

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
JEF-7-10.83
VILLAGE OF BRILLIANT
CITY OF MINGO JUNCTION
WELLS & STEUBENVILLE TOWNSHIPS
JEFFERSON COUNTY

PROJECT DESCRIPTION

RESURFACING OF 3.95 MILES OF S.R. 7, INCLUDING NEW CONCRETE MEDIAN BARRIER AND INLETS, REBUILT GUARDRAIL, PAVEMENT MARKING, AND RUMBLE STRIPS.

LIMITED ACCESS

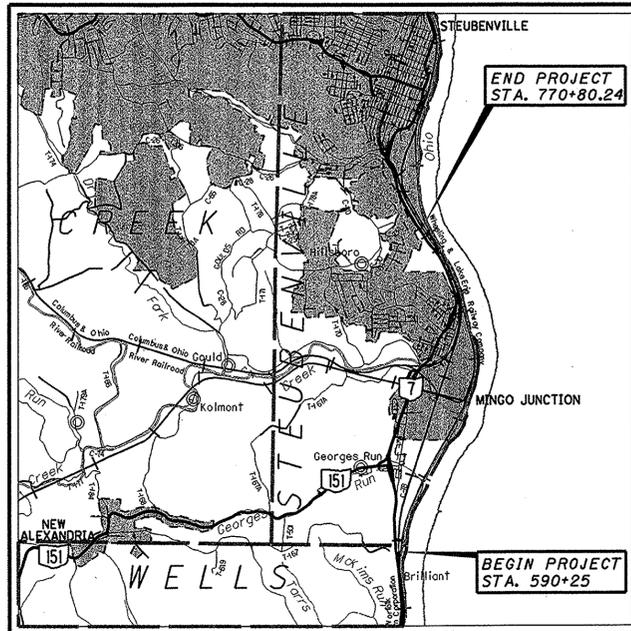
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2010 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 APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

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



LOCATION MAP

LATITUDE: 40°18'50" LONGITUDE: 80°36'55"



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

DESIGN DESIGNATION

	10.83 to 11.85	11.85 to 12.65	12.65 to 13.68	13.68 to 14.78
CURRENT ADT (2011)	14230	15720	20550	23310
DESIGN YEAR ADT (2023)	14230	15720	20900	23310
DESIGN HOURLY VOLUME (2023)	1400	1550	2060	2300
DIRECTIONAL DISTRIBUTION	53%	57%	57%	60%
TRUCKS (24 HOUR B&C)	16%	13%	13%	12%
DESIGN SPEED	55 MPH	55 MPH	55 MPH	55 MPH
LEGAL SPEED	55 MPH	55 MPH	55 MPH	55 MPH

DESIGN FUNCTIONAL CLASSIFICATION:
URBAN FREEWAY/EXPRESSWAY _____
NHS PROJECT _____ YES

DESIGN EXCEPTIONS APPROVAL DATE SHEET NO.

LANE WIDTH	12-14-10	6
SHOULDER WIDTH	12-14-10	4, 5
BRIDGE WIDTH	12-14-10	2, 3
SUPERELEVATION	12-14-10	2, 3
HORIZONTAL CLEARANCE	12-14-10	3

PROJECT EARTH DISTURBED AREA = N/A MAINTENANCE PROJECT
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = N/A MAINTENANCE PROJECT
NOTICE OF INTENT EARTH DISTURBED AREA = N/A MAINTENANCE PROJECT

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	
		RM-4.3	10-16-09	MT-35.10	4-20-01	MT-101.90	1-16-09	TC-41.20	1-19-01	800-2010	1-21-11
BP-3.1	10-19-07	RM-4.4	10-16-09	MT-95.30	7-17-09					832	5-5-09
BP-5.1	7-28-00	RM-4.5	10-16-09					TC-42.20	7-16-04		
BP-7.1	10-15-10	RM-4.6	4-16-10	MT-97.12	10-15-10	MT-105.10	1-16-09	TC-52.10	1-19-07		
BP-9.1	4-15-05			MT-98.10	7-17-09			TC-52.20	1-19-07		
				MT-98.11	7-17-09						
GR-1.1	7-16-04			MT-98.20	7-17-09			TC-61.30	4-16-10		
GR-2.1	1-16-04	I-2.2	7-15-05	MT-98.22	7-17-09						
		I-2.3	7-15-05	MT-98.28	7-17-09						
		I-2.4	7-15-05					TC-65.10	1-21-05		
GR-4.1	4-18-03							TC-65.11	1-21-05		
GR-4.2	1-19-07			MT-99.20	1-16-09			TC-71.10	1-15-10		
GR-5.1	4-16-10							TC-72.20	10-16-09		
GR-5.2	4-16-10	DM-4.3	4-17-09					TC-73.10	1-19-01		
GR-5.3	4-16-10	DM-4.4	4-17-09								

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:
O.D.O.T.
DISTRICT II
NEW PHILADELPHIA, OHIO

ENGINEERS SEAL:



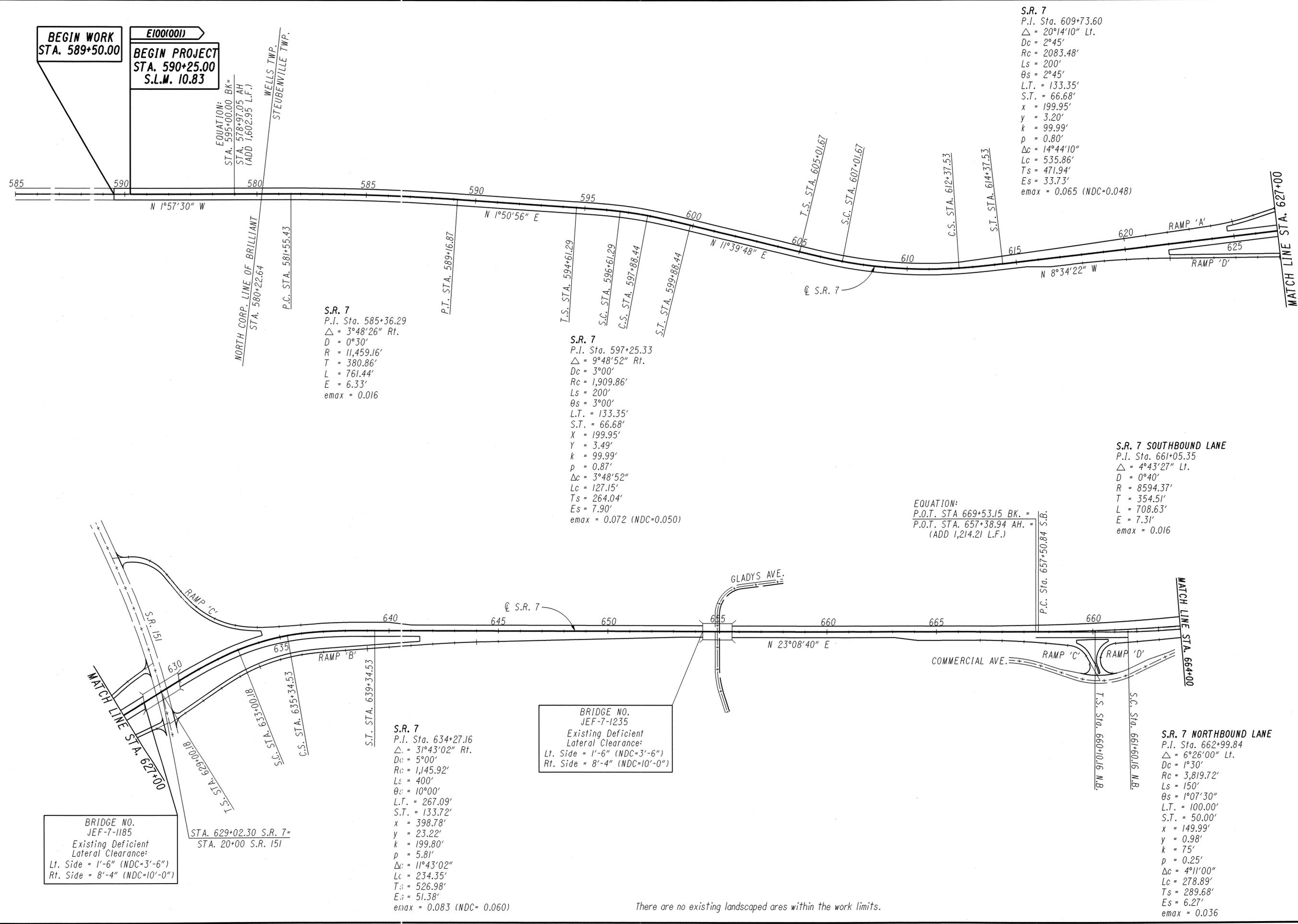
SIGNED: *Shane A. Locke*
DATE: December 22, 2010

APPROVED *Richard A. Ribble, Sr.*
DATE 12/22/10 DISTRICT DEPUTY DIRECTOR

APPROVED *Shane Alan Locke*
DATE 1-21-11 DIRECTOR, DEPARTMENT OF TRANSPORTATION

JEF-SR-7-10.83
110226 PJD-75418
Dist 11 4/21/2011
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FEDERAL PROJECT NO. **E100(001)**
PID NO. **75418**
CONSTRUCTION PROJECT NO. _____
RAILROAD INVOLVEMENT **NONE**
JEF-7-10.83
1/44



BEGIN WORK
STA. 589+50.00

E100(001)
BEGIN PROJECT
STA. 590+25.00
S.L.M. 10.83

EQUATION:
STA. 595+00.00 BK =
STA. 578+97.05 AH
(ADD 1,602.95 L.F.)

WELLS TWP.
STEUERENVILLE TWP.

NORTH CORP. LINE OF BRILLIANT
STA. 580+22.64

S.R. 7
P.I. Sta. 585+36.29
Δ = 3°48'26" Rt.
D = 0°30'
R = 11,459.16'
T = 380.86'
L = 761.44'
E = 6.33'
emax = 0.016

S.R. 7
P.I. Sta. 597+25.33
Δ = 9°48'52" Rt.
Dc = 3°00'
Rc = 1,909.86'
Ls = 200'
θs = 3°00'
L.T. = 133.35'
S.T. = 66.68'
X = 199.95'
Y = 3.49'
k = 99.99'
p = 0.87'
Δc = 3°48'52"
Lc = 127.15'
Ts = 264.04'
Es = 7.90'
emax = 0.072 (NDC=0.050)

S.R. 7
P.I. Sta. 609+73.60
Δ = 20°14'10" Lt.
Dc = 2°45'
Rc = 2083.48'
Ls = 200'
θs = 2°45'
L.T. = 133.35'
S.T. = 66.68'
X = 199.95'
Y = 3.20'
k = 99.99'
p = 0.80'
Δc = 14°44'10"
Lc = 535.86'
Ts = 471.94'
Es = 33.73'
emax = 0.065 (NDC=0.048)

S.R. 7 SOUTHBOUND LANE
P.I. Sta. 661+05.35
Δ = 4°43'27" Lt.
D = 0°40'
R = 8594.37'
T = 354.51'
L = 708.63'
E = 7.31'
emax = 0.016

EQUATION:
P.O.T. STA. 669+53.15 BK. =
P.O.T. STA. 657+38.94 AH. =
(ADD 1,214.21 L.F.)

BRIDGE NO.
JEF-7-1185
Existing Deficient
Lateral Clearance:
Lt. Side = 1'-6" (NDC=3'-6")
Rt. Side = 8'-4" (NDC=10'-0")

BRIDGE NO.
JEF-7-1235
Existing Deficient
Lateral Clearance:
Lt. Side = 1'-6" (NDC=3'-6")
Rt. Side = 8'-4" (NDC=10'-0")

S.R. 7
P.I. Sta. 634+27.16
Δ = 31°43'02" Rt.
Dc = 5°00'
Rc = 1,145.92'
Ls = 400'
θs = 10°00'
L.T. = 267.09'
S.T. = 133.72'
X = 398.78'
Y = 23.22'
k = 199.80'
p = 5.81'
Δc = 11°43'02"
Lc = 234.35'
Ts = 526.98'
Es = 51.38'
emax = 0.083 (NDC = 0.060)

S.R. 7 NORTHBOUND LANE
P.I. Sta. 662+99.84
Δ = 6°26'00" Lt.
Dc = 1°30'
Rc = 3,819.72'
Ls = 150'
θs = 1°07'30"
L.T. = 100.00'
S.T. = 50.00'
X = 149.99'
Y = 0.98'
k = 75'
p = 0.25'
Δc = 4°11'00"
Lc = 278.89'
Ts = 289.68'
Es = 6.27'
emax = 0.036

There are no existing landscaped areas within the work limits.

CALCULATED
RDA
CHECKED
TES

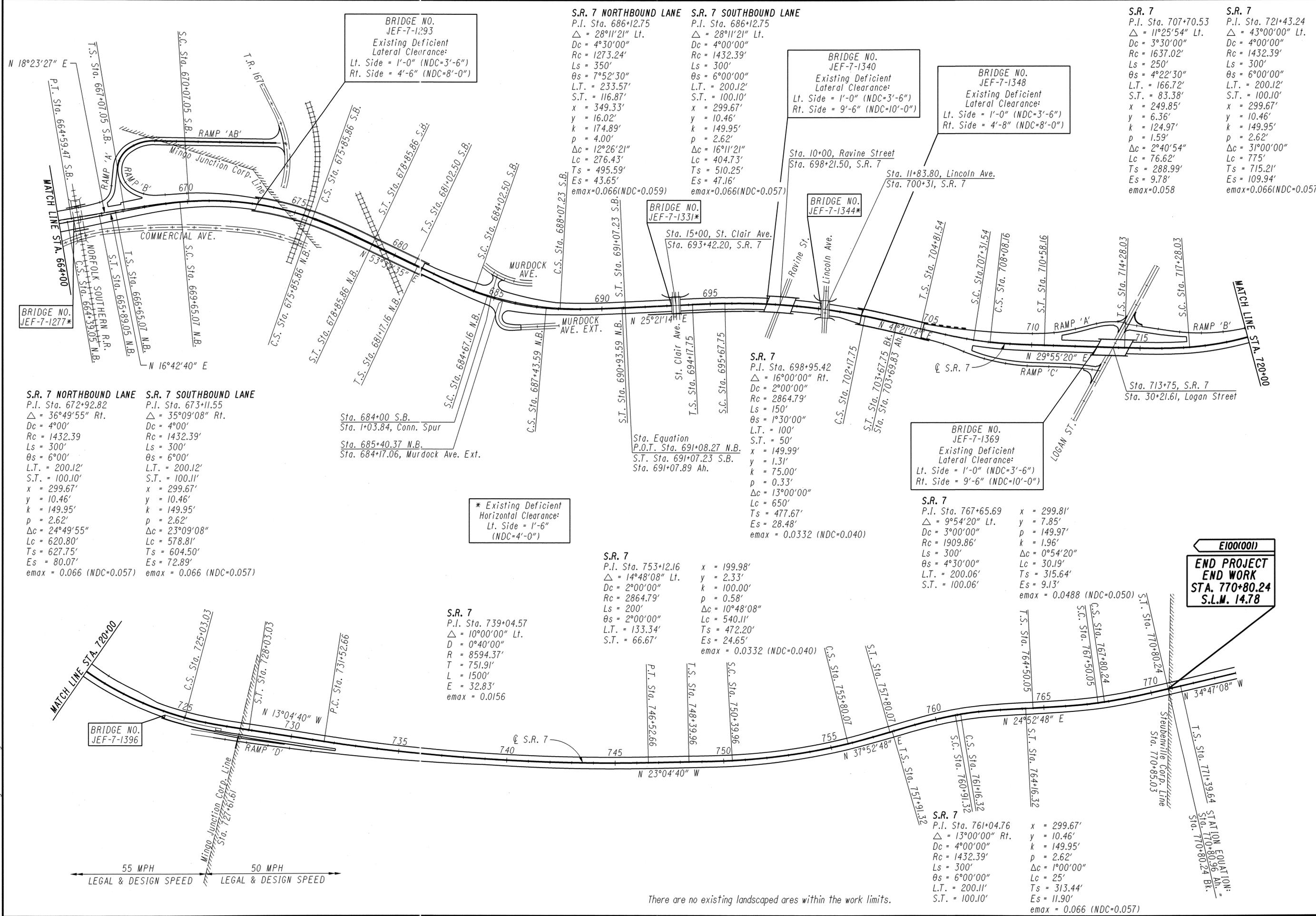
0 200 400
HORIZONTAL
SCALE IN FEET

SCHEMATIC PLAN
STA. 585+00 TO STA. 664+00

JEF-7-10.83

2
44

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S.R. 7 NORTHBOUND LANE
 P.I. Sta. 672+92.82
 $\Delta = 36^\circ 49' 55''$ Lt.
 Dc = 4'00"
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^\circ 00'$
 L.T. = 200.12'
 S.T. = 100.10'
 x = 299.67'
 y = 10.46'
 k = 149.95'
 p = 2.62'
 $\Delta c = 24^\circ 49' 55''$
 Lc = 620.80'
 Ts = 627.75'
 Es = 80.07'
 emax = 0.066 (NDC=0.057)

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 673+11.55
 $\Delta = 35^\circ 09' 08''$ Rt.
 Dc = 4'00"
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^\circ 00'$
 L.T. = 200.12'
 S.T. = 100.11'
 x = 299.67'
 y = 10.46'
 k = 149.95'
 p = 2.62'
 $\Delta c = 23^\circ 09' 08''$
 Lc = 578.81'
 Ts = 604.50'
 Es = 72.89'
 emax = 0.066 (NDC=0.057)

S.R. 7 NORTHBOUND LANE
 P.I. Sta. 686+12.75
 $\Delta = 28^\circ 11' 21''$ Lt.
 Dc = 4'30"00"
 Rc = 1273.24'
 Ls = 350'
 $\theta_s = 7^\circ 52' 30''$
 L.T. = 233.57'
 S.T. = 116.87'
 x = 349.33'
 y = 16.02'
 k = 174.89'
 p = 4.00'
 $\Delta c = 12^\circ 26' 21''$
 Lc = 276.43'
 Ts = 495.59'
 Es = 43.65'
 emax=0.066(NDC=0.059)

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 686+12.75
 $\Delta = 28^\circ 11' 21''$ Rt.
 Dc = 4'00"00"
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^\circ 00' 00''$
 L.T. = 200.12'
 S.T. = 100.10'
 x = 299.67'
 y = 10.46'
 k = 149.95'
 p = 2.62'
 $\Delta c = 16^\circ 11' 21''$
 Lc = 404.73'
 Ts = 510.25'
 Es = 47.16'
 emax=0.066(NDC=0.057)

S.R. 7
 P.I. Sta. 707+70.53
 $\Delta = 11^\circ 25' 54''$ Lt.
 Dc = 3'30"00"
 Rc = 1637.02'
 Ls = 250'
 $\theta_s = 4^\circ 22' 30''$
 L.T. = 166.72'
 S.T. = 83.38'
 x = 249.85'
 y = 6.36'
 k = 124.97'
 p = 1.59'
 $\Delta c = 2^\circ 40' 54''$
 Lc = 76.62'
 Ts = 288.99'
 Es = 9.78'
 emax=0.058

S.R. 7
 P.I. Sta. 721+43.24
 $\Delta = 43^\circ 00' 00''$ Lt.
 Dc = 4'00"00"
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^\circ 00' 00''$
 L.T. = 200.12'
 S.T. = 100.10'
 x = 299.67'
 y = 10.46'
 k = 149.95'
 p = 2.62'
 $\Delta c = 31^\circ 00' 00''$
 Lc = 775'
 Ts = 715.21'
 Es = 109.94'
 emax=0.066(NDC=0.057)

* Existing Deficient Horizontal Clearance:
 Lt. Side = 1'-6"
 (NDC=4'-0")

S.R. 7
 P.I. Sta. 753+12.16
 $\Delta = 14^\circ 48' 08''$ Lt.
 Dc = 2'00"00"
 Rc = 2864.79'
 Ls = 200'
 $\theta_s = 2^\circ 00' 00''$
 L.T. = 133.34'
 S.T. = 66.67'

S.R. 7
 P.I. Sta. 755+80.07
 $\Delta = 10^\circ 48' 08''$ Rt.
 Dc = 2'00"00"
 Rc = 2864.79'
 Ls = 200'
 $\theta_s = 2^\circ 00' 00''$
 L.T. = 133.34'
 S.T. = 66.67'

S.R. 7
 P.I. Sta. 767+65.69
 $\Delta = 9^\circ 54' 20''$ Lt.
 Dc = 3'00"00"
 Rc = 1909.86'
 Ls = 300'
 $\theta_s = 4^\circ 30' 00''$
 L.T. = 200.06'
 S.T. = 100.06'

S.R. 7
 P.I. Sta. 767+65.69
 $\Delta = 9^\circ 54' 20''$ Rt.
 Dc = 3'00"00"
 Rc = 1909.86'
 Ls = 300'
 $\theta_s = 4^\circ 30' 00''$
 L.T. = 200.06'
 S.T. = 100.06'

E100(001)
END PROJECT
END WORK
STA. 770+80.24
S.L.M. 14.78

55 MPH LEGAL & DESIGN SPEED
 50 MPH LEGAL & DESIGN SPEED

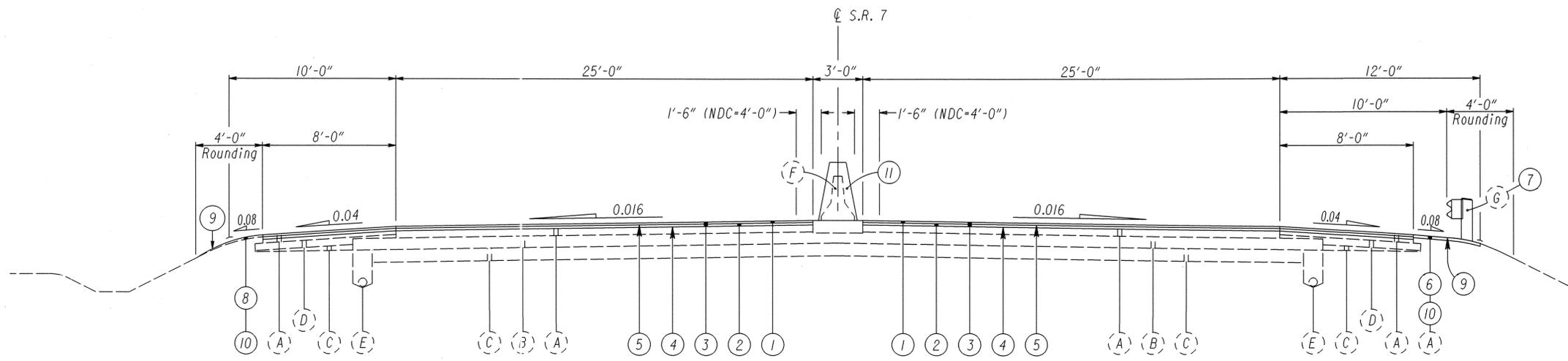
There are no existing landscaped areas within the work limits.

CALCULATED RDA CHECKED TES

SCHEMATIC PLAN
STA. 664+00 TO STA. 774+00

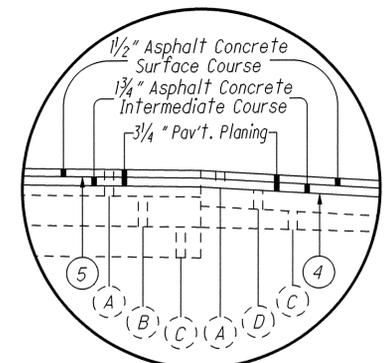
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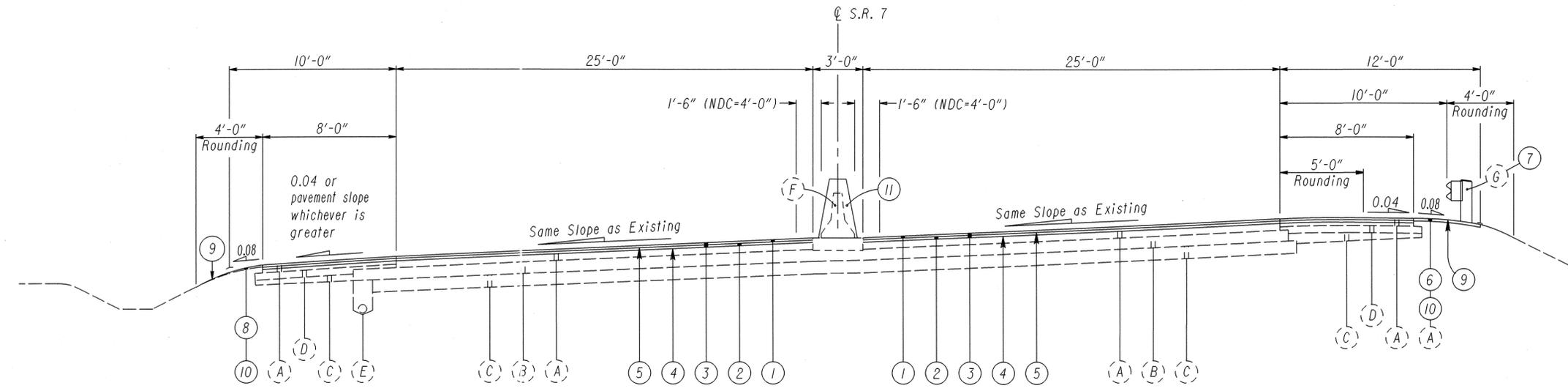


NORMAL SECTION

STA. 590+25 TO STA. 579+00 (STATION EQUATION: STA. 595+00 BACK = STA. 578+97.05 AHEAD)
 STA. 617+50 TO STA. 627+03
 STA. 641+31 TO STA. 657+99
 STA. 657+99 TO STA. 667+07.05 (S.B. ONLY) (STATION EQUATION: STA. 669+53.15 BACK = STA. 657+38.94 AHEAD)
 STA. 678+85.86 TO STA. 681+02.50 (S.B.)
 STA. 678+85.86 TO STA. 681+17.16 (N.B.)
 STA. 691+44.44 TO STA. 693+96.88 (S.B.)
 STA. 691+44.44 TO STA. 691+50 (N.B.)



TYPICAL RESURFACING DETAIL
(MAINLINE & SHOULDER)



SUPERELEVATED SECTION

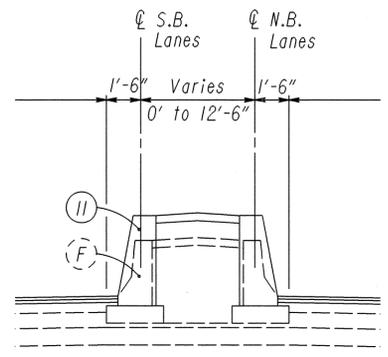
STA. 579+00 TO STA. 617+50
 STA. 627+03 TO STA. 641+31
 STA. 657+99 TO STA. 678+85.86 (N.B. ONLY)
 STA. 667+07.05 TO STA. 678+85.86 (S.B. ONLY)
 STA. 691+07.89 TO STA. 691+44.44
 STA. 693+96.88 TO STA. 770+80.24 (S.B.)
 STA. 691+50 TO STA. 770+80.24 (N.B.)

EXISTING LEGEND

- (A) — EXISTING ASPHALT CONCRETE
- (B) — EXISTING BITUMINOUS AGGREGATE BASE
- (C) — EXISTING 6" SUBBASE
- (D) — EXISTING AGGREGATE BASE
- (E) — EXISTING 6" UNDERDRAIN
- (F) — EXISTING CONCRETE BARRIER
- (G) — EXISTING GUARDRAIL
- (H) — EXISTING CONCRETE MEDIAN

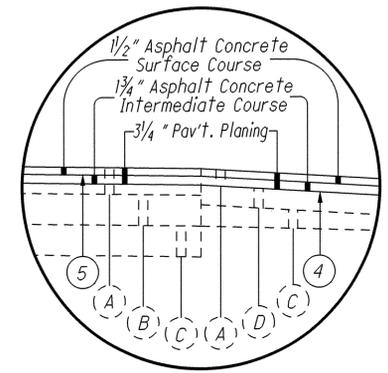
PROPOSED LEGEND

- (1) — ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446), AS PER PLAN
- (2) — ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (446)
- (3) — ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
- (4) — ITEM 407 - TACK COAT (0.075 GAL./S.Y.)
- (5) — ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./S.Y.)
- (6) — ITEM 202 - PAVEMENT REMOVED
- (7) — ITEM 606 - GUARDRAIL, TYPE 5
- (8) — ITEM 209 - LINEAR GRADING, AS PER PLAN
- (9) — ITEM 408 - PRIME COAT, AS PER PLAN
- (10) — ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN
- (11) — ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B

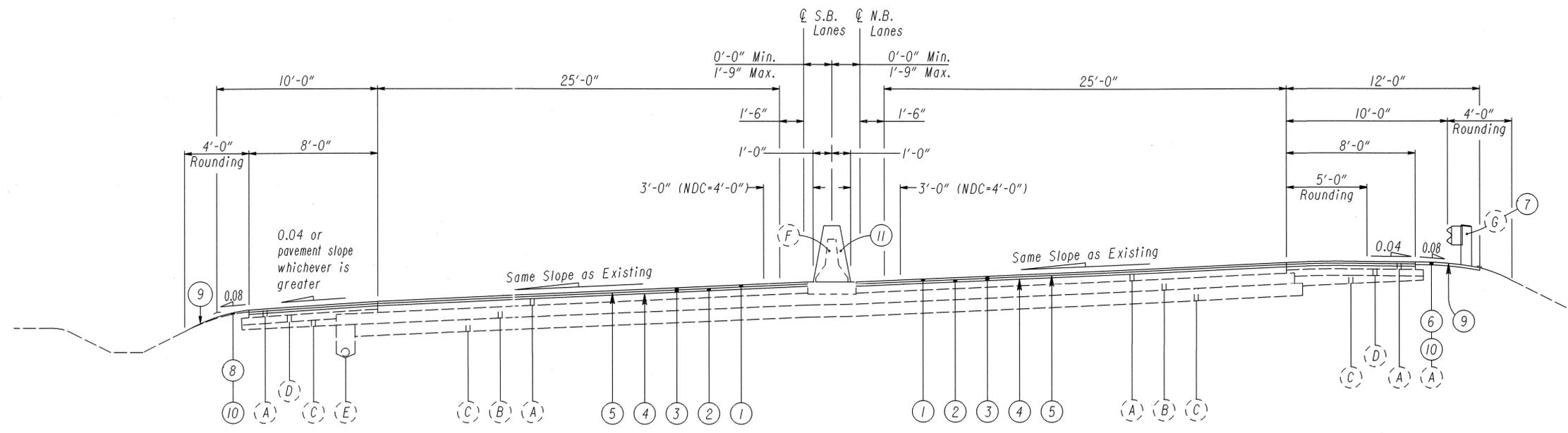


DOUBLE CENTERLINE SECTION

STA. 657+50.84 TO STA. 659+36.20 (BARRIER TRANSITION)
 STA. 659+36.20 TO STA. 667+87.40 N.B. & STA. 667+86.70 S.B.
 STA. 667+87.40 N.B. & STA. 667+86.70 S.B. TO STA. 670+07.79 N.B.
 & STA. 670+07.05 S.B. = (STA. 670+07.79 one \varnothing AHEAD) BARRIER TRANSITION



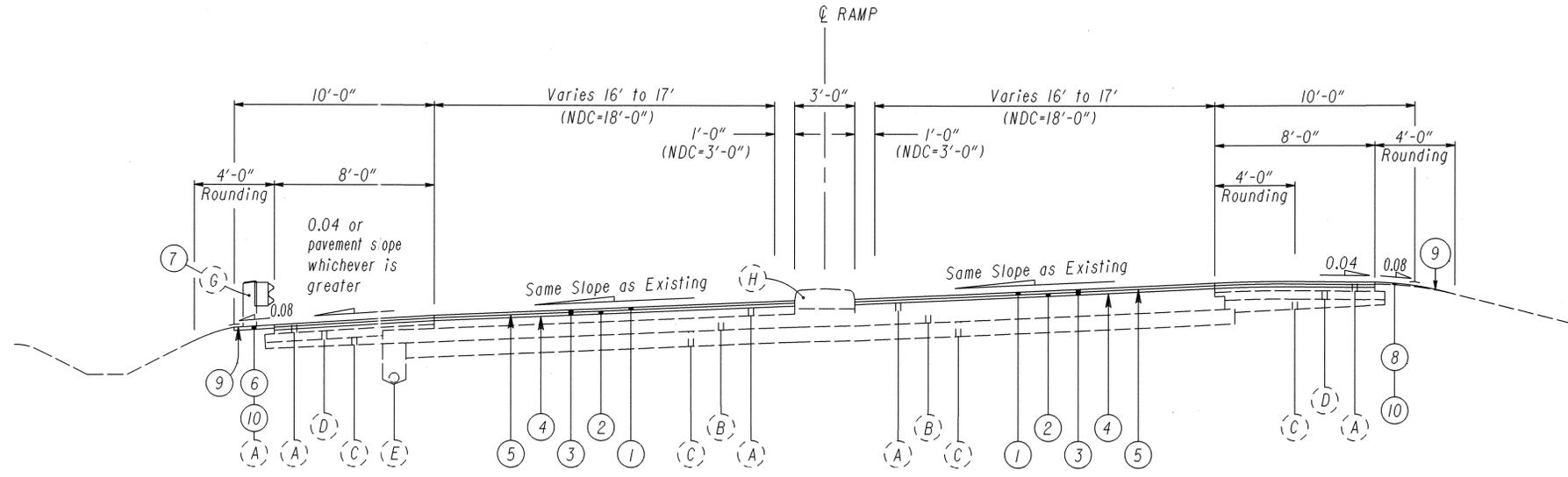
TYPICAL RESURFACING DETAIL
(MAINLINE & SHOULDER)



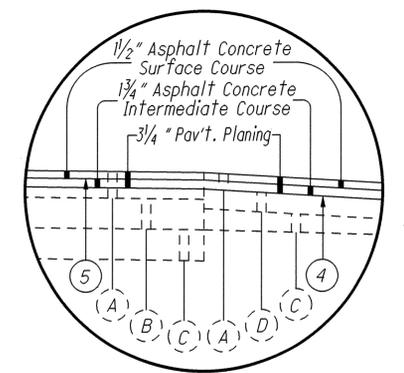
SUPERELEVATED SECTION

STA. 681+02.50 TO STA. 691+07.89 (S.B.) (STATION EQUATION: STA. 691+07.23 BACK = STA. 691+07.89 AHEAD)
 STA. 681+17.16 TO STA. 691+07.89 (N.B.) (STATION EQUATION: STA. 691+08.27 BACK = STA. 691+07.89 AHEAD)

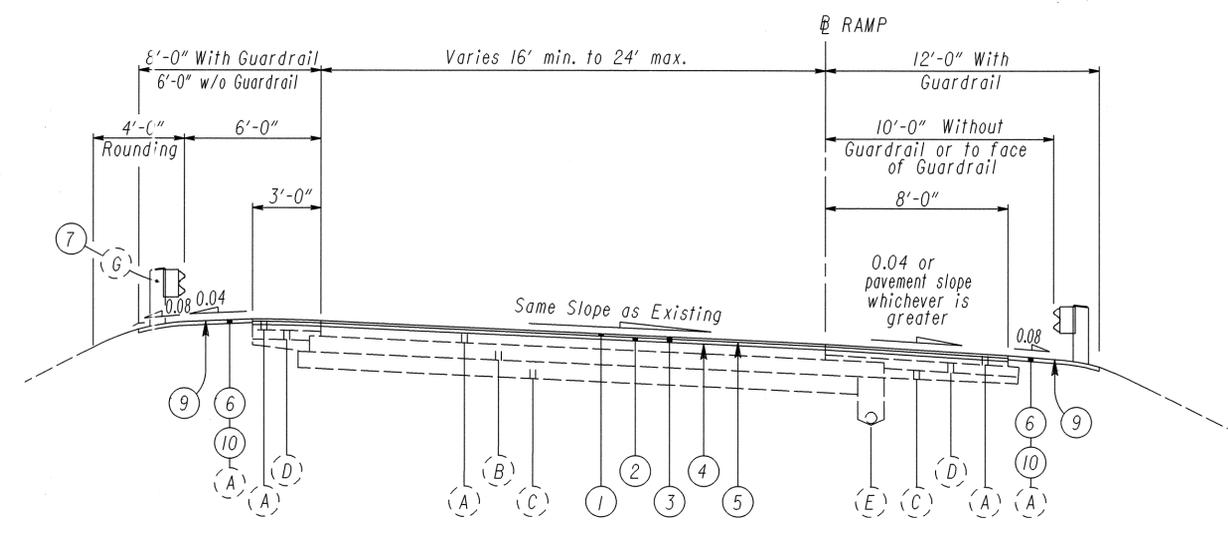
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**COMMERCIAL AVENUE INTERCHANGE
RAMP A-B**
STA. 55+06 TO STA. 63+29.63



**TYPICAL RESURFACING DETAIL
(RAMP & SHOULDER)**



TYPICAL ONE WAY RAMP

- | | |
|--|---|
| <p>S.R. 151 INTERCHANGE
 RAMP A - STA. 20+00.00 TO STA. 29+43.68
 RAMP B - STA. 29+14.00 TO STA. 45+25.00
 RAMP C - STA. 26+25.08 TO STA. 36+75.00
 RAMP D - STA. 17+50.00 TO STA. 28+65.09</p> | <p>COMMERCIAL AVENUE INTERCHANGE
 RAMP A - STA. 65+00.00 TO STA. 67+88.96
 RAMP B - STA. 63+29.63 TO STA. 67+00.00
 RAMP C - STA. 66+83.29 TO STA. 73+03.82
 RAMP D - STA. 58+76.54 TO STA. 63+30.11</p> |
|--|---|

- LOGAN STREET INTERCHANGE**
 RAMP A - STA. 9+60 TO STA. 14+38.90
 RAMP B - STA. 14+48.69 TO STA. 17+73.97
 RAMP C - STA. 7+04.94 TO STA. 13+38.50
 RAMP D - STA. 26+45 TO STA. 32+10

FOR LEGEND SEE SHEET NO. 4.

TYPICAL SECTIONS

JEF-7-10.83

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ROUNDING

The rounding at slope breakpoints shown on the Typical Sections apply to all cross sections even though otherwise shown.

UTILITIES

Listed below are all utilities located within the project construction limits together with their respective owners.

AEP Ohio Power Company P.O. Box 99 47587 National Road St. Clairsville, Ohio 43950 740-699-7845	Jefferson Co. Water & Sewer District P.O. Box 2579 596 State Route 43 Wintersville, Ohio 43953 740-537-2214
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Columbia Gas Transmission 589 North State Road Medina, Ohio 44256 419-340-6403	Comcast 100 Wexley Avenue, Suite A Wintersville, Ohio 43953 740-346-2250
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AT&T Ohio, Inc. 3935 Northpointe Road Zanesville, Ohio 43701 740-454-3455	Verizon 1121 Tuscarawas Avenue New Philadelphia, Ohio 44663 330-364-0510
--	---

Columbiana Gas of Ohio, Inc 300 Luray Drive Wintersville, Ohio 43953 740-266-4282	The Honorable Domenic Chappano Village of Mingo Junction 501 Commercial Street Mingo Junction, Ohio 43938 740-535-1511
--	--

Ohio Department of Transportation
2201 Reiser Avenue, SE
New Philadelphia, Ohio 44663
330-308-3980

There are no underground utilities shown on this plan. The nature of the work required by this project will not affect any known underground utilities that exist under or adjacent to the work area.

ELEVATION DATUM

All elevations are assumed, unless otherwise noted.

WORK LIMITS

The work limits shown on these plans are for the physical construction only. The installation and operation of all work zone traffic control and work zone traffic control devices required by these plans shall be provided by the Contractor whether inside or outside these work limits.

PROFILE AND ALIGNMENT

The work proposed by this project is for the grinding and resurfacing of the existing pavement. The alignment and superelevation rates of the existing pavement will not be changed and the profile of the proposed surface will be similar to that of the existing pavement. Previous construction plans showing the original alignment and profile are listed below.

PREVIOUS CONSTRUCTION PLANS

The following previous construction plans, which show the original alignment and profile, are available for inspection at the ODOT District II office:

- JEF-7-11.35 Original Construction Plan, 1959
- JEF-7-13.53 Original Construction Plan, 1959
- JEF-7-10.82 Upgrading Plan, 1992
- JEF-7-13.11 Upgrading Plan, 1994
- JEF-7-14.62 Slope Stabilization, 2001

SAME SEASON COMPLETION OF SURFACE COURSE

Any length of resurfacing work started in a construction season shall have the surface course placed that same season.

ITEM 201 - CLEARING AND GRUBBING

Although there are no trees or stumps specifically marked for removal within the limits of the project, a lump sum quantity is included in the General Summary for Item 201, Clearing and Grubbing. All provisions as set forth in the specifications under this item are included in the lump sum price bid for Item 201, Clearing and Grubbing.

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

Materials furnished for fine and coarse aggregates used in this item shall exclude all stone and crushed carbonate stone.

ITEM 408 - PRIME COAT, AS PER PLAN

The Contractor will apply "MC-70" at a rate of 0.4 gallons per square yard, or as determined by the Engineer, to the completed aggregate shoulder. A shield shall be provided to prevent the spraying or drifting of liquid bituminous material onto the edge of the pavement or edgeline. The attention of the Contractor is directed to 107.10 of the specifications.

CENTERLINE REFERENCE MONUMENTS

Existing centerline monument assemblies are located at the following stations on S.R. 7. The Contractor shall take care not to disturb any of these centerline reference monuments.

STATION	
P.O.T.	578+97.05
P.O.T.	580+22.64
P.C.	581+55.43
P.T.	589+16.87
P.C.	595+27.96
P.C.C.	596+61.29
P.C.C.	597+88.44
P.T.	599+21.77
P.C.	605+68.34
P.C.C.	607+01.67
P.C.C.	612+37.53
P.T.	613+70.86
P.O.T.	621+70.86
P.O.T.	627+75.00
P.C.	630+33.55
P.C.C.	633+00.18
P.C.C.	635+34.53
P.T.	638+01.16
P.O.T.	646+00.00
P.O.T.	654+00.00
P.O.T.	662+00.00
P.O.T.	669+53.15 Bk.
P.O.T.	657+38.94 Ah.
P.C.	660+60.16
P.C.C.	661+60.16
P.C.C.	664+39.05
P.T.	665+39.05
P.C.	667+65.07
P.C.C.	669+65.06
P.C.	682+02.51
P.C.C.	684+02.53 Bk. = 684+02.50 Ah.

STATION	
P.C.C.	688+07.23
P.T.	690+07.25 Bk. = 690+07.88 Ah.
P.C.	694+77.95
P.C.C.	695+77.95
P.C.C.	702+17.75
P.T.	703+17.75 Bk.
P.C.	705+64.88
P.C.C.	707+31.56 Bk.
P.C.C.	708+08.16
P.T.	709+74.84 Bk.
P.C.	715+28.03
P.C.C.	717+28.05 Bk.
P.C.C.	725+03.02
P.T.	727+03.04 Bk.
P.C.	731+52.66
P.O.C.	739+00.00
P.T.	746+52.66
P.C.	749+06.63
P.C.C.	750+39.96
P.C.C.	755+80.07
P.T.	757+13.40
P.C.	758+91.32
P.C.C.	760+91.34 Bk.
P.C.C.	761+16.31
P.T.	763+16.33 Bk.
P.C.	765+50.05
P.C.C.	767+50.07 Bk.
P.C.C.	767+80.24
P.T.	769+80.26 Bk.
P.O.T.	770+80.24 Bk.

ITEM 209 - LINEAR GRADING, AS PER PLAN

Graded shoulders shall be reshaped as directed by the Engineer to ensure a smooth drainable surface that is free of all irregularities. Vegetation, material buildup, and collected debris on the shoulder or within the linear grading limits shall be removed and disposed of by the Contractor as specified in section 209.01, or wasted over fill slopes at the direction of the Engineer.

This item shall meet the requirements of Item 209 Linear Grading except as follows:

The Contractor shall use the grindings from the project in lieu of Item - 617 Compacted Aggregate. See Item 617, Compacted Aggregate, As Per Plan note.

All equipment, materials, and labor required to perform the work outlined above shall be included for payment under Item 209, Linear Grading, As Per Plan.

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

Graded shoulders shall be reshaped as per the requirements of Item 617, Compacted Aggregate. Grindings shall be used in lieu of Item 617, Compacted Aggregate. The cost for storing the grindings on the project and placing the grindings shall also be included in this item.

COORDINATION OF RESURFACING AND PLANING OPERATIONS

The pavement planing and resurfacing operation shall be completed in a timely manner as directed by the Engineer. The grindings shall become the property of the Contractor with the exception that some grindings will be utilized as noted in the plans for the graded shoulders. The 446 Intermediate Course resurfacing shall begin no more than seven (7) days after beginning the milling operation.

ITEM 621 - RAISED PAVEMENT MARKER REMOVED

Existing raised pavement markers shall become the property of the Contractor for disposal off the project. The requirement to fill the depressions shall be waived. The following quantity has been carried to the General Summary to remove existing raised pavement markers:

Item 621, Raised Pavement Marker Removed - - - - - 808 Each

AIR SPEED ZONE MARKING

The Contractor shall contact the District II Survey Operations Manager when the paving and linear grading is complete for the restoration of the Air Speed Zone Markings. The Air Speed Zone Markings will be applied by District personnel.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

This item shall consist of furnishing and installing either of the following guardrail end terminals, or an approved equal as listed on Roadway Engineering's Web Page at WWW.DOT.STATE.OH.US/DRRCZ under roadside safety devices for approved guardrail end treatments:

- 1). The ET-2000 (1997) manufactured by Trinity Industry, 1170 N. State Street, Girard, Ohio 44420 (Telephone: 330-545-4373).

The length of the ET-2000 (1997) system is considered to be 50'-0", inclusive of two 25'-0" 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
SSI42	E2000 PLUS 50'-0" Plan, Elevation & Sections 25'-0" Rail, Sleeve w/PL Posts 1-4	4/12/00	7/31/00
SSI41	ET2000 PLUS Plan, Elevation & Sections 25'-0" Rail, HBA Posts 1-4	2/29/00	7/31/00
SSI58	ET2000 PLUS 50'-0" With 12'-6" Rail, HBA Posts 1-4 Plan, Elevation & Sections	5/22/00	7/31/00
SS330	ET2000 PLUS 50'-0" With Four Foundation Tubes & Four CRT Posts	3/28/06	3/29/06
SS373	ET2000 PLUS 50'-0" With 7 SYT Posts & One HBA Post	6/20/09	1/20/09

- 2). The SKT-350 manufactured by Road Systems, Inc., 2516 Mallory Lane, Stow, Ohio 44224 (Telephone: 330-346-0721).

The length of the SK-350 system is considered to be 50'-0", inclusive of four 12'-6" 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
SKT Hinged CRT	Sequential Kinking Terminal (SKT-350) Four Posts Are Steel Hinged And Five Posts Are CRT	4/30/06	5/23/06
SKT-SP	Sequential Kinking Terminal (SKT-350) A Seven Post Option Using Standard Steel Post	3/30/09	3/4/09

The face of the Type E impact head shall be covered with a sheet of Type G Reflective Sheeting, per CMS 730.19, approximately 18" x 18", or 12" x 18" if applied to a rectangular ET-2000 "PLUS" extruder head.

Refer to manufacturer's instruction regarding the installation of, and the grading around, the foundation tubes and ground strut. The top of any foundation tube should be less than 4-inches above the ground. The placement of the foundation tubes should be an appropriate depth below the level line in order to maintain the finished guardrail height of 27 3/4" from the edge of the shoulder.

On-site grading is required if the top of the foundation tubes or top of the ground strut does project more than 4-inches above the ground line.

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

ITEM 606 - ANCHOR ASSEMBLY, TYPE B

This item shall consist of furnishing and installing either of the following guardrail end terminals, or an approved equal as listed on Roadway Engineering's Web Page at WWW.DOT.STATE.OH.US/DRRCZ under roadside safety devices for approved guardrail end treatments:

- 1). The SRT-350, guardrail end terminal as manufactured by Trinity Industry, 1170 N. State Street, Girard, Ohio 44420 (Telephone: 330-545-4373).

The length of the SRT-350 system is considered to be 37'-6", inclusive of three 12'-6" 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
SS444	Slotted Rail Terminal Post Layout and Erection Details SRT-350 (12.5, 8 Post)	7/12/99 Rev. 1	8/27/99
SS425M	Slotted Rail Terminal SRT-350 Post Layout and Erection Details (12.5, 9 Post)	6/21/97 Rev. 1	3/6/98

- 2). The FLEAT-350 manufactured by Road Systems, Inc., 2516 Mallory Lane, Stow, Ohio 44224 (Telephone: 330-346-0721).

The length of the FLEAT-350 is considered to be 37'-6", inclusive of three 12'-6" 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
FLT-M	Flared Energy Asorbing Terminal (FLEAT-350) Assembly	4/16/98	7/31/98
FLT-M Hinged CRT	Flared Energy Asorbing Terminal (Posts 1 and 2 are Steel Hinged)	5/4/06	5/23/06
FLT-SP	Flared Energy Asorbing Terminal (A Seven Post Option Using Standard Steel Posts)	3/30/09	3/4/09

Refer to the manufacturer's instruction regarding the installation of, and the grading around, the foundation tubes and ground strut. The top of any foundation tube should be less than 4-inches above the ground. The placement of the foundation tubes should be an appropriate depth below the level line in order to maintain the finished guardrail height of 27 3/4" from the edge of the shoulder.

On-site grading is required if the top of the foundation tubes or top of the ground strut does project more than 4-inches above the ground line.

The face of the Type B impact head shall be covered with Type G reflective sheeting, per CMS 730.19: Approximately 36" w x 12" h for the SRT-350 and 14" w x 20" h for the FLEAT.

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

ITEM 630 - REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION, AS PER PLAN

The following estimated quantity has been carried to the General Summary for the removal and reerection of the 'ONE WAY' sign on the median barrier at the Murdock Ave. Intersection. The Contractor shall note the location of the sign and reerect at same location.

Payment for the above work shall be made at the unit price bid for Item 630, Removal of Structure Mounted Sign and Reerection, As Per Plan and shall include all labor, tools, equipment, materials, and any necessary fabrication for the support assembly.

Item 630, Removal of Structure Mounted Sign and Reerection, As Per Plan - - - - - 1 Each

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

When it is necessary to splice proposed guardrail to existing guardrail, only the existing guardrail shall be cut, drilled, or punched. The connection shall be made using a "W-Beam Rail Splice" as shown in AASHTO M 180. Payment shall be included in the contract price for the respective guardrail items.

GUARDRAIL PLACEMENT

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.

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MAINTAINING TRAFFIC, AS PER PLAN

The Contractor shall maintain traffic at all times in accordance with the requirements of CMS Item 614, these maintenance of traffic notes and details, the Standard Construction Drawings, and the traffic control details described in these plans.

The minimum lane width for traffic control shall be 11 feet at all times. It is the responsibility of the Contractor to organize his work in such a manner to provide the most safety with the least inconvenience to the traveling public.

The Contractor is responsible for designing the maintenance of traffic scheme. The Contractor shall submit, in writing, this maintenance of traffic scheme and a schedule of operations to the Engineer and receive approval before work is started on the project.

Any open pavement trench or dropoff shall be adequately maintained and protected. The protection used shall meet the requirements of Standard Construction Drawing MT-101.90.

Under no circumstances shall the Contractor be permitted to have work zones which alternately close both the passing and travel lane unless the distance between the lane restrictions exceeds 2 miles.

The Contractor shall be responsible for smooth and orderly flow of traffic through the project area 24 hours per day for the duration of the project. This consists of notifying the Ohio State Patrol after encountering any accidents or disabled vehicles or objects hindering the flow of traffic.

The Contractor shall designate to the Engineer a person responsible for maintenance of traffic control during non-work hours who shall be available within thirty (30) minutes after notification.

Payment for providing watchmen, furnishing, erecting, maintaining and removing signs, cones, markers, special lighting, floodlighting, work zone pavement markings, work zone raised pavement markers, etc., shall be included in the lump sum price bid for Item 614 Maintaining Traffic, As Per Plan.

The Contractor shall furnish, install and maintain all additional signs or other traffic control devices as required above. All costs involved in furnishing, installing and maintaining these devices shall be included in the lump sum price bid for Item 614, Maintaining Traffic, As Per Plan.

Unless the Engineer deems it physically impossible, all construction equipment shall exit all work zones from the downstream end of the work zone or by interchange ramps. Under no circumstances shall the Contractor be permitted to directly transport or operate any equipment across the open lanes of the roadway.

Length and duration of lane closures and restrictions shall be at the approval of the Engineer. It is the intent to minimize the impact to the traveling public. Lane closures or restrictions over segments of the project in which no work is anticipated within a reasonable time frame, as determined by the Engineer, shall not be permitted. The level of utilization of maintenance of traffic devices shall be commensurate with the work in progress.

The planing and resurfacing will proceed continuously a minimum of five (5) days per week, weather permitting, excepting holidays and events listed below:

No work shall be performed and all existing lanes shall be open to traffic during the following designated holidays and events:

Memorial Day	Fourth of July
Labor Day	Thanksgiving

The period of time that the lanes are to be opened depends on the day of the week on which the holiday or event falls. The following schedule shall be used to determine this period:

Day of the week	Time all lanes must be opened to traffic
Sunday	12:00N Friday through 12:00N Monday
Monday	12:00N Friday through 12:00N Tuesday
Tuesday	12:00N Monday through 12:00N Wednesday
Wednesday	12:00N Tuesday through 12:00N Thursday
Thursday	12:00N Wednesday through 12:00N Monday
Friday	12:00N Thursday through 12:00N Monday
Saturday	12:00N Friday through 12:00N Monday

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.

All work and traffic control devices shall be in accordance with 614 and other applicable portions of the specifications, as well as the Ohio Manual of Uniform Traffic Control Devices. Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, As Per Plan, unless separately itemized in the plan.

NOTIFICATION OF WORK ZONE LANE RESTRICTIONS

The Contractor shall notify the Engineer at least eighteen (18) days prior to implementing any work zone restriction that will reduce the width or vertical clearance of any lane on which traffic will be maintained during construction. The Engineer shall immediately notify the District Roadway Services Manager to advise the Office of Highway Management of the restrictions.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

In addition to the requirements of section 614.03 of the Construction and Material Specifications the following shall apply. The Contractor's equipment shall be operated in the direction of traffic where practical. A flagger shall be used where the Contractor's equipment must merge with the traffic stream. The Contractor's vehicles and equipment shall be equipped with at least one amber flashing light visible for 300°.

Equipment may be parked in areas along the highway, thirty feet (30') from the edge of traveled highway unless behind guardrail, when various operations are scheduled to continue the next workday. On weekends or at other times of suspension of work, the equipment shall be stored at a storage area removed from the state route right of way. No equipment shall be parked in the median of the highway. Adequate barricades and light shall be placed on the pavement side of the equipment to identify the limits of the equipment. All other equipment, including private vehicles, shall be stored at the approved Contractor's storage area.

MOVEMENT OF DRUMS

The row of drums along a closed lane shall be moved out of the open lane onto the new pavement as soon as paving operations permit.

ITEM 614 - WORK ZONE INCREASED PENALTIES SIGN (R11-H5a)

R11-H5a-48 signs shall be furnished, erected, and maintained in good condition and/or replaced as necessary and subsequently removed by the Contractor. Signs shall be mounted at the appropriate offsets and elevations as prescribed by the Ohio Manual of Uniform Traffic Control Devices. They shall be maintained on supports meeting current safety criteria.

The signs may be erected or uncovered no more than four hours before the actual start of work. The signs shall be removed or covered no later than four hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer. Temporary sign covering and uncovering due to temporary lane restorations shall be guided by the four-hour limitations stated above. Such lane restorations should be expected to remain in effect for 30 or more consecutive calendar days, such as during winter shut-downs.

The signs on the mainline shall be dual mounted unless not physically possible. The first sign shall be placed between the "ROAD WORK AHEAD" (W20-1) sign and the next sign in the sequence. Signs shall be erected on each entrance ramp and every 2 miles through the construction work limits. Signs on the mainline shall be R11-H5a-48. Signs used on the ramps shall be R11-H5a-24. R11-H5a-24 signs may be used in the median in lieu of R11-H5a-48 signs if it is not physically possible to provide R11-H5a-48 signs in the median.

The Contractor may use signs and supports in used, but good, condition provided the signs meet current ODOT specifications. Sign faces shall be reflectorized with Type C sheeting complying with the requirements of CMS 730.19.

Work zone increased penalties signs and supports will be measured as the number of sign installations, including the sign and necessary supports. If a sign and support combination is removed and re-erected at another location as directed by the Engineer, it shall be considered as another unit.

Payment for accepted quantities, complete in place, will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removal of the sign and support.

Item 614, Work Zone Increased Penalties Sign - - - - - 20 Each

DROPOFFS IN WORK ZONES

The wedge treatment as detailed in Standard Drawing MT-101.90 will be required and shall be included in the lump sum bid for Item 614 - Maintaining Traffic, As Per Plan.

WORK ZONE PAVEMENT MARKINGS

The Contractor shall be required to install work zone pavement markings. Work zone pavement markings shall be 642 paint.

Prior to placement of any work zone pavement markings, the Contractor shall completely obliterate, as per 641.10, all existing pavement markings that would create confusion or conflict with the work zone pavement markings.

The following estimated quantities have been carried to the General Summary:

Item 614, Work Zone Lane Line, Class 1, 642 Paint - - - - 25.47 Mile
Item 614, Work Zone Edge Line, Class 1, 642 Paint - - - - 57.15 Mile

Work zone raised pavement markers cannot be used to simulate (replace) any type of work zone pavement marking.

FLOODLIGHTING

Floodlighting of the work site for operations conducted during night time periods shall be accomplished so that the lights do not cause glare to the drivers on the roadway. To ensure the adequacy of the floodlight placement, the Contractor and the Engineer shall drive throughout the worksite each night when the lighting is in place and operative prior to commencing any work. If glare is detected, the light placement and shielding shall be adjusted to the satisfaction of the Engineer before work proceeds. Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, As Per Plan.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 614, Asphalt Concrete for Maintaining Traffic - - - 50 Cu. Yd.

ITEM 614, REPLACEMENT DRUM

Drums furnished by the Contractor in accordance with the requirements of the plans, specifications and proposal which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer. Replacement drums shall be new.

Payment for the new drums shall be made at the contract price per each for Item 614, Replacement Drum, and shall include the cost of removing and disposing of the damaged drum, and providing and maintaining the replacement drum in accordance with the contract requirements for the original drum.

An estimated quantity of 50 each has been provided in the General Summary.

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ITEM 614 - WORK ZONE SPEED LIMIT SIGN

The Contractor shall furnish, install, maintain, cover during suspension of work, and subsequently remove Work Zone Speed Limit (R2-1-48) (45 MPH Speed Limit) signs and supports within the work limits in accordance with the following requirements:

The Contractor shall cover or remove any existing Speed Limit signs within the reduced Speed Zone. These signs shall be restored during suspension or termination of the reduced speed limit. The expense of covering or removal and restoration of existing Speed Limit or Minimum Speed Limit signs shall be included in the pay item for the Work Zone Speed Limit signs.

The Work Zone Speed Limit signs may be erected or uncovered no more than 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. Temporary sign covering and uncovering due to temporary lane restorations shall be guided by the four-hour limitations stated above. Such lane restorations should be expected to remain in effect for 30 or more days, such as during winter shut-downs. Cleanup work and other work beyond the shoulder such as seeding, to be performed after restoration of all full-width lanes and shoulders to traffic, does not constitute a condition warranting a speed reduction. Therefore, when activity is limited to such work, the speed limit in effect shall be the normal speed limit for the site.

Construction and Material Specifications, Item 614, Paragraph 614.02(B) indicates that the two directions of a divided highway are considered separate highway sections. Therefore, if the work on a multi-lane divided highway is limited to only one direction, speed reduction in the direction of the work does not automatically constitute speed reduction in the opposite direction. Speed limit reduction in the opposite direction, in such case, is appropriate only if conditions are expected to have an impact on the directional traffic flow, as directed by the Engineer.

The Contractor shall erect a Work Zone Speed Limit sign in advance of any lane restriction expected to last at least 30 consecutive calendar days, or as directed by the Engineer. The sign shall be mounted on both sides of a directional roadway of divided highways. The first Work Zone Speed Limit sign shall be placed 500 feet in advance of the lane reduction or shift taper or other roadway or shoulder restriction. On undivided highways the sign shall be mounted on the right side, approximately 250 feet in advance of such restrictions. The sign shall be repeated every 1 mile for 55 mph zones and every one-half mile for 50 mph and 45 mph zones. These signs shall also be erected immediately after each open entrance ramp within the zone.

On projects for which the activity or roadway restriction is limited to one section of the project for at least thirty days and then is moved to another section of the project upon completion of work in the first section, the speed limit reduction shall be limited to only the active portion of the project at the given time. Signing for a speed limit reduction, as well as all other advance construction signing, shall be relocated when the concentration of activity is relocated.

On projects for which speed reduction is called for on more than one roadway, the display of reduced speed limit signing on a given roadway shall be dependent on the scheduling of work activity on the given roadway.

Speed Reduction signs (W3-5) shall be erected in advance of the speed reduction, approximately 1250 feet on multi-lane highways and 500 feet on 2-lane highways.

A sign(s) to indicate the resumption of the statutory speed limit shall be erected at the end of any reduced Speed Zone, typically at the point where roadway and shoulder widths return to normal. On undivided roadways, the R2-1 (Speed Limit) sign shall be used. On divided highways where the speed limit varies by vehicle type, the R2-1 (Speed Limit) sign and the R2-H2a (Truck Speed Limit) signs shall be mounted side-by-side on separate supports. The Contractor may use signs and supports in used, but good condition, provided the signs meet current ODOT specifications. Sign faces shall be retroreflectorized with Type G sheeting complying with the requirements of CMS 730.19.

Work Zone Speed Limit signs shall be mounted on two Item 630, Ground Mounted Supports, No. 3 Posts.

Work Zone Speed Limit signs and supports will be measured as the number of sign installations, including the signs and necessary supports. If a sign and support combination is removed and reerected at another location within the project due to changes in the Speed Zone directed by the Engineer, it shall be considered another unit.

Payment for accepted quantities, complete in place, will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removing the signs and supports. Speed limit signing for the point of resumption of the statutory speed limit shall be paid for as Work Zone Speed Limit signs. The following estimated quantity has been carried to the General Summary.

Item 614, Work Zone Speed Limit Sign - - - - - 34 Each
Item 614, Speed Zone Ahead symbol sign - - - - - 8 Each

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

Use of Law Enforcement Officers (LEOs) by Contractors other than the uses specified below will not be permitted at project cost. LEOs should not be used where the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) intends that flaggers be used.

In addition to the requirements of CMS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) shall be provided for the following traffic control 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 for long-term lane closures/shifts (for the first and last day of major changes in traffic control setup). In general, LEOs should be positioned at the point of lane restriction or road closure and to manually control traffic movements through intersections in work zones.

When construction vehicles are entering/exiting the zone directly from/into an open lane of traffic. If a lane has been closed to provide an acceleration/deceleration lane for the vehicle, the LEO will not be required.

LEOs should not forgo their traffic control responsibilities to apprehend motorists for routine traffic violations. However, if a motorist's actions are considered to be reckless, then pursuit of the motorist is appropriate.

The LEOs work at the direction of the Contractor. The Contractor is responsible for securing the services of the LEOs with the appropriate agencies and communicating the intentions of the plans with respect to duties of the LEOs. The Engineer shall have final control over the LEO's duties and placement, and will resolve any issues that may arise between the two parties.

The LEO shall report in to the Contractor prior to the start of the shift, in order to receive instructions regarding specific work assignments during his/her shift. The LEO is expected to stay at the project site for the entire duration of his/her shift. The LEO shall report to the Contractor at the end of his/her shift. Once the LEO has completed the duties described above and still has time remaining on his/her shift, the LEO may be asked to patrol through the work zone (with flashing lights off) or be placed at a location to deter motorists from speeding. Should it be necessary to leave the project site, the LEO shall notify the Engineer. The Contractor shall provide the LEO with a two-way communication device which shall be returned to the Contractor at the end of his/her shift.

LEOs (with patrol car) required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614, Law Enforcement Officer (with patrol car) for Assistance. The following estimated quantity has been carried to the General Summary.

Item 614, Law Enforcement Officer with Patrol Car for Assistance - - 100 Hours

The hours paid shall include minimum show-up time required by the law enforcement agency involved.

Any additional costs (administrative or otherwise) incurred by the Contractor to obtain the services of an LEO are included with the bid unit price for Item 614, Law Enforcement Officer with Patrol Car for Assistance.

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REF. NO.	PLAN SHEET NO.	STATION *ADJUSTED FOR STATION EQ.		SIDE	202			609	617			GUARDRAIL TYPE 5	GUARDRAIL TYPE 5A	606				626		COMMENTS	SEE SHEET NO.
					PAVEMENT REMOVED	GUARDRAIL REMOVED	CURB REMOVED	ASPHALT CONCRETE CURB TYPE 1	2" COMPACTED AGGREGATE AS PER PLAN					ANCHOR ASSEMBLY TYPE				BARRIER REFLECTOR			
					FROM	TO	SQ. YD.	FT.	FT.	FT.	LENGTH			WIDTH	CU. YD.	FT.	FT.	A EA.	B EA.		
1-GR	15 & 16	*589+50.00	*605+05.73	RT	1,400.00	3,150			3,150	4	77.78	3,000	137.5				1		33	(NOTE: THRIE-BEAM TRANSITION SECTIONS END 18.75' FROM END OF BTA'S) CONNECT TO EXISTING GUARDRAIL AT STA. 589+50.00 TYPE 5A GUARDRAIL FROM STA. 582+13.84 TO STA. 583+51.78	
2-GR	16 & 17	623+24.25	627+86.75	RT	197.22	443.75			443.75	4	10.96	393.75				1		5	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
3-GR	17	624+95.75	628+08.25	LT	130.56	293.75			293.75	4	7.25	281.25				1		4	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
4-GR	17	629+98.30	638+39.20	RT	358.33	806.25			806.25	4	19.91	793.75				1		9	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
5-GR	17	630+18.90 630+18.90	31+50.95 Ramp 'C' 633+61.97	LT	141.67	318.75			350	4	8.64	281.25				1		4	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION EXTEND EXISTING RUN AND CONSTRUCT NEW TYPE E ANCHOR ASSEMBLY		
6-GR	17	14+14.45 S.R. 151 14+14.45 S.R. 151	31+49.25 Ramp 'C' 33+62.22 Ramp 'C'	LT	381.94	462.5			687.5	5	21.22	637.5				1		9	CONNECT TO EXISTING GUARDRAIL ALONG S.R. 151 EXTEND EXISTING RUN AND CONSTRUCT NEW TYPE E ANCHOR ASSEMBLY 25' OF GUARDRAIL ON 13.4' RADIUS		
7-GR	17	29+98.00 Ramp 'B'	32+98.00 Ramp 'B'	RT	133.33	300			300	4	7.41	262.5		1		1		4			
8-GR	17	13+33.23 S.R. 151	27+75.00 Ramp 'C'	LT	144.44	325			325	4	8.02	275				1		7	CONNECT TO EXISTING GUARDRAIL ALONG S.R. 151 37.5' OF GUARDRAIL ON 30' RADIUS		
9-GR	17 & 18	641+85.20 651+23.10	654+23.10 654+23.10	RT RT	541.67	1,218.75			1,218.75	4	30.09	1,168.75				1		13	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
10-GR	17	644+50.00	646+00.00	LT	66.67	150			150	4	3.70	87.5				1	1	2			
11-GR	18	653+23.10	654+23.10	LT	36.11	81.25			81.25	4	2.01	68.75				1		2	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
12-GR	18	655+76.90	657+14.40	LT	52.78	118.75			118.75	4	2.93	58.75				1		2	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
13-GR	18	655+76.90	656+64.40	RT	38.89	87.5			87.5	4	2.16	75				1		2	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
14-GR	18	*668+39.30	*657+75.00	RT	66.67	150			150	4	3.70	87.5	25			1	1	3	STATION EQUATION: STA. 669+53.15 BK. = STA. 657+38.94 AH. OVERHEAD SIGN AT STA. 657+50 TYPE 5A GUARDRAIL FROM STA. 657+37.50 TO STA. 657+62.50		
15-GR	18 & 19	660+48.75	664+42.50	LT	166.67	375			375	4	9.26	362.5				1		5	CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
16-GR	18 & 19	663+59.60 663+59.60	664+59.60 664+59.60	RT RT	36.11	81.25			81.25	4	2.01	31.25				1		2	REMOVE EXISTING BARRIER DESIGN GUARDRAIL AND IMPACT ATTENUATOR. REPLACE WITH TYPE 5 GUARDRAIL AND TYPE E ANCHOR ASSEMBLY. CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION CONNECT TO EXISTING BTA TYPE 3 THRIE-BEAM TRANSITION SECTION		
17-GR	19	665+32.50	62+13.50 Ramp 'AB'	LT	163.89	368.75			368.75	4	9.10	343.75		1				6	75' OF GUARDRAIL ON 67' RADIUS		
18-GR	19	62+25.35 Ramp 'AB'	673+12.50	LT	344.44	775			775	4	19.14	737.5	25			1		12	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR OVERHEAD SIGN AT STA. 669+00. TYPE 5A GUARDRAIL FROM STA. 668+87.50 TO STA. 669+12.50		
19-GR	19	665+25.40	673+04.50	RT	338.89	762.5			762.5	4	18.83	762.5						9	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE BEAM TRANSITION SECTION		
20-GR	19	681+67.91	687+46.80 Murdock Ave.	RT	283.33	637.5			637.5	4	15.74	637.5						9	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR 62.5' OF GUARDRAIL ON 65' RADIUS CONNECT TO EXISTING GUARDRAIL AT STA. 687+46.80 ON MURDOCK AVE.		
21-GR	19	681+74.30	683+37.80	LT	63.89	143.75			143.75	4	95.83	131.25				1		3	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION		
22-GR	19	687+37.50	689+02.80	RT	72.22	162.5			162.5	4	4.01	100				1	1	3			
23-GR	19 & 20	685+71.20 Murdock Ave.	692+12.10	RT	305.56	687.5			687.5	4	16.98	687.5				1		9	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION 50' OF GUARDRAIL ON 17' RADIUS		
24-GR	20	692+59.50	693+22.00	LT	27.78	62.5			62.5	4	1.54	50				1		2	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR		
SUB-TOTALS CARRIED TO SHEET 14					5,493.06	11,962.50	300	300			398.22	11,315.00	187.5	3	1	10	12	159			

GUARDRAIL SUB-SUMMARY

JEF-7-10.83

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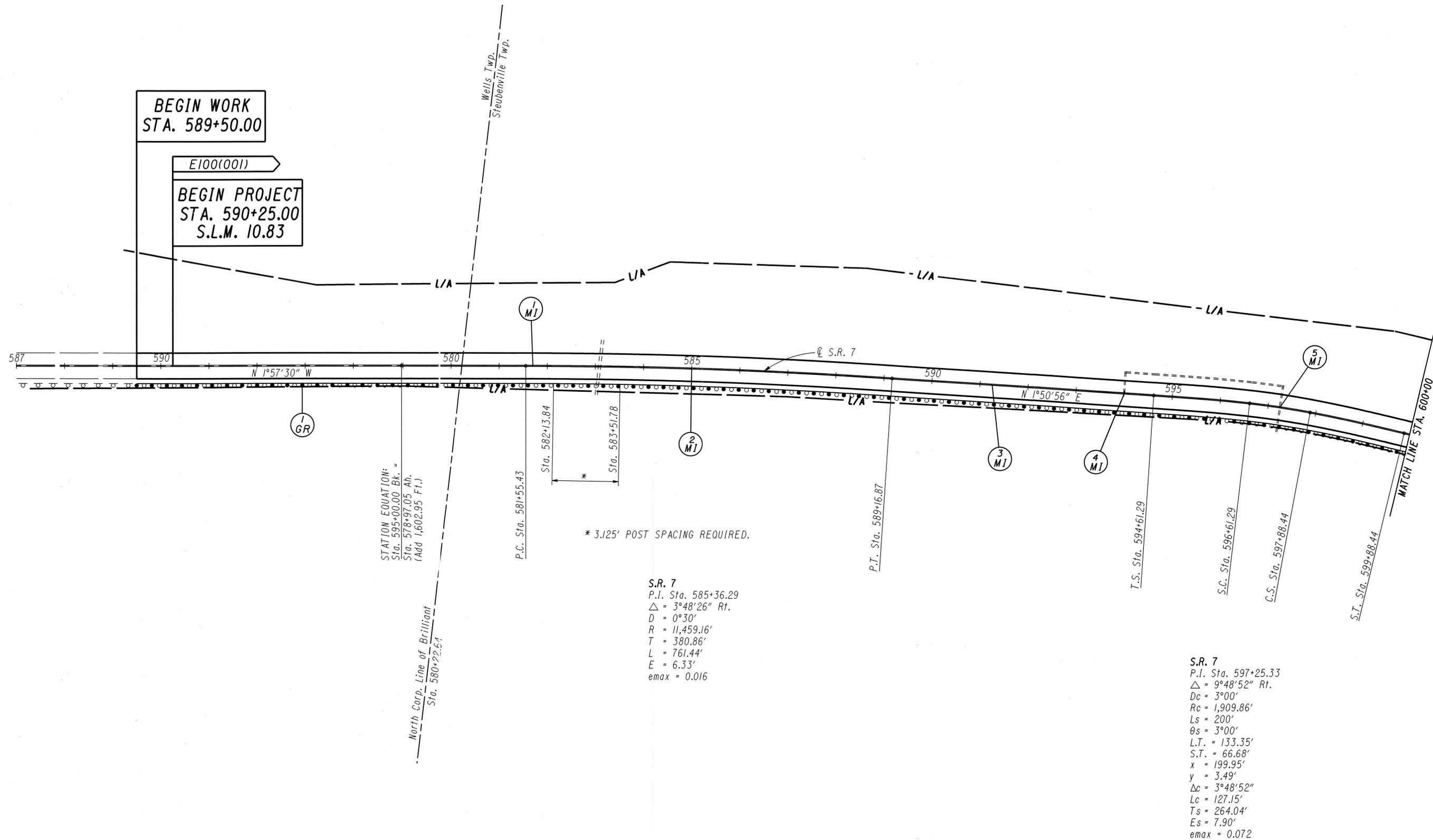
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REF. NO.	PLAN SHEET NO.	STATION		SIDE	202			609	617			GUARDRAIL TYPE 5	GUARDRAIL TYPE 5A	606				626	COMMENTS	SEE SHEET NO.		
					PAVEMENT REMOVED	GUARDRAIL REMOVED	CURB REMOVED	ASPHALT CONCRETE CURB TYPE 1	2" COMPACTED AGGREGATE AS PER PLAN					ANCHOR ASSEMBLY TYPE							BARRIER REFLECTOR	
					SQ. YD.	FT.	FT.	FT.	LENGTH	WIDTH	CU. YD.			FT.	FT.	A EA.	B EA.				E EA.	T EA.
25-GR	20	693+57.90	697+58.70	LT	166.82	375.35			375.35	4	9.27	375.35						5	(NOTE: THRIE-BEAM TRANSITION SECTIONS ARE 18.75' FROM END OF BTA'S) CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
26-GR	20	698+83.90	700+15.60	RT	49.44	111.25			111.25	4	2.75	111.25						3	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
27-GR	20	700+51.50	701+84.00	RT	49.76	111.95			111.95	4	2.76	111.95						3	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
28-GR	20	699+06.30	700+09.00	LT	37.89	85.25			85.25	4	2.10	85.25						2	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
29-GR	20	700+44.90	701+81.00	LT	52.91	119.05			119.05	4	2.94	119.05						3	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
30-GR	20	705+29.00	10+02.10 Ramp 'C'	RT	202.73	456.15			456.15	4	11.26	456.15						6	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
31-GR	20	706+84.40	707+55.30	LT	22.22	50			50	4	1.23				1			2	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
32-GR	20	707+31.70	712+70.90	RT	233.33	525			525	4	12.96	475			1			6	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
33-GR	20	9+13.80 Ramp 'C'	9+82.60 Ramp 'C'	LT	27.78	50			50	5	1.54				1			2	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
34-GR	20	711+94.00	713+06.50	LT	50	112.5			112.5	4	2.78	100			1			3	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR			
35-GR	20	714+79.10	717+38.70	LT	105.56	237.5			237.5	4	5.86	187.5			1			4	CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
36-GR	20 & 21	714+43.50	723+45.80	RT	401.31	902.95			902.95	4	22.30	902.95						10	CONNECT TO EXISTING BTA TYPE 2 W-BEAM TERMINAL CONNECTOR CONNECT TO EXISTING BTA TYPE 1 THRIE-BEAM TRANSITION SECTION			
37-GR	21 & 22	26+45 Ramp 'D'	770+80.24	RT	1,977.78	4,450			4,450	4	109.88	4,450						35	CONNECT TO EXISTING GUARDRAIL AT BOTH ENDS			
38-GR	18 & 19	664+63 Comm. Ave. 664+50 Comm. Ave.	666+64 Comm. Ave. 666+96 Comm. Ave.	LT		212.5						200			2			3	DISCONNECT FROM EXISTING GR-16 BARRIER DESIGN. RELOCATE AT THE FACE OF CURB ON COMMERCIAL AVE.			
SUB-TOTALS (FROM THIS SHEET)					3,377.53	7,799.45			187.63			7,574.70			2			4	1		87	
SUB-TOTALS (FROM SHEET 13)					5,493.06	11,962.50	300	300	398.22			11,315.00	187.5		3	1	10	12			159	
QUANTITIES CARRIED TO GENERAL SUMMARY					8.871	19,761.95	300	300	586			18,889.70	187.5		5	1	14	13			246	

GUARDRAIL SUB-SUMMARY

JEF-7-10.83

CALCULATED
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BEGIN WORK
STA. 589+50.00

E100(001)
BEGIN PROJECT
STA. 590+25.00
S.L.M. 10.83

STATION EQUATION:
Sta. 595+00.00 Bk. =
Sta. 578+97.05 Ah.
(Add 1,602.95 FT.)

North Corp. Line of Brilliant
Sta. 580+22.61

Wells Twp.
Steubenville Twp.

* 3.125' POST SPACING REQUIRED.

S.R. 7
P.I. Sta. 585+36.29
 $\Delta = 3^\circ 48' 26''$ Rt.
D = $0^\circ 30'$
R = 11,459.16'
T = 380.86'
L = 761.44'
E = 6.33'
emax = 0.016

S.R. 7
P.I. Sta. 597+25.33
 $\Delta = 9^\circ 48' 52''$ Rt.
Dc = $3^\circ 00'$
Rc = 1,909.86'
Ls = 200'
 $\theta_s = 3^\circ 00'$
L.T. = 133.35'
S.T. = 66.68'
x = 199.95'
y = 3.49'
 $\Delta c = 3^\circ 48' 52''$
Lc = 127.15'
Ts = 264.04'
Es = 7.90'
emax = 0.072

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.



CALCULATED
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TES

PLAN SHEET
STA. 587+00 TO STA. 600+00

JEF-7-10.83



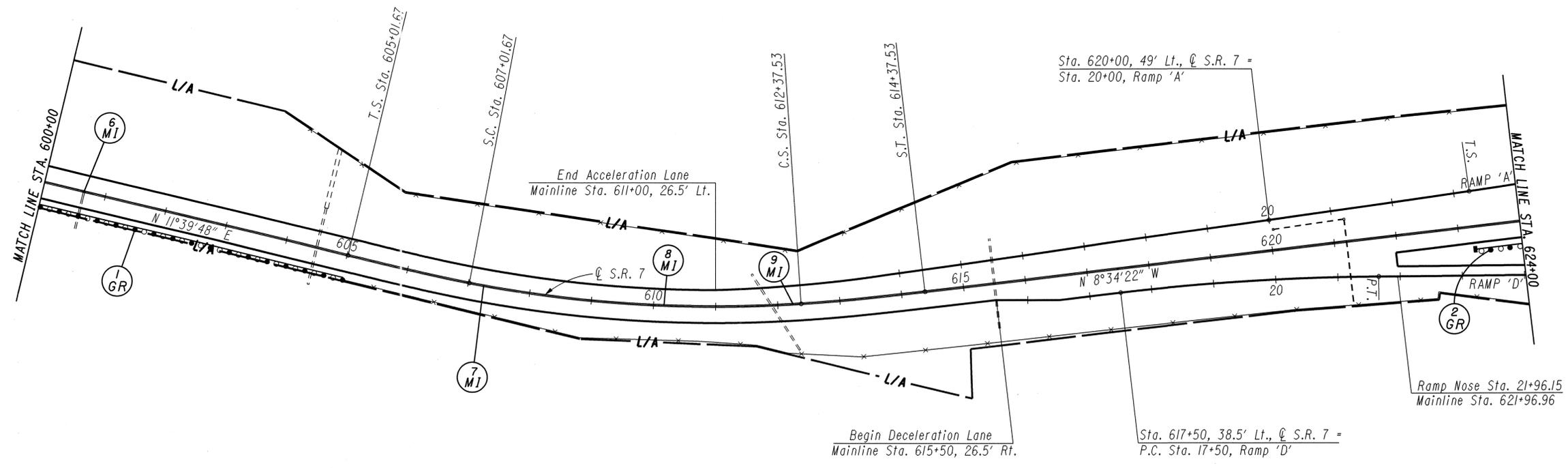
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PLAN SHEET
STA. 600+00 TO STA. 624+00

JEF-7-10.83

RAMP 'A'
 P.I. Sta. 24+83.62
 $\Delta = 10^{\circ}00'00''$ Lt.
 $D_c = 6^{\circ}00'00''$
 $R_c = 954.93'$
 $L_s = 150'$
 $\theta_s = 4^{\circ}30'00''$
 $L.T. = 100.03'$
 $S.T. = 50.03'$
 $x = 149.90'$
 $y = 3.93'$
 $\Delta c = 1^{\circ}00'00''$
 $L_c = 16.68'$
 $T_s = 158.61'$
 $E_s = 4.63'$
 T.S. Sta. 23+25
 S.C. Sta. 24+75
 S.C. Sta. 24+91.67
 S.T. Sta. 26+41.67

S.R. 7
 P.I. Sta. 609+73.60
 $\Delta = 20^{\circ}14'10''$ Lt.
 $D_c = 2^{\circ}45'$
 $R_c = 2083.48'$
 $L_s = 200'$
 $\theta_s = 2^{\circ}45'$
 $L.T. = 133.35'$
 $S.T. = 66.68'$
 $x = 199.95'$
 $y = 3.20'$
 $\Delta c = 14^{\circ}44'10''$
 $L_c = 535.86'$
 $T_s = 471.94'$
 $E_s = 33.73'$
 $e_{max} = 0.065$



RAMP 'D'
 P.I. Sta. 19+57.98
 $\Delta = 6^{\circ}14'00''$ Rt.
 $D = 1^{\circ}30'$
 $R = 3819.72'$
 $T = 207.98'$
 $L = 415.56'$
 $E = 0.33'$
 P.C. Sta. 17+50
 P.T. Sta. 21+65.56

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

S.R. 151
 P.I. Sta. 17+25.24
 $\Delta = 10^{\circ}36'00''$ Rt.
 D = 1'30'00"
 R = 3819.72'
 T = 354.34'
 L = 706.67'
 E = 16.40'
 P.C. Sta. 13+70.90
 P.T. Sta. 20+77.57

Sta. 26+25.08 Ramp 'C'
 Sta. 13+51.38 S.R. 151

Sta. 29+43.68 Ramp 'A'
 Sta. 18+64.02, $\text{\textcircled{C}}$ S.R. 151

Sta. 629+02.30, S.R. 7 =
 Sta. 20+00.00, $\text{\textcircled{C}}$ S.R. 151

Ramp Nose Sta. 24+71.36
 Mainline Sta. 624+72.70

Sta. 636+75, 38.5' Lt., $\text{\textcircled{C}}$ S.R. 7 =
 Sta. 36+75, Ramp 'C'

Ramp Nose Sta. 34+17.24
 Mainline Sta. 634+24.18

Begin Deceleration Lane
 Mainline Sta. 641+00, 26.5' Lt.

Ramp Nose Sta. 41+97.38
 Mainline Sta. 641+97.61

Sta. 644+25, 50' Rt., $\text{\textcircled{C}}$ S.R. 7 =

RAMP 'B'
 P.I. Sta. 34+56.36
 $\Delta = 30^{\circ}00'00''$ Rt.
 Dc = 7'00'00"
 Rc = 818.51'
 Ls = 200'
 $\theta_s = 7^{\circ}00'00''$
 L.T. = 133.44'
 S.T. = 66.76'
 x = 199.70'
 y = 8.14'
 $\Delta c = 16^{\circ}00'00''$
 Lc = 228.57'
 Ts = 319.82'
 Es = 30.98'
 T.S. Sta. 31+36.54
 S.C. Sta. 33+36.54
 C.S. Sta. 35+65.11
 S.T. Sta. 37+65.11

RAMP 'B'
 P.I. Sta. 42+87.53
 $\Delta = 2^{\circ}45'00''$ Rt.
 D = 1'00'00"
 R = 5729.58'
 T = 137.53'
 L = 275'
 E = 1.65'
 P.C. Sta. 41+50
 P.T. Sta. 44+25

S.R. 7
 P.I. Sta. 634+27.16
 $\Delta = 31^{\circ}43'02''$ Rt.
 Dc = 5'00"
 Rc = 1,145.92'
 Ls = 400'
 $\theta_s = 10^{\circ}00''$
 L.T. = 267.09'
 S.T. = 133.72'
 x = 398.78'
 y = 23.22'
 $\Delta c = 11^{\circ}43'02''$
 Lc = 234.35'
 Ts = 526.98'
 Es = 51.38'
 emax = 0.083

RAMP 'A'
 P.I. Sta. 24+83.62
 $\Delta = 10^{\circ}00'00''$ Lt.
 Dc = 6'00'00"
 Rc = 954.93'
 Ls = 150'
 $\theta_s = 4^{\circ}30'00''$
 L.T. = 100.03'
 S.T. = 50.03'
 x = 149.90'
 y = 3.93'
 $\Delta c = 1^{\circ}00'00''$
 Lc = 16.68'
 Ts = 158.61'
 Es = 4.63'
 T.S. Sta. 23+25
 S.C. Sta. 24+75
 C.S. Sta. 24+91.67
 S.T. Sta. 26+41.67

RAMP 'A'
 P.I. Sta. 27+80.12
 $\Delta = 07^{\circ}30'00''$ Rt.
 Dc = 6'00'00"
 Rc = 954.93'
 Ls = 150'
 $\theta_s = 4^{\circ}30'00''$
 L.T. = 100.03'
 S.T. = 50.03'
 x = 149.90'
 y = 3.93'
 $\Delta c = 3^{\circ}00'00''$
 Lc = 50'
 Ts = 137.64'
 Es = 3.03'
 T.S. Sta. 26+50
 S.C. Sta. 28+00
 P.T. Sta. 28+50

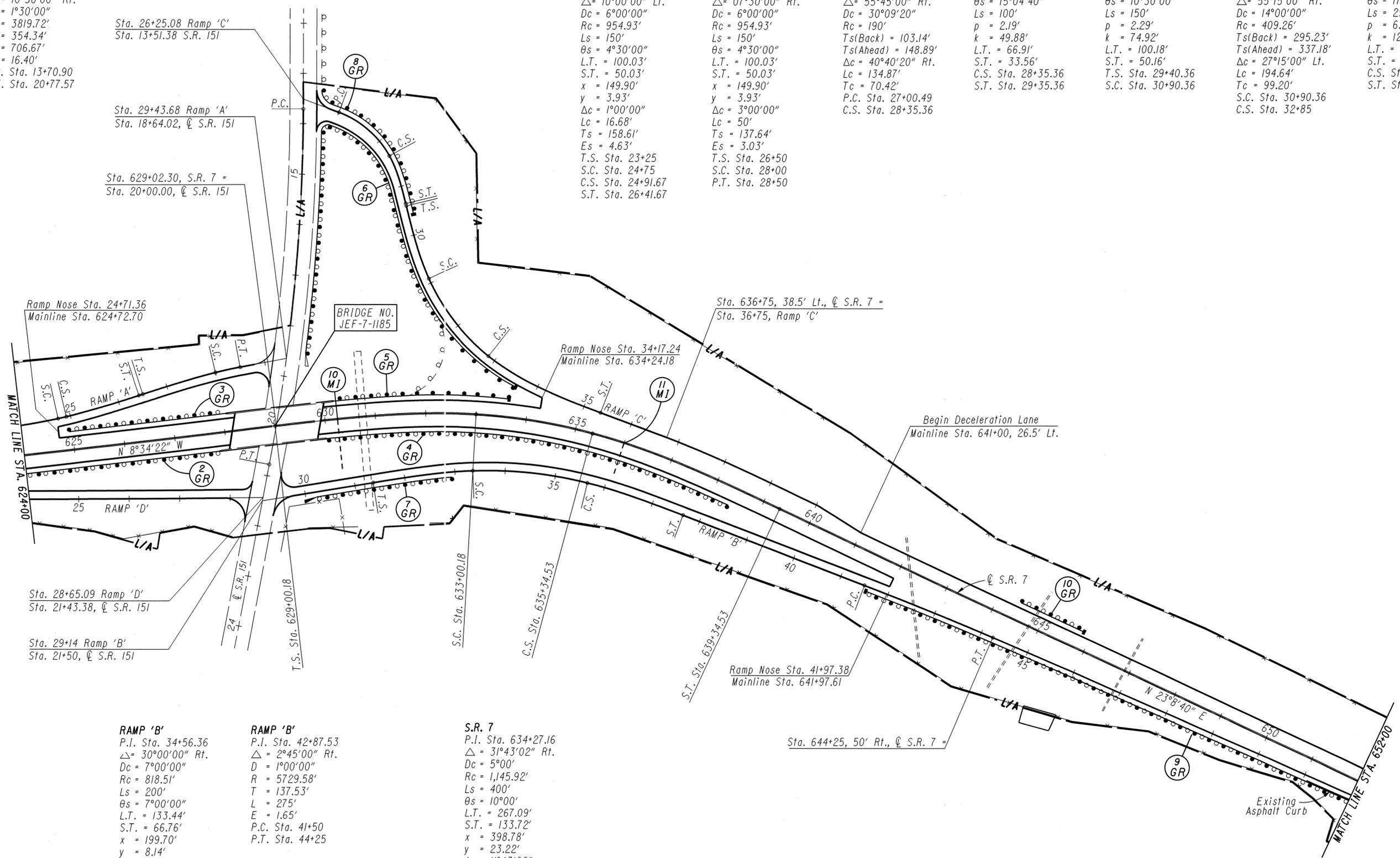
RAMP 'C' (Curve)
 P.I. Sta. 28+03.63
 $\Delta = 55^{\circ}45'00''$ Rt.
 Dc = 30'09'20"
 Rc = 190'
 Ts(Back) = 103.14'
 Ts(Ahead) = 148.89'
 $\Delta c = 40^{\circ}40'20''$ Rt.
 Lc = 134.87'
 Tc = 70.42'
 P.C. Sta. 27+00.49
 C.S. Sta. 28+35.36

RAMP 'C' (Spiral)
 P.I. Sta. 28+68.92
 $\theta_s = 15^{\circ}04'40''$
 Ls = 100'
 p = 2.19'
 k = 49.88'
 L.T. = 66.91'
 S.T. = 33.56'
 C.S. Sta. 28+35.36
 S.T. Sta. 29+35.36

RAMP 'C' (Spiral)
 P.I. Sta. 30+40.54
 $\theta_s = 10^{\circ}30'00''$
 Ls = 150'
 p = 2.29'
 k = 74.92'
 L.T. = 100.18'
 S.T. = 50.16'
 T.S. Sta. 29+40.36
 S.C. Sta. 30+90.36

RAMP 'C' (Curve)
 P.I. Sta. 32+35.59
 $\Delta = 55^{\circ}15'00''$ Rt.
 Dc = 14'00'00"
 Rc = 409.26'
 Ts(Back) = 295.23'
 Ts(Ahead) = 337.18'
 $\Delta c = 27^{\circ}15'00''$ Lt.
 Lc = 194.64'
 Tc = 99.20'
 S.C. Sta. 30+90.36
 C.S. Sta. 32+85

RAMP 'C' (Spiral)
 P.I. Sta. 33+69.08
 $\theta_s = 17^{\circ}30'00''$
 Ls = 250'
 p = 6.34'
 k = 124.61'
 L.T. = 167.49'
 S.T. = 124.61'
 C.S. Sta. 32+85
 S.T. Sta. 35+35



FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

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CALCULATED
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PLAN SHEET
STA. 624+00 TO STA. 652+00

JEF-7-10.83

17
44

HORIZONTAL SCALE IN FEET
0 50 100 200



100
50
0
200
HORIZONTAL
SCALE IN FEET

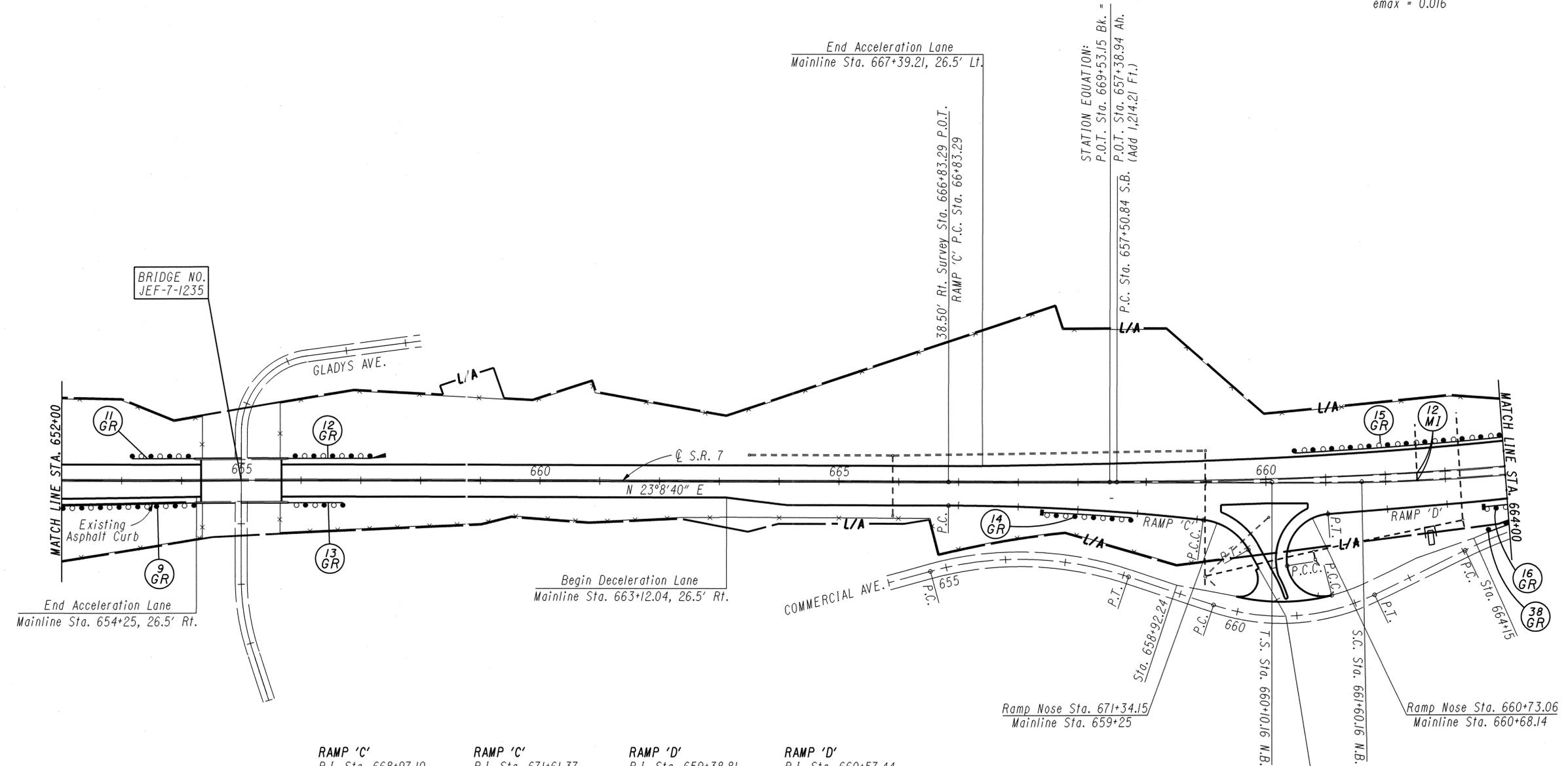
CALCULATED
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PLAN SHEET
STA. 652+00 TO STA. 664+00

JEF-7-10.83

18
44

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 661+05.35
 $\Delta = 4^{\circ}43'27''$ Lt.
 D = 0°40'
 R = 8594.37'
 T = 354.51'
 L = 708.63'
 E = 7.31'
 emax = 0.016



RAMP 'C'
 P.I. Sta. 668+97.10
 $\Delta = 6^{\circ}24'28''$ Rt.
 D = 1°30'
 R = 3819.71'
 T = 213.81'
 L = 427.18'
 E = 5.98'
 P.C. Sta. 666+83.29
 P.C.C. Sta. 671+10.47

RAMP 'C'
 P.I. Sta. 671+61.37
 $\Delta = 53^{\circ}56'52''$ Rt.
 D = 57°17'45"
 R = 100'
 T = 50.90'
 L = 94.16'
 E = 12.21'
 P.C.C. Sta. 671+10.47
 P.T. Sta. 672+04.63

RAMP 'D'
 P.I. Sta. 659+38.81
 $\Delta = 95^{\circ}40'41''$ Rt.
 D = 95°29'35"
 R = 60'
 T = 62.26'
 L = 100.19'
 E = 29.39'
 P.C.C. Sta. 658+80.55
 P.C.C. Sta. 659+76.74

RAMP 'D'
 P.I. Sta. 660+57.44
 $\Delta = 94^{\circ}11'31''$ Rt.
 D = 76°23'40"
 R = 75'
 T = 80.70'
 L = 123.30'
 E = 35.17'
 P.C.C. Sta. 659+76.74
 P.T. Sta. 661+00.04

COMMERCIAL
 P.I. Sta. 656+45.78
 $\Delta = 33^{\circ}38'40''$ Rt.
 D = 10°00'00"
 R = 572.96'
 T = 173.23'
 L = 336.44'
 E = 25.61'
 P.C. Sta. 654+72.55
 P.C.C. Sta. 658+08.99

COMMERCIAL
 P.I. Sta. 661+04.32
 $\Delta = 44^{\circ}15'00''$ Lt.
 D = 16°00'00"
 R = 358.10'
 T = 145.59'
 L = 276.56'
 E = 28.46'
 P.C. Sta. 659+58.73
 P.T. Sta. 662+35.29

COMMERCIAL
 P.I. Sta. 665+57.64
 $\Delta = 24^{\circ}15'37''$ Rt.
 D = 8°00'00"
 R = 716.20'
 T = 153.93'
 L = 303.25'
 E = 16.36'
 P.C. Sta. 664+03.70
 P.C.C. Sta. 667+06.96

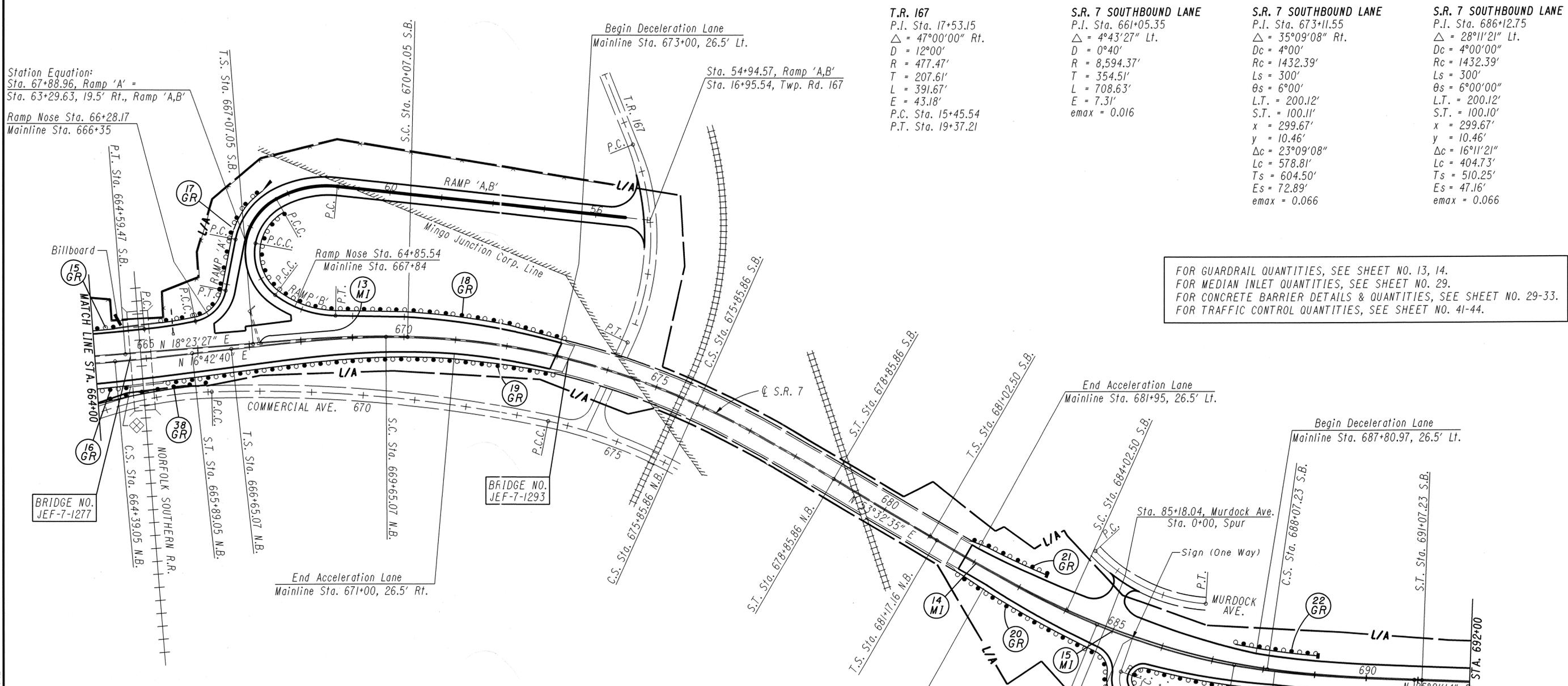
Sta. 73+31.07 Ramp 'C'
 Sta. 660+81.67, Commercial Ave.

S.R. 7 NORTHBOUND LANE
 P.I. Sta. 662+99.84
 $\Delta = 6^{\circ}26'00''$ Lt.
 Dc = 1°30'
 Rc = 3,819.72'
 Ls = 150'
 $\theta_s = 1^{\circ}07'30''$
 L.T. = 100.00'
 S.T. = 50.00'
 x = 149.99'
 y = 0.98'
 $\Delta_c = 4^{\circ}11'00''$
 Lc = 278.89'
 Ts = 289.68'
 Es = 6.27'
 emax = 0.036

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

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S.R. 7 NORTHBOUND LANE
 P.I. Sta. 662+99.84
 $\Delta = 6^{\circ}26'00''$ Lt.
 Dc = 1°30'
 Rc = 3,819.72'
 Ls = 150'
 $\theta_s = 1^{\circ}07'30''$
 L.T. = 100.00'
 S.T. = 50.00'
 x = 149.99'
 y = 0.98'
 $\Delta_c = 4^{\circ}11'00''$
 Lc = 278.89'
 Ts = 289.68'
 Es = 6.27'
 emax = 0.036

S.R. 7 NORTHBOUND LANE
 P.I. Sta. 672+92.82
 $\Delta = 36^{\circ}49'55''$ Rt.
 Dc = 4°00'
 Rc = 1432.39
 Ls = 300'
 $\theta_s = 6^{\circ}00'$
 L.T. = 200.12'
 S.T. = 100.10'
 x = 299.67'
 y = 10.46'
 $\Delta_c = 24^{\circ}49'55''$
 Lc = 620.80'
 Ts = 495.59'
 Es = 80.07'
 emax = 0.066

S.R. 7 NORTHBOUND LANE
 P.I. Sta. 686+12.75
 $\Delta = 28^{\circ}11'21''$ Lt.
 Dc = 4°30'00"
 Rc = 1273.24'
 Ls = 350'
 $\theta_s = 7^{\circ}52'30''$
 L.T. = 233.57'
 S.T. = 116.87'
 x = 349.33'
 y = 16.02'
 $\Delta_c = 12^{\circ}26'21''$
 Lc = 276.43'
 Ts = 495.59'
 Es = 43.65'
 emax = 0.066

RAMP 'A'
 P.I. Sta. 65+50.05
 $\Delta = 6^{\circ}00'00''$ Lt.
 D = 6°00'
 R = 954.93'
 T = 50.05'
 L = 100'
 E = 1.31'
 P.C. Sta. 65+00
 P.C.C. Sta. 66+00

RAMP 'A'
 P.I. Sta. 66+49.84
 $\Delta = 67^{\circ}12'35''$ Lt.
 D = 76°23'40"
 R = 75'
 T = 49.84'
 L = 87.98'
 E = 15.05'
 P.C.C. Sta. 66.00
 P.T. Sta. 66+87.98

RAMP 'B'
 P.I. Sta. 65+06.31
 $\Delta = 36^{\circ}00'00''$ Lt.
 D = 28°38'52"
 R = 200'
 T = 64.98'
 L = 125.66'
 E = 10.29'
 P.C.C. Sta. 64+41.33
 P.T. Sta. 65+66.99

RAMP 'B'
 P.I. Sta. 63+92.12
 $\Delta = 64^{\circ}00'00''$ Lt.
 D = 16°00'00"
 R = 100'
 T = 62.49'
 L = 111.70'
 E = 12.21'
 P.C. Sta. 63+29.63
 P.C.C. Sta. 64+41.33

RAMP 'A,B'
 P.I. Sta. 62+81.07
 $\Delta = 50^{\circ}00'00''$ Lt.
 D = 47°56'47"
 R = 119.5'
 T = 55.72'
 L = 104.28'
 E = 12.35'
 P.C.C. Sta. 62+25.35
 P.C.C. Sta. 63+29.63

RAMP 'A,B'
 P.I. Sta. 61+66.24
 $\Delta = 35^{\circ}00'00''$ Lt.
 D = 28°38'52"
 R = 45'
 T = 63.06'
 L = 122.17'
 E = 9.71'
 P.C. Sta. 61+03.18
 P.C.C. Sta. 62+25.35

MURDOCK AVE. EXT. CURVE DATA
 P.I. Sta. 685+31.34
 $\Delta = 91^{\circ}55'40''$
 D = 127°19'26"
 R = 45'
 T = 46.54'
 L = 72.20'
 E = 19.74'
 P.C. Sta. 684+84.80
 P.C.C. Sta. 685+57
 emax = 0.083

MURDOCK AVE. EXT. CURVE DATA
 P.I. Sta. 685+79.53
 $\Delta = 15^{\circ}05'45''$
 D = 33°42'12"
 R = 170'
 T = 22.53'
 L = 47.79'
 E = 1.49'
 P.C.C. Sta. 685+57
 P.T. Sta. 686+01.79
 emax = 0.083

COMMERCIAL
 P.I. Sta. 665+57.64
 $\Delta = 24^{\circ}15'37''$ Rt.
 D = 8°00'00"
 R = 716.20'
 T = 153.93'
 L = 303.25'
 E = 16.36'
 P.C. Sta. 664+03.70
 P.C.C. Sta. 667+06.96

COMMERCIAL
 P.I. Sta. 670+35.72
 $\Delta = 13^{\circ}05'36''$ Rt.
 D = 2°00'00"
 R = 2864.79'
 T = 328.77'
 L = 654.67'
 E = 18.80'
 P.C.C. Sta. 667+06.96
 P.C.C. Sta. 673+61.63

T.R. 167
 P.I. Sta. 17+53.15
 $\Delta = 47^{\circ}00'00''$ Rt.
 D = 12°00'
 R = 477.47'
 T = 207.61'
 L = 391.67'
 E = 43.18'
 P.C. Sta. 15+45.54
 P.T. Sta. 19+37.21

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 661+05.35
 $\Delta = 4^{\circ}43'27''$ Lt.
 D = 0°40'
 R = 8,594.37'
 T = 354.51'
 L = 708.63'
 E = 7.31'
 emax = 0.016

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 673+11.55
 $\Delta = 35^{\circ}09'08''$ Rt.
 Dc = 4°00'
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^{\circ}00'$
 L.T. = 200.12'
 S.T. = 100.11'
 x = 299.67'
 y = 10.46'
 $\Delta_c = 23^{\circ}09'08''$
 Lc = 578.81'
 Ts = 604.50'
 Es = 72.89'
 emax = 0.066

S.R. 7 SOUTHBOUND LANE
 P.I. Sta. 686+12.75
 $\Delta = 28^{\circ}11'21''$ Lt.
 Dc = 4°00'00"
 Rc = 1432.39'
 Ls = 300'
 $\theta_s = 6^{\circ}00'12''$
 L.T. = 200.12'
 S.T. = 100.10'
 x = 299.67'
 y = 10.46'
 $\Delta_c = 16^{\circ}11'21''$
 Lc = 404.73'
 Ts = 510.25'
 Es = 47.16'
 emax = 0.066

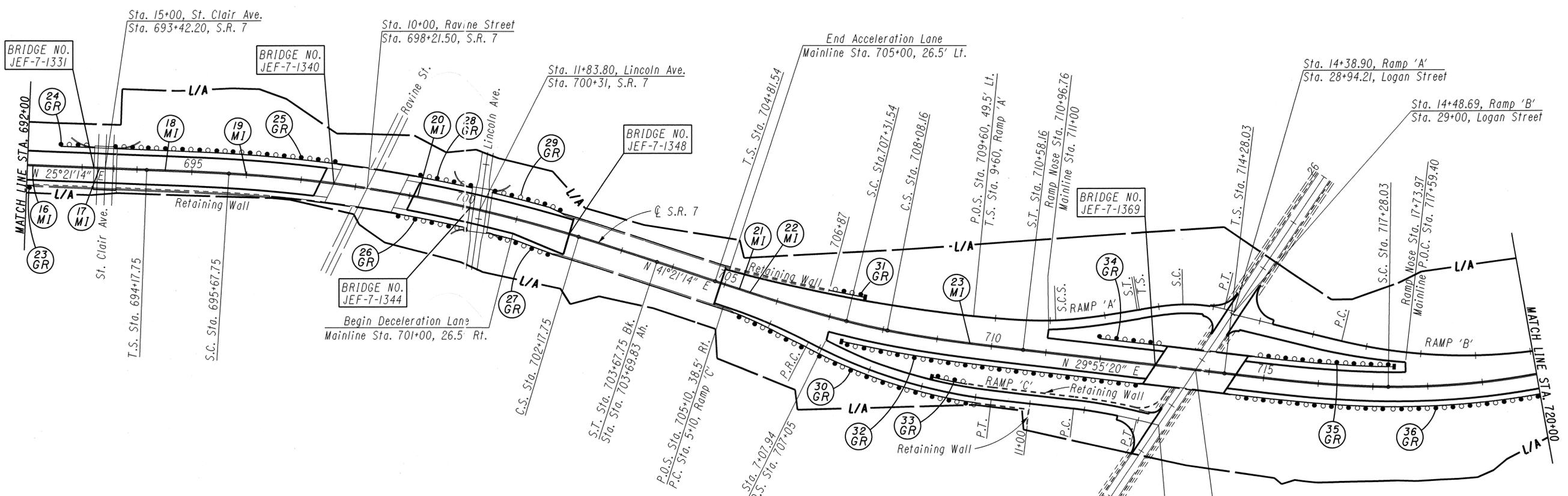
FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

CALCULATED
 RDA
 CHECKED
 TES

0 100 200
 HORIZONTAL
 SCALE IN FEET

PLAN SHEET
 STA. 664+00 TO STA. 692+00

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S.R. 7	S.R. 7	S.R. 7
P.I. Sta. 698+95.42	P.I. Sta. 707+70.53	P.I. Sta. 721+43.24
$\Delta = 16^{\circ}00'00''$ Rt.	$\Delta = 11^{\circ}25'54''$ Lt.	$\Delta = 43^{\circ}00'00''$ Lt.
Dc = 2°00'00"	Dc = 3°30'00"	Dc = 4°00'00"
Rc = 2864.79'	Rc = 1637.02'	Rc = 1432.39'
Ls = 150'	Ls = 250'	Ls = 300'
$\theta_s = 1^{\circ}30'00''$	$\theta_s = 4^{\circ}22'30''$	$\theta_s = 6^{\circ}00'00''$
L.T. = 100'	L.T. = 166.72'	L.T. = 200.12'
S.T. = 50'	S.T. = 83.38'	S.T. = 100.10'
x = 149.99'	x = 249.85'	x = 299.67'
y = 1.31'	y = 6.36'	y = 10.46'
$\Delta c = 13^{\circ}00'00''$	$\Delta c = 2^{\circ}40'54''$	$\Delta c = 31^{\circ}00'00''$
Lc = 650'	Lc = 76.62'	Lc = 775'
Ts = 477.67'	Ts = 288.99'	Ts = 715.21'
Es = 28.48'	Es = 9.78'	Es = 109.94'
emax = 0.0332	emax = 0.058	emax = 0.066

RAMP 'A'
 P.I. Sta. 11+10.60
 $\Delta = 15^{\circ}00'00''$ Lt.
 Dc = 10°00'00"
 Rc = 572.96'
 Ls = 150'
 $\theta_s = 7^{\circ}30'00''$
 L.T. = 100.09'
 S.T. = 50.08'
 x = 149.74'
 y = 6.54'
 $\Delta c = 0^{\circ}00'00''$
 Lc = 0.00'
 Ts = 150.60'
 Es = 6.59'
 emax = 0.038
 T.S. Sta. 9+60
 S.C.S. Sta. 11+10
 S.T. Sta. 12+60

RAMP 'A'
 P.I. Sta. 13+60.48
 $\Delta = 23^{\circ}08'41''$ Lt.
 Dc = 20°00'00"
 Rc = 286.49'
 Ls = 80'
 $\theta_s = 8^{\circ}00'00''$
 L.T. = 53.39'
 S.T. = 26.72'
 x = 79.84'
 y = 3.72'
 $\Delta c = 15^{\circ}08'41''$
 Lc = 75.72'
 Tl = 96.46'
 Es = --
 emax = 0.083
 T.S. Sta. 12+64.02
 S.C. Sta. 13+44.02
 P.T. Sta. 14+19.74

RAMP 'B'
 P.I. Sta. 19+10.28
 $\Delta = 30^{\circ}04'50''$
 D = 6°00'00"
 R = 954.93'
 T = 256.59'
 L = 501.34'
 E = 33.87'
 P.C. Sta. 16+53.69
 P.C.C. Sta. 21+55.03
 emax = 0.066

RAMP 'C'
 P.I. Sta. 5+94.38
 $\Delta = 10^{\circ}05'59''$
 D = 6°00'00"
 R = 954.93'
 T = 84.38'
 L = 168.93'
 E = 3.72'
 P.C. Sta. 5+10
 P.R.C. Sta. 6+78.33
 emax = 0.035

RAMP 'C'
 P.I. Sta. 8+55.60
 $\Delta = 21^{\circ}02'00''$
 D = 6°00'00"
 R = 954.93'
 T = 177.27'
 L = 350.56'
 E = 16.32'
 P.R.C. Sta. 6+78.33
 P.T. Sta. 10+28.88
 emax = 0.083

RAMP 'C'
 P.I. Sta. 12+38.64
 $\Delta = 7^{\circ}00'00''$
 D = 6°00'00"
 R = 954.93'
 T = 58.41'
 L = 116.67'
 E = 1.78'
 P.C. Sta. 11+80.23
 P.T. Sta. 12+96.90
 emax = 0.083

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

PLAN SHEET
STA. 692+00 TO STA. 720+00

JEF-7-10.83

20
44

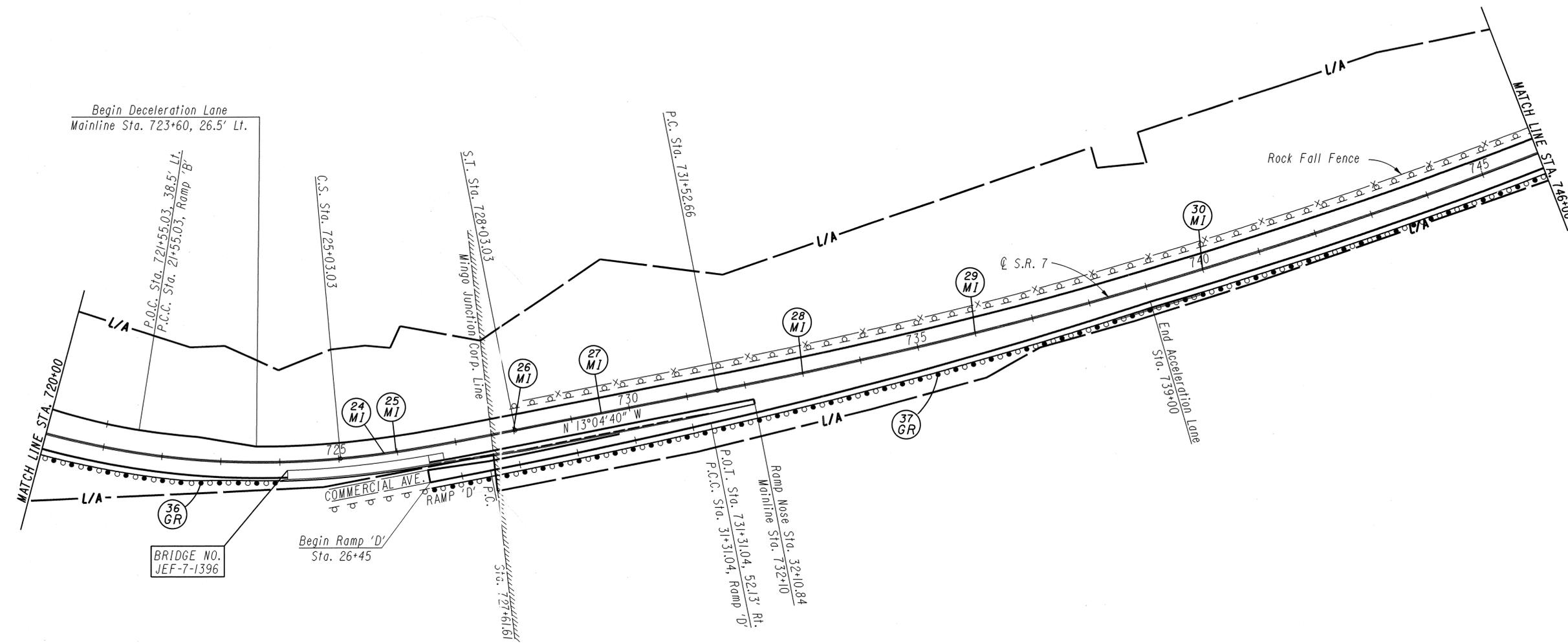
CALCULATED 0
RDA
CHECKED
TES

0 50 100 200
HORIZONTAL
SCALE IN FEET

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S.R. 7
 P.I. Sta. 721+43.24
 $\Delta = 43^{\circ}00'00''$ Lt.
 $Dc = 4^{\circ}00'00''$
 $Rc = 1432.39'$
 $Ls = 300'$
 $\theta s = 6^{\circ}00'00''$
 $L.T. = 200.12'$
 $S.T. = 100.10'$
 $x = 299.67'$
 $y = 10.46'$
 $\Delta c = 31^{\circ}00'00''$
 $Lc = 775'$
 $Ts = 715.21'$
 $Es = 109.94'$
 $emax = 0.066$

S.R. 7
 P.I. Sta. 739+04.57
 $\Delta = 10^{\circ}00'00''$ Lt.
 $D = 0^{\circ}40'00''$
 $R = 8594.37'$
 $T = 751.91'$
 $L = 1500'$
 $E = 32.83'$
 $emax = 0.0156$



RAMP 'D'
 P.I. Sta. 29+40.11
 $\Delta = 1^{\circ}54'33''$
 $D = 0^{\circ}30'00''$
 $R = 11,459.16'$
 $T = 190.93'$
 $L = 381.83'$
 $E = 1.59'$
 P.C. Sta. 27+49.21
 P.C.C. Sta. 31+31.04

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.



CALCULATED
 RDA
 CHECKED
 TES

PLAN SHEET
 STA. 720+00 TO STA. 746+00

JEF-7-10.83

21
 44

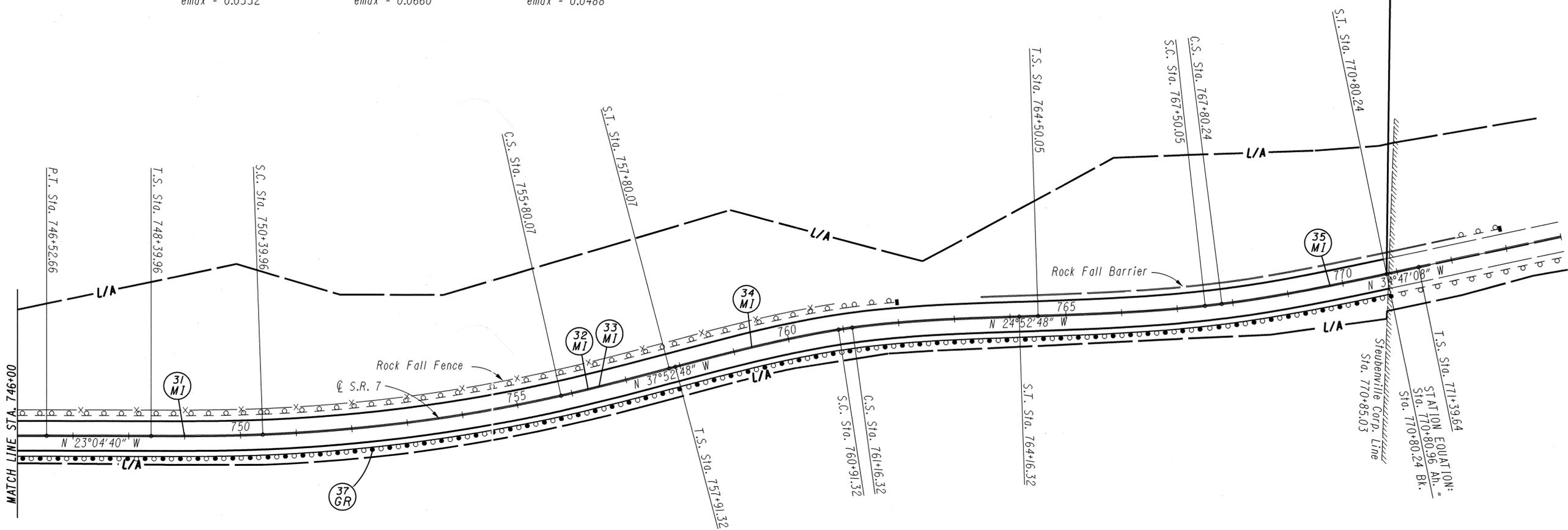
S.R. 7
 P.I. Sta. 739+04.57
 $\Delta = 10^{\circ}00'00''$ Lt.
 $D = 0^{\circ}40'00''$
 $R = 8594.37'$
 $T = 751.91'$
 $L = 1500'$
 $E = 32.83'$
 $e_{max} = 0.0156$

S.R. 7
 P.I. Sta. 753+12.16
 $\Delta = 14^{\circ}48'08''$ Lt.
 $Dc = 2^{\circ}00'00''$
 $Rc = 2864.79'$
 $Ls = 200'$
 $\theta s = 2^{\circ}00'00''$
 $L.T. = 133.34'$
 $S.T. = 66.67'$
 $x = 199.98'$
 $y = 2.33'$
 $\Delta c = 10^{\circ}48'08''$
 $Lc = 540.11'$
 $Ts = 472.20'$
 $Es = 24.65'$
 $e_{max} = 0.0332$

S.R. 7
 P.I. Sta. 761+04.76
 $\Delta = 13^{\circ}00'00''$ Rt.
 $Dc = 4^{\circ}00'00''$
 $Rc = 1432.39'$
 $Ls = 300'$
 $\theta s = 6^{\circ}00'00''$
 $L.T. = 200.11'$
 $S.T. = 100.10'$
 $x = 299.67'$
 $y = 10.46'$
 $\Delta c = 1^{\circ}00'00''$
 $Lc = 25'$
 $Ts = 313.44'$
 $Es = 11.90'$
 $e_{max} = 0.0660$

S.R. 7
 P.I. Sta. 767+65.69
 $\Delta = 9^{\circ}54'20''$ Lt.
 $Dc = 3^{\circ}00'00''$
 $Rc = 1909.86'$
 $Ls = 300'$
 $\theta s = 4^{\circ}30'00''$
 $L.T. = 200.06'$
 $S.T. = 100.06'$
 $x = 299.81'$
 $y = 7.85'$
 $\Delta c = 0^{\circ}54'20''$
 $Lc = 30.19'$
 $Ts = 315.64'$
 $Es = 9.13'$
 $e_{max} = 0.0488$

E100(001)
**END PROJECT
 END WORK
 STA. 770+80.24
 S.L.M. 14.78**



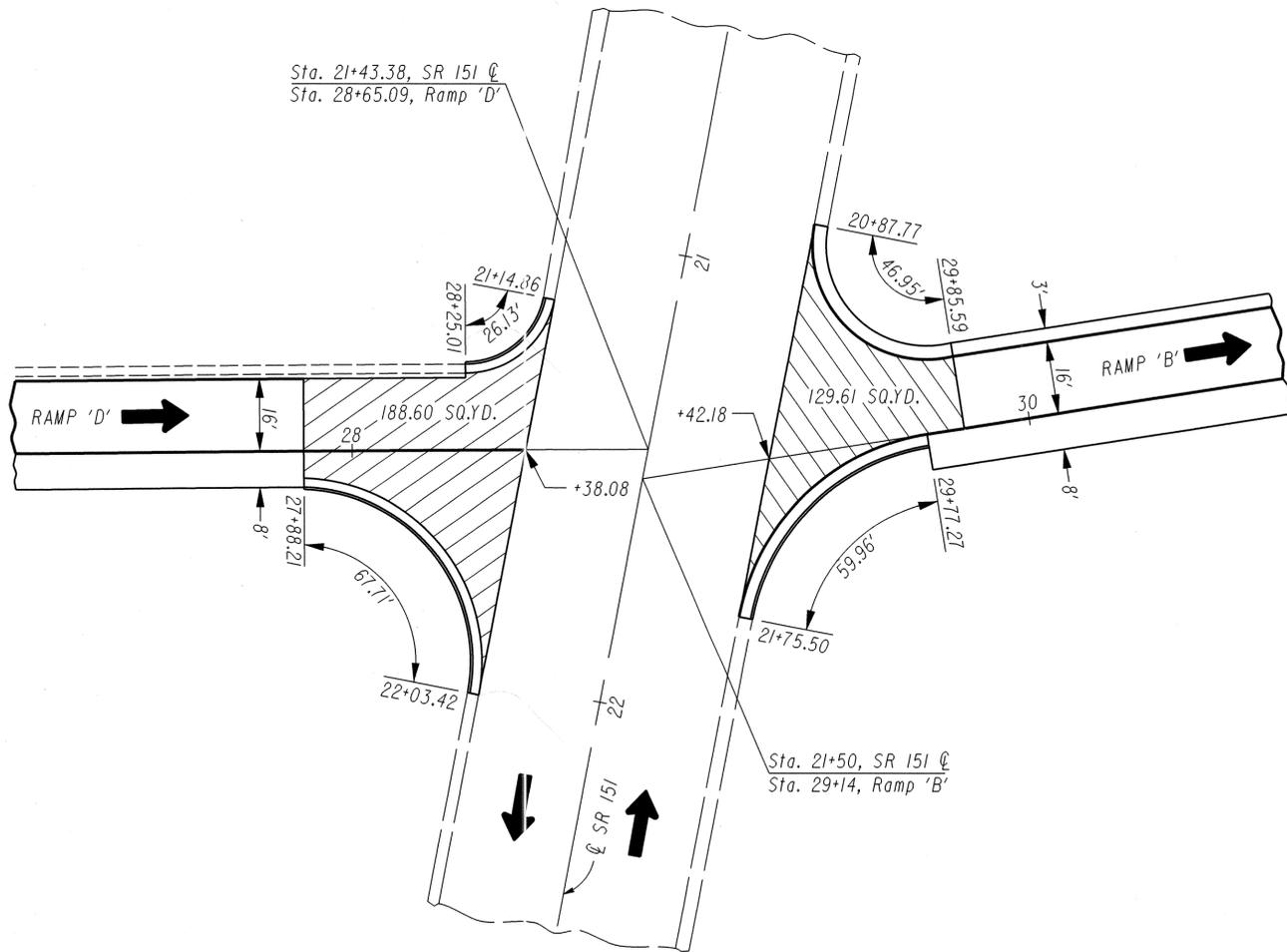
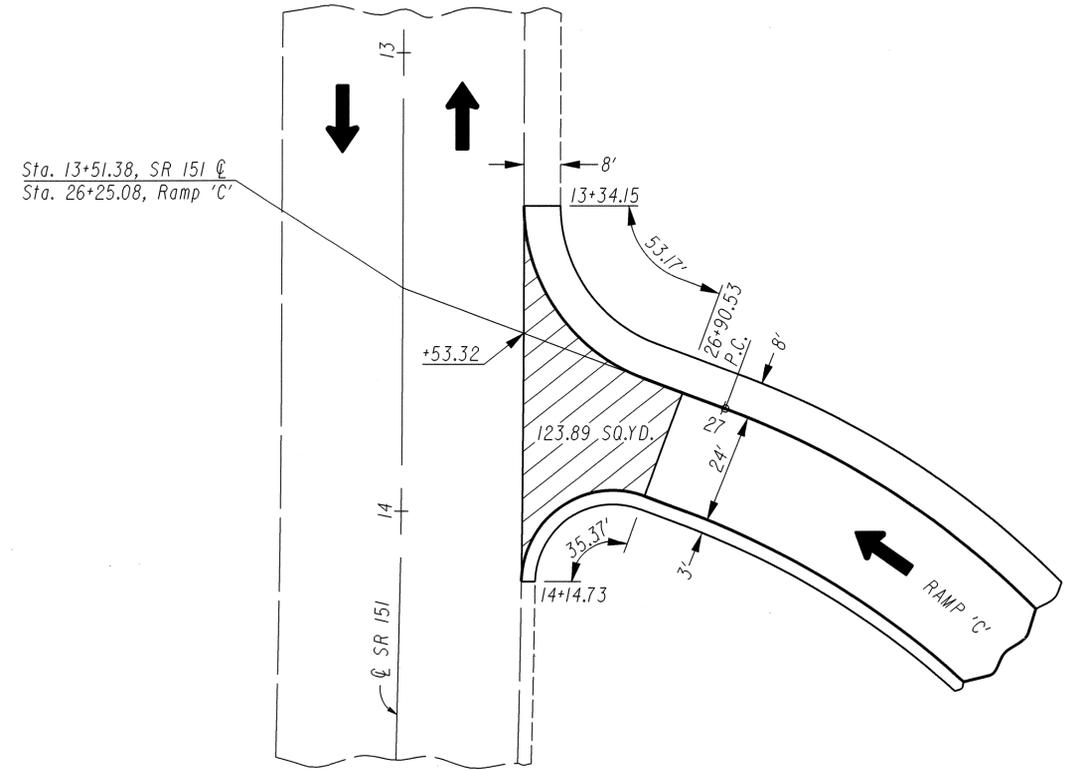
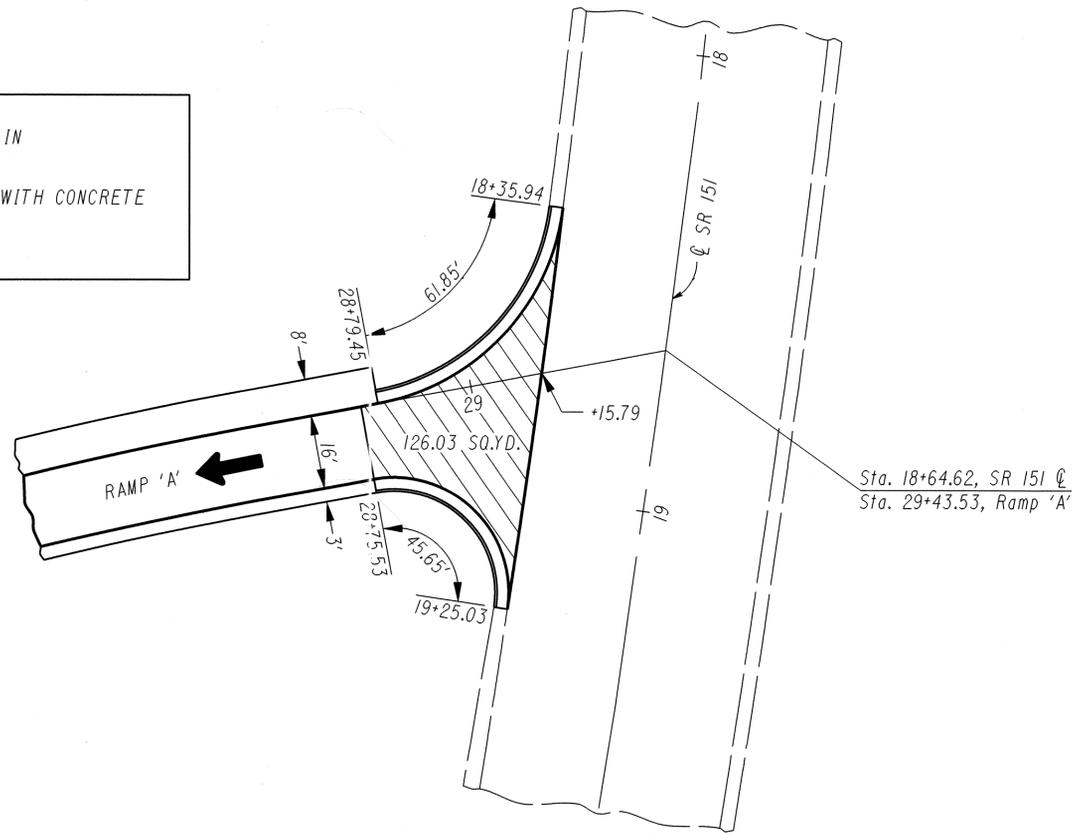
PLAN SHEET
STA. 746+00 TO STA. 774+00

JEF-7-10.83

22
44

FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 13, 14.
 FOR MEDIAN INLET QUANTITIES, SEE SHEET NO. 29.
 FOR CONCRETE BARRIER DETAILS & QUANTITIES, SEE SHEET NO. 29-33.
 FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 41-44.

 CADD GENERATED AREAS USED IN RESURFACING CALCULATIONS
 NOTE: RAMPS A, B & D HAVE FLARES WITH CONCRETE CURB AND GUTTERS, TYPE 2.

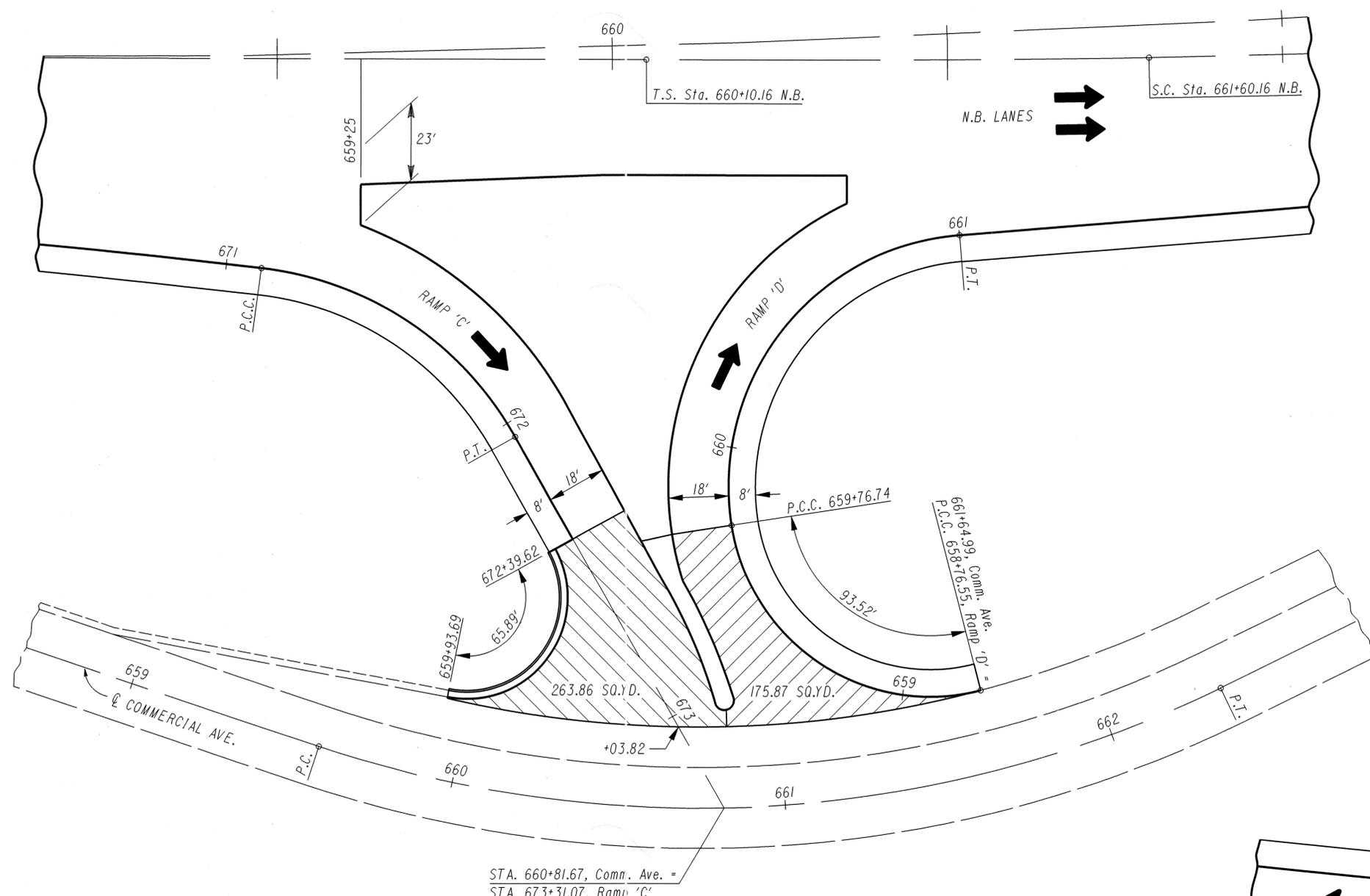


INTERSECTION DETAILS
 S.R. 151 INTERCHANGE

JEF-7-10.83

CALCULATED
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 TES

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CADD GENERATED AREAS USED RESURFACING CALCULATIONS

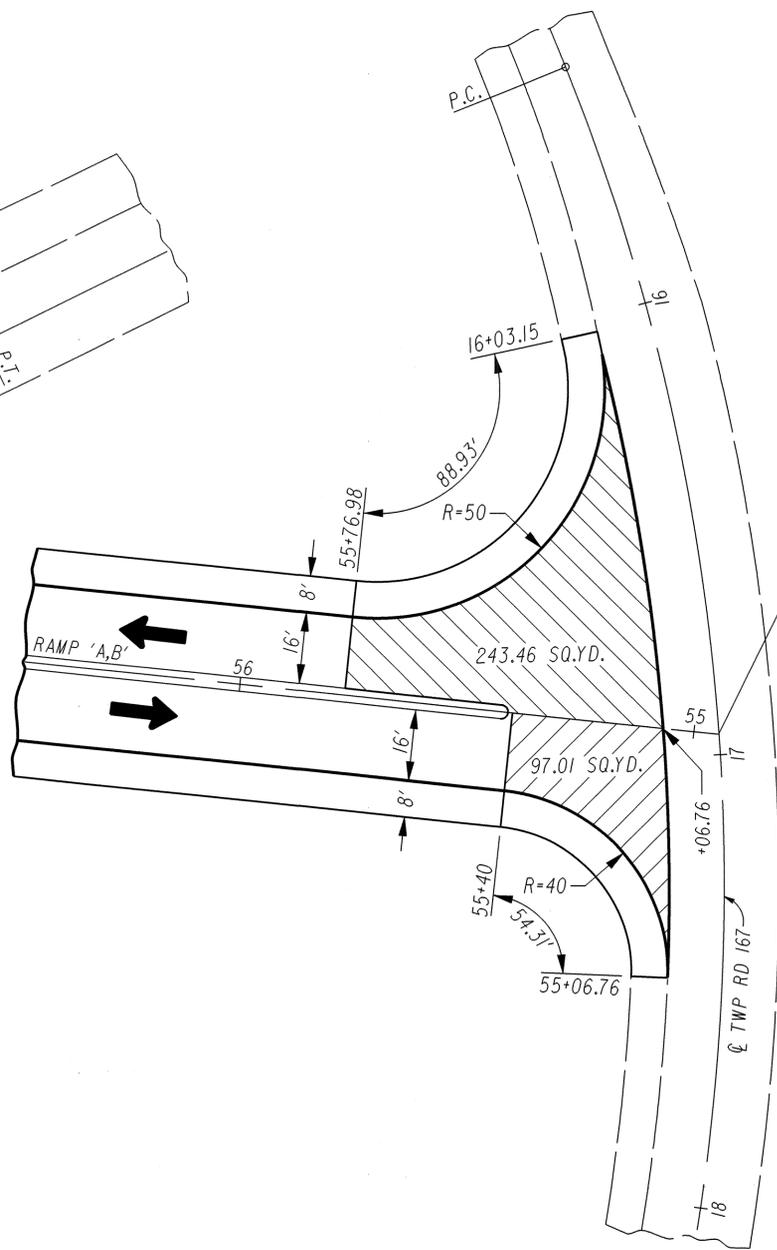
RAMP 'C'
 P.I. Sta. 668+97.10
 $\Delta = 6^{\circ}24'28''$ Rt.
 D = 1°30'
 R = 3819.71'
 T = 213.81'
 L = 427.18'
 E = 5.98'
 P.C. Sta. 666+83.29
 P.C.C. Sta. 671+10.47

RAMP 'C'
 P.I. Sta. 671+61.37
 $\Delta = 53^{\circ}56'52''$ Rt.
 D = 57°17'45"
 R = 100'
 T = 50.90'
 L = 94.16'
 E = 12.21'
 P.C.C. Sta. 671+10.47
 P.T. Sta. 672+04.63

RAMP 'D'
 P.I. Sta. 659+38.81
 $\Delta = 95^{\circ}40'41''$ Rt.
 D = 95°29'35"
 R = 60'
 T = 62.26'
 L = 100.19'
 E = 29.39'
 P.C.C. Sta. 658+76.55
 P.C.C. Sta. 659+76.74

RAMP 'D'
 P.I. Sta. 660+57.44
 $\Delta = 94^{\circ}11'31''$ Rt.
 D = 76°23'40"
 R = 75'
 T = 80.70'
 L = 123.30'
 E = 35.17'
 P.C.C. Sta. 659+76.74
 P.T. Sta. 661+00.04

COMMERCIAL
 P.I. Sta. 661+04.32
 $\Delta = 44^{\circ}15'00''$ Lt.
 D = 16°00'00"
 R = 358.10'
 T = 145.59'
 L = 276.56'
 E = 28.46'
 P.C. Sta. 659+58.73
 P.T. Sta. 662+35.29



T.R. 167
 P.I. Sta. 17+53.15
 $\Delta = 47^{\circ}00'00''$ Rt.
 D = 12°00'
 R = 477.47'
 T = 207.61'
 L = 391.67'
 E = 43.18'
 P.C. Sta. 15+45.54
 P.T. Sta. 19+37.21

Sta. 54+94.57, Ramp 'A,B'
 Sta. 16+95.54, Twp. Rd. 167

CALCULATED
 RDA
 CHECKED
 TES

**INTERSECTION DETAILS
 COMMERCIAL AVENUE & T.R. 167 INTERCHANGE**

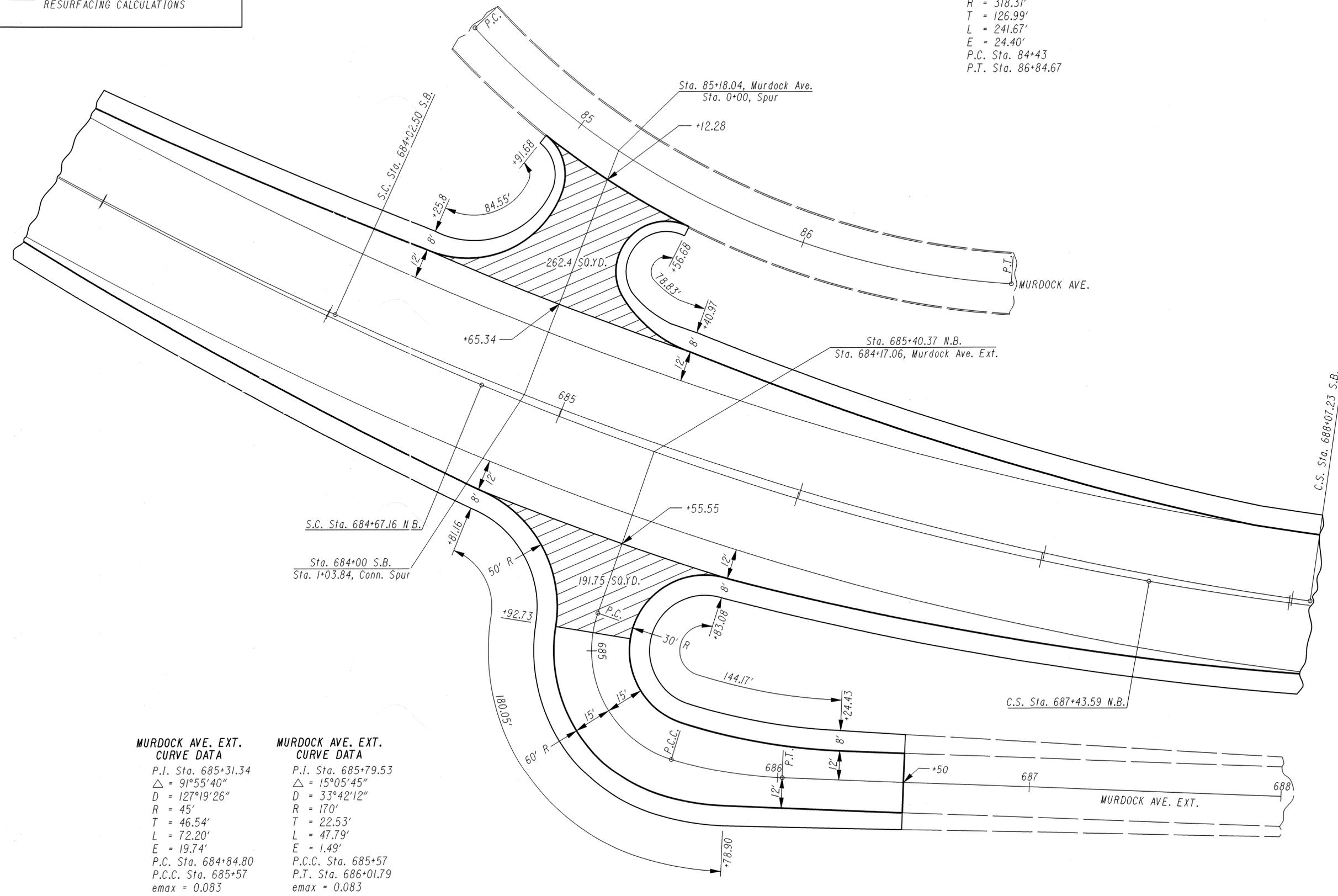
JEF-7-10.83

INTERSECTION DETAILS
MURDOCK AVENUE INTERSECTION

JEF-7-10.83

**MURDOCK AVE.
CURVE DATA**
 P.I. Sta. 85+69.99
 $\Delta = 43^\circ 30'$
 D = 18"
 R = 318.31'
 T = 126.99'
 L = 241.67'
 E = 24.40'
 P.C. Sta. 84+43
 P.T. Sta. 86+84.67

 CADD GENERATED AREAS USED IN RESURFACING CALCULATIONS



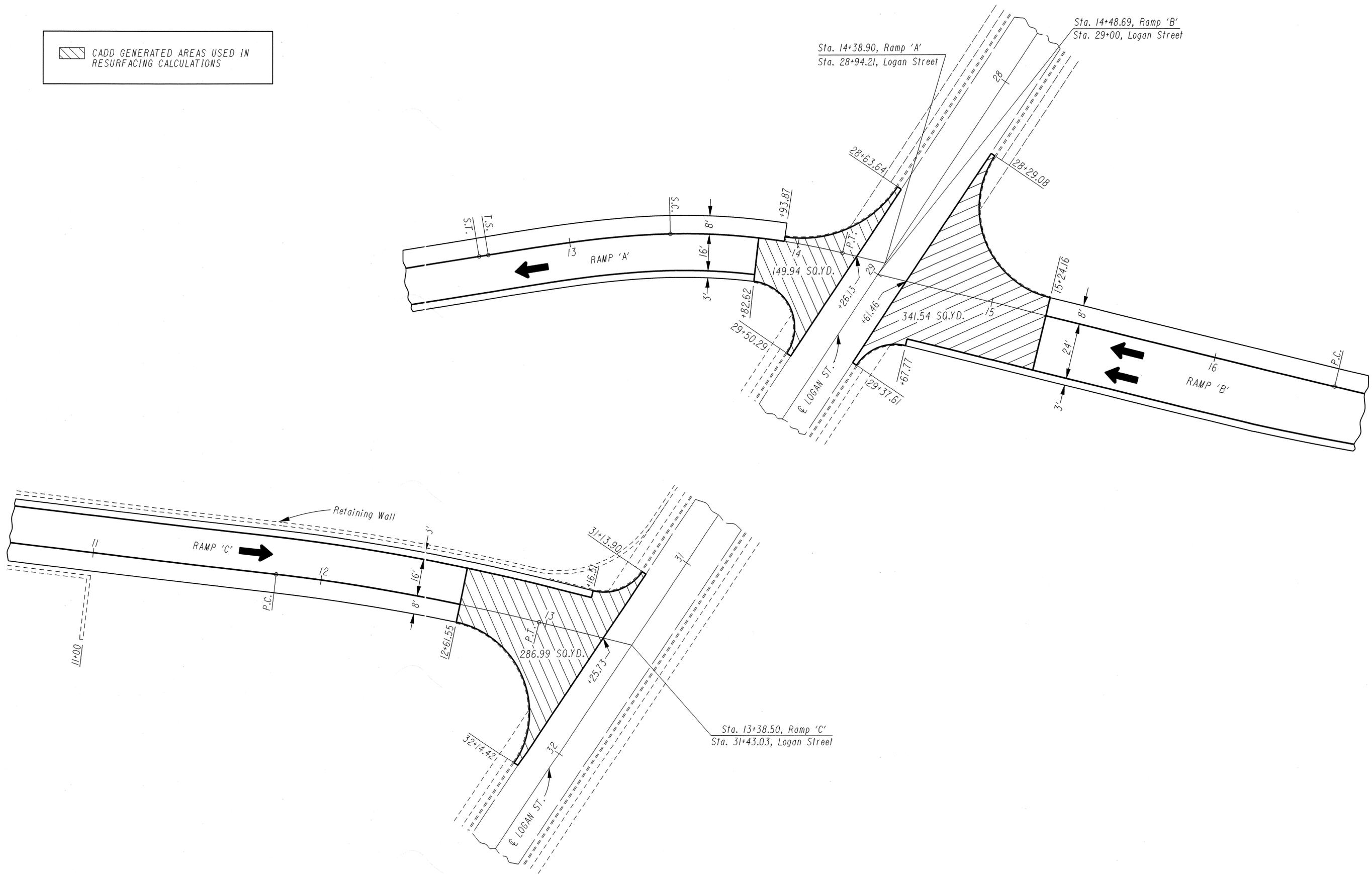
**MURDOCK AVE. EXT.
CURVE DATA**
 P.I. Sta. 685+31.34
 $\Delta = 91^\circ 55' 40''$
 D = 127'19'26"
 R = 45'
 T = 46.54'
 L = 72.20'
 E = 19.74'
 P.C. Sta. 684+84.80
 P.C.C. Sta. 685+57
 emax = 0.083

**MURDOCK AVE. EXT.
CURVE DATA**
 P.I. Sta. 685+79.53
 $\Delta = 15^\circ 05' 45''$
 D = 33'42'12"
 R = 170'
 T = 22.53'
 L = 47.79'
 E = 1.49'
 P.C.C. Sta. 685+57
 P.T. Sta. 686+01.79
 emax = 0.083

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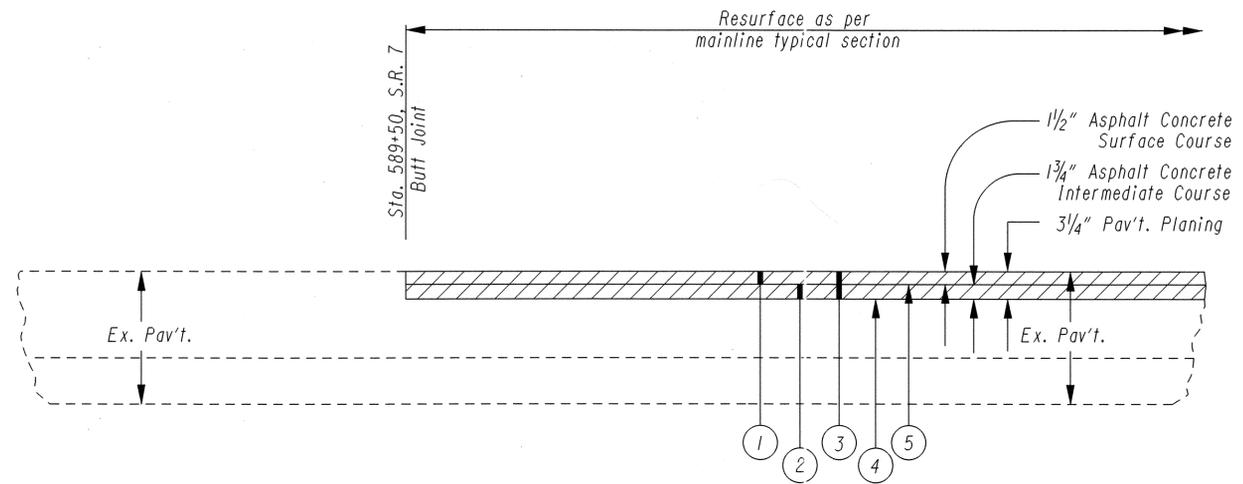
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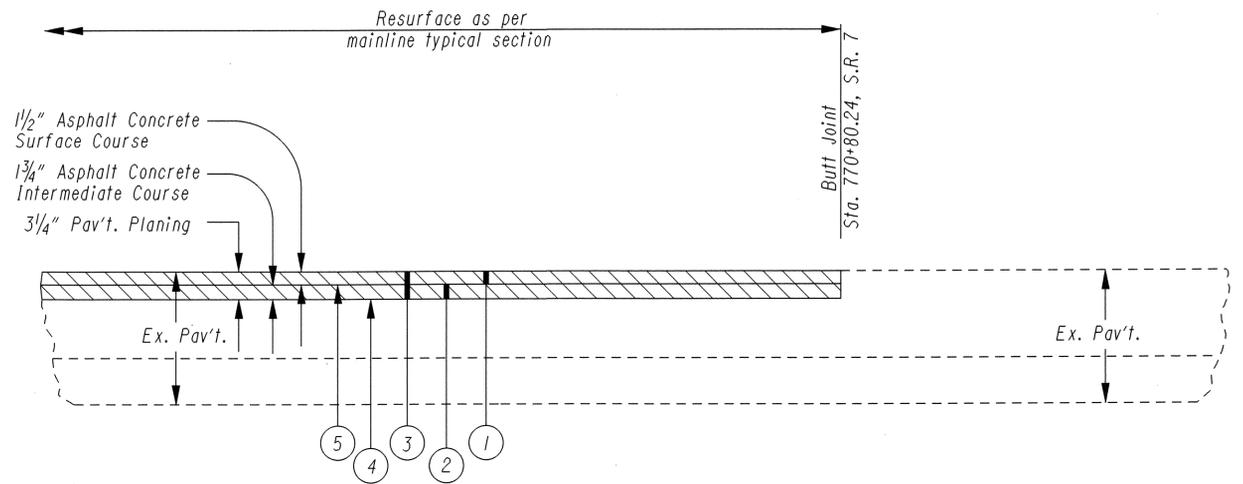
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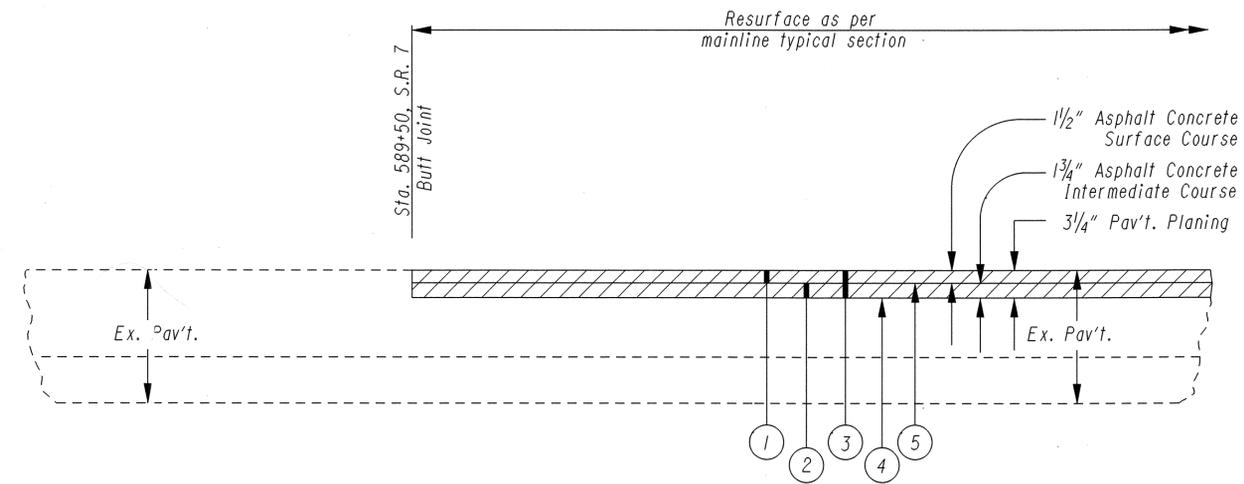
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PAVEMENT TRANSITION AT BEGIN PROJECT

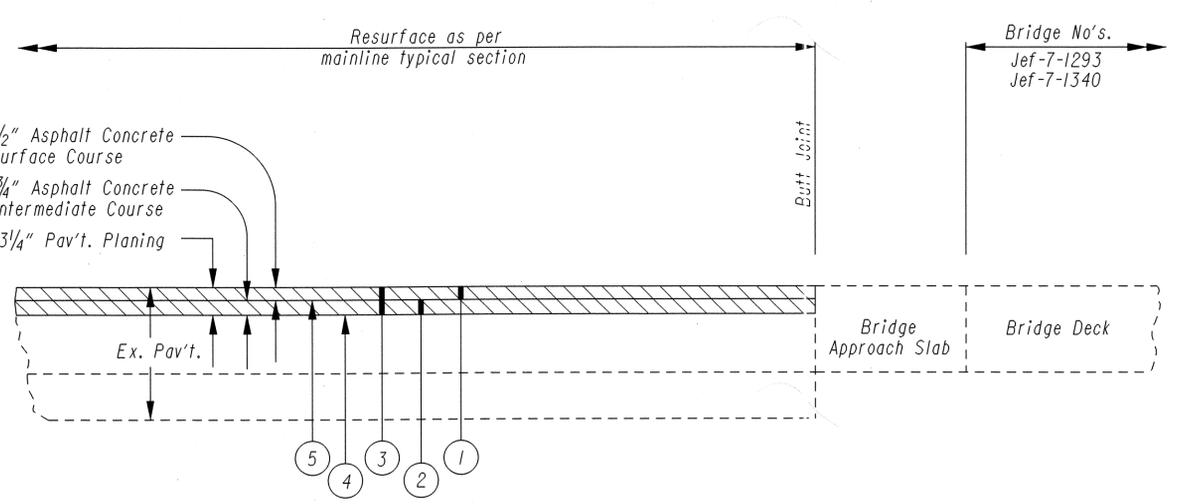


PAVEMENT TRANSITION AT END PROJECT

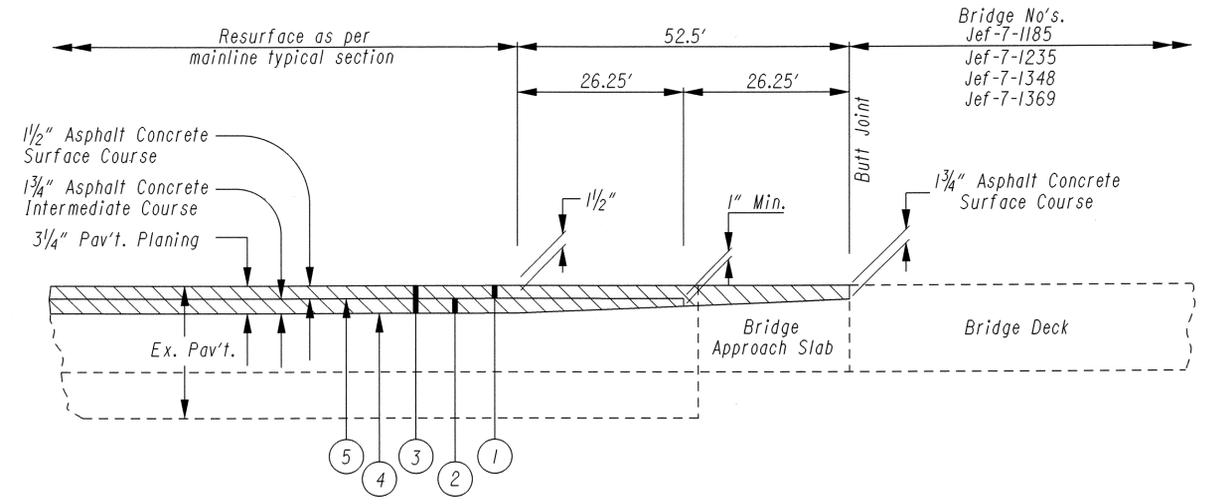


PAVEMENT TRANSITION AT RAMPS

 Pavement Planing
For Legend See Sheet No. 4



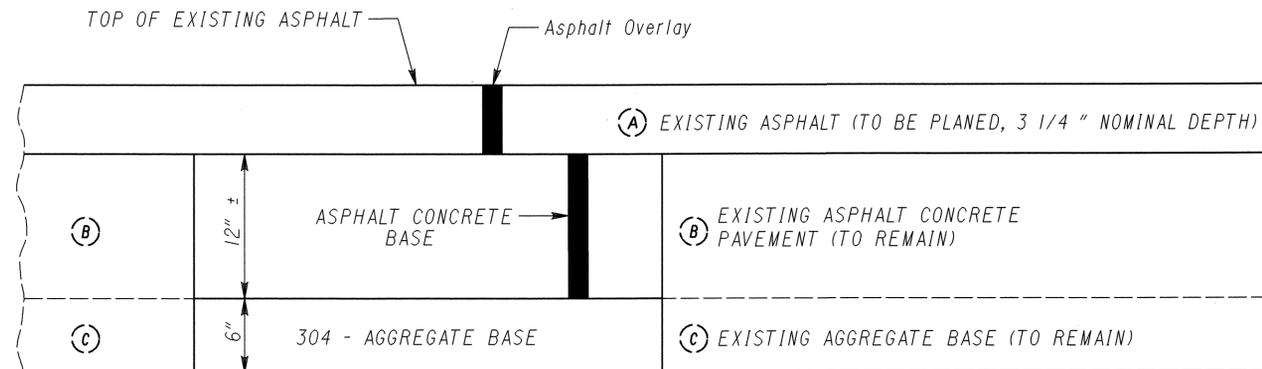
PAVEMENT TRANSITION AT STRUCTURES



PAVEMENT TRANSITION AT STRUCTURES

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**FULL DEPTH REPAIR TYPICAL
MAINLINE & SHOULDERS**

ITEM 253 - PAVEMENT REPAIR

This item shall be used for the repair of the existing pavement and shall meet the requirements of Item 253, Pavement Repair, and the above typical section.

The estimated quantities are to be considered approximate. A final field review will be performed by ODOT prior to construction and final locations will be given to the Contractor prior to construction.

This work consists of removing the existing asphalt concrete and the aggregate base courses; shaping and compacting the exposed material; placing 304 Aggregate Base; followed by 302 Asphalt Concrete Base.

The following estimated quantities have been provided for information only.

302 - Asphalt Concrete Base	2547 Cu. Yd.
304 - Aggregate Base	1274 Cu. Yd.

The following estimated quantity has been carried to the General Summary to be used as directed by the Engineer. Final payment for this item shall be for the accepted quantity completed in place.

Item 253 - Pavement Repair	7642 Sq. Yd.
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ITEM 605 - AGGREGATE DRAINS

This item shall be used to construct aggregate drains and shall meet the requirements of Item 605, Aggregate Drains.

The following estimated quantity has been carried to the General Summary to be used as directed by the Engineer. Final payment for these items shall be for the accepted quantity completed in place.

Item 605 - Aggregate Drains	200 Ft.
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MISCELLANEOUS DETAILS

JEF-7-10.83

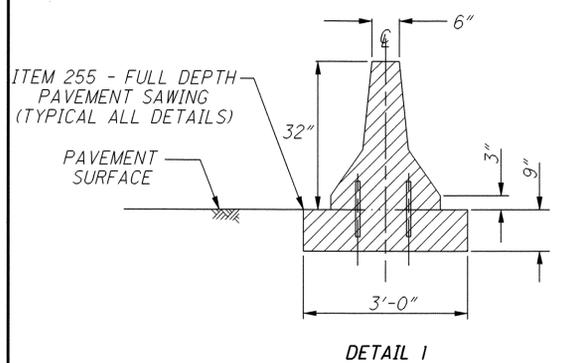
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REF. NO.	PLAN SHEET NO.	STATION		SIDE	202		604					202		622					COMMENTS	SEE SHEET NO.	CALCULATED SAL	CHECKED RMA		
					INLET REMOVED AS PER PLAN	CATCH BASIN ADJUSTED TO GRADE	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE C	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	INLET, NO. 4 FOR SINGLE SLOPE BARRIER, TYPE B	MANHOLE ADJUSTED TO GRADE	DRAINAGE STRUCTURE MISC. INLET CLEANOUT	CONCRETE BARRIER REMOVED	CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN	CONCRETE BARRIER, SINGLE SLOPE, TYPE C, AS PER PLAN	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	BARRIER TRANSITION	CONCRETE BARRIER END ANCHORAGE, REINFORCED, TYPE B	CONCRETE BARRIER END ANCHORAGE, REINFORCED, TYPE B, AS PER PLAN						
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	EACH						
	15	590+25	590+45	℄									20.00							Transition from 32" barrier to 42" barrier	33			
	15	590+45	595+00 BK	℄									455.00	435.00										
	15-16	578+97.05 AH	622+85	℄									4207.95	4207.95										
	16-17	622+85	627+88.23	℄									403.23	403.23										
	17	627+88.23	628+13.23	℄									25.00	10.00							Transition from 42" barrier to 34" barrier across Approach Slab Bridge No. JEF-7-1185	32		
	17	629+92.91	630+17.91	℄									25.00	10.00							Transition from 34" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1185	32		
	17-18	630+17.91	654+07.75	℄									2349.84	2349.84										
	18	654+07.75	654+32.75	℄									25.00	10.00							Transition from 42" barrier to 34" barrier across Approach Slab Bridge No. JEF-7-1235	32		
	18	655+67.25	655+92.25	℄									25.00	10.00							Transition from 34" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1235	32		
	18	655+92.25	669+53.15 BK	℄									1360.90	1360.90										
	18	657+38.94 AH	657+50.84	℄									11.90	11.90										
	18	657+50.84	659+36.20	℄									185.36	185.36							Transition from Type B Barrier to Type D Barrier. See Detail 13 on Barrier Detail Sheets	31		
	18-19	659+36.20	667+87.40 NB	℄									1642.40								Type D Barrier and 4" Slab. See Detail 13 on Barrier Detail Sheets	31		
	19	667+87.40 NB	670+07.79 NB	℄									220.39	220.39							Transition from Type D Barrier to Type B Barrier. See Detail 13 on Barrier Detail Sheets	31		
	19	670+07.79	672+96.71	℄									288.92	288.92										
	19	672+96.71	673+21.71	℄									25.00	10.00							Transition from 42" barrier to 36" barrier across Approach Slab Bridge No. JEF-7-1293	32		
	19	681+55.42	681+80.42	℄									25.00	10.00							Transition from 36" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1293	32		
	19	681+80.42	691+08.27 BK	℄									887.85	887.85										
	19	691+07.89 AH	691+50	℄									42.11	42.11										
	19-20	691+50	696+00	℄									370.00								Type C Barrier			
	20	696+00	697+35.40	℄									135.40	135.40										
	20	697+35.40	697+60.40	℄									25.00	10.00							Transition from 42" barrier to 32" barrier across Approach Slab Bridge No. JEF-7-1340	32		
	20	698+82.22	699+07.22	℄									25.00	10.00							Transition from 32" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1340	32		
	20	699+07.22	701+75.00	℄									247.78								Type C Barrier			
	20	701+75.00	702+00.00	℄									25.00	10.00							Transition from 42" barrier to 34" barrier across Approach Slab Bridge No. JEF-7-1348	32		
	20	704+92.60	705+17.60	℄									25.00	10.00							Transition from 34" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1348	32		
	20	705+17.60	712+75.97	℄									698.37	698.37										
	20	712+75.97	713+00.97	℄									25.00	10.00							Transition from 42" barrier to 34" barrier across Approach Slab Bridge No. JEF-7-1369	32		
	20	714+49.03	714+74.03	℄									25.00	10.00							Transition from 34" barrier to 42" barrier across Approach Slab Bridge No. JEF-7-1369	32		
	20-21	714+74.03	722+50.25	℄									776.22	776.22										
	21	722+50.25	728+38.25	℄									528.00								Type C Barrier			
	21-22	728+38.25	770+60.24	℄									4041.99	4021.99										
	22	770+60.24	770+80.24	℄									20.00								Transition from 42" barrier to 32" barrier	33		
	1-MI	15	581+70	℄																				
	2-MI	15	585+00	℄																				
	3-MI	15	591+25	℄																				
	4-MI	15	594+00	℄																				
	5-MI	15	597+25	℄																				
	6-MI	16	600+65	℄																				
	7-MI	16	607+25	℄																				
	8-MI	16	610+17	℄																				
	9-MI	16	612+25	℄																				
	10-MI	17	630+25	℄																				
	11-MI	17	636+00	℄																				
	12-MI	18	662+53	℄NB																				
			662+53	℄SB																				
	13-MI	19	667+20	℄																				
	14-MI	19	682+05	℄																				
	15-MI	19	685+00	℄																				
	16-MI	20	692+10	℄																				
	17-MI	20	693+32	℄																				
	18-MI	20	694+51.50	℄																				
	19-MI	20	695+99.50	℄																				
	20-MI	20	699+15	℄																				
	21-MI	20	705+28	℄																				
	22-MI	20	705+48	℄																				
	23-MI	20	709+60.70	℄																				
	24-MI	21	725+78	℄																				
	25-MI	21	725+98	℄																				
	26-MI	21	728+00	℄																				
	27-MI	21	729+52	℄																				
	28-MI	21	733+00	℄																				
	29-MI	21	736+00	℄																				
	30-MI	21	740+00	℄																				
	31-MI	22	749+00	℄																				
	32-MI	22	756+30	℄																				
	33-MI	22	756+50	℄																				
	34-MI	22	759+33	℄																				
	35-MI	22	769+77	℄																				
SUBTOTALS					36	26	8	3	25	1	36	19193.61	16145.43	1145.78	1642.40	2	2	12						
TOTALS (Carried to General Summary)					36	26	8	3	25	1	36	19193.61	16145.43	1145.78	1642.40	2	2	12						

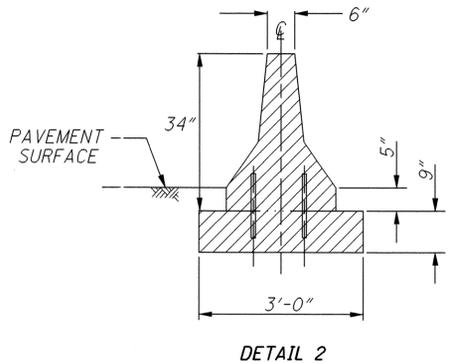
BARRIER QUANTITIES

JEF-7-10.83

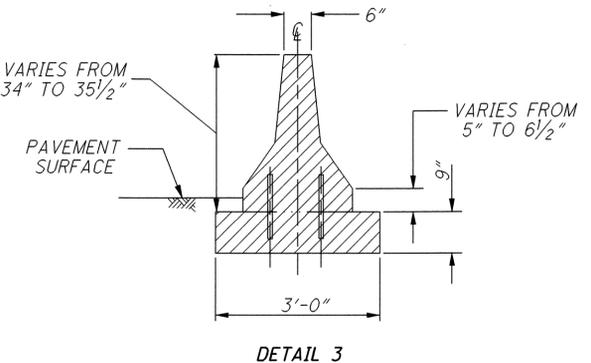
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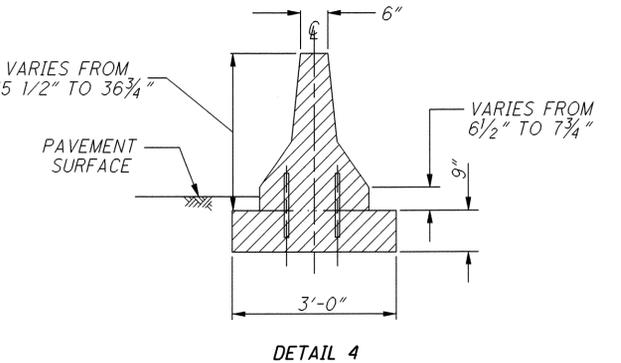
STA. 590+25 TO STA. 595+00 BACK
(STA. 595+00 BACK = STA. 578+97.05 AHEAD)
STA. 578+97.05 AHEAD TO STA. 622+85



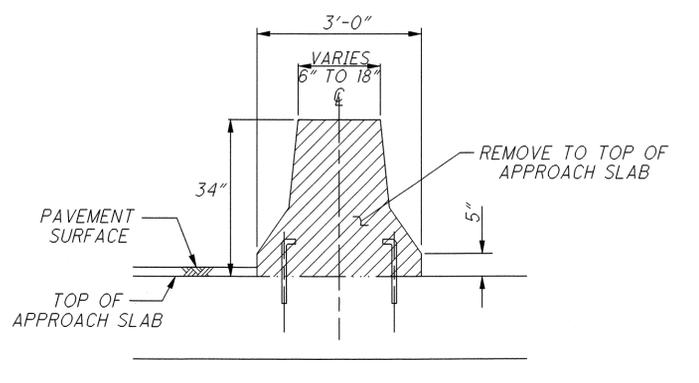
STA. 622+85 TO STA. 627+88.23
STA. 630+17.91 TO STA. 654+07.75
STA. 655+92.25 TO STA. 669+53.15 BACK
(STA. 669+53.15 BACK = STA. 657+38.94 AHEAD)
STA. 657+38.94 AHEAD TO STA. 672+96.71



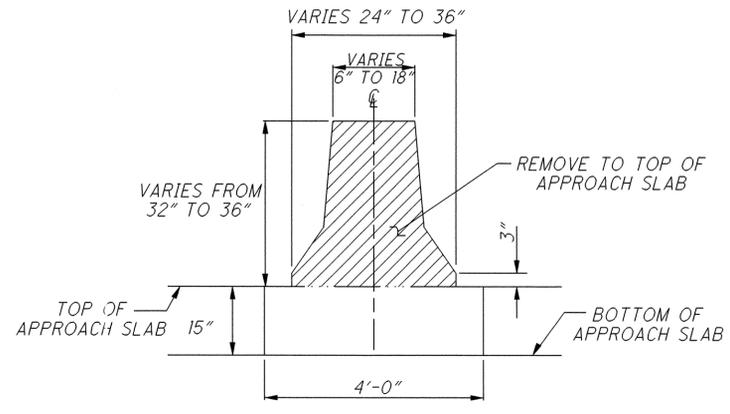
STA. 681+80.42 TO STA. 691+08.27 BACK
(STA. 691+08.27 BACK = STA. 691+07.89 AHEAD)



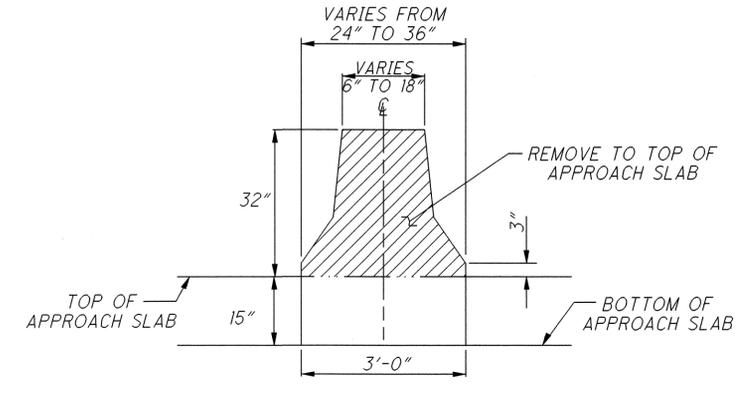
(STA. 691+08.27 BACK = STA. 691+07.89 AHEAD)
STA. 691+07.89 AHEAD TO STA. 691+50
STA. 696+00 TO STA. 697+35.40
STA. 705+17.60 TO STA. 712+75.97
STA. 714+74.03 TO STA. 722+50.25
STA. 728+38.25 TO STA. 770+80.24



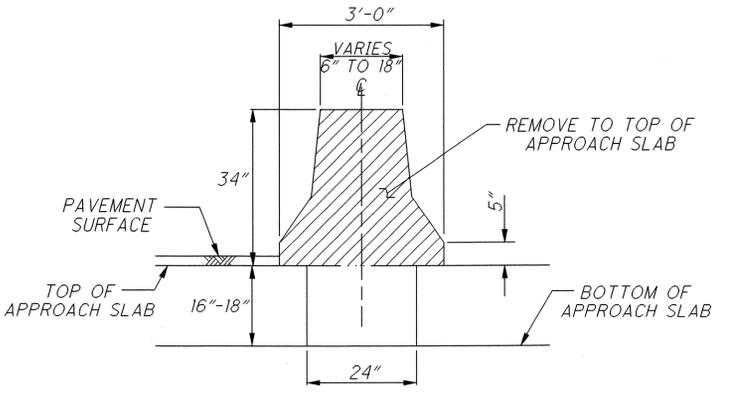
VARIES FROM 6" AT BEGINNING OF THE APPROACH SLAB TO 18" AT THE END OF THE APPROACH SLAB.
DETAIL 5 APPLIES TO APPROACH SLABS FOR
BRIDGE NO. JEF-7-1185
STA. 627+88.23 TO STA. 628+13.23
STA. 629+92.91 TO STA. 630+17.91
BRIDGE NO. JEF-7-1235
STA. 654+07.75 TO STA. 654+32.75
STA. 655+67.25 TO STA. 655+92.25



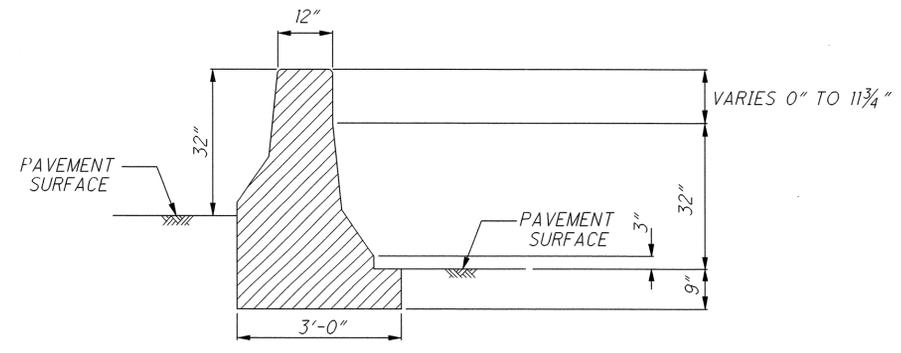
TOP OF BARRIER VARIES FROM 6" AT BEGINNING OF THE APPROACH SLAB TO 18" AT THE END OF THE APPROACH SLAB.
DETAIL 6 APPLIES TO APPROACH SLABS FOR
BRIDGE NO. JEF-7-1293
STA. 672+96.71 TO STA. 673+21.71
STA. 681+55.42 TO STA. 681+80.42



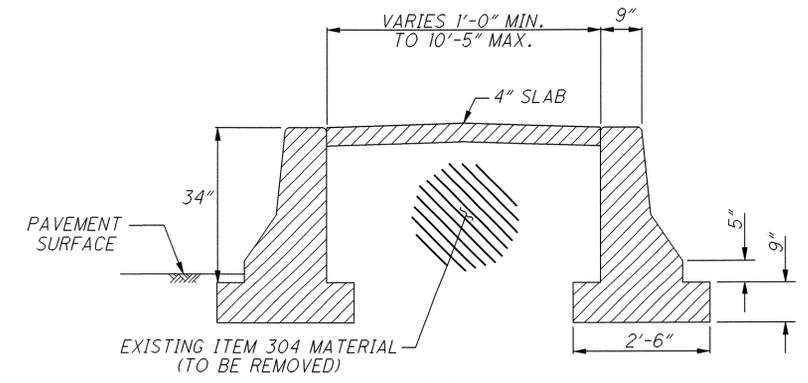
VARIES FROM 6" AT BEGINNING OF THE APPROACH SLAB TO 18" AT THE END OF THE APPROACH SLAB.
DETAIL 7 APPLIES TO APPROACH SLABS FOR
BRIDGE NO. JEF-7-1340
STA. 697+35.40 TO STA. 697+60.40
STA. 698+82.22 TO STA. 699+07.22



VARIES FROM 6" AT BEGINNING OF THE APPROACH SLAB TO 18" AT THE END OF THE APPROACH SLAB.
DETAIL 8 APPLIES TO APPROACH SLABS FOR
BRIDGE NO. JEF-7-1348
STA. 701+75 TO STA. 702+00
STA. 704+92.60 TO STA. 705+17.60
BRIDGE NO. JEF-7-1369
STA. 712+75.97 TO STA. 713+00.97
STA. 714+49.03 TO STA. 714+74.03

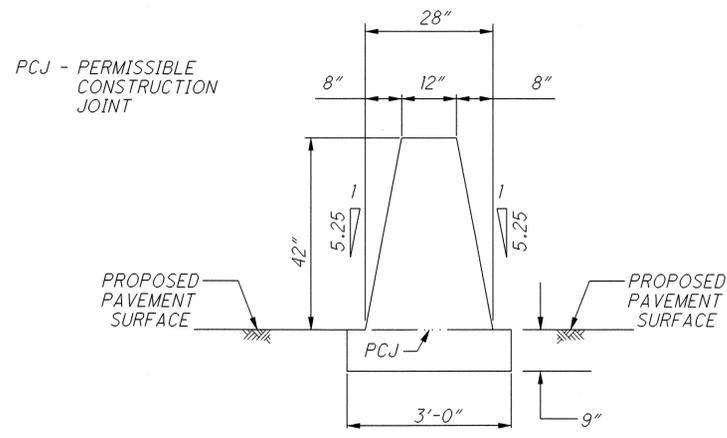


STA. 691+50 TO STA. 696+00
STA. 699+07.22 TO STA. 701+25
STA. 722+50.25 TO STA. 728+38.25



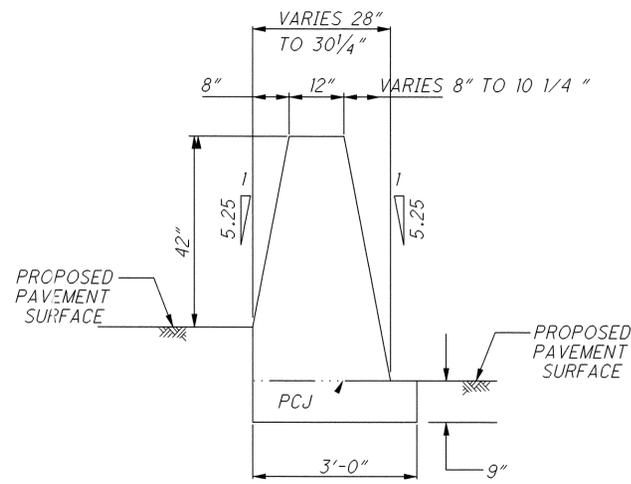
STA. 659+36.20 TO STA. 667+87.40 NB & STA. 667+86.70 SB**
** BEGIN TRANSITION FROM TYPE A BARRIER (SEE DETAIL 2) TO TYPE D BARRIER WITH 4" SLAB (SEE DETAIL 10) FROM STA. 657+50.84 TO STA. 659+36.20 AND STA. 667+87.40 NB TO STA. 670+07.79 NB.
NOTE: THE TOP OF THE TYPE A BARRIER (SHOWN IN DETAIL 2) WIDENS FROM 6" TO 2'-6".

- BARRIER TO BE REMOVED



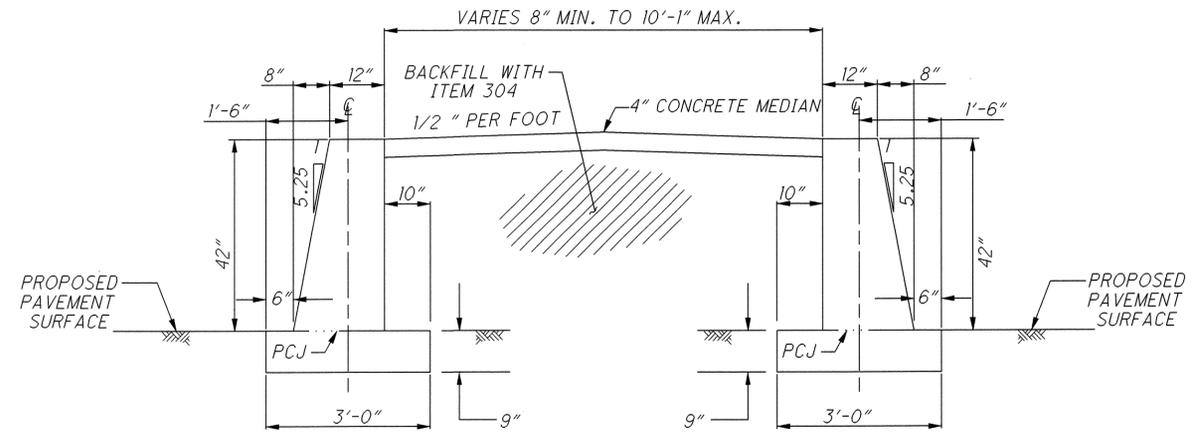
**DETAIL 11
TYPE B BARRIER**

SEE BARRIER QUANTITIES



**DETAIL 12
TYPE C BARRIER**

STA. 691+50 TO STA. 696+00
STA. 699+07.22 TO STA. 701+25
STA. 722+50.25 TO STA. 728+38.25



**DETAIL 13
TYPE D BARRIER WITH 4" SLAB**

STA. 659+36.20 TO STA. 667+87.40 NB & STA. 667+86.70 SB**

** BEGIN TRANSITION FROM TYPE A BARRIER (SEE DETAIL 2) TO TYPE D BARRIER WITH 4" SLAB (SEE DETAIL 10) FROM STA. 657+50.84 TO STA. 659+36.20 AND STA. 667+87.40 NB TO STA. 670+07.79 NB.

NOTE: THE TOP OF THE TYPE B BARRIER (SHOWN IN DETAIL 11) WIDENS FROM 12" TO 2'-8".

- ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN
- ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C, AS PER PLAN
- ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN

THIS ITEM CONSISTS OF PLACING CONCRETE BARRIER, SINGLE SLOPE, AS PER THE PROVISIONS OF THE CMS AND THE STANDARD CONSTRUCTION DRAWINGS, EXCEPT THAT THE BARRIER WILL BE PLACED ON A 36" WIDE BY 9" THICK CONCRETE BASE. IF THE BASE IS BUILT SEPARATELY FROM THE SINGLE SLOPE BARRIER, THE CONSTRUCTION JOINTS MUST BE DOWELED AS PER THE STANDARD CONSTRUCTION DRAWING DETAILS AND NOTES. THE TOP OF THE BASE MUST BE LEVEL WITH THE TOP OF THE ITEM 442 SURFACE COURSE (SEE DETAILS ABOVE).

ITEM 304 - AGGREGATE BASE

IN SOME AREAS THE BASE FOR THE EXISTING NEW JERSEY BARRIER, THAT IS BEING REMOVED, IS UP TO 5 INCHES BELOW THE EXISTING ASPHALT SURFACE AND, THEREFORE, WILL BE BELOW THE PROPOSED ASPHALT SURFACE. SINCE THE TOP OF THE CONCRETE BASE FOR THE PROPOSED SINGLE SLOPE BARRIER, ALL TYPES, IS TO BE LEVEL WITH THE PROPOSED ASPHALT SURFACE COURSE ITEM 304 AGGREGATE BASE MATERIAL WILL BE PROVIDED TO FILL THIS VOID AREA. AN ESTIMATED QUANTITY HAS BEEN PROVIDED BELOW.

ITEM 304 - AGGREGATE BASE 764 CUBIC YARDS

ITEM 255 - FULL DEPTH PAVEMENT SAWING

FULL DEPTH PAVEMENT SAWING HAS BEEN PROVIDED TO SAW CUT BOTH SIDES OF THE EXISTING MEDIAN BARRIER TO FACILITATE ITS REMOVAL. ALL PROVISIONS OF ITEM 255 APPLY.

ITEM 255 - FULL DEPTH PAVEMENT SAWING 39,107 FEET

ITEM 626 - BARRIER REFLECTOR

PROVIDE BARRIER REFLECTORS, TYPE B, ALONG BOTH SIDES OF THE MEDIAN BARRIER, AS PER CMS 626. AN ESTIMATED QUANTITY FOR THE BARRIER REFLECTORS TO BE PLACED HAS BEEN PROVIDED BELOW. AN ESTIMATED QUANTITY HAS BEEN PROVIDED BELOW TO REMOVE THE BARRIER REFLECTORS ON CONCRETE MEDIAN BARRIER ACROSS THE BRIDGES.

ITEM 202 - REMOVAL, MISC.: BARRIER REFLECTORS 40 EACH

ITEM 626 - BARRIER REFLECTOR 390 EACH

ITEM 202 - INLET REMOVED, AS PER PLAN

THIS ITEM CONSISTS OF REMOVING THE EXISTING MEDIAN BARRIER INLETS. CARE SHALL BE TAKEN DURING THE REMOVAL OPERATIONS TO PROTECT THE PORTIONS OF THE EXISTING INLET, INCLUDING THE TROUGH, THAT ARE TO REMAIN AND BE INCORPORATED INTO THE PROPOSED INLET.

ITEM 304 - AGGREGATE BASE, AS PER PLAN

THIS ITEM CONSISTS OF REMOVING THE EXISTING 304 AGGREGATE BASE MATERIAL BETWEEN THE EXISTING TYPE D BARRIER (SEE DETAIL 10 OF EXISTING NEW JERSEY BARRIER DETAILS) TO BE ABLE TO CONSTRUCT THE NEW SINGLE SLOPE BARRIER, TYPE D, THEN PLACING ITEM 304 AGGREGATE BASE TO THE BOTTOM OF THE PROPOSED 4" CONCRETE MEDIAN.

ITEM 304 - AGGREGATE BASE, AS PER PLAN 215 CUBIC YARDS

ITEM 202 - CONCRETE MEDIAN REMOVED

THIS ITEM CONSISTS OF REMOVING THE EXISTING 4 INCH CONCRETE MEDIAN BETWEEN THE EXISTING TYPE D BARRIER (SEE DETAIL 10 OF EXISTING NEW JERSEY BARRIER DETAILS) TO BE ABLE TO CONSTRUCT THE NEW SINGLE SLOPE BARRIER, TYPE D.

ITEM 202 - CONCRETE MEDIAN REMOVED 639 SQUARE YARDS

ITEM 609 - CONCRETE MEDIAN

THIS ITEM CONSISTS OF PLACING A 4 INCH CONCRETE MEDIAN BETWEEN THE PROPOSED SINGLE SLOPE TYPE D BARRIER (SEE DETAIL 13 OF SINGLE SLOPE BARRIER DETAILS). THE MEDIAN WILL BE SLOPED DOWN, FROM THE CENTER, AT 1/2" PER FOOT TO THE TYPE D BARRIER.

ITEM 609 - CONCRETE MEDIAN 608 SQUARE YARDS

ITEM 519 - PATCHING CONCRETE STRUCTURE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PATCHING OF THE CONCRETE BARRIER AT THE LOCATIONS AS DIRECTED BY THE ENGINEER. THE PATCHING SHALL BE COMPLETED BEFORE THE ASPHALT SURFACE COURSE IS PLACED. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 519, PATCHING CONCRETE STRUCTURE AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS.

ITEM 519, PATCHING CONCRETE STRUCTURE 100 SQUARE FEET

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ALL NEW MEDIAN BARRIER AND MEDIAN BARRIER INLETS ARE TO BE SEALED USING ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE). THIS INCLUDES THE TOP EXPOSED SURFACE OF THE BASE. THE EPOXY SEALER SHALL BE TINTED FEDERAL COLOR STANDARD NO. 17778 (Light Neutral).

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) 19,303 SQUARE YARDS

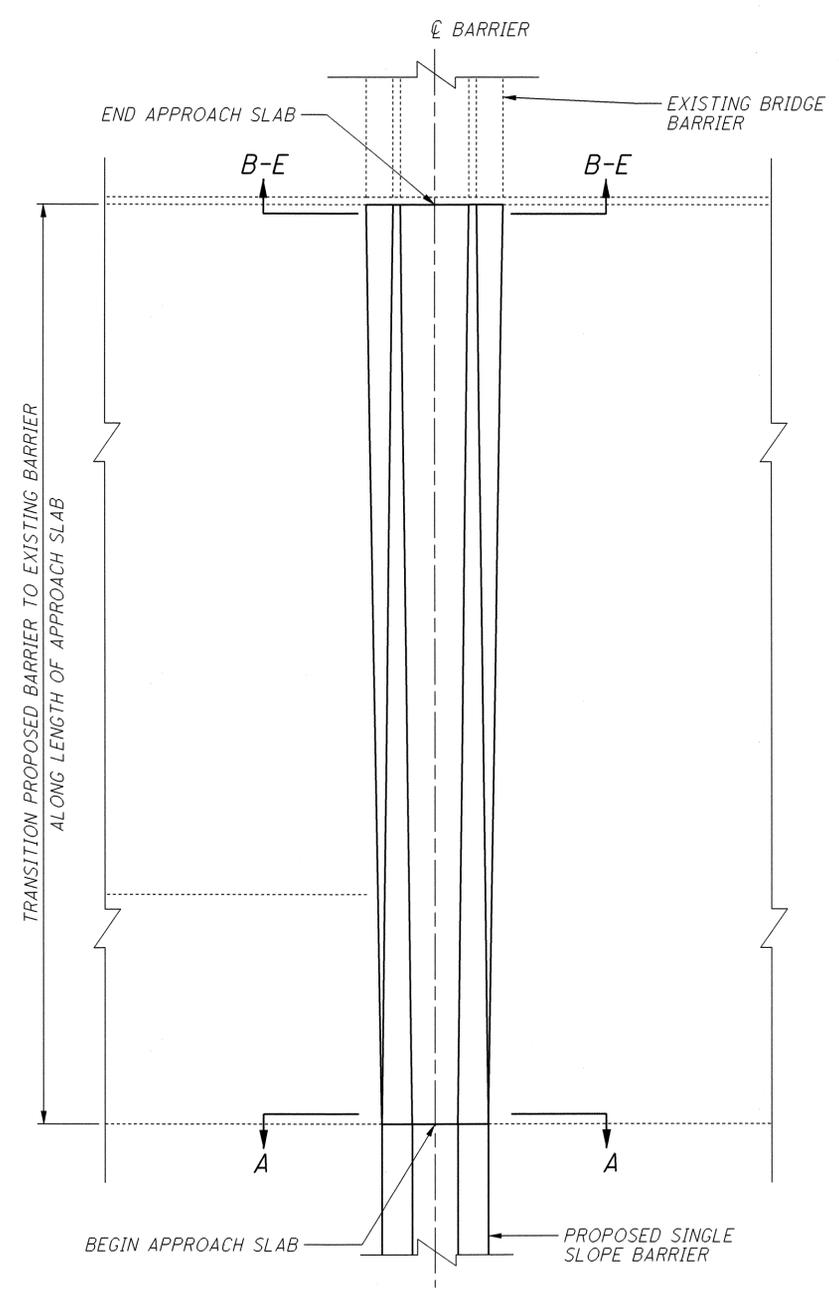
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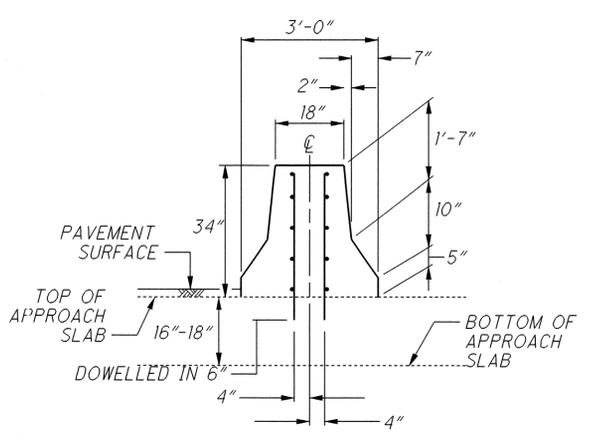
SINGLE SLOPE BARRIER DETAILS & QUANTITIES

JEF-7-10.83

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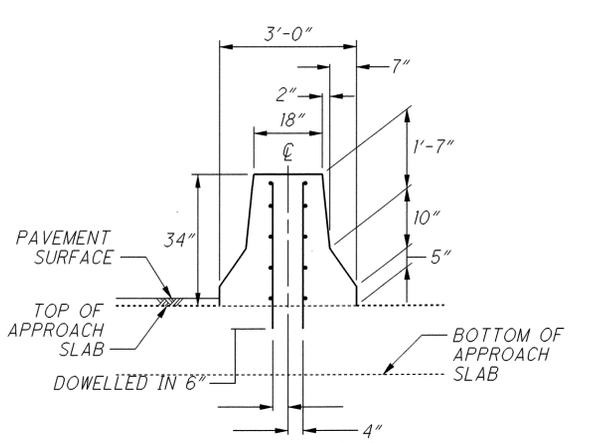


PLAN



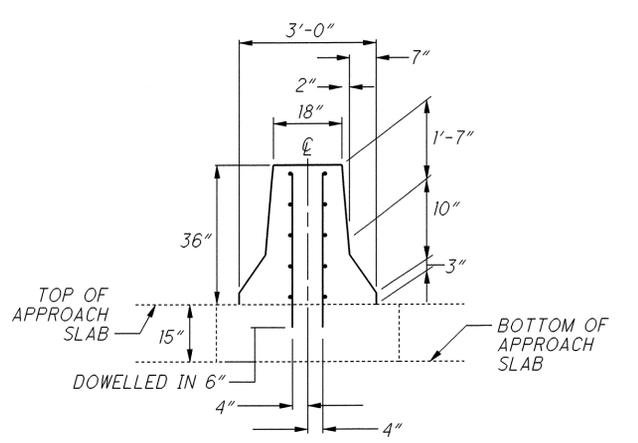
SECTION B-B

TOP WIDTH OF THE BARRIER IS 18" AT THE END OF THE APPROACH SLAB. NEW BARRIER TO MATCH THE BARRIER ON THE BRIDGE STRUCTURE.
SECTION B-B APPLIES TO APPROACH SLABS FOR BRIDGE NO. JEF-7-1348 STA. 701+75 TO STA. 702+00 STA. 704+92.60 TO STA. 705+17.60 Bridge No. JEF-7-1369 STA. 712+75.97 TO STA. 713+00.97 STA. 714+49.03 TO STA. 714+74.03



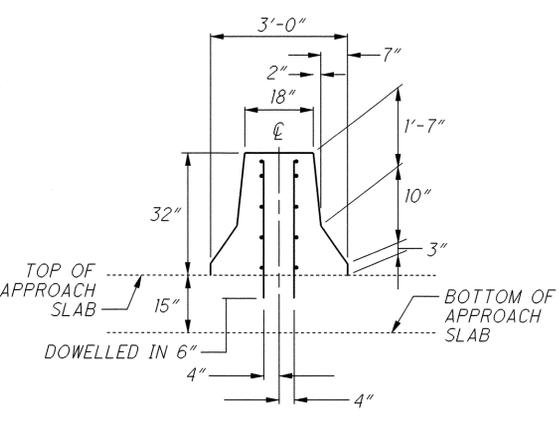
SECTION D-D

TOP WIDTH OF THE BARRIER IS 18" AT THE END OF THE APPROACH SLAB. NEW BARRIER TO MATCH THE BARRIER ON THE BRIDGE STRUCTURE.
SECTION D-D APPLIES TO APPROACH SLABS FOR BRIDGE NO. JEF-7-1185 STA. 627+88.23 TO STA. 628+13.23 STA. 629+92.91 TO STA. 630+17.91 BRIDGE NO. JEF-7-1235 STA. 654+07.75 TO STA. 654+32.75 STA. 655+67.25 TO STA. 655+92.25



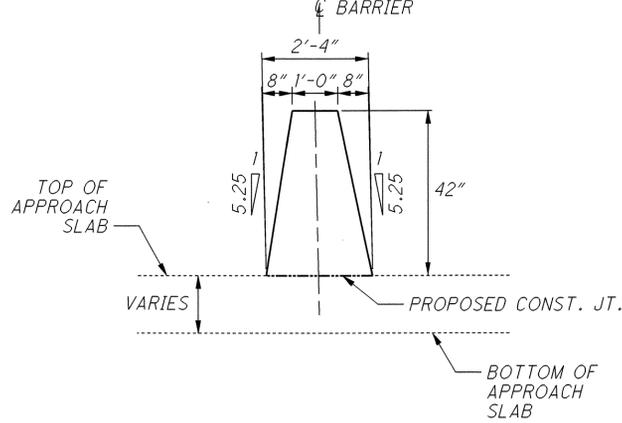
SECTION E-E

TOP WIDTH OF THE BARRIER IS 18" AT THE END OF THE APPROACH SLAB. NEW BARRIER TO MATCH THE BARRIER ON THE BRIDGE STRUCTURE.
SECTION E-E APPLIES TO APPROACH SLABS FOR BRIDGE NO. JEF-7-1293 STA. 672+96.71 TO STA. 673+21.71 STA. 681+55.42 TO STA. 681+80.42



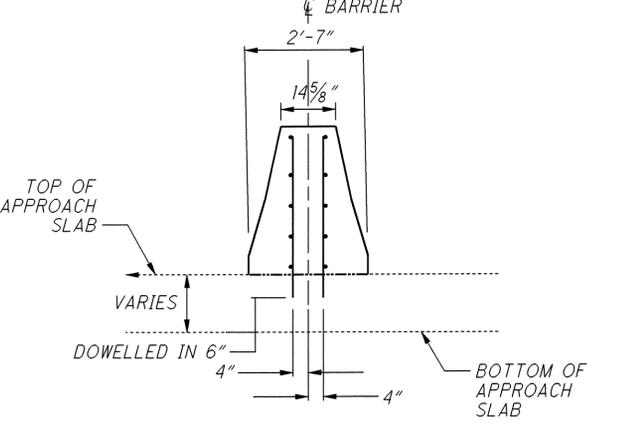
SECTION C-C

TOP WIDTH OF THE BARRIER IS 18" AT THE END OF THE APPROACH SLAB. NEW BARRIER TO MATCH THE BARRIER ON THE BRIDGE STRUCTURE.
SECTION C-C APPLIES TO APPROACH SLABS FOR BRIDGE NO. JEF-7-1340 STA. 697+35.40 TO STA. 697+60.40 STA. 698+82.22 TO STA. 699+07.22



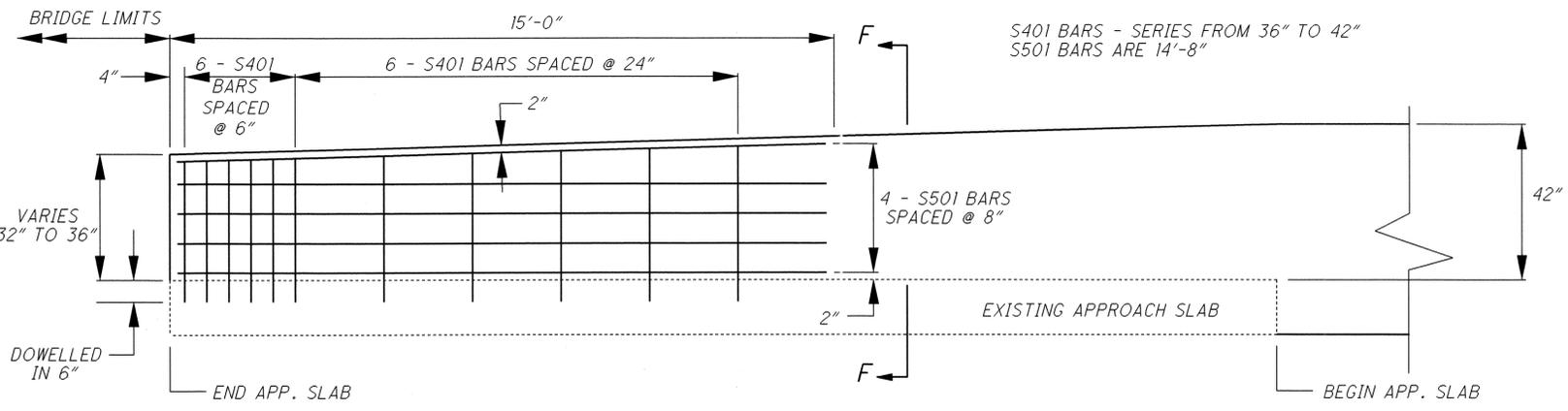
SECTION A-A

TYPICAL ALL APPROACH SLABS



SECTION F-F

TYPICAL ALL APPROACH SLABS



ELEVATION

ITEM 622 - CONCRETE BARRIER END ANCHORAGE, REINFORCED, TYPE B, AS PER PLAN

THIS WORK WILL CONSIST OF BUILDING CONCRETE BARRIER END ANCHORAGES, AS PER THE DETAILS ON THIS SHEET AND IN SDC RM-4.3, ACROSS THE APPROACH SLABS FOR THE BRIDGES ON THIS PROJECT. THE S401 BARS WILL BE DOWELED INTO THE APPROACH SLAB A MINIMUM OF 6 INCHES. THE TOP S501 BAR WILL MATCH THE TOP SLOPE OF THE BARRIER TRANSITION AND HAVE A MINIMUM OF 2 INCHES OF CONCRETE COVER. ALL REINFORCING STEEL SHALL BE EPOXY COATED. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 622, CONCRETE BARRIER END ANCHORAGE, REINFORCED, TYPE B, AS PER PLAN, AND SHALL INCLUDE ALL MATERIALS, LABOR, AND OTHER INCIDENTALS NECESSARY TO CONSTRUCT THIS ANCHOR.

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NOTES

GENERAL: This sheet details the Barrier Transition, to connect existing NJ Concrete Barrier (safety shape) to a new run of Single Slope Concrete Barrier at locations shown on the plans. For Single Slope barrier details, see RM-4.3.

ADJACENT CONCRETE BARRIER RUNS: Remove any tapered end sections, Impact attenuators, or other guardrail hardware from existing barrier end.

The adjacent single slope end should be terminated with a reinforced End Anchor as detailed on the SCDs.

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the safety shape face to the single slope face is made over a 20' [6 m] length. The actual shape of the Transition is dependent on both the adjacent NJ barrier and the single slope barrier types, as detailed on the plans. The contractor and Engineer will agree on a construction method to ensure a smooth barrier face.

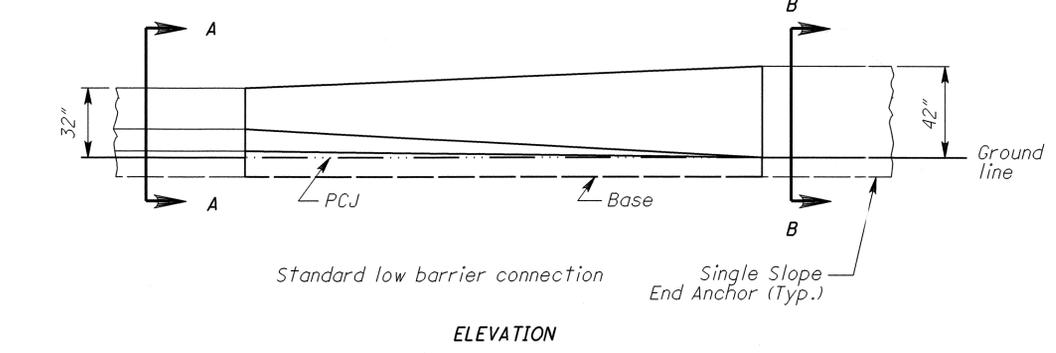
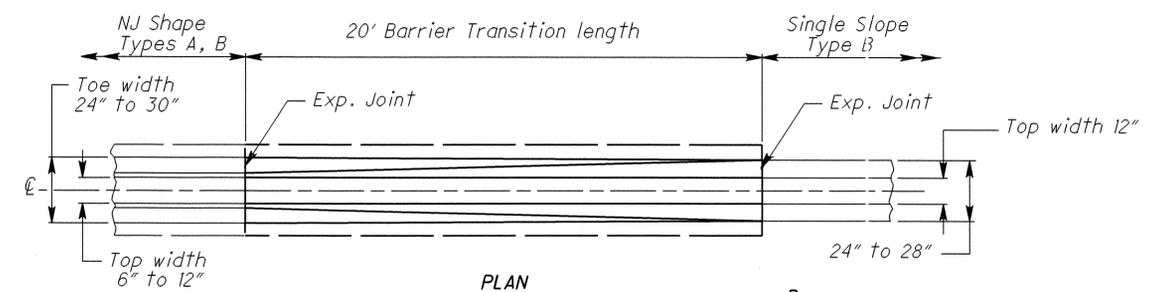
MATERIALS: Materials are same for those shown on RM-4.3, except that cast-in-place is the only acceptable method. Edges may be chamfered or radiused as shown on those drawings.

CONCRETE BASE: Construct proposed barrier on new concrete base.

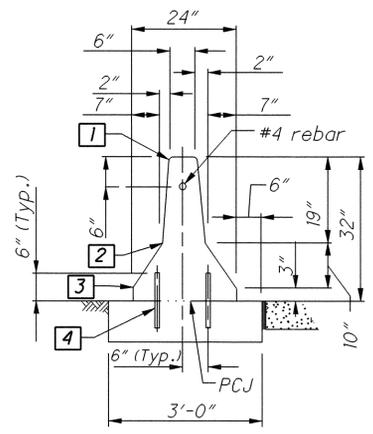
JOINTS: Construct joints as shown on respective barrier drawings.

RACEWAYS: When specified, place raceway(s) to match raceway elevation in adjoining segments. Place to obtain maximum concrete cover.

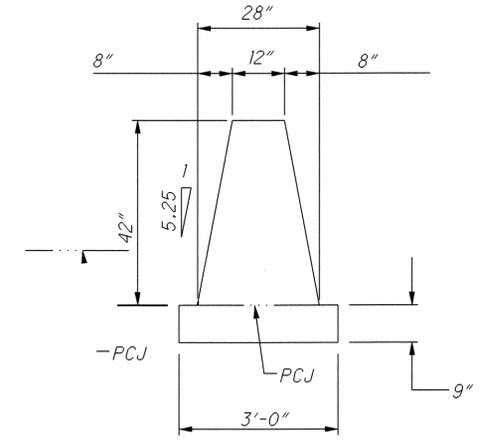
PAYMENT: This Barrier Transition shall include all material and labor needed to construct this 20' [6 m] section, including any raceways, reinforcing steel, dowels and other necessary incidentals. Payment shall be made at the unit price for Item 622- Barrier Transition, Each.



- LEGEND**
- 1 1" [25] radius or 3/4" [19] chamfer.
 - 2 Permissible 10" [250] radius.
 - 3 Permissible 1" [25] radius.
 - 4 #8 [#25M] epoxy coated Deformed Steel Bars, 1'-0" [305] long, spaced 4'-0" [1220] between successive Bars on a staggered pattern except in Type D. Omit Dowels when the top is constructed integrally with the Base.



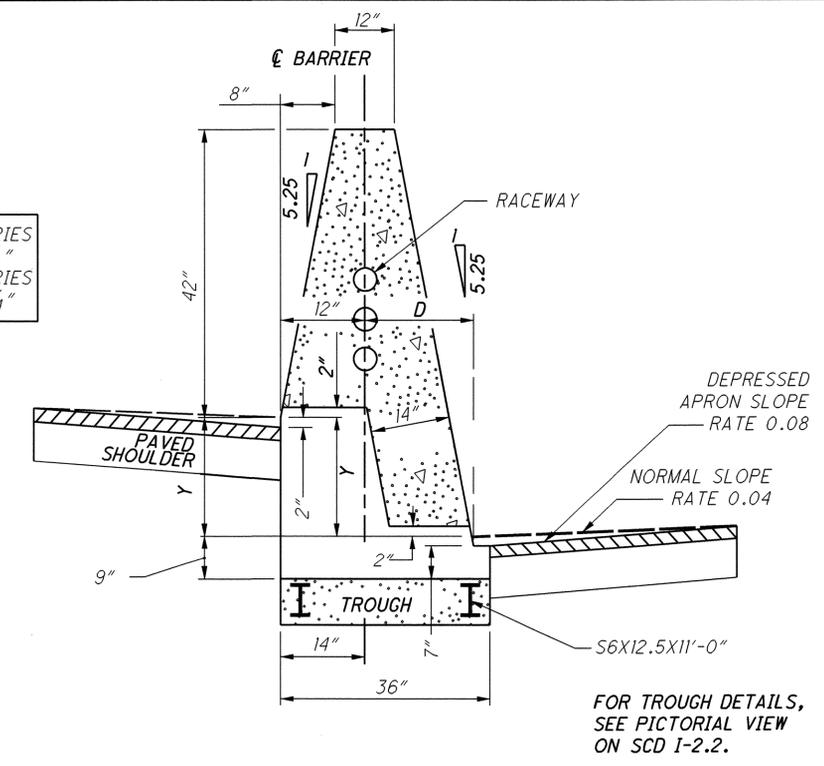
Section A-A
TYPE A
EXISTING NJ SHAPE SECTIONS



Section B-B
TYPE B
PROPOSED SINGLE SLOPE SECTIONS

NJ SHAPE BARRIER TO SINGLE SLOPE BARRIER TRANSITION

DIMENSION "Y" VARIES FROM 0" TO 10 3/4"
DIMENSION "D" VARIES FROM 12" TO 14 1/4"



SECTION THROUGH INLET NO. 3, SINGLE SLOPE, BARRIER, TYPE C

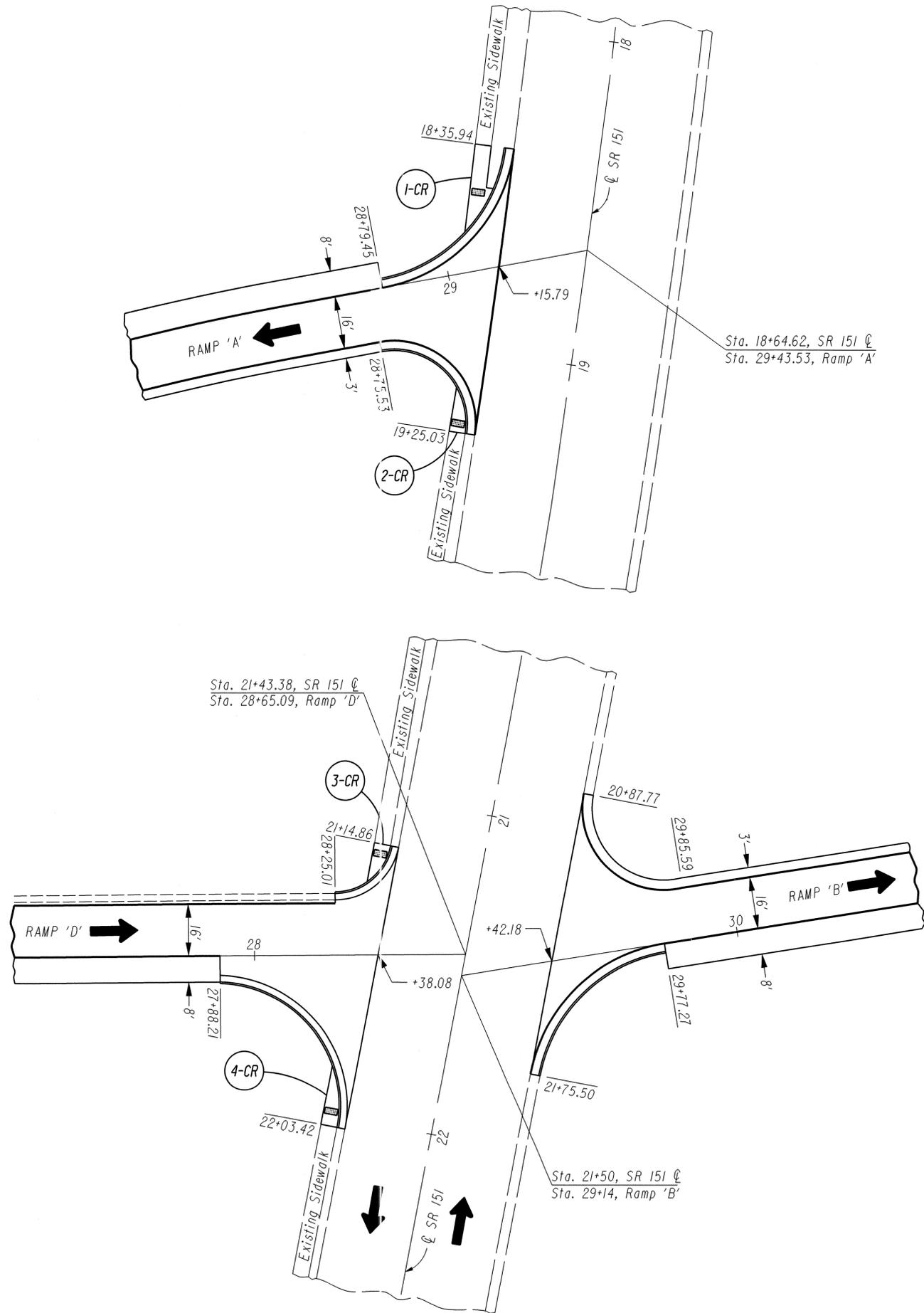
CONTRACTOR WILL FIELD VERIFY THE "Y" DIMENSION FOR EACH INLET NO. 3, TYPE C, LOCATION FOR DETAILS NOT SHOWN SEE SCD I-2.2

FOR TROUGH DETAILS, SEE PICTORIAL VIEW ON SCD I-2.2.

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MISCELLANEOUS BARRIER DETAILS

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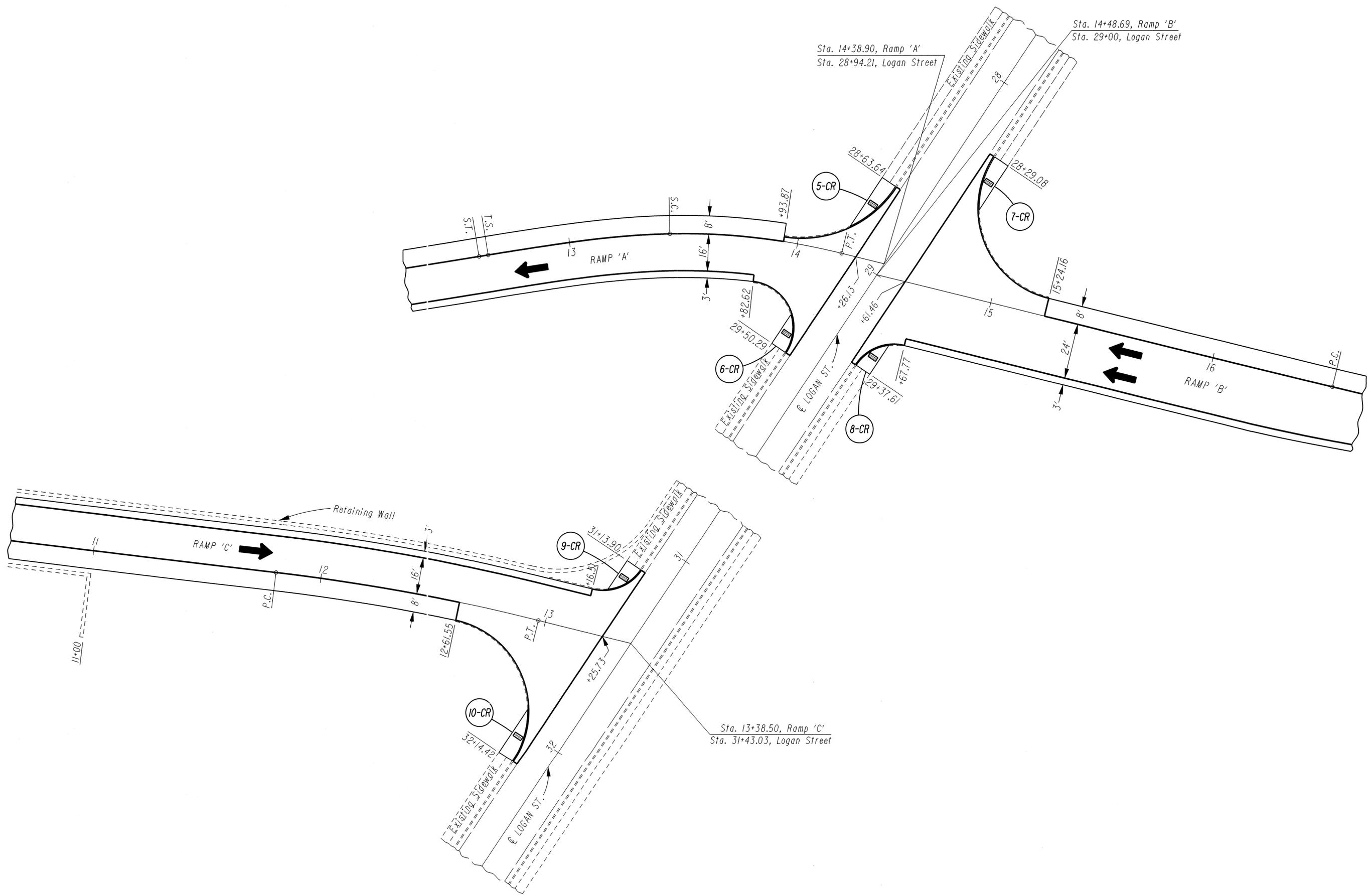


For Curb Ramp Quantities, See Sheet No. 36.

**CURB RAMP DETAILS
S.R. 151 INTERCHANGE**

JEF-7-10.83

CALCULATED	RDA
	CHECKED
	TES



CALCULATED
RDA
CHECKED
TES

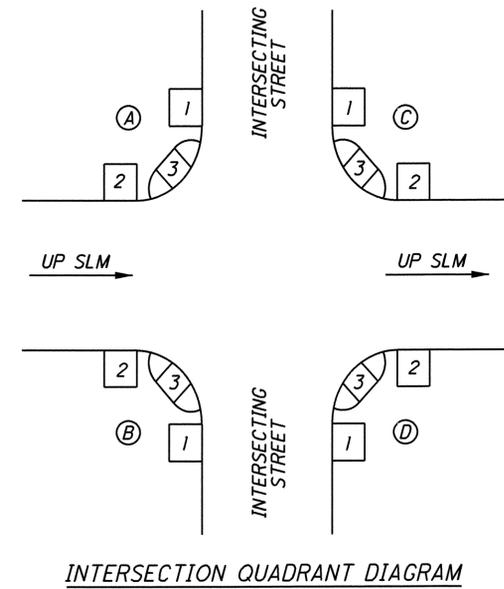
**CURB RAMP DETAILS
LOGAN STREET INTERCHANGE**

JEF-7-10.83

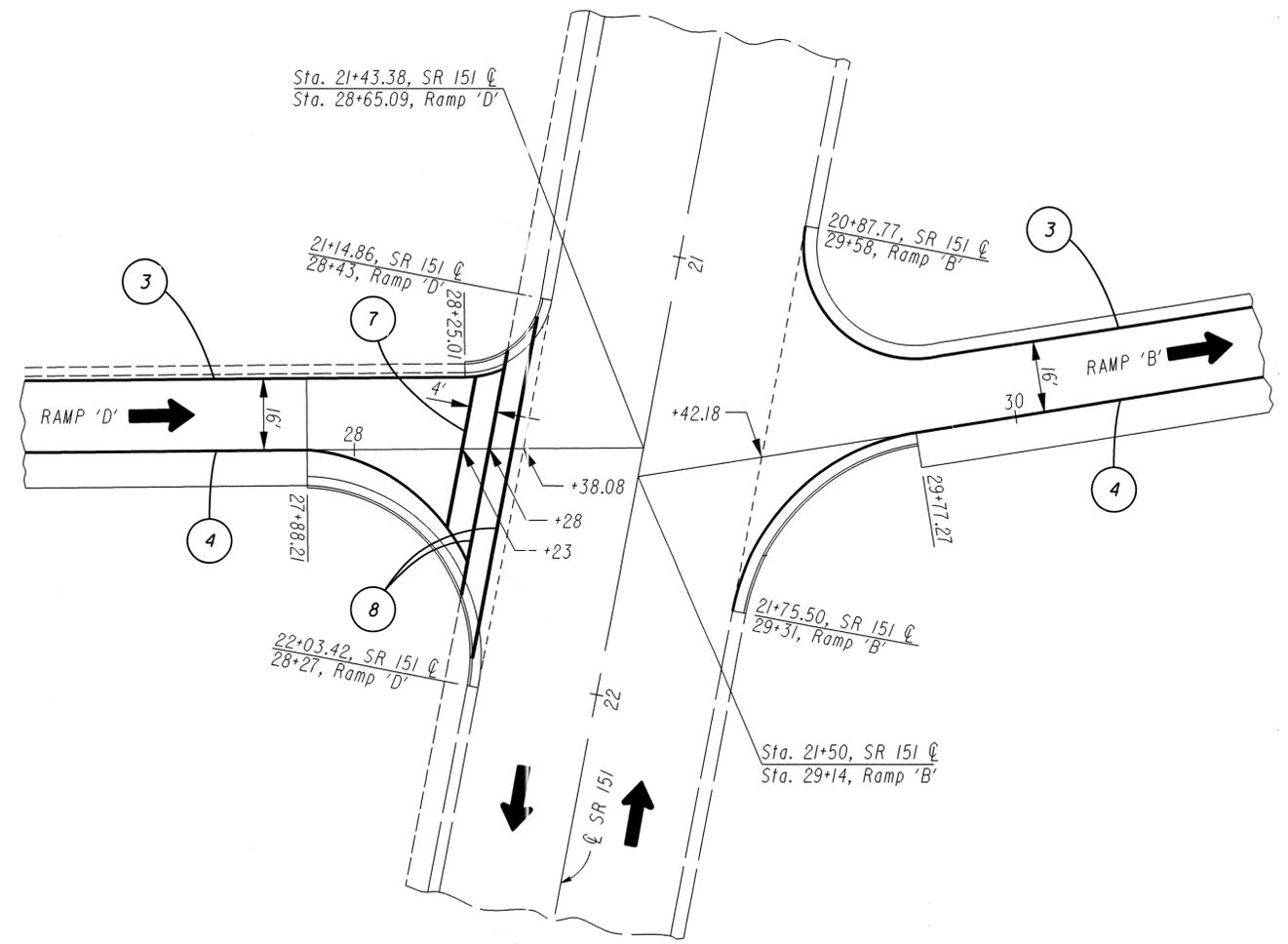
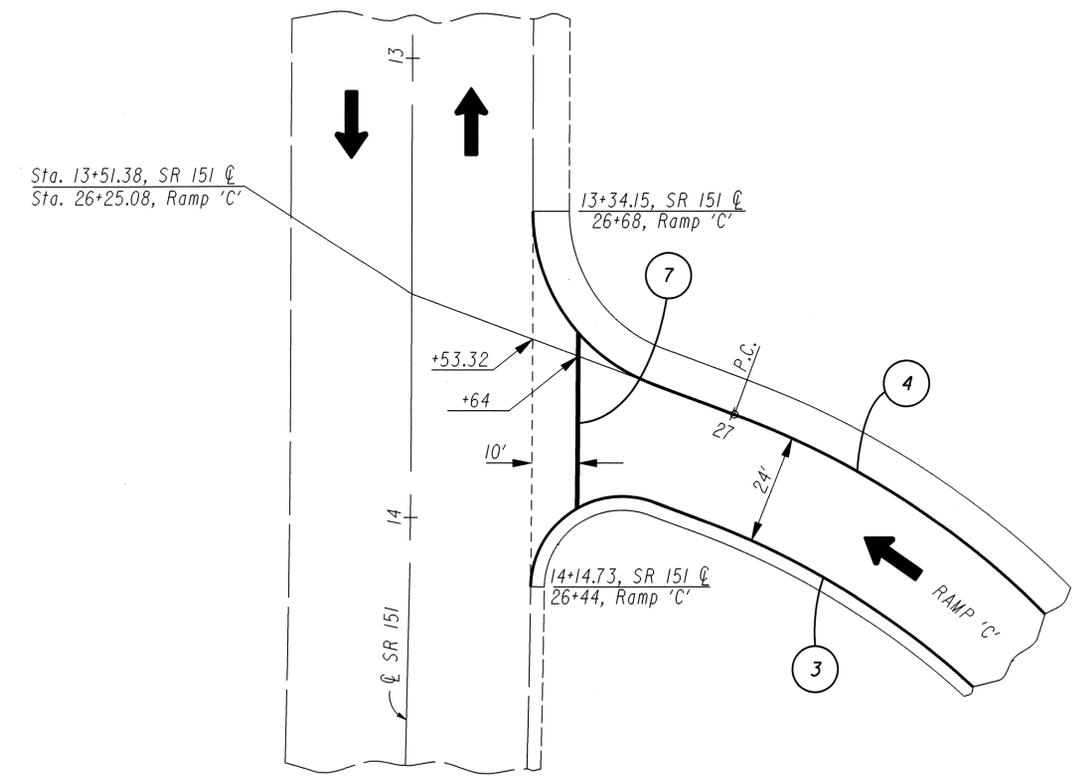
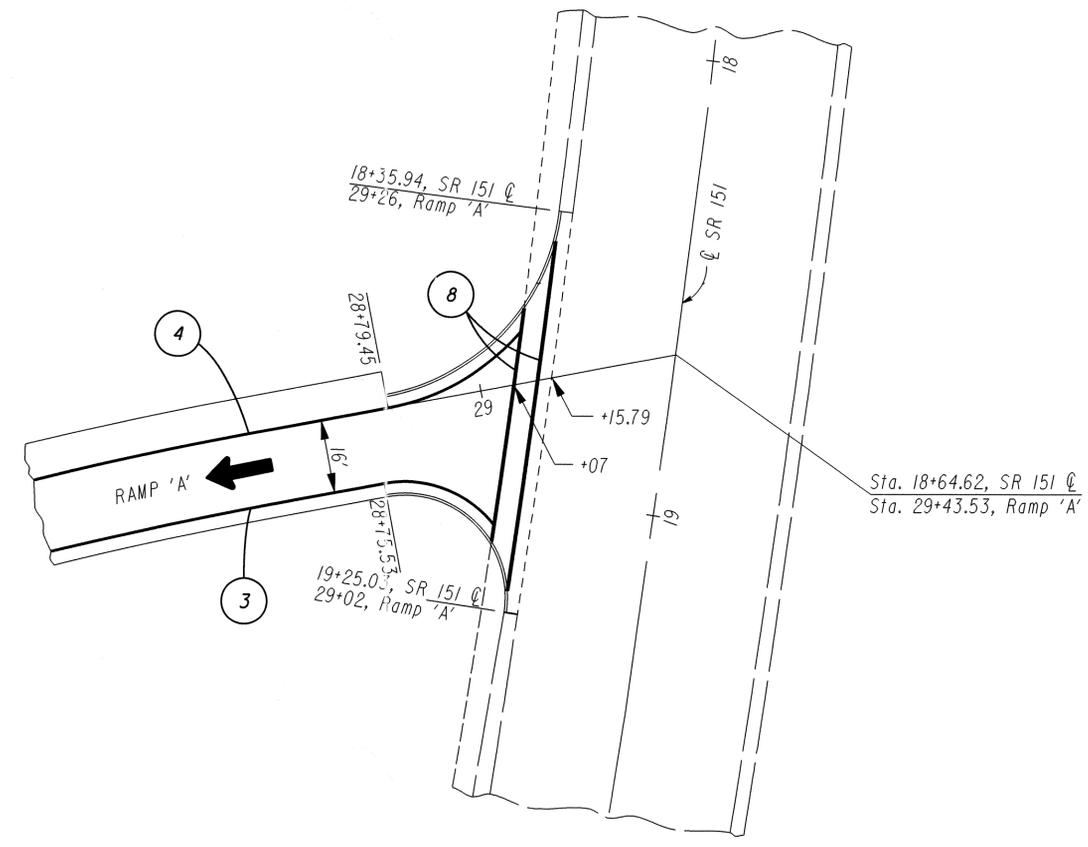
For Curb Ramp Quantities, See Sheet No. 36.

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REF. NO.	ROUTE	SLM OR INTERCHANGE RAMP	CURB RAMP TYPE (S.C.D. BP-7.1)	QUADRANT LOCATION	INTERSECTING ROAD	202		608		REMARKS
						WALK REMOVED	CURB REMOVED	CURB RAMP	DETECTABLE WARNINGS (ONLY FOR INFORMATION)	
						SQ. FT.	FT.	SQ. FT.	SQ. FT.	
1-CR	S.R. 7	Ramp 'A'	B3	A-3	S.R. 151	123	16	123	8	
2-CR	S.R. 7	Ramp 'A'	B3	B-3	S.R. 151	46	15	46	8	
3-CR	S.R. 7	Ramp 'D'	B3	A-3	S.R. 151	42	14	42	8	
4-CR	S.R. 7	Ramp 'D'	B3	B-3	S.R. 151	63	20	63	8	
5-CR	S.R. 7	Ramp 'A'	B3	A-3	Logan St.	120	27	120	8	
6-CR	S.R. 7	Ramp 'A'	B3	B-3	Logan St.	73	17	73	8	
7-CR	S.R. 7	Ramp 'B'	B3	C-3	Logan St.	108	24	108	8	
8-CR	S.R. 7	Ramp 'B'	B3	D-3	Logan St.	73	24	73	8	
9-CR	S.R. 7	Ramp 'C'	B3	A-3	Logan St.	73	17	73	8	
10-CR	S.R. 7	Ramp 'C'	B3	B-3	Logan St.	107	24	107	8	
TOTALS (CARRIED TO GENERAL SUMMARY)						828	198	828	80	



NOTE:
FOR ADDITIONAL CURB RAMP DETAILS SEE SCD BP-7.1.



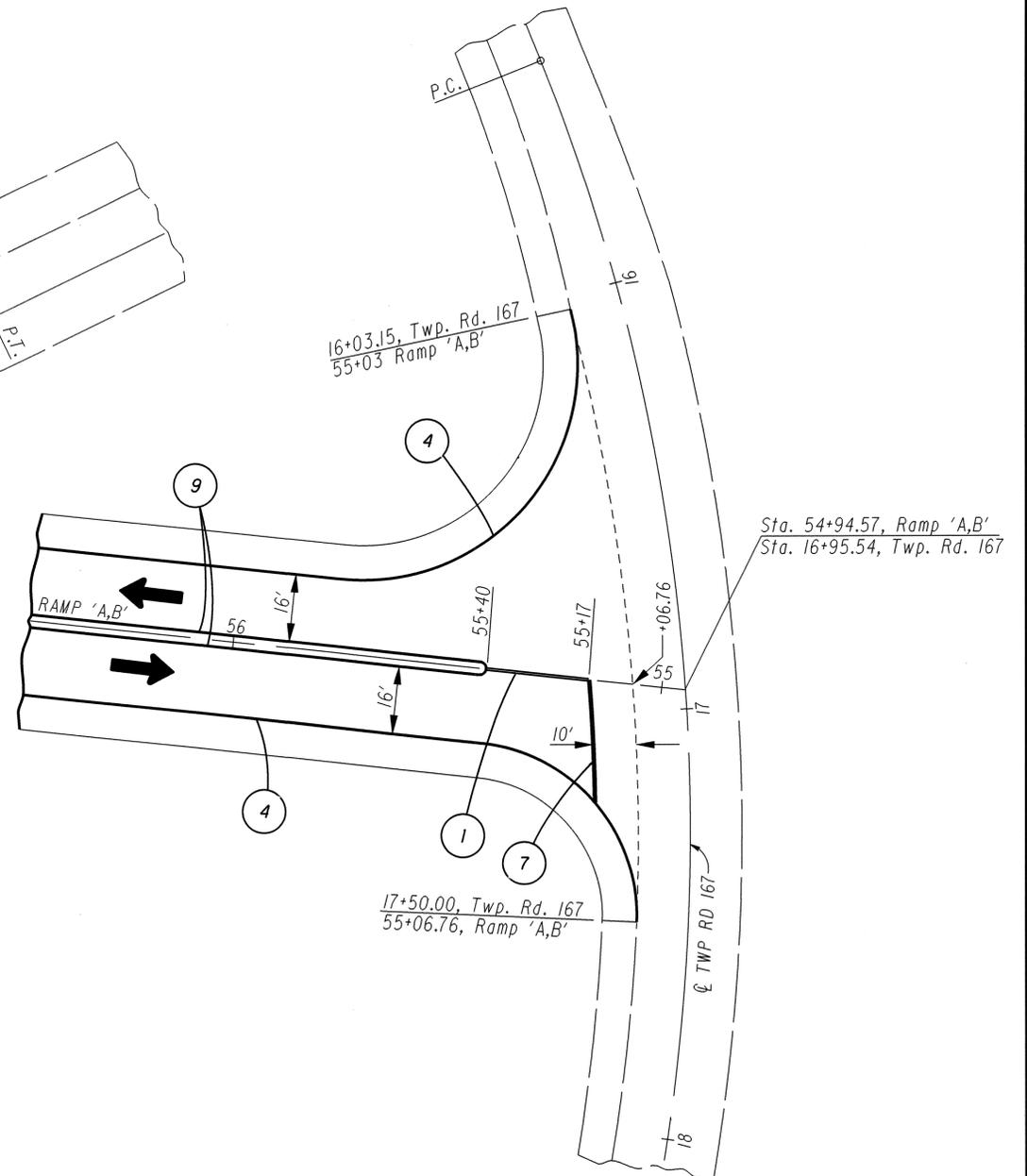
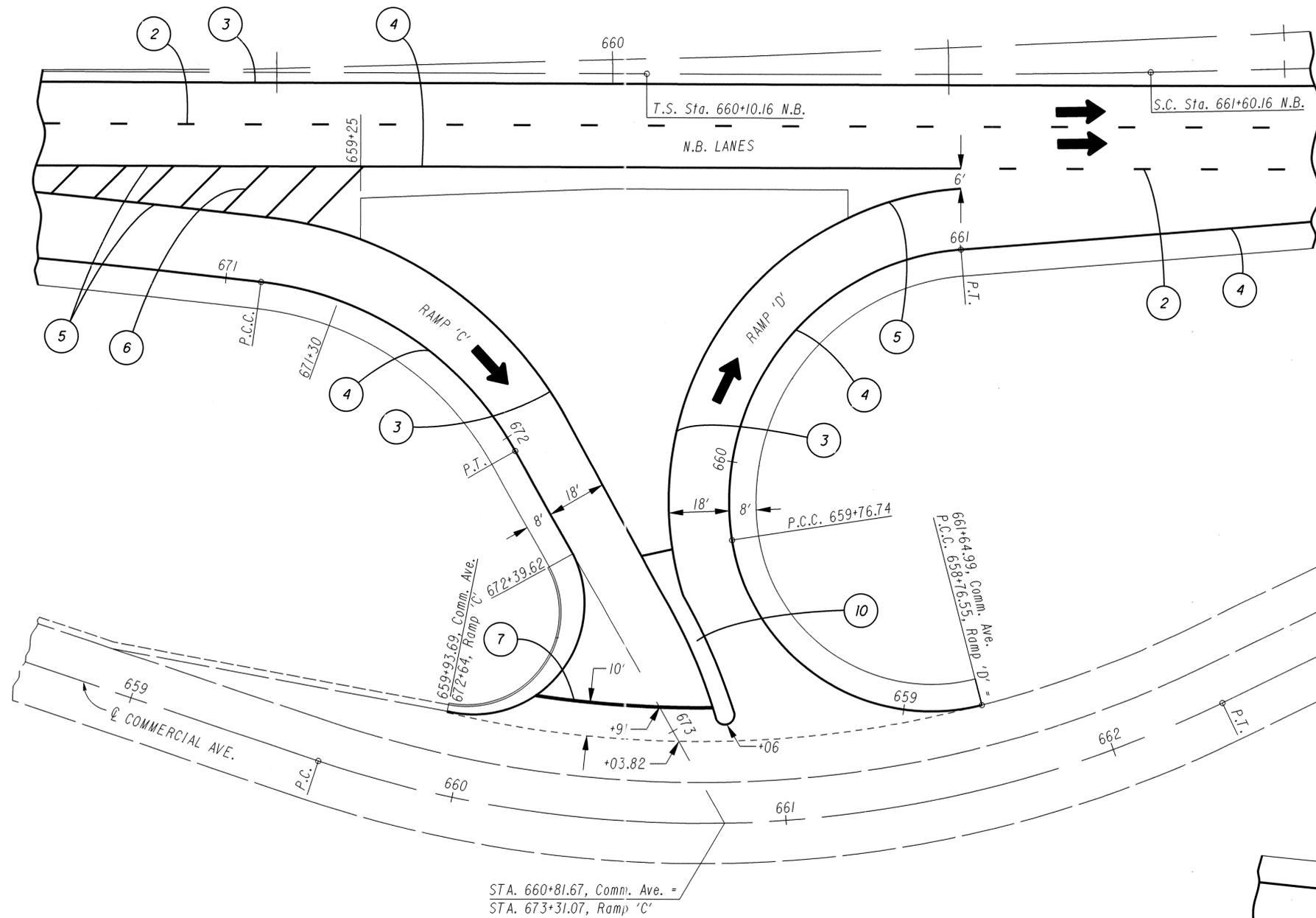
PAVEMENT MARKING LEGEND

- 1 — Center Line (Double Yellow)
- 2 — Lane Line
- 3 — Edge Line (Yellow)
- 4 — Edge Line (White)
- 5 — Channelizing Line
- 6 — Transverse/Diagonal Line (White)
- 7 — Stop Line
- 8 — Crosswalk Line
- 9 — Curb Marking
- 10 — Island Marking

For Quantities, See Sheet No. 43.

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PAVEMENT MARKING LEGEND

- 1 Center Line (Double Yellow)
- 2 Lane Line
- 3 Edge Line (Yellow)
- 4 Edge Line (White)
- 5 Channelizing Line
- 6 Transverse/Diagonal Line (White)
- 7 Stop Line
- 8 Crosswalk Line
- 9 Curb Marking
- 10 Island Marking

For Quantities, See Sheet No. 43.

CALCULATED
DAH
CHECKED
RDA

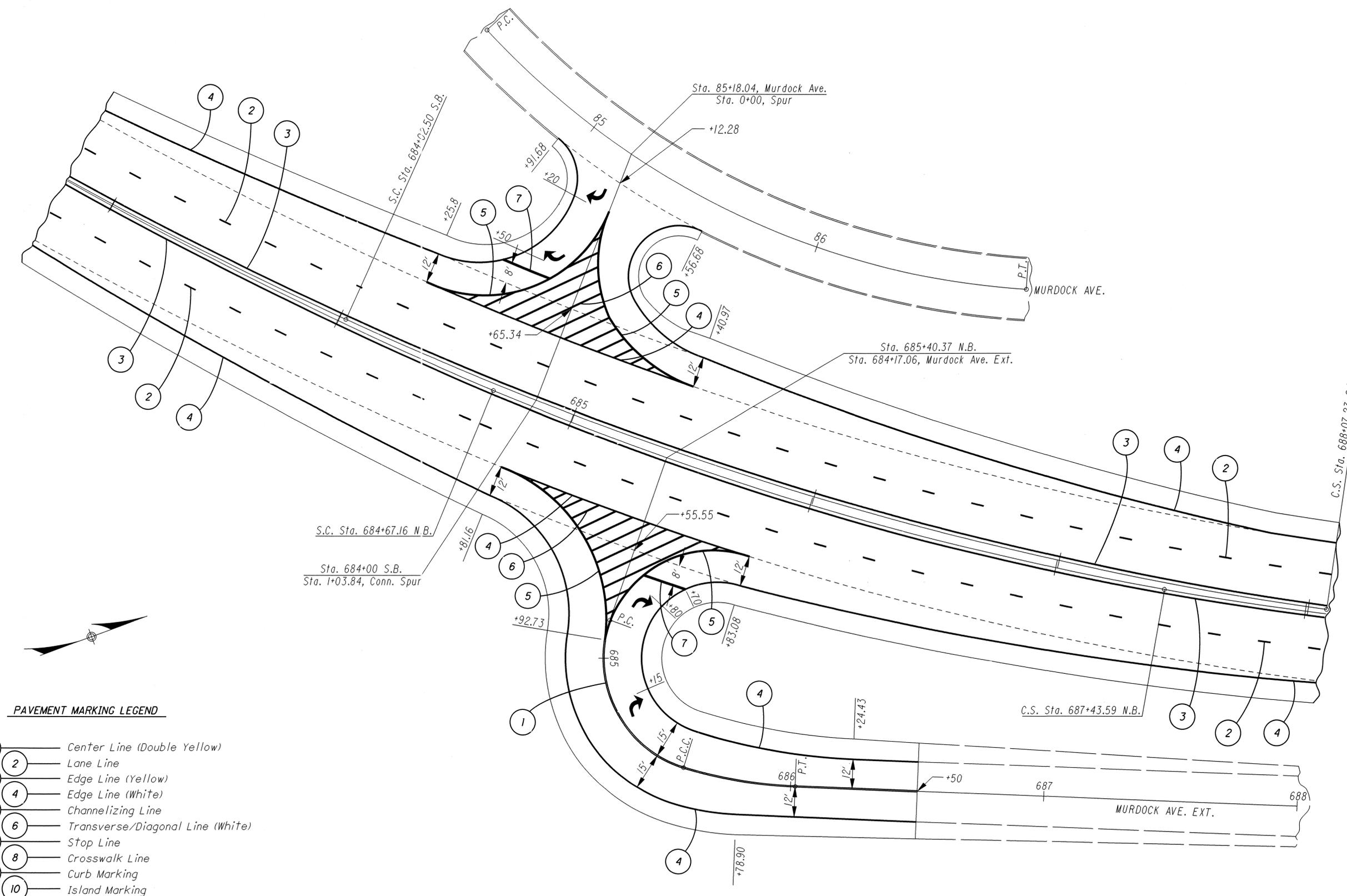
PAVEMENT MARKING DETAILS
COMMERCIAL AVENUE & T.R. 167 INTERCHANGE

JEF-7-10.83

38
44

**PAVEMEN MARKING DETAILS
MURDOCK AVENUE INTERSECTION**

JEF-7-10.83

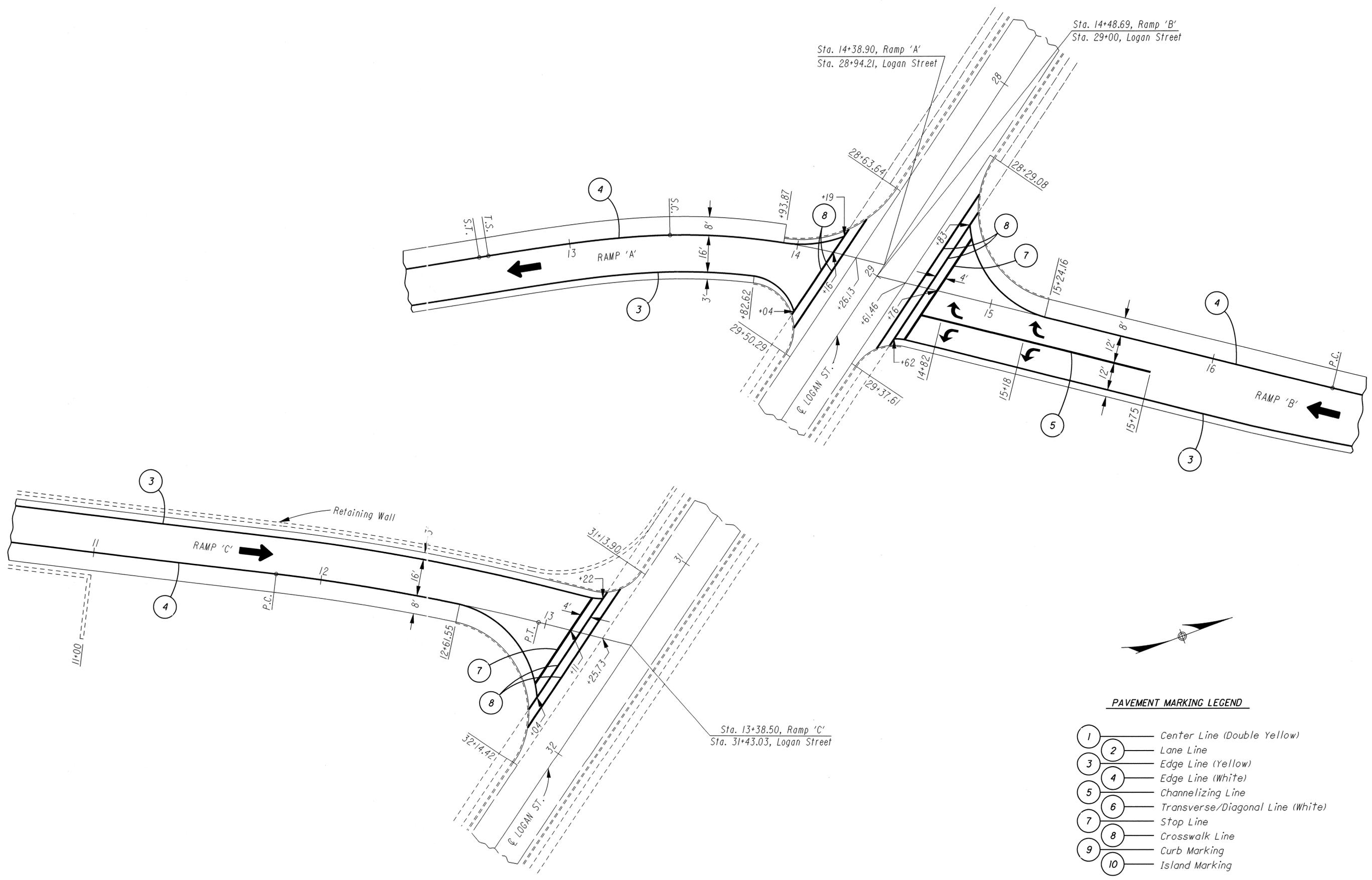


PAVEMENT MARKING LEGEND

- 1 — Center Line (Double Yellow)
- 2 — Lane Line
- 3 — Edge Line (Yellow)
- 4 — Edge Line (White)
- 5 — Channelizing Line
- 6 — Transverse/Diagonal Line (White)
- 7 — Stop Line
- 8 — Crosswalk Line
- 9 — Curb Marking
- 10 — Island Marking

For Quantities, See Sheet No. 44.

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- PAVEMENT MARKING LEGEND**
- 1 — Center Line (Double Yellow)
 - 2 — Lane Line
 - 3 — Edge Line (Yellow)
 - 4 — Edge Line (White)
 - 5 — Channelizing Line
 - 6 — Transverse/Diagonal Line (White)
 - 7 — Stop Line
 - 8 — Crosswalk Line
 - 9 — Curb Marking
 - 10 — Island Marking

For Quantities, See Sheet No. 44.

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LOCATION	STATION * ADJUSTED FOR STATION EQ.		SIDE 'Direction of Travel'	642										621	
				EDGE LINE, TYPE 1 (YELLOW)	EDGE LINE, TYPE 1 (WHITE)	LANE LINE, TYPE 1	CHANNELIZING LINE, TYPE 1	TRANSVERSE/ DIAGONAL LINE, TYPE 1	2 - WAY, WHITE/RED	1 - WAY, WHITE					
	FROM	TO		FT.	FT.	FT.	FT.	FT.	FT.	EACH	EACH				
S.R. 7 MAINLINE NORTHBOUND															
	* 589+50	* 770+80.24	CTR.			20,947.40								176	
	* 589+50	* 770+80.24	LT.	20,947.40											
	* 589+50	* 621+96.96	RT.		4,849.91										
	621+96.96	646+07.14	RT.		2,410.21										
	* 641+97.61	* 659+25	RT.		2,941.60										
	659+25	661+32.74	RT.		207.74										
	660+68.14	684+81.26	RT.		2,413.12										
	685+83.07	707+05	RT.		2,121.93										
	707+05	733+60.96	RT.		2,655.96										
	732+09.96	770+80.24	RT.		3,870.28										
RAMP 'D' DECEL. LANE															
	617+91.79	619+33.51	LT.			141.72									
	619+33.51	621+96.96	LT.				526.90		345			15			
RAMP 'B' ACCEL. LANE															
	641+97.61	646+07.14	LT.				409.53					11			
	646+07.14	648+71.80	LT.			264.66									
RAMP 'C' DECEL. LANE															
	666+34.54	668+58.42	LT.			223.88									
	* 668+58.42	* 659+25	LT.				561.58		257			15			
RAMP 'D' ACCEL. LANE															
	660+68.14	661+32.74	LT.				64.60					3			
	661+32.74	664+74.86	LT.			342.12									
RAMP 'C' DECEL. LANE															
	703+51.04	705+95.12	LT.			244.08									
	705+95.12	707+05	LT.				219.76		50			7			
RAMP 'D' ACCEL. LANE															
	732+09.96	733+60.96	LT.				151.00					5			
	733+60.96	735+40.91	LT.			179.95									
SUBTOTALS CARRIED TO SHEET NO. 44				20,947.40	21,470.75	22,343.81	1,933.37		652		56	176			

CALCULATED	DAH	RDA
TRAFFIC CONTROL ESTIMATED QUANTITIES		
JEF-7-10.83		
41		
44		

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LOCATION	STATION * ADJUSTED FOR STATION EQ.		SIDE 'Direction of Travel'	642										621		CALCULATED	DAH CHECKED	RDA
				EDGE LINE, TYPE 1 (YELLOW)	EDGE LINE, TYPE 1 (WHITE)	LANE LINE, TYPE 1	CHANNELIZING LINE, TYPE 1	TRANSVERSE/ DIAGONAL LINE, TYPE 1	RPM									
									2 - WAY, WHITE / RED	1 - WAY, WHITE								
FROM	TO	FT.	FT.	FT.	FT.	FT.	FT.	EACH	EACH									
S.R. 7 MAINLINE SOUTHBOUND																		
	* 589+50	* 770+80.24	CTR.			20,947.40												176
	* 589+50	* 770+80.24	LT.	20,947.40														
	* 589+50	* 624+72.70	RT.		5,125.65													
	619+80.33	634+24.18	RT.		1,443.85													
	* 634+24.18	* 666+35	RT.		4,425.03													
	665+62.65	667+84	RT.		221.35													
	667+84	684+25.80	RT.		1,641.80													
	685+40.97	711+00	RT.		2,559.03													
	708+89.15	717+59.40	RT.		870.25													
	717+59.40	770+80.24	RT.		5,320.84													
RAMP 'A' ACCEL. LANE																		
	615+80.07	619+80.33	LT.			400.26												
	619+80.33	624+72.70	LT.				492.37						14					
RAMP 'C' DECEL. LANE																		
	634+24.18	635+54.34	LT.				260.32		153				9					
	635+54.34	637+79.71	LT.			225.37												
RAMP 'A' ACCEL. LANE																		
	661+45.13	665+62.65	LT.			417.52												
	665+62.65	666+35	LT.				72.35						3					
RAMP 'B' DECEL. LANE																		
	667+84	668+67.89	LT.				167.78		75				5					
	668+67.89	670+00	LT.			132.11												
RAMP 'A' ACCEL. LANE																		
	706+68.05	708+89.15	LT.			221.10												
	708+89.15	711+00	LT.				268.36						8					
RAMP 'B' DECEL. LANE																		
	717+59.40	719+98.45	LT.				478.10		132				13					
	719+98.45	721+29.23	LT.			130.78												
SUBTOTALS CARRIED TO SHEET NO. 44																		
				20,947.40	21,607.80	22,474.54	1,739.28		360				52				176	

TRAFFIC CONTROL ESTIMATED QUANTITIES

JEF-7-10.83

42
44

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LOCATION	STATION # @ S.R. 7		SIDE 'Direction of Travel'	642							621		
				EDGE LINE, TYPE 1 (YELLOW)	EDGE LINE, TYPE 1 (WHITE)	CENTER LINE, TYPE 1	STOP LINE, TYPE 1	CROSSWALK LINE, TYPE 1	ISLAND MARKING, TYPE 1	2 - WAY, YELLOW/RED			
				FT.	FT.	FT.	FT.	FT.	SQ. FT.	EACH			
S.R. 151 INTERCHANGE													
RAMP 'A'													
	24+72.70	29+26	RT.		472								
	24+72.70	29+02	LT.	450							7		
	29+07		CTR.					98					
RAMP 'B'													
	29+31	41+97.61	RT.		1,283								
	29+58	41+97.61	LT.	1,262							17		
RAMP 'C'													
	26+44	34+10	RT.		770								
	26+68	34+10	LT.	738							11		
	26+64		CTR.				35						
RAMP 'D'													
	21+96.96	34+24.18	LT.	656							9		
	21+96.96	34+24.18	RT.		660								
	28+23		CTR.				35						
	28+28		CTR.					105					
T.R. 167 RAMPS													
RAMP 'A'													
	66+35	67+89	LT.	174							3		
	66+35	67+89	RT.		154								
	66+35	67+89	RT.										
RAMP 'B'													
	63+30	67+84	LT.	180							7		
	63+30	67+84	RT.		466								
RAMP 'AB'													
	55+17		LT.				28						
	55+17	55+40	CTR.			23							
	55+40	63+30	CTR.						3,160				
	55+03	63+30	LT.		825								
	55+25	63+30	RT.		872								
	55+40	63+30	LT.	785							11		
	55+40	63+30	RT.	790							11		
COMMERCIAL AVE. RAMPS													
RAMP 'C'													
	671+30	672+99	LT.	188							3		
	671+30	672+64	RT.		177								
	672+49	673+06	LT.						378				
	672+91		CTR.				48						
RAMP 'D'													
	658+76	661+00	RT.		224								
	659+42	661+00	LT.	205							4		
SUBTOTALS CARRIED TO SHEET NO. 44				5,428	5,593	23	146	203	3,538		83		

CALCULATED	DAH	CHECKED	RDA
TRAFFIC CONTROL ESTIMATED QUANTITIES			
JEF-7-10.83			
43		44	

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LOCATION	STATION		SIDE 'Direction of Travel'	642										621 RPM		
	# ̸ S.R. 7			EDGE LINE, TYPE 1 (YELLOW)	EDGE LINE, TYPE 1 (WHITE)	LANE LINE, TYPE 1	CENTER LINE, TYPE 1	CHANNELIZING LINE, TYPE 1	STOP LINE, TYPE 1	CROSSWALK LINE, TYPE 1	TRANSVERSE/ DIAGONAL LINE, TYPE 1	ISLAND MARKING, TYPE 1	LANE ARROW, TYPE 1	2 - WAY, WHITE/RED	2 - WAY, YELLOW/RED	1 - WAY, WHITE
	FROM	TO		FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	SQ. FT.	EACH	EACH	EACH	EACH
MURDOCK AVE. INTERSECTION																
NORTHBOUND																
	# 684+81.16	686+50	RT.		227											
	# 684+81.16	684+92.73	CTR.							70						3
	684+92.73	# 685+83.08	CTR.							80						3
	# 684+81.16	# 685+83.08	CTR.							102						4
	684+92.73	686+50	CTR.				157				187					
	684+70		RT.						20							
	684+80		RT.										1			
	685+15		RT.										1			
	686+50	# 685+83.08	RT.		200											
SOUTHBOUND																
	# 684+25.80	0+05	RT.		60											
	# 684+25.80	0+20	LT.							50						2
	0+20	# 685+40.97	LT.							50						2
	# 684+25.80	# 685+40.97	LT.							115		66				4
	0+18	# 685+40.97	LT.		60											
	0+20		RT.										1			
	0+50		RT.										1			
	0+57		RT.						17							
LOGAN ST. INTERCHANGE																
RAMP 'A'																
	11+00	14+19	RT.		319											
	11+00	14+04	LT.	304												5
	14+16		CTR.							102						
RAMP 'B'																
	14+83	17+54	RT.		286											
	14+62	17+54	LT.	292												5
	14+76		CTR.							65						
	14+82		LT.										2			
	15+18		LT.										2			
	14+70	15+75	LT.					105						4		
	14+72		CTR.							150						
RAMP 'C'																
	7+30	13+04	RT.		634											
	7+30	13+22	LT.	633												9
	13+11		CTR.						50							
	13+15		CTR.							134						
RAMP 'D'																
	26+45	32+10	RT.		565											
	26+45	32+10	LT.	515												8
TOTALS FROM SHEET 41				20,947.40	21,470.75	22,343.81					652				56	176
TOTALS FROM SHEET 42				20,947.40	21,607.80	22,474.54					360				52	176
TOTALS FROM SHEET 43				5,428	5,593		23	146	203		3,538				83	
TOTALS FROM THIS SHEET				1,744	2,351		157	572	152	386	253		8		22	27
TOTALS CARRIED TO GENERAL SUMMARY				18.96 Mile		8.49 Mile	0.03 Mile	4.245	298	589	1,265	3,538	8	592		

CALCULATED
DAH
CHECKED
RDA

TRAFFIC CONTROL ESTIMATED QUANTITIES

JEF-7-10.83

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