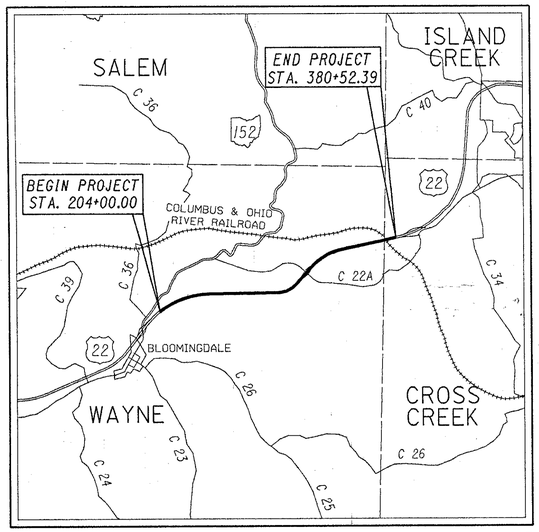


Longitude: 80°48'45" Latitude: 40°21'05"

LOCATION MAP

SCALE IN MILES

0 1 2 3 4

PORTION TO BE IMPROVED

STATE & FEDERAL ROUTES

OTHER ROADS

JEF-22-3.86
960645
114PGS
08-28-96
DIST. 11

DESIGN DESIGNATION

CURRENT ADT (1995)	8800
DESIGN YEAR ADT (2005)	11,540
DESIGN HOURLY VOLUME (2005)	1154
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	9%
DESIGN SPEED	65 mph
LEGAL SPEED	55 mph

DESIGN FUNCTIONAL CLASSIFICATION - DIVIDED ARTERIAL (RURAL)

DESIGN EXCEPTION	APPROVAL DATE	SHEET NO.
GRADED SHOULDER WIDTH	08-22-94	3
VERTICAL CLEARANCE	08-22-94	75

UNDERGROUND UTILITIES

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

PLAN PREPARED BY:

O.D.O.T.
DISTRICT 11
NEW PHILADELPHIA, OHIO

Structure Plans For Br. No. JEF-22-0698 L & R. Prepared By. W.E. Quicksall and Associates, Inc

Structure Plans For Br. No. JEF-22-0698 L & R. Reviewed By Burgess & Niple, Limited

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

JEF-22-3.86

WAYNE & CROSS CREEK TOWNSHIPS
JEFFERSON COUNTY

INDEX OF SHEETS

STANDARD CONSTRUCTION DRAWINGS

										SUPPLEMENTAL SPECIFICATIONS	
BP-1.1	2-21-92	F-5	5-1-76	MC-4	7-26-76	TC-35.10	8-29-84	MT-95.30	10-10-88	802	3-23-95
BP-2.1	10-28-94	F-6	5-1-76	MC-7	10-15-76	TC-41.10	8-29-84	MT-95.70	2-23-90	815	7-17-95
BP-2.2	10-28-94	GR-1.1	5-6-91	MC-9.1	10-30-92	TC-41.20	6-21-94	MT-97.10	4-29-88	820	6-14-95
BP-2.3	2-21-92	GR-1.2	10-30-92	MC-9.2	5-6-91	TC-41.50	6-21-94	MT-99.10	11-14-86		
BP-2.5	2-21-92	GR-1.3	2-21-92	MC-9.3	10-30-92	TC-42.10	8-19-77	MT-99.20	4-29-88		
BP-3.1	2-21-92	GR-2.1	5-6-91	MC-10	5- 1-76	TC-42.20	3-26-79	MT-100.00	2-23-90		
BP-5.1	10-28-94	GR-3.1	5-6-91	MC-11	8- 1-78	TC-51.11	1-20-84	MT-101.60	7-1-92	910	7-17-95
BP-6.1	2-21-92	GR-4.1	5-6-91			TC-52.10	4-3-79	MT-105.10	7-1-92	931	7-17-95
BP-8.1	10-28-94	GR-4.2	5-6-91	HL-20.11	5- 1-87	TC-52.20	4-3-79	MT-105.11	7-1-92	933	7-17-95
				HL-30.11	5- 1-87	TC-61.10	4-5-82			942	6-14-95
CB-5	11-10-83	GR-5.1	10-30-92	HL-30.22	5- 1-87	TC-65.10	7-7-95			944	12-7-95
CB-8	11-10-83	GR-5.2	10-30-92	HL-50.11	5- 1-87	TC-65.11	7-7-95	A-1-69	6-12-69		
F-1	11-10-83	GR-5.3	10-30-92			TC-72.20	2-26-82	AS-1-81	9-15-94		
F-2	5-1-76	GR-6	2- 5-82	PCB-91	4-24-92	TC-82.10	8-29-84	EXJ-4-87	11-12-93		
F-3	5-1-76	GR-7.1	10-30-92			TC-83.20	1-20-84	RB-1-55	2-2-59		
F-4	11-10-83	GR-8.1	1-31-94					SD-1-69	6-12-69		

PROJECT DESCRIPTION

Rehabilitation of 3.34 miles of U.S. 22 by overlaying the existing pavement with reinforced concrete. Including new guardrail, right of way fence, traffic control signs, and pavement marking; reconstruction of three bridges by replacement of the bridge decks and approach slabs.

LIMITED ACCESS

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

1995 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 13, AND THAT THE PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

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

APPROVED John H. McClaud
DATE 10-26-95 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED
DATE 5/29/96 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NH-31(25)

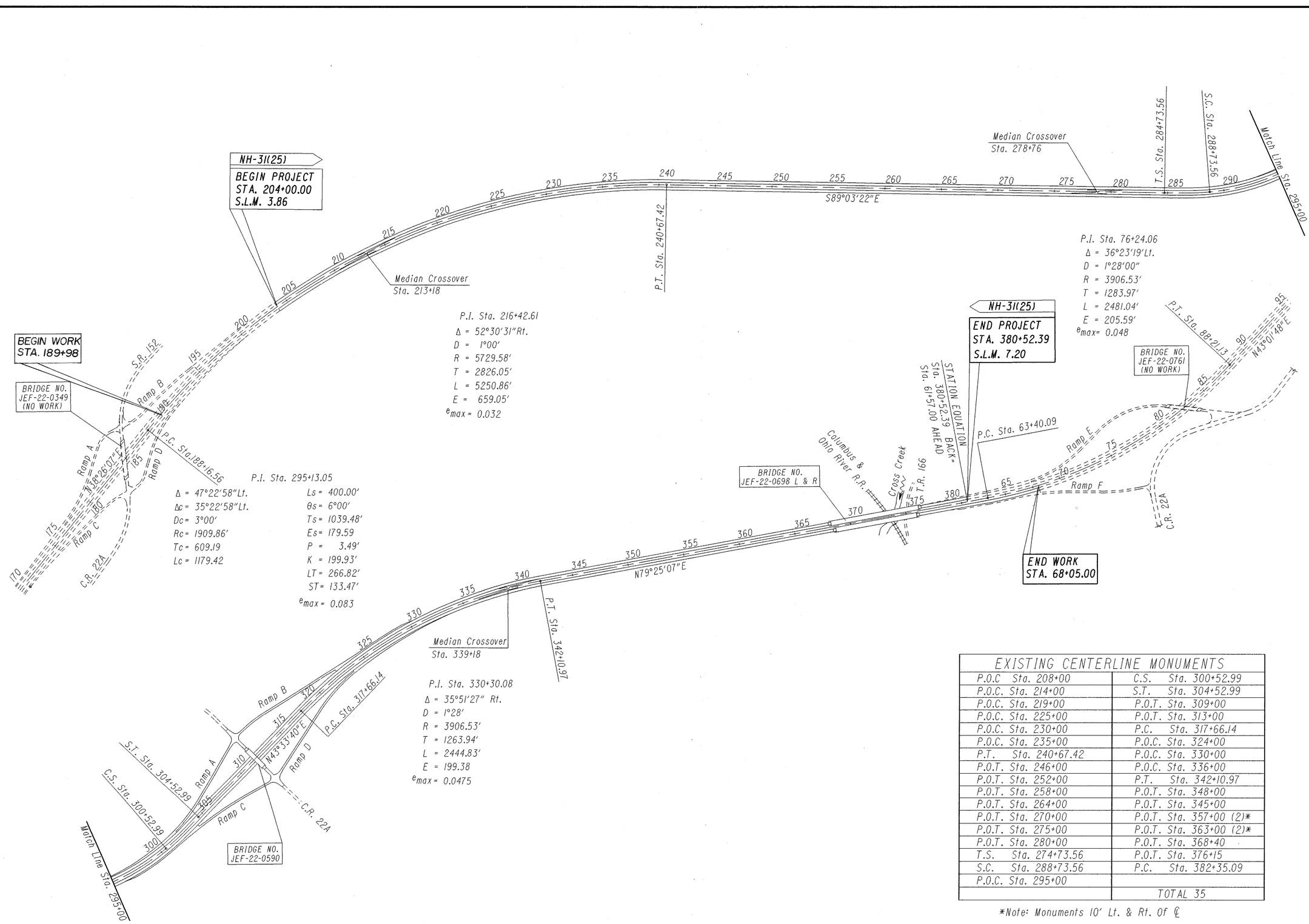
PID NO. 12142

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
COLUMBUS & OHIO RIVER RAILROAD

JEF-22-3.86

1/114



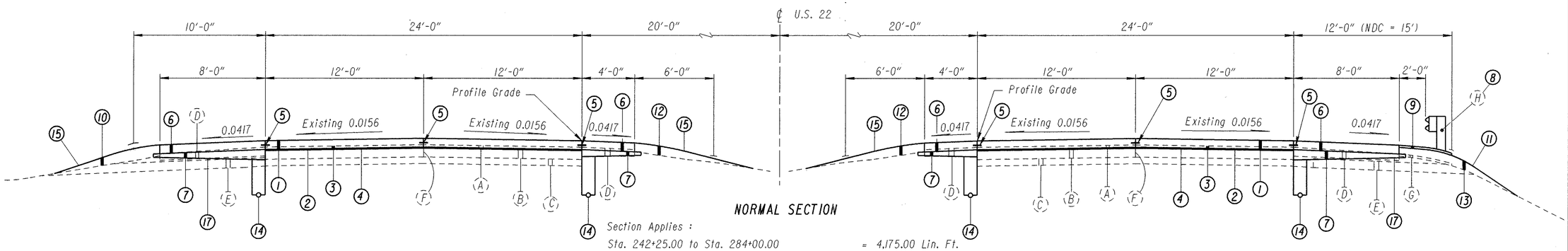
EXISTING CENTERLINE MONUMENTS	
P.O.C Sta. 208+00	C.S. Sta. 300+52.99
P.O.C. Sta. 214+00	S.T. Sta. 304+52.99
P.O.C. Sta. 219+00	P.O.T. Sta. 309+00
P.O.C. Sta. 225+00	P.O.T. Sta. 313+00
P.O.C. Sta. 230+00	P.C. Sta. 317+66.14
P.O.C. Sta. 235+00	P.O.C. Sta. 324+00
P.T. Sta. 240+67.42	P.O.C. Sta. 330+00
P.O.T. Sta. 246+00	P.O.C. Sta. 336+00
P.O.T. Sta. 252+00	P.T. Sta. 342+10.97
P.O.T. Sta. 258+00	P.O.T. Sta. 348+00
P.O.T. Sta. 264+00	P.O.T. Sta. 345+00
P.O.T. Sta. 270+00	P.O.T. Sta. 357+00 (2)*
P.O.T. Sta. 275+00	P.O.T. Sta. 363+00 (2)*
P.O.T. Sta. 280+00	P.O.T. Sta. 368+40
T.S. Sta. 274+73.56	P.O.T. Sta. 376+15
S.C. Sta. 288+73.56	P.C. Sta. 382+35.09
P.O.C. Sta. 295+00	
	TOTAL 35

*Note: Monuments 10' Lt. & Rt. Of ℄

HORIZONTAL SCALE IN FEET
0 400 800
CALCULATED
CHECKED

SCHEMATIC PLAN

JEF-22-3.86

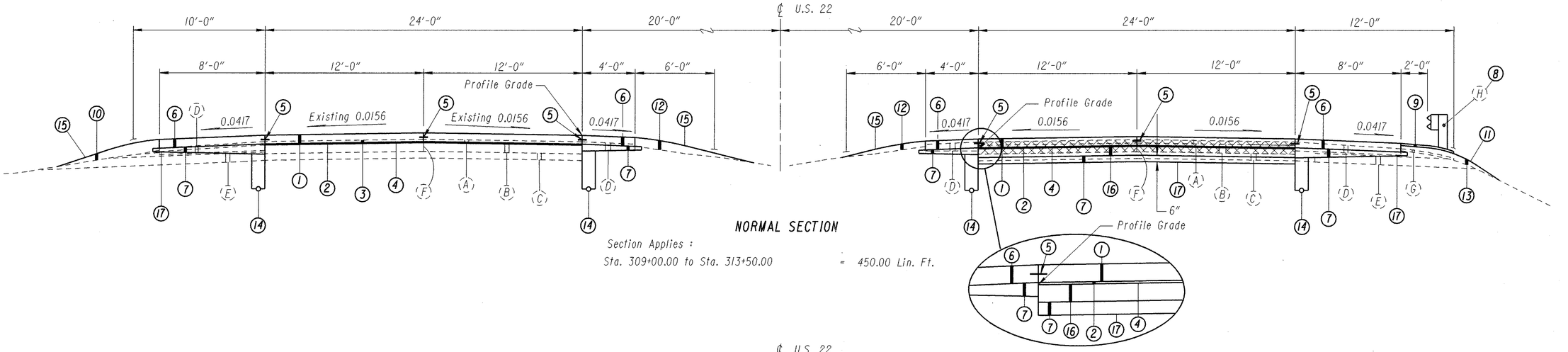


NORMAL SECTION

Section Applies :

Sta. 242+25.00 to Sta. 284+00.00	= 4,175.00 Lin. Ft.	
Sta. 305+50.00 to Sta. 309+00.00	= 350.00 Lin. Ft.	
Sta. 313+50.00 to Sta. 315+25.00	= 175.00 Lin. Ft.	
Sta. 343+75.00 to Sta. 368+05.16 Westbound	= 2,430.16 Lin. Ft.	2,447.68 Lin. Ft. (Avg.)
Sta. 343+75.00 to Sta. 368+40.20 Eastbound	= 2,465.20 Lin. Ft.	
Sta. 368+05.16 to Sta. 376+41.60	= Br. No. JEF-22-0698 L and Approach Slabs	
Sta. 368+40.20 to Sta. 376+14.57	= Br. No. JEF-22-0698 R and Approach Slabs	

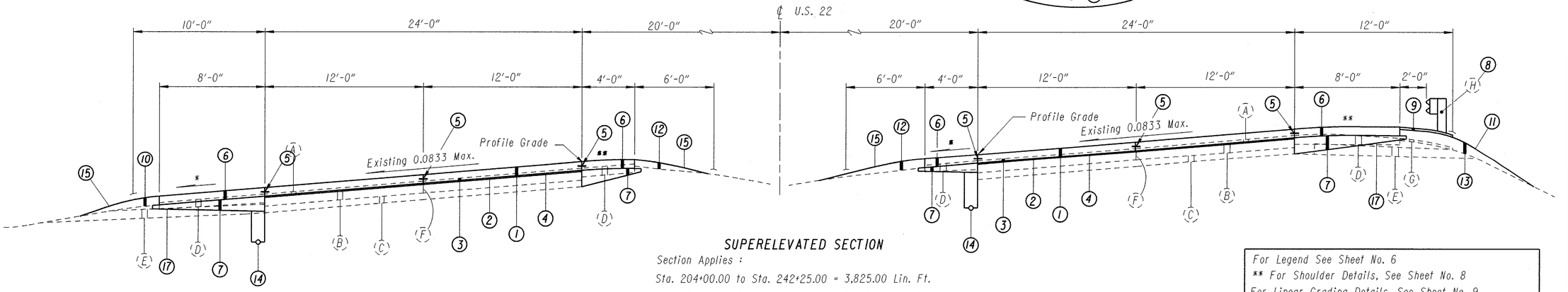
Total = 7,147.68 Lin. Ft.



NORMAL SECTION

Section Applies :

Sta. 309+00.00 to Sta. 313+50.00 = 450.00 Lin. Ft.



SUPERELEVATED SECTION

Section Applies :

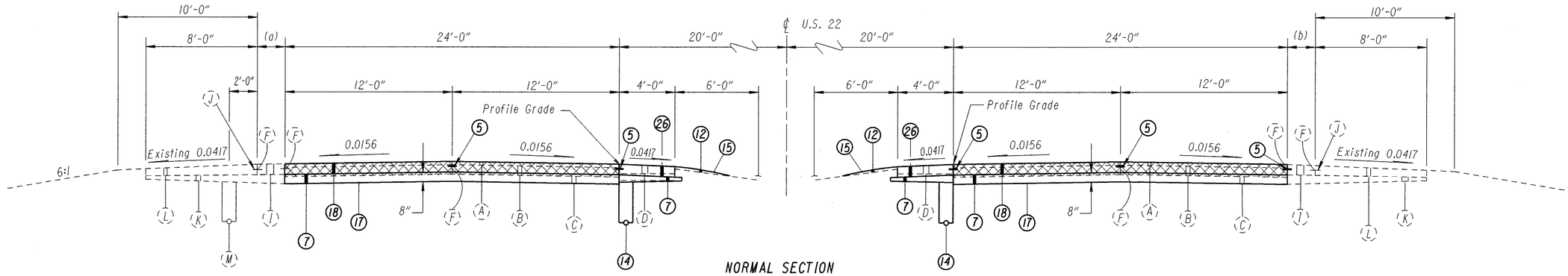
Sta. 204+00.00 to Sta. 242+25.00	= 3,825.00 Lin. Ft.
Sta. 284+00.00 to Sta. 305+50.00	= 2,150.00 Lin. Ft.
Sta. 315+25.00 to Sta. 343+75.00	= 2,850.00 Lin. Ft.
Total	= 8,825.00 Lin. Ft.

For Legend See Sheet No. 6
** For Shoulder Details, See Sheet No. 8
For Linear Grading Details, See Sheet No. 9
For Profile Reconstruction Details, See Sheet No.47.
For Approach Slab Typicals, See Sheet 7.
* 0.0417 or Pavement Slope, if Greater

CALCULATED TKD
CHECKED SHG

TYPICAL SECTIONS - MAINLINE

JEF-22-3.86

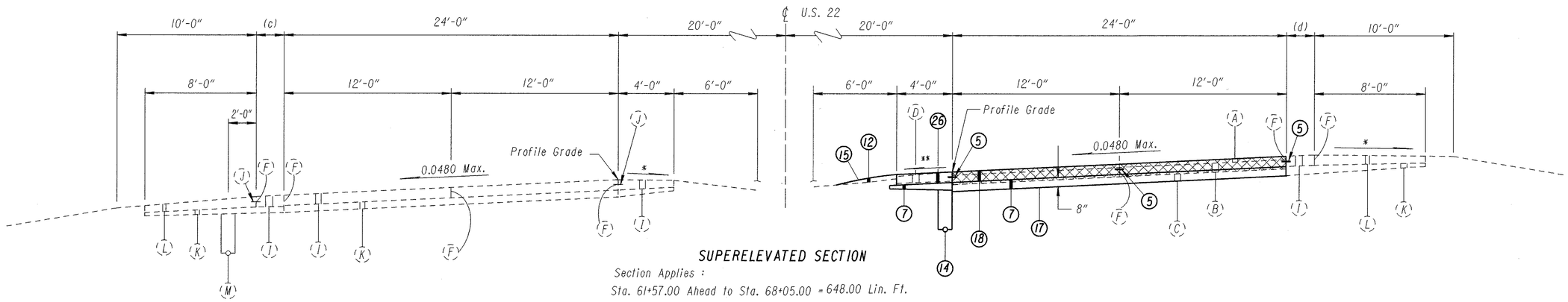


NORMAL SECTION

Section Applies :

Sta. 376+41.60 to Sta. 380+52.39 Back Westbound = 410.79 Lin. Ft.
Sta. 376+14.57 to Sta. 380+52.39 Back Eastbound = 437.82 Lin. Ft.
Total = 424.31 Lin. Ft.

> 424.31 Lin. Ft. (Avg.)



SUPERELEVATED SECTION

Section Applies :

Sta. 61+57.00 Ahead to Sta. 68+05.00 = 648.00 Lin. Ft.

Station Equation:
Sta. 380+52.39 Back = Sta. 61+57.00 Ahead

For Linear Grading Details, See Sheet No. 8.

For Legend, see Sheet No. 6.

* Existing varies from 0.0417 to 0.0104

** 0.0417 or Pavement Slope, if Greater

(a) Varies 0' to 10.18'

(b) 0' from Sta. 376+45.39 to Sta. 378+95.39; Varies from 0' to 12' from Sta. 378+95.39 to Sta. 380+52.39

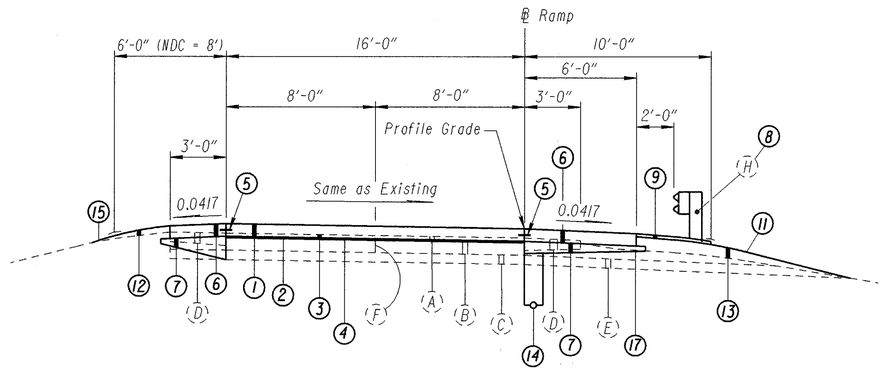
(c) Varies 12' to 39' from Sta. 61+57.00 to Sta. 68+00.00; 0' from Sta. 68+00.00 to Sta. 68+05.00

(d) Varies 10.18' to 25' from Sta. 61+57.00 to Sta. 67+50.00; 0' from Sta. 67+50.00 to Sta. 68+05.00

CALCULATED TKD
CHECKED SHG

TYPICAL SECTION - MAINLINE

JEF-22-3.86



NORMAL SECTION - RAMPS

Section Applies :

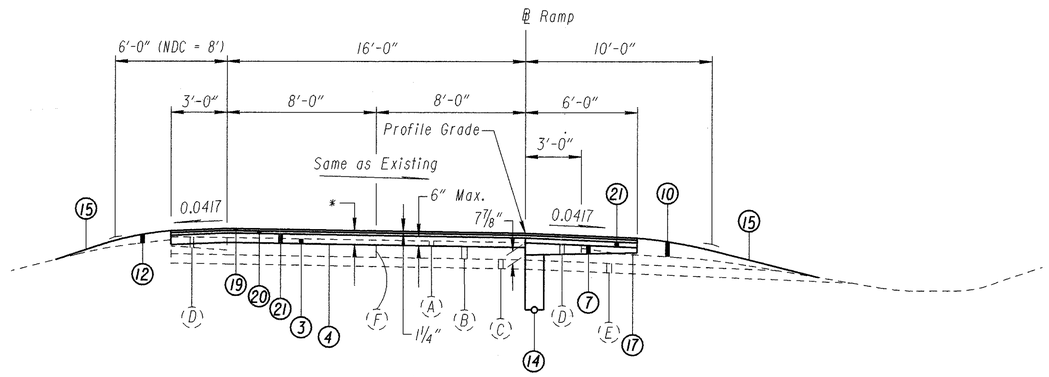
Ramp A: Sta. 2+20.00 to Sta. 11+01.88 = 881.88 Lin. Ft.

Ramp B: Sta. 12+25.98 to Sta. 22+27.39 = 1001.41 LIn. Ft.

Ramp C: Sta. 4+02.45 to Sta. 11+19.89 = 717.44 Lin Ft.

Ramp D: Sta. 12+74.14 to 23+50.00 = 1075.86 Lin. Ft.

Total = 3,676.59 Lin. Ft.



NORMAL SECTION - RAMPS

Section Applies :

Ramp A Sta. 11+01.88 to Sta. 11+95.59 = 93.71 Lin. Ft.

Ramp B Sta. 11+60.84 to Sta. 12+25.98 = 65.14 LIn. Ft.

Ramp C Sta. 11+19.89 to Sta. 11+91.68 = 71.79 Lin Ft.

Ramp D Sta. 11+84.90 to 12+74.14 = 89.24 Lin. Ft.

Total = 319.88 Lin. Ft.

NOTE: Left and right side configuration on ramps is referenced to the direction of travel.

For Legend, See Sheet No. 6.

For Shoulder Details, See Sheet No. 8.

For Linear Grading Details, See Sheet No. 9.

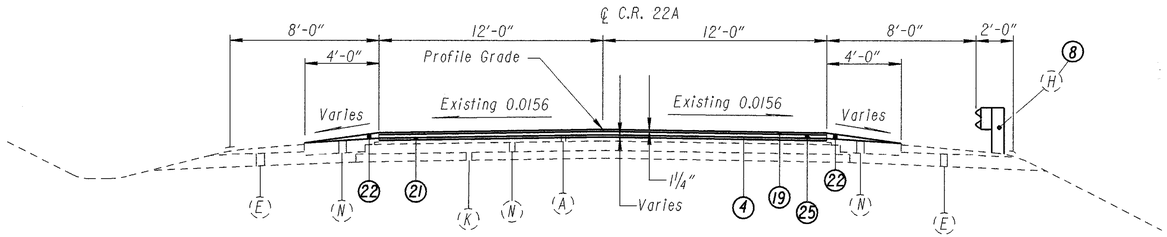
* Total overlay thickness varies; see Feather Detail on Sheet No. 52.

CALCULATED TKD

CHECKED SHG

TYPICAL SECTIONS - RAMPS

JEF-22-3.86



NORMAL SECTION - C.R. 22A
(See Sheet No. 52 For Feather Details)

Section Applies :
Sta. 6+76.34 to Sta. 10+09.25 = 332.91 Lin. Ft.
Sta. 10+09.25 to Sta. 12+60.75 = Br. No. JEF-22-0590 and Approach Slabs
Sta. 12+60.75 to Sta. 15+90.78 = 330.03 Lin. Ft.
Total = 662.94 Lin. Ft.

EXISTING LEGEND

- (A) Existing Asphalt Concrete
- (B) Existing 8" Reinforced Concrete Pavement
- (C) Existing 6" Cement Stabilized Subbase
- (D) Existing Bituminous Aggregate Base
- (E) Existing Aggregate Drains
- (F) Existing Longitudinal Joint
- (G) Existing 2" Asphalt Concrete under guardrail (To be removed)
- (H) Existing Type 5 Guardrail
- (I) Existing 9" Reinforced Concrete Pavement
- (J) Existing Hook Bolt or Tie Bar
- (K) Existing Subbase
- (L) Existing Plain Concrete Pavement
- (M) Existing Pipe Underdrain
- (N) Existing Aggregate Base

PROPOSED LEGEND

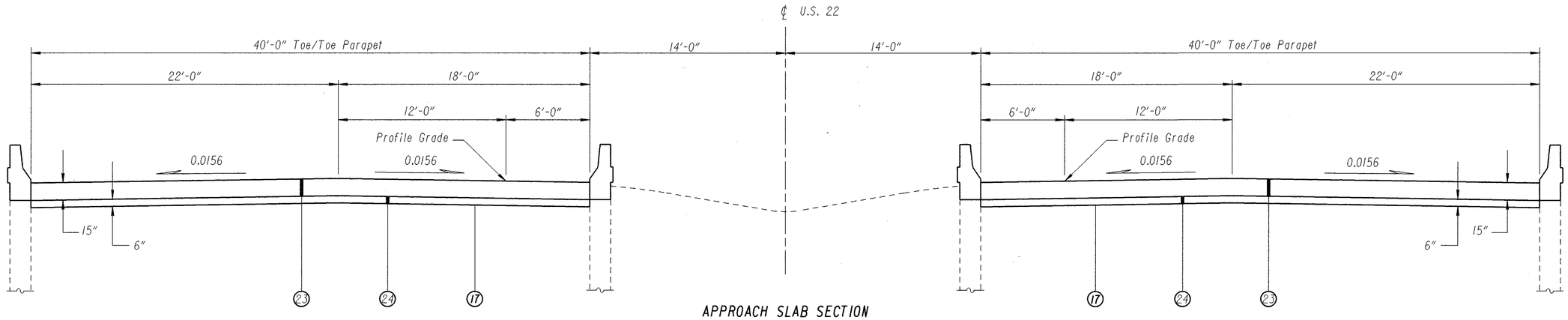
1. Item 451 - 8" Reinforced Concrete Pavement
2. Item 403 - 1" Asphalt Concrete, AC-20
3. Item 202 - Wearing Course Removed (3" Nominal Depth)
4. Item 407 - Tack Coat
5. Standard Longitudinal Joint Per Std. Dwg. BP-2.1
6. Item 452 - 8" Plain Concrete Pavement
7. Item 304 - Aggregate Base
8. Item 606 - Guardrail, Type 5
9. Item 448 - 2" Asphalt Concrete Intermediate Course, Type I (Under Guardrail), As Per Plan
10. Item 203 - Linear Grading, Method A
11. Item 670 - Slope Erosion Protection
12. Item 203 - Linear Grading, Method B
13. Item 203 - Linear Grading, Method C
14. Item 605 - 4" Shallow Pipe Underdrain, 707.15 As Per Plan
15. Item 659 - Seeding and Mulching, and Water
16. Item 305 - 8" Concrete Base
17. Item 203 - Subgrade Compaction
18. Item 451 - 9" Reinforced Concrete Pavement
19. Item 448 - Asphalt Concrete Surface Course, Type 1, AC-20, As Per Plan (Thickness As Shown)
20. Item 448 - 1¾" Asphalt Concrete Intermediate Course, Type 2, AC-20
21. Item 301 - Bituminous Aggregate Base, AC-20 (Thickness As Shown)
22. Item 617 - Compacted Aggregate, Type A, and Water
23. Item 611 - Reinforced Concrete Approach Slab (T=15") As Per Plan
24. Item 304 - 6" Aggregate Base
25. Item 448 - 2¼" Asphalt Concrete Intermediate Course, Type 2, AC-20
26. Item 452 - 9" Plain Concrete Pavement

Pavement to be Removed

CALCULATED TKD
CHECKED SHG

TYPICAL SECTIONS - C.R. 22A

JEF-22-3.86



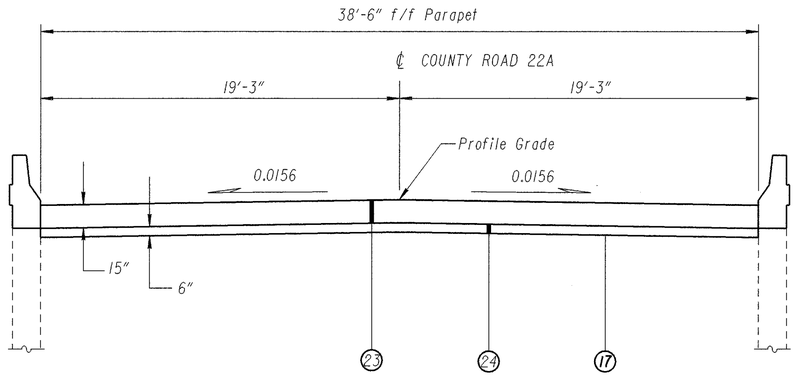
APPROACH SLAB SECTION
BRIDGE NO. JEF-22-0698 L & R

WESTBOUND

Sta. 368+05.16 to Sta. 368+30.16	=	25.00 Lin. Ft.
Sta. 376+16.60 to Sta. 376+41.60	=	25.00 Lin. Ft.
TOTAL	=	50.00 Lin. Ft.

EASTBOUND

Sta. 368+40.20 to Sta. 368+65.20	=	25.00 Lin. Ft.
Sta. 375+89.57 to Sta. 376+14.57	=	25.00 Lin. Ft.
TOTAL	=	50.00 Lin. Ft.



APPROACH SLAB SECTION
BRIDGE NO. JEF-22-0590

Sta. 10+09.25 to Sta. 10+34.25	=	25.00 Lin. Ft.
Sta. 12+35.75 to Sta. 12+60.75	=	25.00 Lin. Ft.
TOTAL	=	50.00 Lin. Ft.

For Legend See Sheet No. 6

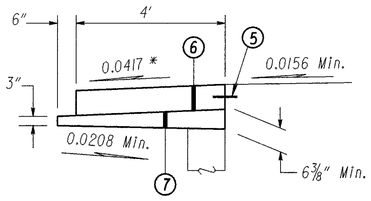
CALCULATED TKD
CHECKED SHG

TYPICAL SECTION - APPROACH SLABS
BR. NO. JEF-22-0590 & BR. NO. JEF-22-0707

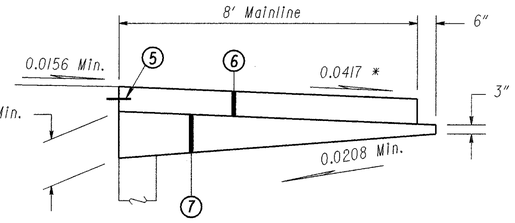
JEF-22-3.86

MAINLINE

MEDIAN

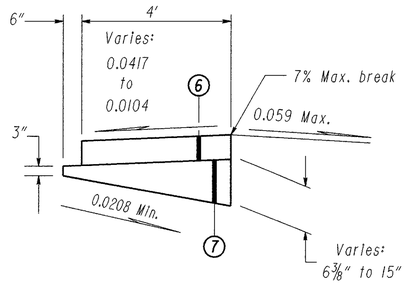


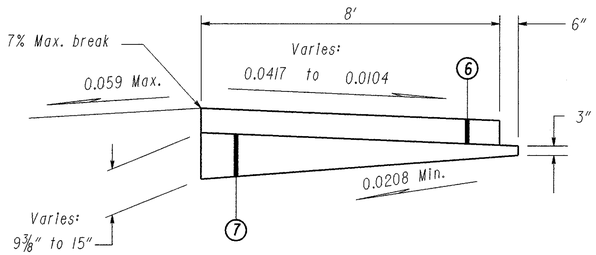
OUTSIDE



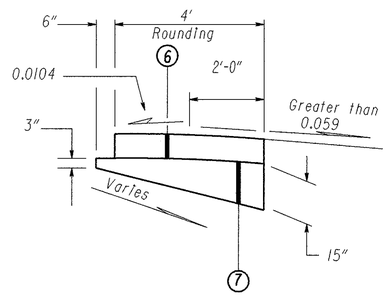
NORMAL AND LOW SIDE OF SUPERELEVATION

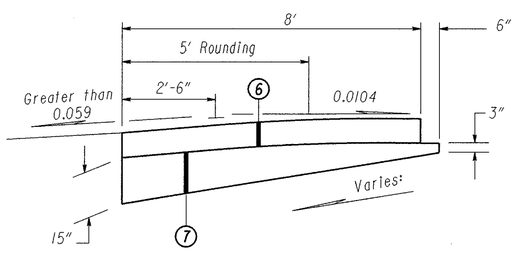
* or rate of superelevation if greater





HIGH SIDE OF SUPERELEVATION (0.059 MAX.)



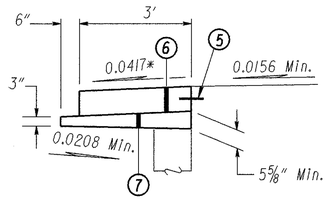


HIGH SIDE OF SUPERELEVATION (GREATER THAN 0.059)

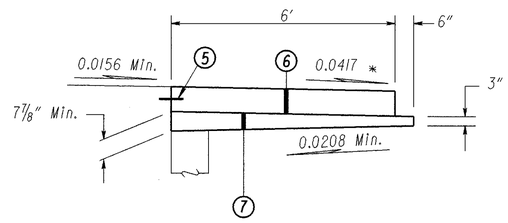
For Legend See Sheet No. 6

RAMPS

LEFT

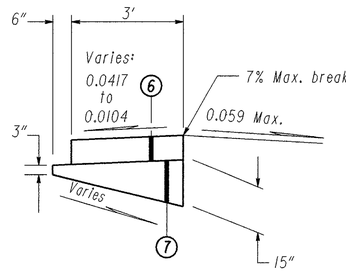


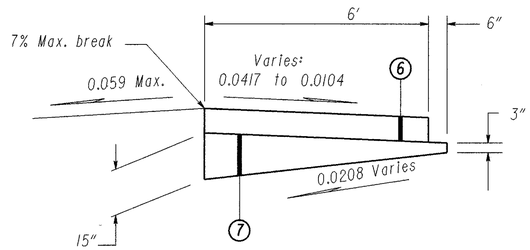
RIGHT



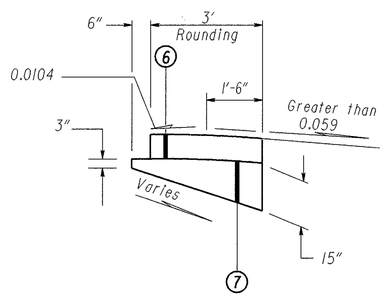
NORMAL AND LOW SIDE OF SUPERELEVATION

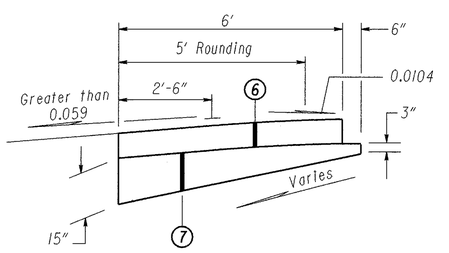
* or rate of superelevation if greater





HIGH SIDE OF SUPERELEVATION (0.059 MAX.)



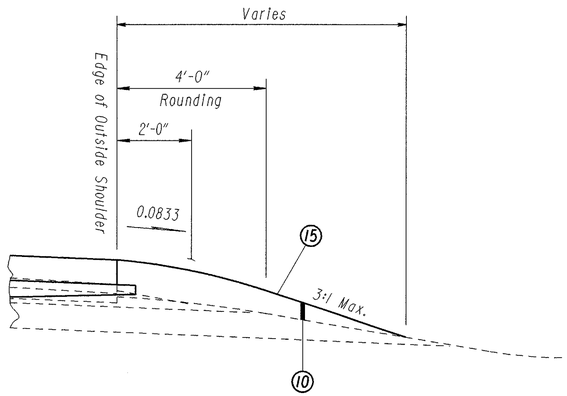


HIGH SIDE OF SUPERELEVATION (GREATER THAN 0.059)

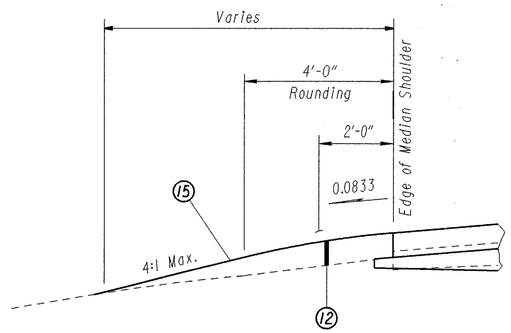
CALCULATED TKD
CHECKED SHG

SHOULDER DETAILS

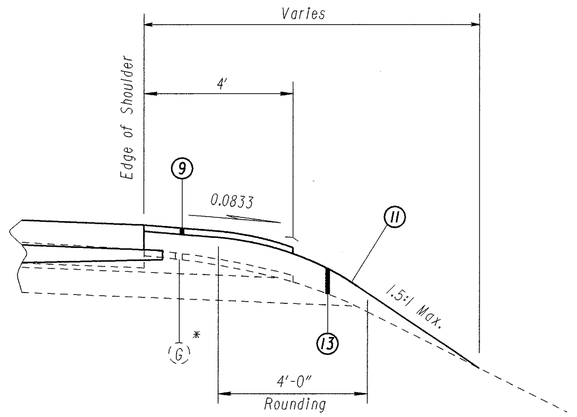
JEF-22-3.86



LINEAR GRADING, METHOD A



LINEAR GRADING, METHOD B



LINEAR GRADING, METHOD C

(Note: Guardrail not shown for clarity)

For Legend See Sheet No. 6

* To be removed using Item 203, Excavation

CALCULATED TKD
CHECKED SHG

LINEAR GRADING DETAILS

JEF-22-3.86

CALCULATED SHG CHECKED KSP

GENERAL NOTES

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:

Ohio Department of Transportation
District 11 Office
P.O. Box 1000
1072 West High Avenue
New Philadelphia, Ohio 44663
330-339-6633

The location of the underground utilities shown on the plans are as obtained from the owners as required by O.R.C. Section 153.64.

CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work for items designated by plan note to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

ELEVATION DATUM

All elevations, unless denoted "assumed elevation", are based on U.S.G.S. datum.

WORK LIMITS

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

PREVIOUS CONSTRUCTION PLANS

The following previous construction plans, which show the original alignment and profile, are available for inspection at the ODOT District 11 office:

JEF-22-3.86 Original construction plan, 1967
JEF-22-0.00 Safety upgrading plan, 1983

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 on Standard Construction Drawing GR-1.1 and GR-1.2. Payment shall be included in the contract price for the respective guardrail items.

ITEM SPECIAL, IMPACT ATTENUATOR, TYPE 1, BI-DIRECTIONAL

This work shall consist of furnishing and installing an impact attenuator system.

The impact attenuator system shall be one of the following:

1. The BREAKMASTER Impact attenuating system manufactured by Energy Absorption Systems, Inc., which is distributed by Baldwin & Sours, 5263 Traube Road, Columbus, Ohio 43228 (telephone 614-851-8800).

2. The C.A.T. Impact attenuating system manufactured by SYRO Steel Company, 1170 North State Street, Girard, Ohio 44420 (telephone 216-545-4373).

The attenuator shall be designed for bi-directional impacts, and shall be placed in accordance with the manufacturer's specifications, and at the locations shown on the plans.

The nose cover of the attenuator shall be marked with three evenly spaced four inch wide horizontal stripes of white reflective material meeting the requirements of 730.19 for a permanent installation.

Payment for the above work will be made at the contract price for Item Special, Each, Impact Attenuator, Type 1, Bi-directional, and shall include the cost of all labor, materials, equipment, and incidentals necessary to complete this item in place, including all related hardware, not separately specified, as required by the manufacturer to construct a complete and functional impact attenuator system.

ITEM 606, ANCHOR ASSEMBLY, TYPE E

This item shall consist of furnishing and installing an ET-2000, Option "B" guardrail end terminal as manufactured by SYRO Steel Company, 1170 N. State Street, Girard, Ohio 44420 (telephone 216-545-4373).

The length of the ET-2000 system is considered to be 50', inclusive of two 25' long rail elements. Installations shall be in accordance with the manufacturer's specifications, and at the locations shown in the plans.

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

ITEM 203, LINEAR GRADING, METHOD A & METHOD B

This work shall include the excavation and embankment required to grade beyond the paved shoulders. 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 per Section 203.05, or wasted over fill slopes at the direction of the Engineer.

Method A and Method B apply to areas without guardrail. The excavated material shall be replaced compactable granular material conforming to Section 203.02, placed to grade as shown on the Typical Sections, or as approved by the Engineer. The graded areas shall be seeded as per Item 659.

Linear grading widths shown on the plan represent minimum requirements, and the Engineer may increase these widths as determined by his analysis of project conditions at no additional cost to the State.

The method of measurement shall be considered as one station per 100 linear feet measured separately for the outside shoulders on mainline, and the left and right shoulders on each ramp.

A quantity of 12,000 cubic yards of Item 203, Borrow, to be used as directed by the Engineer, has been included in the General Summary as per 203.04(g).

Payment for the above work, except for Item 659, will be made at the contract price for Item 203, Station, Linear Grading, Method A and Method B, and shall include the cost of all labor, materials, equipment, and incidentals as necessary to complete the work.

PAVING UNDER GUARDRAIL

This operation shall include preparation of the graded shoulder using Item 203, Linear Grading, Method C, and paving under the guardrail using Item 448, Asphalt Concrete Intermediate Course, Type 1 (Under Guardrail), As Per Plan.

Item 203, Linear Grading, Method **C**, shall consist of excavating topsoil, placing granular material, and applying herbicide as specified in the plans and in accordance with the following:

All collected debris and topsoil, including rhizomes, roots, and other vegetative plant material, shall be removed and disposed of as specified in Section 203.05.

The removed material shall be replaced with compactable granular material conforming to Section 203.02, placed to grade as shown on the Typical Sections, or as approved by the Engineer.

Herbicide shall be Treflan E. C., Spike, or an approved equal, and shall be applied to the prepared area after final leveling and grading has been completed. The application shall be just prior to paving, and shall strictly adhere to the manufacturer's instructions.

Only properly licensed personnel shall apply herbicides as required by the Ohio Revised Code.

All equipment, materials, and labor required to prepare the graded shoulder as outlined above shall be included for payment under Item 203, Linear Grading, Method C.

Paving under guardrail shall consist of placing a 2" course of Item 448 using the following method:

1) Place Item 448
2) Bore asphalt at post locations (may be omitted if steel posts are used)
3) Set guardrail posts
4) Patch around posts. The materials used for patching shall be a bituminous concrete approved by the Engineer. Patched areas shall be compacted using either hand or mechanical methods. Finished surfaces shall be smooth and sloped to drain away from the posts.

Separate payment will be made to protect the graded areas beyond the guardrail paving using Item 670, Slope Erosion Protection.

All equipment, materials, and labor required to pave under guardrail, with the exception of setting guardrail posts, shall be included in payment under Item 448, Asphalt Concrete Intermediate Course, Type 1 (Under Guardrail), As Per Plan.

ITEM 202, CATCH BASIN CLEANOUT

This item shall consisit of removing all foreign material, material buildup, and obstructions from the inside of existing catch basins.

The cleanout shall be accomplished by using a high pressure water jet, vacu-jet, or any other method as approved by the Engineer. The Contractor shall dispose of all collected material and debris as per Section 203.05.

For locations and quantities, see sheet no. 37.

Payment for the above work will be made at the contract price for Item 202, Each, Catch Basin Cleanout, and shall include the cost of all labor, tools, equipment, materials, and incidentals as necessary to complete the work.

ITEM 201, CLEARING AND GRUBBING, AS PER PLAN

Work under this item shall consist of preparing the existing groundline where the new right of way fence will be located. The work limits shall be within two feet on each side of the new Type 47 fence limits, and one foot on each side of the new Type CLT fence limits. This work shall consist of the following:

1) Removal of trees, stumps, and brush to ground level.
2) Removal of litter.
3) Mowing the vegetation to a height between 3" and 5".
4) Treating the prepared area with herbicide within 24 hours after the vegetation is cut.

Herbicide shall be 1 gallon of Dow "Tordon K" combined with two quarts of 2, 4 D-amine or an approved equal in sufficient water to make 50 gallons of total spray mix per acre. The required treated area is estimated to be **2.49** acres.

Only properly licensed personnel shall apply herbicides as required by the Ohio Revised Code.

The following is an estimate of the number of trees to be removed:

Size: 18" Number: 21
Size: 30" Number: 1

The State reserves the right to order the removal of additional trees, stumps, or both, outside the limits of construction, but within the limited access right of way.

Payment for the above work will be made at the lump sum contract price for Item 201, Clearing and Grubbing, As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals as necessary to complete the work.

ITEM 202, RAISED PAVEMENT MARKER REMOVED FOR STORAGE, AS PER PLAN

Existing raised pavement markers shall be removed per Section 202.07.1, except that 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 202, Raised Pavement Marker Removed For Storage, As Per Plan - - - - - 525 Each

FENCE GROUNDING

Proposed right of way fence which crosses under overhead power lines or transmission lines shall be grounded as detailed in Standard Construction Drawing HL-50.11, and as directed by the Engineer. For quantities, see sheet no. 29.

ITEM 659, SEEDING AND MULCHING

Seeding and mulching shall be applied to all areas of proposed grading. Quantity calculations for Item 659 - Seeding and Mulching are based on these limits (see sheet no. 30).

WATERING PERMANENT SEEDED AREAS

The following estimated quantity is to be used as directed by the Engineer to promote growth, and to care for permanent seeded areas as per Section 659.09:

Item 659, Water - - - - - - - - - - - 122 M Gal.

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TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be used as directed by the Engineer for temporary erosion and sediment control measures:

Item 207, Straw or Hay Bales	300 Each
Item 207, Filter Fabric Fence	500 Lin. Ft.

EROSION CONTROL

Items 660 and 670 are provided in the plans for erosion control. Rock of a stable nature shall not be removed in order to place any of these items, and turf of a stable nature shall not be removed in order to place Item 660. The Engineer shall check and non-perform quantities, or adjust locations and quantities of these items where indicated by field conditions during construction. In addition, these items shall meet the requirements of Section 108.04.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

Where plans provide for a proposed conduit to be connected to, or cross over or under an existing sewer or underground utility, the Contractor shall locate the existing pipes or utilities both as to line and grade before starting to lay the proposed conduit.

If it is determined that the elevation of the existing conduit, or existing appurtenance to be connected, differs from the plan elevation or results in a change in the plan conduit slope, the Engineer shall be notified before starting construction of any portion of the proposed conduit which will be affected by the variance in the existing elevations.

If it is determined that the proposed conduit will intersect an existing sewer or underground utility if constructed as shown on the plan, the Engineer shall be notified before starting construction of any portion of the proposed conduit which will be affected by the interference with an existing facility.

Payment for all the operations described above shall be included in the contract price bid for the pertinent 603 conduit item.

ITEM 604, CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN

This item shall consist of removing and disposing of the existing concrete apron, and adjusting the existing catch basin to grade using a new top portion and grate, and constructing a new reinforced concrete apron as shown herein. For details, see sheet no. 56.

Furnishing and placing the steel for the $\frac{5}{8}$" x 12" dowel bars shall be per Item 509. The dowell bars shall be epoxy coated per Section 509.10. The dowel bars shall be installed per Item 510, or cast into the new top. Bolts or inserts may be used. The 6" concrete apron shall be reinforced per Section 601.04(3).

For locations and quantities, see sheet no. 37.

Payment for the above work, including dowel bar placement, concrete apron construction, and reinforcing steel, will be made at the contract price for Item 604, Each, Catch Basin Adjusted To Grade, As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals as necessary to complete the work.

PROFILE AND ALIGNMENT

The proposed pavement resurfacing shall follow the alignment and profile of the existing pavement, except within the eastbound profile reconstruction from Sta. 309+00 to Sta. 313+50. The proposed reinforced concrete overlay with bondbreaker shall have a uniform thickness of 9" after removal of the existing 3" asphalt concrete wearing surface.

CONTRACTION AND/OR EXPANSION JOINTS

Although specific locations of certain contraction and expansion joints have been detailed on this plan, no waiver of the specifications is intended. Provision of expansion joints at all major structures, and the maximum spacing between contraction joints shall, in all cases, be in accordance with Standard Construction Drawing BP-2.2, and the Specifications.

ITEM 407, TACK COAT

The rate of application of the 407 tack coat shall be subject to adjustment as directed by the Engineer. Plan quantities indicate an average application rate of 0.075 gallons per square yard of tack coat for estimating purposes only.

ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN

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

TRAFFIC COUNTER

The contractor shall notify The Ohio Department of Transportation's Bureau of Technical Services three weeks in advance of disturbing the existing traffic counter at Sta. 345+00 at at the following location:

Ohio Department of Transportation
Office of Technical Services
Anthony J. March
25 S. Front St.
Columbus, Ohio 43215
614-466-4224

ITEM 451, REINFORCED CONCRETE PAVEMENT, AS PER PLAN

Where the new pavement butts into the existing pavement, a dowelled Type Y joint per BP-2.5 shall be provided. Grouting and drilling requirements shall be per Item 255 and BP-2.5 except the requirement that the drilling device shall be capable of drilling threee holes at one time shall be waived. All work and materials required to provide these joints shall be incidental to Item 451 Reinforced Concrete Pavement, As Per Plan.

ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

The reinforcing steel for the approach slabs of this structure shall be epoxy coated in conformance with 509.

Materials, labor and installation shall be included with approach slabs for payment.

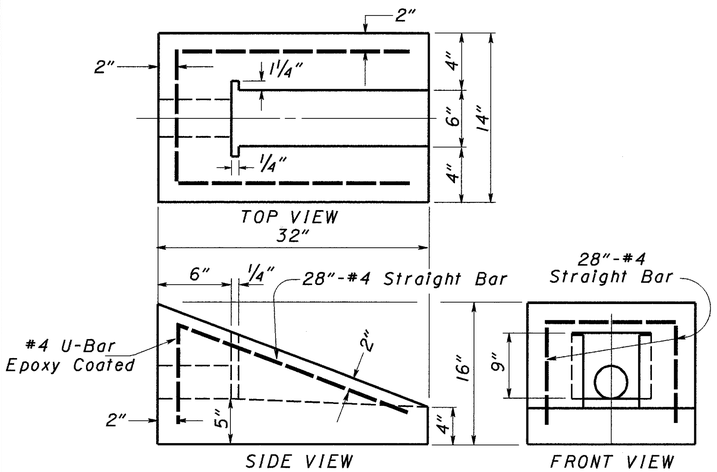
CALCULATED SHG
CHECKED KSP

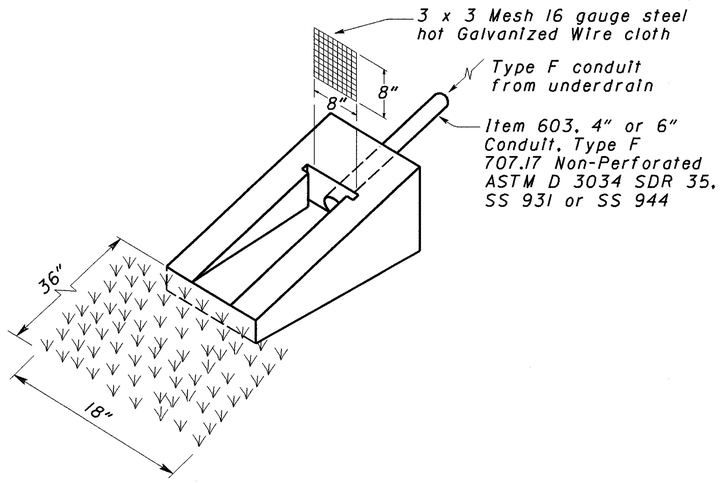
GENERAL NOTES

JEF-22-3.86

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

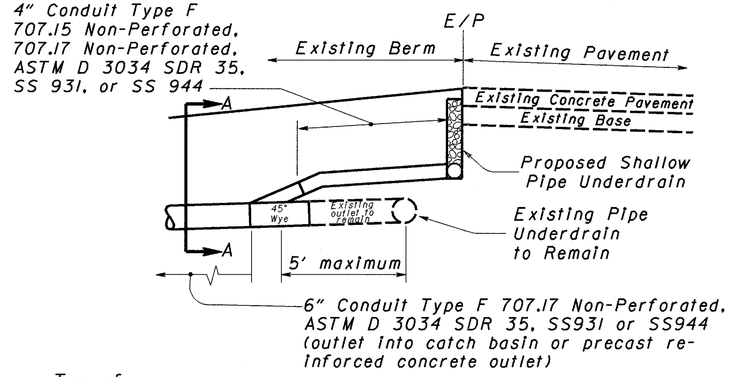
The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.

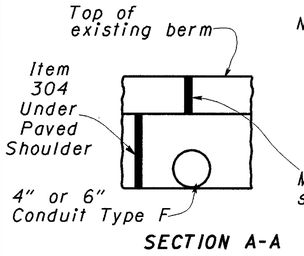




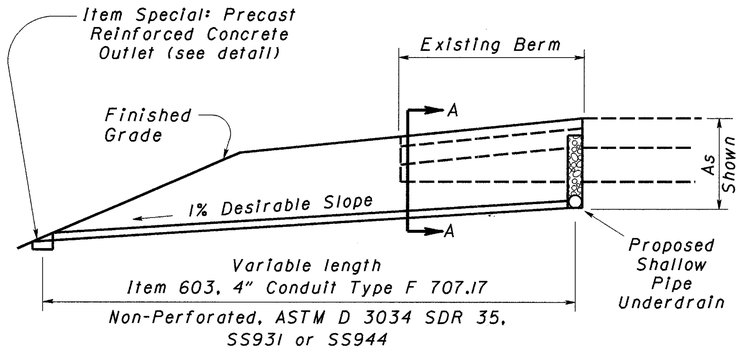
NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

OUTLET DETAILS



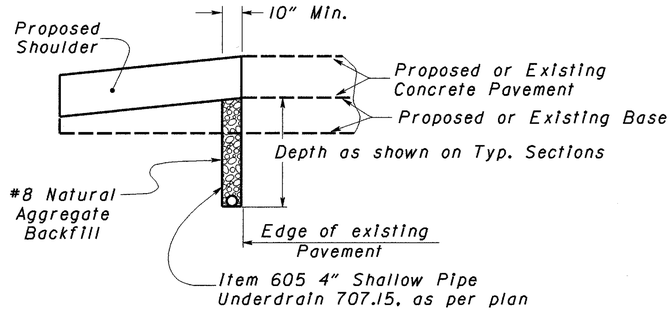


NOTE:
The cost of the 4" conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains be included with the cost of the 6" conduit Type F beyond the existing underdrain.



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

PIPE UNDERDRAIN DETAIL



DESCRIPTION : THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

MATERIALS : THE UNDERDRAIN SHALL BE A PIPE UNDERDRAIN SYSTEM PER ITEM 605. THE OUTLETS FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAIN TO DRAIN THE SUBBASE AND SUBGRADE. ALL PIPE BENDS AND BRANCHES NEEDED TO CONNECT THE PROPOSED UNDERDRAIN TO THE PROPOSED OUTLET OR TO AN EXISTING UNDERDRAIN SHALL BE MANUFACTURED FITTINGS.

METHOD OF MEASUREMENT : COMPLETED AND ACCEPTED UNDERDRAINS WILL BE MEASURED BY THE LINEAR FOOT IN PLACE.

BASIS OF PAYMENT : WORK COMPLETED AND ACCEPTED UNDER THIS ITEM AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN. THE PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; FOR FURNISHING MATERIALS, INCLUDING MATERIAL FOR OUTLET FITTINGS, FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTIALS NECESSARY TO COMPLETE THE WORK.

CALCULATED | CHECKED

2-5-93

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

JEF-22-3.86

MAINTENANCE OF TRAFFIC

MAINLINE

At least one lane of traffic shall be maintained in each direction at all times as per Standard Construction Drawing MT-95.30. The length of restricted traffic lanes shall be kept to a minimum consistent with the specification requirements for the protection of work items which necessitate the restriction. The limits and duration of lane closures shall be subject to the approval of the Engineer.

Construction work shall be permitted on only one directional roadway at a time. Any open pavement trench shall be adequately maintained and protected with barricades, drums, vertical panels, or portable concrete barrier.

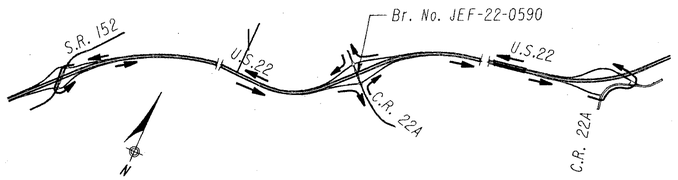
Two-lane, two-way operation (TLTWO) shall be maintained on a directional roadway during pavement reconstruction as per Standard Drawing MT-95.70, and as detailed herein.

MEDIAN OPENINGS

All existing median openings within the project limits shall be closed to traffic while two-way traffic is being maintained on either the eastbound or westbound lanes of U.S. 22. The Contractor may use concrete barrier or soil with a minimum height of 3' placed across the center of the median and parallel to the mainline pavement, or an approved method to the satisfaction of the engineer. The contractor shall maintain and subsequently remove all barrier, embankment, etc., as used to close the median openings. Concrete barriers shall have tapered end sections.

C.R. 22A

During the reconstruction of Br. No. JEF-22-0590, U.S. 22 eastbound to C.R. 22A westbound and U.S. 22 westbound to C.R. 22A eastbound traffic shall be detoured as shown below. Contractor shall notify **the District Roadway Services Manager** at least eighteen (18) days in advance of implementation of the detour. Upon completion of the bridge deck reconstruction, traffic shall be maintained as shown in Standard Construction Drawing MT-97.10 for any remaining work. Upon commencement of work on Br. No. JEF-22-0590, the contractor shall work continuously in a manner satisfactory to the engineer to minimize closure time.



BRIDGE NO. JEF-22-0590 DETOUR
(U.S. 22 eastbound to C.R. 22A westbound)
(U.S. 22 westbound to C.R. 22A eastbound)

GENERAL

All lanes shall be open to traffic between November 15 and April 15. November 15 shall be considered to constitute an interim completion date and liquidated damages shall be assessed in accordance with Section 108.07 of the Construction and Material Specifications for each calendar day that all lanes are not open and available to traffic.

When the project is shut down for the winter, and the permanent pavement markings have not been applied, 614 Temporary Edge Lines, Class I, and 614 Temporary Lane Lines shall be applied to the eastbound and westbound lanes for the entire length of the project, and the Interchange ramps.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR

In addition to the requirements of 614 and the latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), a uniformed law enforcement officer and official patrol car with working top-mounted emergency flashing lights shall be provided for controlling traffic for the following tasks:

1) During the entire advance preparation and closure sequence for the temporary crossovers where complete blockage of traffic is required for Phase 1 and Phase 2 reconstruction.

2) 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.

3) For patrolling or controlling traffic as directed by the Engineer.

Law enforcement officers with patrol car required by the traffic maintenance tasks above shall be paid for on an hourly basis under Item 614, Law Enforcement Officer With Patrol Car. The following estimated quantity has been carried to the Maintenance of Traffic General Summary:

Item 614, Law Enforcement Officer With Patrol Car - - - - - - - - - - - - 200 Hour

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

If the Contractor wishes to utilize LEO's for flagging and traffic control other than that required in these plans, he may do so at his own expense. Payment for the excess above the contract requirements will be included under Item 614, Maintaining Traffic.

Law enforcement officers (LEO's) should not be used where the OMUTCD intends that flaggers be used. The LEO's are considered to be employed by the Contractor, and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Project Engineer shall have control over their placement. The official patrol car shall be a public safety vehicle as required by the Ohio Revised Code.

The Contractor shall make arrangements for these services with the Ohio Highway Patrol, Steubenville Post, 901 Cadiz Road, Steubenville, Ohio, telephone 614-264-1641.

ITEM 614, BARRIER REFLECTORS

Reflectors and their mounting shall conform to Supplemental Specification 802 except that the spacing shall be at 25'. See sheet no. 15 for Quantities.

ITEM 622, PORTABLE CONCRETE BARRIER

It is anticipated that the same barrier will be used in various phases of construction. Movement of the concrete barrier between phases shall be accomplished in one working day. Flaggers shall be utilized for protection of vehicular traffic until movement of the barrier is complete.

ITEM 622, PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

This work shall consist of furnishing, installing, maintaining, and subsequently removing a 50-inch high portable concrete barrier at the locations shown on sheet no's. 16-18, 20-22, and 24. For details, see Standard Construction Drawing MC-9.1.

Portable concrete barrier which is 32 inches high with an 18 inch minimum height glare screen may be used in lieu of 50" high portable concrete barrier at the option of the Contractor. The glare screen shall be constructed using one of the following systems, or an approved equal:

CARSONITE MODULAR GLARE SCREEN
Carsonite International
2900 Lockheed Way, Carson City, Nevada 89701
Phone 702-883-5104 or 800-648-7974

FORWARD GLARE SCREEN
Proven Products, Inc.
7560 SW Lavlew Drive, Portland, Oregon 97219
Phone 503-244-9185

SYRO GLAREFOIL
SYRO Steel Company
1170 North State Street, Girard, Ohio 44420
Phone 216-545-4373

Paddle or intermittent type glare screens shall be designed using a 20 degree cut-off angle based on tangent alignment. That spacing shall be used throughout the barrier length without regard to barrier curvature.

The glare screen shall be securely fastened to the 32-inch portable concrete barrier using the hardware and procedures specified by the manufacturer.

Payment for the above work will be made at the contract price for Item 622, Linear Feet, Portable Concrete Barrier, 50", As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals necessary to complete the work.

ITEM SPECIAL, REPLACEMENT DRUM

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

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

An estimated quantity of 60 each has been provided in the Maintenance of Traffic General Summary.

COVERING OF SIGNS

Where the plans call for a permanent sign to be covered, the Contractor shall do so in such a manner as to avoid damaging the permanent sign when the cover is removed. The cover shall be totally opaque. The use of adhesive tape applied directly to a sign is strictly prohibited.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

The Contractor shall furnish, install, maintain, cover during suspension of work, and subsequently remove work zone speed limit signs and supports (R-10-48) (45 mph) within the work limits in accordance with the following requirements.

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

The work zone speed limit signs may be erected or uncovered no more than 4 hours before the actual start of work. The signs shall be removed or covered no later than 4 hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer.

The Contractor shall erect a work zone speed limit sign in advance of any lane restiction expected to last at least 30 days, or as directed by the Engineer. The sign shall be mounted on both sides of divided highways, 500 feet in advance of the lane reduction taper. The sign shall be mounted on the right side, 250 feet in advance of the lane reduction taper on undivided highways. The sign shall be repeated, on the side nearest traffic, every 1 mile for 55 mph zones, and every 1/2 mile for 45 mph zones. These signs shall also be erected immediately after each open entrance ramp within the zone. A sign to indicate the resumption of the statutory speed limit shall be erected at the end of any reduced speed zone. This sign shall be an R-8A.

The Contractor may use signs and supports in used but good condition provided the signs meet current ODOT specifications. Sign faces shall be reflectorized with Type G sheeting complying with the requirements of 730.19 and U.S. Department of Transportation supplemental specification for Type III-C Sheeting, FP-85. Work zone speed limit signs shall be mounted on two (2) Item 630 Ground Mounted Supports, No. 4 posts.

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

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

Item 614, Work Zone Speed Limit Sign - - - - - - - - - - - - - - - 36 Each

ITEM SPECIAL, REPLACEMENT SIGN

Flat sheet signs furnished by the Contractor in accordance with the requirements of the plans, specifications, and proposal which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer. Replacement signs shall be new. Other materials may be in used but good condition subject to approval by the Engineer.

Payment for the new signs shall be made at the contract price per square foot for Item Special, Replacement Sign, and shall include the cost of removing and disposing of damaged signs, hardware and supports, and providing the necessary replacement hardware, supports, etc.

An estimated quantity of 60 square feet has been provided in the Maintenance of Traffic General Summary.

ITEM SPECIAL, TEMPORARY GUARDRAIL

This item shall consist of furnishing, constructing, maintaining, and susequentely removing temporary guardrail per Standard Construction Drawing GR-6. Type 5 guardrail and a Type A anchor assembly shall be used in lieu of the barrier rail and the barrier anchor assembly shown in the standard drawing.

When no longer needed, the temporary guardrail shall become the property of the Contractor.

Payment for the above work, including the bridge terminal assembly and the Type A anchor assembly, will be included in the contract price bid for Item Special, Linear Feet, Temporary Guardrail, and shall include the cost of all labor, materials, equipment, and incidentials as necessary to complete the work.

CALCULATED KSP
CHECKED SHG

MAINTENANCE OF TRAFFIC GENERAL NOTES

JEF-22-3.86

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SEQUENCE OF CONSTRUCTION

PHASE 1

The westbound lanes shall be closed to traffic and all westbound traffic shall be diverted to the eastbound lanes. The following phases are to be performed by the Contractor prior to diverting the traffic.

1. Review all existing guardrail and bridge parapet ends on eastbound lanes. Install necessary temporary guardrail, bridge terminal assemblies, object markers, and guardrail end treatments for the protection of the diverted westbound traffic. See sheet no. 15 for quantities.

2. Inspect existing eastbound paved shoulders and repair as necessary to accept westbound traffic. See sheet no. 15 for quantities to be used as directed by the Engineer.

3. Construct temporary crossovers as detailed on sheet no's. 16-25. Contractor may construct Phase 2 crossovers at this time if he wishes. Adequate barricades shall be placed to prohibit vehicles from using the crossovers at this time.

4. Remove existing edge lines on the eastbound lanes and apply new edge lines to provide for the TLTWO. The Contractor shall erect temporary traffic control devices as shown on sheet no's. 16-25 and the O.M.U.T.C.D. Temporary traffic control devices are to remain covered until traffic is diverted. Any permanent signs conflicting with temporary signs shall be covered until the project is completed.

5. The Contractor shall remove temporary barricades, uncover temporary traffic control signs and divert westbound traffic onto the eastbound lanes, and maintain a TLTWO operation.

After diverting westbound traffic onto the existing eastbound lanes, the contractor shall proceed to remove the existing asphalt overlay on the westbound lanes, install new underdrains, install guardrail, reconstruct shoulders, construct overlay, and complete the westbound lanes in accordance with the plans and specifications.

The reconstruction of Br. No. JEF-22-0590 shall be concurrent with this phase.

Ramps "A" and "B" shall be closed to traffic during the ramp overlay construction. This work shall be concurrent with the mainline overlay construction that disrupts the ramp crossovers. The contractor shall complete the required work per ramp within 21 calender days.

The pavement and shoulder reconstruction shall be completed by Nov. 15.

Areas of the mainline which are under construction, and are located within the ramp crossover areas shall be completed with the use of flaggers.

PHASE 2

The eastbound lanes shall be closed to traffic, and all eastbound traffic shall be diverted to the westbound lanes. Prior to diverting the traffic from the existing eastbound lanes to the new westbound lanes, the contractor shall perform the following work.

1. Install temporary pavement markings, guardrail end treatment, and bridge terminal assemblies required for the protection of the diverted eastbound traffic.

2. Construct any temporary crossovers if they have not been constructed under Phase 1. Provide adequate barricades as outlined under Phase 1.

3. Remove existing edge lines on the westbound lanes and apply new edge lines to provide for the TLTWO. The Contractor shall erect temporary traffic control devices as shown on sheet no's. 16-25 and the O.M.U.T.C.D. Temporary traffic control devices are to remain covered until traffic is diverted. Any permanent signs conflicting with temporary signs shall be covered until the project is completed.

4. Divert all traffic onto the westbound lanes. Uncover all signs required to maintain a TLTWO operation. The contractor shall schedule this operation so that this step is completed in one working day.

After diverting eastbound traffic onto the westbound lanes, the Contractor shall proceed to remove the existing asphalt overlay on the eastbound lanes, reconstruct the profile under bridge no. JEF-22-0590, install underdrains, reconstruct shoulders, construct overlay, and and complete the eastbound lanes in accordance with the plans and specifications.

Ramps "A" and "B" shall be closed to traffic during the ramp overlay construction. This work shall be concurrent with the mainline overlay construction that disrupts the ramp crossovers. The contractor shall complete the required work per ramp within 21 days.

Areas of the mainline which are under construction, and are located within the ramp crossover areas shall be completed with the use of flaggers.

PHASE 3

1. After completing Phase 2, traffic shall be restored to the proper lanes after applying the temporary pavement markings.

2. Temporary crossovers, including embankment and conduit, shall be removed.

3. Apply final pavement markings and complete any remaining construction.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, CLASS II, AS PER PLAN

The Contractor shall furnish, install maintain and remove, when no longer needed, a changeable message sign, on site, for the duration of the project. The sign shall be of a type shown on a list of approved PCMS units maintained by the Director. The list currently contains class III and II units with minimum legibility distances of 650 ft. and 850 ft., respectively.

Each sign shall be trailer mounted and equipped with a functional dimming mechanism to dim the sign during darkness and a tamper- and vandal-proof enclosure. Each sign shall be provided with appropriate training and operation instructions to enable on-site personnel to operate and troubleshoot the unit. The sign shall also be capable of being powered by an electrical service drop from a local utility company.

Placement, operation, maintenance and all activation of the signs by the Contractor shall be as directed by the Engineer. The PCMS shall be located in a highly visible position yet protected from traffic. The Contractor shall, at the direction of the engineer, relocate the PCMS to improve visibility or accommodate changed conditions. When not in use, the PCMS will be off, facing away from all traffic and shall display one or more high intensity yellow reflective sheeting surfaces of 9-inch by 15-inch minimum size facing traffic.

The Engineer shall be provided access to each sign unit and shall be provided with appropriate training and operation instructions to enable ODOT personnel to operate and troubleshoot the unit and to revise sign messages, if necessary.

The Contractor shall implement a system whereby changed messages will be implemented within four hours following telephone notification from the Project Engineer to a designated phone.

All messages to be displayed on the sign will be provided by the Engineer. A list of all required preprogrammed messages will be given to the Contractor at the project preconstruction conference. The sign shall have the capability to store up to 99 messages. Message memory or pre-programmed displays shall not be lost as a result of power failures to the on board computer. The sign legend shall be capable of being changed in the field. Three-line presention formats with up to six message phases shall be supported, but normally, not more than two message phases should be employed , athough three phases may be used in unusual conditions. PCMS format shall permit the complete message for each phase to be read at least once.

The PCMS shall contain an accurate clock and programming logic which will allow the sign to be activated, deactivated, or messages changed automatically at different times of the day for different days of the week.

The PCMS unit shall be maintained in good working order by the Contractor in accordance with the provisions of 614.03 (C). The Contractor shall, prior to activating the unit, make arrangements with an authorized service agent for the PCMS to assure prompt service in the event of failure. Any failure shall not result in the sign being out of service for more than 12 hours, including weekends. Failure to comply may result in an order to stop work and open all traffic lanes and/or in the Department taking appropriate action to safely control traffic and the entire cost to control traffic accrued by the Departmenat will be deducted from moneys due, or to become due, the Contractor in his contract.

The Contractor shall be responsible for 24 hours per day operation and maintenance of these signs on the project for the duration of the phases when the plan requires their use.

The requirement to furnish, install, maintain and remove a PCMS unit on this project shall not in any way relieve the Contractor of his responsibility as outlined in 104.04.

Payment for the described item shall be at the contract unit price bid per sign-month for each item 614, Portable Changeable Message Sign, As Per Plan and shall include all labor, materials, equipment, fuels, lubricating oils, software, hardware, and incidentials to perform the above work.

Item 614 - Portable Changeable Message Sign, Class II, As Per Plan - - 4 Each

DUST CONTROL

The contractor shall furnish and apply water and calcium chloride for dust control as directed by the engineer. The following contingency quantities have been included for dust control purposes:

Item 616 - Water - - - - - - - - - - - - - - - - - 40 M-Gal.
Item 616 - Calcium Chloride - - - - - - - - - - - - 7 Tons

CALCULATED KSP
CHECKED SHG

TRAFFIC GENERAL NOTES

MAINTENANCE OF TRAFFIC

JEF-22-3.86

QUANTITIES

ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC - 92 Cu. Yd.

ITEM 614 TEMPORARY EDGE LINE, CLASS I

PHASE 1
EASTBOUND
Sta. 194+93 to Sta. 380+52.39 BK = 18,559.4 Lin. Ft. (Yellow)
Sta. 61+57.0 AH to Sta. 70+36 = 879.0 Lin. Ft. (Yellow)
Sta. 203+36 to Sta. 380+52.39 BK = 17,716.4 Lin. Ft. (White)
Sta. 61+57.0 AH to Sta. 70+36 = 879.0 Lin. Ft. (White)
WESTBOUND
Sta. 197+56 to Sta. 380+52.39 BK = 18,296.4 Lin. Ft. (Yellow)
Sta. 61+57.0 AH to Sta. 84+99 = 2342.0 Lin. Ft. (Yellow)
Sta. 201+56 to Sta. 380+52.39 BK = 17,896.4 Lin. Ft. (White)
Sta. 61+57.0 AH to Sta. 72+72 = 1115.0 Lin. Ft. (White)
PHASE 2
EASTBOUND
Sta. 176+35 to Sta. 380+52.39 BK = 20,417.4 Lin. Ft. (Yellow)
Sta. 61+57.0 AH to Sta. 74+36 = 1279.0 Lin. Ft. (Yellow)
Sta. 199+13 to Sta. 380+52.39 BK = 18,139.4 Lin. Ft. (White)
Sta. 61+57.0 AH to Sta. 70+36 = 959.0 Lin. Ft. (White)
WESTBOUND
Sta. 202+25 to Sta. 380+52.39 BK = 17,827.4 Lin. Ft. (Yellow)
Sta. 61+57.0 AH to Sta. 79+64 = 1807.0 Lin. Ft. (Yellow)
Sta. 202+25 to Sta. 380+52.39 BK = 17,827.4 Lin. Ft. (White)
Sta. 61+57.0 AH to Sta. 70+77 = 920.0 Lin. Ft. (White)
81,407.6 Lin. Ft. (Yellow)
75,452.6 Lin. Ft. (White)

TOTAL = 81,407.6 Lin. Ft. ÷ 5280 = 15.5 Mi. (Yellow)
TOTAL = 75,452.6 Lin. Ft. ÷ 5280 = 14.4 Mi. (White)

ITEM 614 OBJECT MARKERS

PHASE 1
Sta. 200+95.7 to Sta. 380+52.39 BK = 17,931.6 Lin. Ft.
Sta. 61+57.0 AH to Sta. 70+36.3 = 885.0 Lin. Ft.
Br. No. JEF-22-0698R = 2 Each
PHASE 2
Sta. 202+25.1 to Sta. 380+52.39 BK = 17,834.4 Lin. Ft.
Sta. 61+57.0 AH to Sta. 73+18.2 = 1153.9 Lin. Ft.
Br. No. JEF-22-0698L = 2 Each
DEDUCT
Portable Concrete Barrier, 50", As Per Plan = -3960.0 Lin. Ft.
33,844.9 Lin. Ft.
4 Each

TOTAL = 33,844.9 Lin. Ft. ÷ 25' X 2 + 4 = 2712 Each

ITEM 614 BARRIER REFLECTOR, TYPE B

PHASE 1
Sta. 209+40 to Sta. 380+52.39 BK = 17,152.4 Lin. Ft.
Sta. 61+57.0 AH to Sta. 64+71 = 314.0 Lin. Ft.
PHASE 2
Sta. 210+31 to Sta. 380+52.39 BK = 17,021.4 Lin. Ft.
Sta. 61+57.0 AH to Sta. 64+72 = 315.0 Lin. Ft.
34,802.8 Lin. Ft.

34,802.8 Lin. Ft. ÷ 25' X 2 = 2784 Each (Yellow)
Carried from Sheet No. 17 = 67 Each (Yellow)
Carried from Sheet No. 18 = 76 Each (Yellow)
Carried from Sheet No. 22 = 103 Each (Yellow)
Carried from Sheet No. 23 = 66 Each (Yellow)
TOTAL = 3096 Each (Yellow)

PHASE 1 (JEF-22-0698R)
Sta. 368+65.20 to Sta. 375+89.57 = 724.37 Lin. Ft. ÷ 25' + 1 = 31 Each (White)
PHASE 2 (JEF-22-0698L)
Sta. 368+30.16 to Sta. 376+16.60 = 786.44 Lin. Ft. ÷ 25' + 1 = 34 Each (White)
TOTAL = 65 Each (White)

ITEM 622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED

PHASE 1
Br. No. JEF-22-0698 R, Sta. 368+57.4 to Sta. 375+97.4 = 740.0 Lin. Ft.
PHASE 2
Br. No. JEF-22-0698 L, Sta. 368+26.9 to Sta. 376+16.9 = 790.0 Lin. Ft.
TOTAL = 1530.0 Lin. Ft.

ITEM 622 PORTABLE CONCRETE BARRIER, 32"

PHASE 1
Sta. 200+95.7 to Sta. 380+52.39 BK = 17,931.6 Lin. Ft.
Sta. 61+57.0 AH to Sta. 70+36.3 = 885.0 Lin. Ft.
PHASE 2
Sta. 202+25.1 to Sta. 380+52.39 BK = 17,834.4 Lin. Ft.
Sta. 61+57.0 AH to Sta. 73+18.2 = 1153.9 Lin. Ft.
DEDUCT
Portable Concrete Barrier, 50", As Per Plan = -3960.0 Lin. Ft.
Portable Concrete Barrier, 32", Bridge Mounted = -1530.0 Lin. Ft.
TOTAL = 32,314.9 Lin. Ft.

ITEM SPECIAL, TEMPORARY GUARDRAIL

PHASE 1 - Bridge No. JEF-22-0698R _____ 125.0 Lin. Ft.
PHASE 2 - Bridge No. JEF-22-0698L _____ 125.0 Lin. Ft.
TOTAL = 250.0 Lin. Ft.

ITEM 614 BARRIER REFLECTOR, TYPE A

PHASE 1 (Bridge No. JEF-22-0698R) - 125.0 Lin. Ft. ÷ 25' = 5 Each (White)
PHASE 2 (Bridge No. JEF-22-0698L) - 125.0 Lin. Ft. ÷ 25' = 5 Each (White)
TOTAL = 10 Each (White)

QUANTITIES FROM MAINTENANCE OF TRAFFIC DETAILS

FROM SHEET NO.	ITEM 411	ITEM 614						ITEM 615	ITEM 622
	STABILIZED CRUSHED AGGREGATE 6" THICKNESS	TEMPORARY CROSSOVER LIGHTING SYSTEM	TEMPORARY EDGE LINE, CLASS I		TEMPORARY RAISED PAVEMENT MARKER, TYPE A		TEMPORARY STOP LINE, CLASS I	TEMPORARY PAVEMENT, CLASS A	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN
			WHITE	YELLOW	WHITE	YELLOW			
	CU. YD.	EACH	MI.	MI.	EACH	EACH	LIN. FT.	SQ. YD.	LIN. FT.
17	65.2	1	--	--	37	30	--	2019.60	840.0
18	44.5	1	--	--	26	34	--	1372.65	570.0
19	10.7	--	0.04	0.04	15	13	18.0	222.91	300.0
20	17.6	--	0.06	0.06	29	16	--	522.99	--
21	11.0	--	0.06	0.04	17	13	18.0	225.65	300.0
22	--	--	--	--	29	49	--	--	810.0
23	--	--	--	--	30	24	--	--	840.0
24	17.3	--	0.11	0.06	29	16	--	509.94	--
25	10.9	--	0.05	0.05	13	15	18.0	225.48	300.0
26	17.2	--	0.11	0.05	29	16	--	509.58	--
TOTALS	194.4	2	0.73		480		54.0	5608.80	3960.0

Totals carried to Maintenance of Traffic General Summary.

CALCULATED KSP CHECKED SHG

MAINTENANCE OF TRAFFIC QUANTITIES

JEF-22-3.86

GENERAL

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMRNT MARKERS (TRPM'S). THE MARKERS SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL

ALL MARKERS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH MARKER AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATE FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCHES FOR TYPE A OR 3.0 SQUARE INCHES FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

SPECIFIC INTENSITY

TYPE A

INCIDENCE ANGLE (DEGREES)	WHITE	YELLOW
0	1.0	0.6
20	0.4	0.24
45	—	—

TYPE B

	WHITE	YELLOW
0	3.0	1.9
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH DAY AND NIGHT. THEIR DAY TIME VISIVILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

1) THE MARKERS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.

2) WHEN VIEWED FROM ABOVE, THE MARKERS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.

3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE MARKER SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETROREFLECTING AUTOMOTIVE HEADLIGHT BACK TO DRIVER.

INSTALLATION

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, ABITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE MARKER UNDER THE ABOVE CONDITIONS. WHEN IT IS NEDESSARY TO ATTACH MARKERS TO NEW CONCRETE PAVEMENT WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS EXPENSE, ANY MARKERS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

MARKERS ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES. THE CONTRACTOR SHALL IMMEDIATELY, AT HIS EXPENSE, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING DAY AND NIGHT AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE MARKERS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING INES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY SHALL BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES LATERALLY TO AVOID PLACEMENT ON JOINTS, OR ON CRACKED OR DETERIORATED PAVEMENT. MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS DESTRACTS FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20'C/C
LANE LINE	A OR B	40'C/C•
CENTER LINE (SINGLE/BROKEN)	A OR B	40'C/C•
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20'C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10'C/C

• CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4 @ 3.33'C/C 30'GAP (40'CYCLE)
CENTER LINE (DOUBLE/SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE/BROKEN)	A	4 @ 3.33'C/C 30'GAP (40'CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW MARKERS USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW AND WHITE MARKERS SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION ONLY.

REMOVAL

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT. PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

PAVEMENT

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH MARKER AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TEMPORARY RAISED PAVEMENT MARKERS WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXECPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS.

CALCULATED / CHECKED

07/03/90

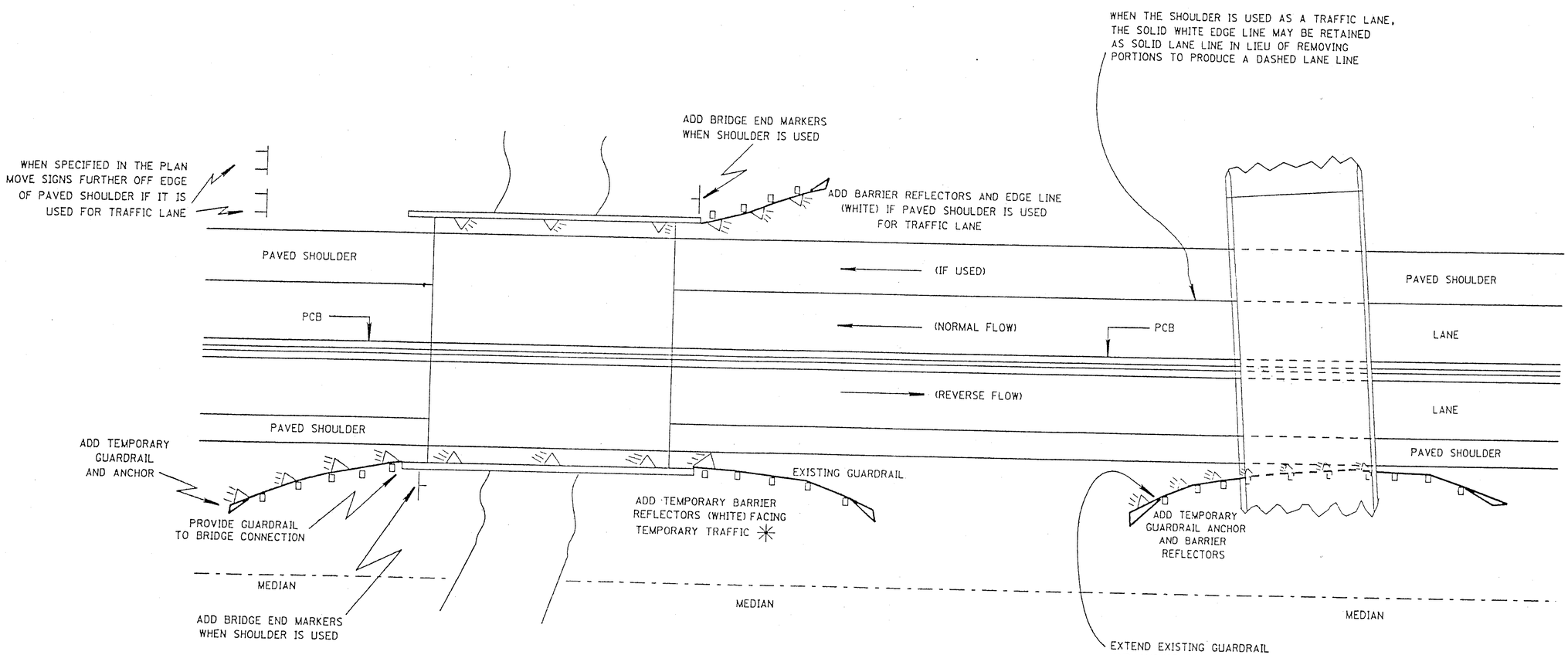
ITEM 614 - TEMPORARY RAISED PAVEMENT MARKERS

JEF-22-3.86

TWO-LANE, TWO-WAY OPERATION FOR USE ON FOUR LANE DIVIDED ROADWAYS PORTABLE CONCRETE BARRIER (PCB)

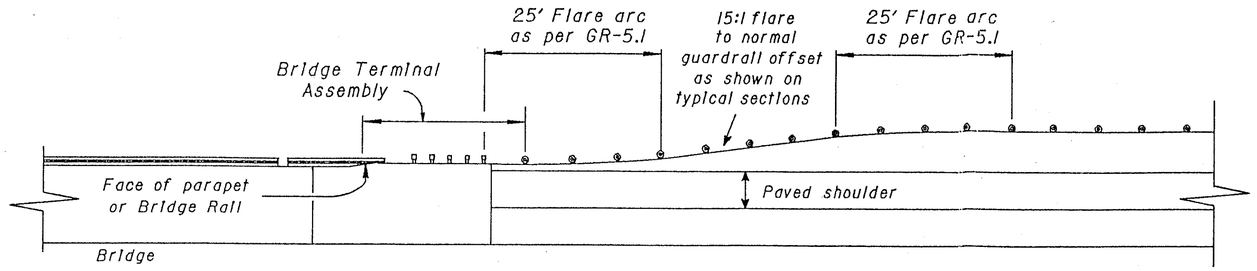
DATE 05/01/90

JEF-22-3.86

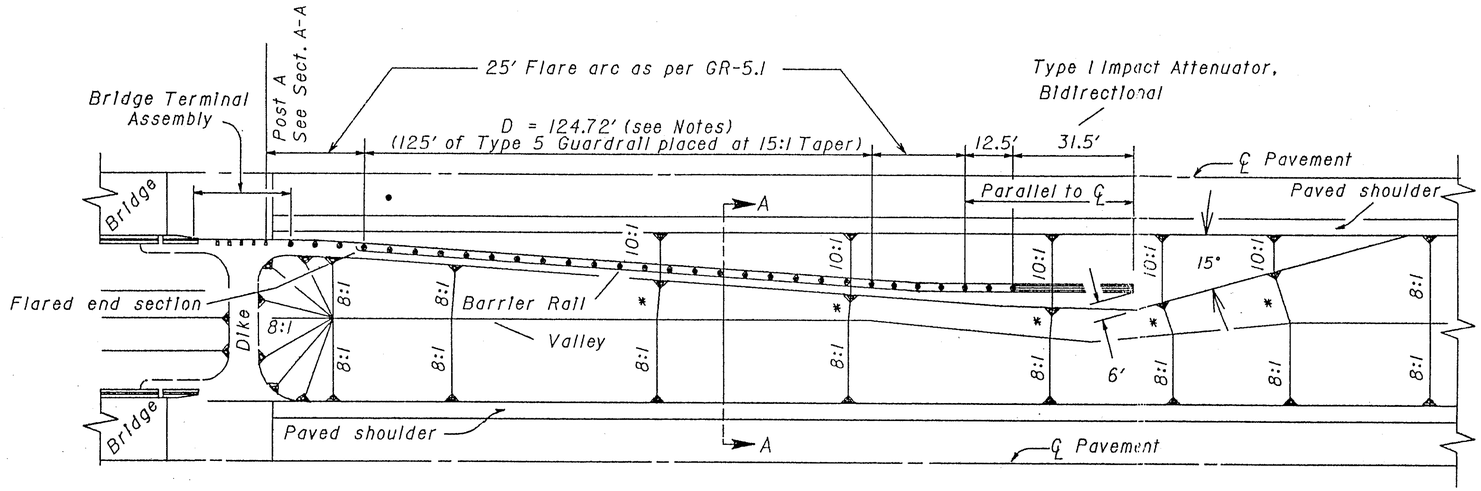


✳ TEMPORARY BARRIER REFLECTORS SHALL BE LOCATED TO ASSURE THEY DO NOT BLOCK VISIBILITY, NOR ARE THEY BLOCKED BY EXISTING PERMANENT BARRIER REFLECTORS. REFLECTORS FACING REVERSE FLOW TRAFFIC SHALL BE REMOVED AT THE END OF THE PROJECT.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

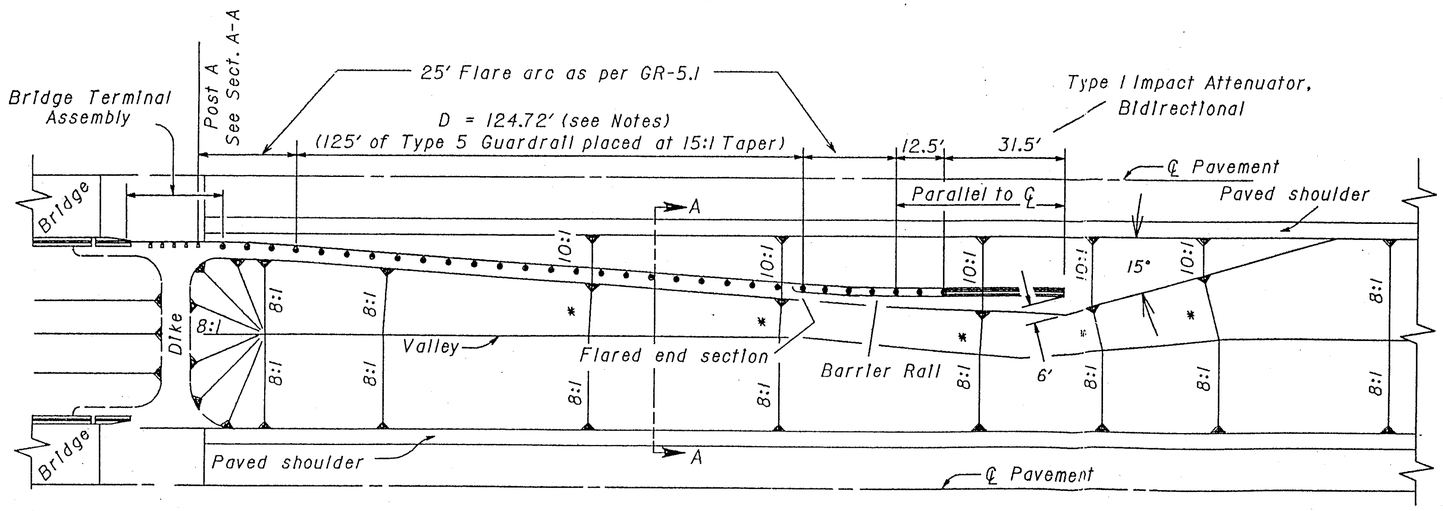


CONTINUOUS GUARDRAIL APPROACH INSTALLATION



DESIGN A
(Median Width ≤ 50')

* Slope varies



DESIGN B
(Median Width > 50')

* Slope varies

INTRODUCED GUARDRAIL APPROACH INSTALLATION

(Designs A and B shown for 4 to 10 foot Paved Median Shoulder Width.)

NOTES

DESIGN A is to be used for median widths equal to or less less than 50 ft. Median widths of greater than 50 ft. are to use Design B.

TAPER DISTANCE "D" is shown for a median shoulder from 4 ft. to 10 ft. For facilities constructed with a median shoulder width greater than 10 ft., distance "D" becomes 99.78 ft. (100.0 ft. of Type 5 Guardrail placed at 15:1 Taper).

STORM SEWERS and catch basins shall be constructed only at locations shown on the plan and profile sheets.

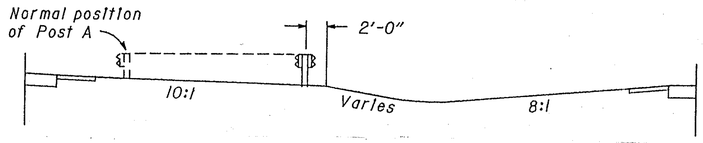
PAYMENT ITEMS for Design A and Design B are as follows:

Paved Median Shoulders from 4 to 10 feet (see plan views).

PAYMENT ITEMS	UNIT	DESIGN A	DESIGN B
Bridge Terminal Assembly, Type 1 or Type 3	EA	1	1
Guardrail, Type 5	LIN. FT.	43.75	168.75
Type 5 Guardrail, Barrier Design	LIN. FT.	162.5	37.5
Impact Attenuator, Type 1, Bidirectional	EA	1	1

Paved Median Shoulders of greater than 10 feet (not Shown).

PAYMENT ITEMS	UNIT	DESIGN A	DESIGN B
Bridge Terminal Assembly, Type 1 or Type 3	EA	1	1
Guardrail, Type 5	LIN. FT.	43.75	143.75
Type 5 Guardrail, Barrier Design	LIN. FT.	137.5	37.5
Impact Attenuator, Type 1, Bidirectional	EA	1	1



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

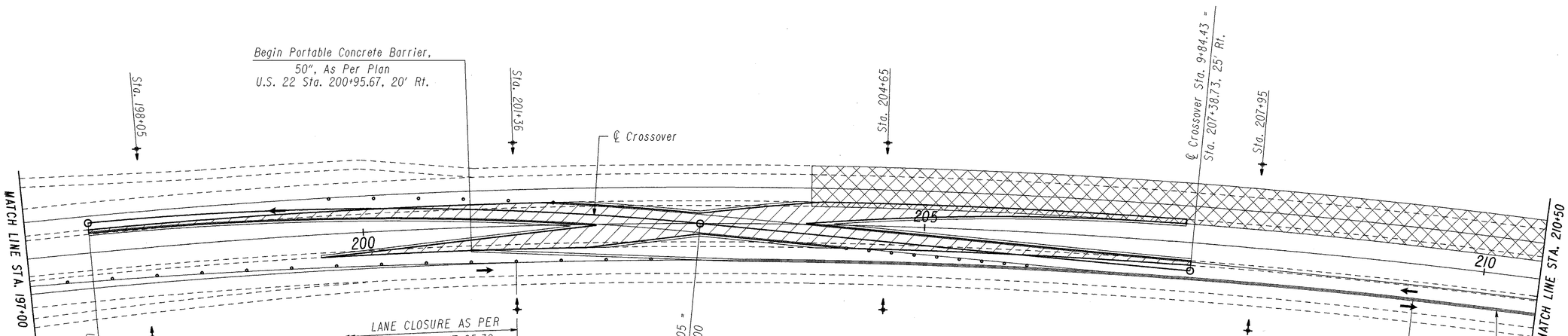
SECTION A-A

3-18-94

GUARDRAIL AT BRIDGES

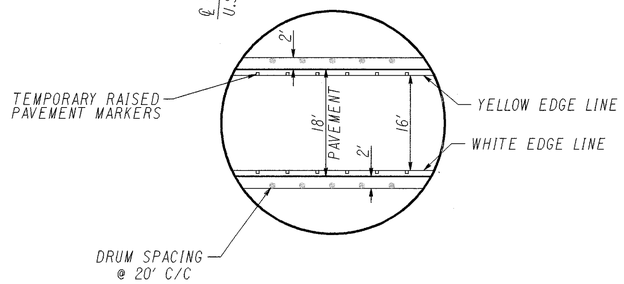
JEF-22-3.86

16B
114



CROSSOVER ℄ CURVE DATA

P.I. = Sta. 2+73.85 =
U.S. 22 Sta. 200+28.83, 32.5' Rt.
Δ = 10°53'47"
D = 2°00'00"
R = 2871.29'
T = 273.85'
L = 546.05'
E = 13.03'



CROSSOVER DETAIL

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 3519.99 sq. ft.
TOTAL = 3519.99 Sq. Ft. X .5' ÷ 27 = 65.2 Cu. Yd.

ITEM 614 TEMPORARY CROSSOVER LIGHTING SYSTEM

TOTAL = 1 Ea.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

WESTBOUND
Sta. 201+70 to Sta. 208+89 = 719'÷20' = 37 Ea. (White)
Sta. 203+00 to Sta. 208+89 = 589'÷20' = 30 Ea. (Yellow)

ITEM 614 BARRIER REFLECTOR, TYPE B

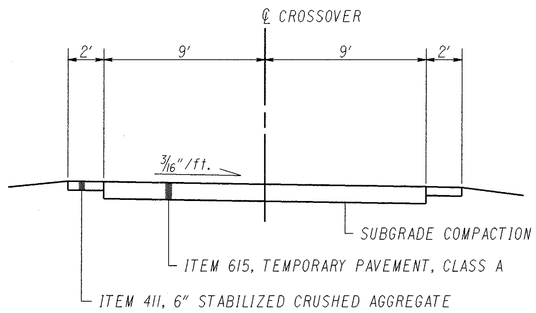
EASTBOUND
Sta. 207+39 to Sta. 209+40 = 200'÷12.5' = 17 Ea.
WESTBOUND
Sta. 203+36 to Sta. 209+40 = 604'÷12.5' = 50 Ea.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

Planimetered area = 18176.29 Sq. Ft.
TOTAL = 18176.29 Sq. Ft. ÷ 9 = 2019.6 Sq. Yd.

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

Sta. 200+95.7 to Sta. 209+39.7 = 840 Lin. Ft.



MEDIAN CROSSOVER TYPICAL SECTION

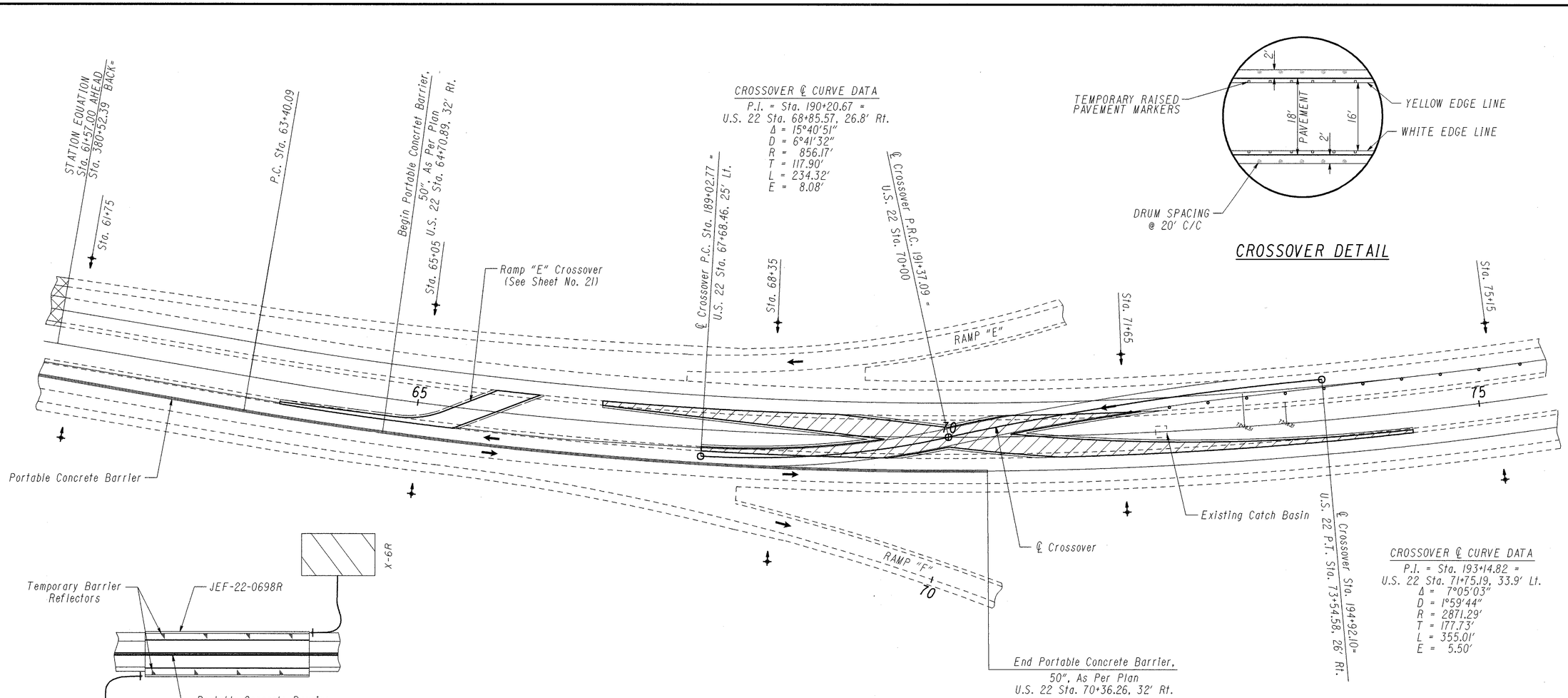
- Temporary Pavement, Class A
- Work Area
- Drum
- Luminaire

See Standard Construction Drawing MT-95.70 For Signing and Additional Details
See Standard Construction Drawing MT-100.00 For Temporary Crossover Lighting System Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

EXITING CROSSOVER - PHASE 1

JEF-22-3.86



CROSSOVER ℄ CURVE DATA
P.I. = Sta. 190+20.67 =
U.S. 22 Sta. 68+85.57, 26.8' Rt.
Δ = 15°40'51"
D = 6°41'32"
R = 856.17'
T = 117.90'
L = 234.32'
E = 8.08'

CROSSOVER DETAIL

CROSSOVER ℄ CURVE DATA
P.I. = Sta. 193+14.82 =
U.S. 22 Sta. 71+75.19, 33.9' Lt.
Δ = 7°05'03"
D = 1°59'44"
R = 2871.29'
T = 177.73'
L = 355.01'
E = 5.50'

BRIDGE DETAIL
Not to Scale

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 2392.33 sq. ft.
TOTAL = 2392.33 Sq. Ft. X .5' ÷ 27 = 44.5 Cu. Yd.

ITEM 614 TEMPORARY CROSSOVER LIGHTING SYSTEM

TOTAL = 1 Ea.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

WESTBOUND
Sta. 70+00 to Sta. 74+96 = 496'÷20 = 26 Ea. (White)
Sta. 68+35 to Sta. 74+96 = 661'÷20 = 34 Ea. (Yellow)

ITEM 614 BARRIER REFLECTOR, TYPE B

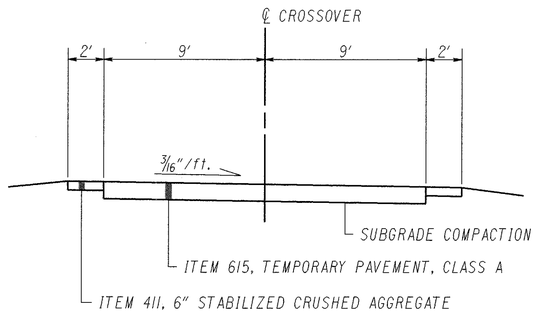
EASTBOUND
Sta. 64+71 to Sta. 68+35 = 364'÷12.5 = 30 Ea.
WESTBOUND
Sta. 64+71 to Sta. 70+36 = 565'÷12.5 = 46 Ea.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

Planimetered area = 12353.87 Sq. Ft.
TOTAL = 12353.87 Sq. Ft. ÷ 9 = 1372.7 Sq. Yd.

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

Sta. 64+70.9 to Sta. 70+36.3 = 570 Lin. Ft.



MEDIAN CROSSOVER TYPICAL SECTION

- Temporary Pavement, Class A
- Work Area
- Drum
- Luminaire

See Standard Construction Drawing MT-95.70 For Signing and Additional Details
See Standard Construction Drawing MT-100.00 For Temporary Crossover Lighting System Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

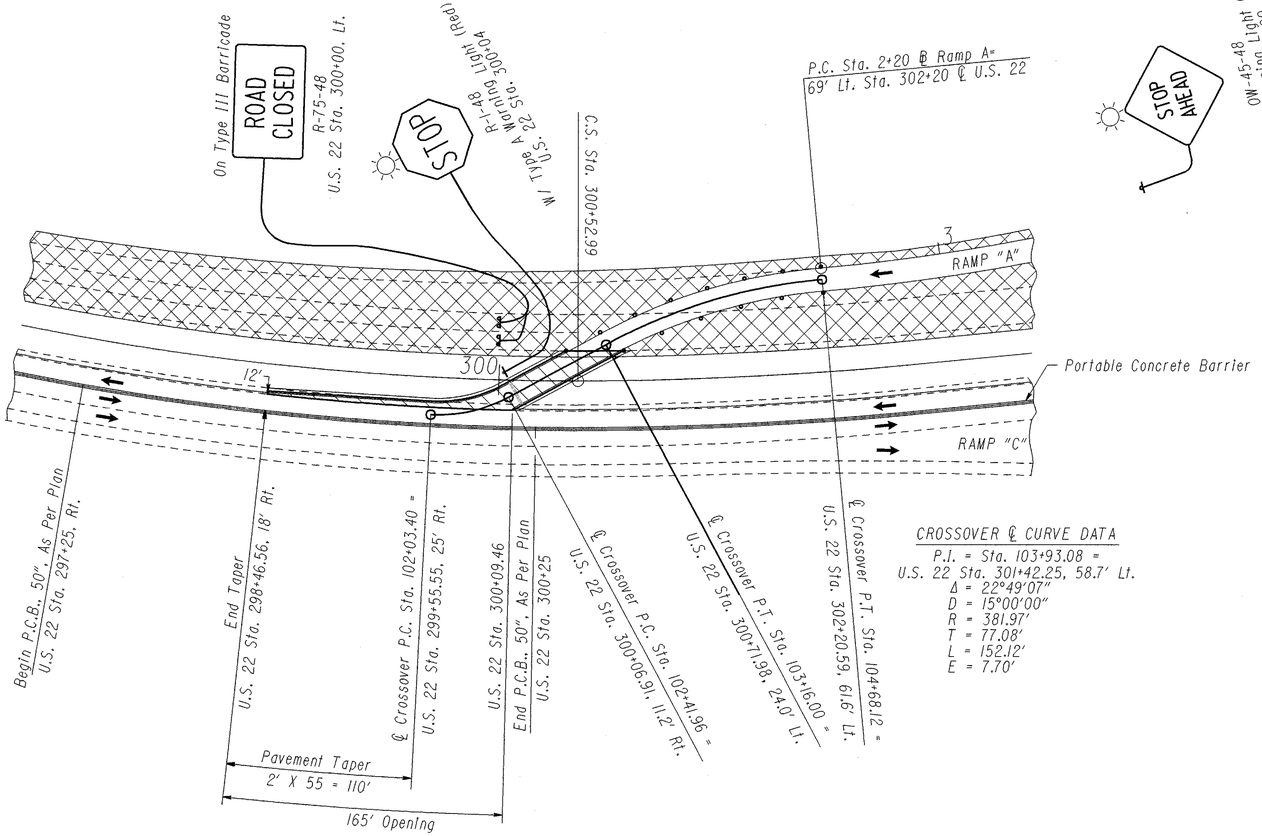
CALCULATED KSP
CHECKED SHG

ENTERING CROSSOVER - PHASE 1

JEF-22-3.86

C.R. 22A RAMP "A" CROSSOVER - PHASE 1

CALCULATED KSP
CHECKED SHG



CROSSOVER ℄ CURVE DATA
P.I. = Sta. 103+93.08 =
U.S. 22 Sta. 301+42.25, 58.7' Lt.
Δ = 22°49'07"
D = 15°00'00"
R = 381.97'
T = 77.08'
L = 152.12'
E = 7.70'

CROSSOVER ℄ CURVE DATA
P.I. = Sta. 102+31.21 =
U.S. 22 Sta. 299+82.93, 25.2' Rt.
Δ = 31°05'03"
D = 57°17'45"
R = 100.00'
T = 27.81'
L = 54.25'
E = 3.79'

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 579.87 Sq. Ft. X 0.5' ÷ 27 = 10.7 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

Planimetered area = 2006.16 Sq. Ft. ÷ 9 = 222.91 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 102+03 to Crossover Sta. 104+68 = 265 ÷ 20' = 15 Ea. (White)
Crossover Sta. 102+42 to Crossover Sta. 104+68 = 226 ÷ 20' = 13 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C

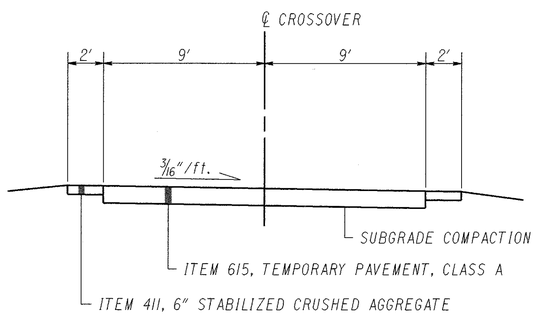
Crossover Sta. 102+42 to Crossover Sta. 104+68 = 226 ÷ 5280 = 0.04 Mi. (White)
Crossover Sta. 102+42 to Crossover Sta. 104+68 = 226 ÷ 5280 = 0.04 Mi. (Yellow)

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

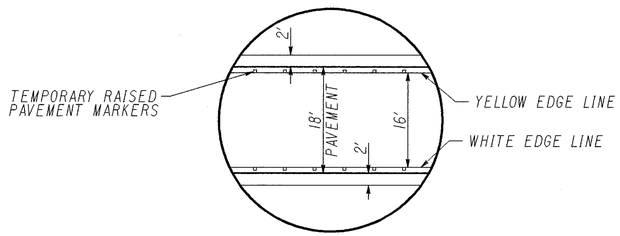
U.S. 22 Sta. 297+25 to U.S. 22 Sta. 300+25 = 300 Lin. Ft.

ITEM 614 TEMPORARY STOP LINE, CLASS I

18 Lin. Ft at Crossover Sta. 102+47.5



MEDIAN CROSSOVER TYPICAL SECTION

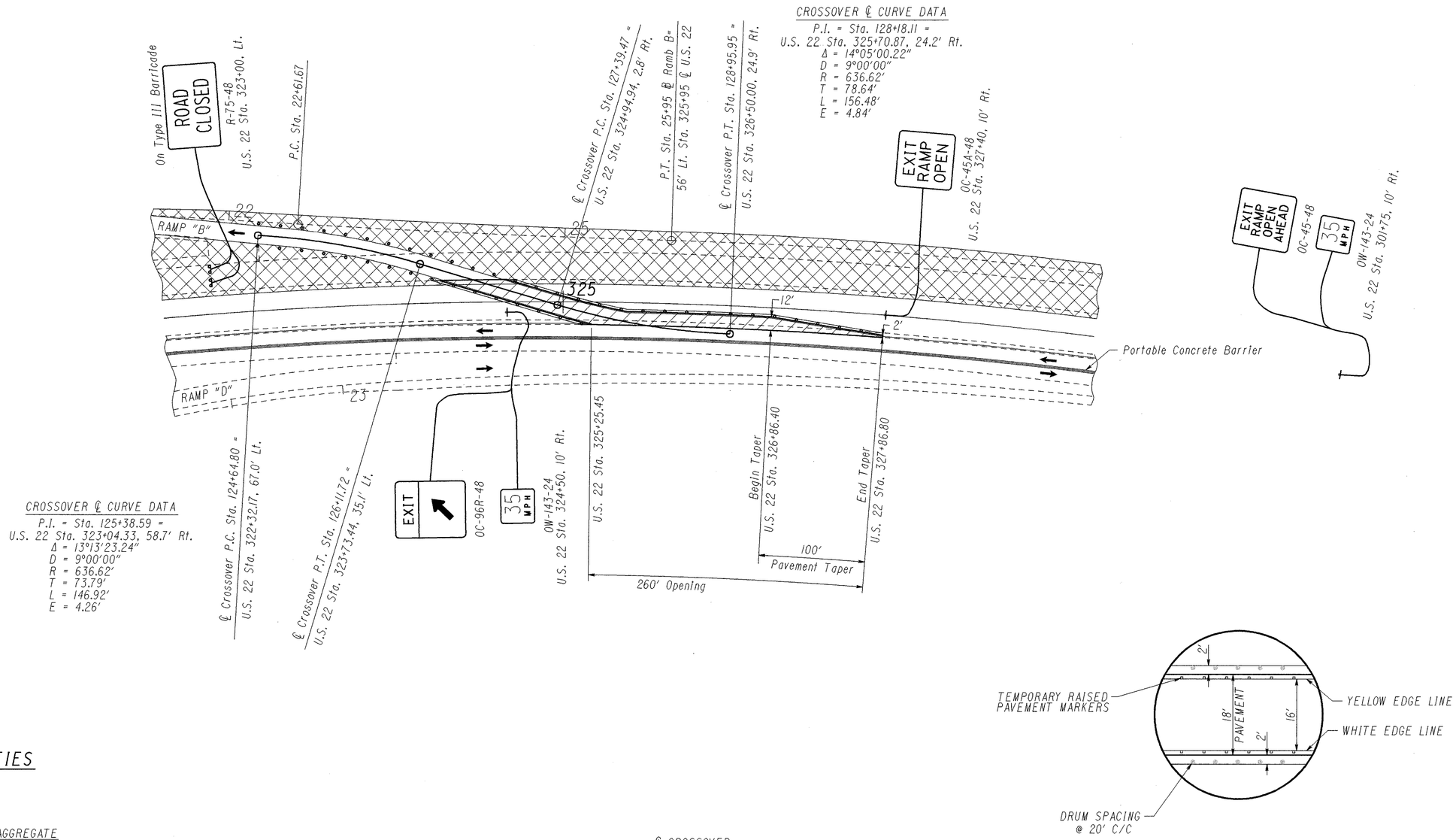


CROSSOVER DETAIL

- Temporary Pavement, Class A
- Work Area

See Standard Construction Drawings MT-95.70 and MT-98.16 For Signing and Additional Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

JEF-22-3.86



QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 952.72 Sq. Ft. X 0.5' ÷ 27 = 17.6 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

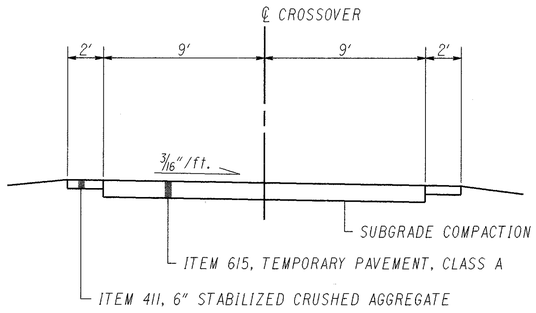
Planimetered area = 4706.92 Sq. Ft. ÷ 9 = 522.99 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 124+65 to Crossover Sta. 130+32 = 567 ÷ 20' = 29 Ea. (White)
Crossover Sta. 124+65 to Crossover Sta. 127+73 = 308 ÷ 20' = 16 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C

Crossover Sta. 124+65 to Crossover Sta. 127+73 = 308 ÷ 5280 = 0.06 Mi. (White)
Crossover Sta. 124+65 to Crossover Sta. 127+73 = 308 ÷ 5280 = 0.06 Mi. (Yellow)



MEDIAN CROSSOVER TYPICAL SECTION

CROSSOVER DETAIL

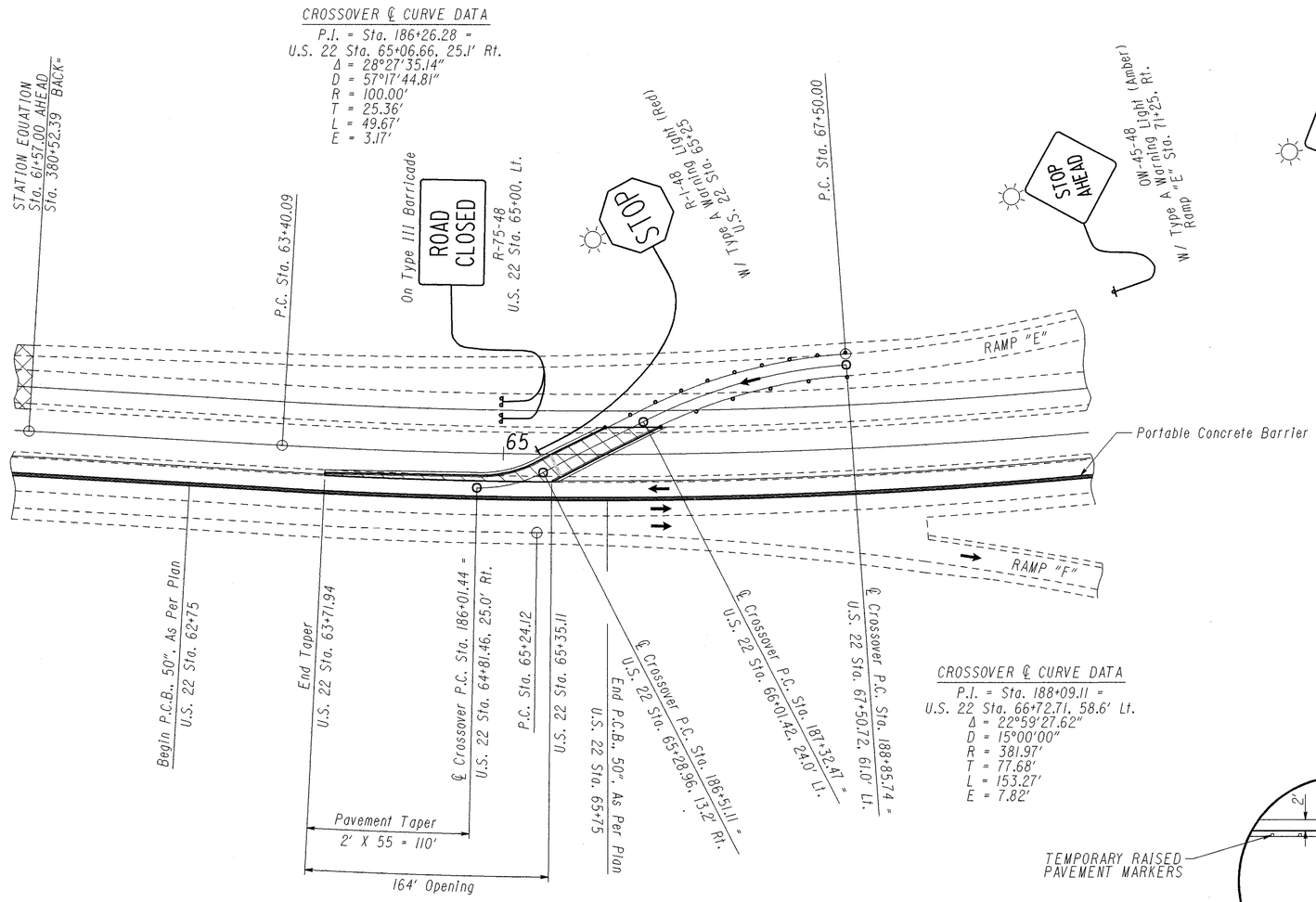
- Temporary Pavement, Class A
- Work Area
- Drum

See Standard Construction Drawing MT-98.13 For Signing and Additional Details
See Sheet No. 15 for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

C.R. 22A RAMP "B" CROSSOVER - PHASE 1

JEF-22-3.86



CROSSOVER & CURVE DATA
P.I. = Sta. 188+09.11 =
U.S. 22 Sta. 66+72.71, 58.6' Lt.
Δ = 22°59'27.62"
D = 15°00'00"
R = 381.97'
T = 77.68'
L = 153.27'
E = 7.82'

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATED

Planimetered area = 592.14 Sq. Ft. X 0.5' ÷ 27 = 11.0 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

Planimetered area = 2030.85 Sq. Ft. ÷ 9 = 225.65 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 184+91 to Crossover Sta. 188+86 = 322 ÷ 20' = 17 Ea. (White)
Crossover Sta. 186+54 to Crossover Sta. 188+86 = 232 ÷ 20' = 13 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C

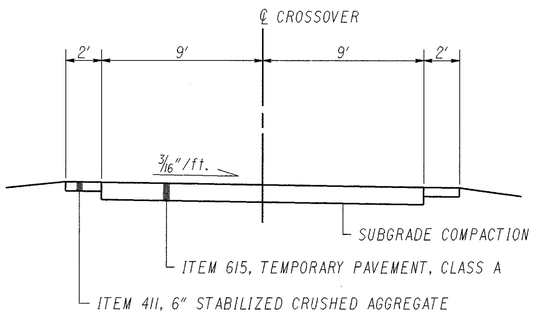
Crossover Sta. 184+91 to Crossover Sta. 188+86 = 322 ÷ 5280 = 0.06 MI. (White)
Crossover Sta. 186+54 to Crossover Sta. 188+86 = 232 ÷ 5280 = 0.04 MI. (Yellow)

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

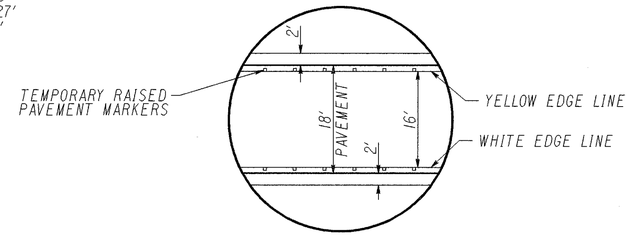
U.S. 22 Sta. 62+75 to U.S. 22 Sta. 65+75 = 300 Lin. Ft.

ITEM 614 TEMPORARY STOP LINE, CLASS I

18 Lin. Ft at Crossover Sta. 186+55



MEDIAN CROSSOVER TYPICAL SECTION



CROSSOVER DETAIL

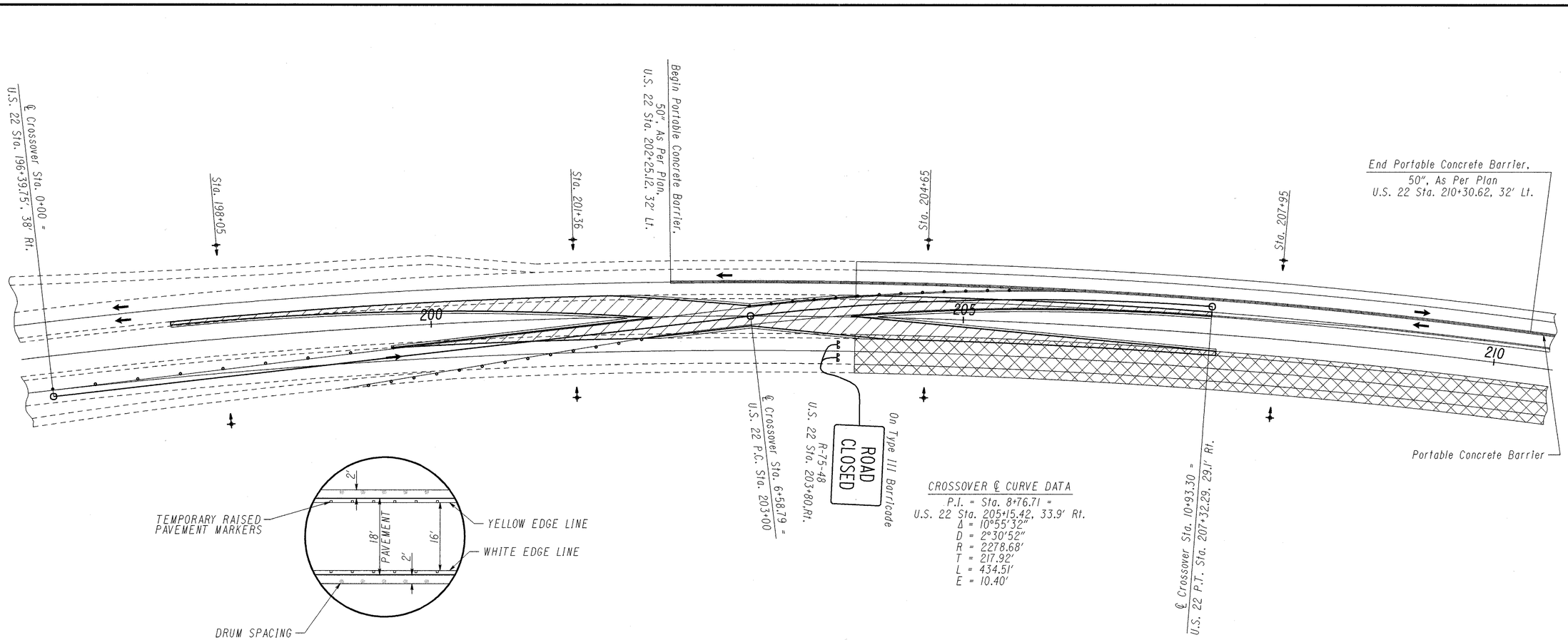
- Temporary Pavement, Class A
- Work Area

See Standard Construction Drawings MT-95.70 and MT-98.16 For Signing and Additional Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

C.R. 22A RAMP "E" CROSSOVER - PHASE 1

JEF-22-3.86



CROSSOVER ℄ CURVE DATA

P.I. = Sta. 8+76.71 =
U.S. 22 Sta. 205+15.42, 33.9' Rt.
Δ = 10°55'32"
D = 2°30'52"
R = 2278.68'
T = 217.92'
L = 434.51'
E = 10.40'

CROSSOVER DETAIL

QUANTITIES

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

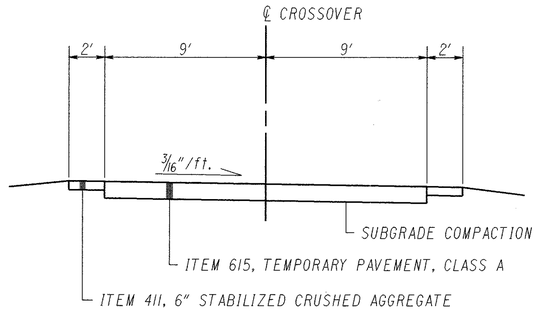
EASTBOUND
Sta. 196+34 to Sta. 201+97 = 563'÷20 = 29 Ea. (White)
Sta. 196+34 to Sta. 205+60 = 962'÷20 = 49 Ea. (Yellow)

ITEM 614 BARRIER REFLECTOR, TYPE B

EASTBOUND
Sta. 205+60 to Sta. 210+31 = 471'÷12.5 = 38 Ea.
WESTBOUND
Sta. 202+25 to Sta. 210+31 = 810'÷12.5 = 65 Ea.

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

Sta. 202+25.7 to Sta. 210+31 = 810 Lin. Ft.



MEDIAN CROSSOVER TYPICAL SECTION

- Temporary Pavement, Class A
- Work Area
- Drum
- Luminaire

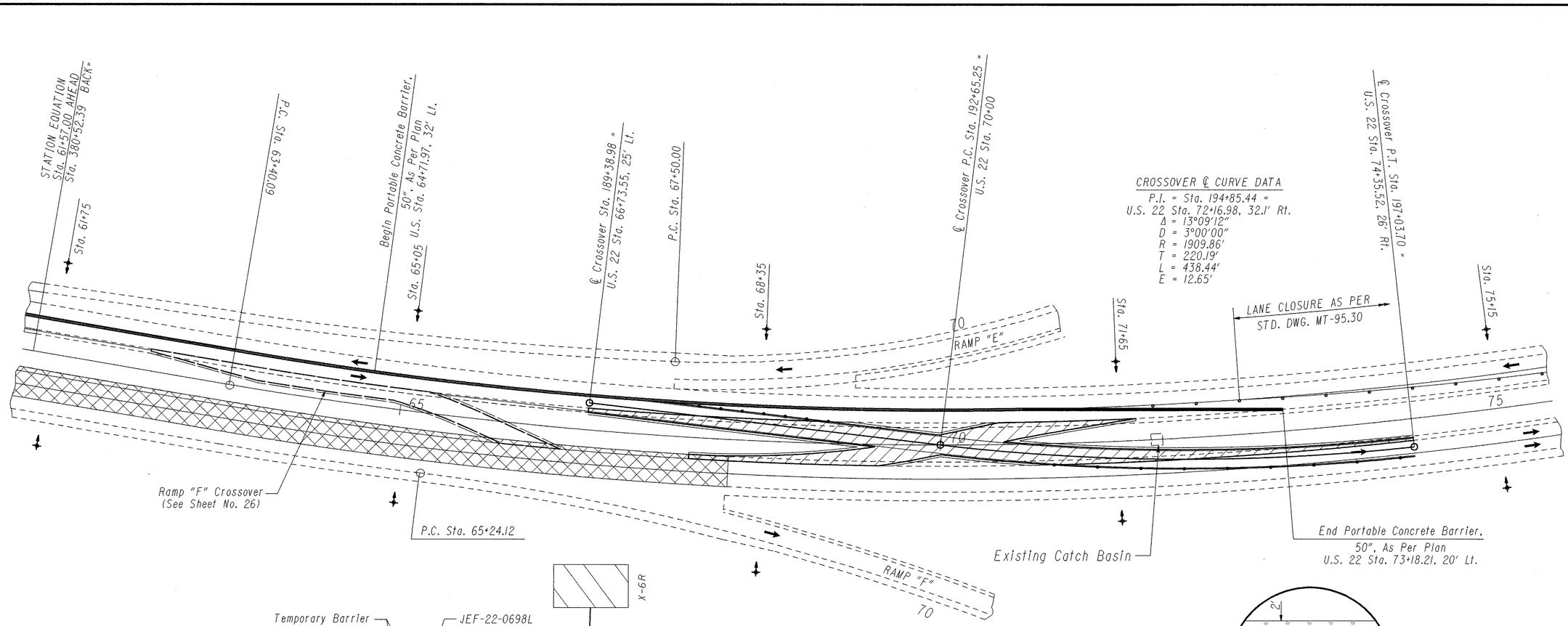
See Standard Construction Drawing MT-95.70 For Signing and Additional Details
See Standard Construction Drawing MT-100.00 For Temporary Crossover Lighting System Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

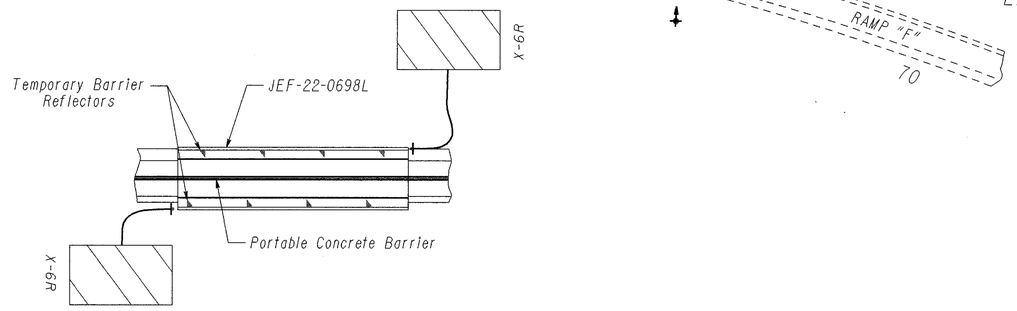
CALCULATED KSP
CHECKED SHG

ENTERING CROSSOVER - PHASE 2

JEF-22-3.86

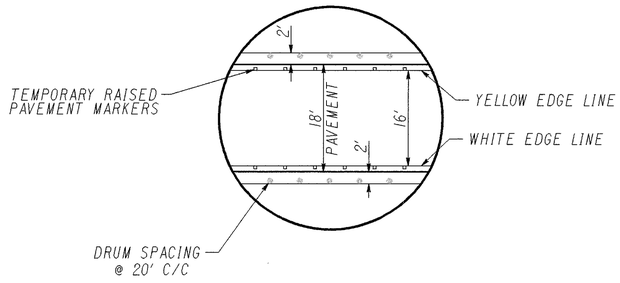
22
114





BRIDGE DETAIL

Not to Scale



CROSSOVER DETAIL

QUANTITIES

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

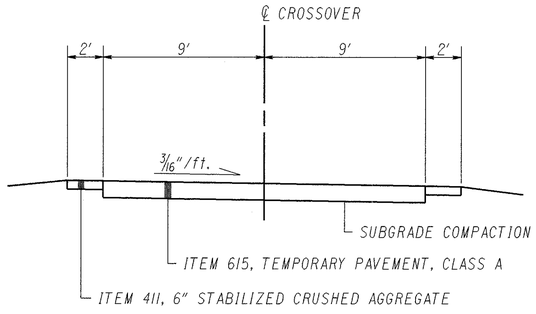
EASTBOUND
Sta. 65+22 to Sta. 71+16 = 594'÷20 = 30 Ea. (White)
Sta. 65+22 to Sta. 70+00 = 478'÷20 = 24 Ea. (Yellow)

ITEM 614 BARRIER REFLECTOR, TYPE B

EASTBOUND
Sta. 64+72 to Sta. 66+74 = 202'÷12.5 = 17 Ea.
WESTBOUND
Sta. 64+72 to Sta. 70+77 = 605'÷12.5 = 49 Ea.

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

Sta. 64+72.0 to Sta. 73+18.2 = 840 Lin. Ft.



MEDIAN CROSSOVER TYPICAL SECTION

- Temporary Pavement, Class A
- Work Area
- Drum
- Luminaire

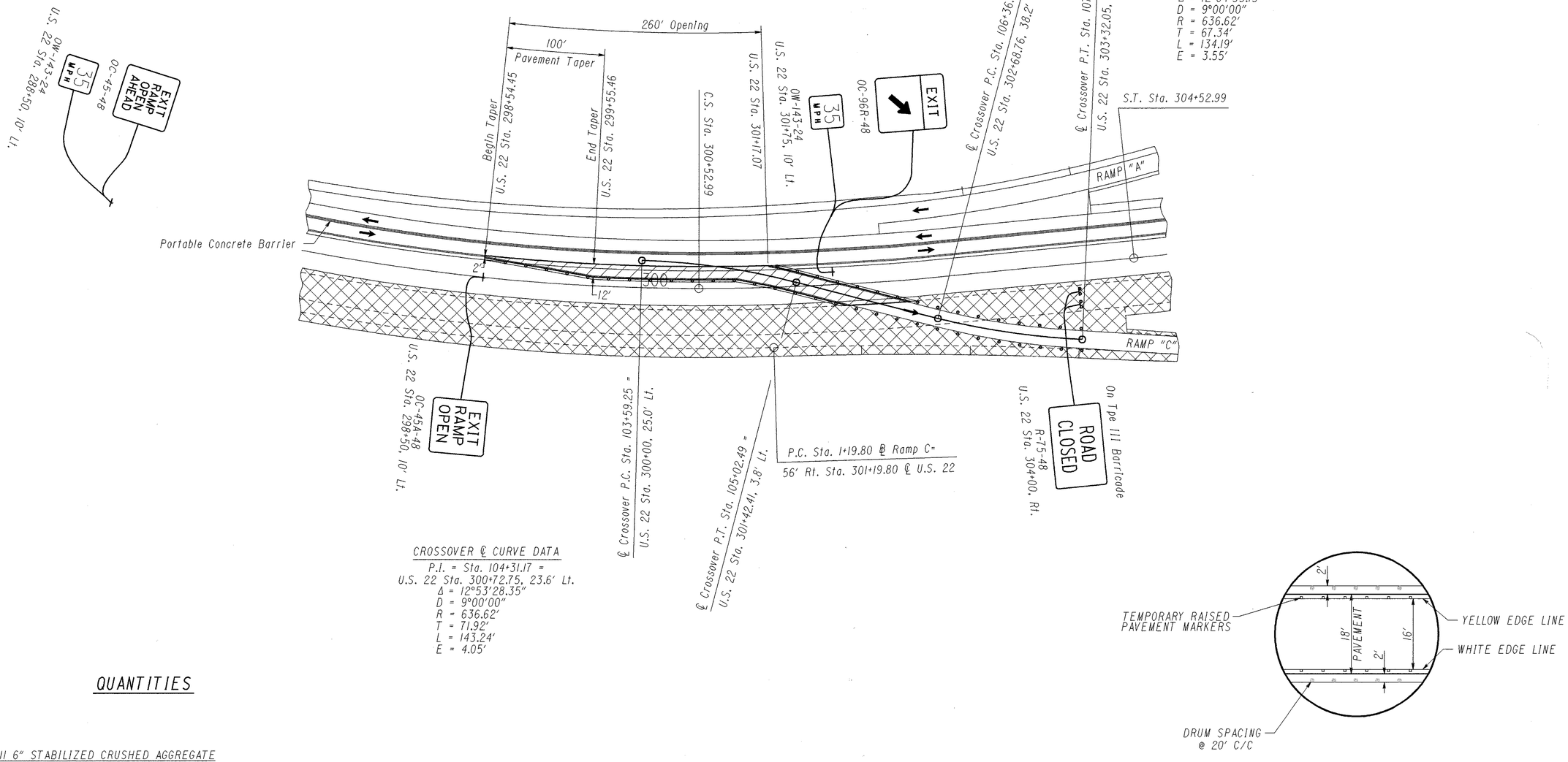
See Standard Construction Drawing MT-95.70 For Signing and Additional Details
See Standard Construction Drawing MT-100.00 For Temporary Crossover Lighting System Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

EXITING CROSSOVER - PHASE 2

JEF-22-3.86

23
114



CROSSOVER ℄ CURVE DATA
P.I. = Sta. 104+31.17 =
U.S. 22 Sta. 300+72.75, 23.6' Lt.
Δ = 12°53'28.35"
D = 9°00'00"
R = 636.62'
T = 71.92'
L = 143.24'
E = 4.05'

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 934.78 Sq. Ft. X 0.5' ÷ 27 = 17.3 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

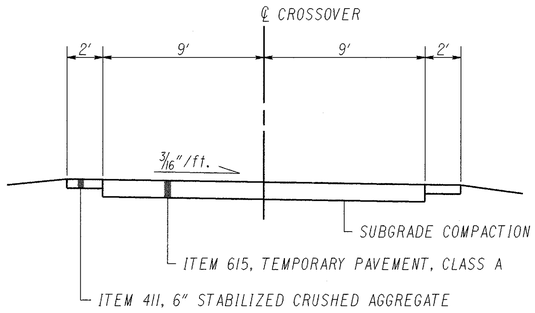
Planimetered area = 4589.48 Sq. Ft. ÷ 9 = 509.94 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 102+16 to Crossover Sta. 107+71 = 555 ÷ 20' = 29 Ea. (White)
Crossover Sta. 104+74 to Crossover Sta. 107+71 = 297 ÷ 20' = 16 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C

Crossover Sta. 102+16 to Crossover Sta. 107+71 = 555 ÷ 5280 = 0.11 Mi. (White)
Crossover Sta. 104+74 to Crossover Sta. 107+71 = 297 ÷ 5280 = 0.06 Mi. (Yellow)



MEDIAN CROSSOVER TYPICAL SECTION

CROSSOVER DETAIL

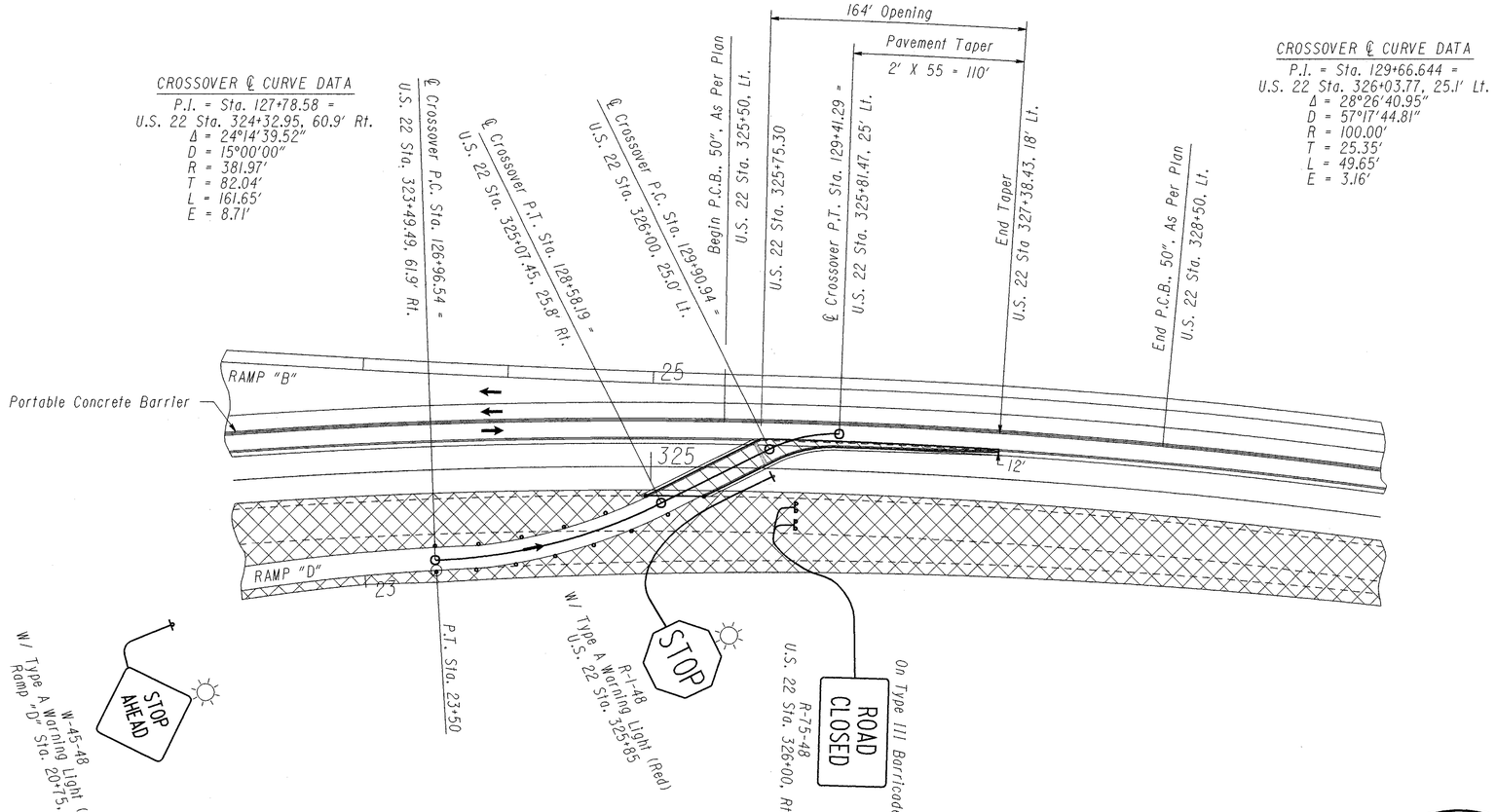
- Temporary Pavement, Class A
- Work Area
- Drum

See Standard Construction Drawing MT-98.13 For Signing and Additional Details
See Sheet No. 15 for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

C.R. 22A RAMP "C" CROSSOVER - PHASE 2

JEF-22-3.86



QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 590.96 Sq. Ft. X 0.5' ÷ 27 = 10.9 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

Planimetered area = 2029.34 Sq. Ft. ÷ 9 = 225.48 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 126+97 to Crossover Sta. 129+41 = 244 ÷ 20' = 13 Ea. (White)
Crossover Sta. 126+97 to Crossover Sta. 129+86 = 289 ÷ 20' = 15 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C

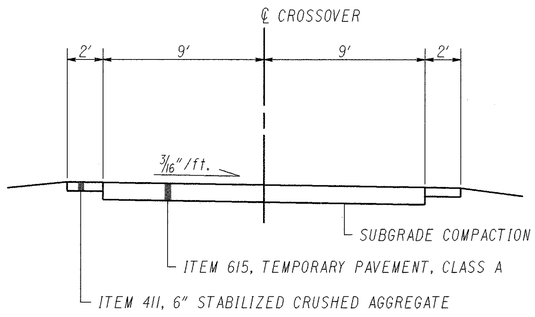
Crossover Sta. 126+97 to Crossover Sta. 129+41 = 244 ÷ 5280 = 0.05 Mi. (White)
Crossover Sta. 126+97 to Crossover Sta. 129+41 = 244 ÷ 5280 = 0.05 Mi. (Yellow)

ITEM 622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

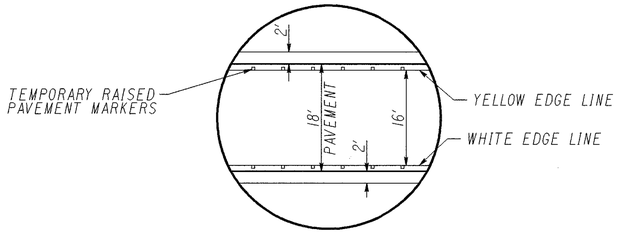
U.S. 22 Sta. 325+50 to U.S. 22 Sta. 328+50 = 300 Lin. Ft.

ITEM 614 TEMPORARY STOP LINE, CLASS I

18 Lin. Ft at Crossover Sta. 129+85.0



MEDIAN CROSSOVER TYPICAL SECTION



CROSSOVER DETAIL

- Temporary Pavement, Class A
- Work Area

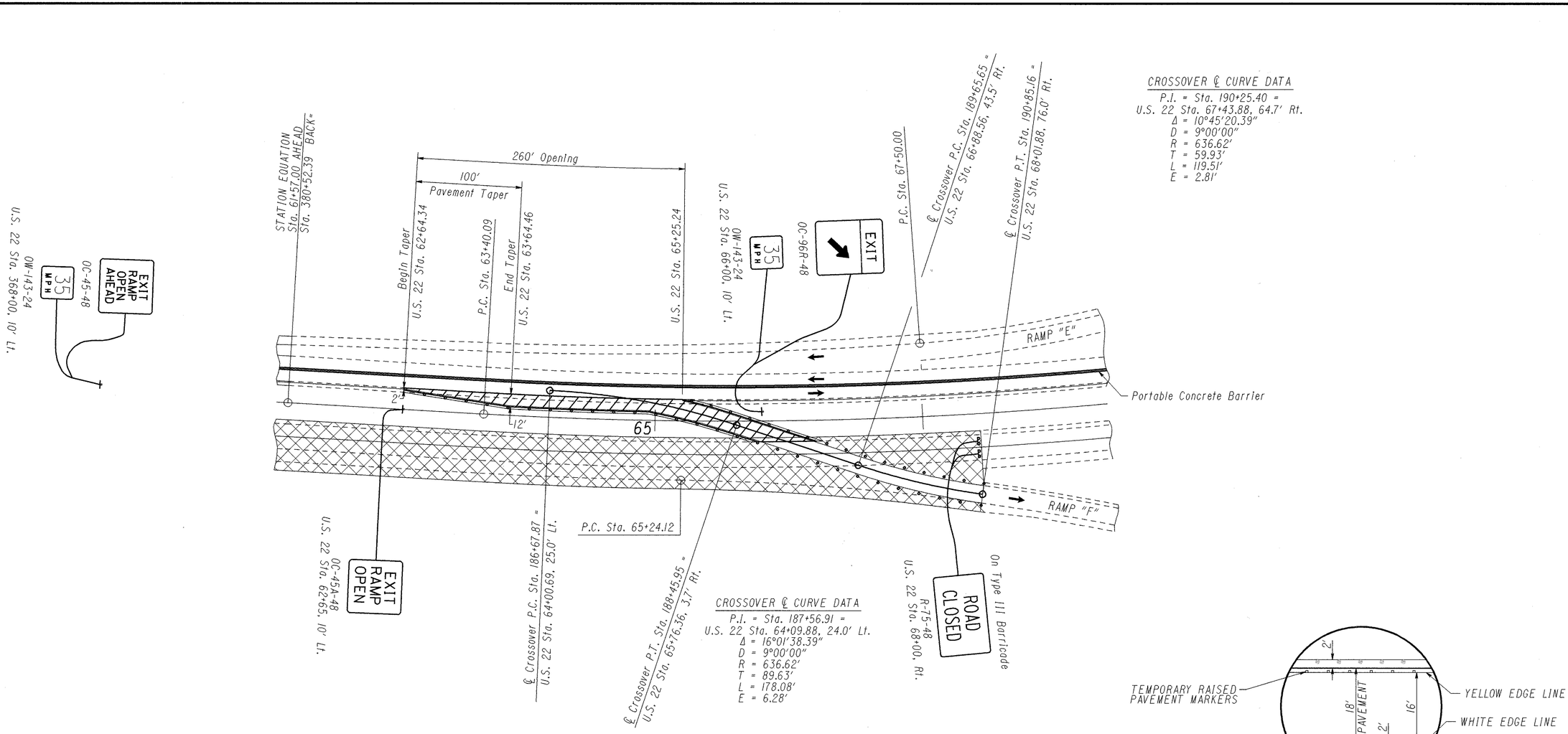
See Standard Construction Drawings MT-95.70 and MT-98.16 For Signing and Additional Details
See Sheet No. 15, for Additional Maintenance of Traffic Quantities Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

C.R. 22A RAMP "D" CROSSOVER - PHASE 2

JEF-22-3.86

25
114



CROSSOVER ℄ CURVE DATA

P.I. = Sta. 190+25.40 =
U.S. 22 Sta. 67+43.88, 64.7' Rt.
Δ = 10°45'20.39"
D = 9°00'00"
R = 636.62'
T = 59.93'
L = 119.51'
E = 2.81'

CROSSOVER ℄ CURVE DATA

P.I. = Sta. 187+56.91 =
U.S. 22 Sta. 64+09.88, 24.0' Lt.
Δ = 16°01'38.39"
D = 9°00'00"
R = 636.62'
T = 89.63'
L = 178.08'
E = 6.28'

QUANTITIES

ITEM 411 6" STABILIZED CRUSHED AGGREGATE

Planimetered area = 930.86 Sq. Ft. X 0.5' ÷ 27 = 17.2 Cu. Yd.

ITEM 615 TEMPORARY PAVEMENT, CLASS A

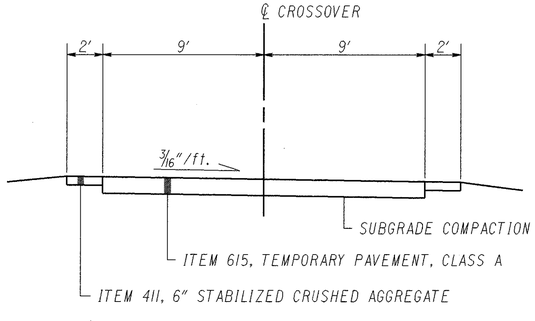
Planimetered area = 4586.26 Sq. Ft. ÷ 9 = 509.58 Sq. Yd.

ITEM 614 TEMPORARY RAISED PAVEMENT MARKER, TYPE A

Crossover Sta. 185+32 to Crossover Sta. 190+85 = 553 ÷ 20' = 29 Ea. (White)
Crossover Sta. 187+91 to Crossover Sta. 190+85 = 285 ÷ 20' = 16 Ea. (Yellow)

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C

Crossover Sta. 185+32 to Crossover Sta. 190+85 = 553 ÷ 5280 = 0.11 Mi. (White)
Crossover Sta. 187+91 to Crossover Sta. 190+85 = 285 ÷ 5280 = 0.05 Mi. (Yellow)



MEDIAN CROSSOVER TYPICAL SECTION

CROSSOVER DETAIL

- Temporary Pavement, Class A
- Work Area
- Drum

See Standard Construction Drawing MT-98.13 For Signing and Additional Details
See Sheet No. 15 for Additional Maintenance of Traffic Quantities
Totals Carried to Sheet No. 15.

CALCULATED KSP
CHECKED SHG

C.R. 22A RAMP "F" CROSSOVER - PHASE 2

JEF-22-3.86

26
114

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NO.
10	11		29	30	31	32		37	38						
														ROADWAY	
LUMP										201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	10
								LUMP		202	11000	LUMP		STRUCTURE REMOVED	
								267		202	22900	267	SQ YD	APPROACH SLAB REMOVED	
					6391					202	23000	6391	SQ YD	PAVEMENT REMOVED	
					99,981	1227				202	23500	101,208	SQ YD	WEARING COURSE REMOVED	
								20		202	35100	20	LIN FT	PIPE REMOVED, 24" AND UNDER	
			14,675							202	38000	14,675	LIN FT	GUARDRAIL REMOVED	
			125							202	38300	125	LIN FT	GUARDRAIL REMOVED, BARRIER DESIGN	
525										202	54101	525	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE, AS PER PLAN	10
								1		202	58100	1	EACH	CATCH BASIN REMOVED	
								1		202	58500	1	EACH	CATCH BASIN ABANDONED	
			29,183							202	75000	29,183	LIN FT	FENCE REMOVED	
								28		202	98100	28	EACH	REMOVAL MISC.: CATCH BASIN CLEAN-OUT	
				1084		20,651		148		203	12000	21,883	CU YD	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
				584						203	20000	584	CU YD	EMBANKMENT	
12,000										203	40000	12,000	CU YD	BORROW	
					6391	31,633				203	50000	38,024	SQ YD	SUBGRADE COMPACTION	
				285						203	60200	285	STATION	LINEAR GRADING, METHOD A	
				325						203	60204	325	STATION	LINEAR GRADING, METHOD B	
				136						203	60300	136	STATION	LINEAR GRADING, METHOD C	
				40						203	60408	40	STATION	LINEAR GRADING (DITCH CLEANOUT)	
			13,325							606	13000	13,325	LIN FT	GUARDRAIL, TYPE 5	
			575							606	15500	575	LIN FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
			4							606	25000	4	EACH	ANCHOR ASSEMBLY, TYPE A	
			17							606	26100	17	EACH	ANCHOR ASSEMBLY, TYPE E	
			16							606	26500	16	EACH	ANCHOR ASSEMBLY, TYPE T	
			10							606	35000	10	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I	
			24,771							607	15000	24,771	LIN FT	FENCE, TYPE 47	
			4698							607	23000	4698	LIN FT	FENCE, TYPE CLT	
			1							607	40500	1	EACH	GATE, TYPE 47	
			4							SPECIAL	69010360	4	EACH	IMPACT ATTENUATOR, TYPE I, BI-DIRECTIONAL	10
			99							622	24000	99	LIN FT	CONCRETE BARRIER, TYPE D	
			7							625	32000	7	EACH	GROUND ROD	
														EROSION CONTROL	
	500								14,925	207	30000	15,425	LIN FT	FILTER FABRIC FENCE (SEE PROPOSAL NOTE)	
	300								370	207	70000	670	EACH	STRAW OR HAY BALES	
								31		601	11000	31	SQ YD	RIPRAP USING 6" REINFORCED CONCRETE SLAB	
				56,300						659	10000	56,300	SQ YD	SEEDING AND MULCHING	
				5.07						659	20000	5.07	TON	COMMERCIAL FERTILIZER	
				11.65						659	30000	11.65	TON	AGRICULTURAL LIMING	
122										659	35000	122	M GAL	WATER	
								20		660	20000	20	SQ YD	REINFORCED SODDING	
				9095						670	41000	9095	SQ YD	SLOPE EROSION PROTECTION	

CALCULATED KSP
CHECKED SHG

GENERAL SUMMARY

JEF-22-3.86

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NO.
		15	30	31	32		36	37		54						
															DRAINAGE	
							1042	40			603	01500	1082	LIN FT	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35,	
															SS 931, OR SS 944	
								400			603	04600	400	LIN FT	12" CONDUIT, TYPE C	
								20			603	06100	20	LIN FT	15" CONDUIT, TYPE C	
								2			604	02800	2	EACH	CATCH BASIN, NO. 8	
								2			604	09000	2	EACH	CATCH BASIN ADJUSTED TO GRADE	
								28			604	09001	28	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	11
							32	4			SPECIAL	60436600	36	EACH	PRECAST REINFORCED CONCRETE OUTLET	12
							47,715				605	05101	47,715	LIN FT	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	12
								154			605	11100	154	LIN FT	6" SHALLOW PIPE UNDERDRAIN 707.01 TYPE III OR 707.21 TYPE II	
															PAVEMENT	
				205	70					66	301	10002	341	CU YD	BITUMINOUS AGGREGATE BASE, AC-20	
				1087	10.500			74			304	20000	11,661	CU YD	AGGREGATE BASE (SEE PROPOSAL NOTE)	
				2400							305	12000	2400	SQ YD	8" CONCRETE BASE	
				2776	21						403	20000	2797	CU YD	ASPHALT CONCRETE, AC-20	
				7709	92					60	407	10000	7861	GALLON	TACK COAT	
		195									411	10000	195	CU YD	STABILIZED CRUSHED AGGREGATE	
			333								448	14101	333	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER	
															GUARDRAIL), AS PER PLAN	10
				215	52					39	448	15000	306	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	
				145	31					28	448	16001	204	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	11
				99,922							451	13000	99,922	SQ YD	8" REINFORCED CONCRETE PAVEMENT	
				3991							451	14000	3991	SQ YD	9" REINFORCED CONCRETE PAVEMENT	
								149			SPECIAL	45130000	149	LIN FT	PRESSURE RELIEF JOINT, TYPE A	
					47,624						452	12000	47,624	SQ YD	8" PLAIN CONCRETE PAVEMENT	
					677						452	13000	677	SQ YD	9" PLAIN CONCRETE PAVEMENT	
								41			609	24000	41	LIN FT	CURB, TYPE 4-A	
								445			611	25001	445	SQ YD	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN	11
								14			617	10100	14	CU YD	COMPACTED AGGREGATE, TYPE A	
								1			617	25000	1	M GAL	WATER	
															TRAFFIC CONTROL	
															FOR SUMMARY SEE SHEET NO. 59	
															MAINTENANCE OF TRAFFIC	
															FOR SUMMARY SEE SHEET NO. 58	
															CAST-IN-PLACE STRUCTURES	
															FOR JEF-22-0590 SUMMARY SEE SHEET NO. 77	
															FOR JEF-22-0698 SUMMARY SEE SHEET NO. 91	
											614	11000	LUMP		MAINTAINING TRAFFIC	
											619	15020	LUMP		FIELD OFFICE, TYPE C	
											SPECIAL	61925010	LUMP		COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE (SEE PROPOSAL NOTE)	
											623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
											624	10000	LUMP		MOBILIZATION	

CALCULATED KSP

CHECKED SHG

GENERAL SUMMARY

JEF-22-3.86

REF. NO.	PLAN SHEET NO.	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, DESIGN BARRIER	202 FENCE REMOVED	606 GUARDRAIL, TYPE 5	606 GUARDRAIL, BARRIER DESIGN TYPE 5	606 ANCHOR ASSEMBLY, TYPE A	606 ANCHOR ASSEMBLY, TYPE E	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL, ASSEMBLY TYPE 1	607 FENCE TYPE 47	607 FENCE TYPE CLT	607 POST ASSEMBLY (C)	607 POST ASSEMBLY (E)	607 POST ASSEMBLY (I)	607 FENCE TERMINAL (A)	607 FENCE TERMINAL (TA)	607 STREAM CROSSING (T1)	607 14' GATE, TYPE 47	622 CONCRETE BARRIER TYPE D	625 GROUND ROD	802 BARRIER REFLECTOR, TYPE * A	802 BARRIER REFLECTOR, TYPE * B	SPECIAL IMPACT ATTENUATOR, TYPE 1, BIDIRECTIONAL	COMMENTS
					LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EA.	EA.	EA.	EA.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN.FT.	EA.	EA.	EA.	EA.	
1-GR	39	202+28	205+53	RT.	325.00																							
		202+28	205+53	RT.				312.50				1													5			Connect to existing
2-GR	40	217+35.5	218+98	RT.	162.50																						
		217+10.5	218+98	RT.				125.00			1	1													3			
3-GR	40,41	240+25	243+12.5	RT.	287.50																						
		240+00	243+12.5	RT.				250.00			1	1													5			
4-GR	40,41	239+61	242+98.5	LT.	337.50																						
		239+61	243+23.5	LT.				300.00			1	1													5			
5-GR	41	246+47.5	252+10	RT.	562.50																						
		245+97.5	252+10	RT.				550.00			1	1													8			
6-GR	41	246+97	253+97	LT.	700.00																						
		246+97	254+22	LT.				662.50			1	1													9			
7-GR	41	260+00	266+00	RT.	600.00																						
		259+75	266+00	RT.				562.50			1	1													8			
8-GR	41,42	267+90	280+27.5	LT.	1237.50																						
		267+90	280+52.5	LT.				1200.00			1	1													14			
9-GR	41,42	268+52.5	278+65	RT.	1012.50																						
		268+27.5	278+65	RT.				975.00			1	1													12			
10-GR	42	286+16	290+91	RT.	475.00																						
		285+41	290+91	RT.				487.50			1	1													7			
11-GR	42,43	296+50	7+63 Ramp C	RT.	1025.00																						
		296+50	7+63 Ramp C	RT.				962.50			1	1													12			
12-GR	42,43	297+50	7+91 Ramp A	LT.	1012.50																						
		297+50	7+91 Ramp A	LT.				950.00			1	1													12			
13-GR	43	310+12	312+12	RT.	200.00																						
		310+02.00	311+97.35	RT.				93.75			1		1										49.5		3	1		
14-GR	43	310+30	313+30	RT.	300.00																						
		309+74.33	312+12.12	RT.				37.50	125.00			1													3		1	Detail on Sheet No. 47
15-GR	43	310+30	313+12	LT.	300.00																						
		311+51.62	313+26.41	LT.				37.50	125.00			1													3		1	Detail on Sheet No. 47
16-GR	43	311+42	313+42	LT.	200.00																						
		311+66.65	313+75.80	LT.				93.75			1		1										49.5		3	1		
17-GR	43,44	17+96 Ramp D	345+13	RT.	2687.50																						
		17+96 Ramp D	345+25	RT.				2637.50			1	1													28			
18-GR	43,44	322+83.5	345+96	LT.	2312.50																						
		322+83.5	346+21	LT.				2275.00			1	1													25			
19-GR	45	365+94	368+48	RT.	250.00																						
		365+55.85	368+49.60	RT.				243.75			1		1												4			
20-GR	45	367+09	368+48	RT.	75.00	62.50																					
		366+12.35	368+49.60	RT.				68.75	162.50				1												3		1	
21-GR	45	376+36.75	377+71	LT.	75.00	62.50																					
		376+33.92	378+71.34	LT.				68.75	162.50				1												3		1	
22-GR	45	376+36.75	378+23	LT.	187.50																						
		376+33.92	378+65.17	LT.				181.25			1		1												4			
23-GR	43	9+21.50 CR 22A	10+21.50 CR 22A	RT.	100.00																						
		9+31.35 CR 22A	10+25.10 CR 22A	RT.				68.75		1			1												2			
24-GR	43	9+46.50 CR 22A	10+21.50 CR 22A	LT.	75.00																						
		9+43.85 CR 22A	10+25.10 CR 22A	LT.				56.25		1			1												2			
25-GR	43	12+48 CR 22A	13+23 CR 22A	RT.	75.00																						
		12+44.90 CR 22A	13+26.15 CR 22A	RT.				56.25		1			1												2			
26-GR	43	12+48 CR 22A	13+48 CR 22A	LT.	100.00																						
		12+44.90 CR 22A	13+38.65 CR 22A	LT.				68.75		1			1												2			
1-F	39,40						3931							3938		1	1	5			4							
2-F	39,40						5462							5462		2	1	7		1	5							
3-F	40,41						886							886		4				2								
4-F	40,41						319							319		1	1			1								
5-F	41						800							800		1		2		2								
6-F	41,43						5321							4876	445	6		7		2	5			1				
7-F	41,43						2525							2525		5		3		2	1							
8-F	42,43						3071							3071		5		5		2	1	1		1				
9-F	43						1095							595	500	3	2			1				1				
10-F	43						1260							630	630	2	2			1				1				
11-F	43						1510							640	870	2	3											
12-F	43,44						1518								1518	8	1			1								
13-F	44						735								735	4	1	3		1	1							
14-F	44						750							750		1	2	1			1							
15-F	45													42					2									
16-F	45													35					2									
17-F	45													112			1		1									
18-F	45													90			1		1									
TOTALS	QUANTITIES CARRIED TO GENERAL SUMMARY				14,675.0	125.00	29,183	13,325.00	575.0	4	17	16	10	24,771	4,698							1	99.0	4	187	2	4	* Total carried to Traffic Control General Summary

CALCULATED K.S.P.
CHECKED J.E.H.

GUARDRAIL AND FENCE QUANTITIES

GUARDRAIL

JEF-22-3.86

LINEAR GRADING, METHOD A

STATION FROM	STATION TO	DESCRIPTION	LENGTH	203 LINEAR GRADING, METHOD A
			Lin. Ft.	Sta.
205+53	217+10.5	East bound	1157.50	11.58
218+98	240+00		2102.00	21.02
243+12.5	245+97.5		285.00	2.85
252+10	259+75		765.00	7.65
266+00	268+27.5		227.50	22.8
278+65	285+41		676.00	6.76
290+91	296+50		559.00	5.59
304+40.26	309+00		459.74	4.60
314+00	321+57		757.00	7.57
345+25	365+62.10		2037.10	20.37
204+00	239+61	West bound	3561.00	35.61
243+23.5	246+97		373.50	3.74
254+22	267+90		1368.00	13.68
280+52.5	297+50		1697.50	16.98
304+08.50	311+66.65		758.15	7.58
313+75.80	321+87.68		811.88	8.12
346+21	368+11.06		2190.06	21.90
7+91	11+91.59	Ramp "A" Lt.	482.38	4.82
4+04	11+91.59	Ramp "A" Rt.	1184.05	11.84
11+56.84	21+82.39	Ramp "B" Lt.	1088.62	10.89
11+56.84	21+82.39	Ramp "B" Rt.	1027.41	10.27
7+63	11+87.68	Ramp "C" Rt.	499.24	4.99
4+42.75	11+87.68	Ramp "C" Lt.	748.00	7.48
11+80.90	17+96	Ramp "D" Rt.	676.80	6.77
11+80.90	21+60.90	Ramp "D" Lt.	970.63	9.71
TOTALS (CARRIED TO GENERAL SUMMARY)				285.17

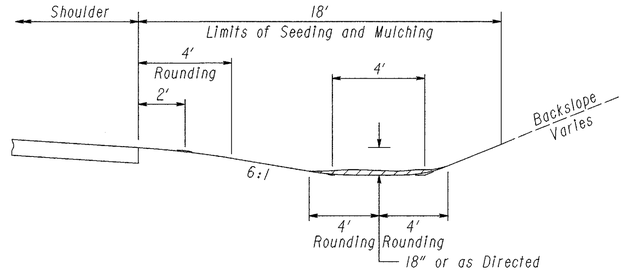
EARTHWORK & SEEDING SUMMARY

CARRIED FROM SHEET NO.	203 EXCAVATION	203 EMBANKMENT	659 SEEDING & MULCHING
	Cu. Yd.	Cu. Yd.	Sq. Yd.
48	277	200	1543
49	279	302	1494
50	139	21	1554
51	56	61	1256
SUBTOTALS	751	584	5847
TOTALS	751	584	

TOTALS CARRIED TO GENERAL SUMMARY

LINEAR GRADING, METHOD B

STATION FROM	STATION TO	DESCRIPTION	LENGTH	203 LINEAR GRADING, METHOD B
			Lin. Ft.	Sta.
202+25.00	306+50	East bound	10,425.00	104.25
314+00	364+50		5050.00	50.50
376+00	380+52.39BK		452.39	4.52
61+57.00AH	68+05.00		648.00	6.48
202+25.00	306+50	West bound	10,425.00	104.25
314+00	364+50		5050.00	50.50
376+00	380+52.39		452.39	4.52
TOTALS (CARRIED TO GENERAL SUMMARY)				325.02



DITCH CLEANOUT DETAIL

DITCH CLEANOUT

STATION FROM	STATION TO	DESCRIPTION	203 LINEAR GRADING, DITCH CLEANOUT
			Sta.
229+50	234+50	East bound	5.0
279+50	284+50		5.0
314+00	318+50		4.5
348+00	350+00		2.0
378+50	382+00		3.5
223+00	224+00	West bound	1.0
231+00	235+50		4.5
282+00	287+35		5.4
296+50	297+50		1.0
313+50	317+00		3.5
376+50	380+50		4.0
TOTALS (CARRIED TO GENERAL SUMMARY)			39.4

LINEAR GRADING, METHOD C

REFERENCE NO.	STATION FROM	STATION TO	DESCRIPTION	LENGTH	203 LINEAR GRADING, METHOD C	203 EXCAVATION	448 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (UNDER GUARDRAIL) AS PER PLAN	COMMENTS
				Lin. Ft.	Sta.	Cu. Yd.	Cu. Yd.	
GR-1	202+28	205+53	East bound	325.00	3.25	8.0	8.0	
GR-2	217+10.5	218+98		187.50	1.88	4.6	4.6	
GR-3	240+00	243+12.5		312.50	3.13	7.7	7.7	
GR-5	245+97.5	252+10		612.50	6.13	7.7	7.7	
GR-7	259+75	266+00		625.00	6.25	15.1	15.1	
GR-9	268+27.5	278+65		1037.50	10.38	25.6	25.6	
GR-10	285+41	290+91		550.00	5.50	13.6	13.6	
GR-11	296+50	304+40.26		727.75	7.28	18.0	18.0	Continued on Ramp "C"
GR-13	310+12	311+99.45		143.75	NA	3.6	3.6	
GR-17	323+50	345+25		2160.00	21.60	53.3	53.3	Continued from Ramp "D"
GR-19	365+62.10	368+47.50		237.50	2.38	5.9	5.9	
GR-4	239+61	243+23.5	West bound	362.50	3.63	9.0	9.0	
GR-6	246+97	254+22		725.00	7.25	17.9	17.9	
GR-8	267+90	280+52.5		1262.50	12.63	31.2	31.2	
GR-12	297+50	302+20		455.62	4.56	11.3	11.3	Continued on Ramp "A"
GR-16	312+16.15	313+75.80		143.75	1.44	3.6	3.6	
GR-18	322+83.5	346+21		2337.50	23.38	57.7	57.7	
GR-22	376+36.02	378+65.17		181.25	1.81	4.5	4.5	
GR-12	2+20	7+91	Ramp "A" Rt.	556.88	5.57	13.8	13.8	Continued from Mainline
GR-11	4+42.75	7+63	Ramp "C" Lt.	297.25	2.97	7.3	7.3	Continued from Mainline
GR-17	17+96	23+50	Ramp "D" Rt.	540.00	5.40	13.3	13.3	Continued on Mainline
TOTALS (CARRIED TO GENERAL SUMMARY)					136.42	332.7	332.7	

QUANTITIES

(Quantities carried to General Summary)

SEEDING & MULCHING

LINEAR GRADING, METHOD A:

285.17 Sta. X 100 X 6' ÷ 9 = 19,011.33 Sq.Yd.

LINEAR GRADING, METHOD B:

325.02 Sta. X 100 X 4' ÷ 9 = 14,445.33 Sq. Yd.

LINEAR GRADING, METHOD C:

136.42 Sta. X 100 X 6' ÷ 9 = 9,094.67 Sq. Yd.

DITCH CLEANOUT:

39.4 Sta. X 100 X 18' ÷ 9 = 7880.00 Sq. Yd.

FROM EARTHWORK SUMMARY TABLE 5847 Sq. Yd.

TOTAL 56,278.33 Sq. Yd.

USE 56,300 Sq. Yd.

WATER

$\frac{56{,}300 \text{ Sq. Yd.} \times 9 \times 120 \times 2 \text{ Applications}}{1000 \times 1000} = 121.61$ M Gal.

USE 122 M Gal. (Carried to Sheet No. 10)

COMMERCIAL FERTILIZER

$\frac{56{,}300 \text{ Sq. Yd.} \times 9 \times 20}{1000 \times 2000} = 5.07$ Ton

AGRICULTURAL LIMING

$\frac{56{,}300 \text{ Sq. Yd.} \times 9 \times 46 \text{ lbs./1000 Sq. Ft.}}{1000 \times 2000} = 11.65$ Ton

SLOPE EROSION PROTECTION

136.42 Sta. x 100 x 6' ÷ 9 = 9094.67 Sq. Yd.

CALCULATED KSP CHECKED SHG

LINEAR GRADING, DITCH CLEANOUT AND EARTHWORK QUANTITIES

JEF-22-3.86

RESURFACING QUANTITIES

CALCULATED KSP CHECKED SHG

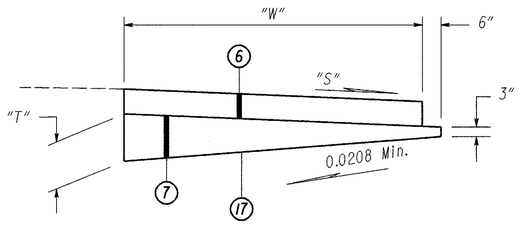
LOCATION	STATION FROM	STATION TO	LENGTH Lin. Ft.	WIDTH Lin. Ft.	AREA Sq. Yd.	202 PAVEMENT REMOVED Sq. Yd.	202 WEARING COURSE REMOVED (3" Nominal) Sq. Yd.	203 SUBGRADE COMPACTION Sq. Yd.	301 THICKNESS Inch	301 BITUMINOUS AGGREGATE BASE, AC-20 Cu. Yd.	304 THICKNESS Inch	304 AGGREGATE BASE Cu. Yd.	305 8" CONCRETE BASE Sq. Yd.	403 1" ASPHALT CONCRETE, AC-20 Cu. Yd.	407 TACK COAT Gal.	448 THICKNESS Inch	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20 Cu. Yd.	448 THICKNESS Inch	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN Cu. Yd.	451 8" REINFORCED CONCRETE PAVEMENT Sq. Yd.	451 9" REINFORCED CONCRETE PAVEMENT Sq. Yd.	SEE SHEET NO.
MAINLINE																						
	202+25.00	202+68.75	43.75	24.0	116.67	--	116.67	--	--	--	--	--	--	--	8.8	2.63*	8.5	1.25	4.1	--	--	
Feather	202+68.75	203+75.00	106.25	24.0	283.33	--	283.33	--	3.88*	30.5	--	--	--	--	21.2	1.75	13.8	1.25	9.8	--	--	
	203+75.00	204+00.00	25.00	24.0	66.67	--	66.67	--	6.00	11.1	--	--	--	--	5.0	1.75	3.2	1.25	2.3	--	--	
	204+00.00	309+00.00	10500.00	24.0	28000.00	--	28000.00	--	--	--	--	--	--	777.8	2100.0	--	--	--	--	28000.00	--	
Eastbound	309+00.00	313+50.00	450.00	24.0	1200.00	1200.00	--	1200.00	--	--	6.00	200.0	1200.00	33.3	90.0	--	--	--	--	1200.00	--	47
	313+50.00	366+15.20	5265.20	24.0	14040.53	--	14040.53	--	--	--	--	--	--	390.0	1053.0	--	--	--	--	14040.53	--	
Feather	366+15.20	368+40.20	225.00	24.0	600.00	600.00	--	600.00	--	--	--	--	600.00	16.7	--	--	--	--	--	600.00	--	
	Br. No. JEF-22-0698R (no work)																					
Eastbound	376+14.57	380+52.39 BK	437.82	24.0	1167.52	1167.52	--	1167.52	--	--	8.00	259.4	--	--	--	--	--	--	--	--	1167.52	
	61+57.00 AH	68+05.00	648.00	24.0	1728.00	1728.00	--	1728.00	--	--	8.00	384.0	--	--	--	--	--	--	--	--	1728.00	
	202+25.00	202+68.75	43.75	24.0	116.67	--	116.67	--	--	--	--	--	--	--	8.8	2.63*	8.5	1.25	4.1	--	--	
Feather	202+68.75	203+75.00	106.25	24.0	283.33	--	283.33	--	3.88*	30.5	--	--	--	--	21.2	1.75	13.8	1.25	9.8	--	--	
	203+75.00	204+00.00	25.00	24.0	66.67	--	66.67	--	6.00	11.1	--	--	--	--	5.0	1.75	3.2	1.25	2.3	--	--	
Westbound	204+00.00	365+80.16	16180.16	24.0	43147.09	--	43147.09	--	--	--	--	--	--	1198.5	3236.0	--	--	--	--	43147.09	--	
Feather	365+80.16	368+05.16	225.00	24.0	600.00	600.00	--	600.00	--	--	--	--	600.00	16.7	--	--	--	--	--	600.00	--	
	Br. No. JEF-22-0698L (no work)																					
Westbound	376+41.60	380+52.39 BK	410.79	24.0	1095.44	1095.44	--	1095.44	--	--	8.00	243.4	--	--	--	--	--	--	--	--	1095.44	
SPEED CHANGE LANES																						
Ramp "A"	292+20.00	302+20.00	1000.00	12.50*	1388.89	--	1388.89	--	--	--	--	--	--	38.6	104.2	--	--	--	--	1388.89	--	
	321+87.68	322+31.46	43.78	37.60*	182.42	--	182.42	--	--	--	--	--	--	5.1	13.7	--	--	--	--	182.42	--	
Ramp "B"	322+31.46	325+95.00	363.54	23.50*	949.24	--	949.24	--	--	--	--	--	--	26.4	71.2	--	--	--	--	949.24	--	
	325+95.00	329+31.46	336.46	12.00	448.61	--	448.61	--	--	--	--	--	--	12.5	33.6	--	--	--	--	448.61	--	
	329+31.46	330+31.46	100.00	6.00*	66.67	--	66.67	--	--	--	--	--	--	1.9	5.0	--	--	--	--	66.67	--	
	296+00.26	297+00.26	100.00	6.00*	66.67	--	66.67	--	--	--	--	--	--	1.9	5.0	--	--	--	--	66.67	--	
Ramp "C"	297+00.26	301+19.80	419.54	12.00	559.39	--	559.39	--	--	--	--	--	--	15.5	42.0	--	--	--	--	559.39	--	
	301+19.80	304+00.26	280.46	23.50*	732.31	--	732.31	--	--	--	--	--	--	20.3	54.9	--	--	--	--	732.31	--	
	304+00.26	304+40.26	40.00	37.60*	167.11	--	167.11	--	--	--	--	--	--	4.6	12.5	--	--	--	--	167.11	--	
Ramp "D"	323+50.00	333+50.00	1000.00	12.50*	1388.89	--	1388.89	--	--	--	--	--	--	38.6	104.2	--	--	--	--	1388.89	--	
RAMPS																						
Ramp "A"	2+20.00	11+01.88	881.88	16.00	1567.79	--	1567.79	--	--	--	--	--	--	43.6	117.6	--	--	--	--	1567.79	--	
	11+01.88	11+40.59	Area 3P		86.84	--	86.84	--	6.00	14.5	--	--	--	--	6.5	1.75	4.2	1.25	3.0	--	--	53
Feather	11+40.59	11+83.09	Area 2P		167.32	--	167.32	--	3.88*	18.0	--	--	--	--	12.5	1.75	8.1	1.25	5.8	--	--	53
	11+83.09	11+95.59	Area 1P		115.95	--	115.95	--	--	--	--	--	--	--	8.7	2.88*	9.3	1.25	4.0	--	--	53
	11+60.84	11+73.34	Area 1P		133.27	--	133.27	--	--	--	--	--	--	--	10.0	2.88*	10.7	1.25	4.6	--	--	53
Feather	11+73.34	12+15.84	Area 2P		144.68	--	144.68	--	3.88*	15.6	--	--	--	--	10.9	1.75	7.0	1.25	5.0	--	--	53
	12+15.84	12+25.98	Area 3P		21.25	--	21.25	--	6.00	3.5	--	--	--	--	1.6	1.75	1.0	1.25	0.7	--	--	53
Ramp "B"	12+25.98	21+82.39	956.41	16.00	1700.28	--	1700.28	--	--	--	--	--	--	47.2	127.4	--	--	--	--	1700.28	--	
Ramp "C"	4+42.75	11+19.89	677.14	16.00	1203.80	--	1203.80	--	--	--	--	--	--	33.4	90.3	--	--	--	--	1203.80	--	
	11+19.89	11+36.68	Area 3P		30.02	--	30.02	--	6.00	5.0	--	--	--	--	2.3	1.75	1.5	1.25	1.0	--	--	53
Feather	11+36.68	11+79.18	Area 2P		158.27	--	158.27	--	3.88*	17.1	--	--	--	--	11.9	1.75	7.7	1.25	5.5	--	--	53
	11+79.18	11+91.68	Area 1P		138.21	--	138.21	--	--	--	--	--	--	--	10.4	2.88*	11.1	1.25	4.8	--	--	53
	11+84.90	11+97.40	Area 1P		117.00	--	117.00	--	--	--	--	--	--	--	8.8	2.88*	9.4	1.25	4.1	--	--	53
Feather	11+97.40	12+39.90	Area 2P		167.37	--	167.37	--	3.88*	18.0	--	--	--	--	12.6	1.75	8.1	1.25	5.8	--	--	53
	12+39.90	12+74.14	Area 3P		78.52	--	78.52	--	6.00	13.1	--	--	--	--	5.9	1.75	3.8	1.25	2.7	--	--	53
Ramp "D"	12+74.14	23+50.00	1075.86	16.00	1912.64	--	1912.64	--	--	--	--	--	--	53.1	143.4	--	--	--	--	1912.64	--	
C.R. 22A																						
	6+76.34	7+07.59	31.25	24.00	83.33	--	83.33	--	--	--	--	--	--	--	6.2	--	--	1.25	2.9	--	--	
Feather	7+07.59	7+45.09	37.50	24.00	100.00	--	--	--	--	--	--	--	--	--	7.5	--	--	2.00*	5.6	--	--	
	7+45.09	7+63.84	18.75	24.00	50.00	--	--	--	--	--	--	--	--	--	3.8	1.88*	2.6	1.25	1.7	--	--	
C.R. 22A	7+63.84	9+34.25	170.41	24.00	454.43	--	--	--	--	--	--	--	--	--	34.1	2.25	28.4	1.25	15.8	--	--	
Feather	9+34.25	9+65.50	31.25	24.00	83.33	--	--	--	--	--	--	--	--	--	6.2	2.00*	4.6	1.25	2.9	--	--	
	9+65.50	10+09.25	43.75	24.00	116.67	--	--	--	2.66*	8.6	--	--	--	--	8.8	1.75	5.7	1.25	4.1	--	--	
	Br. No. JEF-22-0590 (no work)																					
Feather	12+60.75	13+04.50	43.75	24.00	116.67	--	--	--	2.66*	8.6	--	--	--	--	8.8	1.75	5.7	1.25	4.1	--	--	
	13+04.50	13+35.75	31.25	24.00	83.33	--	--	--	--	--	--	--	--	--	6.2	2.00*	4.6	1.25	2.9	--	--	
C.R. 22A	13+35.75	15+03.28	167.53	24.00	446.75	--	--	--	--	--	--	--	--	--	33.5	2.25	27.9	1.25	15.5	--	--	
	15+03.28	15+22.03	18.75	24.00	50.00	--	--	--	--	--	--	--	--	--	3.8	1.88*	2.6	1.25	1.7	--	--	
Feather	15+22.03	15+59.53	37.50	24.00	100.00	--	--	--	--	--	--	--	--	--	7.5	--	--	2.00*	5.6	--	--	
	15+59.53	15+90.78	31.25	24.00	83.33	--	83.33	--	--	--	--	--	--	--	6.2	--	--	1.25	2.9	--	--	
TOTALS (CARRIED TO GENERAL SUMMARY)			NOTE: * - average			6390.96	99,981.03	6390.96	X	205.2	X	1086.8	2400.0	2775.7	7708.7	X	215.0	X	145.1	99,922.33	3990.96	X

JEF-22-3.86

EASTBOUND SHOULDER RECONSTRUCTION QUANTITIES

CALCULATED KSP | CHECKED SHG

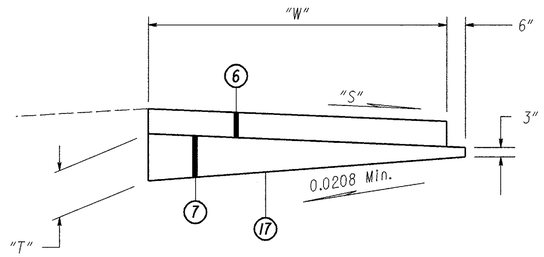
LOCATION	STATION FROM	STATION TO	LENGTH	WIDTH	AREA	END AREA DETAIL NO.	202 WEARING COURSE REMOVED	203 END AREA	203 EXCAVATION	203 SUBGRADE COMPACTION	301 THICKNESS	301 BITUMINOUS AGGREGATE BASE, AC-20	304 THICKNESS *	304 AGGREGATE BASE	403 1" ASPHALT CONCRETE, AC-20	407 TACK COAT	448 THICKNESS	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	448 THICKNESS	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	452 8" PLAIN CONCRETE PAVEMENT	452 9" PLAIN CONCRETE PAVEMENT
							Sq. Yd.	Sq. Ft.	Cu. Yd.	Sq. Yd.	Inch	Cu. Yd.	Inch	Cu. Yd.	Cu. Yd.	Gal.	Inch	Cu. Yd.	Inch	Cu. Yd.	Sq. Yd.	Sq. Yd.
MAINLINE OUTSIDE																						
Feather	202+25.00	202+68.75	43.75	8	38.89	--	38.89	--	--	--	--	--	--	--	--	2.9	2.63*	2.8	1.25	1.4	--	
	202+68.75	203+75.00	106.25	8	94.44	--	94.44	--	--	--	3.88*	10.2	--	--	--	7.1	1.75	4.6	1.25	3.3	--	
	203+75.00	204+00.00	25.00	8	22.22	--	22.22	--	--	--	6.00	3.7	--	--	--	1.7	1.75	1.1	1.25	0.8	--	
East bound	204+00.00	226+50.00	2250.00	8	2000.00	1C	--	9.71	809.2	2000.00	--	--	6.19	365.4	--	--	--	--	--	--	2000.00	
	226+50.00	231+00.00	450.00	8	400.00	1A	--	11.71	195.2	400.00	--	--	9.00	106.3	--	--	--	--	--	--	400.00	
	231+00.00	285+00.00	5400.00	8	4800.00	1C	--	9.71	1942.0	4800.00	--	--	6.19	872.7	--	--	--	--	--	--	4800.00	
	285+00.00	286+16.30	116.30	8	103.38	1A	--	11.71	50.4	103.38	--	--	9.00	27.5	--	--	--	--	--	--	103.38	
	286+16.30	287+63.56	147.26	8	130.90	1A to 2A	--	11.71*	63.9	130.90	--	--	9.00	34.8	--	--	--	--	--	--	130.90	
	287+63.56	289+25.00	161.44	8	143.50	2A to 3	--	11.99*	71.7	143.50	--	--	9.00	38.1	--	--	--	--	--	--	143.50	
	289+25.00	299+00.00	975.00	8	866.67	3	--	12.26	442.7	866.67	--	--	9.00	230.2	--	--	--	--	--	--	866.67	
	299+00.00	299+77.00	77.00	8	68.44	3 to 2A	--	11.99*	34.2	68.44	--	--	9.00	18.2	--	--	--	--	--	--	68.44	
	299+77.00	300+46.55	69.55	8	61.82	2A to 1A	--	11.71*	30.2	61.82	--	--	9.00	16.4	--	--	--	--	--	--	61.82	
	300+46.25	304+40.26	394.01	8	350.23	1A	--	11.71	170.9	350.23	--	--	9.00	93.0	--	--	--	--	--	--	350.23	
	304+40.26	305+00.26	60.00	8	53.33	5	53.33	--	--	--	--	--	--	--	1.5	4.0	--	--	--	--	53.33	
	305+00.26	318+21.00	1320.74	8	1173.99	1A	--	11.71	572.8	1173.99	--	--	9.00	311.8	--	--	--	--	--	--	1173.99	
	318+21.00	318+75.00	54.00	8	48.00	1A to 1B	--	11.71*	23.4	48.00	--	--	9.00	12.8	--	--	--	--	--	--	48.00	
	318+75.00	321+57.00	282.00	8	250.67	1B	--	11.71	122.3	250.67	--	--	9.00	66.6	--	--	--	--	--	--	250.67	
	321+57.00	323+50.00	193.00	15.5*	332.39	4	332.39	--	--	--	--	--	--	--	9.2	24.9	--	--	--	--	332.39	
	323+50.00	324+25.00	75.00	8	66.67	1E to 1D	--	10.10*	28.1	66.67	--	--	10.50	20.7	--	--	--	--	--	--	66.67	
	324+25.00	340+25.00	1600.00	8	1422.22	1D	--	9.92	587.9	1422.22	--	--	10.00	419.8	--	--	--	--	--	--	1422.22	
	340+25.00	340+79.00	54.00	8	48.00	1D to 1C	--	9.82*	19.6	48.00	--	--	9.69	13.7	--	--	--	--	--	--	48.00	
	340+79.00	345+10.00	431.00	8	383.11	1C	--	9.71	155.0	383.11	--	--	6.19	70.0	--	--	--	--	--	--	383.11	
	345+10.00	358+25.00	1315.00	8	1168.89	1A	--	11.71	570.3	1168.89	--	--	9.00	310.5	--	--	--	--	--	--	1168.89	
	358+25.00	366+15.20	790.20	8	702.40	1C	--	9.71	284.2	702.40	--	--	6.19	128.3	--	--	--	--	--	--	702.40	
Feather	366+15.20	368+25.00	209.80	8	186.49	1C	--	9.71	75.5	186.49	--	--	6.19	34.1	--	--	--	--	--	--	186.49	
	368+25.00	368+40.20	15.20	8	13.51	1A	--	11.71	6.6	13.51	--	--	9.00	3.6	--	--	--	--	--	--	13.51	
SUBTOTALS	Eastbound Shoulder Reconstruction Quantities - From This Sheet						541.27		6256.1	14388.89		13.9		3194.5	10.7	40.6		8.5		5.5	14774.61	
	Westbound Shoulder Reconstruction Quantities - From Sheet No. 33						530.16		6557.8	14387.05		13.9		3694.2	10.4	39.7		8.5		5.5	14761.66	
	Median Shoulder Reconstruction Quantities - From Sheet No. 34						155.54		6142.7	29.5		14.0		2780.3		11.6		8.4		5.4	14597.97	676.51
	Ramp Shoulder Reconstruction Quantities - From Sheet No. 35								1694.0	2827.39		27.8		831.0				26.2		14.4	3489.15	
TOTALS	(CARRIED TO GENERAL SUMMARY) NOTE: * - average						1,226.97		20,650.6	31,632.83		69.6		10,500	21.1	91.9		51.6		30.8	47,623.39	676.51



	W	T	S	Exc. End Area (Sq. Ft.)
A	8'	15"	0.0417	11.71
B	8'	15"	0.0475	11.71
C	8'	9 3/8"	0.0417	9.71
D	8'	10"	0.0475	9.92
E	8'	11"	0.0572	10.27

DETAIL 1

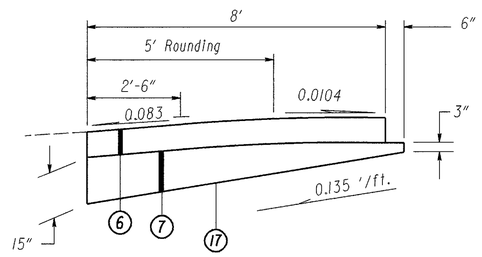
Low side, and High side for pavement slope < 0.0283



	W	T	S	Exc. End Area (Sq. Ft.)
A	8'	15"	0.0104	11.71
B	8'	15"	0.0225	11.71

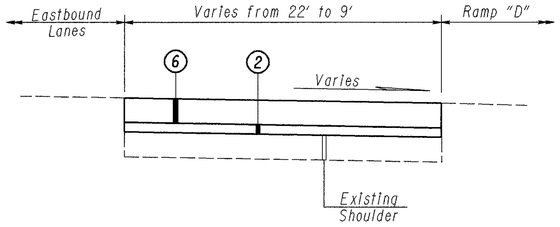
DETAIL 2

High side for pavement slope > 0.0283

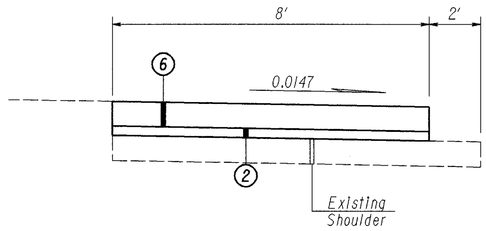


Average end area = 12.26 Sq. Ft.

DETAIL 3



DETAIL 4



DETAIL 5

LEGEND

(2) — Item 403 - 1" Asphalt Concrete, AC-20

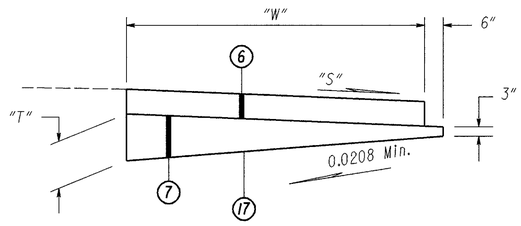
(6) — Item 452 - 8" Plain Concrete Pavement

(7) — Item 304 - Aggregate Base

(17) — Item 203 - Subgrade Compaction

JEF-22-3.86

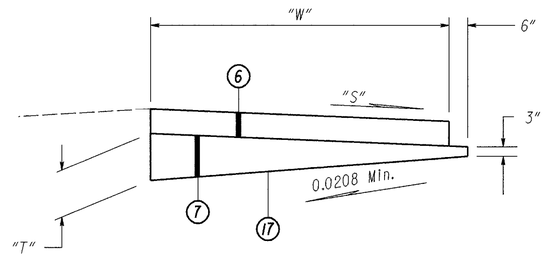
LOCATION	STATION FROM	STATION TO	LENGTH	WIDTH	AREA	END AREA DETAIL NO.	202 WEARING COURSE REMOVED	203 END AREA	203 EXCAVATION	203 SUBGRADE COMPACTION	301 THICKNESS	301 BITUMINOUS AGGREGATE BASE, AC-20	304 THICKNESS #	304 AGGREGATE BASE	403 1" ASPHALT CONCRETE, AC-20	407 TACK COAT	448 THICKNESS	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	448 THICKNESS	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	452 8" PLAIN CONCRETE PAVEMENT
			Lin. Ft.	Lin. Ft.	Sq. Yd.		Sq. Yd.	Sq. Ft.	Cu. Yd.	Sq. Yd.	Inch	Cu. Yd.	Inch	Cu. Yd.	Cu. Yd.	Gal.	Inch	Cu. Yd.	Inch	Cu. Yd.	Sq. Yd.
MAINLINE OUTSIDE																					
Feather	202+25.00	202+68.75	43.75	8	38.89	--	38.89	--	--	--	--	--	--	--	--	2.9	2.63*	2.8	1.25	1.4	--
	202+68.75	203+75.00	106.25	8	94.44	--	94.44	--	--	--	3.88*	10.2	--	--	--	7.1	1.75	4.6	1.25	3.3	--
	203+75.00	204+00.00	25.00	8	22.22	--	22.22	--	--	--	6.00	3.7	--	--	--	1.7	1.75	1.1	1.25	0.8	--
West bound	204+00.00	239+25.00	3525.00	8	3133.33	2A	--	11.71	1528.8	3133.33	--	--	9.00	832.3	--	--	--	--	--	--	3133.33
	239+25.00	239+50.00	25.00	8	22.22	2A to 1A	--	11.71*	10.8	22.22	--	--	9.00	5.9	--	--	--	--	--	--	22.22
	239+50.00	241+50.00	200.00	8	177.78	1A	--	11.71	86.7	177.78	--	--	9.00	47.2	--	--	--	--	--	--	177.78
	241+50.00	286+79.50	4529.50	8	4026.22	1B	--	9.71	1628.9	4026.22	--	--	9.00	1069.5	--	--	--	--	--	--	4026.22
	286+79.50	289+25.00	245.50	8	218.22	1B to 1D	--	10.46*	95.1	218.22	--	--	7.25	46.7	--	--	--	--	--	--	218.22
	289+25.00	301+00.00	1175.00	8	1044.44	1D	--	11.21	487.8	1044.44	--	--	8.31	256.2	--	--	--	--	--	--	1044.44
	301+00.00	302+20.00	120.00	8	106.67	1D to 1E	--	10.96*	48.7	106.67	--	--	7.91	24.9	--	--	--	--	--	--	106.67
	302+20.00	304+08.50	188.50	15.50*	324.64	4	324.64	--	--	--	--	--	--	--	9.0	24.3	--	--	--	--	324.64
	304+08.50	317+77.00	1368.50	8	1216.44	1A	--	11.71	593.5	1216.44	--	--	9.00	323.1	--	--	--	--	--	--	1216.44
	317+77.00	318+75.00	98.00	8	87.11	1A to 2B	--	11.71*	42.5	87.11	--	--	9.00	23.1	--	--	--	--	--	--	87.11
	318+75.00	321+31.46	256.46	8	227.96	2B	--	11.71	111.2	227.96	--	--	9.00	60.6	--	--	--	--	--	--	227.96
	321+31.46	321+87.68	56.22	8	49.97	3	49.97	--	--	--	--	--	--	--	1.4	3.7	--	--	--	--	49.97
	321+87.68	324+00.00	212.32	8	188.73	1B	--	9.71	76.4	188.73	--	--	6.19	34.5	--	--	--	--	--	--	188.73
	324+00.00	325+79.00	179.00	8	159.11	1A	--	11.71	77.6	159.11	--	--	9.00	42.3	--	--	--	--	--	--	159.11
	325+79.00	327+00.00	121.00	8	107.56	1A to 2B	--	11.71*	52.5	107.56	--	--	9.00	28.6	--	--	--	--	--	--	107.56
	327+00.00	340+25.00	1325.00	8	1177.78	2B	--	11.71	574.7	1177.78	--	--	9.00	312.9	--	--	--	--	--	--	1177.78
	340+25.00	341+23.00	98.00	8	87.11	2B to 1A	--	11.71*	42.5	87.11	--	--	9.00	23.1	--	--	--	--	--	--	87.11
	341+23.00	358+00.00	1677.00	8	1490.67	1A	--	11.71	727.3	1490.67	--	--	9.00	396.0	--	--	--	--	--	--	1490.67
	358+00.00	366+05.16	805.16	8	715.70	1B	--	9.71	289.6	715.70	--	--	6.19	130.8	--	--	--	--	--	--	715.70
Feather	366+05.16	368+00.00	194.84	8	173.19	1B	--	9.71	70.1	173.19	--	--	6.19	31.6	--	--	--	--	--	--	173.19
	368+00.00	368+30.16	30.16	8	26.81	1A	--	11.71	13.1	26.81	--	--	6.19	4.9	--	--	--	--	--	--	26.81
TOTALS	(CARRIED TO SHEET NO. 32.)		NOTE: * - average				530.16		6557.8	14,387.05		13.9		3694.2	10.4	39.7		8.5		5.5	14,761.66



	W	T	S	Exc. End Area (Sq. Ft.)
A	8'	15"	0.0417	11.71
B	8'	9 3/8"	0.0417	9.71
C	8'	10"	0.0475	9.92
D	8'	13 3/8"	0.083	11.21
E	8'	12"	0.069	10.70

DETAIL 1

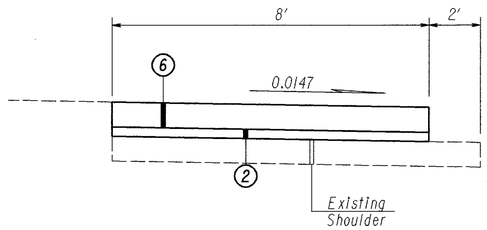
Low side, and High side for pavement slope < 0.0283



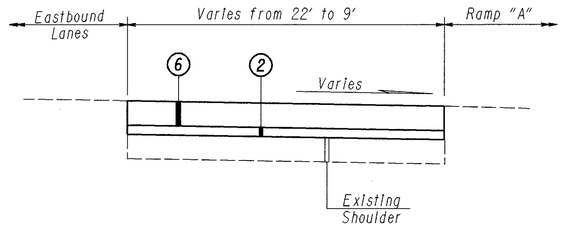
	W	T	S	Exc. End Area (Sq. Ft.)
A	8'	15"	0.0104	11.71
B	8'	15"	0.0225	11.71

DETAIL 2

High side for pavement slope > 0.0283



DETAIL 3



DETAIL 4

LEGEND

(2) Item 403 - 1" Asphalt Concrete, AC-20

(6) Item 452 - 8" Plain Concrete Pavement

(7) Item 304 - Aggregate Base

(17) Item 203 - Subgrade Compaction

CALCULATED KSP CHECKED SHG

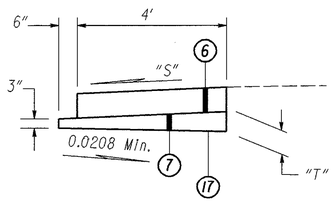
WESTBOUND SHOULDER RECONSTRUCTION QUANTITIES

JEF-22-3.86

LOCATION	STATION FROM	STATION TO	LENGTH	WIDTH	AREA	END AREA DETAIL NO.	202 WEARING COURSE REMOVED	203 END AREA	203 EXCAVATION	203 SUBGRADE COMPACTION	301 THICKNESS	301 BITUMINOUS AGGREGATE BASE, AC-20	304 THICKNESS #	304 AGGREGATE BASE	407 TACK COAT	448 THICKNESS	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	448 THICKNESS	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	452 8" PLAIN CONCRETE PAVEMENT	452 9" PLAIN CONCRETE PAVEMENT
			Lin. Ft.	Lin. Ft.	Sq. Yd.		Sq. Yd.	Sq. Ft.	Cu. Yd.	Sq. Yd.	Inch	Cu. Yd.	Inch	Cu. Yd.	Gal.	Inch	Cu. Yd.	Inch	Cu. Yd.	Sq. Yd.	Sq. Yd.
MAINLINE MEDIAN																					
Feather	202+25.00	202+68.75	43.75	4	19.44	--	19.44	--	--	--	--	--	--	--	1.5	2.63*	1.4	1.25	0.7	--	
	202+68.75	203+75.00	106.25	4	47.22	--	47.22	--	--	--	3.88*	5.1	--	--	3.5	1.75	2.3	1.25	1.6	--	
	203+75.00	204+00.00	25.00	4	11.11	--	11.11	--	--	--	6.00	1.9	--	--	0.8	1.75	0.5	1.25	0.4	--	
East bound	204+00.00	239+25.00	3525.00	4	1566.67	2A	--	6.05	789.9	--	--	--	9.00	440.6	--	--	--	--	--	1566.67	
	239+25.00	239+50.00	25.00	4	11.11	2A to 2B	--	5.24*	4.9	--	--	--	9.00	3.1	--	--	--	--	--	11.11	
	239+50.00	241+75.00	225.00	4	100.00	2B	--	4.43	36.9	--	--	--	9.00	28.1	--	--	--	--	--	100.00	
	241+75.00	286+79.50	4504.50	4	2002.00	1A	--	4.43	739.1	--	--	--	4.69	293.4	--	--	--	--	--	2002.00	
	286+79.50	289+25.00	245.50	4	109.11	1A to 1C	--	4.64*	42.2	--	--	--	5.25	17.9	--	--	--	--	--	109.11	
	289+25.00	300+50.00	1125.00	4	500.00	1C	--	4.85	202.1	--	--	--	5.81	90.8	--	--	--	--	--	500.00	
	300+50.00	302+70.50	220.50	4	98.00	1C to 1A	--	4.64*	37.9	--	--	--	5.25	16.1	--	--	--	--	--	98.00	
	302+70.50	317+77.00	1506.50	4	669.56	1A	--	4.43	247.2	--	--	--	4.69	98.1	--	--	--	--	--	669.56	
	317+77.00	318+75.00	98.00	4	43.56	1A to 2B	--	4.43*	16.1	--	--	--	4.69	6.4	--	--	--	--	--	43.56	
	318+75.00	319+44.00	69.00	4	30.67	2B	--	4.43	11.3	--	--	--	4.69	4.5	--	--	--	--	--	30.67	
	319+44.00	340+25.00	2081.00	4	924.89	2C	--	6.05	466.3	--	--	--	9.00	260.1	--	--	--	--	--	924.89	
	340+25.00	341+23.00	98.00	4	43.56	2C to 1B	--	6.05*	22.0	--	--	--	9.00	12.3	--	--	--	--	--	43.56	
	341+23.00	342+75.00	152.00	4	67.56	1B	--	6.05	34.1	--	--	--	9.00	19.0	--	--	--	--	--	67.56	
	342+75.00	366+15.20	2340.20	4	1040.09	1A	--	4.43	384.0	--	--	--	4.69	152.4	--	--	--	--	--	1040.09	
Feather	366+15.20	368+06.00	190.80	4	84.80	1A	--	4.43	31.3	--	--	--	4.69	12.4	--	--	--	--	--	84.80	
	368+06.00	368+40.20	34.20	4	15.20	1B	--	6.05	7.7	--	--	--	9.00	4.3	--	--	--	--	--	15.20	
	Br. No. JEF-22-0698R (no work)																				
East bound	376+14.57	376+34.99	20.42	6.5	14.75	4C	--	8.28	--	14.75	--	--	4.81	2.0	--	--	--	--	--	--	14.75
	376+34.99	380+52.39 BK	417.40	4	185.51	4A	--	4.76	73.6	--	--	--	4.69	27.2	--	--	--	--	--	--	185.51
	61+57.00 AH	64+29.61	272.61	4	121.16	4A to 4D	--	4.79*	48.4	--	--	--	4.79	18.1	--	--	--	--	--	--	121.16
	64+29.61	68+05.00	375.39	4	166.84	4D	--	4.82	67.0	--	--	--	4.88	25.4	--	--	--	--	--	--	166.84
Feather	202+25.00	202+68.75	43.75	4	19.44	--	19.44	--	--	--	--	--	--	--	1.5	2.63*	1.4	1.25	0.7	--	
	202+68.75	203+75.00	106.25	4	47.22	--	47.22	--	--	--	3.88*	5.1	--	--	3.5	1.75	2.3	1.25	1.6	--	
	203+75.00	204+00.00	25.00	4	11.11	--	11.11	--	--	--	6.00	1.9	--	--	0.8	1.75	0.5	1.25	0.4	--	
West bound	204+00.00	285+00.00	8100.00	4	3600.00	1A	--	4.43	1329.0	--	--	--	4.69	527.6	--	--	--	--	--	3600.00	
	285+00.00	286+16.50	116.50	4	51.78	1B	--	6.05	26.1	--	--	--	9.00	14.6	--	--	--	--	--	51.78	
	286+16.50	287+63.56	147.06	4	65.36	1B to 2B	--	5.24*	28.5	--	--	--	9.00	18.4	--	--	--	--	--	65.36	
	287+63.56	289+25.00	161.44	4	71.75	2B to 3	--	5.10*	30.5	--	--	--	9.00	20.2	--	--	--	--	--	71.75	
	289+25.00	300+50.00	1125.00	4	500.00	3	--	5.77	240.4	--	--	--	9.00	140.6	--	--	--	--	--	500.00	
	300+50.00	301+86.44	136.44	4	60.64	3 to 2B	--	5.10*	25.8	--	--	--	9.00	17.1	--	--	--	--	--	60.64	
	301+86.44	303+33.50	147.06	4	65.36	2B to 1B	--	5.24*	28.5	--	--	--	9.00	18.4	--	--	--	--	--	65.36	
	303+33.50	305+51.00	217.50	4	96.67	1B	--	6.05	48.7	--	--	--	9.00	27.2	--	--	--	--	--	96.67	
	305+51.00	318+21.00	1270.00	4	564.44	1A	--	4.43	208.4	--	--	--	4.69	82.7	--	--	--	--	--	564.44	
	318+21.00	318+75.00	54.00	4	24.00	1A to 1E	--	4.46*	8.9	--	--	--	4.79	3.6	--	--	--	--	--	24.00	
	318+75.00	340+25.00	2150.00	4	955.56	1E	--	4.49	357.5	--	--	--	4.88	145.7	--	--	--	--	--	955.56	
	340+25.00	340+79.00	54.00	4	24.00	1E to 1A	--	4.46*	8.9	--	--	--	4.79	3.6	--	--	--	--	--	24.00	
	340+79.00	365+80.16	2501.16	4	1111.63	1A	--	4.43	410.4	--	--	--	4.69	162.9	--	--	--	--	--	1111.63	
Feather	365+80.16	368+05.16	225.00	4	100.00	1A	--	4.43	36.9	--	--	--	4.69	14.7	--	--	--	--	--	100.00	
	Br. No. JEF-22-0698L (no work)																				
West bound	376+41.60	376+62.02	20.42	6.5	14.75	4C	--	8.28	--	14.75	--	--	4.81	2.0	--	--	--	--	--	--	14.75
	376+62.02	380+52.39 BK	390.37	4	173.50	4B	--	6.38	92.2	--	--	--	9.00	48.8	--	--	--	--	--	--	173.50
TOTALS	(CARRIED TO SHEET NO. 32.)		NOTE: * - average				155.54		6142.7	29.5		14.0		2780.3	11.6		8.4		5.4	14,597.97	676.51

CALCULATED KSP
CHECKED SHG

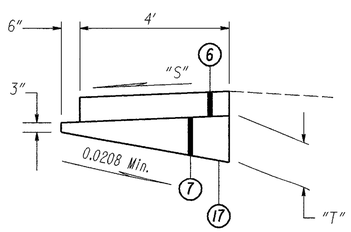
MEDIAN SHOULDER RECONSTRUCTION QUANTITIES



	T	S	Exc. End Area (Sq. Ft.)
A	6 3/8"	0.0417	4.43
B	15"	0.0417	6.05
C	8 5/8"	0.083	4.85
D	6 3/4"	0.0480	4.49
E	6 3/4"	0.0475	4.49

DETAIL 1

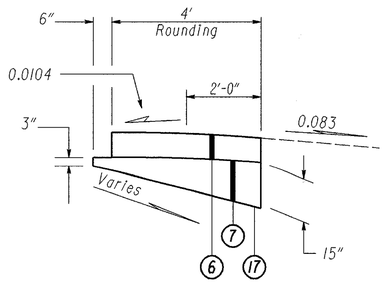
Low side, and High side for pavement slope < 0.0283



	T	S	Exc. End Area (Sq. Ft.)
A	15"	0.032	6.05
B	6 3/8"	0.0475	4.43
C	15"	0.0475	6.05
D	15"	0.059	6.05

DETAIL 2

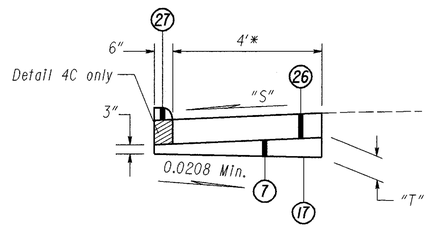
High side for pavement slope > 0.0283



Average end area = 5.77 Sq. Ft.

DETAIL 3

High side



	T	S	Exc. End Area (Sq. Ft.)
A	6 3/8"	0.0417	4.76
B	15"	0.0417	6.38
C	6 5/8"	0.0417	8.28
D	6 3/4"	0.0480	4.82

* 6' width for Detail 4C

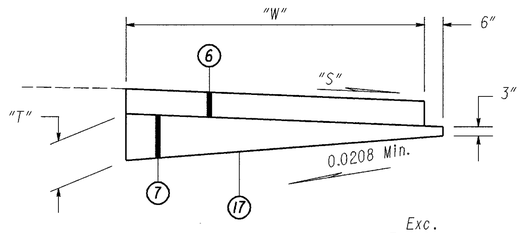
DETAIL 4

LEGEND

- (6) Item 452 - 8" Plain Concrete Pavement
- (7) Item 304 - Aggregate Base
- (17) Item 203 - Subgrade Compaction
- (26) Item 452 - 9" Plain Concrete Pavement
- (27) Item 609 - Curb, Type 4-A (Detail 4C only)

JEF-22-3.86

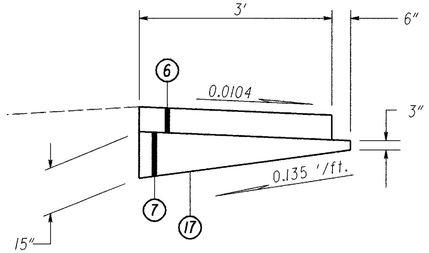
LOCATION	STATION FROM	STATION TO	LENGTH Lin. Ft.	WIDTH Lin. Ft.	AREA Sq. Yd.	END AREA DETAIL NO.	203 END AREA Sq. Ft.	203 EXCAVATION Cu. Yd.	203 SUBGRADE COMPACTION Sq. Yd.	301 THICKNESS Inch	301 BITUMINOUS AGGREGATE BASE, AC-20 Cu. Yd.	304 THICKNESS # Inch	304 AGGREGATE BASE Cu. Yd.	448 THICKNESS Inch	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20 Cu. Yd.	448 THICKNESS Inch	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN Cu. Yd.	452 8" PLAIN CONCRETE PAVEMENT Sq. Yd.	SEE SHEET NO.
RAMP OUTSIDE																			
Ramp "A"	2+20.00	2+70.00	50.00	7*	38.89	1F to 1G	9.08*	16.8	38.89	--	--	6.94	8.0	--	--	--	--	38.89	
	2+70.00	4+50.00	180.00	6	120.00	1G	7.46	49.7	120.00	--	--	6.38	23.0	--	--	--	--	120.00	
	4+50.00	5+61.00	111.00	6	74.00	1G to 1A	7.21*	29.6	74.00	--	--	5.91	13.2	--	--	--	--	74.00	
	5+61.00	11+01.88	540.88	6	360.59	1A	6.95	139.2	360.59	--	--	5.44	59.0	--	--	--	--	360.59	
Feather	11+01.88	11+40.59	Area 3S		26.08	1B	8.88	13.0	26.08	6.00	4.4	9.00	6.5	1.75	1.3	1.25	0.9	--	53
	11+40.59	11+83.09	Area 2S		36.27	1B	8.88	16.0	36.27	3.88*	3.9	9.00	9.1	1.75	1.8	1.25	1.3	--	53
	11+83.09	11+95.59	Area 1S		50.98	1B	8.88	18.6	50.98	--	--	9.00	12.8	2.88*	4.1	1.25	1.8	--	53
Feather	11+60.84	11+73.34	Area 1S		44.52	1B	8.88	16.2	44.52	--	--	9.00	11.1	2.88*	3.6	1.25	1.6	--	53
	11+73.34	12+15.84	Area 2S		39.31	1B	8.88	17.3	39.31	3.88*	4.2	9.00	9.8	1.75	1.9	1.25	1.4	--	53
	12+15.84	12+25.98	Area 3S		6.72	1B	8.88	3.4	6.72	6.00	1.1	9.00	1.7	1.75	0.3	1.25	0.2	--	53
Ramp "B"	12+25.98	15+50.00	324.02	6	216.01	1B	8.88	106.6	216.01	--	--	5.44	35.4	--	--	--	--	216.01	
	15+50.00	21+32.39	582.39	6	388.26	1A	6.95	149.9	388.26	--	--	5.91	69.0	--	--	--	--	388.26	
	21+32.39	21+82.39	50.00	7*	38.89	1A to 1C	8.33*	15.4	38.89	--	--	5.81	6.7	--	--	--	--	38.89	
Ramp "C"	4+42.75	4+92.75	50.00	7*	38.89	1C to 1A	8.33*	15.4	38.89	--	--	5.81	6.7	--	--	--	--	38.89	
	4+92.75	11+19.89	627.14	6	418.09	1A	6.95	161.4	418.09	--	--	5.91	68.6	--	--	--	--	418.09	
Feather	11+19.89	11+36.68	Area 3S		11.59	1B	8.88	5.8	11.59	6.00	1.9	9.00	2.9	1.75	0.6	1.25	0.4	--	53
	11+36.68	11+79.18	Area 2S		41.23	1B	8.88	18.2	41.23	3.88*	4.4	9.00	10.3	1.75	2.0	1.25	1.4	--	53
	11+79.18	11+91.68	Area 1S		43.24	1B	8.88	15.8	43.24	--	--	9.00	10.8	2.88*	3.5	1.25	1.5	--	53
Feather	11+84.90	11+97.40	Area 1S		50.66	1B	8.88	18.5	50.66	--	--	9.00	12.7	2.88*	4.1	1.25	1.8	--	53
	11+97.40	12+39.90	Area 2S		36.42	1B	8.88	16.1	36.42	3.88*	3.9	9.00	9.1	1.75	1.8	1.25	1.3	--	53
	12+39.90	12+74.14	Area 3S		23.95	1B	8.88	12.0	23.95	6.00	4.0	9.00	6.0	1.75	1.2	1.25	0.8	--	53
Ramp "D"	12+74.14	19+22.00	647.86	6	431.91	1A	6.95	166.8	431.91	--	--	5.44	70.7	--	--	--	--	431.91	
	19+22.00	20+50.00	128.00	6	85.33	1A to 1G	7.21*	34.2	85.33	--	--	5.91	15.2	--	--	--	--	85.33	
	20+50.00	23+00.00	250.00	6	166.67	1G	7.46	69.1	166.67	--	--	6.38	32.0	--	--	--	--	166.67	
	23+00.00	23+50.00	50.00	7*	38.89	1G to 1E	8.87*	16.4	38.89	--	--	6.69	7.7	--	--	--	--	38.89	
RAMP INSIDE																			
Ramp "A"	4+04.00	4+50.00	46.00	3	15.33	3	4.71	8.0	--	--	--	9.00	4.5	--	--	--	--	15.33	
	4+50.00	5+00.00	50.00	3	16.67	3 to 2	4.67*	8.7	--	--	--	9.00	4.9	--	--	--	--	16.67	
	5+00.00	6+20.00	120.00	3	40.00	2 to 1D	4.63*	20.6	--	--	--	9.00	11.7	--	--	--	--	40.00	
	6+20.00	11+01.88	481.88	3	160.63	1D	4.63	82.6	--	--	--	9.00	46.9	--	--	--	--	160.63	
Ramp "B"	12+25.98	21+82.39	956.41	3	318.80	1D	4.63	164.0	--	--	--	9.00	93.0	--	--	--	--	318.80	
Ramp "C"	4+42.75	11+19.89	677.14	3	225.71	1D	4.63	116.1	--	--	--	9.00	65.8	--	--	--	--	225.71	
Ramp "D"	12+74.14	18+78.70	604.56	3	201.52	1D	4.63	103.7	--	--	--	9.00	58.8	--	--	--	--	201.52	
	18+78.70	19+81.70	103.00	3	34.33	1D to 2	4.63*	17.7	--	--	--	9.00	10.0	--	--	--	--	34.33	
	19+81.70	20+50.00	68.30	3	22.77	2 to 3	4.67*	11.8	--	--	--	9.00	6.6	--	--	--	--	22.77	
	20+50.00	21+60.90	110.90	3	36.97	3	4.71	19.4	--	--	--	9.00	10.8	--	--	--	--	36.97	
TOTALS	(CARRIED TO SHEET NO. 32.)		NOTE: * - average					1694.0	2827.39	X	27.8	X	831.0	X	26.2	X	14.4	3489.15	



	W	T	S	Exc. End Area (Sq. Ft.)
A	6'	7 7/8"	0.0417	6.95
B	6'	15"	0.0417	8.88
C	8'	9 3/8"	0.0417	9.71
D	3'	15"	0.0417	4.63
E	8'	11"	0.057	10.27
F	8'	12"	0.069	10.70
G	6'	9 3/4"	0.066	7.46

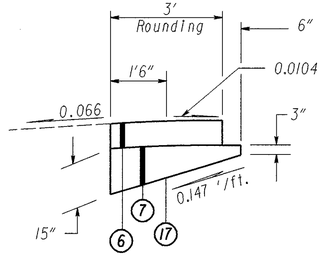
DETAIL 1

Low side, and High side for pavement slope < 0.0283
(See sheet no. 5 for Shoulder Typical In Feather Area)



Average end area = 4.63 sq. ft.

DETAIL 2



Average end area = 4.71 Sq. Ft.

DETAIL 3

LEGEND

6 — Item 452 - 8" Plain Concrete Pavement
7 — Item 304 - Aggregate Base
17 — Item 203 - Subgrade Compaction

CALCULATED KSP
CHECKED SHG

RAMP SHOULDER RECONSTRUCTION QUANTITIES

JEF-22-3.86

STATION FROM	STATION TO	SIDE	ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	ITEM 603 6" CONDUIT TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35, SS 931, OR SS 944 LIN. FT.	OUTLET STATION	PLUG STATION	BENDS AND BRANCHES 90° BENDS EA.	45° WYE EA.	TEE EA.	COMMENTS
							204+00			1	
				1	9	206+00				1	
204+00	226+50	EASTBOUND OUTSIDE	2250	1	10	213+00				1	
				1	10	218+10				1	
				1	12	226+50		1			
							231+00				
				1	12	241+00				1	
				1	10	247+25				1	
				1	10	252+50				1	
231+00	285+00		5400	1	10	261+00				1	
				1	8	263+07				1	Sag outlet
				1	10	265+50				1	
				1	9	269+25				1	
				1	9	278+00				1	
							285+00				
				1	9	329+00				1	Continued from Ramp "D"
323+50	345+10		2160	1	8	334+00				1	
				1	10	339+10				1	
				1	10	345+10		1			
358+25	368+25		1000				358+25				
				1	12	368+25		1			
							241+75				
					19	247+01				1	
					19	253+00				1	
					19	263+07				1	Sag outlet
241+75	319+44	EASTBOUND MEDIAN	7769		19	269+01				1	
					19	279+00				1	
					19	287+00				1	
					19	297+51				1	
					19	305+51				1	
					19	319+50		1			
							342+75				
					19	345+01				1	
342+75	368+06		2531		19	355+00				1	
					19	364+00				1	
					21	368+05		1			
376+15 61+57 AH	380+52.39 BK 68+05		1086				376+15				
					19	380+00				1	Sag outlet
							68+05				
							241+50				
				1	20	247+00				1	
				1	21	253+40				1	
				1	20	263+07				1	Sag outlet
241+50	302+20	WESTBOUND OUTSIDE	6070	1	20	268+00				1	
				1	16	274+00				1	
				1	20	279+50				1	
				1	21	288+50				1	
				1	18	298+00				1	Continued from Ramp "A"
321+87.68	324+00		169	1	18	324+00				1	Continued from Ramp "B"
358+00	368+00		1000				358+00				
				1		368+00				1	
							204+00				
					19	213+00				1	
					19	218+00				1	
					19	226+99				1	
					19	237+00				1	
204+00	285+00		8100		19	247+00				1	
					19	252+99				1	
					19	263+07				1	Sag outlet
					19	269+00				1	
					19	278+99				1	
							285+00				
					19	305+51		1			
					19	319+50				1	
					19	329+50				1	
305+51	368+05	WESTBOUND MEDIAN	6254		19	337+00				1	
					19	345+00				1	
					19	355+00				1	
					19	364+00				1	
					19	368+04		1			
							376+43				
376+42.25	380+52.39		409		19	380+00				1	
							380+52				
2+20	11+00	RAMP "A"	880	1	18	3+00				1	Continued from mainline
							11+00				
15+50	21+82.39	RAMP "B"	633				15+50				Continued to mainline
							3+20				
3+20	11+00	RAMP "C"	780	1	15	4+50				1	Sag outlet
				1	18	8+00				1	
							11+00				
							12+74				
12+74	23+50	RAMP "D"	1224	1	22	17+00				1	
				1	17	23+00				1	Continued to mainline
TOTALS	QUANTITIES CARRIED TO GENERAL SUMMARY		47715	32	1042			7*		58*	* Not Carried To General Summary

CATCH BASIN & STORM SEWER QUANTITIES

REFERENCE NO.	PLAN SHEET NO.	STATION	SIDE	EXISTING CATCH BASIN TYPE	ITEM 202				ITEM 603		ITEM 604			SEE SHEET NO.
					PIPE REMOVED, 24" AND UNDER	CATCH BASIN CLEANOUT	CATCH BASIN REMOVED	CATCH BASIN ABANDONED	12" CONDUIT, TYPE C	15" CONDUIT, TYPE C	CATCH BASIN ADJUSTED TO GRADE	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	CATCH BASIN, NO. 8	
					LIN. FT.	EACH	EACH	EACH	LIN. FT.	LIN. FT.	EACH	EACH	EACH	
1-CB	39	213+00	℄	No. 8		1						1		
2-CB	40	218+60	℄	No. 8		1						1		
3-CB	40	227+10	℄	No. 8		1						1		
4-CB	40	237+00	℄	No. 8		1						1		
5-CB	40	240+00	℄	No. 8		1						1		
6-CB	41	247+00	℄	No. 8		1						1		
7-CB	41	253+50	℄	No. 8		1						1		
8-CB	41	262+00	℄	No. 8		1						1		
9-CB	41	263+00	℄	No. 8		1						1		
10-CB	41	269+00	℄	No. 8		1						1		
11-CB	42	279+00	℄	No. 8		1						1		
12-CB	42	287+50	℄	No. 8		1						1		
13-CB	42	297+50	℄	No. 8		1						1		
14-CB	43	305+50	LT.	No. 5		1						1		
15-CB	43	305+50	℄	No. 8		1						1		
16-CB	43	305+50	RT.	No. 5		1						1		
17-CB	43	319+50	℄	No. 8		1						1		
18-CB	43	320+50	RT.	No. 5		1						1		
19-CB	43	321+32	LT.	No. 8		1						1		
20-CB	44	329+50	℄	No. 8		1						1		
21-CB	44	337+00	℄	No. 8		1						1		
22-CB	44	339+00	℄	No. 8		1						1		
23-CB	44	345+00	℄	No. 8		1						1		
24-CB	44	355+00	℄	No. 8		1						1		
25-CB	45	358+00	℄	No. 8		1						1		
26-CB	45	361+00	℄	No. 8		1						1		
27-CB	45	364+00	℄	No. 8		1						1		
28-CB	45	368+05	℄	No. 2-2-B							1			
29-CB	45	376+40	℄	No. 2-2-B							1			
30-CB	45	378+50	℄	No. 8				1						
31-CB	45	380+00	℄	No. 8		1						1		
1-SS	43	309+50	℄	No. 8					400.0				1	55
2-SS	45	367+00	LT.	No. 8	20		1			20			1	55
TOTALS	(CARRIED TO GENERAL SUMMARY)				20	28	1	1	400.0	20	2	28	2	

APPROACH SLAB QUANTITIES

REF. NO.	PLAN SHEET NO.	STATION FROM	STATION TO	LENGTH	202 APPROACH SLAB REMOVED	203 EXCAVATION	304 AGGREGATE BASE	611 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN
				Lin. Ft.	SQ. YD.	CU. YD.	CU. YD.	SQ. YD.
1-AS	45	368+05.16	368+30.16	25	66.67	37.0	18.5	111.11
2-AS	45	368+40.20	368+65.20	25	66.67	37.0	18.5	111.11
3-AS	45	375+89.57	376+14.57	25	66.67	37.0	18.5	111.11
4-AS	45	376+16.60	3.37+41.60	25	66.67	37.0	18.5	111.11
TOTALS	QUANTITIES CARRIED TO GENERAL SUMMARY				266.68	148.0	74.0	444.44

APPROACH SLAB CALCULATIONS

ITEM 202-Approach Slab Removed

25'x24'÷9=66.67 Sq. Yd.

Item 203-Excavation

25'x24'x6"÷12÷27=11.11 Cu. Yd.

25'x16'x21'÷12÷27=25.9 Cu.Yd.

Total 37.0 Cu.Yd.

Item 304-Aggregate Base

25'x40'x6"÷12÷27=18.51 Cu.Yd.

Item 611-Reinforced Approach Slab

25'x40'÷9=111.11 Sq.Yd.

C.R. 22 SHOULDER RESURFACING QUANTITIES

LOCATION	STATION FROM	STATION TO	LENGTH	WIDTH	AREA	617 THICKNESS *	617 COMPACTED AGGREGATE, TYPE A	617 WATER at 1.5 GAL./C.Y.
			Lin. Ft.	Lin. Ft.	Sq. Yd.	Inch	Cu. Yd.	M Gal.
C.R. 22A								
Feather	6+76.34	7+63.84	87.50	4.00	38.89	0.88	1.0	0.002
Southbound	7+63.84	7+69.07	5.23	4.00	2.32	1.75	0.1	0.001
	9+22.07	9+34.25	12.18	4.00	5.41	1.75	0.3	0.001
Feather	9+34.25	10+09.25	75.00	4.00	33.33	2.38	2.2	0.003
	Br. No. JEF-22-0590 (no work)							
Feather	12+60.75	13+35.75	75.00	4.00	33.33	2.38	2.2	0.003
Southbound	13+35.75	13+38.86	3.11	4.00	1.38	1.75	0.1	0.001
	14+94.85	15+03.28	8.43	4.00	3.75	1.75	0.2	0.001
Feather	15+03.28	15+90.78	87.50	4.00	38.89	0.88	1.0	0.002
Feather	6+76.34	7+63.84	87.50	4.00	38.89	0.88	1.0	0.001
Northbound	9+14.65	9+34.25	19.60	4.00	8.71	1.75	0.4	0.001
Feather	9+34.25	10+09.25	75.00	4.00	33.33	2.38	2.2	0.001
	Br. No. JEF-22-0590 (no work)							
Feather	12+60.75	13+35.75	75.00	4.00	33.33	2.38	2.2	0.002
Northbound	13+35.75	13+50.52	14.77	4.00	6.56	1.75	0.3	0.001
Feather	15+03.52	15+90.78	87.50	4.00	38.89	0.88	1.0	0.001
TOTALS	(CARRIED TO GENERAL SUMMARY)	NOTE: * - average					14.2	0.022

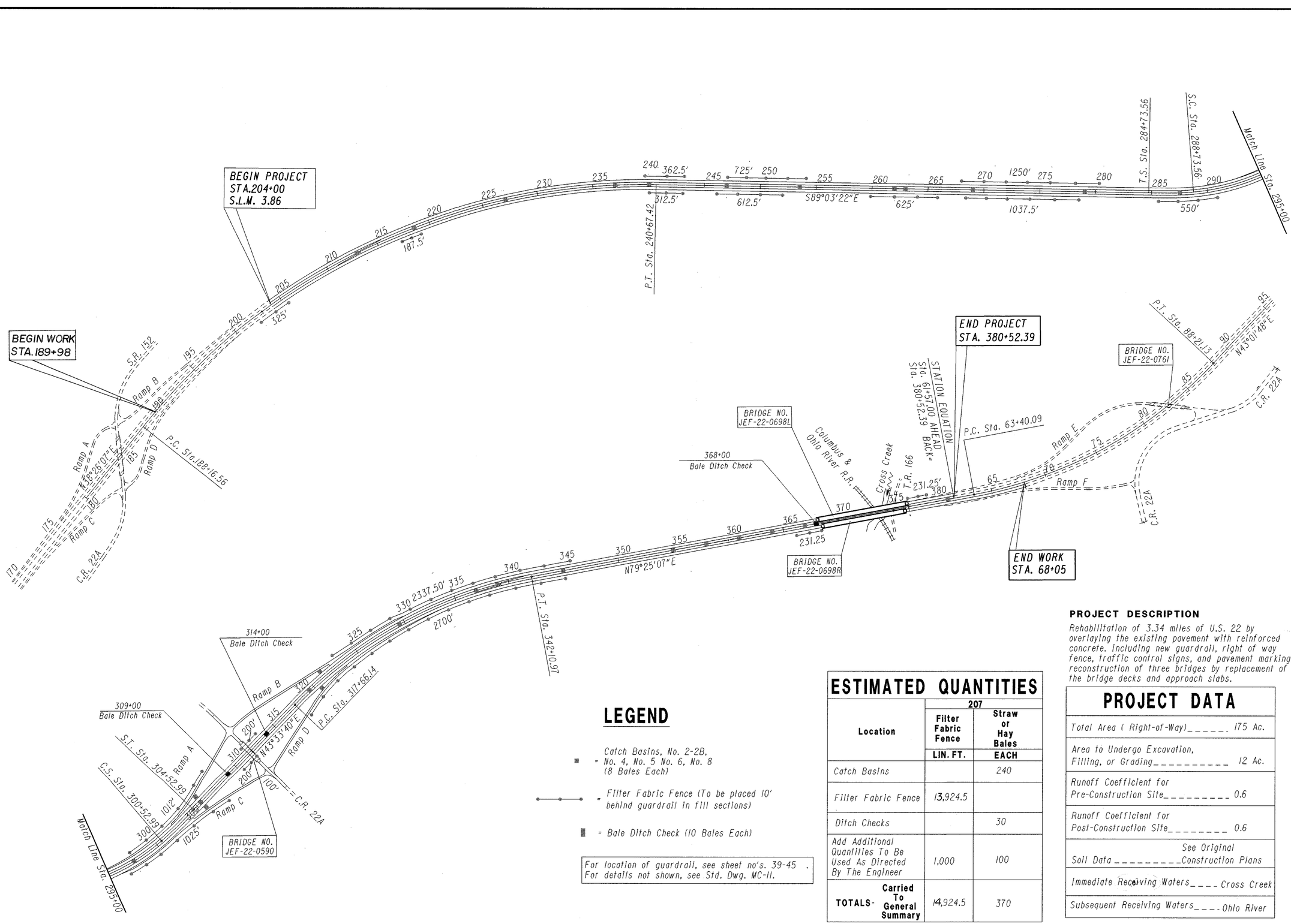
PRESSURE RELIEF JOINT, SODDING, RIPRAP, UNDERDRAIN AND CURB QUANTITIES

REF. NO.	PLAN SHEET NO.	STATION FROM	STATION TO	SIDE	202 STRUCTURE REMOVED	601 RIPRAP, USING 6" REINFORCED CONCRETE SLAB	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM D3034, SDR35, SS 931 OR SS 944	605 6" SHALLOW PIPE UNDERDRAIN 707.01 TYPE III OR 707.21 TYPE III	609 CURB, TYPE 4-A	660 REINFORCED SODDING	SPECIAL PRESSURE RELIEF JOINT TYPE A	SPECIAL PRECAST REINFORCED CONCRETE OUTLET
					LUMP	SQ. YD.	LIN.FT.	LIN.FT.	LIN.FT.	SQ. YD.	LIN.FT.	EACH
1-C	45	376+14.57	376+34.99	RT.					20.4			
2-C	45	376+41.60	376+62.02	LT.					20.4			
1-J	45	367+92		LT.							36	
2-J	45	368+27		RT.							36	
3-J	45	376+28		RT.							38	
4-J	45	376+55		LT.							39	
1-RP	45	376+36	376+56	LT.	LUMP	31						
1-SD	45	376+37		RT.						10.0		
2-SD	45	376+64		LT.						10.0		
1-UD	45	367+88		LT.			10	37				1
2-UD	45	368+23		RT.			10	42				1
3-UD	45	376+32		RT.			10	39				1
4-UD	45	376+59		LT.			10	36				1
TOTALS	QUANTITIES CARRIED TO GENERAL SUMMARY				LUMP	31	40	154	40.8	20.0	149	4

CALCULATED KSP CHECKED JEH

MISCELLANEOUS QUANTITIES

JEF-22-3.86



LEGEND

- ■ = Catch Basins, No. 2-2B, No. 4, No. 5 No. 6, No. 8 (8 Bales Each)
- ——— = Filter Fabric Fence (To be placed 10' behind guardrail in fill sections)
- ▮ = Bale Ditch Check (10 Bales Each)

For location of guardrail, see sheet no's. 39-45 .
For details not shown, see Std. Dwg. MC-11.

ESTIMATED QUANTITIES

Location	207 Filter Fabric Fence LIN. FT.	207 Straw or Hay Bales EACH
Catch Basins		240
Filter Fabric Fence	13,924.5	
Ditch Checks		30
Add Additional Quantities To Be Used As Directed By The Engineer	1,000	100
TOTALS- Carried To General Summary	14,924.5	370

PROJECT DESCRIPTION

Rehabilitation of 3.34 miles of U.S. 22 by overlaying the existing pavement with reinforced concrete. Including new guardrail, right of way fence, traffic control signs, and pavement marking; reconstruction of three bridges by replacement of the bridge decks and approach slabs.

PROJECT DATA

Total Area (Right-of-Way)	175 Ac.
Area to Undergo Excavation, Filling, or Grading	12 Ac.
Runoff Coefficient for Pre-Construction Site	0.6
Runoff Coefficient for Post-Construction Site	0.6
Soil Data	See Original Construction Plans
Immediate Receiving Waters	Cross Creek
Subsequent Receiving Waters	Ohio River

HORIZONTAL SCALE IN FEET
0 200 400 800

CALCULATED JEH
CHECKED SHG

STORM WATER POLLUTION PREVENTION PLAN
STA. 185+00 TO STA. 380+00

JEF-22-3.86

38
114

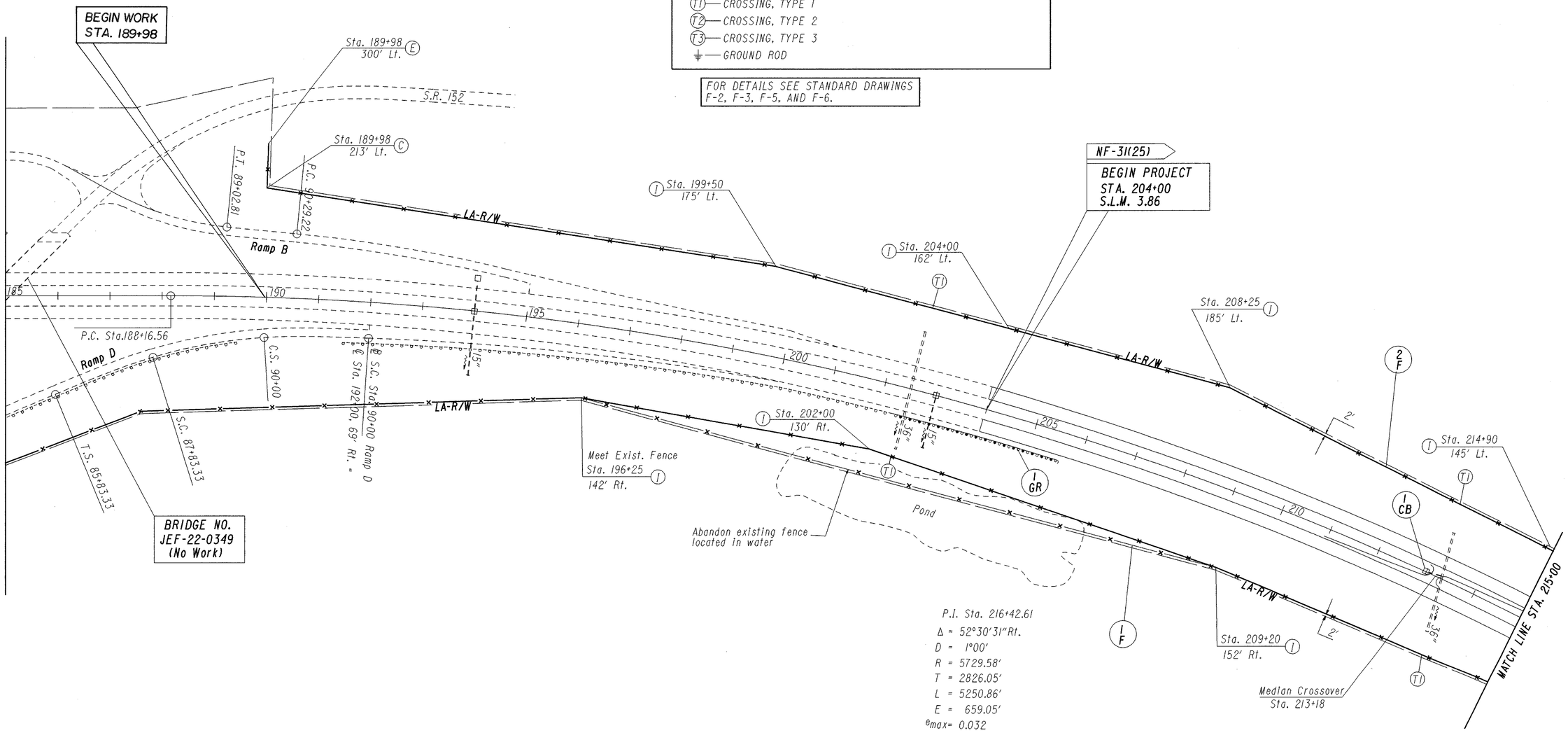
JEH 6022031A V1-L1

Fence Legend Applies To Sheet 39 Thru 46

FENCE LEGEND

- (C) — CORNER POST ASSEMBLY
- (E) — END POST ASSEMBLY
- (I) — INTERMEDIATE ANCHOR POST ASSEMBLY
- (L) — WOOD POST OR CONCRETE ENCASED STEEL LINE POST
- (TA) — FENCE TERMINAL (TYPE A)
- (TE) — FENCE TERMINAL (TYPE E)
- (A) — ABUTMENT CONNECTION
- (W) — WALL CONNECTION (TYPE D)
- (F) — FUTURE MAINTENANCE OPENING
- (T1) — CROSSING, TYPE 1
- (T2) — CROSSING, TYPE 2
- (T3) — CROSSING, TYPE 3
- ⏚ — GROUND ROD

FOR DETAILS SEE STANDARD DRAWINGS F-2, F-3, F-5, AND F-6.



For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

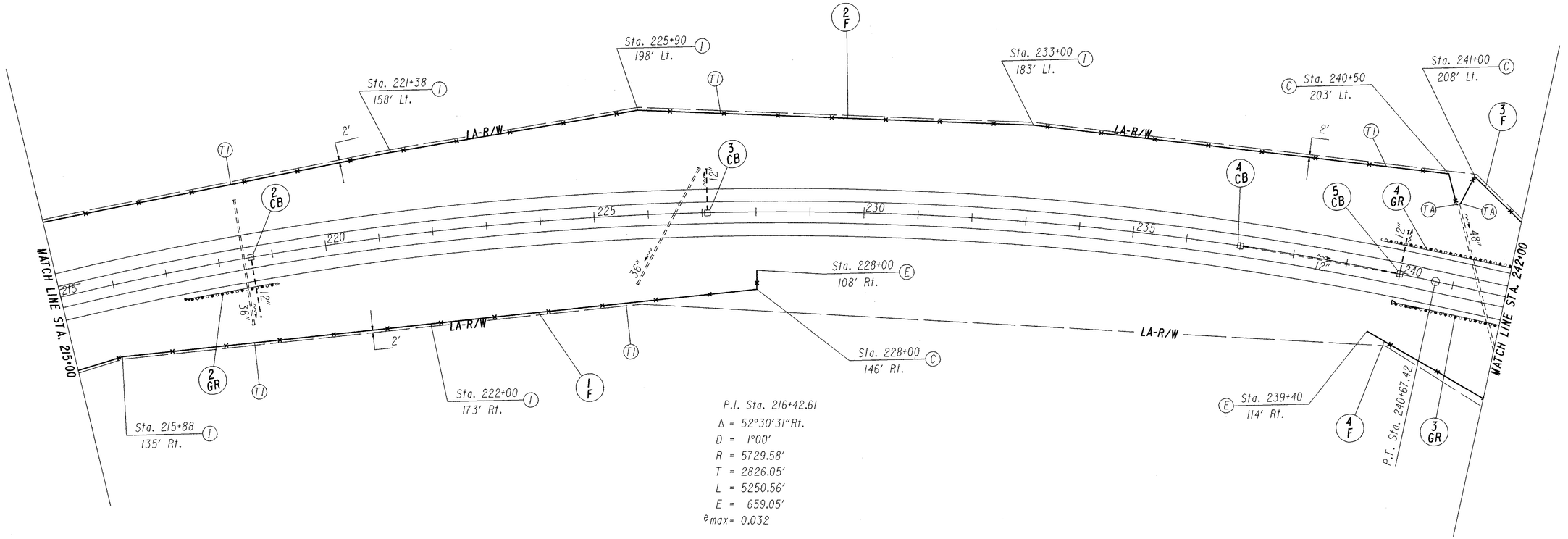
HORIZONTAL SCALE IN FEET
0 50 100 200
CALCULATED
CHECKED

STA. 185+00 TO STA. 215+00

JEF-22-3.86

39
114

JEH 6022031A VI-1



P.I. Sta. 216+42.61
Δ = 52°30'31"Rt.
D = 1°00'
R = 5729.58'
T = 2826.05'
L = 5250.56'
E = 659.05'
e_{max} = 0.032

For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

N

0 50 100 200
HORIZONTAL SCALE IN FEET

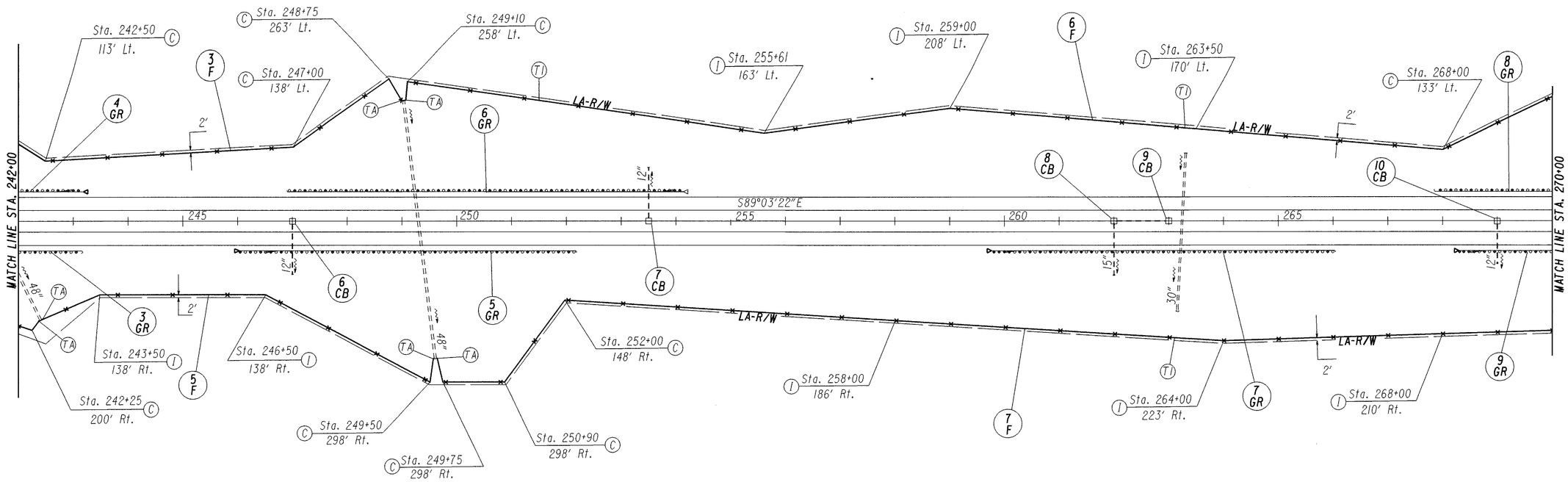
CALCULATED
CHECKED

STA. 215+00 TO STA. 242+00

JEF-22-3.86

40
114

JEH 602203IB V1-1



For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED
CHECKED

STA. 242+00 TO STA. 270+00

JEF-22-3.86

41
114

JEH 602203IC V1-1

P.I. Sta. 295+13.05

Δ = 47°22'58" Lt.
Δc = 35°22'58" Lt.
Dc = 3°00'
Rc = 1909.86'
Tc = 609.19
Lc = 1179.42

Ls = 400.00'
θs = 6°00'
Ts = 1039.48'
Es = 179.59
P = 3.49'
K = 199.93'
LT = 266.82'
ST = 133.47'
emax = 0.083

N

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED
CHECKED

STA. 270+00 TO STA. 300+00

JEF-22-3.86

42
114

MATCH LINE STA. 270+00

MATCH LINE STA. 300+00

LA-R/W

S89°03'22"E

270 275 280 285 290 295

Sta. 271+00 (I) 278' Lt.
Sta. 277+30 (I) 248' Lt.
Sta. 280+00 (I) 123' Lt.
Sta. 284+73.56 (I) 183' Lt.
T.S. Sta. 284+73.56
S.C. Sta. 288+73.56
Sta. 290+65 (C) 125' Lt.
End Type 47 Fence
Begin Type CLT Fence
Sta. 292+60 (C) 206' Lt.
End Type CLT Fence
Begin Type 47 Fence
Sta. 295+42 (C) 141' Lt.

Highland Drive
Culdesac
Highland Park

Median Crossover
Sta. 278+76

14' Gate, Type 47

Power Line

Sta. 272+00 (C) 198' Rt.
Sta. 273+50 (C) 303' Rt.
Sta. 274+25 (C) 322' Rt.
Sta. 276+43 (C) 173' Rt.
Sta. 281+75 (I) 174' Rt.
Sta. 288+00 (tan) (C) 205' Rt.
Sta. 289+25 (C) 323' Rt.
Sta. 291+76 (I) 150' Rt.
Sta. 294+00 (I) 238' Rt.
Sta. 296+39 (I) 216' Rt.

8 GR
9 GR
10 GR
11 GR
12 GR
13 CB
11 CB
12 CB
6 F
8 F
7 F

For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

JEH 6022031D V1-1

P.I. Sta. 295+13.05

Δ = 47°22'58"Lt.
Δc = 35°22'58"Lt.
Dc = 3°00'
Rc = 1909.86'
Tc = 609.19
Lc = 1179.42

Ls = 400.00'
θs = 6°00'
Ts = 1039.48'
Es = 179.59
P = 3.49'
K = 199.93'
LT = 266.82'
ST = 133.47'
emax = 0.083

End Type CLT Fence
(E) Sta. 310+91
573' Lt.

Begin Type CLT Fence
(E) Sta. 312+79
585' Lt.

C.S. Sta. 5+54.83

C.R. 224

Sta. 312+99 (C)
384' Lt.

End Type 47 Fence
Begin Type CLT Fence
Sta. 308+00 (E)
251' Lt.

(C) Sta. 310+51
349' Lt.

(C) Sta. 302+35 (tan)
345' Lt.

(C) Sta. 301+75 (tan)
347' Lt.

S.T. Sta. 304+52.99

Sta. 304+52.99 (C)
223' Lt.

T.S. Sta. 7+54.83

Sta. 8+69.37 ℄ C.R. 22A=
Sta. 12+08.04 ℄ Ramp A=
Sta. 11+48.84 ℄ Ramp B

End Type CLT Fence
Begin Type 47 Fence
Sta. 319+00 (E)
242' Lt.

(C) Sta. 325+00
166' Lt.

(E) Sta. 325+00
166' Lt.

Sta. 322+31.46 ℄
Sta. 22+27.39 Ramp B =
P.C. Sta. 22+61.67

56' Lt. Sta. 325+95 ℄ U.S. 22
P.T. Sta. 25+95 ℄ Ramp B=

6 F
9 F
11 F
12 GR
14 CB
15 CB
16 CB
17 CB
18 CB
18 GR
19 CB
23 GR
24 GR
14 GR
16 GR
1 SS
13 GR
25 GR
26 GR
15 GR
11 GR
17 GR
8 F
10 F
12 F

TA
TA

LA-R/W

P.C. Sta. 2+20 ℄ Ramp A=
69' Lt. Sta. 302+20 ℄ U.S. 22

P.T. Sta. 15+86.67

C.S. Sta. 300+52.99

Ramp 'A'

BRIDGE NO.
JEF-22-0590

P.C. Sta. 11+71.45

P.T. Sta. 15+00.62

Ramp 'B'

N43°33'40"E

MATCH LINE STA. 300+00

MATCH LINE STA. 327+00

Sta. 4+02.45 Ramp C=
Sta. 304+00.06 ℄ U.S. 22

P.C. Sta. 1+19.80 ℄ Ramp C=
56' Rt. Sta. 301+19.80 ℄ U.S. 22

Ramp 'C'

P.C. Sta. 317+66.14

Ramp 'D'

P.C. Sta. 18+95.51

Sta. 324+00 (C)
145' Rt.

Farm Pond

Sta. 322+00 (C)
221' Rt.

Sta. 317+66 (C)
249' Rt.

Sta. 323+00 (C)
150' Rt.

Sta. 323+50 ℄
P.T. Sta. 23+50 Ramp D =

Sta. 324+00 (C)
193' Rt.

Sta. 312+99 (C)
384' Rt.

Sta. 312+79 (E)
466' Rt.
Begin Type CLT Fence

T.S. Sta. 16+99.53

Sta. 311+00 (C)
309' Rt.

P.T. Sta. 8+86.47

Sta. 310+94 (E)
466' Rt.
End Type CLT Fence

Sta. 306+00 (E)
309' Rt.
End Type 47 Fence
Begin Type CLT Fence

Sta. 301+00 (tan) (C)
433' Rt.

Sta. 300+53 (tan) (C)
411' Rt.

Sta. 296+39 (I)
216' Rt.

Sta. 14+00.37 ℄ C.R. 22A=
Sta. 12+04.08 ℄ Ramp C=
Sta. 11+72.61 ℄ Ramp D

BENCHMARK	BENCHMARK
□ Cut in Catch Basin	□ Cut in Catch Basin
Sta. 305+50± ℄	Sta. 319+43± ℄
Elev. 1127.18	Elev. 1102.79

For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

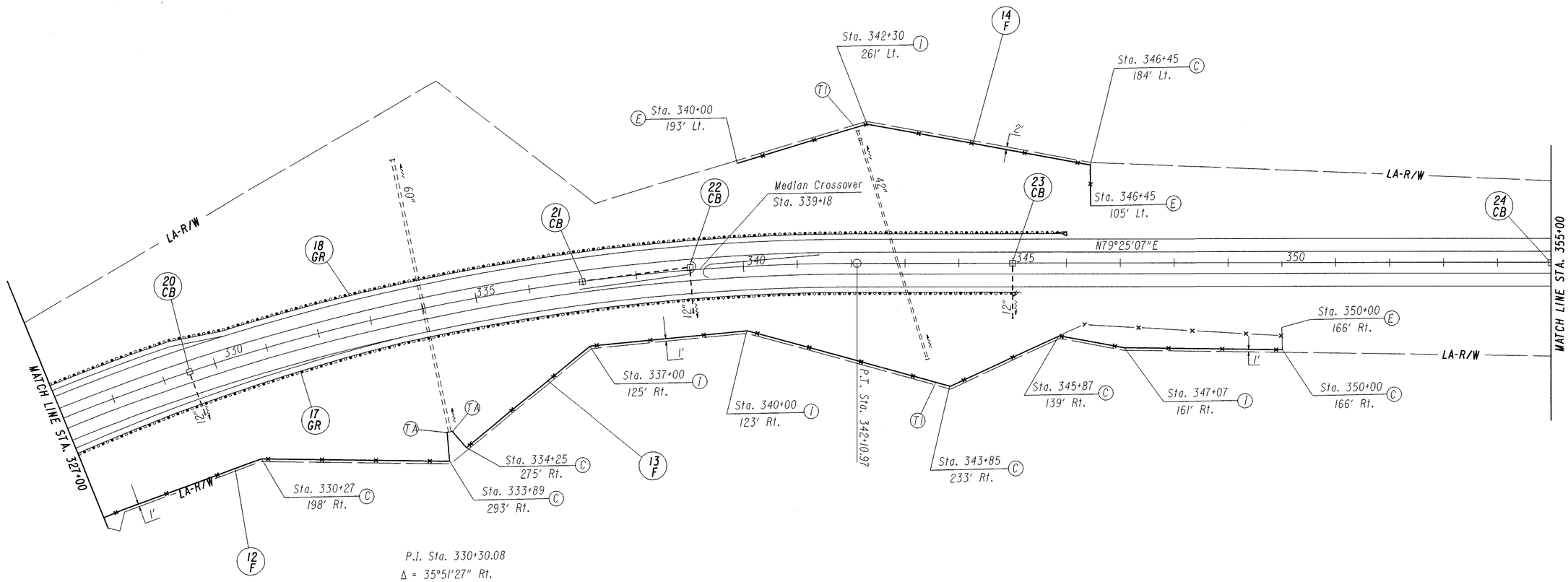
HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED
CHECKED

STA. 300+00 TO STA. 327+00

JEF-22-3.86

JEH 6022031E V1-1



P.I. Sta. 330+30.08
Δ = 35°51'27" Rt.
D = 1°28'
R = 3906.53'
T = 1263.94'
L = 2444.83'
E = 199.38
emax= 0.0475

For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

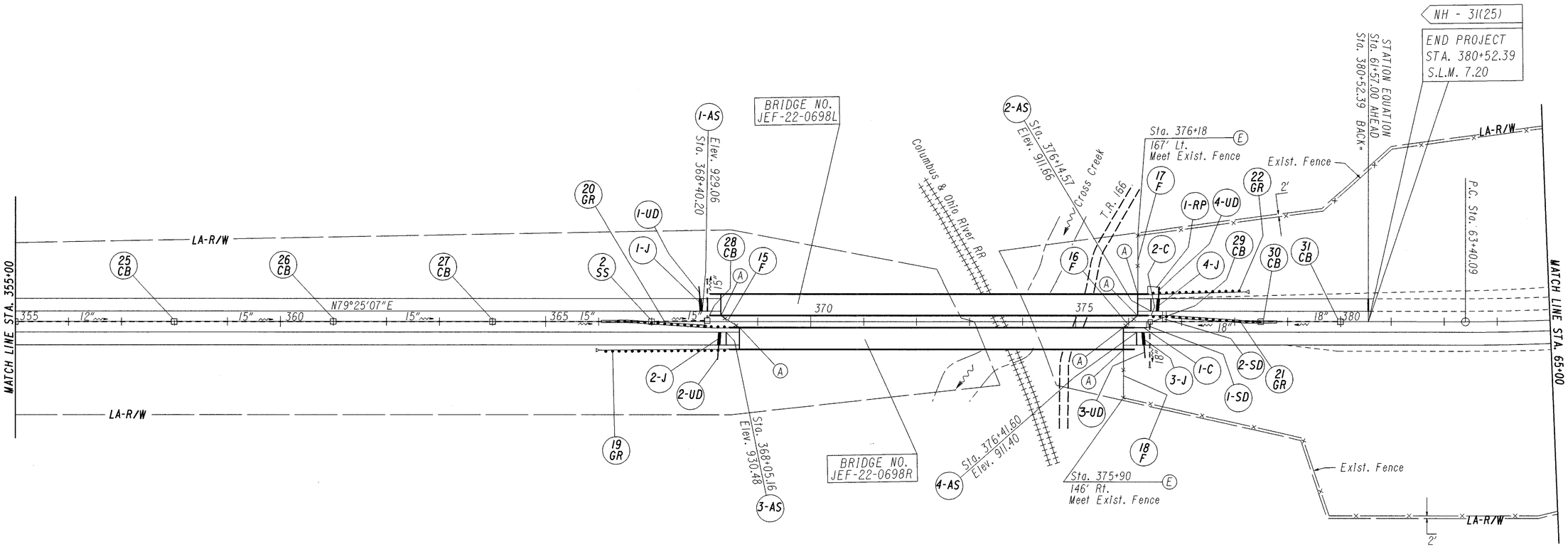
N

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

STA. 327+00 TO STA. 355+00

JEF-22-3.86



BENCHMARK	BENCHMARK
Top of iron pin and cap in median Sta. 368+00± ℄ Elev. 928.27	Top of iron pin and cap in median Sta. 376+50± ℄ Elev. 908.45

For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37
For Other quantities, see sheet no. 37

HORIZONTAL SCALE IN FEET
0 50 100 200

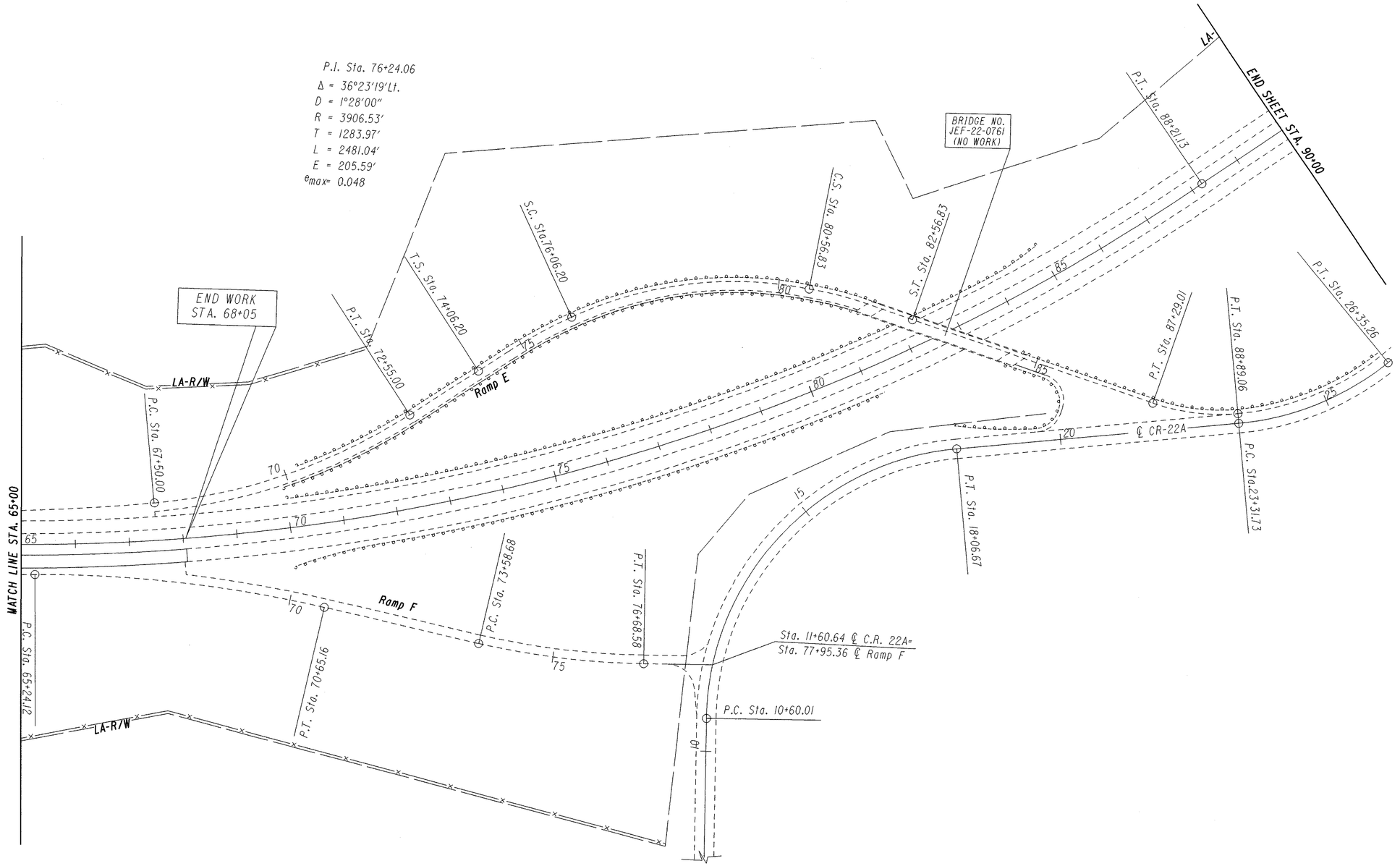
CALCULATED
CHECKED

STA. 355+00 TO STA. 65+00

JEF-22-3.86

45
114

JEH 6022031G V1-1



For Fence quantities, see sheet no. 29
For Guardrail quantities, see sheet no. 29
For Catch Basin quantities, see sheet no. 37

CALCULATED
CHECKED

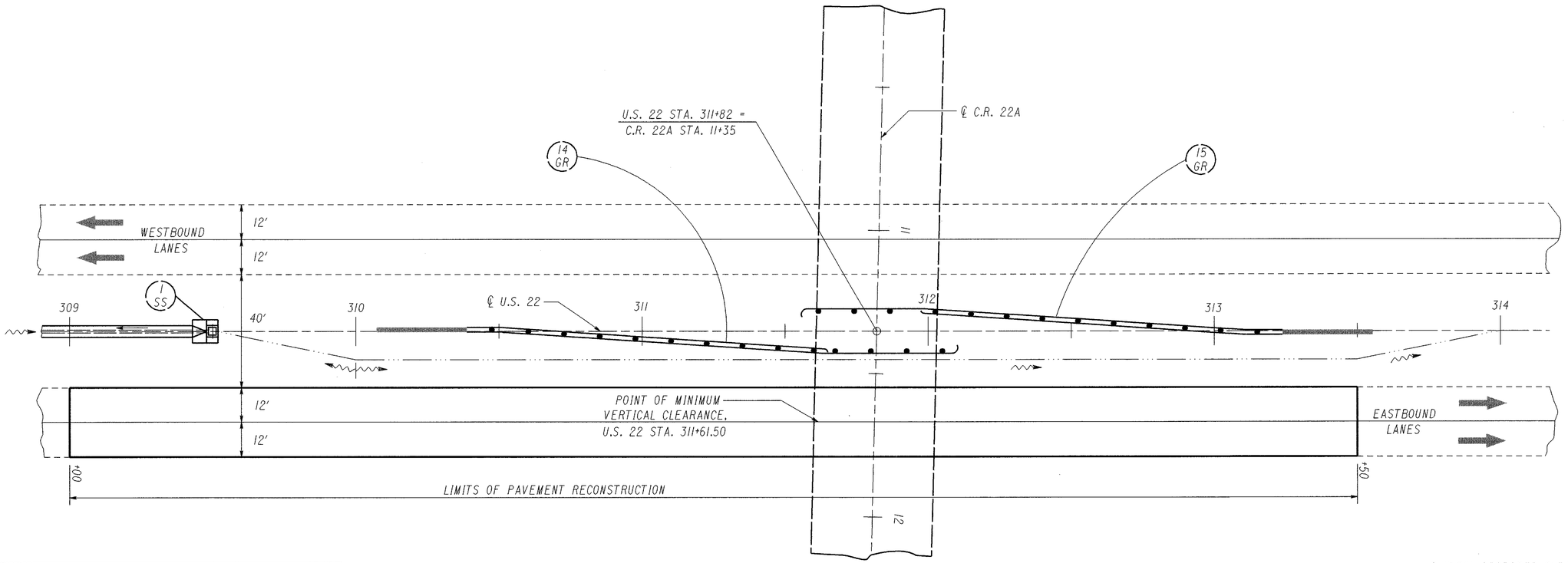
HORIZONTAL SCALE IN FEET
0 100 50 200

STA. 65+00 TO STA. 355+00

JEF-22-3.86

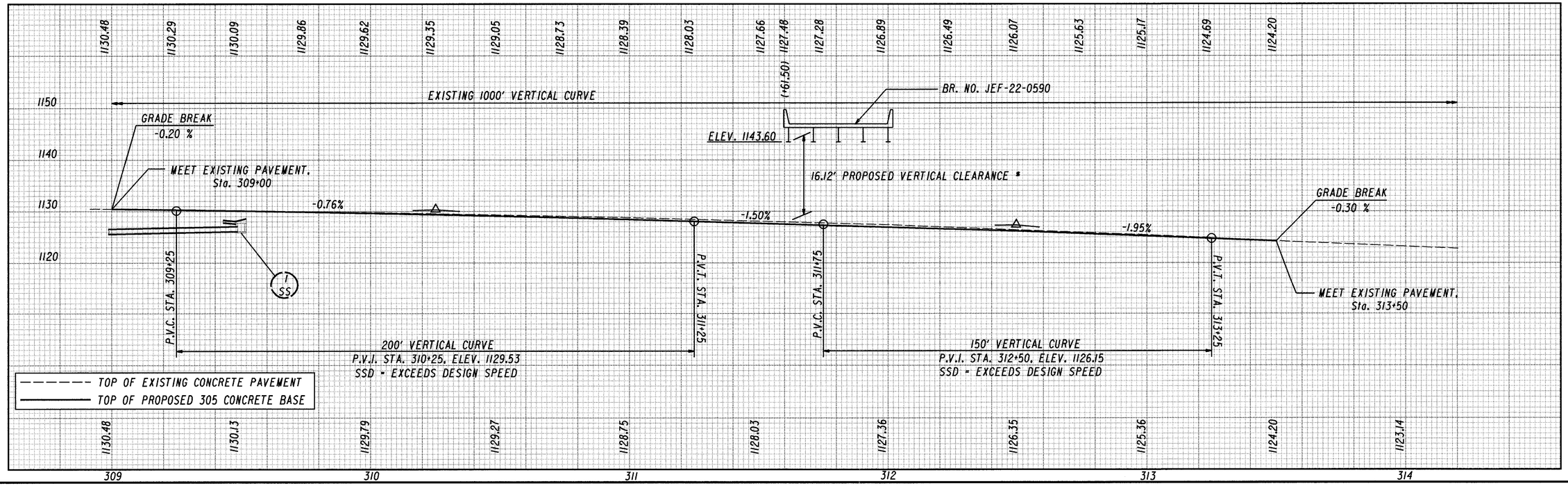
46
114

JEH 6022038 VI-1



FOR PROFILE RECONSTRUCTION QUANTITIES, SEE SHEET NO. 31.
FOR GUARDRAIL QUANTITIES, SEE SHEET NO. 29.
FOR CROSS SECTIONS, SEE SHEET NO'S. 48 & 49.
FOR I-SS DETAILS, SEE SHEET NO. 55.

* 15.00' PROPOSED CLEARANCE AFTER PLACEMENT OF CONCRETE OVERLAY AT THE POINT OF MINIMUM VERTICAL CLEARANCE.



60220307.dgn JPB

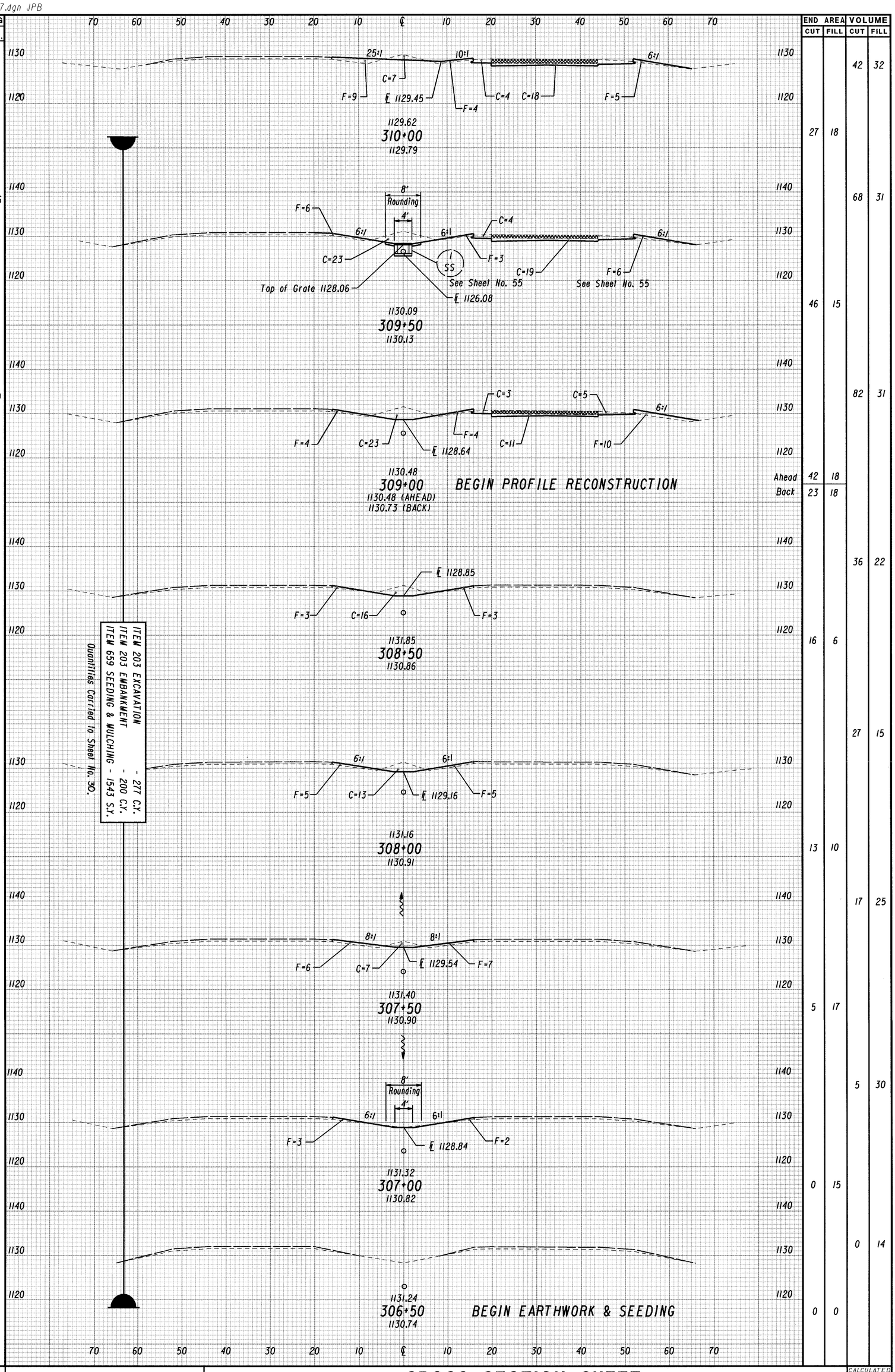
0 10 20 40 HORIZONTAL SCALE IN FEET

CALCULATED JPB CHECKED SHG

PROFILE RECONSTRUCTION STA. 309+00 TO STA. 313+50

JEF-22-3.86

60220307.dgn JPB



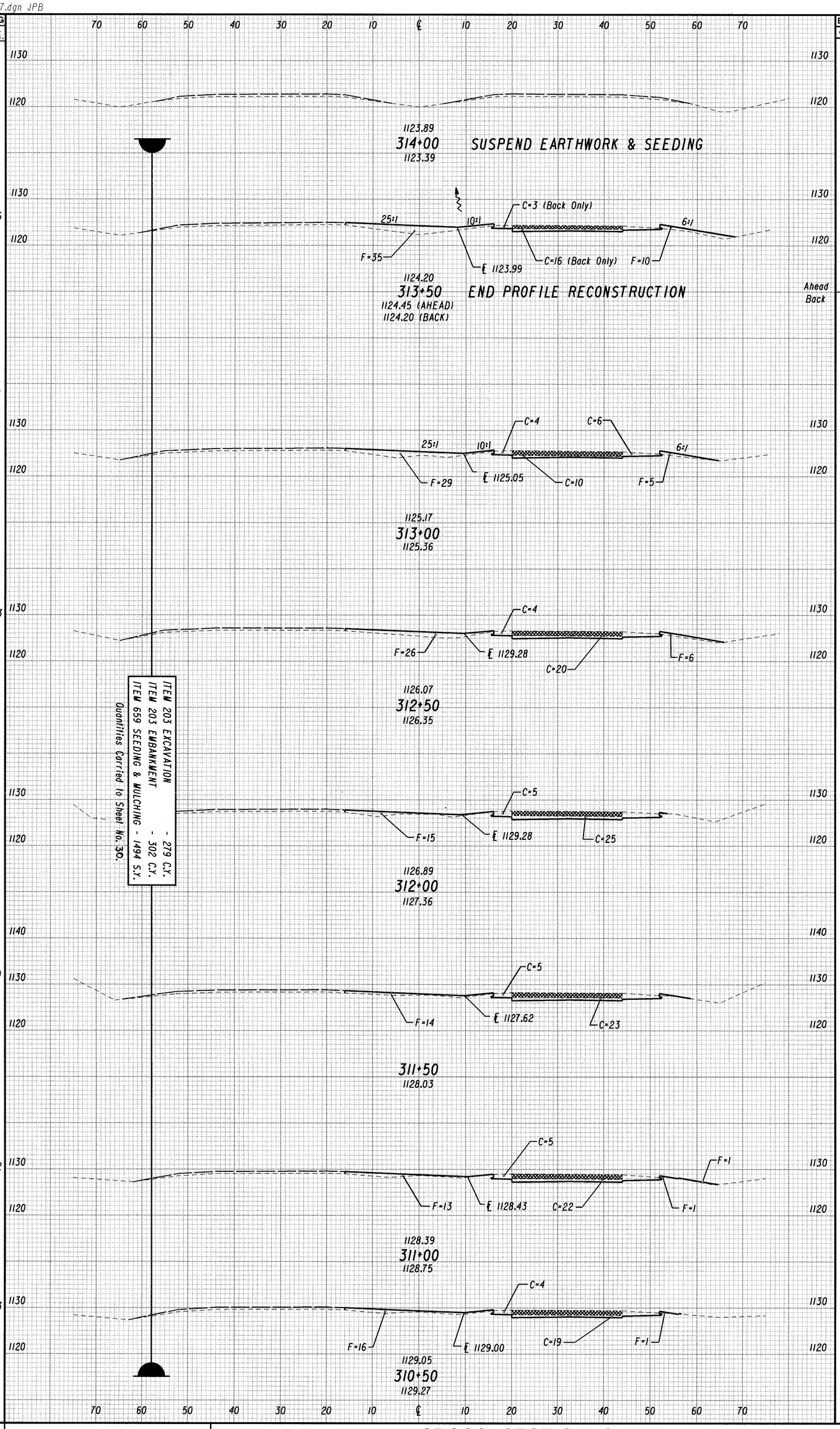
48
114

JEF-22-3.86

CROSS SECTION SHEET
STA. 306+50 to STA. 310+00

CALCULATED JPB
CHECKED SHG

60220307.dgn JPB



114 / 49	JEF-22-3.86	CROSS SECTION SHEET STA. 310+50 to STA. 314+00	CALCULATED JPB CHECKED SHG

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
5		0	0		
	34			4	0
29		13	0		
	75			5	1
32		0	3		
	178			6	3
32		7	0		
	164			6	19
27		0	20		
	164			0	36
32		0	19		
	178			0	33
32		0	17		
	178			0	31
32		0	17		
	94			0	16
2		0	0		

30 20 10 ℄ 10 20 30

BRIDGE NO. JEF-22-0698 L&R

930 920

SUSPEND EARTHWORK AND SEEDING

10:1

368+40
923.2

10:1 C-13

368+22
928.6

EXISTING CATCH BASIN AT STA. 368+05
EXISTING ℄ ELEV. 942.00

8' Rounding 4'
8:1 10:1
℄ ELEV. 928.56 F-3 EXISTING 15" CONDUIT

368+00
928.00

8:1 10:1
℄ ELEV. 930.65 C-7

367+50
931.4

2.5'
GRATE ELEV. 932.05
8:1 10:1
F-5 F-15
28 CB
℄ ELEV. 927.89 EXISTING CATCH BASIN TO BE REMOVED
(SEE SHEET NO. 55.)

367+00
930.83

8:1 4:1 10:1
℄ ELEV. 934.30 F-19

366+50
933.60

8:1 10:1
℄ ELEV. 936.55 F-17

366+00
935.80

8' Rounding 4'
8:1 10:1
℄ ELEV. 937.97 F-17

365+50
937.40

365+00 **RESUME EARTHWORK AND SEEDING**
939.3

364+50
941.14
EXISTING 15" CONDUIT

30 20 10 ℄ 10 20 30

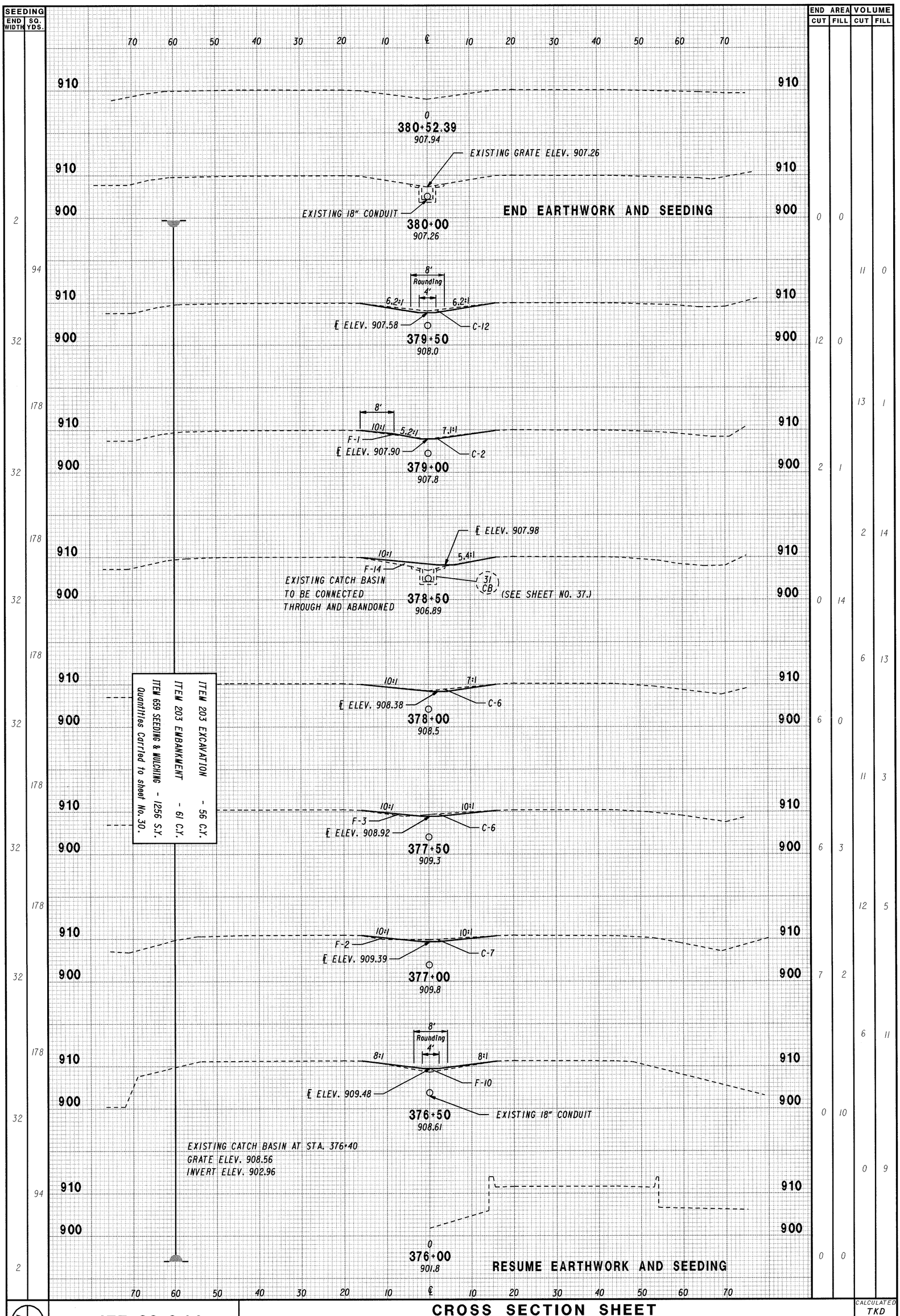
ITEM 203 EXCAVATION - 139 C.Y.
ITEM 203 EMBANKMENT - 21 C.Y.
ITEM 659 SEEDING & MULCHING - 1554 S.Y.
Quantities Carried to sheet No. 30.

50/114

JEF-22-3.86

CROSS SECTION SHEET
STA. 364+50 to STA. 368+40

CALCULATED TKD
CHECKED SHG



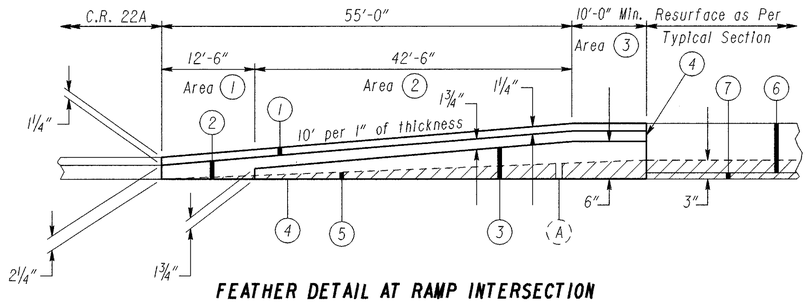
51/114

JEF-22-3.86

CROSS SECTION SHEET
STA. 376+00 to STA. 380+52.39

CALCULATED TKD

CHECKED SHG



FEATHER DETAIL AT RAMP INTERSECTION

For Ramp Intersection Details, See Sheet No. 53. See Standard Construction Drawing BP-2.3 for Pressure Relief Joint, Type A Details.

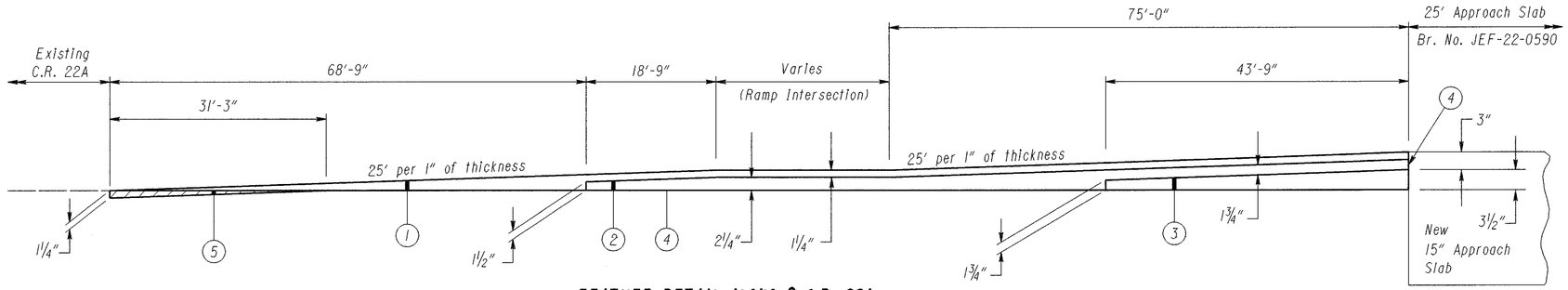
LEGEND

1. Item 448 - Asphalt Concrete Surface Course, Typ I, AC-20 As Per Plan
2. Item 448 - Asphalt Concrete Intermediate Course, Type 2, AC-20
3. Item 301 - Bituminous Aggregate Base, AC-20
4. Item 407 - Tack Coat
5. Item 202 - Wearing Course Removed
6. Item 451 - 8" Reinforced Concrete Pavement
7. Item 403 - 1" Asphalt Concrete, AC-20
8. Item 305 - Concrete Base
9. Item 202 - Pavement Removed
10. Item 203 - Excavation Not Including Embankment Construction

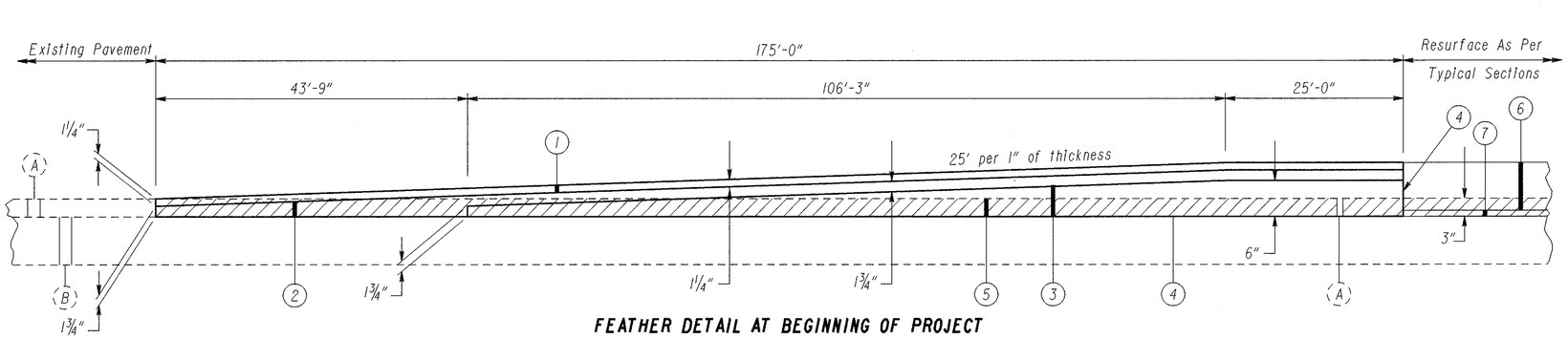
- To Be Removed

EXISTING LEGEND

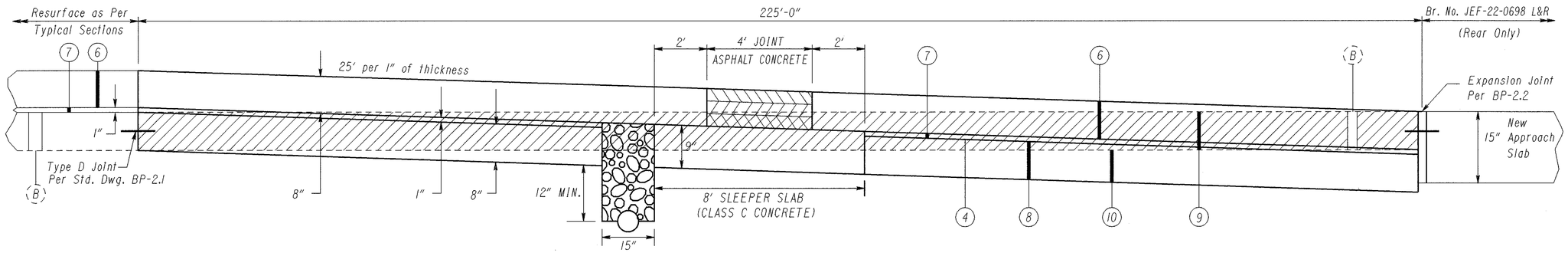
A — Existing Asphalt Concrete
B — Existing 8" Reinforced Concrete Pavement



FEATHER DETAIL ALONG ℄ C.R. 22A



FEATHER DETAIL AT BEGINNING OF PROJECT



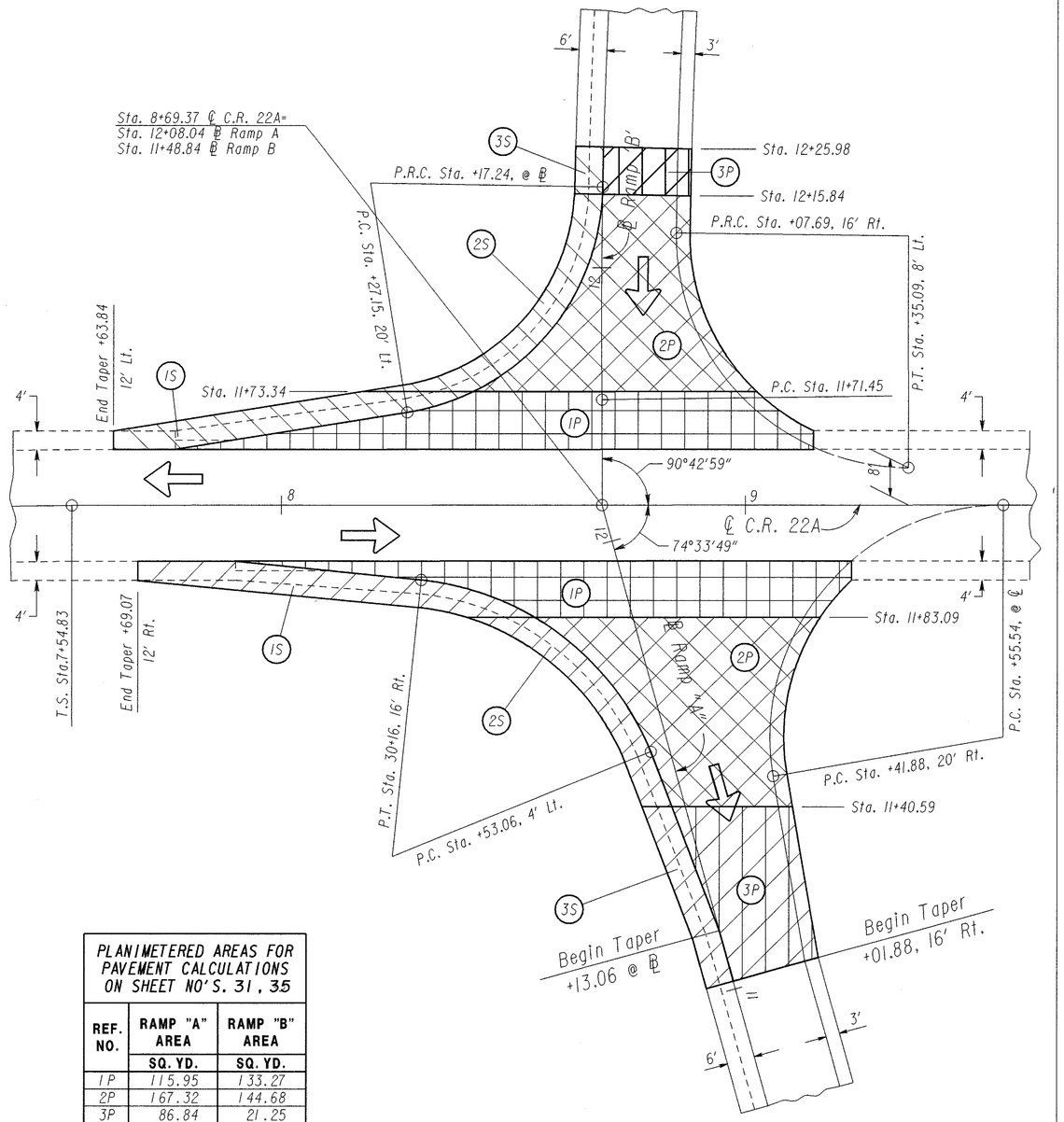
FEATHER DETAIL WITH PRESSURE RELIEF JOINT AT WEST END OF BR. NO. JEF-22-0698

CALCULATED KSP
CHECKED SHG

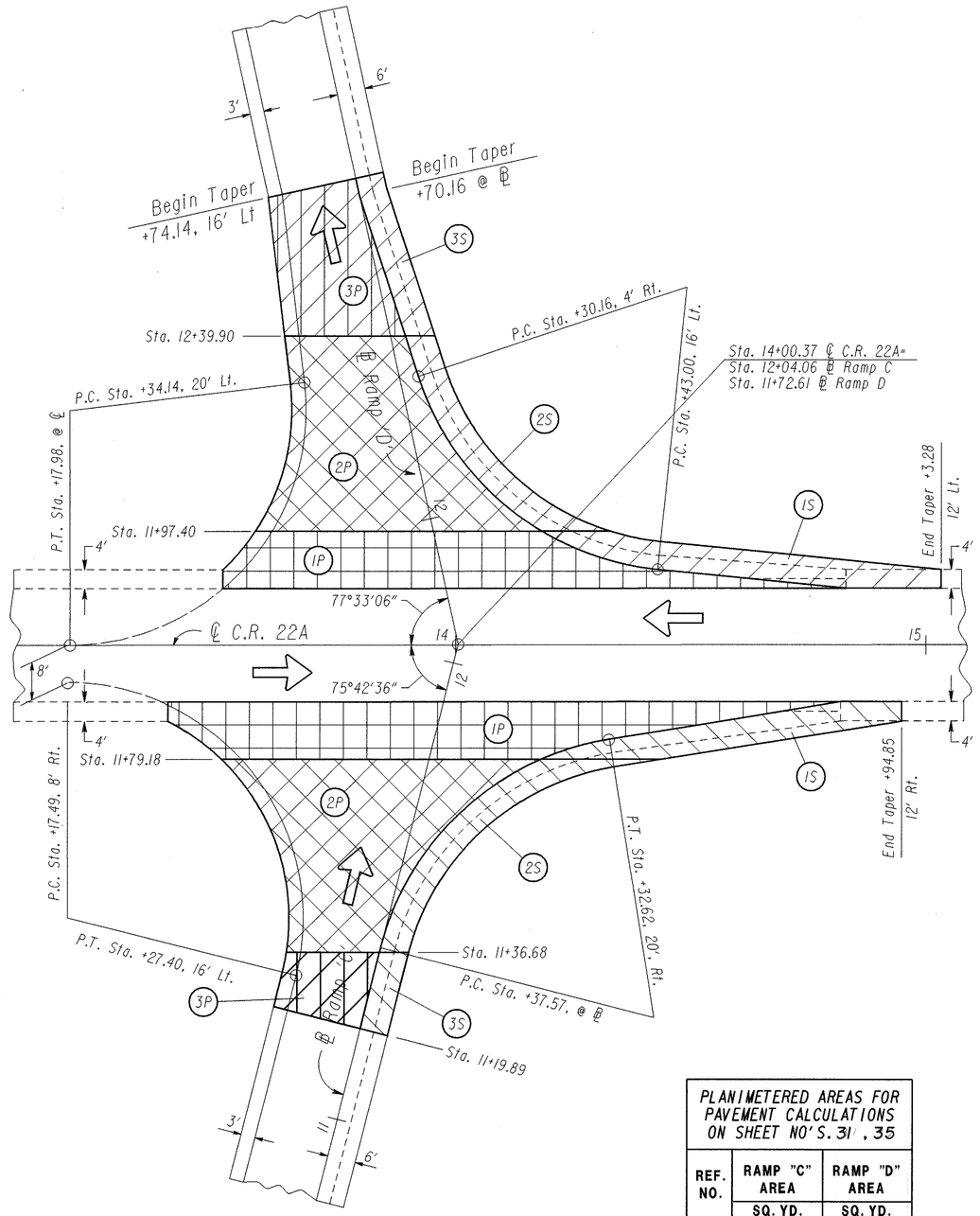
FEATHER DETAILS

JEF-22-3.86

60220323.TKD



PLANIMETERED AREAS FOR PAVEMENT CALCULATIONS ON SHEET NO'S. 31, 35		
REF. NO.	RAMP "A" AREA SQ. YD.	RAMP "B" AREA SQ. YD.
1P	115.95	133.27
2P	167.32	144.68
3P	86.84	21.25
1S	50.98	44.52
2S	36.27	39.31
3S	26.08	6.72

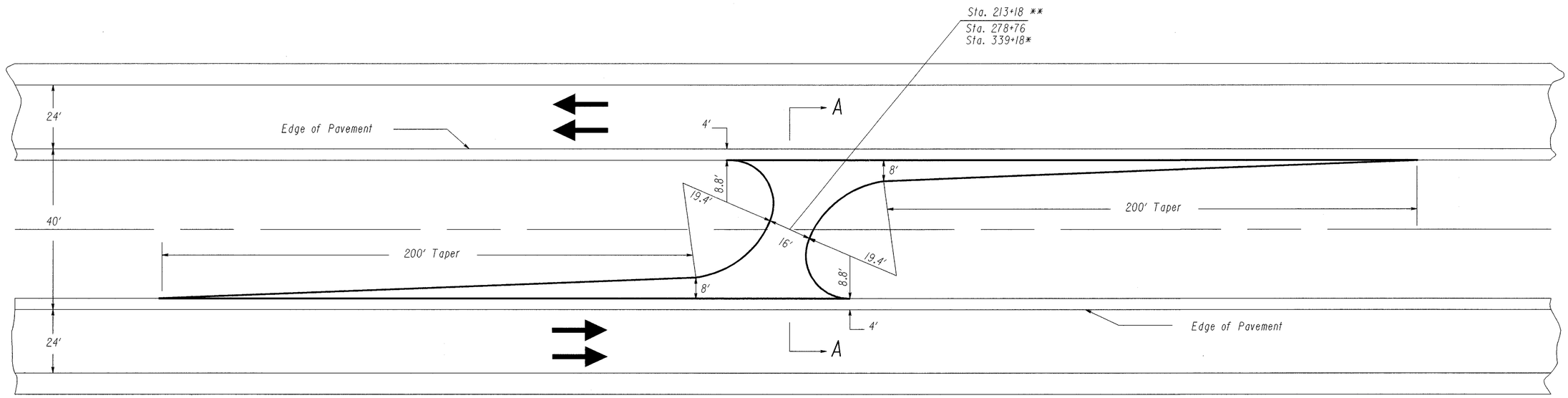


PLANIMETERED AREAS FOR PAVEMENT CALCULATIONS ON SHEET NO'S. 31, 35		
REF. NO.	RAMP "C" AREA SQ. YD.	RAMP "D" AREA SQ. YD.
1P	138.21	117.00
2P	158.27	167.37
3P	30.02	78.52
1S	43.24	50.66
2S	41.23	36.42
3S	11.59	23.95

CALCULATED KSP
CHECKED SHG

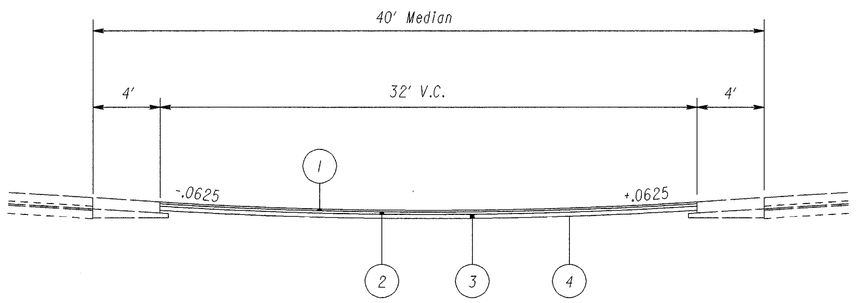
INTERSECTION DETAILS

JEF-22-3.86



PLAN

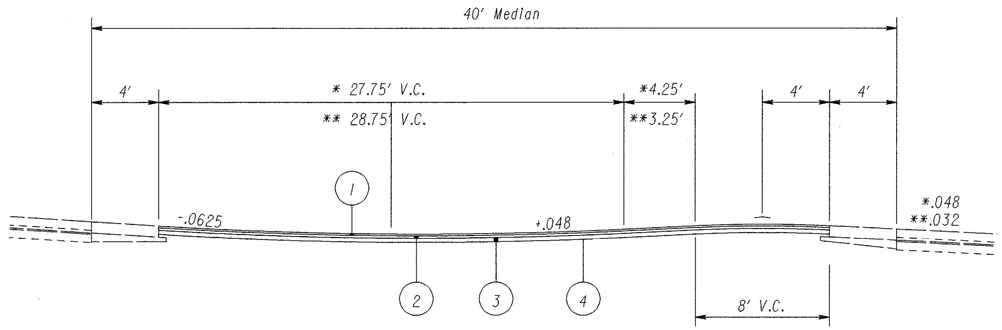
(Not to Scale)



SECTION A-A

Sta. 278+76

(Not to Scale)



SECTION A-A

Sta. 213+18**
Sta. 339+18*

(Not to Scale)

* Superelevation Rate 0.048
** Superelevation Rate 0.032

LEGEND

(1) Item 448, 1¼" Asphalt Concrete Surface Course, Type 1, AC-20, As Per Plan

(2) Item 448, 1¾" Asphalt Concrete Intermediate Course, Type 2, AC-20

(3) Item 301, 3" Bituminous Aggregate Base, AC-20

(4) Item 407, Tack Coat

CALCULATIONS

Computer Area = 2383.35 Sq. Ft.

(1) Item 448: 2383.35 Sq. Ft. x 1.25" ÷ 12 ÷ 27 x 3 locations = 27.6 Cu. Yd.

(2) Item 448: 2383.35 Sq. Ft. x 1.75" ÷ 12 ÷ 27 x 3 locations = 38.6 Cu. Yd.

(3) Item 301: 2383.35 Sq. Ft. x 3" ÷ 12 ÷27 x 3 locations = 66.2 Cu. Yd.

(4) Item 407: 2383.35 Sq. Ft. ÷ 9 x 0.075 Gal/Sq. Yd. x 3 locations = 59.6 Gal.

(Quantities Carried to General Summary)

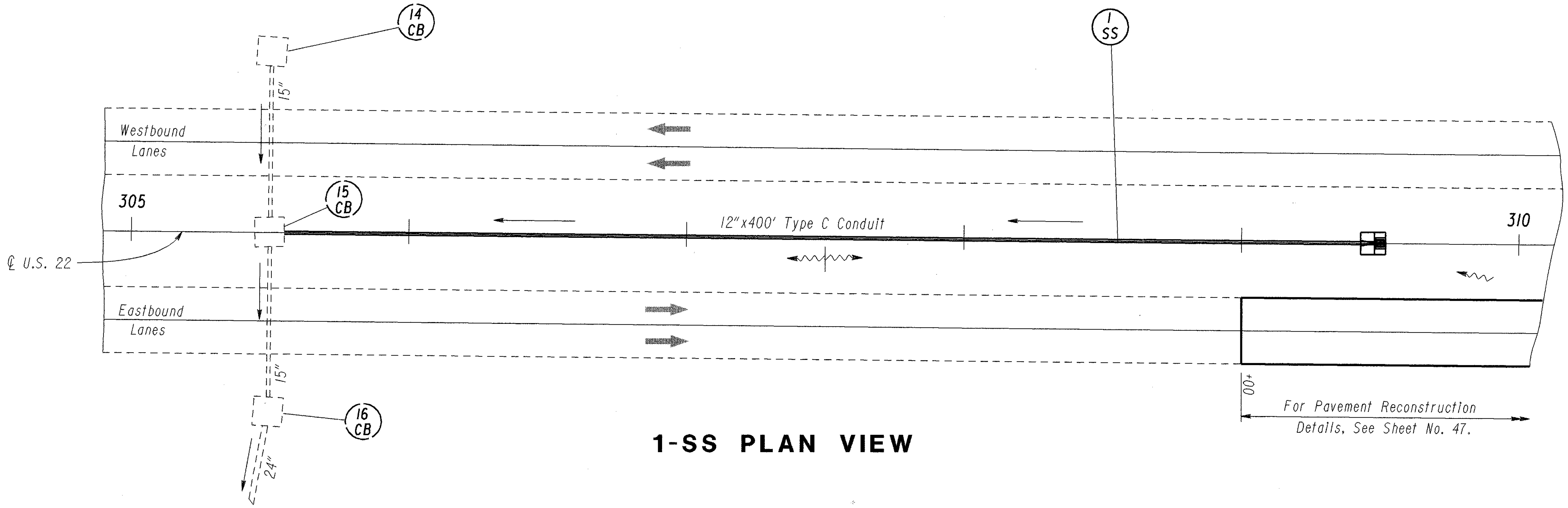
CALCULATED TKD
CHECKED KFP

TYPICAL MEDIAN CROSSOVER DETAIL

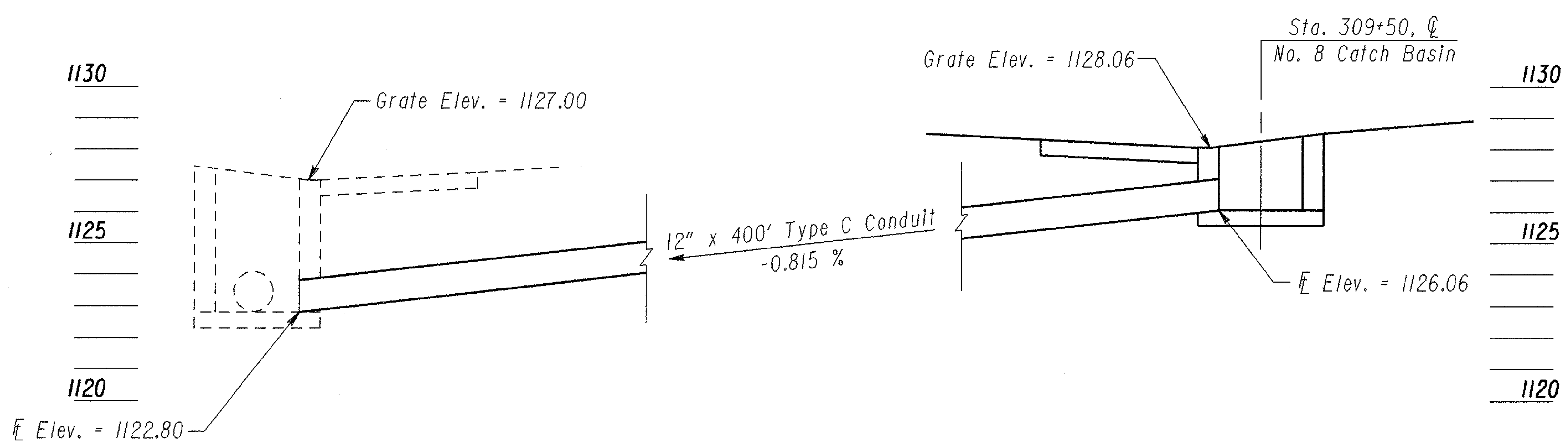
JEF -22-3.86

60220325.TKD

For Quantities, See Sheet No. 37.

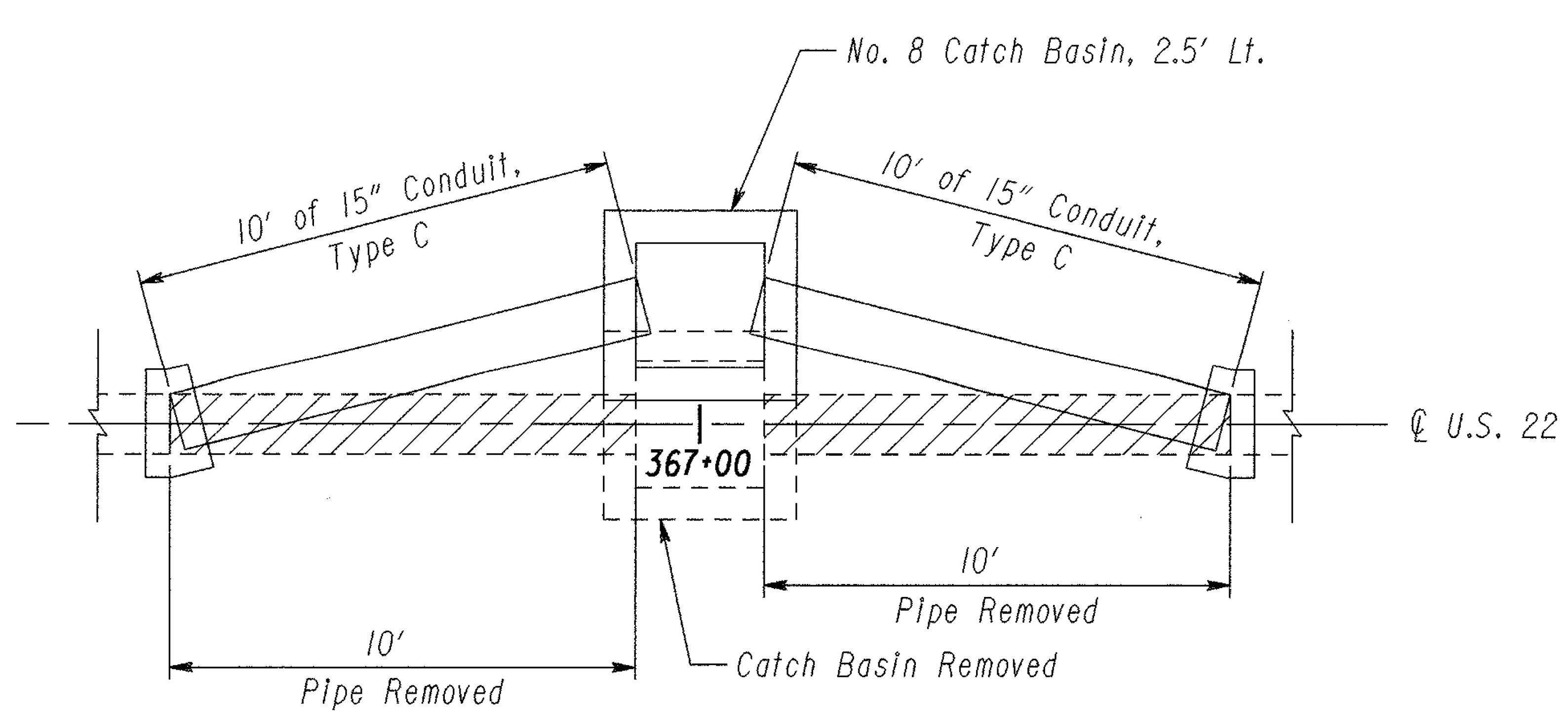


1-SS PLAN VIEW



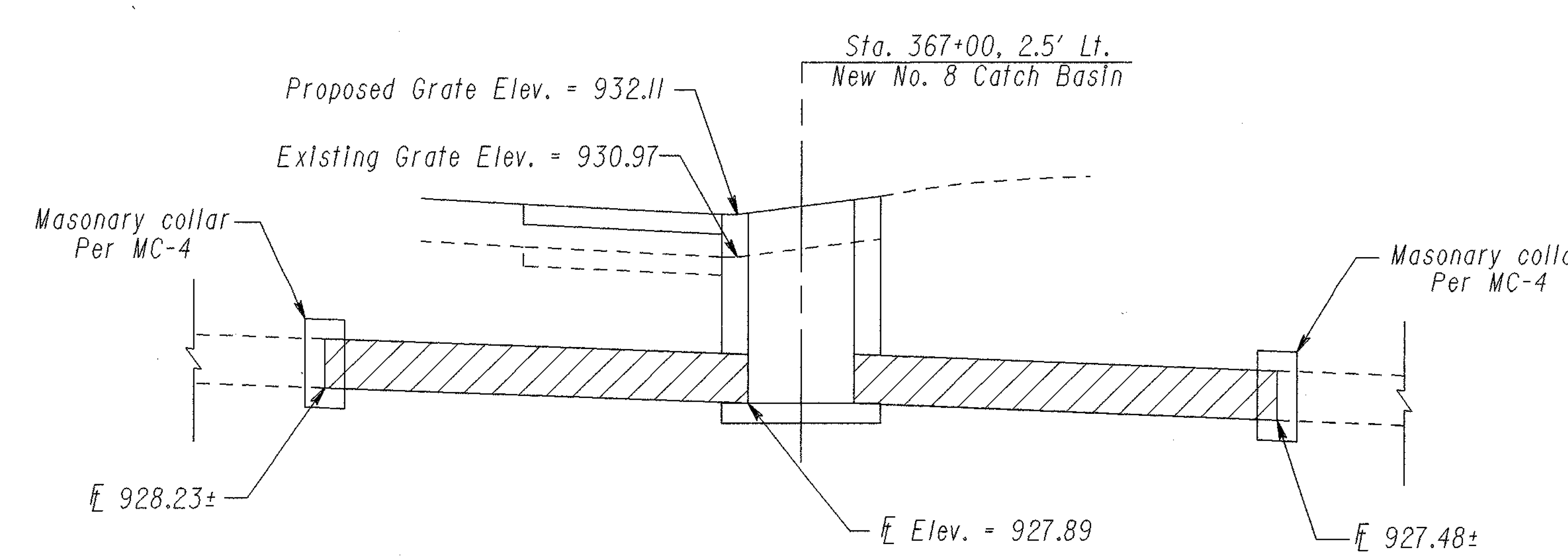
1-SS PROFILE

Not to Scale



2-SS PLAN VIEW

Not to Scale



2-SS PROFILE

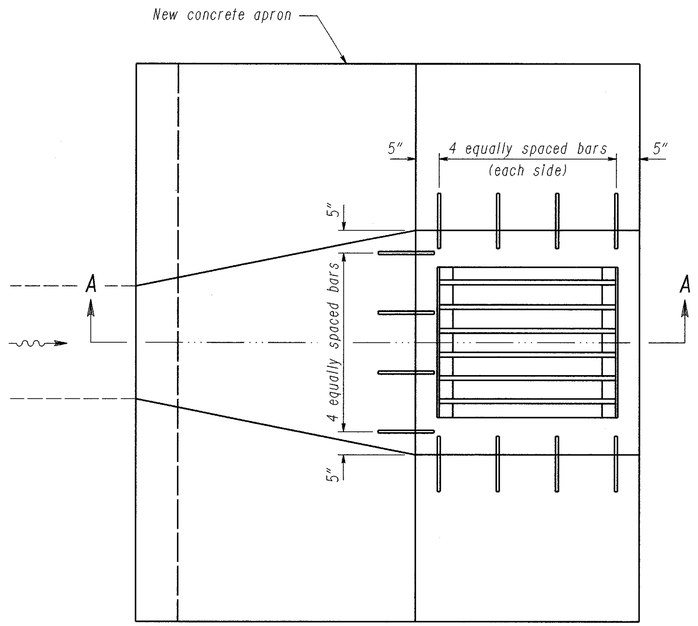
Not to Scale

HORIZONTAL SCALE IN FEET

CALCULATED KSP
CHECKED SHG

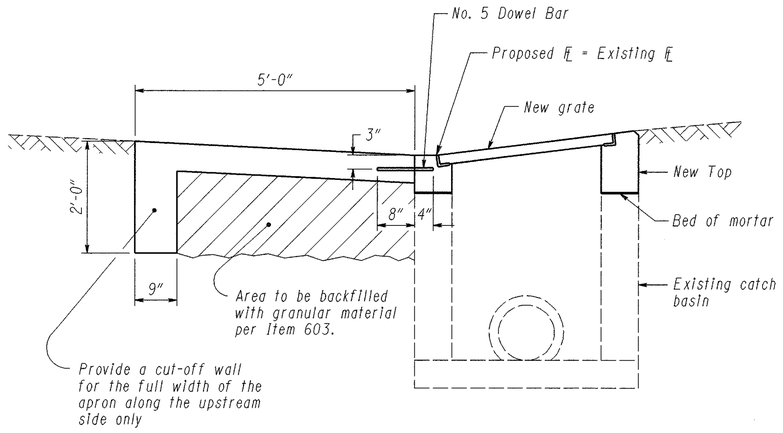
DRAINAGE DETAILS

JEF-22-3.86



PLAN VIEW

Reconstructed No. 5 and No. 8 Catch Basin



SECTION A-A

ITEM 604, CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN

This item shall consist of removing and disposing of the existing concrete apron, and adjusting the existing catch basin to grade using a new top portion and grate, and constructing a new reinforced concrete apron as shown herein.

Furnishing and placing the steel for the $\frac{5}{8}$" x 12" dowel bars shall be per Item 509. The dowel bars shall be epoxy coated per Section 509.10. The dowel bars shall be installed per Item 510, or cast into the new top. Bolts or inserts may be used. The 6" concrete apron shall be reinforced per Section 601.04(3).

For locations and quantities, see sheet no. 37.

Payment for the above work, including dowel bar placement, concrete apron construction, and reinforcing steel, will be made at the contract price for Item 604, Each, Catch Basin Reconstructed To Grade, As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals necessary to complete the work.

NOTE: For details not shown, see Standard Construction Drawings CB-5 and CB-8.

CALCULATED SHG
CHECKED KSP

CATCH BASIN RECONSTRUCTION DETAILS

JEF-22-3.86

CHECKED JCN
CALCULATED JM

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

References to supplemental specifications 857, 858, 861, 957, 958 and 961 on the Traffic Control Standard Construction Drawings in these plans shall be considered to read as respective references to Items 630, 631, 633, 730, 731 and 733.
References to Item 608, 4" Concrete Walk On The Traffic Control Standard Construction Drawing TC-83.20 in these plans shall be considered to read Item 633, Controller Work Pad.

ITEM 630 - REFURBISHING SIGN, AS PER PLAN

This item of work shall consist of cleaning, repair panel if needed, replacement of damaged and missing copy, remove existing route shield and furnish and install new route shield on existing sign. The Contractor shall clean the existing sign by using a cleaning solution that will not damage the reflectivity of the existing sign. The Contractor shall replace all damaged and missing copy with the same type of copy used on the existing sign.
The Contractor shall remove the existing route shield from the existing sign before cleaning the sign. The Contractor shall then place a new route shield in the same location on the sign as the existing route shield. The new route shield shall be furnished as part of this item.

All material removed from the existing sign shall be disposed of by the Contractor as part of this item.

All material, labor and incidentals required to do the work shall be included in the unit bid per a square foot of existing sign refurbished.

ITEM 632 - REMOVAL OF TRAFFIC RECORDER INSTALLATION, AS PER PLAN

This item of work shgall consist of removing the existing traffic recorder installation (wood pole, controller cabinet, pull boxes if present and any miscellaneous items that might be present) at Sta. 344+85 completely and restoration of the disturbed area.
All material removed shall be disposed of by the Contractor as part of this item. Any material required to restore the disturbed area including seeding and mulching shall be provided by the Contractor as part of this Item.

Payment for all of the above work include all labor, equipment and materials shall be included in the unit price bid for each traffic recorder installation removed and restoration of disturbed area.

TRAFFIC CONTROL - GENERAL NOTES

JEF-22-3.86

SHEET NUMBER								PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NO.
		13	14	15		73										
															MAINTENANCE OF TRAFFIC	
				92							404	35000	92	CY	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
		200									614	11100	200	HOURS	LAW ENFORCEMENT OFFICER WITH PATROL CAR	13
				250							SPECIAL	61412200	250	LF	TEMPORARY GUARDRAIL	13
		60									SPECIAL	61412500	60	SF	REPLACEMENT SIGN	13
		60									SPECIAL	61412600	60	EACH	REPLACEMENT DRUM	13
		36									614	12470	36	EACH	WORK ZONE SPEED LIMIT SIGN	
				2							614	12756	2	EACH	TEMPORARY CROSSOVER LIGHTING SYSTEM	
				480							614	12800	480	EACH	TEMPORARY RAISED PAVEMENT MARKER	
				10							614	13200	10	EACH	BARRIER REFLECTOR, TYPE A	
				3161							614	13300	3161	EACH	BARRIER REFLECTOR, TYPE B	
				2712							614	13350	2712	EACH	OBJECT MARKER	
			4								614	18501	4	EACH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	14
						6.87					614	20000	6.87	MILE	TEMPORARY LANE LINE, CLASS I	
				30.63		13.75					614	22000	44.38	MILE	TEMPORARY EDGE LINE, CLASS I	
				54							614	26000	54	LF	TEMPORARY STOP LINE, CLASS I	
						800					614	28000	800	LF	TEMPORARY GORE MARKING, CLASS II	
				5609							615	20000	5609	SY	TEMPORARY PAVEMENT, CLASS A	
			40								616	10000	40	M GAL	WATER	
			7								616	20000	7	TON	CALCIUM CHOLRIDE	
				32315							622	40020	32315	LF	PORTABLE CONCRETE BARRIER, 32"	
				3960							622	40031	3960	LF	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	13
				1530							622	40040	1530	LF	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	

CALCULATED JM
CHECKED JCN

MAINTENANCE OF TRAFFIC - GENERAL SUMMARY

JEF-22-3.86

SHEET NUMBER								PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NO.
		29		61	71	72	73									
															TRAFFIC CONTROL	
						80					603	00400	80	LF	4" CONDUIT, TYPE E	
							39				620	10300	39	EACH	DELINEATOR, TYPE C, POST MOUNTED	
							139				620	31200	139	EACH	DELINEATOR REMOVED FOR DISPOSAL	
					6						620	40300	6	EACH	REFLECTOR, TYPE D	
							538				621	00100	538	EACH	RAISED PAVEMENT MARKER	
						27					625	25500	27	LF	CONDUIT, 3", 713.04	
						90					625	25900	90	LF	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, SIZE: 3"	
						27					625	29000	27	LF	TRENCH	
						4					625	30700	4	EACH	PULL BOX, 713.08, 18"	
						1					625	32000	1	EACH	GROUND ROD	
				5.72							630	00100	5.72	CY	CONCRETE FOR EMBEDDED FOUNDATION	
				134							630	02100	134	LF	GROUND MOUNTED SUPPORT, NO. 2 POST	
				228							630	03100	228	LF	GROUND MOUNTED SUPPORT, NO. 3 POST	
				322	84						630	04100	406	LF	GROUND MOUNTED SUPPORT, NO. 4 POST	
				72							630	06500	72	LF	GROUND MOUNTED SUPPORT, W6X9 BEAM	
				83							630	07600	83	LF	GROUND MOUNTED SUPPORT, W10X12 BEAM	
				30							630	08100	30	LF	ONE WAY SUPPORT, NO. 4 POST	
				8							630	09000	8	EACH	BREAKAWAY BEAM CONNECTION	
				255	84						630	80100	339	SF	SIGN, FLAT SHEET	
				120							630	80102	120	SF	SIGN, FLAT SHEET, TYPE G	
				232							630	80204	232	SF	SIGN, EXTRUSHEET, TYPE G	
				1							630	82000	1	EACH	SIGN BACKING ASSEMBLY	
				1158							630	82701	1158	SF	REFURBISHING SIGN, AS PER PLAN	57
				61	12						630	84900	73	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
				47	12						630	86002	59	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
				8							630	86102	8	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
						360					632	27500	360	LF	LOOP DETECTOR PAVEMENT CUTTING	
						1040					632	64900	1040	LF	LOOP DETECTOR WIRE, TYPE E	
						630					632	65200	630	LF	LOOP DETECTOR LEAD-IN CABLE	
						0.37					632	72000	0.37	CY	CONCRETE FOR ANCHOR BASE FOUNDATION	
						1					632	89800	1	EACH	PEDESTAL, 3', TRANSFORMER BASE	
						1					632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	57
						1					633	65000	1	EACH	CABINET WITHOUT CONTROLLER	
						8.3					633	70500	8.3	SF	CONTROLLER WORK PAD	
							15.36				642	00102	15.36	MILE	EDGE LINE, TYPE 2	
							7.07				642	00202	7.07	MILE	LANE LINE, TYPE 2	
							1554				642	00402	1554	LF	CHANNELIZING LINE, TYPE 2	
							80				642	00502	80	LF	STOP LINE, TYPE 2	
							285				642	00702	285	LF	TRANSVERSE LINE, TYPE 2	
		187									802	00100	187	EACH	BARRIER REFLECTOR, TYPE A	
		2									802	00200	2	EACH	BARRIER REFLECTOR, TYPE B	

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL - GENERAL SUMMARY

JEF-22-3.86

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	* Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced WORK REQUIRED	SIGN CODE	SIGN DIMENSION	630																												
							SIGN CLEARANCE	SUPPORT LENGTHS			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL			REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL		REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	SIGNS, FLAT SHEET	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED, SUPPORTS, NO. 2 POST	GROUND MOUNTED, SUPPORTS, NO. 3 POST	GROUND MOUNTED, SUPPORTS, NO. 4 POST			GROUND MOUNTED, SUPPORTS, W6x9	GROUND MOUNTED, SUPPORTS, W10x12			CONCRETE FOR EMBEDDED FOUNDATIONS	BREAKAWAY BEAM CONNECTION		REFURBISHING SIGN, AS PER PLAN	
						INCHES	FEET	LT.	CNTR.	RT.	EACH			EACH		EACH	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.			LIN. FT.	LIN. FT.			LIN. FT.	EACH		SQ. FT.	
62	1	203+00	Lt.	*																												140	
62	2	207+05	Rt.	Remove Signs and Support							2			1																				
62	2	207+00	Rt.	Erect New Sign On New Support	M-1-30	30x30	14.0		14.3								6.25					14.3											
62	2	207+00	Rt.	Erect New Sign On New Support	M-39-30	30x15											3.13																
62	3	211+15	Lt.	Remove Sign and Support							1			1																				
62	3	211+15	Lt.	Erect New Sign On New Support	N-45-12	12x13	12.0		11.5								1.08			11.5													
62	4	211+15	Rt.	Remove Sign and Support							1			1																				
62	4	211+15	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.0								1.08			12.0													
63	5	215+50	Lt.	Remove Sign and Supports							1					2																		
63	5	215+55	Lt.	Erect New Sign On New Supports	GSS-A	96x48	12.0	17.5		17.0									32.0					34.5				0.66	2				
63	6	217+05	Rt.	Remove Sign and Supports							1			2																				
63	6	217+00	Rt.	Erect New Sign On New Supports	R-10-48	48x60	24.0	16.3		15.2							20.0					31.5											
63	7	227+75	Lt.	*																												140	
63	8	227+05	Rt.	*																												56	
64	9	252+45	Lt.	*																												140	
64	10	251+25	Rt.	*																												91	
64	11	264+21	Lt.	Remove Sign and Support							1			1																				
64	11	264+21	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.5								1.08			12.5													
64	12	264+21	Rt.	Remove Sign and Support							1			1																				
64	12	264+21	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.5								1.08			12.5													
64	13	267+15	Lt.	Remove Sign and Supports							1					2																		
64	13	267+20	Lt.	Erect New Sign On New Supports	GJ	132x48	15.0	18.5		18.7									44.0					37.2				0.66	2				
65	14	274+00	Rt.	*																												91	
65	15	277+15	Lt.	Remove Sign and Supports							1			2																				
65	15	277+20	Lt.	Erect New Sign On New Supports	R-10-48	48x60	16.0	18.0		18.8							20.0				36.8													
65	16	287+23	Lt.	Remove Signs and Support							2			1																				
65	16	287+18	Lt.	Erect New Sign On New Support	M-1-30	30x30			15.3								6.25					15.3											
65	16	287+18	Lt.	Erect New Sign On New Support	M-40-30	30x15											3.13																
65	17	296+05	Rt.	*																												91	
66	18	305+45	Lt.	Remove Sign and Supports							1			2																				
66	18	305+50	Lt.	Erect New Sign On New Supports	W-49R-48	48x48	14.0	17.4		17.9							16.0					35.2											
66	19	305+00	Rt.	*																												30	
66	20	316+77	Lt.	Remove Sign and Support							1			1																				
66	20	316+77	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.2								1.08			11.2													
66	21	316+77	Rt.	Remove Sign and Support							1			1																				
66	21	316+77	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.0								1.08			11.0													
66	22	320+05	Rt.	Remove Sign and Supports							1			2																				
66	22	320+00	Rt.	Erect New Sign On New Supports	W-49R-48	48x48	14.0	17.2		17.7							16.0					34.9											
66	23	321+40	Lt.	*																												30	
67	24	330+16	Lt.	*																												91	
67	25	338+50	Rt.	Remove Signs and Support							2			1																				
67	25	338+45	Rt.	Erect New Sign On New Support	M-1-30	30x30	16.0		16.6								6.25					16.6											
67	25	338+45	Rt.	Erect New Sign On New Support	M-39-30	30x15											3.13																
67	26	342+55	Rt.	Remove Sign and Supports							1			2																				
67	26	342+50	Rt.	Erect New Sign On New Supports	W-139F-48	48x48	14.0	18.0		19.0							16.0					37.0											
67	27	349+00	Lt.	*																												91	
68	28	356+50	Lt.	Remove Sign and Supports							1			2																				
68	28	356+55	Lt.	Erect New Sign On New Supports	R-10-48	48x60	14.0	16.5		16.3							20.0				32.8													
68	29	359+95	Lt.	Remove Sign and Supports							1			2																				
68	29	360+00	Lt.	Erect New Sign On New Supports	R-35-36	36x48	14.0	15.8		15.3							12.0				31.1													
68	30	362+95	Lt.	Remove Sign and Supports							1			2																				
68	30	363+00	Lt.	Erect New Sign On New Supports	R-159-36	36x48		15.3		15.0							12.0				30.3													
68	31	364+90	Lt.	Remove Sign and Supports							1			2																				
68	31	364+95	Lt.	Erect New Sign On New Supports	W-139F-48	48x48	30.0	15.5		15.7							16.0					31.1											
68	32	366+05	Lt.	Remove Signs and Support							2			1																				
68	32	366+00	Lt.	Erect New Sign On New Support	M-1-30	30x30	14.0		15.0								6.25				15.0													
68	32	366+00	Lt.	Erect New Sign On New Support	M-40-30	30x15											3.13																
68	33	367+90	Lt.	Remove Sign							1																							
68	33	367+90	Lt.	*																												91	
68	33	367+90	Lt.	Erect New Sign	N-45-12	12x13											1.08																
68	34	368+45	Rt.	Remove Sign and Support							1			1																				
68	34	368+45	Rt.	Erect New Sign On New Support	X-6L-12	12x36	10.0		13.0								3.0			13.0													
68	35	368+45	Lt.	Remove Sign and Support							1			1																				
68	35	368+45	Lt.	Erect New Sign On New Support	X-6R-12	12x36	10.0		13.0								3.0			13.0													
68	36	367+96	Rt.	Remove Sign and Support							1			1																				
68	36	367+96	Rt.	Erect New Sign On New Support	N-45-12	12x13	16.0		13.8								1.08			11.0													

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL QUANTITIES

JEF-22-3.86

60
114

JM 60220324

* Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced

630

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	SIGNS, FLAT SHEET	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED, SUPPORTS, NO. 2 POST	GROUND MOUNTED, SUPPORTS, NO. 3 POST	GROUND MOUNTED, SUPPORTS, NO. 4 POST	ONE WAY SUPPORTS, NO. 4 POST	GROUND MOUNTED, SUPPORTS, W6x9	GROUND MOUNTED, SUPPORTS, W10x12	SIGN BACKING ASSEMBLY	CONCRETE FOR EMBEDDED FOUNDATIONS	BREAKAWAY BEAM CONNECTION	REFURBISHING SIGN AS PER PLAN
						INCHES	FEET	LT.	CNTR.	RT.	EACH	EACH	EACH	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	EACH	SQ. FT.
68	37	376+36	Lt.	Remove Sign and Support							1	1														
68	37	376+36	Lt.	Erect New Sign On New Support	X-6R-12	12x36	10.0		13.0					3.0			13.0									
68	38	376+36	Rt.	Remove Sign and Support							1	1														
68	38	376+36	Rt.	Erect New Sign On New Support	X-6L-12	12x36	10.0		13.0					3.0			13.0									
69	39	9+35 Ramp A	Lt.	Remove Sign and Support							1	1														
69	39	11+50 Ramp A	Lt.	Erect New Sign On New Support	R-15A-36	36x36	14.0		14.0					9.0					14.0							
69	40	11+84 Ramp B	Rt.	Remove Signs and Supports							3	2														
69	40	11+84 Ramp B	Rt.	Erect New Sign On New Supports	R-41B-36	36x36	17.0	15.5		15.8					16.0				15.8	15.5						
69	40	11+84 Ramp B	Rt.	Erect New Sign On New Supports	R-43L-48	48x18									6.0											
69	40	11+84 Ramp B	Rt.	Erect New Sign On New Supports	R-43R-48	48x18									6.0											
69	41	11+92 Ramp B	Lt.	Remove Signs and Supports							2	2														
69	41	11+92 Ramp B	Lt.	Erect New Sign On New Supports	R-1-4B	48x48	12.0	15.3		15.0					16.0				30.3							
69	41	11+92 Ramp B	Lt.	Erect New Sign On New Supports	R-41B-36	36x36									9.0											
69	42	16+62 Ramp B	Lt.	Remove Signs and Supports							3		2													
69	42	16+66 Ramp B	Lt.	Erect New Sign On New Supports	D-4B	156x24	16.0	19.5		20.2						26.0						39.7		2.20	2	
69	42	16+66 Ramp B	Lt.	Erect New Sign On New Supports	D-4B	156x48										52.0										
69	43	16+62 Ramp B	Rt.	Remove Sign and Support							1	1														
69	43	14+00 Ramp B	Lt.	Erect New Sign On New Support	R-41A-36	36x24	16.0		13.0						6.0			13.3								
69	43	14+00 Ramp B	Rt.	Erect New Sign On New Support	R-41A-36	36x24	16.0		13.0						6.0			13.3								
69	44	9+05 Ramp C	Lt.	Remove Sign and Support							1	1														
69	44	9+00 Ramp C	Lt.	Erect New Sign On New Support	R-41A-36	36x36	17.0		13.0						6.0			13.3								
69	45	9+05 Ramp C	Rt.	Remove Signs and Supports							3		2													
69	45	9+00 Ramp C	Rt	Erect New Sign On New Supports	D-4B	156x24	20.0	22.0		21.0						26.0						43.0		2.20	2	
69	45	9+00 Ramp C	Rt.	Erect New Sign On New Supports	D-4B	156x48										52.0										
69	45	9+00 Ramp C	Rt.	Erect New Sign On New Supports	R-41A-24	36x24									6.0											
69	46	11+57 Ramp C	Rt.	Remove Signs and Supports							2	2														
69	46	11+57 Ramp C	Rt.	Erect New Sign On New Supports	R-1-48	48x48	16.0	15.5		15.7					16.0				31.2							
69	46	11+57 Ramp C	Rt.	Erect New Sign On New Supports	R-41B-36	36x36									6.0											
69	47	11+64 Ramp C	Lt.	Remove Signs and Supports							3	2														
69	47	11+64 Ramp C	Lt.	Erect New Sign On New Supports	R-41B-36	36x36	17.0	14.5		14.3					9.0				14.3	14.5						
69	47	11+64 Ramp C	Lt.	Erect New Sign On New Supports	R-43L-48	48x18									6.0											
69	47	11+64 Ramp C	Lt.	Erect New Sign On New Supports	R-43R-48	48x18									6.0											
69	48	13+93 Ramp D	Rt.	Remove Sign and Support							1	1														
69	48	12+50 Ramp D	Rt.	Erect New Sign On New Support	R-15A-36	36x36	14.0		12.5					9.0				12.5								
70	49	* C.R. 22A	Rt.	Remove Signs and Support							2	1														
70	49	* C.R. 22A	Rt.	Erect New Sign On New Support	M-1-24	24x24	14.0		14.5					6.0				14.5								
70	49	* C.R. 22A	Rt.	Erect New Sign On New Support	M-17-24	24x12								2.0												
70	50	1+62 C.R. 22A	Rt.	*																						22.5
70	51	9+45 C.R. 22A	Rt.	*																						22.5
70	51	9+45 C.R. 22A	Rt.	*																						44.0
70	52	13+40 C.R. 22A	Lt.	*																						22.5
70	53	14+25 C.R. 22A	Rt.	Remove Signs							3															
70	53	14+20 C.R. 22A	Rt.	*																						22.0
70	53	14+20 C.R. 22A	Rt.	Erect New Sign	M-24-21	21x15								2.19									1			
70	53	14+20 C.R. 22A	Rt.	Erect New Sign	M-1-24	24x24								4.0												
70	53	14+20 C.R. 22A	Rt.	Erect New Sign	M-39-24	24x12								2.0												
70	54	16+85 C.R. 22A	Lt.	*																						44.0
70	55	20+85 C.R. 22A	Lt.	*																						22.5
70	56	24+00 C.R. 22A	Lt.	Remove Signs and Support							2	1														
70	56	24+05 C.R. 22A	Lt.	Erect New Sign On New Support	M-1-24	24x24	14.0		14.5					4.0				14.5								
70	56	24+05 C.R. 22A	Lt.	Erect New Sign On New Support	M-17-24	24x12								2.0												
70	57	8+00 C.R. 22A	Lt.	Remove Signs							3															
70	57	8+00 C.R. 22A	Lt.	*																						16.0
70	57	8+00 C.R. 22A	Lt.	Erect New Sign On New Support	M-40-24	24x12								2.0												
70	57	8+00 C.R. 22A	Lt.	Erect New Sign On New Support	M-1-24	24x24								4.0												
70	57	8+00 C.R. 22A	Lt.	Erect New Sign On New Support	M-24-21	21x15								2.19												
TOTAL (Quantity Carried to General Summary)											61	47	8	254.5	120	232	133.7	227.4	321.5	30	71.7	82.7	1	5.72	8	1158

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL QUANTITIES

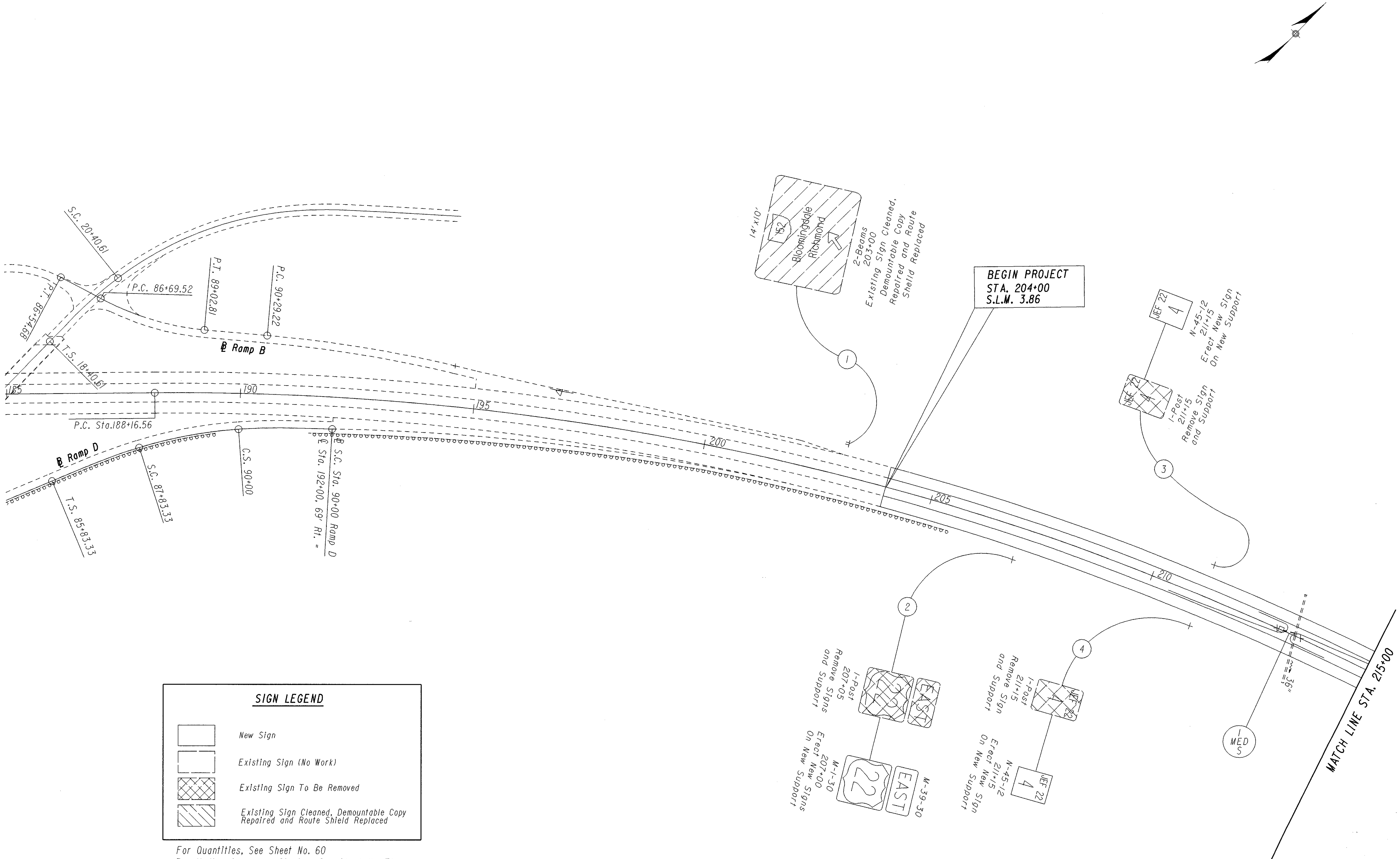
JEF-22-3.86

JM 60220324

SIGNING PLAN - STA. 185+00 TO STA. 215+00

JEF-22-3.86

CALCULATED JM | CHECKED JCN



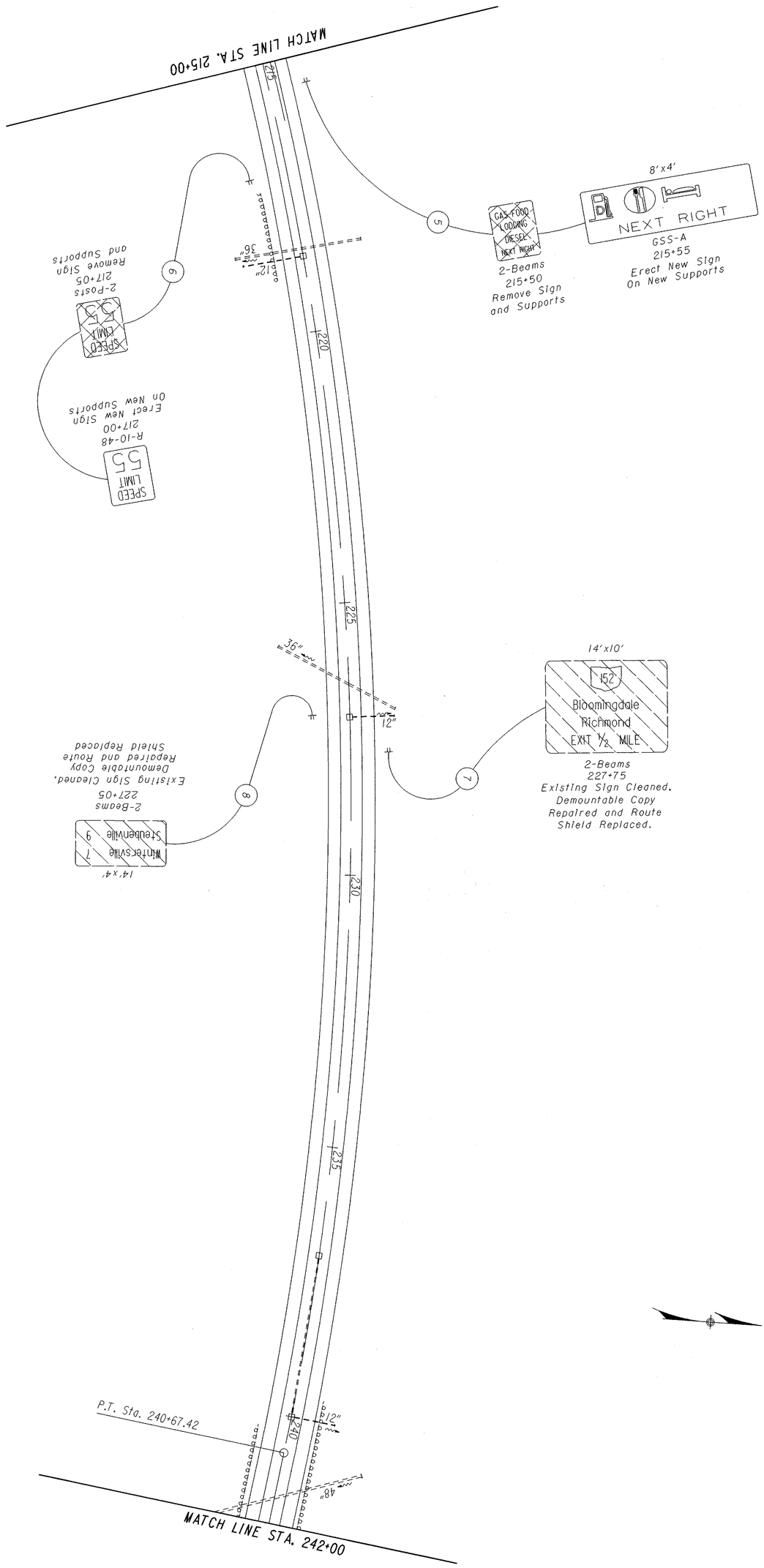
SIGN LEGEND

- New Sign
- Existing Sign (No Work)
- Existing Sign To Be Removed
- Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced

For Quantities, See Sheet No. 60
For Median Crossover Signing, See Sheet No. 71

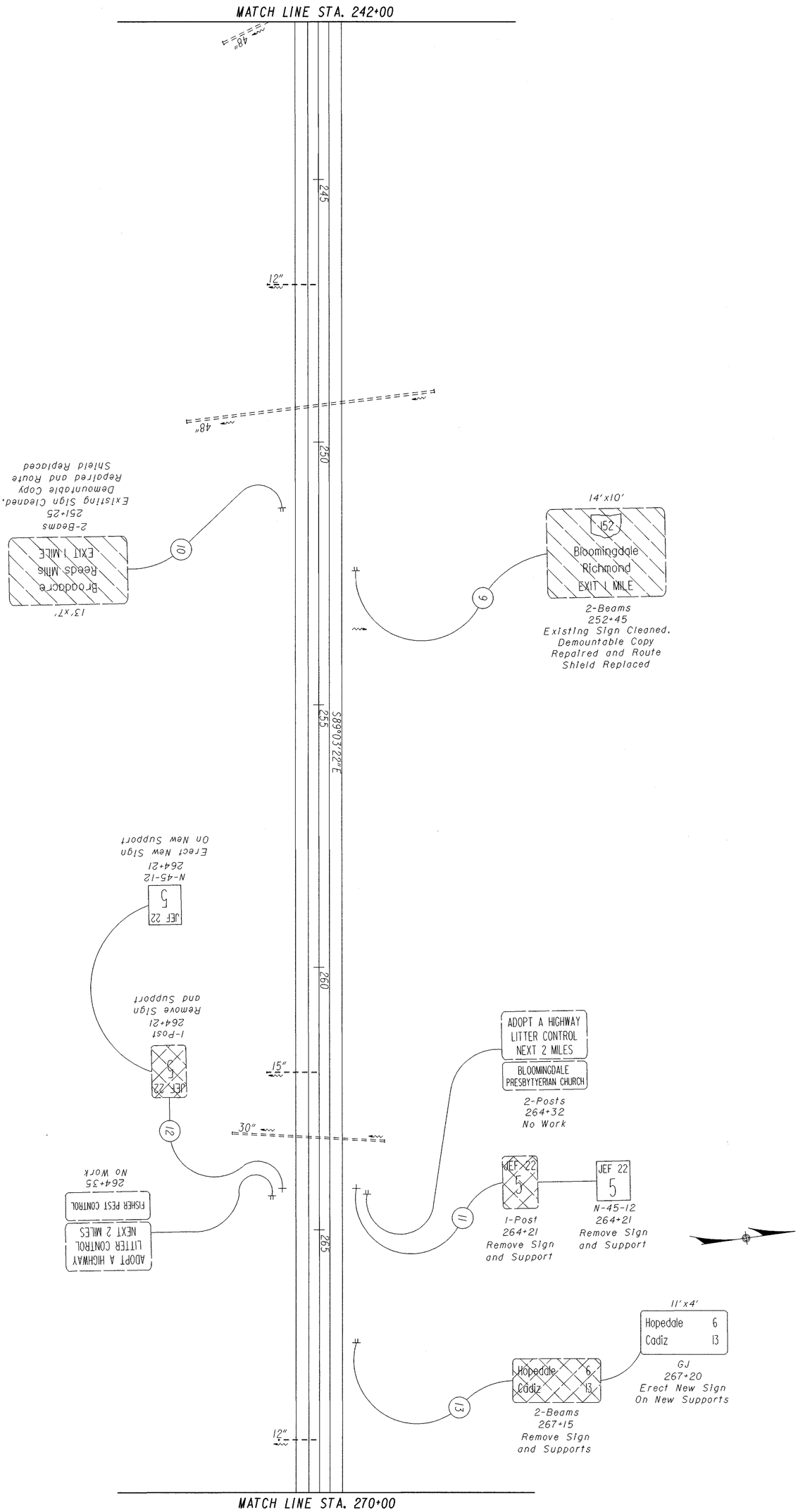
JM 602203IA

JM 6022031B



For Legend, See Sheet No. 62
For Quantities, See Sheet No. 60

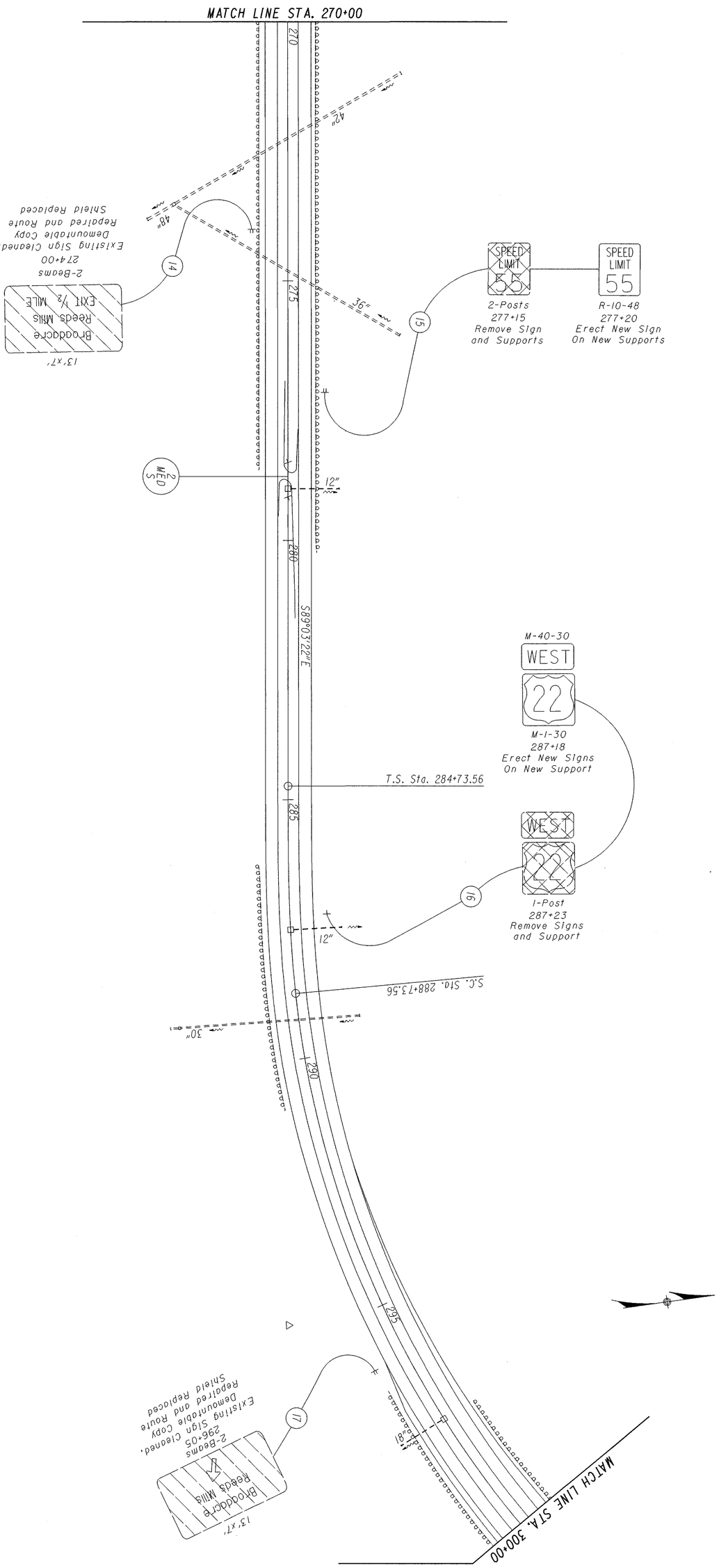
63/114	JEF-22-3.86	SIGNING PLAN - STA. 215+00 TO STA. 242+00	CALCULATED JM / CHECKED JCN



For Legend, See Sheet No. 62
For Quantities, See Sheet No. 60

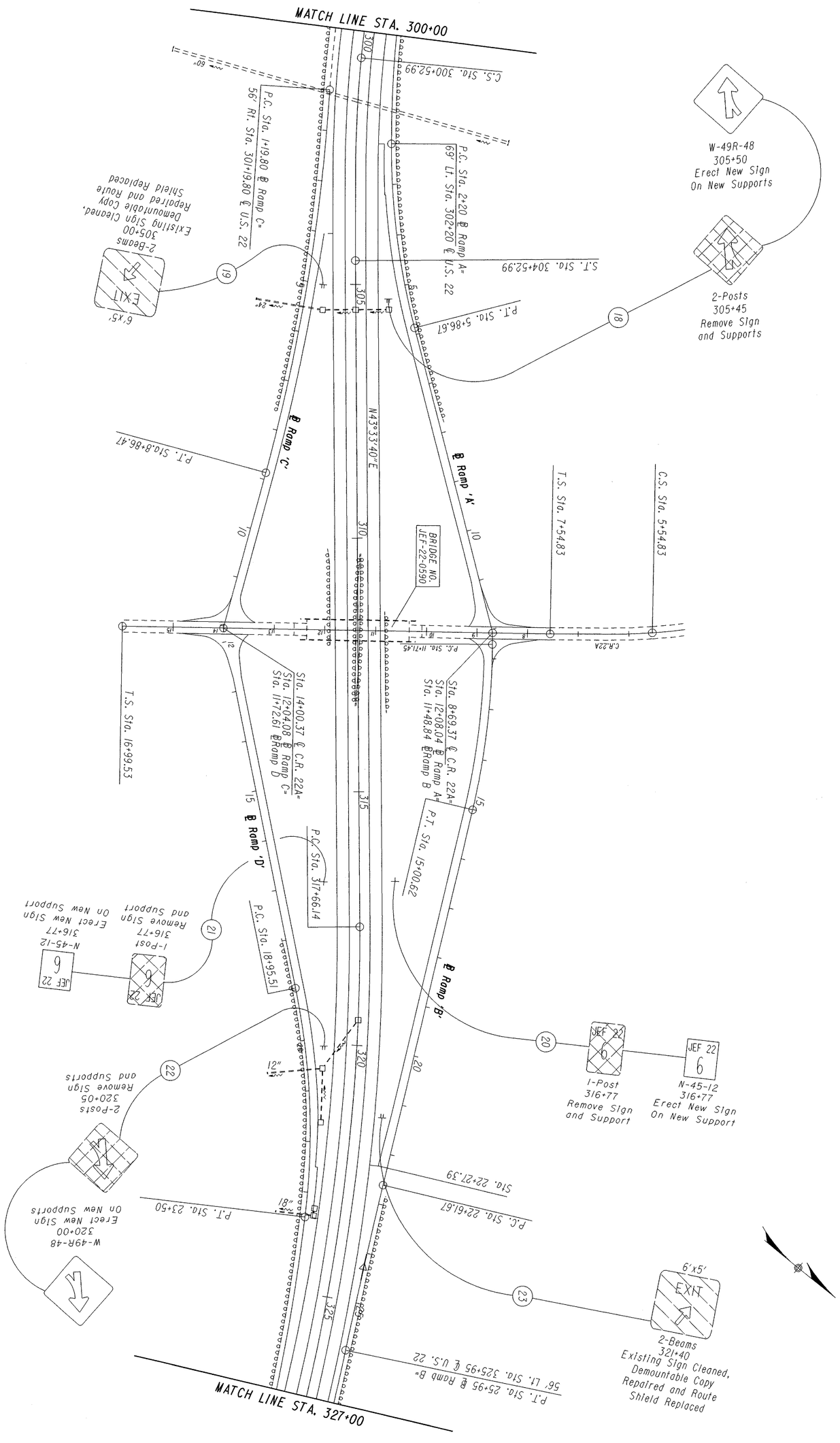
64/114	JEF-22-3.86	SIGNING PLAN - STA. 242+00 TO STA. 270+00	CALCULATED JM / CHECKED JCN

JM 60220310



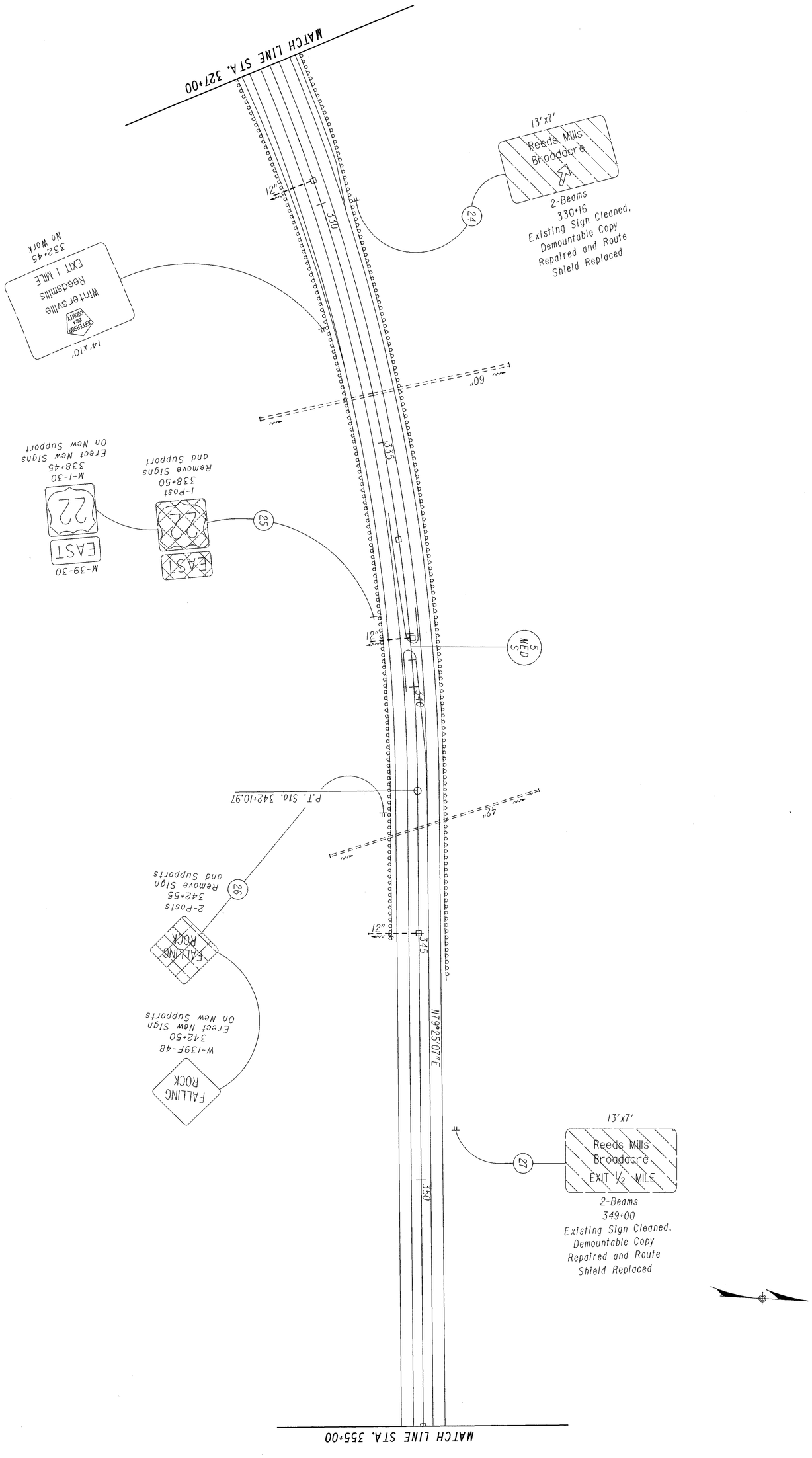
For Legend, See Sheet No. 62
For Quantities, See Sheet No. 60
For Median Crossover Signing, See Sheet No. 71

65/114	JEF-22-3.86	SIGNING PLAN - STA. 270+00 TO STA. 300+00	CALCULATED JM / CHECKED JCN



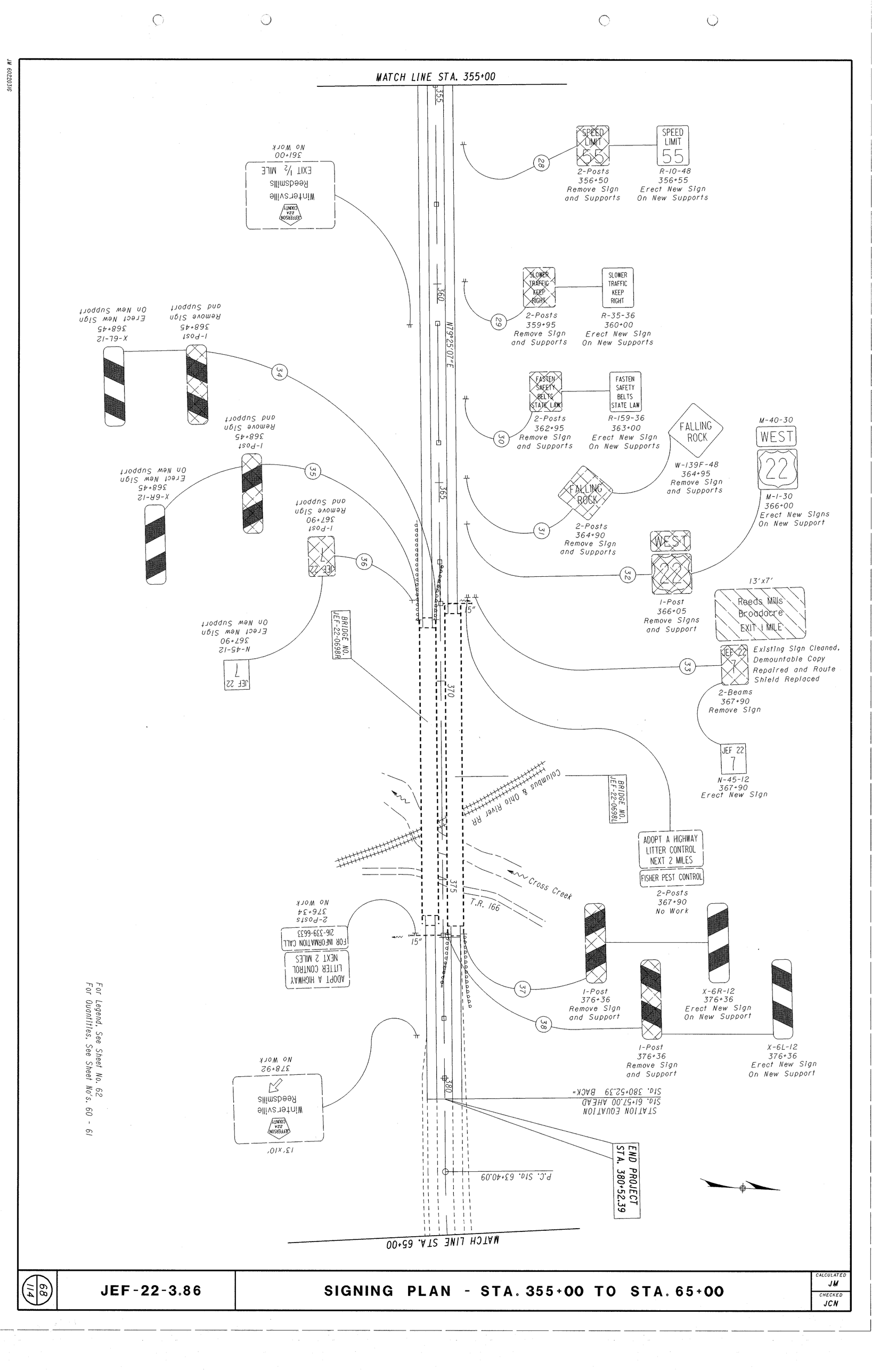
66/114	JEF-22-3.86	SIGNING PLAN - STA. 300+00 TO STA. 327+00	CALCULATED JM / CHECKED JCN

JM 6022031F



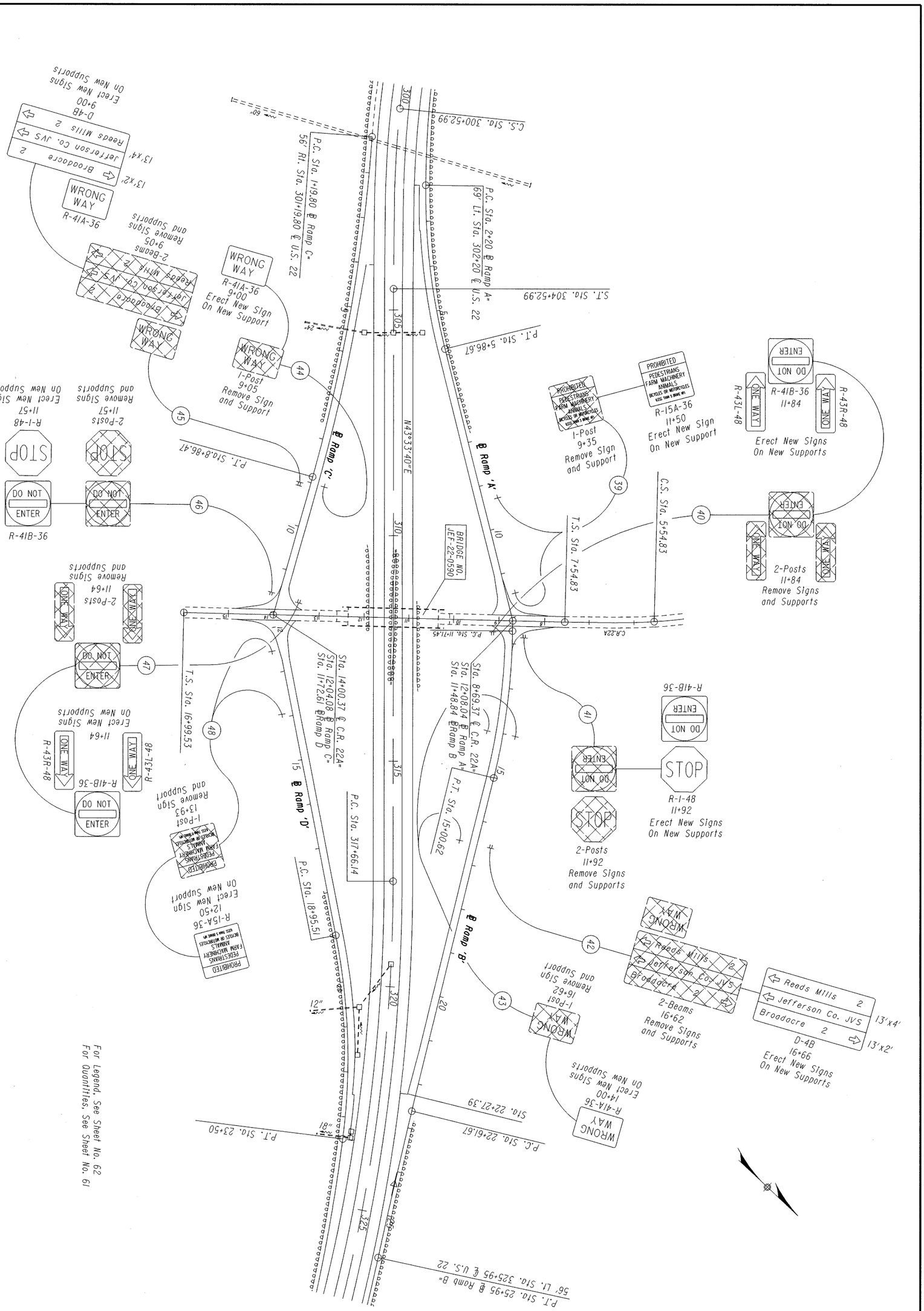
For Legend, See Sheet No. 62
For Quantities, See Sheet No. 60
For Median Crossover Signing, See Sheet No. 71

67 / 114	JEF-22-3.86	SIGNING PLAN - STA. 327+00 TO STA. 355+00	CALCULATED JM / CHECKED JCN

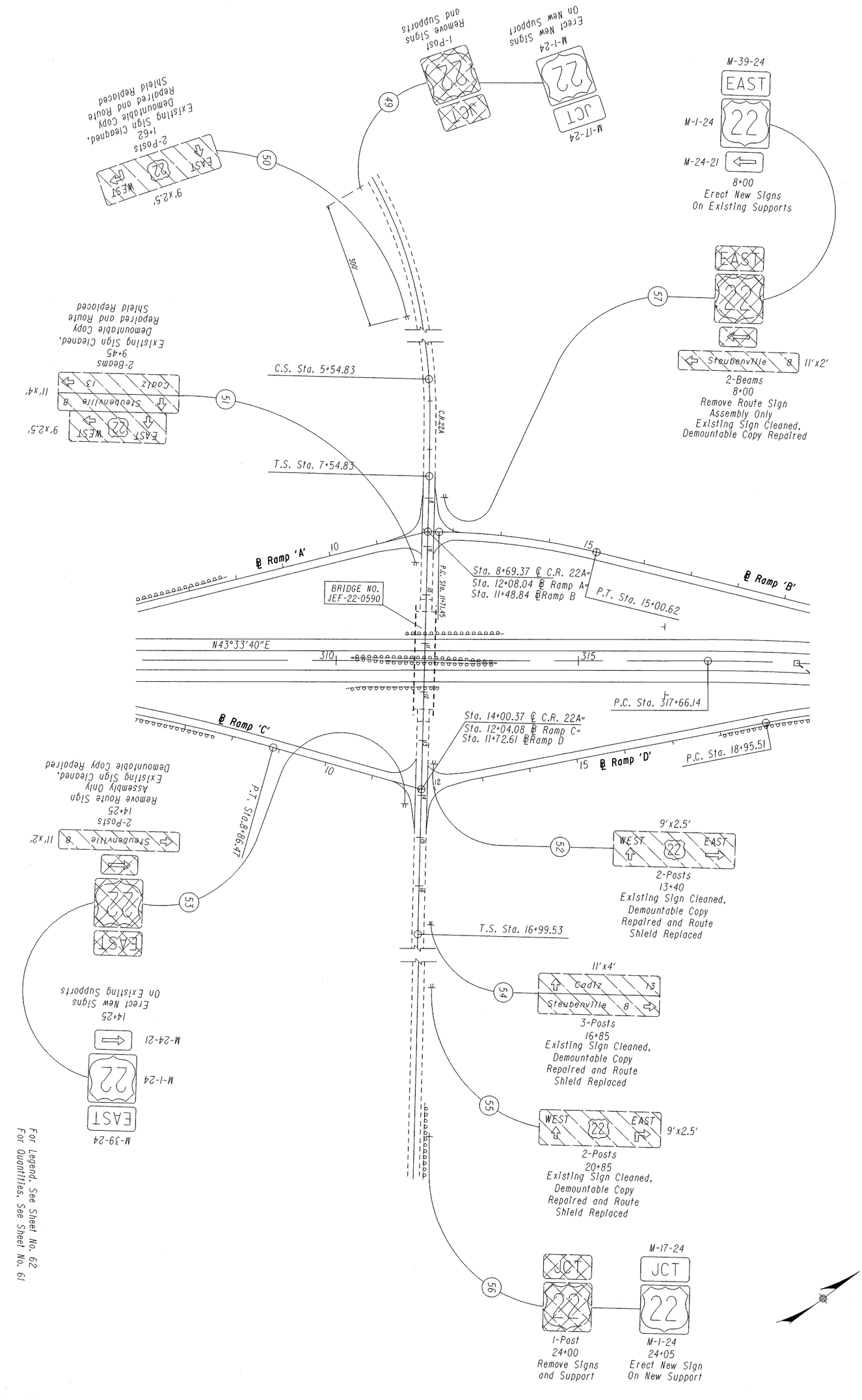


68/114	JEF-22-3.86	SIGNING PLAN - STA. 355+00 TO STA. 65+00

CALCULATED JM
CHECKED JCN

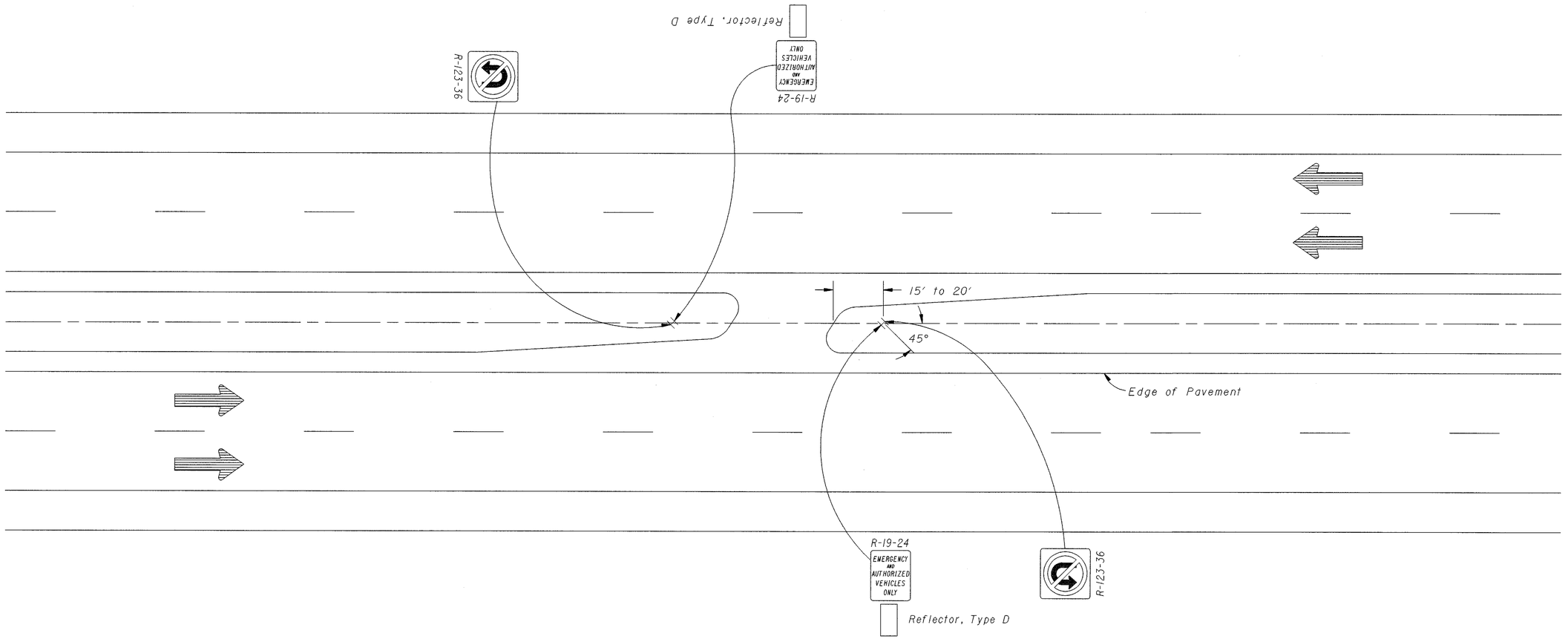


69/114	JEF-22-3.86	SIGNING PLAN - U.S. 22A INTERCHANGE - SHEET 1 OF 2	CALCULATED JM / CHECKED JCN



For Legend, See Sheet No. 62
For Quantities, See Sheet No. 61

70/114	JEF-22-3.86	SIGNING PLAN - U.S. 22A INTERCHANGE - SHEET 2 OF 2	CALCULATED JM / CHECKED JCN



MEDIAN CROSSOVER SIGN DETAIL AND QUANTITIES

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS			620	ITEM 630								
											REFLECTOR. TYPE D			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL		SIGNS. FLAT SHEET.	GROUND MOUNTED SUPPORTS. NO.4 POST		
						INCHES	FEET	LT.	CNTR	RT.	EACH			EACH	EACH		SQ.FT.	LIN.FT.		
	1-MED-S	213+20	Ctr.	Remove Signs And Supports										4	4					
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	2-MED-S	278+83	Ctr.	Remove Signs And Supports										4	4					
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	3-MED-S	339+05	Ctr.	Remove Signs And Supports										4	4					
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
TOTAL (Carried To General Summary)											6			12	12		84.0	84.0		

NOTES:

1. The R-19 and R-123 signs shall be erected back-to-back at approximately the midpoint of the median width at a 45° angle to the traffic flow.
2. Signing for the prohibition of U-turns at temporary crossovers which have been barricaded using an earth mound shall consist of only the R-123 signs.

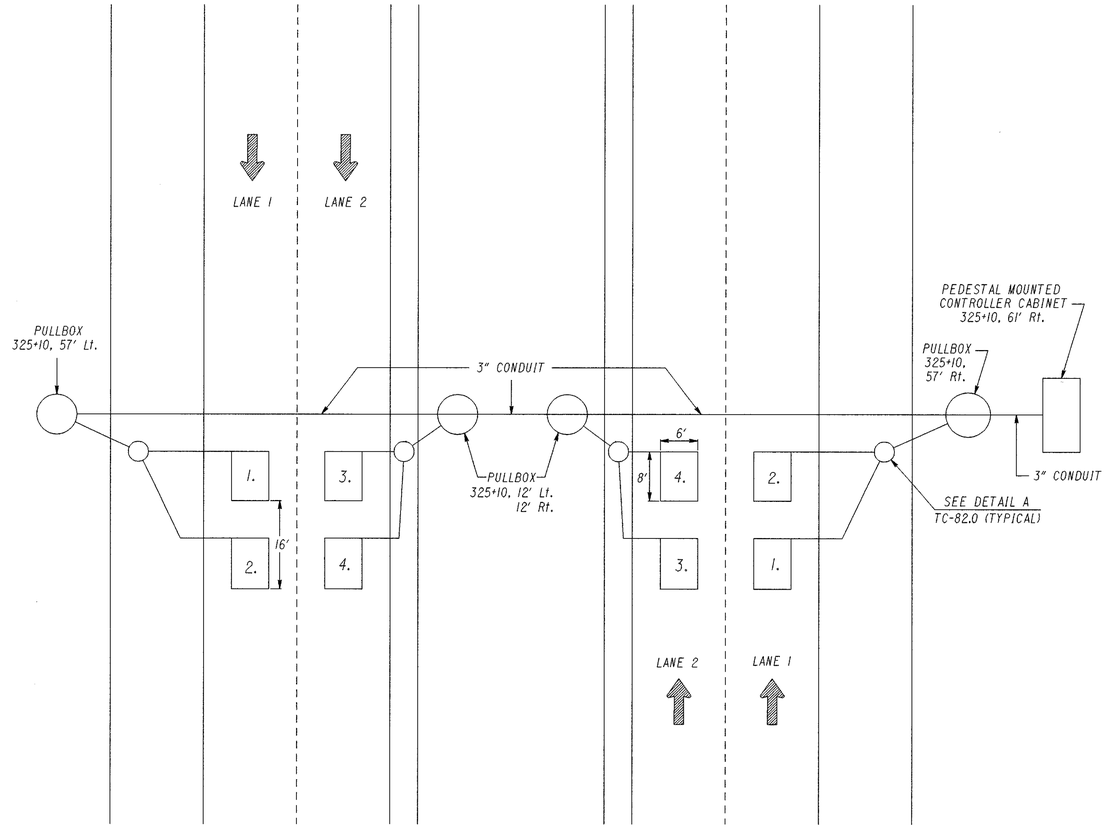
CALCULATED JM
CHECKED JCN

MEDIAN CROSSOVER SIGN DETAIL

JEF-22-3.86

71
114

JM 60220361



AUTOMATIC TRAFFIC RECORDER INSTALLATION
4 LANE SECTION

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
603	00400	80	LIN. FT.	4" CONDUIT, TYPE E
625	25500	27	LIN. FT.	CONDUIT, 3", 713.04
625	25900	90	LIN. FT.	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 3"
625	29000	27	LIN. FT.	TRENCH
625	30700	4	EACH	PULLBOX, 713.08, 18"
625	32000	1	EACH	GROUND ROD
632	27500	360	LIN. FT.	LOOP DETECTOR PAVEMENT CUTTING
632	64900	1040	LIN. FT.	LOOP DETECTOR WIRE, TYPE E
632	65200	630	LIN. FT.	LOOP DETECTOR LEAD-IN CABLE
632	72000	0.37	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
632	89800	1	EACH	PEDESTAL, 3', TRANSFORMER BASE
632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
633	65000	1	EACH	CABINET, WITHOUT CONTROLLER, PREWIRED, PEDESTAL MOUNTING, TYPE G, AS PER PLAN
633	70500	8.3	SQ. FT.	CONTROLLER WORK PAD

QUANTITIES CARRIED TO GENERAL SUMMARY

NOTES

1. ALL LOOPS SHALL BE 6'x 8'. LOOPS SHALL BE SPACED 16'0" FROM LEADING EDGE. INSTALLATION OF LOOPS SHALL CONFORM TO TC-82.10. EACH 6'x 8' LOOP SHALL HAVE 3 TURNS OF WIRE.

2. THE CABINET SHALL BE CLEAN CUT IN DESIGN AND APPEARANCE AND SHALL CONFORM TO THE FOLLOWING:
   A. IT SHALL BE MADE OF ACCEPTABLE STENGTH ALUMINUM (NATURAL FINISH).
   B. THE MINIMUM USEABLE INSIDE DIMENSIONS SHALL BE: HEIGHT 30", WIDTH 19", AND DEPTH 13".
   C. HINGED DOOR SHALL BE PROVIDED ON THE FRONT OF THE CABINET WHICH SHALL INCLUDE SUBSTANTIALLY THE FULL AREA OF THE FRONT OF THE CABINET.
   D. THE DOOR SHALL BE FULLY GASKETED SO THAT WHEN CLOSED IT SHALL FIT CLOSELY TO THE GASKETING MATERIAL, MAKING THE CABINET WEATHER RESISTANT. A ONE POINT LATCH SHALL BE PROVIDED FOR THIS PURPOSE.
   E. THE DOOR SHALL BE PROVIDED WITH AN ACCEPTABLE STRONG LOCK WITH PERMANENT LUBRICATION AND A WEATHERPROOF TAB AND FURNISHED WITH TWO KEYS.
   F. THE DOOR PINS SHALL BE GREASE-LUBRICATED AND OF A NON-CORRODING STEEL MATERIAL.
   G. THE CABINET SHALL CONTAIN ONE SHELF FOR SUPPORT OF TRAFFIC COUNTING EQUIPMENT. SHELF TO BE CENTERED AT 15 INCHES FROM THE TOP OF THE CABINET.
   H. THE CABINET SHALL INCLUDE A VENT.
   I. 12 WIRE TERMINAL BLOCKS 6 INCHES FROM BOTTOM OF CABINET CENTERED ON BACK PANEL (PENN UNION # 6012 OR APPROVED EQUAL). 2 LANE - 2 TERMINAL STRIPS, 4 LANE - 3 TERMINAL STRIPS, 6 LANE - 4 TERMINAL STRIPS, 8 LANE - 5 TERMINAL STRIPS.
   J. MOUNTING FACILITIES SHALL INCLUDE ONE BACK PANEL WITH 5 HOLES (ALUMINUM).

   ALL PIECES SHALL BE SMOOTH AND FREE FROM FLAWS, CRACKS, BLOWHOLES AND OTHER IMPERFECTIONS. THE CABINET SHALL BE ORIENTED SO THAT THE DOOR OPENS TOWARDS THE ROADWAY.

3. CABLE AND WIRE SHALL BE IDENTIFIED IN ACCORDANCE WITH 632.04. IDENTIFICATION SHALL INCLUDE THE DIRECTION OF TRAVEL (ii.e.,NB, WB) AND THE LOOP NUMBER AS SHOWN. EACH CABLE AND WIRE SHALL HAVE 5'0" COILED IN THE CONTROLLER CABINET FOR CONNECTION BY OTHERS.

4. ADJACENT LOOPS (TRANSVERSE AND LONGITUDINAL) SHALL BE INSTALLED IN OPPOSITE DIRECTIONS, i.e., LANE 1, LOOP 1 AND LANE 2, LOOP 4 CLOCKWISE; LANE 1, LOOP 2 AND LANE 2, LOOP 3 COUNTERCLOCKWISE. EACH LOOP SHALL HAVE A SEPERATE LEAD - IN CABLE ROUTED TO THE CONTROLLER CABINET AND TAGGED.

5. REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 80 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE E IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

6. FIVE (5) WORKING DAYS PRIOR TO THE SCHEDULED INSTALLATION, THE CONTRACTOR SHALL CONTACT MR. JAMES ROBSON AT (614) 466-3727.

7. ALL ITEMS SHALL CONFORM TO C & M SPECIFICATIONS 625, 713, 632, 732, 633 AND 733, UNLESS OTHERWISE SPECIFIED.

8. ON AN EIGHT LANE SECTION, LANES 1 AND 2 SHALL BE SAWED TO ONE SIDE OF THE ROADWAY AND LANES 3 AND 4 SHALL BE SAWED TO THE OTHER.

9. LOOPS SHALL BE CUT IN THE FINAL ASPHALT COURSE. THEY SHALL NOT BE INSTALLED BETWEEN THE INTERMEDIATE AND FINAL COURSES.

CALCULATED JM
CHECKED JCN

AUTOMATIC TRAFFIC RECORDER INSTALLATION - 4

JEF-22-3.86

JM 60220373

ITEM 642 - PAVEMENT MARKING

STATION FROM	STATION TO	LANE OR RAMP	SIDE OF LANE OR RAMP	Edge Line: Yellow	Edge Line: White	Lane Line	Channelizing Line	Transverse Line	Stop Line (White)	Curb Marking	Island Marking
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Sq. Ft.
202+25	380+52.39	EAST BOUND	Lt.	17827.39							
61+57	68+05		Lt.	648							
202+25	380+52.39		Ctr			17827.39					
61+57	68+05		Ctr			648					
202+25	325+52		Rt.		12327						
323+50	380+52.39		Rt.		5702.39		202				
61+57	68+05		Rt.		648						
202+25	380+52.39	WEST BOUND	Lt.	17827.3							
202+25	380+52.39		Ctr			17827.39					
202+25	302+20		Rt.		9995						
299+85	380+52.39		Rt.		8067.39		235				
302+20	7+90	RAMP A			1030						
302+20	9+15			960							
299+85	302+20						235				
297+50	299+85					235					
7+80	322+27.39	RAMP B			1117.39				40		
9+15	322+27.39			1077.39							
322+27	324+17						380	145			
324+17	326+77					260					
299+75	302+50	RAMP C				275			40		
302+50	304+00						300	140			
304+00	14+85				850						
304+00	13+37			800							
14+85	323+50	RAMP D			1125						
323+50	325+52							202			
325+52	327+88						236				
13+50	323+50			1115							
TOTALS (Carried To General Summary)				40255.17	40862.17	37072.78	1588	487	80		
				81117.3							
				15.36 MI.		7.02 MI.					

ITEM 621- RAISED PAVEMENT MARKER

STATION FROM	STATION TO	LANE OR RAMP	Length	Spacing	2-Way White/Red	1-Way Yellow	1-Way White	Remarks
			Lin. Ft.	Feet	Each	Each	Each	
202+25	288+00	EAST BOUND	8575	80			107	LANE LINE
288+00	304+00		1600	80	20			LANE LINE
304+00	380+52.39		7652.39	80			96	LANE LINE
61 +57	68+05		648	80			8	LANE LINE
202+25	322+27	WEST BOUND	12002	80			150	LANE LINE
322+27	338+27		1600	80	20			LANE LINE
338+27	380+52		4225	80			53	LANE LINE
299+85	302+20	RAMP A	235	40			6	CHANNELIZING LINE
299+85	304+12		427	40			11	WHITE EDGE LINE
302+20	304+12		192	40		5		YELLOW EDGE LINE
321+47	322+27	RAMP B	80	40			2	WHITE EDGE LINE
321+47	322+27		80	40			2	WHITE EDGE LINE
322+27	324+17		190	20			19	CHANNELIZING LINE
302+50	304+00	RAMP C	150	20			15	CHANNELIZING LINE
304+00	304+80		80	40			2	WHITE EDGE LINE
304+00	304+80		80	40			2	WHITE EDGE LINE
321+60	323+50	RAMP D	190	40		5		YELLOW EDGE LINE
321+60	325+52		392	40			10	WHITE EDGE LINE
323+50	325+52		202	40			5	CHANNELIZING LINE
TOTALS (Carried To General Summary)					40	10	488	
						538		

ITEM 620 - DELINEATORS

STATION FROM	STATION TO	LANE OR RAMP	SIDE	Type C Post Mounted	Type D Post Mounted	Spacing	Delineator Removed For Disposal
				Each	Each	Feet	Each
292+20	12+08	RAMP A	Lt.	10		200	10
11+48	330+30	RAMP B	Lt.	10		200	10
296+00	12+04	RAMP C	Rt.	9		200	9
11+72	333+40	RAMP D	Rt.	10		200	10
EASTBOUND							50
WESTBOUND							50
TOTALS (Carried To General Summary)				39			139

ITEM 614 - TEMPORARY PAVEMENT MARKING

STATION FROM	STATION TO	LANE OR RAMP	No. Of Lane Lines	No. Of Applications	Temporary Lane Line, Class I	Temporary Edge Line, Class I: Yellow	Temporary Edge Line, Class I: White	Temporary Gore Marking, Class II
					Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.
202+25	380+52.39	EASTBOUND	1	1	17827.3	17827.3	17827.3	
61+57	68+05		1	1	648	648	648	
202+25	380+52.39	WESTBOUND	1	1	17827.3	17827.3	17827.3	
RAMP A (C.R. 22 INTERCHANGE)								200
RAMP B (C.R. 22 INTERCHANGE)								200
RAMP C (C.R. 22 INTERCHANGE)								200
RAMP D (C.R. 22 INTERCHANGE)								200
TOTALS (Carried To General Summary)					36302.7	36302.7	36302.7	800
						72605.6		
					6.87 MI	13.75 MI		

CALCULATED JM
CHECKED JCN

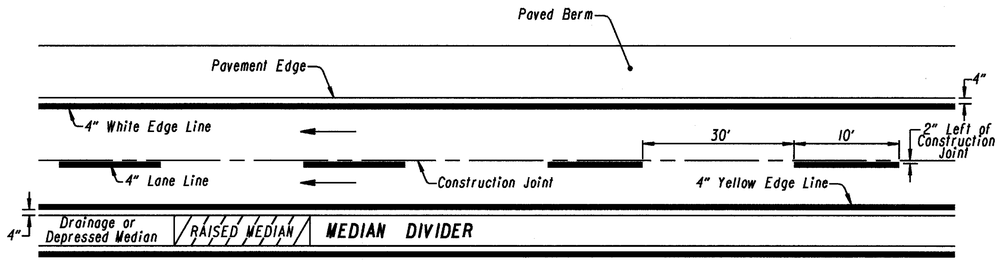
PAVEMENT MARKING, TEMPORARY PAVEMENT MARKING, DELINEATORS, RAISED PAVEMENT MARKER QUANTITIES

JEF-22-3.86

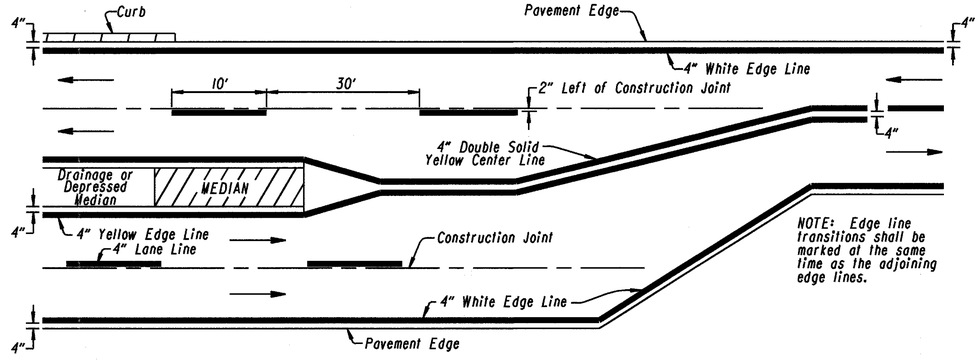
JM 60220362

PAVEMENT MARKING TYPICAL DETAILS

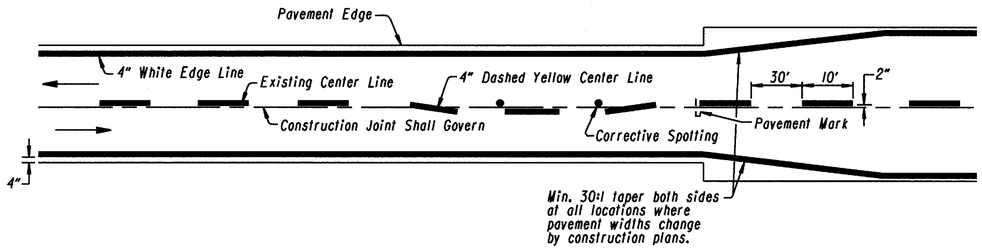
FREEWAY & EXPRESSWAY MAINLINE MARKINGS



MULTILANE DIVIDED & UNDIVIDED HIGHWAY MARKINGS



TWO LANE MARKINGS



NOTES:

1. The distance from the pavement edge to the nearside edge of the edgeline may be increased with the approval of the Engineer in order to maintain uniform lane width.
2. See TC-72.20 for freeway entrance ramp and exit ramp markings.
3. The cycle length for dashed lines shall be 40 feet plus or minus six inches. The minimum length of dash shall be sufficiently long to maintain a 3:1 ratio between length of gap and length of dash.

CALCULATED | CHECKED

PAVEMENT MARKING TYPICAL DETAILS

PAVEMENT

JEF-22-3.86

OHIO DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING TYPICAL DETAILS

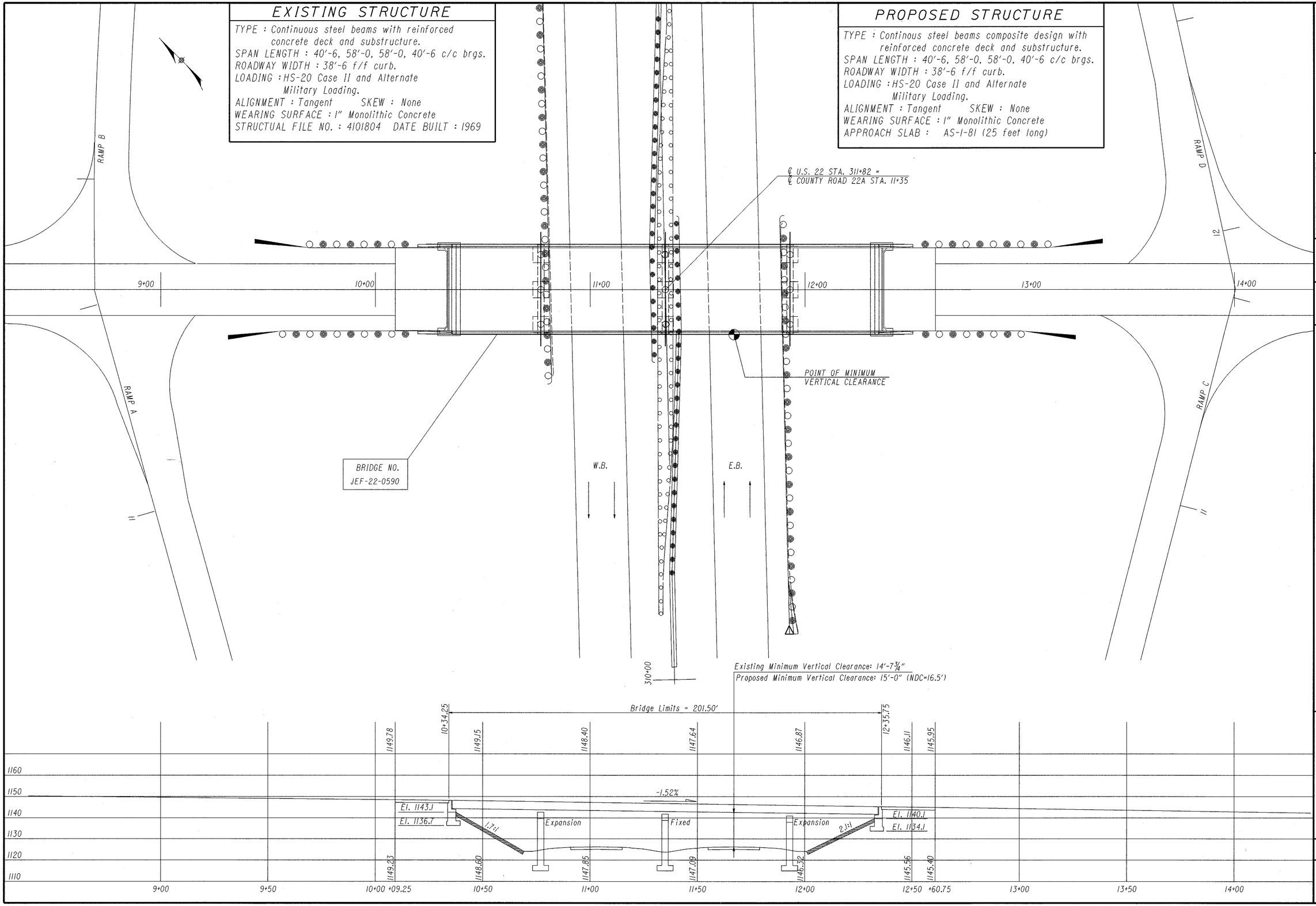
Date: 11-80, 9-86, 9-91

EXISTING STRUCTURE

TYPE : Continuous steel beams with reinforced concrete deck and substructure.
SPAN LENGTH : 40'-6, 58'-0, 58'-0, 40'-6 c/c brgs.
ROADWAY WIDTH : 38'-6 f/f curb.
LOADING : HS-20 Case II and Alternate Military Loading.
ALIGNMENT : Tangent SKEW : None
WEARING SURFACE : 1" Monolithic Concrete
STRUCTUAL FILE NO. : 4101804 DATE BUILT : 1969

PROPOSED STRUCTURE

TYPE : Continous steel beams composite design with reinforced concrete deck and substructure.
SPAN LENGTH : 40'-6, 58'-0, 58'-0, 40'-6 c/c brgs.
ROADWAY WIDTH : 38'-6 f/f curb.
LOADING : HS-20 Case II and Alternate Military Loading.
ALIGNMENT : Tangent SKEW : None
WEARING SURFACE : 1" Monolithic Concrete
APPROACH SLAB : AS-1-81 (25 feet long)



DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	BKL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SHG		4101804	

SITE PLAN

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

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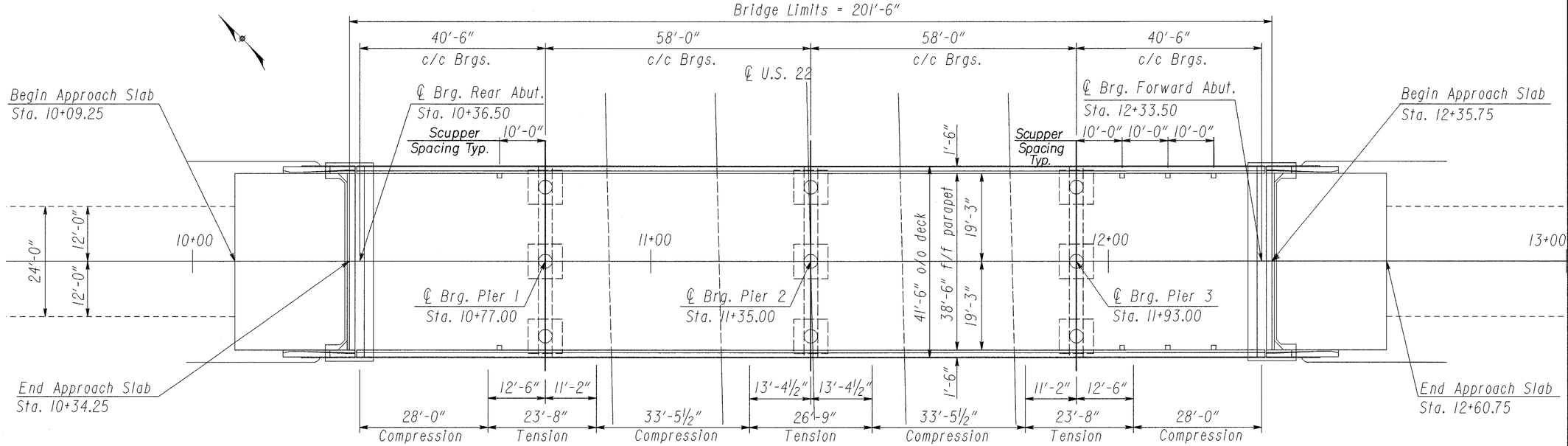
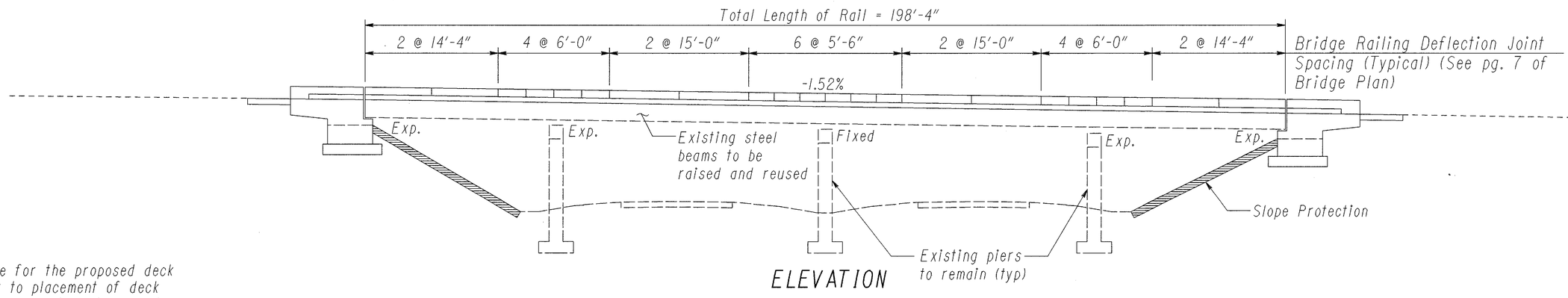


PLAN

WELDED ATTACHMENTS of supports for concrete finishing machine may be made to areas of the facia stringer flanges designated "Compression". Attachments shall not be made to areas designated "Tension". Fillet welds to compression flanges shall be not closer than 1" from the edge of flange, be not more than 2" long and be not smaller than the minimum size required by AASHTO.

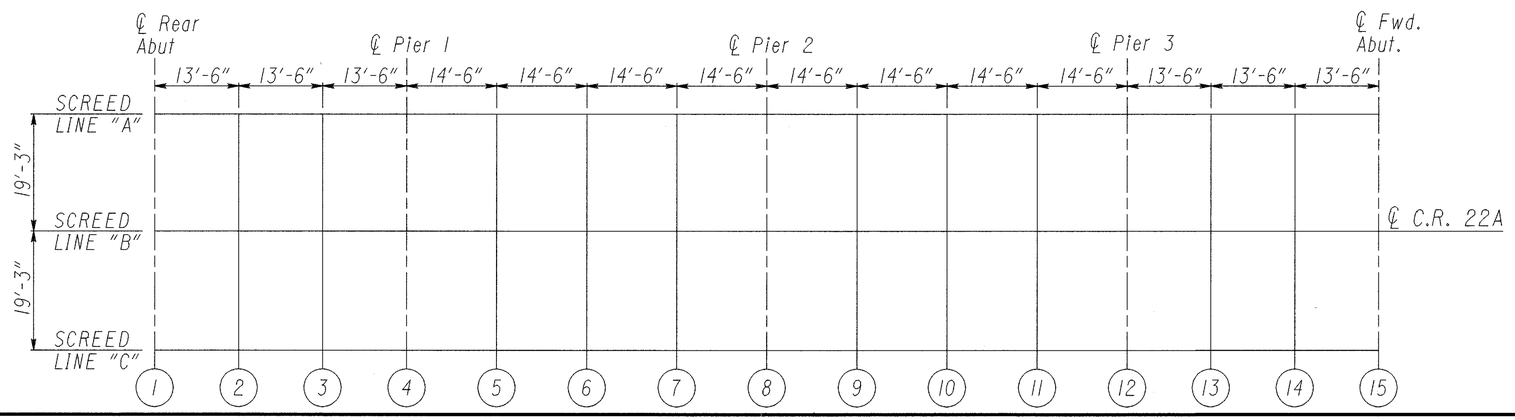


ELEVATION

Elevations are for the proposed deck surface prior to placement of deck concrete. Allowances have been made for anticapated deflection of beams.

DECK SCREED ELEVATIONS

	SCREED LINE		
	"A"	"B"	"C"
1	1149.05	1149.36	1149.05
2	1148.85	1149.16	1148.85
3	1148.65	1148.96	1148.65
4	1148.43	1148.74	1148.43
5	1148.23	1148.54	1148.23
6	1148.02	1148.33	1148.02
7	1147.78	1148.09	1147.78
8	1147.55	1147.86	1147.55
9	1147.34	1147.65	1147.34
10	1147.14	1147.42	1147.14
11	1146.91	1147.22	1146.91
12	1146.67	1146.98	1146.67
13	1146.47	1146.78	1146.47
14	1146.26	1146.57	1146.26
15	1146.05	1146.36	1146.05



DESIGN AGENCY O.D.O.T. DISTRICT 11 BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	BKL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

GENERAL PLAN & ELEVATION
BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

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WORK REQUIRED

1. After closing the road to traffic remove existing reinforced concrete deck and bridge rail, abutments and wingwalls.
2. Refurbish and reset the pier bearings, as per plan.
3. Construct new abutments and wingwalls; install elastomeric bearings at abutments.
4. Install shear connectors.
5. Construct new reinforced concrete deck, parapets and approach slabs.
6. Clean and paint existing structural steel.
7. Repair embankment around wingwalls.

DESIGN DATA

Design Loading- HS20-44 Case II and Alternate Military Loading
High Performance Concrete - Compressive Strength 4500 p.s.i. (Substructure)
High Performance Concrete - Compressive Strength 4500 p.s.i. (Superstructure)
Reinforcing Steel - ASTM A615, A616, A617 - Min.Yield Strength 60000 p.s.i.
Deck Protection Method: Epoxy Coated Reinforcing Steel both mats
Monolithic Wearing Surface is assumed for design purposes to be 1" thick.

EXISTING STRUCTURE VERIFICATION

Details and dimensions of these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS sections 102.05, 105.02 and 513.02. Contract bid prices shall be based upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

CONTINGENCY QUANTITIES

Specific locations and usage of the estimated quantities set up on this plan to be used "As directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project. Estimated quantities of materials shall not be ordered for delivery to the project unless authorized by the Engineer.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

Work to be paid for under this item shall include the removal of structure components as detailed in the plans, as per 202.03 and as directed by the Engineer. These removals are included in but not necessarily limited to the following list:

1. Abutments, wingwalls and wingwall parapets.
2. Reinforced concrete deck including parapets and steel end dam.
3. Approach slabs.

PROTECTION OF TRAFFIC: Prior to demolition of any portions of the existing superstructure, the Contractor shall submit his plans for the protection of traffic (vehicular, pedestrian, etc.) adjacent to and/or under the structure to the Director for approval. These plans shall include provisions for any devices and structures that may be necessary to ensure such protection. Temporary vertical clearances specified on the plans or in the proposal shall be maintained at all times except as otherwise approved by the Director.

PROTECTION OF STEEL SUPPORT SYSTEMS: Before deck slab cutting is permitted, the outline of primary steel members in contact with the bottom of the deck shall be drawn on the surface of the deck. Small diameter pilot holes shall be drilled 2 inches outside these lines to confirm the location of flange edges. Deck cuts over or within 2 inches of flange edges shall not extend lower than the bottom layer of deck slab reinforcing steel. Cuts made outside 2 inches of flange edges may extend the full depth of the deck. During cutting of the deck slab, care shall be taken not to damage steel members that are to be incorporated into the proposed structure.

REMOVAL METHODS: Concrete may be removed by cutting and by means of hand operated pneumatic hammers employing pointed or blunted chisel type tools. For removals above steel members, a hammer heavier than 35 pounds but not to exceed 90 pounds may be used at the approval of the Engineer, to ensure adequate depth control and to prevent nicking or gouging the primary steel members.

DECK REMOVALS: Due to the possible presence of welded attachments to existing structural steel (finishing machine, scupper and form supports, etc.), care shall be taken during deck removal to avoid damaging stringers which are to remain. Stringers damaged by the Contractor's removal operations shall, at no cost to the project, be replaced or repaired. Proposed repairs, developed by a registered professional engineer, shall be submitted in writing for review and approval by the Director.

EXTRANEOUS MEMBERS: Existing extraneous members (i.e., finishing machine and form supports, etc., and the support for scuppers and bulb angles which are to be removed) attached by welded connections to portions of the top flanges designated "tension" shall be removed and the flange surfaces ground smooth. Grinding shall be carefully done and parallel to the flanges.

Any portion of the structure damaged during demolition and construction by the Contractor's operations shall be repaired or replaced by the Contractor at his own expense and to the satisfaction of the Engineer. All concrete and materials removed from the existing structure shall be disposed of as provided in CMS section 203.05 (2). Lane closures and times of implementation shall be approved by the Engineer. No removal work shall be started without prior approval of the Engineer. Cost for protection of the public shall be included with Item 614 - Maintaining Traffic for payment.

BRIDGE SUMMARY

* (SEE PROPOSAL NOTE)

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
202	22900	134	SQ YD	APPROACH SLAB REMOVED
503	21300	LUMP		UNCLASSIFIED EXCAVATION
509	15840	79460	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60
SPECIAL	51148000	243	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK) (MIX TYPE 4) *
SPECIAL	51148020	43	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET) (MIX TYPE 4) *
SPECIAL	51148040	171	CU YD	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE (MIX TYPE 4) *
SPECIAL	51149000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX (MIX TYPE 4)
SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE, TESTING (MIX TYPE 4)
SPECIAL	51267510	770	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *
513	20000	2415	EACH	WELDED STUD SHEAR CONNECTOR
815	00050	10500	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	10500	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIMECOAT, SYSTEM OZEU
815	00060	10500	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	10500	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00504	75	MANHOUR	GRINDING FINS, TEARS, SLIVERS
815	00508	3970	LIN FT	GRINDING FLANGE EDGES
516	11211	81	LIN FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
516	44000	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (8" x 1'-0" x 2")
516	46801	15	EACH	REFURBISH AND RESET BEARING, AS PER PLAN
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
518	12200	8	EACH	SCUPPERS, INCLUDING SUPPORTS
518	21200	34	CU YD	POROUS BACKFILL WITH FILTER FABRIC
518	40000	72	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, 707.16
518	40010	120	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.16
601	20001	418	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN
611	25001	214	SQ YD	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

When removing the existing expansion joint, care should be taken in the removal of the existing angles, plates and gusset plates so as not to damage the top flange of the existing beams. Plates shall be removed by flame cutting and the surface of the flange shall be left smooth of any irregularities so that the new expansion joint shall be properly installed. This work will be included for payment with Item 202 - Portions of Structure Removed, Over 20 Foot Span, As Per Plan.
Existing end crossframe angles and gusset plates shall be removed and reset, or replaced as deemed necessary by the Engineer, to allow new expansion joint armor to be installed. Placement of crossframes and gusset plates will be in accordance with Standard Drawing EXJ-4-87. The work of removing and reseting, or replacing the existing crossframe angles and gusset plates will be included for payment with Item 516 - Structural Expansion Joint Including Elastomeric Strip Seal, As Per Plan.

REFURBISH AND RESET BEARING, AS PER PLAN

Since the beams of Bridge No. JEF-22-0590 are being raised 4"± to increase the vertical clearance the rocker bearings on Piers 1 and 3 and the bolster bearings on Pier 2 will need to be raised 4"± to accomodate the raising of the beams and abutments. Two new steel shim plates, 2" thick and the same dimensions as the existing bearing plates (1'-2" x 1'11"), will be used to raise each rocker or bolster. At the bolsters on Pier 2 the bolts that are embedded in the pier cap will need to be extended a minimum of 4" to accomodate the new shim plates. The extensions of the bolts will be done by either welding or mechanically fastening threaded sections of matching-sized bolts to the existing bolts. New preformed bearing pads shall be provided at all the pier bearings. All provisions of CMS 516.05 that are not superseded by this note will apply. The Contractor may choose to replace the existing rockers and bolsters instead of refurbishing the existing ones at no additional cost to the State. The Contractor will refer to Std. Dwg. RB-1-55 for more information. The bearings will be painted according to the provisions of the OZEU Proposal Note. All work will be to the satisfaction of the Project Engineer and will be paid for under Item 516 Refurbish and Reset Bearing, As Per Plan.

ITEM 516 — JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

This item shall cover the cost of all labor, materials, equipment and incidentals necessary to jack and support the superstructure steel during the replacement of the abutments and the raising of the beams. The Contractor must submit detailed jacking plans and procedures that have been prepared by a registered professional engineer to the Office of Structural Engineering. The submittal will include but not be limited to, sequence of operations, welding locations and procedures, blocking details, shoring details, horizontal movement restraints, hydraulic systems, jacking capacities, reactions, concrete bearing stresses, lateral loads, longitudinal loads, beam buckling check at jacking points, design of blocking, jacks, plates and any other calculations or details necessary to perform the jacking work.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	dated 9-15-94
EXJ-4-87	dated 11-12-93
RB-1-55	dated 2-02-59
SD-1-69	dated 6-12-69
A-1-69	dated 6-12-69

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS:

910	dated 7-17-95
944	dated 12-7-95

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG		4101804	

GENERAL NOTES AND SUMMARY

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

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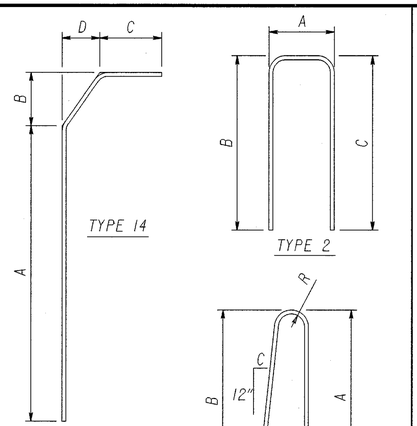
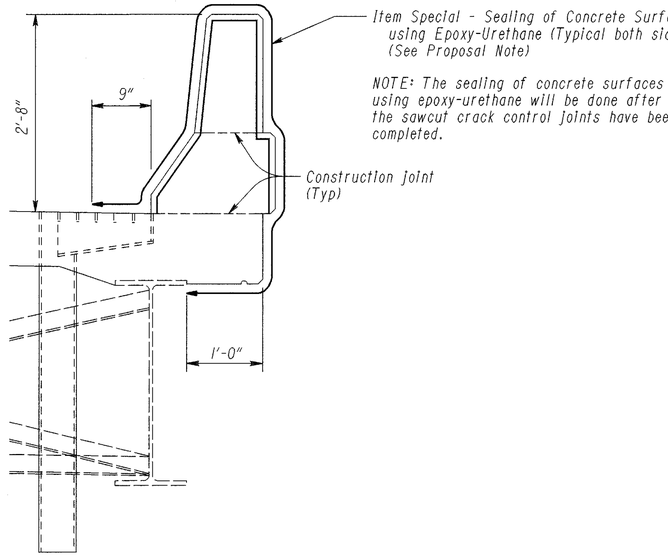
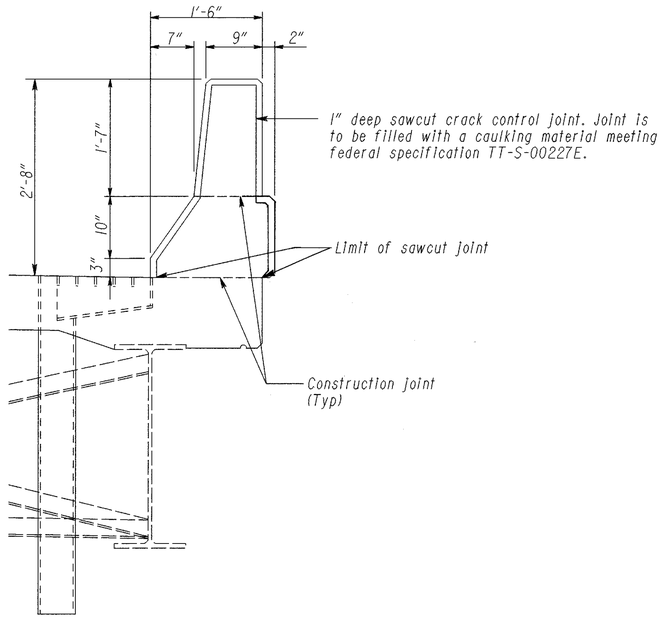
MARK	NUMBER REAR	NUMBER FWD	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
ABUTMENTS													
AE501	28	28	56	15'-3"	891	ST.							
AE503	4	4	8	14'-2½"	119	19	10'-0"	2'-5½"	1'-3¼"	1½"	4¼"		
AE504	28	28	56	6'-0"	350	ST.							
AE505	4	4	8	9'-0"	75	ST.							
AE506	16	16	32	5'-3½"	177	2	10½"	2'-4"	2'-4"				
AE507	16	16	32	6'-3½"	210	14	4'-3"	8½"	10"	6"			
AE508	4	4	8	3'-0"	25	ST.							
AE509	2	2	4	5'-6"	23	17	2'-4"	2'-5"	1¼"	7½"		2⅛"	
AE510	4	4	8	8'-2"	68	ST.							
AE511	26	26	52	21'-8"	1175	ST.							
AE512	18	18	36	21'-8"	814	ST.							
AE513	20	20	40	9'-3"	386	ST.							
AE601	28	28	56	12'-7"	1059	1	7'-7"	5'-2"					
AE602	41	41	82	9'-10"	1211	2	1'-4"	4'-5"	4'-5"				
AE603	39	39	78	5'-0"	586	2	1'-4"	2'-0"	2'-0"				
AE604	39	39	78	6'-10"	801	2	0'-11"	3'-1"	3'-1"				
AE605	28	28	56	9'-5"	792	1	7'-7"	2'-0"					
AE606	28	28	56	7'-2"	603	2	3'-4"	2'-1"	2"-1"				
AE607	8	8	16	22'-8"	545	ST.							
AE608	2	2	4	12'-3"	74	ST.							
AE609	5	5	10	20'-4"	306	2	1'-2"	9'-9"					
DE801	26	26	52	4'-10"	672	20	1'-0"	2'-10¼"				3"	
SUPERSTRUCTURE													
SE401			343	30'-0"	6874	ST.							
SE501			455	30'-0"	14237	ST.							
SE502			680	21'-7"	15308	ST.							
SE505			266	5'-6"	1526	17	2'-4"	2'-5"	1¼"	7½"		2⅛"	
SE506			266	3'-3"	902	16	11½"	8½"	9"	6"	10½"		
SE507			266	2'-5"	671	1	1'-8"	10½"					
SE601			680	22'-4"	22810	ST.							
SE602			156	26'-4"	6170	ST.							

NOTE: All dimensions are measured out-to-out.





PARAPET CONCRETE SEALING DETAIL



PARAPET SAWCUT CRACK CONTROL JOINT DETAIL

CONCRETE PARAPETS: As soon as a concrete saw can be operated without damaging the freshly placed concrete, 1 inch deep control joints shall be sawed into the perimeter of the concrete parapet. The saw cut shall be made in the complete circumference of the parapet, starting and ending at the elevation of the concrete deck. The use of an edge guide, fence or jig is required to insure that the cut joint is straight, true and aligned on all faces of the parapet. The joint width shall be the width of the saw blade, a nominal width of ¼ inch. The perimeter of the deflection joint shall be sealed to a minimum depth of 1 inch with a caulking material conforming to Federal Specification, TT-S-00227E.

ITEM 503 - UNCLASSIFIED EXCAVATION

This item shall cover the necessary excavation around the abutments and wingwalls during the reconstruction of Bridge No. JEF-22-0590.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES

An epoxy-urethane concrete sealer shall be applied to the concrete rail as shown on the Typical Section for the length of the bridge including wingwalls. Sealer shall also be applied to the face of the backwall, all horizontal and vertical faces of the bridge seat to the ground line and all exposed vertical surfaces of the piers. The sealer shall not be applied until the sawcut crack control joints have been completed. See Proposal Note for the surface preparation requirements, application rates, material requirements and application procedures.

HIGH PERFORMANCE CONCRETE

High performance concrete, as specified in Proposal Note 350-94, will be used for all the concrete on Bridge No. JEF-22-0590. Mix Type 4 will be specified as the mix type for the concrete. All other provisions of Proposal Note 350-94 will apply.

FIELD PAINTING OF EXISTING STEEL

For the purposes of estimating the square foot pay item, a percentage of 25% was used for incidental surface area of steel that will need to be painted.

ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

The reinforcing steel for the approach slabs of this structure shall be epoxy coated in conformance with 509. Materials, labor and installation shall be included with the approach slabs for payment.

INSPECTION OF STRUCTURAL STEEL

The Engineer shall visually inspect all existing butt-welded splices and/or top flange cover plate fillet welds to ensure that they are free of defects. The deck slab haunch forms immediately adjacent to such welds shall not be erected until after the Engineer has completed this inspection. This inspection shall not take place until after the top flanges are cleaned as specified in 511.08, but it shall be done before the deck slab reinforcement is installed. The cost associated with this inspection shall be included with Item 511, Superstructure Concrete for payment.

CRUSHED AGGREGATE SLOPE PROTECTION , AS PER PLAN

The provisions of Construction and Material Specification 601 will apply except for the size specified under 601.05. The aggregate shall be greater than 6 inches but not more than 12 inches in size. The remaining provisions of 601.05 will apply.

DESIGN AGENCY O.D.O.T. DISTRICT 11 BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG		4101804	

REINFORCING STEEL LIST

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

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78/114

REAR ABUTMENT

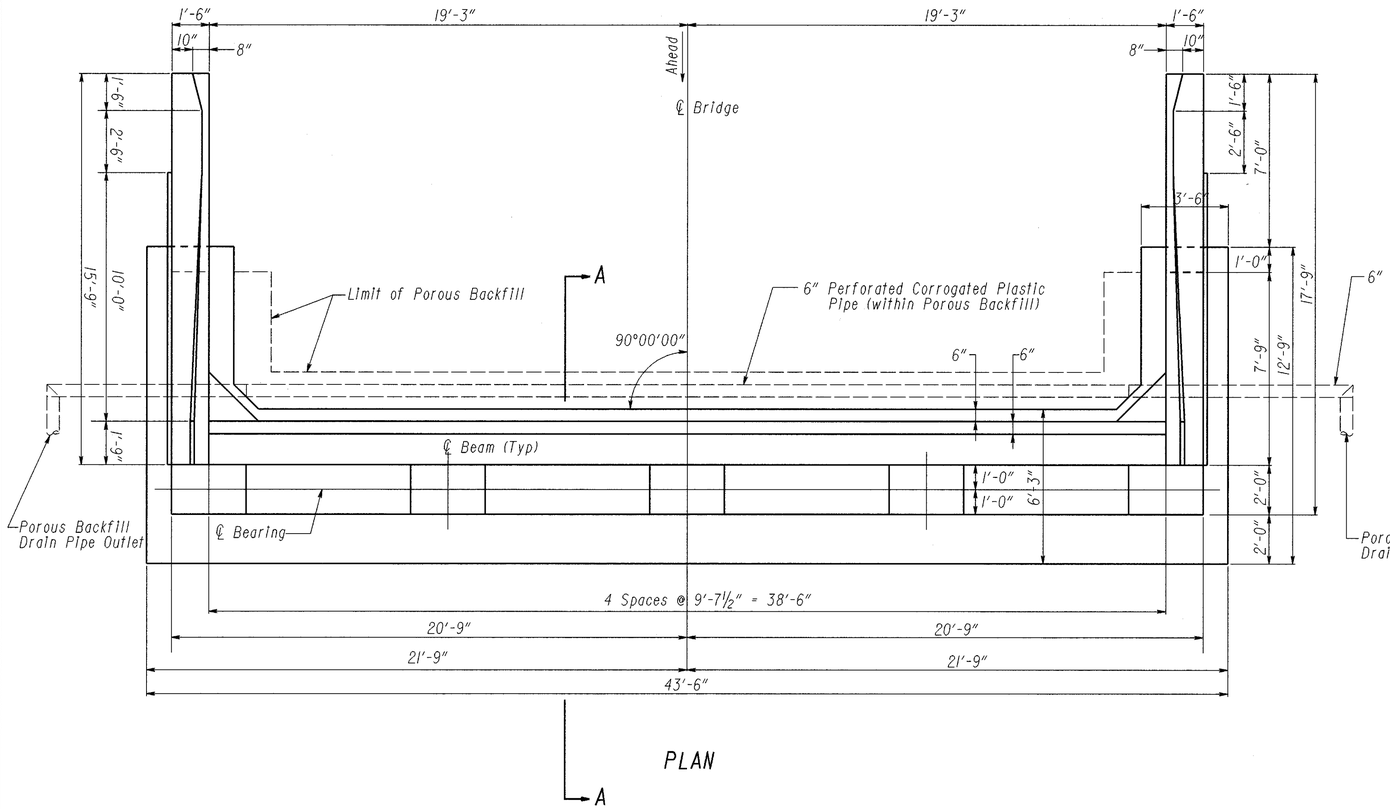
DRAINAGE: The porous backfill behind the abutments shall be drained by extending the 6" Corrugated Plastic Pipe through the wingwall footings, then redirected into the front slope, terminating as shown in Detail C. Only that portion of the CPP located in the Porous Backfill shall be perforated.

CRUSHED AGGREGATE SLOPE PROTECTION shall extend down the face of the front slope in accordance with CMS 601.05. Quantities will be carried in the Bridge General Summary.

BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the abutment has been placed.

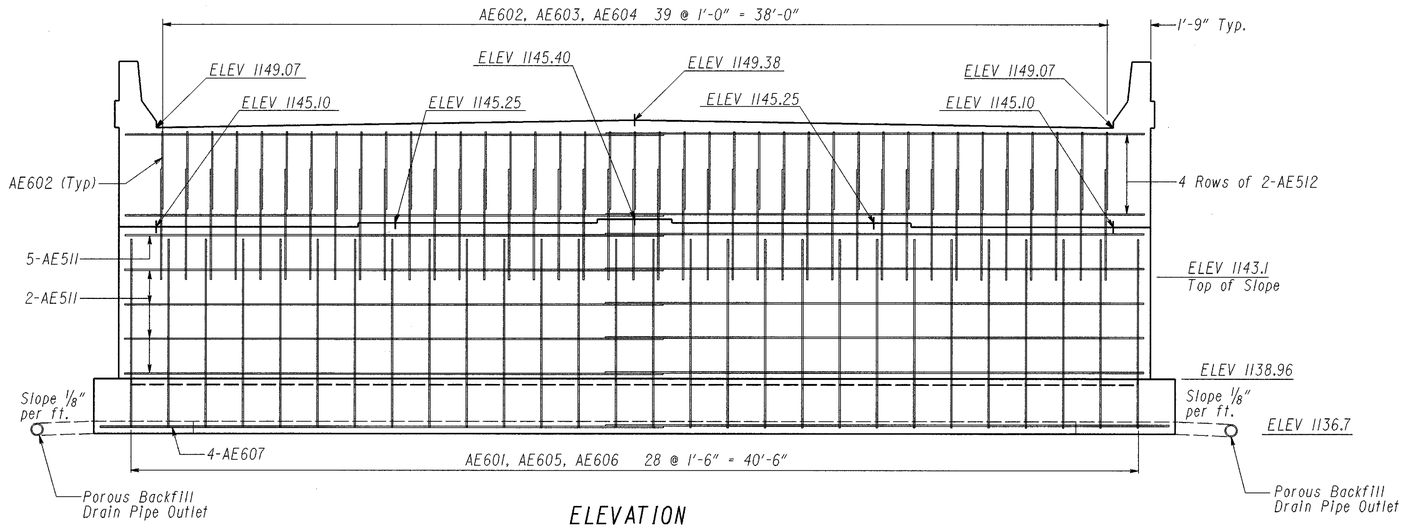
INSTALLATION OF SEAL: During installation of the support/armor for the superstructure side of the expansion joint seal, the seating of beams on bearings shall be carefully observed to assure that positive bearing is maintained. Proper vertical fit of the support/armor on the beams shall be achieved by positioning of the bevel fill plates rather than by clamping force.

NOTE: All exposed concrete surfaces of the abutments will be sealed using the epoxy-urethane sealer.

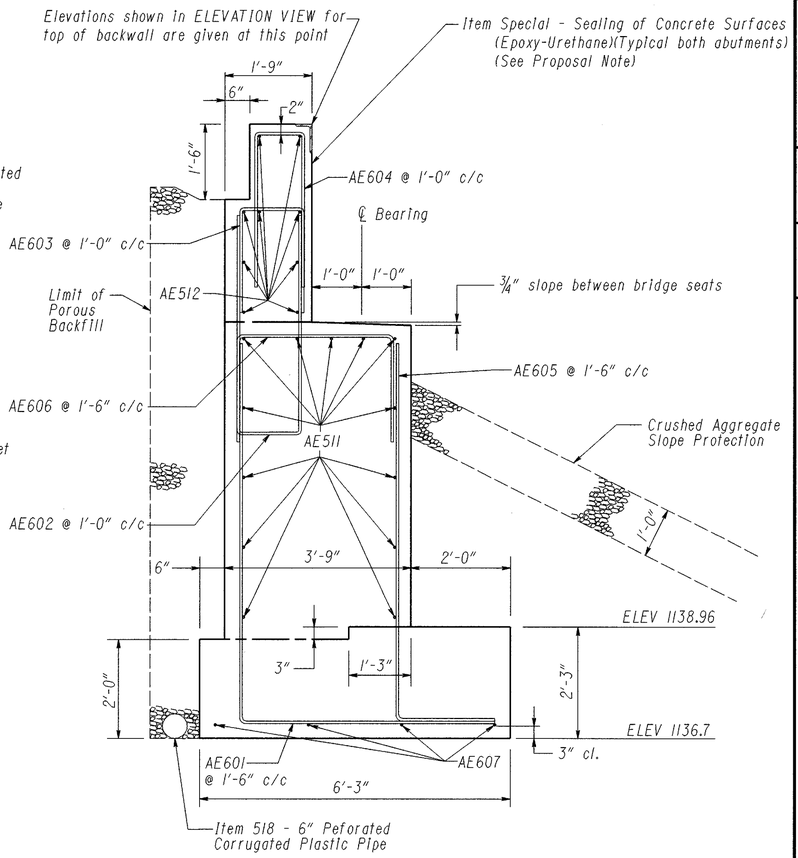


PLAN

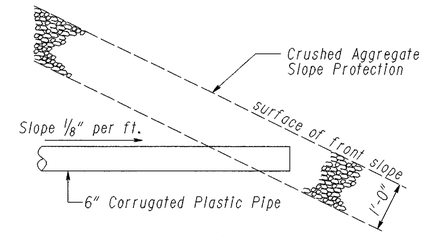
A



ELEVATION



SECTION A-A



DETAIL C

METHOD OF TERMINATING 6" CORRUGATED PLASTIC PIPE AT THE FRONT SLOPE

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

REAR ABUTMENT
BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

5/10

79/114

FORWARD ABUTMENT

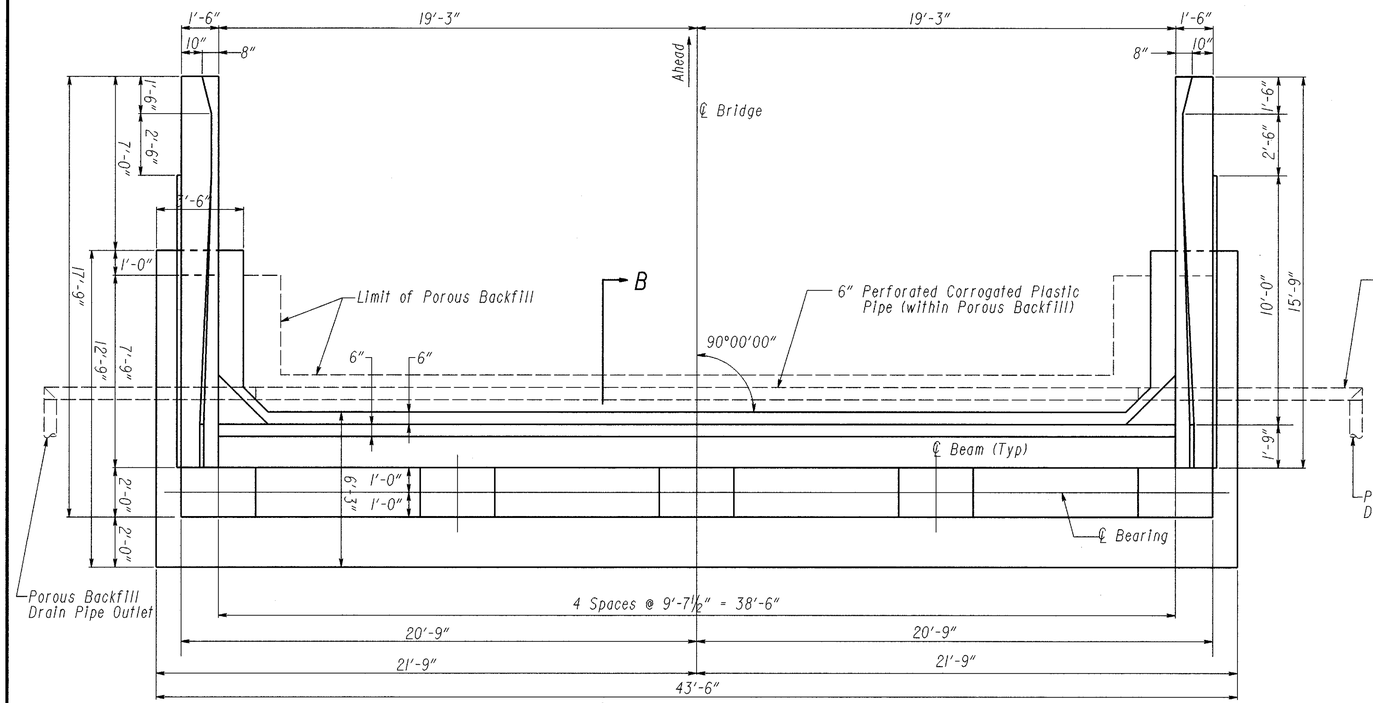
DRAINAGE: The porous backfill behind the abutments shall be drained by extending the 6" Corrugated Plastic Pipe through the wingwall footings, then redirected into the front slope, terminating as shown in Detail C. Only that portion of the CPP located in the Porous Backfill shall be perforated.

CRUSHED AGGREGATE SLOPE PROTECTION shall extend down the face of the front slope in accordance with CMS 601.05. Quantities will be carried in the Bridge General Summary.

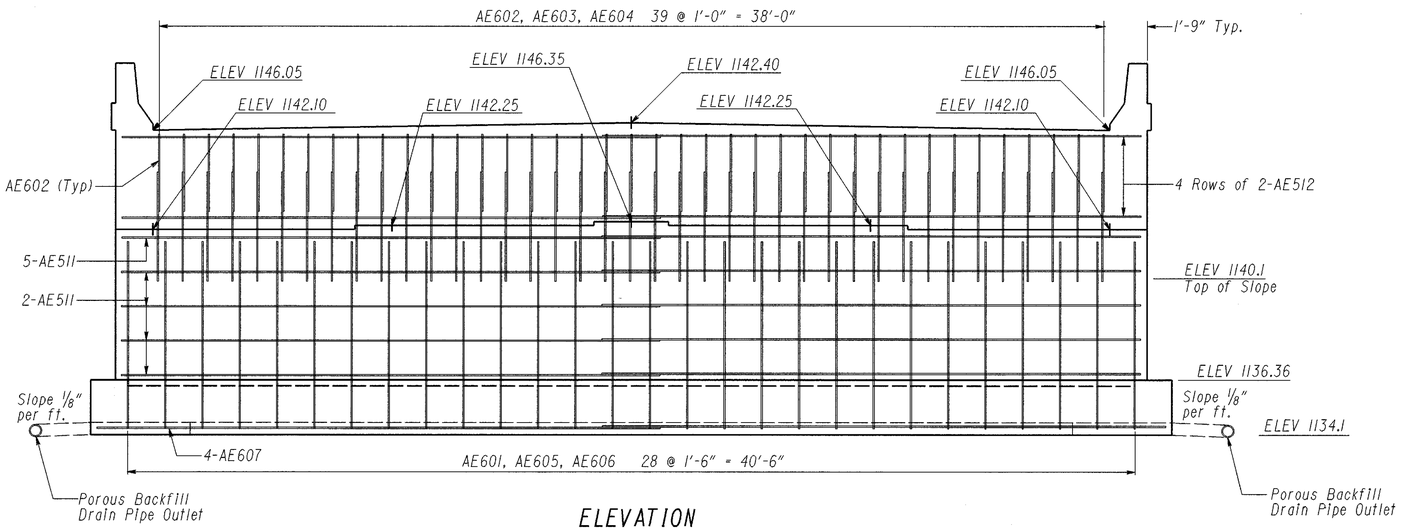
BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the abutment has been placed.

INSTALLATION OF SEAL: During installation of the support/armor for the superstructure side of the expansion joint seal, the seating of beams on bearings shall be carefully observed to assure that positive bearing is maintained. Proper vertical fit of the support/armor on the beams shall be achieved by positioning of the bevel fill plates rather than by clamping force.

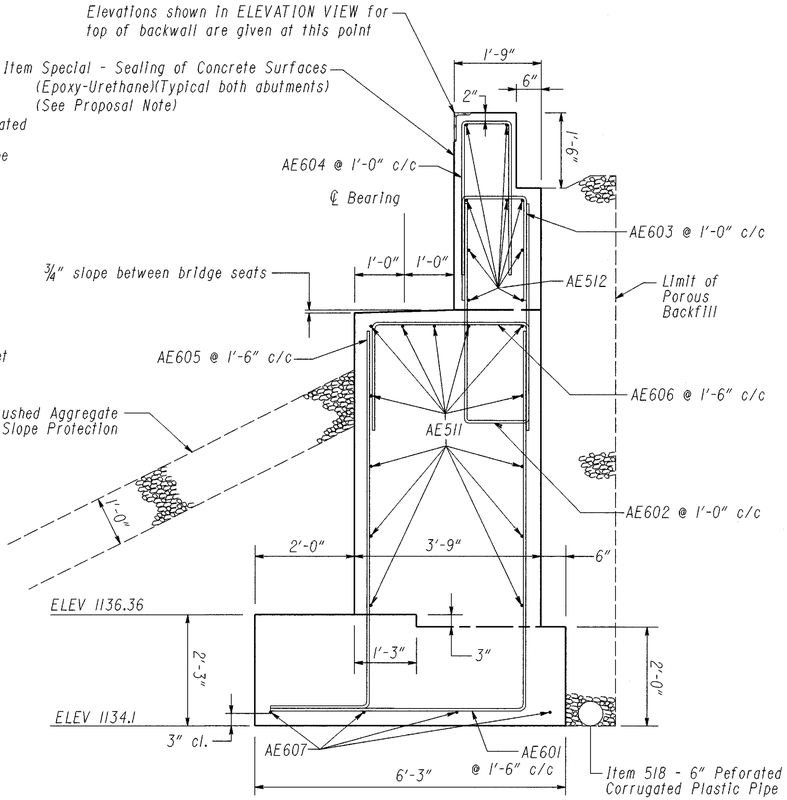
NOTE: All exposed concrete surfaces of the abutments will be sealed using the epoxy-urethane sealer.



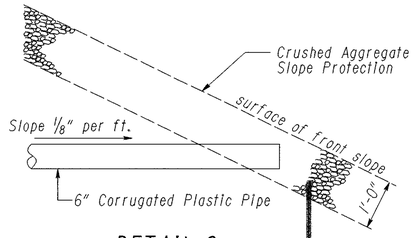
PLAN



ELEVATION



SECTION B-B



DETAIL C

METHOD OF TERMINATING 6" CORRUGATED PLASTIC PIPE AT THE FRONT SLOPE

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

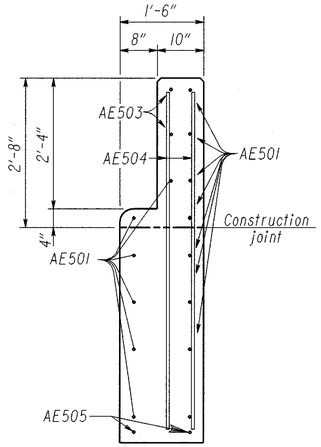
DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

FORWARD ABUTMENT
BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

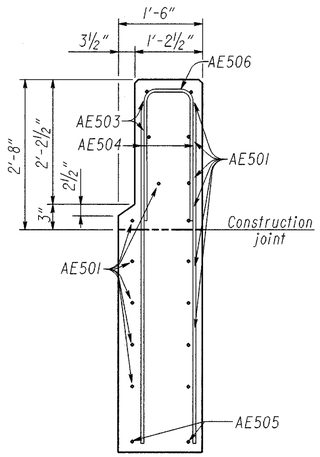
JEF-22-3.86

6/10

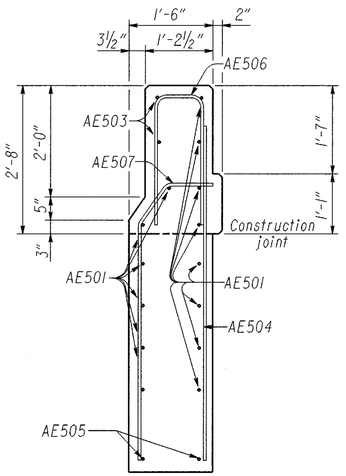
80/114



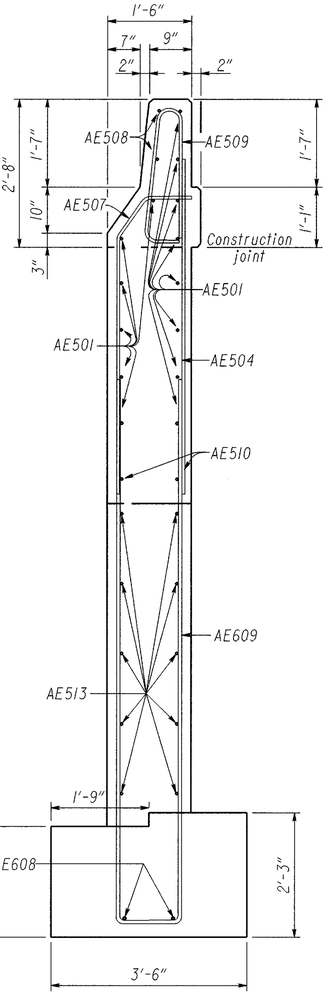
SECTION A-A



SECTION B-B



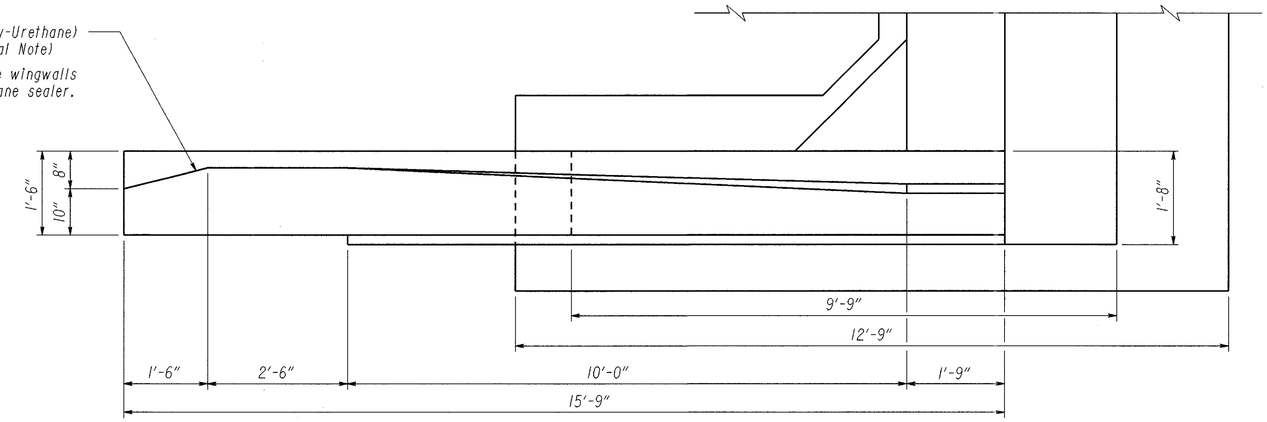
SECTION C-C

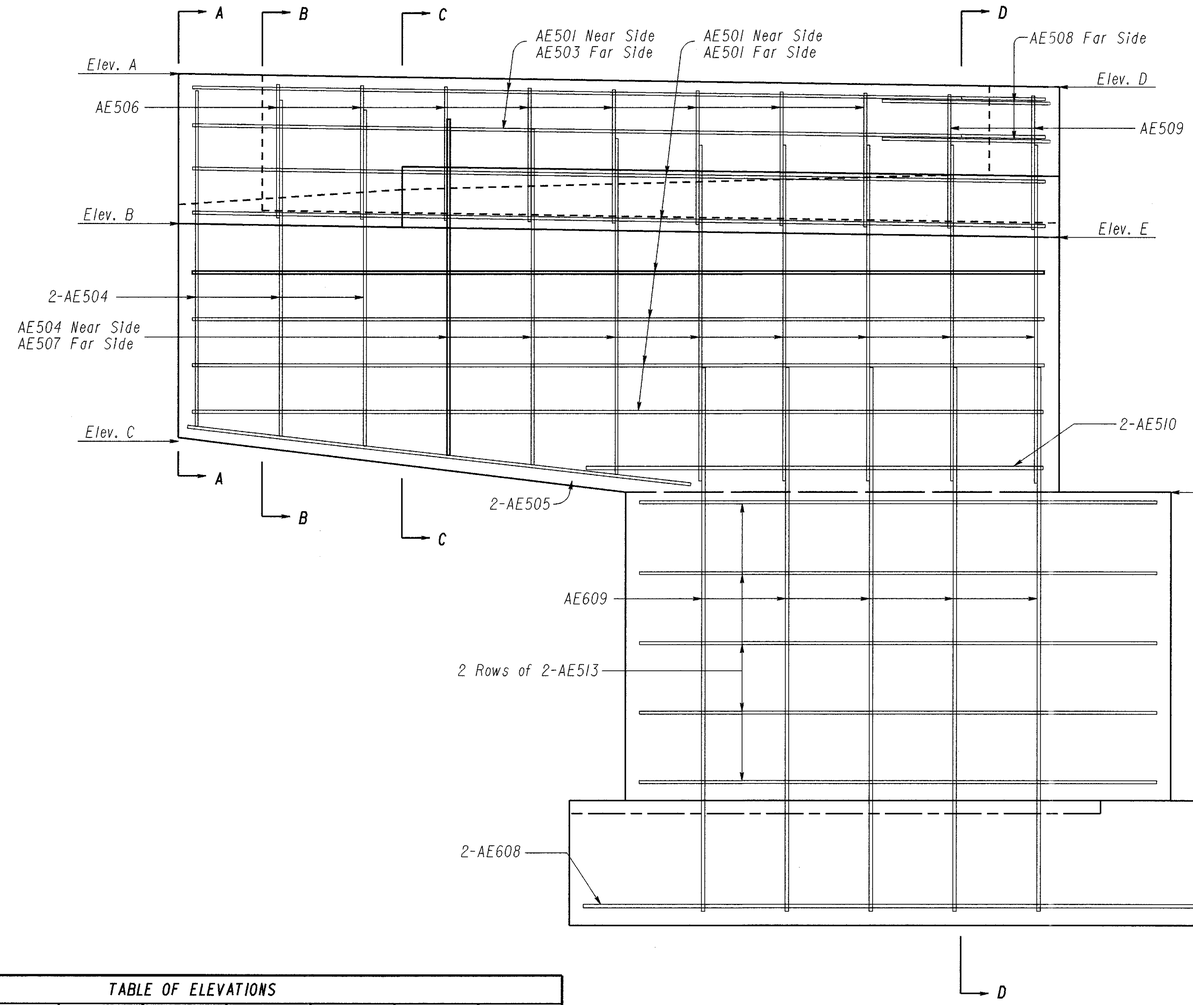


SECTION D-D

Item Special - Sealing of Concrete Surfaces (Epoxy-Urethane) (Typical all wingwalls) (See Proposal Note)

NOTE: All exposed concrete surfaces of the wingwalls will be sealed using the epoxy-urethane sealer.





PLAN & ELEVATION

Wingwalls and Abutments are symmetrical

TABLE OF ELEVATIONS							
ELEVATION		A	B	C	D	E	F
Rear Abutment	Both Wingwalls	1151.96	1149.29	1145.46	1151.72	1149.05	1144.48
Forward Abutment	Both Wingwalls	1148.48	1145.81	1141.98	1148.72	1146.05	1141.48

DESIGN AGENCY
O.D.O.T.
DISTRICT II
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

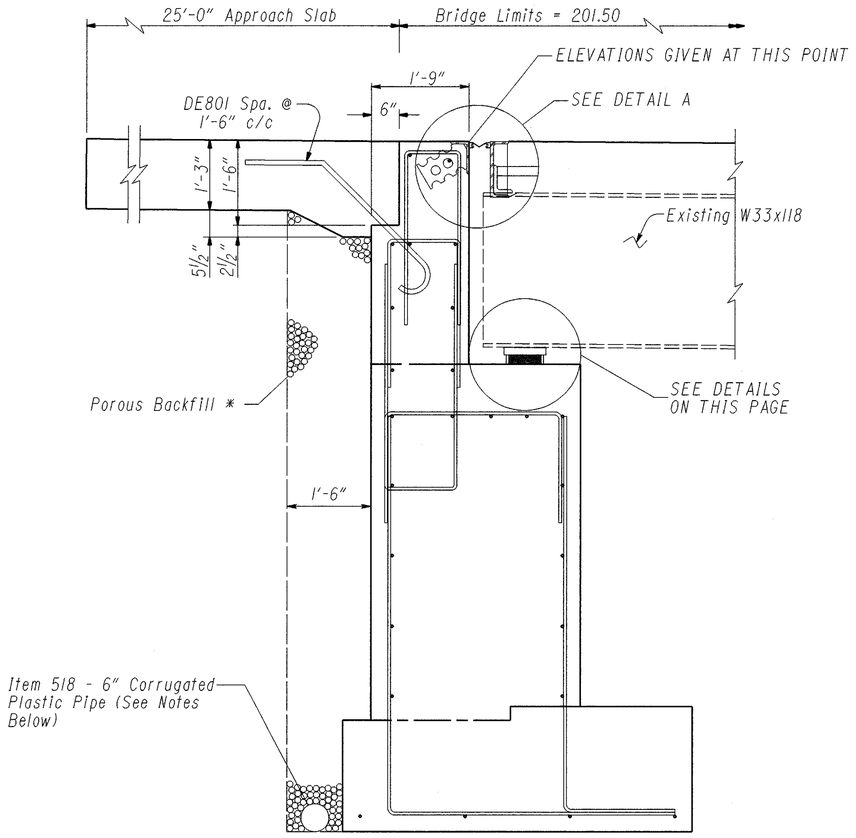
WINGWALL DETAILS

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

7/10

81/114



APPROACH SLAB-ABUTMENT CUT SECTION

* POROUS BACKFILL WITH FILTER FABRIC, 1'-6" thick shall extend up to the plane of the subgrade, to one foot below the embankment surface, and laterally to the ends of the wingwalls.

ITEM 518, 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN: Corrugated pipe used in abutment drainage shall be 6 inch diameter, plastic corrugated as per Supplemental Specification 944, AASHTO M 294, Type SP. Only that portion of the CPP located in the Porous Backfill shall be perforated.

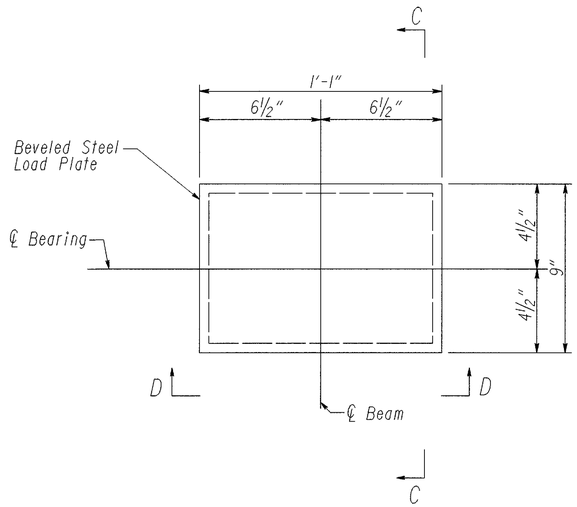
ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN: Corrugated pipe used in abutment drainage shall be 6 inch diameter, plastic corrugated as per Supplemental Specification 944, AASHTO M294, Type S. This item shall include all elbows, tees and end caps required to complete the abutment drainage system.

ELASTOMERIC BEARING NOTES:

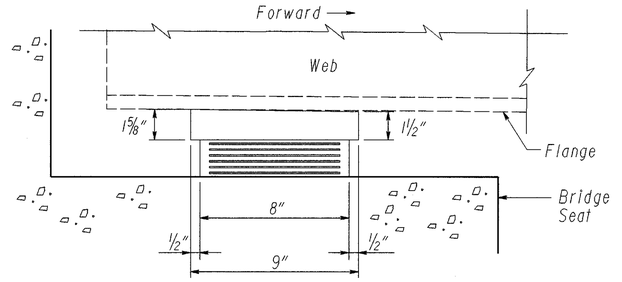
ELASTOMERIC BEARINGS shall comply with Item 516 and Articles 18.2.5 through 18.2.8 of Section 18, Bearing Devices, Division II, Construction of the AASHTO Standard Specification for Highway Bridges. Bearings shall be Grade 3, 50 durometer elastomer, and shall be subjected to the load testing requirements corresponding to Design Method A. Testing shall be included in the unit price bid for the bearings, Each.

LOAD PLATE: The steel load plate (ASTM A588) will be bonded by vulcanization to the elastomer during the molding process. Welding of the steel load plate to the superstructure will be controlled so that the plate temperature at the elastomer bonded surface will exceed 300 deg. F as determined by the use of pyrometric sticks or other temperature monitoring devices. The load plate is beveled to accomodate the profile grade, therefore the bevel must be placed in the appropriate direction.

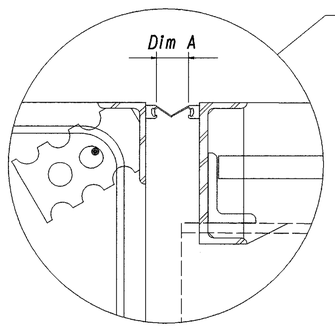
BASIS OF PAYMENT: The unit bid price will include all materials, labor and incidentals necessary to furnish and install laminated elastomeric bearings. Payment will be made at the contract price for Item 516, Each, Elastomeric Bearing with Internal Laminates and Load Plate (Neoprene), (8" x 1'-0" x 2").



ABUTMENT BEARING



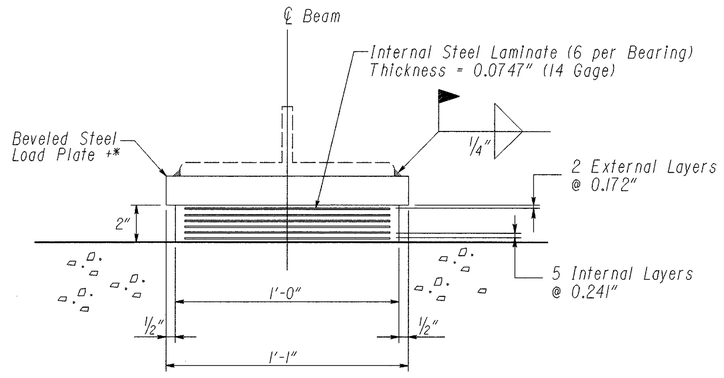
SECTION C-C



For Expansion Joint Details refer to St'd. Dwg. EXJ-4-87 (Strip Seal Expansion Joints at Abutments For Steel Stringer Structures)

3" STRIP SEAL GLAND	
TEMPERATURE	DIMENSION 'A'
30°	1.8"
40°	1.8"
50°	1.7"
60°	1.6"
70°	1.6"
80°	1.5"
90°	1.4"

DETAIL A



SECTION D-D

+* Load Plate is beveled to accomodate the profile grade. Place the bevel in the appropriate direction.

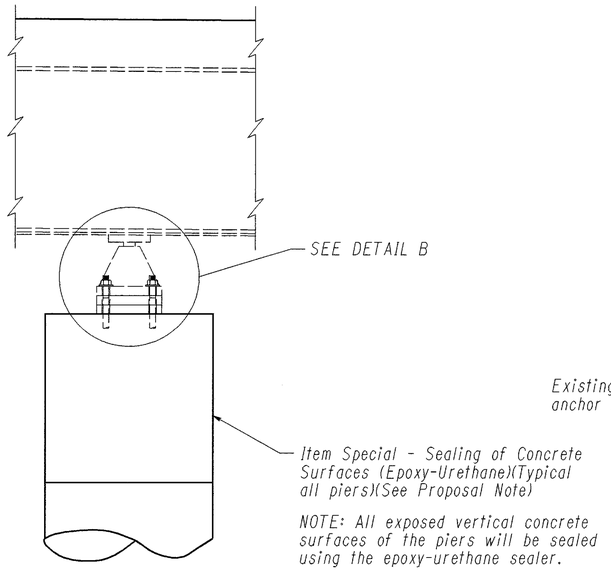
DESIGN AGENCY O.D.O.T. DISTRICT 11 BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

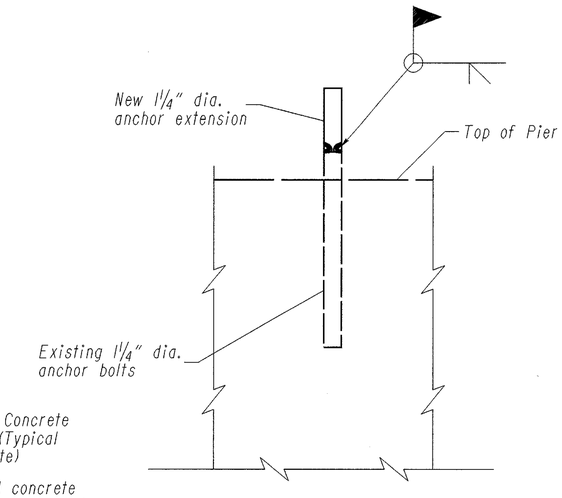
MISCELLANEOUS DETAILS

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

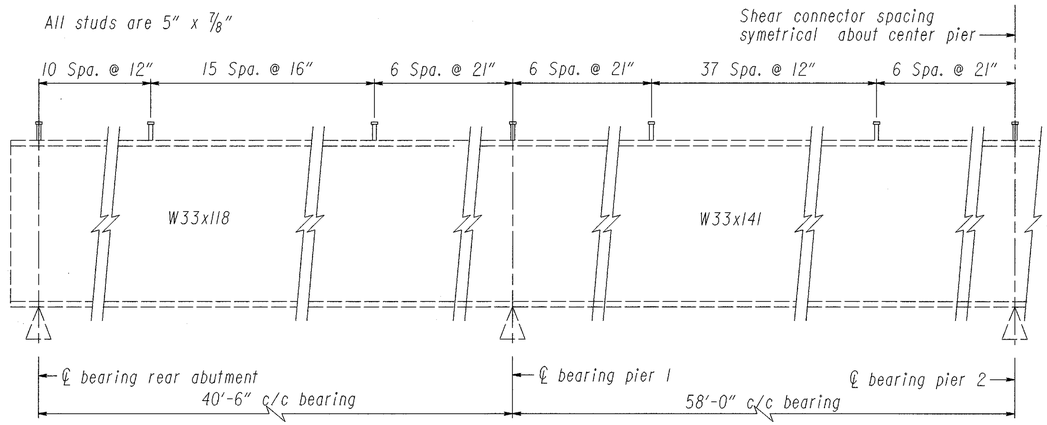
JEF-22-3.86



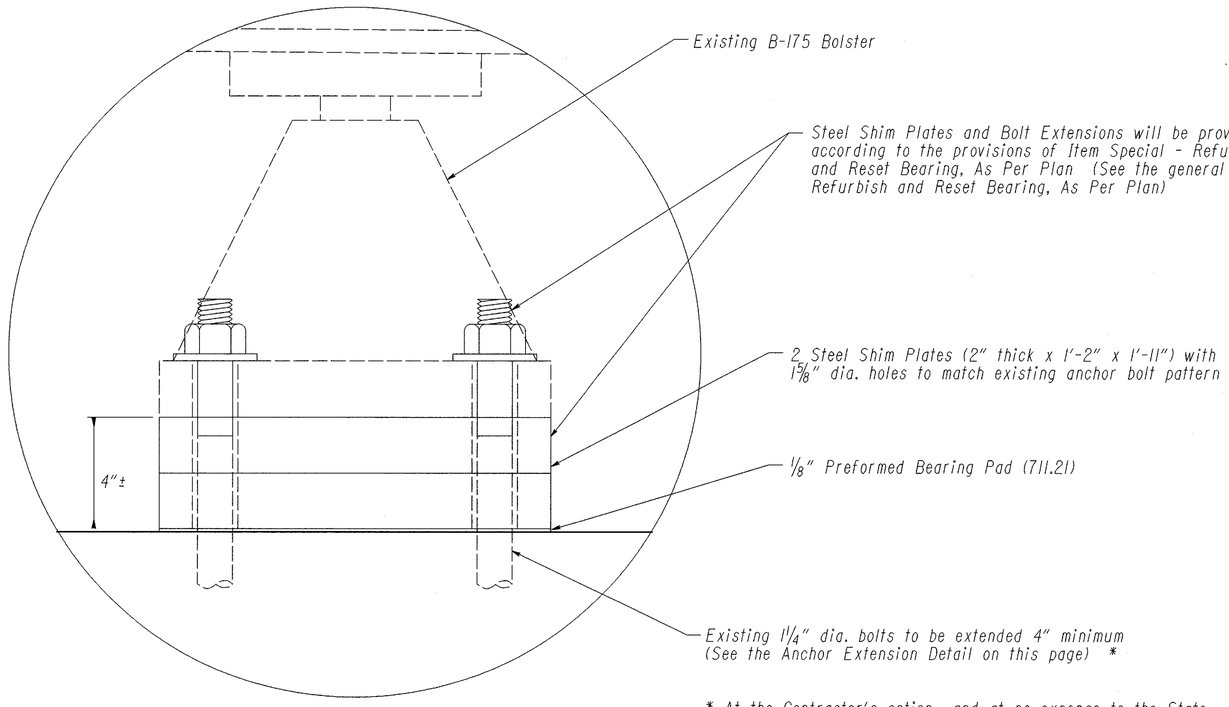
PIER NO. 2 SECTION



ANCHOR EXTENSION DETAIL

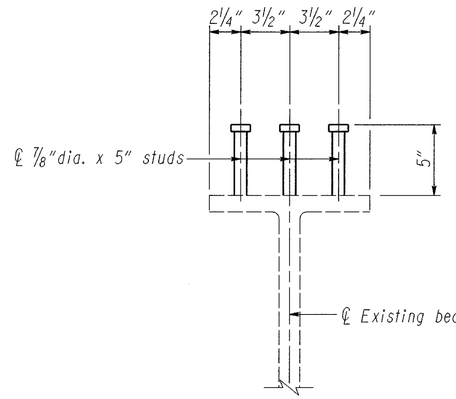


SHEAR CONNECTOR SPACING DETAIL



* At the Contractor's option and at no expense to the State the Contractor may choose to completely replace the existing 1¼" anchor bolts with the length necessary. The bolts are to be grouted as per CMS 510 and approved by the Engineer.

DETAIL B



SHEAR CONNECTOR LOCATION DETAIL

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
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MISCELLANEOUS DETAILS
BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S. 22

JEF-22-3.86

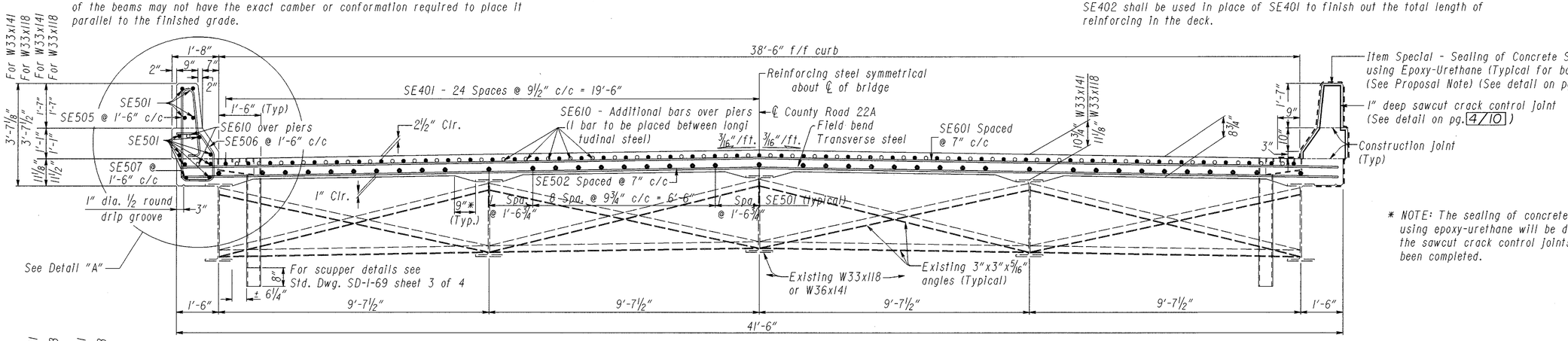
9/10

83
114

DECK SLAB DEPTH
The distance shown from top of deck slab to top of steel beam is a design dimension. The quantity of deck concrete in the haunches shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beams may not have the exact camber or conformation required to place it parallel to the finished grade.

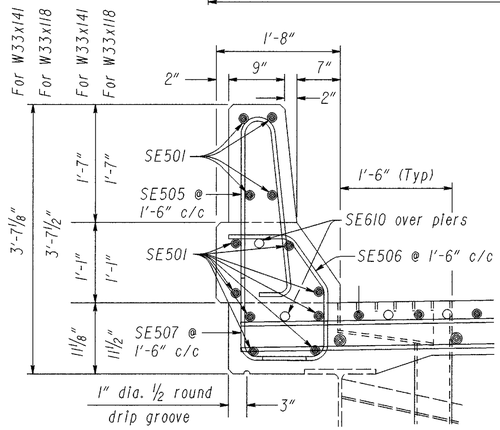
* A haunch width of 9" shall be used for computing the quantity of concrete. However the haunch width may vary between 6" and 12" (provided that the slope shall be not more than 1:3 for a haunch less than 9" in width)

Each longitudinal line of reinforcing steel shall consist of :
6 - SE401 and 1 - SE402 with a 2'-0" min. lap splice in the top of the slab.
7 - SE501 with a 2'-6" min. lap splice in the bottom of the slab.
SE402 shall be used in place of SE401 to finish out the total length of reinforcing in the deck.



* NOTE: The sealing of concrete surfaces using epoxy-urethane will be done after the sawcut crack control joints have been completed.

TYPICAL SECTION



DETAIL A

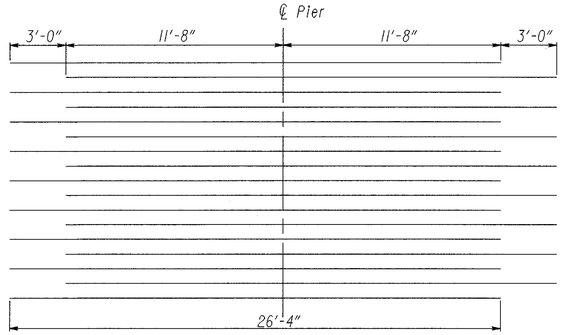
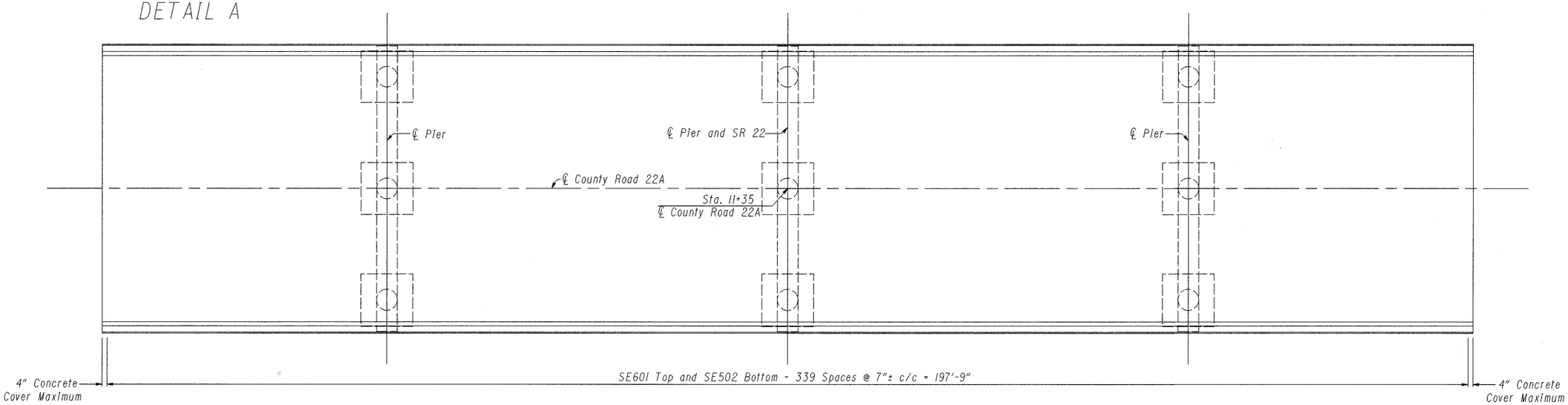


DIAGRAM SHOWING STAGGER OF SE610 BARS OVER PIERS



TYPICAL TRANSVERSE STEEL DETAIL

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
SAL	SAL		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JLO		4101804	

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-22-0590
COUNTY ROAD 22A OVER U.S.22

JEF-22-3.86

10/10

84
114

S9262SPN/20

B.M.#1 ELEV. 928.27
Top of Iron Pin and Cap in Median.
Sta. 368+00± ~ ℄

Proposed Underdrain
Construction Limits
PRESSURE RELIEF JOINT TYPE A (TYP.)
Exist. Asphalt on Aggregate Shoulder
WESTBOUND U.S. 22
END APPROACH SLAB
STA. 368+30.16
Asphalt on Concrete
Exist. Asphalt on Aggregate Shoulder
15" C.M.P.
Construction Limits
Exist. Asphalt on Aggregate Shoulder
Asphalt on Concrete
END APPROACH SLAB
STA. 368+65.20
EASTBOUND U.S. 22
Exist. Asphalt on Aggregate Shoulder
Proposed Underdrain
Construction Limits
℄ SURVEY U.S. 22
Iron Pin
Profile Grade
Approx. Limits of Existing Crushed Aggregate Slope Protection (Typ.)
STA. 368+06.91
STA. 368+43.35
40'-0
24'
20'-0 + 20'-0
40'-0 T/T Parapet
830
MATCH LINE STA. 372+00
N 79°-25'-07" E
2400' V.C.
P.I. STA. 380+00
ELEV. 887.28
G1=-3.60%, G2=+4.00%
EX. LA R/W

2.1 MILES WEST OF WINTERSVILLE

DESIGN DESIGNATION

1994 ADT	9,550
2014 ADT	14,330
2014 ADTT	860

E.B. DENOTES EASTBOUND
W.B. DENOTES WESTBOUND

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

REVIEWED BY BURGESS & NIPLE, LTD.
JCS 5/31/94

PLAN

JEF-22-0698L Bridge Limits = 786.44'
JEF-22-0698R Bridge Limits = 724.37'
2400' V.C.

Proposed Profile Grade Elevations
-3.62% E.B. -3.66% W.B.
Sta. 368+30.16
Sta. 368+65.20
P.C. STA. 368+00
Exp.
Fixed
Existing Crushed Aggregate Slope Protection
Existing Ground Line
E.B. and W.B. Elevations are the same unless noted otherwise.

	930.48	929.59	928.72	927.87	927.04	926.23	925.44	924.67	923.91	923.18	922.47	921.78	921.11	920.45	919.82	919.21	918.61
W.B.	930.41	929.37	928.43	927.51	926.66	925.83	925.00	924.23	923.51	922.75	922.11	921.48	920.83	920.13	919.54	918.85	918.25
E.B.	930.44	929.52	928.56	927.56	926.67	925.84	925.11	924.34	923.51	922.75	922.09	921.38	920.70	920.08	919.33	918.80	918.05

368 369 PROFILE ALONG ℄ SURVEY 370 371 372

EXISTING STRUCTURE DATA
(PARTIAL REMOVAL) DATE BUILT: 1968

TYPE: CONTINUOUS WELDED STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: JEF-22-0698L 123'±-164'±-180'±-180'±-135'± C/C BRGS.
JEF-22-0698R 108'±-144'±-153'±-180'±-135'± C/C BRGS.
MEASURED ALONG ℄ SURVEY
ROADWAY: 38'-6 T/T PARAPETS
SKEW: NONE
WEARING SURFACE: ASPHALT CONCRETE
DESIGN LOADING: HS20-44
APPROACH SLABS: AS-1-67 (25' LONG)
ALIGNMENT: TANGENT

PROPOSED STRUCTURE

TYPE: FIVE SPAN COMPOSITE REINFORCED CONCRETE DECK ON EXISTING CONTINUOUS WELDED STEEL GIRDERS AND PIERS WITH MODIFIED ABUTMENTS
SPANS: JEF-22-0698L 123'±-164'±-180'±-180'±-135'± C/C BRGS.
JEF-22-0698R 108'±-144'±-153'±-180'±-135'± C/C BRGS.
MEASURED ALONG ℄ SURVEY
ROADWAY: 40'-0 T/T PARAPETS
SKEW: NONE
WEARING SURFACE: MONOLITHIC CONC.
LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
APPROACH SLABS: AS-1-81, 25' LONG
ALIGNMENT: TANGENT
SUPERELEVATION: NONE CROWN: 3/16"/FT.

DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS
REVIEWED: CEO DATE: 4/94
DRAWN: FDH REVISED: 4/94
DESIGNED: FDH CHECKED: wda
STRUCTURE FILE NUMBER: 4101839/4101863
JEFFERSON COUNTY
LT. STRUCTURE RT. STRUCTURE
STA.368+30.16 STA.368+65.20
STA.376+16.60 STA.375+89.57

SITE PLAN
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF-22-3.86

1/30
85/114

W. E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

S9262SPN/20

B.M.#2 ELEV. 908.45
Top of Iron Pin and Cap in Median.
Sta. 376+50± ~ ℄

MATCH LINE STA. 372+00

COLUMBUS & OHIO RIVER R.R.

EX. LA R/W

CROSS CREEK

T.R. 166

40'-0 T/T Parapet

Approx. Limits of Existing Crushed Aggregate Slope Protection (Typ.)

STA. 376+40.17

Construction Limits

Concrete Slab (to Be Replaced)

Exist. Underdrain

Proposed Underdrain

Concrete

Begin Ramp Taper
Sta. 376+45.39

BEGIN APPROACH SLAB
STA. 376+16.60

Asphalt on Concrete
WESTBOUND U.S. 22
Exist. Asphalt on Aggregate Shoulder

Profile Grade

Type 4-A Curb

18" C.M.P.

N 79°-25'-07" E

℄ Survey U.S. 22

BEGIN APPROACH SLAB
STA. 375+89.57

EASTBOUND U.S. 22
Asphalt on Concrete

PRESSURE RELIEF JOINT TYPE A (TYP.)

Conc. Pad

36" Pipe

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

2400' V.C.
P.I. Sta. 380+00
Elev. 887.28
G1=-3.60%, G2=+4.00%

PLAN

JEF-22-0698L Bridge Limits = 786.44'

JEF-22-0698R Bridge Limits = 724.37'

2400' V.C.

Graphic Grade

E.B. and W.B. Elevations are the same unless noted otherwise.

Exp.

High Water Elev. 840.0±

Normal Water Elev. 823.8±

Existing Crushed Aggregate Slope Protection

Existing Ground Line

Sta. 375+89.57

Sta. 376+16.60

Match Exist. STA. 377+25

-0.88% E.B.
-1.00% W.B.

PROFILE ALONG ℄ SURVEY

DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

DATE: 4/94

REVIEWED: CFD

STRUCTURE FILE NUMBER: 4101839/4101863

DRAWN: FDH

REVISED: 4/94

DESIGNED: FDH

CHECKED: wda

JEFFERSON COUNTY
LT. STRUCTURE RT. STRUCTURE
STA. 368+30.16 STA. 368+65.20
STA. 376+16.60 STA. 375+89.57

OHIO RIVER R.R.

SITE PLAN

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

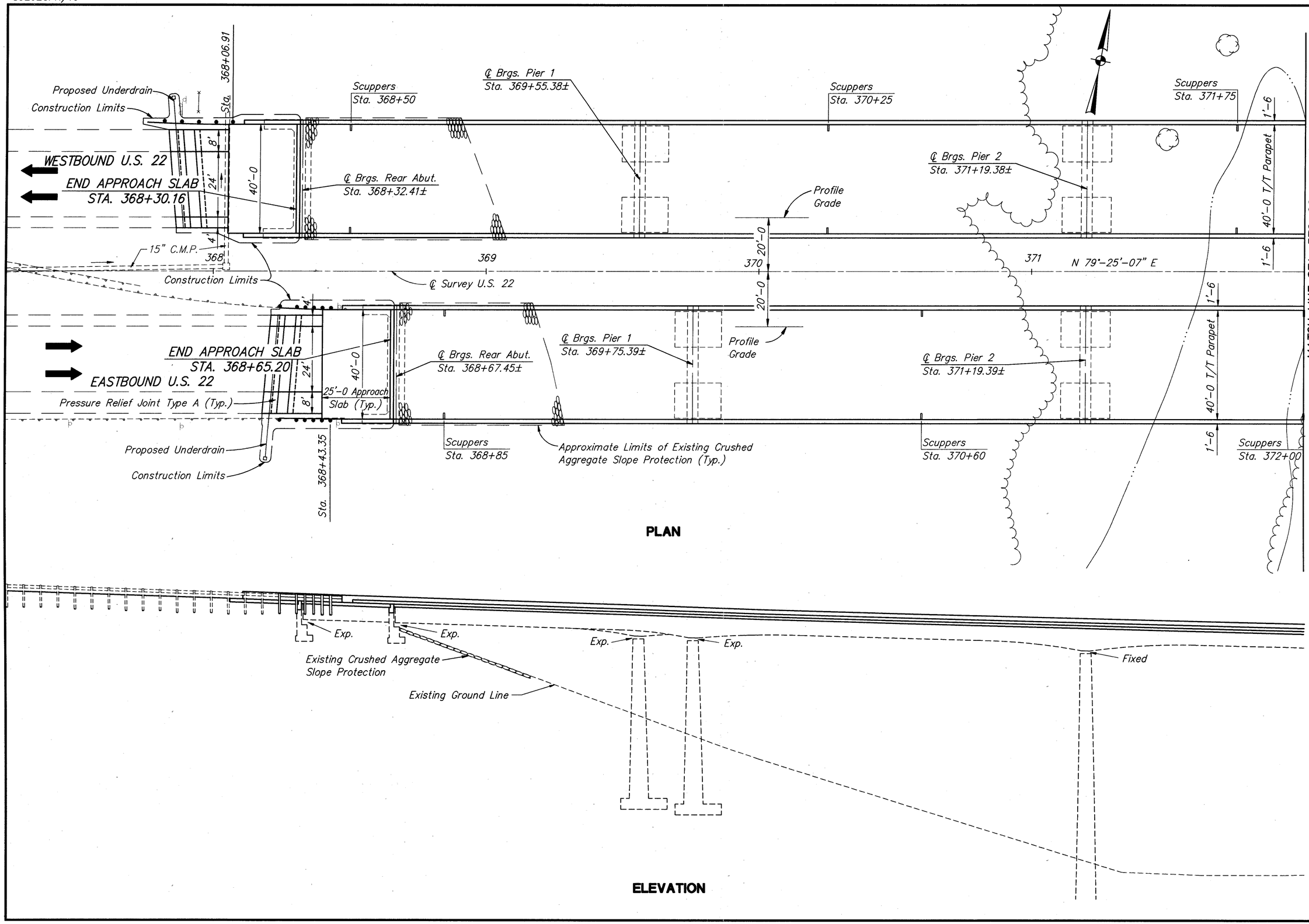
JEF-22-3.86

2 / 30

86 / 114

W. E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

S9262GPN/16



PLAN

ELEVATION

GENERAL PLAN AND ELEVATION

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

DESIGN AGENCY
W.E. QUICKSALL
AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
FDH	FDH	CAD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wda	4/94	4101839/4101863	

JEF-22-3.86

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MATCH LINE STA. 372+00 See Sheet 3/30

COLUMBUS & OHIO RIVER R.R.

Scuppers Sta. 372+45

℄ Brgs. Pier 3 Sta. 372+99.38±

WESTBOUND U.S. 22

Scuppers Sta. 374+25

℄ Brgs. Pier 4 Sta. 374+79.38±

Approximate Limits of Existing Crushed Aggregate Slope Protection (Typ.)

Construction Limits

Concrete Slab (to Be Replaced) Proposed Underdrain

Sta. 376+40.17

Scuppers Sta. 375+50

Scuppers Sta. 376+00

BEGIN APPROACH SLAB STA. 376+16.60

Profile Grade

℄ Brgs. Fwd. Abut. Sta. 376+14.35±

Begin Ramp Taper Sta. 376+45.39

Integral Curb

Type 4-A Curb

1'-6

40'-0 T/T Parapet

1'-6

20'-0

20'-0

374

375

℄ Survey U.S. 22

373

℄ Brgs. Pier 4 Sta. 374+52.39±

Construction Limits N 79°-25'-07" E 376

Pressure Relief Joint Type A (Typ.) Integral Curb

Reinforced Sodding

1'-6

40'-0 T/T Parapet

1'-6

℄ Brgs. Pier 3 Sta. 372+72.39±

Profile Grade

℄ Brgs. Fwd. Abut. Sta. 375+87.32±

Type 4-A Curb

BEGIN APPROACH SLAB STA. 375+89.57

40'-0

25'-0 Approach Slab (Typ.)

EASTBOUND U.S. 22

Scuppers Sta. 372+00

Scuppers Sta. 373+25

Scuppers Sta. 375+20

Scuppers Sta. 375+75

Conc. Pad

Construction Limits

18" C.M.P.

Sta. 376+08.99(±)

T.R. 166

36" Pipe

Proposed Underdrain

CROSS CREEK

PLAN

Exp.

Exp.

Exp.

Exp.

Exp.

Exp.

High Water Elev. 840.0±

Normal Water Elev. 823.8±

Existing Crushed Aggregate Slope Protection

Existing Ground Line

ELEVATION

GENERAL PLAN AND ELEVATION

BRIDGE NO. JEF-22-0698 L/R

U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

DESIGNED FDH | DRAWN FDH | CHECKED wda | REVISED 4/94 | REVIEWED CSD | DATE 4/94

STRUCTURE FILE NUMBER 4101839/4101863

JEF-22-3.86

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BRIDGE GENERAL NOTES

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992 INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA

DESIGN LOADING:	HS20–44 CASE II AND THE ALTERNATE MILITARY LOADING
HIGH PERFORMANCE CONCRETE	COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)
HIGH PERFORMANCE CONCRETE	COMPRESSIVE STRENGTH 4500 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL:	ASTM A615, A616 OR A617 – GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
STRUCTURAL STEEL:	ASTM A36 – YIELD STRENGTH 36,000 P.S.I.

DECK PROTECTION METHOD

1. EPOXY COATED REINFORCING STEEL.
2. 2–1/2" CONCRETE COVER.

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

REFERENCE SHALL BE MADE TO:

STANDARD DRAWINGS			SUPPLEMENTAL SPECIFICATIONS		
AS–1–81	DATED	9–15–94			
EXJ–4–87	DATED	11–12–93	815	DATED	7–17–95
SD–1–69	DATED	6–12–69	910	DATED	7–17–95

REINFORCING STEEL SPLICES

UNLESS SHOWN OTHERWISE, ALL SPLICES SHALL BE MADE BY OVERLAPPING THE ENDS OF BARS NOT LESS THAN SHOWN IN THE FOLLOWING TABLE:

BAR SIZE	LAP LENGTH
#5	1'–6
#6	2'–5
#8	3'–11

DECK EXPANSION JOINTS

THE DECK EXPANSION JOINTS SHALL BE SEALED WITH ELASTOMERIC STRIP SEALS, SEE SHEETS 27/30 & 28/30 .

ELASTOMERIC STRIP SEALS FOR EACH JOINT SHALL BE INSTALLED IN ONE CONTINUOUS PIECE.

REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ADDITIONAL 350 LBS. PER BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

REFERENCE

DETAILED DRAWINGS OF THE EXISTING STRUCTURES MAY BE INSPECTED IN THE DISTRICT 11 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, NEW PHILADELPHIA, OHIO.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PAINTING OF STRUCTURAL STEEL

NEW STEEL SHALL BE PROVIDED BARE FOR PREPARATION AND PAINTING IN THE FIELD. FOR PURPOSES OF FIELD PAINTING, NEWLY ERECTED STEEL SHALL BE CONSIDERED EXISTING STEEL AND SHALL BE PREPARED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT IN CONFORMANCE WITH THE SPECIFICATION "FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU." COST OF CLEANING AND PAINTING OF NEW AND EXISTING STEEL WITH THE OZEU PAINT SYSTEM SHALL BE INCLUDED IN THE SEVERAL OZEU ITEMS. THE SURFACE AREA PAY QUANTITIES ARE BASED ON THE SURFACE AREA OF MAIN MEMBERS INCREASED BY 25% TO ACCOUNT FOR THE AREAS OF CROSSFRAMES, BEARINGS, AND OTHER STEEL INCIDENTALS BEING CLEANED AND PAINTED.

AFTER PRIME COAT APPLICATION, ALL OPEN JOINTS 1/8 INCH WIDE AND GREATER OR THOSE NOT FILLED WITH PAINT, SHALL BE CAULKED USING A TWO COMPONENT, 100% SOLIDS EPOXY MASTIC. PAYMENT FOR CAULKING WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 815 , CAULKING.

STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN

NEW STEEL SHALL BE CLEANED AND IT SHALL BE PRIME PAINTED IN THE FIELD. AT THE CONTRACTOR'S OPTION, NEW STEEL MAY BE GIVEN A PRELIMINARY CLEANING IN THE SHOP. THE COST OF CLEANING AND PRIME PAINTING SHALL BE INCLUDED IN THE SEVERAL OZEU ITEMS.

For Continuation of General Notes, See Sheet 6/30 .

PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

THIS WORK SHALL CONSIST PRIMARILY OF THE REMOVAL OF CONCRETE DECKS INCLUDING PARAPETS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (GIRDERS, CROSS FRAMES, ETC.) AND OTHER REMOVALS AS DIRECTED IN THE PLANS. CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC:

PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR AND RAILROAD) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION.

PROTECTION OF STEEL SUPPORT SYSTEMS:

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS:

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS:

DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS:

EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND SUPPORT FOR SCUPPERS WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS:

NO PART OF THE STRUCTURE SHALL BE SUBJECT TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT:

THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED CFD | DRAWN CFD | CHECKED FDH | REVIEWED wda | DATE 4/94 | REVISED 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

OHIO RIVER R.R.

GENERAL NOTES

BRIDGE NO. JEF–22–0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF–22–3.86

5/30

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BRIDGE GENERAL NOTES

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. PROTRUDING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL:

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18-INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE USED AT THE APPROVAL OF THE ENGINEER.

PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

STRUCTURE EXCAVATION

STRUCTURE EXCAVATION IN ADDITION TO THAT NECESSARY TO REMOVE PORTIONS OF THE EXISTING STRUCTURE, AND ALL NECESSARY BACKFILL, IS INCLUDED IN THE LUMP SUM BID ITEM, " UNCLASSIFIED EXCAVATION," FOR PAYMENT.

CONCRETE PARAPETS

WITHIN 48 HOURS AFTER PLACEMENT OF PARAPET CONCRETE SAWCUT 1 INCH DEEP JOINTS INTO THE CONCRETE PARAPET AT LOCATIONS AS DETAILED IN THE PLANS. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK, AND THE COMPLETED SAWCUT SHALL BE FILLED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM HALF INCH OF THE ONE INCH DEEP SAWED JOINT IN BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

ITEM SPECIAL – SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

AN EPOXY-URETHANE CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON SHEETS 11/30 THRU 14/30, 17/30 AND 18/30. SEE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

INSPECTION OF STRUCTURAL STEEL

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 513 STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN,

(REPLACEMENT OF DETERIORATED END CROSS FRAMES)

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE END CROSS FRAMES AND THEIR ATTACHMENT PLATES, END LATERAL BRACING IF REQUIRED, AND NEW JOINT SUPPORT ANGLES.

PROPOSED WORK

THE GENERAL AREAS OF WORK AS INDICATED ON THE PLAN AND PROFILE AND DETAIL SHEETS ARE:

a. REPLACE EXISTING REINFORCED CONCRETE DECK, PARAPETS AND SCUPPERS AS SHOWN IN THE PLANS.
b. REPLACE PORTIONS OF REAR AND FORWARD ABUTMENT BACKWALLS AND WINGS TO LIMITS SHOWN IN PLANS AND PROVIDE ELASTOMERIC STRIP SEAL JOINTS.
c. RETROFIT LOWER LATERAL CONNECTIONS AS NOTED IN THE PLANS.
d. CLEAN AND PAINT STRUCTURAL STEEL, USING SYSTEM OZEU.

DIMENSION

WHENEVER ONE OF THE FOLLOWING DRAFTING DIMENSION TYPES 45'-9 IS FOUND IN THE PLAN IT SHALL BE CONSIDERED TO READ AS FORTY— FIVE FEET AND NINE INCHES.

For Remainder of General Notes, See Sheet 5/30 .

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FDH	4/94	4101839/4101863	

GENERAL NOTES
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF-22-3.86

6/30

90/114

BRIDGE SUMMARY - LEFT STRUCTURE

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
503	21300	LUMP		UNCLASSIFIED EXCAVATION
509	15840	334343	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60
SPECIAL	51148000	1071	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK) (MIX TYPE 4) *
SPECIAL	51148020	167	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET) (MIX TYPE 4) *
SPECIAL	51148040	108	CU YD	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE (MIX TYPE 4) *
SPECIAL	51149000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX (MIX TYPE 4) *
SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE, TESTING (MIX TYPE 4) *
SPECIAL	51267510	1831	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *
513	15901	2861	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN
513	20000	5940	EACH	WELDED STUD SHEAR CONNECTOR
513	21200	LUMP		TRIMMING OF BEAM END
SPECIAL	51316800	56	EACH	STRUCTURAL STEEL, MISC.: NDT, RETROFIT OF LOWER LATERAL CONNECTIONS AND GRINDING
SPECIAL	51316800	7	EACH	STRUCTURAL STEEL, MISC.: DRILLING 2- 1¼" HOLES AT LOWER LATERALS, GRINDING AND NDT
815	00050	92906	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	92906	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIMECOAT, SYSTEM OZEU
815	00060	92906	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	92906	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00500	47	LIN FT	CAULKING
815	00504	118	MANHOUR	GRINDING FINS, TEARS, SLIVERS
516	11211	83	LIN FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN **
518	12300	14	EACH	SCUPPERS, INCLUDING SUPPORTS
518	21200	57	CU YD	POROUS BACKFILL WITH FILTER FABRIC

BRIDGE SUMMARY - RIGHT STRUCTURE

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
503	21300	LUMP		UNCLASSIFIED EXCAVATION
509	15840	308,689	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60
SPECIAL	51148000	987	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK) (MIX TYPE 4) *
SPECIAL	51148020	154	CU YD	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET) (MIX TYPE 4) *
SPECIAL	51148040	104	CU YD	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE (MIX TYPE 4) *
SPECIAL	51149000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX (MIX TYPE 4) *
SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE, TESTING (MIX TYPE 4) *
SPECIAL	51267510	1689	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *
513	15901	2815	POUND	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN
513	20000	5550	EACH	WELDED STUD SHEAR CONNECTOR
513	21200	LUMP		TRIMMING OF BEAM END
SPECIAL	51316800	54	EACH	STRUCTURAL STEEL, MISC.: NDT, RETROFIT OF LOWER LATERAL CONNECTIONS AND GRINDING
SPECIAL	51316800	7	EACH	STRUCTURAL STEEL, MISC.: DRILLING 2- 1¼" HOLES AT LOWER LATERALS, GRINDING AND NDT
815	00050	81078	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	81078	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIMECOAT, SYSTEM OZEU
815	00060	81078	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	81078	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00500	46	LIN FT	CAULKING
815	00504	108	MANHOUR	GRINDING FINS, TEARS, SLIVERS
516	11211	83	LIN FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN **
518	12300	12	EACH	SCUPPERS, INCLUDING SUPPORTS
518	21200	55	CU YD	POROUS BACKFILL WITH FILTER FABRIC

* (SEE PROPOSAL NOTE)

** SEE "STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN" NOTE ON SHEET 77.

60220604.DGN

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

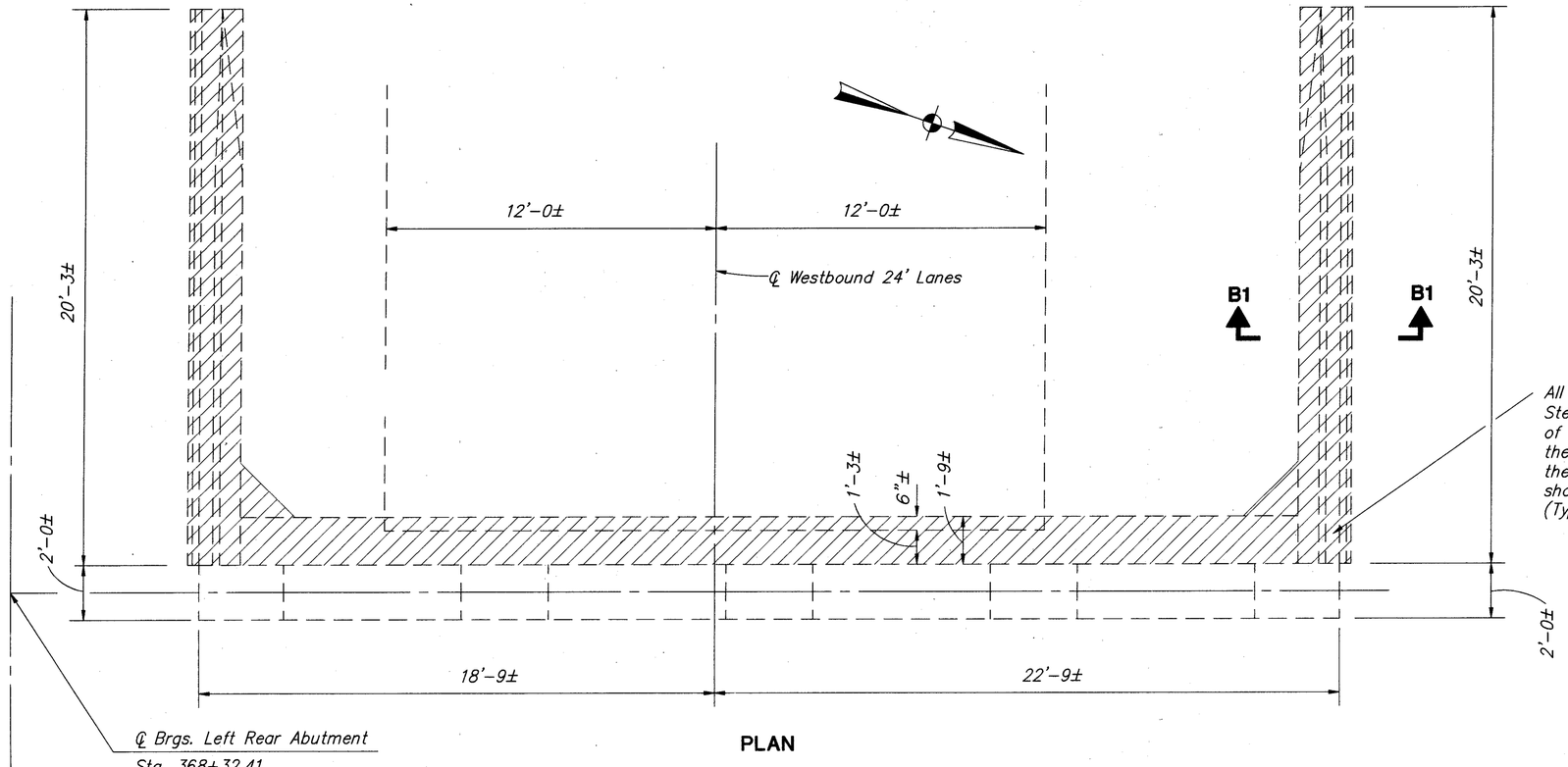
DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZRD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	0-11/10-95	4101839/4101863	

BRIDGE SUMMARY

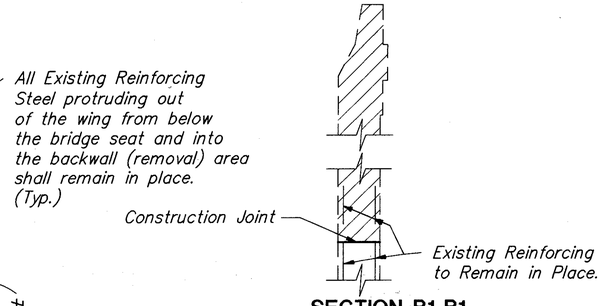
BRIDGE NO. JEF-22-0698 L/R

U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

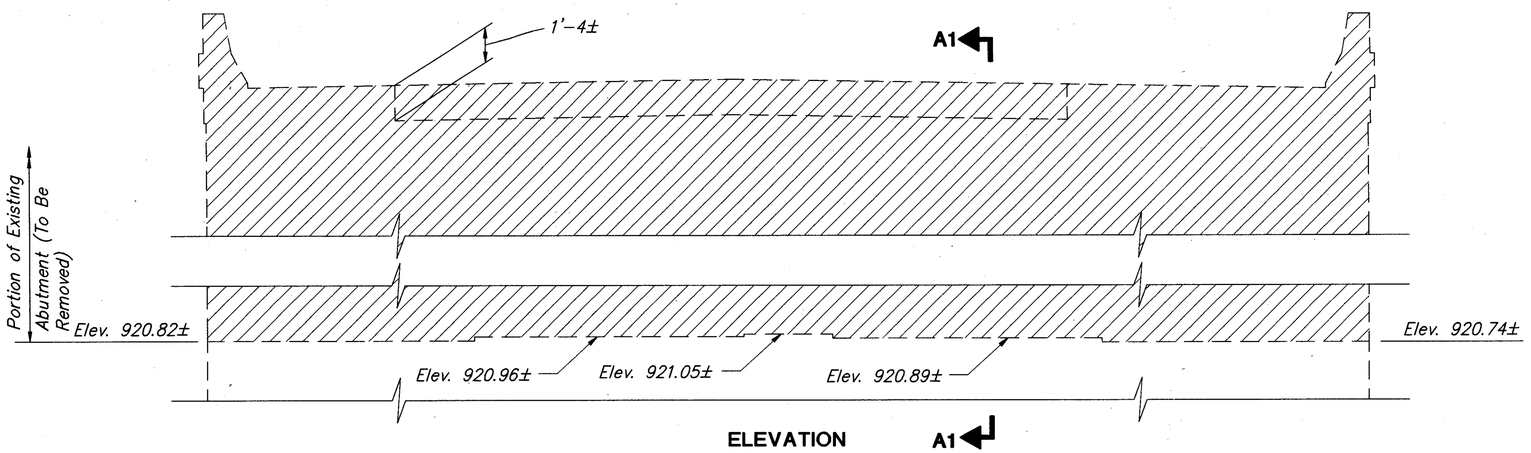
JEF-22-3.86



PLAN

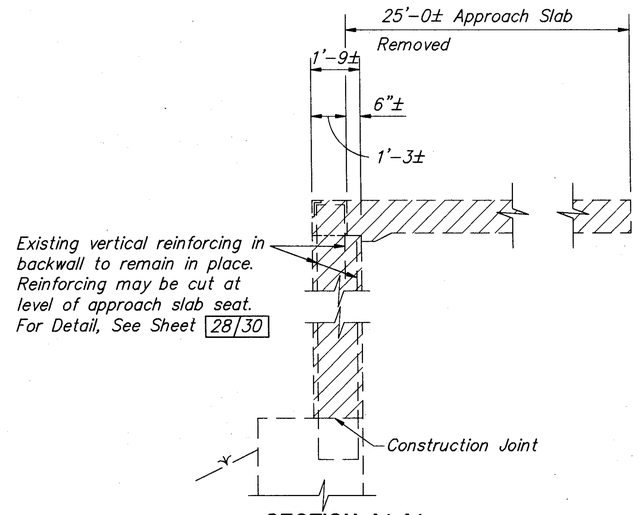


SECTION B1-B1



ELEVATION

EXISTING ABUTMENT REMOVALS



SECTION A1-A1

Denotes Removal.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

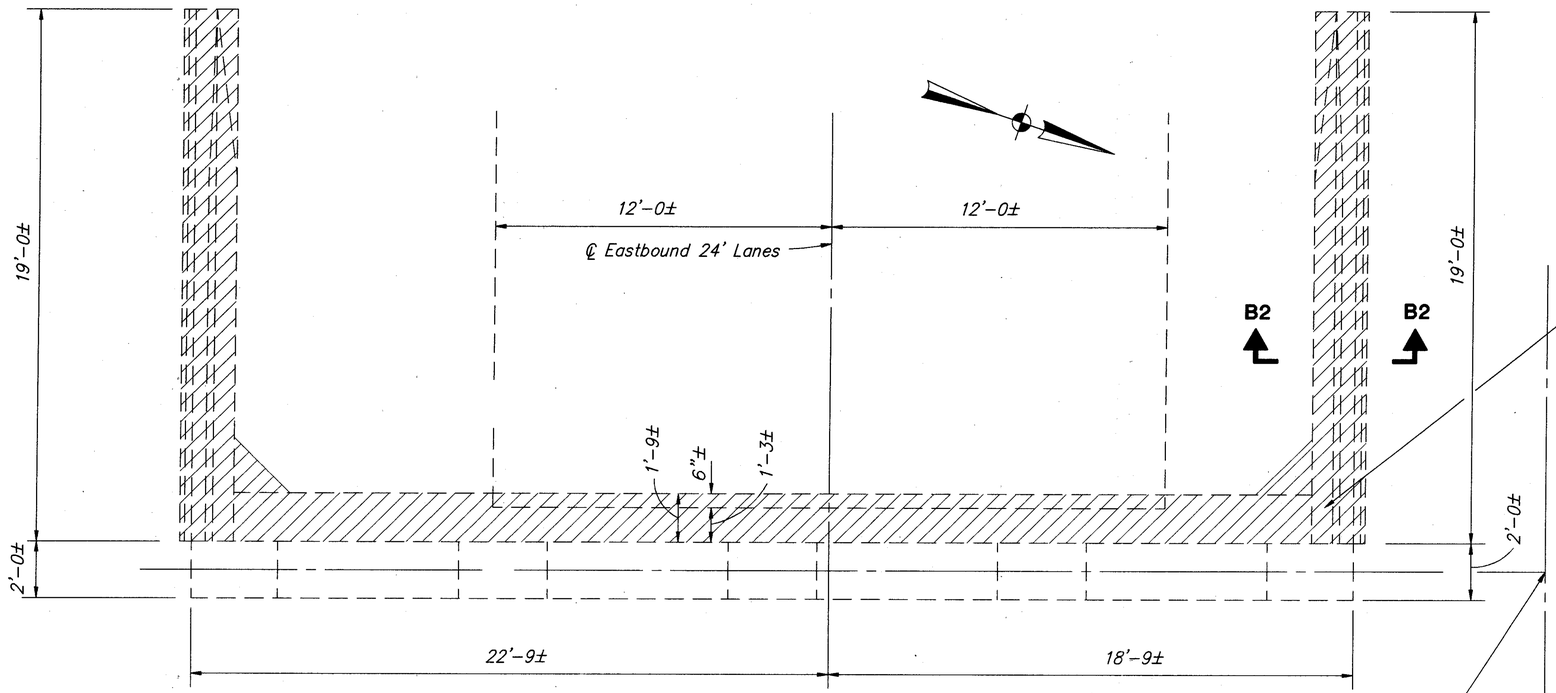
LEFT REAR ABUTMENT DETAILS

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

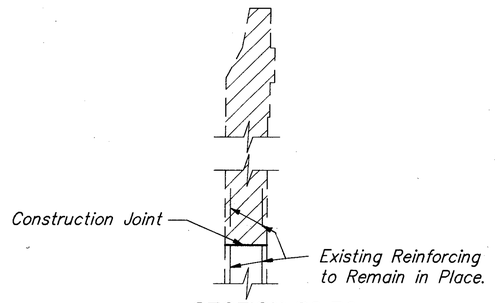
JEF-22-3.86

8/30

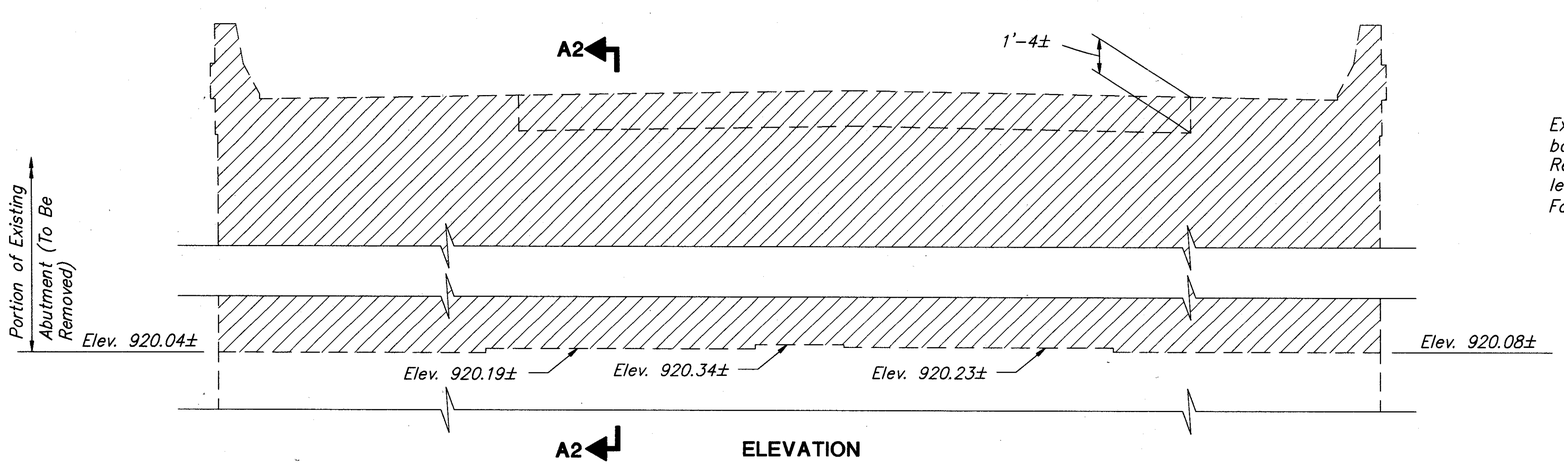
92/114



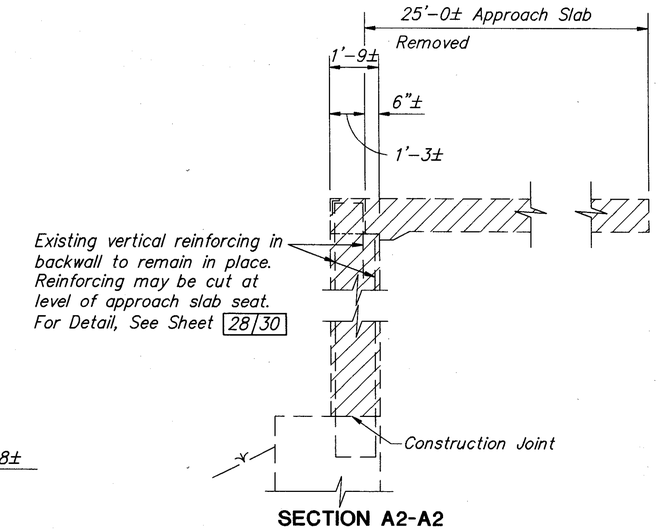
PLAN



SECTION B2-B2



ELEVATION



SECTION A2-A2

Denotes Removal.

EXISTING ABUTMENT REMOVALS

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

REVIEWED wda
DATE 4/94
STRUCTURE FILE NUMBER 4101839/4101863

DRAWN CFD
REVISED 4/94

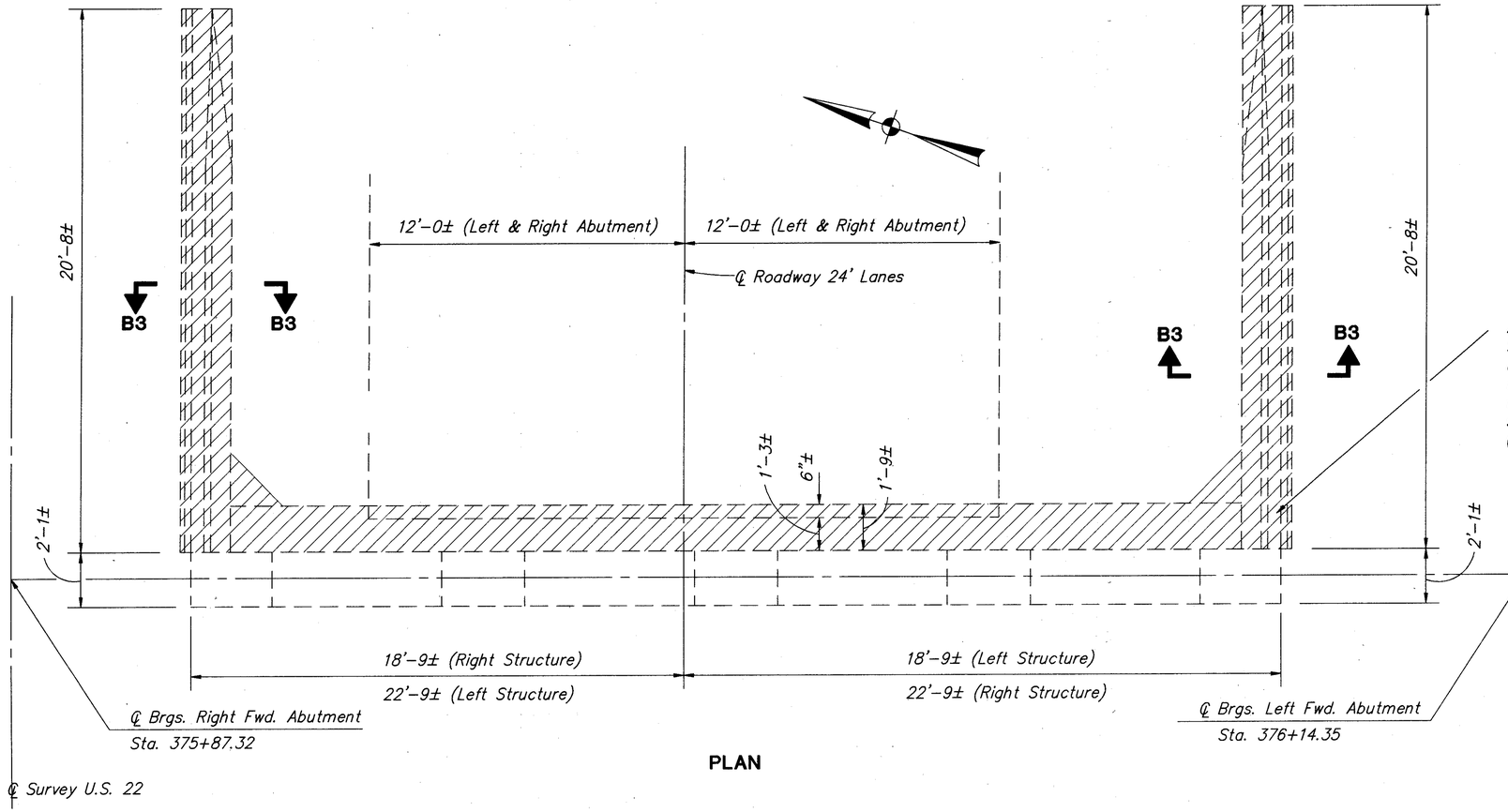
DESIGNED CFD
CHECKED PMZ

RIGHT REAR ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

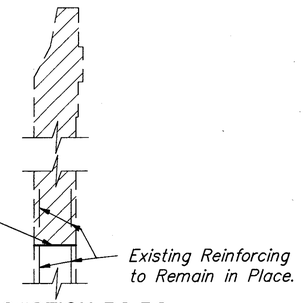
JEF-22-3.86

9/30

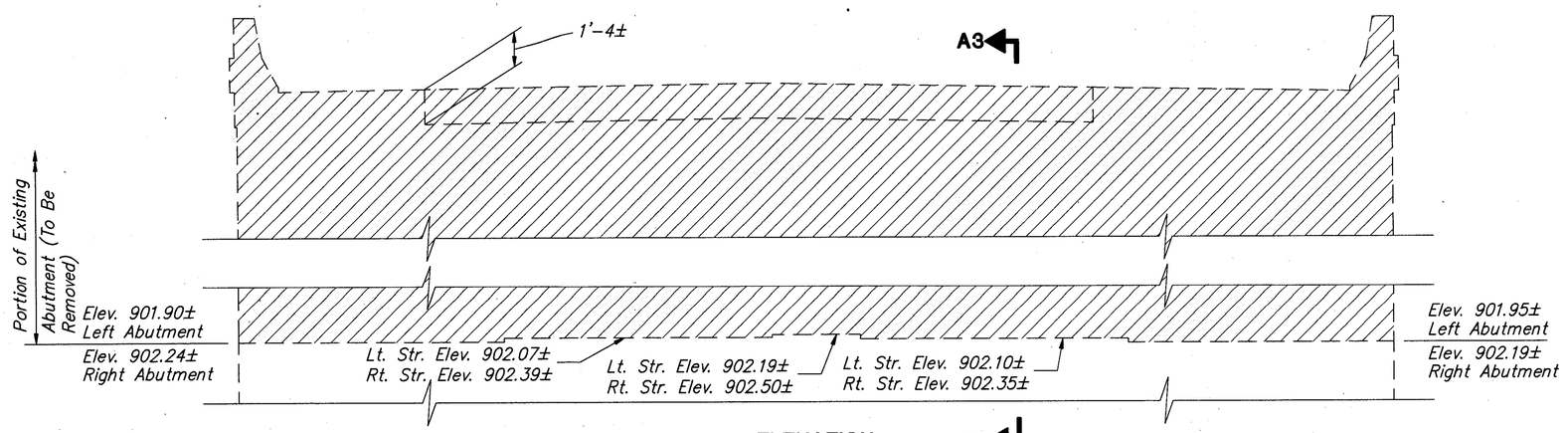
93/14



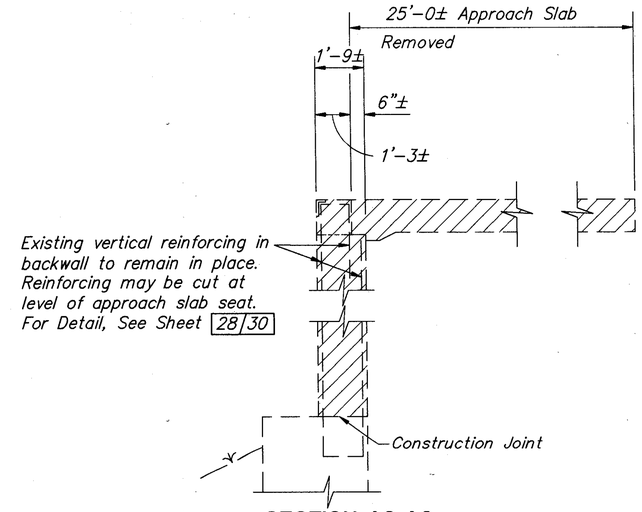
PLAN



SECTION B3-B3



ELEVATION



SECTION A3-A3

Denotes Removal.
Lt. Str. Denotes Left Structure
Rt. Str. Denotes Right Structure

EXISTING ABUTMENT REMOVALS

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

FORWARD ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

10/30

94/114

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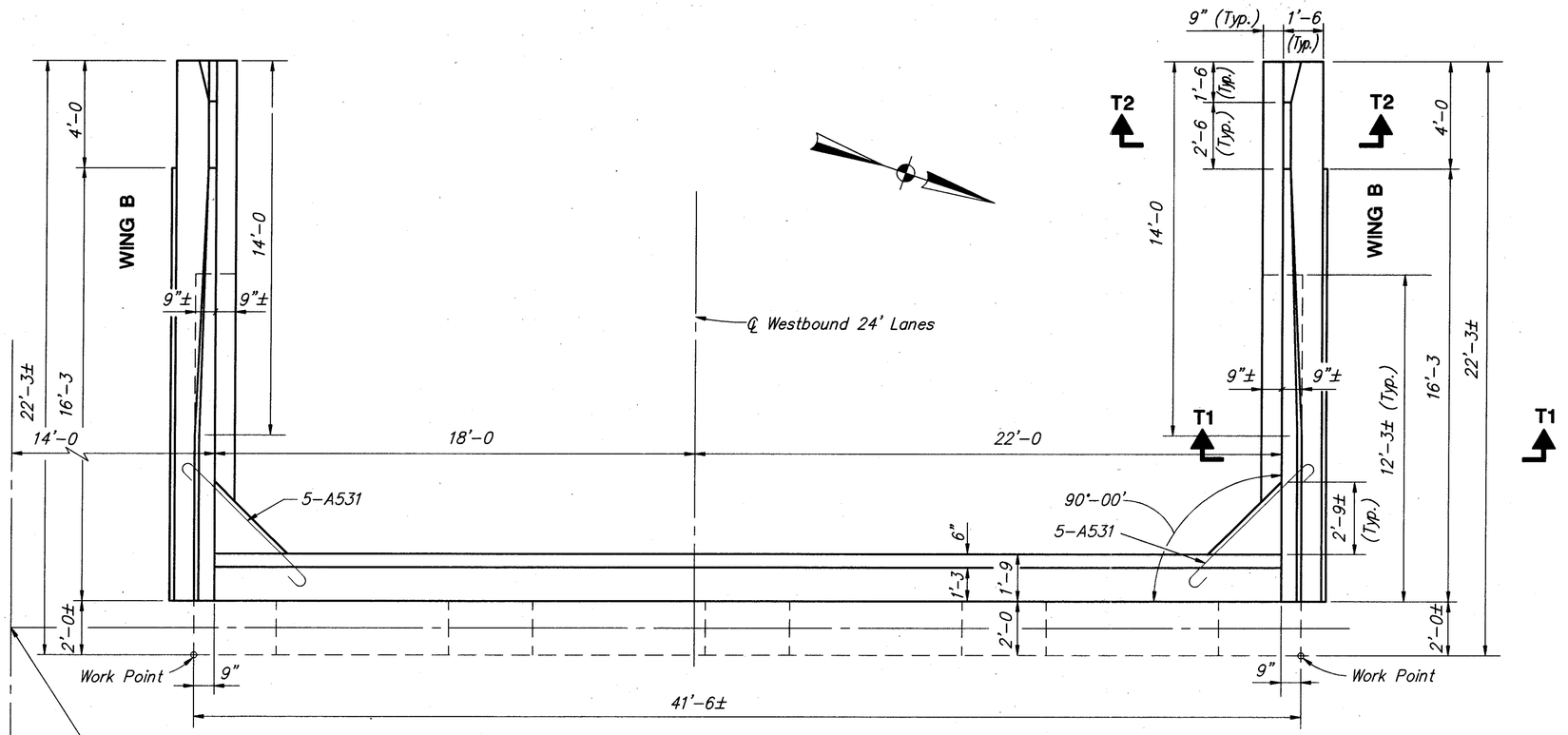

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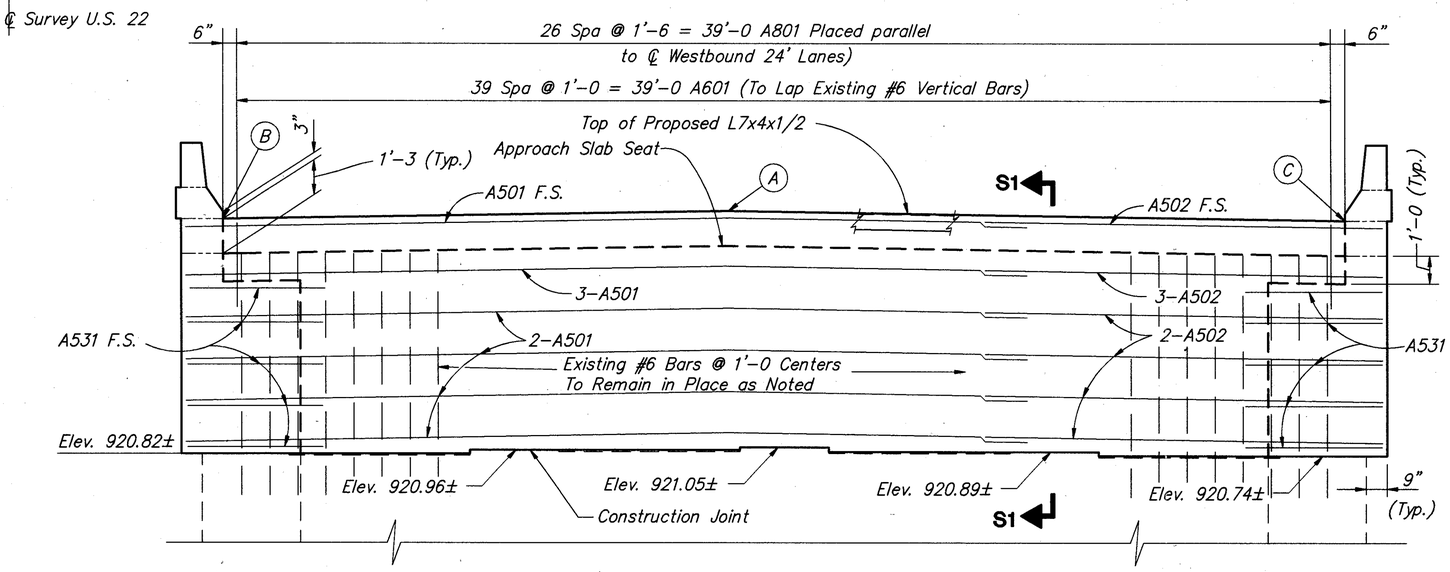


ELEVATION

ELEVATIONS			
LOCATION	A	B	C
LEFT REAR ABUTMENT	929.55	929.27	929.21

Notes: Maintain 2" Minimum Cover over Existing Reinforcing when placing New Concrete.

For Wing Elevations, See Sheet 15/30

For Parapet Reinforcing & Additional Dimensions, See Sheet 17/30

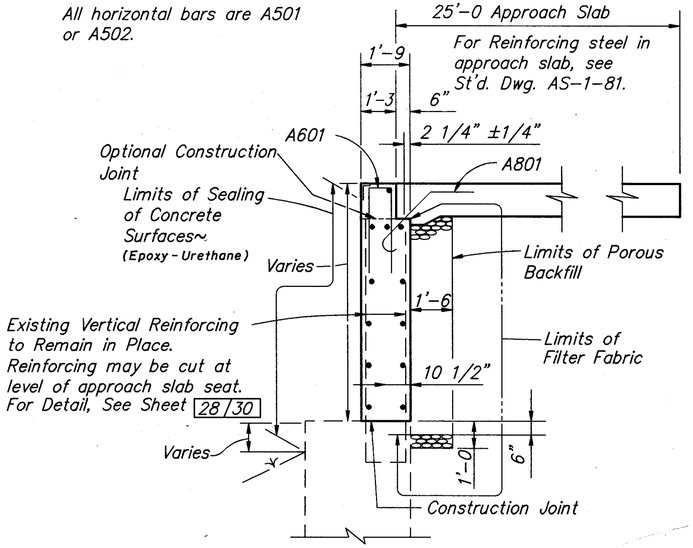
For Sections T1–T1 & T2–T2, See Sheet 16/30

F.S. ~ Denotes Far Side

All existing dimensions and elevations noted (±) are approximate

POROUS BACKFILL with filter fabric, 1'-6 thick shall extend up to the plane of the subgrade, to one foot below bridge seat, and laterally to the ends of the wings. Geotextile fabric shall conform with 712.09, Type A. Geotextile fabric is included with porous backfill for payment.

Note:
All horizontal bars are A501 or A502.



SECTION S1-S1

Note:
All new reinforcing steel to be Epoxy Coated.

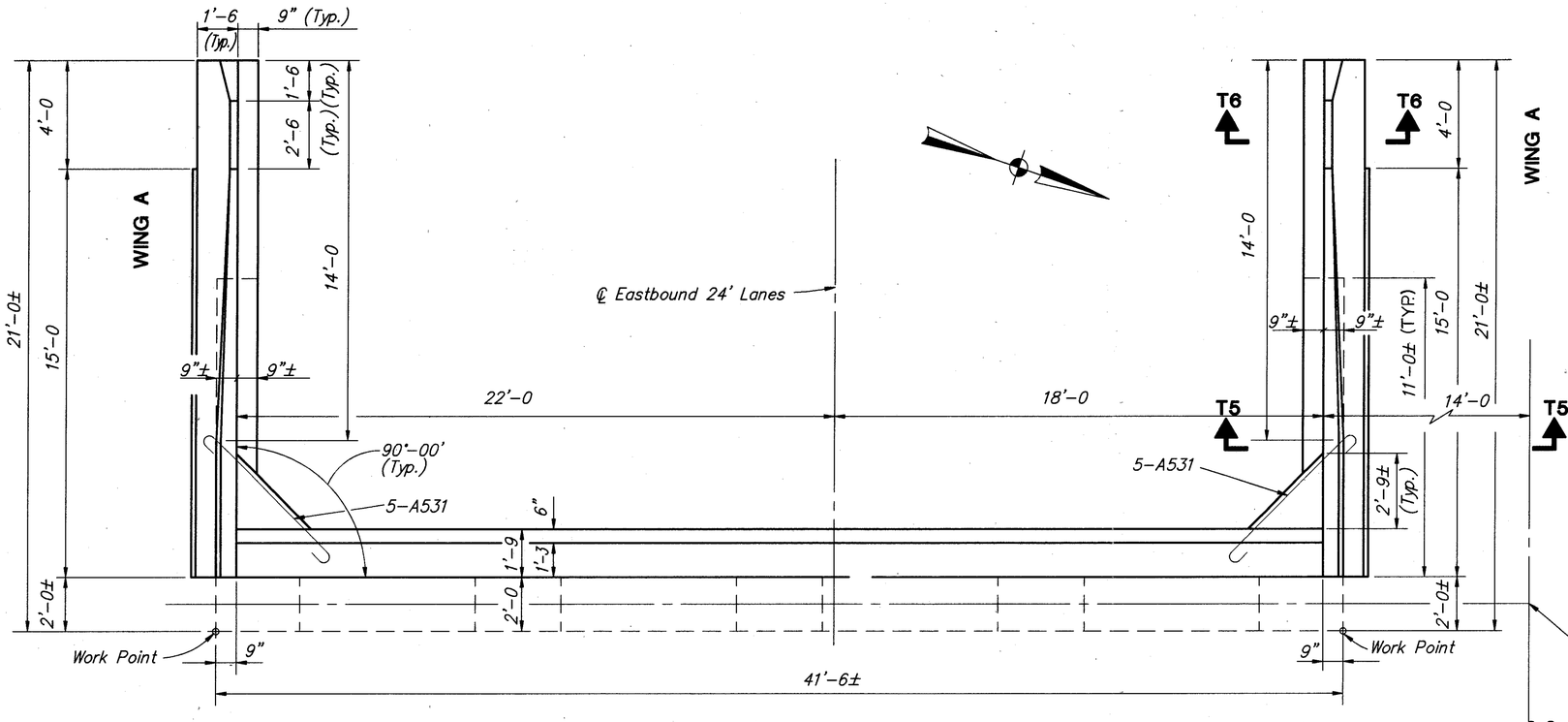
LEFT REAR ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS
DESIGNED: CFD
DRAWN: CFD
CHECKED: PMZ
REVISED: 4/94
REVIEWED: wda
DATE: 4/94
STRUCTURE FILE NUMBER: 4101839/4101863

JEF-22-3.86

11/30

95/114



PLAN

Notes: Maintain 2" Minimum Cover over Existing Reinforcing when placing New Concrete.

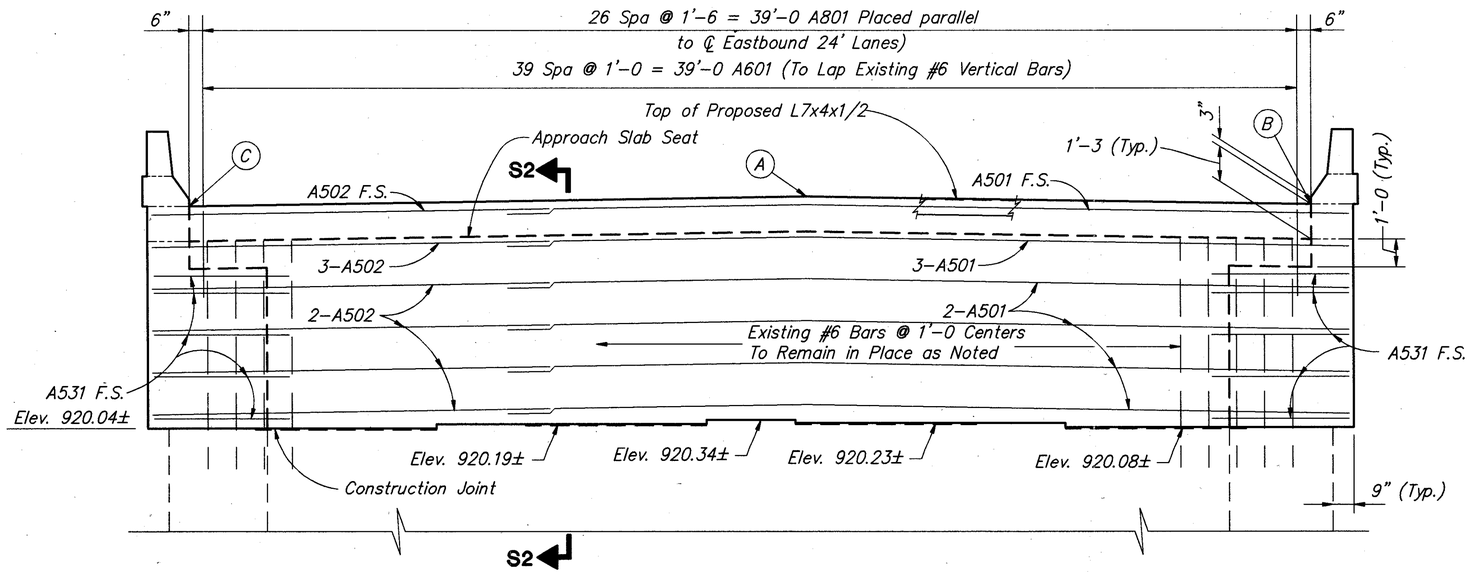
For Wing Elevations, See Sheet 15/30

For Parapet Reinforcing & Additional Dimensions, See Sheet 17/30

For Sections T5-T5 & T6-T6, See Sheet 16/30

F.S. ~ Denotes Far Side

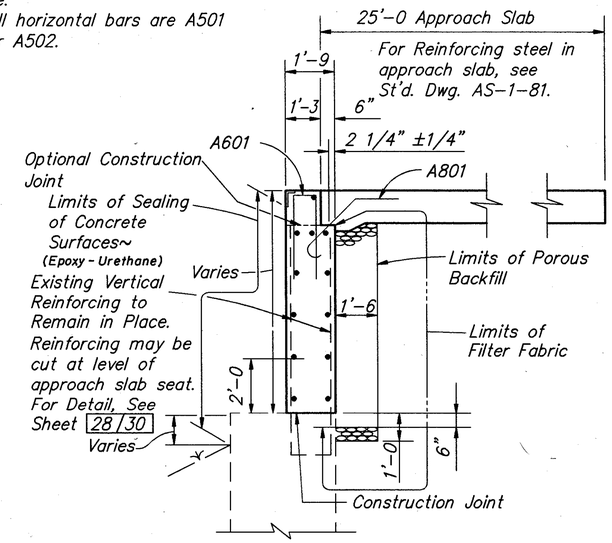
POROUS BACKFILL with filter fabric, 1'-6 thick shall extend up to the plane of the subgrade, to one foot below bridge seat, and laterally to the ends of the wings. Geotextile fabric shall conform with 712.09, Type A. Geotextile fabric is included with porous backfill for payment.



ELEVATION

ELEVATIONS			
LOCATION	A	B	C
RIGHT REAR ABUTMENT	928.35	928.06	928.00

Note:
All horizontal bars are A501 or A502.



SECTION S2-S2

Note:
All new reinforcing steel to be Epoxy Coated.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	WDA	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

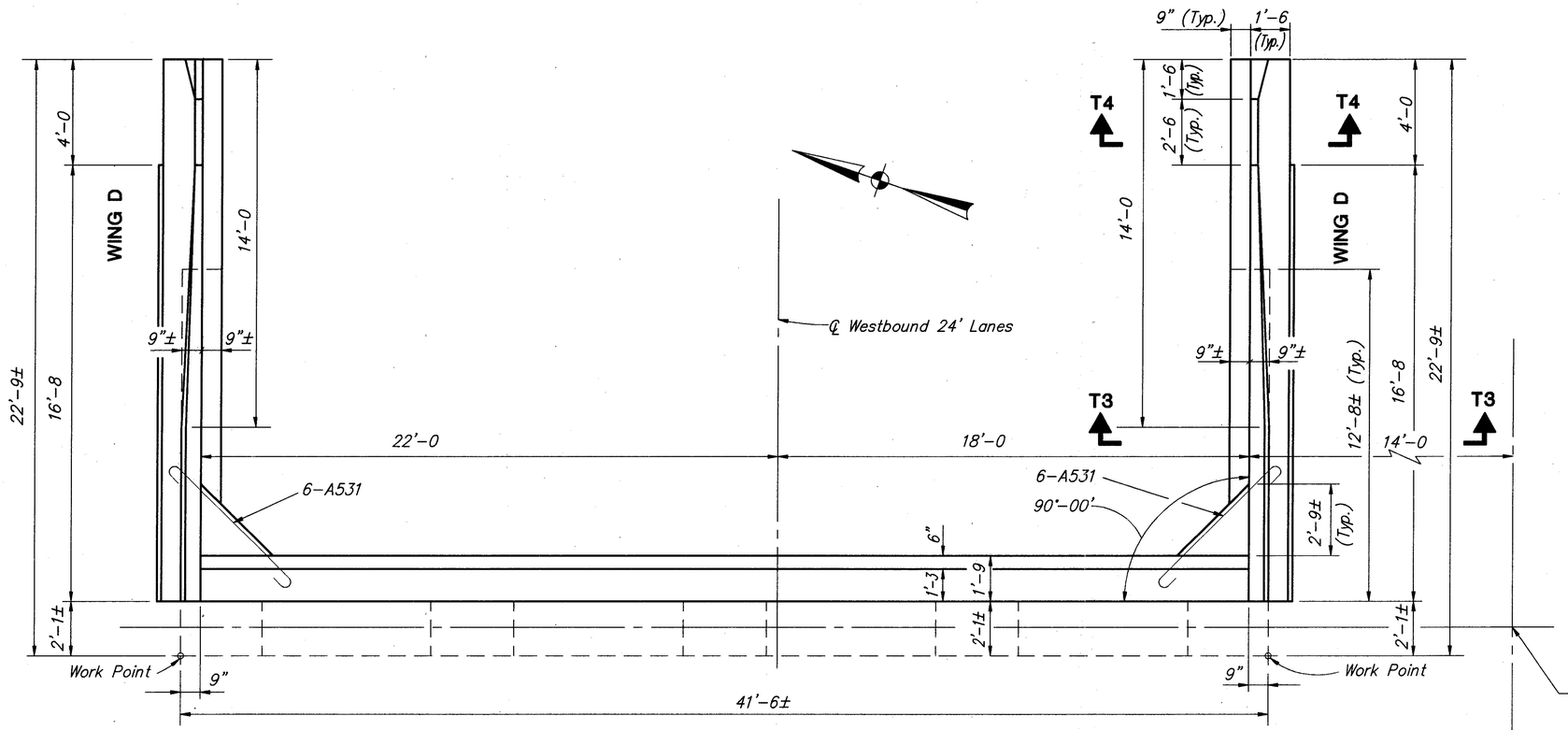
RIGHT REAR ABUTMENT DETAILS

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

12/30

96/114



Notes: Maintain 2" Minimum Cover over Existing Reinforcing when placing New Concrete.

For Wing Elevations, See Sheet 15/30

For Parapet Reinforcing & Additional Dimensions, See Sheet 17/30

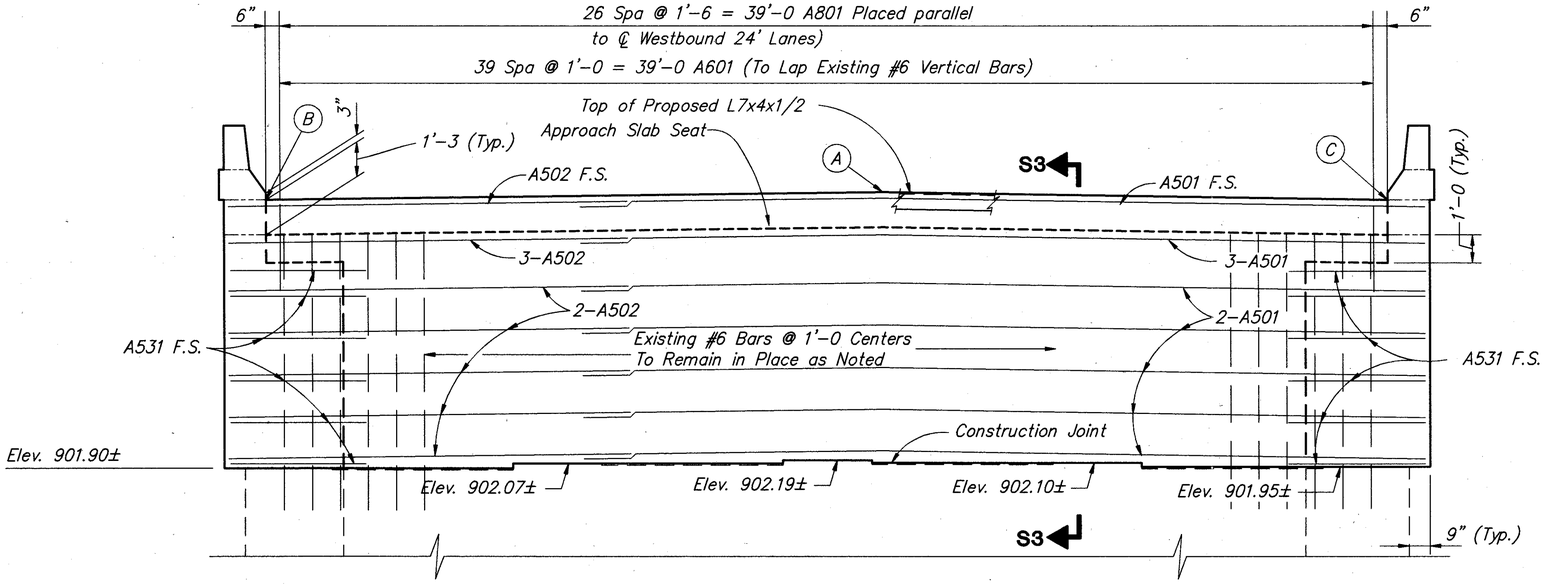
For Sections T3–T3 & T4–T4, See Sheet 16/30

F.S. ~ Denotes Far Side

All existing dimensions and elevations noted (±) are approximate

POROUS BACKFILL with filter fabric, 1'–6 thick shall extend up to the plane of the subgrade, to one foot below bridge seat, and laterally to the ends of the wings. Geotextile fabric shall conform with 712.09, Type A. Geotextile fabric is included with porous backfill for payment.

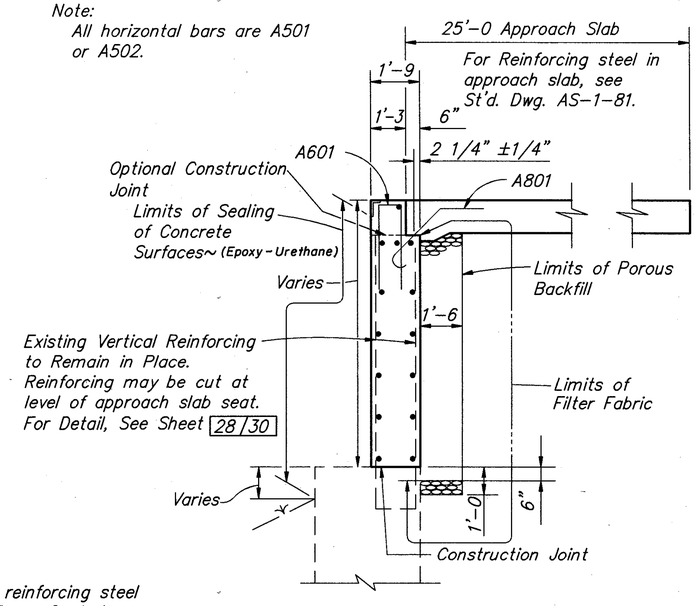
PLAN



ELEVATION

ELEVATIONS			
LOCATION	A	B	C
LEFT FWD. ABUTMENT	911.84	911.50	911.56

Note:
All horizontal bars are A501 or A502.



SECTION S3-S3

Note:
All new reinforcing steel to be Epoxy Coated.

LEFT FORWARD ABUTMENT DETAILS
BRIDGE NO. JEF–22–0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

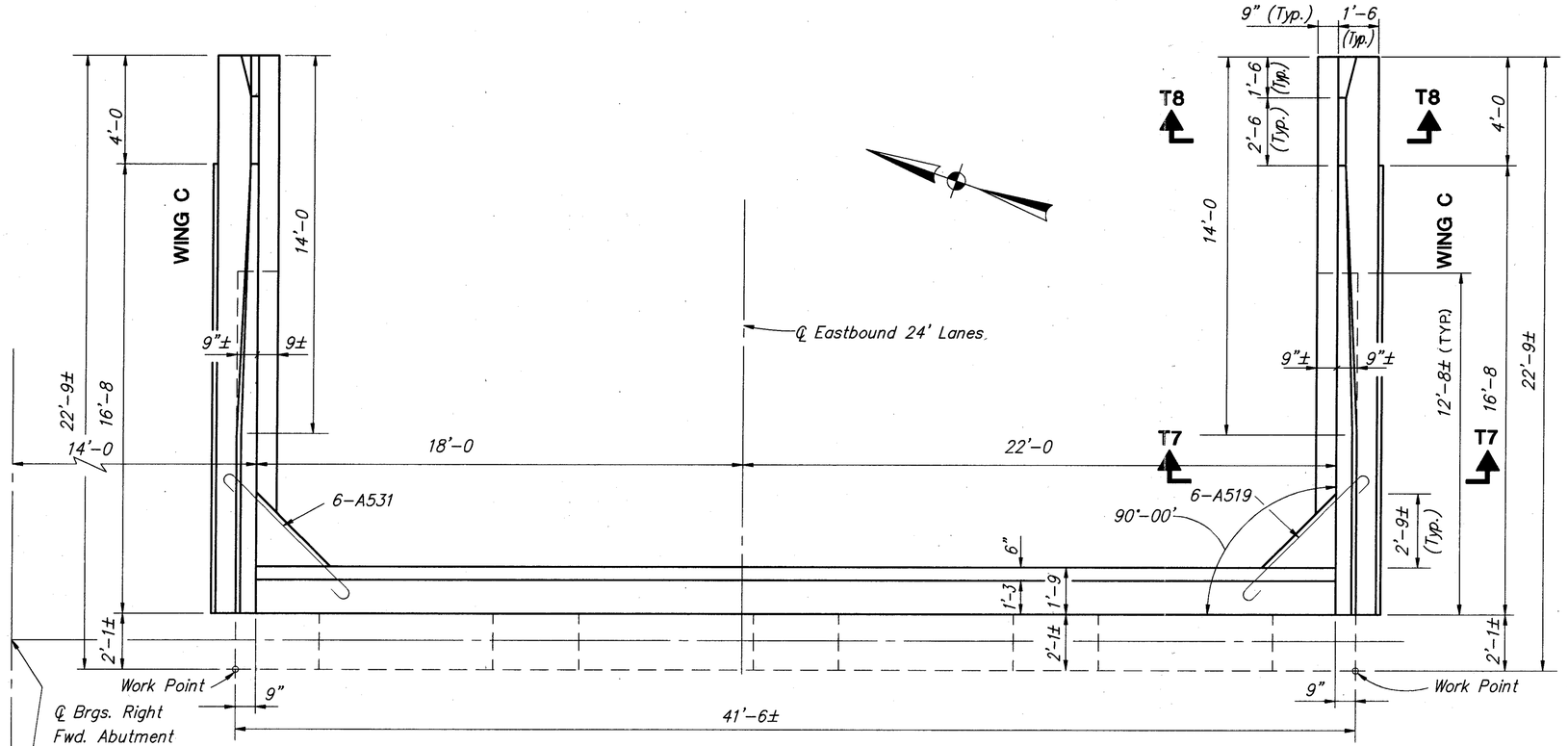
DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

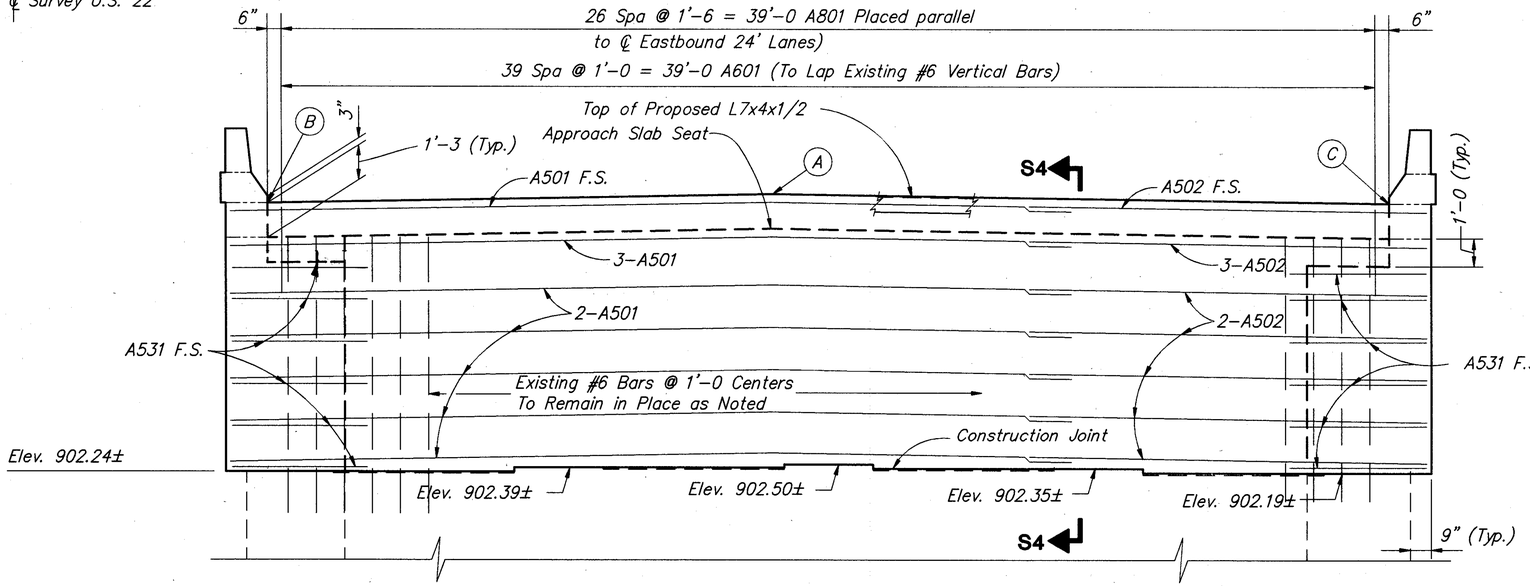
JEF–22–3.86

13/30

97/114



PLAN



ELEVATION

ELEVATIONS			
LOCATION	A	B	C
RIGHT FWD. ABUTMENT	912.13	911.85	911.78

Notes: Maintain 2" Minimum Cover over Existing Reinforcing when placing New Concrete.

For Wing Elevations, See Sheet 15/30

For Parapet Reinforcing & Additional Dimensions, See Sheet 17/30

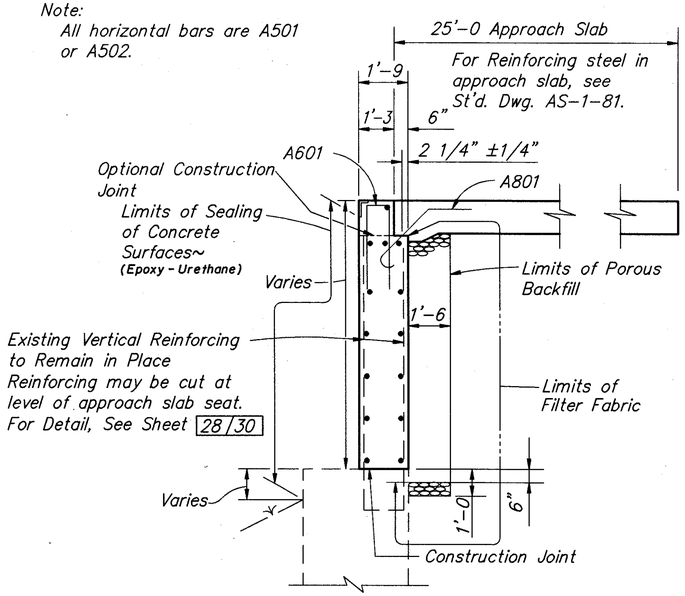
For Sections T7-T7 & T8-T8, See Sheet 16/30

F.S. ~ Denotes Far Side

All existing dimensions and elevations noted (±) are approximate

POROUS BACKFILL with filter fabric, 1'-6 thick shall extend up to the plane of the subgrade, to one foot below bridge seat, and laterally to the ends of the wings. Geotextile fabric shall conform with 712.09, Type A. Geotextile fabric is included with porous backfill for payment.

Note:
All horizontal bars are A501 or A502.



SECTION S4-S4

Note:
All new reinforcing steel to be Epoxy Coated.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

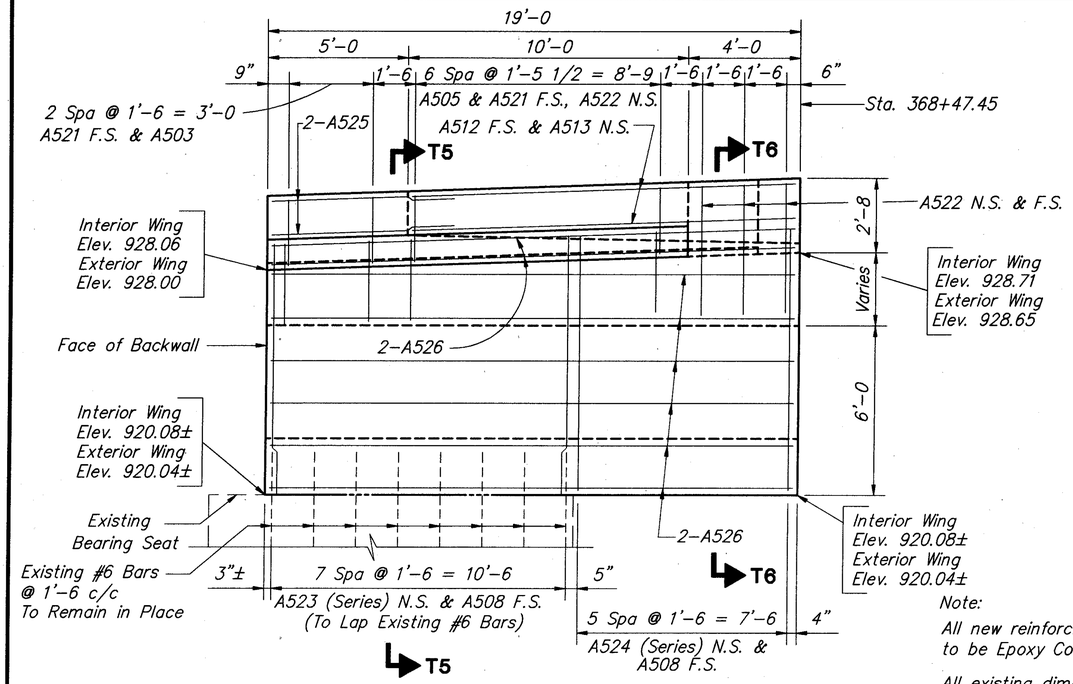
DESIGNED CFD
DRAWN CFD
CHECKED PMZ
REVIEWED wdc
DATE 4/94
REVISED 4/94
STRUCTURE FILE NUMBER 4101839/4101863

RIGHT FORWARD ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

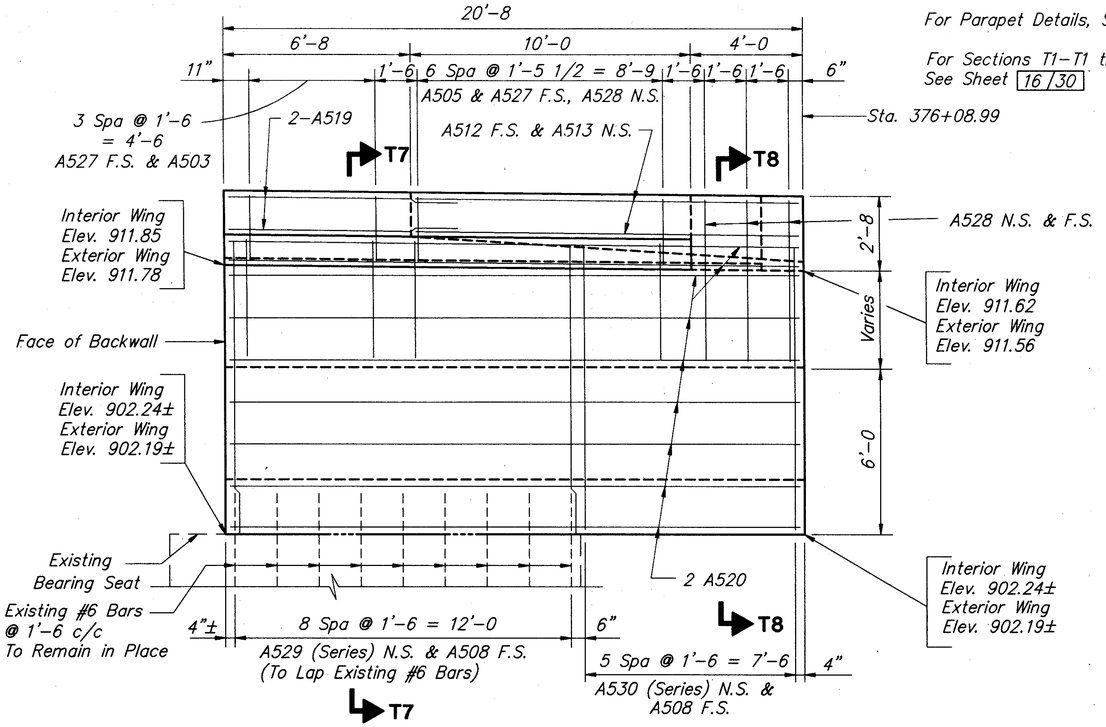
JEF-22-3.86

14/30

98/114



WING A ELEVATION - 0698 R
REAR ABUTMENT



WING C ELEVATION - 0698 R
FORWARD ABUTMENT

Note:

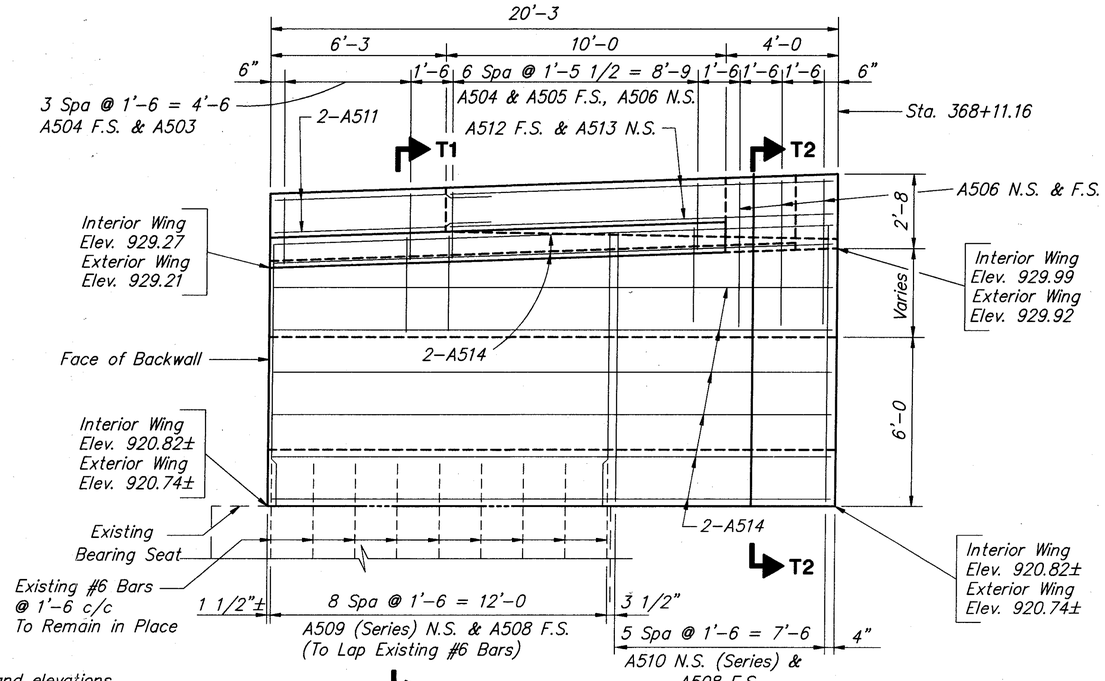
All new reinforcing steel to be Epoxy Coated.

All existing dimensions and elevations noted (±) are approximate

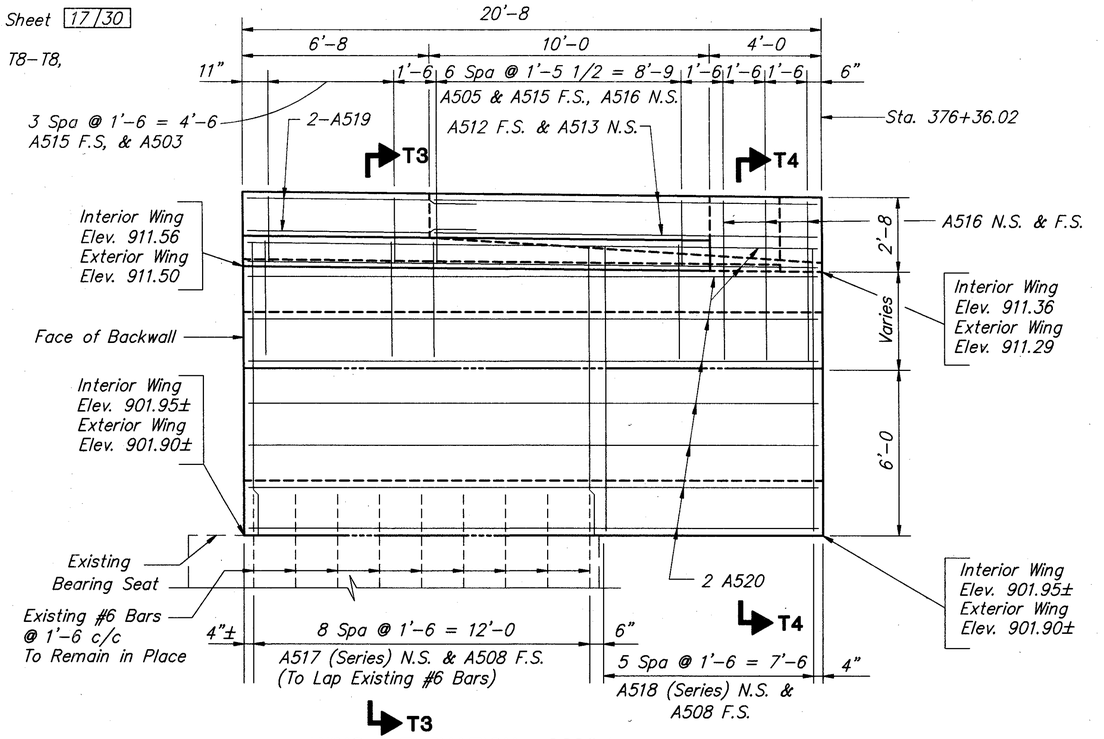
N.S. ~ Denotes Near Side
F.S. ~ Denotes Far Side

For Parapet Details, See Sheet 17/30

For Sections T1-T1 thru T8-T8, See Sheet 16/30



WING B ELEVATION - 0698 L
REAR ABUTMENT



WING D ELEVATION - 0698 L
FORWARD ABUTMENT

DESIGN AGENCY
W.E. QUICKSALL
AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

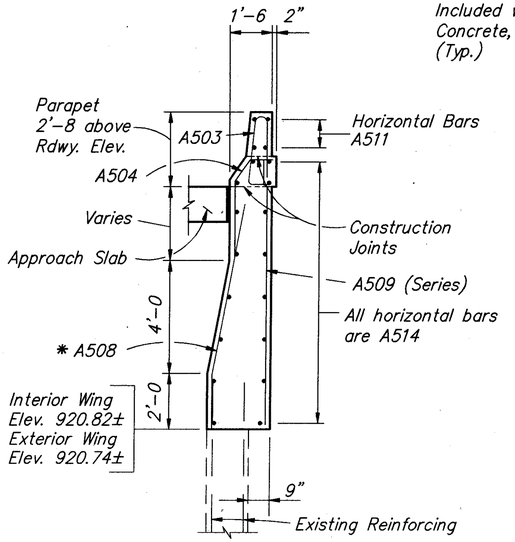
ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

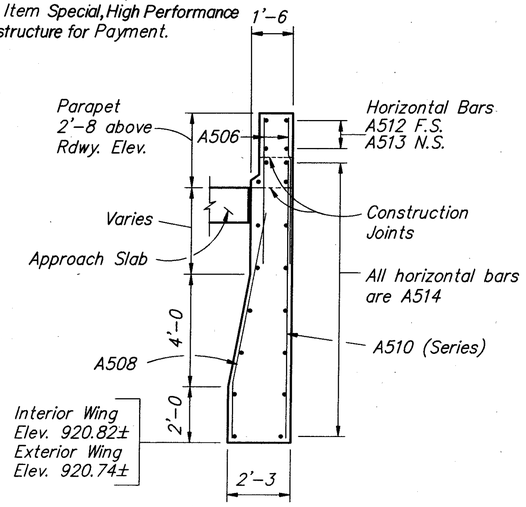
15/30

99
114

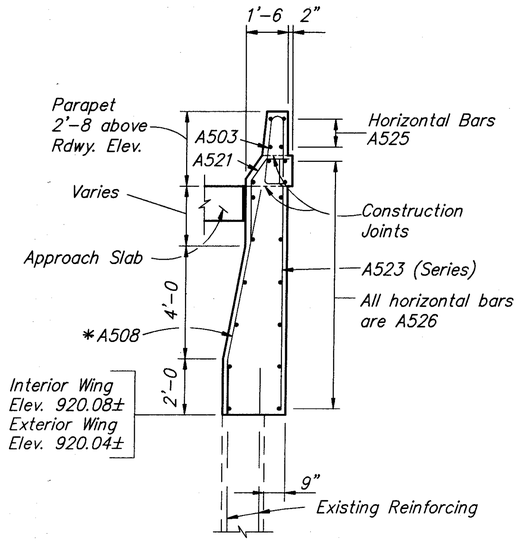
Concrete for Abutment Parapets Included with Item Special, High Performance Concrete, Substructure for Payment. (Typ.)



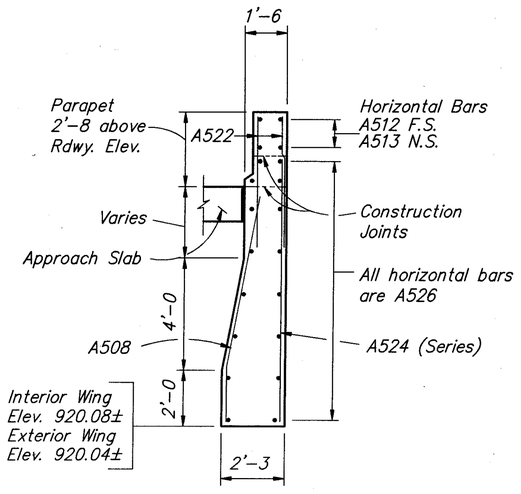
SECTION T1-T1



SECTION T2-T2



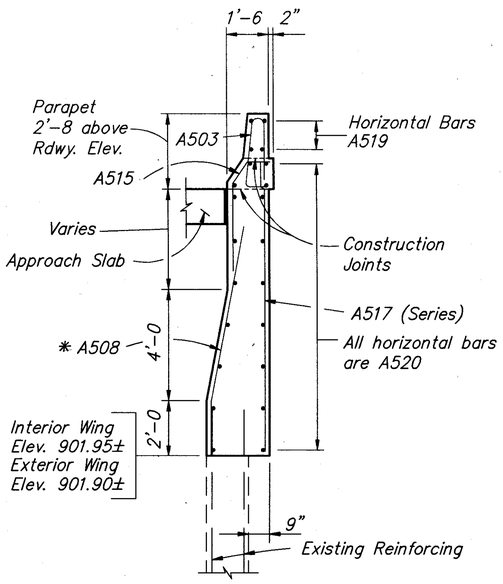
SECTION T5-T5



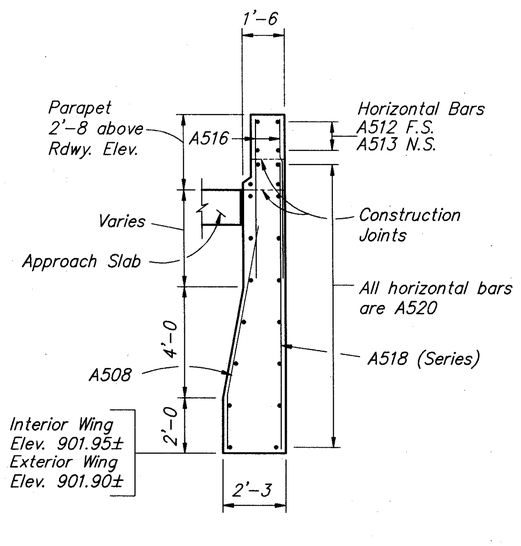
SECTION T6-T6

All existing elevations noted (±) are approximate

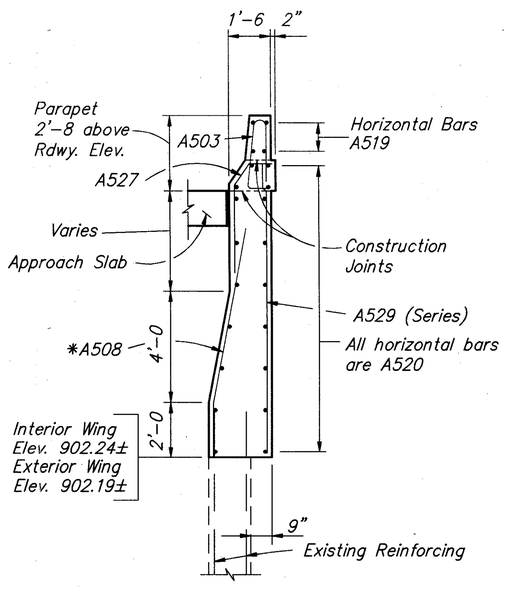
*Lap with existing reinforcing



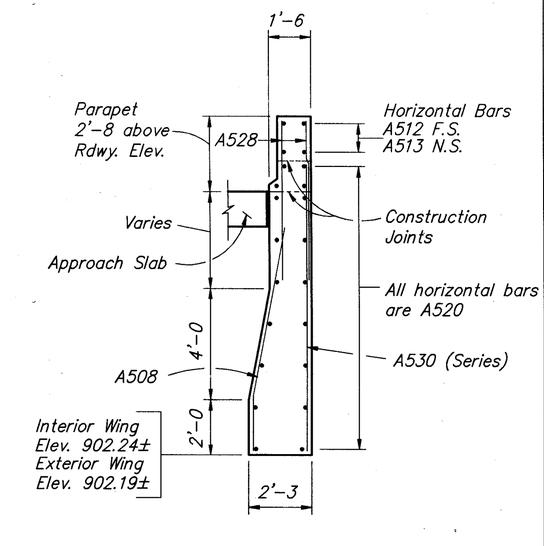
SECTION T3-T3



SECTION T4-T4



SECTION T7-T7



SECTION T8-T8

Note:
Rdwy. ~ Denotes Roadway.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wdc	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PMZ	4/94	4101839/4101863	

ABUTMENT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

16 / 30

100 / 114

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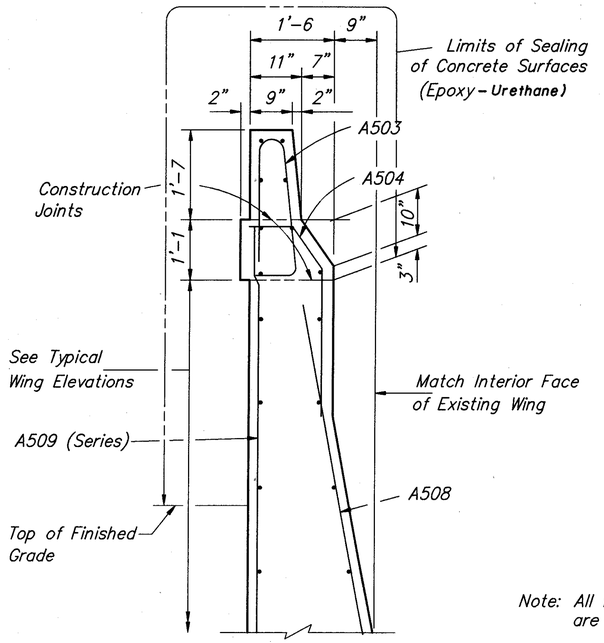
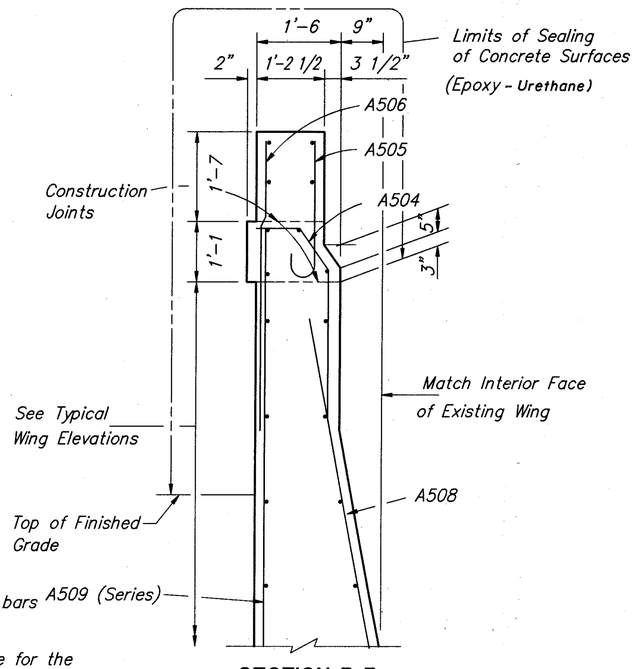


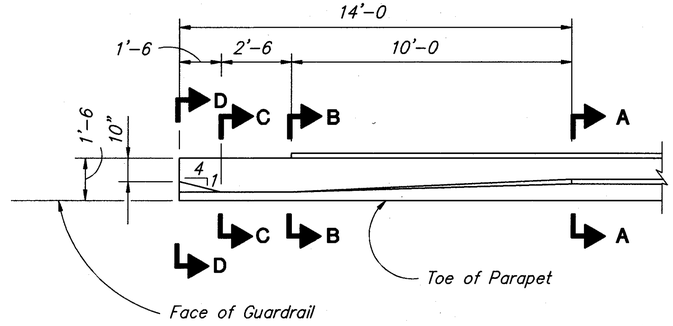
SECTION A-A



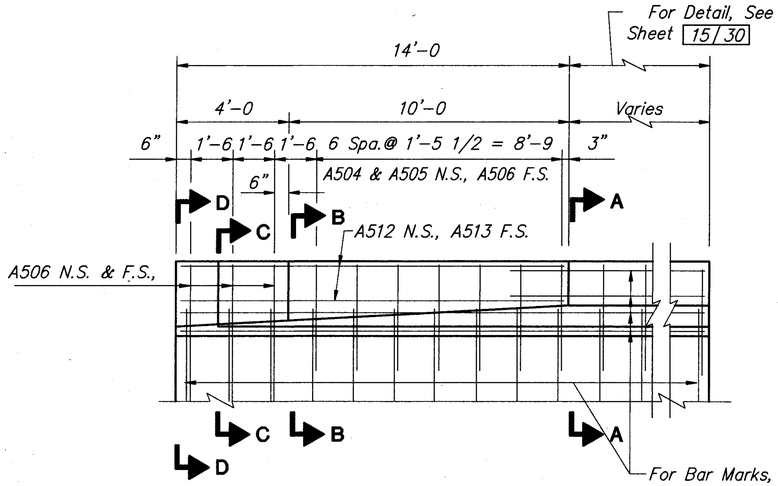
SECTION B-B

Note: All horizontal bars are #5 bars.

Bar marks noted are for the left rear abutment wings. For additional wings and their reinforcing bar marks, see abutment detail sheet 15/30



NORMAL PARAPET ENDING PLAN



NORMAL PARAPET ENDING ELEVATION
(ON ABUTMENT WINGS)

SECTION C-C

SECTION D-D

TYPICAL SECTIONS - PARAPET ON ABUTMENT WINGS

Notes : All new reinforcing steel to be Epoxy Coated.

N.S. ~ Denotes Near Side
F.S. ~ Denotes Far Side

Guardrail not shown

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

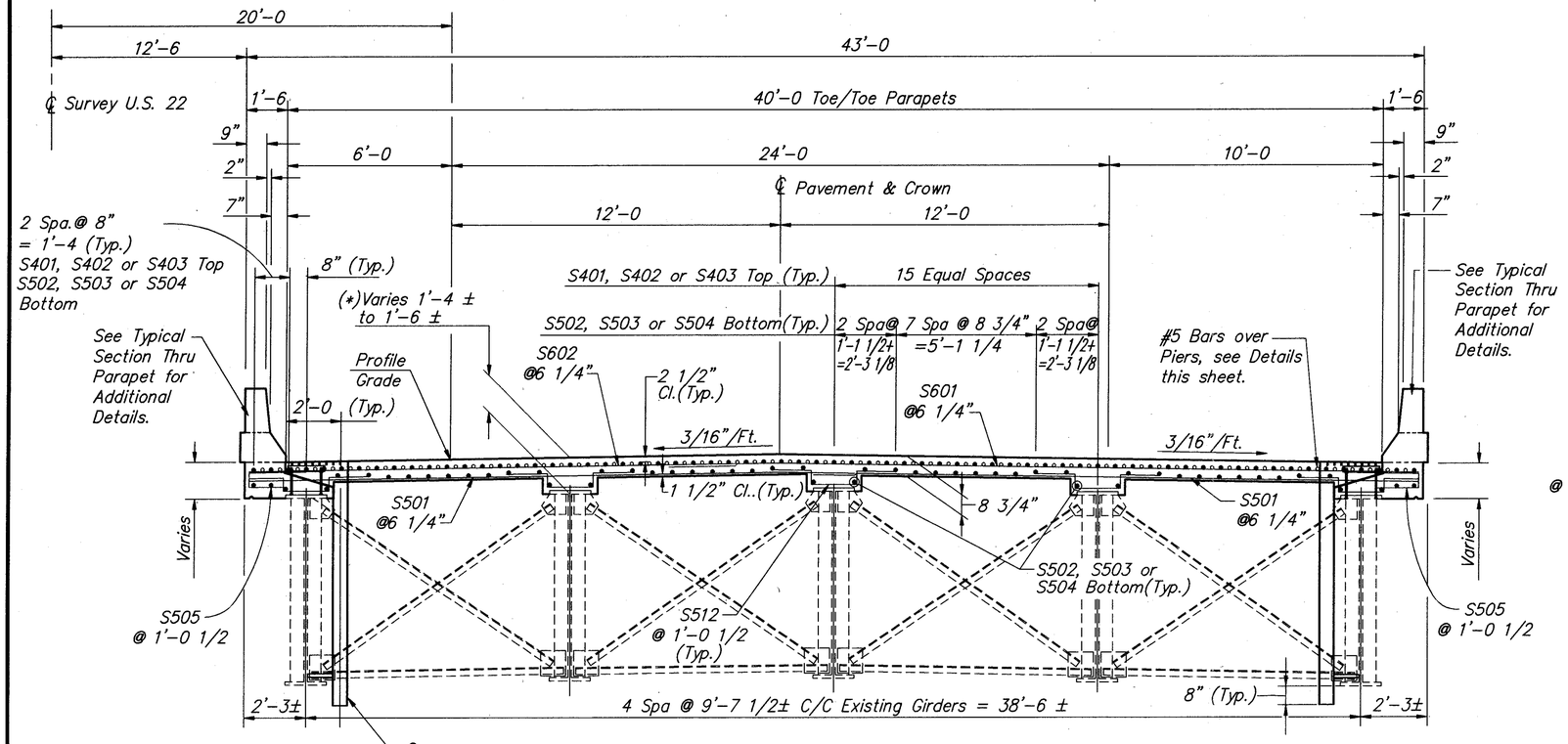
DESIGNED CFD | DRAWN CFD | REVIEWED wda | DATE 4/94
CHECKED PMZ | REVISED 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

ABUTMENT PARAPET ENDING DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

17/30

101/114

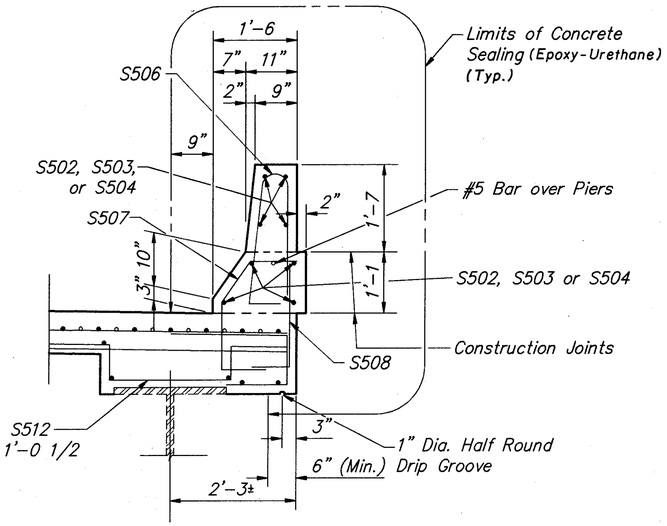


TRANSVERSE SECTION

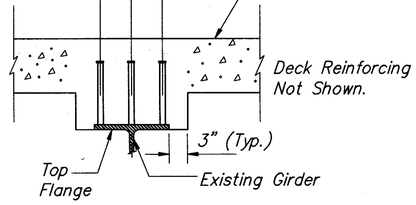
EASTBOUND STRUCTURE

(WESTBOUND STRUCTURE SYMMETRICAL ABOUT CENTERLINE SURVEY)

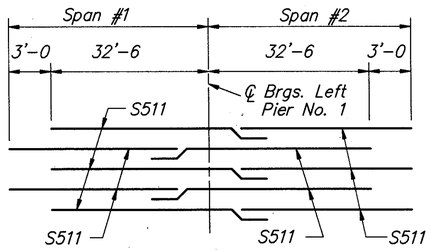
Note: Shear Connectors Not Shown.



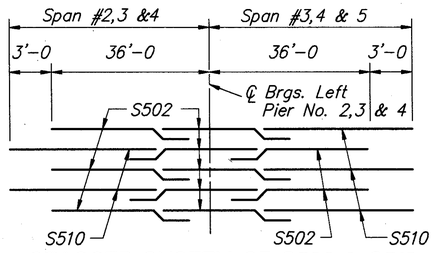
TYPICAL SECTION THRU PARAPET



TYPICAL SECTION SHEAR CONNECTOR AND HAUNCH DETAIL



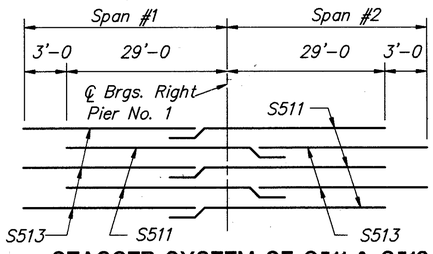
STAGGER SYSTEM OF S511 BARS OVER PIER



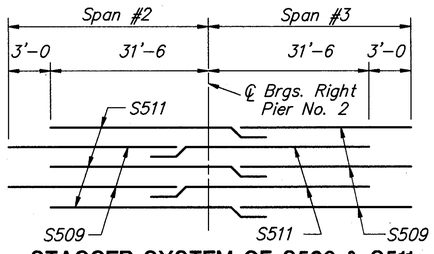
STAGGER SYSTEM OF S502 & S510 BARS OVER PIER

(*)DECK SLAB DEPTH: The distance shown from the top of the deck slab to the bottom of the top flange varies. The quantity of deck concrete to be paid for shall be based upon an average dimension of 1'-5. Deduction shall be made for volume of encased steel plates as per 511.18.

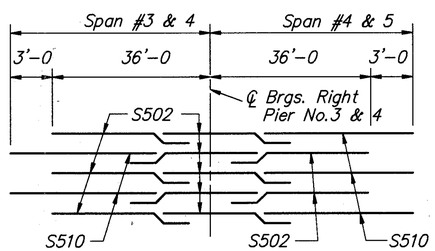
Note: All #5 bars over piers shall have a minimum lap of 2'-0.



STAGGER SYSTEM OF S511 & S513 BARS OVER PIER



STAGGER SYSTEM OF S509 & S511 BARS OVER PIER



STAGGER SYSTEM OF S502 & S510 BARS OVER PIER

For Scupper Details, See Sheet 23/30

For Shear Connector Locations, See Sheets 19/30 & 20/30

Brgs. = Bearings

DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

DESIGNED FDH | DRAWN FDH | CHECKED wda | REVIEWED ZRD | DATE 4/94 | REVISED 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

SUPERSTRUCTURE DETAILS

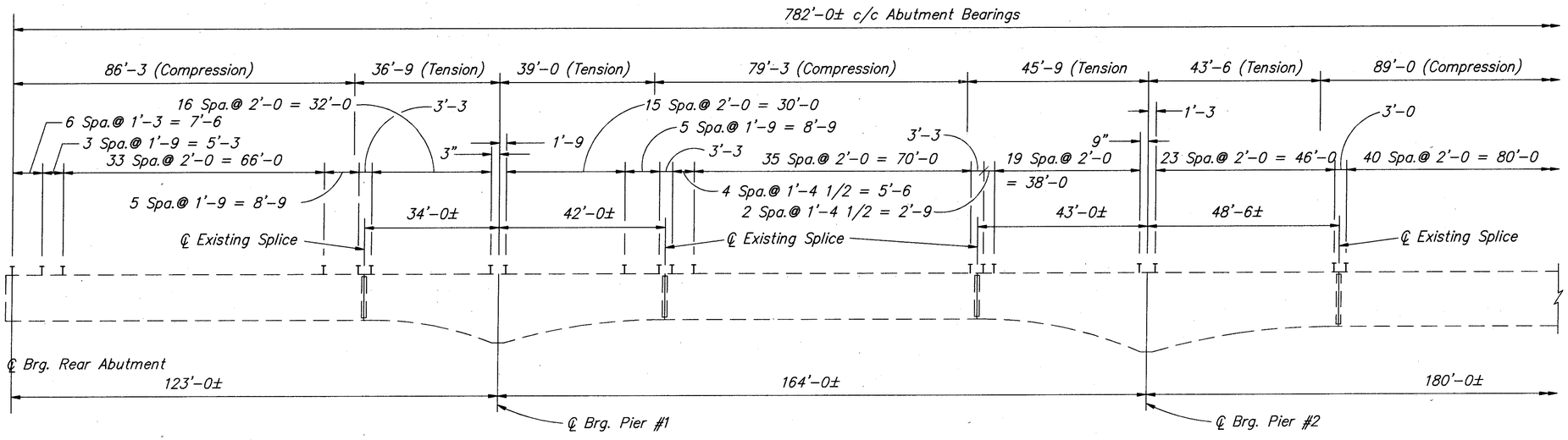
BRIDGE NO. JEF-22-0698 L/R

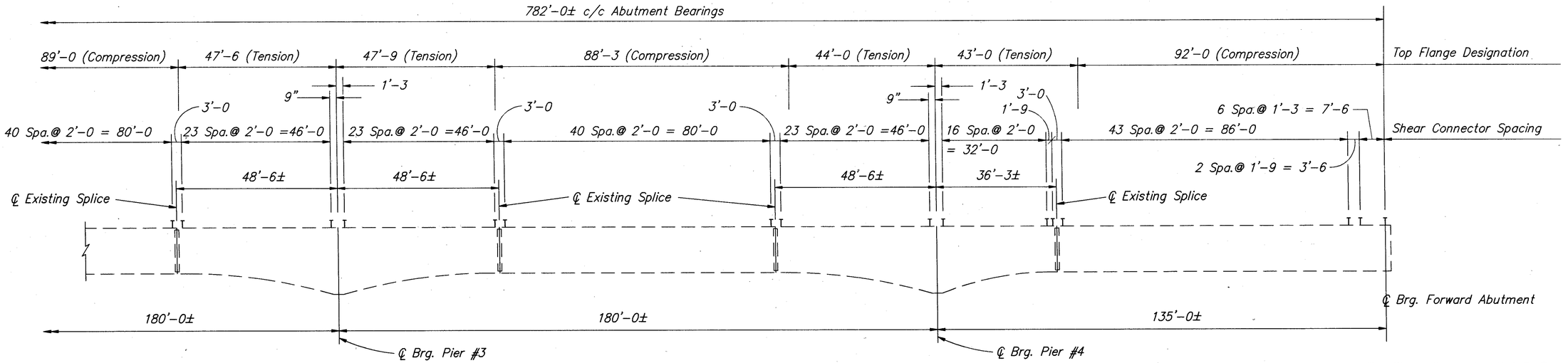
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

18/30

102/114





LEFT STRUCTURE - TYPICAL EXISTING GIRDER ELEVATION

Note:
Brg. ~ Denotes Bearing

For Shear Connector Detail, See Sheet 18/30

For Transverse Section, See Sheet 18/30

For Deck Plan See Sheet 24/30

For Steel Details, See Sheet 22/30

For Framing Plan, See Sheet 21/30

STEEL NOTES

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

AT THE CONTRACTOR'S OPTION, THE BOTTOM MAT OF DECK REINFORCING STEEL MAY BE PLACED PRIOR TO ATTACHING THE SHEAR CONNECTOR STUDS TO AVOID INTERFERENCE WITH THE REINFORCING STEEL.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZRD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wda	4/94	4101839/4101863	

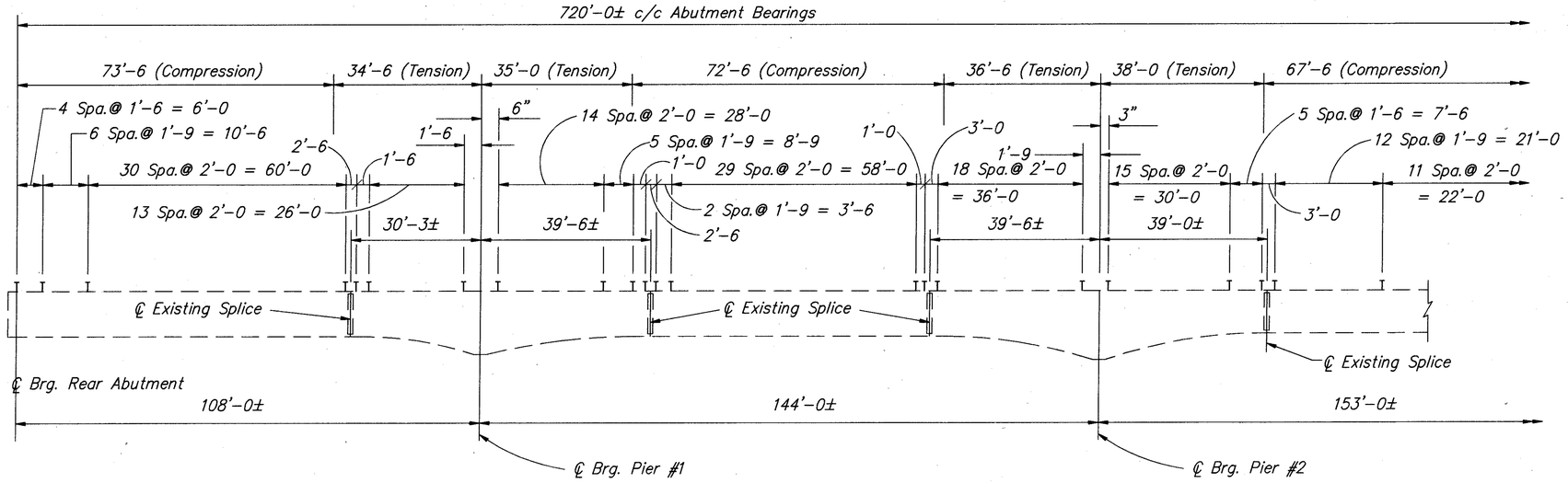
LEFT SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

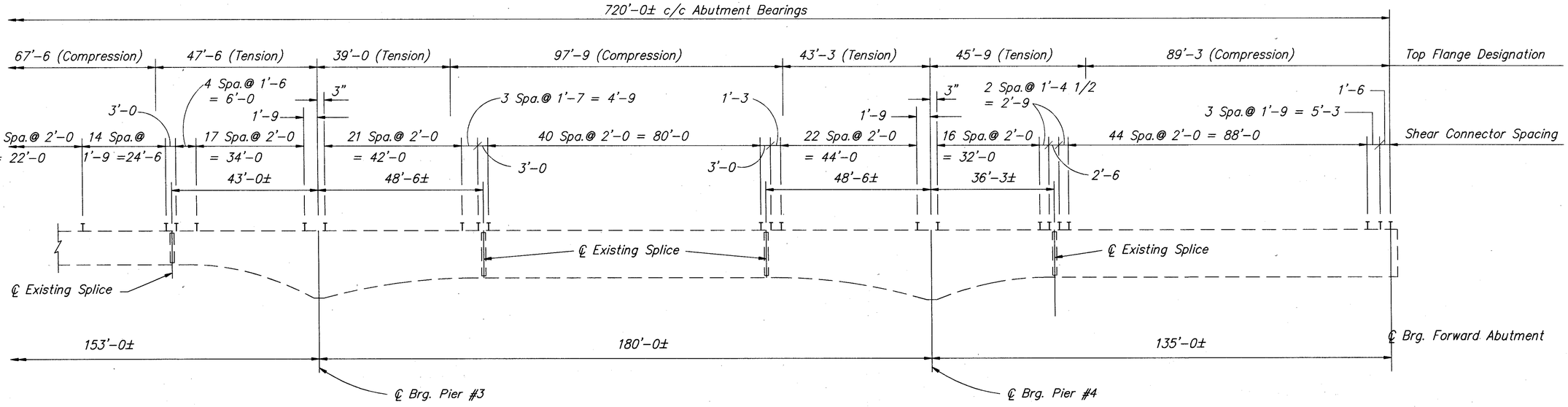
JEF-22-3.86

19/30

103/114

S9262BM2/1





RIGHT STRUCTURE - TYPICAL EXISTING GIRDER ELEVATION

For Transverse Section, See Sheet 18/30

For Framing Plan, See Sheet 21/30

For Deck Plan, See Sheet 24/30

For Steel Details, See Sheet 22/30

For Steel Notes, See Sheet 19/30

For Shear Connector Detail, See Sheet 18/30

Note:
Brg. ~ Denotes Bearing

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZRD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wda	4/94	4101839/4101863	

RIGHT SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

20/30

104/114

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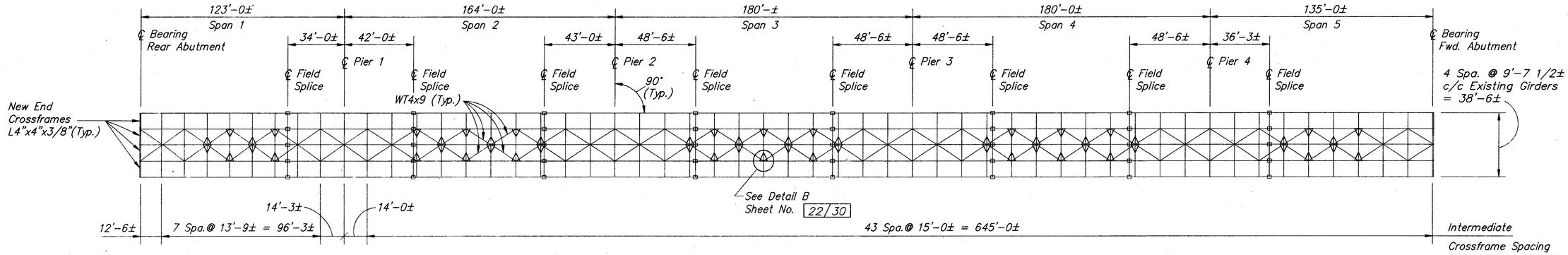
STRUCTURE JEF-22-0698 L				
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
SPECIAL	51316800	56	EACH	STRUCTURAL STEEL, MISC.: NDT, RETROFIT OF LOWER LATERAL CONNECTIONS AND GRINDING
SPECIAL	51316800	7	EACH	STRUCTURAL STEEL, MISC.: DRILLING 2–1 1/4" HOLES AT LOWER LATERALS, GRINDING AND NDT

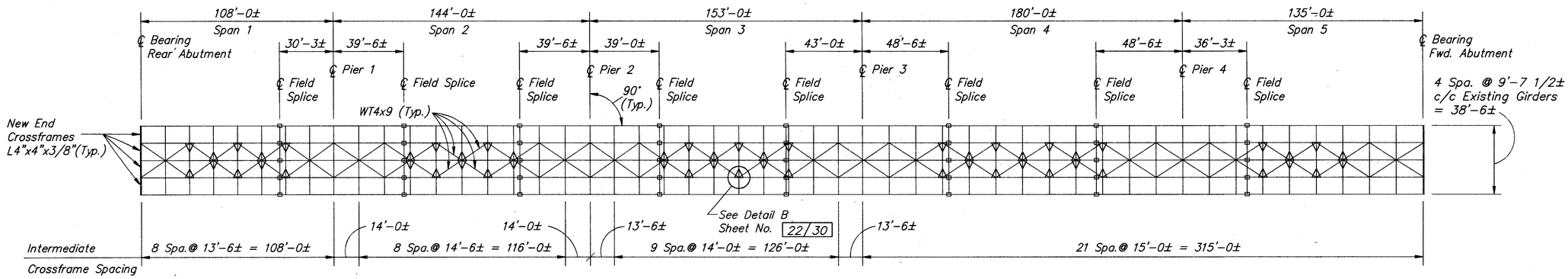
STRUCTURE JEF-22-0698 R				
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
SPECIAL	51316800	54	EACH	STRUCTURAL STEEL, MISC.: NDT, RETROFIT OF LOWER LATERAL CONNECTIONS AND GRINDING
SPECIAL	51316800	7	EACH	STRUCTURAL STEEL, MISC.: DRILLING 2–1 1/4" HOLES AT LOWER LATERALS, GRINDING AND NDT

Quantities carried to Estimated Quantities Sheet 7/30



EXISTING FRAMING PLAN - LEFT BRIDGE

(56 LATERAL BRACING LOCATIONS TO BE RETROFITTED)



EXISTING FRAMING PLAN - RIGHT BRIDGE

(54 LATERAL BRACING LOCATIONS TO BE RETROFITTED)

△ – *Denotes lower lateral connections to be retrofitted.*

For Details and Notes, See Sheet 22/30

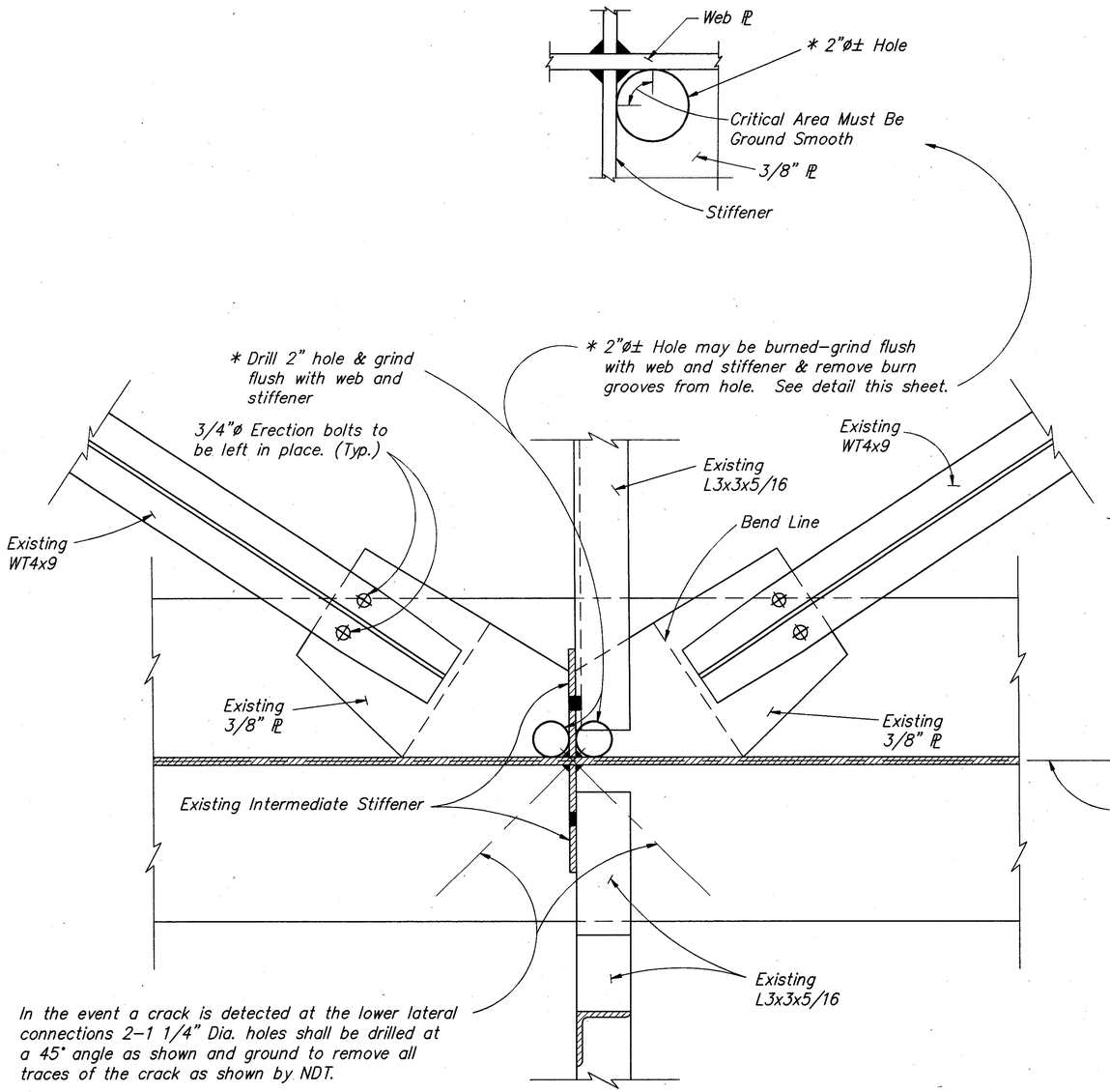
DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED CFD | DRAWN CFD | CHECKED wda | REVISED 4/94 | REVIEWED ZRD | DATE 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF–22–0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF–22–3.86



DETAIL B

ITEM SPECIAL – STRUCTURAL STEEL, MISC.: NDT, RETROFIT OF LOWER LATERAL CONNECTIONS AND GRINDING

This item shall consist of performing non-destructive testing, as described below, of all areas listed, and the drilling or burning and grinding flush of 2" diameter holes through the gusset plates at the corner of the girder web stiffeners as shown on this sheet.

Areas where non-destructive testing shall be performed are:

1. *The corner of the girder web and stiffener on both sides of the gusset plate.*
2. *The other termini of the weld of the gusset plate to the girder web.*
3. *The termination of the weld of the vertical stiffener to the web near the bottom flange.*

These areas are to be cleaned by pencil blasting the paint from both sides of the web and the fillet welds for a minimum of 3 inches from the points described. Special cleaning by grinding shall be used only as directed by the Engineer for further investigation of crack presence. The Contractor and Engineer shall carefully visually inspect the web and fillet welds. Further careful grinding may be directed by the Engineer. Grinding must be cautious, especially in a crack location. Then the Contractor shall non-destructively test all the areas with magnetic particle examination and/or dye penetrant so that the Engineer may further inspect for cracks.

Payment shall be by location and shall include all labor, materials and equipment necessary to perform the non-destructive testing and the drilling or burning and grinding flush (Two holes per location), also included shall be removal and replacement of bolts necessary to perform the work. Locations of retrofit are shown on plan sheet No. 21/30 .

ITEM SPECIAL – STRUCTURAL STEEL, MISC.: DRILLING 2-1 1/4" HOLES AT LOWER LATERALS, GRINDING AND NDT

This work shall consist of drilling two 1 1/4" diameter holes where cracks are detected at the lower lateral connections, grinding and NDT. Testing as directed by the Engineer. Two – 1 1/4" diameter holes shall be drilled at a 45° angle for each as shown and ground smooth, then tested by NDT. The drilling shall be drilled at the apparent ends of the cracks revealed by the NDT and visual inspection performed under structural steel retrofit. The exposed surface of each drilled hole shall be ground smooth and carefully inspected for cracks using dye penetrant and/or magnetic particle inspection. Drilling, grinding and testing shall continue until all crack ends are removed. When no cracks are detected at a location no holes shall be drilled. Since any of the cracks could propagate into the flange-web fillet weld removing the ends is imperative. Catching the end of a crack is complicated by tangency of the crack to the hole. The location of all holes shall be determined by the Engineer and drilled under his direction. As noted, the number of each is dependent upon finding existing cracks. This item may be nonperformed as directed by the Engineer.

"Contractor's personnel performing non-destructive testing shall be qualified as per 513.21."

** Special care must be exercised because a portion of the L3x3x5/16 must be removed by gouging to gain access to the intersection area of the plate and welds with the web and stiffener.*

LOWER LATERAL CONNECTION RETROFIT DETAILS

For Location of Detail B, See Sheet 21/30

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZKD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wdq	4/94	410839/4101863	

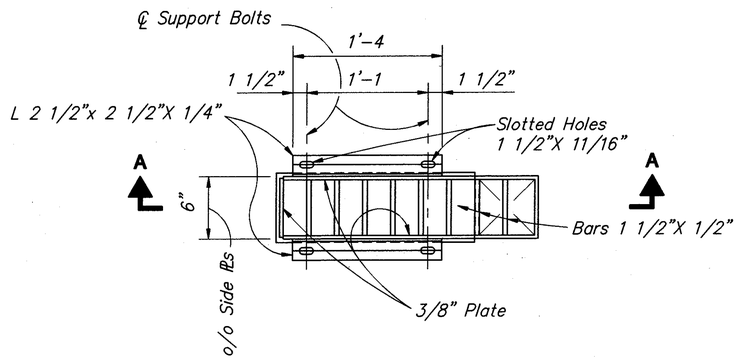
SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF-22-3.86

22/30

106/114



PLAN

SCUPPER TABLE	
BRIDGE NO.	NUMBER OF NEW SCUPPERS
JEF-22-0698 L	14
JEF-22-0698 R	12
TOTAL	26

SCUPPER NOTES

ITEM 518 – SCUPPER, INCLUDING SUPPORTS

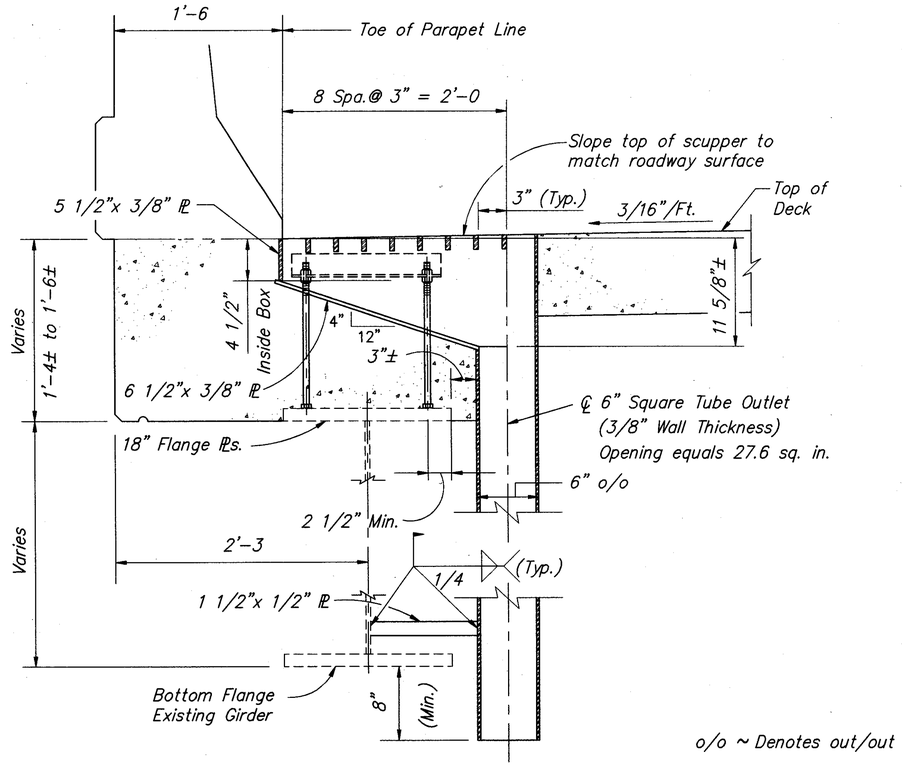
THIS WORK SHALL BE PERFORMED ON THE BRIDGES AS SPECIFIED IN THE SCUPPER TABLE ON THIS SHEET.

THE CONTRACTOR SHALL INSTALL NEW SCUPPERS AND DOWNSPOUTS AS DETAILED ON THIS SHEET.

FOR ADDITIONAL DETAILS, SEE STANDARD DWG. SD-1-69.

EXISTING SCUPPER REMOVAL TO BE INCLUDED WITH ITEM 202 PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN.

FOR SCUPPER LOCATIONS, SEE SHEETS [3/30] & [4/30].



o/o ~ Denotes out/out

SECTION A-A

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	wda	4-94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JMS	4/94	410839/410863	

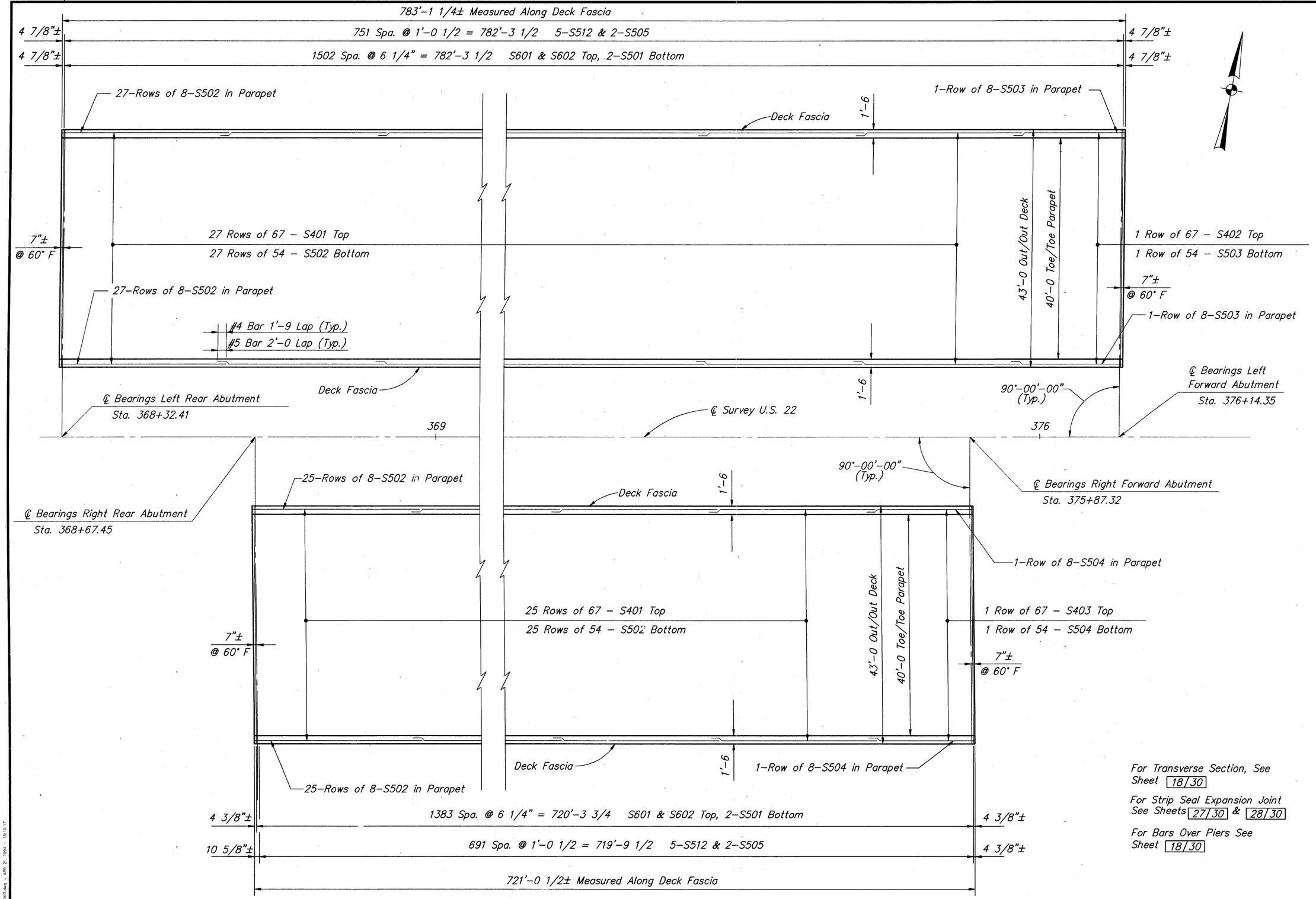
MISCELLANEOUS DETAILS
BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

23/30

(107/114)

S9262DKR/96



PLAN OF DECK REINFORCING

For Transverse Section, See Sheet 18/30

For Strip Seal Expansion Joint See Sheets 27/30 & 28/30

For Bars Over Piers See Sheet 18/30

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED CFD | DRAWN CFD | REVIEWED ZRD | DATE 4/94
CHECKED wda | REVISED 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

24/30

108/114

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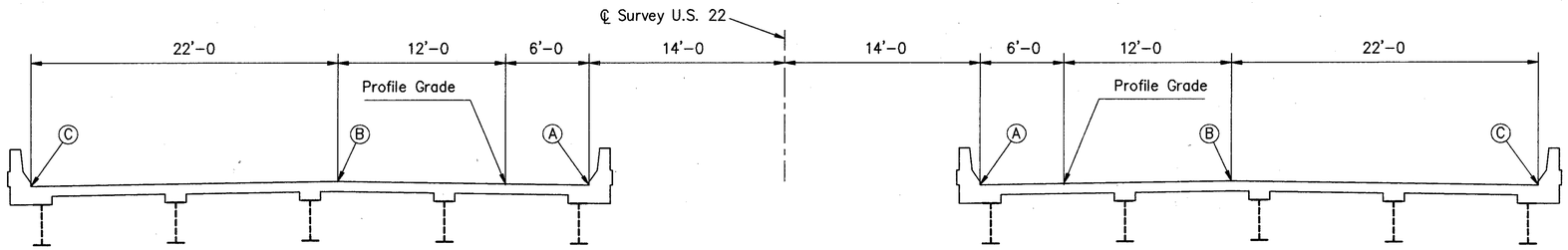
LEFT STRUCTURE TOP OF SLAB ELEVATIONS (SCREED ELEVATIONS)

PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION	PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION	PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION
BRG.	368+32.41	929.24	929.52	929.17	BRG.	371+19.38	920.50	920.79	920.44	BRG.	374+79.38	913.24	913.52	913.17
1/10	368+44.71	928.84	929.12	928.78	1/10	371+37.38	920.06	920.34	919.99	1/10	374+92.88	913.05	913.33	912.98
2/10	368+57.01	928.45	928.73	928.38	2/10	371+55.38	919.63	919.92	919.57	2/10	375+06.38	912.87	913.15	912.81
3/10	368+69.30	928.05	928.33	927.98	3/10	371+73.38	919.23	919.51	919.17	3/10	375+19.87	912.71	912.99	912.65
4/10	368+81.60	927.64	927.92	927.58	4/10	371+91.38	918.82	919.11	918.76	4/10	375+33.37	912.56	912.84	912.50
5/10	368+93.90	927.22	927.51	927.16	5/10	372+09.38	918.41	918.69	918.35	5/10	375+46.87	912.41	912.69	912.35
6/10	369+06.19	926.80	927.09	926.74	6/10	372+27.38	917.99	918.27	917.93	6/10	375+60.36	912.25	912.53	912.19
7/10	369+18.49	926.38	926.67	926.32	7/10	372+45.38	917.56	917.84	917.50	7/10	375+73.86	912.09	912.37	912.03
8/10	369+30.79	925.97	926.25	925.91	8/10	372+63.38	917.14	917.42	917.07	8/10	375+87.36	911.92	912.20	911.86
9/10	369+43.08	925.56	925.85	925.50	9/10	372+81.38	916.73	917.02	916.67	9/10	376+00.85	911.74	912.03	911.68
BRG.	369+55.38	925.18	925.46	925.11	BRG.	372+99.38	916.36	916.64	916.30	BRG.	376+14.35	911.57	911.85	911.51
1/10	369+71.78	924.68	924.96	924.62	1/10	373+17.38	916.01	916.29	915.95					
2/10	369+88.18	924.21	924.49	924.15	2/10	373+35.38	915.69	915.97	915.62					
3/10	370+04.58	923.75	924.03	923.69	3/10	373+53.38	915.38	915.67	915.32					
4/10	370+20.98	923.29	923.58	923.23	4/10	373+71.38	915.09	915.37	915.02					
5/10	370+37.38	922.83	923.11	922.77	5/10	373+89.38	914.78	915.06	914.72					
6/10	370+53.78	922.35	922.63	922.29	6/10	374+07.38	914.47	914.75	914.40					
7/10	370+70.18	921.87	922.15	921.81	7/10	374+25.38	914.14	914.42	914.08					
8/10	370+86.58	921.39	921.68	921.33	8/10	374+43.38	913.82	914.10	913.76					
9/10	371+02.98	920.94	921.22	920.87	9/10	374+61.38	913.52	913.80	913.45					



LEFT STRUCTURE

RIGHT STRUCTURE

Note:
Elevations at the top of concrete slab are those required before deck concrete is placed. Allowance has been made for dead load deflection caused by the weight of the concrete.

RIGHT STRUCTURE TOP OF SLAB ELEVATIONS (SCREED ELEVATIONS)

PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION	PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION	PT.	STATION	A ELEVATION	B ELEVATION	C ELEVATION
BRG.	368+67.45	928.03	928.31	927.97	BRG.	371+19.39	920.50	920.79	920.44	BRG.	374+52.39	913.64	913.92	913.58
1/10	368+78.24	927.69	927.97	927.63	1/10	371+34.69	920.12	920.40	920.05	1/10	374+65.88	913.44	913.72	913.37
2/10	368+89.04	927.35	927.63	927.29	2/10	371+49.99	919.75	920.03	919.69	2/10	374+79.37	913.25	913.53	913.19
3/10	369+99.83	927.01	927.29	926.95	3/10	371+65.29	919.40	919.68	919.34	3/10	374+92.87	913.08	913.36	913.01
4/10	369+10.62	926.66	926.94	926.60	4/10	371+80.59	919.05	919.33	918.99	4/10	375+06.36	912.91	913.19	912.85
5/10	369+21.42	926.31	926.59	926.24	5/10	371+95.89	918.69	918.97	918.63	5/10	375+19.85	912.75	913.03	912.69
6/10	369+32.21	925.95	926.23	925.89	6/10	372+11.19	918.32	918.60	918.26	6/10	375+33.35	912.58	912.86	912.52
7/10	369+43.01	925.59	925.87	925.53	7/10	372+26.49	917.94	918.22	917.88	7/10	375+46.84	912.41	912.69	912.35
8/10	369+53.80	925.24	925.52	925.17	8/10	372+41.79	917.58	917.86	917.52	8/10	375+60.33	912.23	912.51	912.17
9/10	369+64.59	924.89	925.17	924.83	9/10	372+57.09	917.23	917.52	917.17	9/10	375+73.83	912.04	912.33	911.98
BRG.	369+75.39	924.56	924.84	924.50	BRG.	372+72.39	916.91	917.20	916.85	BRG.	375+87.32	911.86	912.14	911.80
1/10	369+89.79	924.14	924.42	924.07	1/10	372+90.39	916.56	916.84	916.50					
2/10	370+04.19	923.73	924.01	923.67	2/10	373+08.39	916.24	916.52	916.17					
3/10	370+18.59	923.34	923.62	923.27	3/10	373+26.39	915.92	916.20	915.86					
4/10	370+32.99	922.94	923.23	922.88	4/10	373+44.39	915.61	915.89	915.55					
5/10	370+47.39	922.54	922.82	922.48	5/10	373+62.39	915.28	915.56	915.22					
6/10	370+61.79	922.13	922.41	922.07	6/10	373+80.39	914.95	915.23	914.88					
7/10	370+76.19	921.71	921.99	921.65	7/10	373+98.39	914.60	914.89	914.54					
8/10	370+90.59	921.29	921.58	921.23	8/10	374+16.39	914.26	914.54	914.20					
9/10	371+04.99	920.89	921.17	920.83	9/10	374+34.39	913.94	914.22	913.87					

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

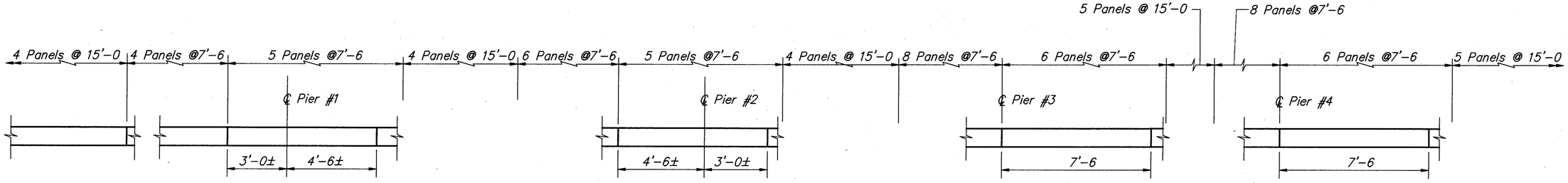
DESIGNED CFD | DRAWN CFD | CHECKED PMZ | REVIEWED wda | DATE 4/94 | REVISED 4/94 | STRUCTURE FILE NUMBER 4101839/4101863

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

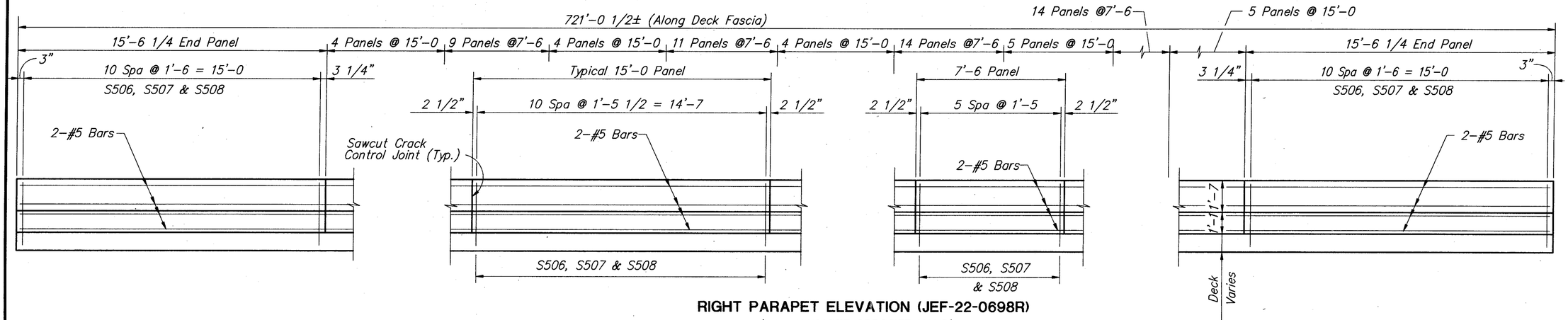
JEF-22-3.86

25/30

109/114

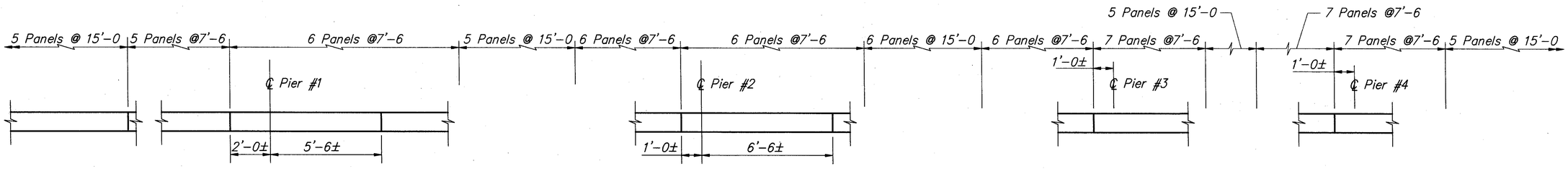


PLAN OF PARAPET PANEL DEFLECTION JOINTS AT PIERS (JEF-22-0698R)

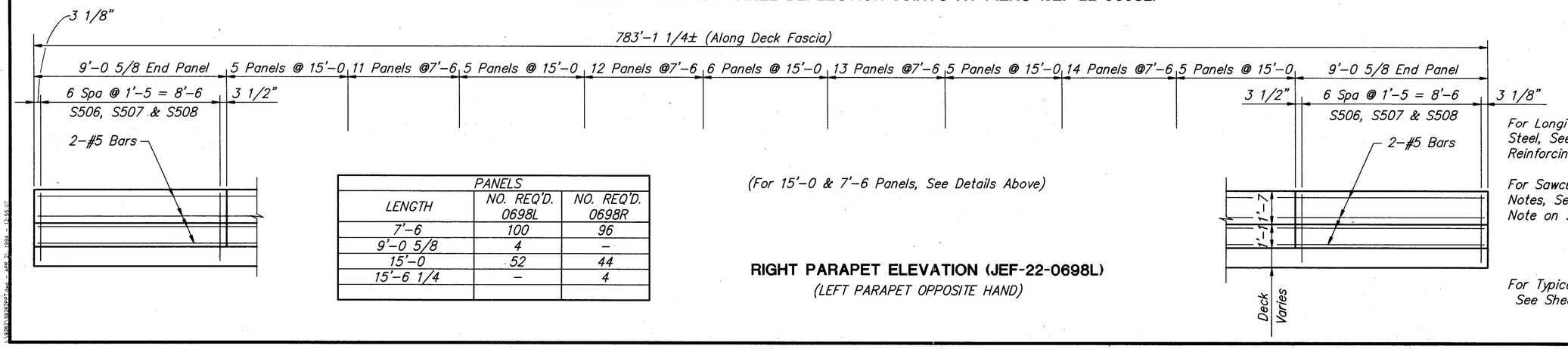


RIGHT PARAPET ELEVATION (JEF-22-0698R)

(LEFT PARAPET OPPOSITE HAND)



PLAN OF PARAPET PANEL DEFLECTION JOINTS AT PIERS (JEF-22-0698L)



PANELS		
LENGTH	NO. REQ'D. 0698L	NO. REQ'D. 0698R
7'-6	100	96
9'-0 5/8	4	–
15'-0	52	44
15'-6 1/4	–	4

(For 15'-0 & 7'-6 Panels, See Details Above)

RIGHT PARAPET ELEVATION (JEF-22-0698L)

(LEFT PARAPET OPPOSITE HAND)

For Longitudinal Reinforcing Steel, See Plan of Deck Reinforcing, Sheet 24 / 30

For Sawcut Crack Control Joint Notes, See Concrete Parapets Note on Sheet 6 / 30

For Typical Section Thru Parapet, See Sheet 18 / 30.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZRD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wda	4/94	4101839/4101863	

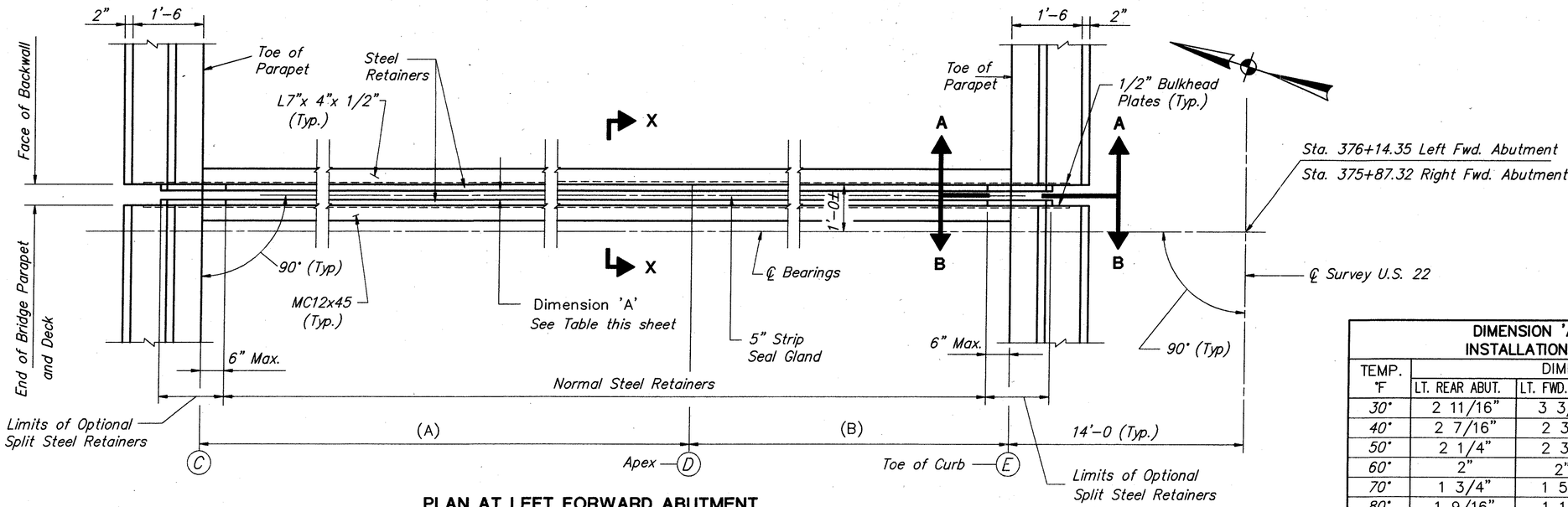
SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

26 / 30

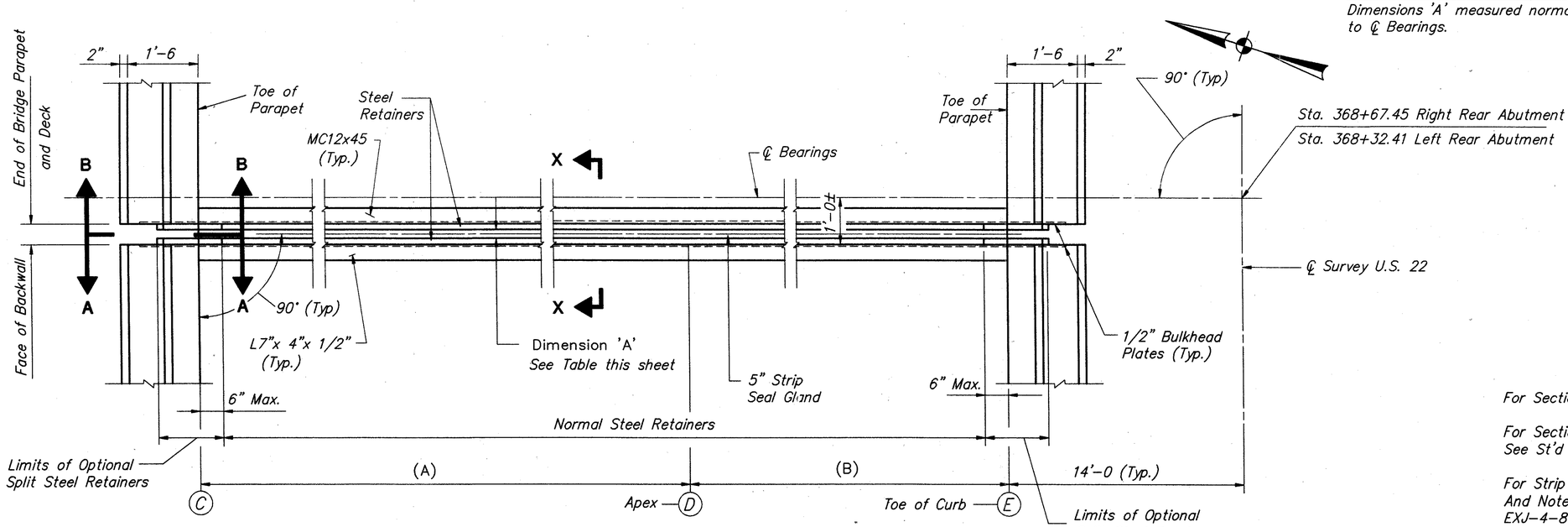
110 / 114



PLAN AT LEFT FORWARD ABUTMENT
(RIGHT FORWARD ABUTMENT OPPOSITE HAND)

DIMENSION 'A' FOR VARIOUS INSTALLATION TEMPERATURES				
TEMP. °F	DIMENSION 'A'			
	LT. REAR ABUT.	LT. FWD. ABUT.	RT. REAR ABUT.	RT. FWD. ABUT.
30°	2 11/16"	3 3/16"	2 9/16"	3 1/8"
40°	2 7/16"	2 3/4"	2 3/8"	2 3/4"
50°	2 1/4"	2 3/8"	2 3/16"	2 3/8"
60°	2"	2"	2"	2"
70°	1 3/4"	1 5/8"	1 13/16"	1 5/8"
80°	1 9/16"	1 1/4"	1 5/8"	1 1/4"
90°	1 5/16"	13/16"	1 7/16"	7/8"

Dimensions 'A' measured normal to ℄ Bearings.



PLAN AT LEFT REAR ABUTMENT
(RIGHT REAR ABUTMENT OPPOSITE HAND)

LOCATION POINT	DIMENSION (A)	DIMENSION (B)	ELEVATION (C)	ELEVATION (D)	ELEVATION (E)
LT. REAR ABUTMENT	22'-0	18'-0	929.21	929.55	929.27
LT. FWD. ABUTMENT	22'-0	18'-0	911.50	911.84	911.56
RT. REAR ABUTMENT	22'-0	18'-0	928.00	928.35	928.06
RT. FWD. ABUTMENT	22'-0	18'-0	911.78	912.13	911.85

Note : Dimensions and elevations given are at the top edge and face of the backwall steel.

For Section X–X, See Sheet 28/30

For Sections A–A and B–B, See St'd Dwg. EXJ–4–87

For Strip Seal Joint Details And Notes, See St'd Dwg. EXJ–4–87

Lt. = Left
Rt. = Right
Fwd. = Forward
Abut. = Abutment

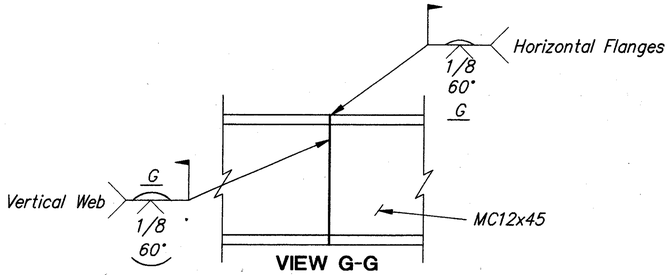
DESIGN AGENCY: W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS
DESIGNED CFD | DRAWN CFD | CHECKED wda | REVIEWED ZRD | DATE 4/94 | REVISED 4/94
STRUCTURE FILE NUMBER 4101839/4101863

EXPANSION JOINT DETAILS
BRIDGE NO. JEF-22-0698 L\R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO R.R

JEF-22-3.86

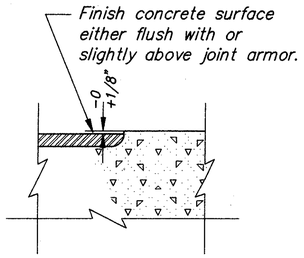
27/30

111/114

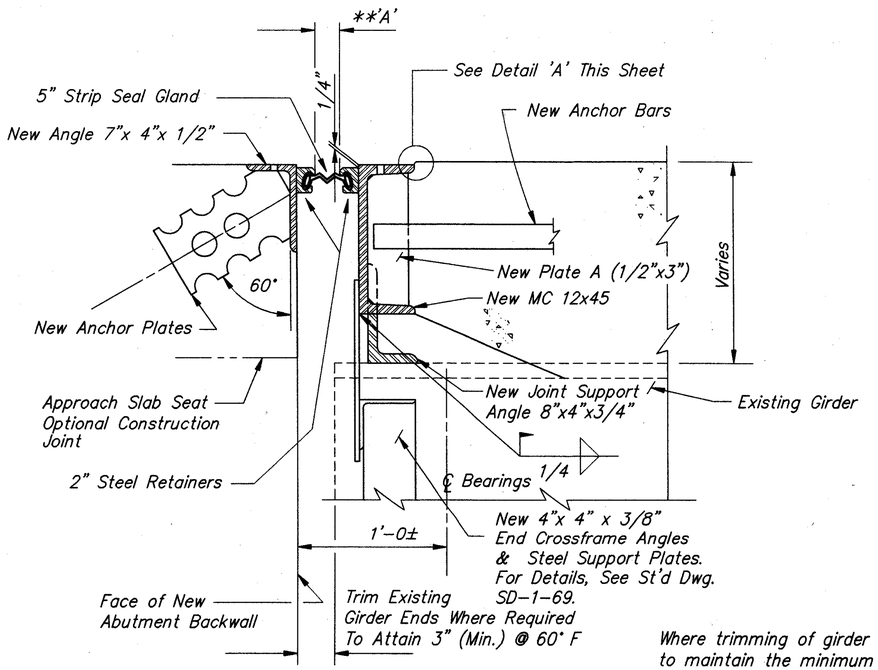


VIEW G-G

WELDED CONNECTIONS: All superstructure field splices shall have a complete penetration butt weld. Welds in contact with seal shall be ground flush. Welds shall conform to standard AWS and AASHTO specifications for highway bridges.



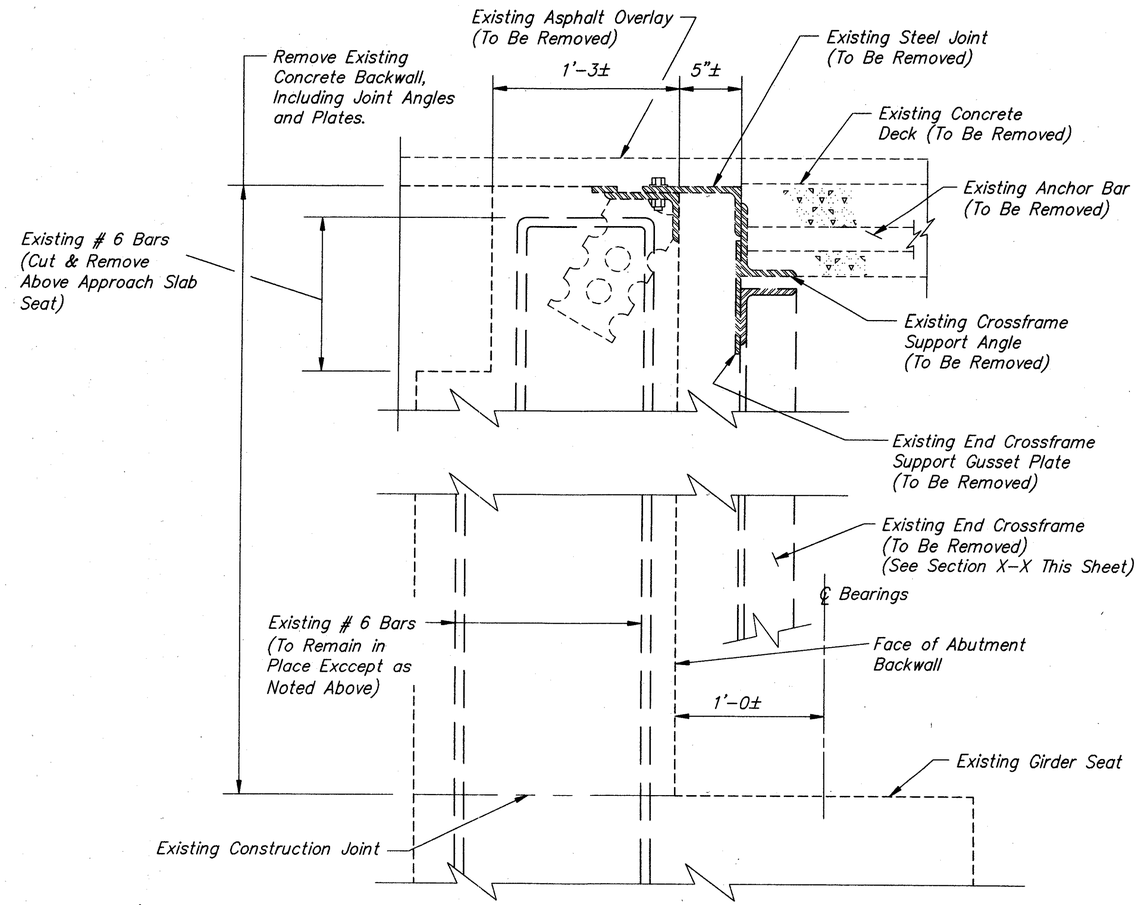
DETAIL 'A'



SECTION X-X

For Additional Details, See Section X-X On St'd Dwg. EXJ-4-87

Where trimming of girder end is required to maintain the minimum 3" clearance at abutments, the trimmed ends shall have smooth edges. Payment for this shall be included with Item 513 Trimming Of Beam Ends.



TYPICAL SECTION OF EXISTING JOINT & BACKWALL REMOVAL

For Detail of Joint Support Attachment to MC12x45 See Detail A & Section C-C on St'd Dwg. EXJ-4-87 Substituting 8x4x3/4 for the 6x4x3/4 Support Angle.

The Joint Armor shall be Sandblasted, prepared and painted in accordance with St'd Dwg. EXJ-4-87 General Notes.

For Strip Seal Joint Details And Notes, See St'd Dwg. EXJ-4-87

** For Dimension 'A', See Sheet 27/30

Note:
Joint seal glands shall have a 5" movement rating at both rear and forward abutments.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
CFD	CFD	ZKD	4/94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
wdc	4/94	4101839/4101863	

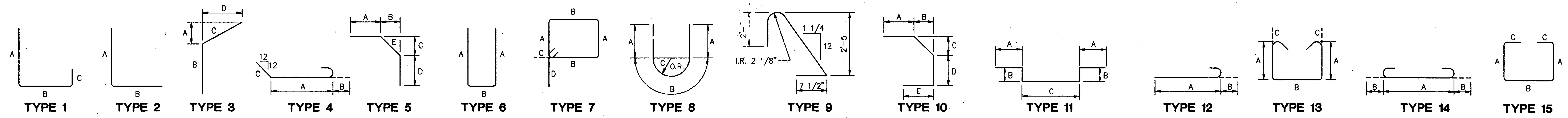
EXPANSION JOINT DETAILS
BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R

JEF-22-3.86

28/30

(112/114)

S9262RE1/1

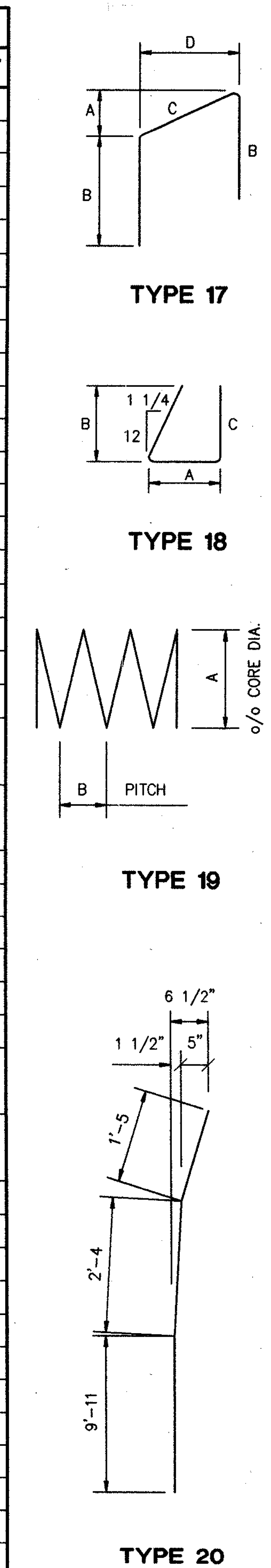


LEFT SUPERSTRUCTURE

MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
S601	ST								1503	27'-3	61517
S602	ST								1503	17'-6	39506
										SUBTOTAL	101,023
S501	ST								3006	22'-1	69237
S502	ST								2298	30'-0	71904
S503	ST								70	26'-6	1935
S504	*										
S505	1	2'-1	10"	1'-4					1504	4'-0	6275
S506	9			See Detail					1200	5'-3	6571
S507	10	9"	6"	8 1/2"	1'-2	10 1/2"			1200	3'-5	4276
S508	2	1'-11	10 1/2"						1200	2'-8	3338
S509	*										
S510	ST								204	19'-0	4043
S511	ST								136	35'-0	4965
S512	11	10 1/2"	8"	1'-8					3760	4'-3	16667
										SUBTOTAL	189,211
S401	ST								1809	30'-0	36252
S402	ST								67	20'-0	895
										SUBTOTAL	37,147
										TOTAL	327,381

LEFT ABUTMENTS

MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
A801	4	2'-7	11"	1'-5			27	27	54	4'-11	709
										SUBTOTAL	709
A601	6	3'-6	11"				40	40	80	7'-7	911
										SUBTOTAL	911
A501	ST						12	14	26	30'-0	814
A502	ST						12	14	26	14'-2	384
A503	9	See Detail					8	8	16	5'-3	88
A504	5	9"	6"	8 1/2"	2'-8	10 3/8"	22	–	22	5'-2	119
A505	12	2'-5	7"				14	14	28	3'-0	88
A506	ST						26	–	26	5'-2	140
A507	*										
A508	3	6'-3	1'-10	6'-3 1/2	1'-2		30	30	60	8'-1	506
A509	ST	Length Varies By 1/2"					2 Series 9	–	2 Series 9	9'-4 to 9'-8	178
A510	ST	Length Varies By 3/8" (+)					2 Series 6	–	2 Series 6	9'-8 to 9'-10	122
A511	ST						8	–	8	7'-11	66
A512	20	See Detail					4	4	8	13'-8	114
A513	ST						4	4	8	13'-8	114
A514	ST						32	–	32	19'-11	665
A515	5	9"	6"	8 1/2"	3'-4	10 3/8"	–	22	22	4'-10	111
A516	ST						–	26	26	5'-8	154
A517	ST	Length Varies By 1/4"					–	2 Series 9	2 Series 9	10'-4 to 10'-6	196
A518	ST	Length Varies By 3/8" (+)					–	2 Series 6	2 Series 6	10'-2 to 10'-4	128
A519	ST						–	8	8	8'-4	70
A520	ST						–	36	36	20'-4	763
A521	*										
A522	*										
A523	*										
A524	*										
A525	*										
A526	*										
A527	*										
A528	*										
A529	*										
A530	*										
A531	14	6'-4	7"				10	12	22	7'-6	172
										SUBTOTAL	4,992
										TOTAL	6,612



NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

* NONE REQUIRED

FOR RIGHT STRUCTURE REINFORCING BAR SCHEDULE, SEE SHEET 30/30

ALL REINFORCING STEEL TO BE EPOXY COATED.

ST IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.

DESIGN AGENCY W.E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

DATE 4/94 | REVIEWED ZRD | STRUCTURE FILE NUMBER 4101839/4101863 | DRAWN CFD | REVISED 4/94 | DESIGNED CFD | CHECKED wda/PMZ

REINFORCING BAR SCHEDULE

BRIDGE NO. JEF-22-0698 L/R

U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF-22-3.86

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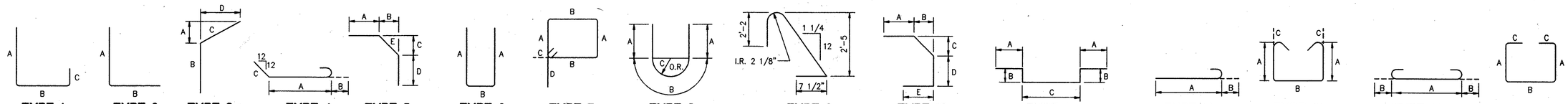
W. E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

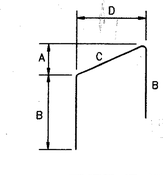


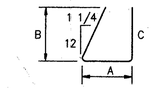
RIGHT SUPERSTRUCTURE

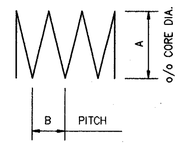
MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
S601	ST								1384	27'-3	56646
S602	ST								1384	17'-6	36378
										SUBTOTAL	93,024
S501	ST								2768	22'-1	63755
S502	ST								2022	30'-0	63268
S503	*										
S504	ST								70	20'-6	1497
S505	1	2'-1	10"	1'-4					1384	4'-0	5774
S506	9			See Detail					1104	5'-3	6045
S507	10	9"	6"	8 1/2"	1'-2	10 1/2"			1104	3'-5	3934
S508	2	1'-11	10 1/2"						1104	2'-8	3071
S509	ST								68	33'-0	2340
S510	ST								136	19'-0	2695
S511	ST								136	35'-0	4965
S512	11	10 1/2"	8"	1'-8					3460	4'-3	15337
S513	ST								68	28'-0	1986
										SUBTOTAL	174,667
S401	ST								1675	30'-0	33567
S402	*										
S403	ST								67	14'-9	660
										SUBTOTAL	34,227
										TOTAL	301,918

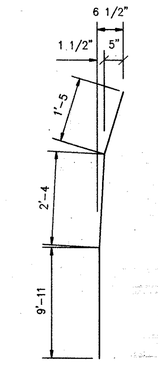
RIGHT ABUTMENTS

MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
A801	4	2'-7	11"	1'-5			27	27	54	4'-11	709
										SUBTOTAL	709
A601	6	3'-6	11"				40	40	80	7'-7	911
										SUBTOTAL	911
A501	ST						12	14	26	30'-0	814
A502	ST						12	14	26	14'-2	384
A503	9			See Detail			6	8	14	5'-3	77
A504	*										
A505	12	2'-5	7"				14	14	28	3'-0	88
A506	*										
A507	*										
A508	3	6'-3	1'-10	6'-3 1/2	1'-2		28	30	58	8'-1	489
A509	*										
A510	*										
A511	*										
A512	20			See Detail			4	4	8	13'-8	114
A513	ST						4	4	8	13'-8	114
A514	*										
A515	*										
A516	*										
A517	*										
A518	*										
A519	ST						–	8	8	8'-4	70
A520	ST						–	36	36	20'-4	763
A521	5	9"	6"	8 1/2"	2'-2	10 3/8"	20	–	20	4'-8	97
A522	ST						13	–	13	4'-8	63
A523	ST	Length Varies By 5/8" (–)					2 Series 8	–	2 Series 8	8'-10 to 9'-2	150
A524	ST	Length Varies By 3/8" (+)					2 Series 6	–	2 Series 6	9'-2 to 9'-4	116
A525	ST						8	–	8	6'-8	56
A526	ST						32	–	32	18'-8	623
A527	5	9"	6"	8 1/2"	3'-5	10 3/8"	–	22	22	5'-11	136
A528	ST						–	26	26	5'-9	156
A529	ST	Length Varies By 1/4"					–	2 Series 9	2 Series 9	10'-2 to 10'-4	192
A530	ST	Length Varies By 1/4" (–)					–	2 Series 6	2 Series 6	10'-1 to 10'-2	127
A531	14	6'-4	7"				10	12	22	7'-6	172
										SUBTOTAL	4,801
										TOTAL	6,421









NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

* NONE REQUIRED

FOR LEFT STRUCTURE REINFORCING BAR SCHEDULE, SEE SHEET 29/30

ALL REINFORCING STEEL TO BE EPOXY COATED.

ST IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.

DESIGN AGENCY
W.E. QUICKSALL AND ASSOCIATES INC.
CONSULTING ENGINEERS

DESIGNED CFD
DRAWN CFD
CHECKED PMZ
REVIEWED ZRD
DATE 1/94
REVISED 4/94
STRUCTURE FILE NUMBER 4101839/4101863

REINFORCING BAR SCHEDULE

BRIDGE NO. JEF-22-0698 L/R
U.S. 22 OVER CROSS CREEK, T.R. 166, & COLUMBUS & OHIO RIVER R.R.

JEF-22-3.86

30/30

114/114