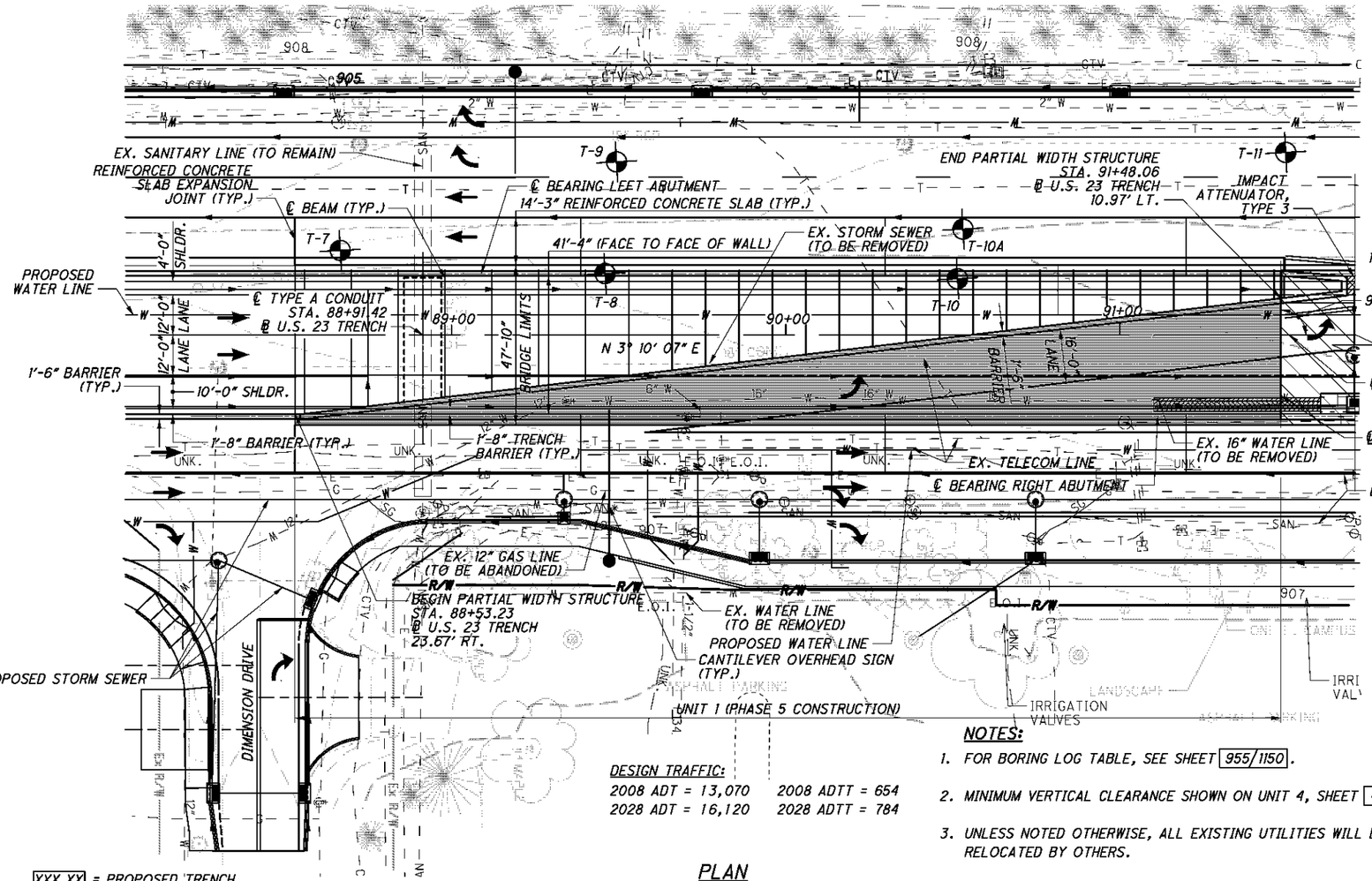
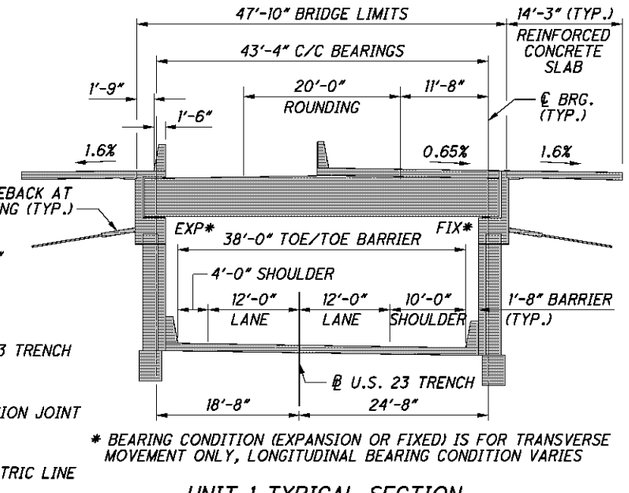


PLAN

DESIGN TRAFFIC:

2008 ADT = 13,070 2008 ADTT = 654
2028 ADT = 16,120 2028 ADTT = 784

XXX.XX = PROPOSED TRENCH PROFILE GRADE



* BEARING CONDITION (EXPANSION OR FIXED) IS FOR TRANSVERSE MOVEMENT ONLY, LONGITUDINAL BEARING CONDITION VARIES

UNIT 1 TYPICAL SECTION

(LOOKING UPSTATION)

LEGEND:

- SOIL BORING LOCATION
- = ELEVATION TOP OF WEATHERED SHALE
- = ELEVATION TOP OF SHALE
- = FULL WIDTH STRUCTURE
- = PARTIAL WIDTH STRUCTURE

NOTES:

1. FOR BORING LOG TABLE, SEE SHEET 955/1150.
2. MINIMUM VERTICAL CLEARANCE SHOWN ON UNIT 4, SHEET 4/101.
3. UNLESS NOTED OTHERWISE, ALL EXISTING UTILITIES WILL BE RELOCATED BY OTHERS.
4. FOR CONSTRUCTION PHASING, SEE ROADWAY MOT PLAN SHEETS AND SHEETS 15/101, 16/101 AND 17/101.

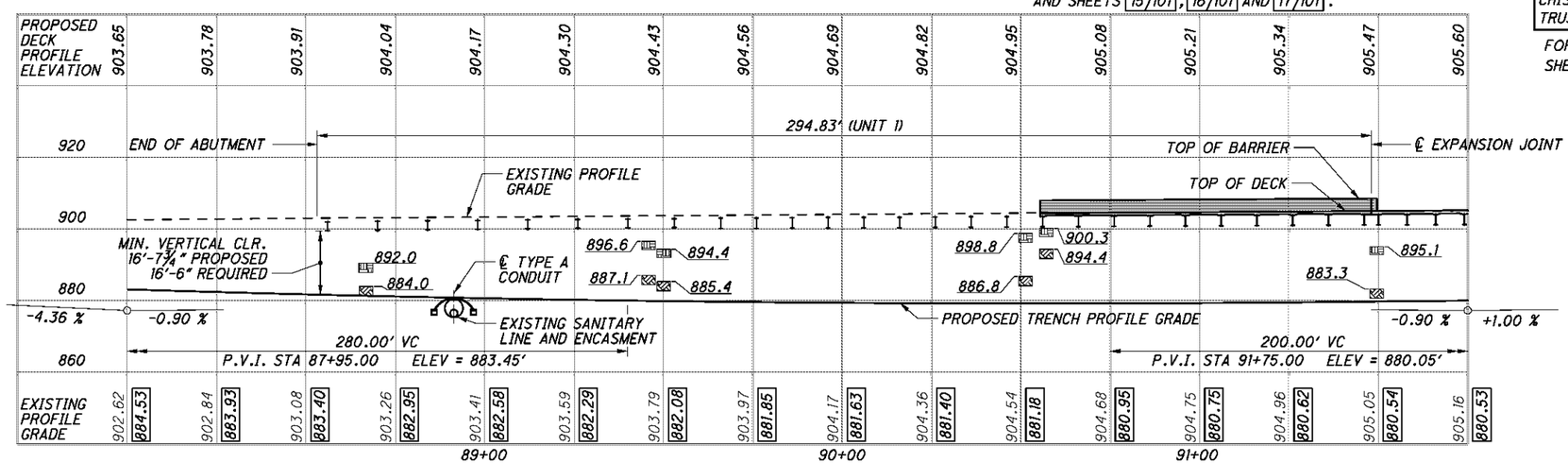
BENCHMARK DATA

BM #1 STA. 88+95.02 (℄ TRENCH), ELEV. 903.44, OFFSET 51.30' RT. CHISELED SQUARE ON THE NORTHEAST CORNER OF CONCRETE BASE OF TRAFFIC POLE AT THE NORTHEAST CORNER OF S.R. 23 AND VANTAGE DRIVE

BM #2 STA. 93+80.22 (℄ TRENCH), ELEV. 906.42, OFFSET 74.72' LT. CHISELED SQUARE ON NORTHEAST CORNER OF CONCRETE BASE OF LIGHT POLE

BM #3 STA. 99+52.57 (℄ TRENCH), ELEV. 908.24, OFFSET 76.77' LT. CHISELED CROSS ON SOUTHEAST BOLT OF TRAFFIC POLE FOR OVERHEAD TRUSS SIGN

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET 7/1150.



ELEVATION ALONG ℄ U.S. 23 TRENCH

PROPOSED STRUCTURE

TYPE: SINGLE-SPAN STRUCTURE WITH ROLLED STEEL BEAMS AND COMPOSITE REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS WITH DRILLED SHAFT SOLDIER PILES AND TIE BACKS.

SPAN: 43'-4" C/C BEARINGS

ROADWAY: UNIT 1, 294'-10" BEGIN ABUTMENT TO ℄ OF EXPANSION JOINT

LOADING: HS25 CASE II, ALTERNATE MILITARY & 60 PSF FWS

SKEW: 0°0'0"

APPROACH SLABS: 14'-3" LONG, AS PER PLAN

ALIGNMENT: TANGENT

COORDINATES: LATITUDE N40°07'06"
LONGITUDE W83°00'58"

WEARING SURFACE: 1" MONOLITHIC CONCRETE

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2591

DRAWN JFM | DATE 11/3/12
DESIGNED JOL | CHECKED BTA/JOL
REVIEWED RSB | STRUCTURE FILE NUMBER 2500760
REVISED

FRANKLIN COUNTY
STA. 88+53.23
STA. 91+48.06

SITE PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH-UNIT 1

FRA-23-22.23
PID No. 81746

1/101

991/1150

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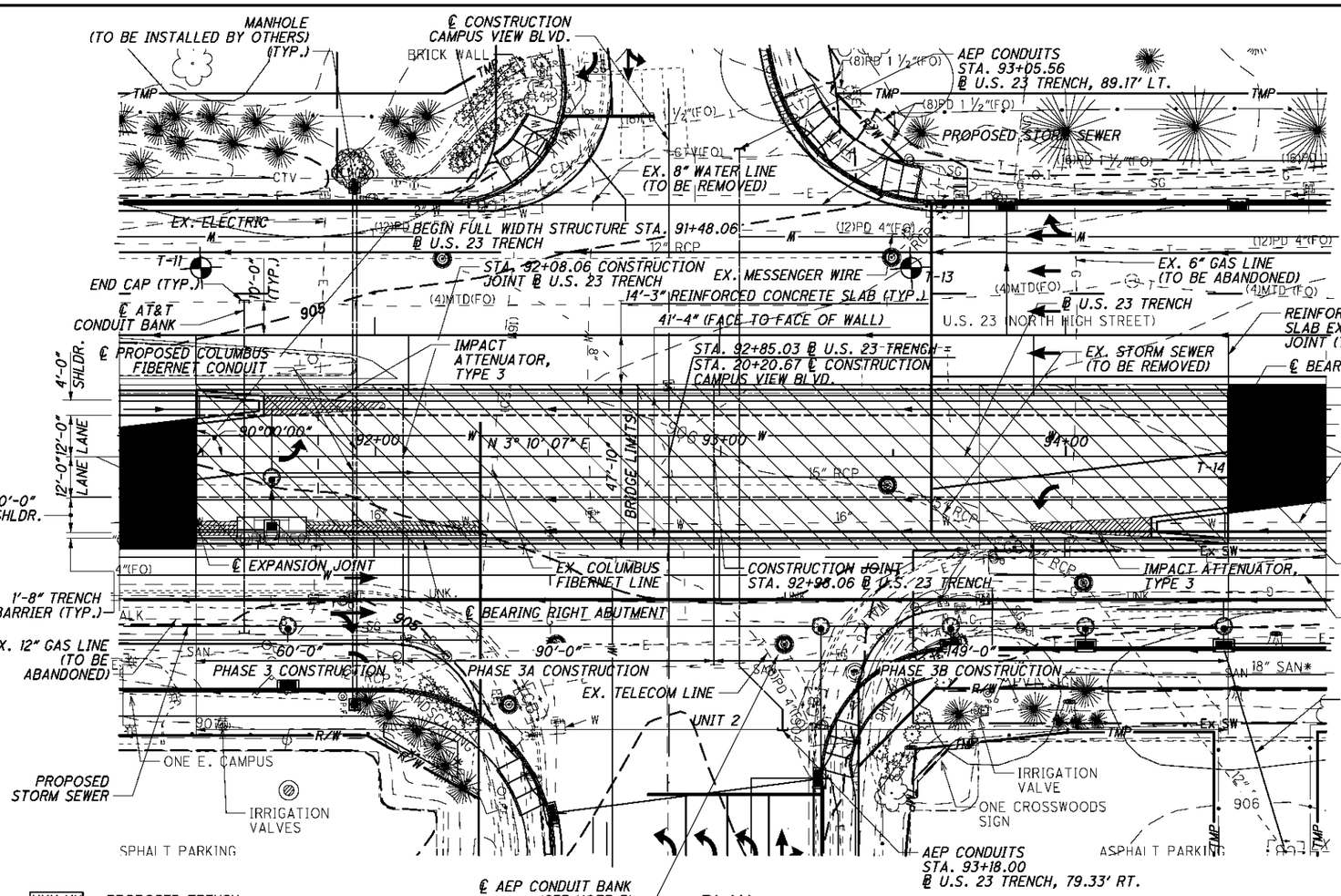
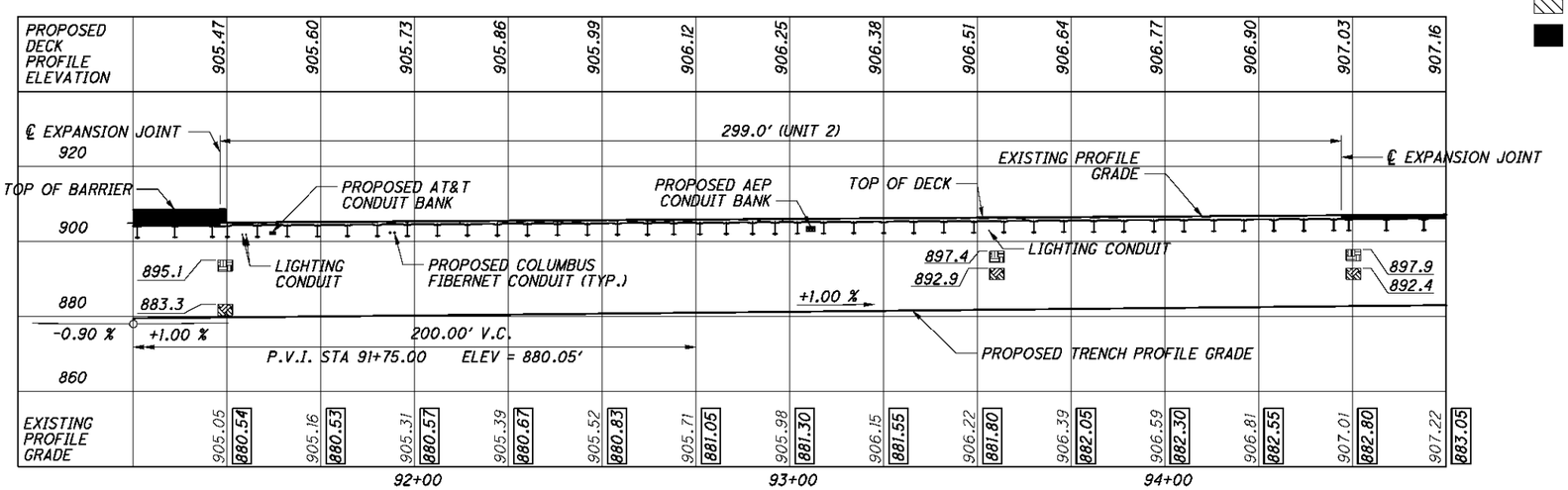
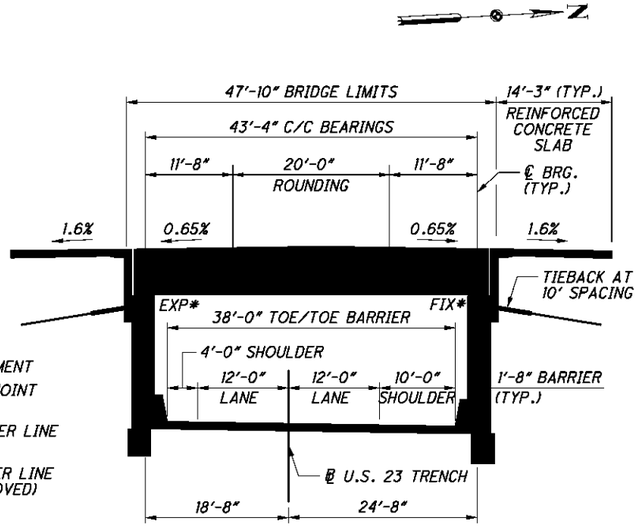


PLAN

XXX.XX = PROPOSED TRENCH PROFILE GRADE



ELEVATION ALONG ℄ U.S. 23 TRENCH



* BEARING CONDITION (EXPANSION OR FIXED) IS FOR TRANSVERSE MOVEMENT ONLY, LONGITUDINAL BEARING CONDITION VARIES

UNIT 2 TYPICAL SECTION

(LOOKING UPSTATION)

NOTES:

1. MINIMUM VERTICAL CLEARANCE SHOWN ON UNIT 4, SHEET 4/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 1/101.
3. MAXIMUM BEND OF AEP CONDUIT SHALL BE 45°. MINIMUM BEND RADIUS SHALL BE 36".

LEGEND:

- SOIL BORING LOCATION
- = ELEVATION TOP OF WEATHERED SHALE
- = ELEVATION TOP OF SHALE
- = FULL WIDTH STRUCTURE
- = PARTIAL WIDTH STRUCTURE

DESIGN TRAFFIC:

2008 ADT = 13,070 2008 ADTT = 654
2028 ADT = 16,120 2028 ADTT = 784

PROPOSED STRUCTURE

TYPE: SINGLE-SPAN STRUCTURE WITH ROLLED STEEL BEAMS AND COMPOSITE REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS WITH DRILLED SHAFT SOLDIER PILES AND TIE BACKS.

SPAN: 43'-4" C/C BEARINGS

ROADWAY: UNIT 2 - 299'-0" ℄ OF EXPANSION JOINT TO ℄ OF EXPANSION JOINT

LOADING: HS25 CASE II, ALTERNATE MILITARY & 60 PSF FWS

SKEW: 0°0'0"

APPROACH SLABS: 14'-3" LONG, AS PER PLAN

ALIGNMENT: TANGENT

COORDINATES: LATITUDE N40°07'06"
LONGITUDE W83°00'58"

WEARING SURFACE: 1" MONOLITHIC CONCRETE

DESIGN AGENCY HNTB 100 Superior Avenue, Suite 1330 Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN JFM | CHECKED BTA/JOL | REVIEWED RSB | DATE 11/3/12 | REVISED | STRUCTURE FILE NUMBER 2500760

FRANKLIN COUNTY
STA. 91+48.06
STA. 94+47.06

SITE PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH-UNIT 2

FRA-23-22.23
PID No. 81746

2 / 101

992 / 1150

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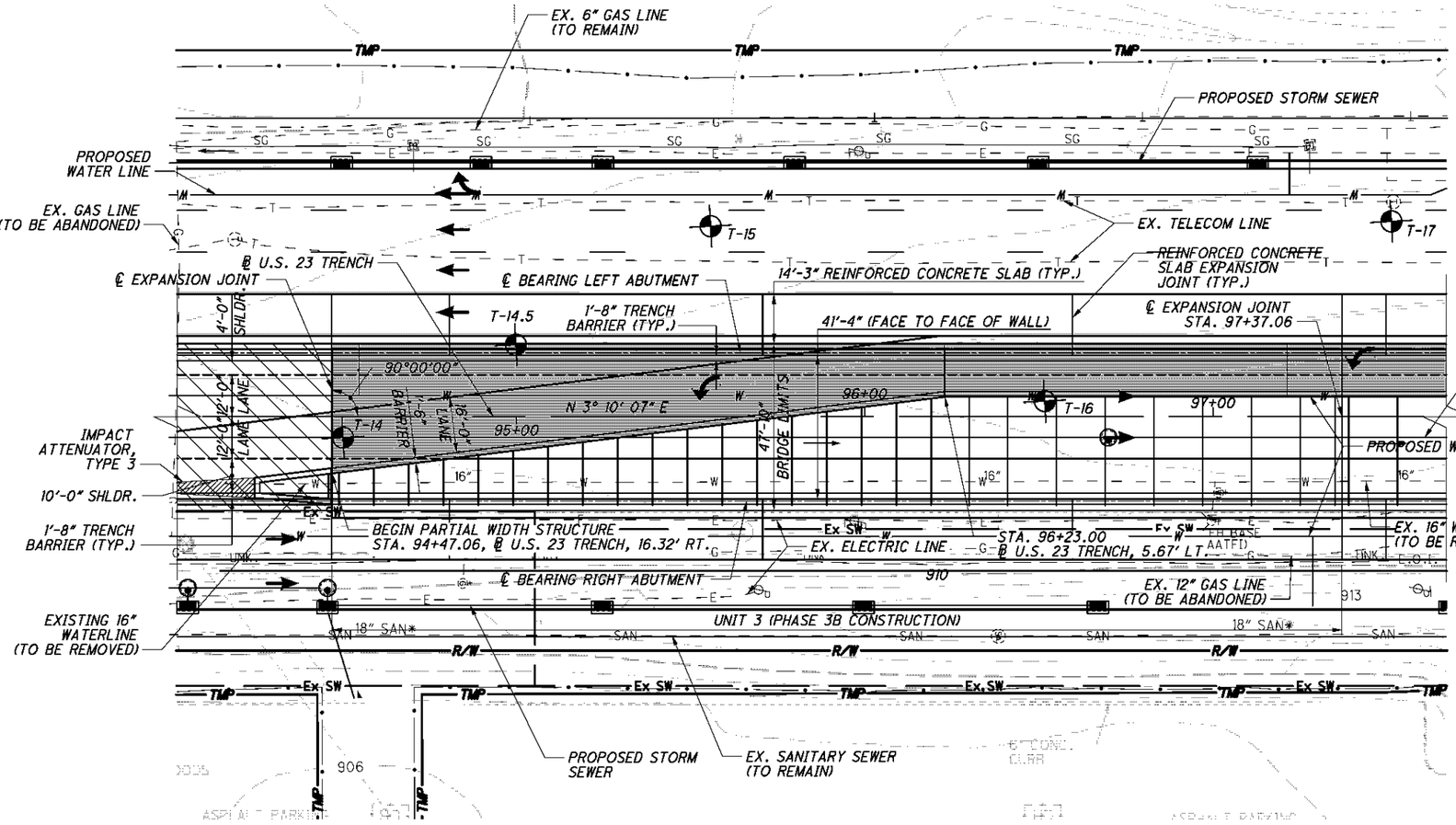
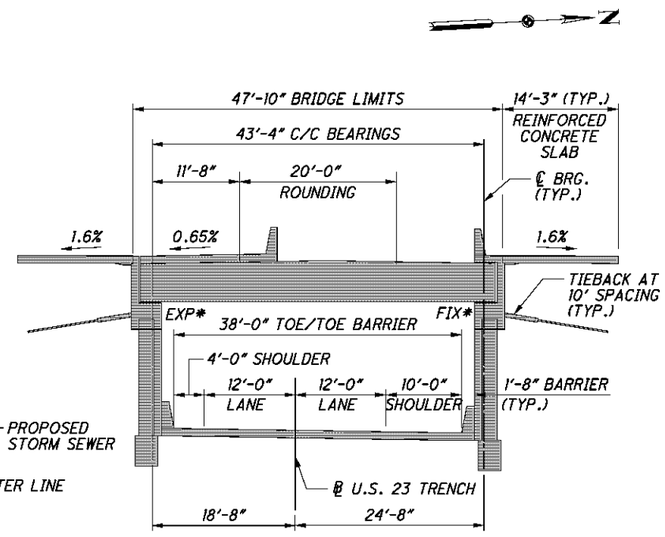


PLAN



* BEARING CONDITION (EXPANSION OR FIXED) IS FOR TRANSVERSE MOVEMENT ONLY, LONGITUDINAL BEARING CONDITION VARIES

UNIT 3 TYPICAL SECTION

(LOOKING UPSTATION)

NOTES:

1. MINIMUM VERTICAL CLEARANCE SHOWN ON UNIT 4, SHEET 4/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 1/101.

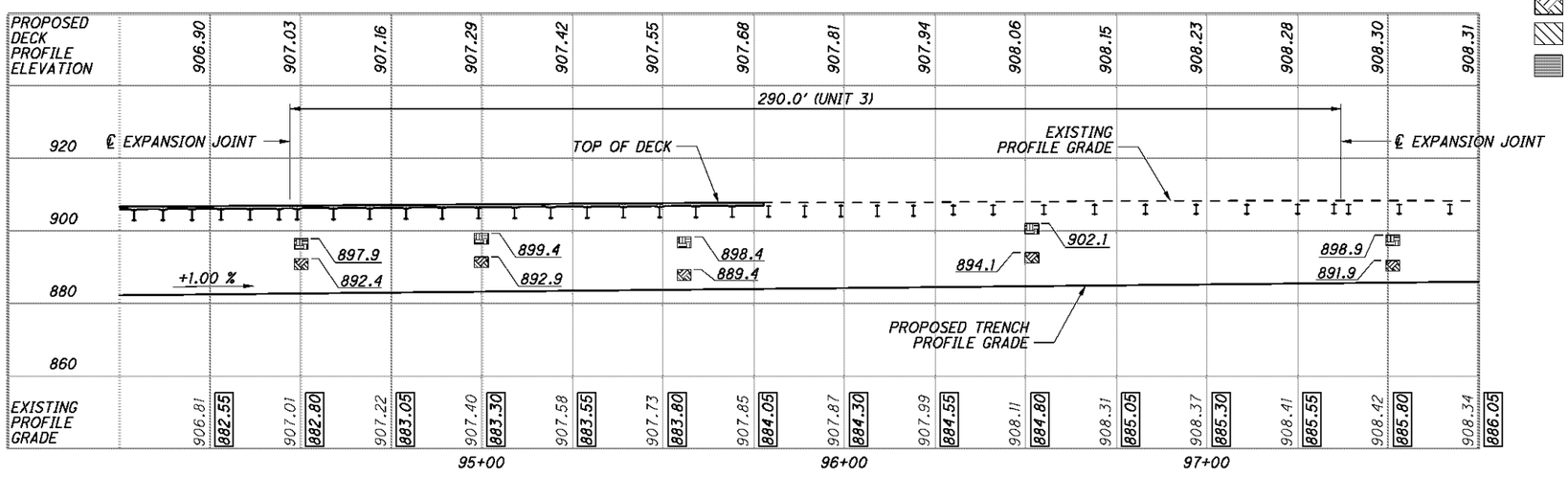
DESIGN TRAFFIC:

2008 ADT = 13,070 2008 ADTT = 654
2028 ADT = 16,120 2028 ADTT = 784

LEGEND:

- SOIL BORING LOCATION
- = ELEVATION TOP OF WEATHERED SHALE
- = ELEVATION TOP OF SHALE
- = FULL WIDTH STRUCTURE
- = PARTIAL WIDTH STRUCTURE

XXX.XX = PROPOSED TRENCH PROFILE GRADE



ELEVATION ALONG ℄ U.S. 23 TRENCH

PROPOSED STRUCTURE

TYPE: SINGLE-SPAN STRUCTURE WITH ROLLED STEEL BEAMS AND COMPOSITE REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS WITH DRILLED SHAFT SOLDIER PILES AND TIE BACKS.

SPAN: 43'-4" C/C BEARINGS

ROADWAY: UNIT 3 - 290'-0" ℄ OF EXPANSION JOINT TO ℄ OF EXPANSION JOINT

LOADING: HS25 CASE II, ALTERNATE MILITARY & 60 PSF FWS

SKEW: 0°0'0"

APPROACH SLABS: 14'-3" LONG, AS PER PLAN

ALIGNMENT: TANGENT

COORDINATES: LATITUDE N40°07'06"
LONGITUDE W83°00'58"

WEARING SURFACE: 1" MONOLITHIC CONCRETE

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JFM	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BTA/JOL		2500760	

FRANKLIN COUNTY
STA. 94+47.06
STA. 97+37.06

SITE PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH-UNIT 3

FRA-23-22.23
PID No. 81746

3/101

993/1150

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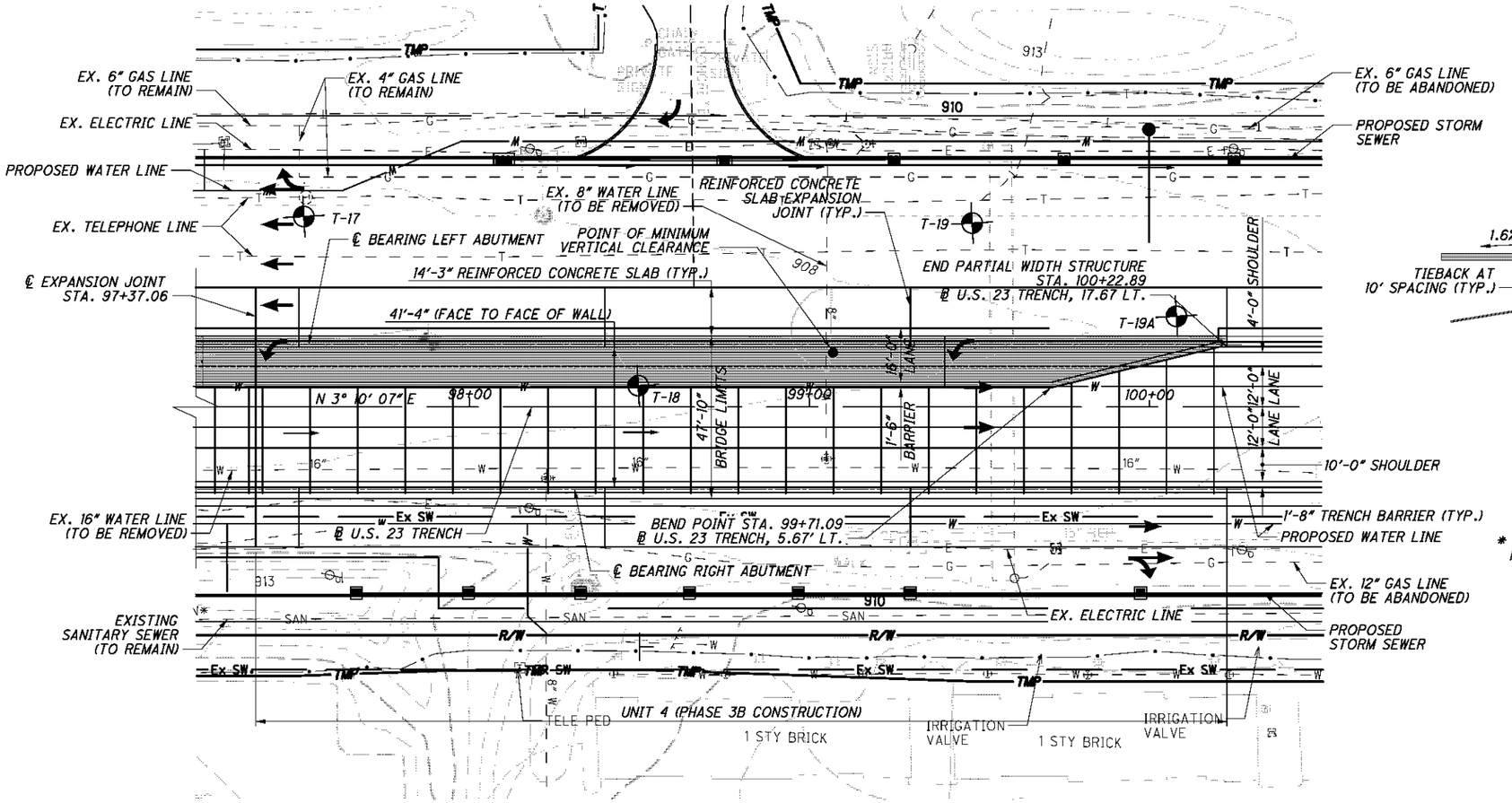
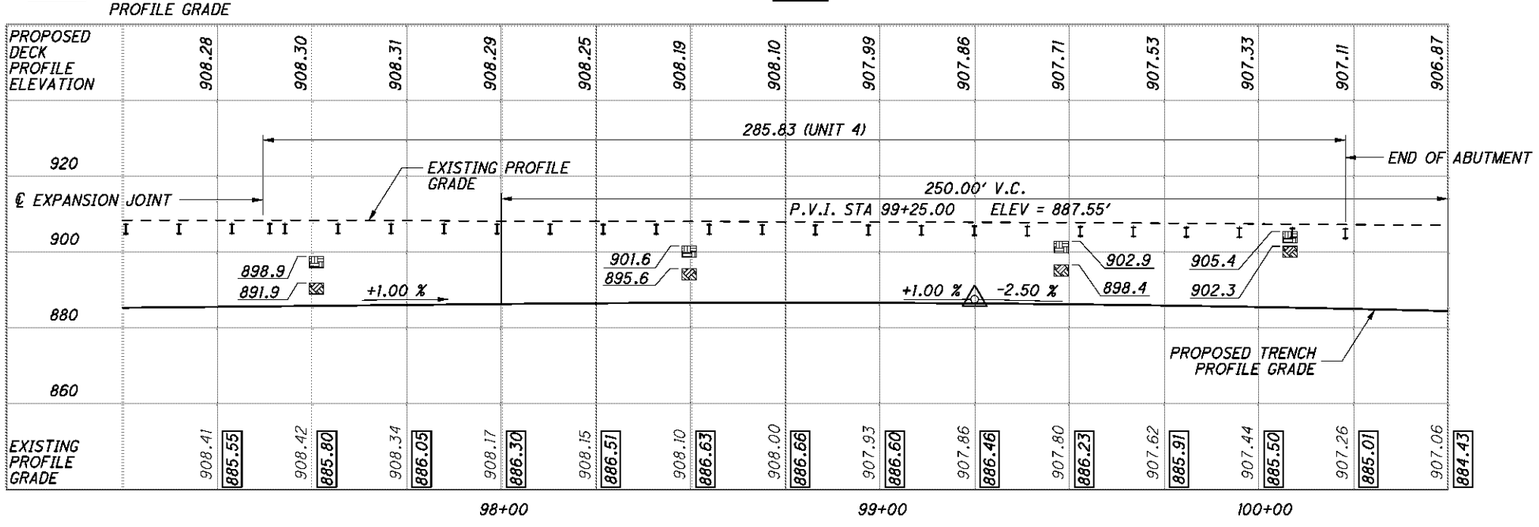
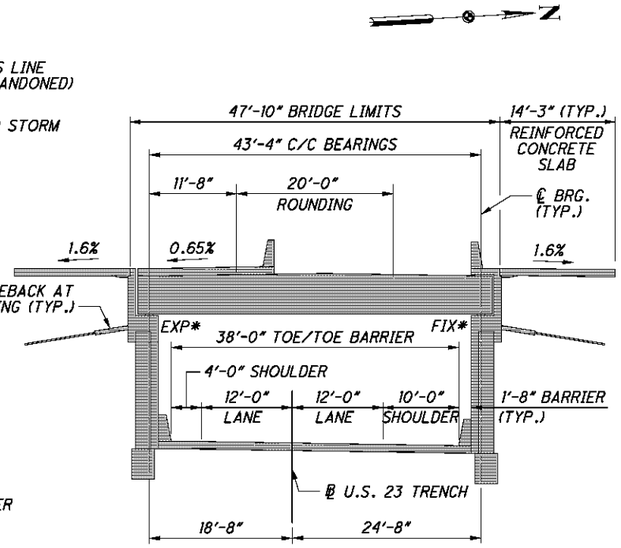


PLAN

XXX.XX = PROPOSED TRENCH PROFILE GRADE



ELEVATION ALONG ℄ U.S. 23 TRENCH



* BEARING CONDITION (EXPANSION OR FIXED) IS FOR TRANSVERSE MOVEMENT ONLY, LONGITUDINAL BEARING CONDITION VARIES

UNIT 4 TYPICAL SECTION

(LOOKING UPSTATION)

NOTE:

1. FOR ADDITIONAL NOTES, SEE SHEET 1/101.

DESIGN TRAFFIC:

2008 ADT = 13,070 2008 ADTT = 654
2028 ADT = 16,120 2028 ADTT = 784

LEGEND:

- SOIL BORING LOCATION
- = ELEVATION TOP OF WEATHERED SHALE
- = ELEVATION TOP OF SHALE
- = FULL WIDTH STRUCTURE
- = PARTIAL WIDTH STRUCTURE

PROPOSED STRUCTURE

TYPE: SINGLE-SPAN STRUCTURE WITH ROLLED STEEL BEAMS AND COMPOSITE REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS WITH DRILLED SHAFT SOLDIER PILES AND TIE BACKS.

SPAN: 43'-4" C/C BEARINGS

ROADWAY: UNIT 4 - 285'-10" ℄ OF EXPANSION JOINT TO END OF ABUTMENT

LOADING: HS25 CASE II, ALTERNATE MILITARY & 60 PSF FWS

SKEW: 0°0'0"

APPROACH SLABS: 14'-3" LONG, AS PER PLAN

ALIGNMENT: TANGENT

COORDINATES: LATITUDE N40°07'06"
LONGITUDE W83°00'58"

WEARING SURFACE: 1" MONOLITHIC CONCRETE

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	CHECKED
JOL	BTA/JOL

DRAWN	REVISED
JFM	

REVIEWED	DATE
RSB	11/3/12

STRUCTURE FILE NUMBER 2500760

FRANKLIN COUNTY
STA. 97+37.06
STA. 100+22.89

SITE PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH-UNIT 4

FRA-23-22.23
PID No. 81746

4 / 101

994
1150

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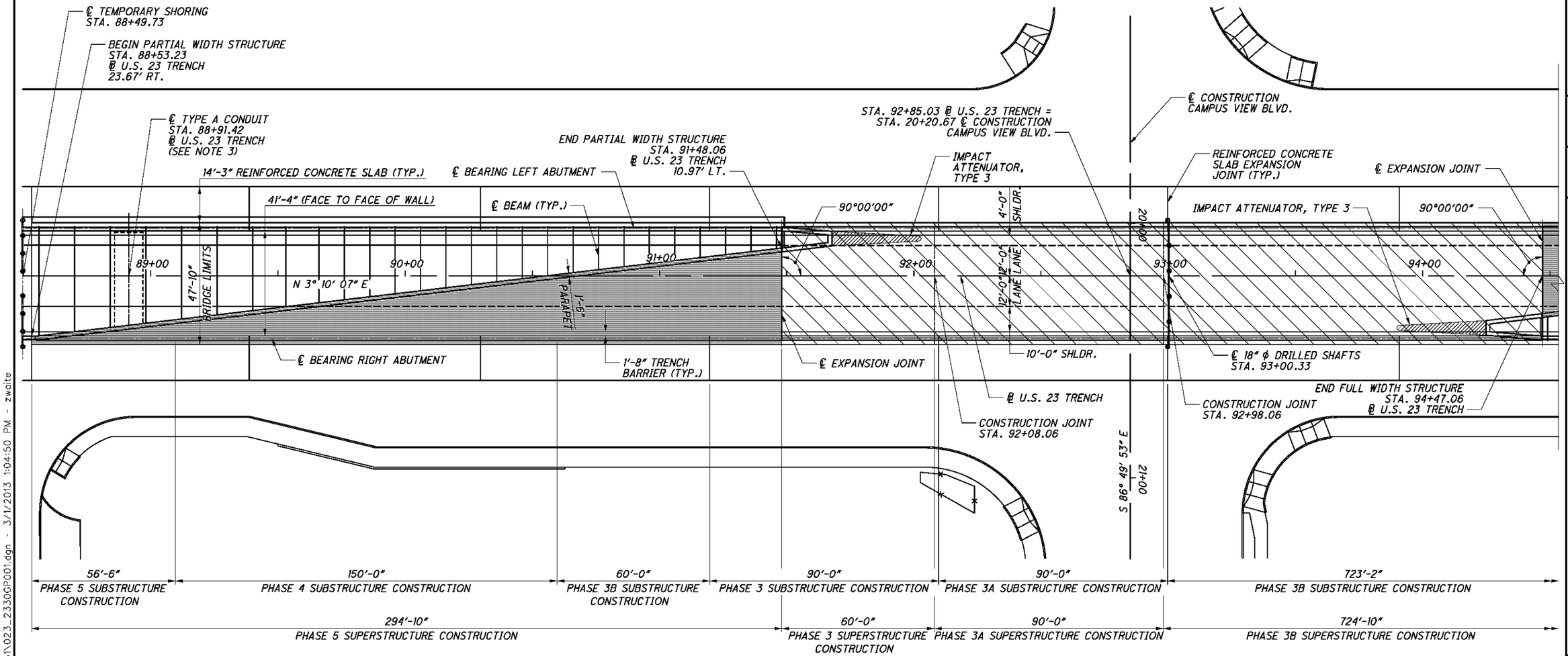

PLAN

LEGEND:

= FULL WIDTH STRUCTURE

= PARTIAL WIDTH STRUCTURE

NOTES:

1. FOR ADDITIONAL DETAILS, SEE SITE PLAN SHEETS 1/101 AND 2/101.
2. FOR ADDITIONAL CONSTRUCTION PHASING DETAILS, SEE ROADWAY MOT PLAN SHEETS AND SHEETS 15/101 THROUGH 17/101.
3. FOR ADDITIONAL TYPE A CONDUIT DETAILS, SEE SHEET 51/101 .

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	XX/X/XX
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JTW		2500760	

GENERAL PLAN - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

5 / 101

995
1150

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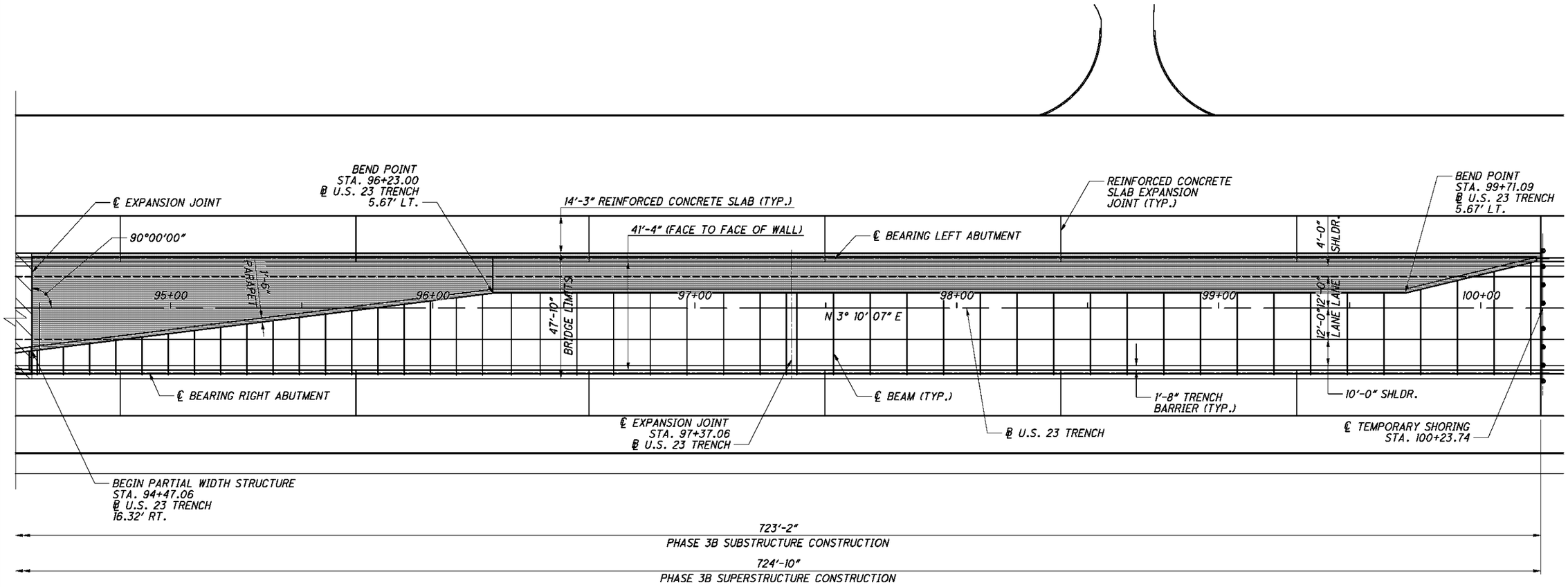

PLAN

LEGEND:

= FULL WIDTH STRUCTURE

= PARTIAL WIDTH STRUCTURE

NOTES:

1. FOR ADDITIONAL DETAILS, SEE SITE PLAN SHEETS 3/101 AND 4/101.
2. FOR ADDITIONAL CONSTRUCTION PHASING DETAILS, SEE ROADWAY MOT PLAN SHEETS AND SHEETS 15/101 THROUGH 17/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	XX/X/XX
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JTW		2500760	

GENERAL PLAN - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

6 / 101

996
1150

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MADE BY: ZTW DATE: 4/02/12
CHECKED BY: RSB DATE: 8/20/12

ESTIMATED QUANTITIES

ITEM	EXT.	UTILITY	05/NHS/ BR/NEW	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	SOLDIER PILE WALLS	SUPERSTRUCTURE	GENERAL	AS PER PLAN REFERENCE SHEET NUMBER
503	11101	0	LUMP	LUMP		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					936/1150
503	21300	0	LUMP	LUMP		UNCLASSIFIED EXCAVATION					
503	31101	0	1585	1585	CU YD	ROCK EXCAVATION, AS PER PLAN	150	1415		20	940/1150
509	10000	0	942973	942973	POUND	EPOXY COATED REINFORCING STEEL	287631	163791	491014	537	
512	10050	0	8671	8671	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)	7670		1001		
512	33001	0	655	655	SQ YD	TYPE 2 WATERPROOFING, AS PER PLAN	655				46,54 & 60 / 101
SPECIAL	51267400	0	28220	28220	SQ FT	WATERPROOFING, MISC.: ASPHALT COATING		28220			936/1150
513	10261	1075	917000	918075	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 3, AS PER PLAN ***			918075		937-939/1150
513	20000	0	15222	15222	EACH	WELDED STUD SHEAR CONNECTORS		15222			
513	20001	0	12074	12074	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN			12074		940/1150
516	11211	0	1555	1555	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			1555		93 / 101
516	13600	0	9226	9226	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	585	8596	45		
516	13900	0	85	85	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	85				
516	44101	0	9	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			9		71 / 101
						(11" DIAMETER X 2.57" W/ 12" X 12" X 1.5" LOAD PLATE & 12" X 20" X 1.5" MASONRY PLATE)					
516	44101	0	46	46	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			46		71 / 101
						(12" DIAMETER X 2.65" W/ 13" X 13" X 1.5" LOAD PLATE & 13" X 22" X 1.5" MASONRY PLATE)					
516	44101	0	2	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			2		71 / 101
						(12" DIAMETER X 2.65" W/ 13" X 20" X 1.5" LOAD PLATE)					
516	44101	0	29	29	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			29		72 / 101
						(8" X 9" X 2.65" W/ 9" X 23" X 1.5" LOAD PLATE & 17" X 21" X 1.5" MASONRY PLATE)					
516	44101	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		72 / 101
						(8" X 9" X 2.65" W/ 9" X 19" X 1.5" LOAD PLATE)					
516	44101	0	26	26	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			26		72 / 101
						(9" X 11" X 2.92" W/ 10" X 24" X 1.5" LOAD PLATE & 17" X 22" X 1.5" MASONRY PLATE)					
516	44101	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		72 / 101
						(9" X 11" X 2.92" W/ 14" X 20" X 1.5" LOAD PLATE)					
516	44201	0	38	38	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			38		71 / 101
						(15" DIAMETER X 3.04" W/ 16" X 16" X 1.5" LOAD PLATE & 16" X 24" X 1.5" MASONRY PLATE)					
516	44201	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		71 / 101
						(15" DIAMETER X 3.04" W/ 16" X 22" X 1.5" LOAD PLATE)					
516	44201	0	17	17	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			17		71 / 101
						(14" DIAMETER X 3.42" W/ 15" X 15" X 1.5" LOAD PLATE & 15" X 23" X 1.5" MASONRY PLATE)					
516	44201	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		71 / 101
						(14" DIAMETER X 3.42" W/ 15" X 21" X 1.5" LOAD PLATE)					
516	44201	0	17	17	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			17		72 / 101
						(12" X 13" X 3.42" W/ 13" X 25" X 1.5" LOAD PLATE & 13" X 23" X 1.5" MASONRY PLATE)					
516	44201	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		72 / 101
						(12" X 13" X 3.42" W/ 10" X 20" X 1.5" LOAD PLATE)					
516	44201	0	38	38	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			38		72 / 101
						(13" X 14" X 3.42" W/ 14" X 25" X 1.5" LOAD PLATE & 14" X 23" X 1.5" MASONRY PLATE)					
516	44201	0	1	1	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN			1		72 / 101
						(13" X 14" X 3.42" W/ 13" X 20" X 1.5" LOAD PLATE)					
524	94603	0	165	165	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN		165			936/1150
524	94605	0	5140	5140	FT	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN		5140			936/1150
SPECIAL	53000400	0	236	236	EACH	STRUCTURE, MISC.: TIEBACK		236			56 / 101
603	98300	0	41	41	FT	CONDUIT, MISC.: TYPE A CORRUGATED STEEL ARCH, 11'-0" SPAN X 3'-6" RISE				41	51 / 101
SPECIAL	61050000	0	468	468	EACH	RETAINING WALL, MISC.: ROCK BOLTS		468			949/1150
SPECIAL	61060000	0	LUMP	LUMP		RETAINING WALL, MISC.: SOLDIER PILE WALL					936/1150
SPECIAL	61060000	0	LUMP	LUMP		RETAINING WALL, MISC.: EXCAVATION MONITORING					949/1150
613	41201	0	22	22	CU YD	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN				22	51 / 101
625	25920	175	0	175	FT	CONDUIT, MISC.: (6) - 5" NOMINAL SIZE FIBERGLASS (AEP) ***				175	949/1150
625	25920	97	0	97	FT	CONDUIT, MISC.: (2) - 4" NOMINAL SIZE FIBERGLASS (AT&T) *				97	949/1150
625	25920	148	0	148	FT	CONDUIT, MISC.: (2) - 6" NOMINAL SIZE SCHEDULE 40 STEEL PIPE (COLUMBUS FIBERNET) **				148	940 &1055/1150
898	10210	0	855	855	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK)			855		
898	10689	0	3705	3705	SQ YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), (T=12"), AS PER PLAN				3705	97 / 101
898	11001	0	282	282	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET), AS PER PLAN	134		148		937/1150
898	20151	0	2045	2045	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT), AS PER PLAN	2045				937,1012,1014,1025&1027/1150
898	20301	0	6	6	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (FOOTING), AS PER PLAN				6	51 / 101
898	98000	0	1055	1055	CU YD	QC/QA CONCRETE, MISC.: CLASS QSC1, SOLDIER PILE CONCRETE FACING, AS PER PLAN		1055			937/1150

* - 08/NHS/OT/AT&T (AT&T IS RESPONSIBLE FOR PAYMENT OF CONDUIT)

** - 09/NHS/OT/FIBE (COLUMBUS FIBERNET IS RESPONSIBLE FOR PAYMENT OF CONDUIT)

*** - 07/NHS/OT/AEP (AEP IS RESPONSIBLE FOR PAYMENT OF 1075 LBS OF STRUCTURAL STEEL AND CONDUIT)

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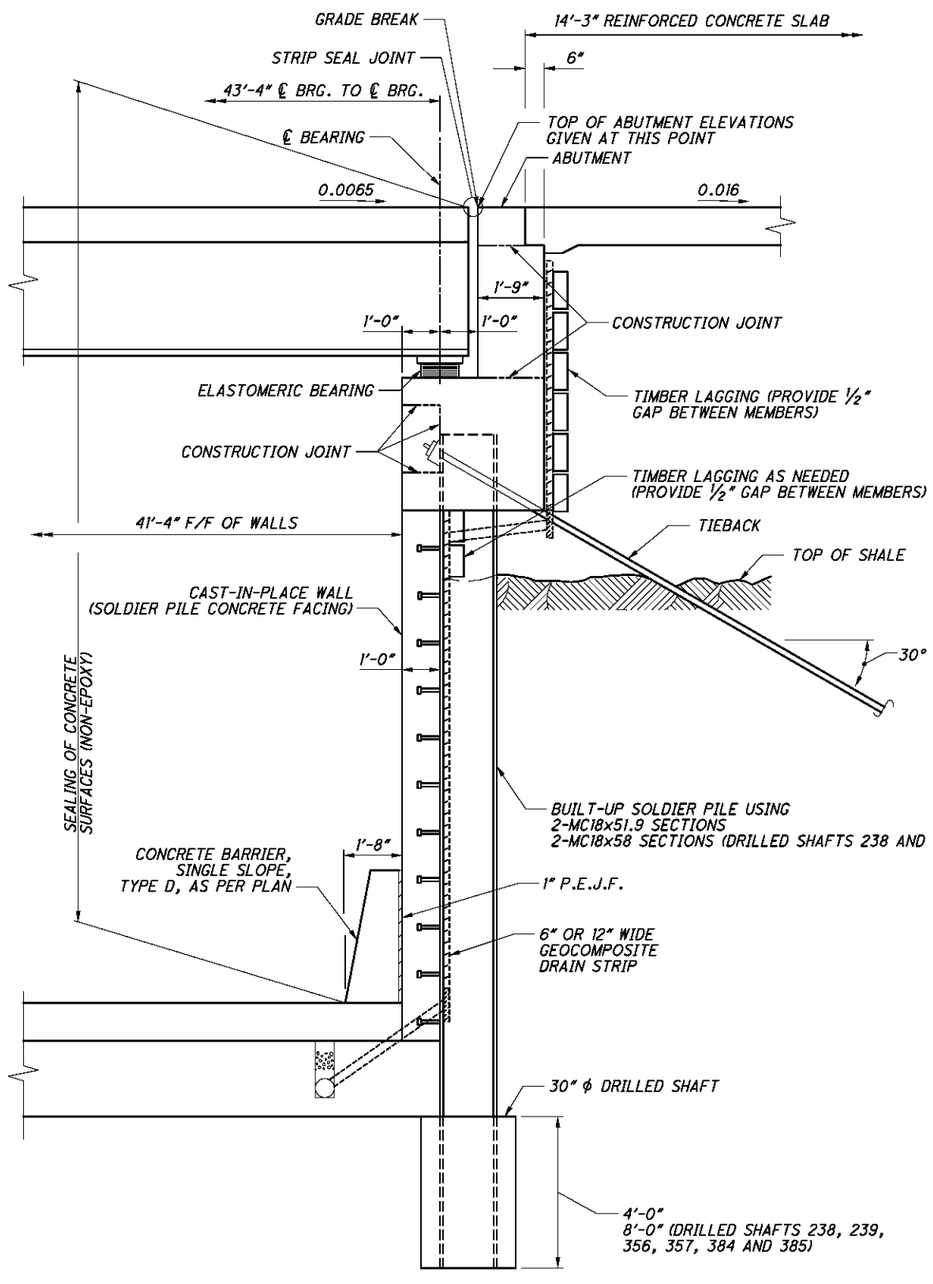
DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

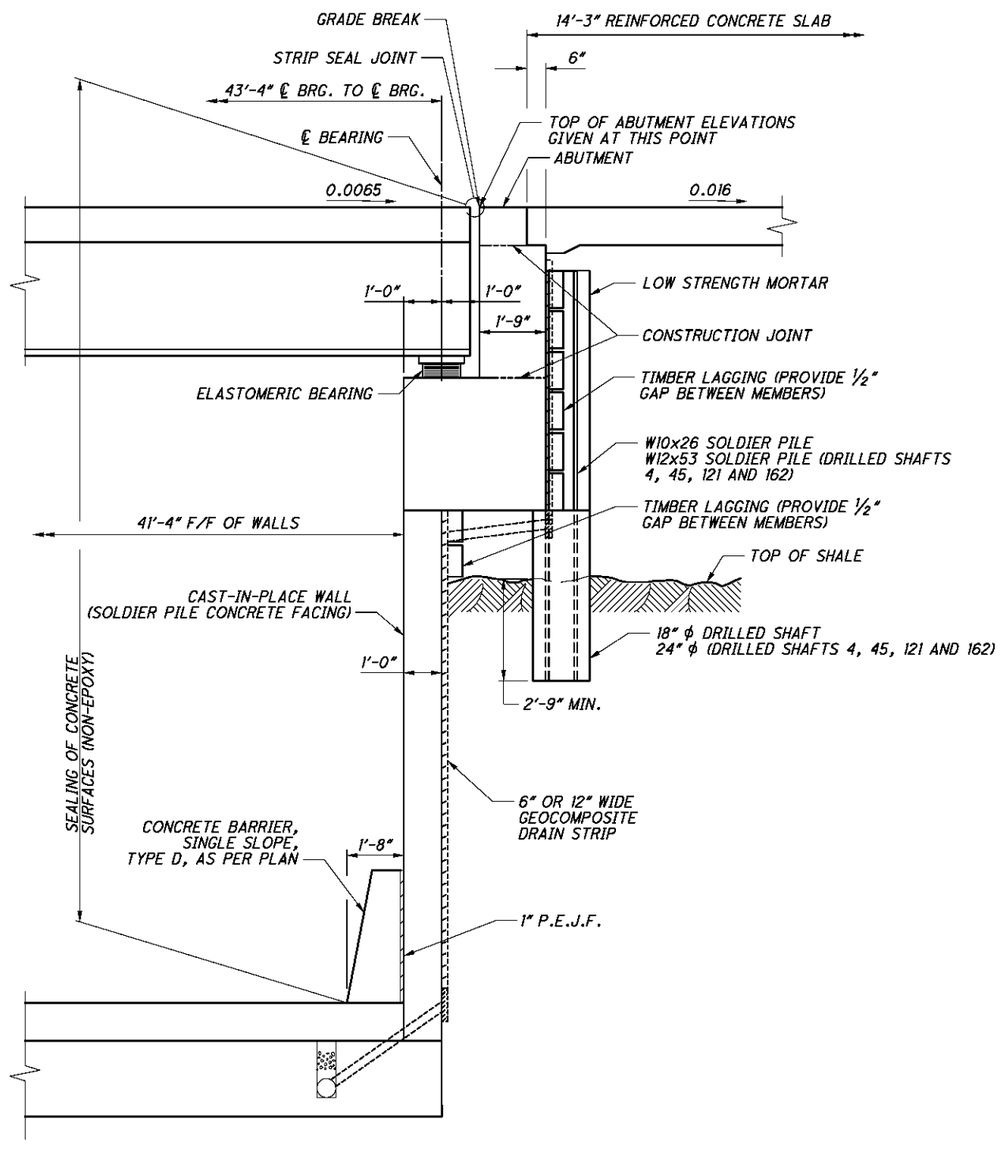
DATE 11/3/12
REVIEWED RSB
STRUCTURE FILE NUMBER 2500760
DRAWN PPA
REVISED
DESIGNED JOL
CHECKED TJE

ESTIMATED QUANTITIES
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746



TYPICAL SECTION AT TIEBACK



TYPICAL SECTION BETWEEN TIEBACKS

NOTES:

1. FOR TYPICAL SECTIONS WITH NO OVERHEAD SLAB, SEE SHEET 9/101.

DESIGN AGENCY
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TYPICAL SECTIONS AT OVERHEAD SLABS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

8/101

998
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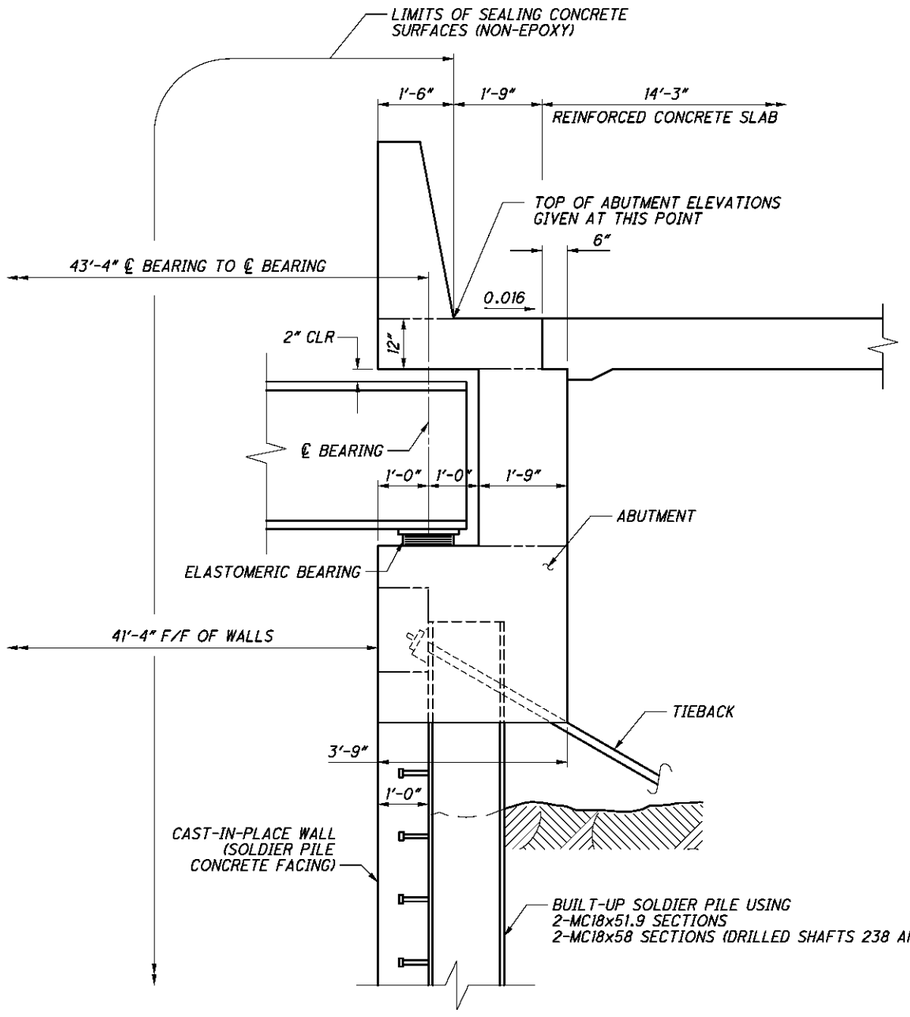
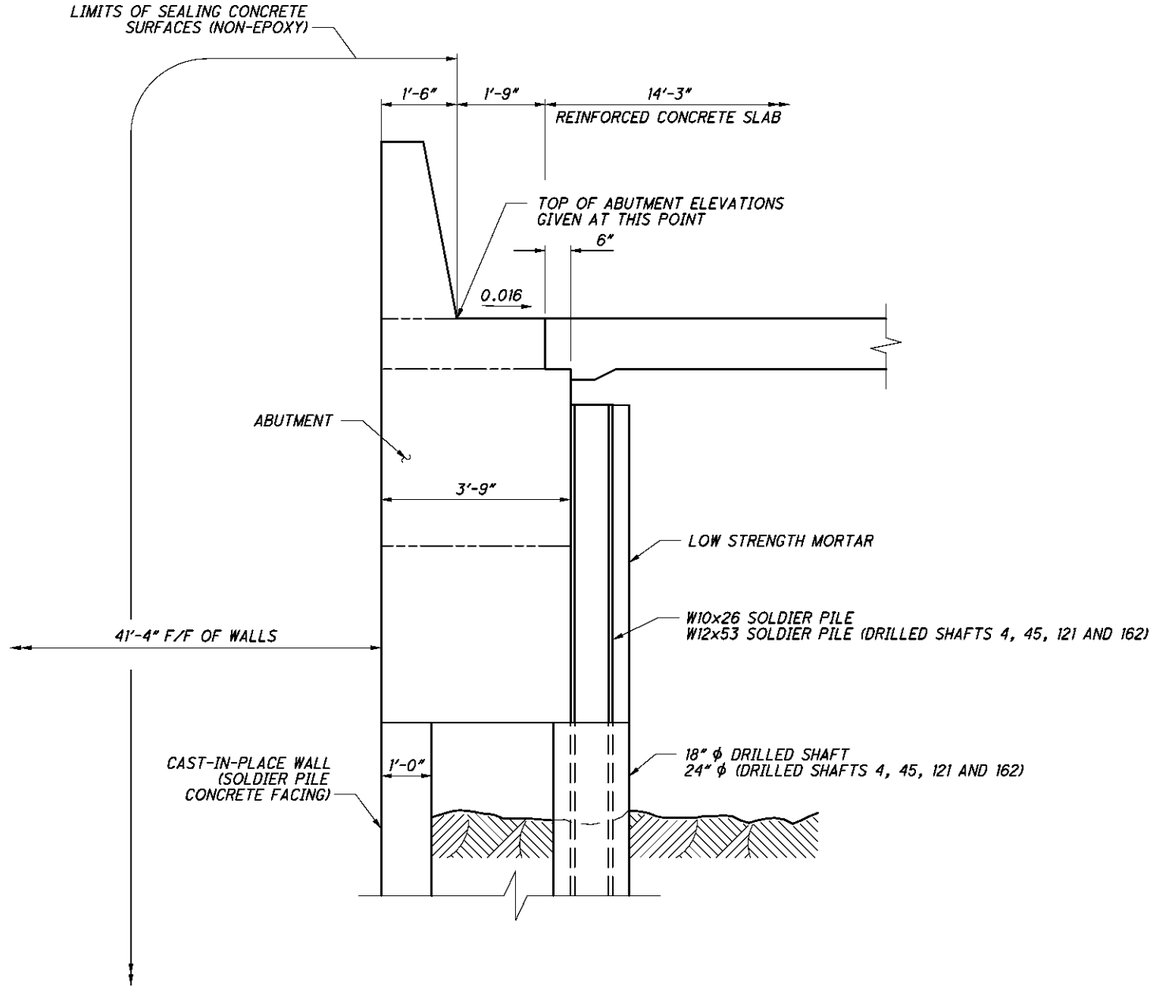


TYPICAL SECTION AT BEAM OPENINGS AND AT TIEBACKS

(TIMBER LAGGING AND GEOCOMPOSITE DRAIN STRIP NOT SHOWN FOR CLARITY)
(SEE NOTE 2)



TYPICAL SECTION BETWEEN BEAMS AND TIEBACKS

(TIMBER LAGGING AND GEOCOMPOSITE DRAIN STRIP NOT SHOWN FOR CLARITY)
(SEE NOTE 3)

NOTES:

1. FOR TYPICAL SECTIONS AT OVERHEAD SLABS, SEE SHEET 8/101.
2. FOR ADDITIONAL DETAILS, SEE TYPICAL SECTION AT TIEBACK ON SHEET 8/101.
3. FOR ADDITIONAL DETAILS, SEE TYPICAL SECTION BETWEEN TIEBACKS ON SHEET 8/101.

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TYPICAL SECTIONS WITH NO OVERHEAD SLAB
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

9/101

999/1150

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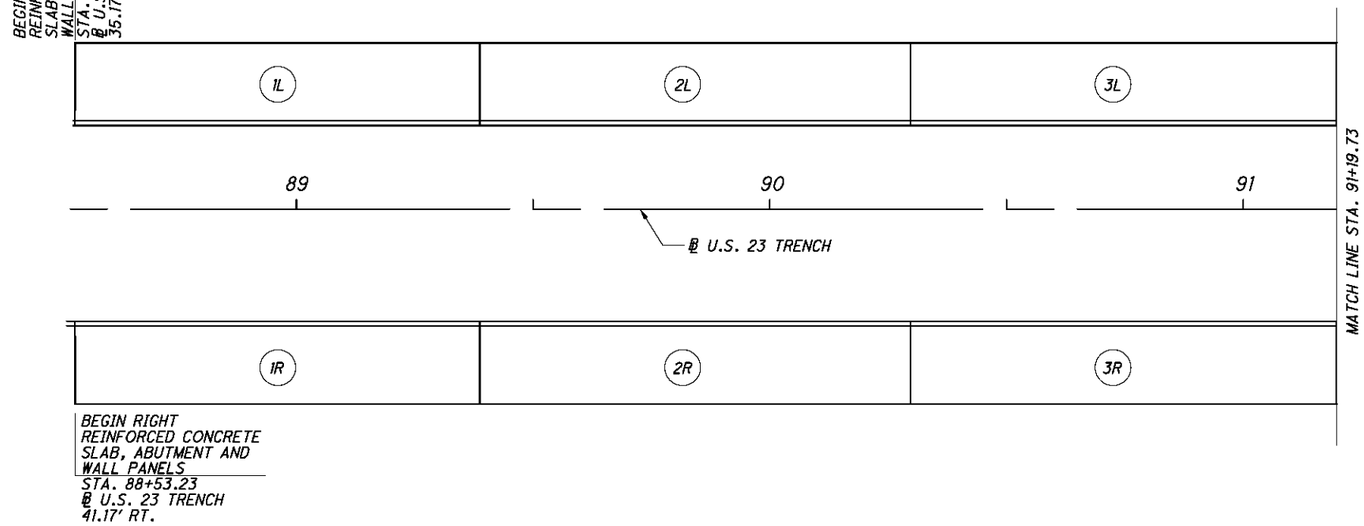
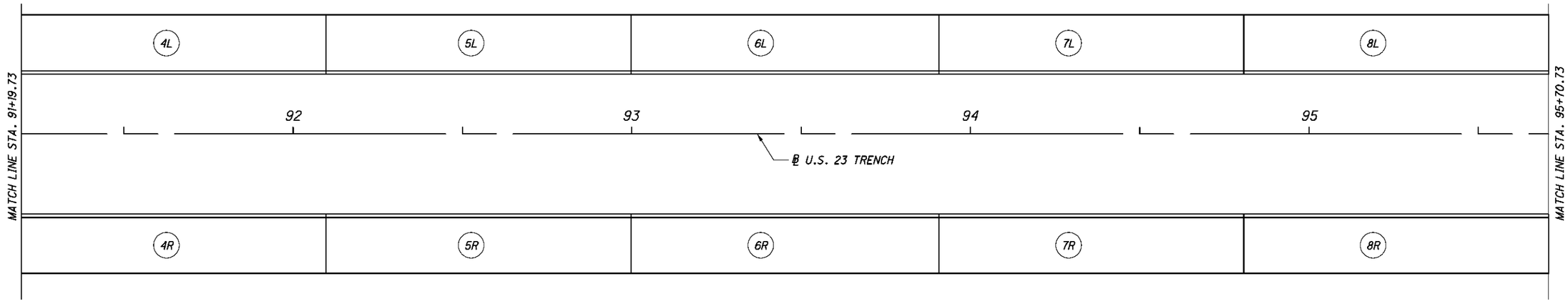


REINFORCED CONCRETE SLAB, ABUTMENT & WALL SCHEMATIC



REINFORCED CONCRETE SLAB, ABUTMENT & WALL SCHEMATIC

LEGEND:

◯ - DENOTES REINFORCED CONCRETE SLAB, ABUTMENT & WALL PANEL NUMBER

NOTES:

1. FOR REINFORCED CONCRETE SLAB DETAILS, SEE SHEET 97/101.
2. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEETS 59/101 AND 60/101.
3. FOR ABUTMENT PLAN, ELEVATION AND DETAILS, SEE SHEETS 19/101 THROUGH 50/101.

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
T.JE/JOL		2500760	

REINFORCED CONCRETE SLAB, ABUTMENT & WALL SCHEMATIC - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

10/101

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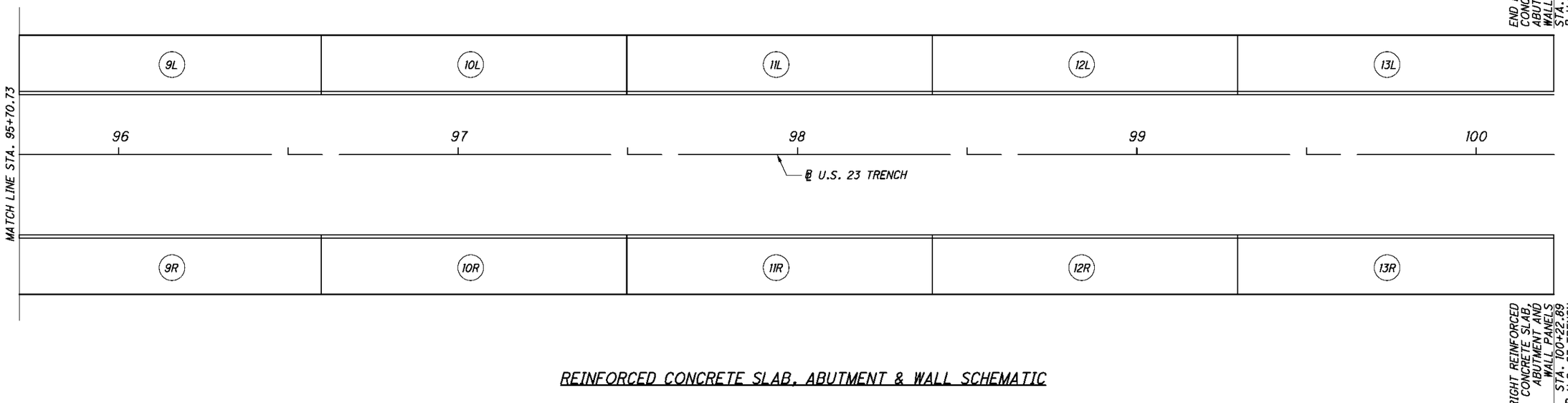

REINFORCED CONCRETE SLAB, ABUTMENT & WALL SCHEMATIC

LEGEND:

- DENOTES REINFORCED CONCRETE SLAB, ABUTMENT & WALL PANEL NUMBER

NOTES:

1. FOR REINFORCED CONCRETE SLAB DETAILS, SEE SHEET 97/101.
2. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEETS 59/101 AND 60/101.
3. FOR ABUTMENT PLAN, ELEVATION AND DETAILS, SEE SHEETS 19/101 THROUGH 50/101.

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TJE/JOL		2500760	

REINFORCED CONCRETE SLAB, ABUTMENT & WALL SCHEMATIC - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

11 / 101

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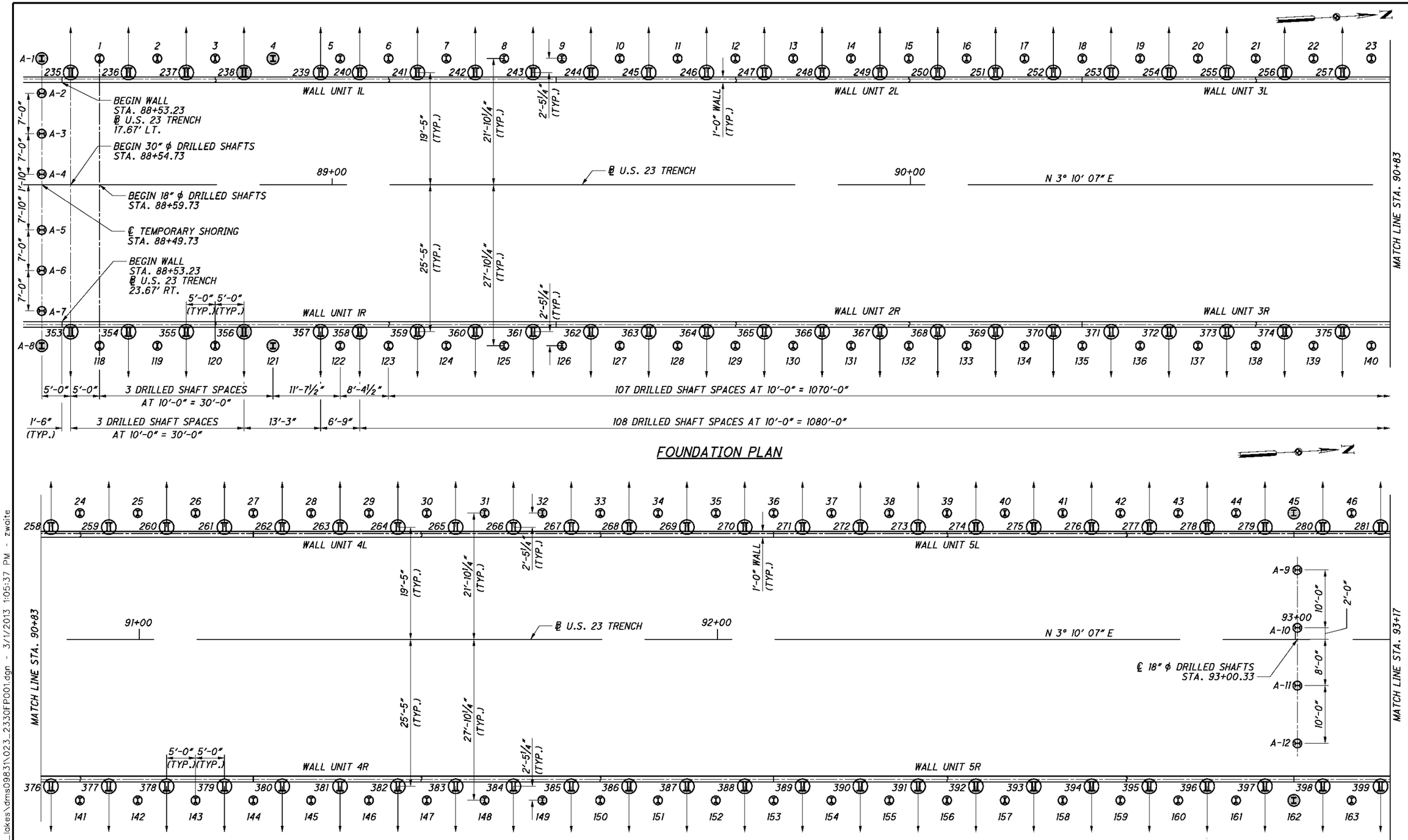

FOUNDATION PLAN

FOUNDATION PLAN

LEGEND:

- (II) – DENOTES BUILT-UP SOLDIER PILE WITH 2-MC18x51.9 SECTIONS AND 30" ϕ DRILLED SHAFT WITH TIEBACK
- (II) – DENOTES BUILT-UP SOLDIER PILE WITH 2-MC18x58 SECTIONS AND 30" ϕ DRILLED SHAFT WITH TIEBACK (238 & 356)
- (I) – DENOTES SOLDIER PILE WITH A W10x26 SECTION AND 18" ϕ DRILLED SHAFT
- (I) – DENOTES SOLDIER PILE WITH A W12x53 SECTION AND 24" ϕ DRILLED SHAFT (A-1, A-8, 4, 45, 121 AND 162)

NOTES:

1. FOR SOLDIER PILE DETAILS, SEE SHEETS 55/101 AND 60/101.
2. DRILLED SHAFTS DESIGNATED WITH "A" ARE USED FOR TEMPORARY SHORING. FOR DETAILS, SEE SHEETS 52/101 AND 53/101.

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SOLDIER PILE WALL FOUNDATION PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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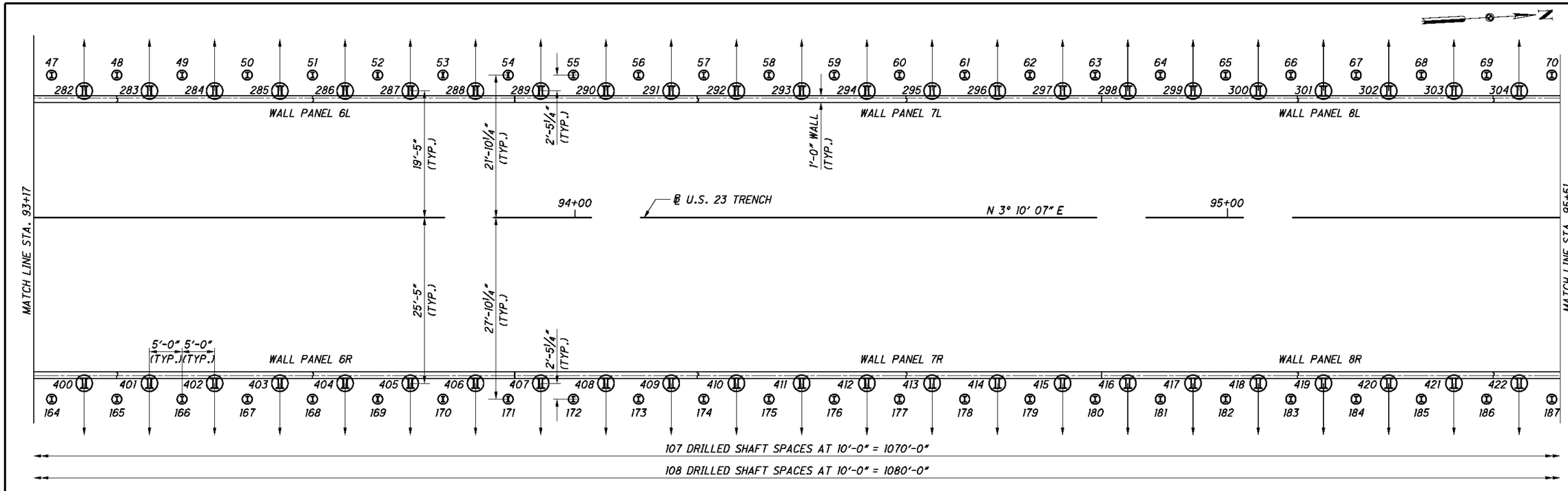
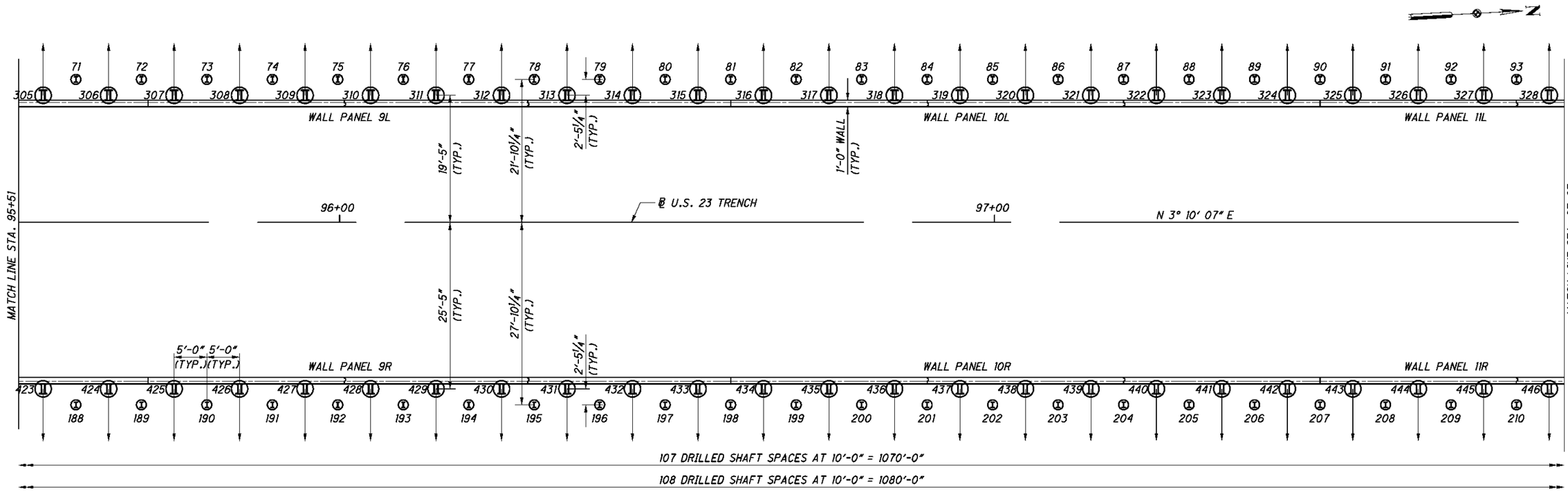


FOUNDATION PLAN



FOUNDATION PLAN

LEGEND:

- DENOTES BUILT-UP SOLDIER PILE WITH 2-MC18x51.9 SECTIONS AND 30" ϕ DRILLED SHAFT WITH TIEBACK
- DENOTES SOLDIER PILE WITH A W10x26 SECTION AND 18" ϕ DRILLED SHAFT

NOTES:

1. FOR SOLDIER PILE DETAILS, SEE SHEETS 55/101 AND 60/101.

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JJB/JOL		2500760	

SOLDIER PILE WALL FOUNDATION PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

13/101

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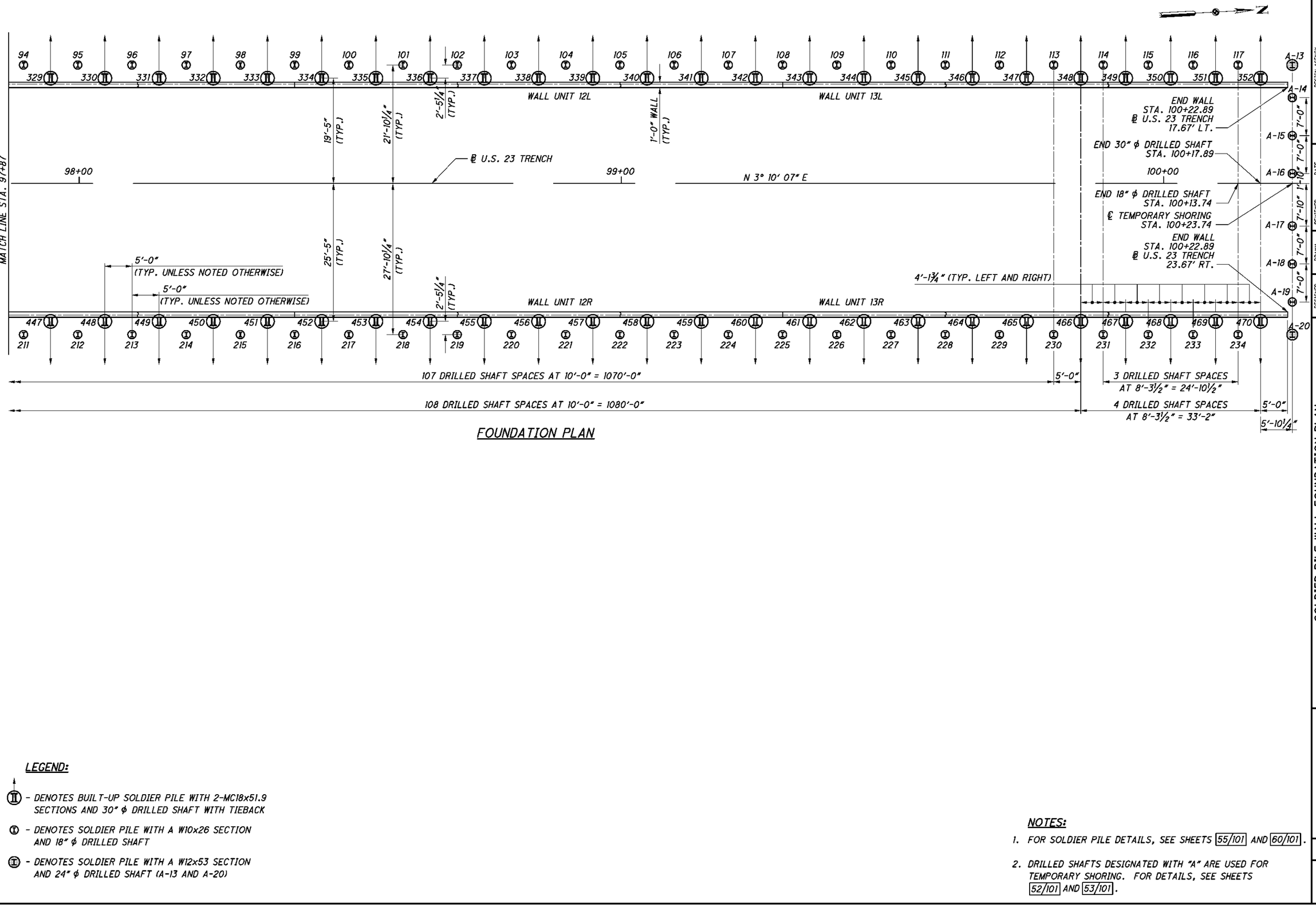

FOUNDATION PLAN

LEGEND:

- ⓘ - DENOTES BUILT-UP SOLDIER PILE WITH 2-MC18x51.9 SECTIONS AND 30″ ϕ DRILLED SHAFT WITH TIEBACK
- Ⓘ - DENOTES SOLDIER PILE WITH A W10x26 SECTION AND 18″ ϕ DRILLED SHAFT
- Ⓘ - DENOTES SOLDIER PILE WITH A W12x53 SECTION AND 24″ ϕ DRILLED SHAFT (A-13 AND A-20)

NOTES:

1. FOR SOLDIER PILE DETAILS, SEE SHEETS 55/101 AND 60/101.
2. DRILLED SHAFTS DESIGNATED WITH "A" ARE USED FOR TEMPORARY SHORING. FOR DETAILS, SEE SHEETS 52/101 AND 53/101.

DESIGN AGENCY
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100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JJB/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JJB/JOL		2500760	

SOLDIER PILE WALL FOUNDATION PLAN
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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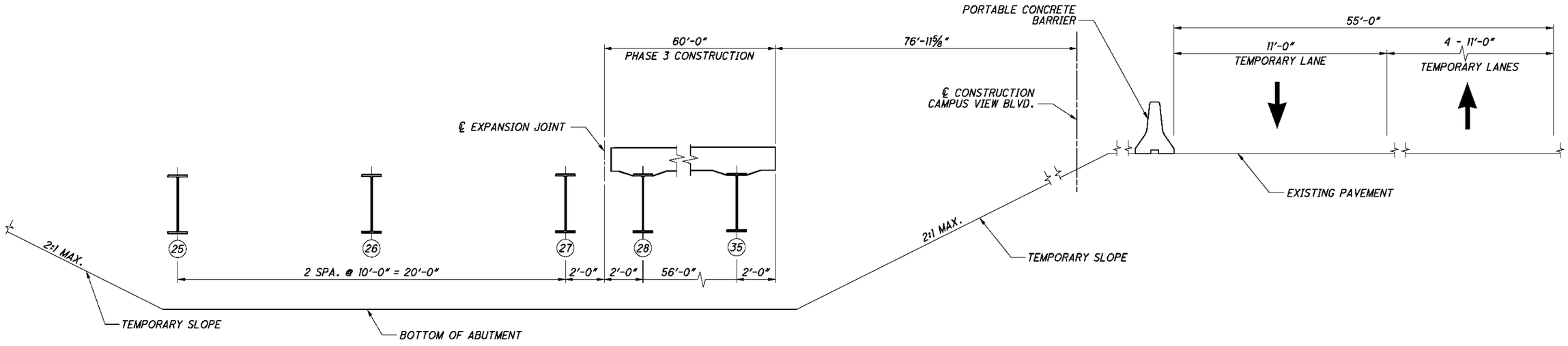

TYPICAL SECTION - PHASE 3 MAINTENANCE OF TRAFFIC

SUGGESTED CONSTRUCTION SEQUENCE FOR PHASE 3 CONSTRUCTION

1. INSTALL PORTABLE CONCRETE BARRIER AND SHIFT CROSSING TRAFFIC AS SHOWN IN THE MOT PLANS.
2. AUGER HOLES FOR 18" DIAMETER DRILLED SHAFTS 27-36 AND 144-153 AND AS REQUIRED ADJACENT TO TEMPORARY SLOPE. (SEE NOTE 2)
3. INSERT W-SECTION INTO AUGERED HOLES.
4. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT; FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
5. EXCAVATE TO THE ELEVATION OF THE BOTTOM OF THE PHASE 3 ABUTMENT, INSTALLING LAGGING AS WORK PROCEEDS.
6. AUGER HOLES FOR 30" DIAMETER DRILLED SHAFTS 262-270 AND 380-388 BELOW ABUTMENT.
7. INSERT BUILT-UP SOLDIER PILE INTO AUGERED HOLES.
8. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE TRENCH PAVEMENT UNDERCUT AND FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
9. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING BEHIND THE ABUTMENT.
10. INSTALL TIEBACKS.
11. FORM, POUR, AND CURE ABUTMENT.
12. STRESS TIEBACKS.
13. ERECT BEAMS 25-35 AND INSTALL CROSSFRAMES.
14. PLACE CONDUIT ALONG UTILITY SUPPORT CROSSFRAMES.
15. COLUMBUS FIBERNET TO INSTALL NEW COMMUNICATION LINE. COLUMBUS FIBERNET ALSO TO ACTIVATE NEW COMMUNICATION LINE AND DEACTIVATE OLD COMMUNICATION LINE. PLACE DECK ON TOP OF NEWLY ERECTED BEAMS 28-35.
16. PROCEED WITH PHASE 3A SEQUENCE.

NOTE:

1. FOR ADDITIONAL DETAILS AND NOTES, SEE SHEET 16/101.
2. FOR CONSTRUCTION SEQUENCE OF 18" DRILLED SHAFTS, SEE SHEETS 52/101 AND 53/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

SUGGESTED CONSTRUCTION SEQUENCE - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

15 / 101

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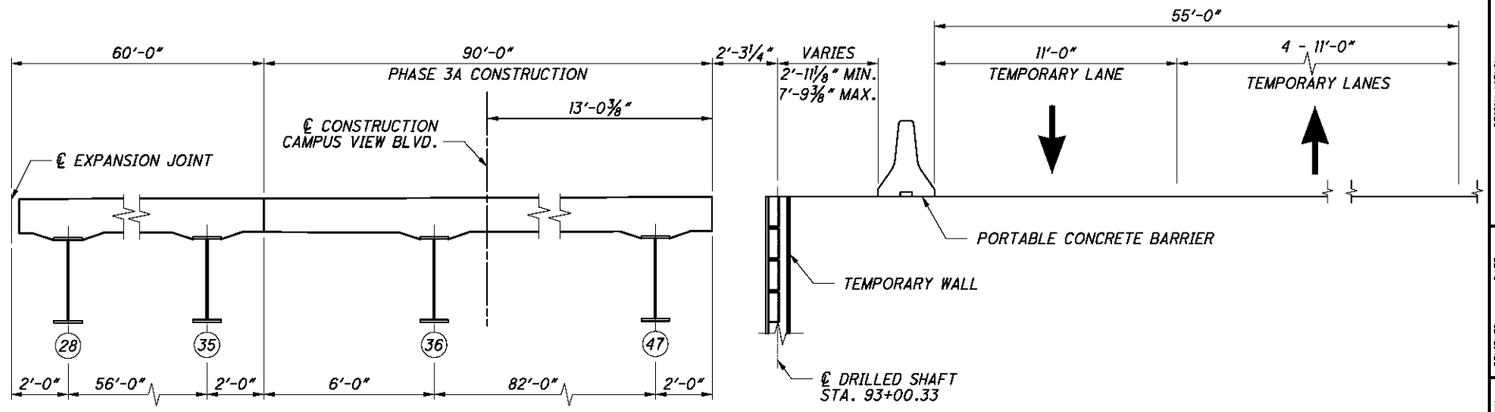
SUGGESTED CONSTRUCTION SEQUENCE FOR PHASE 3A CONSTRUCTION

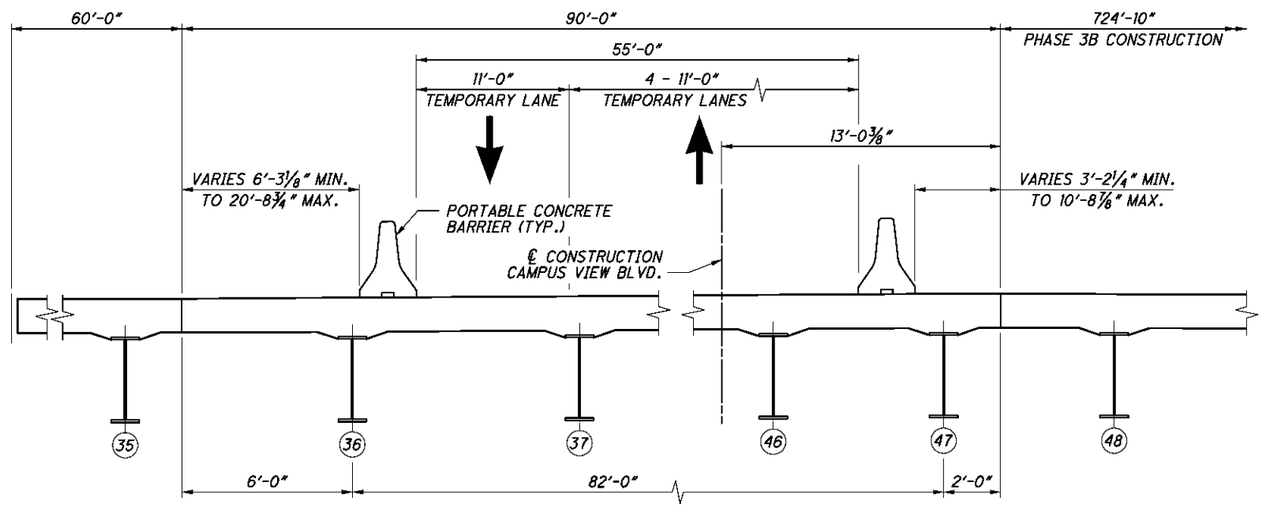
1. INSTALL PORTABLE CONCRETE BARRIERS AND SHIFT TRAFFIC AS SHOWN IN THE MOT PLANS.
2. AUGER HOLES FOR 18" DIAMETER DRILLED SHAFTS NUMBERED A-9 THROUGH A-12 AND DRILLED SHAFTS 37-44 AND 154-161 AND 24" DIAMETER DRILLED SHAFTS 45 AND 162.
3. INSERT W-SECTION INTO AUGERED HOLES.
4. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT; FILL THE REMAINDER OF HOLE WITH LOW STRENGTH MORTAR.
5. EXCAVATE TO THE ELEVATION OF THE BOTTOM OF THE PHASE 3A ABUTMENT, INSTALLING LAGGING AS WORK PROCEEDS.
6. AUGER HOLES FOR 30" DIAMETER DRILLED SHAFTS 271-279 AND 389-397 BELOW ABUTMENT.
7. INSERT BUILT-UP SOLDIER PILE INTO AUGERED HOLES.
8. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE TRENCH PAVEMENT UNDERCUT AND FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
9. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING BEHIND THE ABUTMENT.
10. INSTALL TIEBACKS.
11. FORM, POUR, AND CURE ABUTMENT.
12. STRESS TIEBACKS.
13. ERECT SUPERSTRUCTURE.
14. PROCEED WITH PHASE 3B SEQUENCE.



TYPICAL SECTION - PHASE 3A MAINTENANCE OF TRAFFIC

SUGGESTED CONSTRUCTION SEQUENCE FOR PHASE 3B CONSTRUCTION

1. INSTALL PORTABLE CONCRETE BARRIER AND SHIFT TRAFFIC AS SHOWN IN THE MOT PLANS.
2. AUGER HOLES FOR 18" DIAMETER DRILLED SHAFTS 21-26, 138-143, 46-117, 163-234 AND A-14 - A-19 AND 24" DIAMETER DRILLED SHAFTS A-13 AND A-20.
3. INSERT W-SECTION INTO AUGERED HOLES.
4. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT, FILL THE REMAINDER OF HOLE WITH LOW STRENGTH MORTAR.
5. EXCAVATE TO THE ELEVATION OF THE BOTTOM OF THE PHASE 3B ABUTMENT, INSTALLING LAGGING AS WORK PROCEEDS.
6. REMOVE SHAFTS A-9 THROUGH A-12.
7. AUGER HOLES FOR 30" ϕ DRILLED SHAFTS 256-261, 374-379, 280-352 AND 398-470 BELOW ABUTMENT.
8. INSERT BUILT-UP SOLDIER PILE INTO AUGERED HOLES.
9. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE TRENCH PAVEMENT UNDERCUT AND FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
10. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING BEHIND THE ABUTMENT.
11. INSTALL TIEBACKS.
12. FORM, POUR, AND CURE ABUTMENT.
13. STRESS TIEBACKS.
14. ERECT SUPERSTRUCTURE BEAMS 48-114.
15. PROCEED WITH PHASE 4 SEQUENCE.



TYPICAL SECTION - PHASE 3B MAINTENANCE OF TRAFFIC

NOTES:

1. FOR ADDITIONAL DETAILS ON PORTABLE CONCRETE BARRIER, SEE ODOT STANDARD DRAWING PCB-91.
2. FOR TEMPORARY WALL DETAILS, SEE SHEET 18/101.

DESIGN AGENCY
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JJB/JOL		2500760	

SUGGESTED CONSTRUCTION SEQUENCE - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

16/101

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SUGGESTED CONSTRUCTION SEQUENCE FOR PHASE 4 CONSTRUCTION

1. INSTALL PORTABLE CONCRETE BARRIERS AND SHIFT TRAFFIC AS SHOWN IN THE MOT PLANS.
2. AUGER HOLES FOR 18" DIAMETER DRILLED SHAFTS NUMBERED 6-20 AND 123-137 AND AS REQUIRED ADJACENT TO TEMPORARY SLOPE.
3. INSERT W-SECTION INTO AUGERED HOLES.
4. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT; FILL THE REMAINDER OF HOLE WITH LOW STRENGTH MORTAR.
5. EXCAVATE TO THE ELEVATION OF THE BOTTOM OF THE PHASE 4 ABUTMENT, INSTALLING LAGGING AS WORK PROCEEDS.
6. AUGER HOLES FOR 30" DIAMETER DRILLED SHAFTS 241-255 AND 359-373 BELOW ABUTMENT.
7. INSERT BUILT-UP SOLDIER PILE INTO AUGERED HOLES.
8. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE TRENCH PAVEMENT UNDERCUT AND FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
9. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING BEHIND THE ABUTMENT.
10. INSTALL TIEBACKS.
11. FORM, POUR, AND CURE ABUTMENT.
12. STRESS TIEBACKS.
13. PROCEED WITH PHASE 5 SEQUENCE.

SUGGESTED CONSTRUCTION SEQUENCE FOR PHASE 5 CONSTRUCTION

1. INSTALL PORTABLE CONCRETE BARRIER AND SHIFT TRAFFIC AS SHOWN IN THE MOT PLANS.
2. AUGER HOLES FOR THE REMAINING 18" AND 24" DIAMETER DRILLED SHAFTS.
3. INSERT W-SECTION INTO AUGERED HOLES.
4. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE ABUTMENT, FILL THE REMAINDER OF HOLE WITH LOW STRENGTH MORTAR.
5. EXCAVATE TO THE ELEVATION OF THE BOTTOM OF THE PHASE 5 ABUTMENT, INSTALLING LAGGING AS WORK PROCEEDS.
6. AUGER HOLES FOR REMAINING 30" DIAMETER DRILLED SHAFTS BELOW ABUTMENT.
7. INSERT BUILT-UP SOLDIER PILE INTO AUGERED HOLES.
8. FILL AUGERED HOLES WITH STRUCTURAL CONCRETE TO THE ELEVATION OF THE BOTTOM OF THE TRENCH PAVEMENT UNDERCUT AND FILL THE REMAINDER OF THE HOLE WITH LOW STRENGTH MORTAR.
9. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING BEHIND THE ABUTMENT.
10. INSTALL TIEBACKS.
11. FORM, POUR, AND CURE ABUTMENT.
12. STRESS TIEBACKS.

SUGGESTED WALL CONSTRUCTION SEQUENCE

(CONTRACTOR TO CONSTRUCT WALLS ANYTIME AFTER THE ABUTMENT BUILT-UP SOLDIER PILE TIEBACK IS STRESSED)

1. EXCAVATE TO THE TOP OF THE SHALE, INSTALLING LAGGING AS WORK PROCEEDS.
2. INSTALL GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE LAGGING.
3. EXCAVATE TO THE BOTTOM ELEVATION OF THE TRENCH IN STAGES, INSTALLING GEOCOMPOSITE DRAIN STRIPS ON THE FACE OF THE SHALE AND PLACING ASPHALT COATING AT EACH STAGE.
4. REMOVE SHAFTS A-2 - A-7 AND A-14 - A-19 AS NEEDED.
5. CONSTRUCT SOLDIER PILE CONCRETE FACING.
6. ERECT SUPERSTRUCTURE.

NOTE:

1. FOR ADDITIONAL DETAILS AND NOTES, SEE SHEET 16/101.

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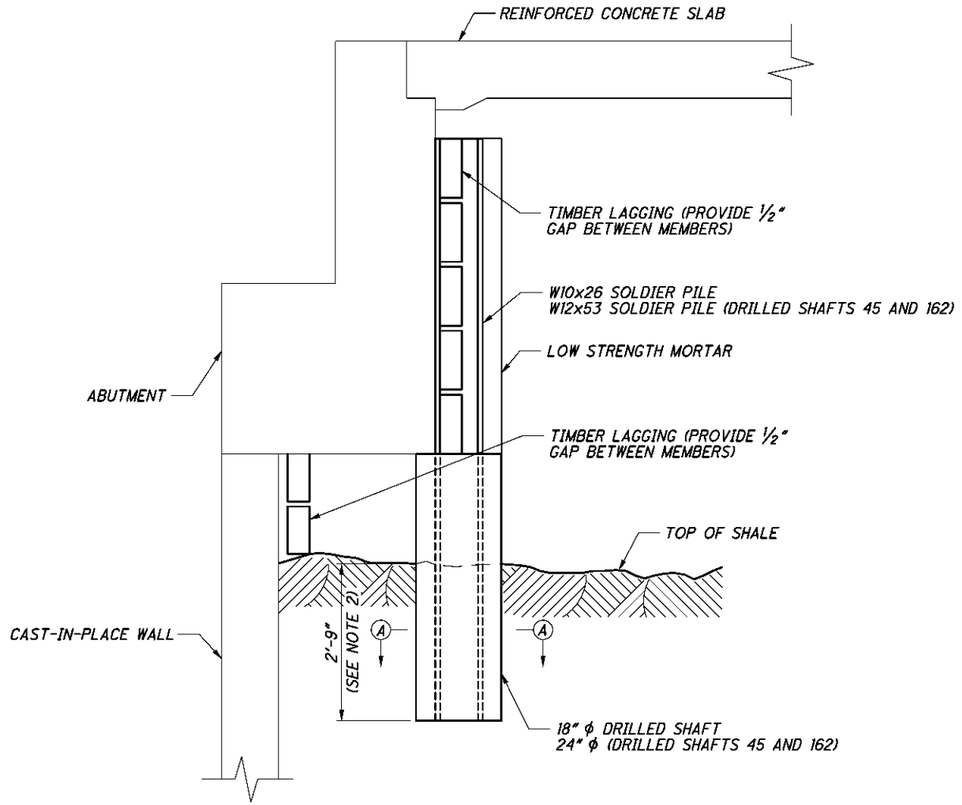
DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
RSB	JTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ZTW		2500760	

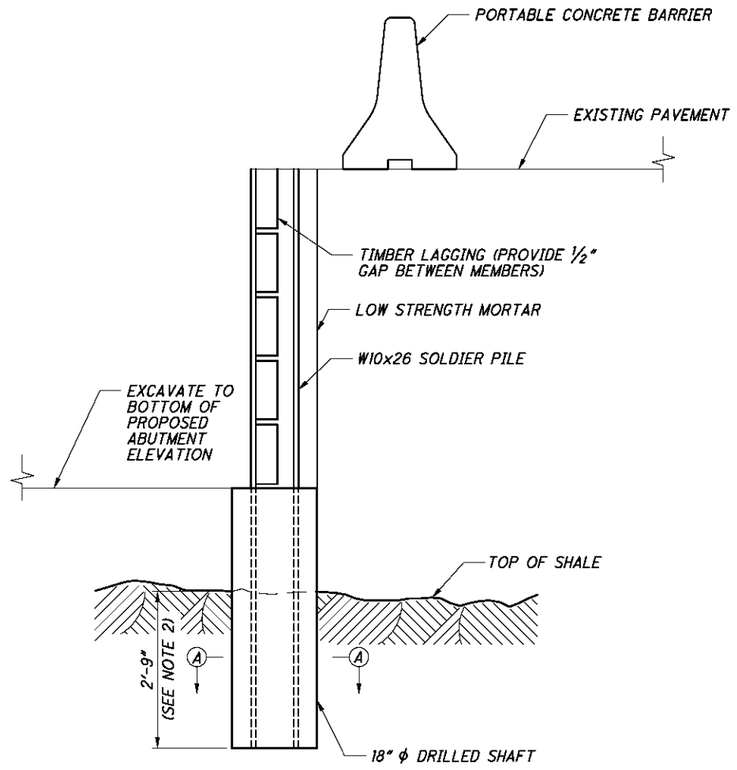
SUGGESTED CONSTRUCTION SEQUENCE - 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

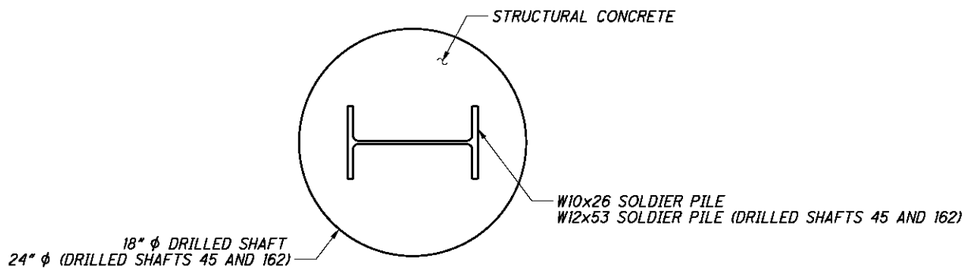
1007
1150



TYPICAL SECTION - TEMPORARY SOLDIER PILE WALL BEHIND ABUTMENTS



TYPICAL SECTION - TEMPORARY SOLDIER PILE WALL AT PHASED CONSTRUCTION JOINT



SECTION A-A

NOTES:

1. PROVIDE 6" OR 12" WIDE GEOCOMPOSITE DRAIN STRIP AS SHOWN ON SHEETS 19/101 THROUGH 44/101. REFER TO SHEET 60/101 FOR ADDITIONAL DRAINAGE DETAILS.
2. DRILLED SHAFTS SHALL EXTEND A MINIMUM OF 2'-9" INTO SHALE OR 2'-9" BELOW THE ABUTMENT, WHICHEVER IS LOWER.
3. TEMPORARY SOLDIER PILE WALLS SHALL BE PAID FOR UNDER ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.
4. FOR SUGGESTED CONSTRUCTION SEQUENCE, SEE SHEETS 15/101 AND 16/101.

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JJB/JOL		2500760	

TEMPORARY WALL DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

18 / 101

1008
1150

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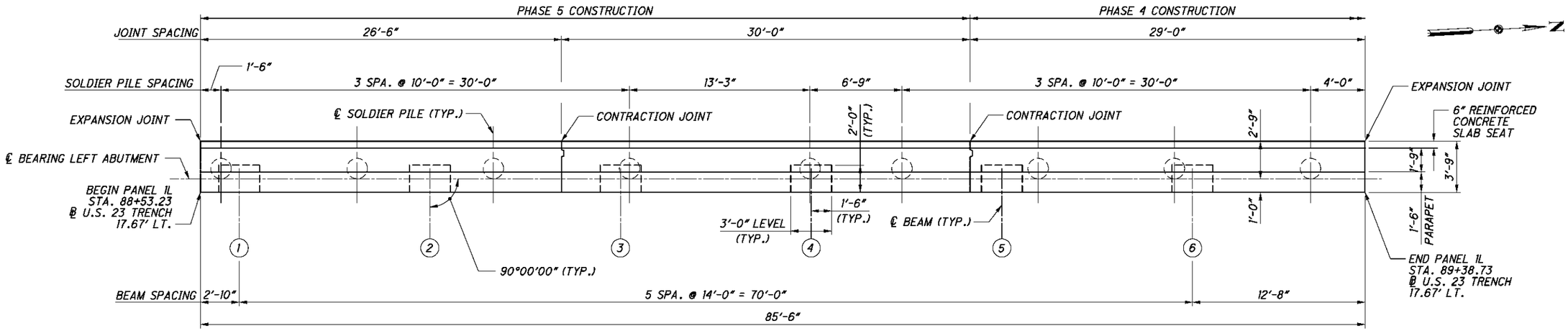
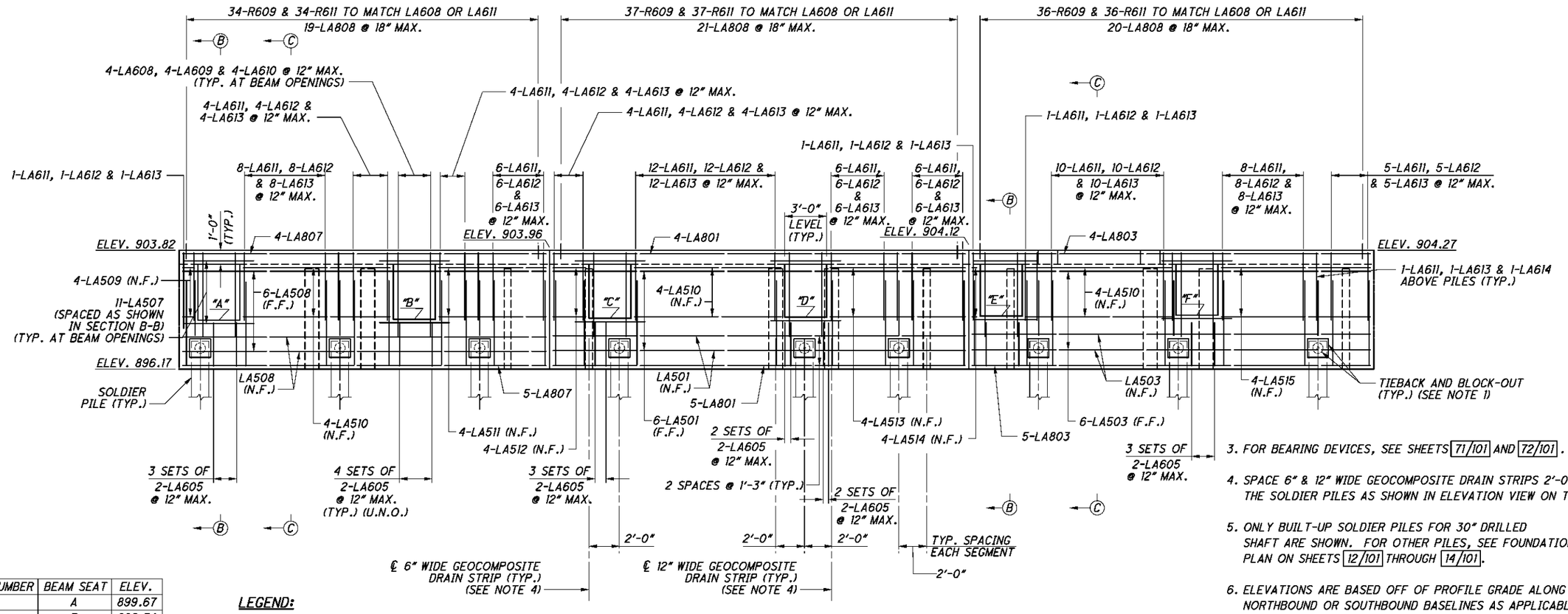


PLAN - PANEL 1L



ELEVATION - PANEL 1L

BEAM NUMBER	BEAM SEAT	ELEV.
1	A	899.67
2	B	899.74
3	C	899.81
4	D	899.89
5	E	899.96
6	F	900.03

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

LEGEND:

F.F. - FAR FACE

N.F. - NEAR FACE

E.F. - EACH FACE

SPA. - SPACES

U.N.O. - UNLESS NOTED OTHERWISE

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. ALL VERTICAL REINFORCEMENT SHALL BE SPACED AT 12" MAXIMUM.
3. FOR BEARING DEVICES, SEE SHEETS 71/101 AND 72/101.
4. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILES AS SHOWN IN ELEVATION VIEW ON THIS SHEET.
5. ONLY BUILT-UP SOLDIER PILES FOR 30" DRILLED SHAFT ARE SHOWN. FOR OTHER PILES, SEE FOUNDATION PLAN ON SHEETS 12/101 THROUGH 14/101.
6. ELEVATIONS ARE BASED OFF OF PROFILE GRADE ALONG U.S. 23 NORTHBOUND OR SOUTHBOUND BASELINES AS APPLICABLE.
7. CAST-IN-PLACE WALL NOT SHOWN FOR CLARITY.
8. FOR LIGHT POLE PILASTER DETAILS, SEE SHEET 47/101.
9. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
10. PARAPET ON TOP OF ABUTMENT NOT SHOWN IN ELEVATION VIEW.

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NJ		2500760	

LEFT ABUTMENT PLAN AND ELEVATION - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1009
1150

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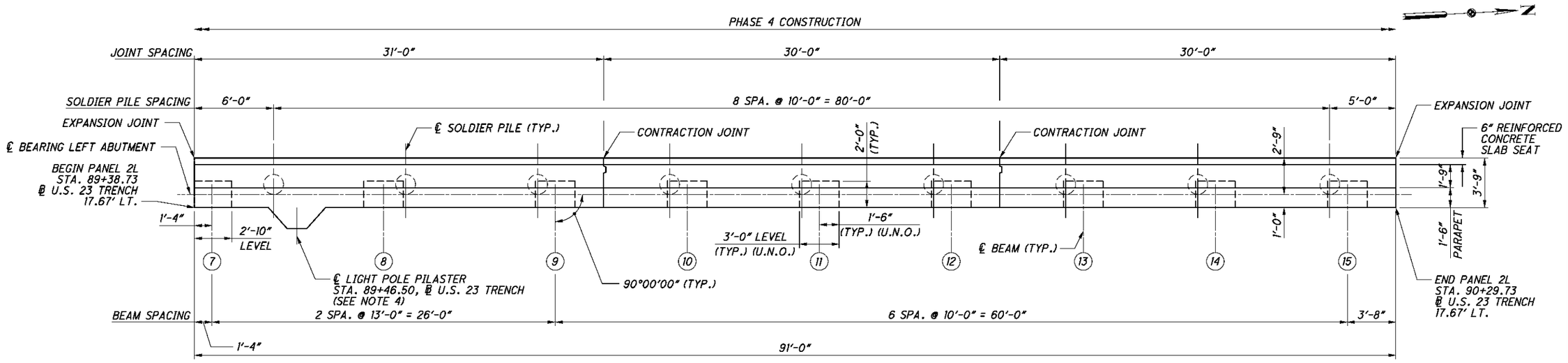
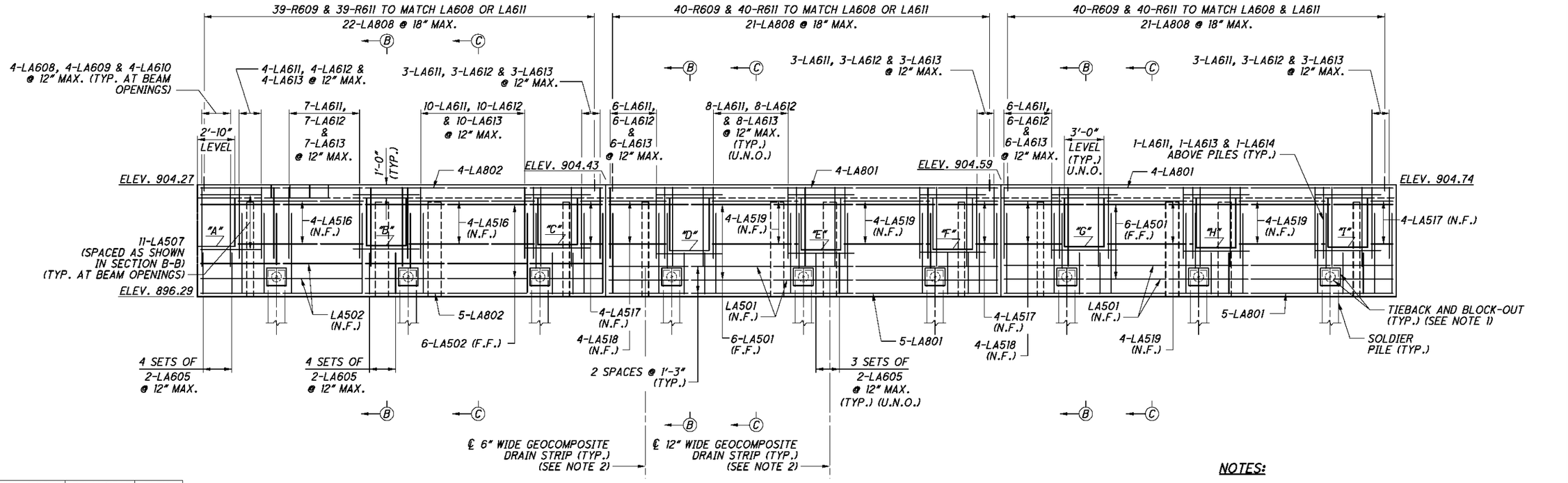


PLAN - PANEL 2L



ELEVATION - PANEL 2L

BEAM NUMBER	BEAM SEAT	ELEV.
7	A	900.11
8	B	900.17
9	C	900.24
10	D	899.79
11	E	899.84
12	F	899.90
13	G	900.09
14	H	900.00
15	I	900.05

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR ADDITIONAL REINFORCING REQUIRED AT LIGHT POLE PILASTER LOCATIONS, SEE SHEET 47/101.

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LEFT ABUTMENT PLAN AND ELEVATION - PANEL 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

20/101

1010
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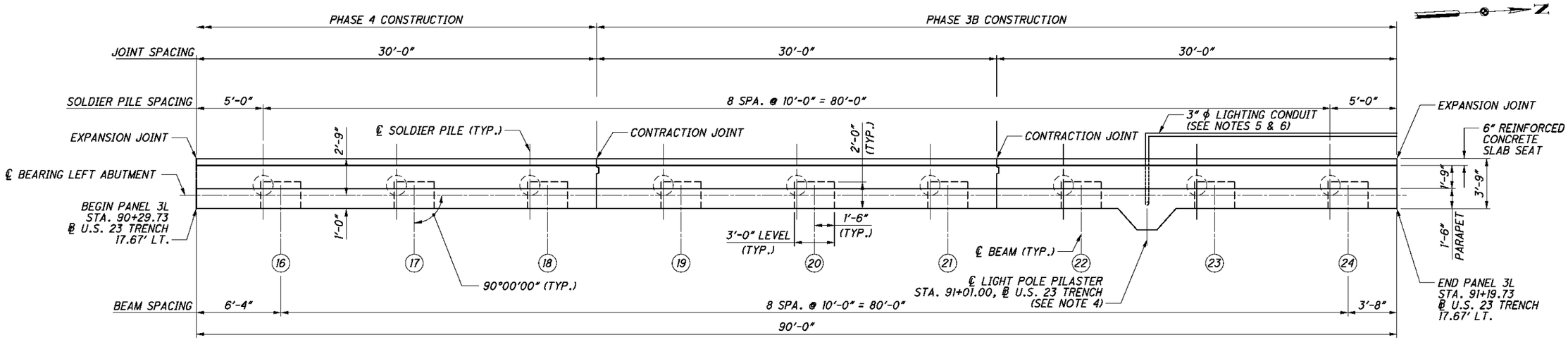
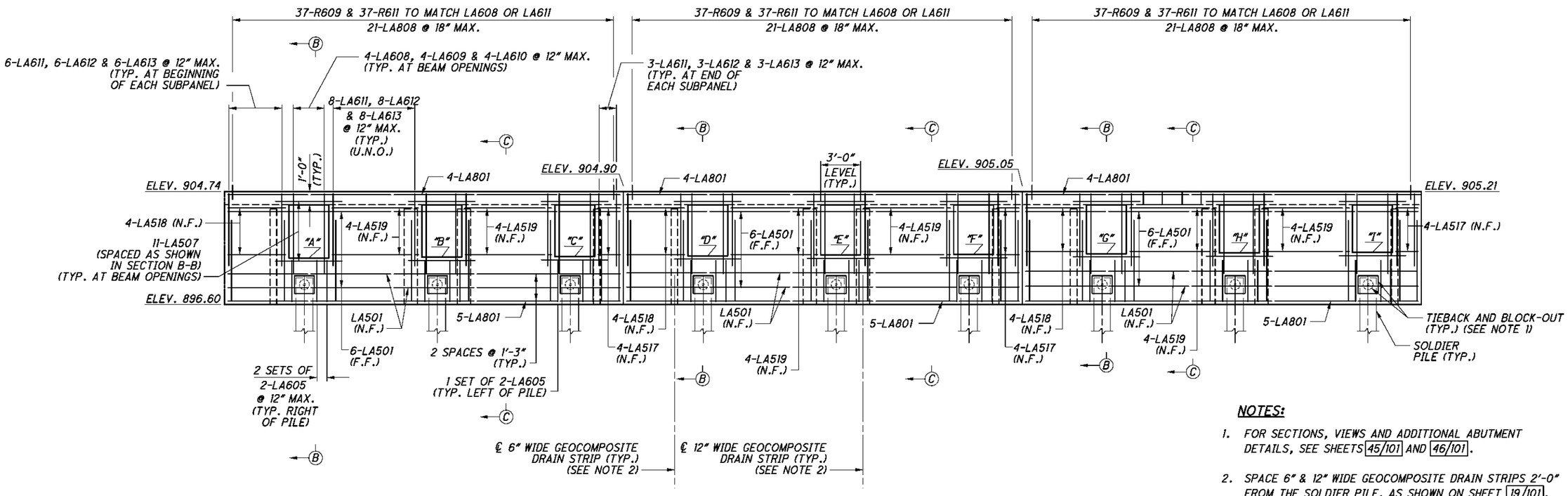


PLAN - PANEL 3L



ELEVATION - PANEL 3L

BEAM NUMBER	BEAM SEAT	ELEV.
16	A	900.10
17	B	900.16
18	C	900.21
19	D	900.26
20	E	900.31
21	F	900.36
22	G	900.42
23	H	900.47
24	I	900.52

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR ADDITIONAL REINFORCING REQUIRED AT LIGHT POLE PILASTER LOCATIONS, SEE SHEET 47/101.
5. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.
6. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUIT.

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LEFT ABUTMENT PLAN AND ELEVATION - 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

21/101

1011
1150

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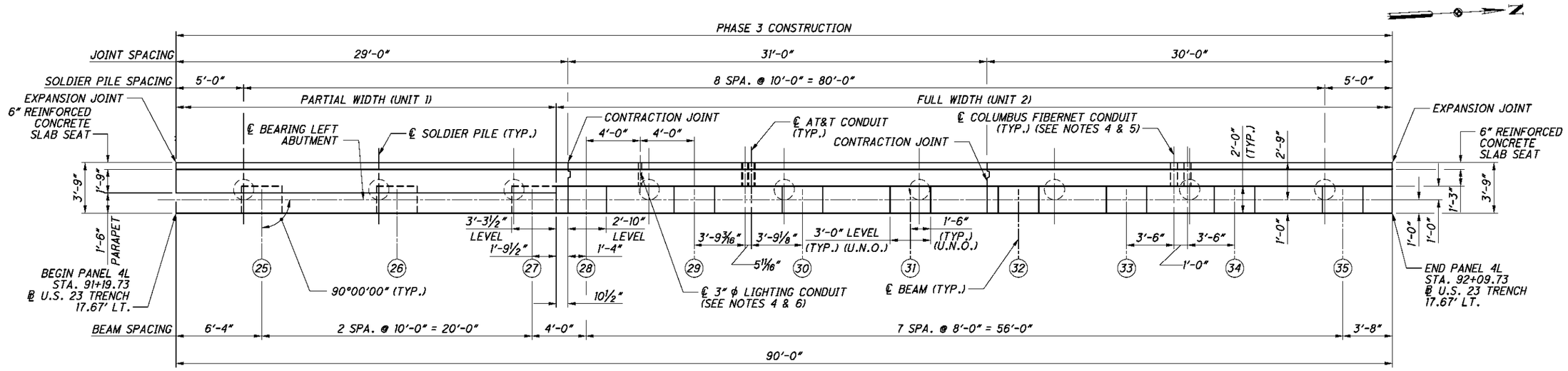
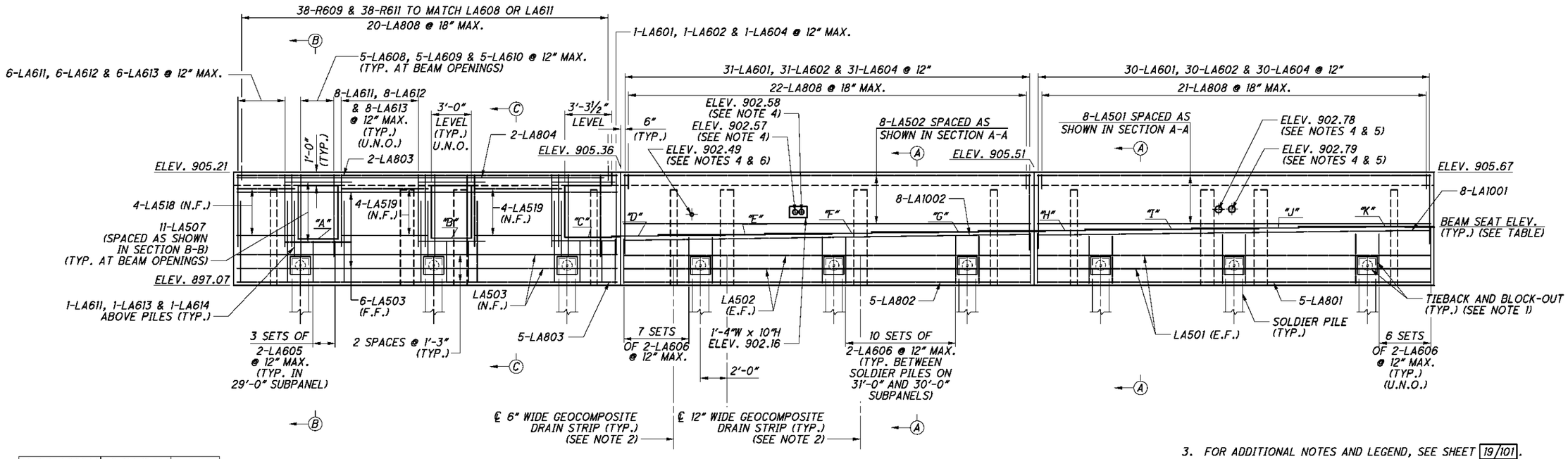


PLAN - PANEL 4L



ELEVATION - PANEL 4L

BEAM NUMBER	BEAM SEAT	ELEV.
25	A	900.57
26	B	900.62
27	C	900.68
28	D	900.98
29	E	901.02
30	F	901.06
31	G	901.10
32	H	901.14
33	I	901.19
34	J	901.23
35	K	901.27

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101, EXCEPT AS SHOWN ON THIS SHEET.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUITS. FOLLOWING INSTALLATION OF AT&T UTILITIES, FILL REMAINDER OF OPENINGS WITH QUICK SETTING CONCRETE MORTAR, TYPE 2, PER 705.21. PAYMENT FOR FORMING OPENINGS AND SUPPLYING, MIXING AND PLACING MORTAR SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT), AS PER PLAN.
5. CAST 6" ϕ COLUMBUS FIBERNET CONDUITS DIRECTLY IN BACKWALL.
6. CAST 3" ϕ LIGHTING CONDUIT DIRECTLY IN BACKWALL. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

DESIGN AGENCY
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LEFT ABUTMENT PLAN AND ELEVATION - PANEL 4L
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

22/101

1012/1150

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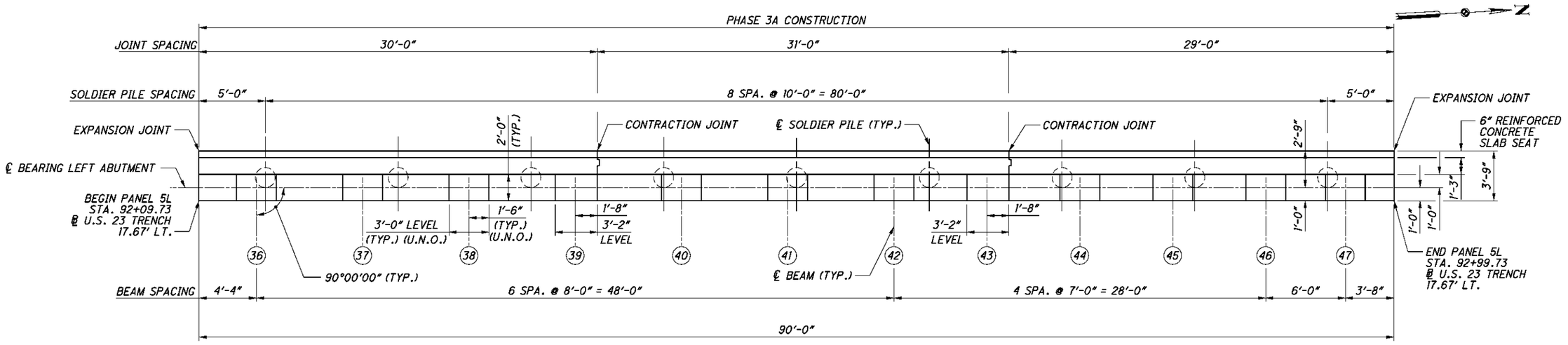
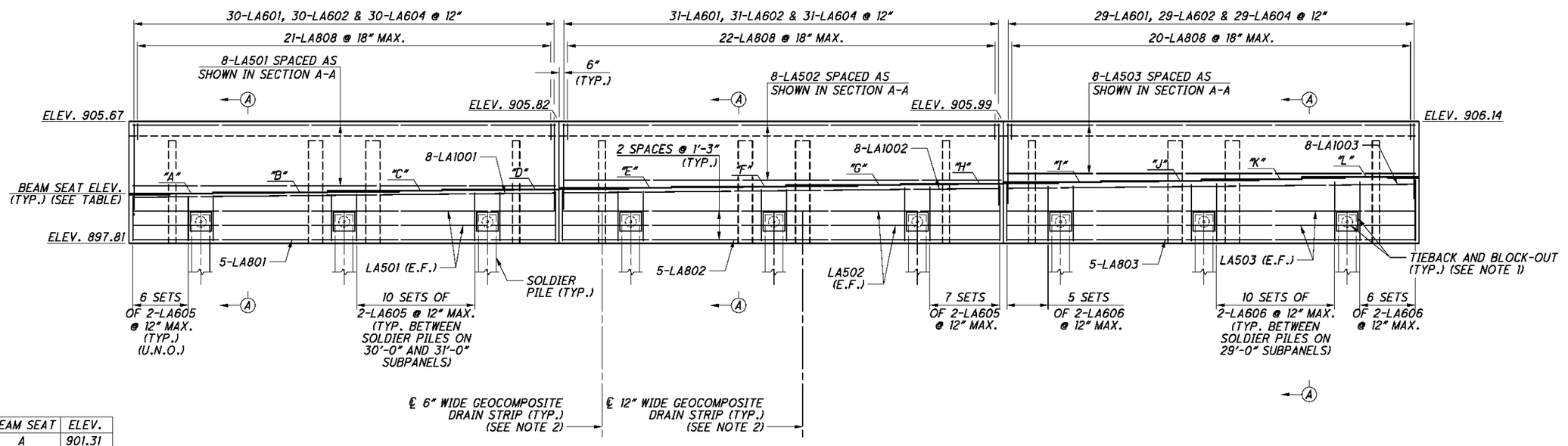


PLAN - PANEL 5L



ELEVATION - PANEL 5L

BEAM NUMBER	BEAM SEAT	ELEV.
36	A	901.31
37	B	901.35
38	C	901.39
39	D	901.44
40	E	901.48
41	F	901.52
42	G	901.56
43	H	901.60
44	I	901.63
45	J	901.67
46	K	901.71
47	L	901.87

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - PANEL 5
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1013/1150

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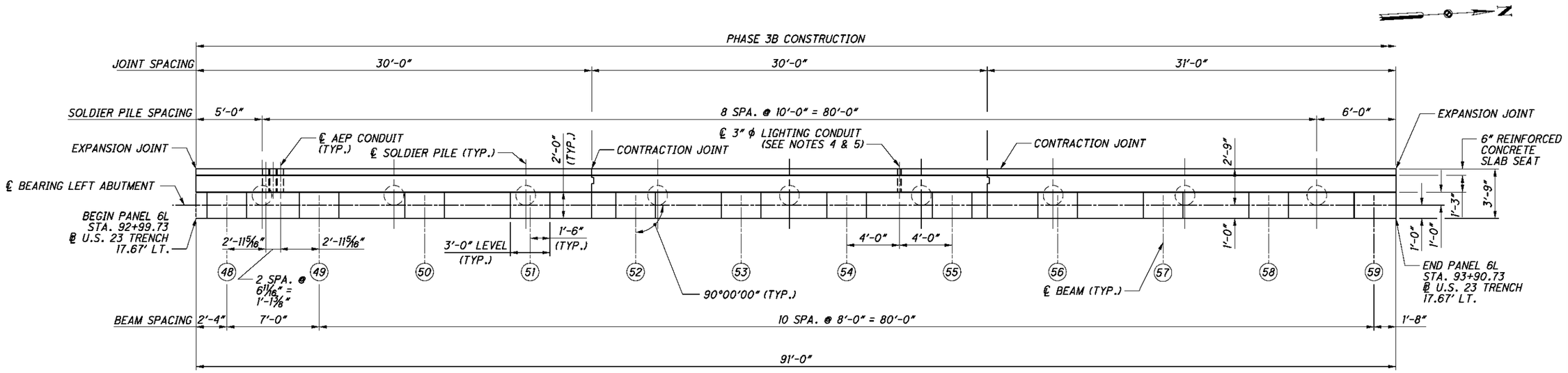
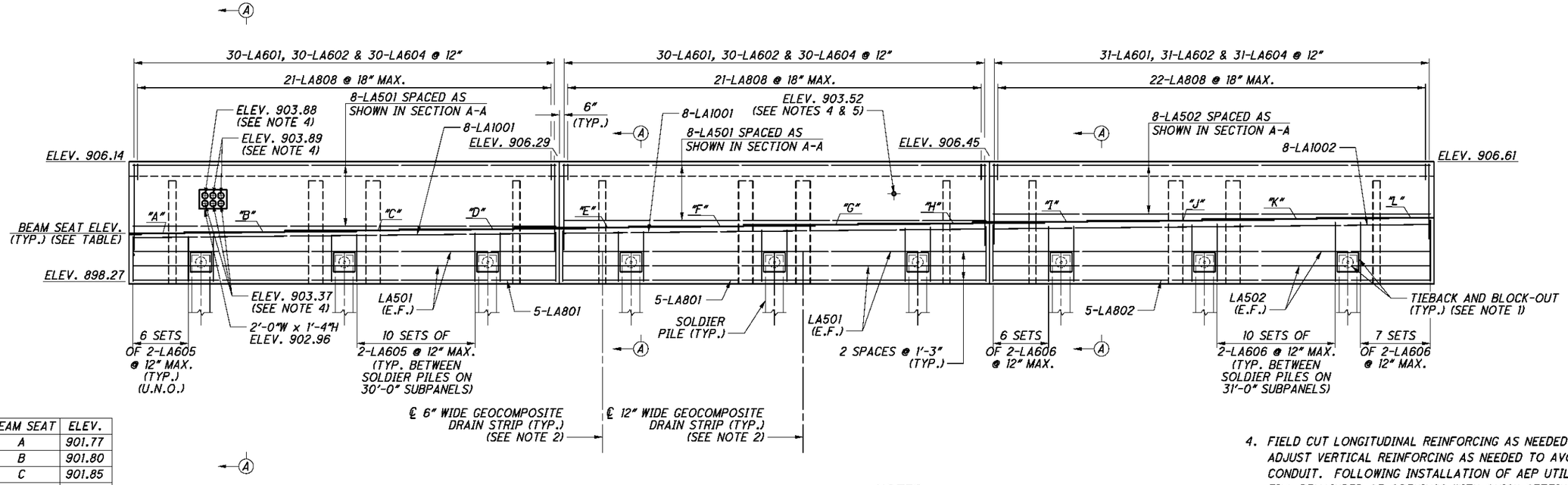


PLAN - PANEL 6L



ELEVATION - PANEL 6L

BEAM NUMBER	BEAM SEAT	ELEV.
48	A	901.77
49	B	901.80
50	C	901.85
51	D	901.89
52	E	901.93
53	F	901.97
54	G	902.01
55	H	902.05
56	I	902.10
57	J	902.14
58	K	902.18
59	L	902.22

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUIT. FOLLOWING INSTALLATION OF AEP UTILITIES, FILL REMAINDER OF OPENINGS WITH QUICK SETTING CONCRETE MORTAR, TYPE 2, PER 705.21. PAYMENT FOR FORMING OPENINGS AND SUPPLYING, MIXING AND PLACING MORTAR SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT), AS PER PLAN.
5. CAST 3" ϕ LIGHTING CONDUIT DIRECTLY IN BACKWALL. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

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LEFT ABUTMENT PLAN AND ELEVATION - 6
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

24/101

1014/1150

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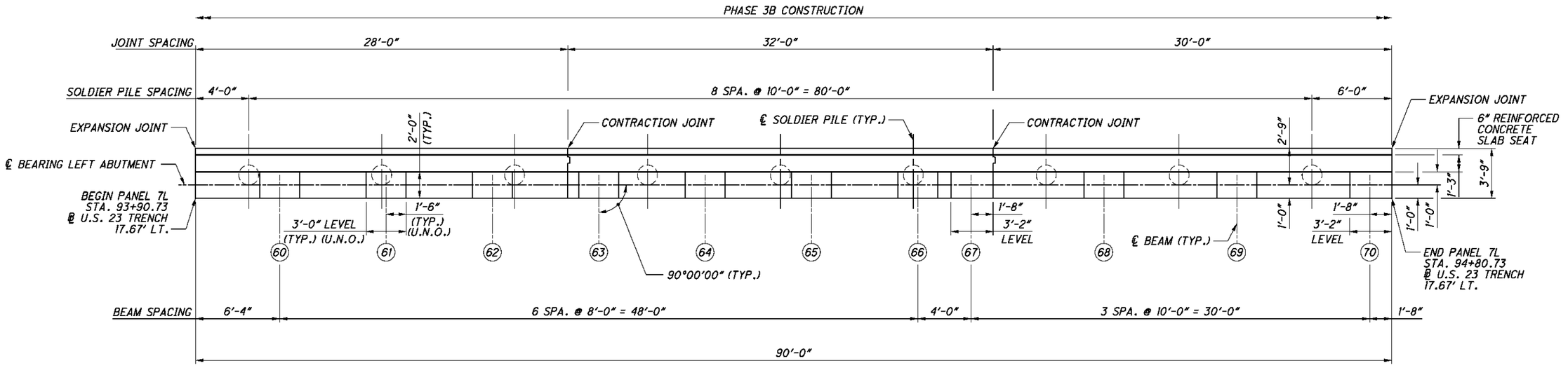
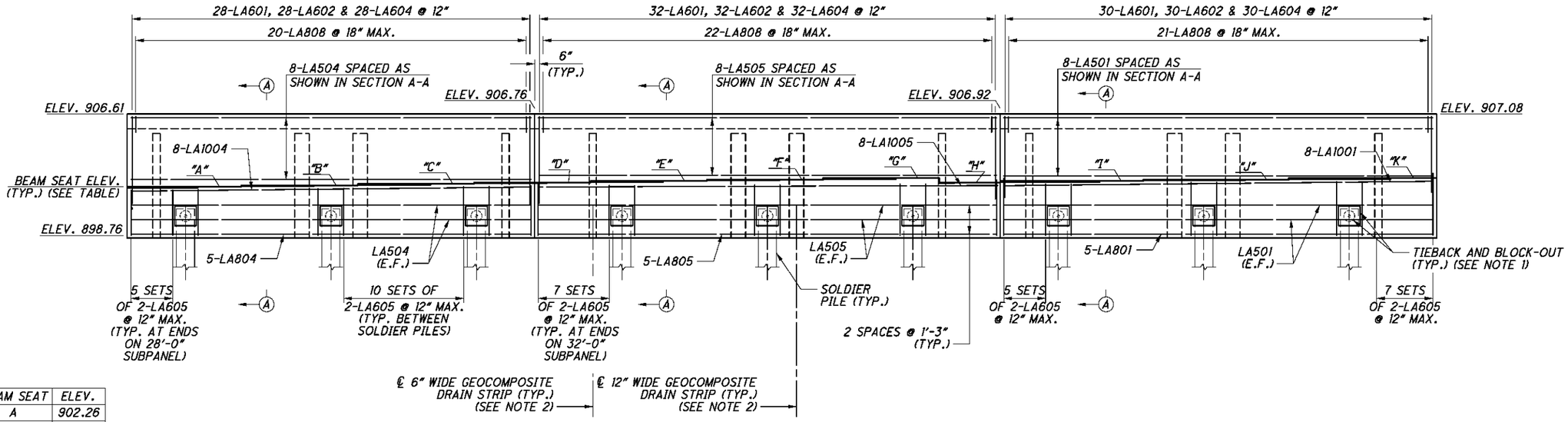


PLAN - PANEL 7L



ELEVATION - PANEL 7L

BEAM NUMBER	BEAM SEAT	ELEV.
60	A	902.26
61	B	902.30
62	C	902.35
63	D	902.39
64	E	902.43
65	F	902.47
66	G	902.51
67	H	902.38
68	I	902.44
69	J	902.49
70	K	902.54

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 7
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

25/101

1015
1150

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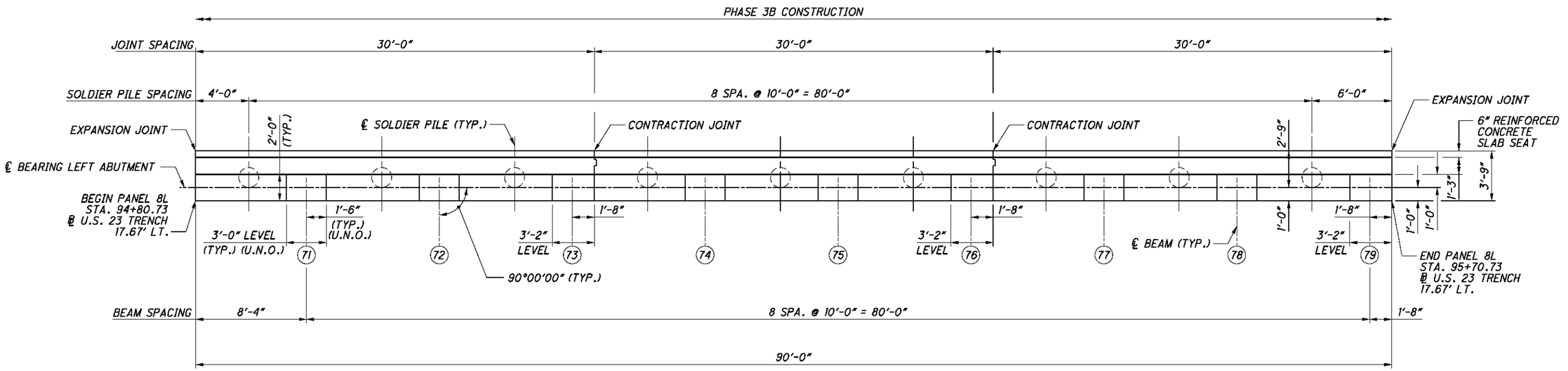

PLAN - PANEL 8L

ELEVATION - PANEL 8L

BEAM NUMBER	BEAM SEAT	ELEV.
71	A	902.59
72	B	902.64
73	C	902.70
74	D	902.75
75	E	902.80
76	F	902.85
77	G	902.90
78	H	902.96
79	I	903.01

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 8
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

26/101

1016/1150

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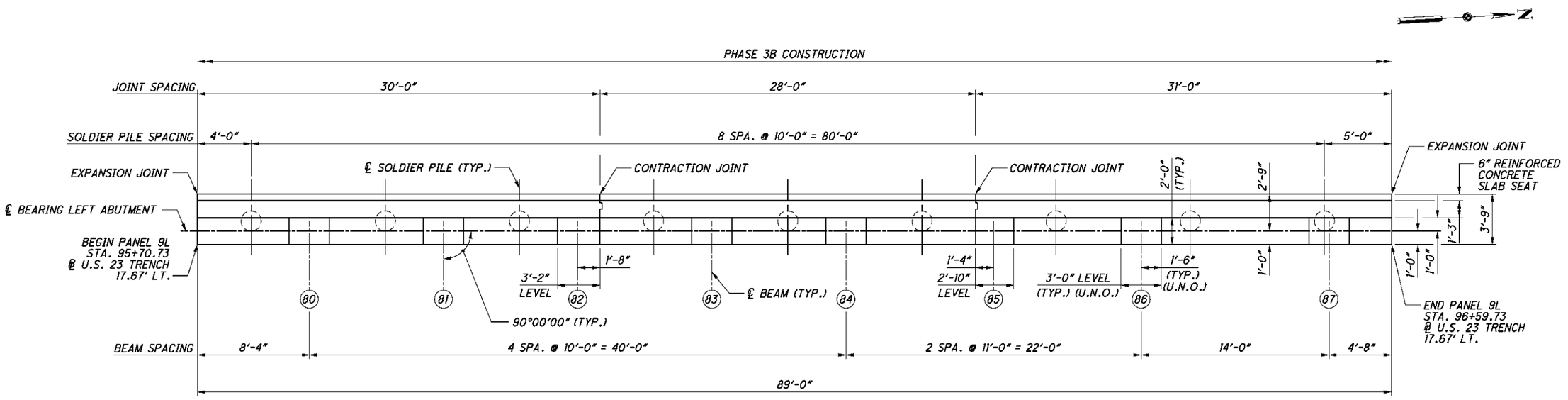
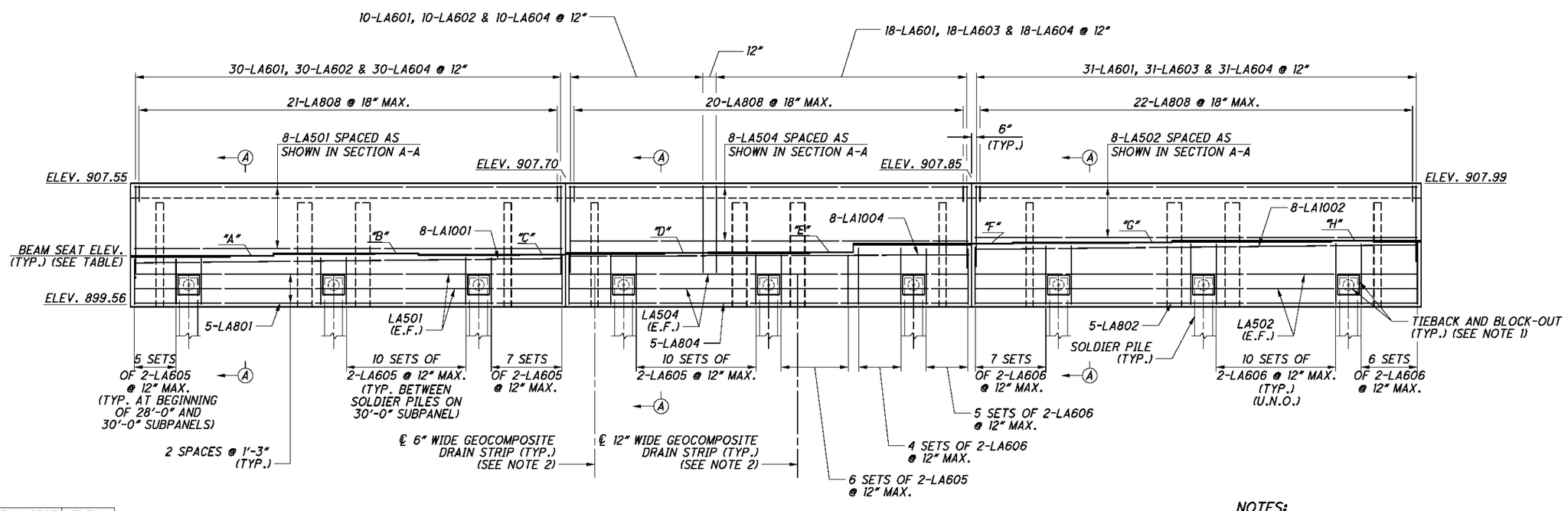


PLAN - PANEL 9L



ELEVATION - PANEL 9L

BEAM NUMBER	BEAM SEAT	ELEV.
80	A	903.06
81	B	903.24
82	C	903.16
83	D	903.22
84	E	903.27
85	F	903.87
86	G	903.93
87	H	903.99

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

DESIGN AGENCY
HNTB
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LEFT ABUTMENT PLAN AND ELEVATION - 9
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

27/101

1017/1150

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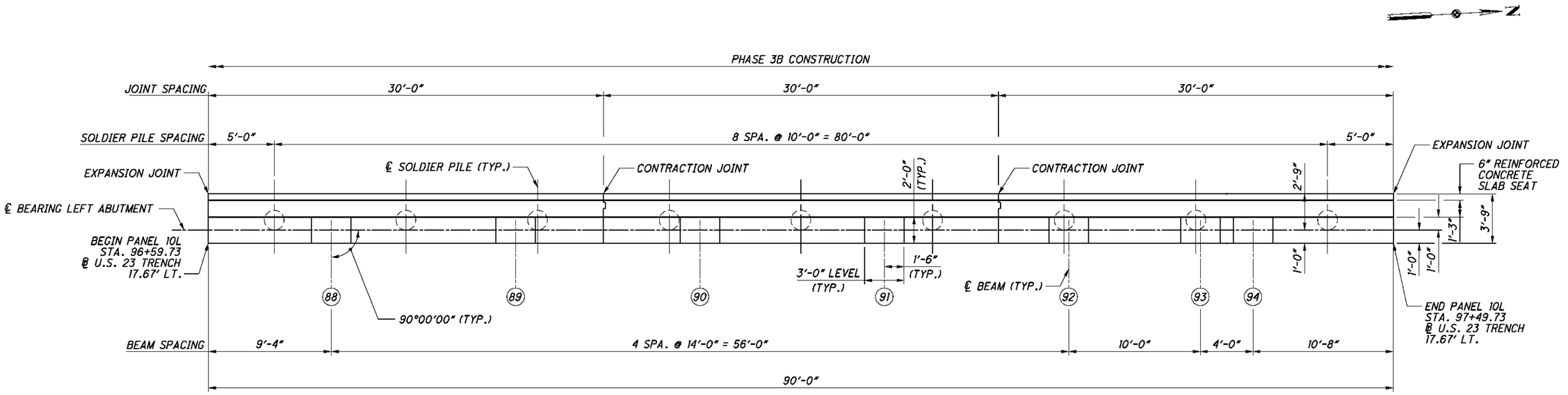
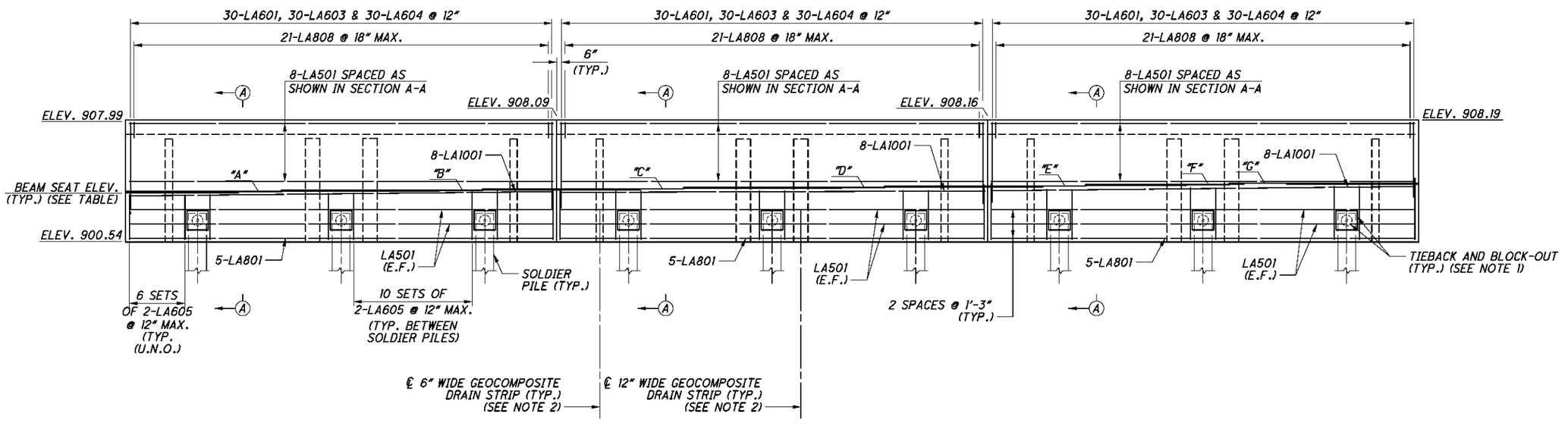


PLAN - PANEL 10L



ELEVATION - PANEL 10L

BEAM NUMBER	BEAM SEAT	ELEV.
88	A	904.04
89	B	904.09
90	C	904.13
91	D	904.16
92	E	904.19
93	F	904.20
94	G	904.21

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 10
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

28/101

1018
1150

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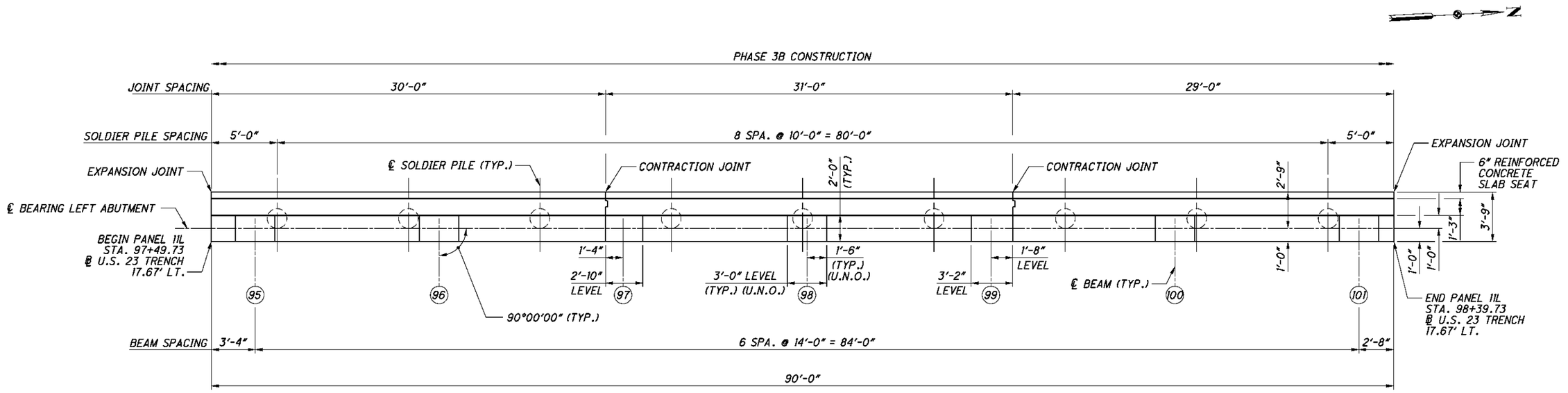
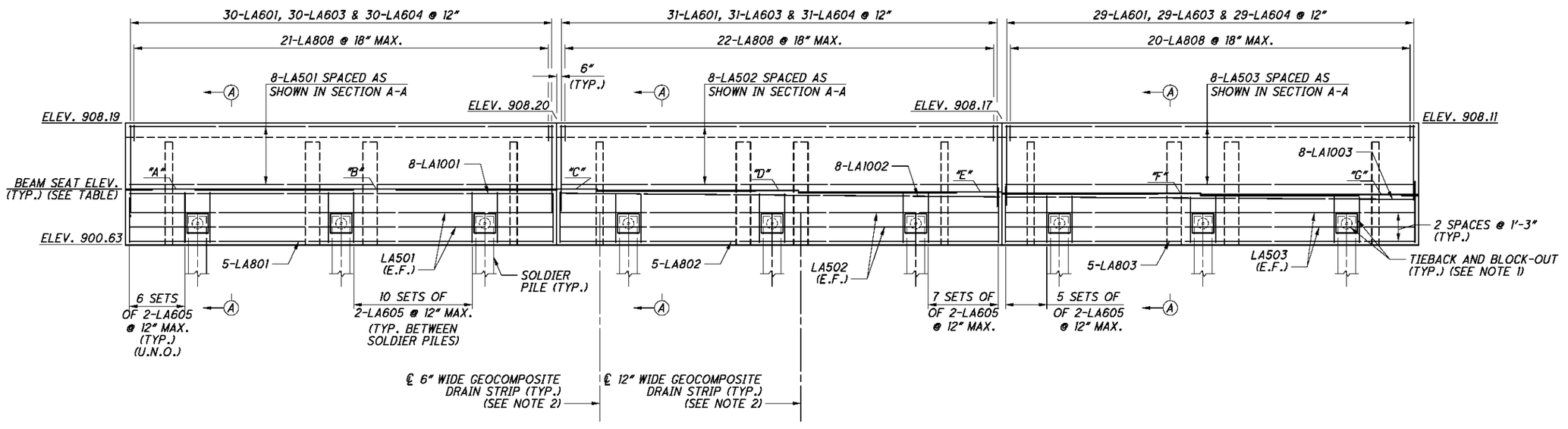


PLAN - PANEL 11L



ELEVATION - PANEL 11L

BEAM NUMBER	BEAM SEAT	ELEV.
95	A	904.22
96	B	904.22
97	C	904.22
98	D	904.21
99	E	904.19
100	F	904.17
101	G	904.13

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 11
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

29/101

1019
1150

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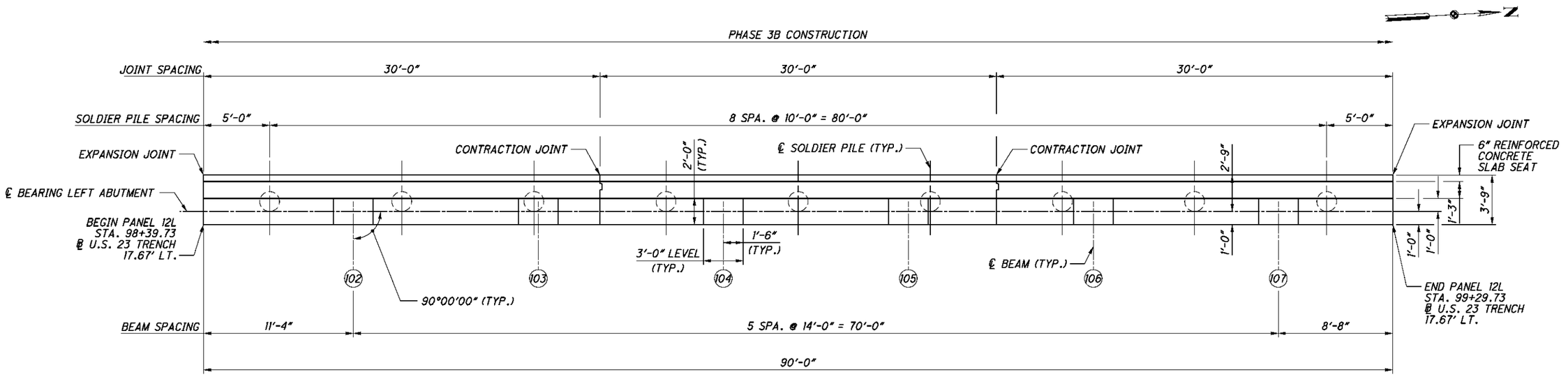
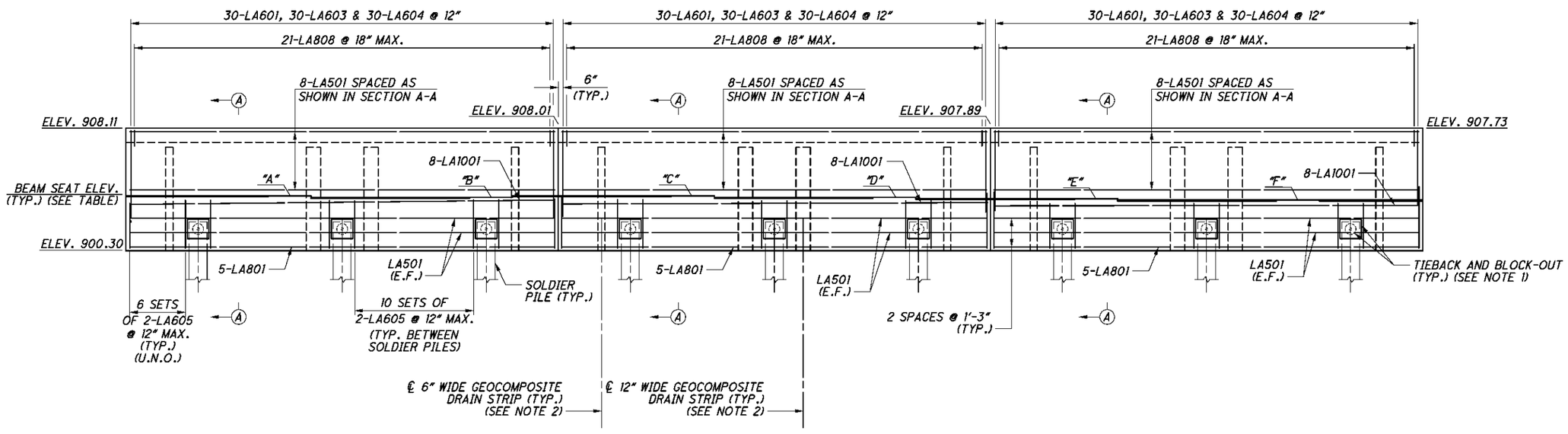


PLAN - PANEL 12L



ELEVATION - PANEL 12L

BEAM NUMBER	BEAM SEAT	ELEV.
102	A	904.10
103	B	904.05
104	C	904.13
105	D	903.94
106	E	903.87
107	F	903.80

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 12
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

30/101

1020
1150

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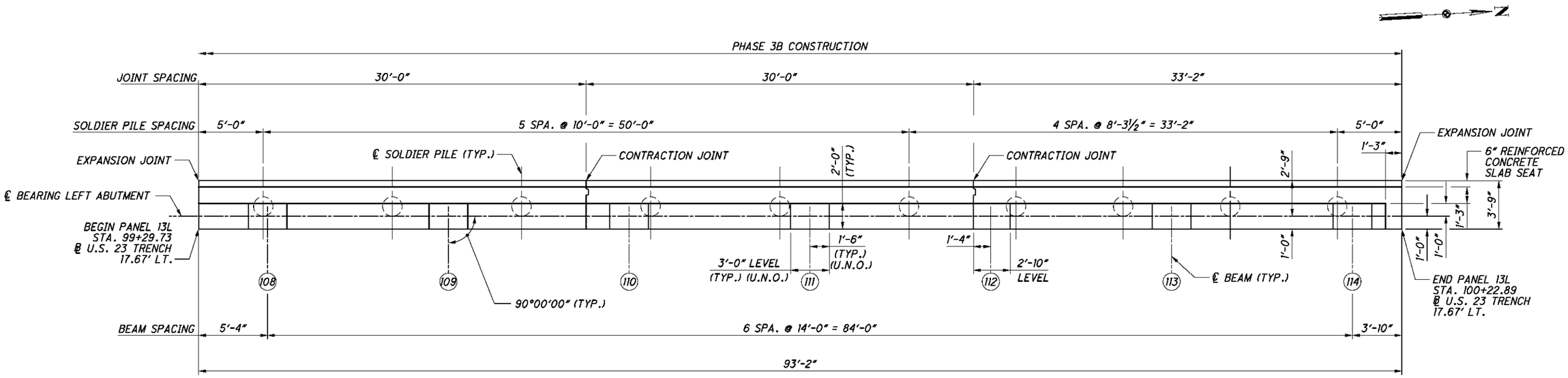
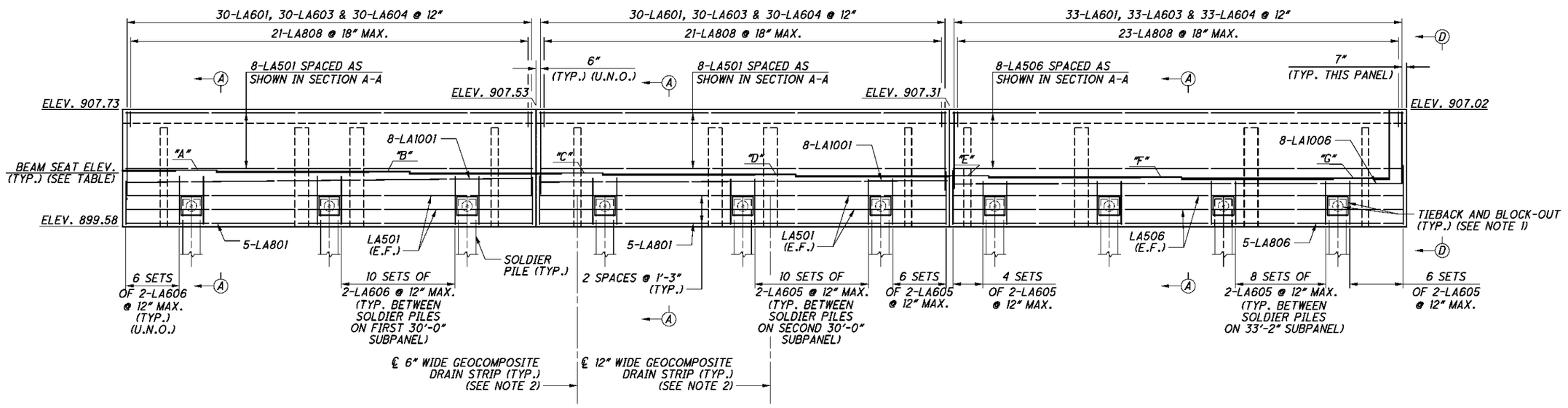


PLAN - PANEL 13L



ELEVATION - PANEL 13L

BEAM NUMBER	BEAM SEAT	ELEV.
108	A	903.71
109	B	903.63
110	C	903.53
111	D	903.43
112	E	903.32
113	F	903.20
114	G	903.08

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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LEFT ABUTMENT PLAN AND ELEVATION - 13
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

31/101

1021
1150

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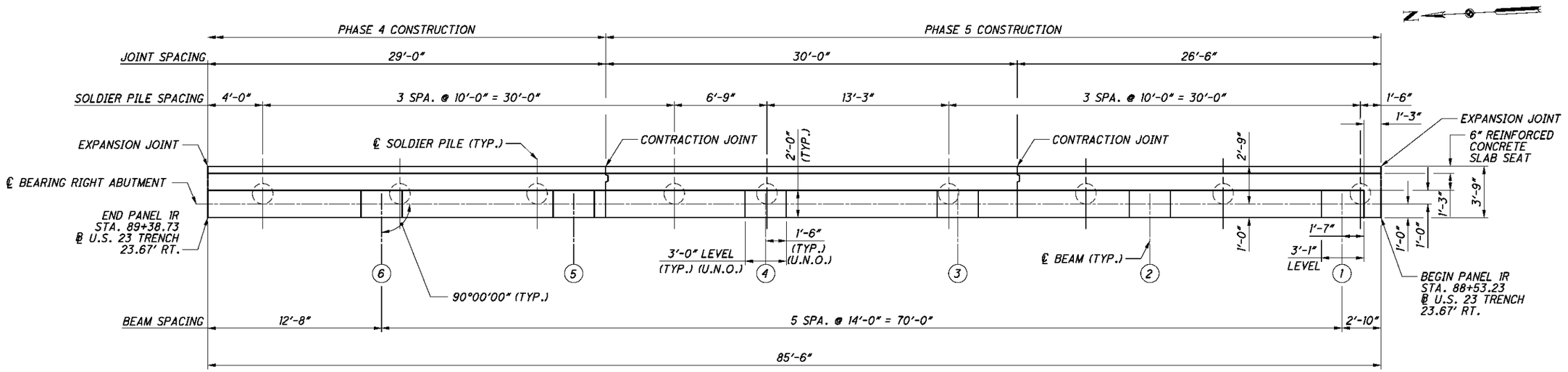
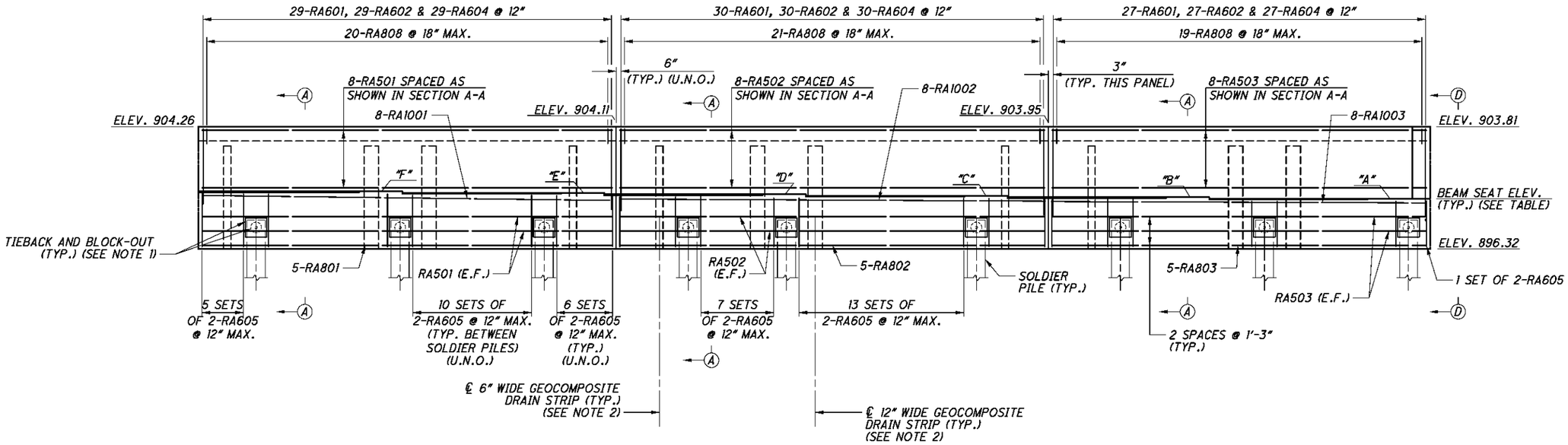


PLAN - PANEL 1R



ELEVATION - PANEL 1R

BEAM NUMBER	BEAM SEAT	ELEV.
1	A	899.82
2	B	899.89
3	C	899.96
4	D	900.04
5	E	900.11
6	F	900.18

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

32/101

1022/1150

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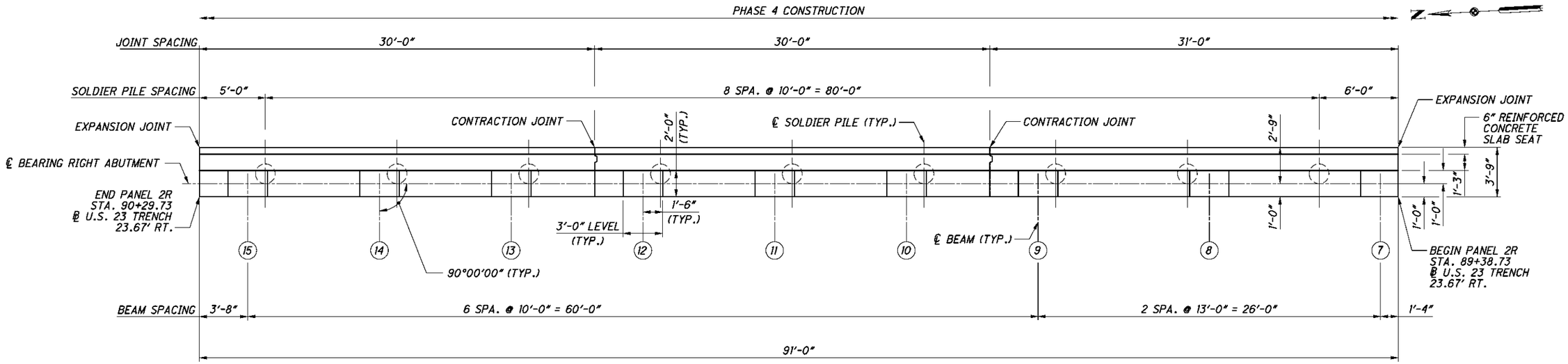
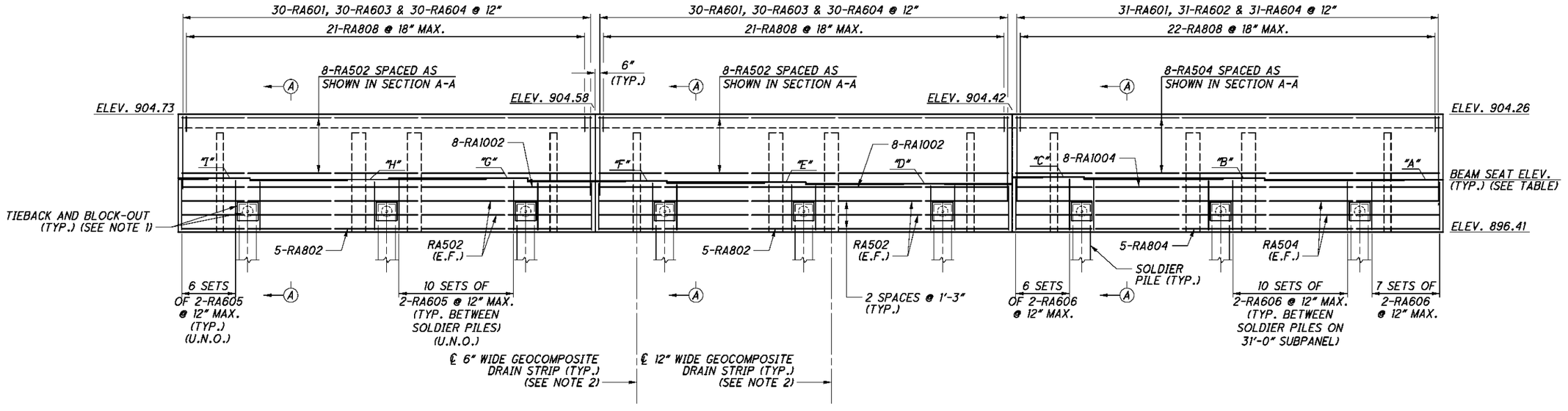


PLAN - PANEL 2R



ELEVATION - PANEL 2R

BEAM NUMBER	BEAM SEAT	ELEV.
7	A	900.26
8	B	900.32
9	C	900.39
10	D	899.91
11	E	899.97
12	F	900.02
13	G	900.21
14	H	900.12
15	I	900.17

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - PHASE 4 CONSTRUCTION - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

33/101

1023/1150

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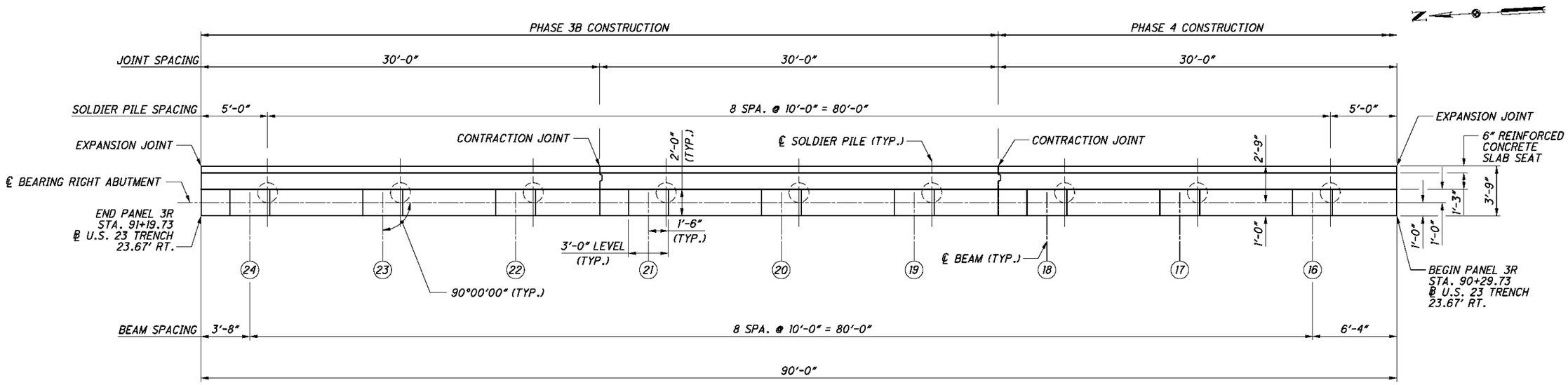
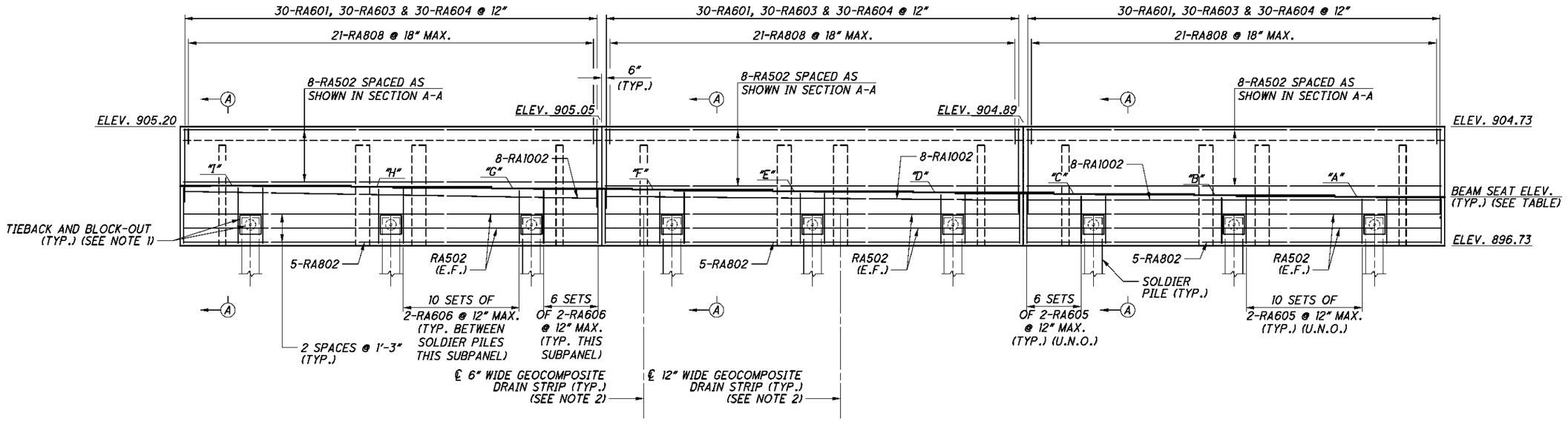


PLAN - PANEL 3R



BEAM NUMBER	BEAM SEAT	ELEV.
16	A	900.23
17	B	900.28
18	C	900.33
19	D	900.38
20	E	900.43
21	F	900.49
22	G	900.54
23	H	900.59
24	I	900.64

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

ELEVATION - PANEL 3R

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

DESIGN AGENCY
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RIGHT ABUTMENT PLAN AND ELEVATION - 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

34/101

1024
1150

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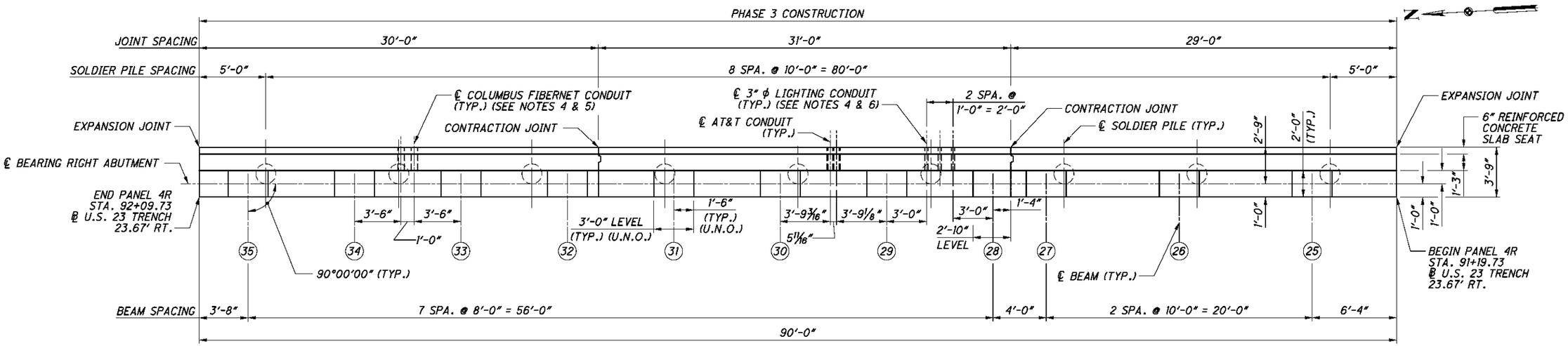
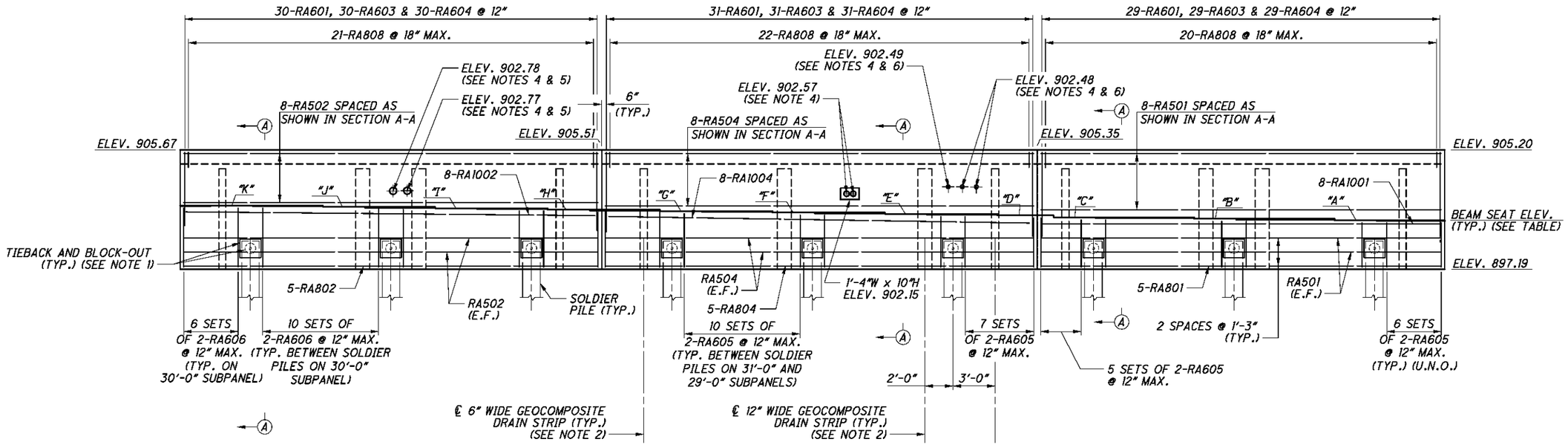


PLAN - PANEL 4R



ELEVATION - PANEL 4R

BEAM NUMBER	BEAM SEAT	ELEV.
25	A	900.69
26	B	900.75
27	C	900.80
28	D	900.94
29	E	900.98
30	F	901.02
31	G	901.06
32	H	901.10
33	I	901.15
34	J	901.19
35	K	901.23

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101, EXCEPT AS SHOWN ON THIS SHEET.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUITS. FOLLOWING INSTALLATION OF AT&T UTILITIES, FILL REMAINDER OF OPENINGS WITH QUICK SETTING CONCRETE MORTAR, TYPE 2, PER 705.21. PAYMENT FOR FORMING OPENINGS AND SUPPLYING, MIXING AND PLACING MORTAR SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSCI, SUBSTRUCTURE (ABUTMENT), AS PER PLAN.
5. CAST 6" ϕ COLUMBUS FIBERNET CONDUITS DIRECTLY IN BACKWALL.
6. CAST 3" ϕ LIGHTING CONDUIT DIRECTLY IN BACKWALL. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

DESIGN AGENCY
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RIGHT ABUTMENT PLAN AND ELEVATION - 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1025/1150

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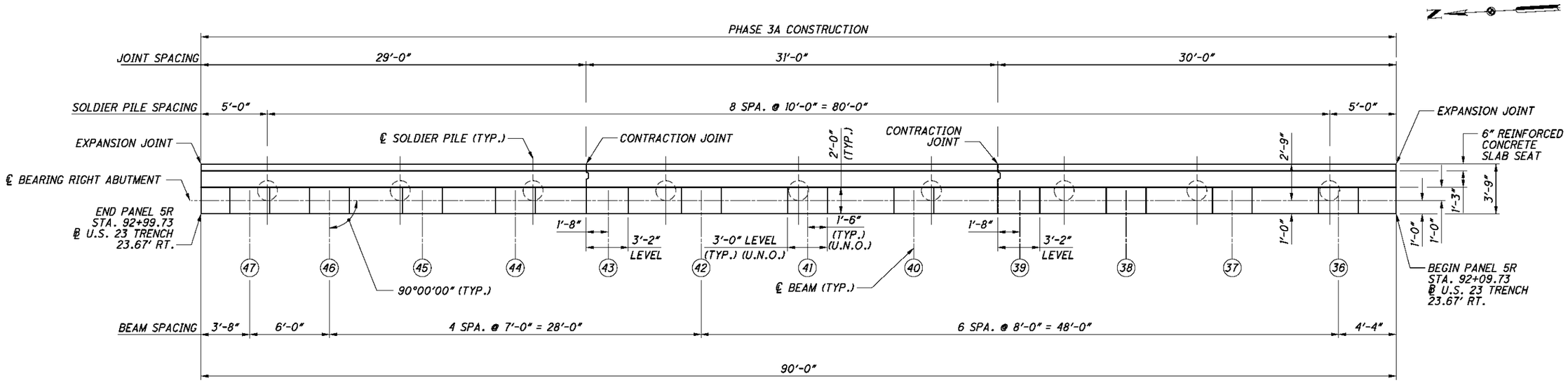
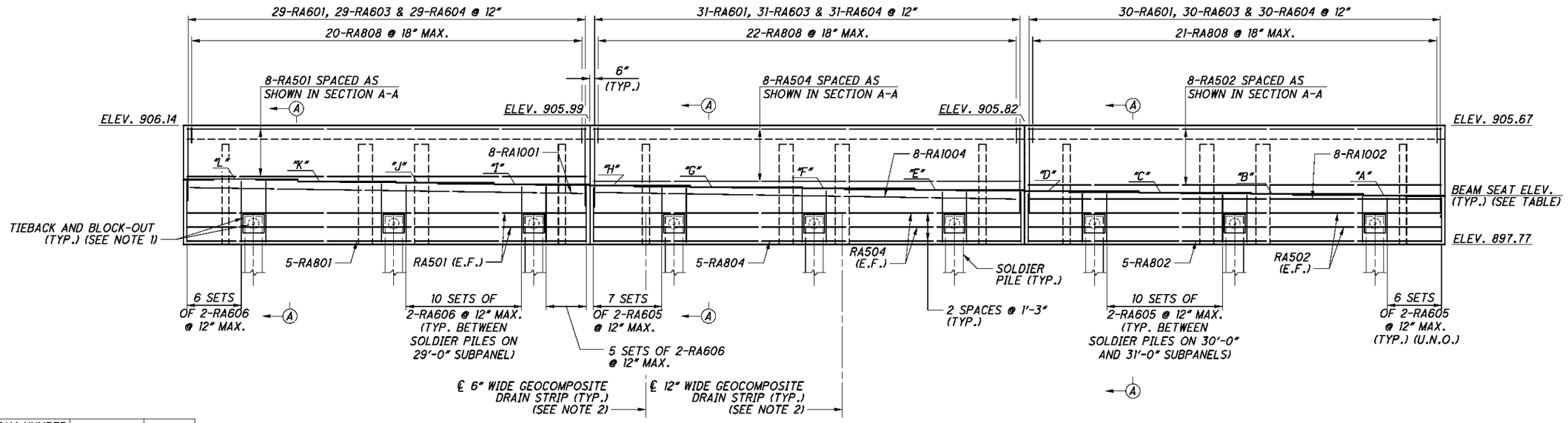


PLAN - PANEL 5R



ELEVATION - PANEL 5R

BEAM NUMBER	BEAM SEAT	ELEV.
36	A	901.27
37	B	901.31
38	C	901.35
39	D	901.40
40	E	901.44
41	F	901.48
42	G	901.52
43	H	901.56
44	I	901.59
45	J	901.63
46	K	901.67
47	L	901.84

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 5
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

36 / 101

1026
1150

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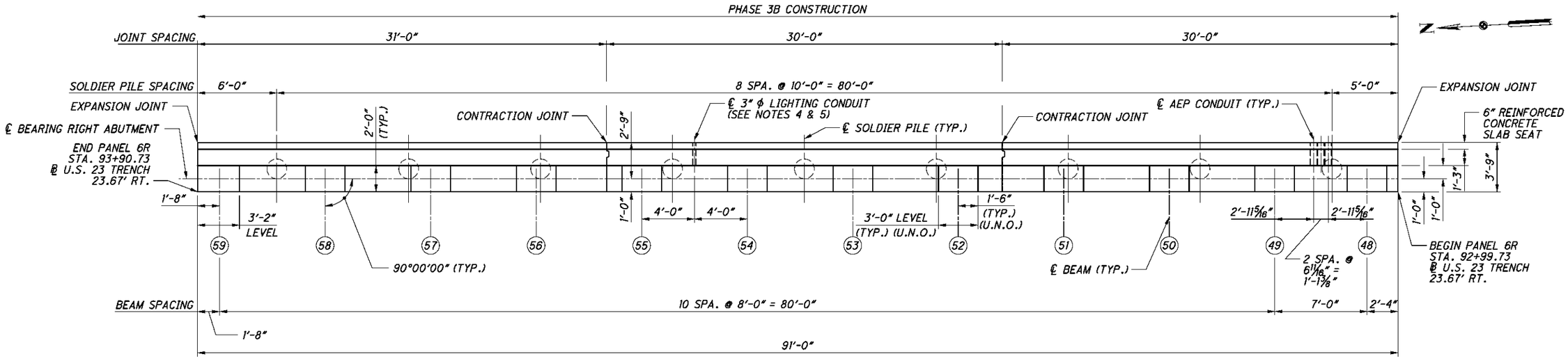
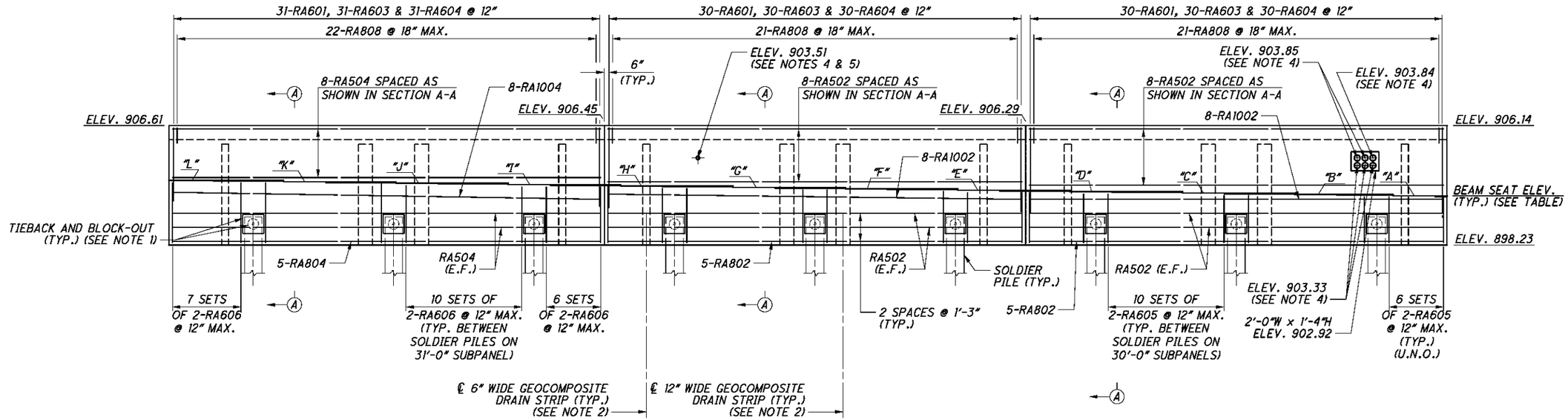


PLAN - PANEL 6R



ELEVATION - PANEL 6R

BEAM NUMBER	BEAM SEAT	ELEV.
48	A	901.73
49	B	901.76
50	C	901.81
51	D	901.85
52	E	901.89
53	F	901.93
54	G	901.97
55	H	902.01
56	I	902.06
57	J	902.10
58	K	902.14
59	L	902.18

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUIT. FOLLOWING INSTALLATION OF AEP UTILITIES, FILL REMAINDER OF OPENINGS WITH QUICK SETTING CONCRETE MORTAR, TYPE 2, PER 705.21. PAYMENT FOR FORMING OPENINGS AND SUPPLYING, MIXING AND PLACING MORTAR SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT), AS PER PLAN.
5. CAST 3" ϕ LIGHTING CONDUIT DIRECTLY IN BACKWALL. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

DESIGN AGENCY
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Cleveland, OH 44114-2531

DRAWN PPA | REVIEWED RSB | DATE 11/3/12 | STRUCTURE FILE NUMBER 2500760
DESIGNED JOL | CHECKED JTW | REVISED

RIGHT ABUTMENT PLAN AND ELEVATION - 6
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

37/101

1027
1150

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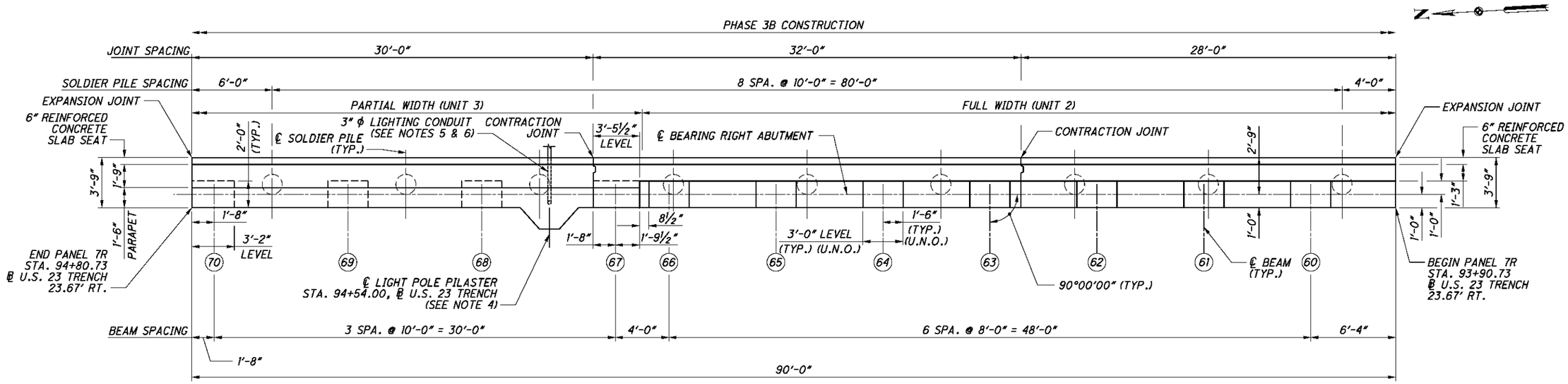
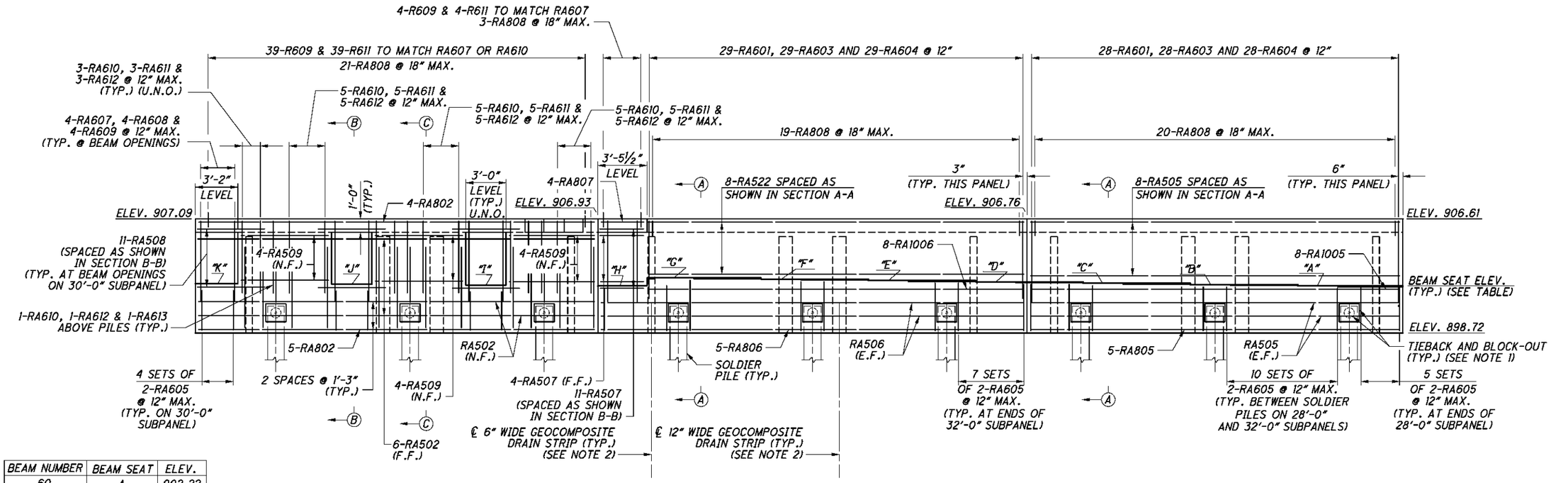


PLAN - PANEL 7R



BEAM NUMBER	BEAM SEAT	ELEV.
60	A	902.22
61	B	902.26
62	C	902.31
63	D	902.35
64	E	902.39
65	F	902.43
66	G	902.47
67	H	902.23
68	I	902.29
69	J	902.34
70	K	902.39

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

ELEVATION - PANEL 7R

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR ADDITIONAL REINFORCING REQUIRED AT LIGHT POLE PILASTER LOCATIONS, SEE SHEET 47/101.
5. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.
6. FIELD CUT LONGITUDINAL REINFORCING AS NEEDED AND ADJUST VERTICAL REINFORCING AS NEEDED TO AVOID CONDUIT.

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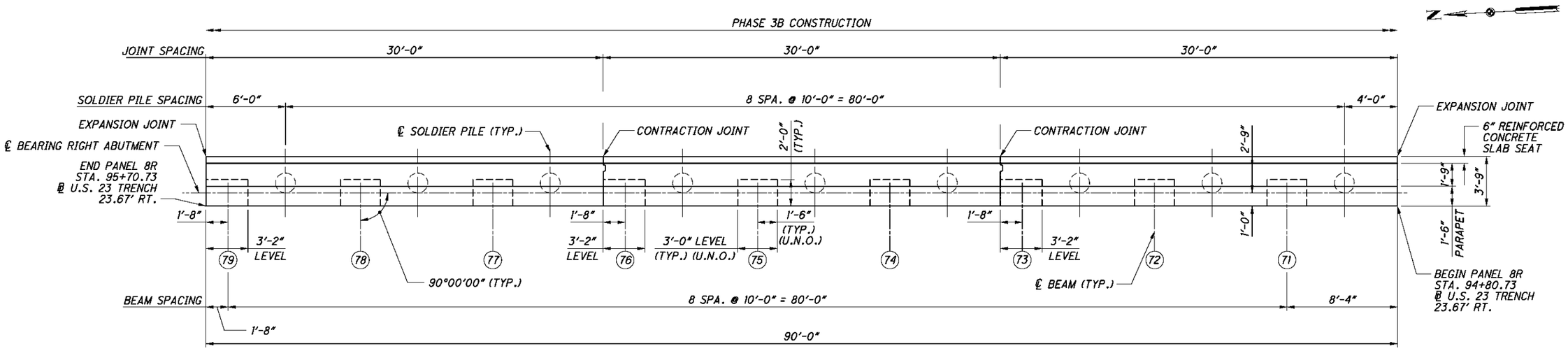
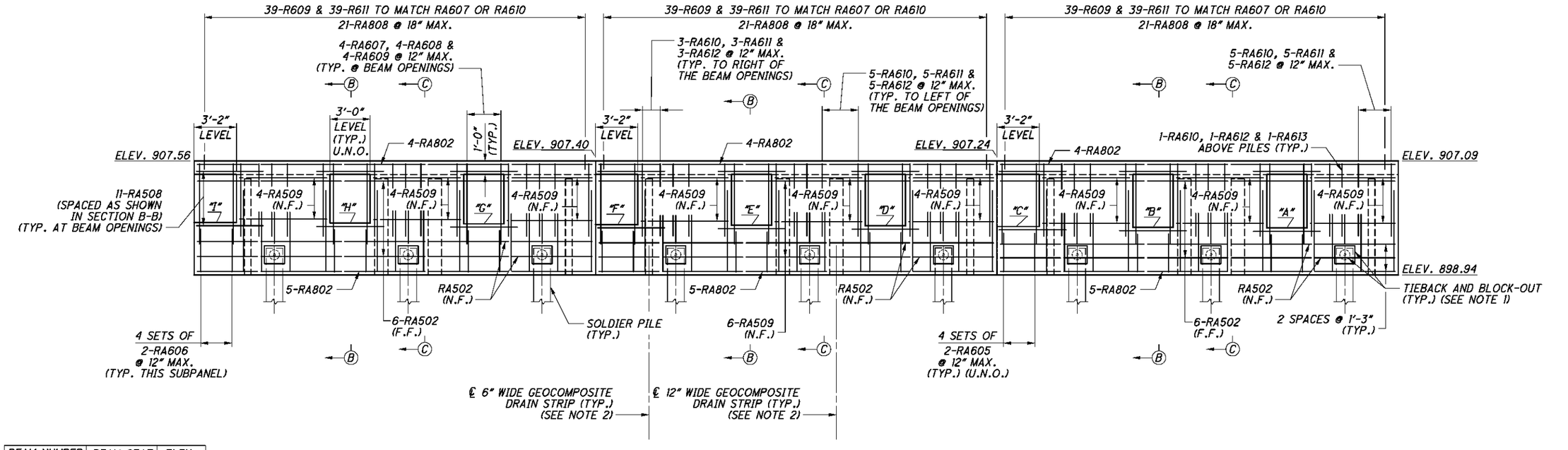
RIGHT ABUTMENT PLAN AND ELEVATION - 7
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746



PLAN - PANEL 8R



ELEVATION - PANEL 8R

BEAM NUMBER	BEAM SEAT	ELEV.
71	A	902.44
72	B	902.49
73	C	902.55
74	D	902.60
75	E	902.65
76	F	902.70
77	G	902.75
78	H	902.81
79	I	902.86

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 8
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

39 / 101

1029
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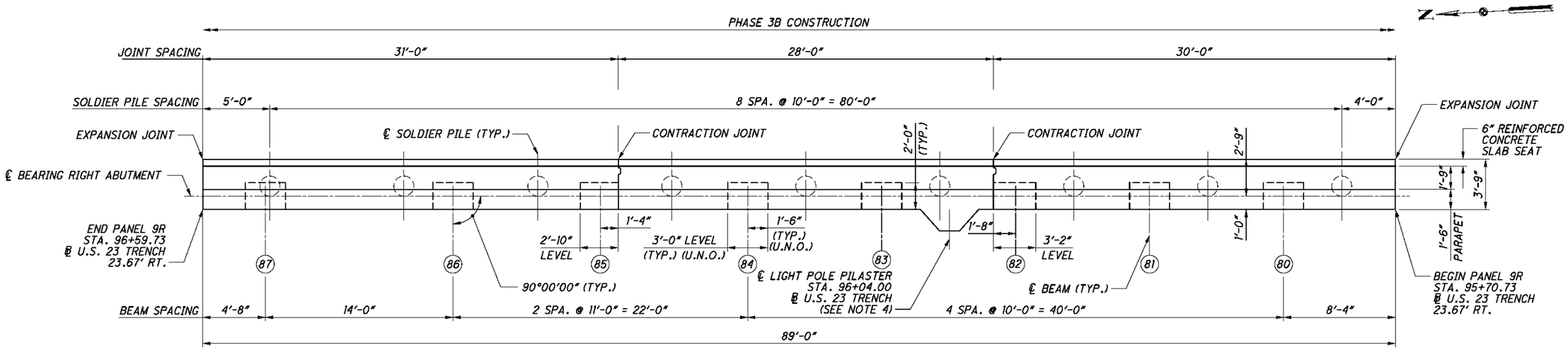
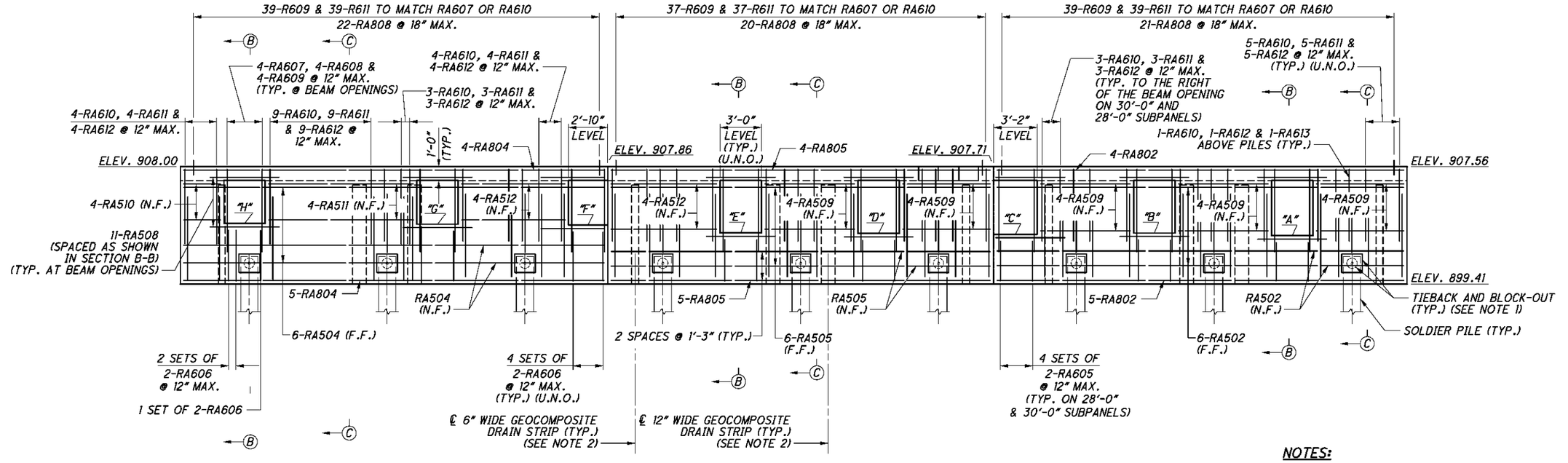


PLAN - PANEL 9R



ELEVATION - PANEL 9R

BEAM NUMBER	BEAM SEAT	ELEV.
80	A	902.91
81	B	903.10
82	C	903.01
83	D	903.07
84	E	903.12
85	F	903.68
86	G	903.74
87	H	903.80

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR ADDITIONAL REINFORCING REQUIRED AT LIGHT POLE PILASTER LOCATIONS, SEE SHEET 47/101.

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JTW		2500760	

RIGHT ABUTMENT PLAN AND ELEVATION - 9
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

40/101

1030
1150

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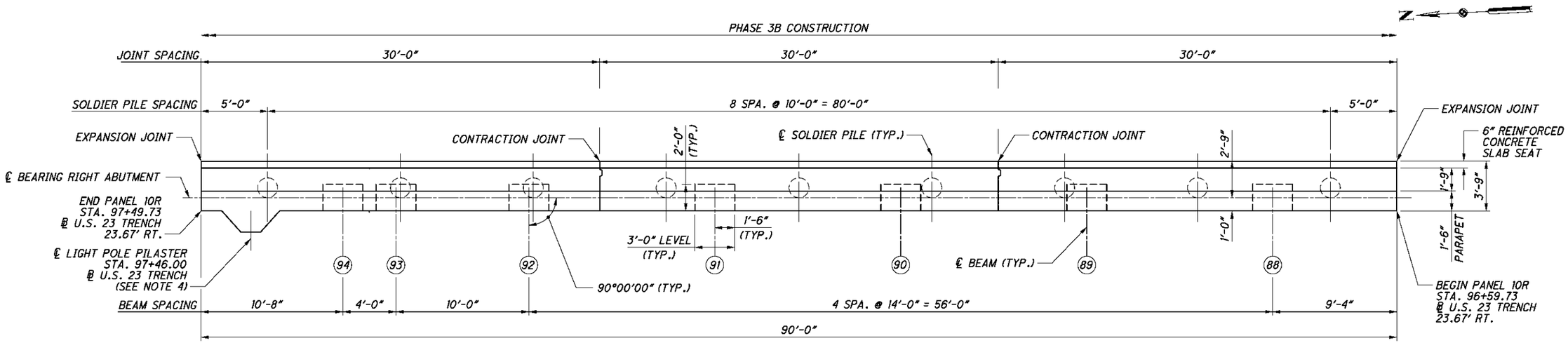
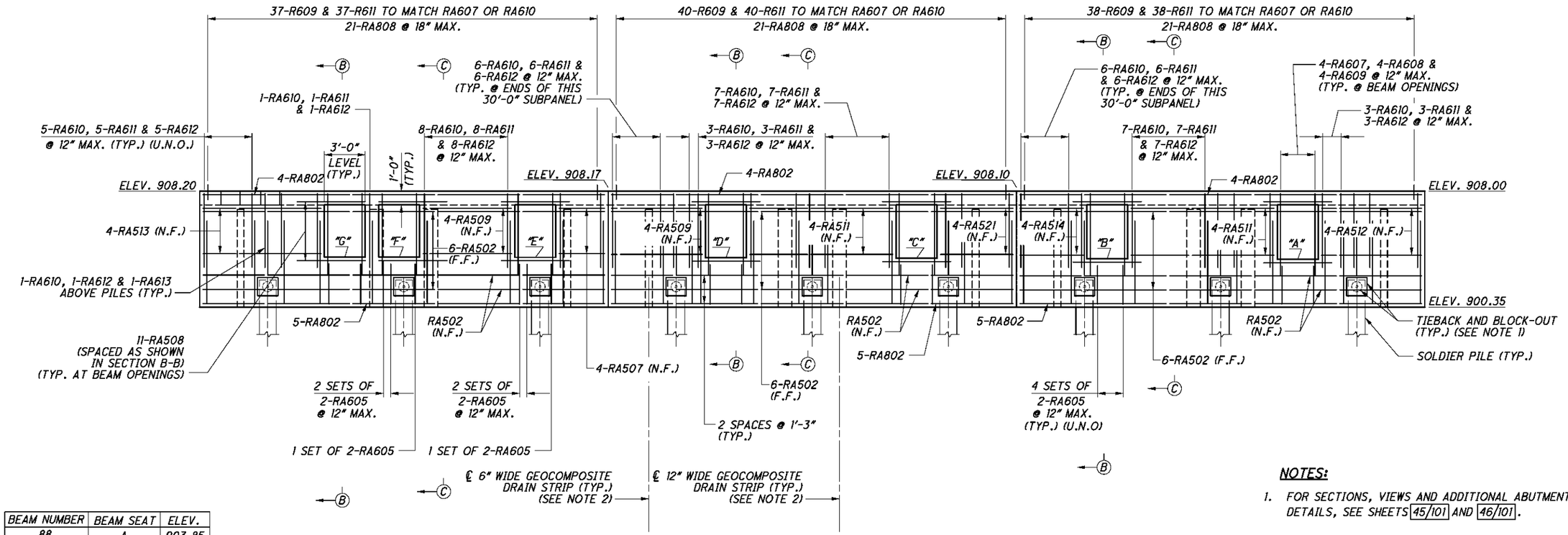


PLAN - PANEL 10R



BEAM NUMBER	BEAM SEAT	ELEV.
88	A	903.85
89	B	903.90
90	C	903.94
91	D	903.97
92	E	904.00
93	F	904.01
94	G	904.02

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

ELEVATION - PANEL 10R

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR ADDITIONAL REINFORCING REQUIRED AT LIGHT POLE PILASTER LOCATIONS, SEE SHEET 47/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 10
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

41 / 101

1031
1150

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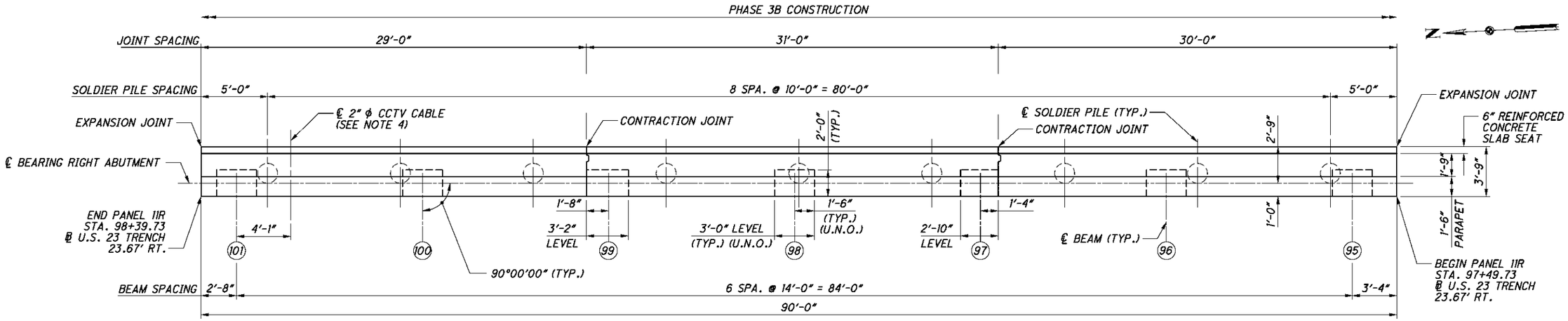
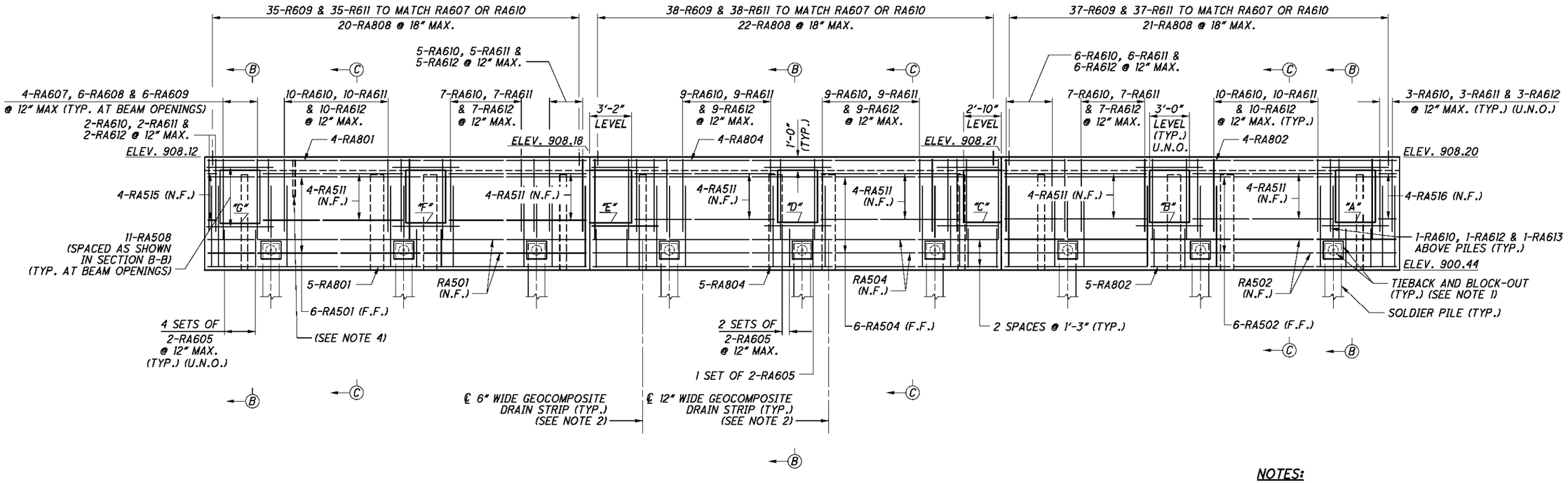


PLAN - PANEL 11R



ELEVATION - PANEL 11R

BEAM NUMBER	BEAM SEAT	ELEV.
95	A	904.03
96	B	904.03
97	C	904.03
98	D	904.02
99	E	904.00
100	F	903.98
101	G	903.94

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.
4. FOR 2" ϕ CCTV CABLE DETAILS AND PAYMENT, SEE ITS PLANS.

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RIGHT ABUTMENT PLAN AND ELEVATION - 11
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

42/101

1032/1150

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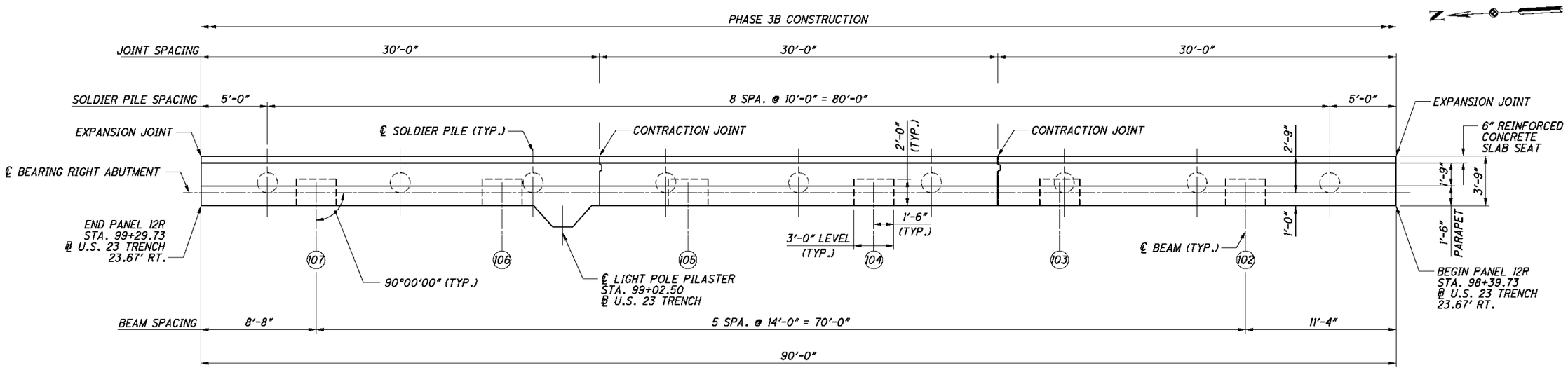
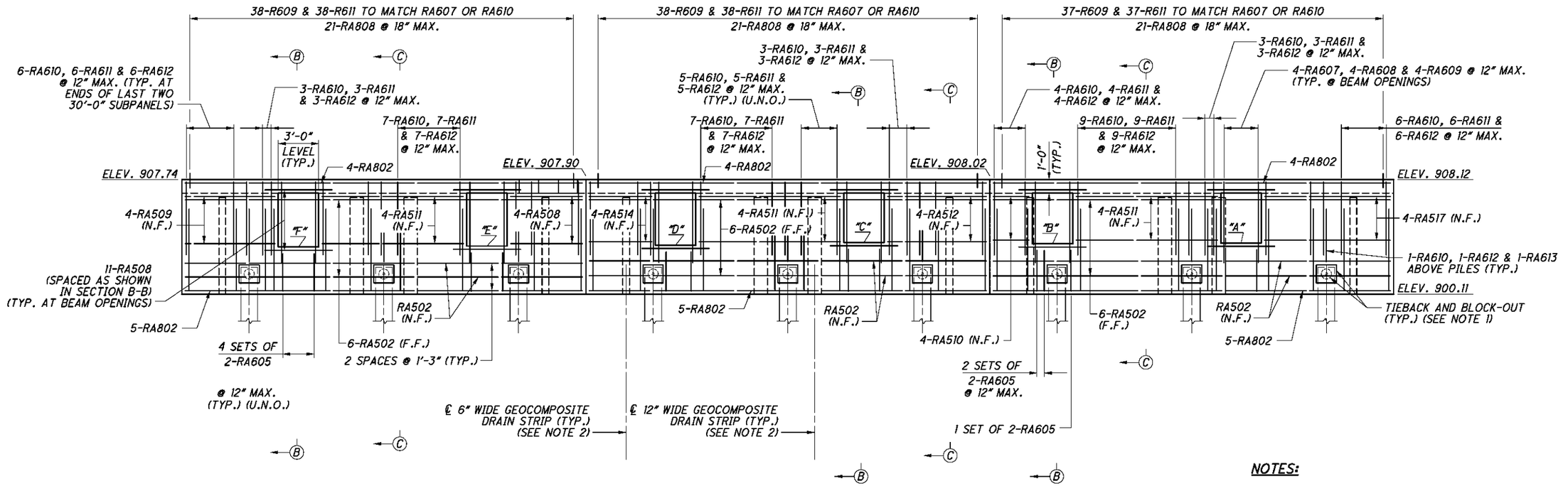


PLAN - PANEL 12R



BEAM NUMBER	BEAM SEAT	ELEV.
102	A	903.91
103	B	903.86
104	C	903.95
105	D	903.75
106	E	903.68
107	F	903.61

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

ELEVATION - PANEL 12R

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 12
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

43/101

1033/1150

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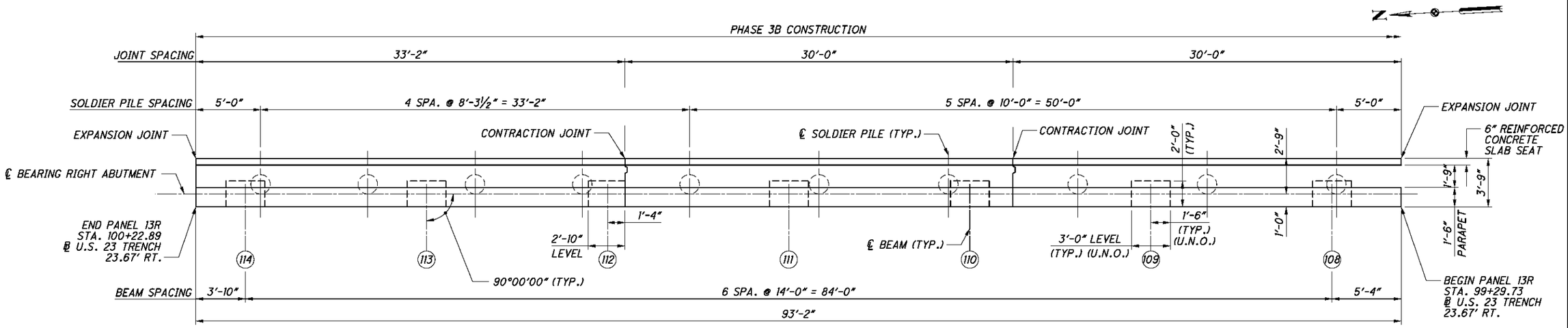
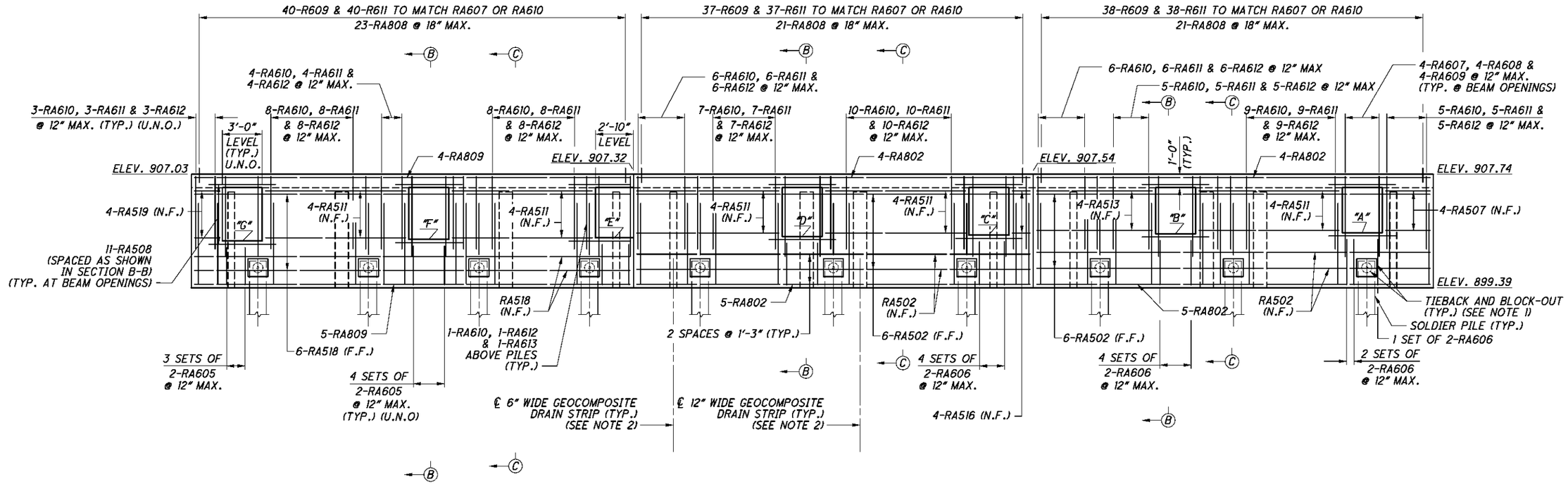


PLAN - PANEL 13R



ELEVATION - PANEL 13R

BEAM NUMBER	BEAM SEAT	ELEV.
108	A	903.52
109	B	903.44
110	C	903.34
111	D	903.24
112	E	903.13
113	F	903.01
114	G	902.89

BAR	MINIMUM LAP LENGTH
#6	1'-9" (BACKWALL) 2'-9" (STEM)

NOTES:

1. FOR SECTIONS, VIEWS AND ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
2. SPACE 6" & 12" WIDE GEOCOMPOSITE DRAIN STRIPS 2'-0" FROM THE SOLDIER PILE, AS SHOWN ON SHEET 19/101.
3. FOR ADDITIONAL NOTES AND LEGEND, SEE SHEET 19/101.

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RIGHT ABUTMENT PLAN AND ELEVATION - 13
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

44 / 101

1034
1150

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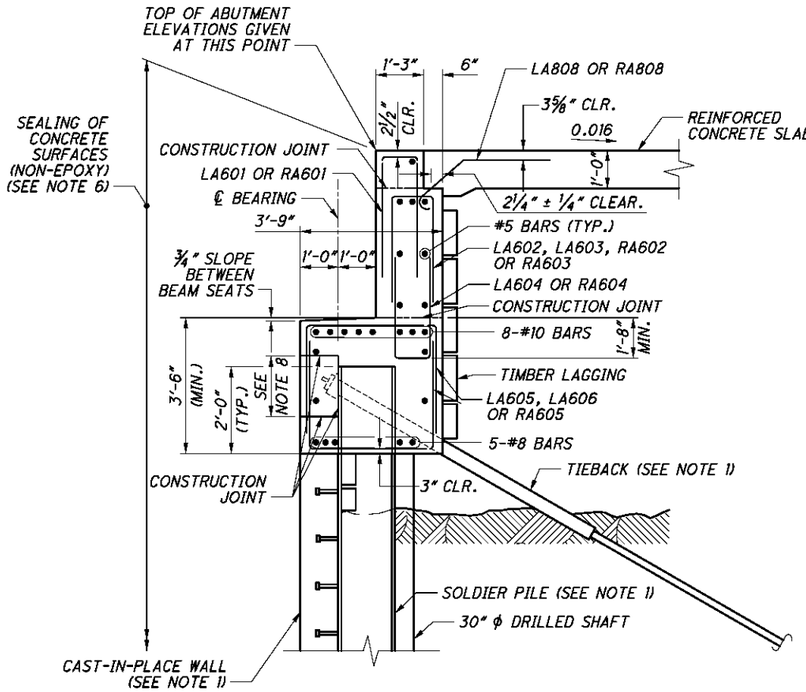
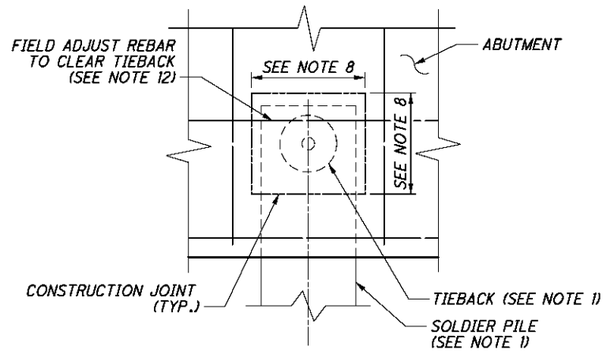
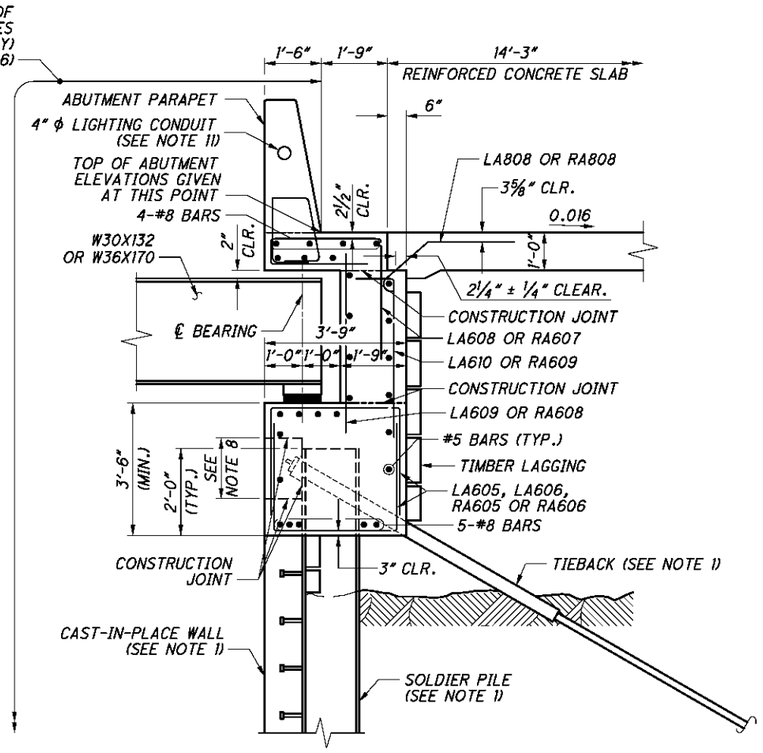


SECTION A-A

(18" OR 24" ϕ DRILLED SHAFT AND DRAINAGE DETAILS NOT SHOWN FOR CLARITY)

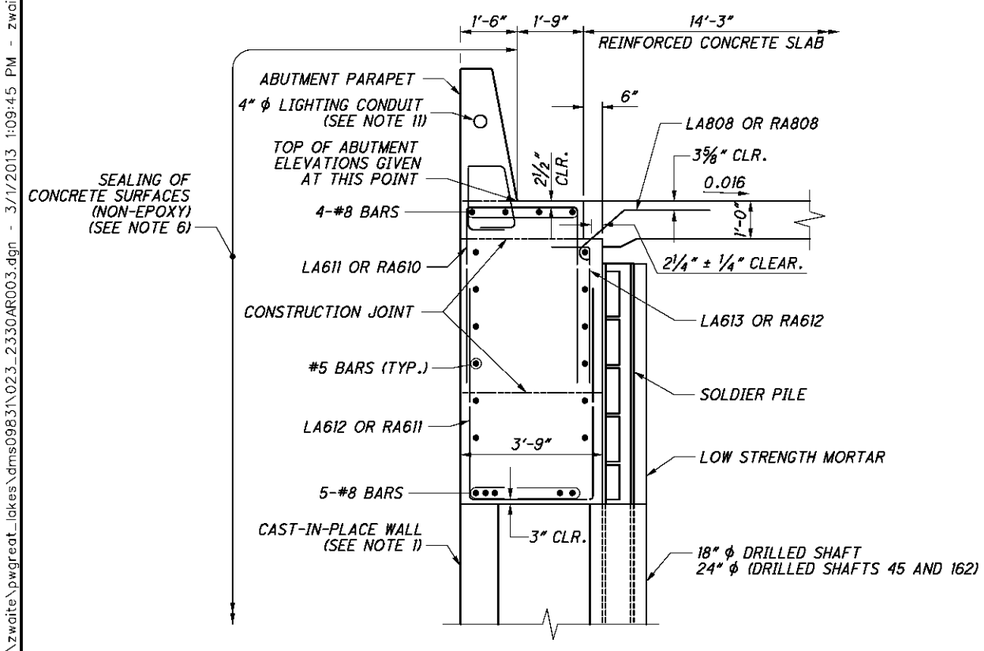


BLOCK-OUT DETAIL

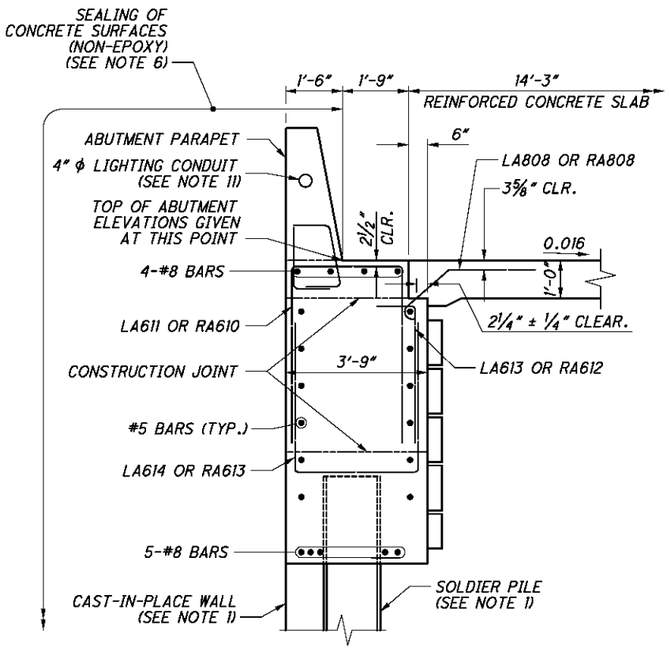


SECTION B-B

(18" OR 24" ϕ DRILLED SHAFT AND DRAINAGE DETAILS NOT SHOWN FOR CLARITY)



SECTION C-C



SECTION C-C

(AT PILES)

NOTES:

1. FOR SOLDIER PILE WALL, TIEBACK AND CAST-IN-PLACE WALL DETAILS, SEE SHEETS 55/101 THROUGH 60/101.
2. FOR ABUTMENT PLAN AND ELEVATION, SEE SHEETS 19/101 THROUGH 44/101.
3. FOR LOCATIONS OF SECTION A-A, SEE SHEETS 22/101 THROUGH 38/101.
4. FOR LOCATIONS OF SECTIONS B-B AND C-C, SEE SHEETS 19/101 THROUGH 22/101 AND 38/101 THROUGH 44/101.
5. FOR REINFORCED CONCRETE SLAB DETAILS, SEE SHEET 97/101.
6. FOR LIMITS OF SEALING OF CONCRETE SURFACES, SEE SHEET 60/101.
7. FOR ABUTMENT PARAPET DETAILS, SEE SHEETS 48/101 THROUGH 50/101.
8. PROVIDE BLOCK-OUT FOR STRESSING BLOCK. THE CONTRACTOR SHALL DETERMINE THE SIZE OF THE BLOCK-OUT.
9. FOR DRAINAGE DETAILS, SEE SHEET 60/101.
10. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THRU 101/101.
11. FOR 4" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.
12. THE MAXIMUM SPACING OF THE HORIZONTAL REINFORCING STEEL SHALL NOT EXCEED 18".

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NJ		2500760	

ABUTMENT DETAILS - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1035
1150

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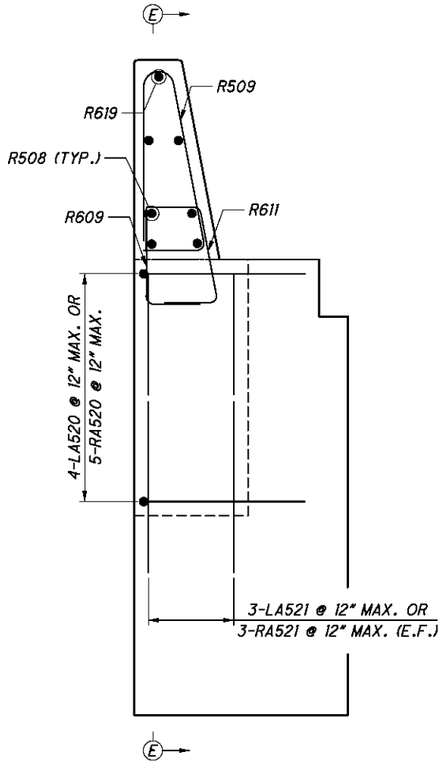
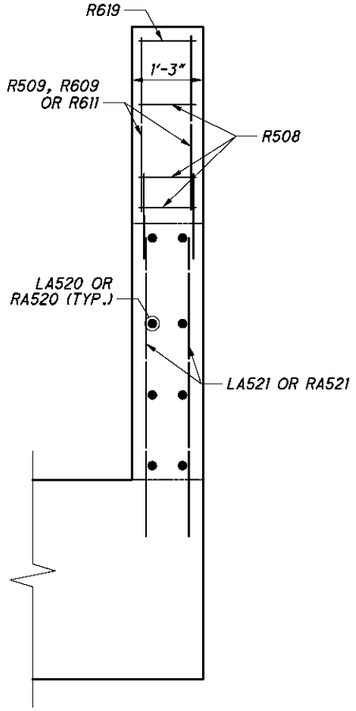
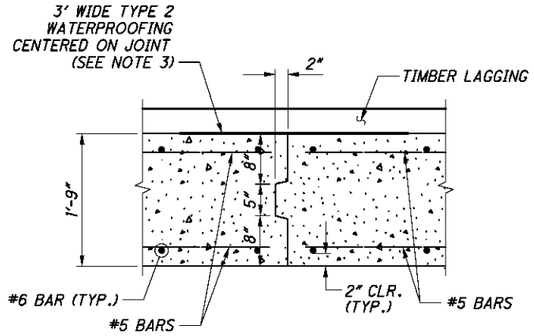


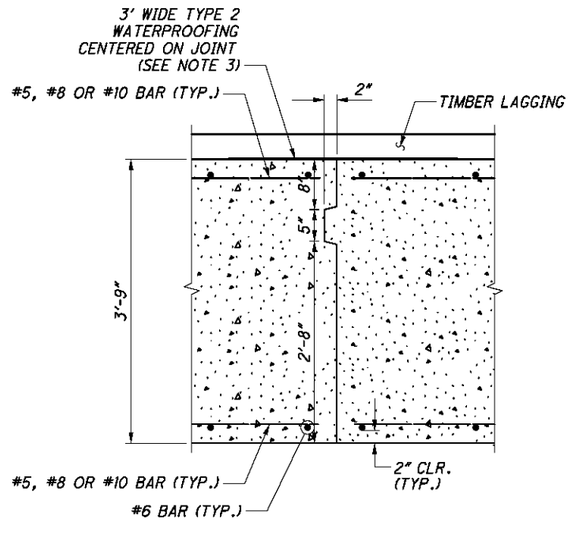
VIEW D-D



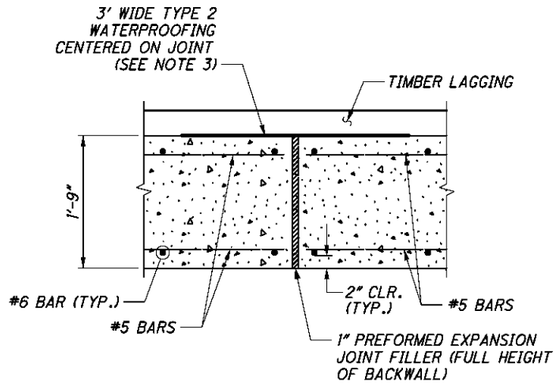
SECTION E-E



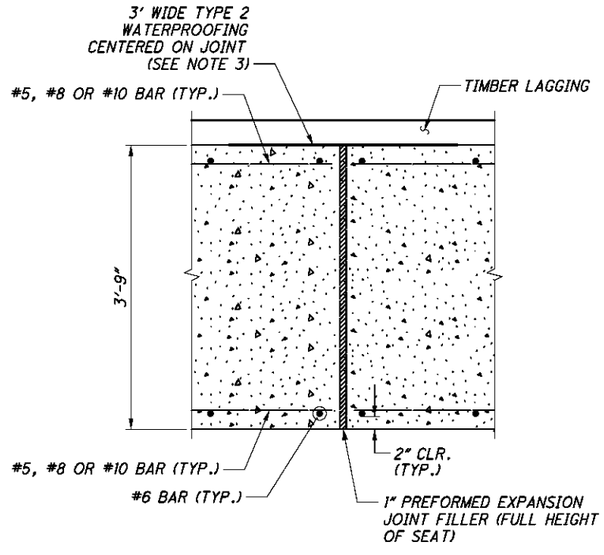
CONTRACTION JOINT DETAIL AT BACKWALL



CONTRACTION JOINT DETAIL AT BEAM SEAT



EXPANSION JOINT DETAIL AT BACKWALL



EXPANSION JOINT DETAIL AT BEAM SEAT

NOTES:

1. FOR LOCATIONS OF VIEW D-D, SEE SHEETS 31/101 AND 32/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 45/101.
3. SECURELY ATTACH THE WATERPROOFING MEMBRANE TO THE WOOD LAGGING OR ASPHALT COATED SHALE WITH SCREWS OR MASONRY ANCHORS AND 1" DIAMETER FENDER WASHERS. PLACE THE MEMBRANE SO THAT THE ADHESIVE SIDE FACES THE CAST-IN-PLACE CONCRETE. THE SURFACE PREPARATION OUTLINED IN CMS 512.08 IS NOT REQUIRED. ALL LABOR AND MATERIALS FOR THIS WORK IS INCLUDED WITH ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN.

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DESIGN AGENCY
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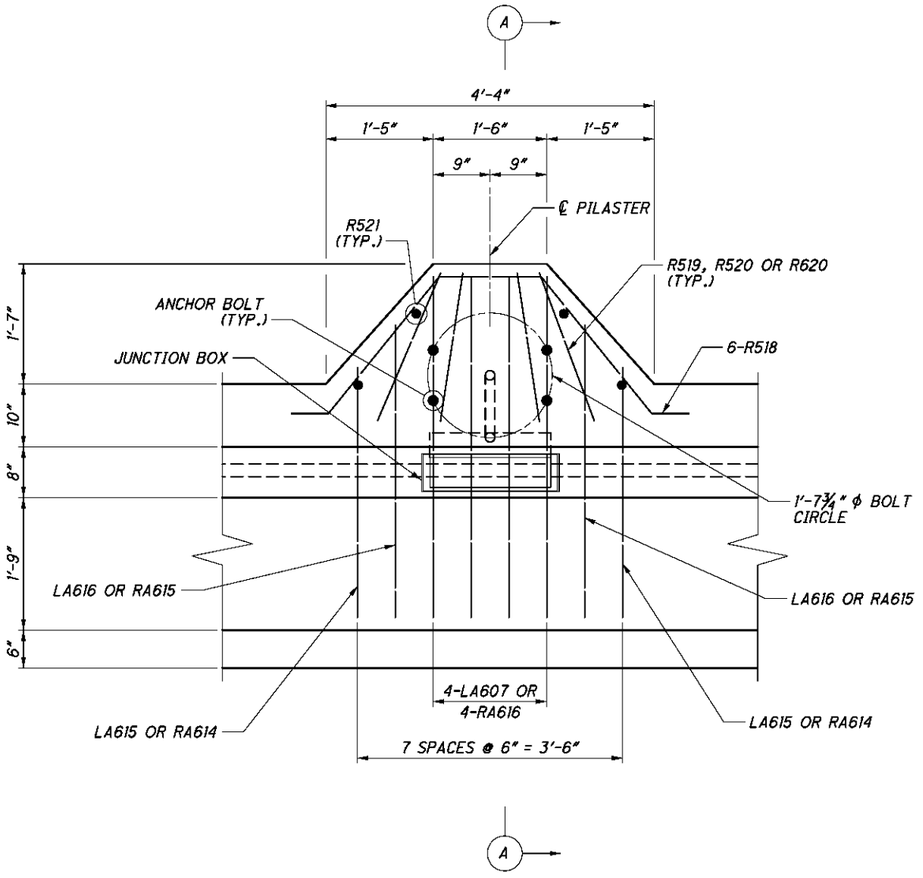
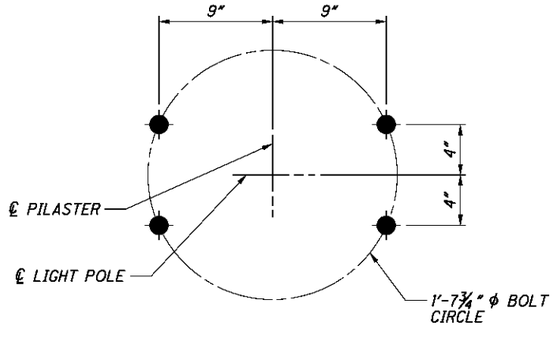
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

ABUTMENT DETAILS - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

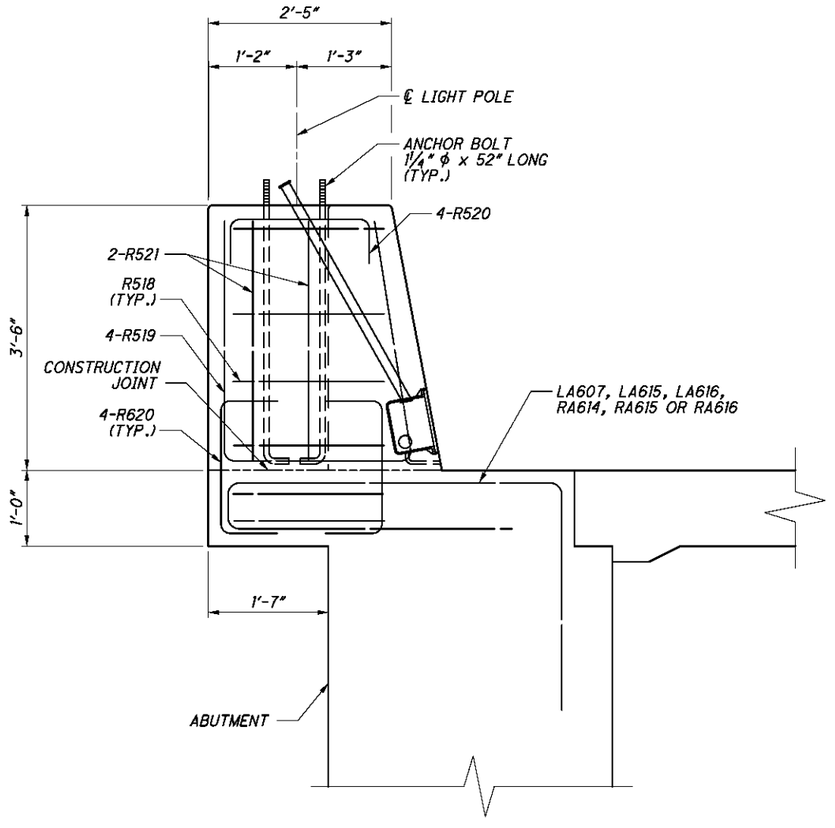
FRA-23-22.23
PID No. 81746



LIGHT POLE PILASTER PLAN



ANCHOR BOLT PATTERN DETAIL



SECTION A-A

(MAIN ABUTMENT REINFORCING
NOT SHOWN FOR CLARITY)

NOTES:

1. FOR ADDITIONAL DETAILS, SEE ODOT STANDARD DRAWING HL-20.14 AND LIGHTING PLANS.
2. FOR ADDITIONAL ABUTMENT DETAILS, SEE SHEETS 19/101 THROUGH 46/101.
3. FOR POLE BASE PLATE DETAILS, SEE ODOT STANDARD DRAWING HL-20.13.
4. FOR PAYMENT OF MATERIAL AND LABOR ASSOCIATED WITH LIGHT POLE AND LUMINAIRE, SEE LIGHTING PLANS.

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DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
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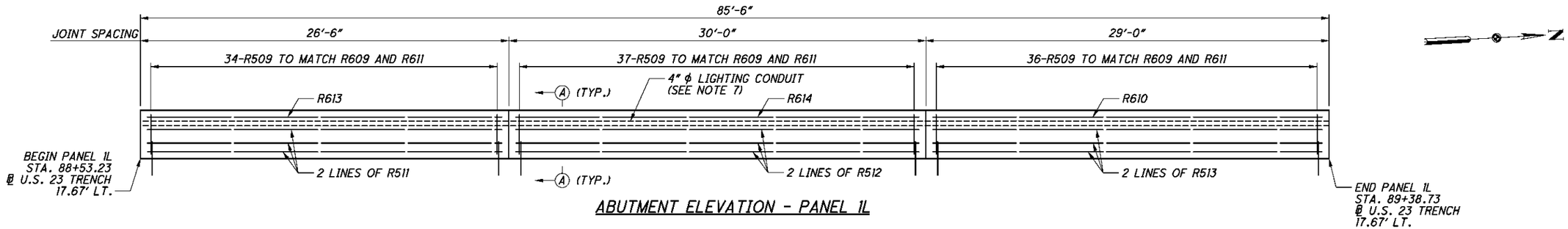
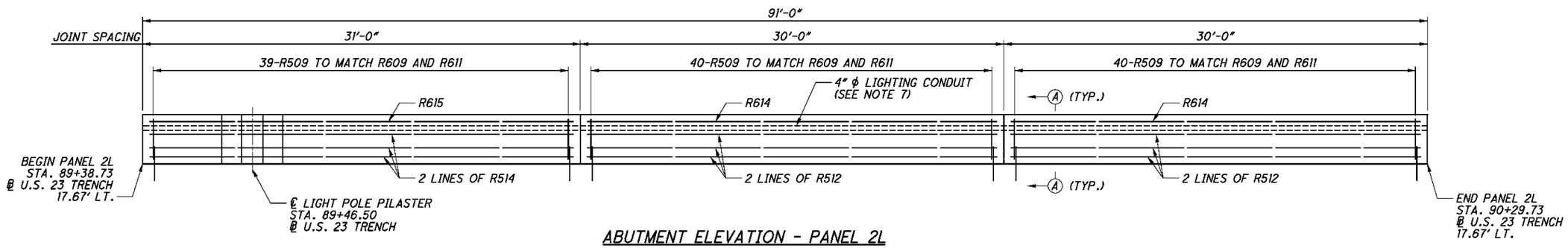
DESIGNED	DRAWN	REVIEWED	DATE
ZTW/JOL	ZTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

LIGHTING DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

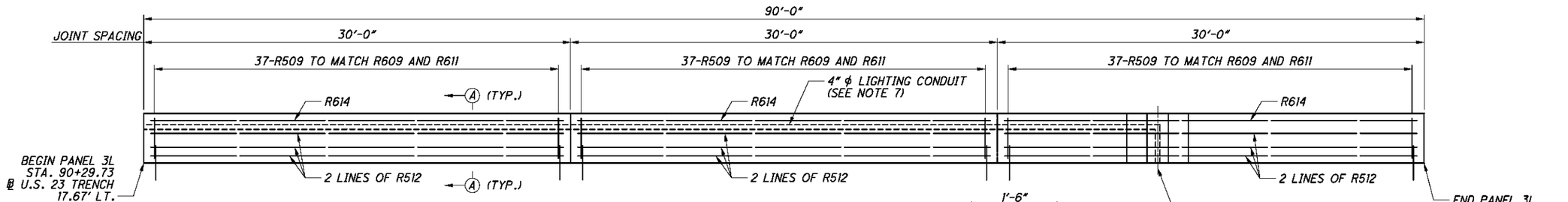
FRA-23-22.23
PID No. 81746



ABUTMENT ELEVATION - PANEL 1L

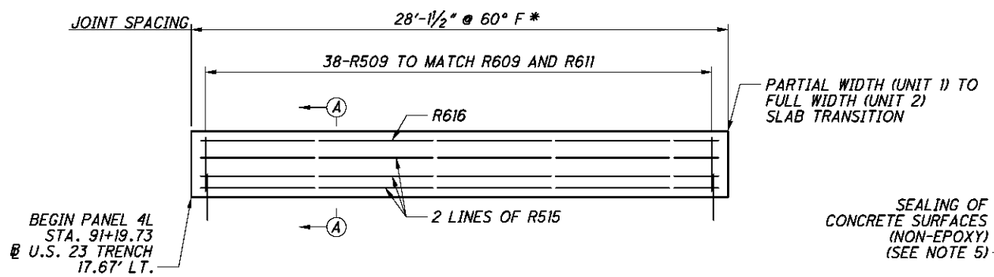


ABUTMENT ELEVATION - PANEL 2L

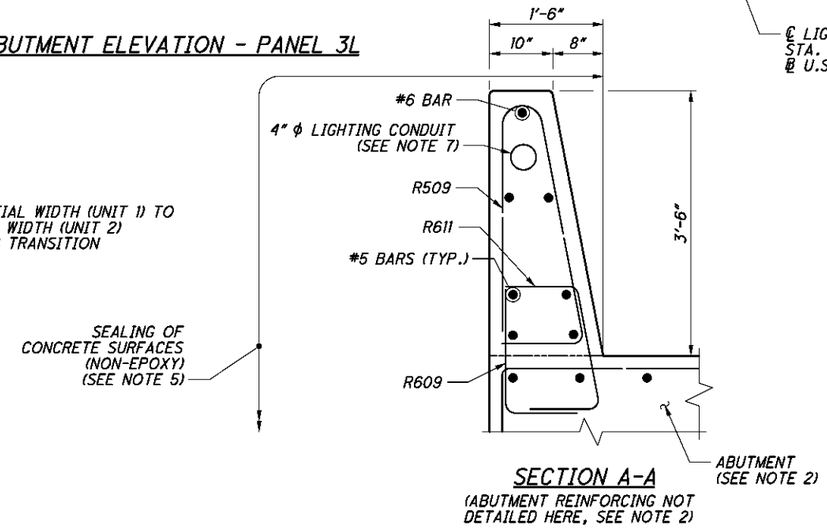


ABUTMENT ELEVATION - PANEL 3L

* DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.



ABUTMENT ELEVATION - PANEL 4L



SECTION A-A

(ABUTMENT REINFORCING NOT DETAILED HERE, SEE NOTE 2)

NOTES:

1. FOR ABUTMENT PLANS AND JOINT LOCATIONS, SEE SHEETS 19/101 THROUGH 44/101.
2. FOR ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
3. VERTICAL BARS IN THE PARAPET SHALL MATCH THE VERTICAL BARS IN THE ABUTMENT.
4. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
5. FOR END OF SEALING LIMITS, SEE SHEET 60/101.
6. FOR JOINT DETAILS, SEE SHEET 50/101.
7. FOR 4" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

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NJ		2500760	

ABUTMENT PARAPET ELEVATION - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1038/1150

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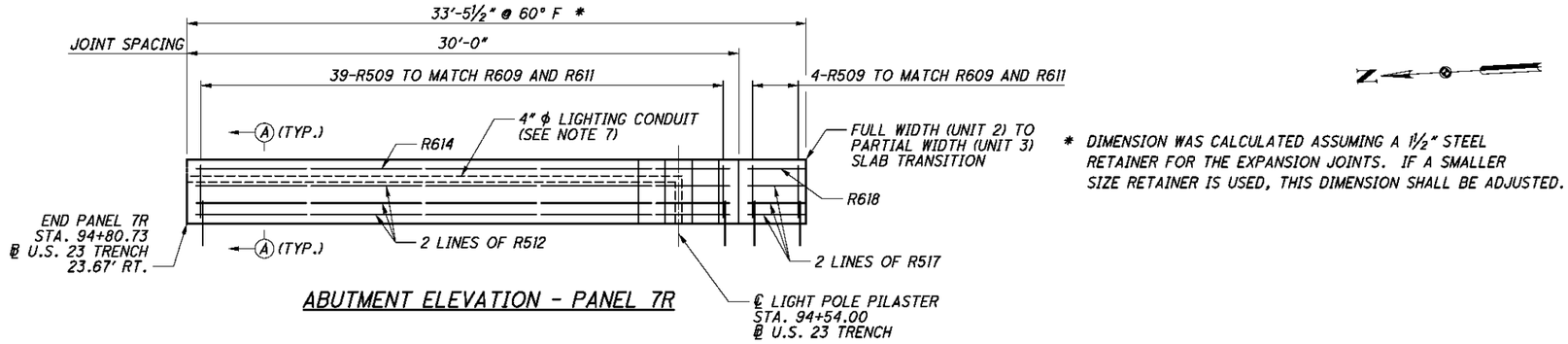
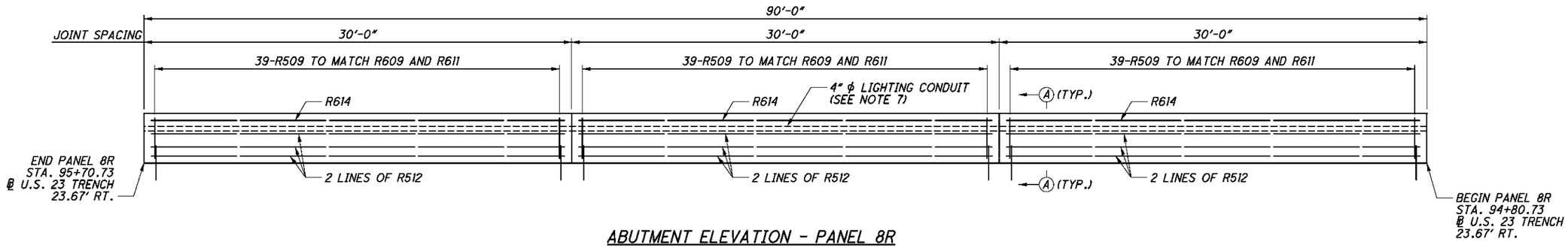
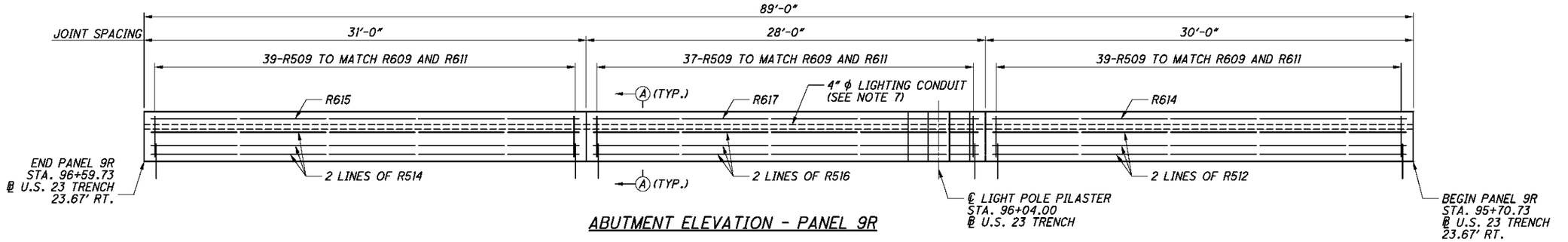


ABUTMENT ELEVATION - PANEL 7R

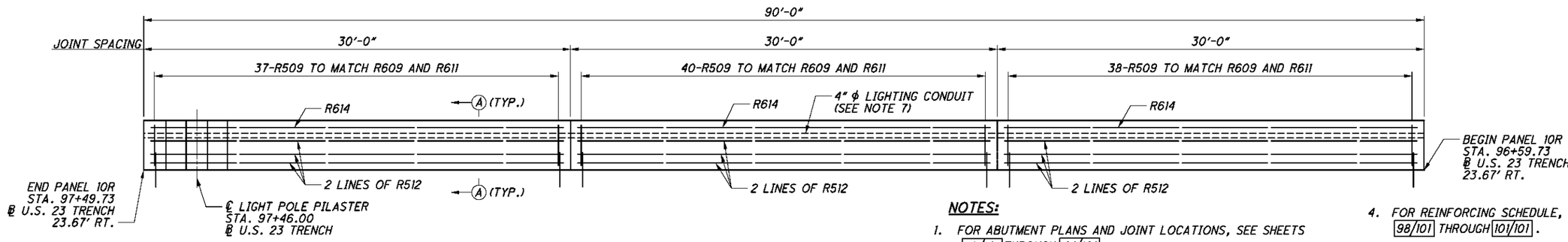
* DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.



ABUTMENT ELEVATION - PANEL 8R



ABUTMENT ELEVATION - PANEL 9R



ABUTMENT ELEVATION - PANEL 10R

NOTES:

1. FOR ABUTMENT PLANS AND JOINT LOCATIONS, SEE SHEETS 19/101 THROUGH 44/101.
2. FOR ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
3. VERTICAL BARS IN THE PARAPET SHALL MATCH THE VERTICAL BARS IN THE ABUTMENT.
4. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
5. FOR SECTION A-A, SEE SHEET 48/101.
6. FOR JOINT DETAILS, SEE SHEET 50/101.
7. FOR 4" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.

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NJ		2500760	

ABUTMENT PARAPET ELEVATION - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1039
1150

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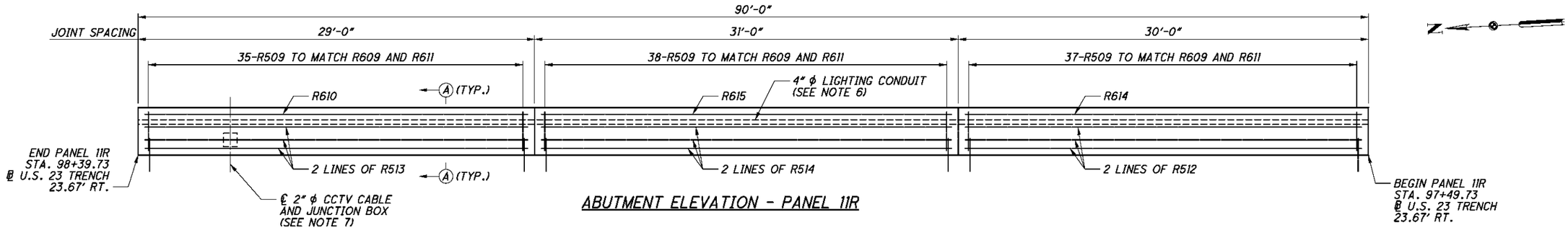
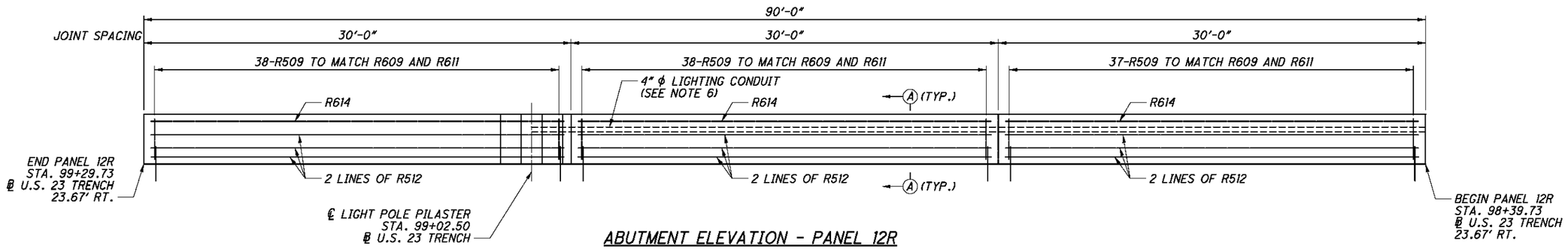
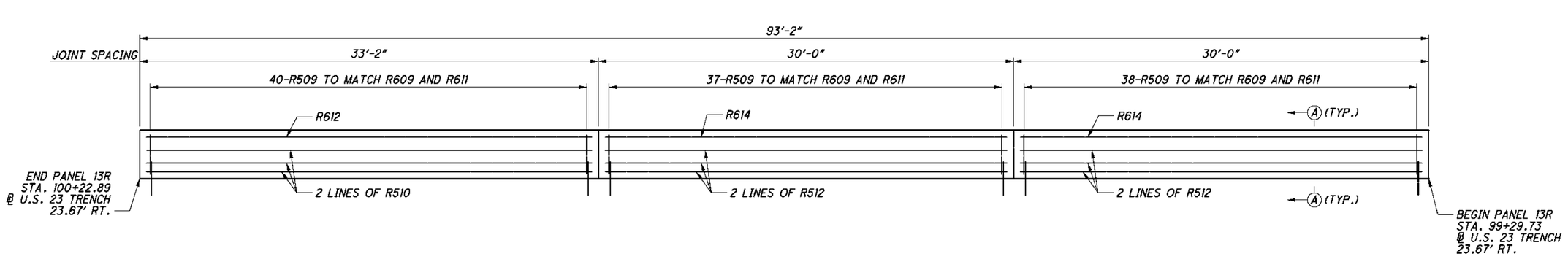


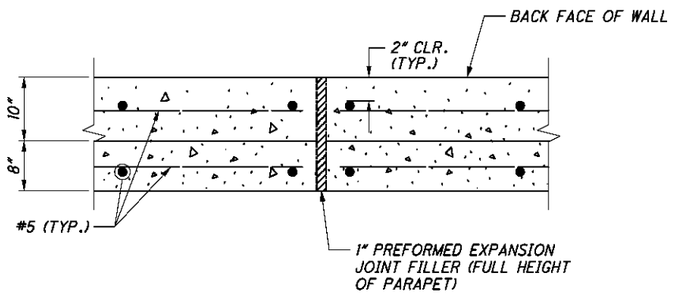
ABUTMENT ELEVATION - PANEL 11R



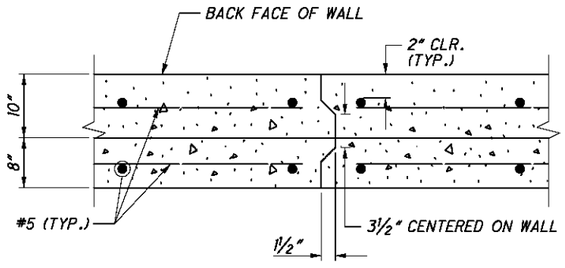
ABUTMENT ELEVATION - PANEL 12R



ABUTMENT ELEVATION - PANEL 13R



EXPANSION JOINT DETAIL



CONTRACTION JOINT DETAIL

NOTES:

1. FOR ABUTMENT PLANS AND JOINT LOCATIONS, SEE SHEETS 19/101 THROUGH 44/101.
2. FOR ABUTMENT DETAILS, SEE SHEETS 45/101 AND 46/101.
3. VERTICAL BARS IN THE PARAPET SHALL MATCH THE VERTICAL BARS IN THE ABUTMENT.
4. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
5. FOR SECTION A-A, SEE SHEET 48/101.
6. FOR 4" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.
7. FOR 2" ϕ CCTV CABLE DETAILS AND PAYMENT, SEE ITS PLANS. ADJUST VERTICAL REINFORCING BARS R509, R609 AND R611 AS NEEDED TO AVOID PLACEMENT OF JUNCTION BOX.

DESIGN AGENCY
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NJ		2500760	

ABUTMENT PARAPET ELEVATION - 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

50/101

1040
1150

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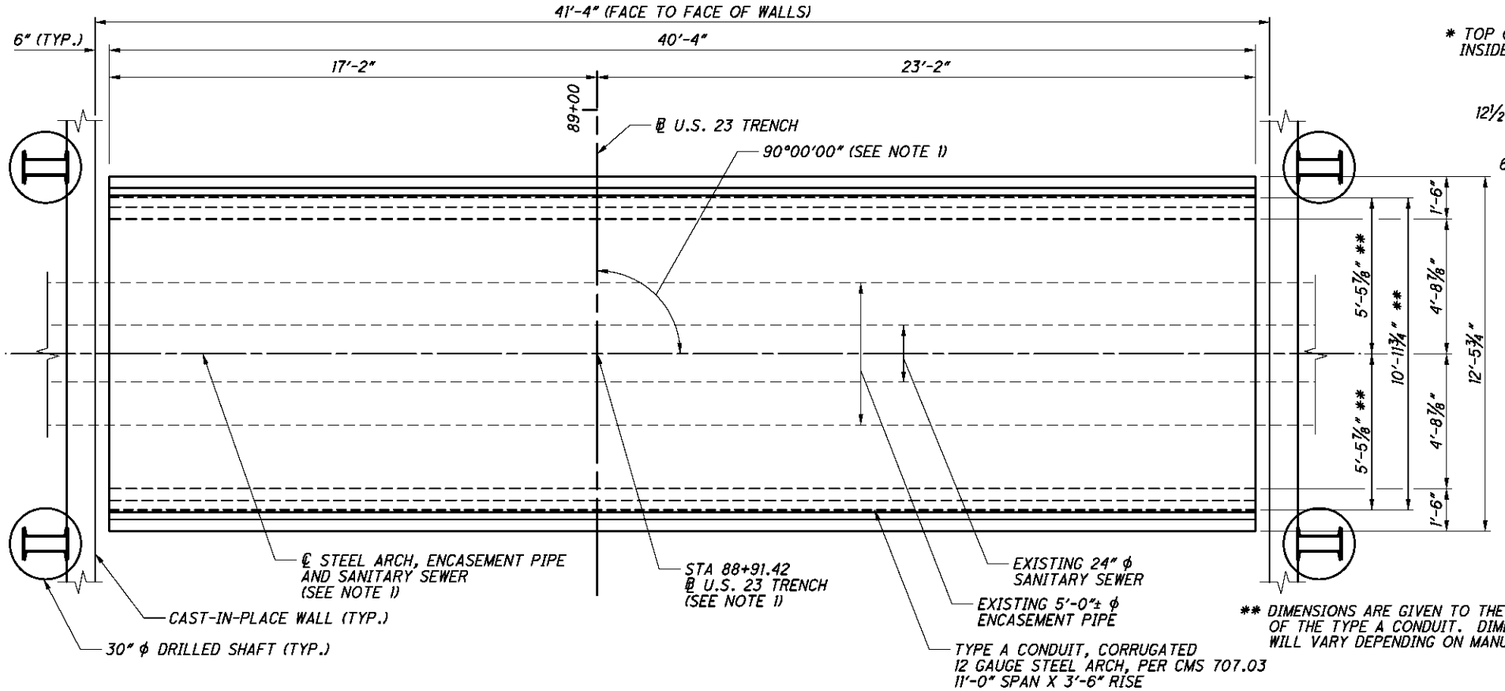
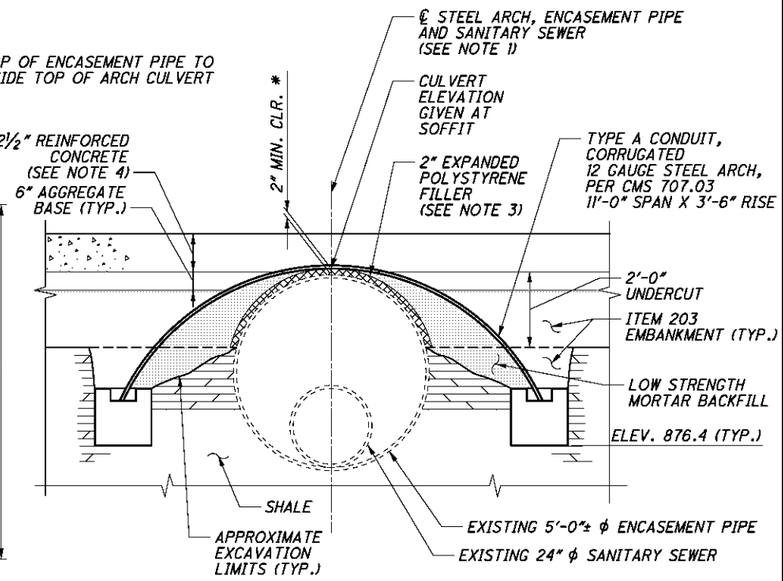


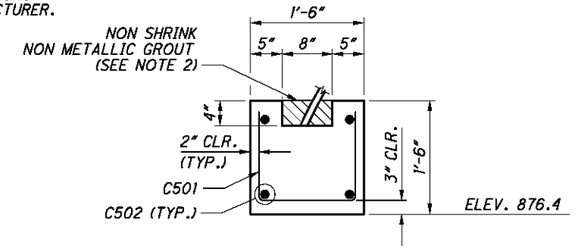
PLAN

(BARRIER AND ROADWAY NOT SHOWN FOR CLARITY)

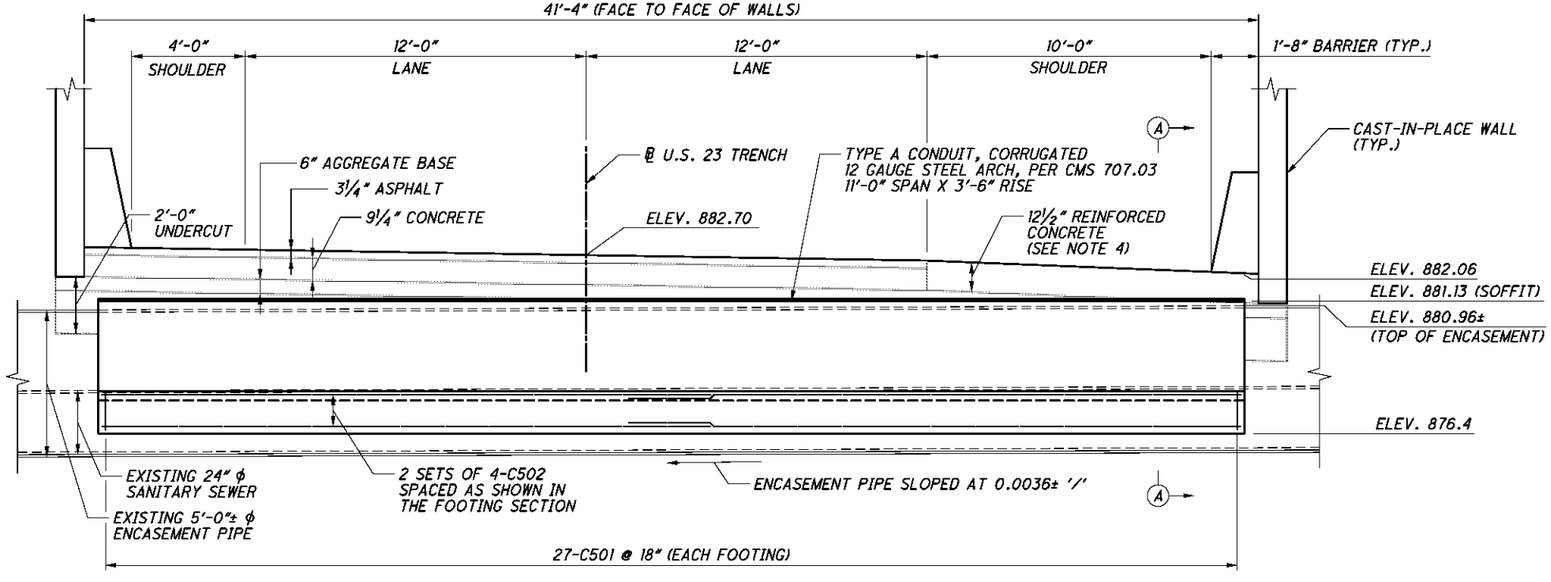
** DIMENSIONS ARE GIVEN TO THE INSIDE OF THE TYPE A CONDUIT. DIMENSIONS WILL VARY DEPENDING ON MANUFACTURER.



SECTION A-A



FOOTING SECTION



ELEVATION

NOTES:

1. THE LOCATION AND ORIENTATION OF THE EXISTING SANITARY SEWER AND PIPE ENCASEMENT SHALL BE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE THE PIPE ENCASEMENT PRIOR TO CONSTRUCTING THE FOOTINGS AND PLACING THE STEEL ARCH. ADJUSTMENTS SHOULD BE MADE TO ENSURE THE PROPOSED STEEL ARCH IS CENTERED ABOVE THE PIPE ENCASEMENT.
2. NON SHRINK NON METALLIC GROUT SHALL BE PER CMS 705.20 AND WILL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (FOOTING), AS PER PLAN FOR PAYMENT.
3. PLACE EXPANDED POLYSTYRENE FILLER OVER THE ENTIRE EXPOSED SURFACE AND FOR THE FULL LENGTH OF THE ENCASEMENT PIPE. IF DURING EXCAVATION OF THE 2'-0" ROADWAY UNDERCUT THE ENCASEMENT PIPE IS NOT EXPOSED, THE CONTRACTOR SHALL LOCATE THE ENCASMENT PIPE. PLACE THE EXPANDED POLYSTYRENE FILLER AT THE BOTTOM OF THE 2'-0" UNDERCUT AND CENTERED OVER THE ENCASEMENT PIPE. PAYMENT FOR EXPANDED POLYSTYRENE FILLER SHALL BE INCLUDED WITH ITEM 613 - LOW STRENGTH MORTAR BACKFILL, AS PER PLAN.
4. FOR ADDITIONAL REINFORCED CONCRETE DETAILS, SEE ROADWAY TYPICAL SECTIONS.

DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1300
Cleveland, OH 44114-2528

DESIGNED	DRAWN	REVIEWED	DATE
JTW	JTW	RSB	1/11/13
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JOL		2500760	

TYPE A CONDUIT DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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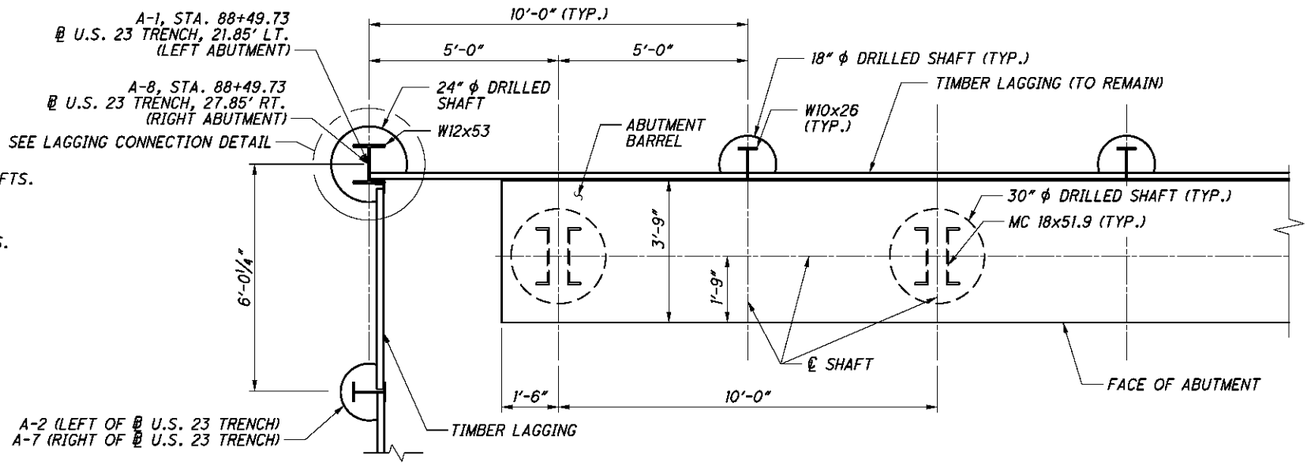
STAGE 1

1. INSTALL 18" AND 24" ϕ DRILLED SHAFTS.
2. EXCAVATE TO THE ELEVATION AT BOTTOM OF ABUTMENT AND INSTALL TIMBER LAGGING AS WORK PROCEEDS.
3. INSTALL 30" ϕ DRILLED SHAFTS.
4. CONSTRUCT ABUTMENT.

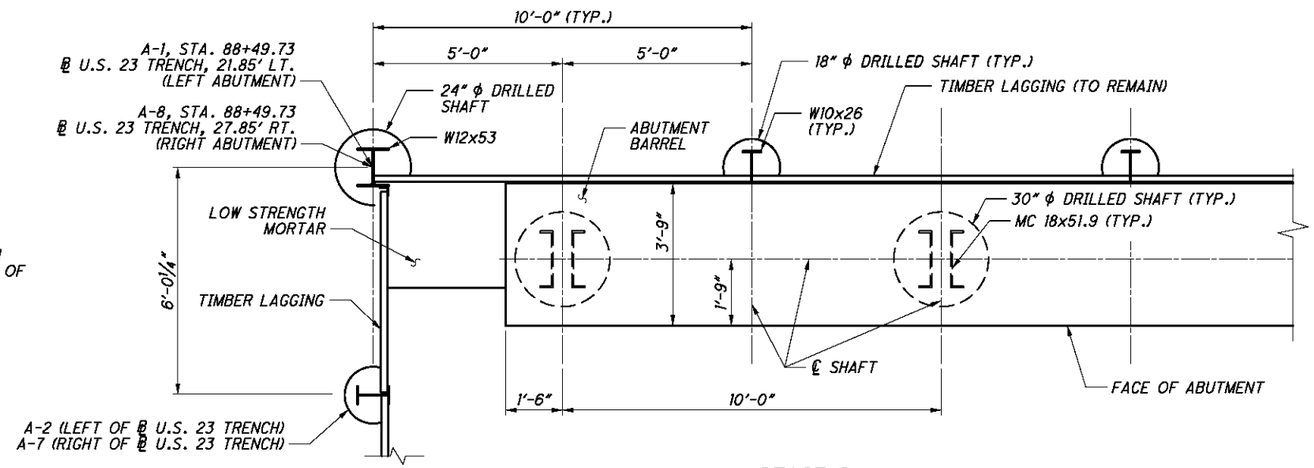


STAGE 1

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)

STAGE 2

1. PLACE LOW STRENGTH MORTAR TO LIMITS SHOWN IN STAGE 2 FROM BOTTOM OF ABUTMENT TO BOTTOM OF REINFORCED CONCRETE SLAB.

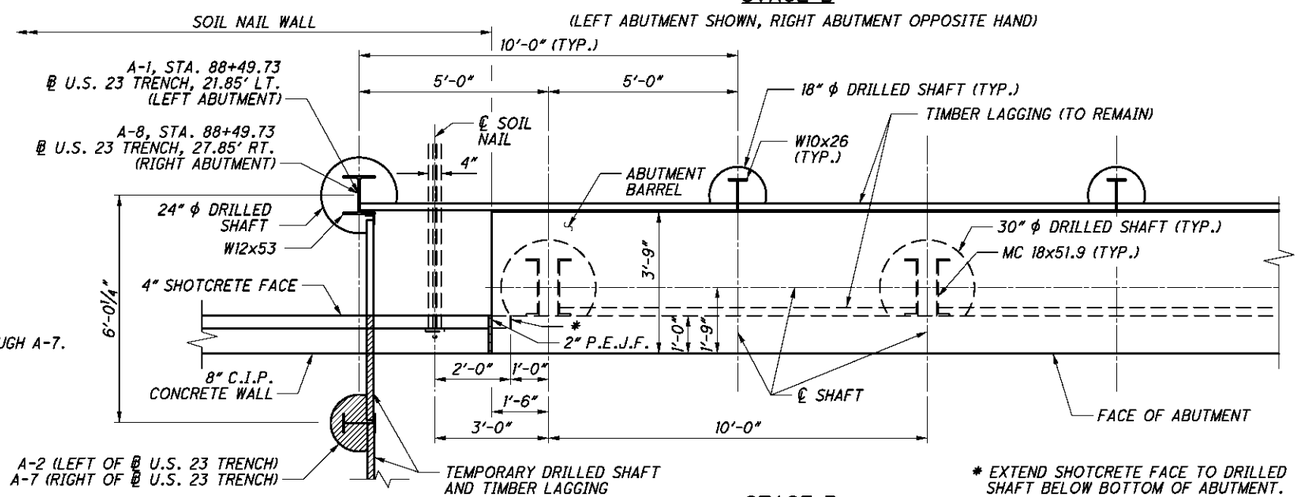


STAGE 2

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)

STAGE 3

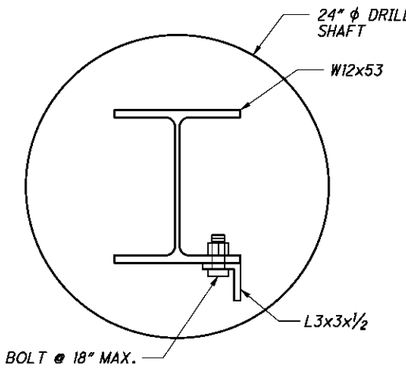
1. CONSTRUCT SOIL NAIL WALL.
2. REMOVE LOW STRENGTH MORTAR AND TIMBER LAGGING AS REQUIRED.
3. REMOVE TEMPORARY PILES A-2 THROUGH A-7.



* EXTEND SHOTCRETE FACE TO DRILLED SHAFT BELOW BOTTOM OF ABUTMENT.

STAGE 3

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)



LAGGING CONNECTION DETAIL

(LAGGING NOT SHOWN FOR CLARITY)

NOTES:

1. FOR DRILLED SHAFT LAYOUT, SEE SHEETS 12/101 THROUGH 14/101.
2. FOR ABUTMENT PLANS AND DETAILS, SEE SHEETS 19/101 THROUGH 50/101.
3. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEETS 59/101 AND 60/101.
4. FOR SOIL NAIL WALL PLANS, SEE SHEETS 969/1150 THROUGH 978/1150.
5. THE ANGLE AND BOLTS SHALL BE PAID FOR UNDER ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

DESIGN AGENCY
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JMS		2500760	

SOIL NAIL WALL / ABUTMENT JUNCTURE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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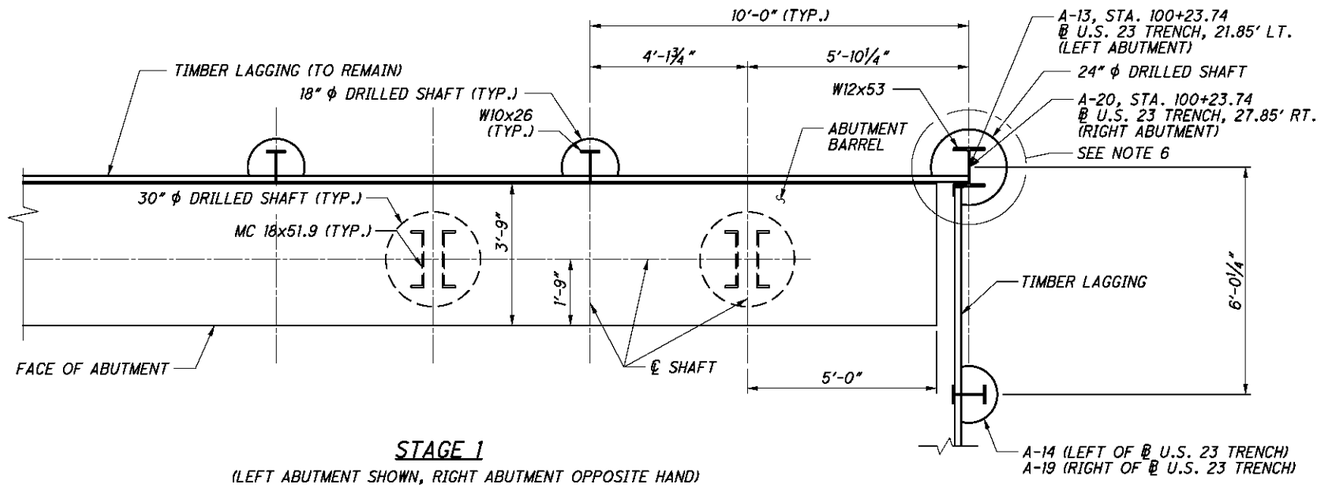
STAGE 1

1. INSTALL 18" AND 24" ϕ DRILLED SHAFTS.
2. EXCAVATE TO THE ELEVATION AT BOTTOM OF ABUTMENT AND INSTALL TIMBER LAGGING AS WORK PROCEEDS.
3. INSTALL 30" ϕ DRILLED SHAFTS.
4. CONSTRUCT ABUTMENT.

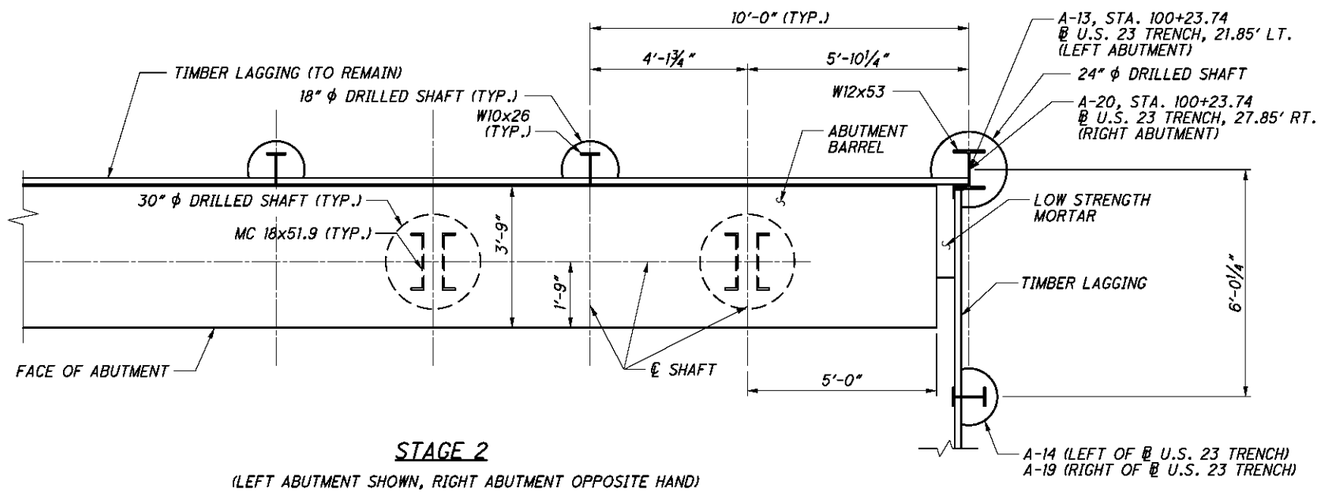


STAGE 1

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)

STAGE 2

1. PLACE LOW STRENGTH MORTAR TO LIMITS SHOWN IN STAGE 2 FROM BOTTOM OF ABUTMENT TO BOTTOM OF REINFORCED CONCRETE SLAB.

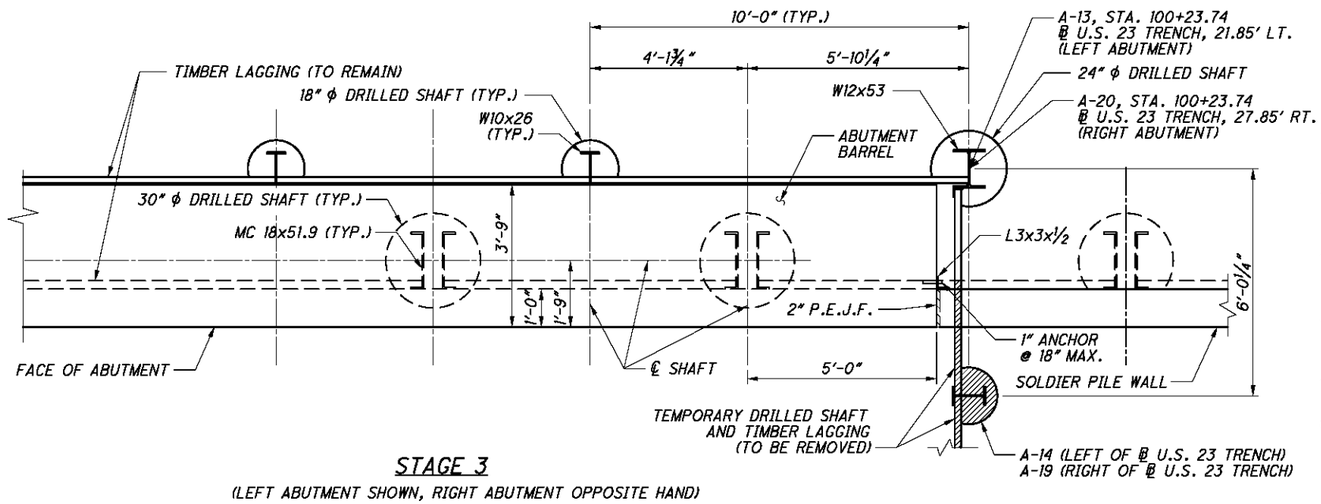


STAGE 2

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)

STAGE 3

1. CONSTRUCT SOLDIER PILE WALL.
2. INSTALL L3x3x½ AS SHOWN AND REMOVE LOW STRENGTH MORTAR AND TIMBER LAGGING AS REQUIRED.
3. REMOVE TEMPORARY PILES A-14 THROUGH A-19.



STAGE 3

(LEFT ABUTMENT SHOWN, RIGHT ABUTMENT OPPOSITE HAND)

NOTES:

1. FOR DRILLED SHAFT LAYOUT, SEE SHEETS 12/101 THROUGH 14/101.
2. FOR ABUTMENT PLANS AND DETAILS, SEE SHEETS 19/101 THROUGH 50/101.
3. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEETS 59/101 AND 60/101.
4. FOR SOLDIER PILE WALL DETAILS, SEE SHEET 55/101.
5. THE ANGLE AND ANCHORS SHALL BE PAID FOR UNDER ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.
6. FOR LAGGING CONNECTION DETAIL, SEE SHEET 52/101.

DESIGN AGENCY
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JWS		2500760	

ABUTMENT / SOLDIER PILE WALL JUNCTURE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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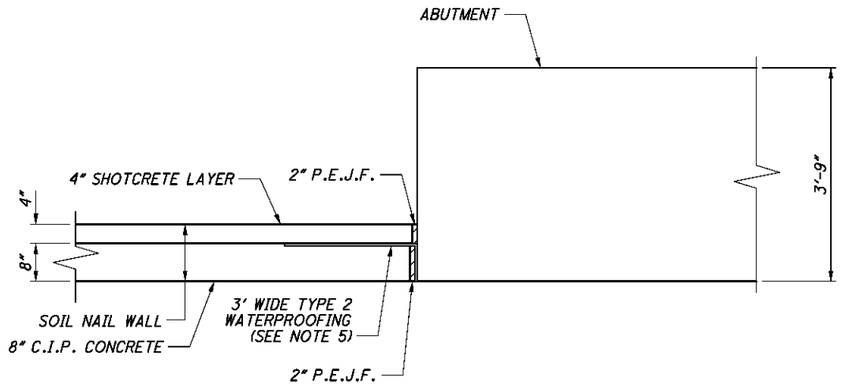
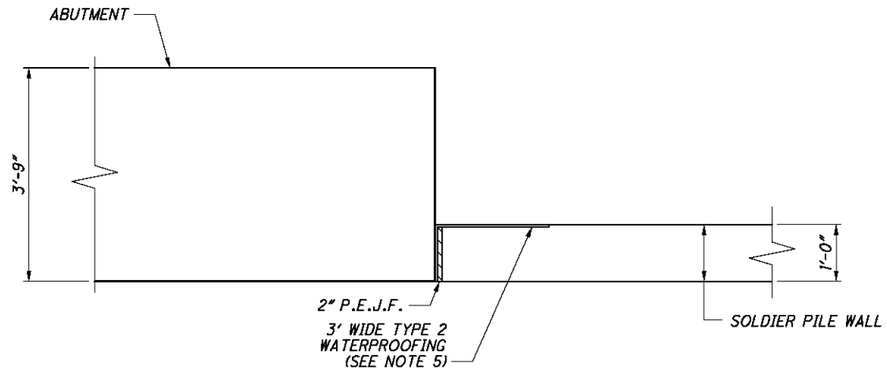


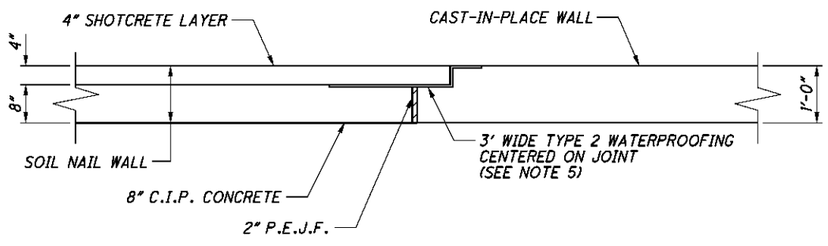
INTERFACE BETWEEN SOIL NAIL RETAINING WALL AND ABUTMENT

(LEFT WALL AND ABUTMENT SHOWN, RIGHT WALL AND ABUTMENT OPPOSITE HAND)



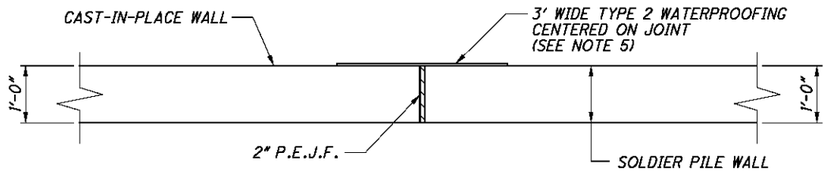
INTERFACE BETWEEN ABUTMENT AND SOLDIER PILE WALL

(LEFT ABUTMENT AND WALL SHOWN, RIGHT ABUTMENT AND WALL OPPOSITE HAND)



INTERFACE BETWEEN SOIL NAIL RETAINING WALL AND CAST-IN-PLACE WALL BELOW ABUTMENT

(LEFT WALLS SHOWN, RIGHT WALLS OPPOSITE HAND)



INTERFACE BETWEEN CAST-IN-PLACE WALL BELOW ABUTMENT AND SOLDIER PILE WALL

(LEFT WALLS SHOWN, RIGHT WALLS OPPOSITE HAND)

NOTES:

1. FOR SOIL NAIL WALL PLANS, SEE SHEETS 969/1150 THROUGH 978/1150.
2. FOR ABUTMENT PLANS AND DETAILS, SEE SHEETS 19/101 THROUGH 50/101.
3. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEETS 59/101 AND 60/101.
4. FOR SOLDIER PILE WALL DETAILS, SEE SHEET 55/101.
5. SECURELY ATTACH THE WATERPROOFING MEMBRANE TO THE WOOD LAGGING, ASPHALT COATED SHALE OR SHOTCRETE WITH SCREWS OR MASONRY ANCHORS AND 1" DIAMETER FENDER WASHERS. PLACE THE MEMBRANE SO THAT THE ADHESIVE SIDE FACES THE CAST-IN-PLACE CONCRETE. THE SURFACE PREPARATION OUTLINED IN CMS 512.08 IS NOT REQUIRED. ALL LABOR AND MATERIALS FOR THIS WORK IS INCLUDED WITH ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA/JOL	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
T.JE/JOL		2500760	

ABUTMENT/WALL INTERFACE DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

54/101

1044/1150

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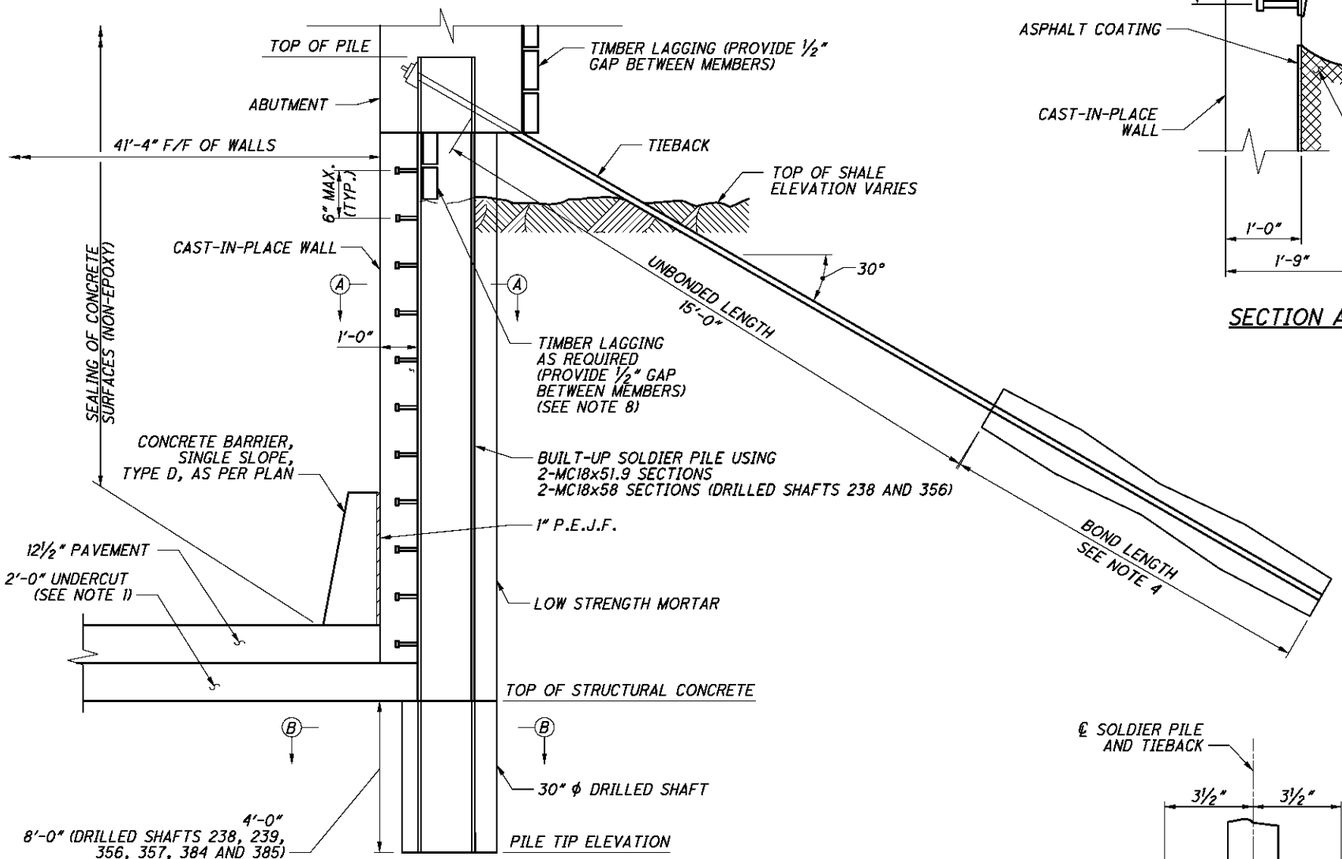
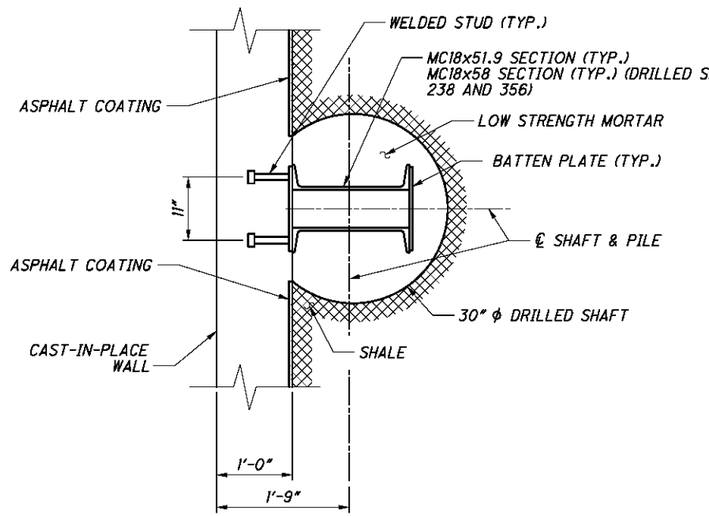
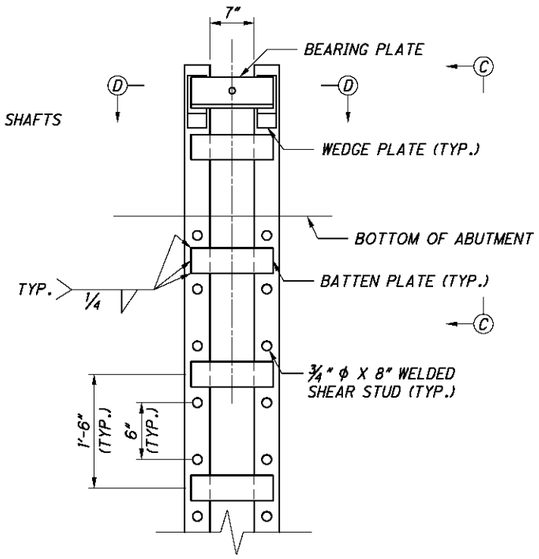


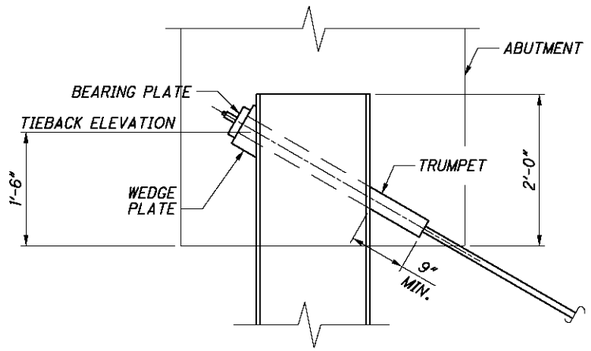
TYPICAL SECTION - SOLDIER PILE WALL AT TIEBACK



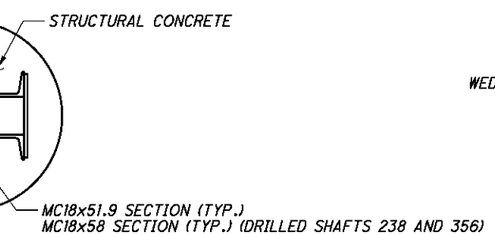
SECTION A-A



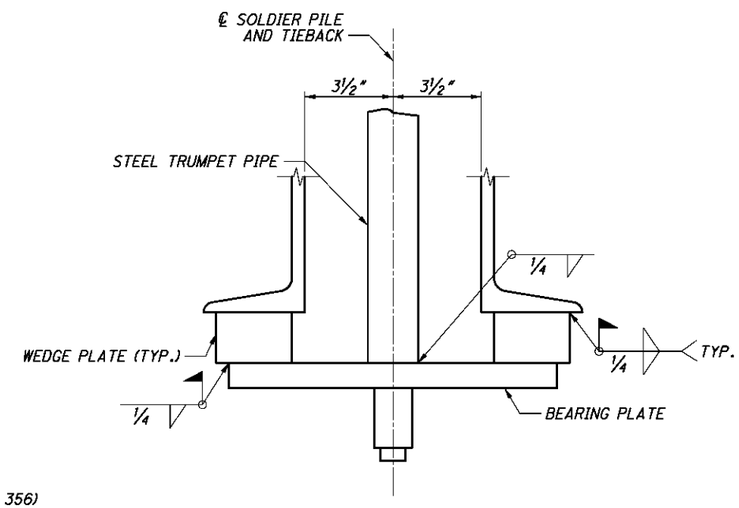
PART FRONT VIEW AT ANCHORAGE



VIEW C-C



SECTION B-B



SECTION D-D

NOTES:

1. THE UNDERCUT RUNS BELOW THE PAVEMENT FROM STA. 85+00.00 TO STA. 113+00.00.
2. SHEAR STUDS SHALL BE FIELD WELDED TO THE CHANNEL SECTIONS.
3. THE BEARING PLATE SHALL BE COUNTER BORED TO RECEIVE THE ANCHOR HEAD AND SHALL BE FURNISHED BY THE ANCHOR HEAD MANUFACTURER.
4. THE CONTRACTOR SHALL DETERMINE THE NECESSARY ANCHOR BOND LENGTH TO DEVELOP ADEQUATE LOAD CAPACITY. THE BOND LENGTH SHALL NOT BE LESS THAN 10 FEET.
5. FOR PILE AND TIEBACK ELEVATIONS, SEE SHEETS 57/101 AND 58/101.
6. FOR PILE LAYOUT, SEE SHEETS 12/101 THROUGH 14/101.
7. FOR CAST-IN-PLACE WALL DETAILS, SEE SHEET 59/101 AND 60/101.
8. WHERE TOP OF SHALE IS ABOVE THE BOTTOM OF THE ABUTMENT, NO LAGGING IS REQUIRED BELOW THE ABUTMENT.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JJB/JOL		2500760	

SOLDIER PILE WALL DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

55/101

1045/1150

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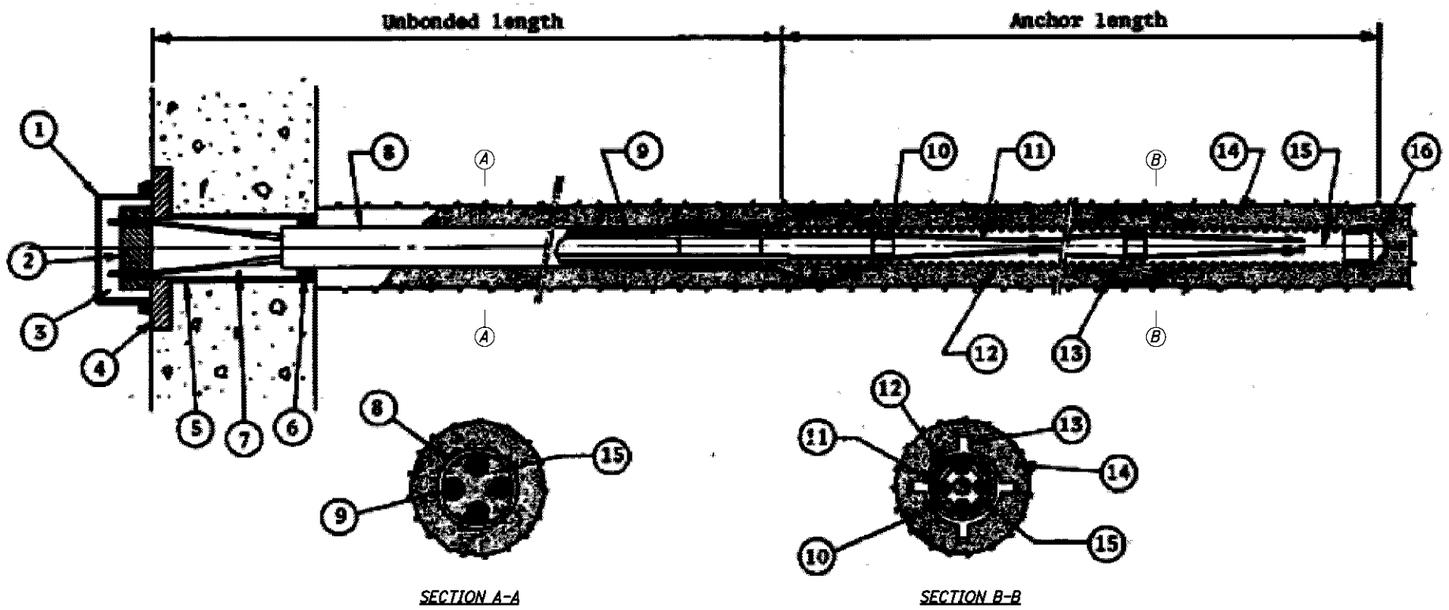
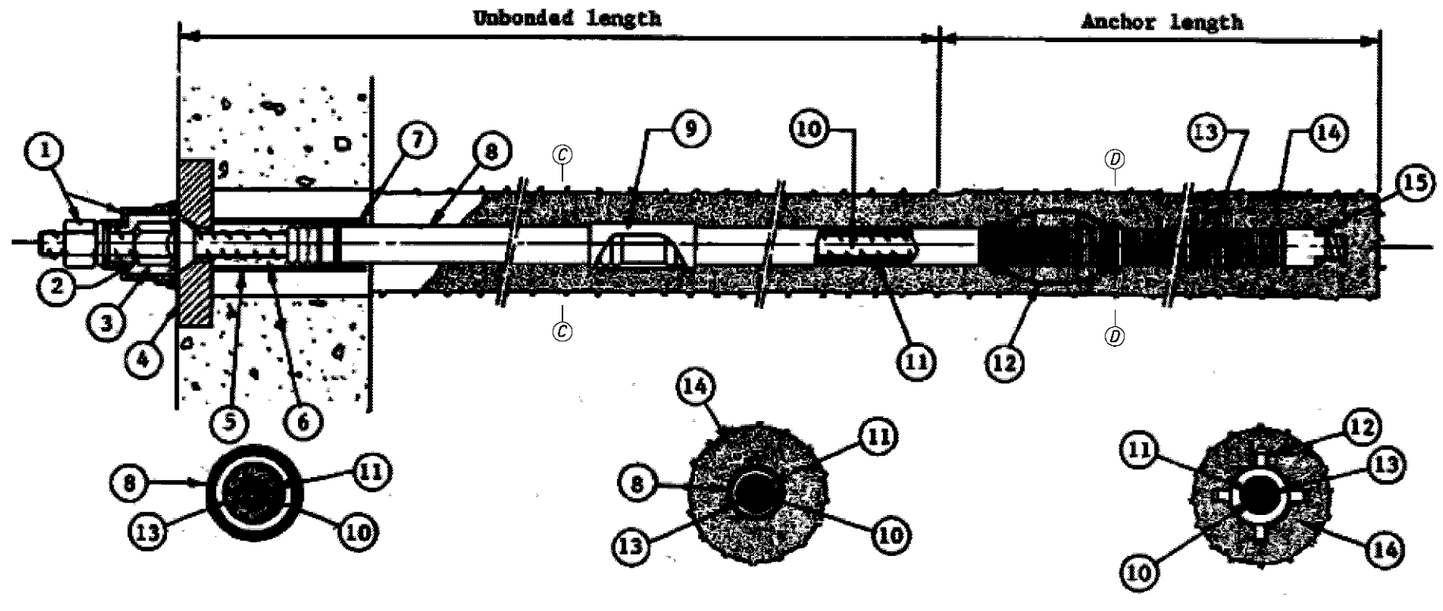


LEGEND

1. *ANCHORAGE COVER*
2. *ANCHOR HEAD AND WEDGES*
3. *ANTICORROSION GREASE OR GROUT*
4. *BEARING PLATE*
5. *TRUMPET*
6. *SEAL*
7. *ANTICORROSION GREASE OR GROUT*
8. *PVC OR POLYETHYLENE TUBE*
9. *INDIVIDUALLY GREASED AND SHEATED STRANDS*
10. *SPACER*
11. *STRAND TENDON*
12. *CORRUGATED POLYETHYLENE OR PVC*
13. *CENTRALIZER*
14. *ANCHOR GROUT*
15. *GROUT OR POLYESTER RESIN*
16. *END CAP*

STRAND TYPE TIEBACK DETAIL



LEGEND

1. *ANCHORAGE COVER*
2. *NUT*
3. *ANTICORROSION GREASE*
4. *BEARING PLATE*
5. *TRUMPET*
6. *ANTICORROSION GREASE OR GROUT*
7. *SEAL*
8. *PVC BOND BREAKER*
9. *PROTECTED BAR COUPLER*
10. *BAR TENDON*
11. *ENCAPSULATION GROUT*
12. *CENTRALIZERS*
13. *CORRUGATED PVC*
14. *ANCHOR GROUT*
15. *END CAP*

NOTES:

1. *SEE SOLDIER PILE AND TIEBACK SCHEDULE FOR DESIGN LOADS.*
2. *THE CONTRACTOR MAY CHOOSE EITHER A STRAND TYPE OR A BAR TYPE TIEBACK FOR THE WALL.*
3. *THE TIEBACKS SHALL BE AS FOLLOWS:*

   STRAND TYPE - USE 0.6" DIAMETER, 7 WIRE STRESS RELIEVED, 270 KSI STEEL STRANDS.

   BAR TYPE - BAR MAY BE 150 OR 160 KSI STEEL (ULTIMATE STRENGTH) CONFORMING TO ASTM A722-07.

   BAR STRESS SHALL BE NOT GREATER THAN 60 PERCENT OF THE ULTIMATE CAPACITY AT THE DESIGN LOAD "P."
4. *SEE TIEBACK SPECIAL PROVISIONS FOR MATERIAL, INSTALLATION, TESTING, MEASUREMENT, PAYMENT, AND OTHER RELATED INFORMATION.*

BAR TYPE TIEBACK DETAIL

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

TIEBACK DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
1L	235	876.5	880.5	898.17	892.2	235	30	897.67
	236	876.4	880.4	898.17	892.0	236	30	897.67
	237	876.3	880.3	898.17	892.5	237	30	897.67
	238	872.1	880.1	898.17	893.0	238	35	897.67
	239	871.9	879.9	898.17	893.8	239	30	897.67
	240	875.9	879.9	898.17	894.2	240	30	897.67
	241	875.7	879.7	898.17	894.8	241	30	897.67
	242	875.6	879.6	898.17	895.4	242	30	897.67
	243	875.4	879.4	898.17	895.9	243	30	897.67
2L	244	875.3	879.3	898.29	896.5	244	30	897.79
	245	875.2	879.2	898.29	894.6	245	30	897.79
	246	875.2	879.2	898.29	895.1	246	30	897.79
	247	875.1	879.1	898.29	895.5	247	30	897.79
	248	875.0	879.0	898.29	895.9	248	30	897.79
	249	874.9	878.9	898.29	896.4	249	30	897.79
	250	874.8	878.8	898.29	896.8	250	30	897.79
	251	874.7	878.7	898.29	897.2	251	30	897.79
	252	874.6	878.6	898.29	897.7	252	30	897.79
3L	253	874.5	878.5	898.60	898.1	253	30	898.10
	254	874.5	878.5	898.60	898.5	254	30	898.10
	255	874.4	878.4	898.60	898.7	255	30	898.10
	256	874.3	878.3	898.60	898.3	256	30	898.10
	257	874.2	878.2	898.60	897.9	257	30	898.10
	258	874.1	878.1	898.60	897.5	258	30	898.10
	259	874.1	878.1	898.60	897.2	259	30	898.10
	260	874.0	878.0	898.60	896.8	260	30	898.10
	261	873.9	877.9	898.60	896.4	261	30	898.10
4L	262	873.9	877.9	899.07	896.0	262	30	898.57
	263	873.8	877.8	899.07	895.7	263	30	898.57
	264	873.8	877.8	899.07	895.3	264	30	898.57
	265	873.8	877.8	899.07	895.2	265	30	898.57
	266	873.8	877.8	899.07	895.3	266	30	898.57
	267	873.8	877.8	899.07	895.4	267	30	898.57
	268	873.8	877.8	899.07	895.5	268	30	898.57
	269	873.8	877.8	899.07	895.6	269	30	898.57
	270	873.8	877.8	899.07	895.7	270	30	898.57
5L	271	873.9	877.9	899.81	895.8	271	30	899.31
	272	873.9	877.9	899.81	895.9	272	30	899.31
	273	874.0	878.0	899.81	896.1	273	30	899.31
	274	874.1	878.1	899.81	896.2	274	30	899.31
	275	874.2	878.2	899.81	896.3	275	30	899.31
	276	874.2	878.2	899.81	896.4	276	30	899.31
	277	874.3	878.3	899.81	896.5	277	30	899.31
	278	874.4	878.4	899.81	896.6	278	30	899.31
	279	874.5	878.5	899.81	896.7	279	30	899.31
6L	280	874.6	878.6	900.27	896.8	280	30	899.77
	281	874.7	878.7	900.27	896.9	281	30	899.77
	282	874.8	878.8	900.27	897.1	282	30	899.77
	283	874.9	878.9	900.27	897.2	283	30	899.77
	284	875.0	879.0	900.27	897.3	284	30	899.77
	285	875.1	879.1	900.27	897.4	285	30	899.77
	286	875.2	879.2	900.27	897.5	286	30	899.77
	287	875.3	879.3	900.27	897.5	287	30	899.77
	288	875.4	879.4	900.27	897.6	288	30	899.77

SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
7L	289	875.5	879.5	900.76	897.6	289	30	900.26
	290	875.6	879.6	900.76	897.7	290	30	900.26
	291	875.7	879.7	900.76	897.7	291	30	900.26
	292	875.8	879.8	900.76	897.8	292	30	900.26
	293	875.9	879.9	900.76	897.8	293	30	900.26
	294	876.0	880.0	900.76	897.9	294	30	900.26
	295	876.1	880.1	900.76	898.0	295	30	900.26
	296	876.2	880.2	900.76	898.3	296	30	900.26
	297	876.3	880.3	900.76	898.6	297	30	900.26
8L	298	876.4	880.4	901.09	898.9	298	30	900.59
	299	876.5	880.5	901.09	899.2	299	30	900.59
	300	876.6	880.6	901.09	899.3	300	30	900.59
	301	876.7	880.7	901.09	899.1	301	30	900.59
	302	876.8	880.8	901.09	899.0	302	30	900.59
	303	876.9	880.9	901.09	898.8	303	30	900.59
	304	877.0	881.0	901.09	898.6	304	30	900.59
	305	877.1	881.1	901.09	898.4	305	30	900.59
	306	877.2	881.2	901.09	898.7	306	30	900.59
9L	307	877.3	881.3	901.56	899.1	307	30	901.06
	308	877.4	881.4	901.56	899.5	308	30	901.06
	309	877.5	881.5	901.56	899.9	309	30	901.06
	310	877.6	881.6	901.56	900.3	310	30	901.06
	311	877.7	881.7	901.56	900.7	311	30	901.06
	312	877.8	881.8	901.56	901.1	312	30	901.06
	313	877.9	881.9	901.56	901.4	313	30	901.06
	314	878.0	882.0	901.56	901.8	314	30	901.06
10L	315	878.1	882.1	901.56	902.0	315	30	901.06
	316	878.2	882.2	902.54	901.7	316	30	902.04
	317	878.3	882.3	902.54	901.4	317	30	902.04
	318	878.4	882.4	902.54	901.0	318	30	902.04
	319	878.5	882.5	902.54	900.7	319	30	902.04
	320	878.6	882.6	902.54	900.4	320	30	902.04
	321	878.7	882.7	902.54	900.1	321	30	902.04
	322	878.8	882.8	902.54	899.8	322	30	902.04
	323	878.9	882.9	902.54	899.4	323	30	902.04
	324	879.0	883.0	902.54	899.1	324	30	902.04
11L	325	879.1	883.1	902.63	899.0	325	30	902.13
	326	879.1	883.1	902.63	899.3	326	30	902.13
	327	879.2	883.2	902.63	899.5	327	30	902.13
	328	879.3	883.3	902.63	899.8	328	30	902.13
	329	879.4	883.4	902.63	900.1	329	30	902.13
	330	879.5	883.5	902.63	900.4	330	30	902.13
	331	879.6	883.6	902.63	900.6	331	30	902.13
	332	879.7	883.7	902.63	900.9	332	30	902.13
	333	879.8	883.8	902.63	901.2	333	30	902.13
12L	334	879.8	883.8	902.30	901.5	334	30	901.80
	335	879.8	883.8	902.30	901.7	335	30	901.80
	336	879.8	883.8	902.30	901.8	336	30	901.80
	337	879.7	883.7	902.30	901.9	337	30	901.80
	338	879.7	883.7	902.30	902.1	338	30	901.80
	339	879.7	883.7	902.30	902.2	339	30	901.80
	340	879.7	883.7	902.30	902.3	340	30	901.80
	341	879.6	883.6	902.30	902.5	341	30	901.80
	342	879.6	883.6	902.30	902.6	342	30	901.80

SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
13L	343	879.5	883.5	901.58	902.7	343	30	901.08
	344	879.4	883.4	901.58	902.9	344	30	901.08
	345	879.3	883.3	901.58	902.8	345	30	901.08
	346	879.1	883.1	901.58	902.7	346	30	901.08
	347	879.0	883.0	901.58	902.6	347	30	901.08
	348	878.8	882.8	901.58	902.5	348	30	901.08
	349	878.7	882.7	901.58	902.4	349	30	901.08
	350	878.6	882.6	901.58	902.3	350	30	901.08
	351	878.5	882.5	901.58	902.2	351	30	901.08
	352	878.4	882.4	901.58	902.1	352	30	901.08

SOLDIER PILE & TIEBACK SCHEDULE - LEFT PANELS

NOTES:

1. THE TIEBACK LOCKOFF LOAD SHALL BE 0.90 TO 1.00 TIMES THE DESIGN LOAD 'P' FOR ALL TIEBACKS.
2. FOR SOLDIER PILE TYPICAL SECTION, ANCHORAGE DETAILS AND ADDITIONAL NOTES, SEE SHEET 55/101.
3. FOR TIEBACK DETAILS AND ADDITIONAL NOTES, SEE SHEET 56/101.
4. FOR SOLDIER PILE & TIEBACK SCHEDULE OF RIGHT PANELS, SEE SHEET 58/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN PPA | CHECKED JUB/JOL | REVIEWED RSB | DATE 11/3/12 | REVISED | STRUCTURE FILE NUMBER 2500760

SOLDIER PILE AND TIEBACK SCHEDULE - LEFT PANELS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

57/101

1047
1150

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SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
1R	353	875.7	879.7	898.32	892.2	353	30	897.82
	354	875.5	879.5	898.32	892.0	354	30	897.82
	355	875.4	879.4	898.32	892.5	355	30	897.82
	356	871.3	879.3	898.32	893.0	356	35	897.82
	357	871.1	879.1	898.32	893.8	357	30	897.82
	358	875.0	879.0	898.32	894.2	358	30	897.82
	359	874.9	878.9	898.32	894.8	359	30	897.82
	360	874.7	878.7	898.32	895.4	360	30	897.82
	361	874.6	878.6	898.32	895.9	361	30	897.82
2R	362	874.5	878.5	898.41	896.5	362	30	897.91
	363	874.4	878.4	898.41	894.6	363	30	897.91
	364	874.3	878.3	898.41	895.1	364	30	897.91
	365	874.2	878.2	898.41	895.5	365	30	897.91
	366	874.1	878.1	898.41	895.9	366	30	897.91
	367	874.0	878.0	898.41	896.4	367	30	897.91
	368	873.9	877.9	898.41	896.8	368	30	897.91
	369	873.9	877.9	898.41	897.2	369	30	897.91
	370	873.8	877.8	898.41	897.7	370	30	897.91
3R	371	873.7	877.7	898.73	898.1	371	30	898.23
	372	873.6	877.6	898.73	898.5	372	30	898.23
	373	873.5	877.5	898.73	898.7	373	30	898.23
	374	873.4	877.4	898.73	898.3	374	30	898.23
	375	873.4	877.4	898.73	897.9	375	30	898.23
	376	873.3	877.3	898.73	897.5	376	30	898.23
	377	873.2	877.2	898.73	897.2	377	30	898.23
	378	873.1	877.1	898.73	896.8	378	30	898.23
	379	873.0	877.0	898.73	896.4	379	30	898.23
4R	380	873.0	877.0	899.19	896.0	380	30	898.69
	381	873.0	877.0	899.19	895.7	381	30	898.69
	382	873.0	877.0	899.19	895.3	382	30	898.69
	383	873.0	877.0	899.19	895.2	383	30	898.69
	384	869.0	877.0	899.19	895.3	384	30	898.69
	385	869.0	877.0	899.19	895.4	385	30	898.69
	386	873.0	877.0	899.19	895.5	386	30	898.69
	387	873.0	877.0	899.19	895.6	387	30	898.69
	388	873.0	877.0	899.19	895.7	388	30	898.69
5R	389	873.0	877.0	899.77	895.8	389	30	899.27
	390	873.1	877.1	899.77	895.9	390	30	899.27
	391	873.2	877.2	899.77	896.1	391	30	899.27
	392	873.2	877.2	899.77	896.2	392	30	899.27
	393	873.3	877.3	899.77	896.3	393	30	899.27
	394	873.4	877.4	899.77	896.4	394	30	899.27
	395	873.5	877.5	899.77	896.5	395	30	899.27
	396	873.5	877.5	899.77	896.6	396	30	899.27
	397	873.6	877.6	899.77	896.7	397	30	899.27
6R	398	873.7	877.7	900.23	896.8	398	30	899.73
	399	873.8	877.8	900.23	896.9	399	30	899.73
	400	873.9	877.9	900.23	897.1	400	30	899.73
	401	874.0	878.0	900.23	897.2	401	30	899.73
	402	874.1	878.1	900.23	897.3	402	30	899.73
	403	874.2	878.2	900.23	897.4	403	30	899.73
	404	874.3	878.3	900.23	897.5	404	30	899.73
	405	874.4	878.4	900.23	897.5	405	30	899.73
	406	874.5	878.5	900.23	897.6	406	30	899.73

SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
7R	407	871.6	878.6	900.72	897.6	407	30	900.22
	408	871.7	878.7	900.72	897.7	408	30	900.22
	409	871.8	878.8	900.72	897.7	409	30	900.22
	410	871.9	878.9	900.72	897.8	410	30	900.22
	411	872.0	879.0	900.72	897.8	411	30	900.22
	412	872.1	879.1	900.72	897.9	412	30	900.22
	413	872.2	879.2	900.72	898.0	413	30	900.22
	414	872.3	879.3	900.72	898.3	414	30	900.22
	415	872.4	879.4	900.72	898.6	415	30	900.22
8R	416	872.5	879.5	900.94	898.9	416	30	900.44
	417	872.6	879.6	900.94	899.2	417	30	900.44
	418	872.7	879.7	900.94	899.3	418	30	900.44
	419	872.8	879.8	900.94	899.1	419	30	900.44
	420	872.9	879.9	900.94	899.0	420	30	900.44
	421	873.0	880.0	900.94	898.8	421	30	900.44
	422	873.1	880.1	900.94	898.6	422	30	900.44
	423	873.2	880.2	900.94	898.4	423	30	900.44
	424	873.3	880.3	900.94	898.7	424	30	900.44
9R	425	873.4	880.4	901.41	899.1	425	30	900.91
	426	873.5	880.5	901.41	899.5	426	30	900.91
	427	873.6	880.6	901.41	899.9	427	30	900.91
	428	873.7	880.7	901.41	900.3	428	30	900.91
	429	873.8	880.8	901.41	900.7	429	30	900.91
	430	873.9	880.9	901.41	901.1	430	30	900.91
	431	874.0	881.0	901.41	901.4	431	30	900.91
	432	874.1	881.1	901.41	901.8	432	30	900.91
	433	874.2	881.2	901.41	902.0	433	30	900.91
10R	434	874.3	881.3	902.35	901.7	434	30	901.85
	435	874.4	881.4	902.35	901.4	435	30	901.85
	436	874.5	881.5	902.35	901.0	436	30	901.85
	437	874.6	881.6	902.35	900.7	437	30	901.85
	438	874.7	881.7	902.35	900.4	438	30	901.85
	439	874.8	881.8	902.35	900.1	439	30	901.85
	440	874.9	881.9	902.35	899.8	440	30	901.85
	441	875.0	882.0	902.35	899.4	441	30	901.85
	442	875.1	882.1	902.35	899.1	442	30	901.85
11R	443	875.2	882.2	902.44	899.0	443	30	901.94
	444	875.3	882.3	902.44	899.3	444	30	901.94
	445	875.4	882.4	902.44	899.5	445	30	901.94
	446	875.5	882.5	902.44	899.8	446	30	901.94
	447	875.6	882.6	902.44	900.1	447	30	901.94
	448	875.7	882.7	902.44	900.4	448	30	901.94
	449	874.5	882.7	902.44	900.6	449	30	901.94
	450	874.6	882.8	902.44	900.9	450	30	901.94
	451	874.7	882.9	902.44	901.2	451	30	901.94
12R	452	874.7	883.0	902.11	901.5	452	30	901.61
	453	874.7	882.9	902.11	901.7	453	30	901.61
	454	874.7	882.9	902.11	901.8	454	30	901.61
	455	874.6	882.9	902.11	901.9	455	30	901.61
	456	874.6	882.9	902.11	902.1	456	30	901.61
	457	874.6	882.8	902.11	902.2	457	30	901.61
	458	874.6	882.8	902.11	902.3	458	30	901.61
	459	874.5	882.8	902.11	902.5	459	30	901.61
	460	874.5	882.8	902.11	902.6	460	30	901.61

SOLDIER PILE DATA						TIEBACK DATA		
PANEL NUMBER	PILE NUMBER	APPROX. PILE TIP ELEVATION	TOP OF STRUCTURAL CONCRETE ELEVATION	TOP OF PILE ELEVATION	APPROX. TOP OF WEATHERED SHALE	TIEBACK NUMBER	DESIGN LOAD "P" (KIPS)	TIEBACK ELEVATION
13R	461	874.4	882.7	901.39	902.7	461	30	900.89
	462	874.3	882.6	901.39	902.9	462	30	900.89
	463	874.2	882.4	901.39	902.8	463	30	900.89
	464	874.0	882.3	901.39	902.7	464	30	900.89
	465	873.9	882.1	901.39	902.6	465	30	900.89
	466	873.7	882.0	901.39	902.5	466	30	900.89
	467	873.6	881.9	901.39	902.4	467	30	900.89
	468	873.5	881.8	901.39	902.3	468	30	900.89
	469	873.4	881.7	901.39	902.2	469	30	900.89
	470	873.3	881.5	901.39	902.1	470	30	900.89

SOLDIER PILE & TIEBACK SCHEDULE - RIGHT PANELS

NOTES:

1. THE TIEBACK LOCKOFF LOAD SHALL BE 0.90 TO 1.00 TIMES THE DESIGN LOAD 'P' FOR ALL TIEBACKS.
2. FOR SOLDIER PILE TYPICAL SECTION, ANCHORAGE DETAILS AND ADDITIONAL NOTES, SEE SHEET 55/101.
3. FOR TIEBACK DETAILS AND ADDITIONAL NOTES, SEE SHEET 56/101.
4. FOR SOLDIER PILE & TIEBACK SCHEDULE OF LEFT PANELS, SEE SHEET 57/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN PPA | REVIEWED RSB | DATE 11/3/12 | STRUCTURE FILE NUMBER 2500760
CHECKED JUB/JOL | REVISED

SOLDIER PILE AND TIEBACK SCHEDULE - RIGHT PANELS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

58/101

1048
1150

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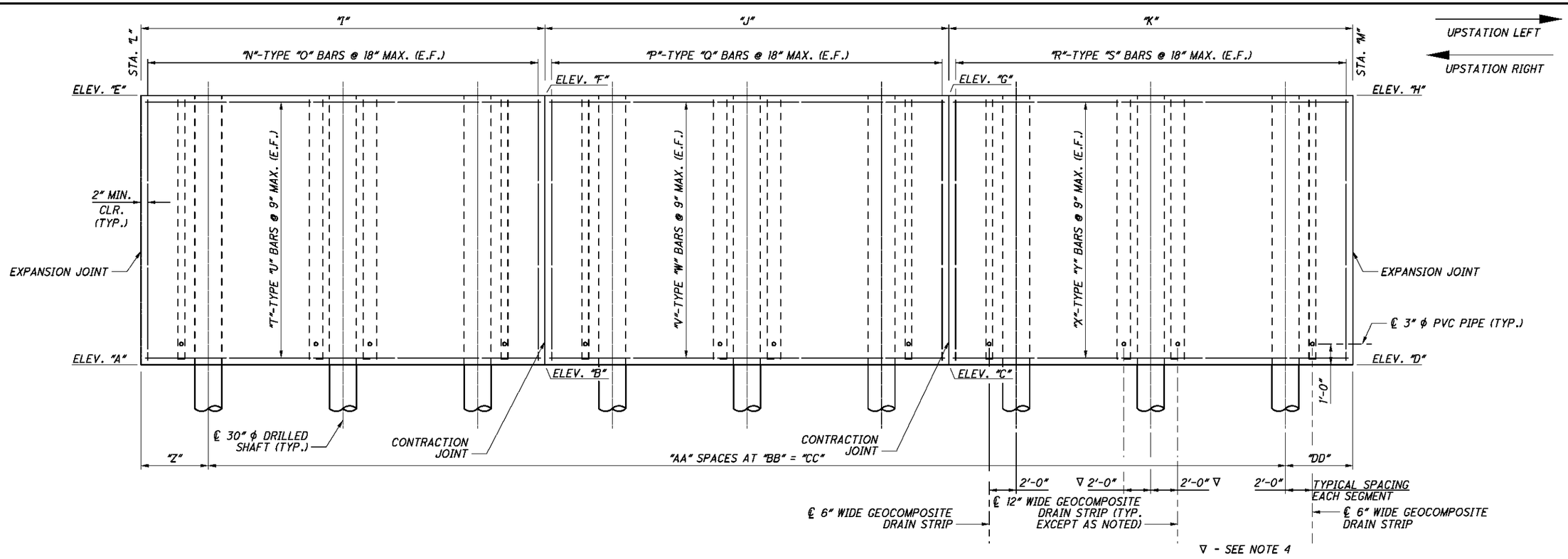

	ELEVATIONS								PANEL SPACING			STATION		VERTICAL REINFORCEMENT						HORIZONTAL REINFORCEMENT						SHAFT SPACING				
PANEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD
1R	880.5	880.8	881.2	881.7	896.32	896.32	896.32	896.32	29'-0"	30'-0"	26'-6"	89+38.73	88+53.23	20	W513	21	W501	19	W518	22	W521	21	W520	21	W519	4'-0"	***	***	***	1'-6"
2R	879.7	880.0	880.3	880.5	896.41	896.41	896.41	896.41	30'-0"	30'-0"	31'-0"	90+29.73	89+38.73	21	W503	21	W511	22	W502	23	W520	23	W520	22	W522	5'-0"	8	10'-0"	80'-0"	6'-0"
3R	879.0	879.2	879.5	879.7	896.73	896.73	896.73	896.73	30'-0"	30'-0"	30'-0"	91+19.73	90+29.73	21	W505	21	W509	21	W504	24	W520	24	W520	24	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
4R	879.0	878.9	878.9	879.0	897.19	897.19	897.19	897.19	30'-0"	31'-0"	29'-0"	92+09.73	91+19.73	21	W507	22	W507	20	W507	25	W520	25	W522	25	W521	5'-0"	8	10'-0"	80'-0"	5'-0"
5R	879.7	879.4	879.1	879.0	897.77	897.77	897.77	897.77	29'-0"	31'-0"	30'-0"	92+99.73	92+09.73	20	W507	22	W526	21	W528	25	W521	26	W522	26	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
6R	880.6	880.3	880.0	879.7	898.23	898.23	898.23	898.23	31'-0"	30'-0"	30'-0"	93+90.73	92+99.73	22	W506	21	W508	21	W507	25	W522	25	W520	26	W520	6'-0"	8	10'-0"	80'-0"	5'-0"
7R	881.5	881.2	880.9	880.6	898.72	898.72	898.72	898.72	30'-0"	32'-0"	28'-0"	94+80.73	93+90.73	21	W509	22	W506	20	W508	24	W520	25	W524	25	W523	6'-0"	8	10'-0"	80'-0"	4'-0"
8R	882.4	882.1	881.8	881.5	898.94	898.94	898.94	898.94	30'-0"	30'-0"	30'-0"	95+70.73	94+80.73	21	W510	21	W504	21	W509	24	W520	24	W520	24	W520	6'-0"	8	10'-0"	80'-0"	4'-0"
9R	883.3	883.0	882.7	882.4	899.41	899.41	899.41	899.41	31'-0"	28'-0"	30'-0"	96+59.73	95+70.73	22	W511	20	W503	21	W510	23	W522	23	W523	24	W520	5'-0"	8	10'-0"	80'-0"	4'-0"
10R	884.2	883.9	883.6	883.3	900.35	900.35	900.35	900.35	30'-0"	30'-0"	30'-0"	97+49.73	96+59.73	21	W511	21	W503	21	W510	23	W520	23	W520	24	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
11R	885.0	884.8	884.5	884.2	900.44	900.44	900.44	900.44	29'-0"	31'-0"	30'-0"	98+39.73	97+49.73	20	W513	22	W512	21	W502	22	W521	22	W522	23	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
12R	884.8	885.0	885.1	885.0	900.11	900.11	900.11	900.11	30'-0"	30'-0"	30'-0"	99+29.73	98+39.73	21	W501	21	W514	21	W514	21	W520	21	W520	21	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
13R	883.5	884.1	884.5	884.8	899.39	899.39	899.39	899.39	33'-2"	30'-0"	30'-0"	100+22.89	99+29.73	23	W513	21	W514	21	W518	22	W525	21	W520	21	W520	5'-0"	*	*	*	5'-0"
1L	882.6	882.1	881.7	881.4	896.17	896.17	896.17	896.17	26'-6"	30'-0"	29'-0"	88+53.23	89+38.73	19	W527	21	W517	20	W515	19	W519	20	W520	20	W521	1'-6"	□	□	□	4'-0"
2L	881.4	881.1	880.8	880.6	896.29	896.29	896.29	896.29	31'-0"	30'-0"	30'-0"	89+38.73	90+29.73	22	W514	21	W501	21	W513	21	W522	21	W520	22	W520	6'-0"	8	10'-0"	80'-0"	5'-0"
3L	880.6	880.3	880.0	879.9	896.60	896.60	896.60	896.60	30'-0"	30'-0"	30'-0"	90+29.73	91+19.73	21	W502	21	W503	21	W510	22	W520	23	W520	23	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
4L	879.9	879.8	879.7	879.8	897.07	897.07	897.07	897.07	29'-0"	31'-0"	30'-0"	91+19.73	92+09.73	20	W509	22	W505	21	W509	24	W521	24	W522	24	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
5L	879.8	880.0	880.2	880.5	897.81	897.81	897.81	897.81	30'-0"	31'-0"	29'-0"	92+09.73	92+99.73	21	W508	22	W506	20	W509	25	W520	24	W522	24	W521	5'-0"	8	10'-0"	80'-0"	5'-0"
6L	880.5	880.8	881.1	881.4	898.27	898.27	898.27	898.27	30'-0"	30'-0"	31'-0"	92+99.73	93+90.73	21	W505	21	W509	22	W504	25	W520	24	W520	24	W522	5'-0"	8	10'-0"	80'-0"	6'-0"
7L	881.4	881.7	882.0	882.3	898.76	898.76	898.76	898.76	28'-0"	32'-0"	30'-0"	93+90.73	94+80.73	20	W509	22	W510	21	W503	24	W523	24	W524	23	W520	4'-0"	8	10'-0"	80'-0"	6'-0"
8L	882.3	882.6	882.9	883.2	899.09	899.09	899.09	899.09	30'-0"	30'-0"	30'-0"	94+80.73	95+70.73	21	W503	21	W511	21	W502	23	W520	23	W520	23	W520	4'-0"	8	10'-0"	80'-0"	6'-0"
9L	883.2	883.5	883.8	884.1	899.56	899.56	899.56	899.56	30'-0"	28'-0"	31'-0"	95+70.73	96+59.73	21	W511	20	W512	22	W513	23	W520	22	W523	22	W522	4'-0"	8	10'-0"	80'-0"	5'-0"
10L	884.1	884.4	884.7	885.0	900.54	900.54	900.54	900.54	30'-0"	30'-0"	30'-0"	96+59.73	97+49.73	21	W511	21	W502	21	W513	23	W520	23	W520	22	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
11L	885.0	885.3	885.6	885.8	900.63	900.63	900.63	900.63	30'-0"	31'-0"	29'-0"	97+49.73	98+39.73	21	W513	22	W514	20	W514	22	W520	21	W522	21	W521	5'-0"	8	10'-0"	80'-0"	5'-0"
12L	885.8	885.9	885.8	885.6	900.30	900.30	900.30	900.30	30'-0"	30'-0"	30'-0"	98+39.73	99+29.73	21	W515	21	W515	21	W515	20	W520	20	W520	21	W520	5'-0"	8	10'-0"	80'-0"	5'-0"
13L	885.6	885.3	884.9	884.3	899.58	899.58	899.58	899.58	30'-0"	30'-0"	33'-2"	99+29.73	100+22.89	21	W516	21	W517	23	W518	20	W520	21	W520	21	W525	5'-0"	**	**	**	5'-0"

* - 4 SPACES AT 8'-3½" = 33'-2" AND 5 SPA. AT 10'-0" = 50'-0"
** - 5 SPACES AT 10'-0" = 50'-0" AND 4 SPA. AT 8'-3½" = 33'-2"
*** - 3 SPACES AT 10'-0" = 30'-0", 1 SPACE AT 6'-9", 1 SPACE AT 13'-3" AND 3 SPACES AT 10'-0" = 30'-0"
□ - 3 SPACES AT 10'-0" = 30'-0", 1 SPACE AT 13'-3", 1 SPACE AT 6'-9" AND 3 SPACES AT 10'-0" = 30'-0"

NOTES:

1. FOR DRILLED SHAFT PLAN, SEE SHEETS 12/101 THROUGH 14/101.
2. FOR TYPICAL SECTION, JOINT DETAILS AND ADDITIONAL DETAILS, SEE SHEET 60/101.
3. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
4. FOR ADDITIONAL DETAILS ON SPACING OF 12" GEOCOMPOSITE DRAIN STRIPS ON PANELS 4L AND 4R, SEE SHEETS 22/101 AND 35/101.

ELEVATION - CAST-IN-PLACE WALL PANEL

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2591

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JJB/JOL		2500760	

CAST-IN-PLACE WALL DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1049
1150

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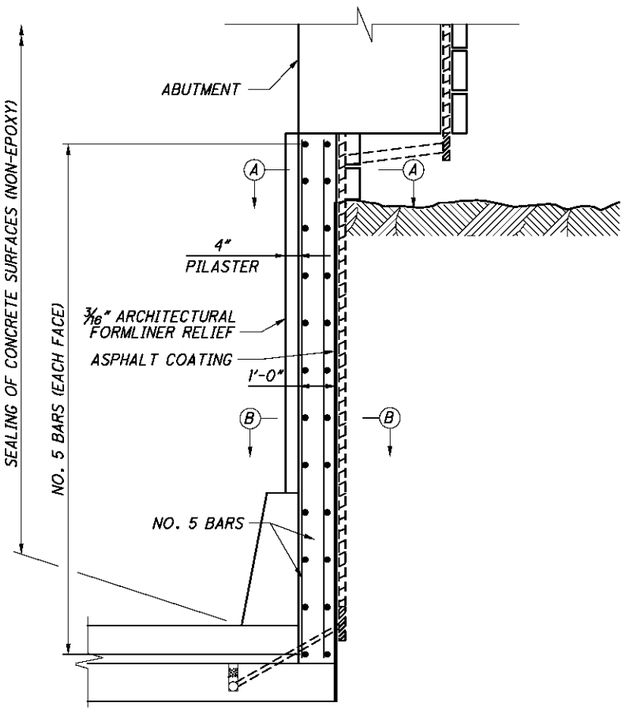
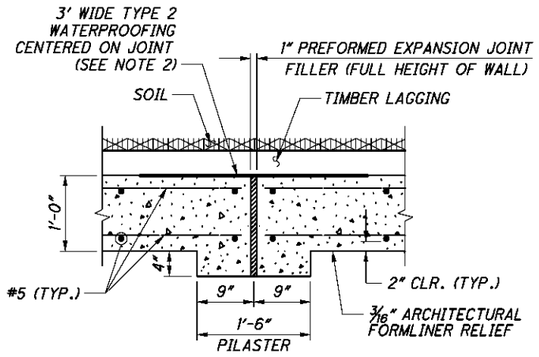
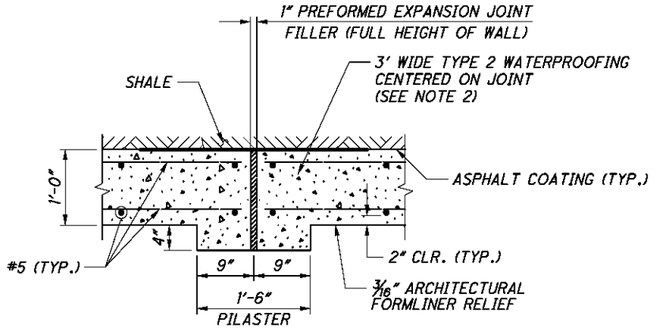


TYPICAL SECTION - CONCRETE FACING

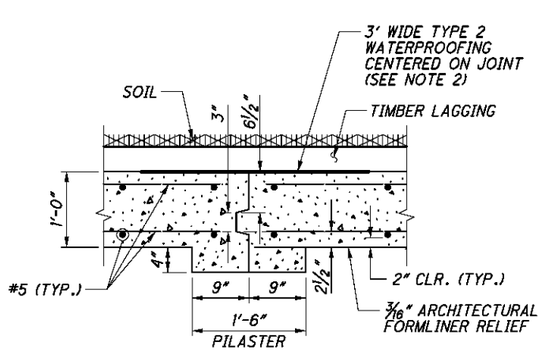


SECTION A-A

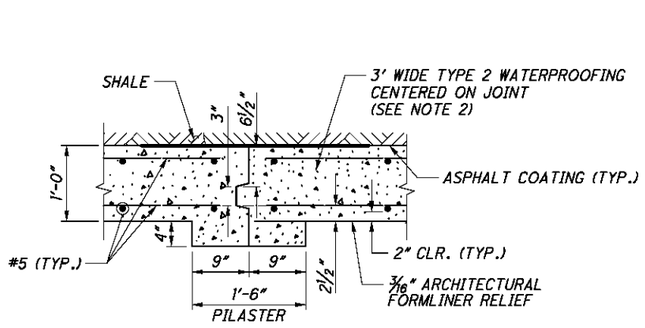


SECTION B-B

EXPANSION JOINT DETAIL

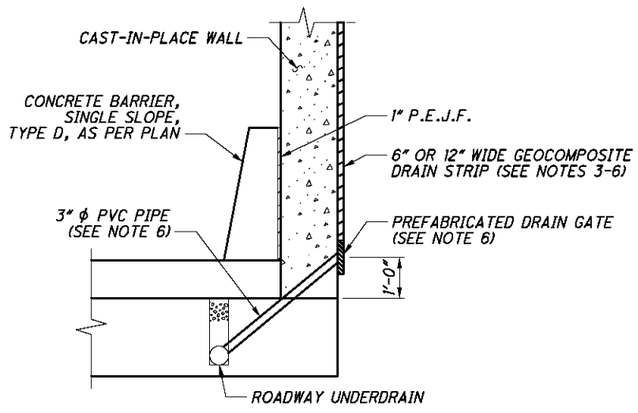


SECTION A-A



SECTION B-B

CONTRACTION JOINT DETAIL



TYPICAL DRAINAGE DETAIL

NOTES:

1. FOR CONCRETE FACING ELEVATION, SEE SHEET 59/101 .
2. SECURELY ATTACH THE WATERPROOFING MEMBRANE TO THE WOOD LAGGING OR ASPHALT COATED SHALE WITH SCREWS OR MASONRY ANCHORS AND 1" DIAMETER FENDER WASHERS. PLACE THE MEMBRANE SO THAT THE ADHESIVE SIDE FACES THE CAST-IN-PLACE CONCRETE. THE SURFACE PREPARATION OUTLINED IN CMS 512.08 IS NOT REQUIRED. ALL LABOR AND MATERIALS FOR THIS WORK IS INCLUDED WITH ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN.
3. PLACE GEOCOMPOSITE DRAIN FILTER FABRIC TOWARD TIMBER LAGGING OR SHALE.
4. WRAP FILTER FABRIC AROUND ALL EDGES A MINIMUM DISTANCE OF 3".
5. THE GEOCOMPOSITE DRAIN STRIP SHALL EXTEND FROM THE TOP OF THE TIMBER LAGGING TO 6" BELOW THE 3" ϕ PVC PIPE.
6. THE PVC PIPE, FITTINGS TO CONNECT TO ROADWAY UNDERDRAIN, GEOCOMPOSITE DRAIN STRIPS AND PREFABRICATED DRAIN GATES SHALL BE PAID FOR UNDER ITEM 610 - RETAINING WALL, MISC.: SOLDIER PILE WALL.
7. FOR SOLDIER PILE DETAILS, SEE SHEET 55/101 .
8. FOR AESTHETIC DETAILS, SEE SHEET 950/1150.
9. THE PLAN CONCRETE WALL THICKNESS IS 12 INCHES. THIS IS THE MINIMUM REQUIRED DIMENSION. HOWEVER, DUE TO MISALIGNMENT OF THE SOLDIER PILES, THE CONTRACTOR AT HIS OPTION MAY PROVIDE ADDITIONAL THICKNESS BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JUB/JOL		2500760	

CAST-IN-PLACE WALL DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

60/101

1050/1150

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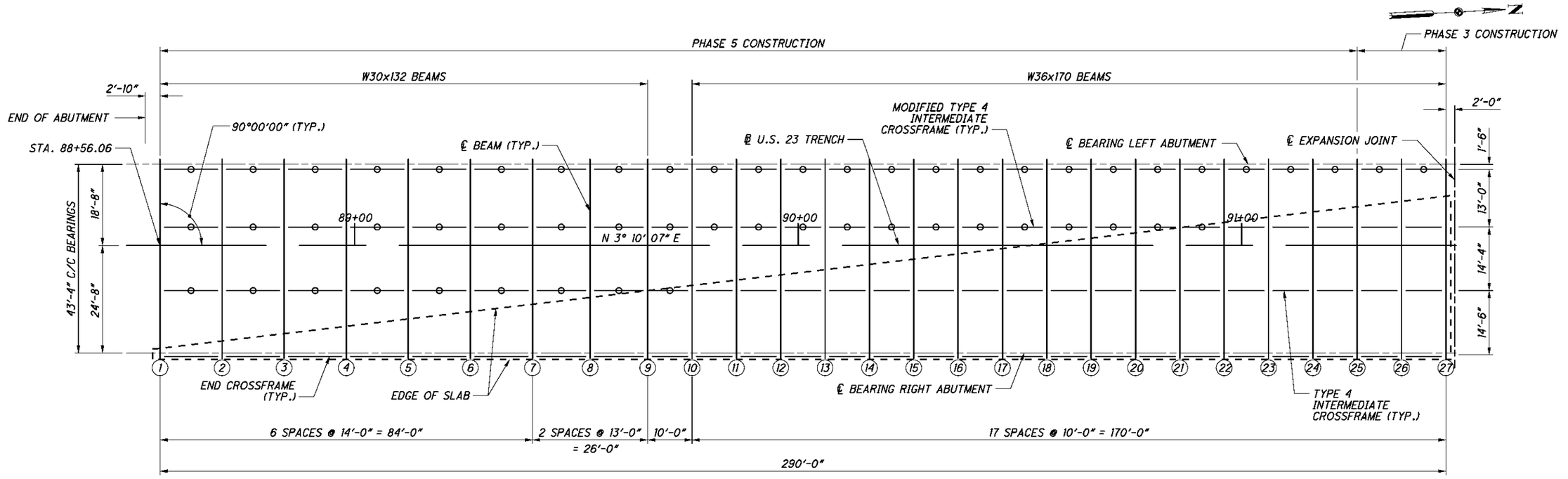
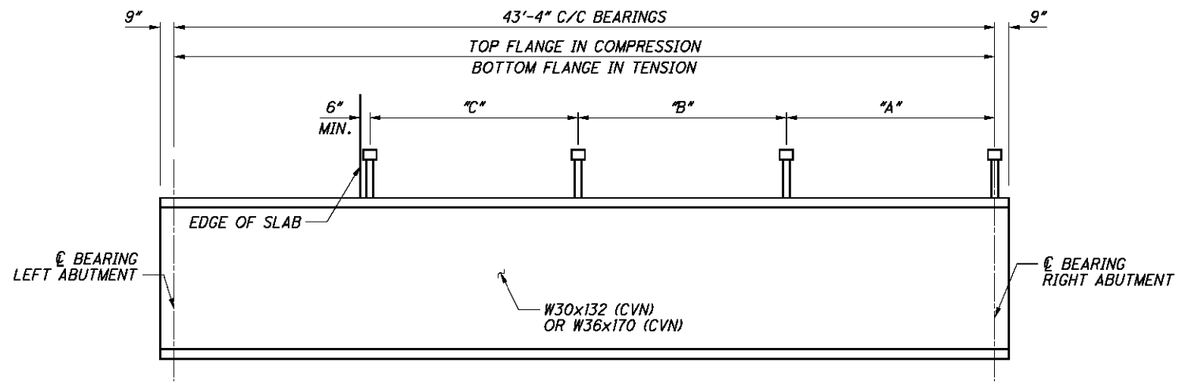


FRAMING PLAN - UNIT 1

TABLE OF SHEAR STUD SPACINGS (SEE NOTE 5 ON SHEET 62/101)			
BEAM	"A"	"B"	"C"
1	2 SPACES @ 3½" = 0'-7"	-	-
2	7 SPACES @ ABOUT 3¾" = 2'-3"	-	-
3	13 SPACES @ ABOUT 3½" = 3'-10½"	-	-
4	15 SPACES @ 4" = 5'-0"	2 SPACES @ ABOUT 3¼" = 0'-6½"	-
5	15 SPACES @ 4" = 5'-0"	5 SPACES @ ABOUT 5¼" = 2'-2"	-
6	15 SPACES @ 4" = 5'-0"	8 SPACES @ ABOUT 5¾" = 3'-10½"	-
7	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	1 SPACE @ 18" = 1'-6"
8	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	2 SPACES @ ABOUT 18¼" = 3'-1"
9	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	3 SPACES @ ABOUT 18½" = 4'-7"
10	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	4 SPACES @ 17¼" = 5'-9"
11	32 SPACES @ 5" = 13'-4"	3 SPACES @ 10" = 2'-7½"	-
12	32 SPACES @ 5" = 13'-4"	5 SPACES @ ABOUT 9" = 3'-10"	-
13	32 SPACES @ 5" = 13'-4"	6 SPACES @ 10" = 5'-0"	-
14	32 SPACES @ 5" = 13'-4"	8 SPACES @ 9¼" = 6'-2"	-
15	32 SPACES @ 5" = 13'-4"	9 SPACES @ ABOUT 9¾" = 7'-4"	-
16	32 SPACES @ 5" = 13'-4"	11 SPACES @ ABOUT 9¼" = 8'-6½"	-
17	32 SPACES @ 5" = 13'-4"	12 SPACES @ 9¾" = 9'-9"	-
18	32 SPACES @ 5" = 13'-4"	13 SPACES @ ABOUT 10" = 10'-11"	-
19	32 SPACES @ 5" = 13'-4"	16 SPACES @ ABOUT 9" = 12'-1"	-
20	32 SPACES @ 5" = 13'-4"	16 SPACES @ ABOUT 10" = 13'-3"	-
21	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	2 SPACES @ ABOUT 7" = 1'-1½"
22	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	4 SPACES @ 7" = 2'-4"
23	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	6 SPACES @ 7" = 3'-6"
24	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	8 SPACES @ 7" = 4'-8"
25	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	10 SPACES @ ABOUT 7" = 5'-10½"
26	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	12 SPACES @ ABOUT 7" = 7'-0½"
27	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	14 SPACES @ ABOUT 7" = 8'-3"



TYPICAL BEAM ELEVATION

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET 62/101.
2. FOR SHEAR STUD DETAIL, SEE SHEET 62/101.
3. FOR MODIFIED TYPE 4 INTERMEDIATE CROSSFRAME DETAIL, SEE SHEET 64/101.
4. FOR END CROSSFRAME DETAILS, SEE SHEET 67/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN JFM/PPA | REVIEWED RSB | DATE 11/3/12
CHECKED BTA/JOL | REVISED | STRUCTURE FILE NUMBER 2500760

FRAMING PLAN AND BEAM ELEVATION - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

61/101

1051
1150

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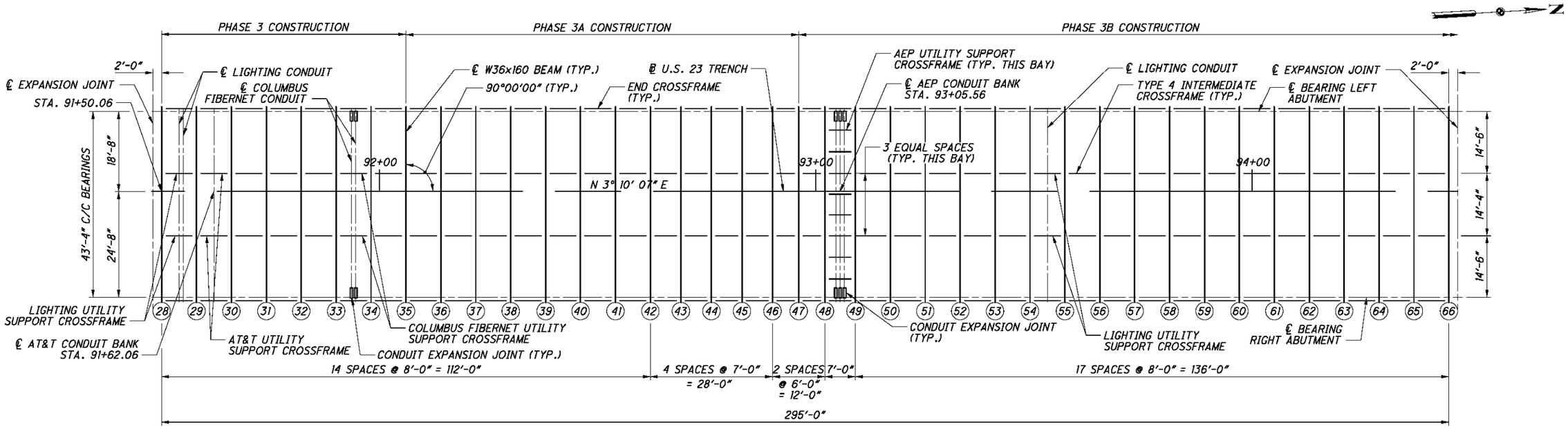
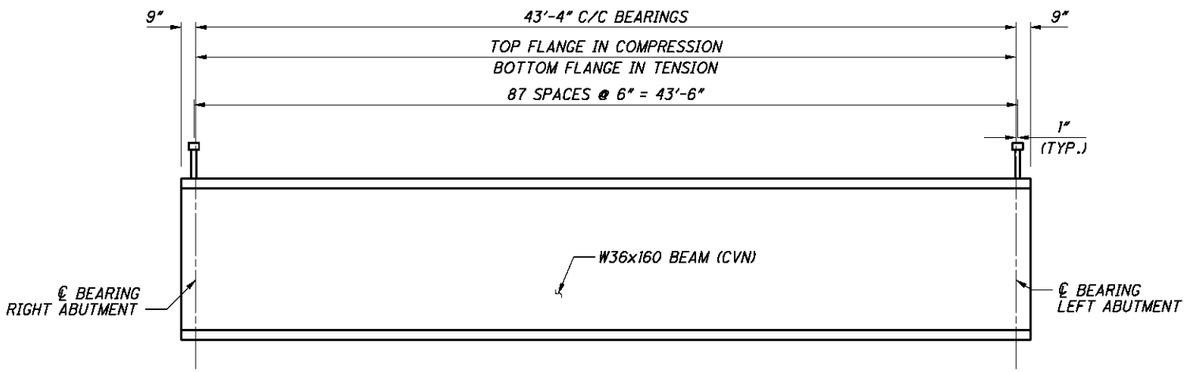
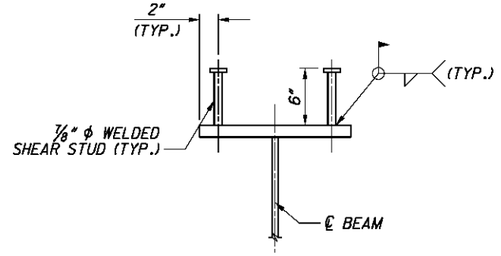


FRAMING PLAN - UNIT 2



TYPICAL BEAM ELEVATION



SHEAR STUD DETAIL

NOTES:

1. FOR ADDITIONAL INTERMEDIATE AND END CROSSFRAME DETAILS, REFER TO ODOT STANDARD DRAWING GSD-1-96. INCREASE HOLE SIZES SHOWN ON THE STANDARD DRAWING BY 1/16 INCH.
2. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AS SPECIFIED IN 711.02.
4. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE STRINGER FLANGES DESIGNATED COMPRESSION. DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM THE EDGE OF THE FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESS UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4".
5. SHEAR STUDS IN THE VICINITY OF THE EDGE OF SLAB SHALL BE PLACED PARALLEL TO THE EDGE OF SLAB TO FACILITATE REBAR PLACEMENT. SPACING MAY BE ADJUSTED TO FACILITATE REBAR. HOWEVER, THE TOTAL NUMBER OF SHEAR STUDS SHALL REMAIN THE SAME.
6. FOR CAMBER AND DEFLECTIONS, SEE SHEETS 68/101 THROUGH 70/101.
7. FOR BEARING DETAILS, SEE SHEETS 71/101 AND 72/101.
8. FOR MODIFIED TYPE 4 INTERMEDIATE CROSSFRAME DETAIL, SEE SHEET 64/101.
9. DO NOT INSTALL CROSSFRAMES BETWEEN BEAMS 35 AND 36 AND BEAMS 47 AND 48 UNTIL BOTH DECK PHASES ARE COMPLETED.
10. FOR END CROSSFRAME DETAILS, SEE SHEET 67/101.
11. WELDED SHEAR CONNECTORS: FOR ADDITIONAL SHEAR STUD REQUIREMENTS, SEE GENERAL NOTES, SHEET 940/1150.
12. FOR UTILITY SUPPORT CROSSFRAME DETAILS, SEE SHEETS 65/101 AND 66/101.

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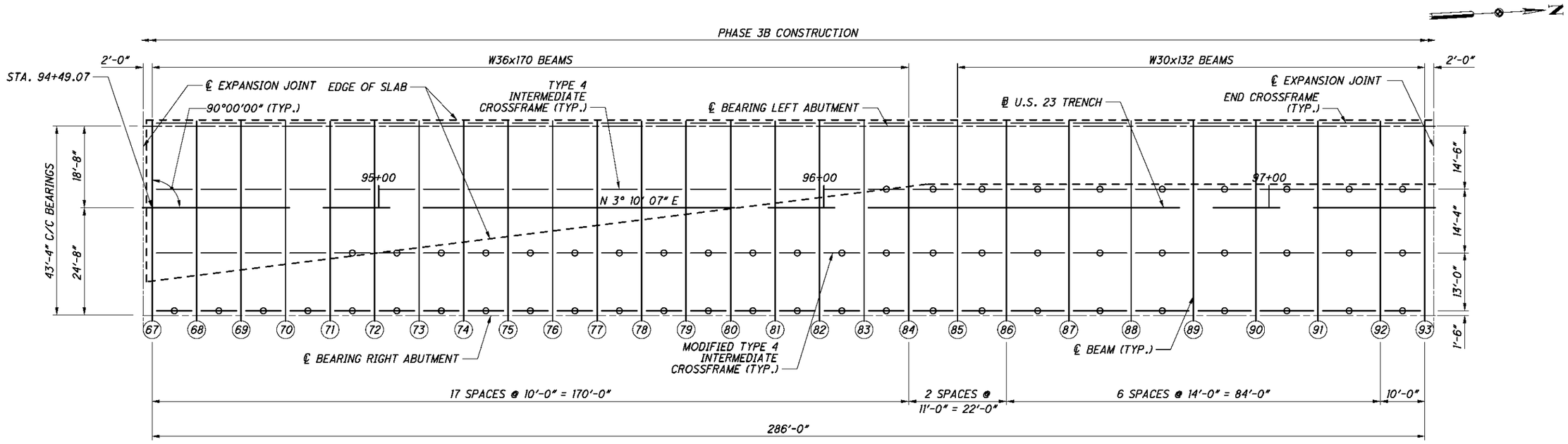
DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JFM/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BTA/JOL		2500760	

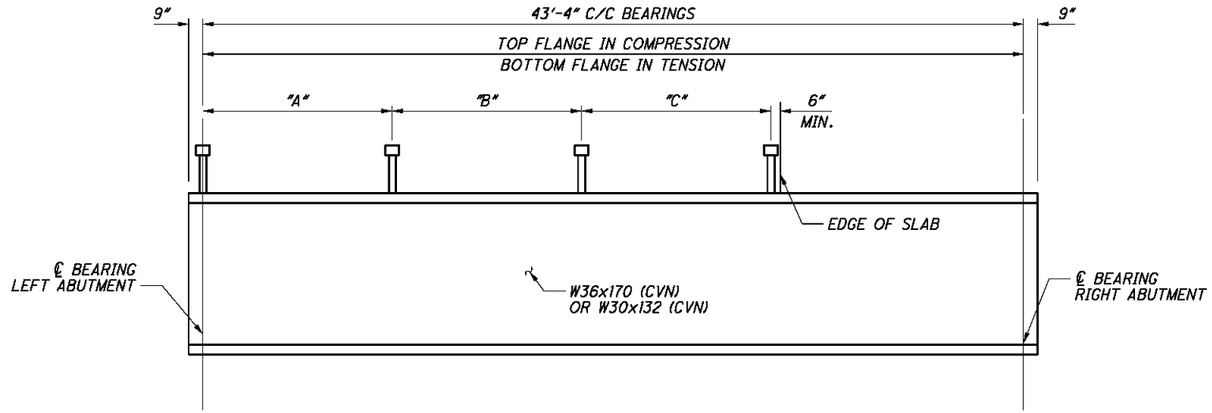
FRAMING PLAN AND BEAM ELEVATION - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746



FRAMING PLAN - UNIT 3

TABLE OF SHEAR STUD SPACINGS (SEE NOTE 5 ON SHEET 62/101)			
BEAM	"A"	"B"	"C"
67	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	13 SPACES @ 7" = 7'-7"
68	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	11 SPACES @ ABOUT 7" = 6'-4"
69	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	9 SPACES @ ABOUT 6¾" = 5'-1"
70	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	7 SPACES @ ABOUT 6½" = 3'-10"
71	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	5 SPACES @ ABOUT 6¼" = 2'-7"
72	32 SPACES @ 5" = 13'-4"	16 SPACES @ 10" = 13'-4"	3 SPACES @ ABOUT 5¼" = 1'-4"
73	32 SPACES @ 5" = 13'-4"	17 SPACES @ ABOUT 9½" = 13'-5"	-
74	32 SPACES @ 5" = 13'-4"	15 SPACES @ ABOUT 9¾" = 12'-2"	-
75	32 SPACES @ 5" = 13'-4"	13 SPACES @ ABOUT 10" = 10'-11"	-
76	32 SPACES @ 5" = 13'-4"	12 SPACES @ ABOUT 9¾" = 9'-8"	-
77	32 SPACES @ 5" = 13'-4"	10 SPACES @ ABOUT 10" = 8'-5"	-
78	32 SPACES @ 5" = 13'-4"	9 SPACES @ ABOUT 9½" = 7'-2"	-
79	32 SPACES @ 5" = 13'-4"	7 SPACES @ ABOUT 10" = 5'-11"	-
80	32 SPACES @ 5" = 13'-4"	6 SPACES @ ABOUT 9¼" = 4'-8"	-
81	32 SPACES @ 5" = 13'-4"	4 SPACES @ ABOUT 10" = 3'-5"	-
82	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	4 SPACES @ 19½" = 6'-6"
83	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	4 SPACES @ 15¾" = 5'-3"
84	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	3 SPACES @ 16" = 4'-0"
85-93	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	3 SPACES @ 14" = 3'-6"



TYPICAL BEAM ELEVATION

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET 62/101.
2. FOR SHEAR STUD DETAIL, SEE SHEET 62/101.
3. FOR MODIFIED TYPE 4 INTERMEDIATE CROSSFRAME DETAIL, SEE SHEET 64/101.
4. FOR END CROSSFRAME DETAILS, SEE SHEET 67/101.

DESIGN AGENCY: HNTB, 700 Superior Avenue, Suite 1300, Cleveland, OH 44114-2531

DESIGNED: JOL | DRAWN: JFM/PPA | REVIEWED: RSB | DATE: 11/3/12 | CHECKED: BTA/JOL | REVISED: | STRUCTURE FILE NUMBER: 2500760

FRAMING PLAN AND BEAM ELEVATION - UNIT 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

63/101

1053/1150

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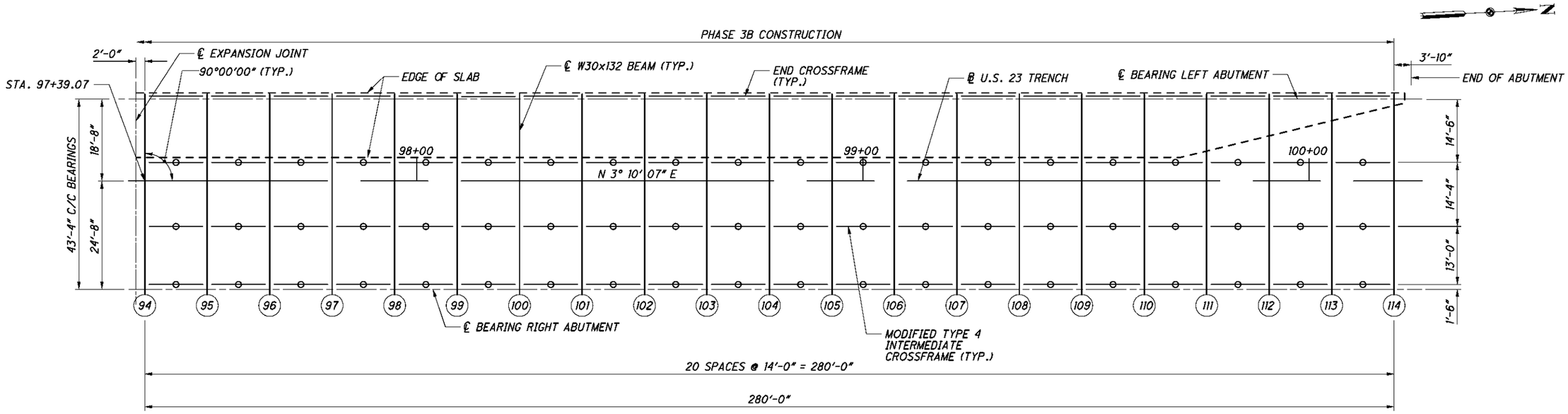
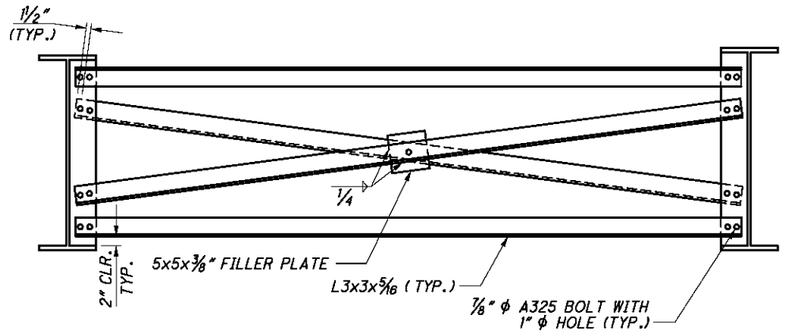
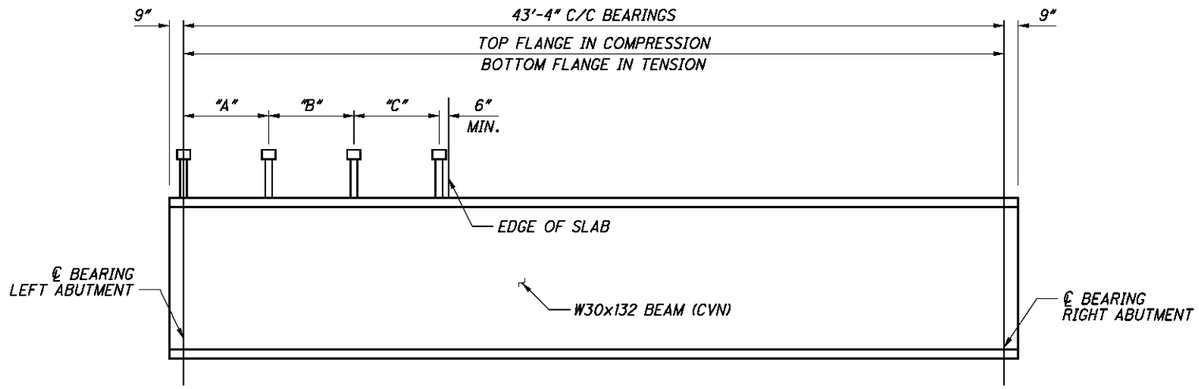


FRAMING PLAN - UNIT 4



MODIFIED TYPE 4 INTERMEDIATE CROSSFRAME



TYPICAL BEAM ELEVATION

TABLE OF SHEAR STUD SPACINGS (SEE NOTE 5 ON SHEET 62/101)			
BEAM	"A"	"B"	"C"
94-110	15 SPACES @ 4" = 5'-0"	8 SPACES @ 6" = 4'-0"	3 SPACES @ 14" = 3'-6"
111	15 SPACES @ 4" = 5'-0"	9 SPACES @ 6" = 4'-6"	1 SPACE @ 18½" = 1'-6½"
112	15 SPACES @ 4" = 5'-0"	6 SPACES @ ABOUT 5½" = 2'-8"	-
113	13 SPACES @ ABOUT 4" = 4'-3¼"	-	-
114	3 SPACES @ ABOUT 3½" = 0'-10½"	-	-

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET 62/101.
2. FOR SHEAR STUD DETAIL, SEE SHEET 62/101.
3. FOR END CROSSFRAME DETAILS, SEE SHEET 67/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JFM/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BTA/JOL		2500760	

FRAMING PLAN AND BEAM ELEVATION - UNIT 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

64/101

1054/1150

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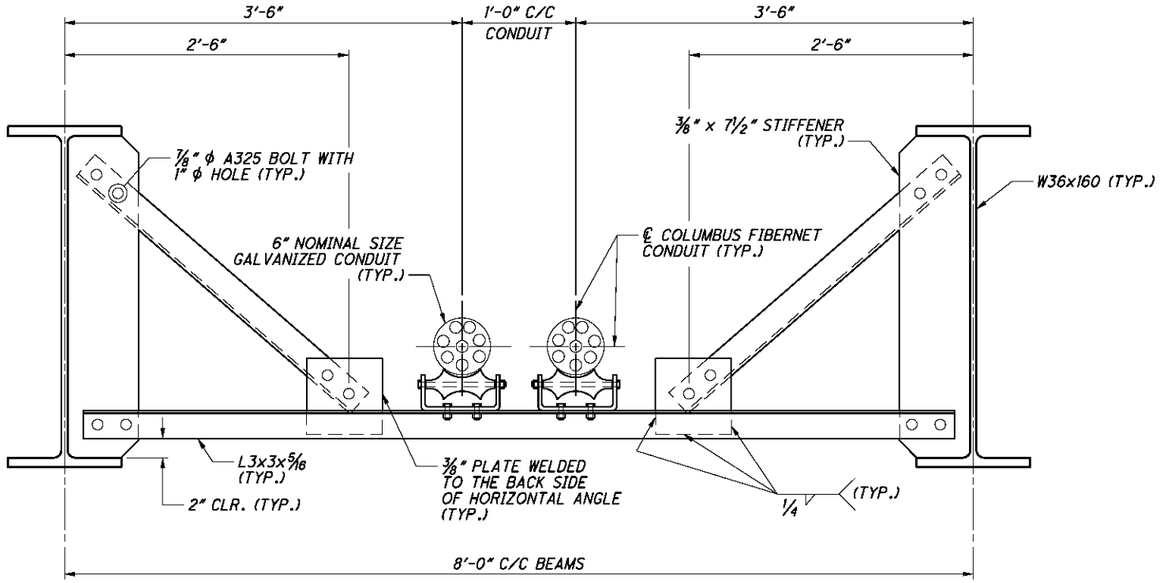
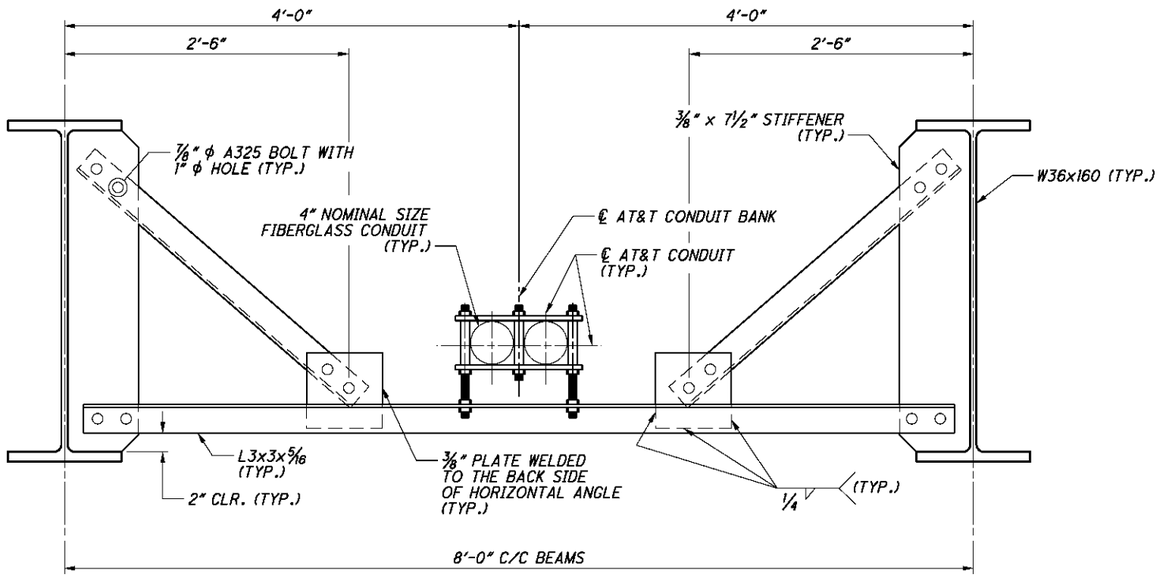


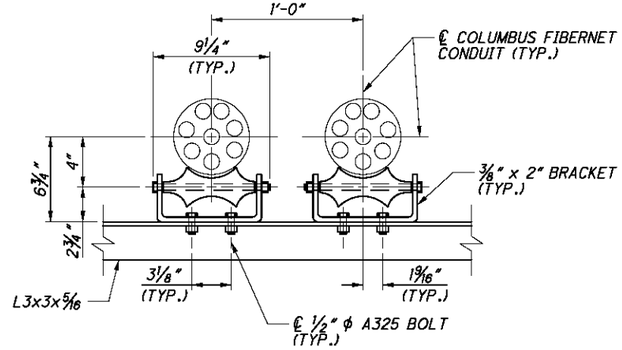
COLUMBUS FIBERNET UTILITY SUPPORT CROSSFRAME

(SEE NOTE 4)



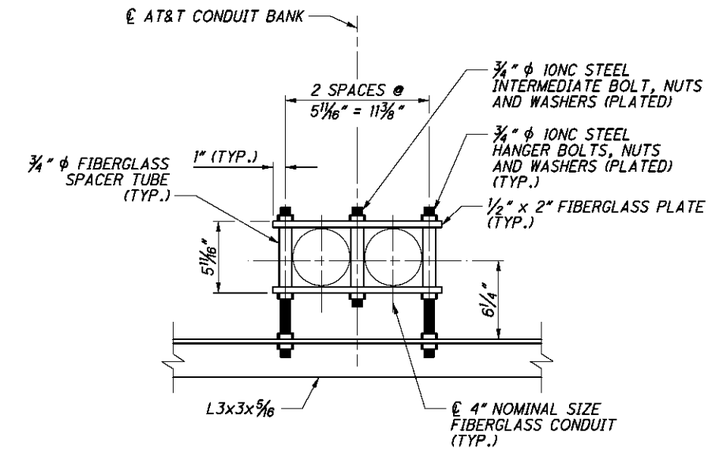
AT&T UTILITY SUPPORT CROSSFRAME

(SEE NOTE 3)



COLUMBUS FIBERNET CONDUIT SUPPORT DETAIL

(SEE NOTE 2)



AT&T CONDUIT SUPPORT DETAIL

(SEE NOTE 2)

NOTES:

1. FOR LOCATION OF UTILITY SUPPORT CROSSFRAMES, SEE SHEET 62/101.
2. VERIFY THESE DIMENSIONS WITH CONDUIT SUPPORT MANUFACTURER/SUPPLIER BEFORE DRILLING HOLES IN UTILITY SUPPORT ANGLES. ADDITIONALLY, VERIFY THAT CHOSEN UTILITY SUPPORT SYSTEMS PROVIDE ADEQUATE CLEARANCES/SPACING BETWEEN UTILITIES AND INTERMEDIATE/END CROSSFRAMES.
3. ALL CONDUIT, CONDUIT SUPPORT ASSEMBLIES, BRACING, EXPANSION JOINTS AND MOUNTING HARDWARE FOR AT&T CONDUIT SHALL BE INCLUDED WITH ITEM 625 - CONDUIT, MISC.: (2) - 4" NOMINAL SIZE FIBERGLASS (AT&T).
4. ALL CONDUIT, CONDUIT ROLLER CHAIRS, BRACING, EXPANSION JOINTS AND MOUNTING HARDWARE FOR COLUMBUS FIBERNET CONDUIT SHALL BE INCLUDED WITH ITEM 625 - CONDUIT, MISC.: (2) - 6" NOMINAL SIZE SCHEDULE 40 STEEL PIPE (COLUMBUS FIBERNET).
5. FOR ADDITIONAL DETAILS, SEE ODOT STANDARD DRAWING GSD-1-96.

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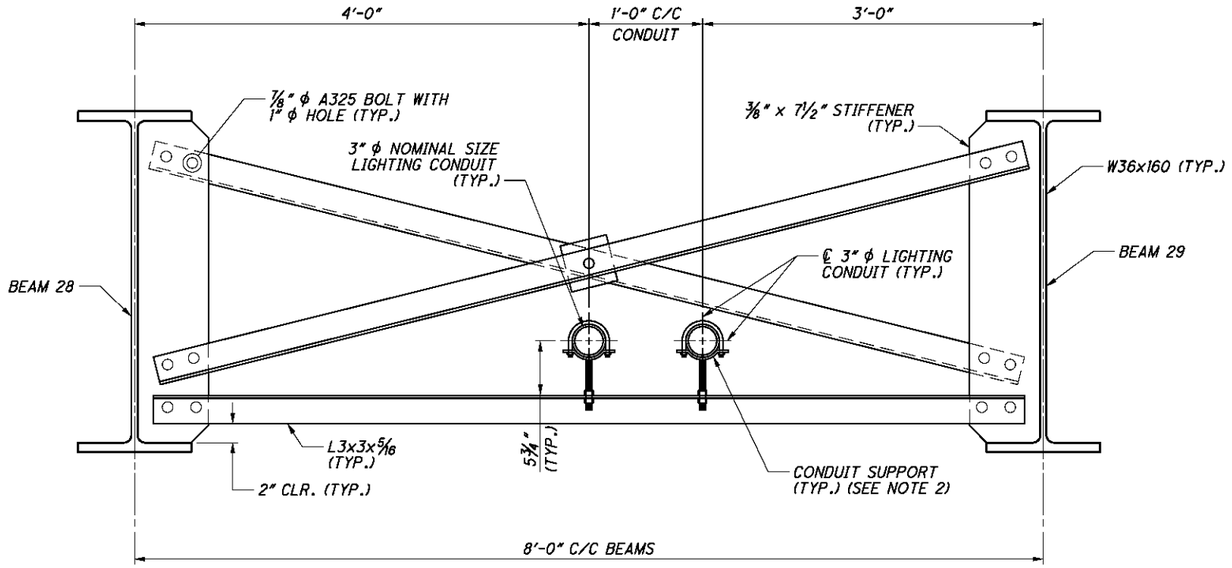
DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

UTILITY DETAILS - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

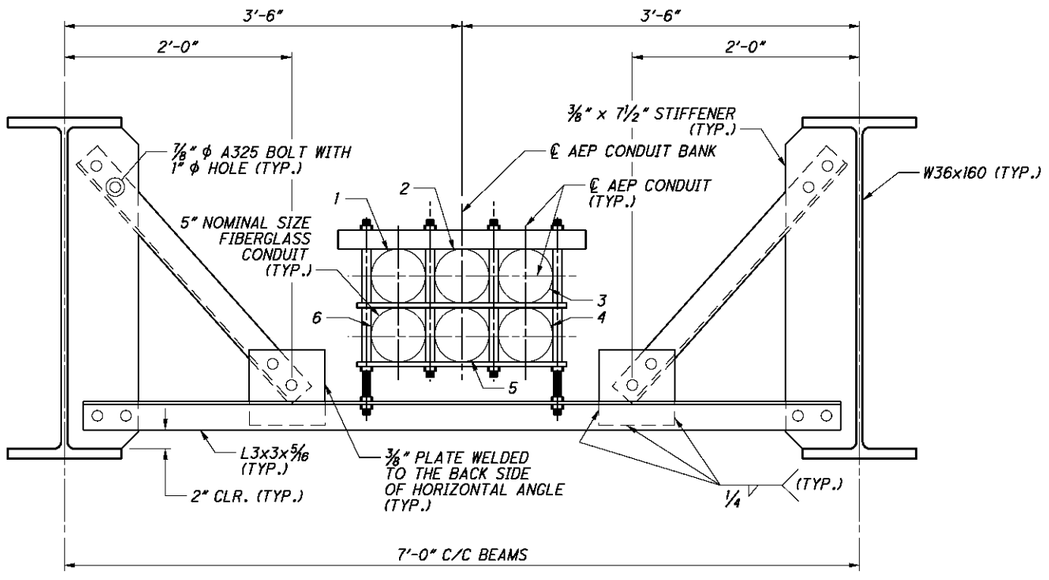
FRA-23-22.23
PID No. 81746

1055
1150



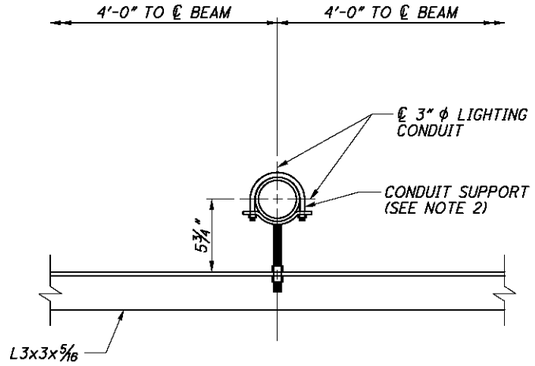
LIGHTING UTILITY SUPPORT CROSSFRAME BETWEEN BEAMS 28 AND 29

(SEE NOTE 3)



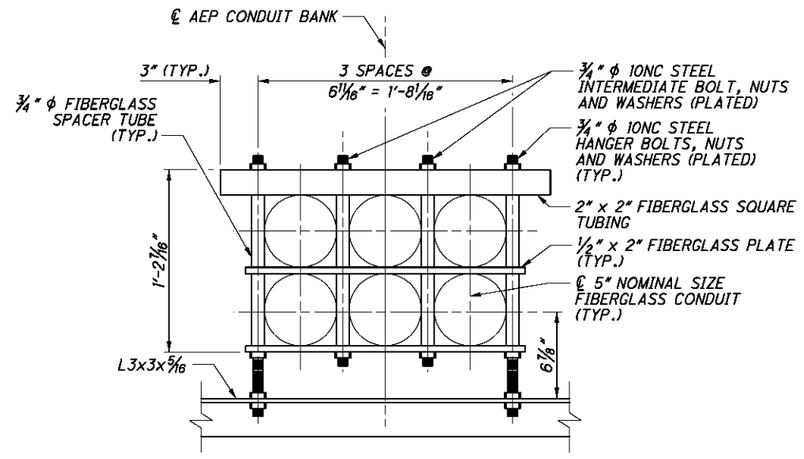
AEP UTILITY SUPPORT CROSSFRAME

(SEE NOTE 4)



LIGHTING UTILITY SUPPORT CROSSFRAME BETWEEN BEAMS 54 AND 55

(SEE LIGHTING UTILITY SUPPORT CROSSFRAME BETWEEN BEAMS 28 AND 29 FOR ADDITIONAL DETAILS)
(SEE NOTE 3)



AEP CONDUIT SUPPORT DETAIL

(SEE NOTE 3)

NOTES:

1. FOR LOCATION OF UTILITY SUPPORT CROSSFRAMES, SEE SHEET 62/101.
2. CONDUIT SUPPORT SHALL BE ANVIL ADJUSTABLE PIPE STANCHION SADDLE WITH U-BOLT, FIGURE 191, OR APPROVED EQUAL. CONDUIT SUPPORT SHALL BE INCIDENTAL TO THE COST OF THE LIGHTING CONDUIT. FOR 3" ϕ LIGHTING CONDUIT DETAILS AND PAYMENT, SEE LIGHTING PLANS.
3. VERIFY THESE DIMENSIONS WITH CONDUIT SUPPORT MANUFACTURER/SUPPLIER BEFORE DRILLING HOLES IN UTILITY SUPPORT ANGLES. ADDITIONALLY, VERIFY THAT CHOSEN UTILITY SUPPORT SYSTEMS PROVIDE ADEQUATE CLEARANCES/SPACING BETWEEN UTILITIES AND INTERMEDIATE/END CROSSFRAMES.
4. ALL CONDUIT, CONDUIT SUPPORT ASSEMBLIES, BRACING, EXPANSION JOINTS AND MOUNTING HARDWARE SHALL BE INCLUDED WITH ITEM 625 - CONDUIT, MISC.: (4) - 5" NOMINAL SIZE FIBERGLASS (AEP).
5. FOR ADDITIONAL CROSSFRAME DETAILS, SEE ODOT STANDARD DRAWING GSD-1-96.

DESIGN AGENCY
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100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	11/3/12
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JOL		2500760	

UTILITY DETAILS - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1056
1150

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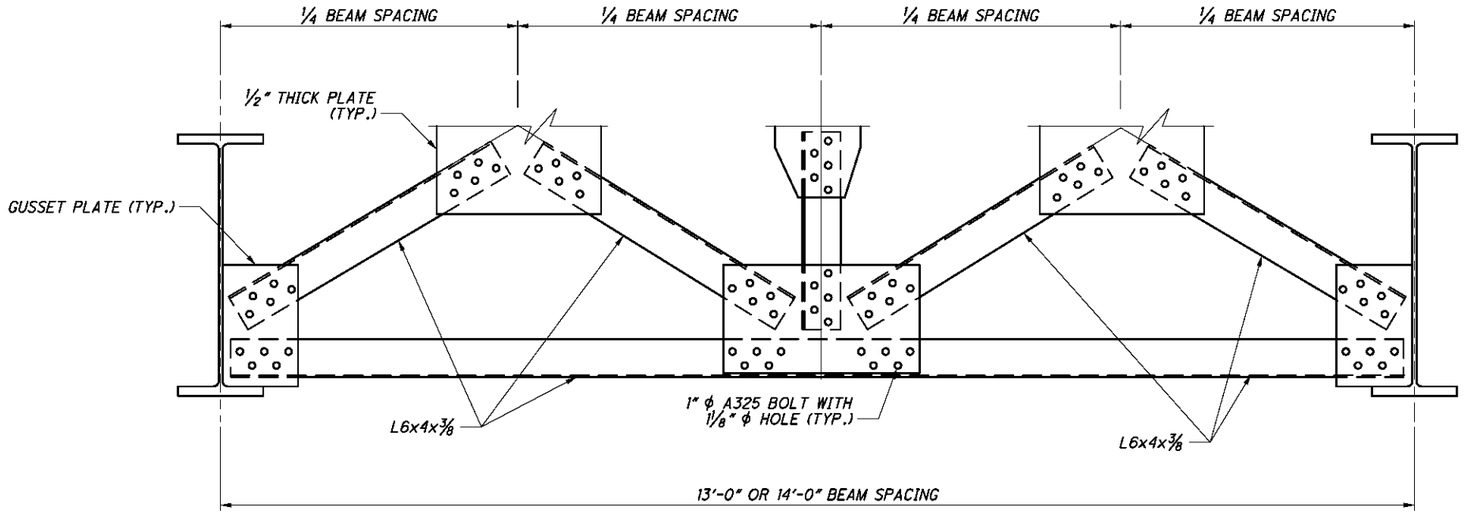
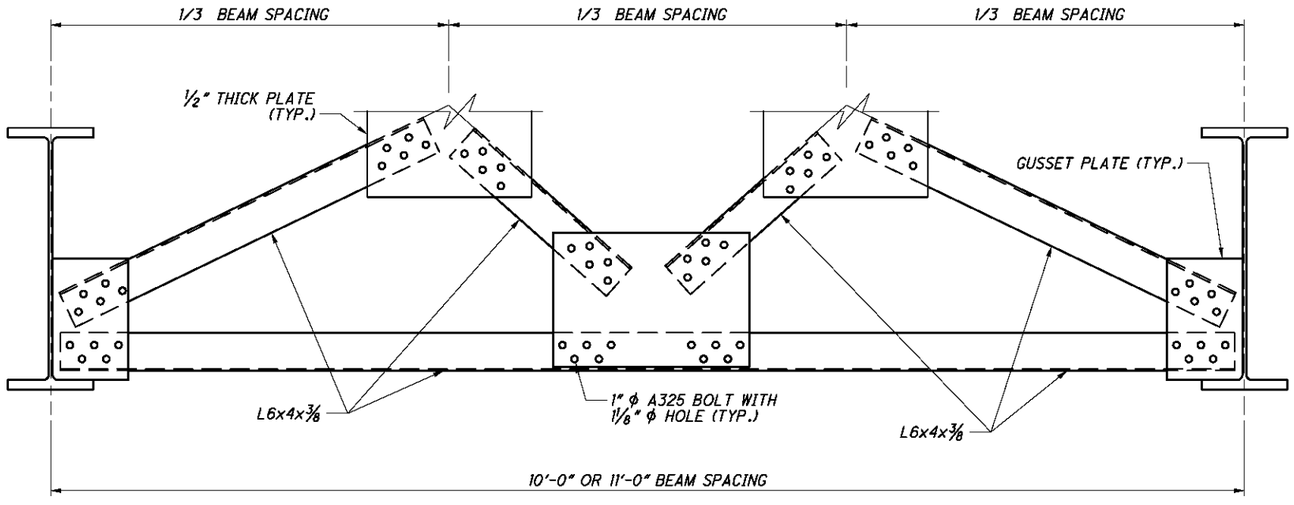
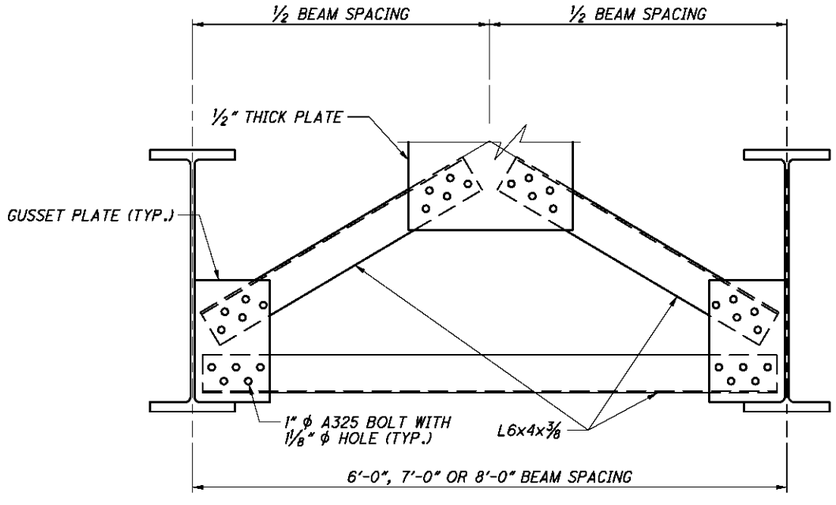


CROSSFRAME FOR 12'-0" OR GREATER BEAM SPACING



CROSSFRAME FOR GREATER THAN 8'-0" TO 12'-0" BEAM SPACING



CROSSFRAME FOR 8'-0" OR LESS BEAM SPACING

NOTES:

1. FOR FRAMING PLAN UNIT 1, SEE SHEET 61/101.
2. FOR FRAMING PLAN UNIT 2, SEE SHEET 62/101.
3. FOR FRAMING PLAN UNIT 3, SEE SHEET 63/101.
4. FOR FRAMING PLAN UNIT 4, SEE SHEET 64/101.
5. FOR ADDITIONAL DETAILS, SEE ODOT STANDARD DRAWING GSD-1-96.
6. SOME BOLTED CONNECTIONS MAY BE REPLACED WITH SHOP WELDS. HOWEVER, NO FIELD WELDS WILL BE PERMITTED.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA/ZTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BTA/JOL		2500760	

END CROSSFRAME DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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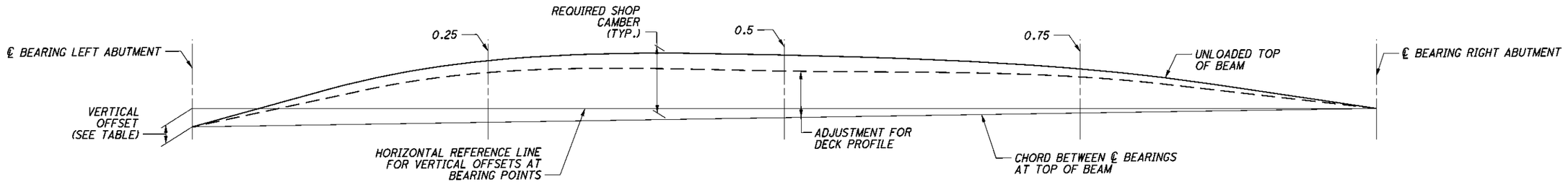

UNIT 1 CAMBER DIAGRAM

(BEAM 1 SHOWN, BEAMS 2-27 SIMILAR)

	BEAM 1		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	0"	0"	0"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 7/16"	2 1/4"	1 1/2"

	BEAM 2		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	0"	0"	0"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 7/16"	2 1/4"	1 1/2"

	BEAM 3		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1/16"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 1/2"	2 5/16"	1 9/16"

	BEAM 4		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1/8"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 1/2"	2 3/8"	1 9/16"

	BEAM 5		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1/8"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 1/2"	2 3/8"	1 5/8"

	BEAM 6		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 5/8"

	BEAM 7		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 11/16"

	BEAM 8		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

	BEAM 9		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

	BEAM 10		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1/8"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 1/2"	2 3/8"	1 5/8"

	BEAM 11		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 5/8"

	BEAM 12		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 5/8"

	BEAM 13		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 5/8"

	BEAM 14		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 7/16"	1 5/8"

	BEAM 15		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 1/2"	1 11/16"

	BEAM 16		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 9/16"	2 1/2"	1 11/16"

	BEAM 17		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

	BEAM 18		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

	BEAM 19		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

	BEAM 20		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 9/16"	1 11/16"

	BEAM 21		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 9/16"	1 11/16"

	BEAM 22		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 9/16"	1 3/4"

	BEAM 23		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 3/4"

	BEAM 24		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 3/4"

	BEAM 25		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 3/4"

	BEAM 26		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 3/4"

	BEAM 27		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 3/8"	2 3/16"	1 7/16"
REQUIRED SHOP CAMBER	1 5/8"	2 1/2"	1 11/16"

VERTICAL OFFSETS AT BEARING POINTS	
BEARING POINT	UNIT 1 (BEAMS 1-27)
LEFT ABUTMENT	2 1/4"
RIGHT ABUTMENT	0"

NOTES:

1. DEFLECTIONS, CAMBER AND ADJUSTMENT FOR VERTICAL CURVES ARE GIVEN TO THE NEAREST 1/16th INCH.
2. FOR UNIT 2 CAMBER TABLE, SEE SHEET 69/101.
3. FOR UNITS 3 AND 4 CAMBER TABLES, SEE SHEET 70/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

DEFLECTION AND CAMBER - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

68/101

1058
1150

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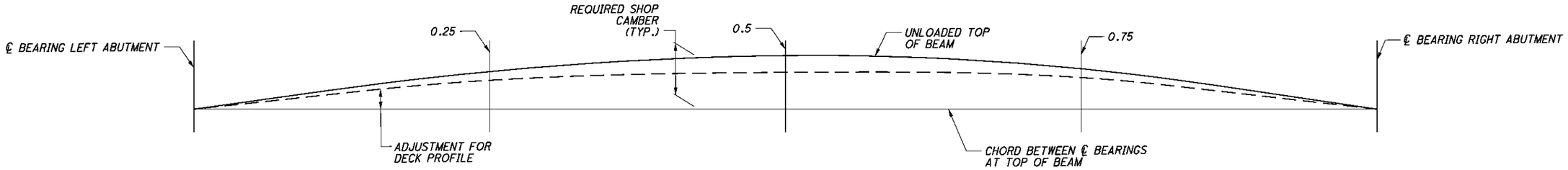


UNIT 2 CAMBER DIAGRAM

(BEAM 28 SHOWN, BEAMS 29-66 SIMILAR)

	BEAM 28		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/16"	1 1/16"	1 1/16"

	BEAM 29		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 30		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 31		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 32		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 33		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 34		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 35		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 36		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 37		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 38		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 39		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 40		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 41		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 42		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 43		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 44		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 45		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 46		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/16"	1 1/16"	1 1/16"

	BEAM 47		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/16"	1 1/16"	1 1/16"

	BEAM 48		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/16"	1 1/16"	1 1/16"

	BEAM 49		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 50		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 51		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 52		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 53		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 54		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 55		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 56		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 57		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 58		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 59		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 60		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 61		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 62		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 63		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 64		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 65		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/8"	1 1/8"	1 1/8"

	BEAM 66		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	7/8"	15/16"	7/8"
REQUIRED SHOP CAMBER	1 1/16"	1 3/16"	1 1/16"

NOTES:

1. FOR UNIT 1 CAMBER TABLE, SEE SHEET 68/101.
2. FOR UNITS 3 AND 4 CAMBER TABLES, SEE SHEET 70/101.
3. FOR ADDITIONAL NOTES, SEE SHEET 68/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

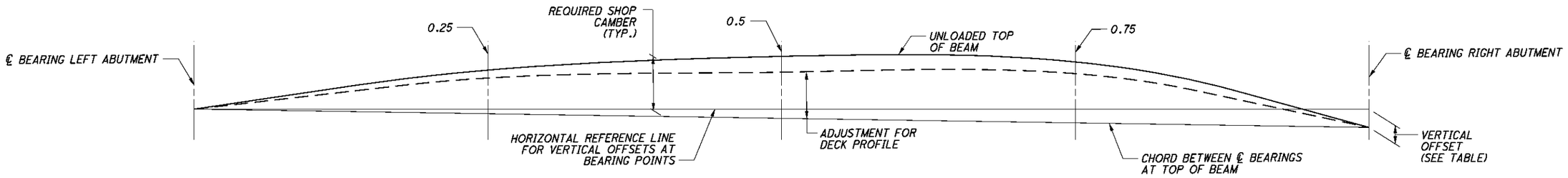
REVIEWED RSB | DATE 11/3/12 | STRUCTURE FILE NUMBER 2500760
DRAWN PPA | REVISED
DESIGNED JOL | CHECKED NJ

DEFLECTION AND CAMBER - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1059
1150

c:\caddlib\pw\zwaite\pwgreat_lakes\dms0983\1\023_2330SD016.dgn - 3/1/2013 1:12:43 PM - zwaite



UNITS 3 & 4 CAMBER DIAGRAM

(BEAM 67 SHOWN, BEAMS 68-114 SIMILAR)

UNIT 3

	BEAM 67		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 5/8"

	BEAM 68		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 11/16"

	BEAM 69		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 11/16"

	BEAM 70		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	1/4"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 11/16"

	BEAM 71		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 72		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 5/8"

	BEAM 73		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 9/16"	1 5/8"

	BEAM 74		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 5/8"

	BEAM 75		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 5/8"

	BEAM 76		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 5/8"

	BEAM 77		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 9/16"

	BEAM 78		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 7/16"	1 9/16"

	BEAM 79		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 7/16"	1 9/16"

	BEAM 80		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 7/16"	1 9/16"

	BEAM 81		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 7/16"	1 9/16"

	BEAM 82		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 3/8"	1 9/16"

	BEAM 83		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 3/8"	1 1/2"

	BEAM 84		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 3/8"	1 1/2"

	BEAM 85		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 9/16"

	BEAM 86		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 5/8"

	BEAM 87		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 88		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 89		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 90		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 91		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 92		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 9/16"

	BEAM 93		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 3/8"	1 1/2"

UNIT 4

	BEAM 94		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 1/16"	1 9/16"

	BEAM 95		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 96		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 97		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 98		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 99		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 100		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 101		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 102		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 103		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 104		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 105		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 106		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 107		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 108		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 109		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 110		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	5/16"	3/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 3/4"	2 9/16"	1 5/8"

	BEAM 111		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	1/4"	1/8"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 11/16"	2 1/2"	1 9/16"

	BEAM 112		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 5/8"	2 3/8"	1 1/2"

	BEAM 113		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1/16"	1/16"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 9/16"	2 5/16"	1 1/2"

	BEAM 114		
	0.25	0.5	0.75
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	0"	0"	0"
ADJUSTMENT REQUIRED FOR DECK PROFILE	1 1/16"	2 3/16"	1 3/8"
REQUIRED SHOP CAMBER	1 1/2"	2 1/4"	1 1/16"

VERTICAL OFFSETS AT BEARING POINTS		
BEARING POINT	UNIT 3 (BEAMS 67-93)	UNIT 4 (BEAMS 94-114)
LEFT ABUTMENT	0"	0"
RIGHT ABUTMENT	2 1/4"	2 1/4"

NOTES:

1. FOR UNIT 1 CAMBER TABLE, SEE SHEET 68/101.
2. FOR UNIT 2 CAMBER TABLE, SEE SHEET 69/101.
3. FOR ADDITIONAL NOTES, SEE SHEET 68/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

REVIEWED RSB
DATE 11/3/12
STRUCTURE FILE NUMBER 2500760

DRAWN PPA
REVISED

DESIGNED JOL
CHECKED NJ

DEFLECTION AND CAMBER - UNITS 3 & 4

BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1060
1150

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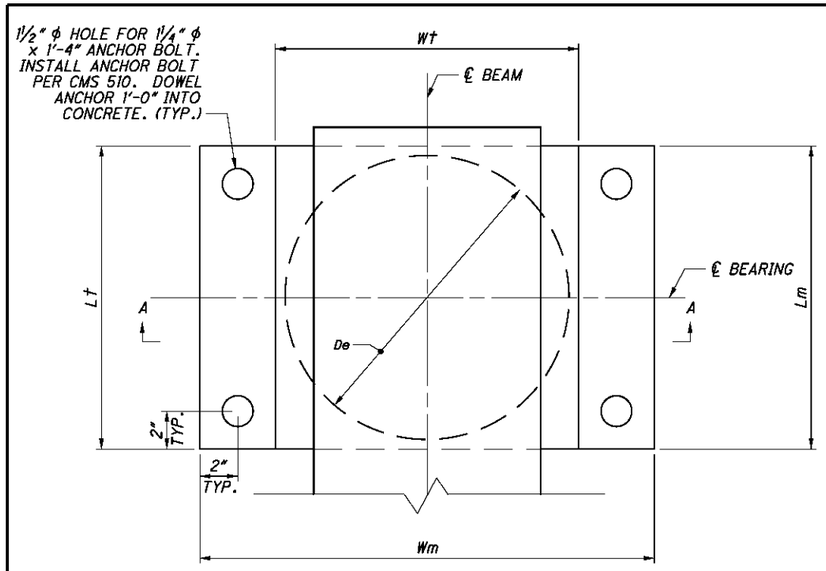
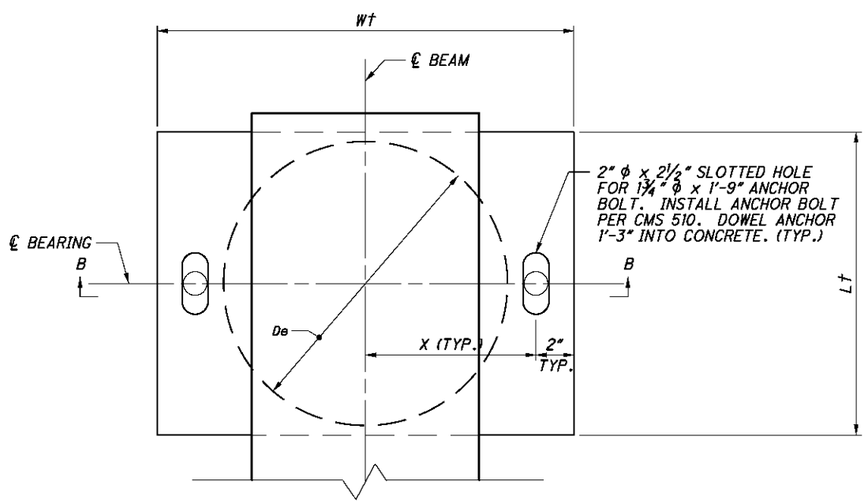


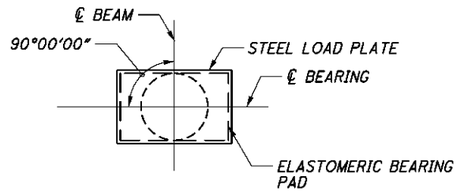
EXPANSION BEARING - TYPE 1

(EXP-EXP)

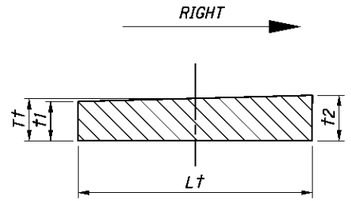


EXPANSION BEARING - TYPE 2

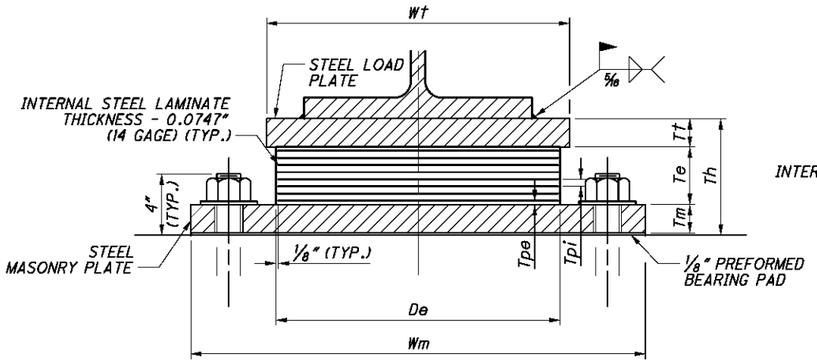
(EXP-FIX)



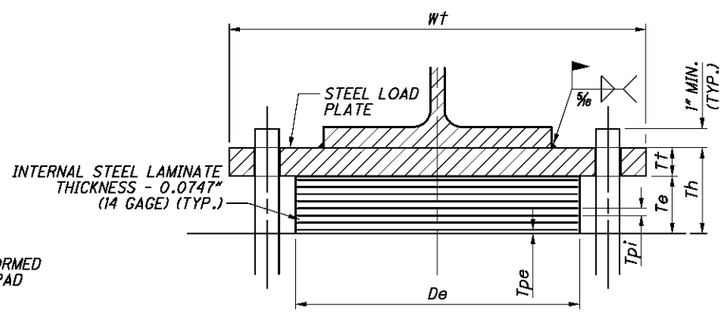
BEARING ORIENTATION PLAN



LOAD PLATE DETAIL



SECTION A-A



SECTION B-B

BEARING DATA

BEARING TYPE	LOCATION	BEAMS	FIXITY	NO. REQ'D.	DL (KIP)	LL(KIP) W/O IMPACT	TOTAL LOAD (DL+LL)	D_e (in)	T_{pi} (in)	T_{pe} (in)	NO. OF T_{pi}'s	NO. OF T_{pe}'s	NO. INTERNAL LAMINATES	T_e (in)	STEEL LOAD PLATE L_t (in)	W_t (in)	t_1 (in)	t_2 (in)	T_t (in)	X (in)	STEEL MASONRY PLATE L_m (in)	W_m (in)	T_m (in)	T_h (in)
1	L. ABUT.	1 THRU 9	E-E	9	10	10	20	11	0.375	0.125	5	2	6	2.573	12	12	1 1/16	1 9/16	1.5	-	12	20	1.5	5.698
1	L. ABUT.	10 THRU 12 14 THRU 27 85 THRU 103 105 THRU 114	E-E	46	38	53	91	12	0.3125	0.125	6	2	7	2.648	13	13	1 1/16	1 9/16	1.5	-	13	22	1.5	5.773
1	L. ABUT.	28 THRU 46 48 THRU 66	E-E	38	46	123	169	15	0.3125	0.125	7	2	8	3.035	16	16	1 1/16	1 9/16	1.5	-	16	24	1.5	6.16
1	L. ABUT.	67 THRU 80 82 THRU 84	E-E	17	43	95	138	14	0.3125	0.125	8	2	9	3.422	15	15	1 1/16	1 9/16	1.5	-	15	23	1.5	6.547
2	L. ABUT.	13 AND 104	E-F	2	38	53	91	12	0.3125	0.125	6	2	7	2.648	13	20	1 1/16	1 9/16	1.5	8	-	-	-	4.148
2	L. ABUT.	47	E-F	1	46	123	169	15	0.3125	0.125	7	2	8	3.035	16	23	1 1/16	1 9/16	1.5	9.5	-	-	-	4.535
2	L. ABUT.	81	E-F	1	43	95	138	14	0.3125	0.125	8	2	9	3.422	15	22	1 1/16	1 9/16	1.5	9	-	-	-	4.922

NOTES:

1. 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 PLATE AND MASONRY PLATE SHALL BE ASTM A709 GRADE 50 STEEL. THE STEEL LOAD PLATE AND MASONRY PLATE SHALL BE GALVANIZED PER ITEM 711.02. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED PER ITEM 711.02.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE.
5. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS (INCLUDING MASONRY PLATES AND ANCHOR BOLTS), LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.
6. THE FIRST LETTER IN THE FIXITY DESIGNATION REFERS TO FIXITY PARALLEL TO THE BEAM AND THE SECOND LETTER REFERS TO FIXITY PERPENDICULAR TO THE BEAM.
7. ANCHOR BOLTS FOR TYPE 2 BEARINGS SHALL BE ASTM F1554 GRADE 105 PER CMS 730.02. ANCHOR BOLTS SHALL BE INCLUDED WITH 516 FOR PAYMENT.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED TJE | DRAWN TJE/PPA | REVIEWED RSB | DATE 11/3/12
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 2500760

BEARING DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

71 / 101

1061
1150

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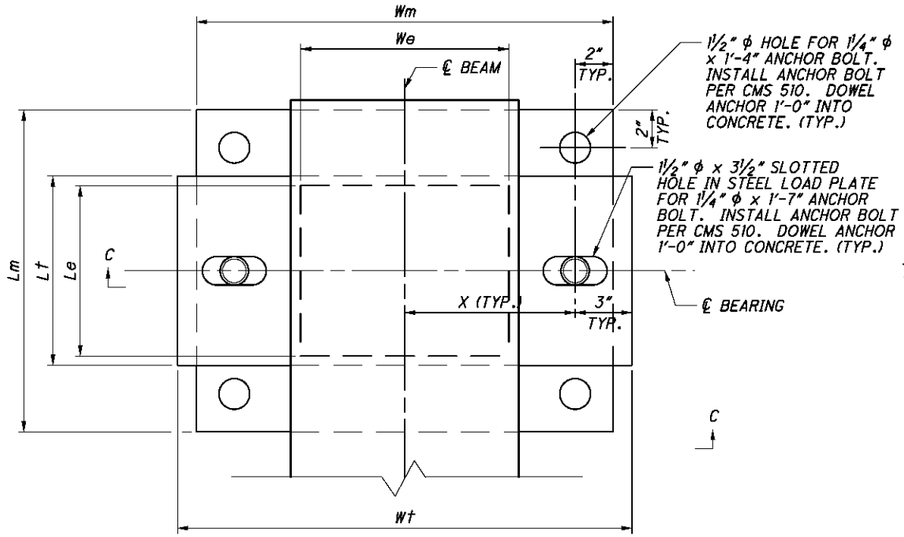
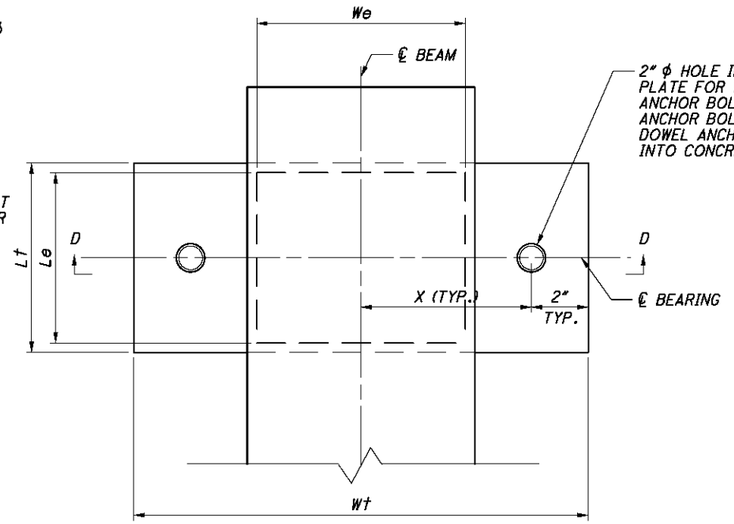


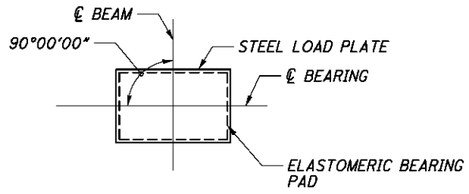
FIXED BEARING - TYPE 3

(FIX-EXP)

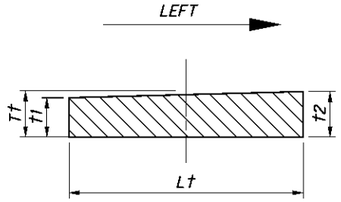


FIXED BEARING - TYPE 4

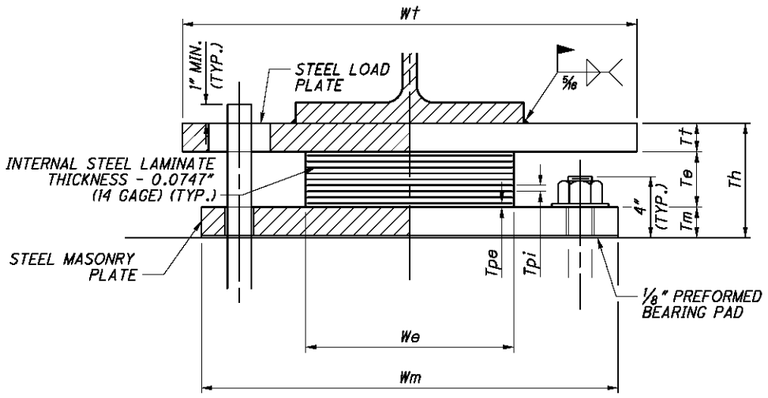
(FIX-FIX)



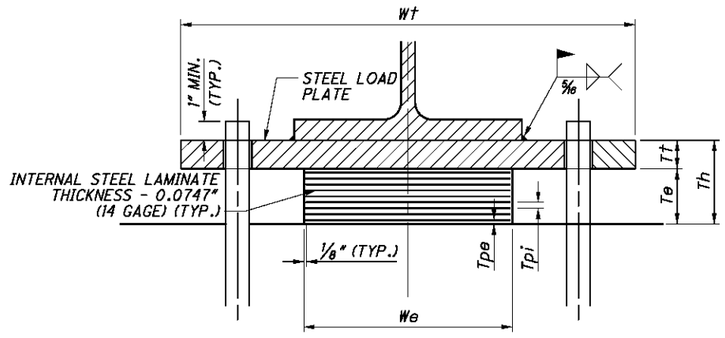
BEARING ORIENTATION PLAN



LOAD PLATE DETAIL



SECTION C-C



SECTION D-D

BEARING DATA

BEARING TYPE	LOCATION	BEAMS	FIXITY	NO. REQ'D.	DL (KIP)	LL(KIP) W/O IMPACT	TOTAL LOAD (DL+LL)	L_e (in)	W_e (in)	T_{pi} (in)	T_{pe} (in)	NO. OF T_{pi}'s	NO. OF T_{pe}'s	NO. INTERNAL LAMINATES	T_e (in)	STEEL LOAD PLATE						STEEL MASONRY PLATE			
																L_t (in)	W_t (in)	t_1 (in)	t_2 (in)	T_t (in)	X (in)	L_m (in)	W_m (in)	T_m (in)	T_h (in)
3	R. ABUT.	1 THRU 9 67 THRU 80 82 THRU 84	F-E	26	35	53	88	9	11	0.25	0.125	8	2	9	2.922	10	24	1 1/16	1 3/16	1.5	9	17	22	1.5	6.047
3	R. ABUT.	10 THRU 12 14 THRU 27	F-E	17	44	95	139	12	13	0.3125	0.125	8	2	9	3.422	13	25	1 1/16	1 3/16	1.5	9.5	13	23	1.5	6.547
3	R. ABUT.	28 THRU 46 48 THRU 66	F-E	38	46	123	169	13	14	0.3125	0.125	8	2	9	3.422	14	25	1 1/16	1 3/16	1.5	9.5	14	23	1.5	6.547
3	R. ABUT.	85 THRU 103 105 THRU 114	F-E	29	10	9	19	8	9	0.3125	0.125	6	2	7	2.648	9	23	1½	1½	1.5	8.5	17	21	1.5	5.773
4	R. ABUT.	13	F-F	1	44	95	139	12	13	0.3125	0.125	8	2	9	3.422	10	21	1 1/16	1 3/16	1.5	8.5	–	–	–	4.922
4	R. ABUT.	47	F-F	1	46	123	169	13	14	0.3125	0.125	8	2	9	3.422	13	22	1 1/16	1 3/16	1.5	9	–	–	–	4.922
4	R. ABUT.	81	F-F	1	35	53	88	9	11	0.25	0.125	8	2	9	2.922	14	20	1 1/16	1 3/16	1.5	8	–	–	–	4.422
4	R. ABUT.	104	F-F	1	10	9	19	8	9	0.3125	0.125	6	2	7	2.648	9	19	1½	1½	1.5	7.5	–	–	–	4.148

NOTES:

1. 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 PLATE AND MASONRY PLATE SHALL BE ASTM A709 GRADE 50 STEEL. THE STEEL LOAD PLATE AND MASONRY PLATE SHALL BE GALVANIZED PER ITEM 711.02. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED PER ITEM 711.02.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE.
5. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS (INCLUDING MASONRY PLATES AND ANCHOR BOLTS), LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.
6. THE FIRST LETTER IN THE FIXITY DESIGNATION REFERS TO FIXITY PARALLEL TO THE BEAM AND THE SECOND LETTER REFERS TO FIXITY PERPENDICULAR TO THE BEAM.
7. ANCHOR BOLTS FOR TYPE 4 BEARINGS SHALL BE ASTM F1554 GRADE 105 PER CMS 730.02. ANCHOR BOLTS SHALL BE INCLUDED WITH 516 FOR PAYMENT.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED TJE | DRAWN TJE/PPA | REVIEWED RSB | DATE 11/3/12
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 2500760

TRENCH

BEARING DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23

FRA-23-22.23
PID No. 81746

1062
1150

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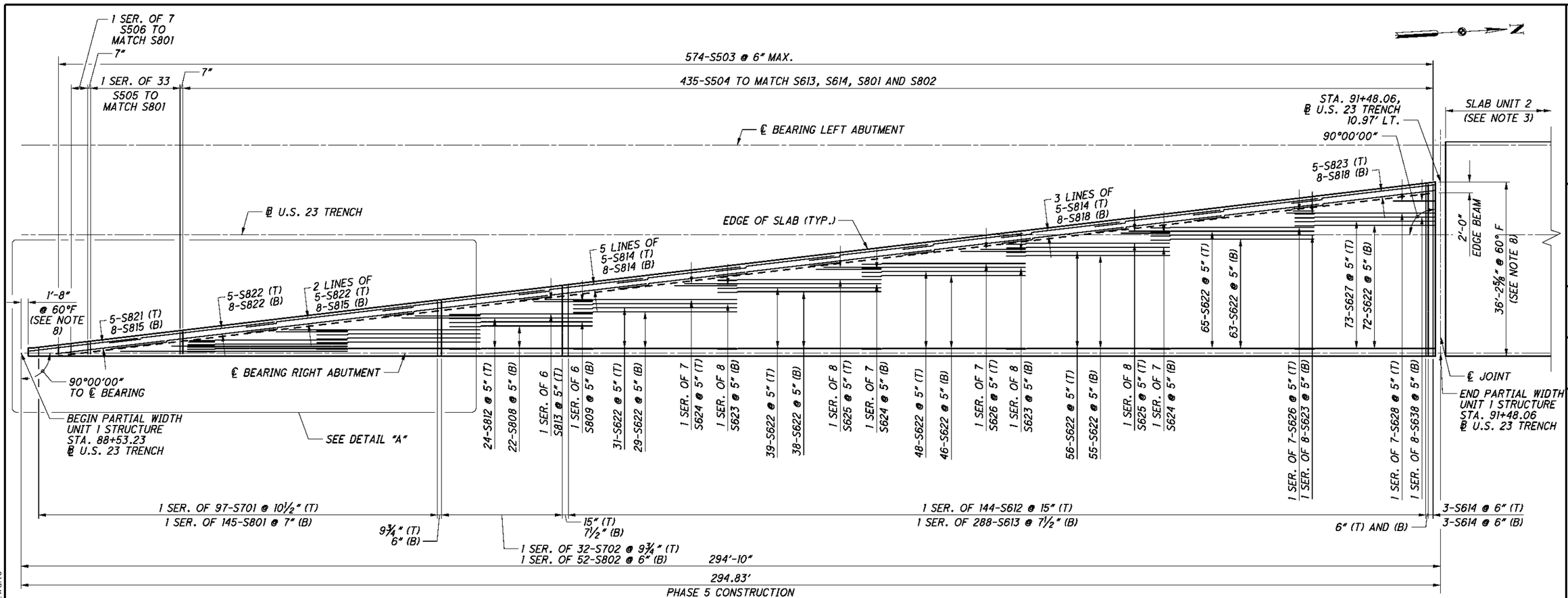
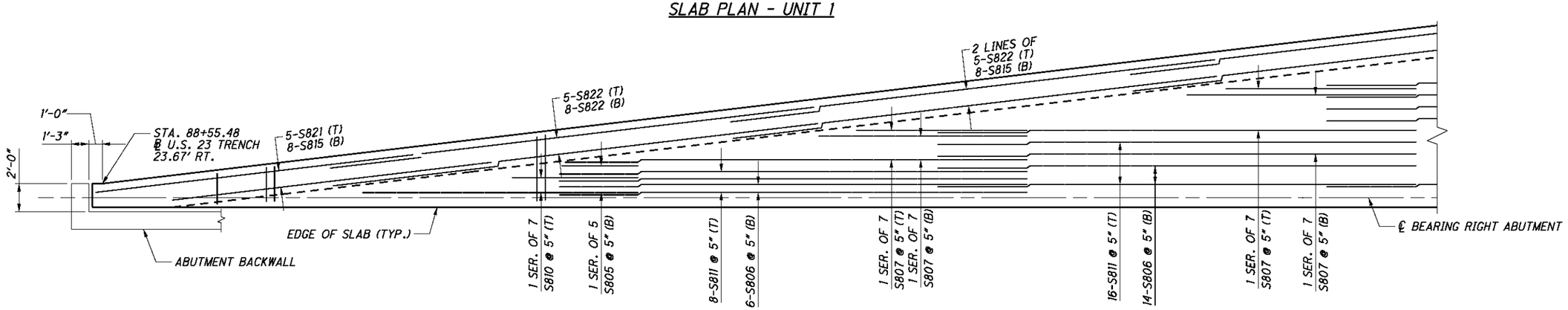


SLAB PLAN - UNIT 1



DETAIL A

(LONGITUDINAL REINFORCEMENT NOT SHOWN FOR CLARITY)

BAR	MINIMUM LAP LENGTH
#6	3'-11"
#8	6'-4"

LEGEND:

(T) - TOP

(B) - BOTTOM

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 77/101 THROUGH 80/101.
2. FOR LONGITUDINAL BAR SPACINGS, SEE SLAB DETAILS ON SHEET 81/101.
3. FOR UNIT 2 SLAB PLAN, SEE SHEET 74/101.
4. FOR UNIT 3 SLAB PLAN, SEE SHEET 75/101.
5. FOR UNIT 4 SLAB PLAN, SEE SHEET 76/101.
6. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
7. FOR PARAPET REINFORCEMENT AND SECTION, SEE SHEETS 82/101 THROUGH 84/101.
8. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
BTA	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
T.JE/BTA		2500760	

SLAB PLAN - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

73/101

1063/1150

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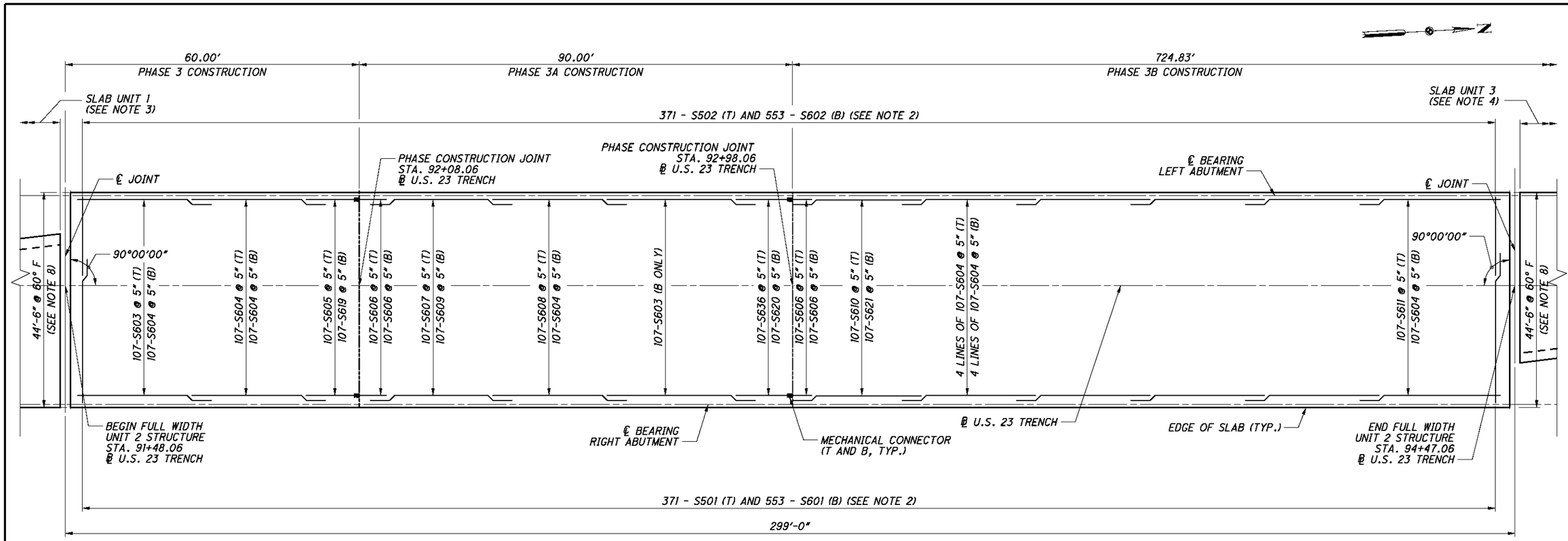

SLAB PLAN - UNIT 2

BAR	MINIMUM LAP LENGTH
#5	2'-5"
#6	3'-11"

LEGEND:

(T) - TOP

(B) - BOTTOM

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 77/101 THROUGH 80/101.
2. FOR LONGITUDINAL BAR SPACINGS, SEE SLAB DETAILS ON SHEET 81/101.
3. FOR UNIT 1 SLAB PLAN, SEE SHEET 73/101.
4. FOR UNIT 3 SLAB PLAN, SEE SHEET 75/101.
5. FOR UNIT 4 SLAB PLAN, SEE SHEET 76/101.
6. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
7. FOR PARAPET DETAILS, SEE SHEET 83/101.
8. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

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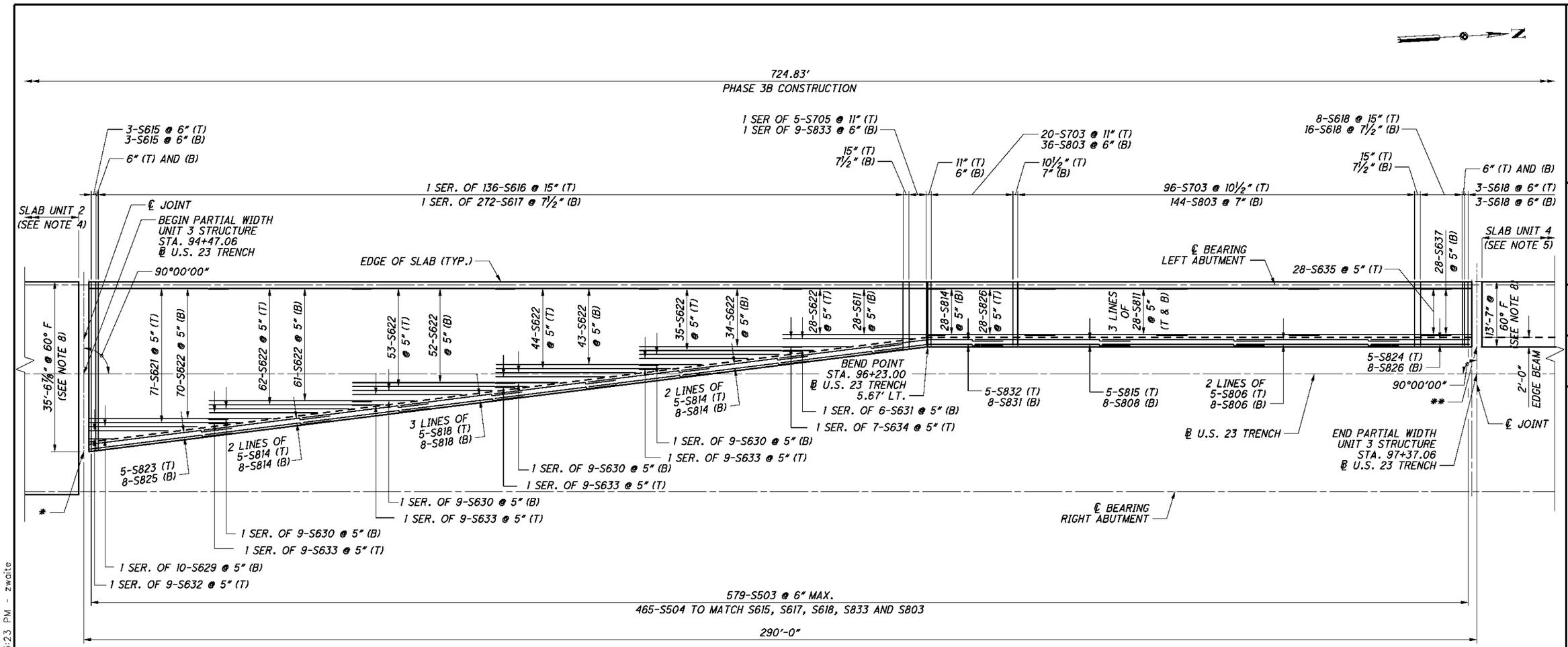
DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2591

DESIGNED	DRAWN	REVIEWED	DATE
BTA	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

SLAB PLAN - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746



SLAB PLAN - UNIT 3

BAR	MINIMUM LAP LENGTH
#6	3'-11"
#8	6'-4"

LEGEND:

(T) - TOP

(B) - BOTTOM

* - STA. 94+47.06
@ U.S. 23 TRENCH
16.32' RT.

** - STA. 97+37.06
@ U.S. 23 TRENCH
5.67' LT.

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 77/101 THROUGH 80/101.
2. FOR LONGITUDINAL BAR SPACINGS, SEE SLAB DETAILS ON SHEET 81/101.
3. FOR UNIT 1 SLAB PLAN, SEE SHEET 73/101.
4. FOR UNIT 2 SLAB PLAN, SEE SHEET 74/101.
5. FOR UNIT 4 SLAB PLAN, SEE SHEET 76/101.
6. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
7. FOR PARAPET REINFORCEMENT AND SECTION, SEE SHEETS 82/101 THROUGH 84/101.
8. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
BTA	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

SLAB PLAN - UNIT 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1065
1150

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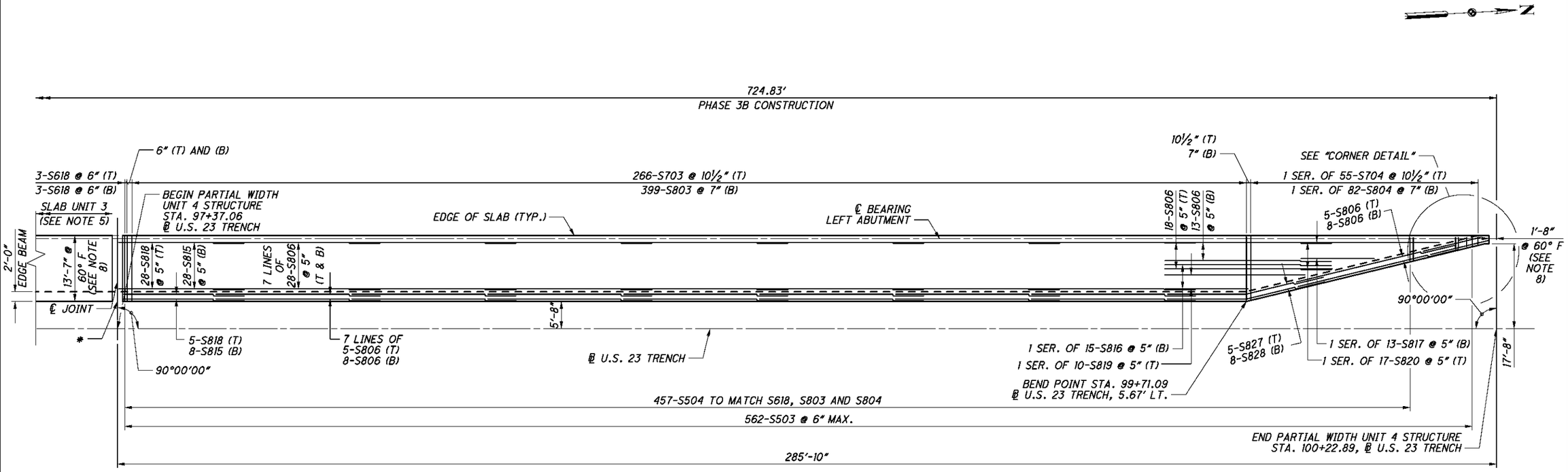
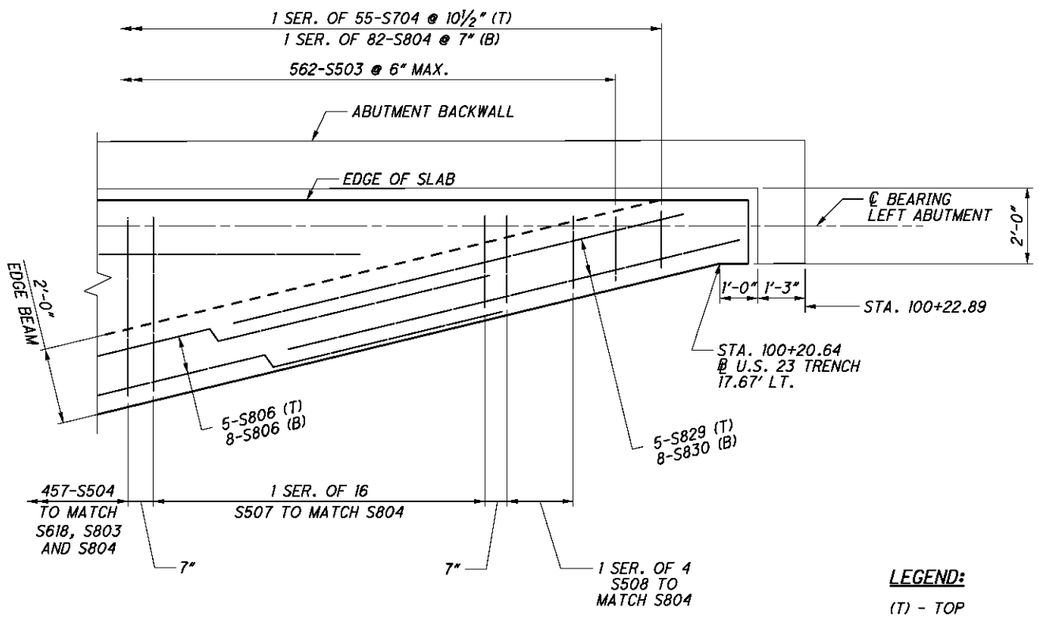


SLAB PLAN - UNIT 4



CORNER DETAIL

BAR	MINIMUM LAP LENGTH
#8	6'-4"

LEGEND:

(T) - TOP

(B) - BOTTOM

* - STA. 97+37.06
@ U.S. 23 TRENCH
5.67' LT.

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 77/101 THROUGH 80/101.
2. FOR LONGITUDINAL BAR SPACINGS, SEE SLAB DETAILS ON SHEET 81/101.
3. FOR UNIT 1 SLAB PLAN, SEE SHEET 73/101.
4. FOR UNIT 2 SLAB PLAN, SEE SHEET 74/101.
5. FOR UNIT 3 SLAB PLAN, SEE SHEET 75/101.
6. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
7. FOR PARAPET REINFORCEMENT AND SECTION, SEE SHEETS 82/101 THROUGH 84/101.
8. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

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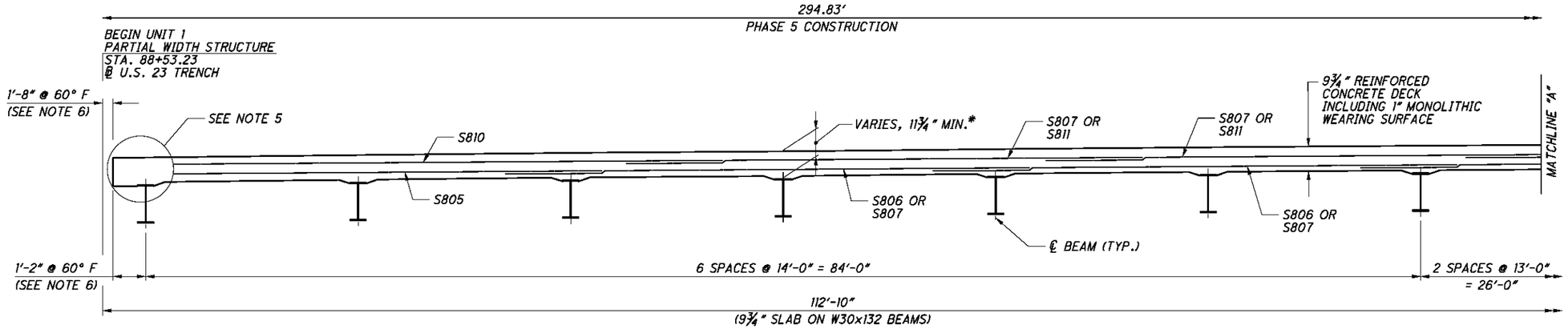
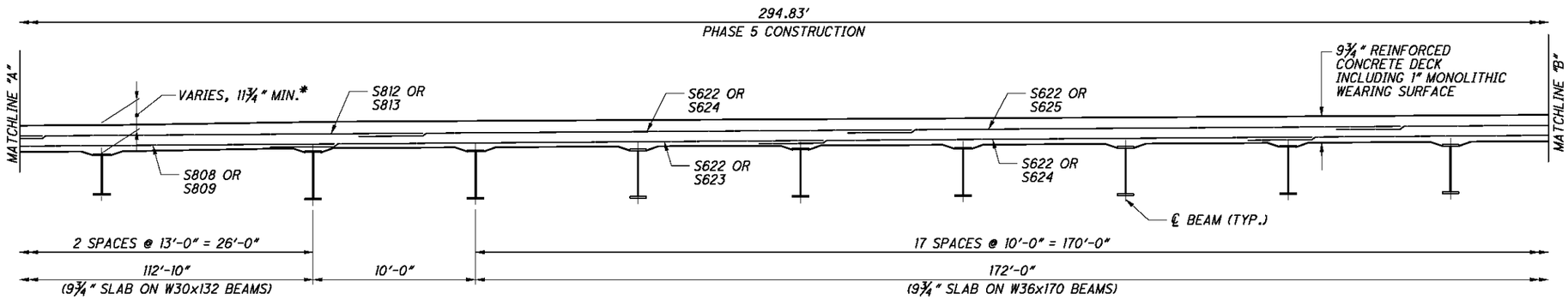
DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1300
Cleveland, OH 44114-2539

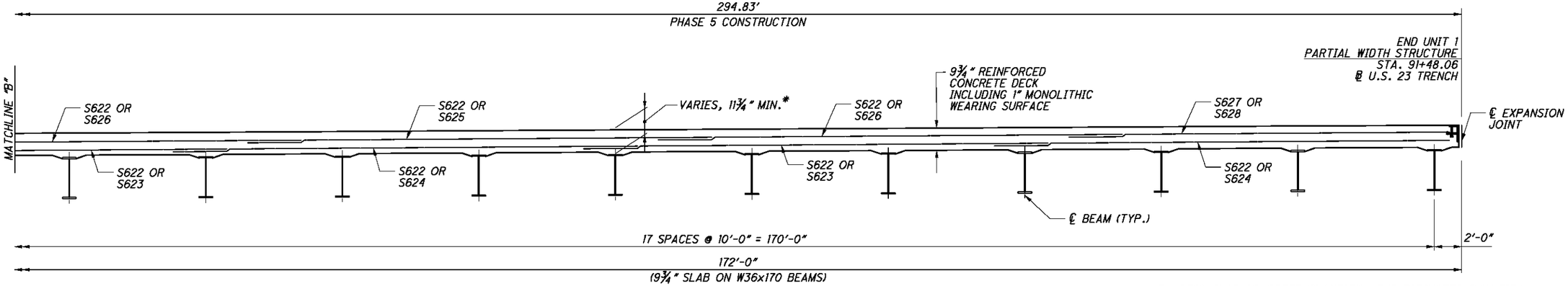
DATE 11/3/12
REVIEWED RSB
STRUCTURE FILE NUMBER 2500760
DRAWN PPA
REVISED
DESIGNED BTA
CHECKED TJE/BTA

SLAB PLAN - UNIT 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746







TRANSVERSE SECTION - UNIT 1

(PARTIAL WIDTH STRUCTURE)
(SHEAR STUDS, LONGITUDINAL REINFORCEMENT AND EDGE BEAM DETAIL REINFORCEMENT NOT SHOWN FOR CLARITY)

LEGEND:

* - TO TOP OF BEAM

NOTES:

1. FOR SLAB PLAN, SEE SHEETS 73/101 THROUGH 76/101.
2. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
3. FOR SCREED, TOP OF HAUNCH & FINAL DECK ELEVATIONS, SEE SHEETS 86/101 AND 92/101.
4. FOR LONGITUDINAL REINFORCEMENT AND EDGE BEAM DETAILS, SEE SLAB DETAILS, SHEET 81/101.
5. TRANSVERSE REINFORCING BARS STOP SHORT OF THE SLAB END DUE TO SLAB EDGE BEAM. FOR REINFORCEMENT PLACEMENT AND EDGE BEAM DETAILS, SEE SHEETS 73/101 AND 81/101.
6. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.
7. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS OF 9¾" ON UNITS 1, 3 & 4, AND 8½" ON UNIT 2, AS SHOWN ON SHEETS 77/101 THROUGH 80/101, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF BEAM 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 BEAM FLANGE IS ±3 INCHES.
8. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, 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.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2231

DESIGNED	DRAWN	REVIEWED	DATE
BTA	JFM/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

TRANSVERSE SECTION - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

77 / 101

1067
1150

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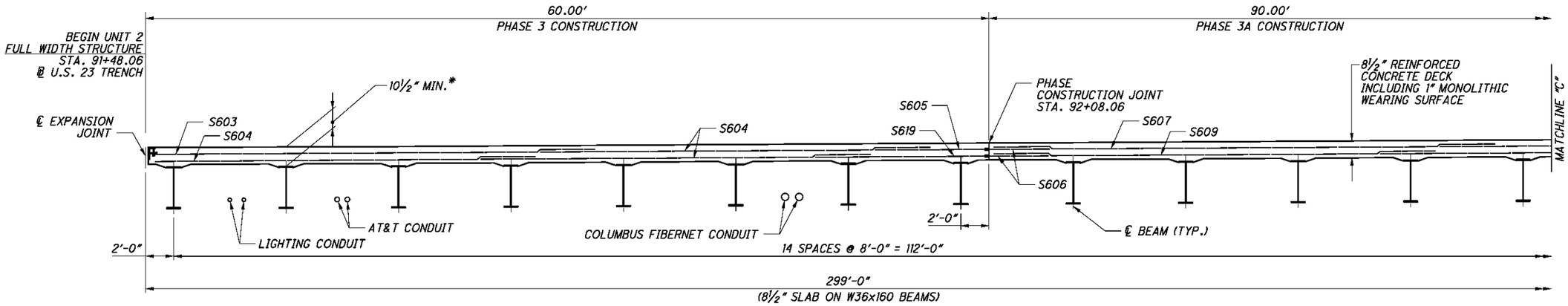

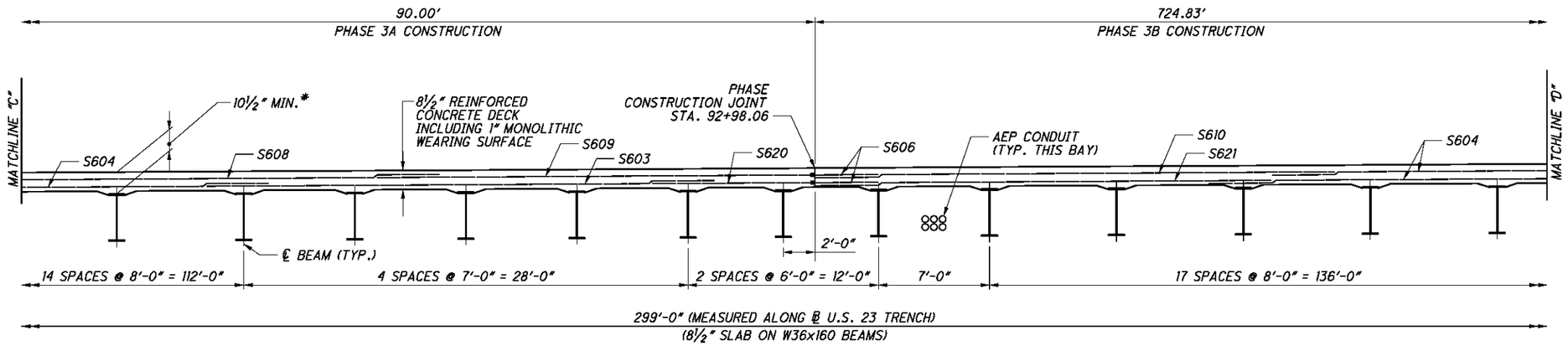

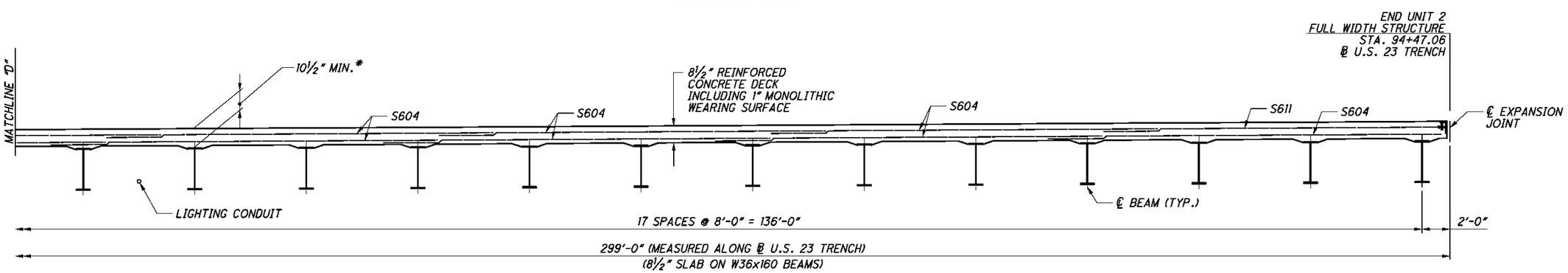

TRANSVERSE SECTION - UNIT 2

(FULL WIDTH STRUCTURE)
(SHEAR STUDS AND LONGITUDINAL
REINFORCEMENT NOT SHOWN FOR CLARITY)

LEGEND:

* - TO TOP OF BEAM

NOTES:

1. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 77/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2331

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

TRANSVERSE SECTION - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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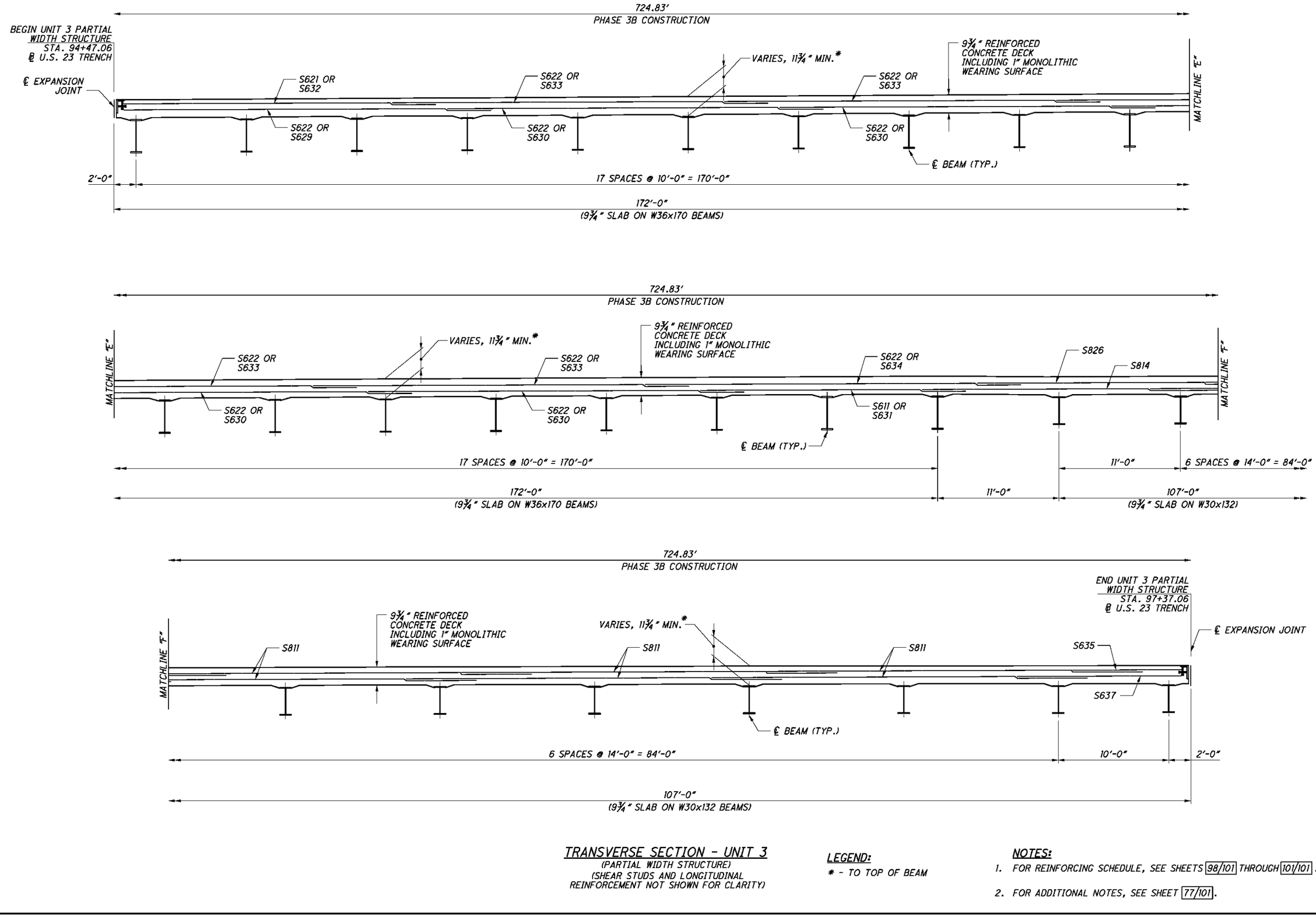

TRANSVERSE SECTION - UNIT 3

(PARTIAL WIDTH STRUCTURE)
(SHEAR STUDS AND LONGITUDINAL REINFORCEMENT NOT SHOWN FOR CLARITY)

LEGEND:

* - TO TOP OF BEAM

NOTES:

1. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 77/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JFM/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

TRANSVERSE SECTION - UNIT 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

79/101

1069
1150

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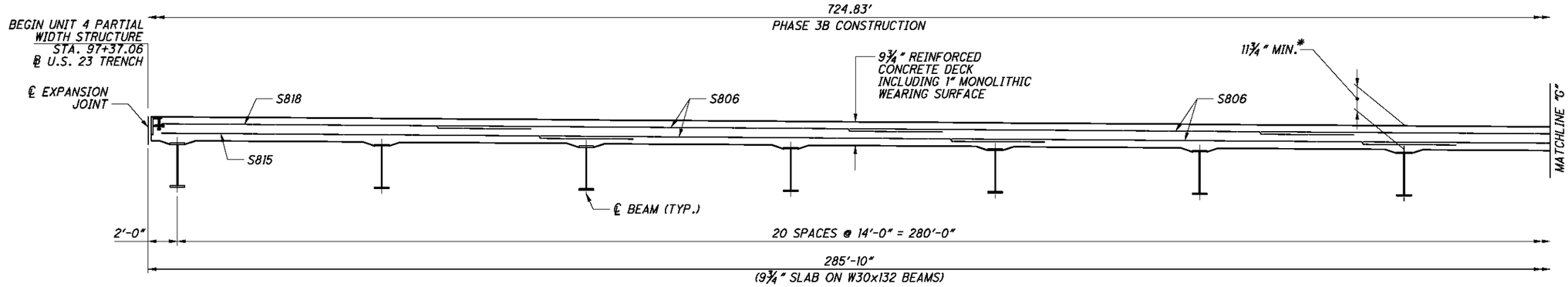

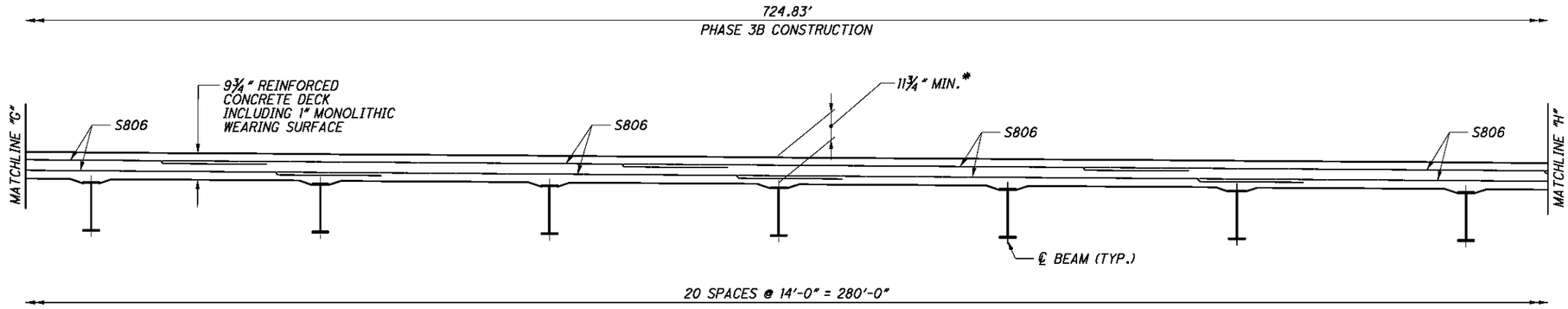

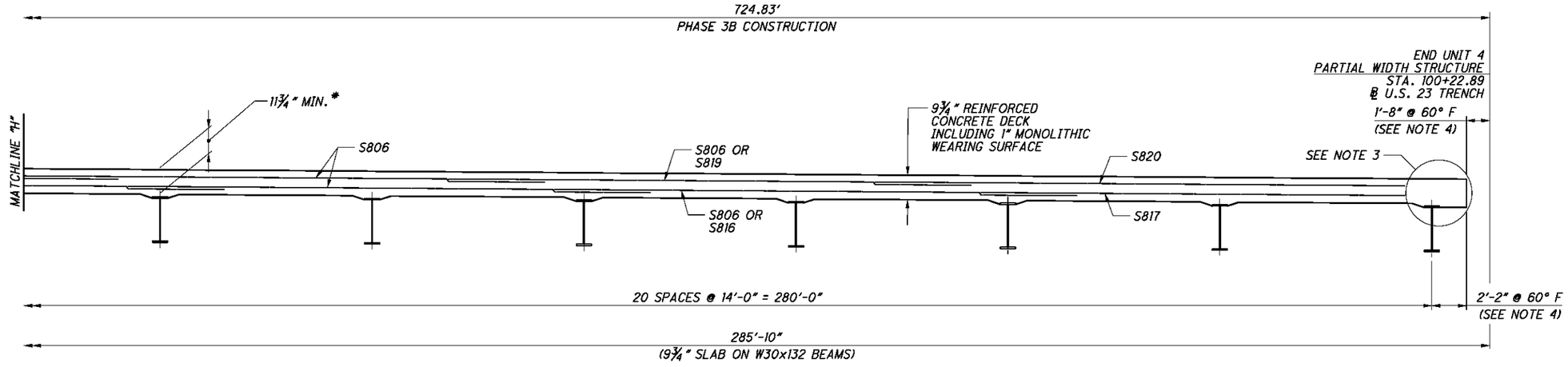

LEGEND:

* - TO TOP OF BEAM

TRANSVERSE SECTION - UNIT 4

(PARTIAL WIDTH STRUCTURE)
(SHEAR STUDS, LONGITUDINAL REINFORCEMENT AND EDGE BEAM DETAIL NOT SHOWN FOR CLARITY)

NOTES:

1. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
2. FOR ADDITIONAL NOTES, SEE SHEET 77/101.
3. TRANSVERSE REINFORCING BARS STOP SHORT OF THE SLAB END DUE TO SLAB EDGE BEAM. FOR REINFORCEMENT PLACEMENT AND EDGE BEAM DETAILS, SEE SHEETS 76/101 AND 81/101.
4. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
BTA	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TJE/BTA		2500760	

TRANSVERSE SECTION - UNIT 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

80/101

1070/1150

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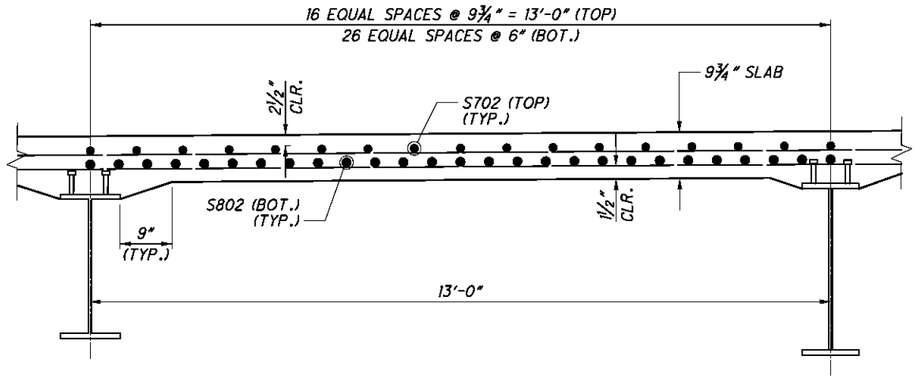
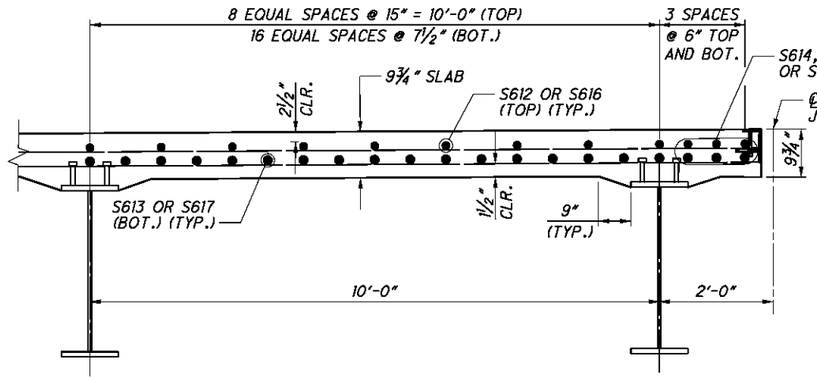


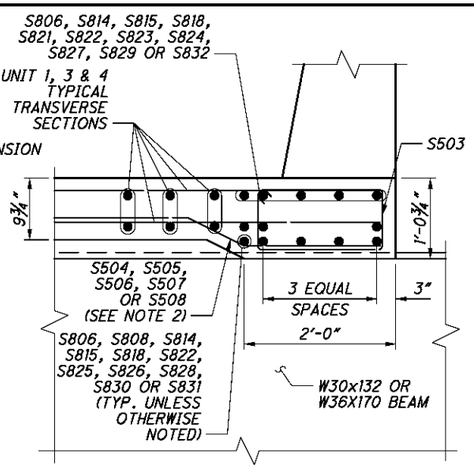
TRANSVERSE SECTION - UNIT 1

(TYPICAL 13'-0" BEAM SPACING)

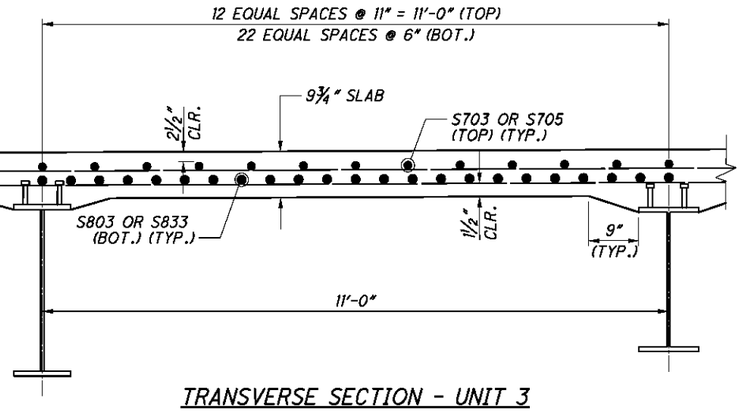


TRANSVERSE SECTION - UNIT 1, 3 & 4

(TYPICAL 10'-0" BEAM SPACING AND DECK OVERHANG)

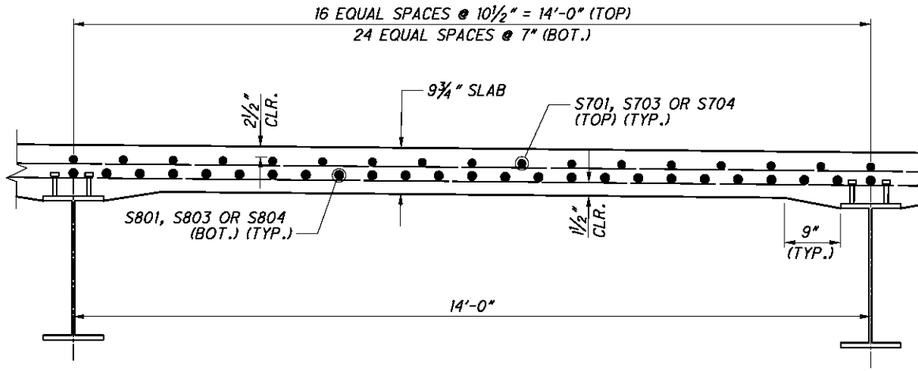


EDGE BEAM DETAIL



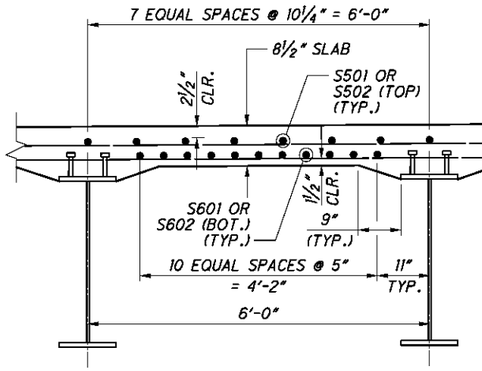
TRANSVERSE SECTION - UNIT 3

(TYPICAL 11'-0" BEAM SPACING)



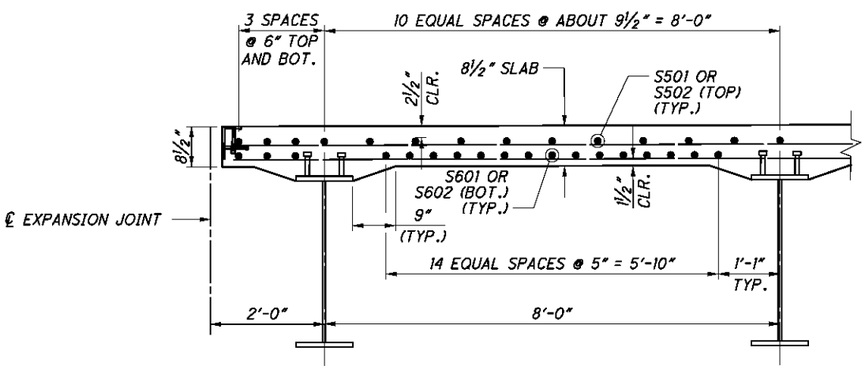
TRANSVERSE SECTION - UNIT 1, 3 & 4

(TYPICAL 14'-0" BEAM SPACING)



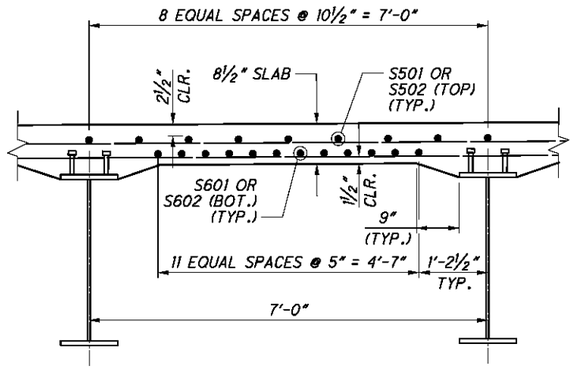
TRANSVERSE SECTION - UNIT 2

(TYPICAL 6'-0" BEAM SPACING)



TRANSVERSE SECTION - UNIT 2

(DECK OVERHANG AND TYPICAL 8'-0" BEAM SPACING)



TRANSVERSE SECTION - UNIT 2

(TYPICAL 7'-0" BEAM SPACING)

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 77/101 THROUGH 80/101 .
2. MATCH #5 STIRRUP BARS WITH BOTTOM SLAB BAR DISTRIBUTION STEEL.
3. FOR SLAB PLANS, SEE SHEETS 73/101 THROUGH 76/101.
4. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
5. FOR PARAPET REINFORCEMENT AND SECTION, SEE SHEETS 82/101 THROUGH 84/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	CHECKED	DRAWN	REVIEWED	DATE
BTA	JOL	PPA	RSB	11/3/12

REVISED

STRUCTURE FILE NUMBER 2500760

SLAB DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

81 / 101

1071
1150

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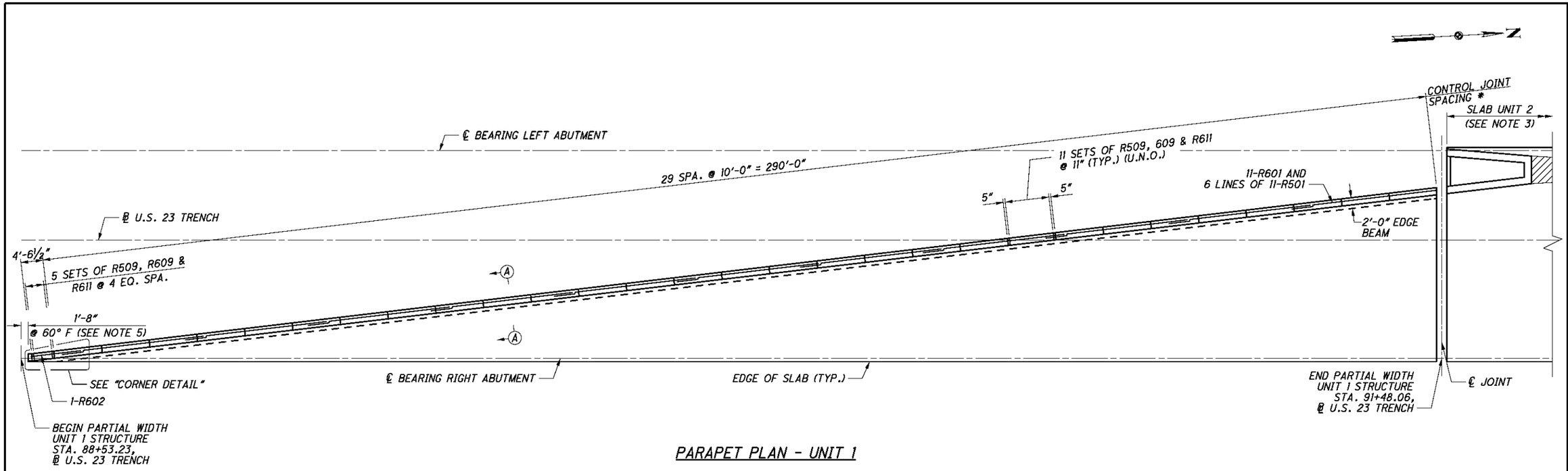
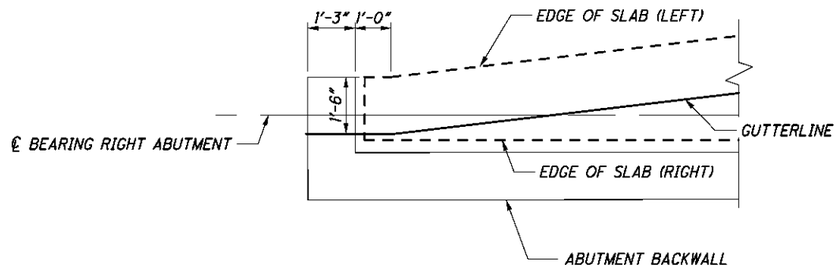
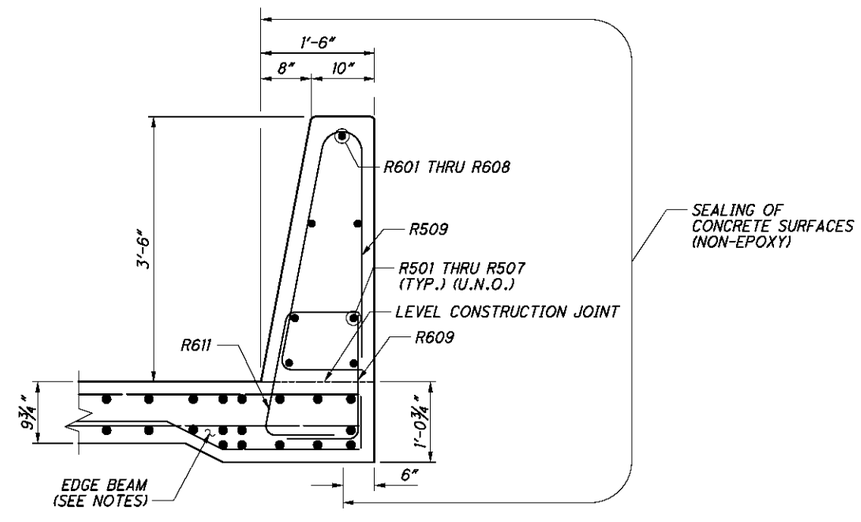


PARAPET PLAN - UNIT 1



CORNER DETAIL

BAR	MINIMUM LAP LENGTH
#5	3'-5"
#6	4'-1"



SECTION A-A

LEGEND:

U.N.O. - UNLESS NOTED OTHERWISE

* - MEASURED ALONG INSIDE FACE OF PARAPET

NOTES:

1. CONTROL JOINTS IN PARAPET SHALL BE AS PER ODOT STANDARD DRAWING SBR-1-99.
2. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 101/101.
3. FOR SLAB PLANS, SEE SHEETS 73/101 THROUGH 76/101.
4. FOR EDGE BEAM REINFORCEMENT, SEE SLAB DETAILS SHEET 81/101.
5. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED BTA | DRAWN PPA | REVIEWED RSB | DATE 11/3/12
CHECKED TJE/BTA | REVISED | STRUCTURE FILE NUMBER 2500760

PARAPET PLAN AND SECTION - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

82/101

1072/1150

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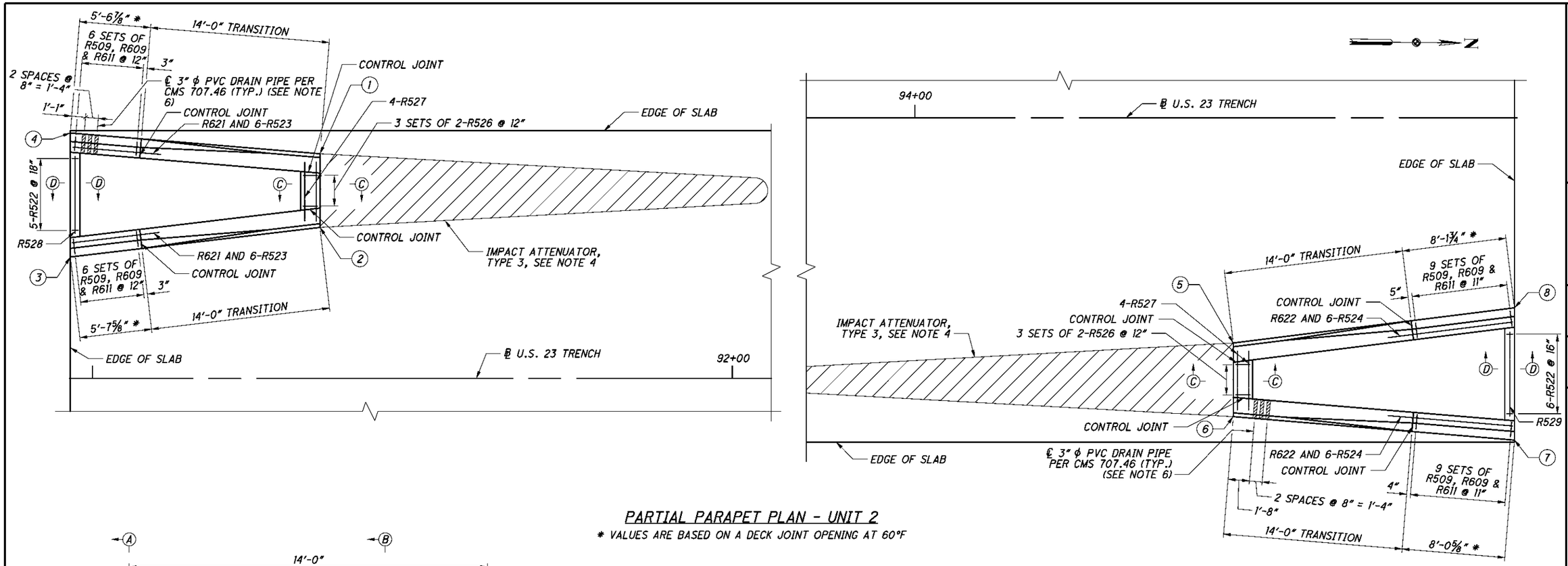
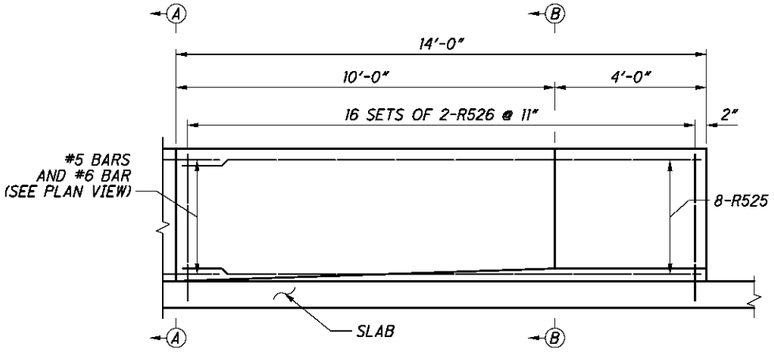


PARTIAL PARAPET PLAN - UNIT 2

* VALUES ARE BASED ON A DECK JOINT OPENING AT 60°F



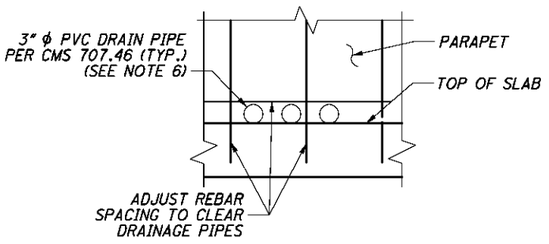
TYPICAL PARAPET TRANSITION ELEVATION

(IMPACT ATTENUATOR NOT SHOWN)

GEOMETRY TABLE

POINT	STATION	OFFSET
1	91+67.78	17.54' LT.
2	91+67.78	11.79' LT.
3*	91+48.27	9.48' LT.
4*	91+48.27	19.17' LT.
5	94+24.89	17.59' RT.
6	94+24.89	23.34' RT.
7*	94+46.86	25.17' RT.
8*	94+46.86	14.84' RT.

* VALUES ARE BASED ON A DECK JOINT OPENING AT 60°F AND A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS.

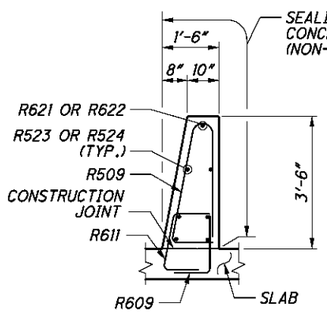


DRAINAGE PIPE DETAIL

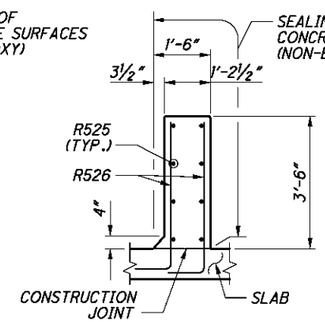
NOTES:

1. FOR SLAB PLAN, SEE SHEETS 73/101 THROUGH 76/101.
2. FOR REINFORCING SCHEDULE, SEE SHEET 99/101.
3. FOR JOINT ARMOR DETAILS, SEE SHEETS 93/101 THROUGH 96/101.
4. THE IMPACT ATTENUATOR SHALL BE INSTALLED AND ANCHORED TO THE DECK PER THE MANUFACTURER'S SPECIFICATIONS. IF DRILLING DOWEL HOLES IS REQUIRED, LOCATE ALL REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF A REINFORCING STEEL BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.
5. CONTROL JOINTS IN PARAPET SHALL BE AS PER ODOT STANDARD DRAWING SBR-1-99.
6. 3" ϕ PVC DRAIN PIPE SHALL BE INCIDENTAL TO ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET), AS PER PLAN.

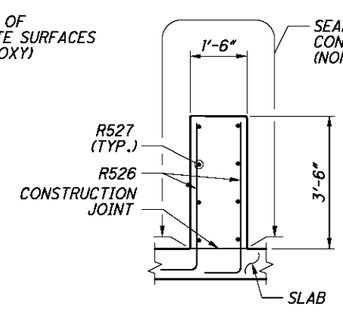
BAR	MINIMUM LAP LENGTH
#5	3'-5"
#6	4'-1"



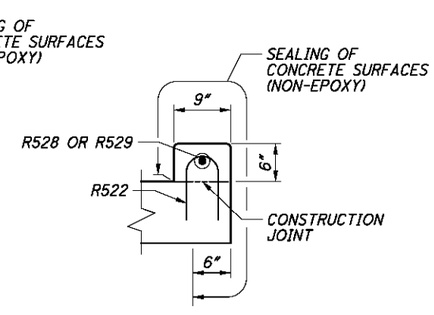
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JTW	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRE		2500760	

PARAPET PLAN AND DETAILS - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

83/101

1073/1150

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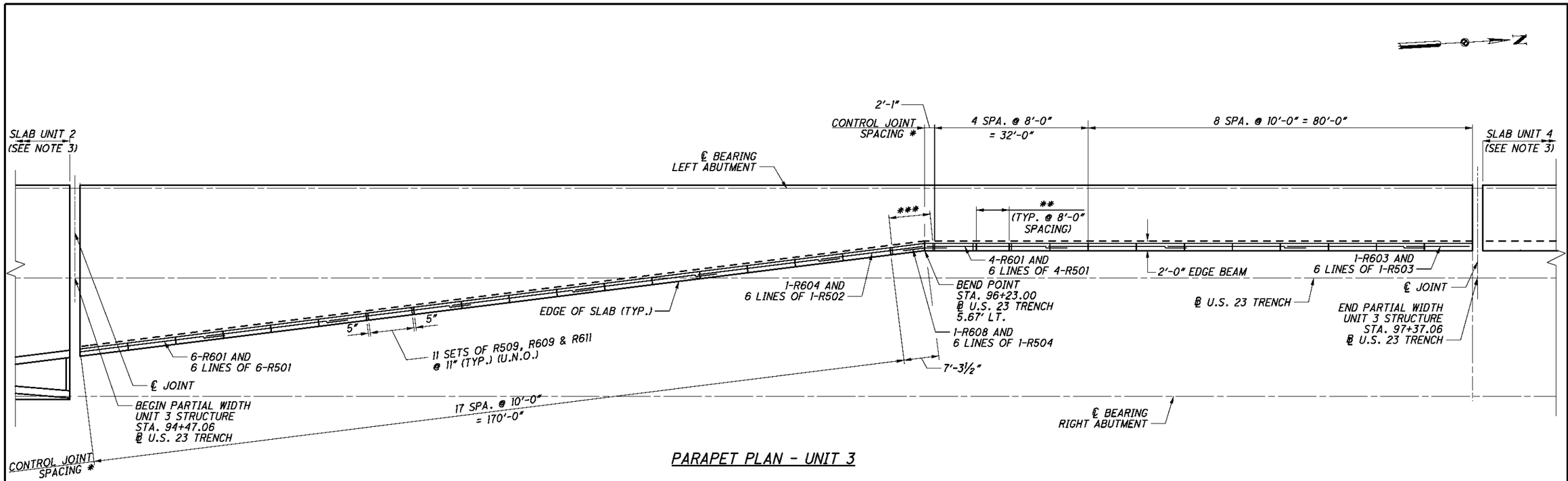
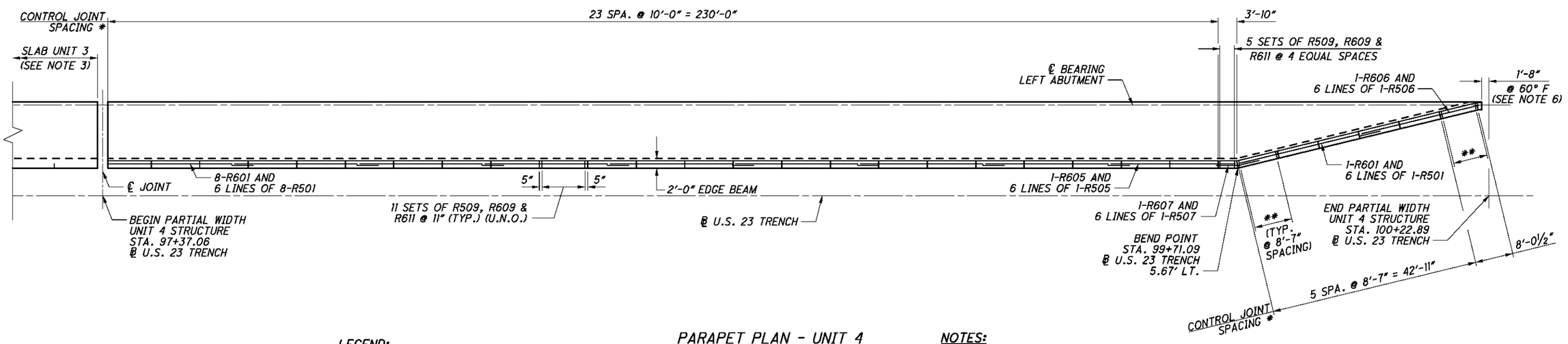


PARAPET PLAN - UNIT 3



PARAPET PLAN - UNIT 4

LEGEND:

* - MEASURED ALONG INSIDE FACE OF PARAPET

** - 9 SETS OF R509, R609 & R611 @ 8 EQUAL SPACES

*** - 10 SETS OF R509, R609 & R611 @ 9 EQUAL SPACES

U.N.O. - UNLESS NOTED OTHERWISE

BAR	MINIMUM LAP LENGTH
#5	3'-5"
#6	4'-1"

NOTES:

1. CONTROL JOINTS IN PARAPET SHALL BE AS PER ODOT STANDARD DRAWING SBR-1-99.
2. FOR REINFORCING SCHEDULE, SEE SHEETS 98/101 THROUGH 98/101.
3. FOR SLAB PLANS, SEE SHEETS 73/101 THROUGH 76/101.
4. FOR EDGE BEAM REINFORCEMENT, SEE SLAB DETAILS SHEET 81/101.
5. FOR PARAPET SECTION, SEE SHEET 82/101.
6. DIMENSION WAS CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINTS. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED BTA | DRAWN PPA | REVIEWED RSB | DATE 11/3/12
CHECKED TJE/BTA | REVISED | STRUCTURE FILE NUMBER 2500760

PARAPET PLAN - UNITS 3 & 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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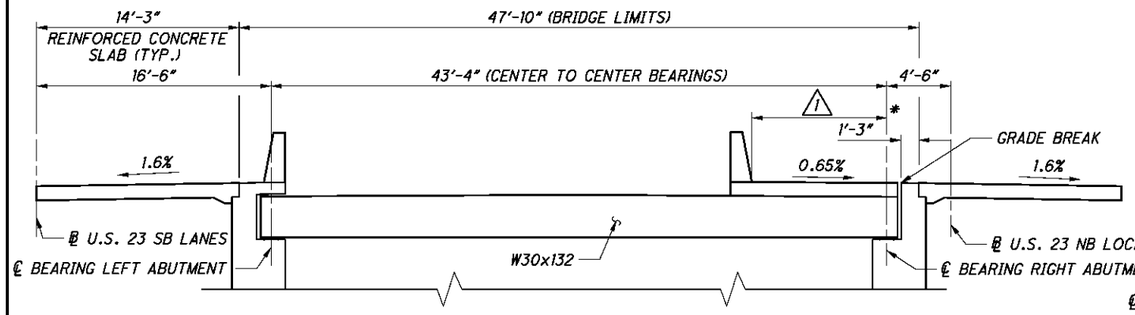
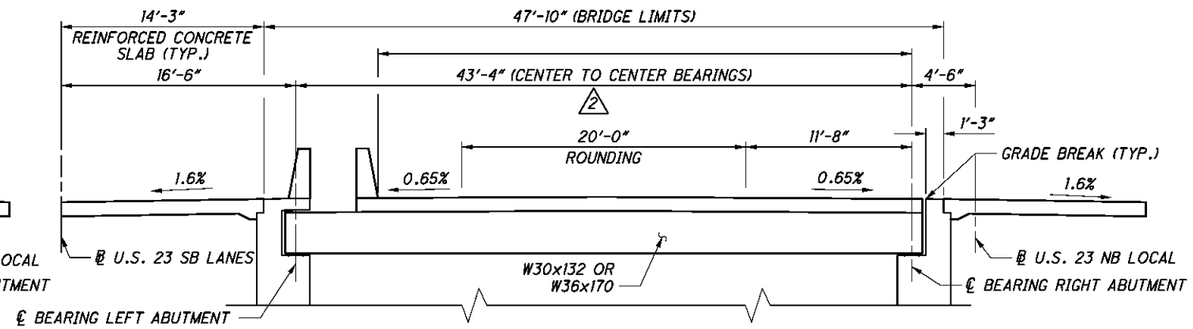


TYPICAL SECTION - UNIT 1

STA. 88+53.23 TO STA. 89+58.35



TYPICAL SECTION - UNIT 1

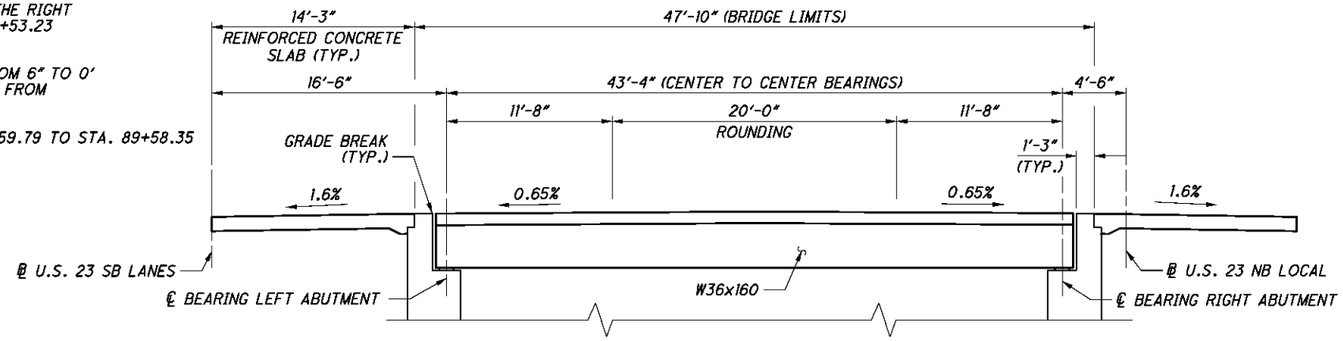
STA. 89+58.35 TO STA. 91+48.06

* GUTTERLINE OF BARRIER IS 6" TO THE RIGHT OF ℄ BEARING RIGHT FROM STA. 88+53.23 TO STA. 88+55.56

GUTTERLINE OF BARRIER VARIES FROM 6" TO 0' TO THE RIGHT OF ℄ BEARING RIGHT FROM STA. 88+55.56 TO STA. 88+59.79

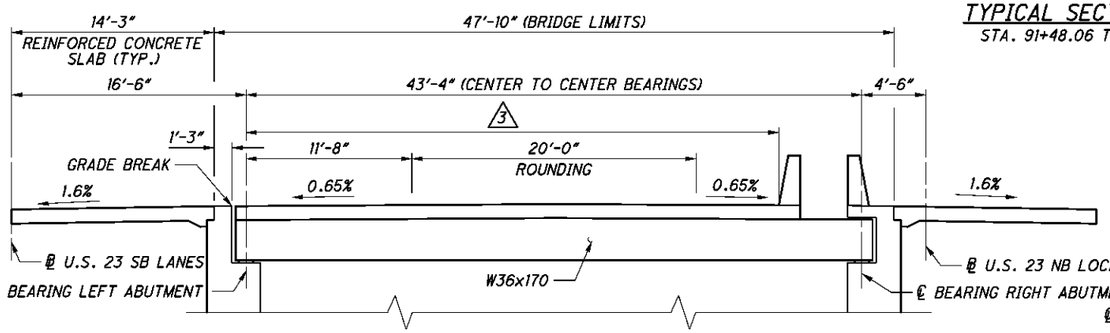
1 VARIES 0' TO 11'-8" FROM STA. 88+59.79 TO STA. 89+58.35

2 VARIES 11'-8" TO 34'-1½" FROM STA. 89+58.35 TO STA. 91+48.06



TYPICAL SECTION - UNIT 2

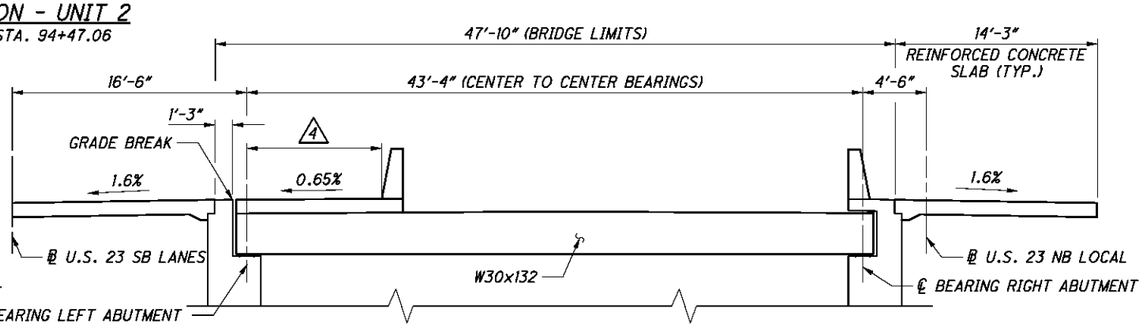
STA. 91+48.06 TO STA. 94+47.06



TYPICAL SECTION - UNIT 3

STA. 94+47.06 TO STA. 96+21.57

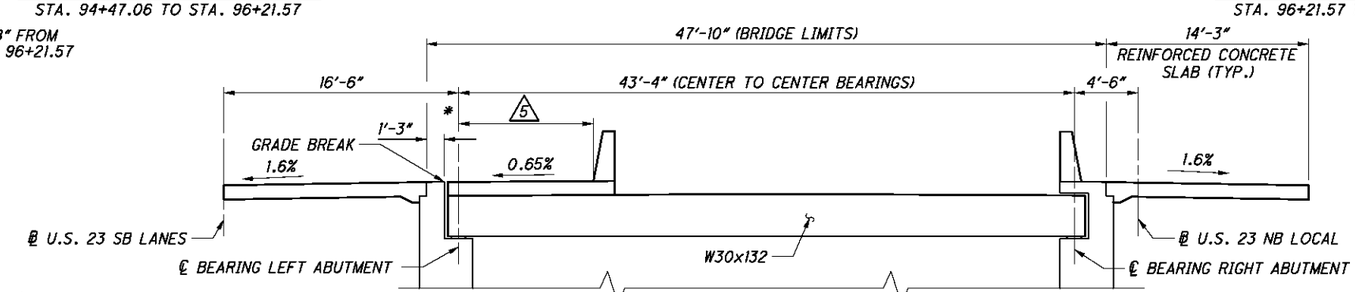
3 VARIES 33'-5¾" TO 11'-8" FROM STA. 94+47.06 TO STA. 96+21.57



TYPICAL SECTION - UNIT 3

STA. 96+21.57 TO STA. 97+37.06

4 VARIES 11'-8" TO 11'-6" FROM STA. 96+21.57 TO STA. 96+23.00
11'-6" FROM STA. 96+23.00 TO STA. 97+37.06



TYPICAL SECTION - UNIT 4

STA. 97+37.06 TO STA. 100+22.89

5 11'-6" FROM STA. 97+37.06 TO STA. 99+70.91
VARIES 11'-6" TO 0' FROM STA. 99+70.91 TO STA. 100+18.37

* GUTTERLINE OF BARRIER VARIES FROM 0' TO 6" TO THE LEFT OF ℄ BEARING LEFT FROM STA. 100+18.37 TO STA. 100+20.44

GUTTERLINE OF BARRIER IS 6" TO THE LEFT OF ℄ BEARING LEFT FROM STA. 100+20.44 TO STA. 100+22.89

NOTES:

1. FOR FINAL DECK ELEVATIONS, SEE SHEETS 90/101 THROUGH 92/101.
2. ALL STATIONS REFER TO ℄ U.S. 23 TRENCH.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BTA/JOL		2500760	

TYPICAL SECTIONS OF DECK UNITS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

85/101

1075/1150

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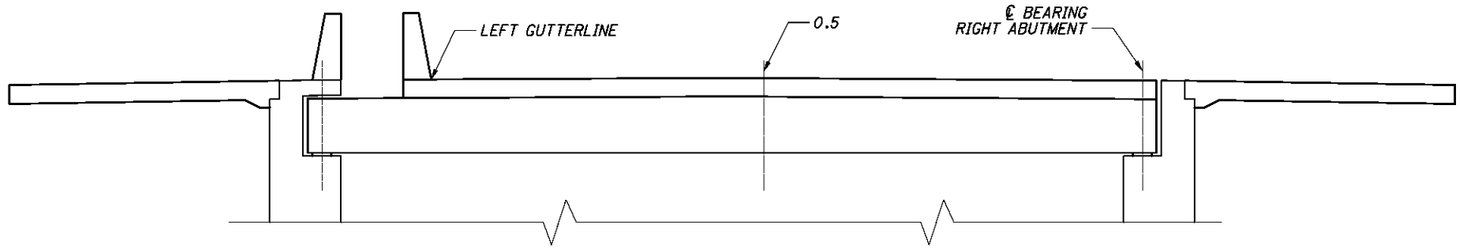

TYPICAL SECTION - UNIT 1

SCREED ELEVATIONS - UNIT 1				
LOCATION	U.S. 23 TRENCH STATION	LEFT GUTTERLINE	0.5	℄ BEARING RIGHT ABUTMENT
℄ JOINT	88+54.68	903.80	-	-
BEAM 1	88+56.06	903.82	-	-
BEAM 2	88+70.06	903.91	-	903.90
BEAM 3	88+84.06	903.99	-	903.97
BEAM 4	88+98.06	904.09	-	904.05
BEAM 5	89+12.06	904.17	-	904.12
BEAM 6	89+26.06	904.25	-	904.19
BEAM 7	89+40.06	904.35	-	904.27
BEAM 8	89+53.06	904.42	-	904.33
BEAM 9	89+66.06	904.50	-	904.40
BEAM 10	89+76.06	904.55	-	904.45
BEAM 11	89+86.06	904.61	-	904.51
BEAM 12	89+96.06	904.67	-	904.56
BEAM 13	90+06.06	904.73	-	904.61
BEAM 14	90+16.06	904.78	-	904.66
BEAM 15	90+26.06	904.84	904.79	904.71
BEAM 16	90+36.06	904.90	904.85	904.77
BEAM 17	90+46.06	904.95	904.91	904.82
BEAM 18	90+56.06	905.00	904.96	904.87
BEAM 19	90+66.06	905.05	905.02	904.92
BEAM 20	90+76.06	905.09	905.07	904.97
BEAM 21	90+86.06	905.15	905.14	905.03
BEAM 22	90+96.06	905.19	905.19	905.08
BEAM 23	91+06.06	905.24	905.24	905.13
BEAM 24	91+16.06	905.28	905.29	905.18
BEAM 25	91+26.06	905.33	905.36	905.23
BEAM 26	91+36.06	905.38	905.41	905.29
BEAM 27	91+46.06	905.42	905.46	905.34
℄ JOINT	91+48.06	905.43	905.47	905.35

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTION CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO LEFT GUTTERLINE FOR EACH BEAM.
3. FOR TYPICAL SECTIONS OF DECK UNITS, SEE SHEET 85/101.
4. ELEVATIONS ARE BASED OFF OF PROFILE GRADE ALONG U.S. 23 NORTHBOUND OR SOUTHBOUND BASELINES AS APPLICABLE.
5. SEE ROADWAY SHEETS FOR PROFILE ALONG U.S. 23 NORTHBOUND LOCAL AND SOUTHBOUND LANES.
6. SEE ROADWAY PLANS FOR RELATIONSHIP BETWEEN ℄ U.S. TRENCH AND U.S. 23 NORTHBOUND AND SOUTHBOUND BASELINES.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

SCREED ELEVATIONS - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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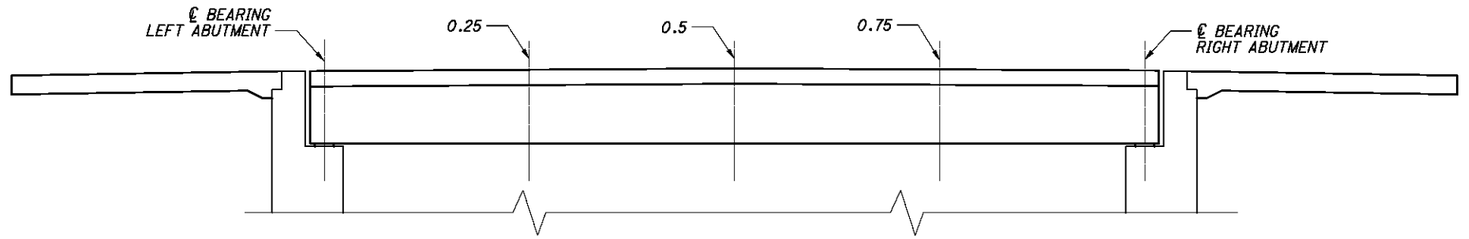

TYPICAL TRANSVERSE SECTION - UNIT 2

SCREED ELEVATIONS - UNIT 2						
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.25	0.5	0.75	℄ BEARING RIGHT ABUTMENT
℄ JOINT	91+48.06	905.35	905.44	905.48	905.44	905.35
BEAM 28	91+50.06	905.36	905.45	905.49	905.45	905.36
BEAM 29	91+58.06	905.40	905.49	905.53	905.49	905.40
BEAM 30	91+66.06	905.44	905.53	905.57	905.53	905.44
BEAM 31	91+74.06	905.48	905.57	905.61	905.57	905.48
BEAM 32	91+82.06	905.52	905.61	905.65	905.61	905.52
BEAM 33	91+90.06	905.57	905.66	905.70	905.66	905.57
BEAM 34	91+98.06	905.61	905.70	905.74	905.70	905.61
BEAM 35	92+06.06	905.65	905.74	905.78	905.74	905.65
PHASE CONST. JOINT 1	92+08.06	905.66	905.75	905.79	905.75	905.66
BEAM 36	92+14.06	905.69	905.78	905.82	905.78	905.69
BEAM 37	92+22.06	905.73	905.82	905.86	905.82	905.73
BEAM 38	92+30.06	905.77	905.86	905.90	905.86	905.77
BEAM 39	92+38.06	905.82	905.91	905.95	905.91	905.82
BEAM 40	92+46.06	905.86	905.95	905.99	905.95	905.86
BEAM 41	92+54.06	905.90	905.99	906.03	905.99	905.90
BEAM 42	92+62.06	905.94	906.03	906.07	906.03	905.94
BEAM 43	92+69.06	905.98	906.07	906.11	906.07	905.98
BEAM 44	92+76.06	906.01	906.10	906.14	906.10	906.01
BEAM 45	92+83.06	906.05	906.14	906.18	906.14	906.05
BEAM 46	92+90.06	906.09	906.18	906.22	906.18	906.09
BEAM 47	92+96.06	906.12	906.21	906.25	906.21	906.12

SCREED ELEVATIONS - UNIT 2						
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.25	0.5	0.75	℄ BEARING RIGHT ABUTMENT
PHASE CONST. JOINT 2	92+98.06	906.13	906.22	906.26	906.22	906.13
BEAM 48	93+02.06	906.15	906.24	906.28	906.24	906.15
BEAM 49	93+09.06	906.18	906.27	906.31	906.27	906.18
BEAM 50	93+17.06	906.23	906.32	906.36	906.32	906.23
BEAM 51	93+25.06	906.27	906.36	906.40	906.36	906.27
BEAM 52	93+33.06	906.31	906.40	906.44	906.40	906.31
BEAM 53	93+41.06	906.35	906.44	906.48	906.44	906.35
BEAM 54	93+49.06	906.39	906.48	906.52	906.48	906.39
BEAM 55	93+57.06	906.43	906.52	906.56	906.52	906.43
BEAM 56	93+65.06	906.48	906.57	906.61	906.57	906.48
BEAM 57	93+73.06	906.52	906.61	906.65	906.61	906.52
BEAM 58	93+81.06	906.56	906.65	906.69	906.65	906.56
BEAM 59	93+89.06	906.60	906.69	906.73	906.69	906.60
BEAM 60	93+97.06	906.64	906.73	906.77	906.73	906.64
BEAM 61	94+05.06	906.68	906.77	906.81	906.77	906.68
BEAM 62	94+13.06	906.73	906.82	906.86	906.82	906.73
BEAM 63	94+21.06	906.77	906.86	906.90	906.86	906.77
BEAM 64	94+29.06	906.81	906.90	906.94	906.90	906.81
BEAM 65	94+37.06	906.85	906.94	906.98	906.94	906.85
BEAM 66	94+45.06	906.89	906.98	907.02	906.98	906.89
℄ JOINT	94+47.06	906.90	906.99	907.03	906.99	906.90

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTION CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. 0.25 POINT REFERS TO THE DISTANCE ONE QUARTER OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
3. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
4. 0.75 POINT REFERS TO THE DISTANCE THREE QUARTERS OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
5. FOR ADDITIONAL NOTES, SEE SHEET 86/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN PPA | REVIEWED RSB | DATE 11/3/12
CHECKED NJ | REVISED | STRUCTURE FILE NUMBER 2500760

SCREED ELEVATIONS - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

87/101

1077
1150

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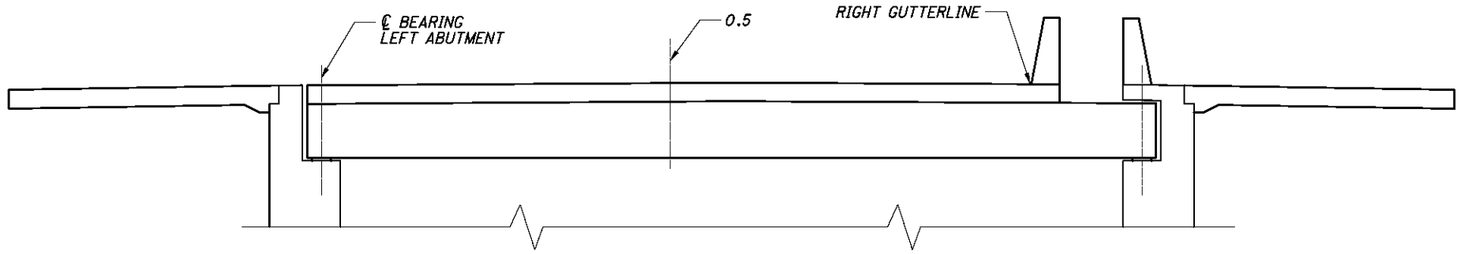
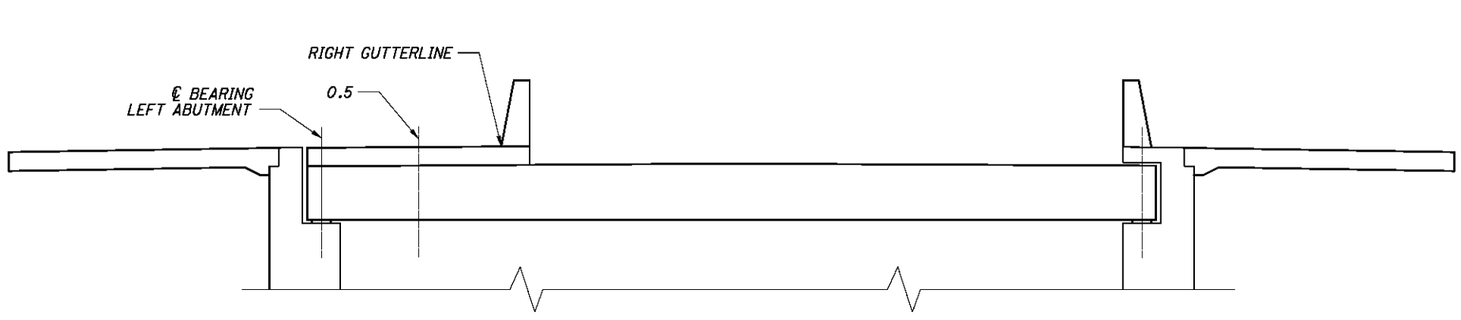


TYPICAL SECTION - UNIT 3

SCREED ELEVATIONS - UNIT 3				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
℄ JOINT	94+47.06	906.90	907.02	906.98
BEAM 67	94+49.06	906.91	907.03	906.99
BEAM 68	94+59.06	906.97	907.10	907.06
BEAM 69	94+69.06	907.02	907.14	907.12
BEAM 70	94+79.06	907.07	907.18	907.18
BEAM 71	94+89.06	907.12	907.23	907.23
BEAM 72	94+99.06	907.17	907.28	907.29
BEAM 73	95+09.06	907.23	907.33	907.35
BEAM 74	95+19.06	907.28	907.38	907.40
BEAM 75	95+29.06	907.33	907.43	907.46

SCREED ELEVATIONS - UNIT 3				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
BEAM 76	95+39.06	907.38	907.47	907.51
BEAM 77	95+49.06	907.43	907.52	907.56
BEAM 78	95+59.06	907.49	-	907.62
BEAM 79	95+69.06	907.54	-	907.66
BEAM 80	95+79.06	907.59	-	907.71
BEAM 81	95+89.06	907.64	-	907.75
BEAM 82	95+99.06	907.69	-	907.79
BEAM 83	96+09.06	907.75	-	907.84
BEAM 84	96+19.06	907.80	-	907.89

SCREED ELEVATIONS - UNIT 3				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
BEAM 85	96+30.06	907.85	-	907.95
BEAM 86	96+41.06	907.91	-	908.01
BEAM 87	96+55.06	907.97	-	908.07
BEAM 88	96+69.06	908.02	-	908.12
BEAM 89	96+83.06	908.07	-	908.17
BEAM 90	96+97.06	908.11	-	908.21
BEAM 91	97+11.06	908.14	-	908.24
BEAM 92	97+25.06	908.17	-	908.27
BEAM 93	97+35.06	908.18	-	908.27
℄ JOINT	97+37.06	908.18	-	908.27



TYPICAL SECTION - UNIT 4

SCREED ELEVATIONS - UNIT 4			
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	RIGHT GUTTERLINE
BEAM 94	97+39.06	908.18	908.27
BEAM 95	97+53.06	908.20	908.30
BEAM 96	97+67.06	908.20	908.30
BEAM 97	97+81.06	908.20	908.30
BEAM 98	97+95.06	908.19	908.29
BEAM 99	98+09.06	908.17	908.27
BEAM 100	98+23.06	908.15	908.25
BEAM 101	98+37.06	908.11	908.21
BEAM 102	98+51.06	908.08	908.18
BEAM 103	98+65.06	908.03	908.13
BEAM 104	98+79.06	907.98	908.08

SCREED ELEVATIONS - UNIT 4			
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	RIGHT GUTTERLINE
BEAM 105	98+93.06	907.92	908.02
BEAM 106	99+07.06	907.85	907.95
BEAM 107	99+21.06	907.78	907.88
BEAM 108	99+35.06	907.69	907.79
BEAM 109	99+49.06	907.61	907.71
BEAM 110	99+63.06	907.51	907.61
BEAM 111	99+77.06	907.41	907.50
BEAM 112	99+91.06	907.30	907.35
BEAM 113	100+05.06	907.18	907.21
BEAM 114	100+19.06	-	907.06
℄ JOINT	100+21.44	-	907.04

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTION CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM ℄ BEARING LEFT ABUTMENT TO RIGHT GUTTERLINE FOR EACH BEAM.
3. FOR ADDITIONAL NOTES, SEE SHEET 86/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

SCREED ELEVATIONS - UNITS 3 AND 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

1078
1150

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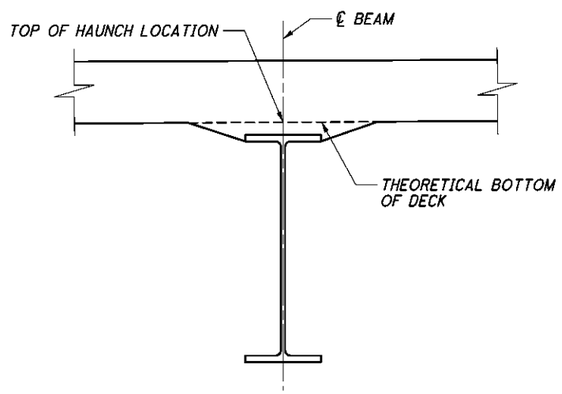
TOP OF HAUNCH ELEVATIONS - UNIT 1				
LOCATION	U.S. 23 TRENCH STATION	LEFT GUTTERLINE	0.5	℄ BEARING RIGHT ABUTMENT
℄ JOINT	88+54.68	902.99	-	-
BEAM 1	88+56.06	903.01	-	-
BEAM 2	88+70.06	903.10	-	903.09
BEAM 3	88+84.06	903.18	-	903.16
BEAM 4	88+98.06	903.27	-	903.24
BEAM 5	89+12.06	903.36	-	903.31
BEAM 6	89+26.06	903.44	-	903.38
BEAM 7	89+40.06	903.54	-	903.46
BEAM 8	89+53.06	903.61	-	903.52
BEAM 9	89+66.06	903.69	-	903.59
BEAM 10	89+76.06	903.74	-	903.64
BEAM 11	89+86.06	903.80	-	903.70
BEAM 12	89+96.06	903.86	-	903.75
BEAM 13	90+06.06	903.91	-	903.80
BEAM 14	90+16.06	903.96	-	903.85
BEAM 15	90+26.06	904.03	903.98	903.90
BEAM 16	90+36.06	904.09	904.04	903.96
BEAM 17	90+46.06	904.14	904.10	904.01
BEAM 18	90+56.06	904.19	904.15	904.06
BEAM 19	90+66.06	904.24	904.21	904.11
BEAM 20	90+76.06	904.28	904.26	904.16
BEAM 21	90+86.06	904.34	904.33	904.22
BEAM 22	90+96.06	904.38	904.38	904.27
BEAM 23	91+06.06	904.43	904.43	904.32
BEAM 24	91+16.06	904.47	904.48	904.37
BEAM 25	91+26.06	904.52	904.54	904.42
BEAM 26	91+36.06	904.57	904.59	904.48
BEAM 27	91+46.06	904.60	904.65	904.53
℄ JOINT	91+48.06	904.61	904.66	904.54

TOP OF HAUNCH ELEVATIONS - UNIT 2						
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.25	0.5	0.75	℄ BEARING RIGHT ABUTMENT
℄ JOINT	91+48.06	904.65	904.73	904.77	904.73	904.65
BEAM 28	91+50.06	904.66	904.74	904.78	904.74	904.66
BEAM 29	91+58.06	904.70	904.78	904.82	904.78	904.70
BEAM 30	91+66.06	904.74	904.82	904.86	904.82	904.74
BEAM 31	91+74.06	904.78	904.86	904.90	904.86	904.78
BEAM 32	91+82.06	904.82	904.90	904.94	904.90	904.82
BEAM 33	91+90.06	904.87	904.95	904.99	904.95	904.87
BEAM 34	91+98.06	904.91	904.99	905.03	904.99	904.91
BEAM 35	92+06.06	904.95	905.03	905.07	905.03	904.95
PHASE CONST. JOINT 1	92+08.06	904.96	905.04	905.08	905.04	904.96
BEAM 36	92+14.06	904.99	905.07	905.11	905.07	904.99
BEAM 37	92+22.06	905.03	905.11	905.15	905.11	905.03
BEAM 38	92+30.06	905.07	905.15	905.19	905.15	905.07
BEAM 39	92+38.06	905.12	905.20	905.24	905.20	905.12
BEAM 40	92+46.06	905.16	905.24	905.28	905.24	905.16
BEAM 41	92+54.06	905.20	905.28	905.32	905.28	905.20
BEAM 42	92+62.06	905.24	905.32	905.36	905.32	905.24
BEAM 43	92+69.06	905.28	905.36	905.40	905.36	905.28
BEAM 44	92+76.06	905.31	905.39	905.43	905.39	905.31
BEAM 45	92+83.06	905.35	905.43	905.47	905.43	905.35
BEAM 46	92+90.06	905.39	905.47	905.51	905.47	905.39
BEAM 47	92+96.06	905.42	905.50	905.54	905.50	905.42
PHASE CONST. JOINT 2	92+98.06	905.43	905.51	905.55	905.51	905.43
BEAM 48	93+02.06	905.45	905.53	905.57	905.53	905.45
BEAM 49	93+09.06	905.48	905.56	905.60	905.56	905.48
BEAM 50	93+17.06	905.53	905.61	905.65	905.61	905.53
BEAM 51	93+25.06	905.57	905.65	905.69	905.65	905.57
BEAM 52	93+33.06	905.61	905.69	905.73	905.69	905.61
BEAM 53	93+41.06	905.65	905.73	905.77	905.73	905.65
BEAM 54	93+49.06	905.69	905.77	905.81	905.77	905.69
BEAM 55	93+57.06	905.73	905.81	905.85	905.81	905.73
BEAM 56	93+65.06	905.78	905.86	905.90	905.86	905.78
BEAM 57	93+73.06	905.82	905.90	905.94	905.90	905.82
BEAM 58	93+81.06	905.86	905.94	905.98	905.94	905.86
BEAM 59	93+89.06	905.90	905.98	906.02	905.98	905.90
BEAM 60	93+97.06	905.94	906.02	906.06	906.02	905.94
BEAM 61	94+05.06	905.98	906.06	906.10	906.06	905.98
BEAM 62	94+13.06	906.03	906.11	906.15	906.11	906.03
BEAM 63	94+21.06	906.07	906.15	906.19	906.15	906.07
BEAM 64	94+29.06	906.11	906.19	906.23	906.19	906.11
BEAM 65	94+37.06	906.15	906.23	906.27	906.23	906.15
BEAM 66	94+45.06	906.19	906.27	906.31	906.27	906.19
℄ JOINT	94+47.06	906.20	906.28	906.32	906.28	906.20

TOP OF HAUNCH ELEVATIONS - UNIT 3				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
℄ JOINT	94+47.06	906.09	906.21	906.17
BEAM 67	94+49.06	906.10	906.22	906.18
BEAM 68	94+59.06	906.16	906.28	906.25
BEAM 69	94+69.06	906.21	906.33	906.31
BEAM 70	94+79.06	906.26	906.37	906.37
BEAM 71	94+89.06	906.31	906.42	906.42
BEAM 72	94+99.06	906.36	906.47	906.48
BEAM 73	95+09.06	906.42	906.52	906.54
BEAM 74	95+19.06	906.47	906.57	906.59
BEAM 75	95+29.06	906.52	906.61	906.65
BEAM 76	95+39.06	906.57	906.66	906.70
BEAM 77	95+49.06	906.62	906.70	906.75
BEAM 78	95+59.06	906.68	-	906.81
BEAM 79	95+69.06	906.73	-	906.84
BEAM 80	95+79.06	906.78	-	906.89
BEAM 81	95+89.06	906.83	-	906.94
BEAM 82	95+99.06	906.88	-	906.98
BEAM 83	96+09.06	906.94	-	907.03
BEAM 84	96+19.06	906.99	-	907.08
BEAM 85	96+30.06	907.04	-	907.13
BEAM 86	96+41.06	907.10	-	907.19
BEAM 87	96+55.06	907.16	-	907.26
BEAM 88	96+69.06	907.21	-	907.31
BEAM 89	96+83.06	907.26	-	907.36
BEAM 90	96+97.06	907.30	-	907.40
BEAM 91	97+11.06	907.33	-	907.43
BEAM 92	97+25.06	907.36	-	907.45
BEAM 93	97+35.06	907.37	-	907.46
℄ JOINT	97+37.06	907.37	-	907.46

TOP OF HAUNCH ELEVATIONS - UNIT 4			
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	RIGHT GUTTERLINE
BEAM 94	97+39.06	907.37	907.46
BEAM 95	97+53.06	907.39	907.49
BEAM 96	97+67.06	907.39	907.49
BEAM 97	97+81.06	907.39	907.49
BEAM 98	97+95.06	907.38	907.48
BEAM 99	98+09.06	907.36	907.46
BEAM 100	98+23.06	907.34	907.44
BEAM 101	98+37.06	907.30	907.40
BEAM 102	98+51.06	907.27	907.37
BEAM 103	98+65.06	907.22	907.32
BEAM 104	98+79.06	907.17	907.27
BEAM 105	98+93.06	907.11	907.21
BEAM 106	99+07.06	907.04	907.14
BEAM 107	99+21.06	906.97	907.07
BEAM 108	99+35.06	906.88	906.98
BEAM 109	99+49.06	906.80	906.90
BEAM 110	99+63.06	906.70	906.80
BEAM 111	99+77.06	906.60	906.68
BEAM 112	99+91.06	906.49	906.54
BEAM 113	100+05.06	906.37	906.39
BEAM 114	100+19.06	-	906.24
℄ JOINT	100+21.44	-	906.22



TOP OF HAUNCH DETAIL

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOAD.
2. FOR TYPICAL TRANSVERSE SECTION OF UNIT 1 AND ADDITIONAL NOTES, SEE SHEET 86/101.
3. FOR TYPICAL TRANSVERSE SECTION OF UNIT 2 AND ADDITIONAL NOTES, SEE SHEET 87/101.
4. FOR TYPICAL TRANSVERSE SECTIONS OF UNITS 3 AND 4 AND ADDITIONAL NOTES, SEE SHEET 88/101.

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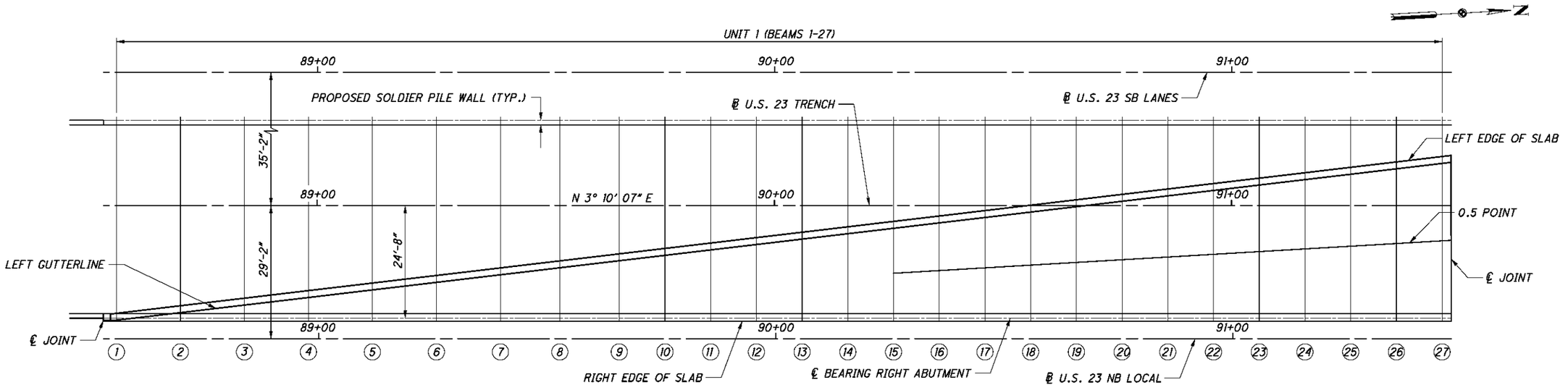
DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN PPA | REVIEWED RSB | DATE 11/3/12
CHECKED NJ | REVISED | STRUCTURE FILE NUMBER 2500760

TOP OF HAUNCH ELEVATIONS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746



PLAN - UNIT 1

FINAL DECK ELEVATIONS - UNIT 1 (SEE NOTES 4-6)				
LOCATION	U.S. 23 TRENCH STATION	LEFT GUTTERLINE	0.5	℄ BEARING RIGHT ABUTMENT
℄ JOINT	88+54.68	903.80	-	-
BEAM 1	88+56.06	903.82	-	-
BEAM 2	88+70.06	903.91	-	903.90
BEAM 3	88+84.06	903.99	-	903.97
BEAM 4	88+98.06	904.08	-	904.05
BEAM 5	89+12.06	904.16	-	904.12
BEAM 6	89+26.06	904.24	-	904.19
BEAM 7	89+40.06	904.33	-	904.27
BEAM 8	89+53.06	904.40	-	904.33
BEAM 9	89+66.06	904.48	-	904.40
BEAM 10	89+76.06	904.54	-	904.45
BEAM 11	89+86.06	904.60	-	904.51
BEAM 12	89+96.06	904.66	-	904.56
BEAM 13	90+06.06	904.71	-	904.61
BEAM 14	90+16.06	904.76	-	904.66

FINAL DECK ELEVATIONS - UNIT 1 (SEE NOTES 4-6)				
LOCATION	U.S. 23 TRENCH STATION	LEFT GUTTERLINE	0.5	℄ BEARING RIGHT ABUTMENT
BEAM 15	90+26.06	904.82	904.78	904.71
BEAM 16	90+36.06	904.88	904.84	904.77
BEAM 17	90+46.06	904.93	904.89	904.82
BEAM 18	90+56.06	904.98	904.95	904.87
BEAM 19	90+66.06	905.03	905.00	904.92
BEAM 20	90+76.06	905.07	905.05	904.97
BEAM 21	90+86.06	905.13	905.12	905.03
BEAM 22	90+96.06	905.17	905.17	905.08
BEAM 23	91+06.06	905.22	905.22	905.13
BEAM 24	91+16.06	905.26	905.27	905.18
BEAM 25	91+26.06	905.31	905.33	905.23
BEAM 26	91+36.06	905.36	905.38	905.29
BEAM 27	91+46.06	905.40	905.44	905.34
℄ JOINT	91+48.06	905.41	905.45	905.35

LEGEND:

(1) - BEAM NUMBER (TYP.)

NOTES:

1. FINAL DECK SURFACE ELEVATIONS REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOADS DEFLECTIONS HAVE OCURRED.
2. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO LEFT GUTTERLINE FOR EACH BEAM.
3. FOR TYPICAL SECTIONS OF DECK UNITS, SEE SHEET 85/101.
4. ELEVATIONS ARE BASED OFF OF PROFILE GRADE ALONG U.S. 23 NORTHBOUND OR SOUTHBOUND BASELINES AS APPLICABLE.
5. SEE ROADWAY SHEETS FOR PROFILE ALONG U.S. 23 NORTHBOUND LOCAL AND SOUTHBOUND LANES.
6. SEE ROADWAY PLANS FOR RELATIONSHIP BETWEEN ℄ U.S. TRENCH AND U.S. 23 NORTHBOUND AND SOUTHBOUND BASELINES.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

FINAL DECK ELEVATIONS - UNIT 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

90/101

1080/1150

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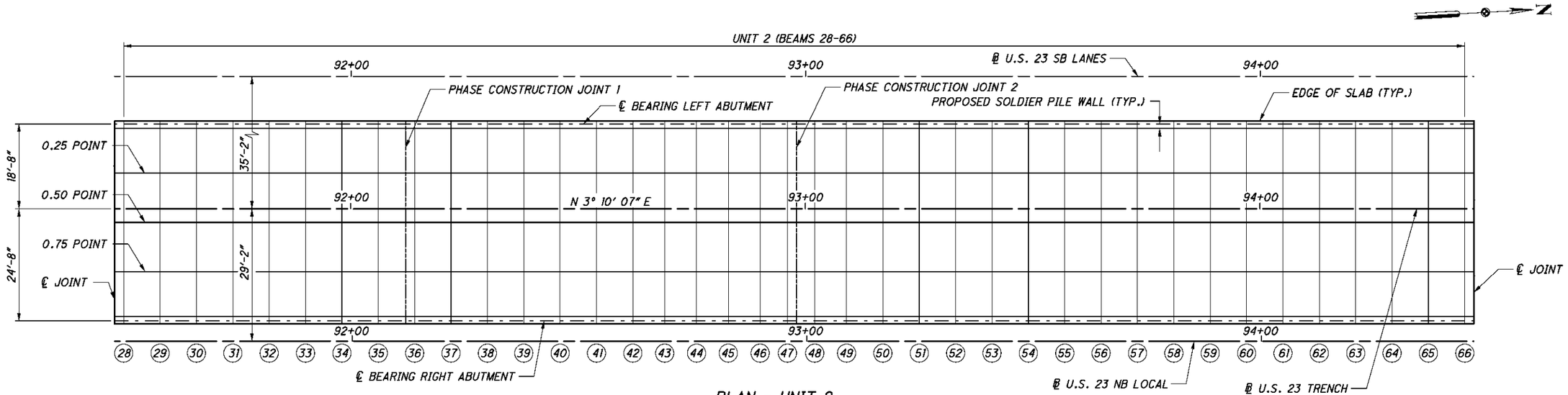

PLAN - UNIT 2

FINAL DECK ELEVATIONS - UNIT 2 (SEE NOTE 4)						
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.25	0.5	0.75	℄ BEARING RIGHT ABUTMENT
℄ JOINT	91+48.06	905.35	905.42	905.46	905.42	905.35
BEAM 28	91+50.06	905.36	905.43	905.47	905.43	905.36
BEAM 29	91+58.06	905.40	905.47	905.51	905.47	905.40
BEAM 30	91+66.06	905.44	905.51	905.55	905.51	905.44
BEAM 31	91+74.06	905.48	905.55	905.59	905.55	905.48
BEAM 32	91+82.06	905.52	905.59	905.63	905.59	905.52
BEAM 33	91+90.06	905.57	905.64	905.68	905.64	905.57
BEAM 34	91+98.06	905.61	905.68	905.72	905.68	905.61
BEAM 35	92+06.06	905.65	905.72	905.76	905.72	905.65
PHASE CONST. JOINT 1	92+08.06	905.66	905.73	905.77	905.73	905.66
BEAM 36	92+14.06	905.69	905.76	905.80	905.76	905.69
BEAM 37	92+22.06	905.73	905.80	905.84	905.80	905.73
BEAM 38	92+30.06	905.77	905.84	905.88	905.84	905.77
BEAM 39	92+38.06	905.82	905.89	905.93	905.89	905.82
BEAM 40	92+46.06	905.86	905.93	905.97	905.93	905.86
BEAM 41	92+54.06	905.90	905.97	906.01	905.97	905.90
BEAM 42	92+62.06	905.94	906.01	906.05	906.01	905.94
BEAM 43	92+69.06	905.98	906.05	906.09	906.05	905.98
BEAM 44	92+76.06	906.01	906.08	906.12	906.08	906.01
BEAM 45	92+83.06	906.05	906.12	906.16	906.12	906.05
BEAM 46	92+90.06	906.09	906.16	906.20	906.16	906.09
BEAM 47	92+96.06	906.12	906.19	906.23	906.19	906.12

FINAL DECK ELEVATIONS - UNIT 2 (SEE NOTE 4)						
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.25	0.5	0.75	℄ BEARING RIGHT ABUTMENT
PHASE CONST. JOINT 2	92+98.06	906.13	906.20	906.24	906.20	906.13
BEAM 48	93+02.06	906.15	906.22	906.26	906.22	906.15
BEAM 49	93+09.06	906.18	906.25	906.29	906.25	906.18
BEAM 50	93+17.06	906.23	906.30	906.34	906.30	906.23
BEAM 51	93+25.06	906.27	906.34	906.38	906.34	906.27
BEAM 52	93+33.06	906.31	906.38	906.42	906.38	906.31
BEAM 53	93+41.06	906.35	906.42	906.46	906.42	906.35
BEAM 54	93+49.06	906.39	906.46	906.50	906.46	906.39
BEAM 55	93+57.06	906.43	906.50	906.54	906.50	906.43
BEAM 56	93+65.06	906.48	906.55	906.59	906.55	906.48
BEAM 57	93+73.06	906.52	906.59	906.63	906.59	906.52
BEAM 58	93+81.06	906.56	906.63	906.67	906.63	906.56
BEAM 59	93+89.06	906.60	906.67	906.71	906.67	906.60
BEAM 60	93+97.06	906.64	906.71	906.75	906.71	906.64
BEAM 61	94+05.06	906.68	906.75	906.79	906.75	906.68
BEAM 62	94+13.06	906.73	906.80	906.84	906.80	906.73
BEAM 63	94+21.06	906.77	906.84	906.88	906.84	906.77
BEAM 64	94+29.06	906.81	906.88	906.92	906.88	906.81
BEAM 65	94+37.06	906.85	906.92	906.96	906.92	906.85
BEAM 66	94+45.06	906.89	906.96	907.00	906.96	906.89
℄ JOINT	94+47.06	906.90	906.97	907.01	906.97	906.90

LEGEND:

(28) - BEAM NUMBER (TYP.)

NOTES:

1. 0.25 POINT REFERS TO THE DISTANCE ONE QUARTER OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
2. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
3. 0.75 POINT REFERS TO THE DISTANCE THREE QUARTERS OF THE WAY FROM ℄ BEARING RIGHT ABUTMENT TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
4. FOR ADDITIONAL NOTES, SEE SHEET 90/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NJ		2500760	

FINAL DECK ELEVATIONS - UNIT 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

91/101

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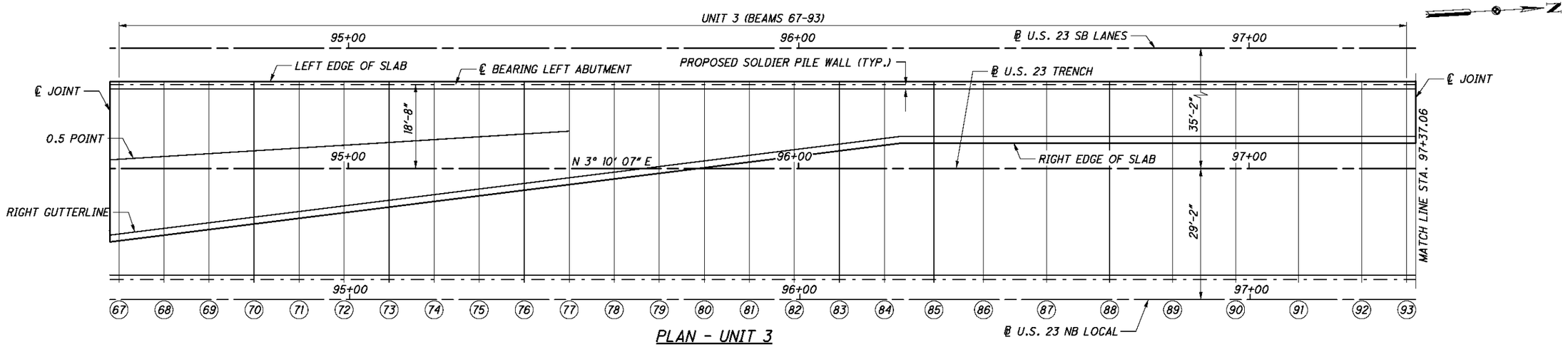
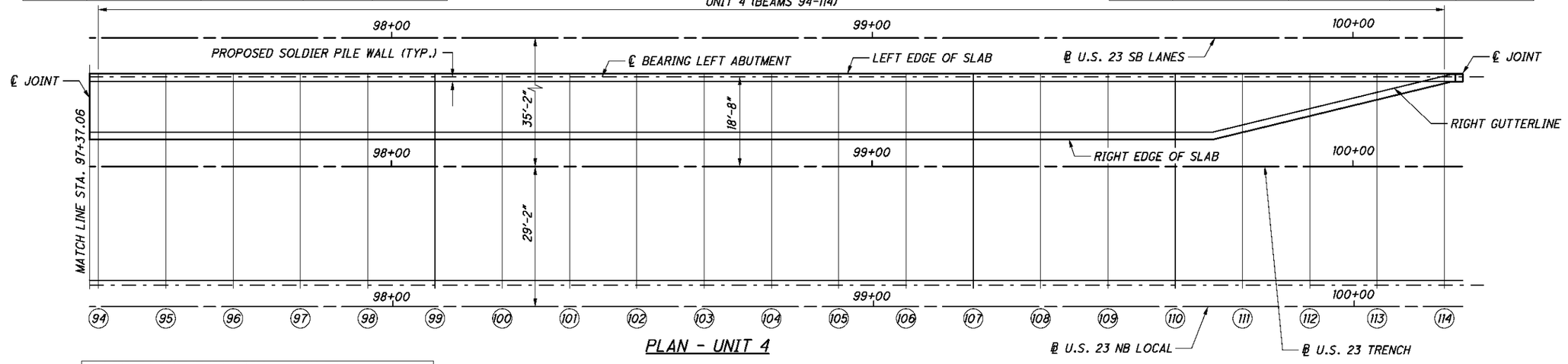


PLAN - UNIT 3

FINAL DECK ELEVATIONS - UNIT 3 (SEE NOTE 2)				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
℄ JOINT	94+47.06	906.90	907.00	906.97
BEAM 67	94+49.06	906.91	907.01	906.98
BEAM 68	94+59.06	906.97	907.07	907.04
BEAM 69	94+69.06	907.02	907.12	907.10
BEAM 70	94+79.06	907.07	907.16	907.16
BEAM 71	94+89.06	907.12	907.21	907.21
BEAM 72	94+99.06	907.17	907.26	907.27
BEAM 73	95+09.06	907.23	907.31	907.33
BEAM 74	95+19.06	907.28	907.36	907.38
BEAM 75	95+29.06	907.33	907.41	907.44

FINAL DECK ELEVATIONS - UNIT 3 (SEE NOTE 2)				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
BEAM 76	95+39.06	907.38	907.46	907.49
BEAM 77	95+49.06	907.43	907.50	907.54
BEAM 78	95+59.06	907.49	-	907.60
BEAM 79	95+69.06	907.54	-	907.64
BEAM 80	95+79.06	907.59	-	907.69
BEAM 81	95+89.06	907.64	-	907.74
BEAM 82	95+99.06	907.69	-	907.78
BEAM 83	96+09.06	907.75	-	907.83
BEAM 84	96+19.06	907.80	-	907.88

FINAL DECK ELEVATIONS - UNIT 3 (SEE NOTE 2)				
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	0.5	RIGHT GUTTERLINE
BEAM 85	96+30.06	907.85	-	907.93
BEAM 86	96+41.06	907.91	-	907.99
BEAM 87	96+55.06	907.97	-	908.05
BEAM 88	96+69.06	908.02	-	908.10
BEAM 89	96+83.06	908.07	-	908.15
BEAM 90	96+97.06	908.11	-	908.19
BEAM 91	97+11.06	908.14	-	908.22
BEAM 92	97+25.06	908.17	-	908.25
BEAM 93	97+35.06	908.18	-	908.26
℄ JOINT	97+37.06	908.18	-	908.26



PLAN - UNIT 4

FINAL DECK ELEVATIONS - UNIT 4 (SEE NOTE 2)			
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	RIGHT GUTTERLINE
BEAM 94	97+39.06	908.18	908.26
BEAM 95	97+53.06	908.20	908.28
BEAM 96	97+67.06	908.20	908.28
BEAM 97	97+81.06	908.20	908.28
BEAM 98	97+95.06	908.19	908.27
BEAM 99	98+09.06	908.17	908.25
BEAM 100	98+23.06	908.15	908.23
BEAM 101	98+37.06	908.11	908.19
BEAM 102	98+51.06	908.08	908.16
BEAM 103	98+65.06	908.03	908.11
BEAM 104	98+79.06	907.98	908.06

FINAL DECK ELEVATIONS - UNIT 4 (SEE NOTE 2)			
LOCATION	U.S. 23 TRENCH STATION	℄ BEARING LEFT ABUTMENT	RIGHT GUTTERLINE
BEAM 105	98+93.06	907.92	908.00
BEAM 106	99+07.06	907.85	907.93
BEAM 107	99+21.06	907.78	907.86
BEAM 108	99+35.06	907.69	907.77
BEAM 109	99+49.06	907.61	907.69
BEAM 110	99+63.06	907.51	907.59
BEAM 111	99+77.06	907.41	907.48
BEAM 112	99+91.06	907.30	907.35
BEAM 113	100+05.06	907.18	907.21
BEAM 114	100+19.06	-	907.06
℄ JOINT	100+21.44	-	907.04

LEGEND:

(67) - BEAM NUMBER (TYP.)

NOTES:

1. 0.5 POINT REFERS TO THE DISTANCE ONE HALF OF THE WAY FROM RIGHT GUTTERLINE TO ℄ BEARING LEFT ABUTMENT FOR EACH BEAM.
2. FOR ADDITIONAL NOTES, SEE SHEET 90/101.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DESIGNED JOL | DRAWN PPA | REVIEWED RSB | DATE 11/3/12 | CHECKED NJ | REVISED | STRUCTURE FILE NUMBER 2500760

FINAL DECK ELEVATIONS - UNIT 3 AND 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

92/101

1082
1150

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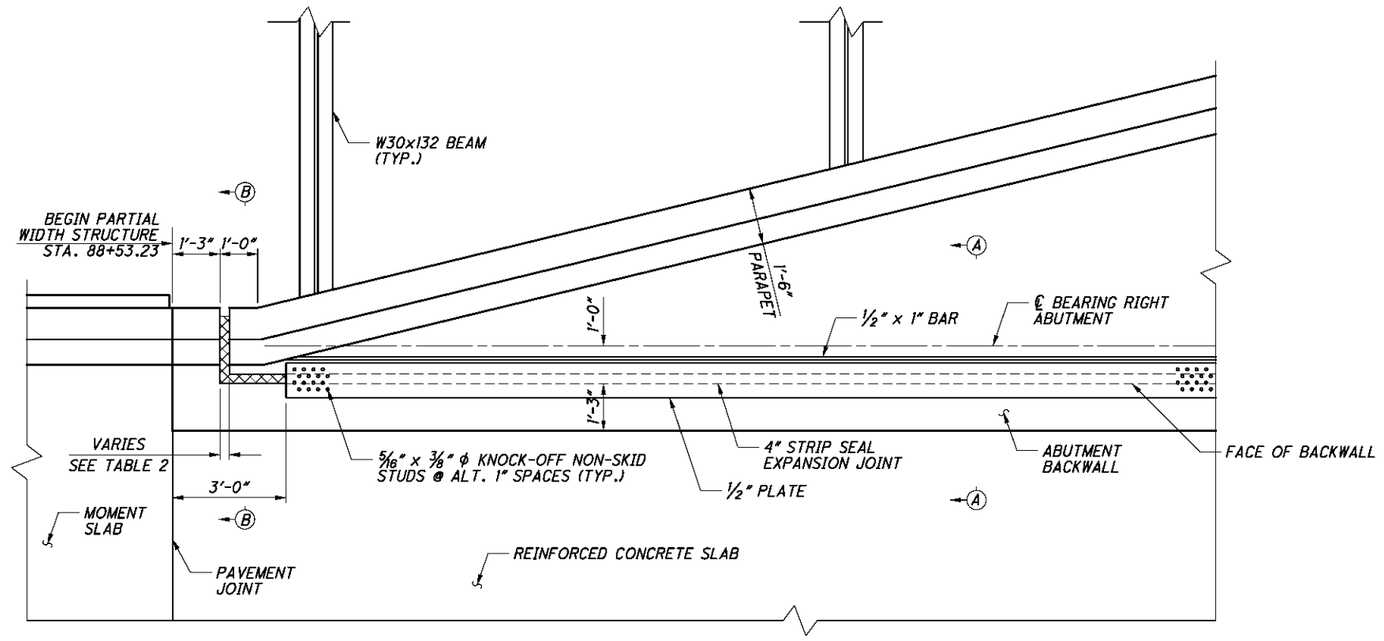
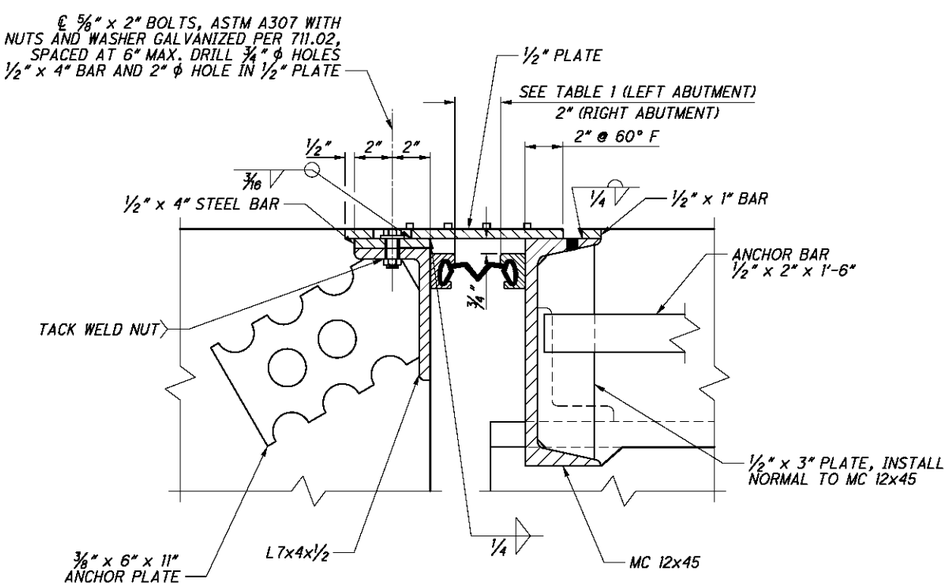


PLAN OF JOINT AT UNIT 1



SECTION A-A

(FOR ADDITIONAL DETAILS, SEE SECTION X-X ON SHEET 2/5 OF ODOT STANDARD DRAWING EXJ-4-87)

TABLE 1

STRIP SEAL JOINT WIDTH FOR LEFT ABUTMENT

AMBIENT TEMPERATURE	JOINT WIDTH 4" STRIP SEAL
90° F	1⅞"
80° F	1 15/16"
70° F	1 15/16"
60° F	2"
50° F	2 1/16"
40° F	2 1/16"
30° F	2⅛"

TABLE 2

JOINT WIDTH INCLUDING STEEL RETAINER *

AMBIENT TEMPERATURE	JOINT WIDTH 3" STRIP SEAL
90° F	4 5/8"
80° F	4¾"
70° F	4⅛"
60° F	5"
50° F	5⅛"
40° F	5¼"
30° F	5⅜"

* DIMENSIONS WERE CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINT. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

NOTES:

1. FOR ADDITIONAL DETAILS, SEE ODOT STANDARD DRAWING EXJ-4-87.
2. FOR SECTION B-B, SEE SHEET 96/101.
3. FOR LOCATIONS OF SECTION A-A, SEE SHEETS 94/101 AND 95/101.
4. PAYMENT FOR KNOCK-OFF STUDS AND COVER PLATE SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED JOL | CHECKED JOL
DRAWN JOL/PPA | REVISED
REVIEWED RSB | DATE 11/3/12
STRUCTURE FILE NUMBER 2500760

JOINT DETAILS - 1
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

93/101

1083
1150

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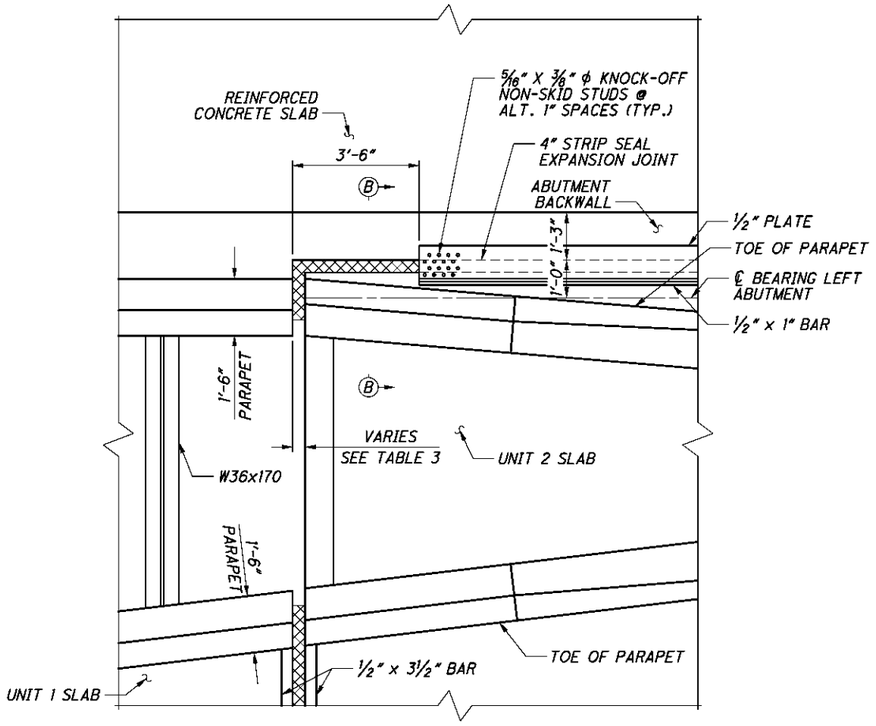

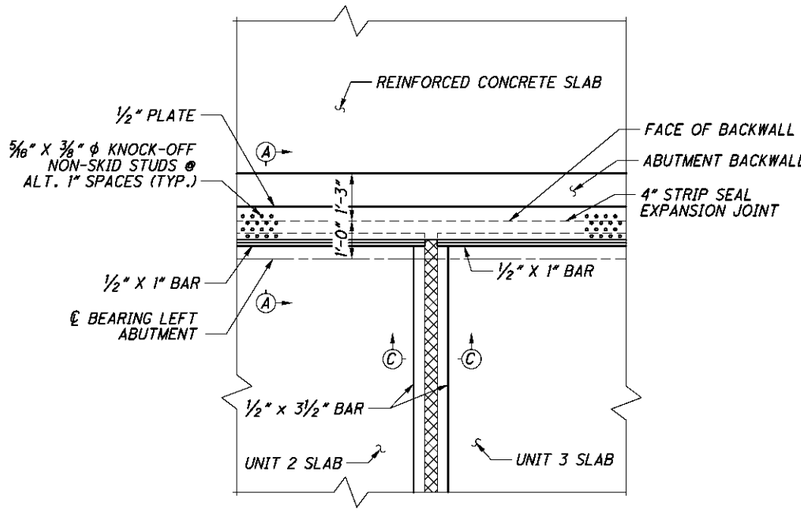

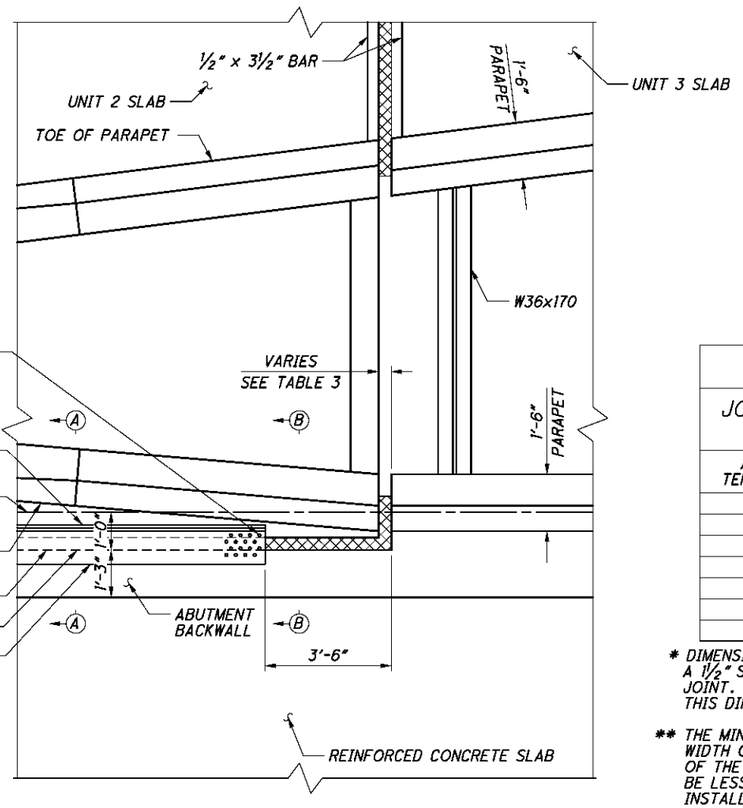

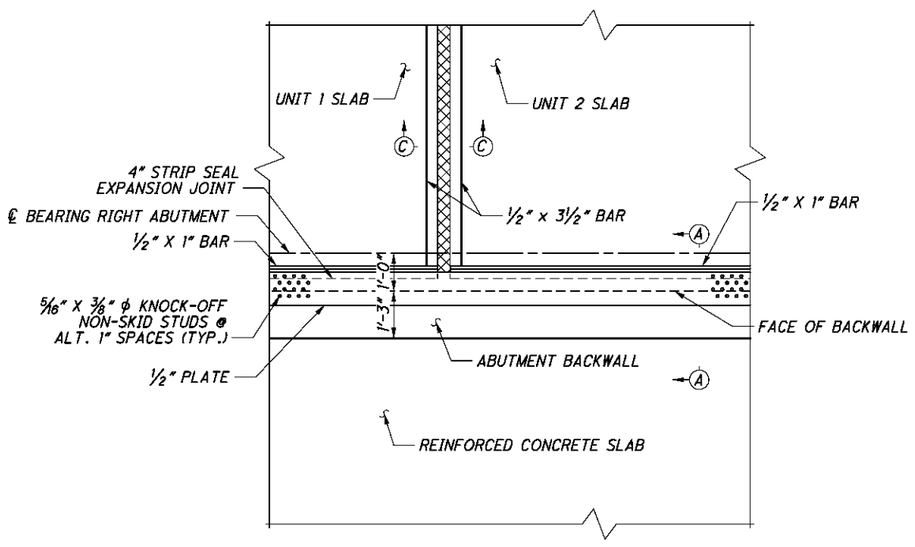

PLAN OF JOINT AT UNIT 2

TABLE 3	
JOINT WIDTH INCLUDING STEEL RETAINER *	
AMBIENT TEMPERATURE	JOINT WIDTH 4" STRIP SEAL
90° F	4 5/16"**
80° F	4 9/16"
70° F	4 3/4"
60° F	5"
50° F	5 1/4"
40° F	5 7/16"
30° F	5 11/16"

* DIMENSIONS WERE CALCULATED ASSUMING A 1½" STEEL RETAINER FOR THE EXPANSION JOINT. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

** THE MINIMUM JOINT WIDTH OPENING MINUS THE WIDTH OF THE STEEL RETAINERS AT THE TIME OF THE SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1½". IF THE OPENING IS LESS, INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1½" OPENING.

NOTES:

1. FOR SECTION A-A, SEE SHEET 93/101.
2. FOR SECTION C-C, SEE SHEET 96/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JOL/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

JOINT DETAILS - 2
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

94/101

1084/1150

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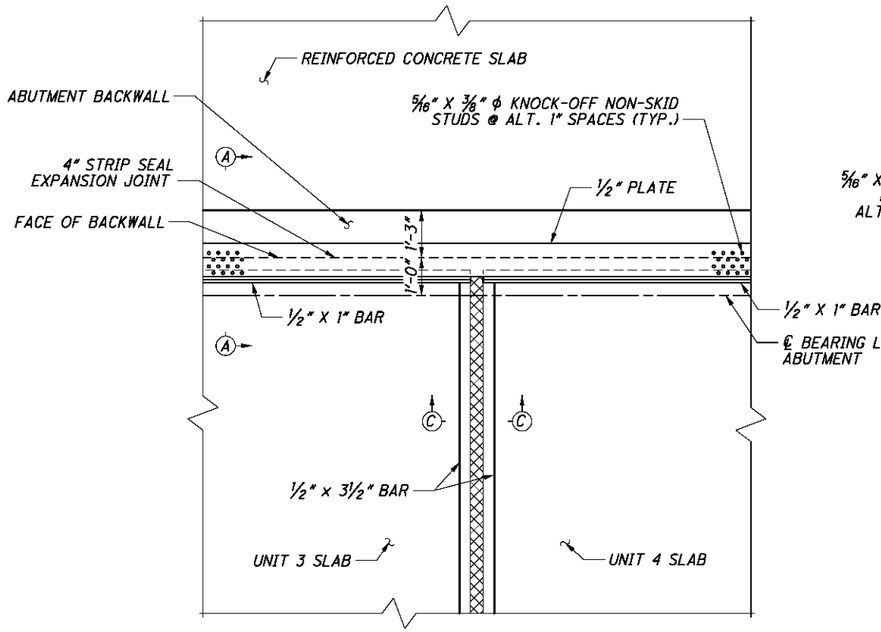

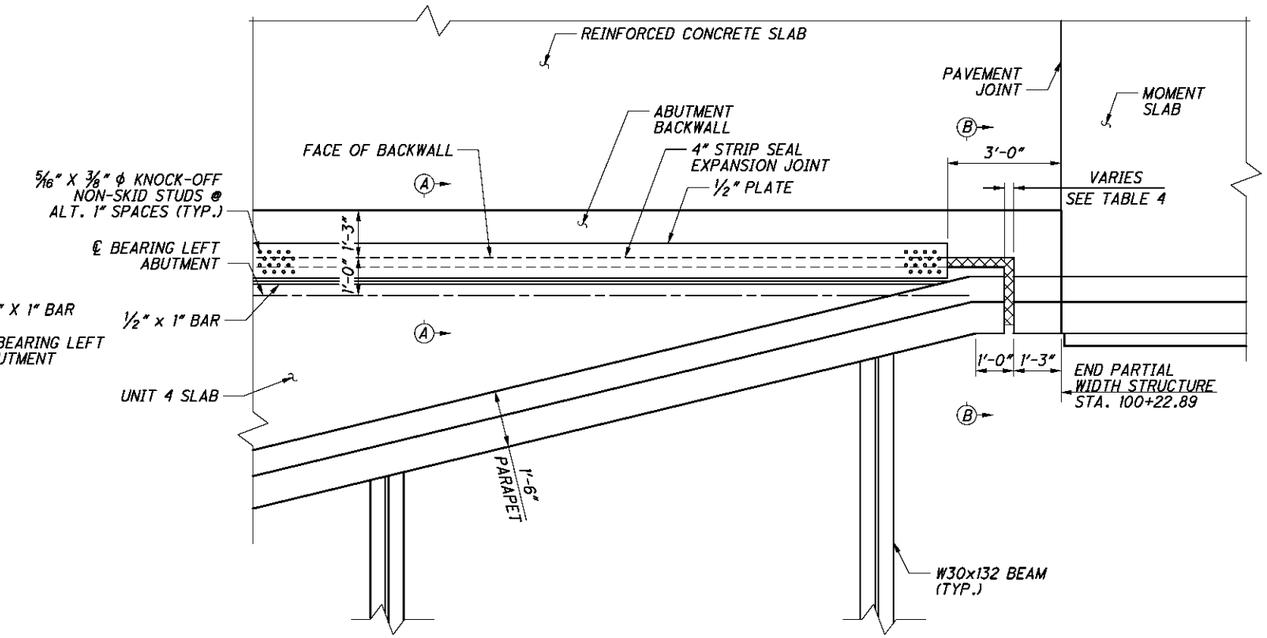

PLAN OF JOINT AT UNITS 3 AND 4

TABLE 4	
JOINT WIDTH INCLUDING STEEL RETAINER *	
AMBIENT TEMPERATURE	JOINT WIDTH 3" STRIP SEAL
90° F	4 1/16"
80° F	4 3/4"
70° F	4 1/8"
60° F	5"
50° F	5 1/8"
40° F	5 1/4"
30° F	5 5/16"

* DIMENSIONS WERE CALCULATED ASSUMING A 1 1/2" STEEL RETAINER FOR THE EXPANSION JOINT. IF A SMALLER SIZE RETAINER IS USED, THIS DIMENSION SHALL BE ADJUSTED.

NOTES:

1. FOR SECTION A-A, SEE SHEET 93/101.
2. FOR SECTIONS B-B AND C-C, SEE SHEET 96/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JOL/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

JOINT DETAILS - 3
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

95/101

1085/1150

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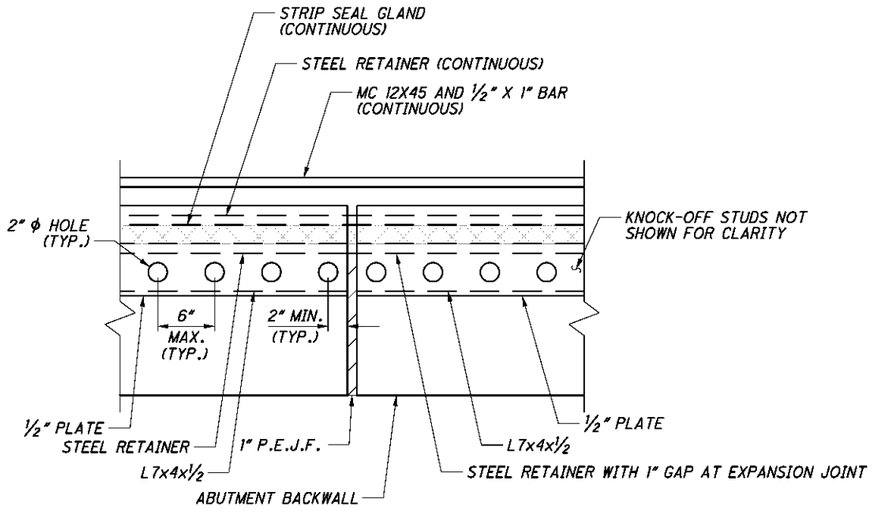
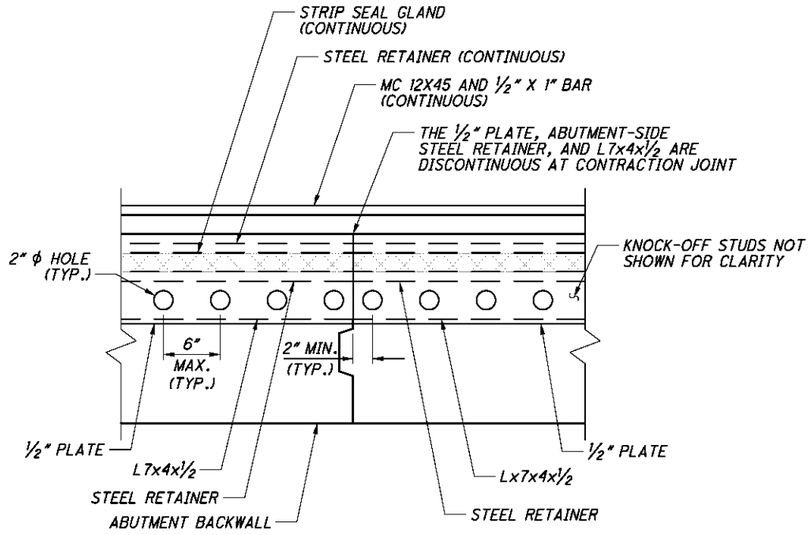
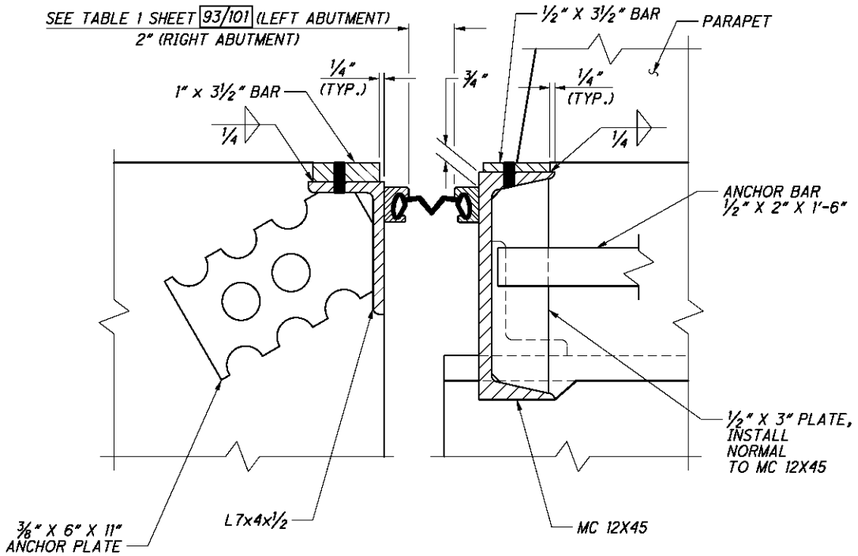


TYPICAL DETAIL AT ABUTMENT EXPANSION JOINT



TYPICAL DETAIL AT ABUTMENT CONTRACTION JOINT



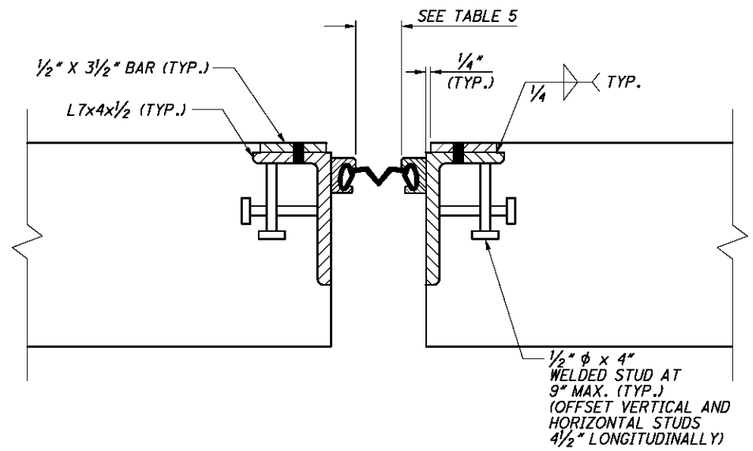
SECTION B-B

(FOR ADDITIONAL DETAILS, SEE SECTION X-X ON SHEET 2/5 OF ODOT STANDARD DRAWING EXJ-4-87)

(FOR DETAILS OF JOINT TERMINATION INTO PARAPET, SEE SECTION B-B ON SHEET 1/5 OF ODOT STANDARD DRAWING EXJ-4-87)

TABLE 5	
STRIP SEAL JOINT WIDTH BETWEEN UNITS *	
AMBIENT TEMPERATURE	JOINT WIDTH 4" STRIP SEAL
90° F	1 15/16"
80° F	1 9/16"
70° F	1¾"
60° F	2"
50° F	2¼"
40° F	2 7/16"
30° F	2 11/16"

* - NOTE:
THE MINIMUM JOINT OPENING AT TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1½". IF THE JOINT OPENING IS LESS, INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1½" OPENING.



SECTION C-C

NOTES:

1. FOR LOCATIONS OF SECTION C-C, SEE SHEETS 94/101 AND 95/101.
2. FOR LOCATIONS OF SECTION B-B, SEE SHEETS 93/101 AND 95/101.
3. FOR PLAN OF JOINT AT UNITS 1 THROUGH 4, SEE SHEETS 93/101 THROUGH 95/101.
4. FOR EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 46/101.

DESIGN AGENCY
HNTB
700 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED	DRAWN	REVIEWED	DATE
JOL	JOL/PPA	RSB	11/3/12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		2500760	

JOINT DETAILS - 4
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

96/101

1086/1150

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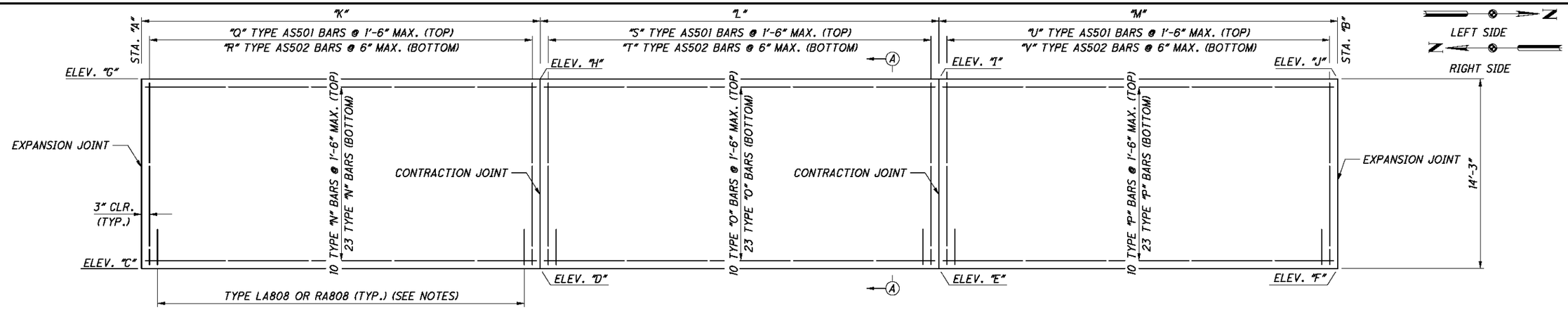
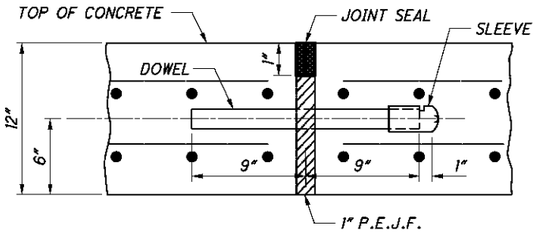
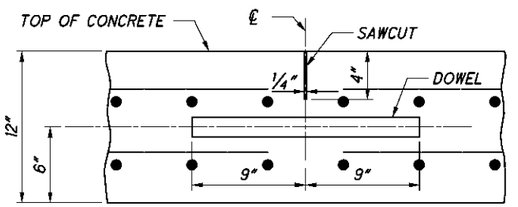


REINFORCED CONCRETE SLAB PLAN

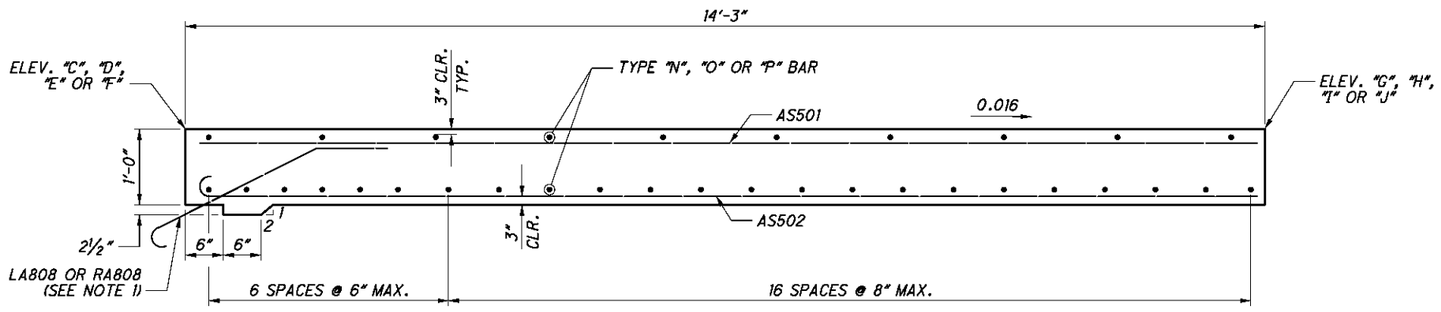
	STATION		ELEVATIONS								PANEL SPACING			LONGITUDINAL REINFORCEMENT			TRANSVERSE REINFORCEMENT					
PANEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1R	89+38.73	88+53.23	904.24	904.09	903.93	903.79	904.01	903.86	903.70	903.56	29'-0"	30'-0"	26'-6"	AS505	AS506	AS503	20	58	21	60	19	53
2R	90+29.73	89+38.73	904.71	904.56	904.40	904.24	904.48	904.33	904.17	904.01	30'-0"	30'-0"	31'-0"	AS506	AS506	AS507	21	60	21	60	22	62
3R	91+19.73	90+29.73	905.18	905.02	904.87	904.71	904.95	904.79	904.64	904.48	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
4R	92+09.73	91+19.73	905.65	905.49	905.33	905.18	905.42	905.26	905.10	904.95	30'-0"	31'-0"	29'-0"	AS506	AS507	AS505	21	60	22	62	20	58
5R	92+99.73	92+09.73	906.12	905.97	905.81	905.65	905.89	905.74	905.58	905.42	29'-0"	31'-0"	30'-0"	AS505	AS507	AS506	20	58	22	62	21	60
6R	93+90.73	92+99.73	906.59	906.43	906.27	906.12	906.36	906.20	906.04	905.89	31'-0"	30'-0"	30'-0"	AS507	AS506	AS506	22	62	21	60	21	60
7R	94+80.73	93+90.73	907.06	906.90	906.74	906.59	906.83	906.67	906.51	906.36	30'-0"	32'-0"	28'-0"	AS506	AS508	AS504	21	60	22	64	20	56
8R	95+70.73	94+80.73	907.53	907.37	907.22	907.06	907.30	907.14	906.99	906.83	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
9R	96+59.73	95+70.73	907.96	907.82	907.68	907.53	907.73	907.59	907.45	907.30	31'-0"	28'-0"	30'-0"	AS507	AS504	AS506	22	62	20	56	21	60
10R	97+49.73	96+59.73	908.18	908.13	908.06	907.96	907.95	907.90	907.83	907.73	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
11R	98+39.73	97+49.73	908.08	908.14	908.17	908.18	907.85	907.91	907.94	907.95	29'-0"	31'-0"	30'-0"	AS505	AS507	AS506	20	58	22	62	21	60
12R	99+29.73	98+39.73	907.70	907.87	907.98	908.08	907.47	907.64	907.75	907.85	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
13R	100+22.89	99+29.73	906.99	907.28	907.51	907.70	906.76	907.05	907.28	907.47	33'-2"	30'-0"	30'-0"	AS509	AS506	AS506	23	67	21	60	21	60
1L	88+53.23	89+38.73	903.79	903.93	904.09	904.24	903.56	903.70	903.86	904.01	26'-6"	30'-0"	29'-0"	AS503	AS506	AS505	19	53	21	60	20	58
2L	89+38.73	90+29.73	904.24	904.40	904.56	904.71	904.01	904.17	904.33	904.48	31'-0"	30'-0"	30'-0"	AS507	AS506	AS506	22	62	21	60	21	60
3L	90+29.73	91+19.73	904.71	904.87	905.02	905.18	904.48	904.64	904.79	904.95	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
4L	91+19.73	92+09.73	905.18	905.24	905.49	905.65	904.95	905.01	905.26	905.42	29'-0"	31'-0"	30'-0"	AS505	AS507	AS506	20	58	22	62	21	60
5L	92+09.73	92+99.73	905.65	905.80	905.97	906.12	905.42	905.57	905.74	905.89	30'-0"	31'-0"	29'-0"	AS506	AS507	AS505	21	60	22	62	20	58
6L	92+99.73	93+90.73	906.12	906.27	906.43	906.59	905.89	906.04	906.20	906.36	30'-0"	30'-0"	31'-0"	AS506	AS506	AS507	21	60	21	60	22	62
7L	93+90.73	94+80.73	906.59	906.74	906.90	907.06	906.36	906.51	906.67	906.83	28'-0"	32'-0"	30'-0"	AS504	AS508	AS506	20	56	22	64	21	60
8L	94+80.73	95+70.73	907.06	907.21	907.37	907.53	906.83	906.98	907.14	907.30	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
9L	95+70.73	96+59.73	907.53	907.68	907.83	907.97	907.30	907.45	907.60	907.74	30'-0"	28'-0"	31'-0"	AS506	AS504	AS507	21	60	20	56	22	62
10L	96+59.73	97+49.73	907.97	908.07	908.14	908.17	907.74	907.84	907.91	907.94	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
11L	97+49.73	98+39.73	908.17	908.18	908.15	908.09	907.94	907.95	907.92	907.86	30'-0"	31'-0"	29'-0"	AS506	AS507	AS505	21	60	22	62	20	58
12L	98+39.73	99+29.73	908.09	907.99	907.87	907.71	907.86	907.76	907.64	907.48	30'-0"	30'-0"	30'-0"	AS506	AS506	AS506	21	60	21	60	21	60
13L	99+29.73	100+22.89	907.71	907.51	907.29	907.00	907.48	907.28	907.06	906.77	30'-0"	30'-0"	33'-2"	AS506	AS506	AS509	21	60	21	60	23	67



EXPANSION JOINT



CONTRACTION JOINT



SECTION A-A

NOTES:

1. FOR LA808 OR RA808 REINFORCEMENT, SEE ABUTMENT DETAILS SHEET 45/101.
2. FOR ADDITIONAL JOINT DETAILS, SEE STANDARD DRAWING BP-2.2.
3. PAYMENT FOR DOWEL AND JOINT MATERIAL SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), (T=12"), AS PER PLAN.

DESIGN AGENCY
HNTB
100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DRAWN PPA | REVIEWED RSB | DATE 11/3/12 | STRUCTURE FILE NUMBER 2500760
DESIGNED JJB | CHECKED JOL | REVISED

REINFORCED CONCRETE SLAB DETAILS
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

97 / 101

1087
1150

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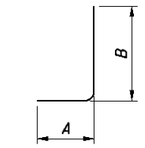
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
LEFT ABUTMENT											
LA501	264	29'-6"	8123	STR							
LA502	68	30'-6"	2163	STR							
LA503	40	28'-6"	1189	STR							
LA504	24	27'-6"	688	STR							
LA505	12	31'-6"	394	STR							
LA506	12	32'-9"	410	STR							
LA507	297	6'-0"	1859	STR							
LA508	8	26'-0"	217	STR							
LA509	4	1'-0"	4	STR							
LA510	12	10'-6"	131	STR							
LA511	4	7'-9"	32	STR							
LA512	4	2'-6"	10	STR							
LA513	4	9'-9"	41	STR							
LA514	4	6"	2	STR							
LA515	4	10'-9"	45	STR							
LA516	8	9'-6"	79	STR							
LA517	24	1'-9"	44	STR							
LA518	24	4'-6"	113	STR							
LA519	48	6'-6"	325	STR							
LA520	4	6'-2"	26	2	2'-10"	9"	2'-10"				
LA521	6	5'-6"	34	STR							
LA601	875	6'-1"	7995	2	2'-9"	11"	2'-9"				
LA602	463	6'-11"	4810	2	2'-11"	1'-5"	2'-11"				
LA603	412	6'-1"	3765	2	2'-6"	1'-5"	2'-6"				
LA604	875	9'-1"	11938	2	4'-0"	1'-5"	4'-0"				
LA605	1552	9'-3"	21563	2	3'-1"	3'-5"	3'-1"				
LA606	482	9'-11"	7179	2	3'-5"	3'-5"	3'-5"				
LA607	8	11'-5"	137	37	4'-2"	7"	4'-6"	2'-8"			
LA608	111	8'-4"	1389	37	2'-9"	7"	2'-10"	2'-8"			
LA609	111	6'-2"	1028	STR							
LA610	111	6'-10"	1139	1	1'-0"	6'-0"					
LA611	266	9'-10"	3929	2	3'-8"	2'-10"	3'-8"				
LA612	247	15'-6"	5750	2	6'-3"	3'-4"	6'-3"				
LA613	266	3'-10"	1532	1	1'-0"	3'-0"					
LA614	19	12'-1"	345	2	4'-6"	3'-5"	4'-6"				
LA615	4	8'-5"	51	37	2'-8"	7"	3'-0"	2'-8"			
LA616	4	10'-1"	61	37	3'-6"	7"	3'-10"	2'-8"			
LA801	144	29'-6"	11342	STR							
LA802	34	30'-6"	2769	STR							
LA803	26	28'-6"	1978	STR							
LA804	12	27'-6"	881	STR							
LA805	5	31'-6"	421	STR							
LA806	5	32'-9"	437	STR							
LA807	9	26'-0"	625	STR							
LA808	820	4'-7"	10035	18	2'-3"	1'-0"	1'-0"				
LA1001	144	29'-6"	18279	STR							
LA1002	40	30'-6"	5250	STR							
LA1003	16	28'-6"	1962	STR							
LA1004	16	27'-6"	1893	STR							
LA1005	8	31'-6"	1084	STR							
LA1006	8	32'-9"	1127	STR							
SUB-TOTAL			146623								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RIGHT ABUTMENT											
RA501	44	28'-6"	1308	STR							
RA502	232	29'-6"	7138	STR							
RA503	12	26'-0"	325	STR							
RA504	64	30'-6"	2036	STR							
RA505	20	27'-6"	574	STR							
RA506	4	31'-6"	131	STR							
RA507	23	3'-0"	72	STR							
RA508	517	6'-0"	3235	STR							
RA509	80	6'-6"	542	STR							
RA510	8	2'-9"	23	STR							
RA511	68	10'-6"	745	STR							
RA512	16	7'-6"	125	STR							
RA513	8	8'-9"	73	STR							
RA514	8	4'-9"	40	STR							
RA515	4	9"	3	STR							
RA516	8	1'-6"	13	STR							
RA517	4	9'-3"	39	STR							
RA518	8	32'-9"	273	STR							
RA519	4	2'-0"	8	STR							
RA520	5	6'-2"	32	2	2'-10"	9"	2'-10"				
RA521	14	5'-6"	80	STR							
RA522	8	28'-0"	234	STR							
RA601	595	6'-1"	5437	2	2'-9"	11"	2'-9"				
RA602	117	6'-5"	1128	2	2'-8"	1'-5"	2'-8"				
RA603	478	7'-1"	5086	2	3'-0"	1'-5"	3'-0"				
RA604	595	8'-7"	7671	2	3'-9"	1'-5"	3'-9"				
RA605	1244	9'-3"	17284	2	3'-1"	3'-5"	3'-1"				
RA606	390	9'-11"	5809	2	3'-5"	3'-5"	3'-5"				
RA607	192	8'-4"	2403	37	2'-9"	7"	2'-10"	2'-8"			
RA608	192	6'-2"	1778	STR							
RA609	192	6'-10"	1971	1	1'-0"	6'-0"					
RA610	535	10'-0"	8036	2	3'-9"	2'-10"	3'-9"				
RA611	484	15'-9"	11450	2	6'-4"	3'-5"	6'-4"				
RA612	535	3'-8"	2946	1	1'-0"	2'-10"					
RA613	51	12'-1"	926	2	4'-6"	3'-5"	4'-6"				
RA614	8	8'-5"	101	37	2'-8"	7"	3'-0"	2'-8"			
RA615	8	10'-1"	121	37	3'-6"	7"	3'-10"	2'-8"			
RA616	16	11'-5"	274	37	4'-2"	7"	4'-6"	2'-8"			
RA801	24	28'-6"	1826	STR							
RA802	176	29'-6"	13863	STR							
RA803	5	26'-0"	347	STR							
RA804	38	30'-6"	3095	STR							
RA805	14	27'-6"	1028	STR							
RA806	5	31'-6"	421	STR							
RA807	4	3'-0"	32	STR							
RA808	820	4'-7"	10035	18	2'-3"	1'-0"	1'-0"				
RA809	9	32'-9"	787	STR							
RA1001	24	28'-6"	2943	STR							
RA1002	80	29'-6"	10155	STR							
RA1003	8	26'-0"	895	STR							
RA1004	32	30'-6"	4200	STR							
RA1005	8	27'-6"	947	STR							
RA1006	8	28'-0"	964	STR							
SUB-TOTAL			141008								

BAR BENDING DIAGRAMS



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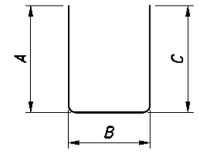

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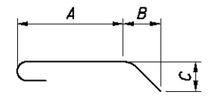

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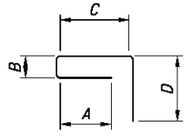

TYPE-37

NOTE:

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:

RA: LOCATION OF THE BARS IN THE STRUCTURE (RIGHT ABUTMENT)
6: BAR SIZE DIMENSION NO. 6
01: SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF THE BAR. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT ARE INDICATED BY "STR".

DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DATE 11/3/12
REVIEWED RSB
STRUCTURE FILE NUMBER 2500760
DRAWN ZTW
REVISED
DESIGNED PPA
CHECKED JTW

REINFORCING SCHEDULE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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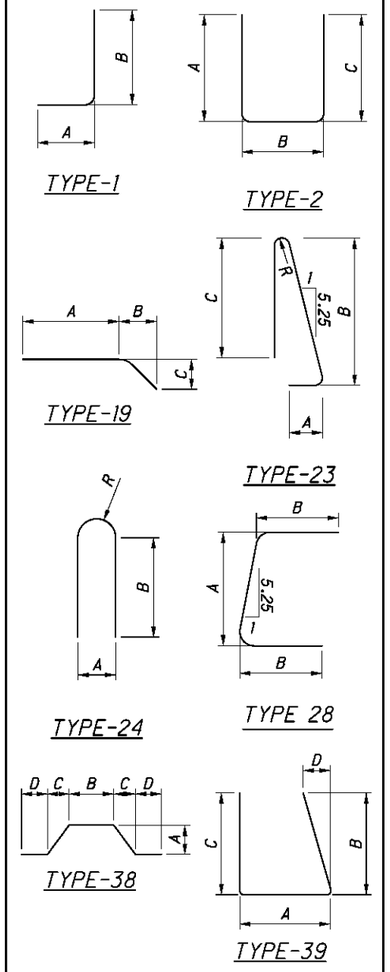
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
CAST-IN-PLACE WALL											
W501	126	14'-9"	1938	STR							
W502	212	15'-6"	3427	STR							
W503	250	16'-0"	4172	STR							
W504	128	16'-6"	2203	STR							
W505	128	17'-0"	2270	STR							
W506	132	17'-3"	2375	STR							
W507	208	17'-9"	3851	STR							
W508	124	17'-6"	2263	STR							
W509	330	16'-9"	5765	STR							
W510	212	16'-3"	3593	STR							
W511	254	15'-9"	4173	STR							
W512	84	15'-3"	1336	STR							
W513	296	15'-0"	4631	STR							
W514	254	14'-6"	3841	STR							
W515	166	14'-0"	2424	STR							
W516	42	13'-6"	591	STR							
W517	84	13'-9"	1205	STR							
W518	126	14'-3"	1873	STR							
W519	80	26'-0"	2169	STR							
W520	2190	29'-6"	67383	STR							
W521	366	28'-6"	10880	STR							
W522	558	30'-6"	17751	STR							
W523	188	27'-6"	5392	STR							
W524	98	31'-6"	3220	STR							
W525	86	32'-6"	2915	STR							
W526	44	18'-0"	826	STR							
W527	38	13'-3"	525	STR							
W528	42	18'-3"	799	STR							
SUB-TOTAL			163791								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RAILING											
R501	180	30'-0"	5632	STR							
R502	6	17'-9"	111	STR							
R503	6	7'-9"	48	STR							
R504	6	7'-0"	44	19	3'-6"	3'-6"	5"				
R505	6	21'-0"	131	STR							
R506	6	24'-9"	155	STR							
R507	6	7'-1"	44	19	3'-6"	3'-6"	10"				
R508	12	11"	11	STR							
R509	2094	7'-5"	16198	23	1'-1"	3'-2"	3'-0"			2¾"	
R510	6	32'-9"	205	STR							
R511	6	26'-0"	163	STR							
R512	120	29'-6"	3692	STR							
R513	12	28'-6"	357	STR							
R514	18	30'-6"	573	STR							
R515	6	27'-9"	174	STR							
R516	6	27'-6"	172	STR							
R517	6	3'-0"	19	STR							
R518	36	7'-3"	272	38	1'-10"	1'-4"	1'-10"	6"			
R519	24	8'-5"	211	39	2'-4"	3'-2"	3'-2"	6½"			
R520	24	2'-10"	71	2	7"	1'-10"	7"				
R521	24	3'-2"	79	STR							
R522	11	1'-10"	21	24	5"	7"				2½"	
R523	12	9'-3"	116	STR							
R524	12	11'-9"	147	STR							
R525	32	13'-6"	451	STR							
R526	140	4'-10"	706	1	1'-1"	3'-11"					
R527	16	5'-3"	88	STR							
R528	1	6'-0"	6	STR							
R529	1	6'-9"	7	STR							
R601	30	30'-0"	1352	STR							
R602	1	9'-3"	14	STR							
R603	1	10'-3"	15	STR							
R604	1	21'-9"	33	STR							
R605	1	26'-6"	40	STR							
R606	1	25'-6"	38	STR							
R607	1	9'-2"	14	19	4'-6"	4'-6"	1'-1"				
R608	1	9'-0"	14	19	4'-6"	4'-6"	7"				
R609	2094	2'-11"	9173	1	1'-1"	2'-0"					
R610	2	28'-6"	86	STR							
R611	2094	3'-8"	11532	28	2'-0"	11"					
R612	1	32'-9"	49	STR							
R613	1	26'-0"	39	STR							
R614	20	29'-6"	886	STR							
R615	3	30'-6"	137	STR							
R616	1	27'-9"	42	STR							
R617	1	27'-6"	41	STR							
R618	1	3'-0"	5	STR							
R619	2	11"	3	STR							
R620	58	3'-10"	334	2	1'-1"	2'-0"	1'-1"				
R621	2	9'-9"	29	STR							
R622	2	12'-3"	37	STR							
SUB-TOTAL			53817								

BAR BENDING DIAGRAMS



NOTE:

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, R601:

- R: LOCATION OF THE BARS IN THE STRUCTURE (RAILING)
- 6: BAR SIZE DIMENSION NO. 6
- 01: SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF THE BAR. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT ARE INDICATED BY "STR".

DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1330
Cleveland, OH 44114-2531

DATE 11/3/12
REVIEWED RSB
STRUCTURE FILE NUMBER 2500760
DRAWN ZTW
REVISED
DESIGNED PPA
CHECKED JTW

REINFORCING SCHEDULE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

99 / 101

1089
1150

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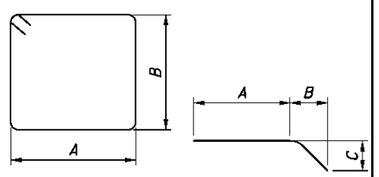
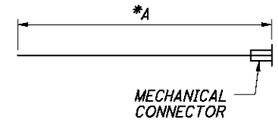
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
SLAB											
S501	371	30'-0"	11609	STR							
S502	371	16'-9"	6481	STR							
S503	1715	5'-3"	9391	3	1'-8"	8"					
S504	1357	4'-8"	6605	36	1'-9"	6"	3"	2'-5"			
	1	4'-7"						2'-4"			
S505	SER OF	TO	119	36	1'-9"	6"	3"	TO			1/8"
	33	2'-4"						2"			
	1	2'-3"				6"	3"				
S506	SER OF	TO	16	19	1'-9"	TO	TO				5/8" / 3/8"
	7	2'-0"				2"	1"				
	1	4'-7"						2'-4"			
S507	SER OF	TO	59	36	1'-9"	6"	3"	TO			1 3/4"
	16	2'-6"						3"			
	1	2'-3"				6"	3"				
S508	SER OF	TO	9	19	1'-9"	TO	TO				1 3/8" / 5/8"
	4	2'-0"				2"	1"				
S601	553	30'-0"	24918	STR							
S602	553	18'-3"	15159	STR							
S603	214	32'-0"	10286	STR							
S604	1391	28'-0"	58500	STR							
S605	107	8'-0"	1286	34	8'-0"						
S606	428	4'-0"	2571	35	4'-0"						
S607	107	36'-0"	5786	STR							
S608	107	34'-6"	5545	STR							
S609	107	32'-0"	5143	STR							
S610	107	33'-0"	5304	STR							
S611	135	24'-0"	4866	STR							
	1	14'-6"									
S612	SER OF	TO	5434	STR							1 3/4"
	144	35'-9"									
	1	14'-6"									
S613	SER OF	TO	10868	STR							1/8"
	288	35'-9"									
S614	6	35'-9"	322	STR							
S615	6	35'-0"	315	STR							
	1	35'-0"									
S616	SER OF	TO	4979	STR							1 7/8"
	136	13'-9"									
	1	35'-0"									
S617	SER OF	TO	9958	STR							1/8"
	272	13'-9"									
S618	36	13'-3"	716	STR							
S619	107	12'-0"	1929	STR							
S620	107	10'-0"	1607	34	10'-0"						
S621	178	29'-0"	7753	STR							
S622	1024	34'-0"	52294	STR							
	3	29'-0"									
S623	SER OF	TO	635	STR							3'-3"
	8	6'-3"									
	3	28'-6"									
S624	SER OF	TO	568	STR							3'-6"
	7	7'-6"									
	2	28'-6"									
S625	SER OF	TO	412	STR							3'-3"
	8	5'-9"									

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
SLAB											
	2	27'-6"									
S626	SER OF	TO	357	STR							3'-6"
	7	6'-6"									
S627	73	29'-0"	3180	STR							
	1	23'-6"									
S628	SER OF	TO	137	STR							3'-6"
	7	2'-6"									
	1	30'-3"									
S629	SER OF	TO	235	STR							3'-3"
	10	1'-0"									
	4	30'-0"									
S630	SER OF	TO	919	STR							3'-6"
	9	4'-0"									
	1	22'-6"									
S631	SER OF	TO	124	STR							3'-6"
	6	5'-0"									
	1	25'-6"									
S632	SER OF	TO	182	STR							3'-0"
	9	1'-6"									
	4	32'-6"									
S633	SER OF	TO	1054	STR							3'-3"
	9	6'-6"									
	1	27'-6"									
S634	SER OF	TO	179	STR							3'-6"
	7	6'-6"									
S635	28	8'-0"	336	STR							
S636	107	28'-0"	4500	34	28'-0"						
S637	28	13'-0"	547	STR							
	1	28'-6"									
S638	SER OF	TO	195	STR							3'-6"
	8	4'-0"									
	1	1'-3"									
S701	SER OF	TO	1239	STR							1 1/4"
	97	11'-3"									
	1	11'-3"									
S702	SER OF	TO	834	STR							1 1/8"
	32	14'-3"									
S703	382	13'-3"	10346	STR							
	1	13'-0"									
S704	SER OF	TO	815	STR							2 1/2"
	55	1'-6"									
	1	13'-9"									
S705	SER OF	TO	138	STR							1 1/2"
	5	13'-3"									
	1	1'-3"									
S801	SER OF	TO	2420	STR							7/8"
	145	11'-3"									
	1	11'-3"									
S802	SER OF	TO	1770	STR							3/4"
	52	14'-3"									
S803	579	13'-3"	20484	STR							
	1	13'-0"									
S804	SER OF	TO	1587	STR							1 3/4"
	82	1'-6"									

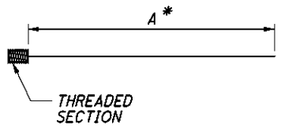
BAR BENDING DIAGRAMS



TYPE-3 TYPE-19

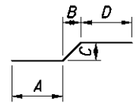


TYPE-34



TYPE-35

*REINFORCING BAR UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH ADJUSTMENT AND/OR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF CONNECTOR USED.



TYPE-36

NOTE:

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, S601:

S: LOCATION OF THE BARS IN THE STRUCTURE (SLAB)
6: BAR SIZE DIMENSION NO. 6
01: SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF THE BAR. ALL REINFORCING STEEL IS TO BE EPOXY COATED. STRAIGHT ARE INDICATED BY "STR".

DESIGN AGENCY HNTB 1100 Superior Avenue, Suite 1300 Cleveland, OH 44114-2531

DESIGNED PPA | DRAWN ZTW | REVIEWED RSB | DATE 11/3/12 | STRUCTURE FILE NUMBER 2500760 | CHECKED JTW | REVISED

REINFORCING SCHEDULE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

100 / 101

1090 / 1150

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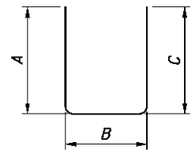
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
SLAB											
	1	22'-0"									
S805	SER OF	TO	200	STR							3'-6"
	5	8'-0"									
S806	573	34'-6"	52782	STR							
	4	28'-6"									
S807	SER OF	TO	1346	STR							3'-6"
	7	7'-6"									
S808	30	31'-3"	2503	STR							
	1	25'-0"									
S809	SER OF	TO	260	STR							3'-6"
	6	7'-6"									
	1	29'-0"									
S810	SER OF	TO	360	STR							3'-3"
	7	9'-6"									
S811	192	34'-0"	17430	STR							
S812	24	29'-9"	1906	STR							
	1	23'-6"									
S813	SER OF	TO	236	STR							3'-6"
	6	6'-0"									
S814	160	27'-0"	11534	STR							
S815	65	33'-0"	5727	STR							
	1	33'-6"									
S816	SER OF	TO	851	STR							1'-9"
	15	9'-0"									
	1	28'-0"									
S817	SER OF	TO	607	STR							1'-9"
	13	7'-0"									
S818	104	26'-0"	7220	STR							
	1	32'-3"									
S819	SER OF	TO	651	STR							1'-9"
	10	16'-6"									
	1	35'-0"									
S820	SER OF	TO	953	STR							1'-9"
	17	7'-0"									
S821	5	23'-3"	310	STR							
S822	23	35'-0"	2149	STR							
S823	10	30'-0"	801	STR							
S824	5	22'-3"	297	STR							
S825	8	24'-3"	518	STR							
S826	36	29'-3"	2812	STR							
S827	5	33'-8"	449	19	16'-11"	16'-3"	4'-0"				
S828	8	19'-5"	415	19	9'-11"	9'-3"	2'-4"				
S829	5	12'-9"	170	STR							
S830	8	20'-0"	427	STR							
S831	8	26'-9"	571	19	10'-2"	16'-5"	2'-1"				
S832	5	27'-6"	367	19	15'-9"	11'-8"	1'-6"				
	1	13'-9"									
S833	SER OF	TO	324	STR							3/4"
	9	13'-3"									
	SUB-TOTAL		437197								

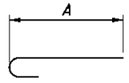
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
REINFORCED CONCRETE SLAB											
AS501	1640	13'-9"	23520	STR							
AS502	4680	14'-4"	69964	16	13'-9"						
AS503	66	26'-0"	1790	STR							
AS504	132	27'-6"	3786	STR							
AS505	264	28'-6"	7848	STR							
AS506	1584	29'-6"	48737	STR							
AS507	396	30'-6"	12597	STR							
AS508	66	31'-6"	2168	STR							
AS509	66	32'-6"	2237	STR							
SUB-TOTAL			172647	(FOR INFORMATION ONLY)							

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
TYPE A CONDUIT FOOTING											
C501	54	3'-1"	174	2	1'-1"	1'-2"	1'-1"				
C502	16	21'-9"	363	STR							
SUB-TOTAL			537								

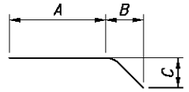
BAR BENDING DIAGRAMS



TYPE-2



TYPE-16



TYPE-19

NOTE:

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6: BAR SIZE DIMENSION NO. 6
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DESIGN AGENCY
HNTB
1100 Superior Avenue, Suite 1300
Cleveland, OH 44114-2531

DESIGNED PPA | DRAWN ZTW | CHECKED JTW | REVIEWED RSB | DATE 11/3/12 | REVISED | STRUCTURE FILE NUMBER 2500760

REINFORCING SCHEDULE
BRIDGE NO. FRA-23-2330
CAMPUS VIEW BLVD OVER U.S. 23 TRENCH

FRA-23-22.23
PID No. 81746

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