FIRST GUARDRAIL POST OFF BRIDGE LOCATIONS		
LOCATION	STATION	SIDE
REAR ABUT.	1011+49.38	RT.
REAR ABUT.	1011+67.90	LT.
FWD. ABUT.	1018+09.95	RT.
FWD. ABUT.	1018+84.17	LT.

BORING LOCATIONS		
BORING No.	STATION**	OFFSET**
B-14	1012+20.22	40.45' LT.
B-15	1013+00.05	2.50' LT.
B-16	1013+75.00	℄
B-17	1015+00.00	℄
B-18	1016+25.70	0.43' LT.
B-19	1017+40.78	4.61' RT.

** - STATIONS AND OFFSETS ARE FROM THE BASELINE OF RAMP P

TRAFFIC DATA	
RAMP P	
CURRENT YEAR	ADT (2002) = 13,703
CURRENT YEAR	ADTT (2002) = 2,711
DESIGN YEAR	ADT (2026) = 18,140
DESIGN YEAR	ADTT (2026) = 3,628

FOUNDATION DATA			
LOCATION	PILE TYPE	ESTIMATED PILE LENGTH	MINIMUM PILE TIP ELEV.
REAR ABUTMENT	16" ∅ CIP	60.0'	868.0
PIER 1	16" ∅ CIP	35.0'	868.0
PIER 2	16" ∅ CIP	40.0'	867.0
PIER 3	16" ∅ CIP	50.0'	863.0
PIER 4	16" ∅ CIP	45.0'	862.7*
FORWARD ABUTMENT	16" ∅ CIP	55.0'	863.0

C.I.P. = CAST-IN-PLACE PILE
* - PILE TIP AT TOP OF BEDROCK

TEMPORARY BENCHMARK #1
#5 REBAR WITH CAP, ℄ IR-71 STA. 123+14.06, 117.52' RT. ELEV. 912.37

TEMPORARY BENCHMARK #2
#5 REBAR WITH CAP, ℄ IR-71 STA. 123+69.93, 78.07' LT. ELEV. 911.12

PLAN

NOTES:

1. FOR ALIGNMENT, GEOMETRY AND SUBSTRUCTURE LAYOUT, SEE GEOMETRIC LAYOUT SHEET 5/41.
2. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
3. ALL SHEETS WITH PLAN DIMENSIONS ARE SHOWN HORIZONTAL.
4. THE PROPOSED PROFILE GRADE IS ONLY WITHING THE BRIDGE LIMITS. SEE ROADWAY PLANS FOR PAVEMENT ELEVATIONS BEYOND THE BRIDGE LIMITS.

PROPOSED STRUCTURE

TYPE: 5 SPAN CONTINUOUS CURVED STEEL PLATE GIRDER A709 GRADE 50 WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED BY REINFORCED CONCRETE SUBSTRUCTURES ON PILES
SPANS: 97'-6", 97'-6", 125'-0", 161'-6", 140'-6" c/c BEARINGS (MEASURED ALONG CURVE)
WIDTH: 37'-0" TOE TO TOE OF PARAPETS
SKEW: VARIABLE (SEE GEOMETRIC LAYOUT SHEET 5/41)
LOADING: HS25, CASE I AND THE ALTERNATE MILITARY LOADING, FUTURE WEARING SURFACE OF 60 PSF.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-81 (25'-0" LONG)
ALIGNMENT: 8°00'00" CURVE
SUPERELEVATION: 0.060 FT/FT AND 0.040 FT/FT
LATITUDE: N 40°06'34"
LONGITUDE: W 82°58'42"
STRUCTURE FILE NO.: 2511452

PROFILE ALONG ℄ RAMP P

TABLE OF VERTICAL CLEARANCES			
LOCATION	"A"	"B"	"C"
PROPOSED	23.38'	20.82'	16.57'
REQUIRED	16.50'	16.50'	16.50'

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 55 PUBLIC SQUARE, SUITE 1650, CLEVELAND, OHIO 44113
DESIGNED BTA | DRAWN CAG | CHECKED NFF | REVIEWED RER | DATE 7/19/05 | REVISED | STRUCTURE FILE NUMBER 2511452

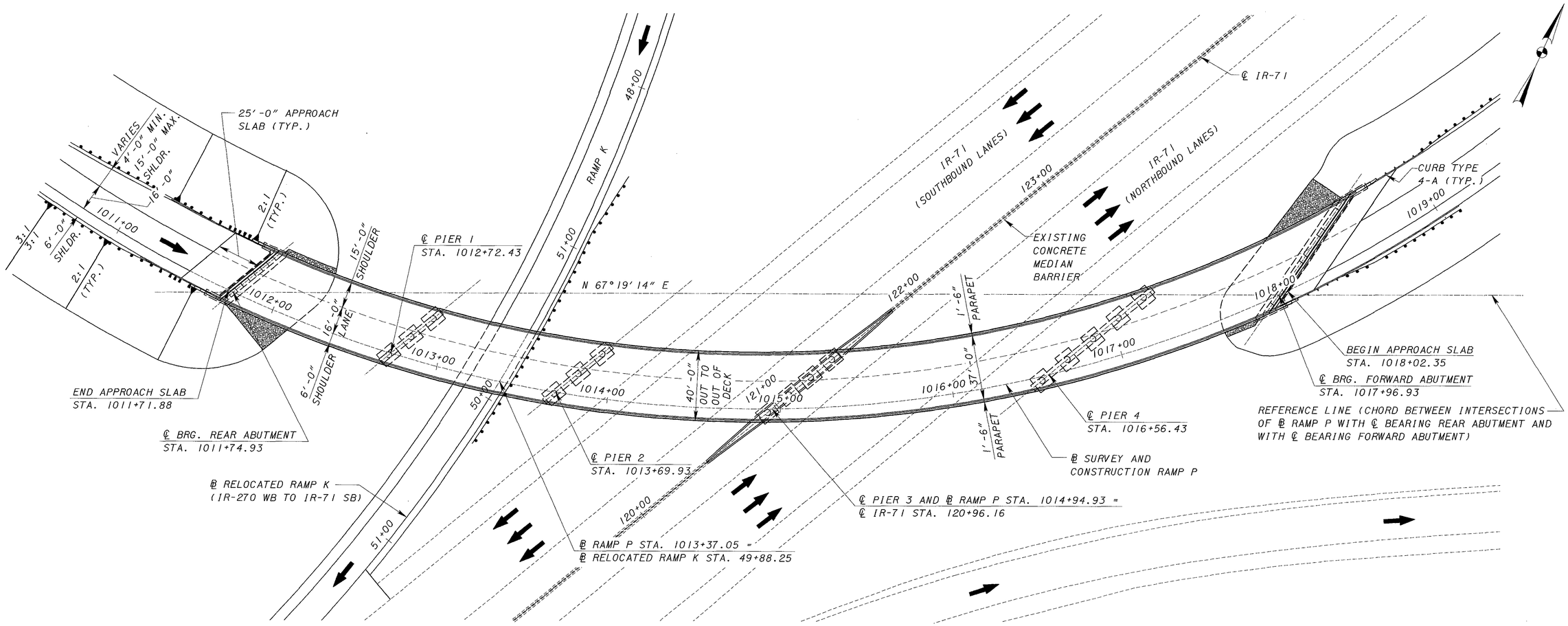
FRANKLIN COUNTY
STA. 1011+71.88
STA. 1018+02.35

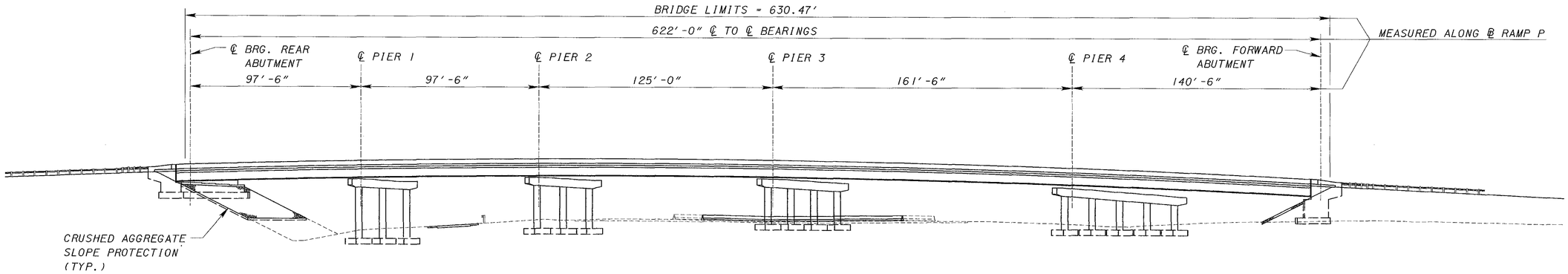
SITE PLAN
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

1 / 41

769 / 846





ELEVATION
(PILES NOT SHOWN)

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 650
CLEVELAND, OHIO 44113

DESIGNED BTA
DRAWN CAG
CHECKED NFF
REVIEWED RER
DATE 7/19/05
REVISED
STRUCTURE FILE NUMBER 251452

GENERAL PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

2 / 41

770
846

STRUCTURE GENERAL NOTES

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

A-1-69	REVISED	07-19-02
AS-1-81	REVISED	07-19-02
EXJ-4-87	REVISED	07-19-02
GSD-1-96	REVISED	07-19-02
SBR-1-99	REVISED	07-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

898 DATED 07-16-04

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003 INTERIM SPECIFICATIONS, THE AASHTO "GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STEEL GIRDER HIGHWAY BRIDGES", 2003 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS25, CASE I AND THE ALTERNATE MILITARY LOADING.
FUTURE WEARING SURFACE (FWS) OF 60 lbs/sq ft

DESIGN DATA:

CONCRETE CLASS QSC2 - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS QSC1 - COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS,
ASTM A82 OR A615

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

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

ITEM 203, EMBANKMENT, AS PER PLAN:

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT BETWEEN STATIONS 1010+71.88 TO 1018+02.35.

PILE DRIVING CONSTRAINTS:

PRIOR TO DRIVING PILES, CONSTRUCT THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. DO NOT BEGIN THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

FRICTION TYPE PILES:

THE PILES ORDER LENGTHS, AND ULTIMATE BEARING VALUES ARE AS FOLLOWS:

REAR ABUTMENT PILES:
14 PILES 65 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 145 TONS PER PILE
1 DYNAMIC LOAD-TESTING ITEM

PIER 1 PILES:
18 PILES 40 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 175 TONS PER PILE

PIER 2 PILES:
18 PILES 45 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 165 TONS PER PILE
1 DYNAMIC LOAD-TESTING ITEM

PIER 3 PILES:
24 PILES 55 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 150 TONS PER PILE
1 DYNAMIC LOAD-TESTING ITEM

PIER 4 PILES:
25 PILES 50 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 180 TONS PER PILE
1 DYNAMIC LOAD-TESTING ITEM

FORWARD ABUTMENT PILES:
22 PILE 60 FEET LONG ORDER LENGTH
ULTIMATE BEARING VALUE = 175 TONS PER PILE
1 DYNAMIC LOAD-TESTING ITEM

BATTERED PILES:

THE BLOW COUNT FOR BATTERED PILES SHALL BE THE BLOW COUNT DETERMINED FOR VERTICAL PILES OF THE SAME ULTIMATE BEARING VALUE DIVIDED BY AN EFFICIENCY FACTOR (D). COMPUTE THE EFFICIENCY FACTOR (D) AS FOLLOWS:

$$D = \frac{1-UG}{\sqrt{(1+G^2)}}$$

U = COEFFICIENT OF FRICTION, WHICH IS ESTIMATED AT 0.05 FOR DOUBLE-ACTING AIR OPERATED OR DIESEL HAMMERS; 0.1 FOR SINGLE-ACTING AIR OPERATED OR DIESEL HAMMERS; AND 0.2 FOR DROP HAMMERS.

G = RATE OF BATTER (1/3, 1/4, ETC.)

ITEM 514, FIELD PAINTING STRUCTURAL STEEL, FINISH COAT:

THE COLOR OF THE FINISH COAT SHALL BE A GRAY COLOR MEETING FEDERAL STANDARD NUMBER 16440.

ITEM 516, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES (ONLY), AS PER PLAN:

IN ADDITION TO THE PROVISIONS OF ITEM 516, THE BEARINGS SHALL ALSO CONFORM TO THE FOLLOWING SPECIFICATIONS:

1.0 DESIGN AND MATERIALS REQUIREMENTS:

1.1 PTFE

A. PTFE FABRIC FIBERS SHALL CONFORM TO THE FOLLOWING:
1. THE RESIN FROM WHICH THE FIBERS ARE PRODUCED SHALL BE 100 PERCENT PTFE CONFORMING TO ASTM D4894.
2. TENSILE STRENGTH - ASTM D2256 - 24,000 PSI (MINIMUM).
3. ELONGATION - ASTM D2256 - 75 PERCENT (MINIMUM).
4. THE TFE FABRIC SHALL HAVE A MINIMUM THICKNESS OF 0.0625 INCH (COMPRESSED). MAXIMUM THICKNESS SHALL BE 0.125 INCH (COMPRESSED).

B. FINISHED UNFILLED PTFE SHEET SHALL BE MADE FROM 100 PERCENT VIRGIN PTFE RESIN AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
1. TENSILE STRENGTH D4894 - 2800 PSI (MINIMUM).
2. ELONGATION ASTM D4894 - 200 PERCENT (MINIMUM).
3. SPECIFIC GRAVITY - ASTM D792 - 2.13 (MINIMUM).
4. MELTING POINT - ASTM D4894 - 623° F +/- 2
5. MINIMUM THICKNESS SHALL BE 0.125 INCH. SHEET SHALL BE RECESSED AND EPOXY BONDED INTO A STEEL SUBSTRATE. THE SHOULDERS OF THE RECESS SHALL BE SHARP AND SQUARE AND THE DEPTH SHALL BE EQUAL TO ONE-HALF OF THE PTFE SHEET THICKNESS.
6. PTFE SHEET SHALL BE COMMERCIALLY ETCHED ON ITS BONDING SIDE.

C. MAXIMUM CONTACT STRESSES SHALL CONFORM TO THE FOLLOWING:

MATERIAL	AVERAGE CONTACT STRESSES		EDGE CONTACT STRESS	
	PERMANENT LOADS	ALL LOADS	PERMANENT LOADS	ALL LOADS
WOVEN PTFE FIBER OVER METALLIC SUBSTRATE	4.0 KSI	6.0 KSI	5.0 KSI	7.5 KSI
CONFINED UNFILLED SHEET PTFE	4.0 KSI	6.0 KSI	5.0 KSI	7.5 KSI

1.2 STAINLESS STEEL

STAINLESS STEEL SHEET SURFACE SHALL CONFORM TO ASTM A167 OR A240 TYPE 304. STAINLESS STEEL IN CONTACT WITH PTFE SHALL HAVE A #8 MIRROR FINISH OR BETTER.

2.0 FABRICATION:

2.1 ATTACHMENT OF SHEET PTFE TO SUBSTRATE:

A. PTFE SHEET SHALL BE RECESSED INTO AND BONDED TO A STEEL SUBSTRATE.
B. PTFE SHALL BE RECESSED FOR ONE HALF ITS THICKNESS.
C. THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN WIPED CLEAN WITH A CLEANING SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.
D. THE ADHESIVE MATERIAL, AND THE BONDING PROCEDURES TO BE USED, AND SURFACE PREPARATION SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION MMM-A-134 AND THE MANUFACTURER'S RECOMMENDATIONS.
E. AFTER COMPLETION OF THE BONDING OPERATION, THE PTFE SURFACE SHALL BE SMOOTH AND FREE FROM BUBBLES.
F. TOLERANCES - PTFE SUBSTRATES:
SUBSTRATE FLATNESS: CLASS A

2.2 ATTACHMENT OF PTFE FABRIC TO SUBSTRATE

A. PTFE FABRIC SHALL BE MECHANICALLY INTERLOCKED AND BONDED TO THE STEEL SUBSTRATE.
B. THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN CLEANED WITH SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.
C. THE MECHANICAL INTERLOCK, ADHESIVE BONDING MATERIAL AND PROCEDURES, AND SURFACE PREPARATION SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION MMM-A-134 AND THE MANUFACTURER'S RECOMMENDATIONS.
D. MIGRATION OF EPOXY THROUGH THE FABRIC WILL NOT BE PERMITTED.
E. FABRIC SHALL BE FURNISHED IN ONE PIECE. EDGES SHALL BE OVERSEWN OR RECESSED SO THAT NO CUT FABRIC EDGES ARE EXPOSED.
F. TOLERANCES - PTFE SUBSTRATE:
SUBSTRATE SURFACES: CLASS A

2.3 ATTACHMENT OF SHEET STAINLESS STEEL

STAINLESS STEEL SHALL BE ATTACHED TO ITS STEEL SUBSTRATE BY A CONTINUOUS SEAL WELD AROUND ITS ENTIRE PERIMETER. WELDS SHALL CONFORM TO THE AWS REQUIREMENTS FOR STAINLESS STEEL. THE WELDER SHALL BE PRE-QUALIFIED BY TEST WELDS PREPARED, WELDED AND TESTED IN ACCORDANCE WITH 6.7 OF ANSI/AWS D1.3, STRUCTURAL WELDING CODE - SHEET STEEL. AFTER WELDING, THE STAINLESS STEEL SHEET SHALL BE FLAT, FREE FROM WRINKLES AND IN CONTINUOUS CONTACT WITH ITS BACKING PLATE. AFTER WELDING THE ENTIRE STAINLESS STEEL SURFACE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1.2 OF THIS SPECIFICATION AFTER WELDING. NO ROUGHNESS FROM THE WELD PROTRUDING ABOVE THE SURFACE OF THE STAINLESS STEEL WILL BE PERMITTED.

2.4 WELDING

WELDING AS A MEANS OF ATTACHMENT SHALL BE DONE IN A CONTROLLED MANNER AND SHALL CONFORM TO SPECIFICATION 513. WELDING TO A STEEL PLATE WHICH HAS BONDED TFE SURFACE MAY BE PERMITTED PROVIDING WELDING PROCEDURES ARE ESTABLISHED WHICH RESTRICT THE MAXIMUM TEMPERATURE REACHED BY THE BOND AREA TO LESS THAN 300° F, AS DETERMINED BY TEMPERATURE, INDICATING PENCILS, OR OTHER SUITABLE MEANS.

3.0 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

REFER TO CMS ITEM 516.

MAINTENANCE OF TRAFFIC:

IR-71 TRAFFIC WILL BE MAINTAINED ON INTERSTATE ROUTE 71 AT ALL TIMES EXCEPT AS PERMITTED FOR FALSEWORK AND STEEL ERECTION. WITH A MINIMUM VERTICAL CLEARANCE OF 14'-6". FOR MAINTENANCE OF TRAFFIC NOTES, PERMITTED LANE CLOSURE AND DETAILS REFER TO THE ROADWAY PLANS.

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

THE CONCRETE SEALING MATERIAL SHALL BE THE "LIGHT NEUTRAL" COLOR MEETING THE FEDERAL COLOR STANDARD NO. 17778 AS PER THE DETAILS ON THE PLANS.

INDEX OF SHEETS:

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BTA	CAG	AER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		25|1452	

GENERAL NOTES
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

MADE BY BTA DATE 5/23/05
CHECK'D BY NFF DATE 7/19/05

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	REAR ABUTMENT	FORWARD ABUTMENT	PIERS	SUPERSTRUCTURE	GENERAL	AS PER PLAN REFERENCE SHEET NUMBER
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING					LUMP	
503	21300	LUMP		UNCLASSIFIED EXCAVATION					LUMP	
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00700	5725	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	840	1210	3675			
507	00750	6330	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	910	1320	4100			
509	10000	279370	POUND	EPOXY COATED REINFORCING STEEL	9406	14460	80860	174644		
512	10100	2344	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	92	151	632	1469		
513	10300	1316859	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 5				1316859		
513	20000	12435	EACH	WELDED STUD SHEAR CONNECTORS				12435		
514	00060	64081	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				64081		
514	00066	64081	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				64081		
516	11211	129	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	45	84				36/41
516	44100	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (21" x 27" x 2.79")			5			
516	44201	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (10½" x 17" x 3.02")	5					28/41 & 29/41
516	44201	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (13" x 20" x 3.48")		5				28/41 & 29/41
516	44300	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (17" x 26" x 4.94")			2			
516	44301	3	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (17" x 26" x 4.94")			3			28/41 & 29/41
516	44400	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (18" x 25" x 5.45")			2			
516	44400	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (18" x 25" x 5.63")			2			
516	44401	3	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (18" x 25" x 5.63")			3			28/41 & 29/41
516	44401	3	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (23"x 31½" x 5.65")			3			28/41 & 29/41
518	21200	128	CU YD	POROUS BACKFILL WITH FILTER FABRIC	41	87				
518	40000	135	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	50	85				
518	40010	47	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	17	30				
523	20000	5	EACH	DYNAMIC LOAD TESTING	1	1	3			
526	25000	338	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=15")	114	224				
601	20000	480	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION	240	240				
898	11100	978	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE				978		
898	20100	255	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (PIER ABOVE FOOTING)			255			
898	20150	360	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT)	117	243				
898	20300	167	CU YD	QC/QA CONCRETE, CLASS QSC1, FOOTING			167			

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED BTA | DRAWN CAG | CHECKED NFF | REVISED

REVIEWED RER | DATE 7/19/05

STRUCTURE FILE NUMBER 251452

ESTIMATED QUANTITIES
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

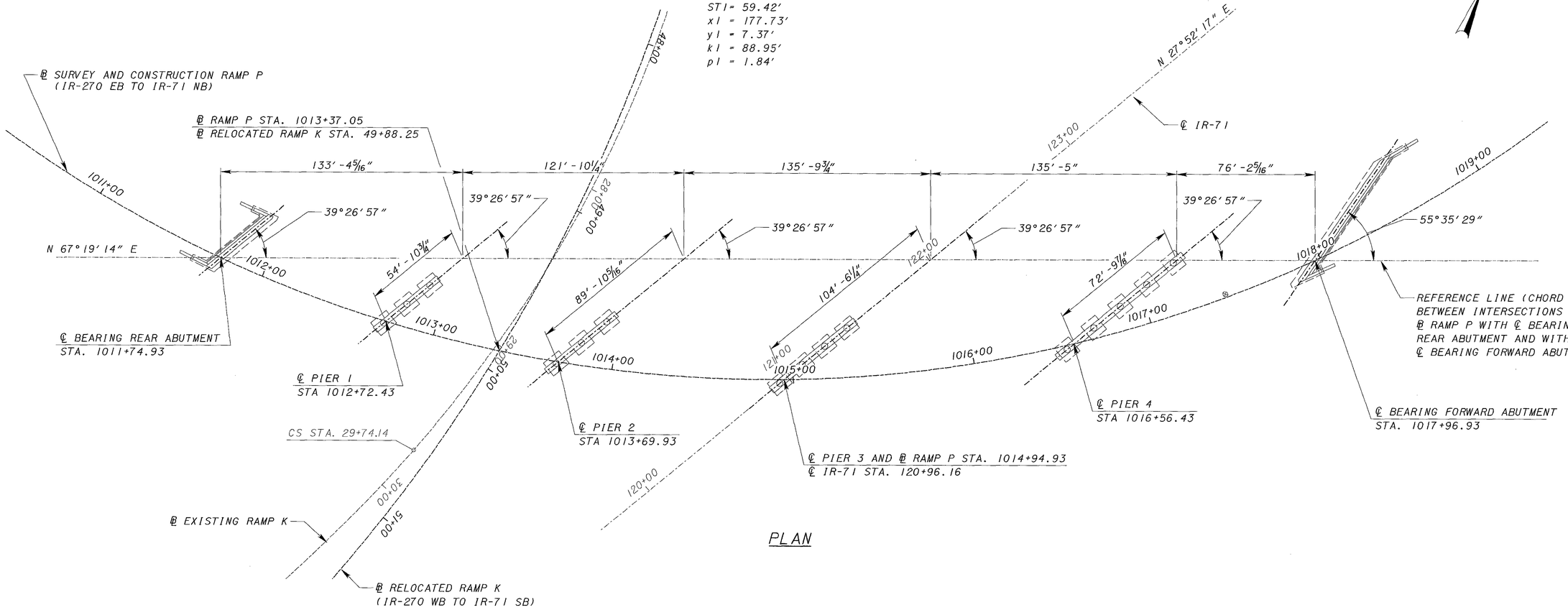
FRA-270-24.47
PID 77320

CURVE DATA
℄ CONSTRUCTION RELOCATED RAMP K

P.I. STA. = 49+09.36
Δ = 36°51′34″ (RT)
Dc = 6°00′00″
R = 954.93′
T = 318.21′
L = 614.32′
E = 51.62′

CURVE DATA
℄ CONSTRUCTION RAMP P

P.I. STA. = 1017+83.67
Δ = 112°55′26″ (LT)
Dc = 8°00′00″
R = 716.20′
Ls1 = 178.00′
Theta1 = 7°07′12″
LT1 = 118.76′
ST1 = 59.42′
x1 = 177.73′
y1 = 7.37′
k1 = 88.95′
p1 = 1.84′
Δc = 105°48′14″ (LT)
Lc = 1,322.55′
Ts1 = 1,170.23′
Ts2 = 1,082.50′
Es = 581.78′
emax = 0.060



PLAN

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED	DRAWN	REVIEWED	DATE
BTA	BTA	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

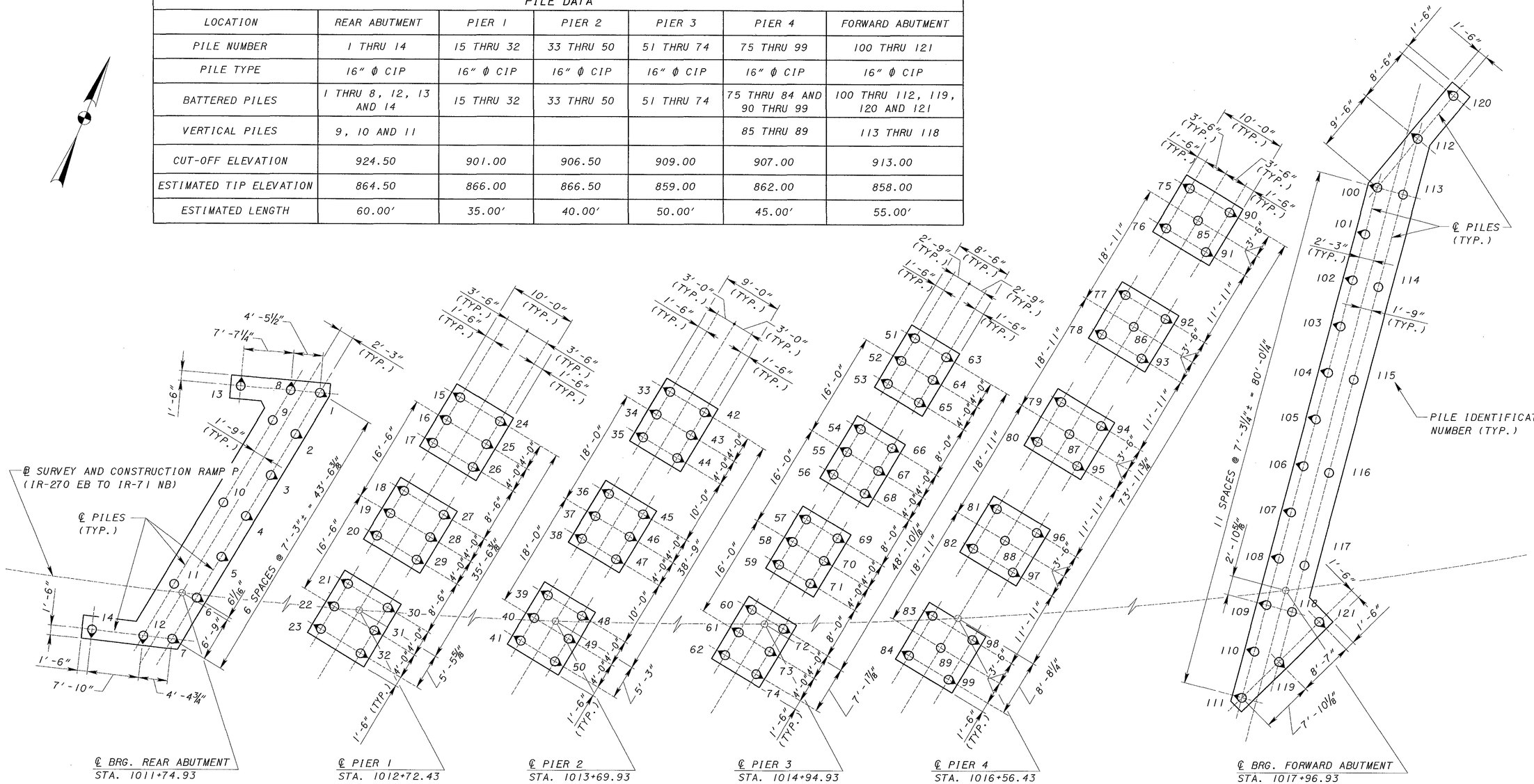
GEOMETRIC LAYOUT
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

5 / 41

773
846

PILE DATA						
LOCATION	REAR ABUTMENT	PIER 1	PIER 2	PIER 3	PIER 4	FORWARD ABUTMENT
PILE NUMBER	1 THRU 14	15 THRU 32	33 THRU 50	51 THRU 74	75 THRU 99	100 THRU 121
PILE TYPE	16" Ø CIP	16" Ø CIP	16" Ø CIP	16" Ø CIP	16" Ø CIP	16" Ø CIP
BATTERED PILES	1 THRU 8, 12, 13 AND 14	15 THRU 32	33 THRU 50	51 THRU 74	75 THRU 84 AND 90 THRU 99	100 THRU 112, 119, 120 AND 121
VERTICAL PILES	9, 10 AND 11				85 THRU 89	113 THRU 118
CUT-OFF ELEVATION	924.50	901.00	906.50	909.00	907.00	913.00
ESTIMATED TIP ELEVATION	864.50	866.00	866.50	859.00	862.00	858.00
ESTIMATED LENGTH	60.00'	35.00'	40.00'	50.00'	45.00'	55.00'



PILE LAYOUT DIAGRAM

NOTES:

1. FOR DIMENSIONS AND SKEW ANGLES NOT SHOWN, SEE GEOMETRIC LAYOUT SHEET 5 41.
2. ALL PILES ARE 16" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE.
3. ⏚ INDICATES BATTER PILE (1:4) IN THE DIRECTION SHOWN.
4. FOR ABUTMENT, WINGWALL AND PIER DETAILS, SEE SHEETS 7 41 TO 20 41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

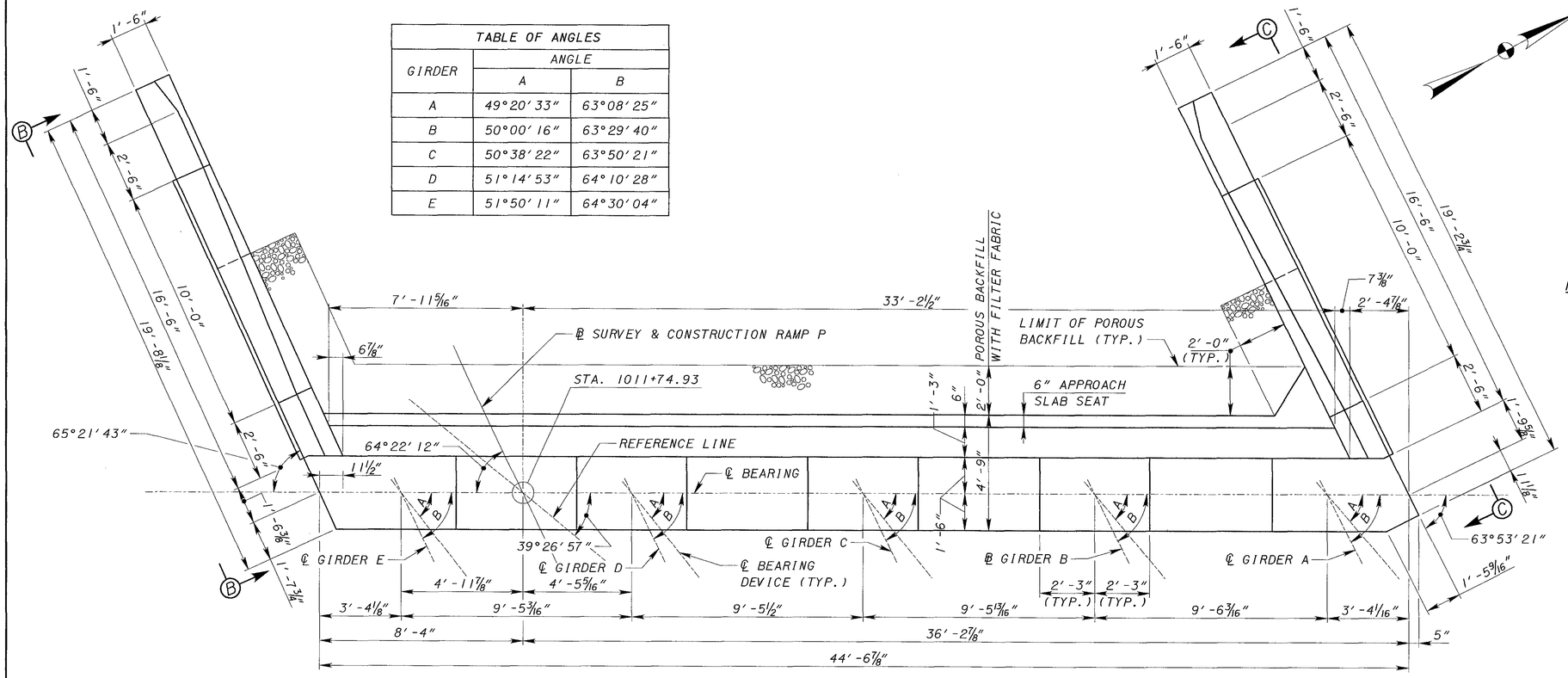
PILE LAYOUT PLAN
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

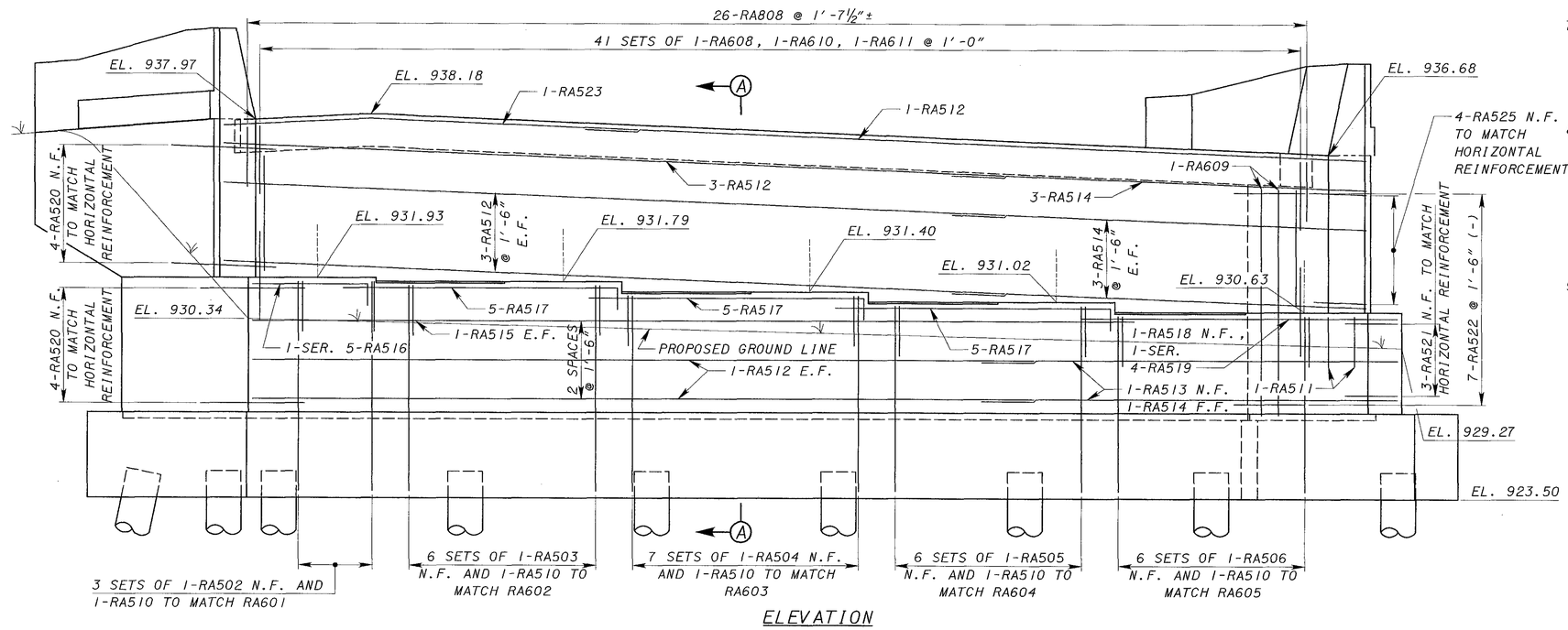
6 / 41

774
846

TABLE OF ANGLES		
GIRDER	ANGLE	
	A	B
A	49°20′33″	63°08′25″
B	50°00′16″	63°29′40″
C	50°38′22″	63°50′21″
D	51°14′53″	64°10′28″
E	51°50′11″	64°30′04″



PLAN



ELEVATION

(FOOTING AND WINGWALL REINFORCING NOT SHOWN FOR CLARITY)

NOTES:

1. FOR REINFORCING SCHEDULE, SEE SHEET 38|41.
2. FOR FOOTING PLAN AND SECTION A-A, SEE SHEET 8|41.
3. FOR VIEW B-B, C-C AND FOR WINGWALL DETAILS, SEE SHEET 9|41.
4. POROUS BACKFILL WITH FILTER FABRIC, 2′-0″ THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1′-0″ BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
5. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
6. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
7. INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF OF THE EXPANSION JOINT SEAL, OBSERVE THE SEATING OF THE BEAMS ON BEARINGS TO ASSURE THAT POSITIVE BEARING IS MAINTAINED.
8. SEALING OF BEAM SEATS: IF THE BEAM SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.
9. THE FOLLOWING ABBREVIATIONS ARE USED:
   - EL. = ELEVATION
   - TYP. = TYPICAL
   - SER. = SERIES
   - CLR. = CLEARANCE
   - N.F. = NEAR FACE
   - F.F. = FAR FACE
   - E.F. = EACH FACE

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
#5	2′-0″
#6	2′-4″
#8	4′-0″

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE SUITE 850
CLEVELAND, OHIO

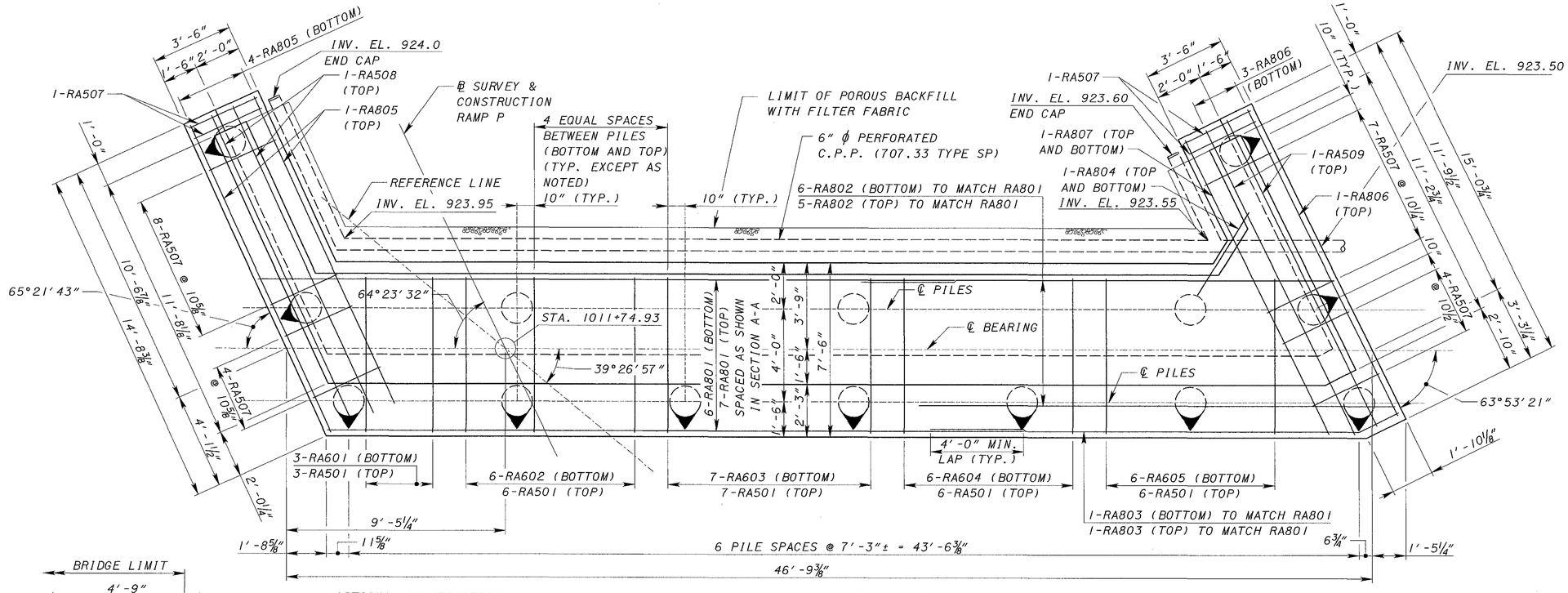
DESIGNED	DRAWN	REVIEWED	DATE
MLR	MLR	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251|452	

REAR ABUTMENT PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

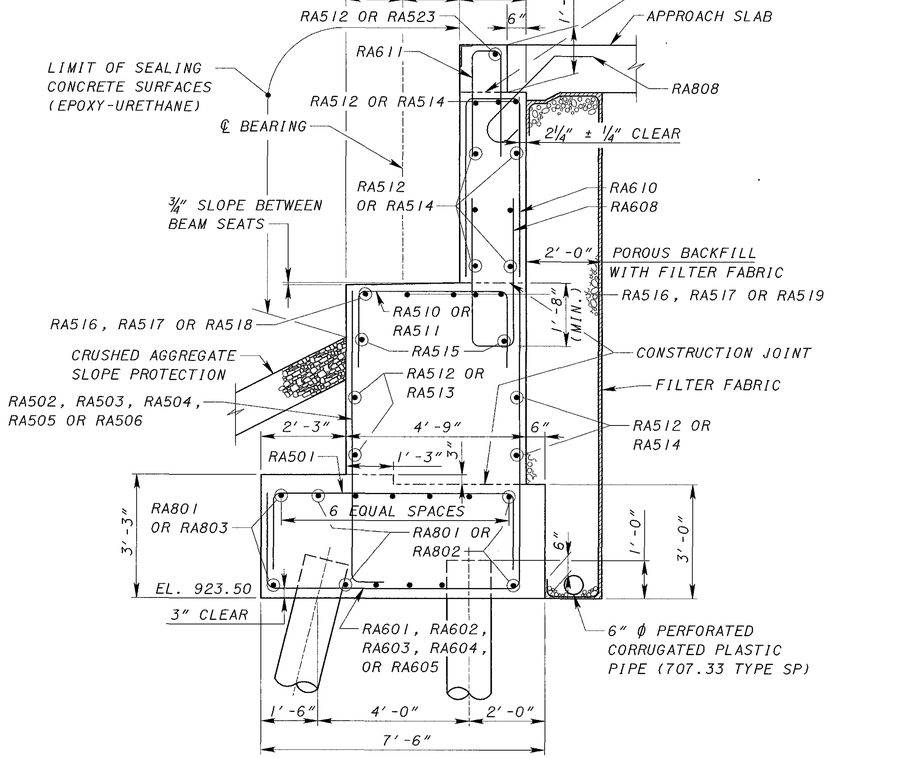
FRA-270-24.47
PID 77320

7 | 41

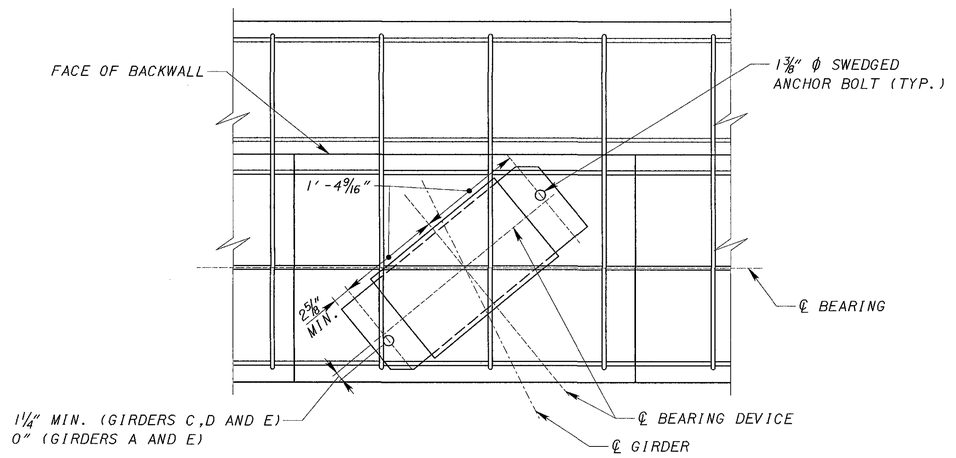
775
846



FOOTING PLAN



SECTION A-A



BEARING ANCHOR PLAN

(SEE NOTE 1)

NOTES:

1. ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS. REFER TO BEARING DETAILS SHOWN ON SHEET 29/41.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE SHEET 7/41.
3. FOR ADDITIONAL NOTES, SEE SHEET 7/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
MLR	MLR	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		25//452	

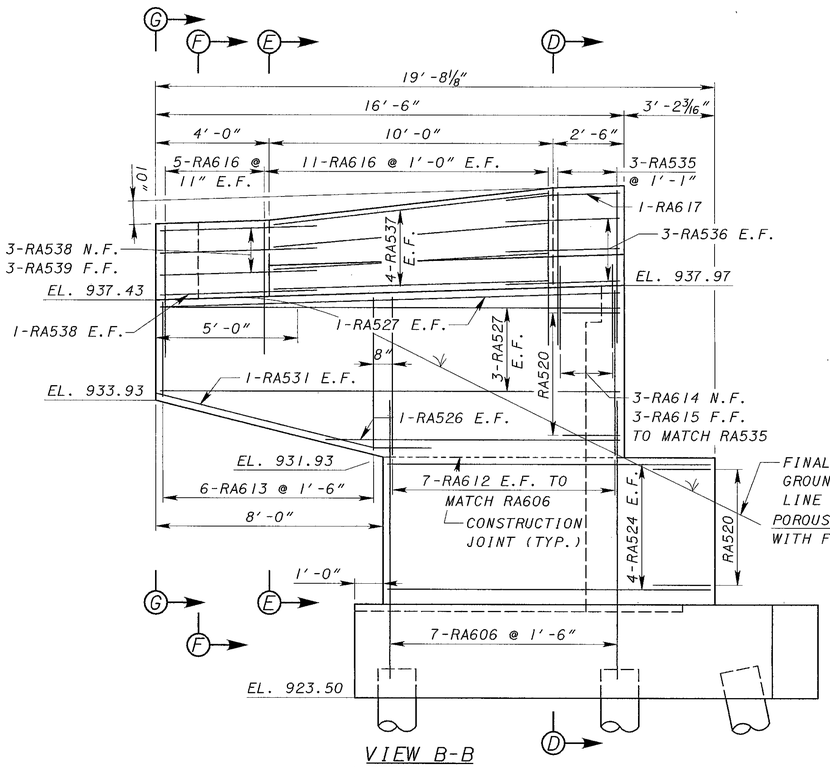
REAR ABUTMENT FOOTING PLAN AND SECTION

BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

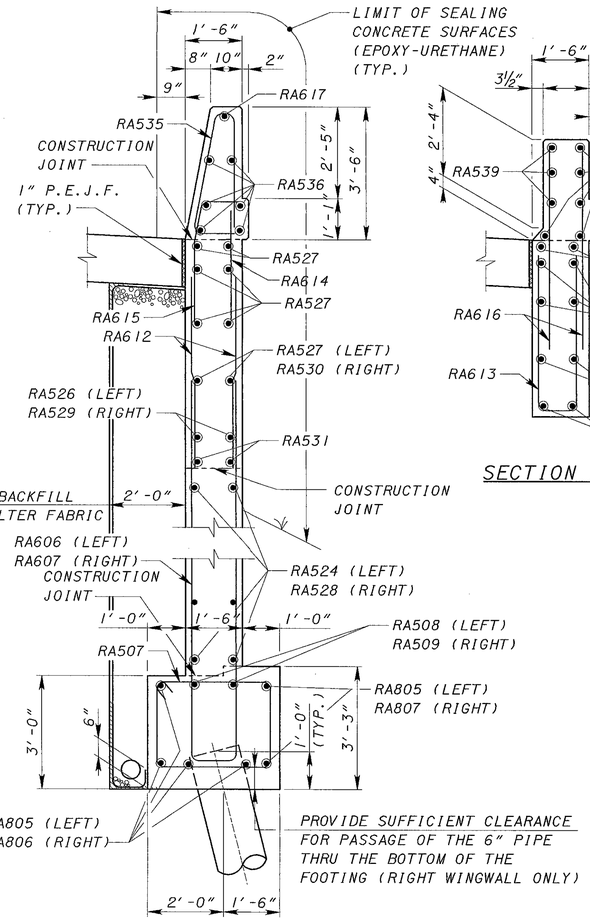
FRA-270-24.47
PID 77320

8/41

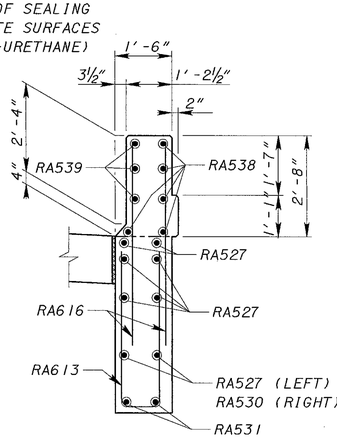
776
846



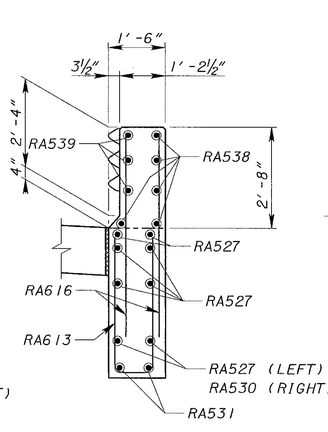
VIEW B-B
(LEFT WINGWALL)



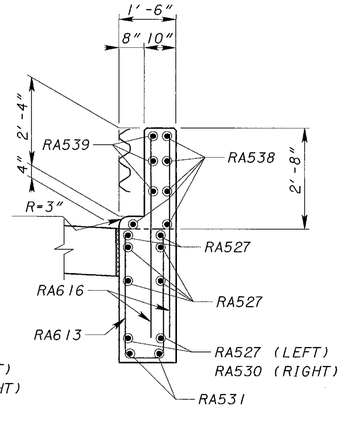
SECTION D-D



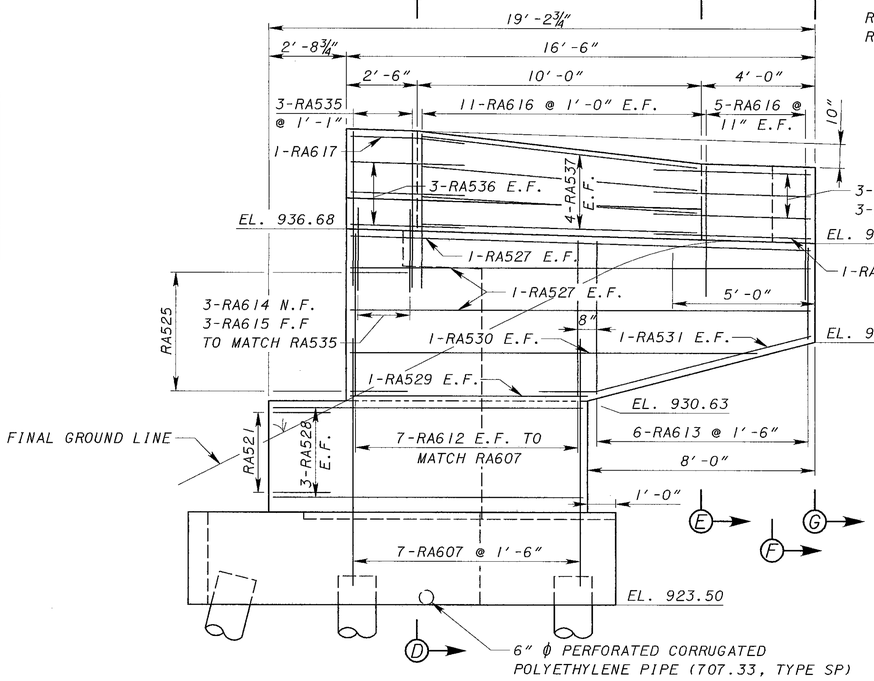
SECTION E-E



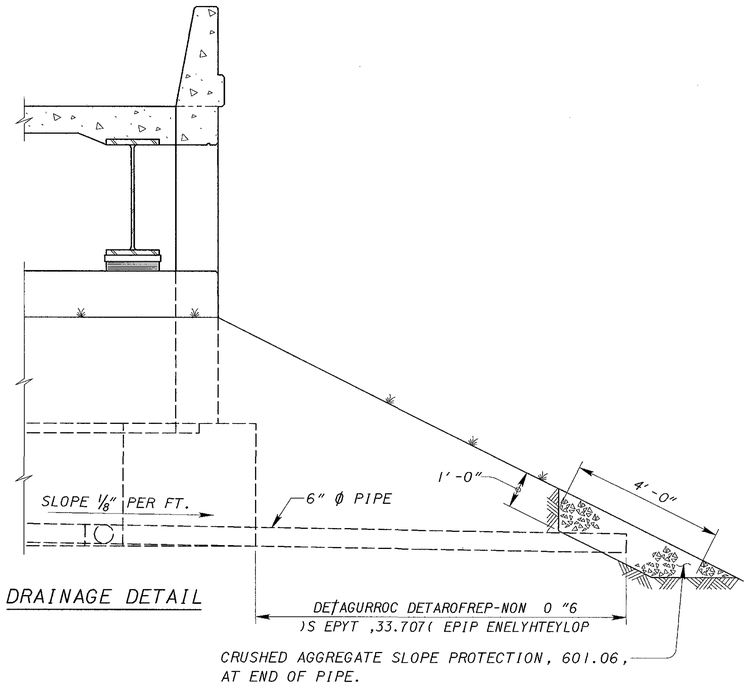
SECTION F-F



SECTION G-G



VIEW C-C
(RIGHT WINGWALL)



DRAINAGE DETAIL

NOTES:

1. FOR ABUTMENT DETAILS, SEE SHEETS 7|41 AND 8|41.
2. FOR ADDITIONAL NOTES, SEE SHEET 7|41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

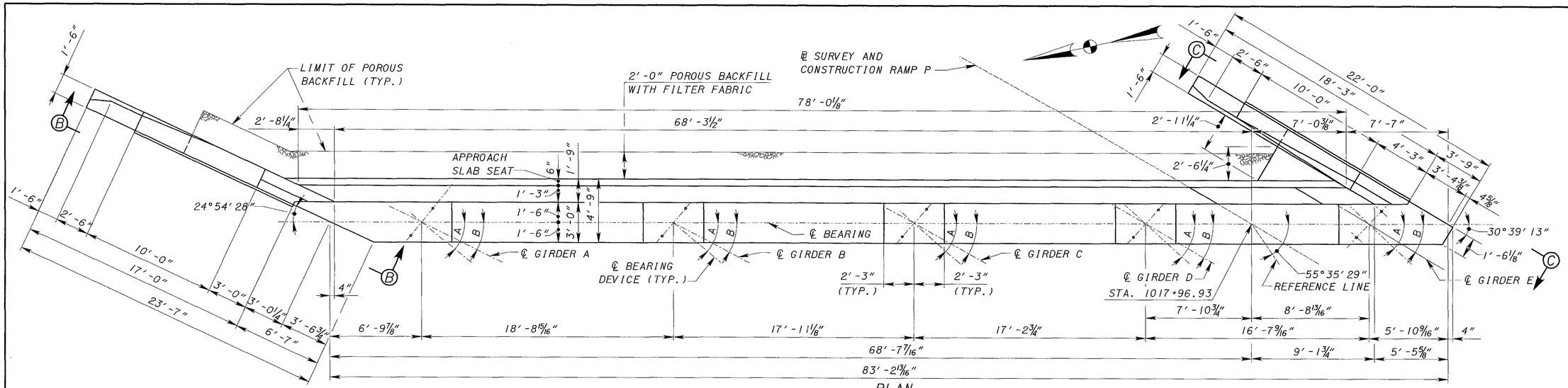
DESIGNED	DRAWN	REVISED	DATE
MLR	MLR	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251452	

REAR ABUTMENT WINGWALL DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

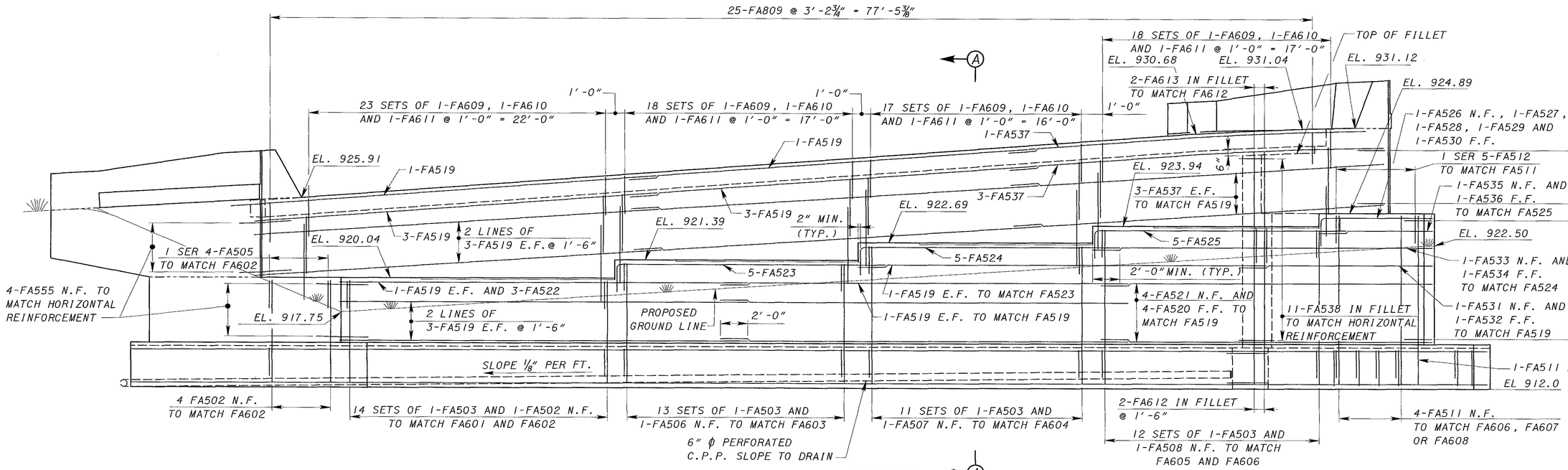
FRA-270-24.47
PID 77320

9 | 41

777
846

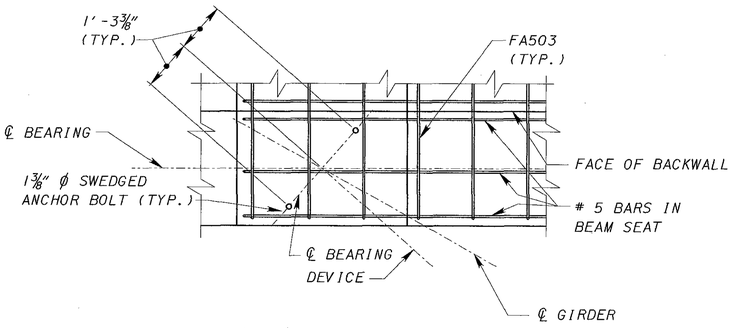


PLAN



ELEVATION

(PILES NOT SHOWN FOR CLARITY)



BEARING ANCHOR PLAN

LAP LENGTH TABLE	
BAR	REQUIRED LAP LENGTH
#5	2'-0"
#6	2'-4"
#8	4'-0"

TABLE OF ANGLES		
GIRDER	ANGLE	
	A	B
A	38°58'57"	26°16'28"
B	40°09'35"	27°39'35"
C	41°16'06"	28°57'09"
D	42°19'01"	30°09'55"
E	43°18'43"	31°18'31"

NOTES:

1. FOR FOOTING PLAN AND SECTION A-A SEE SHEET 11/41.
2. FOR VIEWS B-B & C-C AND WINGWALL DETAILS, SEE SHEET 12/41.
3. FOR BEARING DEVICE DETAILS SEE SHEET 29/41.
4. THE FOLLOWING ABBREVIATIONS ARE USED:
   - EL. = ELEVATION
   - SER = SERIES
   - TYP. = TYPICAL
   - N.F. = NEAR FACE
   - F.F. = FAR FACE
   - E.F. = EACH FACE
   - MIN. = MINIMUM
   - CLR. = CLEARANCE
5. FOR ADDITIONAL NOTES SEE SHEET 7/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO

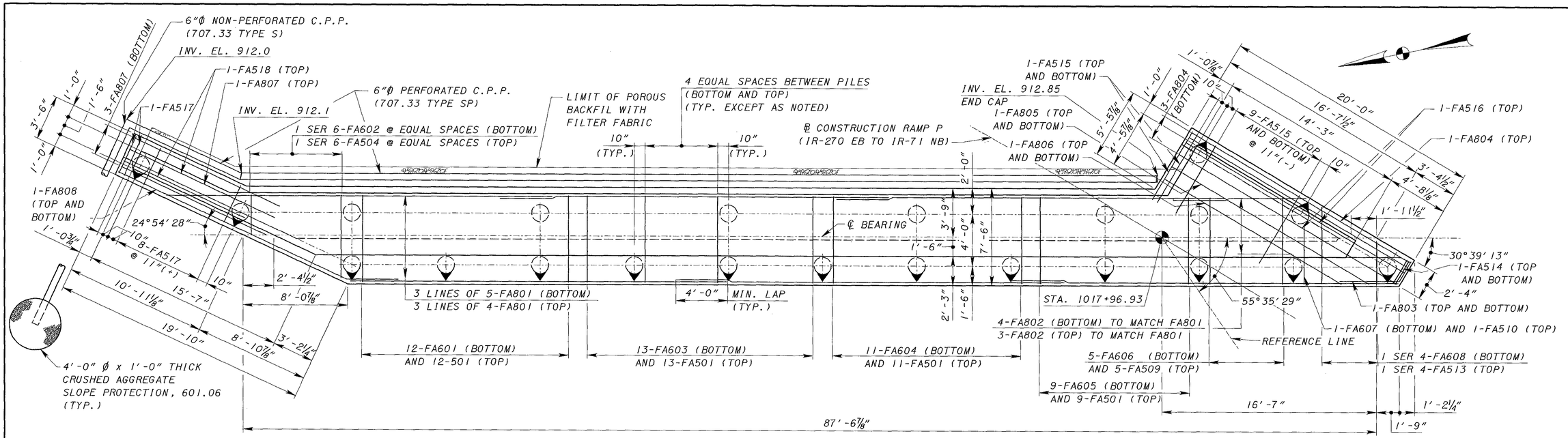
DESIGNED	DRAWN	CHECKED	REVISED	DATE	STRUCTURE FILE NUMBER
WLR	RCK	NFF	RER	7/19/05	2511452

FORWARD ABUTMENT PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

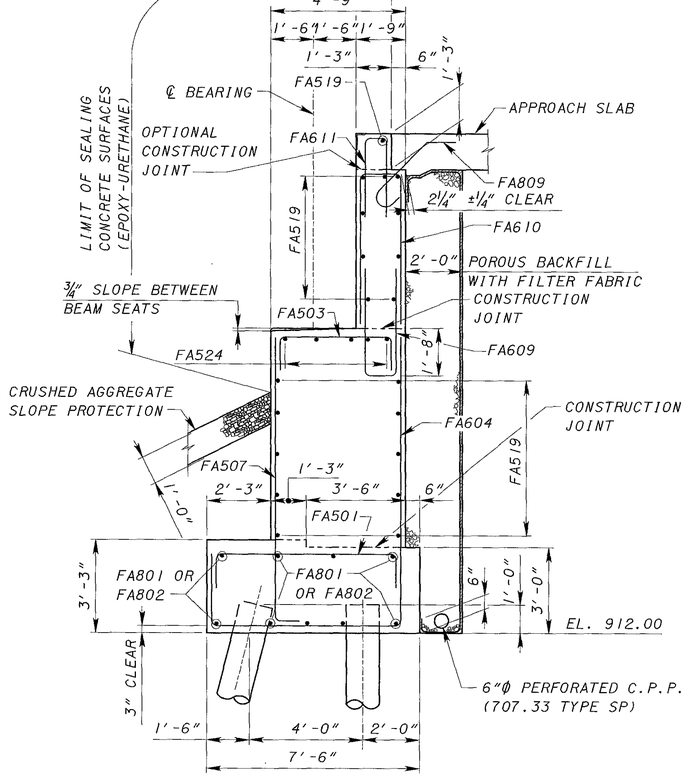
FRA-270-24.47
PID 77320

10/41

778/846



FOOTING PLAN



SECTION A-A

NOTES:

1. FOR ABUTMENT NOTES SEE SHEET 7/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650 CLEVELAND, OHIO 44113-1901

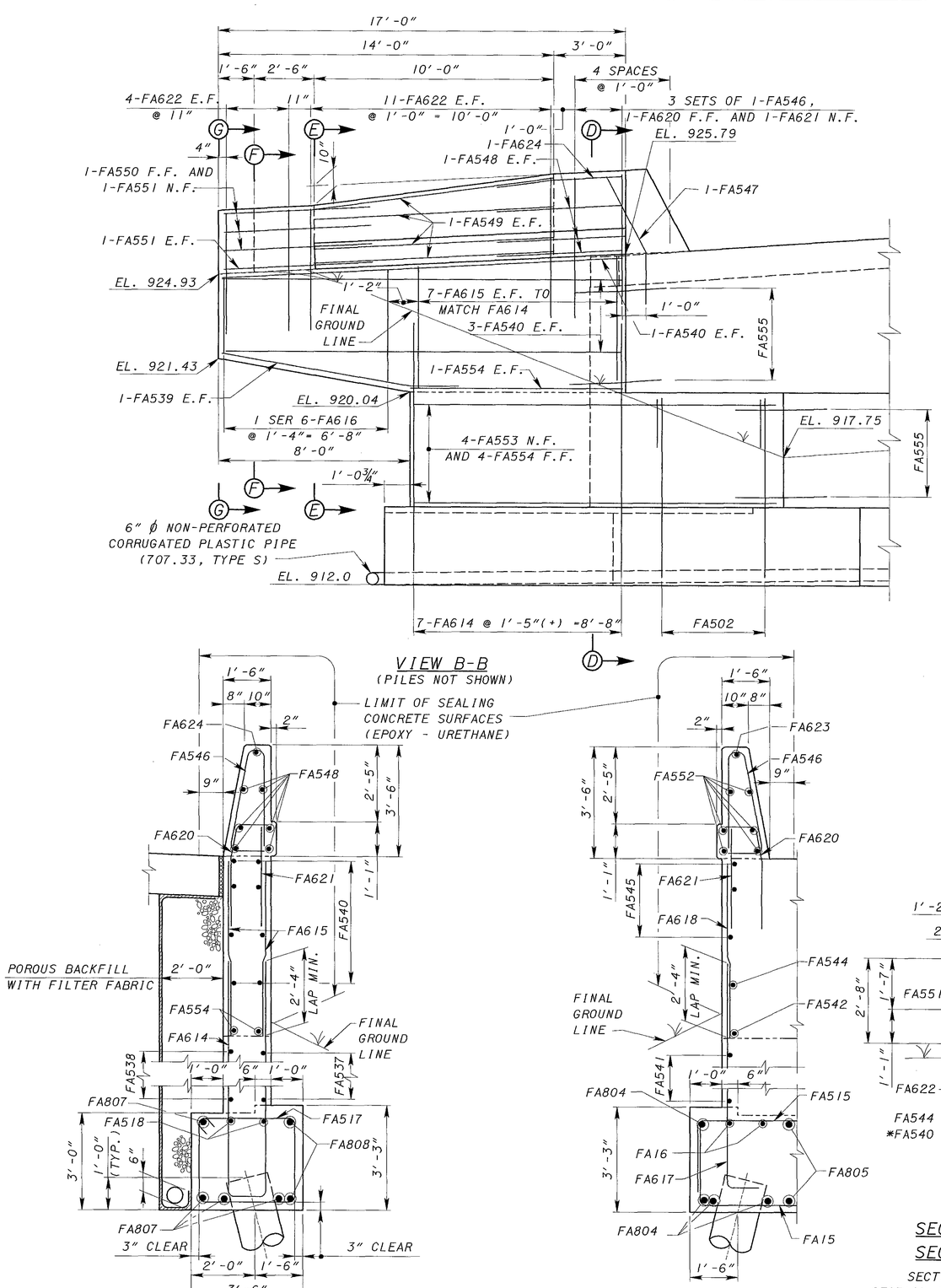
DESIGNED	DRAWN	REVIEWED	DATE
MLR	RCK	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		25/1452	

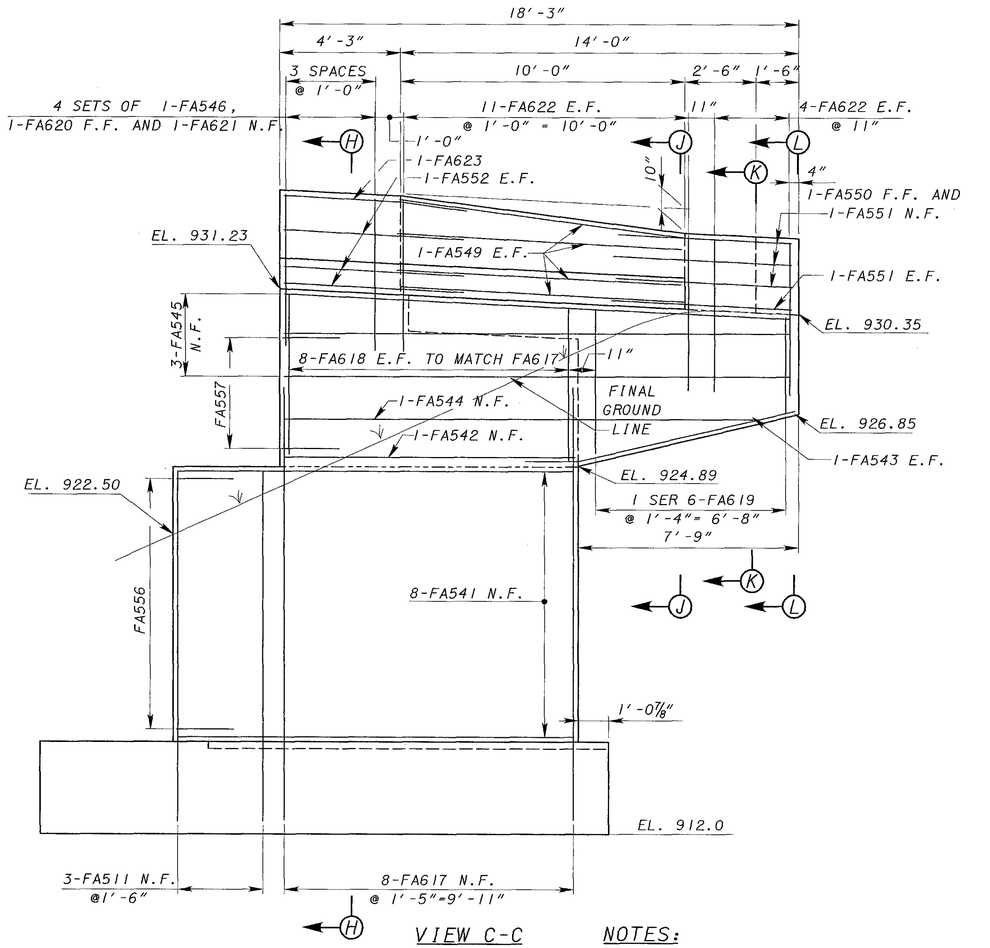
FORWARD ABUTMENT FOOTING PLAN AND SECTION A-A
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

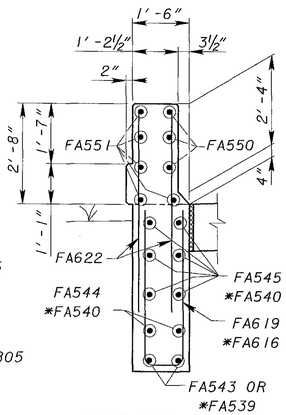
FRA-270-24.47
PID 77320

11/41

779/846

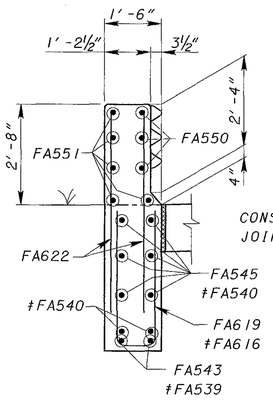






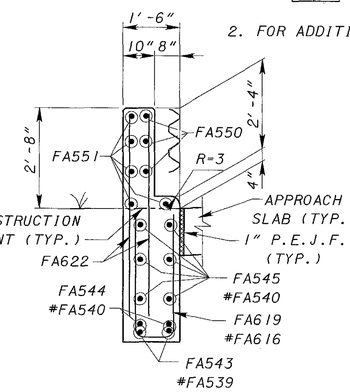
SECTION J-J
SECTION E-E

SECTION J-J SHOWN
SECTION E-E SIMILAR EXCEPT OPPOSITE HAND AND AS NOTED.
* SECTION E-E



SECTION K-K
SECTION F-F

SECTION K-K SHOWN
SECTION F-F SIMILAR EXCEPT OPPOSITE HAND AND AS NOTED.
† SECTION F-F



SECTION L-L
SECTION G-G

SECTION L-L SHOWN
SECTION G-G SIMILAR EXCEPT OPPOSITE HAND AND AS NOTED.
SECTION G-G

NOTES:

1. FOR ABUTMENT DETAILS, SEE SHEETS 10/41 AND 11/41.
2. FOR ADDITIONAL NOTES, SEE SHEET 7/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1800
CLEVELAND, OHIO 44113-1800

DESIGNED MLR
DRAWN RCK
CHECKED NFF
REVIEWED RER
DATE 7/19/05
REVISED
STRUCTURE FILE NUMBER 2511452

FORWARD ABUTMENT WINGWALL DETAILS

BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

12/41

780/846

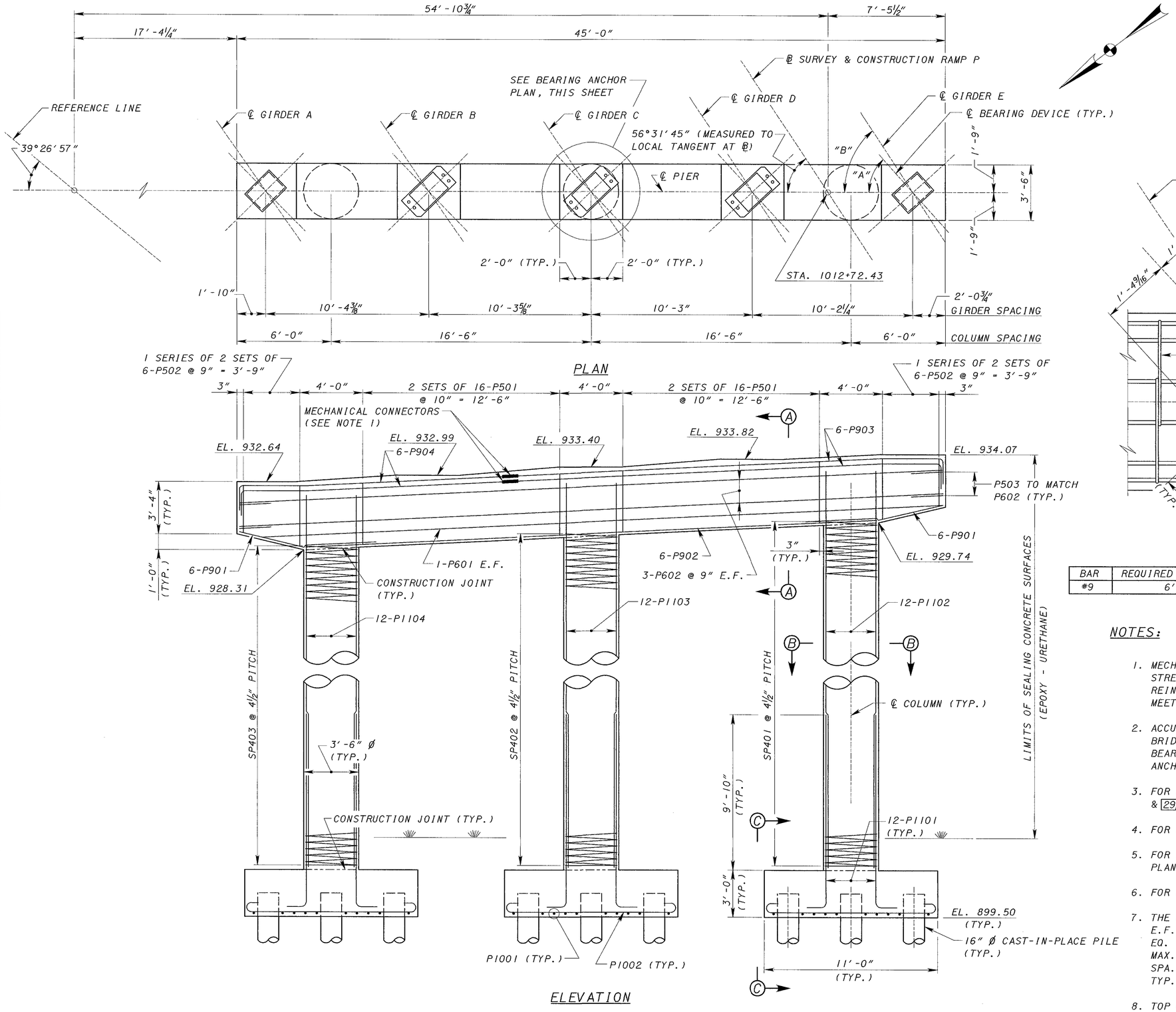
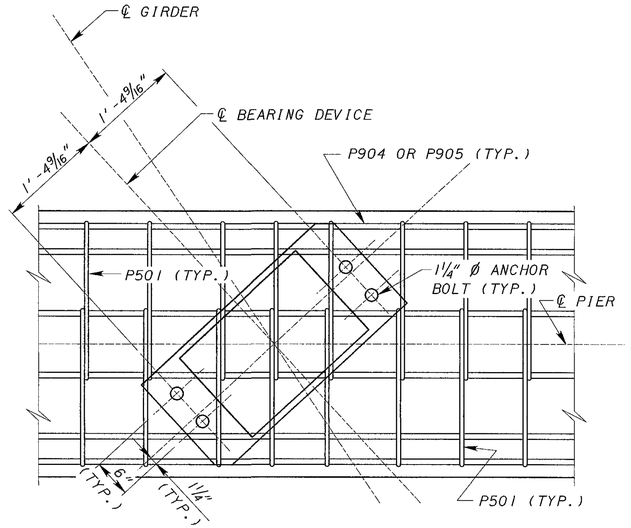


TABLE OF ANGLES		
GIRDER	ANGLE "A"	ANGLE "B"
A	45°13'03"	54°53'10"
B	45°56'51"	55°22'38"
C	46°38'53"	55°51'13"
D	47°19'17"	56°18'59"
E	47°58'10"	56°45'56"

(ANGLE "B" MEASURED FROM LOCAL TANGENT AT ℄ GIRDER TO ℄ PIER)



BEARING ANCHOR PLAN

(SEE NOTE 2)

BAR	REQUIRED LAP LENGTH
#9	6'-5"

NOTES:

1. MECHANICAL CONNECTORS SHALL DEVELOP A MINIMUM ULTIMATE STRENGTH OF 125% OF THE REQUIRED YIELD STRENGTH OF THE REINFORCEMENT THEY CONNECT. MECHANICAL SPLICES SHALL MEET THE REQUIREMENTS OF ITEM 509 AND SHALL BE STAGGERED.
2. ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
3. FOR MASONRY PLATE AND BEARING DETAILS, SEE SHEETS 28/41 & 29/41.
4. FOR PILE LAYOUT, SEE SHEET 6/41.
5. FOR SECTIONS A-A AND B-B, VIEW C-C AND TYPICAL FOOTING PLAN, SEE SHEET 14/41.
6. FOR REINFORCING STEEL LIST, SEE SHEET 40/41.
7. THE FOLLOWING ABBREVIATIONS ARE USED:
   E.F. - EACH FACE
   EQ. - EQUAL
   MAX. - MAXIMUM
   SPA. - SPACES
   TYP. - TYPICAL
8. TOP OF THE COLUMN SPIRAL REINFORCEMENT SHALL BE EMBEDDED A MINIMUM 2" INTO THE PIER CAP CONCRETE.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

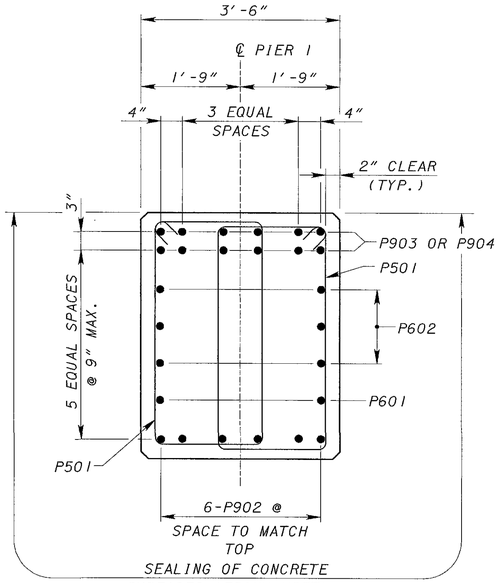
DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/1452	

PIER 1 PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

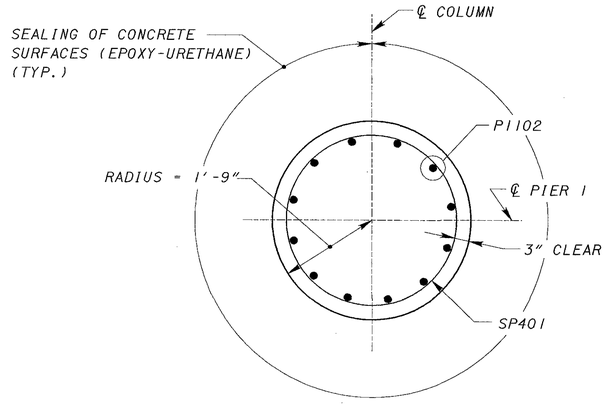
FRA-270-24.47
PID 77320

13/41

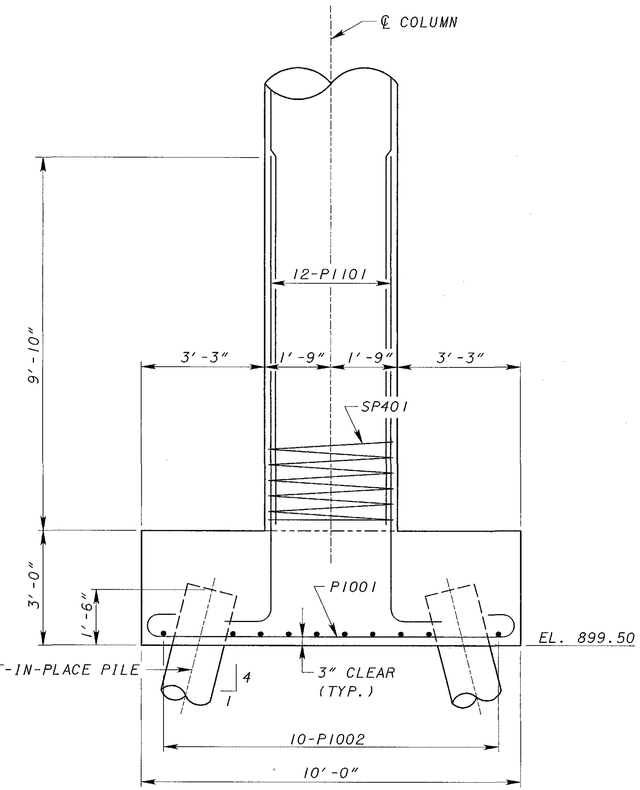
781/846



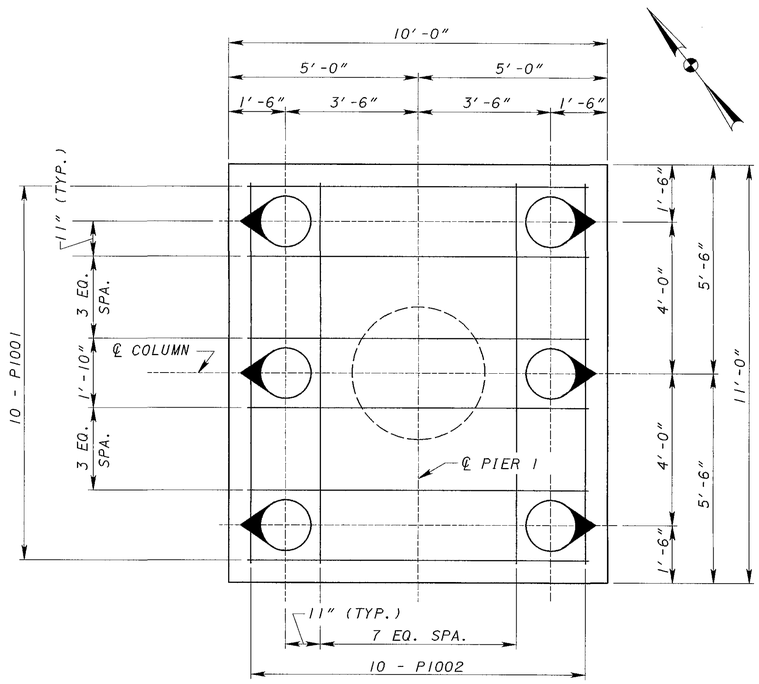
SECTION A-A



SECTION B-B



VIEW C-C



TYPICAL FOOTING PLAN

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13|41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

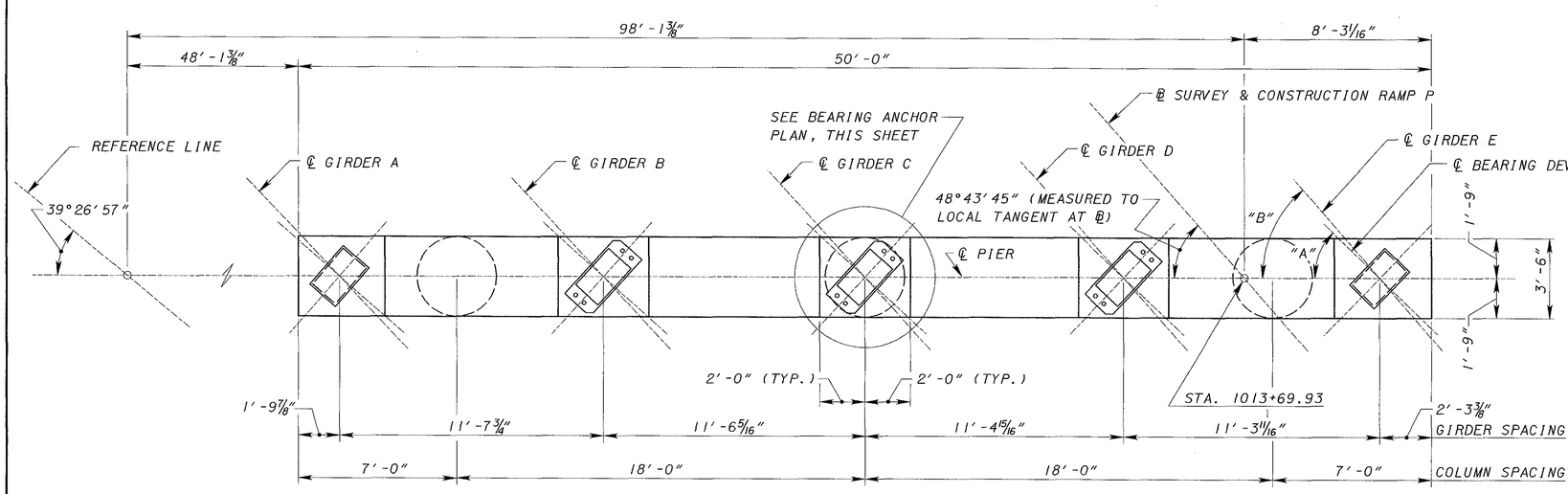
DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/1452	

PIER 1 DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

14|41

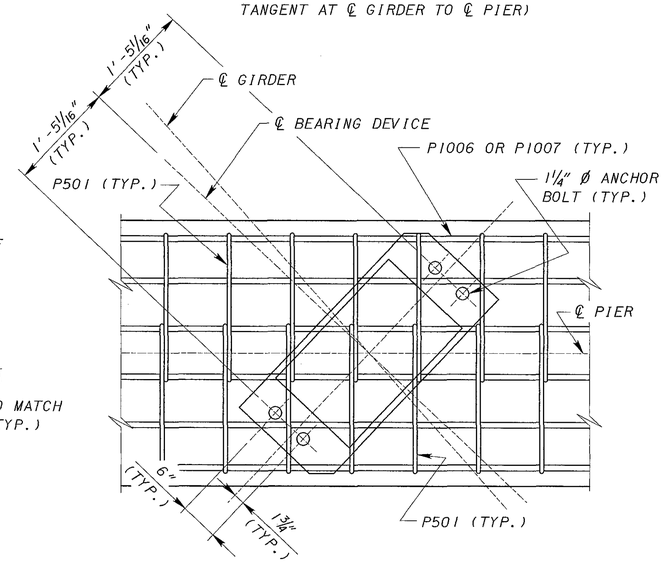
782
846



PLAN

TABLE OF ANGLES		
GIRDER	ANGLE "A"	ANGLE "B"
A	41°02′24″	46°31′54″
B	41°51′17″	47°11′31″
C	42°38′10″	47°49′47″
D	43°23′11″	48°26′46″
E	44°06′28″	49°02′33″

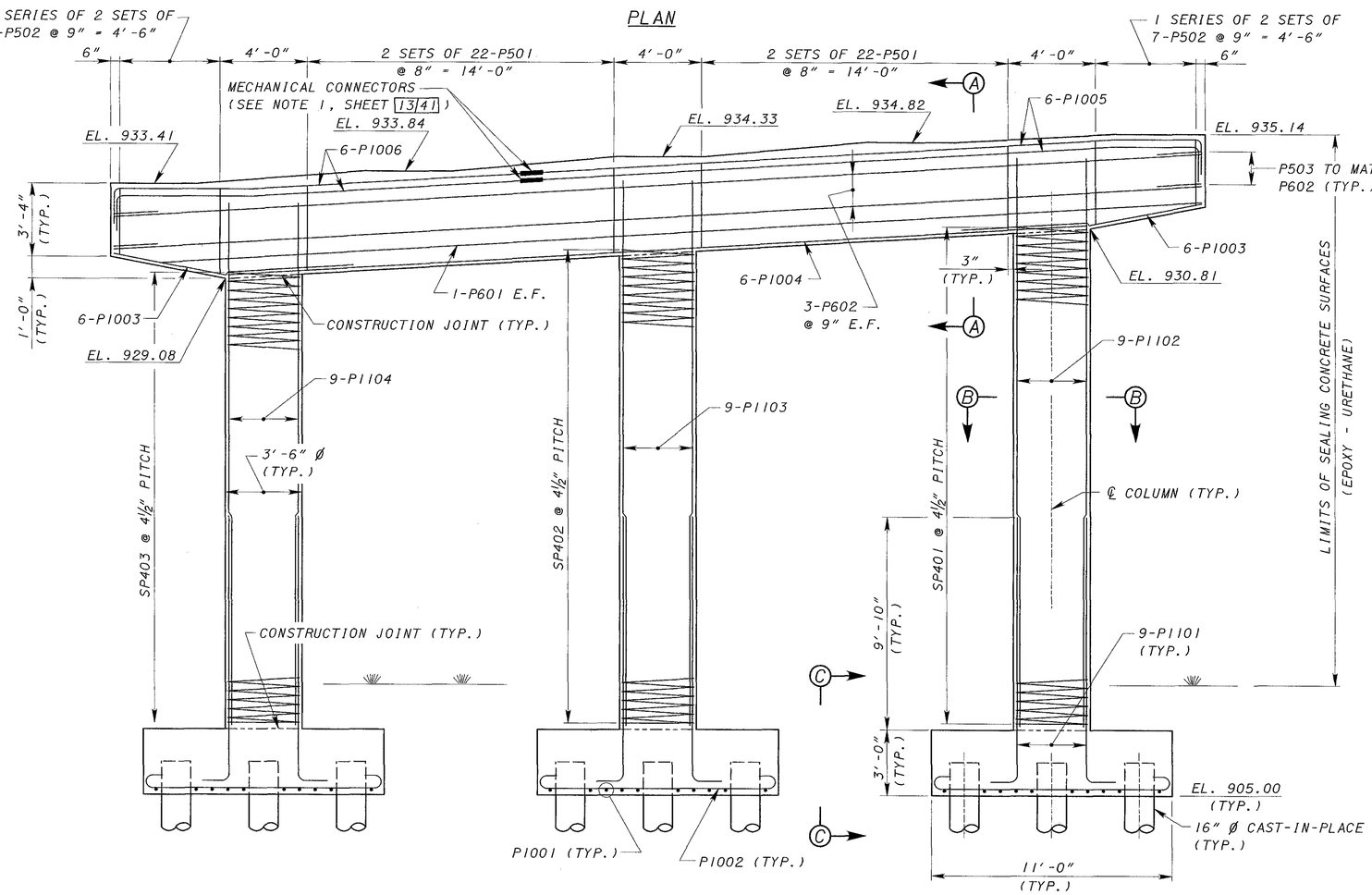
(ANGLE "B" MEASURED FROM LOCAL TANGENT AT ℄ GIRDER TO ℄ PIER)



BEARING ANCHOR PLAN

(SEE NOTE 2, SHEET 13/41)

BAR	REQUIRED LAP LENGTH
#10	8′-2″



ELEVATION

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13/41.
2. FOR SECTIONS A-A AND B-B, VIEW C-C AND TYPICAL FOOTING PLAN SEE SHEET 16/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 650
CLEVELAND, OHIO 44113-1909

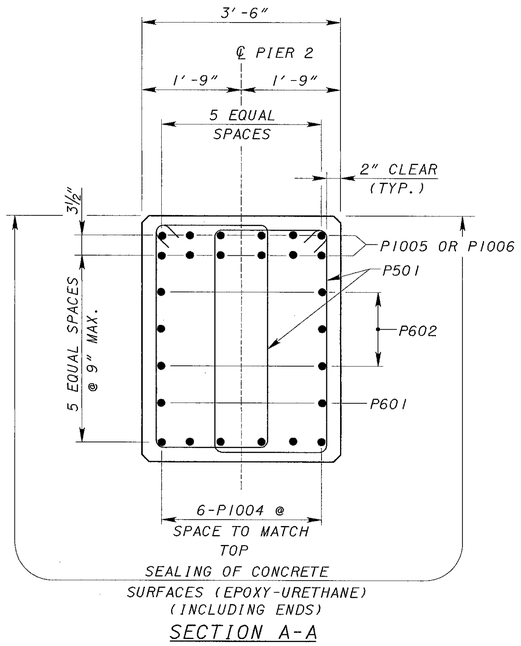
DESIGNED JDH | DRAWN CAG | REVIEWED RER | DATE 7/19/05
CHECKED NFF | REVISED | STRUCTURE FILE NUMBER 251452

PIER 2 PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

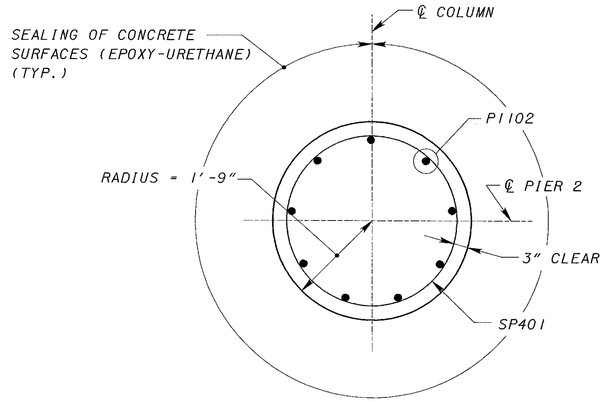
FRA-270-24.47
PID 77320

15/41

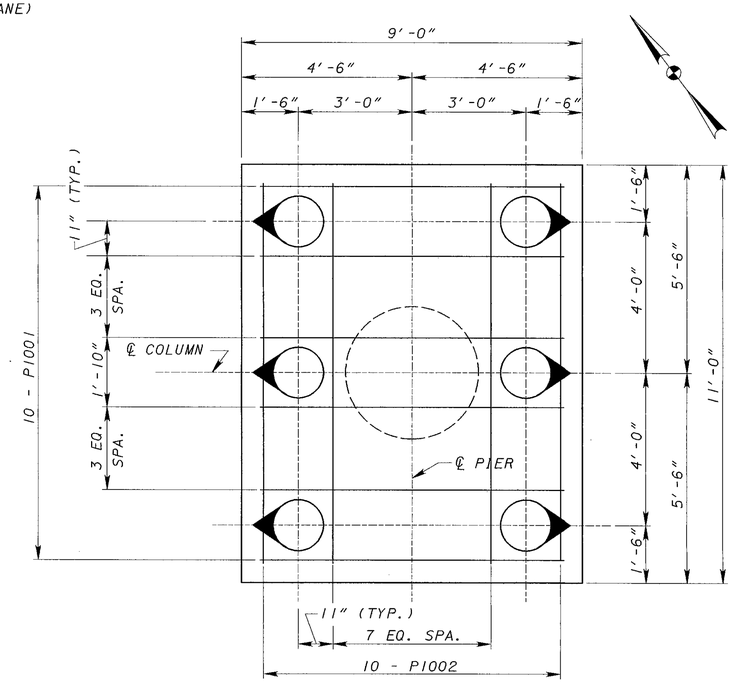
783
846



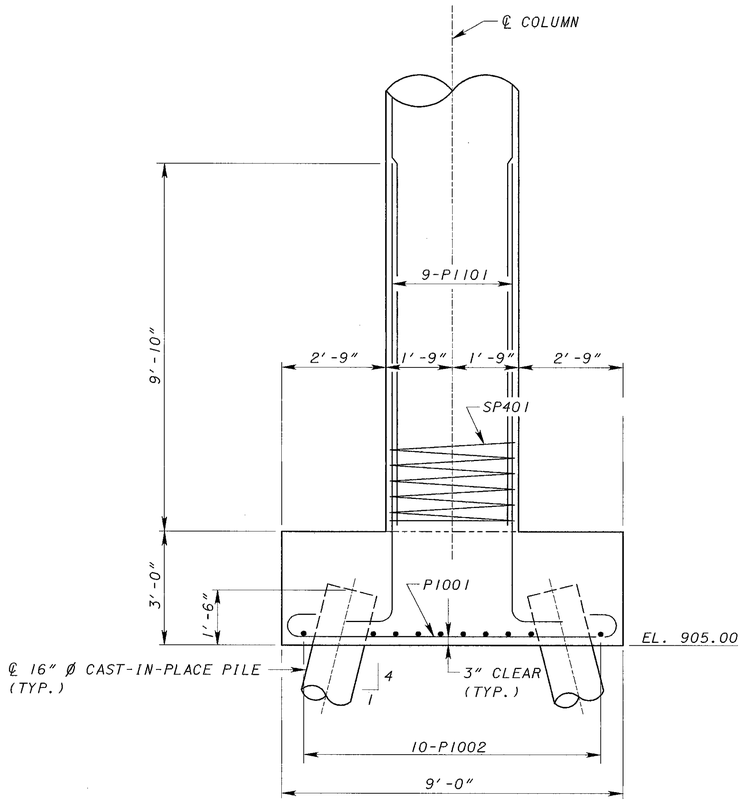
SECTION A-A



SECTION B-B



TYPICAL FOOTING PLAN



VIEW C-C

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

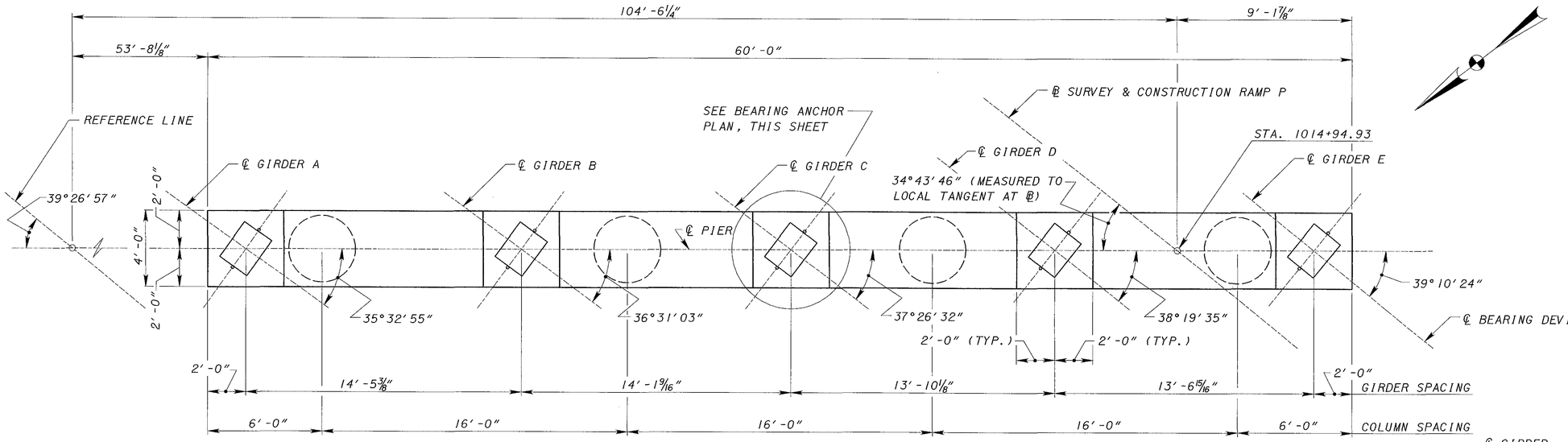
DESIGNED	DRAWN	REVISED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/452	

PIER 2 DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

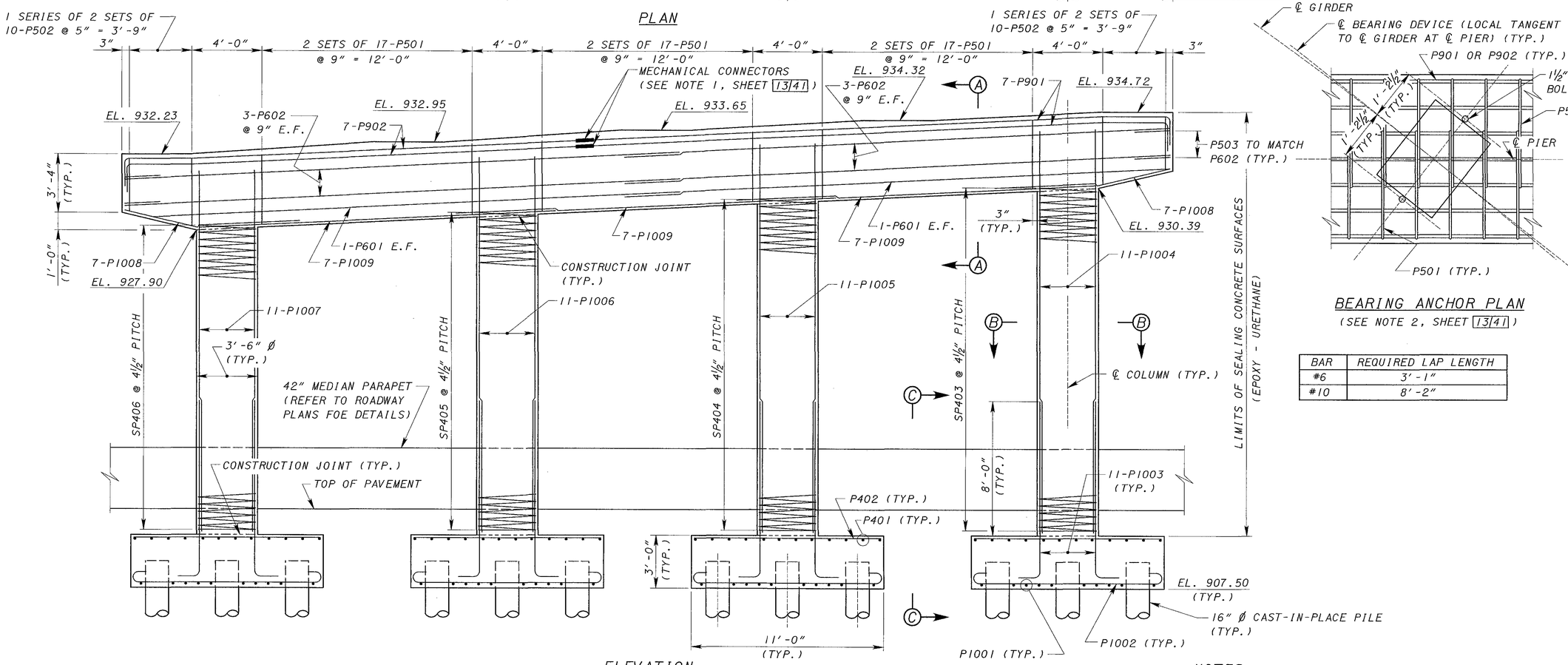
FRA-270-24.47
PID 77320

16/41

784/846



PLAN



ELEVATION

BEARING ANCHOR PLAN

(SEE NOTE 2, SHEET 13/41)

BAR	REQUIRED LAP LENGTH
#6	3'-1"
#10	8'-2"

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13/41.
2. FOR SECTIONS A-A AND B-B, VIEW C-C AND TYPICAL FOOTING PLAN SEE SHEET 18/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

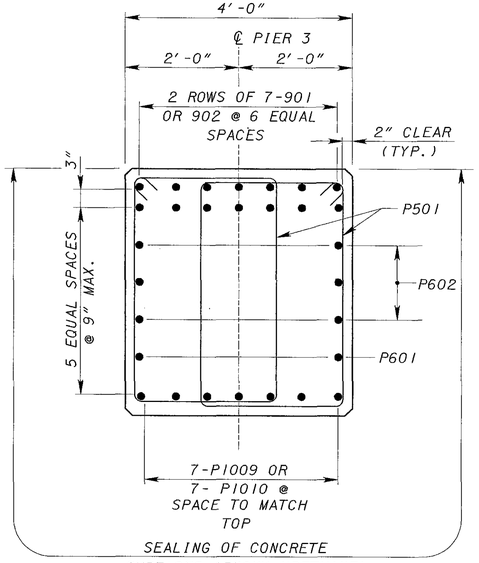
DATE 7/19/05
REVISED AER
STRUCTURE FILE NUMBER 251452
DRAWN CAG
REVISED
DESIGNED JDH
CHECKED NFF

PIER 3 PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

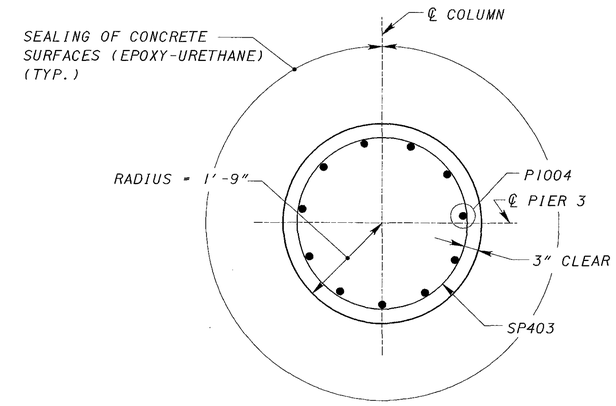
FRA-270-24.47
PID 77320

17/41

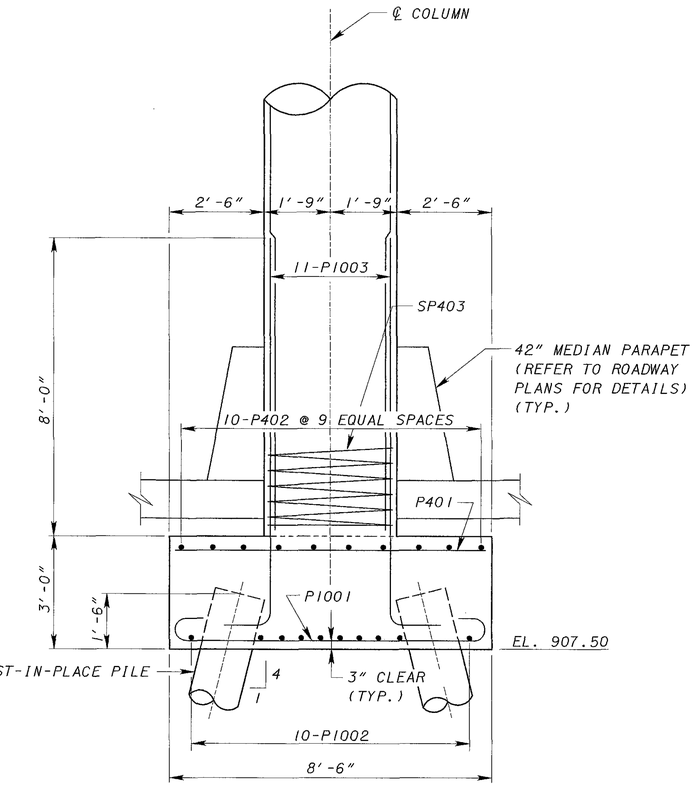
785/846



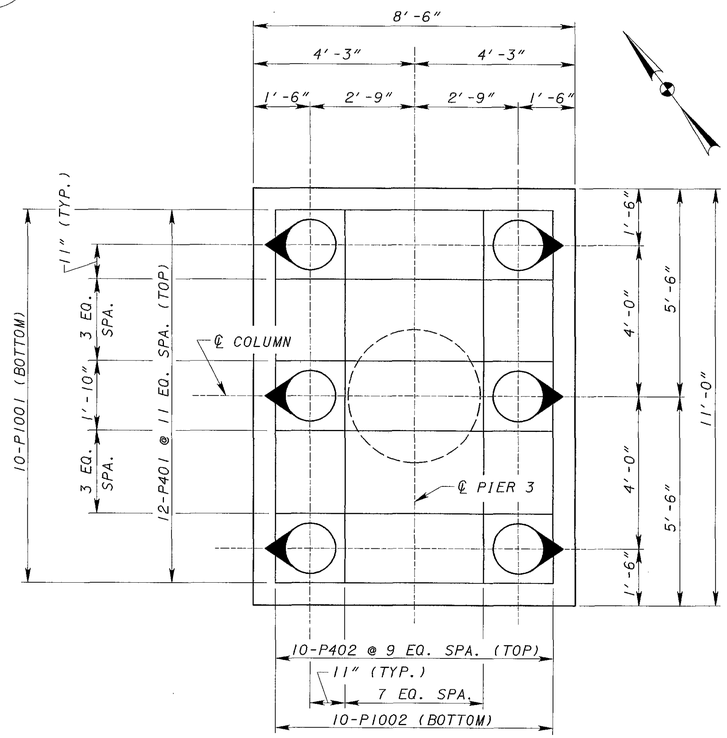
SECTION A-A



SECTION B-B



VIEW C-C



TYPICAL FOOTING PLAN

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1950

DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251452	

PIER 3 DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

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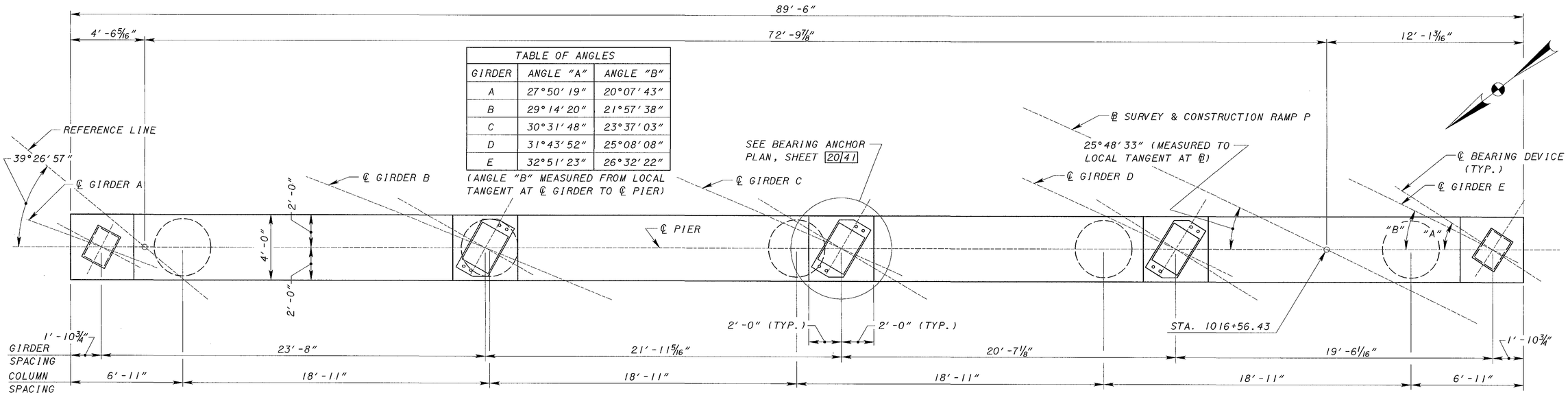
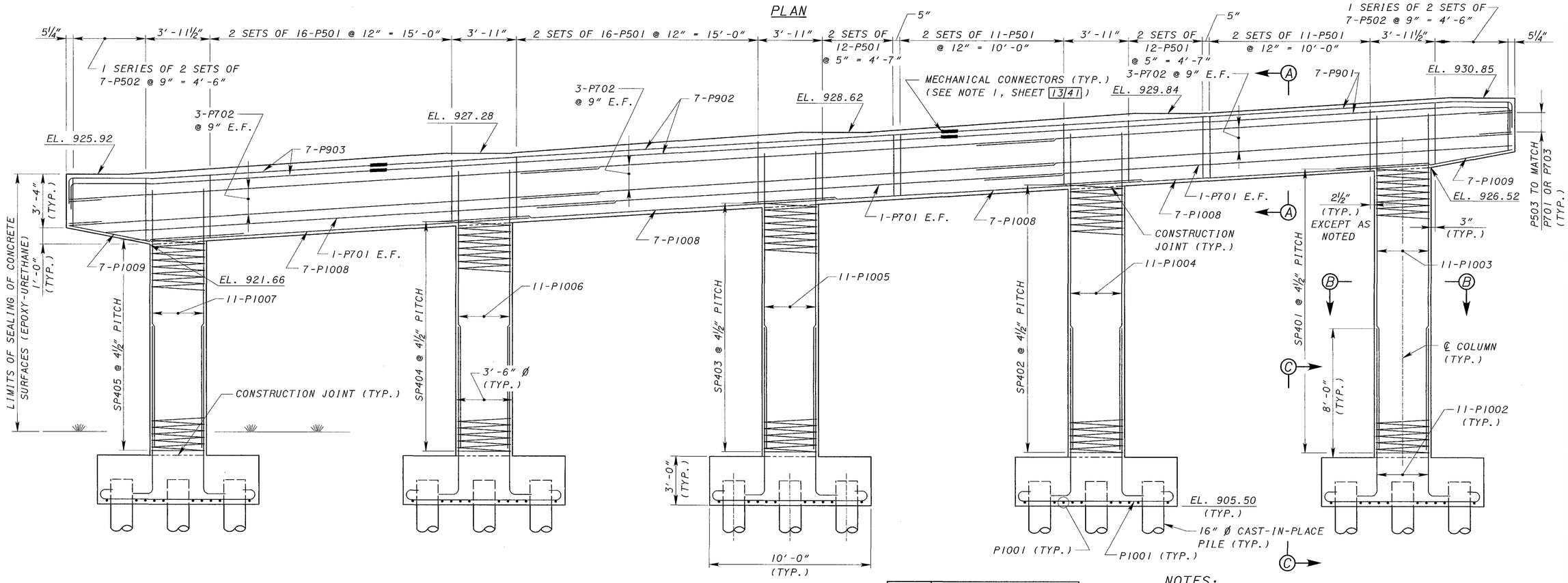
TABLE OF ANGLES		
GIRDER	ANGLE "A"	ANGLE "B"
A	27°50'19"	20°07'43"
B	29°14'20"	21°57'38"
C	30°31'48"	23°37'03"
D	31°43'52"	25°08'08"
E	32°51'23"	26°32'22"

(ANGLE "B" MEASURED FROM LOCAL TANGENT AT ℄ GIRDER TO ℄ PIER)



PLAN



ELEVATION

BAR	REQUIRED LAP LENGTH
#7	3'-10"
#10	8'-2"

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13|41.
2. FOR SECTIONS A-A AND B-B, VIEW C-C AND TYPICAL FOOTING PLAN SEE SHEET 20|41.

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 55 PUBLIC SQUARE, SUITE 1650, CLEVELAND, OHIO 44113

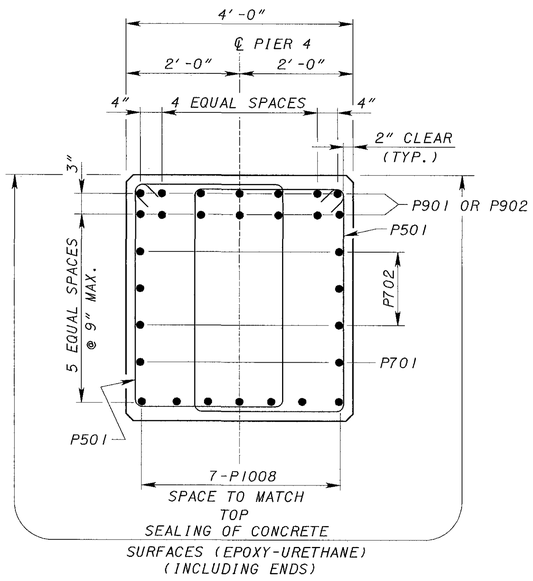
DESIGNED JDH | DRAWN CAG | CHECKED NFF | REVISED | REVISED RER | DATE 7/19/05 | STRUCTURE FILE NUMBER 251|452

PIER 4 PLAN AND ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

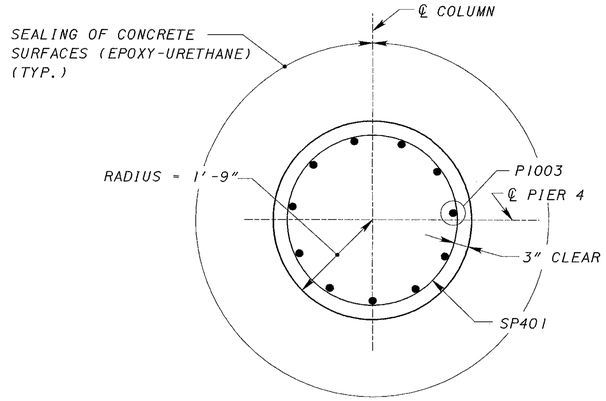
FRA-270-24.47
PID 77320

19|41

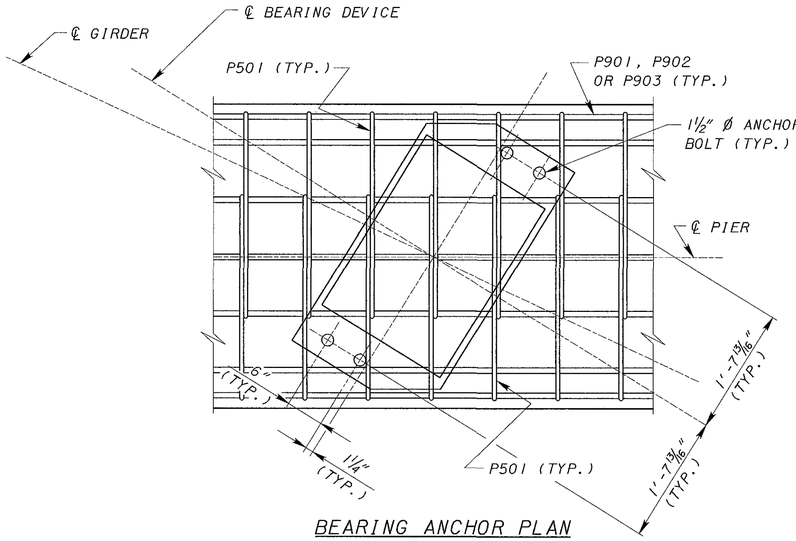
787
846



SECTION A-A

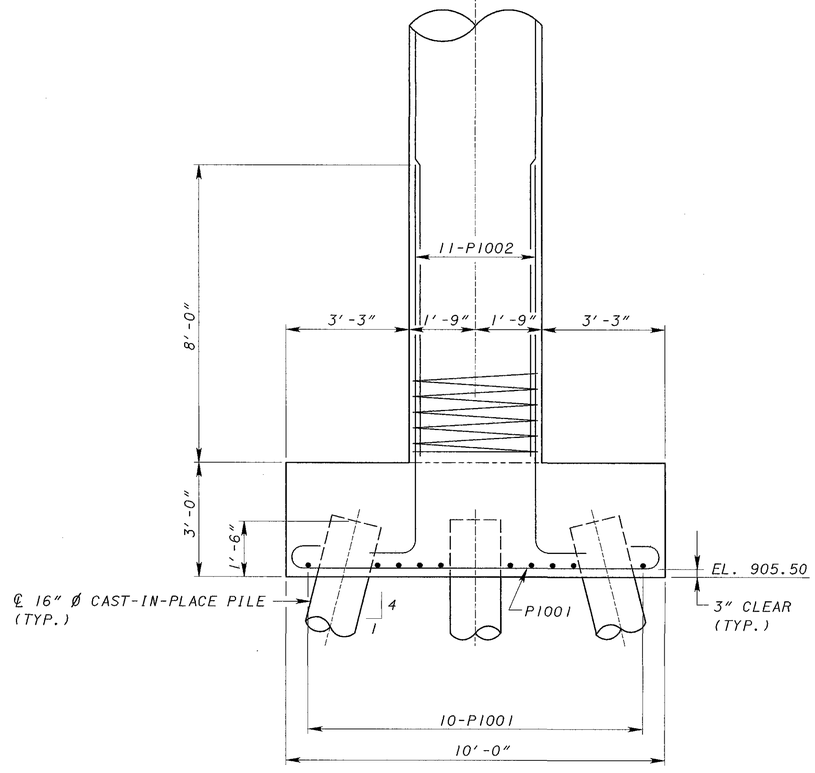


SECTION B-B

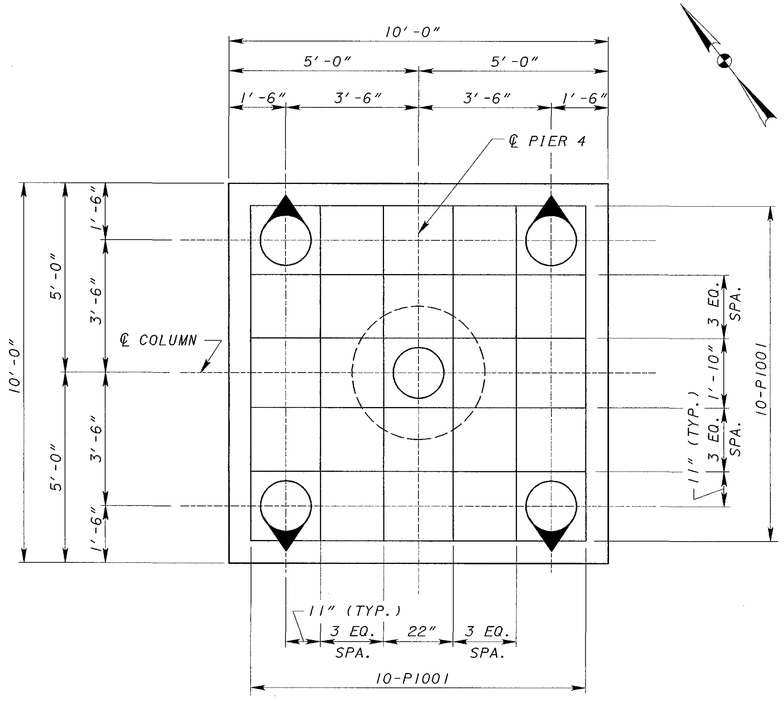


BEARING ANCHOR PLAN

(SEE NOTE 2, SHEET 13/41)



VIEW C-C



TYPICAL FOOTING PLAN

NOTES:

1. FOR ADDITIONAL PIER NOTES, SEE SHEET 13/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

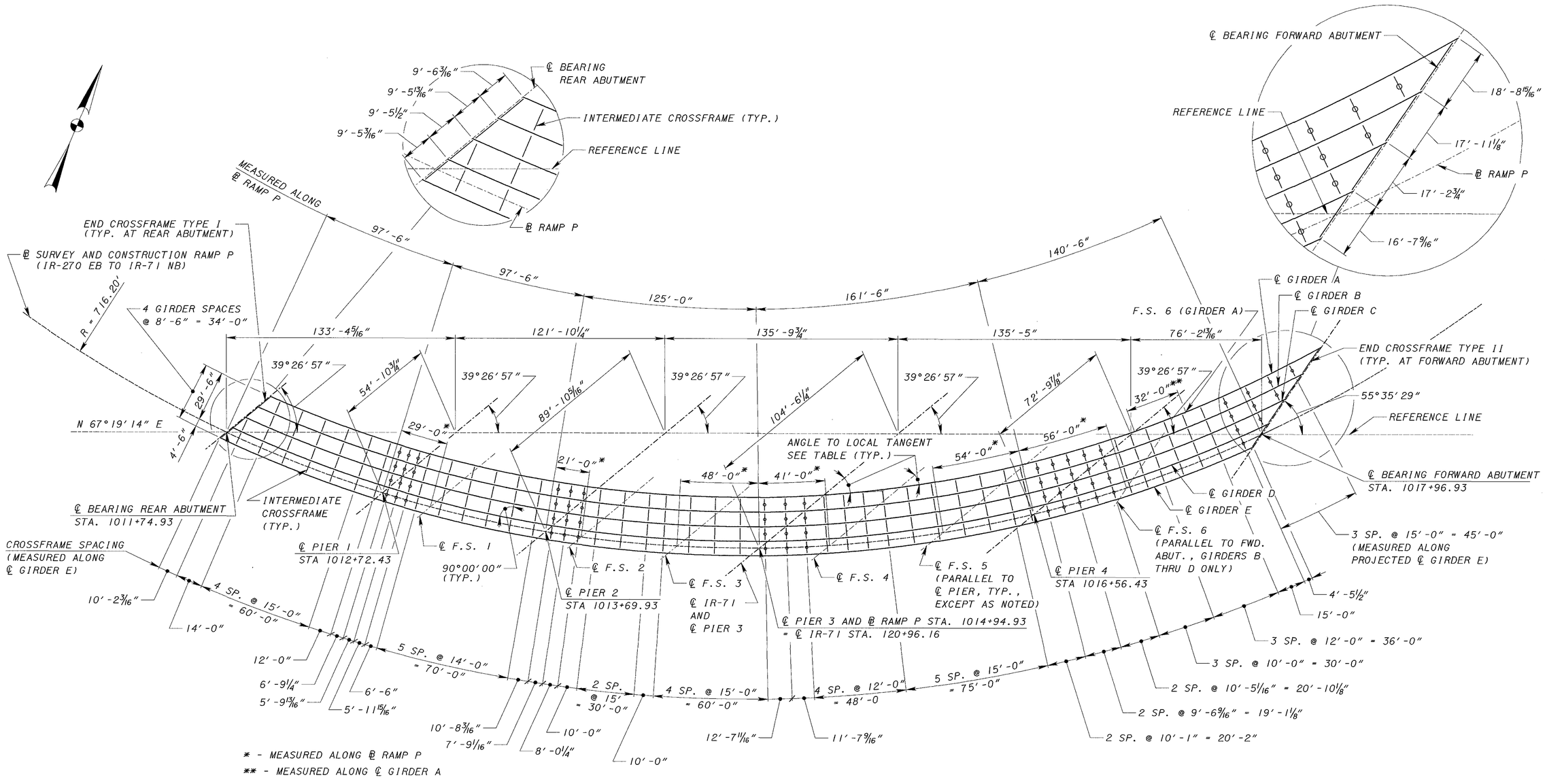
DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251452	

PIER 4 DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

20/41

788
846



FRAMING PLAN

TABLE OF LOCAL TANGENT ANGLES

	℄ BEARING REAR ABUT.	℄ PIER 1	℄ F.S. 1	℄ PIER 2	℄ F.S. 2	℄ F.S. 3	℄ PIER 3	℄ F.S. 4	℄ F.S. 5	℄ PIER 4	℄ F.S. 6	℄ BEARING FWD. ABUT.
GIRDER A	63°08′25″	54°53′10″	52°24′51″	46°31′54″	44°42′47″	39°49′00″	35°32′55″	31°49′45″	25°34′16″	20°07′43″	33°36′03″	26°16′28″
GIRDER B	63°29′40″	55°22′38″	52°57′05″	47°11′31″	45°24′58″	40°38′59″	36°31′03″	32°56′25″	26°59′53″	21°57′38″	35°09′06″	27°39′35″
GIRDER C	63°50′21″	55°51′13″	53°28′19″	47°49′47″	46°05′40″	41°26′57″	37°26′32″	33°59′37″	28°19′35″	23°37′03″	36°07′22″	28°57′09″
GIRDER D	64°10′28″	56°18′59″	53°58′37″	48°26′46″	46°44′56″	42°13′04″	38°19′35″	34°59′41″	29°34′12″	25°08′08″	37°02′59″	30°09′55″
℄ RAMP P	64°19′47″	56°31′45″	54°12′33″	48°43′45″	47°02′57″	42°34′22″	38°43′46″	35°27′01″	30°07′45″	25°48′33″	37°28′17″	30°42′50″
GIRDER E	64°30′04″	56°45′56″	54°28′00″	49°02′33″	47°22′53″	42°57′26″	39°10′24″	35°56′55″	30°44′24″	26°32′22″	37°56′09″	31°18′31″

LEGEND:

| - INDICATES INTERMEDIATE CROSSFRAME TYPE A

ϕ - INDICATES INTERMEDIATE CROSSFRAME TYPE B

NOTES:

1. FOR GIRDER DETAILS AND ADDITIONAL NOTES, SEE SHEET 22/41.
2. FOR CROSSFRAME AND END CROSSFRAME DETAILS, SEE SHEET 23/41.
3. FOR FIELD SPLICE DETAILS, SEE SHEET 24/41.
4. ABBREVIATIONS:
   ABUT. - ABUTMENT FWD. - FORWARD
   F.S. - FIELD SPLICE SP. - SPACES

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 55 PUBLIC SQUARE, SUITE 1650, CLEVELAND, OHIO 44113

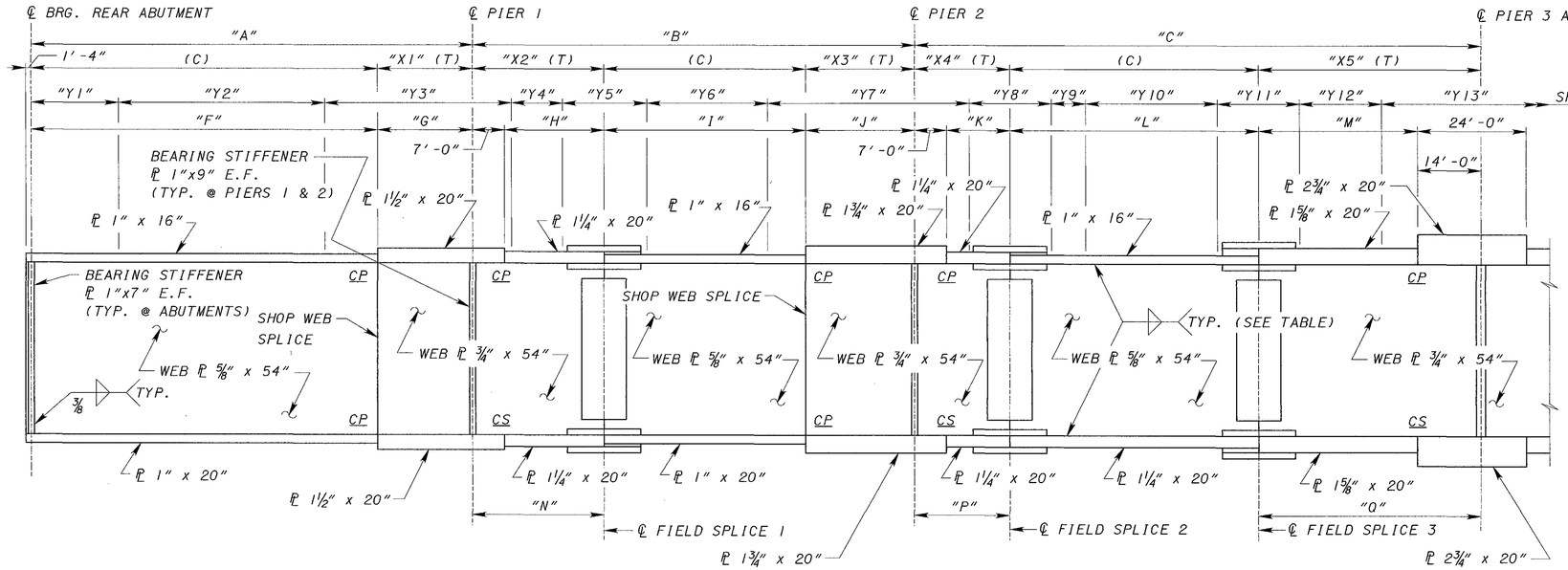
DESIGNED BTA | DRAWN BTA | CHECKED NFF | REVISED | REVIEWED RER | DATE 7/19/05 | STRUCTURE FILE NUMBER 251452

FRAMING PLAN
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

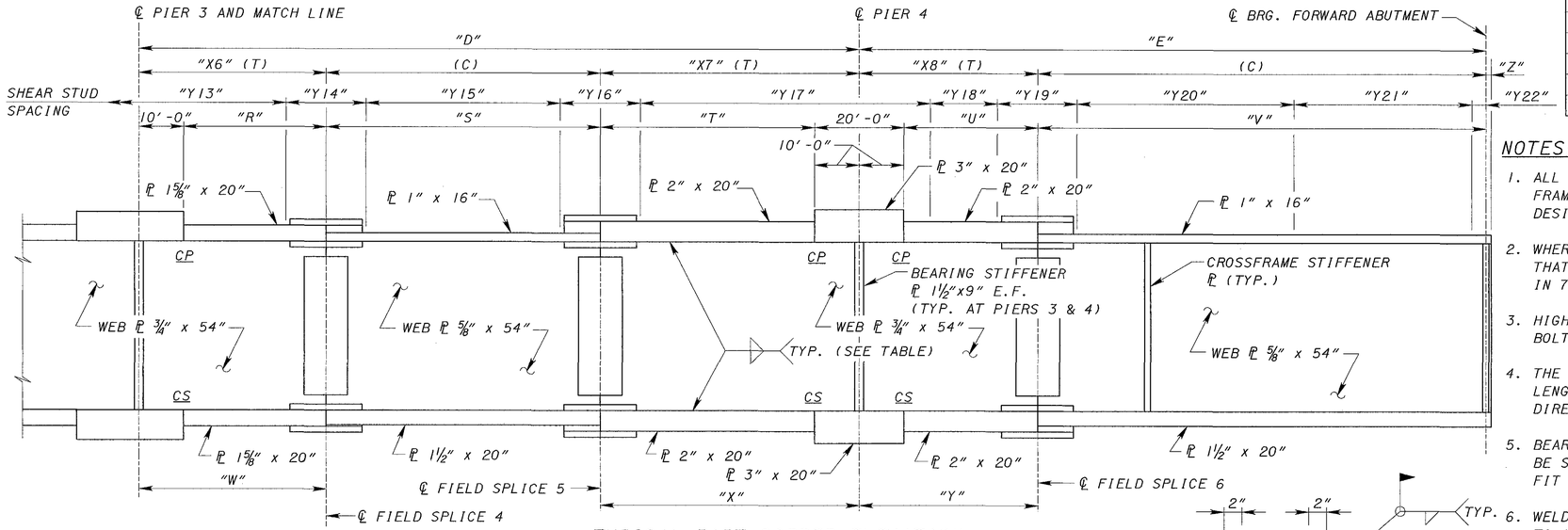
FRA-270-24.47
PID 77320

21/41

789/846



TYPICAL PART GIRDER ELEVATION



TYPICAL PART GIRDER ELEVATION

TABLE OF DIMENSIONS					
DIMENSION	GIRDER A	GIRDER B	GIRDER C	GIRDER D	GIRDER E
"A"	98'-11⅛"	98'-5⅞"	98'-0⅞"	97'-8⅛"	97'-3⅝"
"B"	100'-1⅜"	99'-3¾"	98'-6⅜"	97'-9⅝"	97'-1¾"
"C"	131'-7⅜"	129'-6¼"	127'-6⅝"	125'-9½"	124'-1⅛"
"D"	184'-9¾"	176'-7⅜"	169'-9½"	163'-11⅜"	158'-11"
"E"	119'-9⅛"	126'-8½"	132'-8⅜"	138'-1⅜"	143'-0⅛"
"F"	77'-8⅛"	77'-3¾"	76'-11⅛"	76'-7¾"	76'-4⅛"
"G"	21'-3⅛"	21'-2⅛"	21'-1¼"	21'-0⅜"	20'-11⅝"
"H"	22'-5⅜"	22'-4⅛"	22'-2⅝"	22'-0¾"	21'-11⅜"
"I"	46'-1⅛"	45'-7⅜"	45'-1⅝"	44'-8⅜"	44'-3⅛"
"J"	24'-6⅝"	24'-4⅜"	24'-2⅝"	24'-0⅜"	23'-11⅛"
"K"	14'-6½"	14'-4⅞"	14'-2⅜"	14'-0⅜"	13'-11⅛"
"L"	59'-11⅞"	58'-8⅜"	57'-6½"	56'-5⅛"	55'-5⅜"
"M"	36'-1⅝"	35'-5⅜"	34'-9⅛"	34'-3⅛"	33'-8¾"
"N"	29'-5⅜"	29'-4⅛"	29'-2⅝"	29'-0¾"	28'-11⅜"
"P"	21'-6½"	21'-4⅞"	21'-2⅜"	21'-0⅜"	20'-11⅛"
"Q"	50'-1⅝"	49'-5⅜"	48'-9⅞"	48'-3⅛"	47'-8¾"
"R"	33'-9½"	32'-10⅞"	32'-0⅝"	31'-3⅜"	30'-7⅞"
"S"	78'-3¾"	74'-2⅞"	70'-8⅛"	67'-9⅜"	65'-2⅛"
"T"	52'-8⅞"	49'-6⅝"	47'-0"	44'-10⅜"	43'-1⅛"
"U"	22'-0"	24'-1"	33'-9⅜"	42'-3⅜"	49'-11⅜"
"V"	87'-9⅛"	92'-7½"	88'-11⅝"	85'-10"	83'-1⅛"
"W"	43'-9½"	42'-10⅞"	42'-0⅝"	41'-3⅜"	40'-7⅞"
"X"	62'-8⅞"	59'-6⅝"	57'-0"	54'-10⅜"	53'-1⅛"
"Y"	32'-0"	34'-1"	43'-9⅜"	52'-3⅜"	59'-11⅜"
"Z"	2'-8"	2'-6½"	2'-5¼"	2'-4"	2'-3"

TABLE OF TENSION (T) & COMPRESSION (C) AREAS					
DIMENSION	GIRDER A	GIRDER B	GIRDER C	GIRDER D	GIRDER E
"X1"	22'-10"	22'-4"	22'-2"	21'-7"	21'-2"
"X2"	28'-3"	29'-5"	30'-10"	31'-7"	32'-8"
"X3"	27'-9"	26'-8"	25'-11"	25'-9"	25'-8"
"X4"	21'-5"	22'-5"	22'-5"	21'-11"	22'-8"
"X5"	47'-10"	45'-2"	43'-7"	40'-7"	41'-0
"X6"	36'-1"	37'-3"	38'-0	38'-6"	41'-11"
"X7"	55'-5"	45'-7"	37'-6"	32'-4"	28'-9"
"X8"	32'-8"	39'-7"	45'-5"	50'-11"	59'-4"

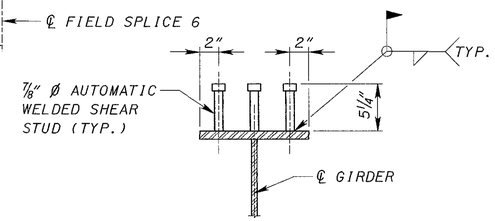
LEGEND:

(T) - DENOTES AREA OF TENSION IN THE TOP FLANGE. THE BOTTOM FLANGE IN THESE AREAS IS IN COMPRESSION.

(C) - DENOTES AREA OF COMPRESSION IN THE TOP FLANGE. THE BOTTOM FLANGE IN THESE AREAS IS IN TENSION.

"CS" - INDICATES BUTT WELD SUBJECT TO COMPRESSIVE STRESSES ONLY.

"CP" - INDICATES COMPLETE JOINT PENETRATION WELD.



SHEAR STUD DETAIL

NOTE: STUD PLACEMENT ON FLANGE SPLICE PLATES IS NOT PERMITTED. ADJUST SPACINGS TO AVOID INTERFERENCE WITH SPLICE PLATES AND CONNECTION BOLTS

WELD SIZE - WEB TO FLANGE	
FLANGE PLATE THICKNESS	FILLET WELD SIZE
⅞" THRU 1½"	5/16
1⅝" THRU 2½"	⅜

NOTES:

1. ALL FLANGE AND WEB PLATES, INCLUDING FIELD SPLICE PLATES, CROSS FRAME MEMBERS, AND CROSS FRAME CONNECTION STIFFENERS, SHALL BE DESIGNATED "CVN".
2. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER A325 GALVANIZED TYPE I BOLTS UNLESS OTHERWISE NOTED.
4. THE WEB PLATES MAY BE SHOP SPLICED AS REQUIRED BY AVAILABLE PLATE LENGTH. THE LOCATION OF WEB SHOP SPLICES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL PRIOR TO ORDERING OF MATERIAL.
5. BEARING STIFFENERS SHALL BE PLACED IN PAIRS ON ALL GIRDERS AND SHALL BE SET VERTICAL WITH FULL BEARING ON THE BOTTOM FLANGE AND A TIGHT FIT AT THE TOP FLANGE.
6. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION (C)". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION (T)". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST ¼" FOR THICKNESS UP TO ¾" OR 5/16" FOR GREATER THAN ¾" THICK.
7. BUTT WELDS AT SHOP SPLICES SHALL BE COMPLETE PENETRATION WELDS (CP). WELD REINFORECEMENT SHALL BE REMOVED BY GRINDING IN THE DIRECTION OF THE MAIN STRESSES.
8. FOR INTERMEDIATE CROSSFRAMES AND END CROSSFRAME DETAILS, SEE SHEET 23/41.
9. FOR FIELD SPLICE DETAILS, SEE SHEET 24/41.
10. FOR BEARING DETAILS, SEE SHEET 28/41 & 29/41.
11. FOR CAMBER AND DEFLECTIONS, SEE SHEET 25/41 THRU 27/41.
12. FOR TABLE OF SHEAR STUD SPACINGS, SEE SHEET 23/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 650
CLEVELAND, OHIO 44113-1901

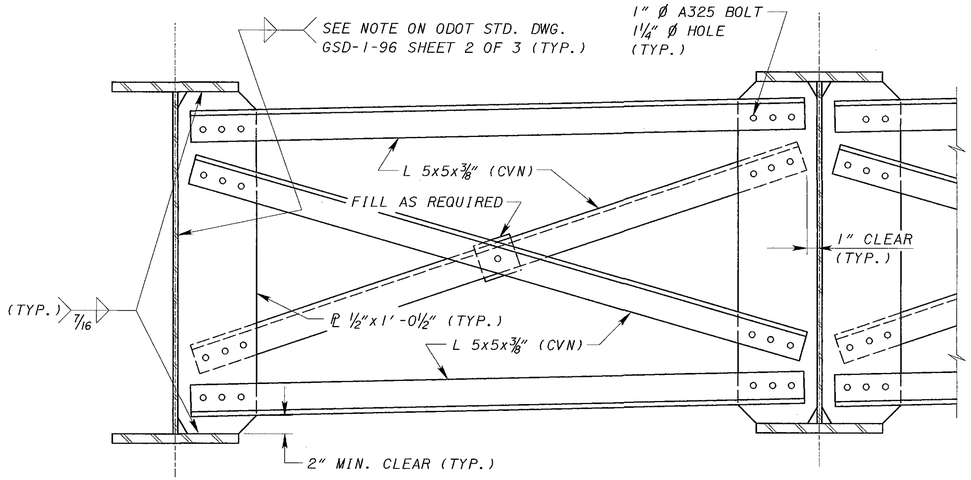
DESIGNED BTA
DRAWN CAG
CHECKED NFF
REVISED
REVISED RER
DATE 7/19/05
STRUCTURE FILE NUMBER 25141452

GIRDER ELEVATION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

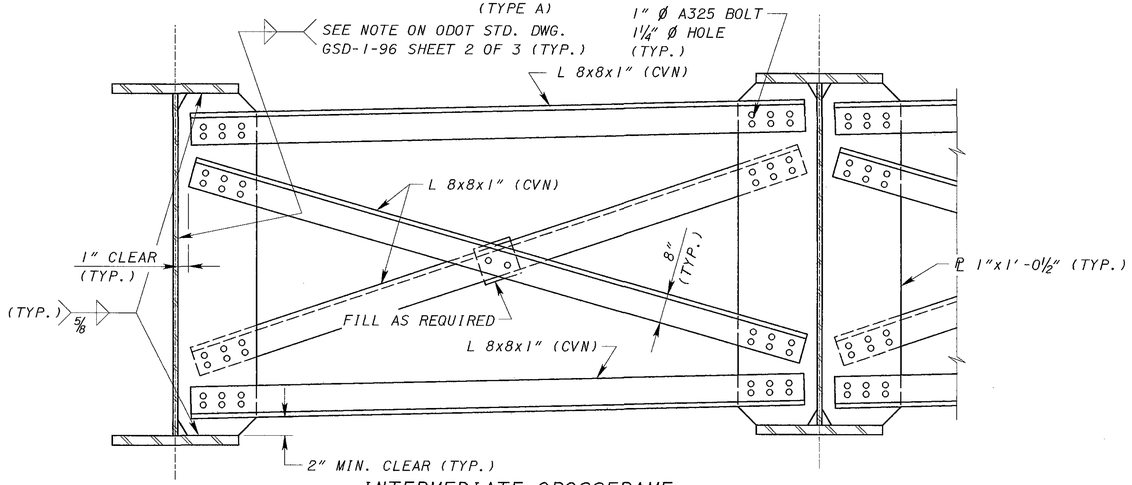
FRA-270-24.47
PID 77320

22/41

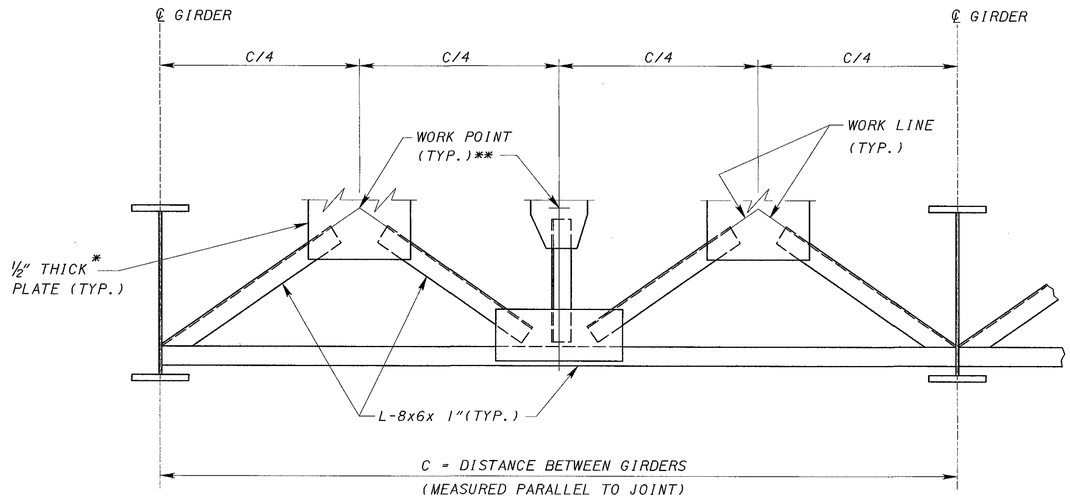
790
846



INTERMEDIATE CROSSFRAME
(TYPE A)



INTERMEDIATE CROSSFRAME
(TYPE B)

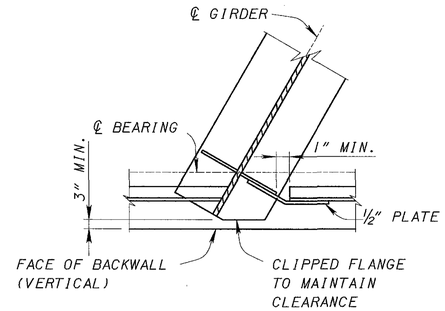


END CROSSFRAME DETAILS

(TYPE II SHOWN, FOR TYPE I REFER TO O.D.O.T. STD. DRAWING GSD-1-96, FOR 8'-0" TO 12'-0" GIRDER SPACING)

* - THE ½" THICK PLATE IS PART OF THE EXPANSION JOINT SYSTEM. SEE THE APPROPRIATE EXPANSION JOINT STANDARD BRIDGE DRAWING FOR DETAILS INCLUDING MATERIAL AND COATING REQUIREMENTS.

** - THE WORK LINE SHALL BE THE INSIDE FACE OF THE PROTRUDING ANGLE LEG EXTENDED AS SHOWN. THE WORK POINT SHALL BE AT THE INTERSECTION OF THESE LINES



CLIPPED FLANGE DETAIL

TABLE OF SHEAR STUD SPACING

DIMENSION	GIRDER A	GIRDER B	GIRDER C	GIRDER D	GIRDER E
"Y1"	14 SPA. @ 9" = 10'-6"	14 SPA. @ 9" = 10'-6"	14 SPA. @ 9" = 10'-6"	14 SPA. @ 9" = 10'-6"	14 SPA. @ 9" = 10'-6"
"Y2"	74 SPA. @ 11" = 67'-10"	53 SPA. @ 11" = 48'-7"	52 SPA. @ 11" = 47'-8"	52 SPA. @ 11" = 47'-8"	74 SPA. @ 11" = 67'-10"
"Y3"	41 SPA. @ 9" = 30'-9"	77 SPA. @ 9" = 57'-9"	80 SPA. @ 9" = 60'-0"	79 SPA. @ 9" = 59'-3"	38 SPA. @ 9" = 28'-6"
"Y4"	21 SPA. @ 10" = 17'-6"	11 SPA. @ 10" = 9'-2"	9 SPA. @ 10" = 7'-6"	9 SPA. @ 10" = 7'-6"	21 SPA. @ 10" = 17'-6"
"Y5"	3'-6"	3'-6"	3'-6"	3'-6"	3'-8"
"Y6"	60 SPA. @ 10" = 50'-0"	59 SPA. @ 10" = 49'-2"	46 SPA. @ 10" = 38'-4"	58 SPA. @ 10" = 48'-4"	57 SPA. @ 10" = 47'-6"
"Y7"	58 SPA. @ 8" = 38'-8"	58 SPA. @ 8" = 38'-8"	73 SPA. @ 8" = 48'-8"	57 SPA. @ 8" = 38'-0"	57 SPA. @ 8" = 38'-0"
"Y8"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"
"Y9"	5 SPA. @ 8" = 3'-4"	43 SPA. @ 8" = 28'-8"	41 SPA. @ 8" = 27'-4"	41 SPA. @ 8" = 27'-4"	58 SPA. @ 8" = 38'-8"
"Y10"	64 SPA. @ 10" = 53'-4"	32 SPA. @ 10" = 26'-8"	32 SPA. @ 10" = 26'-8"	31 SPA. @ 10" = 25'-10"	16 SPA. @ 10" = 13'-4"
"Y11"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"
"Y12"	42 SPA. @ 10" = 35'-0"	41 SPA. @ 10" = 34'-2"	44 SPA. @ 10" = 36'-8"	40 SPA. @ 10" = 33'-4"	41 SPA. @ 10" = 34'-2"
"Y13"	83 SPA. @ 8" = 55'-4"	82 SPA. @ 8" = 54'-8"	76 SPA. @ 8" = 50'-8"	79 SPA. @ 8" = 52'-8"	76 SPA. @ 8" = 50'-8"
"Y14"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"
"Y15"	112 SPA. @ 8" = 74'-8"	106 SPA. @ 8" = 70'-8"	101 SPA. @ 8" = 67'-4"	96 SPA. @ 8" = 64'-0"	93 SPA. @ 8" = 62'-0"
"Y16"	3'-6"	3'-6"	3'-6"	3'-8"	3'-6"
"Y17"	111 SPA. @ 8" = 74'-0"	104 SPA. @ 8" = 69'-4"	102 SPA. @ 8" = 68'-0"	101 SPA. @ 8" = 67'-4"	100 SPA. @ 8" = 66'-8"
"Y18"	21 SPA. @ 10" = 17'-6"	27 SPA. @ 10" = 22'-6"	36 SPA. @ 10" = 30'-0"	44 SPA. @ 10" = 36'-8"	51 SPA. @ 10" = 42'-6"
"Y19"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"
"Y20"	46 SPA. @ 10" = 38'-4"	62 SPA. @ 10" = 51'-8"	25 SPA. @ 10" = 20'-10"	35 SPA. @ 10" = 29'-2"	12 SPA. @ 10" = 10'-0"
"Y21"	70 SPA. @ 8" = 46'-8"	55 SPA. @ 8" = 36'-8"	97 SPA. @ 8" = 64'-8"	81 SPA. @ 8" = 54'-0"	106 SPA. @ 8" = 70'-8"
"Y22"	10 11/16"	9 15/16"	10 3/4"	7 11/16"	10 11/16"

NOTES:

1. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. FOR GIRDER NOTES, SEE SHEET 22/41.
3. FOR ADDITIONAL CROSS FRAME DETAILS NOT SHOWN, REFER TO ODOT STANDARD DRAWING GSD-1-96.
4. FOR CROSS FRAME LOCATIONS, REFER TO FRAMING PLAN, SHEET 21/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1850
CLEVELAND, OHIO 44113-1901

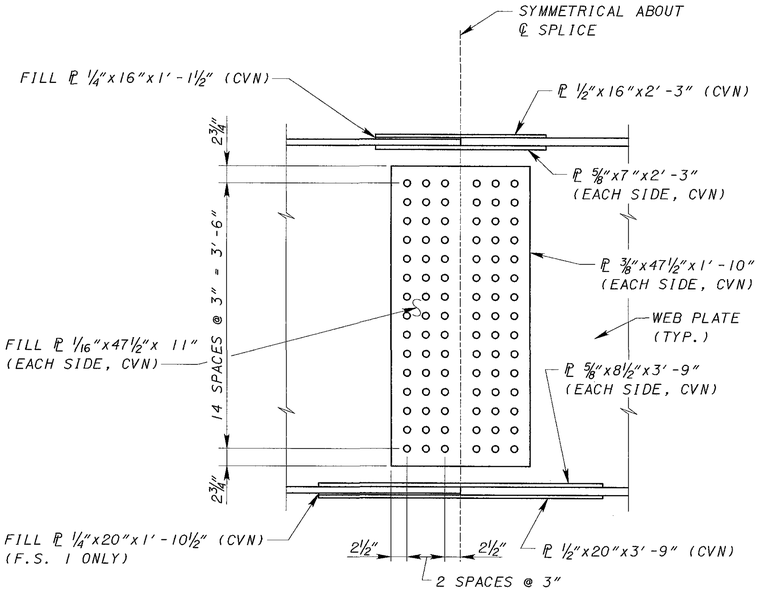
DESIGNED	DRAWN	REVISED	DATE
BTA	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/452	

SUPERSTRUCTURE DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

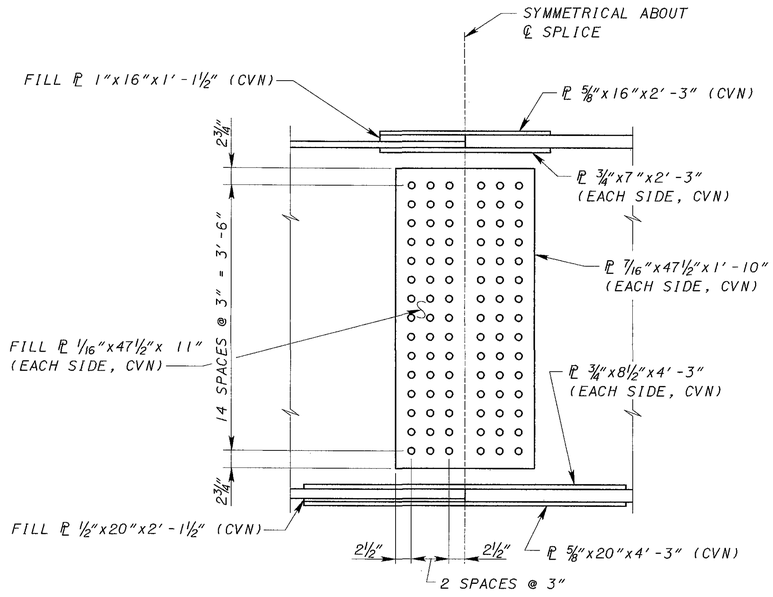
FRA-270-24.47
PID 77320

23/41

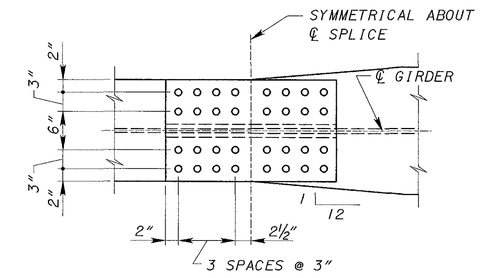
791/846



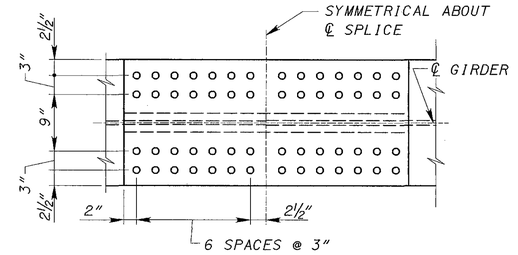
GIRDER WEB SPLICE
FIELD SPLICE 1 AND 2



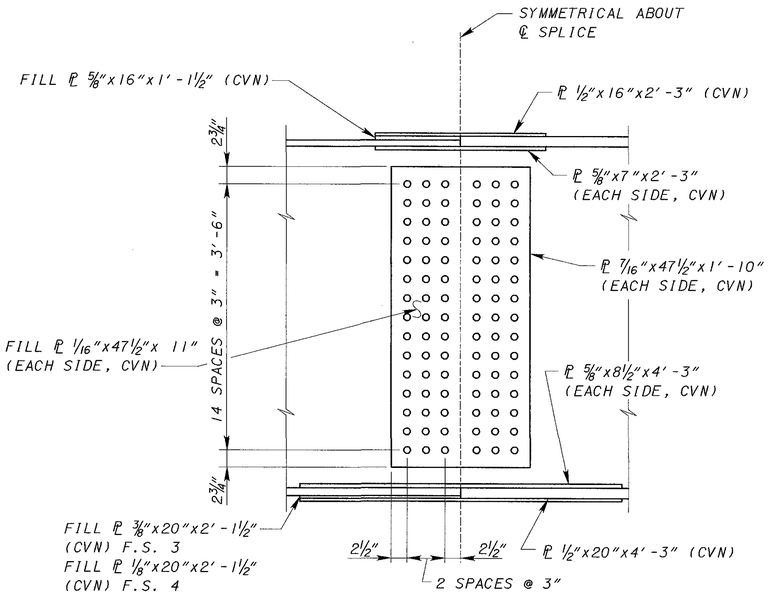
GIRDER WEB SPLICE
FIELD SPLICE 5 AND 6



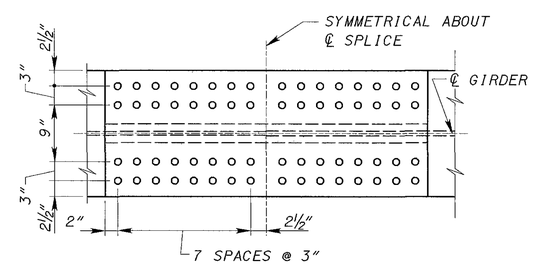
GIRDER TOP FLANGE SPLICE
TYPICAL ALL FIELD SPLICES
(1 OUTSIDE AND 2 INSIDE PLATES REQUIRED)



GIRDER BOTTOM FLANGE SPLICE
FIELD SPLICE 1 AND 2
(1 OUTSIDE AND 2 INSIDE PLATES REQUIRED)



GIRDER WEB SPLICE
FIELD SPLICE 3 AND 4



GIRDER BOTTOM FLANGE SPLICE
FIELD SPLICE 3,4,5 AND 6
(1 OUTSIDE AND 2 INSIDE PLATES REQUIRED)

NOTES:
FOR GIRDER NOTES, SEE SHEET 22|41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BTA	MLR	AER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/452	

SUPERSTRUCTURE DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

24|41

792
846

CAMBER AND DEFLECTIONS

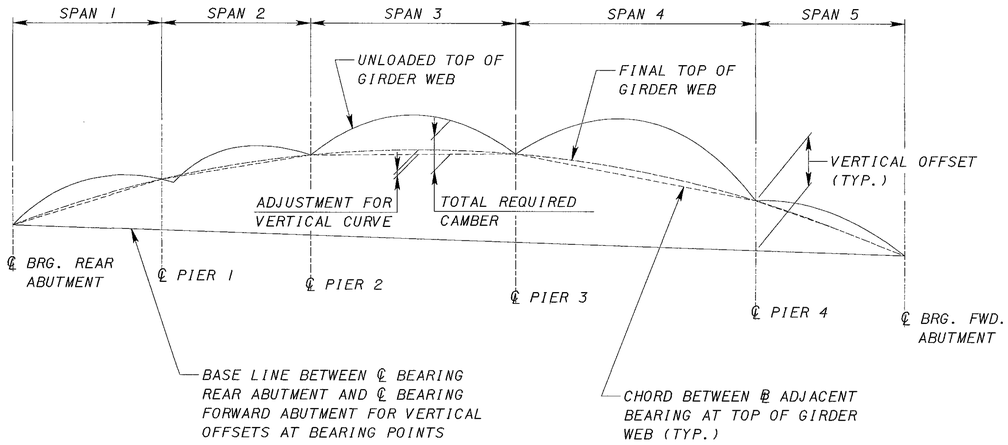
	POINT		SPAN 1									
		℄ BRG. R.A.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
GIRDER A	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16"	3/16"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	11/16"	7/8"	1"	15/16"	13/16"	5/8"	3/8"	3/16"	0
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 5/16"	1 13/16"	2 1/16"	2 3/16"	2 1/16"	1 13/16"	1 7/16"	3/4"	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	1/4"	5/16"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	TOTAL CAMBER	0	1 5/16"	2 3/8"	3 3/16"	3 5/8"	3 11/16"	3 3/8"	2 13/16"	2 1/16"	1"	0

	POINT		SPAN 1									
		℄ BRG. R.A.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
GIRDER B	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/16"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	11/16"	7/8"	1"	1"	7/8"	5/8"	7/16"	3/16"	0
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 3/16"	1 11/16"	1 15/16"	1 15/16"	2 1/16"	1 11/16"	1 5/16"	3/4"	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	3/16"	5/16"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	TOTAL CAMBER	0	1 5/16"	2 1/4"	3 1/8"	3 1/2"	3 1/2"	3 3/8"	2 11/16"	1 15/16"	1"	0

	POINT		SPAN 1									
		℄ BRG. R.A.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
GIRDER C	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/16"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	11/16"	15/16"	1 1/16"	1"	7/8"	11/16"	7/16"	3/16"	0
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 3/16"	1 11/16"	1 15/16"	1 15/16"	1 15/16"	1 11/16"	1 5/16"	5/8"	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	3/16"	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	TOTAL CAMBER	0	1 5/16"	2 5/16"	3 1/8"	3 1/2"	3 1/2"	3 5/16"	2 3/4"	2"	7/8"	0

	POINT		SPAN 1									
		℄ BRG. R.A.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
GIRDER D	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/16"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	3/4"	15/16"	1 1/16"	1 1/16"	15/16"	11/16"	7/16"	3/16"	0
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	5/8"	1 3/16"	1 9/16"	1 15/16"	1 15/16"	1 15/16"	1 9/16"	1 5/16"	3/4"	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	3/16"	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	TOTAL CAMBER	0	1 3/16"	2 5/16"	3 1/16"	3 9/16"	3 9/16"	3 3/8"	2 5/8"	2"	1"	0

	POINT		SPAN 1									
		℄ BRG. R.A.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
GIRDER E	DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/16"	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	7/16"	3/4"	1 1/16"	1 3/16"	1 3/16"	1"	3/4"	1/2"	3/16"	0
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	5/8"	1 1/16"	1 9/16"	1 13/16"	1 15/16"	1 13/16"	1 9/16"	1 3/16"	3/4"	0
	ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0
	ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	3/16"	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0
	TOTAL CAMBER	0	1 1/4"	2 1/4"	3 1/8"	3 9/16"	3 5/8"	3 5/16"	2 3/4"	1 15/16"	1 1/16"	0



CAMBER DIAGRAM

(GIRDER C SHOWN)

VERTICAL OFFSETS AT BEARING POINTS

POINT	BEARING POINT			
	PIER 1	PIER 2	PIER 3	PIER 4
GIRDER A	3'-9 3/8"	6'-1 13/16"	7'-0 5/8"	4'-0 3/8"
GIRDER B	3'-8 1/16"	5'-11 3/4"	6'-10 7/16"	4'-2 3/4"
GIRDER C	3'-6 13/16"	5'-9 5/8"	6'-8 1/4"	4'-4 5/16"
GIRDER D	3'-5 1/2"	5'-7 9/16"	6'-6 1/16"	4'-5 1/4"
GIRDER E	3'-4 5/16"	5'-5 5/8"	6'-4 1/16"	4'-5 3/4"

NOTES:

1. NEGATIVE VALUES FOR DEFLECTIONS INDICATE DEFLECTIONS ABOVE CHORD LINE.
2. DEFLECTIONS AND ADJUSTMENT FOR VERTICAL CURVES ARE GIVEN TO THE NEAREST 1/16th INCH.
3. FOR CAMBER AND DEFLECTIONS, SPANS 2 THRU 5, SEE SHEETS 26/41 AND 27/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BTA	BTA	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/1452	

CAMBER AND DEFLECTIONS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

25/41

793/846

CAMBER AND DEFLECTIONS

GIRDER A

POINT	℄ PIER 1	SPAN 2 0.1	0.2	F.S. 1	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2	SPAN 3 0.1	F.S. 2	0.2	0.3	0.4	0.5	0.6	F.S. 3	0.7	0.8	0.9	℄ PIER 3
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/16"	1/16"	1/16"	0	0	0	0	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	0	-1/16"	-1/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	-1/16"	0	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/8"	5/16"	3/8"	9/16"	5/8"	1/2"	5/16"	5/16"	1/8"	-1/16"	-1/8"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	13/16"	17/16"	1 15/16"	1 15/16"	2 3/16"	2 3/16"	2 1/16"	1 15/16"	1 7/16"	3/4"	0	1 7/16"	2 1/16"	2 3/8"	3 1/8"	3 5/8"	3 3/4"	3 5/8"	3 3/4"	3 1/8"	2 3/8"	1 5/16"	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	-1/16"	0	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/16"	0	-1/16"	-1/16"	0
TOTAL CAMBER	0	3/4"	1 3/8"	2"	2"	2 3/8"	2 7/16"	2 5/16"	2 1/16"	1 1/2"	1 1/16"	0	1 1/16"	2 1/2"	2 15/16"	4"	4 9/16"	4 9/16"	4 1/8"	4 1/8"	3 1/4"	2 1/4"	1 1/16"	0

GIRDER B

POINT	℄ PIER 1	SPAN 2 0.1	0.2	F.S. 1	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2	SPAN 3 0.1	F.S. 2	0.2	0.3	0.4	0.5	0.6	F.S. 3	0.7	0.8	0.9	℄ PIER 3
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	1/16"	1/16"	0	0	0	0	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	0	0	-1/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	-1/16"	-1/16"	0	0	1/16"	1/8"	1/8"	1/16"	0	0	0	1/8"	1/4"	5/16"	1/2"	9/16"	1/2"	3/8"	5/16"	1/8"	-1/16"	-1/8"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 5/16"	1 11/16"	1 13/16"	2 1/16"	2 1/16"	1 15/16"	1 11/16"	1 5/16"	3/4"	0	1 5/16"	1 15/16"	2 1/4"	3"	3 3/8"	3 5/8"	3 1/2"	3 1/2"	3"	2 1/4"	1 3/16"	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	-1/16"	-1/16"	0	0	1/16"	1/8"	1/8"	1/16"	0	0	0	1/16"	1/16"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0	-1/16"	0
TOTAL CAMBER	0	9/16"	1 1/4"	1 11/16"	1 13/16"	2 3/16"	2 5/16"	2 1/8"	1 13/16"	1 3/8"	1 1/16"	0	1 9/16"	2 3/8"	2 13/16"	3 13/16"	4 5/16"	4 7/16"	4 1/16"	4"	3 3/16"	2 3/16"	1"	0

GIRDER C

POINT	℄ PIER 1	SPAN 2 0.1	0.2	F.S. 1	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2	SPAN 3 0.1	F.S. 2	0.2	0.3	0.4	0.5	0.6	F.S. 3	0.7	0.8	0.9	℄ PIER 3
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	0	0	-1/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	-1/16"	-1/16"	0	0	1/16"	1/16"	1/16"	1/16"	0	0	0	1/8"	1/4"	5/16"	1/2"	9/16"	9/16"	3/8"	3/8"	3/16"	0	-1/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	5/8"	1 3/16"	1 11/16"	1 11/16"	1 15/16"	2 1/16"	1 15/16"	1 11/16"	1 5/16"	3/4"	0	1 3/16"	1 15/16"	2 3/16"	2 3/4"	3 1/4"	3 3/8"	3 1/4"	3 1/4"	2 3/4"	2 3/16"	1 1/16"	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	-1/16"	-1/16"	0	0	1/16"	1/16"	1/16"	1/16"	0	0	0	1/16"	1/16"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0	0	0
TOTAL CAMBER	0	7/16"	1 1/16"	1 5/8"	1 5/8"	2 1/16"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	1 1/16"	0	1 7/16"	2 5/16"	2 11/16"	3 9/16"	4 3/16"	4 1/4"	3 7/8"	3 13/16"	3"	2 1/8"	1 5/16"	0

GIRDER D

POINT	℄ PIER 1	SPAN 2 0.1	0.2	F.S. 1	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2	SPAN 3 0.1	F.S. 2	0.2	0.3	0.4	0.5	0.6	F.S. 3	0.7	0.8	0.9	℄ PIER 3
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	1/16"	0	0	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	-1/16"	-1/16"	-1/16"	-1/16"	0	1/16"	1/16"	1/16"	0	0	0	1/8"	1/4"	5/16"	1/2"	5/8"	9/16"	7/16"	3/8"	3/16"	0	-1/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 5/16"	1 9/16"	1 11/16"	1 15/16"	1 15/16"	1 13/16"	1 11/16"	1 3/16"	3/4"	0	1 3/16"	1 13/16"	2 1/16"	2 3/4"	3 1/8"	3 1/8"	3 1/8"	3"	2 3/4"	2 1/16"	1 1/16"	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/16"	1/16"	1/16"	1/16"	0	-1/16"	-1/16"	-1/16"	0	0	0	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0	0	0
TOTAL CAMBER	0	1 1/16"	1 5/16"	1 9/16"	1 11/16"	1 15/16"	1 15/16"	1 13/16"	1 11/16"	1 3/16"	1 1/16"	0	1 7/16"	2 1/4"	2 9/16"	3 9/16"	4 1/16"	4"	3 3/4"	3 5/8"	3 1/16"	2 1/16"	1 5/16"	0

GIRDER E

POINT	℄ PIER 1	SPAN 2 0.1	0.2	F.S. 1	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2	SPAN 3 0.1	F.S. 2	0.2	0.3	0.4	0.5	0.6	F.S. 3	0.7	0.8	0.9	℄ PIER 3
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	0	0	0	0	0	0	0	1/16"	1/16"	1/16"	1/8"	3/16"	1/8"	1/8"	1/8"	1/16"	0	0	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	-1/8"	-1/8"	-1/16"	-1/16"	0	0	0	0	0	0	0	1/8"	5/16"	3/8"	9/16"	5/8"	5/8"	7/16"	7/16"	1/4"	1/16"	-1/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	3/4"	1 1/16"	1 9/16"	1 9/16"	1 13/16"	1 13/16"	1 11/16"	1 9/16"	1 3/16"	5/8"	0	1 1/16"	1 11/16"	1 15/16"	2 1/2"	2 7/8"	3"	3"	2 3/4"	2 1/2"	1 15/16"	1 1/16"	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/16"	1/16"	1/16"	1/16"	0	0	0	0	0	0	0	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0	0	0
TOTAL CAMBER	0	1 1/16"	1"	1 1/2"	1 1/2"	1 13/16"	1 13/16"	1 11/16"	1 9/16"	1 3/16"	9/16"	0	1 5/16"	2 1/8"	2 1/2"	3 3/8"	3 7/8"	3 15/16"	3 11/16"	3 7/16"	2 7/8"	2"	1"	0

NOTES:

1. FOR CAMBER AND DEFLECTIONS, SPANS 1 AND SPANS 4 THRU 5, SEE SHEETS 25|41 AND 27|41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BTA	BTA	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

CAMBER AND DEFLECTIONS - SPANS 2 & 3
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

26 | 41

794
846

CAMBER AND DEFLECTIONS

GIRDER A		SPAN 4												SPAN 5									
POINT	℄ PIER 3	0.1	0.2	F.S. 4	0.3	0.4	0.5	0.6	F.S. 5	0.7	0.8	0.9	℄ PIER 4	0.1	0.2	F.S. 6	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	3/16"	1/2"	9/16"	3/4"	7/8"	7/8"	3/4"	9/16"	1/2"	3/16"	1/16"	0	1/16"	1/8"	1/4"	1/4"	3/8"	7/16"	7/16"	3/8"	5/16"	3/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	9/16"	1 7/16"	1 3/4"	2 5/16"	2 3/4"	2 3/4"	2 3/16"	1 11/16"	1 3/8"	9/16"	1/16"	0	3/16"	9/16"	13/16"	15/16"	1 5/16"	1 9/16"	1 9/16"	1 7/16"	1 1/16"	9/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	2 3/4"	4 13/16"	5 3/16"	6 1/4"	7 1/16"	7 7/16"	7 3/16"	7 15/16"	6 1/4"	4 13/16"	2 5/8"	0	1/4"	1/8"	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	5/16"	3/8"	1/2"	5/8"	5/8"	1/2"	3/8"	5/16"	1/8"	0	0	1/16"	1/8"	1/8"	3/16"	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	0
TOTAL CAMBER	0	3 11/16"	7 1/16"	7 7/8"	9 13/16"	11 3/8"	11 11/16"	10 5/8"	10 9/16"	8 3/8"	5 11/16"	2 3/4"	0	9/16"	15/16"	1 3/16"	1 7/16"	1 15/16"	2 1/4"	2 5/16"	2 1/16"	1 9/16"	7/8"	0

GIRDER B		SPAN 4												SPAN 5									
POINT	℄ PIER 3	0.1	0.2	F.S. 4	0.3	0.4	0.5	0.6	F.S. 5	0.7	0.8	0.9	℄ PIER 4	0.1	0.2	F.S. 6	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	3/16"	3/8"	1/2"	5/8"	13/16"	13/16"	3/4"	5/8"	1/2"	5/16"	1/16"	0	0	1/16"	3/16"	3/16"	5/16"	3/8"	3/8"	3/8"	1/4"	1/8"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/2"	1 1/4"	1 9/16"	2"	2 1/2"	2 9/16"	2 1/4"	1 13/16"	1 9/16"	13/16"	1/4"	0	1/16"	5/16"	5/8"	11/16"	1"	1 1/4"	1 5/16"	1 1/4"	1"	9/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	2 3/8"	4 5/16"	4 13/16"	5 5/8"	6 1/2"	6 5/8"	6 3/8"	6 3/4"	5 5/8"	4 5/16"	2 3/8"	0	1/2"	5/8"	5/8"	5/8"	1/8"	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/8"	1/4"	5/16"	7/16"	1/2"	1/2"	7/16"	3/8"	5/16"	3/16"	1/16"	0	0	1/16"	3/16"	3/16"	1/4"	3/8"	3/8"	3/8"	1/4"	1/8"	0
TOTAL CAMBER	0	3 1/8"	6 1/4"	7 3/16"	8 11/16"	10 5/16"	10 9/16"	9 3/4"	9 1/2"	8 1/16"	5 9/16"	2 3/4"	0	5/8"	1 1/8"	1 9/16"	1 5/8"	1 11/16"	1 15/16"	2 1/8"	1 15/16"	1 1/2"	13/16"	0

GIRDER C		SPAN 4												SPAN 5									
POINT	℄ PIER 3	0.1	0.2	F.S. 4	0.3	0.4	0.5	0.6	F.S. 5	0.7	0.8	0.9	℄ PIER 4	0.1	0.2	0.3	F.S. 6	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/8"	1/2"	5/8"	3/4"	13/16"	3/4"	5/8"	9/16"	5/16"	1/8"	0	0	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	3/8"	1/4"	1/8"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	7/16"	1 1/8"	1 1/2"	1 7/8"	2 3/8"	2 1/2"	2 1/4"	1 7/8"	1 11/16"	15/16"	5/16"	0	0	1/4"	9/16"	11/16"	15/16"	1 3/16"	1 5/16"	1 1/4"	15/16"	1/2"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	2 1/16"	3 13/16"	4 5/16"	4 15/16"	5 3/4"	5 7/8"	5 3/4"	5 5/8"	5 1/16"	3 13/16"	2 3/16"	0	3/4"	1 1/16"	1 3/16"	1 1/16"	1 1/16"	1/2"	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/16"	3/16"	1/4"	5/16"	7/16"	7/16"	3/8"	5/16"	5/16"	3/16"	1/16"	0	0	1/16"	3/16"	1/4"	5/16"	3/8"	7/16"	7/16"	5/16"	3/16"	0
TOTAL CAMBER	0	2 11/16"	5 9/16"	6 9/16"	7 3/4"	9 5/16"	9 11/16"	9 1/8"	8 7/16"	7 9/16"	5 5/16"	2 11/16"	0	3/4"	1 7/16"	2 1/8"	2 3/16"	2 9/16"	2 3/8"	2 1/8"	2"	1 9/16"	7/8"	0

GIRDER D		SPAN 4												SPAN 5									
POINT	℄ PIER 3	0.1	0.2	F.S. 4	0.3	0.4	0.5	0.6	F.S. 5	0.7	0.8	0.9	℄ PIER 4	0.1	0.2	0.3	F.S. 6	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/8"	1/2"	5/8"	3/4"	13/16"	3/4"	11/16"	5/8"	3/8"	1/8"	0	0	0	1/8"	1/4"	1/4"	3/8"	3/8"	3/8"	5/16"	3/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	7/16"	1 1/8"	1 1/2"	1 7/8"	2 3/8"	2 5/8"	2 3/8"	2"	1 13/16"	1 1/8"	7/16"	0	-1/16"	1/8"	1/2"	13/16"	15/16"	1 1/4"	1 7/16"	1 3/8"	1 1/16"	9/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	1 15/16"	3 1/2"	4 3/16"	4 9/16"	5 1/4"	5 3/8"	5 3/16"	4 15/16"	4 9/16"	3 1/2"	1 15/16"	0	13/16"	1 9/16"	1 11/16"	1 13/16"	1 11/16"	1 7/16"	13/16"	0	0	0	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/16"	3/16"	3/16"	1/4"	3/8"	3/8"	5/16"	5/16"	1/4"	1/8"	1/16"	0	0	1/16"	3/16"	5/16"	5/16"	7/16"	1/2"	1/2"	3/8"	3/16"	0
TOTAL CAMBER	0	2 9/16"	5 1/8"	6 3/8"	7 5/16"	8 13/16"	9 3/16"	8 5/8"	7 7/8"	7 1/4"	5 1/8"	2 9/16"	0	3/4"	1 3/4"	2 1/2"	3 1/8"	3 3/16"	3 1/2"	3 3/16"	2 1/4"	1 3/4"	15/16"	0

GIRDER E		SPAN 4												SPAN 5									
POINT	℄ PIER 3	0.1	0.2	F.S. 4	0.3	0.4	0.5	0.6	F.S. 5	0.7	0.8	0.9	℄ PIER 4	0.1	0.2	0.3	0.4	F.S. 6	0.5	0.6	0.7	0.8	0.9	℄ BRG. F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/8"	3/8"	1/2"	5/8"	13/16"	15/16"	7/8"	3/4"	11/16"	7/16"	3/16"	0	-1/16"	-1/16"	1/16"	1/4"	1/4"	3/8"	1/2"	1/2"	7/16"	1/4"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	1 1/16"	1 1/2"	1 7/8"	2 9/16"	2 7/8"	2 11/16"	2 5/16"	2 1/8"	1 5/16"	9/16"	0	-3/16"	-1/16"	5/16"	13/16"	15/16"	1 5/16"	1 11/16"	1 3/4"	1 7/16"	13/16"	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	1 11/16"	3 1/4"	3 13/16"	4 3/16"	4 13/16"	4 15/16"	4 13/16"	4 5/16"	4 3/16"	3 1/8"	1 13/16"	0	1 3/16"	1 15/16"	2 3/8"	2 1/2"	2 1/2"	2 3/8"	1 13/16"	1 1/16"	0	0	0
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTMENT REQUIRED FOR HEAT CURVING	0	1/16"	1/8"	3/16"	3/16"	5/16"	5/16"	5/16"	1/4"	1/4"	1/8"	1/16"	0	-1/16"	0	1/16"	1/4"	1/4"	7/16"	9/16"	9/16"	7/16"	1/4"	0
TOTAL CAMBER	0	2 3/16"	4 3/4"	6"	6 7/8"	8 7/16"	9"	8 5/8"	7 5/8"	7 1/4"	5 1/16"	2 5/8"	0	7/8"	1 13/16"	2 7/8"	3 13/16"	4"	4 9/16"	4 1/2"	3 7/8"	2 5/16"	1 5/16"	0

NOTES:

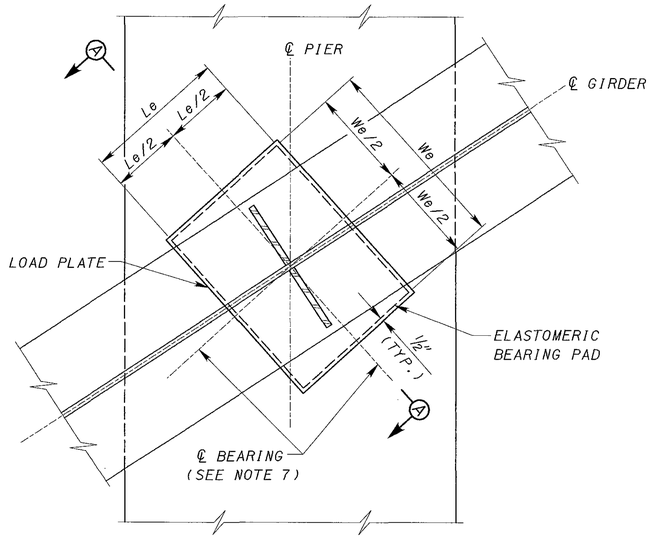
1. FOR CAMBER AND DEFLECTIONS, SPANS 1 AND SPANS 2 THRU 3, SEE SHEETS 25/41 AND 26/41.

DESIGN AGENCY
TranSystems Corporation

DESIGNED BTA | CHECKED NFF | DRAWN BTA | REVISED | REVIEWED RER | DATE 7/19/05 | STRUCTURE FILE NUMBER 2511452

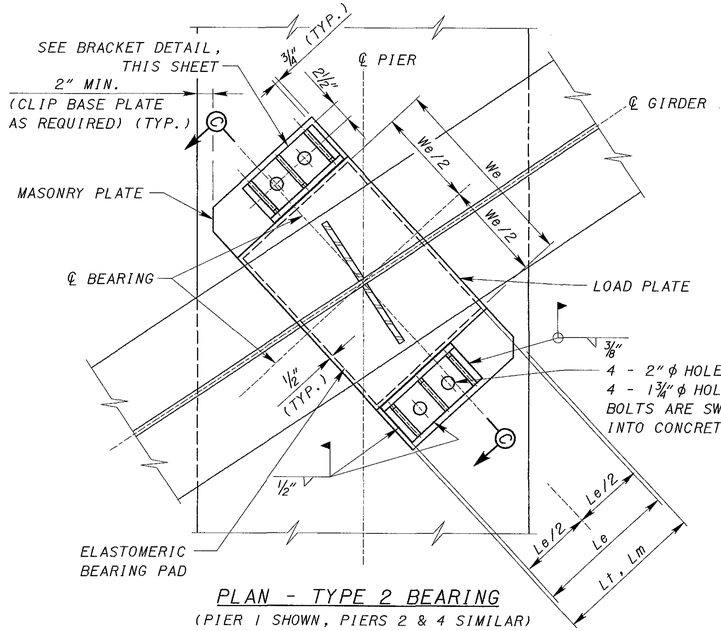
CAMBER AND DEFLECTIONS - SPANS 4 & 5
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320



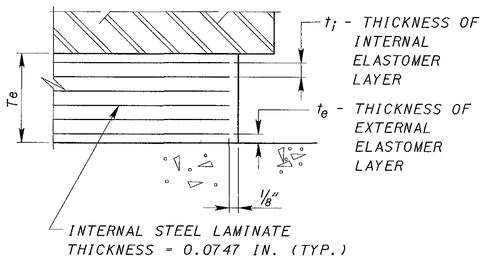
PLAN - TYPE 1 BEARING

(PIER 1 SHOWN, PIERS 2 & 4 SIMILAR)



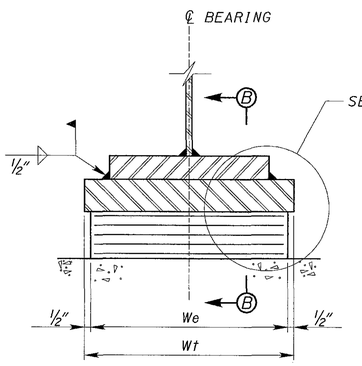
PLAN - TYPE 2 BEARING

(PIER 1 SHOWN, PIERS 2 & 4 SIMILAR)

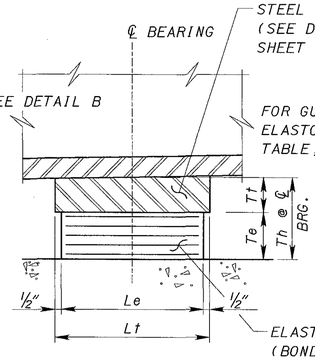


DETAIL B

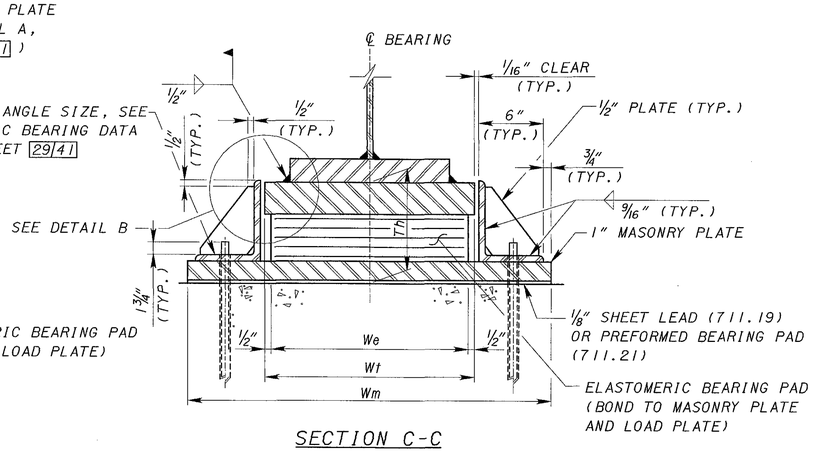
(MASONRY PLATE NOT SHOWN FOR CLARITY)



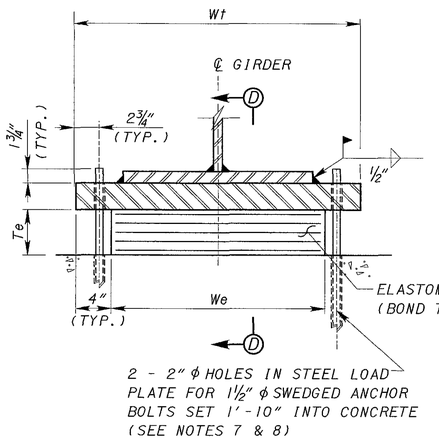
SECTION A-A



SECTION B-B

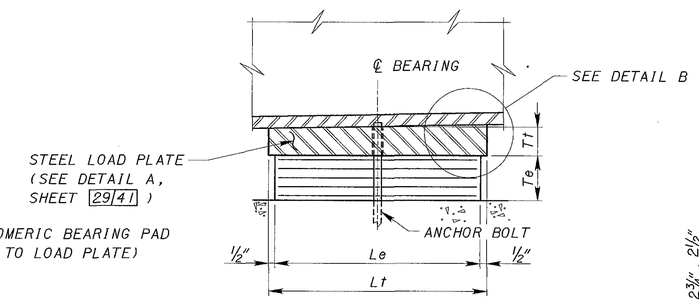


SECTION C-C

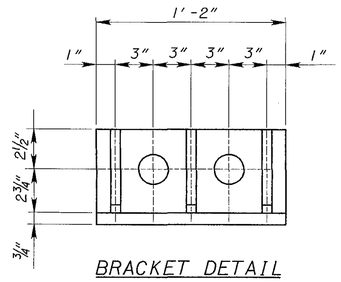


ELEVATION - TYPE 3 BEARING

(PIER 3)



SECTION D-D



BRACKET DETAIL

NOTES:

1. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

2. THE STEEL LOAD PLATES AND STEEL MASONRY PLATES (IF APPLICABLE) SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER. CONTROL WELDING OF LOAD PLATE TO THE SUPERSTRUCTURE SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F ± 10°F, RAISE THE GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDERFORMED SHAPE AT 60°F ± 10°F.

4. BASIS OF PAYMENT - THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS LABOR, TESTING, PAINTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).

5. BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD TO COMPENSATE FOR THE VERTICAL DEFORMATIONS OF THE BEARINGS, AS FOLLOWS:

SEAT ADJUSTMENT (in.)					
GIRDER	A	B	C	D	E
PIER 1	⅛	3/16	⅛	3/16	⅛
PIER 2	–	⅛	⅛	⅛	–
PIER 3	–	–	–	–	–
PIER 4	3/16	–	–	–	3/16

6. AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.

7. FOR ORIENTATION AND DIRECTION OF BEARINGS AND ANCHOR ROD PLACEMENT DETAILS, SEE ABUTMENT DETAIL SHEETS 7/41 & 10/41 AND PIER DETAIL SHEETS 13/41 THRU 20/21.

8. ANCHOR RODS SHALL BE INSTALLED PER ITEM 510 AND GALVANIZED PER ITEM 711.02. INCLUDE DOWEL HOLES AND ANCHOR RODS WITH ITEM 516 FOR PAYMENT.

9. FOR STEEL LOAD PLATE DATA, SEE SHEET 29/41.

10. FOR ADDITIONAL NOTES, SEE GENERAL NOTES SHEET 3/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
JDH	CAG	NFF	RER	7/19/05

REVISED

STRUCTURE FILE NUMBER 25/1452

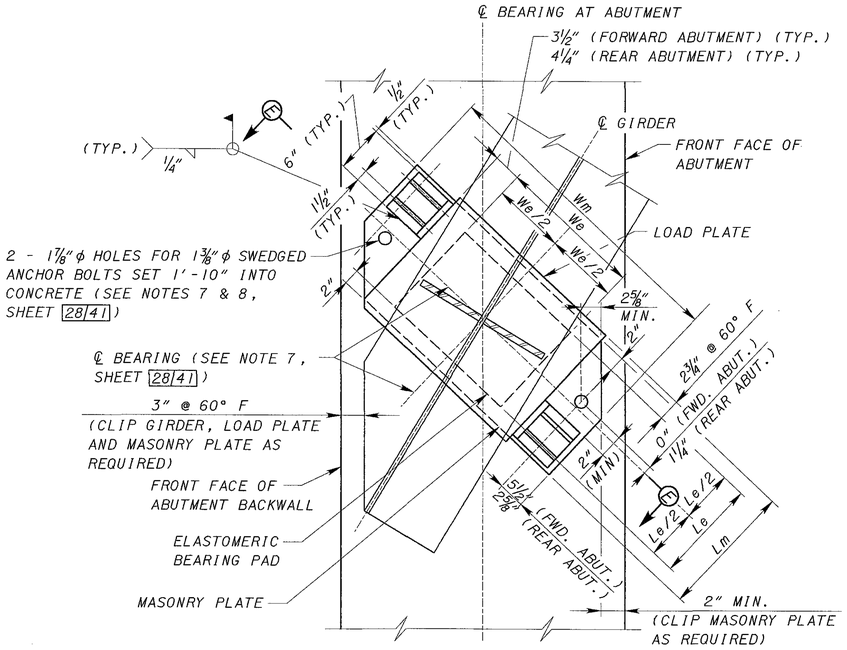
BEARING DETAILS

BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

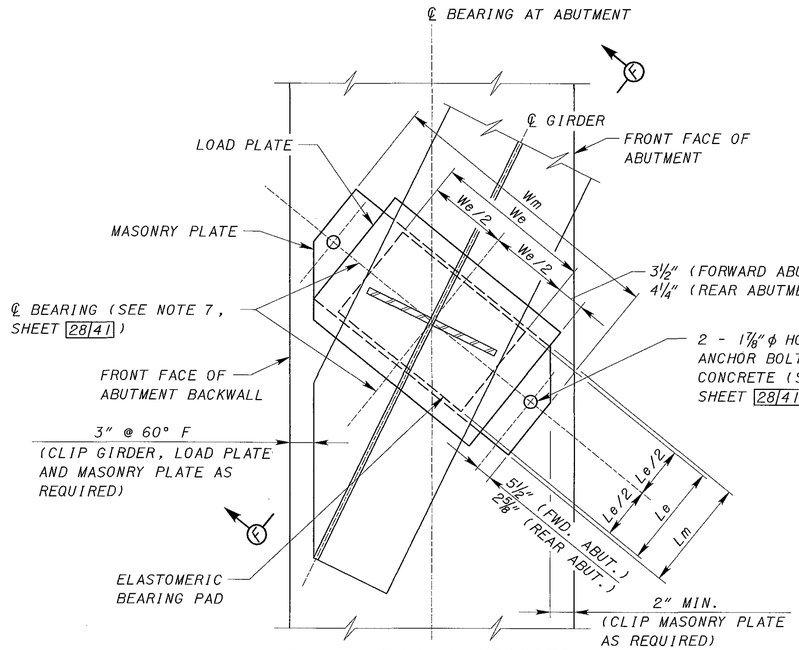
28/41

796/846



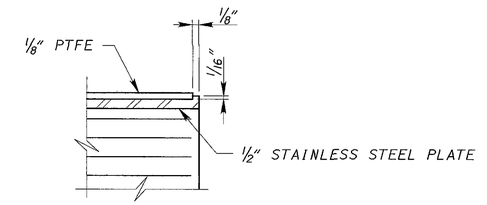
PLAN - TYPE 4 BEARING

(FORWARD ABUTMENT SHOWN, REAR ABUTMENT SIMILAR)

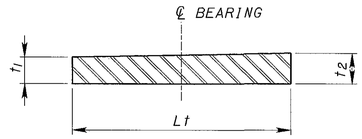


PLAN - TYPE 5 BEARING

(FORWARD ABUTMENT SHOWN, REAR ABUTMENT SIMILAR)



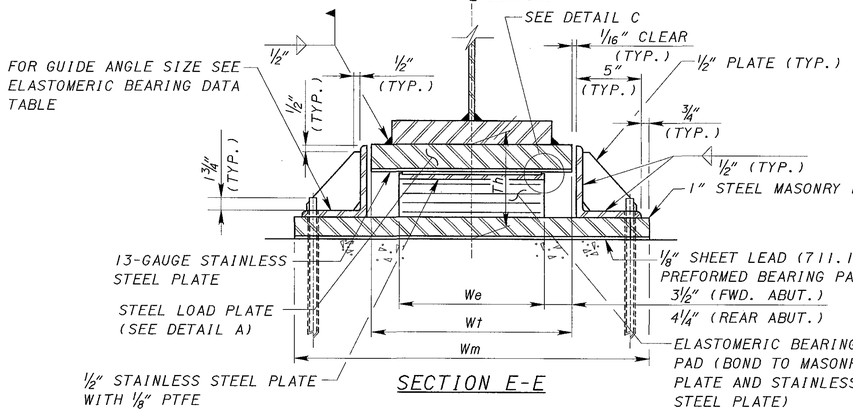
DETAIL C



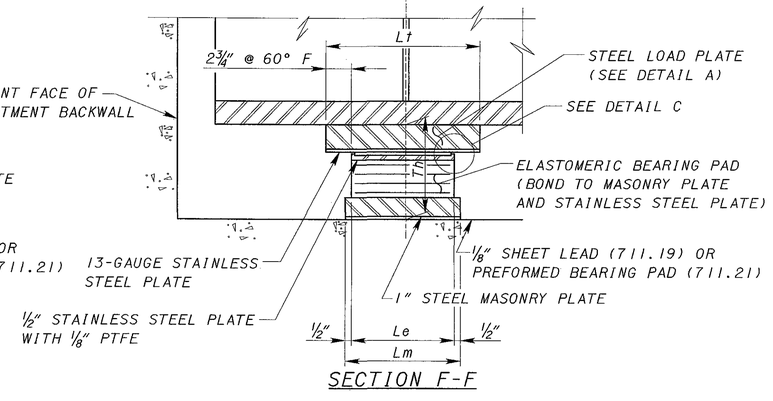
DETAIL A

(STEEL LOAD PLATE)

STEEL MASONRY PLATE DATA			
LOCATION	GIRDER	Wm (in.)	Lm (in.)
REAR ABUTMENT	A & E	38.375	11.5
	B,C & D	38.375	14.5
PIER 1	A & E	-	-
	B,C & D	39.625	19
PIER 2	A & E	-	-
	B,C & D	40.625	18
PIER 3	A - E	-	-
PIER 4	A	-	-
	B	46.125	24
	C	46.125	24
	D	46.125	24
	E	-	-
FORWARD ABUTMENT	A & E	41.75	14
	B,C & D	41.75	17



SECTION E-E



SECTION F-F

STEEL LOAD PLATE DATA					
LOCATION	GIRDER	Wt (in.)	Lt (in.)	t_1 (in.)	t_2 (in.)
REAR ABUTMENT	A & E	25.5	16	1.50	1.96
	B,C & D	25.5	16	1.50	1.96
PIER 1	A & E	26	19	2.00	2.34
	B,C & D	26	19	2.00	2.34
PIER 2	A & E	27	18	2.00	2.00
	B,C & D	27	18	2.00	2.00
PIER 3	A - E	35	22	2.34	2.00
PIER 4	A	30	19	2.93	2.00
	B	36.5	24	3.07	2.00
	C	36.5	24	3.00	2.00
	D	36.5	24	2.93	2.00
	E	30	19	2.71	2.00
FORWARD ABUTMENT	A & E	27	18.5	2.90	2.00
	B,C & D	27	18.5	2.90	2.00

NOTE: t_2 IS ALWAYS UPSTATION OF t_1

ELASTOMERIC BEARING DATA																
LOCATION	GIRDER	TYPE	DL (KIP)	LL (KIP) NO IMPACT	TOTAL LOAD (DL+LL)	Le (in.)	We (in.)	t_i (in.)	t_e (in.)	NO. OF t_i's	NO. OF t_e's	NO. INTERNAL LAMINATES	Te (in.)	Tt* (in.)	Th* (in.)	GUIDE ANGLE **
REAR ABUTMENT	A & E	5	78	80	157.9	10.5	17	0.34	0.23	6	2	7	3.023	1.73	6.58	-
	B,C & D	4													6.58	5"x5"x3/4"
PIER 1	A & E	1	208	123	331	18	25	0.53	0.36	8	2	9	5.632	2.17	7.78	-
	B,C & D	2	239	171	410										8.90	7"x6"x3/4"
PIER 2	A & E	1	190	139	329	17	26	0.52	0.35	7	2	8	4.938	2.00	6.94	-
	B,C & D	2	224	180	404										8.06	6"x6"x3/4"
PIER 3	A - E	3	392	227	619	21	27	0.45	0.31	4	2	5	2.794	2.17	4.96	-
PIER 4	A	1	258	168	426	18	25	0.51	0.35	8	2	9	5.452	2.42	7.87	-
	B	2	412	244	656	23	31.5	0.53	0.37	8	2	9	5.652	2.54	9.27	7"x6"x3/4"
	C	2	471	244	715	23	31.5	0.53	0.37	8	2	9	5.652	2.50	9.24	7"x6"x3/4"
	D	2	450	266	716	23	31.5	0.53	0.37	8	2	9	5.652	2.47	9.21	7"x6"x3/4"
	E	1	198	173	371	18	25	0.51	0.35	4	2	5	5.452	2.32	7.77	-
FORWARD ABUTMENT	A & E	5	126	107	233	13	20	0.40	0.28	6	2	7	3.483	2.45	7.76	-
	B,C & D	4													7.76	5"x6"x3/4"

* - @ ℄ BEARING

** - FOR PIERS 1 & 4 AND REAR ABUTMENT, CUT 1" OFF OF STANDARD LEG TO PROVIDE REQUIRED LEG DIMENSION.

NOTES:

1. FOR BEARING NOTES, SEE SHEET 28/41.

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 58 PUBLIC SQUARE, SUITE 1850, CLEVELAND, OHIO 44113-1901

DATE: 7/19/05

REVIEWED: AER

STRUCTURE FILE NUMBER: 25/1452

DRAWN: CAG

REVISED:

DESIGNED: JDH

CHECKED: NFF

BEARING DETAILS

BRIDGE NO. FRA-270-2583A

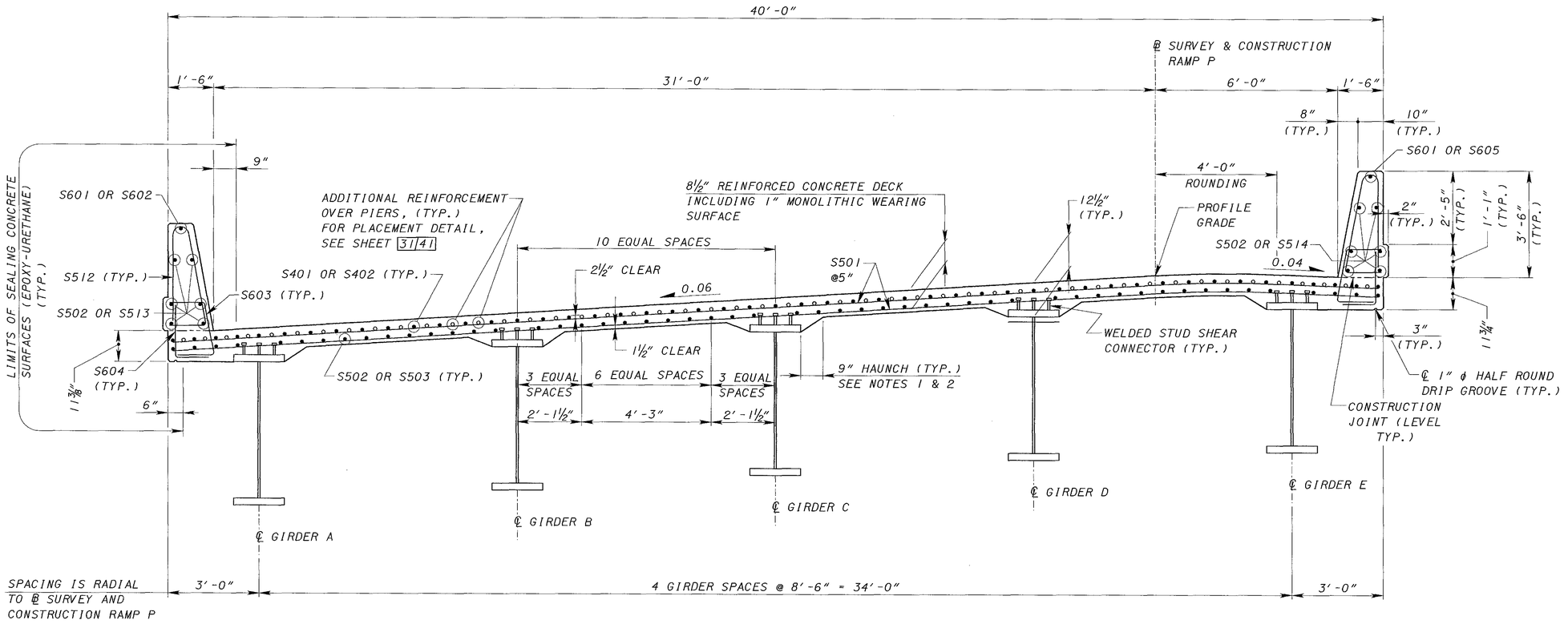
RAMP P OVER IR-71

FRA-270-24.47

PID 77320

29/41

797/846



TRANSVERSE SECTION

NOTES:

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 4 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ± 3 INCHES.
2. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.
3. THE TRANSVERSE DECK REINFORCING BARS SHALL BE FIELD BENT TO CONFORM TO THE ROADWAY CROWN. FIELD BENDING SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE CLASS QSC2, SUPERSTRUCTURE FOR PAYMENT.
4. FOR PARAPET DETAILS, SEE SHEET 32/41.
5. FOR DECK PLAN SEE SHEET 31/41.
6. FOR SCREED ELEVATIONS, SEE SHEETS 33/41 THRU 35/41.
7. FOR STRIP SEAL EXPANSION JOINT DETAILS, SEE SHEET 36/41.
8. FOR REINFORCING SCHEDULE, SEE SHEET 41/41.

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 55 E. MONROE, SUITE 1850, CHICAGO, ILLINOIS 60603

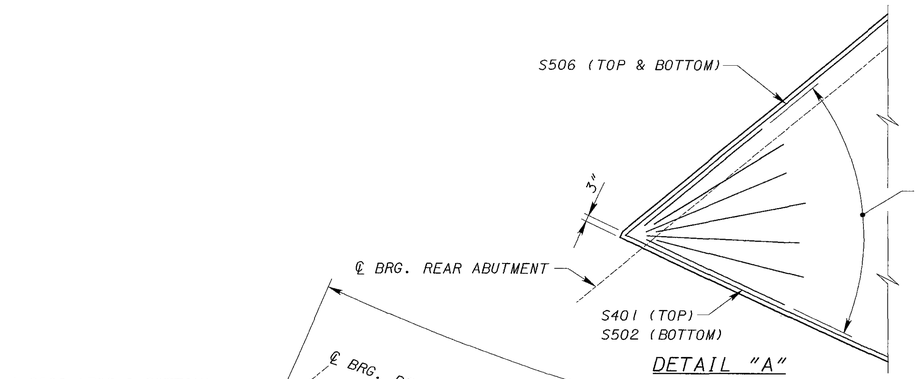
DESIGNED	DRAWN	REVIEWED	DATE
BTA	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251452	

TRANSVERSE SECTION
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

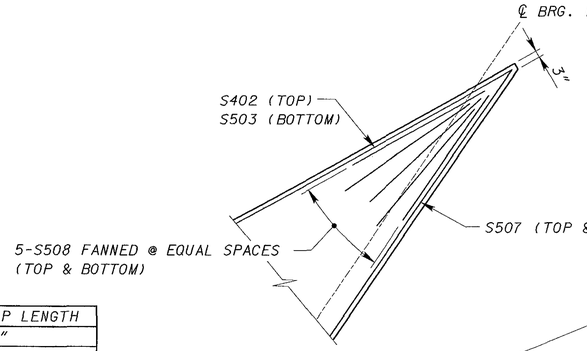
FRA-270-24.47
PID 77320

30/41

798/846

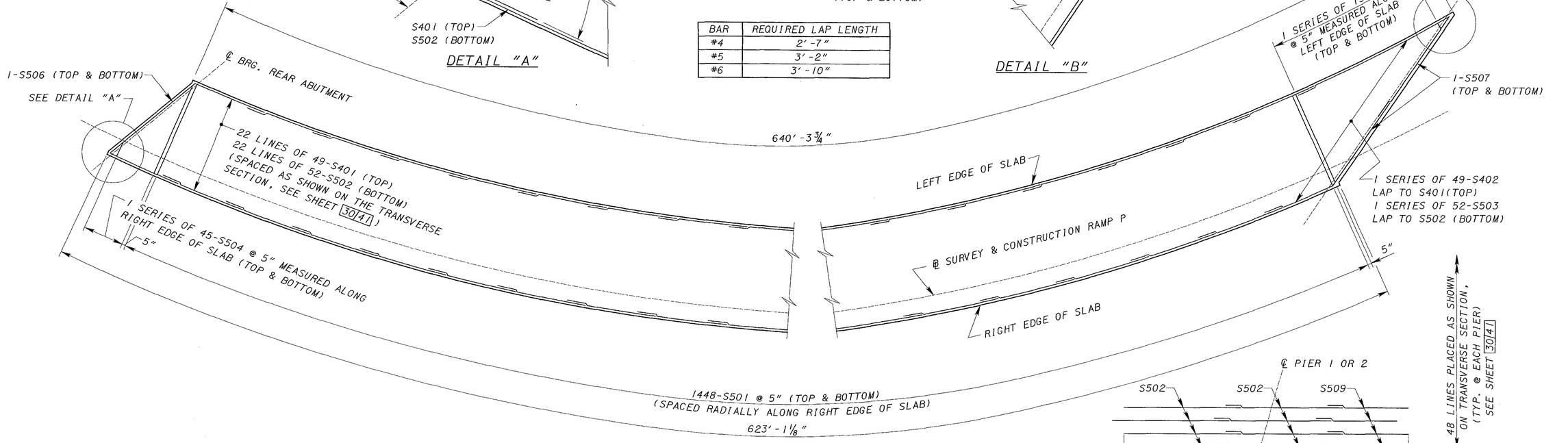


DETAIL "A"

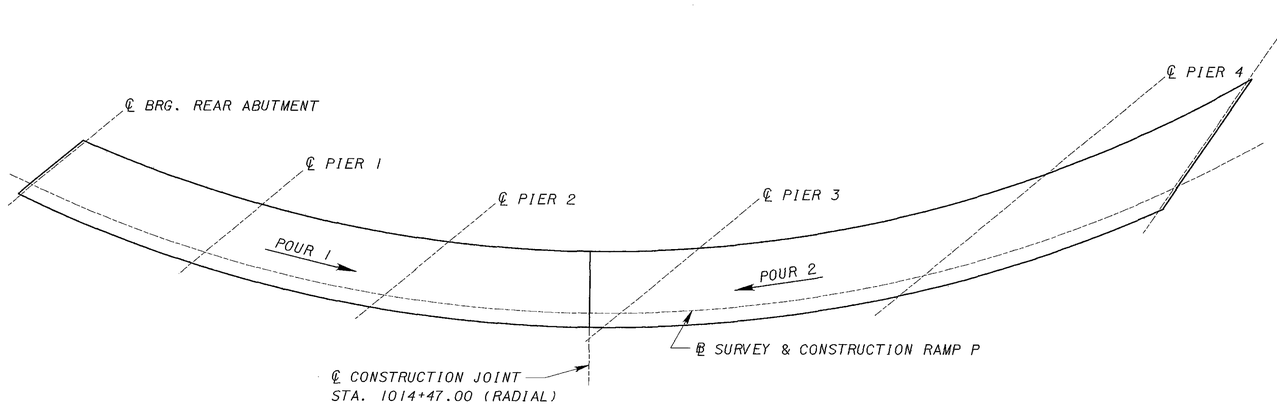


DETAIL "B"

BAR	REQUIRED LAP LENGTH
#4	2'-7"
#5	3'-2"
#6	3'-10"



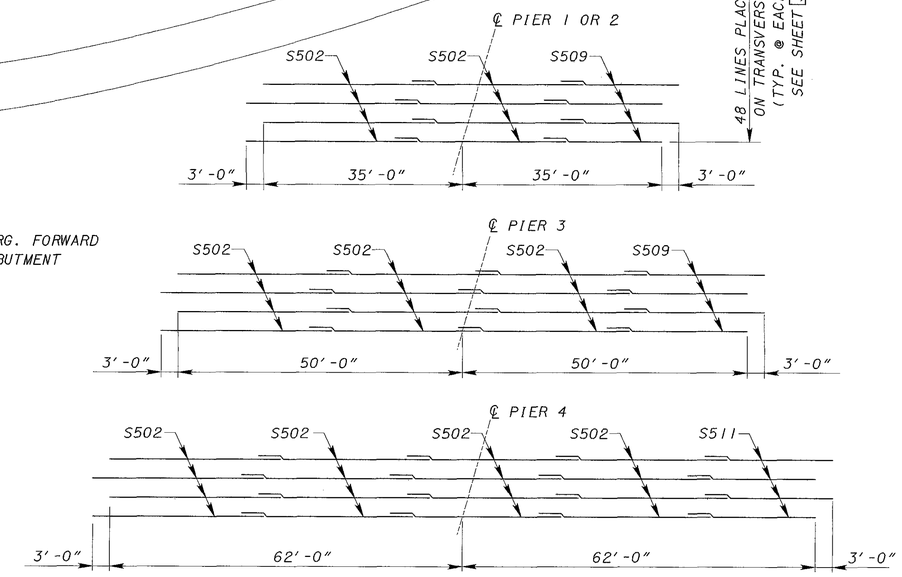
SLAB PLAN



DECK POURING SEQUENCE

POURING OF THE CONCRETE DECK SHALL PROCEED AS FOLLOWS:

1. START POUR 1 AT THE REAR ABUTMENT AND PROCEED TO ℄ CONSTRUCTION JOINT
2. START POUR 2 AT THE FORWARD ABUTMENT AND PROCEED TO ℄ CONSTRUCTION JOINT



ADDITIONAL REINFORCEMENT OVER PIERS

NOTES:

1. FOR TRANSVERE SECTION, SEE SHEET 30/41.
2. FOR PARAPET DETAILS, SEE SHEET 32/41.
3. FOR REINFORCING STEEL LIST, SEE SHEET 41/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1950

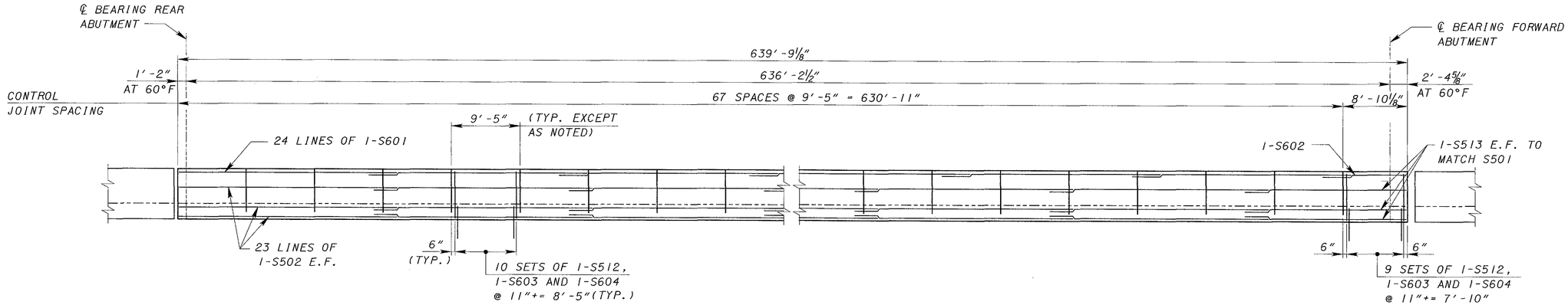
DESIGNED	DRAWN	REVIEWED	DATE
BTA	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		25/1452	

SLAB PLAN
BRIDGE NO. FRA-270-2583A N
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

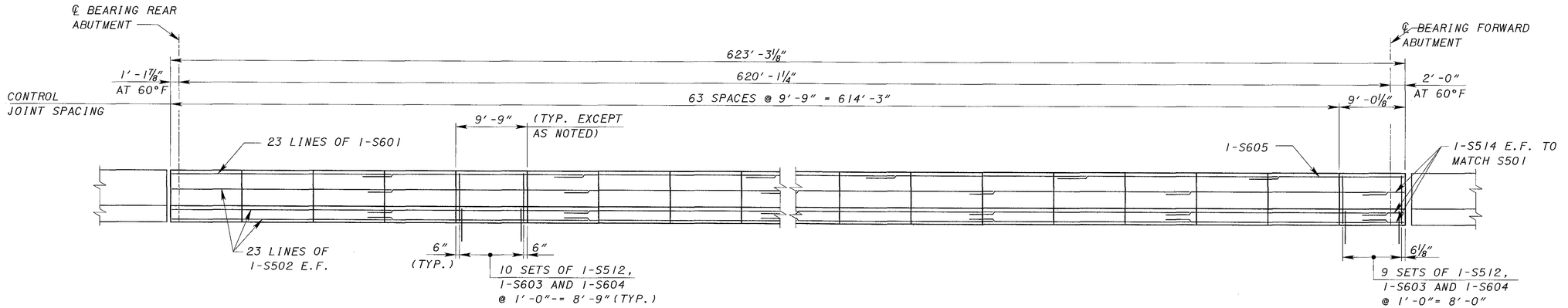
31/41

799
846



ELEVATION OF LEFT PARAPET

(ALL DIMENSIONS ARE MEASURED ALONG GUTTER LINE)



ELEVATION OF RIGHT PARAPET

(ALL DIMENSIONS ARE MEASURED ALONG GUTTER LINE)

LEGEND

E.F. = EACH FACE
TYP. = TYPICAL

NOTES:

1. FOR SLAB PLAN, SEE SHEET 31/41.
2. FOR REINFORCING STEEL LIST, SEE SHEET 41/41.
3. FOR ADDITIONAL PARAPET DETAILS AND NOTES, SEE ODOT DRAWING SBR-1-99.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED BTA
DRAWN RCK
CHECKED NFF
REVISED
REVISED RER
DATE 7/19/05
STRUCTURE FILE NUMBER 251452

PARAPET DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

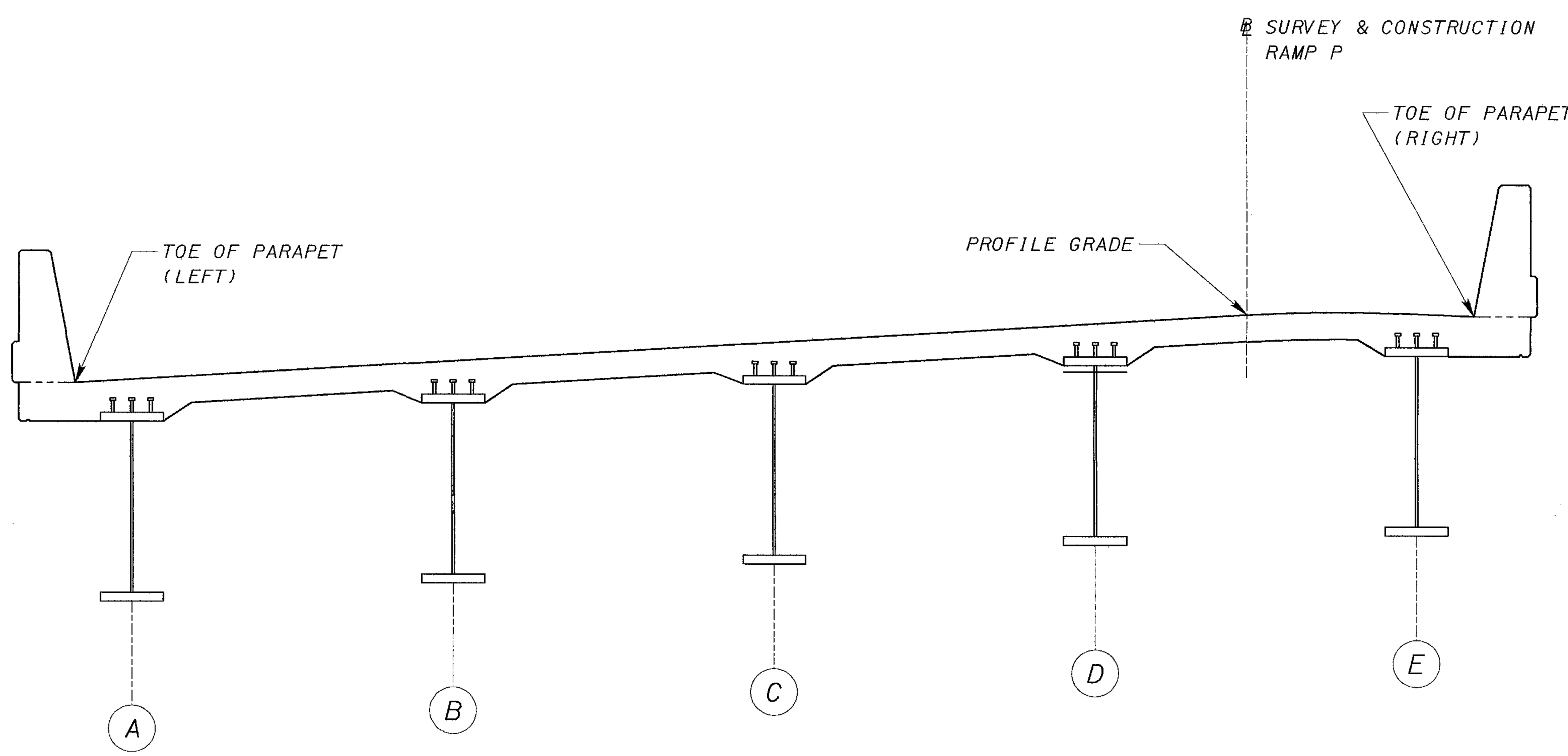
FRA-270-24.47
PID 77320

32/41

800
846

SCREED ELEVATIONS - SPAN 1

LOCATION		℄ BRG. REAR ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 1
TOE OF PARAPET (LEFT)	STATION	1011+91.39	1012+01.77	1012+12.15	1012+22.53	1012+32.91	1012+43.29	1012+53.66	1012+64.04	1012+74.42	1012+84.80	1012+95.18
	FINAL DECK ELEVATION	936.75	937.03	937.30	937.55	937.78	938.00	938.21	938.40	938.58	938.75	938.89
	SCREED ELEVATION	936.75	937.06	937.36	937.62	937.86	938.08	938.28	938.45	938.61	938.76	938.89
GIRDER A	STATION	1011+89.79	1012+00.11	1012+10.43	1012+20.74	1012+31.06	1012+41.38	1012+51.70	1012+62.02	1012+72.33	1012+82.65	1012+92.97
	FINAL DECK ELEVATION	936.80	937.08	937.34	937.60	937.83	938.06	938.26	938.46	938.64	938.80	938.95
	SCREED ELEVATION	936.80	937.11	937.40	937.67	937.91	938.14	938.33	938.51	938.67	938.81	938.95
GIRDER B	STATION	1011+85.37	1011+95.52	1012+05.66	1012+15.81	1012+25.95	1012+36.10	1012+46.25	1012+56.39	1012+66.54	1012+76.68	1012+86.83
	FINAL DECK ELEVATION	937.19	937.47	937.73	937.99	938.23	938.45	938.67	938.86	939.05	939.22	939.38
	SCREED ELEVATION	937.19	937.50	937.79	938.07	938.31	938.53	938.74	938.91	939.08	939.23	939.38
GIRDER C	STATION	1011+81.06	1011+91.04	1012+01.02	1012+11.00	1012+20.98	1012+30.97	1012+40.95	1012+50.93	1012+60.91	1012+70.89	1012+80.87
	FINAL DECK ELEVATION	937.57	937.85	938.12	938.38	938.62	938.85	939.07	939.27	939.46	939.63	939.80
	SCREED ELEVATION	937.57	937.88	938.18	938.46	938.71	938.94	939.14	939.33	939.50	939.65	939.80
GIRDER D	STATION	1011+76.86	1011+86.68	1011+96.51	1012+06.33	1012+16.15	1012+25.98	1012+35.80	1012+45.62	1012+55.44	1012+65.27	1012+75.09
	FINAL DECK ELEVATION	937.96	938.24	938.51	938.77	939.02	939.25	939.47	939.67	939.87	940.05	940.21
	SCREED ELEVATION	937.96	938.27	938.57	938.85	939.11	939.34	939.55	939.73	939.91	940.07	940.21
PROFILE GRADE	STATION	1011+74.93	1011+84.68	1011+94.43	1012+04.18	1012+13.93	1012+23.68	1012+33.43	1012+43.18	1012+52.93	1012+62.68	1012+72.43
	FINAL DECK ELEVATION	938.14	938.43	938.70	938.96	939.20	939.43	939.66	939.86	940.06	940.24	940.41
	SCREED ELEVATION	938.14	938.46	938.76	939.04	939.29	939.52	939.74	939.92	940.10	940.26	940.41
GIRDER E	STATION	1011+72.78	1011+82.45	1011+92.12	1012+01.79	1012+11.46	1012+21.13	1012+30.80	1012+40.47	1012+50.14	1012+59.81	1012+69.48
	FINAL DECK ELEVATION	938.10	938.38	938.65	938.91	939.16	939.40	939.62	939.83	940.02	940.21	940.38
	SCREED ELEVATION	938.10	938.42	938.72	939.00	939.26	939.50	939.70	939.89	940.06	940.23	940.38
TOE OF PARAPET (RIGHT)	STATION	1011+71.37	1011+80.99	1011+90.60	1012+00.22	1012+09.83	1012+19.45	1012+29.07	1012+38.68	1012+48.30	1012+57.91	1012+67.53
	FINAL DECK ELEVATION	938.00	938.28	938.55	938.81	939.06	939.30	939.52	939.73	939.93	940.11	940.29
	SCREED ELEVATION	938.00	938.32	938.62	938.90	939.16	939.40	939.60	939.79	939.97	940.13	940.29



TYPICAL CROSS SECTION

NOTES:

1. SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTION.

2. FOR SCREED ELEVATIONS, SPANS 2 THRU 5, SEE SHEETS 34/41 AND 35/41.

DESIGN AGENCY: TRANSYSTEMS CORPORATION, 55 PUBLIC SQUARE, SUITE 1650, CLEVELAND, OHIO 44113-1901

DESIGNED BTA | CHECKED NFF | DRAWN BTA | REVISED | REVIEWED RER | DATE 7/19/05 | STRUCTURE FILE NUMBER 2511452

SCREED ELEVATIONS - SPAN 1
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

SCREED ELEVATIONS - SPAN 2

LOCATION		℄ PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 2
TOE OF PARAPET (LEFT)	STATION	1012+95.18	1013+05.70	1013+16.22	1013+26.74	1013+37.26	1013+47.79	1013+58.31	1013+68.83	1013+79.35	1013+89.87	1014+00.39
	FINAL DECK ELEVATION	938.89	939.03	939.15	939.26	939.35	939.43	939.49	939.54	939.57	939.59	939.59
	SCREED ELEVATION	938.89	939.03	939.15	939.26	939.36	939.44	939.50	939.55	939.57	939.59	939.59
GIRDER A	STATION	1012+92.97	1013+03.41	1013+13.86	1013+24.30	1013+34.74	1013+45.19	1013+55.63	1013+66.07	1013+76.51	1013+86.96	1013+97.40
	FINAL DECK ELEVATION	938.95	939.09	939.22	939.33	939.42	939.50	939.56	939.62	939.65	939.67	939.68
	SCREED ELEVATION	938.95	939.09	939.22	939.33	939.43	939.51	939.57	939.63	939.65	939.67	939.68
GIRDER B	STATION	1012+86.83	1012+97.06	1013+07.29	1013+17.53	1013+27.76	1013+37.99	1013+48.22	1013+58.45	1013+68.69	1013+78.92	1013+89.15
	FINAL DECK ELEVATION	939.38	939.52	939.65	939.77	939.87	939.96	940.03	940.09	940.14	940.17	940.19
	SCREED ELEVATION	939.38	939.51	939.65	939.77	939.88	939.97	940.04	940.10	940.14	940.17	940.19
GIRDER C	STATION	1012+80.87	1012+90.90	1013+00.93	1013+10.96	1013+20.99	1013+31.02	1013+41.05	1013+51.08	1013+61.11	1013+71.14	1013+81.17
	FINAL DECK ELEVATION	939.80	939.94	940.08	940.20	940.31	940.41	940.49	940.56	940.61	940.65	940.68
	SCREED ELEVATION	939.80	939.93	940.07	940.20	940.31	940.42	940.50	940.56	940.61	940.65	940.68
GIRDER D	STATION	1012+75.09	1012+84.93	1012+94.77	1013+04.60	1013+14.44	1013+24.28	1013+34.12	1013+43.96	1013+53.79	1013+63.63	1013+73.47
	FINAL DECK ELEVATION	940.21	940.37	940.51	940.64	940.75	940.85	940.94	941.02	941.08	941.13	941.17
	SCREED ELEVATION	940.21	940.36	940.50	940.64	940.75	940.85	940.94	941.03	941.08	941.13	941.17
PROFILE GRADE	STATION	1012+72.43	1012+82.18	1012+91.93	1013+01.68	1013+11.43	1013+21.18	1013+30.93	1013+40.68	1013+50.43	1013+60.18	1013+69.93
	FINAL DECK ELEVATION	940.41	940.57	940.71	940.84	940.96	941.06	941.16	941.24	941.30	941.36	941.40
	SCREED ELEVATION	940.41	940.56	940.70	940.84	940.96	941.06	941.16	941.25	941.30	941.36	941.40
GIRDER E	STATION	1012+69.48	1012+79.13	1012+88.79	1012+98.44	1013+08.09	1013+17.75	1013+27.40	1013+37.05	1013+46.70	1013+56.36	1013+66.01
	FINAL DECK ELEVATION	940.38	940.54	940.68	940.82	940.94	941.05	941.14	941.23	941.30	941.36	941.41
	SCREED ELEVATION	940.38	940.53	940.67	940.81	940.94	941.05	941.14	941.23	941.30	941.36	941.41
TOE OF PARAPET (RIGHT)	STATION	1012+67.53	1012+77.12	1012+86.71	1012+96.30	1013+05.89	1013+15.49	1013+25.08	1013+34.67	1013+44.26	1013+53.85	1013+63.44
	FINAL DECK ELEVATION	940.29	940.45	940.59	940.73	940.85	940.96	941.06	941.15	941.22	941.28	941.33
	SCREED ELEVATION	940.29	940.44	940.58	940.72	940.85	940.96	941.06	941.15	941.22	941.28	941.33

SCREED ELEVATIONS - SPAN 3

LOCATION		℄ PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 3
TOE OF PARAPET (LEFT)	STATION	1014+00.39	1014+14.26	1014+28.13	1014+42.00	1014+55.87	1014+69.75	1014+83.62	1014+97.49	1015+11.36	1015+25.23	1015+39.10
	FINAL DECK ELEVATION	939.59	939.57	939.52	939.45	939.36	939.23	939.09	938.91	938.71	938.49	938.23
	SCREED ELEVATION	939.59	939.58	939.55	939.50	939.41	939.27	939.12	938.92	938.70	938.48	938.23
GIRDER A	STATION	1013+97.40	1014+11.13	1014+24.86	1014+38.59	1014+52.32	1014+66.05	1014+79.77	1014+93.50	1015+07.23	1015+20.96	1015+34.69
	FINAL DECK ELEVATION	939.68	939.67	939.63	939.56	939.47	939.36	939.22	939.05	938.86	938.65	938.41
	SCREED ELEVATION	939.68	939.68	939.66	939.61	939.52	939.40	939.25	939.06	938.85	938.64	938.41
GIRDER B	STATION	1013+89.15	1014+02.49	1014+15.84	1014+29.18	1014+42.52	1014+55.87	1014+69.21	1014+82.55	1014+95.89	1015+09.24	1015+22.58
	FINAL DECK ELEVATION	940.19	940.19	940.17	940.12	940.05	939.96	939.84	939.70	939.53	939.34	939.13
	SCREED ELEVATION	940.19	940.20	940.20	940.16	940.10	940.00	939.87	939.71	939.53	939.33	939.13
GIRDER C	STATION	1013+81.17	1013+94.16	1014+07.14	1014+20.13	1014+33.11	1014+46.10	1014+59.08	1014+72.07	1014+85.05	1014+98.04	1015+11.02
	FINAL DECK ELEVATION	940.68	940.70	940.69	940.66	940.61	940.54	940.44	940.32	940.18	940.01	939.83
	SCREED ELEVATION	940.68	940.71	940.72	940.70	940.66	940.59	940.47	940.33	940.18	940.00	939.83
GIRDER D	STATION	1013+73.47	1013+86.12	1013+98.77	1014+11.42	1014+24.07	1014+36.72	1014+49.37	1014+62.02	1014+74.67	1014+87.32	1014+99.97
	FINAL DECK ELEVATION	941.17	941.20	941.21	941.20	941.16	941.10	941.03	940.93	940.80	940.66	940.50
	SCREED ELEVATION	941.17	941.21	941.24	941.24	941.21	941.15	941.06	940.95	940.80	940.65	940.50
PROFILE GRADE	STATION	1013+69.93	1013+82.43	1013+94.93	1014+07.43	1014+19.93	1014+32.43	1014+44.93	1014+57.43	1014+69.93	1014+82.43	1014+94.93
	FINAL DECK ELEVATION	941.40	941.44	941.45	941.44	941.41	941.37	941.30	941.20	941.09	940.96	940.81
	SCREED ELEVATION	941.40	941.45	941.48	941.48	941.46	941.42	941.33	941.22	941.09	940.95	940.81
GIRDER E	STATION	1013+66.01	1013+78.35	1013+90.68	1014+03.02	1014+15.36	1014+27.70	1014+40.03	1014+52.37	1014+64.71	1014+77.04	1014+89.38
	FINAL DECK ELEVATION	941.41	941.45	941.47	941.47	941.45	941.41	941.35	941.26	941.16	941.04	940.90
	SCREED ELEVATION	941.41	941.46	941.50	941.52	941.50	941.46	941.39	941.28	941.16	941.04	940.90
TOE OF PARAPET (RIGHT)	STATION	1013+63.44	1013+75.67	1013+87.90	1014+00.13	1014+12.36	1014+24.60	1014+36.83	1014+49.06	1014+61.29	1014+73.52	1014+85.75
	FINAL DECK ELEVATION	941.33	941.38	941.40	941.41	941.39	941.36	941.30	941.23	941.13	941.02	940.88
	SCREED ELEVATION	941.33	941.39	941.43	941.46	941.44	941.41	941.34	941.25	941.13	941.02	940.88

NOTES:

1. FOR ADDITIONAL NOTES, TYPICAL CROSS SECTION AND SPAN 1 SCREED ELEVATIONS, SEE SHEET 33/41.
2. FOR SCREED ELEVATIONS, SPANS 4 AND 5, SEE SHEET 35/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DATE 7/19/05
REVIEWED RER
STRUCTURE FILE NUMBER 251/1452
DRAWN BTA
REVISED
DESIGNED BTA
CHECKED NFF

SCREED ELEVATIONS - SPANS 2 & 3
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

34/41

802
846

SCREED ELEVATIONS - SPAN 4

LOCATION		℄ PIER 3	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER 4
TOE OF PARAPET (LEFT)	STATION	1015+39.10	1015+58.81	1015+78.51	1015+98.22	1016+17.92	1016+37.63	1016+57.34	1016+77.04	1016+96.75	1017+16.45	1017+36.16
	FINAL DECK ELEVATION	938.23	937.83	937.38	936.87	936.32	935.70	935.04	934.33	933.56	932.74	931.87
	SCREED ELEVATION	938.23	937.88	937.50	937.06	936.55	935.93	935.22	934.44	933.61	932.74	931.87
GIRDER A	STATION	1015+34.69	1015+53.97	1015+73.24	1015+92.52	1016+11.79	1016+31.07	1016+50.34	1016+69.62	1016+88.89	1017+08.17	1017+27.44
	FINAL DECK ELEVATION	938.41	938.03	937.60	937.11	936.58	936.00	935.37	934.69	933.96	933.18	932.35
	SCREED ELEVATION	938.41	938.08	937.72	937.30	936.81	936.23	935.55	934.80	934.01	933.18	932.35
GIRDER B	STATION	1015+22.58	1015+40.78	1015+58.97	1015+77.17	1015+95.36	1016+13.56	1016+31.76	1016+49.95	1016+68.15	1016+86.34	1017+04.54
	FINAL DECK ELEVATION	939.13	938.80	938.43	938.01	937.55	937.04	936.49	935.90	935.26	934.57	933.84
	SCREED ELEVATION	939.13	938.84	938.53	938.18	937.76	937.26	936.68	936.03	935.33	934.59	933.84
GIRDER C	STATION	1015+11.02	1015+28.30	1015+45.58	1015+62.86	1015+80.14	1015+97.43	1016+14.71	1016+31.99	1016+49.27	1016+66.55	1016+83.83
	FINAL DECK ELEVATION	939.83	939.54	939.22	938.85	938.45	938.00	937.52	937.00	936.43	935.83	935.18
	SCREED ELEVATION	939.83	939.58	939.32	939.01	938.65	938.21	937.71	937.14	936.51	935.86	935.18
GIRDER D	STATION	1014+99.97	1015+16.46	1015+32.95	1015+49.43	1015+65.92	1015+82.41	1015+98.90	1016+15.39	1016+31.87	1016+48.36	1016+64.85
	FINAL DECK ELEVATION	940.50	940.25	939.97	939.65	939.30	938.90	938.47	938.01	937.51	936.97	936.40
	SCREED ELEVATION	940.50	940.28	940.06	939.80	939.50	939.12	938.67	938.16	937.60	937.01	936.40
PROFILE GRADE	STATION	1014+94.93	1015+11.08	1015+27.23	1015+43.38	1015+59.53	1015+75.68	1015+91.83	1016+07.98	1016+24.13	1016+40.28	1016+56.43
	FINAL DECK ELEVATION	940.81	940.58	940.31	940.01	939.68	939.31	938.90	938.46	937.99	937.48	936.93
	SCREED ELEVATION	940.81	940.61	940.40	940.16	939.88	939.53	939.10	938.61	938.08	937.52	936.93
GIRDER E	STATION	1014+89.38	1015+05.17	1015+20.96	1015+36.76	1015+52.55	1015+68.34	1015+84.13	1015+99.92	1016+15.72	1016+31.51	1016+47.30
	FINAL DECK ELEVATION	940.90	940.68	940.44	940.16	939.85	939.50	939.12	938.71	938.26	937.78	937.27
	SCREED ELEVATION	940.90	940.71	940.53	940.32	940.06	939.74	939.34	938.89	938.37	937.83	937.27
TOE OF PARAPET (RIGHT)	STATION	1014+85.75	1015+01.32	1015+16.88	1015+32.45	1015+48.01	1015+63.58	1015+79.15	1015+94.71	1016+10.28	1016+25.84	1016+41.41
	FINAL DECK ELEVATION	940.88	940.68	940.45	940.18	939.88	939.55	939.18	938.79	938.36	937.90	937.40
	SCREED ELEVATION	940.88	940.71	940.54	940.34	940.09	939.79	939.40	938.97	938.47	937.95	937.40

SCREED ELEVATIONS - SPAN 5

LOCATION		℄ PIER 4	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. FWD. ABUT.
TOE OF PARAPET (LEFT)	STATION	1017+36.16	1017+48.43	1017+60.69	1017+72.96	1017+85.22	1017+97.49	1018+09.76	1018+22.02	1018+34.29	1018+46.55	1018+58.82
	FINAL DECK ELEVATION	931.87	931.30	930.73	930.13	929.53	928.93	928.34	927.74	927.14	926.54	925.95
	SCREED ELEVATION	931.87	931.32	930.78	930.21	929.64	929.06	928.47	927.86	927.23	926.59	925.95
GIRDER A	STATION	1017+27.44	1017+39.94	1017+52.43	1017+64.93	1017+77.42	1017+89.92	1018+02.41	1018+14.91	1018+27.40	1018+39.90	1018+52.39
	FINAL DECK ELEVATION	932.35	931.79	931.20	930.61	930.00	929.39	928.78	928.18	927.57	926.96	926.35
	SCREED ELEVATION	932.35	931.81	931.25	930.69	930.11	929.52	928.91	928.30	927.66	927.01	926.35
GIRDER B	STATION	1017+04.54	1017+17.59	1017+30.65	1017+43.70	1017+56.76	1017+69.81	1017+82.86	1017+95.92	1018+08.97	1018+22.03	1018+35.08
	FINAL DECK ELEVATION	933.84	933.29	932.72	932.13	931.51	930.88	930.25	929.61	928.98	928.34	927.70
	SCREED ELEVATION	933.84	933.30	932.75	932.19	931.59	930.98	930.36	929.71	929.06	928.38	927.70
GIRDER C	STATION	1016+83.83	1016+97.34	1017+10.85	1017+24.36	1017+37.87	1017+51.38	1017+64.88	1017+78.39	1017+91.90	1018+05.41	1018+18.92
	FINAL DECK ELEVATION	935.18	934.65	934.09	933.51	932.91	932.28	931.63	930.97	930.32	929.66	929.00
	SCREED ELEVATION	935.18	934.65	934.11	933.56	932.99	932.38	931.74	931.07	930.40	929.70	929.00
GIRDER D	STATION	1016+64.85	1016+78.74	1016+92.63	1017+06.52	1017+20.41	1017+34.31	1017+48.20	1017+62.09	1017+75.98	1017+89.87	1018+03.76
	FINAL DECK ELEVATION	936.40	935.88	935.35	934.78	934.19	933.58	932.94	932.28	931.60	930.93	930.25
	SCREED ELEVATION	936.40	935.87	935.36	934.82	934.27	933.68	933.06	932.39	931.69	930.98	930.25
PROFILE GRADE	STATION	1016+56.43	1016+70.48	1016+84.53	1016+98.58	1017+12.63	1017+26.68	1017+40.73	1017+54.78	1017+68.83	1017+82.88	1017+96.93
	FINAL DECK ELEVATION	936.93	936.43	935.90	935.35	934.77	934.16	933.52	932.86	932.19	931.51	930.82
	SCREED ELEVATION	936.93	936.42	935.91	935.39	934.85	934.26	933.64	932.97	932.28	931.56	930.82
GIRDER E	STATION	1016+47.30	1016+61.52	1016+75.73	1016+89.95	1017+04.17	1017+18.39	1017+32.60	1017+46.82	1017+61.04	1017+75.25	1017+89.47
	FINAL DECK ELEVATION	937.27	936.78	936.26	935.71	935.14	934.54	933.91	933.26	932.59	931.90	931.20
	SCREED ELEVATION	937.27	936.76	936.25	935.74	935.21	934.65	934.05	933.40	932.71	931.97	931.20
TOE OF PARAPET (RIGHT)	STATION	1016+41.41	1016+55.73	1016+70.05	1016+84.37	1016+98.69	1017+13.01	1017+27.33	1017+41.65	1017+55.97	1017+70.29	1017+84.61
	FINAL DECK ELEVATION	937.40	936.92	936.41	935.87	935.30	934.71	934.09	933.44	932.77	932.08	931.38
	SCREED ELEVATION	937.40	936.90	936.40	935.90	935.37	934.82	934.23	933.58	932.89	932.15	931.38

NOTES:

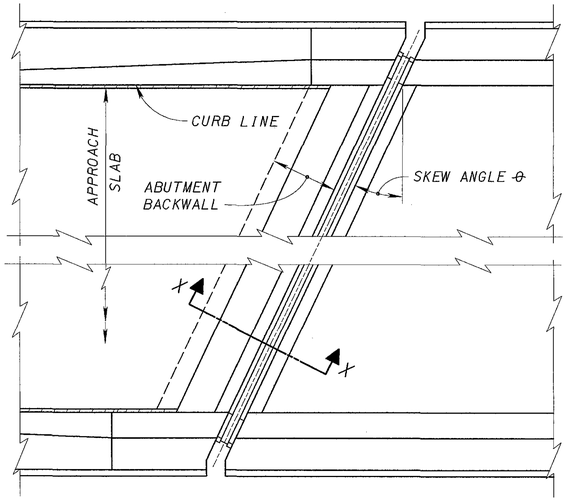
1. FOR ADDITIONAL NOTES, TYPICAL CROSS SECTION AND SPAN 1 SCREED ELEVATIONS, SEE SHEET 33/41.
2. FOR SCREED ELEVATIONS, SPANS 2 AND 3, SEE SHEET 34/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
BTA	BTA	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251452	

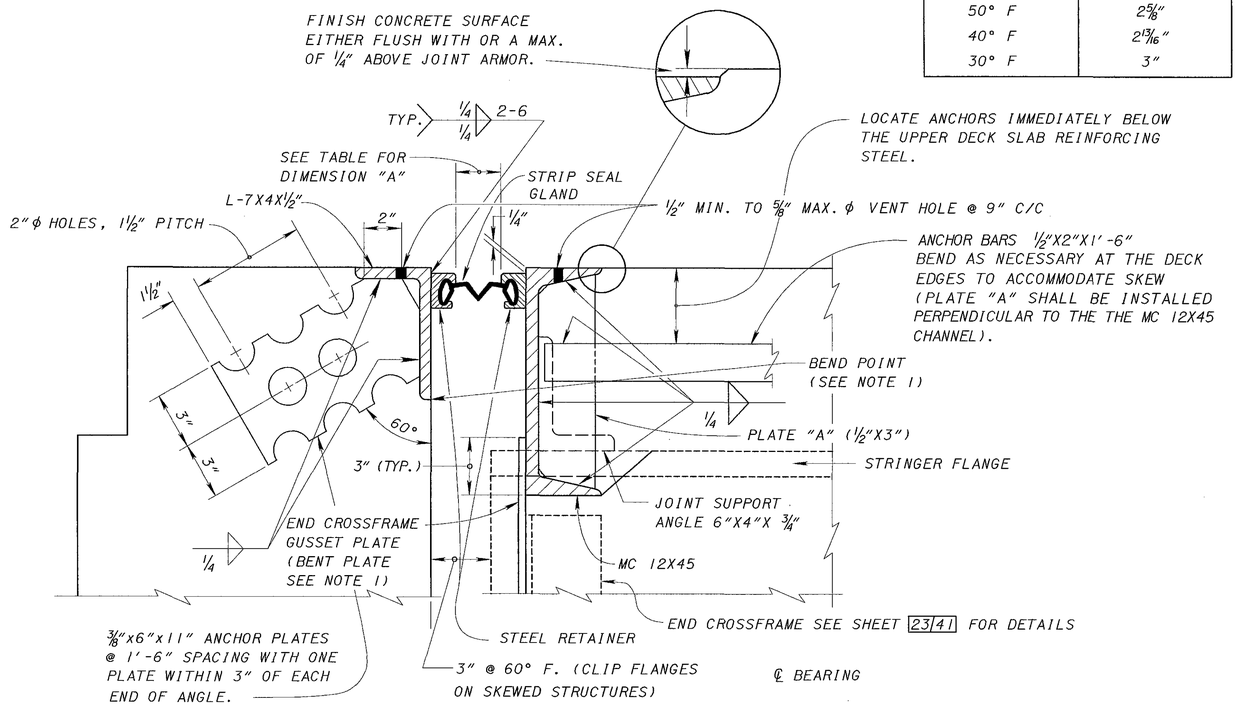
SCREED ELEVATIONS - SPANS 4 & 5
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320



PLAN AT ABUTMENT

5" STRIP SEAL JOINT WIDTH	
AMBIENT TEMPERATURE	DIMENSION "A"
90° F	1 7/8"
80° F	2 1/16"
70° F	2 1/4"
60° F	2 1/2"
50° F	2 5/8"
40° F	2 13/16"
30° F	3"



SECTION X-X

NOTES:

1. THE ROADWAY GRADE AT THE ABUTMENTS IS GREATER THAN 2%, THEREFORE THE END CROSSFRAME GUSSET PLATE SHOULD BE BENT TO BE NORMAL TO THE ROADWAY GRADE. IN ADDITION, THE L-7x4x1/2" ANGLE IN THE BACKWALL SHALL BE ROTATED ABOUT THE BEND POINT TO PLACE THE JOINT ARMOR PERPENDICULAR TO THE ROADWAY GRADE.
2. FOR ADDITIONAL DETAILS AND NOTES NOT SHOWN, REFER TO ODOT STANDARD DRAWING EXJ-4-87 SHEETS 1 THRU 5.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

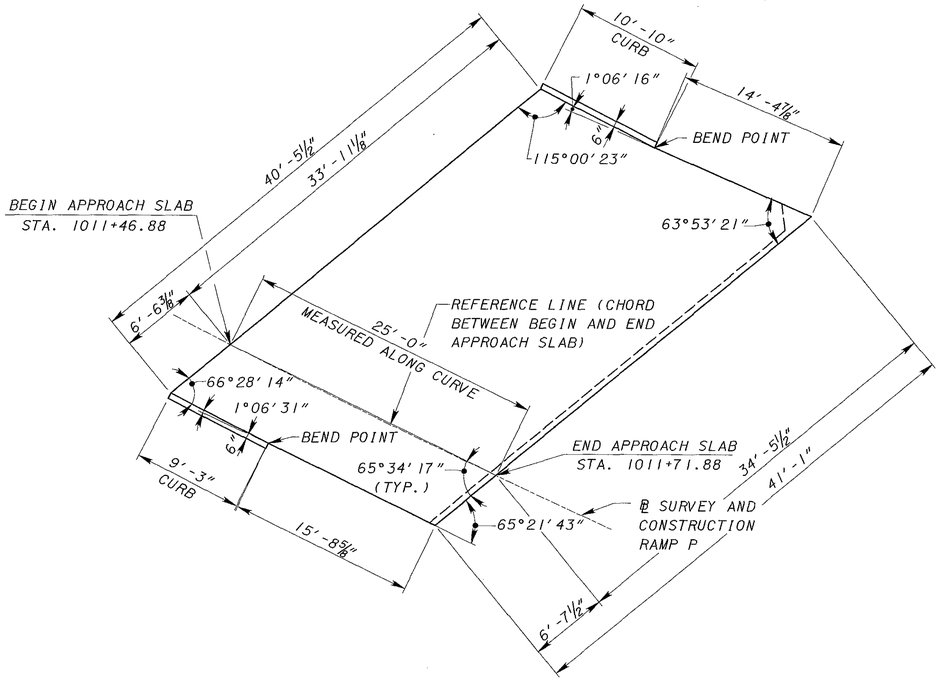
DESIGNED JDH | DRAWN CAG | REVIEWED RER | DATE 7/19/05
CHECKED NFF | REVISED | STRUCTURE FILE NUMBER 25111452

STRIP SEAL EXPANSION JOINT DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

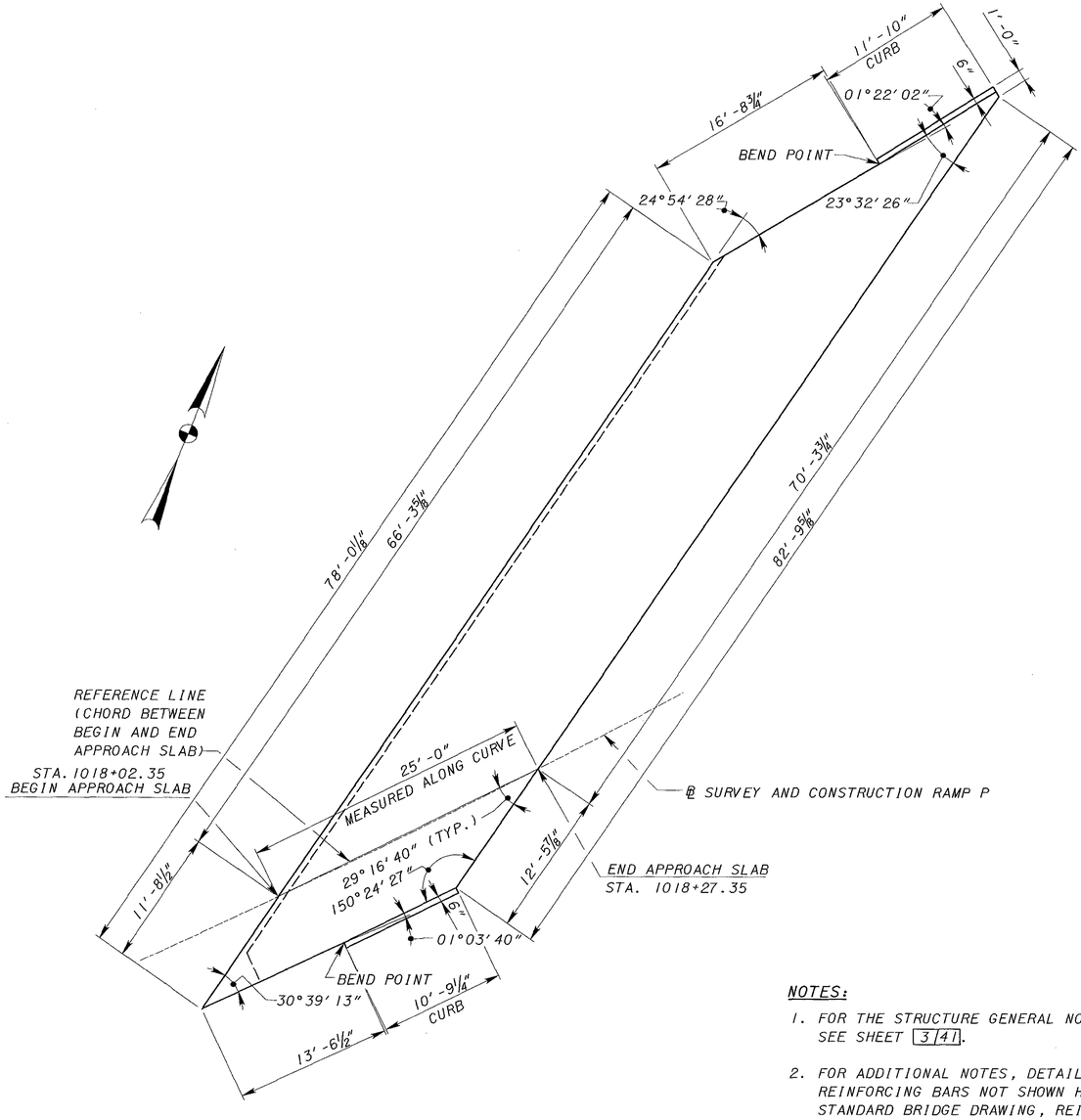
FRA-270-24.47
PID 77320

36/41

804/846



PLAN
REAR ABUTMENT
APPROACH SLAB



PLAN
FORWARD ABUTMENT
APPROACH SLAB

NOTES:

1. FOR THE STRUCTURE GENERAL NOTES, SEE SHEET 3/41.
2. FOR ADDITIONAL NOTES, DETAILS, SECTIONS AND REINFORCING BARS NOT SHOWN HERE SEE ODOT STANDARD BRIDGE DRAWING, REINFORCED CONCRETE APPROACH SLABS, AS-1-81, SHEET 1, 2 AND 3.
3. APPROACH SLAB QUANTITIES TOTAL 216 SQ. YDS.
4. USE CURB TYPE 4-A, AS SHOWN ON ODOT STANDARD DRAWING BP-5-1.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED	DRAWN	REVIEWED	DATE
RCK	RCK	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

APPROACH SLAB DETAILS
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

37 / 41

805
846

BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
REAR ABUTMENT											
RA501	28	10′-5″	304	2	2′-0″	6′-8″	2′-0″				
RA502	3	8′-10″	28	1	10″	8′-1″					
RA503	6	8′-8″	54	1	10″	7′-11″					
RA504	7	8′-2″	60	1	10″	7′-6″					
RA505	6	7′-10″	49	1	10″	7′-2″					
RA506	6	7′-5″	46	1	10″	6′-9″					
RA507	27	12′-5″	350	3	3′-2″	2′-4″					
RA508	2	14′-5″	30	STR.							
RA509	2	14′-6″	30	STR.							
RA510	28	8′-2″	239	2	2′-0″	4′-5″	2′-0″				
RA511	2	6′-5″	13	2	2′-0″	2′-8″	2′-0″				
RA512	14	30′-0″	438	STR.							
RA513	2	16′-1″	34	19	14′-10″	1′-1″	6″				
RA514	11	16′-3″	186	STR.							
RA515	2	35′-1″	73	STR.							
	1	5′-3″			10″	4′-6″					
RA516	SERIES	TO	33	1							6¾″
	OF 5	7′-6″			10″	6′-9″					
RA517	15	12′-0″	188	1	10″	11′-3″					
RA518	1	12′-9″	13	19	11′-6″	1′-1″	6″				
	1	10′-11″									
RA519	SERIES	TO	49	STR.							6½″
	OF 4	12′-6″									
RA520	8	4′-0″	33	19	2′-0″	9″	1′-9″				
RA521	3	4′-0″	13	10	10½″	5½″	1′-2″	2′-0″			
RA522	7	4′-10″	35	STR.							
RA523	1	15′-11″	17	19	10′-3″	5′-8″	6″				
RA524	8	11′-4″	95	STR.							
RA525	4	3′-11″	17	11	11″	1′-10″	2′-0″				
RA526	2	10′-4″	22	STR.							
RA527	14	16′-2″	236	STR.							
RA528	6	10′-10″	68	STR.							
RA529	2	8′-4″	17	STR.							
RA530	2	14′-3″	30	STR.							
RA531	4	10′-1″	42	19	8′-1″	2′-0″	6″				
RA532	(NOT USED)										
RA533	(NOT USED)										
RA534	(NOT USED)										
RA535	6	7′-5″	46	23	1′-1″	3′-2″	3′-0″			3″	
RA536	12	4′-0″	50	STR.							
RA537	16	10′-0″	167	STR.							
RA538	10	5′-6″	57	STR.							
RA539	6	5′-6″	35	25	1′-8″	2′-5″	1′-5″	1½″	5″		
RA601	3	16′-11″	76	2	8′-0″	6′-8″	2′-7″				
RA602	6	16′-9″	151	2	7′-10″	6′-8″	2′-7″				
RA603	7	16′-4″	172	2	7′-5″	6′-8″	2′-7″				
RA604	6	16′-0″	144	2	7′-1″	6′-8″	2′-7″				
RA605	6	15′-7″	141	2	6′-8″	6′-8″	2′-7″				
RA606	7	21′-0″	221	2	10′-1″	1′-2″	10′-1″				
RA607	7	18′-6″	195	2	8′-10″	1′-2″	8′-10″				
RA608	41	8′-5″	518	2	3′-8″	1′-5″	3′-8″				
RA609	2	8′-7″	26	STR.							

BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
REAR ABUTMENT											
RA610	41	10′-1″	621	2	4′-6″	1′-5″	4′-6″				
RA611	41	6′-5″	395	2	3′-0″	9″	3′-0″				
RA612	28	5′-5″	228	STR.							
	2	7′-2″			3′-2″	1′-2″	3′-2″				
RA613	SERIES	TO	168	2							10⅜″
	OF 6	11′-6″			5′-4″	1′-2″	5′-4″				
RA614	6	2′-11″	26	STR.							
RA615	6	3′-11″	35	13	2′-0″	11″	2″	1′-1″			
RA616	64	5′-4″	513	STR.							
RA617	2	4′-8″	14	19	2′-4″	2′-4″	2¼″				
RA801	13	30′-0″	1041	STR.							
RA802	11	20′-6″	602	STR.							
RA803	2	20′-3″	108	19	18′-5″	1′-8″	10″				
RA804	2	4′-2″	22	STR.							
RA805	6	14′-5″	231	STR.							
RA806	4	14′-6″	150	STR.							
RA807	2	14′-0″	75	STR.							
RA808	26	4′-10″	336	18	2′-7″	1′-0″	1′-0″				

TOTAL WEIGHT REAR ABUTMENT = 9406 LBS

BAR BENDING DIAGRAMS

NOTES:

1. FOR NOTES, SEE SHEET 40/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED	DRAWN	REVIEWED	DATE
MLR	MLR	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

REINFORCING STEEL LIST
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

BAR SCHEDULE

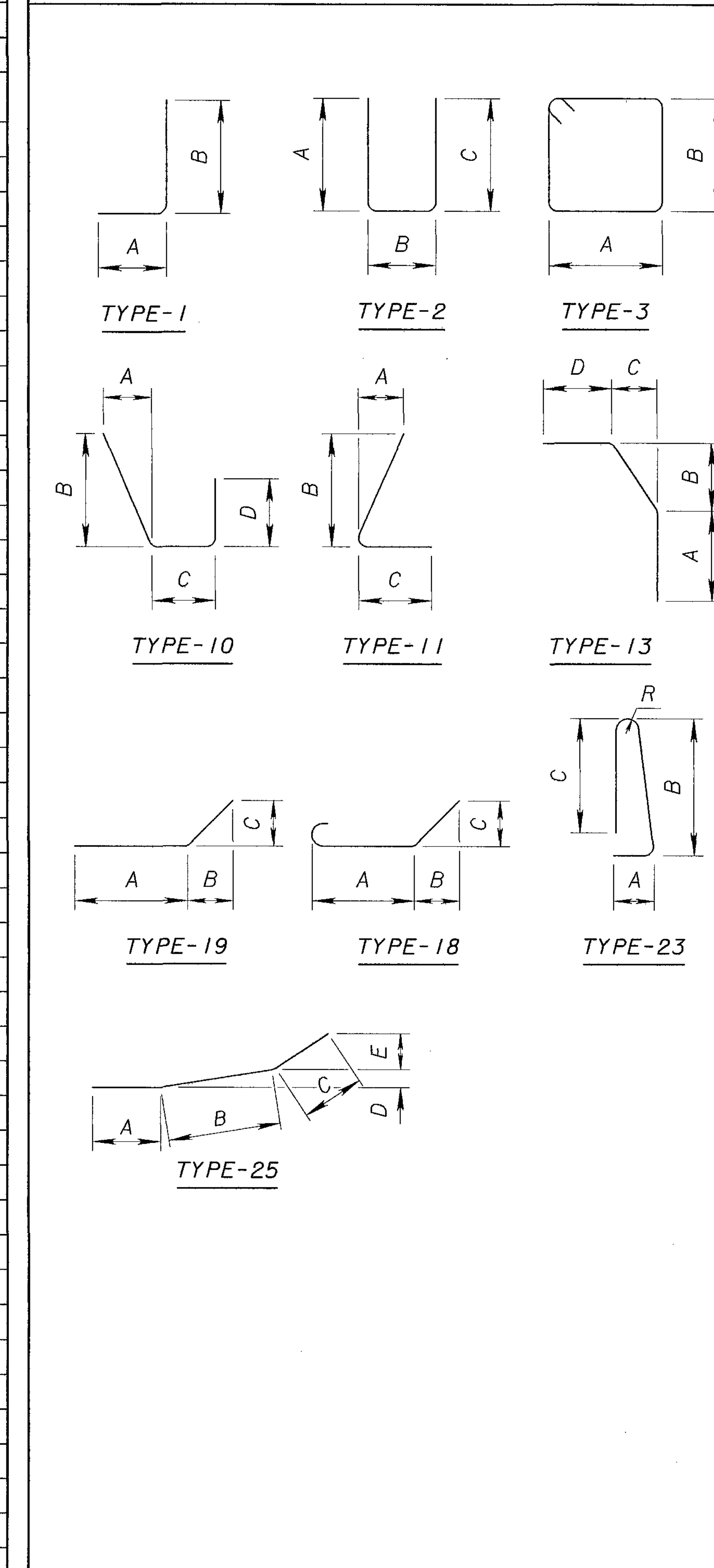
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
FORWARD ABUTMENT											
FA501	45	10′-5″	489	2	2′-0″	6′-8″	2′-0″				
FA502	18	8′-3″	155	1	10″	7′-7″					
FA503	50	8′-2″	426	2	2′-0″	4′-5″	2′-0″				
	1	6′-10″				3′-1″					
FA504	SERIES		52	2	2′-0″		2′-0″				
	OF 6	9′-11″				6′-2″					
	1	5′-9″				2′-0″					
FA505	SERIES		28	2	2′-0″		2′-0″				
	OF 4	7′-7″				3′-10″					
FA506	13	9′-7″	130	1	10″	8′-11″					
FA507	11	10′-11″	125	1	10″	10′-3″					
FA508	12	12′-2″	152	1	10″	11′-6″					
FA509	5	8′-6″	44	1	2′-0″	6′-8″					
FA510	1	6′-2″	6	1	2′-0″	4′-4″					
FA511	8	13′-1″	109	1	10″	12′-5″					
	1	3′-8″				1′-10″					
FA512	SERIES		28	1	2′-0″						
	OF 5	7′-1″				5′-3″					
	1	6′-11″				3′-2″					
FA513	SERIES		34	2	2′-0″		2′-0″				
	OF 4	9′-6″				5′-9″					
FA514	2	6′-11″	14	2	2′-7″	2′-0″	2′-7″				
FA515	22	8′-5″	193	1	2′-7″	6′-0″					
FA516	2	18′-8″	39	STR.							
FA517	10	12′-0″	125	3	3′-2″	2′-7″					
FA518	2	10′-4″	22	STR.							
FA519	38	30′-0″	1189	STR.							
FA520	4	28′-4″	118	STR.							
FA521	4	25′-0″	104	19	23′-8″	8″	1′-1″				
FA522	3	29′-10″	93	STR.							
FA523	5	21′-5″	112	1	2′-6″	19′-0″					
FA524	5	20′-8″	108	1	2′-6″	18′-4″					
FA525	5	20′-0″	104	1	2′-6″	17′-8″					
FA526	1	9′-7″	10	1	2′-3″	7′-6″					
FA527	1	9′-8″	10	1	2′-3″	7′-7″					
FA528	1	7′-5″	8	1	2′-3″	5′-4″					
FA529	1	6′-9″	7	1	2′-3″	4′-8″					
FA530	1	4′-8″	5	1	2′-3″	2′-7″					
FA531	1	13′-0″	14	19	12′-0″	6″	10″				
FA532	1	7′-2″	7	STR.							
FA533	1	26′-0″	27	19.	25′-0″	6″	10″				
FA534	1	20′-0″	21	STR.							
FA535	1	9′-4″	10	19	8′-3″	6″	10″				
FA536	1	3′-5″	4	STR.							
FA537	10	30′-5″	317	STR.							
FA538	11	5′-6″	63	STR.							
FA539	2	9′-11″	21	19	7′-11″	2′-0″	4″				
FA540	8	16′-8″	139	STR.							
FA541	8	13′-11″	116	STR.							
FA542	1	10′-2″	11	STR.							
FA543	2	9′-10″	21	19	7′-9″	2′-1	7″				
FA544	1	16′-0″	17	STR.							
FA545	3	17′-11″	56	STR.							
FA546	7	7′-5″	54	23	1′-1″	3′-2″	3′-0″			3″	
FA547	1	5′-3″	5	19	2′-0″	3′-2″	7″				

BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
FORWARD ABUTMENT											
FA548	6	7′-6″	47	STR.							
FA549	16	10′-0″	167	STR.							
FA550	6	5′-6″	34	25	1′-8″	2′-5″	1′-5″	1½″	5″		
FA551	10	5′-6″	57	STR.							
FA552	6	6′-1″	38	STR.							
FA553	4	15′-3″	64	STR.							
FA554	6	8′-8″	54	STR.							
FA555	8	4′-0″	33	19	2′-0″	1′-10″	10″				
FA556	8	5′-0″	42	10	1′-0″	1′-9″	1′-2″	2′-0″			
FA557	4	3′-10″	16	11	1′-9″	1′-0″	2′-0″				
FA601	12	16′-6″	297	2	2′-7″	6′-8″	7′-7″				
	1	12′-11″				3′-1″					
FA602	SERIES		130	2	2′-7″		7′-7″				
	OF 6	16′-0″				6′-2″					
FA603	13	17′-10″	152	2	2′-7″	6′-8″	8′ 11″				
FA604	11	19′-2″	316	2	2′-7″	6′-8″	10′-3″				
FA605	9	20′-5″	276	2	2′-7″	6′-8″	11′-6″				
FA606	5	9′-1″	68	1	2′-7″	6′-8″					
FA607	1	6′-9″	10	1	2′-7″	4′-4″					
	1	8′-0″				3′-2″					
FA608	SERIES		56	2	2′-7″		2′-7″				
	OF 4	10′-7″				5′-9″					
FA609	76	8′-9″	999	2	3′-10″	1′-5″	3′-10″				
FA610	76	9′-7″	1094	2	4′-3″	1′-5″	4′-3″				
FA611	76	6′-1″	694	2	2′-9″	11″	2′-9″				
FA612	2	12′-4″	37	1	1′-0″	11′-6″					
FA613	2	8′-0″	24	STR.							
FA614	7	22′-4″	235	2	10′-9″	1′-2″	10′-9″				
FA615	14	4′-11″	103	STR.							
	1	10′-8″			4′-11″		4′-11″				
FA616	SERIES		80	2		1′-2″					
	OF 6	7′-2″			3′-2″		3′-2″				
FA617	8	16′-8″	200	1	15′-8″	1′-2″					
FA618	16	5′-6″	132	STR.							
	1	11′-10″			5′-6″		5′-6″				
FA619	SERIES		86	2		1′-2″					
	OF 6	7′-2″			3′-2″		3′-2″				
FA620	7	3′-11″	41	13	2′-0″	11″	2″	1′-1″			
FA621	7	2′-11″	31	STR.							
FA622	60	5′-4″	481	STR.							
FA623	1	6′-5″	10	STR.							
FA624	1	7′-10″	12	STR.							
FA801	27	30′-0″	2163	STR.							
FA802	7	14′-4″	268	STR.							
FA803	2	5′-11″	32	19	4′-0″	11¾″	1′-7¾″				
FA804	4	18′-8″	199	STR.							
FA805	2	16′-8″	89	STR.							
FA806	2	14′-10″	79	STR.							
FA807	4	11′-7″	124	STR.							
FA808	2	23′-4″	125	19	19′-4″	3′-8″	1′-8″				
FA809	25	4′-10″	323	18	2′-7″	1′-0″	1′-0″				

TOTAL WEIGHT = 14,460 LBS

BAR BENDING DIAGRAMS



NOTES:

1. FOR NOTES SEE SHEET 40/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113-1901

DESIGNED	DRAWN	REVIEWED	DATE
MLR	RCK	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

REINFORCING STEEL LIST
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

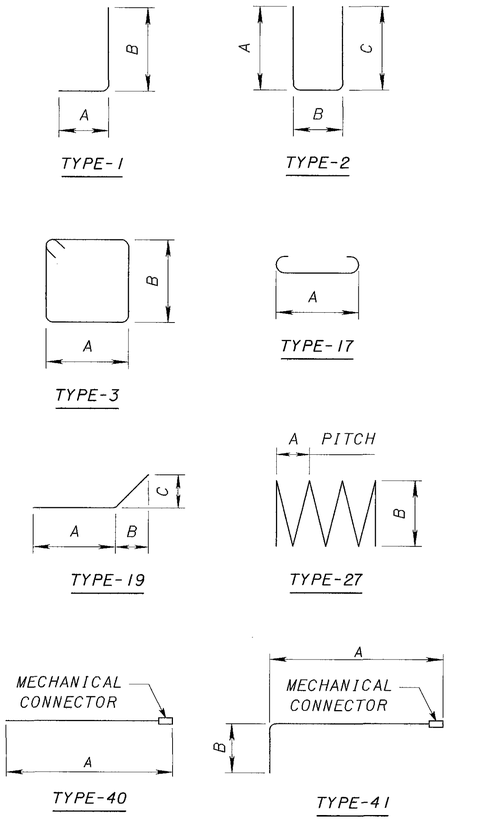
BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
PIER 1											
SP401	1	27'-3"	470	27	4½"	3'-0"					
SP402	1	26'-6"	457	27	4½"	3'-0"					
SP403	1	25'-10"	432	27	4½"	3'-0"					
P501	64	12'-7"	840	3	2'-0"	4'-0"					
	4 SERIES	10'-7"			2'-0"	3'-0"					
P502	OF	TO	288	3							2⅛"
	6 BARS	12'-5"			2'-0"	3'-11"					
P503	6	6'-11"	43	2	2'-0"	3'-2"	2'-0"				
P601	2	43'-2"	130	STR.							
P602	6	44'-8"	403	STR.							
P901	12	10'-7"	432	19	6'-5"	4'-1"	1'-0"				
P902	6	36'-2"	738	STR.							
P903	12	28'-10"	1176	41	27'-6"	1'-7"					
P904	12	18'-6"	755	1	1'-7"	17'-2"					
P1001	30	12'-4"	1592	17	9'-6"						
P1002	30	13'-4"	1721	17	10'-6"						
P1101	36	14'-3"	2726	1	2'-0"	12'-7"					
P1102	12	29'-11"	1907	STR.							
P1103	12	29'-3"	1865	STR.							
P1104	12	28'-6"	1817	STR.							
TOTAL WEIGHT PIER 1 = 17792 POUNDS											
PIER 2											
SP401	1	22'-10"	367	27	4½"	3'-0"					
SP402	1	22'-0"	382	27	4½"	3'-0"					
SP403	1	21'-1"	396	27	4½"	3'-0"					
P501	88	12'-7"	1155	3	2'-0"	4'-0"					
	4 SERIES	10'-7"			2'-0"	3'-0"					
P502	OF	TO	336	3							1¾"
	7 BARS	12'-5"			2'-0"	3'-11"					
P503	6	6'-11"	43	2	2'-0"	3'-2"	2'-0"				
P601	2	47'-7"	143	STR.							
P602	6	49'-8"	448	STR.							
P1001	30	11'-4"	1463	17	8'-6"						
P1002	30	13'-4"	1721	17	10'-6"						
P1003	12	13'-4"	688	19	8'-2"	5'-1"	1'-0"				
P1004	6	39'-6"	1020	STR.							
P1005	12	32'-1"	1657	41	30'-7"	1'-10"					
P1006	12	20'-7"	1063	1	1'-10"	19'-1"					
P1101	27	14'-3"	2044	1	2'-0"	12'-7"					
P1102	9	25'-6"	1219	STR.							
P1103	9	24'-8"	1180	STR.							
P1104	9	23'-9"	1136	STR.							
TOTAL WEIGHT PIER 2 = 16461 POUNDS											

BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
PIER 3											
P401	48	8'-0"	257	STR.							
P402	40	10'-6"	281	STR.							
SP403	1	19'-11"	306	27	4½"	3'-0"					
SP404	1	19'-1"	320	27	4½"	3'-0"					
SP405	1	18'-3"	334	27	4½"	3'-0"					
SP406	1	17'-5"	348	27	4½"	3'-0"					
P501	102	12'-7"	1338	3	2'-0"	4'-0"					
	4 SERIES	10'-7"			2'-0"	3'-0"					
P502	OF	TO	480	3							1¼"
	10 BARS	12'-5"			2'-0"	3'-11"					
P503	6	6'-11"	43	2	2'-0"	3'-2"	2'-0"				
P601	4	30'-8"	184	STR.							
P602	12	31'-5"	566	STR.							
P901	14	36'-1"	1717	41	34'-9"	1'-7"					
P902	14	26'-3"	1250	1	1'-7"	24'-11"					
P1001	40	10'-10"	1864	17	8'-0"						
P1002	40	13'-4"	2294	17	10'-6"						
P1003	44	12'-3"	2319	1	1'-10"	10'-9"					
P1004	11	22'-7"	1069	STR.							
P1005	11	21'-10"	1033	STR.							
P1006	11	20'-11"	990	STR.							
P1007	11	20'-1"	951	STR.							
P1008	14	16'-3"	979	19	8'-2"	4'-1"	1'-0"				
P1009	21	21'-3"	1920	STR.							
TOTAL WEIGHT PIER 3 = 20843 POUNDS											

BAR BENDING DIAGRAMS



NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, RA601:
   - P: LOCATION OF THE BAR IN THE STRUCTURE (PIER)
   - 6: BAR SIZE DESIGNATION NO. 6
   - 01: SEQUENCE NUMBER
2. BAR DIMENSIONS SHOWN ARE OUT-TO-OUT UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT BARS ARE INDICATED BY "STR".
4. CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 10.0') TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF AN APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE COLUMN. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 3" CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE COLUMN. CYLINDRICAL CONCRETE FEET (BOTTOM SUPPORTS) SHALL BE PROVIDED TO ENSURE THAT THE BOTTOM OF THE CAGE IS MAINTAINED AT THE PROPER DISTANCE ABOVE THE BASE.
5. SPRIAL REINFORCING BARS: THE "LENGTH" SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE LENGTH OF THE SPIRAL ALONG THE AXIS OF THE SPIRAL. ONE AND ONE-HALF CLOSED-COIL TURNS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		2511452	

REINFORCING STEEL LIST
BRIDGE NO. FRA-270-25.83A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

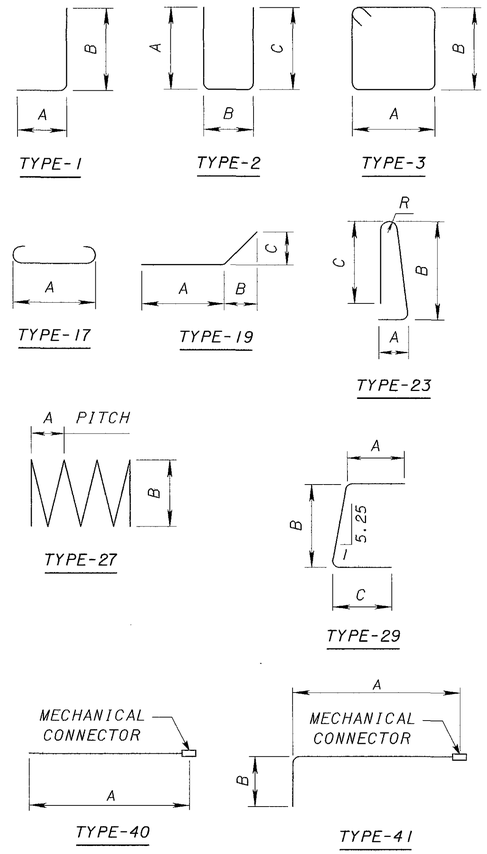
BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
PIER 4											
SP401	1	18'-0"	316	27	4½"	3'-0"					
SP402	1	16'-10"	297	27	4½"	3'-0"					
SP403	1	15'-7"	276	27	4½"	3'-0"					
SP404	1	14'-4"	256	27	4½"	3'-0"					
SP405	1	13'-2"	236	27	4½"	3'-0"					
P501	156	12'-7"	2047	3	2'-0"	4'-0"					
	4 SERIES	10'-7"			2'-0"	3'-0"					
P502	OF	TO	336	3							1¾"
	7 BARS	12'-5"			2'-0"	3'-11"					
P503	6	6'-11"	43	2	2'-0"	3'-2"	2'-0"				
P701	6	31'-0"	368	STR.							
P702	18	31'-8"	1165	STR.							
P901	14	36'-6"	1737	41	35'-2"	1'-7"					
P902	14	37'-10"	1801	40	37'-10"						
P903	14	17'-6"	833	1	1'-7"	16'-2"					
P1001	100	12'-4"	5306	17	9'-6"						
P1002	55	12'-3"	2899	1	1'-10"	10'-9"					
P1003	11	20'-8"	978	STR.							
P1004	11	19'-6"	923	STR.							
P1005	11	18'-3"	864	STR.							
P1006	11	17'-2"	813	STR.							
P1007	11	15'-9"	746	STR.							
P1008	28	22'-8"	2731	STR.							
P1009	14	13'-2"	793	19	8'-2"	5'-0"	1'-0"				
TOTAL WEIGHT PIER 4 = 25764 POUNDS											

BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
SUPERSTRUCTURE											
S401	1078	30'-0"	21603	STR.							
	1 SERIES	22'-9"									
S402	OF	TO	996	STR.							
	49 BARS	38'-1"									
S501	1448	39'-8"	59907	STR.							
S502	1852	30'-0"	57949	STR.							
	1 SERIES	5'-8"									
S503	OF	TO	773	STR.							
	52 BARS	22'-10"									
	1 SERIES	3'-2"									
S504	OF	TO	1001	STR.							
	45 BARS	39'-6"									
	1 SERIES	3'-0"									
S505	OF	TO	3437	STR.							
	156 BARS	39'-3"									
S506	2	44'-2"	92	STR.							
S507	4	43'-0"	180	STR.							
S508	24	8'-0"	200	STR.							
S509	96	19'-4"	1936	STR.							
S510	(NOT USED)										
S511	48	13'-4"	668	STR.							
S512	1318	7'-5"	10196	23	1'-1"	3'-2"	3'-0"			2¾"	
S513	6	22'-3"	139	STR.							
S514	6	5'-9"	36	STR.							
S601	47	30'-0"	2118	STR.							
S602	1	11'-9"	18	STR.							
S603	1318	3'-11"	7754	29	1'-1"	1'-11"	1'-1"				
S604	1318	2'-10"	5609	1	1'-1"	1'-11"					
S605	1	21'-5"	32	STR.							
TOTAL WEIGHT SUPERSTRUCTURE = 174644 LBS											

BAR BENDING DIAGRAMS



NOTES:

1. FOR NOTES SEE SHEET 40/41.

DESIGN AGENCY
TRANSYSTEMS CORPORATION
55 PUBLIC SQUARE, SUITE 1650
CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
JDH	CAG	RER	7/19/05
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NFF		251/452	

REINFORCING STEEL LIST
BRIDGE NO. FRA-270-2583A
RAMP P OVER IR-71

FRA-270-24.47
PID 77320

41/41

809/846