00	16.00	16.00	177.8	177.8	7.4	12.3		13.3	80
866+09.06	865+71.56	37.50	16.00	16.00	66.7	66.7	2.8		3.2	5.0	32
RAMP G											
146+76.48	151+20.30	443.82	36.00	0.00	937.0		39.0	65.1		70.3	399
840+77.85	841+77.85	100.00	18.00	16.00	188.9	188.9	7.9	13.1		14.2	85
841+77.85	842+77.85	100.00	16.00	16.00	177.8	177.8	7.4	12.4		13.3	80
842+77.85	843+15.35	37.50	16.00	16.00	66.7	66.7	2.8		3.2	5.0	32
		TOTALS:				3230.5	476.9	776.2	12.8	858.4	5173

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STATION TO STATION SR 315 LT. STA. RAMP SHOULDER RE-SURFACE		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS	407 TACK COAT	446 ASPHALT CONCRETE SURFACE COURSE	446 ASPHALT CONCRETE SURFACE COURSE
						1½"	@ .075 GAL/SY	1½"	VAR.
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	GAL.	CU. YD.	CU. YD.
RAMP DG									
207+00.00	213+56.51	656.51	3.00	3.00	218.80		16.4	9.1	
213+56.51	214+56.19	99.68	6.00	6.00	66.50				
RAMP DH									
208+75.00	209+50.00	75.00	3.00	6.92	41.30		3.1	1.7	
209+50.00	213+00.00	350.00	6.92	6.92	269.00		20.2	11.2	
213+00.00	213+63.00	63.00	6.92	3.00	34.70		2.6	1.4	
RAMP EA,	(2-WAY, LT.)	(HENDERSON)							
318+27.67	318+65.17	37.50	3.00	3.00	12.50	12.50	0.94		0.9
318+65.17	325+97.29	732.12	3.00	3.00	244.00		18.3	10.2	
325+97.29	326+97.29	100.00	3.00	8.00	61.10		4.6	2.5	
RAMP EA	(2-WAY, RT.)								
318+27.67	318+65.17	37.50	3.00	3.00	12.50	12.50	0.94		0.9
318+65.17	319+89.34	124.17	3.00	3.00	41.40		3.1	1.7	
RAMP EB									
317+00.00	319+00.00	200.00	8.00	3.00	122.90		9.2	5.1	
319+00.00	325+06.47	606.47	3.00	3.00	202.20		15.2	8.4	
325+06.47	325+43.97	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP EC									
310+80.37	311+17.87	37.5	3.00	3.00	12.50	12.50	0.94		0.9
311+17.87	317+00.00	582.13	3.00	3.00	194.04		14.6	8.1	
317+00.00	318+00.00	100.00	3.00	2.00	27.80		2.1	1.2	
RAMP ED									
300+50.07	308+88.66	838.59	3.00	3.00	279.50		21.0	11.7	
308+88.66	309+26.16	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP FA	(BETHEL)								
352+50.00	352+87.50	37.50	3.00	3.00		12.50	0.94		0.9
352+87.50	364+01.95	1114.45	3.00	3.00	371.50		27.9	15.5	
364+01.95	365+01.95	100.00	3.00	8.00	61.10		4.6	2.5	
RAMP FC									
351+45.29	351+82.79	37.50	3.00	3.00		12.50	0.94		0.9
351+82.79	359+00.00	717.21	3.00	3.00	251.60		18.9	10.0	
359+00.00	360+00.00	100.00	3.00	2.00	27.80		2.1	1.2	
RAMP FD									
340+03.75	351+00.40	1096.65	3.00	3.00	365.60		27.4	15.2	
351+00.40	351+37.90	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP FE									
341+80.06	343+80.06	200.00	8.00	3.00	122.20		9.2	5.1	
343+80.06	355+57.74	1177.68	3.00	3.00	392.60		29.4	138.6	
355+57.74	355+95.24	37.5	3.00	3.00	12.50	112.50	0.94		0.9
		TOTALS				112.5	258.4	138.2	8.1

STATION TO STATION SR 315 LT. STA. RAMP SHOULDER PROPOSED		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	301 BITUMINOUS AGGREGATE BASE AC-20	304 AGGREGATE BASE	310 SUBBASE GRADING TYPE I A	446 ASPHALT CONCRETE SURFACE COURSE
						3"	6"	4"	1½"
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
RAMP DG									
207+00.00	213+56.51	656.51	3.00	3.00	218.8	18.2	36.4	24.3	9.1
213+56.51	214+56.19	99.68	6.00	6.00	66.5	5.6	11.2	7.4	2.8
RAMP DH									
208+75.00	209+50.00	75.00	3.00	6.92	41.3				
209+50.00	213+00.00	350.00	6.92	6.92	269.0				
213+00.00	213+63.00	63.00	6.92	3.00	34.7				
RAMP EA,	(2-WAY, LT.)	(ACKERMAN)							
318+27.67	318+65.17	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
318+65.17	325+97.29	732.12	3.00	3.00	244.0	20.4	40.8	27.1	10.2
325+97.29	326+97.29	100.00	3.00	0.00	16.7	1.4	2.8	1.9	0.7
RAMP EA	(2-WAY, RT.)								
318+27.67	318+65.17	37.50	3.00	3.00	12.5				
318+65.17	319+89.34	124.17	3.00	3.00	41.4				
RAMP EB									
317+00.00	319+00.00	200.00	0.00	3.00	33.3	2.8	5.6	3.7	1.4
319+00.00	325+06.47	606.47	3.00	3.00	202.2	16.8	33.6	22.5	8.4
325+06.47	325+43.97	37.50	3.00	3.00	12.50	1.0	2.0	1.4	0.5
RAMP EC									
310+80.37	311+17.87	37.5	3.00	3.00	12.5				
311+17.87	317+00.00	582.13	3.00	3.00	194.04				
317+00.00	318+00.00	100.00	3.00	2.00	27.8				
RAMP ED									
300+50.07	308+88.66	838.59	3.00	3.00	279.5				
308+88.66	309+26.16	37.50	3.00	3.00	12.5				
RAMP FA	(BETHEL RD.)								
352+50.00	352+87.50	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
352+87.50	364+01.95	1114.45	3.00	3.00	371.5	31.0	62.0	41.3	15.5
364+01.95	365+01.95	100.00	3.00	0.00	16.7	1.4	2.8	1.9	0.7
RAMP FC									
351+45.29	351+82.79	37.50	3.00	3.00	12.5				
351+82.79	359+00.00	717.21	3.00	3.00	251.6				
359+00.00	360+00.00	100.00	3.00	2.00	27.8				
RAMP FD									
340+03.75	351+00.40	1096.65	3.00	3.00	365.6				
351+00.40	351+37.90	37.50	3.00	3.00	12.5				
		TOTALS				100.6	201.2	134.3	50.3

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STATION TO STATION SR 315 RT. STA. RAMP SHOULDER RE-SURFACE		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254	446		407					
						PAVEMENT PLANNING BITUMINOUS	ASPHALT CONCRETE SURFACE COURSE	ASPHALT CONCRETE SURFACE COURSE	TACK COAT					
			FROM	TO		1½"	1½"	VAR.	@ .075 GAL/SY					
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	GAL.					
RAMP DG														
208+22.00	213+19.01	497.01	3.00	3.00	165.70		6.9		12.4					
213+19.01	213+56.51	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
RAMP DH														
208+75.00	210+78.00	203.00	3.00	3.00	67.67		2.8		5.1					
210+78.00	212+60.00	182.00	10.00	6.92	171.00		7.1		12.8					
212+60.00	213+62.50	102.5	6.92	4.00	62.20		2.6		4.7					
213+62.50	214+00.00	37.50	4.00	3.00	14.60	14.60		0.9	1.1					
RAMP EA, 2-WAY, LT. SIDE, RT. SHOULDER (HENDERSON)														
318+27.67	318+65.17	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
318+65.17	326+97.29	832.12	3.00	3.00	277.40		11.6		20.8					
RAMP EA, 2-WAY, RT. SIDE, RT. SHOULDER														
318+27.67	318+65.17	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
318+65.17	319+02.81	37.64	3.00	3.00	12.55		0.5		0.94					
RAMP EB, NOTE: PART OF EB IS COUNTED IN EA														
318+00.00	319+00.00	100.00	2.00	3.00	27.78		1.2		2.1					
319+00.00	323+31.87	431.87	3.00	3.00	143.90		6.0		10.8					
324+03.77	325+06.47	102.70	3.00	3.00	34.20		1.4		2.6					
325+06.47	325+43.97	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
RAMP EC														
310+80.37	311+17.87	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
311+17.87	317+00.00	582.13	3.00	3.00	194.04		8.1		14.6					
317+00.00	319+00.00	200.00	3.00	8.00	122.20		5.1		9.2					
RAMP FA (BETHEL)														
352+50.00	352+87.50	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
352+87.50	365+01.95	1214.45	3.00	3.00	404.90		16.9		30.4					
RAMP FC														
351+45.29	351+82.79	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
351+82.79	359+00.00	717.21	3.00	3.00	239.10		9.9		17.9					
359+00.00	361+00.00	200.00	3.00	8.00	122.20		5.1		9.2					
RAMP FD														
340+03.75	341+03.75	100.00	8.00	3.00	61.11		2.5		4.6					
341+03.75	351+00.40	996.65	3.00	3.00	332.20		13.8		24.9					
351+00.40	351+37.90	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
RAMP FE														
342+80.06	343+80.06	100.00	2.00	3.00	27.78		1.2		2.1					
343+80.06	355+55.74	1177.68	3.00	3.00	392.60		16.3		29.4					
355+57.74	355+95.24	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
RAMP GA														
67+50.00	67+87.50	37.50	3.00	3.00	12.50	12.50		0.9	0.94					
67+87.50	74+48.28	660.78	3.00	3.00	220.30		9.2		16.5					
		TOTALS				139.6	128.2	9.9	241.6					

STATION TO STATION SR 315 RT. STA. RAMP SHOULDER PROPOSED		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	446		301	304	310				
						ASPHALT CONCRETE SURFACE COURSE	ASPHALT CONCRETE INTERMEDIATE COURSE	BITUMINOUS AGGREGATE BASE AC-20	AGGREGATE BASE	SUBBASE GRADING TYPE I A				
			FROM	TO		1½"	2½"	3"	6"	4"				
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.				
RAMP DG														
208+22.00	213+19.01	497.01	3.00	3.00	165.7									
213+19.01	213+56.51	37.50	3.00	3.00	12.5									
RAMP DH														
208+75.00	210+78.00	203.00	3.00	3.00	67.67	2.8		5.6	11.2	7.5				
210+78.00	212+60.00	182.00	10.00	6.92	171.1									
212+60.00	214+00.00	140.00	0.00	3.00	23.33	1.0		2.0	4.0	2.6				
RAMP EA, LT. SIDE, RT. SHOULDER, (2-WAY)														
318+27.67	318+65.17	37.50	3.00	3.00	12.5									
318+65.17	326+97.29	832.12	3.00	3.00	277.4									
RAMP EA, RT. SIDE, RT. SHOULDER, (2-WAY)														
318+27.67	318+65.17	37.50	3.00	3.00	12.50	0.5		1.0	2.0	1.4				
318+65.17	319+02.81	37.64	3.00	3.00	12.55	0.5		1.0	2.0	1.4				
RAMP EB														
318+00.00	319+00.00	100.00	2.00	3.00	27.78									
319+00.00	323+31.87	431.87	3.00	3.00	144.0									
324+03.77	325+06.47	102.70	3.00	3.00	34.20									
325+06.47	325+43.97	37.50	3.00	3.00	12.50									
RAMP EC														
310+80.37	311+17.87	37.50	3.00	3.00	12.50	0.5		1.0	2.0	1.4				
311+17.87	317+00.00	582.13	3.00	3.00	194.1	8.1		16.2	32.3	21.6				
317+00.00	319+00.00	200.00	3.00	0.00	33.33	1.4		2.8	5.6	3.7				
RAMP ED														
300+50.07	309+43.72	893.65	6.00	6.00	595.8	24.8	41.4	49.7	99.3	66.2				
RAMP FA (BETHEL RD.)														
352+50.00	352+87.50	37.50	3.00	3.00	12.5									
352+87.50	365+01.95	1214.45	3.00	3.00	404.8									
RAMP FC														
351+45.29	351+82.79	37.50	3.00	3.00	12.50	0.5		1.0	2.0	1.4				
351+82.79	359+00.00	717.21	3.00	3.00	239.1	9.9		19.8	39.6	26.6				
359+00.00	361+00.00	200.00	3.00	0.00	33.33	1.4		2.8	5.6	3.7				
RAMP FD														
340+03.75	341+03.75	100.00	0.00	3.00	16.67	0.7		1.4	2.8	1.9				
341+03.75	351+00.40	996.65	3.00	3.00	332.2	13.8		27.6	55.2	37.0				
351+00.40	351+37.90	37.5	3.00	3.00	12.5	0.5		1.1	2.1	1.4				
RAMP FE														
342+80.06	343+80.06	100.00	2.00	3.00	27.78									
343+80.06	355+55.74	1177.68	3.00	3.00	392.6									
355+57.74	355+95.24	37.50	3.00	3.00	12.50									
		TOTALS				66.4	41.4	133.0	265.6	177.8				

PAVEMENT CALCULATIONS

STATION TO STATION — SR 315 RT. STA. RAMP SHOULDER RE-SURFACE		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254	407	446							
						PAVEMENT PLANING BITUMINOUS	TACK COAT	ASPHALT CONCRETE SURFACE COURSE	ASPHALT CONCRETE SURFACE COURSE						
			FROM	TO		1½"	@ .075 GAL/SY	1½"	VAR.						
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	GAL.	CU. YD.	CU. YD.						
RAMP GB	(S.R. 161)														
65+34.20	65+71.70	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
65+71.70	73+00.00	728.30	3.00	3.00	242.77		18.2	10.1							
73+00.00	75+00.00	200.00	3.00	8.00	122.20		9.2	5.1							
RAMP GC															
56+81.68	57+81.68	100.00	8.00	3.00	61.11		4.6	2.5							
57+81.68	64+82.10	700.42	3.00	3.00	233.50		17.5	9.7							
64+82.10	65+19.60	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
RAMP GD	(RAMP GDD	DOES NOT	HAVE	RT. SHOULDER)											
57+74.00	66+35.92	861.92	3.00	3.00	287.30		21.5	12.0							
66+35.92	66+73.42	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
RDWY A	(I-270)														
826+03.82	827+66.32	162.50	5.00	5.00	90.30		6.8	3.8							
827+66.32	828+03.82	37.50	5.00	5.00	20.80	20.80	1.6		1.2						
RDWY D															
848+64.32	851+26.82	262.50	10.00	10.00	291.70		21.9	12.2							
851+26.82	851+64.32	37.50	10.00	10.00	41.70	41.70	3.1		2.7						
RAMP B															
163+50.00	163+87.50	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
163+87.50	165+17.04	129.54	3.00	3.00	43.20		3.2	1.8							
165+17.04	167+17.04	200.00	3.00	8.00	122.20		9.2	5.1							
RAMP E															
865+75.55	866+13.05	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
866+13.05	866+63.05	50.00	3.00	3.00	16.70		1.3	0.7							
866+63.05	868+13.05	150.00	3.00	10.00	108.40		8.1	4.5							
RAMP F															
865+71.56	866+09.06	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
866+09.06	868+09.06	200.00	3.00	3.00	66.70		5.0	2.8							
RAMP G															
840+77.85	841+77.85	100.00	8.00	3.00	61.11		4.6	2.5							
841+77.85	842+77.85	100.00	3.00	3.0	33.33		2.5	1.4							
842+77.85	843+15.35	37.50	3.00	3.00	12.50	12.50	0.94		0.9						
		TOTALS				150.0	144.9	74.2	10.2						

STATION TO STATION — SR 315 RT. STA. RAMP SHOULDER PROPOSED		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	301	304	310	446						
						BITUMINOUS AGGREGATE BASE AC-20	AGGREGATE BASE	SUBASE GRADING TYPE I A	ASPHALT CONCRETE SURFACE COURSE						
			FROM	TO		3"	6"	4"	1½"						
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.						
RAMP GA															
67+50.00	67+87.50	37.50	3.00	3.00	12.50										
67+87.50	74+48.28	660.78	3.00	3.00	220.3										
RAMP GB															
65+34.20	65+71.70	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5						
65+71.70	73+00.00	728.30	3.00	3.00	242.77	20.2	40.5	27.0	10.1						
73+00.00	75+00.00	200.00	3.00	0.00	33.33	2.8	5.6	3.7	1.4						
RAMP GC															
56+81.68	57+81.68	100.00	0.00	3.00	16.67	1.4	2.8	1.9	0.7						
57+81.68	64+82.10	700.42	3.00	3.00	233.5	19.6	39.2	26.0	9.7						
64+82.10	65+19.60	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5						
RAMP GD															
57+74.00	66+35.92	861.92	3.00	3.00	287.3										
66+35.92	66+73.42	37.50	3.00	3.00	12.5										
RDWY A	(I-270)														
826+03.82	827+66.32	162.50	5.00	5.00	90.3										
827+66.32	828+03.82	37.50	5.00	5.00	20.8										
RDWY D															
848+64.32	851+26.82	262.50	10.00	10.00	291.7										
851+26.82	851+64.32	37.50	10.00	10.00	41.7										
RAMP B															
163+50.00	163+87.50	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5						
163+87.50	165+17.04	129.54	3.00	3.00	43.2	3.6	7.2	4.8	1.8						
165+17.04	167+17.04	200.00	3.00	0.00	33.33	2.8	5.6	3.7	1.4						
RAMP E															
865+75.55	866+13.05	37.50	3.00	3.00	12.50	1.0	2.0	1.4	0.5						
866+13.05	866+63.05	50.00	3.00	3.00	16.7	1.4	2.8	1.9	0.7						
866+63.05	868+13.05	150.00	3.00	0.00	25.0	2.0	4.0	2.8	1.0						
RAMP F															
865+71.56	866+09.06	37.50	3.00	3.00	12.50										
866+09.06	868+09.06	200.00	3.00	3.00	66.7										
RAMP G															
840+77.85	841+77.85	100.00	0.00	3.00	16.67	1.4	2.8	1.9	0.7						
841+77.85	842+77.85	100.00	3.00	3.00	33.33	2.8	5.6	3.7	1.4						
842+77.85	843+15.35	37.50	3.00	3.00	12.50	1.0	2.0	1.4	0.5						
		TOTALS				63.0	126.1	84.4	31.4						

PAVEMENT CALCULATIONS

STATION TO STATION SR 315 LT. STA. RAMP SHOULDER RE-SURFACE		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS 1½"	407 TACK COAT @ .075 GAL/SY	446 ASPHALT CONCRETE SURFACE COURSE 1½"	446 ASPHALT CONCRETE SURFACE COURSE VAR.
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	GAL.	CU. YD.	CU. YD.
RAMP CA	(ACKERMAN)								
174+99.52	175+37.02	37.50	3.00	3.00	12.50	12.50	0.94		0.9
175+37.02	181+45.11	608.09	3.00	3.00	202.70		15.2	8.4	
181+45.11	182+45.11	100.00	3.00	8.00	61.10		4.6	2.5	
RAMP CB									
173+15.77	173+53.27	37.50	3.00	3.00	12.50	12.50	0.94		0.9
173+53.27	181+38.00	784.73	3.00	3.00	261.60		19.6	10.9	
RAMP DA	2-WAY RAMP	(N. BROADWAY)							
231+87.71	232+25.21	37.50	3.00	3.00	12.50	12.50	0.94		0.9
232+25.21	242+68.82	1043.61	3.00	3.00	347.87		26.1	14.5	
242+68.82	243+68.82	100.00	3.00	8.00	61.10		4.6	2.5	
RAMP DB	2-WAY RAMP								
232+50.00	234+50.00	200.00	8.00	3.00	122.20		9.2	5.1	
234+50.00	243+11.19	861.19	3.00	3.00	287.06		21.5	11.9	
243+11.19	243+48.69	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP DBB									
242+18.93	242+56.43	37.50	3.00	3.00	12.50	12.50	0.94		0.9
242+56.43	243+85.24	128.81	3.00	3.00	43.00		3.2	1.8	
RAMP DC									
233+25.60	233+63.10	37.50	3.00	3.00	12.50	12.50	0.94		0.9
233+63.10	241+42.00	778.90	3.00	3.00	260.00		19.5	10.8	
RAMP DCC									
232+88.54	233+88.54	100.00	3.00	3.00	33.30				
233+88.54	235+41.54	153.00	3.00	3.00	51.00		3.8	2.1	
RAMP DD									
199+74.38	220+38.00	2063.62	3.00	3.00	687.90		51.6	28.7	
220+38.00	224+55.07	417.07	20.00	3.00	532.90		40.0	22.2	
226+47.69	227+00.00	52.31	7.25	3.00	29.80		2.2	1.2	
227+00.00	235+26.00	826.00	3.00	3.00	275.30		20.6	11.5	
235+26.00	236+79.00	153.00	3.00	3.00	51.00				
RAMP DE									
218+99.44	224+67.11	567.67	3.00	3.00	189.20		14.2	7.9	
224+67.11	225+04.61	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP DF									
201+00.00	203+00.00	200.00	8.00	3.00	122.20		9.2	5.1	
203+00.00	207+00.00	400.00	3.00	3.00	133.30		10.0	5.6	
207+00.00	208+22.00	122.00	4.00	15.00	128.70		9.7	5.4	
208+22.00	215+39.69	717.69	3.00	3.00	239.20		17.9	10.0	
215+39.69	215+77.19	37.50	3.00	3.00	12.50	12.50	0.94		0.9
		TOTALS				100.0	310.2	168.1	7.2

STATION TO STATION SR 315 LT. STA. RAMP SHOULDER PROPOSED		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	301 BITUMINOUS AGGREGATE BASE AC-20 3"	304 AGGREGATE BASE 6"	310 STABILIZED SUBBASE TYPE I GRADING A 4"	446 ASPHALT CONCRETE SURFACE COURSE 1½"
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
RAMP CA									
174+99.52	175+37.02	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
175+37.02	181+45.11	608.09	3.00	3.00	202.7	16.8	33.6	22.5	8.4
181+45.11	182+45.11	100.00	3.00	0.00	16.7	1.4	2.8	1.9	0.7
RAMP CB									
173+15.77	173+53.27	37.50	3.00	3.00	12.50				
173+53.27	181+38.00	784.73	3.00	3.00	261.6				
RAMP DA	(2-WAY RAMP)								
231+87.71	232+25.21	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
232+25.21	242+68.82	1043.61	3.00	3.00	347.9	28.9	57.9	38.7	14.5
242+68.82	243+68.82	100.00	3.00	0.00	16.7	1.4	2.8	1.9	0.7
RAMP DB	(2-WAY RAMP)								
232+50.00	234+50.00	200.00	0.00	3.00	33.3	2.8	5.6	3.7	1.4
234+50.00	243+11.19	861.19	3.00	3.00	287.1	23.9	47.8	31.9	11.9
243+11.19	243+48.69	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
RAMP DBB									
242+18.93	242+56.43	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
242+56.43	243+85.24	128.81	3.00	3.00	43.0	3.6	7.2	4.8	1.8
RAMP DC									
233+25.60	233+63.10	37.50	3.00	3.00	12.5				
233+63.10	241+42.00	778.90	3.00	3.00	260.0				
RAMP DCC									
232+88.54	233+88.54	100.00	3.00	3.00	33.3	2.8	5.6	3.7	1.4
233+88.54	235+41.54	153.00	3.00	3.00	51.0				
RAMP DD									
199+74.38	220+38.00	2063.62	3.00	3.00	687.9				
220+38.00	224+55.07	417.07	20.00	3.00	532.9				
226+47.69	227+00.00	52.31	7.25	3.00	29.8				
227+00.00	235+26.00	826.00	3.00	3.00	275.3				
235+26.00	236+79.00	153.00	3.00	3.00	51.0	4.2	8.4	5.7	2.1
RAMP DE									
218+99.44	224+67.11	567.67	3.00	3.00	189.2				
224+67.11	225+04.61	37.50	3.00	3.00	12.5				
RAMP DF									
201+00.00	203+00.00	200.00	0.00	3.00	33.3	2.8	5.6	3.7	1.4
203+00.00	207+00.00	400.00	3.00	3.00	133.3	11.2	22.4	14.8	5.6
207+00.00	208+22.00	122.00	4.00	15.00	128.7				
208+22.00	215+39.69	717.69	3.00	3.00	239.2	20.0	40.0	26.6	10.0
215+39.69	215+77.19	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5
		TOTALS				124.8	249.7	166.9	62.4

PAVEMENT CALCULATIONS

CALC. BY JCS DATE 9/95 | CHKD. BY KRS DATE 10/95 | FRA-315-5.18 | OHIO F.H.W.A. REGION 5 | 81/286

STATION TO STATION SR 315 RT. STA. RAMP SHOULDER RE-SURFACE		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	254 PAVEMENT PLANING BITUMINOUS	407 TACK COAT	446 ASPHALT CONCRETE SURFACE COURSE	446 ASPHALT CONCRETE SURFACE COURSE
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	GAL.	CU. YD.	CU. YD.
RAMP CA	(ACKERMAN)								
174+99.52	175+37.02	37.50	3.00	3.00	12.50	12.50	0.94		0.9
175+37.02	182+45.11	708.09	3.00	3.00	236.00		17.7	9.8	
RAMP CB									
173+15.77	173+53.27	37.50	3.00	3.00	12.50	12.50	0.94		0.9
173+53.27	181+00.00	746.20	3.00	3.00	248.90		18.7	10.4	
181+00.00	183+00.00	200.00	3.00	8.00	122.20		9.20	5.1	
RAMP DA	(N. BROADWAY)								
231+87.71	232+25.21	37.50	3.00	3.00	12.50	12.50	0.94		0.9
232+25.21	243+68.82	1143.61	3.00	3.00	381.20		28.6	15.9	
RAMP DB									
234+47.00	243+11.19	864.19	3.00	3.00	288.06		21.6	12.0	
243+11.19>	243+48.69	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP DBB									
242+18.93	243+47.74	128.81	3.00	3.00	42.90		3.2	1.8	
243+47.74	243+85.24	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP DC									
233+25.60	233+63.10	37.50	3.00	3.00	12.50	12.50	0.94		0.9
233+63.10	241+00.00	736.90	3.00	3.00	245.60		18.4	10.2	
241+00.00	243+00.00	200.00	3.00	8.00	122.20		9.2	5.1	
RAMP DCC									
232+88.54	233+88.54	100.00	6.00	6.00	66.70				
233+88.54	235+41.54	153.00	3.00	3.00	51.00		3.8	2.1	
RAMP DD									
199+74.38	200+74.38	100.00	8.00	3.00	61.11		4.6	2.5	
200+74.38	224+00.00	2325.62	3.00	3.00	775.20		58.1	32.3	
224+00.00	224+55.07	55.07	3.00	7.25	31.36		2.4	1.3	
226+47.69	227+00.00	52.31	7.25	3.00	29.79		2.2	1.2	
227+00.00	236+00.00	900.00	3.00	3.00	300.00		22.5	12.5	
236+00.00	236+31.00	31.00	3.00	5.42	14.49		1.1	0.6	
236+31.00	236+93.17	62.17	5.42	5.42	37.42		2.8	1.6	
236+93.17	237+30.67	37.50	5.42	5.42	22.57	22.60	1.7		1.5
RAMP DE									
218+99.44	224+67.11	567.67	3.00	3.00	189.20		14.2	7.8	
224+67.11	225+04.61	37.50	3.00	3.00	12.50	12.50	0.94		0.9
RAMP DF									
202+83.00	213+63.00	1080.00	3.00	3.00	360.00		27.0	15.0	
		TOTALS				110.1	273.6	147.2	7.8

STATION TO STATION SR 315 RT. STA. RAMP SHOULDER PROPOSED		LINEAR FEET	PAVEMENT WIDTH FROM	PAVEMENT WIDTH TO	PAVEMENT AREA	301 BITUMINOUS AGGREGATE BASE AC-20	304 AGGREGATE BASE	310 SUBBASE TYPE I GRADING AS PER PLAN	446 ASPHALT CONCRETE SURFACE COURSE
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
						3"	6"	4"	1½"
RAMP CA									
174+99.52	175+37.02	37.50	3.00	3.00	12.5				
175+37.02	182+45.11	708.09	3.00	3.00	236.0				
RAMP CB									
173+15.77	173+53.27	37.50	3.00	3.00	12.5	1.0	2.1	1.4	0.5
173+53.27	181+00.00	746.20	3.00	3.00	248.9	20.8	41.5	27.7	10.4
181+00.00	183+00.00	200.00	3.00	0.00	33.33	2.8	5.6	3.7	1.4
RAMP DA									
231+87.71	232+25.21	37.50	3.00	3.00	12.5				
232+25.21	243+68.82	1143.61	3.00	3.00	381.2				
RAMP DB									
234+47.00	243+11.19	864.19	3.00	3.00	288.0				
243+11.19	243+48.69	37.50	3.00	3.00	12.5				
RAMP DBB									
242+18.93	243+47.74	128.81	3.00	3.00	42.9				
243+47.74	243+85.24	37.50	3.00	3.00	12.5				
RAMP DC									
233+25.60	233+63.10	37.5	3.00	3.00	12.5	1.0	2.0	1.4	0.5
233+63.10	241+00.00	736.90	3.00	3.00	245.6	20.4	40.8	27.3	10.2
241+00.00	243+00.00	200.00	3.00	0.00	33.33	2.8	5.6	3.7	1.4
RAMP DCC									
232+88.54	233+88.54	100.00	6.00	6.00	66.7	5.6	11.2	7.4	2.8
233+88.54	235+41.54	153.00	3.00	3.00	51.00	4.2	8.4	5.7	2.1
RAMP DD									
199+74.38	200+74.38	100.00	0.00	3.00	16.67	1.4	2.8	1.9	0.7
200+74.38	224+00.00	2325.62	3.00	3.00	775.2	64.6	129.2	86.1	32.3
224+00.00	224+55.07	55.07	3.00	0.00	9.18	0.8	1.6	1.0	0.4
226+47.69	227+00.00	52.31	0.00	3.00	8.72	0.8	1.6	1.0	0.4
227+00.00	236+00.00	900.00	3.00	3.00	300.0	25.0	50.0	33.3	12.5
236+00.00	236+31.00	31.00	3.00	0.58	6.2	0.6	1.2	0.7	0.3
236+31.00	236+93.17	62.17	5.42	5.42	37.42				
236+93.17	237+30.67	37.50	5.42	5.42	22.57				
RAMP DE									
218+99.44	224+67.11	567.67	3.00	3.00	189.2	15.8	31.6	21.0	7.9
224+67.11	225+04.61	37.50	3.00	3.00	12.5	1.0	2.1	1.4	0.5
RAMP DF									
202+83.00	213+63.00	1080.00	3.00	3.00	360.0				
		TOTALS				168.6	337.2	224.7	84.3

PAVEMENT CALCULATIONS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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STATION TO STATION		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	254	407	446						
SR 315 LT. STA. RAMP SHOULDER RE-SURFACE						PAVEMENT PLANING BITUMINOUS	TACK COAT	ASPHALT CONCRETE SURFACE COURSE	ASPHALT CONCRETE SURFACE COURSE					
			FROM	TO		1½"	@ .075 GAL/SY	1½"	VAR.					
		LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	GAL.	CU. YD.	CU. YD.					
RAMP GA	(S.R. 161)													
67+50.00	67+87.50	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
67+87.50	73+48.28	560.78	3.00	3.00	187.00		14.0	7.8						
73+48.28	74+48.28	100.00	3.00	8.00	61.10		4.6	2.5						
RAMP GB														
64+34.20	65+71.70	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
65+71.70	73+25.00	753.30	3.00	3.00	251.10		18.8	10.5						
RAMP GC														
56+81.68	57+19.18	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
57+19.18	65+19.60	800.42	3.00	3.00	266.80		20.0	11.1						
RAMP GD														
56+00.00	58+00.00	200.00	8.00	3.00	122.20		9.2	5.1						
58+00.00	66+00.88	800.88	3.00	3.00	284.80		21.4	11.9						
RAMP GDD														
66+00.88	66+52.89	52.01	3.00	3.00	17.30		1.3	0.7						
66+52.89	66+90.39	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
RDWY A (I-270)														
826+03.82	827+66.32	162.5	10.00	10.00	180.50		13.5	7.5						
827+66.32	828+03.82	37.50	10.00	10.00	41.70	41.70	3.1		2.7					
RDWY D														
848+64.32	850+26.82	162.5	10.00	7.5	158.0		11.8	6.6						
850+26.82	851+64.32	37.50	7.50	6.00	28.10	28.10	2.1		1.8					
RAMP B														
163+50.00	163+87.50	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
163+87.50	165+17.04	129.54	3.00	3.00	43.20		3.2	1.8						
165+17.04	166+17.04	100.00	3.00	2.00	27.80		2.1	1.2						
RAMP E														
865+75.55	866+13.05	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
866+13.05	867+13.05	100.00	3.00	2.00	27.80		2.1	1.2						
RAMP F														
865+71.56	866+09.06	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
866+09.06	866+59.06	50.00	3.00	3.00	16.70		1.3	0.7						
866+59.06	868+09.06	150.00	3.00	10.00	108.30		8.1	4.5						
RAMP G														
840+77.85	842+77.85	200.00	3.00	3.00	66.70		5.0	2.8						
842+77.85	843+15.35	37.50	3.00	3.00	12.50	12.50	0.94		0.9					
		TOTALS				169.8	149.2	75.9	11.7					

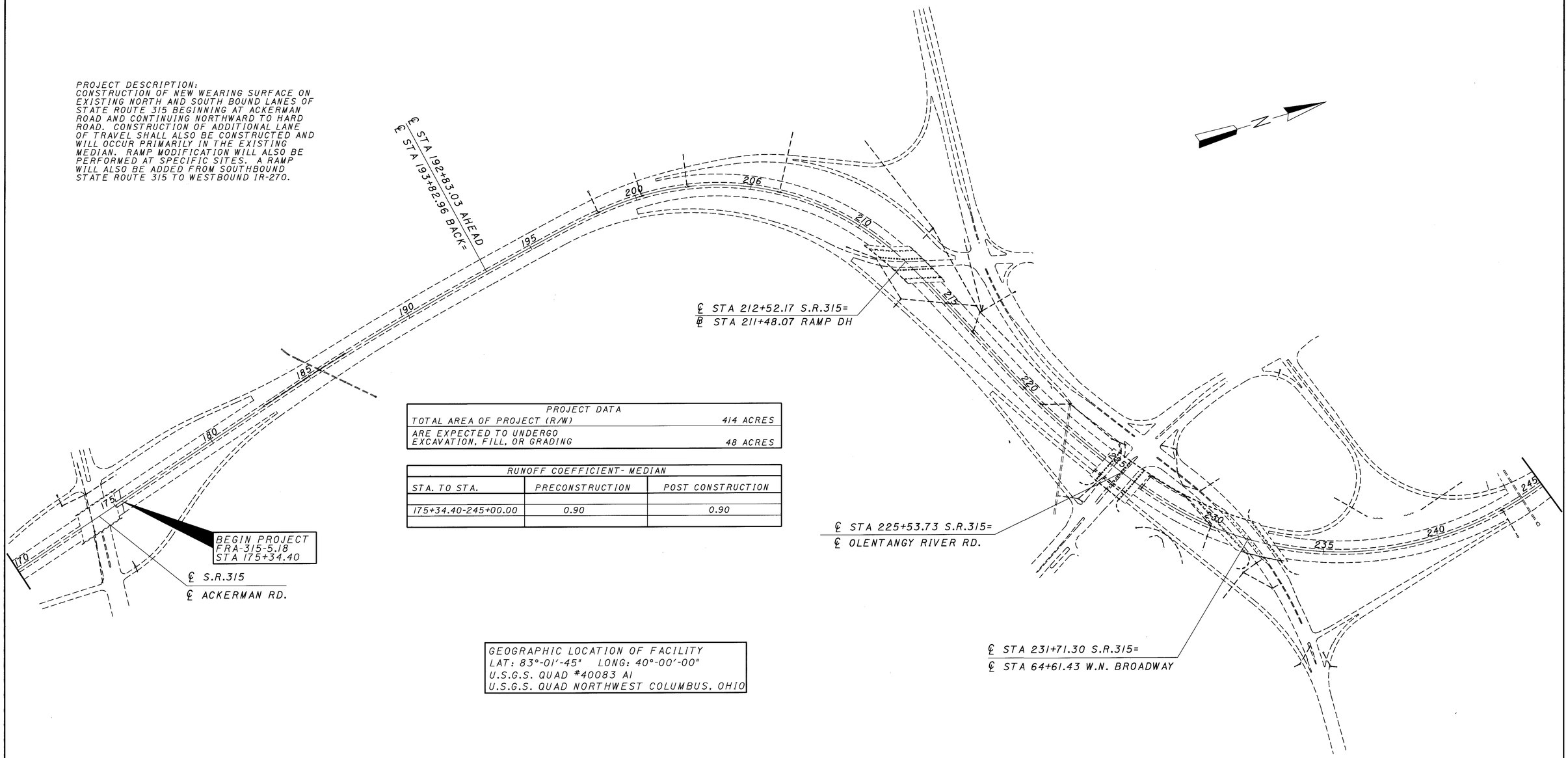
STATION TO STATION		LINEAR FEET	PAVEMENT WIDTH		PAVEMENT AREA	301	304	310	446					
SR 315 LT. STA. RAMP SHOULDER PROPOSED						BITUMINOUS BASE AGGREGATE AC-20	AGGREGATE BASE	SUBASE GRADE A TYPE 1	ASPHALT CONCRETE SURFACE COURSE					
			FROM	TO		3"	6"	4"	1½"					
		LIN. FT.	FEET	FEET	SQ. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.					
RAMP FE	(BETHEL)													
341+80.06	343+80.06	200.00	0.00	3.00	33.3	2.8	5.6	3.7	1.4					
343+80.06	355+57.74	1177.68	3.00	3.00	392.6	32.8	65.6	43.6	16.4					
355+57.74	355+95.24	37.5	3.00	3.00	12.5	1.0	2.0	1.4	0.5					
RAMP GA	(S.R. 161)													
67+50.00	67+87.50	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5					
67+87.50	73+48.28	560.78	3.00	3.00	187.0	15.6	31.2	20.8	7.8					
73+48.28	74+48.28	100.00	3.00	0.00	16.7	1.4	2.8	1.9	0.7					
RAMP GB														
64+34.20	65+71.70	37.50	3.00	3.00	12.5									
65+71.70	73+25.00	753.30	3.00	3.00	251.1									
RAMP GC														
56+81.68	57+19.18	37.50	3.00	3.00	12.5									
57+19.18	65+19.60	800.42	3.00	3.00	266.8									
RAMP GD														
56+00.00	58+00.00	200.00	0.00	3.00	33.3	2.8	5.6	3.7	1.4					
58+00.00	66+00.88	800.88	3.00	3.00	267.0	22.2	44.5	29.7	11.1					
RAMP GDD														
66+00.88	66+52.89	52.01	3.00	3.00	17.3	1.4	2.8	1.9	0.7					
66+52.89	66+90.39	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5					
RDWY A (I-270)														
826+03.82	827+66.32	162.50	10.00	10.00	180.5									
827+66.32	828+03.82	37.50	10.00	10.00	41.7									
RDWY D														
848+64.32	850+26.82	162.50	10.00	7.50	158.0									
850+26.82	851+64.32	37.50	7.50	6.00	28.1									
RAMP B														
163+50.00	163+87.50	37.50	3.00	3.00	12.5									
163+87.50	165+17.04	129.54	3.00	3.00	43.2									
165+17.04	166+17.04	100.00	3.00	2.00	27.8									
RAMP E														
865+75.55	866+13.05	37.50	3.00	3.00	12.5									
866+13.05	867+13.05	100.00	3.00	2.00	27.8									
RAMP F														
865+71.56	866+09.06	37.50	3.00	3.00	12.5	1.0	2.0	1.4	0.5					
866+09.06	866+59.06	50.00	3.00	3.00	16.7	1.4	2.8	1.9	0.7					
866+59.06	868+09.06	150.00	3.00	0.00	25.0	2.1	4.2	2.8	1.0					
RAMP G														
840+77.85	842+77.85	200.00	3.00	3.00	66.7									
842+77.85	843+15.35	37.50	3.00	3.00	12.5									
		TOTALS				86.5	173.1	115.6	43.2					

PAVEMENT CALCULATIONS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

84
286

PROJECT DESCRIPTION:
CONSTRUCTION OF NEW WEARING SURFACE ON EXISTING NORTH AND SOUTH BOUND LANES OF STATE ROUTE 315 BEGINNING AT ACKERMAN ROAD AND CONTINUING NORTHWARD TO HARD ROAD. CONSTRUCTION OF ADDITIONAL LANE OF TRAVEL SHALL ALSO BE CONSTRUCTED AND WILL OCCUR PRIMARILY IN THE EXISTING MEDIAN. RAMP MODIFICATION WILL ALSO BE PERFORMED AT SPECIFIC SITES. A RAMP WILL ALSO BE ADDED FROM SOUTHBOUND STATE ROUTE 315 TO WESTBOUND IR-270.



PROJECT DATA	
TOTAL AREA OF PROJECT (R/W)	414 ACRES
ARE EXPECTED TO UNDERGO EXCAVATION, FILL, OR GRADING	48 ACRES

RUNOFF COEFFICIENT- MEDIAN		
STA. TO STA.	PRECONSTRUCTION	POST CONSTRUCTION
175+34.40-245+00.00	0.90	0.90

GEOGRAPHIC LOCATION OF FACILITY
LAT: 83°-01'-45" LONG: 40°-00'-00"
U.S.G.S. QUAD #40083 A1
U.S.G.S. QUAD NORTHWEST COLUMBUS, OHIO

LEGEND

- X DITCH CHECK
- ▣ CATCH BASIN WITH INLET FILTER
- ● EXISTING STANDARD MANHOLE
- ═ FILTER FABRIC FENCE
- ◪ SEDIMENT BASIN

STORMWATER POLLUTION PREVENTION PLAN

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

85
286

℄ STA 270+03.19 AHEAD
℄ STA 270+00.00 BACK=

250 255 260 265 270 275 280 285 290 295 300 305 310

℄ STA 310+11.41 S.R.315=
℄ STA 23+16.29 HENDERSON RD.

RUNOFF COEFFICIENT- MEDIAN		
STA. TO STA.	PRECONSTRUCTION	POST CONSTRUCTION
245+00.00-345+00.00	0.90	0.90
345+00.00-379+00.00	0.76	0.81

GEOGRAPHIC LOCATION OF FACILITY
LAT: 83°-01'-45" LONG: 40°-00'-00"
U.S.G.S. QUAD #40083 A1
U.S.G.S. QUAD NORTHWEST COLUMBUS, OHIO

ESTIMATED QUANTITIES		
	207	
LOCATION	FILTER FABRIC FENCE	STRAW OR HAY BALES
	LIN FT	EACH
AT DITCH CHECKS		40
AT CATCH BASINS	56	56
RAMP ED	1100	
324+50-333+00	900	
TOTAL	2056	96

315 320 325 330 335 340 345 350 355 360 365 370 375

℄ STA 351+94.09 S.R.315=
℄ STA 31+23.29 BETHEL RD.

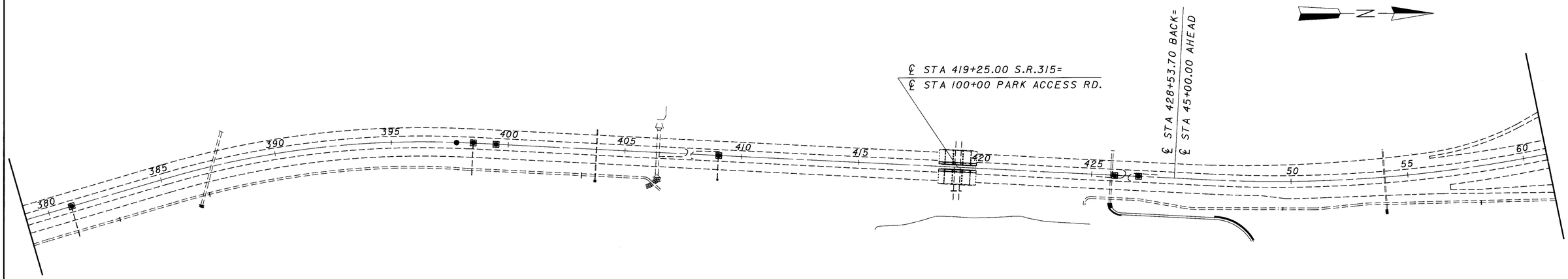
LEGEND

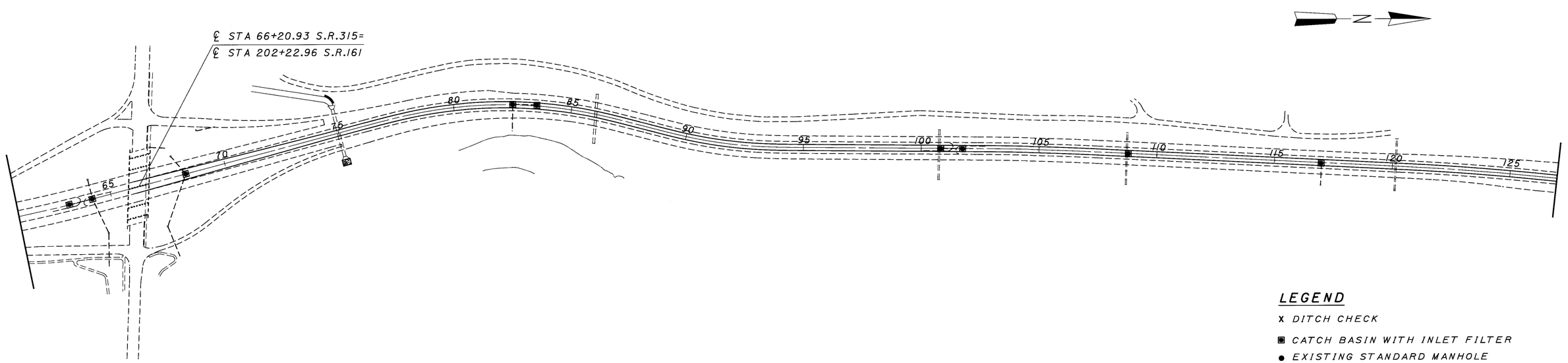
- X DITCH CHECK
- ▣ CATCH BASIN WITH INLET FILTER
- ● EXISTING STANDARD MANHOLE
- ═ FILTER FABRIC FENCE
- ◪ SEDIMENT BASIN

STORMWATER POLLUTION PREVENTION PLAN

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

86
286





GEOGRAPHIC LOCATION OF FACILITY
LAT: 83°-01'-45" LONG: 40°-00'-00"
U.S.G.S. QUAD #40083 A1
U.S.G.S. QUAD NORTHWEST COLUMBUS, OHIO

RUNOFF COEFFICIENT- MEDIAN		
STA. TO STA.	PRECONSTRUCTION	POST CONSTRUCTION
379+00.00-428+53.70	0.76	0.81
45+00.00-66+10.00	0.76	0.81
66+10.00-75+00.00	0.72	0.90
75+00.00-96+00.00	0.69	0.90
96+00.00-117+00.00	0.72	0.90
117+00.00-127+00.00	0.72	0.90

ESTIMATED QUANTITIES		
	207	
LOCATION	FILTER FABRIC FENCE	STRAW OR HAY BALES
	LIN FT	EACH
AT CATCH BASINS	120	120
TOTAL	120	120

LEGEND

- X DITCH CHECK
- ▣ CATCH BASIN WITH INLET FILTER
- ● EXISTING STANDARD MANHOLE
- ═ FILTER FABRIC FENCE
- ◪ SEDIMENT BASIN

STORMWATER POLLUTION PREVENTION PLAN

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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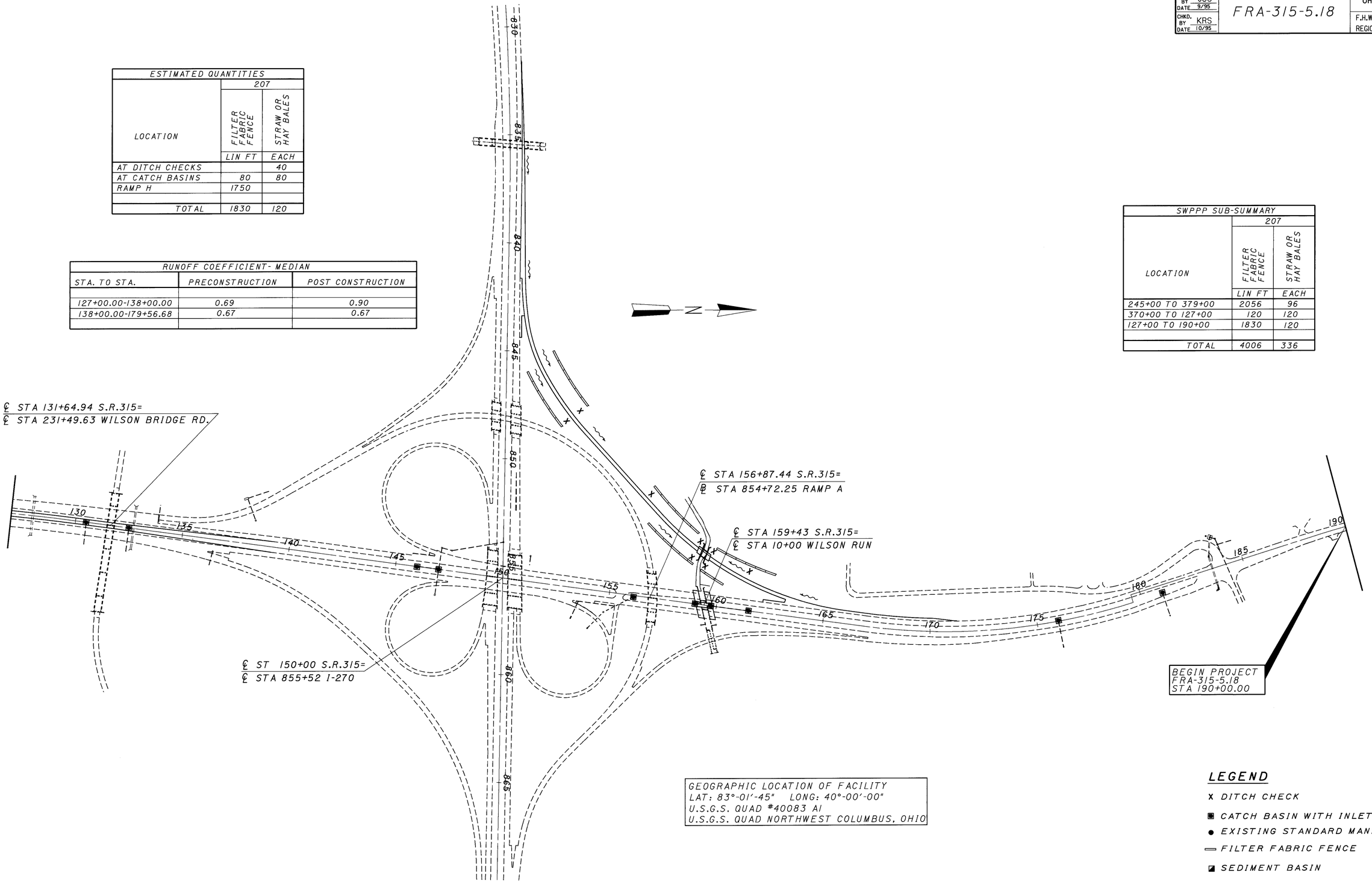
286

ESTIMATED QUANTITIES		
	207	
LOCATION	FILTER FABRIC FENCE	STRAW OR HAY BALES
	LIN FT	EACH
AT DITCH CHECKS		40
AT CATCH BASINS	80	80
RAMP H	1750	
TOTAL	1830	120

RUNOFF COEFFICIENT- MEDIAN		
STA. TO STA.	PRECONSTRUCTION	POST CONSTRUCTION
127+00.00-138+00.00	0.69	0.90
138+00.00-179+56.68	0.67	0.67

SWPPP SUB-SUMMARY		
	207	
LOCATION	FILTER FABRIC FENCE	STRAW OR HAY BALES
	LIN FT	EACH
245+00 TO 379+00	2056	96
370+00 TO 127+00	120	120
127+00 TO 190+00	1830	120
TOTAL	4006	336



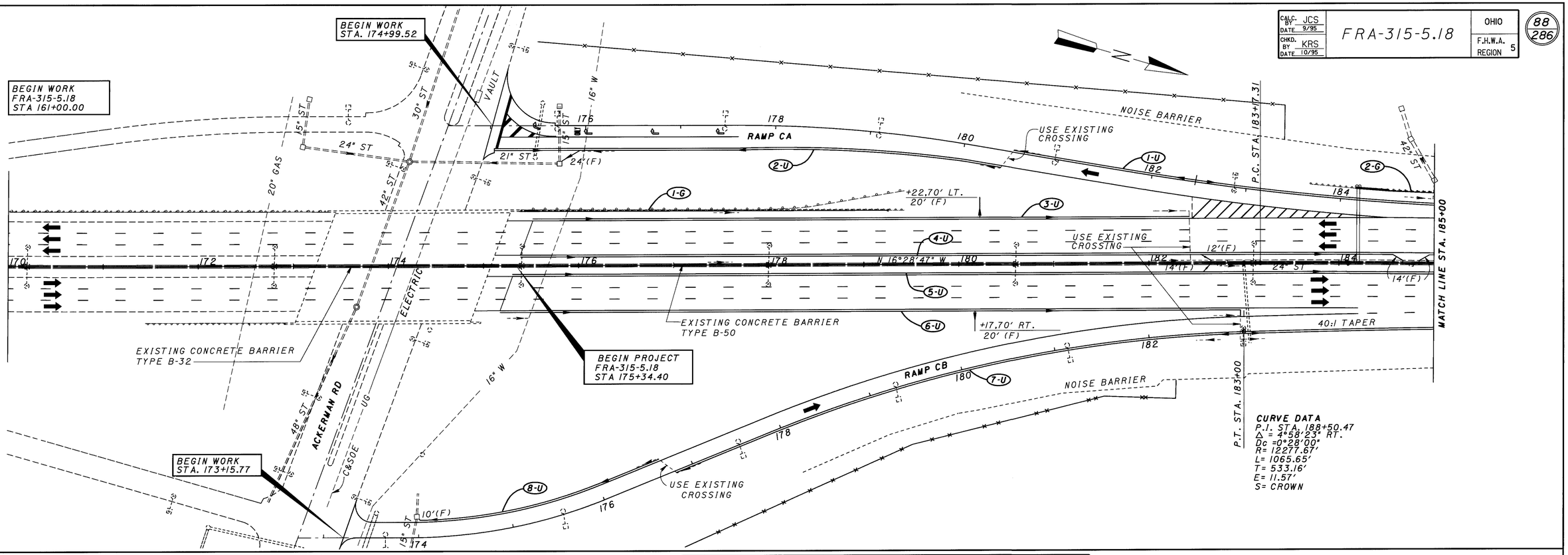
GEOGRAPHIC LOCATION OF FACILITY
LAT: 83°-01'-45" LONG: 40°-00'-00"
U.S.G.S. QUAD #40083 A1
U.S.G.S. QUAD NORTHWEST COLUMBUS, OHIO

LEGEND

- X DITCH CHECK
- ▣ CATCH BASIN WITH INLET FILTER
- ● EXISTING STANDARD MANHOLE
- ═ FILTER FABRIC FENCE
- ◪ SEDIMENT BASIN

STORMWATER POLLUTION PREVENTION PLAN

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO	88
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5	286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE- D-32	622 CONCRETE BARRIER TYPE- D-50	622 CONCRETE BARRIER TYPE- B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH		EACH		LIN. FT.			EACH	
1-U		RAMP CA						446												
2-U		RAMP CA				24		538												
3-U	LT	175+50	182+42			20		692	1											
4-U	LT	175+40	185+00			40	960													
5-U	RT	175+30	185+00			14	970													
6-U	RT	175+16	183+00			20		784	1											
7-U		RAMP CB						822												
8-U		RAMP CB				10		256												
1-G	LT	BRIDGE	179+57	400.0						312.5		1			1				5	
2-G	LT	183+70	185+86	175.0						62.5		1			1	35			2	1
TOTALS:				575.0		128	1930	3538	2	375.0		2			2	35			7	1

BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	6" - 90° CROSS	4" X 45° BEND	4" X 4" X 4" TEE	4" X 4" 90° BEND
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
	1				1		
	2				2		
	2		1			1	
3	3						
1	1					1	
	2		1			1	1
	2		1		1		
	2				2		
4	15		3		6	3	1

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

SR-315 STA. 170+00 TO STA. 185+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	89/286

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2		606 ANCHOR ASSEMBLIES TYPE	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 D-50	622 B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	4" - 90° CROSS	4" x 4" x 4" TEE
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH			EACH			LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	185+00	200+00			40	10		1500	1													1	2	1			1
2-U	LT	185+00	200+00			34		1500															3	3				
3-U	RT	185+00	195+36			20		1036															2	2				
4-U	RT	185+00	RAMP DD			92			1500														2	2	2			
5-U	RT	199+90	200+00						10																			
6-U	LT	195+35	200+00			15			465															1			1	
1-G	LT	194+99	203+71	975.0							800	1					1	35			18	1						
2-G	LT	(SEE PREVIOUS QUANTITY SHT.)																										
3-G	RT	188+29	190+01	175.0							75	1					1	35			2	1						
4-G	RT	195+79	197+53	175.0							75	1					1	35			2	1						
																							8	10	3		1	1
																							TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				1325.0		201	10	2536	3475	1	950	3					3	105			22	3						

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 185+00 TO STA. 200+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	90 / 286

CROSS REFERENCE

SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

CURVE DATA

P.I. STA. 206+89.60
Δ = 76°07'30" RT
Dc = 5°00'00"
R = 1145.92'
Ls = 500.00'
θs = 12°30'00"
LC = 1022.50'
LT = 334.17'
ST = 167.43'
Es = 321.04'
S = 0.083 FT/FT

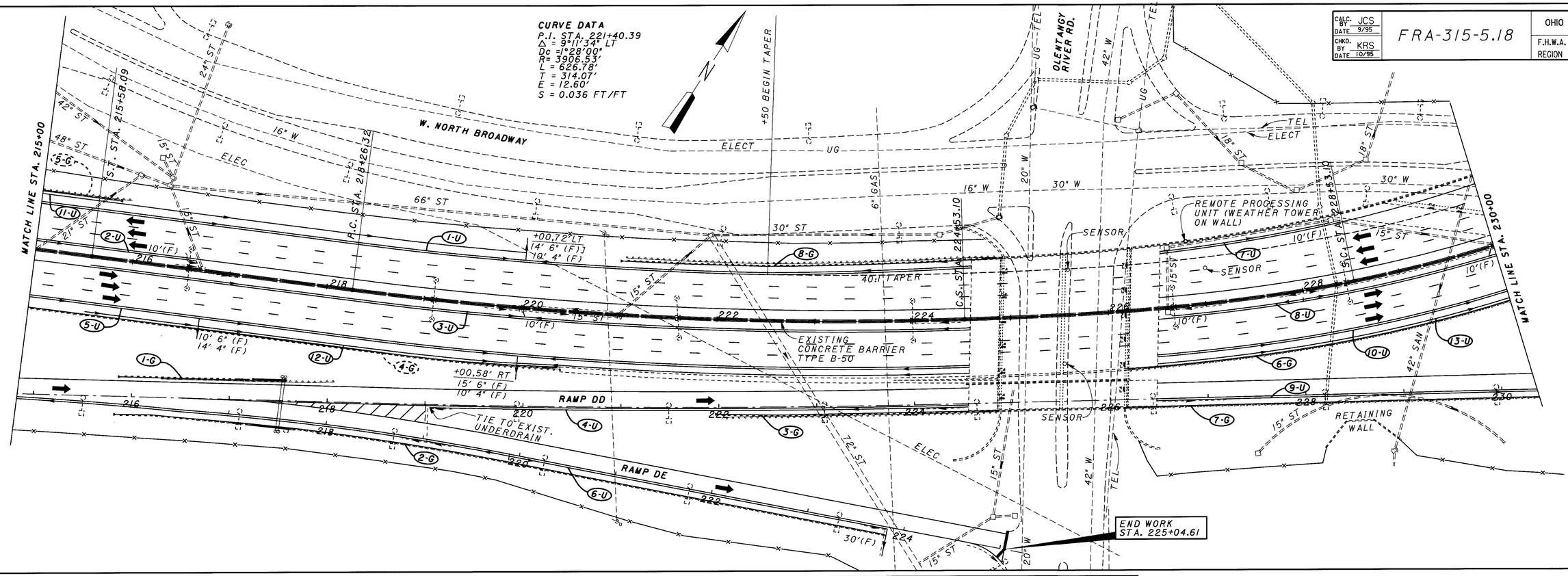
NOTE:
FOR QUANTITIES SEE FOLLOWING SHEET

SR-315 STA. 200+00 TO STA. 215+00

NOTE:
QUANTITIES FOR SR-315 STA. 200+00 TO STA. 215+00

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 BRIDGE TERMINAL ASSEMBLY, TYPE	606 ANCHOR ASSEMBLIES TYPE	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	4" - 90° CROSS	4" X 4" 45° BEND	4" X 4" X 4" TEE	4" X 4" 90° BEND
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH			EACH			LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U		RAMP DF				25			750	1														1					1	
2-U		RAMP DF				26			1430	1														1					1	
3-U	LT	200+00	211+70			30		1170															3	3						
4-U	LT	213+90	215+00					110															2	2						
5-U	RT	200+00	210+80			35			1080	1																				
6-U		RAMP DD				20			1490	1														1					1	
7-U		RAMP DF				18			170															1				1		
8-U		RAMP DH				18			470															1				1		
9-U	RT	213+40	215+00						160																					
10-U	LT	200+00	201+00				10		100	1																			1	
11-U	LT	201+00	212+00				20		1100	2																			1	1
12-U	LT	214+20	215+00						80																					
13-U	LT	202+00	212+00			30			1000															2			1		1	
14-U	LT	214+25	215+00						75																					
15-U	LT	200+00	201+00			15			100															1			1			
1-G	LT	(SEE PREVIOUS QUANTITY SHEET)																												
2-G	RT	RAMP DE		200.0							75.0	1					1	35			2	1								
3-G	RT	207+01	BRIDGE	350.0							275.0	1					1				8	5								
4-G	RT	BRIDGE	BARRIER	725.0							687.5	1	1								14									
5-G	LT	BRIDGE	215+80	175.0							100.0	1					1				5	5	5	13			2	2	6	1
6-G	RT	RAMP DH									75.0	1					1	35			2	1	TOTALS FOR UNDERDRAIN INFORMATION ONLY							
TOTALS:				1450.0		217	30	1280	8005	7	1212.5	5	1				4	70			31	12								

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35. SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35. SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B
				LIN. FT.	LIN. FT.	LIN. FT.		LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH		EACH		LIN. FT.			EACH	
1-U	LT	215+00	224+62				10		962	1										
2-U	LT	215+00	216+65			10		165												
3-U	RT	215+58	224+58			10		900												
4-U		RAMP DD							550											
5-U	RT	215+00	224+62				20		962	2										
6-U		RAMP DE				30			902	1										
7-U	LT	226+55	228+31			10			166											
8-U	RT	226+50	230+00			20		330												
9-U		RAMP DD							390											
10-U	RT	226+50	230+00						350											
11-U	LT	215+00	220+00			14			500											
12-U	RT	215+58	224+55			29			897											
13-U	RT	226+50	230+00						350											
1-G	RT	RAMP DD		175.0							75.0	1			1	35			2	1
2-G	RT	RAMP DE		712.5							650.0	1	1	1	1	50			8	1
3-G	LT	RAMP DD	BRIDGE	287.5							212.5	1			1				4	1
4-G	RT	(SEE PREVIOUS QUANTITY SHEET)																		
5-G	LT	(SEE PREVIOUS QUANTITY SHEET)																		
6-G	RT	BRIDGE	BRIDGE	587.5							550.0	1	1						8	
7-G	RT	BRIDGE	RAMP DD	687.5							662.5		1		1				9	
8-G	LT	221+00	BRIDGE	387.5							362.5		1		1				6	9
TOTALS:				2837.5		123	30	1395	6029	4	2512.5	4	4		3	3	85			37	12

BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	4" - 90° CROSS	4" X 4" 45° BEND	4" X 4" X 4" TEE	4" X 4" 90° BEND
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
						1	
	1				1		
1	1						
	1		1				1
	2					2	
	1						1
	1						
	2				2		
	1					1	
	2			2			
1	12		1	2	3	4	2

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

SR-315 STA. 215+00 TO STA. 230+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	93/286

CURVE DATA

P.I. STA. 238+24.50
Δ = 80°38'02" LT
Dc = 4°00'00"
R = 1432.39'
Ls = 500.00'
Ts = 1471.40'
θs = 10°00'00"
LC = 1515.85'
LT = 333.87'
ST = 167.15'
Es = 455.74'
S = 0.83 FT/FT

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

INSERT "A"

FOR QUANTITIES SEE FOLLOWING SHEET

SR-315 STA. 230+00 TO STA. 245+00

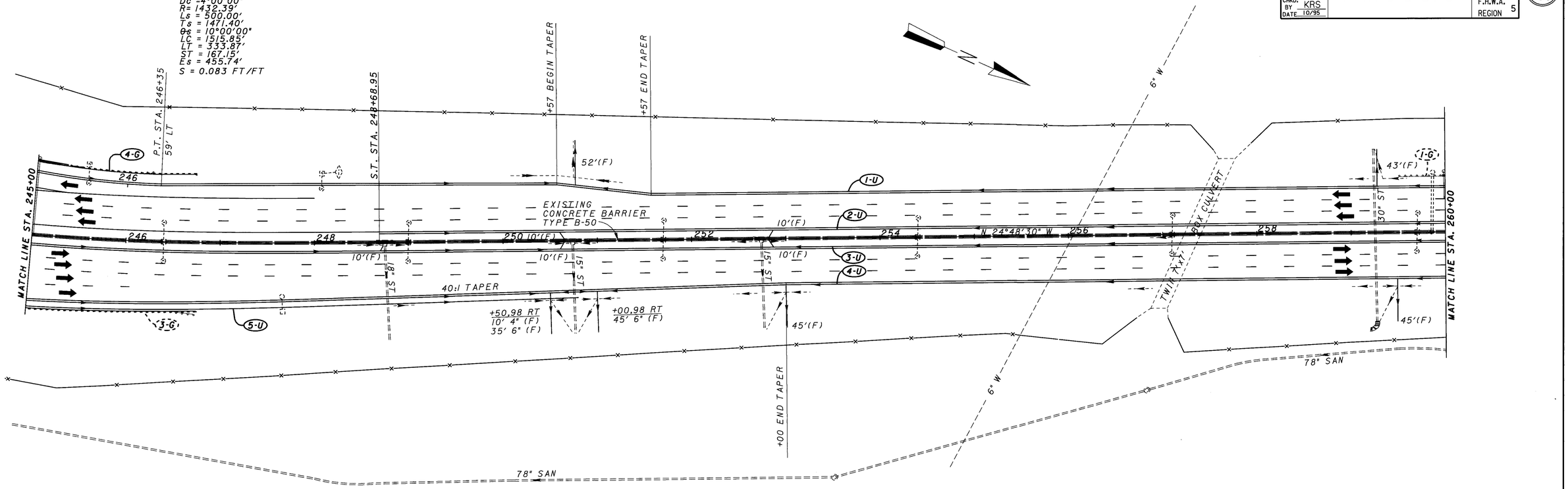
NOTE:
QUANTITIES FOR SR-315 STA. 230+00 TO STA. 245+00

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35. SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35. SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	4" - 90° CROSS	4" X 4" 45° BEND	4" X 4" X 4" TEE	4" X 4" 90° BEND
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-G	LT	BRIDGE	RAMP DB	537.5							462.5	1			1				13											
2-G	RT	BRIDGE	238+06	500.0							475.0		1		1				6	2										
3-G	RT	RAMP DC	246+74	937.5							875.0				1	1				11										
4-G	LT	(SEE FOLLOWING QUANTITY SHEET)																												
6-G	RT	(SEE PREVIOUS QUANTITY SHEET)																												
7-G	RT	(SEE PREVIOUS QUANTITY SHEET)																												
1-U		RAMP DD				10			640																					
2-U		RAMP DC				65			204																					
3-U		RAMP DC				35			1225	1																				
4-U	RT	BRIDGE	245+00			10		1200																		1	1			
5-U	LT	BRIDGE	243+50			36			1100	1																	1			
6-U		RAMP DB				15			1100	1																	1			
7-U		RAMP DA				67			1330	2																	2			
8-U	RT	230+00	231+20				10		120	1																				
9-U	RT	233+45	245+00				10		1155	1																				
10-U	RT	230+00	231+35			15			135																		1			
11-U	RT	233+50	242+00			15			850																		1			
12-U	RT	242+00	245+00						300																		11	2	2	7	1
																											TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				1975.0		268	20	1200	8159	7	1812.5	1	1		2	2				30	2									

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

95
286

CURVE DATA
P.I. STA. 238+24.50
Δ = 80°38'02" LT
Dc = 4°00'00"
R = 1432.39'
Ls = 500.00'
Ts = 1471.40'
Θs = 10°00'00"
LC = 1515.85'
LT = 333.87'
ST = 167.15'
Es = 455.74'
S = 0.083 FT/FT



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 6" x 6" WYE	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	245+00	260+00			95			1500	2											2			2	
2-U	LT	248+70	260+00			20		1130													2	2			
3-U	RT	245+00	260+00			30		1500													3	3			
4-U	RT	245+00	260+00			135	10		1500	4												3		4	
5-U	RT	245+00	250+40			35			540													1			1
1-G	LT	(SEE FOLLOWING SHEET)																							
3-G	RT	(SEE PREVIOUS QUANTITY SHEET)																							
4-G	LT	RAMP DA	246+73	175.0							75.0	1			1	35			2	1					
TOTALS:				175.0		315	10	2630	3540	6	75.0	1			1	35			2	1	5	11		6	1

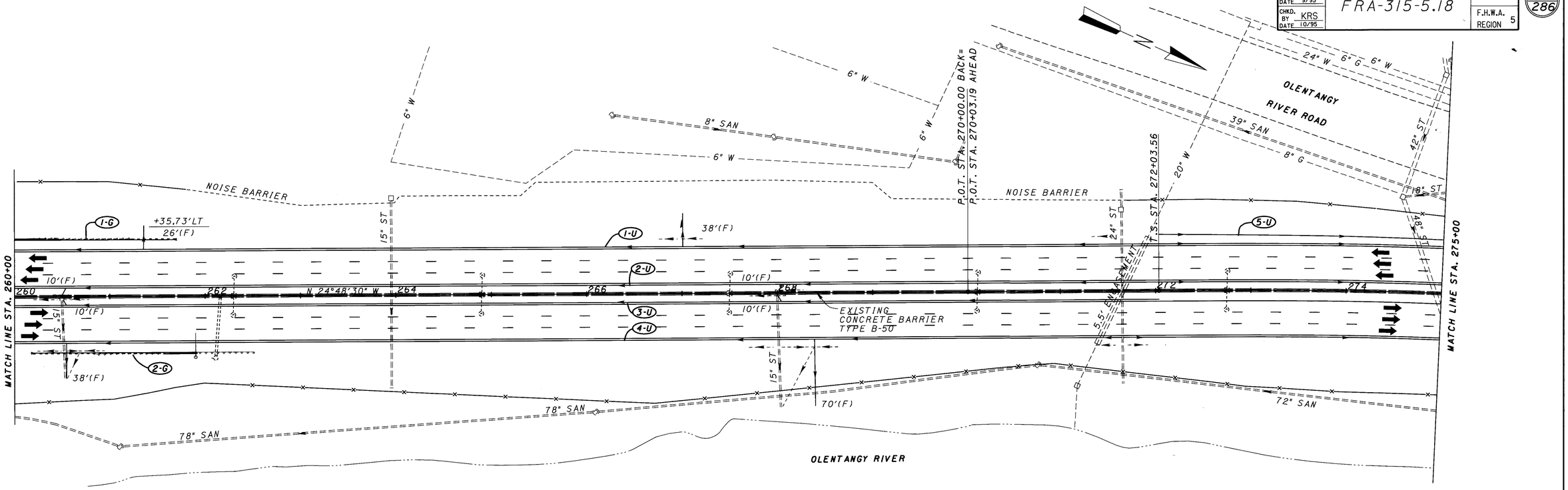
TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 245+00 TO STA. 260+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

96
286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	605 SHALLOW UNDERDRAINS AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 6" x 6" WYE	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	260+00	275+00			64	1500		2													2			2	
2-U	LT	260+00	275+00			20		1500														2				
3-U	RT	260+00	272+00			20		1200														2				
4-U	RT	260+00	275+00			108	1500		2														2		2	
5-U	LT	272+03	275+00				297																			
1-G	LT	259+97	261+69	175.0						75		1			1	35			2	1						
2-G	RT	260+20	261+92	175.0						75		1			1	35			2	1						
TOTALS:				350.0		212	3297	2700	4	150		2			2	70			4	2	4	8		4	

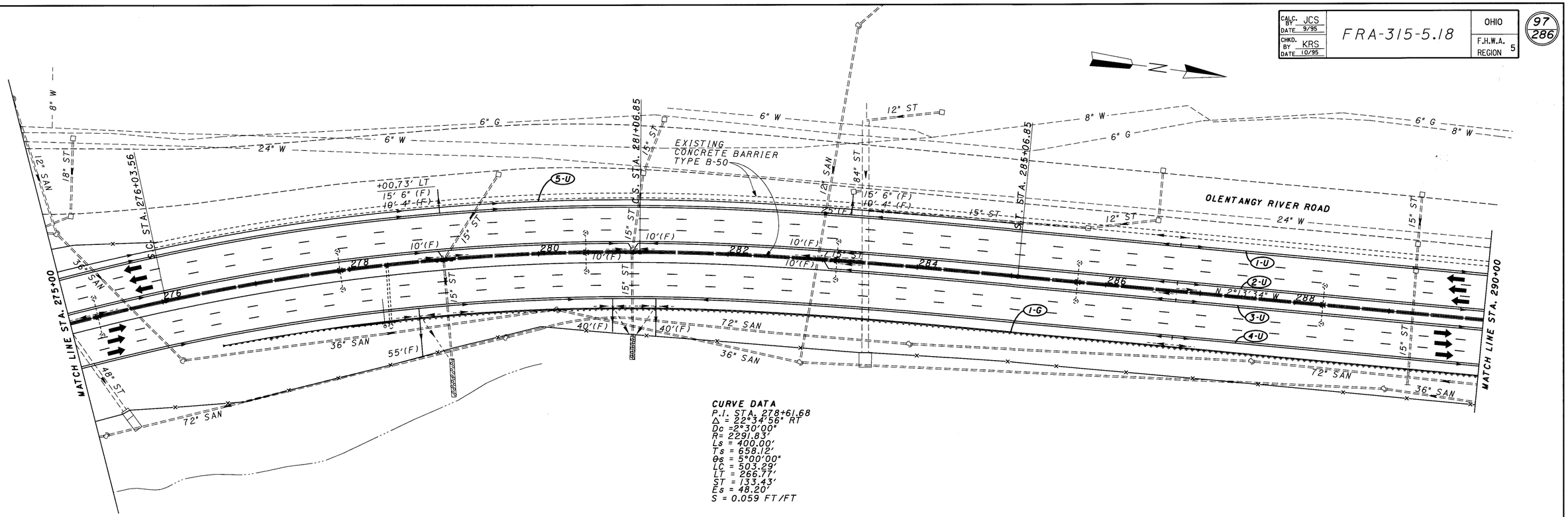
TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 260+00 TO STA. 275+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

97
286



CURVE DATA
P.I. STA. 278+61.68
Δ = 22°34'56" RT
Dc = 2°30'00"
R = 2291.83'
Ls = 400.00'
Ts = 658.12'
θs = 5°00'00"
LC = 503.29'
IT = 266.77'
ST = 133.43'
Es = 48.20'
S = 0.059 FT/FT

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 4" x 4" -45° BEND	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 4" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.		LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH		EACH		LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH
1-U	LT	275+00	290+00				20		1500	1														2	
2-U	LT	275+00	290+00			40		1500													4	4			
3-U	RT	283+00	290+00			10		700														1	1		
4-U	RT	275+00	290+00			136			1500	3												3		3	
5-U	LT	275+00	285+06			30			1006													2			2
1-G	RT	276+53	291+78	1475.0							1362.5	2	1		1	50			15	1					
TOTALS:				1475.0		216	20	2200	4006	4	1362.5	2	1		1	50			15	1	4	10	1	5	2

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 275+00 TO STA. 290+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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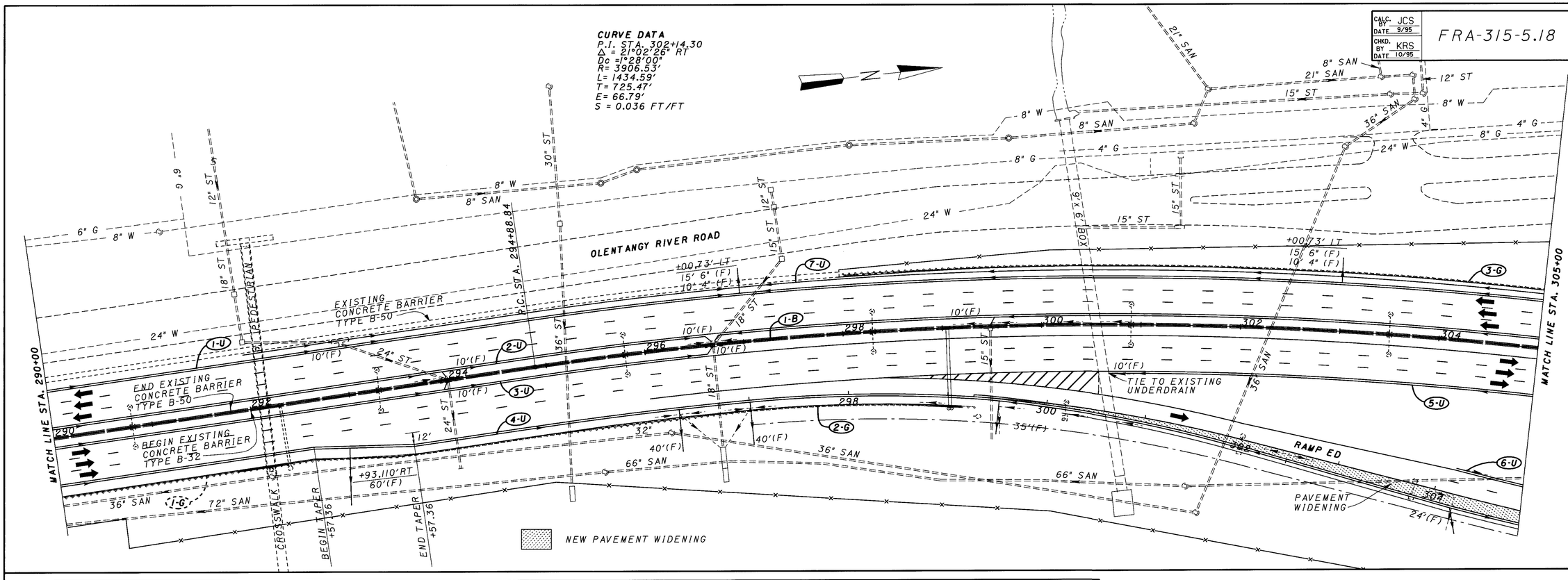
286

CURVE DATA
P.I. STA. 302+14.30
Δ = 21°02'26" RT
Dc = 1°28'00"
R = 3906.53'
L = 1434.59'
T = 725.47'
E = 66.79'
S = 0.036 FT/FT



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	605 SHALLOW UNDERDRAINS AS PER PLAN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - AS PER PLAN	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	4" - 90° CROSS	4" X 4" 45° BEND	4" X 4" X 4" TEE	4" X 4" 90° BEND
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH		LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	290+00	305+00					20	1500	2																
2-U	LT	290+00	305+00			1500	40												4	4						
3-U	RT	290+00	296+60			660	20												1	2				1		
4-U	RT	290+00	RAMP ED				199		1500	5										5	1				4	
5-U	RT	300+70	305+00				10		420											1	1					
6-U	RT	RAMP ED							70																	
7-U	LT	292+00	305+00				30		1300											2			2			
1-G	RT	(SEE PREVIOUS QUANTITY SHEET)																								
2-G	RT	291+79	299+16	750.0							637.5	1	1	85			7	2								
3-G	LT	298+00	BRIDGE	1175.0							1137.5	1	1				14									
1-B	℄	292+00	305+00													1300										
TOTALS:				1925.0		2160	299	20	4790	7	1775	2	2	85		1300	21	2	5	14	2	2	1	6		

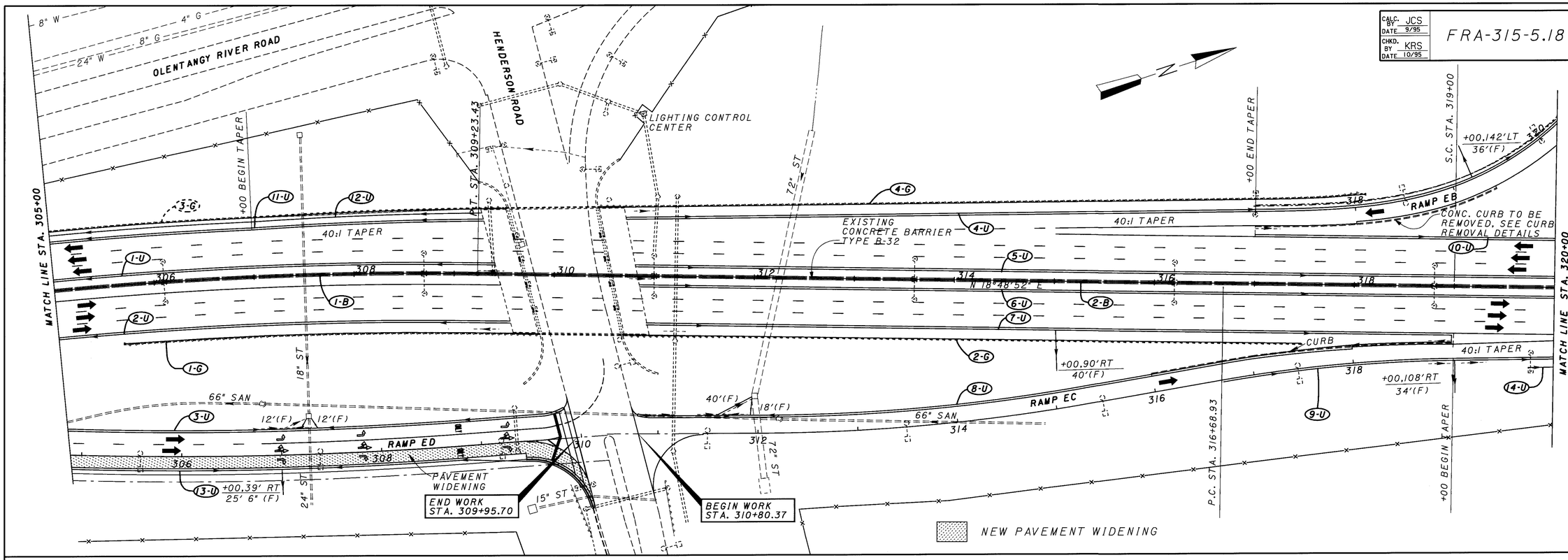
TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS
149	CONC. BARRIER DETAILS

SR-315 STA. 290+00 TO STA. 305+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A.
CHKD. BY KRS		REGION 5
DATE 10/95		

99
286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - AS PER PLAN B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 4" x 4" 90° BEND	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH		LIN. FT.	EACH		EACH		LIN. FT.			EACH		EACH					
1-U	LT	305+00	309+42				442																			
2-U	RT	305+00	309+52					452																		
3-U		RAMP ED				24		500													2	2				
4-U	LT	310+70	RAMP EB			36		950	1													1		1		
5-U	LT	310+82	320+00				918																			
6-U	RT	310+86	320+00				914																			
7-U	RT	310+92	319+00			40		808	1													1	1	1		
8-U		RAMP EC				58		825													1	2	1	1		
9-U		RAMP EC				34		334	1													1		1		
10-U	LT	317+00	320+00					300																		
11-U	LT	305+00	309+40					440																		
12-U	LT	305+00	309+30					430																		
13-U	LT	RAMP ED				25		540	1													1		1		
14-U	RT	319+75	320+00					25																		
1-G	RT	305+66	BRIDGE	412.5						337.5		1			1						5	1				
2-G	RT	BRIDGE	317+46	687.5						662.5			1		1						8					
3-G	LT	(SEE PREVIOUS QUANTITY SHEET)																								
4-G	LT	BRIDGE	RAMP EB	762.5						687.5		1			1						8	2				
																							3	8	2	5
1-B	℄	305+00	309+43.39																444							
2-B	℄	310+83.23	320+00																917							
TOTALS:				1862.5		217	2274	5604	4	1687.5		2	1		1	2			1361		21	3				

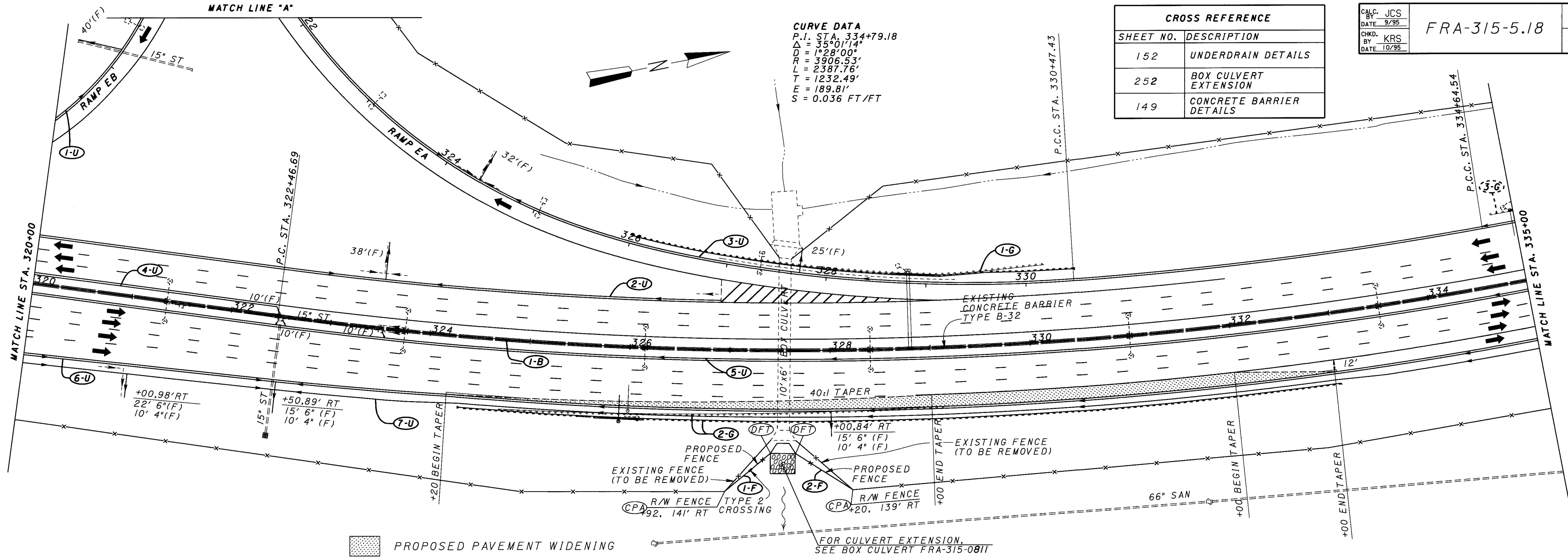
TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS
154	CURB REMOVAL DETAILS
149	CONC. BARRIER DETAILS

SR-315 STA. 305+00 TO STA. 320+00

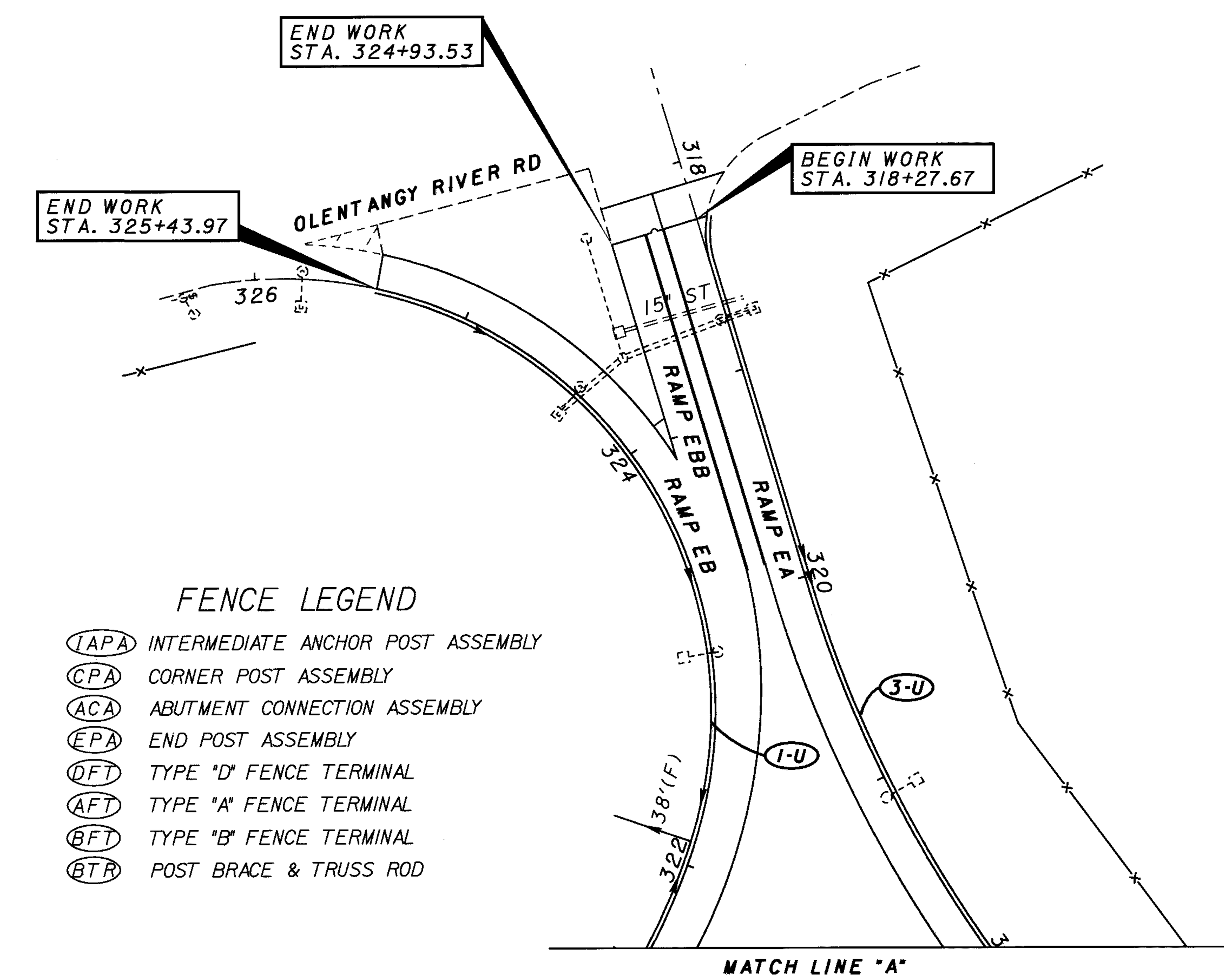
CROSS REFERENCE

SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS
252	BOX CULVERT EXTENSION
149	CONCRETE BARRIER DETAILS



PROPOSED PAVEMENT WIDENING

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED (LIN. FT.)	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931 (LIN. FT.)	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931 (LIN. FT.)	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN (LIN. FT.)	605 SHALLOW UNDERDRAINS AS PER PLAN (LIN. FT.)	SPECIAL PRECAST REINFORCED CONCRETE OUTLET (EACH)	606 GUARDRAIL TYPE 5 SINGLE RAIL (LIN. FT.)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE (EACH)	606 ANCHOR ASSEMBLIES TYPE B (EACH)	606 ANCHOR ASSEMBLIES TYPE T (EACH)	606 ANCHOR ASSEMBLIES TYPE E (EACH)	607 FENCE, TYPE CL (LIN. FT.)	622 CONCRETE BARRIER TYPE - D-32 (LIN. FT.)	622 CONCRETE BARRIER TYPE - D-50 (LIN. FT.)	622 AS PER PLAN B-50 (LIN. FT.)	802 BARRIER REFLECTORS TYPE A (EACH)	802 BARRIER REFLECTORS TYPE B (EACH)	BENDS AND BRANCHES 4" x 4" WYE (EACH)	4" x 6" REDUCER (EACH)	4" x 4" 90° BEND (EACH)	4" x 4" x 4" TEE (EACH)	4" - 90° CROSS (EACH)
1-U		RAMP EB			78		520		2															2		2	
2-U	LT	320+00	326+90		38		690		1															1		1	
3-U		RAMP EA	335+00		57		1660		2															2		2	
4-U	LT	320+00	322+50		10			250																1	1		
5-U	RT	320+00	335+00		30			1500															3	3			
6-U	RT	320+00	335+00			30	1500																			3	
7-U	RT	320+00	335+00		52		1500		3															3			3
1-G	LT	RAMP EA	330+50	450						300	1	1			1	1		50			6	1					
2-G	RT	324+34	333+02	450						725	1	1			1	1		50			10	1					
3-G	(SEE FOLLOWING QUANTITY SHEET)																										
1-F	RT	327+00	327+44														55										
2-F	RT	327+70	328+25														55										
1-B	℄	320+00	335+00																	1500							
																							3	12	1	8	3
TOTAL TO GENERAL SUMMARY				900	265	30	5870	1750	8	1025	2	2			2	2	110	100		1500	16	2	TOTALS FOR UNDERDRAIN INFORMATION ONLY				



FENCE LEGEND

- (IAPA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 320+00 TO STA. 335+00

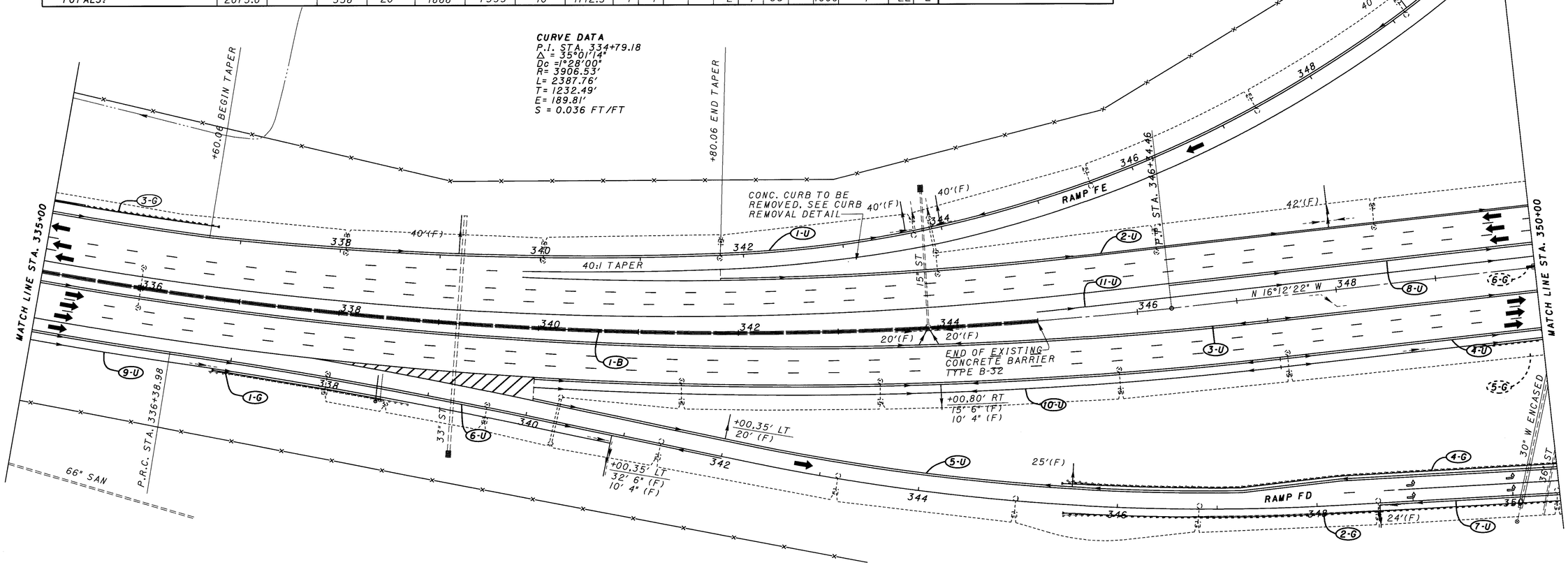
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

101
286

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50 AS PER PLAN	690 IMPACT ATTENUATOR BIDIRECTIONAL TYPE I	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 4" x 4" 90° BEND	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 4" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	335+00	RAMP FE			160			1535	4													4		4	
2-U	LT	341+80	350+00			42			820	1													1		1	
3-U	RT	335+00	350+00			40		1500															2	2		
4-U	RT	340+00	350+00				10		1000															1		1	
5-U		RAMP FD				45			1025	2														2		2	
6-U		RAMP FD					10		700																	1	
7-U		RAMP FD				24			165	1														1	1		
8-U	LT	346+34	350+00					366																			
9-U	RT	335+00	340+90			32			590	1														1		1	
10-U	RT	340+00	350+00			15			1000	1																	1
11-U	RT	345+00	350+00						500																		
1-G	LT	336+81	338+50	200.0							75.0			1	1						2						
2-G	RT	RAMP FD	RAMP FC	1062.5							1000.0			1	1						11						
3-G	LT	334+96	336+96	187.5							75.0	1			1	35					2	1					
4-G	RT	RAMP FD	BRIDGE	625.0							562.5		1		1						7	1					
5-G	RT	(SEE FOLLOWING QUANTITY SHEET)																									
6-G	℄	(SEE FOLLOWING QUANTITY SHEET)																									
1-B	℄	335+00	345+00															1000	1				2	12	1	10	1
TOTALS:				2075.0		358	20	1866	7335	10	1712.5	1	1		2	4	35		1000	1	22	2					

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS
154	CURB REMOVAL DETAILS
149	CONCRETE BARRIER DETAILS



SR-315 STA. 335+00 TO STA. 350+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

102
286

END WORK
STA. 355+95.25

BEGIN WORK
STA. 352+54.52

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

NOTE:
FOR QUANTITIES SEE FOLLOWING SHEET

MATCH LINE STA. 350+00

MATCH LINE STA. 365+00

END WORK
STA. 351+37.72

BEGIN WORK
STA. 351+35.88

P.T. STA 361+00
BEGIN TAPER

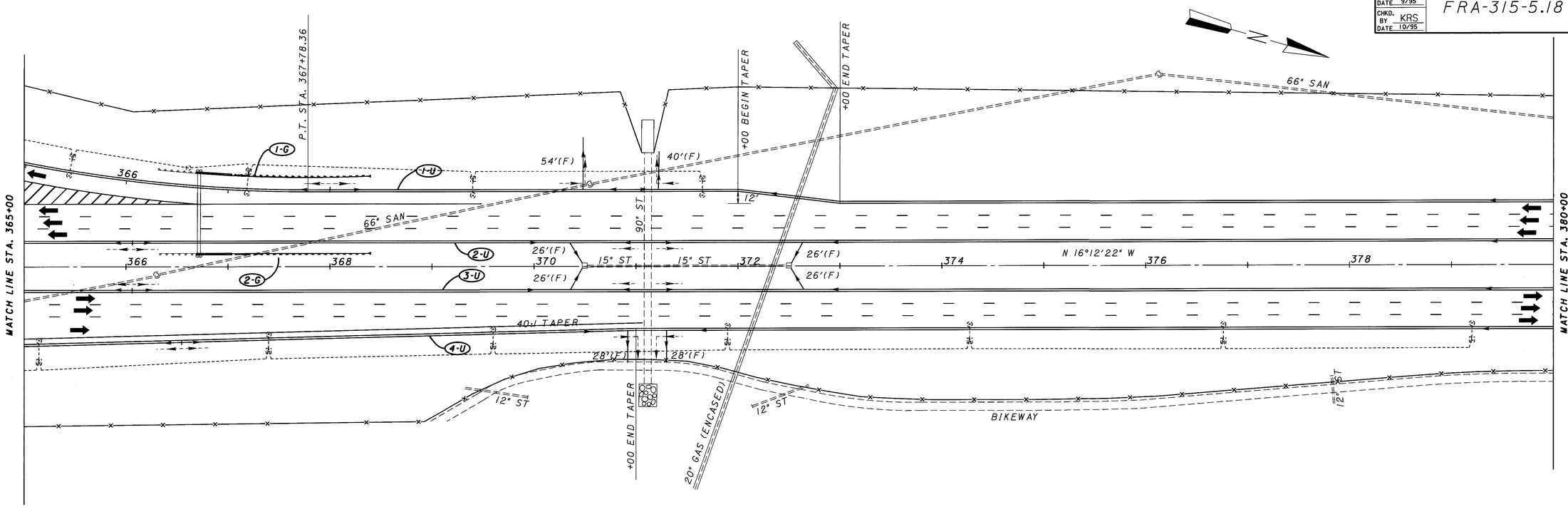
SR-315 STA. 350+00 TO STA. 365+00

NOTE:
QUANTITIES FOR SR-315 STA. 350+00 TO STA. 365+00

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED (LIN. FT.)	202 GUARDRAIL REMOVED BARRIER DESIGN (LIN. FT.)	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944 (LIN. FT.)	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944 (LIN. FT.)	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN (LIN. FT.)	605 SHALLOW UNDERDRAINS AS PER PLAN (LIN. FT.)	SPECIAL PRECAST REINFORCED CONCRETE OUTLET (EACH)	606 GUARDRAIL TYPE 5 SINGLE RAIL (LIN. FT.)	606 GUARDRAIL TYPE 5 BARRIER DESIGN (LIN. FT.)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE	606 ANCHOR ASSEMBLIES TYPE	606 ANCHOR ASSEMBLIES TYPE T (EACH)	606 ANCHOR ASSEMBLIES TYPE E (EACH)	622 CONCRETE BARRIER TYPE - D-32 (LIN. FT.)	622 CONCRETE BARRIER TYPE - D-50 (LIN. FT.)	622 CONCRETE BARRIER TYPE - B-50 (LIN. FT.)	802 BARRIER REFLECTORS TYPE A (EACH)	802 BARRIER REFLECTORS TYPE B (EACH)	690 IMPACT ATTENUATOR BIDIRECTIONAL TYPE I (EACH)	BENDS AND BRANCHES 4" x 4" WYE (EACH)	BENDS AND BRANCHES 4" x 6" REDUCER (EACH)	BENDS AND BRANCHES 4" x 4" x 4" TEE (EACH)	BENDS AND BRANCHES 4" x 4" 90° BEND (EACH)	BENDS AND BRANCHES 4" x 4" 45° BEND (EACH)
1-G	RT	BRIDGE	BETHEL	412.5							375.0		1				1					5							
2-G	RT	(SEE PREVIOUS QUANTITY SHEET)																											
3-G	LT	BRIDGE	BETHEL	112.5							62.5		1					1				2	4						
4-G	RT	(SEE PREVIOUS QUANTITY SHEET)																											
5-G	RT	349+32	352+17	250.0							125.0		1					1	100			3	2						
6-G	℄	349+92	353+60	237.5	90						87.5	125.0					1					7		1					
7-G	℄	351+40	353+96	237.5	90						87.5	125.0					1					7		1					
8-G	LT	BRIDGE	BETHEL	587.5							562.5			1			1					7	3						
1-U		RAMP FE						560																					
2-U		RAMP FA				32		700		1																1	1		
3-U		RAMP FA				26		570		1																1			1
4-U	LT	350+00	365+00			148		1500		3																3	3		
5-U	LT	350+00	365+00			78			1500																4	4			
6-U	RT	350+00	365+00			64			1500																2	3	1		
7-U	RT	350+00	361+00			112	10	1100																	2	2	1		
8-U		RAMP FC						430																		1			1
9-U		RAMP FC				30		910		1																2	1		1
10-U		RAMP FD						90																					
11-U		RAMP FD						90																					
12-U	LT	350+00	351+00					100																					
13-U	RT	350+00	353+80			25		380																		1	1		
																									8	18	8		3
TOTALS:				1837.5	180	515	10	6430	3000	6	1300.0	250.0	3	1			4	2	100			31	9	2	TOTALS FOR UNDERDRAIN INFORMATION ONLY				

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

104
286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED LIN. FT.	202 GUARDRAIL REMOVED BARRIER DESIGN LIN. FT.	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944 LIN. FT.	605 SHALLOW UNDERDRAINS AS PER PLAN LIN. FT.	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	606 GUARDRAIL TYPE 5 SINGLE RAIL LIN. FT.	606 GUARDRAIL TYPE 5 BARRIER DESIGN LIN. FT.	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	606 ANCHOR ASSEMBLIES TYPE T EACH	606 ANCHOR ASSEMBLIES TYPE E EACH	622 CONCRETE BARRIER TYPE - D-32 LIN. FT.	622 CONCRETE BARRIER TYPE - D-50 LIN. FT.	622 CONCRETE BARRIER TYPE - B-50 LIN. FT.	802 BARRIER REFLECTORS TYPE A EACH	802 BARRIER REFLECTORS TYPE B EACH	BENDS AND BRANCHES 4" x 4" WYE EACH	BENDS AND BRANCHES 4" x 6" REDUCER EACH	BENDS AND BRANCHES 6" x 6" WYE EACH	BENDS AND BRANCHES 4" x 4" x 4" TEE EACH	BENDS AND BRANCHES 6" - 90° CROSS EACH
1-U	LT	365+00	380+00			94		1500	2													2		2		
2-U	LT	365+00	380+00			52	1500														2	2				
3-U	RT	365+00	380+00			52	1500														2	2				
4-U	RT	365+00	380+00			56		1500	2													2		2		1
1-G	LT	366+69	368+39	162.5						75		1			1	35			2	1						
2-G	RT	366+69	368+39	162.5						75		1			1	35			2	1						
TOTALS:				325.0		254	3000	3000	4	150		2			2	70			4	2	4	8		4	1	

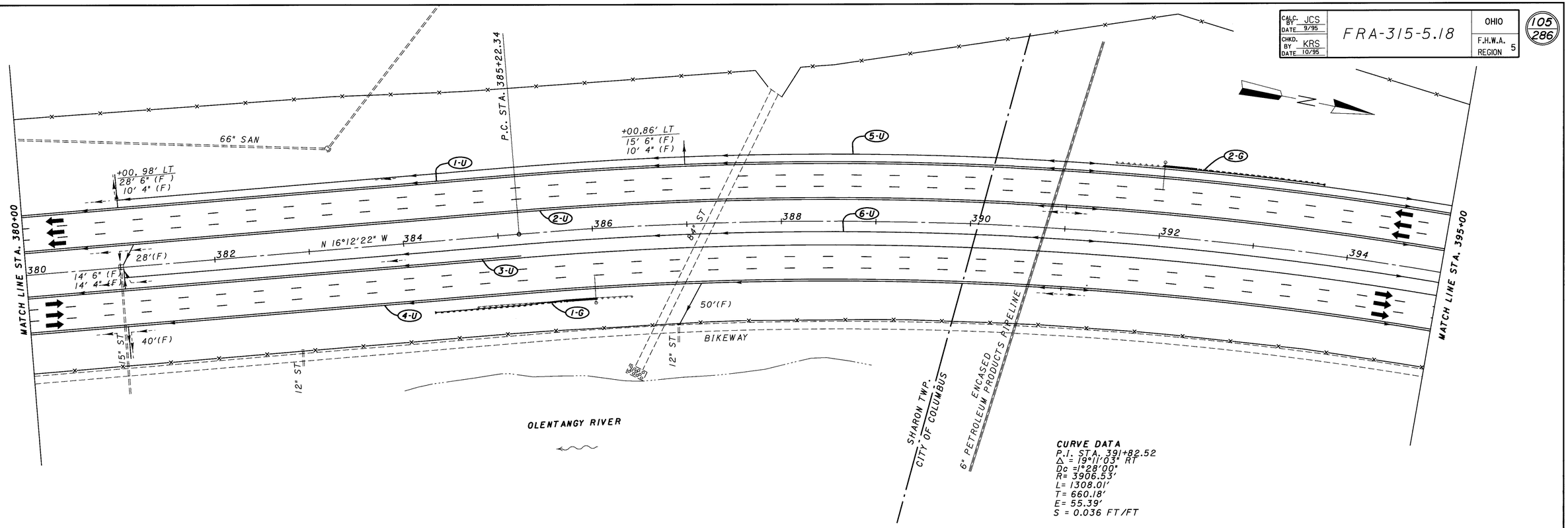
TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

SR-315 STA. 365+00 TO STA. 380+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A.
CHKD. BY KRS		REGION 5
DATE 10/95		

105
286



CURVE DATA
P.I. STA. 391+82.52
△ = 19°11'03" RT
Dc = 1°28'00"
R = 3906.53'
L = 1308.01'
T = 660.18'
E = 55.39'
S = 0.036 FT/FT

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 4" - 90° CROSS	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH		EACH		LIN. FT.			EACH		EACH					
1-U	LT	380+00	395+00				20		1500																2	1
2-U	LT	380+00	395+00				28	1500													1	1				
3-U	RT	380+00	385+22			14	14	522													1					
4-U	RT	380+00	395+00			90			1500	2											1	2			1	
5-U	LT	381+00	395+00			43			1400	2												2	2			
6-U	RT	381+00	395+00						1400												1	1				
1-G	RT	384+29	386+01	162.5							75	1			1	35			2	1						
2-G	LT	391+99	396+64	162.5							75	1			1	35			2	1						
																									4	6	2	3	1
TOTALS:				325.0		147	62	2022	5800	4	150	2			2	70			4	2	TOTALS FOR UNDERDRAIN INFORMATION ONLY				

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 380+00 TO STA. 395+00

CALC. BY JCS DATE 9/95 · CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO · F.H.W.A. REGION 5	106/286

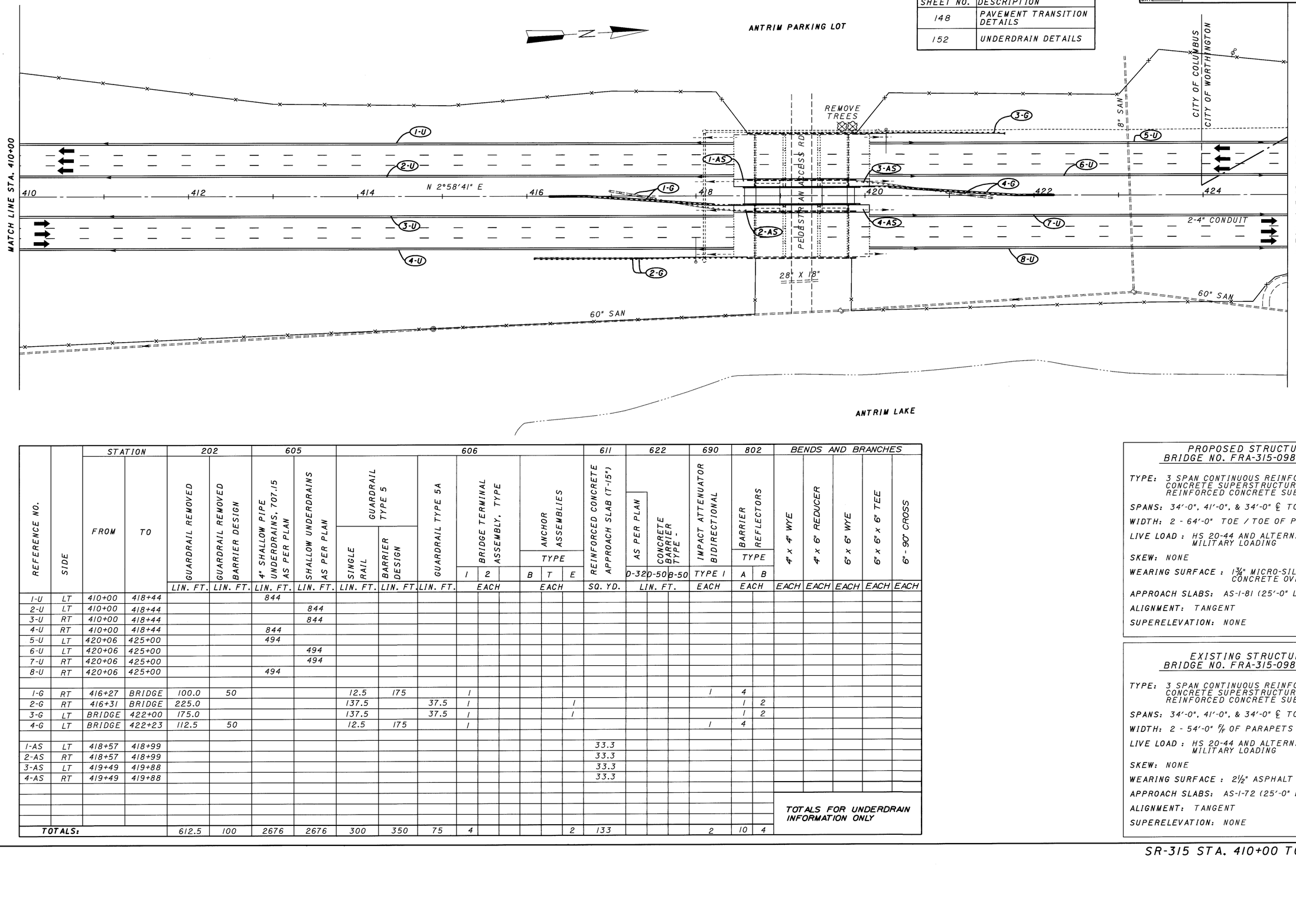
REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	4" x 4" x 4" TEE	4" x 4" 45° BEND	4" - 90° CROSS	6" x 6" CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	395+00	410+00			20	20		1500	1		1	3			2
2-U	LT	399+00	410+00			75		1500				4	4			
3-U	RT	398+65	410+00			26	14	1135			1	1		1		
4-U	RT	395+00	410+00			160			1500	4		4	4			
5-U	LT	395+00	399+50			37			450	2		2	1			1
6-U	RT	395+00	398+60			14			360		1	1				
											2	13	12	1		3
TOTALS:						332	34	2635	3810	7	TOTALS FOR UNDERDRAIN INFORMATION ONLY					

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

SR-315 STA. 395+00 TO STA. 410+00

CALC. BY JCS DATE 9/95
CHKD. BY KRS DATE 10/95
FRA-315-5.18
OHIO
F.H.W.A. REGION 5
107
286

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	605 SHALLOW UNDERDRAINS AS PER PLAN	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 GUARDRAIL TYPE 5A	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	611 REINFORCED CONCRETE APPROACH SLAB (T-15*)	622 AS PER PLAN	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	690 IMPACT ATTENUATOR BIDIRECTIONAL	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	6" x 6" x 6" TEE	6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	SQ. YD.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	410+00	418+44			844																							
2-U	LT	410+00	418+44				844																						
3-U	RT	410+00	418+44				844																						
4-U	RT	410+00	418+44			844																							
5-U	LT	420+06	425+00			494																							
6-U	LT	420+06	425+00				494																						
7-U	RT	420+06	425+00				494																						
8-U	RT	420+06	425+00			494																							
1-G	RT	416+27	BRIDGE	100.0	50			12.5	175		1										1	4							
2-G	RT	416+31	BRIDGE	225.0				137.5		37.5	1				1							1	2						
3-G	LT	BRIDGE	422+00	175.0				137.5		37.5	1				1							1	2						
4-G	LT	BRIDGE	422+23	112.5	50			12.5	175		1										1	4							
1-AS	LT	418+57	418+99													33.3													
2-AS	RT	418+57	418+99													33.3													
3-AS	LT	419+49	419+88													33.3													
4-AS	RT	419+49	419+88													33.3													
TOTALS:				612.5	100	2676	2676	300	350	75	4				2	133					2	10	4						

TOTALS FOR UNDERDRAIN INFORMATION ONLY

PROPOSED STRUCTURE BRIDGE NO. FRA-315-0984 L & R

TYPE: 3 SPAN CONTINUOUS REINFORCED CONCRETE SUPERSTRUCTURE WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 34'-0", 41'-0", & 34'-0" ℄ TO ℄ BEARINGS

WIDTH: 2 - 64'-0" TOE / TOE OF PARAPETS

LIVE LOAD: HS 20-44 AND ALTERNATE MILITARY LOADING

SKEW: NONE

WEARING SURFACE: 1¾" MICRO-SILICA MODIFIED CONCRETE OVERLAY

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: TANGENT

SUPERELEVATION: NONE

EXISTING STRUCTURE BRIDGE NO. FRA-315-0984 L & R

TYPE: 3 SPAN CONTINUOUS REINFORCED CONCRETE SUPERSTRUCTURE WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 34'-0", 41'-0", & 34'-0" ℄ TO ℄ BEARINGS

WIDTH: 2 - 54'-0" F/F OF PARAPETS

LIVE LOAD: HS 20-44 AND ALTERNATE MILITARY LOADING

SKEW: NONE

WEARING SURFACE: 2½" ASPHALT CONCRETE

APPROACH SLABS: AS-1-72 (25'-0" LONG)

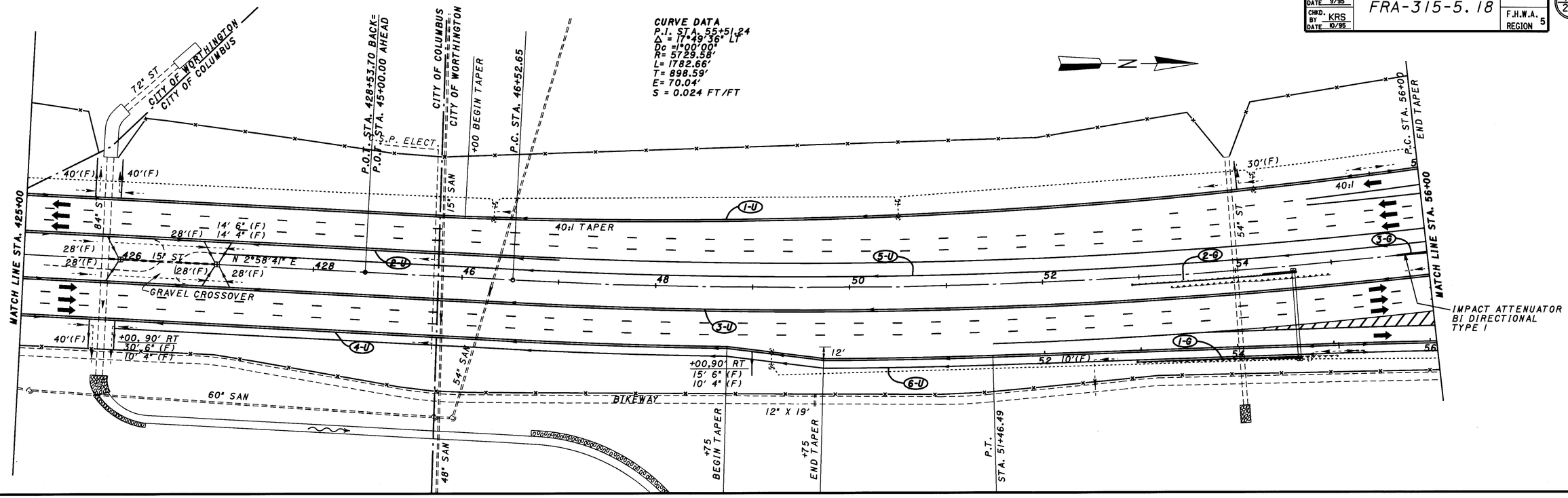
ALIGNMENT: TANGENT

SUPERELEVATION: NONE

SR-315 STA. 410+00 TO STA. 425+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

108/286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	605 SHALLOW UNDERDRAINS AS PER PLAN	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 IMPACT ATTENUATOR BIDIRECTIONAL TYPE I	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 4" x 4" TEE	BENDS AND BRANCHES 4" - 90° CROSS	BENDS AND BRANCHES 6" x 6" TEE
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH		EACH	EACH				LIN. FT.			EACH		EACH					
1-U	LT	425+00	56+00			110			1454	3															3	3			
2-U	LT	425+00	47+00			70	14	554																3	3				
3-U	RT	425+00	56+00			84		1454																3	3				
4-U	RT	425+00	56+00			40	20		1454	1															1	3			
5-U	LT	427+10	56+00			14			1250															1	1				
6-U	RT	426+00	56+00			45			1360	2															2	1	1		
1-G	RT	53+30	54+63	162.5							75	1					1	35				2	1						
2-G	LT	53+30	54+63	162.5							75	1					1	35				2	1						
3-G	CL	55+68.75	56+00											1															
TOTAL TO GENERAL SUMMARY				325.0		363	34	2008	5518	6	150	2		1			2	70				4	2	7	13	7	1		

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
	UNDERDRAIN DETAILS

SR-315 STA. 425+00 TO STA. 56+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

109/286

CURVE DATA
P.I. STA. 55+51.24
Δ = 17°49'36" LT
Dc = 1°00'00"
R = 5729.58'
L = 1782.66'
T = 898.59'
E = 70.04'
S = 0.024 FT/FT

END WORK STA. 66+93.63

END WORK STA. 66+73.22

BEGIN WORK STA. 67+04.06

RAMP GDD

RAMP GD

RAMP GA

RAMP GC

RAMP GB

54" SAN

+25.147' LT
35'(F)

BEGIN CONCRETE BARRIER STA. 56+00
TYPE B-50

MATCH LINE STA. 56+00

MATCH LINE STA. 71+00

REMOVE TREES
2 @ 6"

P.O.T. STA. 64+35.31

ENCASED 12" W

OBT

P.O.T. STA. 66+20.93 SR315=
P.O.T. STA. 202+22.96 SR161

BIKEWAY

15" ST

21" ST

GRAVEL CROSSOVER

USE EXISTING CROSSINGS

PAVEMENT EDGE
BEGIN TAPER 66+10.00

+00.86' RT
15' 6" (F)
10' 4" (F)

+25.25' RT
15' 6" (F)
10' 4" (F)

12" X 18"

USE EXISTING CROSSING

24" W

24" ST

UG-TEL

ENCASED

ELECT. & T.V.

SR 161

204

205

206

207

EXISTING GUARDRAIL TO REMAIN

LA

END WORK STA. 65+59.14

BEGIN WORK STA. 65+34.20

NEW PAVEMENT WIDENING

NOTE: FOR QUANTITIES SEE FOLLOWING SHEET

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
	PAVEMENT TRANSITION DETAILS
	UNDERDRAIN DETAILS
	CONCRETE BARRIER DETAILS

SR-315 STA. 56+00 TO STA. 71+00

NOTE:
QUANTITIES FOR SR-315 STA. 56+00 TO STA. 71+00

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED (LIN. FT.)	202 CATCH BASIN REMOVED (LIN. FT.)	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944 (LIN. FT.)	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944 (LIN. FT.)	604 CATCH BASIN STANDARD (EACH)	604 BARRIER MEDIAN INLET 1-3D50 (EACH)	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN 4" (LIN. FT.)	605 SHALLOW UNDERDRAINS AS PER PLAN (LIN. FT.)	SPECIAL PRECAST REINFORCED CONCRETE OUTLET (EACH)	606 GUARDRAIL TYPE 5 SINGLE RAIL (LIN. FT.)	606 GUARDRAIL TYPE 5 BARRIER DESIGN (LIN. FT.)	606 BRIDGE TERMINAL ASSEMBLY TYPE - 1 (EACH)	606 BRIDGE TERMINAL ASSEMBLY TYPE - 2 (EACH)	606 BRIDGE TERMINAL ASSEMBLY TYPE - BARRIER DESIGN 1 (EACH)		ANCHOR ASSEMBLIES TYPE B (EACH)	ANCHOR ASSEMBLIES TYPE T (EACH)	ANCHOR ASSEMBLIES TYPE E (EACH)	622 CONCRETE BARRIER TYPE - D-32 (LIN. FT.)	622 CONCRETE BARRIER TYPE - D-50 (LIN. FT.)	622 CONCRETE BARRIER TYPE - B-50 (LIN. FT.)	802 BARRIER REFLECTORS TYPE A (EACH)	802 BARRIER REFLECTORS TYPE B (EACH)	BENDS AND BRANCHES 4" x 4" WYE (EACH)	4" x 6" REDUCER (EACH)	4" - 90° CROSS (EACH)	6" x 6" x 6" TEE (EACH)	6" - 90° CROSS (EACH)	4" X 4" 45° BEND (EACH)	4" X 4" X 4" TEE (EACH)	4" X 4" 90° BEND (EACH)
1-U		RAMP GD				35				1100		1																1					1	
2-U		RAMP GD				20				220		1																1						1
3-U	LT	56+00	71+00			87				1500																	3	3						
4-U	RT	56+00	66+10			54					1010																2	2						
5-U		RAMP GC								610																		1						1
6-U		RAMP GC					10			990																							1	
7-U		RAMP GB								540																								
8-U		RAMP GB				38				310		1																1						1
9-U	RT	56+80	71+00				10			1420		1																		1	1			
10-U	LT	64+30	66+10			27					180																	1				1		
11-U		RAMP GA				15				185																		1				1		
12-U		RAMP GA								380																								
13-U	℄	68+30	71+00							270																								
14-U	LT	56+00	64+20			14				820																		1				1		
15-U	RT	56+00	66+50			15				1050																		1	1					
16-U	LT	66+10	71+00			25				490																		1					1	
17-U	RT	66+10	71+00			25				490																		1					1	
18-U	RT	56+00	57+25			15				125																		1					1	
19-U	℄	68+30	71+00							270																								
1-G	RT	RAMP GC		312.5									250.0							1	1				5									
2-G	RT	RAMP GC	BRIDGE	550.0									487.5			1					1				6	1								
3-G	RT	RAMP GB	BRIDGE	337.5									300.0		1					1					4	1								
4-G	RT	RAMP GB		300.0									237.5							1	1				4									
5-G	RT	64+12	66+47	250.0									75.0		1						1	100			2	2								
6-G	LT	66+00	68+35	250.0									75.0		1						1	100			2	2								
7-G	LT	BRIDGE	RAMP GD	462.5									425.0		1					1					6	1								
8-G	LT	BRIDGE	RAMP GA	412.5									350.0			1					1				5	1								
9-G	℄	64+51	67+91	475.0																														
1-I	℄	63+20			1																													
2-I	℄	64+20			1				1															-20										
3-I	℄	68+30							1															-20										
1-B	℄	56+00	63+20																					720										
2-B	℄	63+20	64+20																					100										
3-B	℄	64+20	68+30																					410										
4-B	℄	68+30	71+00																					270										
LIGHT FOUNDATION DEDUCTION																								-60			5	16	1	1	1	3	5	3
TOTAL TO GENERAL SUMMARY				3350.0	2	370	20		2	10,770	1190	4	2200.0		4	2				4	6	200		1400	34	8	TOTALS FOR UNDERDRAIN INFORMATION ONLY							

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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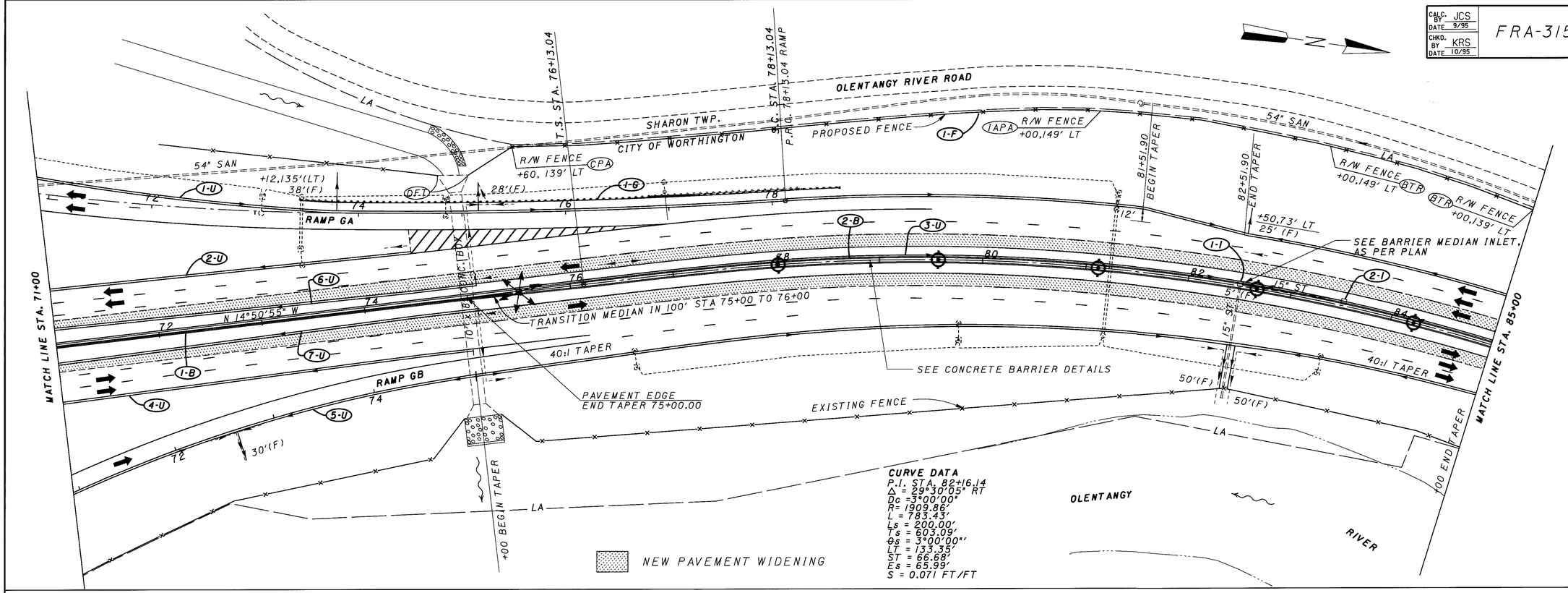

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	202 CATCH BASIN REMOVED	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931 OR SS944	604 BARRIER MEDIAN INLET, AS PER PLAN	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN 4"	605	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	607 FENCE, TYPE CL	608 4" CONCRETE SIDEWALK	622 CONCRETE BARRIER TYPE - D-32	622 B-50	622 C-50 AS PER PLAN	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	4" x 4" x 4" TEE	6" - 90° CROSS
				LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	LIN. FT.		EACH	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	LIN. FT.	SQ. FT.	LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH
1-1	LT	82+50						1																-20							
2-1	LT	83+50				1																									
1-B	℄	71+00	75+00																			400			8						
2-B	℄	75+00	85+00																					1000		20					
1-U		RAMP GA	85+00				91		1400		3																		3		3	
2-U	LT	71+00	74+50						350																						
3-U	℄	71+00	85+00				5		1400																				1		1	
4-U	RT	71+00	75+00						400																						
5-U	RT	RAMP GB	85+00				130		1400		3																		3		3	
6-U	LT	71+00	75+10				12		410																						
7-U	RT	71+00	75+10				12		410																						
1-G	LT	73+51	78+63	487.5								337.5		1	1			1	1			50			6	1					
1-F	LT	75+00	85+00																	1050											
LIGHT FOUNDATION DEDUCTION																								-32.5							
TOTALS:				487.5		1	250	1	5770		6	337.5		1	1			1	1	1050		50	400	947.5	6	29					

TOTALS FOR UNDERDRAIN INFORMATION ONLY

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS
149	CONCRETE BARRIER DETAILS
150	BARRIER MEDIAN INLET, AS PER PLAN

FENCE LEGEND

- (IAPA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 71+00 TO STA. 85+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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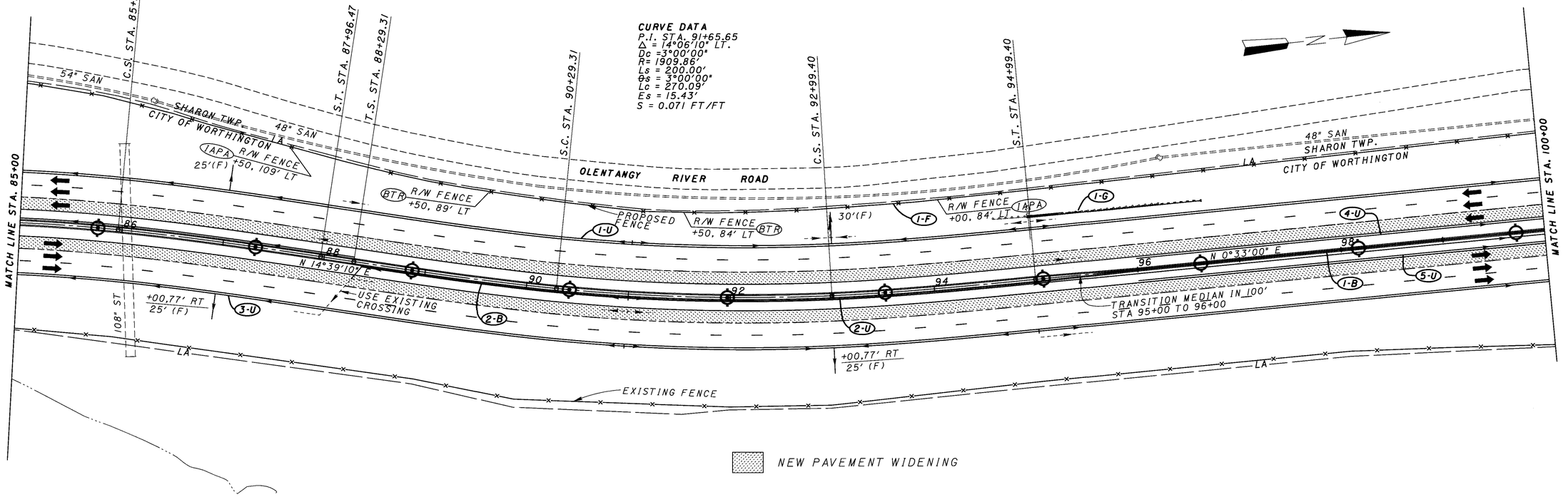

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	604 BARRIER MEDIAN INLET	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR TYPE T	606 ANCHOR TYPE E	607 FENCE, TYPE CL	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - B-50 AS PER PLAN	622 CONCRETE BARRIER TYPE - C-50 AS PER PLAN	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	BENDS AND BRANCHES 4" x 6" REDUCER	BENDS AND BRANCHES 6" x 6" 45° BEND	BENDS AND BRANCHES 4" x 4" x 4" TEE	BENDS AND BRANCHES 4" x 4" 45° BEND
				LIN. FT.	LIN. FT.	LIN. FT.	EACH	4" LIN. FT.		EACH	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-B	℄	96+00	100+00																400			8					
2-B	℄	85+00	96+00																	1100		22					
1-G	LT	94+97	96+67	162.5							75		1			1		35			2	1					
1-U	LT	85+00	100+00			55		1500		2														2		2	
2-U	℄	88+38	100+00					1162																			
3-U	RT	85+00	100+00			50		1500		2														2		2	
4-U	LT	96+00	100+00					400																			
5-U	RT	96+00	100+00					400																			
1-F	RT	85+00	100+00														1500										
																								4		4	
LIGHT FOUNDATION DEDUCTION																			-7.5	-17.5				TOTALS FOR UNDERDRAIN INFORMATION ONLY			
TOTALS:				162.5		105		4962		4	75	100	1			1	1500	35	392.5	1082.5	2	31					

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS
149	CONCRETE BARRIER DETAILS

FENCE LEGEND

- (IAPA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 85+00 TO STA. 100+00

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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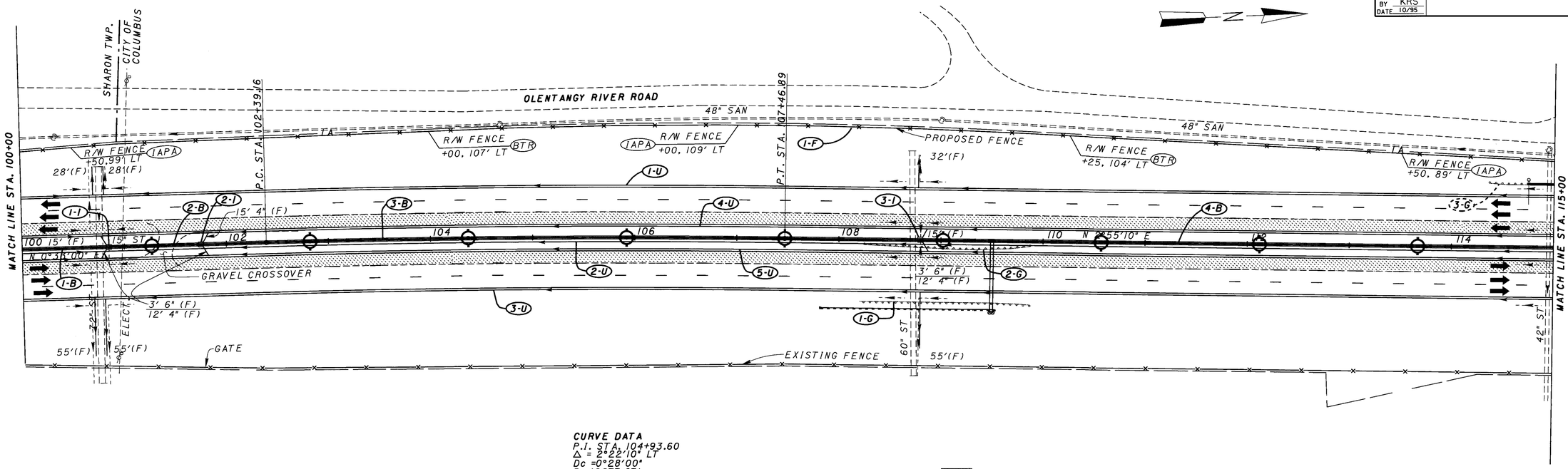
286



CURVE DATA
P.I. STA. 104+93.60
Δ = 2°22'10" LT
Dc = 0°28'00"
R = 12277.67'
L = 507.74'
T = 253.90'
E = 2.63'
S = CROWN

NEW PAVEMENT WIDENING

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931	604 BARRIER MEDIAN INLET, AS PER PLAN I-3D50	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN 4"	605	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 TYPE 5 GUARDRAIL SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	607 FENCE, TYPE CL	622 CONCRETE BARRIER TYPE - D-32	622 D-50	622 B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	4" x 4" x 4" TEE	6" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.		EACH	LIN. FT.	EACH		EACH			LIN. FT.	LIN. FT.			EACH		EACH	EACH	EACH	EACH	EACH
1-1	℄	100+85						1													-20								
2-1	℄	101+75						1													-20								
3-1	℄	108+80						1													-20								
1-B	℄	100+00	100+85																		85		2						
2-B	℄	100+85	101+75																		90		2						
3-B	℄	101+75	108+80																		705		14						
4-B	℄	108+80	115+00																		620		12						
1-U	LT	100+00	115+00			148			1500		3																3		3	
2-U	RT	100+00	115+00			9			1500																		3			3
3-U	RT	100+00	115+00			165			1500		3																3		3	
4-U	LT	100+00	115+00			45			1500																	3	3			
5-U	RT	100+00	115+00				36		1500																			3		
1-G	RT	107+82	109+53	162.5								75				1	1						2						
2-G	LT	108+25	109+88	162.5																									
3-G	LT	(SEE FOLLOWING QUANTITY SHEET)																											
1-F	LT	100+00	115+00															1500							3	12	3	6	3
LIGHT FOUNDATION DEDUCTION																					-22.5					TOTALS FOR UNDERDRAIN INFORMATION ONLY				
TOTALS:				325.0		358	36	3	7500		6	75				1	1	1500			1417.5	2	30						

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
152	UNDERDRAIN DETAILS

FENCE LEGEND

- (IAPA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 100+00 TO STA. 115+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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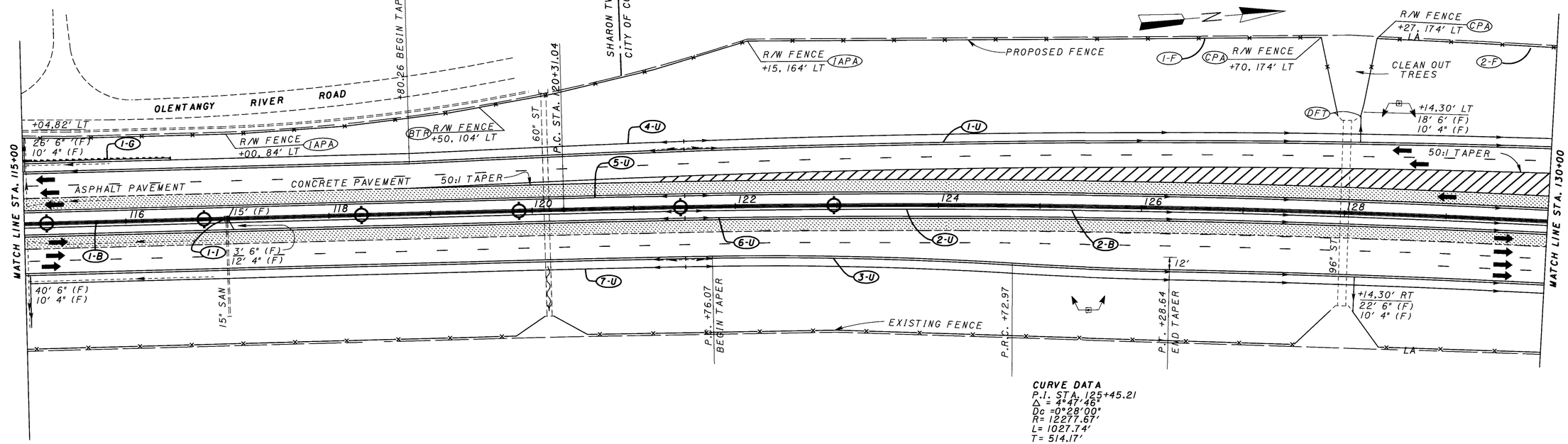
286



CURVE DATA
P.I. STA. 125+45.21
Δ = 4°47'46"
Dc = 0°28'00"
R = 12277.67'
L = 1027.74'
T = 514.17'
E = 10.76'
S = CROWN

NEW PAVEMENT WIDENING

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	604 CATCH BASIN STANDARD	604 BARRIER MEDIAN INLET, AS PER PLAN I-3D50	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN 4"	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	607 FENCE, TYPE CL	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	4" x 4" x 4" TEE	4" - 90° CROSS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-1	℄	117+00							1												-20									
1-B	℄	115+00	117+00																		200		4							
2-B	℄	117+00	130+00																		1300		26							
1-U	LT	115+00	130+00				20			1500		2																2		
2-U	RT	115+00	130+00			3				1500																	1			1
3-U	RT	115+00	130+00				20			1500		2																2		
4-U	LT	115+00	130+00			44				1500																		2	1	1
5-U	LT	115+00	130+00			15				1500																	1	1			
6-U	RT	115+00	130+00				12			1500																			1		
7-U	RT	115+00	130+00			62				1500																		2		1	1
1-G	RT	114+74	116+44	162.5									75.0	1			1		35			2	1							
1-F	LT	115+00	127+90															1380												
2-F	LT	128+10	130+00															270												
																											1	6	1	6	3
LIGHT FOUNDATIONS DEDUCTION																					-15					TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				162.5		124	52		1	10500		4	75.0	1			1	1650	35		1465	2	31							

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

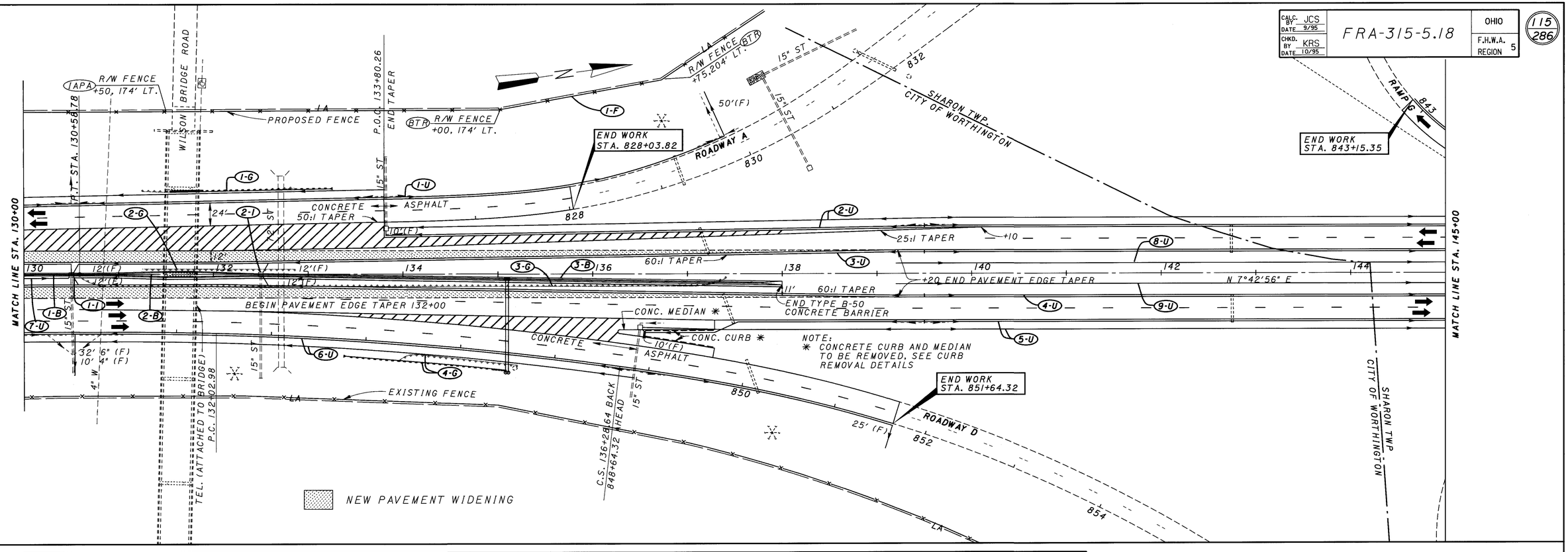
FENCE LEGEND

- (1APA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 115+00 TO STA. 130+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

115
286



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 SS931 OR SS944	604 CATCH BASIN STANDARD	604 BARRIER MEDIAN INLET I-3D50	605 SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN 4"	605 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 TYPE 5 GUARDRAIL SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	607 FENCE, TYPE CL	622 CONCRETE BARRIER TYPE - D-32	622 D-50	622 B-50	802 BARRIER REFLECTORS TYPE A	802 TYPE B	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	4" x 4" 90° BEND	4" x 4" 45° BEND	4" x 4" x 4" TEE	4" - 90° CROSSING
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.		EACH	LIN. FT.	EACH		EACH			LIN. FT.	LIN. FT.			EACH		EA.	EA.	EA.	EA.	EA.	EA.
1-1	℄	130+50							1												-20										
2-1	℄	132+50							1												-20										
1-B	℄	130+00	130+50																		50		2								
2-B	℄	130+50	132+50																		200		4								
3-B	℄	132+50	138+00																		550		12								
1-U	LT	130+00	829+85			50				765		1															1	1			
2-U	LT	133+85	145+00			10				2230																	1	1			
3-U	LT	130+00	145+00			24				1500																	1	2			1	
4-U	RT	130+50	145+00			24				1450																	2	2				
5-U	RT	136+40	145+00			10				1720																		1		3		
6-U	RT	130+00	851+64			57	10			1488		2																2	1		2	1
7-U	RT	130+00	138+00							800																						
8-U	LT	139+20	145+00							580																						
9-U	RT	139+20	145+00							580																						
1-G	LT	131+54	133+24	162.5									75.0	1			1		35			2	1								
2-G	℄	131+25	132+86	162.5																												
3-G	℄	130+62	137+35	687.5																												
4-G	RT	ROADWAY	D	125.0									75.0	1			1		35			2	1	3	9	3	3	3	1
1-F	LT	130+00	137+80																		830						TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				1137.5		175	10		2	11113		3	150.0	2			2		830	70		760	4	20							

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS
154	CURB REMOVAL DETAILS
149	CONCRETE BARRIER DETAILS

FENCE LEGEND

- (1APA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

SR-315 STA. 130+00 TO STA. 145+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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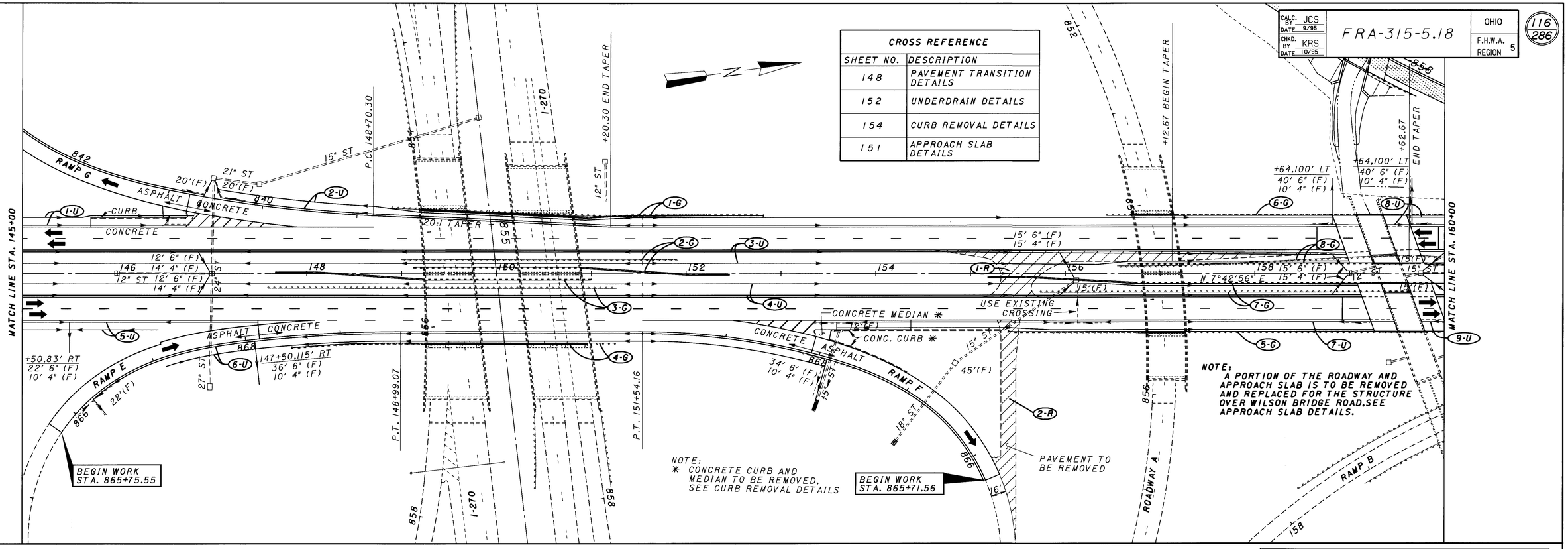
CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS
154	CURB REMOVAL DETAILS
151	APPROACH SLAB DETAILS



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	202 PAVEMENT REMOVED	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944	604 CATCH BASIN STANDARD	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 GUARDRAIL TYPE 5 BARRIER DESIGN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 BRIDGE TERMINAL ASSEMBLY, TYPE 4	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	622 CONCRETE BARRIER TYPE - D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	802 BARRIER REFLECTORS TYPE A	802 BARRIER REFLECTORS TYPE B	690 IMPACT ATTENUATOR BIDIRECTIONAL TYPE I	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	6" x 6" WYE	4" x 4" 45° BEND	4" x 4" x 4" TEE	4" - 90° CROSSING
				LIN. FT.	LIN. FT.	SQ. YDS.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-U	LT	145+00	146+80							360																1	1	1	1		
2-U	LT	147+00	159+10				60	10		2650	1																2		2	2	
3-U	LT	145+00	159+00				42	44		2850																3	3				3
4-U	RT	145+00	147+00				42	29		2850																3	3				3
5-U	RT	145+00	147+50				22	10		400	1																1			1	1
6-U		RAMP E	RAMP F				70	20		1700	2																2			3	1
7-U	RT	153+50	159+40				12			1200																1	3	1		2	
8-U	LT	159+40	160+00				40	10		100	1																1			2	
9-U	RT	159+78	160+00							25																					
1-R	LT	154+61	158+94			554																									
2-R	RT	155+28	155+52			365																									
1-G	LT	149+21	152+81	337.5								137.5		1				1	175			4	2								
2-G	LT	149+14	152+46	287.5								162.5	125				1					4		1							
3-G	RT	147+67	150+98	362.5								162.5	125				1					4		1							
4-G	RT	147+85	150+96	300.0								75.0		1				1	175			3	2								
5-G	RT	155+87	160+00	412.5								287.5		1	1	1	1	1	50			5	1								
6-G	LT	156+44	161+05	462.5								287.5		1		1		1	50			6	1								
7-G	RT	155+18	159+87	412.5								275.0	125			1	1					8		1		8	16	2	3	10	8
8-G	LT	156+68	161+37	475.0								275.0	125			1	1					7		1							
STRUCTURE (DEDUCTED QUANTITIES)												-125														TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				3050		919	288	123		12,135	5	1537.5	500	4	1	4	5	4	450			41	6	4							

PROPOSED STRUCTURE BRIDGE NO. FRA-315-1220 L & R

TYPE: SINGLE SPAN REINFORCED CONCRETE SLAB AND SUPERSTRUCTURE

SPAN: 25.54'℄ ABUTS. (MEASURED ALONG ℄ ROADWAY)

ROADWAY: 52'-0" % DECK

LOAD FREQUENCY : CF = 400 (57)

SKEW: 20° RT. FWD.

WEARING SURFACE : 1¼" MICROSILICA MODIFIED CONCRETE OVERLAY

APPROACH SLABS: AS-I-81 (25'-0" LONG)

ALIGNMENT: TANGENT

SUPERELEVATION: NONE

EXISTING STRUCTURE BRIDGE NO. FRA-315-1220 L & R

TYPE: SINGLE SPAN REINFORCED CONCRETE SLAB AND SUPERSTRUCTURE

SPAN: 25.54'℄ ABUTS. (MEASURED ALONG ℄ ROADWAY)

ROADWAY: 42'-0" % DECK (RT.)
VARIES % SLAB (LT.) AVG. = 43.38'

LOAD FREQUENCY : CF = 400 (57)

SKEW: 20° RT. FWD.

WEARING SURFACE : 1" MONOLITHIC CONCRETE

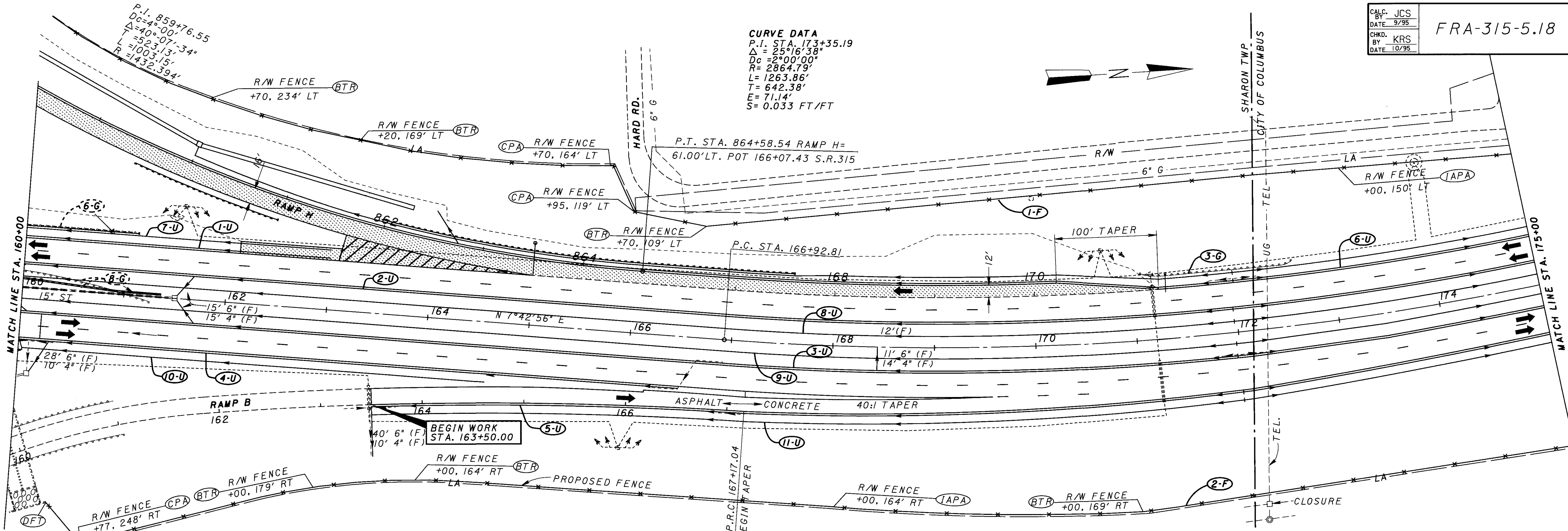
APPROACH SLABS: AS-I-54 (25'-0" LONG) RT.
SPECIAL (25'-0" LONG) LT.

ALIGNMENT: TANGENT

SUPERELEVATION: NONE

SR-315 STA. 145+00 TO STA. 160+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	117
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	286



▨ NEW PAVEMENT WIDENING

TO BE BUILT WITH FRA-270-27.400, PID 12495

REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED (LIN. FT.)	202 GUARDRAIL REMOVED BARRIER DESIGN (LIN. FT.)	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944 (LIN. FT.)	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS931 OR SS944 (LIN. FT.)	604 CATCH BASIN STANDARD (EACH)		604 BARRIER MEDIAN INLET 1-3D50 (EACH)	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN (LIN. FT.)	SPECIAL PRECAST REINFORCED CONCRETE OUTLET (EACH)	606 GUARDRAIL TYPE 5 SINGLE RAIL (LIN. FT.)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 (EACH)	2		606 ANCHOR ASSEMBLIES TYPE (EACH)	T	E	622 CONCRETE BARRIER TYPE - D-32 AS PER PLAN (LIN. FT.)	D-50	B-50	607 FENCE, TYPE CL (LIN. FT.)	802 BARRIER REFLECTORS TYPE A (EACH)	B	BENDS AND BRANCHES 4" x 4" WYE (EACH)	4" x 6" REDUCER (EACH)	6" x 6" WYE (EACH)	4" x 4" x 4" TEE (EACH)	4" - 90° CROSS (EACH)	4" x 4" 45° BEND
3-G	LT	171+08	172+59	150.0																											
6-G	(SEE PREVIOUS QUANTITY SHEET)																														
8-G	(SEE PREVIOUS QUANTITY SHEET)																														
1-U	LT	160+00	163+00								300																				
2-U	LT	160+00	175+00				15				1500																1	1			
3-U	RT	160+00	175+00				29				1500	1														1			1		
4-U	RT	160+00	166+50				10				650															1					
5-U	RT	RAMP B	175+00				10				1150	1																	1		
6-U	LT	171+15	175+00								385																				
7-U	LT	160+00	163+00								300																				
8-U	LT	160+00	175+00			15					1500																1			1	
9-U	RT	160+00	175+00			26					1500																2			2	
10-U	RT	160+00	164+50			28					450																1			1	
11-U	RT	166+00	175+00			40					1150																1		1		
1-F	LT	160+00	175+00																				1550								
2-F	RT	160+40	175+00																				1550								
																										2	6	1	3	4	
																										TOTALS FOR UNDERDRAIN INFORMATION ONLY					
TOTALS:				150		109	64				10,385	2											3100								

CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

FENCE LEGEND

- IAPA INTERMEDIATE ANCHOR POST ASSEMBLY
- CPA CORNER POST ASSEMBLY
- ACA ABUTMENT CONNECTION ASSEMBLY
- EPA END POST ASSEMBLY
- DFT TYPE "D" FENCE TERMINAL
- AFT TYPE "A" FENCE TERMINAL
- BFT TYPE "B" FENCE TERMINAL
- BTR POST BRACE & TRUSS ROD

SR-315 STA. 160+00 TO STA. 175+00

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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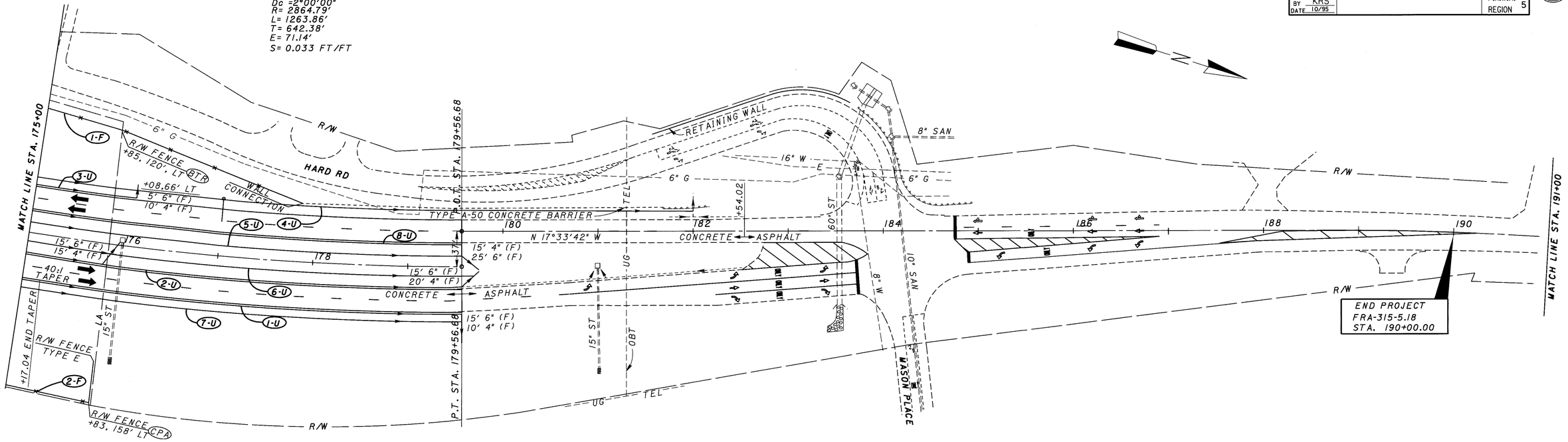
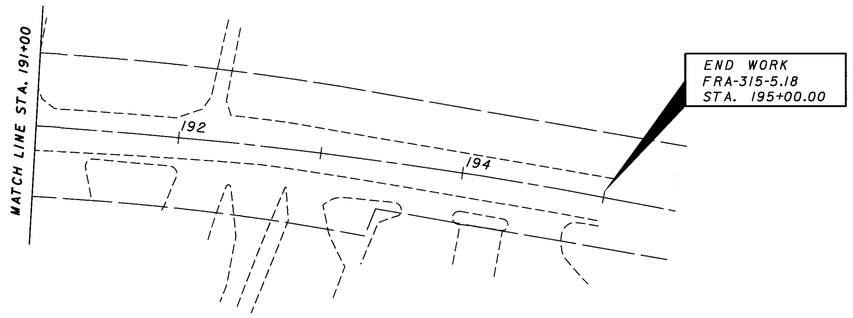
CURVE DATA
P.I. STA. 173+35.19
Δ = 25°16'38"
Do = 2°00'00"
R= 2864.79'
L= 1263.86'
T= 642.38'
E= 71.14'
S= 0.033 FT/FT



REFERENCE NO.	SIDE	STATION FROM	STATION TO	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED BARRIER DESIGN	603 6" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931	603 4" TYPE F CONDUIT, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS931	605 4" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	SPECIAL PRECAST REINFORCED CONCRETE OUTLET	606 GUARDRAIL TYPE 5 SINGLE RAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 ANCHOR ASSEMBLIES TYPE B	606 ANCHOR ASSEMBLIES TYPE T	606 ANCHOR ASSEMBLIES TYPE E	607 FENCE, TYPE CL	622 AS PER PLAN D-32	622 CONCRETE BARRIER TYPE - D-50	622 CONCRETE BARRIER TYPE - B-50	BENDS AND BRANCHES 4" x 4" WYE	4" x 6" REDUCER	4" x 4" 90° BEND	4" x 4" 45° BEND	4" - 90° CROSS	4" x 4" TEE
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.
1-F	LT	175+00	177+85													295									
2-F	RT	175+00	175+85													85									
1-U	RT	175+00	179+56.68				10	457														1			
2-U	RT	175+00	179+56.68				35	457												1			1		
3-U	LT	175+00	176+00				10	100														1			
4-U	LT	175+00	182+00			5		700	1												1			1	
5-U	LT	175+00	179+56.68			25	15	457	1												1		1		
6-U	RT	175+00	179+56.68			30		457	1											1	2		1		
7-U	RT	175+00	179+56.68			15		457	1												1				1
8-U	LT	175+00	179+56.68					457																	
TOTAL TO GENERAL SUMMARY						75	70	3542	4							380				2	5	2	3	1	1

TOTALS FOR UNDERDRAIN INFORMATION ONLY



CROSS REFERENCE	
SHEET NO.	DESCRIPTION
148	PAVEMENT TRANSITION DETAILS
152	UNDERDRAIN DETAILS

FENCE LEGEND

- (IAPA) INTERMEDIATE ANCHOR POST ASSEMBLY
- (CPA) CORNER POST ASSEMBLY
- (ACA) ABUTMENT CONNECTION ASSEMBLY
- (EPA) END POST ASSEMBLY
- (DFT) TYPE "D" FENCE TERMINAL
- (AFT) TYPE "A" FENCE TERMINAL
- (BFT) TYPE "B" FENCE TERMINAL
- (BTR) POST BRACE & TRUSS ROD

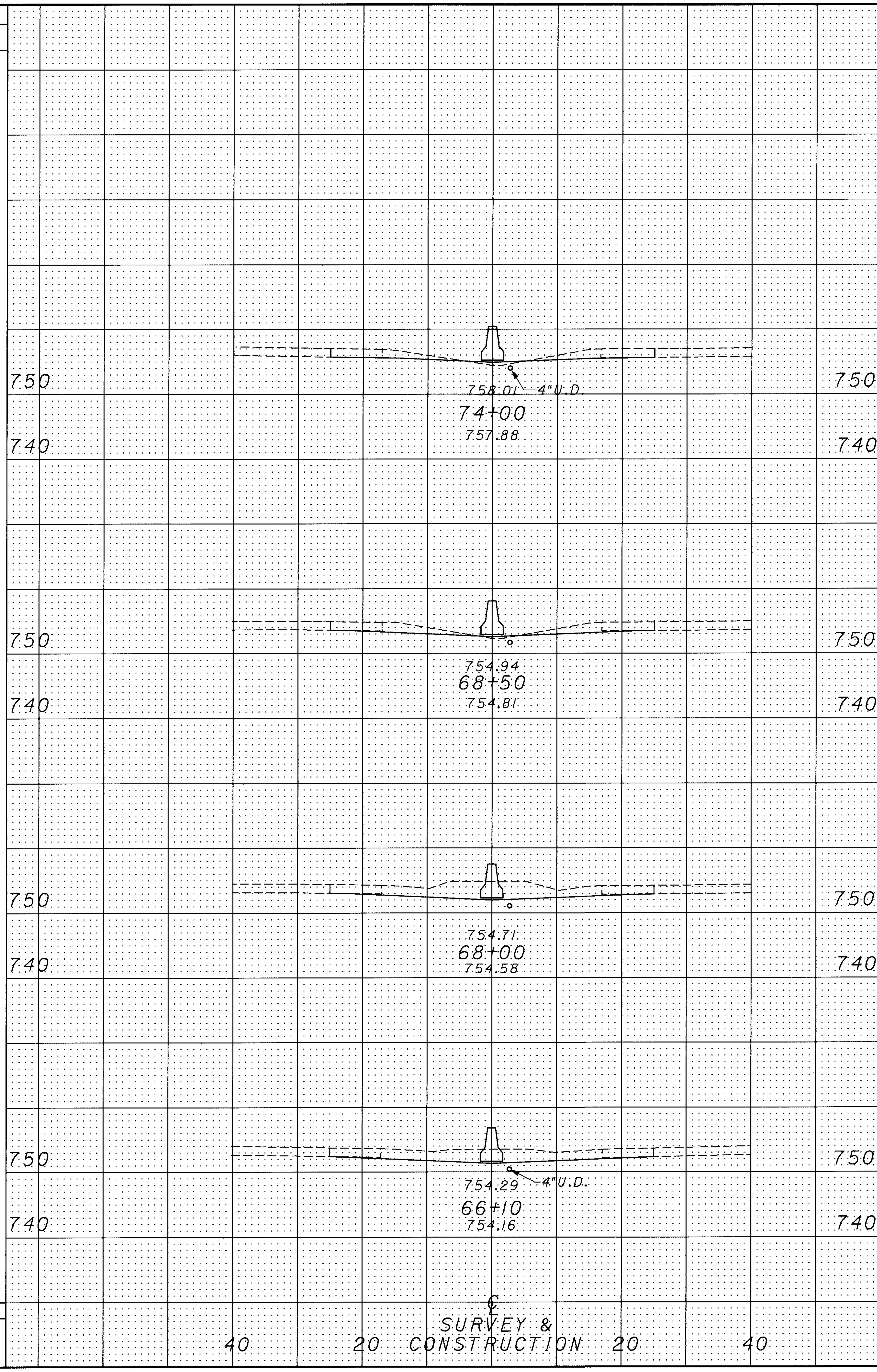
SR-315 STA. 175+00 TO STA. 190+00

CALC. BY	JCS	DATE	9/95
CHKD. BY	KRS	DATE	10/95

FRA-315-5.18

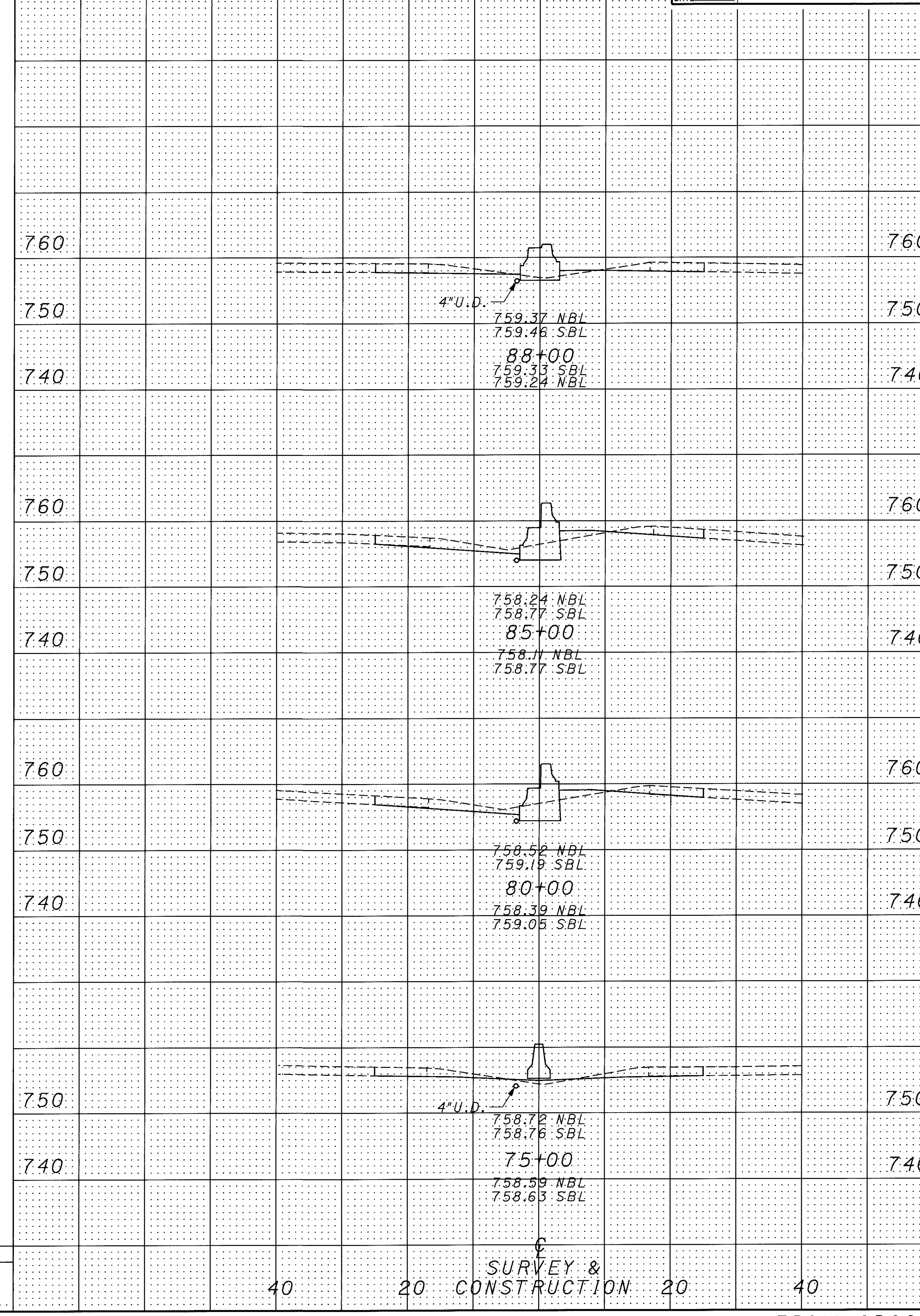
OHIO
F.H.W.A. REGION 5

SEEDING END WIDTH	SEEDING SQ YDS
TOTAL	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
40	3		
		878	42
46	1		
		126	1
90	0		
		598	0
81	0		
TOTAL		1602	43

SEEDING END WIDTH	SEEDING SQ YDS
TOTAL	



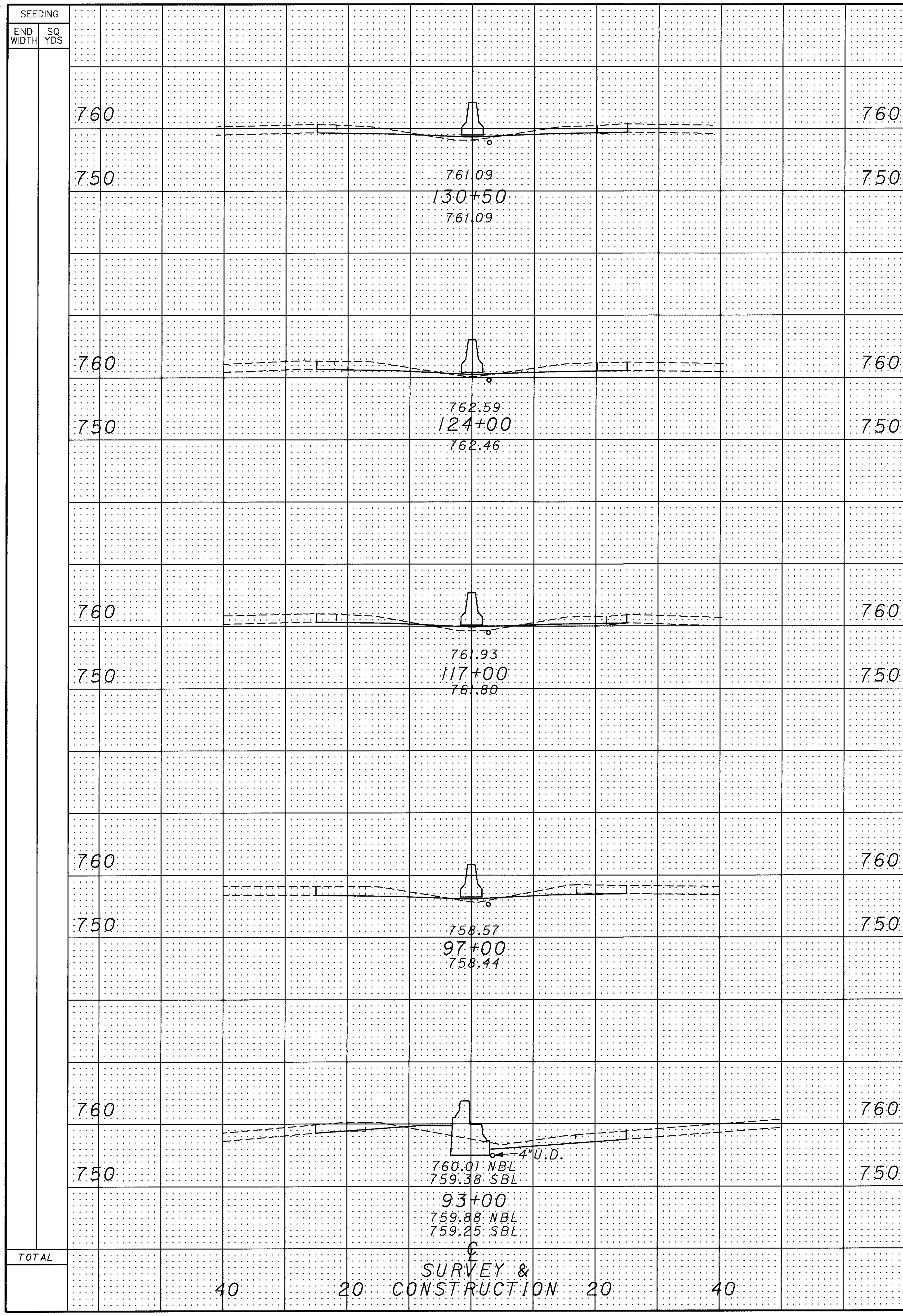
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
42	2		
		554	50
58	7		
		982	222
48	17		
		806	185
39	3		
		146	11
40	3		
TOTAL		2488	468

MEDIAN CROSS SECTIONS

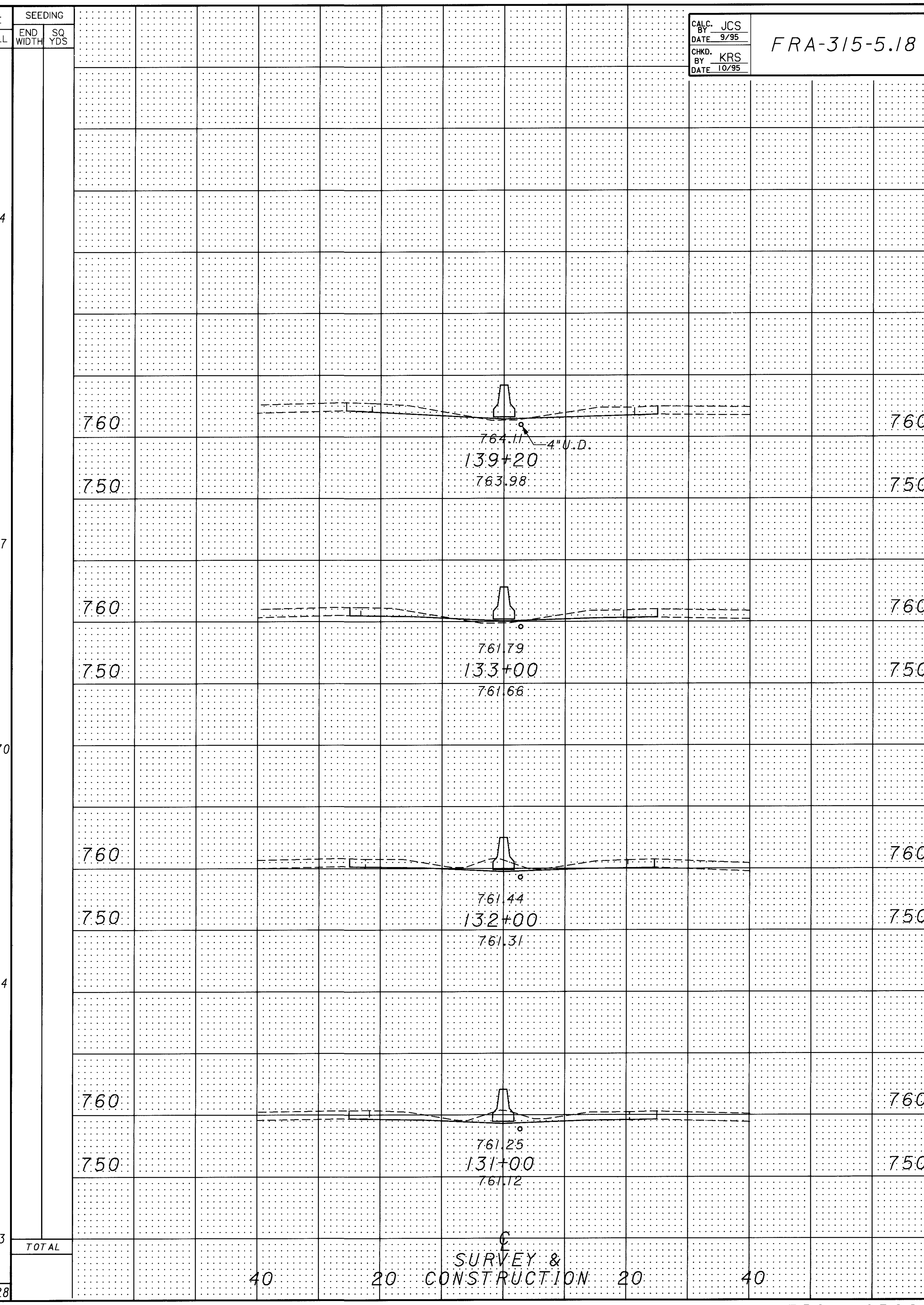
CALC. BY	JCS	DATE	9/95
CHKD. BY	KRS	DATE	10/95

FRA-315-5.18

OHIO
F.H.W.A. REGION 5



Station	End Area Cut	End Area Fill	Volume Cut	Volume Fill
130+50	33	5		
			867	84
124+00	39	2		
			907	117
117+00	31	7		
			2815	370
97+00	45	3		
			756	74
93+00	57	7		
			917	83
	42	2		
TOTAL			6262	728



Station	End Area Cut	End Area Fill	Volume Cut	Volume Fill
139+20	42	2		
			884	69
133+00	35	4		
			149	17
132+00	45	5		
			185	9
131+00	55	0		
			81	5
	33	5		
TOTAL			1299	100

MEDIAN CROSS SECTIONS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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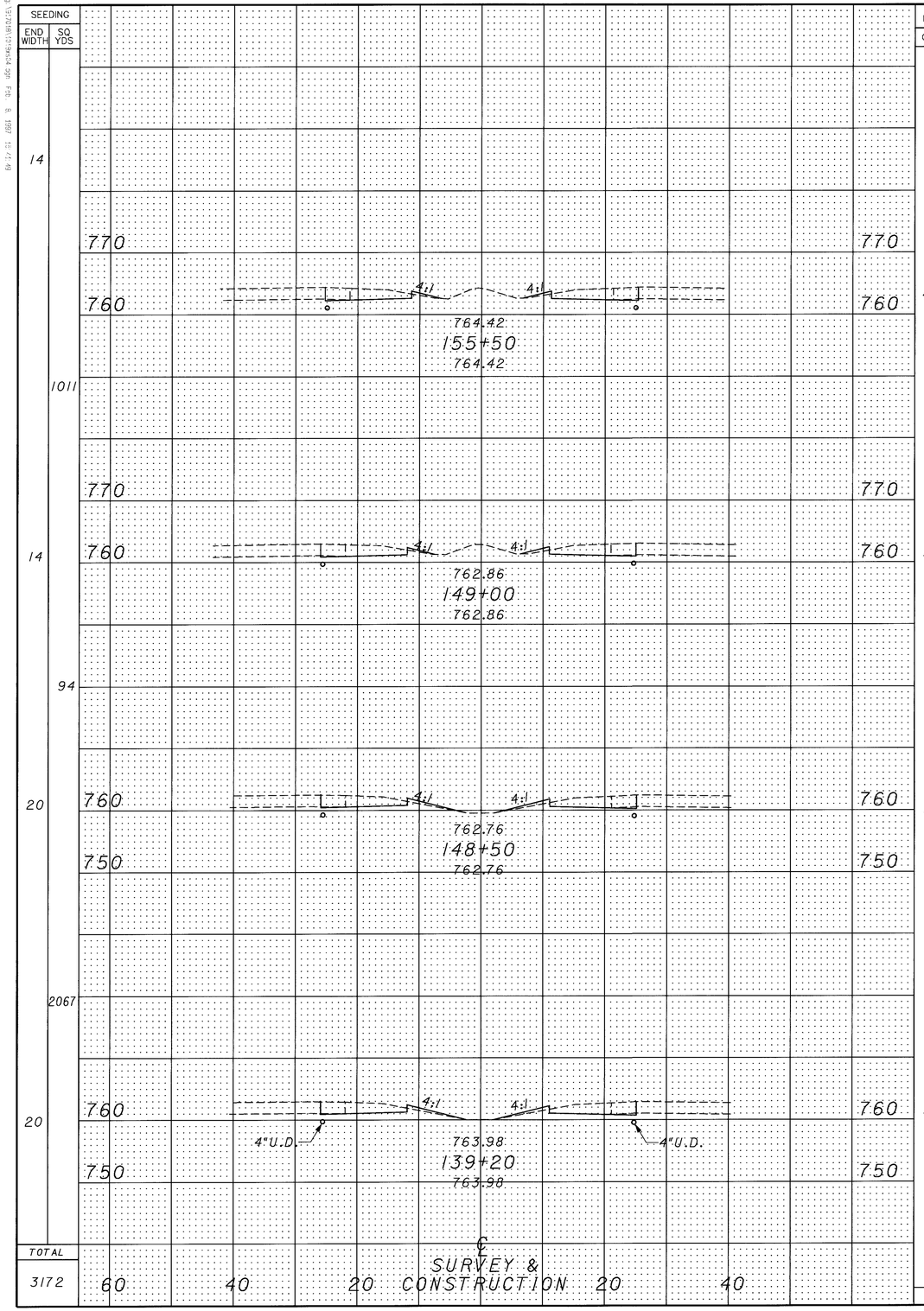
GRAND TOTAL- MEDIAN

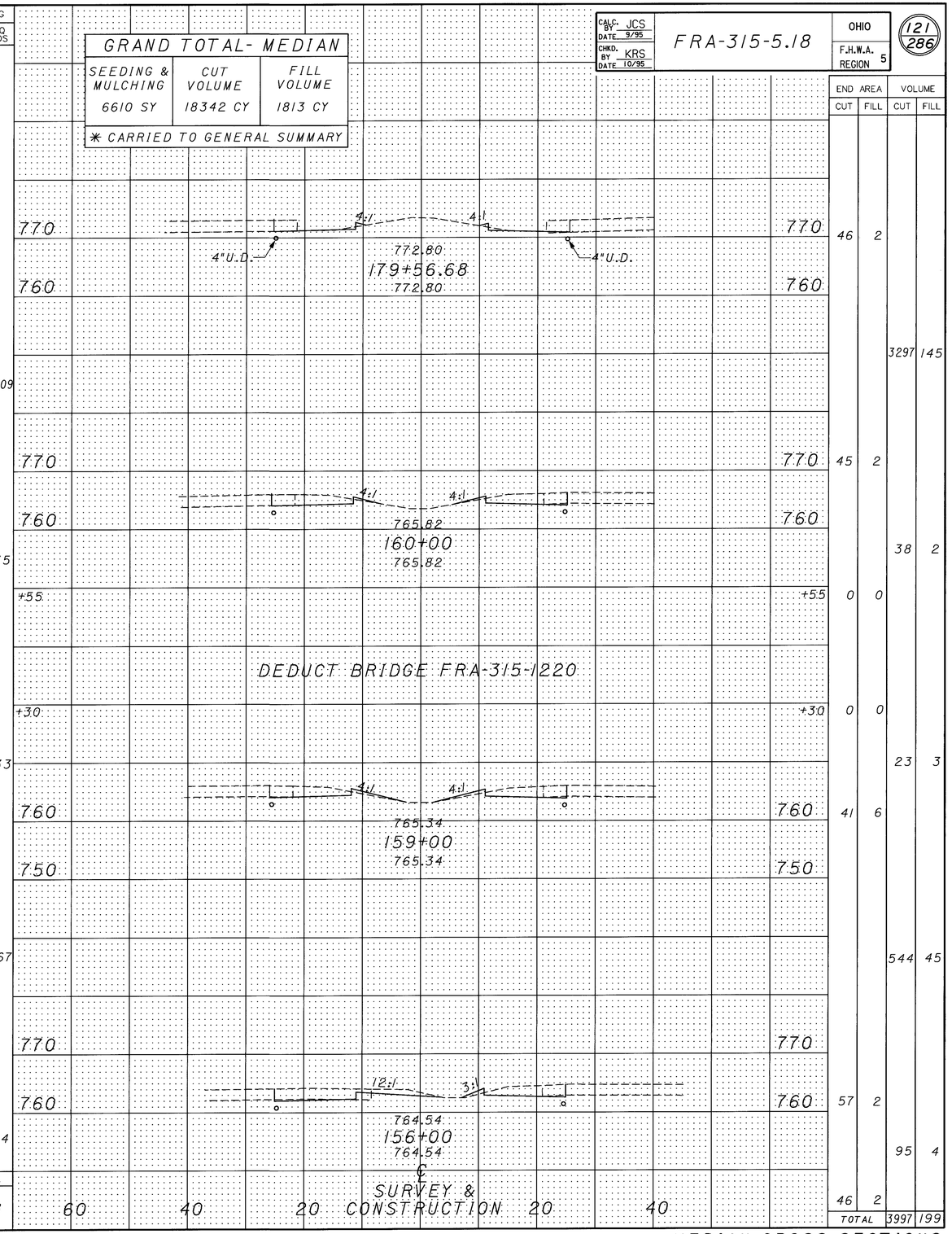
SEEDING & MULCHING	CUT VOLUME	FILL VOLUME
6610 SY	18342 CY	1813 CY

* CARRIED TO GENERAL SUMMARY

SEEDING END WIDTH	SEEDING SQ YDS	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
14					
	1011	46	2	1096	60
14		45	3	82	8
	94				
20		44	6	1516	207
	2067	44	6		
20					
TOTAL	3172	TOTAL		2694	275

SEEDING END WIDTH	SEEDING SQ YDS	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
10					
	2609	46	2	3297	145
14		45	2	38	2
35					
0		+55	0	0	
0		+30	0	0	
33				23	3
20		41	6		
	667			544	45
20		57	2		
14	94			95	4
TOTAL	3438	46	2		
		TOTAL		3997	199





MEDIAN CROSS SECTIONS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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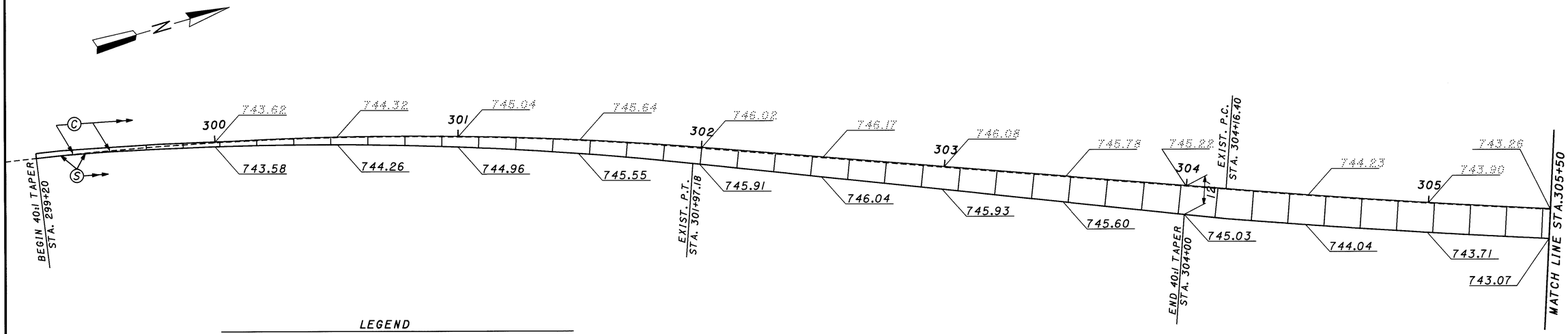
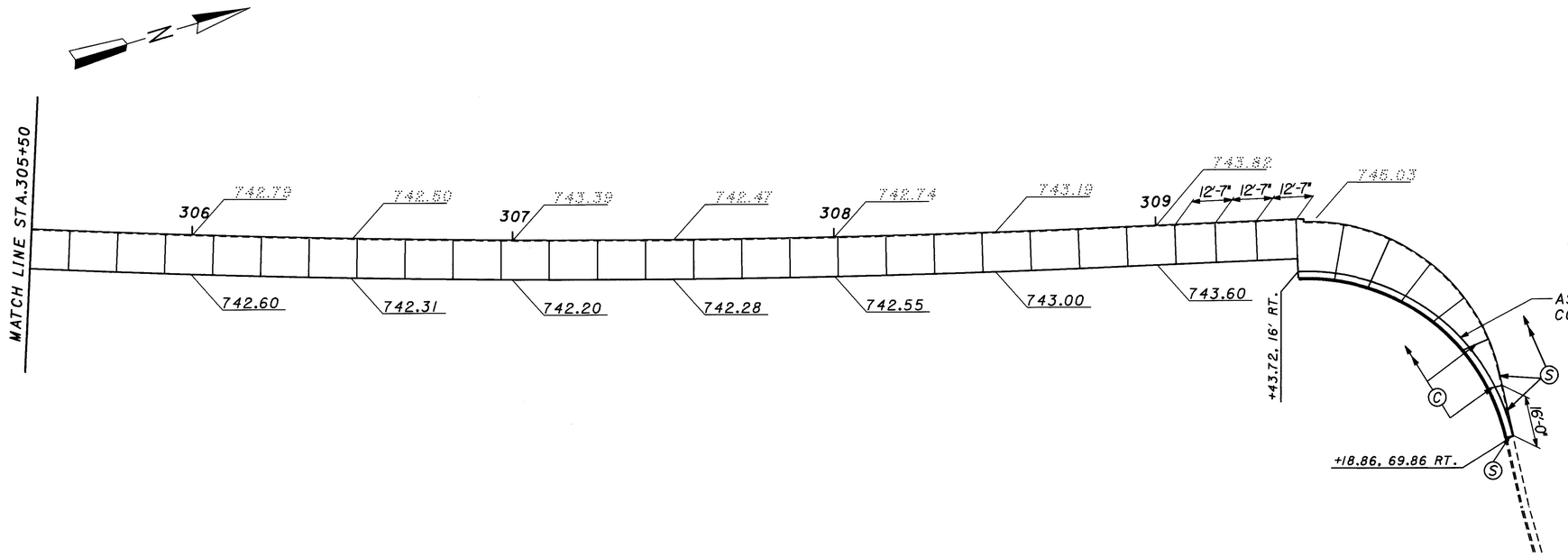


LEGEND

Ⓒ CONTRACTION JOINT AS PER BP-2.1

Ⓢ STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS

NOTE:
ALL CONTRACTION JOINTS ARE TO BE 15 FT. LONG OR MATCH EXISTING PAVEMENT UNLESS OTHERWISE STATED.



PAVEMENT PLAN: RAMP ED

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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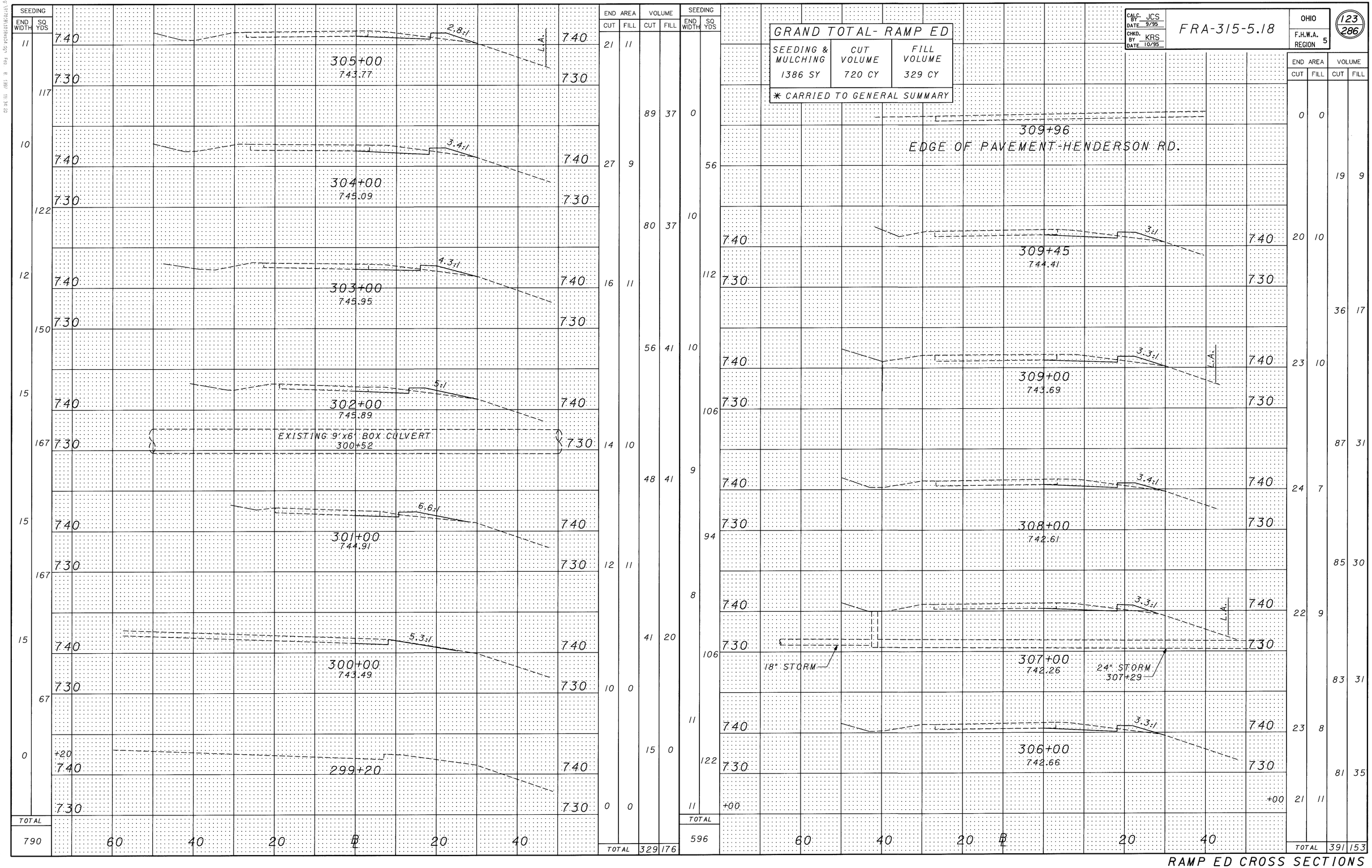
286

GRAND TOTAL- RAMP ED

SEEDING & MULCHING	CUT VOLUME	FILL VOLUME
1386 SY	720 CY	329 CY

* CARRIED TO GENERAL SUMMARY

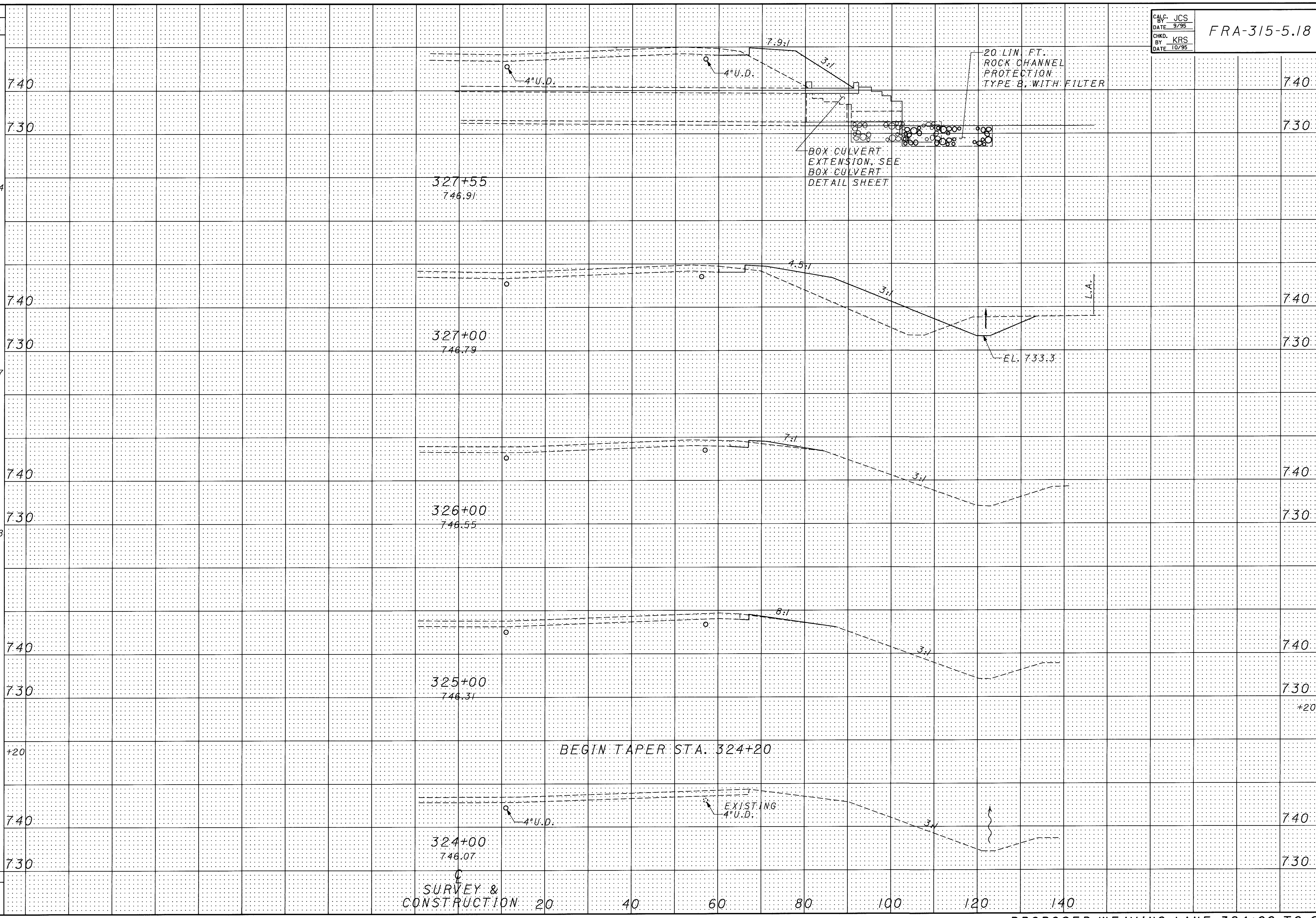


RAMP ED CROSS SECTIONS

CALC. BY	JCS
DATE	9/95
CHKD. BY	KRS
DATE	10/95

FRA-315-5.18

OHIO — F.H.W.A. REGION 5



SEEDING END WIDTH	SEEDING SQ YDS
25	
	284
68	
	467
16	
	278
18	
	80
0	
TOTAL	1109

Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
327+55	6	103		
			62	309
327+00	55	200		
			113	383
326+00	6	7		
			15	17
325+00	2	2		
			3	3
+20	0	0		
TOTAL			193	712

PROPOSED WEAVING LANE 324+00 TO STA. 327+55

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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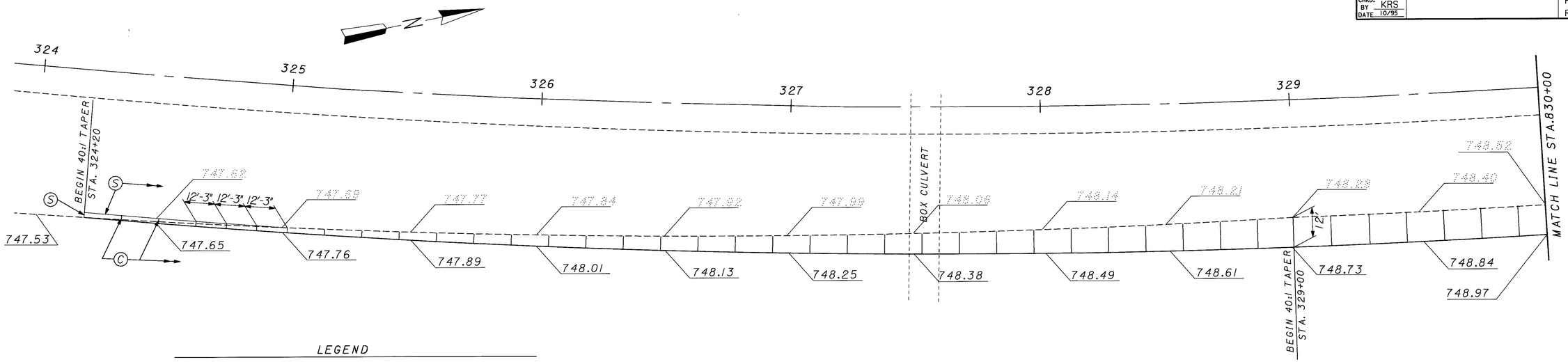
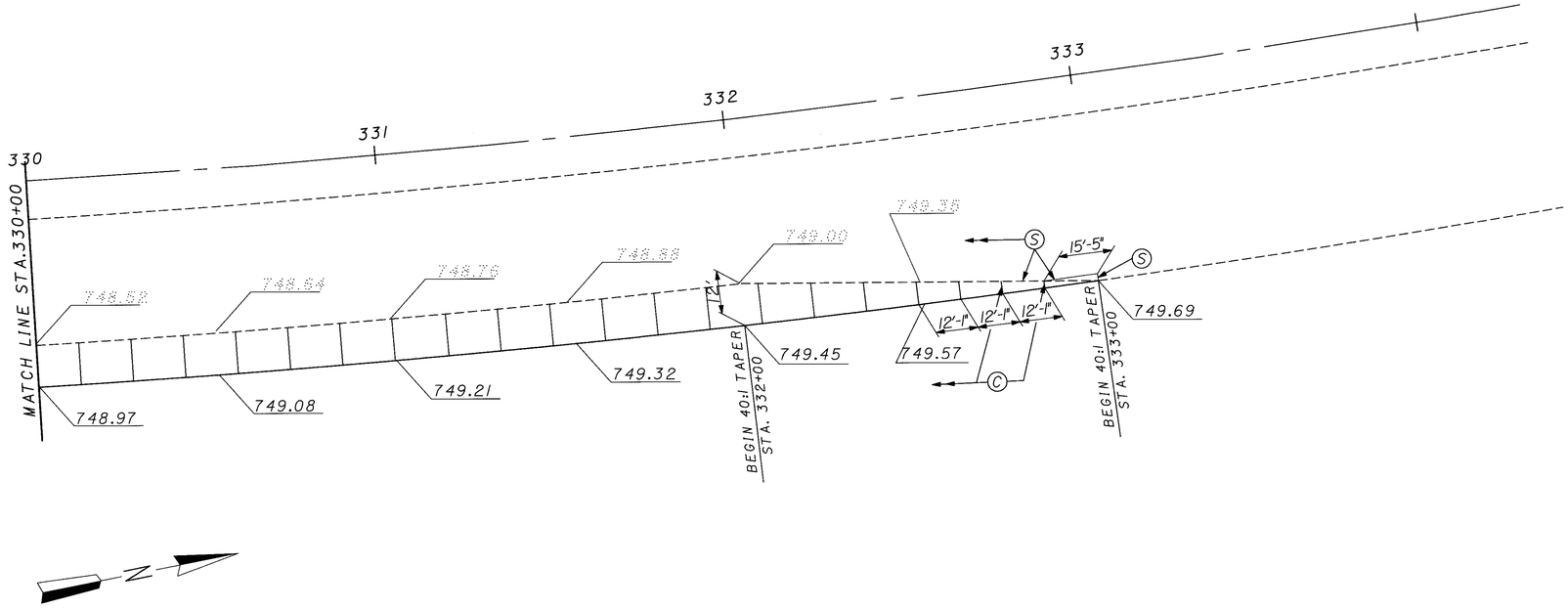


LEGEND

Ⓒ CONTRACTION JOINT AS PER BP-2.1

Ⓢ STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS

NOTE:
ALL CONTRACTION JOINTS ARE TO BE 15 FT. LONG OR MATCH EXISTING PAVEMENT UNLESS OTHERWISE STATED.



PAVEMENT PLAN: STA. 324+00 TO STA. 333+00

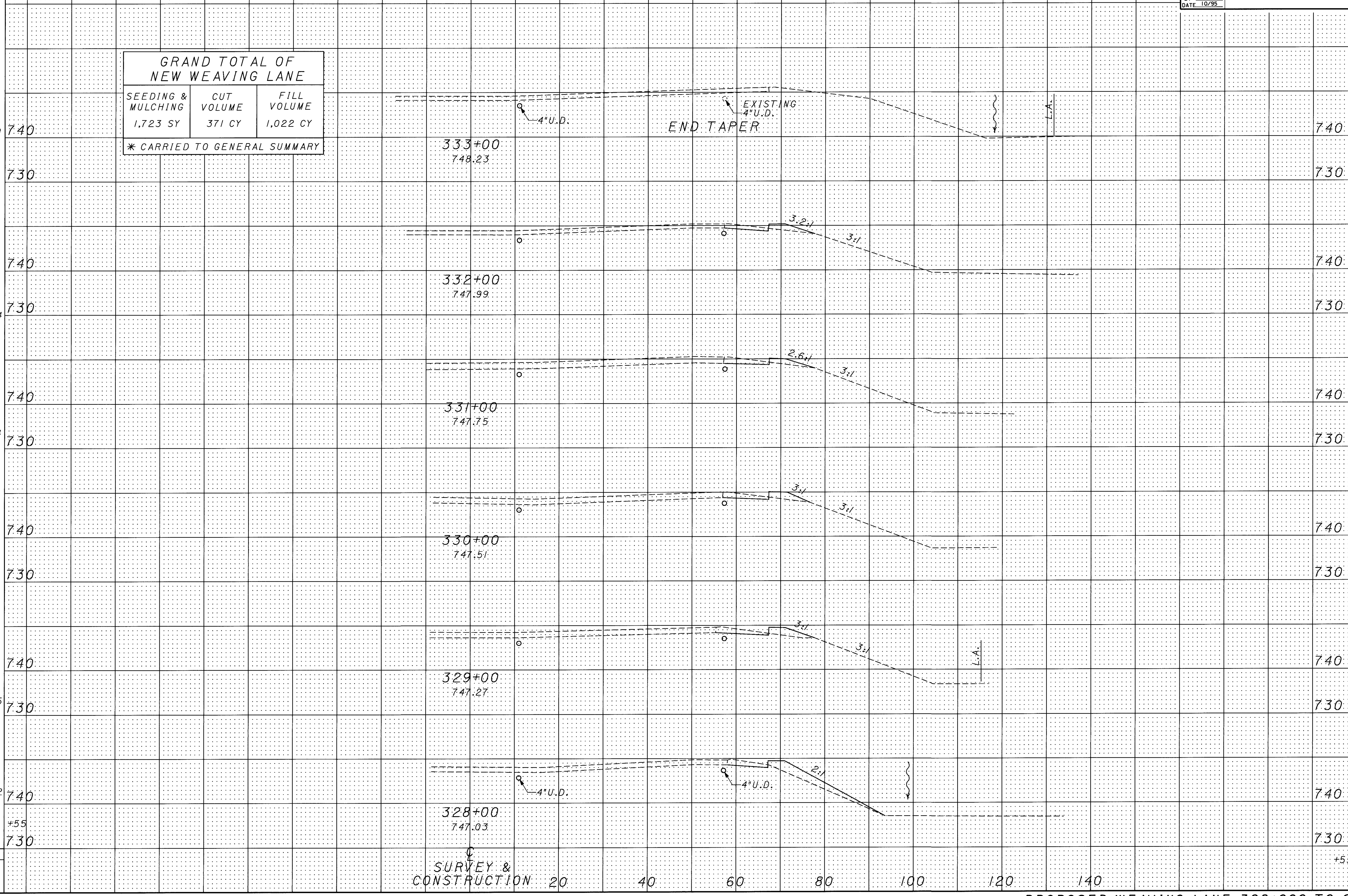
CALC. BY	JCS	DATE	9/95
CHKD. BY	KRS	DATE	10/95

FRA-315-5.18 — OHIO, F.H.W.A. REGION 5 — 126/286

GRAND TOTAL OF NEW WEAVING LANE		
SEEDING & MULCHING	CUT VOLUME	FILL VOLUME
1,723 SY	371 CY	1,022 CY

✱ CARRIED TO GENERAL SUMMARY

SEEDING END WIDTH	SEEDING SQ YDS
0	50
9	94
8	84
7	89
9	165
28	132
25	+55
TOTAL	614



Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
333+00	0	0		
			15	17
332+00	8	9		
			35	31
331+00	11	8		
			39	15
330+00	10	10		
			39	43
329+00	11	13		
			37	89
328+00	9	35		
			13	115
+55	6	103		
TOTAL			178	310

PROPOSED WEAVING LANE 328+000 TO STA. 333+00

PAVEMENT REPLACEMENT NOTES

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

145
286

ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT

DESCRIPTION THIS WORK SHALL CONSIST OF PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION, RIGID PAVEMENT REPLACEMENT, AND SHOULDER RESTORATION IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS. UNLESS OTHERWISE PROVIDED HEREIN, THE MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF 202, 301, 305, 310, 402, 404, 448, 451, 452, AND 499 AS APPLICABLE. THE REQUIREMENTS OF ITEM 451.16 SHALL BE WAIVED FOR THIS WORK.

MATERIALS CONCRETE SHALL BE CLASS C, ITEM 499 UNLESS OTHERWISE SPECIFIED IN THE PLANS.

JOINT SEALER SHALL MEET THE REQUIREMENTS OF 705.04 AND SHALL BE PRETESTED BEFORE SHIPMENT TO THE PROJECT.

BOND-BREAKER MATERIAL SHALL BE ON THE APPROVED LIST ISSUED BY THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT).

NONSHRINK NONMETALLIC GROUT SHALL MEET THE REQUIREMENTS OF ASTM C-881, TYPE I, GRADE 3, CLASS A, B OR C WITH THE EXCEPTION OF GEL TIME. THE GROUT SHALL CONSIST OF A TWO COMPONENT EPOXY OR POLYESTER RESIN BONDING COMPOUND THAT WILL FIRMLY ANCHOR THE DOWEL/TIE BAR WITHIN 15 MINUTES.

THE GROUT SHALL BE ACCEPTED BY CERTIFICATION IN ACCORDANCE WITH ITEM 101.061.

FULL DEPTH PAVEMENT SAWING THE LIMITS OF ALL REPAIRS WILL BE LOCATED AND MARKED BY THE ENGINEER. AEROSOL SPRAY FOR MARKING THE LIMITS OF DETERIORATED PAVEMENT REMOVAL SHALL BE PROVIDED BY THE CONTRACTOR. RIGID PAVEMENT AREAS EXHIBITING DETERIORATION AT THE SURFACE SHALL BE MARKED ONE (1) FOOT MINIMUM BEYOND THE LIMITS OF DETERIORATION BUT IN NO CASE SHALL THE MINIMUM DIMENSIONS OF THE RIGID REPLACEMENT BE LESS THAN SHOWN IN THE PLANS. PAVEMENT DESIGNATED TO BE REMOVED SHALL BE SAWED FULL DEPTH TRANSVERSELY AND ALONG THE LONGITUDINAL JOINT WITH A DIAMOND SAW BLADE.

RIGID PAVEMENT REMOVAL PAVEMENT SHALL BE REMOVED USING THE LIFT OUT METHOD AND SHALL NOT CAUSE SPALLING OR CRACKING OF THE ADJACENT PAVEMENT AND SHALL RESULT IN NO DISTURBANCE TO THE UNDERLYING SUBBASE/SUBGRADE OR SURFACED SHOULDER. THE CONTRACTOR MAY ELECT TO MAKE ADDITIONAL SAW CUTS TO FACILITATE THE REMOVAL OF THE PAVEMENT. HOWEVER, ONLY THE CUTS DESIGNATED BY THE ENGINEER WILL BE MEASURED FOR PAYMENT.

BREAKING THE PAVEMENT AND CLEANING THE MATERIAL OUT WITH A BACKHOE WILL NOT BE PERMITTED UNLESS THE ENGINEER DETERMINES THE LIFT OUT METHOD IS NOT FEASIBLE DUE TO PAVEMENT DETERIORATION.

IF THE ADJACENT PAVEMENT IS DAMAGED DURING THE PAVEMENT SAWING OR RIGID PAVEMENT REMOVAL, AN ADDITIONAL FULL DEPTH DIAMOND BLADE SAW CUT SHALL BE MADE THE FULL WIDTH OF THE LANE AT A LENGTH THAT WILL ENCOMPASS THE DAMAGED PAVEMENT. THIS ADDITIONAL WORK WILL BE PERFORMED AT NO ADDITIONAL COST TO THE STATE.

SUBBASE/SUBGRADE CORRECTION PRIOR TO PLACING THE CONCRETE FOR THE RIGID REPLACEMENT, ANY SUBBASE/SUBGRADE MATERIAL THAT IS DISTURBED BELOW THE DESIRED LEVEL OF CLEANOUT SHALL BE REMOVED AND THE PATCH AREA COMPACTED TO THE SATISFACTION OF THE ENGINEER, OR, AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REPLACE THE SUBBASE/SUBGRADE MATERIAL REMOVED WITH CONCRETE AS PART OF THE RIGID REPLACEMENT AT NO ADDITIONAL COST TO THE STATE.

FURNISHING AND PLACING NEW STEEL ALL REINFORCEMENT, DOWELS AND TIE BARS SHALL BE OF THE SIZE INDICATED IN THE PLAN. DOWEL BARS SHALL BE SMOOTH AND EPOXY COATED AS PER 709.13. THE TIE BARS SHALL BE ROUND, DEFORMED BARS AND EPOXY COATED AS PER 709.13. DOWEL/TIE BAR HOLES SHALL BE DRILLED WITH HYDRAULIC OR ELECTRIC DRILLS. ALL DRILL HOLES SHALL BE BLOWN CLEAN WITH COMPRESSED AIR PRIOR TO GROUTING THE DOWEL/TIE BARS. THE DOWEL/TIE BARS SHALL BE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT WITH GROUT. THE GROUT SHALL BE MECHANICALLY INJECTED INTO THE REAR PORTION OF THE HOLE. ENOUGH MATERIAL SHALL BE INJECTED TO PROVIDE COMPLETE COVERAGE AROUND THE DOWEL/TIE BAR TO ENSURE THEY ARE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT. A SATISFACTORY METHOD SHALL BE USED TO HOLD THE DOWEL/TIE BAR IN PROPER ALIGNMENT UNTIL THE GROUT HAS HARDENED.

RIGID REPLACEMENT THE RIGID REPLACEMENT SHALL NOT BE PLACED UNTIL THE GROUT AROUND THE DOWEL/TIE BAR HAS HARDENED. FORMS SHALL BE USED TO PROVIDE A STRAIGHT AND NEAT EDGE AT THE SHOULDER. EACH PATCH SHALL BE CAST IN ONE CONTINUOUS FULL-DEPTH OPERATION. THE CONCRETE SHALL BE CONSOLIDATED IN PLACE BY USE OF AN INTERNAL TYPE VIBRATOR. THE CONCRETE SHALL BE CONSOLIDATED AROUND THE EDGES OF THE PATCH AND INTERNALLY. INTERNAL VIBRATORS FOR CONSOLIDATING THE CONCRETE SHALL BE AN APPROVED MECHANICAL SPUD TYPE. THE VIBRATORS SHALL BE CAPABLE OF VISIBILITY AFFECTING THE CONCRETE FOR A DISTANCE OF 12 INCHES FROM THE VIBRATOR END.

FINISHING AND TEXTURING PATCHES THAT ARE LESS THAN 12 FEET IN LENGTH SHALL BE SCREEDED EITHER TRANSVERSELY OR LONGITUDINALLY AS DIRECTED BY THE ENGINEER. FOR PATCHES OVER 12 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE.

IF TRAFFIC IS PERMITTED ON THE EXPOSED REPAIR THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SLABS BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE PAVEMENT CENTERLINE WITH THE ENDS RESTING ON THE EXISTING PAVEMENT AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. THE STRAIGHTEDGE SHOULD BE IN CONTACT WITH THE EXISTING PAVEMENT WHILE DRAWING IT ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

THE SURFACE OF THE CONCRETE SHALL BE TEXTURED TO MATCH THE SURROUNDING PAVEMENT.

CURING CONCRETE CURING COMPOUND SHALL BE APPLIED TO THE RIGID REPLACEMENT SURFACE IN ACCORDANCE WITH 451.10.

JOINTS TRANSVERSE JOINTS BETWEEN THE RIGID REPLACEMENT AND THE EXISTING RIGID PAVEMENT SHALL BE SAWED OR FORMED BEFORE THE REPAIR IS OPENED TO TRAFFIC. ANY CONCRETE OR LAITANCE ABOVE THE PREFORMED EXPANSION JOINT FILLER SHALL BE REMOVED. BOTH FACES OF THE JOINT SHALL BE THOROUGHLY CLEANED BY SANDBLASTING TO THE DEPTH OF THE BOTTOM OF THE PROPOSED SEALER. THE SANDBLASTING OPERATION SHALL BE SUCH THAT WHEN COMPLETED THE CONCRETE JOINT WHICH IS TO RECEIVE THE NEW JOINT SEALANT SHALL BE COMPLETELY FREE OF ALL DIRT, DUST, TAR AND BITUMINOUS MATERIAL; CURING COMPOUND, DISCOLORATION AND STAIN, AS WELL AS ANY AND ALL OTHER FORMS OF CONTAMINATION, LEAVING A CLEAN, NEWLY EXPOSED CONCRETE SURFACE. THE TOP OF THE FRESHLY PLACED SEALANT SHALL BE 1/4 INCH (± 1/16 INCH) BELOW THE PAVEMENT SURFACE. THE SHAPE FACTOR (DEPTH TO WIDTH RATIO) OF THE SEALANT SHALL BE BETWEEN ONE (1) AND TWO (2).

SHOULDER RESTORATION PRIOR TO OPENING THE RIGID REPLACEMENT TO TRAFFIC, THE SHOULDER SHALL BE RESTORED TO THE ORIGINAL LINE AND GRADE USING AN AGGREGATE OR BITUMINOUS CONCRETE IN ACCORDANCE WITH THE PLANS OR AS APPROVED BY THE ENGINEER. THE LOW AREAS SHALL BE FILLED AND COMPACTED FLUSH WITH THE SURROUNDING SHOULDER. MATERIALS REMOVED FROM THE SHOULDER SHALL BE DISPOSED OF BY THE CONTRACTOR.

OPENING TO TRAFFIC THE RIGID REPLACEMENT MAY BE OPENED TO TRAFFIC WHEN NEW CONCRETE HAS ATTAINED A MODULUS OF RUPTURE OF 400 P.S.I. BEAMS SHALL BE CAST BY THE ENGINEER TO DETERMINE THE MODULUS OF RUPTURE.

TRAFFIC SAFETY WHEN TRAFFIC IS MAINTAINED IN ADJACENT LANES, THE CONTRACTOR SHALL SCHEDULE HIS WORK SUCH THAT ALL REPAIRS 60 FEET OR LESS IN LENGTH ARE COMPLETED WITHIN 48 HOURS OF THE PAVEMENT REMOVAL. REPAIRS 10 FEET OR LESS IN LENGTH SHALL BE COVERED WITH A STEEL PLATE IF THEY ARE LEFT UNFILLED OVERNIGHT. NO REPAIRS SHALL BE LEFT UNFILLED FROM 4:00 PM ON FRIDAY TO 8:00 AM ON MONDAY OR 8:00 AM ON TUESDAY IF MONDAY IS A HOLIDAY. WHEN THE PAVEMENT HAS BEEN REMOVED AND THE CONTRACTOR IS UNABLE TO COMPLETE THE REQUIRED RIGID REPLACEMENT WITHIN THE TIME SPECIFIED ABOVE, THE EXCAVATION SHALL BE FILLED WITH A COMMERCIALLY AVAILABLE BITUMINOUS MIXTURE OR OTHER SUITABLE TEMPORARY PATCH MATERIAL WITH A DURABLE SURFACE AS DIRECTED BY THE ENGINEER. OPENINGS 10 FEET OR LESS MAY BE COVERED WITH A STEEL PLATE. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PATCHES WHILE THEY ARE IN SERVICE. THE COST OF PLACING, MAINTAINING, REMOVING AND DISPOSING OF THE TEMPORARY PATCHES WILL BE AT THE CONTRACTOR'S EXPENSE.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT THE QUANTITY OF FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT TO BE PAID FOR SHALL BE THE NUMBER OF SQUARE YARDS OF RIGID PAVEMENT REMOVED TO THE LIMITS ESTABLISHED BY THE ENGINEER. ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION, RIGID REPLACEMENT, FURNISHING AND PLACING NEW STEEL, JOINTS AND MATERIAL.

THE QUANTITY OF FULL DEPTH PAVEMENT SAWING TO BE PAID FOR SHALL BE THE NUMBER OF LINEAR FEET OF TRANSVERSE AND LONGITUDINAL FULL DEPTH SAW CUTS COMPLETED AT THE DESIGNATED LIMITS OF THE REPAIR. PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT
SPECIAL	LIN. FT.	FULL DEPTH PAVEMENT SAWING
SPECIAL	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

THE PREVIOUS ITEMS ARE TO BE DONE AS DIRECTED BY THE ENGINEER. FOR ESTIMATED QUANTITIES SEE SUB-SUMMARY OF PAVEMENT REPAIRS.

SUBBASE/SUBGRADE FAILURES
IF, AFTER REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE AND PLACE AGGREGATE DRAINS AS NECESSARY. THE BELOW ESTIMATE QUANTITIES ARE FOR USE AS DIRECTED BY THE ENGINEER AS DETERMINED DURING CONSTRUCTION. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	DESCRIPTION	UNIT
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	2500 CU. YDS.
304	AGGREGATE BASE	2500 CU. YDS.

STANDARD DRAWING BP-25 THE LAST SENTENCE OF THE FOOTNOTE (*) ON STANDARD DRAWING BP-2.5 SHALL BE REVISED TO READ. "IF THE PATCH LENGTH EXCEEDS 20 FEET, THE FABRIC SHALL CONSIST OF W8.5 CR D8.5 LONGITUDINAL WIRE SPACED AT 6" C/C AND W4 OR D4 TRANSVERSE WIRES SPACED AT 12" C/C."

SR-315 PAVEMENT REPAIR (MAINLINE) AND (RAMPS) SUB-SUMMARY

STATION TO STATION	RIGID REPAIR LOCATIONS APPROXIMATELY 6'x12' EACH									ITEM 301 BITUMIN. AGGR. BASE
	SOUTHBOUND SR-315					NORTHBOUND SR-315				
	OTHER	DRIVING	PASSING	OTHER		OTHER	PASSING	DRIVING	OTHER	CU. YD.
175+34.40 TO 193+82.96	55	92	46	18	M	18	46	92	55	
192+83.03 TO 211+57.18	56	94	47	19		19	47	94	56	
213+79.56 TO 224+58.85		54	27	11		11	27	54		
226+51.71 TO 230+23.30		18	9	4	E	4	9	18		
233+01.21 TO 270+00.00	30	185	92	37		37	92	185	25	
270+03.19 TO 292+00.00		110	55	24		24	55	110		
292+00.00 TO 309+43.59	36	87	43	17		17	43	87	24	
310+83.23 TO 345+00.00	34	171	85	34	D	34	85	171	30	
SUB-TOTAL	211	811	404	164		164	404	811	190	
345+00.00 TO 418+44.75		367	183	73		73	183	367		
420+05.00 TO 428+53.70		42	21	8	I	8	21	42		
45+00.00 TO 66+10.00	32	105	52	21		21	52	105	24	
66+10.00 TO 75+00.00		44	22				22	44		
75+00.00 TO 96+00.00	34	105	52				52	105	30	
96+00.00 TO 117+00.00		105	52		A		52	105		
117+00.00 TO 159+03.90	30	105	105				105	105	21	
159+82.10 TO 178+00.00		45	45				45	45		
178+00.00 TO 190+00.00		60	30				30	60	20	
SUB-TOTAL	96	978	562	102	N	102	562	978	95	
RIGID REPAIR LOCATIONS APPROXIMATELY 6'x16' EACH										
RAMP CB		22								
RAMP DF		37								
RAMP DH		14								
RAMP DD		35								
RAMP DB		27								
RAMP DC		30								
RAMP FE		32								
RAMP FC		22								
RAMP GB		22								
TOTAL CONC. REPAIRS ON RAMPS		241								

ITEM SPECIAL - FULL DEPTH PAVEMENT SAWING

2430 REPAIRS AT 30 FEET EACH = 72,900 L.F.
729 REPAIRS AT 24 FEET EACH = 17,496 L.F.
20% ADDED TO BE USED AS DIRECTED = 18,079 L.F.
TOTAL 108,475 L.F.

3080 REPAIRS AT 30 FEET EACH = 92,400 L.F.
395 REPAIRS AT 24 FEET EACH = 9,480 L.F.
RAMPS 241 REPAIRS AT 32 FEET EACH = 7,712 L.F.
20% ADDED TO BE USED AS DIRECTED = 20,376 L.F.
TOTAL 129,968 L.F.

RAMPS 426 REPAIRS AT 19 FEET EACH = 8,094 L.F.
RAMPS 240 REPAIRS AT 27 FEET EACH = 6,480 L.F.
20% ADDED TO BE USED AS DIRECTED = 2,915 L.F.
TOTAL 17,489 L.F.

TOTAL TO GENERAL SUMMARY = 255,932 L.F.

ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C

1590 REPAIRS AT 8 S.Y. EACH = 12,720 S.Y.
2070 REPAIRS AT 8 S.Y. EACH = 16,560 S.Y.
20% ADDED TO BE USED AS DIRECTED = 5,856 S.Y.
TOTAL 35,136 S.Y.

1328 REPAIRS AT 8 S.Y. EACH = 10,624 S.Y.
2147 REPAIRS AT 8 S.Y. EACH = 17,176 S.Y.
RAMPS 241 REPAIRS AT 10.6 S.Y. EACH = 2,555 S.Y.
20% ADDED TO BE USED AS DIRECTED = 6,071 S.Y.
TOTAL 36,426 S.Y.

TOTAL TO GENERAL SUMMARY = 71,562 S.Y.

SR-315 PAVEMENT REPAIR (RAMPS) - SUB-SUMMARY

STATION TO STATION	FLEXIBLE REPAIR LOCATIONS AT 8'x 6' EACH			ITEM 301 BITUMIN. AGGR. BASE
	OTHER EACH	DRIVING EACH	PASSING EACH	CU. YD.
RAMP CA		13	13	
RAMP DE		18	18	
RAMP DA		30	30	
RAMP EB		19	19	
RAMP ED		5	5	
RAMP EC		19	19	
RAMP EA		22	22	
RAMP FD		20	20	
RAMP FA		33	33	
RAMP GD		17	17	
RAMP GC		10	10	
RAMP GA		7	7	
SUB-TOTAL FLEXIBLE REPAIRS		213	213	
FLEXIBLE REPAIR LOCATIONS AT 12'x 6' EACH				
RAMP CA		7	7	
RAMP DE		17	17	
RAMP DD		35	35	
RAMP ED		17	17	
RAMP FD		8	8	
RAMP GD		10	10	
RAMP GC		15	15	
RAMP GA		11	11	
SUB-TOTAL FLEXIBLE REPAIRS		120	120	

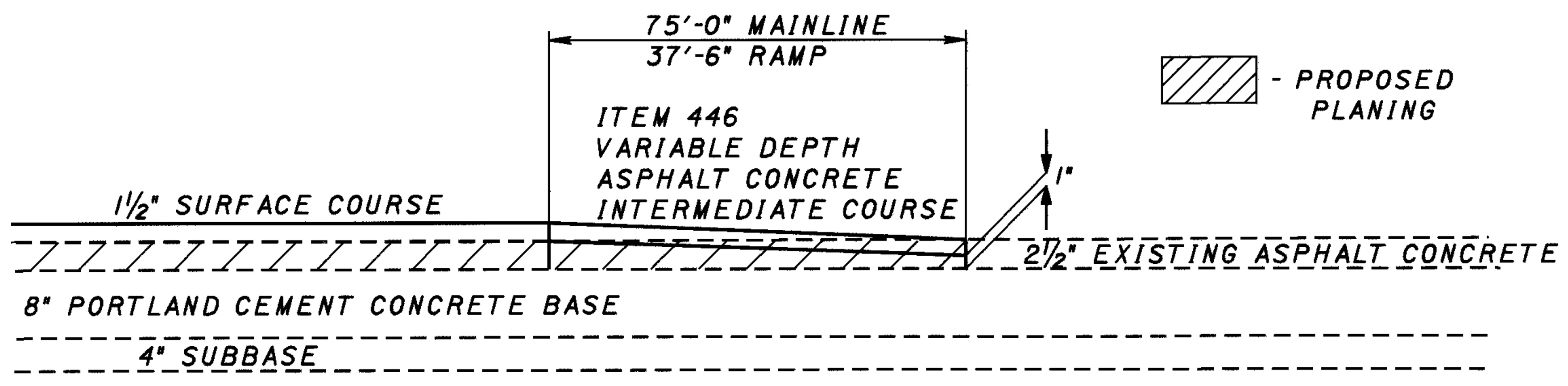
ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

RAMPS 426 REPAIRS AT 5.3 S.Y. EACH = 2,258 S.Y.
RAMPS 240 REPAIRS AT 8 S.Y. EACH = 1,920 S.Y.
20% ADDED TO BE USED AS DIRECTED = 836 S.Y.
TOTAL 5,014 S.Y.

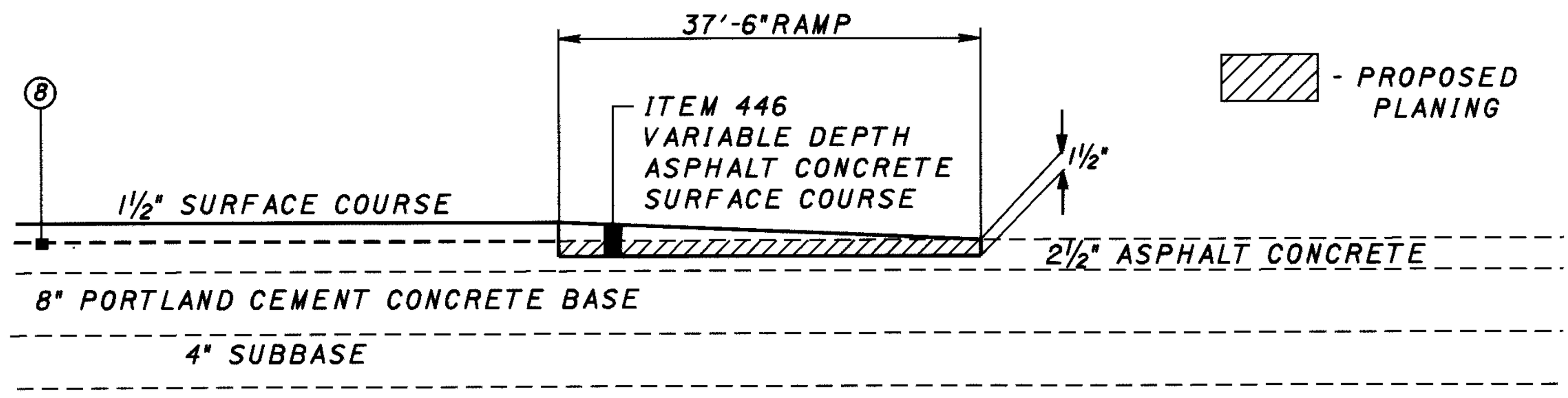
TOTAL TO GENERAL SUMMARY = 5,014 S.Y.

ALL ITEM TOTALS ARE CARRIED OVER TO THE GENERAL SUMMARY

SUB-SUMMARY OF PAVEMENT REPAIRS

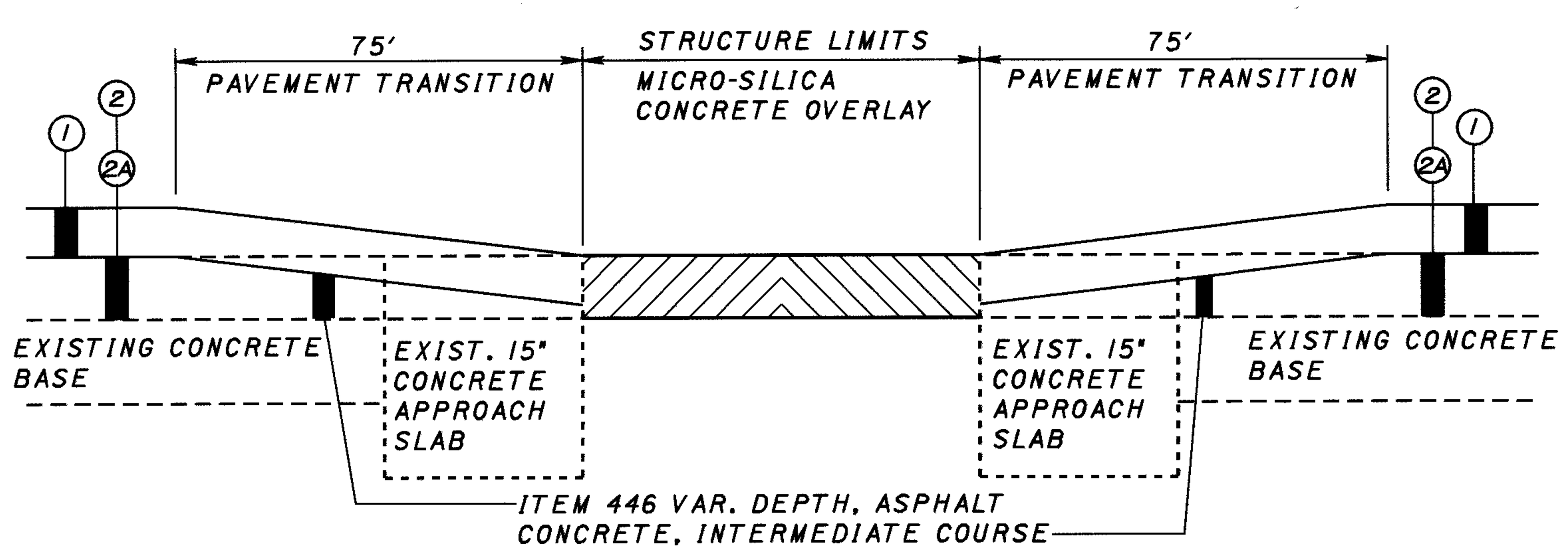


MAINLINE AND RAMP TRANSITION @ END OF WORK

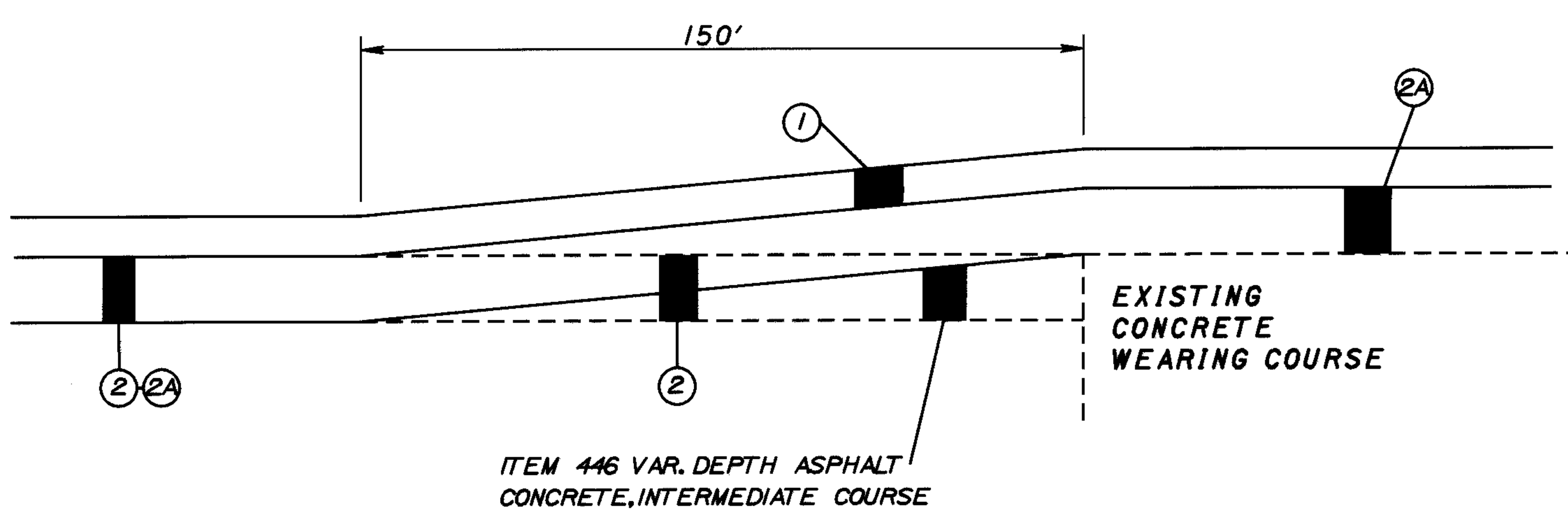


⑧-TACK COAT

RAMP SHOULDER TRANSITION @ END OF WORK



TRANSITION @ MAIN LINE BRIDGES



DETAIL AT STA. 117+00
EXISTING COMPOSITE/CONCRETE PAVEMENT

MAINLINE BRIDGE TRANSITIONS

BEGIN WORK TRANSITION
FRA-315-0473 (ACKERMAN ROAD)

LT BRIDGE BEGIN STA. 175+34.40 TO END STA. 176+09.40
RT BRIDGE BEGIN STA. 175+34.40 TO END STA. 176+09.40

FRA-315-0591 (W. NORTH BROADWAY)

LT BRIDGE BEGIN STA. 211+07.10 TO END STA. 211+82.10
RT BRIDGE BEGIN STA. 210+47.84 TO END STA. 211+22.84
LT BRIDGE BEGIN STA. 213+99.74 TO END STA. 214+74.74
RT BRIDGE BEGIN STA. 213+58.97 TO END STA. 214+33.97

FRA-315-0616 (W. NORTH BROADWAY)

LT BRIDGE BEGIN STA. 223+84.85 TO END STA. 224+59.85
RT BRIDGE BEGIN STA. 223+82.85 TO END STA. 224+57.85
LT BRIDGE BEGIN STA. 226+52.71 TO END STA. 227+27.71
RT BRIDGE BEGIN STA. 226+50.71 TO END STA. 227+25.71

FRA-315-0629 (W. NORTH BROADWAY)

LT BRIDGE BEGIN STA. 228+46.19 TO END STA. 229+21.19
RT BRIDGE BEGIN STA. 229+95.32 TO END STA. 230+70.32
LT BRIDGE BEGIN STA. 232+69.21 TO END STA. 233+44.21
RT BRIDGE BEGIN STA. 233+20.14 TO END STA. 233+95.14

FRA-315-0777 (HENDERSON ROAD)

LT BRIDGE BEGIN STA. 308+62.19 TO END STA. 309+37.19
RT BRIDGE BEGIN STA. 308+74.99 TO END STA. 309+49.99
LT BRIDGE BEGIN STA. 310+78.36 TO END STA. 311+53.36
RT BRIDGE BEGIN STA. 310+88.10 TO END STA. 311+63.10

FRA-315-0984 (ANTRIM PARK ACCESS)

LT BRIDGE BEGIN STA. 417+69.75 TO END STA. 418+44.75
RT BRIDGE BEGIN STA. 417+69.75 TO END STA. 418+44.75
LT BRIDGE BEGIN STA. 420+05.00 TO END STA. 420+80.00
RT BRIDGE BEGIN STA. 420+05.00 TO END STA. 420+80.00

ASPHALT TO CONCRETE TRANSITION

LT BEGIN STA. 116+25.00 TO END STA. 117+00.00
RT BEGIN STA. 116+25.00 TO END STA. 117+00.00

FRA-315-1220 (WILSON RUN)

LT BRIDGE BEGIN STA. 158+76.23 TO END STA. 159+01.23
RT BRIDGE BEGIN STA. 158+84.23 TO END STA. 159+09.23
LT BRIDGE BEGIN STA. 159+76.77 TO END STA. 160+01.77
RT BRIDGE BEGIN STA. 159+84.77 TO END STA. 160+09.09

CONCRETE TO ASPHALT TRANSITION

LT BEGIN STA. 182+54.02 TO END STA. 183+29.02
RT BEGIN STA. 179+56.68 TO END STA. 180+31.68

END WORK TRANSITION

LT BEGIN STA. 189+25.00 TO END STA. 190+00.00
RT BEGIN STA. 189+25.00 TO END STA. 190+00.00

RAMP TRANSITIONS

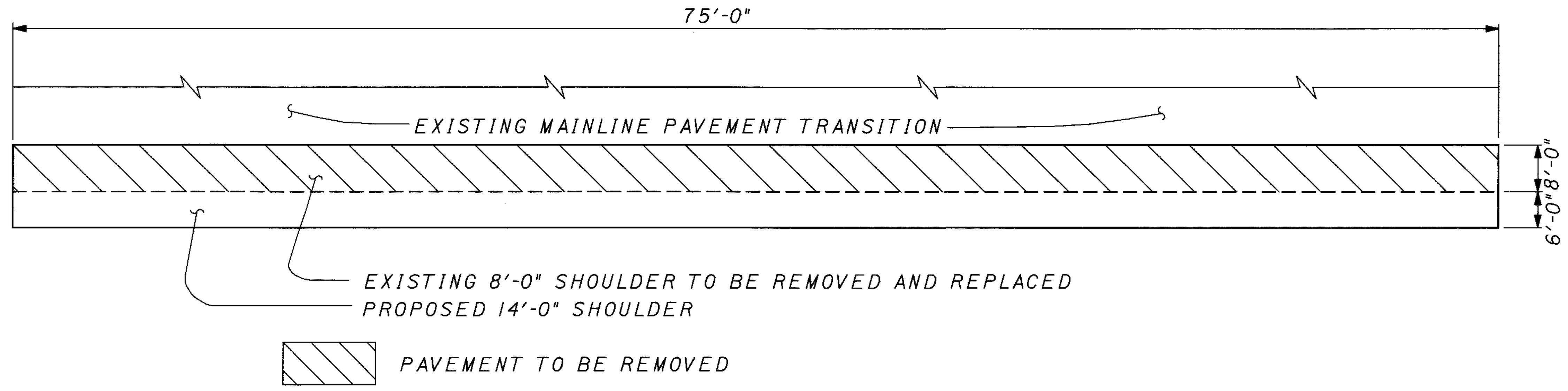
ACKERMAN ROAD	RAMP CA	BEGIN STA. 174+99.52 TO END STA. 175+37.02
	RAMP CB	BEGIN STA. 173+15.77 TO END STA. 173+53.27
W. NORTH BROADWAY	RAMP DA	BEGIN STA. 231+87.71 TO END STA. 232+25.21
	RAMP DB	BEGIN STA. 243+11.19 TO END STA. 243+48.69
	RAMP DBB	BEGIN STA. 243+47.74 TO END STA. 243+85.24
	RAMP DC	BEGIN STA. 233+35.60 TO END STA. 233+73.10
	RAMP DCC	BEGIN STA. 232+88.54 TO END STA. 233+26.04
	RAMP DD	BEGIN STA. 236+93.17 TO END STA. 237+30.67
	RAMP DE	BEGIN STA. 224+67.11 TO END STA. 225+04.61
	RAMP DF	BEGIN STA. 215+39.69 TO END STA. 215+77.19
	RAMP DG	BEGIN STA. 214+19.01 TO END STA. 214+56.51
	RAMP DH	BEGIN STA. 213+85.16 TO END STA. 214+22.66
HENDERSON ROAD	RAMP EA	BEGIN STA. 318+27.67 TO END STA. 318+65.17
	RAMP EB	BEGIN STA. 325+06.47 TO END STA. 325+43.97
	RAMP EBB	BEGIN STA. 324+56.03 TO END STA. 324+93.53
	RAMP EC	BEGIN STA. 310+80.37 TO END STA. 311+17.87
	RAMP ED	BEGIN STA. 309+58.20 TO END STA. 309+95.70
BETHEL ROAD	RAMP FA	BEGIN STA. 352+54.52 TO END STA. 352+92.02
	RAMP FC	BEGIN STA. 351+35.88 TO END STA. 351+73.38
	RAMP FD	BEGIN STA. 351+00.22 TO END STA. 351+37.72
	RAMP FE	BEGIN STA. 355+57.75 TO END STA. 355+95.25
S.R. 161	RAMP GA	BEGIN STA. 67+04.06 TO END STA. 67+41.56
	RAMP GB	BEGIN STA. 65+34.20 TO END STA. 65+71.70
	RAMP GC	BEGIN STA. 65+21.64 TO END STA. 65+59.14
	RAMP GD	BEGIN STA. 66+35.72 TO END STA. 66+73.22
	RAMP GDD	BEGIN STA. 66+56.13 TO END STA. 66+93.63
I-270	ROADWAY A	BEGIN STA. 827+66.32 TO END STA. 828+03.82
	ROADWAY D	BEGIN STA. 851+26.82 TO END STA. 851+64.32
	RAMP B	BEGIN STA. 163+50.00 TO END STA. 163+87.50
	RAMP E	BEGIN STA. 866+13.05 TO END STA. 865+75.55
	RAMP F	BEGIN STA. 866+09.06 TO END STA. 865+71.56
	RAMP G	BEGIN STA. 842+77.85 TO END STA. 843+15.35

LEGEND

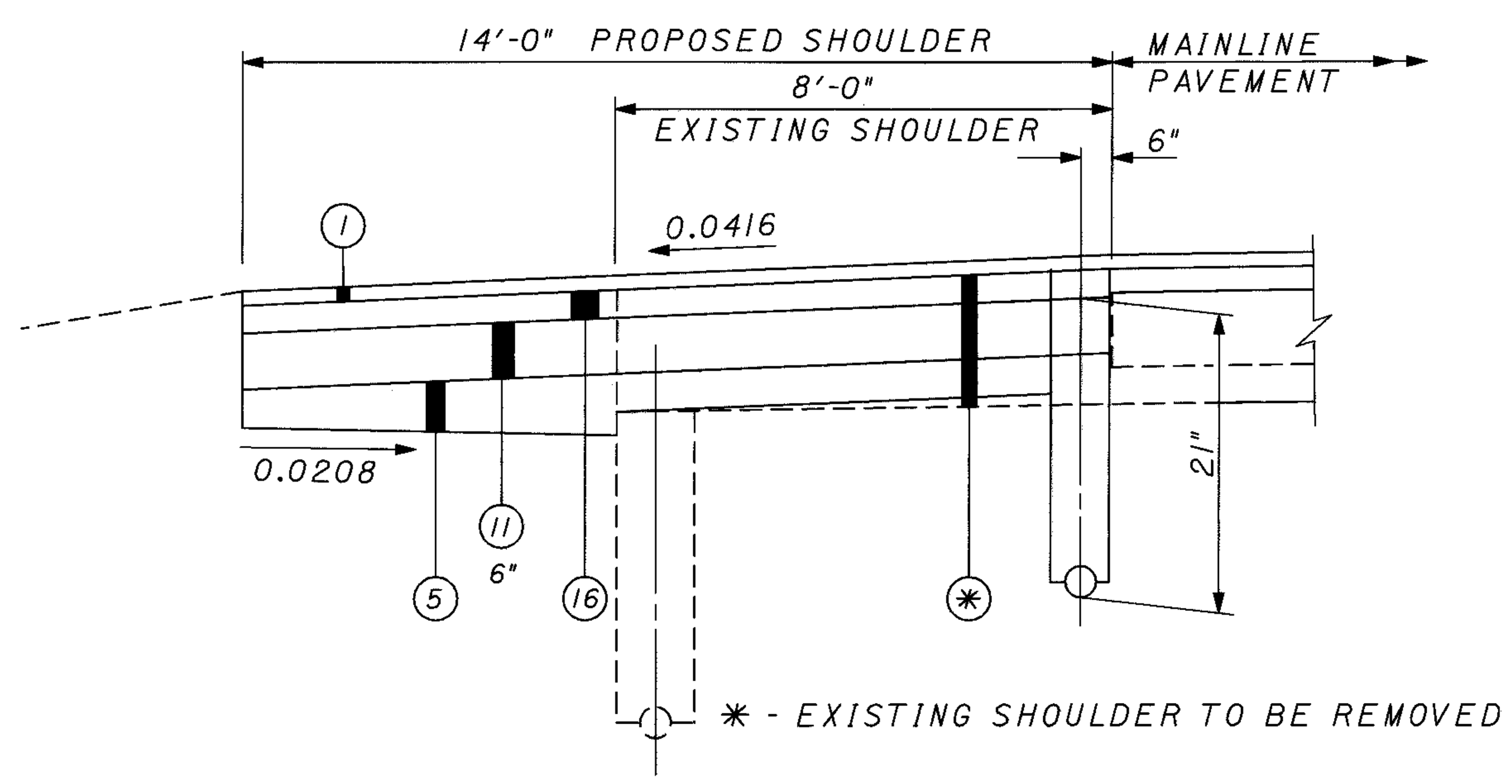
①	ITEM 446	1 ½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
②	ITEM 254	2½" PAVEMENT PLANING, BITUMINOUS
②A	ITEM 446	2½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
⑤	ITEM 310	4" SUBBASE "TYPE I", GRADING A, AS PER PLAN
⑪	ITEM 304	6" AGGREGATE BASE, AS PER PLAN
⑯	ITEM 301	3" BITUMINOUS AGGREGATE, AC-20

13-JAN-1999

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	148/286



MEDIAN SHOULDER TRANSITION
STR. NO. FRA-315-0984
ANTRIM PARK ACCESS ROAD



14'-0" MEDIAN SHOULDER FOR 75' TRANSITION
STR. NO. FRA-315-0984
ANTRIM PARK ACCESS ROAD

LEGEND

(1)	ITEM 446	1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
(2)	ITEM 254	2 1/2" PAVEMENT PLANING, BITUMINOUS
(2A)	ITEM 446	2 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
(5)	ITEM 310	4" SUBBASE "TYPE 1", GRADING A, AS PER PLAN
(11)	ITEM 304	6" AGGREGATE BASE, AS PER PLAN
(16)	ITEM 301	3" BITUMINOUS AGGREGATE, AC-20

TRANSITION PAVEMENT DETAILS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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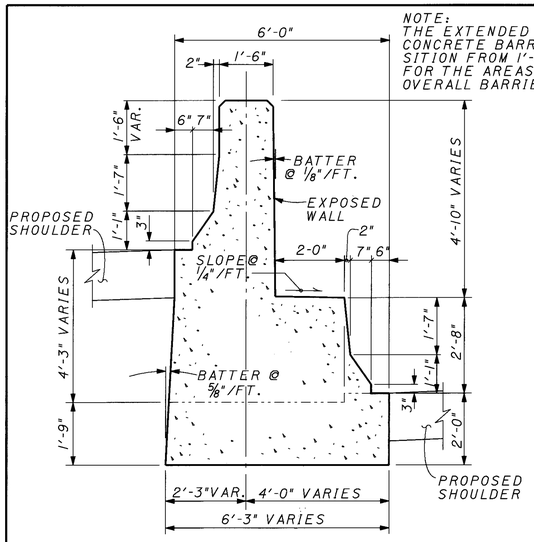
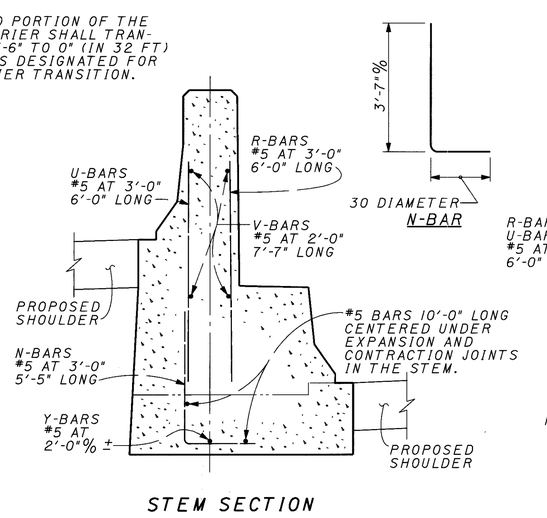
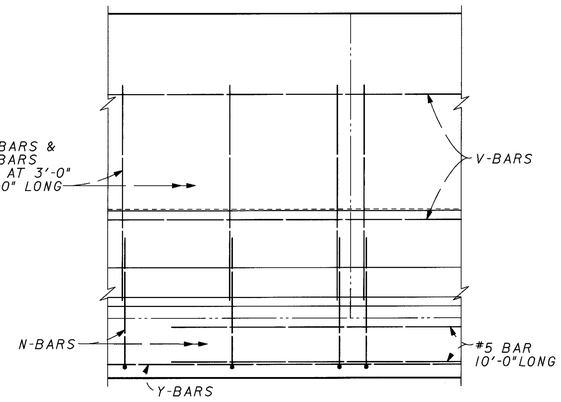
286



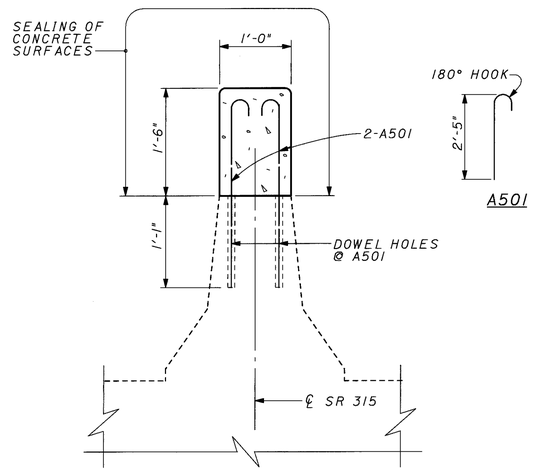
TYPICAL SECTION



STEM SECTION



ELEVATION

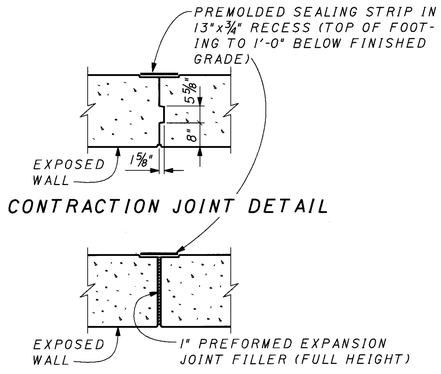


CONCRETE BARRIER EXTENSION

STA. 292+00 TO STA. 345+00

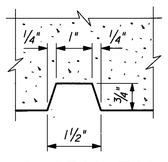
PAYMENT

PAYMENT FOR ITEM 622 CONCRETE BARRIER, TYPE D, AS PER PLAN SHALL BE IN LIN. FT.. THIS SHALL INCLUDE ALL MATERIALS, CONCRETE, SEALING OF CONCRETE SURFACES, REINFORCING STEEL AND LABOR REQUIRED TO CONSTRUCT THE PRESCRIBED BARRIER.



CONTRACTION JOINT DETAIL

EXPANSION JOINT DETAIL



VERTICAL RUSTICATION GROOVE

SPACED AT 4'-0" %

GENERAL

ALL CLASS C CONCRETE SHALL BE CONSTRUCTED OF THE MATERIALS AND BY METHODS AS DESCRIBED UNDER ITEM 499 AND 511 OF THE ODOT CMS. REINFORCING STEEL SHALL BE PLACED AS PRESCRIBED UNDER ITEM 509.

DESIGN DATA

CONCRETE, CLASS "C": COMPRESSIVE STRENGTH 4000 PSI

REINFORCING STEEL: A615, A616 OR A617 GRADE 60 MINIMUM YIELD STRENGTH OF 60,000 PSI AND SHALL BE EPOXY COATED.

WALL JOINTS

EXPANSION JOINTS SHALL BE SPACED AT APPROXIMATELY 32 FOOT CENTERS TO COINCIDE WITH A 4 FOOT SPACING OF RUSTICATION GROOVES TO FIT STANDARD PLYWOOD FORMS. GENERALLY , ONLY CONSTRUCTION JOINTS SHOULD BE USED IN THE FOOTINGS.

FOUNDATION

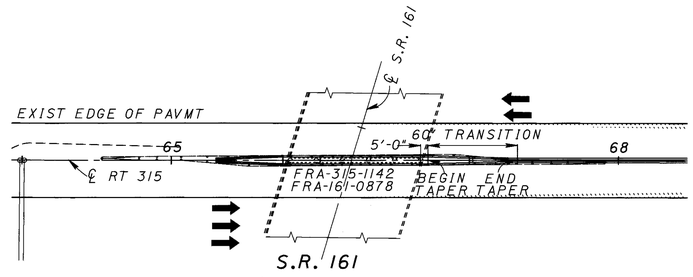
WHERE THE SOIL BORINGS INDICATE A BEARING CAPACITY OF LESS THAN 2600 PSF IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE FOOTING.

PAYMENT

PAYMENT FOR ITEM 622, CONCRETE BARRIER, TYPE B-50, AS PER PLAN SHALL BE IN LIN. FT. THIS SHALL INCLUDE ALL MATERIALS, CONCRETE, EXCAVATION, REINFORCING STEEL AND LABOR REQUIRED TO CONSTRUCT THE PRESCRIBED BARRIER.

CONCRETE BARRIER DETAIL AT GRADE SEPARATION

STA. 75+00 TO STA. 96+00



CONCRETE BARRIER AT PIERS

CALC. BY JCS	FRA-315-5.18	OHIO
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CHKD. BY KRS		
DATE 10/95		

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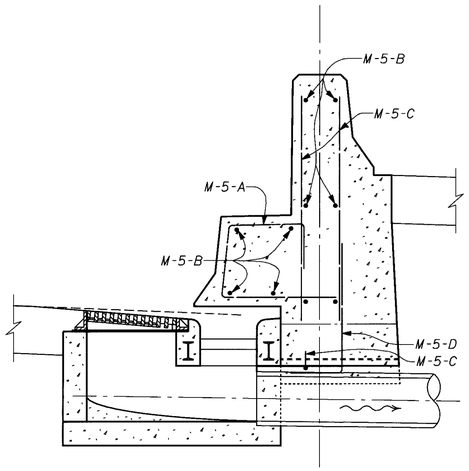
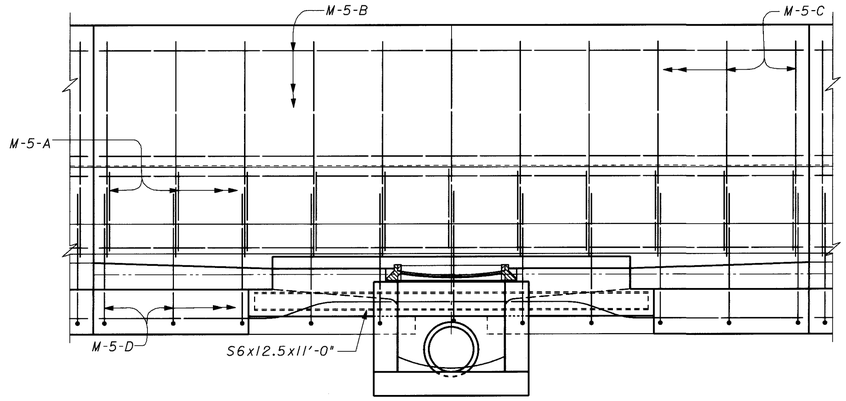
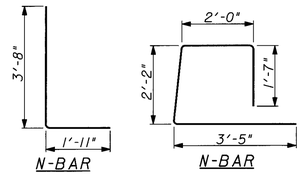
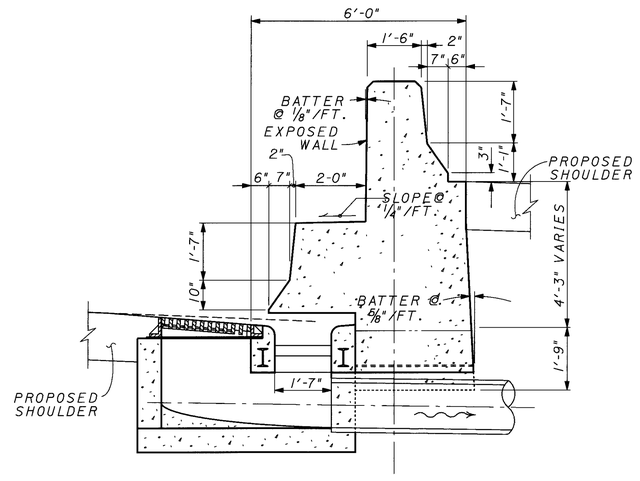


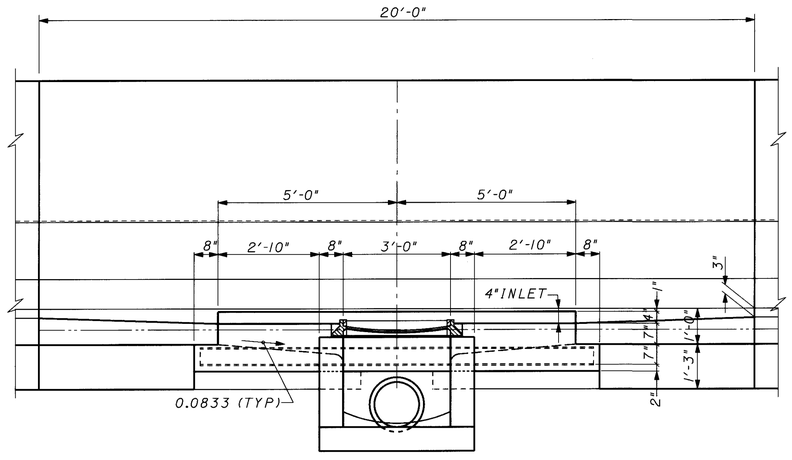


STEEL LIST		
BAR	NUMBER	LENGTH
M-5-A	11	9'-2"
M-5-B	11	19'-8"
M-5-C	22	6'-0"
M-5-D	11	5'-5"





TYPICAL SECTION



ELEVATION

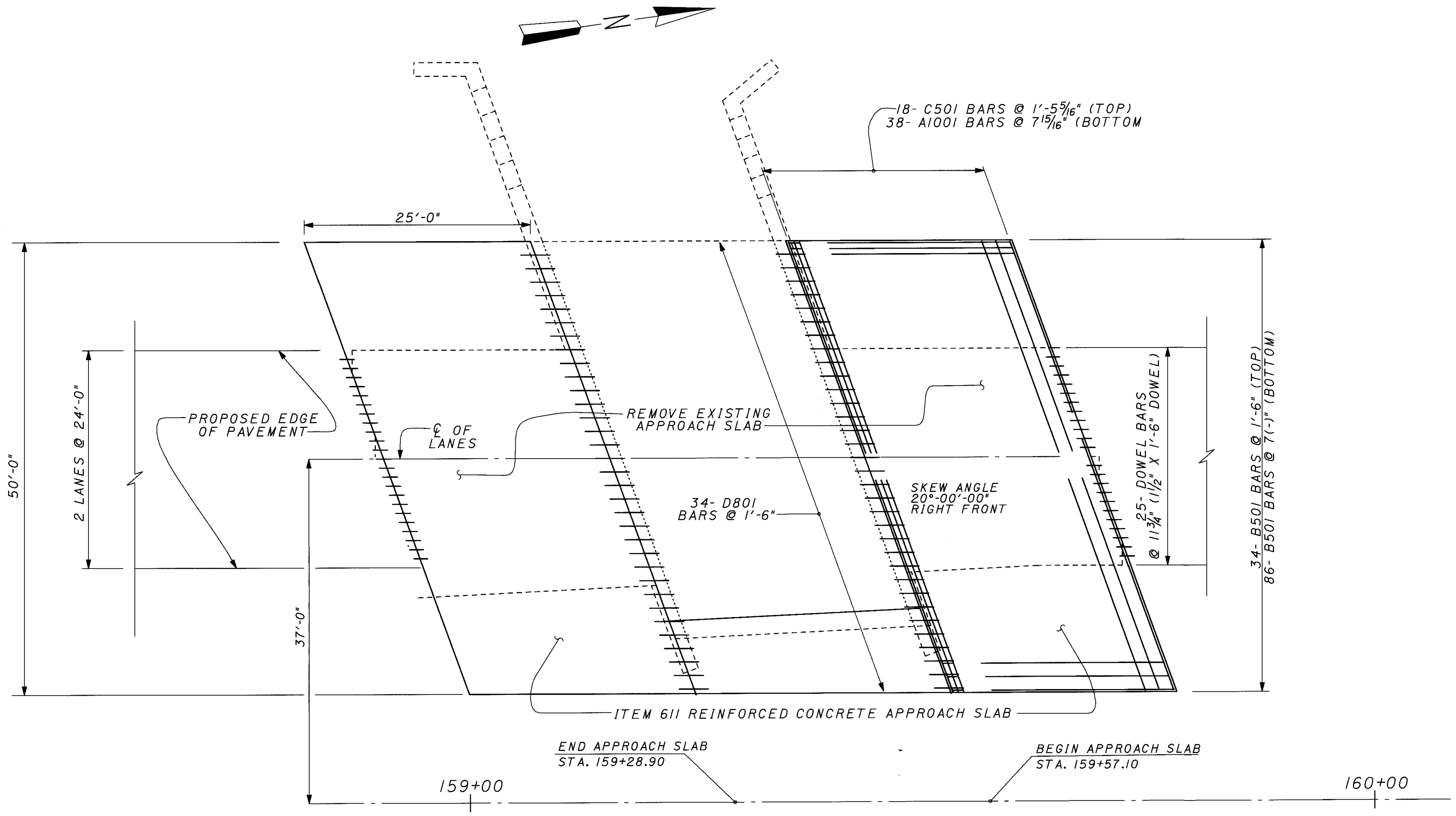
NOTE:

FOR FURTHER INFORMATION ON DESIGN AND GENERAL CONSTRUCTION DETAILS REFER TO ODOT BUREAU OF LOCATION AND DESIGN. STANDARD CONSTRUCTION DRAWING 1-3A & B4-1-80

THE QUANTITIES OF REINFORCING STEEL AND CLASS "C" CONCRETE MEASURED AND IN PLACE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH UNDER ITEM 604 INLET, NO. 3C50, AS PER PLAN.

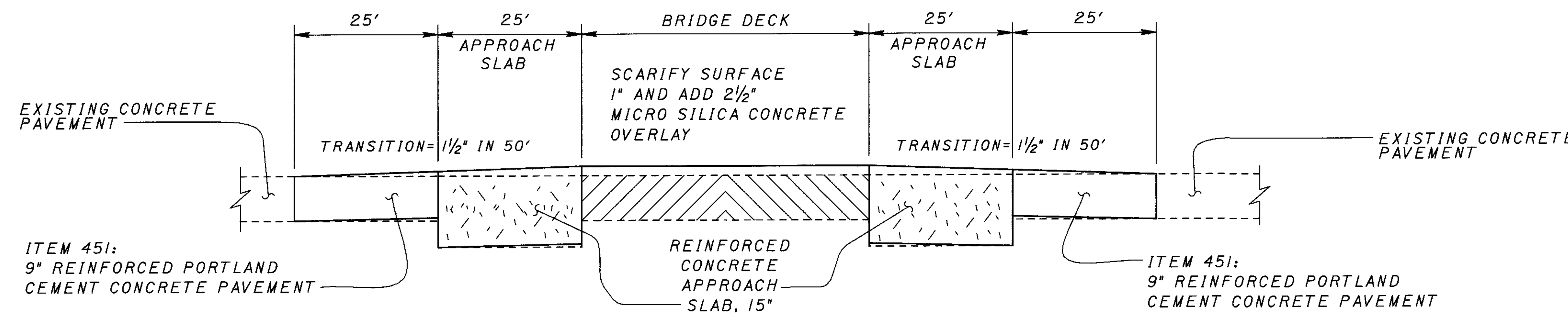
BARRIER MEDIAN INLET, AS PER PLAN

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5



APPROACH SLAB DETAILS

STRUCTURE NO. FRA-315-1220 OVER WILSON RUN



STRUCTURE NO. FRA-315-1220 OVER WILSON RUN

NOTE:
FOR FURTHER INFORMATION ON DESIGN AND GENERAL CONSTRUCTION DETAILS, REFER TO ODOT, BUREAU OF BRIDGES AND STRUCTURAL DESIGN, STANDARD CONSTRUCTION DRAWING AS-1-81 (DATED 11-27-81)

THE QUANTITIES OF CONCRETE AND REINFORCING STEEL MEASURED AND IN PLACE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD UNDER ITEM 611 REINFORCED CONCRETE APPROACH SLAB.

STRUCTURE OVER WILSON RUN-APPROACH SLAB DETAILS

UNDERDRAIN DETAILS

ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN

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 CORE MATERIAL SHALL BE RESISTANT TO PETROLEUM BASED CHEMICALS, NATURAL OCCURRING 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 UNOBSTRUCTED 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 OPTION 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 SEPARATION OF ADJOINING SECTIONS OF THE PREFABRICATED EDGE DRAIN PANELS.

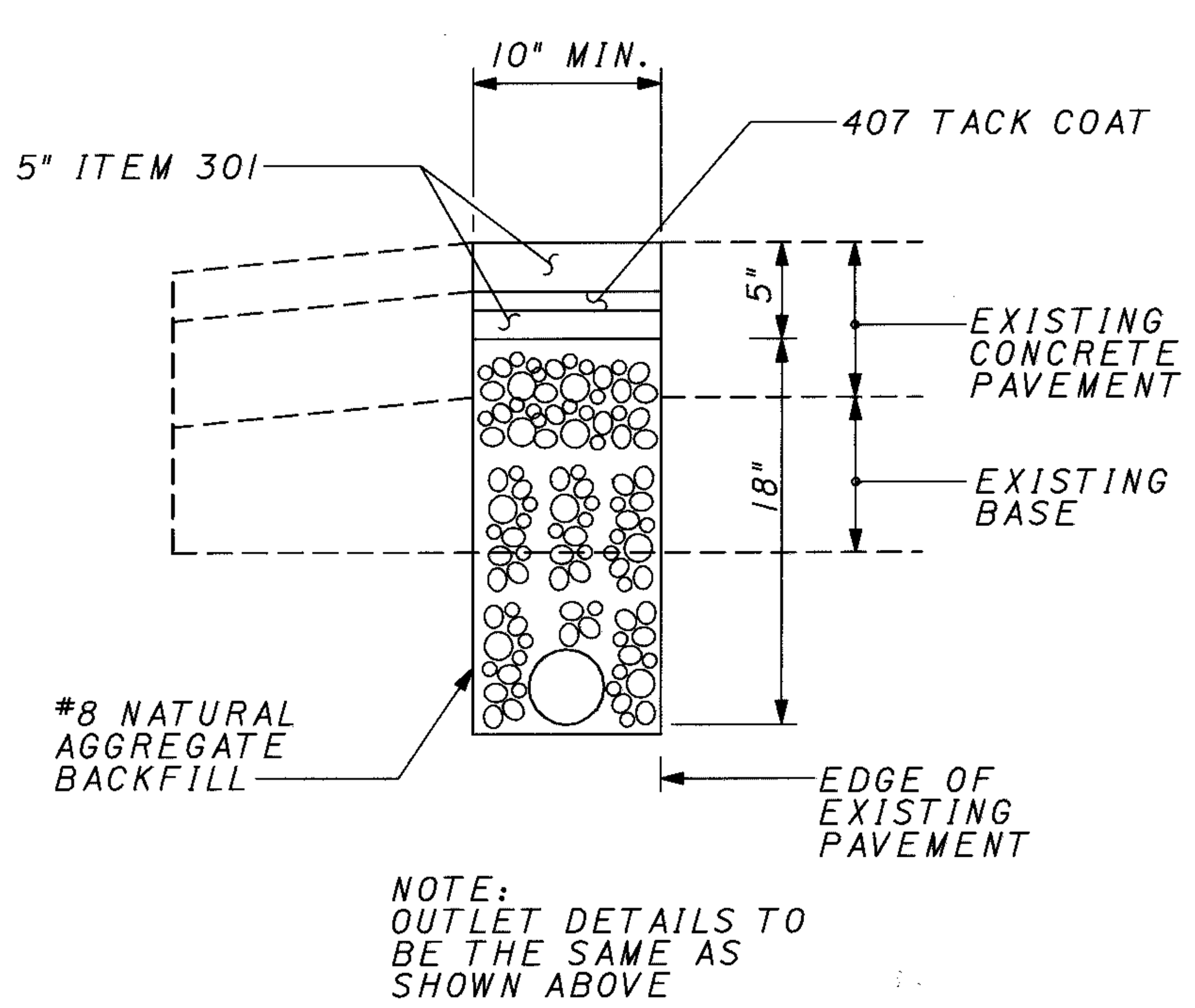
THE UNDERDRAIN OUTLETS SHALL BE PLACED IN ACCORDANCE WITH ITEM 603 USING OUTLET FITTINGS. THE MANUFACTURER SHALL SUPPLY OUTLET FITTINGS WHICH WILL MAKE THE TRANSITION BETWEEN THE PREFABRICATED EDGE DRAIN AND THE OUTLET PIPE.

THE OUTLETS FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAIN. THE UNDERDRAIN AND OUTLETS ON CRACK AND 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.

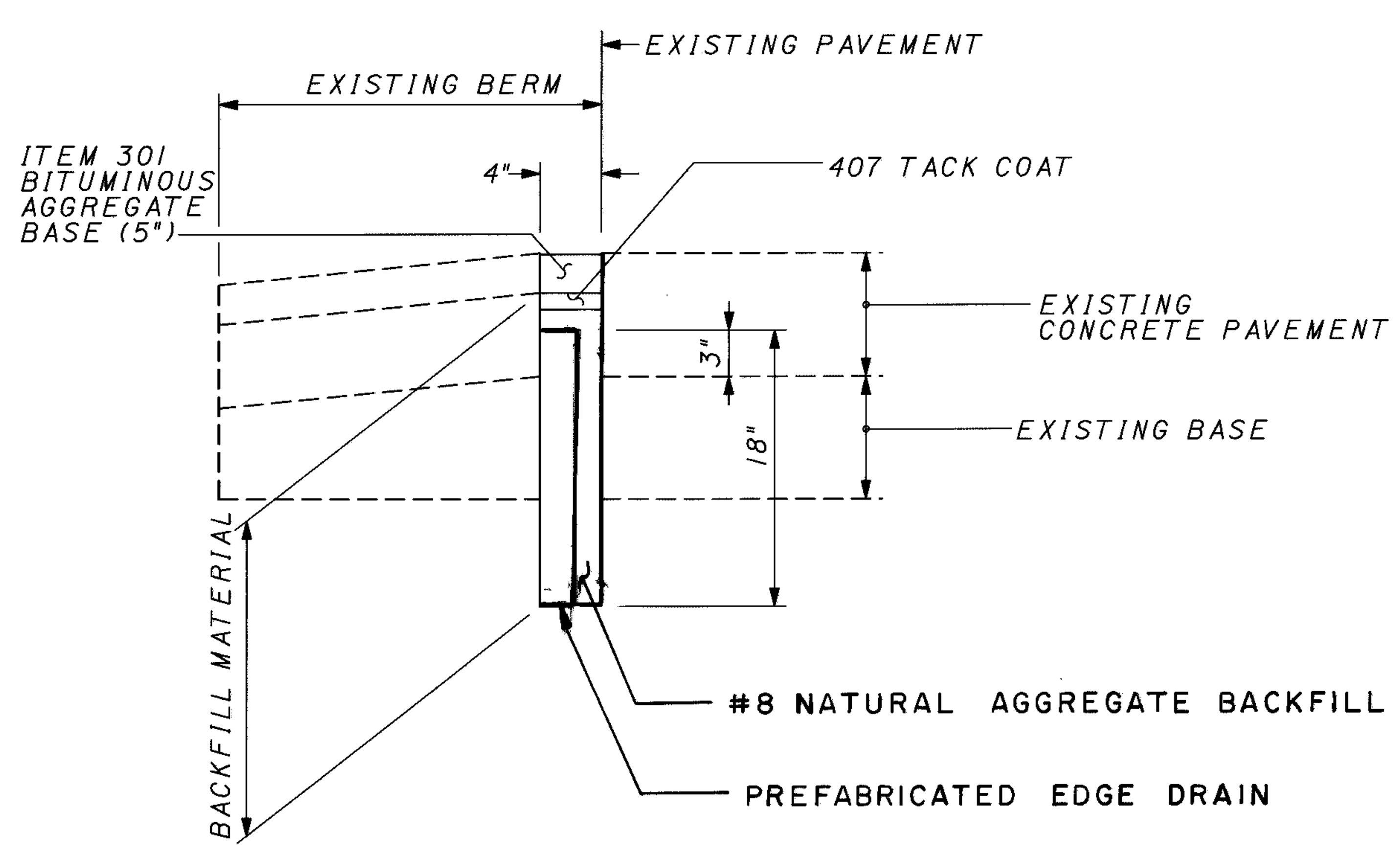
BASIS OF PAYMENT: WORK COMPLETED AND ACCEPTED UNDER THIS ITEM AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 605 - SHALLOW UNDERDRAIN, AS PER PLAN. WHICH PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; FOR FURNISHING MATERIALS, INCLUDING MATERIALS FOR SPLICES; OUTLET FITTINGS AND ITEM 301; FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PIPE UNDERDRAIN SYSTEM



NOTE:
OUTLET DETAILS TO BE THE SAME AS SHOWN ABOVE

PREFABRICATED EDGE DRAIN SYSTEM



EXISTING SHOULDER TREATMENT

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

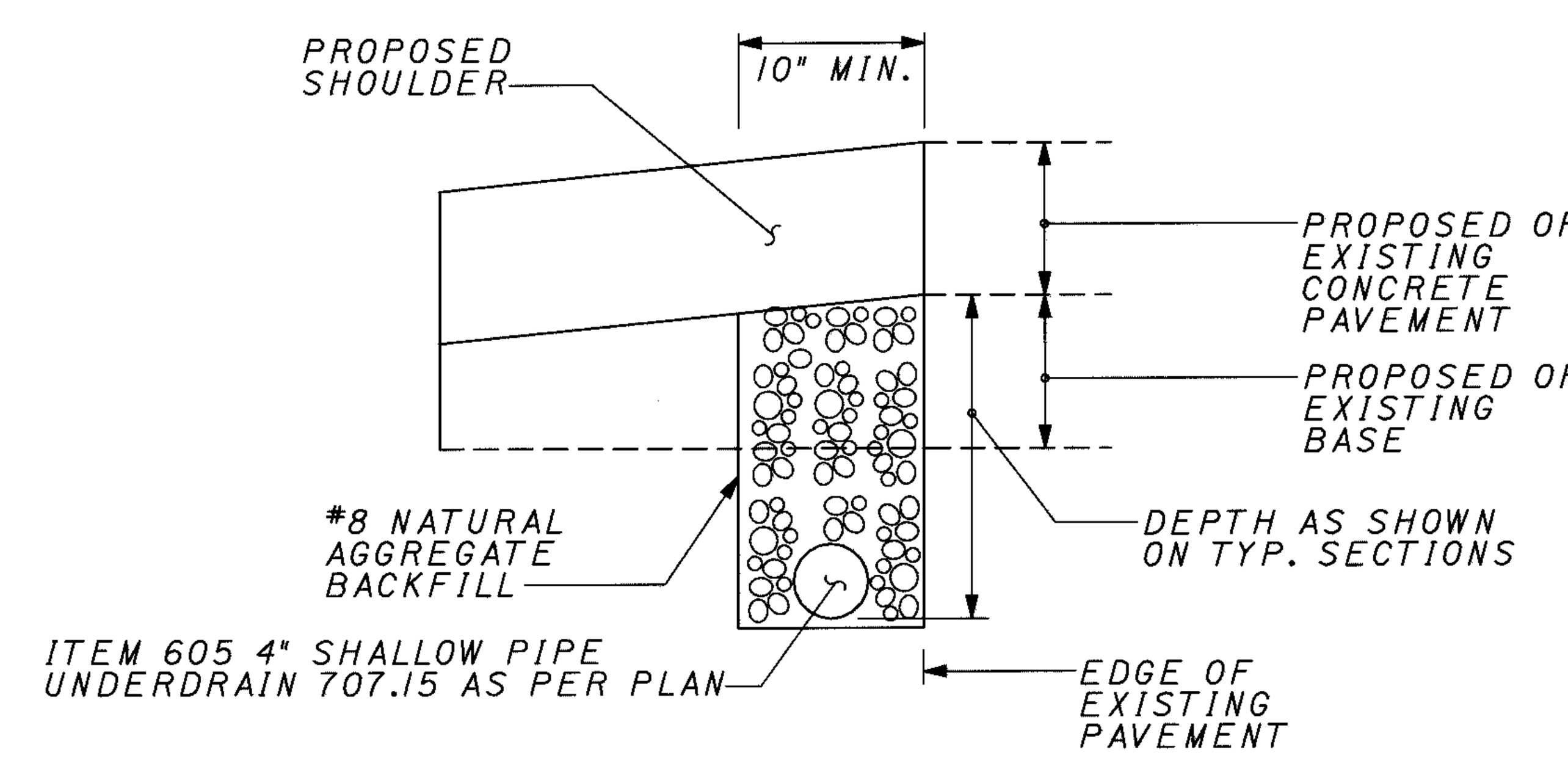
DESCRIPTION: THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

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 AND SUBGRADE. ALL PIPE BENDS AND 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.

PIPE UNDERDRAIN DETAIL



PROPOSED SHOULDER TREATMENT

UNDERDRAIN OUTLET DETAILS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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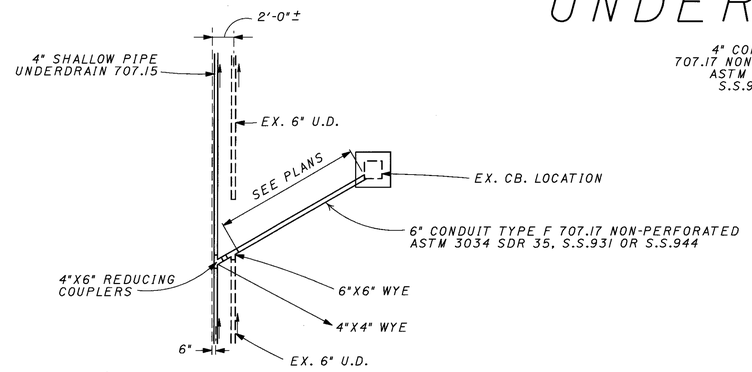
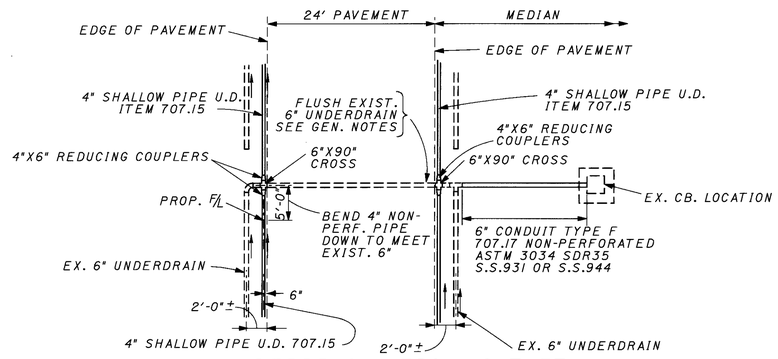
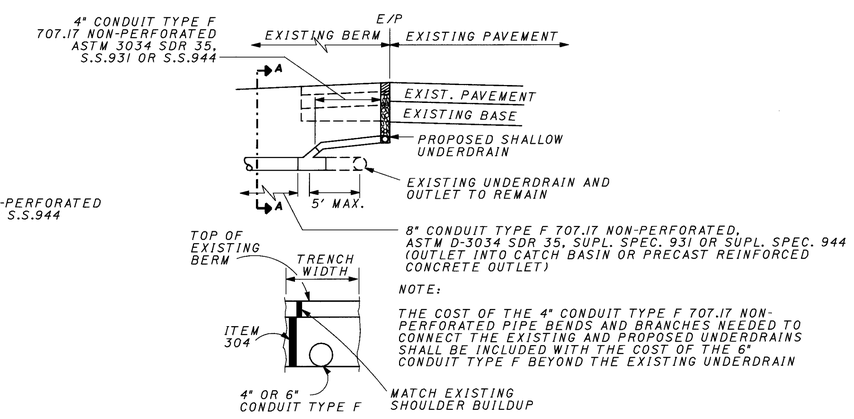


MEDIAN OUTLET
DETAIL "A"

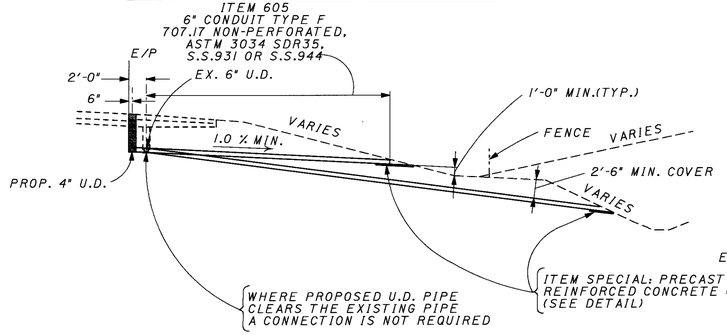


UNDERDRAIN MEDIAN OUTLET
DETAIL "B"

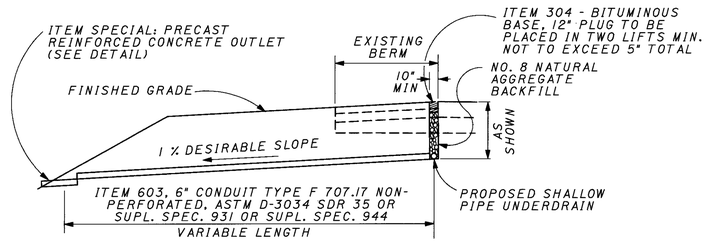


SECTION A - A

ALTERNATE OUTLET DETAIL

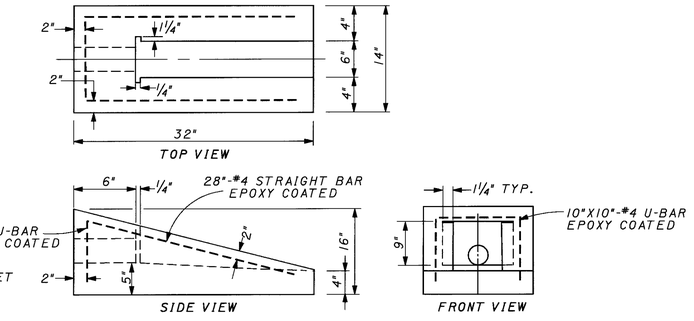


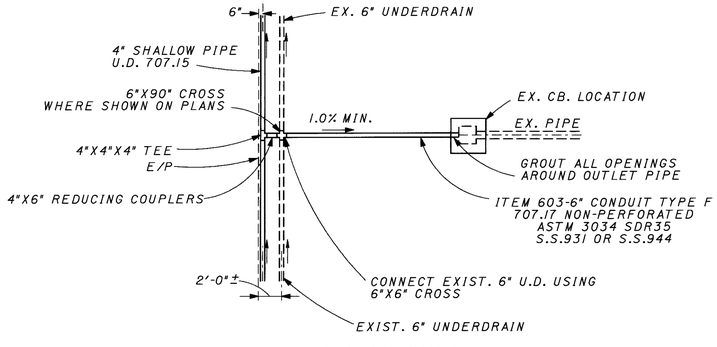
UNDERDRAIN OUTLET PROFILE



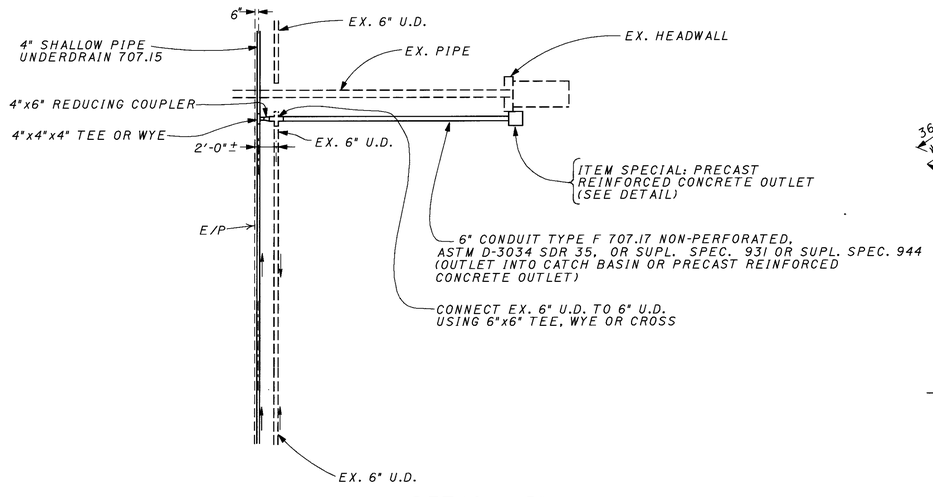
NOTE: FOR UNDERDRAIN OUTLETS INTO CATCH BASINS THE ABOVE TYPE F CONDUIT SHALL BE USED ENTIRELY BETWEEN THE UNDERDRAIN AND CATCH BASIN.

UNDERDRAIN OUTLET PROFILE

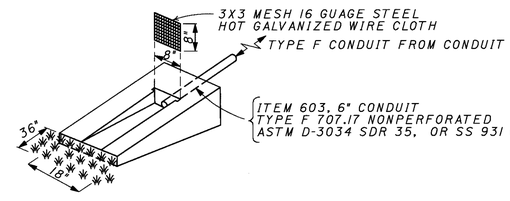




MEDIAN OUTLET
DETAIL "C"



DETAIL "D"



NOTE: THE SOD SHALL BE IN ACCORDANCE WITH ITEM 660 AND STAKED AT EACH CORNER APPROXIMATELY 3 INCHES IN FROM THE EDGE.

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.

ITEM SPECIAL-PRECAST REINFORCED
CONCRETE OUTLET

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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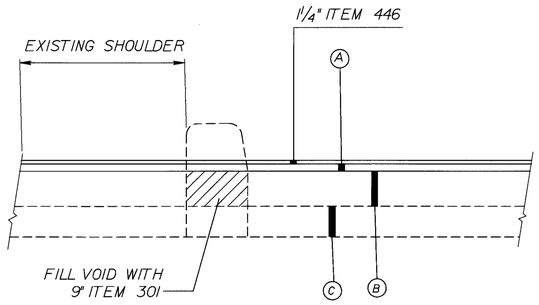
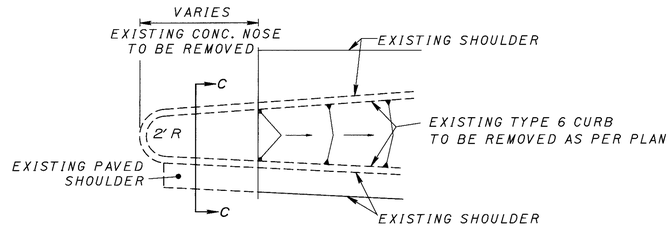


TYPICAL BARRIER CURB REMOVAL
(BETWEEN PAVED SHOULDERS)
ITEM 202 - CURB REMOVED

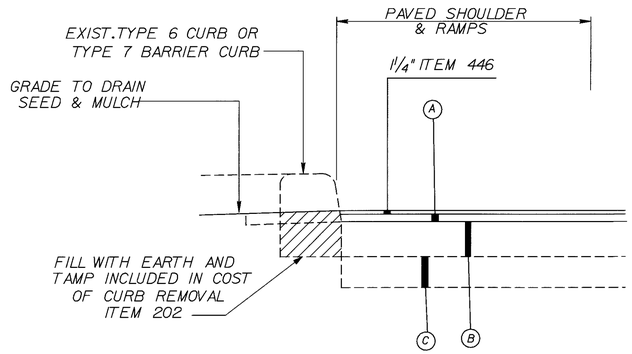


TYPICAL NOSE REMOVAL

CONCRETE MEDIAN & CURB REMOVAL SUB-SUMMARY

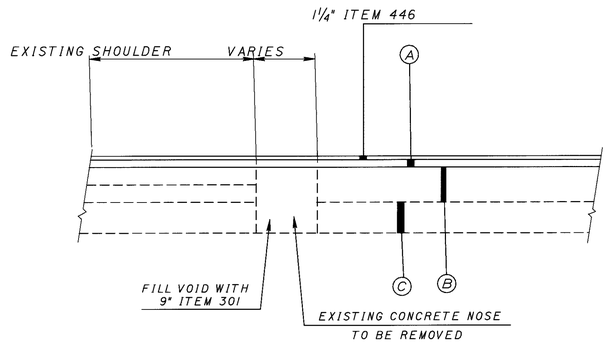
STA.	SIDE	202 MEDIAN REMOVED SQ.YDS.	202 CONC. CURB REMOVED LIN.FT.	REMARKS
317+00	LT.		200	HENDERSON ROAD
318+00	RT.		300	HENDERSON ROAD
341+80	LT.		200	BETHEL ROAD
138+40	RT.	33	160	I-270
153+00	RT.	33	300	I-270
TOTAL		66	1160	

NOTE:
PAYMENT: PAYMENT FOR ITEM 202 CURB REMOVAL SHALL BE IN LIN. FT., AND INCLUDE ITEM 446, ITEM 301, AND ANY LABOR REQUIRED TO REMOVE & REPAIR CURBED AREAS NOTED.



TYPICAL TYPE 6 CURB AND

BARRIER CURB REMOVAL



SECTION C-C

EXISTING SR-315 PAVEMENT

(A) 2½" ASPHALT CONCRETE WITH RALUMAC WEARING SURFACE
(B) 8" PORTLAND CEMENT CONCRETE BASE
(C) 4" SUBBASE

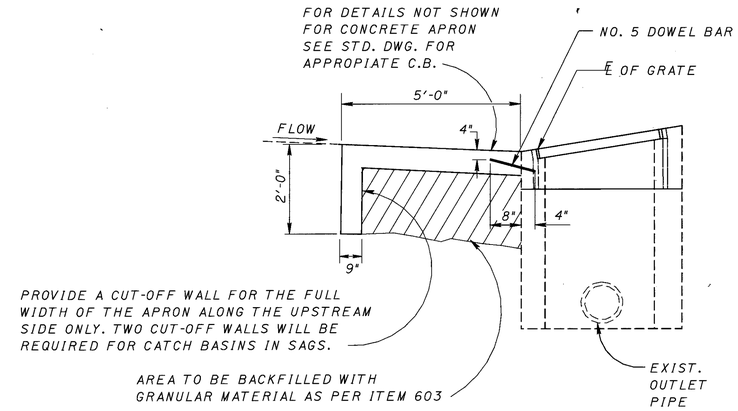
CURB REMOVAL DETAILS

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

155
286

SUB-SUMMARY OF CATCH BASIN RECONSTRUCTION

STATION	LOCATION	℄ ITEM 604				
		CATCH BASIN STANDARD NUMBER MODIFIED AS PER PLAN			CATCH BASIN STANDARD NUMBER AS PER PLAN	
		EACH			EACH	
		4	5	8	2-2-B	6
350+00	℄			1		
350+30	105' RT		1			
351+00	7' LT			1		
351+00	7' RT			1		
353+75	℄			1		
360+00	℄			1		
370+50	℄			1		
372+50	℄			1		
381+00	℄			1		
398+50	℄			1		
399+50	℄			1		
409+00	℄			1		
426+00	℄			1		
427+00	℄			1		
63+20	℄			1		
64+20	℄			1		
64+20	87' LT		1	1		
64+50	155' RT		1	1		
67+00	195' RT		1	1		
67+87	90' LT		1			
68+30	℄					
82+50	℄					
83+50	℄					
100+85	℄					
101+75	℄					
108+82	℄					
117+00	℄					
130+50	℄					
132+50	℄					
136+50	58' RT					1
146+00	℄	1				
147+00	℄	1				
147+00	105' LT		1			
147+50	98' LT		1			
151+15	120' LT		1			
156+13	℄				1	
159+00	℄				1	
159+41	95' RT		1			
159+75	℄				1	
160+10	84' RT		1			
161+50	℄	1				
176+00	℄	1				
181+00	℄	1				
GRAND TOTAL TO THE GENERAL SUMMARY		5	10	18	3	1



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

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE ITEM 604 CATCH BASIN, NO. 4, 5, OR 8, AS PER PLAN, AND SHALL CONSITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

CONNECTIONS OF EXISTING CONDUITS TO PROPOSED CATCH BASINS

IF ANY EXISTING CONDUITS ARE DAMAGED DURING THE REMOVAL OR PLACEMENT OF THE CATCH BASINS, THE CONDUIT SHALL BE REPLACED WHEN DIRECTED. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR THIS PURPOSE :

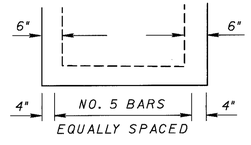
ITEM 603 - 6" CONDUIT, TYPE F 500 LIN. FT.
ITEM 603 - 15" CONDUIT, TYPE B 150 LIN. FT.
ITEM 603 - 18" CONDUIT, TYPE B 20 LIN. FT.
ITEM 603 - 21" CONDUIT, TYPE B 20 LIN. FT.

ITEM 604 CATCH BASIN, MISC.: REPLACEMENT GRATES

EXISTING GRATES SHALL BE REUSED UNLESS DIRECTED OTHERWISE. AN ESTIMATED QUANTITY OF REPLACEMENT GRATES HAS BEEN PROVIDED TO REPLACE ANY DAMAGED GRATES WHEN DIRECTED.

TOTAL = 10 EACH

CATCH BASIN NO. 4, 5, & 8 - AS PER PLAN



CATCH BASIN NO.	TOTAL # BARS FOR A	
	STD. APRON	SAG APRON
4	7	14
5	12	16
8	12	16

THE NUMBER OF BARS NEEDED ALONG EACH SIDE OF A NO. 4 CATCH BASIN WITH A CONCRETE APRON IS 7. FOR A NO. 5 & 8 CATCH BASIN, THE NUMBER OF BARS NEEDED ALONG EACH SIDE WITH A CONCRETE APRON IS 4.
THE FURNISHING AND PLACING OF STEEL FOR THE ⅝" X 12" DOWEL BARS SHALL BE AS PER 509 REINFORCING STEEL. THE DOWEL BARS SHALL BE EPOXY COATED PER 509.10. THE DOWEL BARS SHALL BE INSTALLED PER 510 OR CAST INTO THE BASIN. BOLT IN INSERTS MAY BE USED. THE CATCH BASIN SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE. BRICK OR CONCRETE BLOCK WILL NOT BE PERMITTED. THE 6" CONCRETE APRON SHALL BE REINFORCED AS PER 601.04(3).

BAR LOCATION DETAIL

FOR NO. 4, 5, & 8 C.B.

GENERAL SUMMARY

SHEET NUMBER				ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
159	158	157						TRAFFIC CONTROL
197				620	10300	197	EACH	DELINEATOR, TYPE C, FLEXIBLE POST MOUNTED
218				620	15300	218	EACH	DELINEATOR, TYPE D, FLEXIBLE POST MOUNTED
4287				621	00100	4287	EACH	RAISED PAVEMENT MARKER
	6			625	32000	6	EACH	GROUND ROD
	42.28	8.76		630	00000	51.04	CU.YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
		52		630	03100	52	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 3 POST
		104		630	04100	104	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 4 POST
		16		630	06100	16	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 6 POST
		152		630	06400	152	LIN.FT.	GROUND MOUNTED SUPPORT, S4X7.7 BEAM
		28		630	07600	28	LIN.FT.	GROUND MOUNTED SUPPORT, W 10x12 BEAM
		14		630	09000	14	EACH	BREAKAWAY BEAM CONNECTION
	2			630	20600	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 6
	2			630	20800	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 8
	1			630	36500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6 (65-69.9 FT)
	1			630	49000	1	EACH	OVERHEAD SIGN SUPPORT TC-7.65, DESIGN 8 (90-94.5 FT)
	1415	272		630	80102	1687	SQ.FT.	SIGNS, FLAT SHEET, TYPE G
		16		630	84900	16	EACH	REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL
		8		630	85100	8	EACH	REMOVAL OF GROUND MOUNTED SIGN & REERECTION
		1		630	85400	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL
		1		630	85600	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN & REERECTION
		19		630	86002	19	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL
		4		630	86102	4	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL
	3			630	86310	3	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN & DISPOSAL
	10			630	87400	10	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN & DISPOSAL
	3			630	89706	3	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT & DISPOSAL, TYPE TC-12.30
	2			630	89802	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT & DISPOSAL, TYPE TC-7.65
	1			630	89806	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT & DISPOSAL, TYPE TC-18.24
	1			630	89808	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT & DISPOSAL, TYPE TC-18.26
	6			631	84000	6	EACH	SIGN SERVICE
	10			631	84300	10	EACH	SIGN WIRED
	6			631	85100	6	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X
	2			631	87102	2	EACH	BALLAST TYPE, CMRI-100-480, INTEGRAL
	16			631	87202	16	EACH	BALLAST TYPE, CMRI-175-480, INTEGRAL
	2			631	87302	2	EACH	BALLAST TYPE, CMRI-250-480, INTEGRAL
	2			631	89100	2	EACH	MERCURY VAPOR LUMINAIRE, TC-31.21 WITH 100W LAMP
	16			631	89200	16	EACH	MERCURY VAPOR LUMINAIRE, TC-31.21 WITH 175 W LAMP
	2			631	89300	2	EACH	MERCURY VAPOR LUMINAIRE, TC-31.21 WITH 250W LAMP
39.69				644	00100	39.69	MILE	EDGE LINE
28.73				644	00200	28.73	MILE	LANE LINE
0.29				644	00300	0.29	MILE	CENTER LINE (DOUBLE LINE)
19,312				644	00400	19,312	LIN.FT.	CHANNELIZING LINE
438				644	00500	438	LIN.FT.	STOP LINE
310				644	00600	310	LIN.FT.	CROSSWALK LINE
7740				644	00700	7740	LIN.FT.	TRANSVERSE LINE
55				644	01300	55	EACH	LANE ARROW
16				644	01400	16	EACH	WORD ON PAVEMENT, 72"
1240				644	01502	1240	LIN.FT.	DOTTED LINE, 5"
3				690	13010	3	EACH	SPECIAL - RUMBLE STRIP PAD

SHEET NUMBER				ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
								TRAFFIC CONTROL

SUB-SUMMARY ITEM 630 - SIGNS

* TWO OR MORE SIGNS MOUNTED ON THE SAME POST

SHEET No.		STATION	SIDE	CODE	SIZE (INCHES)	SIGNS FLAT SHEET, TYPE G (S.F.)	GROUND MOUNTED SUPPORT NO. 6 POST (L.F.)	GROUND MOUNTED SUPPORT NO. 3 POST (L.F.)	GROUND MOUNTED SUPPORT NO. 4 POST (L.F.)	GROUND MOUNTED SUPPORT S4x7.7 (L.F.)	GROUND MOUNTED SUPPORT W10x12 (L.F.)			CONCRETE FOR ANCHOR BASE FOUNDATION (C.Y.)	BREAKAWAY BEAM CONNECTION (EACH)	REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL (EACH)	REMOVAL OF GROUND MOUNTED SIGN & RE-ERECTION (EACH)	REMOVAL OF GROUND MOUNTED MAJOR SIGN & RE-ERECTION (EACH)	REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL (EACH)		REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL (EACH)	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL (EACH)
173		315+00	R	W-50R	48"x48"	16			26							2					2	
173		RAMP ED 306+00	R	D-4B	180"x48"						13.15			2.20	2			1				2
173		RAMP ED 306+50	R	R-31P	48"x30"	10		26								1						
173		*RAMP ED 307+50	L&R	R-41A	36"x24"			26									4				2	
				R-15C	24"x12"																	
180		56+30	℄						26								2				2	
180		56+85	R	GF	72"x60"	30				13.13				.54	2						2	
180		56+90	℄						26								2				2	
181		74+40	L	GF	72"x60"	30				13.13				.54	2							
182		101+95	℄	R-123	36"x 36"											2					1	
182		103+05	℄	R-123	36"x 36"											2					1	
183		137+40	R	GF	72"x60"	30				13.13				.54	2							
183		139+00	L	W-50R	48"x48"	16			26							1					2	
183		145+00	L	W-54C	144"x48"	48				13.11				2.20	2							
183		RAMP F 869+54	R													1					1	
183		155+00	R	W-55	144"x48"	48				13.11				2.20	2							
183		155+13	℄													4					2	
183		156+30	℄	R-123	36"x 36"											1					1	
183		159+75	℄																1			2
184		162+80	L	GF	72"x60"	30				13.13				.54	2							
184		164+25	L													2					1	
184		*182+00	L	IM-17-24	24"x12"	2	16															
			L	M-5C-36-3	48"x36"	12																
SUB-TOTAL						272	16	52	104	152	28			8.76	14	16	8	1	1		19	4

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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						630		622	SUB-SUMMARY ITEM 630 - SIGNS																				SUB-SUMMARY ITEM 631 - SIGN LIGHTING														625
									OVERHEAD SIGN SUPPORT																																			
									TC-12.30				TC-7.65				TC-7.65																											
SHEET No.	STATION	SIGN CODE	SIDE	SIGN DESIGNATION	EFFECTIVE SIGN SIZE	CONCRETE FOR ANCHOR BASE FOUNDATION		CONCRETE BARRIER TYPE B-50	DES.6	DES.6	DES.8	DES.8	DES. 6, 3' BOX				DES. 8, 5' BOX				SIGNS; EXTRUSHEET TYPE G	SIGNS SUPPORT ASSEMBLY POLE MOUNTED	REMOVAL OF SIGN MOUNTED	REMOVAL OF OVERHEAD SIGN AND DISPOSAL				REMOVE O.H. SIGN SUPPORT AND DISPOSAL TYPE TC-18.24	REMOVE O.H. SIGN SUPPORT AND DISPOSAL TYPE TC-18.26	REMOVE O.H. SIGN SUPPORT AND DISPOSAL TYPE TC-12.30	REMOVE O.H. SIGN SUPPORT AND DISPOSAL TYPE TC-7.65	MERCURY VAPOR LUMINAIRE FC-31.2/ 100 W	MERCURY VAPOR LUMINAIRE FC-31.2/ 175 W	MERCURY VAPOR LUMINAIRE FC-31.2/ 250 W		BALLAST TYPE			DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	SIGNS WIRED	SIGN SERVICE		GROUND ROD
						C.Y.		LN.FT.	EACH	EACH	EACH	EACH	EACH				EACH				S.F.	EACH	EACH	EACH				EACH	EACH	EACH	EACH	EACH	EACH	EACH		CMRI-100-480 INTEGRAL	CMRI-175-480 INTEGRAL	CMRI-250-480 INTEGRAL	EACH	EACH	EACH		EACH
187	326+00		R		13'x9'	2.92			1												117.0			1						1						2				2		1	1	1		1
187	338+50		R		16'x6.5'	2.92				1											104.0			1						1						2				2		1	1	1		1
188	54+60		R	A	16'x12.5'																200.0			2													2				2		1				
188	65+70		R																				2							1															
188	109+50		R	A	12'x4.5'	14.00							1								54.0			1									1	2				2				1	1	1		1
				B	16'x10'																160.0			1												2				2			1			
				C	16'x10'																160.0															2				2			1			
189	131+45																						1					1																	
189	135+08		R	A	16'x10'	14.50											1				160.0			3									1				2				2		1	1	1		1
				B	17'x10'																170.0															2				2			1			
189	165+00		L		16'x7.5'	3.97						1									120.0															2				2		1	1	1		1
189	171+30		L																					1																					
189	177+00		L		17'x10'	3.97					1										170.0															2				2		1	1	1		1
SUBTOTALS						42.28			2	2	1						1				1415		3	10				1	1	3	2	2	16	2		2	16	2	6	10	6		6

SUB-SUMMARY - OVERHEAD SIGNING

STATION FROM	STATION TO	SIDE	644 5" WHITE LANE LINE	644 5" WHITE EDGE LINE	644 5" YELLOW EDGE LINE	644 5" DOTTED WHITE LANE LINE	644 20" WHITE CHANNELIZING LINE	644 20" WHITE TRANSVERSE LINE	644 20" YELLOW TRANSVERSE LINE	644 5" DOUBLE YELLOW LINE	644 20" WHITE LINE (STOP LINE)	644 10" WHITE LINE (CROSSWALK)	644 WORD	644 ARROW	690 RUMBLE STRIP PAD	621 RAISED PAVEMENT MARKER, ONE WAY (WHITE)	621 RAISED PAVEMENT MARKER, ONE WAY (YELLOW)	621 RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED)	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED)	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/YELLOW)	620 TYPE C DELINEATORS	620 TYPE D DELINEATORS
			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
TOTALS																						
SHEET 160			11,664	6806	6688		2340	530			58		1	3		197	63	66	23		15	8
SHEET 160			6531	7395	7218		754	50	40		30		1	3		96	38	24	55		43	56
SHEET 161			6000	5159	5159	710	420	125			45					88	38	11	28		9	4
SHEET 161			6420	7622	7338		876	180					1	6	3	93	38	22	56		48	41
SHEET 161			12,105	6000	6000		340									177	76	14				
SHEET 162			12,160	6440	6440		670	230								178	76	23	6			3
SHEET 162			6560	4995	4765		938	20			50	45	2	9		94	38	24	21		11	10
SHEET 162			6900	4474	4474		1150	225								96	38	30	19		12	23
SHEET 162			6280	5085	4887		1092	250						4		93	38	33	24			14
SHEET 163			6150	5947	5827	300	208		275	500	55		2	2		99	38	6	49		16	21
SHEET 163			12,000	6000	6000		620	170								176	76	16				
SHEET 163			12,000	6000	6000											176	76					
SHEET 163			5962	3026	2906		825	160								88	37	21				
SHEET 164			6480	6126	6006	230	1092	175			115	265	4	12		99		28	38		19	10
SHEET 164			11,800	6661	6548		863	305								173	73	22	10			6
SHEET 164			10,980	6000	6000		2240	1475								168	76	56				
SHEET 165			6954	7282	7222		3070	1990								255	76	78	16		24	19
SHEET 165			4734	4155	4892		1814	600	940	1055	85		5	16		88	72	46	7	14		3
GRAND TOTALS			151,680	105,173	104,370	1240	19,312	6485	1255	1555	438	310	16	55	3	2434	967	520	352	14	197	218
			28.73 MI.	39.69 MI.		1240 LIN.FT.	19,312 LIN.FT.	7740 LIN. FT.		0.29 MI.	438 LIN.FT.	310 LIN.FT.	16 EA.	55 EA.	3 EA.	4287 EA.					197 EA.	218 EA.

PAVEMENT MARKING SUB-SUMMARY TOTALS

STATION FROM	STATION TO	SIDE		644 5" WHITE LANE LINE LIN. FT.	644 5" WHITE EDGE LINE LIN. FT.	644 5" YELLOW EDGE LINE LIN. FT.	644 5" DOTTED WHITE LANE LINE LIN. FT.	644 20" WHITE CHANNELIZING LINE LIN. FT.	644 20" WHITE TRANSVERSE LINE LIN. FT.	644 20" YELLOW TRANSVERSE LINE LIN. FT.	644 5" DOUBLE YELLOW LINE LIN. FT.	644 20" WHITE LINE (STOP LINE) LIN. FT.	644 10" WHITE LINE (CROSSWALK) LIN. FT.	644 WORD EACH	644 ARROW EACH	690 RUMBLE STRIP PAD	621 RAISED PAVEMENT MARKER, ONE WAY (WHITE) EACH	621 RAISED PAVEMENT MARKER, ONE WAY (YELLOW) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/YELLOW) EACH	620 TYPE C DELINEATORS EACH	620 TYPE D DELINEATORS EACH
SHEET 167																							
175+34	185+00	℄		3864		1932											33	25					
175+17	184+19	RT			902												12						
183+00	184+19	RT						119											3				
183+00	185+00	RT			200												3						
175+52	182+45	LT			693												9						
182+45	185+00	LT			255												4						
182+45	184+50	LT						410	220										11				
184+50	185+00	LT						50											2				
185+00	200+00	℄		7800		3025											98	38	3				
185+00	200+00	RT			1525												19						
193+00	200+00	RT						700											18				
197+56	200+00	RT						244	270										6				
185+00	200+00	LT			1500												19						
185+00	190+00	LT						500											13				
RAMP CB																							
173+15	183+00	L&R			985	985														13		7	8
RAMP CA																							
174+99	182+45	L&R			746	746														10		8	
175+68	177+60	℄						192											5				
175+12	175+68	℄						125	40										5				
175+12		L&R										58											
175+45		℄													1								
175+88		℄												1									
176+68		℄													1								
177+38		℄													1								
SUB-TOTAL				11,664	6806	6688		2340	530			58		1	3		197	63	66	23		15	8
SHEET 167																							
200+00	215+00	℄		6000		3000											50	38					
200+42	215+00	LT			1458												18						
200+42	201+00	LT						58									3						
200+00	201+00	LT			100												2						
200+00	215+00	RT			1500												19					4	
RAMP DF																							
201+00	215+77	L&R			1477	1477														19		18	18
201+00	205+81	℄		481													4						
205+81	207+00	L&R			119			119											3				
RAMP DG																							
207+00	214+56	L&R			756	756														10		15	14
RAMP DD																							
200+00	214+85	L&R			1485	1485														19			19
207+51	209+25	L&R						255	50										13				
RAMP DH																							
209+25	214+22	L&R			500	500														7		6	5
210+50	211+00	℄		50																			
211+00	214+22	℄						322											8				
211+16		℄													1								
212+51		℄													1								
213+51		℄												1									
213+91		℄													1								
213+63	214+22	LT								40													
214+22		℄										30											
SUB-TOTAL				6531	7395	7218		754	50	40		30		1	3		96	38	24	55		43	56

PAVEMENT MARKING SUB-SUMMARY

STATION			644												690	621				620	
FROM	TO	SIDE	5" WHITE LANE LINE	5" WHITE EDGE LINE	5" YELLOW EDGE LINE	5" DOTTED WHITE LANE LINE	20" WHITE CHANNELIZING LINE	20" WHITE TRANSVERSE LINE	20" YELLOW TRANSVERSE LINE	5" DOUBLE YELLOW LINE	20" WHITE LINE (STOP LINE)	10" WHITE LINE (CROSSWALK)	WORD	ARROW	RUMBLE STRIP PAD	RAISED PAVEMENT MARKER, ONE WAY (WHITE)	RAISED PAVEMENT MARKER, ONE WAY (YELLOW)	RAISED PAVEMENT MARKER,TWO WAY (WHITE/RED)	RAISED PAVEMENT MARKER,TWO WAY (YELLOW/RED)	TYPE C DELINEATORS	TYPE D DELINEATORS
			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH		EACH	EACH	EACH	EACH	EACH	EACH
SHEET **169**																					
215+00	230+00	℄	6000		3000											50	38				
215+00	230+00	L&R		3000												38					
222+50	229+60	LT				710															
RAMP DE																					
219+00	225+04	L&R		604	604														8	2	4
225+04		℄									45										
RAMP DD																					
214+85	230+40	L&R		1555	1555														20	7	
216+50	219+00	L&R					420	125										11			
SUB-TOTAL			6000	5159	5159	710	420	125			45					88	38	11	28	9	4
SHEET **170**																					
230+00	245+00	℄	6130		3000											51	38				
231+30	243+55	LT		1225												15					
230+00	244+64	RT		1464												18					
230+00	232+50	LT		250												3					
231+30	232+50	LT					120											3			
243+00	245+00	RT		200												3					
243+00	244+64	RT					164											4			
243+55	245+00	LT		145			280	180										7			
RAMP DD																					
230+40	237+30	L&R		690	690														9	3	4
230+50	231+50	℄													3						
RAMP DC																					
233+35	243+00	L&R		965	965														12	7	
235+40	237+00	℄	160													2					
RAMP DCC																					
232+88	235+40	L&R		252	252														3	3	3
RAMP DA																					
243+55	231+88	L&R		1167	1167														15	14	12
235+00	231+88	℄					312											8			
234+85		℄												2							
233+53		℄												2							
232+59		℄											1								
232+19		℄												2							
RAMP DB																					
232+50	243+48	L&R		1098	1098														14	17	19
242+19	240+89	℄	130													1					
RAMP DBB																					
243+85	242+19	L&R		166	166														3	4	3
SUB-TOTAL			6420	7622	7338		876	180					1	6	3	93	38	22	56	48	41
SHEET **171**																					
245+00	260+00	℄	6105		3000											51	38	5			
245+00	260+00	L&R		3000												38					
245+00	248+00	LT					340											9			
260+00	275+00	℄	6000		3000											50	38				
260+00	275+00	L&R		3000												38					
SUB-TOTAL			12,105	6000	6000		340									177	76	14			
SHEET **172**																					
275+00	290+00	℄	6000		3000											50	38				
275+00	290+00	L&R		3000												38					
290+00	305+00	℄	6000		3000											50	38	5			
290+00	305+00	L&R		3000												38					
296+00	300+50	RT					670	230										18			

PAVEMENT MARKING SUB-SUMMARY

STATION FROM	STATION TO	SIDE		644 5" WHITE LANE LINE LIN. FT.	644 5" WHITE EDGE LINE LIN. FT.	644 5" YELLOW EDGE LINE LIN. FT.	644 5" DOTTED WHITE LANE LINE LIN. FT.	644 20" WHITE CHANNELIZING LINE LIN. FT.	644 20" WHITE TRANSVERSE LINE LIN. FT.	644 20" YELLOW TRANSVERSE LINE LIN. FT.	644 5" DOUBLE YELLOW LINE LIN. FT.	644 20" WHITE LINE (STOP LINE) LIN. FT.	644 10" WHITE LINE (CROSSWALK) LIN. FT.	644 WORD EACH	644 ARROW EACH	690 RUMBLE STRIP PAD	621 RAISED PAVEMENT MARKER, ONE WAY (WHITE) EACH	621 RAISED PAVEMENT MARKER, ONE WAY (YELLOW) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED) EACH		620 TYPE C DELINEATORS EACH	620 TYPE D DELINEATORS EACH					
SHEET 172	CONTINUED																											
RAMP ED																												
300+50	304+90	RT		160	440	440											2			6			3					
SUB-TOTAL				12,160	6440	6440		670	230								178	76	23	6			3					
SHEET 173																												
305+00	320+00	℄		6180		3000											51	38										
305+00	320+00	L&R			3000												38											
315+00	317+00	LT			200			200											5									
319+00	320+00	RT			100			100											3									
RAMP ED																												
304+90	309+95	L&R			505	505														6		3						
304+90	306+80	℄		380													5											
306+80	309+79	℄						598											15									
309+46	309+79	℄						40	20										1									
309+79		℄				100						50																
309+85		℄											45															
307+04		℄													3													
307+80		℄													3													
308+80		℄												2														
309+30		℄													3													
RAMP EC																												
310+80	319+00	L&R			870	840														11		6	3					
RAMP EB																												
317+00	320+20	L&R			320	320														4		2	7					
SUB-TOTAL				6560	4995	4765		938	20			50	45	2	9		94	38	24	21		11	10					
SHEET 174																												
320+00	335+00	℄		6900		3000											58	38										
320+00	335+00	L&R			3000												38											
329+10	332+00	LT						290											8									
326+97	329+10	LT						260	225										7									
329+00	335+00	RT						600											15									
RAMP EA																												
326+97	318+27	L&R			870	870														11		8	11					
RAMP EB																												
320+20	325+44	L&R			524	524														7		4	12					
RAMP EBB																												
324+14	324+94	L&R			80	80														1								
SUB-TOTAL				6900	4474	4474		1150	225								96	38	30	19		12	23					
SHEET 175																												
335+00	350+00	℄		6200		3000											52	38	5									
335+00	350+00	L&R			3000												38											
339+81	341+79	LT			198			198									2		5									
335+00	340+04	RT						730	250										19									
RAMP FE																												
341+79	350+20	L&R			841	841														11			6					
RAMP FD																												
340+04	350+50	L&R			1046	1046														13			8					
348+25	348+86	℄		80													1											
348+86	350+50	℄						164											4									
349+03															2													
350+03															2													
SUB-TOTAL				6280	5085	4887		1092	250						4		93	38	33	24			14					

PAVEMENT MARKING SUB-SUMMARY

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	163/286

STATION				644												690	621					620	
FROM	TO	SIDE		5" WHITE LANE LINE	5" WHITE EDGE LINE	5" YELLOW EDGE LINE	5" DOTTED WHITE LANE LINE	20" WHITE CHANNELIZING LINE	20" WHITE TRANSVERSE LINE	20" YELLOW TRANSVERSE LINE	5" DOUBLE YELLOW LINE	20" WHITE LINE (STOP LINE)	10" WHITE LINE (CROSSWALK)	WORD	ARROW	RUMBLE STRIP PAD	RAISED PAVEMENT MARKER, ONE WAY (WHITE)	RAISED PAVEMENT MARKER, ONE WAY (YELLOW)	RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED)	RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED)		TYPE C DELINEATORS	TYPE D DELINEATORS
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH		EACH	EACH	EACH	EACH		EACH	EACH
SHEET 176																							
350+00	365+00	℄		6150		3000											52	38					
350+00	365+00	L&R			3000												38						
361+00	362+20	RT			120			120									1		3				
RAMP FE																							
350+20	355+95	L&R			575	575														8			4
RAMP FD																							
350+50	351+38	L&R			88	88														1			1
350+50	351+38	℄						88											3				
350+50														2									
351+00															2								
351+30												55											
351+38							300										8						
RAMP FC																							
351+36	361+00	L&R			964	964														12		3	3
RAMP FA																							
364+50	352+55	L&R			1200	1200														15		13	13
352+55	357+05	RT								275	500									13			
SUB-TOTAL				6150	5947	5827	300	208		275	500	55		2	2		99	38	6	49		16	21
SHEET 177																							
365+00	380+00	℄		6000		3000											50	38					
365+00	380+00	L&R			3000												38						
365+00	369+48	LT						620	170										16				
380+00	395+00	℄		6000		3000											50	38					
380+00	395+00	L&R			3000												38						
SUB-TOTAL				12,000	6000	6000		620	170								176	76	16				
SHEET 178																							
395+00	410+00	℄		6000		3000											50	38					
395+00	410+00	L&R			3000												38						
410+00	425+00	℄		6000		3000											50	38					
410+00	425+00	L&R			3000												38						
SUB-TOTAL				12,000	6000	6000											176	76					
SHEET 179																							
425+00	428+53	℄		1412		706											12	9					
45+00	56+00	℄		4550		2200											38	28					
425+00	428+53	L&R			706												9						
45+00	56+00	L&R			2200												28						
54+80	56+00	LT			120			120									1		3				
51+46	56+00	RT						705	160										18				
SUB-TOTAL				5962	3026	2906		825	160								88	37	21				
SHEET 180																							
56+00	71+00	℄		6000		3000											50	38					
56+00	71+00	LT			1500												19						
56+82	71+00	RT			1418												18						
56+00	56+82	RT						164	145										4				

PAVEMENT MARKING SUB-SUMMARY

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

164
286

STATION FROM	STATION TO	SIDE		644 5" WHITE LANE LINE LIN. FT.	644 5" WHITE EDGE LINE LIN. FT.	644 5" YELLOW EDGE LINE LIN. FT.	644 5" DOTTED WHITE LANE LINE LIN. FT.	644 20" WHITE CHANNELIZING LINE LIN. FT.	644 20" WHITE TRANSVERSE LINE LIN. FT.	644 20" YELLOW TRANSVERSE LINE LIN. FT.	644 5" DOUBLE YELLOW LINE LIN. FT.	644 20" WHITE LINE (STOP LINE) LIN. FT.	644 10" WHITE LINE (CROSSWALK) LIN. FT.	644 WORD EACH	644 ARROW EACH	690 RUMBLE STRIP PAD	621 RAISED PAVEMENT MARKER, ONE WAY (WHITE) EACH	621 RAISED PAVEMENT MARKER, ONE WAY (YELLOW) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED) EACH	621 RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED) EACH	620 TYPE C DELINEATORS EACH	620 TYPE D DELINEATORS EACH
SHEET 180	CONTINUED																						
RAMP GC																							
56+82	65+59	L&R			877	877															11	6	
61+75	63+37	℄		320													4						
63+37	65+48	℄						422												11			
63+53		℄													3								
64+70		℄												2									
65+19		℄													3								
65+48		℄					150					55					4						
RAMP GD																							
56+00	66+73	L&R			1145	1073															14	6	8
RAMP GDD																							
65+99	66+93	L&R			224	94															1		2
RAMP GB																							
65+34	71+00	L&R			566	566															7	4	
65+40		℄											110										
RAMP GA																							
67+04	71+00	℄			396	396															5	3	
67+10		℄											155										
67+24		℄					80	50	30			60					2			1			
67+24	69+52	℄						456												12			
69+52	71+00	℄		160													2						
67+62		℄													3								
68+02		℄												2									
68+52		℄													3								
SUB-TOTAL				6480	6126	6006	230	1092	175			115	265	4	12		99		28	38		19	10
SHEET 181																							
71+00	85+00	℄		5800		2800											49	35					
71+00	85+00	L&R			2800												35						
75+00	76+13	RT			113			113									1		3				
74+48	79+50	LT						750	305										19				
85+00	100+00	℄		6000		3000											50	38					
85+00	100+00	L&R			3000												38						
RAMP GA																							
71+00	74+48	L&R			348	348														5		3	
RAMP GB																							
71+00	75+00	L&R			400	400														5		3	
SUB-TOTAL				11,800	6661	6548		863	305								173	73	22	10			6
SHEET 182																							
100+00	115+00	℄		6000		3000											50	38					
100+00	115+00	L&R			3000												38						
115+00	130+00	℄		4980		3000											42	38					
115+00	130+00	L&R			3000												38						
118+80	130+00	LT						2240	1475										56				
SUB-TOTAL				10,980	6000	6000		2240	1475								168	76	56				
SHEET 183																							
130+00	145+00	℄		3100		3000											25	38					
130+00	145+00	L&R			3000			1390									38						
130+00	140+10	LT							1480								70		35				
130+59	136+29	RT						1000	410								47		25				

PAVEMENT MARKING SUB-SUMMARY

STATION FROM	STATION TO	SIDE	644: 5" WHITE LANE LINE	644: 5" WHITE EDGE LINE	644: 5" YELLOW EDGE LINE	644: 5" DOTTED WHITE LANE LINE	644: 20" WHITE CHANNELIZING LINE	644: 20" WHITE TRANSVERSE LINE	644: 20" YELLOW TRANSVERSE LINE	644: 5" DOUBLE YELLOW LINE	644: 20" WHITE LINE (STOP LINE)	644: 10" WHITE LINE (CROSSWALK)	644: WORD	644: ARROW	690: RUMBLE STRIP PAD	621: RAISED PAVEMENT MARKER, ONE WAY (WHITE)	621: RAISED PAVEMENT MARKER, ONE WAY (YELLOW)	621: RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED)	621: RAISED PAVEMENT MARKER, TWO WAY (YELLOW/RED)	621: RAISED PAVEMENT MARKER, TWO WAY (YELLOW/YELLOW)	620: TYPE C DELINEATORS	620: TYPE D DELINEATORS
			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH
SHEET 183	CONTINUED																					
145+00	160+00	℄	3350		3000											28	38					
145+00	160+00	℄		3000												38						
146+72	148+70	LT					320	100										8				
147+49	148+09	RT		60			60									2		2				
151+54	153+37	RT					300											8				
RDWY A																						
826+00	828+04	L&R	204	204	204											3			3		4	3
RDWY D																						
848+64	851+64	L&R	300	300	300											4			4		5	2
RAMP G																						
840+72	843+15	L&R		243	243														3		9	4
RAMP E																						
868+15	865+76	L&R		239	239														3		3	5
RAMP F																						
868+08	865+72	L&R		236	236														3		3	5
SUB-TOTAL			6954	7282	7222		3070	1990								255	76	78	16		24	19
SHEET 184																						
160+00	175+00	℄	3094		3000											26	38					
160+00	175+00	L&R		3000												38						
167+17	169+56	RT		239			239											6	2			
163+00	168+00	LT					680	250										17				
175+00	182+75	℄			1525												20					
175+00	183+56	LT	856													11						
175+00	180+70	RT	570													7						
180+70	183+72	RT					455											12				
182+51	183+84	℄							590	250										7		
180+93		RT												1								
182+47		RT												3								
182+92		RT											3									
183+42		RT												3								
183+72		RT									40											
184+76	190+25	L&R		549																		
184+76	186+90	℄					440	350										11				
187+54	190+25	℄							350	540							14					
184+90	187+54	℄								265										7		
184+76	186+90	LT	214													6						
184+76		LT									30											
184+90		RT									15											
184+95		RT												2								
185+20		RT												1								
185+53		LT											1									
185+70		RT											1									
186+15		LT												3								
186+65		LT												3								
RAMP B																						
163+50	167+17	L&R		367	367														5			3
SUB-TOTAL			4734	4155	4892		1814	600	940	1055	85		5	16		88	72	46	7	14		3

GENERAL

THE TRAFFIC ENGINEERING AND PARKING DIVISION SHALL LOCATE AND MARK ALL UNDERGROUND TRAFFIC CONTROL CABLES. THE DIVISION SYSTEM ENGINEER SHALL BE NOTIFIED AT 645-7790 AT LEAST 48 HOURS (6 WEEKS FOR SIGNAL REVISIONS AND/OR POLE RELOCATIONS) PRIOR TO THE BEGINNING OF ANY WORK WITHIN 300 FEET OF THE SIGNALIZED INTERSECTION OF S.R. 315 @ ACKERMAN, NORTH BROADWAY, HENDERSON AND HARD ROADS.

NO EXCAVATION SHALL BE MADE WTHIN FIVE (5) FEET OF ANY POLE THAT SUPPORTS TRAFFIC SIGNAL DISPLAYS OR SIGNS BY MAST ARM OR SIGNAL SPAN. EXCAVATION WITHIN EIGHT (8) FEET BUT MORE THAN FIVE (5) FEET SHALL REQUIRE ADDITIONAL SUPPORT (DOWN GUY, HEAD GUY, BASE GUY, ETC...). THE "CONTRACTOR" SHALL CONTACT THE DIVISION SYSTEM ENGINEER AT 614-645-7790 AT LEAST TWO (2) WORKING DAYS PRIOR TO SUCH EXCAVATION, SO THAT THE DIVISION MAY INSTALL SUCH SUPPORTS AT THE "OWNER'S/CONTRACTING AGENCY,S" EXPENSE.

ANY WORK DONE BY THE TRAFFIC ENGINEERING AND PARKING DIVISION, INCLUDING INSTALLATION, RELOCATION, REMOVAL AND/OR REPLACEMENT OF PERMANENT TRAFFIC CONTROL DEVICES AS A RESULT OF WORK DONE BY THE "CONTRACTOR" OR AS A RESULT OF THE NEGLIGENCE OF THE "CONTRACTOR" SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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286

BEGIN WORK
FRA-315-5.18
STA 161+00.00

BEGIN WORK
STA. 174+99.52

BEGIN PROJECT
FRA-315-5.18
STA 175+34.40

BEGIN WORK
STA. 173+15.77

DO NOT ENTER
ONE WAY
ONE WAY

WRONG WAY

FOOTBALL PARKING

Ackerman Rd.
Doolridge St.

EXIT

RAMP CA

RAMP CB

RAMP DD

ACKERMAN RD

BEGIN TAPER

END TAPER

P.T. STA. 183+00.00
BEGIN TAPER

MATCH LINE STA. 185+00

MATCH LINE STA. 185+00

MATCH LINE STA. 200+00

P.R.C. STA. 186+00.00
END TAPER

P.O.T. STA. 192+83.03 AHEAD
P.T. STA. 193+82.96 BACK=

T.S. STA. 195+35.59

N 16°28'47" W

N 11°30'24" W

CURVE DATA
P.I. STA. 188+50.47
Δ = 4°58'23" RT.
Dc =0°28'00"
R= 12277.67'
L= 1065.65'
T= 533.16'
E= 11.57'
S= CROWN

CURVE DATA
P.I. STA. 206+89.60
Δ = 76°07'30" RT.
Dc =5°00'00"
R= 1145.92'
Ls = 500.00'
θs = 12°30'00"
LC = 1022.50'
LT = 334.17'
ST = 167.43'
Es = 321.04'
S = 0.083 FT/FT

SIGN LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- REMOVAL OF SIGN
- R&R REMOVE AND RE-ERECT

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SR-315 STA. 170+00 TO STA. 200+00

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 206+89.60
Δ = 76°07'30" RT.
Dc = 5°00'00"
R = 1145.92'
Ls = 500.00'
θs = 12°30'00"
LC = 1022.50'
LT = 334.17'
ST = 167.43'
Es = 321.04'
S = 0.083 FT/FT

TRAFFIC CONTROL SR-315 STA. 200+00 TO STA. 215+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

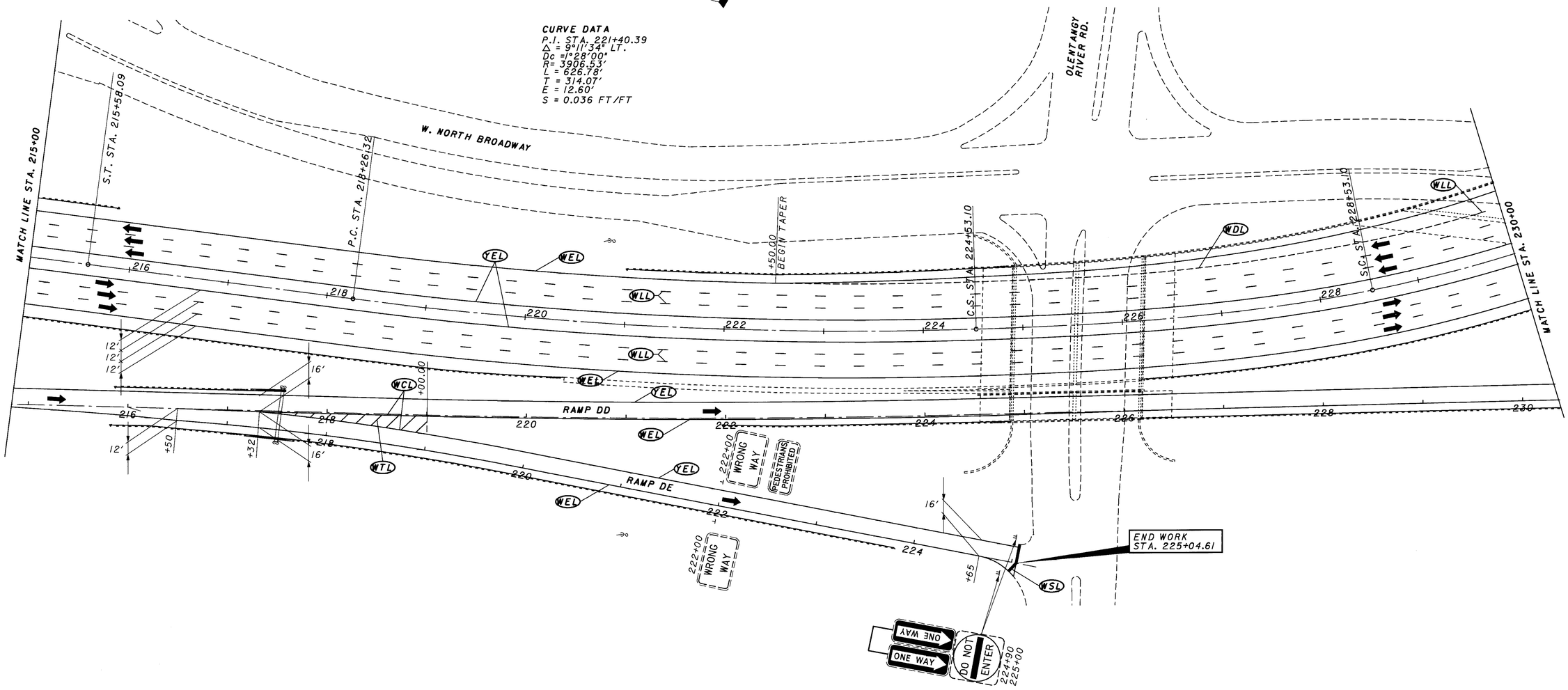
169
286

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 221+40.39
$\Delta = 9°11'34"$ LT.
Dc = 1°28'00"
R = 3906.53'
L = 626.78'
T = 314.07'
E = 12.60'
S = 0.036 FT/FT



TRAFFIC CONTROL SR-315 STA. 215+00 TO STA. 230+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	170/286

CURVE DATA
P.I. STA. 238+24.50
Δ = 80°38′02″ LT.
Dc =4°00′00″
R= 1432.39′
Ls = 500.00′
Ts = 1471.40′
θs = 10°00′00″
LC = 1515.85′
LT = 333.87′
ST = 167.15′
Es = 455.74′
S = 0.83 FT/FT

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12′-0" UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SR-315 STA. 230+00 TO STA. 245+00

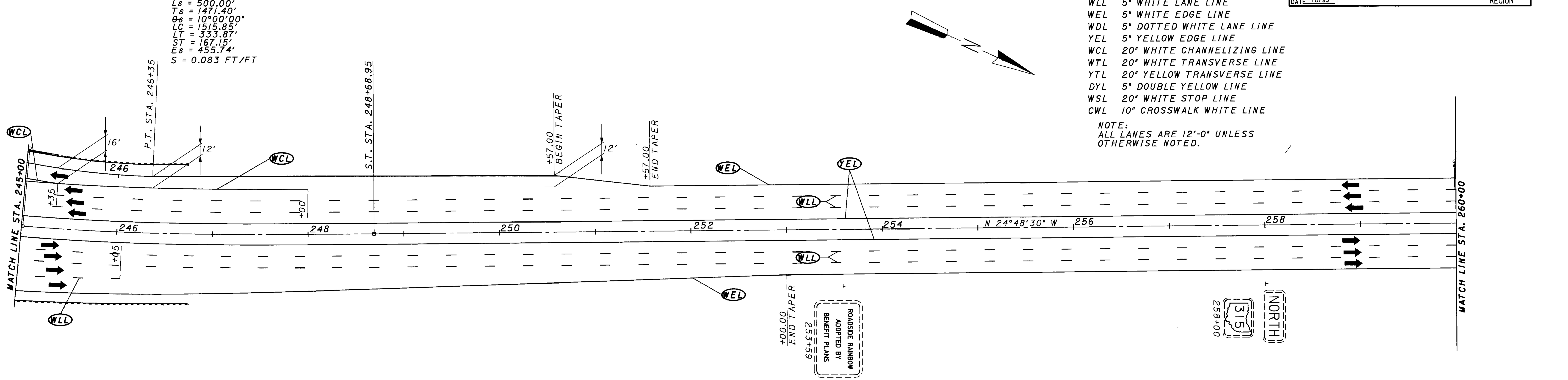
CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	171/286

CURVE DATA
P.I. STA. 238+24.50
Δ = 80°38'02" LT.
Dc = 4°00'00"
R = 1432.39'
Ls = 500.00'
Ts = 1471.40'
θs = 10°00'00"
LC = 1515.85'
LT = 333.87'
ST = 167.15'
Es = 455.74'
S = 0.083 FT/FT

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



TRAFFIC CONTROL SR-315 STA. 245+00 TO STA. 275+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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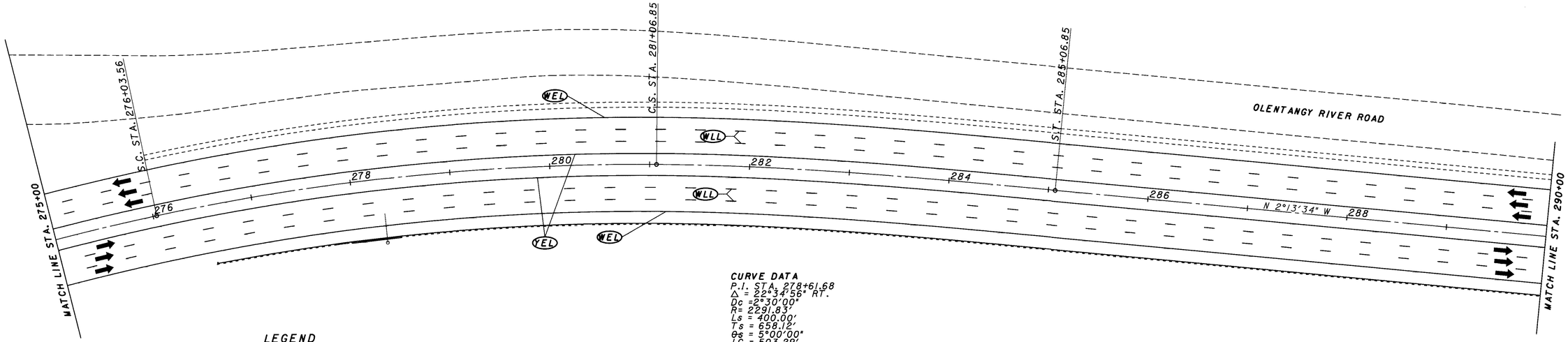


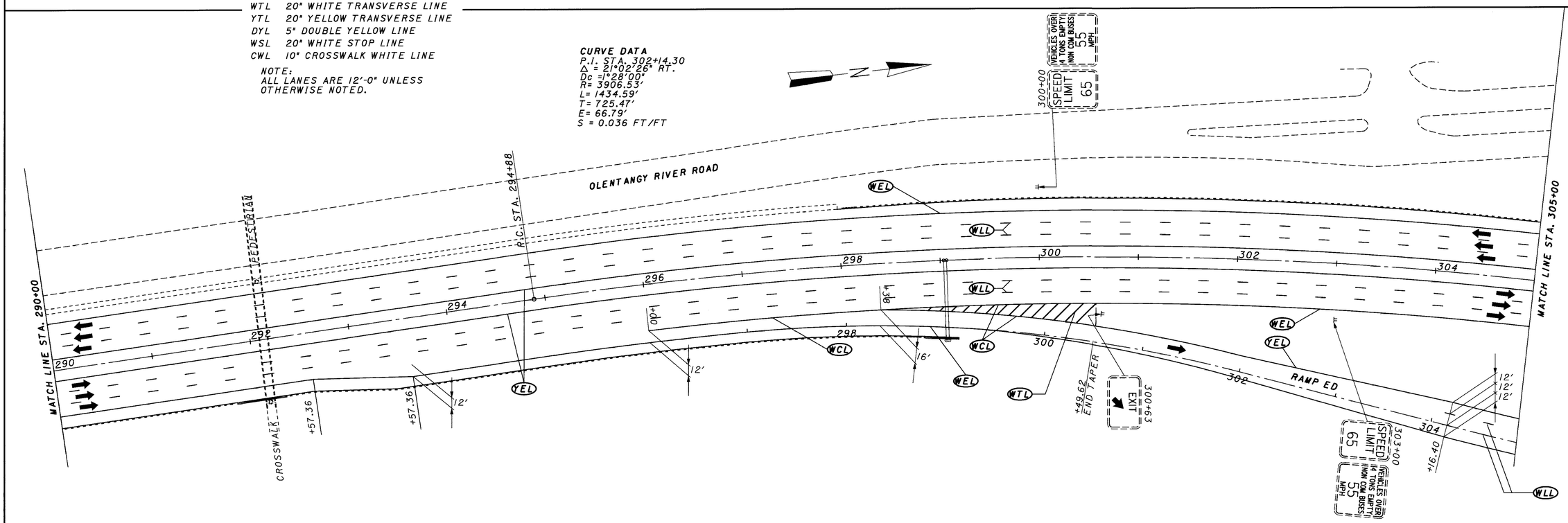
CURVE DATA
P.I. STA. 278+61.68
Δ = 22°34'56" RT.
Dc = 2°30'00"
R = 2291.83'
Ls = 400.00'
Ts = 658.12'
θs = 5°00'00"
LC = 503.29'
LT = 265.77'
ST = 133.43'
Es = 48.20'
S = 0.059 FT/FT

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 302+14.30
Δ = 21°02'26" RT.
Dc = 1°28'00"
R = 3906.53'
L = 1434.59'
T = 725.47'
E = 66.79'
S = 0.036 FT/FT



TRAFFIC CONTROL SR-315 STA. 275+00 TO STA. 305+00

CALC. BY: JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

OLENTANGY RIVER ROAD

HENDERSON ROAD

MATCH LINE STA. 305+00

MATCH LINE STA. 320+00

305+00 SPEED LIMIT 65 55 MPH (VEHICLES OVER 4 TONS EMPTY, NON COM BUSES)

+00.00 BEGIN TAPER

P.T. STA. 309+23.43

+20.72

+00.00 END TAPER

RAMP EB

S.C. STA. 319+00

N 18°48'52" E

RAMP EC

P.C. STA. 316+68.93

40:1 TAPER

RAMP ED

306+50 R-3 1P 48"x30" ONLY

WRONG WAY

PEDESTRIANS PROHIBITED

REMOVE & RE-ERECT

REMOVE

311+50 PEDESTRIANS AND BICYCLES PROHIBITED

+45.21

END WORK STA. 309+95.70

BEGIN WORK STA. 310+80.37

306+00 REMOVE & RE-ERECT

Olentangy River Rd.

Henderson Rd.

309+85 DO NOT ENTER ONE WAY

PARK OF ROSES

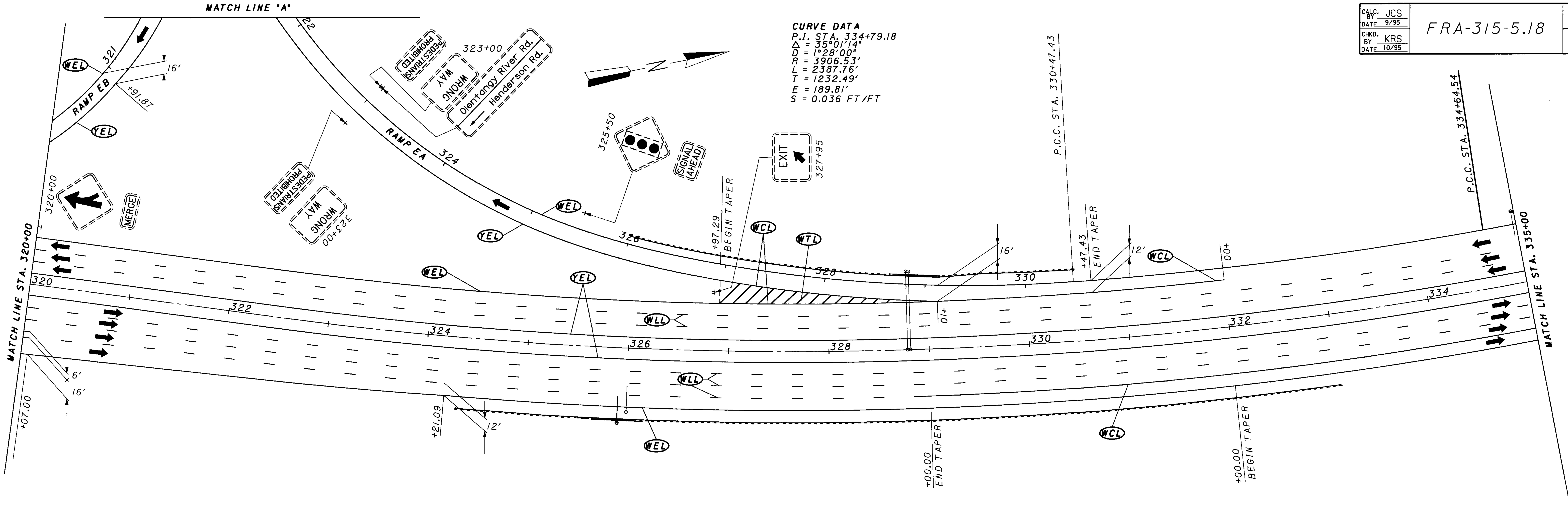
24'-0"

25'-0"

TRAFFIC CONTROL SR-315 STA. 305+00 TO STA. 320+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	174/286

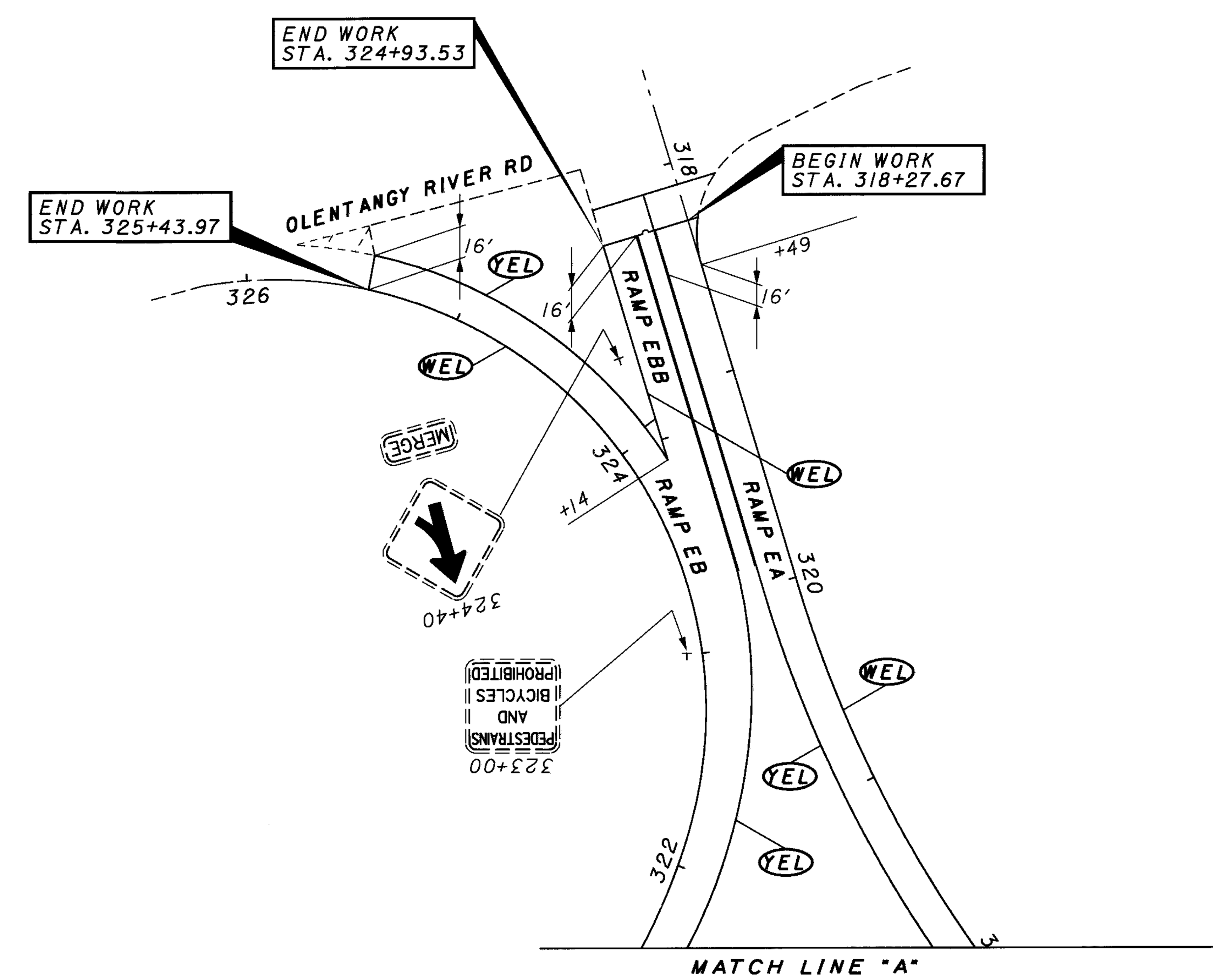
CURVE DATA
P.I. STA. 334+79.18
Δ = 35°01'14"
D = 1°28'00"
R = 3906.53'
L = 2387.76'
T = 1232.49'
E = 189.81'
S = 0.036 FT/FT



LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



TRAFFIC CONTROL SR-315 STA. 320+00 TO STA. 335+00

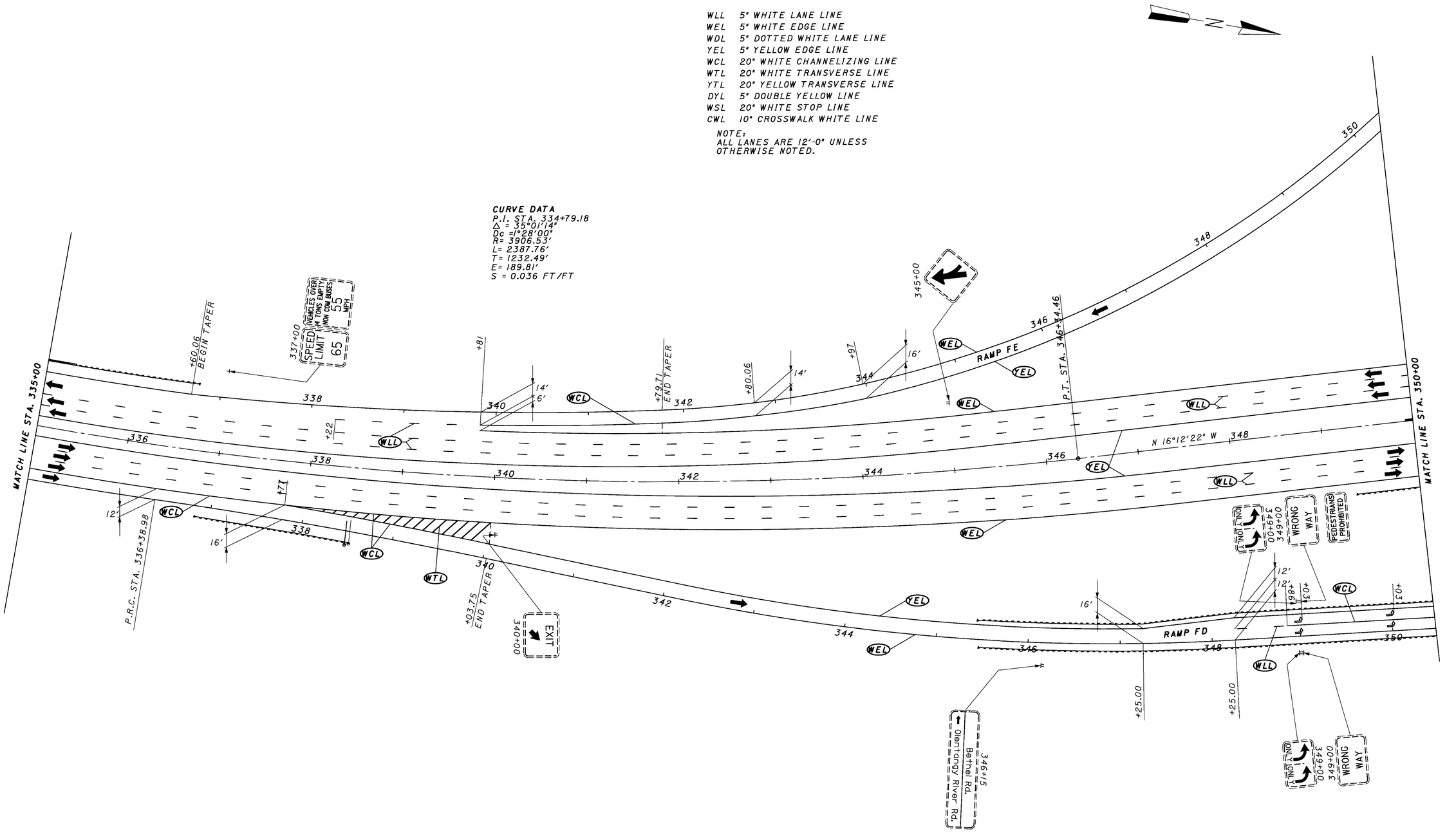
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	175
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 334+79.18
△ = 35°01'14"
Dc = 1°28'00"
R = 3906.53'
L = 2387.76'
T = 1232.49'
E = 189.81'
S = 0.036 FT/FT



TRAFFIC CONTROL SR-315 STA. 335+00 TO STA. 350+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	176/286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SR-315 STA. 350+00 TO STA. 365+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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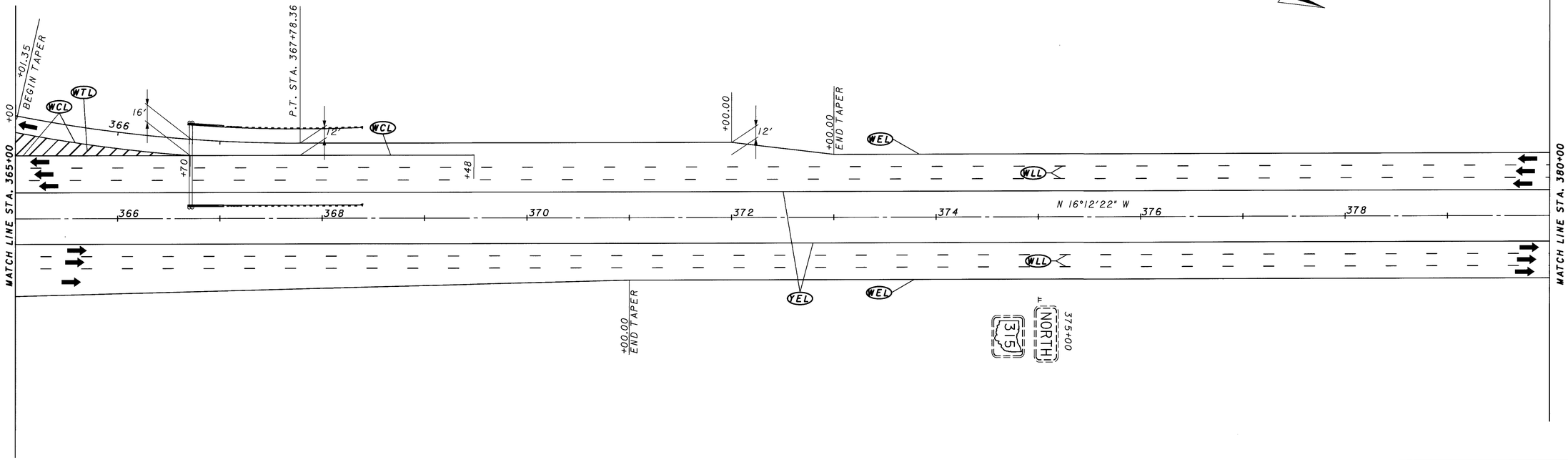

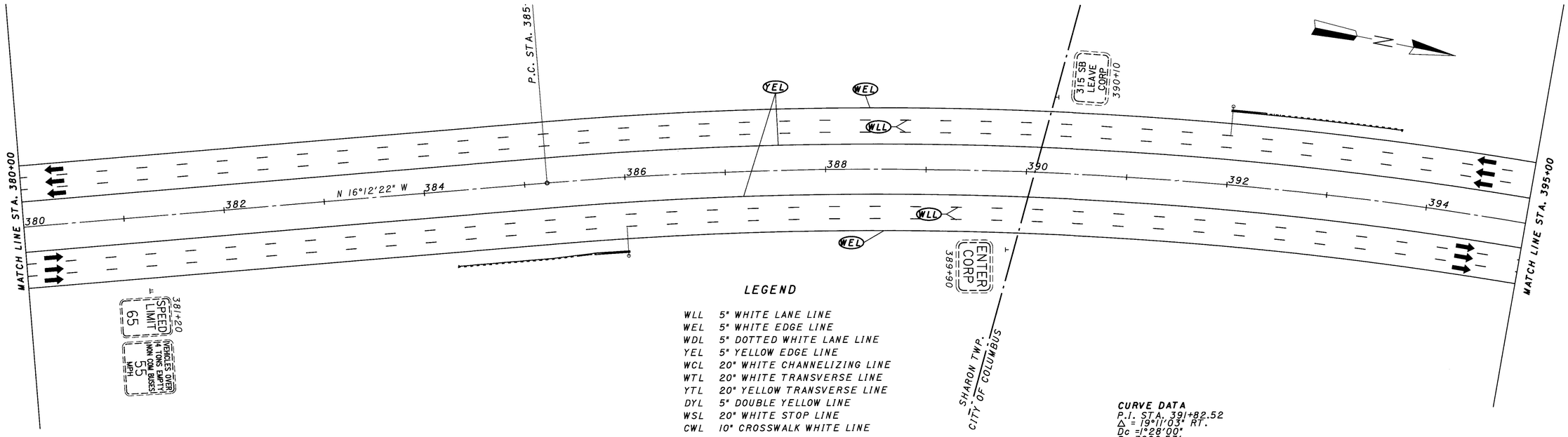

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 391+82.52
Δ = 19°11'03" RT.
Dc = 1°28'00"
R = 3906.53'
L = 1308.01'
T = 660.18'
E = 55.39'
S = 0.036 FT/FT

TRAFFIC CONTROL SR-315 STA. 365+00 TO STA. 395+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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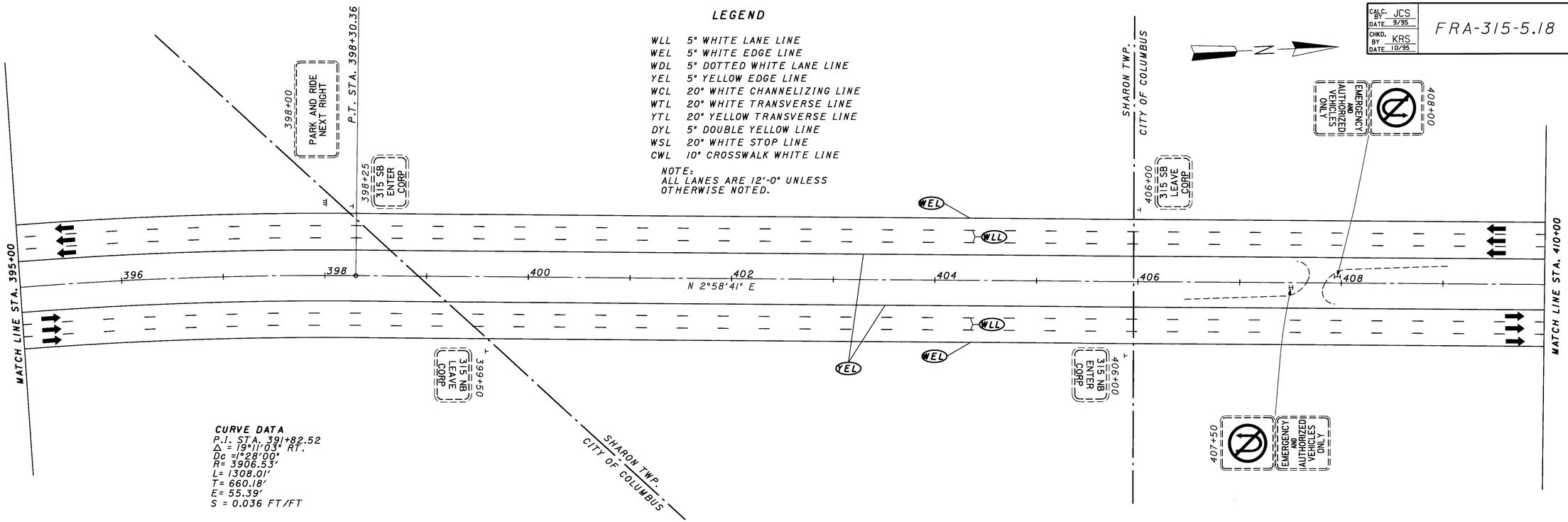
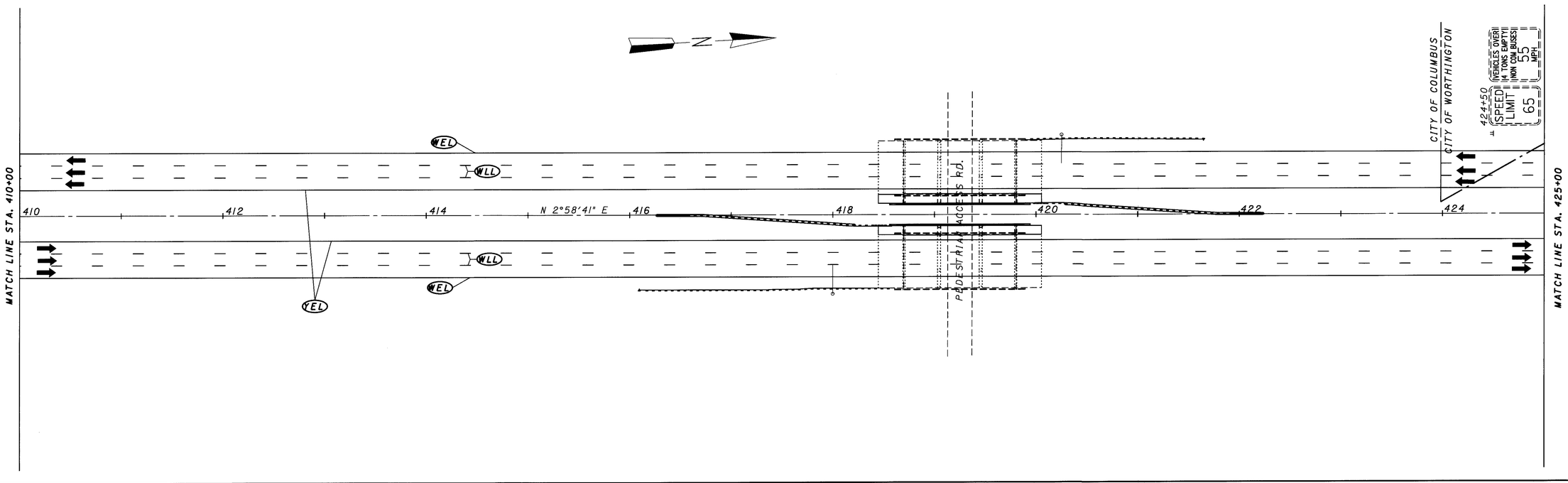
LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



CURVE DATA
P.I. STA. 391+82.52
Δ = 19°11'03" RT.
Dc = 1°28'00"
R = 3906.53'
L = 1308.01'
T = 660.18'
E = 55.39'
S = 0.036 FT/FT



TRAFFIC CONTROL SR-315 STA. 395+00 TO STA. 425+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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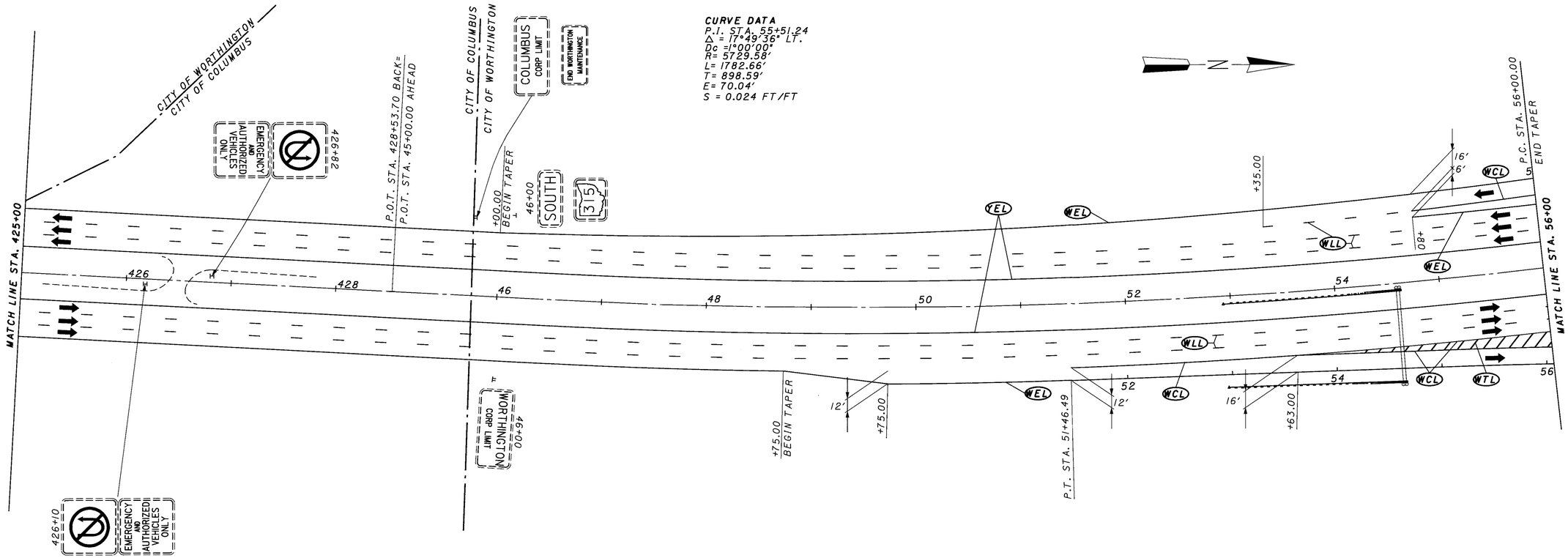
LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 55+51.24
Δ = 17°49'36" LT.
Dc = 1°00'00"
R= 5729.58'
L= 1782.66'
T= 898.59'
E= 70.04'
S = 0.024 FT/FT



TRAFFIC CONTROL SR-315 STA. 425+00 TO STA. 56+00

CALC. BY JCS		OHIO
DATE 9/95	FRA-315-5.18	F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

CURVE DATA
P.I. STA. 55+51.24
Δ = 17°49'36" LT.
Dc = 1°00'00"
R = 5729.58'
L = 1782.66'
T = 898.59'
E = 70.04'
S = 0.024 FT/FT

BEGIN WORK STA. 67+04.06
END WORK STA. 66+93.63
END WORK STA. 66+73.22
MATCH LINE STA. 56+00
MATCH LINE STA. 71+00
P.O.T. STA. 66+20.93 SR315=
P.O.T. STA. 202+22.96 SR161
PAVEMENT EDGE BEGIN TAPER 66+10.00
BEGIN WORK STA. 65+34.20
END WORK STA. 65+59.14
P.T. STA. 64+35.31
RAMP GD
RAMP GA
RAMP GC
RAMP GB
SR 161
Dublin
Worthington
Olentangy River Rd.
ANTRIM PARK
OHIO NATIONAL GUARD ARMORY
EMERGENCY AND AUTHORIZED VEHICLES ONLY
REMOVE & RE-ERECT
ONE WAY
WRONG WAY
DO NOT ENTER
STOP HERE TO TRIP SIGNAL
PEDESTRIANS AND BICYCLES PROHIBITED
EXIT
TYPE OF TRAFFIC

TRAFFIC CONTROL SR-315 STA. 56+00 TO STA. 71+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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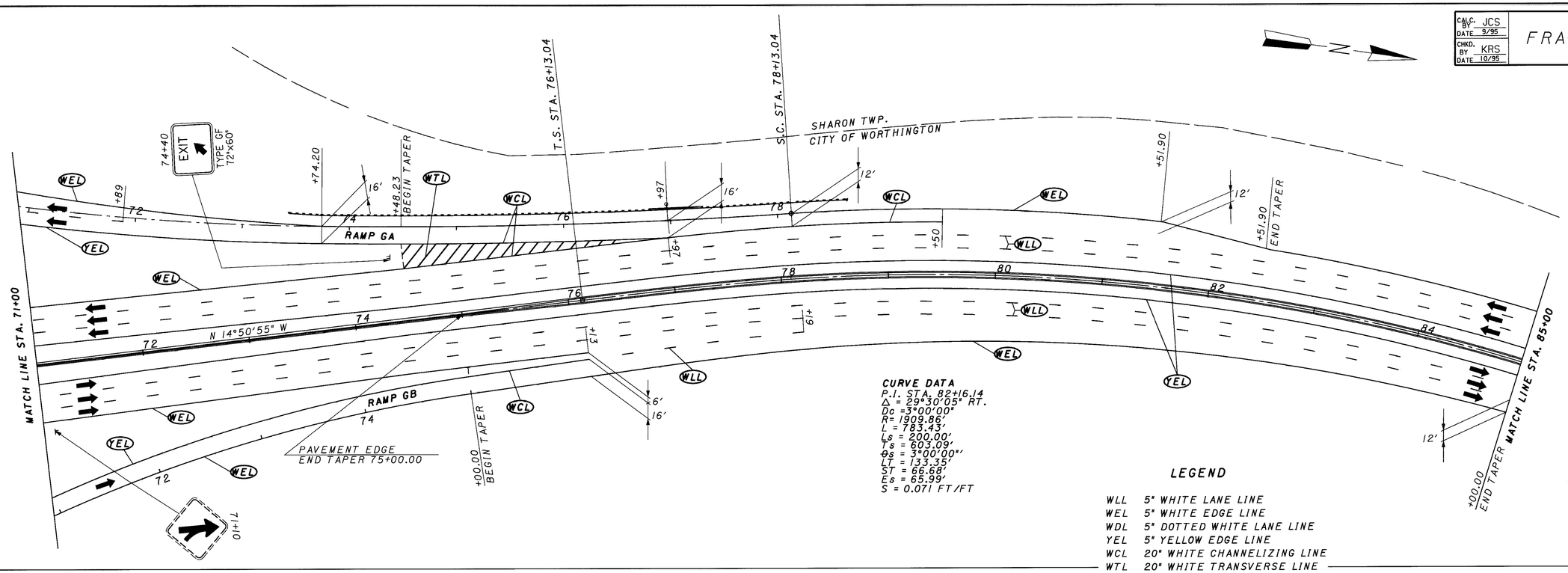
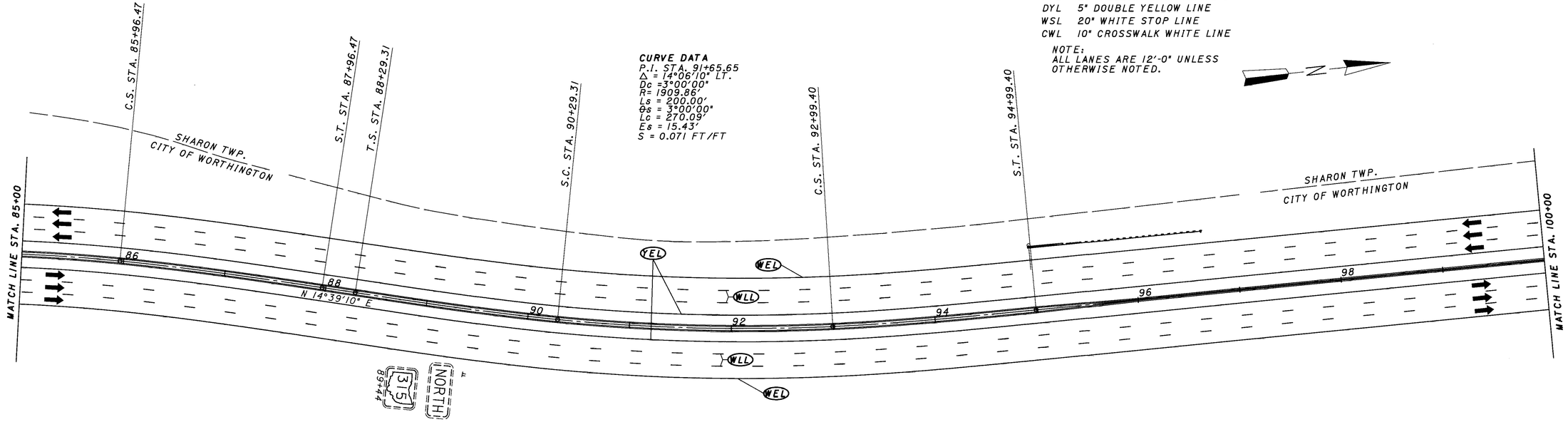


CURVE DATA
P.I. STA. 82+16.14
Δ = 29°30'05" RT.
Dc = 3°00'00"
R = 1909.86'
L = 783.43'
Ls = 200.00'
Ts = 603.09'
θs = 3°00'00"
LT = 133.35'
ST = 66.68'
Es = 65.99'
S = 0.071 FT/FT

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



CURVE DATA
P.I. STA. 91+65.65
Δ = 14°06'10" LT.
Dc = 3°00'00"
R = 1909.86'
Ls = 200.00'
θs = 3°00'00"
Lc = 270.09'
Es = 15.43'
S = 0.071 FT/FT

TRAFFIC CONTROL SR-315 STA. 71+00 TO STA. 100+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A.
CHKD. BY KRS		REGION 5
DATE 10/95		

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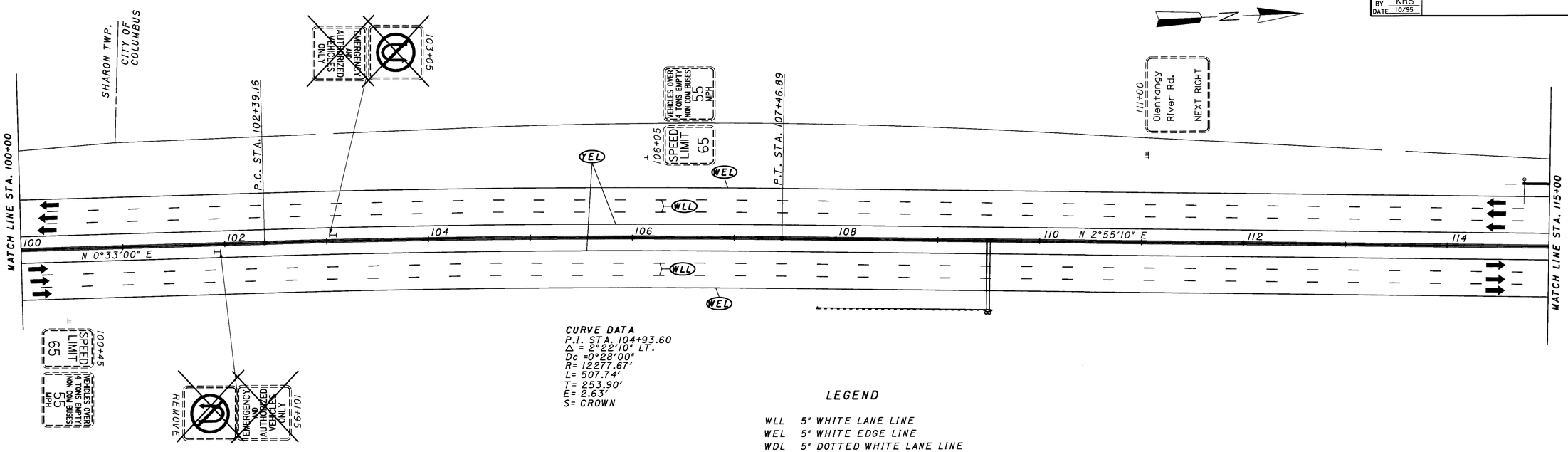
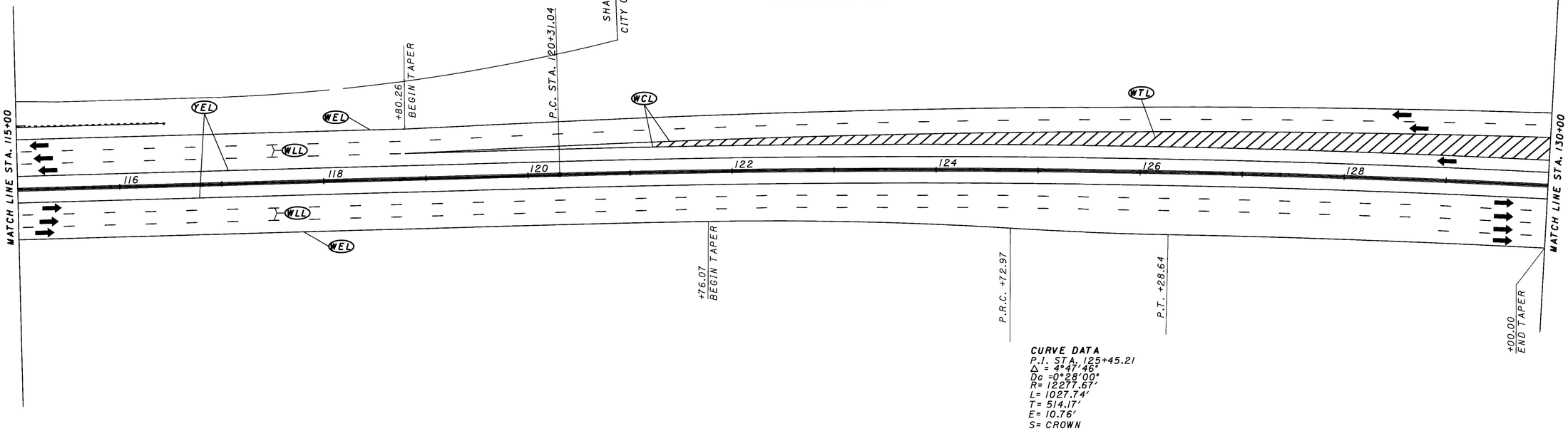


CURVE DATA
P.I. STA. 104+93.60
Δ = 2°22'10" LT.
Dc = 0°28'00"
R = 12277.67'
L = 507.74'
T = 253.90'
E = 2.63'
S = CROWN

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



CURVE DATA
P.I. STA. 125+45.21
Δ = 4°47'46"
Dc = 0°28'00"
R = 12277.67'
L = 1027.74'
T = 514.17'
E = 10.76'
S = CROWN

TRAFFIC CONTROL SR-315 STA. 100+00 TO STA. 130+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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MATCH LINE STA. 130+00
P.T. STA. 130+58.78
WILSON BRIDGE ROAD
P.O.C. 133+80.26 END TAPER
ROADWAY A
SHARON TWP.
CITY OF WORTHINGTON
CONCRETE
ASPHALT
END WORK STA. 828+03.82
W-50 R-48
REMOVE
139+00
+10 END TAPER
24'
141+50
WORTHINGTON CORP LIMT 144+22
RAMP G
END WORK STA. 843+15.35
144+22 KEEP LEFT
MATCH LINE STA. 145+00
+20 END PAVEMENT EDGE TAPER
N 7°42'56" E
142+00
P.C. 132+02.98
END TAPER C.S. 136+28.64 BACK 848+64.32 AHEAD
EXIT TYPE 9F 12'x60'
137+40
END WORK STA. 851+64.32
ROADWAY D
SHARON TWP. CITY OF WORTHINGTON

LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.

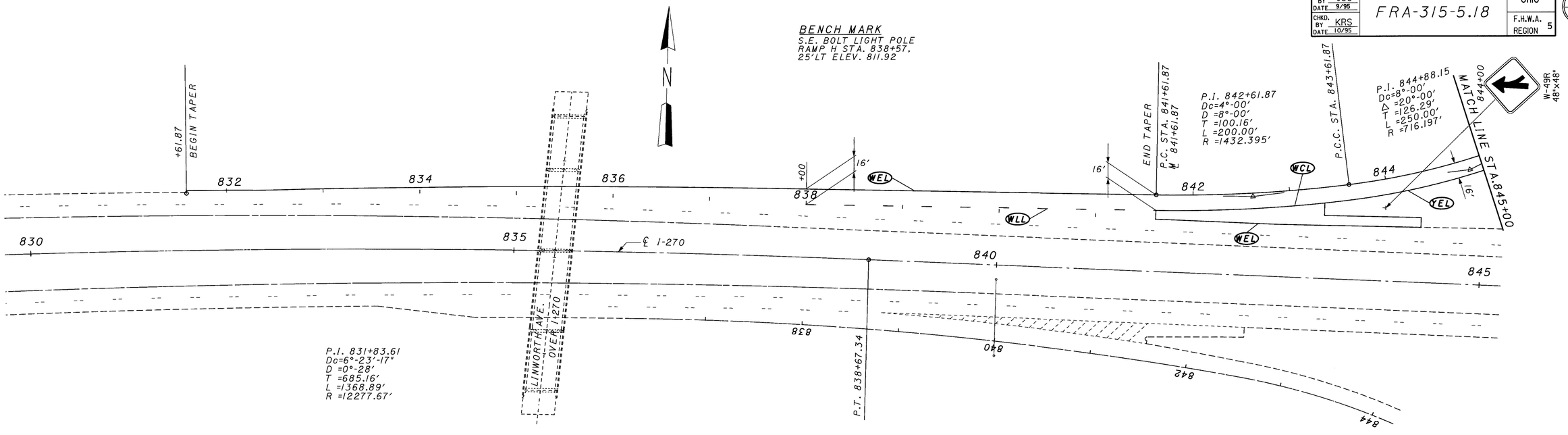
145+00 RIGHT LANE ENDS MERGE LEFT 12'x4' W-54C
+76.48 BEGIN TAPER
146+12 270 EAST Cleveland
147+37 RAMP 30 MPH
RAMP G
ASPHALT CONCRETE
P.C. 148+70.30
I-270
+20.30 END TAPER
270 EAST Cleveland
151+25
MATCH LINE STA. 145+00
155+13 REMOVE WEST 270 Dublin
REMOVE
156+30
REMOVE 159+75 270 WEST Indianapolis
MATCH LINE STA. 160+00
N 7°42'56" E
RAMP E
+48.68 BEGIN TAPER
P.T. 148+99.07
END TAPER P.T. 151+54.16 BEGIN TAPER
RAMP F
+37.12 END TAPER
152+72
RAMP 30 MPH
EXIT 30 MPH
857+19
I-270
270 WEST Indianapolis 868+33
BEGIN WORK STA. 865+71.56
REMOVE 869+54
155+00 FREEWAY ENDS 1/4 MILE 12'x4' W-55
LITTER CONTROL NEXT 2 MILES WORTHINGTON LOWORTH TOWNSHIP
ROADWAY A
RAMP B
BEGIN WORK STA. 865+75.55

TRAFFIC CONTROL SR-315 STA. 130+00 TO STA. 160+00

TRAFFIC CONTROL SR-315 STA. 160+00 TO STA. 190+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

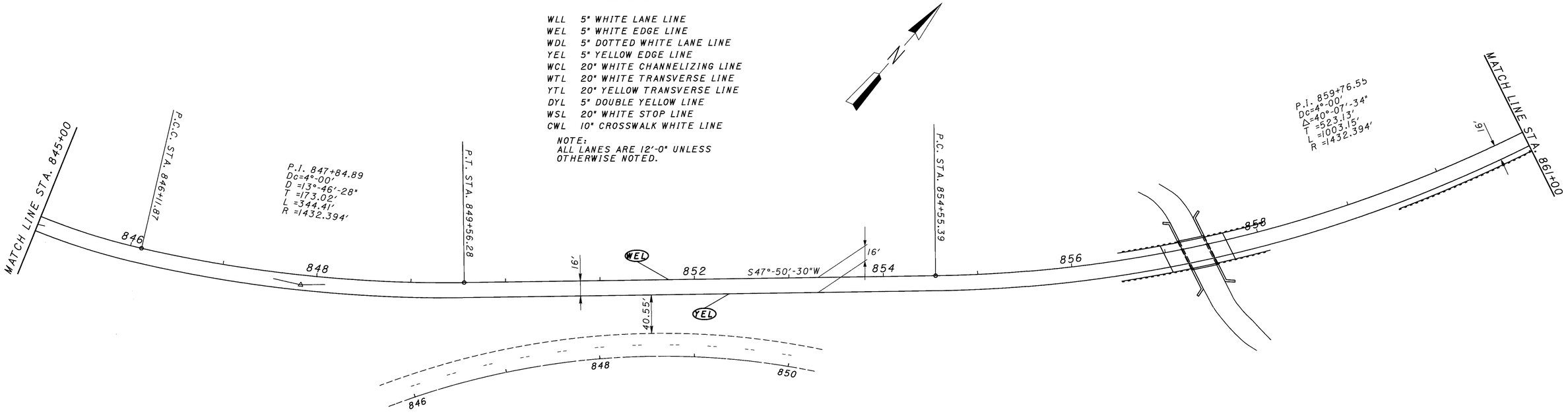
185
286



LEGEND

WLL	5" WHITE LANE LINE
WEL	5" WHITE EDGE LINE
WDL	5" DOTTED WHITE LANE LINE
YEL	5" YELLOW EDGE LINE
WCL	20" WHITE CHANNELIZING LINE
WTL	20" WHITE TRANSVERSE LINE
YTL	20" YELLOW TRANSVERSE LINE
DYL	5" DOUBLE YELLOW LINE
WSL	20" WHITE STOP LINE
CWL	10" CROSSWALK WHITE LINE

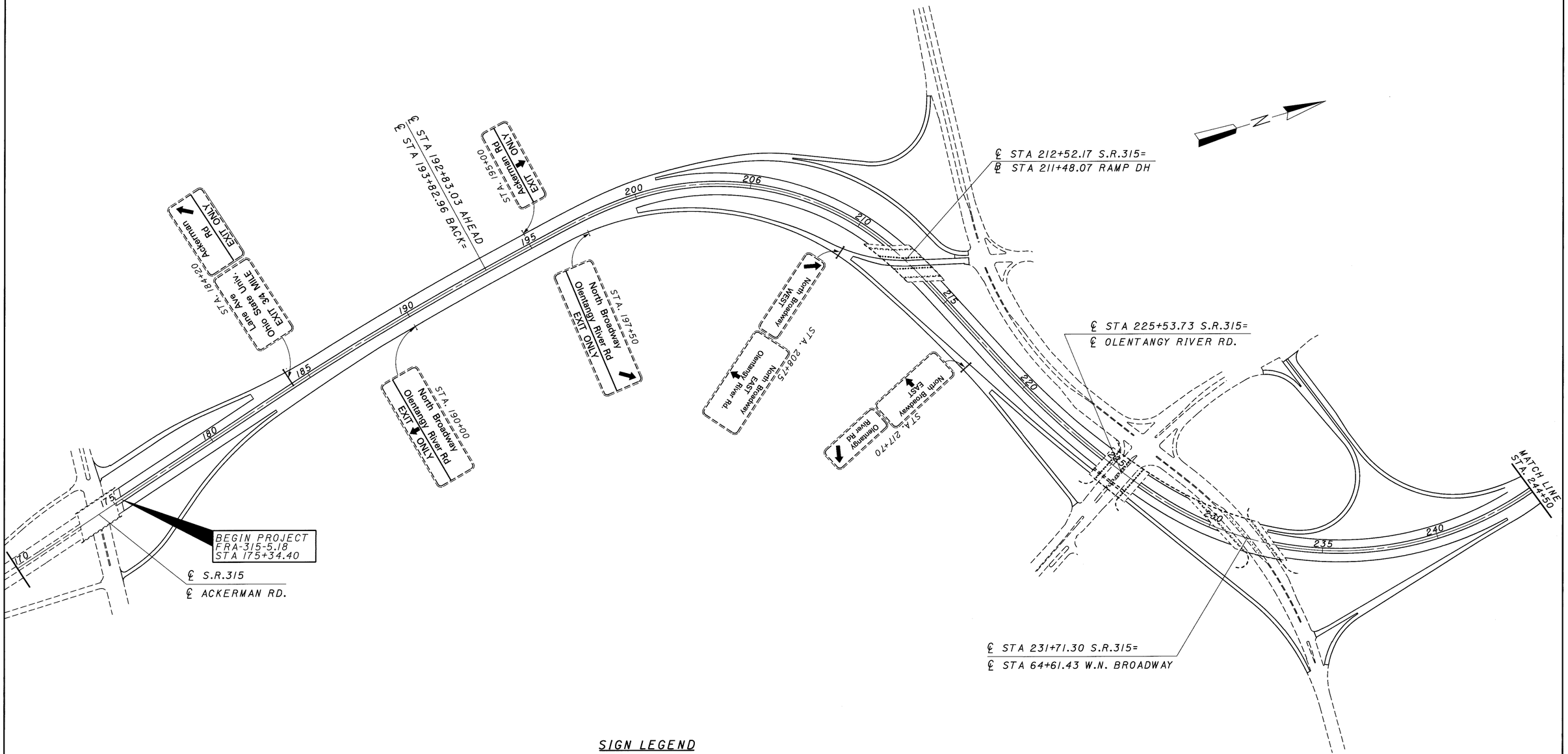
NOTE:
ALL LANES ARE 12'-0" UNLESS OTHERWISE NOTED.



TRAFFIC CONTROL RAMP H STA. 831+61.87 TO STA. 861+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

186
286



SIGN LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- REMOVAL OF SIGN
- REMOVE AND RE-ERECT (R&R)

OVERHEAD SIGNING PLAN STA. 175+34.40 TO STA. 244+50

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

187
286

℄ STA 270+03.19 AHEAD
℄ STA 270+00.00 BACK=

MATCH LINE STA. 244+50

STA. 245+00
North Broadway
Ackerman Rd
EXIT 1 1/4 MILE

STA. 260+00
North Broadway
NEXT RIGHT

STA. 261+09
Henderson Rd
EXIT 3/4 MILE

Henderson Rd
NEXT RIGHT
278+31

STA. 299+05
Bethel Rd
EXIT 3/4 MILE
Henderson Rd

MATCH LINE STA. 312+00

℄ STA 310+11.41 S.R.315=
℄ STA 23+16.29 HENDERSON RD.

MATCH LINE STA. 312+00

STA. 328+80
North Broadway
Henderson Rd
EXIT ONLY
EXIT 1 1/2 MILE

STA. 335+00
Henderson Rd
EXIT ONLY

REMOVE
Bethel Rd
VERY RIGHT
STA. 326+00

Bethel Rd
EXIT ONLY
17'-0"x8'-6"

Bethel Rd
EXIT ONLY
16'-0"x6'-0"

Bethel Rd
STA. 339+50

STA. 366+70
Bethel Rd
Henderson Rd
EXIT 3/4 MILE

MATCH LINE STA. 379+00

℄ STA 351+94.09 S.R.315=
℄ STA 31+23.29 BETHEL RD.

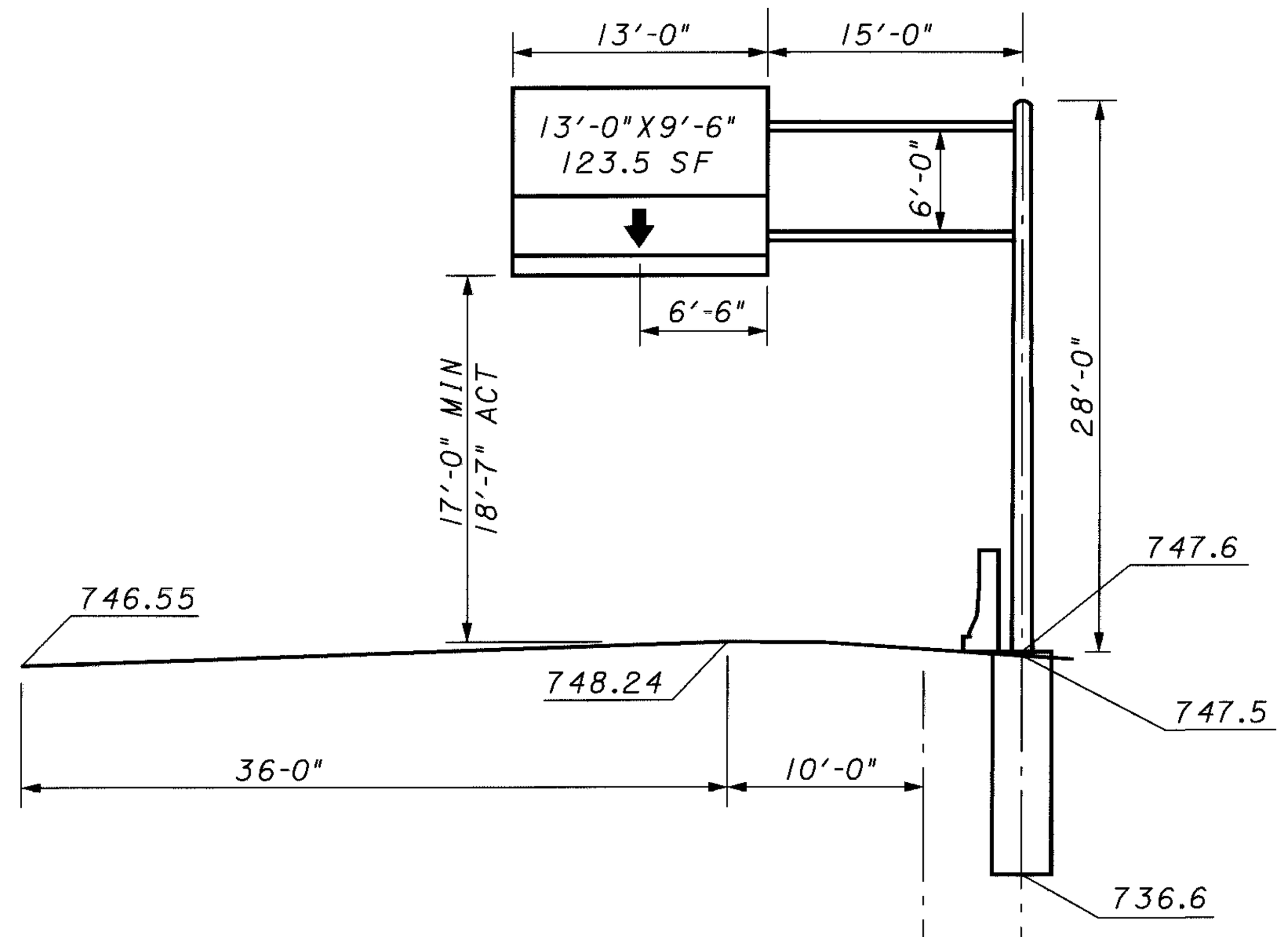
OVERHEAD SIGNING PLAN- STA. 244+50 TO STA. 379+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	188/286

OVERHEAD SIGNING PLAN- STA. 379+00 TO STA. 127+00

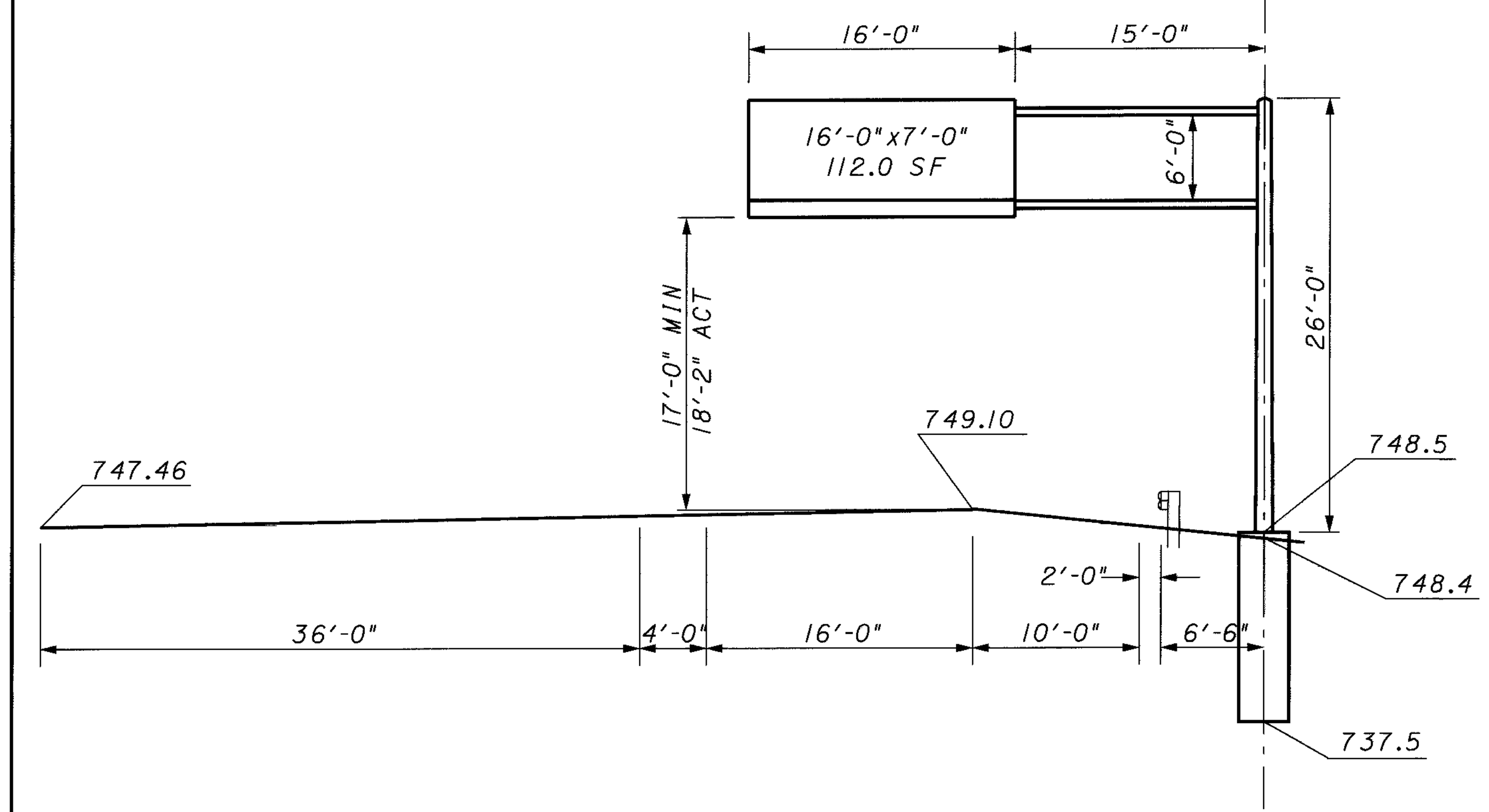
OVERHEAD SIGNING PLAN STA. 127+00 TO STA. 190+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	190/286
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5	



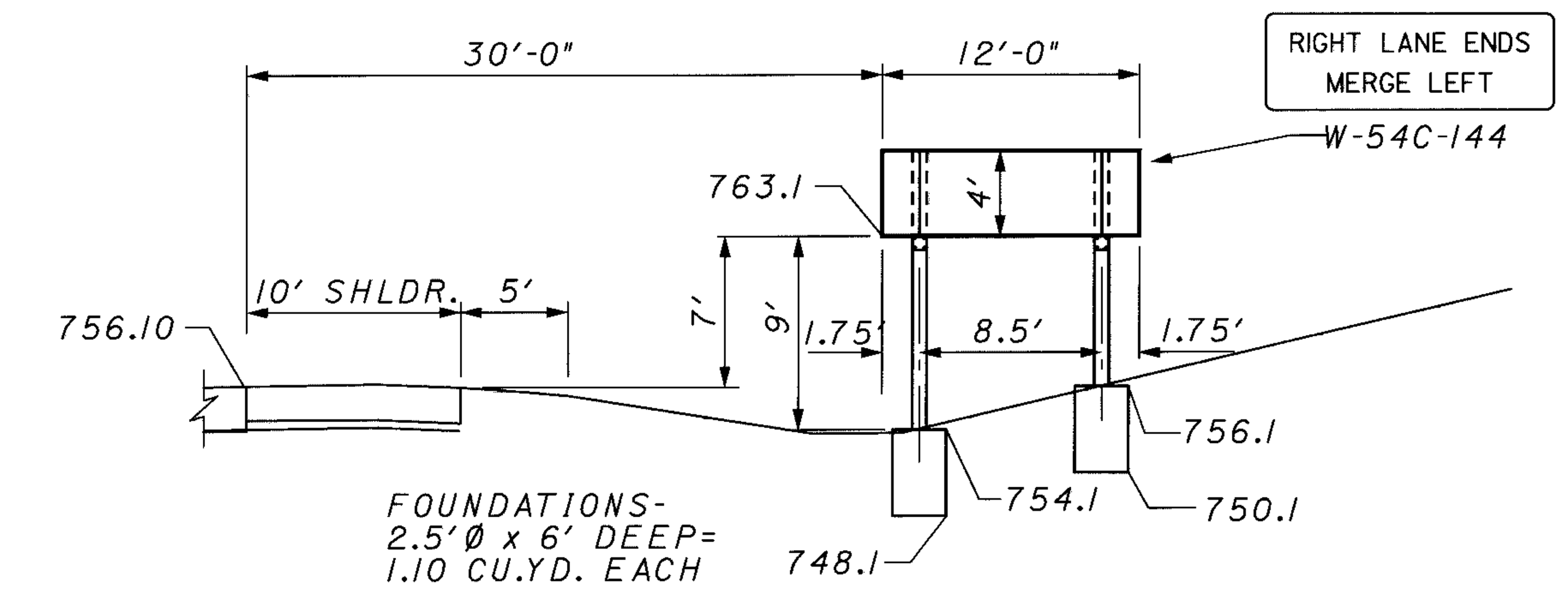
SR 315 STA. 326+00 N.B.
TC-12.30 DESIGN 6

TOTAL SIGN AREA= 123.5 FT²

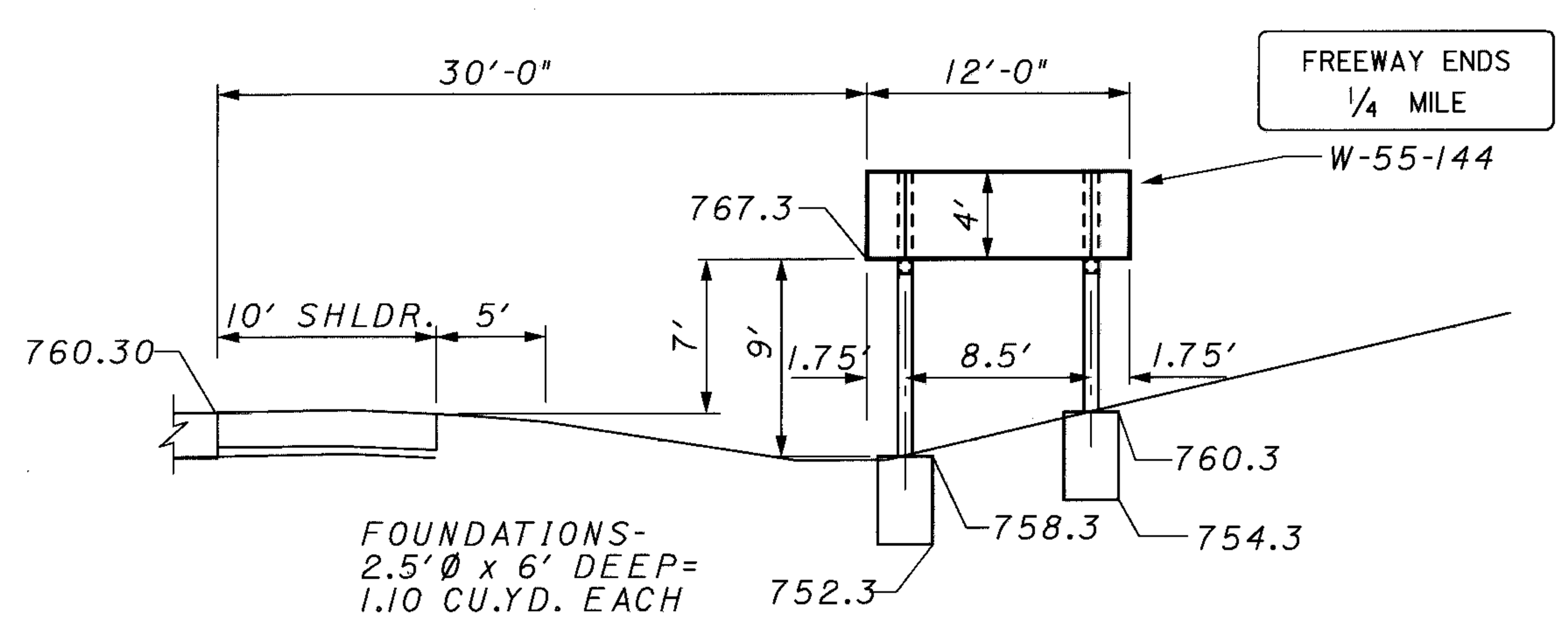


SR 315 STA. 338+50 N.B.
TC-12.30 DESIGN 6

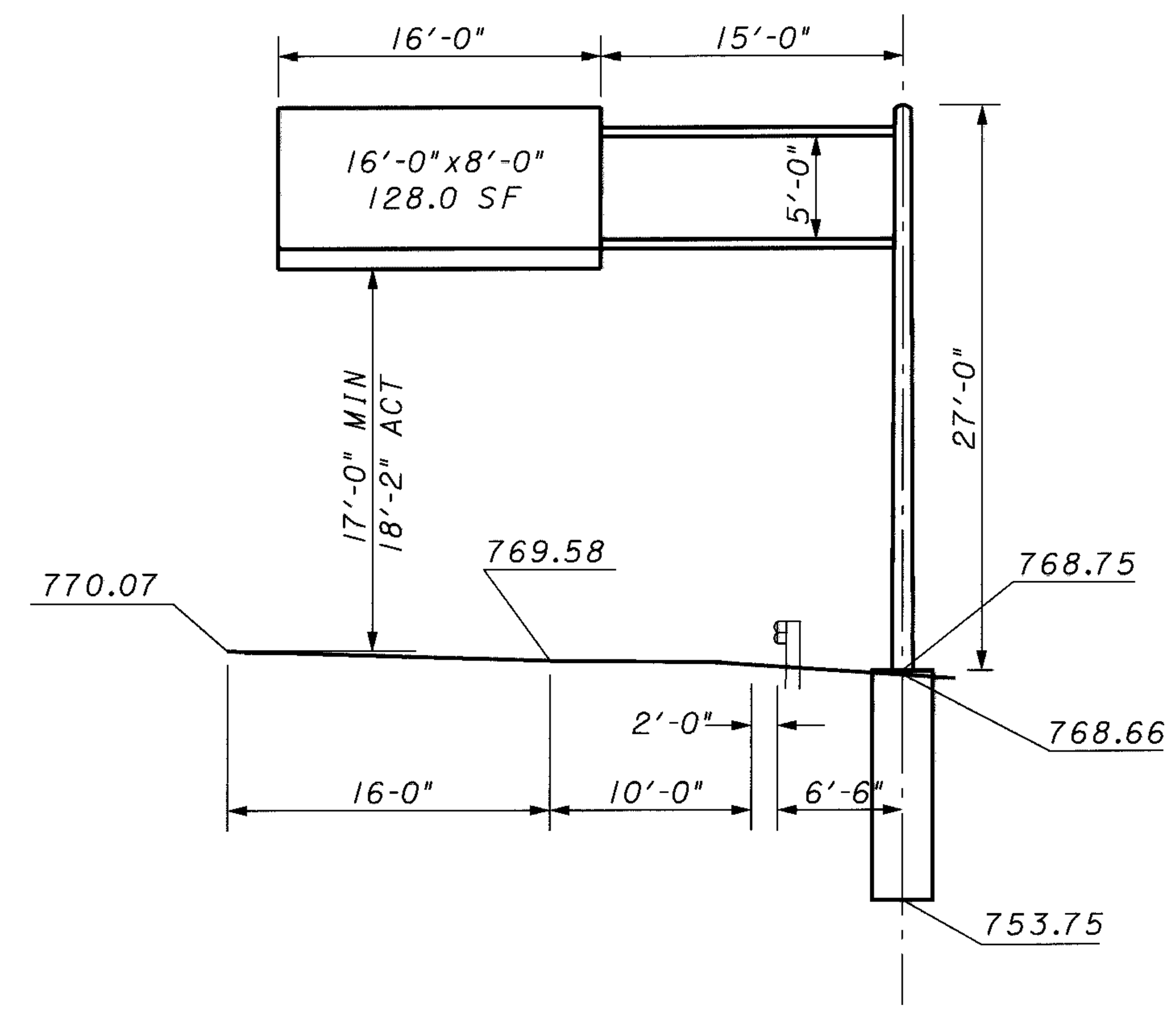
TOTAL SIGN AREA= 112.0 FT²



GROUND MOUNTED SIGN SUPPORT
S.R. 315 STA. 145+00 S.B.

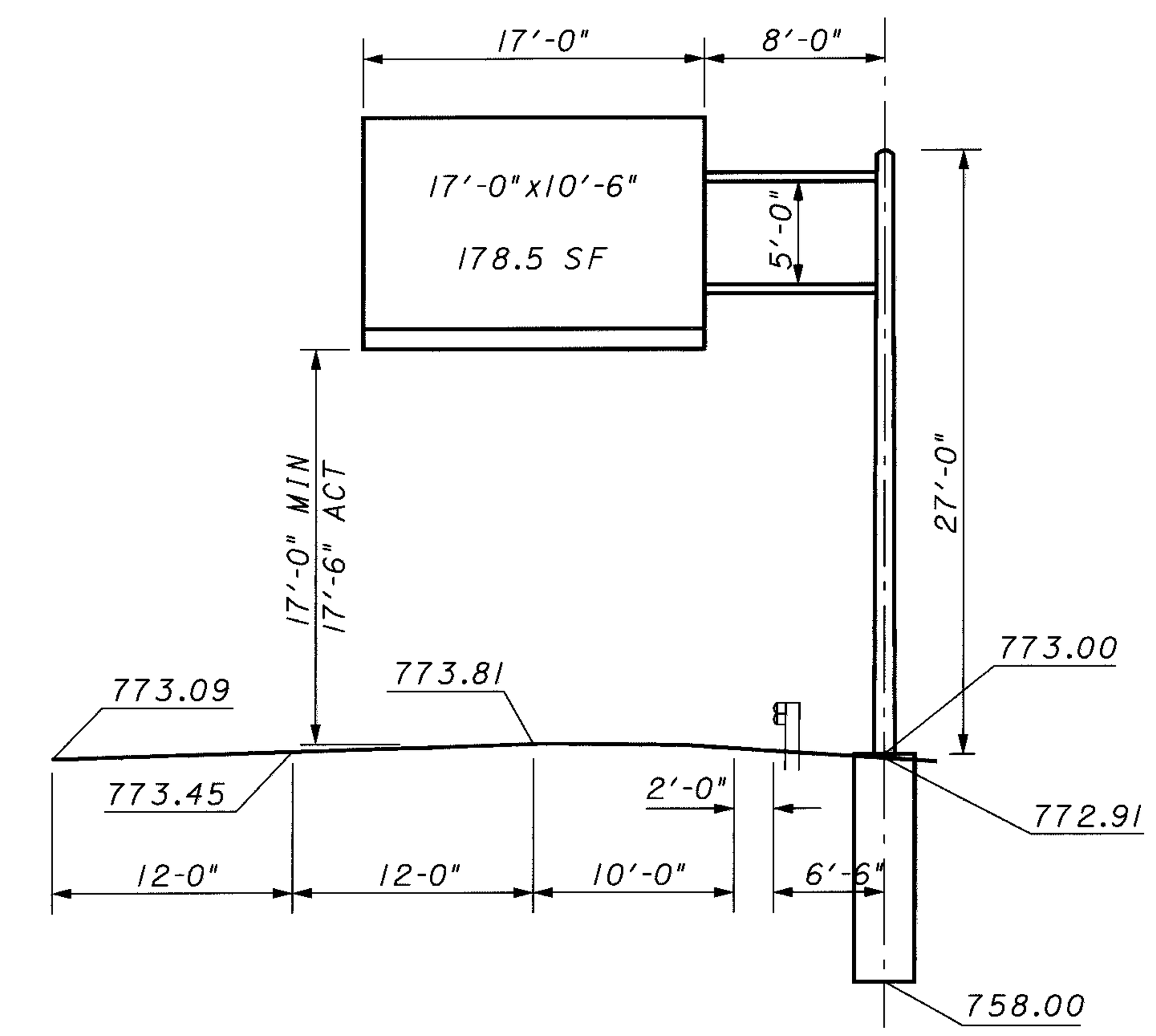


GROUND MOUNTED SIGN SUPPORT
S.R. 315 STA. 155+00 N.B.



SR 315 STA. 165+00 S.B.
TC-12.30 DESIGN 8

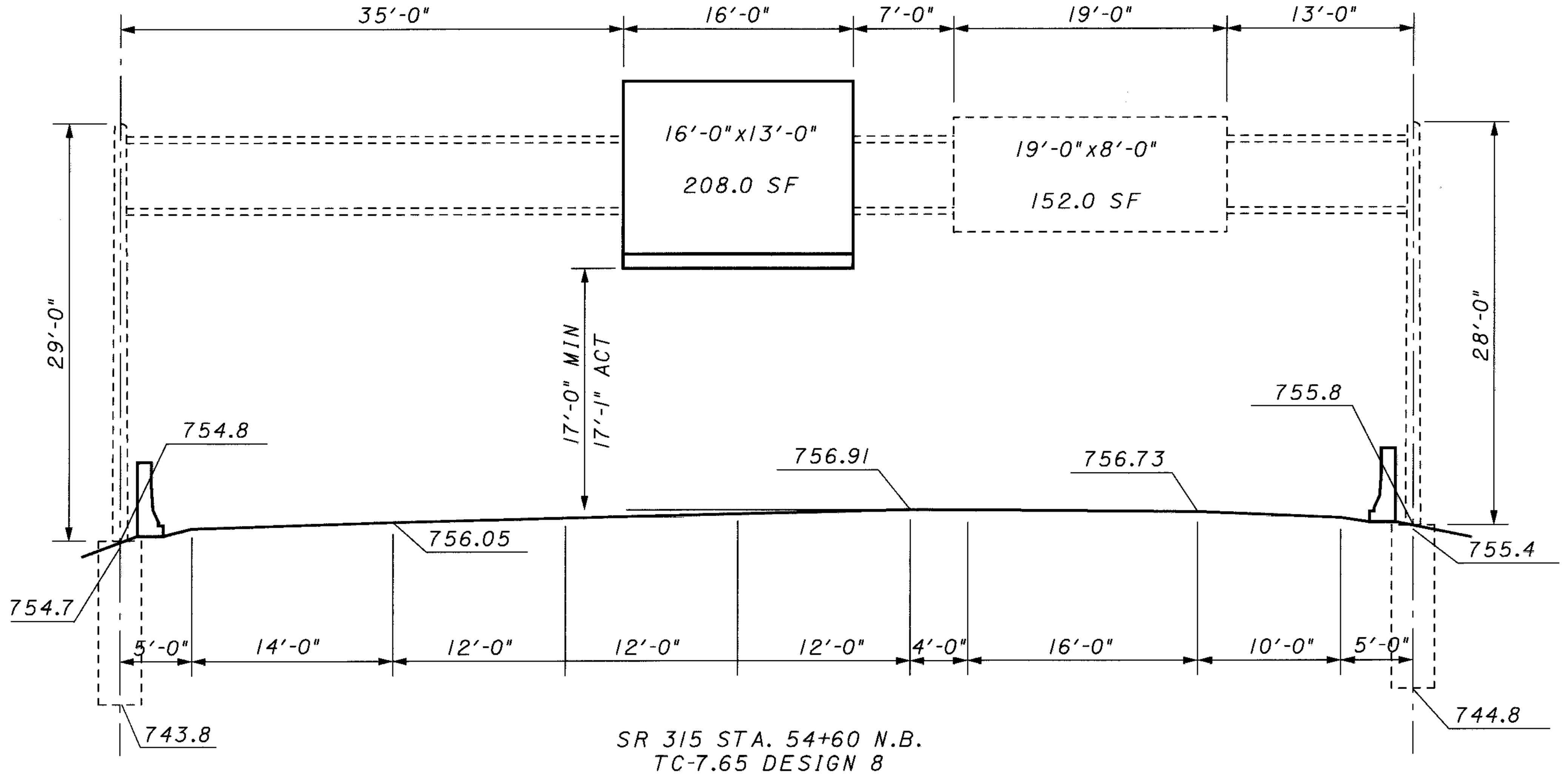
TOTAL SIGN AREA= 128.0 FT²



SR 315 STA. 177+00 S.B.
TC-12.30 DESIGN 8

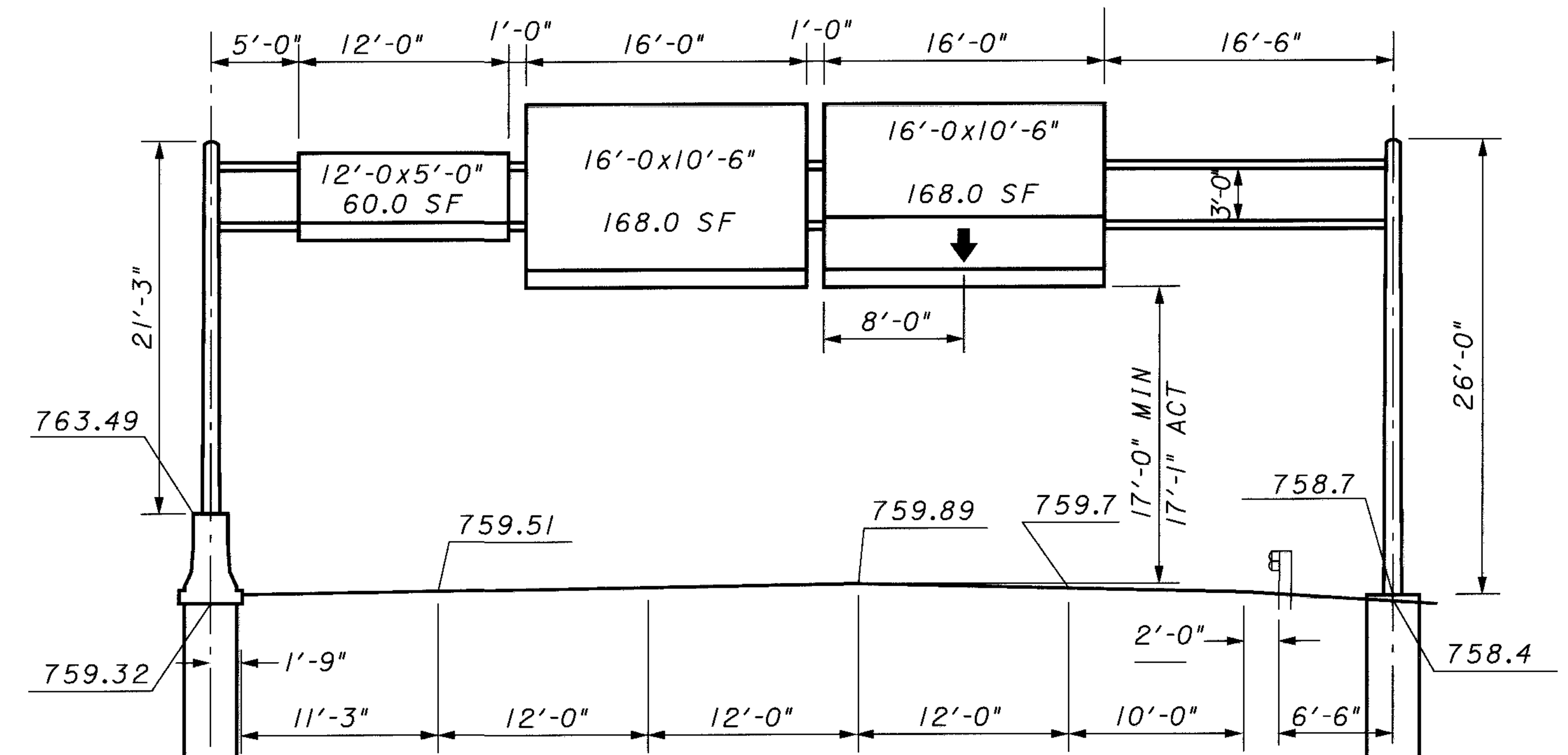
TOTAL SIGN AREA= 178.5 FT²

GROUND MOUNTED & OVERHEAD SIGN DETAILS



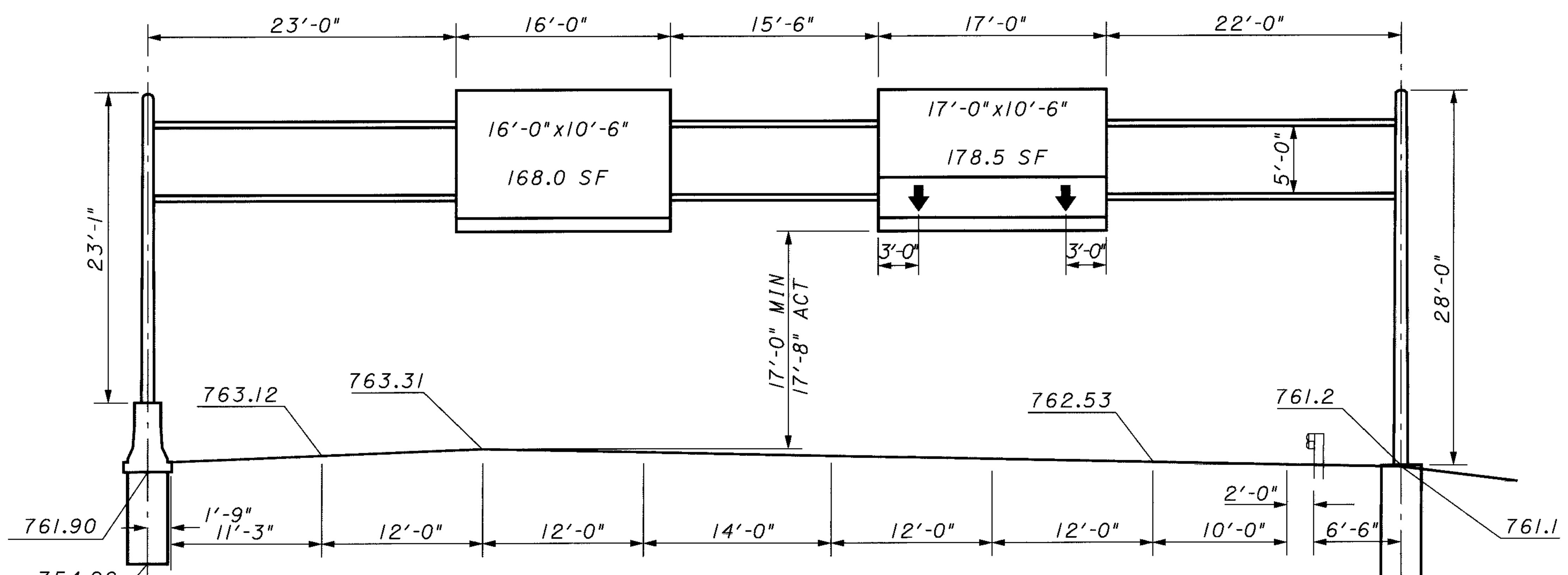
SR 315 STA. 54+60 N.B.
TC-7.65 DESIGN 8

A=208.0 FT^2, B=152.0 FT^2
TOTAL SIGN AREA= 360.0 FT^2
SPAN=90'-0"



SR 315 STA. 109+50 N.B.
TC-7.65 DESIGN 6

A=60.0FT^2
B=168.0 FT^2
C=168.0 FT^2
TOTAL SIGN AREA= 396.0 FT^2
SPAN=67'-5"



OVERHEAD SIGN SUPPORT
SR 315 STA. 135+08 N.B.
TC-7.65 DESIGN 8

A=178.5 FT^2
B=168.0 FT^2
TOTAL SIGN AREA= 346.5 FT^2
SPAN=93'-6"

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

SHEET NUMBER																										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
193	196	197	199	200	202	203	204	205	206	207	208	210	210	212	213	214	215	216	218	219	220	221	222	224						
																														TRAFFIC SURVEILLANCE GENERAL SUMMARY
	86		30																					65		625	25300	231	LIN.FT.	CONDUIT 1½ INCH 713.04
	260		2306		895				250	60	110	60	2156						252							625	25302	5849	LIN.FT.	CONDUIT 1½ INCH 713.07
	236	18	544	74	310	16	16	16	248	344	504	268	352	16	16	516		146	600	16	60	16	224	106		625	25500	4,662	LIN.FT.	CONDUIT 3 INCH 713.04
	262	256	662		502	216	208	208	362	472	256	372	554	240	240	240		240	560	256	240	276	388	458		625	25900	6,268	LIN.FT.	3" CONDUIT JACKED OR DRILLED UNDER PAVEMENT
	3396	3066	3108	2652	4718	3036	3040	3000	2762	4576	3648	3980	3260	3080	3104	2576	2728	2858	3803	60		60	1700	6708		625	25920	71,919	LIN.FT.	CONDUIT MISC.: MULTICELL CONDUIT SYSTEM, 4"
	2117	1542	3059	1326	3169	1526	1528	1508	1782	2470	1708	1614	3061	1530	1560	1546	1364	1502	1539	38	30	8	968	2022		625	29000	38,520	LIN.FT.	TRENCH
	6	1	11		7	1	1	1	3	4	4		12	2	2	2		2	6	1	1	1	7	5		625	30700	80	EACH	PULL BOX 713.08 18 INCH
																			1				1			625	31501	2	EACH	18" MEDIAN PULL BOX, AS PER PLAN
	1	1	2	1	1	1	1	1	1	1	1								1	1	1	2				625	31501	17	EACH	36" MEDIAN PULL BOX, AS PER PLAN
			2		2					2							2									625	31600	8	EACH	PULL BOX MISC.: BRIDGE TRANSITION PULL BOX, AS PER PLAN
																			1				1			625	31600	2	EACH	PULL BOX MISC.: MEDIAN TRANSITION PULL BOX, AS PER PLAN
	8	3	6	2	7	2	2	1	3	8	5	7	7	3	3	4		4	8	2	1	2	5	10		625	31600	96	EACH	PULL BOX MISC.: PULL BOX, 713.08, HEAVY DUTY 32"
	1		1		2					1		1	1													625	32000	7	EACH	GROUND ROD
			526	274	326					188							272									625	98100	1586	LIN.FT.	LIGHTING MISC.: CONDUIT 3 INCH 713.04 ON BRIDGE
4																										632	28100	4	EACH	MAGNETOMETER SENSOR PROBE
860	640	308	508	52	828	192	192	384	288	548	344	204	552	192	384	192		192	784	192	384	212	256	360		632	27500	9048	LIN.FT.	LOOP DETECTOR PAVEMENT CUTTING
	845		1095		1774					850	363	757	1420													632	40500	7104	LIN.FT.	SIGNAL CABLE 5 CONDUCTOR #14 AWG
1955	1688	829	1468	136	2072	520	520	1040	780	1408	917	512	1440	520	1040	520		520	2104	520	1040	602	734	964		632	64900	23,889	LIN.FT.	LOOP DETECTECTOR WIRE,TYPE E
	2345		2246		7628					3830	1565	4831	5362													632	65200	27,807	LIN.FT.	LOOP DETECTOR LEAD-IN CABLE
	506		588		885					459	309	35	1209													632	69500	3991	LIN.FT.	SERVICE CABLE 2 CONDUCTOR #6 AWG
			1		1								1													632	70000	3	EACH	POWER SERVICE
	1		1		1					1	1		1													632	70001	6	EACH	POWER SERVICE, AS PER PLAN
					1								1													632	70401	2	EACH	CONDUIT RISER, 2 INCH, AS PER PLAN
	1		1		2					2		1	1													632	90400	8	EACH	SIGNALIZATION, MISC.: RAMP METER, AS PER PLAN
	1		2		2					1	1		2													632	90400	9	EACH	SIGNALIZTION, MISC.: RAMP METER SIGN, AS PER PLAN
	1		1		2					1	1		2													633	40100	8	EACH	CONTROLLER, MISC.: RAMP CONTROLLER, AS PER PLAN

SIGNALS

NO EXCAVATION SHALL BE MADE WITHIN FIVE FEET (5') OF ANY POLE THAT SUPPORTS TRAFFIC SIGNAL DISPLAYS OR SIGNS BY MAST ARM OR SIGNAL SPAN. EXCAVATION WITHIN EIGHT FEET (8') BUT MORE THAN FIVE FEET (5') SHALL REQUIRE ADDITIONAL SUPPORT (DOWN GUY, HEAD GUY, BASE GUY, ETC.) THE CONTRACTOR SHALL CONTACT THE DIVISION SYSTEM ENGINEER (614 645-7790) AT LEAST TWO WORKING DAYS PRIOR TO SUCH EXCAVATION, SO THAT THE DIVISION MAY INSTALL SUCH SUPPORTS AT THE OWNER/CONTRACTING AGENCY'S EXPENSE.

ANY WORK DONE BY THE DIVISION OF THE TRAFFIC ENGINEERING, INCLUDING THE INSTALLATION, RELOCATION, REMOVAL AND/OR REPLACEMENT OF PERMANENT TRAFFIC CONTROL DEVICES AS A RESULT OF NEGLIGENCE ON THE PART OF THE CONTRACTOR SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

WHEN THE CONTRACTOR CUTS A DETECTOR OR ITS LEAD-IN, THE DIVISION OF TRAFFIC ENGINEERING SHALL BE NOTIFIED. CONTACT THE SYSTEMS ENGINEER (614 645-7790) BETWEEN 8:00 A.M. AND 5:00 P.M. WEEKDAYS. AT OTHER TIMES OR IF THE SYSTEMS ENGINEER CANNOT BE REACHED CONTACT THE TRAFFIC ENGINEERING MAINTENANCE SHOP (614 645-7393), LEAVING A MESSAGE ON THE ANSWERING MACHINE IF NECESSARY.

THE DIVISION OF TRAFFIC ENGINEERING SHALL LOCATE AND MARK ALL UNDERGROUND TRAFFIC CONTROL CABLES. THE DIVISION SYSTEM ENGINEER SHALL BE NOTIFIED (614 645-7790) AT LEAST 48 HOURS (6 WEEKS FOR SIGNAL REVISIONS AND/OR POLE RELOCATIONS) PRIOR TO THE BEGINNING OF ANY WORK WITHIN 450' OF ANY SIGNALIZED INTERSECTIONS OR WITHIN ANY POSTED AREA WHERE THE DIVISION HAS UNDERGROUND CABLE.

AT ANY INTERSECTION WHERE DAMAGE TO DETECTORS AND/OR THEIR HOMERUN CABLES ARE UNAVOIDABLE, THE CONTRACTOR SHALL REPLACE THEM. ANY DETECTOR REPLACED SHALL BE PLACED PRIOR TO THE LAYING OF THE FINISH COURSE. LOCATION OF THE REPLACEMENT DETECTION SHALL BE FIELD LOCATED BY THE DIVISION OF TRAFFIC ENGINEERING. THE CONTRACTOR SHALL NOTIFY THE SYSTEM ENGINEER (614 645-7790) TWO WORKING DAYS PRIOR TO WORK BEGINNING ON TRAFFIC DETECTOR REPLACEMENT, SO THAT DETECTOR MAY BE PRE-MARKED.

THE WORK TO INSTALL THE DETECTION SHALL CONFORM TO OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWING (ODOT SCD) TC-82.10 (DATED 8/29/84 OR LATER) AND TO THE FOLLOWING PROVISIONS:

LOOP WIRES MAY EXIT AT ANY POINT ON THE LOOP AND SHALL BE UNIFORMLY TWISTED AT THREE (3) TO FIVE (5) TURNS PER FOOT;

ANY NOTE HERE APPLYING TO MAGNETOMETER PROBE INSTALLATION ALSO APPLIES TO MICROLOOP PROBES. HOWEVER, DETECTOR LEAD-IN CABLE IS USED TO CONNECT MICROLOOPS TO THE TRAFFIC CONTROL BOX. THE MICROLOOP PROBE IS AVAILABLE FROM MINNESOTA MINING AND MANUFACTURING. THE PROBE SETS ARE CUSTOM BUILT OF MICROLOOP PROBES (3M PART NUMBER M-701);

ANY DIRECTIONAL CHANGE IN A LEAD-IN OR HOMERUN CABLE MADE IN A SAW SLOT SHALL BE MADE THROUGH A 1.25" DRILLED HOLE;

THE LOOP POLARITY SHALL BE IDENTIFIED BY MEANS OF A PLASTIC TAG PLACED ON ONE OF THE LOOP WIRES AT THE SPLICE WHICH CONNECTS TO THE BLACK CONDUCTOR IN THE HOMERUN CABLE AND AGAIN ON THE BLACK WIRE AT THE CONTROL BOX. THE LOOP WIRE WHICH IS TO BE IDENTIFIED AS POSITIVE (+) SHALL BE THE WIRE WHICH IF FOLLOWED FROM THE SPLICE AND AROUND THE LOOP TRACES A CLOCKWISE (CW) PATTERN. COUNTERCLOCKWISE (CCW) AND CLOCKWISE PATTERN SHALL BE USED FOR QUADRAPOLE LOOPS. THE PLASTIC TAG SHALL IDENTIFY THE LOOPS AS NBLT, EB, SBRT, ETC.;

IF THE WET METHOD OF SAW CUTTING IS USED FOR THE MAGNETOMETER PROBE INSTALLATIONS, THE SAW SLOT SHALL BE SAWN FIRST, BLOWN DRY AND THEN THE PROBE HOLE(S) SHALL BE DRILLED. THE SLOT AND HOLES SHALL BE CLEANED THOROUGHLY BEFORE THE SLOT AND HOLES ARE SEALED;

LOOP SAW SLOTS SHALL BE CLEANED THOROUGHLY AND DRIED BEFORE THE INSTALLATION OF WIRE AND SEALANT. ALL SHARP EDGES AT TURNING POINTS SHALL BE CHAMFERED OR CHISELED OUT. PRIOR TO POURING THE SLOT SEALANT, THE SENSOR WIRE SHALL BE GENTLY WEDGED INTO SLOT WITH PLASTIC TUBING AT TWO (2) FOOT INTERVALS. LOOP SEALANTS APPROVED FOR USE ON THIS PROJECT ARE PRECO GOLD FLEX (TWO PART) AND 3M DETECTOR LOOP SEALANT (ONE PART). PAYMENT FOR LOOP SEALANT IS INCIDENTAL TO THE DETECTOR PAVEMENT CUTTING ITEM;

ONE-INCH (1") STEEL CONDUIT SHALL BE INSTALLED FROM THE SAWSLOT AWAY FROM THE PAVEMENT TO THE PULLBOX OR CONDUIT RISER. INSTALLATION SHALL FOLLOW THE DETAIL A OF ODOT SCD 82.10.

SENSOR LOCATIONS SHALL BE FIELD MARKED BY DIVISION OF TRAFFIC ENGINEERING PERSONNEL. CONTACT THE SYSTEMS ENGINEER (614 645-7790) AT LEAST TWO WORKING DAYS PRIOR TO NEEDING THE LOCATIONS MARKED;

LOOP LEAD-IN AND HOMERUN CABLE SHALL BE SOLDERED OR CONNECTED WITH APPROVED PRESSURE CONNECTORS WITHIN AN EPOXY ENCAPSULATED SPLICE ENCLOSURE. COST FOR SPLICES BETWEEN LOOP WIRE AND LEAD-IN CABLES SHALL BE INCLUDED IN THE BID PRICE FOR LOOP WIRE. COST FOR SPLICES REQUIRED BETWEEN LEAD-IN CABLES SHALL BE INCIDENTAL TO THE LEAD-IN CABLE;

WHEN A PULLBOX IS NOT USED, THE SPLICE SHALL BE MADE IN AN ANCHOR BASE STRAIN POLE OR A CONDUIT RISER SPECIFIED BY THE TRAFFIC ENGINEERING REPRESENTATIVE EXCEPT WHERE A CONTROLLER CABINET IS MOUNTED ON THAT POLE IN WHICH CASE THE LEAD-IN OR HOME-RUN CABLE SHALL BE ROUTED DIRECTLY INTO THE CABINET;

SAWSLOTS SHALL BE TWO INCH (2") MINIMUM FOR LOOP INSTALLATIONS AND ONE AND A HALF INCH (1.5") MINIMUM FOR MAGNETOMETER OR MICROLOOP DETECTORS. IF LOOP INSTALLATION IS MADE IN FINAL COURSE OF PAVEMENT, THE MINIMUM DEPTH OF THE SAWSLOTS SHALL BE INCREASED TO FOUR INCHES (4") AND THREE AND ONE HALF INCH (3.5") RESPECTIVELY. IN AREAS OF POOR PAVEMENT CONDITION, THE SAWSLOT DEPTH SHALL BE INCREASED TO INSURE ADEQUATE WIRE EMBEDMENT. ALL FINAL ADJUSTMENTS SHALL BE SUBJECT TO APPROVAL OF THE TRAFFIC ENGINEERING REPRESENTATIVE.

LOOP WIRE SHALL BE #14 AWG TYPE (WIRE IS INSERTED INTO A NOMINAL 1/4-INCH OD x 0.025-INCH WALL (MIN.) POLYVINYL CHLORIDE OR POLYETHYLENE TUBING);

LOOP LEAD-IN SHALL BE TWO CONDUCTOR, #14 AWG, COPPER STRANDED, TWISTED PAIR, SHIELDED, POLYETHYLENE-INSULATED CABLE. THE JACKET SHALL BE 0.04-INCH THICK (MIN.) BLACK POLYETHYLENE;

MAGNETOMETER LEAD-IN SHALL BE FOUR CONDUCTOR, #18 AWG, COPPER, COLOR CODED, STRANDED, POLYETHYLENE-INSULATED CABLE. CAPACITANCE BETWEEN ADJACENT CONDUCTORS SHALL BE NO MORE THAN 18 PICOFARADS AND NO MORE THAT 15 PICOFARADS BETWEEN DIAGONAL PAIRS. THE JACKET SHALL BE 0.26 INCH (MIN.) HIGH DENSITY POLYETHYLENE;

PULLBOXES SHALL BE HIGH DENSITY ULTRAVIOLET STABILIZED POLYETHYLENE OR POLYCARBONATE, OR FIBER REINFORCED RESIN OR FOAM MOLDINGS, ADEQUATELY REINFORCED AND WITH A BOX WALL THICKNESS OF AT LEAST 0.25 INCH. THE OVERALL SIZE SHALL BE 10"W x 14"L x 24"D AFFORDING A CLEAR OPENING OF AT LEAST 120 SQUARE INCHES. THE PULLBOX AND COVER SHALL WITHSTAND A TEST LOAD OF 2500 POUNDS. THE COVER SHALL BE SLIP RESISTANT AND BEAR THE WORD "TRAFFIC"; THE CONTRACTOR SHALL NOT MAKE ANY WIRING CONNECTIONS OR ADJUSTMENTS INSIDE THE CONTROL CABINET. WHEN SUCH CONNECTIONS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEER MAINTENANCE SHOP (614 645-7790, MONDAY THRU FRIDAY, 8 AM TO 4 PM) TO SCHEDULE CITY FORCES FOR MAKING THE ACTUAL CONNECTIONS. THE CONTRACTOR SHALL BE AVAILABLE AT THE AGREED TIME. THE CONTRACTOR WILL BE BILLED FOR ANY TIME THAT CITY FORCES ARE REQUIRED TO WAIT FOR THE CONTRACTOR'S WORK TO BE COMPLETED PRIOR TO CITY WORK;

THE ITEMS AND ESTIMATED QUANTITIES FOR THE REPLACEMENT OF TRAFFIC ENGINEERING DETECTION ITEMS SHALL BE INCLUDED IN THESE PLANS. THESE ESTIMATES ARE FOR THE PURPOSE OF BIDDING THE PROJECT. THE CONTRACTOR WILL BE PAID FOR ACTUAL WORK PERFORMED AS LAID OUT BY THE REPRESENTATIVE OF THE TRAFFIC ENGINEERING DIVISION. THE FOLLOWING IS A LIST OF THE ITEMS AND QUANTITIES PROJECTED FOR USE IN A DETECTOR REPLACEMENT FOR THIS PROJECT.

LOOP DETECTOR REPLACEMENT QUANTITIES FOR TRAFFIC SIGNAL CONTROL

LOCATION	LOOP DETECTOR WIRE, TYPE E QUANTITY L.F.	LOOP DETECTOR PAVEMENT CUTTING QUANTITY L.F.	MAGNETOMETER (2) PROBE SET, 6' SEPARATION, 60' LEAD IN QUANTITY EACH
ACKERMAN @ 315 SB	330	145	
OLENTANGY @ 315 NB	330	145	
N. BROADWAY @ 315 NB	500	220	
HENDERSON @ 315 NB	650	265	
HARD @ OLENTANGY RIVER	185	85	4
TOTALS	1995	860	4

ITEM 625: MULTICELL CONDUIT SYSTEM, 4", AS PER PLAN

THE FIBER OPTIC CONDUIT SHALL CONSIST OF A FACTORY ASSEMBLED SYSTEM OF FOUR (4) INNERDUCTS ASSEMBLED WITHIN A PROTECTIVE OUTERDUCT.

THE OUTERDUCT SHALL BE A NOMINAL 4" PVC, TYPE C TELEPHONE DUCT, VEETING BELLCORE CAO-8546 SPECIFICATIONS, AND FURTHER DEFINED AS FOLLOWS:

4.350" AVERAGE OUTSIDE DIAMETER
.063" MINIMUM WALL THICKNESS

THE COUPLING SHALL BE DESIGNED IN A MANNER TO PERMIT EASY FIELD ASSEMBLY. THE COUPLING SHALL BE MARKED OR KEYED IN A MANNER TO ENSURE THE INNERDUCTS ARE PROPERLY ALIGNED, ANY COLOR CODES ARE CONTINUED AND THE ADJOINING SECTION IS INSERTED TO THE PROPER DEPTH IN THE BELL. ALL KEYS AND/OR MARKINGS SHALL BE VISIBLE AFTER ASSEMBLY, TO ALLOW THE INSPECTION OF EACH JOINT FOR PROPER ASSEMBLY BEFORE BURIAL. THE SEALING SYSTEM SHALL BE DESIGNED TO ASSURE AIR INTEGRITY OF EACH INDIVIDUAL INNERDUCT AND WATER INTEGRITY OF THE ENTIRE SYSTEM.

THE INNERDUCTS SHALL BE PRE-LUBRICATED AT THE FACTORY WITH A MATERIAL THAT WILL PROVIDE A LOW COEFFICIENT OF FRICTION BETWEEN THE CABLE AND THE INSIDE WALL WITHOUT THE ADDITION OF PULLING SOAP OR OTHER LUBRICANT.

WHERE A MULTICELL DUCT IS TO REMAIN EMPTY, A 1/4" NYLON PULL ROPE SHALL BE INSTALLED IN A UNIQUE COLORED INNERDUCT CHOSEN BY THE ENGINEER. THE ROPE WILL REMAIN TO BE USED FOR A FUTURE CABLE INSTALLATION.

RAMP METERING

PURPOSE

THIS SECTION DESCRIBES A RAMP METERING SIGNAL, HARDWARE AND SOFTWARE, FURNISHED AND INSTALLED BY THE "CONTRACTOR". THE RAMP METER SIGNAL SHALL BE CAPABLE OF BEING OPERATED UNDER THE CONTROL OF THE CENTRAL SYSTEM, OR LOCALLY BY THE MEANS OF LOOP DETECTORS AND TRAFFIC RESPONSIVE SOFWARE INSTALLED AT THE LOCAL RAMP.

SPECIFIC REFERENCES

ODOT, BUREAU OF DESIGN SERVICES, STANDARD CONSTRUCTION DRAWINGS TC-82.10, TC-83.10, TC-83.20, TC-85.10, HL-30.11

ODOT, CONSTRUCTION AND MATERIAL SPECIFICATIONS, 1993

TRAFFIC SIGNAL CONTROL EQUIPMENT SPECIFICATIONS, CURRENT EDITION, PUBLISHED BY THE CALIFORNIA BUSINESS, TRANSPORTATION & HOUSING AGENCY, DEPARTMENT OF TRANSPORTATION, P.O. BOX 942874, SACRAMENTO, CA 94274-0001.

HUMAN ENGINEERING DESIGN CRITERIA FOR MILITARY SYSTEMS, EQUIPMENT AND FACILITIES, MIL-STD-1472D.

NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION STANDARDS PUBLICATION TS-1, PARTS 1,2,5,6,8,13 AND 14.

NATIONAL ELECTRICAL CODE.

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC.

IN CASE OF ANY CONFLICTING SPECIFICATION STATEMENTS, THE SPECIFICATION DOCUMENT HIERARCHY SHALL BE IN THE ORDER OF "SUPPLEMENTAL SPECIFICATIONS, COLUMBUS METRO FREEWAY MANAGEMENT SYSTEM, PHASE B" AND THEN FOLLOW THE ORDER LISTED ABOVE.

USER CHARACTERISTICS

ALL FIELD PROGRAMMING SHALL BE ACCOMPLISHED THROUGH THE USE OF A PLUG IN LAPTOP COMPUTER FURNISHED UNDER FRA-71-15.26, "COLUMBUS FREEWAY MANAGEMENT SYSTEM, PHASE 1" AND DOWNLOAD TO THE FIELD PROCESSOR. THE 170 SOFTWARE SHALL BE THE SAME AS THAT FURNISHED UNDER FRA-71-15.56, "COLUMBUS FREEWAY MANAGEMENT SYSTEM, PHASE 1."

HARDWARE REQUIREMENTS

LOOP DETECTORS

A QUANTITY OF $1\frac{59}{64}$ INCH CONDUIT (713.04) HAS BEEN PROVIDED FOR USE BETWEEN THE EDGE OF PAVEMENT AND THE PULL BOX. THIS SHALL BE SUBSTITUTED FOR THE 1/2" TO 1" CONDUIT SHOWN ON THE CROSS SECTION OF ODOT DRAWING TC-82.10.

LOOP DETECTOR WIRE SHALL BE TYPE E, AS PER 739.19. THE NUMBER OF TURNS, 3 OR 4, WILL BE AS SHOWN ON THE PLANS. FIVE (5) FEET OF TAIL SHALL BE LEFT ON EACH WIRE IN EACH PULL BOX. THIS WILL BE ADDED TO THE PAY QUANTITY. PAYMENT SHALL BE PER LINEAR FOOT OF DETECTOR WIRE IN PLACE AND INCLUDE APPROVED SEALANT.

ANY EXISTING LOOP THAT WILL BE USED FOR RAMP METERING SHALL BE RESTED FOR CONTINUITY (PARAGRAPH 3) AND INSULATION (PARAGRAPH 4) AS PER 632.27. THE INSULATION RESISTANCE MEASURED TO GROUND SHALL NOT BE LESS THAN ONE HUNDRED (100) MEGOHMS. A COPY OF THE TEST RECORDS SHALL BE FURNISHED TO THE ENGINEER. ANY LOOPS WHICH TEST OPEN OR LESS THAN 100 MEGOHMS TO GROUND SHALL BE REPLACED AT THE BID PRICE FOR THE APPROPRIATE NEW LOOP ITEMS.

CERTIFICATION SHALL BE REQUIRED FOR ALL LOOP DETECTOR WIRE. VERIFICATION BY THE CONTRACTOR THAT THE PROPOSED LOOP SEALANT IS ON ODOT'S APPROVED MATERIALS LIST SHALL BE REQUIRED.

CONDUIT

CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH ITEM 625.13.

DUAL CONDUITS MAY BE STACKED FOR INSTALLATION IN A STANDARD WIDTH TRENCH. TRENCH DEPTH SHALL BE ADJUSTED TO PROVIDE A MINIMUM OF TWO (2) FEET OF COVER OVER ALL CONDUITS. THE INSTALLATION SHALL CONFORM TO ITEM 625.13.

A PULL WIRE SHALL BE INSTALLED IN ANY CONDUIT WHICH DOES NOT HAVE A CIRCUIT WIRE OR CABLE PULLED INTO IT DURING CONSTRUCTION AS PER ITEM 625.13. PAYMENT FOR THE PULL WIRE IS INCIDENTAL TO THE CONDUIT AND SHALL BE INCLUDED IN THE UNIT PRICE.

CERTIFICATION AND A STATEMENT OF NATIONAL ORIGIN IS REQUIRED FOR ALL CONDUIT.

18" CONCRETE PULL BOXES

18 INCH PULL BOXES SHALL BE CONCRETE, AND INSTALLED IN ACCORDANCE WITH ITEM 625.11 AND STANDARD DRAWING HL-30.11.

ALL PULL BOX LIDS SHALL BE MARKED "TRAFFIC". IF STEEL PLATE COVERS ARE USED, THE TAGS SHALL BE DIE STAMPED ONLY. ETCHED OR ENGRAVED LETTERS ARE NOT ACCEPTABLE.

THE PULL BOX LIDS SHALL BE SECURED WITH 3/8 NC x 1" STAINLESS STEEL HEX HEAD CAP SCREWS IN LIEU OF THE COUNTERSUNK FLAT HEAD SCREWS SPECIFIED ON HL-30.11.

CERTIFICATION IS REQUIRED FOR ALL PULL BOXES.

PULL BOX, MISC: CONCRETE 32"

PULL BOXES SHALL BE CONCRETE, AND CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ITEM SPECIAL, 32" PULL BOX.

ALL PULL BOX LIDS SHALL BE MARKED "TRAFFIC".

DRAINS SHALL BE INSTALLED AS PER HL-30.11.

NEENAH R-1792-HL OR JORDAN 1475A FRAMES AND LIDS SHALL BE USED.

PULL BOXES MAY BE POURED IN PLACE OR PRECAST. IF THEY ARE POURED IN PLACE, ALL STEEL SHALL BE INSPECTED BEFORE THE POUR IS MADE. CLASS "C" CONCRETE SHALL BE USED FROM AN ODOT APPROVED PLANT. CERTIFICATION FOR ALL STEEL AND ALL CONCRETE TICKETS SHALL BE FURNISHED.

IF THE PULL BOXES ARE PRECAST, CERTIFICATION FROM THE MANUFACTURER SHALL BE FURNISHED. NO PAYMENT WILL BE MADE FOR UNINSPECTED OR UNDOCUMENTED PULL BOXES.

THE CONTRACTOR MAY SUBSTITUTE THE 48" PULL BOXES DESCRIBED IN SECTION 5.3.4.5 FOR ANY 32" PULL BOX. ALL 32" PULL BOX LOCATIONS MARKED ON THE PLANS WILL BE PAID AT THE 32" PULL BOX UNIT BID PRICE, REGARDLESS OF THE SIZE OF PULL BOX USED.

PULL BOX, MISC: CONCRETE 48"

PULL BOXES SHALL BE CONCRETE, AND CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ITEM SPECIAL, 48" PULL BOX.

ALL PULL BOX LIDS SHALL BE MARKED "TRAFFIC".

DRAINS SHALL BE INSTALLED AS PER HL-30.11.

NEENAH R-1792-HL OR JORDAN 1475A FRAMES AND LIDS SHALL BE USED.

PULL BOXES MAY BE POURED IN PLACE OR PRECAST. IF THEY ARE POURED IN PLACE, ALL STEEL SHALL BE INSPECTED BEFORE THE POUR IS MADE. CLASS "C" CONCRETE SHALL BE USED FROM AN ODOT APPROVED PLANT. CERTIFICATION FOR ALL STEEL AND ALL CONCRETE TICKETS SHALL BE FURNISHED.

IF THE PULL BOXES ARE PRECAST, CERTIFICATION FROM THE MANUFACTURER SHALL BE FURNISHED. NO PAYMENT WILL BE MADE FOR UNINSPECTED OR UNDOCUMENTED PULL BOXES.

WOOD POLE

WOOD POLES USED TO CARRY SERVICE CABLE AND POWER SERVICES TO RAMP METER CABINETS.

THE POLES SHALL BE LOCATED ACCORDING TO PLAN OR AS DIRECTED BY THE ENGINEER. IF RELOCATED BY THE ENGINEER, THE POLE AND ASSOCIATED DOWN GUY SHALL BE NO CLOSER THAN 30 FEET TO THE EDGE OF ANY TRAVELED PAVEMENT.

INSTALLATION SHALL BE IN ACCORDANCE WITH ITEM 632.16.

TREATMENT CERTIFICATIONS SHALL BE FURNISHED WITH EACH POLE SHIPMENT.

DOWN GUY

DOWN GUYS SHALL BE INSTALLED AS PER PLAN OR AS DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH ITEM 632.17. THE DOWN GUY SHALL INCLUDE ALL ANCHORS, MESSENGER CABLE AND OTHER HARDWARE NECESSARY FOR A COMPLETE INSTALLATION.

WHERE A SIDEWALK GUY IS INDICATED ON THE PLAN, OR DIRECTED BY THE ENGINEER, THE EXTRA HARDWARE SHALL BE INCLUDED IN THE BID PRICE.

RAMP METER CONTROLLER

RAMP METER CONTROL EQUIPMENT SHALL BE LOCATED AS PER PLAN, AND PER THE TYPICAL DRAWING.

MEAN TIME BETWEEN FAILURE FOR THE CONTROLLER AND CABINET HARDWARE SHALL BE 30,000 HOURS. THIS SHALL BE DOCUMENTED AND CERTIFIED BY THE MANUFACTURER(S) OF THE VARIOUS HARDWARE ITEMS.

EACH RAMP METER CONTROLLER SHALL CONSIST OF ALL HARDWARE NEEDED TO BE FULLY FUNCTIONAL. AT A MINIMUM, THE FOLLOWING HARDWARE SHALL BE FURNISHED:

ONE (1) EA. MODEL 170E CONTROLLER
ONE (1) EA. MODEL 412 PROGRAM MODULE
TWO (2) EA. MODEL 200 SWITCH PACK
ONE (1) EA. MODEL 204 FLASHER UNIT
TWO (2) EA. MODEL 222 TWO CH LOOP DETECTORS
ONE (1) EA. MODEL 334 CABINET
ONE (1) EA. MODEL 206 POWER SUPPLY MODULE
ONE (1) EA. FIBER MODEM, [D/C SPEC]

THE RAMP METERING SOFTWARE SHALL BE FURNISHED BY THE CONTRACTOR. ALL SOFTWARE SHALL BE IDENTICAL TO THAT INSTALLED UNDER FRA-71-15.51, "COLUMBUS FREEWAY MANAGEMENT SYSTEM, PART 1".

IN ADDITION TO THE HARDWARE DOCUMENTATION REQUIRED BY THE CALTRANS SPECIFICATION, FIVE (5) COPIES OF THE RAMP METERING SOFTWARE OPERATION MANUALS AND DOCUMENTATION SHALL BE DELIVERED TO THE ENGINEER SIX (6) WEEKS PRIOR TO DELIVERY OF THE CONTROLLER.

UPON RECEIPT OF THESE COPIES, THE ENGINEER WILL FURNISH THE CONTRACTOR WITH THE DATA NEEDED TO START UP THE SYSTEM.

RAMP METER SIGNAL DISPLAYS

RAMP METER SIGNAL DISPLAYS SHALL BE LOCATED AS SHOWN ON THE PLANS AND ON ATTACHED TYPICAL.

THE FOUNDATION, TRANSFORMER BASE AND PEDESTAL SHAFT SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING TC-85.20.

SIGNAL HEADS SHALL BE 8", TWO SECTION, RED OVER GREEN, AND SHALL CONFORM TO 732.01. THE LOW MOUNTED SIGNAL HEAD SHALL BE MOUNTED AS SHOWN ON STANDARD CONSTRUCTION DRAWING TC-85.10.

THE SIGNAL DISPLAY SHALL BE AS A COMPLETE ITEM, FOR ONE OR TWO HEAD AS SHOWN ON THE PLANS. THIS ITEM SHALL INCLUDE THE FOUNDATION EXCAVATION, FOUNDATION CONCRETE, ANCHOR BOLTS, TRANSFORMER BASE, PEDESTAL SHAFT, SIGNAL HEADS COMPLETE WITH BULBS, REFLECTORS AND LENSES, ATTACHING HARDWARE AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CABLE WILL BE PAID AS A SEPARATE ITEM.

RAMP METER SIGN

RAMP METER SIGN AND WARNING FLASHERS SHALL BE INSTALLED AS PER THE RAMP METER SIGN DRAWING

THIS ITEM SHALL INCLUDE THE FOUNDATION EXCAVATION, FOUNDATION CONCRETE, ANCHOR BOLTS, BREAKAWAY BASE, POLE, SIGN, SIGN BRACKETS, SIGN LUMINAIRE, FLASHERS, MOUNTING HARDWARE AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE INSTALLATION.

ELECTRICAL CABLE WILL BE PAID AS A SEPARATE ITEM. A QUANTITY OF SIGNAL CABLE, TWO (2) CONDUCTOR, #14 AWG IS PROVIDED FOR THE FLASHERS. A QUANTITY OF SIGNAL CABLE, TWO (2) CONDUCTOR, #10 AWG IS PROVIDED FOR THE LUMINAIRE.

SOFTWARE REQUIREMENTS

RAMP METERING CONTROLLER PROCESSOR

COMMUNICATIONS WITH CENTRAL, ACCEPTS AND TRANSMITS DATA USING THE DATA PROTOCAL ESTABLISHED UNDER FRA-71-15.56, "COLUMBUS FREEWAY MANAGEMENT SYSTEM, PHASE I".

PROCESSES ALL LOCAL DETECTOR DATA.

ALL STARTUP INDICATIONS, GREEN DWELL TO RED OVER GREEN PATTERN RED. RED OVER GREEN TIME TO BE USER SET BETWEEN THREE (3) AND TEN (10) SECONDS.

-TURN SIGN BEACONS ON AND OFF.
-RAMP LOOP MONITORING AND ERROR FLAGGING.
-EQUIPMENT MONITORING AND MALFUNCTION FLAGGING.
-AUTOMATIC IDENTIFICATION OF THE CONTROLLER IN THE CABINET.
-DWELL IN STEADY GREEN.
-LOCAL METERING CAPABILITY

LOCAL PARAMETERS CAN BE ENTERED AND MODIFIED USING A LAPTOP COMPUTER:

- TABLE APPEARS ON THE SCREEN.
- TYPEOVER TO ENTER OR MODIFY LOCAL DATA BASE.
- DIRECT NUMERICAL INPUT TO PC.
- NO DIRECT HEXADECIMAL OR MACHINE INPUT REQUIRED BY THE PERSON ENTERING THE DATA.
- PROTECTION AGAINST UNAUTHORIZED USE.

METERING MODES:

1. PRETIMED METERING
2. LOCAL TRAFFIC RESPONSIVE METERING:
   - VOLUME CONTROL.
   - DEMAND CAPACITY CONTROL.
   - VOLUME CONTROL.
   - OCCUPANCY CONTROL.

SOFTWARE SOURCE

LOCAL METERING SOFTWARE SHALL BE IDENTICAL TO THAT FURNISHED UNDER FRA-71-15.56, "COLUMBUS FREEWAY MANAGEMENT PROJECT, PHASE I".

THE FOLLOWING DOCUMENTATION SHALL BE FURNISHED WITH EACH RAMP METER CABINET:
A. FULL OPERATING INSTRUCTIONS.
B. FULL SOFTWARE DOCUMENTATION.

TRAINING

GENERAL

THE CONTRACTOR SHALL SUPPLY TRAINING FOR MAINTENANCE PERSONNEL IN THE OPERATIONS AND MAINTENANCE OF ALL FIELD EQUIPMENT. THIS TRAINING SHALL CONCENTRATE ON FEATURES THAT ARE DIFFERENT FROM THE RAMP METERS FURNISHED UNDER FRA-71-15.56, "COLUMBUS FREEWAY MANAGEMENT SYSTEM, PHASE I." EQUIPMENT PRESENTLY OWNED BY THE OWNER AGENCIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE TEST EQUIPMENT AVAILABLE AT EACH OF THE VARIOUS MAINTENANCE AGENCIES. CLASS SIZE FOR EACH OF THE TWO COURSES SHALL BE LIMITED TO TEN (10) PERSONS TO AFFORD MAXIMUM INDIVIDUAL EXPERIENCE.

ALL TRAINING CLASS TIME (INDOORS OR OUTDOORS) SHALL BE VIDEOTAPED BY THE CONTRACTOR ON STANDARD VHS 3/4" CASSETTE FOR USE IN A STANDARD VCR. THE VIDEO TAPE(S) SHALL BECOME PROPERTY OF THE CITY.

TESTING AND CERTIFICATION

ALL LOOPS INSTALLED BY THE CONTRACTOR SHALL BE TESTED FOR CONTINUITY (PARAGRAPH 3) AND INSULATION (PARAGRAPH 4) AS PER 632.27. THE INSULATION RESISTANCE MEASURED TO GROUND SHALL NOT BE LESS THAN ONE HUNDRED (100) MEGOHMS. A COPY OF THE TEST RECORDS SHALL BE FURNISHED TO THE ENGINEER. ANY LOOPS WHICH TEST OPEN OR LESS THAN ONE HUNDRED (100) MEGOHMS TO GROUND SHALL BE RECUT AT THE CONTRACTOR'S EXPENSE.

CALIFORNIA STANDARD SPECIFICATIONS, JULY 1992, TEST NUMBERS 658, 659, AND 667.

RAMP METER TESTING, LOCAL OPERATION.

EACH RAMP METER INSTALLED UNDER THIS PROJECT, INCLUDING ALL HARDWARE AND SOFTWARE COMPONENTS, WARNING SIGN AND LOOP DETECTORS, SHALL BE TESTED FOR OPERATIONAL COMPLETENESS. TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND/OR HIS/HER DESIGNATED REPRESENTATIVE AND THE CITY AND SHALL CONSIST OF PRE-TEST CHECK-OUT TEST AND A RAMP METER SIXTY-DAY PERFORMANCE TEST.

THE CONTRACTOR SHALL STATE, TO THE ENGINEER, IN WRITING, THAT THE RAMP METER IS COMPLETE AND READY FOR LOCAL TESTING. WITHIN FIVE (5) DAYS UPON RECEIVING THIS NOTIFICATION THE ENGINEER SHALL BEGIN THE PRE-TEST CHECK-OUT.

PRE-TEST CHECK OUT

THE ENGINEER AND/OR HIS/HER REPRESENTATIVE SHALL THOROUGHLY EXERCISE THE SYSTEM, USING ANY TEST OR PROCEDURE THAT WOULD DEMONSTRATE THE CAPABILITIES OF EACH COMPONENT. ALL HARDWARE, SOFTWARE AND PERFORMANCE FUNCTIONS, INCLUDING THE MAINTENANCE AND TROUBLE SHOOTING SOFTWARE, SHALL BE INDIVIDUALLY CHECKED FOR COMPLIANCE WITH THE SPECIFICATIONS. TRAINING IS CONSIDERED A SYSTEM COMPONENT AND SHALL HAVE BEEN FURNISHED BEFORE THE TESTS CAN BEGIN.

ANY PORTION OF THE PROJECT WHICH DOES NOT MEET THESE SPECIFICATIONS SHALL BE CORRECTED BY THE CONTRACTOR AND RECHECKED BY THE ENGINEER. THE CONTRACTOR SHALL DEMONSTRATE THAT THE FIELD EQUIPMENT CAN MEET THE REQUIREMENTS AS SPECIFIED IN THIS DOCUMENT.

RAMP METER SIXTY-DAY (60) PERFORMANCE TEST - LOCAL CONTROL.

FOLLOWING SUCCESSFUL COMPLETION OF THE PRE-TEST CHECK-OUT, AND THE CORRECTION, REPAIR, AND/OR REPLACEMENT OF IDENTIFIED DEFICIENCIES, THE CONTRACTOR SHALL DEMONSTRATE THAT THE SYSTEM SATISFIES THE SPECIFIED OPERATIONAL REQUIREMENTS AS AN INTEGRATED UNIT BY OPERATING THE SYSTEM CONTINUOUSLY FOR TEN CONSECUTIVE DAYS WITHOUT MAJOR MALFUNCTIONS OR FAILURE.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, THAT THE RAMP METER SIXTY-DAY (60) PERFORMANCE TEST WILL BEGIN ON A DATE AND TIME MUTUALLY ACCEPTABLE TO ALL PARTIES, INCLUDING THE CITY.

DURING THE RAMP METER SIXTY-DAY (60) PERFORMANCE TEST THE ENGINEER SHALL EXERCISE THE SYSTEM AND DOCUMENT THE PERFORMANCE OF ALL SPECIFIED FEATURES AND ANY OTHER EVENTS WHICH COULD BE EXPECTED TO OCCUR IN AN OPERATIONAL TRAFFIC MANAGEMENT SYSTEM, INCLUDING THE SIMULATION OF FAILURES. DURING THE SYSTEM EXERCISE, THE RAMP METER SIXTY-DAY PERFORMANCE TEST MAY BE SUSPENDED OR TERMINATED BY THE ENGINEER OR THE CONTRACTOR. SUSPENSION IS DEFINED AS HALTING THE TEST PROGRESS, THE CONTRACTOR OR THE CITY TAKING NECESSARY CORRECTIVE ACTION, AND THE TEST BEING RESUMED FROM THE POINT OF SUSPENSION. TERMINATION IS DEFINED AS HALTING THE TEST. IN THE EVENT OF TERMINATION THE CONTRACTOR SHALL TAKE NECESSARY CORRECTIVE ACTION, AND THE TEST SHALL BE RESTARTED FROM THE BEGINNING. ANY CORRECTIVE ACTION SHALL BE BY MUTUAL AGREEMENT BETWEEN THE CONTRACTOR AND THE ENGINEER.

THE RAMP METER SIXTY-DAY (60) PERFORMANCE TEST MAY BE SUSPENDED FOR THE FOLLOWING REASONS, INCLUDING BUT NOT LIMITED TO:

1. FAILURE OR INTERFERENCE DUE TO CONDITIONS BEYOND THE CONTROL OF THE CONTRACTOR, SUCH AS VANDALISM, TRAFFIC ACCIDENTS, POWER FAILURES AND SIMILAR OCCURRENCES.

2. COMMUNICATIONS NOISE FROM AN OUTSIDE SOURCE, UNANTICIPATED OR NOT PRESENT DURING THE COMMUNICATIONS DESIGN, CONSTRUCTION OR PRE-TEST STAGES OF THE PROJECTS.

3. FAILURE OF ANY SUPPORT OR DIAGNOSTIC EQUIPMENT NECESSARY TO SUCCESSFULLY TEST THE SYSTEM.

4. FAILURE OF ANY COMMUNICATIONS HUB.

5. A HARDWARE FAILURE OF THE COMPUTER OR ASSOCIATED CRITICAL PERIPHERAL EQUIPMENT, OR A COMPUTER SOFTWARE ERROR WHICH CAUSES THE SYSTEM TO CRASH OR BEHAVE ERRATICALLY.

THE RAMP METER SIXTY-DAY (60) PERFORMANCE TEST MAY BE TERMINATED FOR THE FOLLOWING REASONS, INCLUDING BUT NOT LIMITED TO:

1. FAILURE OF ANY HARDWARE OR PERFORMANCE ITEM TO MEET THESE SPECIFICATIONS.

2. COMMUNICATIONS NOISE FROM AN OUTSIDE SOURCE, WHICH WAS ANTICIPATED BY EITHER THE ENGINEER OR THE CONTRACTOR DURING THE COMMUNICATIONS DESIGN, CONSTRUCTION OR PRE-TEST STAGES OF THE PROJECT.

3. FAILURE OF SOFTWARE TO CHANGE TIMING PATTERNS OR GO FROM METERING TO NON-METERING OR GO FROM NON-METERING TO METERING IN THE LOCAL MODE OF OPERATION.

4. FAILURE OF THE WARNING SIGN TO OPERATE PROPERLY, EXCEPT FOR LAMP OUTAGES.

5. INTERMITTENT OR CATASTROPHIC FAILURE OF ANY OF THE RAMP METER LOOP DETECTORS.

6. FAILURE OF ANY ELECTRICAL COMPONENT IN THE RAMP METER LOOP DETECTORS.

7. THE APPEARANCE OF ANY PROBLEM WHICH, IN THE OPINION OF THE CITY AND/OR ENGINEER, HAS A SIGNIFICANT EFFECT UPON THE RELIABILITY, SAFETY OR OPERATION OF THE SYSTEM.

EACH RAMP METER WILL BE TESTED FOR PROPER OPERATION FROM THE HEAD-END COMPUTER.

BASIS OF PAYMENT

THE TESTING REPORT SHALL BE TURNED INTO THE ENGINEER AND ALL DEFICIENCIES CORRECTED BEFORE PAYMENT OF ANY LOOP DETECTOR ITEMS. LOOP DETECTORS SHALL BE PAID FOR UNDER THE FOLLOWING:

1. ITEM 632, "LOOP DETECTOR WIRE, TYPE E", LINEAR FOOT.
2. ITEM 632, "LOOP DETECTOR PAVEMENT CUTTING", LINEAR FOOT.

PAYMENT FOR CONDUIT ITEMS SHALL BE MADE UNDER THE FOLLOWING ITEMS:
1. ITEM 625, "CONDUIT, 4 INCH, 713.07, TYPE DB", LINEAR FOOT.
2. ITEM 625, "CONDUIT, 4 INCH, 713.04, JACKED OR BORED UNDER PAVEMENT", LINEAR FOOT.
3. ITEM 625, "CONDUIT, 1 59/64 INCH, 713.07 TYPE DB", LINEAR FOOT.
4. ITEM 625, "CONDUIT, 1 59/64 INCH, 713.04, AS PER PLAN", LINEAR FOOT.

PULL BOXES SHALL BE PAID UNDER THE FOLLOWING ITEMS:
1. ITEM 625, "PULL BOX, 713.08, 18", AS PER PLAN", EACH.
2. ITEM SPECIAL, "PULL BOX, MISC.: PULL BOX, 713.08, 32", EACH.
3 ITEM SPECIAL, "PULL BOX, MISC.: PULL BOX, 713.08, 48", EACH.

POWER SERVICE ITEMS SHALL BE PAID FOR UNDER THE FOLLOWING:
1. ITEM 632, "WOOD POLE, CLASS 4, 35 FEET", EACH.
2. ITEM 632, "DOWN GUY", EACH.
3. ITEM 632, "POWER SERVICE", EACH.
4. ITEM 632, "POWER CABLE", 2 CONDUCTOR, NO. 8 AWG, LINEAR FOOT.
5 ITEM 632, "SERVICE CABLE", 2 CONDUCTOR, NO. 8 AWG, LINEAR FOOT.

RAMP METER ITEMS CALL BE PAID UNDER THE FOLLOWING:
1. ITEM 632, "SIGNALIZATION, MISC.: RAMP METER CABINET, AS PER PLAN", EACH.
2. ITEM 632, "SIGNALIZATION, MISC.: RAMP METER SIGNAL DISPLAY, AS PER PLAN", EACH.
3. ITEM 632, "SIGNALIZATION, MISC.: RAMP METER SIGN, AS PER PLAN", EACH.
4. ITEM SIGNALIZATION, MISC.: MAINTENANCE PERSONNEL PC LAPTOP COMPUTER," EACH.
5. ITEM 633, "CONCRETE FOR CABINET FOUNDATION", CU. YD.
6. ITEM 633, "CONTROLLER WORK PAD", SQ. FT.
7. ITEM 625, "GROUND ROD", EACH.

PAYMENT FOR RAMP METER TRAINING SHALL BE MADE AS 15.79% OF THE LUMP SUM PRICE FOR ITEM SPECIAL "TRAINING."

WARRANTY

FOLLOWING SUCCESSFUL COMPLETION OF THE SIXTY-DAY (60) PERFORMANCE TEST AND CONSTRUCTION ACCEPTANCE, A WARRANTY PERIOD SHALL COMMENCE. THE PURPOSE OF THIS PERIOD IS TO ENSURE THAT ALL COMPONENTS OF THE RAMP METER FUNCTION IN ACCORDANCE WITH THE SPECIFICATIONS OVER AN EXTENDED LENGTH OF TIME, AND TO PROVIDE CONTINUING ASSISTANCE TO THE CITY IN ALL PHASES OF SYSTEM OPERATION AS REQUIRED. THIS CONSIST OF THE TWO YEAR WARRANTY PERIOD. FOR A TWO (2) YEAR PERIOD, BEGINNING AT CONSTRUCTION ACCEPTANCE OF THE SYSTEM, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PERFORMANCE OF ALL EQUIPMENT, EXCEPT LAMPS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR OBTAINING TECHNICAL ASSISTANCE FROM THE EQUIPMENT MANUFACTURES AND/OR SUPPLIERS IN CASES WHERE PROGRAMMING, OPERATIONAL OR ADJUSTMENT DIFFICULTIES ARE ENCOUNTERED; THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TRAINING TO THE CITY ON ANY RAMP METER EQUIPMENT IF NEW OR UNUSUAL PROBLEMS/REPAIRS ARE DISCOVERED DURING THE WARRANTY PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY PROBLEMS ATTRIBUTED TO POOR WORKMANSHIP AND/OR EQUIPMENT.

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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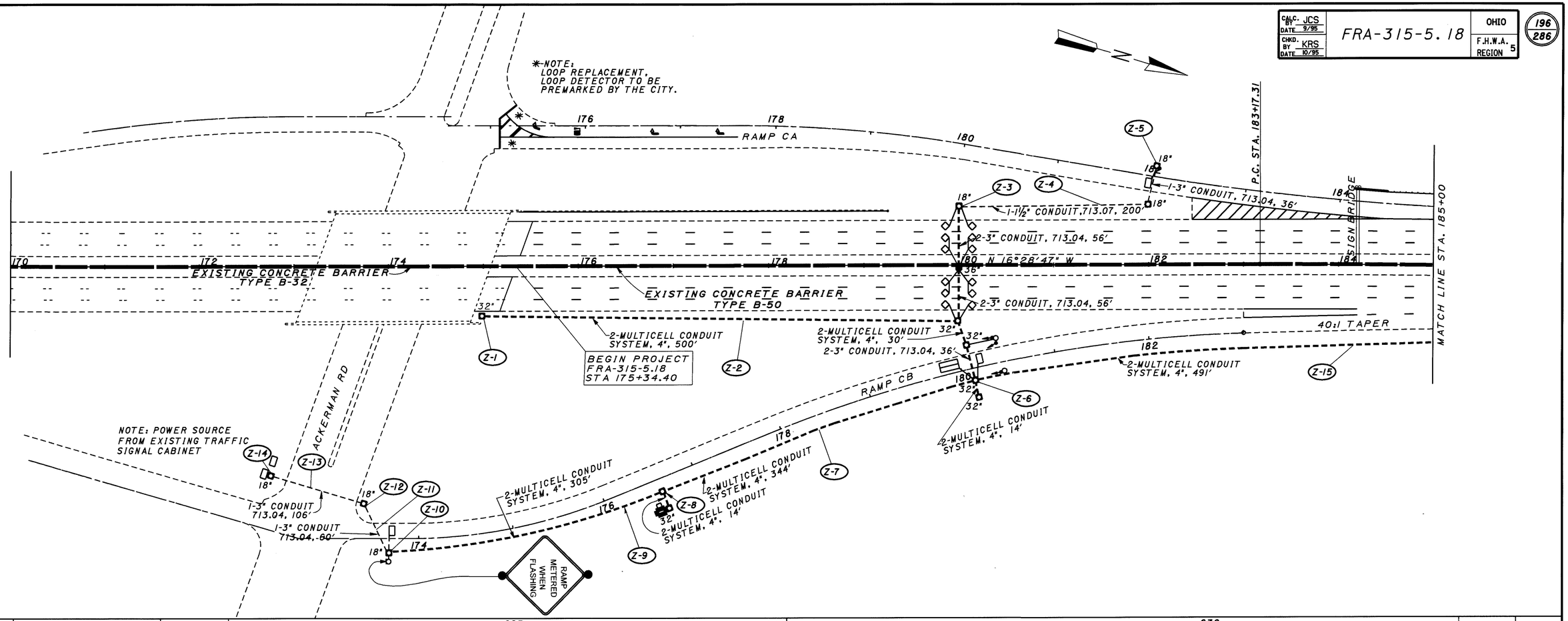

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3"CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH	CONDUIT 1½ INCH 713.04	CONDUIT 1½ INCH 713.07		LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E	RAMP METER SIGN A.P.P.	RAMP CONTROL-LER A.P.P.	RAMP METER A.P.P.		POWER SERVICE A.P.P.	SERVICE CABLE 2 CONDUCT-OR #6 AWG	SIGNAL CABLE 5 CONDUCT-OR #14 AWG	LOOP DETECTOR LEAD-IN CABLE		GROUND ROD		
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH	LIN.FT.	LIN.FT.		LIN.FT.	LIN.FT.	EACH	EACH	EACH		EACH	LIN.FT.	LIN.FT.	LIN.FT.		EACH		
Z-1	175+00	PULL BOX							1										✓							
Z-2	175+00 TO 180+00	CONDUIT				500	1000																			
Z-3	180+00	SPEED TRAP	1	208	1	8	60	16	1	40			384	1040												
Z-4	180+00 TO 182+00 RAMP CA	CONDUIT				200					200															
Z-5	RAMP CA 182+00	EXIT RAMP	2			36		36		10			52	136												
Z-6	RAMP CB 182+09	RAMP METER		54		53	28	18	4	20	60		152	376			1				131	310				
Z-7	RAMP CB 180+09 TO 176+65	CONDUIT				344	688														354	1720				
Z-8	RAMP CB 176+65	CONTROL CB				14	28		2							1				20	20			1		
Z-9	RAMP CB 176+65 TO 173+60	CONDUIT				305	610													315	315	315				
Z-10	RAMP CB 173+60	WARN.SIGN	1							16			52	136	1						25					
Z-11	RAMP CB 173+60 TO 173+60	CONDUIT				60		60												60						
Z-12	RAMP CB 173+60	PULL BOX	1																							
Z-13	RAMP CB 173+60 TO SIGNAL CB	CONDUIT				106		106												111						
Z-14	SIGNAL CB	PULL BOX	1																1							
Z-15	180+00 TO 185+00	CONDUIT				491	982																			
TOTAL TO GENERAL SUMMARY			6	262	1	2117	3396	236	8	86	260		640	1688	1	1	1		1	506	845	2345		1		

TRAFFIC SURVEILLANCE: SR- 315 STA. 170+00 TO 185+00

CALC. BY JCS DATE 9/95
CHKD. BY KRS DATE 10/95

FRA-315-5.18

OHIO
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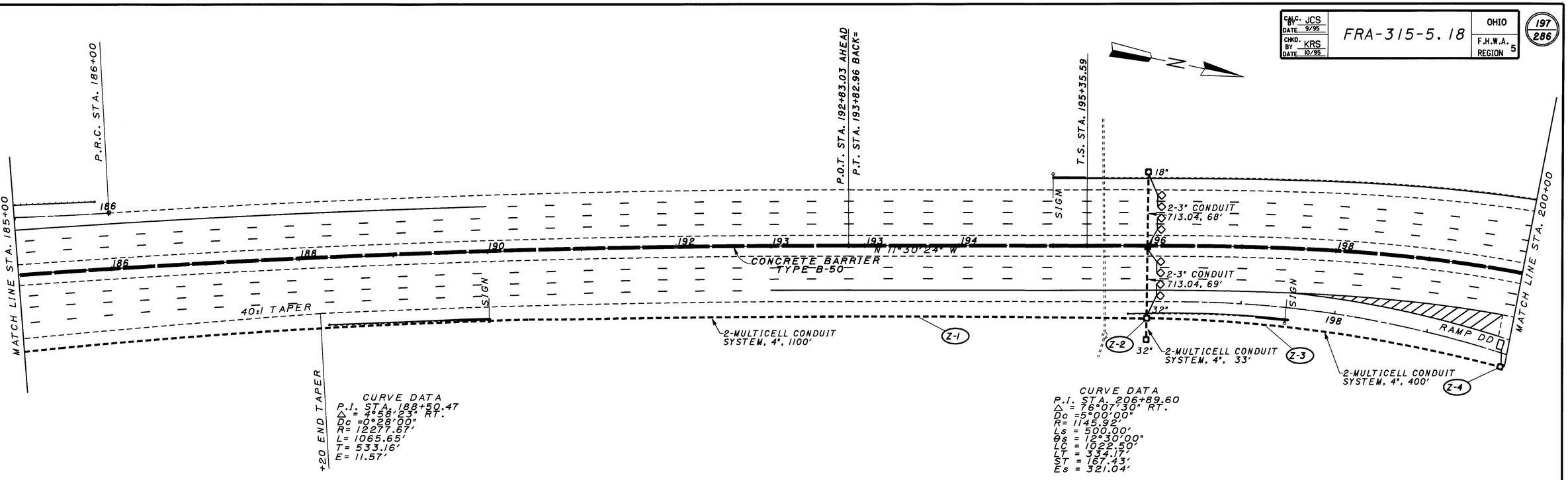

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3"CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH					LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E									
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH					LIN.FT.	LIN.FT.									
Z-1	185+00 TO 196+00	CONDUIT				1100	2200																	
Z-2	196+00	COUNT STA.	1	256	1	42	66	18	2					256	693									
Z-3	196+00 TO 200+00	CONDUIT				400	800																	
Z-4	200+00	PULL BOX							1					52	136									
TOTAL TO GENERAL SUMMARY			1	256	1	1542	3066	18	3					308	829									

TRAFFIC SURVEILLANCE: SR- 315 STA. 185+00 TO STA. 200+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	198 / 286

*NOTE: LOOP REPLACEMENT. LOOP DETECTOR TO BE PREMARKED BY THE CITY.

FOR QUANTITIES SEE FOLLOWING SHEET

TRAFFIC SURVEILLANCE: SR- 315 STA. 200+00 TO STA. 215+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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286

QUANTITIES FOR SR-315 STA. 200+00 TO STA. 215+00

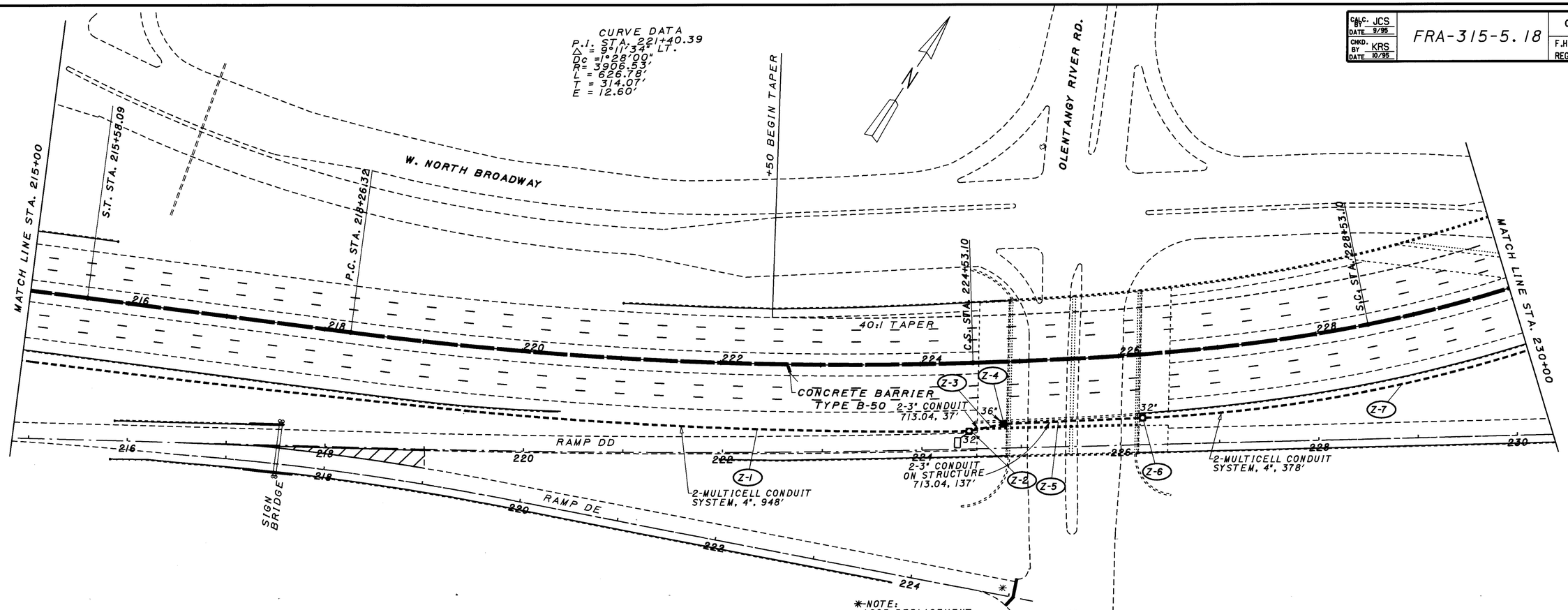
REFERENCE NUMBER	LOCATION	ITEM	625											632											GROUND ROD
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3"CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	CONDUIT 3 INCH 713.04 ON BRIDGE	CONDUIT 1½ INCH 713.04	CONDUIT 1½ INCH 713.07	PB, CONC. HEAVY DUTY 32 INCH	BRIDGE TRANSITION PULL BOX A.P.P.	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E	RAMP METER SIGN A.P.P.	RAMP CONTROL-LER A.P.P.	RAMP METER A.P.P.	POWER SERVICE	POWER SERVICE A.P.P.	SERVICE CABLE 2 CONDUCT-OR #6 AWG	SIGNAL CABLE 5 CONDUCT-OR #14 AWG	LOOP DETECTOR LEAD-IN CABLE		
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	LIN.FT.	LIN.FT.	EACH	EACH	EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.		EACH
Z-1	200+00 TO 201+00	CONDUIT		54		78		156																	
Z-2	201+00	PULL BOX										1													
Z-3	201+00 TO 205+00	CONDUIT				400	800																		
Z-4	205+00	CROSSOVER		108	1	4		8				1													
Z-5	205+00 TO 210+63	CONDUIT				563	1126																		
Z-6	210+63	BR TRAN											1												
Z-7	210+63 TO 213+26	BR CONDUIT							526																
Z-8	213+26	BR TRAN											1												
Z-9	213+26 TO 214+50	CONDUIT				124	248																		
Z-10	214+50	COUNT STA	1	208	1	8		16				1		192	520										
Z-11	214+50 TO DE 214+50	CONDUIT				60					60														
Z-12	DE 214+50	EXIT RAMP	2			32		64						52	136										
Z-13	214+50 TO 215+00	CONDUIT				50	100																		
Z-14	205+00	CONDUIT		110		45		90																	
Z-15	DF 204+00	RAMP METER	2	74		18		36		30	60			160	540			1				115	110		
Z-16	204+00 TO 205+25	CONDUIT				125					250											125	375		
Z-17	205+25	PULL BOX										1													
Z-18	DF 205+25 TO DF 206+12	CONDUIT				387	774															387	1161		
Z-19	DF 209+12	CONTROL CB				30	60					2					1				40	40	200		1
Z-20	DF 209+12 TO DF 213+00	CONDUIT				388					776										388	388	400		
Z-21	DF 213+00	WARN SIGN	2			36		72						52	136	1						40			
Z-22		CONDUIT				160					160								1		160				
Z-23	SIGNAL CB	PULL BOX	1																	1					
Z-24	DG 209+00 TO	CONDUIT		108		51		102																	
Z-25	DG 209+00	PULL BOX	1																						
Z-26	DG 209+00 TO DG 211+50	CONDUIT				250					500														
Z-27	DG 211+50	PULL BOX	1																						
Z-28	DG 211+50 TO DG 214+00	CONDUIT				250					500														
Z-29	DG 214+00	PULL BOX	1											52	136	1									
	TOTAL TO GENERAL SUMMARY		11	662	2	3059	3108	544	526	30	2306	6	2	508	1468	2	1	1	1	1	588	1095	2246		1

TRAFFIC SURVEILLANCE: SR- 315 STA. 200+00 TO STA. 215+00

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

200
286

CURVE DATA
P.I. STA. 221+40.39
Δ = 9°11'34" LT.
Dc = 1°28'00"
R = 3906.53'
L = 626.78'
T = 314.07'
E = 12.60'



*NOTE:
LOOP REPLACEMENT,
LOOP DETECTOR TO BE
PREMARKED BY THE CITY.

REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625 36" MEDIAN PULL BOX A.P.P. EACH	625 TRENCH LIN.FT.	625 MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	625 CONDUIT 3 INCH 713.04 LIN.FT.	625 CONDUIT 3 INCH 713.04 ON BRIDGE LIN.FT.	625 PB, CONC. HEAVY DUTY 32 INCH EACH	632 LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	632 LOOP DETECTOR WIRE TYPE E LIN.FT.
Z-1	215+00 TO 224+48	CONDUIT		948	1896					
Z-2	224+48	EXIT RAMP						1	52	136
Z-3	224+48 TO 224+85	CONDUIT				74				
Z-4	224+85	MEDIAN PB	1							
Z-5	224+85 TO 226+22	BR CONDUIT					274			
Z-6	226+22	BRIDGE TRAN						1		
Z-7	226+22 TO 230+00	CONDUIT		378	756					
TOTAL TO GENERAL SUMMARY			1	1326	2652	74	274	2	52	136

TRAFFIC SURVEILLANCE: SR-315 STA. 215+00 TO STA. 230+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

201
286

MATCH LINE "A"

2-1½" CONDUIT 713.07, 5'

Z-13

Z-12

18"

2-MULTICELL CONDUIT SYSTEM, 4", 205'

Z-11

238

2-MULTICELL CONDUIT SYSTEM, 4", 20'

32"

Z-10

2-MULTICELL CONDUIT SYSTEM, 4", 105'

Z-9

236

+50 END TAPER

S.C. STA. 234+50

Z-7

2-MULTICELL CONDUIT SYSTEM, 4", 90'

32"

234

RAMP DB

Z-8

18"

2-3" CONDUIT 713.04, 32'

1-1½" CONDUIT 713.07, 25'

32"

2-3" CONDUIT 713.04, 40'

2-3" CONDUIT 713.04, 56'

MATCH LINE STA. 230+00

40:1 TAPER

230

232

2-MULTICELL CONDUIT SYSTEM, 4", 170'

Z-1

32"

Z-2

Z-5

234

36"

2-3" CONDUIT 713.04, 56'

32"

Z-3

2-3" CONDUIT 713.04, 163'

32"

Z-6

Z-4

2-MULTICELL CONDUIT SYSTEM, 4", 67'

2-MULTICELL CONDUIT SYSTEM, 4", 600'

RAMP DD

232

234

W. NORTH BROADWAY

236

238

CONCRETE BARRIER TYPE B-50

236

238

240

RAMP DA

242

C.S. STA. 243+68.82

244

BRIDGE

MATCH LINE STA. 245+00

40:1 TAPER

242

244

00 BEGIN TAPER

Z-26

Z-24

18"

242

32"

2-3" CONDUIT 713.04, 36'

Z-25

2-MULTICELL CONDUIT SYSTEM, 4", 400'

Z-19

Z-18

2-MULTICELL CONDUIT SYSTEM, 4", 400'

Z-20

RAMP DC

240

2-3" CONDUIT 713.04, 126'

Z-21

2-MULTICELL CONDUIT SYSTEM, 4", 257'

Z-22

32"

6' x 24'

238

2-3" CONDUIT 713.04, 60'

18"

EXISTING TRAFFIC SIGNAL CABINET

Z-23

32"

234

1-1½" CONDUIT 713.07, 10'

RAMP METERED WHEN FLASHING

OLENTANGY RIVER ROAD

232

EXISTING POLE & SERVICE

Z-17

18"

Z-28

244

1-1½" CONDUIT 713.07, 195'

Z-27

18"

Z-16

1-1½" CONDUIT 713.07, 195'

RAMP DB

242

RAMP DA

234

6' x 24'

RAMP METERED WHEN FLASHING

18"

Z-15

Z-14

1-1½" CONDUIT 713.07, 10'

1-1½" CONDUIT 713.07, 195'

240

236

MATCH LINE "A"

FOR QUANTITIES SEE FOLLOWING SHEET

TRAFFIC SURVEILLANCE: SR-315 STA. 230+00 TO STA. 245+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

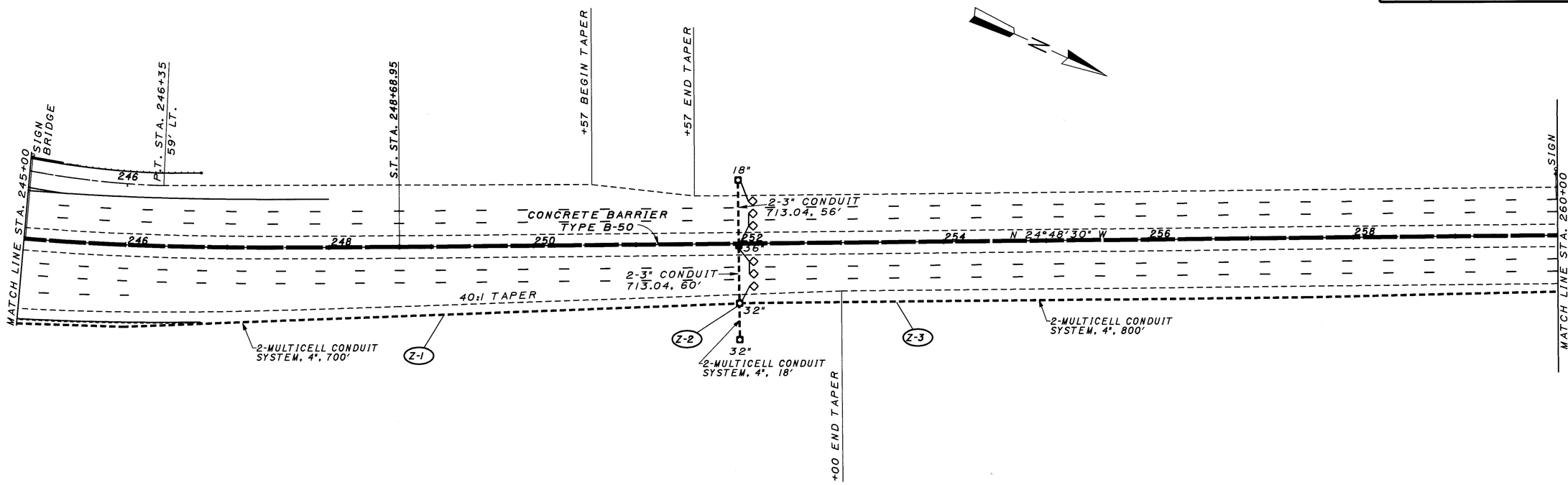
202
286

QUANTITIES FOR SR-315 STA. 230+00 TO STA. 245+00

REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625										BRIDGE TRANSITION PULL BOX A.P.P.	632												
			PB, CONC. 713.08 18 INCH	3" CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	CONDUIT 3 INCH 713.04 ON BRIDGE	PB, CONC. HEAVY DUTY 32 INCH	CONDUIT 1½ INCH 713.07			RAMP METER SIGN A.P.P.	RAMP CONTROL-LER A.P.P.	RAMP METER A.P.P.	POWER SERVICE	POWER SERVICE A.P.P.	SERVICE CABLE 2 CONDUCT-OR #6 AWG	SIGNAL CABLE 5 CONDUCT-OR #14 AWG	LOOP DETECTOR LEAD-IN CABLE	CONDUIT RISER, 2 INCH A.P.P.	GROUND ROD	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E	
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	LIN.FT.		EACH	EACH	EACH	EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	LIN.FT.	LIN.FT.	
Z-1	230+00 TO 231+70	CONDUIT				170	340																		
Z-2	231+70	BRIDGE TRAN											1												
Z-3	231+70 TO 233+33	BR CONDUIT							326																
Z-4	233+33	BRIDGE TRAN											1												
Z-5	233+33 TO 234+00	CONDUIT				67	134																		
Z-6	234+00	SPEED TRAP		262	1	21		42		3											374			384	1040
Z-7	DB 234+00 TO DB 241+90	CONDUIT				90	180														370				
Z-8	DB 241+90	RAMP METER	1	54		30		10		1	25					1				110				152	376
Z-9	DB 241+90 TO DB 235+95	CONDUIT				105	210													105	550				
Z-10	DB 235+95	CONTROL CB				20	40			1					1				40	80	150		1		
Z-11	DB 235+95 TO DB 238+00	CONDUIT				205	410												205	205	215				
Z-12	DB 238+00	PULL BOX	1																						
Z-13	DB 238+00 TO DB 238+05	CONDUIT				5					10								5	5	5				
Z-14	DB 238+05 TO DB 240+00	CONDUIT				195					390								195	195	200				
Z-15	DB 240+00	WARN SIGN	1			10					10			1						25				70	140
Z-16	DB 240+00 TO DB 241+95	CONDUIT				195					195								195						
Z-27	DB 241+95	PULL BOX	1																						
Z-28	DB 241+95 TO DB 242+93	CONDUIT				195					195								195						
Z-17	DB 242+93	SERVICE	1														1		30			1			
Z-18	234+00 TO 240+00	CONDUIT				600	1200														1815				
Z-19	240+00	PULL BOX								1															
Z-20	240+00 TO DC 236+00	CONDUIT				400	800													400	2005				
Z-21	DC 236+00	WARN SIGN	1	90		25		30		1	10			1						100	60			70	140
Z-22	DC 236+00 TO DC 233+43	CONDUIT				257	514													257	1572				
Z-23	DC 233+43	CONTROL CB				5	10			1					1			1	20	40	60		1		
Z-24	240+00 TO DC 241+00	CONDUIT		96		78		156												126	252				
Z-25	DC 241+00	RAMPMETER	1			96		72		1	60					1				126				152	376
Z-26	DC 241+00 TO 245+00	CONDUIT				400	800																		
	TOTAL TO GENERAL SUMMARY		7	502	1	3169	4718	310	326	7	895		2	2	2	2	1	1	885	1774	7628	1	2	828	2072

TRAFFIC SURVEILLANCE: SR-315 STA. 230+00 TO STA. 245+00

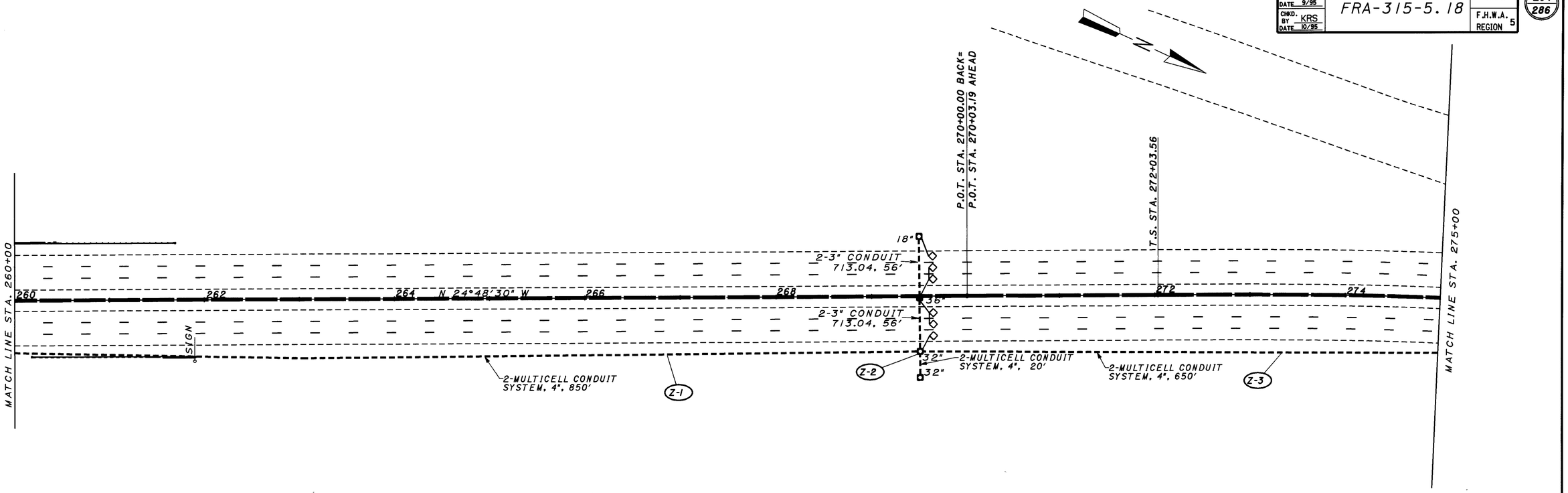
CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5



REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625										632											
			PB, CONC. 713.08 18 INCH EACH	3" CONDUIT JACKED UNDER PAVEMENT LIN.FT.	36" MEDIAN PULL BOX A.P.P. EACH	TRENCH LIN.FT.	MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	CONDUIT 3 INCH 713.04 LIN.FT.	PB, CONC. HEAVY DUTY 32 INCH EACH				LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	LOOP DETECTOR WIRE TYPE E LIN.FT.										
Z-1	245+00 TO 252+00	CONDUIT				700	1400																	
Z-2	252+00	COUNT STA	1	216	1	26	36	16	2				192	520										
Z-3	252+00 TO 260+00	CONDUIT				800	1600																	
TOTAL TO GENERAL SUMMARY			1	216	1	1526	3036	16	2				192	520										

TRAFFIC SURVEILLANCE: SR-315 STA. 245+00 TO STA. 260+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5



REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3" CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH				LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH				LIN.FT.	LIN.FT.										
Z-1	260+00 TO 268+50	CONDUIT				850	1700																	
Z-2	268+50	COUNT STA	1	208	1	28	40	16	2				192	520										
Z-3	268+50 TO 275+00	CONDUIT				650	1300																	
TOTAL TO GENERAL SUMMARY			1	208	1	1528	3040	16	2				192	520										

TRAFFIC SURVEILLANCE: SR-315 STA. 260+00 TO STA. 275+00

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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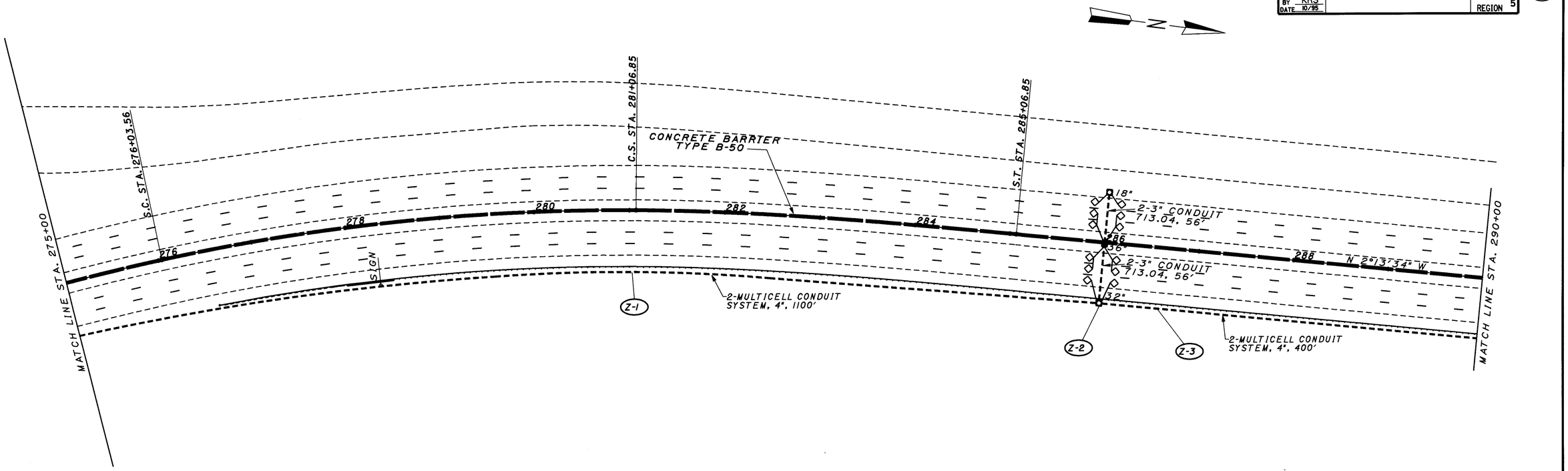

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3" CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH				LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH				LIN.FT.	LIN.FT.										
Z-1	275+00 TO 286+00	CONDUIT				1100	2200																	
Z-2	286+00	SPEED TRAP	1	208	1	8		16	1				384	1040										
Z-3	286+00 TO 290+00	CONDUIT				400	800																	
TOTAL TO GENERAL SUMMARY			1	208	1	1508	3000	16	1				384	1040										

TRAFFIC SURVEILLANCE: SR-315 STA. 275+00 TO STA. 290+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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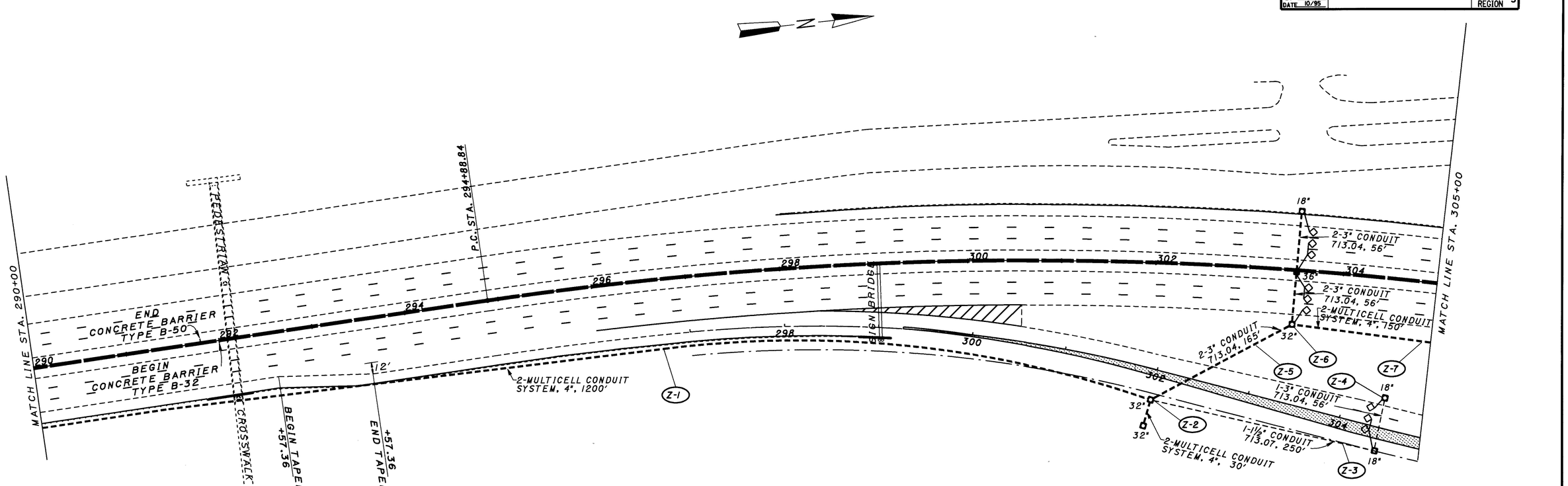

REFERENCE NUMBER	LOCATION	ITEM	625 PB, CONC. 713.08 18 INCH	625 3" CONDUIT JACKED UNDER PAVEMENT	625 36" MEDIAN PULL BOX A.P.P.	625 TRENCH	625 MULTICELL CONDUIT SYSTEM, 4"	625 CONDUIT 3 INCH 713.04	625 PB, CONC. HEAVY DUTY 32 INCH	625	625 CONDUIT 1½ INCH 713.07			632 LOOP DETECTOR PAVEMENT CUTTING	632 LOOP DETECTOR WIRE TYPE E
	STATION TO STATION		EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH		LIN.FT.			LIN.FT.	LIN.FT.
Z-1	290+00 TO 302+00	CONDUIT				1200	2400								
Z-2	ED 302+00	CONTROL CB				30	60		2						
Z-3	ED 302+00 TO ED 304+50	CONDUIT				250					250				
Z-4	ED 304+50	EXIT RAMP	2			56		56						96	260
Z-5	ED 302+00 TO 303+50	CONDUIT		154		88		176							
Z-6	303+50	COUNT STA	1	208	1	8		16	1					192	520
Z-7	303+50 TO 305+00	CONDUIT				150	300								
TOTAL TO GENERAL SUMMARY			3	362	1	1782	2762	248	3		250			288	780

TRAFFIC SURVEILLANCE: SR-315 STA. 290+00 TO STA. 305+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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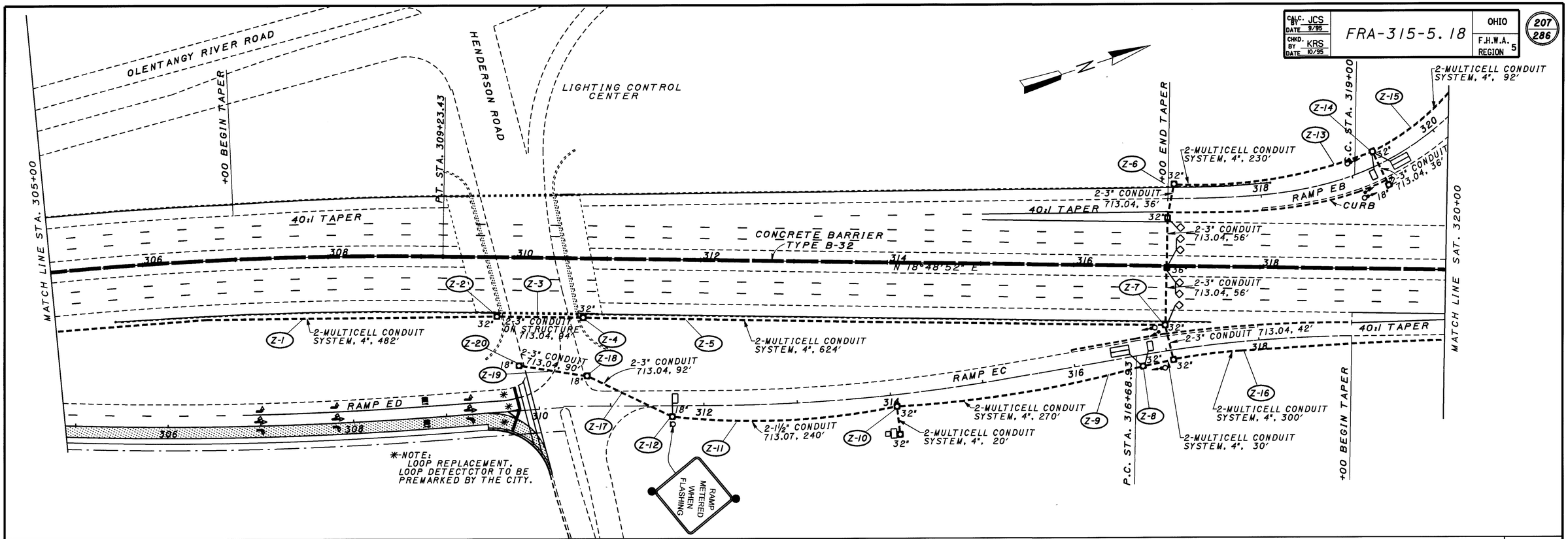
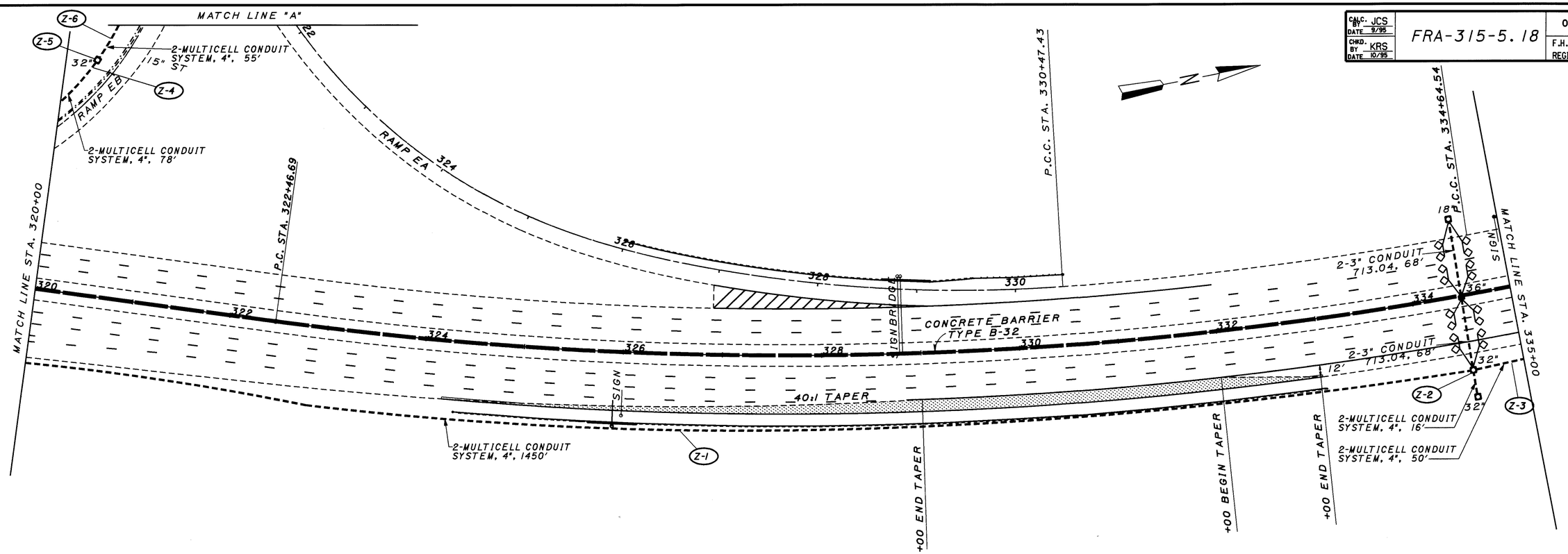
286



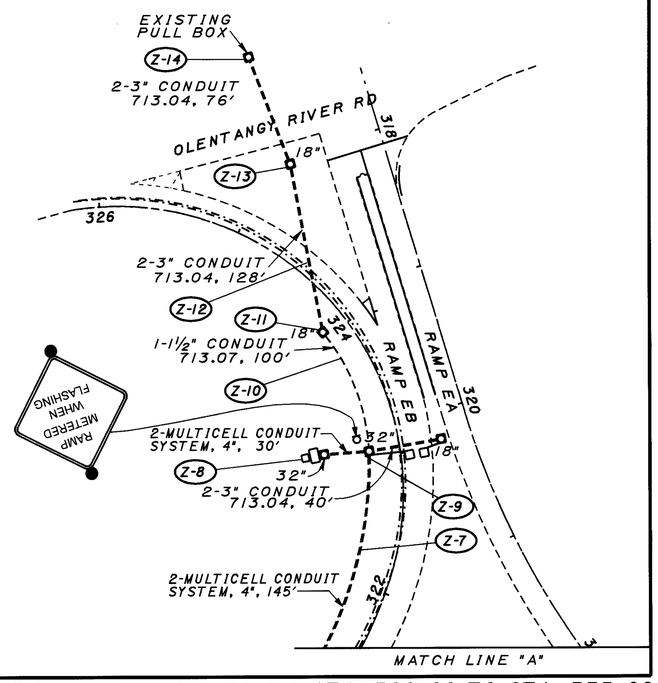
REFERENCE NUMBER	LOCATION	ITEM	625											632												
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3" CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	CONDUIT 3 INCH 713.04 ON BRIDGE	CONDUIT 1½ INCH 713.04	CONDUIT 1½ INCH 713.07	PB, CONC. HEAVY DUTY 32 INCH	BRIDGE TRANSITION PULL BOX A.P.P.	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E	RAMP METER SIGN A.P.P.	RAMP CONTROL-LER A.P.P.	RAMP METER A.P.P.		POWER SERVICE A.P.P.	SERVICE CABLE 2 CONDUCT-OR #6 AWG	SIGNAL CABLE 5 CONDUCT-OR #14 AWG	LOOP DETECTOR LEAD-IN CABLE		GROUND ROD	
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	LIN.FT.	LIN.FT.	EACH	EACH	EACH		EACH	LIN.FT.	LIN.FT.	LIN.FT.		EACH	
Z-1	305+00 TO 309+82	CONDUIT				482	964																			
Z-2	309+82	BRIDGE TRAN											1													
Z-3	309+82 TO 310+76	BR CONDUIT							188																	
Z-4	310+76	BRIDGE TRAN											1													
Z-5	310+76 TO 317+00	CONDUIT				624	1248																			
Z-6	317+00	COUNT STA		260	1	18		36				3		192	520								332			
Z-7	EC 317+00	RAMP METER		54		45	60	30				1						1				107	216			
Z-8	EC 316+70	RAMP METER										1		152	376											
Z-9	EC 314+00 TO EC 316+70	CONDUIT				270	540															270	1350			
Z-10	EC 314+00	CONTROL CB				20	40					2					1				25		540		1	
Z-11	EC 311+60 TO EC 314+00	CONDUIT				240	480														240	240	240			
Z-12	EC 314+00	WARN SIGN	1			10				10				52	136	1						25				
Z-13	316+00 TO EB 319+30	CONDUIT				230	460																690			
Z-14	EB 319+30	RAMP METER	1	54		9		18			60	1		152	376			1				116				
Z-15	EB 319+30 TO EB 320+22	CONDUIT				92	184															92	460			
Z-16	EC 317+00 TO 320+00	CONDUIT				300	600																			
Z-17	EC 311+60 TO EC 310+80	CONDUIT		104		40		80														92				
Z-18	EC 310+80	PULL BOX	1																							
Z-19	EC 310+80 TO SIGNAL CB	CONDUIT				90		180														90				
Z-20	SIGNAL CB	PULL BOX	1																		1	10				
TOTAL TO GENERAL SUMMARY			4	472	1	2470	4576	344	188	10	60	8	2	548	1408	1	1	2		1	459	850	3830		1	

TRAFFIC SURVEILLANCE: SR-315 STA. 305+00 TO STA. 320+00



CALC. BY JCS DATE 9/95
CHKD. BY KRS DATE 10/95
FRA-315-5.18
OHIO F.H.W.A. REGION 5
208 286

REFERENCE NUMBER	LOCATION	ITEM	625	625	625	625	625	625	625	632	632	632	632	632	632	632	632
	STATION TO STATION		PB, CONC. 713.08 18 INCH	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	3" CONDUIT JACKED UNDER PAVEMENT	CONDUIT 1½ INCH 713.07	PB, CONC. HEAVY DUTY 32 INCH	LOOP DETECTOR PAVEMENT CUTTING	LOOP WIRE TYPE E	RAMP METER SIGN A.P.P.	RAMP CONTROL-LER A.P.P.	POWER SERVICE A.P.P.	SERVICE CABLE 2 CONDUCT-OR #6 AWG	SERVICE CABLE 5 CONDUCT-OR #14 AWG	LOOP DETECTOR LEAD-IN CABLE
			EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	LIN.FT.	LIN.FT.	EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.
Z-1	322+88 TO 328+66	CONDUIT			1450	2900												
Z-2	334+50	SPEED TRAP	1	1	24	32	16	256		2	256	693						
Z-3	334+50 TO 335+00	CONDUIT			50	100												
Z-4	EB 320+22 TO EB 321+00	CONDUIT			78	156											78	390
Z-5	EB 321+00	PULL BOX								1								
Z-6	EB 321+00 TO EB 321+55	CONDUIT			55	110											55	275
Z-7	EB 321+55 TO EB 323+00	CONDUIT			145	290											145	725
Z-8	EB 323+00	CONTROL CB	1		70	60	80			2	88	224		1			60	175
Z-9	EB 323+00	WARN SIGN			10				10				1				25	
Z-10	EB 323+00 TO EB 324+00	CONDUIT			100				100							100		
Z-11	EB 324+00	PULL BOX	1															
Z-12	EB 324+00 TO EB 325+10	CONDUIT			128		256									128		
Z-13	EB 325+10	PULL BOX	1															
Z-14	EB 325+10 TO EXIST PB	CONDUIT			76		152								1	81		
TOTAL TO GENERAL SUMMARY			4	1	1708	3648	504	256	110	5	344	917	1	1	1	309	363	1565



TRAFFIC SURVEILLANCE: SR-315 STA. 320+00 TO STA. 335+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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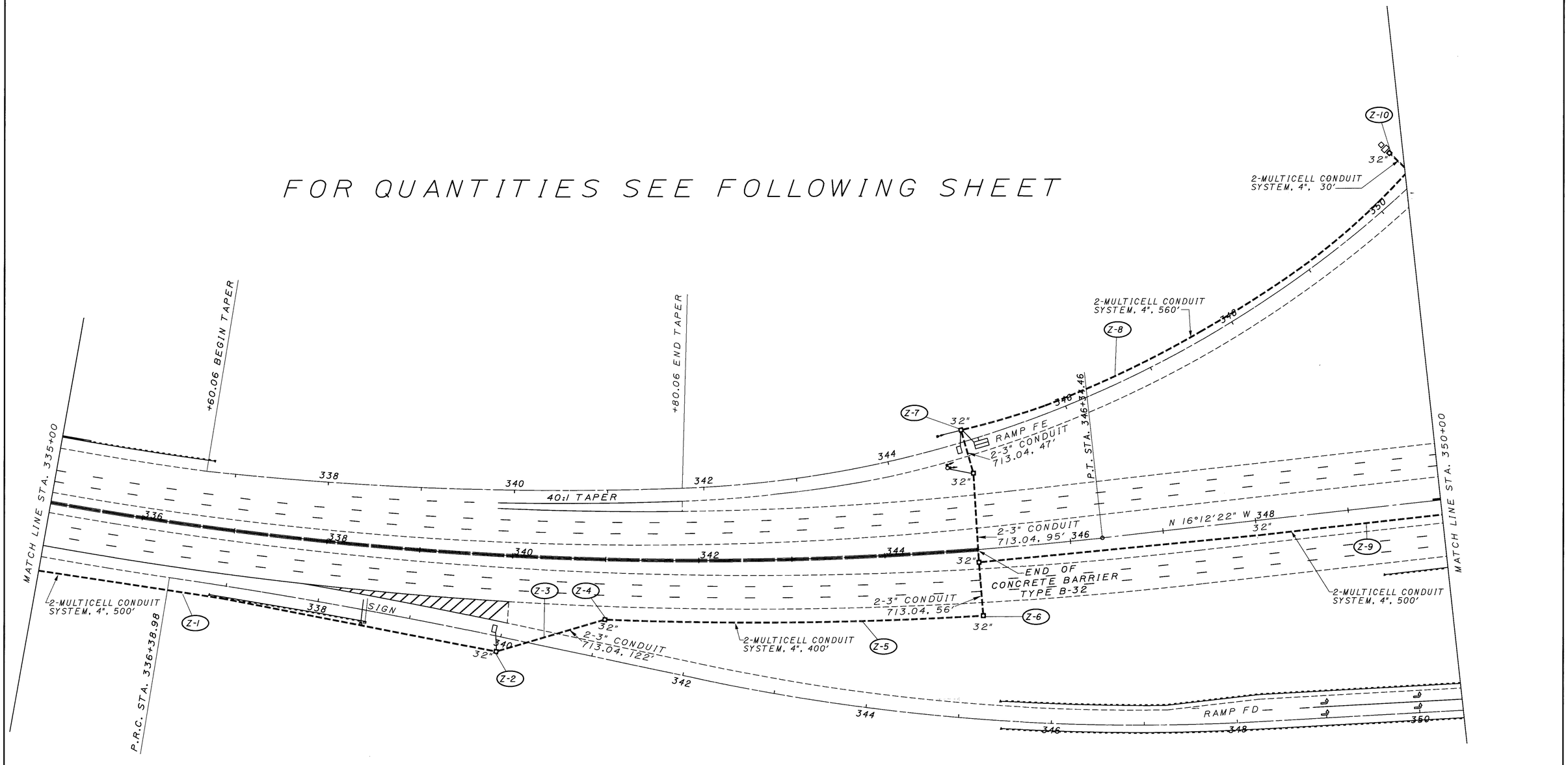
FOR QUANTITIES SEE FOLLOWING SHEET



TRAFFIC SURVEILLANCE: SR-315 STA. 335+00 TO 350+00

CALC. BY JCS DATE 9/95 | CHKD. BY KRS DATE 10/95 | FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 210 286

REFERENCE NUMBER	LOCATION	ITEM	625										632											SPECIAL
	STATION TO STATION				3" CONDUIT JACKED UNDER PAVEMENT LIN.FT.	TRENCH LIN.FT.	MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	CONDUIT 3 INCH 713.04 LIN.FT.			CONDUIT 1½ INCH 713.07 LIN.FT.			LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	LOOP WIRE TYPE E LIN.FT.			RAMP METER A.P.P. EACH			SERVICE CABLE 2 CONDUCTOR #6 AWG LIN.FT.	SIGNAL CABLE 5 CONDUCTOR #14 AWG LIN.FT.	LOOP DETECTOR LEAD-IN CABLE LIN.FT.		GROUND ROD EACH	PB, CONC. HEAVY DUTY 32 INCH EACH
Z-1	335+00 TO FD 340+00	CONDUIT				500	1000																		
Z-2	FD 340+00	EXIT RAMP												52	136										1
Z-3	FD 340+00 TO 341+00	CONDUIT			54	95		190																	
Z-4	341+00	PULL BOX																							1
Z-5	341+00 TO 345+00	CONDUIT				400	800																		
Z-6	345+00	CROSS OVER			264	19		38																	3
Z-7	FE 344+85	RAMP METER			54	20		40			60			152	376			1				127	426			1
Z-8	FE 344+85 TO FE 350+45	CONDUIT				560	1120															560	2800			
Z-9	345+00 TO 350+00	CONDUIT				500	1000																1500			
Z-10	FE 350+45	CONTROL CB				30	60															35	70	105	1	1
	TOTAL TO GENERAL SUMMARY				372	1614	3980	268			60			204	512			1				35	757	4831	1	7

QUANTITIES FOR SR-315 STA. 335+00 TO STA. 350+00

REFERENCE NUMBER	LOCATION	ITEM	625										632												
	STATION TO STATION		PB, CONC. 713.08 18 INCH EACH		3" CONDUIT JACKED UNDER PAVEMENT LIN.FT.	TRENCH LIN.FT.	MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	CONDUIT 3 INCH 713.04 LIN.FT.	PB, CONC. HEAVY DUTY 32 INCH EACH		CONDUIT 1½ INCH 713.07 LIN.FT.			LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	LOOP WIRE TYPE E LIN.FT.	RAMP METER SIGN A.P.P. EACH	RAMP CONTROLLER A.P.P. EACH	RAMP METER A.P.P. EACH	POWER SERVICE EACH	POWER SERVICE A.P.P. EACH	SERVICE CABLE 2 CONDUCTOR #6 AWG LIN.FT.	SIGNAL CABLE 5 CONDUCTOR #14 AWG LIN.FT.	LOOP DETECTOR LEAD-IN CABLE LIN.FT.	CONDUIT RISER, 2 INCH A.P.P. EACH	GROUND ROD EACH	
Z-1	FE 350+45	CONTROL CB							1								1									
Z-2	FE 350+45 TO FE 353+25	CONDUIT				280					560											280	280	280			
Z-3	FE 353+25	PULL BOX	1																								
Z-4	FE 353+25 TO FE 356+00	CONDUIT				275					550											275	275	275			
Z-5	FE 356+00	WARN SIGN	1			6					6			52	136	1						25				
Z-6	350+00 TO 352+50	CONDUIT				250	500																	750		
Z-7	352+50	COUNT STA	3		240	30	44	16	1					192	520									168		
Z-8	352+50 TO 357+87	CONDUIT				537	1074																	1611		
Z-9	357+87	X-OVER			110	9		18	2															168		
Z-10	FC 358+00	RAMP METER			54	85		86	1		72			152	376			1					182	336		
Z-11	FC 358+00 TO FC 355+34	CONDUIT				266	532																266	1330		
Z-12	FC 355+34	CONTROL CB				10			1								1					20	40	60		1	
Z-13	FC 355+34 TO FC 532+50	CONDUIT				334					668											334	334	334			
Z-14	FC 532+50	WARN SIGN	2			50		100						104	272	1							26	50			
Z-15	357+87 TO 363+24	CONDUIT				357	714																			
Z-16	363+45	X-OVER	2		112	30	44	16	1																	
Z-17	FA 363+45	EXIT RAMP	1		54	58		116						52	136											
Z-18	FA 363+45 TO 365+00	CONDUIT				176	352																			
Z-19	FE 356+00 TO FE 358+37	CONDUIT				237					237											237				
Z-20	FE 358+37	PULL BOX	1			11					11										1	11				
Z-21	FE 352+00 TO SIG POLE	CONDUIT				52					52											52				
Z-22	SIG POLE	RISER	1																	1					1	
	TOTAL TO GENERAL SUMMARY		12		554	3061	3260	352	7		2156			552	1440	2	2	1	1	1	1209	1420	5362	1	1	

QUANTITIES FOR SR-315 STA. 350+00 TO STA. 365+00

TRAFFIC SURVEILLANCE: SR-315 STA. 350+00 TO STA. 365+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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FOR QUANTITIES SEE PREVIOUS SHEET

MATCH LINE "A"

MATCH LINE STA. 350+00

MATCH LINE STA. 365+00

BETHEL RD.

RAMP FE

RAMP FA

RAMP FB

RAMP FC

RAMP FD

Z-1 2-1½" CONDUIT 713.07, 280'

Z-2

Z-3 18"

Z-4 2-1½" CONDUIT 713.07, 275'

Z-5 18"

Z-6 2-MULTICELL CONDUIT SYSTEM, 4", 250'

Z-7 18" 2-3" CONDUIT 713.04, 64'

Z-8 2-MULTICELL CONDUIT SYSTEM, 4", 22'

Z-9 2-3" CONDUIT 713.04, 64'

Z-10 2-MULTICELL CONDUIT SYSTEM, 4", 266'

Z-11

Z-12 2 1½" CONDUIT 713.07, 334'

Z-13 18"

Z-14 2-3" CONDUIT 713.04, 50'

Z-15 2-MULTICELL CONDUIT SYSTEM, 4", 537'

Z-16 2-3" CONDUIT 713.04, 64'

Z-17 18"

Z-18 2-MULTICELL CONDUIT SYSTEM, 4", 176'

Z-19 1-1½" CONDUIT 713.07, 237'

Z-20 18"

Z-21 18"

Z-22 18" 1½" CONDUIT 713.07, 52'

RAMP METERED WHEN FLASHING

2-3" CONDUIT 713.04, 85'

2-MULTICELL CONDUIT SYSTEM, 4", 22'

2-MULTICELL CONDUIT SYSTEM, 4", 357'

1-1½" CONDUIT 713.07, 42'

2-3" CONDUIT 713.04, 70'

40:1 TAPER

P.T. STA 361+00 BEGIN TAPER

N 16°12'22" W

350 352 354 356 358 360 362 364

32"

TRAFFIC SURVEILLANCE: SR-315 STA. 350+00 TO STA. 365+00

CALC. BY JCS	DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS	DATE 10/95		F.H.W.A. REGION 5

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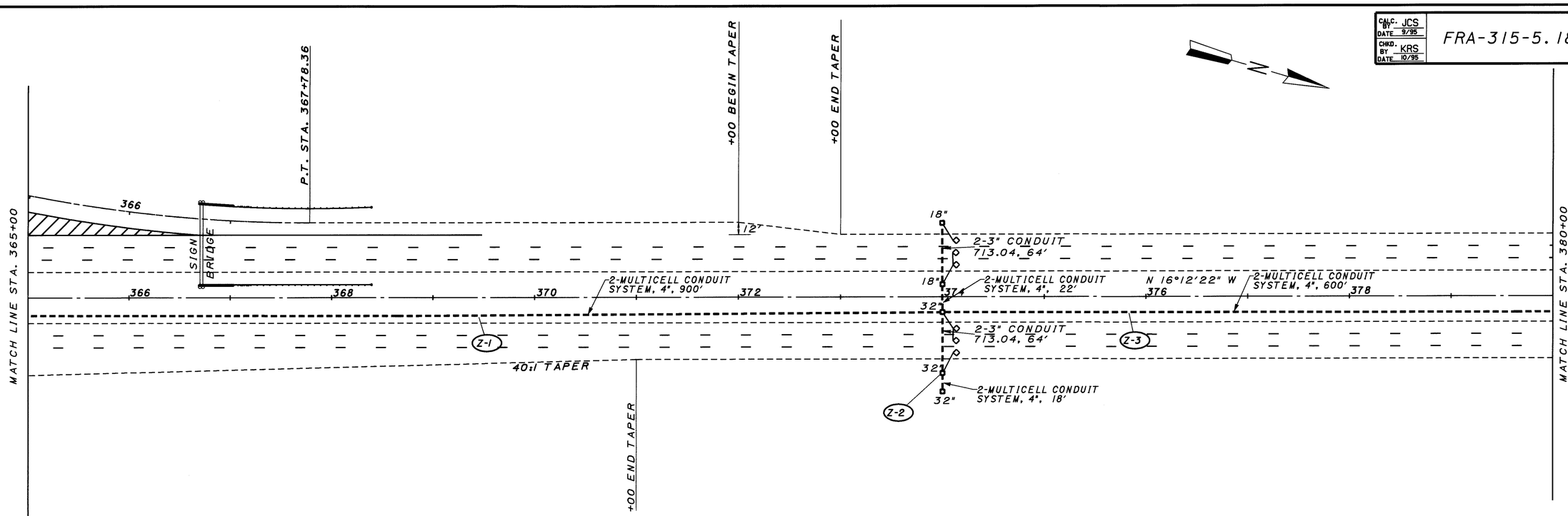

REFERENCE NUMBER	LOCATION	ITEM	625										632										
			PB, CONC. 713.08 18 INCH		3" CONDUIT JACKED UNDER PAVEMENT	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH				BRIDGE TRANSITION A.P.P.	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E									
	STATION TO STATION		EACH		LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH					LIN.FT.	LIN.FT.								
Z-1	365+00 TO 374+00	CONDUIT				900	1800																
Z-2	374+00	COUNT STA	2		240	48	80	16	3					192	520								
Z-3	374+00 TO 380+00	CONDUIT				600	1200																
TOTAL TO GENERAL SUMMARY			2		240	1530	3080	16	3					192	520								

TRAFFIC SURVEILLANCE: SR-315 STA. 365+00 TO STA. 380+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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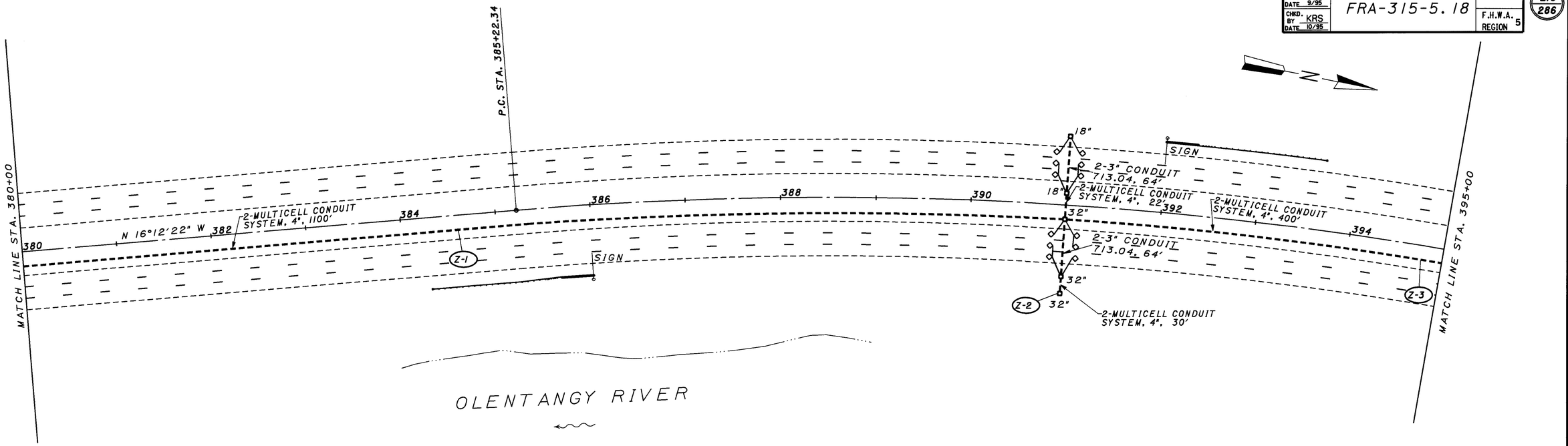

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH		3" CONDUIT JACKED UNDER PAVEMENT	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH				LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH		LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH				LIN.FT.	LIN.FT.										
Z-1	380+00 TO 391+00	CONDUIT				1100	2200																	
Z-2	391+00	COUNT STA	2		240	60	104	16	3				384	1040										
Z-3	391+00 TO 395+00	CONDUIT				400	800																	
TOTAL TO GENERAL SUMMARY			2		240	1560	3104	16	3				384	1040										

TRAFFIC SURVEILLANCE: SR-315 STA. 380+00 TO STA. 395+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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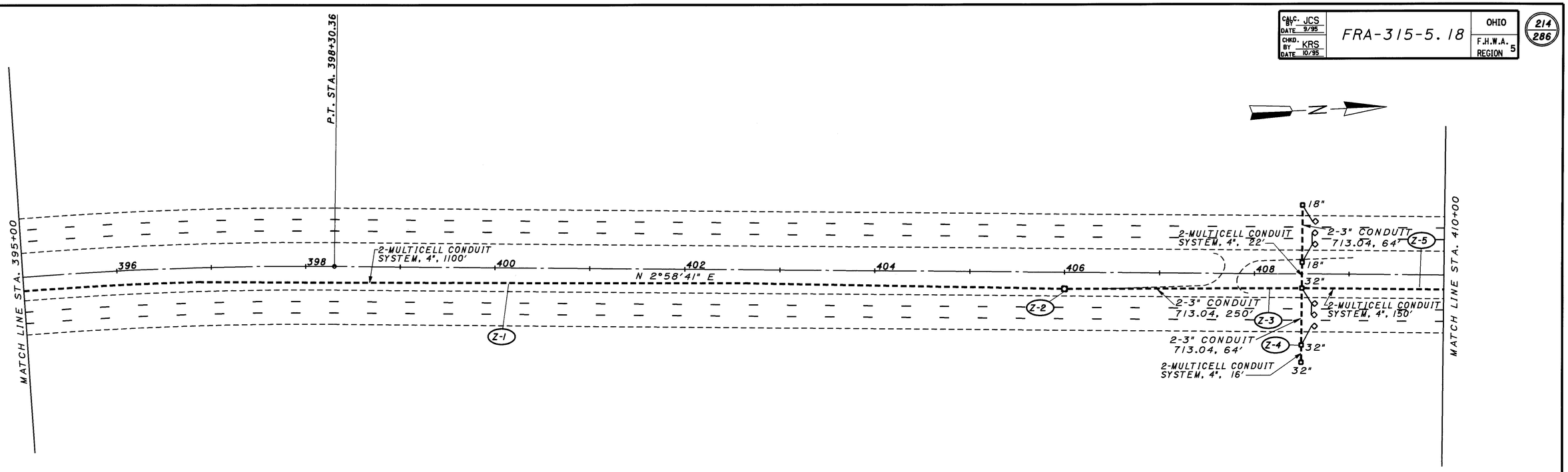
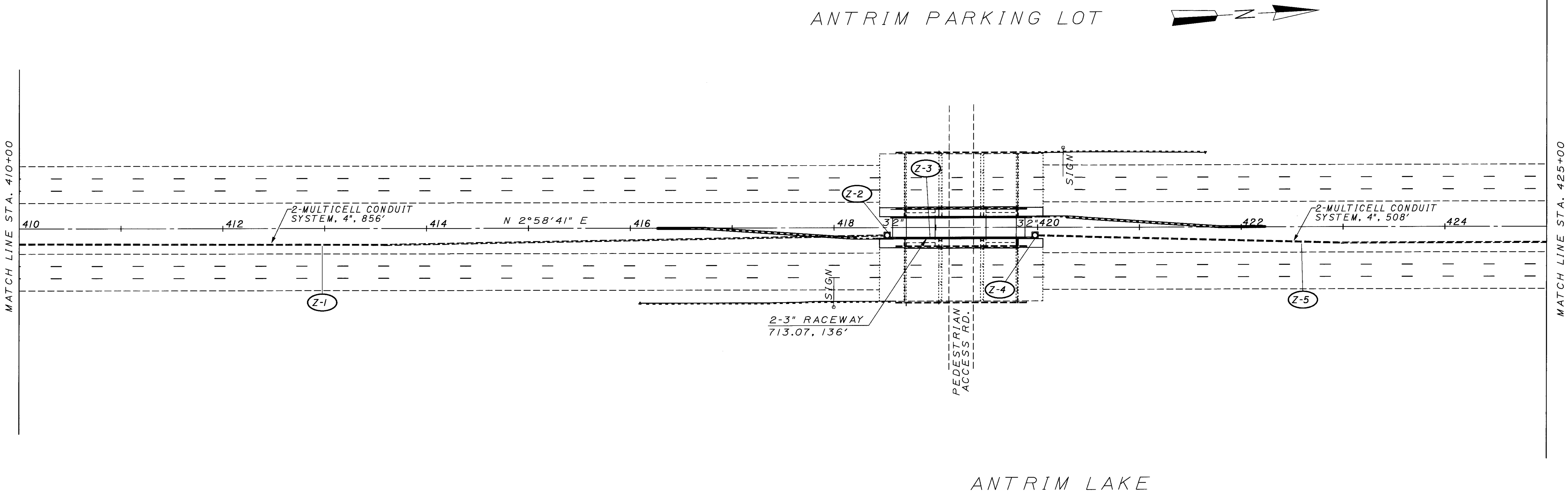


REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH		3" CONDUIT JACKED UNDER PAVEMENT	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB. CONC. HEAVY DUTY 32 INCH				LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH		LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH				LIN.FT.	LIN.FT.										
Z-1	395+00 TO 406+00	CONDUIT				1100	2200																	
Z-2	406+00	PULL BOX							1															
Z-3	406+00 TO 408+50	CONDUIT				250		500																
Z-4	408+50	COUNT STA	2		240	46	76	16	3				192	520										
Z-5	408+50 TO 410+00	CONDUIT				150	300																	
TOTAL TO GENERAL SUMMARY			2		240	1546	2576	516	4				192	520										

TRAFFIC SURVEILLANCE: SR-315 STA. 395+00 TO STA. 410+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	215/286



REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625									
						TRENCH LIN.FT.	MULTICELL CONDUIT SYSTEM, 4" LIN.FT.		CONDUIT 3 INCH 713.04 ON BRIDGE LIN.FT.			BRIDGE TRANSITION PULL BOX A.P.P. EACH
Z-1	410+00 TO 418+56	CONDUIT				856	1712					
Z-2	418+56	BR TRANS										1
Z-3	418+56 TO 419+92	COND ON BR							272			
Z-4	419+92	BR TRANS										1
Z-5	419+92 TO 425+00	CONDUIT				508	1016					
	TOTAL TO GENERAL SUMMARY					1364	2728		272			2

TRAFFIC SURVEILLANCE: SR-315 STA. 410+00 TO STA. 425+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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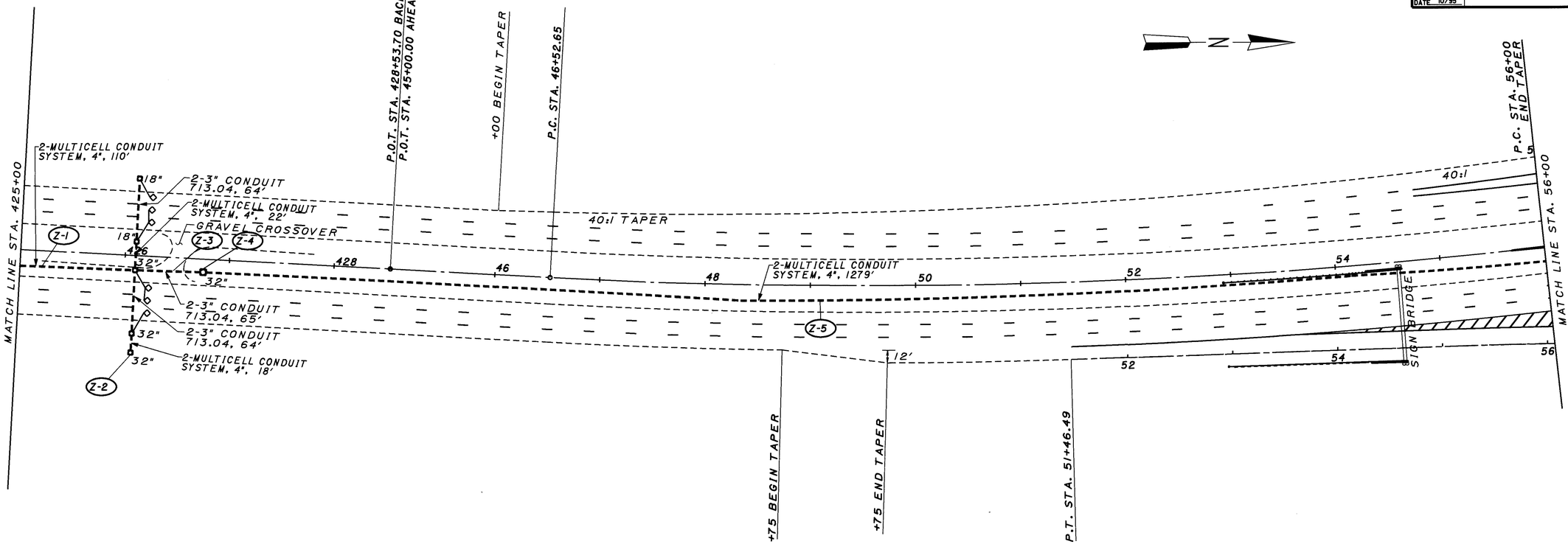

REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625 PB, CONC. 713.08 18 INCH EACH		625 3" CONDUIT JACKED UNDER PAVEMENT LIN.FT.	625 TRENCH LIN.FT.	625 MULTICELL CONDUIT SYSTEM, 4' LIN.FT.	625 CONDUIT 3 INCH 713.04 LIN.FT.	625 PB, CONC. HEAVY DUTY 32 INCH EACH				632 LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	632 LOOP DETECTOR WIRE TYPE E LIN.FT.
Z-1	425+00 TO 426+10	CONDUIT				110	220							
Z-2	426+10	COUNT STA	2		240	48	80	16	3				192	520
Z-3	426+10 TO 426+75	CONDUIT				65		130						
Z-4	426+75	PULL BOX							1					
Z-5	426+75 TO 56+00	CONDUIT				1279	2558							
TOTAL TO GENERAL SUMMARY			2		240	1502	2858	146	4				192	520

TRAFFIC SURVEILLANCE: SR-315 STA. 425+00 TO STA. 56+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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N

MATCH LINE STA. 56+00

MATCH LINE STA. 71+00

RAMP GD

RAMP GA

RAMP GC

RAMP GB

SR 161

P.T. STA. 64+35.31

P.O.T. STA. 66+20.93 SR315=
P.O.T. STA. 202+22.96 SR161

BEGIN CONCRETE BARRIER TYPE B-50

Z-1 2-MULTICELL CONDUIT SYSTEM, 4", 400'

Z-2 18"

Z-3 18" 2-MULTICELL CONDUIT SYSTEM, 4", 22'

Z-4 18"

Z-5 2-MULTICELL CONDUIT SYSTEM, 4", 350'

Z-6 Z-7 Z-8 2-3" CONDUIT 713.04, 50'

Z-9 2-MULTICELL CONDUIT SYSTEM, 4", 185'

Z-10 36"

Z-11 Z-12 2 - MEDIAN MULTICELL CONDUIT SYSTEM, 4", 407'

Z-13 18" 2 - MEDIAN MULTICELL CONDUIT SYSTEM, 4", 108'

Z-14 1-1½" CONDUIT 713.07, 252'

2-3" CONDUIT 713.04, 85'

2-3" CONDUIT 713.04, 64'

2-3" CONDUIT 713.04, 64'

2-3" CONDUIT 713.04, 100'

32"

FOR QUANTITIES SEE FOLLOWING SHEET

TRAFFIC SURVEILLANCE: SR-315 STA. 56+00 TO STA. 71+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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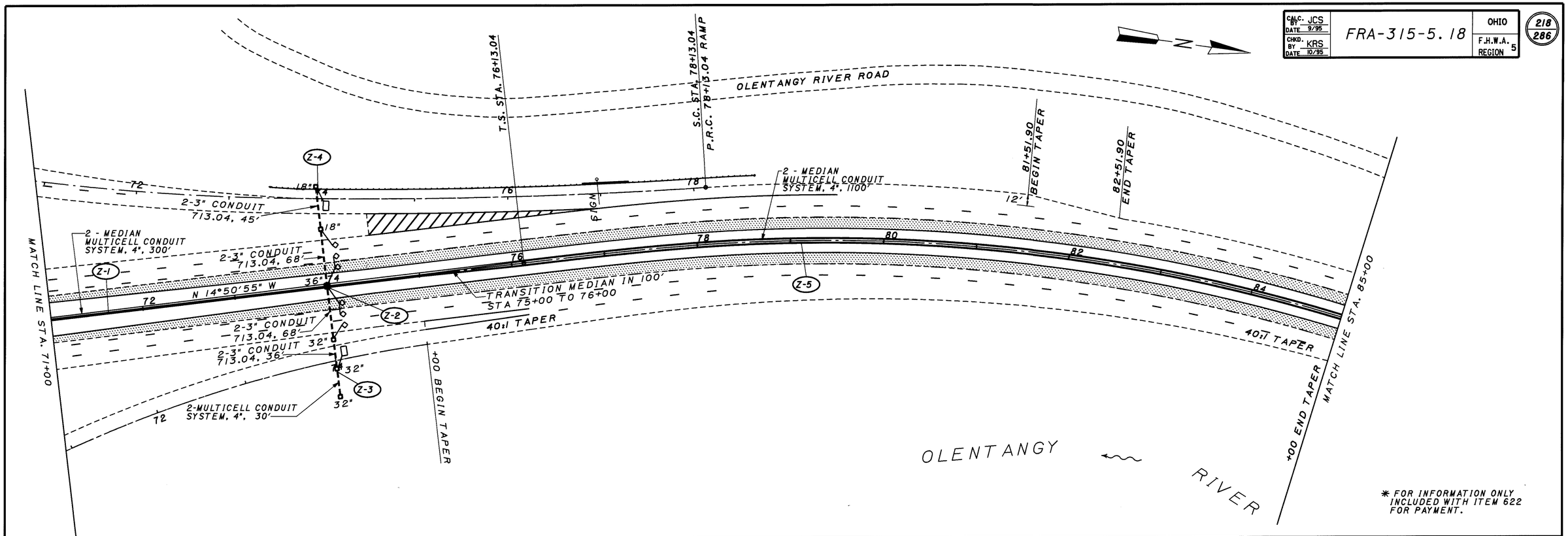

* FOR INFORMATION ONLY INCLUDED WITH ITEM 622 FOR PAYMENT.

REFERENCE NUMBER	LOCATION	ITEM	625											632														
	STATION TO STATION		PB, CONC. 713.08 18 INCH	18" MEDIAN PULL BOX A.P.P.	36" MEDIAN PULL BOX A.P.P.	MEDIAN TRANSITION PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	3" CONDUIT JACKED UNDER PAVEMENT	PB, CONC. HEAVY DUTY 32 INCH	CONDUIT 1½ INCH 713.07	MEDIAN MULTICELL CONDUIT SYSTEM, 4"	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E												
			EACH	EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.													
	QUANTITIES FOR PREVIOUS SHEET																											
Z-1	56+00 TO 60+00	CONDUIT					400	800																				
Z-2	GC 57+50	EXIT RAMP	1											52	136													
Z-3	60+00	SPEED TRAP	2				179	44	314	142	3			384	1040													
Z-4	GD 59+72	ENT RAMP	1				58		116	54				52	136													
Z-5	60+00 TO 63+50	CONDUIT					350	700																				
Z-6	63+50	PULL BOX									1																	
Z-7	63+50 TO 64+00	CONDUIT					50		100																			
Z-8	64+00	PULL BOX									1																	
Z-9	64+00 TO 65+85	CONDUIT					185	370																				
Z-10	65+85	MED TRAN				1																						
Z-11	65+85 TO 69+92	RACEWAY											814															
Z-12	69+92	MEDIAN PB		1																								
Z-13	69+92 TO 71+00	RACEWAY											216															
Z-14	GC 57+50 TO GC 60+02	CONDUIT					252					252																
	QUANTITIES FOR THIS SHEET																											
Z-1	71+00 TO 74+00	RACEWAY											600															
Z-2	74+00	COUNT STA	1		1		8		16	256	1			192	520													
Z-3	GB 74+00	ENT RAMP					39	60	18	54	2			52	136													
Z-4	GA 74+00	EXIT RAMP	1				18		36	54				52	136													
Z-5	74+003 TO 85+00	RACEWAY											2200															
TOTAL TO GENERAL SUMMARY			6	1	1	1	1539	3803	600	560	8	252	* 3830	784	2104													

TRAFFIC SURVEILLANCE: SR-315 STA. 71+00 TO STA. 85+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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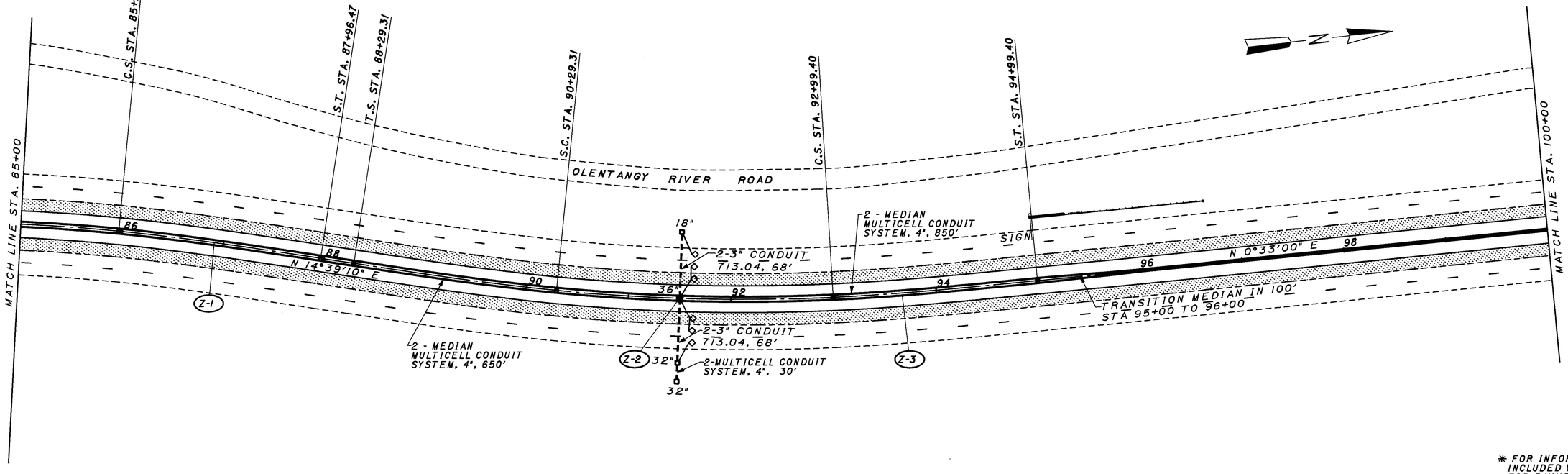

* FOR INFORMATION ONLY INCLUDED WITH ITEM 622 FOR PAYMENT.

REFERENCE NUMBER	LOCATION STATION TO STATION	ITEM	625 PB, CONC. 713.08 18 INCH EACH	625 3" CONDUIT JACKED UNDER PAVEMENT LIN.FT.	625 36" MEDIAN PULL BOX A.P.P. EACH	625 TRENCH LIN.FT.	625 MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	625 CONDUIT 3 INCH 713.04 LIN.FT.	625 PB, CONC. HEAVY DUTY 32 INCH EACH	625 MEDIAN MULTICELL CONDUIT SYSTEM, 4" LIN.FT.	632 LOOP DETECTOR PAVEMENT CUTTING LIN.FT.	632 LOOP DETECTOR WIRE TYPE E LIN.FT.
Z-1	85+00 TO 91+50	RACEWAY								1300		
Z-2	91+50	COUNT STA	1	256	1	38	60	16	2		192	520
Z-3	91+50 TO 100+00	RACEWAY								1700		
TOTAL TO GENERAL SUMMARY			1	256	1	38	60	16	2	* 3000	192	520

TRAFFIC SURVEILLANCE: SR-315 STA. 85+00 TO STA. 100+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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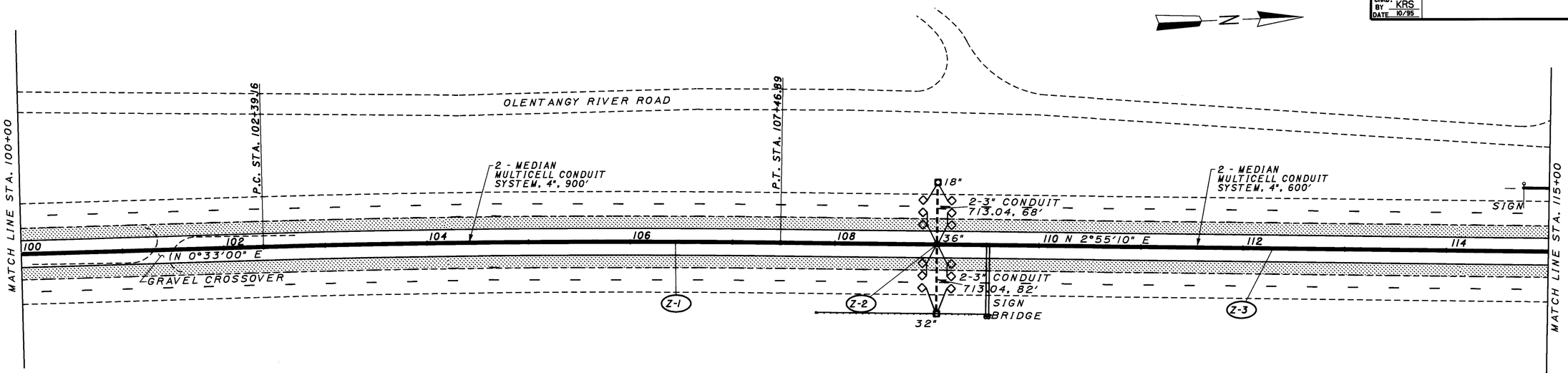
286

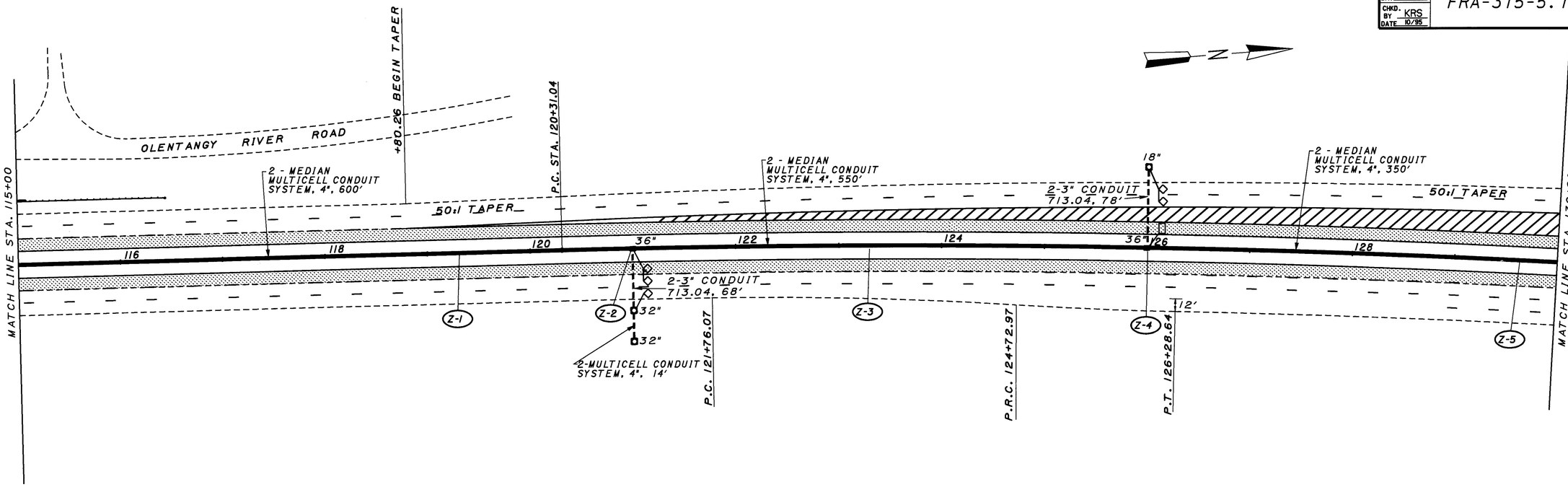


* FOR INFORMATION ONLY INCLUDED WITH ITEM 622 FOR PAYMENT.

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH		36" MEDIAN PULL BOX A.P.P.	TRENCH	3" CONDUIT JACKED UNDER PAVEMENT	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH			MEDIAN MULTICELL CONDUIT SYSTEM, 4"	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH		EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH			LIN.FT.	LIN.FT.	LIN.FT.										
Z-1	100+00 TO 109+00	RACEWAY										1800												
Z-2	109+00	SPEED TRAP	1		1	30	240	60	1				384	1040										
Z-3	109+00 TO 115+00	RACEWAY										1200												
TOTAL TO GENERAL SUMMARY			1		1	30	240	60	1			* 3000	384	1040										

TRAFFIC SURVEILLANCE: SR-315 STA. 100+00 TO STA. 115+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5



* FOR INFORMATION ONLY INCLUDED WITH ITEM 622 FOR PAYMENT.

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	3" CONDUIT JACKED UNDER PAVEMENT	36" MEDIAN PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	PB, CONC. HEAVY DUTY 32 INCH			MEDIAN MULTICELL CONDUIT SYSTEM, 4"	LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E										
			EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	EACH			LIN.FT.	LIN.FT.	LIN.FT.										
Z-1	115+00 TO 121+00	RACEWAY										1200												
Z-2	121+00	COUNT STA		128	1	4	60	8	2				96	260										
Z-3	121+00 TO 126+50	RACEWAY										1100												
Z-4	126+50	COUNT STA	1	148	1	4		8					116	342										
Z-5	126+50 TO 130+00	RACEWAY										700												
TOTAL TO GENERAL SUMMARY			1	276	2	8	60	16	2			* 3000	212	602										

TRAFFIC SURVEILLANCE: SR-315 STA. 115+00 TO STA. 130+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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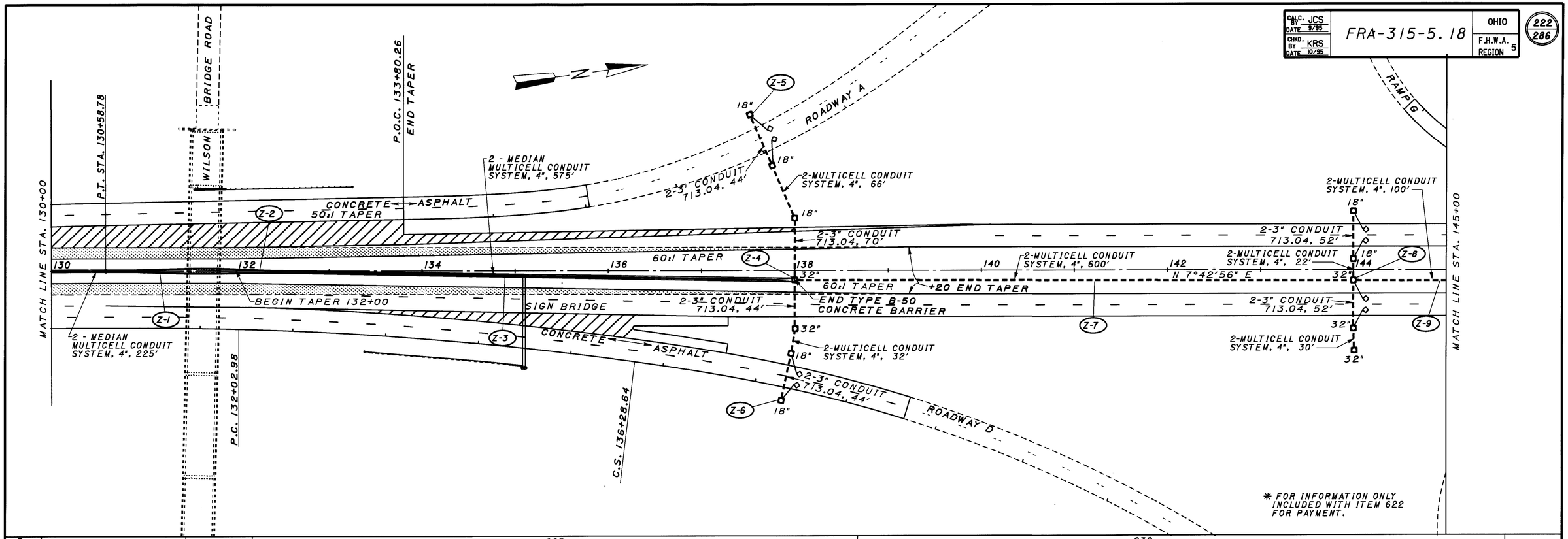
286

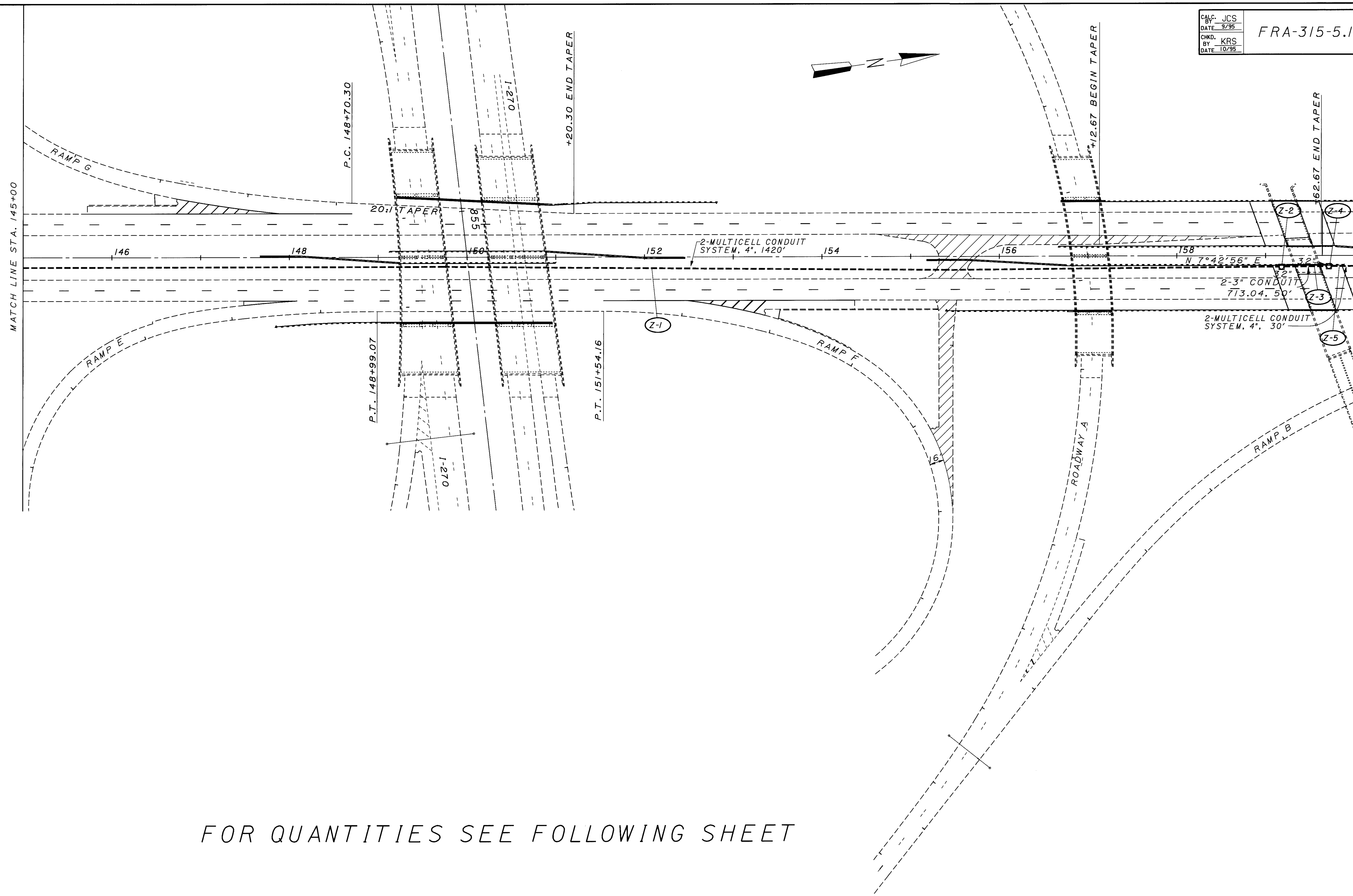


* FOR INFORMATION ONLY INCLUDED WITH ITEM 622 FOR PAYMENT.

REFERENCE NUMBER	LOCATION	ITEM	625										632											
	STATION TO STATION		PB, CONC. 713.08 18 INCH	18" MEDIAN PULL BOX A.P.P.	MEDIAN TRANSITION PULL BOX A.P.P.	TRENCH	MULTICELL CONDUIT SYSTEM, 4"	CONDUIT 3 INCH 713.04	3" CONDUIT JACKED UNDER PAVEMENT	PB, CONC. HEAVY DUTY 32 INCH		MEDIAN MULTICELL CONDUIT SYSTEM, 4"		LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE TYPE E									
			EACH	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH		LIN.FT.		LIN.FT.	LIN.FT.									
Z-1	130+00 TO 132+25	RACEWAY										450												
Z-2	132+25	MEDIAN PB		1																				
Z-3	132+25 TO 138+00	RACEWAY										1150												
Z-4	138+00	X-OVER	1		1	8		4	224	2														
Z-5	A 138+00	ENT RAMP	2			69	132	6	82					64	194									
Z-6	D 138+00	EXIT RAMP	2			35	64	6	82					64	194									
Z-7	138+00 TO 144+00	CONDUIT				600	1200																	
Z-8	144+00	COUNT STA	2			156	104	208		3				128	346									
Z-9	144+00 TO 145+00	CONDUIT				100	200																	
TOTAL TO GENERAL SUMMARY			7	1	1	968	1700	224	388	5		* 1600		256	734									

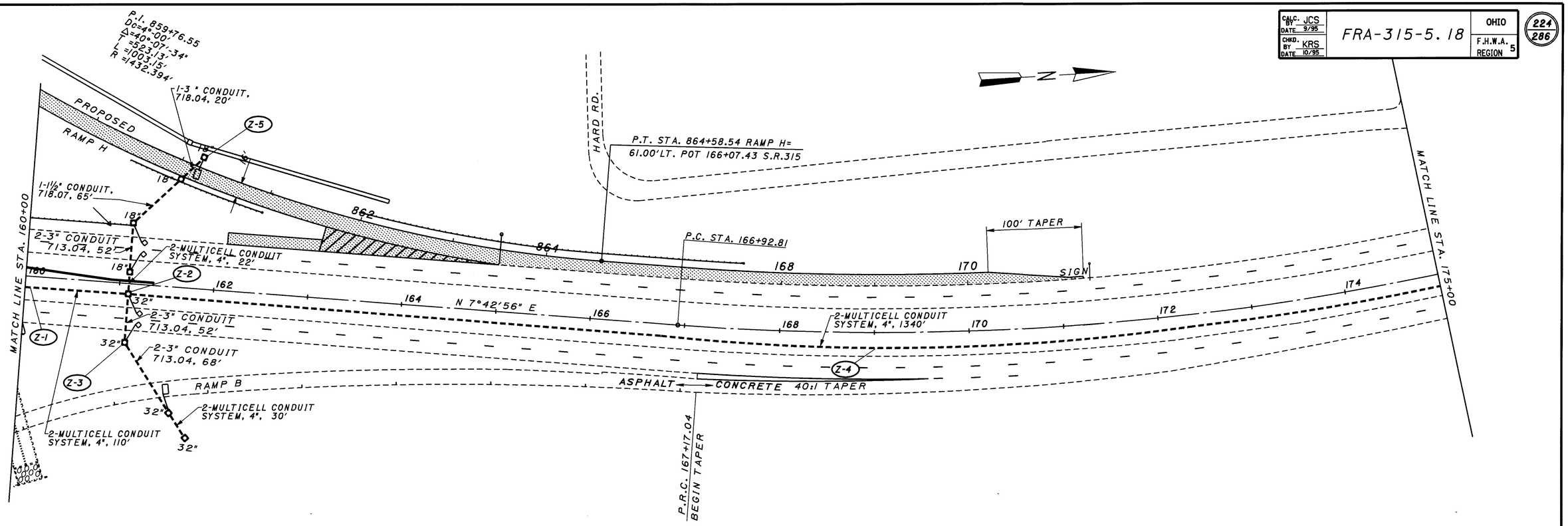
TRAFFIC SURVEILLANCE: SR-315 STA. 130+00 TO STA. 145+00

CALC. BY JCS DATE 9/95 CHKD. BY KRS DATE 10/95	FRA-315-5.18	OHIO F.H.W.A. REGION 5	223/286



FOR QUANTITIES SEE FOLLOWING SHEET

TRAFFIC SURVEILLANCE: SR-315 STA. 145+00 TO STA. 160+00

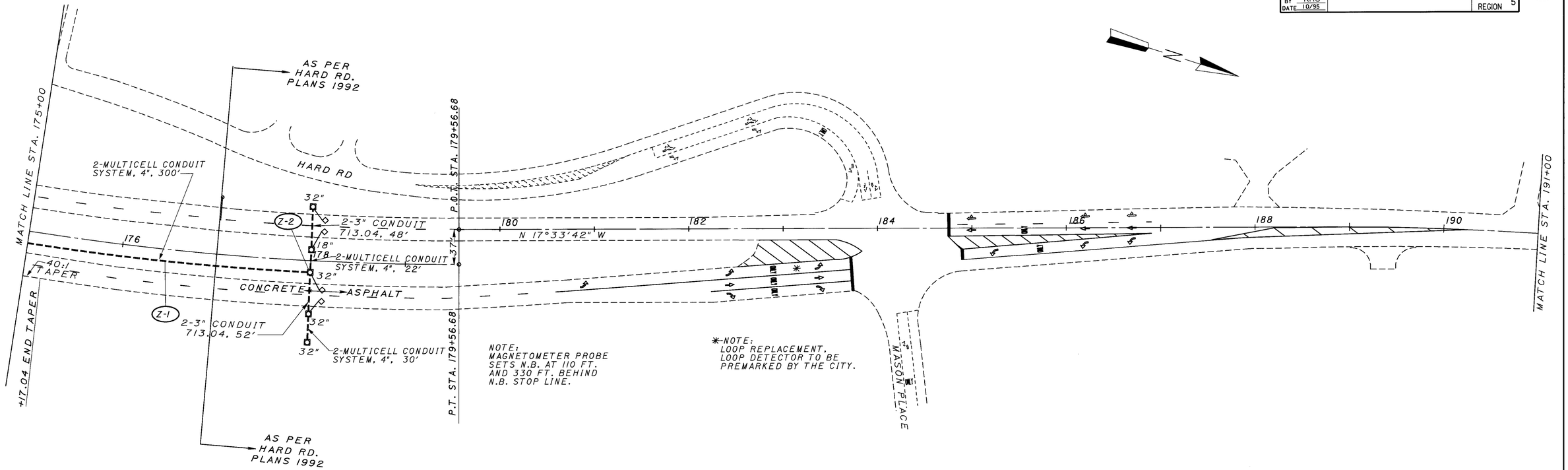


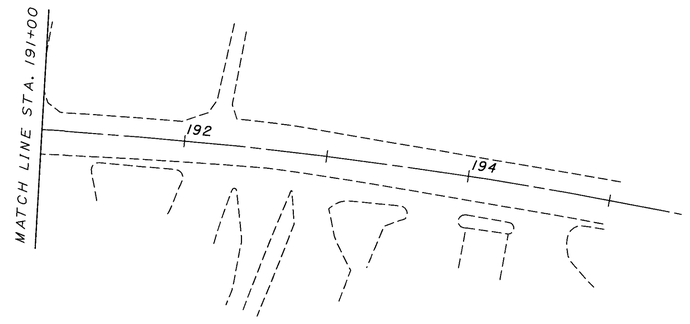
REFERENCE NUMBER	LOCATION	ITEM	625 PB, CONC. 713.08 18 INCH		625 3" CONDUIT JACKED UNDER PAVEMENT	625 TRENCH	625 MULTICELL CONDUIT SYSTEM, 4'	625 CONDUIT 3 INCH 713.04	625 PB, CONC. HEAVY DUTY 32 INCH	625 CONDUIT 1½ INCH 713.04				632 LOOP DETECTOR PAVEMENT CUTTING	632 LOOP DETECTOR WIRE TYPE E										
	STATION TO STATION		EACH		LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH	LIN.FT.				LIN.FT.	LIN.FT.										
	QUANTITIES FROM PREVIOUS SHEET																								
Z-1	145+00 TO 159+20	CONDUIT				1420	2840																		
Z-2	159+20	PULL BOX							1																
Z-3	159+20 TO 159+70	BR CONDUIT						100																	
Z-4	159+70	PULL BOX							1																
Z-5	159+70 TO 160+00	CONDUIT				30	60																		
	QUANTITIES FROM THIS SHEET																								
Z-1	160+00 TO 161+10	CONDUIT				110	220																		
Z-2	161+10	COUNT STA	2		192	30	44	16	2					128	346										
Z-3	B 161+10	ENT RAMP			54	71	60	82	2					52	136										
Z-4	161+10 TO 175+00	CONDUIT				1390	2780																		
Z-5	RAMP H 860+00	EXIT RAMP	2		20	65				65				52	136										
	QUANTITIES FROM FOLLOWING SHEET																								
Z-1	175+00 TO 178+00	CONDUIT				300	600																		
Z-2	178+00	COUNT STA	1		192	56	104	8	4					128	346										
	TOTAL TO GENERAL SUMMARY		5		458	2022	6708	106	10	65				360	964										

TRAFFIC SURVEILLANCE: SR-315 STA. 160+00 TO STA. 175+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

225
286

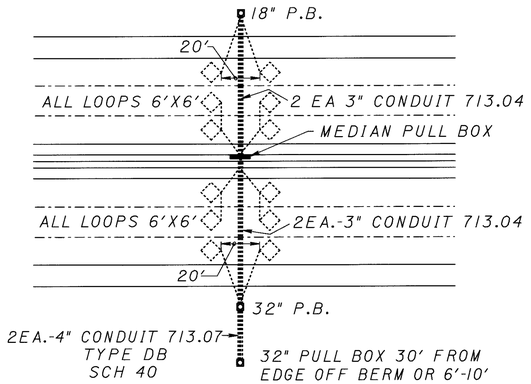




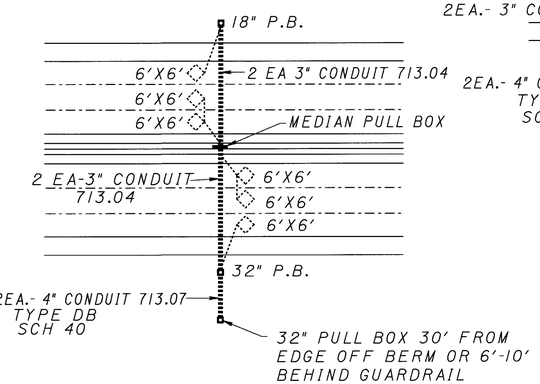
FOR QUANTITIES SEE PREVIOUS SHEET

TRAFFIC SURVEILLANCE: SR-315 STA. 175+00 TO STA. 190+00

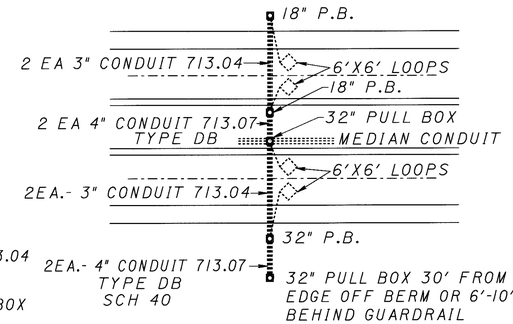
LOOP PLACEMENT



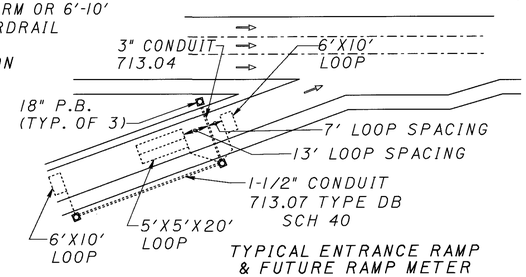
SPEED TRAP STATION



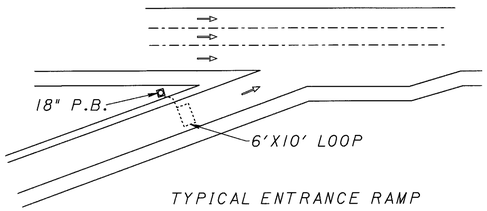
DETECTOR STATION



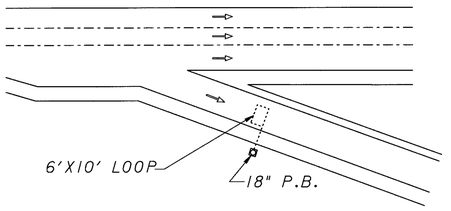
TYPICAL DETECTOR STATION WITHOUT MEDIAN WALL



TYPICAL ENTRANCE RAMP & FUTURE RAMP METER

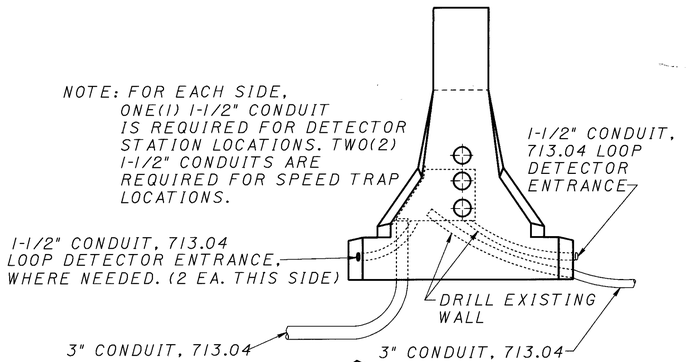


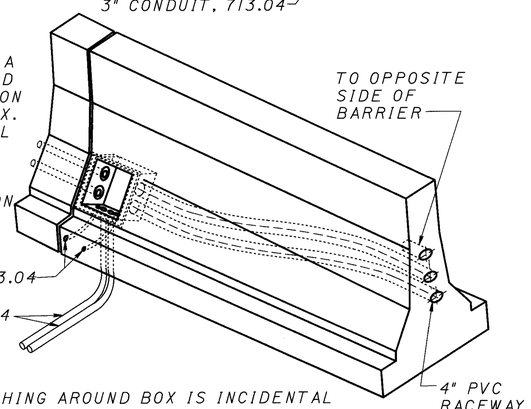
TYPICAL ENTRANCE RAMP



TYPICAL EXIT RAMP

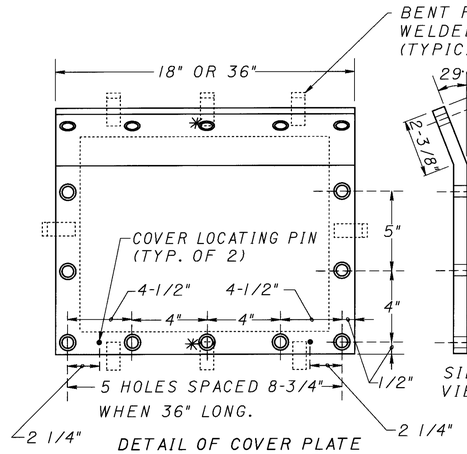
SURVEILLANCE PULL BOX & CONDUIT MODIFICATIONS TO EXISTING MEDIAN PULL BOX





REFINISHING AROUND BOX IS INCIDENTAL TO THE COST OF INSTALLATION.

NEW SURVEILLANCE MEDIAN PULL BOX & CONDUIT

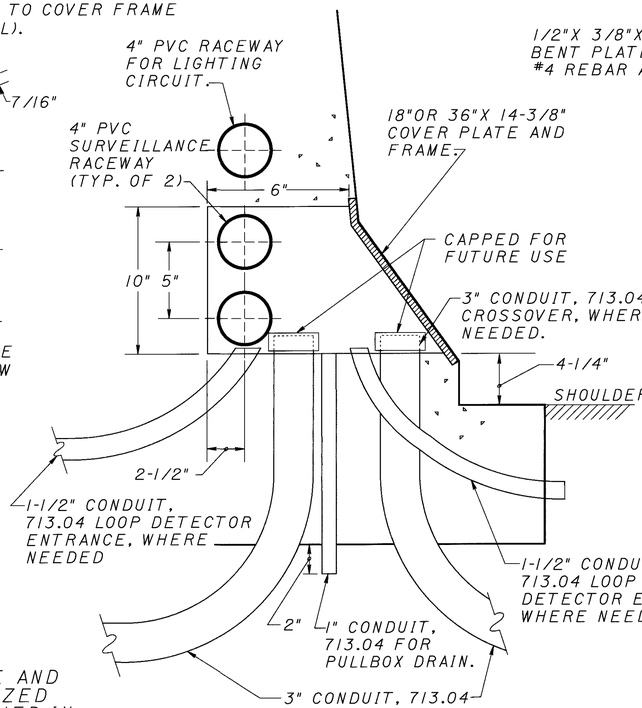


DETAIL OF COVER PLATE FOR PULLBOX CAVITY

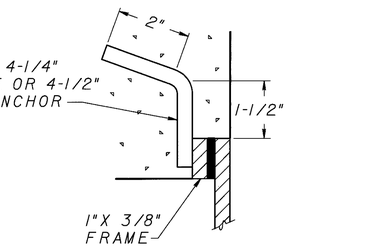
*NOTE:
WHEN 36" LONG COVER PLATE IS USED LOCATE 2 ADDITIONAL PLATE ANCHOR BARS AS SHOWN.

ASSEMBLY NOTE:
COVER SHALL BE ORIENTED WITH THE LOCATING PINS BEFORE DRILLING COVER PLATE BOLT HOLES.

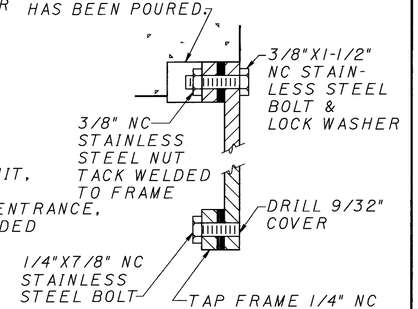
NOTE:
THE PULLBOX CAVITY COVER PLATE AND FRAME SHALL BE HOT DIP GALVANIZED AFTER ALL FABRICATION IS FINISHED, IN ACCORDANCE WITH REQUIREMENTS OF ASTM A-123.



TYPICAL TRAFFIC SURVEILLANCE PULLBOX



FRAME ANCHOR DETAIL



COVER BOLT & LOCATION PIN DETAIL

SURVEILLANCE DETAILS & TYPICALS

GENERAL LIGHTING SUMMARY

SHEET NUMBER 230	231	232	233	234	235	236	236A	237	237A	238	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
		3			4			3	7		202	75401	17	EACH	LIGHT POLE REMOVED, AS PER PLAN
		3			4			3	7		202	75501	17	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN
2605	675	1425		495	2133			1860	1600		202	98200	10793	LIN. FT.	REMOVAL MISC.: CABLE ABANDONED
17	20	27	14	28	14	18	7	15	14	15	625	00500	189	EACH	CONNECTOR KIT, TYPE II
17	20	27	14	30	14	18	7	15	14	15	625	00600	191	EACH	CONNECTOR KIT, TYPE III
18	40	54	26	54		2	2		6	30	625	01004	232	EACH	CONNECTOR KIT, TYPE VII B
26				2	2	4	22				625	01500	56	EACH	CABLE SPLICE KIT
	16	20	14	28	14	11	3	8			625	06500	114	EACH	LIGHT POLE, DESIGN AT18B41.7
						7	3	6	13	15	625	10461	44	EACH	LOW MAST LIGHT POLE, DESIGN A0N41.7, AS PER PLAN
	16	20	14	28	14	11	3	8			625	14100	114	EACH	LIGHT POLE FOUNDATION, 24"x 8' DEEP
						7	3	6	13	16	625	14300	45	EACH	MEDIAN LIGHT POLE FOUNDATION, 8' DEEP
				720		2348	5479	2434	4100	5054	625	23200	20135	LIN. FT.	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE
50											625	23300	50	LIN. FT.	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE
	1920	2760	1680	3360	1680	1830	630	1500	1120	1275	625	23400	17755	LIN. FT.	NO. 10 AWG POLE AND BRACKET CABLE
1315	3320	4250	3770	6855	2648	2558	504	1571		380	625	24100	27171	LIN. FT.	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES
2990	1510	1510									625	24300	6010	LIN. FT.	1-1/2" DUCT CABLE WITH TWO NO. 2 AWG 5000 VOLT CABLES
							1438				625	25500	1438	LIN. FT.	CONDUIT, 3", 713.04
225			200	300			832		135	140	625	25900	1832	LIN. FT.	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"
	16	23	14	28	14	11	3	8			625	26250	117	EACH	LUMINAIRE, CONVENTIONAL, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT
						7	3	6	13	15	625	26270	44	EACH	LUMINAIRE, LOW MAST, SYMMETRIC TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT
295	4640	5520	3430	6255	2528	2138	1912	1481	15	200	625	29002	28414	LIN. FT.	TRENCH, 24" DEEP
						1	1		2		625	29900	4	EACH	JUNCTION BOX (TYPE IV)
9				1		2	11		1	5	625	30700	29	EACH	PULL BOX, 713.08, 18"
	16	20	14	28	14	17	7	14	13	15	625	32000	158	EACH	GROUND ROD
1				1	1		1		1		625	34001	5	EACH	POWER SERVICE, AS PER PLAN
5								1			625	40020	6	EACH	SPECIAL - DISCONNECT EXISTING CIRCUIT

POWER SERVICE, AS PER PLAN
ELECTRIC POWER FOR THIS PROJECT, INCLUDING THE SERVICE TRANSFORMERS, WILL BE FURNISHED BY THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY, 90 WEST BROAD STREET, COLUMBUS, OHIO 43215.

SERVICE: 480 VOLT, 2 WIRE, SINGLE PHASE, GROUNDED

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:
AMERICAN ELECTRIC POWER
215 NORTH FRONT STREET
COLUMBUS, OHIO 43215 (614) 836-8570

"POWER SERVICE, AS PER PLAN" SHALL INCLUDE CHARGES BY THE POWER COMPANY IN ADDITION TO THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

AFTER ACCEPTANCE OF THE LIGHTING WORK, THE ENERGY ACCOUNT SHALL BE TRANSFERRED TO THE MAINTAINING AGENCY SPECIFIED IN THE PLANS.

LUMINAIRES, AS PER PLAN
STYLE B (27,500 LUMENS) LUMINAIRES, DESIGNED FOR USE WITH 250 WATT HIGH PRESSURE SODIUM LAMPS, SHALL HAVE SINGLE RATED 480 VOLT, 250 WATT INTEGRAL REGULATOR BALLASTS. STYLE B (50,000 LUMENS) LUMINAIRES, DESIGNED FOR USE WITH 400 WATT HIGH PRESSURE SODIUM LAMPS, SHALL HAVE SINGLE RATED 480 VOLT, 400 WATT INTEGRAL REGULATOR BALLASTS. STYLE B LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, CROUSE HINDS OVM, AMERICAN 125/126 OR EQUAL APPROVED BY THE ENGINEER.

LAMPS
HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", SYLVANIA "LUMALUX", WESTINGHOUSE "CERAMALUX" OR EQUAL APPROVED BY THE ENGINEER.

HIGH VOLTAGE DIRECT CURRENT TEST
A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 839, SHALL BE PERFORMED ON ALL SECONDARY FEEDER CABLE, DISTRIBUTION CABLE, AND DUCT CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARDRAIL, FENCE, DELINEATOR POSTS, SIGN SUPPORTS, ETC., IN THE IMMEDIATE VICINITY OF THE LOCATION OF THE CABLE RUN BEING TESTED, HAS BEEN COMPLETED.

ITEM SPECIAL - RE-ERECT EXISTING LIGHT TOWER
THE CONTRACTOR SHALL INSTALL NEW FOUNDATIONS AND ANCHOR BOLTS WHERE NEEDED. THE EXISTING POLE FOUNDATIONS NOT NEEDED SHALL BE REMOVED AS PER ITEM 202.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR EACH, "ITEM SPECIAL - RE-ERECT EXISTING LIGHT TOWER, WHICH PRICE SHALL CONSTITUTE FULL PAYMENT FOR CONCRETE FOUNDATIONS, ALL EXCAVATION, DISPOSAL OF SURPLUS EXCAVATION AND DISCARDED MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK. THE CONTRACTOR SHALL, AT HIS EXPENSE, REPAIR OR REPLACE, TO THE SATISFACTION OF THE ENGINEER, ALL DAMAGE TO THE LIGHT POLE, LUMINAIRE, LAMP, OR CABLE TO BE REUSED, CAUSED BY THE CONTRACTOR'S OPERATIONS OR NEGLECT.

ANCHOR BOLTS FOR REERECTED LIGHT TOWER
ANCHOR BOLTS FOR THE REERECTED LIGHT TOWER SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS. PAYMENT IS INCIDENTAL TO THE UNIT PRICE BID FOR REERECTING THE EXISTING LIGHT TOWER.

LIGHT TOWER FOUNDATIONS
IN LIEU OF THE TOP OF FOUNDATION RELATIONSHIP SHOWN IN STANDARD DRAWINGS, LIGHTING TOWER FOUNDATIONS SHALL EXTEND SIX TO TWELVE INCHES ABOVE GRADE OR PLATFORM, ON THE HIGHER ELEVATION SIDE OF THE FOUNDATION. THE SIX TO TWELVE INCH EXTENSION IS INCLUDED IN THE FOUNDATION DEPTH.

ELECTRICAL SERVICE FOR ILLUMINATING SIGNS
THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND THE ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING SPLICES OR CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTION IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

LOW MAST LUMINAIRES
LOW MAST LIGHTING SHALL USE SYMMETRIC TOWER LUMINAIRES AS DESCRIBED IN SPECIFICATIONS EXCEPT THAT LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN SECTION 713.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY WAIVED FOR THIS PROJECT. INSTEAD, THE SYMMETRIC TOWER LUMINAIRE SHALL MEET THE FOLLOWING REQUIREMENT.

SYMMETRIC, TYPE V, LUMINAIRES FOR LOW MAST LIGHTING MAY BE HOLOPHANE "HMST" TEST #36383, OR GENERAL ELECTRIC "HM" TEST 6312, OR COOPER "HAL" TEST #HMX4SDW.

IN ADDITION, OTHER SYMMETRIC LUMINAIRES FOR LOW MAST LIGHTING WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNATED POLE LOCATIONS AND THE DESIGNATED TYPE OF FIXTURE ON EACH POLE.

HIGH MAST LUMINAIRES
THE LUMINAIRE ARRAYS ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN SECTION 713.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY WAIVED FOR THIS PROJECT. INSTEAD, THE LUMINARES FOR TOWER LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS.

ASYMMETRIC, TYPE I, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #36801, OR GENERAL ELECTRIC "HM" TEST #GE8946, OR COOPER "HMC" TEST #HMC4SIDL.

ASYMMETRIC, TYPE II OR III, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #46973, OR GENERAL ELECTRIC "HM" TEST #GE7349, OR COOPER "HMC" TEST #HMC4SD.

SYMMETRIC, TYPE V, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #36383, OR GENERAL ELECTRIC "HM" TEST #GE6312, OR COOPER "HMC" TEST #HMX4SDW.

IN ADDITION, OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE DESIGNED NUMBER OF FIXTURES PER POLE.

ITEM 202, LIGHT POLE REMOVED, AS PER PLAN
THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM, TRANSFORMER BASE, AND EXISTING WIRING. REMOVAL OF LUMINAIRES FOR STORAGE IS A SEPARATE BID ITEM. THE LIGHT POLE WITH BRACKET ARM, TRANSFORMER BASE, AND WIRING SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL OFF OF THE SITE OF THE PROJECT.

PAYMENT WILL BE MADE FOR EACH "ITEM 202, LIGHT POLE REMOVED, AS PER PLAN," AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO PERFORM THE WORK IN A SATISFACTORY MANNER.

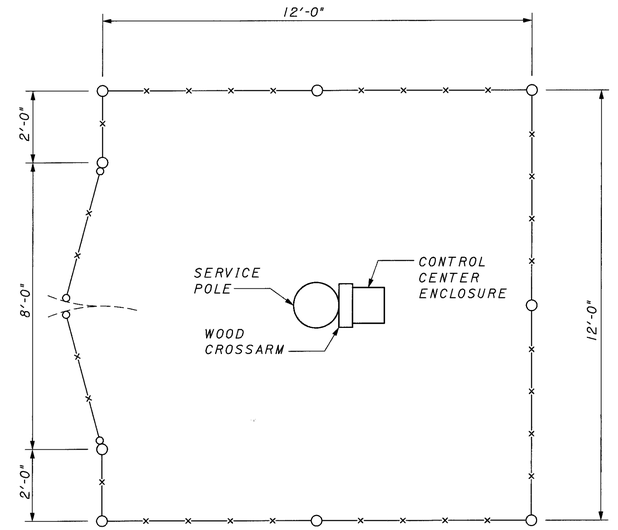
LIGHT POLE FOUNDATION REMOVED, AS PER PLAN
THIS ITEM OF WORK SHALL CONSIST OF REMOVING A LIGHT POLE FOUNDATION. ANY PORTION OF THE EXISTING FOUNDATION WHICH INTERFERES WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED. IN ADDITION THE FOUNDATION SHALL BE REMOVED TO A MINIMUM OF ONE FOOT BELOW FINISHED GRADE. THE RESULTANT DEPRESSION SHALL BE BACKFILLED WITH COMPACTED SOIL AND THE DISTURBED AREA SHALL BE RESTORED TO NORMAL CONDITIONS TO THE SATSFACTION OF THE ENGINEER. IN ADDITION, A REMOVED FOUNDATION, THE RESULTANT OPENING LEFT BY A REMOVED LIGHT POLE FOUNDATION SHALL BE BACKFILLED AND COMPACTED AS THOUGH IT WERE SUBGRADE FOR A ROADWAY.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH "ITEM 202.. LIGHT POLE FOUNDATION REMOVED AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE REMOVAL OF THE FOUNDATION SATISFACTORILY IN A WORKMANLIKE MANNER.

ITEM 625 POWER SERVICE, AS PER PLAN
ITEM 625 POWER SERVICE, AS PER PLAN SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIAL NECESSARY FOR A FENCE ENCLOSURE. THE FENCE FOR THE CONTROL CENTER SHALL BE 12 FOOT SQUARE ENCLOSURE WITH AN 8 FT. WIDE DOUBLE GATE. THE CHAIN LINK FENCE AND GATE SHALL BE 8 FEET HIGH PLUS 1 FT. OF 3 STRAND BARBED WIRE, AS PER 710.01 MOUNTED ON A 45 33/64 ARM ON THE TOP.

MATERIAL AND INSTALLATION SHALL CONFORM TO ITEM 607, AND LOCK TO BE PROVIDED BY THE CONTRACTOR.

PAYMENT FOR THE AFOREMENTIONED ITEM SHALL BE INCLUDED IN ITEM 625 POWER SERVICE, AS PER PLAN.



FENCE AT CONTROL CENTER DETAIL

12'-0" SQUARE FENCED ENCLOSURE AND 8'-0" WIDE DOUBLE GATE. CHAIN LINK FENCE AND GATE SHALL BE 8'-0" HIGH PLUS 1'-0" AT 45° SKEW 3 STRAND BARBED WIRE AT TOP.

PADLOCK AND KEYS
PADLOCK FURNISHED SHALL BE EITHER BRASS OE BRONZE, EQUAL TO MASTER NO. 48KA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED IN ACCORDANCE WITH SPECIFICATION 631.08, PARAGRAPH 3. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO	229 286
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0 250 500 1000
SCALE IN FEET

SHEET 240 | SHEET 241 | SHEET 242 | SHEET 243 | SHEET 244 | SHEET 245 | SHEET 246 | SHEET 247 | SHEET 248

HENDERSON ROAD
OLENTANGY RIVER ROAD
N 18°-48'-52" E
CITY OF COLS
BETHEL ROAD
SHARON TWP
CITY OF COLS
N 16°-12'-22" W
SHARON TWP
CITY OF COLS
SHARON TWP
CITY OF COLS
N 2°-58'-41" E
CITY OF COLS
CITY OF WORTHINGTON
P.O.T. STA. 428+53.70 BACK =
P.O.T. STA. 45+00.00 AHEAD
CITY OF COLS
CITY OF WORTHINGTON
ANTRIM PARK ACCESS STRUCTURE
N
CITY OF WORTHINGTON
CITY OF COLS
CITY OF COLS
CITY OF WORTHINGTON
N 14°-58'-55" W
N 14°-39'-10" E
N 0°-33'-00" E
N 2°-55'-10" E
WILSON BRIDGE ROAD
CITY SHARON TWP
CITY OF WORTHINGTON
N 7°-42'-56" E
I.R. 270
RAMP "H"
WILSON BRIDGE ROAD
HARD RD.
N 17°-33'-42" W
SHARON TWP.
CITY OF COLS
S.R. 161

LIGHTING SCHEMATIC PLAN

REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 CABLE ABANDONED LIN. FT.			625 SPECIAL - DISCONNECT EXIST. CIRCUIT EA.	NO. 2 AWG, 5000 VOLT DISTRIBUTION CABLE LIN. FT.	NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE LIN. FT.	1-1/4" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES LIN. FT.	1-1/4" DUCT CABLE WITH TWO NO. 2 AWG. 5000 VOLT CABLES LIN. FT.				PULL BOX 713.08, 18" EA.		CONNECTOR KIT, TYPE II EA.	CONNECTOR KIT, TYPE III EA.	CABLE SPLICE KIT EA.	CONNECTOR KIT, TYPE VII B EA.				TRENCH, 24" DEEP LIN. FT.	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3" LIN. FT.			POWER SERVICE, AS PER PLAN EA.		
		SHEET 242																														
L-1		21+25	23+00	LT								185																				
		22+30										25						1	1	2												
L-2		21+25	23+00	LT								185																				
		21+25		LT								25																				
L-3		21+25		LT												1				2												
		21+25																													1	
SHEET - TOTALS												420				1		1	1	4										1	
		SHEET 241																														
L-1		363+60	365+00	LT	150							150						1	1		2											
L-2		363+60	361+80	LT	190							190						1	1		2											
L-3		361+80	360+00	LT	190							190						1	1		2											
L-4		360+00	358+20	LT	190							190						1	1		2											
L-5		358+20	356+40	LT	190							190						1	1		2											
L-6		356+40	354+60	LT	190							190						1	1		2											
L-7		354+60	353+00	LT	230							230						1	1		2											
L-8		350+50	351+10	RT				1			70							1	1		2											
		351+10		RT												1																
		351+10		LT/RT							175																	110	65				
L-9		351+10		LT				1								1																
L-10		26+75	30+55	RT							450							1	1		2											
L-11		359+00		RT				1								1				2												
		359+00		LT/RT								60																20	30				
L-12		359+00		LT												1				2												
L-13		359+05		RT								15						1	1	2												
		359+05	357+10	RT	205							205						1	1													
L-14		357+10	355+10	RT	210							210						1	1	2												
L-15		355+10	353+00	RT	220							220						1	1	2												
L-16		353+00	352+90	RT								20						1	1	2												
L-17		352+90		RT				1								1																
		352+90		LT/RT							185																	110	65				
L-18		352+90		LT				1								1				2												
		352+90	27+30	LT							315							1	1													
L-19		27+30		LT												1				4												
		27+30		LT/RT							120	120																55	65				
L-20		28+75		RT	200													1	1	2												
L-21		27+30		RT												1				2												
L-22		27+30	23+00	LT	440				50			390																				
SHEET - TOTALS					2605			5	50		1315	2570				8		16	16	22	18					295	225					
TOTALS CARRIED TO GENERAL SUMMARY					2605			5	50		1315	2990				9		17	17	26	18					295	225			1		

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS DATE 9/95
CHKD. BY KRS DATE 10/95

FRA-315-5.18

OHIO
F.H.W.A. REGION 5

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 CABLE ABANDONED	625 1-½" DUCT CABLE WITH TWO NO.2 AWG. 5000 VOLT CABLES	625 1-½" DUCT CABLE WITH TWO NO.4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CONNECTOR KIT, TYPE VII B	625 GROUND ROD	625 LIGHT POLE FOUNDATION	625 TRENCH, 24" DEEP
		SHEET 243			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN. FT.
L-1	H	389+50	395+00	LT			560									550
	H	389+50		LT				120	1	1	1	1	2	1	1	
L-2	H	387+30	389+50	LT			230									220
	H	387+30		LT				120	1	1	1	1	2	1	1	
L-3	H	385+10	387+30	LT			230									220
	H	385+10		LT				120	1	1	1	1	2	1	1	
L-4	H	382+90	385+10	LT			230									220
	H	382+90		LT				120	1	1	1	1	2	1	1	
L-5	H	380+70	382+90	LT			230									220
	H	380+70		LT				120	1	1	1	1	2	1	1	
L-6	H	378+50	380+70	LT			230									220
	H	378+50		LT				120	1	1	1	1	2	1	1	
L-7	H	376+30	378+50	LT		230										220
	H	376+30		LT				120	1	1	1	1	2	1	1	
L-8	H	374+10	376+30	LT		230										220
	H	374+10		LT				120	1	1	1	1	2	1	1	
L-9	H	371+65	374+10	LT		355										345
	H	371+65		LT							1	1	2			
L-10	H	369+40	371+65	LT	225	235										225
	H	369+40		LT							1	1	2			
L-11	H	367+10	369+40	LT	235	240										230
	H	367+10		LT							1	1	2			
L-12	H	365+00	367+10	LT	215	220										210
	H	365+40		LT							1	1	2			
L-13	J	389+50		RT				120	1	1	1	1	2	1	1	
L-14	J	387+30	389+50	RT			230									220
	J	387+30		RT				120	1	1	1	1	2	1	1	
L-15	J	385+10	387+30	RT			230									220
	J	385+10		RT				120	1	1	1	1	2	1	1	
L-16	J	382+90	385+10	RT			230									220
	J	382+90		RT				120	1	1	1	1	2	1	1	
L-17	J	380+70	382+90	RT			230									220
	J	380+70		RT				120	1	1	1	1	2	1	1	
L-18	J	378+50	380+70	RT			230									220
	J	378+50		RT				120	1	1	1	1	2	1	1	
L-19	J	376+30	378+50	RT			230									220
	J	376+30		RT				120	1	1	1	1	2	1	1	
L-20	J	374+10	376+30	RT			230									220
	J	374+10		RT				120	1	1	1	1	2	1	1	
SHEET - SUB TOTALS					675	1510	3320	1920	16	16	20	20	40	16	16	4640

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	625 1-½" DUCT CABLE WITH TWO NO. 2 AWG. 5000 VOLT CABLES	625 1-½" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE, DESIGN AT18B41.7	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CONNECTOR KIT, TYPE VII B	625 GROUND ROD	625 LIGHT POLE FOUNDATION	625 TRENCH, 24" DEEP
		SHEET 243 CONT.			EA.	LIN. FT.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN. FT.
L-21	J	371+90	374+10	RT					230									220
	J	371+90		RT						120	1		1	1	2			
L-22	J	369+60		RT						120	1		1	1	2			
L-23	J	367+40		RT						120	1		1	1	2			
L-24	N	391+70	393+90	LT					230									220
	N	391+70		LT						120	1	1	1	1	2	1	1	
L-25	N	393+90	395+00	LT					120									110
	N	393+90		LT						120	1	1	1	1	2	1	1	
L-26	N	391+70	393+90	RT					230									220
	N	391+70		RT						120	1	1	1	1	2	1	1	
L-27	N	393+90	395+00	RT					120									110
	N	393+90		RT						120	1	1	1	1	2	1	1	
L-28	J	379+30		RT	1													
	J	376+80	379+30	RT		250	1											
L-29	J	376+80		RT	1													
	J	374+30	376+80	RT		250	1											
L-30	J	374+30		RT	1													
	J	374+30	371+90	RT		250	1											
SHEET - SUB TOTALS					3	750	3		930	840	7	4		7	7		14	4	4		880
TOTALS CARRIED TO GENERAL SUMMARY					3	1425	3	1510	4250	2760	23	20		27	27		54	20	20		5520

LIGHTING PLAN SUB-SUMMARY

REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202			625																							
								LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	LIGHT POLE, DESIGN AT18841.7	NO. 4 AWG. 5000 VOLT DISTRIBUTION CABLE			1-½" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	NO. 10 AWG POLE AND BRACKET CABLE				CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III		CONNECTOR KIT, TYPE VII B	GROUND ROD	LIGHT POLE FOUNDATION	TRENCH, 24" DEEP	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"						
								EA.	EA.	LIN. FT.			LIN. FT.	LIN. FT.				EA.	EA.		EA.	EA.	EA.	LIN. FT.	LIN. FT.						
		SHEET 244																													
L-1	H	395+00	398+30	LT									340											330							
	H	398+30		LT				1	1					120				1	1		2	1	1								
L-2	H	398+30	400+50	LT									230											220							
	H	400+50		LT				1	1					120				1	1		2	1	1								
	H	400+50	400+50	LT-RT									160											50	100						
L-3	H	400+50		RT				1	1					120				1	1		2	1	1								
L-4	H	400+50	402+70	LT									230											220							
	H	402+70		LT				1	1					120				1	1		2	1	1								
L-5	H	400+50	402+70	RT									230											220							
	H	402+70		RT				1	1					120				1	1		2	1	1								
L-6	H	402+70	404+90	LT									230											220							
	H	404+90		LT				1	1					120				1	1		2	1	1								
L-7	H	402+70	404+90	RT									230											220							
	H	404+90		RT				1	1					120				1	1		2	1	1								
L-8	N	395+00	396+10	LT									120											110							
	N	396+10		LT				1	1					120				1	1			1	1								
		396+10	396+10	LT-RT									160											50	100						
L-9	N	395+00	396+10	RT									120											110							
	N	396+10		RT				1	1					120				1	1		2	1	1								
L-10	N	396+10	398+30	RT									230											220							
	N	398+30		RT				1	1					120				1	1		2	1	1								
L-11	N	398+30	407+10	RT									890											880							
	N	407+10		RT				1	1					120				1	1		2	1	1								
L-12	N	407+10	409+30	RT									230											220							
	N	409+30		RT				1	1					120				1	1		2	1	1								
	N	409+30	410+00	RT									70											70							
L-13	N	407+10		LT				1	1					120				1	1		2	1	1								
L-14	N	407+10	409+30	LT									230											220							
	N	409+30		LT				1	1					120				1	1		2	1	1								
	N	409+30	410+00	LT									70											70							
SHEET - SUB TOTALS								14	14				3770	1680				14	14		26	14	14	3430	200						

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 CABLE ABANDONED	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE, DESIGN AT18B41.7	625 NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	625 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 PULL BOX 713.08, 18"	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 CONNECTOR KIT, TYPE VII B	625 GROUND ROD	625 LIGHT POLE FOUNDATION	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	625 POWER SERVICE, AS PER PLAN
		SHEET 244 CONT.			LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	EA.
L-15	N	410+00	411+50	LT					160									150		
	N	411+50		LT		1	1			120		1	1		2	1	1			
L-16	N	410+00	411+50	RT					160									150		
	N	411+50		RT		1	1			120		1	1		2	1	1			
L-17	N	411+50	413+70	LT					230									220		
	N	413+70		LT		1	1			120		1	1		2	1	1			
L-18	N	411+50	413+70	RT					230									220		
	N	413+70		RT		1	1			120		1	1		2	1	1			
L-19	N	413+70	415+90	LT					230									220		
	N	415+90		LT		1	1			120		1	1		2	1	1			
L-20	N	413+70	415+90	RT					230									220		
	N	415+90		RT		1	1			120		1	1		2	1	1			
L-21	N	415+90	418+15	LT					235									225		
	N	418+15		LT		1	1			120		1	1		2	1	1			
	N	418+15	418+15	LT-RT				320												
L-22	N	415+90	418+00	RT					220					2				210		
	N	418+00	418+15	RT					25									15		
	N	418+15		RT		1	1			120		1	1		2	1	1			
L-23	N	418+15	420+05	LT				400												
	N	420+05		LT		1	1			120		1	1		2	1	1			
L-24	N	418+15	420+05	RT																
	N	420+05		RT		1	1			120		1	1		2	1	1			
L-25	N	420+05	422+00	LT					205									195		
	N	422+00		LT		1	1			120		1	1		2	1	1			
	N	422+00	423+75	LT					185									175		
L-26	N	420+05	422+00	RT					205									195		
	N	422+00		RT		1	1			120		1	1		2	1	1			
L-27	N	423+85		LT		1	1			120		1	1		2	1	1			
	N	423+85	425+00	LT					115									115		
	N	423+85	423+85	LT-RT					160									50	100	
L-28	N	422+00	425+00	RT					300									290		
	N	423+85		RT		1	1			120		1	1		2	1	1			
	N	423+85	425+00	RT					115									115		
L-29	N	423+75		LT							1		2							
	N	423+75	423+75	LT					60									50		1
	N	423+75	423+85	LT					20									10		
	EX.	420+05	425+00	LT	495															
SHEET - SUB TOTALS					495	14	14	720	3085	1680	1	14	16	2	28	14	14	2825	100	1
TOTAL CARRIED TO GENERAL SUMMARY					495	28	28	720	6855	3360	1	28	30	2	54	28	28	6255	300	1

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

235/286

REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION, REMOVED, AS PER PLAN	202 DISCONNECT EXISTING CIRCUIT	625 NO. 4 AWG. 5000 VOLT DISTRIBUTION CABLE	625 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG. POLE AND BRACKET CABLE	625 GROUND ROD	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 PULL BOX 713.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	625 CONDUIT, SIZE: 3" 713.04	625 LOW MAST LIGHT POLE, DESIGN AON41.7	625 LUMINAIRE, SYMMETRIC TYPE III, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 MEDIAN LIGHT POLE FOUNDATION	625 MEDIAN JUNCTION BOX	625 LIGHT POLE FOUNDATION	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7		625 POWER SERVICE, AS PER PLAN				
		SHEET 245			EA.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.		EA.				
L-1	N	425+00	426+00	LT						110							100													
	N	426+00		LT							120	1	1	1										1	1	1				
L-2	N	426+00	428+20	LT						230							220													
	N	428+20		LT							120	1	1	1										1	1	1				
L-3	N	425+00	426+00	RT						110							100													
	N	426+00		RT							120	1	1	1										1	1	1				
L-4	N	426+00	428+20	RT						230							220													
	N	428+20		RT							120	1	1	1										1	1	1				
L-5	K	46+80		LT							120	1	1	1										1	1	1				
L-6	K	46+80	49+00	LT						252							242													
	K	49+00		LT							120	1	1	1										1	1	1				
L-7	K	49+00	51+20	LT						247							237													
	K	51+20		LT							120	1	1	1										1	1	1				
L-8	K	51+20	53+40	LT						246							236													
	K	53+40		LT							120	1	1	1										1	1	1				
L-9	K	53+40	55+45	LT						225							215													
		55+45		LT							120	1	1	1										1	1	1				
L-10	K	46+80		RT							120	1	1	1										1	1	1				
L-11	K	46+80	49+00	RT						254							244													
	K	49+00		RT							120	1	1	1										1	1	1				
L-12	K	49+00	51+20	RT						248							238													
	K	51+20		RT							120	1	1	1										1	1	1				
L-13	K	51+20	53+40	RT						248							238													
	K	53+40		RT							120	1	1	1										1	1	1				
L-14	K	53+40	55+45	RT				1		248					2		238													
	K	55+45		RT							120	1	1	1										1	1	1				
L-16	EX	425+00	46+30	LT	1	483	1																							
L-17	EX	46+30	50+50	LT	1	420	1																							
L-18	EX	50+50	54+30	LT	1	380	1																							
		54+30	56+00	LT		170																								
L-19	EX	49+20	56+00	RT	1	680	1																							
TOTALS CARRIED TO GENERAL SUMMARY					4	2133	4	1		2648	1680	14	14	14	2		2528							14	14	14				

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS DATE 9/95 | CHKD. BY KRS DATE 10/95 | FRA-315-5.18 | OHIO | F.H.W.A. REGION 5

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	202 DISCONNECT EXISTING CIRCUIT	625 NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	625 1-1/2" DUCT CABLE W/2 TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 GROUND ROD	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 PULL BOX 713.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	625 CONDUIT, SIZE: 3" 713.04	625 LOW MAST LIGHT POLE, DESIGN AON41.7	625 LUMINAIRE, SYMMETRIC TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 MEDIAN LIGHT POLE FOUNDATION	625 JUNCTION BOX (TYPE IV)	625 LIGHT POLE FOUNDATION	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7	625 CONNECTOR KIT, TYPE VII B	625 POWER SERVICE, AS PER PLAN			
		SHEET 246			EA.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.			
L-1	K	55+45	57+55	Lt.						230							220													
	K	57+55		Lt.							120	1	1	1										1	1	1				
L-2	K	57+55	59+65	Lt.						237							227													
	K	59+65		Lt.							120	1	1	1										1	1	1				
L-3	K	59+65	61+75	Lt.						238							228													
	K	61+75		Lt.							120	1	1	1										1	1	1				
L-4	K	61+75	63+85	Lt.						210							200													
	K	63+85		Lt.							120	1	1	1										1	1	1				
L-5	K	63+85	64+40 (K-PB2)	Lt.						92							82													
	K	64+40 (K-PB2)		Lt.											2	1														
L-6	K	64+40 (K-PB2)	66+05	Lt.						178							168													
	K	66+05		Lt.							120	1	1	1										1	1	1				
L-7	K	55+45	57+35	Rt.						215							205													
	K	57+35		Rt.							120	1	1	1										1	1	1				
L-8	K	57+35	59+25	Rt.						213							203													
	K	59+25		Rt.							120	1	1	1										1	1	1				
L-9	K	59+25	61+20	Rt.						215							205													
	K	61+20		Rt.							120	1	1	1										1	1	1				
L-10	K	61+20	63+10	Rt.						211							201													
	K	63+10		Rt.							120	1	1	1										1	1	1				
L-11	K	63+10	63+26 (K-PB8)	Rt.						34							24													
	K	63+26 (K-PB8)		Rt.											2	1								1	1	1				
L-12	K	63+26 (K-PB8)	65+00	Rt.						185							175													
	K	65+00		Rt.							120	1	1	1										1	1	1				
L-13	K	54+70	56+20	℄					330																					
	K	56+20		℄							90	1	1	1						1	1	1								
L-14	K	56+20	57+70	℄					332																					
	K	57+70		℄							90	1	1	1						1	1	1								
L-15	K	57+70	59+20	℄					328																					
	K	59+20		℄							90	1	1	1						1	1	1								
L-16	K	59+20	60+70	℄					334																					
	K	60+70		℄							90	1	1	1						1	1	1								
L-17	K	60+70	62+20	℄					330																					
	K	62+20		℄							90	1	1	1						1	1	1								
L-18	K	62+20	63+40 (K-PB5)	℄					272																					
	K	63+40 (K-PB5)		℄									1	1											1				2	
L-19	K	63+40 (K-PB5)	63+70	℄					88																					
	K	63+70		℄							90	1	1	1						1	1	1								
L-20	K	63+70	65+20	℄					334																					
	K	65+20		℄							90	1	1	1						1	1	1								
TOTALS CARRIED TO GENERAL SUMMARY									2348	2258	1830	17	18	18	4	2	2138			7	7	7	1	11	11	11	2			

LIGHTING PLAN SUB-SUMMARY

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	202 DISCONNECT EXISTING CIRCUIT	625 NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	625 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 GROUND ROD	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 PULL BOX 713.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE, 3"	625 CONDUIT, SIZE, 3" 713.04	625 LOW MAST LIGHT POLE, DESIGN A0N41.7	625 LUMINAIRE, SYMMETRIC TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 MEDIAN LIGHT POLE FOUNDATION	625 JUNCTION BOX (TYPE IV)	625 LIGHT POLE FOUNDATION	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7	625 CONNECTOR KIT, TYPE VII B	625 POWER SERVICE, AS PER PLAN			
		SHEET 246			EA.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.			
L-21	K	196+50 (CC*5)	196+40 (K-PB1)	Lt.					306			1						143									1			
	K	196+40 (K-PB1)		Lt.											2															
L-22	K	196+40 (K-PB1)	64+40 (K-PB2)	Lt.					1210								595		595											
	K	64+40 (K-PB2)		Lt.											2	1														
L-23	K	64+40 (K-PB2)	64+00 (K-PB3)	Lt.					224									102												
	K	64+00 (K-PB3)		Lt.											2	1														
	K	64+00 (K-PB3)	63+70 (K-PB4)	Lt.					284								132		132											
L-24	K	63+70 (K-PB4)	63+40 (K-PB5)	Lt.					190									85												
	K	63+70 (K-PB4)		Lt.											2	1														
L-25	K	63+40 (K-PB5)	63+25 (K-PB6)	Rt.					192									86												
	K	63+25 (K-PB6)		Rt.											2	1														
	K	63+25 (K-PB6)	63+20 (K-PB7)	Rt.					168									74												
L-26	K	63+20 (K-PB7)	63+26 (K-PB8)	Rt.					178									79												
	K	63+20 (K-PB7)		Rt.											2	1														
L-27	P	196+50 (CC*5)	70+60 (P-PB1)	Lt.					178									79												
	P	70+60 (P-PB1)		Lt.											2	1														
	P	70+60 (P-PB1)	70+60 (P-PB2)	Lt.					1204								592		592											
L-28	P	70+60 (P-PB2)	70+30 (P-PB3)	Lt.					142								61		61											
	P	70+60 (P-PB2)		Lt.											2	1														
L-29	P	70+35 (P-PB3)	70+35 (P-PB4)						158									69												
	P	70+35 (P-PB3)		Lt.											2	1														
L-30	P	70+35 (P-PB4)	70+35 (P-PB5)						162									71												
	P	70+35 (P-PB4)		℄									1	1										1				2		
L-31	P	70+35 (P-PB5)	70+45 (P-PB6)	Rt.					136								58		58											
	P	70+35 (P-PB5)		Rt.											2	1														
L-32	P	70+45 (P-PB6)	70+45 (P-PB7)	Rt.					108								58	44												
	P	70+45 (P-PB6)		Rt.											2	1														
L-33	P	70+45 (P-PB7)	69+85	Rt.						68																				
	P	70+45 (P-PB7)		Rt.												1														
L-34	P	69+85	67+90	Rt.						212							202													
	P	69+85		Rt.							120	1	1	1											1	1	1			
L-35	P	67+90	65+95	Rt.						224							214													
	P	67+90		Rt.							120	1	1	1											1	1	1			
L-36	P	65+95		Rt.							120	1	1	1											1	1	1			
L-37	P	70+35 (P-PB4)	70+30	℄					15																					
	P	70+30		℄							90	1	1	1						1	1	1								
	P	70+30	68+80	℄					312																					
L-38	P	68+80	67+30	℄					312																					
	P	68+80		℄							90	1	1	1						1	1	1								
L-39	P	67+30		℄							90	1	1	1						1	1	1								
TOTALS CARRIED TO GENERAL SUMMARY									5479	504	630	7	7	7	22	11	1912	832	1438	3	3	3	1	3	3	3	2	1			

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	202 DISCONNECT EXISTING CIRCUIT	625 NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	625 1-1/4" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 GROUND ROD	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 PULL BOX 713.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	625 CONDUIT, SIZE: 3" 713.04	625 LOW MAST LIGHT POLE, DESIGN A0N41.7	625 LUMINAIRE, SYMMETRIC TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 MEDIAN LIGHT POLE FOUNDATION		625 LIGHT POLE FOUNDATION	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7		625 POWER SERVICE, AS PER PLAN				
		SHEET 246			EA.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.		EA.	EA.	EA.		EA.				
L-40	P	70+60 (P-PB1)	69+55	Lt.						120							110														
	P	69+55		Lt.							120	1	1	1										1	1	1					
	P	69+55	67+65	Lt.						204							194														
L-41	P	67+65		Lt.							120	1	1	1										1	1	1					
L-42	EX	56+00	56+40	RT		40																									
	EX	56+40			1		1																								
L-43	EX	56+40	58+30	RT		190																									
	EX	58+30		RT	1		1																								
	EX	58+30	64+70	RT		640																									
L-44	EX	56+00	64+20	LT		820																									
L-45	EX	64+20		LT	1		1																								
	EX	64+20	65+90	LT		170																									
		SHEET 247																													
L-1	P	70+60 (P-PB1)	71+65	Lt.						111							101														
	P	71+65		Lt.							120	1	1	1										1	1	1					
	P	71+65	73+65	Lt.						218							208														
L-2	P	73+65	75+65	Lt.						214							204														
	P	73+65		Lt.							120	1	1	1										1	1	1					
L-3	P	75+65	77+00	Lt.						147							137														
	P	75+65		Lt.							120	1	1	1										1	1	1					
L-4	P	77+00		Lt.				1					1	1			130														
L-5	P	70+45 (P-PB7)	71+75	Rt.						140																					
	P	71+75		Rt.							120	1	1	1										1	1	1					
	P	71+75	73+70	Rt.						209							199														
L-6	P	73+70	75+65	Rt.						208							198														
	P	73+70		Rt.							120	1	1	1										1	1	1					
L-7	P	75+65		Rt.																				1	1	1					
											120	1	1	1																	
L-8	P	70+35 (P-PB4)	71+85	℄					334																						
	P	71+85		℄							90	1	1	1						1	1	1									
	P	71+85	73+40	℄					344																						
L-9	P	73+40	74+90	℄					328											1	1	1									
	P	73+40		℄							90	1	1	1																	
L-10	P	74+90	76+47	℄					340											1	1	1									
	P	74+90		℄							90	1	1	1																	
L-11	P	76+47	78+02	℄					344																						
	P	76+47		℄							90	1	1	1						1	1	1									
L-12	P	78+02	79+57	℄					372																						
	P	78+02		℄							90	1	1	1						1	1	1									
L-13	P	79+57	81+12	℄					372																						
	P	79+57		℄							90	1	1	1						1	1	1									
TOTALS CARRIED TO GENERAL SUMMARY					3	1860	3	1	2434	1571	1500	14	15	15			1481			6	6	6		8	8	8					

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202 LIGHT POLE REMOVED, AS PER PLAN	202 CABLE ABANDONED	202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	202 DISCONNECT EXISTING CIRCUIT	625 NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	625 1-1/4" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	625 NO. 10 AWG POLE AND BRACKET CABLE	625 GROUND ROD	625 CONNECTOR KIT, TYPE II	625 CONNECTOR KIT, TYPE III	625 CABLE SPLICE KIT	625 PULL BOX 713.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	625 CONDUIT, SIZE: 3" 713.04	625 LOW MAST LIGHT POLE, DESIGN A0N41.7	625 LUMINAIRE, SYMMETRIC TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 MEDIAN LIGHT POLE FOUNDATION	625 JUNCTION BOX (TYPE IV)	625 LIGHT POLE FOUNDATION	625 LUMINAIRE, ASYMMETRIC TYPE III, 250 WATT HIGH PRESSURE SODIUM, 480 VOLT	625 LIGHT POLE DESIGN AT18B41.7	625 CONNECTOR KIT, TYPE VII B	625 POWER SERVICE, AS PER PLAN			
		SHEET 247			EA.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.			
L-14	P	81+12	82+67	℄					372																							
	P	81+12		℄							90	1	1	1						1	1	1										
L-15	P	82+67	84+22	℄					372																							
	P	82+67		℄							90	1	1	1						1	1	1										
L-16	P	84+22		℄							90	1	1	1						1	1	1										
L-17	L	85+77		℄							85	1	1	1						1	1	1										
L-18	L	85+77	87+32	℄					330																							
	L	87+32		℄							85	1	1	1						1	1	1										
L-19	L	87+32	88+87	℄					330																							
	L	88+87		℄							85	1	1	1						1	1	1	1				2					
L-20	L	88+87	90+42	℄					330																							
	L	90+42		℄							85	1	1	1						1	1	1										
L-21	L	90+42	91+97	℄					330																							
	L	91+97		℄							85	1	1	1						1	1	1										
L-22	L	91+97	93+52	℄					330																							
	L	93+52		℄							85	1	1	1						1	1	1										
L-23	L	93+52	95+07	℄					330																							
	L	95+07		℄							85	1	1	1						1	1	1	1				2					
	L	95+07	95+07	℄-LT					160									70														
L-24	L	95+07	96+62	℄					330																							
	L	96+62		℄							85	1	1	1						1	1	1										
L-25	L	96+62	98+17	℄					330																							
	L	98+17		℄							85	1	1	1						1	1	1										
L-26	L	98+17	99+72	℄					330																							
	L	99+72		℄							85	1	1	1						1	1	1										
	L	99+72	100+00	℄					56																							
L-27	L	88+87	88+87	℄-LT					170								15	65														
	L	88+87		LT									1	1		1												2	1			
L-28	EX.	73+15		LT	1	220	1																									
L-29	EX.	74+90		LT	1	180	1																									
L-30	EX.	81+20		LT	1	630	1																									
L-31	EX.	73+45		LT	1	120	1																									
L-32	EX.	76+50		RT	1	310	1																									
L-33	EX.	79+80		RT	1	140	1																									
L-34	EX.	83+40		RT	1		1																									
TOTALS CARRIED TO GENERAL SUMMARY					7	1600	7		4100		1120	13	14	14		1	15	135		13	13	13	2				6	1			

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REFERENCE NUMBER	CIRCUIT DESIGNATION	STATION FROM	STATION TO	SIDE	202			625		NO. 4 AWG. 5000 VOLT DISTRIBUTION CABLE		1-½" DUCT CABLE WITH TWO NO. 4 AWG. 5000 VOLT CABLES	NO. 10 AWG POLE AND BRACKET CABLE	LUMINAIRE, SYMMETRIC TYPE V, 400 WATT, HIGH PRESSURE SODIUM, 480 VOLT	LOW MAST LIGHT POLE, DESIGN A0N41.7	PULL BOX 713.08, 18"		CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III		CONNECTOR KIT, TYPE VII B	GROUND ROD		TRENCH, 24" DEEP	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"		MEDIAN LIGHT POLE FOUNDATION				
		SHEET 248								LIN. FT.		LIN. FT.	LIN. FT.	EA.	EA.	EA.		EA.	EA.		EA.	EA.		LIN. FT.	LIN. FT.		EA.				
L-1	L	100+00	101+27	℄						274																						
	L	102+27		℄									85	1	1			1	1		2	1					1					
L-2	L	101+27	102+82	℄						330																						
	L	102+82		℄									85	1	1			1	1		2	1					1					
L-3	L	102+82	104+37	℄						330																						
	L	104+37		℄									85	1	1			1	1		2	1					1					
L-4	L	104+37	105+92	℄						330																						
	L	105+92		℄									85	1	1			1	1		2	1					1					
L-5	L	105+92	107+47	℄						330																						
	L	107+47		℄									85	1	1			1	1		2	1					1					
L-6	L	107+47	109+02	℄						330																						
	L	109+02		℄									85	1	1			1	1		2	1					1					
L-7	L	109+02	110+57	℄						330																						
	L	110+57		℄									85	1	1			1	1		2	1					1					
L-8	L	110+57	110+57	℄ -RT						160		80														70						
	L	110+57		RT												1								100								
	L	110+57	109+57	RT								110																				
L-9	L	110+57	112+12	℄						330																						
	L	112+12		℄									85	1	1			1	1		2	1					1					
L-10	L	112+12	113+67	℄						330																						
	L	113+67		℄									85	1	1			1	1		2	1					1					
L-11	L	113+67	113+67	℄ -LT								80														70						
	L	113+67		LT												1								100								
	L	113+67	114+67	LT								110																				
	L	113+67	115+00	℄						266																						
L-12	L	115+00	115+22	℄						64																						
	L	115+22		℄									85	1	1			1	1		2	1					1					
L-13	L	115+22	116+77	℄						330																						
	L	116+77		℄									85	1	1			1	1		2	1					1					
L-14	L	116+77	118+32	℄						330																						
	L	118+32		℄									85	1	1			1	1		2	1					1					
L-15	L	118+32	119+87	℄						330																						
	L	119+87		℄									85	1	1	1		1	1		2	1					1					
L-16	L	119+87	121+47	℄						340																						
	L	121+47		℄									85	1	1	1		1	1		2	1					1					
L-17	L	121+47	122+97	℄						320																						
	L	122+97		℄									85	1	1	1		1	1		2	1					1					
TOTALS CARRIED TO GENERAL SUMMARY										5054		380	1275	15	15	5		15	15		30	15		200	140		16				

LIGHTING PLAN SUB-SUMMARY

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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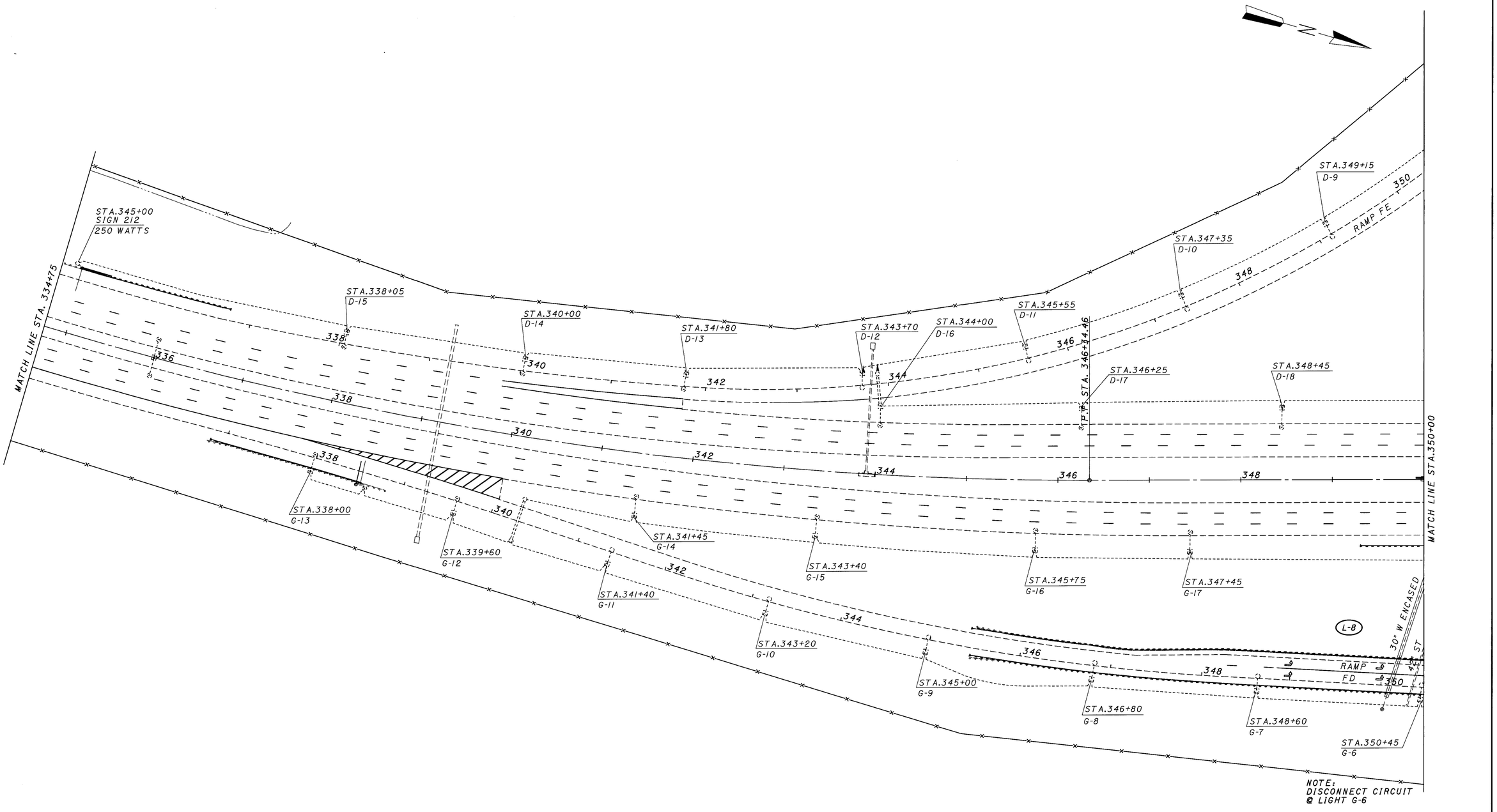
286



LIGHTING PLANS STA. 334+75 TO STA. 350+00

CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

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286

MATCH LINE

EXIST. P.B. 355+85

26+75, 10.00' RT
G-1

D-6

EXISTING CKT D 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

D-7

30" W ENCASED

RAMP FE

D-8

L-10
26+75
13.00' RT
G-2

CITY OF COLUMBUS

26

L-21
27+30.25' RT
PULL BOX J-4

L-22

EXISTING CKT J 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

EXISTING CKT G 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES. (TO BE ABANDONED)

SHARON TWP

28

PROPOSED CKT J DUCT CABLE WITH TWO NO. 2 AWG WIRES

27+30.25' LT
PULL BOX J-3
L-19

27+75, 13.00' LT
J-10

30" W

28+75
13.00' RT
J-13
L-20

NOTE:
SPLICE PROPOSED LIGHT J-13 TO EXISTING CIRCUIT J (RE-USE EXISTING CABLE)

PROPOSED CKT G 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES

BETHEL RD.

12" SLUDGE LINE

PROPOSED CKT J (USE EXISTING CABLE) EXISTING CIRCUIT H 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

29+62, 13.00' LT
J-11

L-9
351+10.15' LT
PULL BOX G-2

30+69
J-14

36" ST

L-18
352+90.15' RT
PULL BOX J-2

NOTE:
SPLICE EXISTING CABLE AT PULL BOX J-2 TO CONNECT LIGHTS J-35 THRU J-40

353+20, 15' LT
J-35

354+25, 15' LT
J-36

PROPOSED CKT J (USE EXISTING CABLE) EXISTING CKT D 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

357+30, 15' LT
J-37

359+40, 15' LT
J-38

L-2
361+80, 11.00' LT
H-6

363+75, 15' LT
J-40

350+70
15' LT
D-19

30" W ENCASED

36" ST

DISCONNECT CIRCUIT D

22 H-21 H-20

MATCH LINE STA.350+00

350

30" ST

354

356

358

360

362

N 16°12'22" W

364

MATCH LINE STA.365+00

15" ST

351+10.20' RT
PULL BOX G-1

25 H-24 H-23

DISCONNECT CIRCUIT G

31+56
J-12

PROPOSED CKT J 1-1/2" DUCT CABLE WITH TWO NO. 2 AWG WIRES

L-12
359+00 11.00' LT
PULL BOX J-5

359+05, 15' RT
J-9

L-13

15" ST

42" ST

36" ST

350+50
20' RT
G-18

L-8

L-17
352+90.15' RT
PULL BOX J-1

353+00, 15' RT
J-6

L-16

L-15
355+10, 15' RT
J-7

357+10, 15' RT
J-8

L-14

32+85
13' RT
J-15

EXISTING CKT G 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES. (TO BE ABANDONED)

353+40, 11.00' RT
J-17

66" SAN

359+00 11.00' RT
PULL BOX J-6

L-11

361+00, 15' RT
J-21

363+00, 15' RT
J-22

DISCONNECT CIRCUIT

EXISTING CKT J 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

NOTE:
SPLICE EXISTING NO. 4 CABLE AT PULL BOX J-6 TO PROPOSED NO. 2 CABLE WHICH CONNECTS LIGHTS J-21 THRU J-34.

EXIST. P.B. 351+15

351+60, 11.00' RT
J-16

24" ST

RAMP FC

355+20, 11.00' RT
J-18

357+00, 11.00' RT
J-19

358+80, 11.00' RT
J-20

RAMP FD

SIGNAL

L-7
353+00, 11.00 LT
H-1

L-6
354+60, 11.00' LT
H-2

L-5
356+40, 11.00' LT
H-3

L-4
358+20, 11.00' LT
H-4

L-3
360+00, 11.00' LT
H-5

L-1
363+60, 11.00' LT
H-7

NOTE:
OFFSETS SHOWN FOR CONVENTIONAL LIGHTS ARE MEASURED FROM THE EDGE OF PAVEMENT

25+70, 13.00' LT
J-5

EXISTING CKT H 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES. (TO BE ABANDONED)

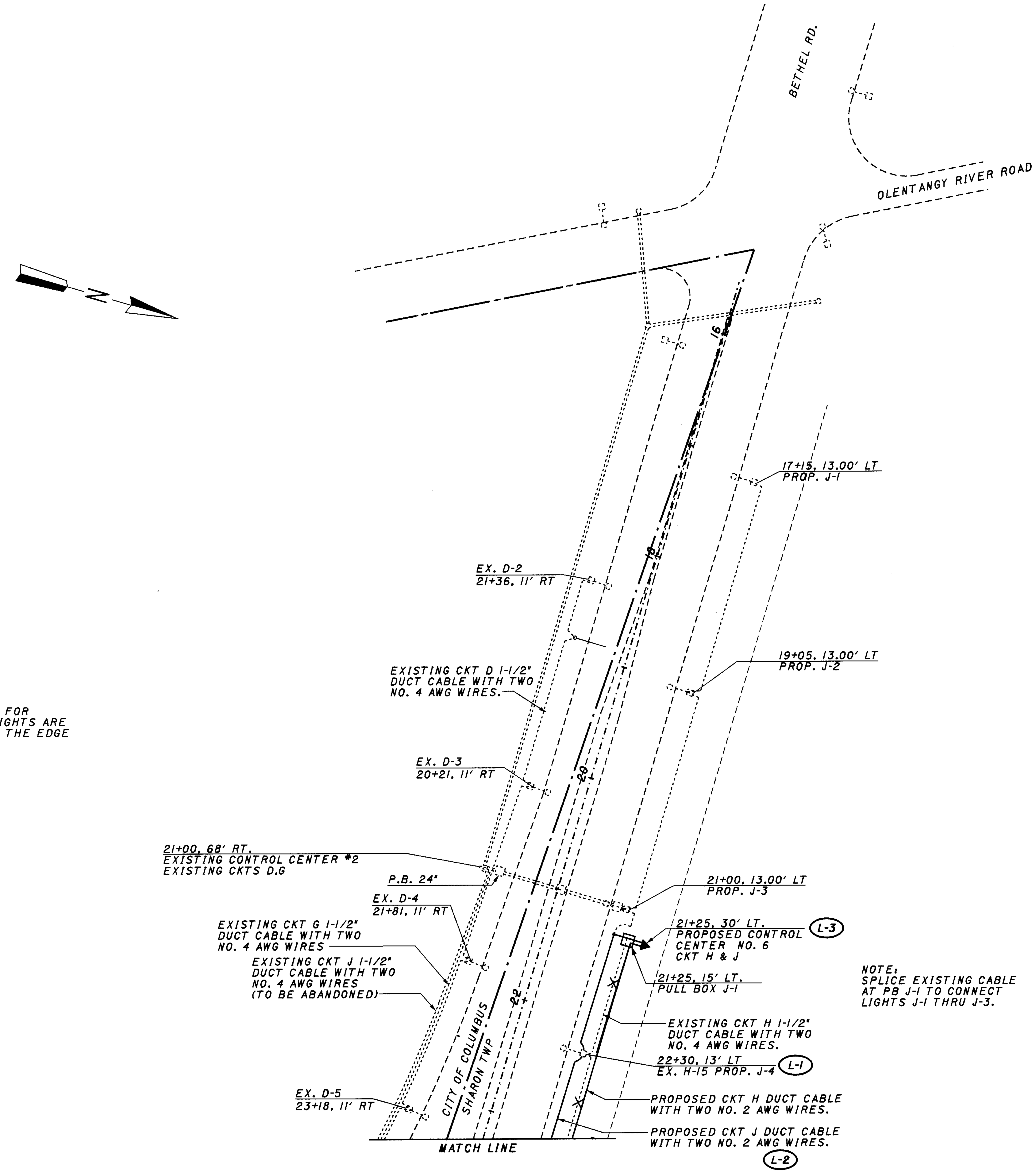
EXISTING CKT H 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES.

PROPOSED CKT H DUCT CABLE WITH TWO NO. 2 AWG WIRES

NOTE:
SPLICE EXISTING CABLE AT PULL BOX J-3 TO CONNECT LIGHTS J-10 THRU J-12

RAMP FA

LIGHTING PLANS STA. 350+00 TO STA. 365+00



NOTE:
OFFSETS SHOWN FOR CONVENTIONAL LIGHTS ARE MEASURED FROM THE EDGE OF PAVEMENT

NOTE:
SPLICE EXISTING CABLE AT PB J-1 TO CONNECT LIGHTS J-1 THRU J-3.

LEGEND

EXISTING

- EXISTING CONDUIT
- EXISTING 6-400 W LUMINARIRES, SYMMETRIC
- EXISTING 2-400 W LUMINAIRES, ASYMMETRIC
- EXISTING 4-400 W LUMINAIRES, ASYMMETRIC
- EXISTING CONVENTIONAL LIGHT
- REMOVE EXISTING LIGHT
- S REMOVE EXISTING LIGHT FOR STORAGE
- EXISTING CONTROL CENTER
- EXISTING PULL BOX

PROPOSED

- CONDUIT UNDER PAVEMENT
- AWG NO.4 OR NO.2 5000 VOLT CABLE IN DUCT
- AWG NO.4 OR NO.2 5000 VOLT CABLE ENCLOSED IN BARRIER
- CONVENTIONAL LIGHT, 1-250 WATT LUMINAIRES
- 40' MAST HEIGHT, 1-400 W LUMINAIRE, SYMMETRIC
- 100' MAST HEIGHT, 2-400 W LUMINAIRES, ASYMMETRIC
- 100' MAST HEIGHT, 3-400 W LUMINAIRES, SYMMETRIC
- 100' MAST HEIGHT, 4-400 W LUMINAIRES, ASYMMETRIC
- 100' MAST HEIGHT, 6-400 W LUMINAIRES, SYMMETRIC
- PULL BOX
- CONTROL CENTER

ESTIMATED:

POWER SERVICE DESIGNATION	TYPE OF SERVICE	CONNECTED LOAD-KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING-AMPS	CIRCUIT NUMBER	CIRCUIT LOAD-AMPS	CIRCUIT FUSE-AMPS	MAINTAINING AGENCY
CC - 2	480 VOLT 1Ø, 2W GROUNDED NEUTRAL	11.86	NO. 4	60	D	17.0	60	CITY OF COLUMBUS
					G	7.7	30	

ESTIMATED:

POWER SERVICE DESIGNATION	TYPE OF SERVICE	CONNECTED LOAD-KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING-AMPS	CIRCUIT NUMBER	CIRCUIT LOAD-AMPS	CIRCUIT FUSE-AMPS	MAINTAINING AGENCY
CC - 6	480 VOLT 1Ø, 2W GROUNDED NEUTRAL	24.48	NO. 2	60	J	30.8	60	ODOT
					H	20.2	30	

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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L-12
365+40, 13.00' LT
H-8

EXISTING CKT H 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES

L-11
367+10, 15' LT
H-9

L-10
369+40, 13.00' LT
H-10

L-9
371+65, 13.00' LT
H-11

L-8
374+10, 15' LT
H-12

L-7
376+30, 15' LT
H-13

L-6
378+50, 15' LT
H-14

66" SAN

PROPOSED CKT H NO 2 AWG

BEGIN PROPOSED NO. 4 AWG

MATCH LINE STA. 365+00

SIGN 4 LAMPS @ 175 WATTS

66" SAN

90" ST

366 368 370 372 374 N 16°12'22" W 376 378

MATCH LINE STA. 380+00

BEGIN PROPOSED AWG NO.4

L-20
374+10, 15' RT
J-27

L-19
376+30, 15' RT
J-28

365+15, 15' RT
J-23

367+40, 15' RT
J-24
RELAMP TO 250W LUMINAIRE
L-23

12" ST

L-22
369+60, 15' RT
J-25
RELAMP TO 250W LUMINAIRE

L-21
371+90, 15' RT
J-26
RELAMP TO 250W LUMINAIRE

20" GAS (ENCASED)

BIKEWAY

L-30
374+30, 15' RT
(TO BE REMOVED)

L-29
376+80, 15' RT
(TO BE REMOVED)

12" ST

L-18
378+50, 15' RT
J-29

EXISTING CKT J 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES (RE-USE EXISTING CABLE)

PROPOSED CKT J 1-½" DUCT CABLE WITH TWO NO. 4 AWG WIRES

EXISTING CKT J 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG WIRES (TO BE REMOVED)

L-28
379+30, 15' RT
(TO BE REMOVED)

P.C. STA. 385+22.34

L-4
382+90, 15' LT
H-16

L-3
385+10, 15' LT
H-17

L-2
387+30, 15' LT
H-18

L-1
389+50, 15' LT
H-19

PROPOSED CKT N NO 4 AWG

L-24
391+70, 15' LT
N-2

NOTE:
MAINTAIN 5 FEET OF SEPARATION BETWEEN PARALLEL CIRCUITS.

L-25
393+90, 15' LT
N-4

66" SAN

L-5
380+70, 15' LT
H-15

PROPOSED CKT H NO 4 AWG

SIGN 2 LAMPS @ 175 WATTS

MATCH LINE STA. 380+00

382 384 N 16°12'22" W 386 388 390 392 394

MATCH LINE STA. 395+00

84" ST

SIGN 3 LAMPS @ 175 WATTS

15" ST

12" ST

12" ST

BIKEWAY

L-17
380+70, 15' RT
J-30

L-16
382+90, 15' RT
J-31

PROPOSED CKT J NO 4 AWG

L-15
385+10, 15' RT
J-32

L-14
387+30, 15' RT
J-33

L-13
389+50, 15' RT
J-34

L-26
391+70, 15' RT
N-1

L-27
393+90, 15' RT
N-3

PROPOSED CKT N NO 4 AWG

OLENTANGY RIVER

SHARON TWP.
CITY OF COLUMBUS

6" PETROLEUM PRODUCTS PIPELINE ENCASED

LIGHTING PLANS STA. 365+00 TO STA. 395+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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286

NOTE:
MAINTAIN 5 FEET
OF SEPARATION
BETWEEN PARALLEL
CIRCUITS.

66" SAN

P.T. STA. 398+30.

60" SAN

PROPOSED CKT N
NO 4 AWG

L-8
396+10, 15' LT
N-6

L-1
398+30, 15' LT
H-20

L-2
400+50, 15' LT
H-21

PROPOSED CKT H
NO 4 AWG

L-4
402+70, 15' LT
H-22

L-6
404+90, 15' LT
H-23

SHARON TWP.
CITY OF COLUMBUS

L-13
407+10, 15' LT
N-8

L-14
409+30, 15' LT
N-10

PROPOSED CKT N
NO 4 AWG

NOTE:
SPLICE IN BASE

36" SAN

MATCH LINE STA. 395+00

396 398 400 N 2°58'41" E 402 404 406 408

18" ST

30" ST

24" SAN

9' X 7' BOX CULVERT

15" ST

MATCH LINE STA. 410+00

NOTE:
SPLICE IN BASE

PROPOSED CKT N
NO 4 AWG

L-9
396+10, 15' RT
N-5

L-10
398+30, 15' RT
N-7

L-3
400+50, 15' RT
H-24

BIKEWAY

L-5
402+70, 15' RT
H-25

15" ST

L-7
404+90, 15' RT
H-26

60" SAN

L-12
409+30, 15' RT
N-11

L-11
407+10, 15' RT
N-9

60" SAN

36" SAN

CURVE DATA
P.I. STA. 391+82.52
Δ = 19°1'03" RT.
Dc = 1°28'00"
R= 3906.53'
L= 1308.01'
T= 660.18'
E= 55.39'
S = 0.036 FT/FT

SHARON TWP.
CITY OF COLUMBUS

PROPOSED CKT H
NO 4 AWG

NOTE:
MAINTAIN 5 FEET
OF SEPARATION
BETWEEN PARALLEL
CIRCUITS.

ESTIMATED:

POWER SERVICE DESIGNATION	TYPE OF SERVICE	CONNECTED LOAD-KVA	SERVICE EXTREME CONDUCTOR SIZE - AWG	ENCLOSURE RATING-AMPS	CIRCUIT NUMBER	CIRCUIT LOAD-AMPS	CIRCUIT FUSE-AMPS	MAINTAINING AGENCY
CC - 7	480 VOLT 1Ø, 2W GROUNDED NEUTRAL	11.18	NO. 4	60	N	23.3	30	CITY OF COLUMBUS

NOTE:
ALL SPLICES
IN POLE BASE

POLE BASE

EX. PULL BOX

ANTRIM PARKING LOT

POLE BASE

EX. PULL BOX

SIGN

L-29
423+75, 55' LT
PROP. CONTROL CENTER NO. 7
CKT N

423+75,15'LT
PULL BOX N-1

CITY OF COLUMBUS
CITY OF WORTHINGTON

NOTE:
FOR AEP USE ONLY
678 OLEN DRIVE
POLE NUMBER
X= 1850041
Y= 758144

L-15
411+50, 15' LT
N-12

L-17
413+70, 15' LT
N-14

L-19
415+90, 15' LT
N-16

L-21
418+15, 15' LT
N-18

L-23
420+05, 15' LT
N-20

PEDESTRIAN ACCESS RD.

L-25
422+00, 15' LT
N-22

L-27
423+85, 15' LT
N-24

PROPOSED CKT N
NO 4 AWG

PROPOSED CKT N
NO 4 AWG

PROPOSED CKT N
NO 4 AWG

SIGN
2 LAMPS @
175 WATTS

NOTE:
SPLICE IN
POLE BASE

MATCH LINE STA. 410+00

410 412 414 N 2°58'41" E 416 418 420 422 424

8" SAN

MATCH LINE STA. 425+00

SIGN
3 LAMPS @
175 WATTS

28" X 18"

NOTE:
SPLICE IN
POLE BASE

L-16
411+50, 15' RT
N-13

PROPOSED CKT N
NO 4 AWG

L-18
413+70, 15' RT
N-15

L-20
415+90, 15' RT
N-17

PROPOSED CKT N
NO 4 AWG

418+00
EXISTING
PULL BOX

60" SAN

60" SAN

L-22
418+15, 15' RT
N-19

L-24
420+05, 15' RT
N-21

L-26
422+00, 15' RT
N-23

L-28
423+85, 15' RT
N-25

ANTRIM LAKE

LIGHTING PLAN STA. 395+00 TO STA. 425+00

CALC. JCS BY		OHIO
DATE 9/95	FRA-315-5.18	
CHKD. KRS BY		F.H.W.A. REGION 5
DATE 10/95		

CURVE DATA
P.I. STA. 55+51.24
Δ = 17°49'36" LT.
Dc = 1°00'00"
R = 5729.58'
L = 1782.66'
T = 898.59'
E = 70.04'
S = 0.024 FT/FT

CITY OF WORTHINGTON
CITY OF COLUMBUS

P.O.T. STA. 428+53.70 BACK=
P.O.T. STA. 45+00.00 AHEAD

CITY OF COLUMBUS
CITY OF WORTHINGTON

P.C. STA. 46+52.65

L-1 426+00, 15' LT N-26
L-2 428+20, 15' LT N-28
L-3 426+00, 15' RT N-27
L-4 428+20, 15' RT N-29
L-5 46+80, 92' LT K-19
L-6 49+00 92' LT K-20
L-7 51+20 92' LT K-21
L-8 53+40 92' LT K-22
L-9 55+45, LT K-23
L-10 46+80, 92' RT K-1
L-11 49+00, 92' RT K-2
L-12 51+20, 92' RT K-3
L-13 53+40, 92' RT K-4
L-14 55+45, RT K-5
L-16
L-17
L-18
L-19

S.P. ELECT.
15" SAN
54" SAN
60" SAN
84" ST
426 15" ST
54" ST

PROPOSED CKT K NO 4 AWG
PROPOSED CKT N NO 4 AWG
PROPOSED CKT K NO 4 AWG

N 2°58'41" E
GRAVEL CROSSOVER
BIKEWAY
EXISTING PULL BOX

MATCH LINE STA. 425+00
MATCH LINE STA. 56+00

428 +40 46 48 50 52 54

N

LIGHTING PLAN STA. 425+00 TO STA. 56+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

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NOTE:
RE-USE EXISTING CABLE AND SPLICE AT EXISTING PULL BOX AND TO CONNECT PROPOSED CKT M.
196+40, RT K-PB1 L-22
MATCH LINE A
L-21 CONTROL CENTER #5 196+50 CIRCUITS K, M & P
194+40, 15' LT M-4
OLENTANGY RIVER ROAD
195+55, 15' RT M-7
198+00, 15' RT M-6
EXISTING CKT K PROPOSED CKT M NO. 4 AWG
197+05, 15'LT M-3
SIGN 12 LAMPS 175 WATTS
PROPOSED CKT K NO. 4 AWG
CIRCUIT P, NO. 4 AWG
EXISTING CKT L PROPOSED CKT M NO. 4 AWG
DISCONNECT EXISTING CKT K
66+05, LT K-28 L-6
64+40, LT K-PB2 L-5
198+85, 15'LT M-2
67+65, LT P-23 L-41
69+55, LT P-22 L-40
L-4 63+85, LT K-27
L-45
54" SAN
L-3 61+75, LT K-26
RAMP GD
RAMP GA
70+60,15'LT P-PB1 L-27
L-2 59+65, LT K-25
L-23 64+00, LT K-PB3
L-28 70+60,15'RT P-PB2
L-1 57+55, LT K-24
L-44
15" ST
P.O.T. STA. 66+20.93 SR315= P.O.T. STA. 202+22.96 SR161
L-29 70+35,15'LT P-PB3
L-24 63+70, LT K-PB4
L-37 70+30, 0' RT P-10
L-18 63+40, LT K-PB5
P.T. STA. 64+35.31
OBT
12" W
MATCH LINE STA. 56+00
MATCH LINE STA. 71+00
70+35, 0' RT P-PB4 L-30
BARRIER TYPE B-50
56+20 K-12 L-13
57+70 K-13 L-14
59+20 K-14 L-15
60+70 K-15 L-16
62+20 K-16 L-17
65+20 K-18 L-20
67+30 P-12 L-39
68+80 P-11 L-38
GRAVEL CROSSOVER
21" ST
L-31 70+35,15'RT P-PB5
L-25 63+25, RT K-PB6
63+70 K-17 L-19
L-32 70+45, RT P-PB6
L-42
L-7 57+35, RT K-6
L-43
L-26 63+20, RT K-PB7
L-8 59+25, RT K-7
RAMP GC
BIKEWAY
L-9 61+20, RT K-8
UG-TEL
24" W
24" ST
SR 161
RAMP GB
69+85, RT P-16 L-34
70+45, RT P-PB7 L-33
204+60, 15' RT M-1
L-10 63+10, RT K-9
L-11 63+26, RT K-PB8
ENCASED
67+90, RT P-17 L-35
MATCH LINE B
SIGN 2 LAMPS 175 WATTS
211+90, 18' LT EX. PULLBOX SIGN
SIGN 4 LAMPS 175 WATTS
L-12 65+00, RT K-10
65+95, RT P-18 L-36
C&SOE & WARNER CABLE
EXISTING CKT K PROPOSED CKT M NO. 4 AWG
205+65, 15' RT M-5
EXISTING CKT L PROPOSED CKT M NO. 4 AWG

ESTIMATED:

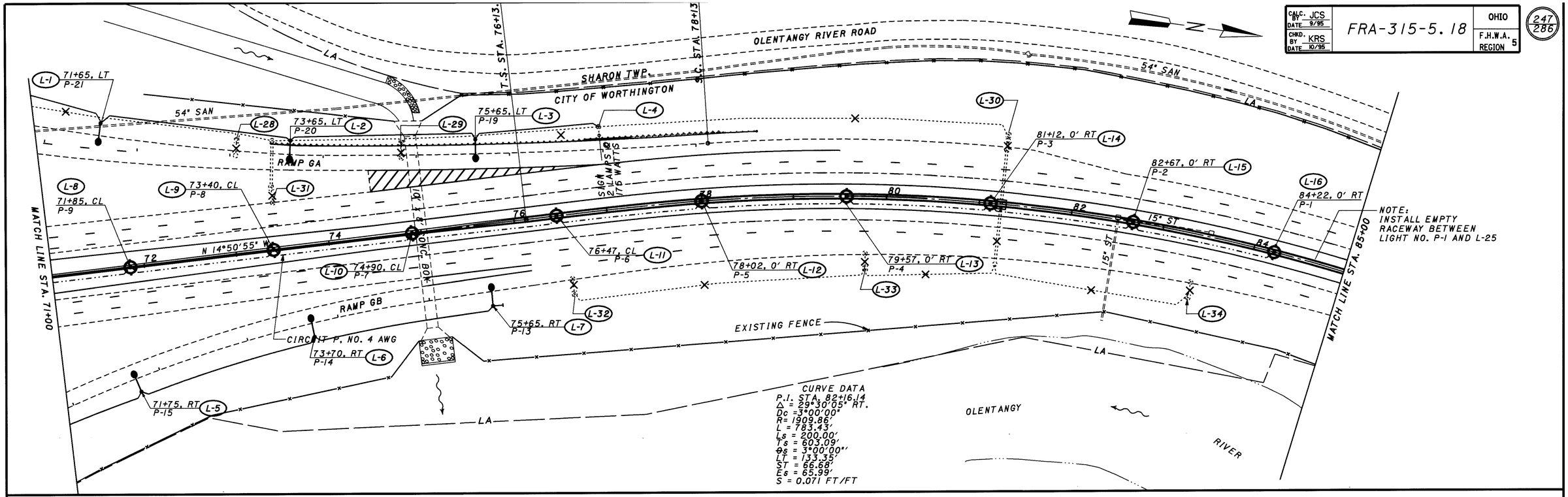
POWER SERVICE DESIGNATION	TYPE OF SERVICE	CONNECTED LOAD-KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING-AMPS	CIRCUIT NUMBER	CIRCUIT LOAD-AMPS	CIRCUIT FUSE-AMPS	MAINTAINING AGENCY
CC - 5	480 VOLT 1Ø, 2W GROUNDED NEUTRAL	25.10	NO. 4	60	K	25.2	30	CITY OF WORTHINGTON
					M	4.9	30	
					P	22.2	30	

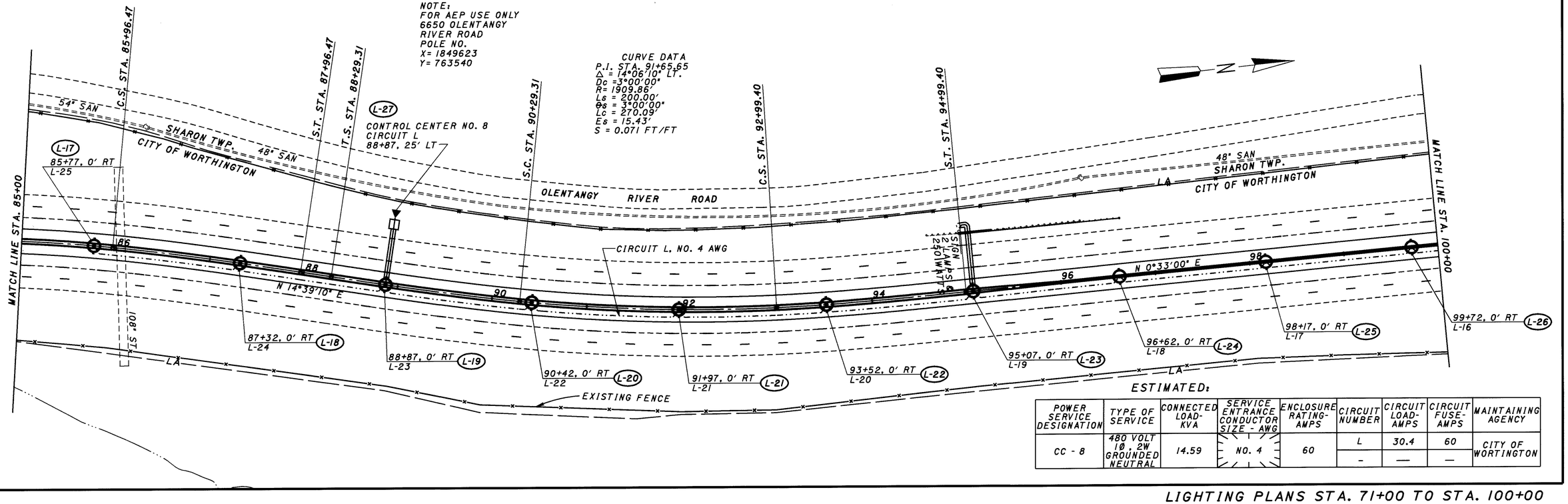
CURVE DATA
P.I. STA. 55+51.24
Δ = 17°49'36" LT.
Dc = 1°00'00"
R= 5729.58'
L= 1782.66'
T= 898.59'
E= 70.04'
S = 0.024 FT/FT

LIGHTING PLANS STA. 56+00 TO STA. 71+00

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

247/286





ESTIMATED:

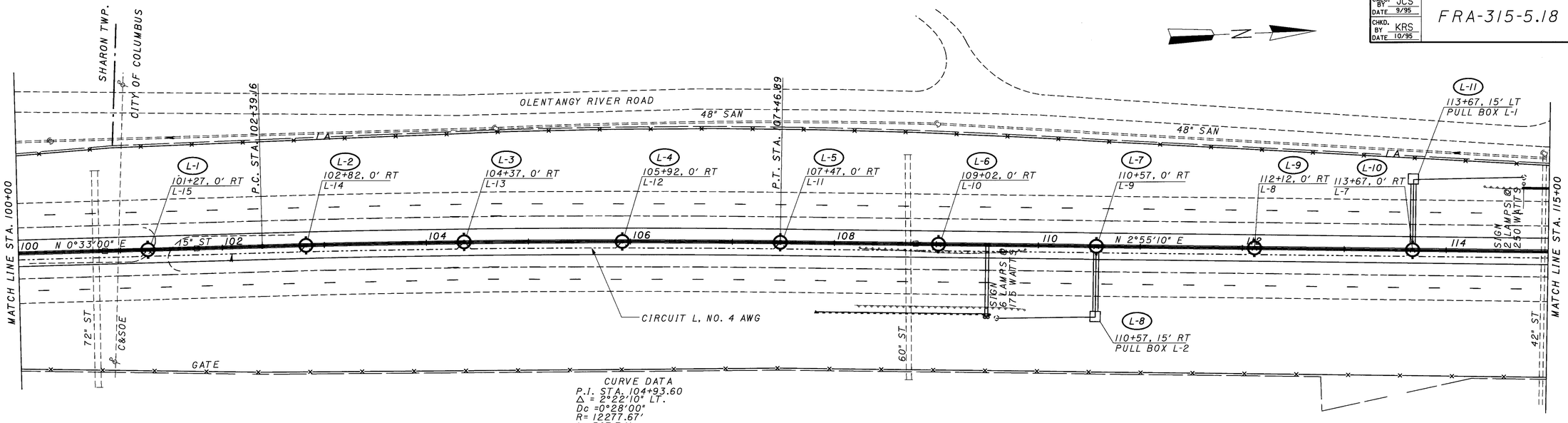
POWER SERVICE DESIGNATION	TYPE OF SERVICE	CONNECTED LOAD-KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING-AMPS	CIRCUIT NUMBER	CIRCUIT LOAD-AMPS	CIRCUIT FUSE-AMPS	MAINTAINING AGENCY
CC - 8	480 VOLT 1Ø, 2W GROUNDED NEUTRAL	14.59	NO. 4	60	L	30.4	60	CITY OF WORTINGTON
					-	—	—	

LIGHTING PLANS STA. 71+00 TO STA. 100+00

25-JAN-1999

CALC. BY JCS DATE 9/95	FRA-315-5.18	OHIO
CHKD. BY KRS DATE 10/95		F.H.W.A. REGION 5

248
286



CURVE DATA
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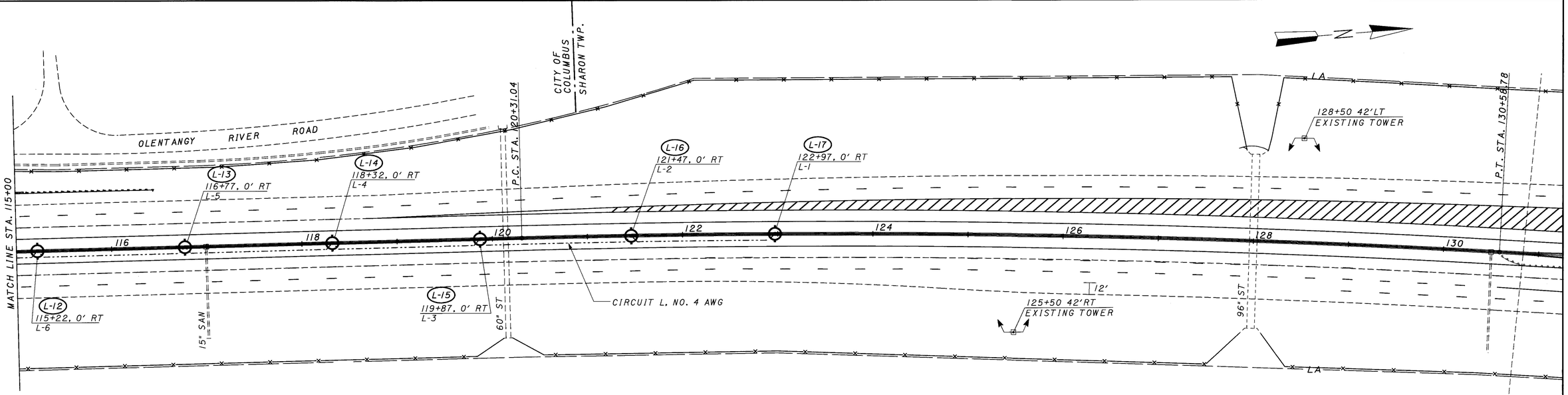
R = 12277.67'
L = 507.74'
T = 253.90'
E = 2.63'
S = CROWN



CURVE DATA
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Dc = 0°28'00"
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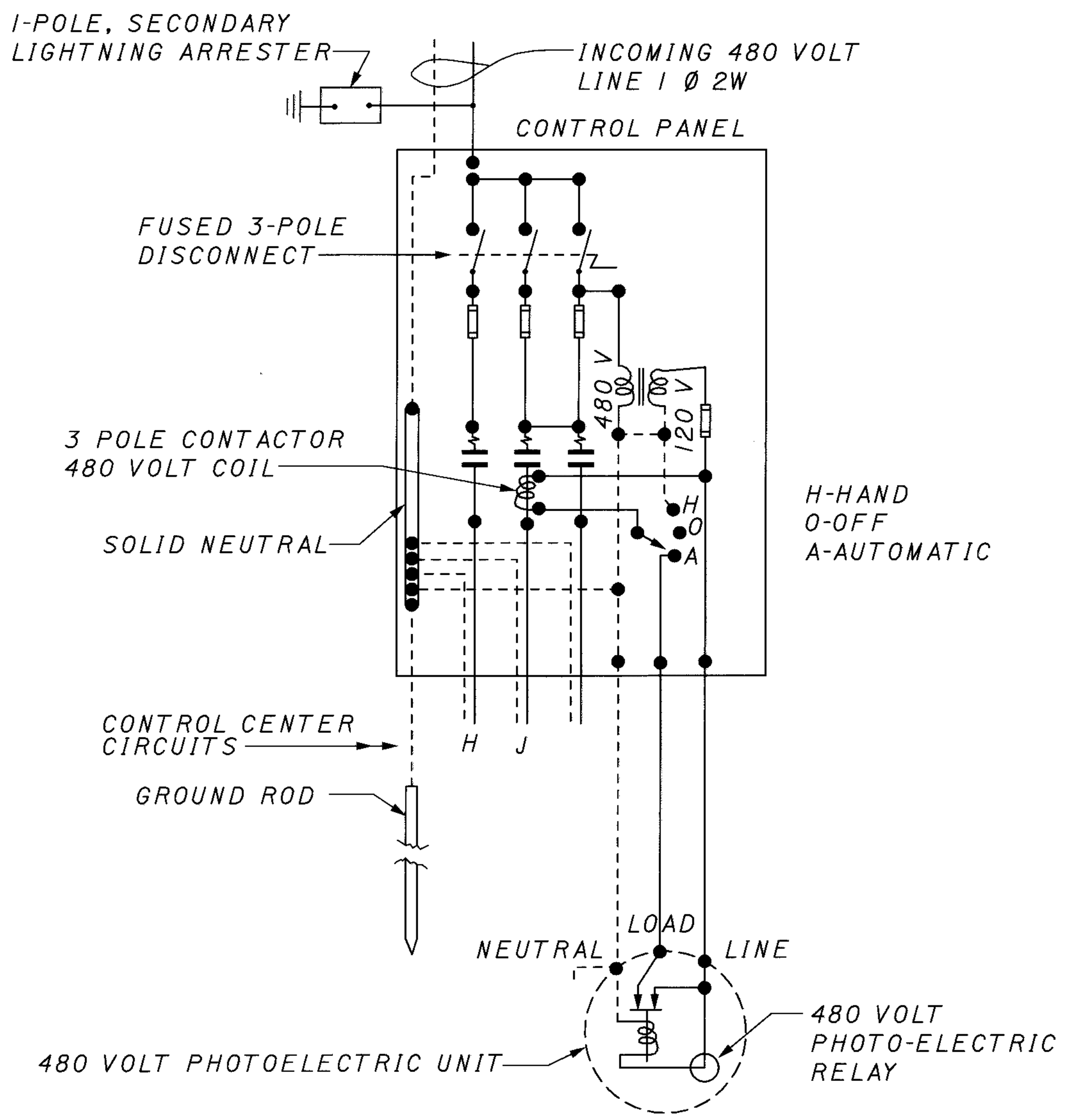
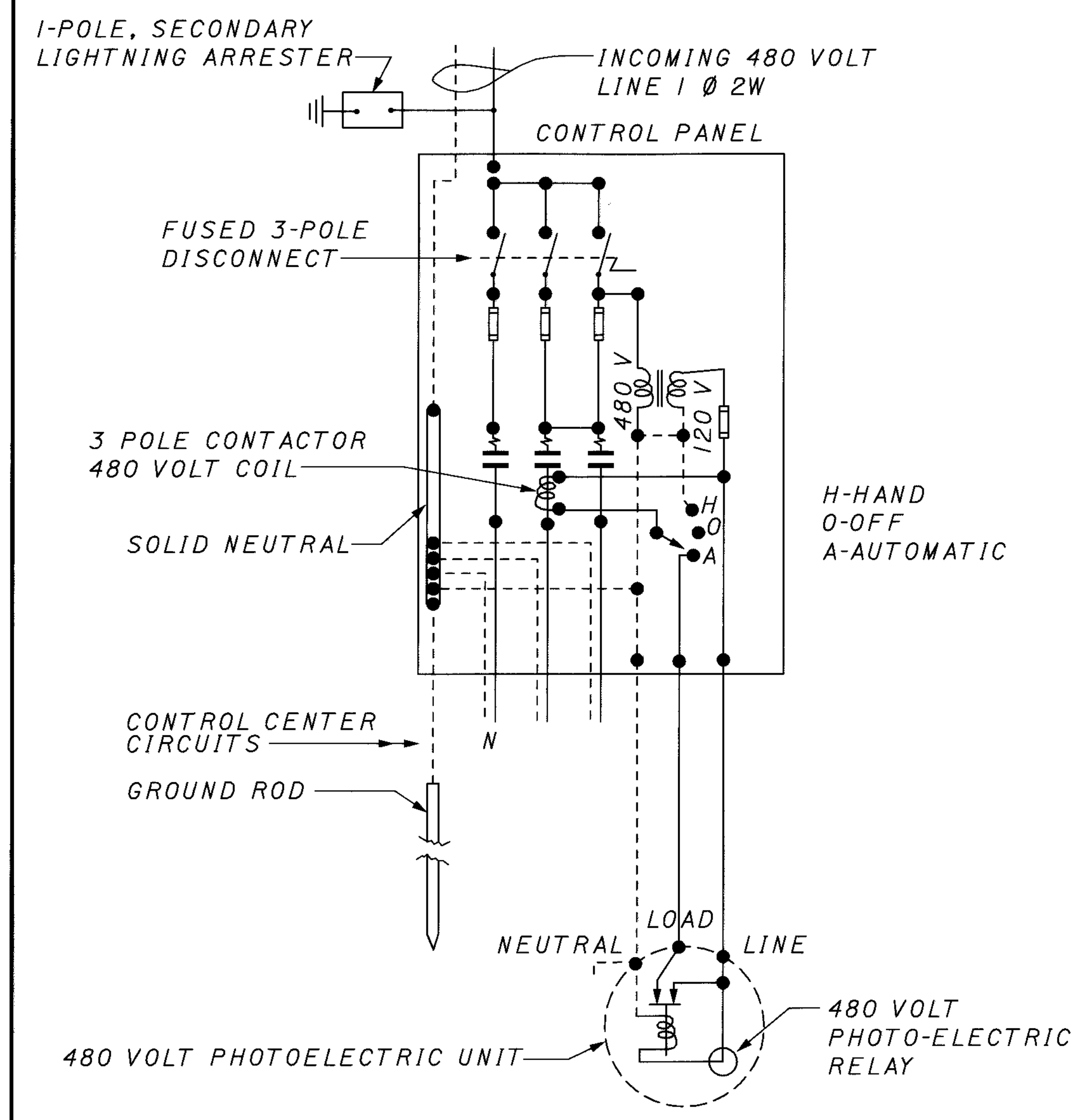
L = 1027.74'
T = 514.17'
E = 10.76'
S = CROWN

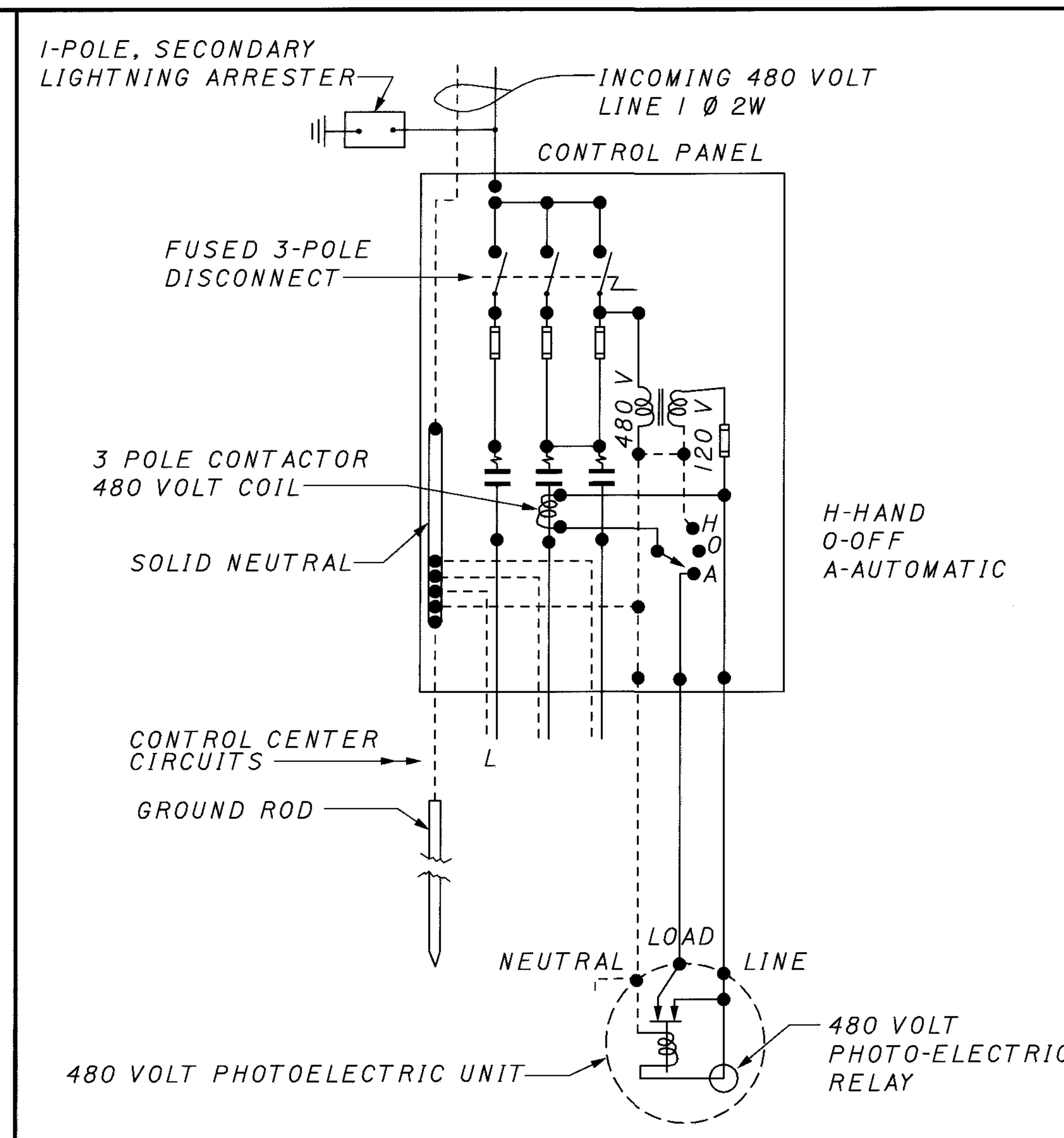
LIGHTING PLANS STA. 100+00 TO STA. 130+00



WIRING DIAGRAM: CONTROL CENTER NO. 6



WIRING DIAGRAM: CONTROL CENTER NO. 7



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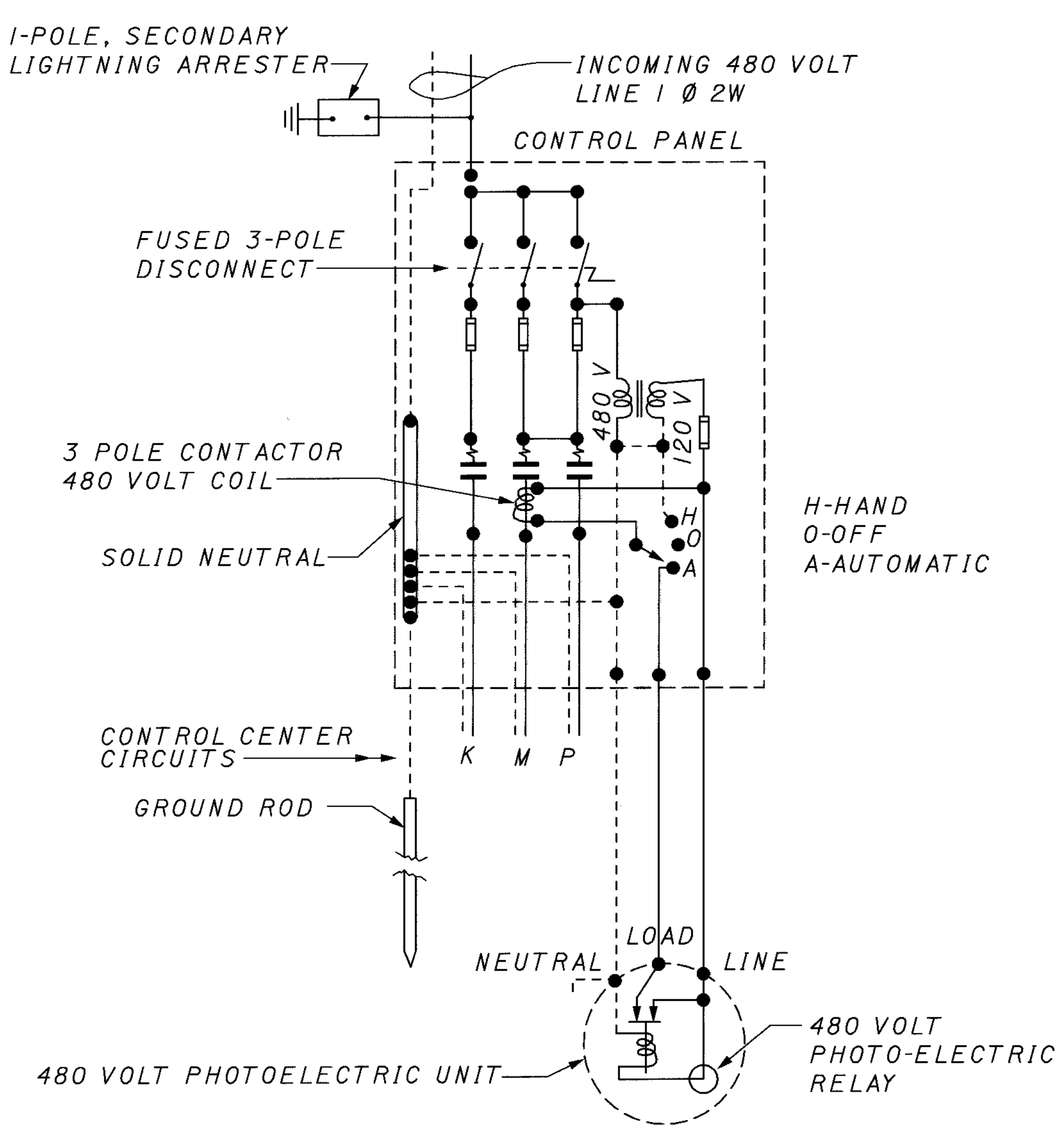

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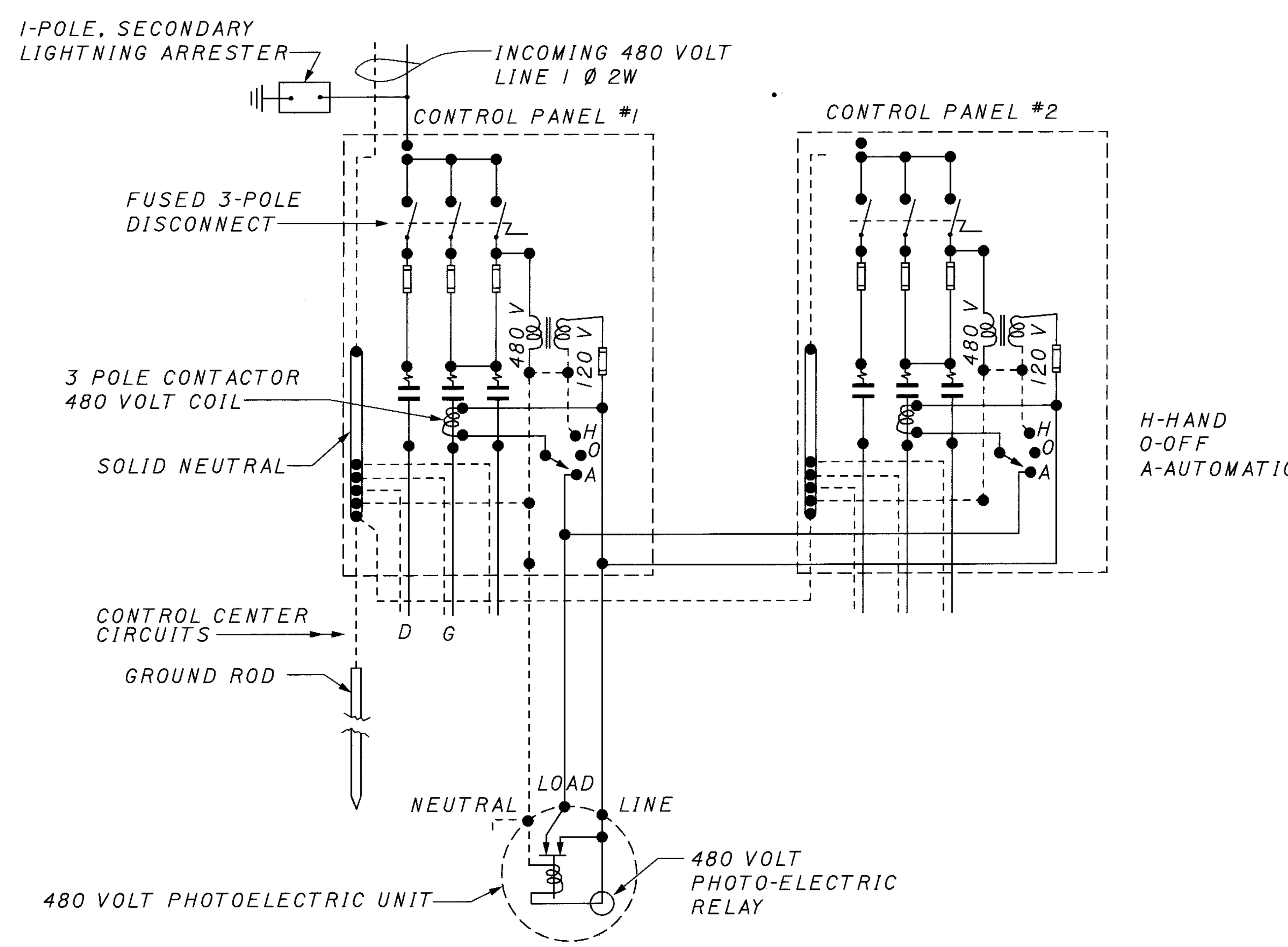

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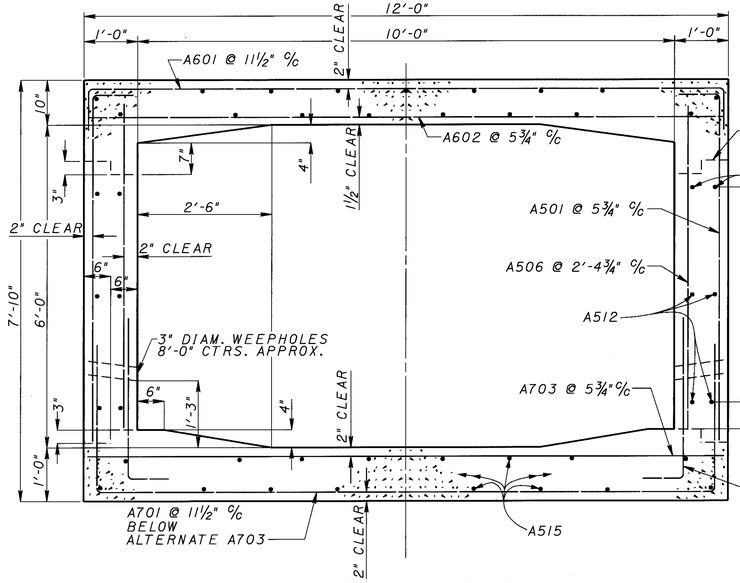
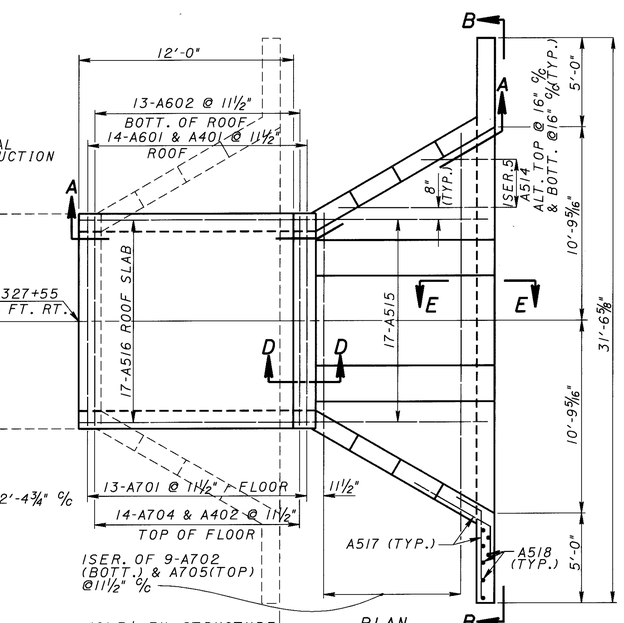
CALC. BY JCS	FRA-315-5.18	OHIO
DATE 9/95		F.H.W.A. REGION 5
CHKD. BY KRS		
DATE 10/95		

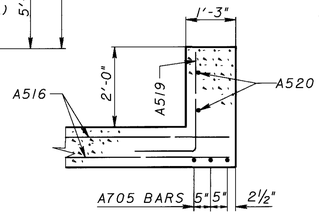
252
286



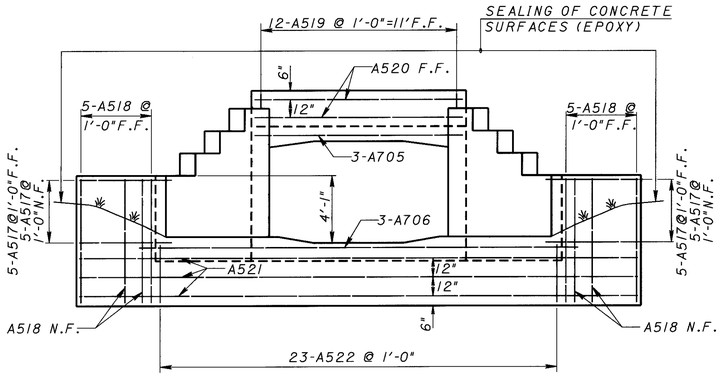
TYPICAL SECTION THRU BARREL



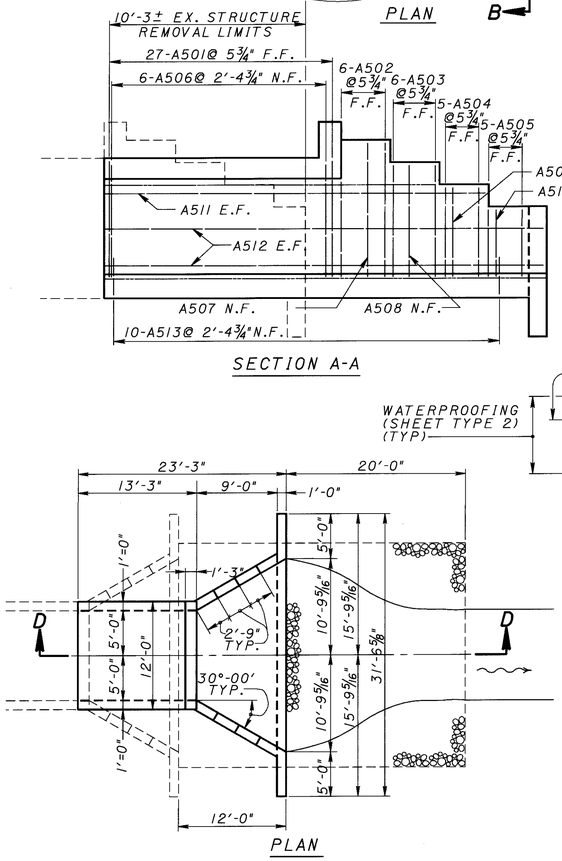
PLAN



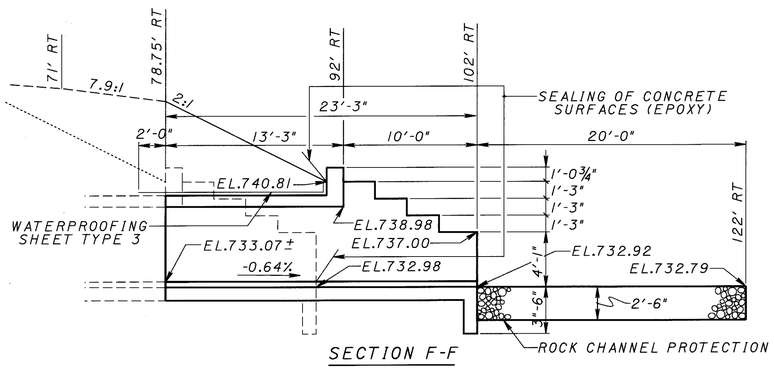
SECTION D-D



SECTION B-B

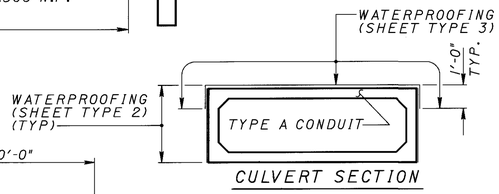


SECTION A-A

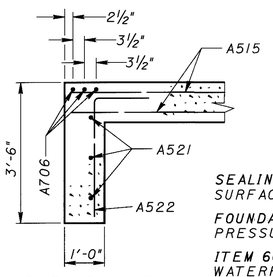


SECTION F-F

PLAN



CULVERT SECTION

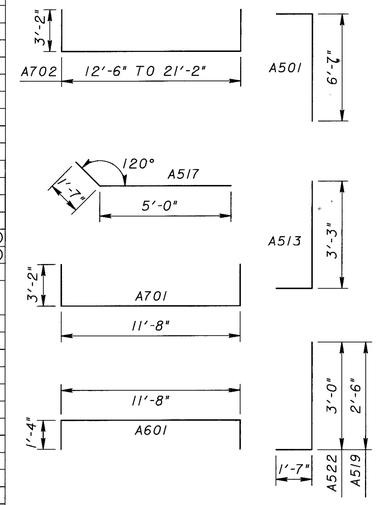


SECTION E-E

EPOXY COATED REINFORCING STEEL, GRADE 60

MARK	TOTAL NO.	LENGTH	WEIGHT	SHP
A501	54	7'-4"	413	BT
A502	12	7'-7"	95	S
A503	12	6'-4"	79	S
A504	10	5'-1"	53	S
A505	10	3'-10"	40	S
A506	12	6'-3"	78	S
A507	2	7'-4"	15	S
A508	2	6'-1"	13	S
A509	2	5'-0"	10	S
A510	2	3'-7"	8	S
A511	4	20'-5"	85	S ①
A512	8	24'-2"	202	S ①
A513	20	4'-0"	83	BT
A514	2 SER. OF 5	②	63	S
A515	17	22'-11"	406	S
A516	17	12'-11"	229	S
A517	20	6'-7"	137	BT
A518	14	7'-3"	106	S
A519	12	4'-1"	51	BT
A520	2	11'-8"	24	S
A521	3	31'-2"	98	S
A522	23	4'-7"	110	BT
A601	14	14'-0"	294	BT
A602	26	11'-6"	449	S
A701	13	17'-8"	469	BT
A702	1 SER. OF 9	③	420	BT
A703	27	11'-6"	466	S
A704	1 SER. OF 9	④	310	S
A705	3	11'-8"	72	S
A706	3	24'-6"	150	S
TOTAL			5028	

BENDING DIAGRAMS AND NOTES



① BEND IN FIELD
② VARIES FROM 4'-0" TO 8'-0", INCR.=1'-0"
③ VARIES FROM 18'-6" TO 27'-2", INCR.=1'-1"
④ VARIES FROM 12'-6" TO 21'-2", INCR.=1'-1"

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION
202	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING
SPECIAL	27	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 2)
SPECIAL	25	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 3)
SPECIAL	32	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY)
601	50	CU.YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER
602	33	CU.YD.	CONCRETE MASONRY

THE FOLLLOWING ITEMS ARE INCLUDED WITH ITEM 602, CONCRETE MASONRY:
509 EPOXY COATED REINFORCING STEEL 5028 POUNDS
511 CLASS C CONCRETE, CULVERT 33 CU. YD.

SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES DESIGNATED ON THE PLANS IN ACCORDANCE WITH THE PROPOSAL NOTE.

FOUNDATION BEARING PRESSURE: FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF ONE TON PER SQUARE FOOT.

ITEM 603 10'x6' CONDUIT, TYPE A, 706.05, AS PER PLAN: ITEM SPECIAL, MEMBRANE WATERPROOFING (SHEET TYPE 3), SHALL BE APPLIED TO THE TOP SURFACE OF THE CULVERT AND SHALL EXTEND VERTICALLY DOWN THE SIDES FOR ONE FOOT. ITEM SPECIAL, MEMBRANE WATERPROOFING (SHEET TYPE 2), SHALL BE APPLIED TO THE ENTIRE FACE OF THE VERTICAL SIDES OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAVEMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE PER SQUARE YARD FOR ITEM SPECIAL, MEMBRANE WATERPROOFING (SHEET TYPE 2) AND (SHEET TYPE 3).

BOX CULVERT FRA-315-0811 STA. 327+55

BRIDGE GENERAL NOTES

REFERENCE: SHALL BE MADE TO STANDARD DRAWINGS
AS-1-81, SHEETS 1-3 (DATED 11-27-81)
DBR-2-73 (DATED 4-10-73)
AND TO SUPPLEMENTAL SPECIFICATIONS 820 (DATE 03-18-92), 910 (DATED 5-20-91), 933 (DATED 7-22-94), 944 (DATED 05-02-94)

DESIGN SPECIFICATIONS: THESE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1992 INCLUDING THE 1993 AND 1994 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES

CONCRETE CLASS S - UNIT STRESS 1500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C - UNIT STRESS 1333 PSI (SUBSTRUCTURE)

PSI. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, MICRO SILICA MODIFIED CONCRETE OVERLAYS, 2½" CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND 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 C.M.S. SECTIONS 102.5, 105.02 AND 513.02. THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES ARE AVAILABLE UPON REQUEST AT THE DISTRICT 6 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, DELAWARE, OHIO.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES 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.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES , THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT AND PIER PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 800 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE FOR TWIN BRIDGES, AND LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE THE EXISTING REINFORCING STEEL AS DETAILED IN THE PLAN DRAWINGS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS AS SPECIFIED. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT. DUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

EXISTING REINFORCING STEEL: PARTIALLY EXPOSED BY CONCRETE REMOVAL SHOULD BE LEFT IN PLACE, EXCEPT THAT IT SHALL BE BENT AS NECESSARY TO CLEAR PROPOSED CONCRETE SURFACES BY AT LEAST 2 INCHES.

REINFORCING BAR SPLICE LENGTHS: SHALL CONFORM TO THE MINIMUM LENGTHS IN 509.08 UNLESS OTHERWISE NOTED ON THE PLANS.

ITEM SPECIAL-SEALING OF CONCRETE SURFACES (EPOXY) THE PROPOSED CONCRETE PARAPET SURFACES FOR MAINLINE BRIDGES SHALL BE SEALED USING AN EPOXY SEALER. SEE THE DETAILS OF INDIVIDUAL BRIDGES FOR AREAS TO BE SEALED. SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

CONCRETE SLOPE PROTECTION, AS PER PLAN (FRA-315-0984 L/R): AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES SHALL BE RESTORED TO A UNIFORM PLANE SURFACE WITH CONCRETE SLOPE PROTECTION AS SPECIFIED IN 601.06.

STRUCTURE EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.11 EXCEPT THAT THERE SHALL BE NO DEDUCTION FOR REMOVALS MADE AS PART OF 202. EXCAVATION OUTSIDE THE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE IS INCLUDED IN 202 FOR PAYMENT.

FIELD PAINTING OF STRUCTURAL STEEL: EXISTING STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED THE SEVERAL OZEU PAINTING ITEMS FOR PAINTING.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU: THE SURFACE AREA PAY QUANTITIES ARE BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY 10 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS AND OTHER STRUCTURAL STEEL INCIDENTALS ARE TO BE CLEANED AND PAINTED.

CONCRETE PARAPETS : WITHIN 48 HOURS AFTER PLACEMENT OF PARAPET CONCRETE SAWCUT 1 INCH DEEP JOINTS INTO THE CONCRETE PARAPET AT LOCATIONS AS DETAILED IN THE PLANS. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK, AND THE COMPLETED SAWCUT SHALL BE FILLED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM HALF INCH OF THE ONE INCH DEEP SAWED JOINT IN BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE. THE COST OF SAWING AND SEALING SHALL BE INCLUDED WITH ITEM 511, CLASS S CONCRETE, SUPERSTRUCTURE, FOR BRIDGES WITH DEFLECTOR PARAPETS.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS AND DECK JOINTS. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURE ANALYSIS COMPUTATIONS, BY AN ENGINEER REGISTERED BY THE STATE OF OHIO, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 518, 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN: CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN: CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

ITEM 516, RESET BEARINGS:

A. DESCRIPTION
THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RESET EXISTING BEARINGS ON THE STRUCTURES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

B. GENERAL PROCEDURE
THE BEARINGS SHALL BE RESET, USING THE FOLLOWING PROCEDURE:
1. RAISE THE BEAM AT THE BEARING BY JACKING, 5/8" MAXIMUM.
2. RESET THE BEARING BY SHIFTING THE SOLE PLATE AND ROCKER SO THAT THE ROCKER IS VERTICAL AND AT THE CENTER OF BOTH THE SOLE PLATE AND THE MASONRY PLATE AT 60° F. FOR SETTING THE ROCKER AT TEMPERATURE OTHER THAN 60° F, THE ROCKERS SHALL BE TILTED 1/16-INCH FOR EACH 10 DEGREE VARIATION FROM 60 DEGREES. LOWER THE END OF THE BEAM MAKING SURE THE ROCKER IS PROPERLY IN ITS SOCKET.

C. REQUIREMENTS
ANY DAMAGE TO STRUCTURAL MEMBERS, CONNECTIONS OR PARTS THAT ARE TO REMAIN AS PART OF THE PERMANENT CONSTRUCTION SHALL BE CORRECTED BY AND/OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR'S DETAILED PROCEDURES FOR RESETTING THE BEARINGS SHALL BE SUBMITTED, IN TRIPLICATE, TO THE ENGINEER FOR APPROVAL.

D. METHOD OF MEASUREMENT
THE QUANTITY WILL BE MEASURED AS THE ACTUAL NUMBER OF BEARINGS RESET.

E. BASIS OF PAYMENT
PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516, RESET BEARINGS.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABATEMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS
FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.
JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.
JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.
SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.
SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS ON ANY ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1 /4 INCH.
MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FORM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1 / 1

BRIDGE GENERAL NOTES

BRIDGE NOS. FRA-315-0591,-0617,-0617B, -0629,-0777,-0856,-0984 L/R, -1042,-1166, -1175,-1177,-1215,-1220 L/R AND -1220H

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 2-95 CHK'D ELC 2-95

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	2174	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	2174			
815	00050	25,770	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	25,770			
815	00056	25,770	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	25,770			
815	00060	25,770	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	25,770			
815	00066	25,770	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	25,770			
815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
815	00508	4064	LIN. FT.	GRINDING FLANGE EDGES	4064			
SPECIAL	51922020	2174	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK*	2174			
SPECIAL	51922130	9	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	9			
SPECIAL	51922134	44	SQ. YD.	HAND CHIPPING*	44			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	51922400	2174	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	2174			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

* - SEE PROPOSAL NOTE

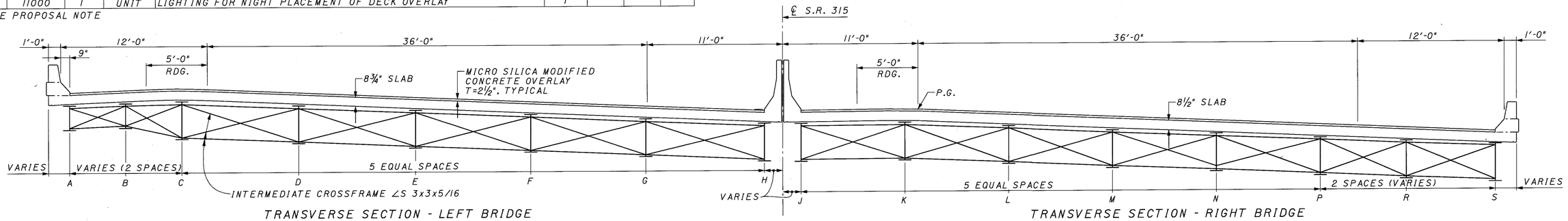
FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 254 / 286

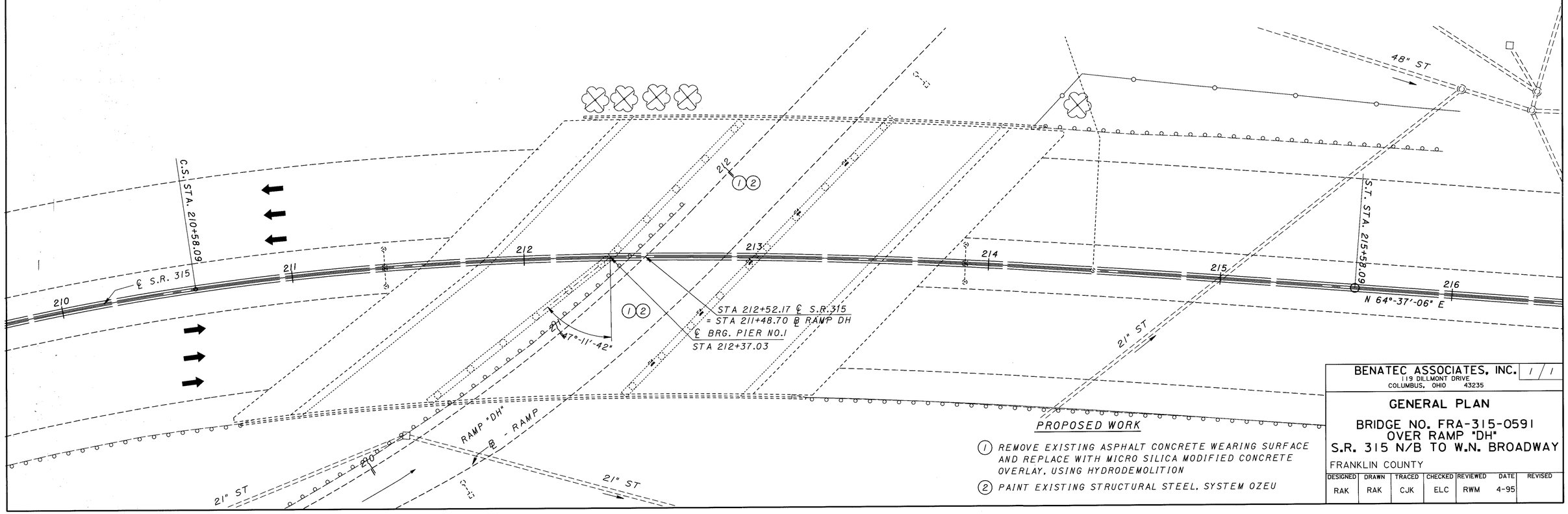
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 51'-0"±, 63'-6"±, 51'-0"± & BEARINGS ALONG CURVE
ROADWAY: 118'-0"± & PARAPETS WITH 3'-0" MEDIAN BARRIER
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: VARIES
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: SPIRAL CURVE TO RIGHT
SFN: 2515520

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 51'-0"±, 63'-6"±, 51'-0"± & BEARINGS ALONG CURVE
ROADWAY: 118'-0"± & PARAPETS WITH 3'-0" MEDIAN BARRIER
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: VARIES
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-71 (25' LONG)
ALIGNMENT: SPIRAL CURVE TO RIGHT





BENATEC ASSOCIATES, INC. 1 / 1
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN

BRIDGE NO. FRA-315-0591
OVER RAMP "DH"
S.R. 315 N/B TO W.N. BROADWAY
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	1740	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	1740			
515	00050	21,180	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	21,180			
515	00056	21,180	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	21,180			
515	00060	21,180	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	21,180			
515	00066	21,180	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	21,180			
515	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
515	00508	4025	LIN. FT.	GRINDING FLANGE EDGES	4025			
SPECIAL	5/922020	1740	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK*	1740			
SPECIAL	5/922130	7	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	7			
SPECIAL	5/922134	35	SQ. YD.	HAND CHIPPING*	35			
SPECIAL	5/922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	5/922400	1740	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	1740			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

* - SEE PROPOSAL NOTE

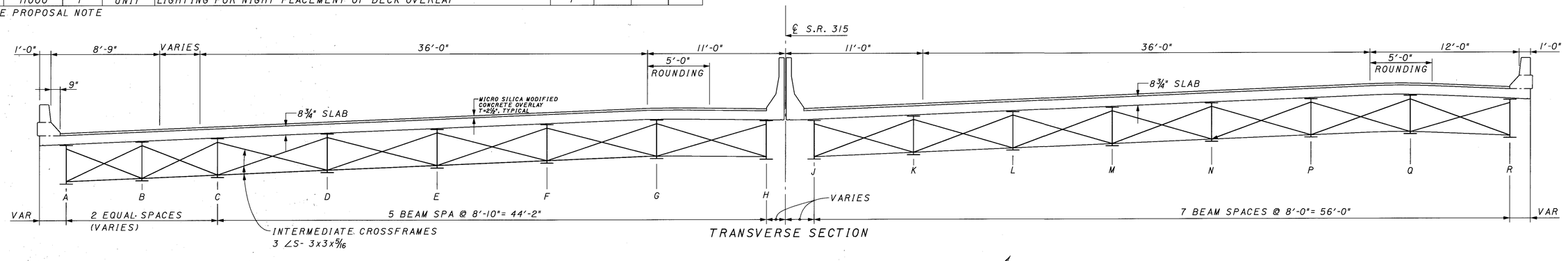
FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 255 / 286

EXISTING STRUCTURE

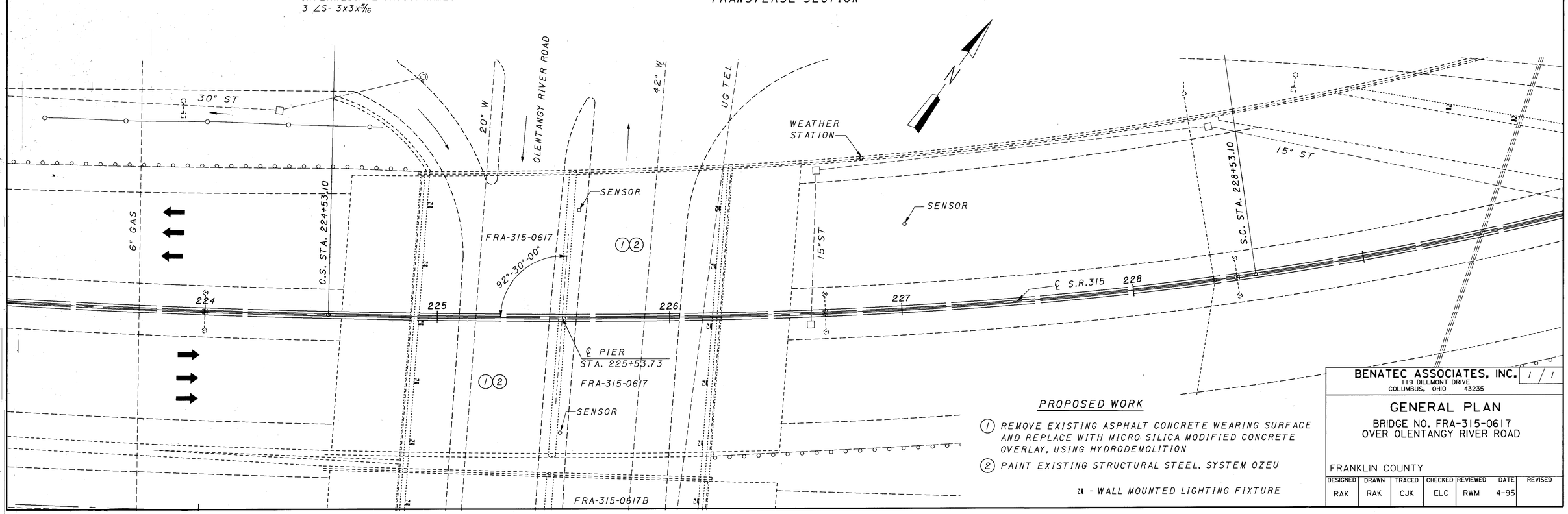
TYPE: 2-SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 62'-6¾"± AND 65'-6¾"± @ BEARINGS ALONG BACK TANGENT
ROADWAY: VARIES (122.25'± AVG. WIDTH)
LOADING: HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 2°-30 LF TO BACK TANGENT
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (30' LONG)
ALIGNMENT: SPIRAL TO CURVE LEFT
SFN: 2515539

PROPOSED STRUCTURE

TYPE: 2-SPAN CONTINUOUS STEEL BEAM WITH REINFORCED DECK AND SUBSTUCTURE
SPANS: 62'-6¾"± AND 65'-6¾"± @ BEARINGS ALONG BACK TANGENT
ROADWAY: VARIES (122.25'± AVG. WIDTH)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 2°-30 LF TO BACK TANGENT
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-72 (30' LONG)
ALIGNMENT: SPIRAL TO CURVE LEFT



TRANSVERSE SECTION



PROPOSED WORK

(1) REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION
(2) PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU

N - WALL MOUNTED LIGHTING FIXTURE

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1 / 1

GENERAL PLAN

BRIDGE NO. FRA-315-0617
OVER OLENTANGY RIVER ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	390	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	390			
815	00050	5570	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	5570			
815	00056	5570	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	5570			
815	00060	5570	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSEM OZEU	5570			
815	00066	5570	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	5570			
815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
815	00508	1004	LIN. FT.	GRINDING FLANGE EDGES	1004			
SPECIAL	51922020	390	SQ. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK✱	390			
SPECIAL	51922130	2	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY✱	2			
SPECIAL	51922134	8	SQ. YD.	HAND CHIPPING✱	8			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB✱	LUMP			
SPECIAL	51922400	390	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION✱	390			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

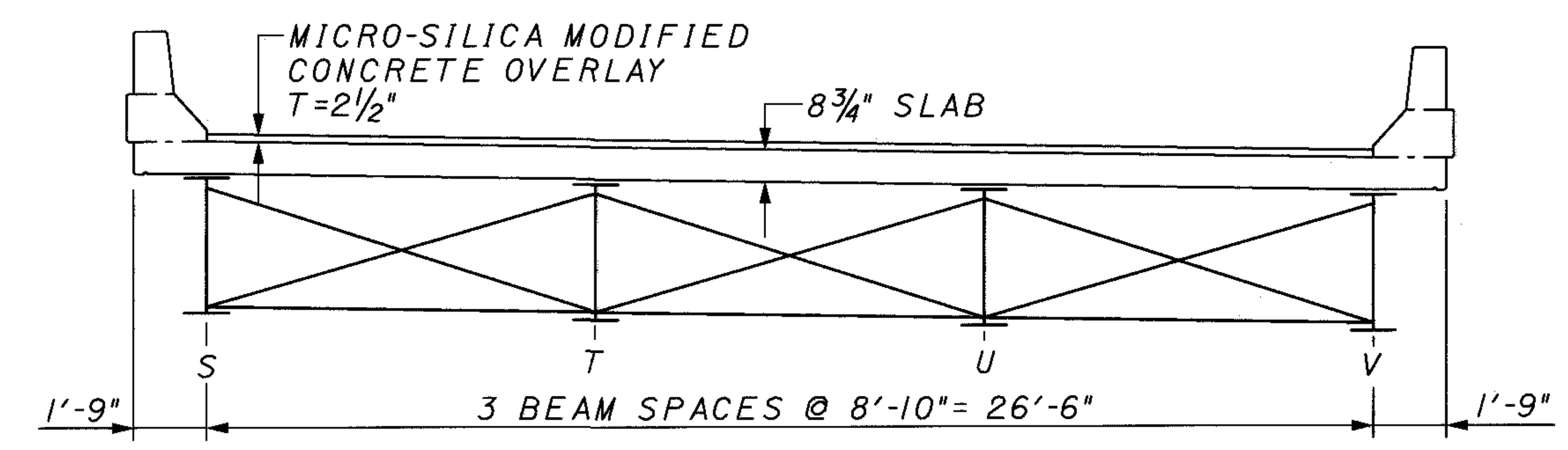
✱ - SEE PROPOSAL NOTE

EXISTING STRUCTURE

TYPE: 2-SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 62'-6¾"± AND 65'-6¾"± C/C BEARINGS ALONG BACK TANGENT
ROADWAY: 28'-0"± F/F PARAPETS
LOADING: HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 2°-30 LF TO BACK TANGENT
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (30' LONG)
ALIGNMENT: TANGENT
SFN: 2515555

PROPOSED STRUCTURE

TYPE: 2-SPAN CONTINUOUS STEEL BEAM WITH REINFORCED DECK AND SUBSTUCTURE
SPANS: 62'-6¾"± AND 65'-6¾"± C/C BEARINGS ALONG BACK TANGENT
ROADWAY: 28'-0"± F/F PARAPETS
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
WEARING SURFACE: MICRO SILICA CONCRETE
SKEW: 2°-30 LF TO BACK TANGENT
APPROACH SLABS: AS-1-72 (30' LONG)
ALIGNMENT: TANGENT



TRANSVERSE SECTION

PROPOSED WORK

1. REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION
2. PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU

✱ - WALL MOUNTED LIGHTING FIXTURE

BENATEC ASSOCIATES, INC. 1/1
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN
BRIDGE NO. FRA-315-0617B
OVER OLENTANGY RIVER ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

FRA-315-5.18	OHIO	257 / 286
	F.H.W.A. REGION 5	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	2970	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	2970			
815	00050	48,370	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	48,370			
815	00056	48,370	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	48,370			
815	00060	48,370	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	48,370			
815	00066	48,370	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	48,370			
815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
815	00508	2658	LIN. FT.	GRINDING FLANGE EDGES	2658			
519	11100	32	SQ. FT.	PATCHING CONCRETE STRUCTURE	32			
SPECIAL	51922020	2970	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING	2970			
				HYDRODEMOLITION, 3½" THICK*				
SPECIAL	51922130	13	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY	13			
				(VARIABLE THICKNESS), MATERIAL ONLY*				
SPECIAL	51922134	59	SQ. YD.	HAND CHIPPING*	59			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	51922400	2970	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	2970			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

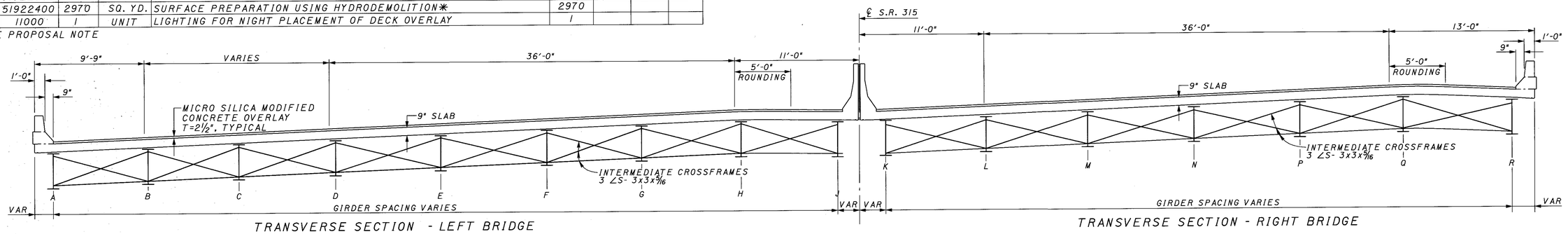
* = SEE PROPOSAL NOTE

EXISTING STRUCTURE

TYPE: 2-SPAN CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: VARIABLE (96.58'± AND 90.09'± ALONG ℄)
ROADWAY: VARIES (6 LANES)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: VARIES
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-I-72 (LENGTH VARIES)
ALIGNMENT: 4°-00' CURVE LEFT
SUPERELEVATION: .083
SFN ; 2515563

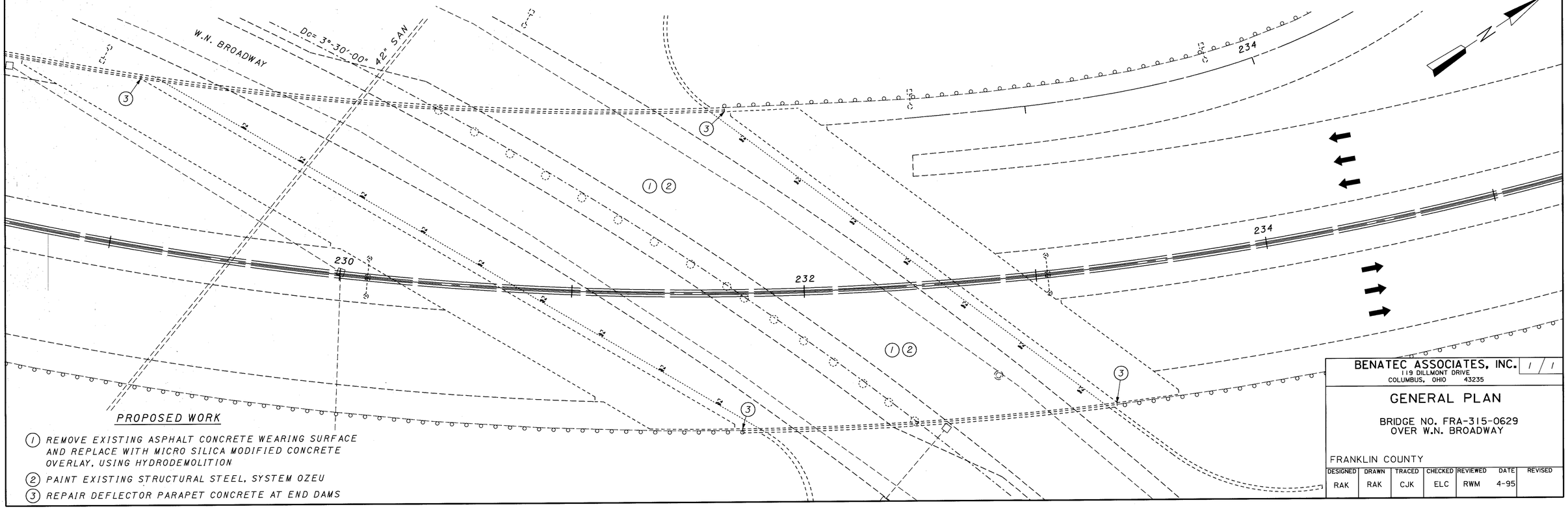
PROPOSED STRUCTURE

TYPE: 2-SPAN CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: VARIABLE (96.58'± AND 90.09'± ALONG ℄)
ROADWAY: VARIES (6 LANES)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: VARIES
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-I-72 (LENGTH VARIES)
ALIGNMENT: 4°-00' CURVE LEFT
SUPERELEVATION: .083



TRANSVERSE SECTION - LEFT BRIDGE

TRANSVERSE SECTION - RIGHT BRIDGE



BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1 / 1

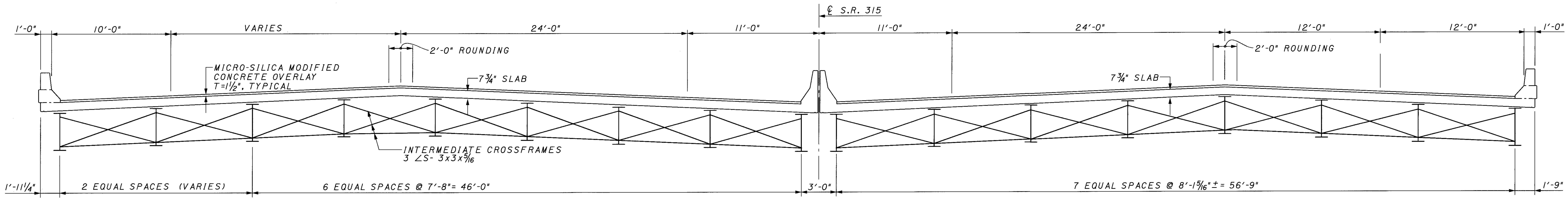
GENERAL PLAN

BRIDGE NO. FRA-315-0629
OVER W.N. BROADWAY

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

EXISTING STRUCTURE	PROPOSED STRUCTURE
TYPE: STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE	TYPE: STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 85'-0"± C/L BEARINGS	SPANS: 85'-0"± C/L BEARINGS
ROADWAY: VARIES (123.5'± F/F PARAPETS AVERAGE)	ROADWAY: VARIES (123.5'± F/F PARAPETS AVERAGE)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING	LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: VARIES	SKEW: VARIES
WEARING SURFACE: ASPHALT CONCRETE	WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)	APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT	ALIGNMENT: TANGENT
SFN: 2515717	



TRANSVERSE SECTION

PROPOSED WORK

1. REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION
2. PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
3. RAISE MEDIAN CONCRETE BARRIER
4. PATCH ABUTMENT CONCRETE

BENATEC ASSOCIATES, INC. 1/2
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN

BRIDGE NO. FRA-315-0777
OVER HENDERSON ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

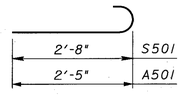
CALC'D RAK 6-94 CHK'D ELC 8-94

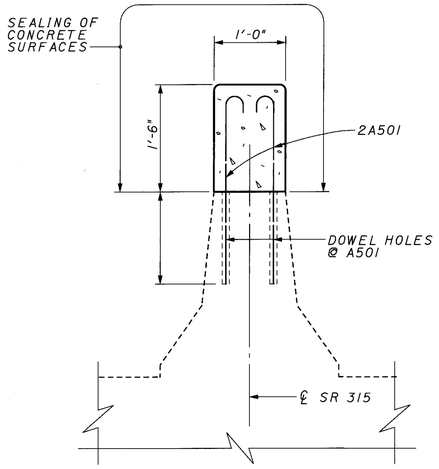
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN	LUMP			
202	23500	1174	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	1174			
509		1697	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	1472	125		100
510	09950	8	EACH	DOWEL HOLES WITH CEMENT GROUT		8		
511	33900	10	CU. YD.	CLASS S CONCRETE	9	1		
SPECIAL	51267500	66	SQ. YD.	SEALING OF CONCRETE SURFACES*	64	2		
815	00050	17,760	SQ. YD.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	17,760			
815	00056	17,760	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	17,760			
815	00060	17,760	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	17,760			
815	00066	17,760	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	17,760			
815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
	00508	2963	LIN. FT.	GRINDING FLANGE EDGES	2963			
519	11100	28	SQ. FT.	PATCHING CONCRETE STRUCTURE		28		
SPECIAL	51922020	1174	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 2½" THICK*	1174			
SPECIAL	51922130	5	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	5			
SPECIAL	51922134	23	SQ. YD.	HAND CHIPPING*	23			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	51922400	1174	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	1174			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

* - SEE PROPOSAL NOTE

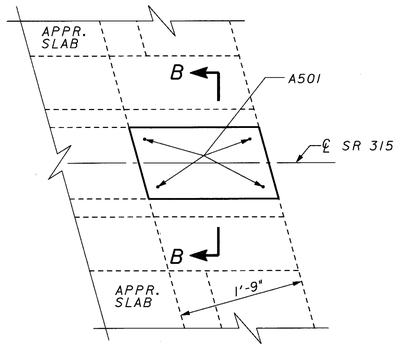
REINFORCING STEEL

MARK	NO.	LENGTH	WEIGHT	SHP	BENDING DIAGRAMS
SUPERSTRUCTURE					
S501	124	3'-3"	420	BT	
S502	36	28'-8"	1052	S	
ABUTMENTS					
A501	8	3'-0"	25	BT	



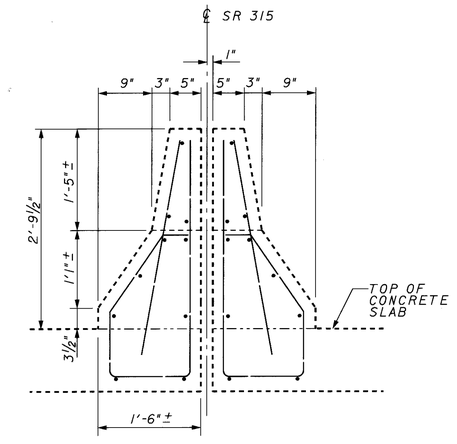


SECTION B-B

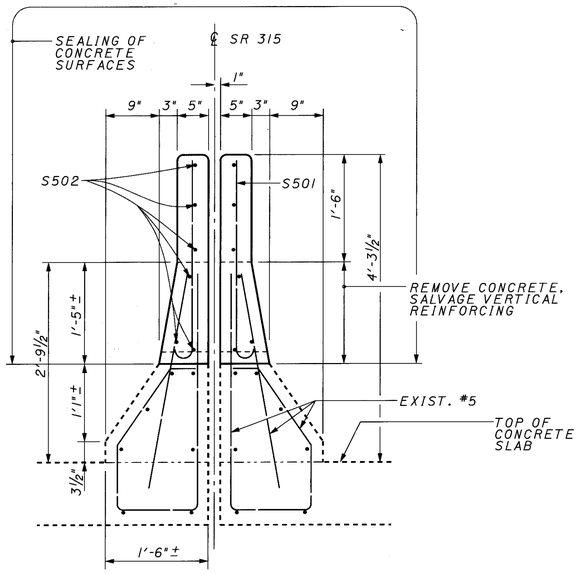


DETAIL A
PART PLAN AT ABUTMENT BACKWALL

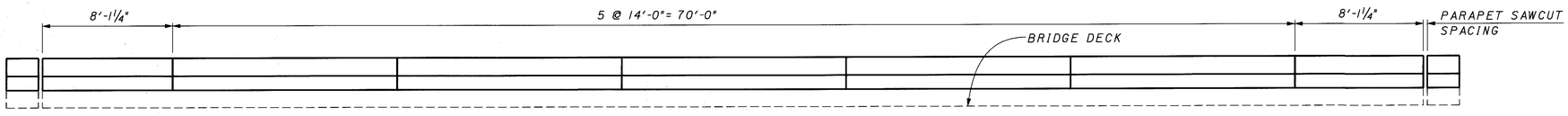
PARAPET PANELS



EXISTING PARAPET- SECTION C-C



PROPOSED PARAPET- SECTION C-C



MEDIAN PARAPET ELEVATION

SEE BRIDGE GENERAL NOTES FOR PARAPET JOINTS

BENATEC ASSOCIATES, INC. 2 / 2
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL NOTES, DETAILS

BRIDGE NO. FRA-315-0777
OVER HENDERSON ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

FRA-315-5.18	OHIO F.H.W.A. REGION 5	260 286

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	1728	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	1728			
815	00050	32,800	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	32,800			
815	00056	32,800	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	32,800			
815	00060	32,800	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	32,800			
815	00066	32,800	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	32,800			
815	+00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
815	00508	7170	LIN. FT.	GRINDING FLANGE EDGES	7170			
516	46700	4	EACH	RESET BEARING		4		
516	46701	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	LUMP			
519	11100	110	SQ. FT.	PATCHING CONCRETE STRUCTURE		110		
SPECIAL	51922020	1728	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK*	1728			
SPECIAL	51922130	7	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	7			
SPECIAL	51922134	35	SQ. YD.	HAND CHIPPING*	35			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	51922400	1728	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	1728			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

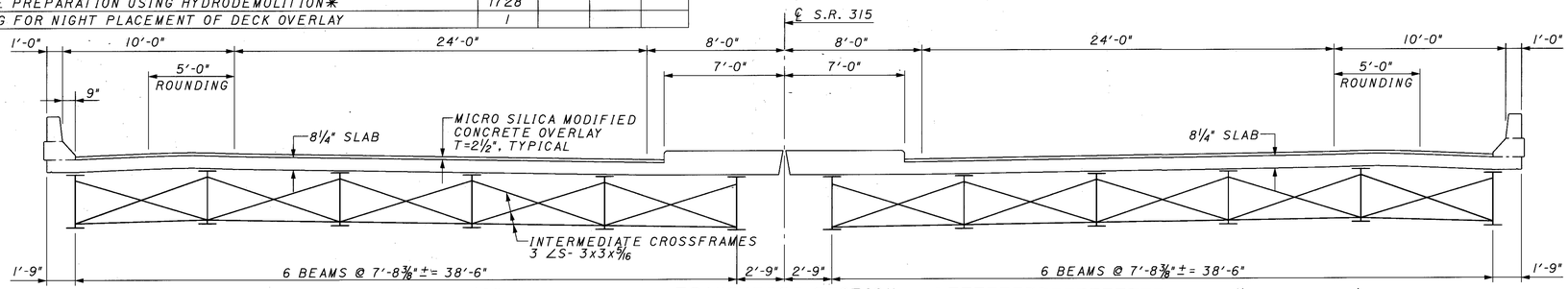
* - SEE PROPOSAL NOTE

EXISTING STRUCTURE

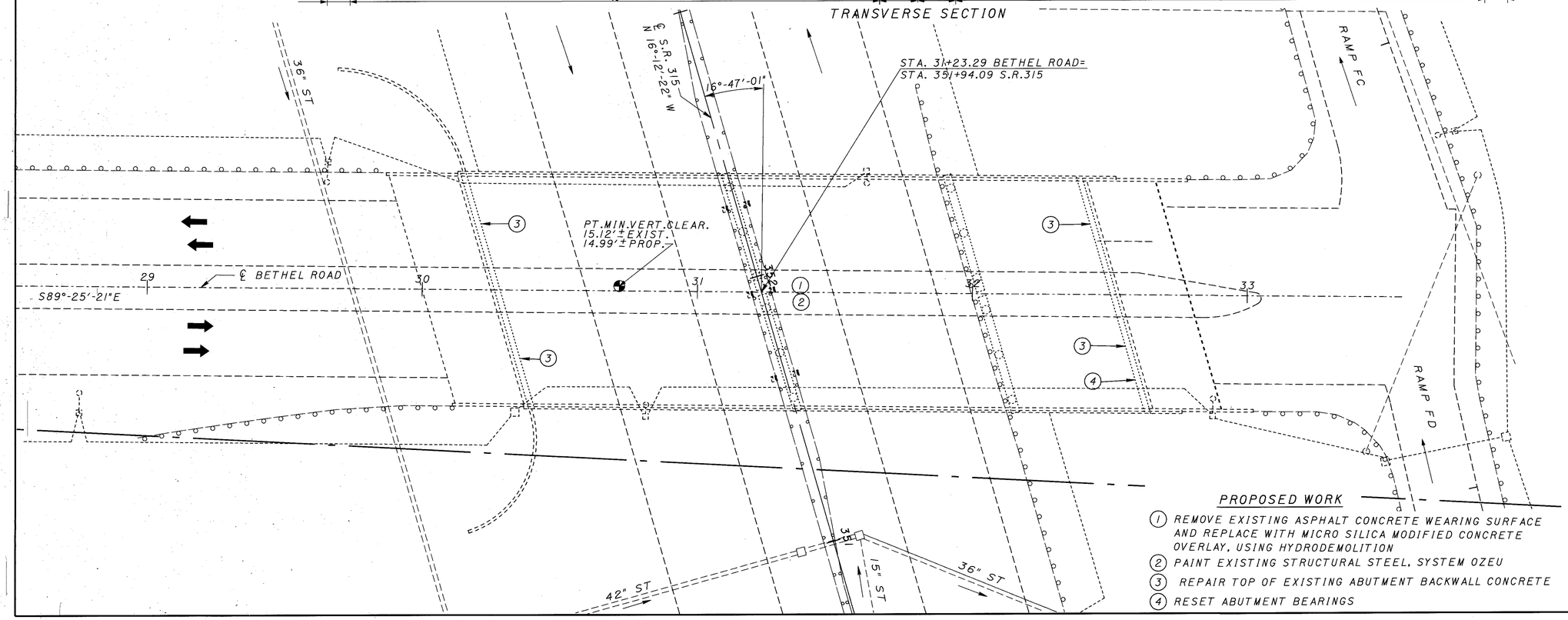
TYPE: CONTINUOUS STEEL BEAM AND GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 96'-0"±, (GIRDER), 80'-0"± (BEAM), 48'-0"± (BEAM)
ROADWAY: 84'-0"± F/F PARAPETS
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 16°-47'-01" RF
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT
SFN: 2515741

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM AND GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 96'-0"±, (GIRDER), 80'-0"± (BEAM), 48'-0"± (BEAM)
ROADWAY: 84'-0"± F/F PARAPETS
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 16°-47'-01" RF
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT



TRANSVERSE SECTION



PROPOSED WORK

(1) REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION
(2) PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
(3) REPAIR TOP OF EXISTING ABUTMENT BACKWALL CONCRETE
(4) RESET ABUTMENT BEARINGS

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1 / 1

GENERAL PLAN

BRIDGE NO. FRA-315-0856
UNDER BETHEL ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTUCTURE
SPANS: 34'-0", 41'-0", 34'-0" C/C BEARINGS
ROADWAY: 54'-0" F/F PARAPETS
LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING
SKEW: NONE
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT
S F N: LEFT BRIDGE: 2515822
RIGHT BRIDGE: 2515830

PROPOSED STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTUCTURE
SPANS: 34'-0", 41'-0", 34'-0" C/C BEARINGS
ROADWAY: 64'-0" F/F PARAPETS
LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING
SKEW: NONE
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-72/AS-1-81 (25' LONG)
ALIGNMENT: TANGENT

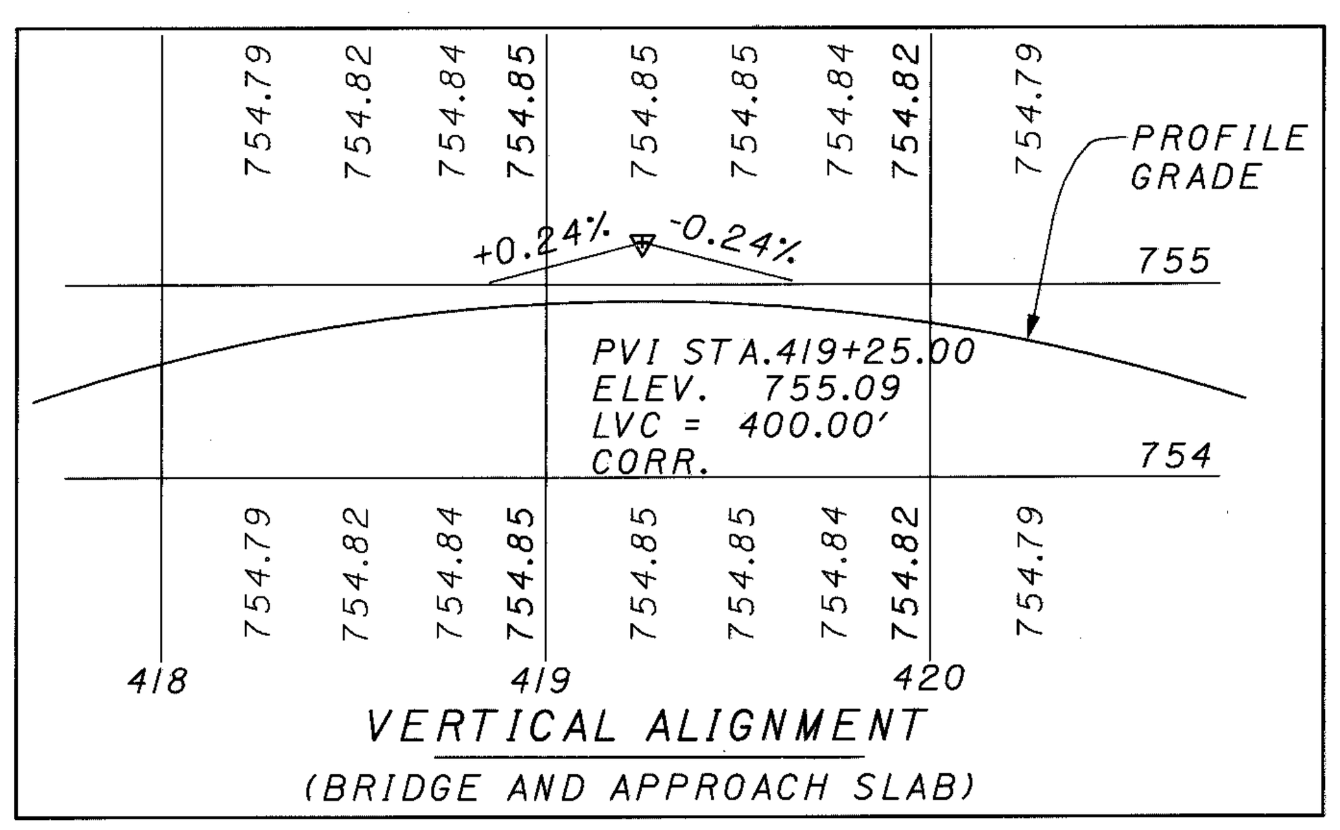
BENCH MARK

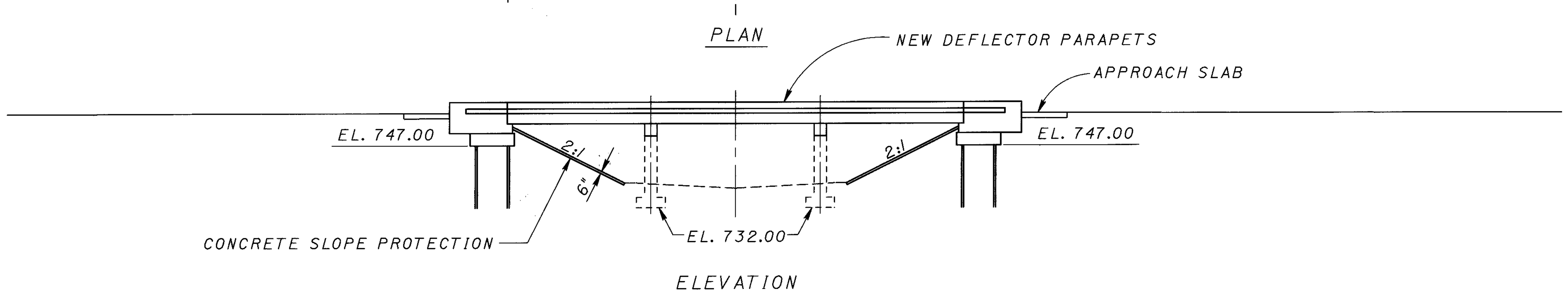
S.E. BOLT IN SIGN SUPPORT FOUNDATION.
STA. 420+26, 74' LT.
ELEV. 751.94

PROPOSED WORK

(1) REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION

(2) WIDEN BRIDGE





BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1/7

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE GENERAL NOTES

FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 262 286

REFERENCE SHALL BE MADE TO STANDARD DRAWING
AS-1-81, (DATED 11-27-81)

AND TO SUPPLEMENTAL SPECIFICATIONS
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 AND 1994 INTERIM SPECIFICATION AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S - UNIT STRESS 1500 PSI (SUPERSTUCTURE)
ORIGINAL DESIGN CONCRETE CLASS C, UNIT STRESS 1200 PSI
REINFORCING STEEL - ASTM A615, A616, OR A616- GRADE 60 - UNIT STRESS 24,000 PSI. ORIGINAL DESIGN GRADE 40 (NON-EPOXY COATED) - UNIT STRESS 20,000 PSI.

DECK PROTECTION: EPOXY COATED REINFORCING STEEL, MICRO-SILICA MODIFIED CONCRETE OVERLAY OF EXISTING DECK, AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ITEM SPECIAL, SEALING ON CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES SHOWN ON SHEET 3 / 7 , 5 / 7 AND 6 / 7 . SEE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

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 HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSEABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 400 POUNDS FOR EACH BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02. C.M.S. SECTIONS 102.05 AND 105.02. THE ORIGINAL CONSTRUCTION PLANS ARE AVAILABLE UPON REQUEST AT THE DISTRICT 6 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, DELAWARE, OHIO.

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.

SCOPE OF WORK:
DEMOLITION: REMOVAL OF EXISTING DEFLECTOR PARAPETS, 2 FEET OF INSIDE PORTIONS OF EXISTING DECKS AND PORTIONS OF EXISTING ABUTMENTS AND PIERS.
CONSTRUCTION: MICRO-SILICA CONCRETE OVERLAY OF REMAINING EXISTING CONCRETE SLABS, WIDENING OF EXISTING CONCRETE SLABS, AND NEW DEFLECTOR PARAPETS.

TRAFFIC: TO BE MAINTAINED DURING CONSTRUCTION BY USE OF STAGED CONSTRUCTION.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL, WHOLLY OR IN PART, AND SATISFACTORY DISPOSAL OF PORTIONS OF THE EXISTING STRUCTURE AS PER 202 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND AS DIRECTED ON THE PLANS. THIS WORK SHALL ALSO INCLUDE ANY DEVICES OR STRUCTURES NECESSARY FOR THE PROTECTION OF TRAFFIC, PREPARATION OF PLANS FOR SUCH STRUCTURES, AND ANY OTHER WORK ASSOCIATED WITH REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE AS DESCRIBED BELOW. CARE SHALL BE TAKEN TO PROTECT PORTIONS OF THE STRUCTURE THAT ARE TO REMAIN AND BE INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, AT LEAST A 1'-10" LENGTH OF PROTRUDING REINFORCING STEEL SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS AS SPECIFIED. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, RUST, OR OTHER FOREIGN MATERIALS BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS TO THE ENGINEER. THE CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY AN ENGINEER REGISTERED BY THE STATE OF OHIO, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT. THE ALLOWABLE BEARING PRESSURE IS 3.0 TONS PER SQ. FT.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES , THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT AND PIER PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

ITEM 518, 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN: CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN: CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

CONCRETE PARAPETS : WITHIN 48 HOURS AFTER PLACEMENT OF PARAPET CONCRETE SAWCUT 1 INCH DEEP JOINTS INTO THE CONCRETE PARAPET AT LOCATIONS AS DETAILED IN THE PLANS. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK, AND THE COMPLETED SAWCUT SHALL BE FILLED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM HALF INCH OF THE ONE INCH DEEP SAWED JOINT IN BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 35 TONS PER PILE FOR THE ABUTMENT PILES.

BRIDGE ESTIMATED QUANTITIES

ITEM	CODE	NO.	UNIT	DESCRIPTION	SUPER	ABUTS.	PIERS	GEN'L
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP
202	23500	1289	SQ.YD.	WEARING SURFACE REMOVED	1289			
503	11100	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	21100	181	CU.YD.	UNCLASSIFIED EXCAVATION		108	73	
505	11100	LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP
507	11100	240	LIN.FT.	STEEL PILES HP10x42		240		
509	15830	54,292	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	38,729	4815	9948	800
510	09950	98	EACH	DOWEL HOLES, WITH CEMENT GROUT		26	72	
511	32200	178	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE.	178			
511	41000	30	CU.YD.	CLASS C CONCRETE, PIER ABOVE FOOTING			30	
511	44200	25	CU.YD.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING		25		
511	46500	45	CU.YD.	CLASS C CONCRETE, FOOTING		22	23	
512	44400	2	SQ.YD.	TYPE B WATERPROOFING		2		
SPEC	51267500	365	SQ.YD.	SEALING OF CONCRETE SURFACES	240	44	81	
518	21200	19	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC		19		
518	40001	22	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN		22		
518	40011	86	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN		86		
SPEC	51922020	1285	SQ. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK*	1285			
SPEC	51922130	6	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	6			
SPEC	51922134	26	SQ. YD.	HAND CHIPPING*	26			
SPEC	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPEC	51922400	1285	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	1285			
601	21000	213	SQ.YD.	CONCRETE SLOPE PROTECTION				213

* - SEE PROPOSAL NOTE

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

2 / 7

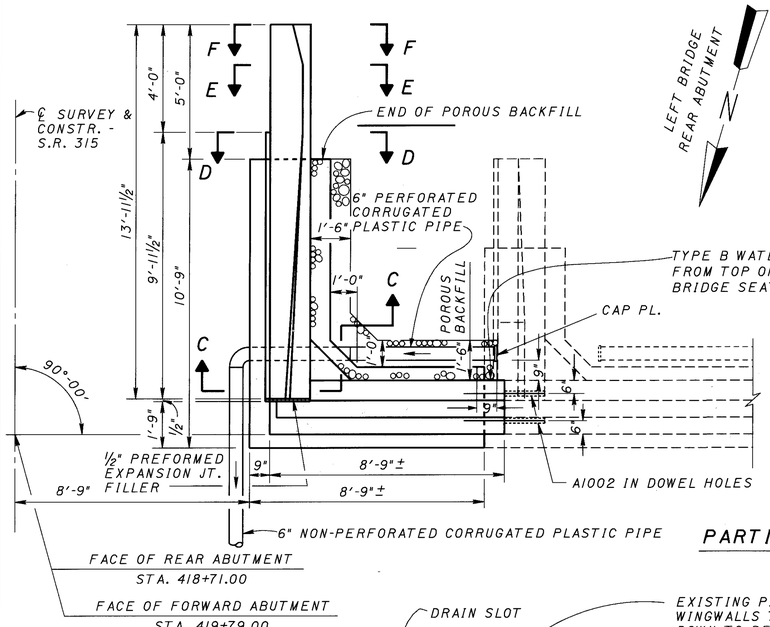
GENERAL NOTES, ESTIMATED QUANTITIES

BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD

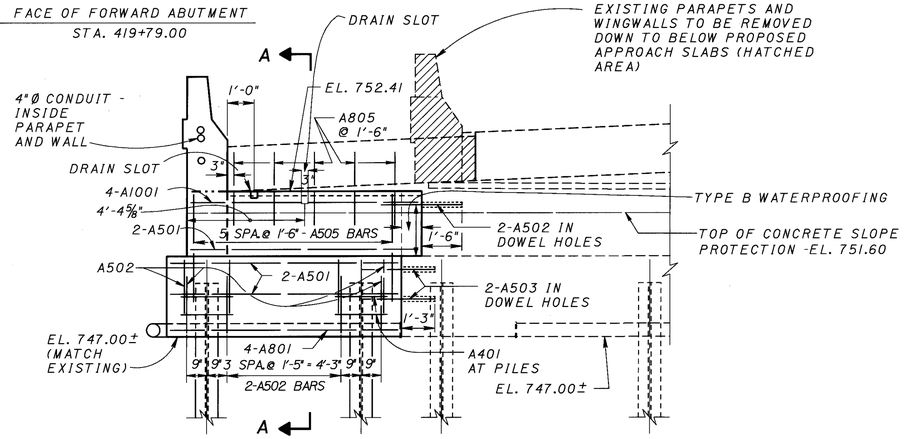
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

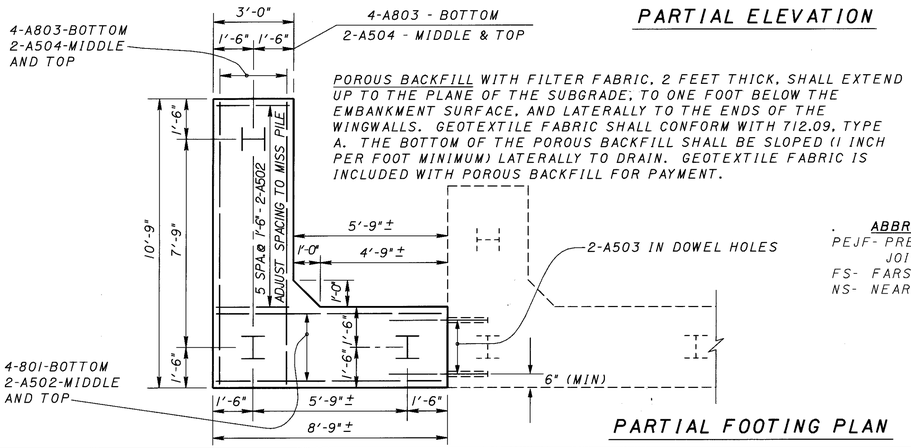
FOR LIGHTING AND SURVEILLANCE DETAILS : SEE STD. DWG. HL-30.31



PARTIAL PLAN



PARTIAL ELEVATION

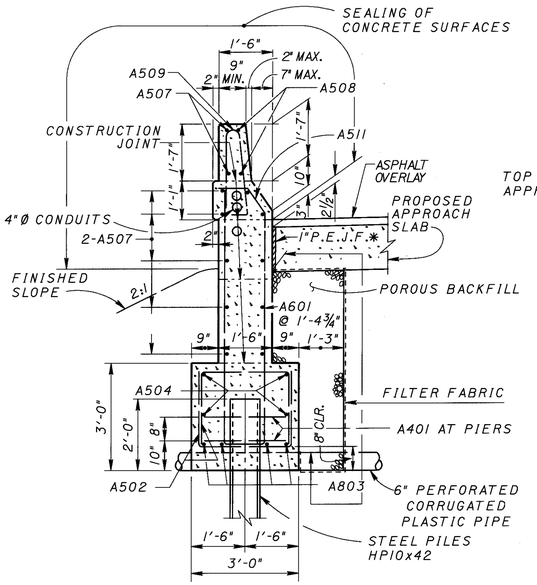


PARTIAL FOOTING PLAN

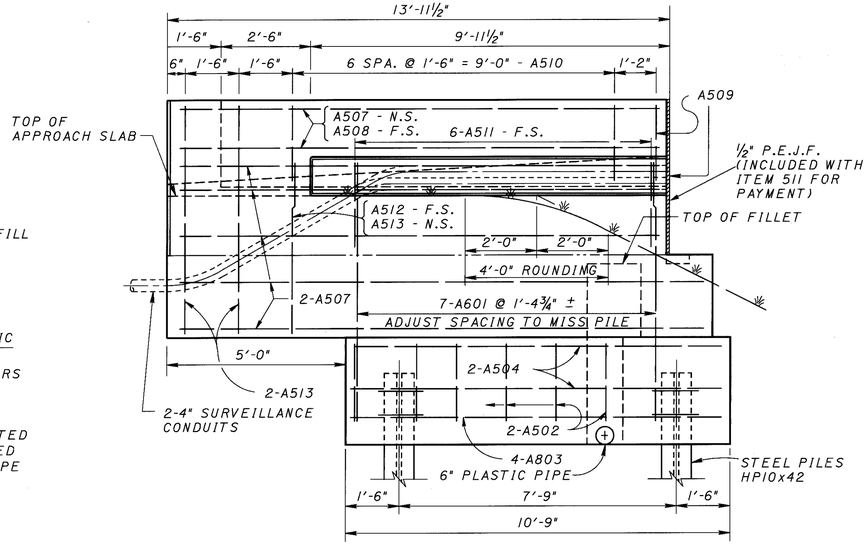
POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO ONE FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. THE BOTTOM OF THE POROUS BACKFILL SHALL BE SLOPED (1 INCH PER FOOT MINIMUM) LATERALLY TO DRAIN. GEOTEXTILE FABRIC IS INCLUDED WITH POROUS BACKFILL FOR PAYMENT.

ABBREVIATIONS

PEJF- PREFORMED EXPANSION JOINT FILLER
FS- FARSIDE
NS- NEAR SIDE

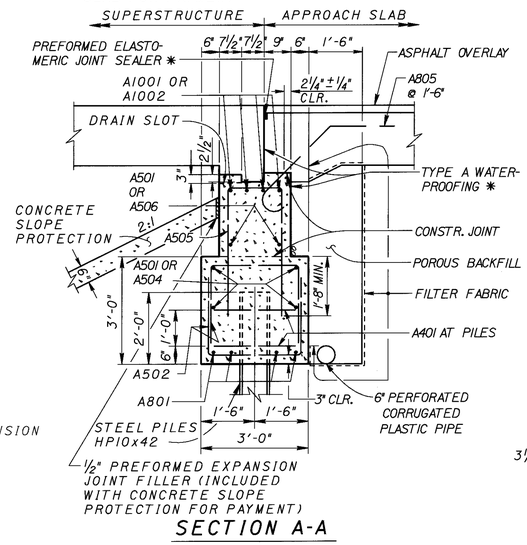


SECTION C-C

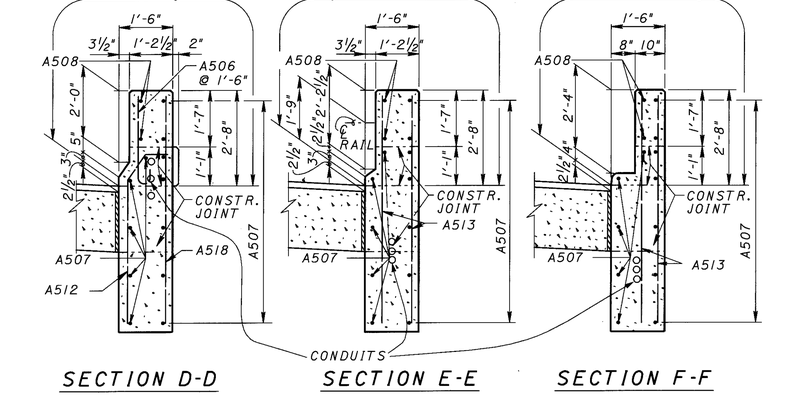


WINGWALL ELEVATION

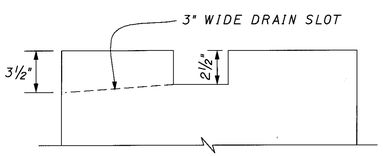
* - INCLUDED WITH APPROACH SLAB FOR PAYMENT



SECTION A-A



SECTION D-D | SECTION E-E | SECTION F-F

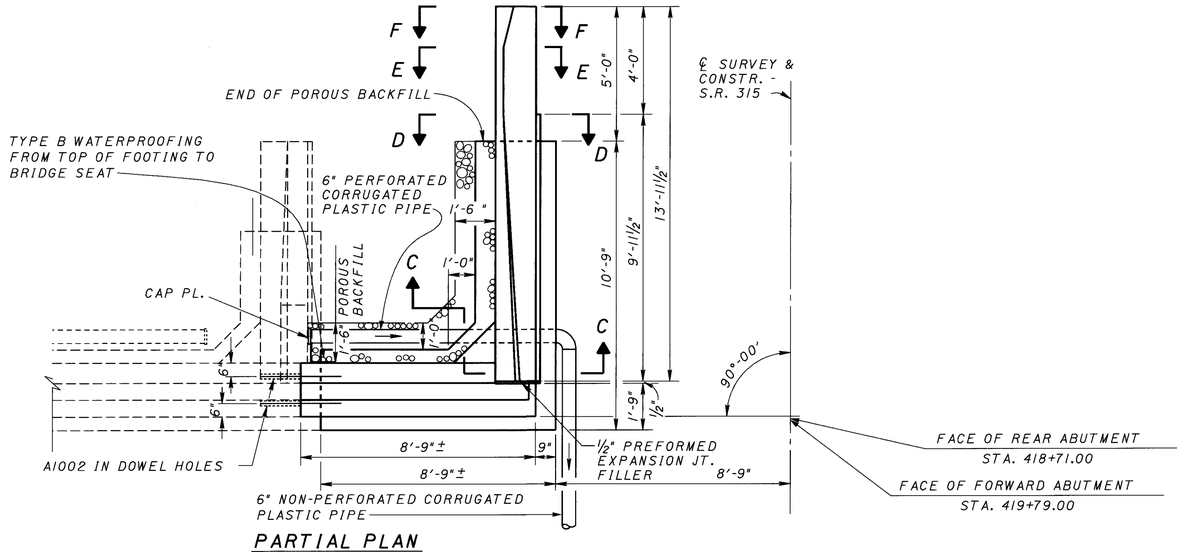


DRAIN SLOT DETAIL

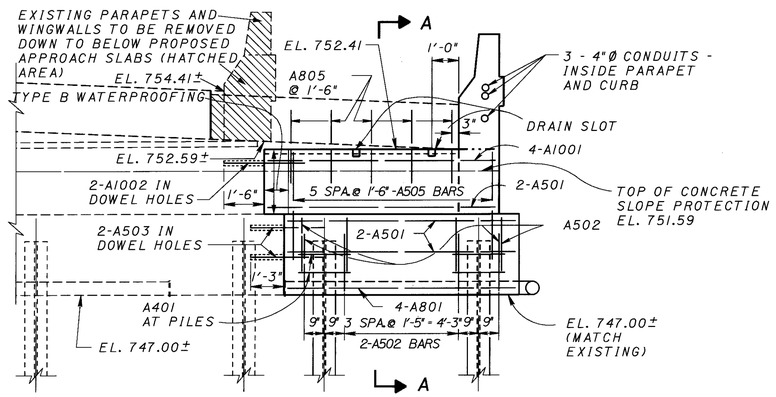
BENATEC ASSOCIATES, INC. 3/7
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

LEFT BRIDGE - REAR ABUTMENT &
RIGHT BRIDGE - FORWARD ABUTMENT
BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD
FRANKLIN COUNTY

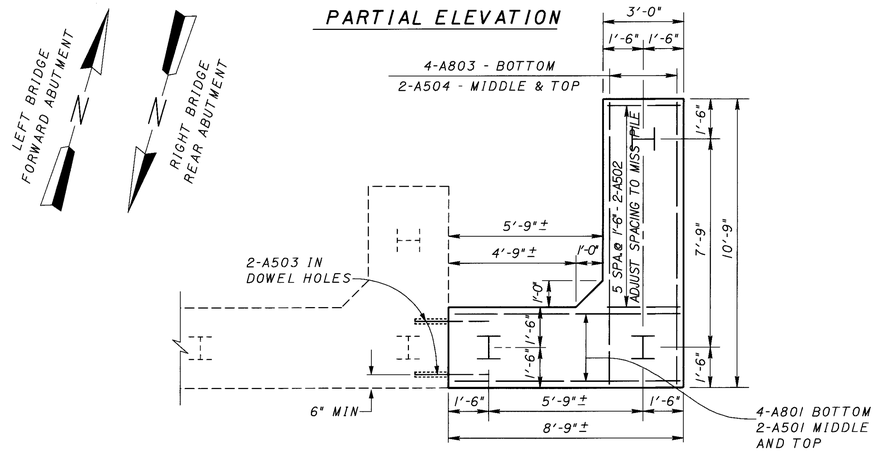
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



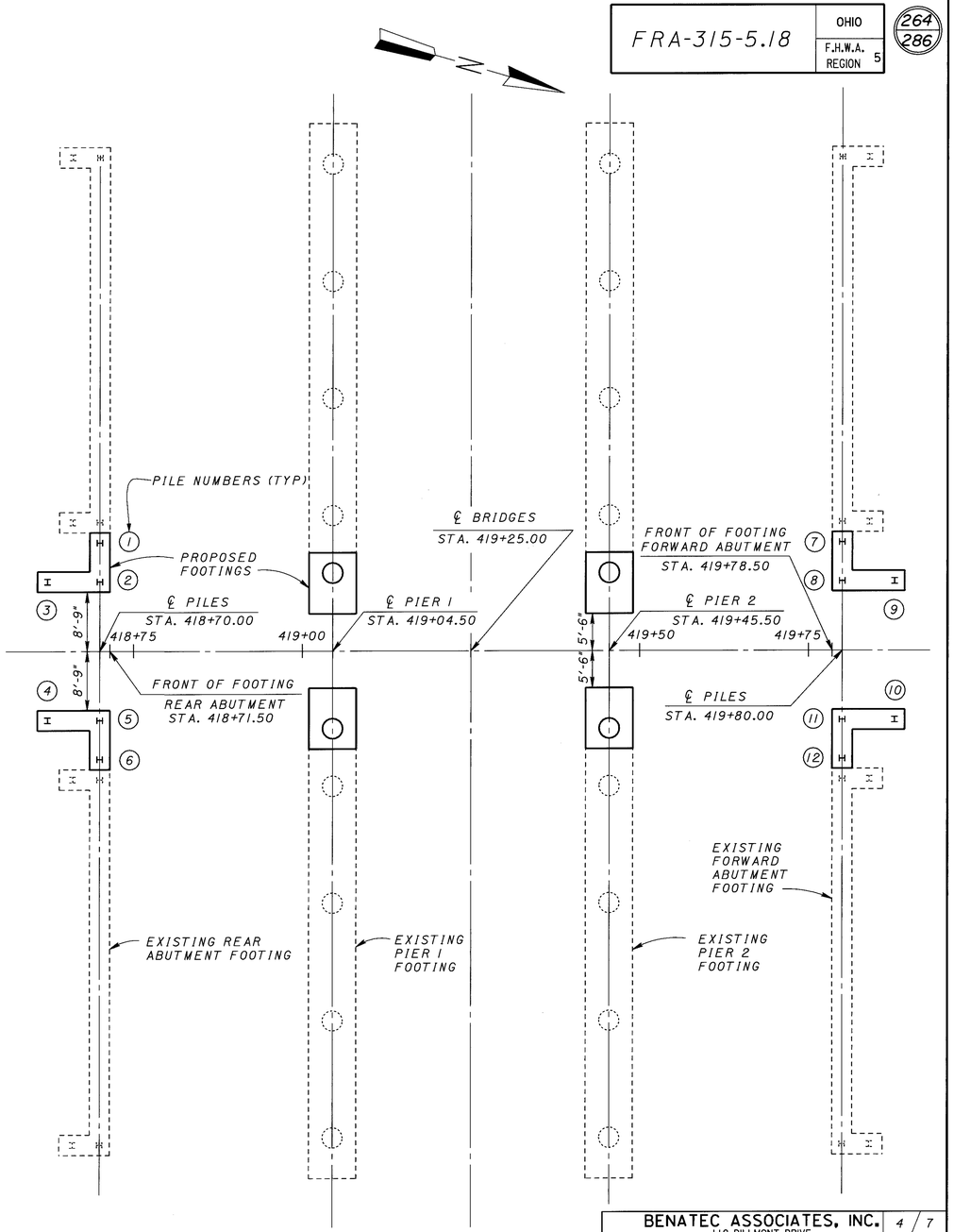
PARTIAL PLAN



PARTIAL ELEVATION



PARTIAL FOOTING PLAN



FOOTING PLAN

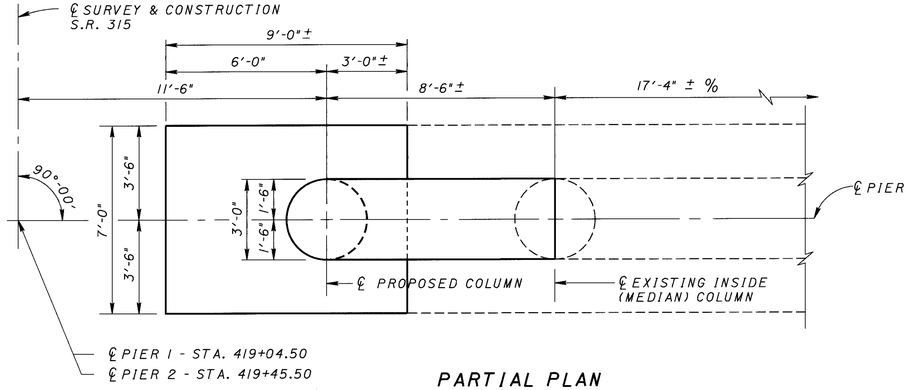
BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

4 / 7

RT. BRIDGE - REAR ABUT. & LT. BRIDGE-FWD. ABUT. & FOOTING PLAN

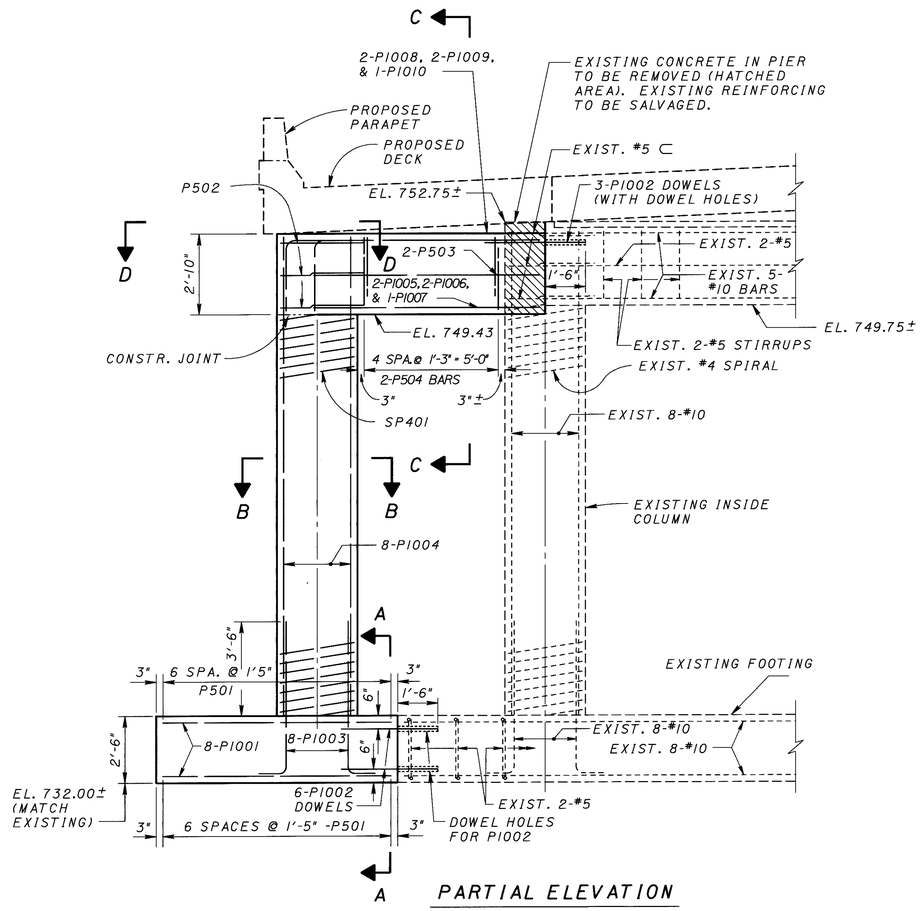
BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

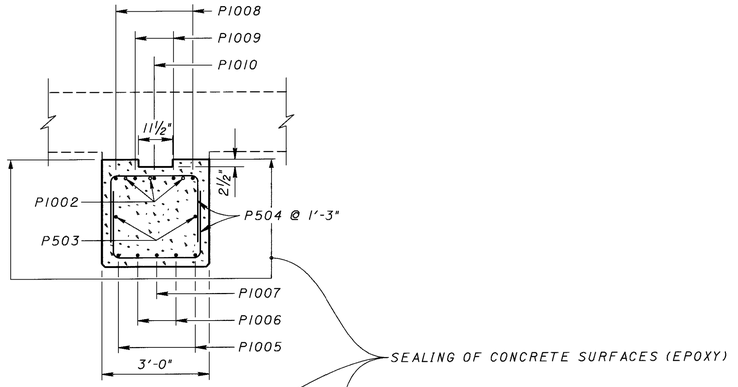


PARTIAL PLAN

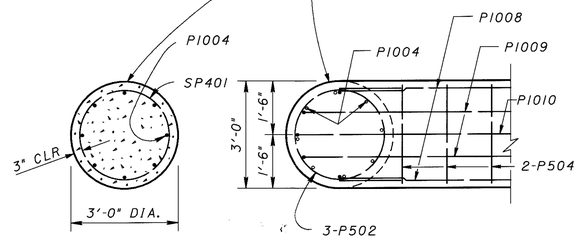
RIGHT BRIDGE PIERS - SHOWN
LEFT BRIDGE PIERS - OPPOSITE HAND



PARTIAL ELEVATION

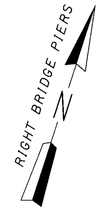


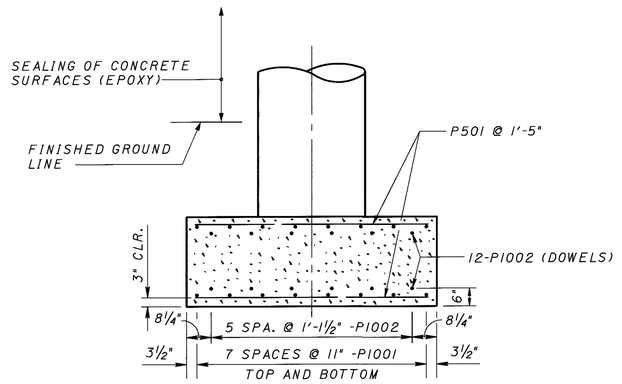
SECTION C-C



SECTION B-B

SECTION D-D





SECTION A-A

SEALING OF CONCRETE SURFACES (EPOXY)

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

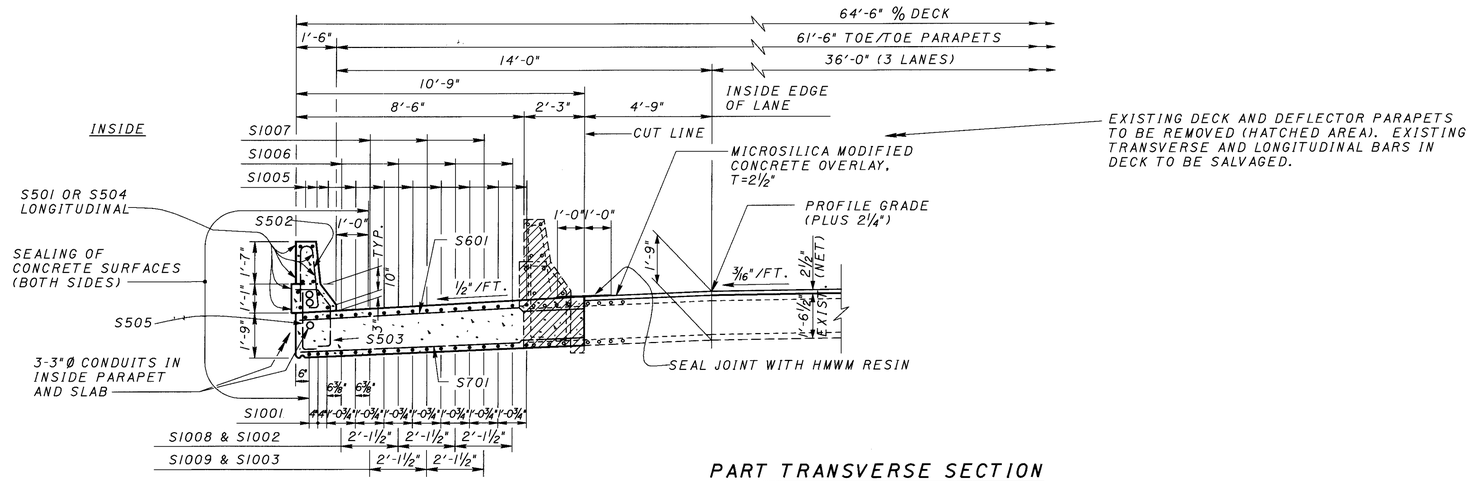
5 / 7

PIERS

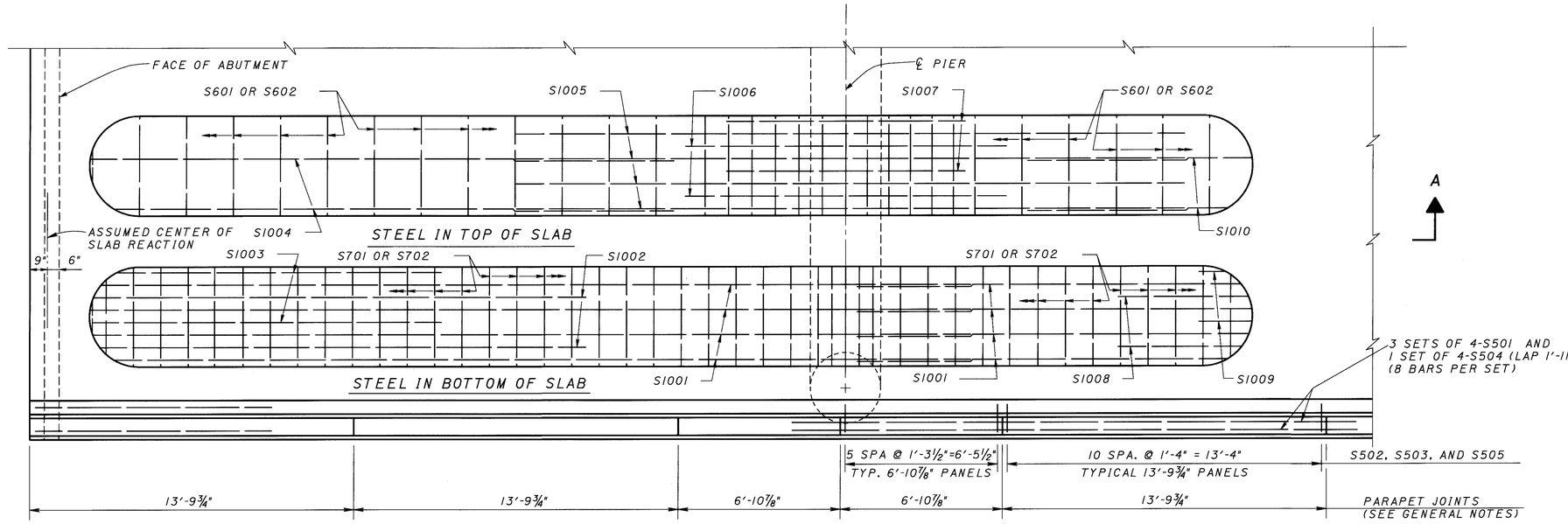
BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD

FRANKLIN COUNTY

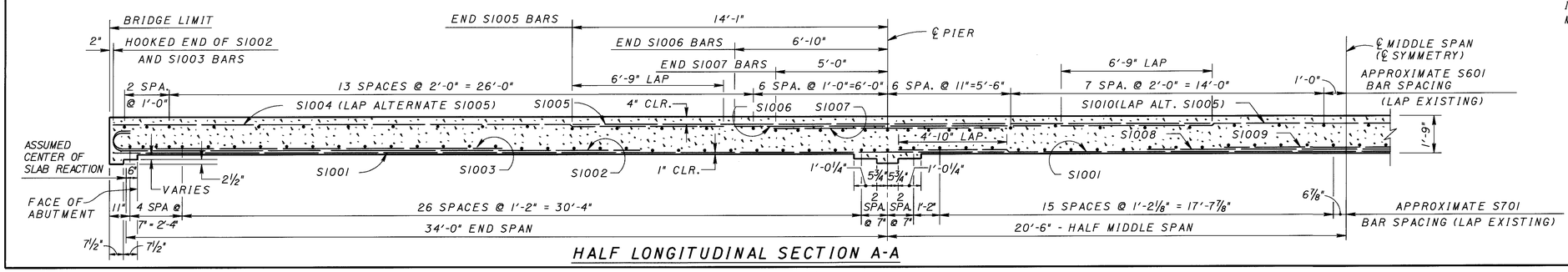
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



PART TRANSVERSE SECTION



PARTIAL SLAB PLAN



HALF LONGITUDINAL SECTION A-A

CAMBER OF ½" IN END SPANS AND ⅝" IN THE MIDDLE SPAN SHALL BE PROVIDED TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

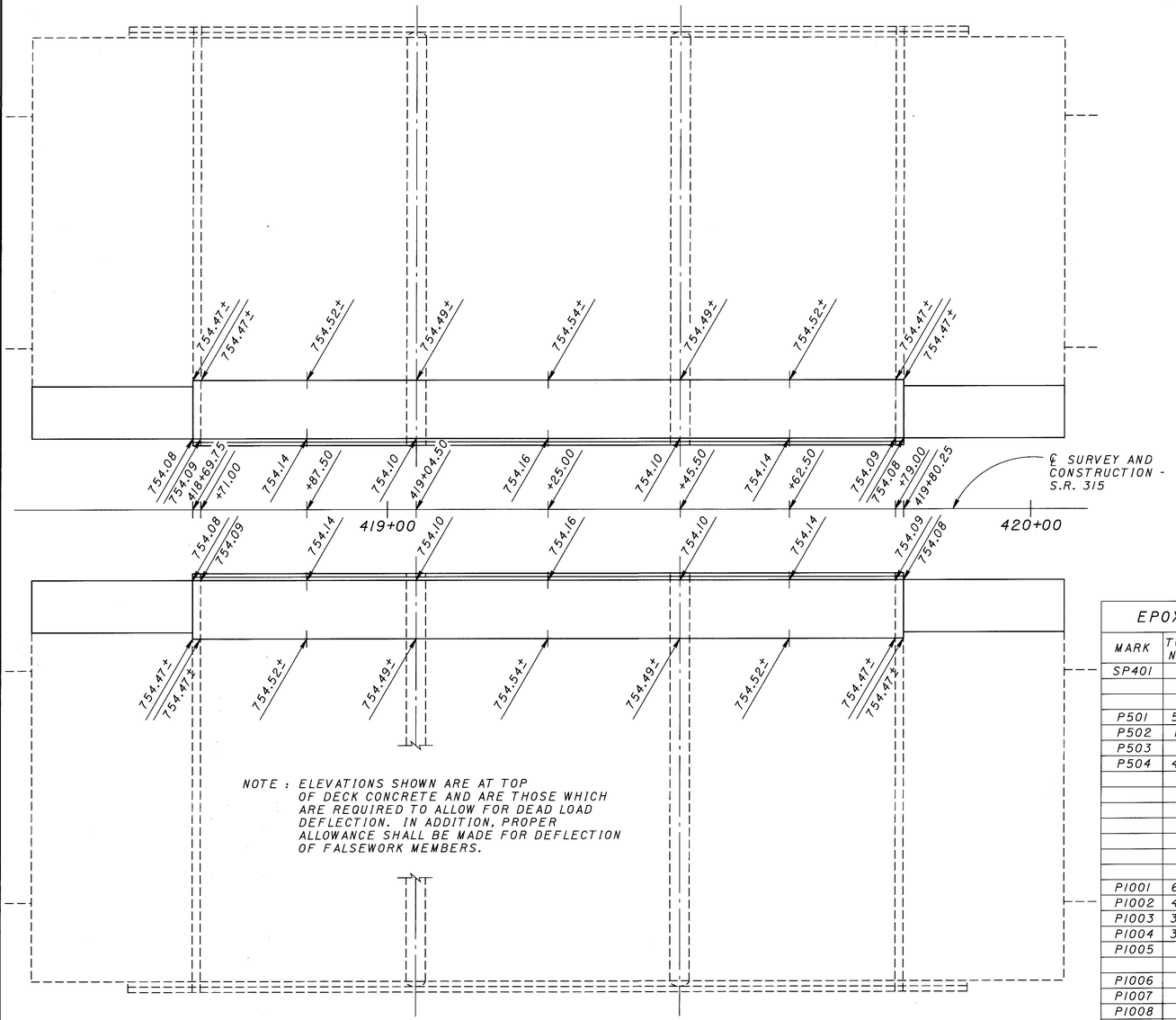
6 / 7

SUPERSTRUCTURE PLAN

BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



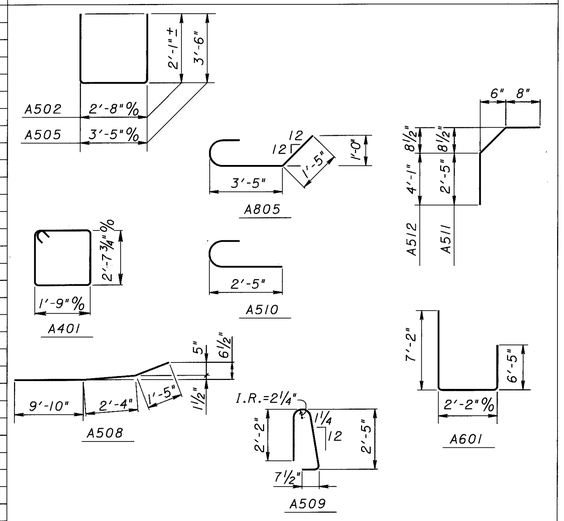
NOTE : ELEVATIONS SHOWN ARE AT TOP OF DECK CONCRETE AND ARE THOSE WHICH ARE REQUIRED TO ALLOW FOR DEAD LOAD DEFLECTION. IN ADDITION, PROPER ALLOWANCE SHALL BE MADE FOR DEFLECTION OF FALSEWORK MEMBERS.

SCREED PLAN

EPOXY COATED REINFORCING STEEL, GRADE 60- ABUTMENTS

MARK	TOT NO.	LENGTH	WEIGHT	SHP	ABUTS LT	ABUTS RT
A401	24	9'-2"	147	BT	12	12
A501	12	8'-6"	106	S	6	6
A502	80	6'-7"	549	BT	40	40
A503	16	2'-9"	46	S	8	8
A504	16	10'-5"	174	S	8	8
A505	24	8'-5"	211	BT	12	12
A507	48	13'-7"	680	S	24	24
A508	8	13'-7"	113	BT	4	4
A509	4	5'-3"	22	BT	2	2
A510	28	3'-0"	88	BT	14	14
A511	24	3'-10"	96	BT	12	12
A512	4	5'-6"	23	BT	2	2
A513	20	6'-3"	130	S	10	10
A601	28	15'-5"	648	BT	14	14
A801	16	8'-6"	363	S	8	8
A803	16	10'-5"	445	S	8	8
A805	20	5'-8"	303	BT	10	10
A1001	16	8'-6"	585	S	8	8
A1002	8	2'-6"	86	S	4	4

BENDING DIAGRAMS

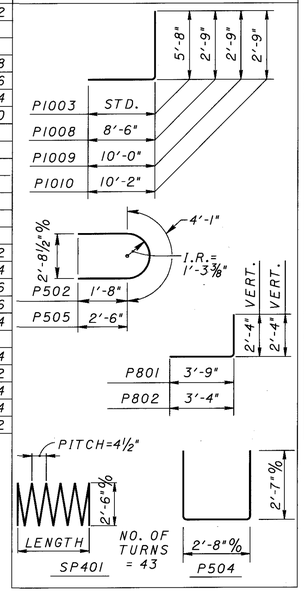


TOTAL 4,815 LBS.

EPOXY COATED REINFORCING STEEL, GRADE 60- PIERS

MARK	TOT NO.	LENGTH	WEIGHT	SHP	BRIDGE LT	BRIDGE RT
SP401	4	15'-0"	1114	BT	2	2
P501	56	8'-8"	506	S	28	28
P502	12	7'-5"	91	BT	6	6
P503	8	8'-6"	71	S	4	4
P504	40	7'-7"	316	BT	20	20
P1001	64	8'-9"	2410	S	32	32
P1002	48	3'-9"	188	S	24	24
P1003	32	7'-2"	987	BT	16	16
P1004	32	17'-8"	2433	S	16	16
P1005	8	8'-6"	293	S	4	4
P1006	8	10'-0"	344	S	4	4
P1007	4	10'-2"	175	S	2	2
P1008	8	10'-11"	376	BT	4	4
P1009	8	12'-5"	427	BT	4	4
P1010	4	12'-7"	217	BT	2	2

BENDING DIAGRAMS

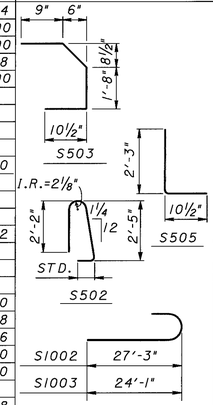


TOTAL 9,948 LBS.

EPOXY COATED REINFORCING STEEL, GRADE 60 - SUPERSTRUCTURE

MARK	TOT NO.	LENGTH	WEIGHT	SHP	BRIDGE LT	BRIDGE RT
S501	48	30'-0"	1502	S	24	24
S502	180	5'-3"	986	BT	90	90
S503	180	3'-11"	753	BT	90	90
S504	16	25'-11"	432	S	8	8
S505	180	2'-11"	548	BT	90	90
S601	140	10'-6"	2208	S	70	70
S701	204	10'-6"	4378	S	102	102
S1001	60	40'-0"	10,327	S	30	30
S1002	16	28'-10"	1985	BT	8	8
S1003	12	25'-8"	1325	BT	6	6
S1004	40	25'-4"	4360	S	20	20
S1005	40	28'-6"	4905	S	20	20
S1006	16	13'-3"	912	S	8	8
S1007	12	10'-0"	516	S	6	6
S1008	8	25'-2"	866	S	4	4
S1009	6	20'-7"	531	S	3	3
S1010	20	25'-6"	2195	S	10	10

BENDING DIAGRAMS



TOTAL 38,729 LBS.

NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A NO. 5 SIZE AND P1006 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS. "STD" WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR. ALL REINFORCING STEEL TO BE EPOXY COATED.

SPIRAL BARS: CONCRETE SPACERS OR OTHER APPROVED NON- CORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 10 FEET) TO ENSURE CONCENTRIC SPACING FOR THE ENTIRE GAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE COLUMN. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 3-INCH CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE SIDE OF THE COLUMN.

THE LENGTH SHOWN IN THE STEEL SCHEDULE FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO 2 INCHES INTO THE PIER CAP INCLUDING THREE (3) CLOSED COILS (1½CLOSED COILS AT THE ENDS FOR EACH SPIRAL UNIT).

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

7 / 7

SCREED PLAN, REINFORCING STEEL

BRIDGE NO. FRA-315-0984 L/R
OVER PARK ACCESS ROAD
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

FRA-315-5.18	OHIO F.H.W.A. REGION 5	268/286

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
202	23500	2289	SQ. YD.	WEARING COURSE REMOVED, ASPHALT	2289			
815	.00050	28,950	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	28,950			
815	00056	28,950	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	28,950			
815	00060	28,950	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	28,950			
815	.00066	28,950	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	28,950			
815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
815	00508	3520	LIN. FT.	GRINDING FLANGE EDGES	3520			
516	46700	2	EACH	RESET BEARING		2		
516	47001	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	LUMP			
SPECIAL	51912510	2	SQ. YD.	PATCHING CONCRETE BRIDGE DECK	2			
SPECIAL	51922020	2289	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 3½" THICK*	2289			
SPECIAL	51922130	10	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY*	10			
SPECIAL	51922134	46	SQ. YD.	HAND CHIPPING*	46			
SPECIAL	51922300	LUMP	LUMP	TEST SLAB*	LUMP			
SPECIAL	51922400	2289	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION*	2289			
530	11000	1	UNIT	LIGHTING FOR NIGHT PLACEMENT OF DECK OVERLAY	1			

* - SEE PROPOSAL NOTE

EXISTING STRUCTURE

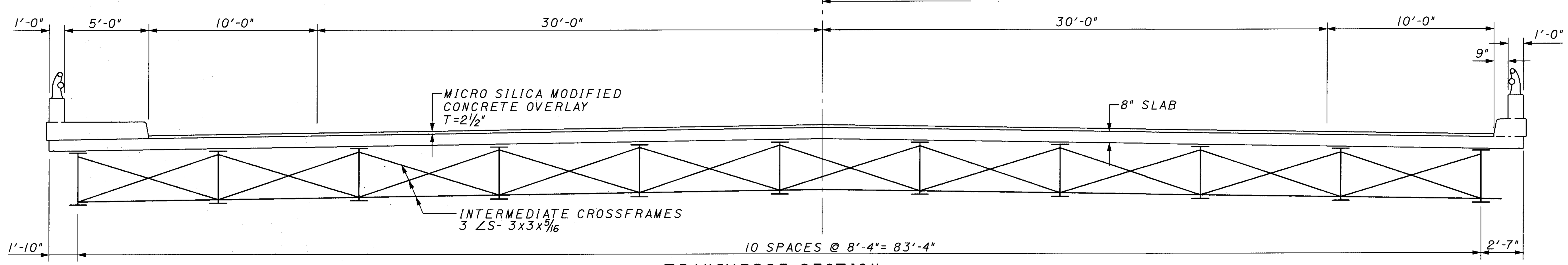
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 48'-0"±, 2 @ 80'-0"±, 48'-0"± C/C BEARINGS
ROADWAY: 85'-9"± F/F PARAPETS WITH 5'-0" WALK (NORTH)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 16°-42'-40"
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT
SFN: 2508958

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 48'-0"±, 2 @ 80'-0"±, 48'-0"± C/C BEARINGS
ROADWAY: 85'-9"± F/F PARAPETS WITH 5'-0" WALK (NORTH)
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
SKEW: 16°-42'-40"
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT

PROPOSED WORK

1. REMOVE EXISTING ASPHALT CONCRETE WEARING SURFACE AND REPLACE WITH MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION
2. PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
3. RESET BEARINGS
4. PATCHING CONCRETE BRIDGE DECK



TRANSVERSE SECTION

BENATEC ASSOCIATES, INC. 1/1
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN

BRIDGE NO. FRA-315-1042
UNDER S.R.161 (DUBLIN-GRANVILLE RD)

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
SPECIAL	51319000	LUMP	LUMP	HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL	LUMP			
815	00050	35,540	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	35,540			
815	00056	35,540	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	35,540			
815	00060	35,540	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	35,540			
815	00066	35,540	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	35,540			
815	00504	100	MANHOUR	GRINDING FINS, TEARS, SLIVERS	100			
815	00508	3208	LIN. FT.	GRINDING FLANGE EDGES	3208			
518	12900	16	EACH	SCUPPER LENGTHENING	16			

✱ - SEE PROPOSAL NOTE

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 59.0'±, 90.5'±, 3 @ 110.0',72.0'± C/C BEARINGS
ROADWAY: 30'-0"± F/F PARAPETS 2'-0"± SAFETY CURBS
LOADING: CF400 (57)
SKEW: NONE
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT, SPIRAL (8° LT)
SFN: 2515903

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 59.0'±, 90.5'±, 3 @ 110.0',72.0'± C/C BEARINGS
ROADWAY: 30'-0"± F/F PARAPETS 2'-0"± SAFETY CURBS
LOADING: CF400 (57)
SKEW: NONE
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT, SPIRAL (8° LT)

PROPOSED WORK

1. HEAT STRAIGHTEN GIRDER BOTTOM FLANGE
2. PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
3. LENGTHEN BOTTOM OF SCUPPER PIPES

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1/1

GENERAL PLAN

BRIDGE NO. FRA-315-1166
UNDER WILSON BRIDGE ROAD

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
~~SPECIAL~~	81500050	20,010	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU *	20,010			
~~SPECIAL~~	81500056	20,010	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU *	20,010			
~~SPECIAL~~	81500060	20,010	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU *	20,010			
~~SPECIAL~~	81500066	20,010	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU *	20,010			
~~SPECIAL~~	81500504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
~~SPECIAL~~	81500508	2332	LIN. FT.	GRINDING FLANGE EDGES	2332			
518	12900	16	EACH	SCUPPER LENGTHENING	16			

* - SEE PROPOSAL NOTE

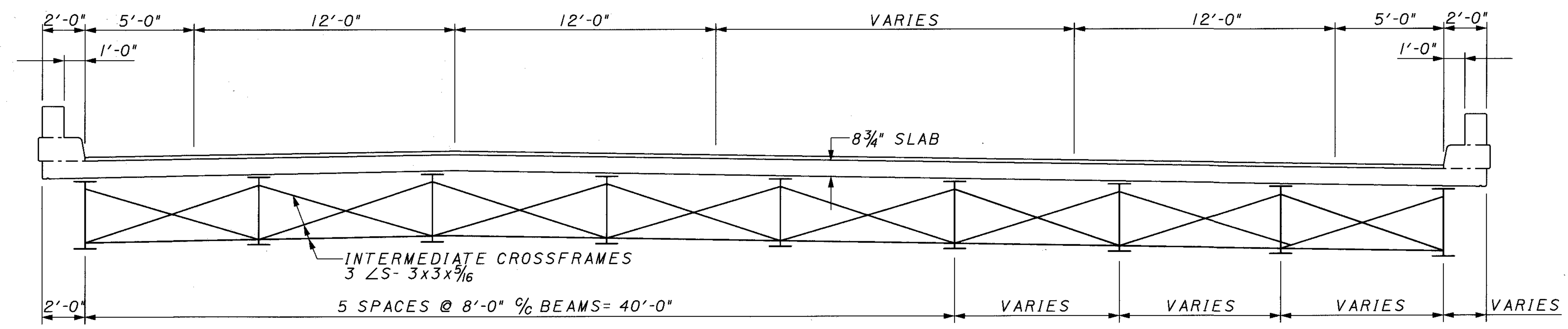
FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 270/286

EXISTING STRUCTURE

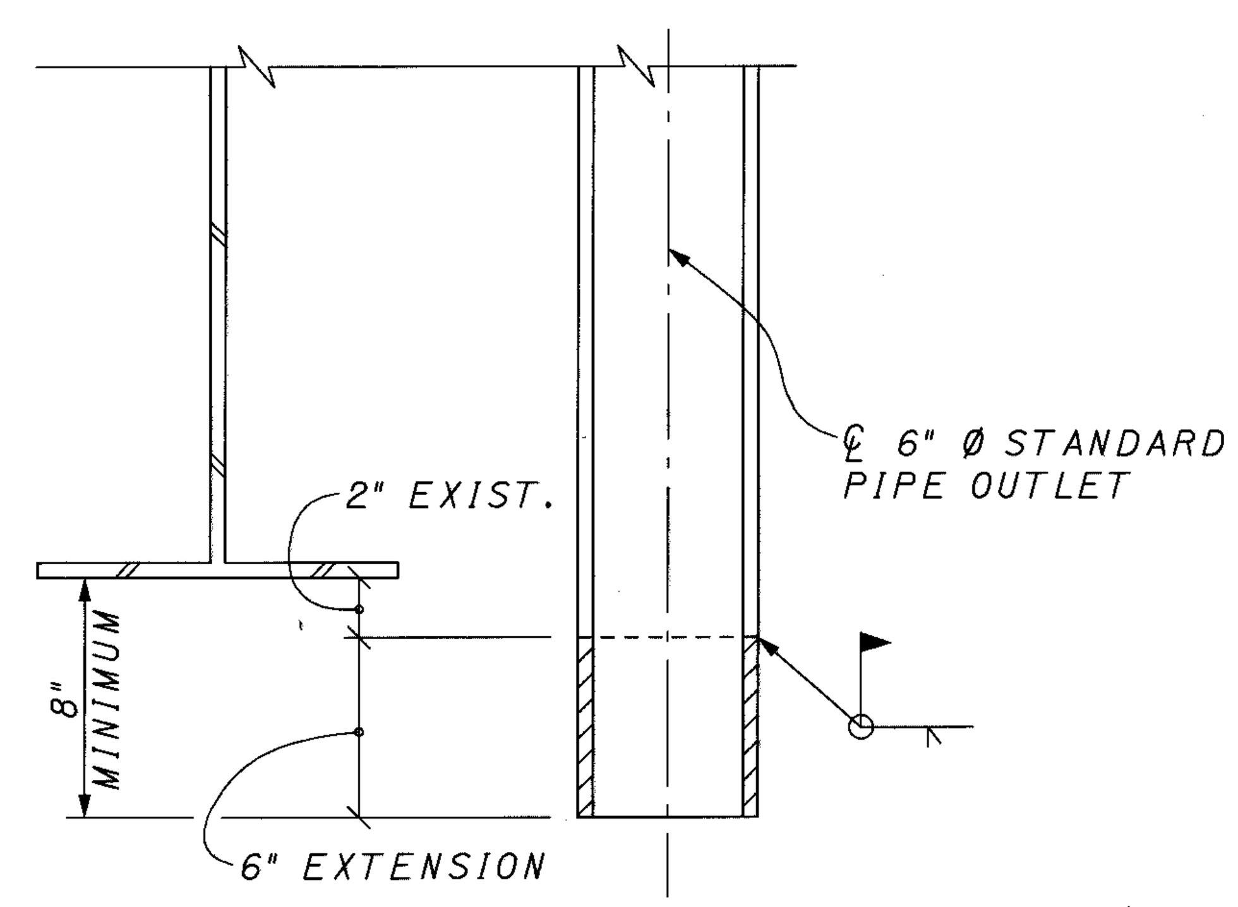
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 46.25'±, 66.0'±, 77.0'±, 54.0'± C/L BEARINGS
ROADWAY: VARIES (64.5'± F/F PARAPETS AVERAGE)
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40' LF
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT AND 4° RAMP CURVE
SFN: 2510863

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 46.25'±, 66.0'±, 77.0'±, 54.0'± C/L BEARINGS
ROADWAY: VARIES (64.5'± F/F PARAPETS AVERAGE)
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40' LF
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT AND 4° RAMP CURVE



TRANSVERSE SECTION



TYPICAL SCUPPER LENGTHENING

PROPOSED WORK

(1) PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
(2) LENGTHEN BOTTOM OF SCUPPER PIPES

BENATEC ASSOCIATES, INC. 1/1
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN
BRIDGE NO. FRA-315-1175
UNDER I.R.270 E/B

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 271/286

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
~~SPECIAL~~ 815	00050	19,560	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	19,560			
~~SPECIAL~~ 815	00056	19,560	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	19,560			
~~SPECIAL~~ 815	00060	19,560	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	19,560			
~~SPECIAL~~ 815	00066	19,560	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	19,560			
~~SPECIAL~~ 815	00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
~~SPECIAL~~ 815	00508	2288	LIN. FT.	GRINDING FLANGE EDGES	2288			
518	12900	12	EACH	SCUPPER LENGTHENING	12			

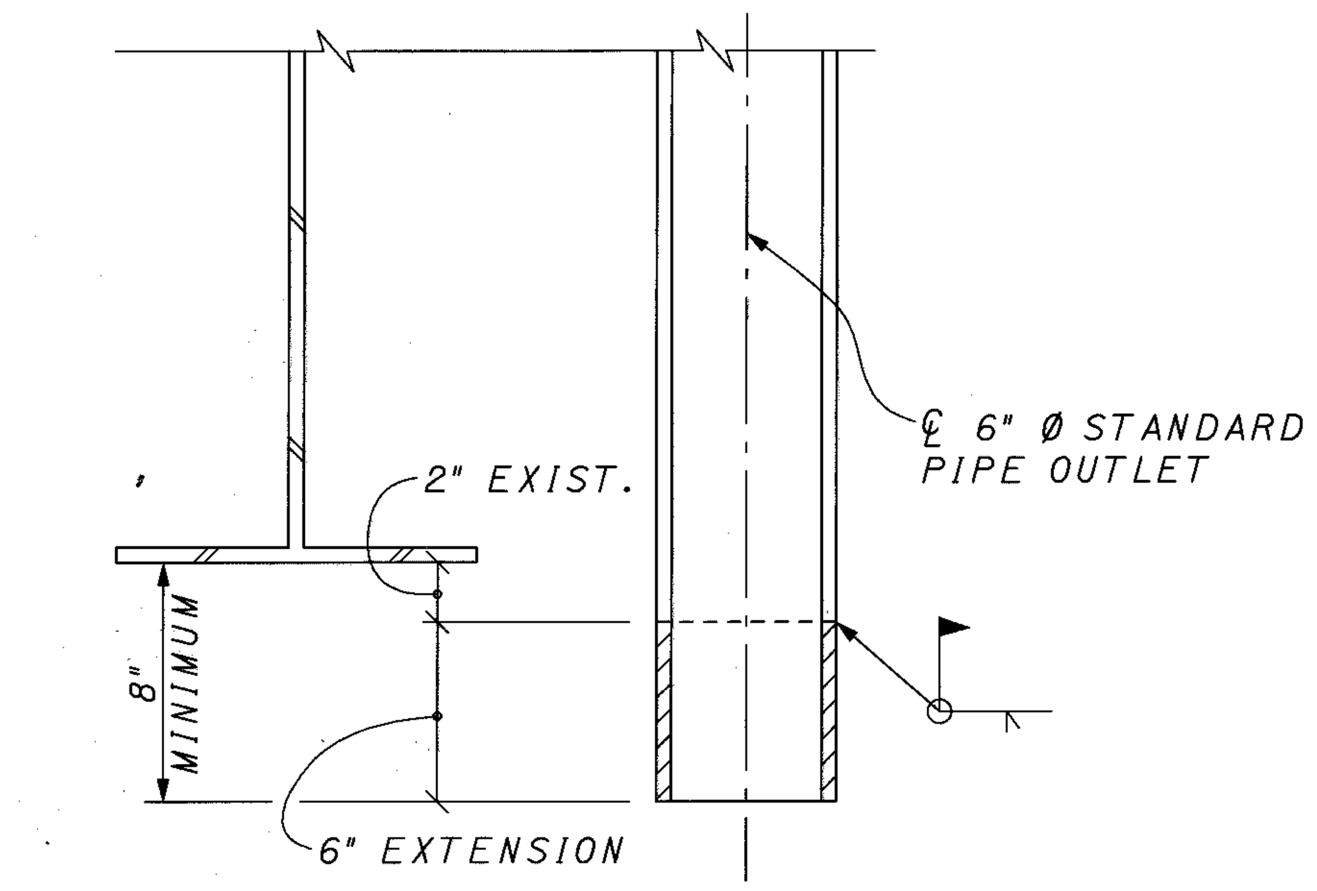
✱ - SEE PROPOSAL NOTE

EXISTING STRUCTURE

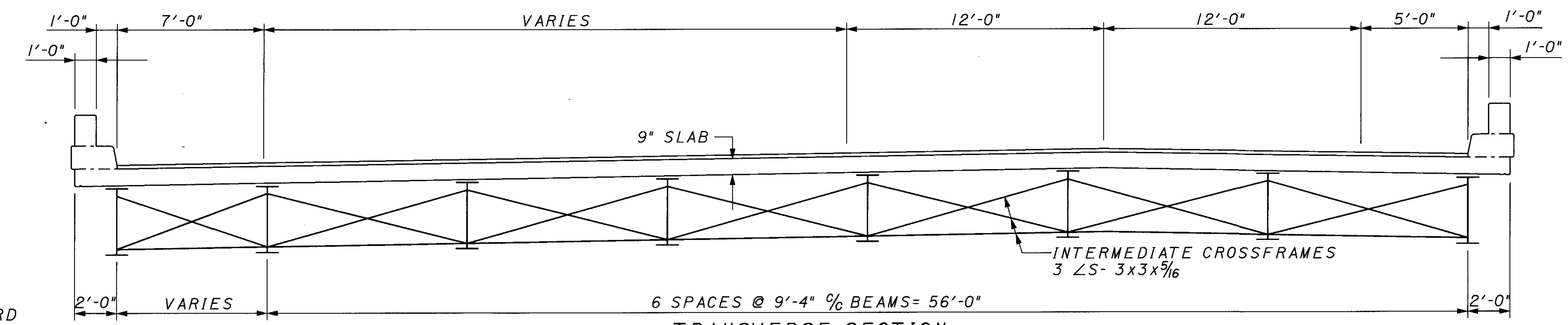
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 49.5'±, 70.5'±, 77.0'±, 54.0'± C/C BEARINGS
ROADWAY: VARIES (55.0'± F/F PARAPETS AVERAGE)
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40' LF
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT AND RAMP TAPER
SFN: 2510898

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 49.5'±, 70.5'±, 77.0'±, 54.0'± C/C BEARINGS
ROADWAY: VARIES (55.0'± F/F PARAPETS AVERAGE)
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40' LF
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT AND RAMP TAPER



TYPICAL SCUPPER LENGTHENING



TRANSVERSE SECTION

PROPOSED WORK

① PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU
② LENGTHEN BOTTOM OF SCUPPER PIPES

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1/1

GENERAL PLAN

BRIDGE NO. FRA-315-1177
UNDER I.R.270 W/B

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE ESTIMATED QUANTITIES

CALC'D RAK 6-94 CHK'D ELC 8-94

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L
~~SPECIAL~~	815 00050	14,940	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	14,940			
~~SPECIAL~~	815 00056	14,940	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	14,940			
~~SPECIAL~~	815 00060	14,940	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	14,940			
~~SPECIAL~~	815 00066	14,940	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	14,940			
~~SPECIAL~~	815 00504	50	MANHOUR	GRINDING FINS, TEARS, SLIVERS	50			
~~SPECIAL~~	815 00508	1560	LIN. FT.	GRINDING FLANGE EDGES	1560			

* - SEE PROPOSAL NOTE

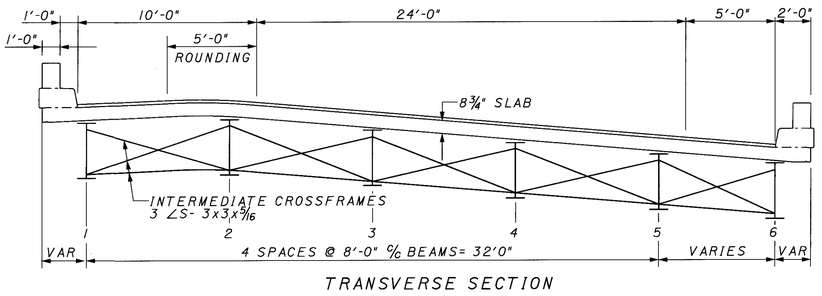
FRA-315-5.18 | OHIO | F.H.W.A. REGION 5 | 272 / 286

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 49.5'±, 2 @ 65.0'±, 45.5'± % BEARINGS ALONG TANGENT
ROADWAY: 41.0'± f/ PARAPETS
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40'-21" LF TO REFERENCE TANGENT
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: 7°-00' CURVE LEFT
SUPERELEVATION: 0.0833
SFN: 2510839

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTUCTURE
SPANS: 49.5', 2 @ 65.0', 45.5' % BEARINGS ALONG TANGENT
ROADWAY: 41.0' f/ PARAPETS
LOADING: CF2000 (57), ADEQUATE FOR AASHTO ALTERNATE LOADING
SKEW: 6°-40'-21" LF TO REFERENCE TANGENT
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: 7°-00' CURVE LEFT
SUPERELEVATION: 0.0833



TRANSVERSE SECTION

PROPOSED WORK

(1) PAINT EXISTING STRUCTURAL STEEL, SYSTEM OZEU

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL PLAN

BRIDGE NO. FRA-315-1215
UNDER RAMP (I-270 W/B TO SR-315 S/B)

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

EXISTING STRUCTURE

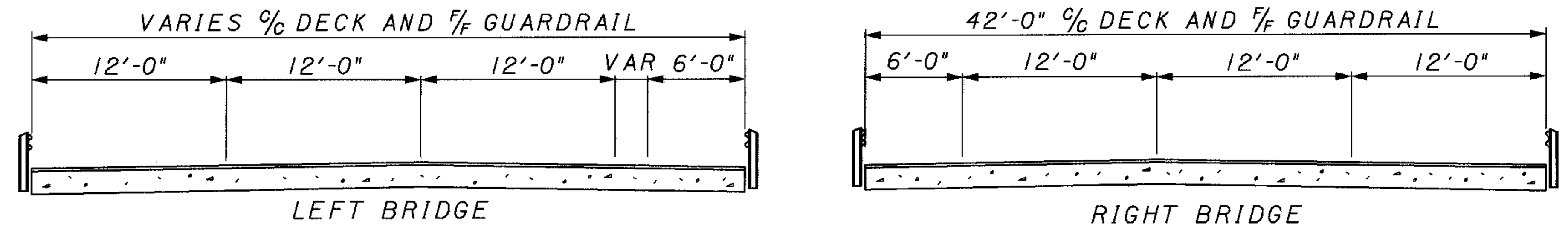
TYPE: REINFORCED CONCRETE SLAB AND SUBSTRUCTURE
SPAN: 25.54'± F/F ABUTMENTS
ROADWAY: VARIES (LEFT- 43.38'± C/C DECK AVG. RIGHT- 42'-0"± C/C DECK)
LOADING: CF400 (57)
SKEW: 20°-00' RF
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT
S F N : LEFT BRIDGE 2515962
RIGHT BRIDGE 2515997

PROPOSED STRUCTURE

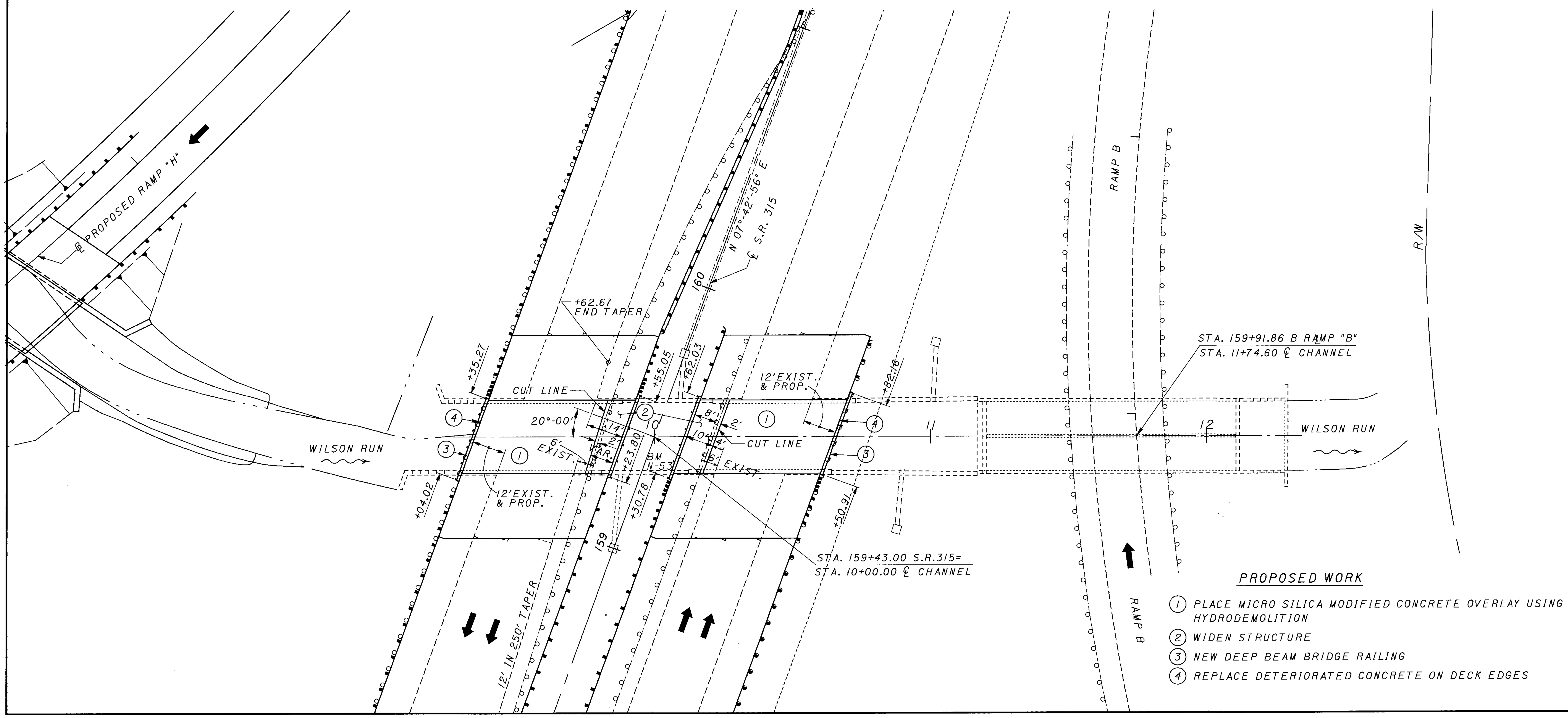
TYPE: REINFORCED CONCRETE SLAB AND SUBSTRUCTURE
SPAN: 25.54'± F/F ABUTMENTS
ROADWAY: LEFT- 50'-0"± C/C DECK, RIGHT- 50'-0"± C/C DECK
LOADING: CF400 (57)
SKEW: 20°-00' RF
WEARING SURFACE: MICRO SILICA CONCRETE
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: TANGENT

BENCH MARK

N-53 ELEV. 765.327
DISK SET IN S. ENDWALL OF CULVERT @ WILSON RUN BETWEEN NB & SB SR 315
STA. 159+30.78, 5.40' RT.
NAVD 1929



EXISTING TRANSVERSE SECTIONS



PROPOSED WORK

1. PLACE MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION
2. WIDEN STRUCTURE
3. NEW DEEP BEAM BRIDGE RAILING
4. REPLACE DETERIORATED CONCRETE ON DECK EDGES

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

1/8

GENERAL PLAN

BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	

BRIDGE GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS
AS-1-81, SHEETS 1-3 (DATED 11-27-81)
DBR-2-73 (DATED 4-12-73)
AND TO SUPPLEMENTAL SPECIFICATIONS
852 (DATED 7-3-93)
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 AND 1994 INTERIM SPECIFICATION AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S - UNIT STRESS 1500 PSI (SUPERSTUCTURE)
ORIGINAL DESIGN CONCRETE CLASS C, UNIT STRESS 1200 PSI
REINFORCING STEEL - ASTM A615, A616, OR A616- GRADE 60 - UNIT STRESS 24,000 PSI. ORIGINAL DESIGN GRADE 40 (NON-EPOXY COATED) - UNIT STRESS 20,000 PSI.

DECK PROTECTION: EPOXY COATED REINFORCING STEEL, MICRO-SILICA MODIFIED CONCRETE OVERLAY OF EXISTING DECK, AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES SHOWN ON SHEET 7 / 8 AND 8 / 8.
SEE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

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 HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 400 POUNDS FOR EACH BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES AND/OR 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 102.5 AND 105.2.

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.

SCOPE OF WORK:
DEMOLITION: REMOVAL OF EXISTING GUARDRAIL, 2 FEET OF OUTSIDE PORTIONS OF EXISTING DECKS AND TOPS OF EXISTING ABUTMENTS AND RETAINING WALLS.
CONSTRUCTION: MICRO-SILICA CONCRETE OVERLAY OF REMAINING EXISTING CONCRETE SLABS, WIDENING OF EXISTING CONCRETE SLABS, NEW DEEP BEAM BRIDGE GUARDRAIL WITH TUBULAR BACKUP AND TYPE 2 POSTS.
TRAFFIC: TO BE MAINTAINED DURING CONSTRUCTION BY USE OF STAGED CONSTRUCTION.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, AT LEAST A 1'-10" LENGTH OF PROTRUDING REINFORCING STEEL SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS AS SPECIFIED. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, RUST, OR OTHER FOREIGN MATERIALS BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS TO THE ENGINEER. THE CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

EXISTING REINFORCING STEEL PARTIALLY EXPOSED BY CONCRETE REMOVAL SHOULD BE LEFT IN PLACE, EXCEPT THAT IT SHALL BE BENT AS NECESSARY TO CLEAR PROPOSED CONCRETE SURFACES BY AT LEAST 2 INCHES.

STRUCTURE EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.11 EXCEPT THAT THERE SHALL BE NO DEDUCTION FOR REMOVALS MADE AS PART OF 202. EXCAVATION OUTSIDE THESE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE IS INCLUDED IN 202 FOR PAYMENT.

REINFORCING BAR SPLICE LENGTHS SHALL CONFORM TO THE MINIMUM LENGTHS SPECIFIED IN 509.08 UNLESS OTHERWISE NOTED ON THE PLANS.

PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN

DESCRIPTION: THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF PORTIONS OF THE CONCRETE DECKS AND OTHER REMOVALS INDICATED ON THE PLANS. CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED.

SUPERSTRUCTURE: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY AN ENGINEER REGISTERED BY THE STATE OF OHIO, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF WORK.

PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

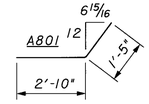
BRIDGE ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	GEN'L
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	LUMP	LUMP	
509	15820	8676	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	7447	829	400
510	09950	76	EACH	DOWEL HOLES WITH CEMENT GROUT		76	
511	33400	37	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE, [illegible]	37		
SPEC	51267500	38	SQ.YD.	SEALING OF CONCRETE SURFACES ✳	38		
516	13200	18	SQ.FT.	½" PREFORMED EXPANSION JOINT FILLER		18	
517	72300	62.50	LIN.FT.	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS) AND ANCHOR BOLTS	62.50		
517	72306	62.50	LIN.FT.	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS)	62.50		
SPEC	51922020	255	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY, USING HYDRODEMOLITION, 2½" THICK✳	255		
SPEC	51922130	36	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY✳	36		
SPEC	51922134	5	SQ. YD.	HAND CHIPPING✳	5		
SPEC	51922300	LUMP	LUMP	TEST SLAB✳	LUMP		
SPEC	51922400	255	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION✳	255		

✳ - SEE PROPOSAL NOTE

REINFORCING STEEL - ABUTMENTS

MARK	TOTAL NO.	LENGTH	WEIGHT	SHAPE	LEFT REAR	RIGHT REAR	LEFT FORWARD	RIGHT FORWARD
A801	74	4'-1"	806	BENT	18	19	18	19
		TOTAL	806					



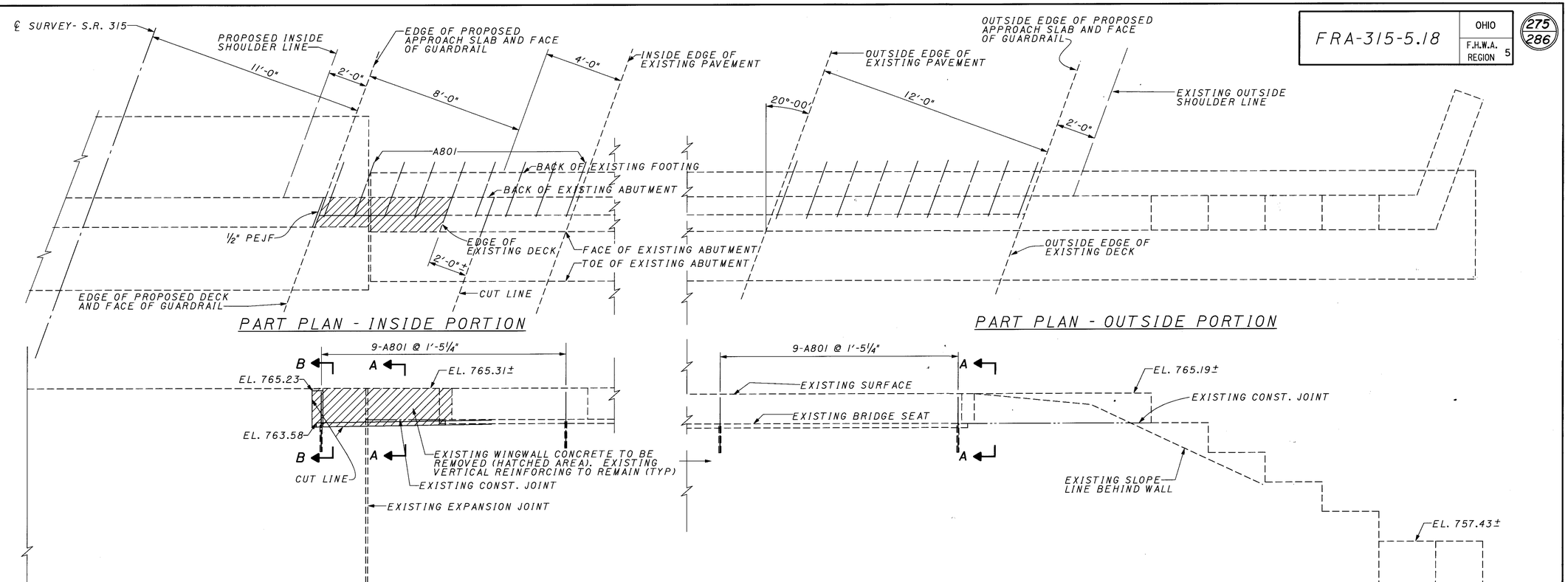
BENATEC ASSOCIATES, INC. 2 / 8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

GENERAL NOTES, ESTIMATED QUANTITIES

BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



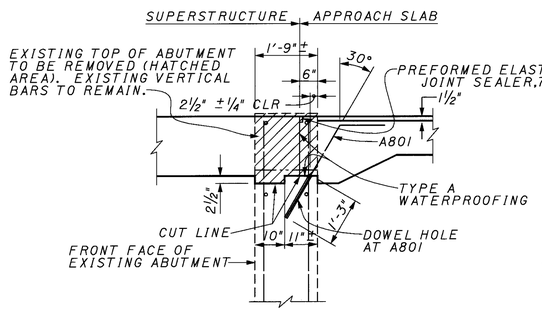
PART PLAN - INSIDE PORTION

PART PLAN - OUTSIDE PORTION

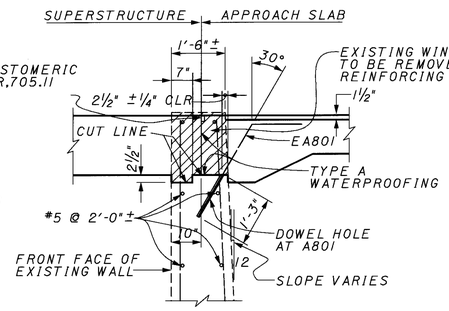
PART ELEVATION - INSIDE PORTION

PART ELEVATION - OUTSIDE PORTION

PEJF: PREFORMED EXPANSION JOINT



SECTION A-A



SECTION B-B

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

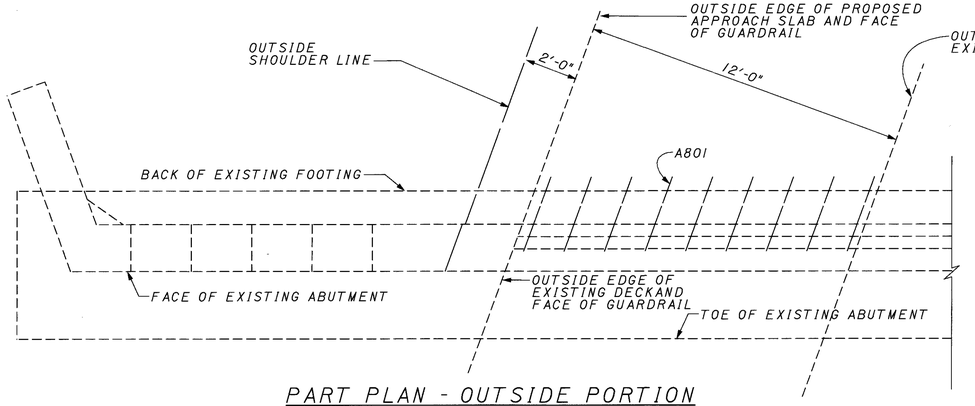
3 / 8

LEFT BRIDGE-REAR ABUTMENT

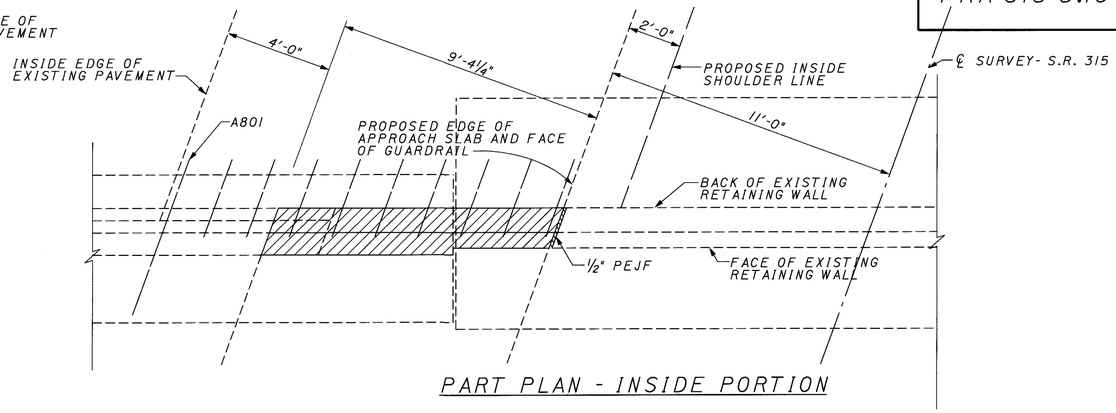
BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

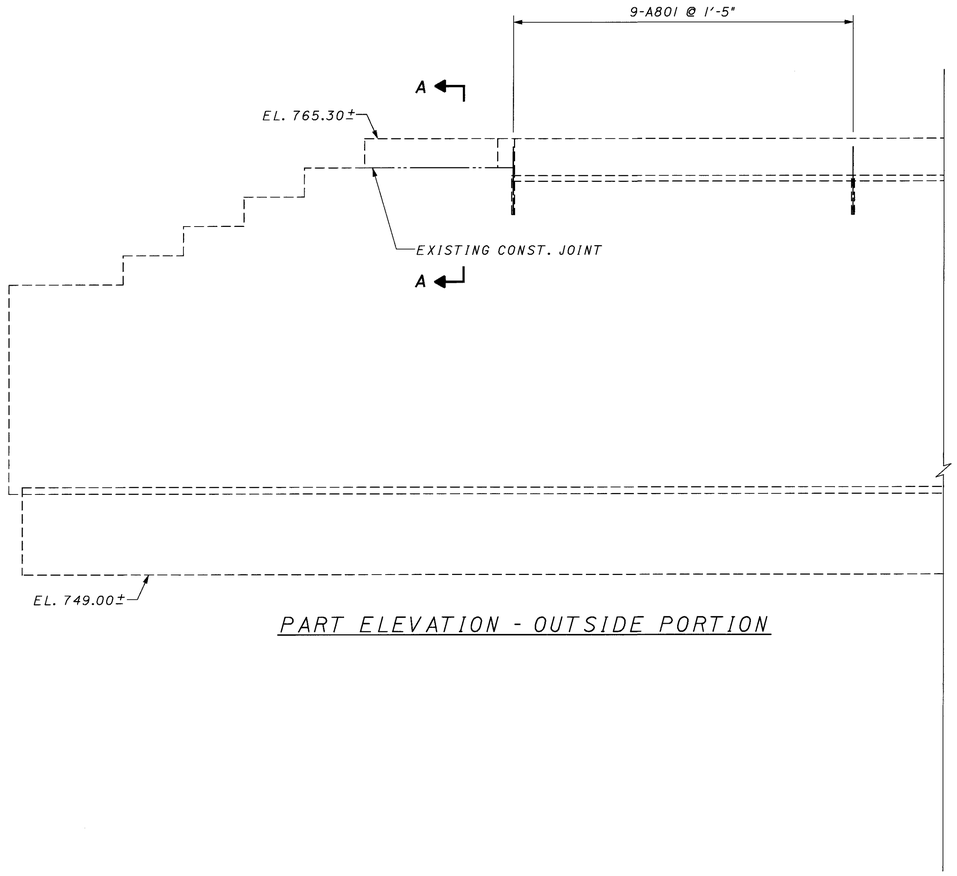
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



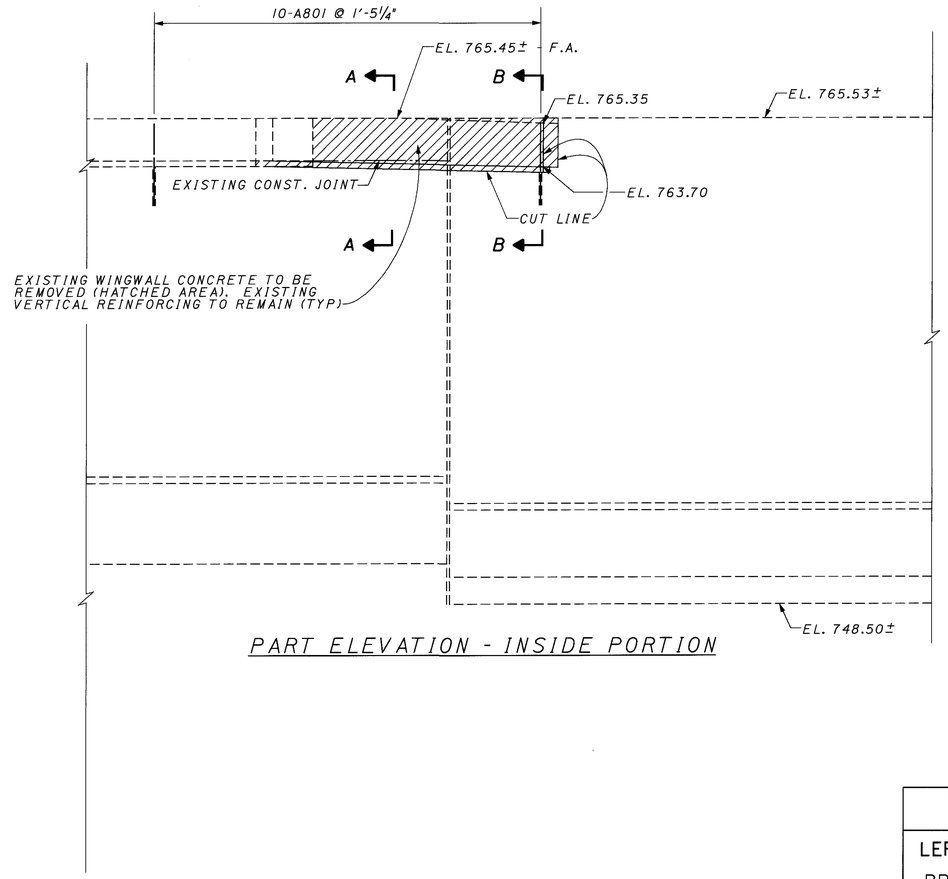
PART PLAN - OUTSIDE PORTION



PART PLAN - INSIDE PORTION



PART ELEVATION - OUTSIDE PORTION



PART ELEVATION - INSIDE PORTION

SECTIONS A-A AND B-B:
SEE SHEET 3/8

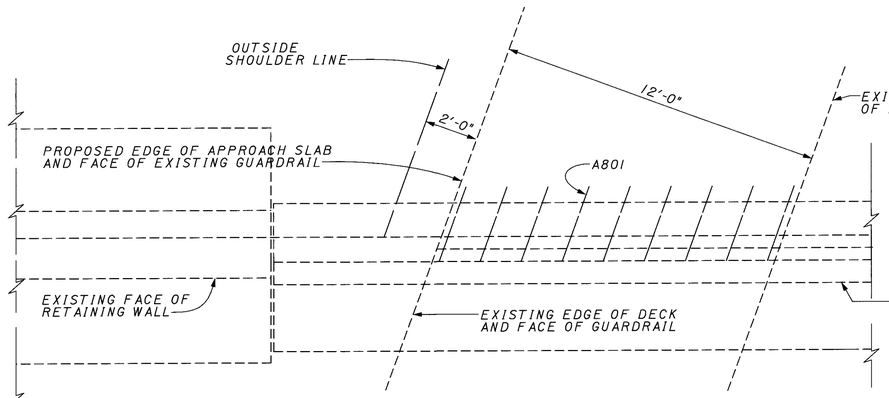
BENATEC ASSOCIATES, INC. 4/8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

LEFT BRIDGE-FORWARD ABUTMENT

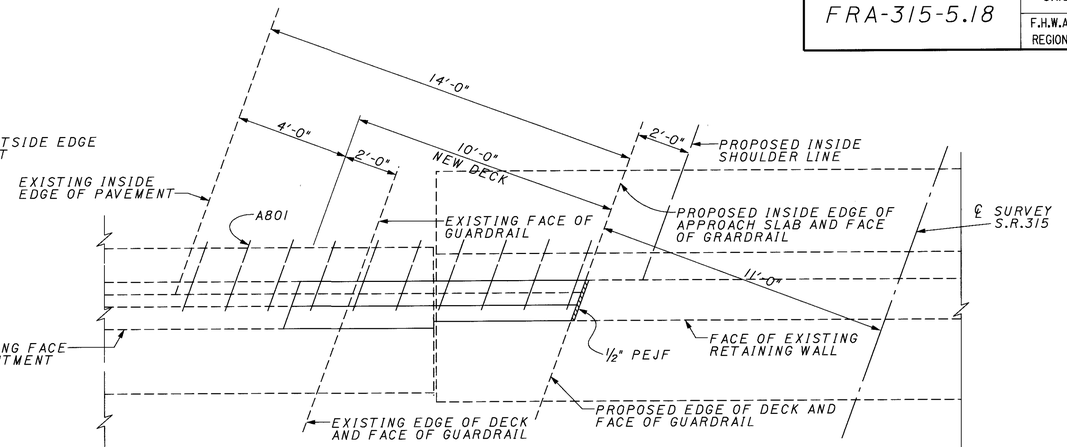
BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

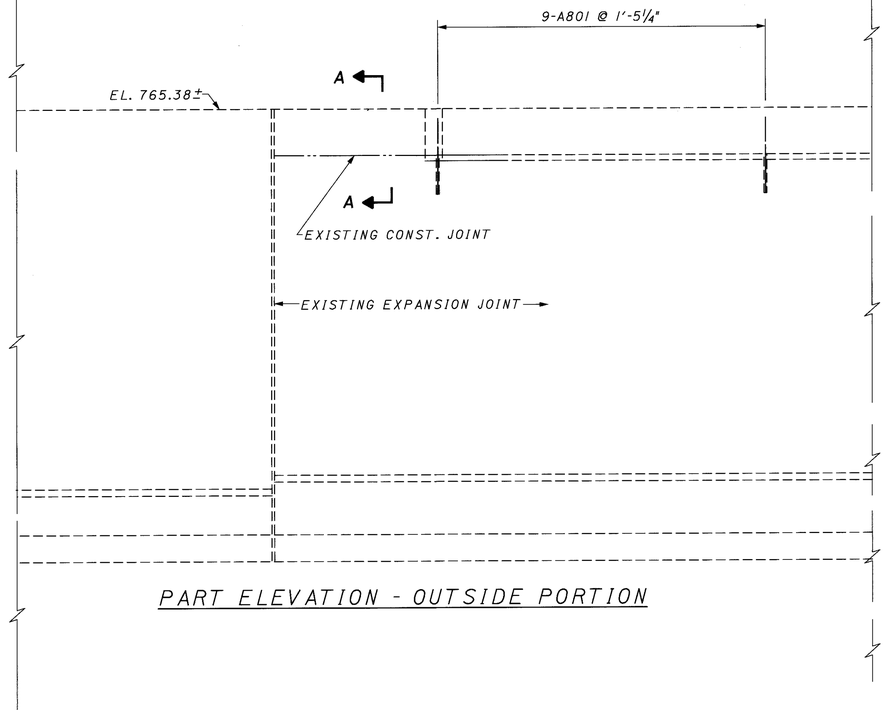
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



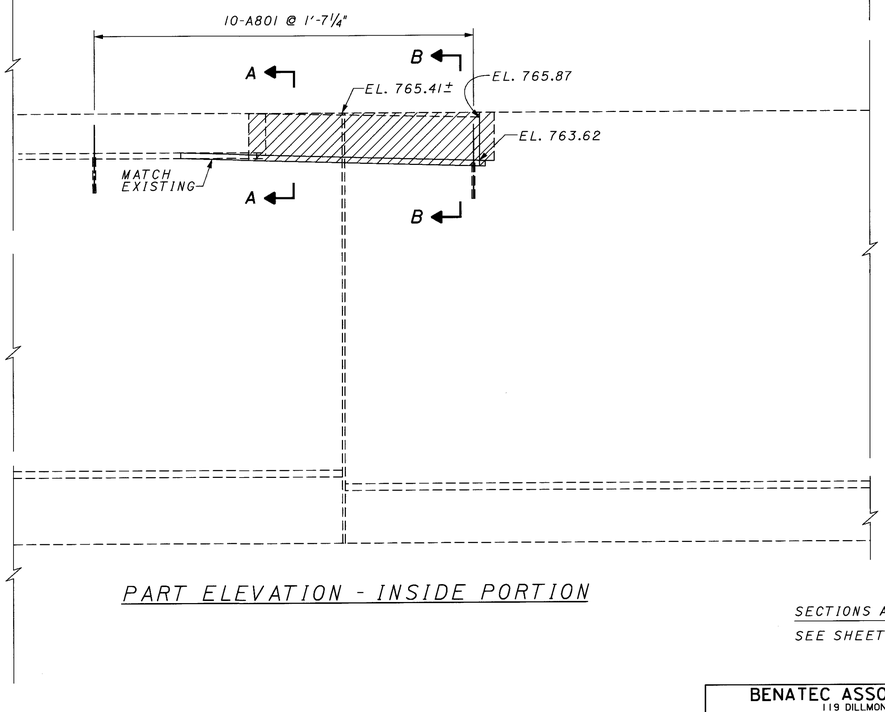
PART PLAN - OUTSIDE PORTION



PART PLAN - INSIDE PORTION



PART ELEVATION - OUTSIDE PORTION



PART ELEVATION - INSIDE PORTION

SECTIONS A-A AND B-B:
SEE SHEET 3/8

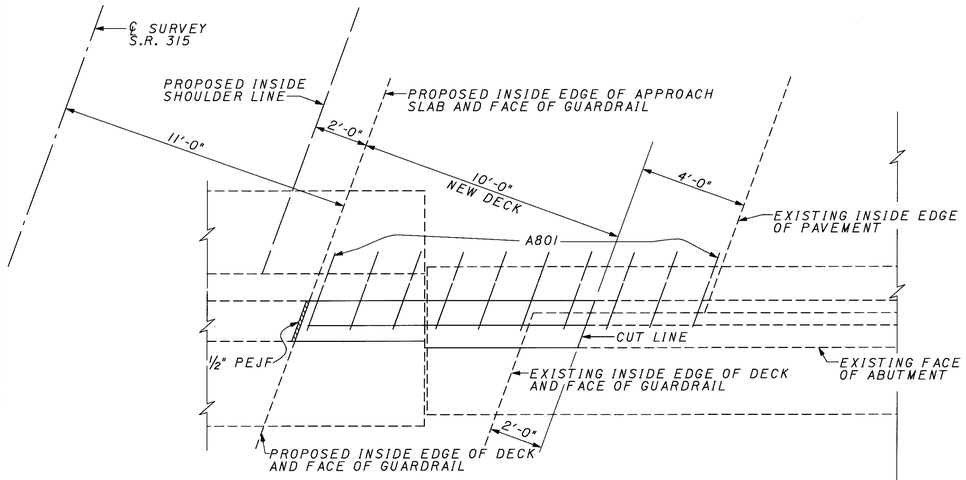
BENATEC ASSOCIATES, INC. 5/8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

RIGHT BRIDGE-REAR ABUTMENT

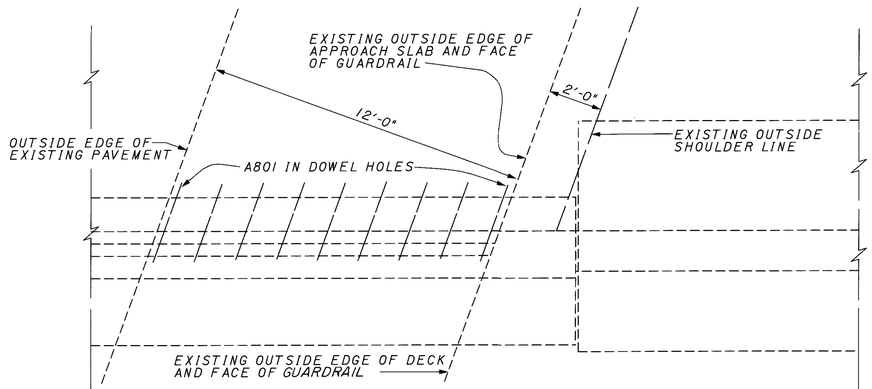
BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

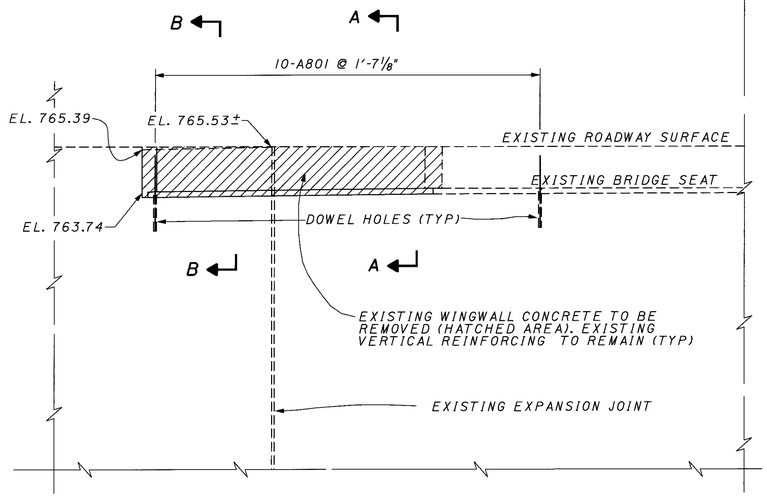
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



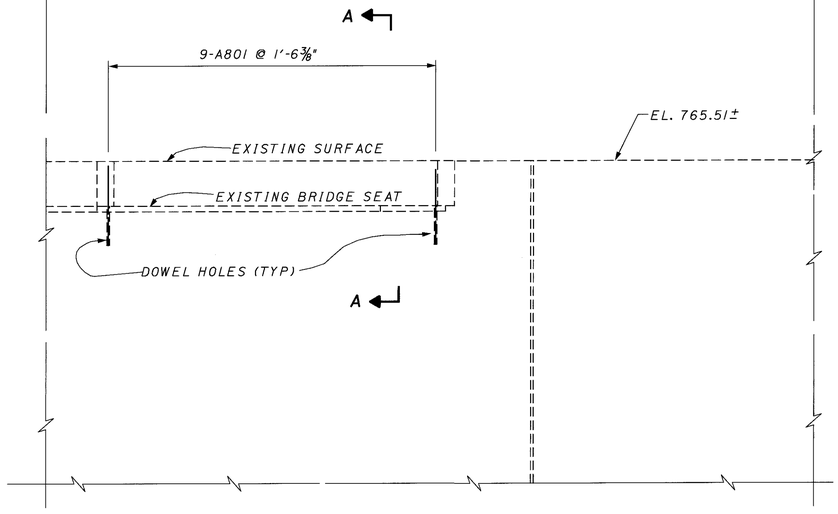
PART PLAN - INSIDE PORTION



PART PLAN - OUTSIDE PORTION



PART ELEVATION - INSIDE PORTION



PART ELEVATION - OUTSIDE PORTION

SECTIONS A-A AND B-B:
SEE SHEET 3/8

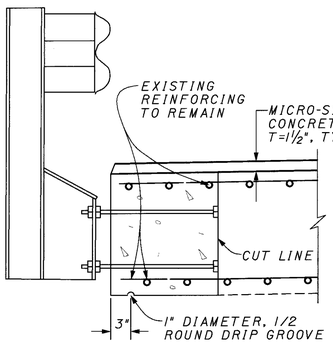
BENATEC ASSOCIATES, INC. 6/8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

RIGHT BRIDGE-FORWARD ABUTMENT

BRIDGE NO. FRA-315-1220 L/R
OVER WILSON RUN

FRANKLIN COUNTY

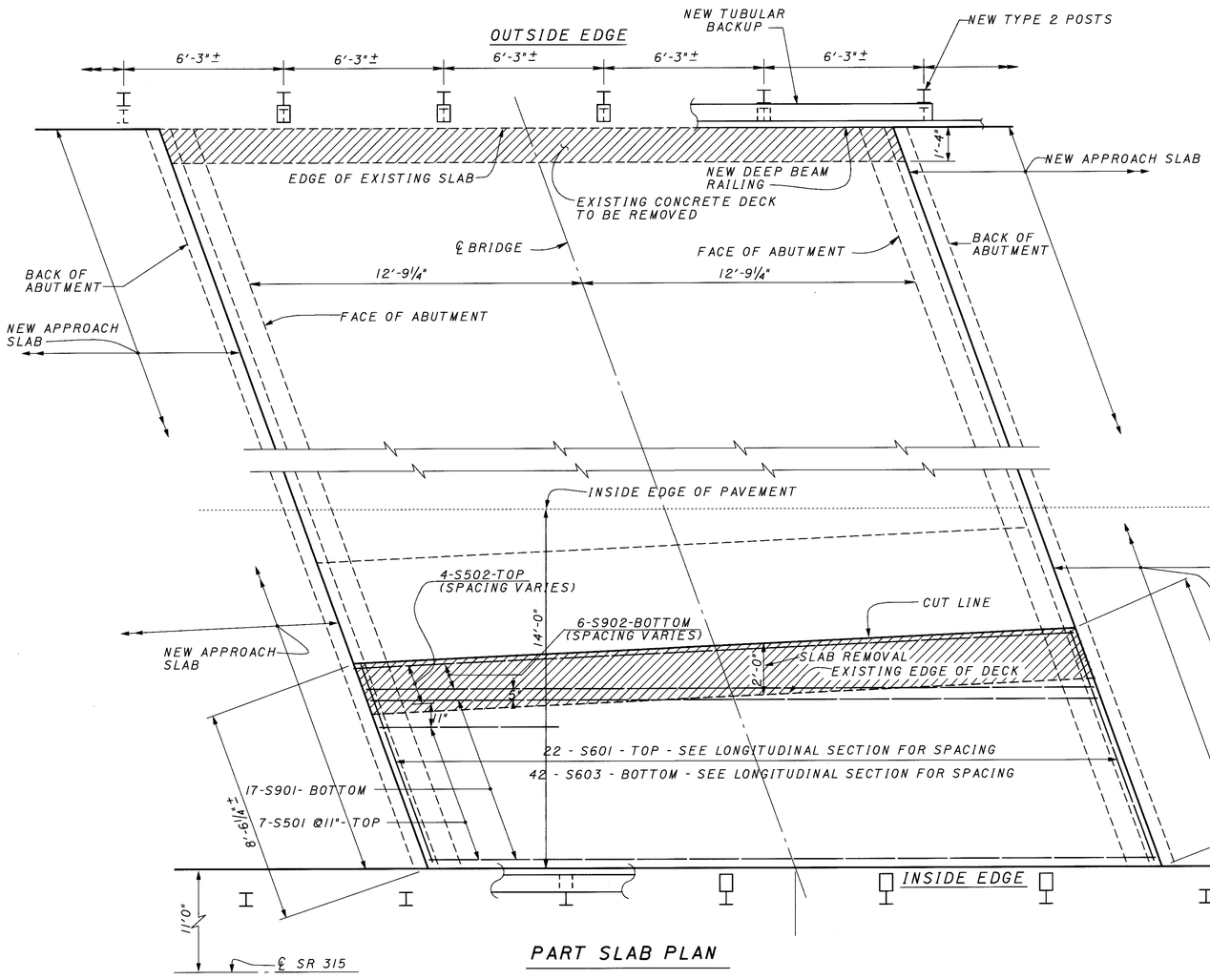
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



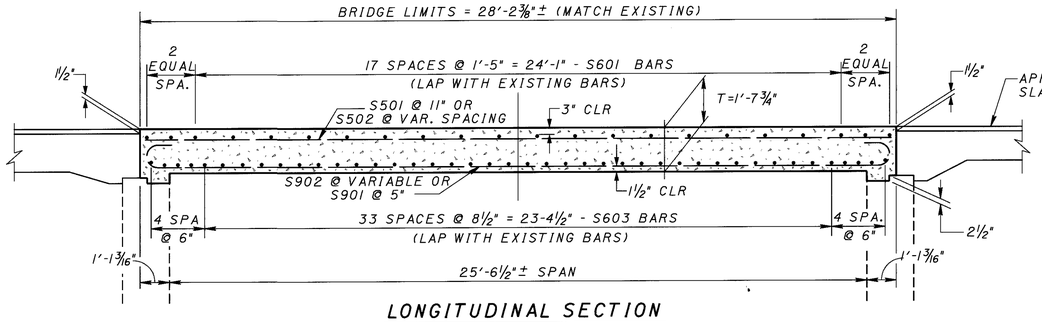
DETAIL A

TRANSVERSE SECTION

LEFT BRIDGE

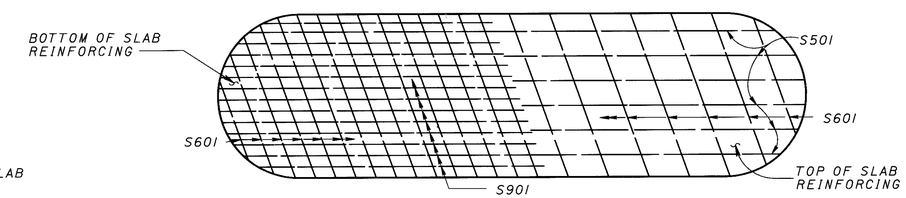


PART SLAB PLAN



LONGITUDINAL SECTION

LEFT BRIDGE



TYPICAL SLAB REINFORCING

LEFT BRIDGE AND RIGHT BRIDGE

SUPERSTRUCTURE NOTES, DECK FASCIA DETAILS, SCREED PLAN, SCREED ELEVATIONS: SEE SHEET 8/8

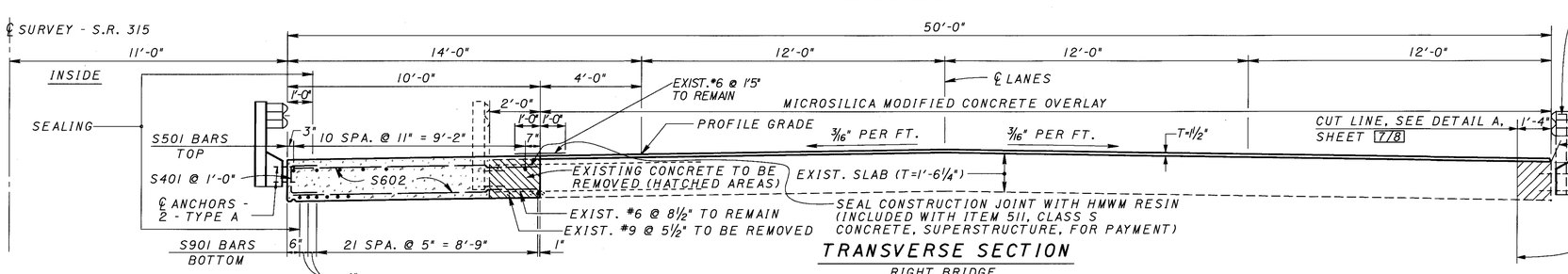
BENATEC ASSOCIATES, INC. 7/8
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

SUPERSTRUCTURE LEFT BRIDGE

BRIDGE NO. FRA-315-1220 L & R OVER WILSON RUN

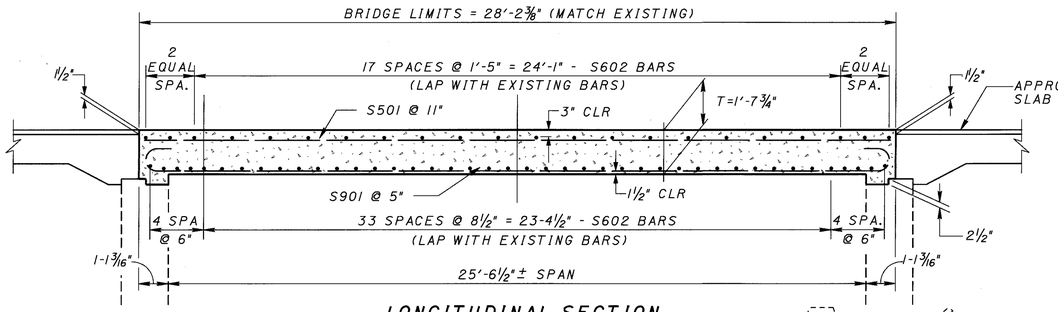
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	



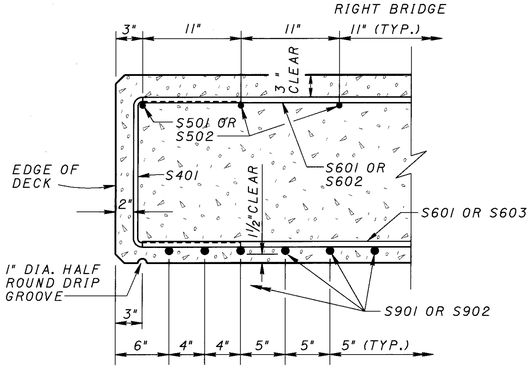
TRANSVERSE SECTION

RIGHT BRIDGE

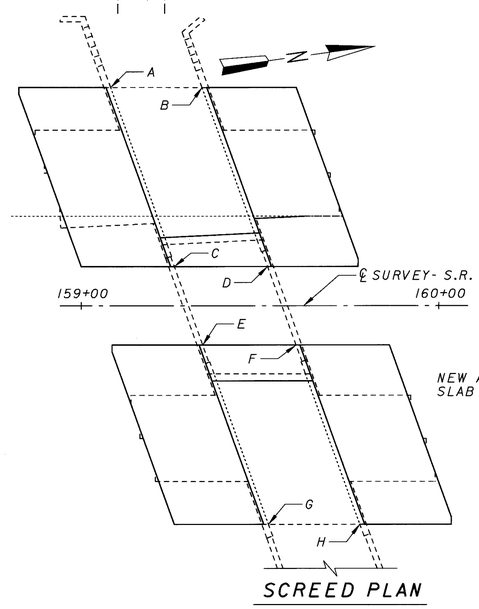


LONGITUDINAL SECTION

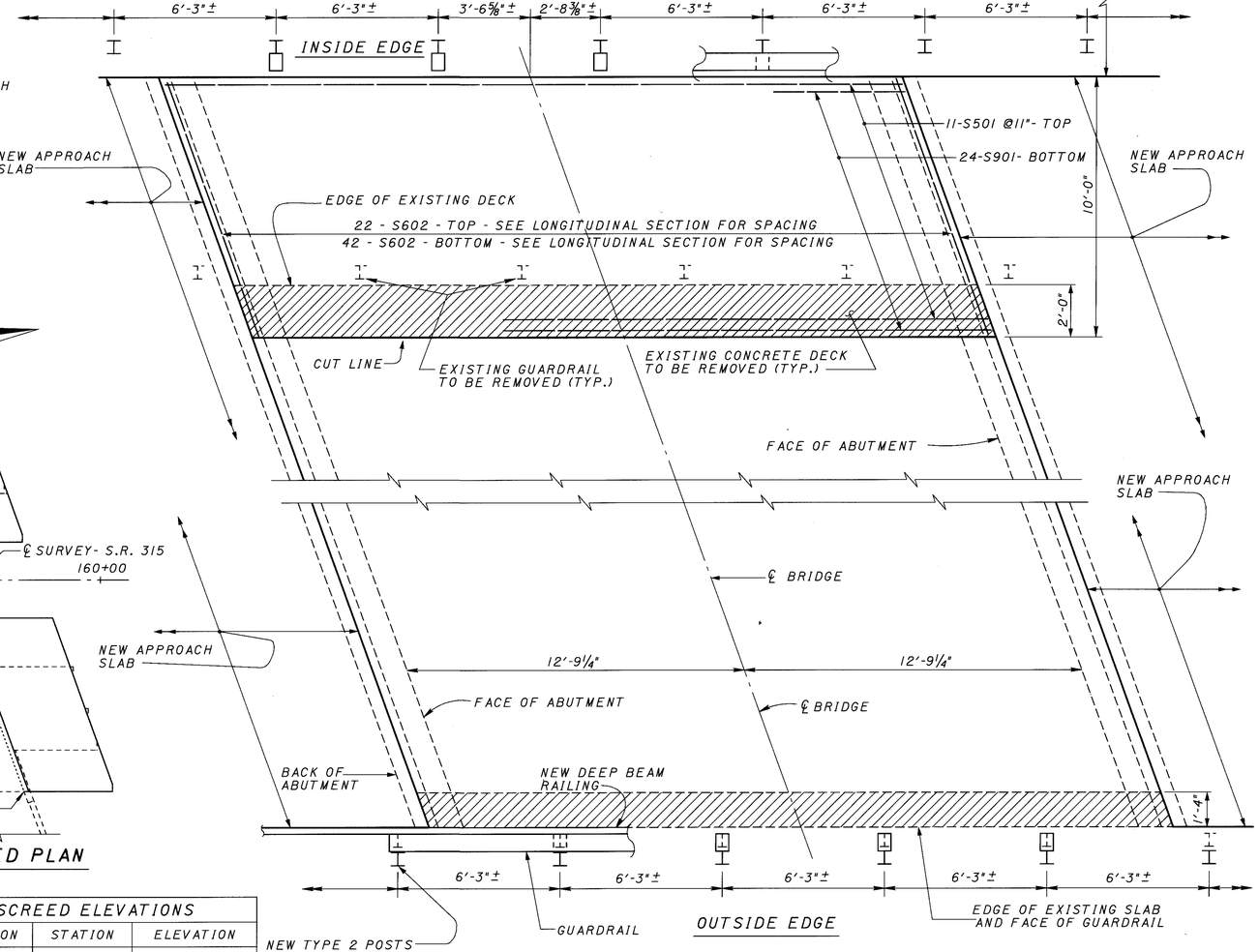
RIGHT BRIDGE



DECK FASCIA DETAIL



SCREED PLAN

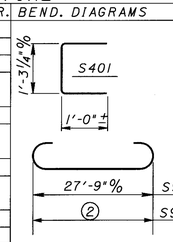


OUTSIDE EDGE

PART SLAB PLAN

EPOXY COATED REINFORCING STEEL, GRADE 60- SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	SHP	LT. BR.	RT. BR.	BEND. DIAGRAMS
S401	58	3'-0"	116	BT	29	29	
S501	18	27'-10"	523	S	7	11	
S502	1 SER OF 4	①	115	S	1 SER OF 4		
S601	1 SER OF 22	④	296	S	1 SER OF 22		
S602	64	10'-5"	1001	S		64	
S603	1 SER OF 42	⑤	565	S	1 SER OF 42		
S901	41	30'-3"	4217	BT	17	24	
S902	1 SER OF 6	③	614	BT	1 SER. OF 6		
TOTAL			7447				



① VARIES FROM 27'-6" TO 27'-10", INCREMENT= 1⅜"
② VARIES FROM 27'-5" TO 27'-9", INCREMENT= ⅞"
③ VARIES FROM 29'-11" TO 30'-3", INCREMENT= ⅞"
④ VARIES FROM 8'-3" TO 9'-8", INCREMENT= 2½"
⑤ VARIES FROM 8'-3" TO 9'-8", INCREMENT= ⅜"

NOTES BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A NO. 5 SIZE AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS. "STD" WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR. ALL REINFORCING STEEL TO BE EPOXY COATED.

SCREED ELEVATIONS

LOCATION	STATION	ELEVATION
A	159+08.03	765.15
B	159+33.57	765.26
C	159+26.23	765.23
D	159+51.77	765.35
E	159+34.23	765.27
F	159+59.77	765.39
G	159+52.43	765.36
H	159+77.97	765.49

SUPERSTRUCTURE NOTES

DEEP BEAM BRIDGE GUARDRAIL WITH TUBULAR BACKUP AND TYPE 2 POSTS: SEE STANDARD DRAWING DBR-2-73

CAMBER OF 5/16" SHALL BE PROVIDED TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

BENATEC ASSOCIATES, INC.
119 DILLMONT DRIVE
COLUMBUS, OHIO 43235

8 / 8

SUPERSTRUCTURE RIGHT BRIDGE

BRIDGE NO. FRA-315-1220 L & R
OVER WILSON RUN

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	CJK	ELC	RWM	4-95	