76C44

ST. CLAIR I&R #115

7-30-10 LETTING ITEM 115

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 76C44		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP ROUTE 998 (I–70) RELOCATED
SECTION 82–2–1HVB
PROJECT: PNRS-0998(001)
ST. CLAIR COUNTY
C–98–022–10

PROPOSED I–70 CURVED BRIDGE OVER NS, TRRA, MCT & INDUSTRIAL DRIVE AND PROPOSED MSE RETAINING WALL

FOR INDEX OF SHEETS, SEE SHEET NO. 2

LIST OF STRUCTURAL WORK

I–70 OVER NS, TRRA, MCT, AND INDUSTRIAL DRIVE
STATION 134 + 22.00
STRUCTURE NO. 082–0318 (EB) PROPOSED I–70 BRIDGE
STRUCTURE NO. 082–0319 (WB) PROPOSED I–70 BRIDGE
LENGTH 1,285'
STRUCTURE NO. 082–W234 PROPOSED MSE WALL
CONSTRUCTED IN THIS CONTRACT

100%
10-10-2013

INDUSTRIAL DRIVE
ADT = 25 (2008)
DESIGN SPEED = 25 MPH
POSTED SPEED = 20 MPH

EXCHANGE AVENUE
ADT = 16,940 (2030)
DESIGN SPEED = 30 MPH
POSTED SPEED = 25 MPH

INTERSTATE 70
DESIGN DESIGNATION – 6,594(30) INTERSTATE FREEWAY 48.96 (PCC–20)
ADT = 59,940 (2030)
DESIGN SPEED = 60 MPH
POSTED SPEED = 55 MPH

IL ROUTE 3 (ST. CLAIR AVE.)
ADT = 6,400 (2008), 7,900 (2030)
DESIGN SPEED = 40 MPH (S. OF PACKERS AVE.)
DESIGN SPEED = 45 MPH (N. OF PACKERS AVE.)
POSTED SPEED = 35 MPH (S. OF PACKERS AVE.)
POSTED SPEED = 45 MPH (N. OF PACKERS AVE.)

1ST STREET
ADT = 1,350 (2008), 1,700 (2030)
DESIGN SPEED = 35 MPH
POSTED SPEED = 30 MPH

PROJECT LOCATED IN: FAIRMONT CITY, ILLINOIS

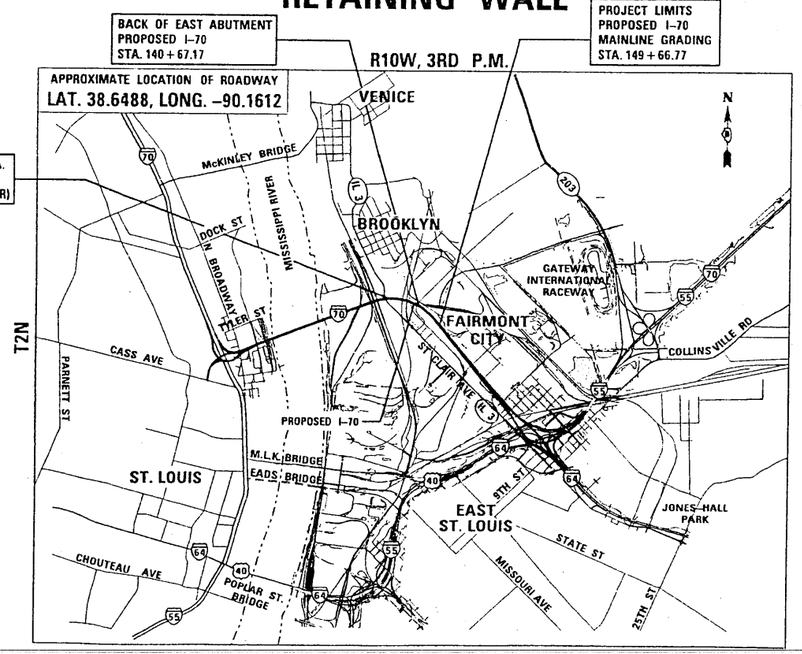
PLANS 1" = 50'
PROFILES 1" = 5'
X-SECTIONS 1" = 10' H
1" = 5' V

New Bridge.

100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123
OR 811



GROSS LENGTH OF PROJECT: 0.244 MI (1,286.17')

NET LENGTH OF PROJECT: 0.244 MI (1,286.17')

PROJECT ENGINEER : MICHAEL D. PRITCHETT (618) 346–3180
PROJECT MANAGER : JANE CHASTAIN MERCER (618) 346–3206

CONTRACT NO. 76C44 082-0318(EB), 0319(WB)

BRIAN T. DANLEY
EXPIRES: 11/30/2010
DATE : 3/11/10
FOR SHEETS : 78, 111-235

ROBERT J. STERN
040104
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS
EXPIRES: 11/30/11
DATE : 3/10/10
FOR SHEETS : 1-77, 79-80, 100-110, 236-285

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE CHICAGO, IL 60601
TELEPHONE: 312-616-0000

D–98–059–08

LOCATION OF SECTION INDICATED THUS: –■–

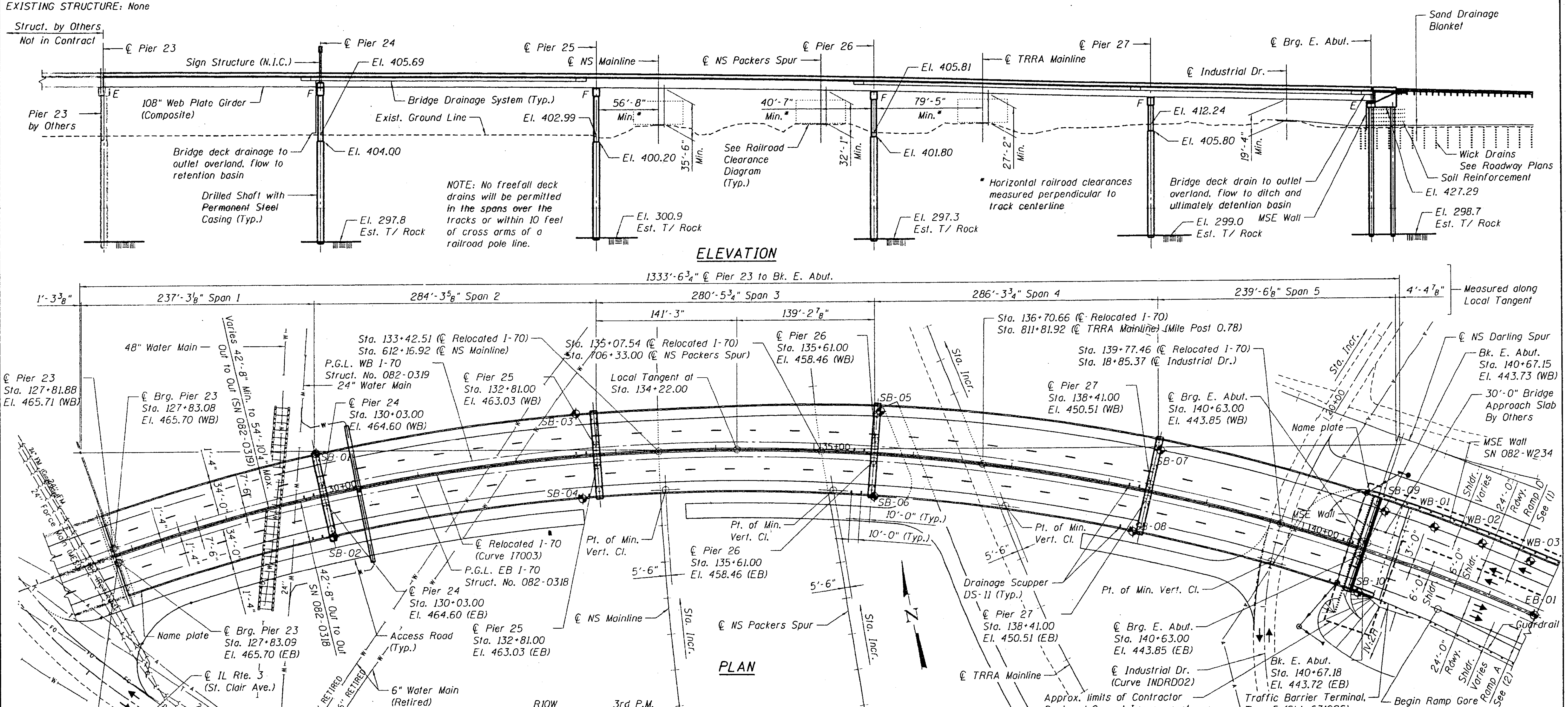
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

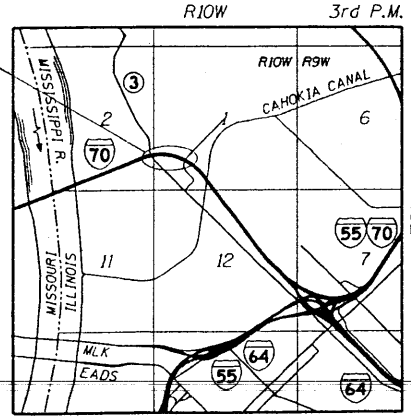
SUBMITTED March 18 20 10
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
June 25 20 10
Scott E. Stitt, P.E. /bc
acting ENGINEER OF DESIGN AND ENVIRONMENT
June 25 20 10
Christine M. Reed /bc
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

BENCH MARK: Monument No. 11: Aluminum disk set in the back of a 4.5' concrete walk (end of walk), located on the west side of Illinois Route 3 approximately 0.3 miles south of Canal Street (Brooklyn). El. 414.02

EXISTING STRUCTURE: None





LOCATION SKETCH

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interim Revisions

SEISMIC DATA

(See Sheet S-3)

DESIGN LOADING

Vehicular Live Load: HL-93
Future Wearing Surface: 50 psf

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 50,000 psi (AASHTO M 270 Grade 50W)

℄ RELOCATED I-70 CURVE I7003

PI Sta. = 138+29.72
Δ = 74°40'52" (RT)
D = 2°56'04"
R = 1,952.50'
T = 1,489.60'
L = 2,544.95'
E = 503.34'
SE = 5.40%
PC Sta. = 123+40.13
PT Sta. = 148+85.08

℄ INDUSTRIAL DR. CURVE INDRD02

PI Sta. = 17+68.75
Δ = 87°47'02" (RT)
D = 15°03'19"
R = 380.57'
T = 366.13'
L = 583.08'
E = 147.52'
SE = n/a
PC Sta. = 14+02.62
PT Sta. = 19+85.70

(1) Ramp D (Auxilliary Lane) Drop Taper begins at Sta. 139+90.69, Offset 43.5' LT and ends at Sta. 133+42.43, Offset 31.5 LT.

(2) Ramp A Taper begins at Sta. 141+51.57, Offset 31.50' RT and ends at Sta. 144+42.57, Offset 43.5' RT.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TJD)
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS R. SHANKAR NAIR 81-3676 CHICAGO LICENSED STRUCTURAL ENGINEER
6/4/10 exp 11/30/10

FILE NAME =	USER NAME = $USER$	DESIGNED - KK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - KK	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

GENERAL PLAN & ELEVATION

SN 082-0318 (EB) & 0319 (WB)

SCALE:	SHEET NO. S-1 OF S-111	STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	111
		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts $^{7}/_{8}$ in. ϕ, holes $^{15}/_{16}$ in. ϕ, unless otherwise noted.

2. Calculated weight of Structural Steel = 7,894,000 lbs.

3. All structural steel shall be AASHTO M 270 Grade 50W except expansion joints which shall be AASHTO M 270 Grade 50.

4. No field welding is permitted except as specified in the contract documents.

5. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

6. Reinforcement bars designated (E) shall be epoxy coated.

7. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

8. Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of $^{1}/_{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

9. Concrete Sealer shall be applied to the designated areas of the abutment.

10 Structural steel shall only be painted for a distance of 10 ft. each way from the deck joints and piers. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".

11. All exposed structural steel of the bearings shall be cleaned and shop painted as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".

12. Slipforming of the parapets is not allowed.

13. The Contractor is alerted that camber and dead load deflection values shown on the girder detail drawings were developed based on the deck pouring sequence shown in the Contract Drawings. Any deviation from this pouring sequence will result in changes to camber and elevations that reflect dead load deflections. If the Contractor wishes to change the sequence, then the proposed plan revisions and design calculations shall be submitted to the Engineer for review and approval. The calculations shall be prepared and sealed by a Licensed Structural Engineer in Illinois.

14. Abbreviations:
    - NS - Norfolk Southern
    - TRRA - Terminal Railroad Association
    - MCT - Metro County Transit

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu Yd	462
Concrete Structures	Cu Yd	1,452.3
Concrete Superstructure	Cu Yd	4,076.2
Bridge Deck Grooving	Sq Yd	11,530
Protective Coat	Sq Yd	14,509
Furnishing And Erecting Structural Steel	L Sum	1
Furnishing and Erecting Structural Steel	Pound	1,150
Stud Shear Connectors	Each	31,625
Reinforcement Bars	Pound	680,740
Reinforcement Bars, Epoxy Coated	Pound	1,475,060
Bar Splicers	Each	97
Name Plates	Each	2
Permanent Casing	Foot	2,447
Drilled Shaft In Soil	Cu Yd	2,579
Drilled Shaft In Rock	Cu Yd	57
Anchor Bolts, 1"	Each	88
Anchor Bolts, 1 1/4"	Each	264
Concrete Sealer	Sq Ft	1,727
Drainage Scuppers, DS-11	Each	20
High Load Multi-Rotation Bearings, Fixed - 900 K	Each	33
High Load Multi-Rotation Bearings, Fixed - 1000 K	Each	11
High Load Multi-Rotation Bearings, Guided Expansion, 300 K	Each	22
Mechanical Splicers	Each	896
Drainage System	L Sum	1
Modular Expansion Joint-Swivel 9"	Foot	93.5
Modular Expansion Joint-Swivel 24"	Foot	80.0
Crosshole Sonic Logging	Each	5

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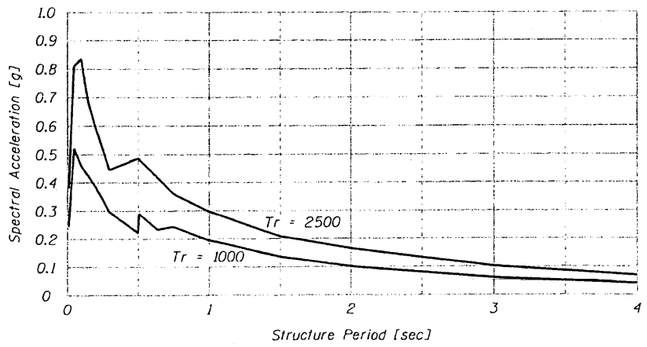
SEISMIC DATA*

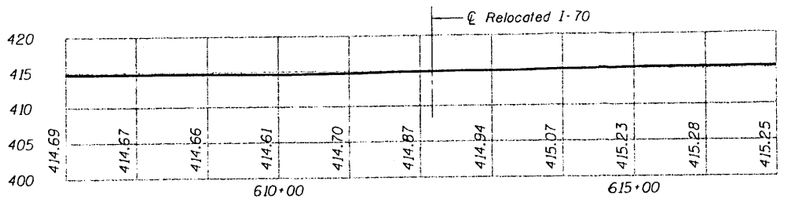
Soil Site Class = D

Return Period, Tr [yrs]	1000	2500
Design Spectral Acceleration at 1.0 sec, SDI [g]	0.20	0.30
Design Spectral Acceleration at 0.2 sec, SDS [g]	0.39	0.60
Importance Category	Critical	Essential
Seismic Performance Zone	2	2

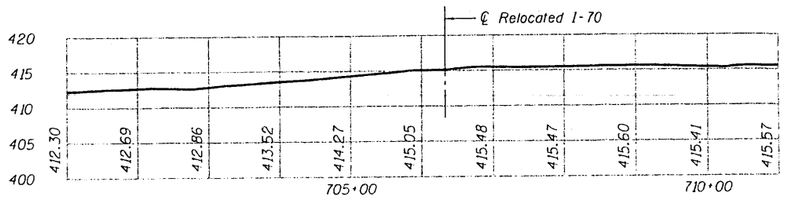
* Seismic Data based on site-specific analysis.

SITE-SPECIFIC UNIFORM HAZARD SPECTRA

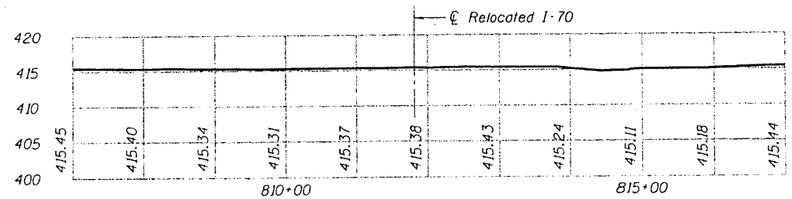




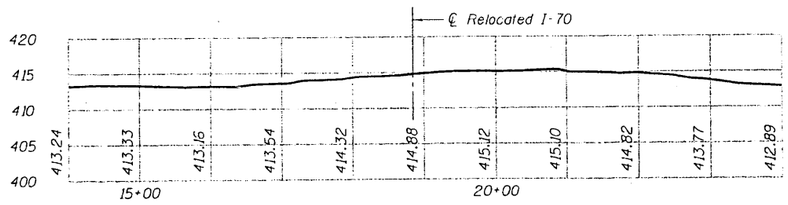
NS MAINLINE PROFILE



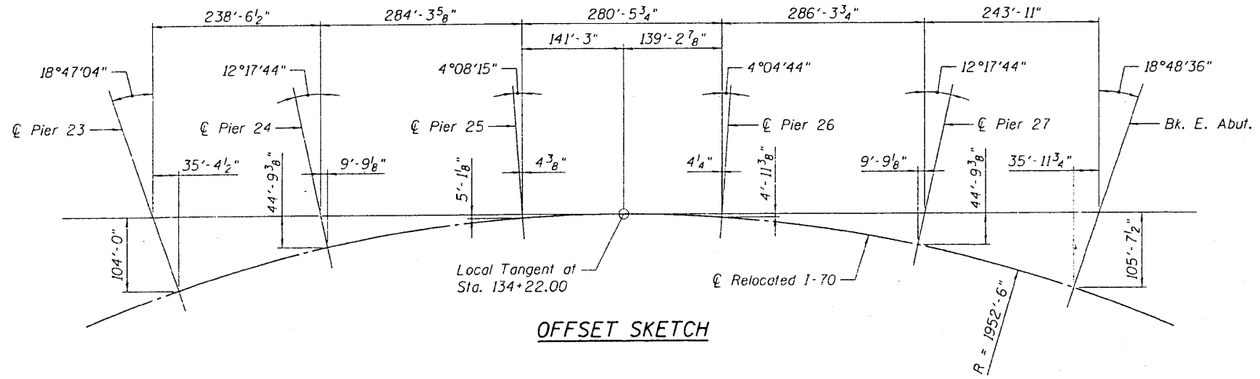
NS PACKERS SPUR PROFILE



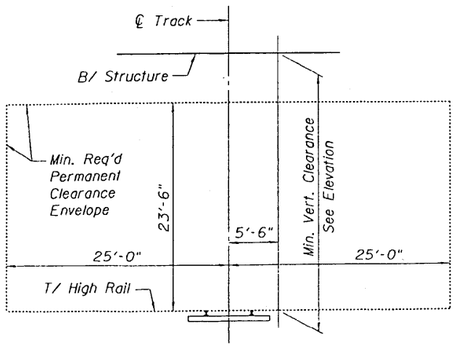
TRRA MAINLINE PROFILE



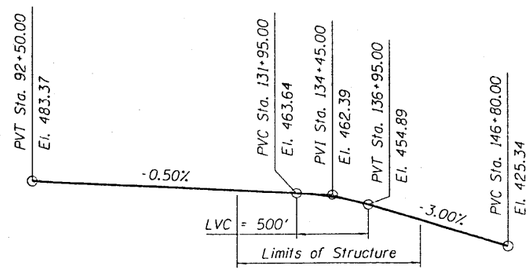
INDUSTRIAL DR. PROFILE



OFFSET SKETCH



RAILROAD CLEARANCE DIAGRAM



PROFILE GRADE F.A.P. RTE 998 (RELOCATED I-70)

STATION 134+22
BUILT 2011 BY
STATE OF ILLINOIS
F.A.P. RT. 998 SEC. 82-2-IHVB
LOADING HL-93
STRUCTURE NO. 082-0318

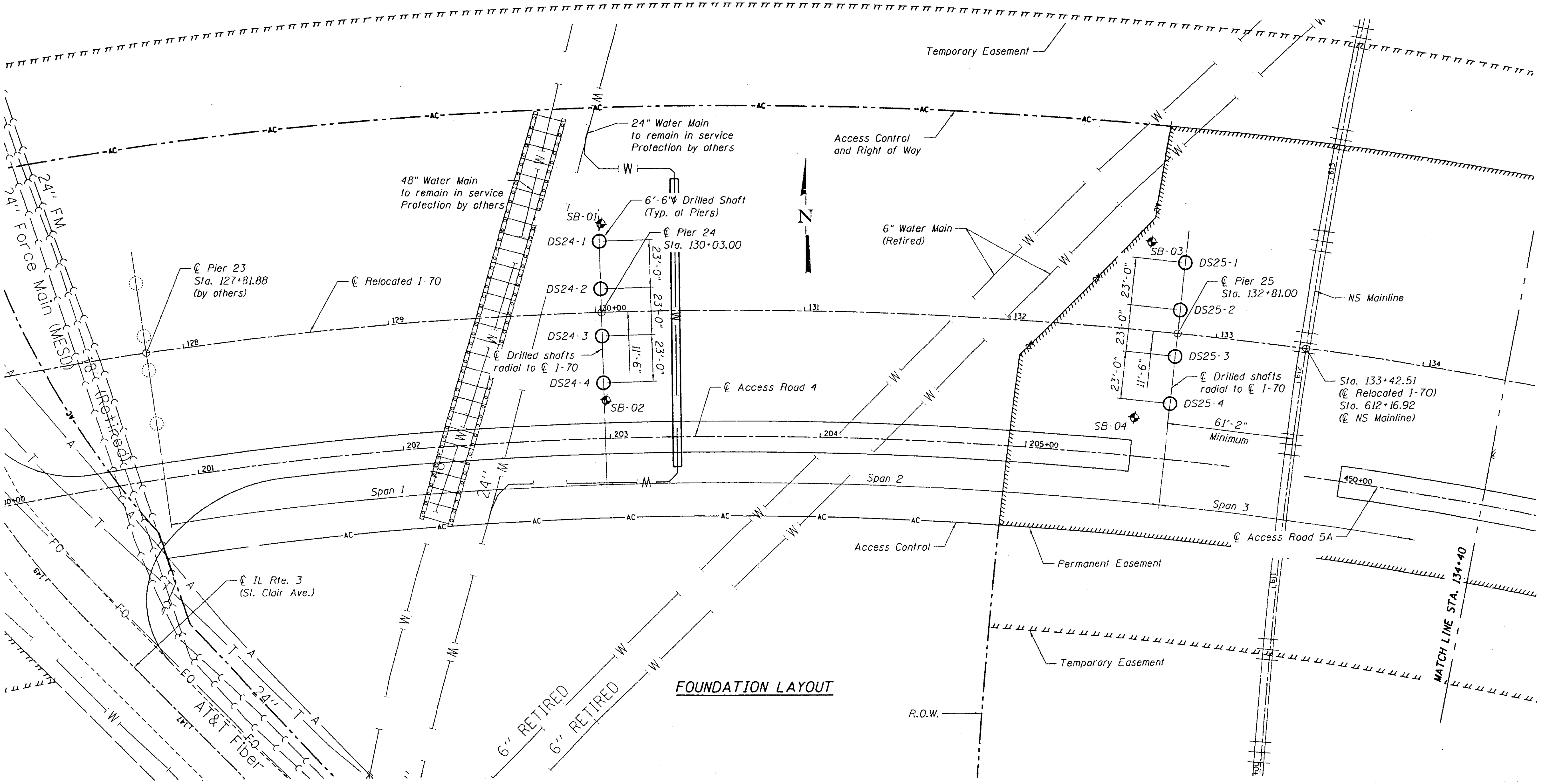
NAME PLATE (EB)
See Std. 515001

STATION 134+22
BUILT 2011 BY
STATE OF ILLINOIS
F.A.P. RT. 998 SEC. 82-2-IHVB
LOADING HL-93
STRUCTURE NO. 082-0319

NAME PLATE (WB)
See Std. 515001

\\1820318-CONN-05-001-TL.DGN ..\1820318-CONN-05-001-TL.DGN ..\1820318-CONN-05-001-TL.DGN ..\1820318-CONN-99-001-RD.DGN
6-23-2010 10:39:15 BDOHLWD \\FS-0244\VHVAULT_D-TRANS_87\2282-20868-ENV\STRUCTURE\CADD\01 DESIGN\1820318\SHEET\1820318-CONN-05-002-SHT-PG.DGN

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	VERTICAL PROFILES & SEISMIC DATA	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - KK	REVISED -			998	82-2-IHVB	ST. CLAIR	285	113
TENG ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -			SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44				
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-3 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	



FOUNDATION LAYOUT

LEGEND:

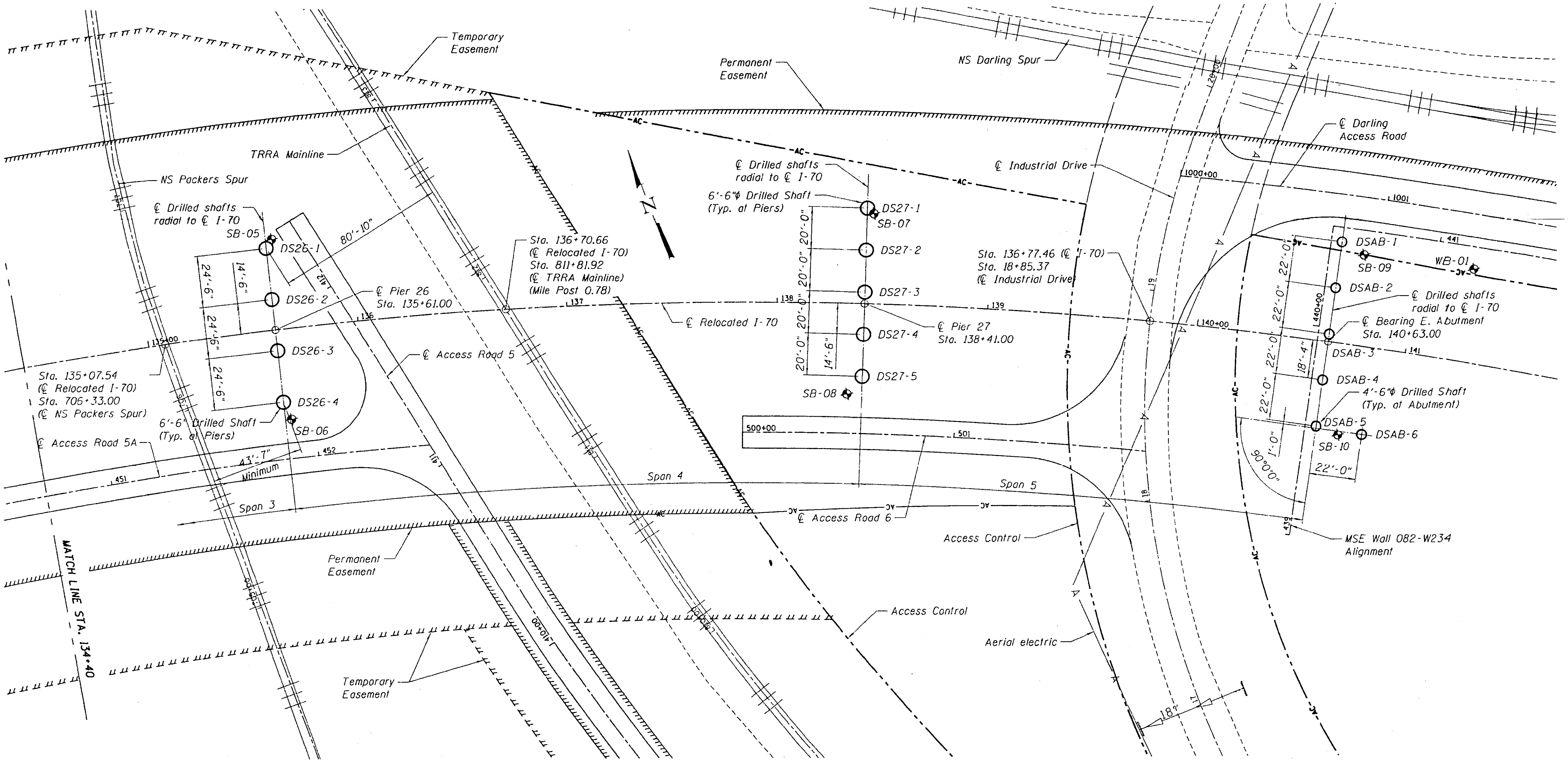
- Right of Way (R.O.W.)
- Access Control
- R.O.W. and Access Control
- Permanent Easement
- Temporary Easement

NOTES:

1. Work this sheet with Sheet S-5.
2. See Civil Plans for permanent access road details.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FOUNDATION LAYOUT 1 OF 2
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - JLR	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		SHEET NO. S-4 OF S-111
		DATE - 06/04/10	REVISED -		STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	114
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



FOUNDATION LAYOUT

NOTE:

Work this sheet with Sheet S-4.

FILE NAME :	USER NAME : $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
	PLOT SCALE : $SCALE$	CHECKED - TCU	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -

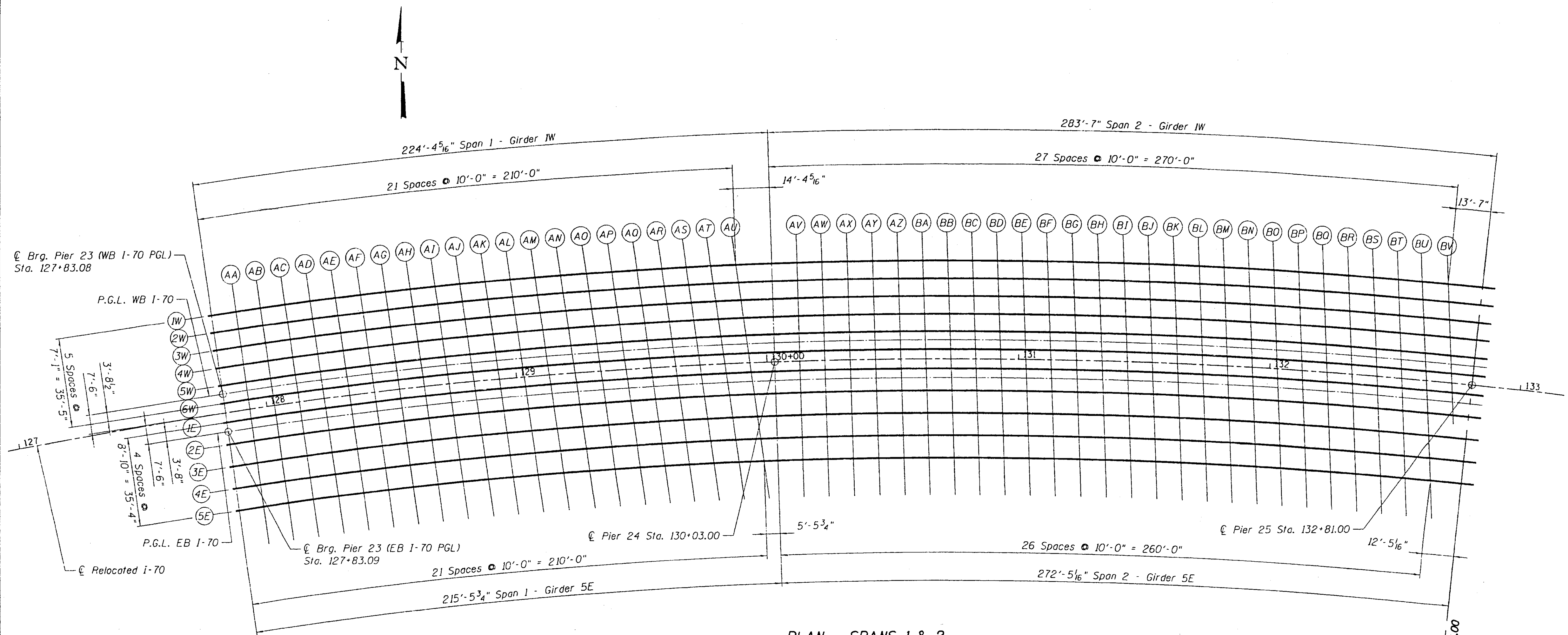
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

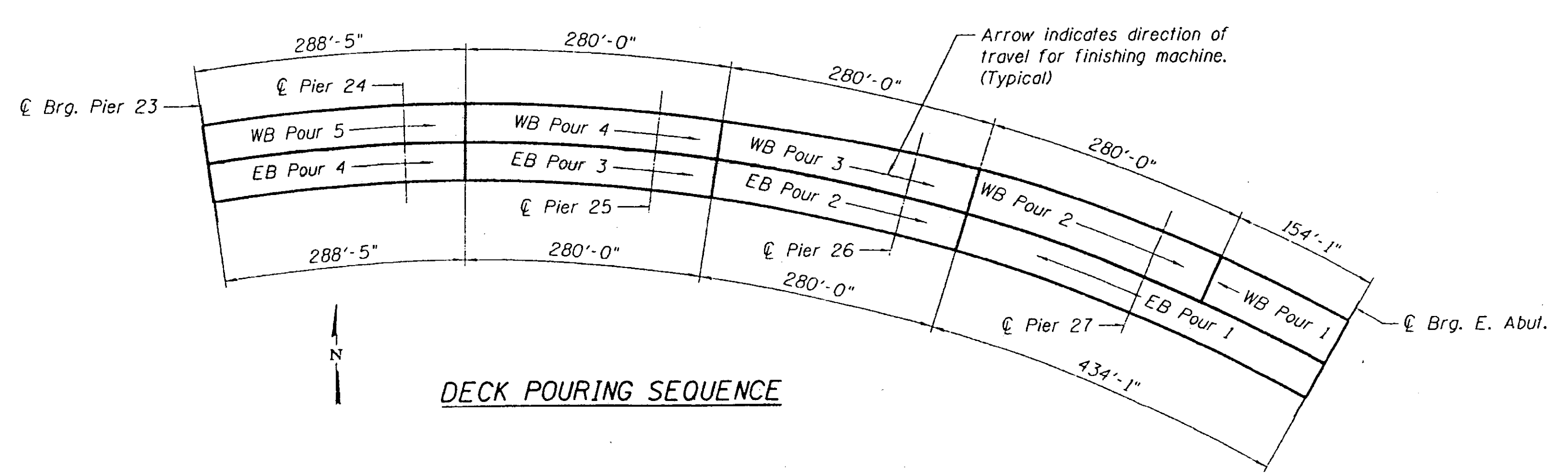
FOUNDATION LAYOUT
2 OF 2

SCALE: | SHEET NO. S-5 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	115
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN - SPANS 1 & 2



DECK POURING SEQUENCE

NOTES:

1. Work this sheet with Sheets S-7 through S-21.
2. The Contractor is alerted that camber and dead load deflection values shown on the plans were developed based on the deck pouring sequence shown on this sheet. Any deviation from this pouring sequence will result in changes to camber and elevations that reflect dead load deflections. If the Contractor wishes to change the sequence, then the proposed plan revisions and design calculations shall be submitted to the Engineer for review and approval. The calculations shall be prepared and sealed by a Licensed Structural Engineer in Illinois.
3. When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:
   1. At least 72 hours shall have elapsed from the end of the previous pour.
   2. The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

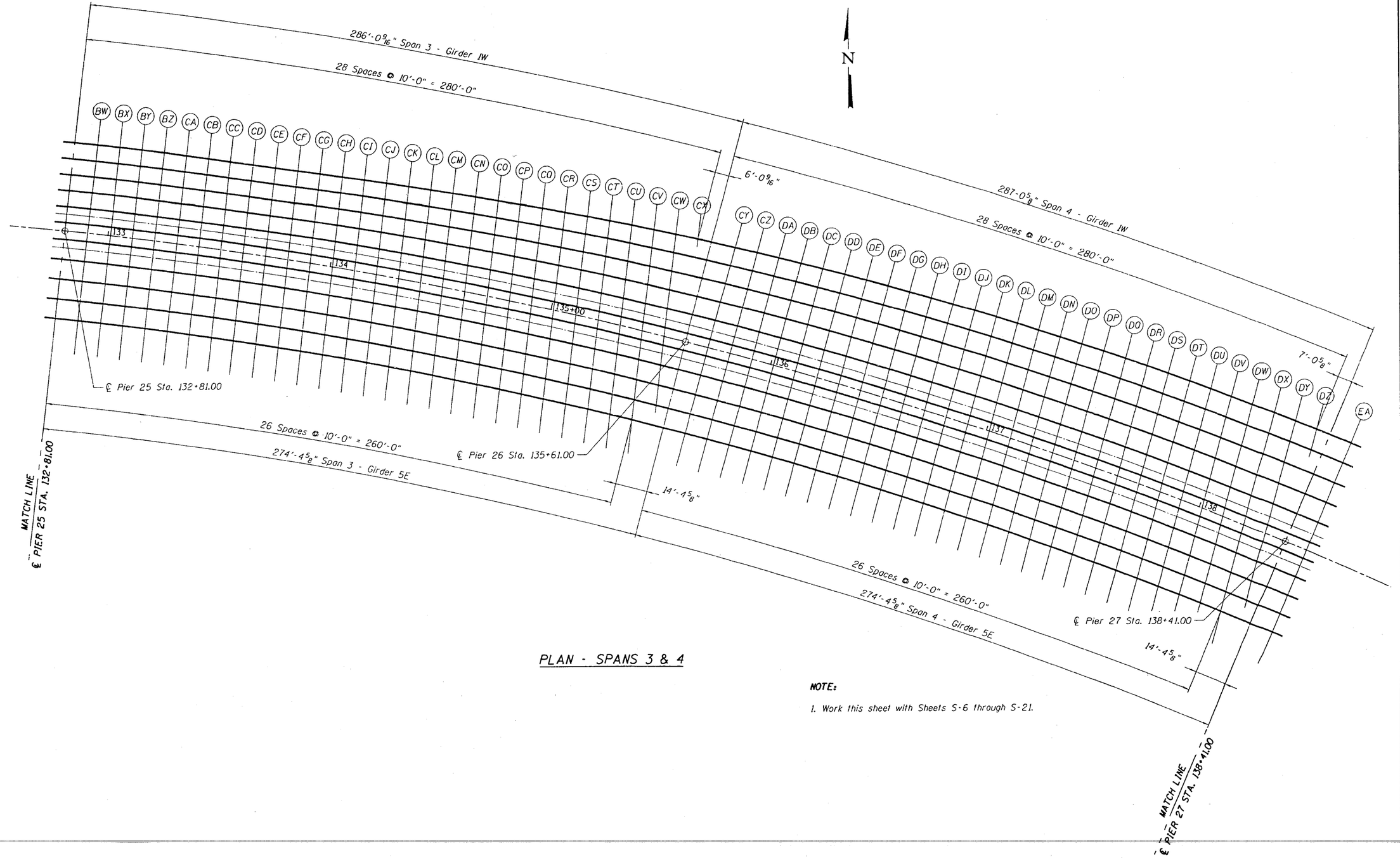
FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -
$FILE$		DRAWN - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATION PLAN
1 OF 3

SCALE: | SHEET NO. S-6 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	116
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



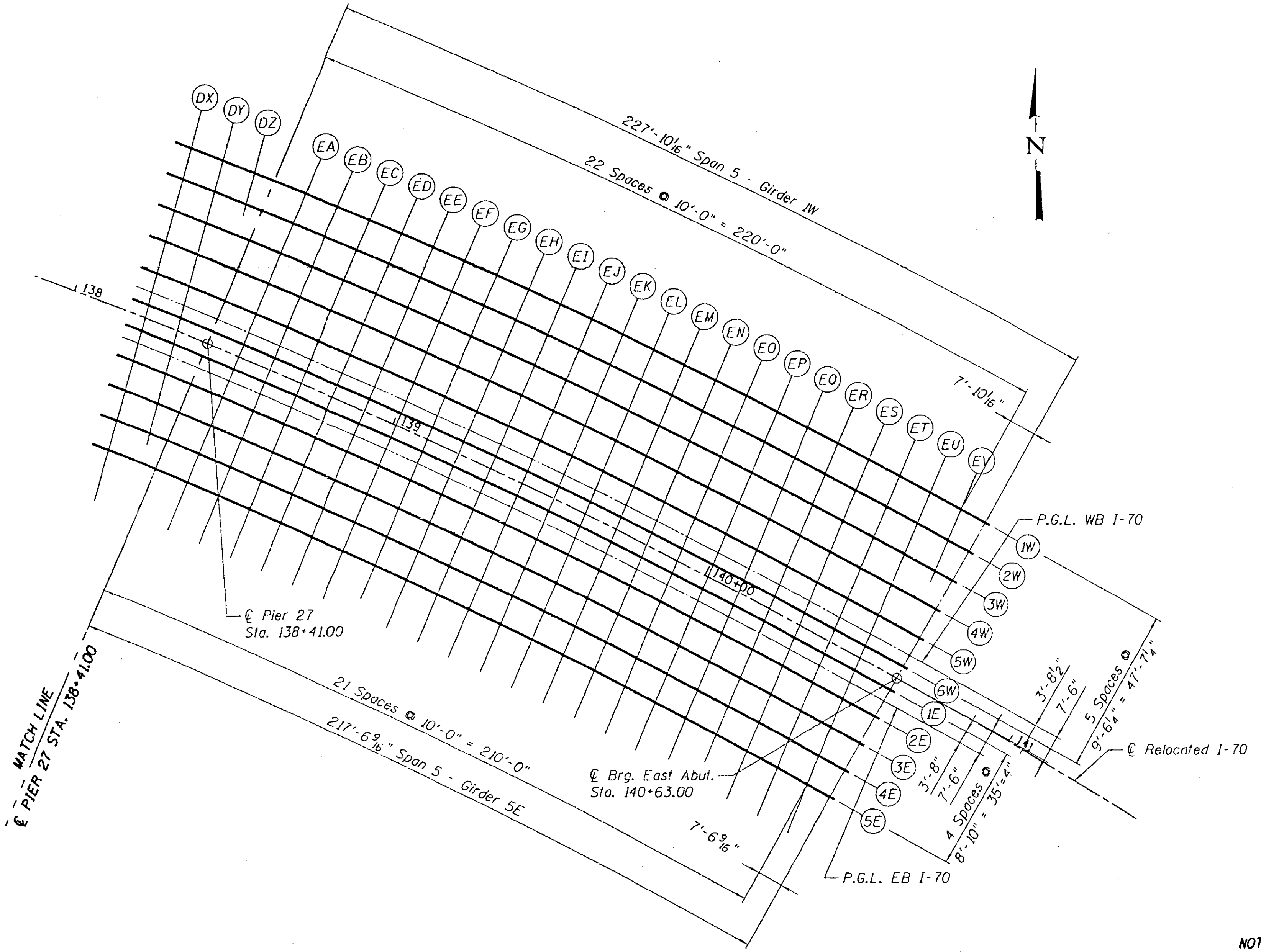
PLAN - SPANS 3 & 4

NOTE:

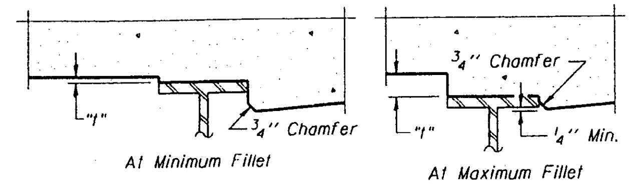
1. Work this sheet with Sheets S-6 through S-21.

..\DGN\05-ALIGNMENTS.DGN ..\082031B-CONN-05-R01-SP.DGN ..\082031B-CONN-99-R01-BD.DGN
6/03/2010 10:29:44 BOWMAN \\FS-0844\VARIALL_D-TRANS_87-2282-20868-08\STRUCTS\CADD\082031B\DESIGN\082031B\SHEET\082031B-CONN-05-R02-SH1-SP.DGN

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	TOP OF SLAB ELEVATION PLAN 2 OF 3	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - JLR	REVISED -			998	82-2-IHVB	ST. CLAIR	285	117
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -				SN 082-0318 (EB) & 0313 (WB) CONTRACT NO. 76C44			
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-7 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT



PLAN - SPAN 5



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below and on Sheets S-6 and S-7 of S-111. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets S-9 thru S-21 of S-111, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

NOTE:

1. Work this sheet with Sheets S-6 through S-21.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -
$FILE$		DRAWN - JLR	REVISED -
TENG (TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS)	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATION PLAN
3 OF 3

SCALE: | SHEET NO. S-8 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	118
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GIRDER 1E - SPANS 1 & 2

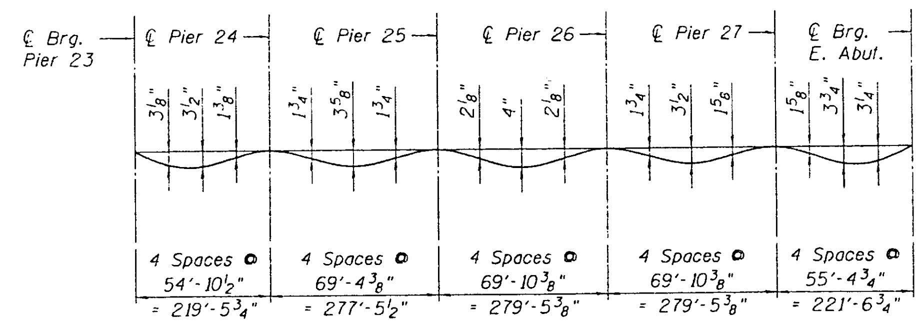
Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.09	-3.67	465.90	465.90
AA	127+93.11	-3.67	465.85	465.90
AB	128+03.13	-3.67	465.80	465.91
AC	128+13.14	-3.67	465.75	465.91
AD	128+23.16	-3.67	465.70	465.90
AE	128+33.18	-3.67	465.65	465.89
AF	128+43.20	-3.67	465.60	465.87
AG	128+53.22	-3.67	465.55	465.84
AH	128+63.24	-3.67	465.50	465.80
AI	128+73.26	-3.67	465.45	465.75
AJ	128+83.28	-3.67	465.40	465.69
AK	128+93.30	-3.67	465.35	465.63
AL	129+03.32	-3.67	465.30	465.56
AM	129+13.34	-3.67	465.25	465.48
AN	129+23.36	-3.67	465.20	465.40
AO	129+33.38	-3.67	465.15	465.31
AP	129+43.40	-3.67	465.10	465.23
AQ	129+53.42	-3.67	465.05	465.14
AR	129+63.44	-3.67	465.00	465.06
AS	129+73.46	-3.67	464.95	464.99
AT	129+83.48	-3.67	464.90	464.92
AU	129+93.50	-3.67	464.85	464.86
℄ Pier 24	130+03.00	-3.67	464.80	464.80
AV	130+13.02	-3.67	464.75	464.76
AW	130+23.04	-3.67	464.70	464.72
AX	130+33.06	-3.67	464.65	464.68
AY	130+43.08	-3.67	464.60	464.66
AZ	130+53.10	-3.67	464.55	464.63
BA	130+63.12	-3.67	464.50	464.61
BB	130+73.14	-3.67	464.45	464.60
BC	130+83.16	-3.67	464.40	464.58
BD	130+93.18	-3.67	464.35	464.56
BE	131+03.20	-3.67	464.30	464.54
BF	131+13.22	-3.67	464.25	464.51
BG	131+23.24	-3.67	464.20	464.48
BH	131+33.26	-3.67	464.15	464.44
BI	131+43.28	-3.67	464.10	464.39
BJ	131+53.30	-3.67	464.05	464.33
BK	131+63.31	-3.67	464.00	464.27
BL	131+73.33	-3.67	463.95	464.21
BM	131+83.35	-3.67	463.90	464.13
BN	131+93.37	-3.67	463.85	464.05
BO	132+03.39	-3.67	463.79	463.97
BP	132+13.41	-3.67	463.74	463.88
BQ	132+23.43	-3.67	463.68	463.78
BR	132+33.45	-3.67	463.61	463.69
BS	132+43.47	-3.67	463.54	463.59
BT	132+53.49	-3.67	463.46	463.49
BU	132+63.51	-3.67	463.38	463.39
BV	132+73.53	-3.67	463.29	463.30

GIRDER 1E - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-3.67	463.22	463.22
BW	132+91.02	-3.67	463.13	463.14
BX	133+01.04	-3.67	463.03	463.05
BY	133+11.06	-3.67	462.92	462.96
BZ	133+21.08	-3.67	462.81	462.88
CA	133+31.10	-3.67	462.69	462.80
CB	133+41.12	-3.67	462.57	462.71
CC	133+51.14	-3.67	462.45	462.62
CD	133+61.16	-3.67	462.32	462.53
CE	133+71.18	-3.67	462.18	462.42
CF	133+81.20	-3.67	462.04	462.31
CG	133+91.22	-3.67	461.89	462.19
CH	134+01.24	-3.67	461.74	462.06
CI	134+11.26	-3.67	461.59	461.91
CJ	134+21.28	-3.67	461.43	461.76
CK	134+31.30	-3.67	461.26	461.59
CL	134+41.31	-3.67	461.09	461.40
CM	134+51.33	-3.67	460.91	461.21
CN	134+61.35	-3.67	460.73	461.00
CO	134+71.37	-3.67	460.55	460.79
CP	134+81.39	-3.67	460.36	460.56
CQ	134+91.41	-3.67	460.16	460.33
CR	135+01.43	-3.67	459.96	460.09
CS	135+11.45	-3.67	459.75	459.85
CT	135+21.47	-3.67	459.54	459.61
CU	135+31.49	-3.67	459.32	459.37
CV	135+41.51	-3.67	459.10	459.13
CW	135+51.53	-3.67	458.88	458.89
CX				
℄ Pier 26	135+61.00	-3.67	458.66	458.66
CY	135+71.02	-3.67	458.42	458.43
CZ	135+81.04	-3.67	458.18	458.20
DA	135+91.06	-3.67	457.94	457.97
DB	136+01.08	-3.67	457.69	457.74
DC	136+11.10	-3.67	457.43	457.51
DD	136+21.12	-3.67	457.17	457.28
DE	136+31.14	-3.67	456.90	457.05
DF	136+41.16	-3.67	456.63	456.81
DG	136+51.18	-3.67	456.35	456.56
DH	136+61.20	-3.67	456.07	456.31
DI	136+71.22	-3.67	455.79	456.05
DJ	136+81.24	-3.67	455.50	455.77
DK	136+91.26	-3.67	455.20	455.48
DL	137+01.28	-3.67	454.90	455.19
DM	137+11.30	-3.67	454.60	454.88
DN	137+21.31	-3.67	454.30	454.57
DO	137+31.33	-3.67	454.00	454.25
DP	137+41.35	-3.67	453.70	453.92
DQ	137+51.37	-3.67	453.40	453.60
DR	137+61.39	-3.67	453.10	453.26
DS	137+71.41	-3.67	452.80	452.93
DT	137+81.43	-3.67	452.50	452.60
DU	137+91.45	-3.67	452.19	452.27
DV	138+01.47	-3.67	451.89	451.94
DW	138+11.49	-3.67	451.59	451.62
DX	138+21.51	-3.67	451.29	451.31
DY	138+31.53	-3.67	450.99	451.00
DZ				

GIRDER 1E - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-3.67	450.71	450.71
EA	138+51.02	-3.67	450.41	450.42
EB	138+61.04	-3.67	450.11	450.13
EC	138+71.06	-3.67	449.81	449.86
ED	138+81.08	-3.67	449.51	449.58
EE	138+91.10	-3.67	449.21	449.32
EF	139+01.12	-3.67	448.90	449.05
EG	139+11.14	-3.67	448.60	448.79
EH	139+21.16	-3.67	448.30	448.52
EI	139+31.18	-3.67	448.00	448.26
EJ	139+41.20	-3.67	447.70	447.98
EK	139+51.22	-3.67	447.40	447.71
EL	139+61.24	-3.67	447.10	447.42
EM	139+71.26	-3.67	446.80	447.13
EN	139+81.28	-3.67	446.50	446.82
EO	139+91.30	-3.67	446.20	446.51
EP	140+01.31	-3.67	445.90	446.19
EQ	140+11.33	-3.67	445.60	445.86
ER	140+21.35	-3.67	445.30	445.52
ES	140+31.37	-3.67	445.00	445.17
ET	140+41.39	-3.67	444.70	444.82
EU	140+51.41	-3.67	444.40	444.46
EV				
℄ Brg Abut	140+63.00	-3.67	444.05	444.05



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 1E

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATIONS
1 OF 13

SCALE: | SHEET NO. S-9 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	119
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EB I-70 P.G.L. - SPANS 1 & 2

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.09	0.00	465.70	465.70
AA	127+93.13	0.00	465.65	465.70
AB	128+03.17	0.00	465.60	465.71
AC	128+13.20	0.00	465.55	465.70
AD	128+23.24	0.00	465.50	465.70
AE	128+33.28	0.00	465.45	465.68
AF	128+43.32	0.00	465.40	465.66
AG	128+53.36	0.00	465.35	465.63
AH	128+63.40	0.00	465.30	465.59
AI	128+73.44	0.00	465.25	465.55
AJ	128+83.47	0.00	465.20	465.49
AK	128+93.51	0.00	465.15	465.43
AL	129+03.55	0.00	465.10	465.35
AM	129+13.59	0.00	465.05	465.28
AN	129+23.63	0.00	465.00	465.19
AO	129+33.67	0.00	464.95	465.11
AP	129+43.70	0.00	464.90	465.02
AQ	129+53.74	0.00	464.85	464.94
AR	129+63.78	0.00	464.80	464.86
AS	129+73.82	0.00	464.75	464.79
AT	129+83.86	0.00	464.70	464.72
AU	129+93.90	0.00	464.65	464.66
℄ Pier 24	130+03.00	0.00	464.60	464.60
AV	130+13.04	0.00	464.55	464.56
AW	130+23.08	0.00	464.50	464.52
AX	130+33.12	0.00	464.45	464.48
AY	130+43.15	0.00	464.40	464.46
AZ	130+53.19	0.00	464.35	464.44
BA	130+63.23	0.00	464.30	464.42
BB	130+73.27	0.00	464.25	464.40
BC	130+83.31	0.00	464.20	464.38
BD	130+93.35	0.00	464.15	464.36
BE	131+03.39	0.00	464.10	464.34
BF	131+13.42	0.00	464.05	464.32
BG	131+23.46	0.00	464.00	464.28
BH	131+33.50	0.00	463.95	464.24
BI	131+43.54	0.00	463.90	464.19
BJ	131+53.58	0.00	463.85	464.13
BK	131+63.62	0.00	463.80	464.07
BL	131+73.66	0.00	463.75	464.01
BM	131+83.69	0.00	463.70	463.93
BN	131+93.73	0.00	463.65	463.85
BO	132+03.77	0.00	463.59	463.77
BP	132+13.81	0.00	463.54	463.68
BQ	132+23.85	0.00	463.48	463.58
BR	132+33.89	0.00	463.41	463.49
BS	132+43.93	0.00	463.34	463.39
BT	132+53.96	0.00	463.26	463.28
BU	132+64.00	0.00	463.18	463.19
BV	132+74.04	0.00	463.09	463.10

EB I-70 P.G.L. - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	0.00	463.03	463.03
BW	132+91.04	0.00	462.93	462.94
BX	133+01.08	0.00	462.83	462.85
BY	133+11.12	0.00	462.72	462.76
BZ	133+21.15	0.00	462.61	462.68
CA	133+31.19	0.00	462.50	462.60
CB	133+41.23	0.00	462.37	462.51
CC	133+51.27	0.00	462.25	462.42
CD	133+61.31	0.00	462.12	462.32
CE	133+71.35	0.00	461.98	462.22
CF	133+81.39	0.00	461.84	462.11
CG	133+91.42	0.00	461.69	461.99
CH	134+01.46	0.00	461.54	461.85
CI	134+11.50	0.00	461.39	461.71
CJ	134+21.54	0.00	461.22	461.55
CK	134+31.58	0.00	461.06	461.38
CL	134+41.62	0.00	460.89	461.19
CM	134+51.66	0.00	460.71	461.00
CN	134+61.69	0.00	460.53	460.79
CO	134+71.73	0.00	460.34	460.58
CP	134+81.77	0.00	460.15	460.35
CQ	134+91.81	0.00	459.95	460.12
CR	135+01.85	0.00	459.75	459.88
CS	135+11.89	0.00	459.55	459.64
CT	135+21.93	0.00	459.33	459.40
CU	135+31.96	0.00	459.12	459.16
CV	135+42.00	0.00	458.89	458.92
CW	135+52.04	0.00	458.67	458.68
CX				
℄ Pier 26	135+61.00	0.00	458.46	458.46
CY	135+71.04	0.00	458.22	458.23
CZ	135+81.08	0.00	457.98	458.00
DA	135+91.12	0.00	457.74	457.77
DB	136+01.15	0.00	457.49	457.54
DC	136+11.19	0.00	457.23	457.31
DD	136+21.23	0.00	456.97	457.08
DE	136+31.27	0.00	456.70	456.85
DF	136+41.31	0.00	456.43	456.61
DG	136+51.35	0.00	456.15	456.36
DH	136+61.39	0.00	455.87	456.10
DI	136+71.42	0.00	455.58	455.84
DJ	136+81.46	0.00	455.29	455.56
DK	136+91.50	0.00	454.99	455.28
DL	137+01.54	0.00	454.69	454.98
DM	137+11.58	0.00	454.39	454.67
DN	137+21.62	0.00	454.09	454.36
DO	137+31.66	0.00	453.79	454.04
DP	137+41.69	0.00	453.49	453.71
DQ	137+51.73	0.00	453.19	453.39
DR	137+61.77	0.00	452.89	453.06
DS	137+71.81	0.00	452.59	452.72
DT	137+81.85	0.00	452.28	452.39
DU	137+91.89	0.00	451.98	452.06
DV	138+01.93	0.00	451.68	451.73
DW	138+11.96	0.00	451.38	451.40
DX	138+22.00	0.00	451.08	451.09
DY	138+32.04	0.00	450.78	450.79
DZ				

EB I-70 P.G.L. - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	0.00	450.51	450.51
EA	138+51.04	0.00	450.21	450.22
EB	138+61.08	0.00	449.91	449.93
EC	138+71.12	0.00	449.61	449.66
ED	138+81.15	0.00	449.31	449.38
EE	138+91.19	0.00	449.00	449.11
EF	139+01.23	0.00	448.70	448.85
EG	139+11.27	0.00	448.40	448.58
EH	139+21.31	0.00	448.10	448.32
EI	139+31.35	0.00	447.80	448.05
EJ	139+41.39	0.00	447.50	447.77
EK	139+51.42	0.00	447.20	447.50
EL	139+61.46	0.00	446.90	447.21
EM	139+71.50	0.00	446.59	446.92
EN	139+81.54	0.00	446.29	446.61
EO	139+91.58	0.00	445.99	446.30
EP	140+01.62	0.00	445.69	445.97
EQ	140+11.66	0.00	445.39	445.64
ER	140+21.69	0.00	445.09	445.31
ES	140+31.73	0.00	444.79	444.96
ET	140+41.77	0.00	444.49	444.61
EU	140+51.81	0.00	444.19	444.25
EV				
℄ Brg Abut	140+63.00	0.00	443.85	443.85

NOTE:

1. Work this sheet with Sheets S-6 through S-21.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS 2 OF 13
		DRAWN - JLR	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	
TENG (TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS)	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -		SCALE:
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SHEET NO. S-10 OF S-111 / STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	120
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

\0820318-CONN-05-201-SP.DGN ..\0820318-CONN-99-001-BO.DGN \\FS-2044\MHVAULT\D-TRANS.07\2282\20060-001\STRUCT\CADD\01 DESIGN\0820318\SHEET\0820318-CONN-05 005-SHT-SP.DGN
6-03-2010 10:39:58 BOHORQJD

GIRDER 2E - SPANS 1 & 2

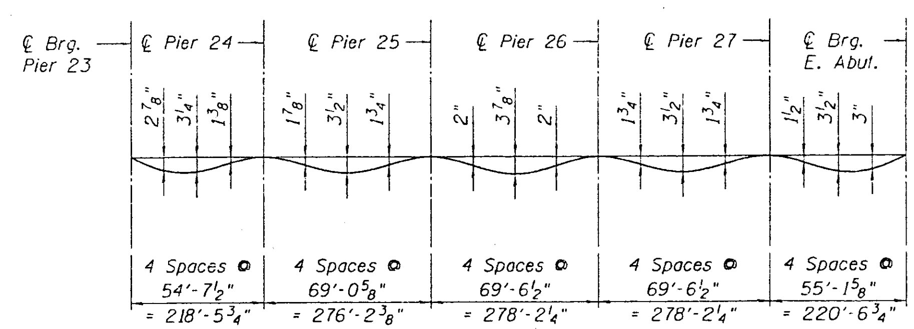
Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.09	5.17	465.42	465.42
AA	127+93.16	5.17	465.37	465.42
AB	128+03.22	5.17	465.32	465.43
AC	128+13.29	5.17	465.27	465.42
AD	128+23.35	5.17	465.22	465.41
AE	128+33.42	5.17	465.17	465.40
AF	128+43.48	5.17	465.12	465.37
AG	128+53.55	5.17	465.07	465.34
AH	128+63.61	5.17	465.02	465.30
AI	128+73.68	5.17	464.97	465.26
AJ	128+83.74	5.17	464.92	465.20
AK	128+93.81	5.17	464.87	465.14
AL	129+03.87	5.17	464.82	465.06
AM	129+13.94	5.17	464.77	464.99
AN	129+24.01	5.17	464.72	464.90
AO	129+34.07	5.17	464.67	464.82
AP	129+44.14	5.17	464.62	464.74
AQ	129+54.20	5.17	464.57	464.66
AR	129+64.27	5.17	464.52	464.58
AS	129+74.33	5.17	464.46	464.50
AT	129+84.40	5.17	464.41	464.43
AU	129+94.46	5.17	464.36	464.37
℄ Pier 24	130+03.00	5.17	464.32	464.32
AV	130+13.07	5.17	464.27	464.28
AW	130+23.13	5.17	464.22	464.24
AX	130+33.20	5.17	464.17	464.20
AY	130+43.26	5.17	464.12	464.18
AZ	130+53.33	5.17	464.07	464.16
BA	130+63.39	5.17	464.02	464.14
BB	130+73.46	5.17	463.97	464.12
BC	130+83.52	5.17	463.92	464.11
BD	130+93.59	5.17	463.87	464.09
BE	131+03.65	5.17	463.82	464.06
BF	131+13.72	5.17	463.77	464.04
BG	131+23.78	5.17	463.72	464.00
BH	131+33.85	5.17	463.67	463.96
BI	131+43.91	5.17	463.62	463.91
BJ	131+53.98	5.17	463.57	463.85
BK	131+64.04	5.17	463.52	463.79
BL	131+74.11	5.17	463.47	463.72
BM	131+84.18	5.17	463.42	463.65
BN	131+94.24	5.17	463.37	463.57
BO	132+04.31	5.17	463.31	463.49
BP	132+14.37	5.17	463.26	463.40
BQ	132+24.44	5.17	463.19	463.30
BR	132+34.50	5.17	463.12	463.20
BS	132+44.57	5.17	463.05	463.10
BT	132+54.63	5.17	462.97	463.00
BU	132+64.70	5.17	462.89	462.91
BV	132+74.76	5.17	462.80	462.81

GIRDER 2E - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	5.17	462.75	462.75
BW	132+91.07	5.17	462.65	462.66
BX	133+01.13	5.17	462.55	462.57
BY	133+11.20	5.17	462.44	462.48
BZ	133+21.26	5.17	462.33	462.40
CA	133+31.33	5.17	462.21	462.31
CB	133+41.39	5.17	462.09	462.23
CC	133+51.46	5.17	461.97	462.14
CD	133+61.52	5.17	461.84	462.04
CE	133+71.59	5.17	461.70	461.93
CF	133+81.65	5.17	461.56	461.82
CG	133+91.72	5.17	461.41	461.70
CH	134+01.78	5.17	461.26	461.56
CI	134+11.85	5.17	461.10	461.41
CJ	134+21.91	5.17	460.94	461.26
CK	134+31.98	5.17	460.77	461.08
CL	134+42.04	5.17	460.60	460.90
CM	134+52.11	5.17	460.42	460.71
CN	134+62.18	5.17	460.24	460.50
CO	134+72.24	5.17	460.05	460.28
CP	134+82.31	5.17	459.86	460.06
CQ	134+92.37	5.17	459.66	459.83
CR	135+02.44	5.17	459.46	459.59
CS	135+12.50	5.17	459.25	459.35
CT	135+22.57	5.17	459.04	459.11
CU	135+32.63	5.17	458.82	458.86
CV	135+42.70	5.17	458.60	458.62
CW	135+52.76	5.17	458.37	458.38
CX				
℄ Pier 26	135+61.00	5.17	458.18	458.18
CY	135+71.07	5.17	457.95	457.95
CZ	135+81.13	5.17	457.70	457.72
DA	135+91.20	5.17	457.46	457.49
DB	136+01.26	5.17	457.20	457.26
DC	136+11.33	5.17	456.95	457.03
DD	136+21.39	5.17	456.68	456.80
DE	136+31.46	5.17	456.42	456.57
DF	136+41.52	5.17	456.14	456.33
DG	136+51.59	5.17	455.87	456.08
DH	136+61.65	5.17	455.58	455.82
DI	136+71.72	5.17	455.30	455.56
DJ	136+81.78	5.17	455.00	455.28
DK	136+91.85	5.17	454.71	454.99
DL	137+01.91	5.17	454.40	454.69
DM	137+11.98	5.17	454.10	454.38
DN	137+22.04	5.17	453.80	454.07
DO	137+32.11	5.17	453.50	453.75
DP	137+42.18	5.17	453.20	453.42
DQ	137+52.24	5.17	452.89	453.09
DR	137+62.31	5.17	452.59	452.76
DS	137+72.37	5.17	452.29	452.43
DT	137+82.44	5.17	451.99	452.09
DU	137+92.50	5.17	451.69	451.76
DV	138+02.57	5.17	451.38	451.43
DW	138+12.63	5.17	451.08	451.11
DX	138+22.70	5.17	450.78	450.79
DY	138+32.76	5.17	450.48	450.48
DZ				

GIRDER 2E - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	5.17	450.23	450.23
EA	138+51.07	5.17	449.93	449.94
EB	138+61.13	5.17	449.63	449.65
EC	138+71.20	5.17	449.33	449.37
ED	138+81.26	5.17	449.02	449.10
EE	138+91.33	5.17	448.72	448.83
EF	139+01.39	5.17	448.42	448.56
EG	139+11.46	5.17	448.12	448.29
EH	139+21.52	5.17	447.82	448.02
EI	139+31.59	5.17	447.51	447.76
EJ	139+41.65	5.17	447.21	447.48
EK	139+51.72	5.17	446.91	447.20
EL	139+61.78	5.17	446.61	446.91
EM	139+71.85	5.17	446.31	446.62
EN	139+81.91	5.17	446.00	446.31
EO	139+91.98	5.17	445.70	445.99
EP	140+02.04	5.17	445.40	445.67
EQ	140+12.11	5.17	445.10	445.34
ER	140+22.18	5.17	444.80	445.00
ES	140+32.24	5.17	444.49	444.65
ET	140+42.31	5.17	444.19	444.30
EU	140+52.37	5.17	443.89	443.95
EV				
℄ Brg Abut	140+63.00	5.17	443.57	443.57



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 2E

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

GIRDER 3E - SPANS 1 & 2

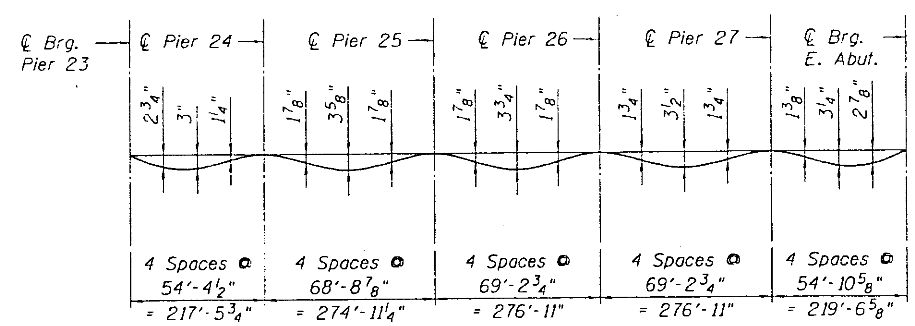
Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.10	14.00	464.94	464.94
AA	127+93.21	14.00	464.89	464.94
AB	128+03.32	14.00	464.84	464.94
AC	128+13.43	14.00	464.79	464.93
AD	128+23.54	14.00	464.74	464.92
AE	128+33.65	14.00	464.69	464.90
AF	128+43.76	14.00	464.64	464.88
AG	128+53.88	14.00	464.59	464.85
AH	128+63.99	14.00	464.54	464.81
AI	128+74.10	14.00	464.49	464.76
AJ	128+84.21	14.00	464.44	464.70
AK	128+94.32	14.00	464.39	464.64
AL	129+04.43	14.00	464.34	464.57
AM	129+14.54	14.00	464.29	464.49
AN	129+24.66	14.00	464.24	464.41
AO	129+34.77	14.00	464.19	464.33
AP	129+44.88	14.00	464.14	464.25
AQ	129+54.99	14.00	464.08	464.17
AR	129+65.10	14.00	464.03	464.09
AS	129+75.21	14.00	463.98	464.02
AT	129+85.32	14.00	463.93	463.95
AU	129+95.43	14.00	463.88	463.89
℄ Pier 24	130+03.00	14.00	463.84	463.84
AV	130+13.11	14.00	463.79	463.81
AW	130+23.22	14.00	463.74	463.77
AX	130+33.33	14.00	463.69	463.73
AY	130+43.45	14.00	463.64	463.71
AZ	130+53.56	14.00	463.59	463.69
BA	130+63.67	14.00	463.54	463.67
BB	130+73.78	14.00	463.49	463.65
BC	130+83.89	14.00	463.44	463.63
BD	130+94.00	14.00	463.39	463.61
BE	131+04.11	14.00	463.34	463.59
BF	131+14.22	14.00	463.29	463.56
BG	131+24.34	14.00	463.24	463.52
BH	131+34.45	14.00	463.19	463.48
BI	131+44.56	14.00	463.14	463.43
BJ	131+54.67	14.00	463.09	463.37
BK	131+64.78	14.00	463.04	463.31
BL	131+74.89	14.00	462.98	463.24
BM	131+85.00	14.00	462.93	463.16
BN	131+95.12	14.00	462.88	463.09
BO	132+05.23	14.00	462.83	463.00
BP	132+15.34	14.00	462.77	462.91
BQ	132+25.45	14.00	462.71	462.82
BR	132+35.56	14.00	462.64	462.72
BS	132+45.67	14.00	462.57	462.62
BT	132+55.78	14.00	462.49	462.51
BU	132+65.89	14.00	462.40	462.42
BV				

GIRDER 3E - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	14.00	462.27	462.27
BW	132+91.11	14.00	462.17	462.18
BX	133+01.22	14.00	462.07	462.09
BY	133+11.33	14.00	461.96	462.00
BZ	133+21.45	14.00	461.85	461.92
CA	133+31.56	14.00	461.74	461.83
CB	133+41.67	14.00	461.61	461.74
CC	133+51.78	14.00	461.49	461.65
CD	133+61.89	14.00	461.35	461.55
CE	133+72.00	14.00	461.22	461.44
CF	133+82.11	14.00	461.07	461.33
CG	133+92.22	14.00	460.93	461.21
CH	134+02.34	14.00	460.77	461.06
CI	134+12.45	14.00	460.61	460.92
CJ	134+22.56	14.00	460.45	460.76
CK	134+32.67	14.00	460.28	460.58
CL	134+42.78	14.00	460.11	460.40
CM	134+52.89	14.00	459.93	460.20
CN	134+63.00	14.00	459.75	459.99
CO	134+73.12	14.00	459.56	459.78
CP	134+83.23	14.00	459.37	459.55
CQ	134+93.34	14.00	459.17	459.32
CR	135+03.45	14.00	458.96	459.08
CS	135+13.56	14.00	458.75	458.84
CT	135+23.67	14.00	458.54	458.60
CU	135+33.78	14.00	458.32	458.35
CV	135+43.89	14.00	458.10	458.12
CW	135+54.01	14.00	457.87	457.88
CX				
℄ Pier 26	135+61.00	14.00	457.71	457.71
CY	135+71.11	14.00	457.47	457.48
CZ	135+81.22	14.00	457.22	457.24
DA	135+91.33	14.00	456.98	457.01
DB	136+01.45	14.00	456.72	456.78
DC	136+11.56	14.00	456.46	456.55
DD	136+21.67	14.00	456.20	456.32
DE	136+31.78	14.00	455.93	456.08
DF	136+41.89	14.00	455.66	455.84
DG	136+52.00	14.00	455.38	455.59
DH	136+62.11	14.00	455.09	455.33
DI	136+72.22	14.00	454.80	455.07
DJ	136+82.34	14.00	454.51	454.78
DK	136+92.45	14.00	454.21	454.49
DL	137+02.56	14.00	453.91	454.20
DM	137+12.67	14.00	453.60	453.88
DN	137+22.78	14.00	453.30	453.57
DO	137+32.89	14.00	453.00	453.25
DP	137+43.00	14.00	452.69	452.92
DQ	137+53.12	14.00	452.39	452.59
DR	137+63.23	14.00	452.09	452.26
DS	137+73.34	14.00	451.78	451.92
DT	137+83.45	14.00	451.48	451.58
DU	137+93.56	14.00	451.18	451.25
DV	138+03.67	14.00	450.87	450.92
DW	138+13.78	14.00	450.57	450.59
DX	138+23.89	14.00	450.27	450.28
DY	138+34.01	14.00	449.96	449.97
DZ				

GIRDER 3E - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	14.00	449.75	449.75
EA	138+51.11	14.00	449.45	449.46
EB	138+61.22	14.00	449.15	449.17
EC	138+71.33	14.00	448.84	448.89
ED	138+81.45	14.00	448.54	448.61
EE	138+91.56	14.00	448.24	448.34
EF	139+01.67	14.00	447.93	448.07
EG	139+11.78	14.00	447.63	447.80
EH	139+21.89	14.00	447.33	447.53
EI	139+32.00	14.00	447.02	447.25
EJ	139+42.11	14.00	446.72	446.97
EK	139+52.22	14.00	446.42	446.69
EL	139+62.34	14.00	446.11	446.40
EM	139+72.45	14.00	445.81	446.10
EN	139+82.56	14.00	445.51	445.79
EO	139+92.67	14.00	445.20	445.48
EP	140+02.78	14.00	444.90	445.15
EQ	140+12.89	14.00	444.60	444.82
ER	140+23.00	14.00	444.29	444.48
ES	140+33.12	14.00	443.99	444.14
ET	140+43.23	14.00	443.69	443.79
EU	140+53.34	14.00	443.38	443.43
EV				
℄ Brg Abut	140+63.00	14.00	443.09	443.09



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 3E

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME :	USER NAME : \$USER\$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : \$SCALE\$	DRAWN - JLR	REVISED -	
	PLOT DATE : \$DATE\$	CHECKED - TCU	REVISED -	
		DATE 06/04/10	REVISED -	

TOP OF SLAB ELEVATIONS
4 OF 13

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

SCALE: | SHEET NO. S-12 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	122
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GIRDER 4E - SPANS 1 & 2

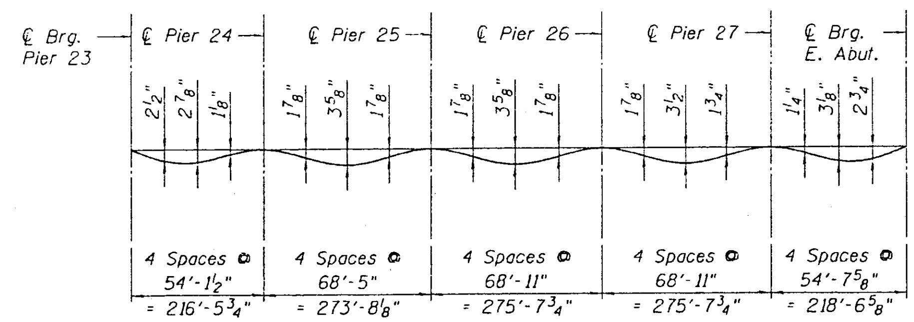
Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.10	22.83	464.47	464.47
AA	127+93.26	22.83	464.42	464.46
AB	128+03.42	22.83	464.37	464.46
AC	128+13.58	22.83	464.31	464.45
AD	128+23.73	22.83	464.26	464.43
AE	128+33.89	22.83	464.21	464.41
AF	128+44.05	22.83	464.16	464.39
AG	128+54.21	22.83	464.11	464.35
AH	128+64.36	22.83	464.06	464.31
AI	128+74.52	22.83	464.01	464.26
AJ	128+84.68	22.83	463.96	464.20
AK	128+94.84	22.83	463.91	464.14
AL	129+05.00	22.83	463.86	464.07
AM	129+15.15	22.83	463.81	464.00
AN	129+25.31	22.83	463.76	463.92
AO	129+35.47	22.83	463.71	463.84
AP	129+45.63	22.83	463.65	463.76
AQ	129+55.79	22.83	463.60	463.68
AR	129+65.94	22.83	463.55	463.60
AS	129+76.10	22.83	463.50	463.53
AT	129+86.26	22.83	463.45	463.46
AU	129+96.42	22.83	463.40	463.41
℄ Pier 24	130+03.00	22.83	463.37	463.37
AV	130+13.16	22.83	463.32	463.33
AW	130+23.32	22.83	463.27	463.29
AX	130+33.47	22.83	463.22	463.26
AY	130+43.63	22.83	463.16	463.23
AZ	130+53.79	22.83	463.11	463.21
BA	130+63.95	22.83	463.06	463.19
BB	130+74.10	22.83	463.01	463.18
BC	130+84.26	22.83	462.96	463.16
BD	130+94.42	22.83	462.91	463.14
BE	131+04.58	22.83	462.86	463.11
BF	131+14.74	22.83	462.81	463.08
BG	131+24.89	22.83	462.76	463.04
BH	131+35.05	22.83	462.71	463.00
BI	131+45.21	22.83	462.66	462.95
BJ	131+55.37	22.83	462.61	462.89
BK	131+65.52	22.83	462.55	462.83
BL	131+75.68	22.83	462.50	462.76
BM	131+85.84	22.83	462.45	462.68
BN	131+96.00	22.83	462.40	462.60
BO	132+06.16	22.83	462.35	462.52
BP	132+16.31	22.83	462.29	462.43
BQ	132+26.47	22.83	462.23	462.33
BR	132+36.63	22.83	462.16	462.23
BS	132+46.79	22.83	462.08	462.13
BT	132+56.95	22.83	462.00	462.03
BU	132+67.10	22.83	461.92	461.93
BV				

GIRDER 4E - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	22.83	461.79	461.79
BW	132+91.16	22.83	461.70	461.71
BX	133+01.32	22.83	461.59	461.62
BY	133+11.47	22.83	461.49	461.52
BZ	133+21.63	22.83	461.37	461.44
CA	133+31.79	22.83	461.26	461.35
CB	133+41.95	22.83	461.13	461.26
CC	133+52.10	22.83	461.00	461.16
CD	133+62.26	22.83	460.87	461.06
CE	133+72.42	22.83	460.73	460.95
CF	133+82.58	22.83	460.59	460.83
CG	133+92.74	22.83	460.44	460.71
CH	134+02.89	22.83	460.29	460.57
CI	134+13.05	22.83	460.13	460.42
CJ	134+23.21	22.83	459.96	460.26
CK	134+33.37	22.83	459.79	460.08
CL	134+43.52	22.83	459.62	459.90
CM	134+53.68	22.83	459.44	459.70
CN	134+63.84	22.83	459.26	459.49
CO	134+74.00	22.83	459.07	459.27
CP	134+84.16	22.83	458.87	459.05
CQ	134+94.31	22.83	458.67	458.81
CR	135+04.47	22.83	458.47	458.58
CS	135+14.63	22.83	458.25	458.34
CT	135+24.79	22.83	458.04	458.09
CU	135+34.95	22.83	457.82	457.85
CV	135+45.10	22.83	457.59	457.61
CW	135+55.26	22.83	457.36	457.37
CX				
℄ Pier 26	135+61.00	22.83	457.23	457.23
CY	135+71.16	22.83	456.99	457.00
CZ	135+81.32	22.83	456.74	456.77
DA	135+91.47	22.83	456.49	456.53
DB	136+01.63	22.83	456.24	456.30
DC	136+11.79	22.83	455.98	456.07
DD	136+21.95	22.83	455.72	455.84
DE	136+32.10	22.83	455.44	455.60
DF	136+42.26	22.83	455.17	455.36
DG	136+52.42	22.83	454.89	455.10
DH	136+62.58	22.83	454.60	454.84
DI	136+72.74	22.83	454.31	454.58
DJ	136+82.89	22.83	454.02	454.29
DK	136+93.05	22.83	453.72	454.00
DL	137+03.21	22.83	453.41	453.70
DM	137+13.37	22.83	453.11	453.38
DN	137+23.52	22.83	452.80	453.07
DO	137+33.68	22.83	452.50	452.75
DP	137+43.84	22.83	452.19	452.42
DQ	137+54.00	22.83	451.89	452.09
DR	137+64.16	22.83	451.58	451.75
DS	137+74.31	22.83	451.28	451.41
DT	137+84.47	22.83	450.97	451.08
DU	137+94.63	22.83	450.67	450.75
DV	138+04.79	22.83	450.36	450.41
DW	138+14.95	22.83	450.06	450.08
DX	138+25.10	22.83	449.75	449.77
DY	138+35.26	22.83	449.45	449.45
DZ				

GIRDER 4E - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	22.83	449.28	449.28
EA	138+51.16	22.83	448.97	448.98
EB	138+61.32	22.83	448.67	448.69
EC	138+71.47	22.83	448.36	448.40
ED	138+81.63	22.83	448.06	448.12
EE	138+91.79	22.83	447.75	447.85
EF	139+01.95	22.83	447.45	447.57
EG	139+12.10	22.83	447.14	447.30
EH	139+22.26	22.83	446.84	447.02
EI	139+32.42	22.83	446.53	446.75
EJ	139+42.58	22.83	446.23	446.47
EK	139+52.74	22.83	445.92	446.18
EL	139+62.89	22.83	445.62	445.89
EM	139+73.05	22.83	445.32	445.59
EN	139+83.21	22.83	445.01	445.28
EO	139+93.37	22.83	444.71	444.96
EP	140+03.52	22.83	444.40	444.64
EQ	140+13.68	22.83	444.10	444.31
ER	140+23.84	22.83	443.79	443.97
ES	140+34.00	22.83	443.49	443.62
ET	140+44.16	22.83	443.18	443.27
EU	140+54.31	22.83	442.88	442.92
EV				
℄ Brg Abut	140+63.00	22.83	442.62	442.62



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 4E

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATIONS
5 OF 13

SCALE: | SHEET NO. S-13 OF S-131 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	123
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GIRDER 5E - SPANS 1 & 2

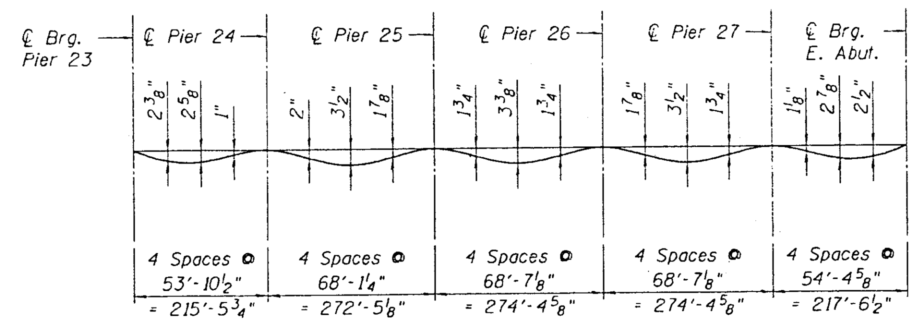
Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.11	31.67	463.99	463.99
AA	127+93.31	31.67	463.94	463.98
AB	128+03.52	31.67	463.89	463.97
AC	128+13.72	31.67	463.84	463.96
AD	128+23.93	31.67	463.79	463.95
AE	128+34.13	31.67	463.74	463.92
AF	128+44.34	31.67	463.68	463.89
AG	128+54.54	31.67	463.63	463.86
AH	128+64.75	31.67	463.58	463.81
AI	128+74.95	31.67	463.53	463.76
AJ	128+85.16	31.67	463.48	463.71
AK	128+95.36	31.67	463.43	463.64
AL	129+05.56	31.67	463.38	463.57
AM	129+15.77	31.67	463.33	463.50
AN	129+25.97	31.67	463.28	463.42
AO	129+36.18	31.67	463.22	463.34
AP	129+46.38	31.67	463.17	463.27
AQ	129+56.59	31.67	463.12	463.19
AR	129+66.79	31.67	463.07	463.11
AS	129+77.00	31.67	463.02	463.04
AT	129+87.20	31.67	462.97	462.98
AU	129+97.41	31.67	462.92	462.92
℄ Pier 24	130+03.00	31.67	462.89	462.89
AV	130+13.20	31.67	462.84	462.85
AW	130+23.41	31.67	462.79	462.81
AX	130+33.61	31.67	462.74	462.78
AY	130+43.82	31.67	462.69	462.76
AZ	130+54.02	31.67	462.64	462.74
BA	130+64.23	31.67	462.58	462.72
BB	130+74.43	31.67	462.53	462.70
BC	130+84.64	31.67	462.48	462.68
BD	130+94.84	31.67	462.43	462.66
BE	131+05.05	31.67	462.38	462.63
BF	131+15.25	31.67	462.33	462.60
BG	131+25.46	31.67	462.28	462.56
BH	131+35.66	31.67	462.23	462.52
BI	131+45.87	31.67	462.18	462.47
BJ	131+56.07	31.67	462.12	462.41
BK	131+66.28	31.67	462.07	462.35
BL	131+76.48	31.67	462.02	462.27
BM	131+86.68	31.67	461.97	462.20
BN	131+96.89	31.67	461.92	462.12
BO	132+07.09	31.67	461.87	462.03
BP	132+17.30	31.67	461.81	461.94
BQ	132+27.50	31.67	461.74	461.84
BR	132+37.71	31.67	461.67	461.75
BS	132+47.91	31.67	461.60	461.64
BT	132+58.12	31.67	461.52	461.54
BU	132+68.32	31.67	461.43	461.44
BV				

GIRDER 5E - SPANS 3 & 4

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	31.67	461.32	461.32
BW	132+91.20	31.67	461.22	461.23
BX	133+01.41	31.67	461.12	461.14
BY	133+11.61	31.67	461.01	461.04
BZ	133+21.82	31.67	460.89	460.96
CA	133+32.02	31.67	460.78	460.87
CB	133+42.23	31.67	460.65	460.77
CC	133+52.43	31.67	460.52	460.68
CD	133+62.64	31.67	460.39	460.57
CE	133+72.84	31.67	460.25	460.46
CF	133+83.05	31.67	460.11	460.34
CG	133+93.25	31.67	459.96	460.22
CH	134+03.46	31.67	459.80	460.07
CI	134+13.66	31.67	459.64	459.92
CJ	134+23.87	31.67	459.48	459.76
CK	134+34.07	31.67	459.31	459.58
CL	134+44.28	31.67	459.13	459.39
CM	134+54.48	31.67	458.95	459.19
CN	134+64.68	31.67	458.76	458.98
CO	134+74.89	31.67	458.57	458.77
CP	134+85.09	31.67	458.38	458.54
CQ	134+95.30	31.67	458.17	458.31
CR	135+05.50	31.67	457.97	458.07
CS	135+15.71	31.67	457.76	457.83
CT	135+25.91	31.67	457.54	457.59
CU	135+36.12	31.67	457.32	457.34
CV	135+46.32	31.67	457.09	457.10
CW				
CX				
℄ Pier 26	135+61.00	31.67	456.75	456.75
CY	135+71.20	31.67	456.51	456.52
CZ	135+81.41	31.67	456.27	456.29
DA	135+91.61	31.67	456.01	456.05
DB	136+01.82	31.67	455.76	455.82
DC	136+12.02	31.67	455.50	455.59
DD	136+22.23	31.67	455.23	455.36
DE	136+32.43	31.67	454.96	455.12
DF	136+42.64	31.67	454.68	454.87
DG	136+52.84	31.67	454.40	454.62
DH	136+63.05	31.67	454.11	454.35
DI	136+73.25	31.67	453.82	454.09
DJ	136+83.46	31.67	453.52	453.80
DK	136+93.66	31.67	453.22	453.50
DL	137+03.87	31.67	452.91	453.20
DM	137+14.07	31.67	452.61	452.89
DN	137+24.28	31.67	452.30	452.57
DO	137+34.48	31.67	452.00	452.25
DP	137+44.68	31.67	451.69	451.91
DQ	137+54.89	31.67	451.38	451.58
DR	137+65.09	31.67	451.08	451.25
DS	137+75.30	31.67	450.77	450.91
DT	137+85.50	31.67	450.46	450.57
DU	137+95.71	31.67	450.16	450.24
DV	138+05.91	31.67	449.85	449.90
DW	138+16.12	31.67	449.55	449.57
DX	138+26.32	31.67	449.24	449.26
DY				
DZ				

GIRDER 5E - SPAN 5

Location	Station	Offset From EB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	31.67	448.80	448.80
EA	138+51.20	31.67	448.49	448.50
EB	138+61.41	31.67	448.19	448.21
EC	138+71.61	31.67	447.88	447.92
ED	138+81.82	31.67	447.58	447.63
EE	138+92.02	31.67	447.27	447.36
EF	139+02.23	31.67	446.96	447.08
EG	139+12.43	31.67	446.66	446.80
EH	139+22.64	31.67	446.35	446.52
EI	139+32.84	31.67	446.04	446.24
EJ	139+43.05	31.67	445.74	445.96
EK	139+53.25	31.67	445.43	445.67
EL	139+63.46	31.67	445.13	445.37
EM	139+73.66	31.67	444.82	445.07
EN	139+83.87	31.67	444.51	444.76
EO	139+94.07	31.67	444.21	444.45
EP	140+04.28	31.67	443.90	444.12
EQ	140+14.48	31.67	443.60	443.79
ER	140+24.68	31.67	443.29	443.45
ES	140+34.89	31.67	442.98	443.10
ET	140+45.09	31.67	442.68	442.76
EU	140+55.30	31.67	442.37	442.41
EV				
℄ Brg Abut	140+63.00	31.67	442.14	442.14



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 5E

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = | USER NAME = $USER$ | PLOT SCALE = $SCALE$ | PLOT DATE = $DATE$

TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

DESIGNED - JLR | DRAWN - JLR | CHECKED - TCU | DATE - 06/04/10 | REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATIONS
6 OF 13

SCALE: | SHEET NO. S-14 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	124

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

GIRDER IW - SPANS 1 & 2

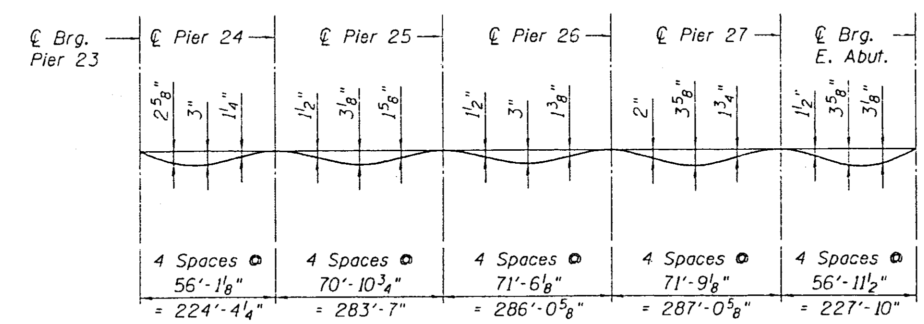
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.06	-31.71	467.41	467.41
AA	127+92.86	-31.71	467.36	467.41
AB	128+02.67	-31.71	467.31	467.41
AC	128+12.47	-31.71	467.27	467.40
AD	128+22.27	-31.71	467.22	467.39
AE	128+32.08	-31.71	467.17	467.37
AF	128+41.88	-31.71	467.12	467.35
AG	128+51.68	-31.71	467.07	467.32
AH	128+61.48	-31.71	467.02	467.28
AI	128+71.29	-31.71	466.97	467.24
AJ	128+81.09	-31.71	466.92	467.18
AK	128+90.89	-31.71	466.87	467.13
AL	129+00.70	-31.71	466.82	467.06
AM	129+10.50	-31.71	466.78	466.99
AN	129+20.30	-31.71	466.73	466.91
AO	129+30.11	-31.71	466.68	466.84
AP	129+39.91	-31.71	466.63	466.76
AQ	129+49.71	-31.71	466.58	466.68
AR	129+59.52	-31.71	466.53	466.60
AS	129+69.32	-31.71	466.48	466.53
AT	129+79.12	-31.71	466.43	466.46
AU	129+88.93	-31.71	466.38	466.40
℄ Pier 24	130+03.00	-31.71	466.31	466.31
AV	130+12.80	-31.71	466.26	466.27
AW	130+22.61	-31.71	466.21	466.23
AX	130+32.41	-31.71	466.17	466.19
AY	130+42.21	-31.71	466.12	466.16
AZ	130+52.02	-31.71	466.07	466.14
BA	130+61.82	-31.71	466.02	466.11
BB	130+71.62	-31.71	465.97	466.09
BC	130+81.43	-31.71	465.92	466.07
BD	130+91.23	-31.71	465.87	466.05
BE	131+01.03	-31.71	465.82	466.02
BF	131+10.83	-31.71	465.77	466.00
BG	131+20.64	-31.71	465.72	465.96
BH	131+30.44	-31.71	465.68	465.92
BI	131+40.24	-31.71	465.63	465.88
BJ	131+50.05	-31.71	465.58	465.83
BK	131+59.85	-31.71	465.53	465.77
BL	131+69.65	-31.71	465.48	465.72
BM	131+79.46	-31.71	465.43	465.65
BN	131+89.26	-31.71	465.38	465.57
BO	131+99.06	-31.71	465.33	465.50
BP	132+08.87	-31.71	465.28	465.42
BQ	132+18.67	-31.71	465.22	465.34
BR	132+28.47	-31.71	465.16	465.25
BS	132+38.28	-31.71	465.09	465.15
BT	132+48.08	-31.71	465.02	465.06
BU	132+57.88	-31.71	464.94	464.96
BV	132+67.68	-31.71	464.86	464.87

GIRDER IW - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-31.71	464.74	464.74
BW	132+90.80	-31.71	464.64	464.65
BX	133+00.61	-31.71	464.55	464.56
BY	133+10.41	-31.71	464.44	464.47
BZ	133+20.21	-31.71	464.33	464.38
CA	133+30.02	-31.71	464.22	464.29
CB	133+39.82	-31.71	464.10	464.20
CC	133+49.62	-31.72	463.98	464.11
CD	133+59.42	-31.79	463.86	464.01
CE	133+69.23	-31.90	463.73	463.91
CF	133+79.03	-32.07	463.60	463.80
CG	133+88.83	-32.28	463.47	463.69
CH	133+98.62	-32.55	463.34	463.57
CI	134+08.42	-32.86	463.21	463.45
CJ	134+18.21	-33.23	463.07	463.32
CK	134+27.99	-33.61	462.93	463.18
CL	134+37.78	-33.99	462.79	463.02
CM	134+47.56	-34.37	462.64	462.86
CN	134+57.35	-34.73	462.48	462.69
CO	134+67.13	-35.09	462.32	462.50
CP	134+76.91	-35.44	462.16	462.32
CQ	134+86.68	-35.79	461.99	462.12
CR	134+96.46	-36.13	461.81	461.92
CS	135+06.24	-36.46	461.63	461.71
CT	135+16.01	-36.78	461.45	461.50
CU	135+25.78	-37.10	461.25	461.29
CV	135+35.55	-37.41	461.06	461.07
CW	135+45.32	-37.71	460.86	460.87
CX	135+55.09	-38.01	460.65	460.65
℄ Pier 26	135+61.00	-38.18	460.52	460.52
CY	135+70.77	-38.46	460.31	460.32
CZ	135+80.53	-38.74	460.09	460.11
DA	135+90.30	-39.01	459.86	459.90
DB	136+00.06	-39.27	459.63	459.70
DC	136+09.82	-39.53	459.40	459.49
DD	136+19.58	-39.77	459.16	459.28
DE	136+29.34	-40.02	458.91	459.07
DF	136+39.10	-40.25	458.66	458.85
DG	136+48.86	-40.47	458.41	458.62
DH	136+58.62	-40.69	458.15	458.39
DI	136+68.37	-40.91	457.88	458.15
DJ	136+78.13	-41.11	457.61	457.89
DK	136+87.89	-41.31	457.33	457.62
DL	136+97.64	-41.50	457.05	457.35
DM	137+07.39	-41.68	456.77	457.06
DN	137+17.14	-41.86	456.49	456.77
DO	137+26.90	-42.02	456.20	456.47
DP	137+36.65	-42.19	455.92	456.16
DQ	137+46.40	-42.34	455.63	455.85
DR	137+56.15	-42.49	455.35	455.54
DS	137+65.90	-42.63	455.06	455.22
DT	137+75.64	-42.76	454.78	454.91
DU	137+85.39	-42.88	454.49	454.59
DV	137+95.14	-43.00	454.21	454.28
DW	138+04.89	-43.11	453.92	453.96
DX	138+14.63	-43.21	453.63	453.65
DY	138+24.38	-43.31	453.35	453.36
DZ	138+34.13	-43.40	453.06	453.07

GIRDER IW - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-43.46	452.86	452.86
EA	138+50.75	-43.53	452.57	452.58
EB	138+60.49	-43.60	452.28	452.31
EC	138+70.23	-43.66	451.99	452.04
ED	138+79.98	-43.72	451.70	451.78
EE	138+89.72	-43.77	451.41	451.52
EF	138+99.47	-43.81	451.12	451.26
EG	139+09.21	-43.84	450.83	451.00
EH	139+18.95	-43.86	450.54	450.75
EI	139+28.70	-43.88	450.25	450.49
EJ	139+38.44	-43.89	449.96	450.22
EK	139+48.19	-43.90	449.66	449.96
EL	139+57.93	-43.90	449.37	449.68
EM	139+67.67	-43.90	449.08	449.40
EN	139+77.42	-43.90	448.79	449.11
EO	139+87.16	-43.90	448.50	448.80
EP	139+96.90	-43.90	448.20	448.50
EQ	140+06.65	-43.90	447.91	448.18
ER	140+16.39	-43.90	447.62	447.86
ES	140+26.13	-43.90	447.33	447.52
ET	140+35.88	-43.90	447.03	447.18
EU	140+45.62	-43.90	446.74	446.84
EV	140+55.36	-43.90	446.45	446.49
℄ Brg Abut	140+63.00	-43.90	446.22	446.22



DEAD LOAD DEFLECTION DIAGRAM - GIRDER IW

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - JLR	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

TOP OF SLAB ELEVATIONS
7 OF 13

SCALE: | SHEET NO. S-15 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
996	82-2-1HVB	ST. CLAIR	285	125

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76E44
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

GIRDER 2W - SPANS 1 & 2

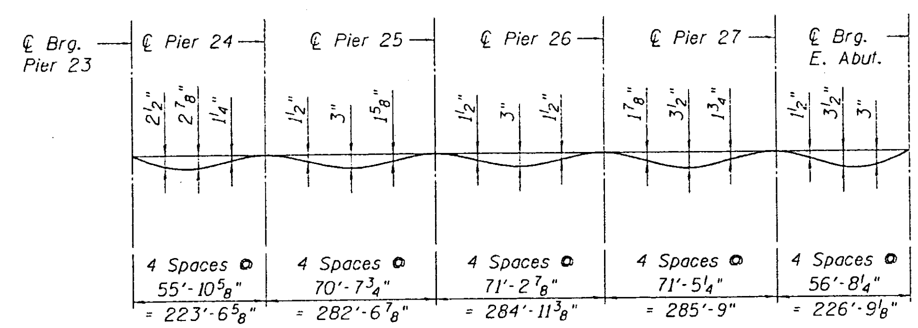
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.06	-24.63	467.03	467.03
AA	127+92.90	-24.63	466.98	467.03
AB	128+02.74	-24.63	466.93	467.02
AC	128+12.58	-24.63	466.88	467.01
AD	128+22.42	-24.63	466.83	467.00
AE	128+32.25	-24.63	466.78	466.98
AF	128+42.09	-24.63	466.73	466.95
AG	128+51.93	-24.63	466.69	466.92
AH	128+61.77	-24.63	466.64	466.88
AI	128+71.61	-24.63	466.59	466.84
AJ	128+81.45	-24.63	466.54	466.79
AK	128+91.28	-24.63	466.49	466.73
AL	129+01.12	-24.63	466.44	466.66
AM	129+10.96	-24.63	466.39	466.59
AN	129+20.80	-24.63	466.34	466.52
AO	129+30.64	-24.63	466.29	466.44
AP	129+40.47	-24.63	466.24	466.37
AQ	129+50.31	-24.63	466.19	466.29
AR	129+60.15	-24.63	466.14	466.21
AS	129+69.99	-24.63	466.10	466.14
AT	129+79.83	-24.63	466.05	466.07
AU	129+89.66	-24.63	466.00	466.01
℄ Pier 24	130+03.00	-24.63	465.93	465.93
AV	130+12.84	-24.63	465.88	465.89
AW	130+22.68	-24.63	465.83	465.85
AX	130+32.51	-24.63	465.78	465.81
AY	130+42.35	-24.63	465.73	465.78
AZ	130+52.19	-24.63	465.68	465.76
BA	130+62.03	-24.63	465.64	465.73
BB	130+71.87	-24.63	465.59	465.71
BC	130+81.71	-24.63	465.54	465.69
BD	130+91.54	-24.63	465.49	465.66
BE	131+01.38	-24.63	465.44	465.64
BF	131+11.22	-24.63	465.39	465.61
BG	131+21.06	-24.63	465.34	465.57
BH	131+30.90	-24.63	465.29	465.53
BI	131+40.73	-24.63	465.24	465.49
BJ	131+50.57	-24.63	465.19	465.44
BK	131+60.41	-24.63	465.14	465.38
BL	131+70.25	-24.63	465.09	465.32
BM	131+80.09	-24.63	465.04	465.25
BN	131+89.92	-24.63	465.00	465.18
BO	131+99.76	-24.63	464.95	465.11
BP	132+09.60	-24.63	464.89	465.03
BQ	132+19.44	-24.63	464.83	464.94
BR	132+29.28	-24.63	464.77	464.85
BS	132+39.12	-24.63	464.70	464.76
BT	132+48.95	-24.63	464.63	464.67
BU	132+58.79	-24.63	464.55	464.57
BV	132+68.63	-24.63	464.47	464.48

GIRDER 2W - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-24.63	464.36	464.36
BW	132+90.84	-24.63	464.26	464.27
BX	133+00.68	-24.63	464.16	464.18
BY	133+10.51	-24.63	464.06	464.09
BZ	133+20.35	-24.63	463.95	464.00
CA	133+30.19	-24.63	463.84	463.91
CB	133+40.03	-24.63	463.72	463.82
CC	133+49.87	-24.64	463.60	463.72
CD	133+59.70	-24.71	463.47	463.63
CE	133+69.54	-24.82	463.35	463.52
CF	133+79.38	-24.99	463.22	463.42
CG	133+89.21	-25.21	463.09	463.31
CH	133+99.04	-25.47	462.95	463.19
CI	134+08.87	-25.78	462.82	463.06
CJ	134+18.70	-26.09	462.68	462.93
CK	134+28.52	-26.39	462.53	462.78
CL	134+38.35	-26.69	462.38	462.62
CM	134+48.17	-26.98	462.23	462.45
CN	134+57.99	-27.27	462.07	462.27
CO	134+67.81	-27.55	461.90	462.08
CP	134+77.63	-27.82	461.73	461.89
CQ	134+87.45	-28.09	461.56	461.69
CR	134+97.27	-28.35	461.38	461.48
CS	135+07.08	-28.61	461.19	461.27
CT	135+16.90	-28.86	461.00	461.05
CU	135+26.71	-29.11	460.80	460.84
CV	135+36.52	-29.35	460.60	460.62
CW	135+46.33	-29.59	460.40	460.41
CX				
℄ Pier 26	135+61.00	-29.93	460.08	460.08
CY	135+70.81	-30.15	459.86	459.87
CZ	135+80.62	-30.37	459.63	459.66
DA	135+90.42	-30.58	459.41	459.45
DB	136+00.23	-30.78	459.17	459.24
DC	136+10.04	-30.98	458.93	459.03
DD	136+19.84	-31.17	458.69	458.81
DE	136+29.64	-31.36	458.44	458.59
DF	136+39.45	-31.54	458.18	458.37
DG	136+49.25	-31.72	457.92	458.14
DH	136+59.05	-31.89	457.66	457.90
DI	136+68.85	-32.06	457.39	457.65
DJ	136+78.65	-32.22	457.11	457.39
DK	136+88.45	-32.37	456.83	457.12
DL	136+98.25	-32.52	456.55	456.84
DM	137+08.05	-32.66	456.26	456.55
DN	137+17.84	-32.80	455.98	456.25
DO	137+27.64	-32.93	455.69	455.95
DP	137+37.43	-33.05	455.40	455.64
DQ	137+47.23	-33.17	455.11	455.33
DR	137+57.03	-33.29	454.83	455.01
DS	137+66.82	-33.40	454.54	454.69
DT	137+76.61	-33.50	454.25	454.37
DU	137+86.41	-33.60	453.96	454.05
DV	137+96.20	-33.69	453.67	453.74
DW	138+05.99	-33.77	453.38	453.43
DX	138+15.79	-33.85	453.09	453.12
DY	138+25.58	-33.93	452.80	452.82
DZ	138+35.37	-34.00	452.51	452.52

GIRDER 2W - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-34.03	452.35	452.35
EA	138+50.79	-34.09	452.06	452.07
EB	138+60.58	-34.15	451.77	451.79
EC	138+70.37	-34.20	451.48	451.52
ED	138+80.16	-34.24	451.18	451.26
EE	138+89.95	-34.27	450.89	450.99
EF	138+99.75	-34.31	450.60	450.73
EG	139+09.54	-34.33	450.31	450.48
EH	139+19.33	-34.35	450.02	450.22
EI	139+29.12	-34.36	449.72	449.96
EJ	139+38.91	-34.37	449.43	449.69
EK	139+48.70	-34.38	449.14	449.42
EL	139+58.49	-34.38	448.84	449.14
EM	139+68.28	-34.38	448.55	448.85
EN	139+78.07	-34.38	448.25	448.56
EO	139+87.86	-34.38	447.96	448.26
EP	139+97.65	-34.38	447.67	447.95
EQ	140+07.44	-34.38	447.37	447.63
ER	140+17.23	-34.38	447.08	447.31
ES	140+27.02	-34.38	446.79	446.97
ET	140+36.81	-34.38	446.49	446.63
EU	140+46.60	-34.38	446.20	446.29
EV	140+56.39	-34.38	445.90	445.94
℄ Brg Abut	140+63.00	-34.38	445.71	445.71



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 2W

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
$FILEL$	PLOT SCALE = $SCALE$	DRAWN - JLR	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

TOP OF SLAB ELEVATIONS
8 OF 13

SCALE: | SHEET NO. S-16 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	126

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76E44

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

GIRDER 3W - SPANS 1 & 2

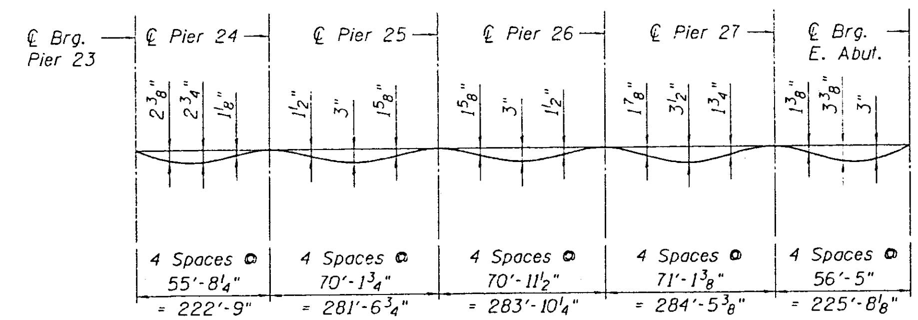
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.07	-17.54	466.65	466.65
AA	127+92.94	-17.54	466.60	466.64
AB	128+02.81	-17.54	466.55	466.63
AC	128+12.69	-17.54	466.50	466.62
AD	128+22.56	-17.54	466.45	466.61
AE	128+32.43	-17.54	466.40	466.59
AF	128+42.31	-17.54	466.35	466.56
AG	128+52.18	-17.54	466.30	466.53
AH	128+62.05	-17.54	466.25	466.49
AI	128+71.93	-17.54	466.20	466.45
AJ	128+81.80	-17.54	466.15	466.39
AK	128+91.68	-17.54	466.10	466.33
AL	129+01.55	-17.54	466.06	466.27
AM	129+11.42	-17.54	466.01	466.20
AN	129+21.30	-17.54	465.96	466.13
AO	129+31.17	-17.54	465.91	466.05
AP	129+41.04	-17.54	465.86	465.97
AQ	129+50.92	-17.54	465.81	465.90
AR	129+60.79	-17.54	465.76	465.82
AS	129+70.66	-17.54	465.71	465.75
AT	129+80.54	-17.54	465.66	465.68
AU	129+90.41	-17.54	465.61	465.62
℄ Pier 24	130+03.00	-17.54	465.55	465.55
AV	130+12.87	-17.54	465.50	465.51
AW	130+22.75	-17.54	465.45	465.47
AX	130+32.62	-17.54	465.40	465.43
AY	130+42.49	-17.54	465.35	465.40
AZ	130+52.37	-17.54	465.30	465.37
BA	130+62.24	-17.54	465.25	465.35
BB	130+72.11	-17.54	465.20	465.33
BC	130+81.99	-17.54	465.15	465.30
BD	130+91.86	-17.54	465.10	465.28
BE	131+01.73	-17.54	465.05	465.25
BF	131+11.61	-17.54	465.00	465.22
BG	131+21.48	-17.54	464.96	465.19
BH	131+31.35	-17.54	464.91	465.15
BI	131+41.23	-17.54	464.86	465.10
BJ	131+51.10	-17.54	464.81	465.05
BK	131+60.97	-17.54	464.76	464.99
BL	131+70.85	-17.54	464.71	464.93
BM	131+80.72	-17.54	464.66	464.86
BN	131+90.59	-17.54	464.61	464.79
BO	132+00.47	-17.54	464.56	464.72
BP	132+10.34	-17.54	464.50	464.64
BQ	132+20.21	-17.54	464.45	464.55
BR	132+30.09	-17.54	464.38	464.46
BS	132+39.96	-17.54	464.31	464.37
BT	132+49.83	-17.54	464.24	464.27
BU	132+59.71	-17.54	464.16	464.18
BV	132+69.58	-17.54	464.08	464.09

GIRDER 3W - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-17.54	463.97	463.97
BW	132+90.87	-17.54	463.88	463.89
BX	133+00.75	-17.54	463.78	463.80
BY	133+10.62	-17.54	463.68	463.71
BZ	133+20.49	-17.54	463.57	463.62
CA	133+30.37	-17.54	463.45	463.53
CB	133+40.24	-17.54	463.33	463.44
CC	133+50.11	-17.56	463.21	463.34
CD	133+59.99	-17.63	463.09	463.24
CE	133+69.86	-17.74	462.96	463.14
CF	133+79.73	-17.91	462.83	463.03
CG	133+89.60	-18.13	462.70	462.92
CH	133+99.46	-18.36	462.56	462.80
CI	134+09.33	-18.59	462.42	462.66
CJ	134+19.20	-18.82	462.28	462.53
CK	134+29.06	-19.04	462.13	462.37
CL	134+38.92	-19.26	461.97	462.21
CM	134+48.79	-19.47	461.81	462.04
CN	134+58.65	-19.68	461.65	461.85
CO	134+68.51	-19.88	461.48	461.66
CP	134+78.37	-20.09	461.30	461.46
CQ	134+88.22	-20.28	461.12	461.25
CR	134+98.08	-20.48	460.93	461.04
CS	135+07.94	-20.66	460.74	460.82
CT	135+17.79	-20.85	460.55	460.60
CU	135+27.65	-21.03	460.35	460.38
CV	135+37.50	-21.21	460.14	460.16
CW	135+47.36	-21.38	459.93	459.94
CX				
℄ Pier 26	135+61.00	-21.61	459.63	459.63
CY	135+70.85	-21.77	459.40	459.42
CZ	135+80.70	-21.93	459.18	459.20
DA	135+90.55	-22.08	458.94	458.98
DB	136+00.40	-22.23	458.70	458.77
DC	136+10.25	-22.38	458.46	458.56
DD	136+20.10	-22.52	458.21	458.34
DE	136+29.95	-22.66	457.96	458.11
DF	136+39.79	-22.79	457.70	457.89
DG	136+49.64	-22.92	457.44	457.65
DH	136+59.48	-23.05	457.17	457.40
DI	136+69.33	-23.17	456.89	457.15
DJ	136+79.17	-23.29	456.62	456.89
DK	136+89.02	-23.40	456.33	456.61
DL	136+98.86	-23.51	456.04	456.33
DM	137+08.70	-23.61	455.75	456.04
DN	137+18.55	-23.71	455.46	455.73
DO	137+28.39	-23.81	455.17	455.43
DP	137+38.23	-23.90	454.88	455.12
DQ	137+48.07	-23.99	454.59	454.80
DR	137+57.91	-24.07	454.30	454.49
DS	137+67.75	-24.15	454.01	454.16
DT	137+77.59	-24.22	453.72	453.84
DU	137+87.43	-24.29	453.43	453.52
DV	137+97.27	-24.36	453.14	453.20
DW	138+07.11	-24.42	452.85	452.89
DX	138+16.95	-24.48	452.55	452.57
DY	138+26.79	-24.53	452.26	452.27
DZ				

GIRDER 3W - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-24.61	451.84	451.84
EA	138+50.84	-24.65	451.55	451.56
EB	138+60.68	-24.69	451.25	451.28
EC	138+70.51	-24.72	450.96	451.00
ED	138+80.35	-24.75	450.67	450.74
EE	138+90.19	-24.78	450.37	450.47
EF	139+00.03	-24.80	450.08	450.21
EG	139+09.86	-24.82	449.78	449.95
EH	139+19.70	-24.84	449.49	449.69
EI	139+29.54	-24.85	449.20	449.42
EJ	139+39.37	-24.85	448.90	449.15
EK	139+49.21	-24.85	448.61	448.88
EL	139+59.05	-24.85	448.31	448.60
EM	139+68.89	-24.85	448.02	448.31
EN	139+78.72	-24.85	447.72	448.02
EO	139+88.56	-24.85	447.43	447.71
EP	139+98.40	-24.85	447.13	447.40
EQ	140+08.23	-24.85	446.84	447.08
ER	140+18.07	-24.85	446.54	446.76
ES	140+27.91	-24.85	446.24	446.42
ET	140+37.74	-24.85	445.95	446.08
EU	140+47.58	-24.85	445.65	445.74
EV	140+57.42	-24.85	445.36	445.39
℄ Brg Abut	140+63.00	-24.85	445.19	445.19



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 3W

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS 9 OF 13
		DRAWN - JLR	REVISED -		
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-17 OF S-1:1 STA. 134+22.00 TO STA.
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	127
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

GIRDER 4W - SPANS 1 & 2

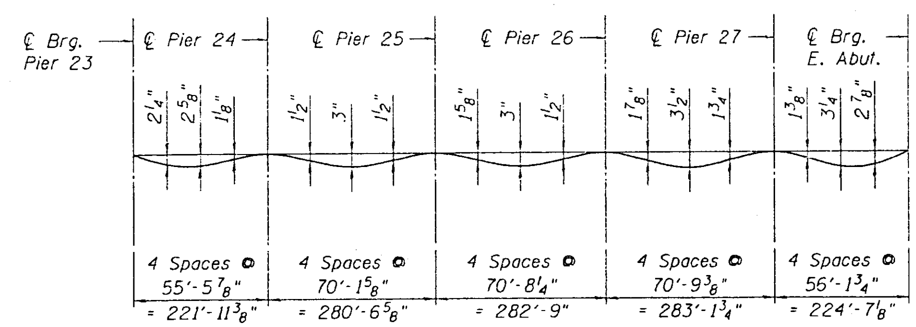
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.07	-10.46	466.27	466.27
AA	127+92.98	-10.46	466.22	466.26
AB	128+02.89	-10.46	466.17	466.25
AC	128+12.80	-10.46	466.12	466.23
AD	128+22.71	-10.46	466.07	466.22
AE	128+32.62	-10.46	466.02	466.19
AF	128+42.53	-10.46	465.97	466.17
AG	128+52.43	-10.46	465.92	466.13
AH	128+62.34	-10.46	465.87	466.09
AI	128+72.25	-10.46	465.82	466.05
AJ	128+82.16	-10.46	465.77	465.99
AK	128+92.07	-10.46	465.72	465.94
AL	129+01.98	-10.46	465.67	465.87
AM	129+11.89	-10.46	465.62	465.80
AN	129+21.80	-10.46	465.57	465.73
AO	129+31.71	-10.46	465.52	465.66
AP	129+41.61	-10.46	465.47	465.58
AQ	129+51.52	-10.46	465.42	465.51
AR	129+61.43	-10.46	465.37	465.43
AS	129+71.34	-10.46	465.32	465.36
AT	129+81.25	-10.46	465.27	465.29
AU	129+91.16	-10.46	465.22	465.23
℄ Pier 24	130+03.00	-10.46	465.17	465.17
AV	130+12.91	-10.46	465.12	465.12
AW	130+22.82	-10.46	465.07	465.08
AX	130+32.73	-10.46	465.02	465.05
AY	130+42.64	-10.46	464.97	465.02
AZ	130+52.54	-10.46	464.92	464.99
BA	130+62.45	-10.46	464.87	464.97
BB	130+72.36	-10.46	464.82	464.94
BC	130+82.27	-10.46	464.77	464.92
BD	130+92.18	-10.46	464.72	464.90
BE	131+02.09	-10.46	464.67	464.87
BF	131+12.00	-10.46	464.62	464.84
BG	131+21.91	-10.46	464.57	464.80
BH	131+31.82	-10.46	464.52	464.76
BI	131+41.72	-10.46	464.47	464.72
BJ	131+51.63	-10.46	464.42	464.66
BK	131+61.54	-10.46	464.37	464.60
BL	131+71.45	-10.46	464.32	464.54
BM	131+81.36	-10.46	464.27	464.47
BN	131+91.27	-10.46	464.22	464.40
BO	132+01.18	-10.46	464.17	464.33
BP	132+11.09	-10.46	464.12	464.25
BQ	132+20.99	-10.46	464.06	464.16
BR	132+30.90	-10.46	463.99	464.07
BS	132+40.81	-10.46	463.92	463.98
BT	132+50.72	-10.46	463.85	463.88
BU	132+60.63	-10.46	463.77	463.79
BV	132+70.54	-10.46	463.68	463.69

GIRDER 4W - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-10.46	463.59	463.59
BW	132+90.91	-10.46	463.50	463.51
BX	133+00.82	-10.46	463.40	463.42
BY	133+10.73	-10.46	463.29	463.32
BZ	133+20.64	-10.46	463.18	463.24
CA	133+30.54	-10.46	463.07	463.15
CB	133+40.45	-10.46	462.95	463.05
CC	133+50.36	-10.48	462.83	462.96
CD	133+60.27	-10.54	462.70	462.86
CE	133+70.18	-10.66	462.57	462.76
CF	133+80.08	-10.82	462.44	462.65
CG	133+89.99	-10.97	462.31	462.53
CH	133+99.89	-11.13	462.17	462.40
CI	134+09.80	-11.28	462.02	462.26
CJ	134+19.70	-11.42	461.87	462.12
CK	134+29.60	-11.57	461.72	461.96
CL	134+39.51	-11.71	461.56	461.79
CM	134+49.41	-11.85	461.39	461.61
CN	134+59.31	-11.98	461.22	461.42
CO	134+69.21	-12.12	461.04	461.22
CP	134+79.11	-12.25	460.86	461.02
CQ	134+89.01	-12.38	460.68	460.81
CR	134+98.90	-12.50	460.49	460.59
CS	135+08.80	-12.62	460.29	460.37
CT	135+18.70	-12.74	460.09	460.15
CU	135+28.60	-12.86	459.88	459.92
CV	135+38.49	-12.98	459.67	459.69
CW	135+48.39	-13.09	459.46	459.47
CX				
℄ Pier 26	135+61.00	-13.23	459.18	459.18
CY	135+70.89	-13.33	458.95	458.96
CZ	135+80.79	-13.44	458.72	458.74
DA	135+90.68	-13.54	458.48	458.52
DB	136+00.57	-13.64	458.24	458.30
DC	136+10.47	-13.73	457.99	458.08
DD	136+20.36	-13.82	457.74	457.86
DE	136+30.25	-13.91	457.48	457.63
DF	136+40.14	-14.00	457.22	457.40
DG	136+50.03	-14.08	456.95	457.16
DH	136+59.92	-14.16	456.68	456.91
DI	136+69.81	-14.24	456.40	456.66
DJ	136+79.70	-14.32	456.12	456.39
DK	136+89.59	-14.39	455.83	456.11
DL	136+99.48	-14.46	455.54	455.82
DM	137+09.37	-14.53	455.24	455.52
DN	137+19.25	-14.60	454.95	455.22
DO	137+29.14	-14.66	454.66	454.91
DP	137+39.03	-14.72	454.36	454.60
DQ	137+48.92	-14.77	454.07	454.28
DR	137+58.80	-14.83	453.78	453.96
DS	137+68.69	-14.88	453.48	453.63
DT	137+78.58	-14.93	453.19	453.31
DU	137+88.46	-14.97	452.89	452.98
DV	137+98.35	-15.02	452.60	452.66
DW	138+08.23	-15.06	452.31	452.34
DX	138+18.12	-15.10	452.01	452.03
DY	138+28.01	-15.13	451.72	451.73
DZ				

GIRDER 4W - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-15.17	451.33	451.33
EA	138+50.89	-15.20	451.03	451.05
EB	138+60.77	-15.23	450.74	450.76
EC	138+70.65	-15.25	450.44	450.49
ED	138+80.54	-15.27	450.15	450.22
EE	138+90.42	-15.29	449.85	449.95
EF	139+00.31	-15.30	449.56	449.68
EG	139+10.19	-15.31	449.26	449.42
EH	139+20.08	-15.32	448.97	449.15
EI	139+29.96	-15.33	448.67	448.89
EJ	139+39.85	-15.33	448.37	448.62
EK	139+49.73	-15.33	448.08	448.34
EL	139+59.62	-15.33	447.78	448.06
EM	139+69.50	-15.33	447.48	447.77
EN	139+79.38	-15.33	447.19	447.47
EO	139+89.27	-15.33	446.89	447.16
EP	139+99.15	-15.33	446.59	446.85
EQ	140+09.04	-15.33	446.30	446.53
ER	140+18.92	-15.33	446.00	446.21
ES	140+28.81	-15.33	445.70	445.87
ET	140+38.69	-15.33	445.41	445.53
EU	140+48.58	-15.33	445.11	445.18
EV				
℄ Brg Abut	140+63.00	-15.33	444.68	444.68



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 4W

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCD	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
10 OF 13

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

SCALE: | SHEET NO. S-18 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	128
SN 082-0518 (EB) & 0519 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GIRDER 5W - SPANS 1 & 2

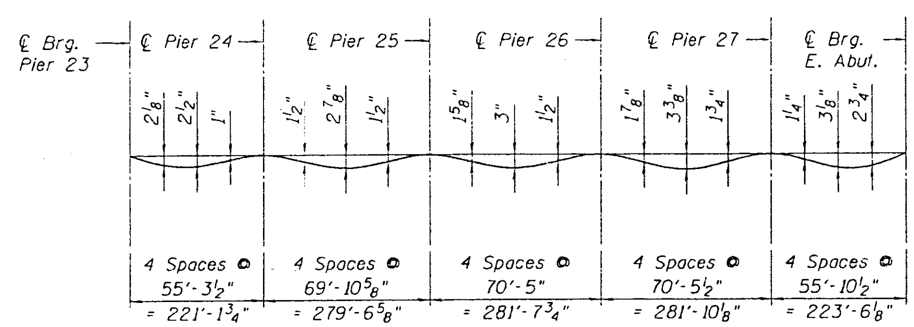
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.08	-3.38	465.88	465.88
AA	127+93.02	-3.38	465.83	465.87
AB	128+02.97	-3.38	465.78	465.86
AC	128+12.91	-3.38	465.73	465.84
AD	128+22.86	-3.38	465.68	465.83
AE	128+32.80	-3.38	465.63	465.80
AF	128+42.74	-3.38	465.58	465.77
AG	128+52.69	-3.38	465.53	465.74
AH	128+62.63	-3.38	465.48	465.70
AI	128+72.58	-3.38	465.43	465.65
AJ	128+82.52	-3.38	465.39	465.60
AK	128+92.47	-3.38	465.34	465.54
AL	129+02.41	-3.38	465.29	465.48
AM	129+12.36	-3.38	465.24	465.41
AN	129+22.30	-3.38	465.19	465.34
AO	129+32.25	-3.38	465.14	465.26
AP	129+42.19	-3.38	465.09	465.19
AQ	129+52.14	-3.38	465.04	465.11
AR	129+62.08	-3.38	464.99	465.04
AS	129+72.02	-3.38	464.94	464.97
AT	129+81.97	-3.38	464.89	464.90
AU	129+91.91	-3.38	464.84	464.85
℄ Pier 24	130+03.00	-3.38	464.78	464.78
AV	130+12.94	-3.38	464.73	464.74
AW	130+22.89	-3.38	464.68	464.70
AX	130+32.83	-3.38	464.63	464.66
AY	130+42.78	-3.38	464.58	464.64
AZ	130+52.72	-3.38	464.53	464.61
BA	130+62.67	-3.38	464.48	464.59
BB	130+72.61	-3.38	464.43	464.56
BC	130+82.56	-3.38	464.38	464.54
BD	130+92.50	-3.38	464.34	464.51
BE	131+02.45	-3.38	464.29	464.48
BF	131+12.39	-3.38	464.24	464.45
BG	131+22.34	-3.38	464.19	464.41
BH	131+32.28	-3.38	464.14	464.37
BI	131+42.22	-3.38	464.09	464.33
BJ	131+52.17	-3.38	464.04	464.27
BK	131+62.11	-3.38	463.99	464.21
BL	131+72.06	-3.38	463.94	464.15
BM	131+82.00	-3.38	463.89	464.08
BN	131+91.95	-3.38	463.84	464.01
BO	132+01.89	-3.38	463.79	463.94
BP	132+11.84	-3.38	463.73	463.86
BQ	132+21.78	-3.38	463.67	463.77
BR	132+31.73	-3.38	463.61	463.68
BS	132+41.67	-3.38	463.53	463.59
BT	132+51.62	-3.38	463.46	463.49
BU	132+61.56	-3.38	463.38	463.40
BV	132+71.50	-3.38	463.29	463.30

GIRDER 5W - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	-3.38	463.21	463.21
BW	132+90.94	-3.38	463.11	463.12
BX	133+00.89	-3.38	463.01	463.03
BY	133+10.83	-3.38	462.91	462.94
BZ	133+20.78	-3.38	462.80	462.86
CA	133+30.72	-3.38	462.68	462.76
CB	133+40.67	-3.38	462.56	462.67
CC	133+50.61	-3.39	462.44	462.57
CD	133+60.56	-3.46	462.31	462.48
CE	133+70.50	-3.54	462.18	462.37
CF	133+80.44	-3.62	462.05	462.25
CG	133+90.39	-3.69	461.91	462.13
CH	134+00.33	-3.77	461.76	462.00
CI	134+10.27	-3.84	461.61	461.86
CJ	134+20.21	-3.91	461.46	461.71
CK	134+30.15	-3.98	461.30	461.54
CL	134+40.10	-4.05	461.13	461.37
CM	134+50.04	-4.12	460.96	461.19
CN	134+59.98	-4.19	460.79	460.99
CO	134+69.92	-4.25	460.61	460.79
CP	134+79.86	-4.31	460.42	460.58
CQ	134+89.80	-4.38	460.23	460.36
CR	134+99.74	-4.44	460.03	460.14
CS	135+09.67	-4.50	459.83	459.91
CT	135+19.61	-4.56	459.63	459.68
CU	135+29.55	-4.61	459.42	459.45
CV	135+39.49	-4.67	459.20	459.22
CW	135+49.43	-4.73	458.98	458.99
CX				
℄ Pier 26	135+61.00	-4.79	458.72	458.72
CY	135+70.94	-4.84	458.49	458.50
CZ	135+80.87	-4.89	458.25	458.28
DA	135+90.81	-4.94	458.01	458.05
DB	136+00.75	-4.99	457.76	457.83
DC	136+10.68	-5.03	457.51	457.61
DD	136+20.62	-5.08	457.26	457.38
DE	136+30.56	-5.12	457.00	457.15
DF	136+40.49	-5.16	456.73	456.91
DG	136+50.43	-5.21	456.46	456.67
DH	136+60.36	-5.25	456.18	456.41
DI	136+70.30	-5.28	455.90	456.16
DJ	136+80.23	-5.32	455.61	455.88
DK	136+90.17	-5.36	455.32	455.60
DL	137+00.10	-5.39	455.03	455.31
DM	137+10.03	-5.42	454.73	455.01
DN	137+19.97	-5.46	454.44	454.70
DO	137+29.90	-5.49	454.14	454.39
DP	137+39.84	-5.52	453.84	454.07
DQ	137+49.77	-5.54	453.55	453.75
DR	137+59.70	-5.57	453.25	453.43
DS	137+69.64	-5.59	452.95	453.10
DT	137+79.57	-5.62	452.66	452.77
DU	137+89.50	-5.64	452.36	452.45
DV	137+99.44	-5.66	452.06	452.12
DW	138+09.37	-5.68	451.77	451.80
DX	138+19.30	-5.70	451.47	451.49
DY	138+29.24	-5.72	451.17	451.18
DZ				

GIRDER 5W - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	-5.73	450.82	450.82
EA	138+50.93	-5.75	450.52	450.53
EB	138+60.87	-5.76	450.23	450.25
EC	138+70.80	-5.77	449.93	449.97
ED	138+80.73	-5.78	449.63	449.69
EE	138+90.66	-5.79	449.33	449.42
EF	139+00.59	-5.80	449.04	449.16
EG	139+10.53	-5.80	448.74	448.89
EH	139+20.46	-5.81	448.44	448.62
EI	139+30.39	-5.81	448.14	448.35
EJ	139+40.32	-5.81	447.84	448.08
EK	139+50.26	-5.81	447.55	447.80
EL	139+60.19	-5.81	447.25	447.51
EM	139+70.12	-5.81	446.95	447.22
EN	139+80.05	-5.81	446.65	446.92
EO	139+89.99	-5.81	446.35	446.62
EP	139+99.92	-5.81	446.06	446.30
EQ	140+09.85	-5.81	445.76	445.98
ER	140+19.78	-5.81	445.46	445.65
ES	140+29.71	-5.81	445.16	445.32
ET	140+39.65	-5.81	444.86	444.98
EU	140+49.58	-5.81	444.57	444.63
EV				
℄ Brg Abut	140+63.00	-5.81	444.16	444.16



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 5W

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-21.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

TOP OF SLAB ELEVATIONS
11 OF 13

SCALE: | SHEET NO. S-19 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	129

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

WB I-70 P.G.L. - SPANS 1 & 2

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.08	0.00	465.70	465.70
AA	127+93.04	0.00	465.65	465.69
AB	128+03.00	0.00	465.60	465.68
AC	128+12.96	0.00	465.55	465.66
AD	128+22.92	0.00	465.50	465.64
AE	128+32.89	0.00	465.45	465.61
AF	128+42.85	0.00	465.40	465.59
AG	128+52.81	0.00	465.35	465.55
AH	128+62.77	0.00	465.30	465.51
AI	128+72.73	0.00	465.25	465.46
AJ	128+82.70	0.00	465.20	465.41
AK	128+92.66	0.00	465.15	465.35
AL	129+02.62	0.00	465.10	465.29
AM	129+12.58	0.00	465.05	465.22
AN	129+22.54	0.00	465.00	465.15
AO	129+32.50	0.00	464.95	465.08
AP	129+42.47	0.00	464.90	465.00
AQ	129+52.43	0.00	464.85	464.93
AR	129+62.39	0.00	464.80	464.86
AS	129+72.35	0.00	464.75	464.79
AT	129+82.31	0.00	464.70	464.72
AU	129+92.27	0.00	464.65	464.66
℄ Pier 24	130+03.00	0.00	464.60	464.60
AV	130+12.96	0.00	464.55	464.56
AW	130+22.92	0.00	464.50	464.52
AX	130+32.89	0.00	464.45	464.48
AY	130+42.85	0.00	464.40	464.46
AZ	130+52.81	0.00	464.35	464.43
BA	130+62.77	0.00	464.30	464.40
BB	130+72.73	0.00	464.25	464.38
BC	130+82.69	0.00	464.20	464.36
BD	130+92.66	0.00	464.15	464.33
BE	131+02.62	0.00	464.10	464.30
BF	131+12.58	0.00	464.05	464.27
BG	131+22.54	0.00	464.00	464.23
BH	131+32.50	0.00	463.95	464.19
BI	131+42.46	0.00	463.90	464.14
BJ	131+52.43	0.00	463.85	464.09
BK	131+62.39	0.00	463.80	464.03
BL	131+72.35	0.00	463.75	463.97
BM	131+82.31	0.00	463.70	463.90
BN	131+92.27	0.00	463.65	463.83
BO	132+02.23	0.00	463.60	463.75
BP	132+12.20	0.00	463.55	463.67
BQ	132+22.16	0.00	463.49	463.59
BR	132+32.12	0.00	463.42	463.49
BS	132+42.08	0.00	463.35	463.40
BT	132+52.04	0.00	463.27	463.30
BU	132+62.01	0.00	463.19	463.21
BV	132+71.97	0.00	463.11	463.12

WB I-70 P.G.L. - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	0.00	463.03	463.03
BW	132+90.96	0.00	462.93	462.94
BX	133+00.92	0.00	462.83	462.85
BY	133+10.89	0.00	462.73	462.76
BZ	133+20.85	0.00	462.61	462.67
CA	133+30.81	0.00	462.50	462.58
CB	133+40.77	0.00	462.38	462.49
CC	133+50.73	0.00	462.26	462.39
CD	133+60.69	0.00	462.13	462.29
CE	133+70.66	0.00	461.99	462.18
CF	133+80.62	0.00	461.85	462.06
CG	133+90.58	0.00	461.71	461.93
CH	134+00.54	0.00	461.56	461.79
CI	134+10.50	0.00	461.40	461.65
CJ	134+20.46	0.00	461.24	461.49
CK	134+30.43	0.00	461.08	461.32
CL	134+40.39	0.00	460.91	461.14
CM	134+50.35	0.00	460.73	460.96
CN	134+60.31	0.00	460.55	460.76
CO	134+70.27	0.00	460.37	460.55
CP	134+80.23	0.00	460.18	460.34
CQ	134+90.20	0.00	459.99	460.12
CR	135+00.16	0.00	459.79	459.89
CS	135+10.12	0.00	459.58	459.66
CT	135+20.08	0.00	459.37	459.43
CU	135+30.04	0.00	459.16	459.19
CV	135+40.01	0.00	458.94	458.96
CW	135+49.97	0.00	458.72	458.72
CX				
℄ Pier 26	135+61.00	0.00	458.46	458.46
CY	135+70.96	0.00	458.23	458.24
CZ	135+80.92	0.00	457.99	458.01
DA	135+90.89	0.00	457.74	457.78
DB	136+00.85	0.00	457.49	457.56
DC	136+10.81	0.00	457.24	457.33
DD	136+20.77	0.00	456.98	457.10
DE	136+30.73	0.00	456.71	456.87
DF	136+40.69	0.00	456.45	456.63
DG	136+50.66	0.00	456.17	456.38
DH	136+60.62	0.00	455.89	456.12
DI	136+70.58	0.00	455.61	455.86
DJ	136+80.54	0.00	455.32	455.58
DK	136+90.50	0.00	455.02	455.30
DL	137+00.46	0.00	454.73	455.01
DM	137+10.43	0.00	454.43	454.70
DN	137+20.39	0.00	454.13	454.39
DO	137+30.35	0.00	453.83	454.08
DP	137+40.31	0.00	453.53	453.75
DQ	137+50.27	0.00	453.23	453.43
DR	137+60.23	0.00	452.93	453.11
DS	137+70.20	0.00	452.63	452.78
DT	137+80.16	0.00	452.34	452.45
DU	137+90.12	0.00	452.04	452.12
DV	138+00.08	0.00	451.74	451.80
DW	138+10.04	0.00	451.44	451.47
DX	138+20.01	0.00	451.14	451.16
DY	138+29.97	0.00	450.84	450.85
DZ				

WB I-70 P.G.L. - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	0.00	450.51	450.51
EA	138+50.96	0.00	450.21	450.22
EB	138+60.92	0.00	449.91	449.93
EC	138+70.89	0.00	449.61	449.65
ED	138+80.85	0.00	449.31	449.38
EE	138+90.81	0.00	449.02	449.10
EF	139+00.77	0.00	448.72	448.84
EG	139+10.73	0.00	448.42	448.57
EH	139+20.69	0.00	448.12	448.30
EI	139+30.66	0.00	447.82	448.03
EJ	139+40.62	0.00	447.52	447.75
EK	139+50.58	0.00	447.22	447.47
EL	139+60.54	0.00	446.92	447.18
EM	139+70.50	0.00	446.62	446.89
EN	139+80.46	0.00	446.33	446.59
EO	139+90.43	0.00	446.03	446.28
EP	140+00.39	0.00	445.73	445.97
EQ	140+10.35	0.00	445.43	445.64
ER	140+20.31	0.00	445.13	445.32
ES	140+30.27	0.00	444.83	444.98
ET	140+40.23	0.00	444.53	444.64
EU	140+50.20	0.00	444.23	444.29
EV				
℄ Brg Abut	140+63.00	0.00	443.85	443.85

NOTE:

1. Work this sheet with Sheets S-6 through S-21.

GIRDER 6W - SPANS 1 & 2

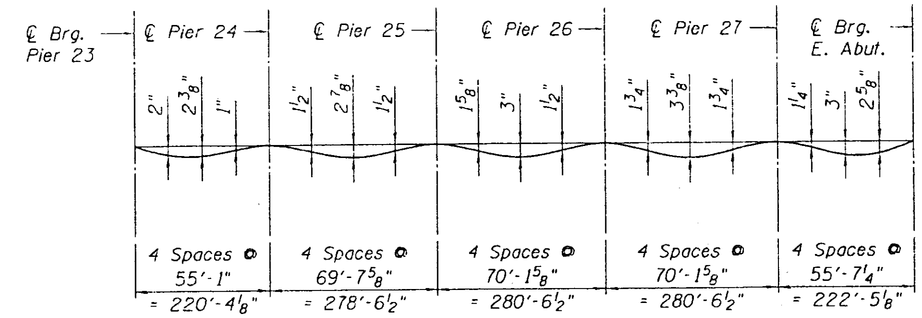
Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Brg P23	127+83.08	3.71	465.50	465.50
AA	127+93.06	3.71	465.45	465.49
AB	128+03.04	3.71	465.40	465.47
AC	128+13.02	3.71	465.35	465.46
AD	128+23.00	3.71	465.30	465.44
AE	128+32.98	3.71	465.25	465.41
AF	128+42.96	3.71	465.20	465.38
AG	128+52.95	3.71	465.15	465.34
AH	128+62.93	3.71	465.10	465.30
AI	128+72.91	3.71	465.05	465.26
AJ	128+82.89	3.71	465.00	465.20
AK	128+92.87	3.71	464.95	465.15
AL	129+02.85	3.71	464.90	465.08
AM	129+12.83	3.71	464.85	465.02
AN	129+22.81	3.71	464.80	464.94
AO	129+32.79	3.71	464.75	464.87
AP	129+42.77	3.71	464.70	464.80
AQ	129+52.75	3.71	464.65	464.72
AR	129+62.73	3.71	464.60	464.65
AS	129+72.71	3.71	464.55	464.58
AT	129+82.69	3.71	464.50	464.52
AU	129+92.67	3.71	464.45	464.46
℄ Pier 24	130+03.00	3.71	464.40	464.40
AV	130+12.98	3.71	464.35	464.36
AW	130+22.96	3.71	464.30	464.32
AX	130+32.94	3.71	464.25	464.28
AY	130+42.92	3.71	464.20	464.26
AZ	130+52.90	3.71	464.15	464.23
BA	130+62.88	3.71	464.10	464.20
BB	130+72.86	3.71	464.05	464.18
BC	130+82.84	3.71	464.00	464.16
BD	130+92.83	3.71	463.95	464.13
BE	131+02.81	3.71	463.90	464.10
BF	131+12.79	3.71	463.85	464.07
BG	131+22.77	3.71	463.80	464.03
BH	131+32.75	3.71	463.75	463.99
BI	131+42.73	3.71	463.70	463.94
BJ	131+52.71	3.71	463.65	463.88
BK	131+62.69	3.71	463.60	463.83
BL	131+72.67	3.71	463.55	463.76
BM	131+82.65	3.71	463.50	463.69
BN	131+92.63	3.71	463.45	463.62
BO	132+02.61	3.71	463.40	463.55
BP	132+12.59	3.71	463.34	463.47
BQ	132+22.57	3.71	463.28	463.38
BR	132+32.55	3.71	463.22	463.29
BS	132+42.53	3.71	463.15	463.20
BT	132+52.52	3.71	463.07	463.10
BU	132+62.50	3.71	462.99	463.01
BV	132+72.48	3.71	462.90	462.91

GIRDER 6W - SPANS 3 & 4

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 25	132+81.00	3.71	462.83	462.83
BW	132+90.98	3.71	462.73	462.74
BX	133+00.96	3.71	462.63	462.65
BY	133+10.94	3.71	462.52	462.56
BZ	133+20.92	3.71	462.41	462.47
CA	133+30.90	3.71	462.30	462.38
CB	133+40.88	3.71	462.18	462.29
CC	133+50.86	3.71	462.05	462.19
CD	133+60.84	3.71	461.92	462.09
CE	133+70.83	3.71	461.79	461.97
CF	133+80.81	3.71	461.65	461.86
CG	133+90.79	3.71	461.50	461.73
CH	134+00.77	3.71	461.35	461.59
CI	134+10.75	3.71	461.20	461.44
CJ	134+20.73	3.71	461.04	461.29
CK	134+30.71	3.71	460.87	461.12
CL	134+40.69	3.71	460.70	460.94
CM	134+50.67	3.71	460.53	460.75
CN	134+60.65	3.71	460.35	460.55
CO	134+70.63	3.71	460.16	460.34
CP	134+80.61	3.71	459.97	460.13
CQ	134+90.59	3.71	459.78	459.91
CR	135+00.57	3.71	459.58	459.68
CS	135+10.55	3.71	459.37	459.45
CT	135+20.53	3.71	459.16	459.22
CU	135+30.52	3.71	458.95	458.98
CV	135+40.50	3.71	458.73	458.75
CW	135+50.48	3.71	458.50	458.51
CX				
℄ Pier 26	135+61.00	3.71	458.26	458.26
CY	135+70.98	3.71	458.03	458.04
CZ	135+80.96	3.71	457.79	457.81
DA	135+90.94	3.71	457.54	457.58
DB	136+00.92	3.71	457.29	457.36
DC	136+10.90	3.71	457.04	457.13
DD	136+20.88	3.71	456.78	456.90
DE	136+30.86	3.71	456.51	456.66
DF	136+40.84	3.71	456.24	456.42
DG	136+50.83	3.71	455.97	456.17
DH	136+60.81	3.71	455.69	455.91
DI	136+70.79	3.71	455.40	455.65
DJ	136+80.77	3.71	455.11	455.37
DK	136+90.75	3.71	454.82	455.09
DL	137+00.73	3.71	454.52	454.80
DM	137+10.71	3.71	454.22	454.49
DN	137+20.69	3.71	453.92	454.18
DO	137+30.67	3.71	453.62	453.87
DP	137+40.65	3.71	453.32	453.54
DQ	137+50.63	3.71	453.02	453.22
DR	137+60.61	3.71	452.72	452.89
DS	137+70.59	3.71	452.42	452.56
DT	137+80.57	3.71	452.12	452.23
DU	137+90.55	3.71	451.82	451.91
DV	138+00.53	3.71	451.52	451.58
DW	138+10.52	3.71	451.22	451.26
DX	138+20.50	3.71	450.92	450.94
DY	138+30.48	3.71	450.63	450.64
DZ				

GIRDER 6W - SPAN 5

Location	Station	Offset From WB I-70 P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for DL Deflections
℄ Pier 27	138+41.00	3.71	450.31	450.31
EA	138+50.98	3.71	450.01	450.02
EB	138+60.96	3.71	449.71	449.73
EC	138+70.94	3.71	449.41	449.45
ED	138+80.92	3.71	449.11	449.17
EE	138+90.90	3.71	448.81	448.90
EF	139+00.88	3.71	448.51	448.63
EG	139+10.86	3.71	448.21	448.36
EH	139+20.84	3.71	447.91	448.09
EI	139+30.83	3.71	447.61	447.82
EJ	139+40.81	3.71	447.32	447.54
EK	139+50.79	3.71	447.02	447.26
EL	139+60.77	3.71	446.72	446.97
EM	139+70.75	3.71	446.42	446.68
EN	139+80.73	3.71	446.12	446.38
EO	139+90.71	3.71	445.82	446.07
EP	140+00.69	3.71	445.52	445.75
EQ	140+10.67	3.71	445.22	445.43
ER	140+20.65	3.71	444.92	445.10
ES	140+30.63	3.71	444.62	444.76
ET	140+40.61	3.71	444.32	444.43
EU	140+50.59	3.71	444.02	444.08
EV				
℄ Brg Abut	140+63.00	3.71	443.65	443.65



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 6W

(Includes weight of concrete only.)

NOTES:

1. Work this sheet with Sheets S-6 through S-20.
2. The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on this sheet.

FILE NAME : $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCD	REVISED -
		DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

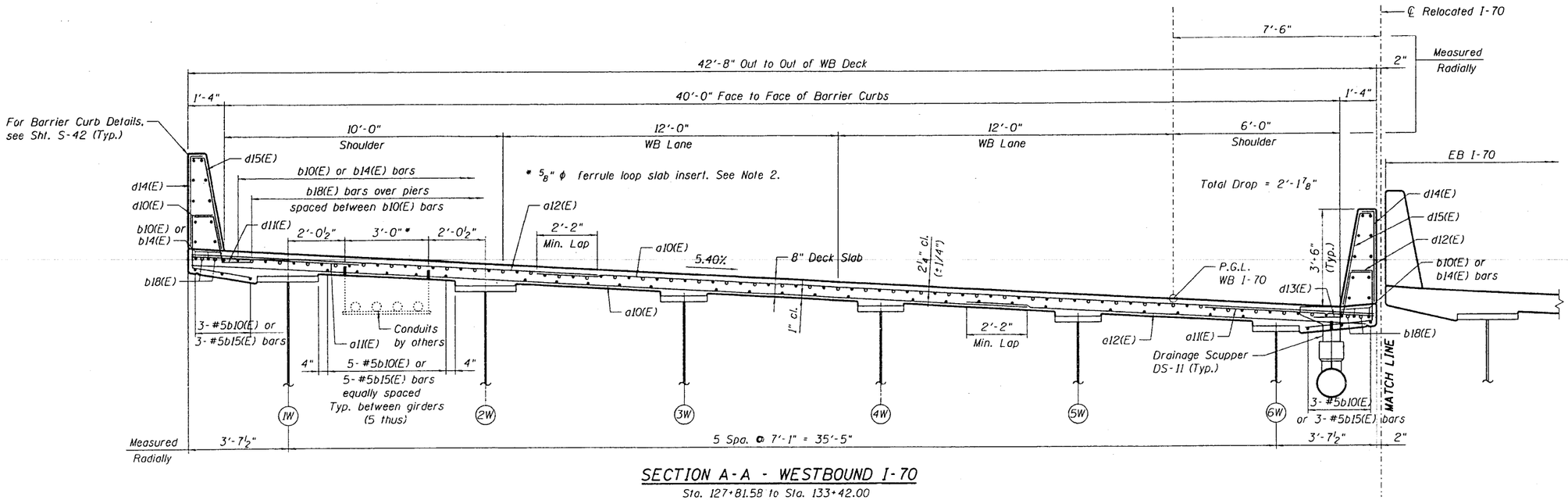
TOP OF SLAB ELEVATIONS
13 OF 13

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

SCALE: | SHEET NO. S-21 OF S-111 | STA. 134+22.00 TO STA.

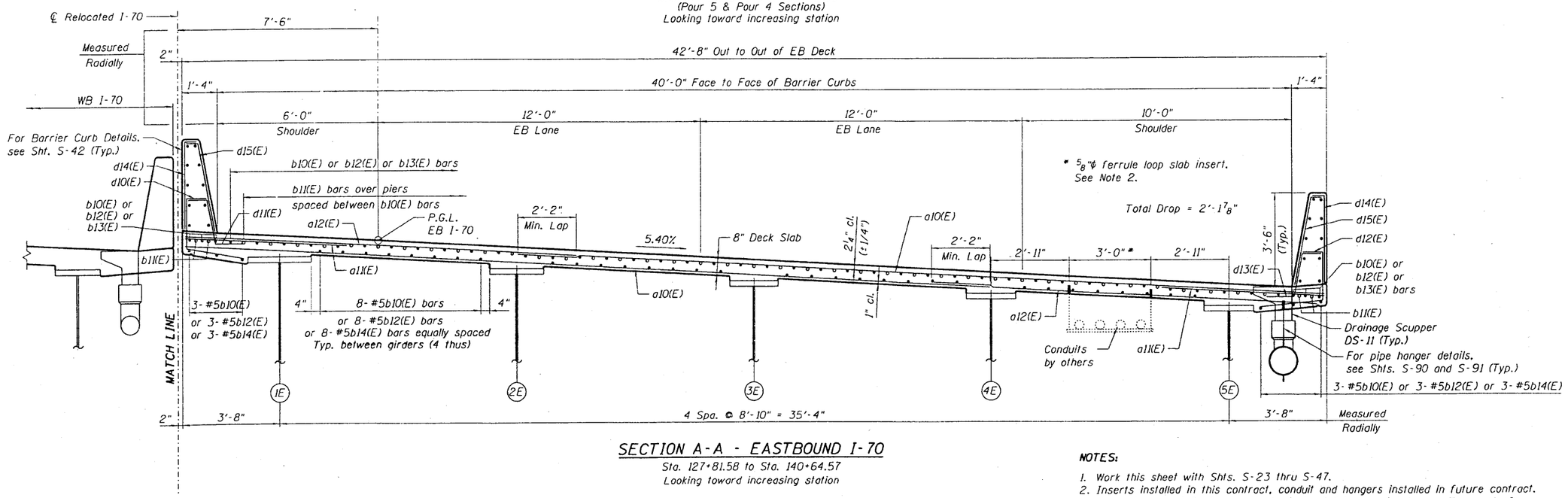
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	131

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



SECTION A-A - WESTBOUND I-70

Sta. 127+81.58 to Sta. 133+42.00
(Pour 5 & Pour 4 Sections)
Looking toward increasing station



SECTION A-A - EASTBOUND I-70

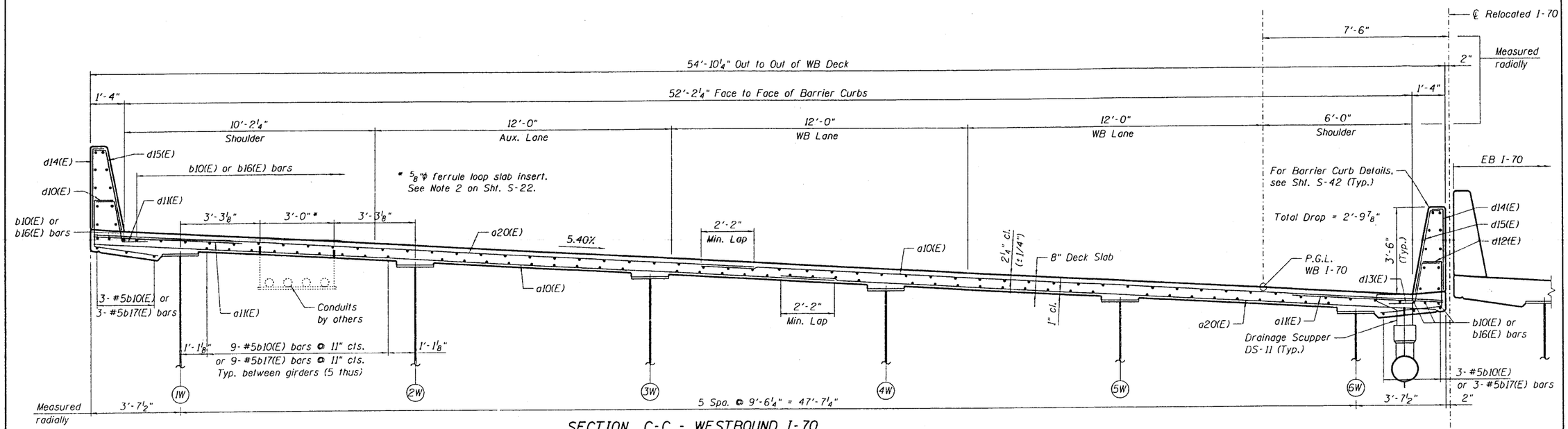
Sta. 127+81.58 to Sta. 140+64.57
Looking toward increasing station

NOTES:

1. Work this sheet with Shts. S-23 thru S-47.
2. Inserts installed in this contract, conduit and hangers installed in future contract. Space inserts at 5'-0" cts. longitudinally, full length of bridges. The cost of inserts is included in the cost of Reinforcement Bars, Epoxy Coated.
   ~~Safe working load = 2,200 lbs.~~
3. For scupper spacing, see Shts. S-24 thru S-33.

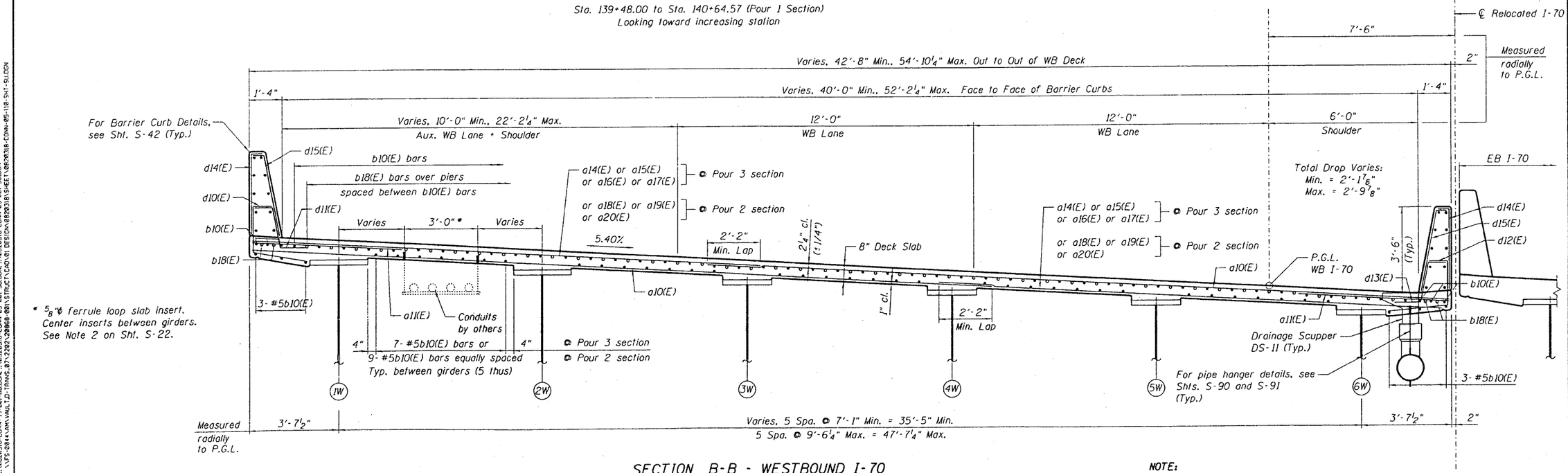
..\082038-CONN-99-001-BODCN, ..\082038-CONN-85-001-SUDCN, ..\082038-CONN-85-001-SUDCN
6-03-2010, 13:41:11 BDMOHLIC \\FS-0044\JAN\VAULT\D-TRANS_07\2262\28868-001\STRUCT\CAD\01 DESIGN\082038\SHEET\082038-CONN-85-101-SH1-SUDCN

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	DECK CROSS SECTIONS 1 OF 2	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -			998	82-2-1HVB	ST. CLAIR	285	132
	PLOT SCALE = $SCALE$	CHECKED - TGU	REVISED -			~~SN 082-0318 (EB) & 0319 (WB)~~		~~CONTRACT NO. 76644~~		
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-22 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	



SECTION C-C - WESTBOUND I-70

Sta. 139+48.00 to Sta. 140+64.57 (Pour 1 Section)
Looking toward increasing station



SECTION B-B - WESTBOUND I-70

Sta. 133+42.00 to Sta. 139+48.00 (Pour 3 & Pour 2 Sections)
Looking toward increasing station

NOTE:

See Sht. S-22 for notes.

\082\0318-CONN-85-181-SHT-SLUDGN ..\082\0318-CONN-99-801-RDJDGN ..\082\0318-CONN-85-801-SLUDGN ..\082\0318-CONN-85-901-SLUDGN
6-03-2010 10:41:16 BDAGHUJO \\FS-2044\JAN\VAULT\D_TRANS_87\2282\20868.001\STRUCT\CADD\01 DESIGN\082\0318\SHEET\082\0318-CONN-85-118-SHT-SLUDGN

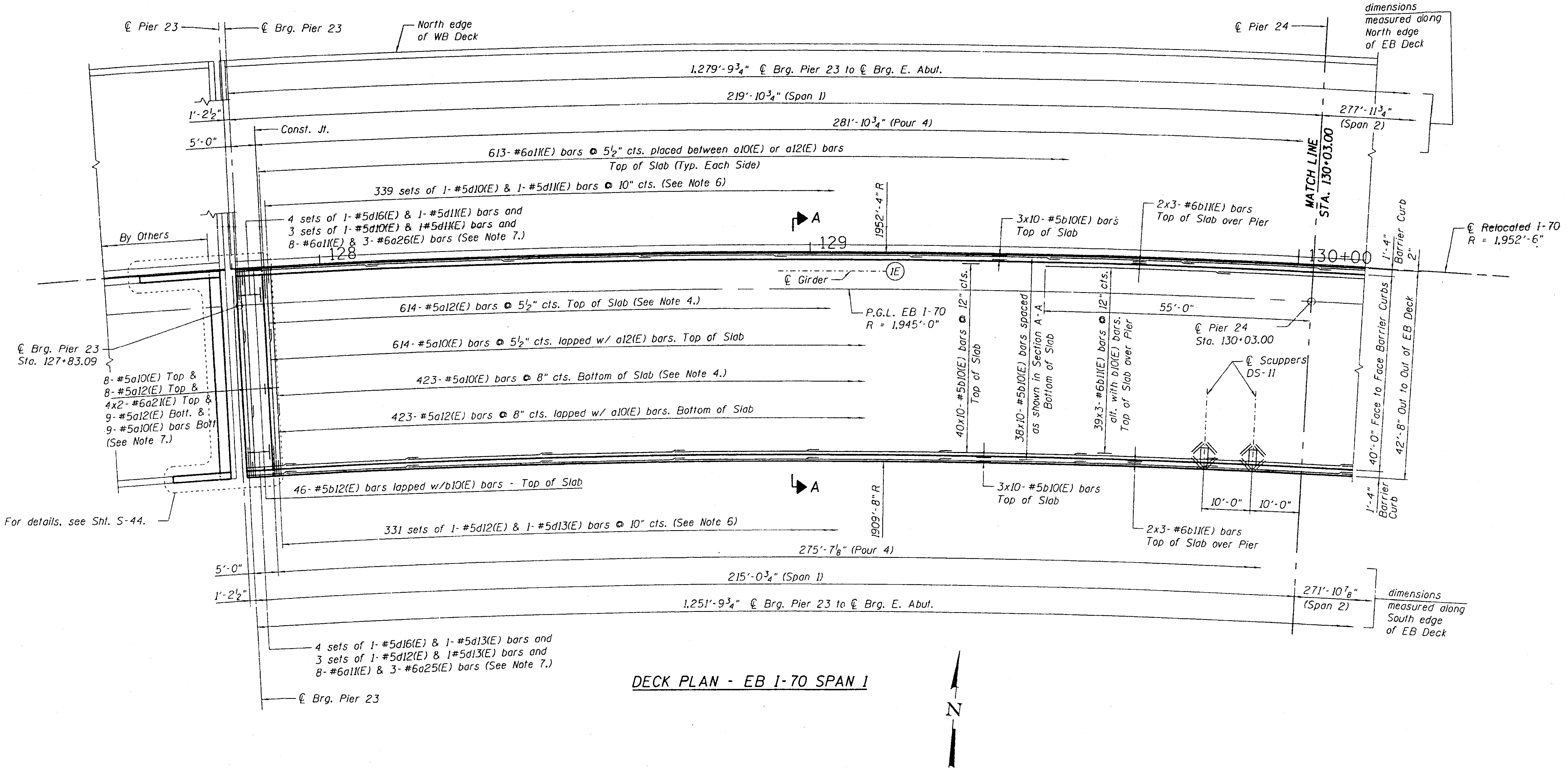
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - FD	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
TENG ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

DECK CROSS SECTIONS
2 OF 2

SCALE: | SHEET NO. S-23 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	133
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

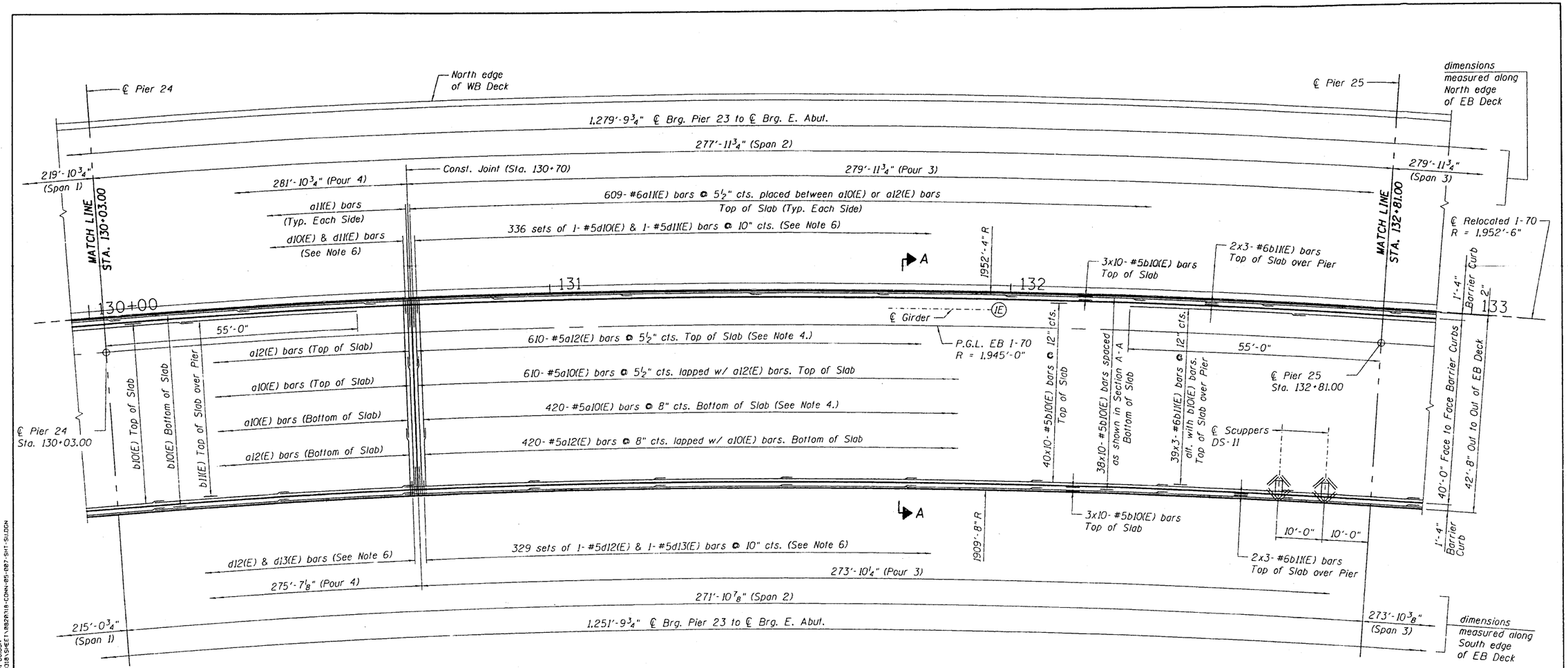


DECK PLAN - EB I-70 SPAN 1

NOTES:

1. Work this sheet with Shts. S-22 thru S-47.
2. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. Longitudinal b(E) bars shall be sprung into place to be concentric at the spacing noted.
4. Transverse a(E) bars shall be placed radially at the spacing noted. The spacing is measured along ℄ of Girder 1E.
5. Minimum Lap for Deck Reinforcement:
   #5 Bars = 2'-2"
   #6 Bars = 2'-7"
6. Space bars to miss Barrier Curb Joints.
7. For layout of bars and additional edge beam reinforcement, see Shts. S-45 and S-46.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN EB I-70 1 OF 5	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 134
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SHEET NO. S-24 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT
		DATE - 06/04/10	REVISED -							



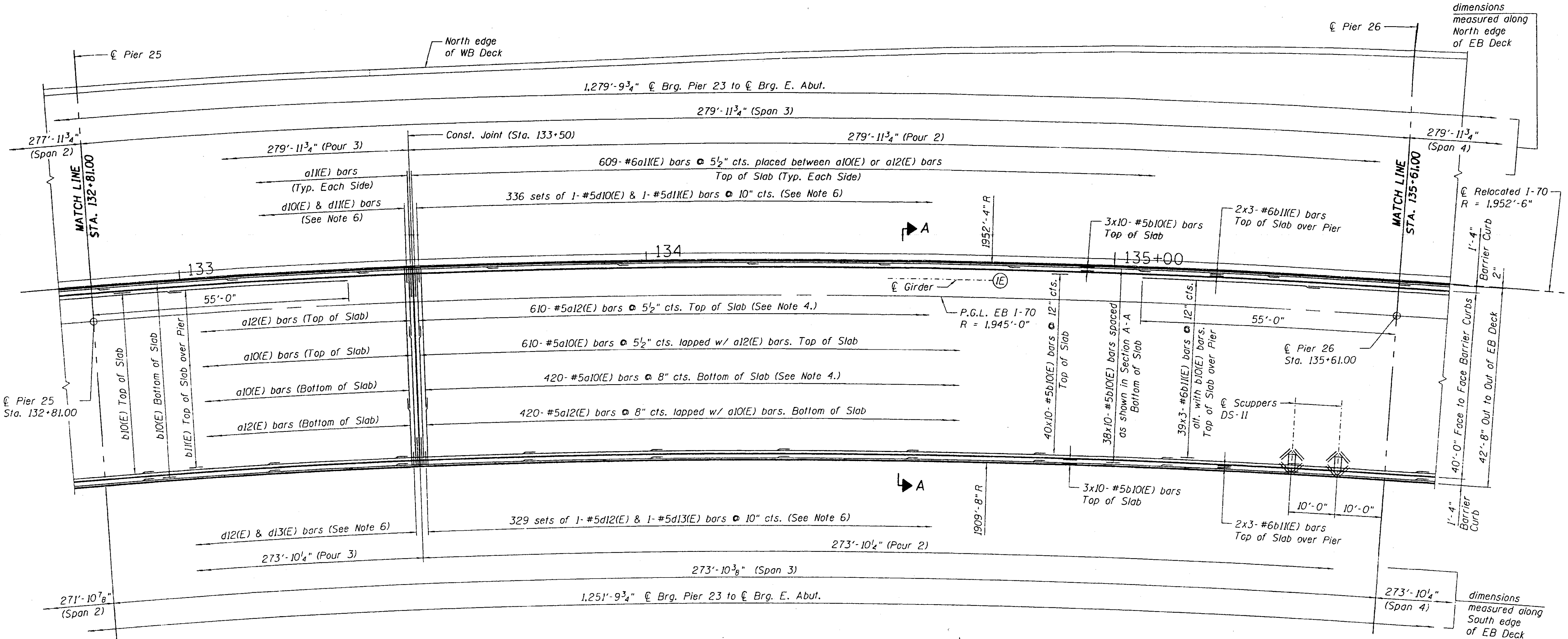
DECK PLAN - EB I-70 SPAN 2

N

NOTE:
See Sht. S-24 for notes.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	DECK PLAN EB I-70 2 OF 5	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -			998	82-2-IHVB	ST. CLAIR	285	135
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -				SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-25 OF S-111	STA. 13+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT

..\V082#318-CONN-05-002-SU.DGN ..\B82#318-CONN-05-001-SU.DGN ..\DRCONN-99-AL(GMENT3.DGN ..\V82#318-CONN-99-001-BD.DGN
6-03-2010, 12:41:29 BDNGHJO \\FS-0004\VAH\VAULT\D-TRANS_07-2202-28868-001\STRUCTURE\CAD\01 DESIGN\0820318\SHEET\0820318-CONN-05-007-SHT-SU.DGN



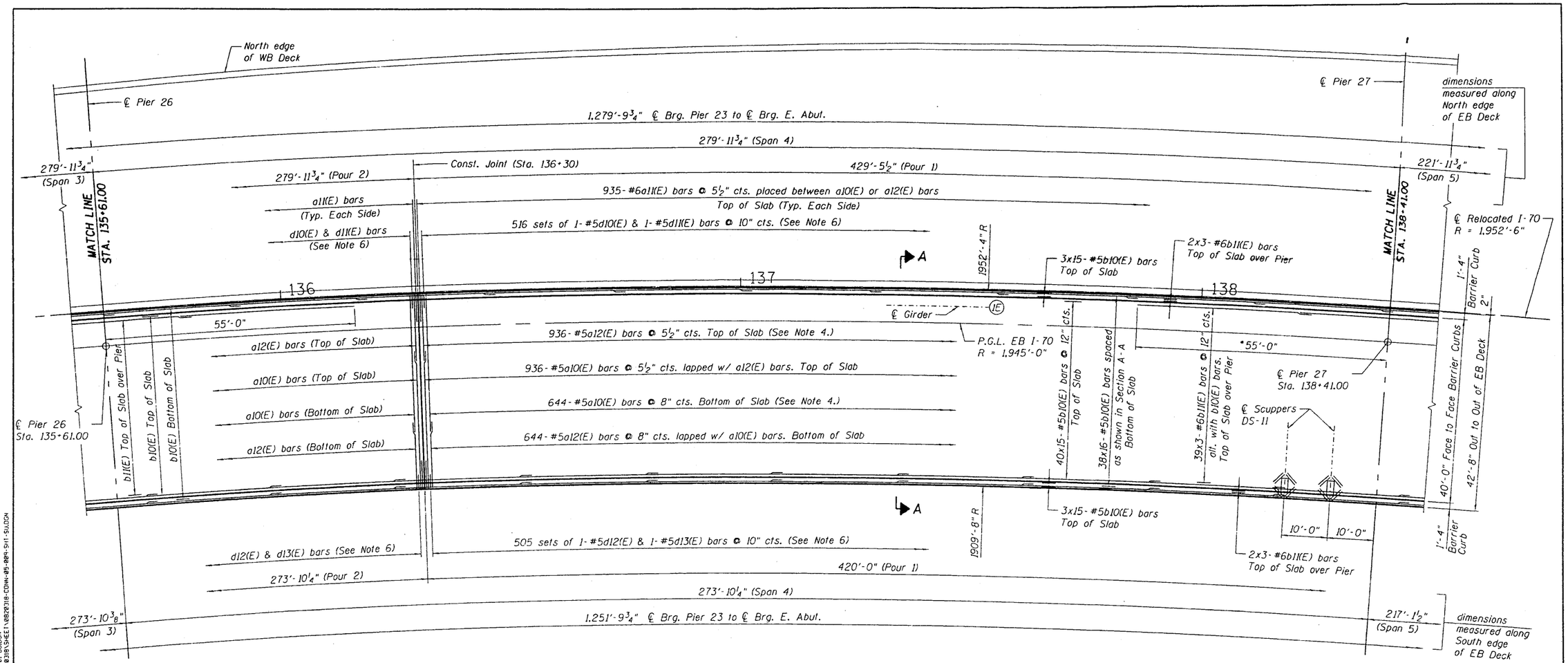
℄ Pier 25
North edge of WB Deck
℄ Pier 26
dimensions measured along North edge of EB Deck
1,279'-9¾" ℄ Brg. Pier 23 to ℄ Brg. E. Abut.
279'-11¾" (Span 3)
277'-11¾" (Span 2)
279'-11¾" (Pour 3)
Const. Joint (Sta. 133+50)
279'-11¾" (Pour 2)
279'-11¾" (Span 4)
MATCH LINE STA. 132+81.00
MATCH LINE STA. 135+61.00
a11(E) bars (Typ. Each Side)
609-#6a11(E) bars @ 5½" cts. placed between a10(E) or a12(E) bars Top of Slab (Typ. Each Side)
d10(E) & d11(E) bars (See Note 6)
336 sets of 1-#5d10(E) & 1-#5d11(E) bars @ 10" cts. (See Note 6)
℄ Relocated I-70 R = 1,952'-6"
1952'-4" R
3x10-#5b10(E) bars Top of Slab
2x3-#6b11(E) bars Top of Slab over Pier
A
133
134
135+00
℄ Girder
IE
55'-0"
P.G.L. EB I-70 R = 1,945'-0"
a12(E) bars (Top of Slab)
610-#5a12(E) bars @ 5½" cts. Top of Slab (See Note 4.)
a10(E) bars (Top of Slab)
610-#5a10(E) bars @ 5½" cts. lapped w/ a12(E) bars. Top of Slab
a10(E) bars (Bottom of Slab)
420-#5a10(E) bars @ 8" cts. Bottom of Slab (See Note 4.)
a12(E) bars (Bottom of Slab)
420-#5a12(E) bars @ 8" cts. lapped w/ a10(E) bars. Bottom of Slab
b10(E) Top of Slab
b10(E) Bottom of Slab
b11(E) Top of Slab over Pier
℄ Pier 25 Sta. 132+81.00
40x10-#5b10(E) bars @ 12" cts. Top of Slab
38x10-#5b10(E) bars spaced as shown in Section A-A Bottom of Slab
39x3-#6b11(E) bars @ 12" cts. alt. with b10(E) bars. Top of Slab over Pier
55'-0"
℄ Pier 26 Sta. 135+61.00
℄ Scuppers DS-11
1'-4" Barrier Curb
2"
40'-0" Face to Face Barrier Curbs
42'-8" Out to Out of EB Deck
1'-4" Barrier Curb
A
1909'-8" R
3x10-#5b10(E) bars Top of Slab
10'-0"
10'-0"
2x3-#6b11(E) bars Top of Slab over Pier
d12(E) & d13(E) bars (See Note 6)
329 sets of 1-#5d12(E) & 1-#5d13(E) bars @ 10" cts. (See Note 6)
273'-10¼" (Pour 3)
273'-10¼" (Pour 2)
273'-10⅜" (Span 3)
271'-10⅞" (Span 2)
1,251'-9¾" ℄ Brg. Pier 23 to ℄ Brg. E. Abut.
273'-10¼" (Span 4)
dimensions measured along South edge of EB Deck

DECK PLAN - EB I-70 SPAN 3

N

NOTE:
See Sht. S-24 for notes.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS	DECK PLAN EB I-70	F.A.P. RTE. 998 / SECTION 82-2-1HVB / COUNTY ST. CLAIR / TOTAL SHEETS 285 / SHEET NO. 136
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	DEPARTMENT OF TRANSPORTATION	3 OF 5	SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-26 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
		DATE - 06/04/10	REVISED -			



DECK PLAN - EB I-70 SPAN 4

NOTE:
See Sht. S-24 for notes.

...\B020318-CONN-05-002-SUDON, ...\B020318-CONN-05-201-SUDON, ...\DBCONN-99-ALIGNMENT3.DGN, ...\B020318.CONN-99-001-BRIDGN
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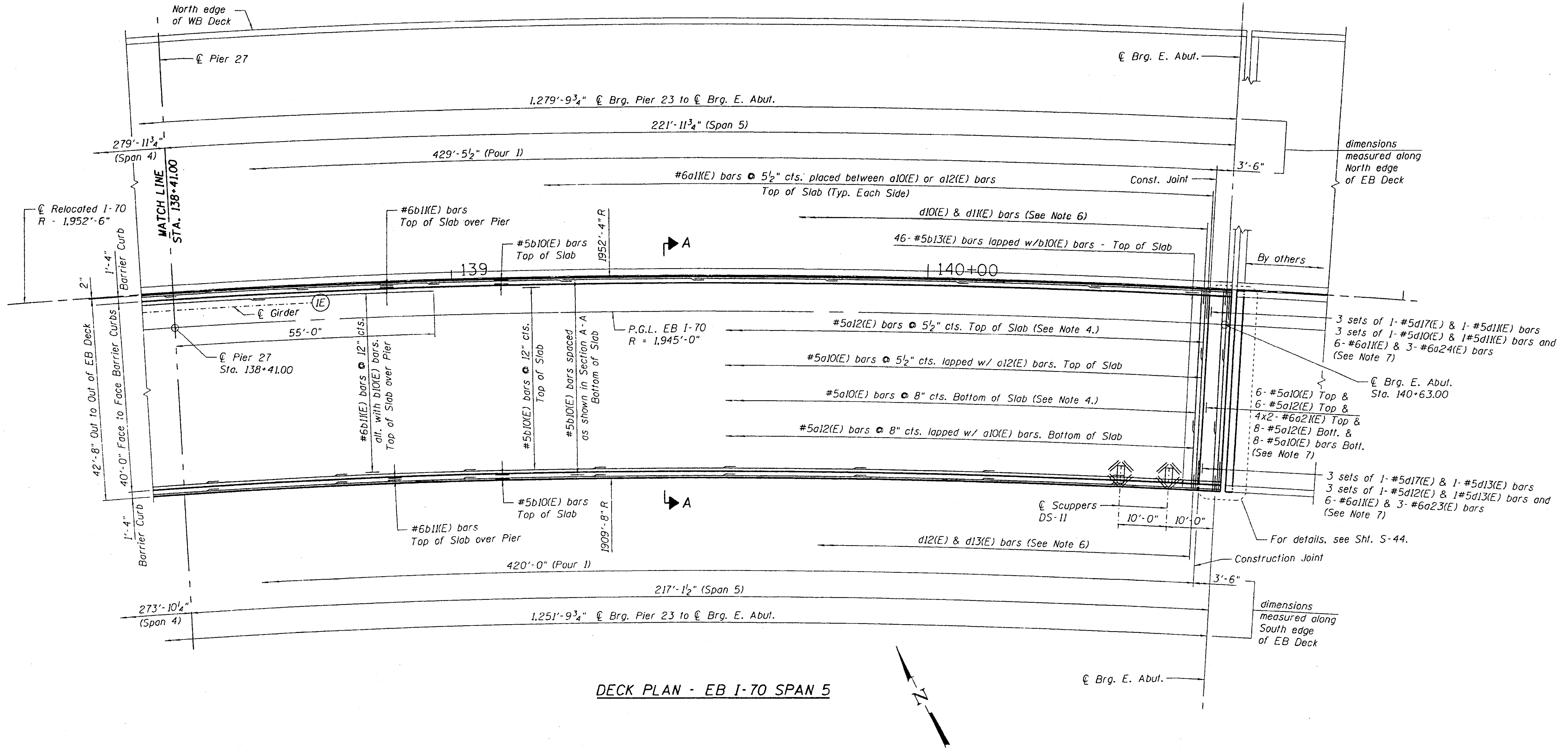
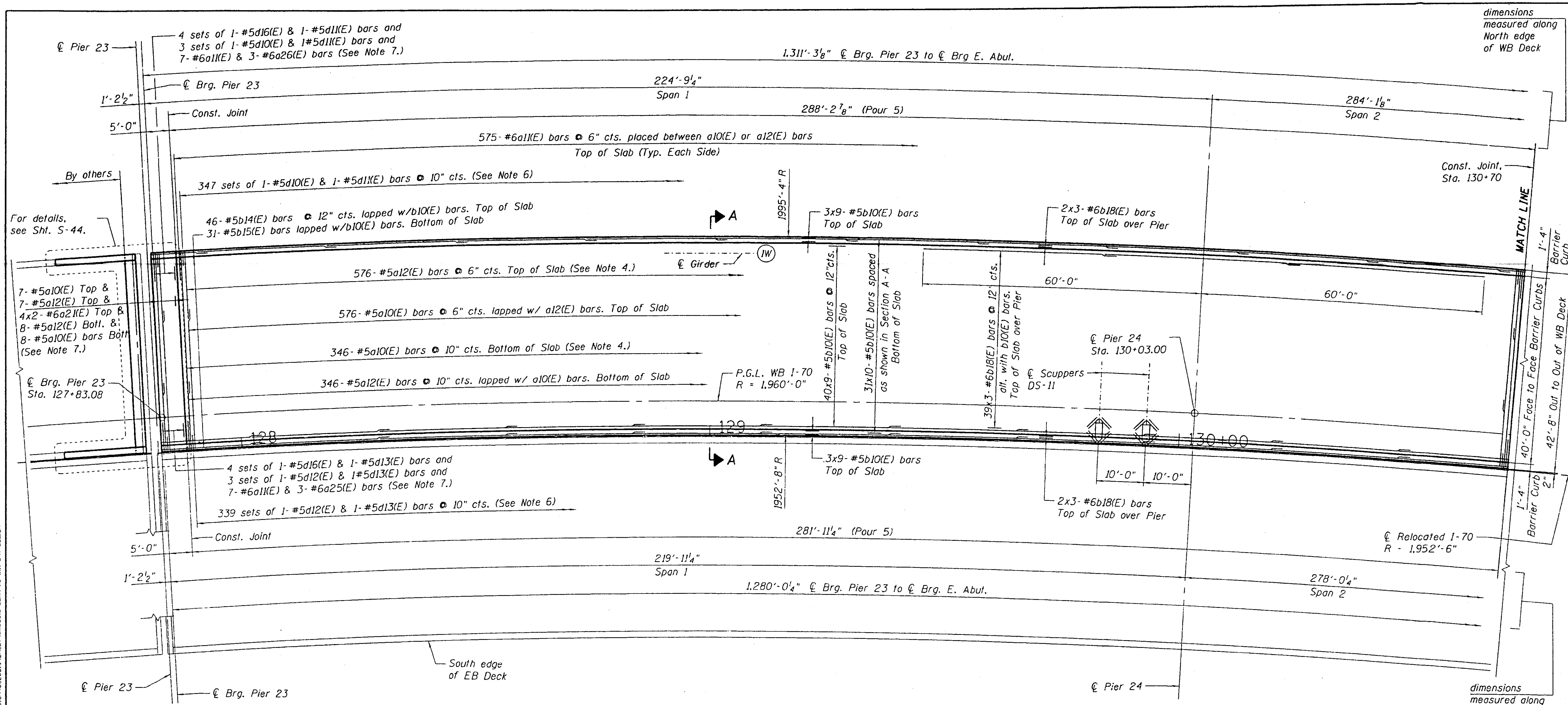
FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	DECK PLAN EB I-70 4 OF 5			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -					998	82-2-1HVB	ST. CLAIR	285	137
	PLOT SCALE = #SCALE#	~~CHECKED - TCU~~	~~REVISED -~~						SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44		
TENG ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = #DATE#	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-27 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



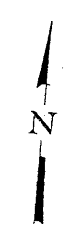
DECK PLAN - EB I-70 SPAN 5

NOTE:
See Sht. S-24 for notes.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN EB I-70 5 OF 5	F.A.P. RTE. 998 / SECTION 82-2-1HVB / COUNTY ST. CLAIR / TOTAL SHEETS 285 / SHEET NO. 138
		DRAWN - FD	REVISED -			SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: / SHEET NO. S-28 OF S-111 / STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. / ILLINOIS / FED. AID PROJECT
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -			



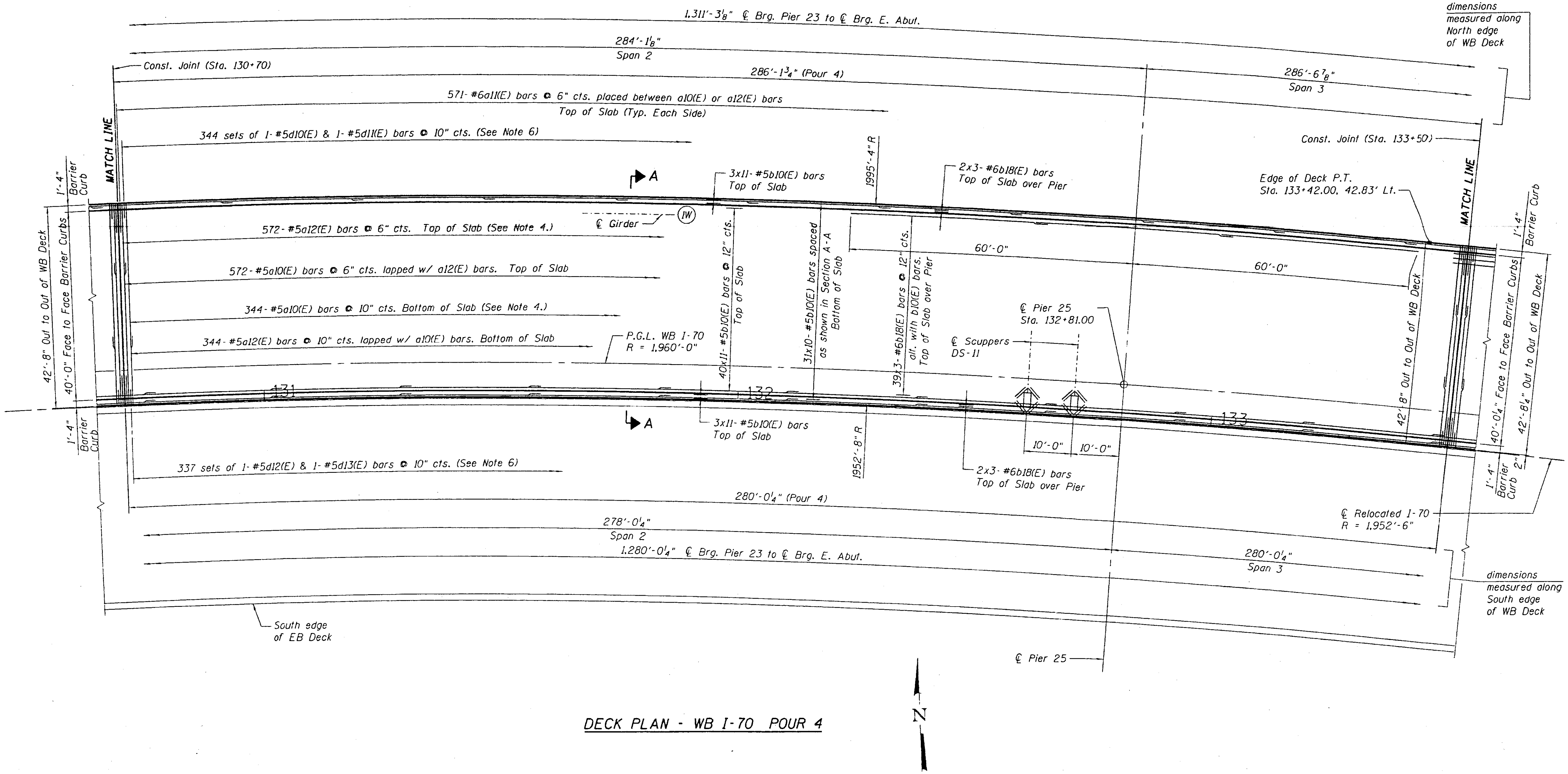
DECK PLAN - WB I-70 POUR 5



NOTES:

1. Work this sheet with Shts. S-22 thru S-47.
2. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. Longitudinal b(E) bars shall be sprung into place to be concentric at the spacing noted.
4. Transverse a(E) bars shall be placed radially to P.G.L. at the spacing noted. The spacing is measured along ℄ of Girder IW.
5. Minimum Lap for Deck Reinforcement:
   #5 Bars = 2'-2"
   #6 Bars = 2'-7"
6. Space bars to miss Barrier Curb Joints.
7. For layout of bars and additional edge beam reinforcement, see Shts. S-45 and S-46.

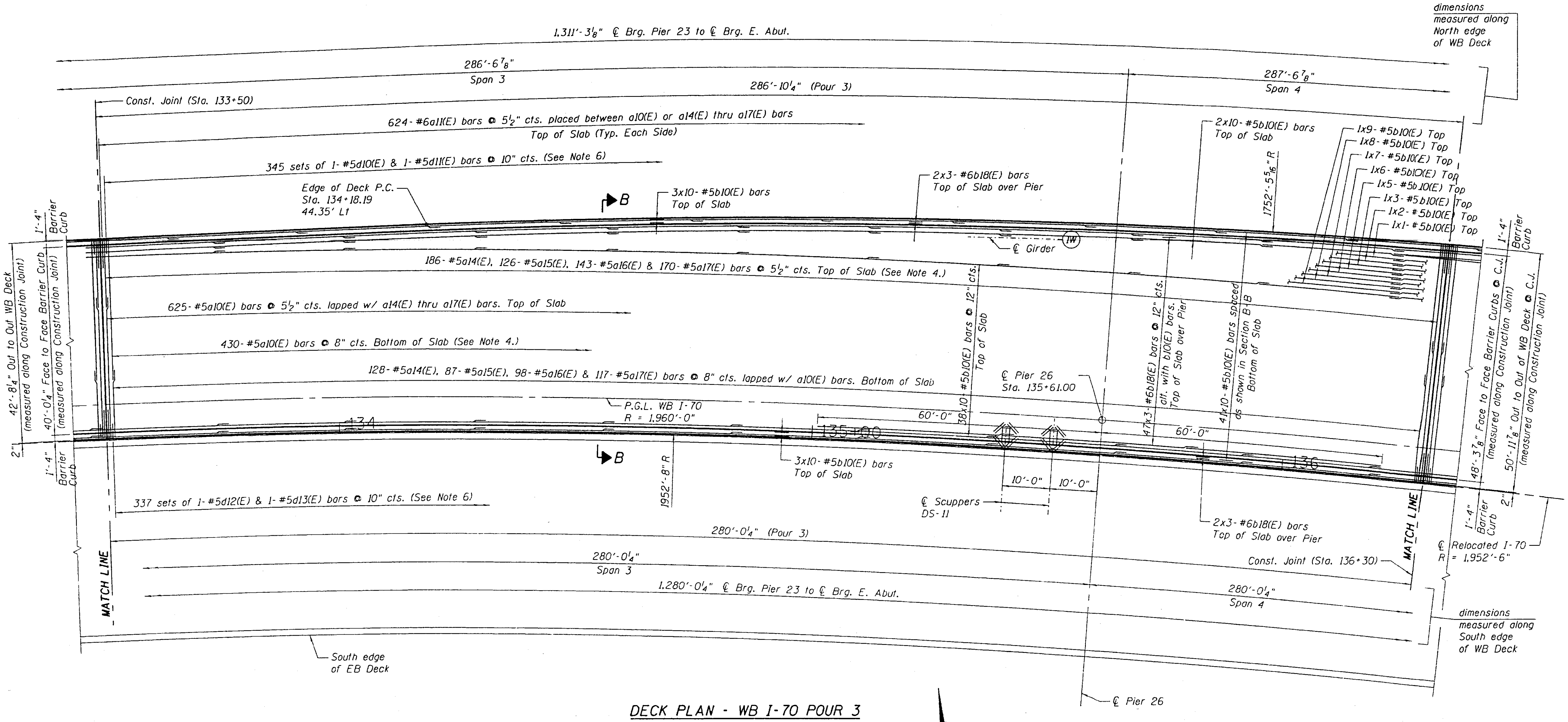
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN WB I-70 1 OF 5	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 139
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-29 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
		DATE - 06/04/10	REVISED -							



DECK PLAN - WB I-70 POUR 4

NOTE:
See Sht. S-29 for notes.

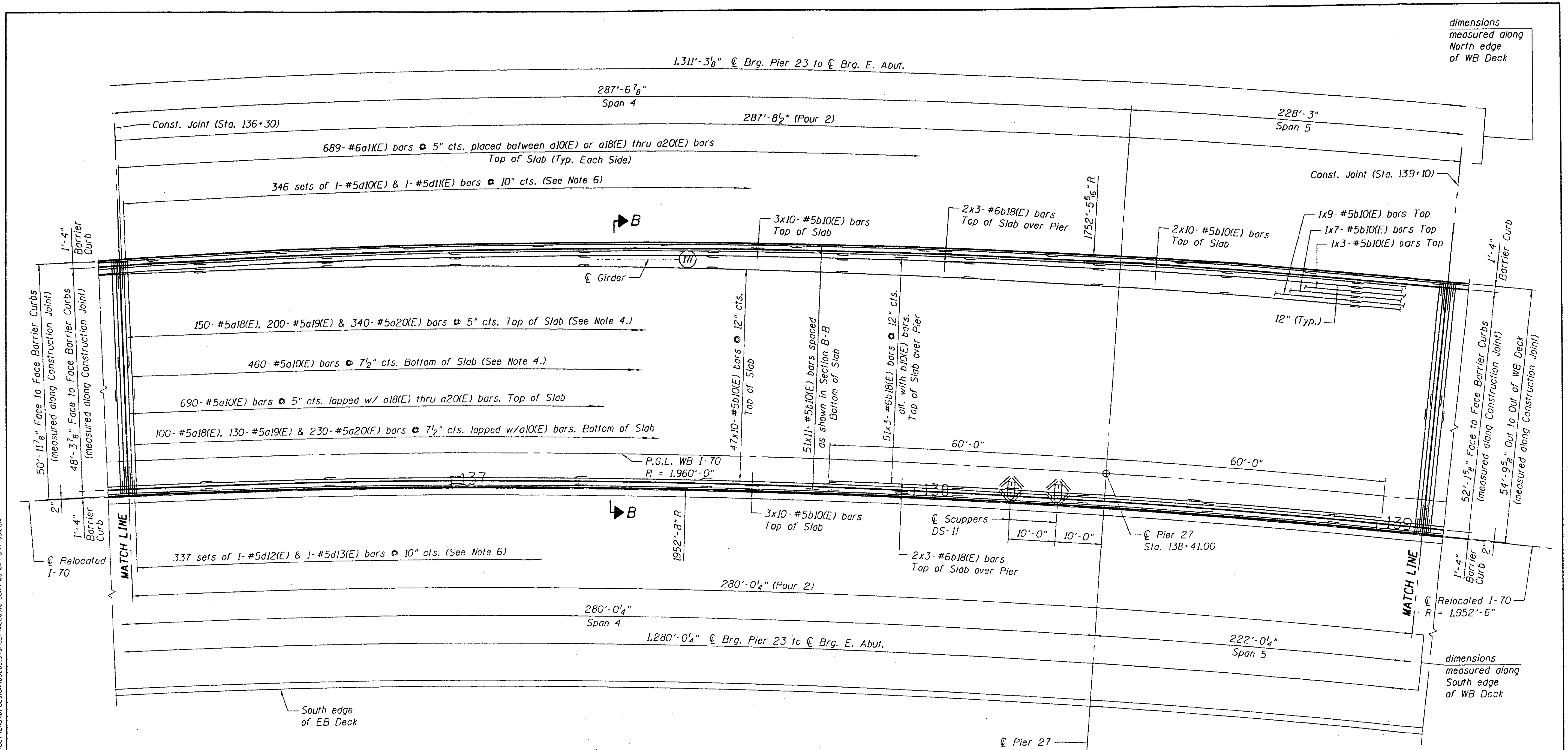
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN WB I-70 2 OF 5	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44	TOTAL SHEETS 285 / SHEET NO. 140
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: / SHEET NO. S-30 OF S-111 / STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	
		DATE - 06/04/10	REVISED -					



DECK PLAN - WB I-70 POUR 3

NOTE:
See Sht. S-29 for notes.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN WB I-70 3 OF 5	F.A.P. RTE. 998 / SECTION 82-2-1HVB / COUNTY ST. CLAIR / TOTAL SHEETS 285 / SHEET NO. 141
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-31 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
		DATE - 06/04/10	REVISED -			



DECK PLAN - WB I-70 POUR 2

N

NOTE:
See Sht. S-29 for notes.

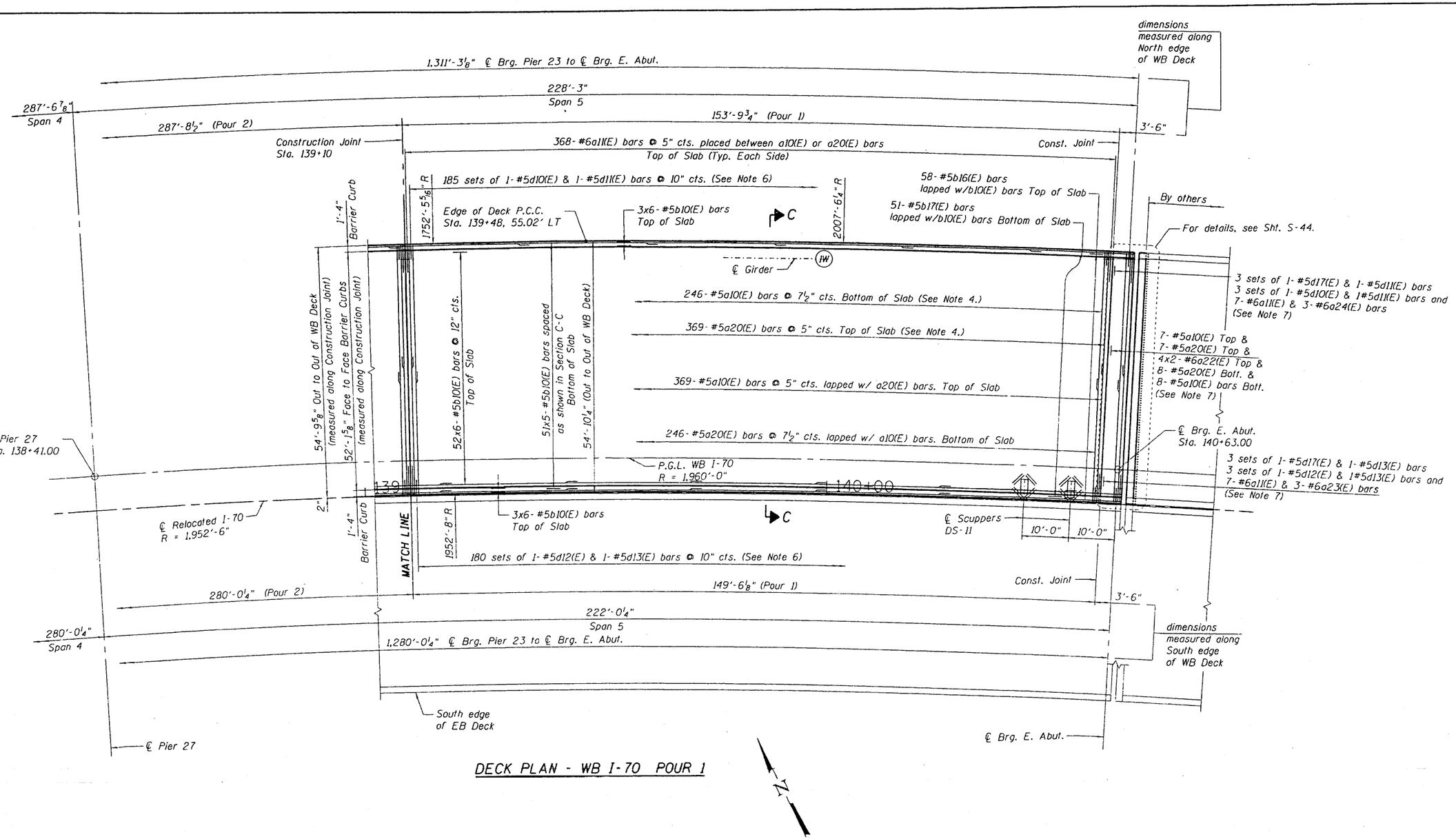
FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = *SCALE*	DRAWN - FD	REVISED -	
	PLOT DATE = *DATE*	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

DECK PLAN WB I-70
4 OF 5

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

SCALE: | SHEET NO. S-32 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	142
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



DECK PLAN - WB I-70 POUR 1

NOTE:
See Sht. S-29 for notes.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	DECK PLAN WB I-70 5 OF 5			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -					998	82-2-1HVB	ST. CLAIR	285	143
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -					~~SN 082-0310 (EB) & 0319 (WB)~~	~~CONTRACT NO. 76G44~~			
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-33 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

\\0820318-CONN-05-801-SU.DGN, \\0820318-CONN-99-801-BG.DGN, \\0820318-CONN-05-802-SU.DGN, \\DBCONN-99-ALIGNMENT.DGN, \\0820318-CONN-05-818-SHT-SU.DGN
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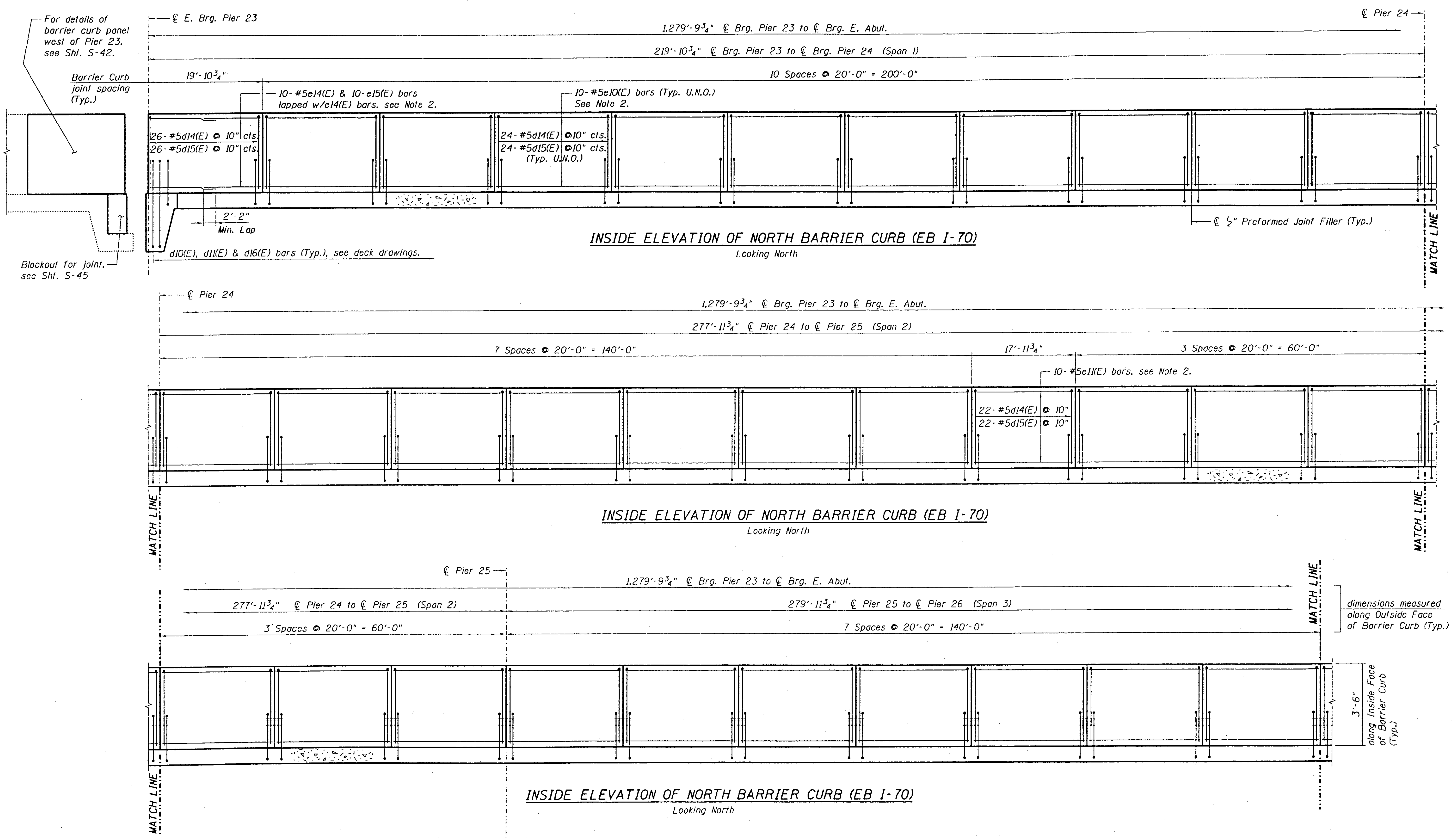
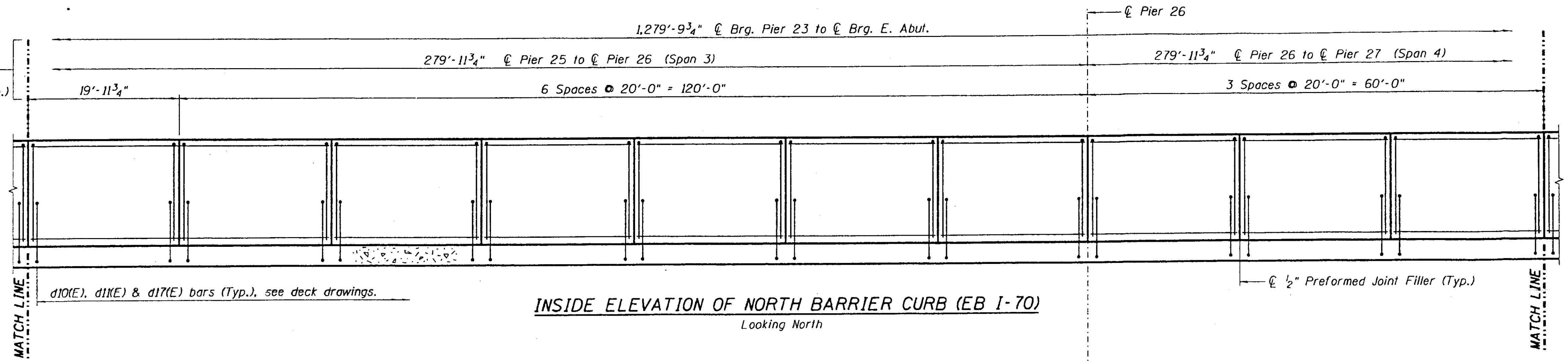


NOTE:
See Sht. S-35 for Notes.

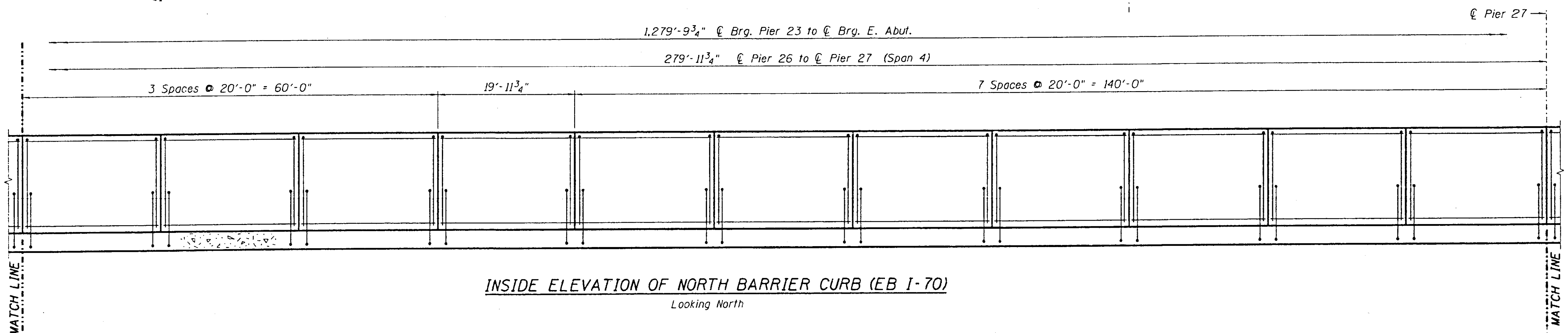
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PARAPET ELEVATIONS EB I-70 1 OF 4
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	I-70 CONNECTION OVER	
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-34 OF S-111 STA. 134+22.00 TO STA.
		DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	144
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



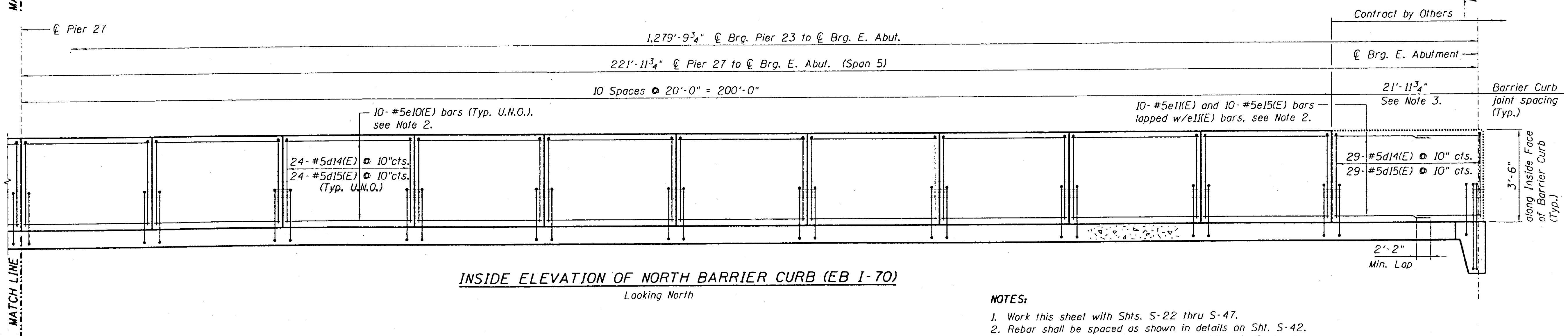
INSIDE ELEVATION OF NORTH BARRIER CURB (EB I-70)

Looking North



INSIDE ELEVATION OF NORTH BARRIER CURB (EB I-70)

Looking North



INSIDE ELEVATION OF NORTH BARRIER CURB (EB I-70)

Looking North

NOTES:

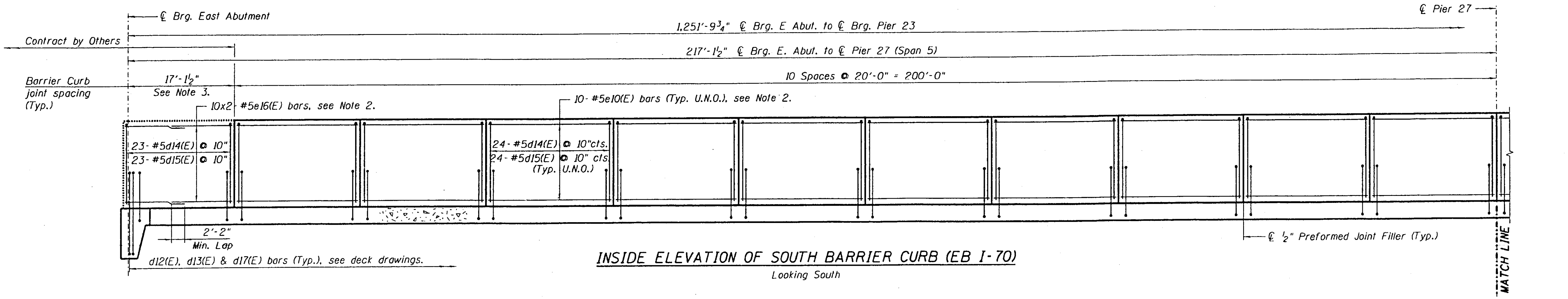
1. Work this sheet with Shts. S-22 thru S-47.
2. Rebar shall be spaced as shown in details on Sht. S-42.
3. Barrier segment reinforcement included in this Contract. Forming and concrete placement for barrier included in Contract by Others.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS
$FILEL$		DRAWN - FD	REVISED -	DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.

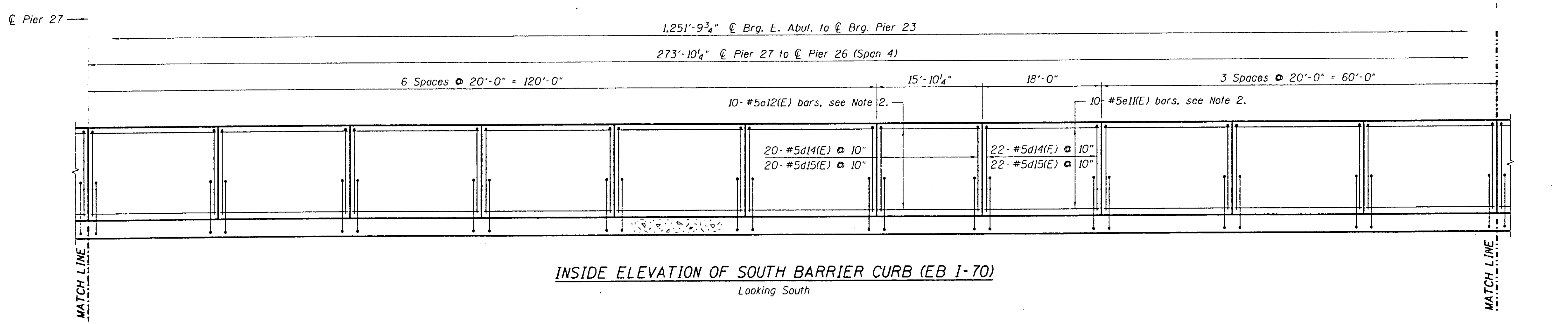
PARAPET ELEVATIONS EB I-70
2 OF 4

SCALE: | SHEET NO. S-35 OF S-111 | STA. 134+22.00 TO STA.

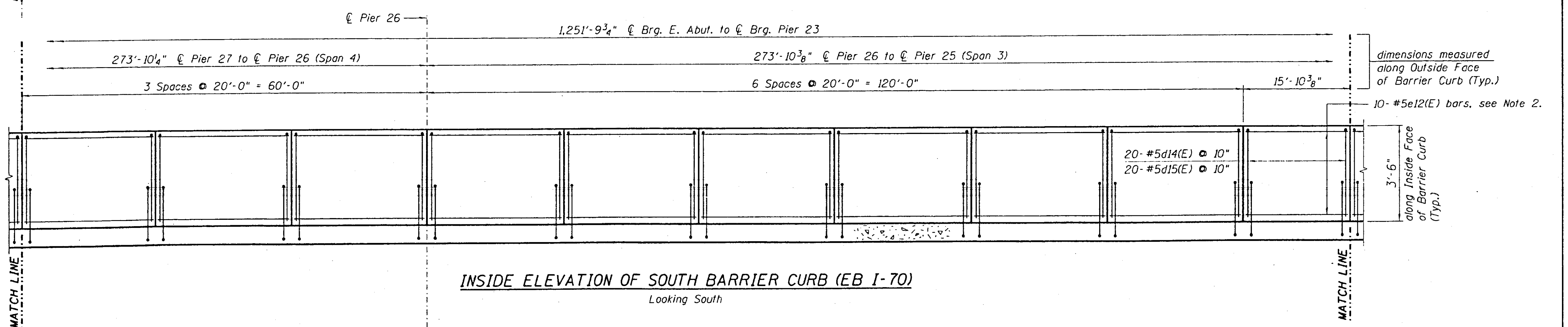
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	145
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South

NOTE:
See Sht. S-35 for Notes.

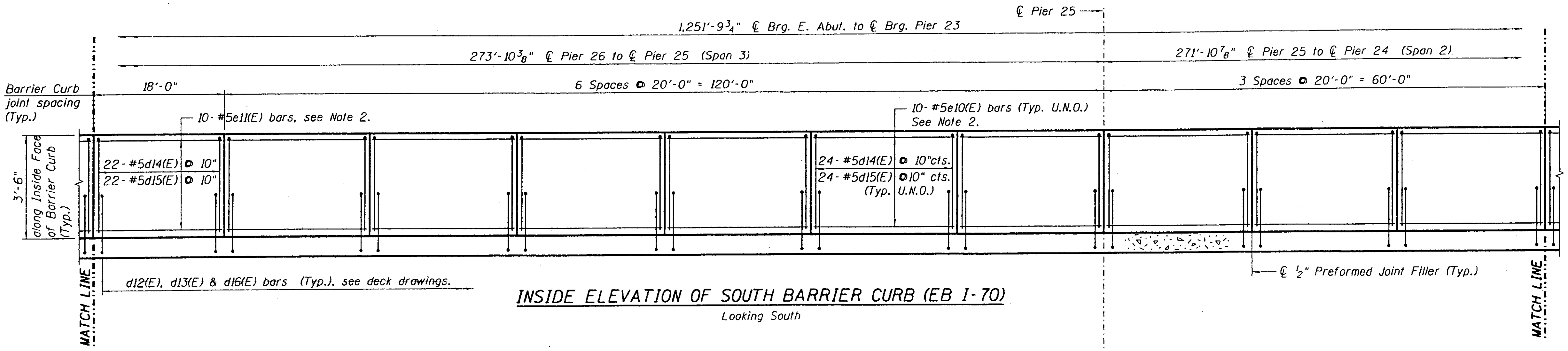
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -	
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

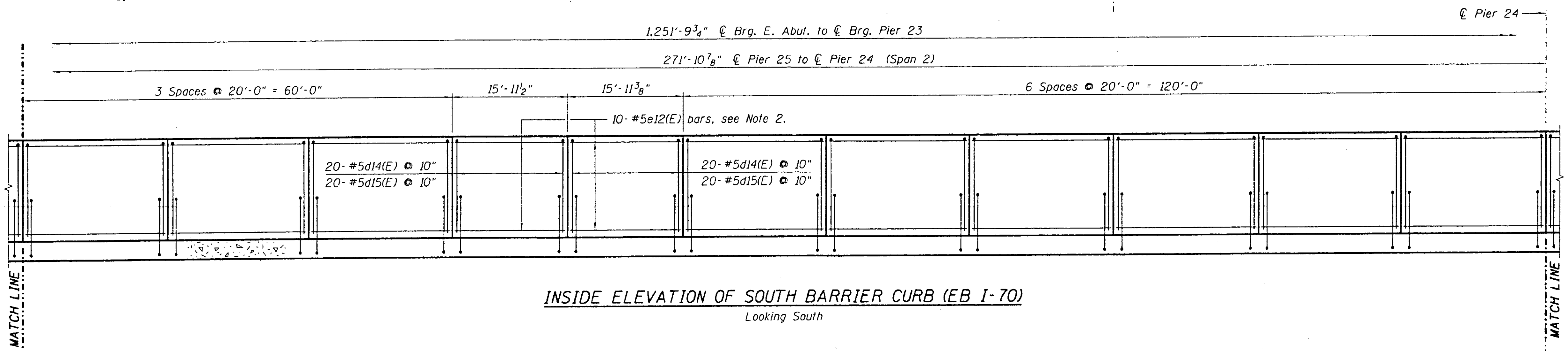
PARAPET ELEVATIONS EB I-70
3 OF 4

SCALE: | SHEET NO. S-36 OF S-111 | STA. 134+22.00 TO STA.

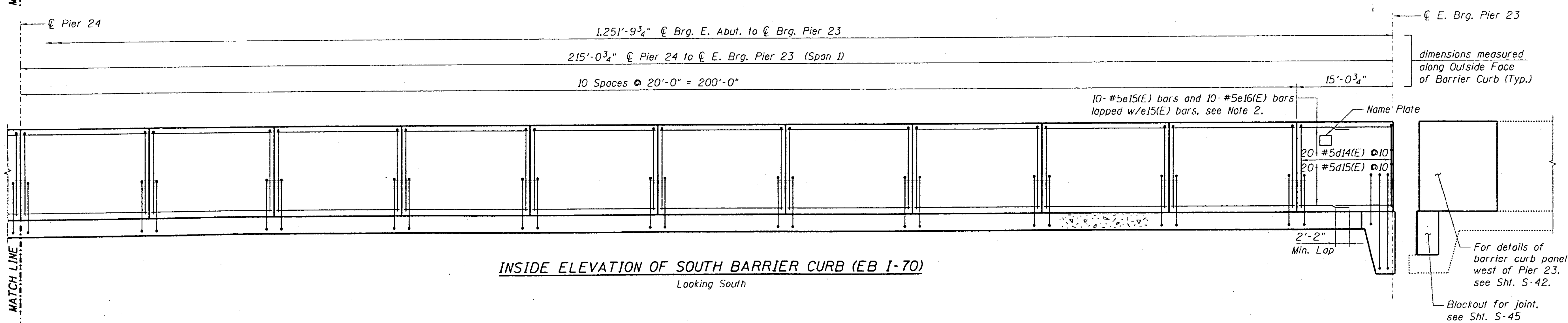
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	146
SN 082-0318 (EB) & 0318 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (EB I-70)
Looking South

NOTE:
See Sht. S-35 for Notes.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

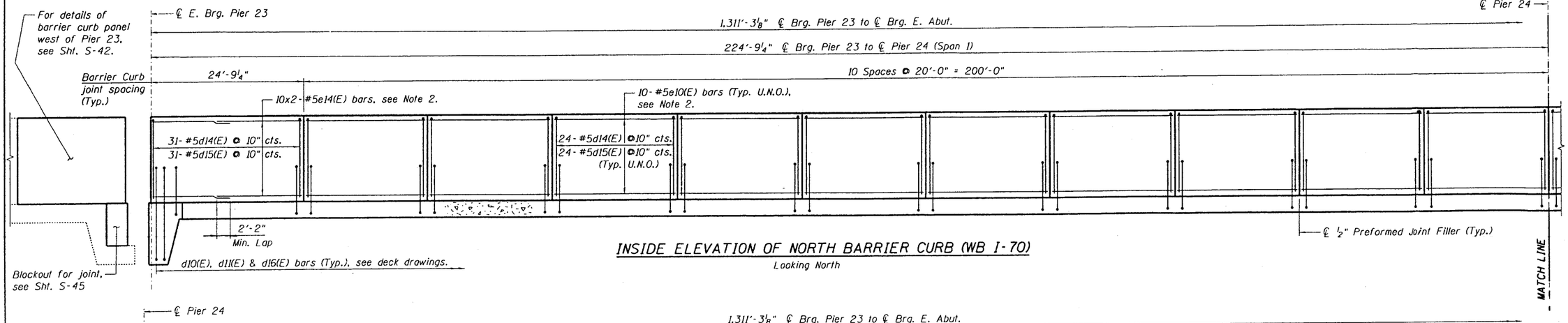
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

PARAPET ELEVATIONS EB I-70
4 OF 4

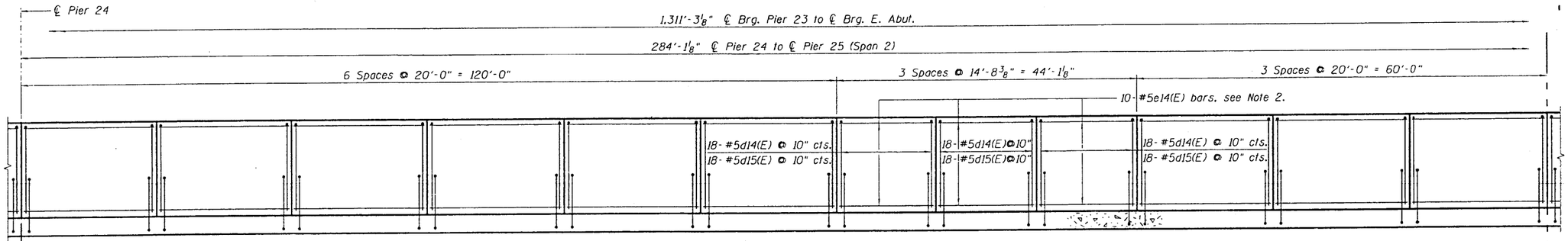
SCALE: | SHEET NO. S-37 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	147
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



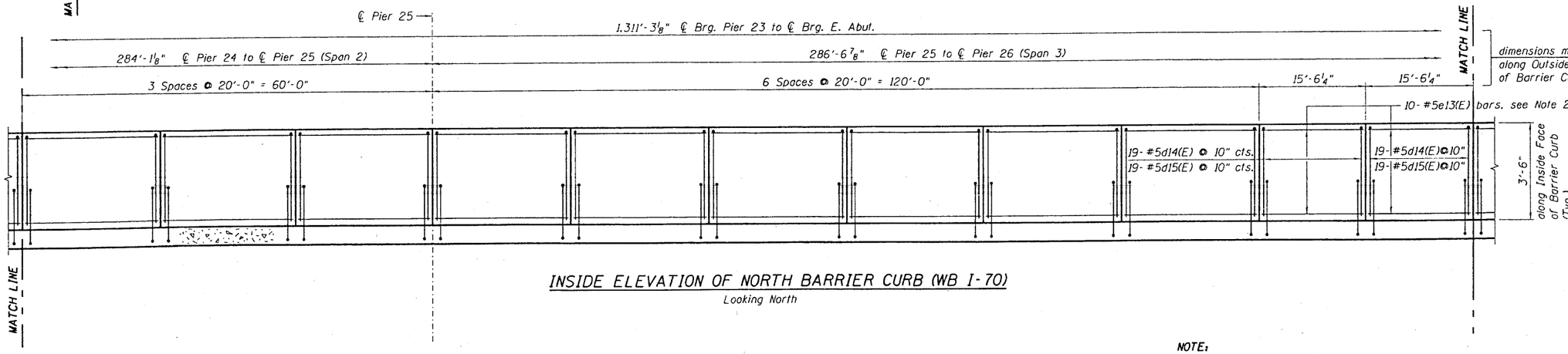
INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North



INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North



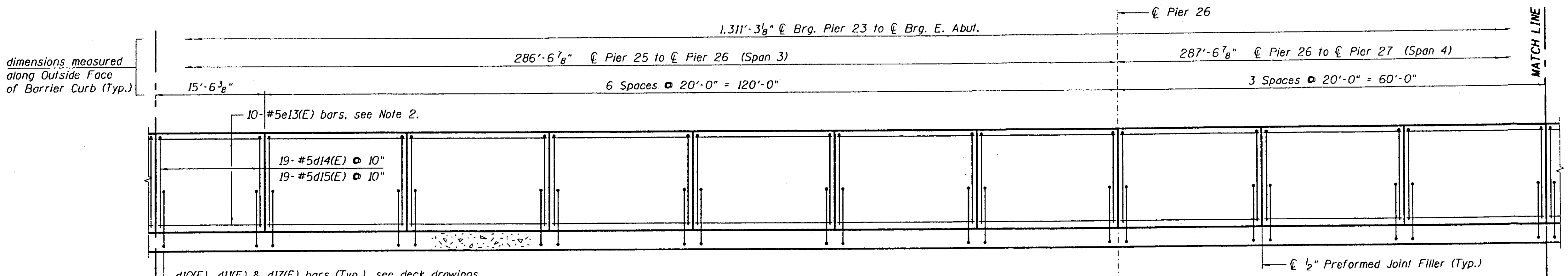
INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North

NOTE:
See Sht. S-39 for Notes.

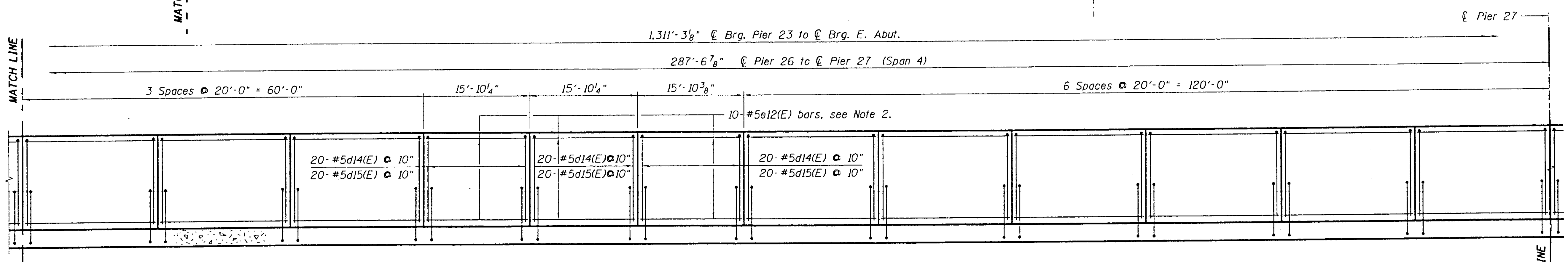
FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	PARAPET ELEVATIONS WB I-70 1 OF 4	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -			998	B2-2-IHVB	ST. CLAIR	285	148
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -			~~SN 082-0310 (EB) & 0319 (WB)~~		~~CONTRACT NO. 76644~~		
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SCALE:	SHEET NO. S-38 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	

\\B82B318-CONN-05-001-SU.DGN \\B82B318-CONN-99-001-80.DGN \\B82B318-CONN-05-001-SU.DGN \\B82B318-CONN-05-001-SU.DGN \\B82B318-CONN-05-MR1-SU.DGN
6-APR-2010, 18:43:25 BOWMAUD \\FS-0844\VHVOL1\D-TRANS_67\2262\28868-001\STRUCTURAL\DESIGN\B82B318\SHEET\B82B318-CONN-05-MR2-SH1-SU.DGN



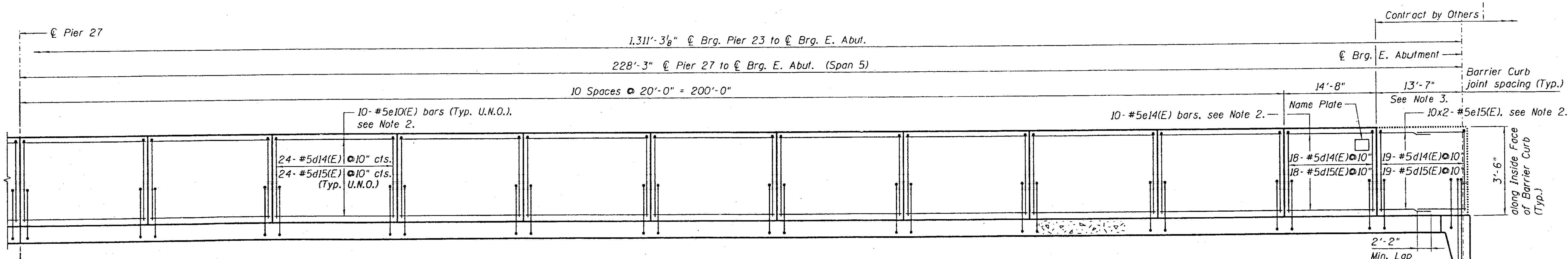
INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North



INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North



INSIDE ELEVATION OF NORTH BARRIER CURB (WB I-70)

Looking North

NOTES:

1. Work this sheet with Shts. S-22 thru S-47.
2. Rebar shall be spaced as shown in details on Sht. S-42.
3. Barrier segment reinforcement included in this Contract. Forming and concrete placement for barrier included in Contract by Others.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

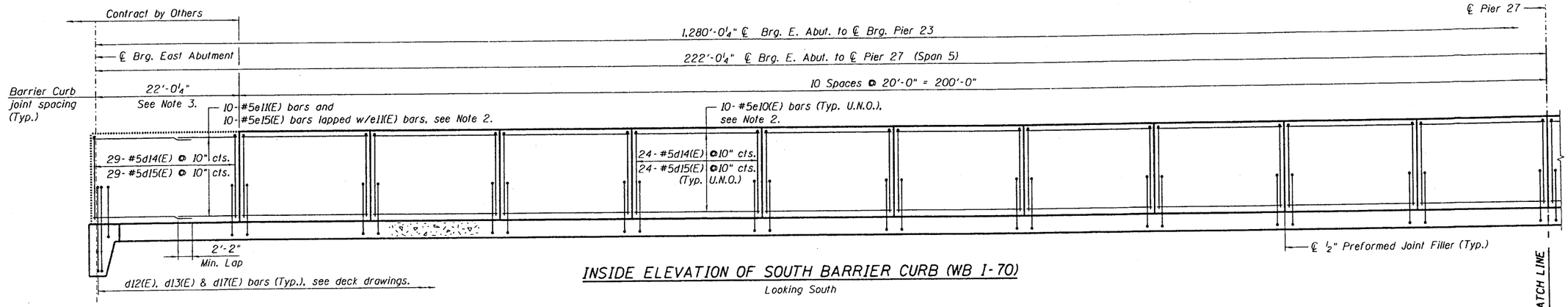
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

PARAPET ELEVATIONS WB I-70
2 OF 4

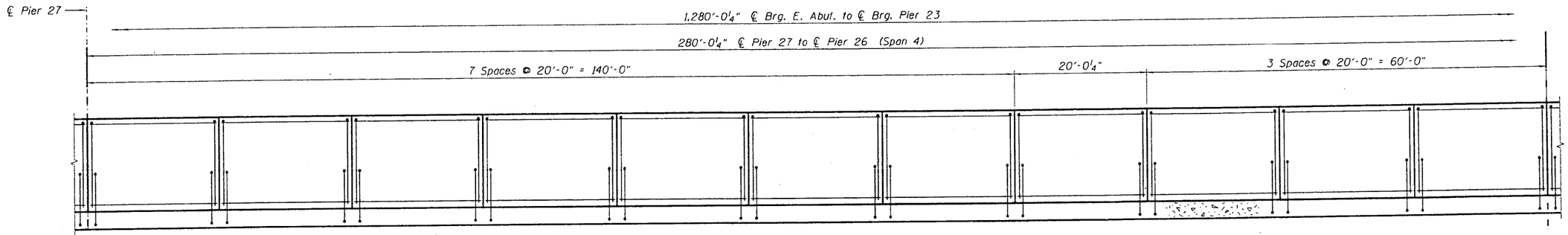
SCALE: | SHEET NO. S-39 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	149
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



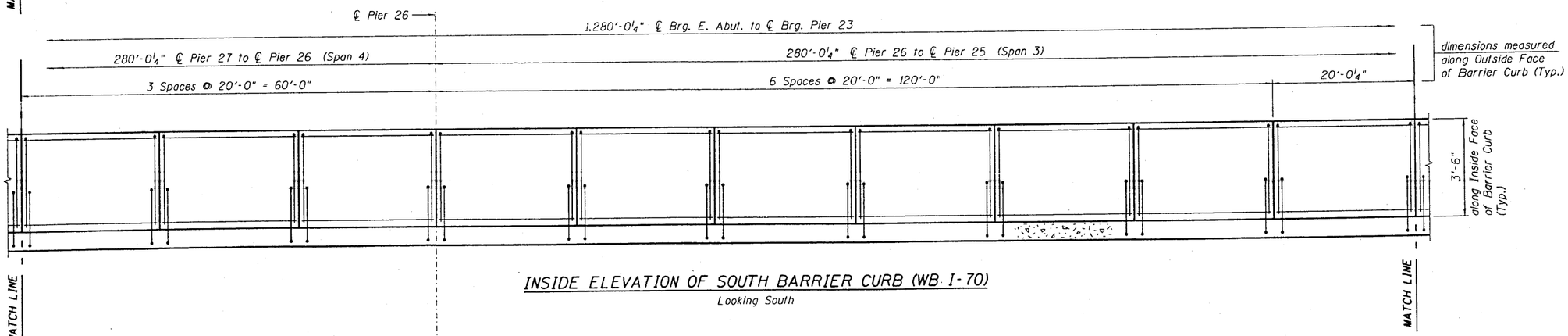
INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South



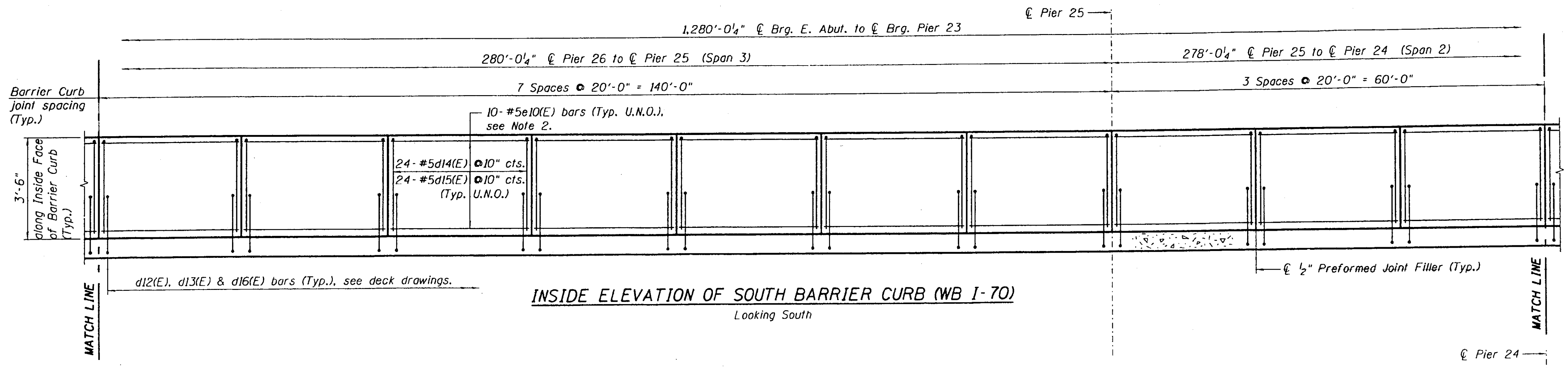
INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South

NOTE:
See Sht. S-39 for Notes.

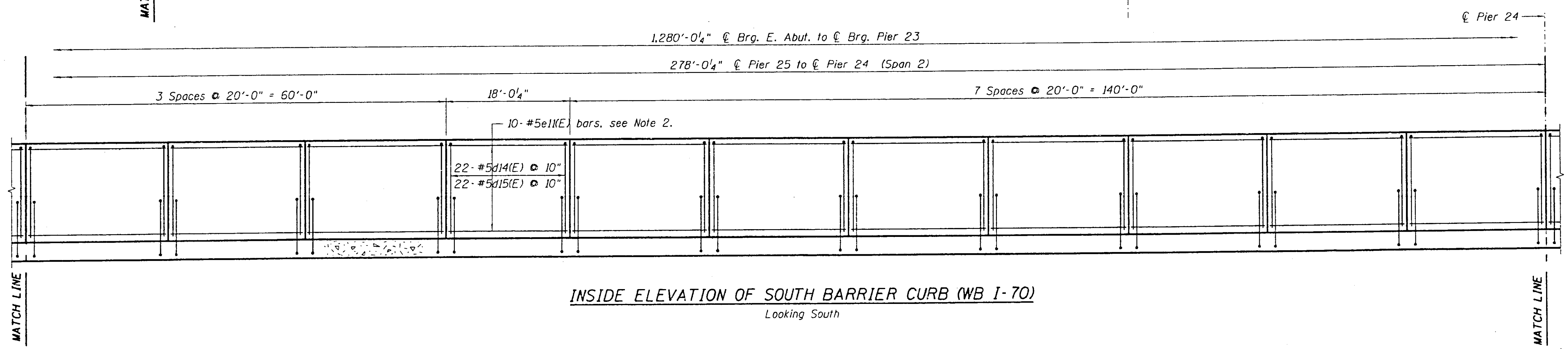
\\082318-CONN-05-001-SU.DGN ..\082318-CONN-05-001-SU.DGN ..\082318-CONN-05-001-SU.DGN ..\082318-CONN-05-001-SU.DGN ..\082318-CONN-05-001-SU.DGN
6:03:2010 10:43:58 BDHOHLJO \\FS-0044\VOL4\PROJ-TRANS_07\22202\28868-001\STRUCT\CAD\DGN DESIGN\082031B\SHEET\082031B-CONN-05-184-SHT-SU.DGN

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	PARAPET ELEVATIONS WB I-70 3 OF 4	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - FD	REVISED -			998	82-2-1HVB	ST. CLAIR	285	150
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -		SCALE:	SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44			
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SHEET NO. S-40 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT			



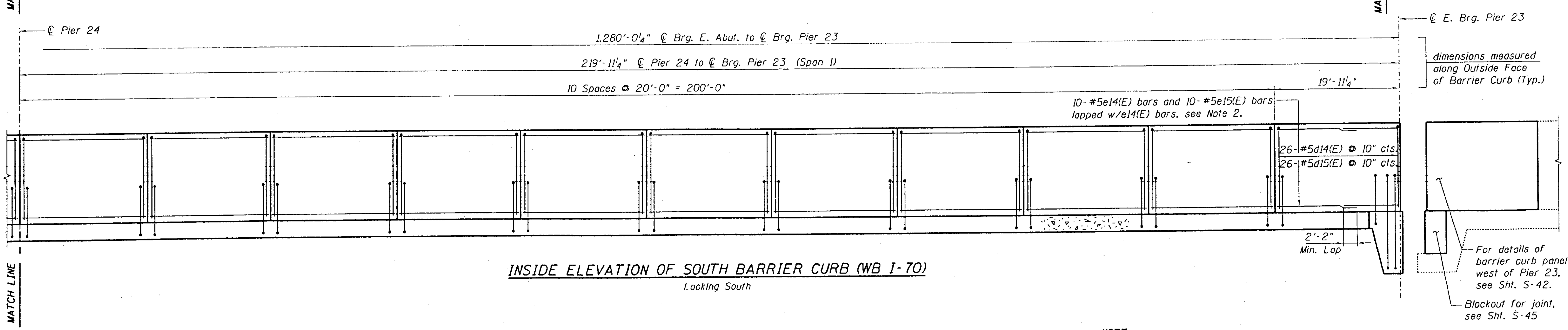
INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South



INSIDE ELEVATION OF SOUTH BARRIER CURB (WB I-70)

Looking South

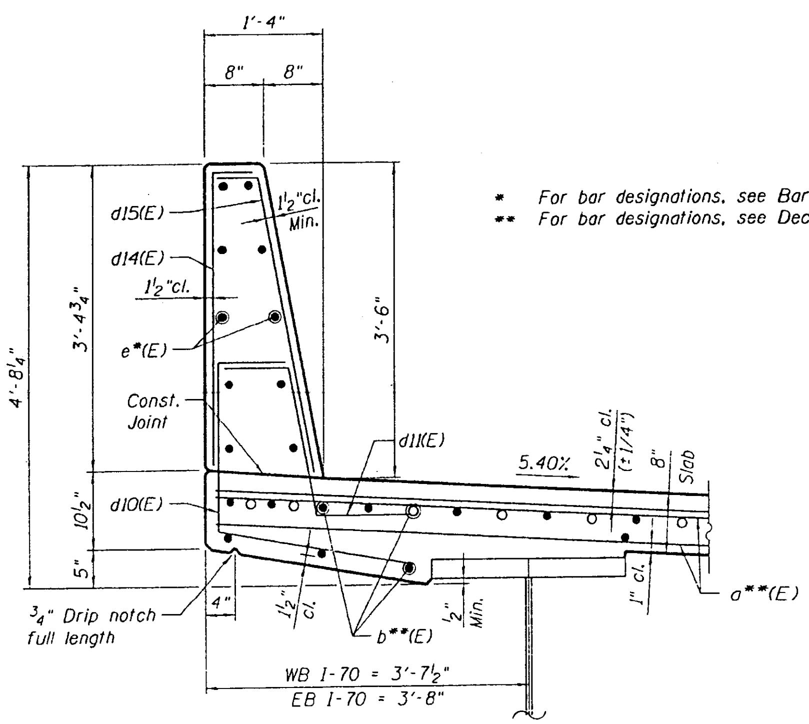
NOTE:
See Sht. S-39 for Notes.

FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS
$FILEL$		DRAWN - FD	REVISED -	DEPARTMENT OF TRANSPORTATION
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	

PARAPET ELEVATIONS WB I-70
4 OF 4

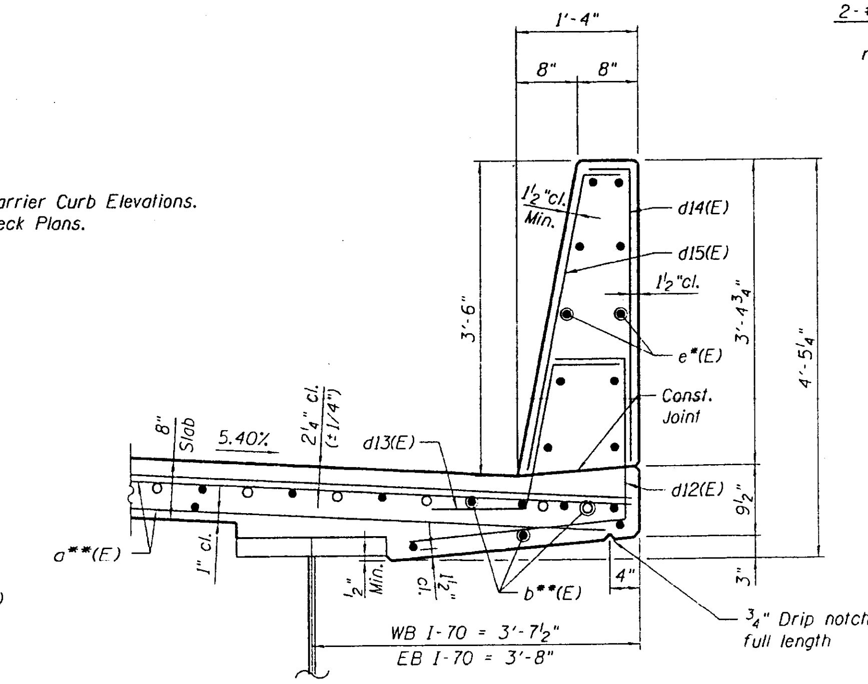
SCALE: | SHEET NO. S-41 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	151
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

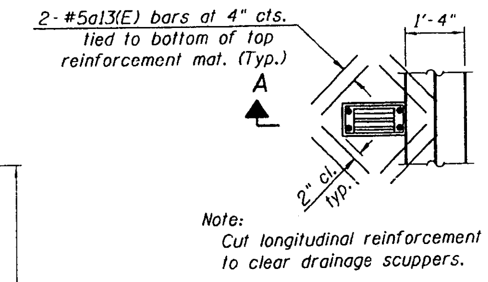


NORTH BARRIER CURB DETAIL

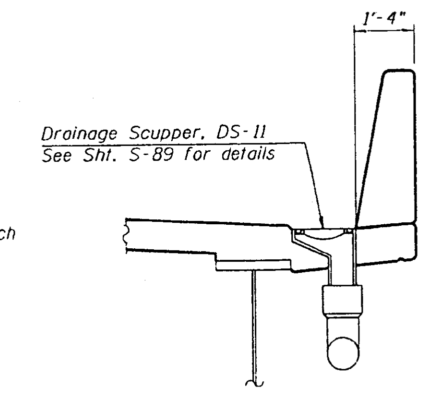
* For bar designations, see Barrier Curb Elevations.
** For bar designations, see Deck Plans.



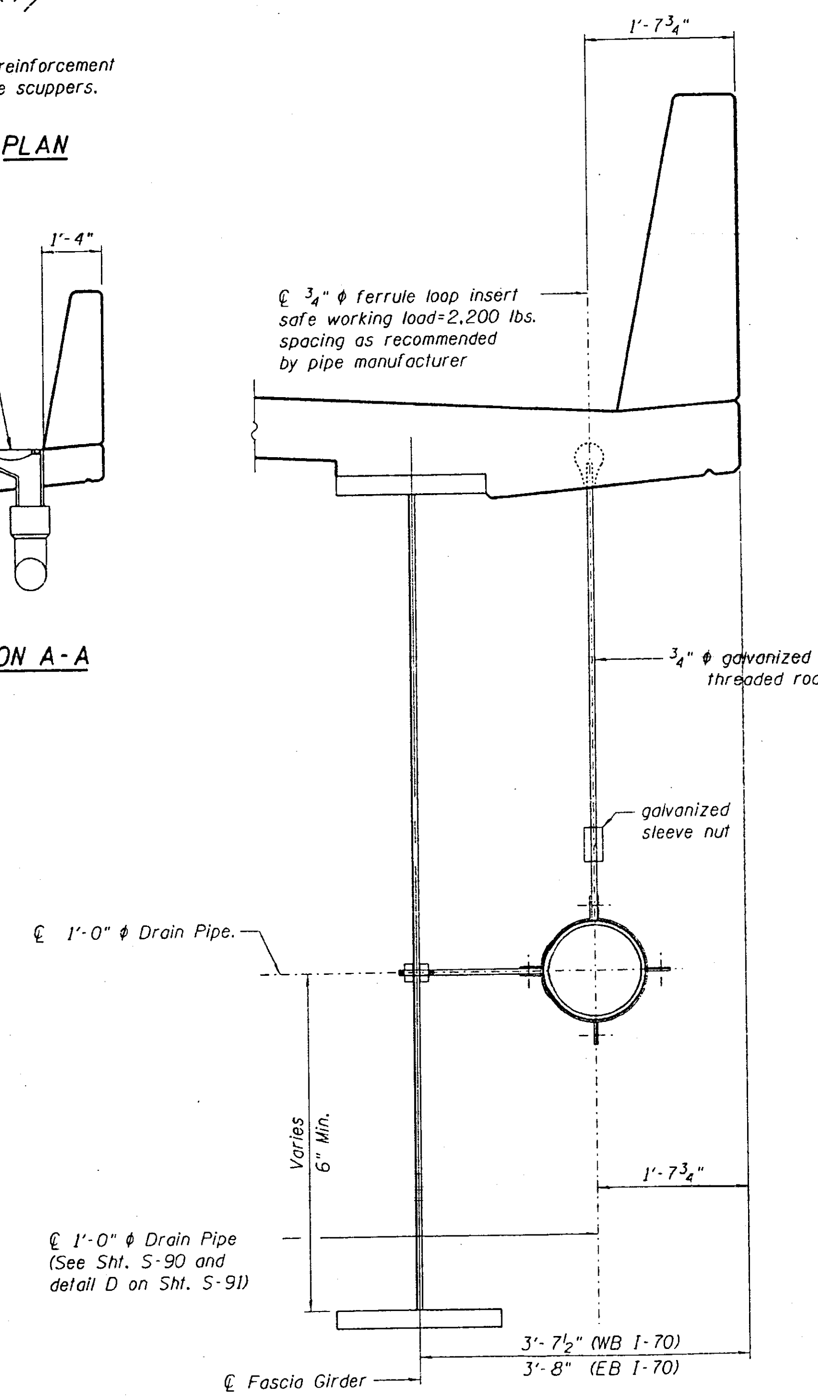
SOUTH BARRIER CURB DETAIL



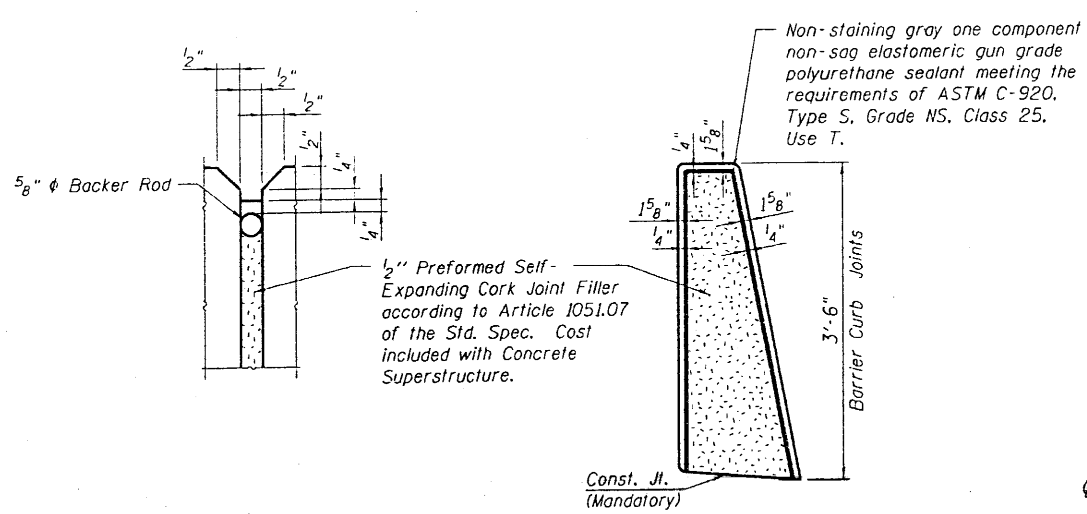
PLAN



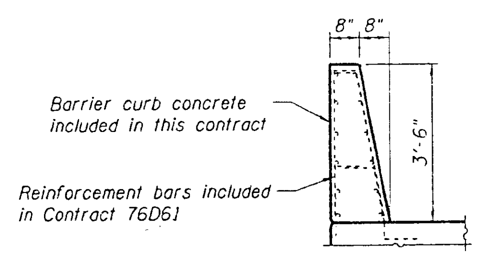
SECTION A-A



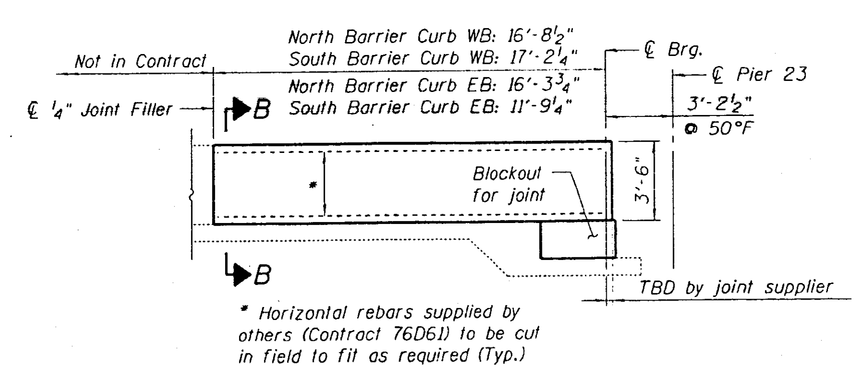
PIPE HANGER DETAIL



BARRIER CURB JOINT DETAILS



SECTION B-B



* Horizontal rebars supplied by others (Contract 76D61) to be cut in field to fit as required (Typ.)

BARRIER ELEVATION
(Barrier at Pier 23, west of Exp. Joint)

NOTE:
Work this sheet with Shts. S-22 thru S-47.

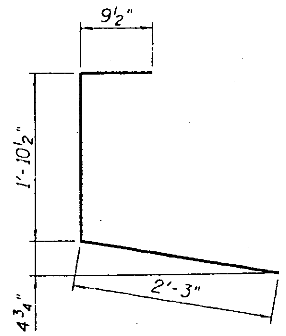
FILE NAME :	USER NAME : $USER$	DESIGNED - JLR	REVISED -
$FILEL$		DRAWN - FD	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

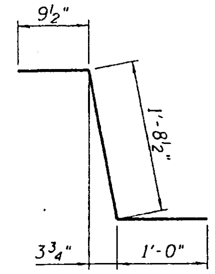
DECK DETAILS

SCALE: | SHEET NO. S-42 OF S-111 | STA. 134+22.00 TO STA.

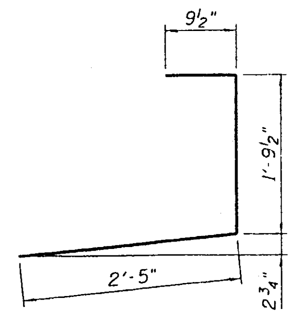
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	152
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



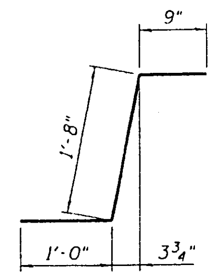
BAR d10(E)



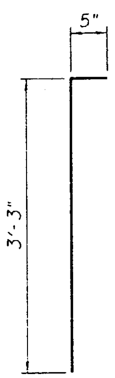
BAR d11(E)



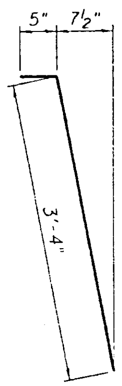
BAR d12(E)



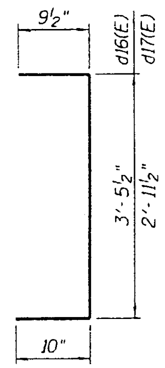
BAR d13(E)



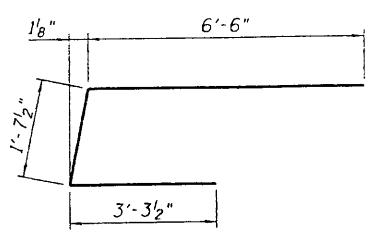
BAR d14(E)



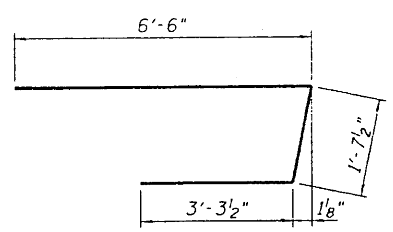
BAR d15(E)



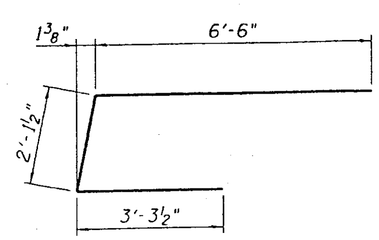
BARS d16(E) & d17(E)



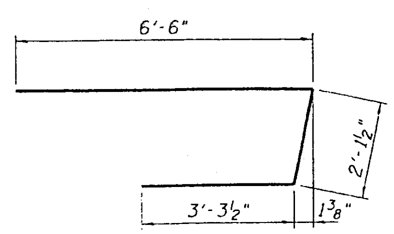
BAR a23(E)



BAR a24(E)



BAR a25(E)



BAR a26(E)

NOTE:
Work this sheet with Shts. S-22 thru S-47.

EB DECK BAR LIST

Bar	No.	Size	Length	Shape
a10(E)	4708	#5	30'-0"	
a11(E)	5560	#6	6'-6"	
a12(E)	4708	#5	14'-7"	
a13(E)	80	#5	1'-6"	
a21(E)	16	#6	22'-7"	
a23(E)	3	#6	11'-5"	
a24(E)	3	#6	11'-5"	
a25(E)	3	#6	11'-11"	
a26(E)	3	#6	11'-11"	
b10(E)	3818	#5	30'-0"	
b11(E)	516	#6	38'-5"	
b12(E)	46	#5	9'-0"	
b13(E)	46	#5	23'-1"	
d10(E)	1533	#5	4'-11"	
d11(E)	1540	#5	3'-6"	
d12(E)	1500	#5	5'-0"	
d13(E)	1507	#5	3'-5"	
d14(E)	3052	#5	3'-8"	
d15(E)	3052	#5	3'-9"	
d16(E)	8	#5	5'-1"	
d17(E)	6	#5	4'-7"	
e10(E)	1170	#5	19'-7"	
e11(E)	40	#5	17'-7"	
e12(E)	40	#5	15'-6"	
e14(E)	10	#5	14'-4"	
e15(E)	30	#5	8'-6"	
e16(E)	30	#5	10'-3"	

WB DECK BAR LIST

Bar	No.	Size	Length	Shape
a10(E)	4688	#5	30'-0"	
a11(E)	5682	#6	6'-6"	
a12(E)	1853	#5	14'-7"	
a13(E)	80	#5	1'-6"	
a14(E)	314	#5	16'-7"	
a15(E)	213	#5	18'-8"	
a16(E)	241	#5	20'-9"	
a17(E)	287	#5	22'-10"	
a18(E)	250	#5	24'-2"	
a19(E)	330	#5	25'-6"	
a20(E)	1200	#5	26'-8"	
a21(E)	8	#6	22'-7"	
a22(E)	8	#6	28'-8"	
a23(E)	3	#6	11'-5"	
a24(E)	3	#6	11'-5"	
a25(E)	3	#6	11'-11"	
a26(E)	3	#6	11'-11"	
b10(E)	4184	#5	30'-0"	
b14(E)	46	#5	23'-6"	
b15(E)	31	#5	13'-6"	
b16(E)	58	#5	12'-5"	
b17(E)	51	#5	22'-5"	
b18(E)	576	#6	41'-9"	
d10(E)	1573	#5	4'-11"	
d11(E)	1580	#5	3'-6"	
d12(E)	1536	#5	5'-0"	
d13(E)	1543	#5	3'-5"	
d14(E)	3124	#5	3'-8"	
d15(E)	3124	#5	3'-9"	
d16(E)	8	#5	5'-1"	
d17(E)	6	#5	4'-7"	
e10(E)	1170	#5	19'-7"	
e11(E)	20	#5	17'-7"	
e12(E)	30	#5	15'-6"	
e13(E)	30	#5	15'-2"	
e14(E)	70	#5	14'-4"	
e15(E)	40	#5	8'-6"	

EB DECK BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	1879.5
Reinforcement Bars, Epoxy Coated	Pound	501,230
Bridge Deck Grooving	Sq. Yd.	5,363
Protective Coat	Sq. Yd.	6,835
Name Plates	Each	1

WB DECK BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	2101.9
Reinforcement Bars, Epoxy Coated	Pound	550,130
Bridge Deck Grooving	Sq. Yd.	6,167
Protective Coat	Sq. Yd.	7,674
Name Plates	Each	1

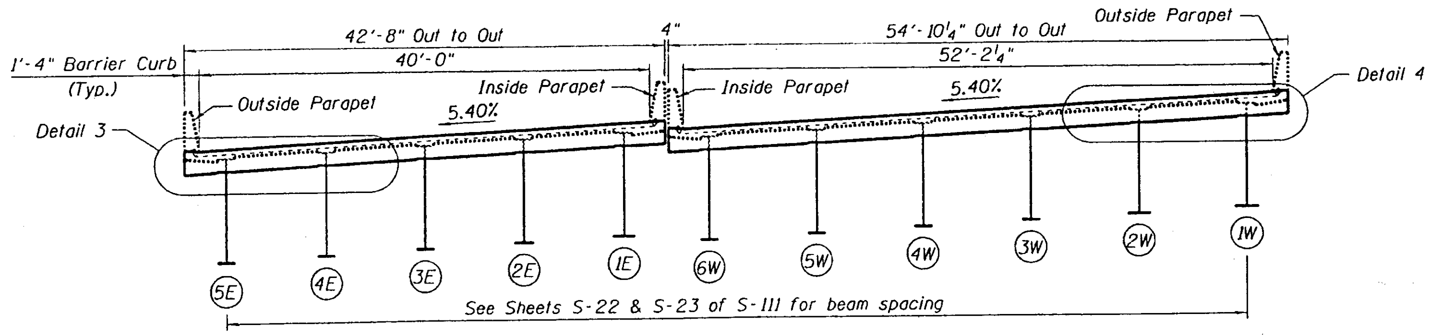
FILE NAME =
USER NAME = $USER$
PLOT SCALE = $SCALE$
PLOT DATE = $DATE$
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

DESIGNED - JLR | REVISED -
DRAWN - FD | REVISED -
CHECKED - TCU | REVISED -
DATE - 06/04/10 | REVISED -

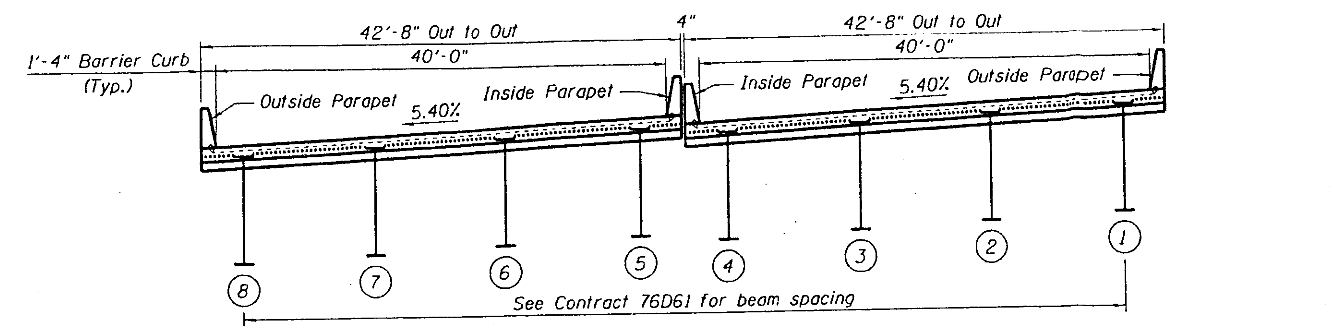
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

DECK BAR LISTS
SCALE: | SHEET NO. S-43 OF S-111 | STA. 134+22.00 TO STA.

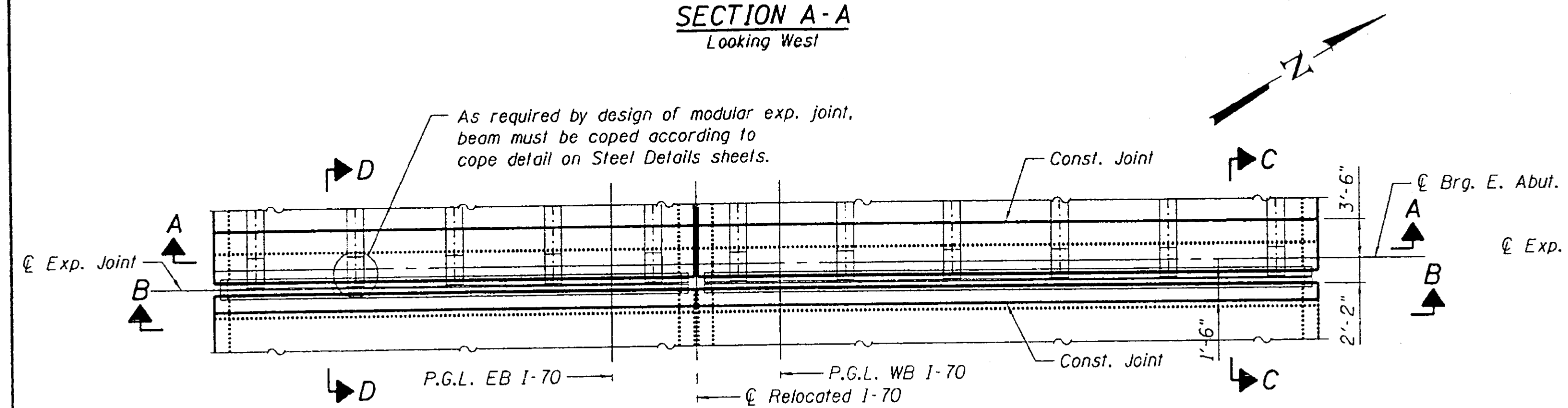
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	153
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



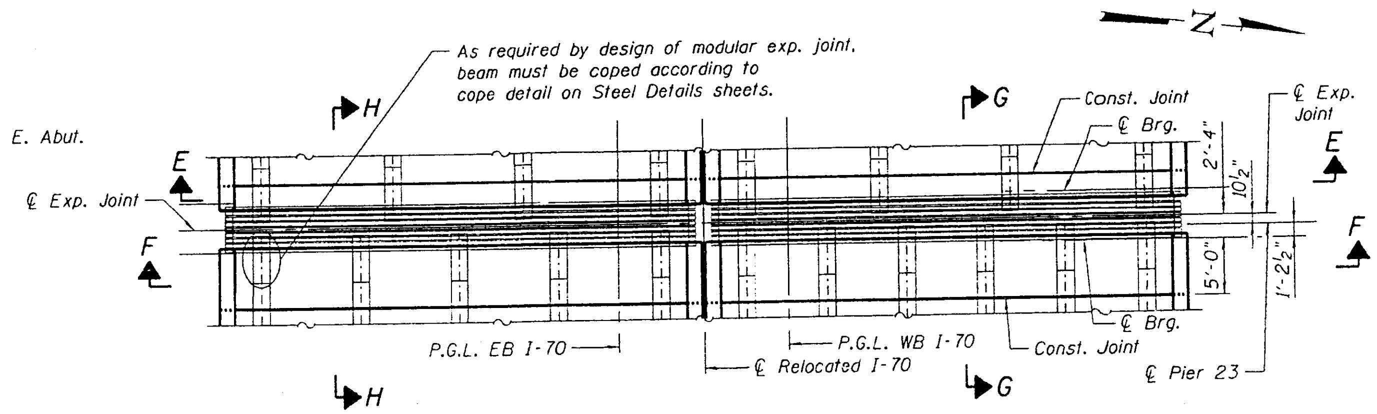
SECTION A-A
Looking West



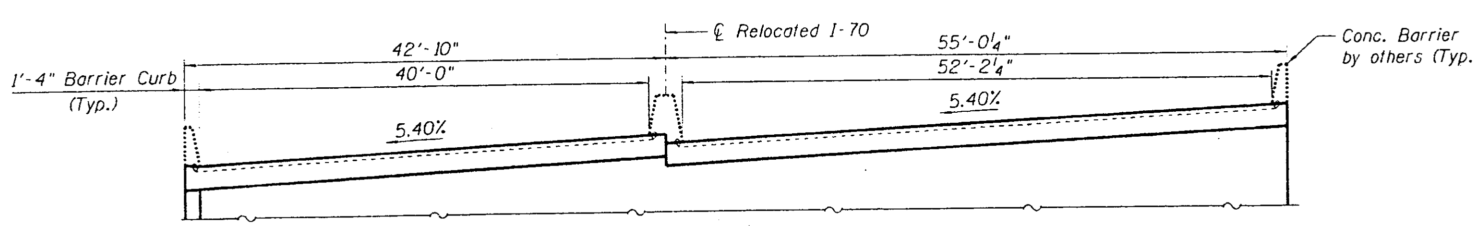
SECTION E-E
Looking West



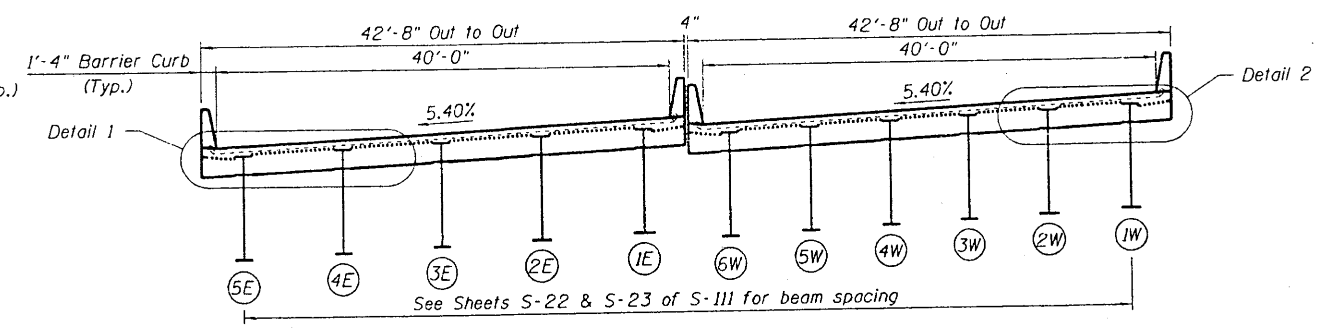
DECK PLAN AT EAST ABUTMENT



DECK PLAN AT PIER 23



SECTION B-B
Looking West



SECTION F-F
Looking West

REQUIRED MOVEMENT
(AASHTO LOAD COMBINATION SERVICE I)

Item	East Abutment	Pier 23
Total longitudinal (open/close) movement	8½"	24"
Total transverse (wracking) movement	1"	1"
Maximum longitudinal break about ℄ joint	0.0033 Rad	0.0066 Rad

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modular Expansion Joint - Swivel 9"	Foot	92.5
Modular Expansion Joint - Swivel 24"	Foot	80.0

NOTES:

1. Work this sheet with Sheets S-22 through S-47.
2. The expansion joint device shall be a prefabricated modular assembly with multiple support bars and separator beams. providing a continuous seal across the deck. The device shall be capable of accomodating differential (non-parallel) open/close movements and transverse (wracking) movements. The design concept shall have been tested successfuly under dynamic conditions representative of seismic demands.
3. Joint longitudinal opening shall be adjusted according to Article 520.04 of the Standard Specifications when the end of the deck is cast at an ambient temperature other than 50° F.
4. The opposing sides of the joint assembly shall be positioned with respect to the face of parapet on each deck as shown in the plans. At 50° F, the opposing sides of the joint assembly shall be aligned transversely. The neoprene strip seals shall be secured in place with the opposing sides of the joint aligned transversely.
5. Concrete in end of the deck to be placed after the Modular Joint is fixed in position.
6. Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
7. For sections C-C, D-D, G-G & H-H, see Sht. S-45.

FILE NAME :	USER NAME = $USER$	DESIGNED - TCG	REVISED -
$FILEL$		DRAWN - TCG	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

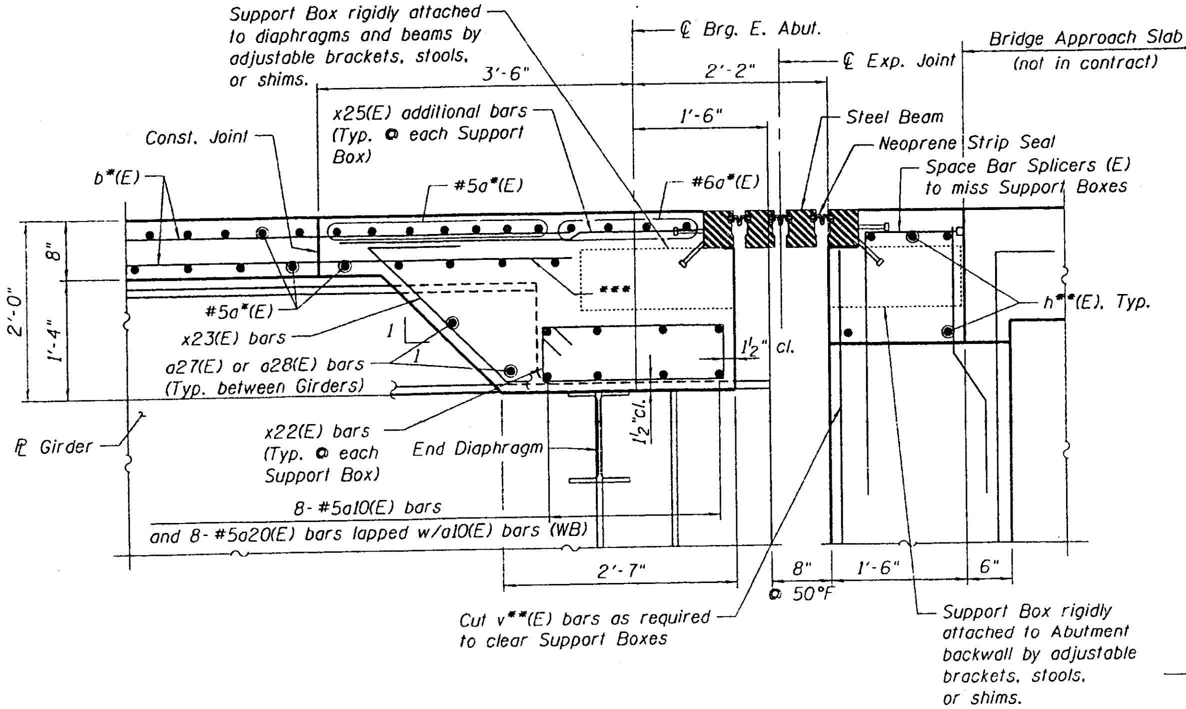
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

MODULAR EXPANSION JOINT
1 OF 4

SCALE: | SHEET NO. S-44 OF S-111 | STA. 134+22.00 TO STA.

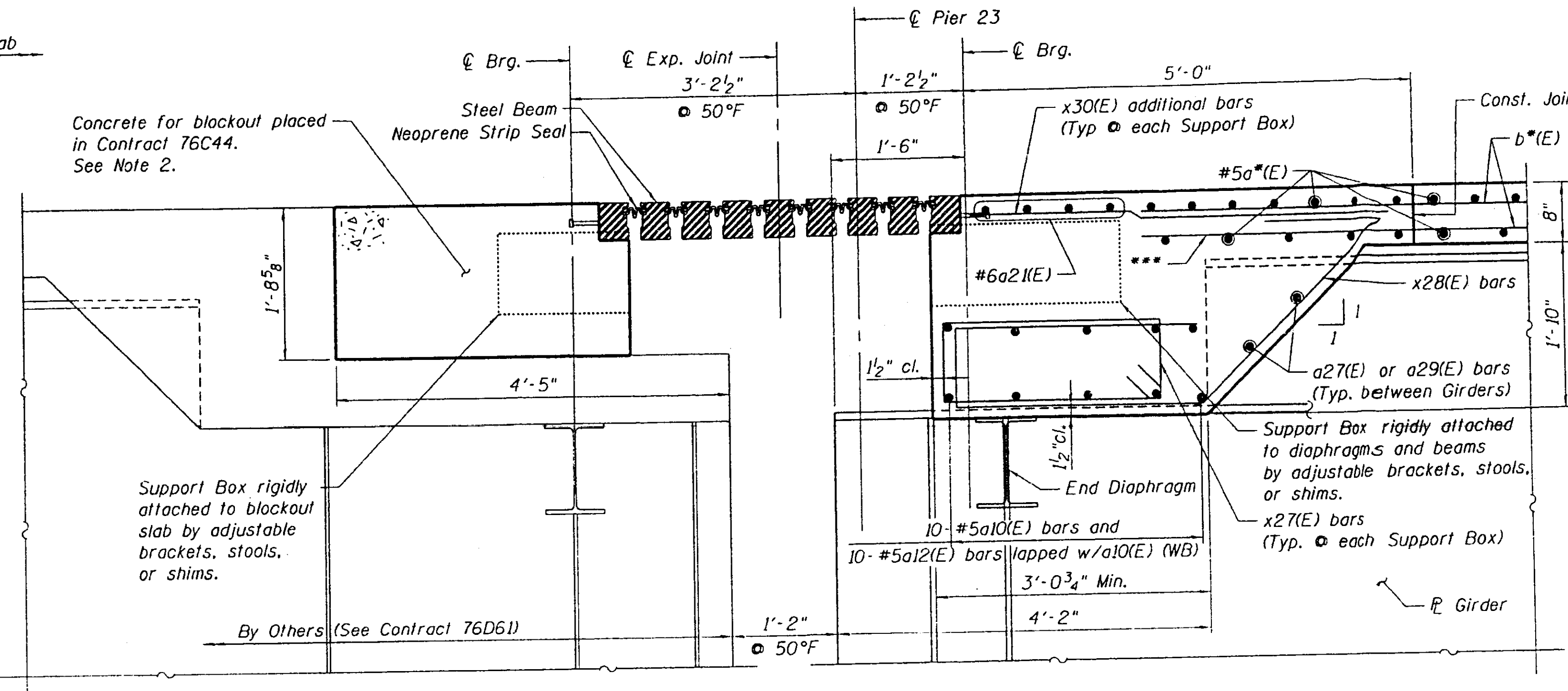
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	154
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

..\0820318-CONN-99-001-BO.DGN, ..\0820318-CONN-05-003-SU.DGN, ..\0820318-CONN-05-003-SU.DGN
6-03-2010 10:14:25 BONCHUJD \\FS-0014\DATA\VALLEY-TRANS\07\2202\20868-001\STRUCT\CAD\01 DESIGN\0820318\SHEET\0820318-CONN-05-121-SHT-SU.DGN



SECTION C-C

(@ Support Box)



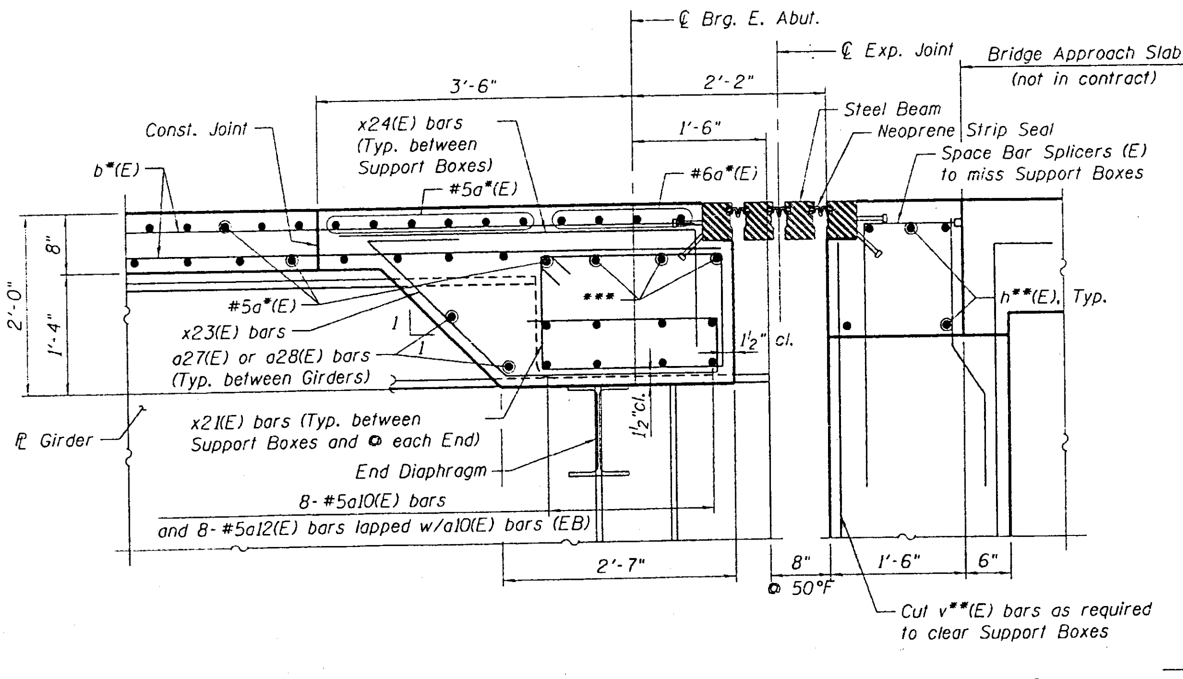
SECTION G-G

(@ Support Box)

* For bar designations, see Deck Plans.

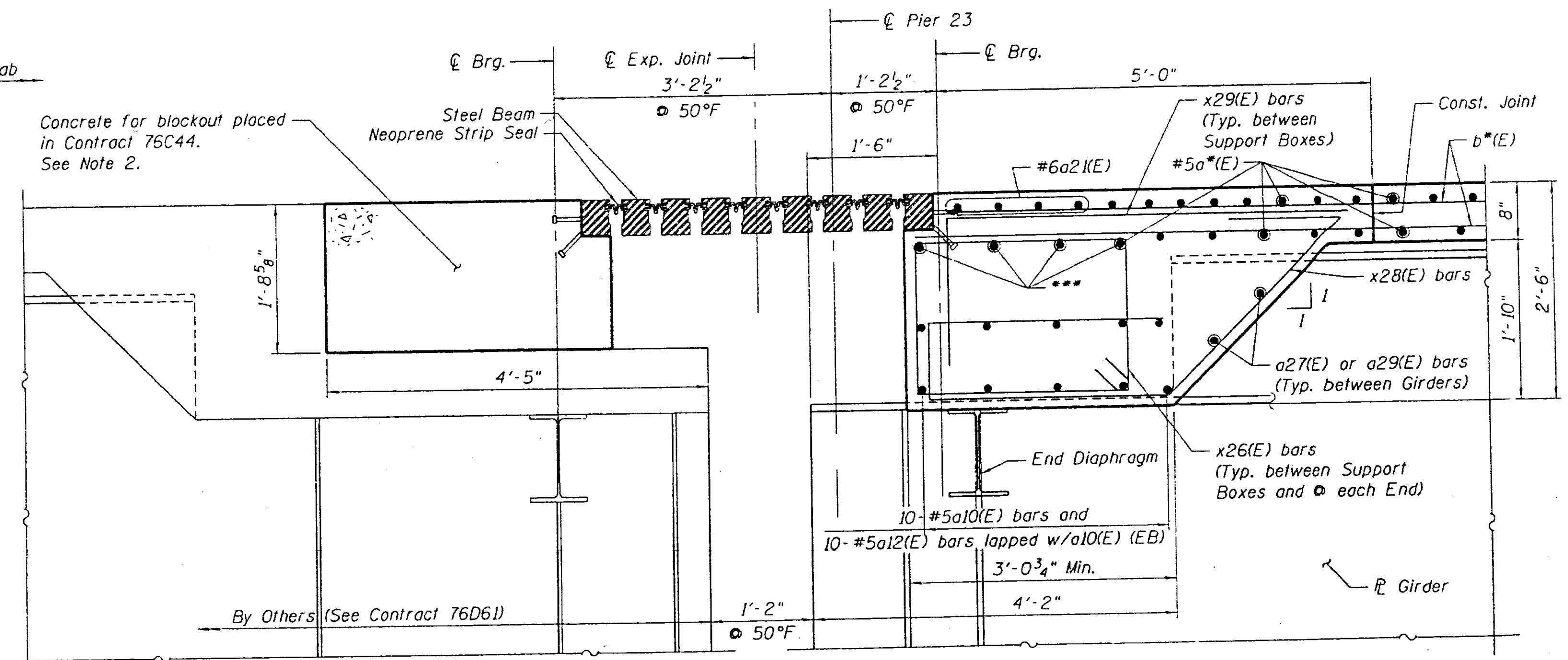
** For bar designations, see Abutment Plans.

*** Cut bars as required to clear Support Boxes.



SECTION D-D

(between Support Boxes)



SECTION H-H

(between Support Boxes)

NOTES:

1. Work this sheet with Shts. S-22 thru S-47.
2. Concrete for blockout is to be placed in this Contract, 76C44. Quantity is included with Concrete Superstructure. Reinforcement in the blockout is by others under Contract 76D61 and may need to be modified to provide clearance for modular joint. Cost for bending or cutting rebar in field is included with Modular Expansion Joint - Swivel, 24".

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - FD	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - FD	REVISED -
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

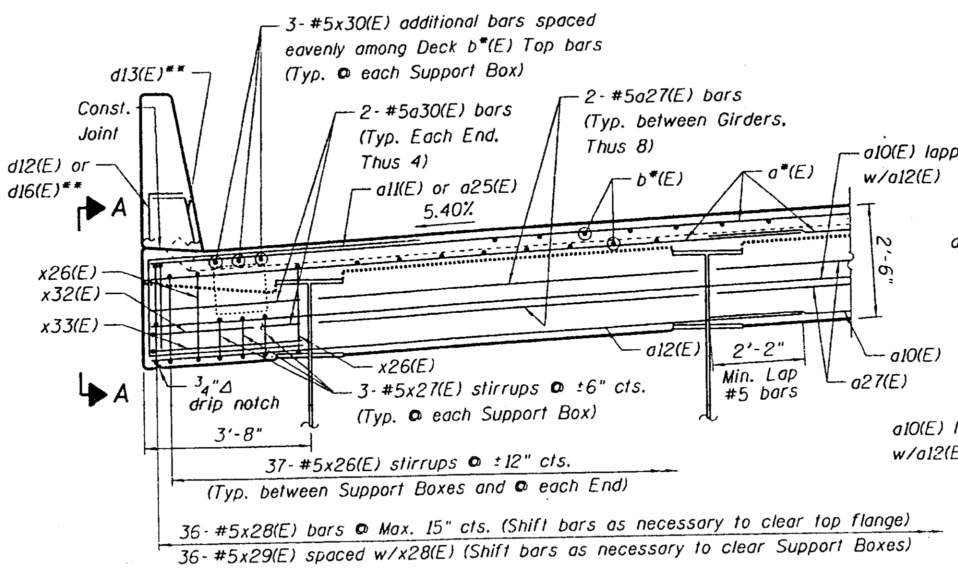
MODULAR EXPANSION JOINT
2 OF 4

SCALE: | SHEET NO. S-45 OF S-111 | STA. 134+22.00 TO STA.

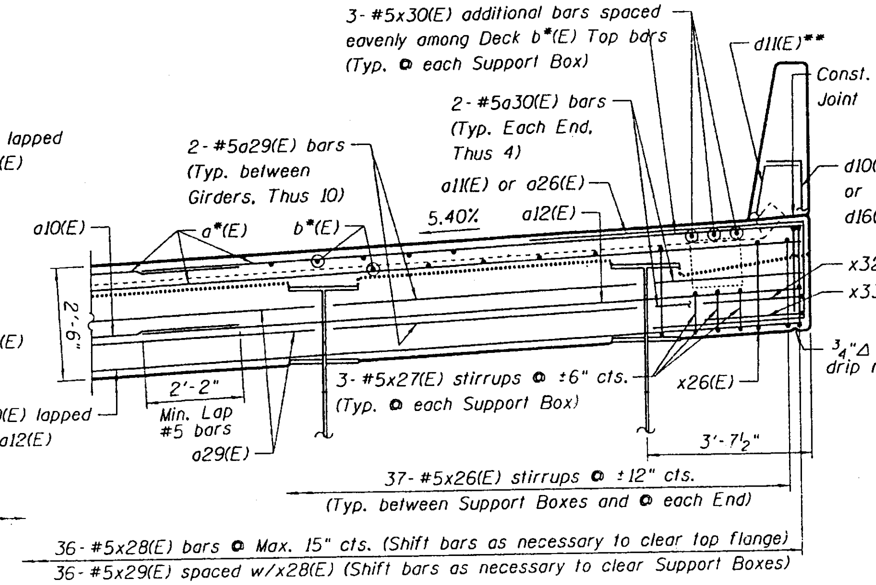
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	155

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44

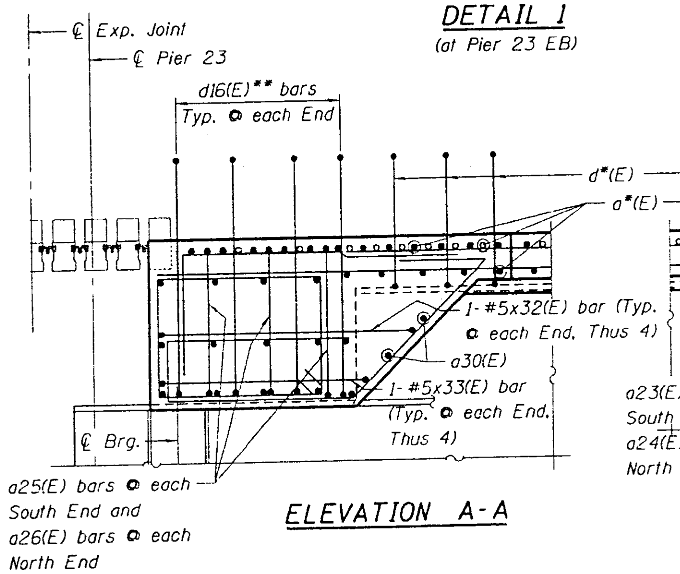
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



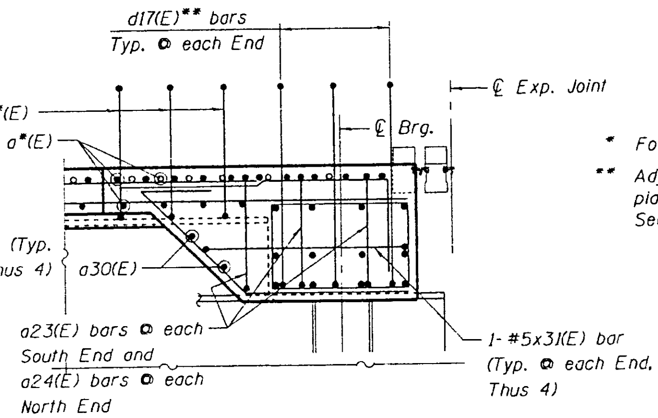
DETAIL 1
(at Pier 23 EB)



DETAIL 2
(at Pier 23 WB)



ELEVATION A-A



ELEVATION B-B

* For bar designations, see Deck Plans.

** Adjust bar position as required to clear anchor bolts, plates and studs in barrier plate assemblies. See Sht. S-47.

EAST ABUTMENT BAR LIST

Bar	No.	Size	Length	Shape
a10(E)	16	#5	30'-0"	
a12(E)	8	#5	14'-7"	
a20(E)	8	#5	26'-8"	
a27(E)	8	#5	8'-5"	
a28(E)	10	#5	9'-2"	
a30(E)	8	#5	3'-4"	
x21(E)	83	#5	7'-8"	
x22(E)	81	#5	6'-1"	
x23(E)	82	#5	8'-4"	
x24(E)	82	#5	5'-4"	
x25(E)	81	#5	4'-0"	
x31(E)	4	#5	9'-4"	

PIER 23 BAR LIST

Bar	No.	Size	Length	Shape
a10(E)	20	#5	30'-0"	
a12(E)	20	#5	14'-7"	
a27(E)	8	#5	8'-5"	
a29(E)	10	#5	6'-8"	
a30(E)	8	#5	3'-4"	
x26(E)	74	#5	9'-4"	
x27(E)	72	#5	7'-3"	
x28(E)	72	#5	10'-7"	
x29(E)	72	#5	6'-5"	
x30(E)	72	#5	4'-9"	
x32(E)	4	#5	10'-0"	
x33(E)	4	#5	9'-7"	

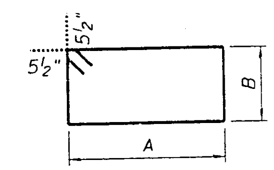
EAST ABUTMENT BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	35.6
Reinforcement Bars, Epoxy Coated	Pound	3,760

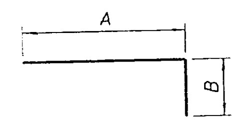
PIER 23 BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	59.2
Reinforcement Bars, Epoxy Coated	Pound	4,080

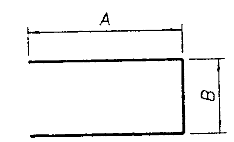
Bar	A	B
x21(E)	2'-0"	1'-4½"
x22(E)	2'-0"	7"
x24(E)	4'-0"	1'-4"
x26(E)	2'-4"	1'-10½"
x27(E)	2'-4"	10"
x29(E)	4'-8"	1'-9"
x31(E)	3'-3"	2'-10"
x32(E)	3'-3"	3'-6"
x33(E)	3'-3"	3'-1"



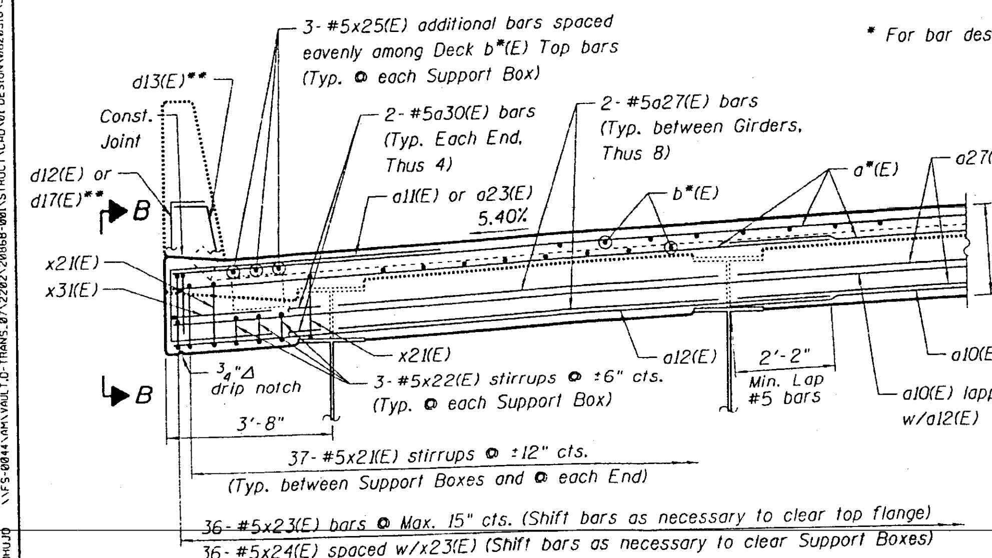
BARS x21(E), x22(E), x26(E) & x27(E)



BARS x24(E) & x29(E)

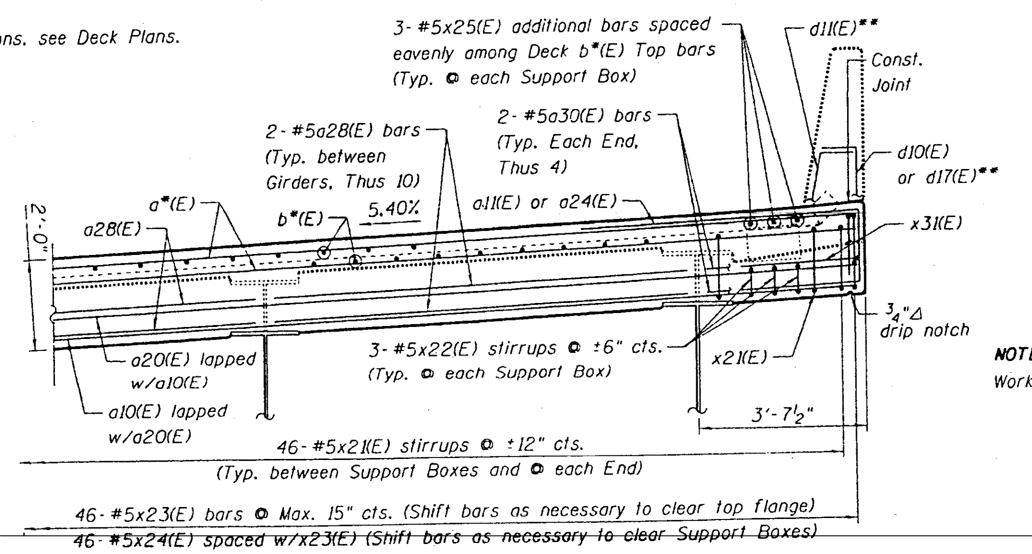


BARS x31(E), x32(E) & x33(E)

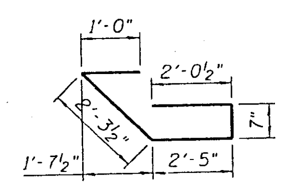


DETAIL 3
(at East Abut. EB)

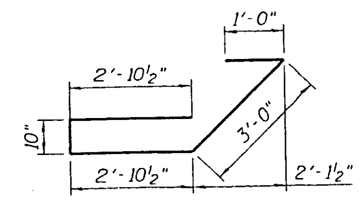
* For bar designations, see Deck Plans.



DETAIL 4
(at East Abut. WB)



BAR x23(E)



BAR x28(E)

NOTE:
Work this sheet with Sheets S-22 through S-47.

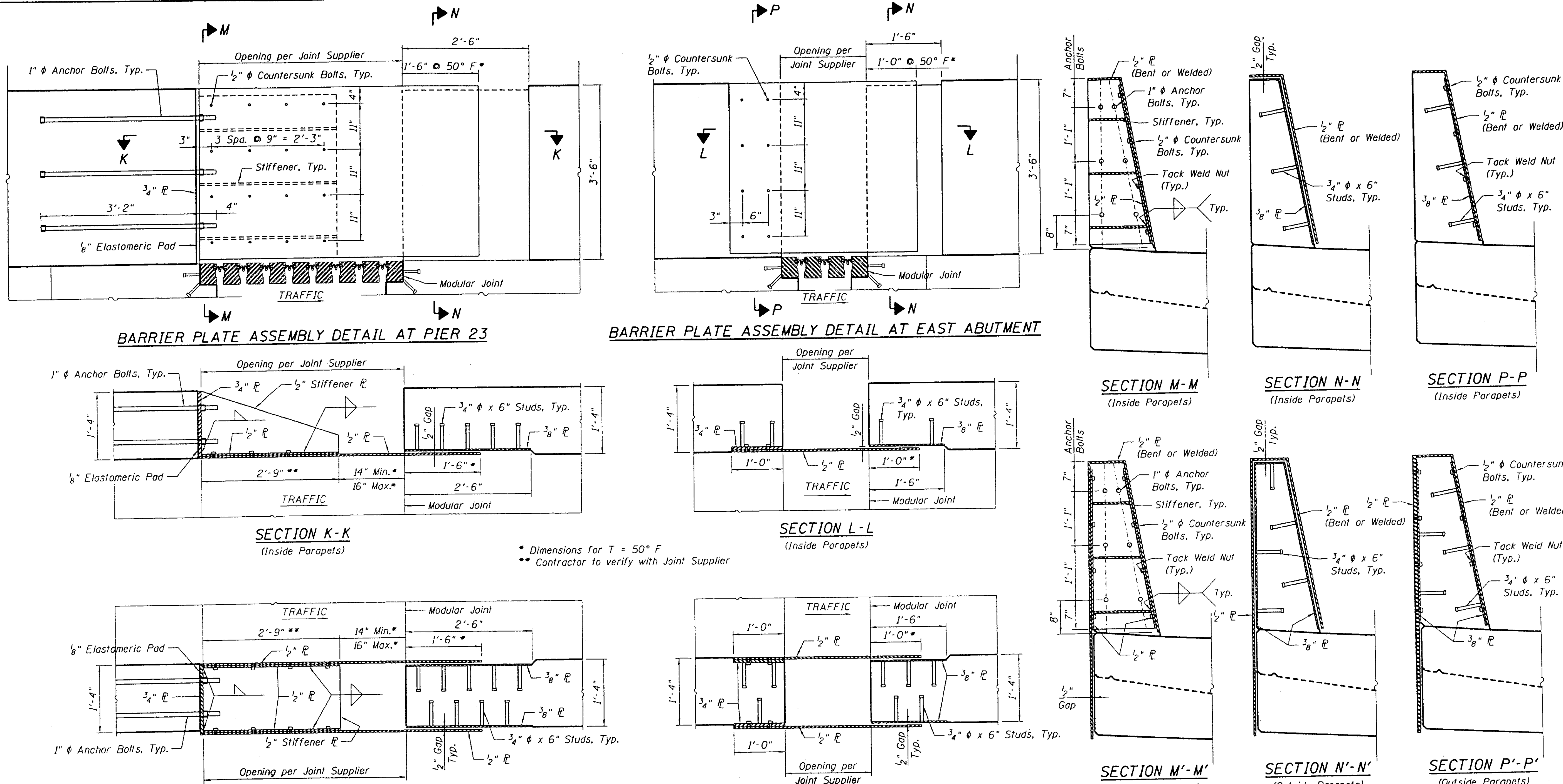
USER NAME = $USER$	DESIGNED - FD	REVISED -	STATE OF ILLINOIS
	DRAWN - FD	REVISED -	DEPARTMENT OF TRANSPORTATION
PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER
PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.

TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

MODULAR EXPANSION JOINT
3 OF 4

SCALE: | SHEET NO. S-46 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	156
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76644		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



BARRIER PLATE ASSEMBLY DETAIL AT PIER 23

BARRIER PLATE ASSEMBLY DETAIL AT EAST ABUTMENT

SECTION K-K
(Inside Parapets)

SECTION L-L
(Inside Parapets)

SECTION M-M
(Inside Parapets)

SECTION N-N
(Inside Parapets)

SECTION P-P
(Inside Parapets)

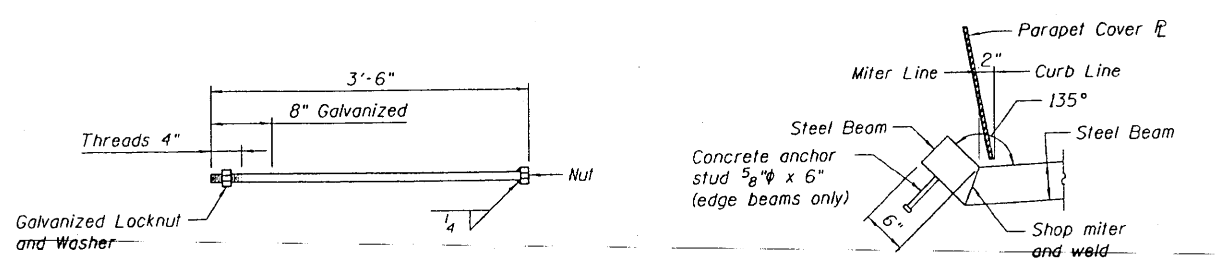
SECTION K'-K'
(Outside Parapets)

SECTION L'-L'
(Outside Parapets)

SECTION M'-M'
(Outside Parapets)

SECTION N'-N'
(Outside Parapets)

SECTION P'-P'
(Outside Parapets)



1" ϕ Anchor Bolt

DETAIL 4

NOTES:

1. Work this sheet with Sheets S-44 through S-46.
2. Opening at 50° F is dependent upon modular expansion joint selection. Contractor is responsible for coordinating any revisions required due to deviations from dimensions shown.
3. All structural steel of the barrier plate assemblies shall be AASHTO M270 Grade 50 and galvanized according to AASHTO M111.
4. Payment for furnishing and installing the barrier plate assemblies shall be included in cost of Modular Expansion Joints.
5. Plug end of nut to maintain void for bolt placement.
6. Countersunk bolts shall be in accordance with ASTM A307, Grade A.
7. Barrier plate assemblies shall be placed as shown for traffic direction, such that sliding plate is anchored on oncoming traffic side of joint.

FILE NAME = \$FILEL\$	USER NAME = \$USER\$	DESIGNED - TCG	REVISED -
		DRAWN - TCG	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = \$SCALE\$	CHECKED - TCU	REVISED -
	PLOT DATE = \$DATE\$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

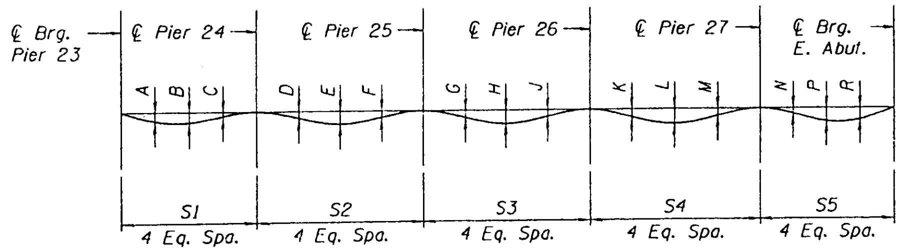
MODULAR EXPANSION JOINT
4 OF 4

SCALE: | SHEET NO. S-47 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	157
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

DEAD LOAD DEFLECTIONS - STEEL SELF WEIGHT ONLY

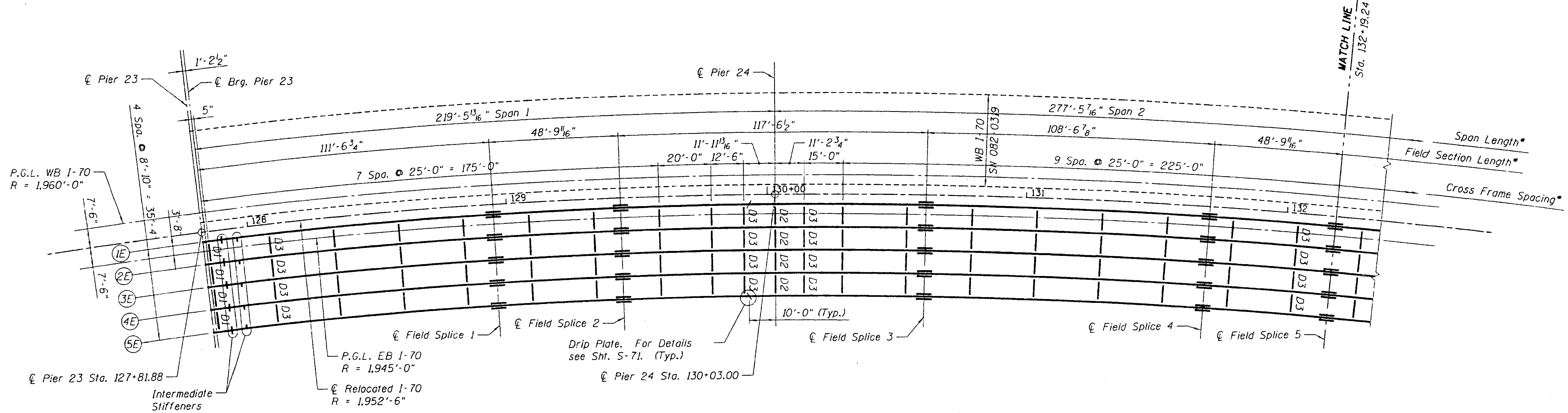
	S1	S2	S3	S4.	S5	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
Girder 1E	219'-5 13/16"	277'-5 7/16"	279'-5 3/8"	279'-5 3/8"	221'-6 3/4"	1 3/8	1 9/16	5/8	3/4	1 1/2	3/4	15/16	1 13/16	15/16	3/4	1 9/16	3/4	11/16	1 5/8	1 7/16
Girder 2E	218'-5 13/16"	276'-2 3/8"	278'-2 3/16"	278'-2 3/16"	220'-6 11/16"	1 5/16	1 7/16	5/8	3/4	1 1/2	3/4	15/16	1 3/4	15/16	3/4	1 9/16	3/4	5/8	1 9/16	1 5/16
Girder 3E	217'-5 3/4"	274'-11 1/4"	276'-11"	276'-11"	219'-6 11/16"	1 3/16	1 3/8	9/16	3/4	1 7/16	3/4	7/8	1 5/8	7/8	13/16	1 1/2	3/4	5/8	1 7/16	1 1/4
Girder 4E	216'-5 3/4"	273'-8 3/16"	275'-7 13/16"	275'-7 13/16"	218'-6 5/8"	1 1/8	1 1/4	1/2	3/4	1 7/16	3/4	13/16	1 9/16	13/16	3/4	1 1/2	3/4	9/16	1 5/16	1 3/16
Girder 5E	215'-5 3/4"	272'-5 1/16"	274'-4 5/8"	274'-4 5/8"	217'-6 9/16"	1	1 3/16	1/2	3/4	1 7/16	3/4	13/16	1 1/2	3/4	3/4	1 1/2	3/4	1/2	1 3/16	1 1/16



DEAD LOAD DEFLECTION - STEEL SELF WEIGHT

(Includes weight of structural steel only.)

NOTE:
The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±1/8" per vertical ft. throughout when supporting their own weight.



* Dimensions measured along centerline Girder 1E

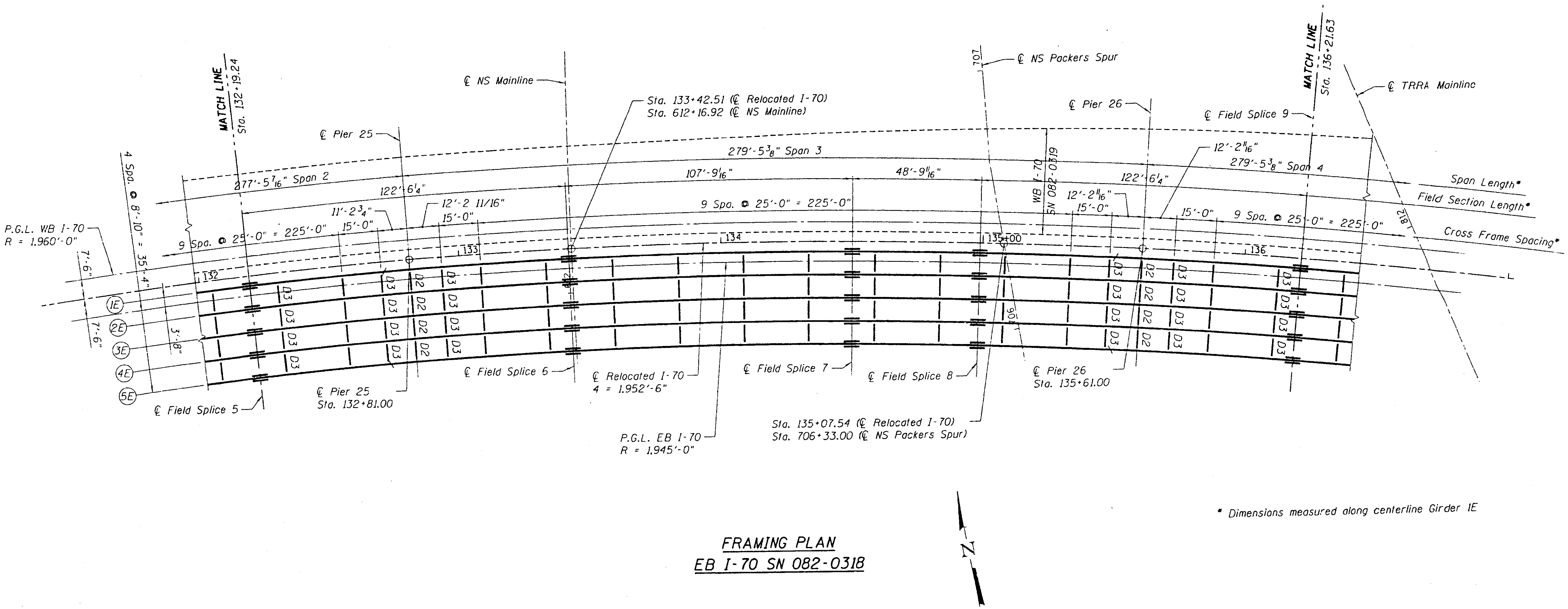
FRAMING PLAN
EB I-70 SN 082-0318

N

NOTES:

1. Work this sheet with Sheets S-49 and S-50.
2. All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
3. All cross frames shall be installed radial to ℄ Relocated I-70 or parallel to ℄ of bearing at Pier 23.
4. The Contractor shall either:
   1. Ream diaphragm and/or cross frame connection holes during shop assembly, or
   2. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(l) of the Standard Specifications.

FILE NAME =	USER NAME = $USER$	DESIGNED - CCE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN EB I-70 1 OF 3	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 158
$FILE$	PLOT SCALE = $SCALE$	DRAWN - CCE	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		SHEET NO. S-48 OF S-111	STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	
		DATE - 06/04/10	REVISED -							



FRAMING PLAN
EB I-70 SN 082-0318

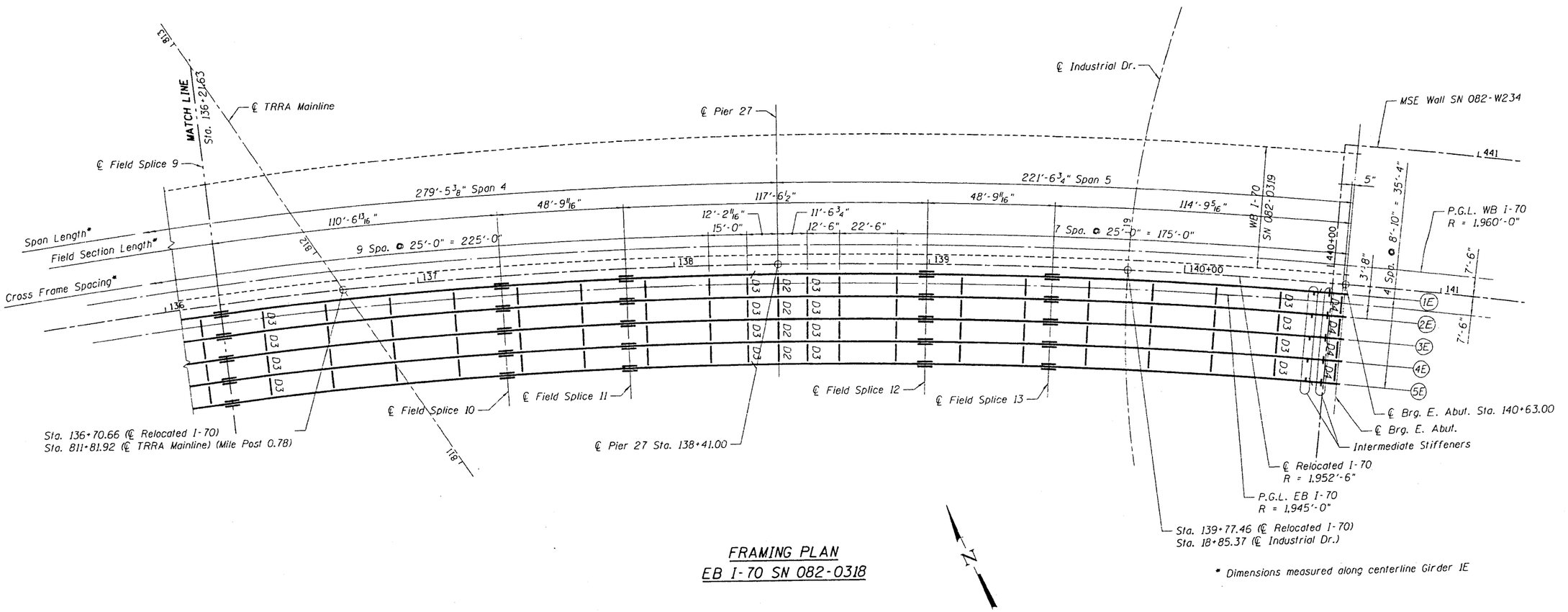
* Dimensions measured along centerline Girder 1E

NOTE:

Work this sheet with Sheets S-48 and S-50.

FILE NAME =	USER NAME = $USER$	DESIGNED - CCE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN EB I-70 2 OF 3
$FILEL$		DRAWN - CCE	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -		SCALE: SHEET NO. S-49 OF S-111 STA. 134+22.00 TO STA.
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	159
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



FRAMING PLAN
EB I-70 SN 082-0318

* Dimensions measured along centerline Girder 1E

NOTE:

Work this sheet with Sheets S-48 and S-49.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - CCE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN EB I-70 3 OF 3
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - CCE	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-50 OF S-111 STA. 134+22.00 TO STA.
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		
		DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	160
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

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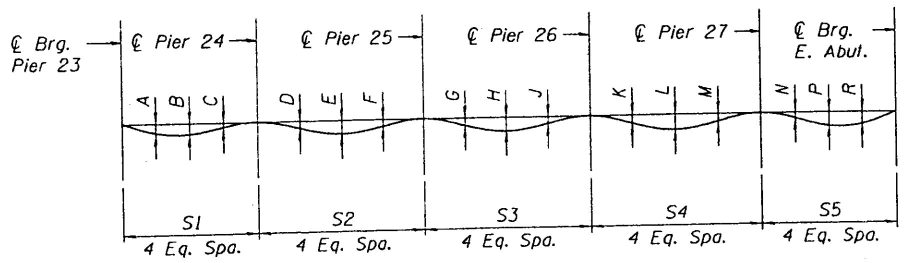


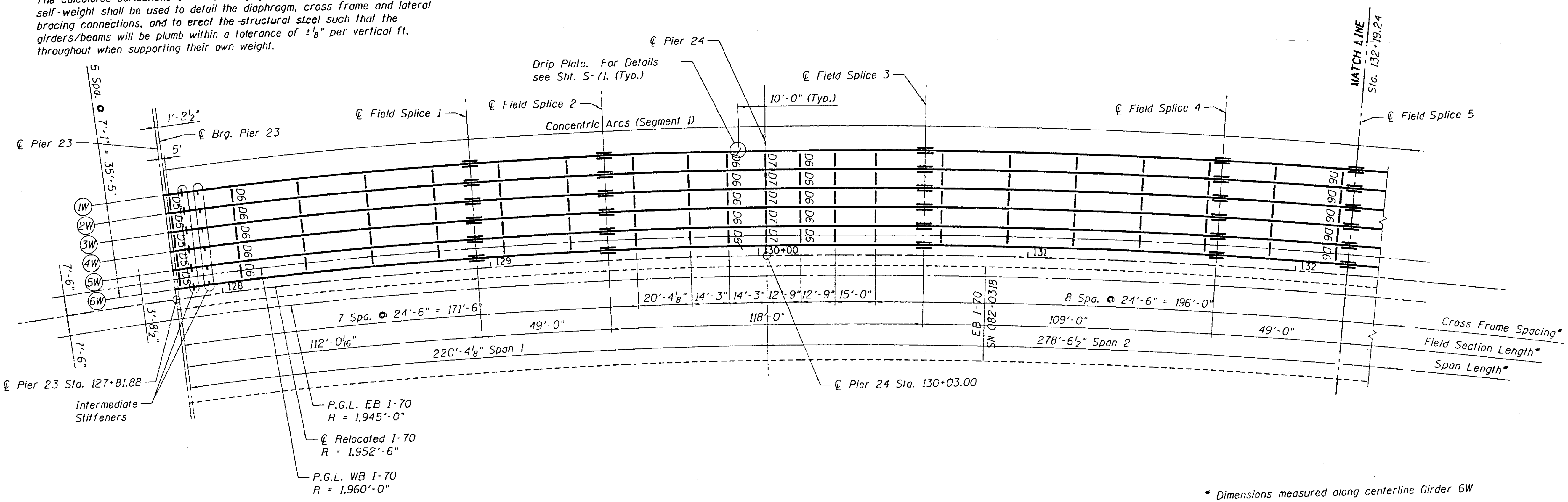
DEAD LOAD DEFLECTION - STEEL SELF WEIGHT

(Includes weight of structural steel only.)

NOTE:
The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±1/8" per vertical ft. throughout when supporting their own weight.

DEAD LOAD DEFLECTIONS - STEEL SELF WEIGHT ONLY

	S1	S2	S3	S4	S5	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
Girder 1W	224'-4 5/16"	283'-7"	286'-0 9/16"	287'-0 5/8"	227'-10 1/16"	1 3/8	1 9/16	5/8	7/8	1 11/16	7/8	7/8	1 3/4	7/8	7/8	1 11/16	7/8	5/8	1 5/8	1 7/16
Girder 2W	223'-6 11/16"	282'-6 7/8"	284'-11 3/8"	285'-9"	226'-9 1/16"	1 5/16	1 1/2	5/8	7/8	1 11/16	7/8	7/8	1 11/16	7/8	7/8	1 5/8	7/8	5/8	1 1/2	1 5/16
Girder 3W	222'-9 1/16"	281'-6 13/16"	283'-10 3/16"	284'-5 3/8"	225'-8 1/8"	1 1/4	1 7/16	9/16	7/8	1 5/8	7/8	7/8	1 11/16	7/8	7/8	1 5/8	13/16	5/8	1 7/16	1 1/4
Girder 4W	221'-11 3/8"	280'-6 11/16"	282'-9"	283'-1 3/4"	224'-7 1/8"	1 3/16	1 3/8	9/16	13/16	1 5/8	7/8	7/8	1 5/8	7/8	13/16	1 9/16	13/16	9/16	1 3/8	1 3/16
Girder 5W	221'-1 3/4"	279'-6 9/16"	281'-7 3/4"	281'-10 1/8"	223'-6 1/8"	1 1/8	1 1/4	9/16	13/16	1 9/16	13/16	7/8	1 5/8	7/8	13/16	1 9/16	13/16	1/2	1 5/16	1 1/8
Girder 6W	220'-4 1/8"	278'-6 1/2"	280'-6 1/2"	280'-6 1/2"	222'-5 3/16"	1 1/16	1 3/16	1/2	13/16	1 9/16	13/16	7/8	1 9/16	7/8	13/16	1 1/2	13/16	1/2	1 1/4	1 1/16



* Dimensions measured along centerline Girder 6W

FRAMING PLAN
WB I-70 SN 082-0319

N

NOTES:

1. Work this sheet with Sheets S-52 and S-53.
2. All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
3. All cross frames shall be installed radial to ℄ Relocated I-70 or parallel to ℄ of bearing at Pier 23.
4. The Contractor shall either:
   1. Ream diaphragm and/or cross frame connection holes during shop assembly, or
   2. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(i) of the Standard Specifications.

FILE NAME =	USER NAME = $USER$	DESIGNED - CCE	REVISED -
$FILE$	PLOT SCALE = $SCALE$	DRAWN - CCE	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

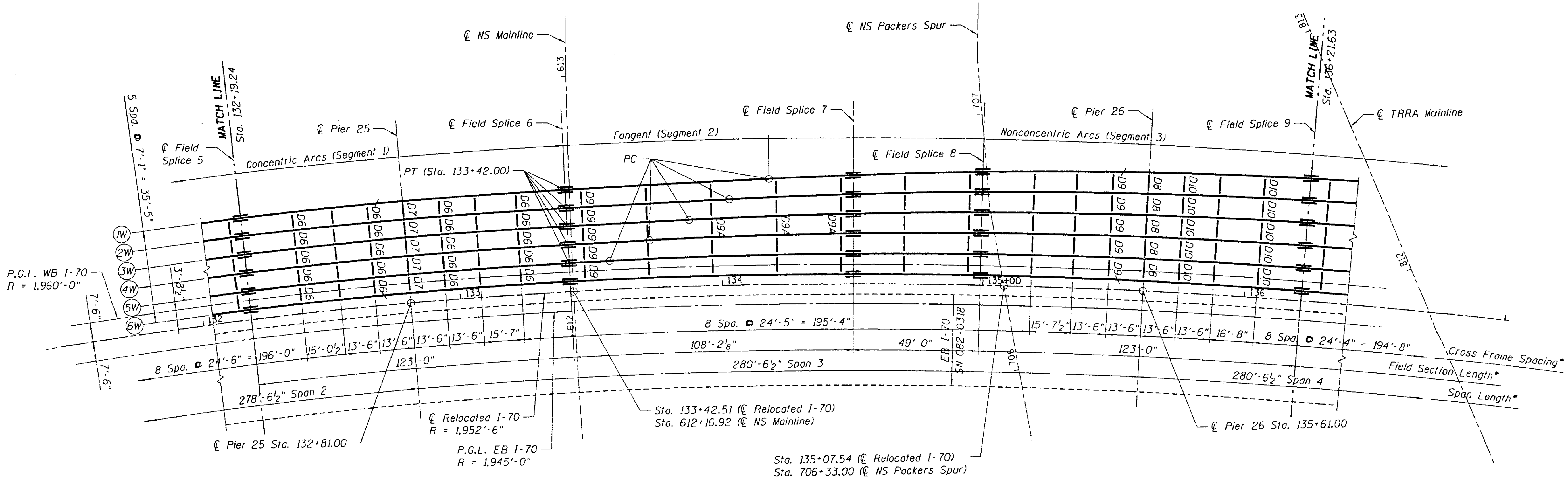
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

FRAMING PLAN WB I-70
1 OF 3

SCALE: | SHEET NO. S-51 OF S-111 SHEETS | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	161
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



* Dimensions measured along centerline Girder 6W

FRAMING PLAN
WB I-70 SN 082-0319

FLARED GIRDERS 1W-5W RADII

Girder	PC Sta. ℄ I-70	PC Offset ℄ I-70	Radius Segment 1	Radius Segment 3	Radius Segment 4
1W	134+18.33	-40.73	1991'-8½"	1748'-9¹³⁄₁₆"	2003'-10¾"
2W	134+03.29	-33.10	1984'-7½"	1790'-3¾"	1994'-4½"
3W	133+88.14	-25.59	1977'-6½"	1831'-9¹¹⁄₁₆"	1984'-10¼"
4W	133+72.87	-18.20	1970'-5½"	1873'-3⅝"	1975'-4"
5W	133+57.49	-10.94	1963'-4½"	1914'-9⁹⁄₁₆"	1965'-9¾"

NOTE:

Work this sheet with Sheets S-51 and S-53.

USER NAME = $USER$	DESIGNED - CCE	REVISED -	
FILE NAME =	DRAWN - CCE	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	
PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	

TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

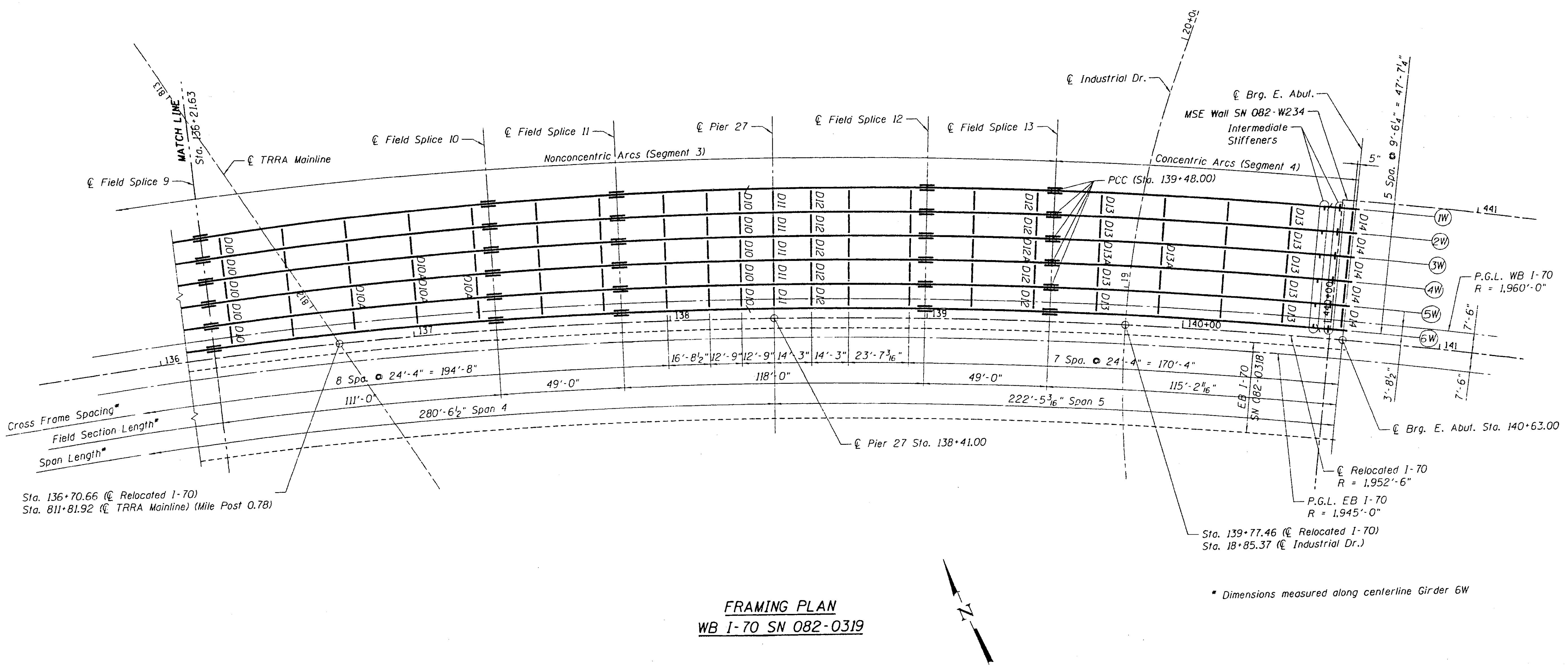
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

FRAMING PLAN WB I-70
2 OF 3

SCALE: | SHEET NO. S-52 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	162
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



* Dimensions measured along centerline Girder 6W

FRAMING PLAN
WB I-70 SN 082-0319

NOTE:

Work this sheet with Sheets S-51 and S-52.

FILE NAME :	USER NAME : $USER$	DESIGNED - CCE	REVISED -	
$FILE$	PLOT SCALE : $SCALE$	DRAWN - CCE	REVISED -	
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE : $DATE$	CHECKED - TCU	REVISED -	
		DATE - 06/04/10	REVISED -	

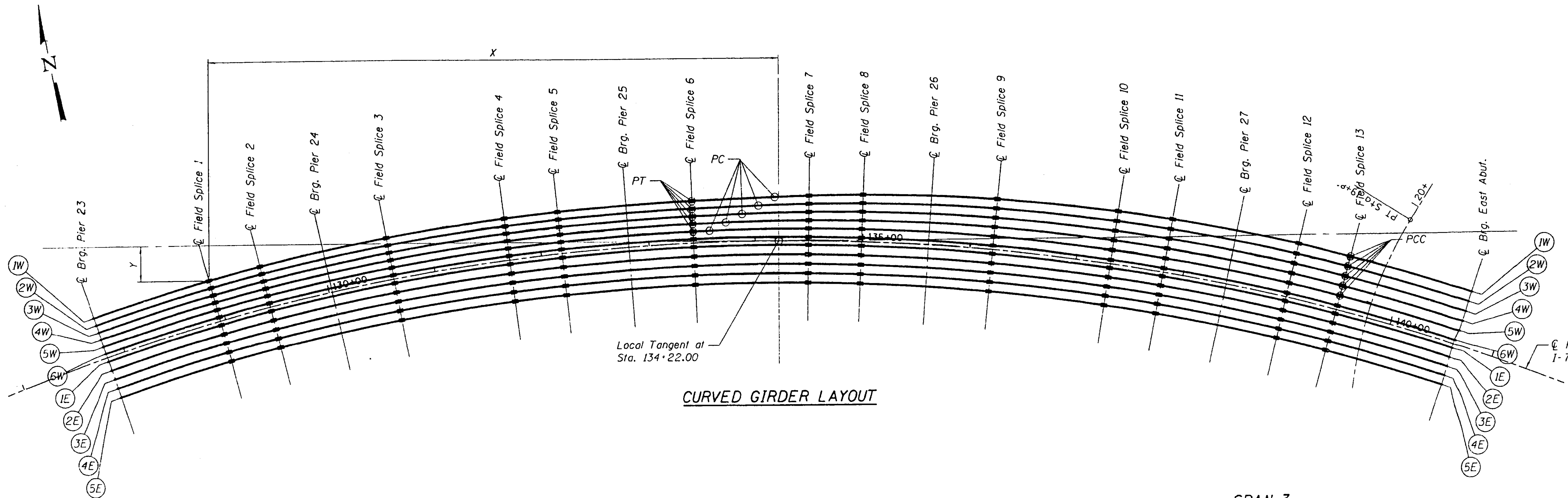
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

FRAMING PLAN WB I-70
3 OF 3

SCALE: | SHEET NO. S-63 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	163
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



CURVED GIRDER LAYOUT

SPAN 1

Girder	℄ Brg. Pier 23 Sta. Varies		Splice 1 Sta. 128+94.87		Splice 2 Sta. 129+43.77	
	X	Y	X	Y	X	Y
1W	-640.20	-66.49	-531.21	-32.94	-482.97	-20.24
2W	-637.92	-73.19	-529.32	-39.76	-481.25	-27.11
3W	-635.64	-79.90	-527.43	-46.59	-479.53	-33.98
4W	-633.36	-86.61	-525.54	-53.42	-477.81	-40.85
5W	-631.08	-93.31	-523.65	-60.24	-476.10	-47.72
6W	-628.80	-100.02	-521.76	-67.07	-474.38	-54.60
1E	-626.34	-107.24	-519.73	-74.42	-472.53	-61.99
2E	-623.50	-115.60	-517.37	-82.93	-470.39	-70.56
3E	-620.65	-123.96	-515.02	-91.45	-468.25	-79.13
4E	-617.81	-132.32	-512.66	-99.96	-466.10	-87.70
5E	-614.96	-140.69	-510.31	-108.47	-463.96	-96.27

SPAN 2

Girder	℄ Pier 24 Sta. 130+03.00		Splice 3 Sta. 130+61.54		Splice 4 Sta. 131+70.33		Splice 5 Sta. 132+19.24	
	X	Y	X	Y	X	Y	X	Y
1W	-424.14	-6.48	-365.61	5.36	-256.01	22.69	-206.46	28.48
2W	-422.63	-13.40	-364.31	-1.60	-255.10	15.66	-205.73	21.43
3W	-421.12	-20.32	-363.01	-8.56	-254.19	8.64	-204.99	14.39
4W	-419.62	-27.24	-361.71	-15.52	-253.28	1.61	-204.26	7.34
5W	-418.11	-34.16	-360.41	-22.49	-252.37	-5.41	-203.52	0.30
6W	-416.60	-41.08	-359.11	-29.45	-251.46	-12.44	-202.79	-6.75
1E	-414.98	-48.53	-357.71	-36.95	-250.48	-20.00	-202.00	-14.33
2E	-413.09	-57.16	-356.09	-45.63	-249.34	-28.76	-201.08	-23.12
3E	-411.21	-65.79	-354.46	-54.31	-248.21	-37.52	-200.17	-31.90
4E	-409.33	-74.42	-352.84	-63.00	-247.07	-46.28	-199.25	-40.69
5E	-407.45	-83.05	-351.22	-71.68	-245.94	-55.04	-198.34	-49.47

SPAN 3

Girder	℄ Pier 25 Sta. 132+81.00		Splice 6 Sta. 133+42.00		PC Sta. Varies		Splice 7 Sta. 134+49.97		Splice 8 Sta. 134+98.87	
	X	Y	X	Y	X	Y	X	Y	X	Y
1W	-143.71	34.02	-81.58	37.54	-3.75	40.73	28.57	41.75	78.57	42.16
2W	-143.20	26.95	-81.29	30.46	-19.02	33.01	28.46	34.33	78.27	34.35
3W	-142.68	19.89	-81.00	23.38	-34.30	25.30	28.35	26.79	77.95	26.46
4W	-142.17	12.82	-80.71	16.30	-49.58	17.58	28.24	19.15	77.64	18.47
5W	-141.66	5.76	-80.42	9.23	-64.86	9.87	28.13	11.42	77.32	10.41
6W	-141.15	-1.31	-80.13	2.15	N/A	N/A	28.02	3.59	77.00	2.28
1E	-140.60	-8.91	-79.82	-5.47	N/A	N/A	27.91	-4.03	76.70	-5.34
2E	-139.96	-17.72	-79.46	-14.29	N/A	N/A	27.78	-12.87	76.35	-14.17
3E	-139.33	-26.53	-79.10	-23.12	N/A	N/A	27.66	-21.70	76.01	-23.00
4E	-138.69	-35.34	-78.74	-31.95	N/A	N/A	27.53	-30.53	75.66	-31.82
5E	-138.05	-44.15	-78.37	-40.77	N/A	N/A	27.41	-39.36	75.31	-40.65

SPAN 4

Girder	℄ Pier 26 Sta. 135+61.00		Splice 9 Sta. 136+21.63		Splice 10 Sta. 137+32.42		Splice 11 Sta. 137+81.32	
	X	Y	X	Y	X	Y	X	Y
1W	142.13	40.62	204.12	36.88	316.97	24.37	366.51	16.51
2W	141.54	32.39	203.24	28.31	315.52	15.36	364.81	7.38
3W	140.95	24.09	202.35	19.69	314.07	6.33	363.11	-1.76
4W	140.36	15.73	201.46	11.03	312.62	-2.73	361.41	-10.91
5W	139.76	7.31	200.57	2.32	311.17	-11.79	359.70	-20.07
6W	139.15	-1.16	199.67	-6.43	309.71	-20.88	357.99	-29.24
1E	138.61	-8.77	198.89	-14.01	308.51	-28.41	356.60	-36.74
2E	137.98	-17.58	197.99	-22.80	307.11	-37.13	354.98	-45.42
3E	137.35	-26.39	197.09	-31.58	305.71	-45.85	353.36	-54.11
4E	136.72	-35.20	196.19	-40.37	304.31	-54.57	351.75	-62.79
5E	136.10	-44.01	195.29	-49.16	302.91	-63.30	350.13	-71.48

SPAN 5

Girder	℄ Pier 27 Sta. 138+41.00		Splice 12 Sta. 138+99.10		Splice 13 Sta. 139+48.00		℄ Brg. E. Abut. Sta. 140+63.00	
	X	Y	X	Y	X	Y	X	Y
1W	426.64	5.00	484.77	-8.22	533.34	-20.88	646.12	-55.63
2W	424.64	-4.20	482.47	-17.44	530.81	-30.06	643.05	-64.64
3W	422.63	-13.42	480.18	-26.66	528.27	-39.24	639.98	-73.65
4W	420.62	-22.63	477.88	-35.88	525.74	-48.41	636.91	-82.66
5W	418.61	-31.86	475.58	-45.10	523.20	-57.59	633.84	-91.68
6W	416.60	-41.08	473.28	-54.32	520.67	-66.77	630.77	-100.69
1E	414.98	-48.53	471.43	-61.72	518.64	-74.12	628.31	-107.91
2E	413.09	-57.16	469.30	-70.29	516.29	-82.63	625.46	-116.27
3E	411.21	-65.79	467.16	-78.86	513.94	-91.15	622.62	-124.63
4E	409.33	-74.42	465.02	-87.43	511.59	-99.66	619.77	-132.99
5E	407.45	-83.05	462.89	-96.00	509.24	-108.18	616.92	-141.35

NOTES:

1. For girder segment lengths see Sheets S-55 through S-57 and Sheets S-61 through S-63.
2. For girder radii and location of PT, PC, and PCC see Sheets S-48 through S-53.

FILE NAME :
$FILEL$
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

USER NAME : $USER$
PLOT SCALE : $SCALE$
PLOT DATE : $DATE$

DESIGNED - CCE
DRAWN - CCE
CHECKED - TCU
DATE - 06/04/10

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REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

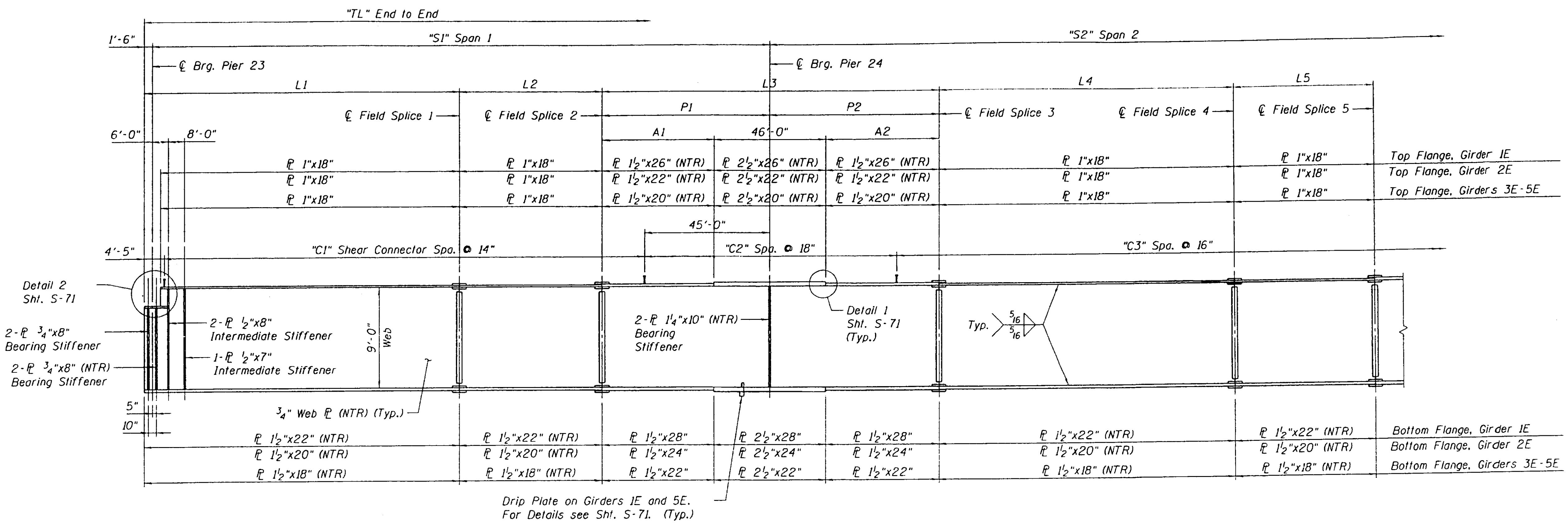
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

CURVED GIRDER LAYOUT

SCALE:
SHEET NO. S-54 OF S-111
STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	164

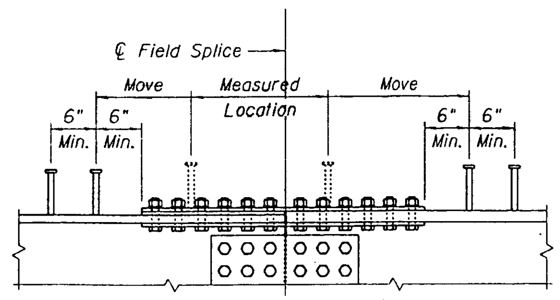
SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



GIRDERS 1E-5E ELEVATION

GIRDERS 1E-5E DIMENSIONS

Girder	Radius	TL	S1	S2	L1	L2	L3	L4	L5	P1	P2	A1	A2	C1	C2	C3
1E	1948'-8"	1280'-4 13/16"	219'-5 13/16"	277'-5 7/16"	113'-0 3/4"	48'-9 11/16"	117'-6 1/2"	108'-6 7/8"	48'-9 11/16"	59'-1 5/16"	58'-5 3/16"	36'-1 5/16"	35'-5 3/16"	148	60	141
2E	1939'-10"	1274'-7 1/4"	218'-5 13/16"	276'-2 3/8"	112'-6 5/8"	48'-7 1/16"	117'-0 1/16"	108'-1"	48'-7 1/16"	58'-10 1/8"	58'-2"	35'-10 1/8"	35'-2"	147	60	140
3E	1931'-0"	1268'-9 11/16"	217'-5 3/4"	274'-11 1/4"	112'-0 1/2"	48'-4 3/8"	116'-5 11/16"	107'-7 1/16"	48'-4 3/8"	58'-6 7/8"	57'-10 13/16"	35'-6 7/8"	34'-10 13/16"	146	60	139
4E	1922'-2"	1263'-0 3/16"	216'-5 3/4"	273'-8 3/16"	111'-6 3/8"	48'-1 3/4"	115'-11 5/16"	107'-1 3/16"	48'-1 3/4"	58'-3 11/16"	57'-7 5/8"	35'-3 11/16"	34'-7 5/8"	145	60	138
5E	1913'-4"	1257'-2 5/8"	215'-5 3/4"	272'-5 1/16"	111'-0 1/4"	47'-11 1/16"	115'-4 7/8"	106'-7 1/4"	47'-11 1/16"	58'-0 7/16"	57'-4 7/16"	35'-0 7/16"	34'-4 7/16"	144	60	137



SHEAR CONNECTOR DETAIL AT SPLICES AND FLANGE TRANSITIONS

DO NOT place shear connectors on splice plates.
Move row of studs to 6" beyond nearest edge of splice plate from measured location.

NOTES:

1. Work this sheet with Sheets S-56 and S-57.
2. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 7/8 in. dia., holes 15/16 in. dia. unless otherwise noted.
3. All structural steel shall be AASHTO M 270 Grade 50W except expansion joints which shall be AASHTO M 270 Grade 50.
4. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
5. Structural steel shall only be painted for a distance of 10 ft. each way from the deck joints and interior supports. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
6. Single-sided intermediate transverse stiffeners are to be placed on the south face of the web of Girders 1E through 4E and on the north face of the web of Girder 5E. See Framing Plan Sht. S-48.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS	GIRDER ELEVATIONS EB I-70
		DRAWN - CCE	REVISED -	DEPARTMENT OF TRANSPORTATION	1 OF 3
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER	
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: / SHEET NO. S-55 OF S-111 / STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	165
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

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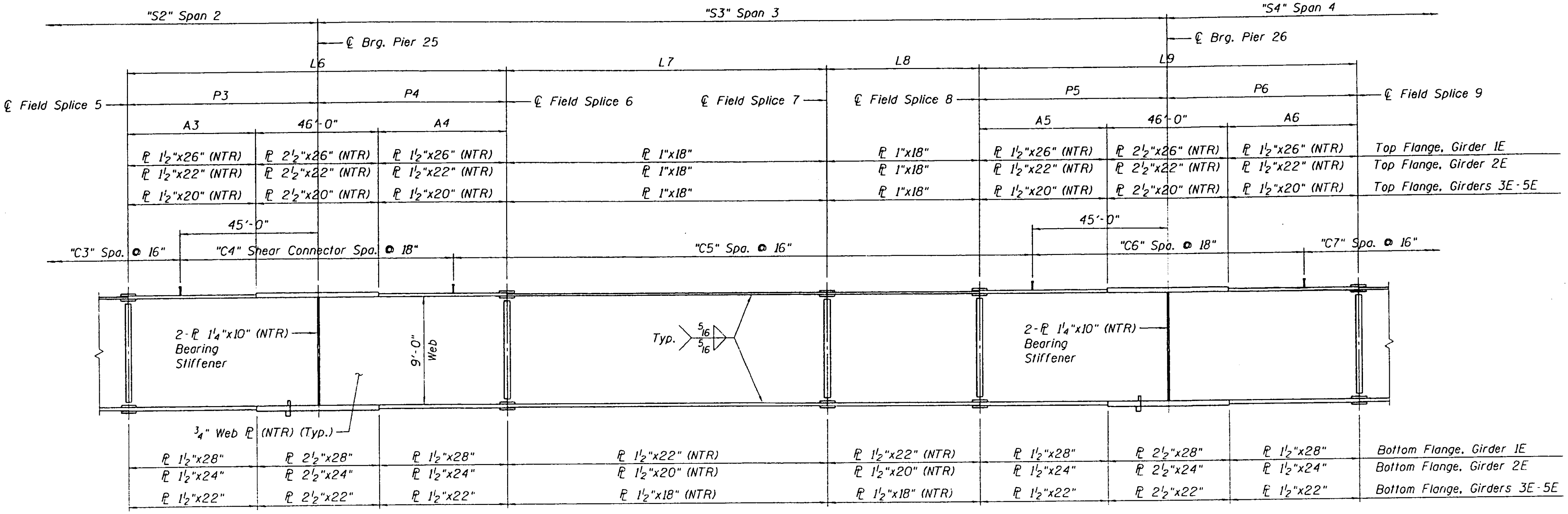


GIRDERS 1E-5E ELEVATION

GIRDERS 1E-5E DIMENSIONS

Girder	S3	L6	L7	L8	L9	P3	P4	P5	P6	A3	A4	A5	A6	C4	C5	C6
1E	279'-5 3/8"	122'-6 1/4"	107'-9 1/16"	48'-9 11/16"	122'-6 1/4"	61'-7 11/16"	60'-10 9/16"	62'-0 1/16"	60'-6 3/16"	38'-7 11/16"	37'-10 9/16"	39'-0 1/16"	37'-6 3/16"	60	143	60
2E	278'-2 3/16"	121'-11 9/16"	107'-3 3/16"	48'-7 1/16"	121'-11 9/16"	61'-4 5/16"	60'-7 1/4"	61'-8 11/16"	60'-2 7/8"	38'-4 5/16"	37'-7 1/4"	38'-8 11/16"	37'-2 7/8"	60	142	60
3E	276'-11"	121'-4 15/16"	106'-9 5/16"	48'-4 3/8"	121'-4 15/16"	61'-1"	60'-3 15/16"	61'-5 5/16"	59'-11 9/16"	38'-1"	37'-3 15/16"	38'-5 5/16"	36'-11 9/16"	60	141	60
4E	275'-7 13/16"	120'-10 1/4"	106'-3 1/2"	48'-1 3/4"	120'-10 1/4"	60'-9 5/8"	60'-0 5/8"	61'-1 15/16"	59'-8 5/16"	37'-9 5/8"	37'-0 5/8"	38'-1 15/16"	36'-8 5/16"	60	140	60
5E	274'-4 5/8"	120'-3 9/16"	105'-9 5/8"	47'-11 1/16"	120'-3 9/16"	60'-6 1/4"	59'-9 5/16"	60'-10 9/16"	59'-5"	37'-6 1/4"	36'-9 5/16"	37'-10 9/16"	36'-5"	60	139	60

NOTE:

Work this sheet with Sheets S-55 and S-57.

FILE NAME: $FILEL$
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS
USER NAME: $USER$
PLOT SCALE: $SCALE$
PLOT DATE: $DATE$
DESIGNED -
DRAWN - CCE
CHECKED - TCU
DATE - 06/04/10
REVISED -
REVISED -
REVISED -
REVISED -

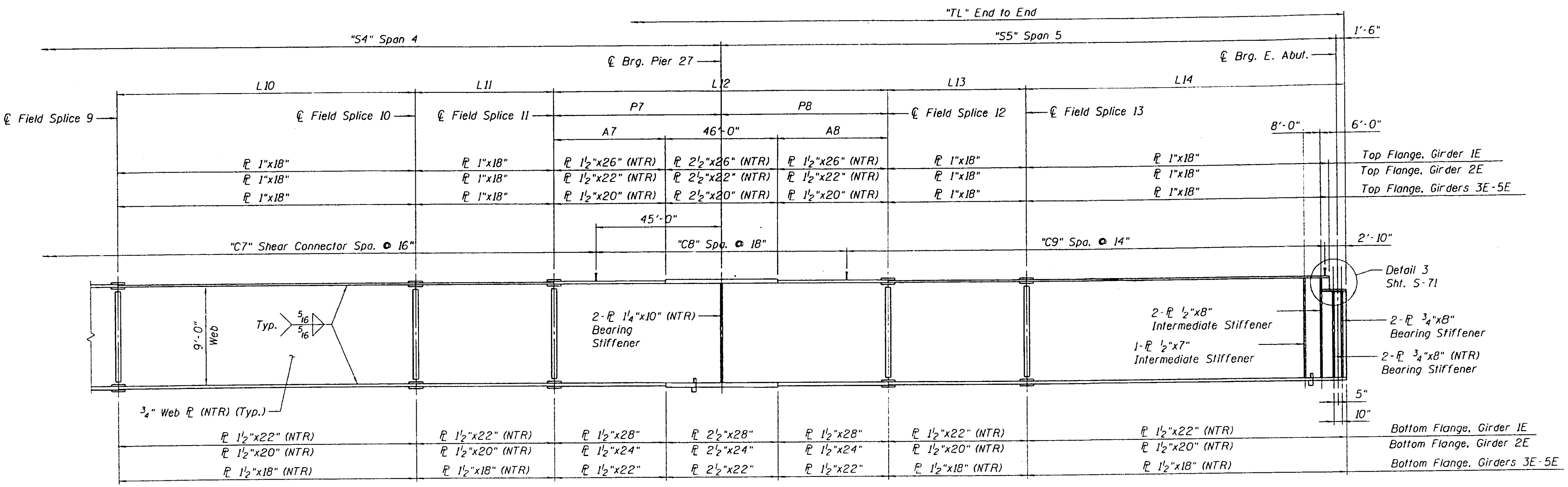
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER ELEVATIONS EB I-70
2 OF 3

SCALE:
SHEET NO. S-56 OF S-111
STA. 154+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	166

SN 082-0318 (EB) & 0319 (WB)
CONTRACT NO. 76C44
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



GIRDERS 1E-5E ELEVATION

GIRDERS 1E-5E DIMENSIONS

Girder	S4	S5	L10	L11	L12	L13	L14	P7	P8	A7	A8	C7	C8	C9
1E	279'-5 3/8"	221'-6 3/4"	110'-6 13/16"	48'-9 11/16"	117'-6 1/2"	48'-9 11/16"	116'-3 5/16"	59'-6 11/16"	57'-11 3/4"	36'-6 11/16"	34'-11 3/4"	143	60	151
2E	278'-2 3/16"	220'-6 11/16"	110'-0 13/16"	48'-7 1/16"	117'-0 1/16"	48'-7 1/16"	115'-9 1/16"	59'-3 1/2"	57'-8 5/8"	36'-3 1/2"	34'-8 5/8"	142	60	150
3E	276'-11"	219'-6 11/16"	109'-6 3/4"	48'-4 3/8"	116'-5 11/16"	48'-4 3/8"	115'-2 13/16"	59'-0 1/4"	57'-5 7/16"	36'-0 1/4"	34'-5 7/16"	141	60	149
4E	275'-7 13/16"	218'-6 5/8"	109'-0 3/4"	48'-1 3/4"	115'-11 5/16"	48'-1 3/4"	114'-8 9/16"	58'-9"	57'-2 5/16"	35'-9"	34'-2 5/16"	140	60	148
5E	274'-4 5/8"	217'-6 9/16"	108'-6 3/4"	47'-11 1/16"	115'-4 7/8"	47'-11 1/16"	114'-2 5/16"	58'-5 3/4"	56'-11 1/8"	35'-5 3/4"	33'-11 1/8"	139	60	147

NOTE:

Work this sheet with Sheets S-55 and S-56.

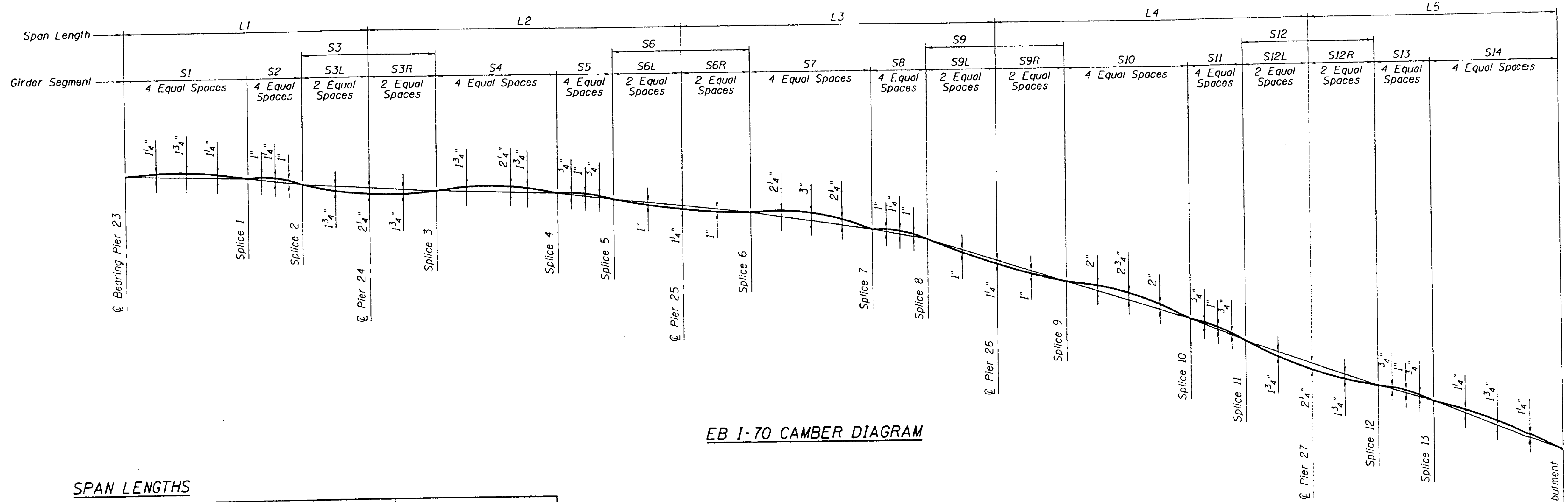
FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -
$FILEL$		DRAWN - CCE	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER ELEVATIONS EB I-70
3 OF 3

SCALE: | SHEET NO. S-57 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	167
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



EB I-70 CAMBER DIAGRAM

℄ Bearing E. Abutment

SPAN LENGTHS

	L1	L2	L3	L4	L5
Girder 1E	219'-5 13/16"	277'-5 7/16"	279'-5 3/8"	279'-5 3/8"	221'-6 3/4"
Girder 2E	218'-5 13/16"	276'-2 3/8"	278'-2 3/16"	278'-2 3/16"	220'-6 11/16"
Girder 3E	217'-5 3/4"	274'-11 1/4"	276'-11"	276'-11"	219'-6 11/16"
Girder 4E	216'-5 3/4"	273'-8 3/16"	275'-7 13/16"	275'-7 13/16"	218'-6 5/8"
Girder 5E	215'-5 3/4"	272'-5 1/16"	274'-4 5/8"	274'-4 5/8"	217'-6 9/16"

GIRDER SEGMENT LENGTHS

	S1	S2	S3	S3L	S3R	S4	S5	S6	S6L	S6R
Girder 1E	111'-6 3/4"	48'-9 11/16"	117'-6 1/2"	59'-1 3/8"	58'-5 1/8"	108'-6 7/8"	48'-9 11/16"	122'-6 1/4"	61'-7 11/16"	60'-10 9/16"
Girder 2E	111'-0 5/8"	48'-7 1/16"	117'-0 1/16"	58'-10 1/8"	58'-2"	108'-1"	48'-7 1/16"	121'-11 9/16"	61'-4 5/16"	60'-7 1/4"
Girder 3E	110'-6 1/2"	48'-4 3/8"	116'-5 11/16"	58'-6 7/8"	57'-10 13/16"	107'-7 1/16"	48'-4 3/8"	121'-4 15/16"	61'-1"	60'-3 15/16"
Girder 4E	110'-0 3/8"	48'-1 3/4"	115'-11 5/16"	58'-3 11/16"	57'-7 5/8"	107'-1 3/16"	48'-1 3/4"	120'-10 1/4"	60'-9 5/8"	60'-0 5/8"
Girder 5E	109'-6 1/4"	47'-11 1/16"	115'-4 7/8"	58'-0 7/16"	57'-4 7/16"	106'-7 1/4"	47'-11 1/16"	120'-3 9/16"	60'-6 1/4"	59'-9 5/16"

	S7	S8	S9	S9L	S9R	S10	S11	S12	S12L	S12R	S13	S14
Girder 1E	107'-9 1/16"	48'-9 11/16"	122'-6 1/4"	62'-0 1/8"	60'-6 1/8"	110'-6 13/16"	48'-9 11/16"	117'-6 1/2"	59'-6 3/4"	57'-11 3/4"	48'-9 11/16"	114'-9 5/16"
Girder 2E	107'-3 3/16"	48'-7 1/16"	121'-11 9/16"	61'-8 11/16"	60'-2 7/8"	110'-0 13/16"	48'-7 1/16"	117'-0 1/16"	59'-3 1/2"	57'-8 5/8"	48'-7 1/16"	114'-3 1/16"
Girder 3E	106'-9 5/16"	48'-4 3/8"	121'-4 15/16"	61'-5 5/16"	59'-11 9/16"	109'-6 3/4"	48'-4 3/8"	116'-5 11/16"	59'-0 1/4"	57'-5 7/16"	48'-4 3/8"	113'-8 13/16"
Girder 4E	106'-3 1/2"	48'-1 3/4"	120'-10 1/4"	61'-1 15/16"	59'-8 5/16"	109'-0 3/4"	48'-1 3/4"	115'-11 5/16"	58'-9"	57'-2 5/16"	48'-1 3/4"	113'-2 9/16"
Girder 5E	105'-9 5/8"	47'-11 1/16"	120'-3 9/16"	60'-10 9/16"	59'-5"	108'-6 3/4"	47'-11 1/16"	115'-4 7/8"	58'-5 3/4"	56'-11 1/8"	47'-11 1/16"	112'-8 5/16"

TOP OF WEB ELEVATIONS *(For fabrication only)*

	*℄ Brg. Pier 23	Splice 1	Splice 2	℄ Brg. Pier 24	Splice 3	Splice 4	Splice 5	℄ Brg. Pier 25	Splice 6	Splice 7	Splice 8	℄ Brg. Pier 26	Splice 9	Splice 10	Splice 11	℄ Brg. Pier 27	Splice 12	Splice 13	*℄ Brg. E. Abut.
Girder 1E	465.03	464.79	464.28	463.78	463.66	463.38	462.87	462.21	461.76	460.41	459.21	457.64	456.32	453.37	451.65	449.69	448.16	446.97	443.18
Girder 2E	464.56	464.29	463.81	463.31	463.20	462.90	462.41	461.74	461.29	459.92	458.74	457.17	455.85	452.89	451.18	449.22	447.69	446.47	442.71
Girder 3E	464.08	463.79	463.32	462.84	462.73	462.43	461.94	461.27	460.81	459.43	458.26	456.70	455.38	452.41	450.72	448.75	447.20	445.97	442.23
Girder 4E	463.60	463.29	462.83	462.36	462.26	461.95	461.46	460.79	460.32	458.93	457.78	456.22	454.91	451.94	450.24	448.27	446.71	445.47	441.75
Girder 5E	463.13	462.79	462.34	461.88	461.78	461.47	460.99	460.31	459.84	458.44	457.29	455.74	454.43	451.46	449.77	447.79	446.22	444.96	441.28

* Top of web elevations at Pier 23 and East Abutment are top of web before girder is coped.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - JLR	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER CAMBER DIAGRAM EB I-70

SCALE: | SHEET NO. S-58 OF S-111 | STA. 13+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	168
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

..\0820318-CONN-05-003-GOLDON...\0820318-CONN-99-001-BOLDON
6-03-2010, 12:46:46

GIRDER 1E MOMENT TABLE

	0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s (in^4)	225,958	490,545	225,958	490,545	225,958	490,545	225,958	490,545	225,958
$I_c(n)$ (in^4)	463,114	514,254	463,114	514,254	463,114	514,254	463,114	514,254	463,114
$I_c(3n)$ (in^4)	339,716	514,254	339,716	514,254	339,716	514,254	339,716	514,254	339,716
S_s (in^3)	4,589	8,490	4,589	8,490	4,589	8,490	4,589	8,490	4,589
$S_c(n)$ (in^3)	6,052	9,175	6,052	9,175	6,052	9,175	6,052	9,175	6,052
$S_c(3n)$ (in^3)	5,449	9,175	5,449	9,175	5,449	9,175	5,449	9,175	5,449
S_{xl} (in^3)	121	327	121	327	121	327	121	327	121
DC1 (k/')	1.46	1.75	1.46	1.75	1.46	1.75	1.46	1.75	1.46
M_{DC1} ('k)	4,758	11,419	3,840	11,233	4,187	11,307	3,889	11,696	4,824
DC2 (k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M_{DC2} ('k)	726	1,551	632	1,549	662	1,564	642	1,584	741
DW (k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW} ('k)	1,383	2,955	1,204	2,950	1,261	2,978	1,224	3,018	1,411
M_{L+IM} ('k)	6,029	7,248	6,298	7,806	6,562	7,852	6,353	7,344	6,111
M_u (Strength I) * ('k)	20,453	34,995	19,340	35,767	20,408	36,011	19,549	35,678	20,756
M_{bl} ('k)	26	19	24	20	25	22	24	21	26
f_s DC1 (ksi)	12.44	16.14	10.04	15.88	10.95	15.98	10.17	16.53	12.61
f_s DC2 (ksi)	1.60	2.03	1.39	2.03	1.46	2.05	1.41	2.07	1.63
f_s DW (ksi)	3.05	3.86	2.65	3.86	2.78	3.90	2.69	3.95	3.11
f_s 1.3(L+IM) (ksi)	15.54	12.32	16.23	13.27	16.91	13.35	16.38	12.49	15.75
f_l (ksi)	2.53	0.71	2.41	0.75	2.53	0.81	2.42	0.76	2.53
f_s (Service II) (ksi)	32.63	34.36	30.32	35.03	32.10	35.27	30.66	35.04	33.11
f_s (Total)(Strength I)* (ksi)	45.19	47.35	42.13	48.34	44.57	48.67	42.60	48.28	45.86
F_{cr} (Service II) (ksi)	36.39	47.54	36.39	47.54	36.39	47.54	36.39	47.54	36.39
V_r (k)	40.61	58.12	45.39	59.56	48.06	60.42	48.08	60.03	46.35
F_{cr} (ksi)	50.00	49.70	50.00	49.70	50.00	49.70	50.00	49.70	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

GIRDER 2E MOMENT TABLE

	0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s (in^4)	218,738	429,447	218,738	429,447	218,738	429,447	218,738	429,447	218,738
$I_c(n)$ (in^4)	457,420	455,321	457,420	455,321	457,420	455,321	457,420	455,321	457,420
$I_c(3n)$ (in^4)	336,065	455,321	336,065	455,321	336,065	455,321	336,065	455,321	336,065
S_s (in^3)	4,343	7,416	4,343	7,416	4,343	7,416	4,343	7,416	4,343
$S_c(n)$ (in^3)	5,794	8,155	5,794	8,155	5,794	8,155	5,794	8,155	5,794
$S_c(3n)$ (in^3)	5,215	8,155	5,215	8,155	5,215	8,155	5,215	8,155	5,215
S_{xl} (in^3)	100	240	100	240	100	240	100	240	100
DC1 (k/')	1.41	1.64	1.41	1.64	1.41	1.64	1.41	1.64	1.41
M_{DC1} ('k)	4,327	10,430	3,648	10,299	3,938	10,368	3,736	10,645	4,441
DC2 (k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M_{DC2} ('k)	678	1,466	601	1,471	625	1,484	611	1,494	692
DW (k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW} ('k)	1,291	2,793	1,145	2,802	1,190	2,826	1,164	2,846	1,318
M_{L+IM} ('k)	4,736	5,685	4,949	6,098	5,146	6,126	4,994	5,752	4,798
M_u (Strength I) * ('k)	17,303	30,458	16,475	31,068	17,318	31,264	16,715	30,985	17,629
M_{bl} ('k)	21	17	21	17	21	19	21	18	22
f_s DC1 (ksi)	11.96	16.88	10.08	16.67	10.88	16.78	10.32	17.23	12.27
f_s DC2 (ksi)	1.56	2.16	1.38	2.16	1.44	2.18	1.41	2.20	1.59
f_s DW (ksi)	2.97	4.11	2.64	4.12	2.74	4.16	2.68	4.19	3.03
f_s 1.3(L+IM) (ksi)	12.75	10.88	13.33	11.66	13.85	11.72	13.45	11.00	12.92
f_l (ksi)	2.57	0.84	2.47	0.87	2.56	0.95	2.48	0.89	2.58
f_s (Service II) (ksi)	29.24	34.02	27.43	34.62	28.91	34.84	27.85	34.61	29.82
f_s (Total)(Strength I)* (ksi)	40.44	46.83	38.03	47.70	40.06	48.00	38.62	47.64	41.23
F_{cr} (Service II) (ksi)	37.79	47.77	37.79	47.77	37.79	47.77	37.79	47.77	37.79
V_r (k)	22.98	35.63	26.24	37.98	26.25	38.40	28.10	38.39	27.39
F_{cr} (ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

GIRDER 3E MOMENT TABLE

	0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s (in^4)	211,175	398,895	211,175	398,895	211,175	398,895	211,175	398,895	211,175
$I_c(n)$ (in^4)	438,834	424,785	438,834	424,785	438,834	424,785	438,834	424,785	438,834
$I_c(3n)$ (in^4)	323,671	424,785	323,671	424,785	323,671	424,785	323,671	424,785	323,671
S_s (in^3)	4,097	6,879	4,097	6,879	4,097	6,879	4,097	6,879	4,097
$S_c(n)$ (in^3)	5,487	7,613	5,487	7,613	5,487	7,613	5,487	7,613	5,487
$S_c(3n)$ (in^3)	4,933	7,613	4,933	7,613	4,933	7,613	4,933	7,613	4,933
S_{xl} (in^3)	81	202	81	202	81	202	81	202	81
DC1 (k/')	1.40	1.61	1.40	1.61	1.40	1.61	1.40	1.61	1.40
M_{DC1} ('k)	3,914	9,641	3,384	9,593	3,532	9,664	3,390	9,845	3,993
DC2 (k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M_{DC2} ('k)	619	1,367	562	1,380	577	1,392	570	1,393	631
DW (k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW} ('k)	1,179	2,603	1,071	2,629	1,099	2,651	1,085	2,653	1,202
M_{L+IM} ('k)	3,830	4,716	4,005	5,002	4,134	5,024	4,034	4,768	3,873
M_u (Strength I) * ('k)	14,845	27,213	14,225	27,732	14,721	27,916	14,319	27,690	15,079
M_{bl} ('k)	18	15	18	15	18	17	18	16	18
f_s DC1 (ksi)	11.47	16.82	9.91	16.73	10.35	16.86	9.93	17.18	11.70
f_s DC2 (ksi)	1.51	2.15	1.37	2.18	1.40	2.19	1.39	2.20	1.53
f_s DW (ksi)	2.87	4.10	2.60	4.14	2.67	4.18	2.64	4.18	2.92
f_s 1.3(L+IM) (ksi)	10.89	9.66	11.39	10.25	11.75	10.30	11.47	9.77	11.01
f_l (ksi)	2.71	0.89	2.61	0.92	2.68	1.00	2.61	0.94	2.70
f_s (Service II) (ksi)	26.73	32.74	25.27	33.30	26.18	33.53	25.42	33.32	27.17
f_s (Total)(Strength I)* (ksi)	36.93	45.03	35.00	45.83	36.25	46.14	35.22	45.82	37.54
F_{cr} (Service II) (ksi)	39.35	47.91	39.35	47.91	39.35	47.91	39.35	47.91	39.35
V_r (k)	27.24	39.97	29.71	42.41	29.66	42.78	31.58	42.42	32.63
F_{cr} (ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

GIRDER 4E MOMENT TABLE

	0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s (in^4)	211,175	398,895	211,175	398,895	211,175	398,895	211,175	398,895	211,175
$I_c(n)$ (in^4)	438,834	424,785	438,834	424,785	438,834	424,785	438,834	424,785	438,834
$I_c(3n)$ (in^4)	323,671	424,785	323,671	424,785	323,671	424,785	323,671	424,785	323,671
S_s (in^3)	4,097	6,879	4,097	6,879	4,097	6,879	4,097	6,879	4,097
$S_c(n)$ (in^3)	5,487	7,613	5,487	7,613	5,487	7,613	5,487	7,613	5,487
$S_c(3n)$ (in^3)	4,933	7,613	4,933	7,613	4,933	7,613	4,933	7,613	4,933
S_{xl} (in^3)	81	202	81	202	81	202	81	202	81
DC1 (k/')	1.40	1.61	1.40	1.61	1.40	1.61	1.40	1.61	1.40
M_{DC1} ('k)	3,804	9,519	3,337	9,502	3,453	9,611	3,394	9,701	3,868
DC2 (k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M_{DC2} ('k)	588	1,337	548	1,353	557	1,368	556	1,360	599
DW (k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW} ('k)	1,120	2,546	1,045	2,578	1,061	2,605	1,060	2,590	1,141
M_{L+IM} ('k)	3,861	4,850	4,066	5,149	4,178	5,181	4,096	4,903	3,902
M_u (Strength I) * ('k)	14,623	27,170	14,217	27,769	14,612	28,034	14,381	27,607	14,828
M_{bl} ('k)	18	15	18	15	18	17	18	16	18
f_s DC1 (ksi)	11.14	16.61	9.78	16.58	10.12	16.77	9.94	16.92	11.33
f_s DC2 (ksi)	1.43	2.11	1.33	2.13	1.35	2.16	1.35	2.14	1.46
f_s DW (ksi)	2.73	4.01	2.54	4.06	2.58	4.11	2.58	4.08	2.77
f_s 1.3(L+IM) (ksi)	10.98	9.94	11.56	10.55	11.88	10.62	11.65	10.05	11.09
f_l (ksi)	2.65	0.88	2.61	0.92	2.65	1.00	2.61	0.94	2.65
f_s (Service II) (ksi)	26.27	32.67	25.21	33.32	25.93	33.65	25.52	33.20	26.65
f_s (Total)(Strength I)* (ksi)	36.31	44.93	34.92	45.87	35.91	46.31	35.35	45.66	36.83
F_{cr} (Service II) (ksi)	39.35	47.91	39.35	47.91	39.35	47.91	39.35	47.91	39.35
V_r (k)	25.46	37.49	28.54	39.50	28.49	39.76	29.97	39.41	30.45
F_{cr} (ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

GIRDER 5E MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	211,175	398,895	211,175	398,895	211,175	398,895	211,175	398,895	211,175
$I_c(n)$	(in^4)	427,725	422,655	427,725	422,655	427,725	422,655	427,725	422,655	427,725
$I_c(3n)$	(in^4)	316,093	422,655	316,093	422,655	316,093	422,655	316,093	422,655	316,093
S_s	(in^3)	4,097	6,879	4,097	6,879	4,097	6,879	4,097	6,879	4,097
$S_c(n)$	(in^3)	5,442	7,550	5,442	7,550	5,442	7,550	5,442	7,550	5,442
$S_c(3n)$	(in^3)	4,888	7,550	4,888	7,550	4,888	7,550	4,888	7,550	4,888
S_{xt}	(in^3)	81	202	81	202	81	202	81	202	81
DC1	(k/')	1.44	1.64	1.44	1.64	1.44	1.64	1.44	1.64	1.44
M_{DC1}	('k)	3,513	9,572	3,350	9,676	3,353	9,776	3,381	9,770	3,557
DC2	(k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M_{DC2}	('k)	539	1,311	520	1,341	521	1,352	527	1,334	548
DW	(k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M_{DW}	('k)	1,027	2,496	990	2,555	992	2,576	1,004	2,542	1,044
M_{LL+IM}	('k)	4,427	5,794	4,715	6,222	4,840	6,255	4,751	5,865	4,474
M_u (Strength I) *	('k)	15,070	28,861	15,303	29,916	15,540	30,157	15,440	29,356	15,252
M_{bl}	('k)	19	16	19	17	19	18	19	17	18
f_s DC1	(ksi)	10.29	16.70	9.81	16.88	9.82	17.05	9.90	17.04	10.42
f_s DC2	(ksi)	1.32	2.08	1.28	2.13	1.28	2.15	1.29	2.12	1.35
f_s DW	(ksi)	2.52	3.97	2.43	4.06	2.44	4.09	2.46	4.04	2.56
f_s 1.3(LL+IM)	(ksi)	12.69	11.97	13.51	12.86	13.87	12.93	13.62	12.12	12.82
f_l	(ksi)	2.75	0.94	2.82	0.99	2.83	1.08	2.81	1.00	2.73
f_s (Service II)	(ksi)	26.82	34.72	27.04	35.93	27.41	36.22	27.28	35.32	27.15
f_s (Total)(Strength I)*	(ksi)	37.15	47.82	37.49	49.52	38.01	49.92	37.83	48.65	37.60
F_{cr} (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.91	39.35	47.91	39.35
V_f	(k)	35.46	52.33	39.60	52.76	41.69	53.24	41.69	52.85	41.22
F_{cr}	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

S_{xt}: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange ($in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$

M_{bl}: Factored lateral bending moment for controlling flange plate (kip-ft.).

f_l: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{LL+IM}$

f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$

F_{cr} (Service II): Critical flange stress at Service II computed according to Article 6.10.4.2 (ksi).

F_{cr}: Critical flange stress computed according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Maximum factored shear range computed according to Article 6.10.10.

Note:
M_{LL} and R_{LL} include the effects of centrifugal force and superelevation.

MAXIMUM GIRDER REACTION TABLE

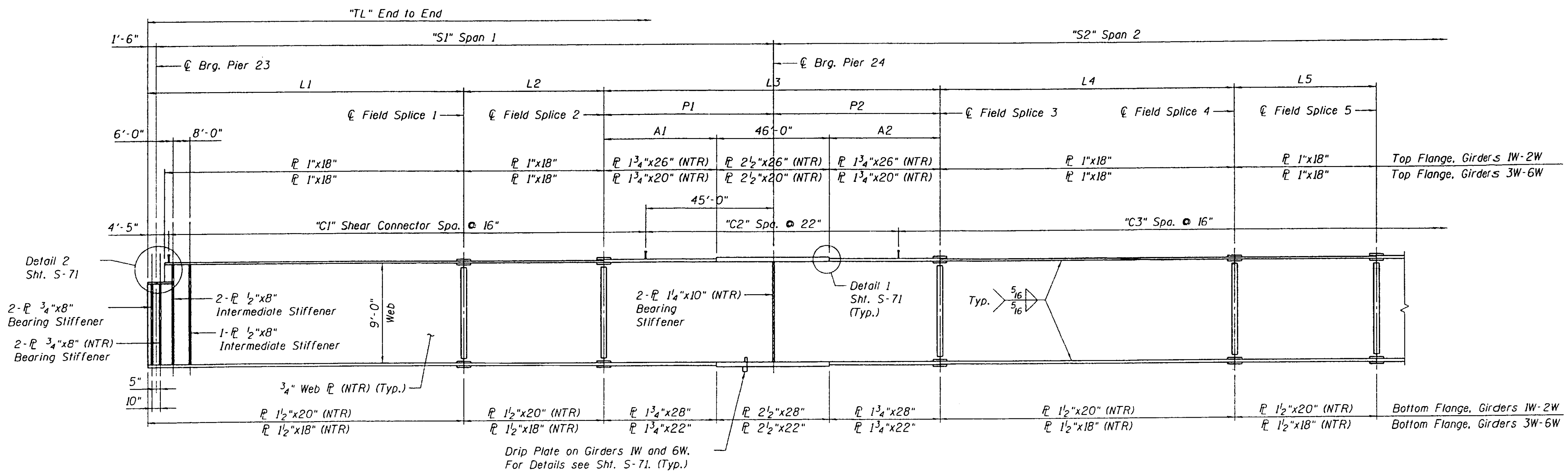
		Pier 23	Pier 24	Pier 25	Pier 26	Pier 27	E. Abut.
R_{DC1}	(k)	123.3	436.0	435.6	437.3	441.5	125.8
R_{DC2}	(k)	18.5	60.6	61.0	61.4	61.2	18.7
R_{DW}	(k)	35.2	115.5	116.3	116.9	116.6	35.6
R_{LL+IM}	(k)	140.6	275.8	284.6	285.1	274.6	141.3
R_{Total}	(k)	317.6	887.8	897.4	900.6	894.0	321.4

FILE NAME = $FILEL$	USER NAME = $USER$ / PLOT SCALE = $SCALE$ / PLOT DATE = $DATE$	DESIGNED - JLR / DRAWN - JLR / CHECKED - TCU / DATE - 06/04/10	REVISED - / REVISED - / REVISED - / REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS				I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER TABLES EB I-70
2 OF 2

SCALE: | SHEET NO. S-60 OF S-111 | STA. 134+22.00 TO STA.

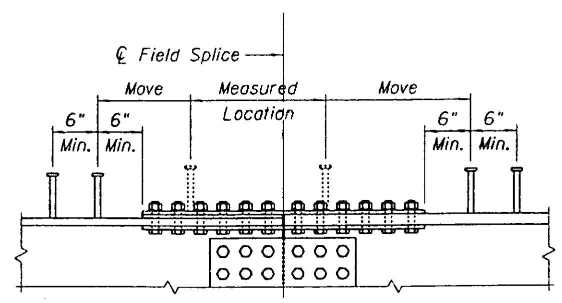
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	170
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



GIRDERS 1W-6W ELEVATION

GIRDERS 1W-6W DIMENSIONS

Girder	Radius	TL	S1	S2	L1	L2	L3	L4	L5	P1	P2	A1	A2	C1	C2	C3
1W	(See Plan Sht. S-52)	1311'-10 9/16"	224'-4 5/16"	283'-7"	115'-6 5/8"	49'-10 5/8"	120'-1 5/8"	110'-11 11/16"	49'-10 5/8"	60'-5"	59'-8 5/8"	37'-5"	36'-8 5/8"	133	50	146
2W		1306'-7"	223'-6 11/16"	282'-6 7/8"	115'-1 3/4"	49'-8 1/2"	119'-8 1/2"	110'-6 15/16"	49'-8 1/2"	60'-2 7/16"	59'-6 1/8"	37'-2 7/16"	36'-6 1/8"	132	50	145
3W		1301'-3 7/16"	222'-9 1/16"	281'-6 13/16"	114'-8 13/16"	49'-6 3/8"	119'-3 3/8"	110'-2 3/16"	49'-6 3/8"	59'-11 13/16"	59'-3 9/16"	36'-11 13/16"	36'-3 9/16"	132	50	144
4W		1295'-11 15/16"	221'-11 3/8"	280'-6 11/16"	114'-3 7/8"	49'-4 1/4"	118'-10 1/4"	109'-9 1/2"	49'-4 1/4"	59'-9 1/4"	59'-1"	36'-9 1/4"	36'-1"	131	50	143
5W		1290'-8 3/8"	221'-1 3/4"	279'-6 9/16"	113'-11"	49'-2 1/8"	118'-5 1/8"	109'-4 3/4"	49'-2 1/8"	59'-6 11/16"	58'-10 7/16"	36'-6 11/16"	35'-10 7/16"	130	50	143
6W	1956'-3 1/2"	1285'-4 7/8"	220'-4 1/8"	278'-6 1/2"	113'-6 1/16"	49'-0"	118'-0"	109'-0"	49'-0"	59'-4 1/8"	58'-7 7/8"	36'-4 1/8"	35'-7 7/8"	130	50	142



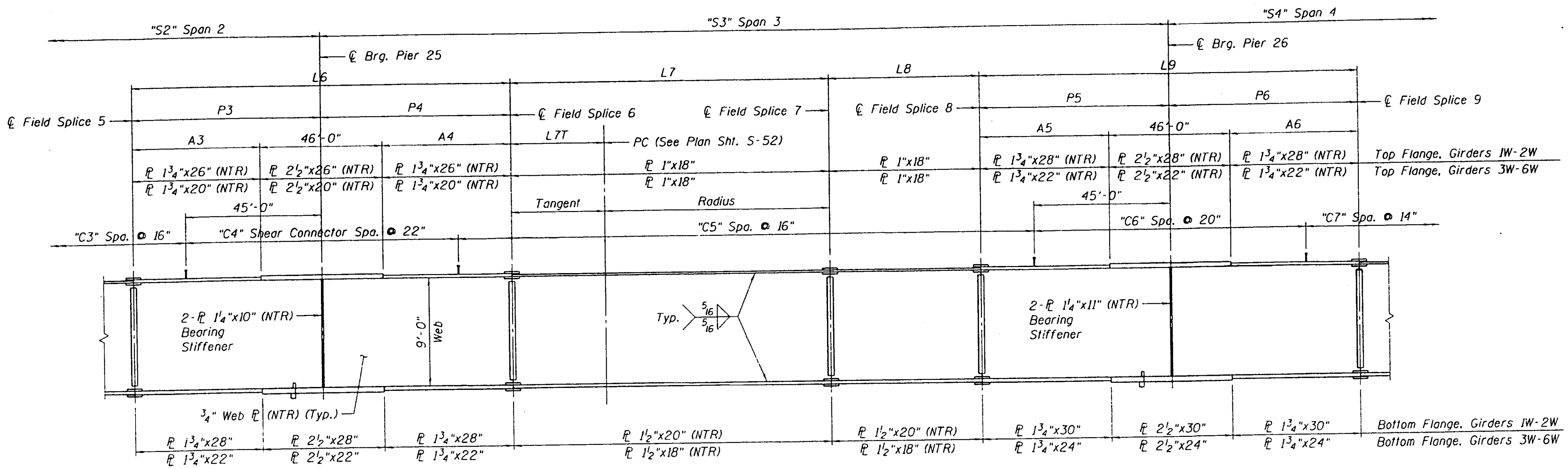
SHEAR CONNECTOR DETAIL AT SPLICES AND FLANGE TRANSITIONS

DO NOT place shear connectors on splice plates.
Move row of studs to 6" beyond nearest edge of splice plate from measured location.

NOTES:

1. Work this sheet with Sheets S-62 and S-63.
2. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts ⅞ in. dia., holes 15/16 in. dia. unless otherwise noted.
3. All structural steel shall be AASHTO M 270 Grade 50W except expansion joints which shall be AASHTO M 270 Grade 50.
4. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
5. Structural steel shall only be painted for a distance of 10 ft. each way from the deck joints and interior supports. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
6. Single-sided intermediate transverse stiffeners are to be placed on the south face of the web of Girders 1W through 5W and on the north face of the web of Girder 6W. See Framing Plan Sht. S-51.

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS	GIRDER ELEVATIONS WB I-70	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
$FILEL$		DRAWN - CCE	REVISED -	DEPARTMENT OF TRANSPORTATION	1 OF 3	998	82-2-1HVB	ST. CLAIR	285	171
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-61 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



GIRDERS 1W-6W ELEVATION

GIRDERS 1W-6W DIMENSIONS

Girder	S3	L6	L7	L7T	L8	L9	P3	P4	P5	P6	A3	A4	A5	A6	C4	C5	C6
1W	286'-0 9/16"	125'-2 3/4"	110'-2 13/16"	77'-10 13/16"	50'-0 1/8"	125'-8 3/16"	63'-0"	62'-2 11/16"	63'-7"	62'-1 3/16"	40'-0"	39'-2 11/16"	40'-7"	39'-1 3/16"	50	148	54
2W	284'-11 3/8"	124'-9 3/8"	109'-9 15/16"	62'-3 7/8"	49'-9 11/16"	125'-1 3/4"	62'-9 5/16"	62'-0 1/16"	63'-3 3/4"	61'-9 15/16"	39'-9 5/16"	39'-0 1/16"	40'-3 3/4"	38'-9 15/16"	50	147	54
3W	283'-10 3/16"	124'-4 1/16"	109'-5"	46'-8 7/8"	49'-7 1/4"	124'-7 1/4"	62'-6 5/8"	61'-9 3/8"	63'-0 9/16"	61'-6 11/16"	39'-6 5/8"	38'-9 3/8"	40'-0 9/16"	38'-6 11/16"	50	146	54
4W	282'-9"	123'-10 11/16"	109'-0 1/16"	31'-1 15/16"	49'-4 13/16"	124'-0 7/8"	62'-3 15/16"	61'-6 3/4"	62'-9 3/8"	61'-3 1/2"	39'-3 15/16"	38'-6 3/4"	39'-9 3/8"	38'-3 1/2"	50	145	54
5W	281'-7 3/4"	123'-5 3/8"	108'-7 1/16"	15'-6 15/16"	49'-2 7/16"	123'-6 7/16"	62'-1 1/4"	61'-4 1/16"	62'-6 3/16"	61'-0 1/4"	39'-1 1/4"	38'-4 1/16"	39'-6 3/16"	38'-0 1/4"	50	144	54
6W	280'-6 1/2"	123'-0"	108'-2 1/8"	N.A.	49'-0"	123'-0"	61'-10 9/16"	61'-1 7/16"	62'-3"	60'-9"	38'-10 9/16"	38'-1 7/16"	39'-3"	37'-9"	50	143	54

NOTE:

Work this sheet with Sheets S-61 and S-63.

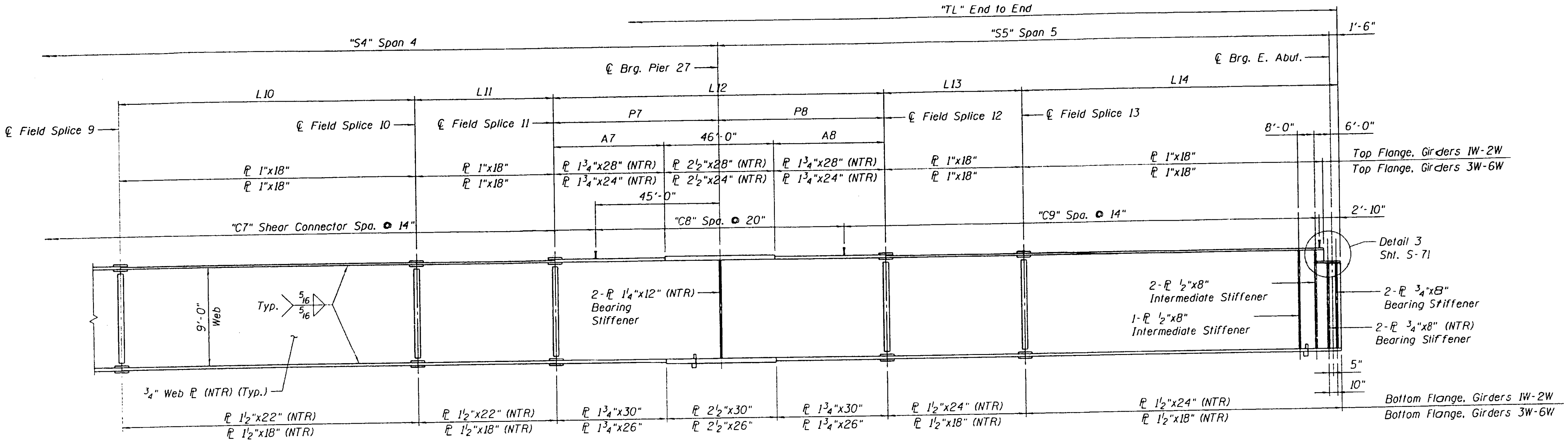
FILE NAME : *FILEL*	USER NAME : *USER*	DESIGNED -	REVISED
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : *SCALE*	DRAWN - CCE	REVISED -
	PLOT DATE : *DATE*	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER ELEVATIONS WB I-70
2 OF 3

SCALE: | SHEET NO. S-62 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	172
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



GIRDERS 1W-6W ELEVATION

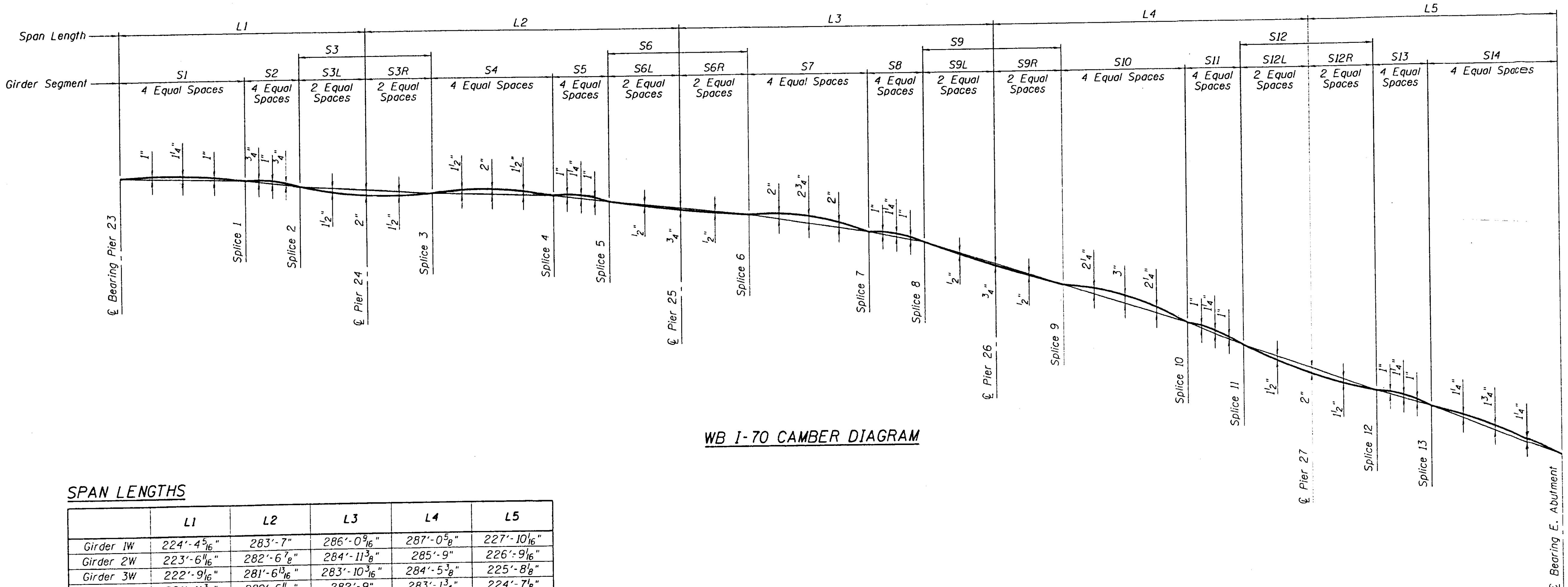
GIRDERS 1W-6W DIMENSIONS

Girder	S4	S5	L10	L11	L12	L13	L14	P7	P8	A7	A8	C7	C8	C9
1W	287'-0 5/8"	227'-10 1/16"	113'-6 3/4"	50'-1 15/16"	120'-10 1/8"	50'-2 5/16"	119'-6 5/16"	61'-2 3/4"	59'-7 7/16"	38'-2 3/4"	36'-7 7/16"	169	54	156
2W	285'-9"	226'-9 1/16"	113'-0 9/16"	49'-11 1/8"	120'-3 5/16"	49'-11 7/16"	118'-11 5/8"	60'-11 5/16"	59'-4"	37'-11 5/16"	36'-4"	168	54	155
3W	284'-5 3/8"	225'-8 1/8"	112'-6 7/16"	49'-8 3/8"	119'-8 1/2"	49'-8 9/16"	118'-4 7/8"	60'-7 13/16"	59'-0 5/8"	37'-7 13/16"	36'-0 5/8"	167	54	154
4W	283'-1 3/4"	224'-7 1/8"	112'-0 5/16"	49'-5 9/16"	119'-1 11/16"	49'-5 3/4"	117'-10 1/8"	60'-4 3/8"	58'-9 1/4"	37'-4 3/8"	35'-9 1/4"	166	54	153
5W	281'-10 1/8"	223'-6 1/8"	111'-6 1/8"	49'-2 13/16"	118'-6 13/16"	49'-2 7/8"	117'-3 7/16"	60'-0 15/16"	58'-5 7/8"	37'-0 15/16"	35'-5 7/8"	165	54	152
6W	280'-6 1/2"	222'-5 3/16"	111'-0"	49'-0"	118'-0"	49'-0"	116'-8 11/16"	59'-9 1/2"	58'-2 1/2"	36'-9 1/2"	35'-2 1/2"	164	54	151

NOTE:

Work this sheet with Sheets S-61 and S-62.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GIRDER ELEVATIONS WB I-70 3 OF 3	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 173
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - CCE	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		SHEET NO. S-63 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		DATE - 06/04/10	REVISED -							



WB I-70 CAMBER DIAGRAM

SPAN LENGTHS

	L1	L2	L3	L4	L5
Girder 1W	224'-4 5/16"	283'-7"	286'-0 9/16"	287'-0 5/8"	227'-10 1/16"
Girder 2W	223'-6 11/16"	282'-6 7/8"	284'-11 3/8"	285'-9"	226'-9 1/16"
Girder 3W	222'-9 1/16"	281'-6 13/16"	283'-10 3/16"	284'-5 3/8"	225'-8 1/8"
Girder 4W	221'-11 3/8"	280'-6 11/16"	282'-9"	283'-1 3/4"	224'-7 1/8"
Girder 5W	221'-1 3/4"	279'-6 9/16"	281'-7 3/4"	281'-10 1/8"	223'-6 1/8"
Girder 6W	220'-4 1/8"	278'-6 1/2"	280'-6 1/2"	280'-6 1/2"	222'-5 3/16"

GIRDER SEGMENT LENGTHS

	S1	S2	S3	S3L	S3R	S4	S5	S6	S6L	S6R
Girder 1W	114'-0 5/8"	49'-10 5/8"	120'-1 5/8"	60'-5"	59'-8 5/8"	110'-11 11/16"	49'-10 5/8"	125'-2 3/4"	63'-0"	62'-2 11/16"
Girder 2W	113'-7 3/4"	49'-8 1/2"	119'-8 1/2"	60'-2 7/16"	59'-6 1/8"	110'-6 15/16"	49'-8 1/2"	124'-9 3/8"	62'-9 5/16"	62'-0 1/16"
Girder 3W	113'-2 13/16"	49'-6 3/8"	119'-3 3/8"	59'-11 13/16"	59'-3 9/16"	110'-2 3/16"	49'-6 3/8"	124'-4 1/16"	62'-6 5/8"	61'-9 3/8"
Girder 4W	112'-9 7/8"	49'-4 1/4"	118'-10 1/4"	59'-9 1/4"	59'-1"	109'-9 1/2"	49'-4 1/4"	123'-10 11/16"	62'-3 15/16"	61'-6 3/4"
Girder 5W	112'-5"	49'-2 1/8"	118'-5 1/8"	59'-6 11/16"	58'-10 7/16"	109'-4 3/4"	49'-2 1/8"	123'-5 3/8"	62'-1 1/4"	61'-4 1/16"
Girder 6W	112'-0 1/16"	49'-0"	118'-0"	59'-4 1/8"	58'-7 7/8"	109'-0"	49'-0"	123'-0"	61'-10 9/16"	61'-1 7/16"

	S7	S8	S9	S9L	S9R	S10	S11	S12	S12L	S12R	S13	S14
Girder 1W	110'-2 13/16"	50'-0 1/8"	125'-8 3/16"	63'-7"	62'-1 3/16"	113'-6 3/4"	50'-1 15/16"	120'-10 1/8"	61'-2 3/4"	59'-7 7/16"	50'-2 5/16"	118'-0 5/16"
Girder 2W	109'-9 15/16"	49'-9 11/16"	125'-1 3/4"	63'-3 3/4"	61'-9 15/16"	113'-0 9/16"	49'-11 1/8"	120'-3 5/16"	60'-11 5/16"	59'-4 1/16"	49'-11 7/16"	117'-5 5/8"
Girder 3W	109'-5"	49'-7 1/4"	124'-7 1/4"	63'-0 9/16"	61'-6 11/16"	112'-6 7/16"	49'-8 3/8"	119'-8 1/2"	60'-7 13/16"	59'-0 5/8"	49'-8 9/16"	116'-10 7/8"
Girder 4W	109'-0 1/16"	49'-4 13/16"	124'-0 7/8"	62'-9 3/8"	61'-3 1/2"	112'-0 5/16"	49'-5 9/16"	119'-1 11/16"	60'-4 3/8"	58'-9 1/4"	49'-5 3/4"	116'-4 1/8"
Girder 5W	108'-7 1/16"	49'-2 7/16"	123'-6 7/16"	62'-6 3/16"	61'-0 1/4"	111'-6 1/8"	49'-2 13/16"	118'-6 13/16"	60'-0 15/16"	58'-5 7/8"	49'-2 7/8"	115'-9 7/16"
Girder 6W	108'-2 1/8"	49'-0"	123'-0"	62'-3"	60'-9"	111'-0"	49'-0"	118'-0"	59'-9 1/2"	58'-2 1/2"	49'-0"	115'-2 11/16"

TOP OF WEB ELEVATIONS (For fabrication only)

	*℄ Brg. Pier 23	Splice 1	Splice 2	℄ Brg. Pier 24	Splice 3	Splice 4	Splice 5	℄ Brg. Pier 25	Splice 6	Splice 7	Splice 8
Girder 1W	466.55	466.27	465.76	465.29	465.15	464.88	464.37	463.73	463.21	461.99	460.90
Girder 2W	466.17	465.87	465.37	464.90	464.77	464.49	463.99	463.34	462.84	461.59	460.48
Girder 3W	465.78	465.47	465.00	464.53	464.40	464.10	463.61	462.98	462.47	461.18	460.07
Girder 4W	465.40	465.08	464.61	464.15	464.02	463.72	463.23	462.59	462.09	460.77	459.64
Girder 5W	465.02	464.68	464.22	463.76	463.64	463.33	462.84	462.21	461.71	460.35	459.20
Girder 6W	464.64	464.28	463.83	463.37	463.25	462.94	462.46	461.83	461.33	459.93	458.76

	℄ Brg. Pier 26	Splice 9	Splice 10	Splice 11	℄ Brg. Pier 27	Splice 12	Splice 13	*℄ Brg. E. Abut.
Girder 1W	459.51	458.28	455.47	453.76	451.84	450.30	449.12	445.36
Girder 2W	459.06	457.81	454.98	453.26	451.33	449.78	448.60	444.84
Girder 3W	458.63	457.35	454.48	452.76	450.83	449.27	448.07	444.33
Girder 4W	458.18	456.88	453.98	452.26	450.31	448.75	447.54	443.81
Girder 5W	457.72	456.40	453.47	451.76	449.80	448.23	447.01	443.30
Girder 6W	457.26	455.92	452.97	451.25	449.29	447.71	446.48	442.79

* Top of web elevations at Pier 23 and East Abutment are top of web before girder is coped.

FILE NAME : #FILE#	USER NAME : #USER#	DESIGNED - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		DRAWN - JLR	REVISED -
	PLOT SCALE : #SCALE#	CHECKED - TCU	REVISED -
	PLOT DATE : #DATE#	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

GIRDER CAMBER DIAGRAM WB I-70

SCALE: | SHEET NO. S-64 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	174
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GIRDER 1W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	218,738	490,545	218,738	490,545	218,738	521,091	225,958	521,091	232,857
$I_c(n)$	(in^4)	426,644	516,823	426,644	516,823	427,508	549,587	460,251	551,532	481,681
$I_c(3n)$	(in^4)	311,925	516,823	311,925	516,823	312,447	549,587	333,336	551,532	347,122
S_s	(in^3)	4,343	8,490	4,343	8,490	4,343	9,028	4,589	9,028	4,834
$S_c(n)$	(in^3)	5,669	9,255	5,669	9,255	5,673	9,865	6,042	9,925	6,364
$S_c(3n)$	(in^3)	5,069	9,255	5,069	9,255	5,073	9,865	5,411	9,925	5,708
S_{xt}	(in^3)	100	327	100	327	100	375	121	375	144
DC1	(k/')	1.38	1.68	1.38	1.68	1.38	1.77	1.49	1.84	1.53
M_{DC1}	('k)	4,530	10,828	3,774	10,396	3,728	11,451	4,334	12,671	5,318
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	629	1,358	534	1,325	542	1,345	528	1,348	623
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	1,193	2,598	1,031	2,492	1,005	2,926	1,322	3,366	1,540
M_{LL+IM}	('k)	5,350	8,294	5,441	8,718	5,806	8,442	6,193	7,457	6,207
M_u (Strength I) *	('k)	18,481	35,326	17,277	35,330	17,856	36,914	19,843	37,404	21,630
M_{bf}	('k)	20	27	36	27	49	32	49	33	19
f_s DC1	(ksi)	12.52	15.30	10.43	14.69	10.30	15.22	11.33	16.84	13.20
f_s DC2	(ksi)	1.49	1.76	1.26	1.72	1.28	1.64	1.17	1.63	1.31
f_s DW	(ksi)	2.82	3.37	2.44	3.23	2.38	3.56	2.93	4.07	3.24
f_s 1.3(LL+IM)	(ksi)	14.72	13.98	14.97	14.69	15.97	13.35	15.99	11.72	15.22
f_l	(ksi)	2.43	0.99	4.33	0.99	5.92	1.04	4.83	1.06	1.57
f_s (Service II)	(ksi)	31.55	34.41	29.11	34.34	29.93	33.76	31.43	34.26	32.97
f_s (Total)(Strength I) *	(ksi)	43.64	47.46	40.36	47.40	41.52	46.60	43.63	47.22	45.65
F_{cr} (Service II)	(ksi)	37.79	47.54	37.79	47.54	37.79	47.44	36.39	47.44	35.12
V_r	(k)	42.05	53.23	41.27	53.81	42.88	57.75	46.15	58.80	46.71
F_{cr}	(ksi)	50.00	49.70	50.00	49.70	50.00	49.70	50.00	49.70	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, $\eta_I = 1.05$

GIRDER 2W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	218,738	490,545	218,738	490,545	218,738	521,091	225,958	521,091	232,857
$I_c(n)$	(in^4)	425,149	516,527	425,149	516,527	427,980	551,622	474,773	555,382	500,482
$I_c(3n)$	(in^4)	311,027	516,527	311,027	516,527	312,732	551,622	342,699	555,382	359,358
S_s	(in^3)	4,343	8,490	4,343	8,490	4,343	9,028	4,589	9,028	4,834
$S_c(n)$	(in^3)	5,663	9,247	5,663	9,247	5,675	9,927	6,099	10,043	6,435
$S_c(3n)$	(in^3)	5,064	9,247	5,064	9,247	5,074	9,927	5,468	10,043	5,780
S_{xt}	(in^3)	100	327	100	327	100	375	121	375	144
DC1	(k/')	1.29	1.59	1.29	1.59	1.30	1.74	1.49	1.86	1.55
M_{DC1}	('k)	4,286	11,231	3,635	10,925	3,637	12,103	4,188	13,164	5,126
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	594	1,411	512	1,393	523	1,426	523	1,417	620
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	1,127	2,698	986	2,623	976	3,103	1,301	3,533	1,534
M_{LL+IM}	('k)	4,267	6,553	4,332	6,956	4,631	6,967	5,200	6,537	5,358
M_u (Strength I) *	('k)	16,020	32,883	14,956	33,080	15,507	35,446	17,786	36,715	19,802
M_{bf}	('k)	17	25	31	25	42	30	42	31	17
f_s DC1	(ksi)	11.84	15.87	10.04	15.44	10.05	16.09	10.95	17.50	12.72
f_s DC2	(ksi)	1.41	1.83	1.21	1.81	1.24	1.72	1.15	1.69	1.29
f_s DW	(ksi)	2.67	3.50	2.34	3.40	2.31	3.75	2.86	4.22	3.18
f_s 1.3(LL+IM)	(ksi)	11.75	11.05	11.93	11.74	12.73	10.95	13.30	10.15	12.99
f_l	(ksi)	2.09	0.92	3.72	0.92	5.01	0.96	4.16	1.01	1.43
f_s (Service II)	(ksi)	27.68	32.26	25.53	32.39	26.33	32.51	28.25	33.57	30.18
f_s (Total)(Strength I) *	(ksi)	38.21	44.38	35.32	44.59	36.44	44.76	39.18	46.19	41.76
F_{cr} (Service II)	(ksi)	37.79	47.54	37.79	47.54	37.79	47.44	36.39	47.44	35.12
V_r	(k)	27.50	40.49	29.34	41.06	30.69	41.10	27.12	37.24	29.37
F_{cr}	(ksi)	50.00	49.70	50.00	49.70	50.00	49.70	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, $\eta_I = 1.05$

GIRDER 3W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	211,175	398,895	211,175	398,895	211,175	429,447	211,175	459,997	211,175
$I_c(n)$	(in^4)	408,332	424,921	408,332	424,921	412,992	460,212	438,539	494,303	445,039
$I_c(3n)$	(in^4)	299,765	424,921	299,765	424,921	302,610	460,212	319,078	494,303	323,520
S_s	(in^3)	4,097	6,879	4,097	6,879	4,097	7,416	4,097	7,953	4,097
$S_c(n)$	(in^3)	5,362	7,621	5,362	7,621	5,382	8,306	5,487	8,956	5,512
$S_c(3n)$	(in^3)	4,787	7,621	4,787	7,621	4,806	8,306	4,907	8,956	4,933
S_{xt}	(in^3)	81	202	81	202	81	240	81	282	81
DC1	(k/')	1.28	1.48	1.28	1.48	1.30	1.64	1.47	1.79	1.52
M_{DC1}	('k)	3,933	9,170	3,403	9,052	3,448	10,148	3,818	11,554	4,506
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	545	1,191	479	1,190	491	1,228	474	1,266	542
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	1,034	2,276	919	2,245	922	2,673	1,174	3,153	1,343
M_{LL+IM}	('k)	3,343	4,305	3,455	4,554	3,600	4,839	3,802	5,095	3,812
M_u (Strength I) *	('k)	13,648	25,095	12,889	25,345	13,237	28,034	14,469	31,153	15,745
M_{bf}	('k)	15	19	27	19	35	23	33	26	14
f_s DC1	(ksi)	11.52	16.00	9.97	15.79	10.10	16.42	11.18	17.43	13.20
f_s DC2	(ksi)	1.37	1.88	1.20	1.87	1.23	1.77	1.16	1.70	1.32
f_s DW	(ksi)	2.59	3.58	2.30	3.54	2.30	3.86	2.87	4.22	3.27
f_s 1.3(LL+IM)	(ksi)	9.73	8.81	10.05	9.32	10.43	9.09	10.81	8.87	10.79
f_l	(ksi)	2.19	1.12	3.93	1.14	5.14	1.15	4.85	1.10	2.02
f_s (Service II)	(ksi)	25.20	30.27	23.52	30.52	24.06	31.15	26.03	32.23	28.57
f_s (Total)(Strength I) *	(ksi)	34.74	41.56	32.49	41.93	33.24	42.81	36.01	44.30	39.45
F_{cr} (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.77	39.35	47.65	39.35
V_r	(k)	23.95	31.99	24.12	32.89	24.32	34.11	31.10	44.28	34.50
F_{cr}	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, $\eta_I = 1.05$

GIRDER 4W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	211,175	398,895	211,175	398,895	211,175	429,447	211,175	459,997	211,175
$I_c(n)$	(in^4)	408,332	424,921	408,332	424,921	414,819	460,410	438,884	494,316	445,039
$I_c(3n)$	(in^4)	299,765	424,921	299,765	424,921	303,738	460,410	319,311	494,316	323,520
S_s	(in^3)	4,097	6,879	4,097	6,879	4,097	7,416	4,097	7,953	4,097
$S_c(n)$	(in^3)	5,362	7,621	5,362	7,621	5,389	8,311	5,488	8,957	5,512
$S_c(3n)$	(in^3)	4,787	7,621	4,787	7,621	4,813	8,311	4,908	8,957	4,933
S_{xt}	(in^3)	81	202	81	202	81	240	81	282	81
DC1	(k/')	1.28	1.48	1.28	1.48	1.32	1.65	1.47	1.79	1.52
M_{DC1}	('k)	3,748	9,123	3,322	9,138	3,410	10,214	3,751	11,409	4,374
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	519	1,180	467	1,192	481	1,227	467	1,249	529
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	986	2,253	894	2,253	912	2,672	1,150	3,104	1,313
M_{LL+IM}	('k)	3,021	3,888	3,068	4,156	3,295	4,805	3,922	4,991	3,926
M_u (Strength I) *	('k)	12,705	24,216	12,020	24,744	12,598	28,053	14,554	30,672	15,716
M_{bf}	('k)	14	18	25	19	32	22	32	25	14
f_s DC1	(ksi)	10.98	15.92	9.73	15.94	9.99	16.53	10.99	17.21	12.81
f_s DC2	(ksi)	1.30	1.86	1.17	1.88	1.20	1.77	1.14	1.67	1.29
f_s DW	(ksi)	2.47	3.55	2.24	3.55	2.27	3.86	2.81	4.16	3.19
f_s 1.3(LL+IM)	(ksi)	8.79	7.96	8.93	8.51	9.54	9.02	11.15	8.69	11.11
f_l	(ksi)	2.03	1.08	3.65	1.10	4.78	1.11	4.72	1.05	2.01
f_s (Service II)	(ksi)	23.54	29.28	22.07	29.87	23.00	31.18	26.09	31.74	28.40
f_s (Total)(Strength I) *	(ksi)	32.43	40.17	30.46	41.00	31.75	42.84	36.11	43.63	39.24
F_{cr} (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.77	39.35	47.65	39.35
V_r	(k)	21.93	27.61	21.05	28.14	26.50	41.48	32.58	46.70	36.83
F_{cr}	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, $\eta_I = 1.05$

GIRDER 5W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	211,175	398,895	211,175	398,895	211,175	429,447	211,175	459,997	211,175
$I_c(n)$	(in^4)	408,332	424,921	408,332	424,921	416,509	460,595	439,207	494,329	445,039
$I_c(3n)$	(in^4)	299,765	424,921	299,765	424,921	304,788	460,595	319,530	494,329	323,520
S_s	(in^3)	4,097	6,879	4,097	6,879	4,097	7,416	4,097	7,953	4,097
$S_c(n)$	(in^3)	5,362	7,621	5,362	7,621	5,397	8,317	5,489	8,957	5,512
$S_c(3n)$	(in^3)	4,787	7,621	4,787	7,621	4,820	8,317	4,910	8,957	4,933
S_{xt}	(in^3)	81	202	81	202	81	240	81	282	81
DC1	(k/')	1.28	1.48	1.28	1.48	1.33	1.66	1.48	1.79	1.52
M_{DC1}	('k)	3,569	9,055	3,250	9,207	3,378	10,214	3,681	11,178	4,222
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	493	1,160	455	1,185	470	1,215	459	1,224	513
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	937	2,213	870	2,244	898	2,647	1,124	3,037	1,277
M_{LL+IM}	('k)	3,344	4,281	3,504	4,637	3,843	5,267	4,301	5,470	4,335
M_u (Strength I)*	('k)	12,953	24,758	12,672	25,694	13,526	28,847	15,107	31,112	16,193
M_{bl}	('k)	14	19	26	19	34	22	32	24	14
f_s DC1	(ksi)	10.46	15.80	9.52	16.06	9.90	16.53	10.78	16.87	12.37
f_s DC2	(ksi)	1.24	1.83	1.14	1.87	1.17	1.75	1.12	1.64	1.25
f_s DW	(ksi)	2.35	3.48	2.18	3.53	2.24	3.82	2.75	4.07	3.11
f_s 1.3(LL+IM)	(ksi)	9.73	8.76	10.20	9.49	11.11	9.88	12.22	9.53	12.27
f_l	(ksi)	2.06	1.10	3.84	1.14	5.04	1.11	4.74	1.03	2.05
f_s (Service II)	(ksi)	23.77	29.87	23.04	30.95	24.41	31.98	26.87	32.10	28.99
f_s (Total)(Strength I)*	(ksi)	32.80	41.00	31.84	42.51	33.75	43.97	37.23	44.16	40.11
F_{cr} (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.77	39.35	47.65	39.35
V_f	(k)	29.70	40.97	31.46	41.83	32.91	42.00	29.91	38.29	30.32
F_{cr}	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

GIRDER 6W MOMENT TABLE

		0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I_s	(in^4)	211,175	398,895	211,175	398,895	211,175	429,447	211,175	459,997	211,175
$I_c(n)$	(in^4)	409,747	425,216	409,747	425,216	414,266	458,373	425,928	490,478	429,074
$I_c(3n)$	(in^4)	300,624	425,216	300,624	425,216	303,395	458,373	310,758	490,478	312,798
S_s	(in^3)	4,097	6,879	4,097	6,879	4,097	7,416	4,097	7,953	4,097
$S_c(n)$	(in^3)	5,367	7,629	5,367	7,629	5,387	8,250	5,436	8,839	5,449
$S_c(3n)$	(in^3)	4,793	7,629	4,793	7,629	4,810	8,250	4,856	8,839	4,869
S_{xt}	(in^3)	81	202	81	202	81	240	81	282	81
DC1	(k/')	1.36	1.57	1.36	1.57	1.39	1.68	1.48	1.77	1.50
M_{DC1}	('k)	3,385	9,217	3,173	9,523	3,339	10,487	3,586	11,255	4,033
DC2	(k/')	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	466	1,169	444	1,208	453	1,220	434	1,213	476
DW	(k/')	0.33	0.33	0.33	0.33	0.35	0.39	0.42	0.43	0.43
M_{DW}	('k)	887	2,228	845	2,292	873	2,659	1,056	3,003	1,187
M_{LL+IM}	('k)	4,004	5,311	4,257	5,869	4,549	6,511	4,803	6,503	4,709
M_u (Strength I)*	('k)	13,808	26,901	13,901	28,477	14,711	31,517	15,765	33,043	16,440
M_{bl}	('k)	15	20	28	21	36	24	32	25	14
f_s DC1	(ksi)	9.92	16.08	9.30	16.61	9.78	16.97	10.50	16.98	11.81
f_s DC2	(ksi)	1.17	1.84	1.11	1.90	1.13	1.77	1.07	1.65	1.17
f_s DW	(ksi)	2.22	3.50	2.12	3.61	2.18	3.87	2.61	4.08	2.92
f_s 1.3(LL+IM)	(ksi)	11.64	10.86	12.37	12.00	13.17	12.31	13.79	11.48	13.48
f_l	(ksi)	2.20	1.20	4.22	1.27	5.39	1.18	4.80	1.06	2.08
f_s (Service II)	(ksi)	24.94	32.28	24.90	34.12	26.26	34.92	27.97	34.18	29.39
f_s (Total)(Strength I)*	(ksi)	34.49	44.39	34.48	46.94	36.37	48.09	38.79	47.09	40.71
F_{cr} (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.77	39.35	47.65	39.35
V_f	(k)	36.75	47.51	35.76	47.56	37.89	54.36	39.76	54.45	42.12
F_{cr}	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60	50.00

* LRFD Strength I Load Combinations include an Operational Importance Factor, η_I = 1.05

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s(Total-Strength I, and Service II) due to short-term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s(Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

S_{xt}: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange ($in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{LL+IM}$

M_{bl}: Factored lateral bending moment for controlling flange plate (kip-ft.).

f_l: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{LL+IM}$

f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{LL+IM}$

F_{cr} (Service II): Critical flange stress at Service II computed according to Article 6.10.4.2 (ksi).

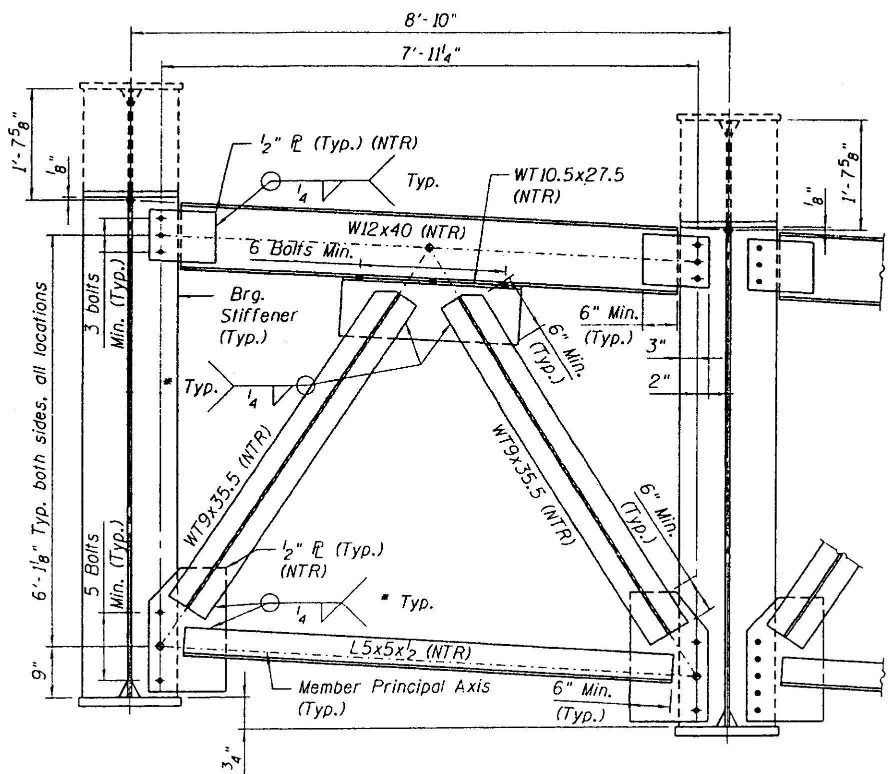
F_{cr}: Critical flange stress computed according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Maximum factored shear range computed according to Article 6.10.10.

Note:
M_{LL} and R_{LL} include the effects of centrifugal force and superelevation.

MAXIMUM GIRDER REACTION TABLE

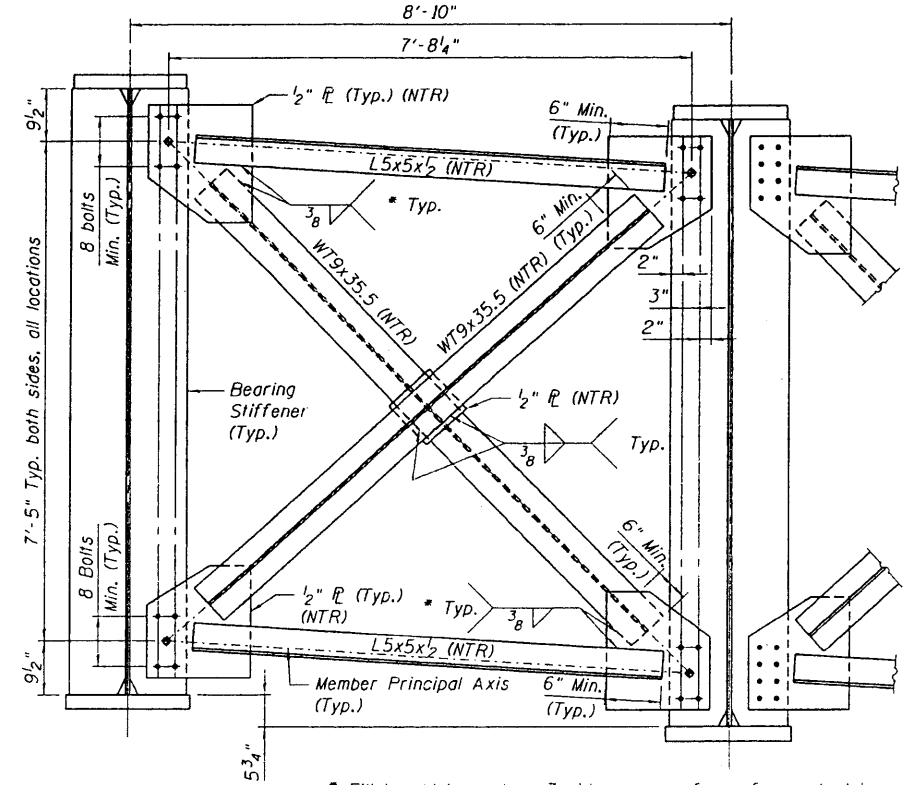
		Pier 23	Pier 24	Pier 25	Pier 26	Pier 27	E. Abut.
R_{DC1}	(k)	116.8	453.9	442.0	487.7	523.3	130.2
R_{DC2}	(k)	15.8	56.9	55.8	56.8	56.5	15.3
R_{DW}	(k)	30.0	108.7	105.9	124.3	139.8	37.9
R_{LL+IM}	(k)	125.4	267.3	268.6	297.2	271.5	117.3
R_{Total}	(k)	288.0	886.7	872.2	966.0	991.1	300.7



* Fillet weld tees along 3 sides on one face of gusset plate.

D1 - CROSS FRAME AT PIER 23

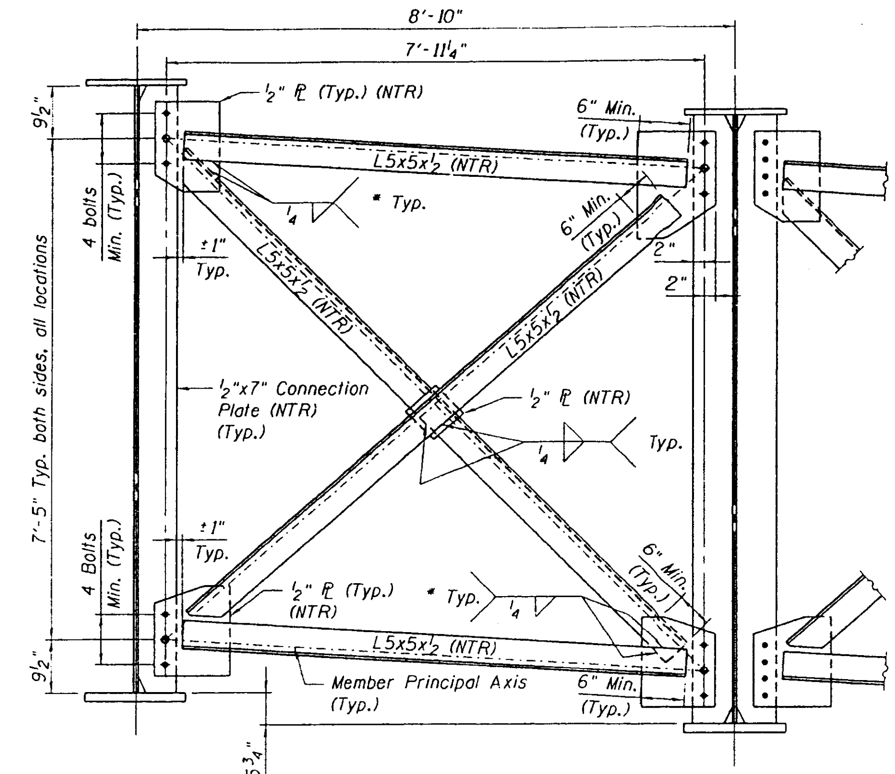
(4 thus)



* Fillet weld tees along 3 sides on one face of gusset plate.

D2 - CROSS FRAME AT PIERS 24 THRU 27

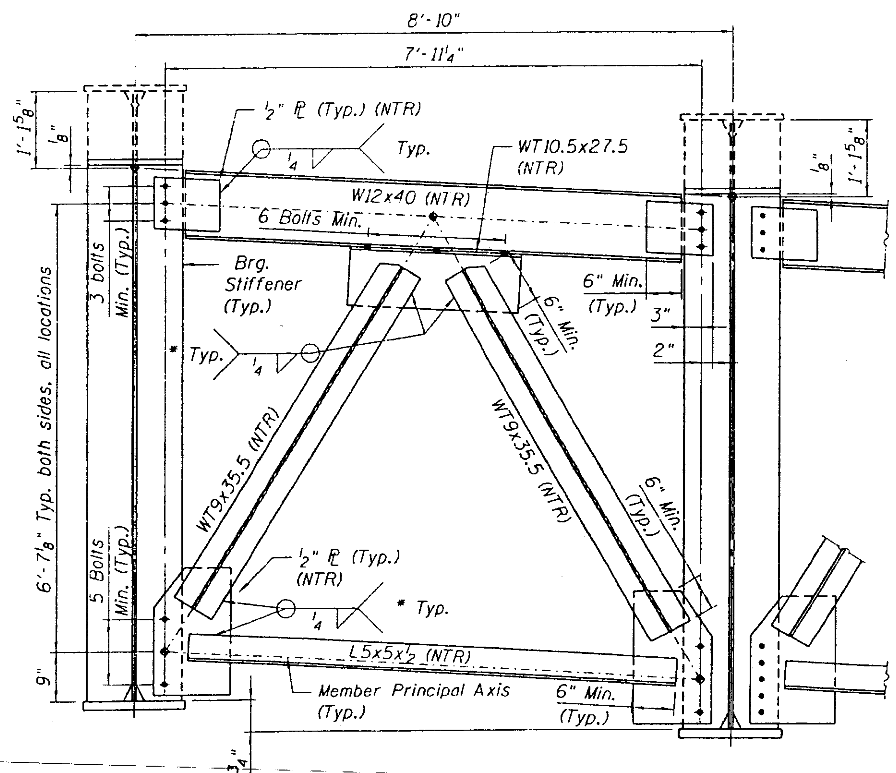
(16 thus)



* Fillet weld angles along 3 sides on one face of gusset plate.

D3 - TYPICAL INTERIOR CROSS FRAME

(216 thus)



* Fillet weld tees along 3 sides on one face of gusset plate.

D4 - CROSS FRAME AT EAST ABUTMENT

(4 thus)

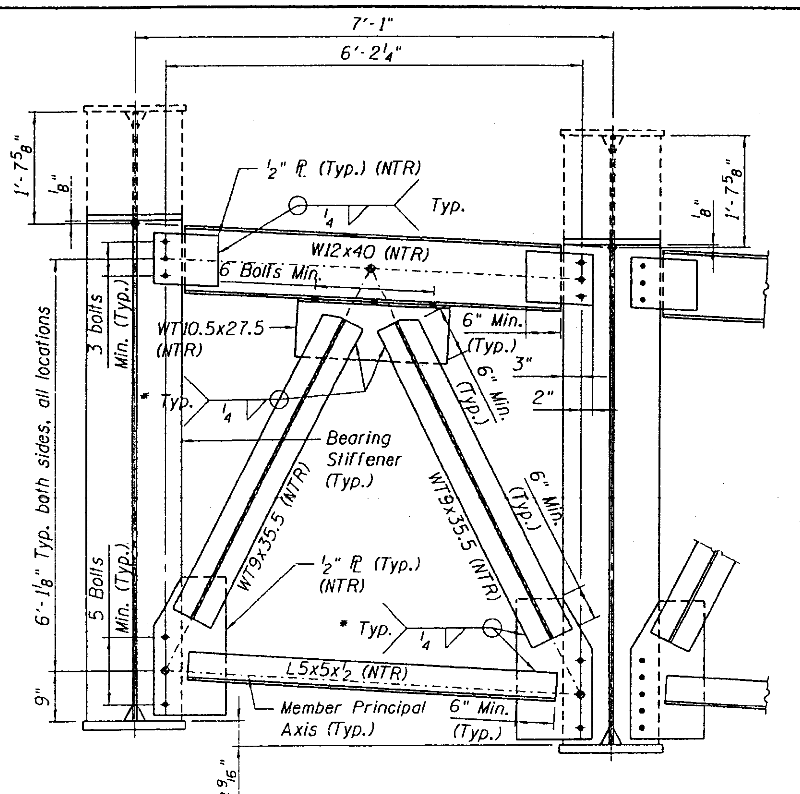
◆ Centroid of bolt group and workpoint of member principal axes

NOTES:

1. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
2. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
3. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts ⅞" φ, holes ¹⁵⁄₁₆" φ, unless noted otherwise.
4. The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±⅛ in. per vertical ft. throughout when supporting their own weight.
5. The contractor shall either:
   1. Ream diaphragm and/or cross frame connection holes during shop assembly, or
   2. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(l) of the Standard Specifications.
6. For Bearing Stiffener ℄ sizes, see Shts. S-55 thru S-63.

FILE NAME = \$FILEL\$	USER NAME = \$USER\$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS	STEEL DETAILS 1 OF 6
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = \$SCALE\$	DRAWN - MDB	REVISED -	DEPARTMENT OF TRANSPORTATION	
		CHECKED - TCU	REVISED -	I-70 CONNECTION OVER	
	PLOT DATE = \$DATE\$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: / SHEET NO. S-67 OF S-111 / STA. 134+22.00 TO STA.

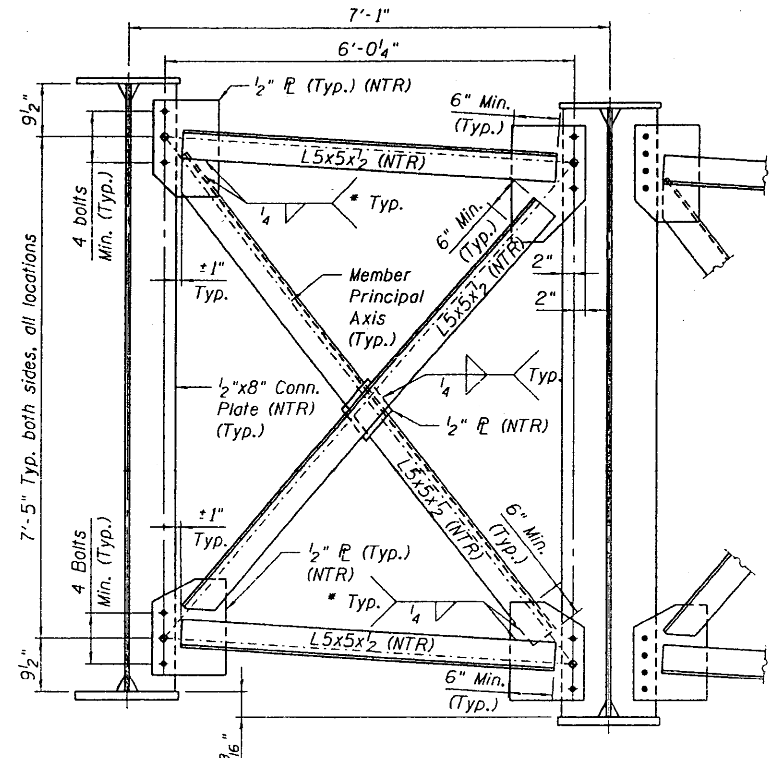
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	177
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



* Fillet weld tees along 3 sides on one face of gusset plate.

D5 - CROSS FRAME AT PIER 23

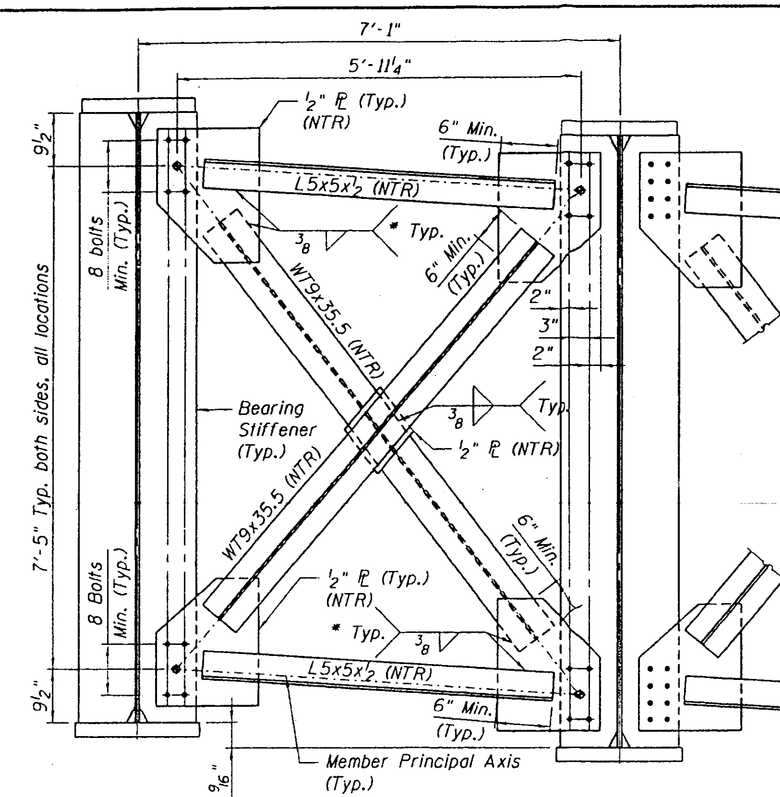
(5 thus)



* Fillet weld angles along 3 sides on one face of gusset plate.

D6 - TYPICAL INTERIOR CROSS FRAME

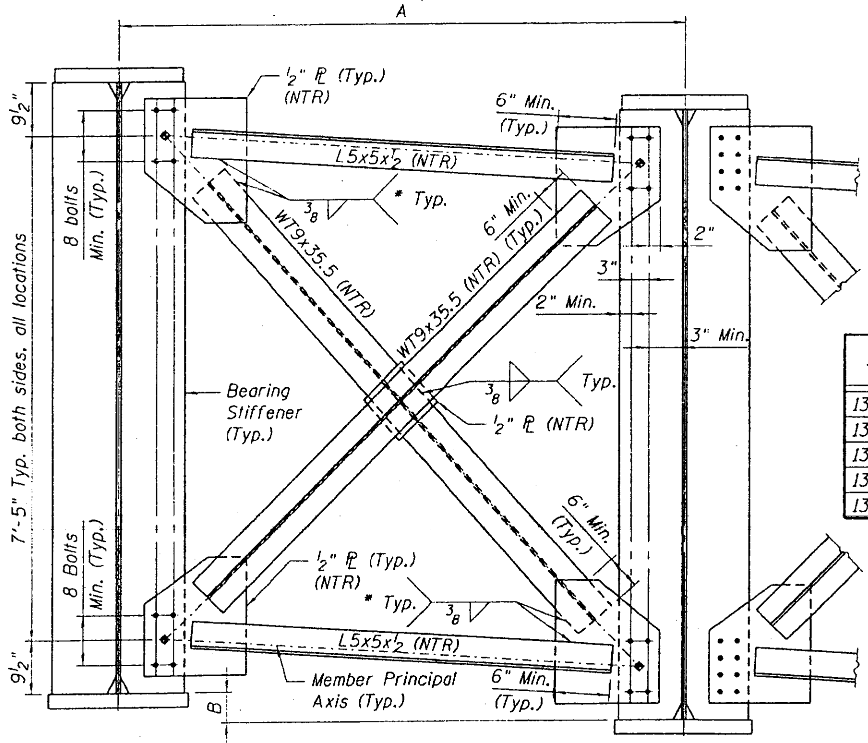
(125 thus)



* Fillet weld angles along 3 sides on one face of gusset plate.

D7 - CROSS FRAME AT PIERS 24 & 25

(10 thus)



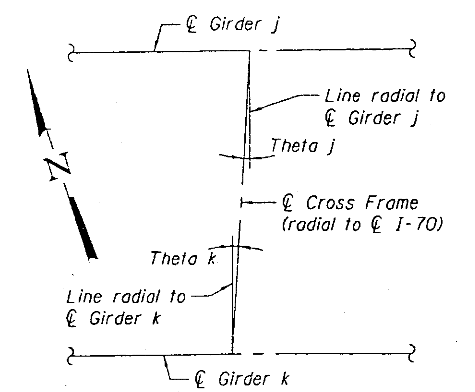
* Fillet weld angles along 3 sides on one face of gusset plate.

D8 - CROSS FRAME AT PIER 26

(5 thus)

D8 CROSS FRAME DIMENSIONS

Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
135+61.00	1-2	8'-3"	5⅜"	1.65	1.29
135+61.00	2-3	8'-3$\frac{13}{16}$"	5⅜"	1.29	0.94
135+61.00	3-4	8'-4$\frac{9}{16}$"	5$\frac{7}{16}$"	0.94	0.61
135+61.00	4-5	8'-5$\frac{5}{16}$"	5½"	0.61	0.30
135+61.00	5-6	8'-5$\frac{15}{16}$"	5½"	0.30	0.00



CROSS FRAME PLAN VIEW

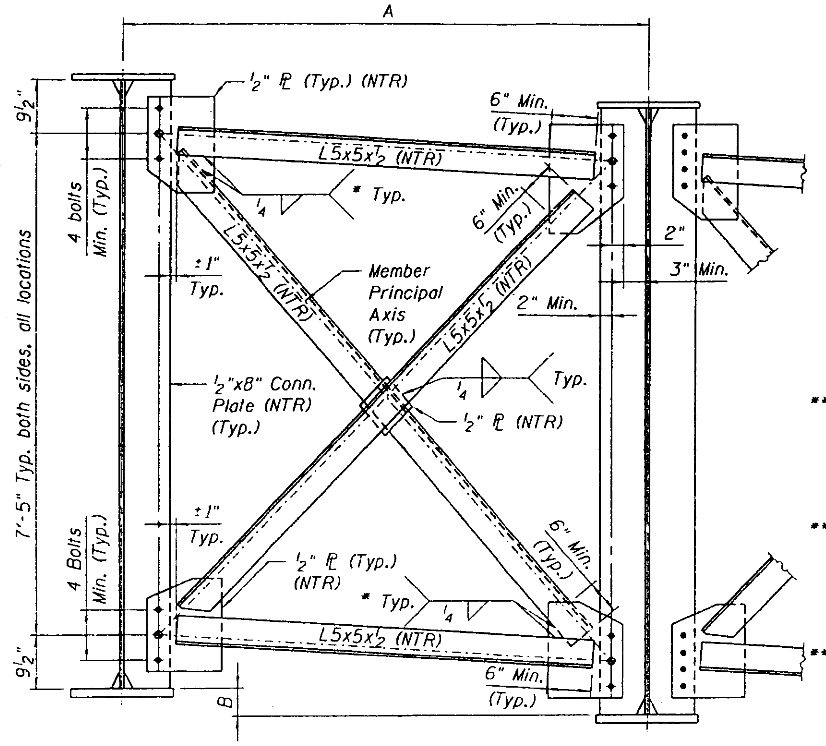
Note: Cross Frame - Girder skew measured in degrees.

◆ Centroid of bolt group and workpoint of member principal axes

NOTE:
See Sht. S-67 for notes.

FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STEEL DETAILS 2 OF 6
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = *SCALE*	DRAWN - MDB	REVISED -	I-70 CONNECTION OVER	
	PLOT DATE = *DATE*	CHECKED - TCU	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
		DATE - 06/04/10	REVISED -		SHEET NO. S-68 OF S-111 — STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	178
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



* Fillet weld angles along 3 sides on one face of gusset plate.

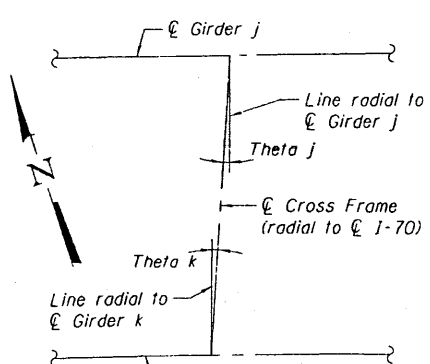
D9 - TYPICAL INTERIOR CROSS FRAME

(47 thus)

** D9A similar to D9, except all connection plates shall have 5 bolts, min.

D9A - TYPICAL INTERIOR CROSS FRAME

(3 thus)

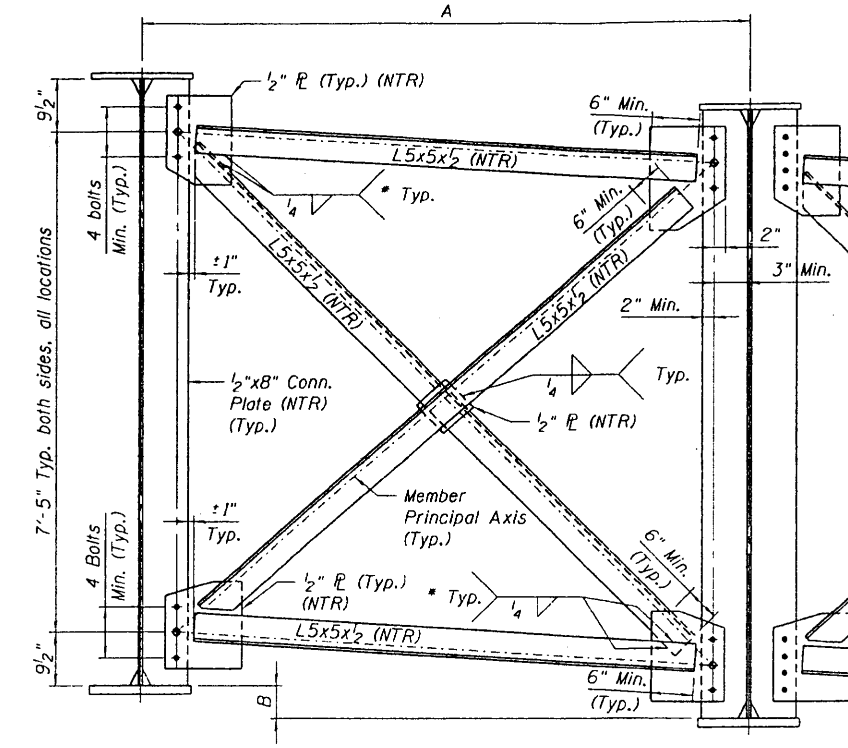


CROSS FRAME PLAN VIEW

Note: Cross Frame - Girder skew measured in degrees.

D9 & D9A CROSS FRAME DIMENSIONS

	Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
	133+47.87	1-2	7'-1"	4 9/16"	0.17	0.17
	133+47.87	2-3	7'-1"	4 9/16"	0.17	0.17
	133+47.87	3-4	7'-1"	4 9/16"	0.17	0.17
	133+47.87	4-5	7'-1"	4 9/16"	0.17	0.17
	133+47.87	5-6	7'-1 1/8"	4 5/8"	0.17	0.00
	133+72.24	1-2	7'-1"	4 9/16"	0.89	0.89
	133+72.24	2-3	7'-1"	4 9/16"	0.89	0.89
	133+72.24	3-4	7'-1"	4 9/16"	0.89	0.89
	133+72.24	4-5	7'-1 11/16"	4 5/8"	0.89	0.44
	133+72.24	5-6	7'-3 1/8"	4 11/16"	0.44	0.00
	133+96.61	1-2	7'-1 1/16"	4 9/16"	1.60	1.60
	133+96.61	2-3	7'-1 1/4"	4 5/8"	1.60	1.33
**	133+96.61	3-4	7'-2 5/8"	4 11/16"	1.33	0.87
	133+96.61	4-5	7'-4 1/16"	4 3/4"	0.87	0.43
	133+96.61	5-6	7'-5 3/8"	4 13/16"	0.43	0.00
	134+20.98	1-2	7'-2 1/8"	4 5/8"	2.23	1.74
	134+20.98	2-3	7'-3 5/8"	4 3/4"	1.74	1.28
**	134+20.98	3-4	7'-5"	4 13/16"	1.28	0.83
	134+20.98	4-5	7'-6 5/16"	4 7/8"	0.83	0.41
	134+20.98	5-6	7'-7 1/2"	4 15/16"	0.41	0.00
	134+45.35	1-2	7'-4 5/8"	4 13/16"	2.13	1.66
	134+45.35	2-3	7'-6"	4 7/8"	1.66	1.22
**	134+45.35	3-4	7'-7 1/4"	4 15/16"	1.22	0.79
	134+45.35	4-5	7'-8 7/16"	5"	0.79	0.39
	134+45.35	5-6	7'-9 9/16"	5 1/16"	0.39	0.00
	134+69.72	1-2	7'-7 1/16"	4 15/16"	2.03	1.58
	134+69.72	2-3	7'-8 1/4"	5"	1.58	1.16
	134+69.72	3-4	7'-9 7/16"	5 1/16"	1.16	0.76
	134+69.72	4-5	7'-10 1/2"	5 1/8"	0.76	0.37
	134+69.72	5-6	7'-11 1/2"	5 3/16"	0.37	0.00
	134+94.09	1-2	7'-9 5/16"	5 1/16"	1.93	1.50
	134+94.09	2-3	7'-10 7/16"	5 1/8"	1.50	1.10
	134+94.09	3-4	7'-11 1/2"	5 1/8"	1.10	0.72
	134+94.09	4-5	8'-0 7/16"	5 3/16"	0.72	0.35
	134+94.09	5-6	8'-1 3/8"	5 1/4"	0.35	0.00
	135+18.46	1-2	7'-11 1/2"	5 3/16"	1.82	1.43
	135+18.46	2-3	8'-0 1/2"	5 3/16"	1.43	1.04
	135+18.46	3-4	8'-1 7/16"	5 1/4"	1.04	0.68
	135+18.46	4-5	8'-2 5/16"	5 5/16"	0.68	0.33
	135+18.46	5-6	8'-3 1/8"	5 3/8"	0.33	0.00
	135+34.05	1-2	8'-0 13/16"	5 1/4"	1.76	1.37
	135+34.05	2-3	8'-1 3/4"	5 1/4"	1.37	1.01
	135+34.05	3-4	8'-2 5/8"	5 5/16"	1.01	0.66
	135+34.05	4-5	8'-3 7/16"	5 3/8"	0.66	0.32
	135+34.05	5-6	8'-4 3/16"	5 7/16"	0.32	0.00
	135+47.53	1-2	8'-1 15/16"	5 5/16"	1.70	1.33
	135+47.53	2-3	8'-2 13/16"	5 5/16"	1.33	0.98
	135+47.53	3-4	8'-3 5/8"	5 3/8"	0.98	0.64
	135+47.53	4-5	8'-4 3/8"	5 7/16"	0.64	0.31
	135+47.53	5-6	8'-5 1/16"	5 7/16"	0.31	0.00



* Fillet weld angles along 3 sides on one face of gusset plate.

D10 - TYPICAL INTERIOR CROSS FRAME

(61 thus)

*** D10A similar to D10, except all connection plates shall have 5 bolts, min.

D10A - TYPICAL INTERIOR CROSS FRAME

(4 thus)

◆ Centroid of bolt group and workpoint of member principal axes

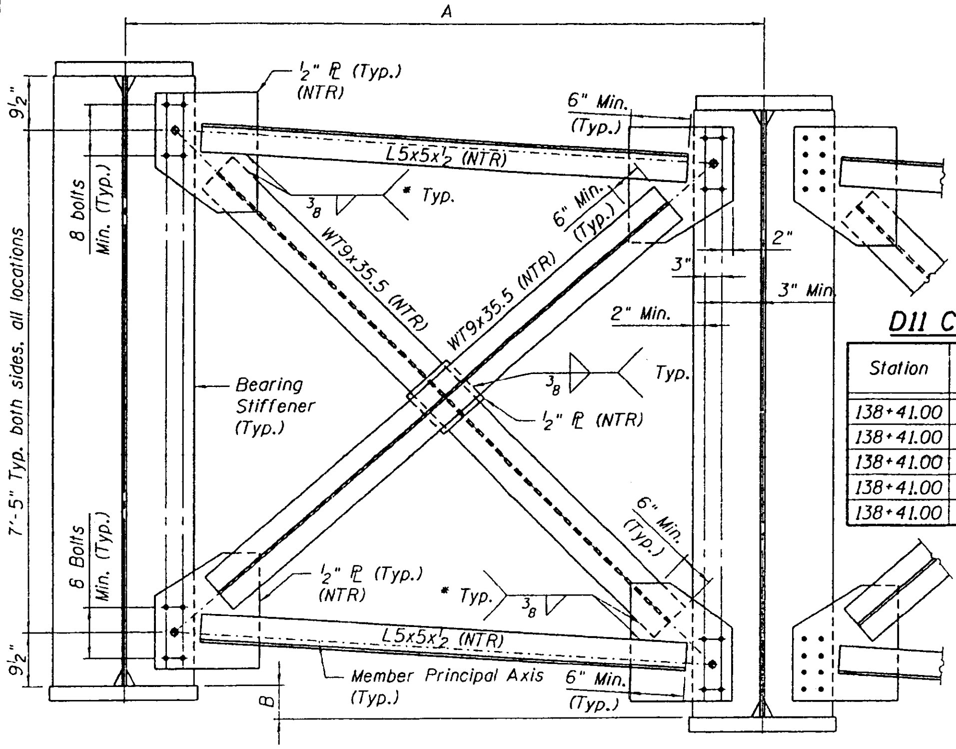
NOTE:

See Sht. S-67 for notes.

D10 & D10A CROSS FRAME DIMENSIONS

	Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
	135+74.47	1-2	8'-4 1/16"	5 3/8"	1.59	1.24
	135+74.47	2-3	8'-4 13/16"	5 7/16"	1.24	0.91
	135+74.47	3-4	8'-5 1/2"	5 1/2"	0.91	0.59
	135+74.47	4-5	8'-6 3/16"	5 1/2"	0.59	0.29
	135+74.47	5-6	8'-6 13/16"	5 9/16"	0.29	0.00
	135+87.95	1-2	8'-5 1/16"	5 7/16"	1.53	1.20
	135+87.95	2-3	8'-5 3/4"	5 1/2"	1.20	0.88
	135+87.95	3-4	8'-6 7/16"	5 1/2"	0.88	0.57
	135+87.95	4-5	8'-7"	5 9/16"	0.57	0.28
	135+87.95	5-6	8'-7 5/8"	5 5/8"	0.28	0.00
	136+04.58	1-2	8'-6 1/4"	5 1/2"	1.46	1.14
	136+04.58	2-3	8'-6 7/8"	5 9/16"	1.14	0.84
	136+04.58	3-4	8'-7 1/2"	5 9/16"	0.84	0.55
	136+04.58	4-5	8'-8 1/16"	5 5/8"	0.55	0.27
	136+04.58	5-6	8'-8 9/16"	5 5/8"	0.27	0.00
	136+28.87	1-2	8'-7 7/8"	5 5/8"	1.36	1.06
	136+28.87	2-3	8'-8 7/16"	5 5/8"	1.06	0.78
	136+28.87	3-4	8'-8 15/16"	5 11/16"	0.78	0.51
	136+28.87	4-5	8'-9 7/16"	5 11/16"	0.51	0.25
	136+28.87	5-6	8'-9 7/8"	5 11/16"	0.25	0.00
	136+53.15	1-2	8'-9 3/8"	5 11/16"	1.26	0.98
	136+53.15	2-3	8'-9 7/8"	5 11/16"	0.98	0.72
	136+53.15	3-4	8'-10 5/16"	5 3/4"	0.72	0.47
	136+53.15	4-5	8'-10 11/16"	5 3/4"	0.47	0.23
	136+53.15	5-6	8'-11 1/8"	5 13/16"	0.23	0.00
	136+77.44	1-2	8'-10 13/16"	5 3/4"	1.15	0.90
	136+77.44	2-3	8'-11 3/16"	5 13/16"	0.90	0.66
	136+77.44	3-4	8'-11 9/16"	5 13/16"	0.66	0.43
***	136+77.44	4-5	8'-11 7/8"	5 13/16"	0.43	0.21
	136+77.44	5-6	9'-0 1/4"	5 7/8"	0.21	0.00
	137+01.73	1-2	9'-0 1/16"	5 13/16"	1.05	0.82
	137+01.73	2-3	9'-0 3/8"	5 7/8"	0.82	0.60
***	137+01.73	3-4	9'-0 11/16"	5 7/8"	0.60	0.39
***	137+01.73	4-5	9'-1"	5 7/8"	0.39	0.19
	137+01.73	5-6	9'-1 1/4"	5 7/8"	0.19	0.00
	137+26.01	1-2	9'-1 1/4"	5 7/8"	0.95	0.74
	137+26.01	2-3	9'-1 1/2"	5 15/16"	0.74	0.54
	137+26.01	3-4	9'-1 3/4"	5 15/16"	0.54	0.35
***	137+26.01	4-5	9'-2"	5 15/16"	0.35	0.17
	137+26.01	5-6	9'-2 3/16"	5 15/16"	0.17	0.00
	137+50.30	1-2	9'-2 1/4"	5 15/16"	0.84	0.66
	137+50.30	2-3	9'-2 1/2"	5 15/16"	0.66	0.48
	137+50.30	3-4	9'-2 11/16"	6"	0.48	0.32
	137+50.30	4-5	9'-2 7/8"	6"	0.32	0.15
	137+50.30	5-6	9'-3"	6"	0.15	0.00
	137+74.59	1-2	9'-3 3/16"	6"	0.74	0.58
	137+74.59	2-3	9'-3 5/16"	6"	0.58	0.42
	137+74.59	3-4	9'-3 1/2"	6"	0.42	0.28
	137+74.59	4-5	9'-3 5/8"	6"	0.28	0.14
	137+74.59	5-6	9'-3 3/4"	6 1/16"	0.14	0.00
	137+98.87	1-2	9'-4"	6 1/16"	0.64	0.50
	137+98.87	2-3	9'-4 1/8"	6 1/16"	0.50	0.37
	137+98.87	3-4	9'-4 3/16"	6 1/16"	0.37	0.24
	137+98.87	4-5	9'-4 5/16"	6 1/16"	0.24	0.12
	137+98.87	5-6	9'-4 7/16"	6 1/16"	0.12	0.00
	138+15.55	1-2	9'-4 7/16"	6 1/16"	0.57	0.44
	138+15.55	2-3	9'-4 9/16"	6 1/16"	0.44	0.32
	138+15.55	3-4	9'-4 5/8"	6 1/16"	0.32	0.21
	138+15.55	4-5	9'-4 3/4"	6 1/16"	0.21	0.10
	138+15.55	5-6	9'-4 13/16"	6 1/16"	0.10	0.00
	138+28.27	1-2	9'-4 13/16"	6 1/16"	0.51	0.40
	138+28.27	2-3	9'-4 7/8"	6 1/8"	0.40	0.29
	138+28.27	3-4	9'-4 15/16"	6 1/8"	0.29	0.19
	138+28.27	4-5	9'-5"	6 1/8"	0.19	0.09
	138+28.27	5-6	9'-5 1/16"	6 1/8"	0.09	0.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	179
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



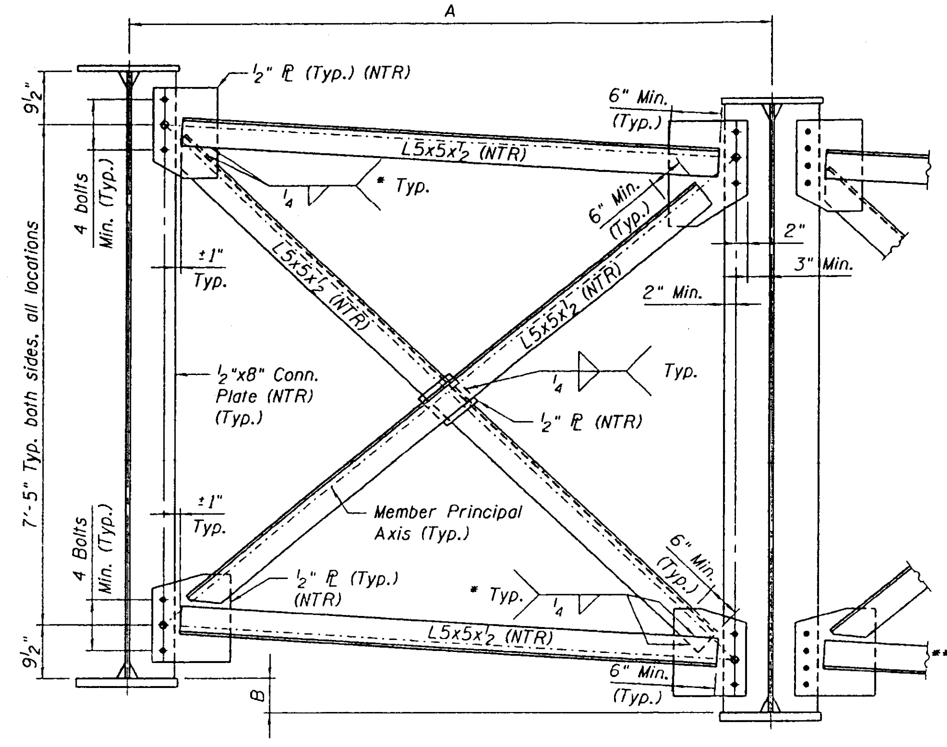
D11 CROSS FRAME DIMENSIONS

Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
138+41.00	1-2	9'-5 1/16"	6 1/8"	0.46	0.36
138+41.00	2-3	9'-5 1/8"	6 1/8"	0.36	0.26
138+41.00	3-4	9'-5 3/16"	6 1/8"	0.26	0.17
138+41.00	4-5	9'-5 1/4"	6 1/8"	0.17	0.08
138+41.00	5-6	9'-5 5/16"	6 1/8"	0.08	0.00

* Fillet weld angles along 3 sides on one face of gusset plate.

D11 - CROSS FRAME AT PIER 27

(5 thus)



* Fillet weld angles along 3 sides on one face of gusset plate.

D12 - TYPICAL INTERIOR CROSS FRAME

(24 thus)

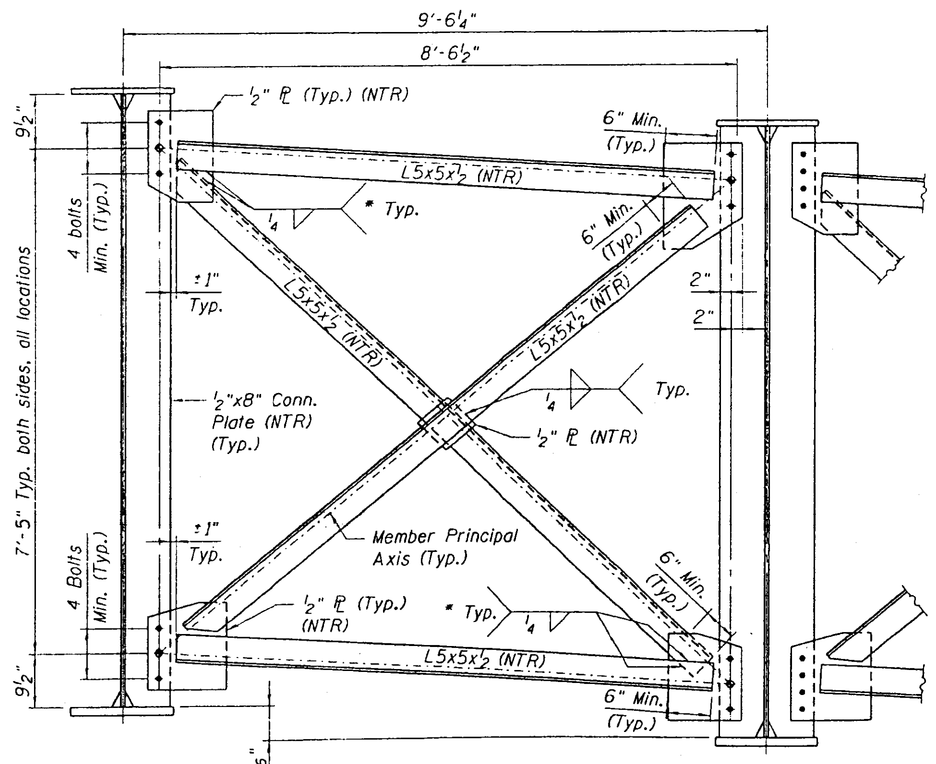
D12 & D12A CROSS FRAME DIMENSIONS

Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
138+55.22	1-2	9'-5 3/8"	6 1/8"	0.40	0.31
138+55.22	2-3	9'-5 7/16"	6 1/8"	0.31	0.23
138+55.22	3-4	9'-5 7/16"	6 1/8"	0.23	0.15
138+55.22	4-5	9'-5 1/2"	6 1/8"	0.15	0.07
138+55.22	5-6	9'-5 9/16"	6 1/8"	0.07	0.00
138+69.44	1-2	9'-5 5/8"	6 1/8"	0.34	0.26
138+69.44	2-3	9'-5 5/8"	6 1/8"	0.26	0.19
138+69.44	3-4	9'-5 11/16"	6 1/8"	0.19	0.13
138+69.44	4-5	9'-5 11/16"	6 1/8"	0.13	0.06
138+69.44	5-6	9'-5 3/4"	6 1/8"	0.06	0.00
138+93.00	1-2	9'-5 15/16"	6 1/8"	0.24	0.18
138+93.00	2-3	9'-5 15/16"	6 1/8"	0.18	0.13
138+93.00	3-4	9'-6"	6 1/8"	0.13	0.09
138+93.00	4-5	9'-6"	6 1/8"	0.09	0.04
138+93.00	5-6	9'-6"	6 1/8"	0.04	0.00
139+17.28	1-2	9'-6 1/8"	6 3/16"	0.13	0.10
139+17.28	2-3	9'-6 3/16"	6 3/16"	0.10	0.08
139+17.28	3-4	9'-6 3/16"	6 3/16"	0.08	0.05
139+17.28	4-5	9'-6 3/16"	6 3/16"	0.05	0.02
139+17.28	5-6	9'-6 3/16"	6 3/16"	0.02	0.00
139+41.57	1-2	9'-6 1/4"	6 3/16"	0.03	0.02
139+41.57	2-3	9'-6 1/4"	6 3/16"	0.02	0.02
139+41.57	3-4	9'-6 1/4"	6 3/16"	0.02	0.01
139+41.57	4-5	9'-6 1/4"	6 3/16"	0.01	0.01
139+41.57	5-6	9'-6 1/4"	6 3/16"	0.01	0.00

*** D12A similar to D12, except all connection plates shall have 5 bolts, min.

D12A - TYPICAL INTERIOR CROSS FRAME

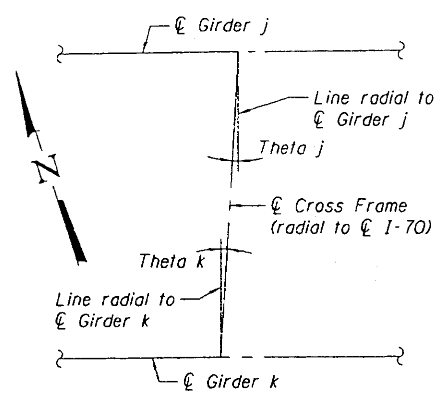
(1 thus)



* Fillet weld angles along 3 sides on one face of gusset plate.

D13 - TYPICAL INTERIOR CROSS FRAME

(18 thus)



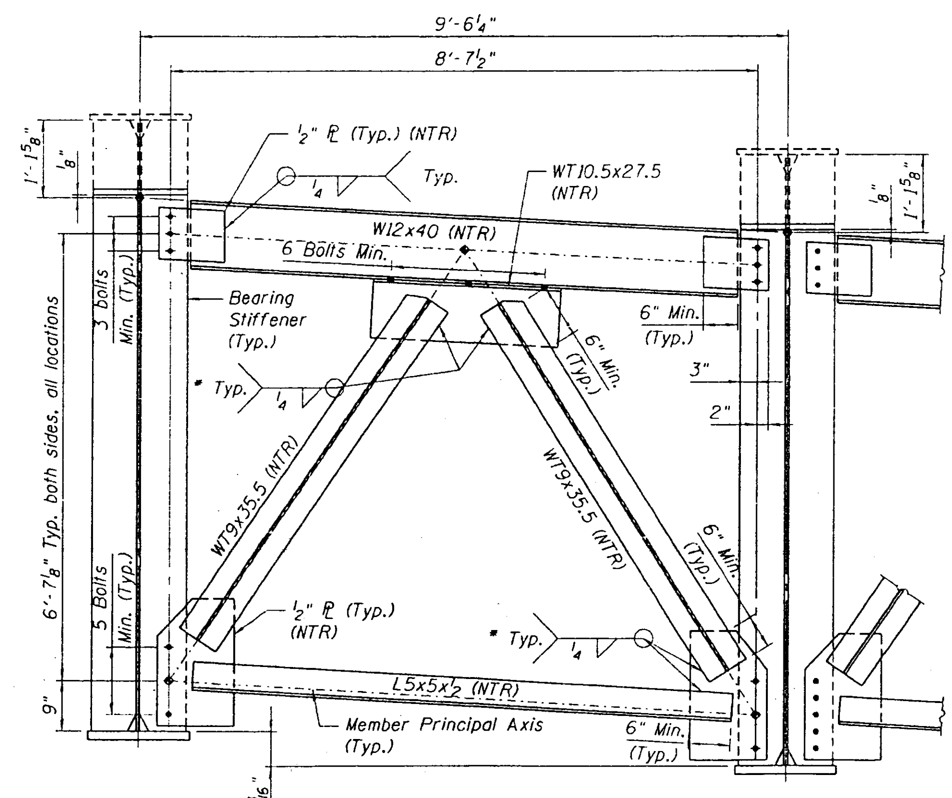
CROSS FRAME PLAN VIEW

Note: Cross Frame - Girder skew measured in degrees.

** D13A similar to D13, except all connection plates shall have 5 bolts, min.

D13A - TYPICAL INTERIOR CROSS FRAME

(2 thus)



◆ Centroid of bolt group and workpoint of member principal axes

NOTE:

See Sht. S-67 for notes.

* Fillet weld tees along 3 sides on one face of gusset plate.

D14 - CROSS FRAME AT E. ABUT.

(5 thus)

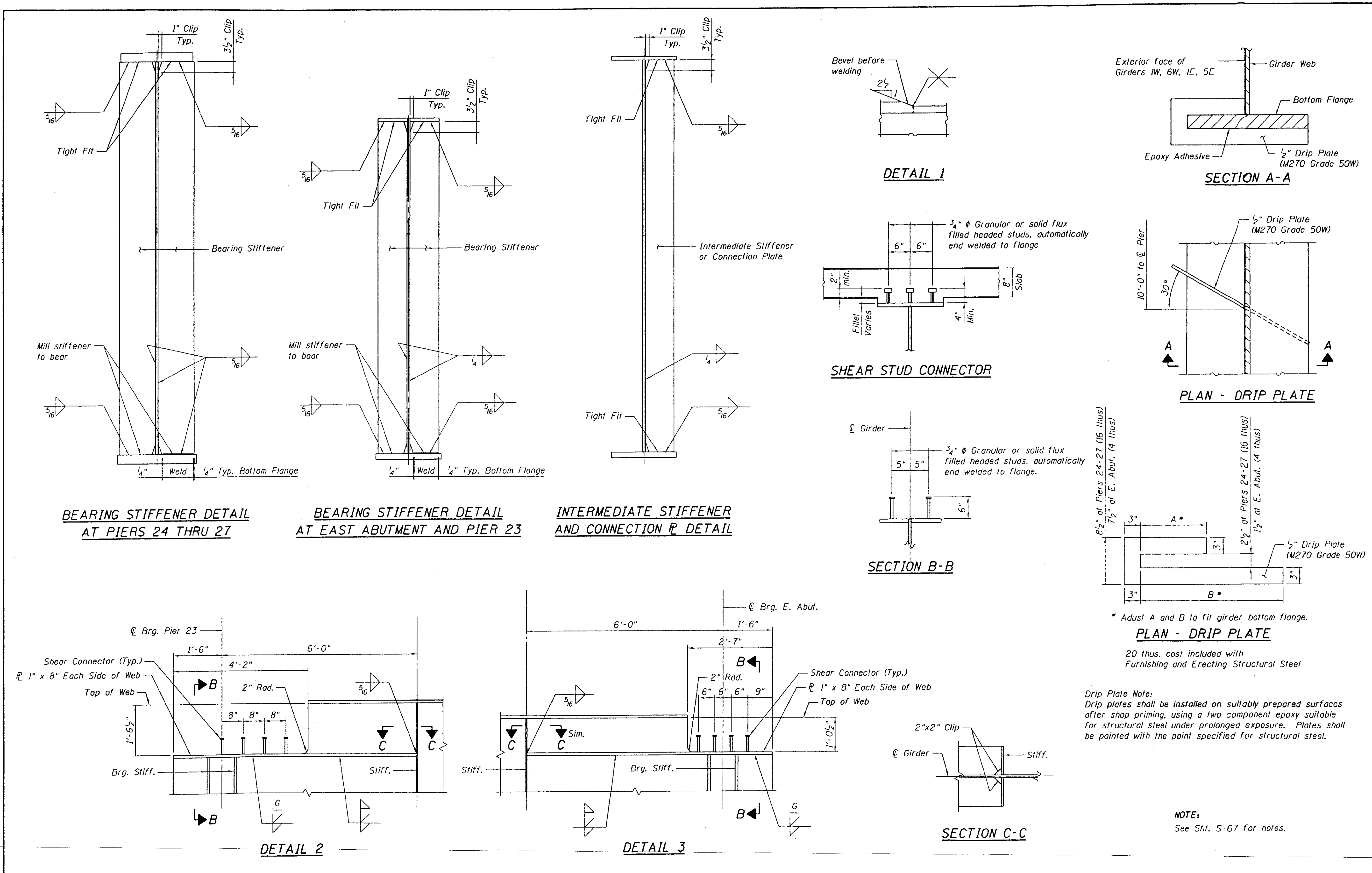
FILE NAME : $FILE$	USER NAME : $USER$	DESIGNED - JLR	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	DRAWN - MDB	REVISED -
	PLOT DATE : $DATE$	CHECKED - TCU	REVISED -
		DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MET AND INDUSTRIAL DR.

STEEL DETAILS
4 OF 6

SCALE: | SHEET NO. S-70 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	180
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

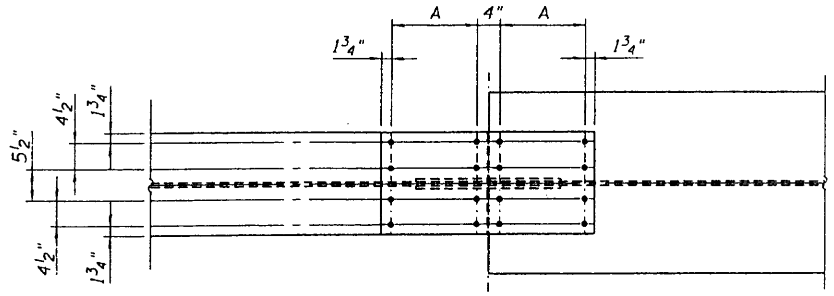


FILE NAME =	USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
$FILEL$		DRAWN - MOB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	

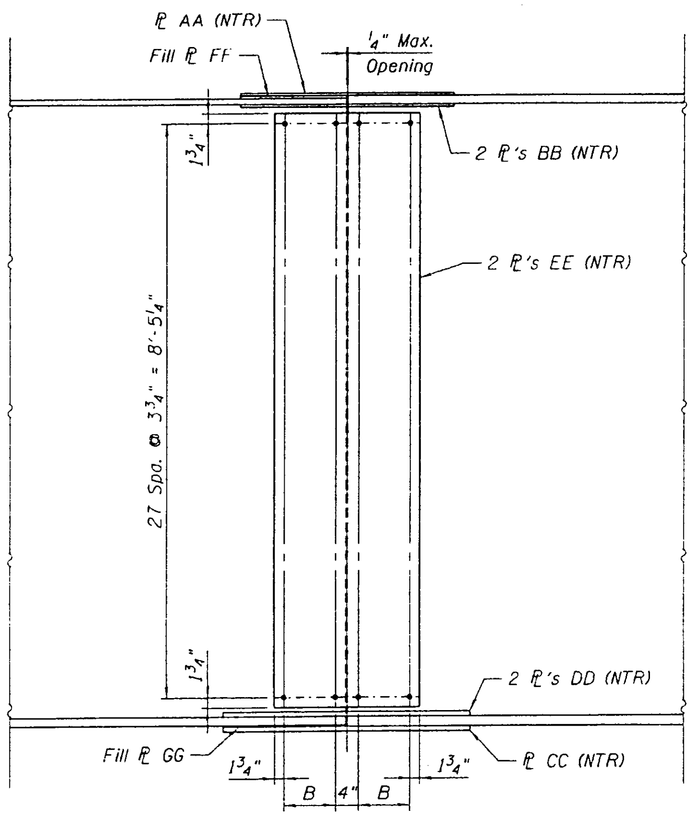
STEEL DETAILS 5 OF 6

SCALE: | SHEET NO. S-71 OF S-111 | STA. 134+22.00 TO STA.

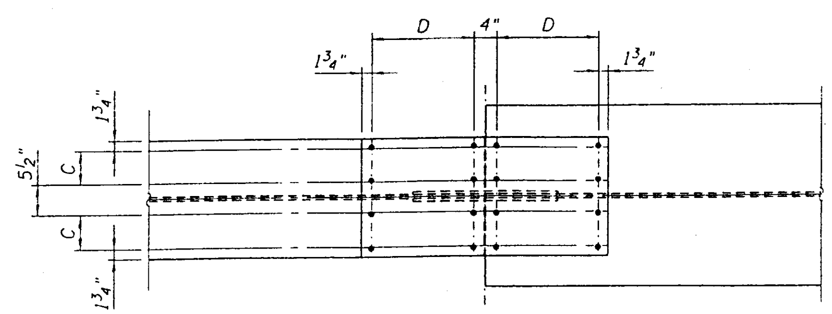
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
999	82-2-1HVB	ST. CLAIR	285	181
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TOP FLANGE



ELEVATION



BOTTOM FLANGE

FIELD SPLICE TYPE

GIRDER	FIELD SPLICE 1	2	3	4	5	6	7	8	9	10	11	12	13
1W, 2W	20-4	20-3	20-3	20-4	20-3	20-3	20-4	20-3	22-3	22-4	22-3	24-1	24-2
3W, 4W, 5W, 6W	18-2	18-3	18-3	18-2	18-3	18-3	18-2	18-3	18-3	18-2	18-3	18-3	18-4
1E	22-2	22-1	22-1	22-2	22-1	22-1	22-2	22-1	22-1	22-2	22-1	22-1	22-2
2E	20-2	20-1	20-1	20-2	20-1	20-1	20-2	20-1	20-1	20-2	20-1	20-1	20-2
3E, 4E, 5E	18-2	18-1	18-1	18-2	18-1	18-1	18-2	18-1	18-1	18-2	18-1	18-1	18-2

SPLICE BOLT SPACING

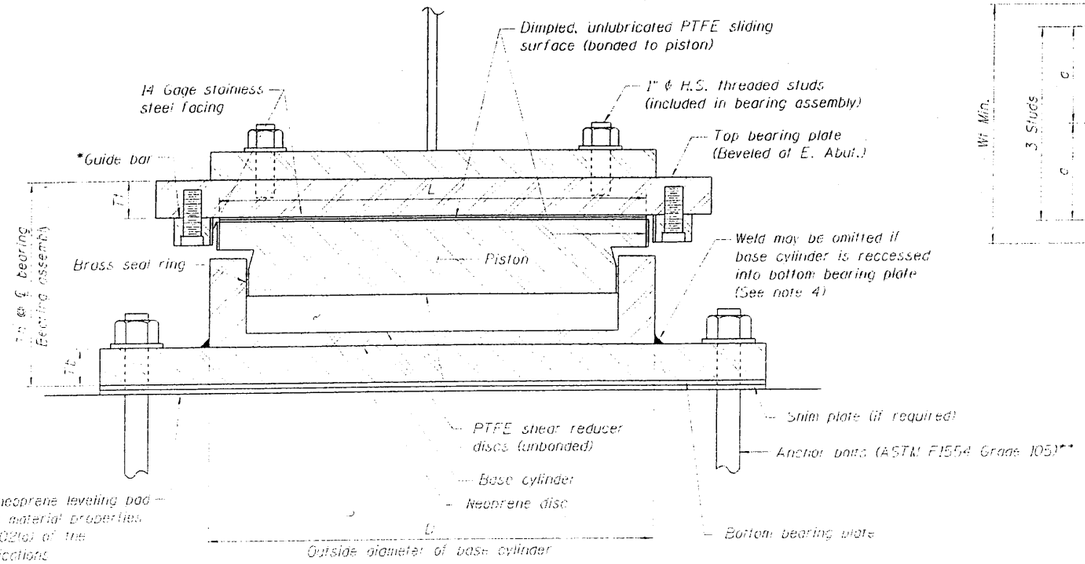
SPLICE TYPE	A	B	C	D
18-1	5 Spa. @ 3" = 1'-3"	2 Spa. @ 3" = 6"	$4\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
18-2	4 Spa. @ 3" = 1'-0"	2 Spa. @ 3" = 6"	$4\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
18-3	5 Spa. @ 3" = 1'-3"	2 Spa. @ 3" = 6"	$4\frac{1}{2}$"	7 Spa. @ 3" = 1'-9"
18-4	4 Spa. @ 3" = 1'-0"	2 Spa. @ 3" = 6"	$4\frac{1}{2}$"	7 Spa. @ 3" = 1'-9"
20-1	5 Spa. @ 3" = 1'-3"	2 Spa. @ 3" = 6"	$5\frac{1}{2}$"	7 Spa. @ 3" = 1'-9"
20-2	4 Spa. @ 3" = 1'-0"	2 Spa. @ 3" = 6"	$5\frac{1}{2}$"	7 Spa. @ 3" = 1'-9"
20-3	6 Spa. @ 3" = 1'-6"	2 Spa. @ 3" = 6"	$5\frac{1}{2}$"	8 Spa. @ 3" = 2'-0"
20-4	4 Spa. @ 3" = 1'-0"	3 Spa. @ 3" = 9"	$5\frac{1}{2}$"	8 Spa. @ 3" = 2'-0"
22-1	5 Spa. @ 3" = 1'-3"	2 Spa. @ 3" = 6"	2 Spa. @ $3\frac{1}{4}$" = $6\frac{1}{2}$"	5 Spa. @ 3" = 1'-3"
22-2	4 Spa. @ 3" = 1'-0"	3 Spa. @ 3" = 9"	2 Spa. @ $3\frac{1}{4}$" = $6\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
22-3	6 Spa. @ 3" = 1'-6"	2 Spa. @ 3" = 6"	2 Spa. @ $3\frac{1}{4}$" = $6\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
22-4	4 Spa. @ 3" = 1'-0"	3 Spa. @ 3" = 9"	2 Spa. @ $3\frac{1}{4}$" = $6\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
24-1	6 Spa. @ 3" = 1'-6"	2 Spa. @ 3" = 6"	2 Spa. @ $3\frac{3}{4}$" = $7\frac{1}{2}$"	6 Spa. @ 3" = 1'-6"
24-2	4 Spa. @ 3" = 1'-0"	3 Spa. @ 3" = 9"	2 Spa. @ $3\frac{3}{4}$" = $7\frac{1}{2}$"	7 Spa. @ 3" = 1'-9"

SPLICE PLATE SIZES

SPLICE TYPE	AA	BB	CC	DD	EE	FF	GG
18-1	$\frac{1}{2}$" x 18" x 3'-$1\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 18" x 3'-$7\frac{1}{2}$"	$\frac{3}{4}$" x 8" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{1}{2}$" x 18" x 1'-$6\frac{5}{8}$"	---
18-2	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 18" x 3'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 8" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
18-3	$\frac{1}{2}$" x 18" x 3'-$1\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 18" x 4'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 8" x 4'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{3}{4}$" x 18" x 1'-$6\frac{5}{8}$"	$\frac{1}{4}$" x 18" x 2'-$0\frac{5}{8}$"
18-4	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 18" x 4'-$1\frac{1}{2}$"	$\frac{7}{8}$" x 8" x 4'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
20-1	$\frac{1}{2}$" x 18" x 3'-$1\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 20" x 4'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 9" x 4'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{1}{2}$" x 18" x 1'-$6\frac{5}{8}$"	---
20-2	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 20" x 4'-$1\frac{1}{2}$"	$\frac{7}{8}$" x 9" x 4'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
20-3	$\frac{1}{2}$" x 18" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 20" x 4'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 9" x 4'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{3}{4}$" x 18" x 1'-$9\frac{5}{8}$"	$\frac{1}{4}$" x 20" x 2'-$3\frac{5}{8}$"
20-4	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 20" x 4'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 9" x 4'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $25\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
22-1	$\frac{1}{2}$" x 18" x 3'-$1\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 22" x 3'-$1\frac{1}{2}$"	$\frac{3}{4}$" x 10" x 3'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{1}{2}$" x 18" x 1'-$6\frac{5}{8}$"	---
22-2	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	1" x 22" x 3'-$7\frac{1}{2}$"	1" x 10" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $25\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
22-3	$\frac{1}{2}$" x 18" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 22" x 3'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 10" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{3}{4}$" x 18" x 1'-$9\frac{5}{8}$"	$\frac{1}{4}$" x 22" x 1'-$9\frac{5}{8}$"
22-4	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 22" x 3'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 10" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $25\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---
24-1	$\frac{1}{2}$" x 18" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 3'-$7\frac{1}{2}$"	$\frac{3}{4}$" x 24" x 3'-$7\frac{1}{2}$"	$\frac{3}{4}$" x 11" x 3'-$7\frac{1}{2}$"	$\frac{1}{2}$" x $19\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	$\frac{3}{4}$" x 18" x 1'-$9\frac{5}{8}$"	$\frac{1}{4}$" x 24" x 1'-$9\frac{5}{8}$"
24-2	$\frac{1}{2}$" x 18" x 2'-$7\frac{1}{2}$"	$\frac{1}{2}$" x 8" x 2'-$7\frac{1}{2}$"	$\frac{7}{8}$" x 24" x 4'-$1\frac{1}{2}$"	$\frac{7}{8}$" x 11" x 4'-$1\frac{1}{2}$"	$\frac{1}{2}$" x $25\frac{1}{2}$" x 8'-$8\frac{3}{4}$"	---	---

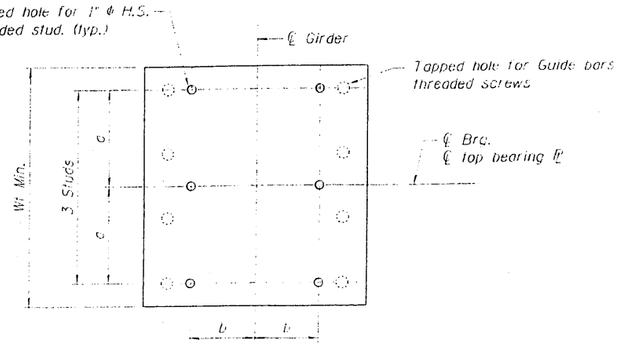
NOTE:
See Sht. S-67 for notes.

* As alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

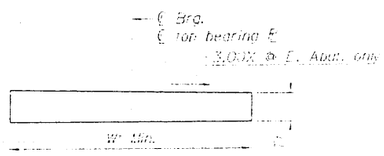


GUIDED EXPANSION POT BEARING

(Pier 23 & E. Abutment)



TOP BEARING ℄ PLAN



TOP BEARING ℄ ELEVATION

** 1 ϕ x 12" Anchor bolts 2½" x 2½" x ⅝" ℄ Washer under nut 1½" ϕ holes in bottom bearing ℄, typ.

DIMENSIONS (IN)

Dimension	Pier 23	E. Abut.
D	13 ⅜	13 ⅜
L	14	14
Tt	2	2
Tb	10 ⅝	10 ⅝
Ti	2	2
Wt	26	26
a	11	11
b	7	7
c	9	9
d	13½	13½

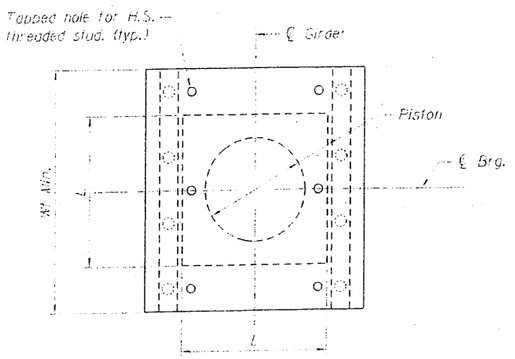
1

DESIGN DATA

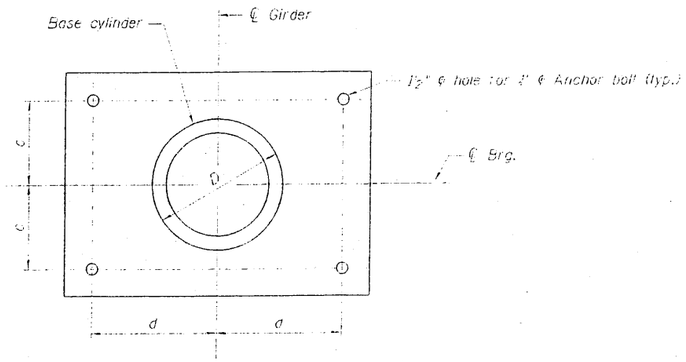
Data	Pier 23	E. Abut.
Service Vertical Design Load (kips)	290	290
Factored Horizontal Design Load (kips)	25	25
Factored Design Rotation (rad)	0.02	0.02
Total Required Movement (in)	2½	2½

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotation Bearings, Guided Expansion, 300K	Each	22
Anchor Bolts, 1" ϕ	Each	88



TOP BEARING ℄ AND PISTON PLAN



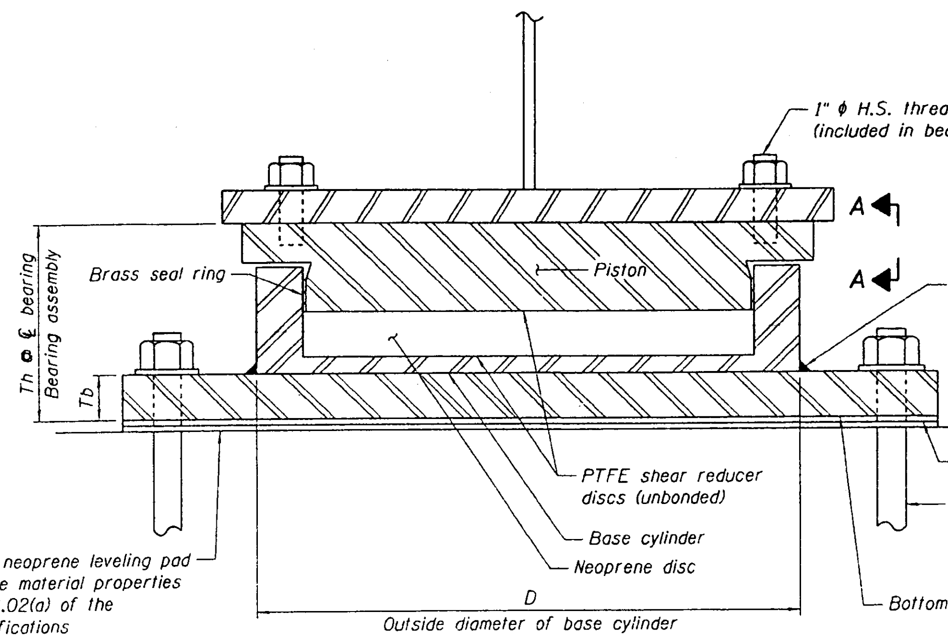
BOTTOM BEARING ℄ AND BASE CYLINDER PLAN

NOTES:

1. The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M 270 Grade 50W.
2. Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
3. H.S. bolts in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
4. If base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.

		DESIGNED	FF	REVISED	1 07/09/2010 JR	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	BEARING DETAILS 1 OF 2
		DRAWN	FF	REVISED			
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		CHECKED	TSU	REVISED			
		DATE	06/04/10	REVISED		SCALE: SHEET NO. S-23 OF 2 SHTS STA. 134+20.00 TO STA.	

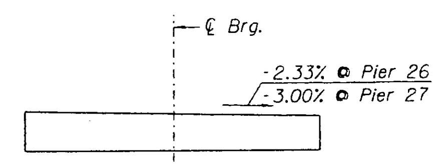
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEET NO.	SHEET NO.
998	82-2 IHVB	ST. CLAIR	285	183
SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44				
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



FIXED POT BEARING

(Piers 24 - 27)

** 1¼" ϕ x 15" Anchor bolts
2¾" x 2¾" x 5/16" ℘. Washer under nut.
1¾" ϕ holes in bottom bearing ℘, typ



VIEW A-A - BEVELED TOP OF PISTON

(level top at piers 24 & 25)

DIMENSIONS (IN)

Dimension	Piers 24 & 25	Pier 26	Pier 27
D	23⅞	23⅞	24
Tb	2¾	2¾	2¾
Th	11¾	12	12 3/16
a	6½	6½	6½
b	9	9	9
c	15½	15½	15½
d	17	17	17

DESIGN DATA

Data	Pier 24	Pier 25	Pier 26	Pier 27
Service Vertical Design Load (kips)	825	835	900	945
Factored Horizontal Design Load (kips)	270	240	280	240
Factored Design Rotation (rad)	0.02	0.02	0.02	0.02

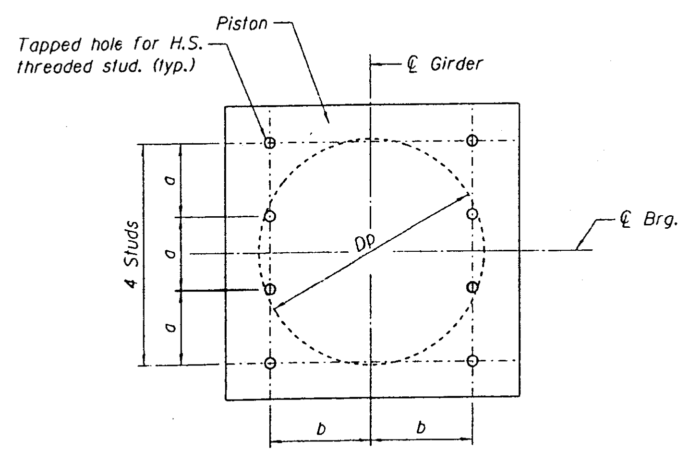
BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotation Bearings, Fixed - 900K	Each	33
* High Load Multi-Rotation Bearings, Fixed - 1000K	Each	11 *
Anchor Bolts, 1¼" ϕ	Each	264

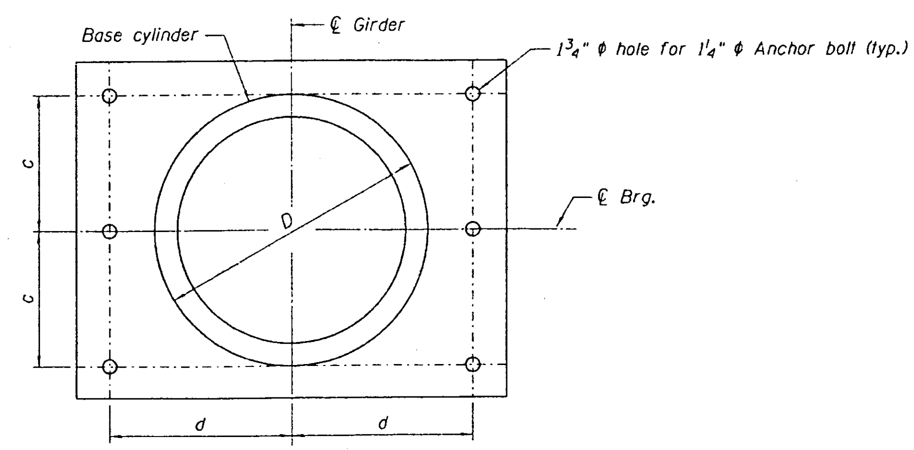
* High Load Multi-Rotation Bearings, Fixed - 1000K at Pier 27.

NOTES:

1. The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M 270 Grade 50W.
2. Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
3. H.S. bolts in bearing assembly shall be galvanized according to AASHTO M298 Class 50.
4. If base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.



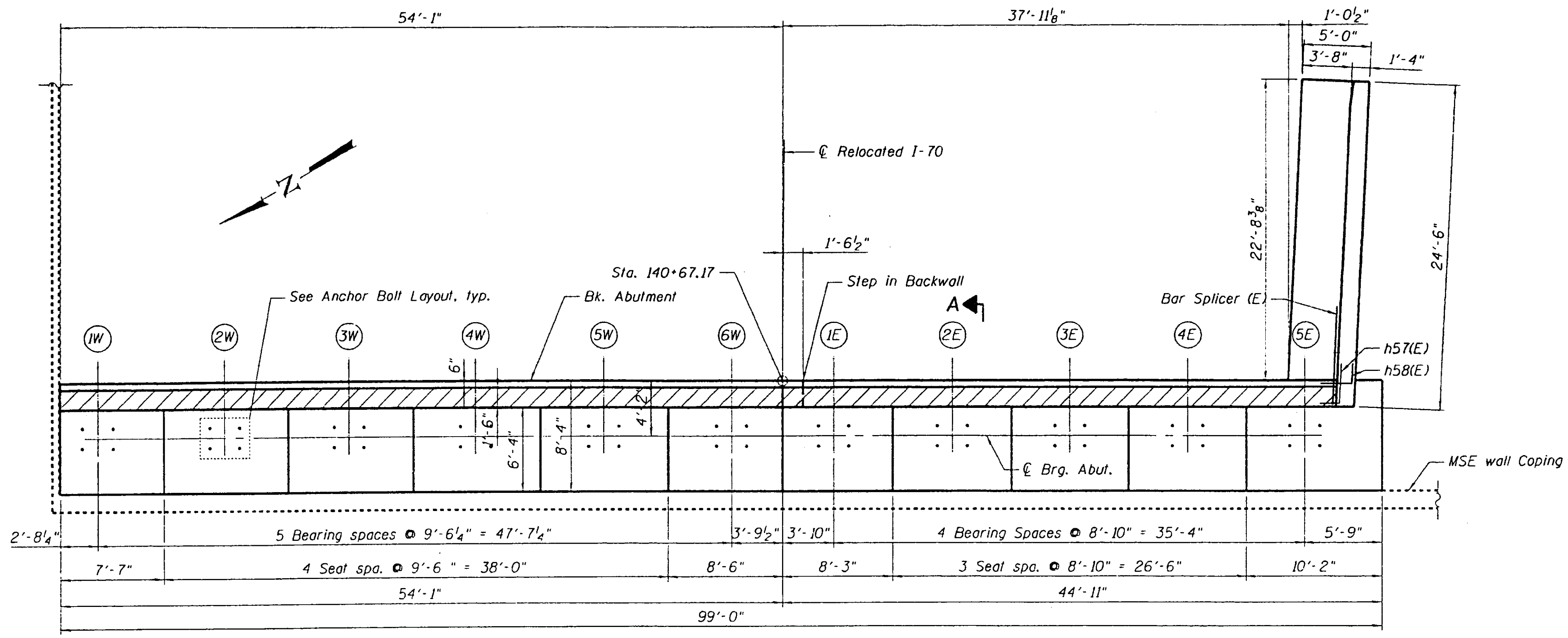
TOP ℘ - PISTON PLAN



BOTTOM BEARING ℘ AND BASE CYLINDER PLAN

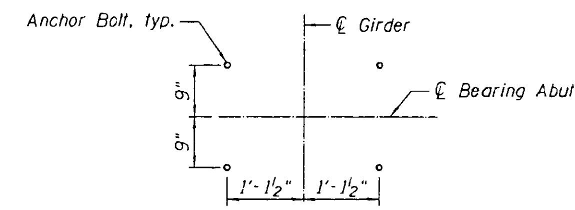
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING DETAILS 2 OF 2
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - KK	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		SHEET NO. S-74 OF S-111
		DATE - 06/04/10	REVISED -		STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	184
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

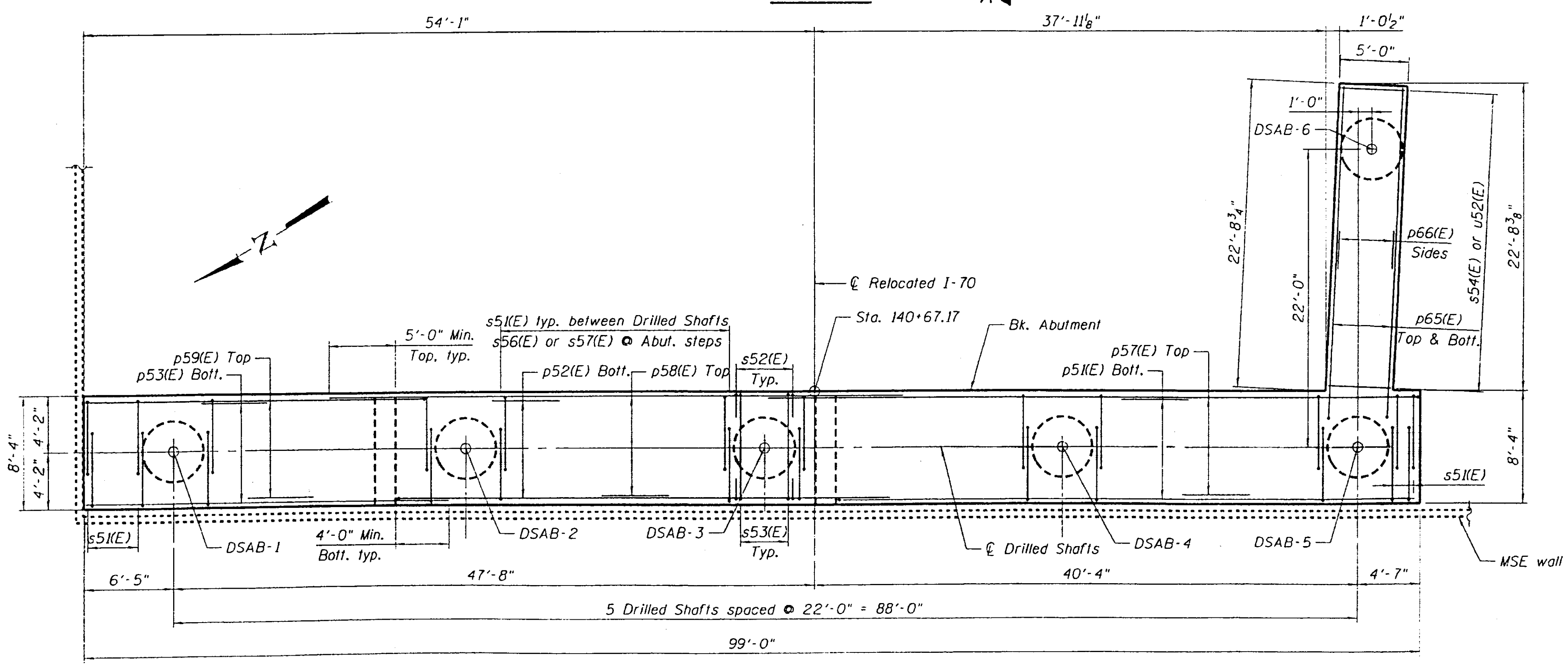


TOP VIEW

BEARING SEAT ELEVATIONS	
Girder	Elevations
1W	435.34
2W	434.83
3W	434.31
4W	433.80
5W	433.28
6W	432.77
1E	433.17
2E	432.69
3E	432.21
4E	431.74
5E	431.26



ANCHOR BOLT LAYOUT



PLAN - E. ABUTMENT CAP

NOTES:

1. Work this sheet with Shts. S-76, S-77 & S-78.
2. Hatched area of abutment backwall to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sht. S-46.
3. For MSE Wall plans, see Shts. W-1, W-2 & W-3.
4. For Anchor Bolt and Bearing details, see Sht. S-73.

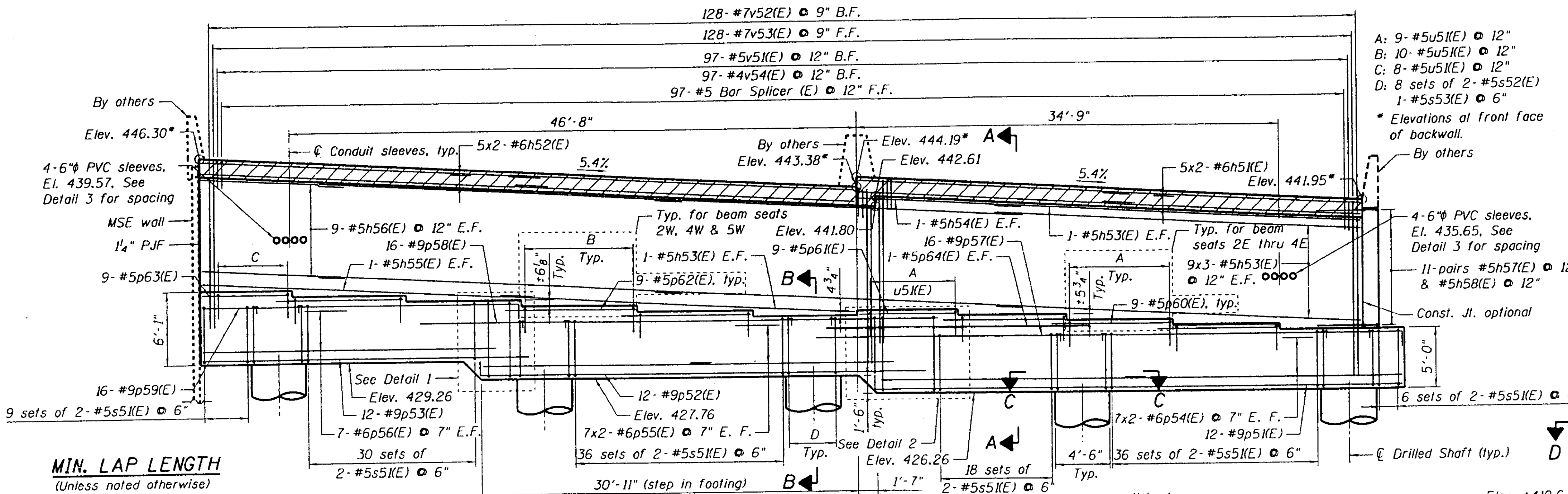
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - KK	REVISED -	
	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -	
		DATE 06/04/10	REVISED -	

EAST ABUTMENT PLAN

I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

SCALE: | SHEET NO. S-75 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	185
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



ELEVATION

(Looking East)

Note A:

9-#14v70(E) & 9-#14v71(E) (Alternating): DSAB-1

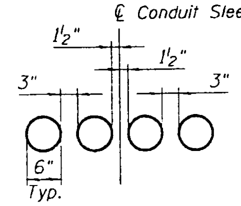
9-#14v72(E) & 9-#14v73(E) (Alternating): DSAB-2 & 3

9-#14v74(E) & 9-#14v75(E) (Alternating): DSAB-4, 5 & 6

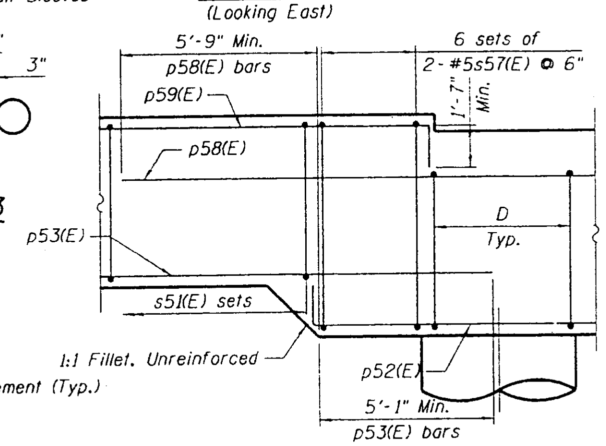
MIN. LAP LENGTH

(Unless noted otherwise)

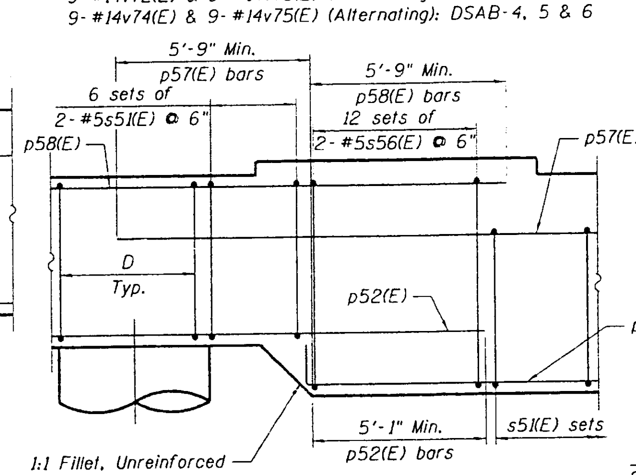
Bar Size	Lap
#4	2'-11"
#5	3'-8"
#6	4'-5"



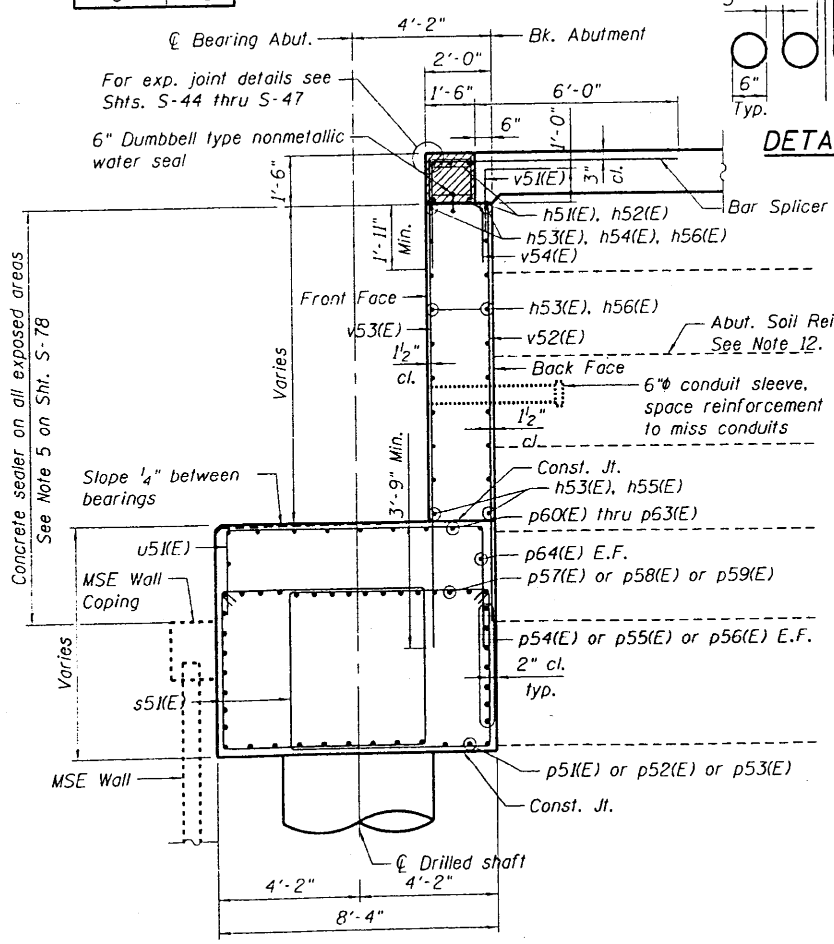
DETAIL 3



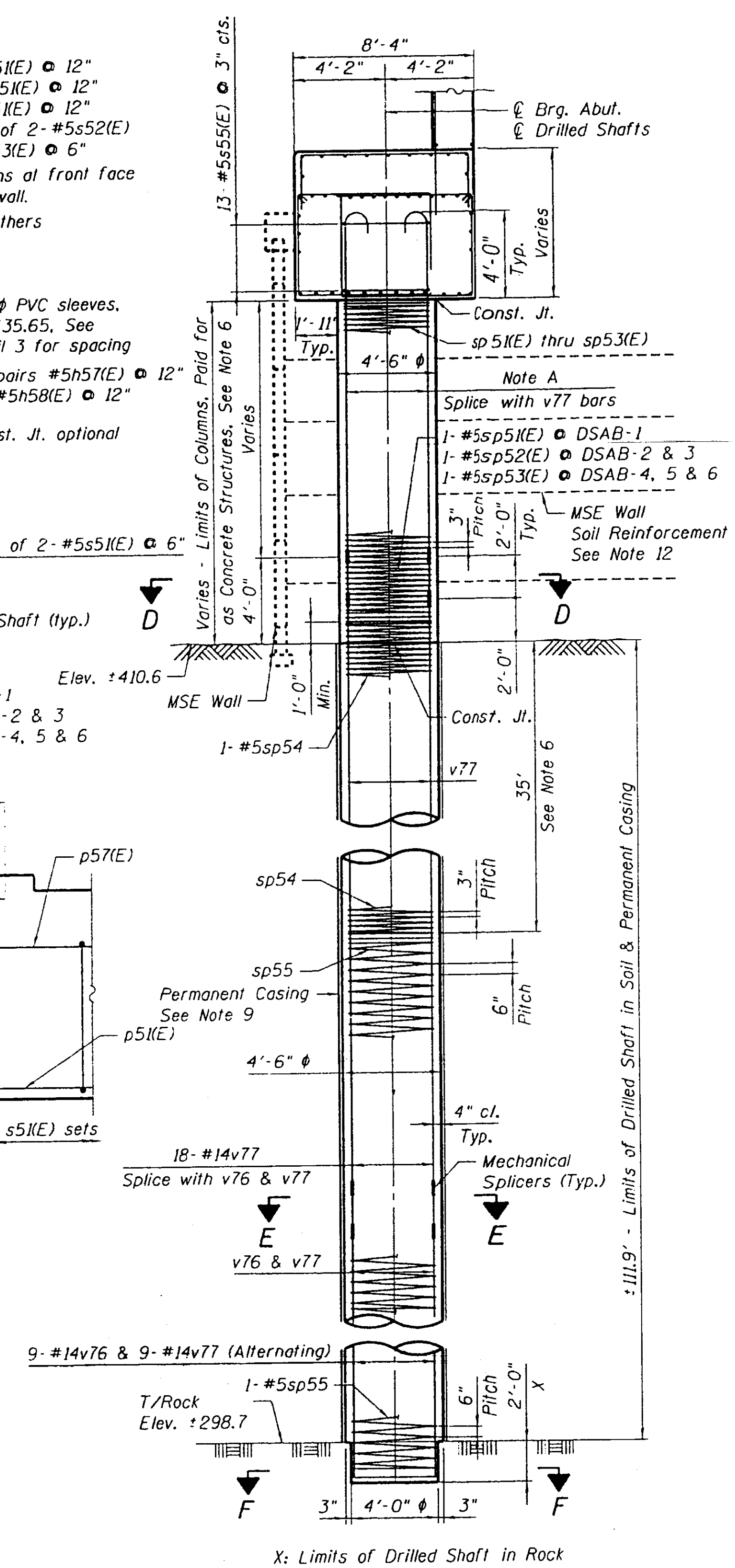
DETAIL 1



DETAIL 2



SECTION A-A



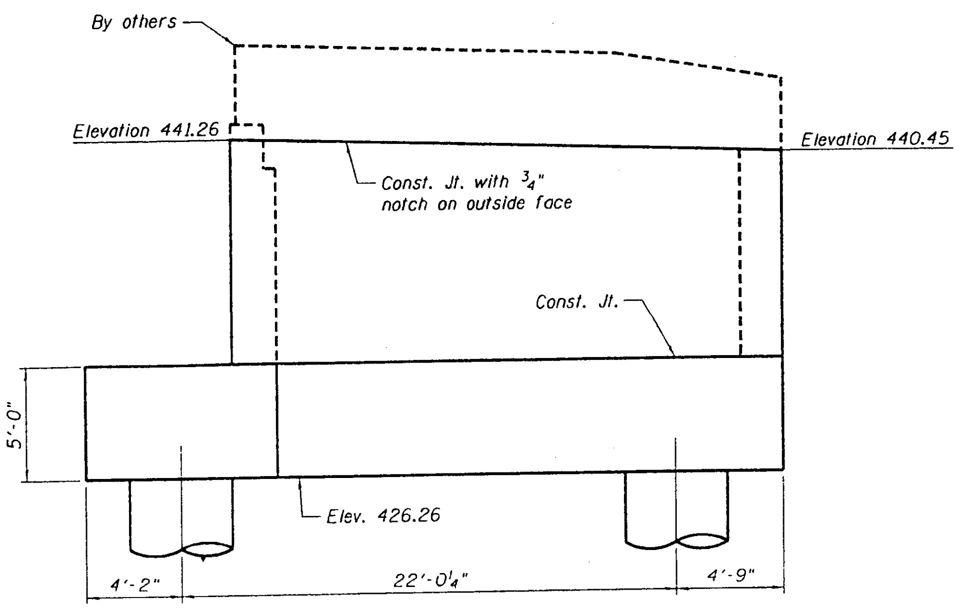
COLUMN/DRILLED SHAFT END VIEW

NOTES:

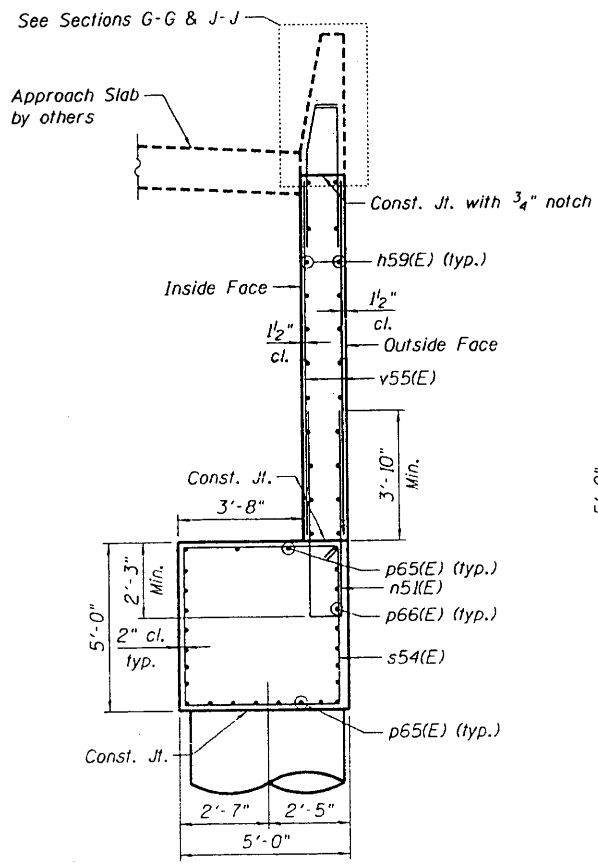
1. Work this sheet with Shts. S-75, S-77 & S-78.
2. Cast steps monolithically with cap.
3. Space top reinforcement in cap to miss anchor bolts.
4. The hooks of v70(E) thru v75(E) bars embedded in abutment cap shall be oriented inward.
5. Splice locations of v or v(E) bars in column/drilled shaft shall be staggered by 2'-0" min. Lap splicing of these bars is not allowed, full-mechanical bar splicers or full-welding of bars is required.
6. Lapping of spiral reinforcement is not allowed within columns and within 35' of T/drilled shafts. Where splicing is necessary, fully-welded or full-mechanical splices are allowed.
7. When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook. Provide min. 4-#4 spacers or equivalent.
8. Continue sp51(E) thru sp53(E) to the bottom of abutment cap stirrup bars.
9. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.
10. The drilled shaft foundation design is based on end bearing in bedrock. The limits shown for Drilled Shaft in Rock is the minimum penetration into bedrock required to achieve the factored resistance used in design (200 ksf).
11. Wet construction methods within the permanent casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.
12. M.S.E. Wall supplier shall design and supply abutment soil reinforcement to resist earth pressure of 40 pcf equivalent fluid weight applied to back of the abutment and backwall plus a longitudinal force of 72 kips transmitted by the bearings to the bridge seats.
13. Construct backwall and backfill prior to erecting structural steel.

FILE NAME =	USER NAME = \$USER\$	DESIGNED - KK	REVISED -	STATE OF ILLINOIS	EAST ABUTMENT DETAILS
\$FILEL\$		DRAWN - KK	REVISED -	DEPARTMENT OF TRANSPORTATION	1 OF 3
TENG & ASSOCIATES, INC. CHICAGO, ILLINOIS	PLOT SCALE = \$SCALE\$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-76 OF S-111 STA. 134+22.00 TO STA.
	PLOT DATE = \$DATE\$	DATE 06/04/10	REVISED -		

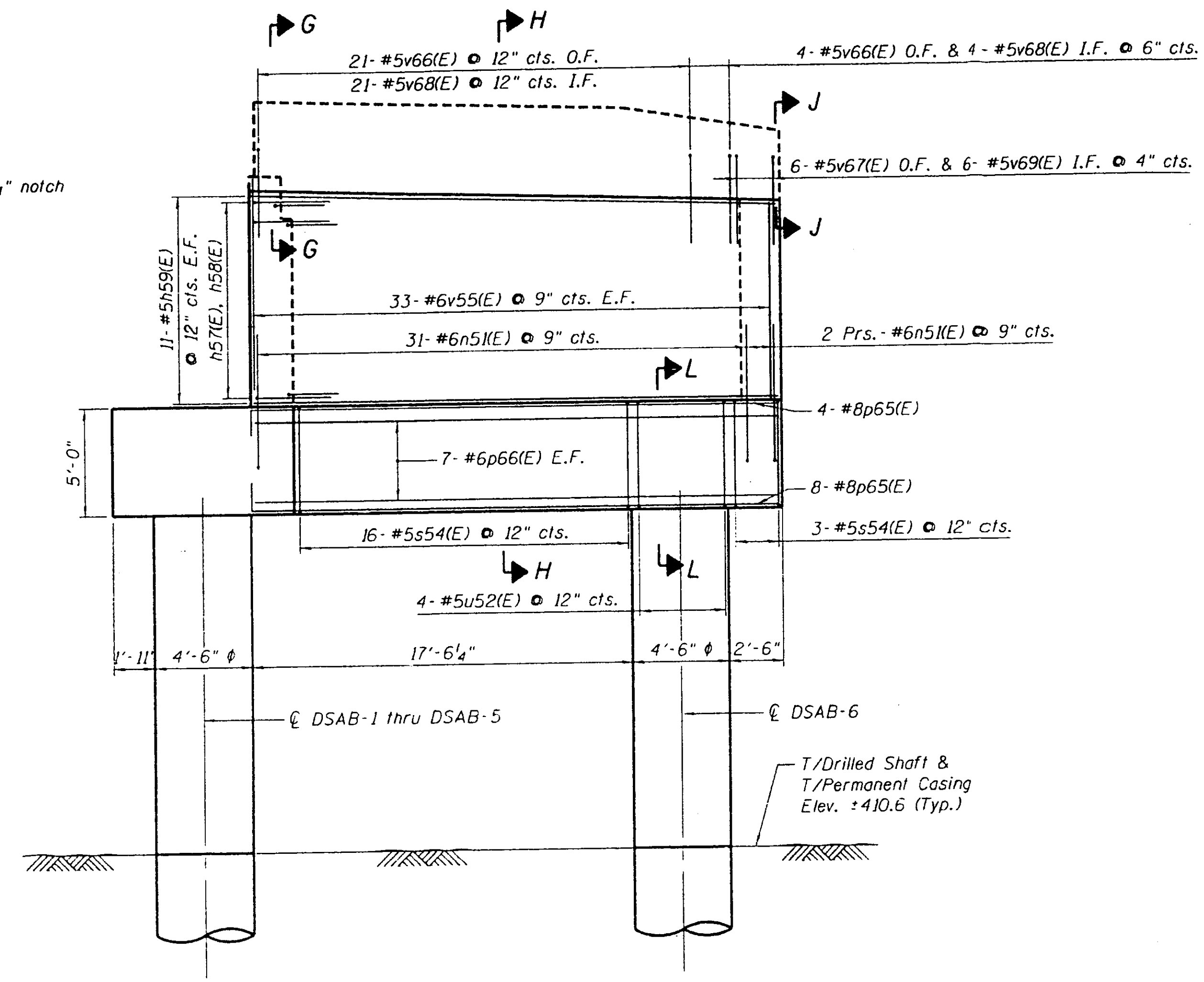
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	186
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



WING WALL ELEVATION
(Looking North - Showing dimensions)

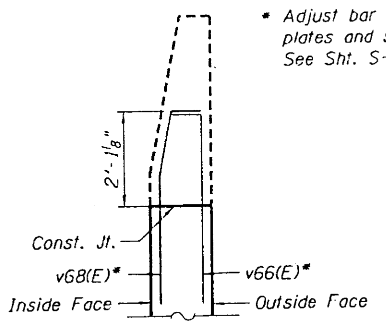


SECTION H-H

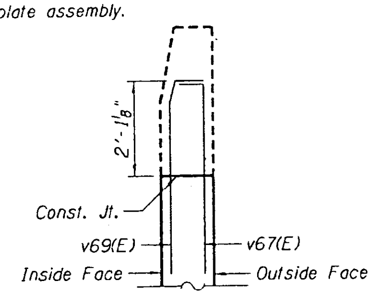


WING WALL & COLUMN ELEVATION
(Looking North - Showing Reinforcement)

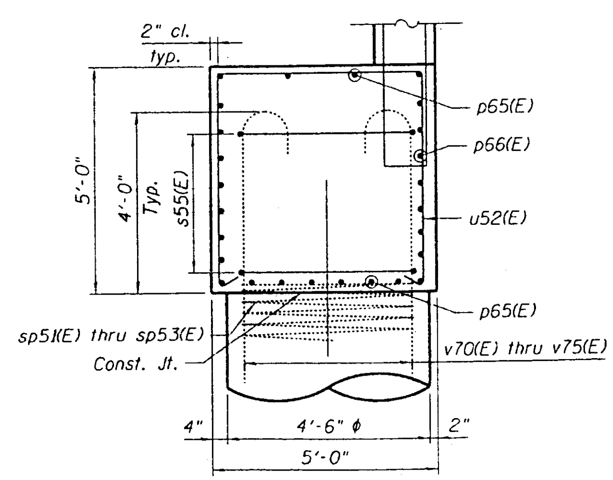
* Adjust bar position as required to clear plates and studs in barrier plate assembly. See Sht. S-47.



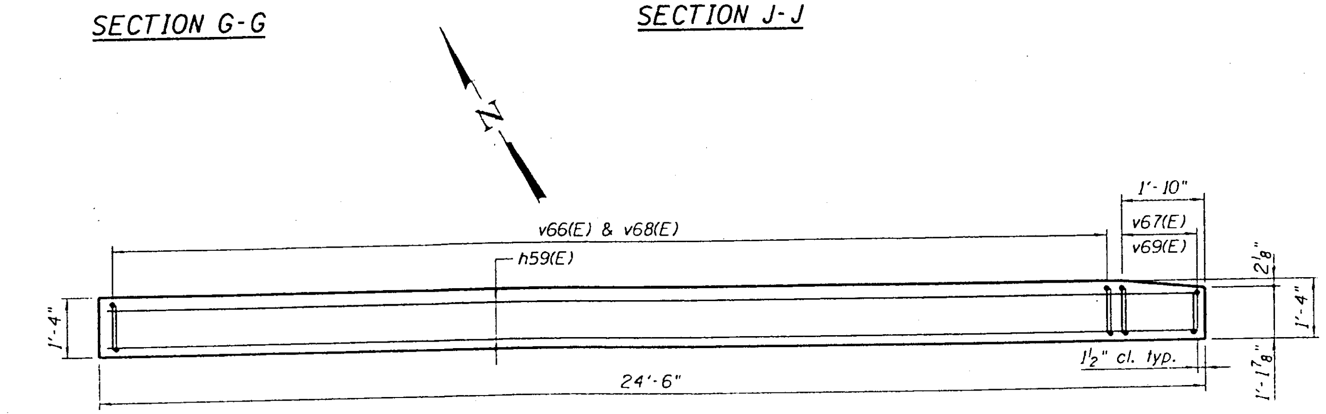
SECTION G-G



SECTION J-J



SECTION L-L



WINGWALL PLAN

NOTES:

1. Work this sheet with Shts. S-75, S-76 & S-78.
2. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
3. All edges shall have ¾" chamfer unless noted otherwise.
4. F.F. indicates Front Face.
   B.F. indicates Back Face.
   I.F. indicates Inside Face.
   O.F. indicates Outside Face.
   E.F. indicates Each Face.

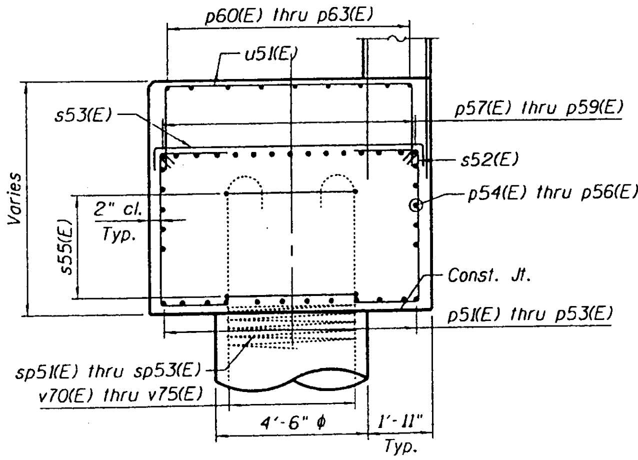
FILE NAME : $FILE$	USER NAME : $USER$	DESIGNED - KK	REVISED -
		DRAWN - KK	REVISED -
TENG & ASSOCIATES, INC. CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

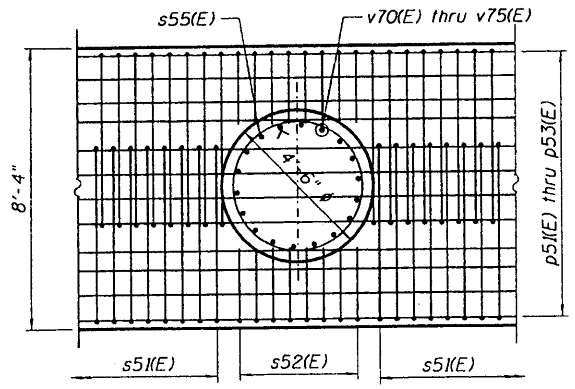
EAST ABUTMENT DETAILS
2 OF 3

SCALE: | SHEET NO. S-77 OF S-111 | STA. 134+22.00 TO STA.

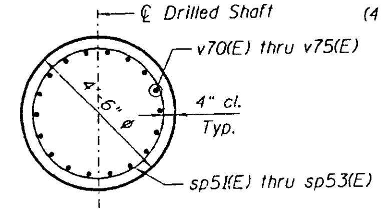
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	187
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



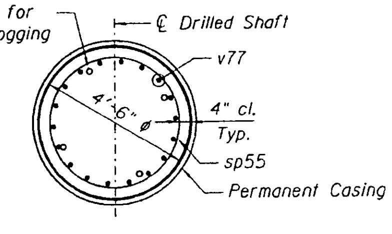
SECTION B-B



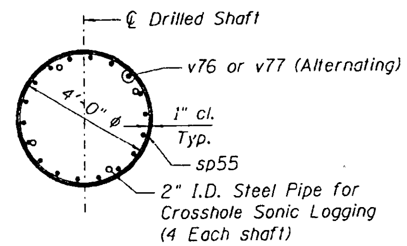
SECTION C-C



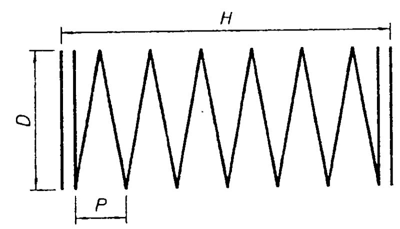
SECTION D-D



SECTION E-E

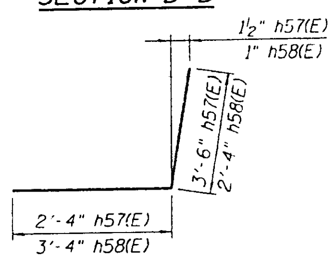


SECTION F-F

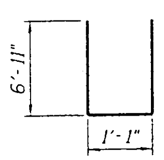


Bar	H	D	P
sp51(E)	18'-8"	3'-10"	3"
sp52(E)	17'-2"	3'-10"	3"
sp53(E)	15'-8"	3'-10"	3"
sp54	35'	3'-10"	3"
sp55	78'-11"	3'-10"	6"

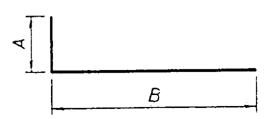
sp1(E) thru sp5 BARS



h57(E) & h58(E) BARS

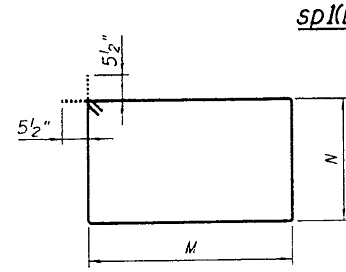


n51(E) BAR



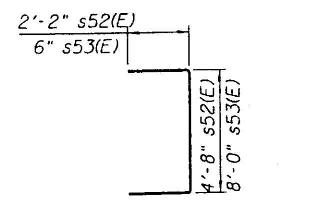
Bar	A	B
p51(E)	1'-6"	43'-4"
p52(E)	1'-6"	37'-7"
p57(E)	1'-7"	48'-11"
p59(E)	1'-7"	26'-2"
p65(E)	1'-4"	24'-2"

p51(E), p52(E), p57(E) p59(E) & p65(E)

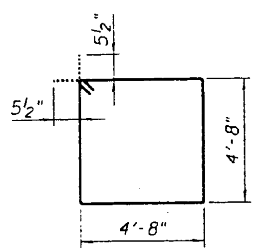


Bar	M	N
s51(E)	5'-3"	4'-8"
s56(E)	5'-3"	6'-7"
s57(E)	5'-3"	6'-3"

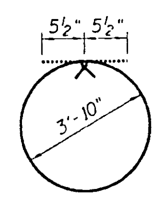
s51(E), s56(E) & s57(E) BARS



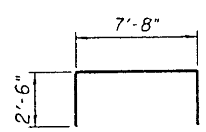
s52(E) & s53(E) BARS



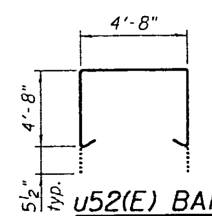
s54(E) BAR



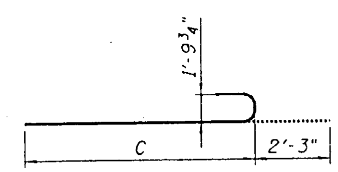
s55(E) BAR



u51(E) BAR

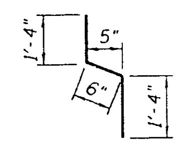


u52(E) BAR



Bar	C
v70(E)	20'-8"
v71(E)	18'-8"
v72(E)	19'-2"
v73(E)	17'-2"
v74(E)	17'-8"
v75(E)	15'-8"

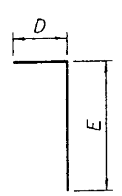
v70(E) thru v75(E) BARS



v54(E) BAR

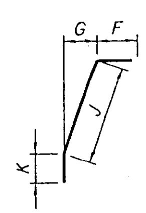
NOTES:

1. Work this sheet with Shts. S-75, S-76 & S-77.
2. The cost of steel pipes, pipe caps, and couplers for crosshole sonic logging shall be included in Drilled Shaft in Soil and Drilled Shaft in Rock.
3. v(E) bars in the column/drilled shaft shall be placed as shown to provide space for p(E) bars in cap.
4. Quantities and reinforcement detailing shown are based on the top of shaft and estimated top of rock elevations shown and may change based on the actual elevations encountered at each shaft.
5. Concrete Sealer shall be applied to all exposed abutment areas including the bearing seats and steps, front face of backwall, top 1 ft. of the abutment face, north side of the backwall, and north and south face of abutment.
6. The exposed end of v51(E) bars are to be protected. The unused half of the abutment bar splicers to be incorporated into the approach slab are to be stored by the Contractor at a location as directed by the Engineer.



Bar	D	E
v51(E)	1'-11"	1'-10"
v66(E)	10"	4'-0"
v67(E)	8"	4'-0"

v51(E), v66(E) & v67(E) BARS



Bar	F	G	J	K
v68(E)	10"	3"	1'-6"	2'-7"
v69(E)	8"	1"	6"	3'-6"

v68(E) & v69(E) BARS

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	331.5
Reinforcement Bars	Pound	119,150
Reinforcement Bars, Epoxy Coated	Pound	61,530
Bar Splicer	Each	97
Permanent Casing	Foot	672
Drilled Shaft in Soil	Cu. Yd.	396
Drilled Shaft in Rock	Cu. Yd.	6
Concrete Sealer	Sq. Ft.	1727
Mechanical Splicers	Each	216
Crosshole Sonic Logging	Each	1

BAR LIST

Bar	No.	Size	Length	Shape
h51(E)	10	#6	22'-10"	
h52(E)	10	#6	29'-1"	
h53(E)	58	#5	30'-0"	
h54(E)	2	#5	14'-10"	
h55(E)	2	#5	27'-5"	
h56(E)	18	#5	16'-3"	
h57(E)	11	#5	5'-10"	
h58(E)	11	#5	5'-8"	
h59(E)	22	#5	24'-3"	
n51(E)	33	#6	14'-11"	
p51(E)	12	#9	44'-10"	
p52(E)	12	#9	39'-1"	
p53(E)	12	#9	28'-1"	
p54(E)	28	#6	25'-3"	
p55(E)	28	#6	19'-8"	
p56(E)	14	#6	25'-7"	
p57(E)	16	#9	50'-6"	
p58(E)	16	#9	44'-0"	
p59(E)	16	#9	27'-9"	
60(E)	27	#5	10'-10"	
p61(E)	9	#5	7'-11"	
p62(E)	27	#5	11'-6"	
p63(E)	9	#5	7'-2"	
p64(E)	2	#5	19'-10"	
p65(E)	12	#8	25'-6"	
p66(E)	14	#6	24'-2"	
s51(E)	282	#5	20'-9"	
s52(E)	80	#5	9'-0"	
s53(E)	40	#5	9'-0"	
s54(E)	19	#5	19'-7"	
s55(E)	78	#5	13'-0"	
s56(E)	24	#5	24'-7"	
s57(E)	12	#5	23'-11"	
* sp51(E)	1	#5	18'-8"	
* sp52(E)	2	#5	17'-2"	
* sp53(E)	3	#5	15'-8"	
* sp54	6	#5	35'-0"	
* sp55	6	#5	78'-11"	
u51(E)	74	#5	12'-8"	
u52(E)	4	#5	14'-11"	
v51(E)	97	#5	3'-9"	
v52(E)	128	#7	13'-2"	
v53(E)	128	#7	14'-8"	
v54(E)	97	#4	3'-2"	
v55(E)	66	#6	8'-11"	
v66(E)	25	#5	4'-10"	
v67(E)	6	#5	4'-8"	
v68(E)	25	#5	4'-11"	
v69(E)	6	#5	4'-8"	
v70(E)	9	#14	22'-11"	
v71(E)	9	#14	20'-11"	
v72(E)	18	#14	21'-5"	
v73(E)	18	#14	19'-5"	
v74(E)	27	#14	19'-11"	
v75(E)	27	#14	17'-11"	
v76	54	#14	57'-0"	
v77	162	#14	58'-11"	

* Height of the spiral (not length) is provided in the Bar List.

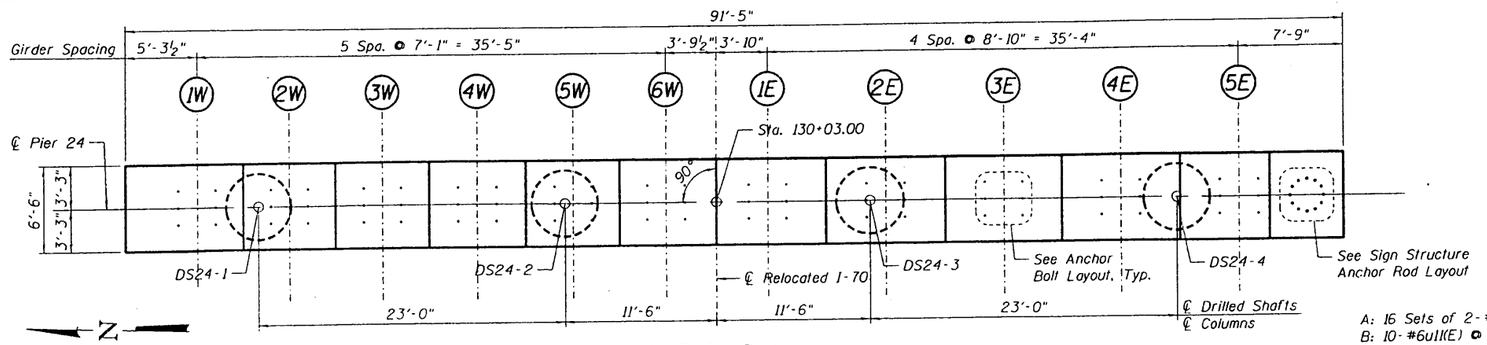
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - KK	REVISED -
		DRAWN - KK	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

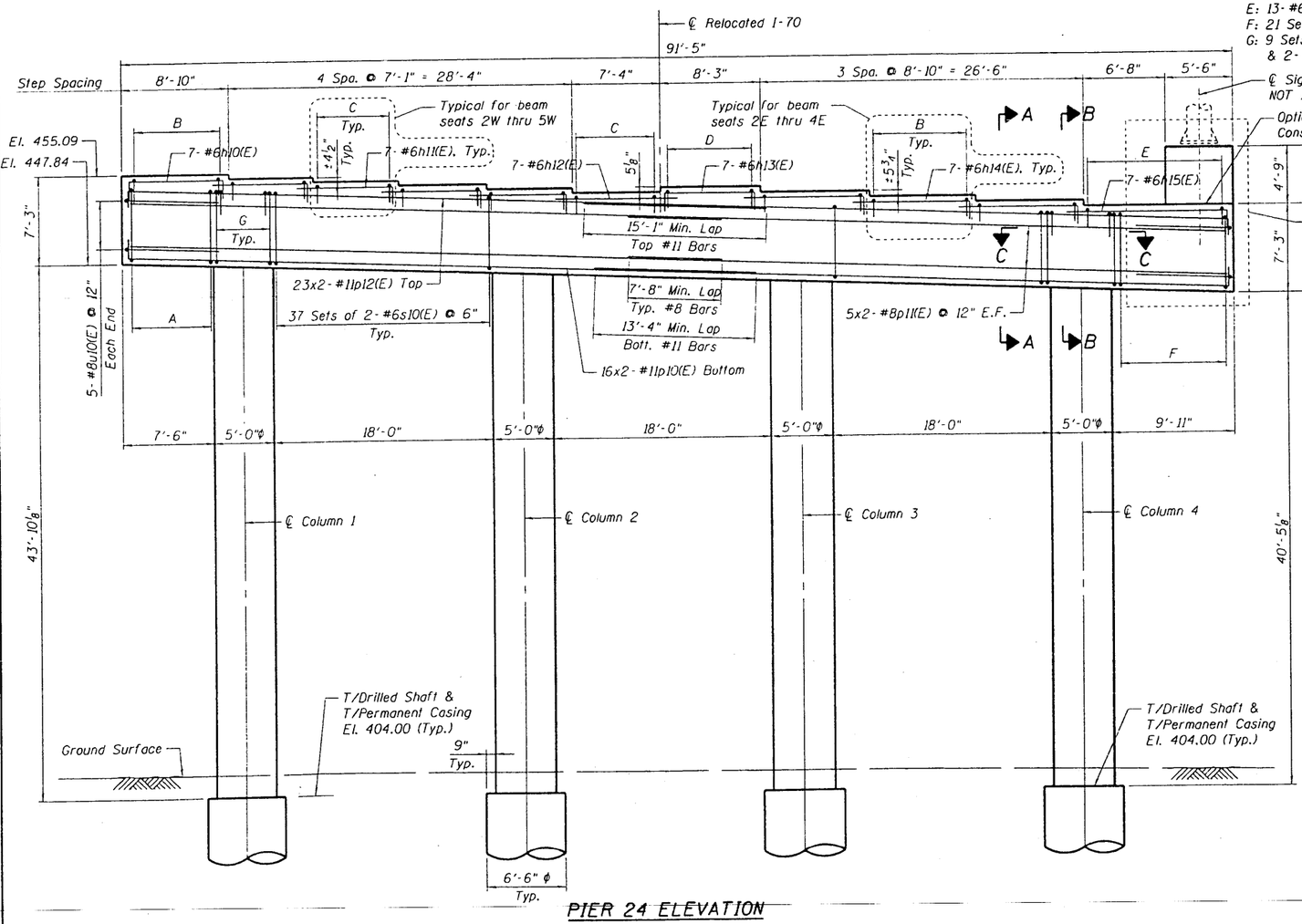
EAST ABUTMENT DETAILS
3 OF 3

SCALE: | SHEET NO. S-78 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	188
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



PIER 24 PLAN



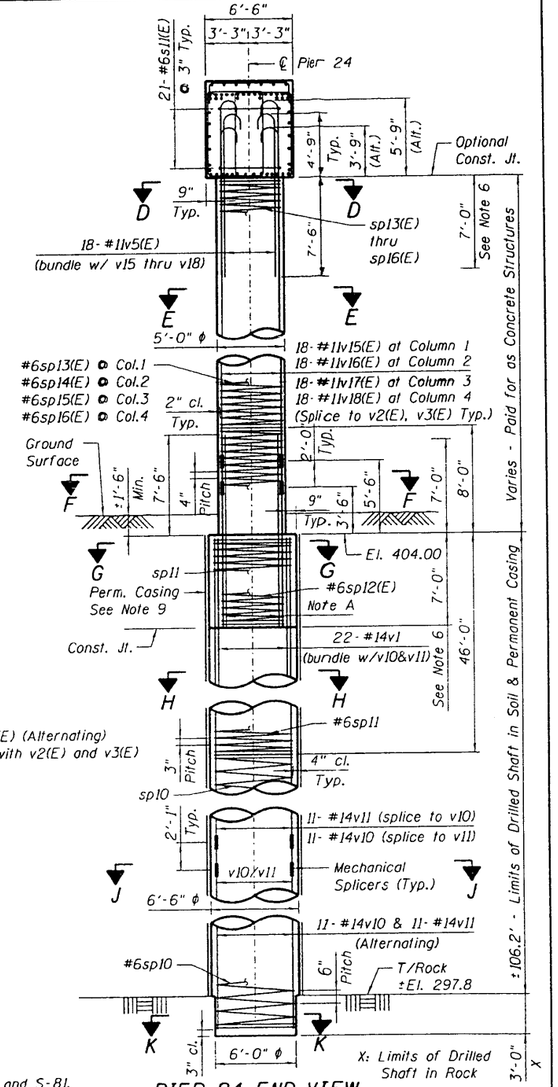
PIER 24 ELEVATION

(Looking East)

BEARING SEAT ELEVATIONS

Girder	Elev.
1W	455.09
2W	454.70
3W	454.33
4W	453.95
5W	453.56
6W	453.18
1E	453.58
2E	453.11
3E	452.64
4E	452.16
5E	451.68

A: 16 Sets of 2- #6s10(E) @ 6"
B: 10- #6u11(E) @ 12"
C: 8- #6u11(E) @ 12"
D: 9- #6u11(E) @ 12"
E: 13- #6u11(E) @ 12"
F: 21 Sets of 2- #6s10(E) @ 6"
G: 9 Sets of 1- #6s12(E) & 2- #6s13(E) @ 6"



Note A:
9- #11v2(E) & 9- #11v3(E) (Alternating)
18- #11v4(E) - bundle with v2(E) and v3(E)

PIER 24 END VIEW

NOTES:

1. Work this sheet with Shts. S-80 and S-81.
2. Cast steps monolithically with cap.
3. Space top reinforcement in cap to miss anchor bolts.
4. The hooks of v15(E) thru v18(E) bars embedded in pier cap shall be oriented inward.
5. Splice locations of v and v(E) bars shall be staggered by 2'-0" min. Lap splicing of v and v(E) bars is not allowed, full-mechanical bar splicers or full-welding of bars is required.
6. Lapping of spiral reinforcement is not allowed within 7'-0" of T/Column and B/Column in either the columns or drilled shafts. Where splicing is necessary, fully-welded or full-mechanical splices are allowed.
7. Continue sp13(E) thru sp16(E) to bottom of pier cap stirrup bars.
8. When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook. Provide min. 4- #4 spacers or equivalent.
9. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.
10. The drilled shaft foundation design is based on end bearing in bedrock. The limits shown for Drilled Shaft in Rock is the minimum penetration required to achieve the factored resistance used in design (200 ksf).
11. Wet construction methods within the permanent casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.

..\B82318-CONN-85-001-PLDGN ..\B82318-CONN-99-001-BD.DGN
6-8-2010, 10:45:42 BONDHUD \\FS-0041\AM\VAULT\D-TRANS.07\2282\20868-001\STRUCT\CAD\01 DESIGN\B82318\SHEET\B82318-CONN-85-001-SHT-PLDGN

TENG ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

FILE NAME : $FILE$ | USER NAME : $USER$ | PLOT SCALE : $SCALE$ | PLOT DATE : $DATE$

DESIGNED - MDB | DRAWN - MDB | CHECKED - TCU | DATE - 06/04/10

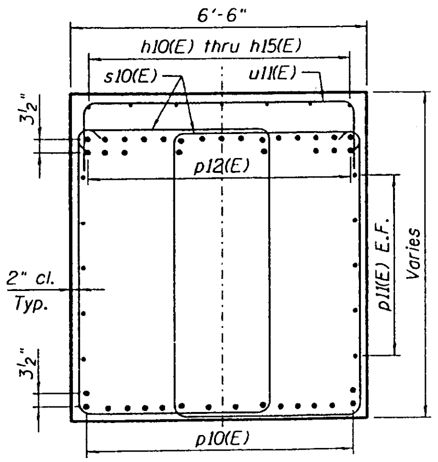
REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

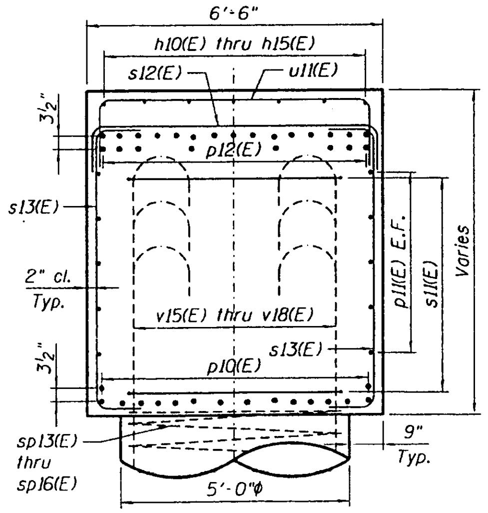
PIER 24 PLAN & ELEVATION

SCALE: | SHEET NO. 3 OF 5 SHTS | STA. 134+22.00 TO STA.

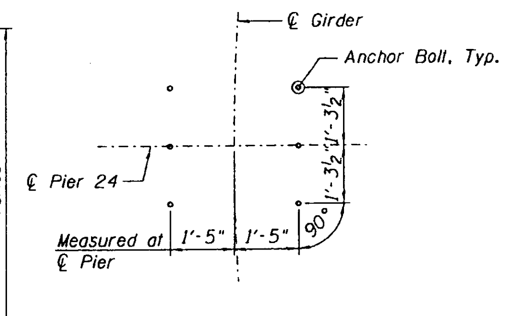
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	B2-2-1HVB	ST. CLAIR	285	189
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



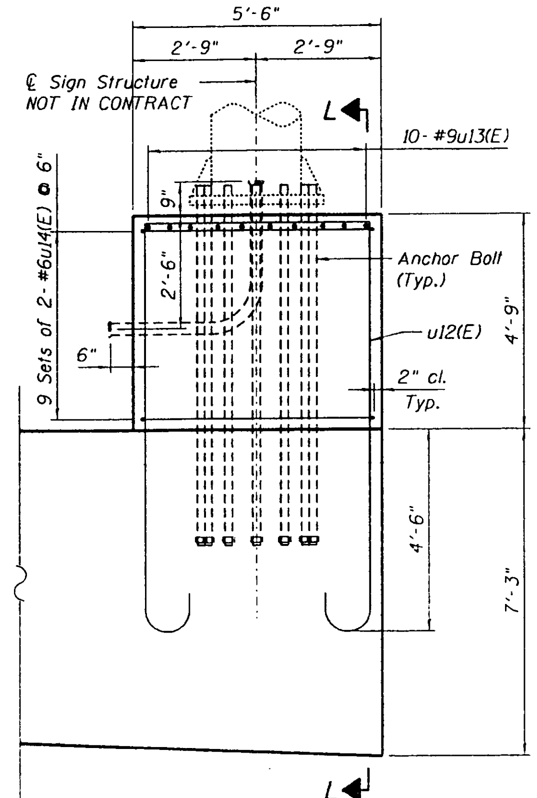
SECTION A-A



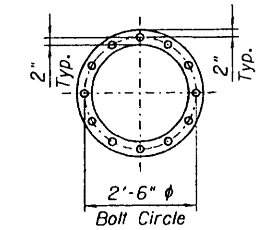
SECTION B-B



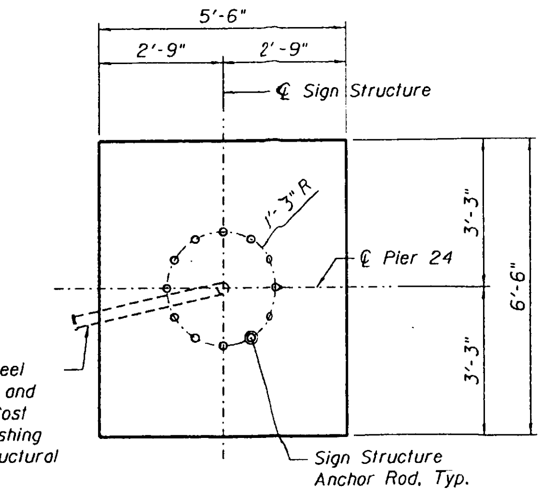
ANCHOR BOLT LAYOUT



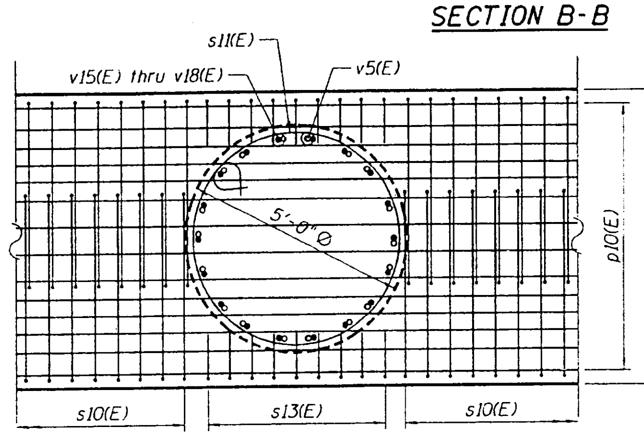
DETAIL I



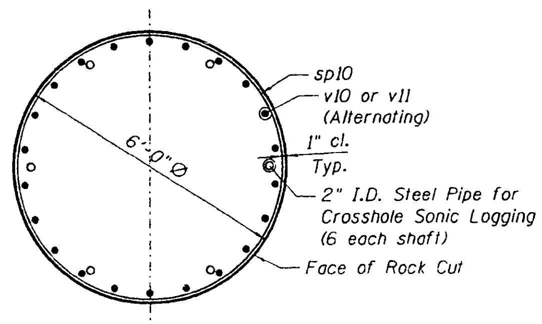
SUGGESTED POSITIONING PLATE



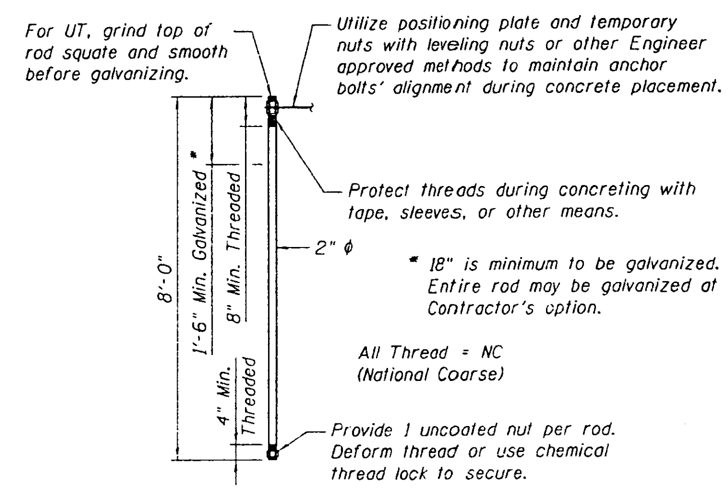
SIGN STRUCTURE ANCHOR ROD LAYOUT



SECTION C-C

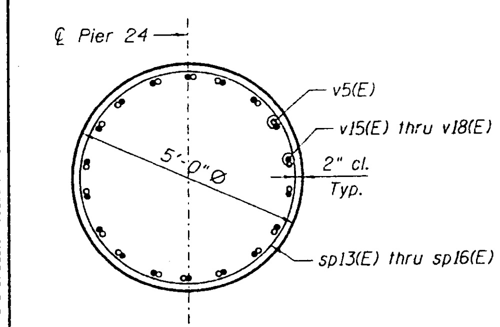


SECTION K-K

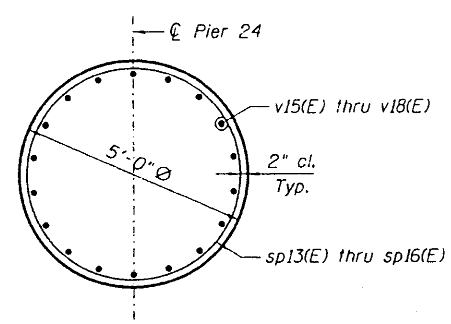


SIGN STRUCTURE ANCHOR ROD DETAIL

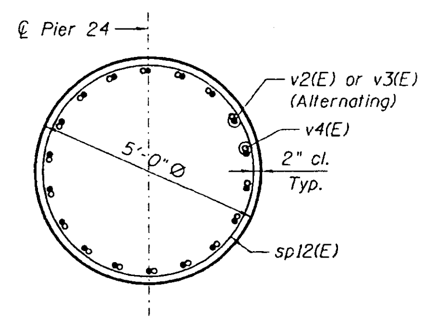
Anchor rods shall conform to AASHTO M314 Grade 105 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum*) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, using a straight beam, ½" φ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Furnishing and Erecting Structural Steel (Pounds). Anchor rods, nuts and positioning plate shall be paid for as Furnishing and Erecting Structural Steel (Pounds).



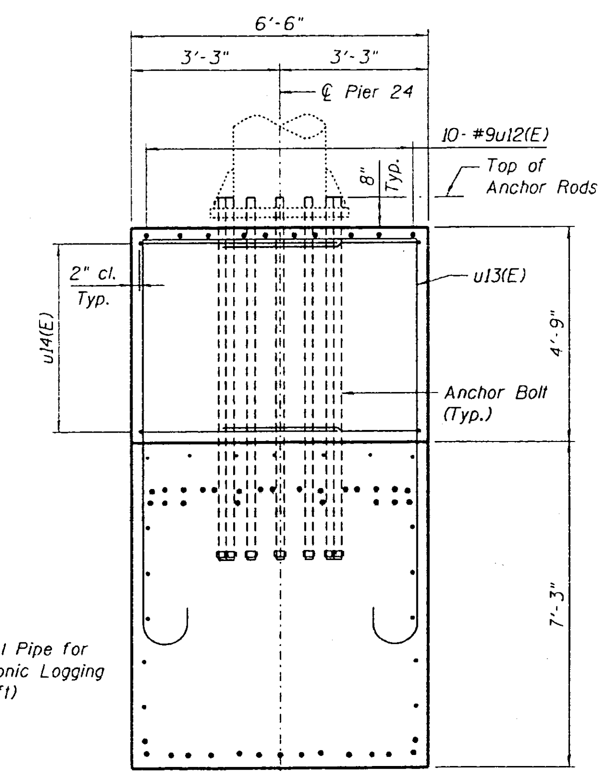
SECTION D-D



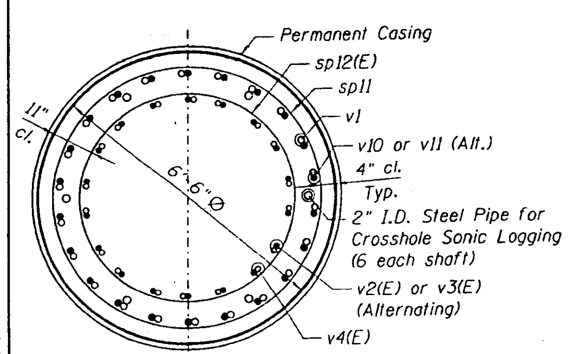
SECTION E-E



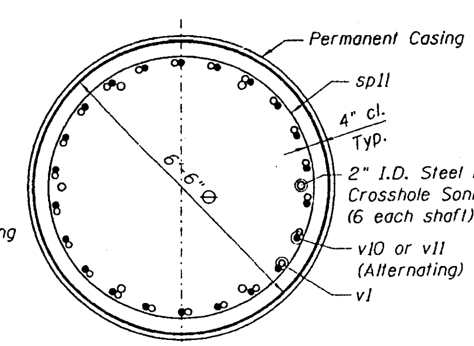
SECTION F-F



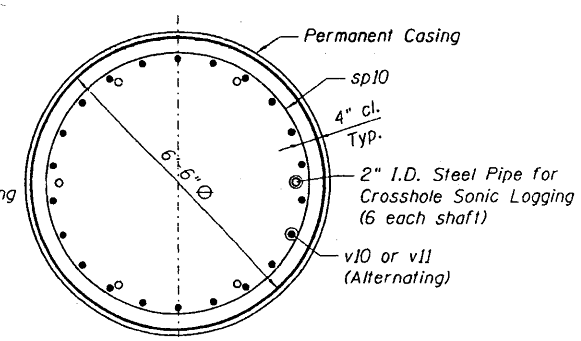
SECTION L-L



SECTION G-G



SECTION H-H



SECTION J-J

NOTES:

1. Work this sheet with Shts. S-79 & S-81.
2. The cost of steel pipes, pipe caps and couplers for crosshole sonic logging shall be included in Drilled Shaft in Soil and Drilled Shaft in Rock.
3. v(E) bars in columns shall be placed as shown to provide space for p10(E) bars in cap.
4. For Anchor Bolt and bearing details, see Sht. S-74.
5. Sign structure to be furnished and installed in future contract. Anchor rods and conduit to be installed in this contract.

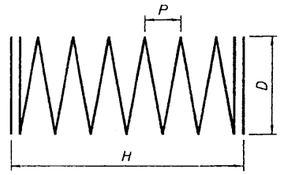
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - MDB	REVISED -
		DRAWN - MDB	REVISED -
TENG & ASSOCIATES, INC. CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

PIER 24 DETAILS

SCALE: | SHEET NO. S-80 OF S-111 | STA. 134+22.00 TO STA.

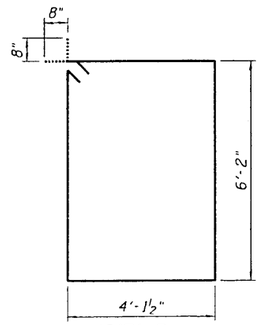
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	190
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



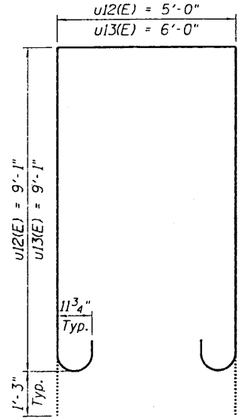
sp10 thru sp16(E) Bars

Bar	H	D	P	Length*
sp10	63'-0"	5'-10"	6"	2,339'
sp11	45'-10"	5'-10"	3"	3,379'
sp12(E)	15'-0"	4'-8"	4"	695'
sp13(E)	35'-8"	4'-8"	4"	1,592'
sp14(E)	34'-10"	4'-8"	4"	1,555'
sp15(E)	33'-11"	4'-8"	4"	1,516'
sp16(E)	33'-1"	4'-8"	4"	1,479'

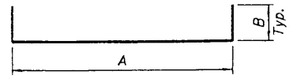
* For Information Only - length calculated as continuous bar (ignoring splices).



s10(E) Bars

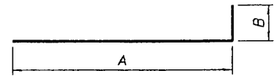


u12(E) & u13(E) Bars



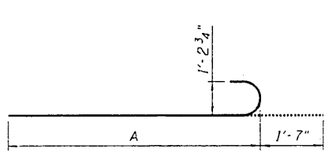
h10(E), h13(E), s12(E), s13(E), u10(E), u11(E), u14(E) Bars

Bar	A	B	Length
h10(E)	8'-6"	1'-6"	11'-6"
h13(E)	7'-11"	1'-6"	10'-11"
s12(E)	6'-2"	1'-0"	8'-2"
s13(E)	6'-2"	1'-0"	8'-2"
u10(E)	6'-0"	7'-9"	21'-6"
u11(E)	6'-2"	1'-6"	9'-2"
u14(E)	5'-2"	4'-4"	13'-10"



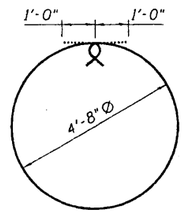
h11(E), h14(E), h15(E), p10(E), p12(E) Bars

Bar	A	B	Length
h11(E)	8'-5"	1'-6"	9'-11"
h14(E)	10'-2"	1'-6"	11'-8"
h15(E)	13'-6"	1'-6"	15'-0"
p10(E)	52'-2"	2'-0"	54'-2"
p12(E)	53'-1"	2'-0"	55'-1"



v15(E) - v18(E) & v5(E) Bars

Bar	A	Length
v15(E)	43'-9"	45'-4"
v16(E)	42'-11"	44'-6"
v17(E)	42'-0"	43'-7"
v18(E)	41'-2"	42'-9"
v5(E)	12'-3"	13'-10"



s11(E) Bars

PIER 24 BAR LIST

Bar	No.	Size	Length	Shape
h10(E)	7	#6	11'-6"	
h11(E)	28	#6	9'-11"	
h12(E)	7	#6	10'-4"	
h13(E)	7	#6	10'-11"	
h14(E)	21	#6	11'-8"	
h15(E)	7	#6	15'-0"	
p10(E)	32	#11	54'-2"	
p11(E)	20	#8	49'-4"	
p12(E)	46	#11	55'-1"	
s10(E)	296	#6	21'-11"	
s11(E)	84	#6	16'-8"	
s12(E)	36	#6	8'-2"	
s13(E)	72	#6	8'-2"	
sp10	4	#6	63'-0"	*
sp11	4	#6	45'-10"	*
sp12(E)	4	#6	15'-0"	*
sp13(E)	1	#6	35'-8"	*
sp14(E)	1	#6	34'-10"	*
sp15(E)	1	#6	33'-11"	*
sp16(E)	1	#6	33'-1"	*
u10(E)	10	#8	21'-6"	
u11(E)	102	#6	9'-2"	
u12(E)	10	#9	25'-8"	
u13(E)	10	#9	26'-8"	
u14(E)	18	#6	13'-10"	
v10	88	#14	53'-4"	
v11	88	#14	55'-5"	
v1	88	#14	38'-10"	
v2(E)	36	#11	10'-6"	
v3(E)	36	#11	12'-6"	
v4(E)	72	#11	14'-6"	
v15(E)	18	#11	45'-4"	
v16(E)	18	#11	44'-6"	
v17(E)	18	#11	43'-7"	
v18(E)	18	#11	42'-9"	
v5(E)	72	#11	13'-10"	

* Length is height of spiral

PIER 24 BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	52
Concrete Structures	Cu. Yd.	287.5
Furnishing and Erecting Structural Steel	Pound	1,150
Reinforcement Bars	Pound	133,700
Reinforcement Bars, Epoxy Coated	Pound	89,380
Permanent Casing	Foot	425
Drilled Shaft in Soil	Cu. Yd.	523
Drilled Shaft in Rock	Cu. Yd.	13
Mechanical Splicers	Each	160
Crosshole Sonic Logging	Each	1

NOTES:

1. Work this sheet with Shts. S-79 & S-80.
2. The quantities and reinforcement detailing shown are based on the top of shaft and estimated top of rock elevations shown and may change based on the actual elevations encountered at each shaft.

N:\082\0318-CONN-95-001-PLDN_\082\0318-CONN-95-001-BO.DGN
8-03-2010, 12:49:57
BONDHUJO \\FS-0044\VM\VAULT-TRANS_07\22M2\20868-B01\STRUCT\CAD\01 DESIGN\082\318\SHEET\082\0318-CONN-95-001-SH1-PI.DGN

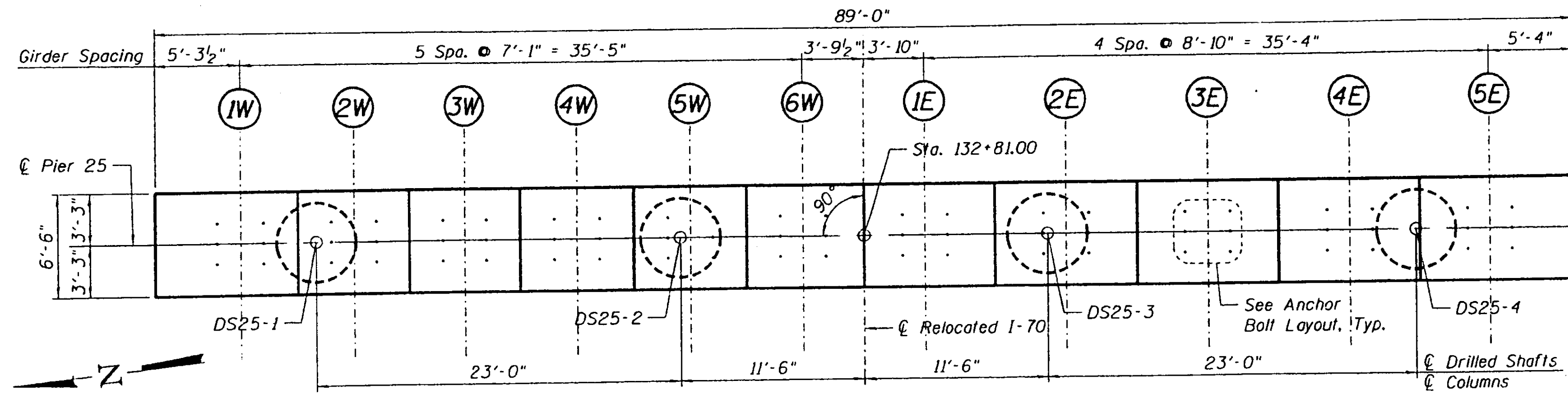
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - MDB	REVISED -
		DRAWN - MDB	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

PIER 24 BAR LIST

SCALE: | SHEET NO. S-81 OF S-111 | STA. ~~134+22.00~~ TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	191
SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

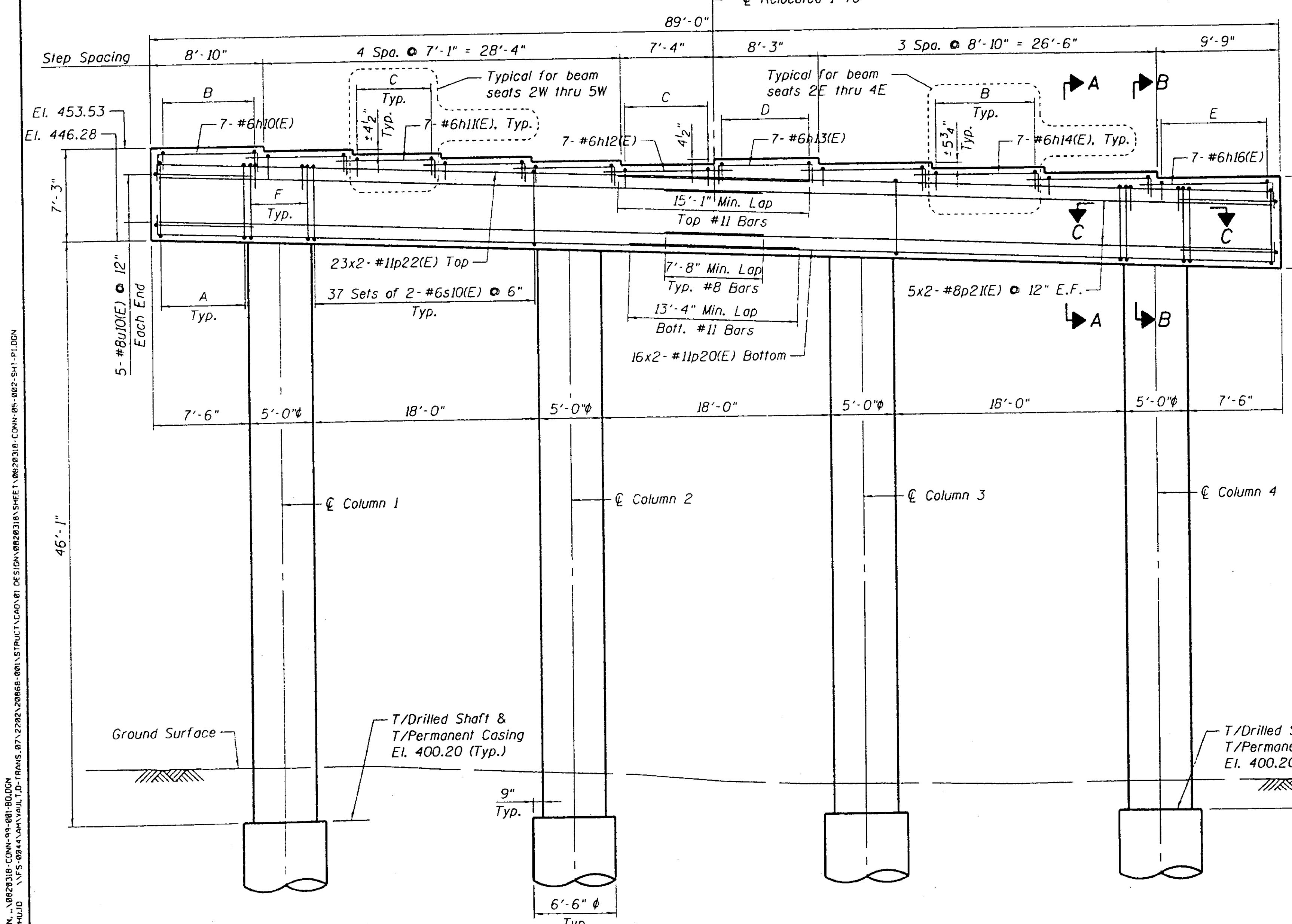


PIER 25 PLAN

BEARING SEAT ELEVATIONS

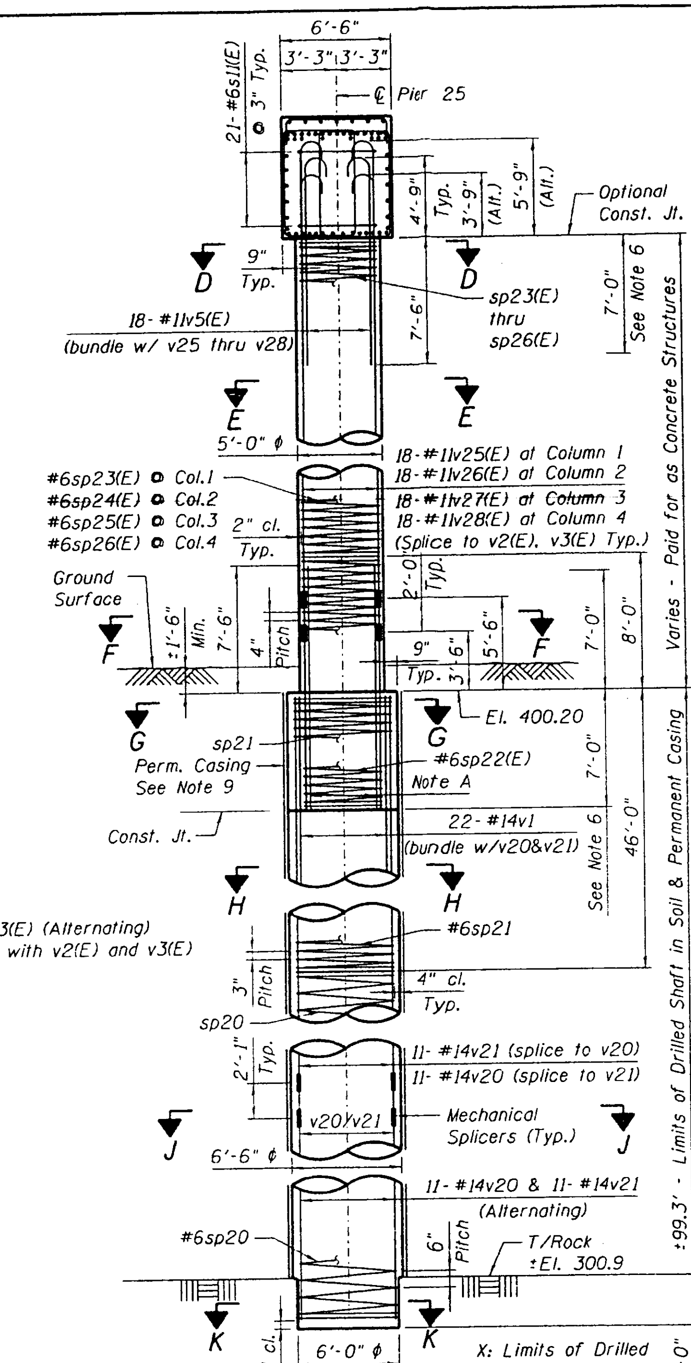
Girder	Elev.
1W	453.53
2W	453.15
3W	452.78
4W	452.39
5W	452.01
6W	451.63
1E	452.01
2E	451.54
3E	451.07
4E	450.59
5E	450.11

A: 16 Sets of 2-#6s10(E) @ 6"
B: 10-#6u11(E) @ 12"
C: 8-#6u11(E) @ 12"
D: 9-#6u11(E) @ 12"
E: 11-#6u11(E) @ 12"
F: 9 Sets of 1-#6s12(E) & 2-#6s13(E) @ 6"



PIER 25 ELEVATION

(Looking East)



PIER 25 END VIEW

Note A:
9-#11v2(E) & 9-#11v3(E) (Alternating)
18-#11v4(E) - bundle with v2(E) and v3(E)

NOTES:

1. Work this sheet with Sht. S-83.
2. Cast steps monolithically with cap.
3. Space top reinforcement in cap to miss anchor bolts.
4. The hooks of v25(E) thru v28(E) bars embedded in pier cap shall be oriented inward.
5. Splice locations of v and v(E) bars shall be staggered by 2'-0" min. Lap splicing of v and v(E) bars is not allowed, full-mechanical bar splicers or full-welding of bars is required.
6. Lapping of spiral reinforcement is not allowed within 7'-0" of T/Column and B/Column in either the columns or drilled shafts. Where splicing is necessary, fully-welded or full-mechanical splices are allowed.
7. Continue sp23(E) thru sp26(E) to bottom of pier cap stirrup bars.
8. When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook. Provide min. 4-#4 spacers or equivalent.
9. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.
10. The drilled shaft foundation design is based on end bearing in bedrock. The limits shown for Drilled Shaft in Rock is the minimum penetration required to achieve the factored resistance used in design (200 ksf).
11. Wet construction methods within the permanent casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.

USER NAME : $USER$	DESIGNED - MDB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
PLOT SCALE : $SCALE$	DRAWN - MDB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
PLOT DATE : $DATE$	CHECKED - TCU	REVISED -	
	DATE - 06/04/10	REVISED -	

FILE NAME : $FILEL$

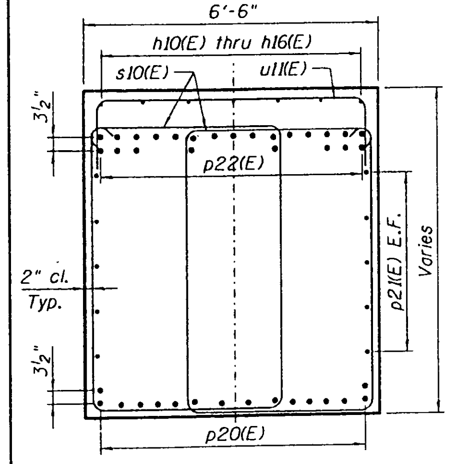
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

PIER 25 PLAN & ELEVATION

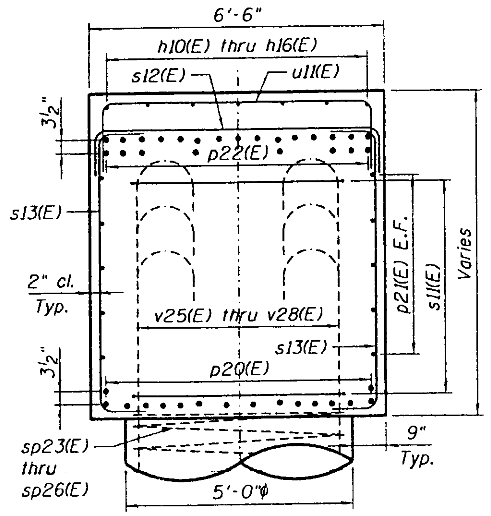
SCALE: | SHEET NO. S-82 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	192
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		

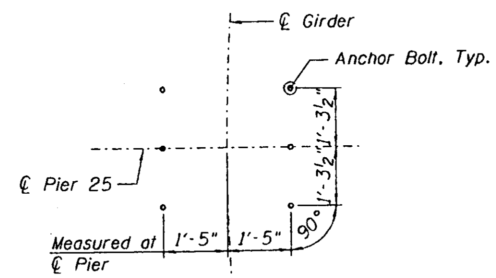
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



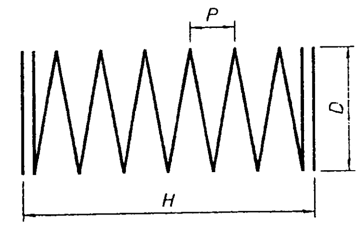
SECTION A-A



SECTION B-B



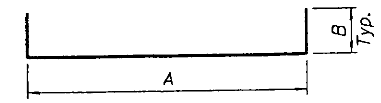
ANCHOR BOLT LAYOUT



sp20 thru sp26(E) Bars

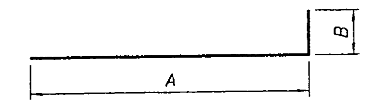
Bar	H	D	P	Length*
sp20	56'-1"	5'-10"	6"	2,088'
sp21	45'-10"	5'-10"	3"	3,379'
sp22(E)	15'-0"	4'-8"	4"	695'
sp23(E)	37'-11"	4'-8"	4"	1,689'
sp24(E)	37'-0"	4'-8"	4"	1,649'
sp25(E)	36'-1"	4'-8"	4"	1,610'
sp26(E)	35'-3"	4'-8"	4"	1,574'

* For Information Only - length calculated as continuous bar (ignoring splices).



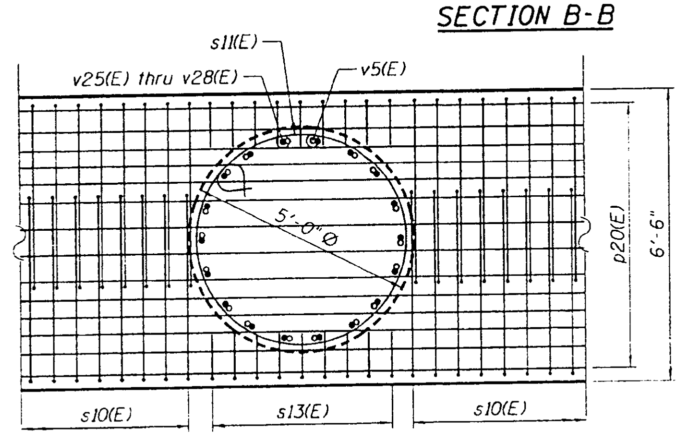
h10(E), h13(E), s12(E), s13(E), u10(E), u11(E) Bars

Bar	A	B	Length
h10(E)	8'-6"	1'-6"	11'-6"
h13(E)	7'-11"	1'-6"	10'-11"
s12(E)	6'-2"	1'-0"	8'-2"
s13(E)	6'-2"	1'-0"	8'-2"
u10(E)	6'-0"	7'-9"	21'-6"
u11(E)	6'-2"	1'-6"	9'-2"

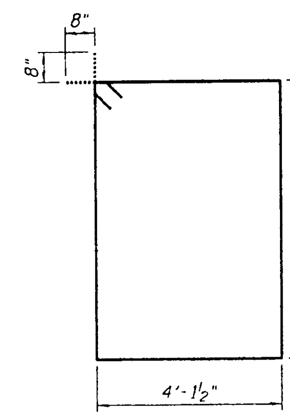


h11(E), h14(E), h16(E), p20(E), p22(E) Bars

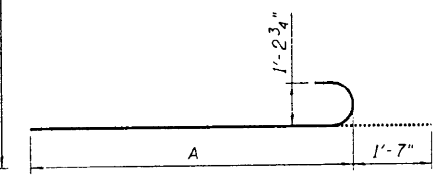
Bar	A	B	Length
h11(E)	8'-5"	1'-6"	9'-11"
h14(E)	10'-2"	1'-6"	11'-8"
h16(E)	11'-1"	1'-6"	12'-7"
p20(E)	51'-0"	2'-0"	53'-0"
p22(E)	51'-10"	2'-0"	53'-10"



SECTION C-C



s10(E) Bars



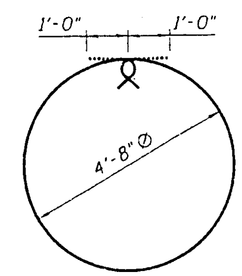
v25(E) - v28(E) & v5(E) Bars

Bar	A	Length
v25(E)	46'-0"	47'-7"
v26(E)	45'-1"	46'-8"
v27(E)	44'-2"	45'-9"
v28(E)	43'-4"	44'-11"
v5(E)	12'-3"	13'-10"

PIER 25 BAR LIST

Bar	No.	Size	Length	Shape
h10(E)	7	#6	11'-6"	
h11(E)	28	#6	9'-11"	
h12(E)	7	#6	10'-4"	
h13(E)	7	#6	10'-11"	
h14(E)	21	#6	11'-8"	
h16(E)	7	#6	12'-7"	
p20(E)	32	#11	53'-0"	
p21(E)	20	#8	48'-2"	
p22(E)	46	#11	53'-10"	
s10(E)	286	#6	21'-11"	
s11(E)	84	#6	16'-8"	
s12(E)	36	#6	8'-2"	
s13(E)	72	#6	8'-2"	
sp20	4	#6	56'-1"	*
sp21	4	#6	45'-10"	*
sp22(E)	4	#6	15'-0"	*
sp23(E)	1	#6	37'-11"	*
sp24(E)	1	#6	37'-0"	*
sp25(E)	1	#6	36'-1"	*
sp26(E)	1	#6	35'-3"	*
u10(E)	10	#8	21'-6"	
u11(E)	100	#6	9'-2"	
v20	88	#14	49'-11"	
v21	88	#14	52'-0"	
v1	88	#14	38'-10"	
v2(E)	36	#11	10'-6"	
v3(E)	36	#11	12'-6"	
v4(E)	72	#11	14'-6"	
v25(E)	18	#11	47'-7"	
v26(E)	18	#11	46'-8"	
v27(E)	18	#11	45'-9"	
v28(E)	18	#11	44'-11"	
v5(E)	72	#11	13'-10"	

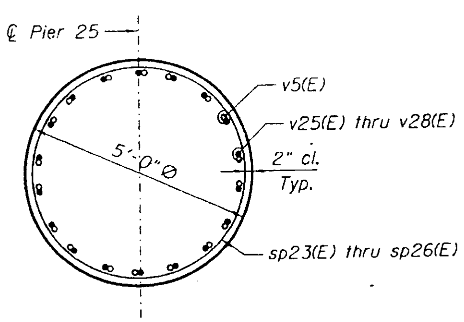
* Length is height of spiral



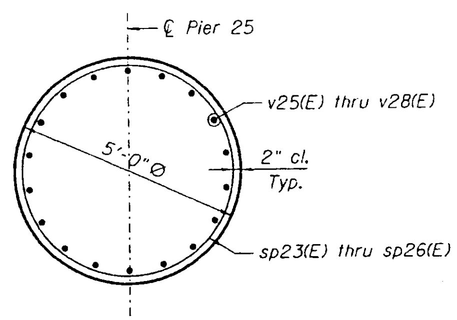
s11(E) Bars

PIER 25 BILL OF MATERIAL

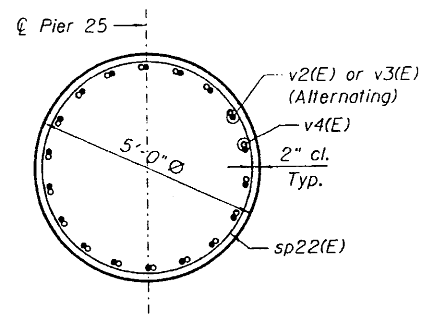
Item	Unit	Total
Structure Excavation	Cu. Yd.	101
Concrete Structures	Cu. Yd.	284.5
Reinforcement Bars	Pound	127,590
Reinforcement Bars, Epoxy Coated	Pound	87,680
Permanent Casing	Foot	398
Drilled Shaft in Soil	Cu. Yd.	489
Drilled Shaft in Rock	Cu. Yd.	13
Mechanical Splicers	Each	160
Crosshole Sonic Logging	Each	1



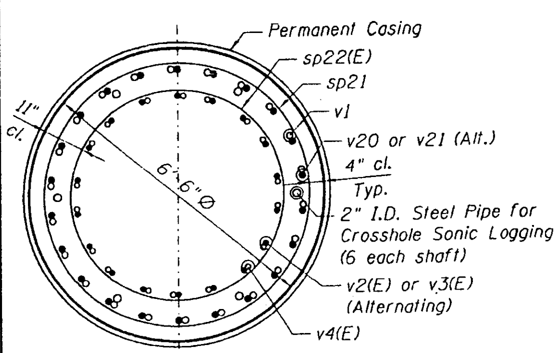
SECTION D-D



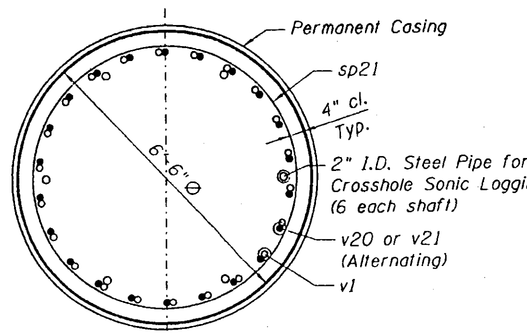
SECTION E-E



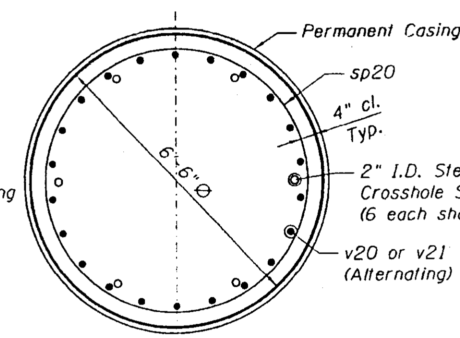
SECTION F-F



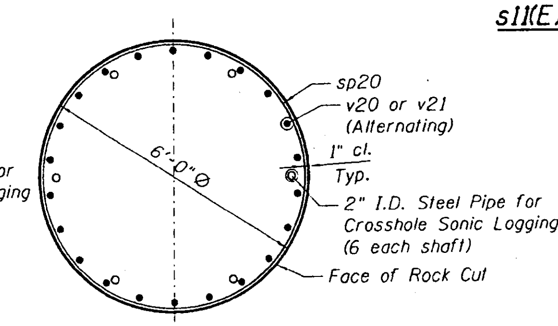
SECTION G-G



SECTION H-H



SECTION J-J



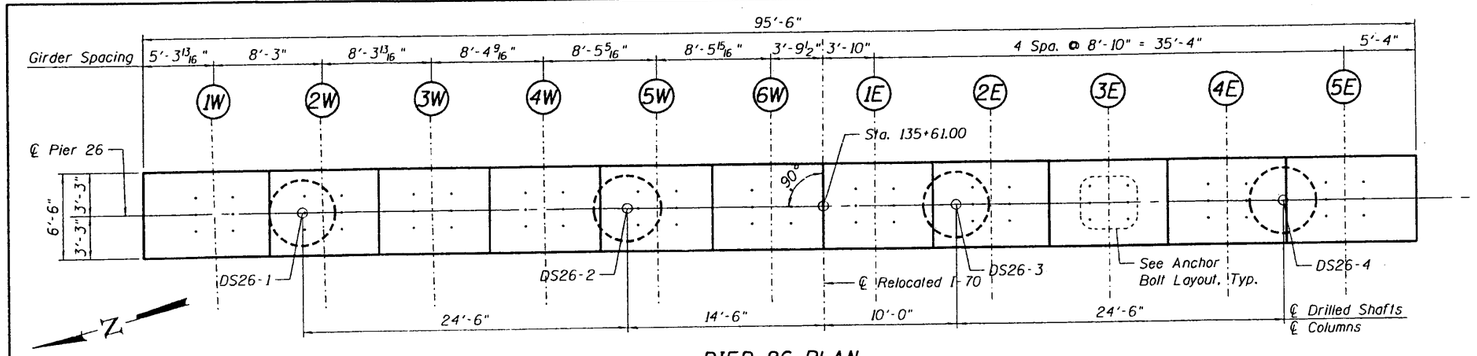
SECTION K-K

NOTES:

1. Work this sheet with Sht. S-82.
2. The quantities and reinforcement detailing shown are based on the top of shaft and estimated top of rock elevations shown and may change based on the actual elevations encountered at each shaft.
3. The cost of steel pipes, pipe caps and couplers for crosshole sonic logging shall be included in Drilled Shaft in Soil and Drilled Shaft in Rock.
4. v(E) bars in columns shall be placed as shown to provide space for p20(E) bars in cap.
5. ~~For Anchor Bolt and bearing details, see Sht. S-74.~~

FILE NAME :	USER NAME = $USER$	DESIGNED - MDB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 25 DETAILS & BAR LIST
$FILE$	PLOT SCALE = $SCALE$	DRAWN - MDB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
TENG & ASSOCIATES, INC. CHICAGO, ILLINOIS	PLOT DATE = $DATE$	CHECKED - TCU	REVISED -		SHEET NO. S-83 OF S-1.1
		DATE - 06/04/10	REVISED -		STA. 134+22.00 TO STA.

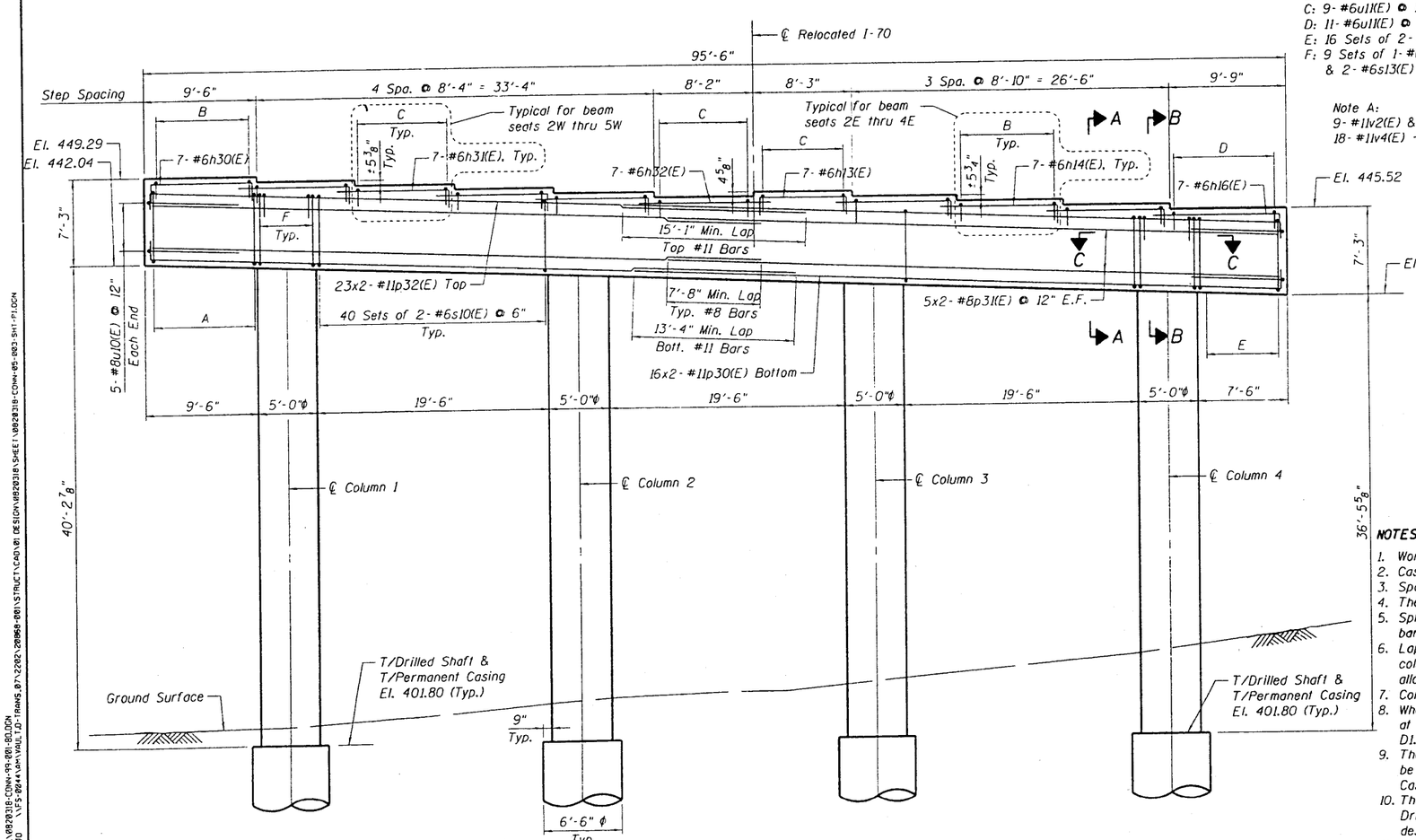
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	193
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



PIER 26 PLAN

BEARING SEAT ELEVATIONS

Girder	Elev.
1W	449.29
2W	448.84
3W	448.41
4W	447.96
5W	447.50
6W	447.04
1E	447.42
2E	446.95
3E	446.48
4E	446.00
5E	445.52

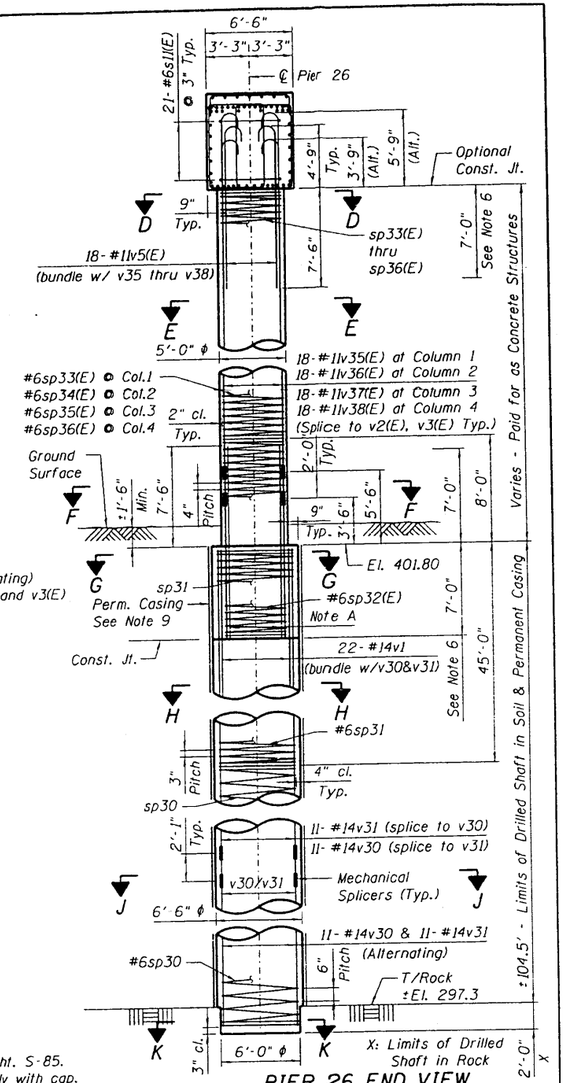


PIER 26 ELEVATION

(Looking East)

A: 20 Sets of 2- #6s10(E) @ 6"
B: 10- #6u11(E) @ 12"
C: 9- #6u11(E) @ 12"
D: 11- #6u11(E) @ 12"
E: 16 Sets of 2- #6s10(E) @ 6"
F: 9 Sets of 1- #6s12(E) & 2- #6s13(E) @ 6"

Note A:
9- #11v2(E) & 9- #11v3(E) (Alternating)
18- #11v4(E) - bundle with v2(E) and v3(E)



PIER 26 END VIEW

NOTES:

1. Work this sheet with Sht. S-85.
2. Cast steps monolithically with cap.
3. Space top reinforcement in cap to miss anchor bolts.
4. The hooks of v35(E) thru v38(E) bars embedded in pier cap shall be oriented inward.
5. Splice locations of v and v(E) bars shall be staggered by 2'-0" min. Lap splicing of v and v(E) bars is not allowed, full-mechanical bar splicers or full-welding of bars is required.
6. Lapping of spiral reinforcement is not allowed within 7'-0" of T/Column and B/Column in either the columns or drilled shafts. Where splicing is necessary, fully-welded or full-mechanical splices are allowed.
7. Continue sp33(E) thru sp36(E) to bottom of pier cap stirrup bars.
8. When splicing of spiral reinforcement is necessary, the spirals shall be provided with $1\frac{1}{2}$ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook. Provide min. 4- #4 spacers or equivalent.
9. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.
10. The drilled shaft foundation design is based on end bearing in bedrock. The limits shown for Drilled Shaft in Rock is the minimum penetration required to achieve the factored resistance used in design (200 ksf).
11. Wet construction methods within the permanent casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - MDB	REVISED -
		DRAWN - MDB	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TCD	REVISED -
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
~~I-70 CONNECTION OVER~~
NS, TRRA, MCT AND INDUSTRIAL DR.

PIER 26 PLAN & ELEVATION

SCALE:

SHEET NO. S-84 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	194

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

\\82031B-CON\-05-001-P1.DGN \\082031B-CON\-99-001-BD.DGN
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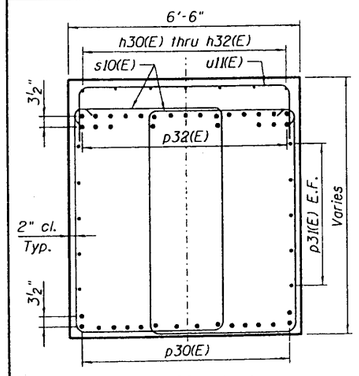
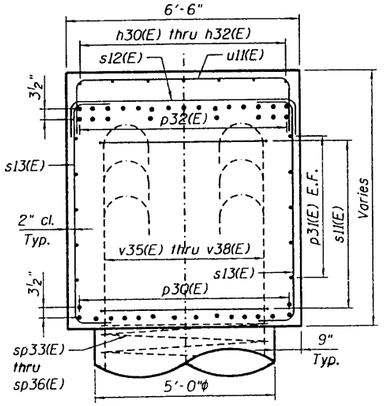
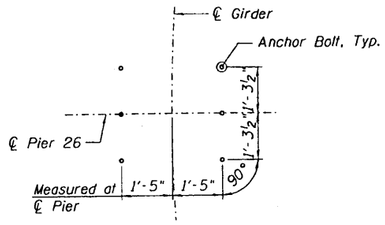


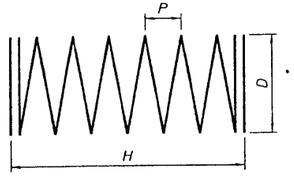
SECTION A-A



SECTION B-B



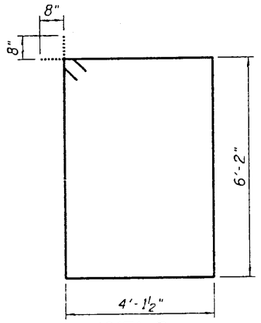
ANCHOR BOLT LAYOUT



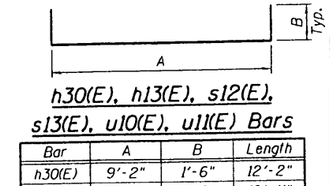
sp30 thru sp36(E) Bars

Bar	H	D	P	Length*
sp30	61'-3"	5'-10"	6"	2,276'
sp31	44'-10"	5'-10"	3"	3,306'
sp32(E)	15'-0"	4'-8"	4"	695'
sp33(E)	31'-11"	4'-8"	4"	1,429'
sp34(E)	31'-0"	4'-8"	4"	1,389'
sp35(E)	30'-0"	4'-8"	4"	1,346'
sp36(E)	29'-0"	4'-8"	4"	1,302'

* For Information Only - length calculated as continuous bar (ignoring splices).

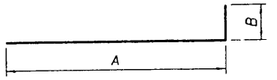


s10(E) Bars



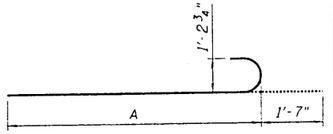
h30(E), h13(E), s12(E), s13(E), u10(E), u11(E) Bars

Bar	A	B	Length
h30(E)	9'-2"	1'-6"	12'-2"
h13(E)	7'-11"	1'-6"	10'-11"
s12(E)	6'-2"	1'-0"	8'-2"
s13(E)	6'-2"	1'-0"	8'-2"
u10(E)	6'-0"	7'-9"	21'-6"
u11(E)	6'-2"	1'-6"	9'-2"



h31(E), h14(E), h16(E), p30(E), p32(E) Bars

Bar	A	B	Length
h31(E)	9'-8"	1'-6"	11'-2"
h14(E)	10'-2"	1'-6"	11'-8"
h16(E)	11'-1"	1'-6"	12'-7"
p30(E)	54'-3"	2'-0"	56'-3"
p32(E)	55'-1"	2'-0"	57'-1"



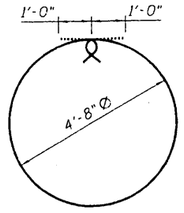
v35(E) - v38(E) & v5(E) Bars

Bar	A	Length
v35(E)	40'-0"	41'-7"
v36(E)	39'-1"	40'-8"
v37(E)	38'-1"	39'-8"
v38(E)	37'-1"	38'-8"
v5(E)	12'-3"	13'-10"

PIER 26 BAR LIST

Bar	No.	Size	Length	Shape
h30(E)	7	#6	12'-2"	
h31(E)	28	#6	11'-2"	
h32(E)	7	#6	11'-2"	
h13(E)	7	#6	10'-11"	
h14(E)	21	#6	11'-8"	
h16(E)	7	#6	12'-7"	
p30(E)	32	#11	56'-3"	
p31(E)	20	#8	51'-5"	
p32(E)	46	#11	57'-1"	
s10(E)	312	#6	21'-11"	
s11(E)	84	#6	16'-8"	
s12(E)	36	#6	8'-2"	
s13(E)	72	#6	8'-2"	
sp30	4	#6	61'-3"	
sp31	4	#6	44'-10"	
sp32(E)	4	#6	15'-0"	
sp33(E)	1	#6	31'-11"	
sp34(E)	1	#6	31'-0"	
sp35(E)	1	#6	30'-0"	
sp36(E)	1	#6	29'-0"	
u10(E)	10	#8	21'-6"	
u11(E)	105	#6	9'-2"	
v30	88	#14	52'-0"	
v31	88	#14	54'-1"	
v1	88	#14	38'-10"	
v2(E)	36	#11	10'-6"	
v3(E)	36	#11	12'-6"	
v4(E)	72	#11	14'-6"	
v35(E)	18	#11	41'-7"	
v36(E)	18	#11	40'-8"	
v37(E)	18	#11	39'-8"	
v38(E)	18	#11	38'-8"	
v5(E)	72	#11	13'-10"	

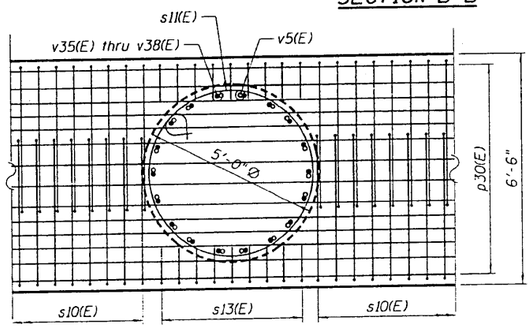
* Length is height of spiral



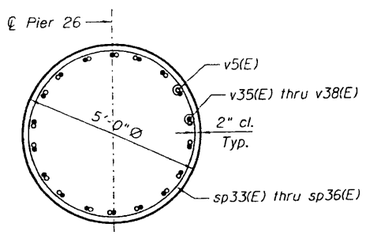
s11(E) Bars

PIER 26 BILL OF MATERIAL

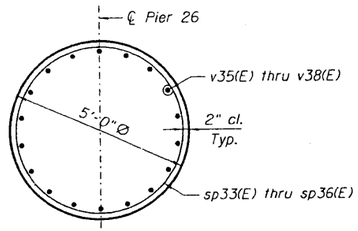
Item	Unit	Total
Structure Excavation	Cu. Yd.	145
Concrete Structures	Cu. Yd.	277.6
Reinforcement Bars	Pound	131,090
Reinforcement Bars, Epoxy Coated	Pound	86,280
Permanent Casing	Foot	418
Drilled Shaft in Soil	Cu. Yd.	514
Drilled Shaft in Rock	Cu. Yd.	9
Mechanical Splicers	Each	160
Crosshole Sonic Logging	Each	1



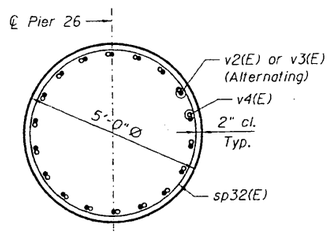
SECTION C-C



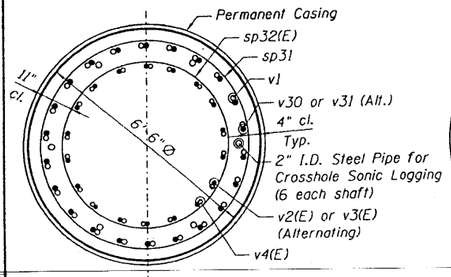
SECTION D-D



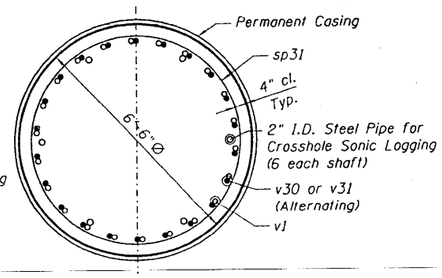
SECTION E-E



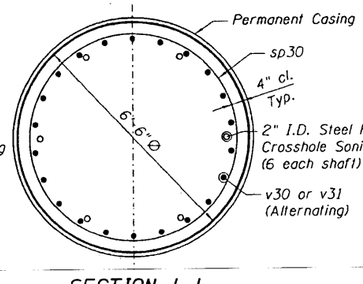
SECTION F-F



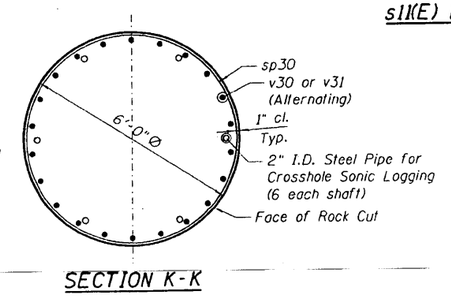
SECTION G-G



SECTION H-H



SECTION J-J



SECTION K-K

NOTES:

1. Work this sheet with Sht. S-84.
2. The quantities and reinforcement detailing shown are based on the top of shaft and estimated top of rock elevations shown and may change based on the actual elevations encountered at each shaft.
3. The cost of steel pipes, pipe caps and couplers for crosshole sonic logging shall be included in Drilled Shaft in Soil and Drilled Shaft in Rock.
4. v(E) bars in columns shall be placed as shown to provide space for p30(E) bars in cap.
5. For Anchor Bolt and bearing details, see Sht. S-74.

FILE NAME = #FILE1#	USER NAME = #USER#	DESIGNED - MDB	REVISED -
		DRAWN - MDB	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - TCU	REVISED -
TENG ENGINEERS/ARCHITECTS/PLANNERS, CHICAGO, ILLINOIS	PLOT DATE = #DATE#	DATE - 06/04/10	REVISED -

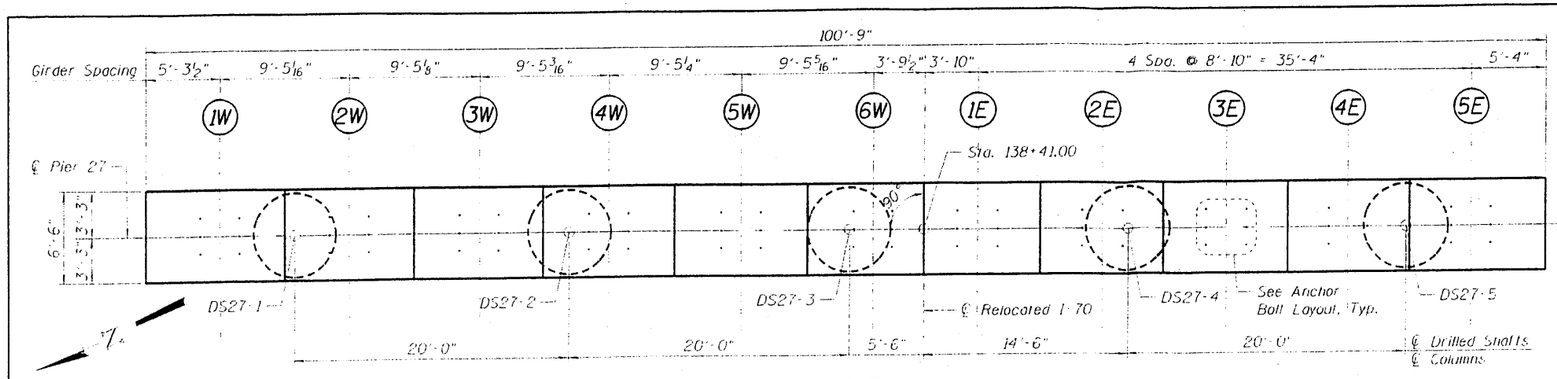
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

PIER 26 DETAILS & BAR LIST

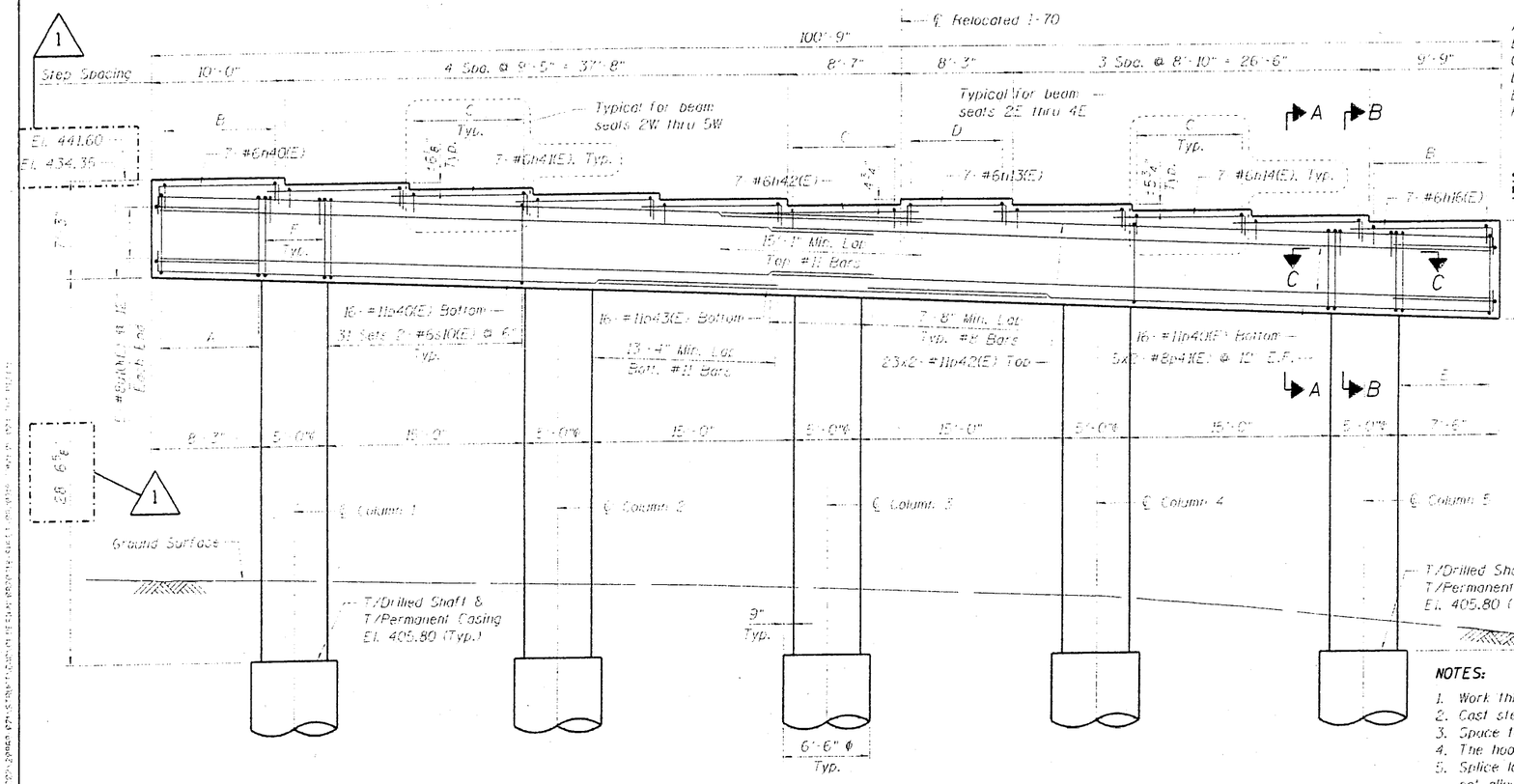
SCALE: | SHEET NO. S-85 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	195
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

-\082318-CONN-85-001-PLDGN, -\082318-CONN-99-001-BD.DGN
6/3/2010, 16:58:26 BDKOHLHJO \\FS-0044\VAULT\D-TRANS_07\2262\26858-001\STRUCT\CADD\01 DESIGN\082318\SHEET\082318-CONN-85-087-SHT-P1.DGN



PIER 27 PLAN



PIER 27 ELEVATION

(Looking East)

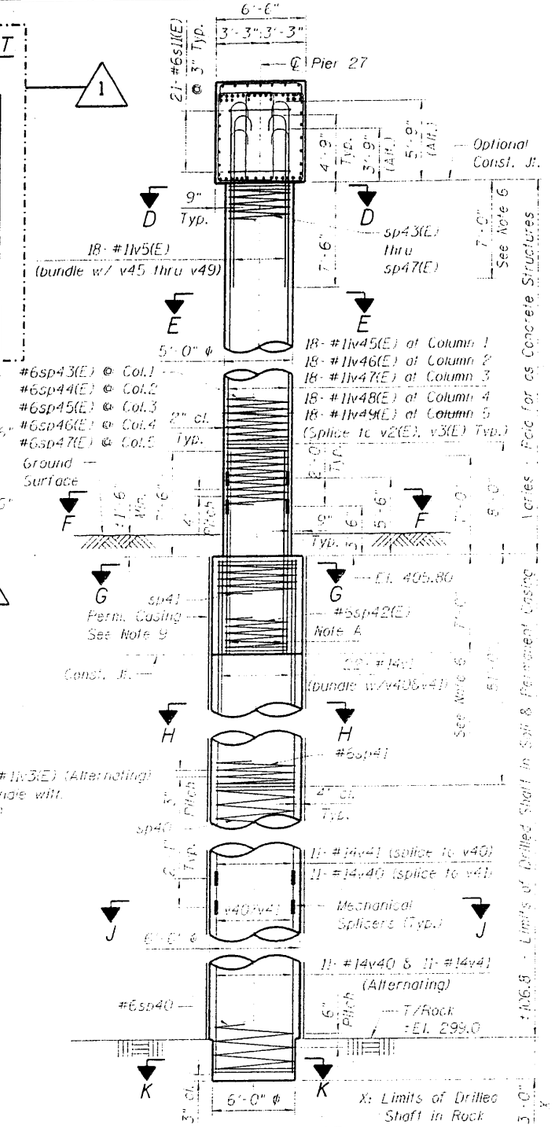
BEARING SEAT ELEVATIONS

Girder	Elev.
1W	441.60
2W	441.09
3W	440.59
4W	440.08
5W	439.57
6W	439.05
1E	439.46
2E	438.99
3E	438.51
4E	438.03
5E	437.55

A: 17 Sets of 2-#6s10(E) @ 6"
B: 11 #6u11(E) @ 12"
C: 10-#6u11(E) @ 12"
D: 9-#6u11(E) @ 12"
E: 16 Sets of 2-#6s10(E) @ 6"
F: 9 Sets of 1-#6s12(E) & 2-#6s13(E) @ 6"

El. 437.55
El. 430.30

Note A:
9-#11v2(E) & 9-#11v3(E) (Alternating)
18-#11v4(E) - bundle with v2(E) and v3(E)



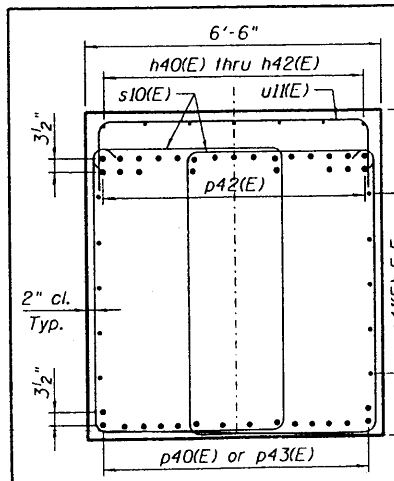
PIER 27 END VIEW

NOTES:

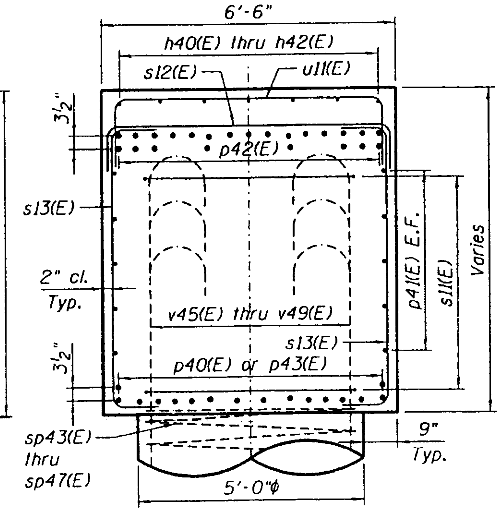
1. Work this sheet with Sht. S-87.
2. Cast steps monolithically with cap.
3. Space top reinforcement in cap to miss anchor bolts.
4. The hooks of v45(E) thru v49(E) bars embedded in pier cap shall be oriented inward.
5. Splice locations of v and v(E) bars shall be staggered by 2'-0" min. Lap splicing of v and v(E) bars is not allowed, full-mechanical bar splicers or full-welding of bars is required.
6. Lapping of spiral reinforcement is not allowed within 7'-0" of T/Column and B/Column in either the columns or drilled shafts. Where splicing is necessary, fully welded or full-mechanical splices are allowed.
7. Continue sp43(E) thru sp47(E) to bottom of pier cap stirrup bars.
8. When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook. Provide min. 4-#4 spacers or equivalent.
9. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.
10. The drilled shaft foundation design is based on end bearing in bedrock. The limits shown for Drilled Shaft in Rock is the minimum penetration required to achieve the factored resistance used in design (200 ksf).
11. Wet construction methods within the permanent casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.

DESIGNED	MDB	REVISED 1 07-09-2010 JR	STATE OF ILLINOIS	PIER 27 PLAN & ELEVATION	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
DRAWN	MDB	REVISED	DEPARTMENT OF TRANSPORTATION		632	82-2-INVE	CLAIR	235
CHECKED	TCU	REVISED	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.		CONTRACT NO.			
DATE	06/04/10	REVISED			SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44			
				SCALE: SHEET NO. S-86 OF S-111 STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

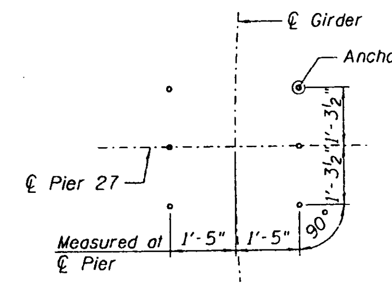
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS



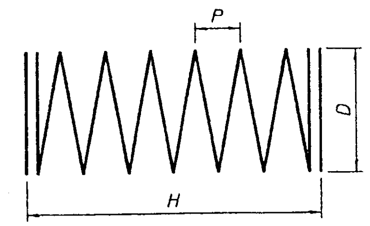
SECTION A-A



SECTION B-B



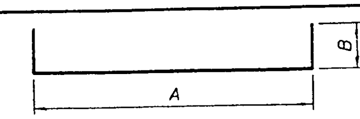
ANCHOR BOLT LAYOUT



sp40 thru sp47(E) Bars

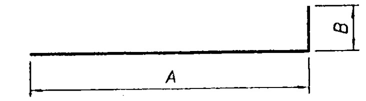
Bar	H	D	P	Length*
sp40	58'-7"	5'-10"	6"	2,179'
sp41	50'-10"	5'-10"	3"	3,741'
sp42(E)	15'-0"	4'-8"	4"	695'
sp43(E)	20'-4"	4'-8"	4"	926'
sp44(E)	19'-6"	4'-8"	4"	890'
sp45(E)	18'-9"	4'-8"	4"	858'
sp46(E)	17'-11"	4'-8"	4"	821'
sp47(E)	17'-1"	4'-8"	4"	785'

* For Information Only - length calculated as continuous bar (ignoring splices).



h40(E), h13(E), s12(E), s13(E), u10(E), u11(E) Bars

Bar	A	B	Length
h40(E)	9'-8"	1'-6"	12'-8"
h13(E)	7'-11"	1'-6"	10'-11"
s12(E)	6'-2"	1'-0"	8'-2"
s13(E)	6'-2"	1'-0"	8'-2"
u10(E)	6'-0"	7'-9"	21'-6"
u11(E)	6'-2"	1'-6"	9'-2"



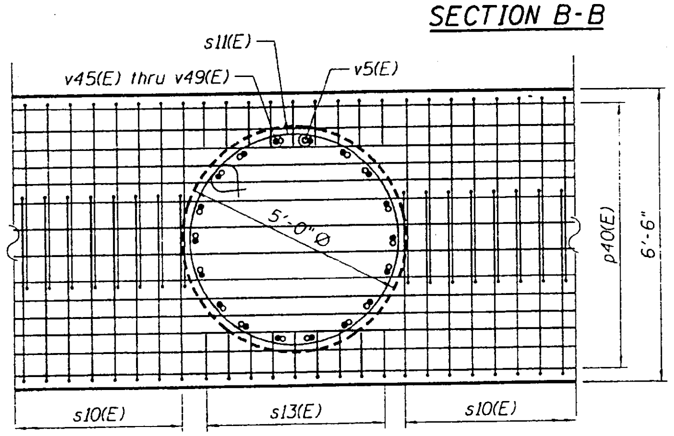
h41(E), h14(E), h16(E), p40(E), p42(E) Bars

Bar	A	B	Length
h41(E)	10'-9"	1'-6"	12'-3"
h14(E)	10'-2"	1'-6"	11'-8"
h16(E)	11'-1"	1'-6"	12'-7"
p40(E)	46'-10"	2'-0"	48'-10"
p42(E)	57'-9"	2'-0"	59'-9"

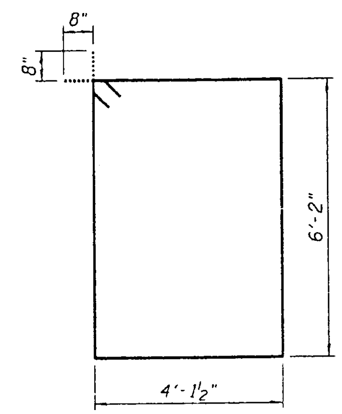
PIER 27 BAR LIST

Bar	No.	Size	Length	Shape
h40(E)	7	#6	12'-8"	
h41(E)	28	#6	12'-3"	
h42(E)	7	#6	11'-7"	
h13(E)	7	#6	10'-11"	
h14(E)	21	#6	11'-8"	
h16(E)	7	#6	12'-7"	
p40(E)	32	#11	48'-10"	
p41(E)	20	#8	54'-0"	
p42(E)	46	#11	59'-9"	
p43(E)	16	#11	33'-4"	
s10(E)	314	#6	21'-11"	
s11(E)	105	#6	16'-8"	
s12(E)	45	#6	8'-2"	
s13(E)	90	#6	8'-2"	
sp40	5	#6	58'-7"	*
sp41	5	#6	50'-10"	*
sp42(E)	5	#6	15'-0"	*
sp43(E)	1	#6	20'-4"	*
sp44(E)	1	#6	19'-6"	*
sp45(E)	1	#6	18'-9"	*
sp46(E)	1	#6	17'-11"	*
sp47(E)	1	#6	17'-1"	*
u10(E)	10	#8	21'-6"	
u11(E)	111	#6	9'-2"	
v40	110	#14	53'-8"	
v41	110	#14	55'-9"	
v1	110	#14	38'-10"	
v2(E)	45	#11	10'-6"	
v3(E)	45	#11	12'-6"	
v4(E)	90	#11	14'-6"	
v45(E)	18	#11	30'-0"	
v46(E)	18	#11	29'-2"	
v47(E)	18	#11	28'-5"	
v48(E)	18	#11	27'-7"	
v49(E)	18	#11	26'-9"	
v5(E)	90	#11	13'-10"	

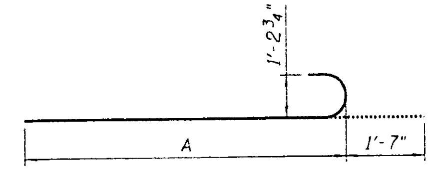
* Length is height of spiral



SECTION C-C

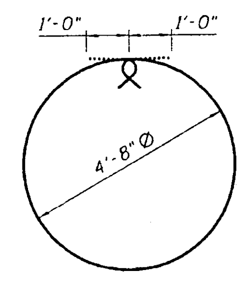


s10(E) Bars

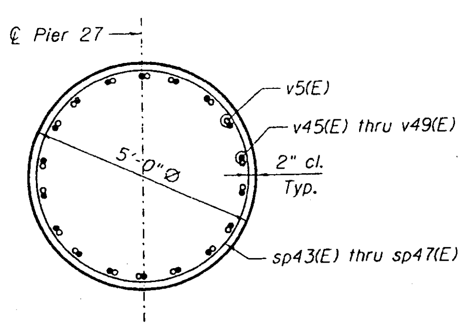


v45(E) - v49(E) & v5(E) Bars

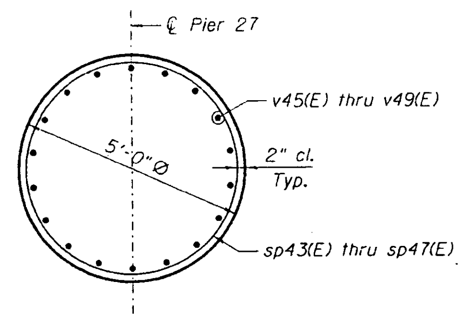
Bar	A	Length
v45(E)	28'-5"	30'-0"
v46(E)	27'-7"	29'-2"
v47(E)	26'-10"	28'-5"
v48(E)	26'-0"	27'-7"
v49(E)	25'-2"	26'-9"
v5(E)	12'-3"	13'-10"



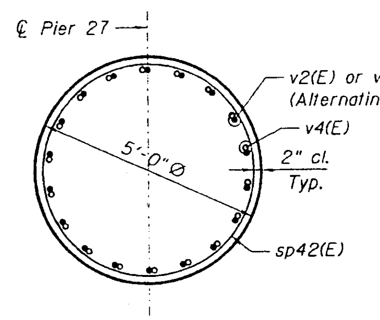
s11(E) Bars



SECTION D-D



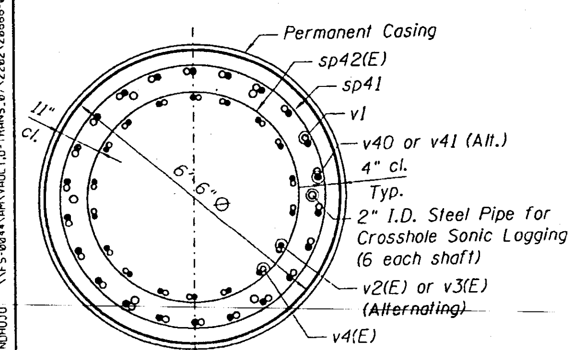
SECTION E-E



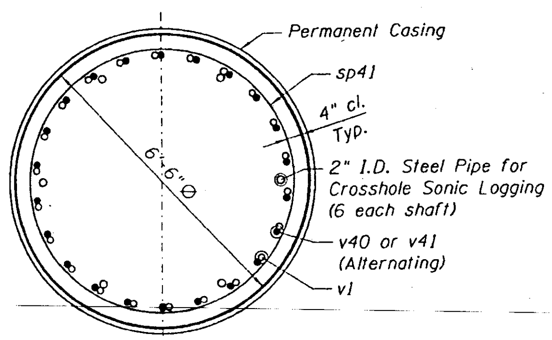
SECTION F-F

PIER 27 BILL OF MATERIAL

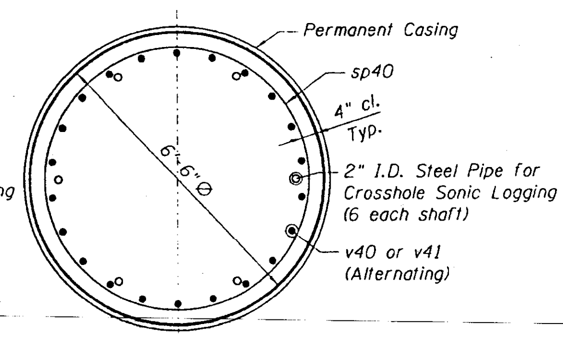
Item	Unit	Total
Structure Excavation	Cu. Yd.	164
Concrete Structures	Cu. Yd.	271.2
Reinforcement Bars	Pound	169,210
Reinforcement Bars, Epoxy Coated	Pound	90,990
Permanent Casing	Foot	534
Drilled Shaft in Soil	Cu. Yd.	657
Drilled Shaft in Rock	Cu. Yd.	16
Mechanical Splicers	Each	200
Crosshole Sonic Logging	Each	1



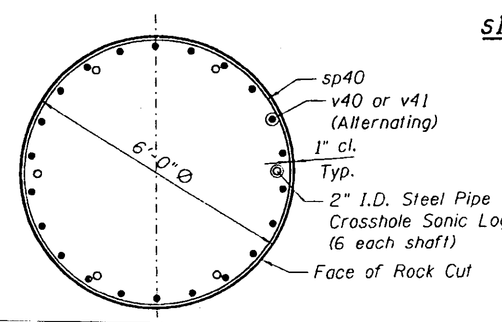
SECTION G-G



SECTION H-H



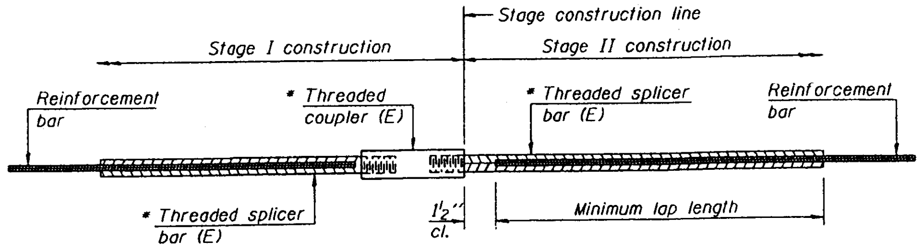
SECTION J-J



SECTION K-K

NOTES:

1. Work this sheet with Sht. S-86.
2. The quantities and reinforcement detailing shown are based on the top of shaft and estimated top of rock elevations shown and may change based on the actual elevations encountered at each shaft.
3. The cost of steel pipes, pipe caps and couplers for crosshole sonic logging shall be included in Drilled Shaft in Soil and Drilled Shaft in Rock.
4. v(E) bars in columns shall be placed as shown to provide space for p40(E) bars in cap.
5. For Anchor Bolt and bearing details, see Sht. S-74.



STANDARD BAR SPLICER ASSEMBLY

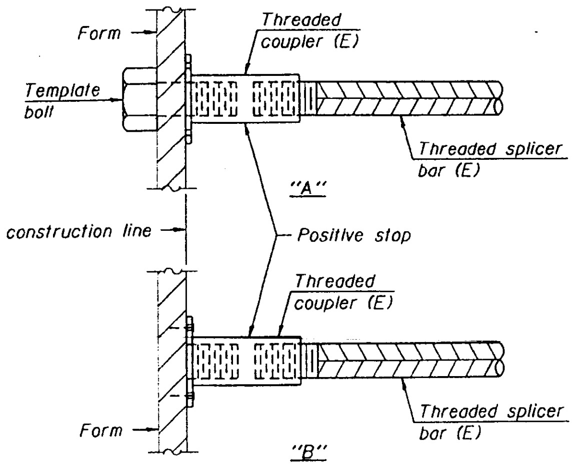
Minimum Lap Lengths				
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

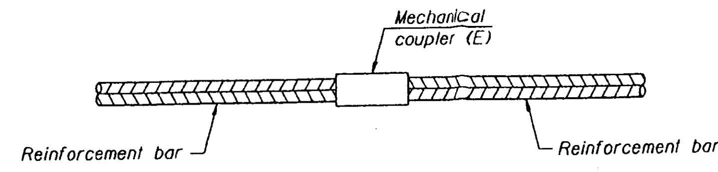
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



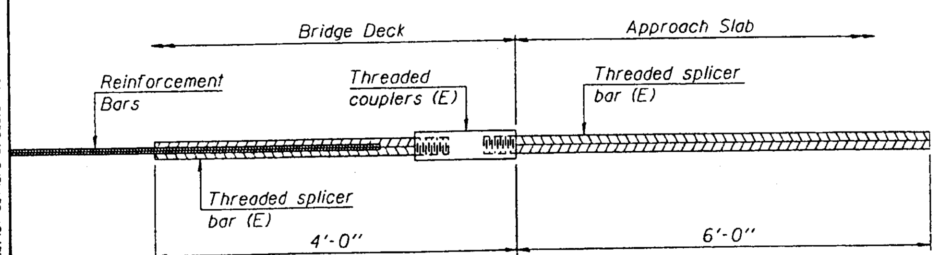
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



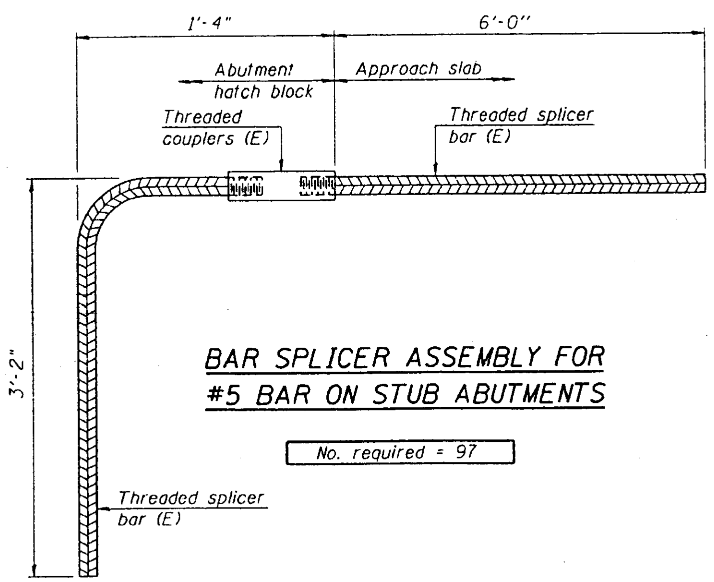
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 24	#14	88
	#11	72
Pier 25	#14	88
	#11	72
Pier 26	#14	88
	#11	72
Pier 27	#14	110
	#11	90



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 97

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 11-1-09

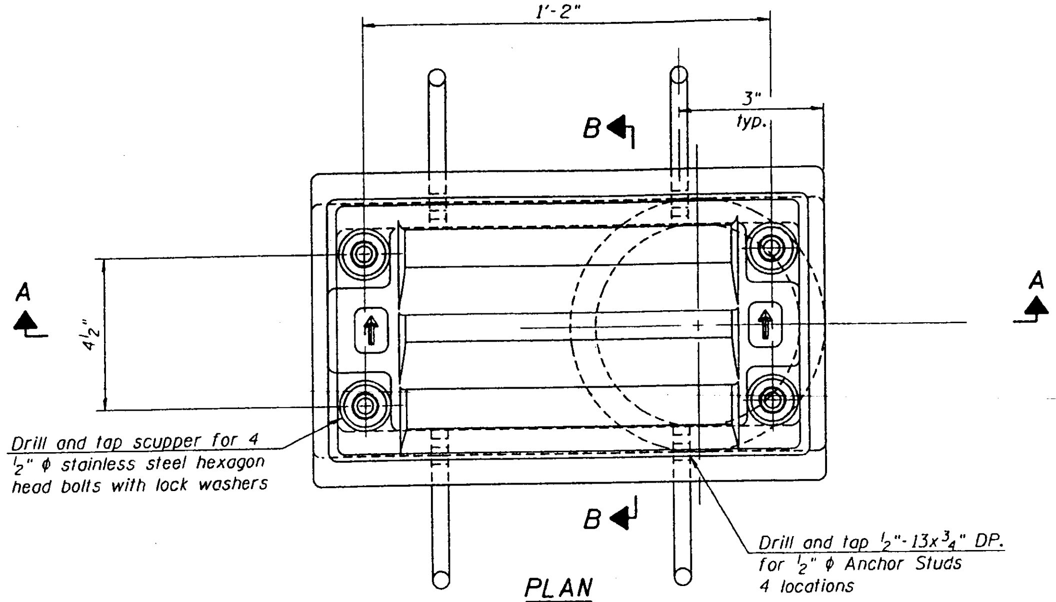
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JLR	REVISED -
		DRAWN - CPB	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - JLR	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

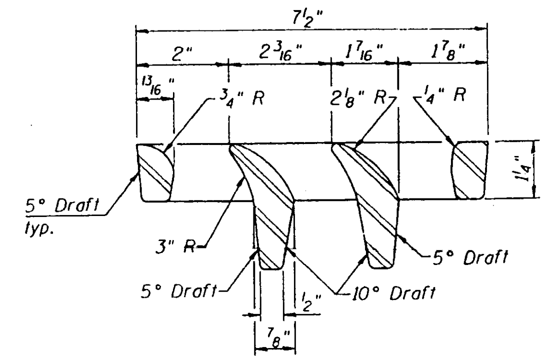
BAR SPLICER DETAILS

SCALE: | SHEET NO. S-88 OF S-111 | STA. 134+22.00 TO STA.

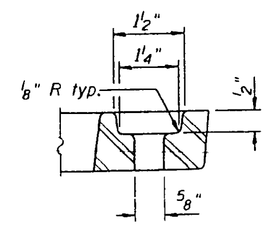
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	198
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



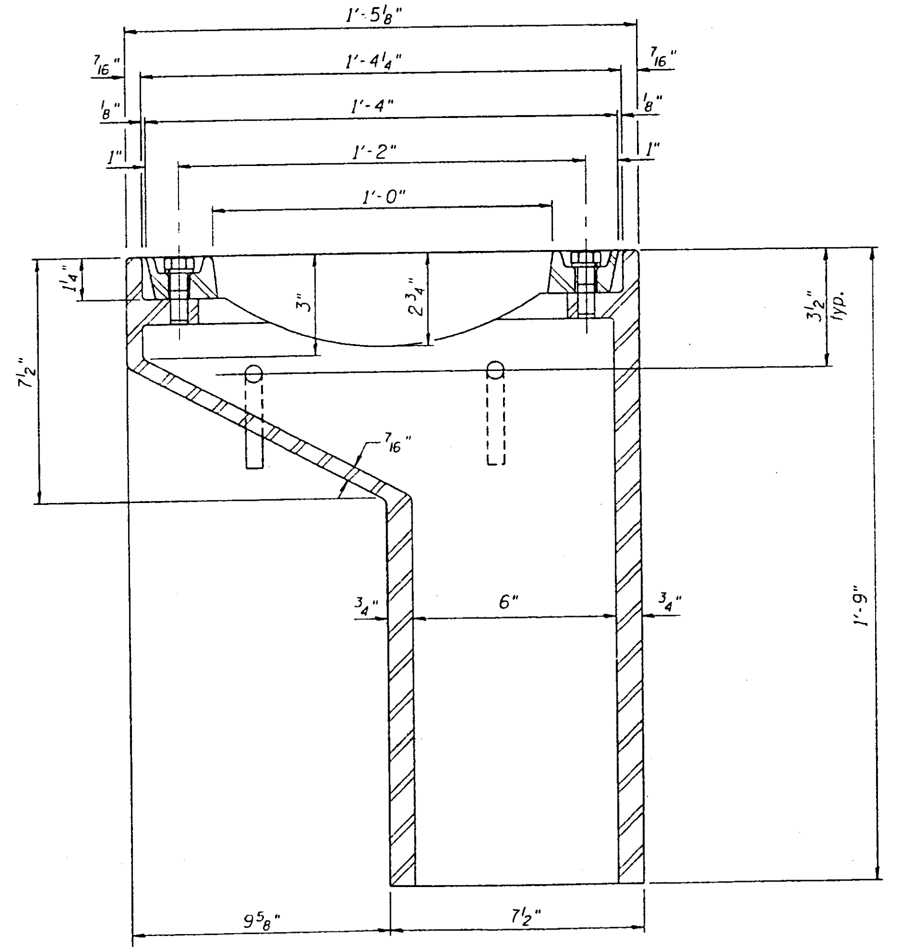
PLAN



VANE GRATE DETAIL

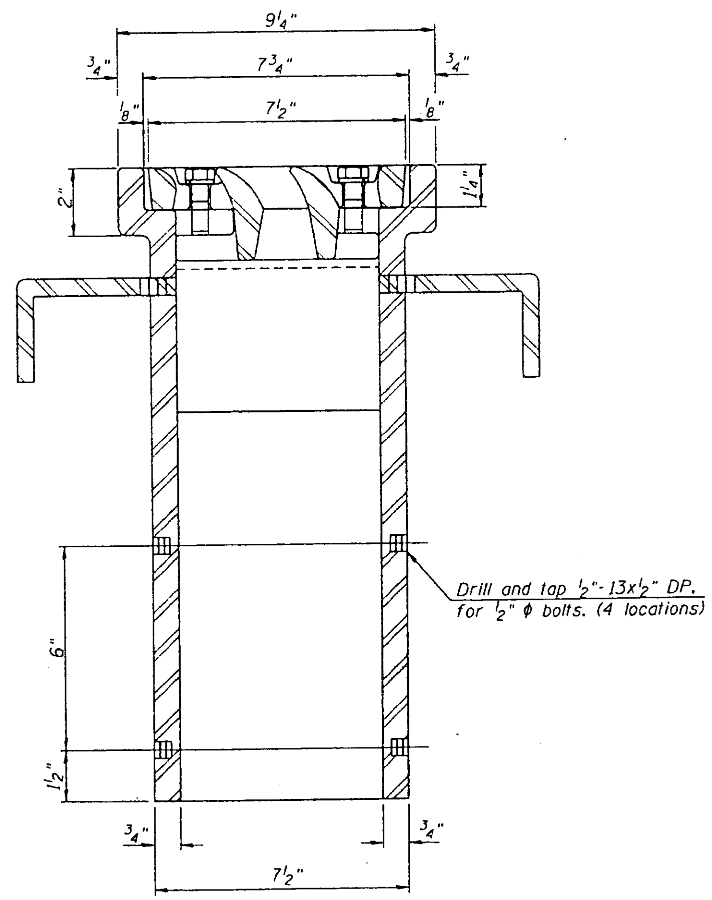


BOLT HOLE DETAIL

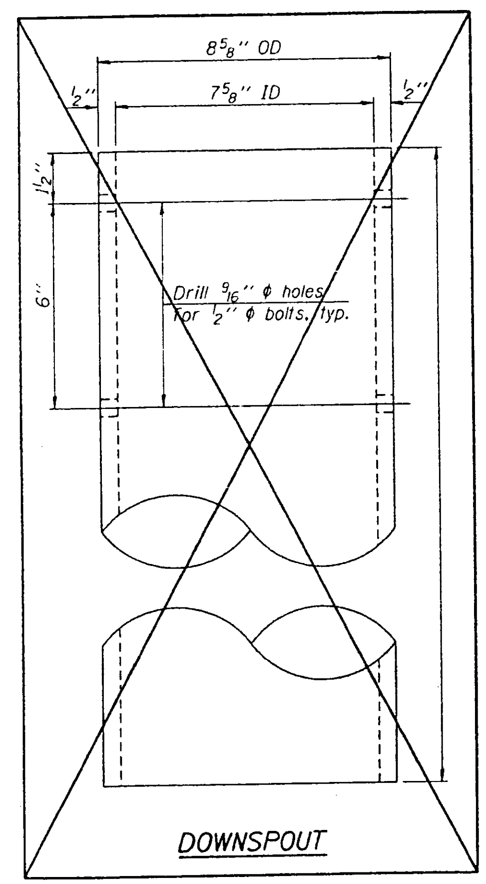


SECTION A-A

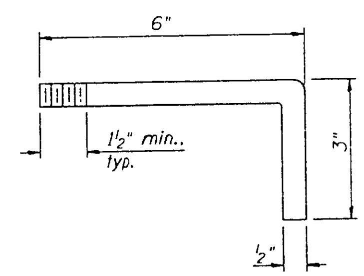
See sheet of for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	20

DS-11   11-1-09

USER NAME = $USER$	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS
FILE NAME = $FILE$	DRAWN - CPB	REVISED -	DEPARTMENT OF TRANSPORTATION
PLOT SCALE = $SCALE$	CHECKED - JLR	REVISED -	I-70 CONNECTION OVER
PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.

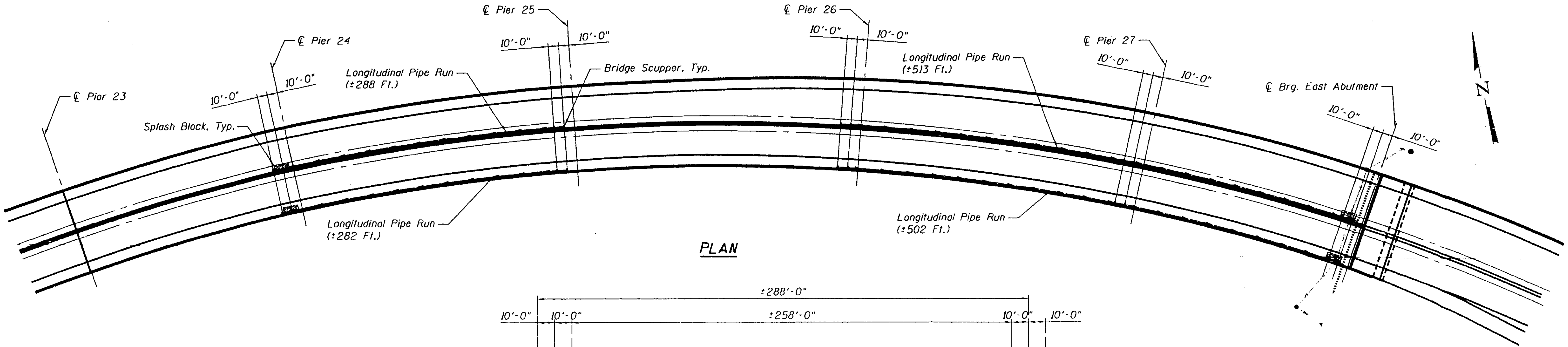
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS

DRAINAGE SCUPPER DS-11

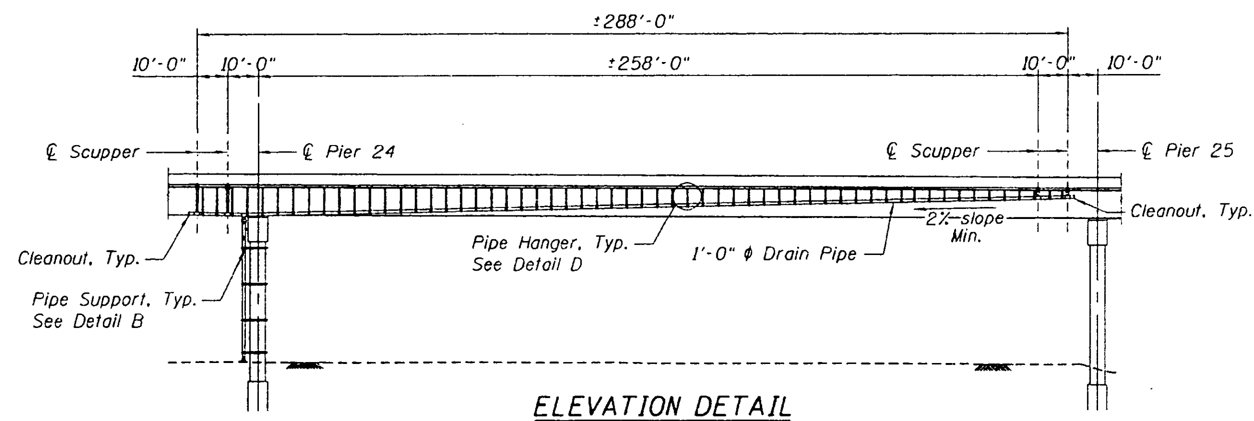
SCALE: | SHEET NO. S-89 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-IHVB	ST. CLAIR	285	199
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

\\FS-0044\VAM\VAULT_D-TRANS\07\2282\20868-001\STRUCT\CAD\01 DESIGN\0820318\SHEET\0820318-CONN-05-022-SHT-MS.DGN
\0820318-CONN-99-001-BD.DGN BONDHUJD 6-03-2010, 18:59:48



PLAN

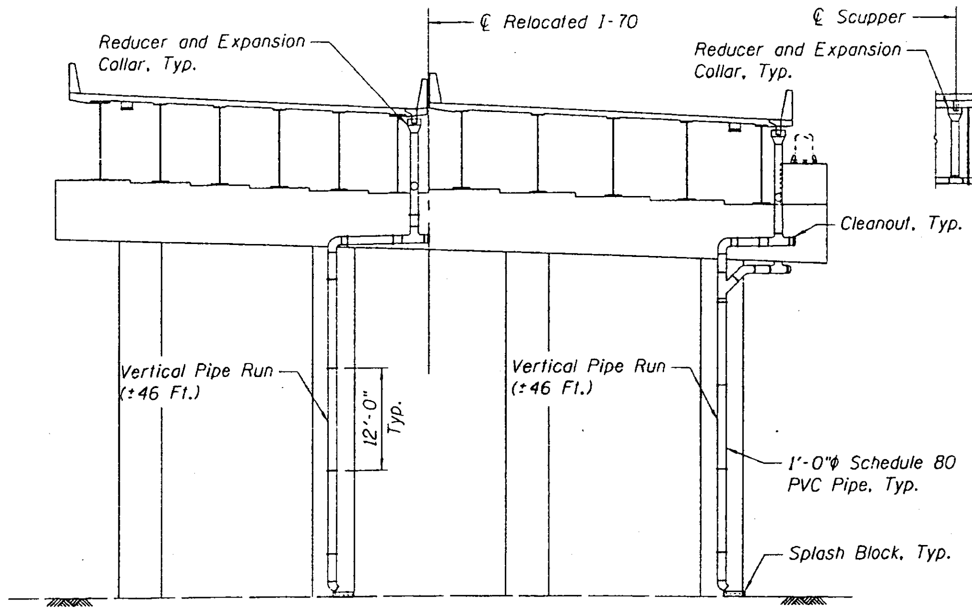


ELEVATION DETAIL

(Looking North, WB Pipe Run shown)

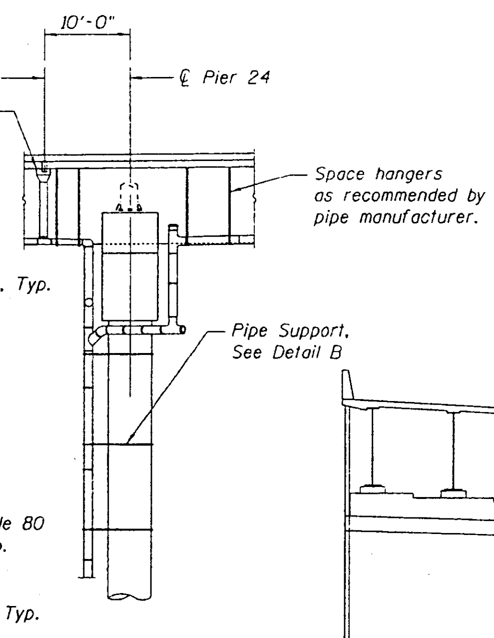
NOTES:

1. Work this sheet with Sheet S-91.
2. Pipe hangers shall be provided on all horizontal collector pipes at each tee, elbow, or change in direction and at intermediate points as recommended by pipe manufacturer. Collector pipe hangers shall have a load capacity of not less than 2000 lbs. and shall be designed so as not to apply excessive compressive stress to the pipe. Pipe supports shall be provided on all vertical drain pipes at points not more than 12'-0" on centers.



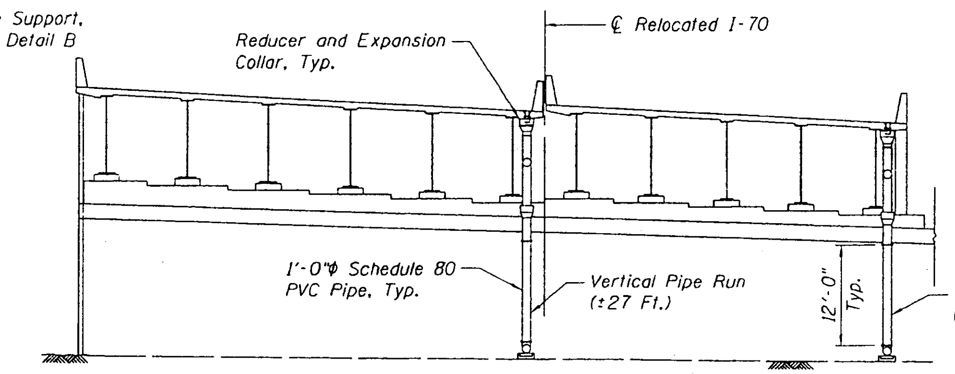
ELEVATION - PIER 24

(Looking East)



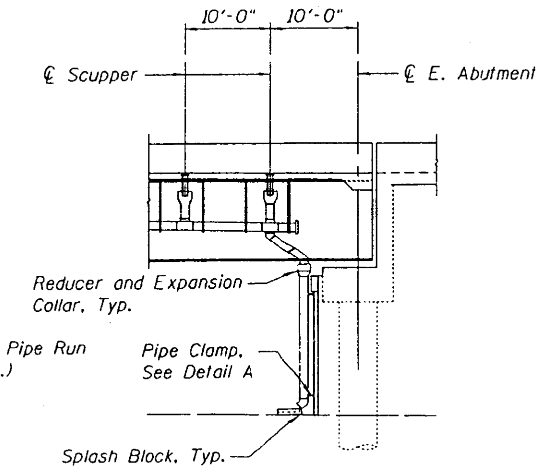
END VIEW - PIER 24

(Looking North)



ELEVATION - EAST ABUTMENT

(Looking East)



END VIEW - EAST ABUTMENT

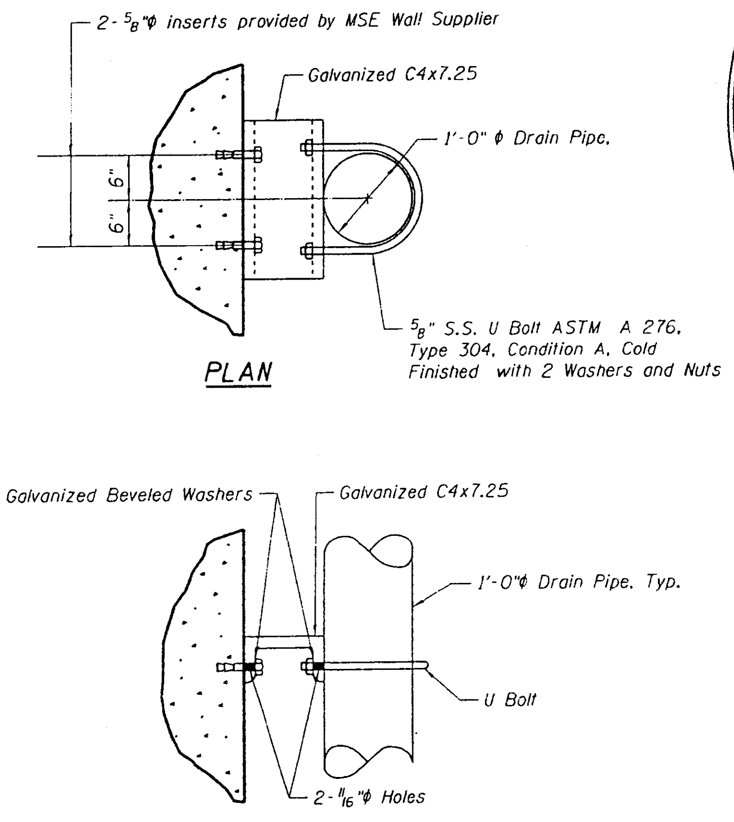
(Looking North)

FILE NAME =	USER NAME = $USER$	DESIGNED - TKL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
$FILEL$		DRAWN - CPB	REVISED -	
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	

BRIDGE DRAINAGE SYSTEM

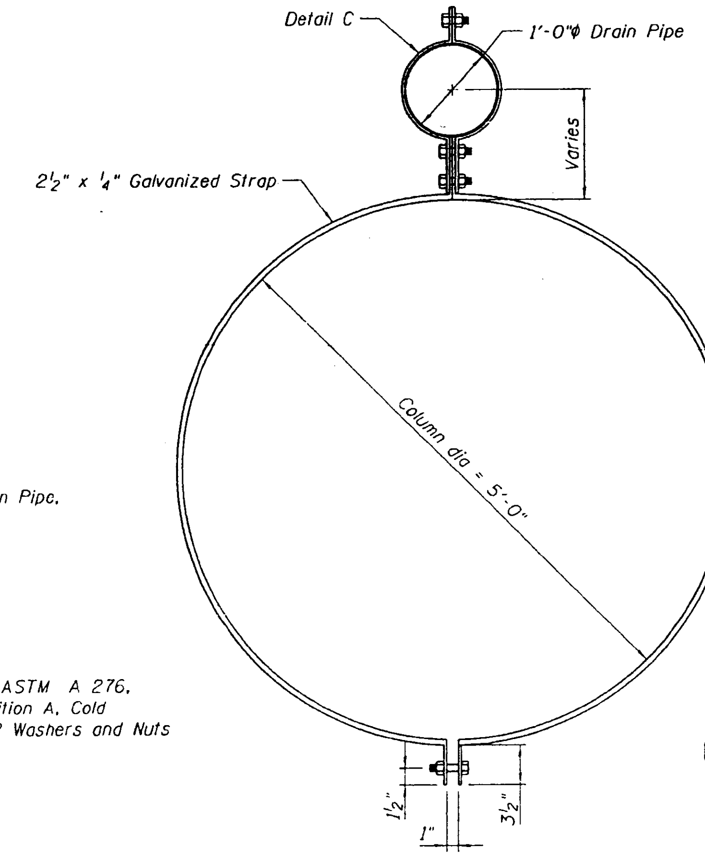
SCALE: | SHEET NO. S-90 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	200
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



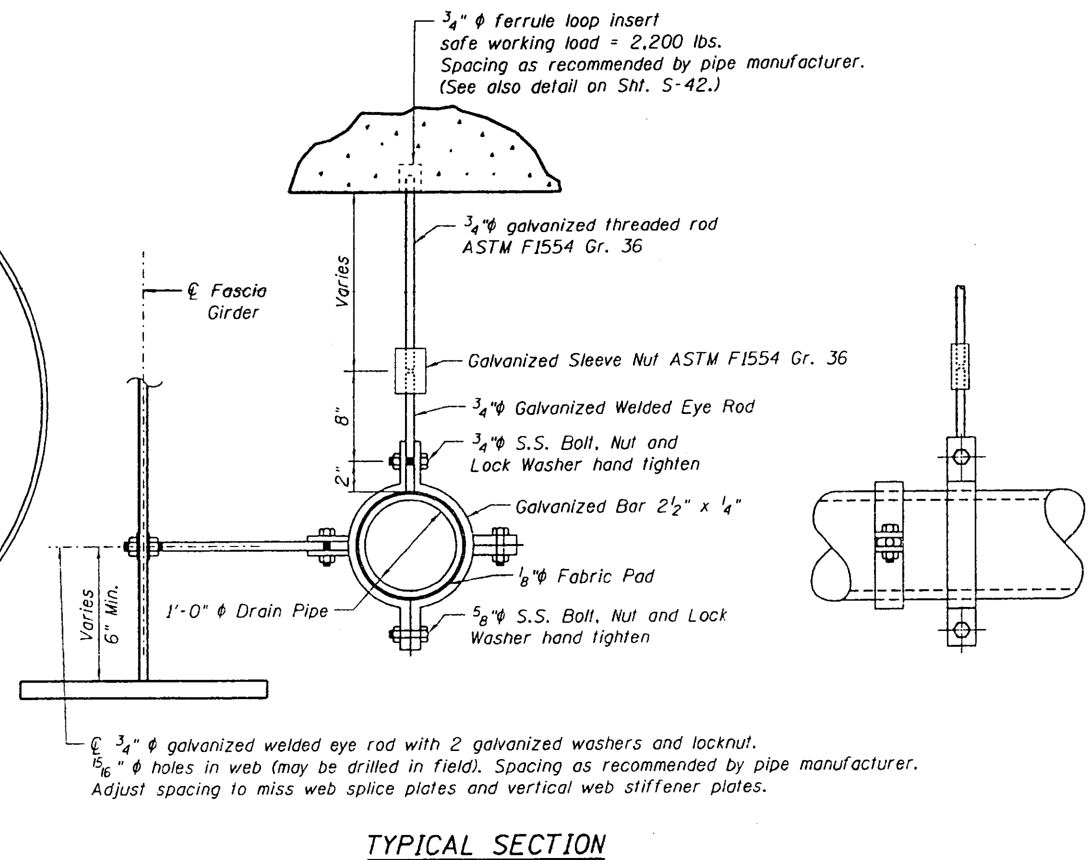
DETAIL A - PIPE CLAMP DETAIL

(Use to support horizontal pipe runs along pier cap and vertical pipe runs along existing pier wall and abutment face)



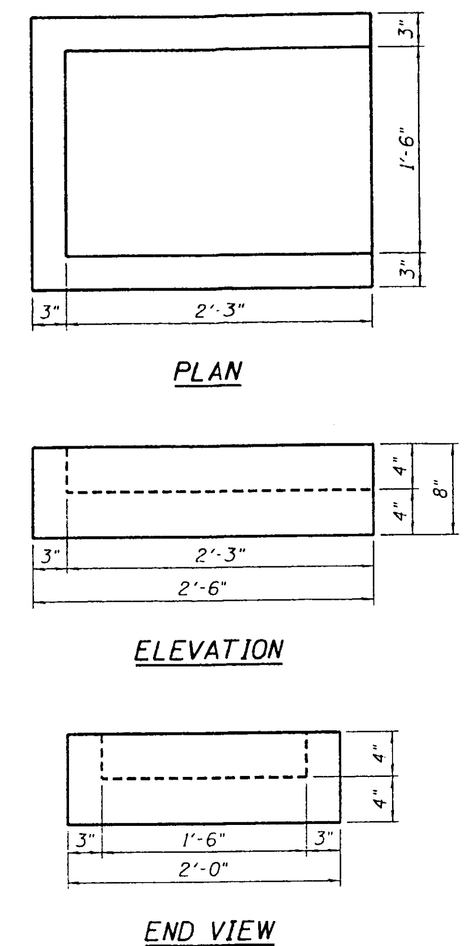
DETAIL B - PIPE SUPPORT DETAIL

(Use to support Vertical Pipe runs along Column Piers)

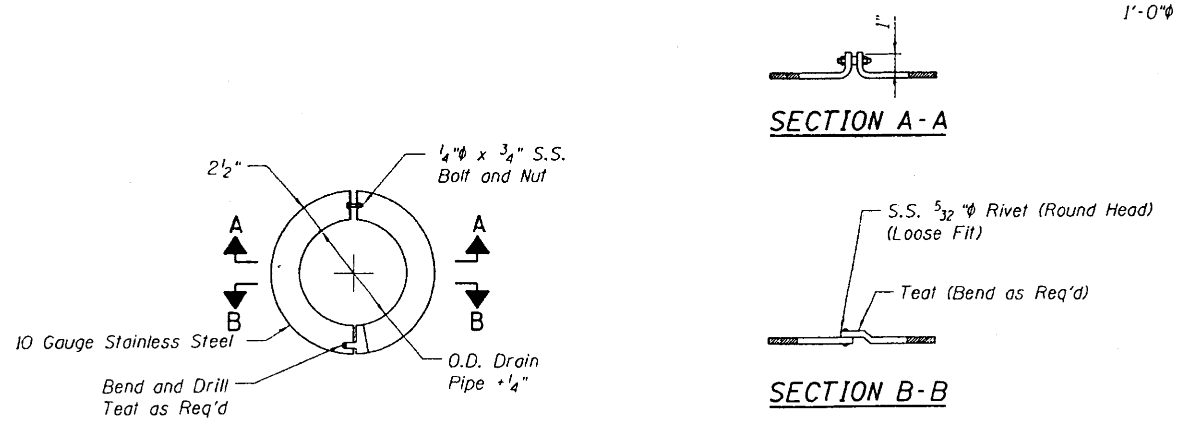


DETAIL D - PIPE HANGER DETAILS

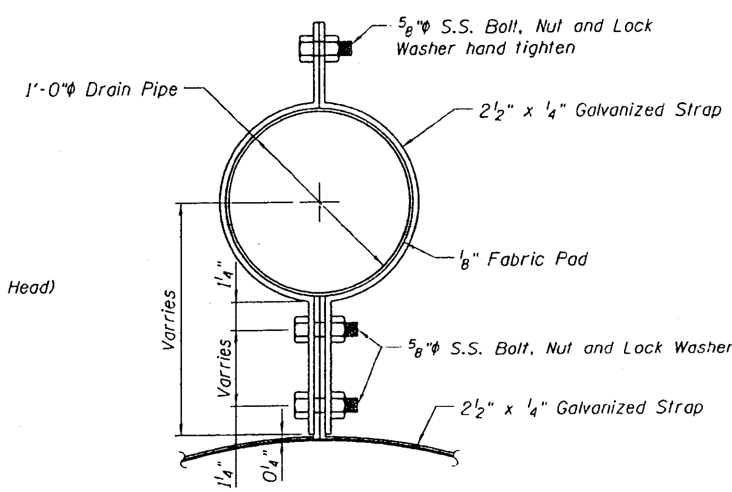
(Use similar pipe clamp at horizontal supports.)



SPLASH BLOCK DETAIL



EXPANSION COLLAR DETAIL



DETAIL C

NOTE:

All pipe hangers, supports and hardware shall be hot-dipped galvanized in accordance with AASHTO M232 (ASTM A153) unless otherwise noted. All bolts, nuts and washers shall be stainless steel. Stainless steel bolts shall conform to the requirements of ASTM A 193M (A193), Class 1, ASTM F593, TYPE 304 Grade B8. Stainless steel nuts shall conform to the requirements of ~~AASHTO M 292, ASTM F594, TYPE 304 Grade 8~~ or 8F, and the washers shall conform to ASTM A 240, Type 302 or 304.

FILE NAME :	USER NAME : $USER$	DESIGNED - TKL	REVISED -
$FILEL$		DRAWN - CPB	REVISED -
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	CHECKED - TCU	REVISED -
	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

BRIDGE DRAINAGE SYSTEM DETAILS

SCALE: | SHEET NO. S-91 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	201
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SB-01

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 4
DATE 3/9-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-01
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6.0" TOPSOIL-black	405.3		AS	-	29
SILTY CLAY-dark brown & gray-medium stiff to stiff (A-7) Wet			2		*83*
			2		
			4	1.6B	38
			1		*80*
			2		
		-5	2	0.7B	41
			2		*82*
			2		
	397.8		5	1.2B	40
SAND-brown-loose to medium dense (A-3)			5		
			5		
		-10	6	NP	6
			3		
			4		
			5	NP	27
			6		
			5		
		-15	6	NP	28
			4		
			6		
			7	NP	25
			5		
			7		
		-20	7	NP	28
SAND-brown-loose to medium dense (A-3)			5		
			6		
			6	NP	25
			7		
			11		
		-25	12	NP	23
			7		
			8		
			15	NP	15
			6		
			8		
	475.3	-30	10	NP	24
SAND-gray-loose to medium dense (A-3)			7		
			12		
			17	NP	24
			11		
			10		
		-35	9	NP	21
			5		
			7		
			11	NP	13
			10		
			11		
		-40	10	NP	16

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-01

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 4
DATE 3/9-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-01
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray-loose to medium dense (A-3)			3		
			3		
			3	NP	17
			20		
			24		
		-45	25	NP	23
			3		
			6		
			9	NP	18
			14		
			15		
		-50	11	NP	18
			4		
			6		
			10	NP	15
			8		
			20		
		-55	18	NP	22
			21		
			26		
			27	NP	21
Trace organics from -58.5' to -60.0'.			5		
			4		
		-60	10	NP	27
SAND-loose to medium dense (A-3)	345.3				
SAND & GRAVEL-gray-medium dense (A-1)			7		
			6		
	342.8		6	NP	16
Trace organics from -66.0' to -67.5'.			7		
			9		
		-65	11	NP	20
			10		
			12		
			14	NP	24
SAND-brown & gray-medium dense to dense (A-3)			6		
			10		
		-70	12	NP	25
			10		
			11		
			18	NP	19
			21		
			18		
		-75	15	NP	12
			18		
			27		
			28	NP	18
			14		
			18		
		-80	18	NP	17

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-01

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 3 of 4
DATE 3/9-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-01
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-medium dense to dense (A-3)	325.3				
SAND with Gravel-brown & gray-medium dense to dense (A-1-b)			9		
			10		
			13	NP	15
			22		
			27		
		-85	28	NP	12
			16		
			26		
			25	NP	15
			32		
			34		
		-90	15	NP	16
			31		
	313.8		50/3"		
SAND & GRAVEL-gray-very dense (A-1)				NP	14
			50/6"		
		-95		NP	10
			39		
			50/5"		
	307.8			NP	8
SAND with Gravel-gray-very dense (A-1-b)			26		
			33		
		-100	50/5"	NP	15
SAND with Gravel-very dense (A-1-b)	305.3		46		
SAND & GRAVEL-gray-very dense (A-1)			50/3"		
				NP	10
			16		
			50/3"		
		-105		NP	6
			50/5"		
	297.8			NP	9
Drillers Observation: Apparent Bedrock.	296.8				
RUN 1 (-109.0' to -119.0') Mississippian System, Valmeyeran Series Limestone		-110	RUN 1		
Light gray & fine grained with horizontal bedding becoming gray & coarser grained @ -113.45. Some chert replacement throughout. Horizontal fractures @ -109.3', -109.4', -109.5', -110.1', -110.2', -110.7', -111.1', -111.8', -112.0' & -112.2'. Tight horizontal fractures between -112.2' & -113.4'. Horizontal fractures @ -113.4', -114.5', -115.1', -116.3', -116.7', -117.0', -117.6' & -118.6'.		-115			
Recovery = 97.0% R.Q.D. = 71.8%	286.8				
RUN 2 (-119.0' to -124.0')		-120	RUN 2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		DRAWN - SNB	REVISED -	~~I-70 CONNECTION OVER~~ NS, TRRA, MCT AND INDUSTRIAL DR.
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -	
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	

SOIL BORING LOGS
1 OF 20

SCALE: | SHEET NO. S-92 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	202
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

SB-01

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 4 of 4
DATE 39-102009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Auger
HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-01
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Gray with horizontal bedding. Fine grained with no chert replacement encountered. Horizontal fractures @ -119.5', -119.8', -120.2', -120.8', -121.2', -121.8', -121.9', -122.1', -122.3', -122.7', -113.3' & -113.7'. Recovery = 100.0% R.Q.D. = 76.5%	281.8	RUN 2		
End Of Boring @ -124.0' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 106' Of 3"* Casing Used	-125			
	-130			
	-135			
	-140			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-145			
-150			
-155			
-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-01 Run-1

ROCK CORE LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 39-102009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74
Core Diameter 2.0 in
Top of Rock Elev. 297.8
BORING NO. SB-01
Begin Core Elev. 296.8
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-109.0' to -119.0') Mississippian System, Valmeyeran Series Limestone. Light gray & fine grained with horizontal bedding becoming gray & coarser grained @ -113.45. Some chert replacement throughout. Horizontal fractures @ -109.3', -109.4', -109.5', -110.1', -110.2', -110.7', -111.1', -111.8', -112.0' & -112.2'. Tight horizontal fractures between -112.2' & -113.4'. Horizontal fractures @ -113.4', -114.5', -115.1', -116.3', -116.7', -117.0', -117.6' & -118.6'.	296.8	1	97.0	71.8	n/a	1018/ -109.7'
	-5					
	-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-01 Run-2

ROCK CORE LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 39-102009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74
Core Diameter 2.0 in
Top of Rock Elev. 297.8
BORING NO. SB-01
Begin Core Elev. 296.8
Station: 130+04
Offset: 43.0' Left
Ground Surface Elev. 405.8

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 2 (-119.0' to -124.0') Mississippian System, Valmeyeran Series Limestone. Gray with horizontal bedding. Fine grained with no chert replacement encountered. Horizontal fractures @ -119.5', -119.8', -120.2', -120.8', -121.2', -121.8', -121.9', -122.1', -122.3', -122.7', -113.3' & -113.7'.	286.8	2	100.0	76.5	n/a	[illegible] -119.1'
	-5					
	-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-02

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering — 805 Amherst Court, Suite 204, Naperville, Illinois 60565

SOIL BORING LOG

PAGE 1 of 4
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-02
Station: 130+04
Offset: 43.0' Right
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black	404.3		AS	-	35
CLAY-dark brown & gray-medium stiff to stiff (A-7) Wet			2		*77*
			3		
			3	1.2B	42
					80
		-5	ST	0.6B	40
Sand seams from -6.0' to -10.0'.			2		
			5		
			5	1.5P	36
			2		
			2		
	395.3	-10	2	0.25P	39
SAND-brown-loose to medium dense (A-3)			6		
			6		
			7	NP	26
			8		
			9		
		-15	7	NP	25
			5		
			5		
			4	NP	29
			6		
			7		
		-20	7	NP	29

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-loose to medium dense (A-3)			6		
			6		
			9	NP	23
			8		
			9		
		-25	8	NP	22
			8		
			5		
			6	NP	16
	377.3				
SAND-gray-medium dense (A-3)			8		
			12		
		-30	13	NP	24
			12		
			12		
			10	NP	25
Trace organics from -33.5' to -35.0'.			6		
			7		
		-35	9	NP	28
			8		
			11		
			9	NP	20
			13		
			14		
		-40	13	NP	16

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-04

SB-02

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering — 805 Amherst Court, Suite 204, Naperville, Illinois 60565

SOIL BORING LOG

PAGE 2 of 4
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-02
Station: 130+04
Offset: 43.0' Right
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
SAND-gray-medium dense to dense (A-3)			7		
			6		
			6	NP	17
Clay seams from -43.5' to -45.0'.			2		
			5		
		-45	6	NP	13
			12		
			16		
			20	NP	18
	357.3				
SAND with Clay Seams-gray-medium dense (A-2)			3		
			6		
		-50	11	<0.25P	34
	354.8				
SAND-gray-medium dense to dense (A-3)			10		
			16		
			25	NP	18
			14		
			26		
		-55	33	NP	21
	349.8				
SAND with Gravel-gray-medium dense (A-1-b)			10		
			13		
			14	NP	15
			8		
			11		
		-60	13	NP	17

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel (A-1-b)	344.8				
SAND-gray-medium dense to dense (A-3)			10		
			15		
			17	NP	21
			10		
			11		
		-65	13	NP	22
			10		
			11		
			15	NP	24
			8		
			11		
		-70	12	NP	21
	334.8				
SAND & GRAVEL-gray-very dense (A-1)			27		
			28		
			50/5"	NP	6
			35		
			41		
		-75	27	NP	11
	329.8				
SAND-brown & gray-medium dense to very dense (A-3)			12		
			14		
			15	NP	12
			19		
			18		
		-80	22	NP	12

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-02

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering — 805 Amherst Court, Suite 204, Naperville, Illinois 60565

SOIL BORING LOG

PAGE 3 of 4
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-02
Station: 130+04
Offset: 43.0' Right
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to very dense (A-3)			19		
			34		
			35	NP	14
			18		
			19		
		-85	19	NP	13
			20		
			18		
			27	NP	22
			17		
			21		
		-90	27	NP	14
			18		
			31		
			28	NP	13
	312.3				
SAND & GRAVEL-brown & gray-dense (A-1)			41		
			29		
		-95	28	NP	15
	309.8				
Silty SAND & GRAVEL-brown & gray-dense (A-2)			9		
			19		
			21	NP	14
	306.3		26		
COBBLES, BOULDERS & GRAVEL-gray-very dense (A-1)			50/3"		
		-100		NP	13

Description	Elev.	DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
COBBLES, BOULDERS & GRAVEL-gray-very dense (A-1)			33		
			35		
			50	NP	11
			50/2"		
		-105			NR
	299.3				
Drillers Observation:Cobbles & Boulders	298.8				
RUN 1 (-106.5' to -107.0') Cobbles & Boulders RUN 1 (-107.0' to -116.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming gray & coarser grained @ -112.35'. No chert replacement encountered. Horizontal fractures @ -107.6', -107.7', -107.9', -108.1', -108.3', -108.5', -108.9', -109.3', -109.5', -109.8', -110.4', -110.6', -110.7', -111.3', -112.9', -113.2', -113.9' & -116.2'. Recovery = 92.1% R.Q.D. = 71.1%		-110 -115	RUN 1		
	288.5				
RUN 2 (-116.5' to -119.0') Gray with horizontal bedding. Fine grained with no chert encountered. Horizontal fractures @ -116.7', -117.0', -117.3', -117.9' & -118.3'. Recovery = 100.0% R.Q.D. = 40.0%	286.3		RUN 2		
RUN 3 (-119.0' to -121.5') Gray with horizontal bedding. Fine grained		-120	RUN 3		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-02

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 4 of 4
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-02
Station: 130+04
Offset: 43.0' Right
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
with no chert encountered. Horizontal fractures @ -119.7' & -120.1'. Thin clay partings @ -120.8', -121.0' & -121.1'. 283.8		RUN 3		
End Of Boring @ -121.5' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 108' Of 3"* Casing Used				
	-125			
	-130			
	-135			
	-140			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-145			
-150			
-155			
-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-02 Run-1

ROCK CORE LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318 — CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74 — Core Diameter 2.0 in
BORING NO. SB-02 — Top of Rock Elev. 298.3
Station: 130+04 — Begin Core Elev. 298.8
Offset: 43.0' Right
Ground Surface Elev. 405.3

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-106.5' to -107.0') Cobbles & Boulders 298.8						
RUN 1 (-107.0' to -116.5') 298.3 Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming gray & coarser grained @ -112.35'. No chert replacement encountered. Horizontal fractures @ -107.6', -107.7', -107.9', -108.1', -108.3', -108.5', -108.9', -109.3', -109.5', -109.8', -110.4', -110.6', -110.7', -111.3', -112.9', -113.2', -113.9' & -115.2'.		1	92.1	71.1	n/a	[illegible] -107.0'
	-5					
	-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-02 Run-2&3

ROCK CORE LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 3/11-12/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318 — CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74 — Core Diameter 2.0 in
BORING NO. SB-02 — Top of Rock Elev. 298.3
Station: 130+04 — Begin Core Elev. 298.8
Offset: 43.0' Right
Ground Surface Elev. 405.3

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 2 (-116.5' to -119.0') 288.8 Mississippian System, Valmeyeran Series Limestone Gray with horizontal bedding. Fine grained with no chert encountered. Horizontal fractures @ -116.7', -117.0', -117.8', -117.9' & -118.3'.		2	100.0	40.0	n/a	n/a
RUN 3 (-119.0' to -121.5') 286.3 Mississippian System, Valmeyeran Series Limestone Gray with horizontal bedding. Fine grained with no chert encountered. Horizontal fractures @ -119.7' & -120.1'. Horizontal fractures with thin clay partings @ -120.8', -121.0' & -121.1'.	-5	3	100.0	86.0	n/a	[illegible] -119.?
	-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 4 OF 20
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-95 OF S-111 STA. 134+22.00 TO STA.
	PLOT DATE = $DATE$	CHECKED -	REVISED -		
		DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	205
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

SB-03

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 3
DATE 3/4-5/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-03
Station: 132+64
Offset: 43.0' Left
Ground Surface Elev. 404.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6.0" TOPSOIL-black	403.9		AS	-	45
SILTY CLAY-dark brown & gray-medium stiff to stiff (A-7) Wet			2		
			3		
			4	0.5P	37
			2		*79*
			3		
	398.9	-5	4	1.3B	38
SANDY LOAM-brown-medium dense (A-2)			ST	NP	11
			4		
			5		
	393.9	-10	5	NP	35
SAND-brown & gray-medium dense (A-3)			5		
			7		
			9	NP	25
			6		
			6		
	388.9	-15	4	NP	24
CLAY-dark gray-very soft (A-7) Wet			2		*60*
			1		
	386.4		1	0.2B	61
SAND-brown & gray-medium dense to dense (A-3)		-20	ST	NP	27

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to dense (A-3)			1		
			2		
			4	NP	24
			10		
			15		
		-25	14	NP	23
			16		
			13		
			13	NP	25
			4		
			4		
		-30	7	NP	18
			4		
			6		
			9	NP	17
			7		
			5		
		-35	9	NP	17
			6		
			8		
			11	NP	17
			9		
			15		
		-40	18	NP	22

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-03

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 3
DATE 3/4-5/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-03
Station: 132+64
Offset: 43.0' Left
Ground Surface Elev. 404.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to dense (A-3)			13		
			13		
			14	NP	23
			9		
			11		
		-45	17	NP	27
			4		
			9		
			12	NP	15
			6		
			9		
		-50	12	NP	16
			13		
			15		
			19	NP	17
			16		
			25		
		-55	28	NP	16
			12		
			12		
			11	NP	16
			7		
			10		
		-60	12	NP	13

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to dense (A-3)			9		
			7		
			11	NP	13
			14		
			11		
		-65	12	NP	13
			11		
			13		
			16	NP	13
			14		
			16		
	333.9	-70	14	NP	14
SAND with Gravel-brown & gray-medium dense to very dense (A-1-b)			8		
			30		
			50/1"	NP	9
			50/6"		
		-75		NP	3
			19		
			26		
			24	NP	9
			9		
			12		
		-80	13	NP	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-03

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 3 of 3
DATE 3/4-5/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-03
Station: 132+64
Offset: 43.0' Left
Ground Surface Elev. 404.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-brown & gray-medium dense to very dense (A-1-b)			9		
			11		
			12	NP	10
			12		
			26		
	318.9	-85	34	NP	10
SAND-brown & gray-dense (A-3)			19		
			22		
	316.4		30	NP	15
SAND & GRAVEL-brown & gray-very dense (A-1)			34		
			34		
	313.9	-90	39	NP	6
SAND-brown & gray-very dense (A-3)			22		
			50/5"		
				NP	17
			42		
			37		
		-95	42	NP	13
			24		
			32		
			37	NP	11
			26		
			50/5"		
		-100		NP	10

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-very dense (A-3)	303.9				
GRAVEL-brown & gray-very dense (A-1)			50/3"		
	300.9			NP	6
Drillers Observation: Apparent Bedrock	299.9				
Mississippian System, Valmeyeran Series Limestone RUN 1 (-104.5' to -114.5') Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some chert replacement. Recovery = 100.0% R.Q.D. = 33.5%	289.9	-105 / -110	RUN 1		
RUN 2 (-114.5' to -119.5') Light gray to gray with horizontal bedding. Fine grained with some chert replacement. Horizontal fractures @ -114.6', -115.0', -115.5', -116.9', -117.4' & -119.2'. Recovery = 100.0% R.Q.D. = 100.0%		-115	RUN 2		
End Of Boring @ -119.5' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer	284.9	-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN - SNB	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

SOIL BORING LOGS
5 OF 20

SCALE: | SHEET NO. S-96 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	206
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

SB-03 Run-1

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 1 of 2
DATE 3/4-5/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 | CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74 | Core Diameter 2.0 in
BORING NO. SB-03 | Top of Rock Elev. 300.9
Station: 132+64 | Begin Core Elev. 299.9
Offset: 43.0' Left
Ground Surface Elev. 404.4

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
299.9 MISSISSIPPIAN SYSTEM, VALMEYERAN SERIES LIMESTONE RUN 1 (-104.5' to -114.5') Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some chert replacement.		1	100.0	33.5	n/a	10136 -110.6'
	-109.5					
	-114.5					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-03 Run-2

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 2 of 2
DATE 3/4-5/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 | CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74 | Core Diameter 2.0 in
BORING NO. SB-03 | Top of Rock Elev. 300.9
Station: 132+64 | Begin Core Elev. 299.9
Offset: 43.0' Left
Ground Surface Elev. 404.4

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
289.9 MISSISSIPPIAN SYSTEM, VALMEYERAN SERIES LIMESTONE RUN 2 (-114.5' to -119.5') Light gray to gray with horizontal bedding. Fine grained with some chert replacement. Horizontal fractures @ -114.6', -115.0', -115.5', -116.9', -117.4' & -119.2'.		2	100.0	100.0	n/a	8978 -114.4'
	-119.5					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-04

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 1 of 3
DATE 3/2-3/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-04
Station: 132+64
Offset: 43.0' Right
Ground Surface Elev. 403.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 396.2 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black 402.7		AS	-	40
SILTY CLAY-dark brown & gray-medium stiff to stiff (A-7) Wet		2		78
		2		
		3	0.9B	42
		1		
		2		
398.2	-5	4	1.75P	39
SILTY LOAM to LOAM-brown & gray-loose (A-2/A-4) ▼		3		
		3		
		2	NP	32
		2		
		3		
393.2	-10	5	NP	30
SAND-brown-medium dense (A-3)		6		
		6		
390.7		6	NP	25
CLAY-dark gray-very soft (A-7) Wet		0		
		3		
388.2	-15	5	<0.25P	82
SAND-brown & gray-loose to dense (A-3)		4		
		4		
		4	NP	27
		7		
		8		
	-20	9	NP	26

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-loose to dense (A-3)		8		
		10		
		11	NP	24
		16		
		24		
	-25	26	NP	21
		4		
		4		
		8	NP	19
		6		
		10		
	-30	14	NP	15
		4		
		5		
		4	NP	17
		8		
		9		
	-35	10	NP	18
		9		
		11		
		14	NP	22
		10		
		14		
	-40	16	NP	22

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 6 OF 20
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
	PLOT DATE = $DATE$	CHECKED -	REVISED -		SHEET NO. S-97 OF S-111
		DATE 06/04/10	REVISED -		STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	207
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SB-04

SOIL BORING LOG

Geo Services, Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 3
DATE 3/2-3/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB LOCATION I-70 Curved Approach Structures
COUNTY St. Clair DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-04
Station: 132+64
Offset: 43.0' Right
Ground Surface Elev. 403.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 396.2
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray- loose to dense (A-3)		8		
		10		
		13	NP	25
		10		
		10		
	-45	10	NP	26
		5		
		5		
		7	NP	16
		7		
		11		
	-50	17	NP	16
		14		
		18		
		20	NP	18
		18		
		20		
	-55	16	NP	13
348.2				
SAND with Gravel-brown & gray- medium dense (A-1-b)		8		
		8		
		10	NP	28
		10		
		12		
	-60	11	NP	14

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-brown & gray- medium dense (A-1-b)		6		
		7		
		13	NP	10
340.7				
SAND-brown & gray- medium dense to dense (A-3)		10		
		14		
	-65	16	NP	11
		10		
		12		
		12	NP	12
		12		
		12		
	-70	13	NP	12
		14		
331.7		19		
		50/4"	NP	12
SAND & GRAVEL-brown & gray- very dense (A-1)		10		
		42		
	-75	27	NP	8
		41		
		50/3"		
			NP	9
325.7				
SAND-brown & gray- medium dense to very dense (A-3)		10		
		11		
	-80	12	NP	10

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-04

SOIL BORING LOG

Geo Services, Inc.

PAGE 3 of 3
DATE 3/2-3/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB LOCATION I-70 Curved Approach Structures
COUNTY St. Clair DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-04
Station: 132+64
Offset: 43.0' Right
Ground Surface Elev. 403.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 396.2
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray- medium dense to very dense (A-3)		10		
		11		
		11	NP	13
		11		
		9		
	-85	10	NP	11
		22		
		34		
		30	NP	14
		12		
		18		
	-90	21	NP	22
313.2				
SAND with Gravel-brown & gray- very dense (A-1-b)		23		
		40		
		50	NP	7
		15		
		34		
	-95	50/6"	NP	14
		31		
		35		
		50	NP	10
		33		
		45		
	-100	50/5"	NP	9

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-brown & gray- very dense (A-1-b)		50/3"		
301.2			NP	3
Drillers Observation: Apparent Bedrock				
299.7				
Mississippian System, Valmeyeran Series Limestone	-105			
RUN 1 (-104.0' to -114.0') Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Recovery=100.0% R.Q.D.=57.0%	-110	RUN 1		
289.7				
RUN 2 (-114.0' to -119.0') Light gray & fine grained with horizontal bedding becoming gray & sandy @ -114.5'. Some tight vertical fractures & chert replacement throughout. Numerous horizontal fractures throughout. Recovery=100.0% R.Q.D.=59.0%	-115	RUN 2		
End Of Boring @ -119.0' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer				
284.7	-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-04 Run-1

ROCK CORE LOG

Geo Services, Inc.

PAGE 1 of 2
DATE 3/2-3/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB LOCATION I-70 Curved Approach Structures
COUNTY St. Clair CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74 Core Diameter 2.0 in
BORING NO. SB-04 Top of Rock Elev. 301.2
Station: 132+64 Begin Core Elev. 299.7
Offset: 43.0' Right
Ground Surface Elev. 403.7

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
299.7 MISSISSIPPIAN SYSTEM, VALMEYERAN SERIES LIMESTONE RUN 1 (-104.0' to -114.0') Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout.		1	100.0	57.0	n/a	690@ -106.2'
	-5					
	-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN - SNB	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

SOIL BORING LOGS
7 OF 20

SCALE: | SHEET NO. S-98 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	208
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

..\0820318-CONN-05-010-MS.DGN ..\0820318-CONN-05-010-MS.DGN 6-02-2010, 18:03:54 BONDHUJO

SB-04 Run-2

ROCK CORE LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 3/2-3/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
SECTION 82-2-1HVB
COUNTY St. Clair
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-04
Station: 132+64
Offset: 43.0' Right
Ground Surface Elev. 403.7

DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
LOCATION I-70 Curved Approach Structures
CORING METHOD Rotary Wash
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 301.2
Begin Core Elev. 299.7

Description	Elev.	Depth (ft)	Core Run (#)	Recovery (%)	R.Q.D. (%)	Core Time (min/ft)	Strength (tsf)
MISSISSIPPIAN SYSTEM, VALMEYERAN SERIES LIMESTONE RUN 2 (-114.0' to -119.0') Light gray & fine grained with horizontal bedding becoming gray & sandy @ -114.5'. Some tight vertical fractures & chert replacement throughout. Horizontal fractures @ -114.1', -114.5', -115.0', -115.2', -115.7', -116.3', -116.9', -117.1', -117.5', -117.6', -118.1', -118.3' & -118.8'.	289.7	-119.0	2	100.0	59.0	n/a	100?@ -116.5'

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-05

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 1 of 4
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
SECTION 82-2-1HVB
COUNTY St. Clair
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-05
Station: 135+64
Offset: 43.0' Left
Ground Surface Elev. 403.8

DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
LOCATION I-70 Curved Approach Structures
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3 ▼
Upon Completion n/a ▽
Dry Cave In 395.3 ▽

Description	Bottom Elev.
SANDY LOAM with Cinders-black (Fill)	402.8
TOPSOIL-black (A-7)	400.8
LOAM-brown-loose (A-4)	▼▽ 395.3
SAND-brown-medium dense (A-3)	
SAND-brown-medium dense (A-3)	375.8
SILTY LOAM-brown-very loose (A-4)	370.8
SAND-dark gray to gray-medium dense to dense (A-3)	

Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
	AS	NP	32
	2, 1, 2	NP	60
-5	1, 2, 2	NP	28
	2, 2, 4	NP	21
-10	2, 3, 3	NP	28
	6, 4, 3	NP	22
-15	4, 4, 5	NP	29
	7, 8, 10	NP	26
-20	6, 7, 8	NP	25
	8, 10, 12	NP	24
-25	6, 11, 11	NP	25
	4, 4, 6	NP	30
-30	2, 1, 2	NP	41
	2, 1, 2	NP	28
-35	6, 7, 6	NP	26
	3, 6, 9	NP	29
-40	7, 8, 7	NP	29

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-05

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 4
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
SECTION 82-2-1HVB
COUNTY St. Clair
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-05
Station: 135+64
Offset: 43.0' Left
Ground Surface Elev. 403.8

DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
LOCATION I-70 Curved Approach Structures
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3 ▼
Upon Completion n/a ▽
Dry Cave In 395.3 ▽

Description	Bottom Elev.
SAND-dark gray to gray-medium dense to dense (A-3) Trace organics from -46.0' to -47.5'. SAND-medium dense to dense (A-3)	343.3
SAND with Gravel-brown & gray-loose to medium dense (A-1-b)	338.3
SAND-brown & gray-medium dense to very dense (A-3)	328.3
SAND with Gravel-brown & gray-medium dense (A-1-b)	

Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
	8, 8, 6	NP	15
-45	7, 7, 9	NP	18
	10, 11, 11	NP	21
-50	7, 9, 12	NP	22
	9, 15, 17	NP	20
-55	11, 12, 14	NP	21
	11, 12, 14	NP	20
-60	6, 5, 5	NP	17
	6, 4, 6	NP	15
-65	3, 4, 3	NP	16
	10, 10, 8	NP	16
-70	9, 10, 11	NP	13
	12, 19, 22	NP	18
-75	17, 25, 43	NP	16
	14, 12, 16	NP	11
-80	12, 13, 14	NP	13

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN - SNB	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.

SOIL BORING LOGS
8 OF 20

SCALE: | SHEET NO. S-99 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	209
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

SB-05

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 3 of 4
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-05
Station: 135+64
Offset: 43.0' Left
Ground Surface Elev. 403.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
Dry Cave In 395.3

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-(A-1-b)	323.3				
SAND-brown & gray-dense (A-3)			16		
			21		
			21	NP	12
			12		
			20		
		-85	21	NP	14
			13		
			21		
			16	NP	14
	315.3				
			16		
			15		
		-90	17	NP	13
			14		
			12		
			11	NP	13
	310.8				
GRAVEL-brown & gray-very dense (A-1-a)			50/5"		
		-95		NP	7
			50/3"		
				NP	4
			50/2"		
		-100			NR

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
GRAVEL-very dense (A-1-a)	303.3				
SAND & GRAVEL-brown & gray-very dense (A-1)			50/6"		
				NP	12
	300.8				
SAND with Gravel-brown & gray-very dense (A-1-b)			25		
			43		
		-105	43	NP	12
	297.8				
Drillers Observation: Boulder or Bedrock.	297.3				
RUN 1 (-106.5' to -116.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings. Recovery = 100.0% R.Q.D. = 19.8%		-110	RUN 1		
	287.3	-115			
RUN 2 (-116.5' to -121.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings becoming darker gray & weathered with some chert replacement.		-120	RUN 2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-05

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 4 of 4
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-05
Station: 135+64
Offset: 43.0' Left
Ground Surface Elev. 403.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 395.3
Upon Completion n/a
Dry Cave In 395.3

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Numerous horizontal fractures throughout. Recovery = 100.0% R.Q.D. = 8.0%	282.3		RUN 2		
End Of Boring @ -121.5' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 108' Of 3"* Casing Used		-125			
		-130			
		-135			
		-140			

Depth scale, right column: -145, -150, -155, -160

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-05 Run-1

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 1 of 2
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-05
Station: 135+64
Offset: 43.0' Left
Ground Surface Elev. 403.8

CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 297.3
Begin Core Elev. 297.3

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-106.5' to -116.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings.	297.3		1	100.0	19.8	n/a	973 @ -113.7
		-5					
		-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME :	USER NAME : $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS	SOIL BORING LOGS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
$FILEL$		DRAWN - SNB	REVISED -	DEPARTMENT OF TRANSPORTATION	9 OF 20	998	82-2-1HVB	ST. CLAIR	285	210
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	CHECKED -	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: — SHEET NO. S-100 OF S-111 — STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

SB-05 Run-2

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 2 of 2
DATE 3/30-31/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 — CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74 — Core Diameter 2.0 in
BORING NO. SB-05 — Top of Rock Elev. 297.3
Station: 135+64 — Begin Core Elev. 297.3
Offset: 43.0' Left
Ground Surface Elev. 403.8

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 2 (-116.5' to -121.5') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings becoming darker gray & weathered with some chert replacement. Numerous horizontal fractures throughout.	287.3		2	100.0	8.0	n/a	n/a
		-5					
		-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-06

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 1 of 4
DATE 4/1-2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
Cave In 393.1

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SANDY LOAM with Cinders-black-very loose (A-2) Fill			AS	NP	21
			1		
			1		
	408.1		1	NP	38
SILTY LOAM-dark brown & black-very loose (A-4) Fill, Wet			1		
			1		
	405.6	-5	1	NP	30
CINDERS, SAND & BRICK-very loose (Fill)			1		
			1		
			0	NP	30
			1		
			1		
	400.6	-10	0	NP	23
SILTY CLAY-brown & gray-medium dense (A-7) Wet	398.1		ST	0.5P	41
SANDY LOAM-brown-medium dense (A-2)			2		
			3		
	395.6	-15	7	NP	26
SAND-brown-medium dense (A-3) (Cave In ▽)			4		
			5		
			7	NP	25
			10		
			11		
		-20	11	NP	24
SAND-brown-medium dense (A-3)			7		
			10		
			10	NP	23
			9		
			8		
		-25	6	NP	23
			7		
			6		
			4	NP	28
			8		
			10		
		-30	7	NP	23
			6		
			8		
	378.1		5	NP	26
SAND-dark gray-medium dense (A-3)			7		
			7		
	375.6	-35	9	NP	26
SANDY LOAM with Organics-dark gray-loose (A-2)			3		
			3		
			4	NP	39
			2		
			5		
		-40	4	NP	52

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-06

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 2 of 4
DATE 4/1-2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-06
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
Cave In 393.1

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SANDY LOAM-dark gray-loose (A-2)	370.6				
SAND-gray-medium dense (A-3)			5		
			6		
	368.1		5	NP	28
SANDY LOAM with Organics-dark gray to black-loose to medium dense (A-2)			2		
			3		
		-45	3	NP	60
			2		
			4		
	363.1		9	NP	54
SAND-gray-medium dense to very dense (A-3)			8		
			10		
		-50	12	NP	26
			8		
			9		
			12	NP	21
Clay seams from -56.0' to -57.5'.			8		
			12		
		-55	17	NP	24
			8		
			10		
			16	NP	18
			13		
			17		
		-60	19	NP	23
SAND-gray-medium dense to very dense (A-3)			18		
			22		
			42	NP	22
			30		
			36		
		-65	37	NP	21
			14		
			22		
	343.1		44	NP	20
SAND with Gravel-brown & gray-medium dense (A-1-b)			7		
			7		
		-70	5	NP	19
			6		
			7		
	338.1		9	NP	16
SAND-gray-medium dense to dense (A-3)			9		
			14		
		-75	17	NP	19
			9		
			10		
			17	NP	18
			11		
			19		
		-80	26	NP	20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS	SOIL BORING LOGS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
$FILEL$		DRAWN - SNB	REVISED -	DEPARTMENT OF TRANSPORTATION	10 OF 20	998	82-2-1HVB	ST. CLAIR	285 / 211
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED -	I-70 CONNECTION OVER		SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44	
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: / SHEET NO. S-101 OF S-111 / STA. 134+22.00 TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

SB-06

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 3 of 4
DATE 4/2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-069-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
Cave In 393.1

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray-medium dense to dense (A-3)			9		
			10		
	328.1		17	NP	16
SAND & GRAVEL-brown & gray-medium dense (A-1)			33		
			13		
	325.6	-85	15	NP	10
SAND with Gravel-brown & gray-medium dense to dense (A-1-b)			12		
			12		
			11	NP	10
			18		
			25		
	320.6	-90	18	NP	10
SAND-brown & gray-dense (A-3)			17		
			19		
			22	NP	19
			14		
			24		
	315.6	-95	23	NP	14
SAND with Gravel-brown & gray-medium dense to very dense (A-1-b)			12		
			11		
			10	NP	17
			14		
			22		
		-100	23	NP	14

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-brown & gray-medium dense to very dense (A-1-b)			25		
			50/3"		
	307.6			NP	13
SAND & GRAVEL-brown & gray-very dense (A-1)			50/3"		
		-105		NP	10
			46		
			50/3"		
	303.1			NP	9
GRAVEL-brown & gray-very dense (A-1-a)			50/3"		
		-110		NP	10
	299.1		50/1"		
Drillers Observation: Apparent Bedrock.	298.6				NR
RUN 1 (-112.5' to -122.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings. Recovery = 99.5% R.Q.D. = 32.5%		-115	RUN 1		
		-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-06

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 4 of 4
DATE 4/1-2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-069-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
Cave In 393.1

Description	Elev.	DEPTH (ft)	BLOWS / UCS / MOIST
RUN 1 continued.	288.6		RUN 1
RUN 2 (-122.5' to -127.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings becoming darker gray & weathered with some chert replacement. Numerous horizontal fractures throughout. Recovery = 100.0% R.Q.D. = 14.5%	283.6	-125	RUN 2
End Of Boring @ -127.5' Hollow Stem Augers To -15.0' Rotary Drilling To Completion CME Automatic Hammer 15' Of 4"* Casing Used 114' Of 3"* Casing Used		-130	
		-135	
		-140	

Right-hand columns: depths -145, -150, -155, -160 (no entries).

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-06 Run-1

ROCK CORE LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 4/1-2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 299.1
Begin Core Elev. 298.6

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-112.5' to -122.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings.	298.6		1	99.5	32.5	n/a	972 @ -114.8'
		-5					
		-10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the unixial compressive strength of the core sample (ASTM D-2938)

FILE NAME : $FILEL$	USER NAME : $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 11 OF 20	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 212
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SHEET NO. S-102 OF S-111	STA. 134+22.00 TO STA.	SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44	
	PLOT DATE : $DATE$	CHECKED -	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		DATE - 06/04/10	REVISED -							

SB-06 Run-2

ROCK CORE LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

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DATE 4/1-2/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 299.1
Begin Core Elev. 298.6
BORING NO. SB-06
Station: 135+64
Offset: 43.0' Right
Ground Surface Elev. 411.1

RUN 2 (-122.5' to -127.5') — 288.6
Mississippian System, Valmeyeran Series Limestone

Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout & some thin clay partings becoming darker gray & weathered with some chert replacement. Numerous horizontal fractures throughout.

Depth (ft)	Core Run (#)	Recovery (%)	R.Q.D. (%)	Core Time (min/ft)	Strength (tsf)
	2	100.0	14.5	n/a	817 @ -126.5'

Depth scale: -5, -10

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-07

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 4
DATE 3/24-25/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Auger
HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-07
Station: 138+44
Offset: 43.0' Left
Ground Surface Elev. 412.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Strata (elevation of bottom of stratum):
- Miscellaneous Sand, Cinders & Brick-very loose to medium dense (Fill); Clay seams from -6.0' to -7.5'. — 404.0
- SILTY CLAY-dark brown & gray-medium stiff to stiff (A-7) Wet — 396.5
- SAND-brown-medium dense (A-3) — 395.0
- SANDY LOAM-gray-very loose (A-2) — 391.5
- SAND-brown-loose (A-3) — 389.0
- SILTY CLAY LOAM to SILTY LOAM-gray-very loose (A-4) — 381.5
- SAND-gray-medium dense (A-3) — 379.0
- SANDY LOAM-gray-very loose (A-2) — 376.5
- SAND-gray-medium dense to dense (A-3)

Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
	AS	NP	12
	3, 4, 6	NP	16
-5	2, 2, 1	NP	22
	1, 0, 1	NP	31
-10	1, 2, 3	1.1B	*74* / 43
	2, 2, 3	1.4S@ 11.3%	*80* / 38
-15	ST	0.9S@ 9.0%	36
	4, 5, 7	NP	20
-20	2, 0, 1	NP	28
	4, 4, 5	NP	29
-25	1, 0, 1	<0.25P	40
	0, 0, 1	<0.25P	32
-30	1, 0, 1	NP	30
	5, 7, 6	NP	27
-35	1, 2, 6	NP	25
	8, 15, 19	NP	23
-40	8, 7, 9	NP	19

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-07

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

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LOGGED BY DR
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ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Auger
HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-07
Station: 138+44
Offset: 43.0' Left
Ground Surface Elev. 412.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Strata (elevation of bottom of stratum):
- SAND-gray-medium dense to dense (A-3)
- SAND-gray-medium dense to dense (A-3) — 336.5
- SAND & GRAVEL-brown & gray-medium dense to dense (A-1)

Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
	12, 15, 11	NP	18
-45	9, 8, 8	NP	19
	9, 13, 12	NP	25
-50	6, 11, 12	NP	18
	10, 11, 11	NP	25
-55	10, 10, 15	NP	24
	15, 14, 16	NP	20
-60	7, 12, 15	NP	16
	12, 13, 14	NP	19
-65	9, 11, 21	NP	25
	20, 24, 23	NP	23
-70	10, 22, 29	NP	22
	14, 17, 18	NP	19
-75	13, 15, 15	NP	18
	6, 8, 10	NP	14
-80	8, 10, 14	NP	9

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 12 OF 20
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER	
	PLOT DATE = $DATE$	CHECKED -	REVISED -	NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE: SHEET NO. S-103 OF S-111 STA. 134+22.00 TO STA.
		DATE - 06/04/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	213

SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

SB-07

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 3 of 4
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LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Auger
HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-07
Station: 138+44
Offset: 43.0' Left
Ground Surface Elev. 412.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-brown & gray-medium dense to dense (A-1)			32		
			17		
	329.0		14	NP	13
SAND-brown & gray-medium dense to dense (A-3)			18		
			12		
		-85	15	NP	11
			8		
			8		
			9	NP	16
			13		
			18		
	321.5	-90	14	NP	19
SAND with Gravel-brown & gray-medium dense to dense (A-1-b)			12		
			15		
			16	NP	10
			18		
			19		
	316.5	-95	25	NP	9
SAND-brown & gray-dense to very dense (A-3)			29		
			33		
			41	NP	14
			17		
			19		
		-100	22	NP	14

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-dense to very dense (A-3)	311.5				
SAND & GRAVEL-brown & gray-dense to very dense (A-1)			13		
			19		
			19	NP	12
			50/5"		
		-105		NP	13
			50/5"		
				NP	11
			50/5"		
		-110		NP	9
	300.0		50/4"		
Drillers Observation: Bedrock or Boulder.	299.5			NP	15
RUN 1 (-112.5' to -122.5') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some thin clay partings & chert replacement. Recovery = 100.0% R.Q.D. = 30.0%		-115	RUN 1		
		-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-07

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

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DATE 3/24-25/2009
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ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Auger
HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-07
Station: 138+44
Offset: 43.0' Left
Ground Surface Elev. 412.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
RUN 1 (-112.5' to -122.5')	289.5		RUN 1		
RUN 2 (-122.5' to -127.5') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some chert replacement. Recovery = 100.0% R.Q.D. = 41.5%	284.5	-125	RUN 2		
End Of Boring @ -127.5' Hollow Stem Augers To -15.0' Rotary Drilling To Completion CME Automatic Hammer 15' Of 4"* Casing Used 114' Of 3"* Casing Used		-130			
		-135			
		-140			
		-145			
		-150			
		-155			
		-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-07 Run-1

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 1 of 2
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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-07
Station: 138+44
Offset: 43.0' Left
Ground Surface Elev. 412.0

CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 299.5
Begin Core Elev. 299.5

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-112.5' to -122.5') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some thin clay partings & chert replacement.	299.5		1	100.0	30.0	n/a	[illegible] -120.5'
		-117.5					
		-122.5					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 13 OF 20	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 214
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	CHECKED -	REVISED -		SHEET NO. S-104 OF S-111	STA. 134+22.00 TO STA.				
		DATE - 06/04/10	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SB-07 Run-2

ROCK CORE LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
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ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 | CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74 | Core Diameter 2.0 in
BORING NO. SB-07 | Top of Rock Elev. 299.5
Station: 138+44 | Begin Core Elev. 299.5
Offset: 43.0' Left
Ground Surface Elev. 412.0

Description	Elev.	Depth (ft)	Core Run (#)	Recovery (%)	R.Q.D. (%)	Core Time (min/ft)	Strength (tsf)
RUN 2 (-122.5' to -127.5') Mississippian System, Valmeyeran Series Limestone. Light gray with horizontal bedding. Fine grained with numerous horizontal fractures throughout. Some chert replacement.	289.5		2	100.0	41.5	n/a	707 @ -122.6'
		-127.5					
		-132.5					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-08

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

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ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-08
Station: 138+34
Offset: 43.0' Right
Ground Surface Elev. 404.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev. (bottom)	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
Silty SAND & STONE with Wood Chips-medium dense (Fill)			AS	NP	33
			1		
			2		
	401.3		2	NP	55
SILTY CLAY LOAM-dark brown-very loose (A-4)			2		
			1		
	398.8	-5	2	0.5P	34
SILTY CLAY-brown & gray-stiff (A-6/A-7) Wet	396.3		ST	1.7B	37
SAND-brown-loose to medium dense (A-3)			3		
			6		
		-10	6	NP	15
			3		
			4		
			2	NP	17
			3		
			5		
		-15	7	NP	23
			4		
			3		
	386.3		3	NP	31
SILTY CLAY to SILTY CLAY LOAM-gray-very soft to soft (A-4/A-6) Wet			1		*71*
			0		
		-20	1	0.1B	46
SILTY CLAY to SILTY CLAY LOAM-gray-very soft to soft (A-4/A-6) Wet	380.3		ST	0.4B	46
SANDY LOAM to LOAM-gray-very loose (A-4)			1		
			0		
		-25	1	NP	33
			1		
			0		
			1	NP	32
			1		
			0		
	373.8	-30	2	<0.25P	39
SAND-gray-loose to dense (A-3)			2		
			2		
			4	NP	26
			1		
			2		
		-35	4	NP	26
			5		
			6		
			5	NP	26
			5		
			5		
		-40	6	NP	21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR No Recovery

SB-08

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 4
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ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-08
Station: 138+34
Offset: 43.0' Right
Ground Surface Elev. 404.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev. (bottom)	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
Coal chips from -41.0' to -42.5'.			9		
			11		
			10	NP	22
SAND-gray-loose to dense (A-3)			10		
			12		
		-45	13	NP	23
			10		
			12		
			14	NP	23
			11		
			11		
		-50	12	NP	16
			13		
			14		
			15	NP	17
			10		
			14		
		-55	21	NP	17
			9		
			11		
			16	NP	23
			9		
			29		
		-60	29	NP	21
SAND-gray-loose to dense (A-3)			12		
			16		
			24	NP	24
			14		
			18		
		-65	28	NP	21
			15		
			20		
			24	NP	18
			8		
			8		
	333.8	-70	11	NP	17
SAND & GRAVEL-brown & gray-medium dense to dense (A-1)			6		
			6		
			9	NP	13
			28		
			10		
		-75	9	NP	10
			14		
			30		
	326.3		18	NP	8
SAND with Gravel-brown & gray-medium dense to dense (A-1-b)			16		
			20		
		-80	19	NP	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-08

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

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ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-08
Station: 138+34
Offset: 43.0' Right
Ground Surface Elev. 404.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-brown & gray-medium dense to dense (A-1-b)		10		
		11		
		13	NP	12
		10		
		10		
	-85	11	NP	13
		10		
		11		
		13	NP	13
		15		
		19		
	-90	29	NP	10
		11		
		16		
		21	NP	16
		16		
		26		
308.8	-95	29	NP	12
SAND & GRAVEL & FRACTURED ROCK-gray-very dense (A-1)		50/3"		
				NR
		50/5"		
	-100		NP	7

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-very dense (A-1) 303.8				
Silty SAND & GRAVEL & FRACTURED ROCK-gray-very dense (A-2)		38		
		50/5"		
300.8			NP	15
RUN 1 (-103.5' to -105.3') Cobbles & Gravel.		Run 1		
RUN 1 (-105.3' to -106.0') Mississippian System, Valmeyeran Series Limestone 299.0 / 298.3	-105			
RUN 2 (-106.0' to -107.0') Mississippian System, Valmeyeran Series Limestone 297.3		Run 2		
RUN 3 (-107.0' to -117.0') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with some chert replacement. Numerous horizontal fractures throughout with some thin clay partings. Recovery = 100.0% R.Q.D. = 34.5%	-110	Run 3		
287.3	-115			
RUN 3 (-117.0' to -122.0') Mississippian System, Valmeyeran Series Limestone Light gray with horizontal bedding. Fine grained with some chert replacement.	-120	Run 4		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-08

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

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LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-08
Station: 138+34
Offset: 43.0' Right
Ground Surface Elev. 404.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Horizontal fractures @ -117.3', -117.4', -117.9', -118.8', -119.0', -120.4', -121.4' & -121.6'. Recovery = 91.5% R.Q.D. = 75.0% 282.3		RUN 4		
End Of Boring @ -122.0' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 107' Of 3"* Casing Used	-125			
	-130			
	-135			
	-140			

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	-145			
	-150			
	-155			
	-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-08 Run-1&2

ROCK CORE LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 3
DATE 3/26-27/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-08
Station: 138+34
Offset: 43.0' Right
Ground Surface Elev. 404.3

CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 299.0
Begin Core Elev. 300.8

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-103.5' to -105.3') Cobbles & Gravel	300.8		1	n/a	n/a	n/a	n/a
RUN 1 (-105.3' to -106.0') Mississippian System, Valmeyeran Series Limestone	299.0 / 298.3		1	100.0	0.0	n/a	n/a
RUN 2 (-106.0' to -107.0') Mississippian System, Valmeyeran Series Limestone			2	85.0	0.0	n/a	n/a
		-108.5					
		-113.5					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 15 OF 20
TENG (TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS)		DRAWN - SNB	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		SHEET NO. S-106 OF S-111 / STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	216
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SB-08 Run-3

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806 Kenilworth Court, Suite 204
Naperville, Illinois 60565
(630) 961-7756

ROCK CORE LOG

PAGE 2 of 3
DATE
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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74
Core Diameter 2.0 in
BORING NO. SB-08
Top of Rock Elev. 299.0
Station: 138+34
Begin Core Elev. 300.8
Offset: 43.0' Right
Ground Surface Elev. 404.3

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	RQD (%)	CORE TIME (min/ft)	STRENGTH (tsf)
297.3					
	3	100.0	34.5	n/a	12069 -107.3
-122.0					
-127.0					

RUN 3 (-107.0' to -117.0')
Mississippian System,
Valmeyeran Series Limestone

Light gray with horizontal bedding. Fine grained with some chert replacement. Numerous horizontal fractures throughout with some thin clay partings.

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-08 Run-4

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ROCK CORE LOG

PAGE 3 of 3
DATE
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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
CORING BARREL TYPE & SIZE NX Double Swivel-6 ft
Station: 127+00 to 140+74
Core Diameter 2.0 in
BORING NO. SB-08
Top of Rock Elev. 299.0
Station: 138+34
Begin Core Elev. 300.8
Offset: 43.0' Right
Ground Surface Elev. 404.3

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	RQD (%)	CORE TIME (min/ft)	STRENGTH (tsf)
287.3					
	4	91.5	76.0	n/a	10634 -118.3
-122.0					
-127.0					

RUN 3 (-117.0' to -122.0')
Mississippian System,
Valmeyeran Series Limestone

Light gray with horizontal bedding. Fine grained with some chert replacement. Horizontal fractures @ -117.3', -117.4', -117.9', -118.8', -119.0', -120.4', -121.4' & -121.6'.

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-09

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Naperville, Illinois 60565
(630) 961-7756

SOIL BORING LOG

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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
DRILLING METHOD 3.25" Hollow Stem Augor HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-09
Station: 140+74
Offset: 43.0' Left
Ground Surface Elev. 406.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black							
405.1	AS	-	39				
	2				6		
	4				9		
	5	1.25P	40		11	NP	19
SAND-brown & gray-medium dense (A-3)							
	2				6		
	2				8		
SILTY CLAY-dark brown-stiff to very stiff (A-7) Wet	2	2.0P	30	-25	9	NP	22
			84		3		
Clay seams from -26.0' to -27.5'.					7		
	ST	1.2B	33		10	NP	23
	2				9		
	2				13		
	3	1.25P	31	-30	16	NP	21
				375.6			
	3				14		
	4				12		
	4	1.25P	28		11	NP	17
393.1							
	2				4		
	2				8		
SANDY LOAM-brown-very loose (A-2)	1	NP	25	-35	11	NP	34
	1				7		
	0				8		
	3	NP	28		10	NP	18
388.1							
SAND-brown & gray-medium dense (A-3)	5				10		
	6				16		
-20	10	NP	18	-40	19	NP	23

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

\\082031B-CONN-05-B1B-MS.DGN \\082031B-CONN-05-B1B-MS.DGN \\082031B-CONN-05-B1B-MS.DGN \\082031B-CONN-05-B1B-MS.DGN \\082031B-CONN-05-B1B-MS.DGN
6-02-2010 15:08:09 BOHDANJD \\FS-2004\ANYVAULT\D-TRANS_07\2292\28868-00R\STRUCT\CADD\01 DESIGN\082031B\SHEET\082031B-CONN-05-B1B-SHT-MS.DGN

SB-09

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 ... Court, Suite 204
Naperville, Illinois 60566

PAGE 2 of 4
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LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-09
Station: 140+74
Offset: 43.0' Left
Ground Surface Elev. 406.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		12		
		15		
		13	NP	20
		8		
		6		
SAND-gray- medium dense to dense (A-3)	-45	10	NP	22
		7		
		10		
		11	NP	24
		10		
		23		
	-50	31	NP	24
		9		
		9		
		11	NP	27
		5		
		6		
	-55	6	NP	15
		6		
		6		
Gravel seams from -26.0' to -27.5'.		9	NP	20
		8		
		12		
	-60	14	NP	24

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		8		
		12		
		17	NP	25
		6		
		8		
	-65	9	NP	24
SAND-gray- medium dense to dense (A-3)		7		
		11		
		18	NP	29
		9		
		13		
	-70	22	NP	26
		10		
		17		
		28	NP	24
		13		
		9		
330.6	-75	10	NP	14
		11		
		8		
SAND & GRAVEL-brown & gray- medium dense (A-1)		6	NP	12
		20		
		13		
	-80	10	NP	8

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-09

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
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Naperville, Illinois 60566

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ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-09
Station: 140+74
Offset: 43.0' Left
Ground Surface Elev. 406.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL medium dense (A-1) 325.6				
		12		
		11		
		10	NP	14
		9		
SAND with Gravel-brown & gray- medium dense (A-1-b)		10		
	-85	9	NP	12
		8		
		11		
		14	NP	9
		8		
		10		
315.6	-90	10	NP	13
		8		
SAND-brown & gray- medium dense (A-3)		9		
313.1		12	NP	12
		12		
SAND with Gravel-brown & gray- dense (A-1-b)		17		
302.6	-95	24	NP	18
		38		
		40		
SAND & GRAVEL-brown & gray- very dense (A-1)		47	NP	4
		31		
		25		
	-100	39	NP	9

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-brown & gray- very dense (A-1)		38		
		43		
303.1		60	NP	6
		31		*129*
SANDY CLAY LOAM-gray- very stiff to hard (A-6)		23		
	-105	45	8.0B	10
299.1		50/4"		
Drillers Observation: Apparent Bedrock 298.1			3.25P	13
RUN 1 (-108.0' to -118.0') Mississippian System, Valmeyeran Series Limestone				
Light gray & fine grained with horizontal bedding becoming darker gray @ -115.6. Some chert replacement & numerous horizontal fractures throughout.	-110	RUN1		
Recovery = 100.0% R.Q.D. = 58.0%	-115			
288.1				
RUN 2 (-118.0' to -123.0') Mississippian System, Valmeyeran Series Limestone	-120	RUN 2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-09

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 ... Court, Suite 204
Naperville, Illinois 60566

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DATE 3/16-17/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-09
Station: 140+74
Offset: 43.0' Left
Ground Surface Elev. 406.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Gray & fine grained with horizontal bedding. No chert replacement encountered. Horizontal fractures @ -118.6', -121.0', -121.6', -122.2', -122.3' & -122.5'. Recovery = 100.0% R.Q.D. = 93.0% 283.1		RUN 2		
End Of Boring @ -123.0' Hollow Stem Augers To -12.5' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 109' Of 3"* Casing Used	-125			
	-130			
	-135			
	-140			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-145			
-150			
-155			
-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-09 Run-1

ROCK CORE LOG

Geo Services, Inc. — Geotechnical, Environmental & Civil Engineering

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GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 | CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station: 127+00 to 140+74 | Core Diameter 2.0 in
BORING NO. SB-09 | Top of Rock Elev. 299.1
Station: 140+74 | Begin Core Elev. 298.1
Offset: 43.0' Left
Ground Surface Elev. 406.1

Description	Depth (ft)	Core (#)	Recovery (%)	R.Q.D. (%)	Core Time (min/ft)	Strength (tsf)
298.1 — RUN 1 (-108.0' to -118.0') Mississippian System, Valmeyeran Series Limestone. Light gray & fine grained with horizontal bedding becoming darker gray @ -115.6. Some chert replacement & numerous horizontal fractures throughout.		1	100.0	58.0	n/a	[illegible] -109.4'
	-113.0					
	-118.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-09 Run-2

ROCK CORE LOG

Geo Services, Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 3/16-17/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318 | CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Station: 127+00 to 140+74 | Core Diameter 2.0 in
BORING NO. SB-09 | Top of Rock Elev. 299.1
Station: 140+74 | Begin Core Elev. 298.1
Offset: 43.0' Left
Ground Surface Elev. 406.1

Description	Depth (ft)	Core (#)	Recovery (%)	R.Q.D. (%)	Core Time (min/ft)	Strength (tsf)
288.1 — RUN 2 (-118.0' to -123.0') Mississippian System, Valmeyeran Series Limestone. Gray & fine grained with horizontal bedding. No chert replacement encountered. Horizontal fractures @ -118.6', -121.0', -121.6', -122.2', -122.3' & -122.5'.		2	100.0	93.0	n/a	[illegible] -118.0'
	-123.0					
	-128.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-10

SOIL BORING LOG

Geo Services, Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 1 of 4
DATE 3/18-20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1IIVB | LOCATION I-70 Curved Approach Structures
COUNTY St. Clair | DRILLING METHOD 3.25" Hollow Stem Auger | HAMMER TYPE CME Automatic
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
TOPSOIL-black	405.7		AS	-	34
SILTY CLAY-dark brown-stiff (A-6/A-7) Wet			2		*94*
			2		
			3	1.9B	28
			2		*87*
			1		
	401.2	-5	2	1.3B	35
SILTY CLAY LOAM-brown & gray-medium stiff (A-4/A-6) Wet			2		
			2		
	398.7		3	0.5P	28
SILTY LOAM to LOAM-brown & gray-loose (A-4)			3		
			3		
	396.2	-10	3	NP	26
SAND-brown-loose to medium dense (A-3)			2		
			3		
			2	NP	24
			4		
			3		
		-15	4	NP	22
			5		
			6		
			7	NP	23
			3		
			3		
		-20	5	NP	25

Description	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
SAND-brown-loose to medium dense (A-3)		9		
		9		
		10	NP	22
		9		
		11		
	-25	11	NP	22
		11		
		13		
		14	NP	22
		10		
		8		
	-30	9	NP	21
Trace organics from -31.0' to -32.5'.		7		
		7		
		12	NP	20
		6		
		7		
	-35	11	NP	21
		9		
		9		
		17	NP	24
		10		
		12		
	-40	14	NP	21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 18 OF 20	F.A.P. RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 219
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - SNB	REVISED -	I-70 CONNECTION OVER NS, TRRA, MCT AND INDUSTRIAL DR.	SCALE:	SHEET NO. S-109 OF S-111	STA. 134+22.00 TO STA.	SN 082-0318 (EB) & 0319 (WB)	CONTRACT NO. 76C44	
	PLOT DATE = $DATE$	CHECKED -	REVISED -					FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT
		DATE - 06/04/10	REVISED -							

SB-10

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

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LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-loose to medium dense (A-3) 366.2				
SAND-gray- medium dense to very dense (A-3)		8		
		13		
		13	NP	21
		9		
		19		
	-45	19	NP	18
		11		
		23		
		28	NP	20
		24		
		23		
	-50	36	NP	23
		23		
		30		
		33	NP	19
		10		
		10		
	-55	13	NP	24
		8		
		9		
		11	NP	23
		8		
		9		
	-60	12	NP	23

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- medium dense to very dense (A-3). Trace organics from -66.0' to -67.5'.		12		
		14		
		21	NP	23
		10		
		12		
	-65	12	NP	24
		7		
		13		
		14	NP	36
		12		
		15		
	-70	17	NP	21
		12		
		20		
		28	NP	15
333.7				
SAND with Gravel-gray- medium dense to dense (A-1-b)		10		
		9		
	-75	8	NP	12
		22		
		12		
		10		NR
		16		
		17		
	-80	23	NP	13

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-10

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 3 of 4
DATE 3/18-20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-gray- medium dense to dense (A-1-b)		11		
		15		
		12	NP	13
		13		
		15		
	-85	13	NP	11
		14		
		11		
		9	NP	10
318.7				
SAND-brown & gray- dense to very dense (A-3)		13		
		15		
	-90	21	NP	18
		24		
		38		
		50	NP	13
		22		
		23		
	-95	29	NP	16
		18		
		32		
		50	NP	15
308.7				
SAND with Gravel-gray- very dense (A-1-b)		50/6"		
	-100		NP	16

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND with Gravel-gray- very dense (A-1-b)		36		
		50/2"		
			NP	12
		45		
		39		
302.2				
Drillers Observation: Cobbles & Boulders.	-105	24	NP	10
		50/2"		
				NR
298.7				
RUN 1 (-108.0' to -118.0') Mississippian System, Valmeyeran Series Limestone. Light gray & fine grained with horizontal bedding, & some chert replacement. Numerous horizontal fractures throughout. Recovery = 100.0% R.Q.D. = 33.5%	-110	RUN1		
	-115			
288.7				
RUN 2 (-118.0' to -123.0') Mississippian System, Valmeyeran Series Limestone	-120	RUN 2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SB-10

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 4 of 4
DATE 3/18-20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB — LOCATION I-70 Curved Approach Structures
COUNTY St. Clair — DRILLING METHOD 3.25" Hollow Stem Auger — HAMMER TYPE CME Automatic

STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Light gray & fine grained with horizontal bedding, & some chert replacement. Numerous horizontal fractures throughout, with some thin clay partings. Recovery = 100.0% R.Q.D. = 52.0%		RUN 2		
283.7				
End Of Boring @ -123.0' Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10' Of 4"* Casing Used 109' Of 3"* Casing Used	-125			
	-130			
	-135			
	-140			

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	-145			
	-150			
	-155			
	-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -
$FILEL$		DRAWN - SNB	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION OVER
NS, TRRA, MCT AND INDUSTRIAL DR.

SOIL BORING LOGS
19 OF 20

SCALE: | SHEET NO. S-110 OF S-111 | STA. 134+22.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	220
SN 082-0318 (EB) & 0319 (WB)		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SB-10 Run-1

ROCK CORE LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 3/18-20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 298.7
Begin Core Elev. 298.7
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-108.0' to -118.0') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding, & some chert replacement. Numerous horizontal fractures throughout.	298.7		1	100.0	33.6	n/a	1161@ -110.4'
		-113.0					
		-118.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SB-10 Run-2

ROCK CORE LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

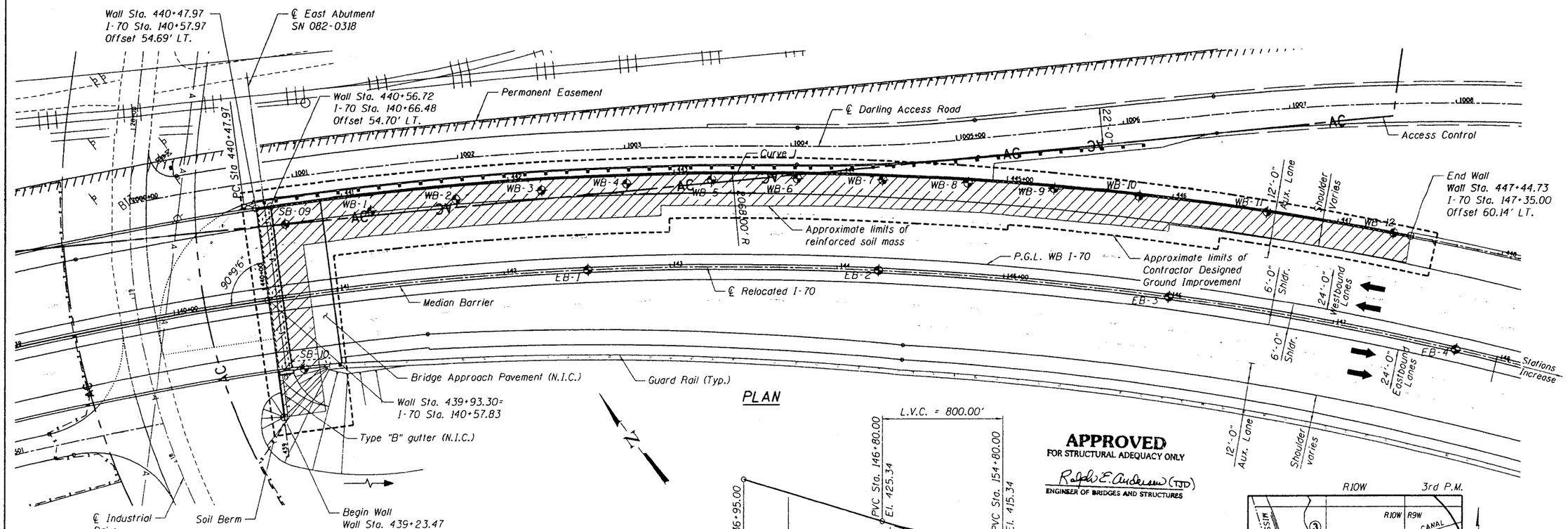
PAGE 2 of 2
DATE 3/18-20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION 82-2-1HVB
LOCATION I-70 Curved Approach Structures
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. S.N. 082-0318
Station: 127+00 to 140+74
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 298.7
Begin Core Elev. 298.7
BORING NO. SB-10
Station: 140+74
Offset: 43.0' Right
Ground Surface Elev. 406.7

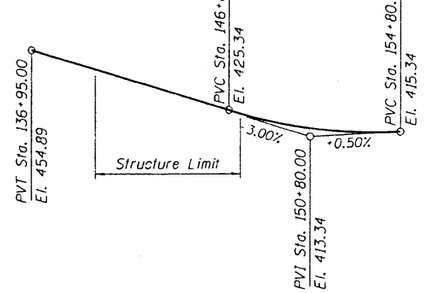
Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 2 (-118.0' to -123.0') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding, & some chert replacement. Numerous horizontal fractures throughout, with some thin clay partings.	288.7		2	100.0	52.0	n/a	1013@ -119.3'
		-123.0					
		-128.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BENCH MARK:
Monument No. 11: Aluminum disk set in the back of a 4.5' concrete walk (end of walk), located on the west side of Illinois Route 3 approximately 0.3 miles south of Canal Street (Brooklyn). El. 414.02

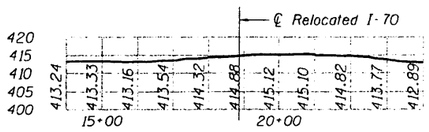


PLAN



PROFILE GRADE RELOCATED I-70

(along ℄ Roadway)



INDUSTRIAL DR. PROFILE

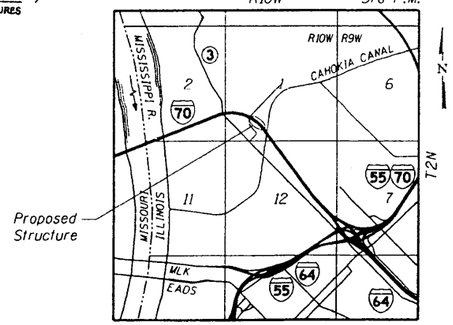
APPROVED

FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (TJD)

ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
R. SHANKAR NAIR
81-3676
Licensed Structural Engineer
6/30/10



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi (Precast Panels)

SEISMIC DATA *

Soil Site Class = D

Return Period, Tr [yrs]	1000	2500
Modified Peak Ground Acceleration, As [g]	0.20	0.26
Importance Category	Critical	Essential
Seismic Performance Zone	2	2

* Seismic Data based on site-specific analysis.

CURVE DATA - WALL CURVE 1

PI Sta. 444+33.90
Δ = 21°08'30" (RT)
D = 2°46'14"
R = 2,068.00'
L = 763.07'
T = 385.92'
E = 35.70'
SE = N/A
PC Sta. 440+47.97
PT Sta. 448+11.04

℄ RELOCATED I-70 CURVE 17003

PI Sta. = 138+29.72
Δ = 74°40'52" (RT)
D = 2°56'04"
R = 1,952.50'
T = 1,489.60'
L = 2,544.95'
E = 503.34'
SE = 5.40%
PC Sta. = 123+40.13
PT Sta. = 148+85.08

INDEX OF SHEETS

W-1	MSE Wall Plan
W-2	MSE Wall Elevation
W-3	MSE Wall Details
W-4 to W-14	Soil Boring Logs 1 to 11

LEGEND:

◆ Soil Boring
⟶ Ditch

BILL OF MATERIAL

Item	Unit	Total
MSE Wall	Sq. Ft.	18,598
Contractor Designed Ground Improvement	L. Sum	1

Notes:

1. Stations and offsets are measured from the ℄ Relocated I-70 to the front face of the MSE wall panels.
2. MSE Wall to be constructed in this Contract. Parapet, Moment Slab, Wall Coping, Approach Pavement and Roadway to be constructed in later Contract.
3. Design of the wall shall include consideration of seismic force effects. Under the 1000-year seismic demand, the performance objective is uninterrupted use of the supported roadway. Wall displacements shall thus be limited to effectively "undamaged" levels. Under the 2500-year seismic demand, the performance objective is availability of the supported roadway to emergency services vehicles (only). Large wall displacements and significant local damage is permissible, but large-scale collapse shall be prevented.

FILE NAME = *FILE*	USER NAME = *USER*	DESIGNED - JLR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION I-70 CONNECTION RETAINING WALL	MSE WALL PLAN			F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - HBJ	REVISED -					998	B2-2-1HVB	ST. CLAIR	285	222
TENG ENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = *SCALE*	CHECKED - TCU	REVISED -		SCALE: NTS	SHEET NO. W-1 OF W-14	STA. 140+57.64 TO STA. 147+35.00		SN 082-W234	CONTRACT NO. 76C44		
	PLOT DATE = *DATE*	DATE - 06/04/10	REVISED -					FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

...\B82W234-CONN-85-004-PE.DGN ...\OBCONN-85-ALIGNMENT2.DGN ...\B82031B-CONN-99-001-BD.DGN ...\OBCONN-85-TOPO1.DGN ...\B82031B-CONN-85-002-TL.DGN ...\OBCONN-99-UTILI.DGN ...\OBCONN-99-ROW1.DGN ...\OBCONN-85-GEOMETRICS1.DGN ...\OBCONN-99-ROW1.DGN ...\B82031B-CONN-85-001-SL.DGN
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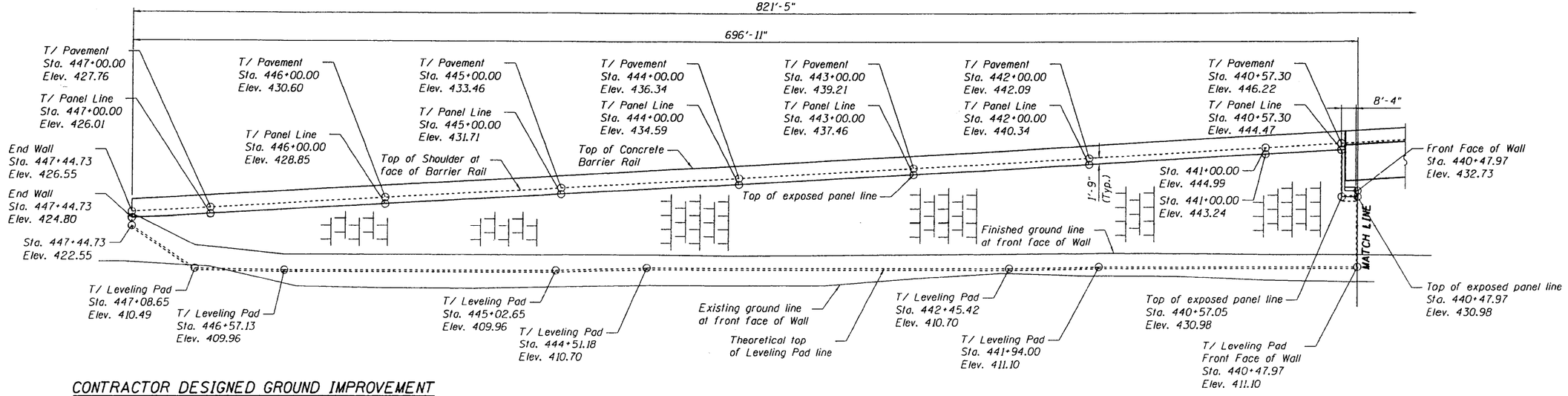


ELEVATION
(Looking South)

CONTRACTOR DESIGNED GROUND IMPROVEMENT PERFORMANCE CRITERIA

MSE Wall Station	Bearing	Maximum Settlement		Stability - Static		Global Stability - Dynamic	
	Bearing Demand [ksf]	at Tc + 3 month [in]	at Tc + 1 year [in]	Factor of Safety Required		Factor of Safety Required	
				Sliding	Global	Tr = 1000 yr	Tr = 2500 yr
439+23	4.0	2	3	1.5	1.5	1.0	1.0
439+50	6.0	2	3	1.5	1.5	1.0	1.0*
440+23	6.0	2	3	1.5	1.5	1.0	1.0*
441+23	6.0	2	3	1.5	1.5	1.0	1.0
443+70	5.0	2	3	1.5	1.5	1.0	1.0
445+70	4.5	2	3	1.5	1.5	1.0	1.0
447+50	4.0	2	3	1.5	1.5	1.0	1.0

Bearing
Bearing demand is the unfactored, static, equivalent uniform demand acting at T/Leveling Pad. Bearing demand includes the envelope of dead load, live load and potential downdrag associated with settlement of adjacent unreinforced embankment acting on an MSE wall of assumed typical proportions. The improved ground shall provide factor of safety = 2.5, calculated as Nominal Bearing Capacity / Bearing Demand.

Settlement
Settlement shall be measured at T/Leveling pad, and referred to a reference elevation taken prior to placement of wall panels. Tc shall be the time of completion of the MSE wall fill.

Stability - Static
Factor of safety calculations shall be based on an assumed MSE wall design of typical proportions. Factor of safety for global stability shall be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.

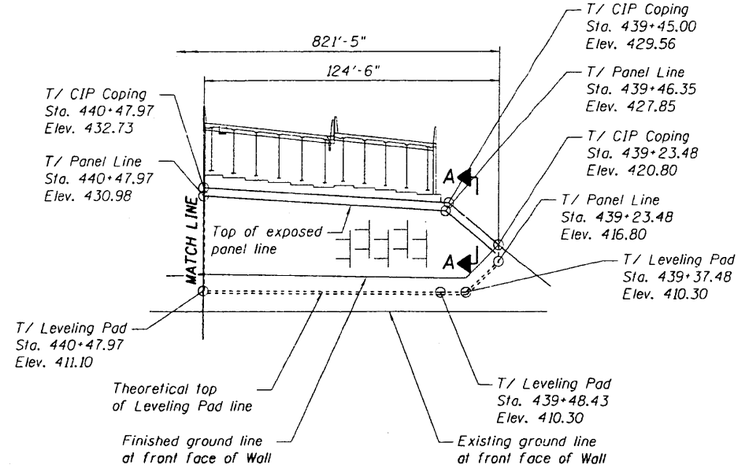
Liquefaction
Liquefaction anlayses reflecting the presence of increased vertical stress due to the proposed wall have been performed and are reported in the Structure Geotechnical Reports for the Darling Spur Wall (SN 082-W234) and the I-70 Connector Bridge (SN 082-0318 and -0319). Mitigation of liquefaction occurrence is not a performance criteria for Contractor Designed Ground Improvement. The occurrence and hazard associated with liquefaction is recognized through performance criteria on global stability which include the effects of predicted liquefaction.

Stability - Dynamic
Factor of safety calculation shall be based on an assumed MSE wall design of typical proportions. Factor of safety for global stability shall be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.

Factor of safety calculations for global stability shall:

- *be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.*
- *reflect a driving inertial force from acceleration equal to 75% of the Modified Peak Ground Acceleration As.*
- *include reduced soil properties to represent liquefaction for the return periods, locations, and depths at which it is indicated in the Structure Geotechnical Reports for the Darling Spur Retaining Wall and the MRB Connector Bridge.*

** For the 2500-year event (only), the stability calculation for sections cut through the abutment may consider a stabilizing contribution from the bridge abutment foundation. The design of these foundations has included an allowance for delivering a restoring shear force of 16.5 kips per foot of wall on an assumed failure plane which intersects the foundations at elevation 392'.*



ELEVATION
(Looking East)

FILE NAME = $FILE$ | USER NAME = $USER$ | PLOT SCALE = $SCALE$ | PLOT DATE = $DATE$
DESIGNED - TCG | DRAWN - TCG | CHECKED - TCU | DATE - 06/04/10
REVISED - | REVISED - | REVISED - | REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION
RETAINING WALL
MSE WALL ELEVATION
SCALE: NTS | SHEET NO. W-2 OF W-14 | STA. 140+57.64 TO STA. 147+35.00
F.A.P RTE. 998 | SECTION 82-2-1HVB | COUNTY ST. CLAIR | TOTAL SHEETS 285 | SHEET NO. 223
SN 082-W234 | CONTRACT NO. 76044
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

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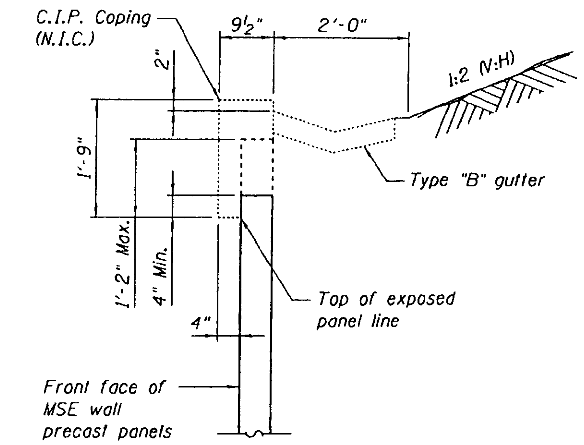
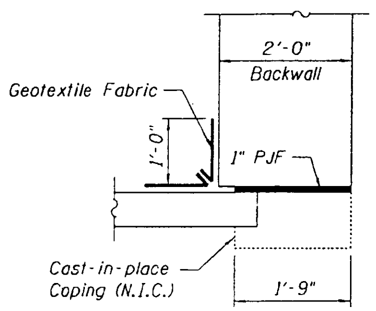
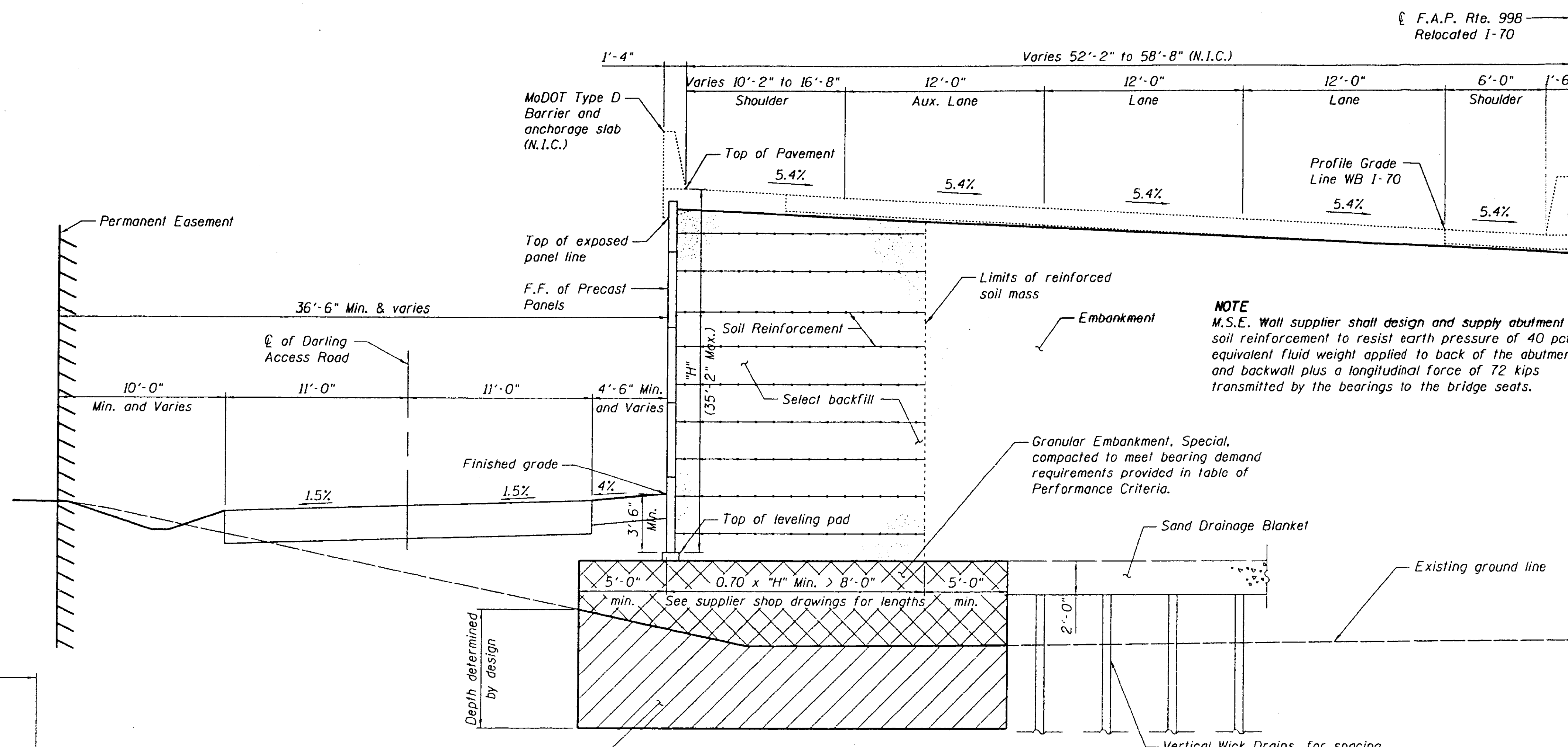


SECTION A-A

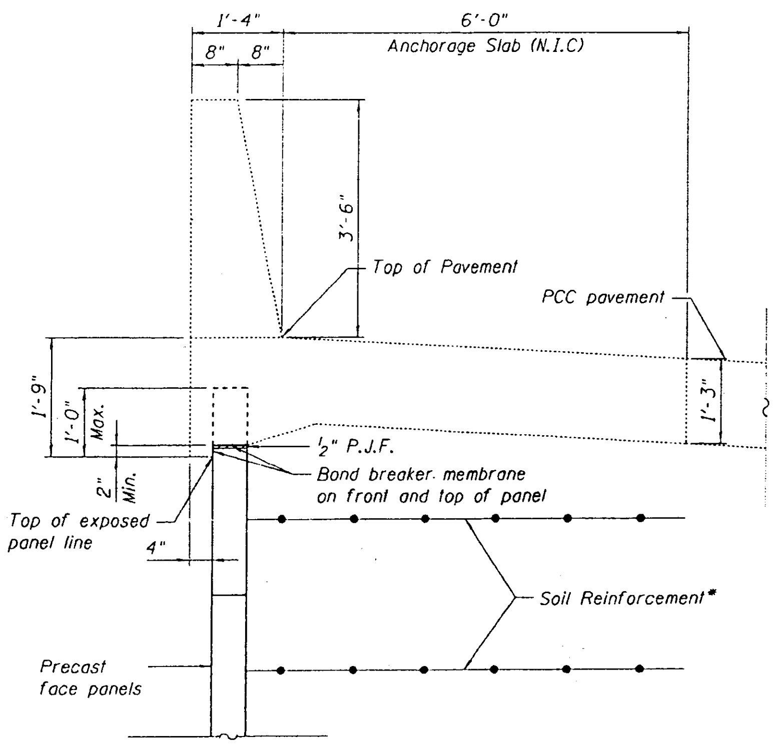


SECTION B-B



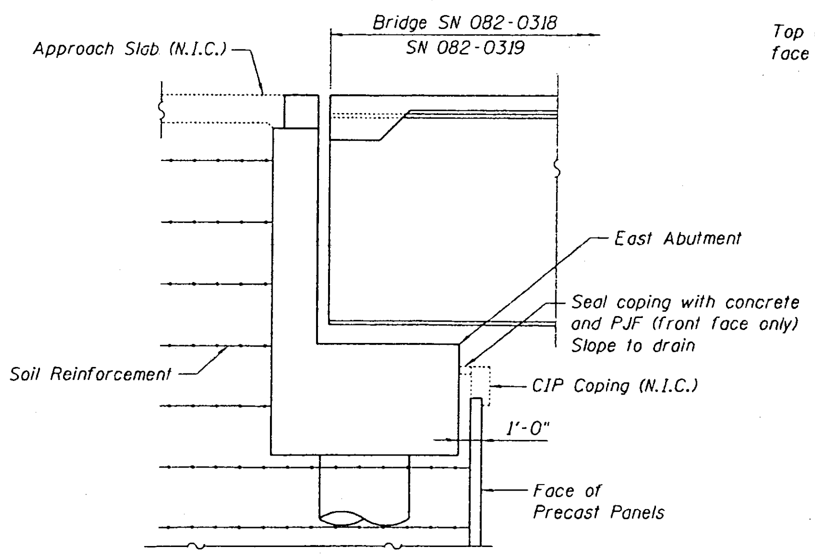
TYPICAL WALL SECTION
(Looking Upstation)

NOTE
M.S.E. Wall supplier shall design and supply abutment soil reinforcement to resist earth pressure of 40 pcf equivalent fluid weight applied to back of the abutment and backwall plus a longitudinal force of 72 kips transmitted by the bearings to the bridge seats.

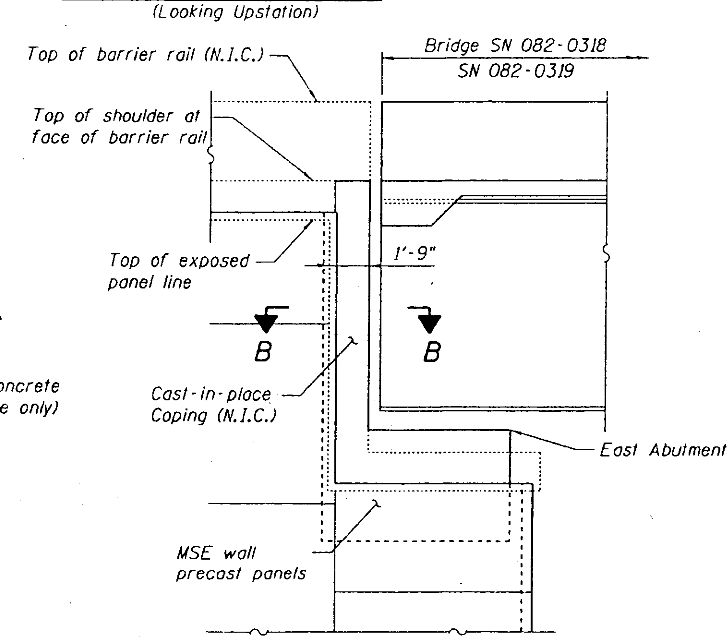


SECTION THROUGH ANCHORAGE SLAB

*The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 0.24 ksf and horizontal sliding force of 0.5 kip/ft of wall



SECTION THROUGH ABUTMENT
(Looking South)



COPING DETAIL AT ABUTMENT
(Looking South)

NOTE:
N.I.C. indicates Not In Contract. The items constructed in a later contract include Bridge Approach Slab, cast-in-place coping for MSE Wall, anchorage slab and parapet on MSE Wall, and concrete gutter adjacent to coping.

FILE NAME :	USER NAME : $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MSE WALL DETAILS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
$FILE$		DRAWN - TCG	REVISED -			998	82-2-1HVB	ST. CLAIR	285	224
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE : $SCALE$	CHECKED - TCU	REVISED -	I-70 CONNECTION RETAINING WALL	SN 082-W234			CONTRACT NO. 76C44		
	PLOT DATE : $DATE$	DATE - 06/04/10	REVISED -		SCALE: NTS | SHEET NO. W-3 OF W-14 | STA. 140+57.64 TO STA. 147+35.00	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

WB-01

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 7/20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-01
Station: 140+23
Offset: 34.5' Left
Ground Surface Elev. 406.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.5 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	31
XX				
SILTY CLAY-brown- medium stiff to stiff (A-6) Wet		1		*85*
		2		
		3	1.3B	33
		1		
		2		
	-5	2	1.25P	33
		1		*82*
		2		
		3	0.7B	34
▼		0		*77*
		1		
	-10	1	0.15B	43
XX				
SILTY CLAY-brown- very soft (A-7) Wet		0		
		1		
		2	NP	37
XX				
SAND-brown-loose (A-2)		0		
		2		
	-15	3	NP	29
XX				
SAND-brown- medium dense to dense (A-3)		5		
		7		
		7	NP	19
		3		
		8		
	-20	11	NP	18

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown- medium dense to dense (A-3)		5		
		8		
		9	NP	23
		7		
		7		
	-25	9	NP	23
		10		
		11		
		13	NP	22
		11		
		15		
	-30	17	NP	19
		11		
		12		
		13	NP	21
		6		
		10		
	-35	9	NP	16
XX				
SAND-gray- medium dense to dense (A-3)		6		
		7		
		7	NP	22
		10		
		12		
	-40	13	NP	19

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-01

SOIL BORING LOG

Geo Services, Inc.

PAGE 2 of 2
DATE 7/20/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-01
Station: 140+23
Offset: 34.5' Left
Ground Surface Elev. 406.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.5 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- medium dense to dense (A-3)		12		
		16		
		19	NP	23
		8		
		9		
	-45	11	NP	22
		9		
		9		
		10	NP	22
		16		
		19		
	-50	21	NP	22
		12		
		9		
		8	NP	23
XX				
SAND with Gravel-gray- loose (A-1-b)		5		
		4		
	-55	3	NP	16
XX				
SAND-gray- loose to dense (A-3)		10		
		6		
		3	NP	22
		7		
		7		
	-60	7	NP	22

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- loose to dense (A-3)		10		
		11		
		10	NP	23
		14		
		16		
	-65	17	NP	23
		14		
		13		
		15	NP	24
		11		
		12		
	-70	16	NP	25
		14		
		16		
		15	NP	24
		13		
		14		
	-75	11	NP	22
XX				
SAND with Gravel-gray- medium dense (A-1-b)		9		
		19		
		8	NP	12
End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion 10.0' of 4.0"* Casing Used		10		
		12		
XX	-80	16	NP	10

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NB-No Recovery

WB-02

SOIL BORING LOG

Geo Services, Inc.

PAGE 1 of 2
DATE 7/20-21/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-02
Station: 140+72
Offset: 34.5' Left
Ground Surface Elev. 406.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.5 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	31
XX				
SILTY CLAY-brown- stiff (A-6) Wet		1		*87*
		2		
		3	1.4B	33
		1		*84*
		2		
	-5	2	1.1B	33
XX				
SILTY CLAY-brown- soft (A-6/A-7) Wet		1		*86*
		1		
		1	0.3B	34
▼		1		*88*
		1		
	-10	1	0.3B	34
XX				
SANDY LOAM-brown & gray- loose (A-2)		1		
		1		
		4	NP	26
XX				
SAND-brown- medium dense to dense (A-3)		5		
		6		
	-15	5	NP	21
		4		
		7		
		6	NP	20
		5		
		6		
	-20	10	NP	18

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown- medium dense to dense (A-3)		6		
		6		
		7	NP	22
		3		
		7		
	-25	8	NP	21
		8		
		11		
		21	NP	19
		10		
		12		
	-30	14	NP	19
		10		
		13		
		12	NP	19
		6		
		7		
	-35	10	NP	19
XX				
SAND-gray- medium dense to dense (A-3)		9		
		9		
		8	NP	23
		9		
		13		
	-40	13	NP	26

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -
$FILEL$		DRAWN - TCG	REVISED -
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-70 CONNECTION
RETAINING WALL

SOIL BORING LOGS
1 OF 11

SCALE: NTS | SHEET NO. W-4 OF W-14 | STA. 140+57.64 TO STA. 147+35.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	225
	SN 082-W234	CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

WB-02

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 7/20-21/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-02
Station: 140+72
Offset: 34.5' Left
Ground Surface Elev. 406.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.5 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- medium dense to dense (A-3)		8 10 12	NP	15
	-45	14 18 18	NP	16
		11 16 15	NP	17
	-50	8 10 17	NP	23
		14 14 13	NP	16
XX				
SAND with Gravel-gray- loose (A-1-b)	-55	3 5 7	NP	14
XX				
SAND-gray- loose to dense (A-3)		13 14 16	NP	21
	-60	13 14 15	NP	20

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- loose to dense (A-3)		15 16 13	NP	19
	-65	16 19 20	NP	20
		11 9 7	NP	25
	-70	6 8 18	NP	22
		13 14 16	NP	21
	-75	19 22 26	NP	19
		16 26 36	NP	18
XX				
SAND with Gravel-loose (A-1-b) End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion XX	-80	12 13 19	NP	11

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-03

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2
DATE 7/21/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-03
Station: 142+23
Offset: 38.5' Left
Ground Surface Elev. 405.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.2 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	24
XX				
SILTY CLAY-brown- soft to stiff (A-6) Wet		1 2 3	1.7B	*88* 33
	-5	1 2 2	1.5P	25
		0 1 1	0.25B	*86* 34
▼	-10	0 1 1	0.5B	*87* 35
		1 1 2	0.25P	30
XX				
SAND-brown- medium dense (A-3)	-15	8 5 6	NP	22
		5 7 10	NP	21
	-20	8 8 8	NP	22

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown- medium dense (A-3)		9 9 8	NP	20
	-25	4 7 12	NP	21
		8 8 9	NP	25
	-30	6 13 11	NP	18
		9 5 8	NP	19
	-35	6 8 9	NP	26
		6 9 10	NP	20
	-40	7 9 13	NP	18

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-03

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2
DATE 7/21/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-03
Station: 142+23
Offset: 38.5' Left
Ground Surface Elev. 405.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 397.2 ▼
Upon Completion n/a ▽
After 24 Hrs. n/a ▽

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-medium dense (A-3) XX				
SAND-gray- medium dense to dense (A-3)		12 17 16	NP	15
	-45	7 9 11	NP	18
		10 11 12	NP	24
	-50	9 12 13	NP	21
		12 16 19	NP	19
	-55	10 12 19	NP	18
		15 15 14	NP	17
	-60	14 10 7	NP	21

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- medium dense to dense (A-3)		10 12 16	NP	20
	-65	10 10 11	NP	21
		15 16 16	NP	20
	-70	12 15 17	NP	24
		11 15 23	NP	10
	-75	14 15 17	NP	20
		17 22 19	NP	17
XX				
SAND & Gravel-medium dense (A-1-b) End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion XX	-80	21 6 5	NP	13

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME : *FILE*	USER NAME : *USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 2 OF 11	F.A.P RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285 / SHEET NO. 226
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		DRAWN - TCG	REVISED -			SN 082-W234		CONTRACT NO. 76C44	
	PLOT SCALE : *SCALE*	CHECKED -	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS	SHEET NO. W-5 OF W-14	STA. 140+57.64 TO STA. 147+35.00	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT
	PLOT DATE : *DATE*	DATE - 06/04/10	REVISED -						

WB-05

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2 | DATE 7/23/2009 | LOGGED BY MR | GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-05
Station: 143+25
Offset: 51.5' Left
Ground Surface Elev. 405.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-medium dense (A-3) XX				
SAND-gray-medium dense (A-3)		6 / 6 / 8	NP	26
	-45	4 / 7 / 12	NP	24
		9 / 8 / 5	NP	28
XX				
SAND with Gravel-gray-medium dense (A-1-b)	-50	7 / 7 / 13	NP	16
XX				
SAND-gray-medium dense to very dense (A-3)		12 / 12 / 12	NP	22
	-55	11 / 12 / 13	NP	23
		9 / 12 / 19	NP	20
	-60	13 / 14 / 18	NP	19
Trace organics from -61.0' to -62.5'.		10 / 16 / 38	NP	20
SAND-gray-medium dense to very dense (A-3)	-65	17 / 12 / 15	NP	20
		9 / 13 / 25	NP	25
	-70	11 / 14 / 20	NP	22
		15 / 29 / 33	NP	20
	-75	16 / 11 / 9	NP	20
		12 / 26 / 15	NP	16
XX				
SAND with Gravel-loose (A-1-b) End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion XX	-80	10 / 8 / 8	NP	12

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-06

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2 | DATE 7/23-24/2009 | LOGGED BY MR | GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-06
Station: 143+75
Offset: 52.5' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black XX		AS	-	30
SILTY CLAY-brown-soft to stiff (A-6) Wet		2 / 2 / 4	1.3B	*88* / 32
	-5	1 / 3 / 4	1.4B	*86* / 34
		1 / 2 / 2	0.3B	*92* / 31
XX				
SILTY LOAM-brown-loose (A-4)	-10	1 / 2 / 3	NP	25
XX				
SAND-brown-loose to medium dense (A-3)		2 / 2 / 4	NP	26
	-15	1 / 2 / 5	NP	27
		3 / 4 / 7	NP	22
	-20	5 / 6 / 9	NP	21
SAND-loose to medium dense (A-3) XX				
SANDY LOAM-gray-loose (A-2)		4 / 3 / 4	NP	33
XX				
SAND with Gravel-brown-medium dense (A-1-b)	-25	3 / 9 / 9	NP	15
XX				
SAND-brown-medium dense to dense (A-3)		8 / 8 / 8	NP	25
	-30	4 / 10 / 19	NP	25
		9 / 16 / 17	NP	19
	-35	7 / 9 / 11	NP	22
		4 / 9 / 12	NP	24
	-40	4 / 5 / 6	NP	24

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-06

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2 | DATE 7/23-24/2009 | LOGGED BY MR | GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-06
Station: 143+75
Offset: 52.5' Left
Ground Surface Elev. 405.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-medium dense to dense (A-3)		5 / 8 / 15	NP	24
XX				
SAND-gray-medium dense to dense (A-3)	-45	7 / 6 / 11	NP	24
		8 / 8 / 15	NP	26
	-50	8 / 9 / 11	NP	25
		10 / 12 / 13	NP	25
	-55	12 / 18 / 21	NP	24
		9 / 12 / 14	NP	23
	-60	8 / 12 / 19	NP	22
SAND-gray-medium dense to dense (A-3)		10 / 14 / 24	NP	23
	-65	13 / 17 / 22	NP	22
		13 / 13 / 20	NP	22
XX				
SAND with Gravel-gray-dense (A-1-b)	-70	17 / 18 / 20	NP	8
XX				
SAND-gray-dense (A-3)		16 / 24 / 28	NP	14
	-75	16 / 25 / 18	NP	23
XX				
SAND with Gravel-gray-medium dense (A-1-b)		50 / 14 / 10	NP	11
End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion 10.0' of 4.0"* Casing Used XX	-80	6 / 7 / 9	NP	11

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 4 OF 11	F.A.P RTE. 998 / SECTION 82-2-IHVB / COUNTY ST. CLAIR / TOTAL SHEETS 285 / SHEET NO. 228
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - TCG	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS	SN 082-W234
	PLOT DATE = $DATE$	CHECKED -	REVISED -		SHEET NO. W-7 OF W-14	CONTRACT NO. 76C44
		DATE - 06/04/10	REVISED -		STA. 140+57.64 TO STA. 147+35.00	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

WB-07

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

PAGE 1 of 2
DATE 7/27/2009
LOGGED BY MR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair
DRILLING METHOD Straight Flight Auger/Rotary
HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-07
Station: 144+25
Offset: 53.5' Left
Ground Surface Elev. 405.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	30
XX				
SILTY CLAY-brown- very stiff (A-6) Wet		2		*87*
		4		
		5	2.5B	30
		2		*89*
		2		
	-5	3	3.6B	27
XX				
SANDY LOAM-brown- very loose to medium dense (A-2)		4		
		5		
		5	NP	24
		1		
		1		
	-10	1	NP	25
XX				
SILTY CLAY-gray- medium stiff (A-6) Wet		1		
		6		
		8	NP	28
XX				
SANDY LOAM-brown-loose (A-2)		2		
		4		
	-15	4	NP	31
XX				
SAND-brown-medium dense (A-3)		3		
		4		
		7	NP	24
		6		
		9		
	-20	7	NP	23

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-medium dense (A-3) XX				
SILTY CLAY-gray- soft (A-7) Wet		6		*75*
		4		
		4	0.25B	43
XX				
SAND-brown- loose to dense (A-3)		7		
		9		
	-25	9	NP	21
		4		
		3		
		6	NP	21
		4		
		5		
	-30	3	NP	20
		8		
		9		
		15	NP	21
		9		
		14		
	-35	20	NP	19
		8		
		10		
		13	NP	20
		8		
		12		
	-40	13	NP	22

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-07

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair
DRILLING METHOD Straight Flight Auger/Rotary
HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-07
Station: 144+25
Offset: 53.5' Left
Ground Surface Elev. 405.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown- loose to dense (A-3)		8		
		14		
		12	NP	23
		6		
		13		
	-45	14	NP	16
		15		
		14		
		17	NP	19
XX				
Trace organics from -46.5' to -50.0'.		9		
		13		
	-50	12	NP	24
SAND-gray- loose to very dense (A-3)		8		
		7		
		13	NP	24
		10		
		10		
	-55	13	NP	23
		5		
		3		
		1	NP	23
Trace organics from -56.5' to -60.0'.		0		
		4		
	-60	3	NP	37

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- loose to very dense (A-3)		8		
		10		
		13	NP	24
		8		
		12		
	-65	19	NP	20
		14		
		19		
		30	NP	16
		16		
		21		
	-70	21	NP	17
		20		
		37		
		86	NP	18
		20		
		22		
	-75	11	NP	21
XX				
SAND with Gravel-brown & gray- medium dense (A-1-b)		35		
		16		
		10	NP	11
End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion 10.0' of 4.0"* Casing Used		10		
		7		
XX	-80	8	NP	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-08

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

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GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair
DRILLING METHOD Straight Flight Auger/Rotary
HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-08
Station: 144+75
Offset: 54.5' Left
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	25
XX				
SILTY CLAY-brown- very stiff (A-6) Wet		2		*82*
		2		
		3	2.2B	35
XX				
SILTY CLAY LOAM-brown- loose (A-4) Wet		3		
		2		
	-5	3	0.25P	25
		2		
		2		
		3	0.5P	27
XX				
SAND-brown- loose to medium dense (A-3)		3		
		3		
	-10	4	NP	26
		3		
		3		
		4	NP	25
		2		
		3		
	-15	3	NP	25
		2		
		8		
		8	NP	19
XX				
SILTY CLAY-gray- very soft (A-7) Wet		2		
		3		
	-20	3	<0.25P	65

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY-gray- very soft (A-7) Wet				
XX		7		
SAND-brown- loose to dense (A-3)		4		
		2	NP	23
		7		
		10		
	-25	17	NP	15
		5		
		8		
		7	NP	22
		5		
		12		
	-30	14	NP	18
		9		
		14		
		16	NP	20
		9		
		12		
	-35	11	NP	22
		10		
		12		
		15	NP	20
		9		
		15		
	-40	16	NP	21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 5 OF 11	F.A.P RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285 / SHEET NO. 229
TENG TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - TCG	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS	SHEET NO. W-8 OF W-14	STA. 140+57.64 TO STA. 147+35.00	SN 082-W234	CONTRACT NO. 76C44
	PLOT DATE = $DATE$	CHECKED -	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	
		DATE - 06/04/10	REVISED -						

WB-08

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 2 of 2
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LOGGED BY MR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-08
Station: 144+75
Offset: 54.5' Left
Ground Surface Elev. 405.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown-loose to dense (A-3)		10		
		14		
		14	NP	20
		7		
		10		
	-45	12	NP	23
		10		
		14		
		15	NP	21
		11		
		16		
	-50	18	NP	22
		11		
		15		
		17	NP	24
XX				
SAND-gray-medium dense to dense (A-3)		12		
		14		
	-55	18	NP	23
		13		
		13		
		17	NP	21
		11		
		14		
	-60	16	NP	25

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray-medium dense to dense (A-3)		9		
		13		
		14	NP	24
		10		
		20		
	-65	29	NP	22
		16		
		28		
		30	NP	16
		15		
		25		
	-70	29	NP	20
		14		
		18		
		25	NP	22
		14		
		13		
	-75	16	NP	22
XX				
SAND with Gravel-brown & gray-medium dense (A-1-b)		24		
		12		
		12	NP	9
End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion 10.0' of 4.0"* Casing Used		8		
		7		
XX	-80	8	NP	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-09

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 1 of 2
DATE 7/28/2009
LOGGED BY MR
GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-09
Station: 145+25
Offset: 44.5' Left
Ground Surface Elev. 404.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black		AS	-	27
XX				
SILTY CLAY-brown-medium stiff to stiff (A-6/A-7) Wet		2		*78*
		2		
		3	1.1B	37
		2		*80*
		3		
	-5	3	1.5B	36
		2		*75*
		2	1.4S@	
		3	9.9%	44
		3		*83*
		3		
	-10	3	0.9B	36
XX				
SILTY CLAY-gray-very soft (A-7) Wet		0		*56*
		0		
		0	0.2B	71
XX				
SAND-brown-loose (A-3)		5		
		1		
	-15	3	NP	21
		2		
		2		
		3	NP	26
		1		
XX		3		
SILTY CLAY-gray-very soft (A-7) Wet	-20	5	NP	26

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY-gray-very soft (A-7) Wet		4		*66*
		2		
		2	0.2B	51
XX				
SAND-brown & gray-medium dense to dense (A-3)		10		
		12		
	-25	13	NP	16
		5		
		9		
		11	NP	25
		5		
		11		
	-30	16	NP	22
		9		
		15		
		23	NP	30
		10		
		17		
	-35	18	NP	19
		8		
		11		
		16	NP	18
		7		
		14		
	-40	12	NP	18

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-09

Geo Services, Inc. Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 2 of 2
DATE 7/28/2009
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GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-09
Station: 145+25
Offset: 44.5' Left
Ground Surface Elev. 404.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		10		
		13		
		12	NP	19
		4		
Trace organics from -43.5' to -45.0'.		8		
	-45	13	NP	30
SAND-brown & gray-medium dense to dense (A-3)		9		
		8		
		10	NP	25
		6		
		12		
	-50	17	NP	27
		9		
		10		
		14	NP	26
		6		
		9		
	-55	12	NP	23
		2		
Trace organics from -56.0' to -57.5'.		4		
		7	NP	42
		5		
		8		
	-60	10	NP	25

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to dense (A-3)		11		
		10		
		13	NP	23
		8		
		10		
	-65	12	NP	22
XX				
SAND with Gravel-gray-medium dense (A-1-b)		4		
		9		
		8	NP	15
XX				
SAND-gray-dense (A-3)		10		
		20		
	-70	25	NP	22
XX				
SAND with Gravel-gray-medium dense to very dense (A-1-b)		10		
		13		
		14	NP	11
		10		
		31		
	-75	33	NP	8
XX				
SAND-gray-dense (A-3)		18		
		33		
		19	NP	22
XX				
SAND with Gravel-medium dense (A-1-b)				
End Of Boring @ -80.0' Straight Flight Augers To -10.0' Rotary Drilling To Completion		10		
		8		
XX	-80	8	NP	17

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -
		~~DRAWN - TCG~~	~~REVISED -~~
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
~~**DEPARTMENT OF TRANSPORTATION**~~
I-70 CONNECTION
RETAINING WALL

SOIL BORING LOGS
6 OF 11

SCALE: NTS | SHEET NO. W-9 OF W-14 | STA. 140+57.64 TO STA. 147+35.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	230
	SN 082-W234	CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

WB-10

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

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GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black (A-7)	403.7		AS	-	33
SILTY CLAY-brown & gray- medium stiff to very stiff (A-6/A-7) Wet			2		*89*
			3		
			3	2.0B	33
		-5	ST	1.0P	45
			1		
			2		
			2	0.75P	34
	395.7		2		
SAND-brown- loose to medium dense (A-3)			2		
		-10	3	0.5P	33
			3		
			3		
			4	NP	21
Clay seams from -13.5' to -15.0'.			2		
			4		
		-15	5	NP	22
			3		
			6		
	386.7		7	NP	23
SILTY CLAY-dark gray- very soft (A-7) Wet			3		
			3		
		-20	3	<0.25P	58

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY-dark gray-very soft (A-7)	384.2				
SAND-brown & gray- medium dense to dense (A-3)			3		
			5		
			6	NP	18
			8		
			12		
		-25	13	NP	18
			7		
			13		
			14	NP	21
			6		
			7		
		-30	6	NP	24
			6		
			11		
			12	NP	24
			7		
			10		
		-35	13	NP	20
			9		
			8		
			9	NP	23
			8		
			9		
		-40	10	NP	21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-10

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

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GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray- medium dense to dense (A-3)			7		
			8		
			9	NP	21
			6		
			8		
		-45	8	NP	16
			7		
			7		
			11	NP	18
			7		
			11		
		-50	16	NP	21
			10		
			17		
			24	NP	21
			13		
			18		
		-55	21	NP	19
			11		
			12		
			24	NP	21
			11		
			14		
		-60	23	NP	20

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray- medium dense to dense (A-3)			10		
			12		
			19	NP	23
			12		
			14		
	339.2	-65	28	NP	19
SAND & GRAVEL-brown & gray- loose (A-1-b)			17		
			6		
	336.7		4	NP	17
SAND-brown & gray- medium dense to dense (A-3)			12		
			19		
		-70	28	NP	22
			11		
			9		
	331.7		8	NP	16
SAND & GRAVEL-brown & gray- very dense (A-1)			28		
			50/5"		
	329.2	-75		NP	8
SAND-brown & gray-dense (A-3)			14		
			17		
	326.7		30	NP	22
SAND & GRAVEL-brown & gray- loose to dense (A-1-b)			11		
			9		
		-80	8	NP	16

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-10

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565

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DATE 4/8-10/2009
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~~GSI JOB No. 08201~~

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-brown & gray- loose to dense (A-1-b)			5		
			3		
			4	NP	12
			11		
			11		
		-85	26	NP	17
			13		
			10		
			12	NP	14
			7		
			11		
		-90	14	NP	12
			18		
			16		
			20	NP	12
	310.7		31		
SAND-brown & gray-very dense (A-3)			50/3"		
		-95		NP	9
			19		
			35		
			50	NP	13
			27		
			31		
		-100	48	NP	14

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-very dense (A-3)	304.2				
SAND & GRAVEL-brown & gray- very dense (A-1)			50/4"		
				NP	15
			50/1"		
	298.7	-105			NR
RUN 1 (-106.0' to -116.0') Mississippian System, Valmeyeran Series Limestone. Light gray & fine grained with horizontal bedding becoming. Some chert replacement throughout. Numerous horizontal fractures with some thin clay partings. RECOVERY=100.0% R.Q.D.=41.8%		-110	RUN 1		
	288.7	-115			
RUN 2 (-116.0' to -121.0') Mississippian System, Valmeyeran Series Limestone. Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout. 1/4" clay partings @ -117.4', -117.6' & -118.2'.		-120	RUN 2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 7 OF 11
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		DRAWN - TCC	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -		SHEET NO. W-10 OF W-14
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -		STA. 140+57.64 TO STA. 147+35.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	231
SN 082-W234		CONTRACT NO. 76C44		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

WB-10

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

SOIL BORING LOG

PAGE 4 of 4
DATE 4/8-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St. Clair
DRILLING METHOD Straight Flight Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	RUN 2						
-125				-145			
-130				-150			
-135				-155			
-140				-160			

RECOVERY = 100.0%
R.Q.D. = 59.6%
283.7

End Of Boring @ -121.0'
Straight Flight Augers To -15.0'
Rotary Drilling To Completion
15.0' of 4.0"* Casing Used
CME Automatic Hammer

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS = Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-10 Run-1

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 1 of 2
DATE 4/8-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structures Retaining Wall
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. XX
Station: 140+70 to 147+35
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 298.7
Begin Core Elev. 298.7
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

RUN 1 (-106.0' to -116.0')
Mississippian System, Valmeyeran Series Limestone

Light gray & fine grained with horizontal bedding becoming. Some chert replacement throughout. Numerous horizontal fractures with some thin clay partings.

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
298.7	1	100.0	41.8	n/a	1177@ -106.3'
-111.0					
-116.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

WB-10 Run-2

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

ROCK CORE LOG

PAGE 2 of 2
DATE 4/8-10/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX
LOCATION I-70 Curved Approach Structures Retaining Wall
COUNTY St. Clair
CORING METHOD Rotary Wash
STRUCT. NO. XX
Station: 140+70 to 147+35
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 298.7
Begin Core Elev. 298.7
BORING NO. WB-10
Station: 145+75
Offset: 56.5' Left
Ground Surface Elev. 404.7

RUN 2 (-116.0' to -121.0')
Mississippian System, Valmeyeran Series Limestone

Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout. 1/4" clay partings @ -117.4', -117.6' & -118.2'.

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
288.7	2	100.0	59.6	n/a	1119@ -118.8'
-121.0					
-126.0					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

FILE NAME = #FILEL#	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS	SOIL BORING LOGS 8 OF 11	F.A.P RTE. 998	SECTION 82-2-1HVB
	PLOT SCALE = #SCALE#	DRAWN - TCC	REVISED -	DEPARTMENT OF TRANSPORTATION		COUNTY ST. CLAIR	TOTAL SHEETS 285
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT DATE = #DATE#	CHECKED -	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS	SHEET NO. 232	SN 082-W234
		DATE - 06/04/10	REVISED -		SHEET NO. W-11 OF W-14	STA. 140+57.64 TO STA. 147+35.00	CONTRACT NO. 76C44
						FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT

..\082831B-CONN-05-011-MS.DGN,..\082831B-CONN-05-011-MS.DGN,..\082831B-CONN-99-001-BO.DGN
6-03-2010, 8:56:58 BONOHUJO \\FS-0044\AM\VAULT\D-TRANS.07\2282\20868-001\STRUCT\CAD\01 DESIGN\082W234\SHEET\082W234-CONN-05-030-SHT-MS.DGN

WB-11

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 1 of 2 — DATE 7/29/2009 — LOGGED BY MR — GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX — Station: 140+70 to 147+35

BORING NO. WB-11 — Station: 146+50 — Offset: 58.0' Left — Ground Surface Elev. 405.4

Surface Water Elev. n/a — Stream Bed Elev. n/a

Groundwater Elevation: First Encounter n/a; Upon Completion n/a; After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		AS	-	38
SILTY CLAY-brown-stiff (A-6) Wet		2		*83*
		2		
		2	1.3B	32
XX				
SILTY LOAM to LOAM-brown-loose (A-2/A-4)		2		
		3		
	-5	8	NP	22
		2		
		2		
		2	NP	25
		2		
		2		
	-10	2	NP	27
XX				
SAND-brown-loose to medium dense (A-3)		3		
		4		
		4	NP	24
		1		
		3		
	-15	4	NP	27
		2		
		3		
		8	NP	19
XX				
SANDY CLAY LOAM-gray-loose (A-2)		3		
		2		
	-20	3	-	33
SANDY CLAY LOAM-gray-loose (A-2) XX				
SAND-brown & gray-medium dense to dense (A-3)		5		
		9		
		11	NP	21
		11		
		12		
	-25	11	NP	21
		5		
		4		
		7	NP	25
		4		
		6		
	-30	9	NP	25
		8		
		9		
		6	NP	24
		6		
		10		
	-35	11	NP	16
		9		
		12		
		16	NP	18
		10		
		10		
	-40	12	NP	22

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-11

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 2 of 2 — DATE 7/29/2009 — LOGGED BY MR — GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE Diedrich Automatic

STRUCT. NO. XX — Station: 140+70 to 147+35

BORING NO. WB-11 — Station: 146+50 — Offset: 58.0' Left — Ground Surface Elev. 405.4

Surface Water Elev. n/a — Stream Bed Elev. n/a

Groundwater Elevation: First Encounter n/a; Upon Completion n/a; After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-brown & gray-medium dense to dense (A-3)		8		
		13		
		13	NP	21
		7		
		11		
	-45	13	NP	21
		8		
		13		
		11	NP	17
		4		
		5		
	-50	6	NP	17
		4		
		5		
		6	NP	16
		5		
		7		
	-55	9	NP	16
		11		
		16		
		16	NP	22
		7		
		11		
	-60	14	NP	20
SAND-brown & gray-medium dense to dense (A-3)		12		
		15		
		21	NP	16
		8		
		12		
	-65	22	NP	17
XX				
SAND with Gravel-gray-medium dense (A-1-b)		11		
		14		
		14	NP	10
		9		
		10		
	-70	16	NP	9
XX				
SAND-gray-medium dense to dense (A-1-b)		8		
		50		
		33	NP	14
		10		
		16		
	-75	24	NP	18
		29		
		9		
		12	NP	19
XX				
SAND with Gravel-medium dense (A-1-b)		8		
End Of Boring @ -80.0' Straight Flight Augers To -10.0'		6		
Rotary Drilling To Completion XX	-80	7	NP	13

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-12

SOIL BORING LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering

PAGE 1 of 4 — DATE 46-8/2009 — LOGGED BY DR — GSI JOB No. 08201

ROUTE I-70 — DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08

SECTION XX — LOCATION I-70 Curved Approach Structure-Retaining Wall

COUNTY St. Clair — DRILLING METHOD Straight Flight Auger/Rotary — HAMMER TYPE CME Automatic

STRUCT. NO. XX — Station: 140+70 to 147+35

BORING NO. WB-12 — Station: 147+25 — Offset: 60.0' Left — Ground Surface Elev. 413.0

Surface Water Elev. n/a — Stream Bed Elev. n/a

Groundwater Elevation: First Encounter n/a; Upon Completion n/a; After 24 Hrs. n/a

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		AS	-	35
TOPSOIL with Cinders, Stone & Brick-very loose to loose (Fill)		2		
		4		
		5	-	25
		2		
		1		
	-5	2	-	21
		1		
		1		
		0	-	31
405.0				
SILTY CLAY-dark brown & gray-stiff (A-6/A-7) Wet		2		*82*
		4		
	-10	4	1.9B	36
402.0				
SILTY LOAM to LOAM-brown & gray-very loose (A-4)		ST	NP	17
		2		
		3		
	-15	3	NP	23
		1		
		1		
		2	NP	33
395.0				
SILTY CLAY LOAM-brown & gray-very loose (A-4/A-6)		3		
		1		
	-20	1	-	38
SILTY CLAY LOAM-very loose (A-4/A-6) *392.5*				
SAND-brown-medium dense (A-3)		4		
		5		
		6	NP	23
		3		
		5		
	-25	6	NP	27
		5		
		5		
		6	NP	32
385.0				
SILTY CLAY-dark gray-very soft to soft (A-7) Wet		4		*66*
		3		
	-30	2	0.4B	58
		4		
		2		
		2	<0.25P	57
380.0				
SILTY LOAM to LOAM-dark gray-medium dense (A-2/A-4)		3		
		12		
	-35	9	NP	39
377.5				
SILTY CLAY-dark gray-soft (A-7) Wet		0		*61*
		2		
		1	0.4B	65
375.0				
SAND-gray-loose to medium dense (A-3)		2		
		2		
	-40	3	NP	28

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS 9 OF 11	F.A.P RTE. 998	SECTION 82-2-1HVB	COUNTY ST. CLAIR	TOTAL SHEETS 285	SHEET NO. 233
TENG — TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS	PLOT SCALE = $SCALE$	DRAWN - TCC	REVISED -	I-70 CONNECTION RETAINING WALL	SCALE: NTS	SN 082-W234		CONTRACT NO. 76C44		
	PLOT DATE = $DATE$	CHECKED -	REVISED -		SHEET NO. W-12 OF W-14	STA. 140+57.64 TO STA. 147+35.00				
		DATE - 06/04/10	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

WB-12

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 2 of 4
DATE 4/6-8/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-12
Station: 147+25
Offset: 60.0' Left
Ground Surface Elev. 413.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray- loose to medium dense (A-3)			3		
			11		
	370.0		13	NP	26
SILTY CLAY-dark gray- soft (A-7) Wet			0		*65*
			3		
	367.5	-45	4	0.4B	59
SAND-brown & gray- medium dense to dense (A-3)			8		
			11		
			17	NP	25
			5		
			9		
		-50	8	NP	22
			7		
			8		
			11	NP	20
			8		
			10		
		-55	9	NP	23
			6		
			6		
			10	NP	19
			6		
			6		
		-60	11	NP	15

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
			6		
			6		
			11	NP	17
			10		
			15		
		-65	24	NP	19
SAND-brown & gray- medium dense to dense (A-3)			11		
			19		
			27	NP	19
			15		
			13		
		-70	16	NP	25
			17		
			17		
			18	NP	22
			6		
Trace organics from -73.5' to -75.0'.			10		
	337.5	-75	9	NP	24
SAND & GRAVEL-brown & gray- dense (A-1)			10		
			19		
	335.0		23	NP	13
SAND-gray-dense (A-3)			15		
			23		
		-80	27	NP	22

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-12

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 3 of 4
DATE 4/6-8/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-12
Station: 147+25
Offset: 60.0' Left
Ground Surface Elev. 413.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND-gray-dense (A-3)			12		
			20		
			34	NP	22
			16		
			24		
	327.5	-85	18	NP	23
SAND & GRAVEL-brown & gray- loose to medium dense (A-1-b)			11		
			10		
			9	NP	13
			6		
			4		
		-90	4	NP	15
			36		
			30		
	320.0		22	NP	11
SAND-brown & gray-dense (A-3)			11		
			13		
	317.5	-95	17	NP	20
Trace coal from -96.0' to -97.5'. SAND & GRAVEL-brown & gray- medium dense to dense (A-1-b)			25		
			24		
			15	NP	22
			14		
			13		
		-100	16	NP	12

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-brown & gray- medium dense to dense (A-1-b)			14		
			21		
	310.0		50	NP	12
SAND & GRAVEL-brown & gray- dense to very dense (A-1)			16		
			24		
		-105	32		NR
			50/1"		
				NP	12
			45		
			50/3"		
	302.5	-110		NP	7
SAND-brown-very dense (A-3)			44		
			50/6"		
	300.0			NP	17
Drillers Observation: Apparent Bedrock.	299.5		50/1"		NR
RUN 1 (-113.5' to -123.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming. Some chert replacement throughout. Numerous horizontal fractures throughout. RECOVERY=100.0% R.Q.D.=44.3%		-115	RUN 1		
		-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

WB-12

SOIL BORING LOG

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering

PAGE 4 of 4
DATE 4/6-8/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70 | DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
SECTION XX | LOCATION I-70 Curved Approach Structure-Retaining Wall
COUNTY St Clair | DRILLING METHOD Straight Flight Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-12
Station: 147+25
Offset: 60.0' Left
Ground Surface Elev. 413.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After 24 Hrs. n/a

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
RUN 1 (-113.5' to -123.5')	289.5		RUN 1		
RUN 2 (-123.5' to -125.5') Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout. RECOVERY=64.0% R.Q.D.=16.5%	287.5	-125	RUN 2		
RUN 3 (-125.5' to -130.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout. RECOVERY=100.0% R.Q.D.=16.5%	282.5	-130	RUN 3		
End Of Boring @ -130.5' Straight Flight Augers To -15.0' Rotary Drilling To Completion 15.0' of 4.0"* Casing Used 115.0' of 3.0"* Casing Used CME Automatic Hammer		-135			
		-140			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-145			
-150			
-155			
-160			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
TENG & ASSOCIATES, INC. ENGINEERS/ARCHITECTS/PLANNERS CHICAGO, ILLINOIS		DRAWN - TGG	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE - 06/04/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
I-70 CONNECTION
RETAINING WALL

SOIL BORING LOGS
10 OF 11

SCALE: NTS | SHEET NO. W-13 OF W-14 | STA. 140+57.64 TO STA. 147+35.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
998	82-2-1HVB	ST. CLAIR	285	234
	SN 082-W234	CONTRACT NO. 76C44		

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

WB-12 Run-1

ROCK CORE LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering, 805 Amherst Court, Suite 204, Naperville, Illinois 60565, (630) 355-2838

PAGE 1 of 2
DATE 4-6-8/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
SECTION XX
COUNTY St. Clair
STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-12
Station: 147+25
Offset: 60.0' Left
Ground Surface Elev. 413.0

DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
LOCATION I-70 Curved Approach Structures Retaining Wall
CORING METHOD Rotary Wash
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 300.0
Begin Core Elev. 299.5

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-113.5' to -123.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming. Some chert replacement throughout. Numerous horizontal fractures throughout.	299.5 -118.5 -123.5	1	100.0	44.3	n/a	1010@ -118.1'

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

WB-12 Run-2&3

ROCK CORE LOG

Geo Services Inc. — Geotechnical, Environmental & Civil Engineering, 805 Amherst Court, Suite 204, Naperville, Illinois 60565, (630) 355-2838

PAGE 2 of 2
DATE 4-6-8/2009
LOGGED BY DR
GSI JOB No. 08201

ROUTE I-70
SECTION XX
COUNTY St. Clair
STRUCT. NO. XX
Station: 140+70 to 147+35
BORING NO. WB-12
Station: 147+25
Offset: 60.0' Left
Ground Surface Elev. 413.0

DESCRIPTION I-70 Tri-Level Connection IDOT Job No. D-98-059-08
LOCATION I-70 Curved Approach Structures Retaining Wall
CORING METHOD Rotary Wash
CORING BARREL TYPE & SIZE NX Double Swivel-5 ft
Core Diameter 2.0 in
Top of Rock Elev. 300.0
Begin Core Elev. 299.5

Description	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 2 (-123.5' to -125.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout.	289.5	2	84.0	16.5	n/a	n/a
RUN 3 (-125.5' to -130.5') Mississippian System, Valmeyeran Series Limestone Light gray & fine grained with horizontal bedding becoming. Numerous horizontal fractures throughout.	277.5 -128.5 -133.5	3	100.0	16.5	n/a	9700@ -128.5'

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)