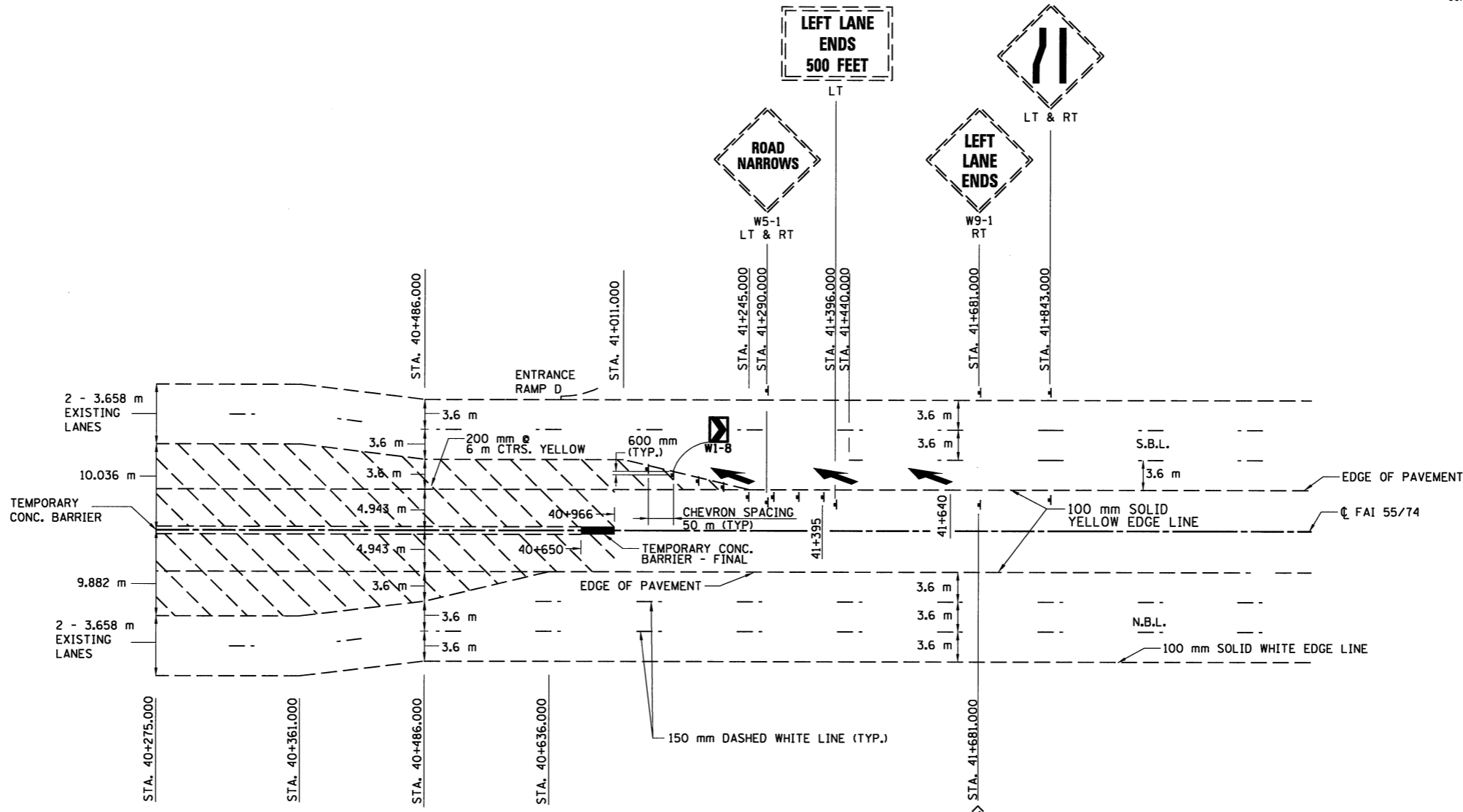


SIGN REMOVAL		
STATION	SIDE	EACH
35+550	RT	1.0
35+611	RT	1.0
35+842	RT	1.0
35+900	RT	1.0
35+955	RT	1.0
36+000	RT	1.0
36+500	CL	2.0
39+990	CL	2.0
41+145	LT	1.0
41+195	LT	1.0
41+245	LT	1.0
41+290	CL,LT	2.0
41+396	CL	1.0
41+681	CL	1.0
41+843	LT	1.0
TOTAL		18.0



	PAVEMENT MARKING REMOVAL				AREA SQ. M
	STATION	TO	STATION	SIDE	
ARROW	35+428			RT	3.9
ARROW	35+623			RT	3.9
ARROW	35+817			RT	3.9
DIAGONALS	35+839		36+064	RT	9.0
DIAGONALS	40+275		41+230	LT	110.0
ARROW	41+275			LT	3.9
ARROW	41+436			LT	3.9
ARROW	41+640			LT	3.9
TOTAL					143.0

**EXISTING INTERIM SIGNING & PAVEMENT MARKINGS
AT NORTH JOB LIMITS
(SIMILAR AT SOUTH JOB LIMITS)**

- NOTES:
1. SEE STATE STANDARD 780001 AND 781001 FOR TYPICAL PAVEMENT MARKINGS.

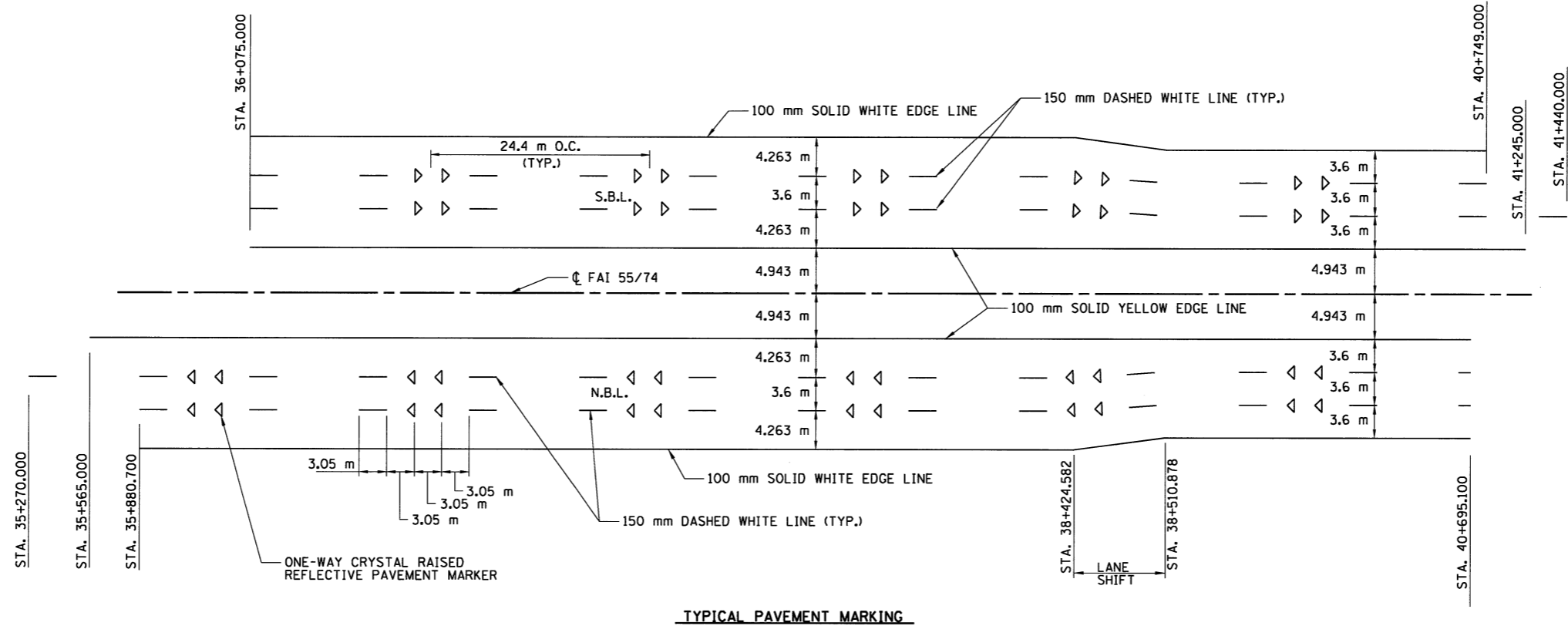
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY
**EXISTING INTERIM
PAVEMENT MARKING PLAN**

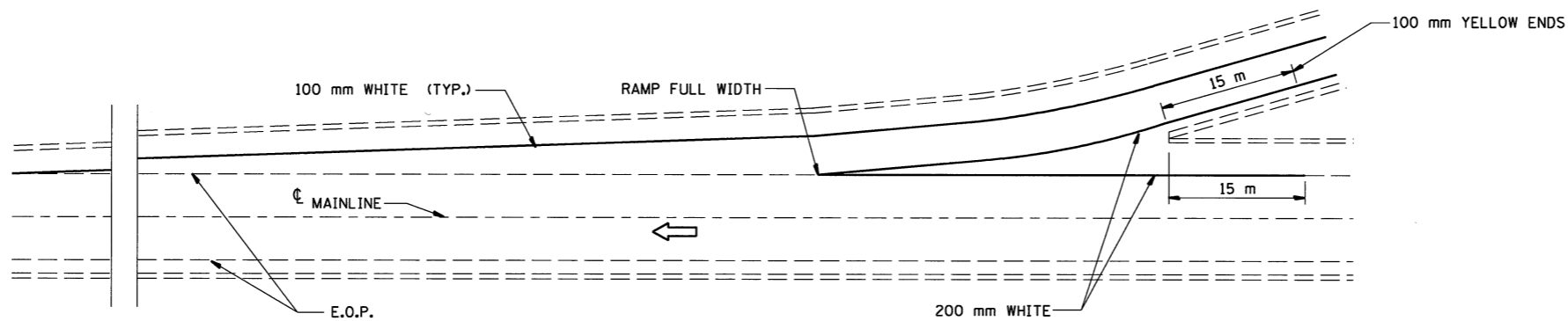
JOB NO. 94S2063
DATE 8/20/2009

8/20/2009
 #FILES
 LAYOUT
 DRAWN
 REVIEWED
 J.J.H.
 J.J.H.
 D.L.H.
 03/18/04

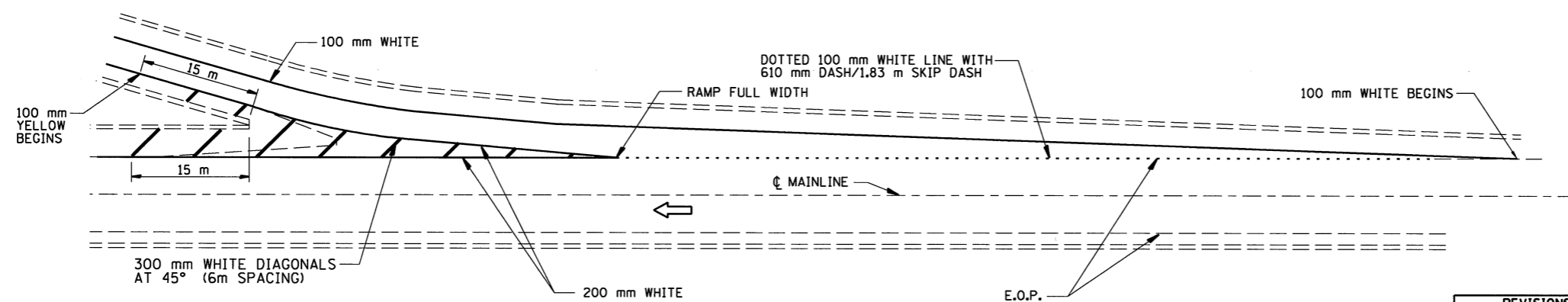
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	102
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



TYPICAL PAVEMENT MARKING



TYPICAL PAVEMENT MARKING FOR ENTRANCE RAMP TERMINALS



TYPICAL PAVEMENT MARKINGS FOR EXIT RAMP TERMINALS

- NOTES:
- SEE STATE STANDARD 780001 AND 781001 FOR TYPICAL PAVEMENT MARKINGS.
 - POLYUREA PAVEMENT MARKING TYPE I WILL BE USED FOR 100 mm AND 200 mm MARKING ALONG I-55 AND RAMPS.
 - PREFORMED PLASTIC PAVEMENT MARKING TYPE B, 150 mm WILL BE USED FOR ALL DASHED LINES ALONG I-55.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY
PAVEMENT MARKING PLAN

REVISIONS	
NAME	DATE

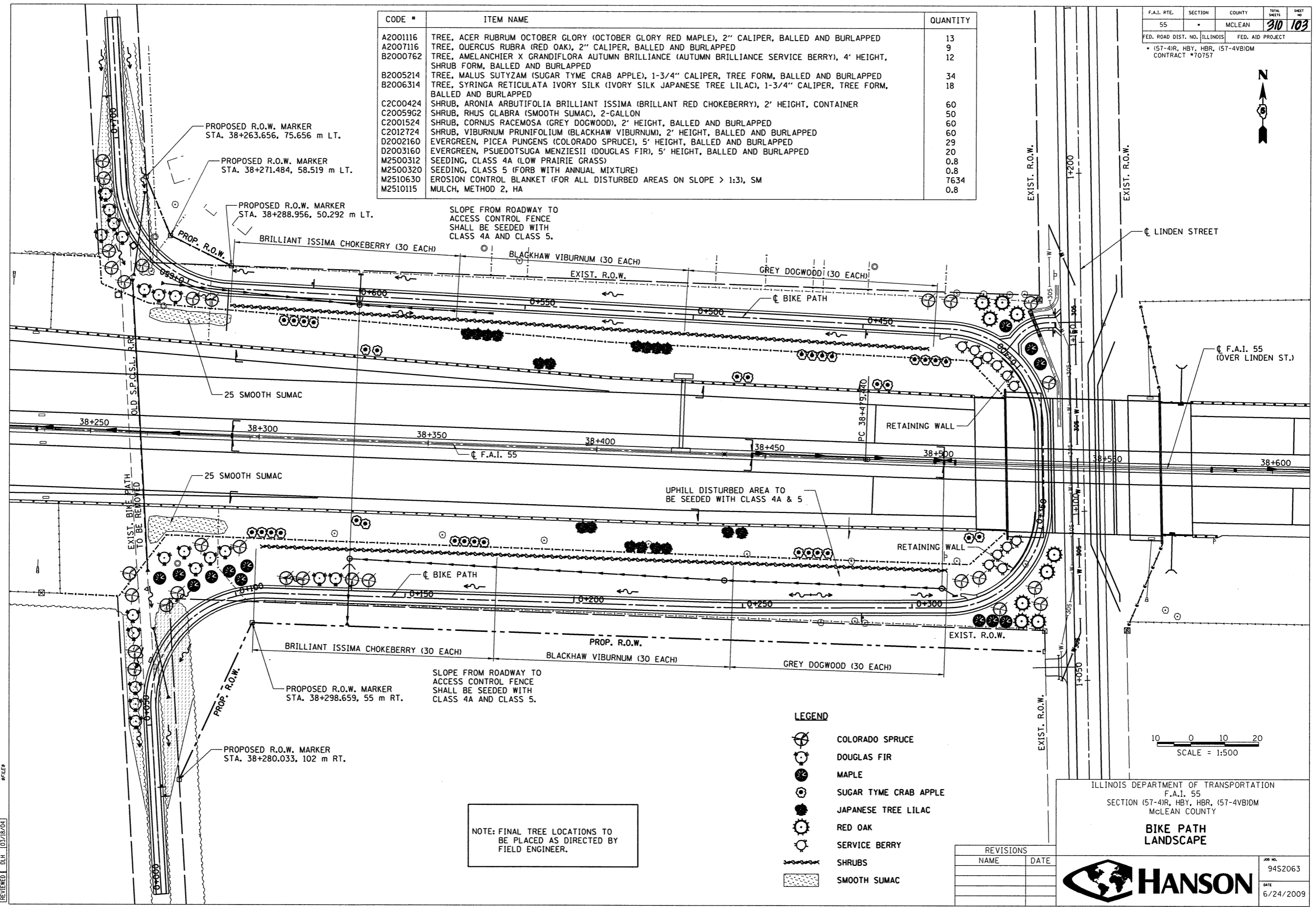
HANSON

JOB NO. 9452063
DATE 8/18/2009

8/18/2009
#1/LS
LAYOUT 04/10/02
DRAWN J.H. 03/05/04
REVIEWED D.H. 03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	103
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* (57-4)R, HBY, HBR, (57-4)BDM CONTRACT #70757				

CODE #	ITEM NAME	QUANTITY
A2001116	TREE, ACER RUBRUM OCTOBER GLORY (OCTOBER GLORY RED MAPLE), 2" CALIPER, BALLED AND BURLAPPED	13
A2007116	TREE, QUERCUS RUBRA (RED OAK), 2" CALIPER, BALLED AND BURLAPPED	9
B2000762	TREE, AMELANCHIER X GRANDIFLORA AUTUMN BRILLIANCE (AUTUMN BRILLIANCE SERVICE BERRY), 4' HEIGHT, SHRUB FORM, BALLED AND BURLAPPED	12
B2005214	TREE, MALUS SUTYZAM (SUGAR TYME CRAB APPLE), 1-3/4" CALIPER, TREE FORM, BALLED AND BURLAPPED	34
B2006314	TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 1-3/4" CALIPER, TREE FORM, BALLED AND BURLAPPED	18
C2C00424	SHRUB, ARONIA ARBUTIFOLIA BRILLIANT ISSIMA (BRILLIANT RED CHOKEBERRY), 2' HEIGHT, CONTAINER	60
C2005962	SHRUB, RHUS GLABRA (SMOOTH SUMAC), 2-GALLON	50
C2001524	SHRUB, CORNUS RACEMOSA (GREY DOGWOOD), 2' HEIGHT, BALLED AND BURLAPPED	60
C2012724	SHRUB, VIBURNUM PRUNIFOLIUM (BLACKHAW VIBURNUM), 2' HEIGHT, BALLED AND BURLAPPED	60
D2002160	EVERGREEN, PICEA PUNGENS (COLORADO SPRUCE), 5' HEIGHT, BALLED AND BURLAPPED	29
D2003160	EVERGREEN, PSUEDOTSUGA MENZIESII (DOUGLAS FIR), 5' HEIGHT, BALLED AND BURLAPPED	20
M2500312	SEEDING, CLASS 4A (LOW PRAIRIE GRASS)	0.8
M2500320	SEEDING, CLASS 5 (FORB WITH ANNUAL MIXTURE)	0.8
M2510630	EROSION CONTROL BLANKET (FOR ALL DISTURBED AREAS ON SLOPE > 1:3), SM	7634
M2510115	MULCH, METHOD 2, HA	0.8



SLOPE FROM ROADWAY TO ACCESS CONTROL FENCE SHALL BE SEEDING WITH CLASS 4A AND CLASS 5.

SLOPE FROM ROADWAY TO ACCESS CONTROL FENCE SHALL BE SEEDING WITH CLASS 4A AND CLASS 5.

NOTE: FINAL TREE LOCATIONS TO BE PLACED AS DIRECTED BY FIELD ENGINEER.

- LEGEND**
- COLORADO SPRUCE
 - DOUGLAS FIR
 - MAPLE
 - SUGAR TYME CRAB APPLE
 - JAPANESE TREE LILAC
 - RED OAK
 - SERVICE BERRY
 - SHRUBS
 - SMOOTH SUMAC

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BDM
MCLEAN COUNTY

BIKE PATH LANDSCAPE

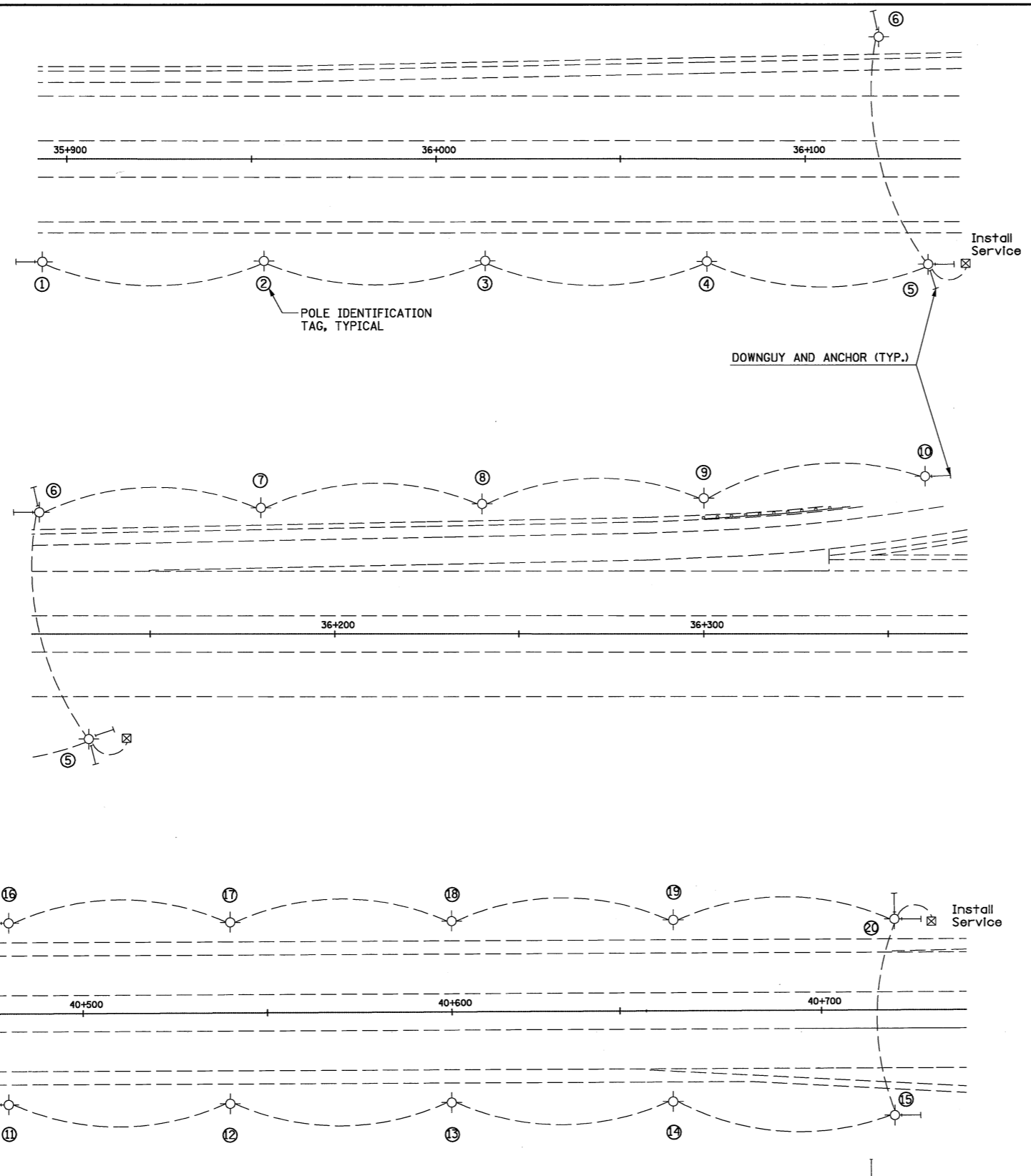
HANSON

JOB NO. 94S2063
DATE 6/24/2009

REVISED	JRH	05/04/04
LAYOUT	JRH	07/06/99
DRAWN	JRH	03/05/04
REVIEWED	DJH	03/18/04

6/24/2009 #FILE#

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	104
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



- ① STA. 35+890 RT.
- ② STA. 35+950 RT.
- ③ STA. 36+010 RT.
- ④ STA. 36+070 RT.
- ⑤ STA. 36+130 RT.
- ⑥ STA. 36+120 LT.
- ⑦ STA. 36+180 LT.
- ⑧ STA. 36+240 LT.
- ⑨ STA. 36+300 LT.
- ⑩ STA. 36+360 LT.
- ⑪ STA. 40+480 RT.
- ⑫ STA. 40+540 RT.
- ⑬ STA. 40+600 RT.
- ⑭ STA. 40+660 RT.
- ⑮ STA. 40+720 RT.
- ⑯ STA. 40+480 LT.
- ⑰ STA. 40+540 LT.
- ⑱ STA. 40+600 LT.
- ⑲ STA. 40+660 LT.
- ⑳ STA. 40+720 LT.

NOTE:
 1. SETBACK SHALL BE MIN. 9 m (30') FROM EDGE OF TRAFFIC LANE OR 1.2 m (4') BEHIND GUARDRAIL, UNLESS BREAKAWAY TYPE POLE IS USED.

TYPICAL TEMPORARY LIGHTING FOR MULTIPLE TRAFFIC LANE TAPERS (CROSSOVERS)
 ALL STAGES

LAYOUT	J.H.	04/10/02
DRAWN	J.H.	03/05/04
REVIEWED	D.H.	03/18/04

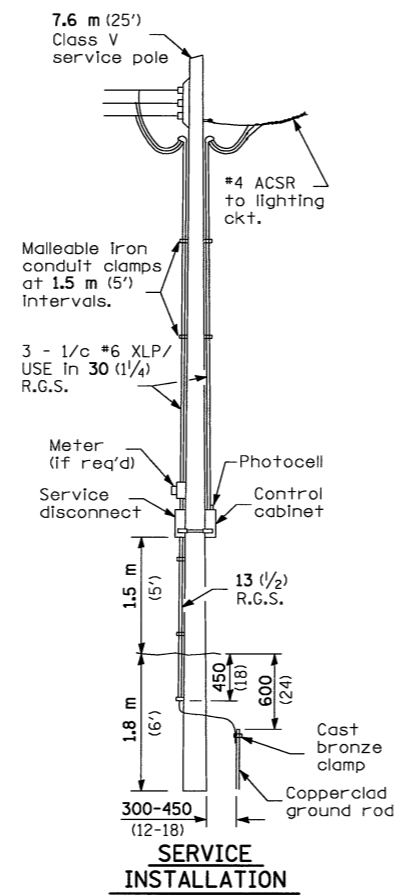
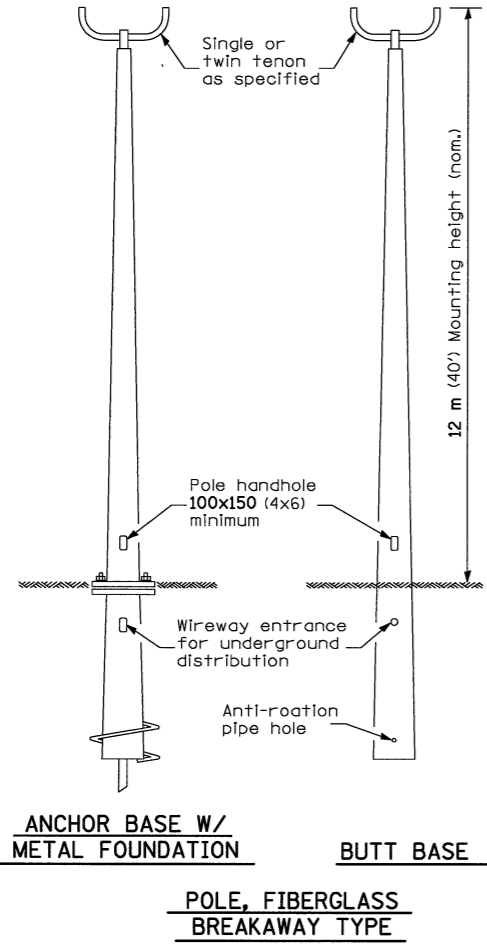
10/6/2009
#1/ER

REVISIONS	
NAME	DATE

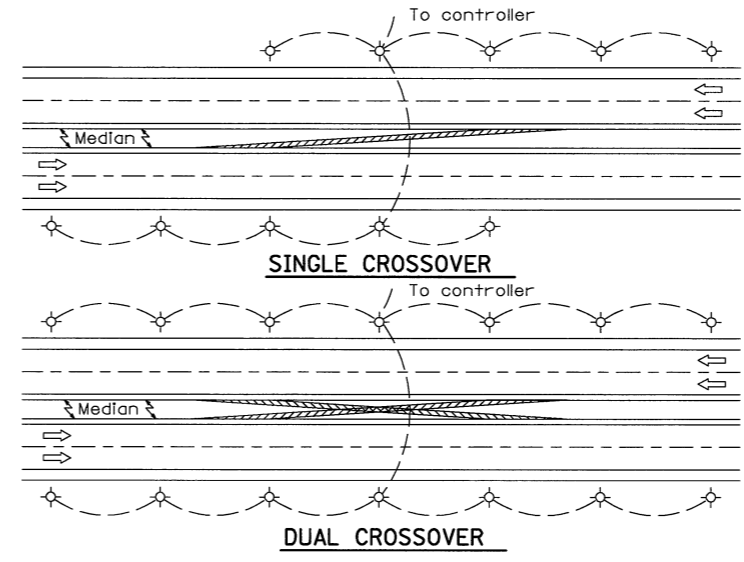
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4VB)DM
 MCLEAN COUNTY

TEMPORARY LIGHTING PLANS

JOB NO.	94S2063
DATE	10/6/2009



NOTE:
Contractor to coordinate with electric utility to arrange for service installations as indicated by the plan sheets.

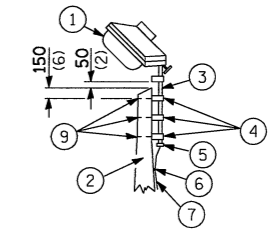


NOTE:
Min. Pole spacing 60 m (200')
Max. Pole spacing 75 m (250')
Setback shall be min. 9 m (30') or 1.5 m (5') back of ditch, unless breakaway type pole is used.

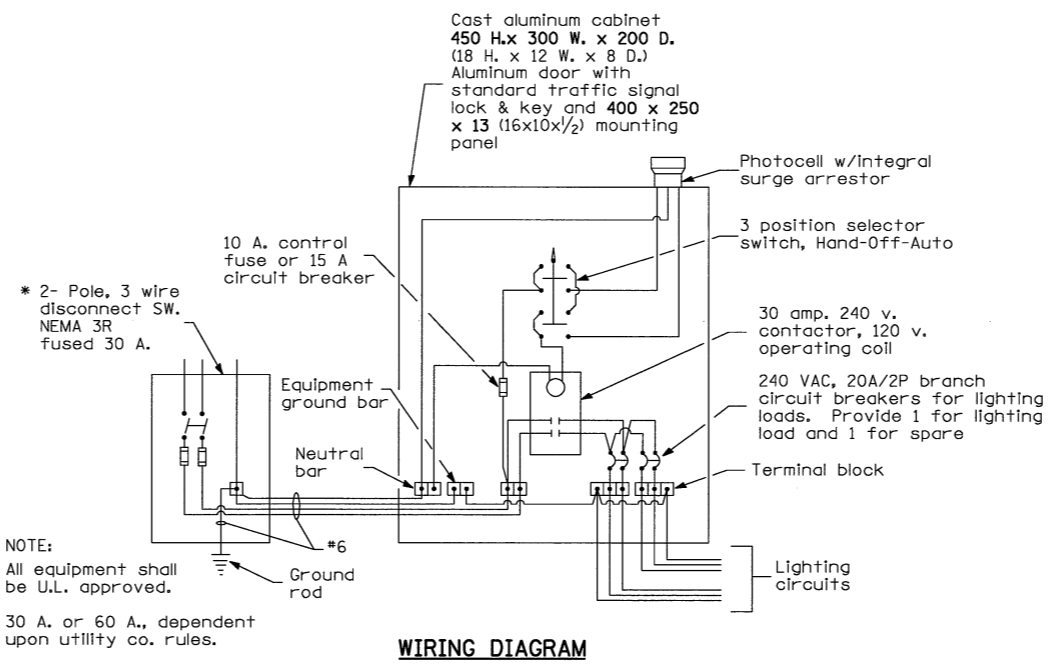
- ① Luminaire 400 watt H.P.S. multimount w/Internal fusing 13.7 m (45') MTG ht.
- ② Wood pole, class 3 or better
- ③ 63 (2 1/2) Galv. steel conduit
- ④ Single offset pole band
- ⑤ Conduit bushing
- ⑥ Cable clamps on 600 (24) centers
- ⑦ 2/c #12 Type USE cable
- ⑧ 25 (1) Galv. steel conduit 3.0 m (10') in length

NOTE:
Luminaires shall have a two-pole inline weatherproof quick disconnect fuse holder. Luminaire(s) shall be oriented and the mounting angle adjusted as recommended by the Engineer.

Connect luminaire equipment ground to ACSR messenger.



- ⑨ 16 (5/8) Ø hot dpped galvanized bolt with flat washer & locknut (3 req'd)
- ⑩ Conduit clamps on 900 (36) centers
- ⑪ Unit duct
- ⑫ Threaded reducer
- ⑬ "C" Condulet, threaded
- ⑭ 40 (1 1/2) Galv. steel conduit for 1 unit duct or 75 (3) galv. steel conduit for 2 or 3 unit ducts.



NOTE:
All equipment shall be U.L. approved.
* 30 A. or 60 A., dependent upon utility co. rules.

POLE LENGTH	DEPTH IN GROUND
19.8 m (65')	3.6 m (12')
18.0 m (60')	3.0 m (10')
16.8 m (55')	2.7 m (9')
16.0 m (50')	2.4 m (8')
13.7 m (45')	2.1 m (7')
12.0 m (40')	2.0 m (6.5')
10.7 m (35')	1.8 m (6')
9.0 m (30')	1.7 m (5.5')

POLE, WOOD
All dimensions are in millimeters (inches) unless otherwise shown.

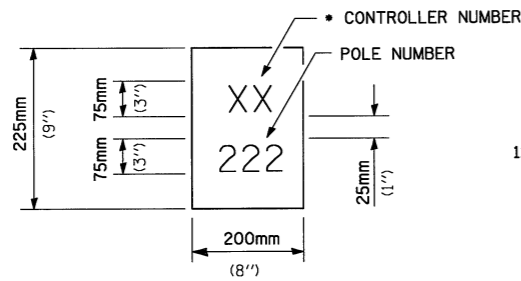
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY

TEMPORARY LIGHTING DETAILS

REVISIONS	
NAME	DATE

JOB NO. 94S2063
DATE 8/20/2009
HANSON

DESIGNED	04/10/02
DRAWN	03/05/04
CHECKED	02/18/04
APPROVED	



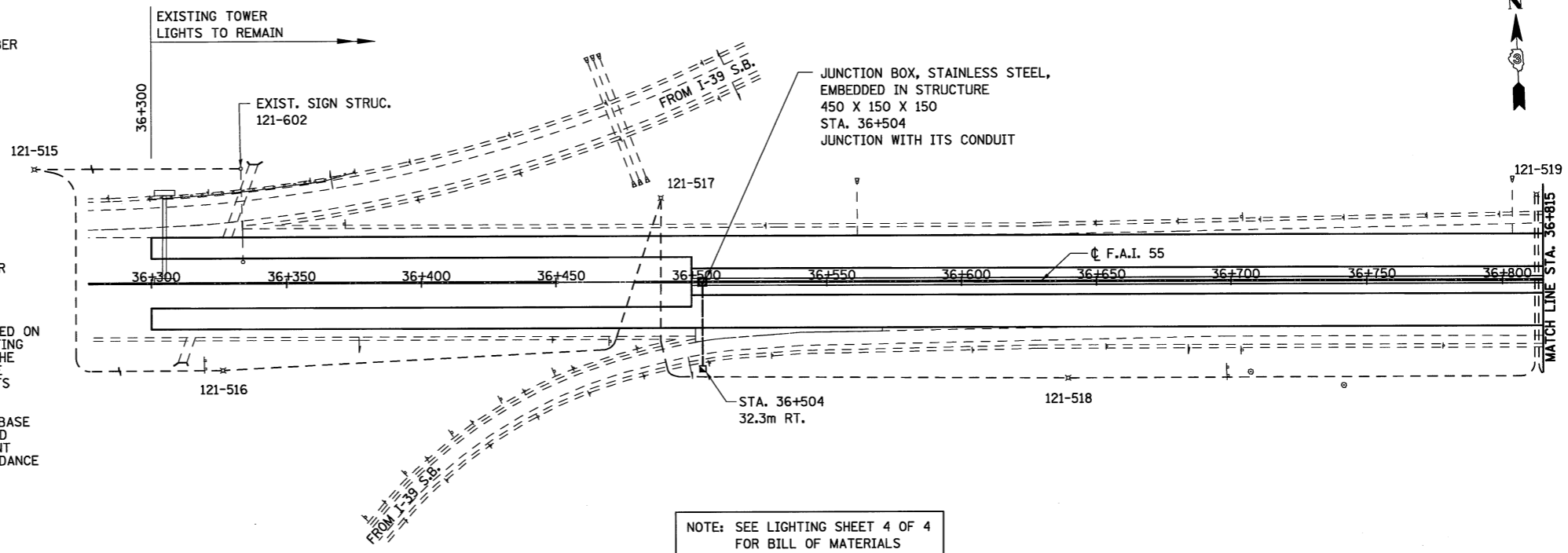
• LOCATION NUMBER REFERS TO LIGHTING CONTROLLER NUMBER

THE CONTRACTOR SHALL FURNISH AND INSTALL A LIGHT POLE IDENTIFICATION ON EACH NEW LIGHT POLE, AS SHOWN ABOVE, INCIDENTAL TO THE RESPECTIVE LIGHT POLE PAY ITEM. THE NUMERALS SHALL BE 75mm (3 IN.) SERIES "D", BLACK, SCREENED ON SILVER-WHITE TYPE B PRESSURE SENSITIVE REFLECTIVE SHEETING CONFORMING TO THE REQUIREMENTS OF SECTION T602.01 OF THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS. THE NUMERALS SHALL CONFORM TO THE FHWA "STANDARD ALPHABETS FOR HIGHWAY SIGNS".

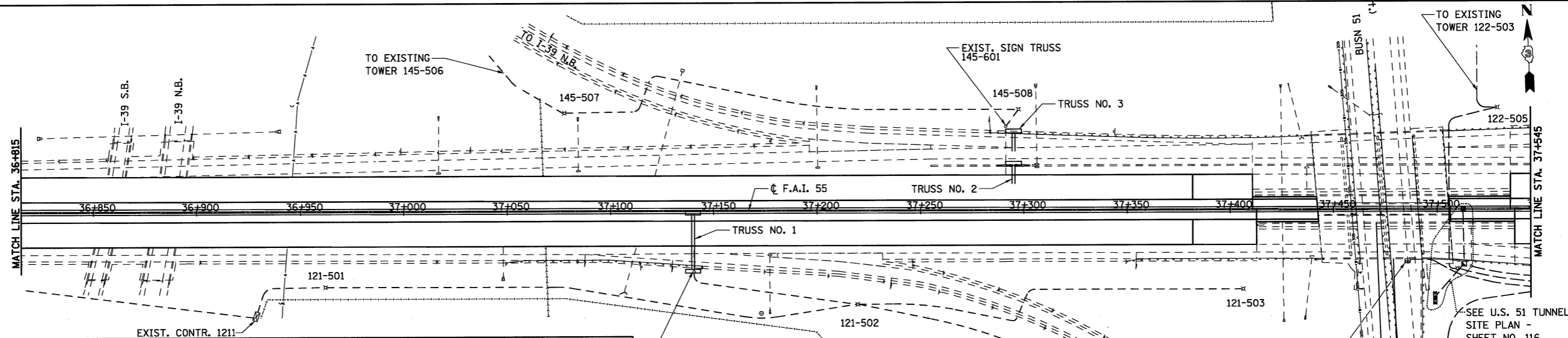
THE LIGHT POLE IDENTIFICATION SHALL BE APPLIED TO SIGN BASE MATERIAL AS SPECIFIED IN SECTION 1069.06 OF THE STANDARD SPECIFICATIONS, APPROXIMATELY 2.1M (7') ABOVE THE ADJACENT PAVEMENT GRADE VISIBLE TO APPROACHING TRAFFIC IN ACCORDANCE WITH HIGHWAY STANDARD T20001.

LIGHT POLE IDENTIFICATION

PLACE SIGNS AT 30° TO ONCOMING TRAFFIC IN BOTH DIRECTIONS

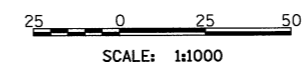


NOTE: SEE LIGHTING SHEET 4 OF 4 FOR BILL OF MATERIALS



LEGEND	
1	CONDUIT PUSHED, 50 mm, GALVANIZED STEEL
2	2 *6XLP, 1 *6XLP-G
3	UNIT DUCT, 2 *6XLP, 1 *6XLP-G, 25 P
4	CONDUIT ATTACHED TO STRUCTURE, 50 mm DIA, GALVANIZED STEEL
5	CONDUIT EMBEDDED IN STRUCTURE, 50 mm PVC
6	CONDUIT ATTACHED TO STRUCTURE 20 mm DIA., GALVANIZED STEEL
7	2 *10XLP, 1 *10XLP-G
	UNDERPASS LUMINAIRE, 150W HPS
	JUNCTION BOX, EXISTING
	JUNCTION BOX, PROPOSED, SIZE AS NOTED
	LIGHTING CONTROLLER, PROPOSED
	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES
	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES INSTALLED ON EXISTING FOUNDATION
	PROPOSED CONDUIT OR UNIT DUCT
	EXISTING LIGHTPOLE AND FOUNDATION TO BE REMOVED
	EXISTING LIGHTING UNIT

REVISIONS	
NAME	DATE



ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

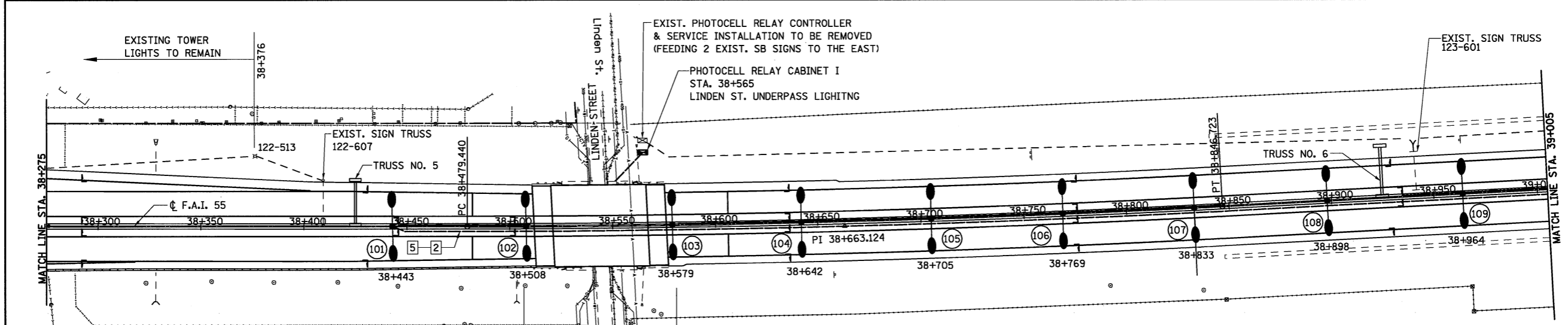
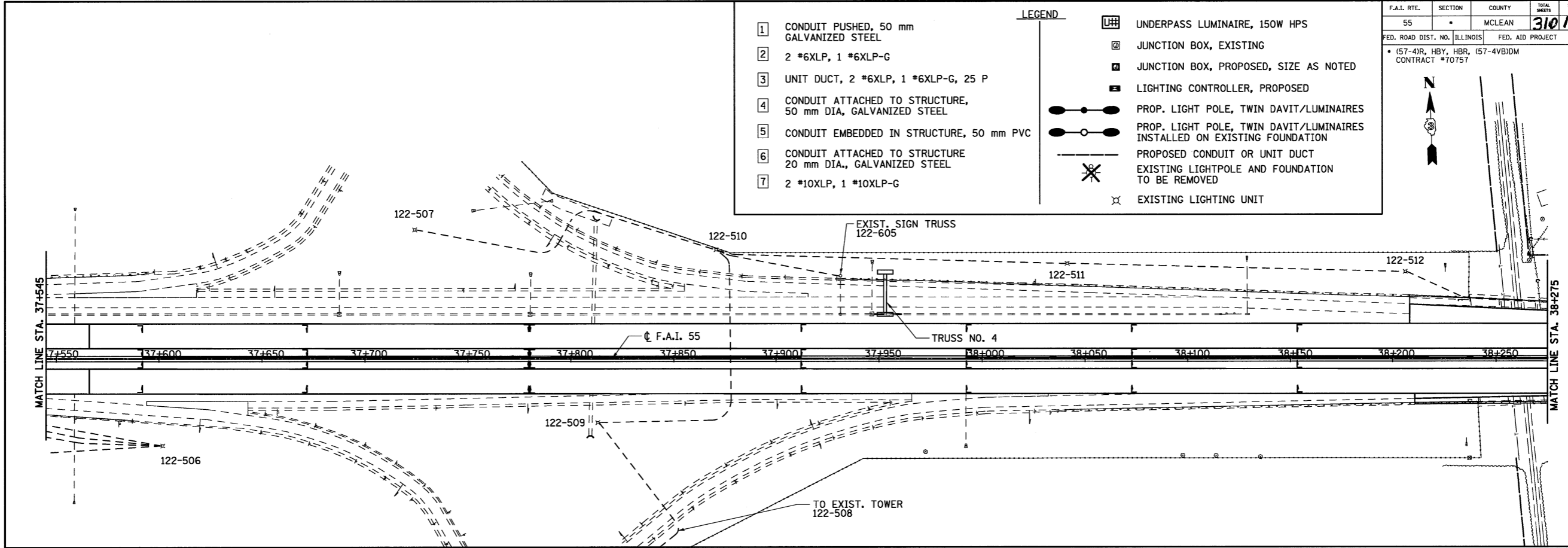
LIGHTING PLAN
I-55

JOB NO. 94S2063
DATE 10/6/2009

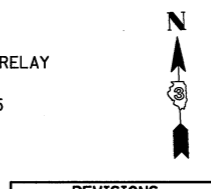
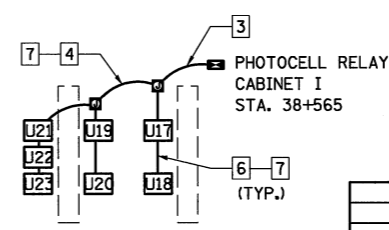
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	107
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
(57-4)R, HBY, HBR, (57-4VB)DM		CONTRACT #70757		

LEGEND

1	CONDUIT PUSHED, 50 mm GALVANIZED STEEL	UHH	UNDERPASS LUMINAIRE, 150W HPS
2	2 *6XLP, 1 *6XLP-G	⊗	JUNCTION BOX, EXISTING
3	UNIT DUCT, 2 *6XLP, 1 *6XLP-G, 25 P	⊠	JUNCTION BOX, PROPOSED, SIZE AS NOTED
4	CONDUIT ATTACHED TO STRUCTURE, 50 mm DIA, GALVANIZED STEEL	⊞	LIGHTING CONTROLLER, PROPOSED
5	CONDUIT EMBEDDED IN STRUCTURE, 50 mm PVC	●—●	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES
6	CONDUIT ATTACHED TO STRUCTURE 20 mm DIA., GALVANIZED STEEL	●—○	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES INSTALLED ON EXISTING FOUNDATION
7	2 *10XLP, 1 *10XLP-G	—○—	PROPOSED CONDUIT OR UNIT DUCT
		⊗	EXISTING LIGHTPOLE AND FOUNDATION TO BE REMOVED
		⊗	EXISTING LIGHTING UNIT



NOTE: SEE DETAIL FOR "PROPOSED UNDERPASS LIGHTING, LINDEN ST." FOR UNDERPASS LIGHTING DETAILS



SCALE: 1:1000

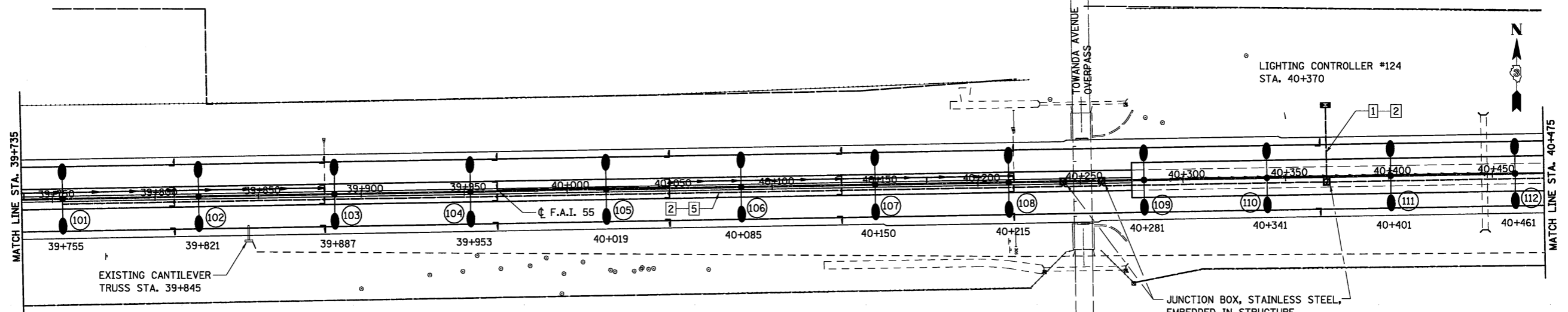
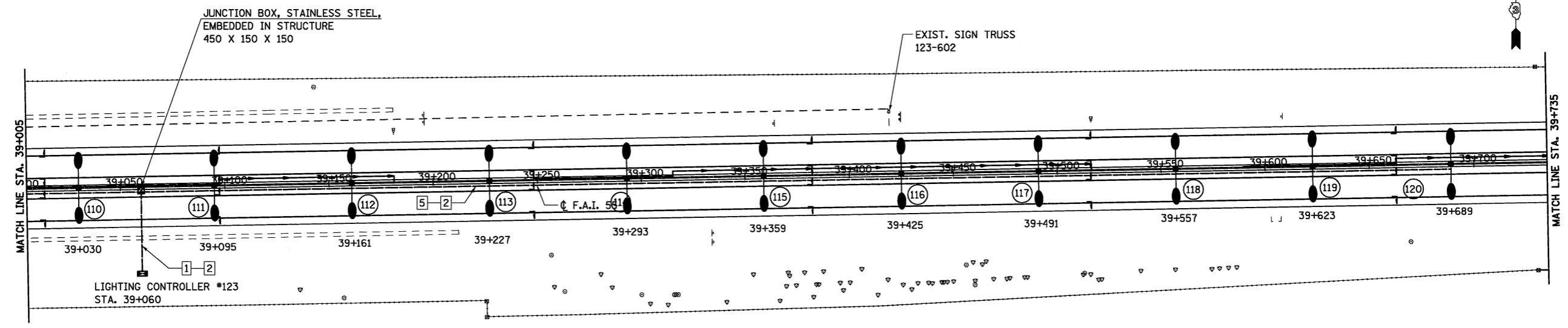
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4VB)DM
 MCLEAN COUNTY
LIGHTING PLAN
 I-55

REVISIONS	
NAME	DATE

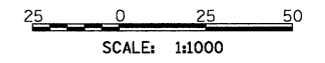
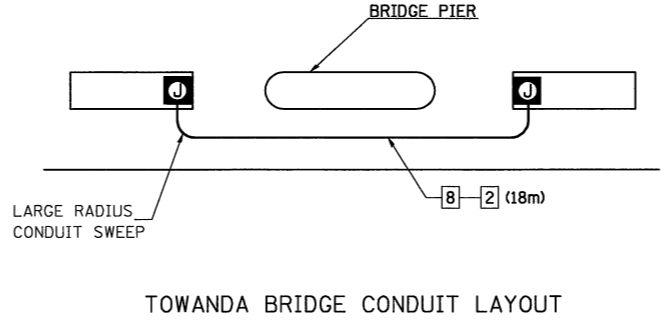
JOB NO. 94S2063
 DATE 10/6/2009

DATE	04/10/02
DRAWN	JRH
REVIEWED	DLH
DATE	03/05/04
DATE	03/28/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	108
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)B)DM CONTRACT #70757				



LEGEND	
1	CONDUIT PUSHED, 50 mm GALVANIZED STEEL
2	2 #6XLP, 1 #6XLP-G
3	UNIT DUCT, 2 #6XLP, 1 #6XLP-G, 25 P
4	CONDUIT ATTACHED TO STRUCTURE, 50 mm DIA., GALVANIZED STEEL
5	CONDUIT EMBEDDED IN STRUCTURE, 50 mm PVC
6	CONDUIT ATTACHED TO STRUCTURE 20 mm DIA., GALVANIZED STEEL
7	2 #10XLP, 1 #10XLP-G
8	CONDUIT IN TRENCH, 50 mm GALVANIZED STEEL
[Symbol]	UNDERPASS LUMINAIRE, 150W HPS
[Symbol]	JUNCTION BOX, EXISTING
[Symbol]	JUNCTION BOX, PROPOSED, SIZE AS NOTED
[Symbol]	LIGHTING CONTROLLER, PROPOSED
[Symbol]	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES
[Symbol]	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES INSTALLED ON EXISTING FOUNDATION
[Symbol]	PROPOSED CONDUIT OR UNIT DUCT
[Symbol]	EXISTING LIGHTPOLE AND FOUNDATION TO BE REMOVED
[Symbol]	EXISTING LIGHTING UNIT



ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY
LIGHTING PLAN
I-55

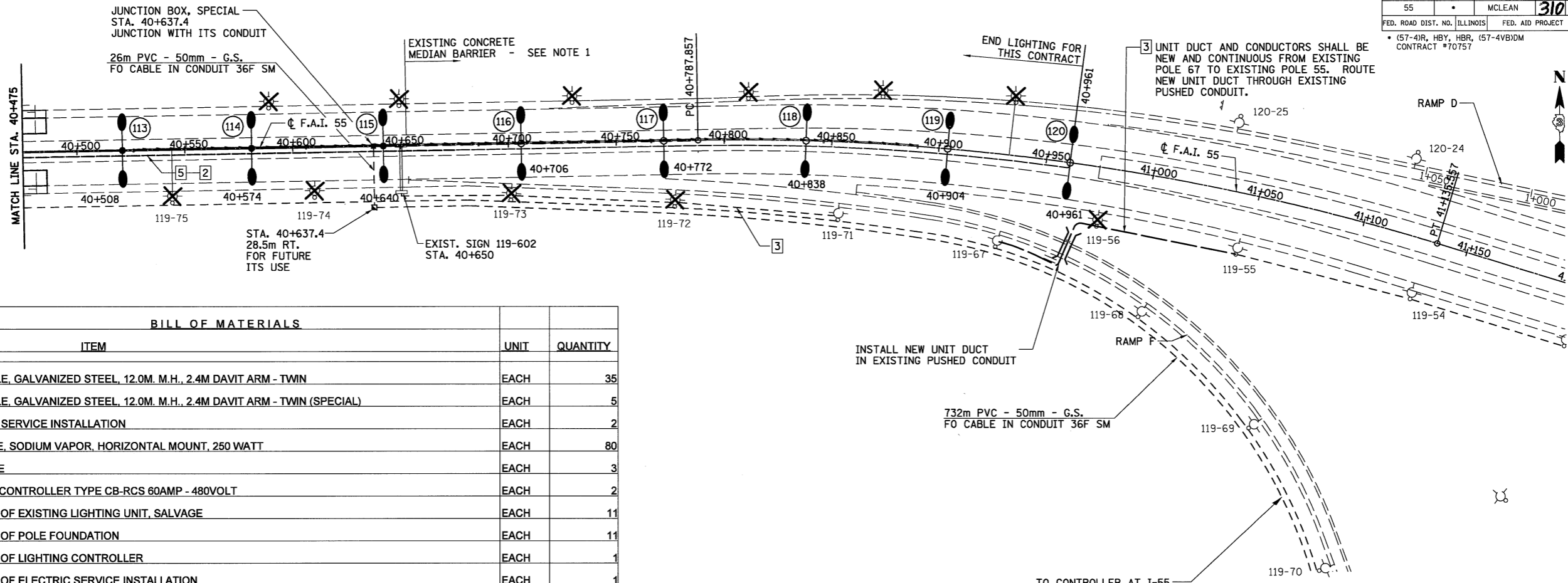
REVISIONS	
NAME	DATE

HANSON

JOB NO. 94S2063
DATE 8/20/2009

LAYOUT	04/10/02
DRAWN	JH
REVIEWED	DLH
	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	109
FED. ROAD DIST. NO., ILLINOIS		FED. AID PROJECT		
		* (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757		



BILL OF MATERIALS		
ITEM	UNIT	QUANTITY
LIGHT POLE, GALVANIZED STEEL, 12.0M. M.H., 2.4M DAVIT ARM - TWIN	EACH	35
LIGHT POLE, GALVANIZED STEEL, 12.0M. M.H., 2.4M DAVIT ARM - TWIN (SPECIAL)	EACH	5
ELECTRIC SERVICE INSTALLATION	EACH	2
LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT	EACH	80
HANDHOLE	EACH	3
LIGHTING CONTROLLER TYPE CB-RCS 60AMP - 480VOLT	EACH	2
REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE	EACH	11
REMOVAL OF POLE FOUNDATION	EACH	11
REMOVAL OF LIGHTING CONTROLLER	EACH	1
REMOVAL OF ELECTRIC SERVICE INSTALLATION	EACH	1
CONDUIT PUSHED, 50MM DIA., GALVANIZED STEEL	METER	135
CONDUIT IN TRENCH, 50MM DIA., GALVANIZED STEEL	METER	765
CONDUIT ATTACHED TO STRUCTURE, 50MM DIA., GALVANIZED STEEL	METER	48
CONDUIT EMBEDDED IN STRUCTURE, 50 MM DIA. PVC	METER	2452
JUNCTION BOX, STAINLESS STEEL, EMBEDDED IN STRUCTURE, 450MM X 150MM X 150MM	EACH	4
JUNCTION BOX, SPECIAL	EACH	2
UNIT DUCT, 2#6XLP, 1#6 XLP GROUND 25MM POLYETHYLENE	METER	340
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6	METER	7725
TRENCH AND BACKFILL FOR ELECTRICAL WORK	METER	765
DISCONNECT SIGN LIGHTING AND REMOVE WIRING TO NEAREST SPLICE	EACH	6
TEMPORARY LIGHTING SYSTEM	SUM	1
LIGHT POLE FOUNDATION, INTEGRAL WITH BARRIER WALL	EACH	35
FIBER OPTIC CABLE, 36 FIBER, SINGLE MODE	EACH	4981
DRILL EXISTING HANDHOLE	EACH	1

INSTALL NEW UNIT DUCT IN EXISTING PUSHED CONDUIT

732m PVC - 50mm - G.S. FO CABLE IN CONDUIT 36F SM

TO CONTROLLER AT I-55 & VETERANS SOUTH RAMP. CONNECT AT DOUBLE HANDHOLE. DRILL EXIST. HANDHOLE - 1 EA.

NOTES

1. PROPOSED LIGHT POLE WITH SPECIAL BASE CONFIGURATION INSTALLED ON EXISTING FOUNDATION.
2. CONTRACTOR SHALL MAINTAIN POWER TO EXISTING SIGN TRUSS AT STATIONS 39+845 AND 40+650. MAINTENANCE OF POWER SHALL REMAIN FOR TRUSS AT STA. 39+845 UNTIL THE TRUSS IS REMOVED AND REPLACED. THE SIGN STRUCTURE AT 40+650 IS TO REMAIN. SEE SPECIAL PROVISION FOR REMOVAL OF POLE FOUNDATION.

LEGEND	
1	CONDUIT PUSHED, 50 mm GALVANIZED STEEL
2	2 *6XLP, 1 *6XLP-G
3	UNIT DUCT, 2 *6XLP, 1 *6XLP-G, 25 P
4	CONDUIT ATTACHED TO STRUCTURE, 50 mm DIA., GALVANIZED STEEL
5	CONDUIT EMBEDDED IN STRUCTURE, 50 mm PVC
6	CONDUIT ATTACHED TO STRUCTURE 20 mm DIA., GALVANIZED STEEL
7	2 *10XLP, 1 *10XLP-G
[Symbol]	UNDERPASS LUMINAIRE, 150W HPS
[Symbol]	JUNCTION BOX, EXISTING
[Symbol]	JUNCTION BOX, PROPOSED, SIZE AS NOTED
[Symbol]	LIGHTING CONTROLLER, PROPOSED
[Symbol]	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES
[Symbol]	PROP. LIGHT POLE, TWIN DAVIT/LUMINAIRES INSTALLED ON EXIST. FOUNDATION (NOTE 1)
[Symbol]	PROPOSED CONDUIT OR UNIT DUCT
[Symbol]	EXISTING LIGHTPOLE AND FOUNDATION TO BE REMOVED
[Symbol]	EXISTING LIGHTING UNIT



ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

LIGHTING PLAN I-55

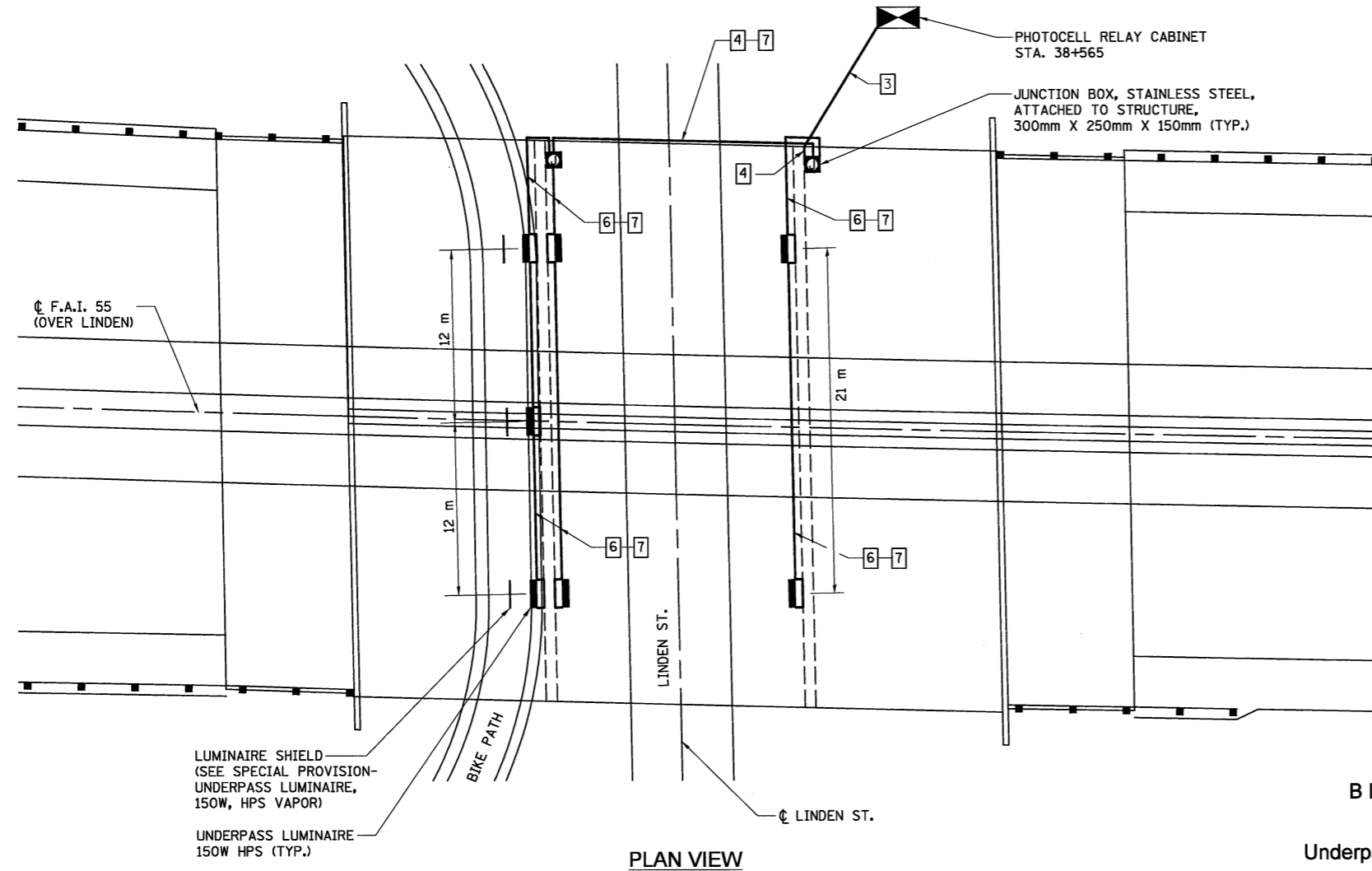
REVISIONS	NAME	DATE

HANSON

JOB NO. 9452063
DATE 10/7/2009

01/7/2009
 #FILES
 LAYOUT 04/10/02
 DRAWN J.H. 03/05/04
 REVIEWED D.H. 03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	110
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)BDM CONTRACT #70757				



LEGEND

- 3 UNIT DUCT, 2 #6XLP, 1 #6XLP-G, 25 P
- 4 CONDUIT ATTACHED TO STRUCTURE, 50 mm DIA, GALVANIZED STEEL
- 6 CONDUIT ATTACHED TO STRUCTURE 20 mm DIA., GALVANIZED STEEL
- 7 2 #10XLP, 1 #10XLP-G
- 5 JUNCTION BOX, PROPOSED, SIZE AS NOTED

BILL OF MATERIALS

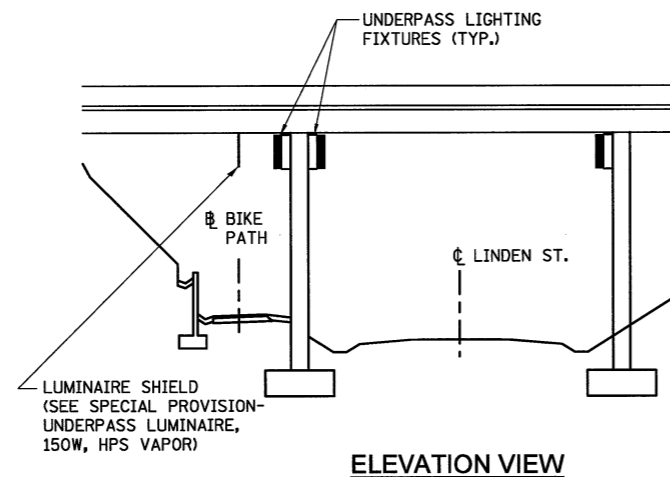
Underpass Lighting - Linden St. Structure

ITEM	UNIT	QUANTITY
UNDERPASS LUMINAIRE, 150 WATT, HIGH PRESSURE SODIUM VAPOR	EACH	7
LIGHTING CONTROLLER PHOTOCELL RELAY	EACH	1
CONDUIT ATTACHED TO STRUCTURE, 20MM DIA., GALVANIZED STEEL	METER	98
CONDUIT ATTACHED TO STRUCTURE, 50MM DIA., GALVANIZED STEEL	METER	23
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 300MM X 250MM X 150MM	EACH	1
UNIT DUCT, 2#6XLP, 1#6 XLP GROUND 25MM POLYETHYLENE	METER	25
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	METER	345
LUMINAIRE SHIELD	EACH	3
ELECTRIC SERVICE INSTALLATION	EACH	1

NOTES

1. PER SPECIAL PROVISION, UNDERPASS LIGHTING QUANTITIES FROM THE FIRST JUNCTION BOX TO THE LUMINAIRES ARE INCLUDED IN THE COST OF THE LUMINAIRES. THE BILL OF MATERIALS IS FOR REFERENCE ONLY AND INCLUDES ITEMS THAT ARE NOT PAID FOR SEPARATELY.

2. SEE DETAIL "UNDERPASS LIGHTING-OUTSIDE PIERS" (LINDEN ST.).



ELEVATION VIEW

10/16/2009
#P105

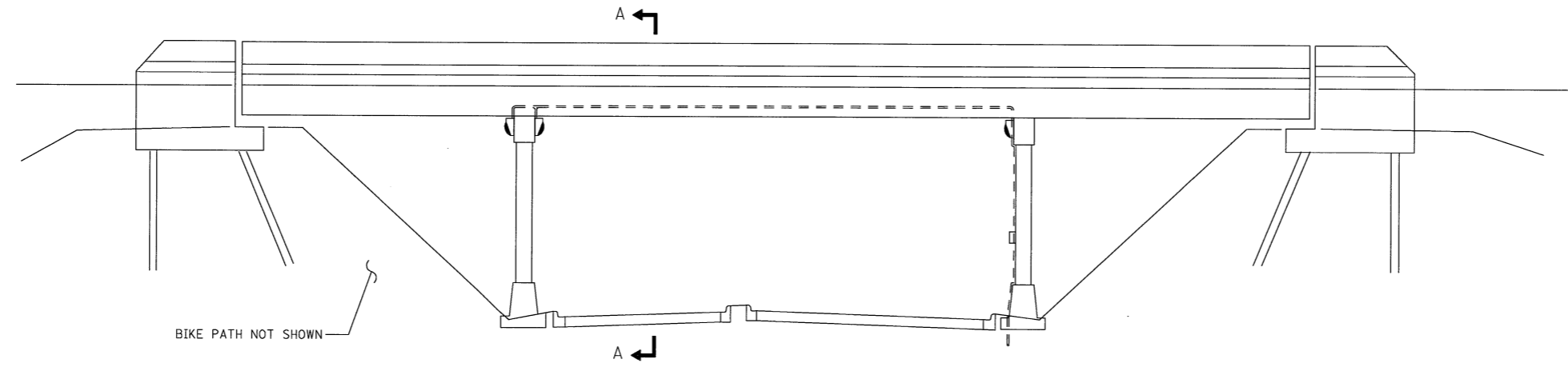
DATE	BY	CHKD
03/09/04	JH	03/09/04
07/19/04	RLA	07/19/04
02/18/04	DH	02/18/04

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BDM
MCLEAN COUNTY
**PROPOSED UNDERPASS LIGHTING DETAIL
LINDEN STREET**

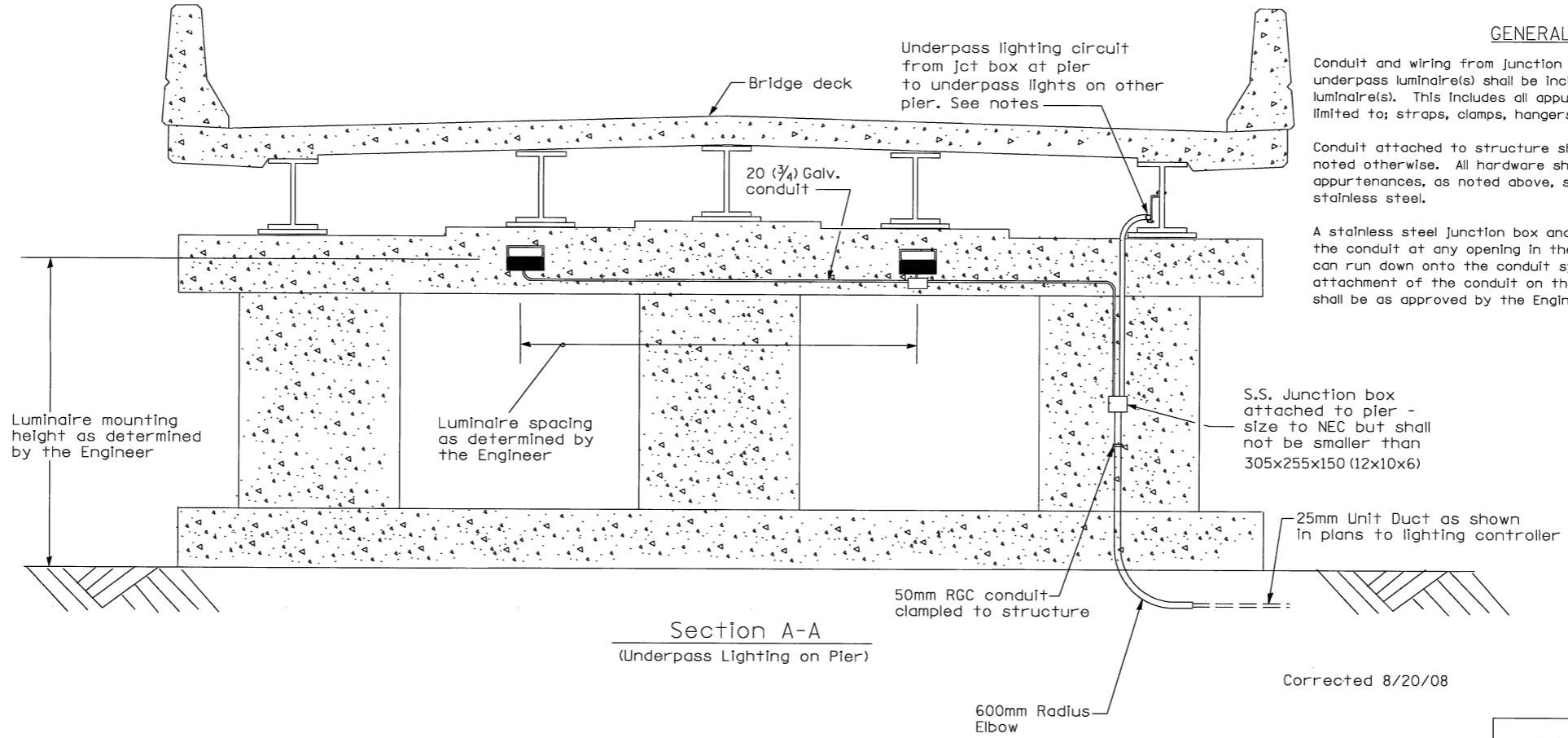
REVISIONS	NAME	DATE

JOB NO. 94S2063
DATE 10/6/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	111
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)B)DM CONTRACT #70757				



OVERPASS ELEVATION
(Not to Scale)



Section A-A
(Underpass Lighting on Pier)

GENERAL NOTES

Conduit and wiring from junction box at bridge pier to the underpass luminaire(s) shall be incidental to the cost of the underpass luminaire(s). This includes all appurtenances including, but not limited to; straps, clamps, hangers, fittings, attachments, hardware, etc.

Conduit attached to structure shall be rigid galvanized conduit unless noted otherwise. All hardware shall be stainless steel and all conduit appurtenances, as noted above, shall be hot dip galvanized or stainless steel.

A stainless steel junction box and flex conduit shall be installed in the conduit at any opening in the bridge deck where road salt can run down onto the conduit system. Routing and method of attachment of the conduit on the bridge structure and across piers shall be as approved by the Engineer.

Corrected 8/20/08

UNDERPASS LIGHTING
OUTSIDE PIERS
(LINDEN ST.)

REVISIONS	
NAME	DATE
Corrected	8/20/08

JOB NO.
94S2063
DATE
8/21/2009

8/21/2009 #7128

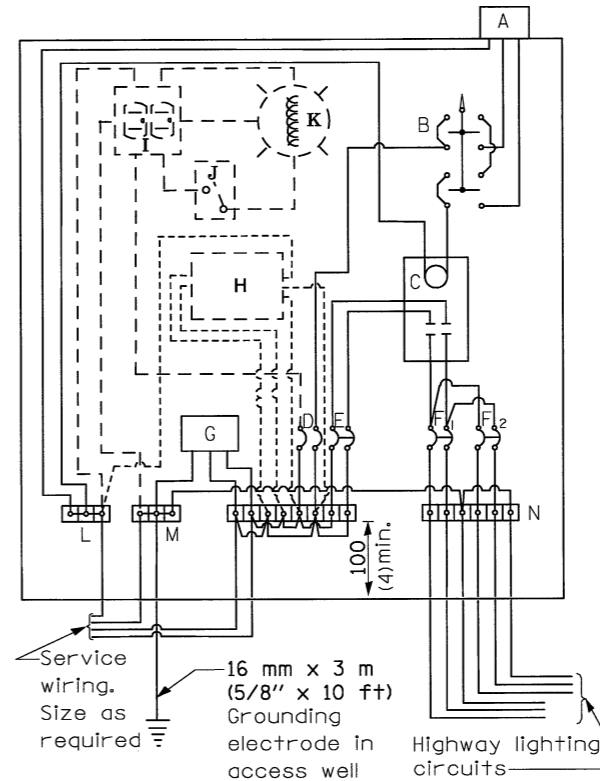
LAYOUT	JWH	
DRAWN	JWH	
REVIEWED	DUH	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	•	MCLEAN	130	112
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• (57-4R, HBV, HBR, (57-4VB)DM
CONTRACT #70757

MATERIALS

- A Photocell w/ integral surge arrester (remote mount in urban areas)
 - B 3 position selector switch HAND-OFF-AUTO
 - C 2 pole, 100 amp*, electrically held contactor, 120V operating coil
 - D 15 amp, 1 pole, circuit breaker
 - E 60 amp*, 2 pole, main circuit breaker
 - F 20 amp*, 2 pole, branch circuit breaker (typ). 2 spare c.b. required but not shown
 - G Surge arrester
 - H Transformer (see notes), 1 KVA*, 240/480V primary, 120/240V sec, single phase
 - I GFCI duplex receptacle
 - J Single pole, single throw switch
 - K Shielded security fixture with 100W lamp
 - L Neutral bar
 - M Equipment ground bar
 - N Terminal block (typ)
- (* = Size larger as needed)



CONTROL SCHEMATIC

GENERAL NOTES

Locate service pole and control installation adjacent to R.O.W. line with a minimum distance of 9 m (30') from the edge of pavement. Locate in close proximity to the utility transformer so the service drop does not exceed 46 m (150ft) and the total distance of overhead and underground cable (utility transformer to lighting controller) does not exceed 76 m (250ft). Exact location shall be established by the Engineer.

Wiring shall be panel board fashion. All bends shall be right angles. All runs shall vertical or parallel to panel board. Wires shall be grouped or laced.

All control installation components shall be U.L. listed.

Add receptacle, light, and switch in control cabinet, when specified.

For 480 V service, a step down transformer (dashed lines) is required.

Raceways shall terminate 75 (3) above top of concrete foundation.

Label equipment ground buss and neutral buss.

240 V. SERVICE

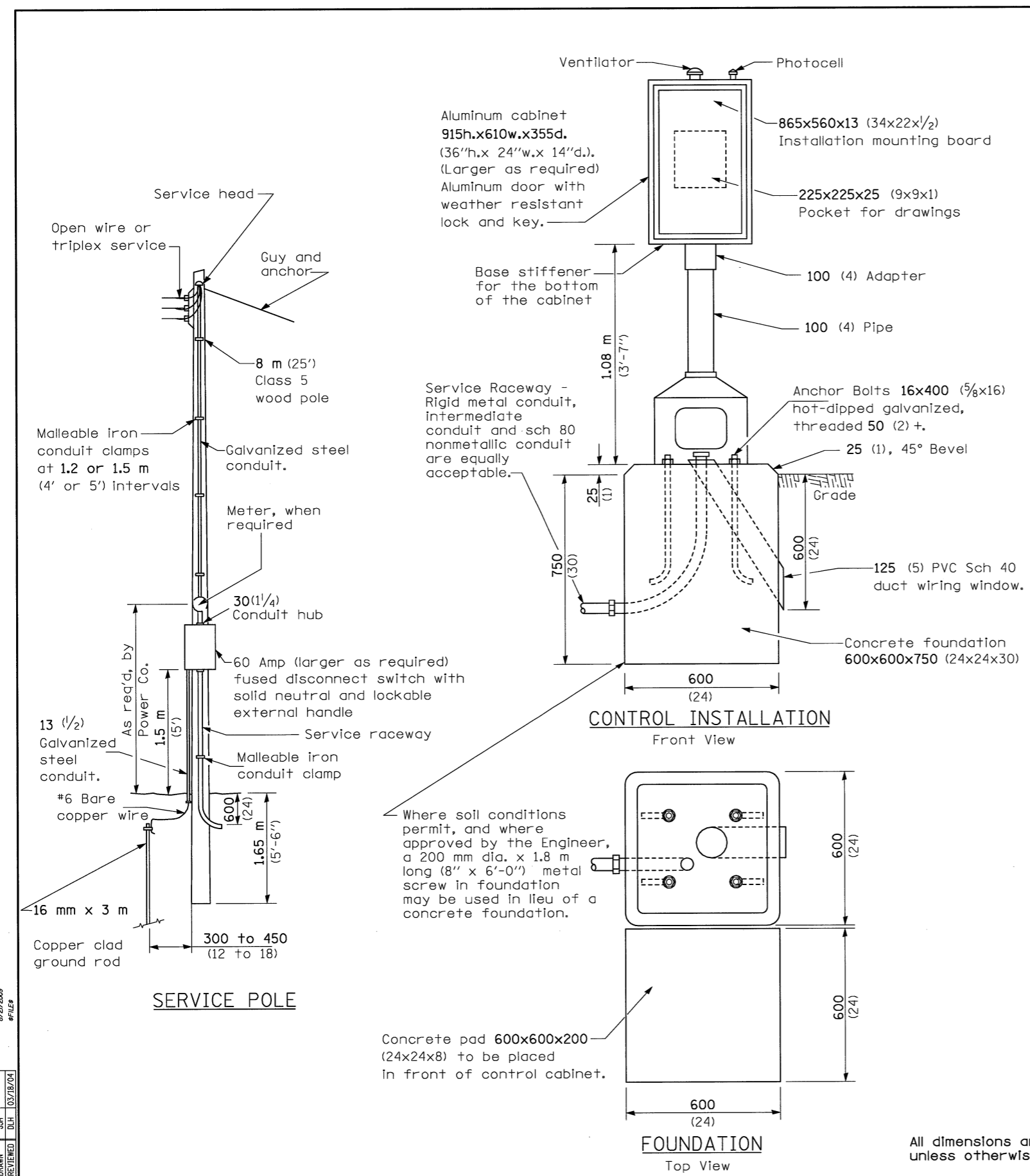
480 V. SERVICE

CONTROL INSTALLATION Pedestal Mount Cabinet

REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
8/21/2009

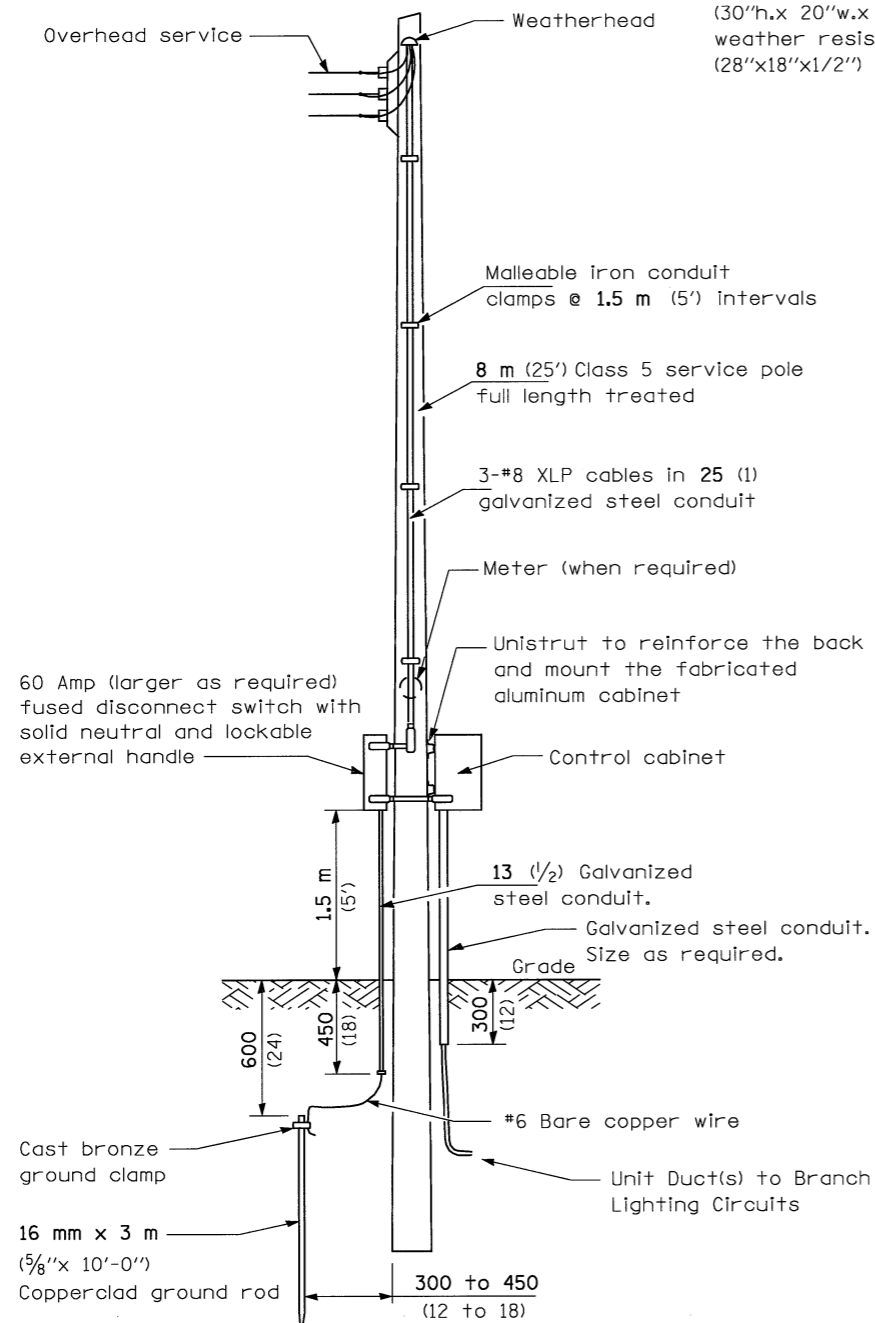


All dimensions are in millimeters (Inches) unless otherwise shown.

8/21/2009 #FILES

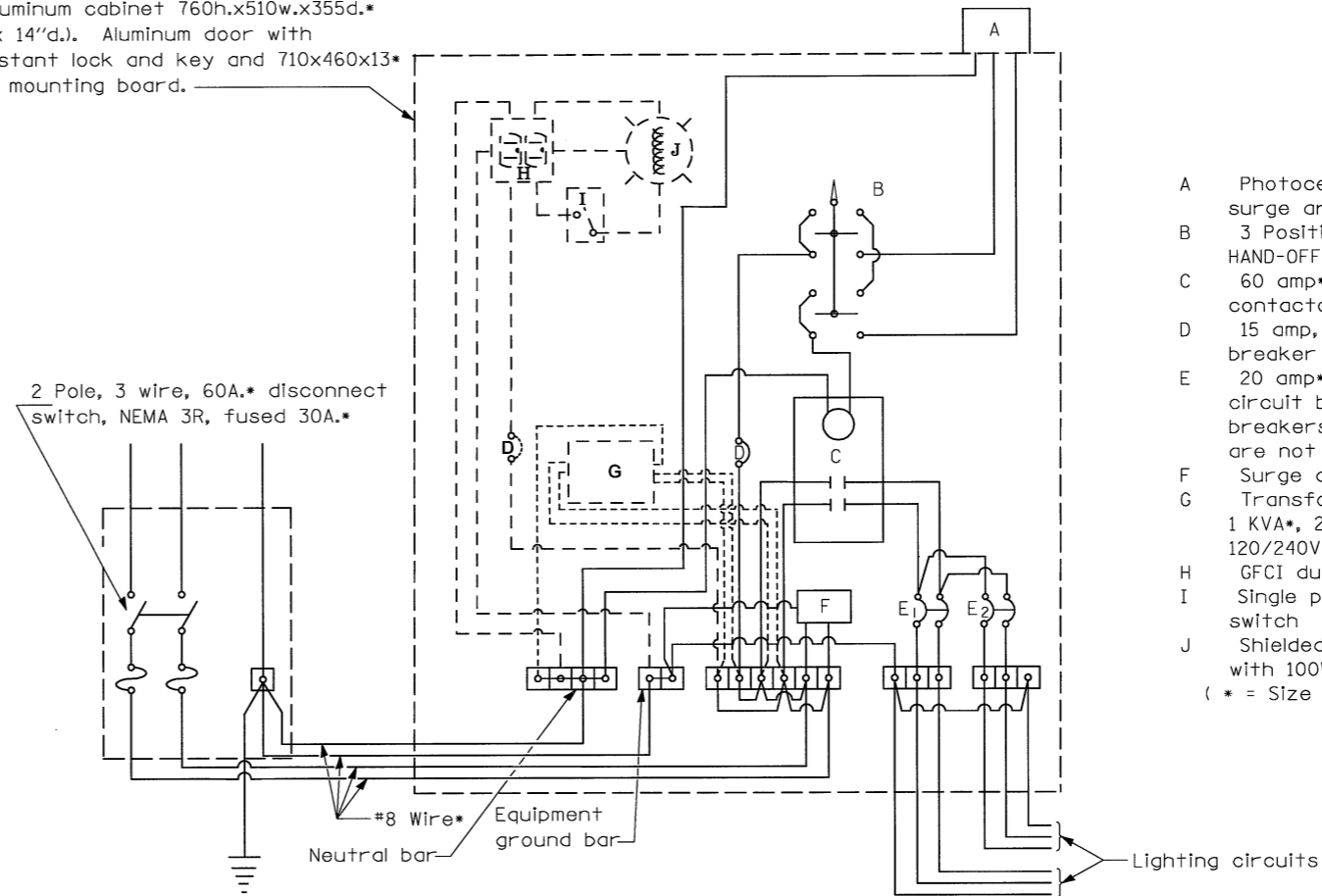
LAYOUT	J.J.H.	05/19/04
DRAWN	J.J.H.	
REVIEWED	D.L.H.	

120/240V., 1 PHASE, 3 WIRE SERVICE



SERVICE POLE

Fabricated aluminum cabinet 760h.x510w.x355d.* (30"h.x 20"w.x 14"d.). Aluminum door with weather resistant lock and key and 710x460x13* (28"x18"x1/2") mounting board.



DISCONNECT SWITCH

PHOTOCELL RELAY

- A Photocell with integral surge arrester
 - B 3 Position selector switch HAND-OFF-AUTO
 - C 60 amp* electrically held contactor
 - D 15 amp, 1 pole, circuit breaker
 - E 20 amp*, 2 pole, branch circuit breaker. Two spare breakers are required but are not shown
 - F Surge arrestor
 - G Transformer (see notes), 1 KVA*, 240/480V primary, 120/240V sec, single phase
 - H GFCI duplex receptacle
 - I Single pole, single throw switch
 - J Shielded security fixture with 100W lamp
- (* = Size larger as needed)

GENERAL NOTES

Wiring shall be panel board fashion. All bends shall be right angles. All runs shall be vertical or parallel to panel board. Wires shall be grouped or laced.

All control installation components shall be U.L. listed.

Label equipment ground and neutral.

Locate service pole and control installation adjacent to R.O.W. line with a minimum distance of 9 m (30') from the edge of pavement. Exact location shall be established by the Engineer.

The total distance between the control installation and primary transformer shall not exceed 76 m (250').

For 480 V service, a step down transformer (dashed lines) is required.

Add receptacle, light, and switch in control cabinet, when specified.

Corrected 1/19/06
1/17/08 Service disconnect
2/3/08 SA wiring, cabinet notes

All dimensions are in millimeters (Inches) unless otherwise shown.

- 240 V. SERVICE
- 480 V. SERVICE

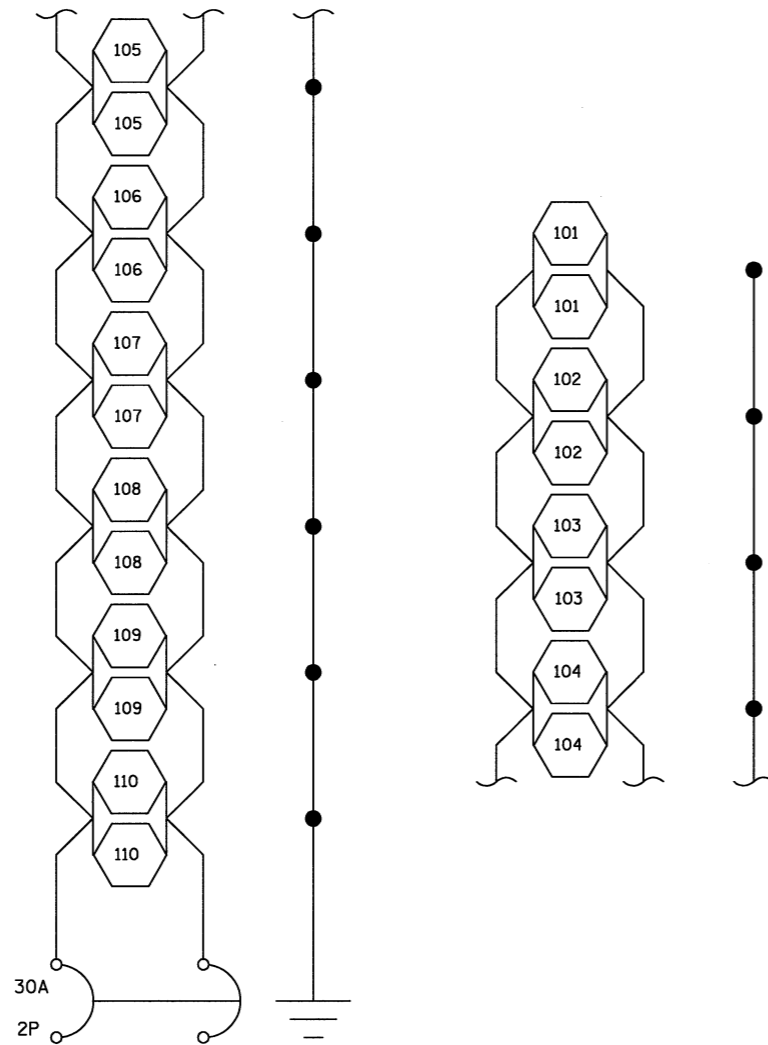
**CONTROL INSTALLATION
Service Pole Mounted**

REVISIONS	
NAME	DATE

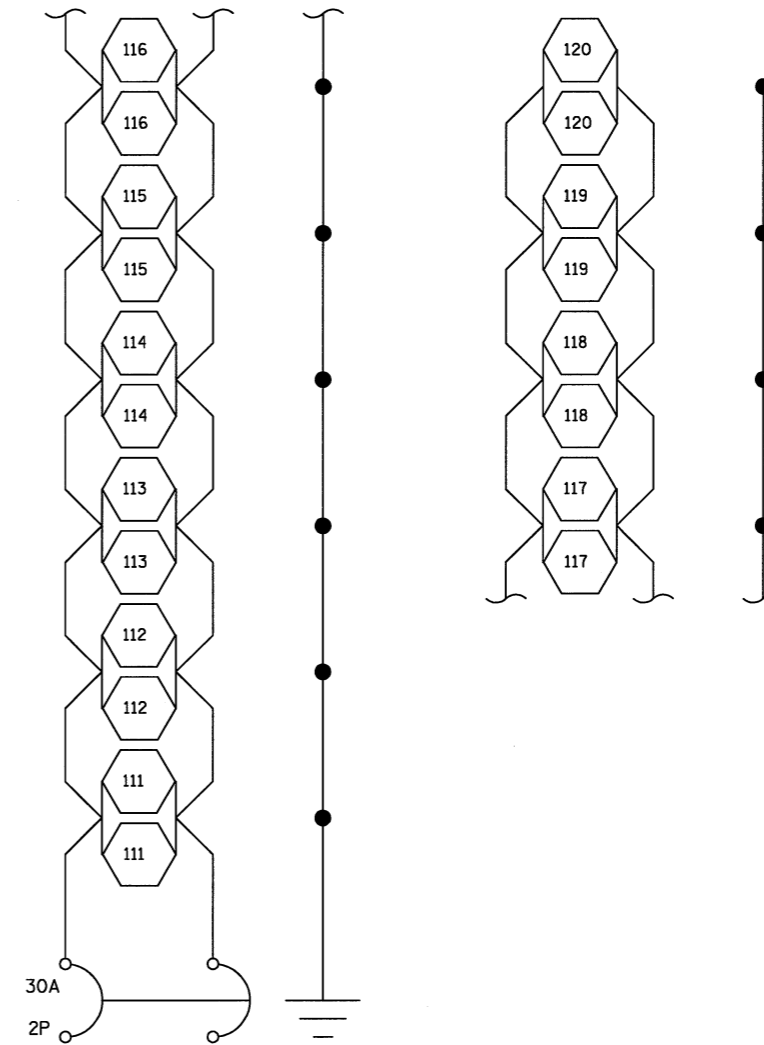
JOB NO.
94S2063
DATE
8/21/2009

LAYOUT	JJH	03/19/04
DRAWN	JJH	
REVIEWED	DLH	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	114
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)B)DM CONTRACT #70757				



CIRCUIT #1
CONTROLLER #123



CIRCUIT #2
CONTROLLER #123


8/20/2009
#FILE*

LAYOUT	DOT		
DRAWN	JH		
REVIEWED	DLH	03/18/04	

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY

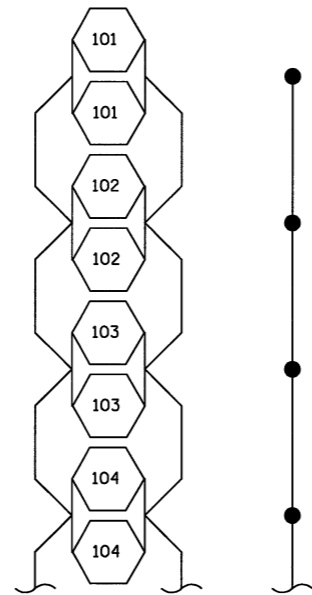
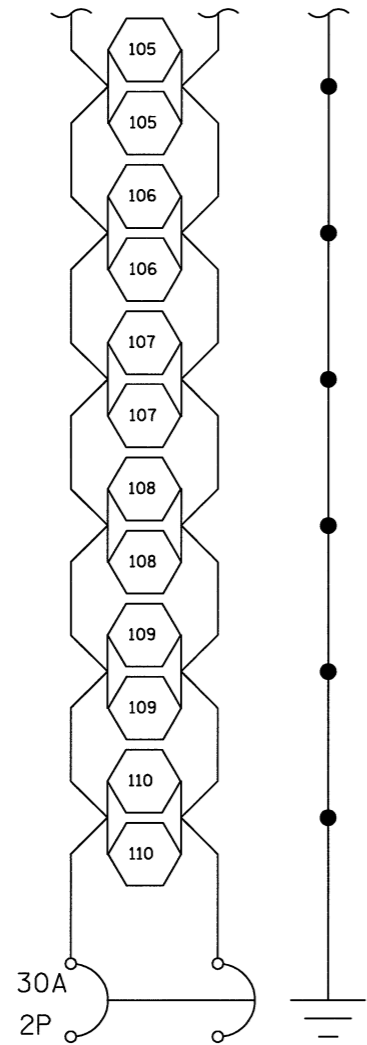
**CIRCUIT DIAGRAM
CONTROLLER #123**

REVISIONS	
NAME	DATE

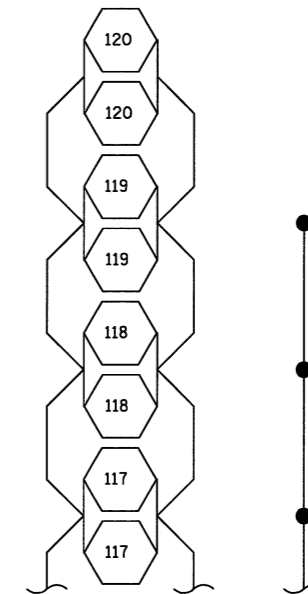
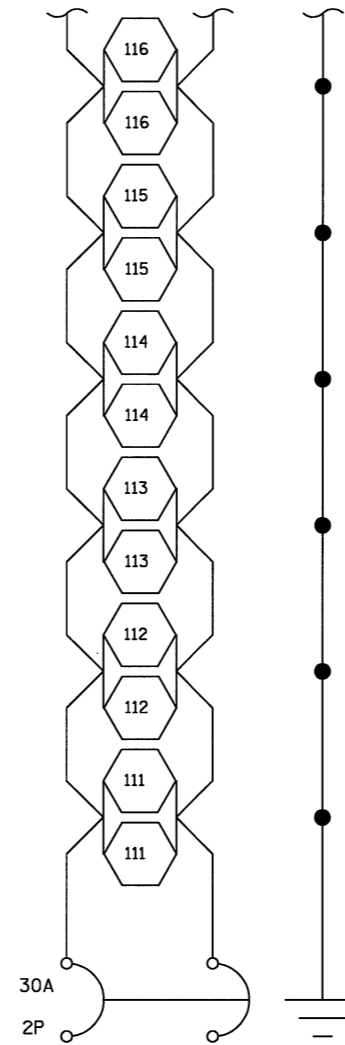
 **HANSON**

JOB NO. 9452063
DATE 8/20/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	115
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4)B)DM CONTRACT #70757				



CIRCUIT #1
CONTROLLER #124




CIRCUIT #2
CONTROLLER #124

LAYOUT	DDOT		
DRAWN	JJH		
REVIEWED	DLH	03/18/04	#FILE#

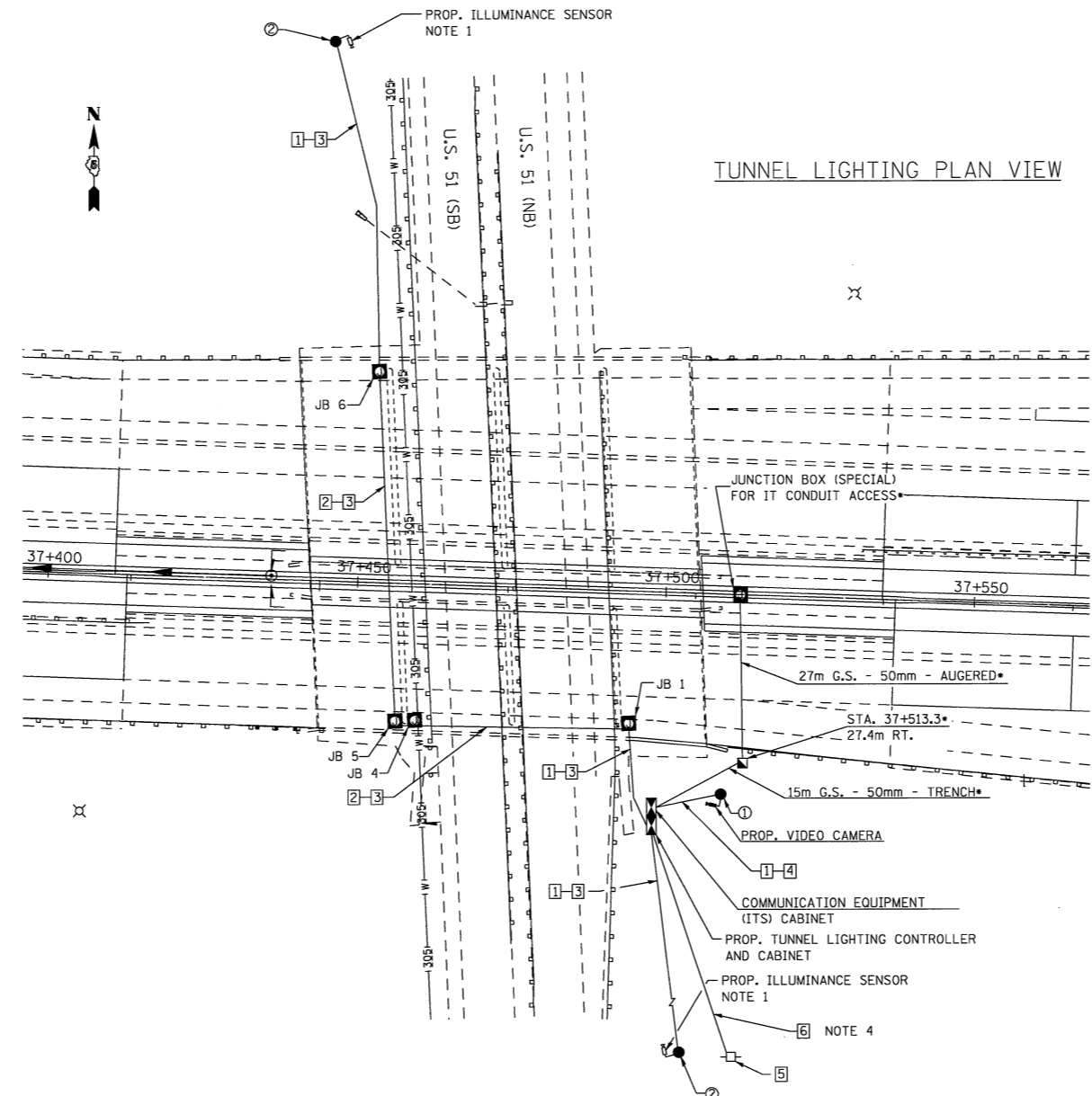
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY

**CIRCUIT DIAGRAM
CONTROLLER #124**

REVISIONS	
NAME	DATE

 **HANSON**

JOB NO. 94S2063
DATE 8/20/2009



BILL OF MATERIALS
U.S. 51 BUS. TUNNEL LIGHTING UNDER I-55

LEGEND

- ① CONDUIT IN TRENCH, 50mm, GALV. STEEL
- ② CONDUIT ATTACHED TO STRUCTURE, SIZE AS SHOWN ON PROP. TUNNEL LIGHTING PLAN.
- ③ SENSOR WIRING
- ④ SURVEILANCE VIDEO CAMERA WIRING
- ⑤ PROPOSED ELECTRIC SERVICE, 480/277, 3-PHASE, 4 WIRE
- ⑥ SERVICE CABLE, 3 - NO. 350 kcmil PLUS GROUND
- ① LIGHT POLE, GALV. STEEL, 15.2m (50') M.H.
- ② LIGHT POLE, GALV. STEEL, 9.0m (30') M.H.
- HANDHOLE

ITEM	UNIT	QUANTITY
TUNNEL LIGHTING CONTROL SYSTEM	L SUM	1
TUNNEL LUMINAIRE, 150 WATT HIGH PRESSURE SODIUM VAPOR	EACH	12
TUNNEL LUMINAIRE, 400 WATT HIGH PRESSURE SODIUM VAPOR	EACH	194
VIDEO CAMERA CONTROL SYSTEM	L SUM	1
ELECTRIC SERVICE INSTALLATION	EACH	1
CONDUIT IN TRENCH, 50MM DIA., GALVANIZED STEEL	METER	290
CONDUIT ATTACHED TO STRUCTURE, 30MM DIA., GALVANIZED STEEL	METER	500
CONDUIT ATTACHED TO STRUCTURE, 50MM DIA., GALVANIZED STEEL	METER	105
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 250MM X 200MM X 150MM	EACH	103
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 300MM X 250MM X 150MM	EACH	5
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 400MM X 400MM X 150MM	EACH	1
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	METER	7500
TRENCH AND BACKFILL FOR ELECTRICAL WORK	METER	290
LIGHT POLE, GALVANIZED STEEL, 9.0M. M.H., TENON MOUNT	EACH	2
LIGHT POLE, GALVANIZED STEEL, 15.2M. M.H., TENON MOUNT	EACH	1
LIGHT POLE FOUNDATION, 600MM DIAMETER	METER	3.4
LIGHT POLE FOUNDATION, 750MM DIAMETER	METER	2

• ITEMS NOT INCLUDED IN TUNNEL LIGHTING. PAID FOR PER RESPECTIVE PAY ITEM.

NOTES

1. PROPOSED SENSOR TO BE POSITIONED ONE (1) SIGHT STOPPING DISTANCE FROM THE TUNNEL ENTRANCE PORTAL AND MOUNTED ON GALV. STEEL POLE. THE POLE TO BE SETBACK 6m (20') FROM EDGE OF PAVEMENT AND NOTE LESS THAN 1.5m (5 FT.) BEHIND THE GUARDRAIL.
2. CONTROLLER TO BE LOCATED APPROX. 15m (50') FROM THE BRIDGE PORTAL AND A MINIMUM OF 9m (30') FROM THE EDGE OF PAVEMENT. THE EXACT LOCATION SHALL BE ESTABLISHED BY THE ENGINEER.
3. PER SPECIAL PROVISION, TUNNEL LIGHTING QUANTITIES FROM THE FIRST JUNCTION BOX TO THE LUMINAIRES ARE INCLUDED IN THE COST OF THE LUMINAIRES. THE BILL OF MATERIALS IS FOR REFERENCE ONLY AND INCLUDES ITEMS THAT ARE NOT PAID FOR SEPARATELY.
4. THE COST OF THE SERVICE CABLE FROM THE METER TO THE TUNNEL LIGHTING CONTROLLER SHALL BE INCLUDED IN THE COST OF THE ELECTRICAL SERVICE INSTALLATION.

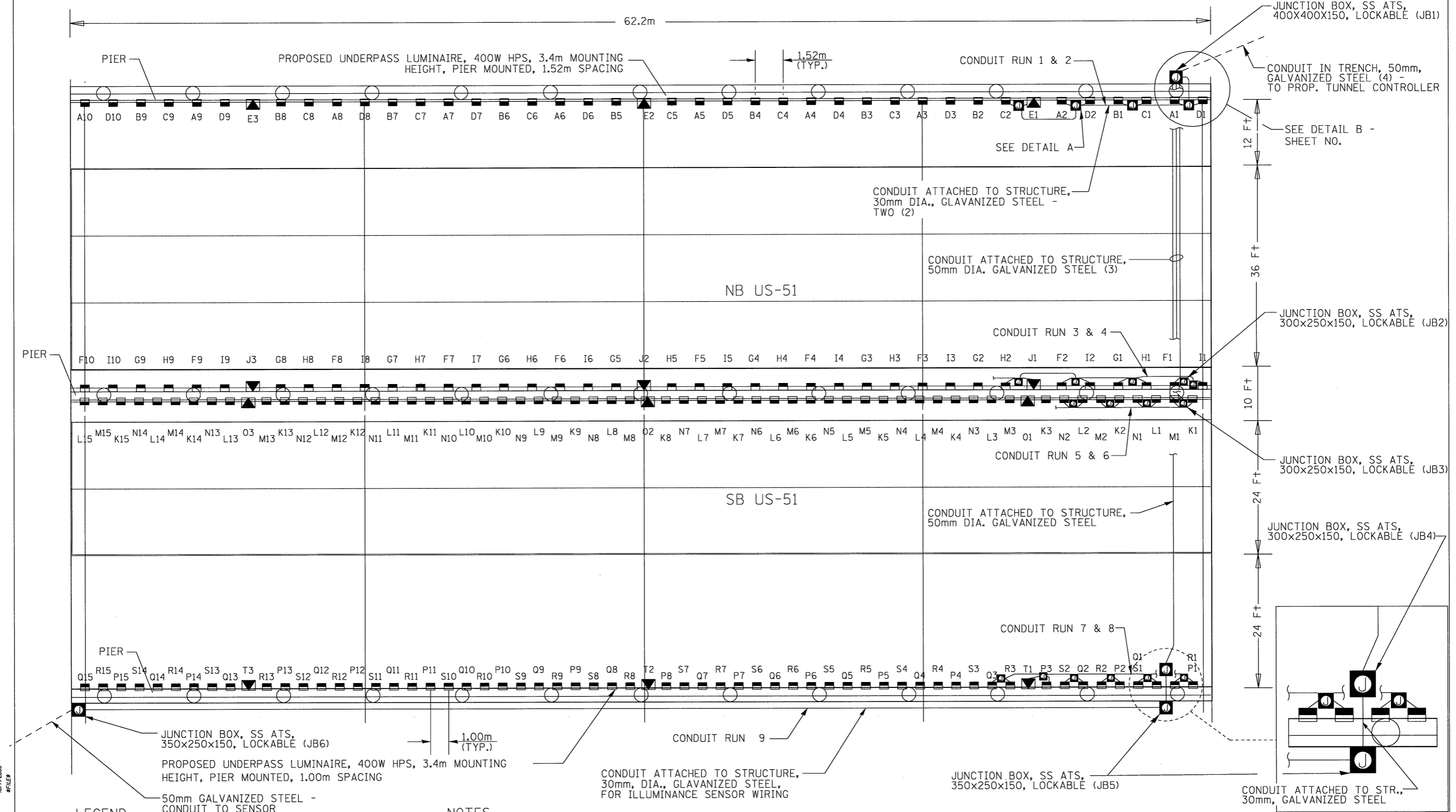
**TUNNEL LIGHTING
EXTERIOR LAYOUT**

REVISIONS			JOB NO. 94S2063
NAME	DATE		
		DATE 10/7/2009	

LAYOUT	J.H.	10/7/2009
DRAWN	J.H.	#FILE#
REVIEWED	D.H.	03/18/04

PROPOSED TUNNEL LIGHTING PLAN

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	117
FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT			
• (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



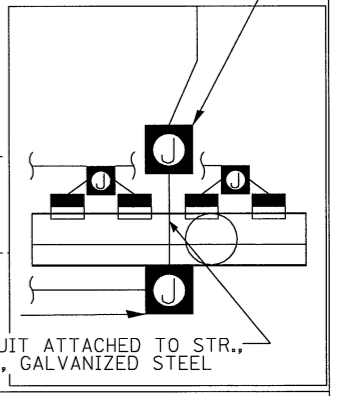
LEGEND

- PROPOSED TUNNEL LUMINAIRE, 400W, HPS (DAYTIME LIGHTING)
- ▼ PROPOSED TUNNEL LUMINAIRE, 150W, HPS (NIGHTTIME LIGHTING)
- PROPOSED JUNCTION BOX *
- PROPOSED CONDUIT ATTACHED TO STRUCTURE *
- 50mm GALVANIZED STEEL - CONDUIT TO SENSOR

NOTES

1. ALL CABLE IN EACH JUNCTION BOX SHALL BE GROUPED AND LABELED WITH CIRCUIT DESIGNATION.
 2. EACH JUNCTION BOX SHALL BE PROPERLY BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- * TO BE SIZED PER NEC. SIZE SHALL BE NO SMALLER THAN SHOWN.

TUNNEL LIGHTING INTERIOR LAYOUT



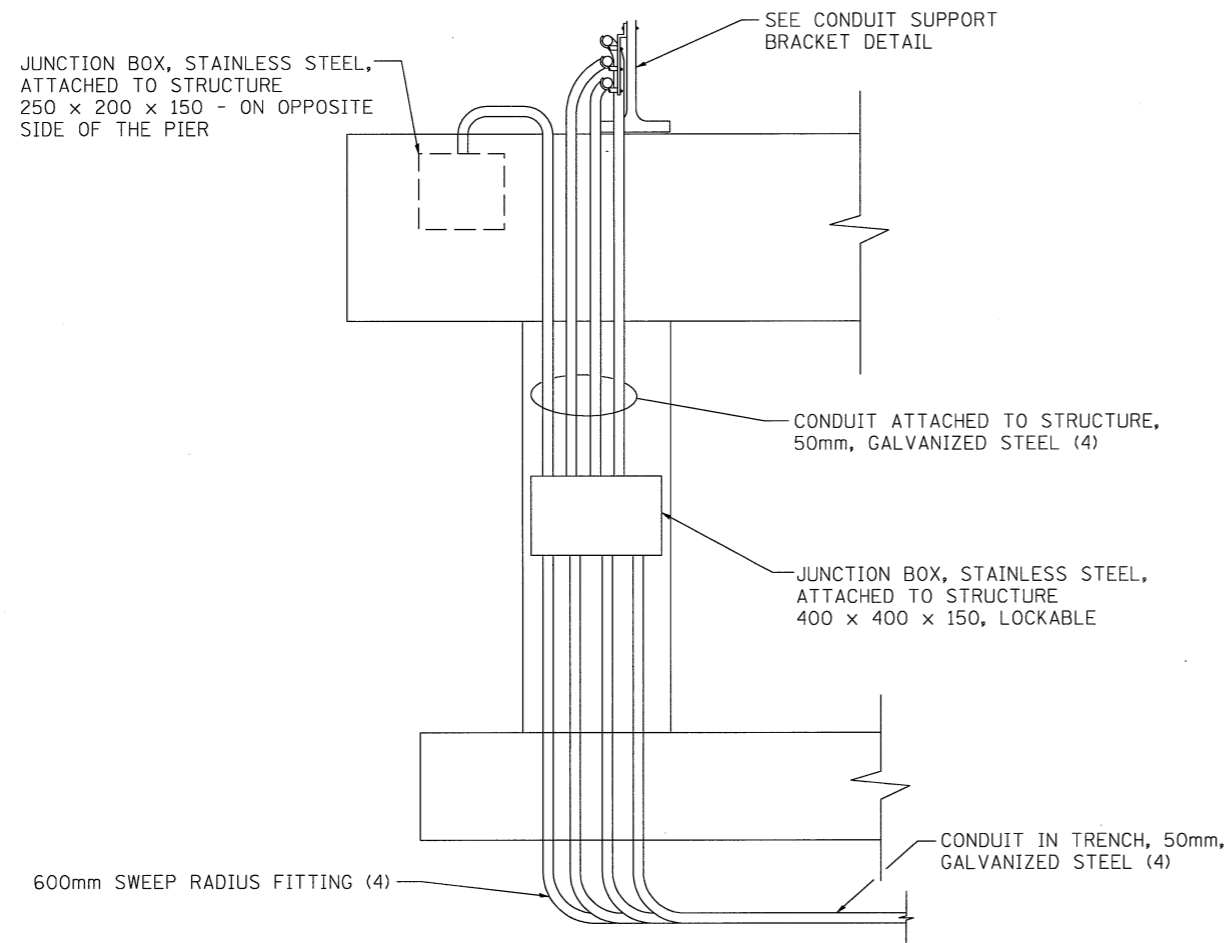
REVISIONS	
NAME	DATE

HANSON

JOB NO. 94S2063
DATE 10/7/2009

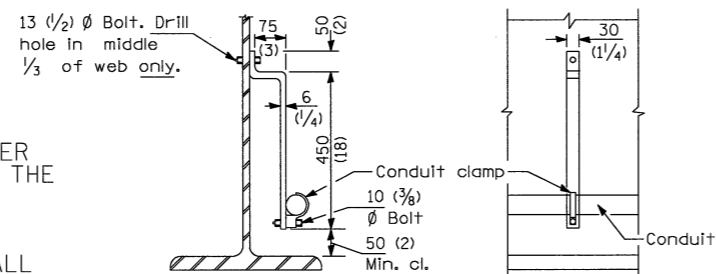
LAYOUT	JUH	03/18/04
DRAWN	JUH	
REVIEWED	DLF	

10/7/2009
#FILE#



DETAIL B

(TUNNEL LIGHTING ELECTRICAL DETAIL)

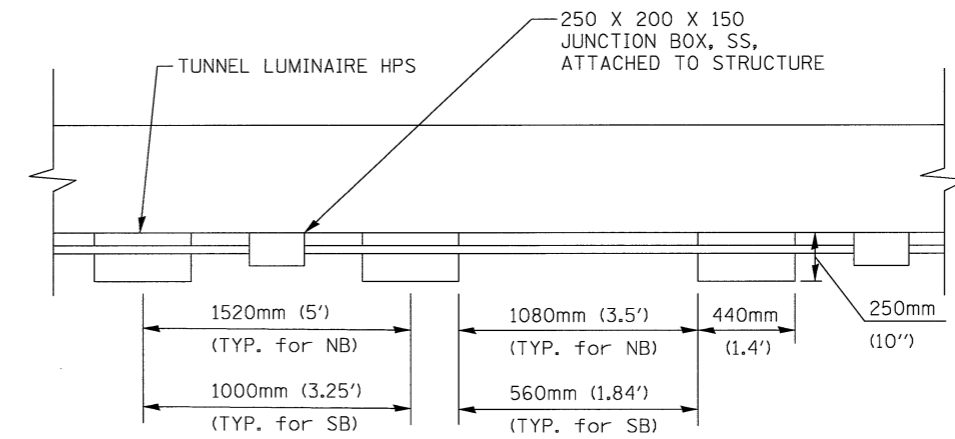


CONDUIT SUPPORT BRACKET

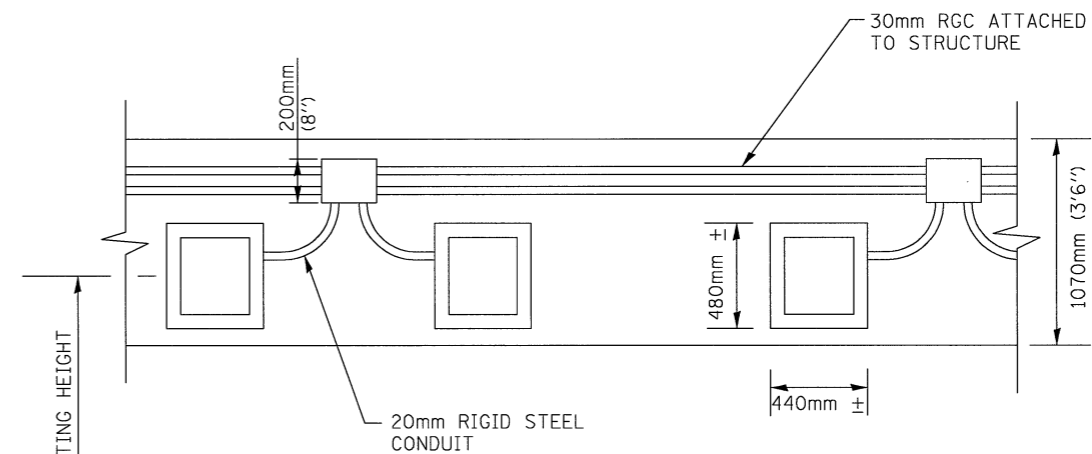
NOTES

1. CONDUIT TO BE MOUNTED TO BRIDGE BEAM USING A HANGER BRACKET SYSTEM APPROVED BY THE ENGINEER.
2. CONDUIT MOUNTING SYSTEM SHALL BE STAINLESS STEEL

LAYOUT	JLH	DLH
DRAWN	JLH	DLH
REVIEWED	DLH	03/18/04



ELEVATION



PLAN

DETAIL A

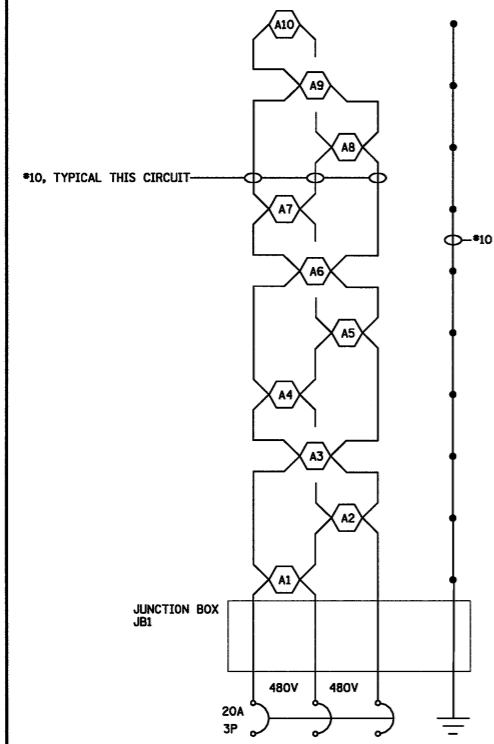
NOTES

1. TUNNEL LUMINAIRES TO BE MOUNTED TO THE PIER STRUCTURE USING UNISTRUT OR SIMILAR MOUNTING SYSTEM TO BE APPROVED BY THE ENGINEER.
2. MOUNTING SYSTEM SHALL BE STAINLESS STEEL
3. DISTANCES AS CALLED OUT ARE APPROXIMATE

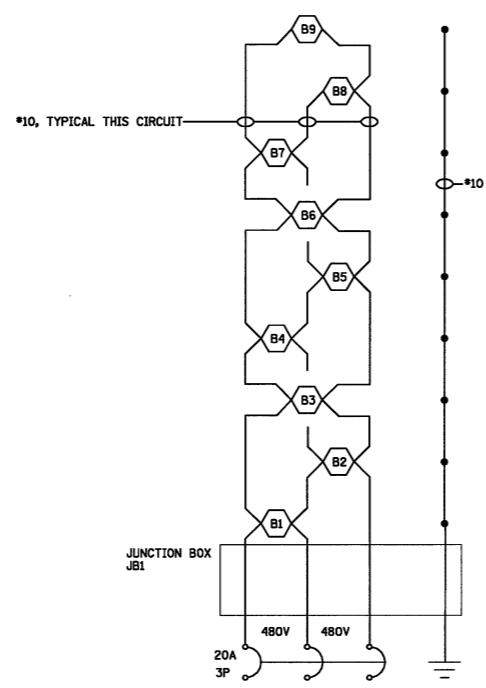
REVISIONS	
NAME	DATE

TUNNEL LIGHTING
ELECTRICAL DETAIL

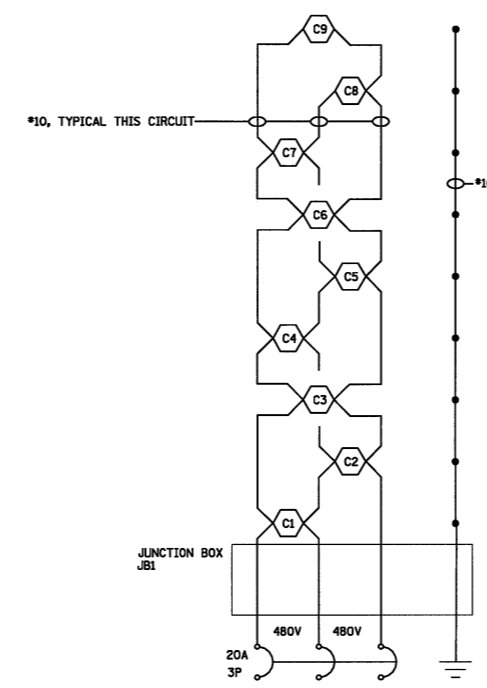
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	DATE	10/6/2009



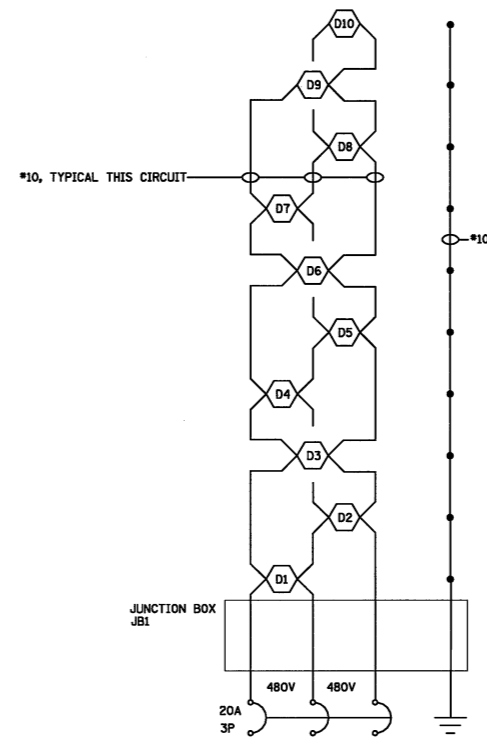
CKT A



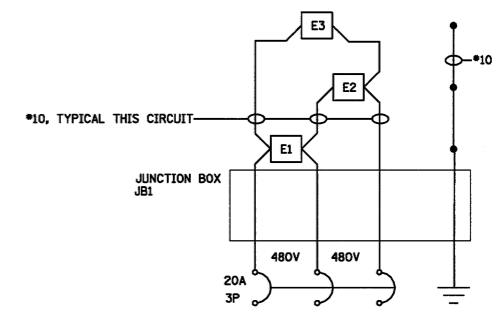
CKT B



CKT C



CKT D



CKT E

NOTES:

- ALL NECESSARY REVISIONS TO THE WIRING SHOWN ON THIS SHEET SHALL BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
- JUNCTION BOXES FEEDING INDIVIDUAL LUMINAIRES ARE NOT SHOWN.

CONDUIT RUN	CKT	ELECTRIC CABLE	LENGTH (M)
1	A	3-1/C #10	92
	B	3-1/C #10	88
	GND.	1/C #10	92
2	C	3-1/C #10	87
	D	3-1/C #10	90
	E	3-1/C #10	82
	GND.	1/C #10	90

- 400W TUNNEL LUMINAIRE
- 150W TUNNEL LUMINAIRE
- JUNCTION BOX

WIRING DIAGRAMS (NB)

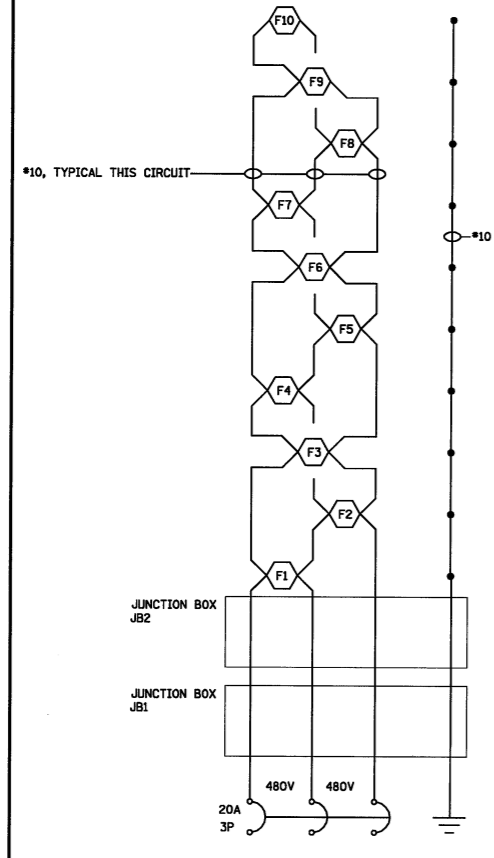
(1 OF 2)

REVISIONS	
NAME	DATE

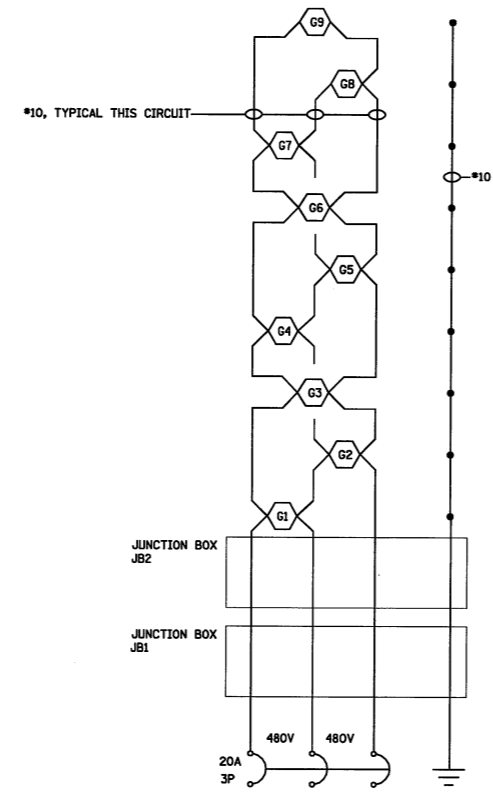
TUNNEL LIGHTING
CIRCUIT DIAGRAM
NORTHBOUND (1 OF 2)

JOB NO.	94S2063
DATE	8/21/2009

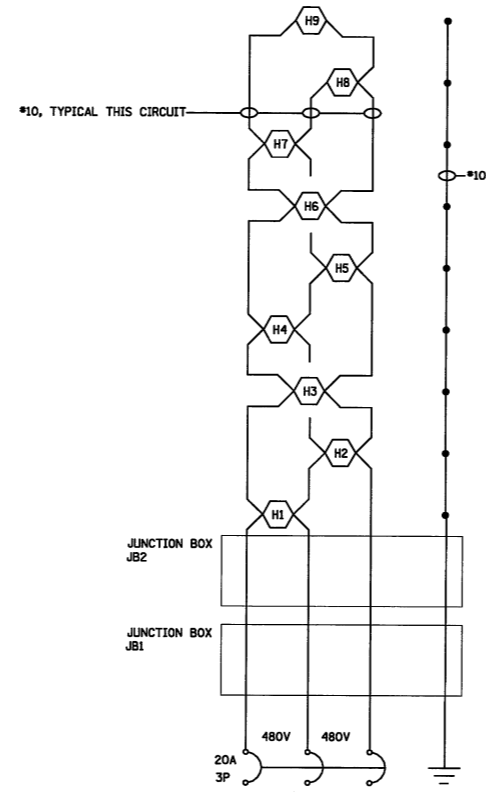
8/21/2009
 #FILE*
 LAYOUT
 DRAWN JAH
 REVIEWED DLH 03/18/04



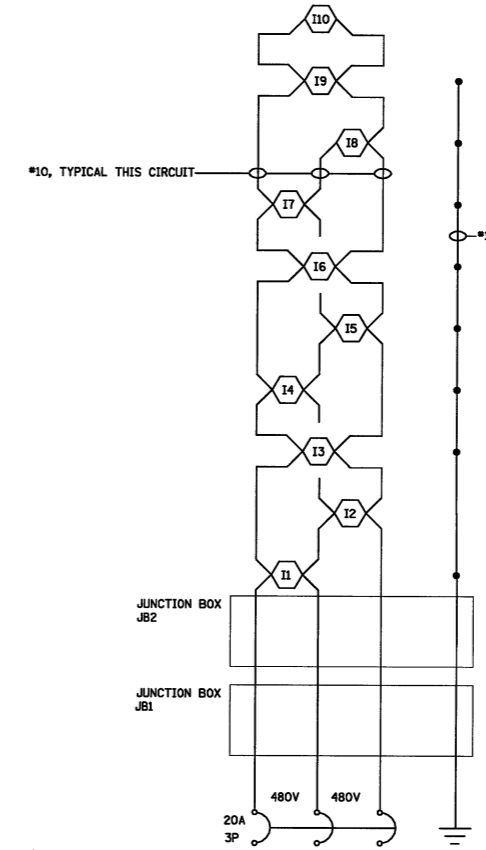
CKT F



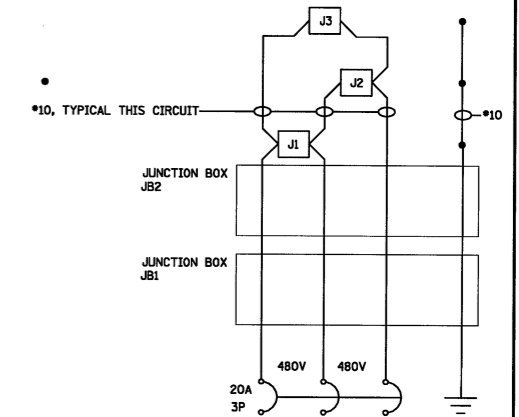
CKT G



CKT H



CKT I



CKT J

NOTES:

1. ALL NECESSARY REVISIONS TO THE WIRING SHOWN ON THIS SHEET SHALL BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
2. JUNCTION BOXES FEEDING INDIVIDUAL LUMINAIRES ARE NOT SHOWN.

CONDUIT RUN	CKT	ELECTRIC CABLE	LENGTH (M)
3	F	3-1/C #10	108
	G	3-1/C #10	105
	GND.	1/C #10	108
4	H	3-1/C #10	104
	I	3-1/C #10	107
	J	3-1/C #10	100
	GND.	1/C #10	107

- 400W TUNNEL LUMINAIRE
- 150W TUNNEL LUMINAIRE
- JUNCTION BOX

WIRING DIAGRAMS (NB)
(2 OF 2)

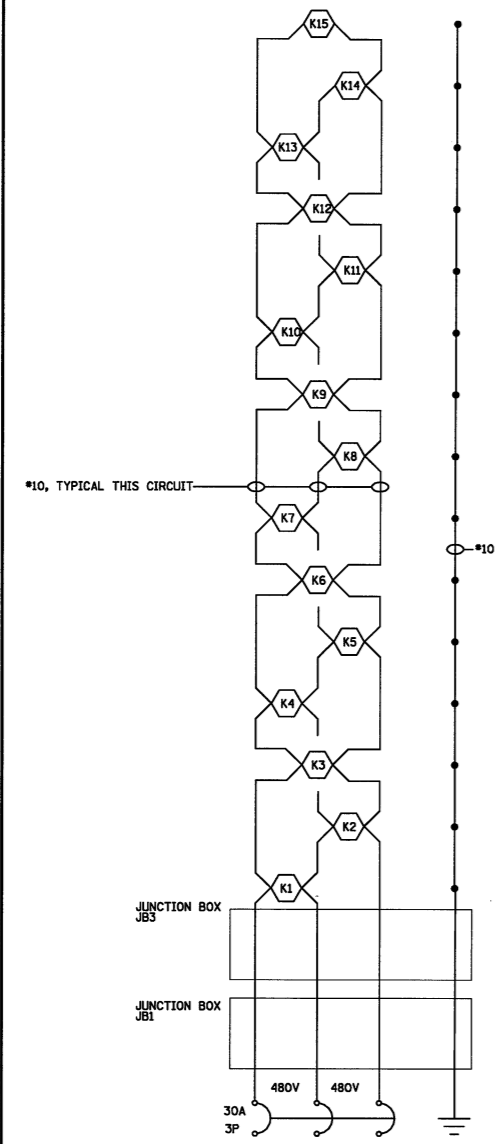
REVISIONS	
NAME	DATE

TUNNEL LIGHTING
CIRCUIT DIAGRAM
NORTHBOUND (2 OF 2)

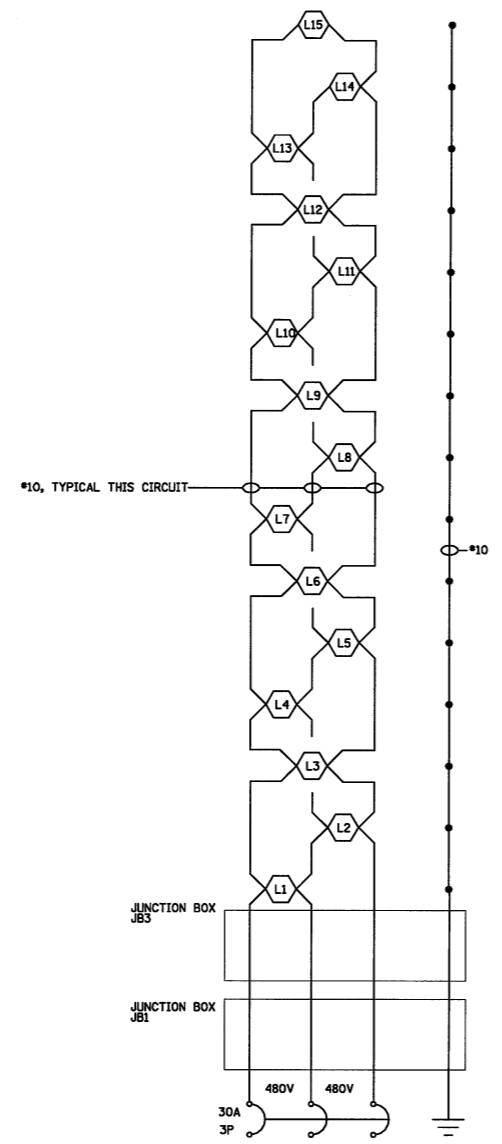
JOB NO.
94S2063

DATE
8/21/2009

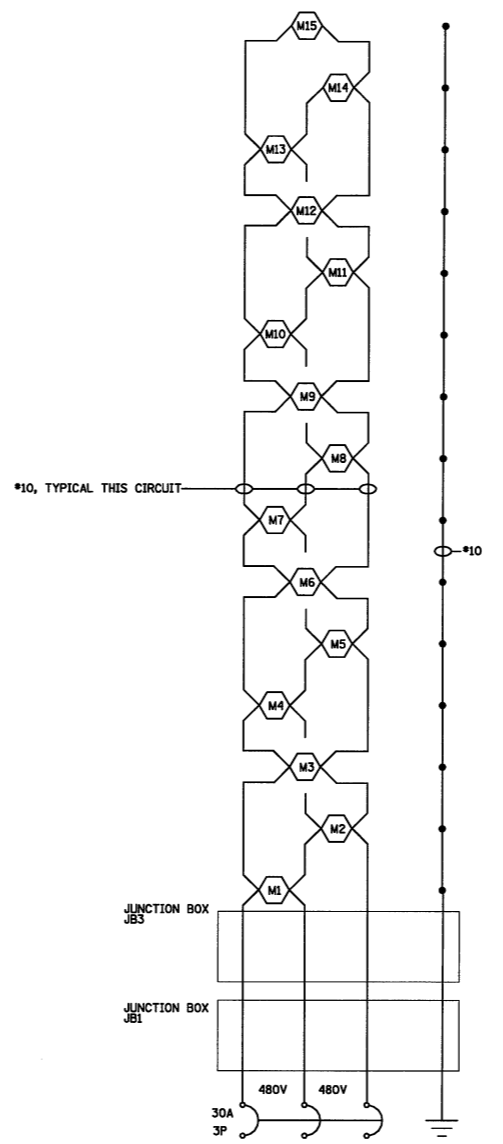
8/21/2009 #FILES
 LAYOUT
 DRAWN
 REVIEWED
 DLH 03/18/04



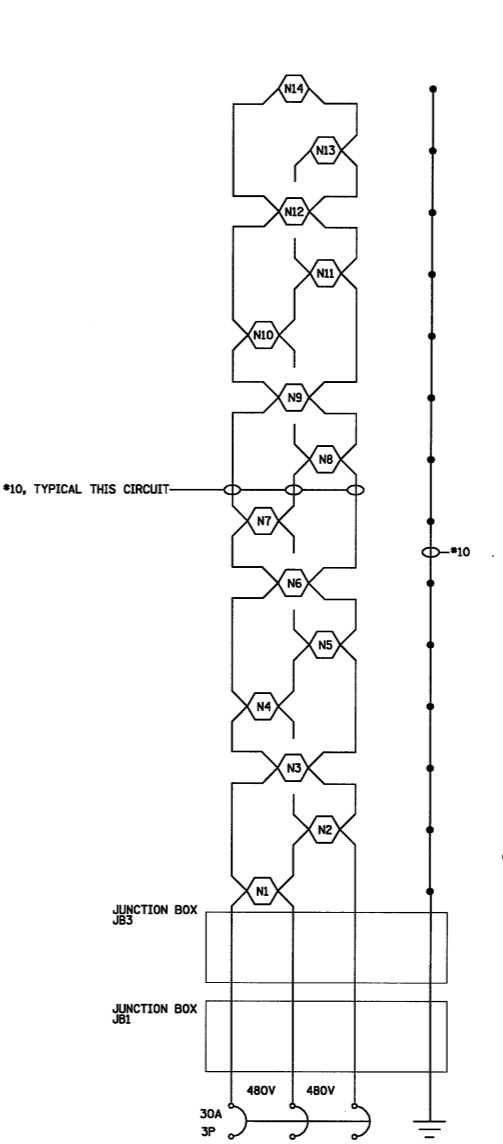
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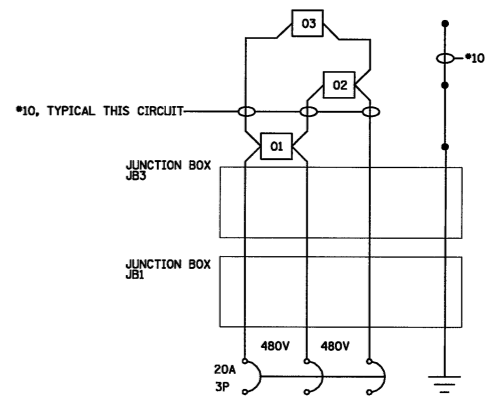
CKT L



CKT M



CKT N



CKT O

NOTES:

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- JUNCTION BOXES FEEDING INDIVIDUAL LUMINAIRES ARE NOT SHOWN.

- 400W TUNNEL LUMINAIRE
- 150W TUNNEL LUMINAIRE
- JUNCTION BOX

CONDUIT RUN	CKT	ELECTRIC CABLE	LENGTH (M)
5	K	3-1/C #10	109
	L	3-1/C #10	112
	GND.	1/C #10	112
6	M	3-1/C #10	111
	N	3-1/C #10	108
	O	3-1/C #10	102
	GND.	1/C #10	111

WIRING DIAGRAMS (SB)

(1 OF 2)

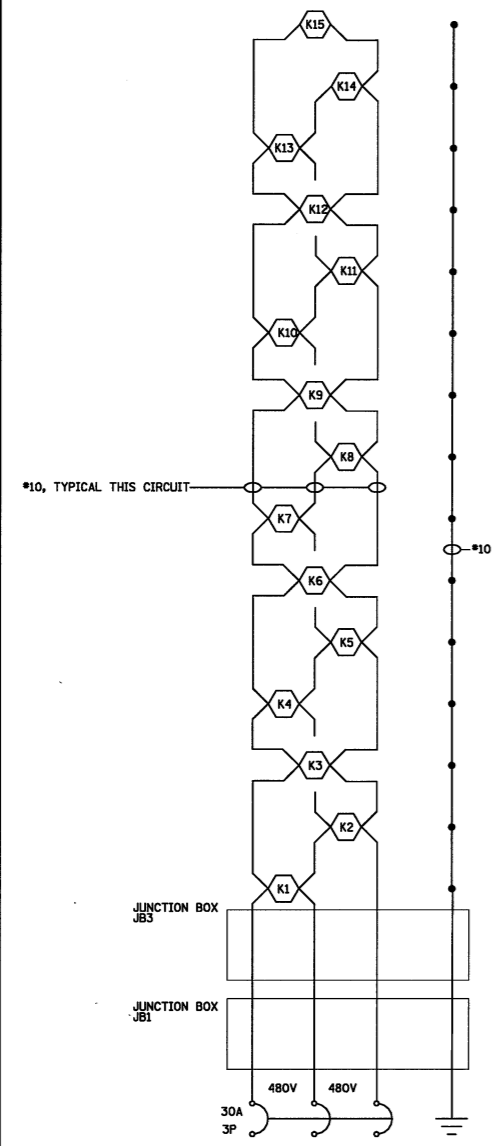
REVISIONS	
NAME	DATE

TUNNEL LIGHTING
CIRCUIT DIAGRAM
SOUTHBOUND (1 OF 2)

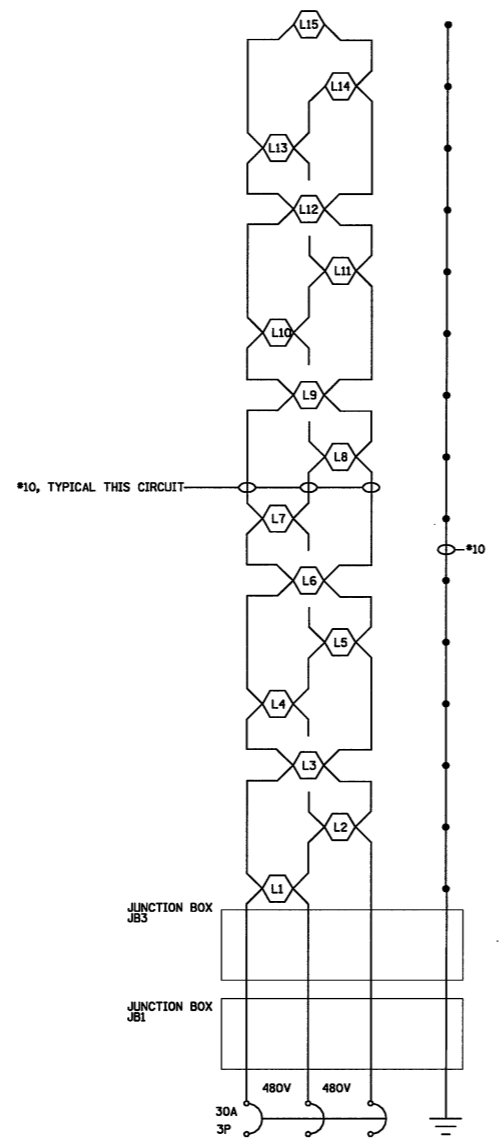
JOB NO. 94S2063

DATE 8/21/2009

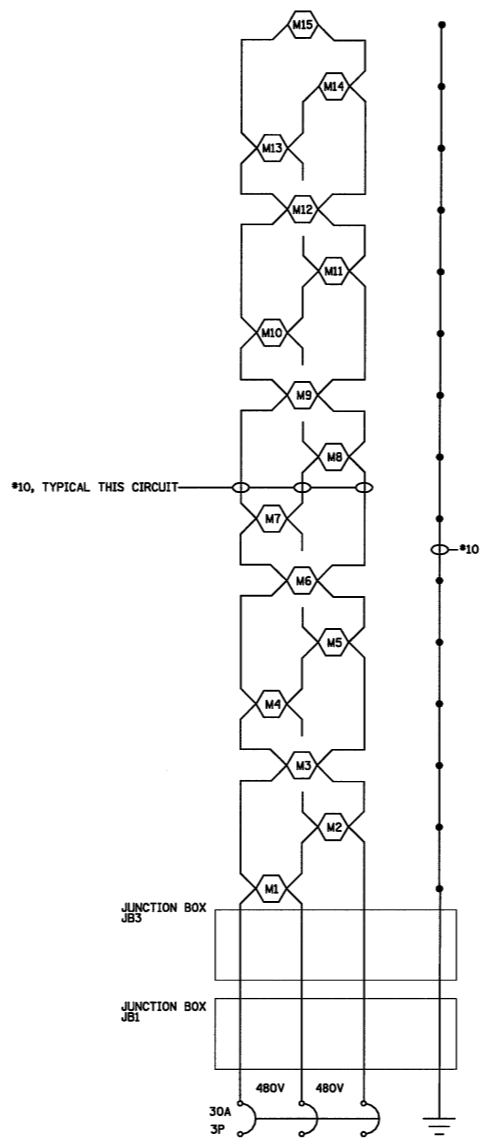
8/21/2009
 #FILE#
 LAYOUT: JAH
 DRAWN: JAH
 REVIEWED: DLH 03/18/04



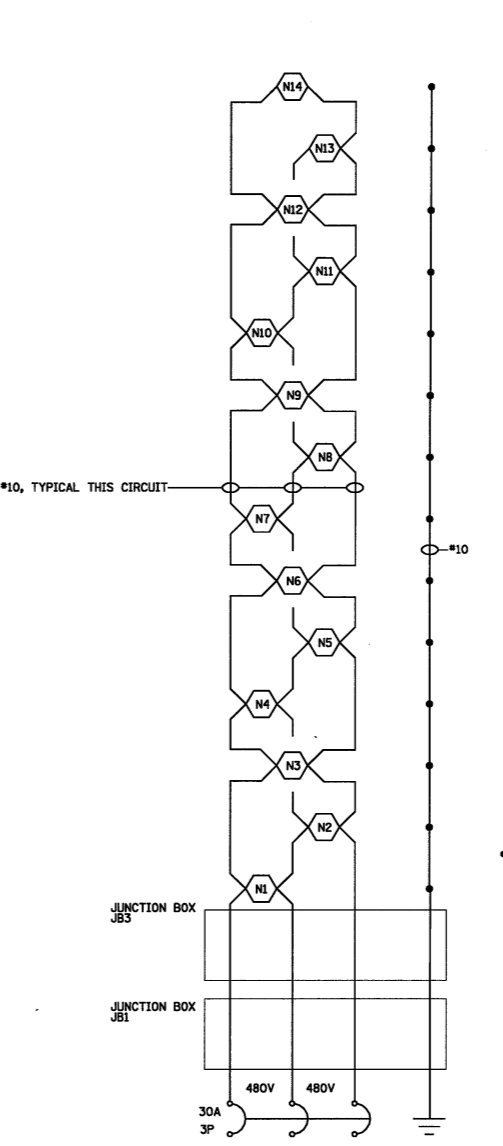
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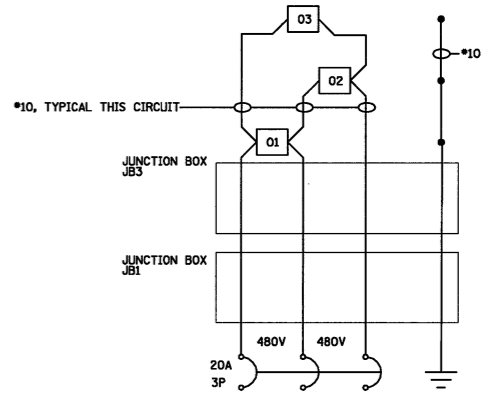
CKT L



CKT M






CKT N



CKT O

NOTES:

1. ALL NECESSARY REVISIONS TO THE WIRING SHOWN ON THIS SHEET SHALL BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.
2. JUNCTION BOXES FEEDING INDIVIDUAL LUMINAIRES ARE NOT SHOWN.

-  400W TUNNEL LUMINAIRE
-  150W TUNNEL LUMINAIRE
-  JUNCTION BOX

CONDUIT RUN	CKT	ELECTRIC CABLE	LENGTH (M)
5	K	3-1/C #10	109
	L	3-1/C #10	112
	GND.	1/C #10	112
6	M	3-1/C #10	111
	N	3-1/C #10	108
	O	3-1/C #10	102
	GND.	1/C #10	111

WIRING DIAGRAMS (SB)
(1 OF 2)

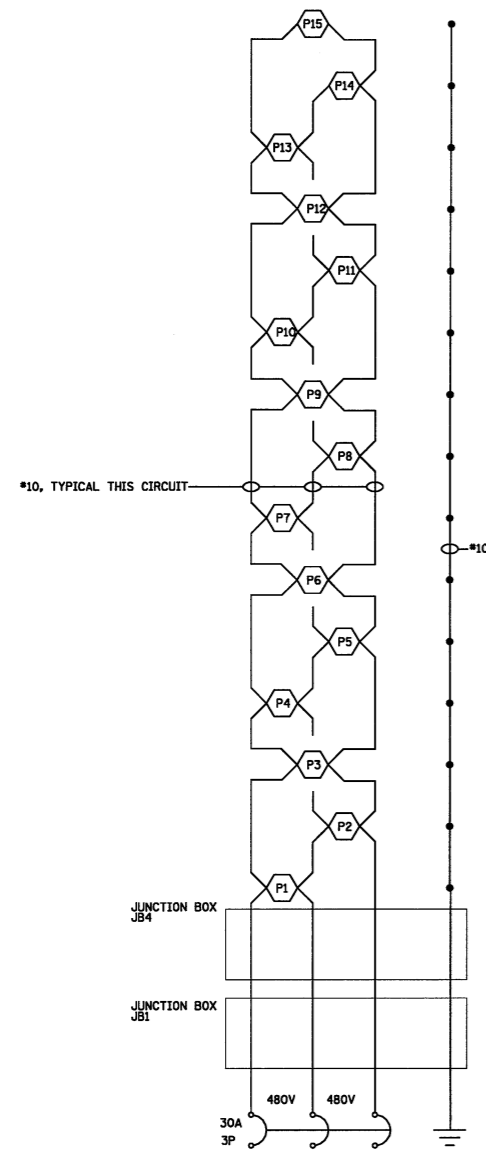
REVISIONS	
NAME	DATE

TUNNEL LIGHTING
CIRCUIT DIAGRAM
SOUTHBOUND (1 OF 2)

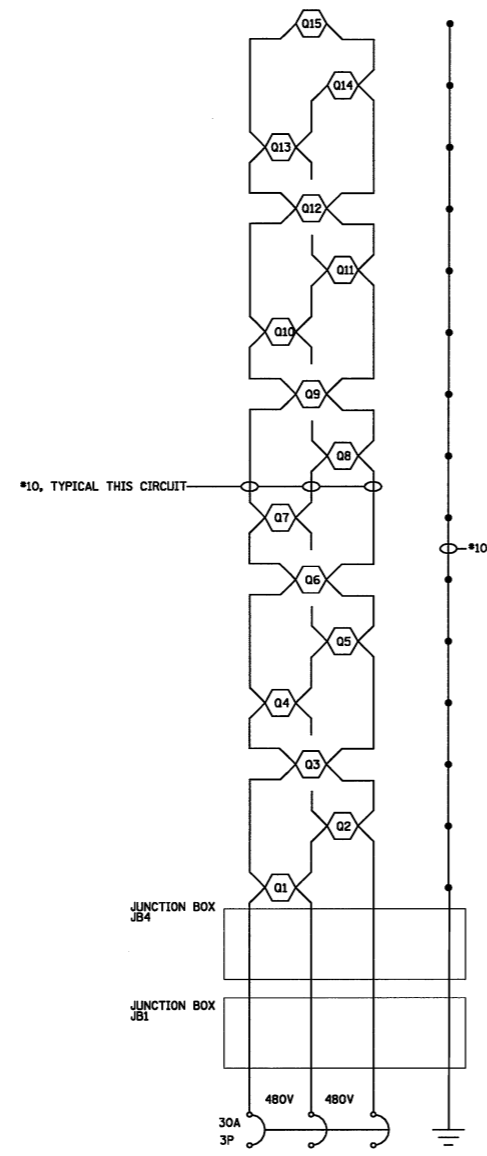


JOB NO. 94S2063
DATE 8/21/2009

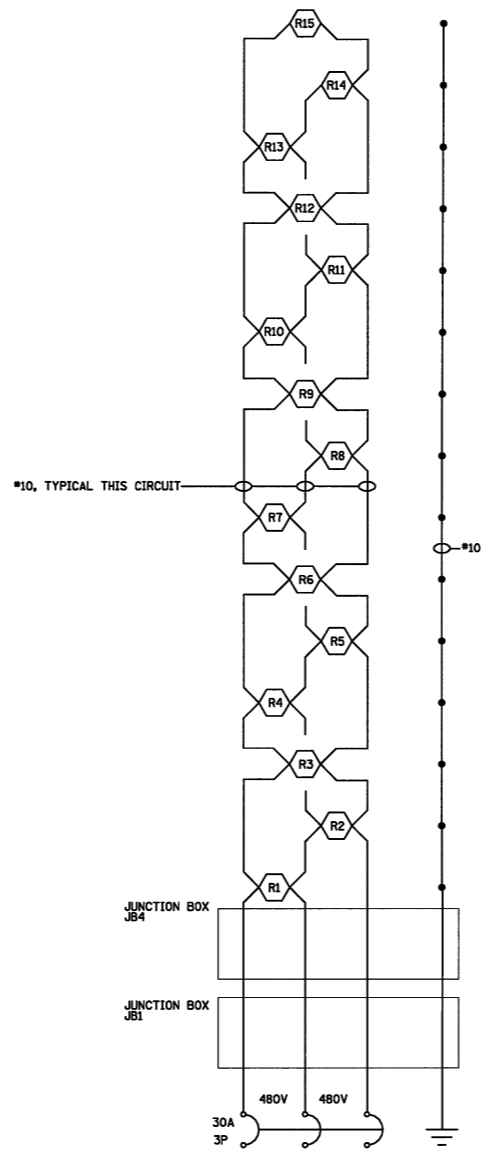
LAYOUT	J.H.	03/18/04
DRAWN	J.H.	
REVIEWED	D.L.H.	



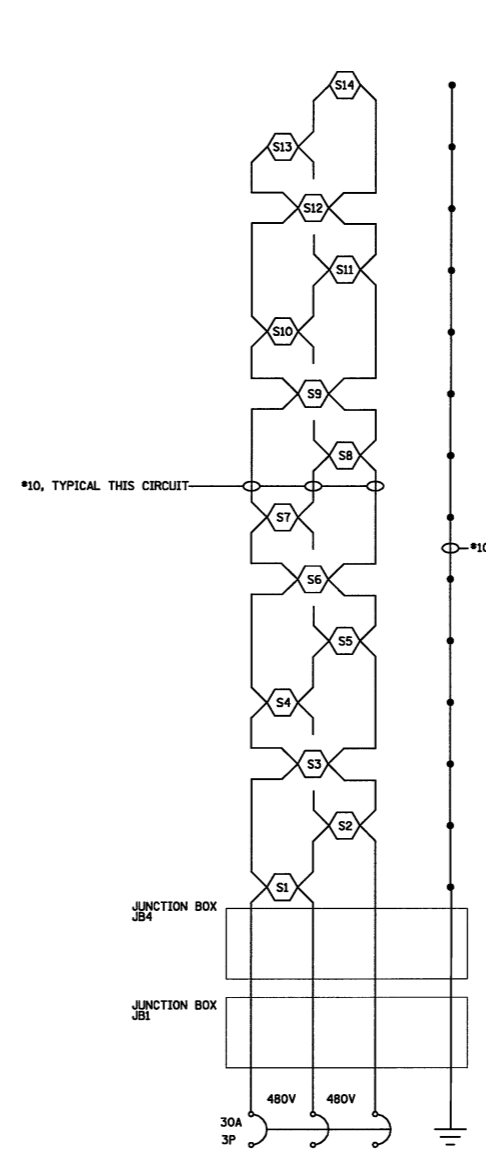
CKT P



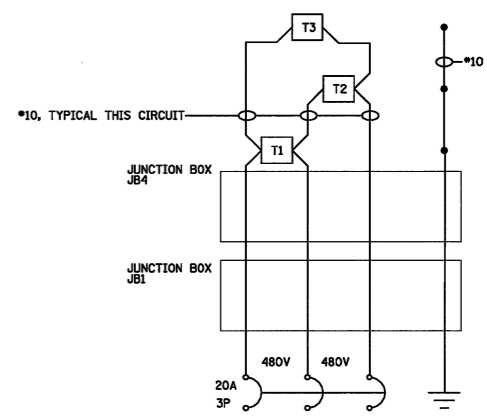
CKT Q



CKT R



CKT S



CKT T

NOTES:

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- JUNCTION BOXES FEEDING INDIVIDUAL LUMINAIRES ARE NOT SHOWN.

- 400W TUNNEL LUMINAIRE
- 150W TUNNEL LUMINAIRE
- JUNCTION BOX

CONDUIT RUN	CKT	ELECTRIC CABLE	LENGTH (M)
7	P	3-1/C #10	126
	Q	3-1/C #10	129
	GND.	1/C #10	129
8	R	3-1/C #10	128
	S	3-1/C #10	125
	T	3-1/C #10	119
	GND.	1/C #10	128

WIRING DIAGRAMS (SB)

(2 OF 2)

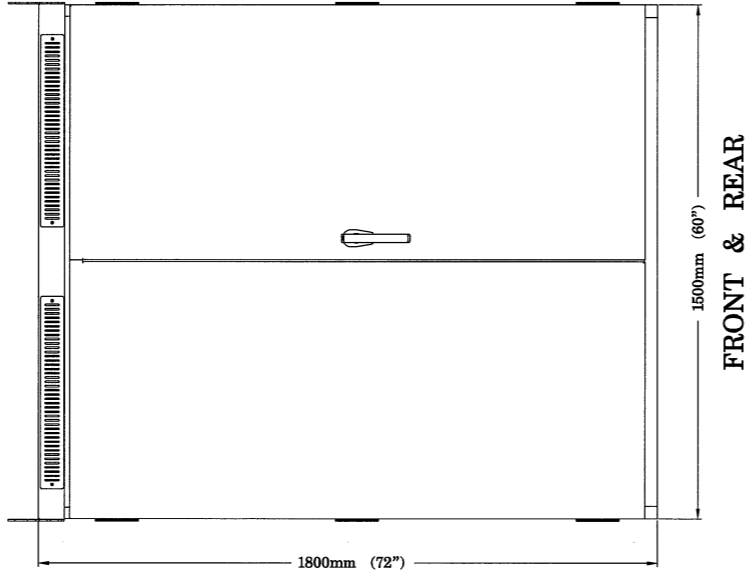
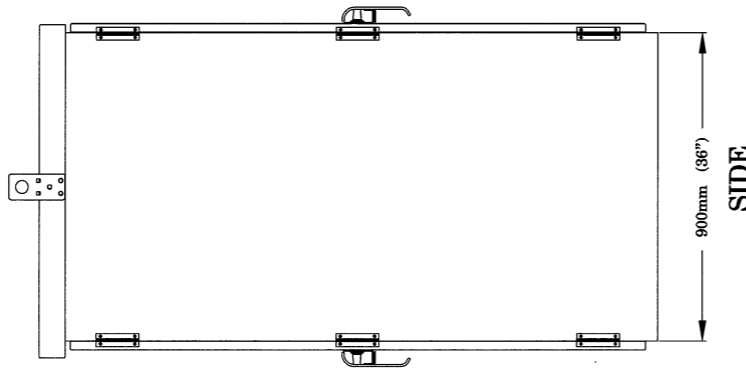
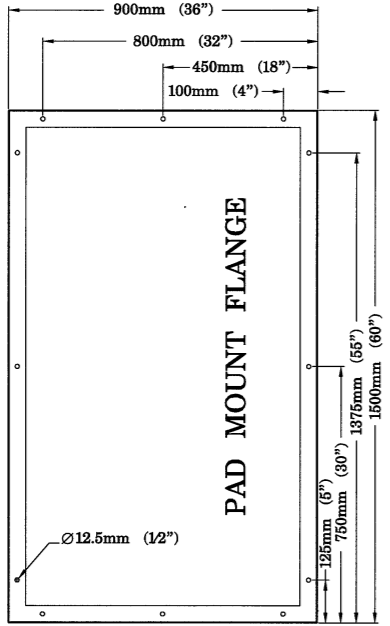
TUNNEL LIGHTING
CIRCUIT DIAGRAM
SOUTHBOUND (2 OF 2)

REVISIONS		JOB NO. 94S2063
NAME	DATE	
		DATE 8/21/2009

LAYOUT	JRH	03/18/04
DRAWN	JRH	
REVIEWED	DCH	

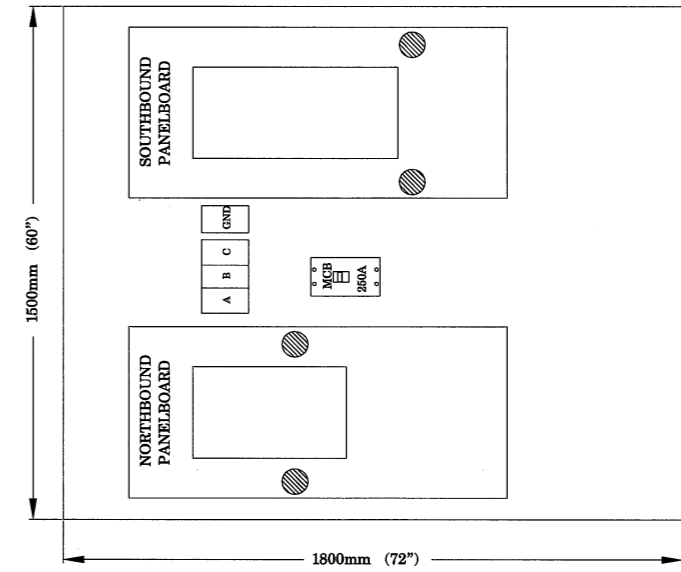
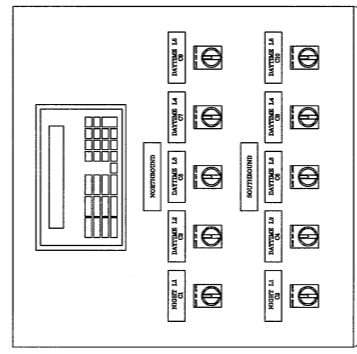
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	121C
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4)BIDM CONTRACT #70757				

Dimensions shown shall be minimum size.

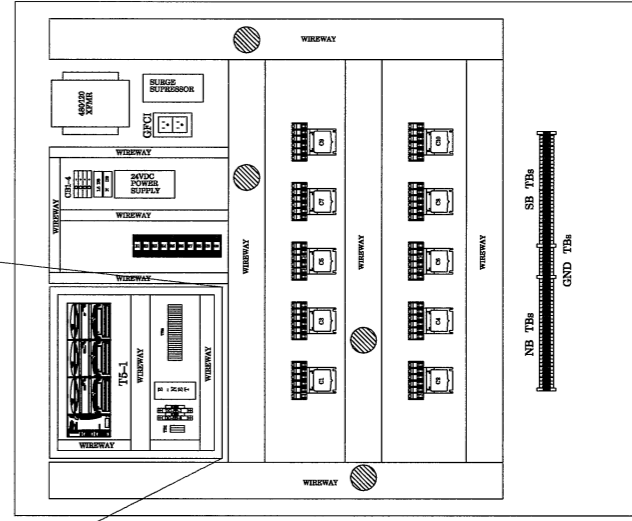


TUNNEL LIGHTING CONTROL SYSTEM CABINET EXTERIOR DETAIL

INTERNAL DOOR



REAR INTERIOR



FRONT INTERIOR

TUNNEL LIGHTING CONTROL SYSTEM CABINET INTERIOR DETAIL

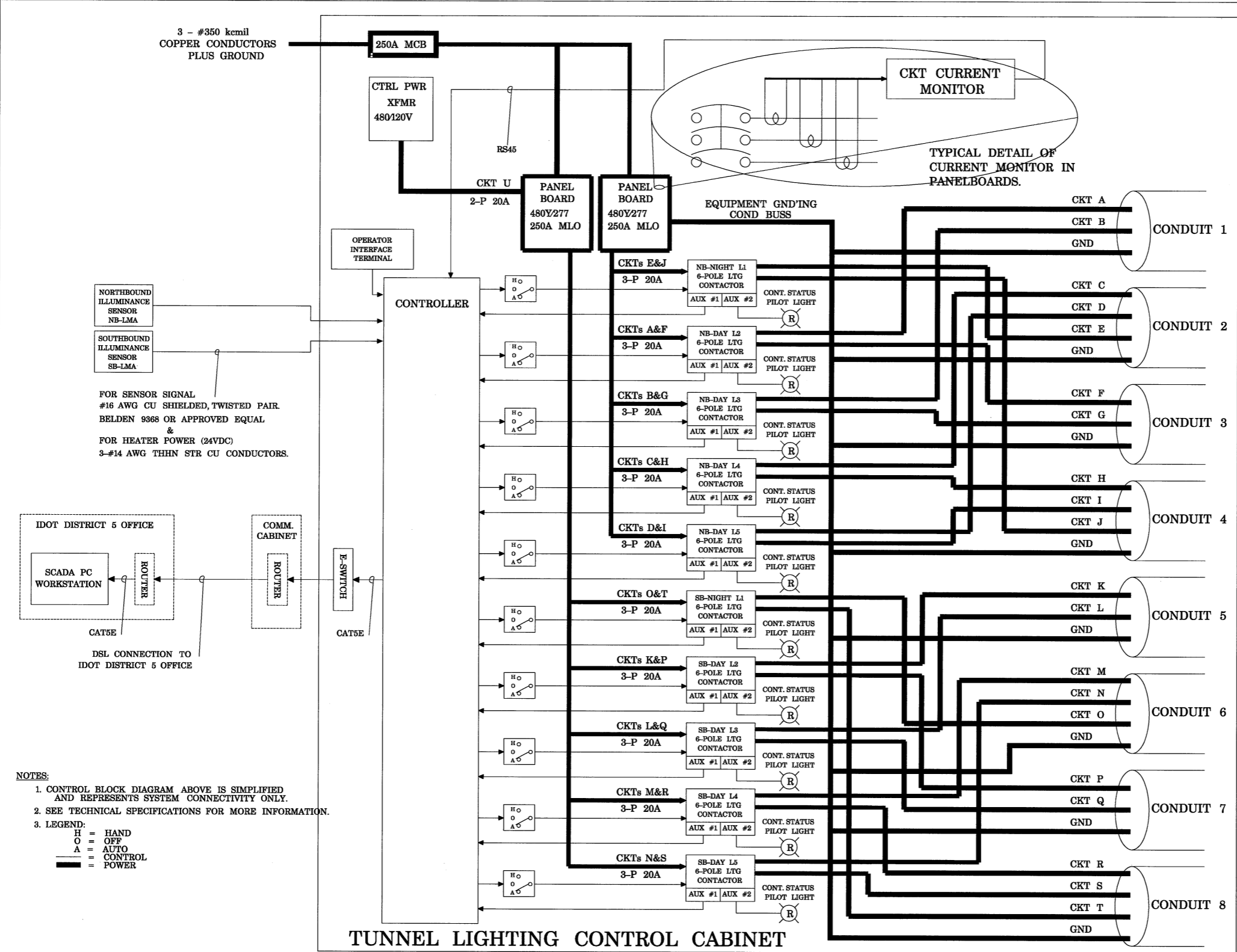
TUNNEL LIGHTING CONTROL SYSTEM CABINET DETAIL

REVISIONS	
NAME	DATE

JOB NO.	94S2063
DATE	10/7/2009

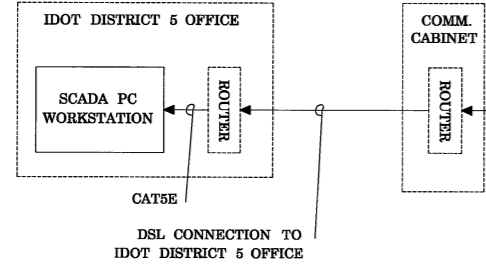
LAYOUT	JUH	
DRAWN	JUH	
REVIEWED	DLH	03/18/04

10/7/2009
#FILES



NOTES:

- CONTROL BLOCK DIAGRAM ABOVE IS SIMPLIFIED AND REPRESENTS SYSTEM CONNECTIVITY ONLY.
- SEE TECHNICAL SPECIFICATIONS FOR MORE INFORMATION.
- LEGEND:
H = HAND
O = OFF
A = AUTO
— = CONTROL
— = POWER



FOR SENSOR SIGNAL
#16 AWG CU SHIELDED, TWISTED PAIR.
BELDEN 9368 OR APPROVED EQUAL
&
FOR HEATER POWER (24VDC)
3-#14 AWG THHN STR CU CONDUCTORS.

CONDUIT 1 TO LIGHTING FIXTURES
CONDUIT 2 TO LIGHTING FIXTURES
CONDUIT 3 TO LIGHTING FIXTURES
CONDUIT 4 TO LIGHTING FIXTURES
CONDUIT 5 TO LIGHTING FIXTURES
CONDUIT 6 TO LIGHTING FIXTURES
CONDUIT 7 TO LIGHTING FIXTURES
CONDUIT 8 TO LIGHTING FIXTURES

TUNNEL LIGHTING CONTROL CABINET

TUNNEL LIGHTING CONTROL BLOCK DIAGRAM

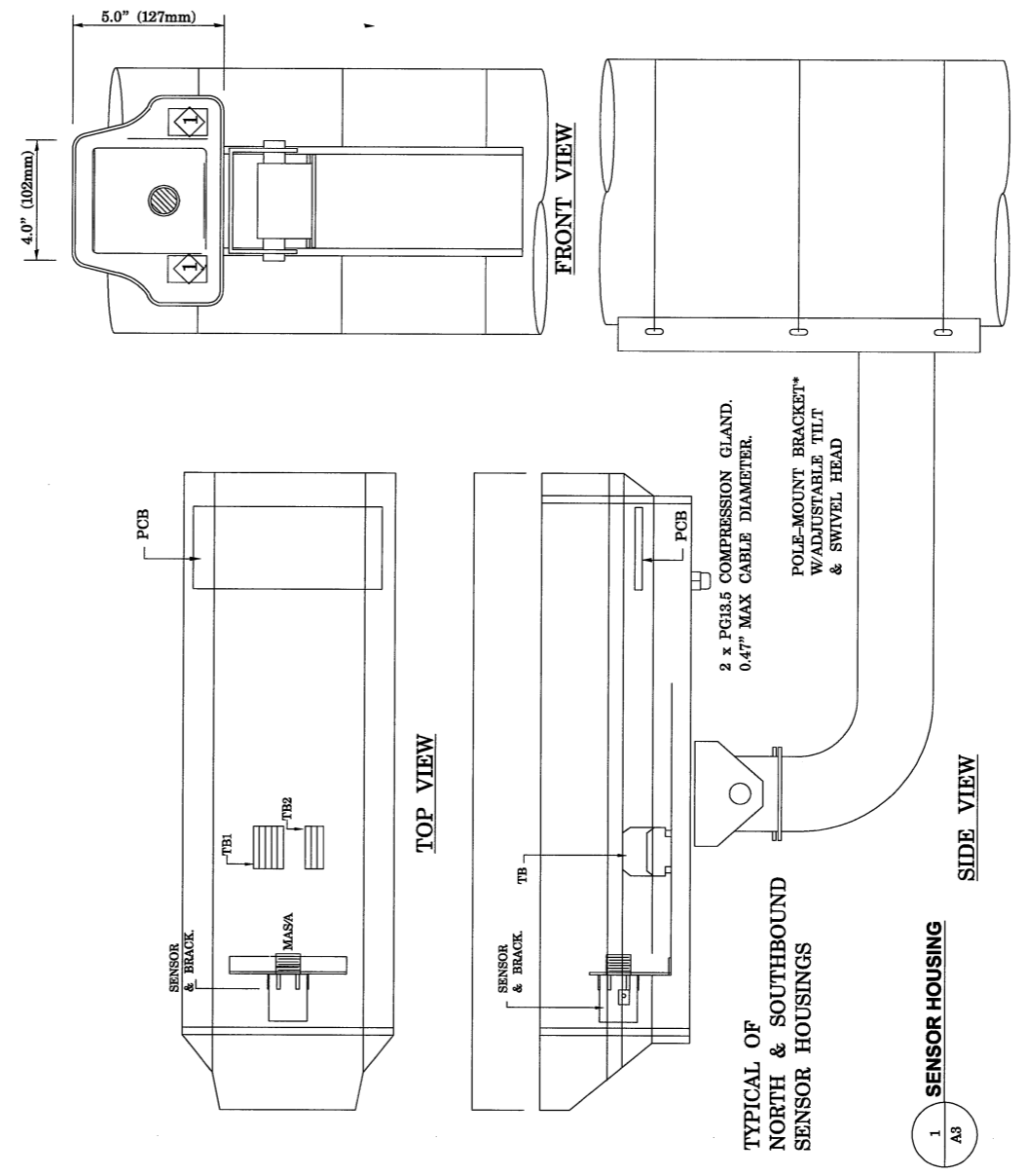
TUNNEL LIGHTING CONTROL SYSTEM CABINET BLOCK DIAGRAM

REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
10/6/2009

LAYOUT	J.H.	03/28/04
DRAWN	J.H.	
REVIEWED	D.H.	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN		310121E
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



TYPICAL OF NORTH & SOUTHBOUND SENSOR HOUSINGS

1
A3
SENSOR HOUSING

TYPICAL - NORTH & SOUTHBOUND SENSOR HOUSING

ILLUMINANCE SENSOR / CAMERA MOUNTING DETAIL

REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
9/16/2009

LAYOUT	LJH	
DRAWN	LJH	
REVIEWED	DLI	03/18/04

9/16/2009
#FILE#

DESCRIPTION	PANEL BOARD																			
	NB										SB									
	CKT A	CKT B	CKT C	CKT D	CKT E	CKT F	CKT G	CKT H	CKT I	CKT J	CKT K	CKT L	CKT M	CKT N	CKT O	CKT P	CKT Q	CKT R	CKT S	CKT T
TOTAL NO. OF DAY LUMINAIRES (400W)	10	9	9	10	-	10	9	9	10	-	15	15	15	14	-	15	15	15	14	-
TOTAL LOAD OF DAY LUMINAIRES (KILOWATTS)																				
TOTAL NO. OF NIGHT LUMINAIRES (150W)	-	-	-	-	3	-	-	-	-	3	-	-	-	-	3	-	-	-	-	3
TOTAL LOAD OF NIGHT LUMINAIRES (KILOWATTS)																				
TOTAL NO. OF "ON" LUMINAIRES DURING LIGHT LEVEL #1, NIGHT	-	-	-	-	3	-	-	-	-	3	-	-	-	-	3	-	-	-	-	3
TOTAL NO. OF "ON" LUMINAIRES DURING LIGHT LEVEL #2, DUSK OR DAWN HOURS, VERY LOW AMBIENT ILLUMINANCE	10	-	-	-	-	10	-	-	-	-	15	-	-	-	-	15	-	-	-	-
TOTAL NO. OF "ON" LUMINAIRES DURING LIGHT LEVEL #3, CLOUDY DAY	10	9	-	-	-	10	9	-	-	-	15	15	-	-	-	15	15	-	-	-
TOTAL NO. OF "ON" LUMINAIRES DURING LIGHT LEVEL #4, SUNNY DAY, AVERAGE AMBIENT ILLUMINANCE	10	9	9	-	-	10	9	9	-	-	15	15	15	-	-	15	15	15	-	-
TOTAL NO. OF "ON" LUMINAIRES DURING LIGHT LEVEL #5, BRIGHT, SUNNY DAY, HIGH AMBIENT ILLUMINANCE	10	9	9	10	-	10	9	9	10	-	15	15	15	14	-	15	15	15	14	-

LIGHTING CRITERIA							
NB LUMINANCE				SB LUMINANCE			
AVERAGE LUMINANCE (CD/SO.M)	UNIFORMITY (AVE. TO MIN)	UNIFORMITY (MAX TO MIN)	MAXIMUM LV TO LAVG RATIO	AVERAGE LUMINANCE (CD/SO.M)	UNIFORMITY (AVE. TO MIN)	UNIFORMITY (MAX TO MIN)	MAXIMUM LV TO LAVG RATIO
2.16	1.52	2.54	0.04	2.12	1.66	2.80	0.04
24.5	1.14	1.37	0.07	37.0	1.19	1.37	0.06
48.6	1.12	1.30	0.07	74.2	1.17	1.34	0.06
73.6	1.11	1.29	0.07	111.7	1.18	1.34	0.06
99.8	1.11	1.31	0.07	148.1	1.18	1.36	0.06

8/21/2009
#1228

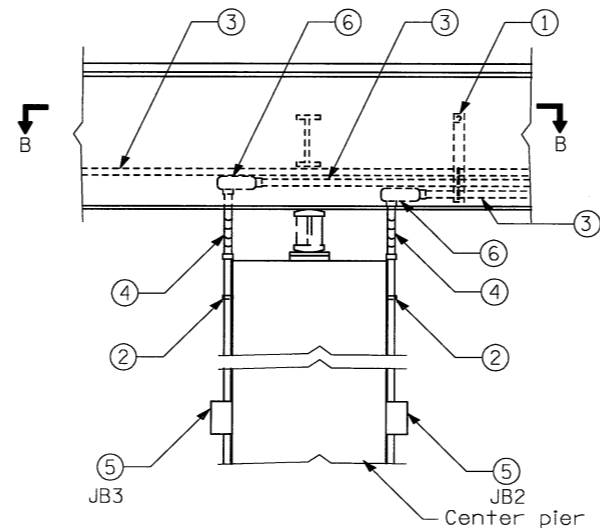
LAYOUT	J.M.	
DRAWN	J.M.	
REVIEWED	D.L.	03/18/04

TUNNEL LIGHTING
PANEL BOARD TABLE
LIGHTING CRITERIA

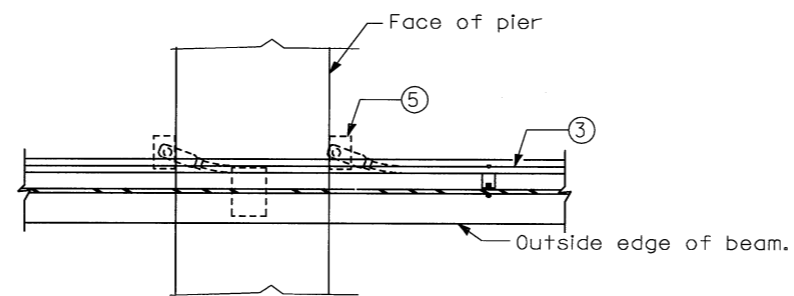
REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
8/21/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	1216
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		(57-4)R, HBY, HBR, (57-4V)DM		
CONTRACT #70757				



ELEVATION



SECTION B-B

NOTES

- | | |
|---|---|
| ① Conduit support bracket, see detail | ④ Liquid tight flexible conduit (non-metallic), Type "NM" |
| ② Galvanized steel or stainless steel conduit clamp | ⑤ Junction box, size as noted on the plans |
| ③ 50 (2) Galvanized steel conduit | ⑥ 50 (2) Type LB conduit |

BRIDGE CROSSING DETAIL

BRIDGE CROSSING DETAIL
FOR CONDUIT

10/6/2009
#1/ER

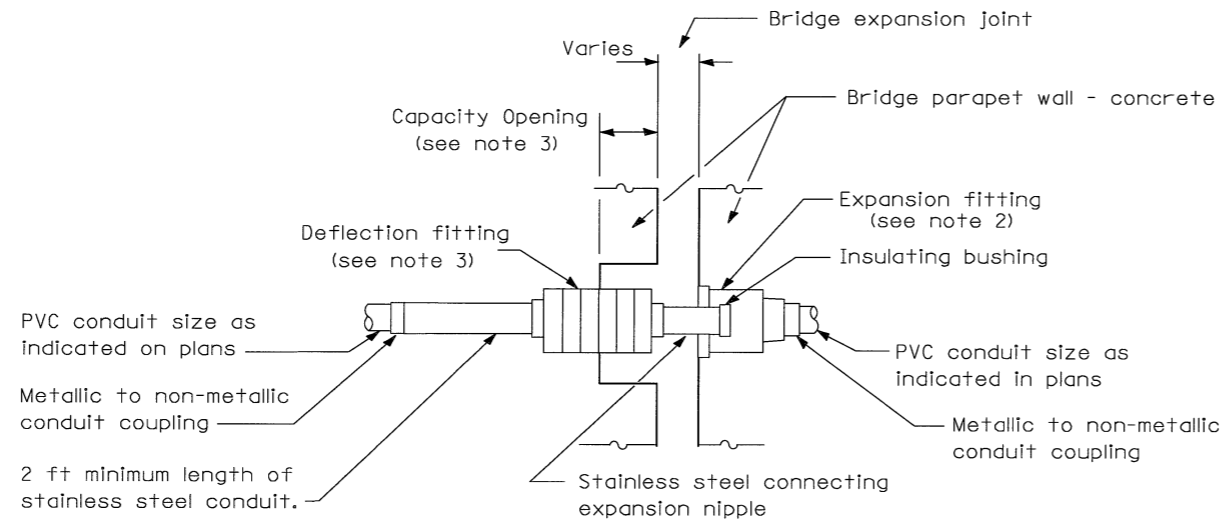
LAYOUT	J.H.	
DESIGN	J.H.	
REVIEWED	D.H.	03/18/04

REVISIONS	
NAME	DATE

HANSON

JOB NO. 94S2063
DATE 10/6/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	121 H
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* (57-4)R, HBY, HBR, (57-4V)DM CONTRACT *70757				



CONDUIT EXPANSION/
DEFLECTION COUPLING DETAIL

GENERAL NOTES

The Contractor shall install a conduit expansion/deflection coupling at the joints in the concrete parapet on the bridge capable of accepting the longitudinal movement. All metallic parts of the coupling shall be made of stainless steel or as approved by the Engineer. Any non-stainless metal shall be hot dip galvanized and coated to prevent reaction with the concrete. The cost of the coupling shall be part of and incidental to the conduit system.

The barrel in the expansion fitting shall be fully embedded in the concrete on one side of the expansion joint. One half the length of the deflection fitting shall be embedded in the concrete on the other side of the coupling.

A cavity opening 3" larger in diameter than the deflection fitting shall be provided in the concrete to ensure proper performance of the coupling.

Careful attention to joint movement over a range of temperatures shall be coordinated with the selection and installation of the coupling to ensure the range of movement of the coupling is not exceeded at temperature extremes.

All manufacturer's installation instructions shall be carefully followed to ensure optimum performance of the expansion/deflection coupling.

The Contractor shall install couplings at all bridge and median barrier wall expansion joints and shall be responsible to determine the proper number of couplings required.

**CONDUIT COUPLING
EXPANSION/DEFLECTION**

REVISIONS	
NAME	DATE



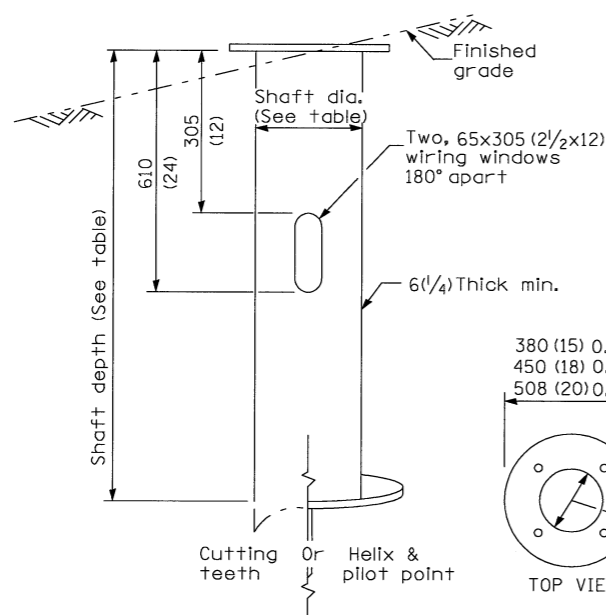
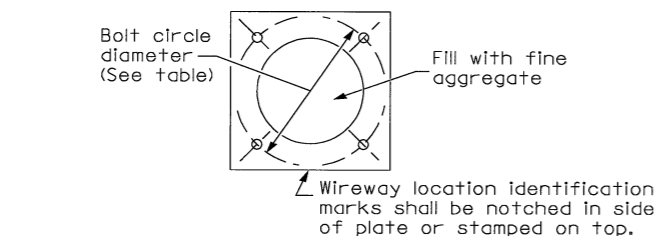
JOB NO.
94S2063
DATE
8/21/2009

LAYOUT	JHF	03/18/04
DRAWN	JHF	
REVIEWED	DJH	

8/21/2009 #FILE#

LIGHT POLE MOUNTING HEIGHT	BOLT CIRCLE DIAMETER	STEEL FOUNDATION			CONCRETE FOUNDATION		
		SHAFT DIAMETER	SHAFT DEPTH	TOP PLATE (min)	SHAFT DIAMETER	SHAFT DEPTH	ANCHOR ROD LENGTH ①
<9.1 m (30')	292 (11.5)	220 (8 5/8)	1.83 m (6')	300 x 300 x 25 12 x 12 x 1	610 (24)	1.52 m (5'-0")	1.45 m (4'-9")
9.4 m - 10.7 m (31'-35')	292 (11.5)	220 (8 5/8)	1.83 m (6')	300 x 300 x 25 12 x 12 x 1	610 (24)	1.67 m (5'-6")	1.60 m (5'-3")
10.9 m - 12.2 m (36'-40')	381 (15) ③	220 (8 5/8)	1.83 m (6') ②	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	1.83 m (6'-0")	1.75 m (5'-9")
12.5 m - 13.7 m (41'-45')	381 (15) ③	220 (8 5/8)	1.83 m (6') ②	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	1.98 m (6'-6")	1.90 m (6'-3")
14.0 m - 15.2 m (46'-50')	381 (15) ③	220 (8 5/8)	2.44 m (8')	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	2.13m (7'-0")	2.00 m (6'-9")

- ① Length does not include 100(4)hook
 ② 220 mm x 2.44 m (8 5/8" x 8'-0") for Twin luminaires
 ③ Bolt circle diam. shall be 430 (17) when a TB3-17 transformer base is used



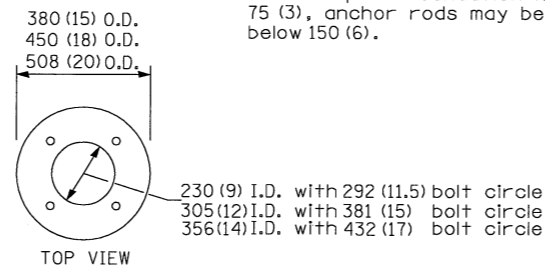
STEEL FOUNDATION

RING PLATE DETAIL
 (When rock is encountered and foundation is shallower)

Length above foundation shall be adjusted to accommodate breakaway devices furnished by the contractor for a specific installation.

Use dirt removed from foundation to meet 1.52m (5 ft.) chord fill around foundation top. Grade dirt level with bottom of concrete chamfer.

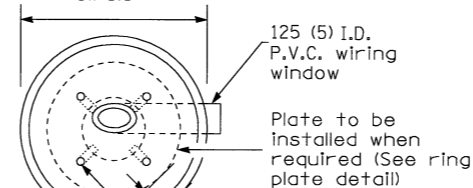
- ④ If the required anchor rod length above top of foundation is less than 75 (3), anchor rods may be lowered below 150 (6).



Cast bronze clamp
 16 mm x 3 m (5/8" x 10')
 Copperclad grounding electrode. When foundation is set in rock, install ground electrode in cable trench.

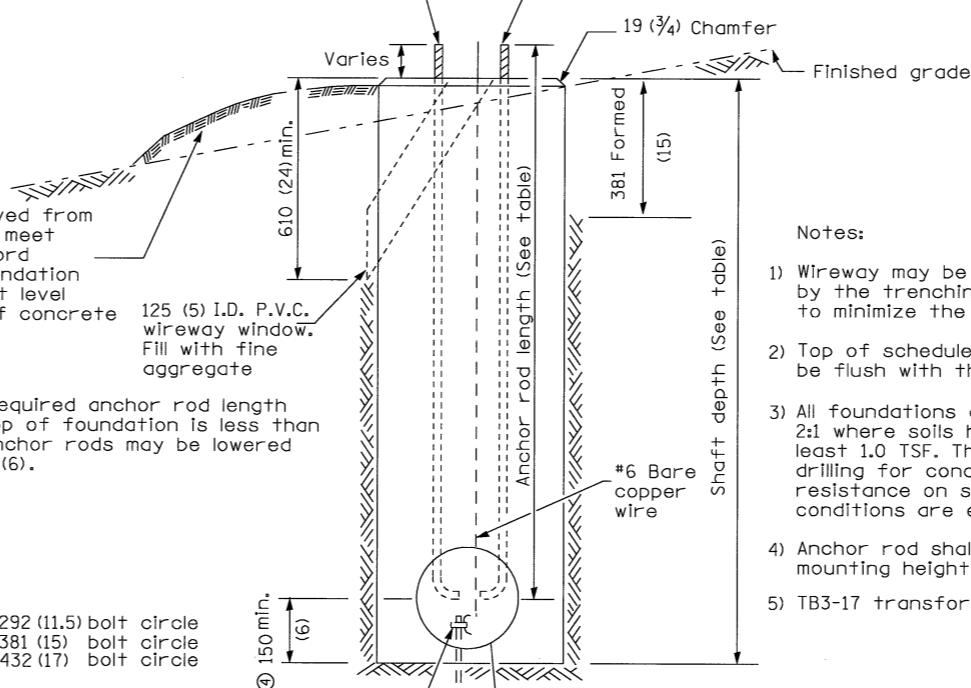
CONCRETE FOUNDATION

610 (24) min. dia. with 292 (11.5) bolt circle
 762 (30) min. dia. with 381 (15) or 432 (17) bolt circle



75 (3) Min. concrete cover on all steel

Anchor rod 25 (1) diameter with 230 (9) threads. Anchor rod shall extend through nut 25 (1). For barrier or foundation behind guardrail, use self-locking nut and flat washer. Do not use lock washer.



Pole Foundation Setback:

For horizontal mounted luminaires, setback shall be a minimum of 6.1 m (20') from edge of pavement.

For vertical mount luminaires, setback shall be a minimum of 9 m (30') from edge of pavement. Poles shall be located 1.5 m (5') behind guardrail or other protective barriers, or as directed by the Engineer.

Notes:

- Wireway may be on front, back or side of foundation as required by the trenching. Place door of transformer base on wireway side to minimize the number of unit duct bends.
- Top of schedule 40 125 (5) I.D. PVC wiring window, shall be flush with the top of foundation for drainage.
- All foundations are designed to be located on slopes not exceeding 2:1 where soils have an unconfined compressive strength of at least 1.0 TSF. The contractor shall verify the soil strength during drilling for concrete foundations or by monitoring installation resistance on steel foundations and notify the engineer if other conditions are encountered.
- Anchor rod shall be increased to 31 (1 1/4) diameter for 15.24 (50') mounting height or above.
- TB3-17 transformer base is not to be used on metal foundation

All dimensions are in millimeters (inches) unless otherwise shown.

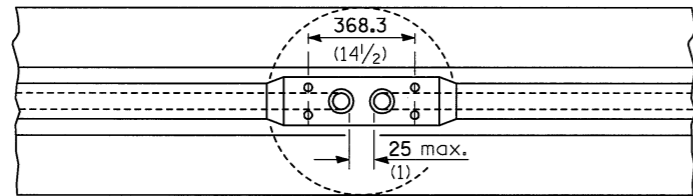
LIGHT POLE FOUNDATION
 (CAMERA AND SENSOR
 POLE FOUNDATION)

REVISIONS	
NAME	DATE

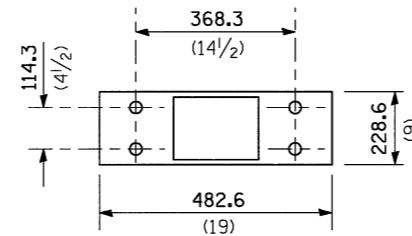
LGT007-836

JOB NO.
94S2063
DATE
9/15/2009

LAYOUT	J.L.H.	09/15/2009
DRAWN	J.L.H.	09/15/09
REVIEWED	D.L.H.	03/18/04



PLAN



BASE PLATE

(To be furnished w/light pole)

228.6x482.6x6 (9x19x1/4)
Temporary steel plate template

180 Threaded (7)

368.3x114.3 ctrs. (14 1/2 x 4 1/2)

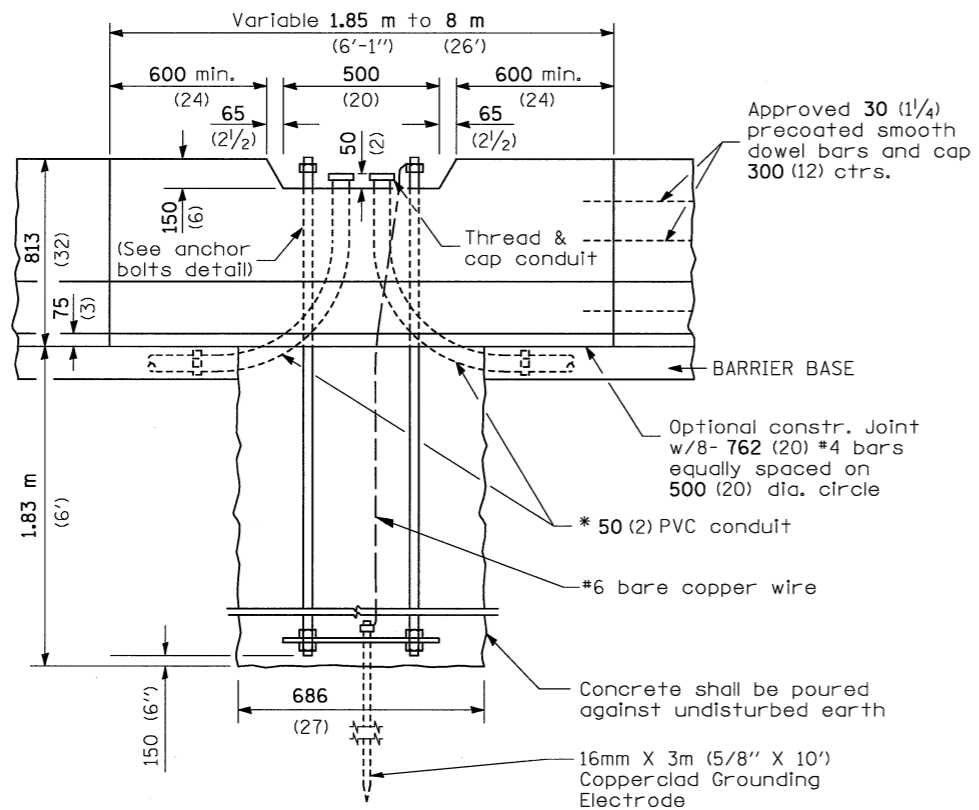
Hex nuts (8 required)

30 (1 1/4) Ø high strength steel anchor bolts
Rectangular centers (4 required)
thread shall be protected (nuts & washers included)

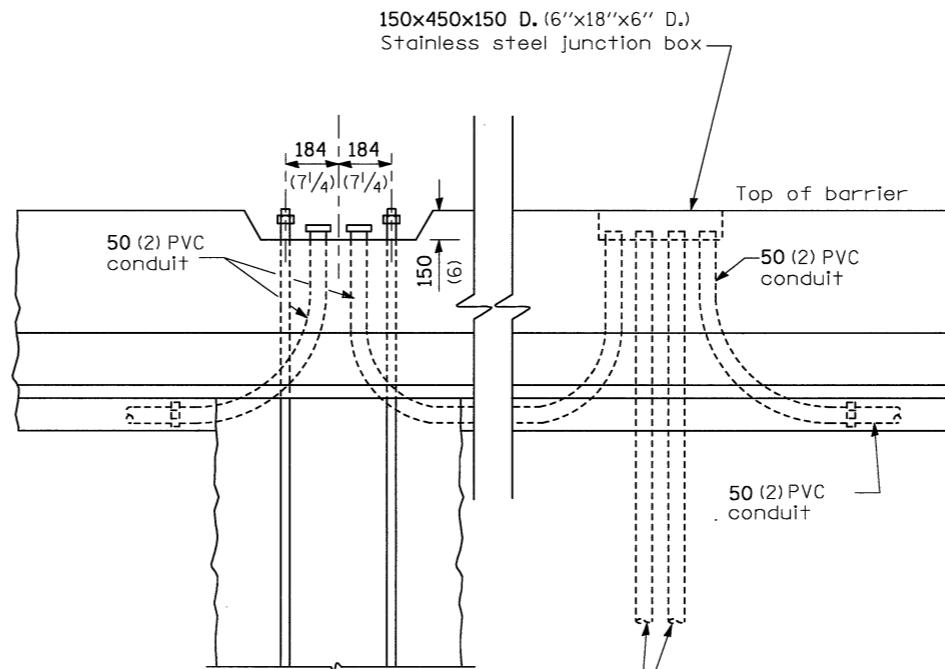
Hex nuts (8 required)

228.6x482.6x6 (9x19x1/4)
Galv. Steel plate template

ANCHOR BOLTS DETAIL



ELEVATION AT LIGHT POLE SUPPORT



ELEVATION

GENERAL NOTES

A rigid template of the pole base shall be used to ensure rectangular centers of 114.3 mm x 368.3 mm (4 1/2" x 14 1/2").

The light pole base at the top of the barrier shall be cast level in a horizontal plane.

* Not more than two 50 mm (2") Ø conduit openings (or one 75 mm (3") Ø conduit) at the pole base permitted (see plan for requirements).

The contractor shall furnish protection for exposed anchor bolt threads.

All anchor bolts shall be supplied with nuts, flatwashers and lockwashers.

PROJECT SPECIFIC NOTE:

This foundation configuration shall apply to 5 poles on the east end of the project.

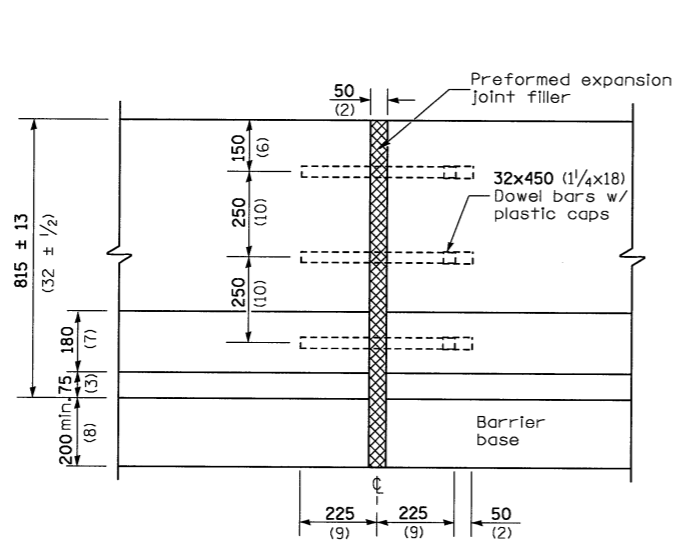
POLE MOUNTING ON MEDIAN BARRIER

LAYOUT	JMH	
DRAWN	JMH	
REVIEWED	DJH	03/18/04

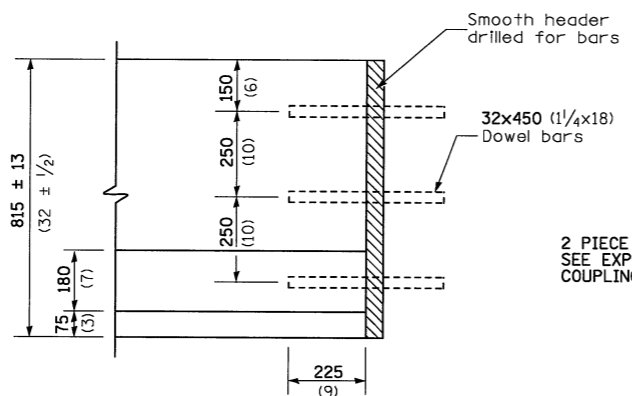
All dimensions are in millimeters (inches) unless otherwise shown.

REVISIONS	
NAME	DATE

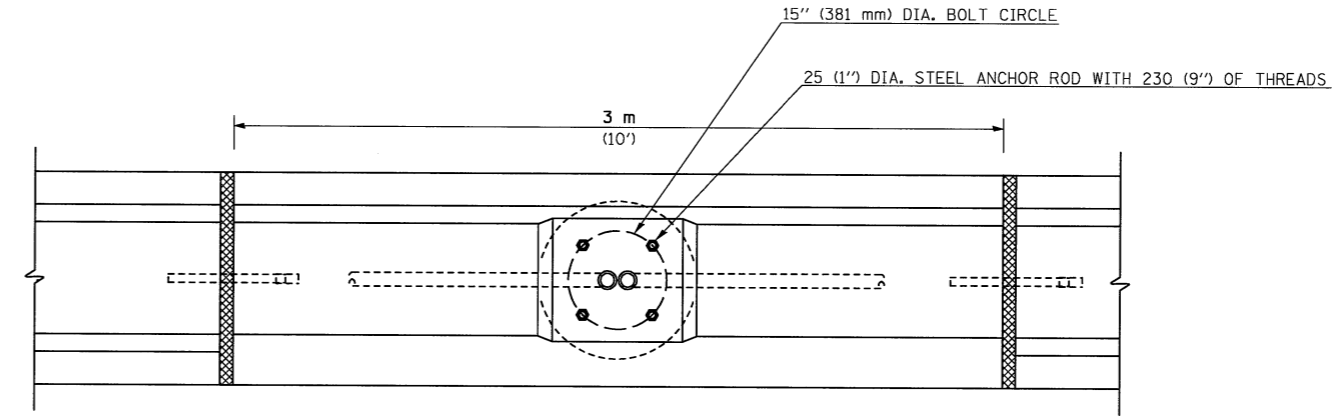
JOB NO.	94S2063
DATE	10/6/2009



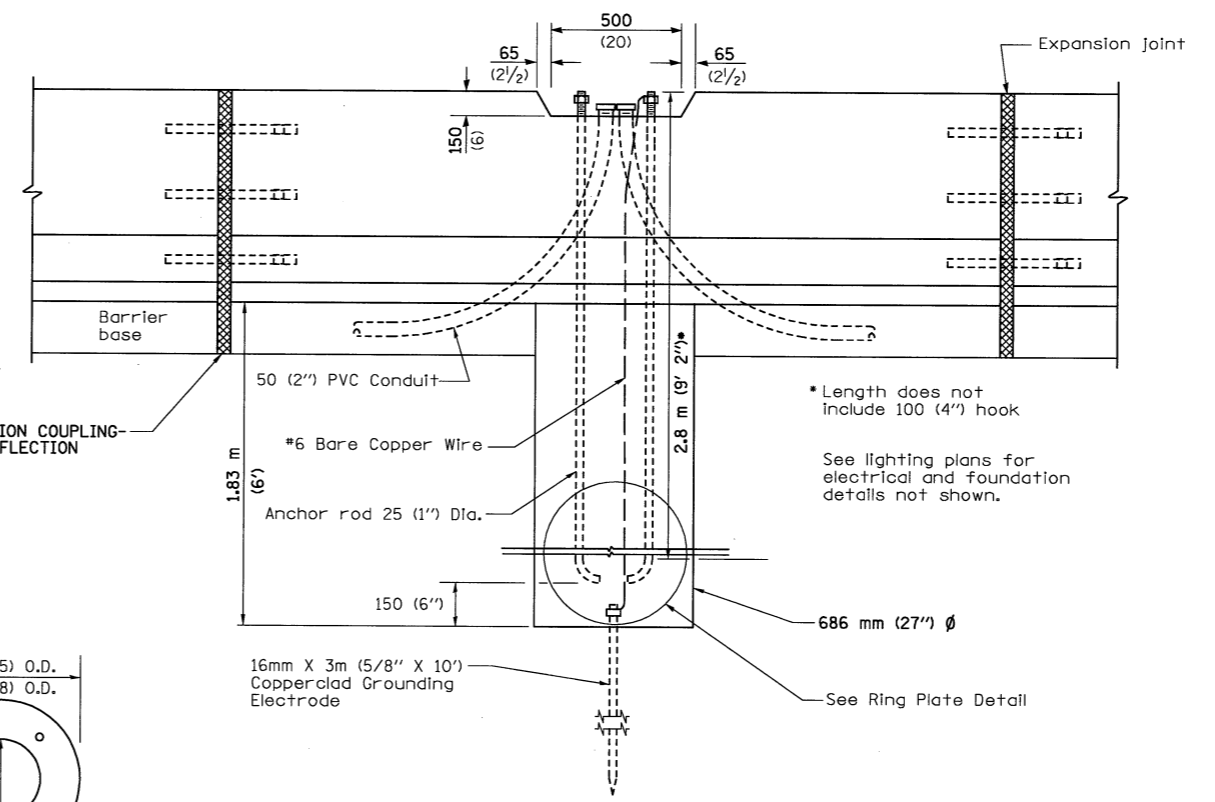
EXPANSION JOINT



CONSTRUCTION JOINT



PLAN AT LIGHTING FOUNDATION



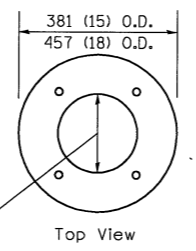
ELEVATION AT LIGHTING FOUNDATION

2 PIECE PVC EXPANSION COUPLING-
SEE EXPANSION / DEFLECTION
COUPLING DETAIL

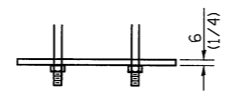
* Length does not
include 100 (4\") hook

See lighting plans for
electrical and foundation
details not shown.

230 (9) I.D. with 292 (11.5) bolt circle
305 (12) I.D. with 381 (15) bolt circle



Top View



RING PLATE DETAIL

(When rock is encountered
and foundation is shallower)

All dimensions are in millimeters (inches)
unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY
**LIGHT POLE AT
MEDIAN FOUNDATION BARRIER**

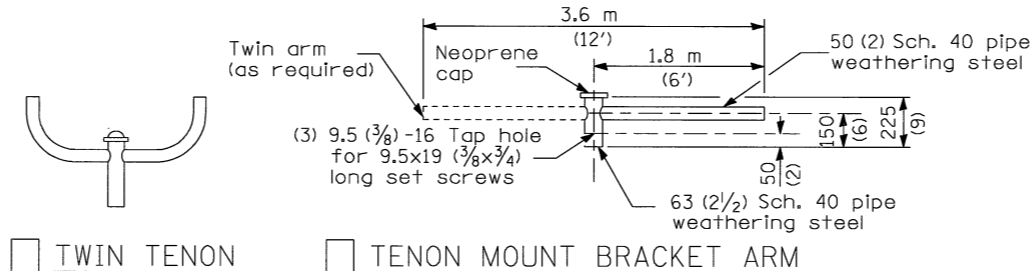
REVISIONS	
NAME	DATE

HANSON

JOB NO. 94S2063
DATE 10/6/2009

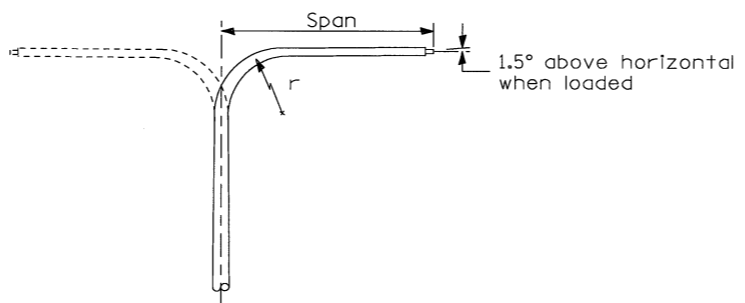
10/6/2009 #FILE#

LAYOUT	DOT	DOT	DLH	05/19/04
DRAWN				
REVIEWED				

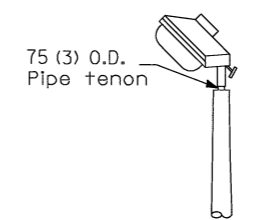


TWIN TENON TENON MOUNT BRACKET ARM

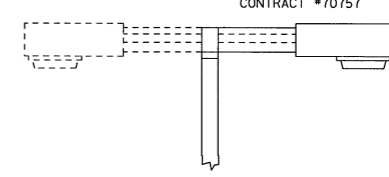
NOTE: Single or twin arm assembly shall be tilted 3° above horizontal.



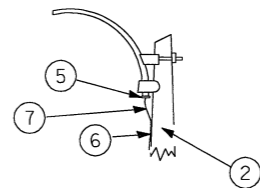
DAVIT ARM DAVIT ARM-TWIN



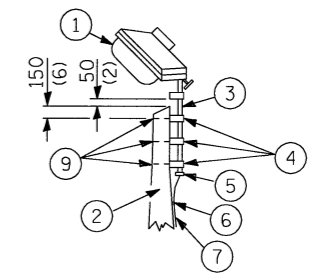
TENON



SHORT BRACKET SHORT BRACKET - TWIN

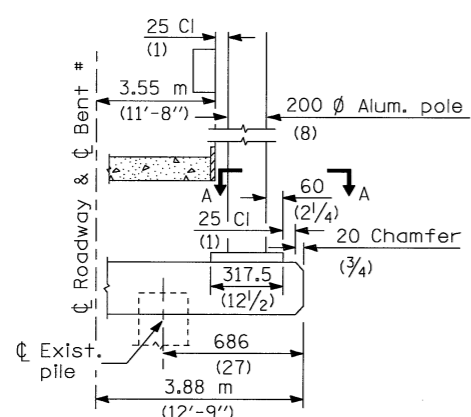


MAST ARM

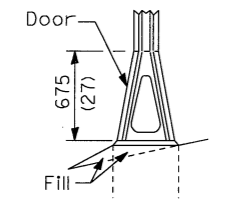


TENON

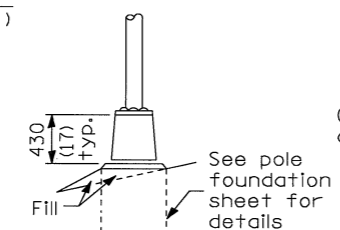
- ① Luminaire
- ② Wood pole, class 3 or better
- ③ 63 (2 1/2) Galv. steel conduit
- ④ Single offset pole band
- ⑤ Conduit bushing
- ⑥ Cable clamps on 600 (24) centers
- ⑦ 2/c #12 Type use cable
- ⑧ 25 (1) Galv. steel conduit 3.0 m (10') in length
- ⑨ 16 (5/8) Ø hot dipped galvanized bolt with flat washer & locknut (3 req'd)
- ⑩ Conduit clamps on 900 (36) centers
- ⑪ Unit duct
- ⑫ Threaded reducer
- ⑬ "C" Condulet, threaded
- ⑭ 40 (1 1/2) Galv. steel conduit for 1 unit duct or 75 (3) galv. steel conduit for 2 or 3 unit ducts.



BENT # (Looking)

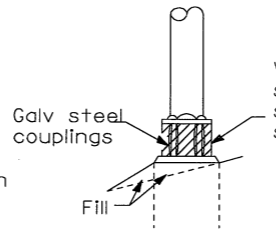


STAINLESS STEEL FLAIR BASE

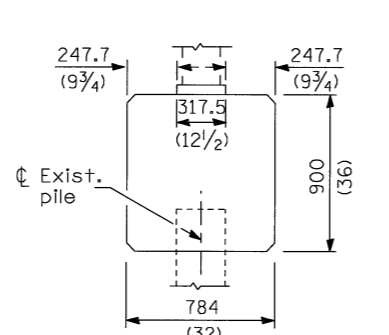


TRANSFORMER BASE

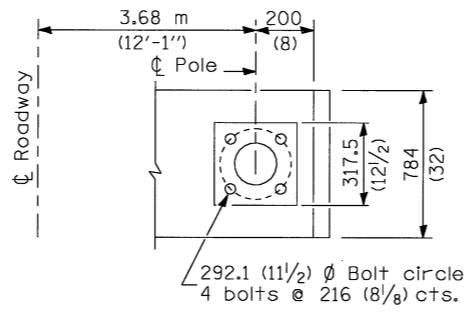
FRANGIBLE



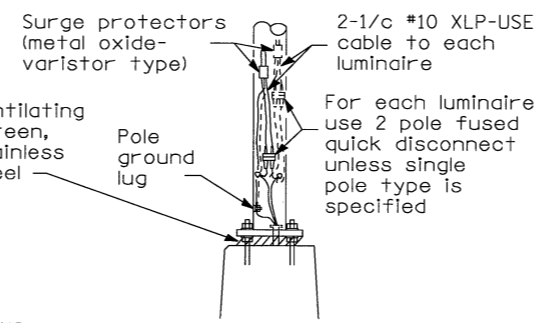
BREAKAWAY COUPLING



BRIDGE PIER MOUNT



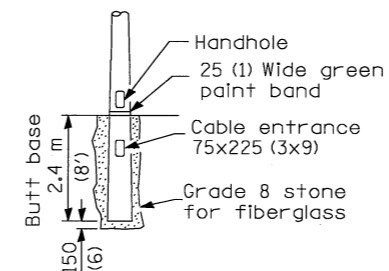
SECTION A-A



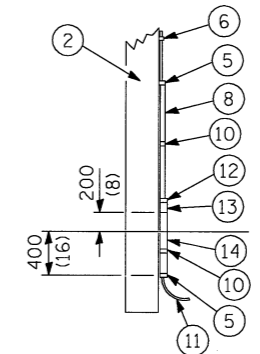
ANCHOR

METAL OR CONCRETE

Details for underground distribution if required



BUTT BASE



POLE, WOOD

POLE LENGTH	DEPTH IN GROUND
19.8 m (65')	3.6 m (12')
18.0 m (60')	3.0 m (10')
16.8 m (55')	2.7 m (9')
16.0 m (50')	2.4 m (8')
13.7 m (45')	2.1 m (7')
12.0 m (40')	2.0 m (6.5')
10.7 m (35')	1.8 m (6')
9.0 m (30')	1.7 m (5.5')

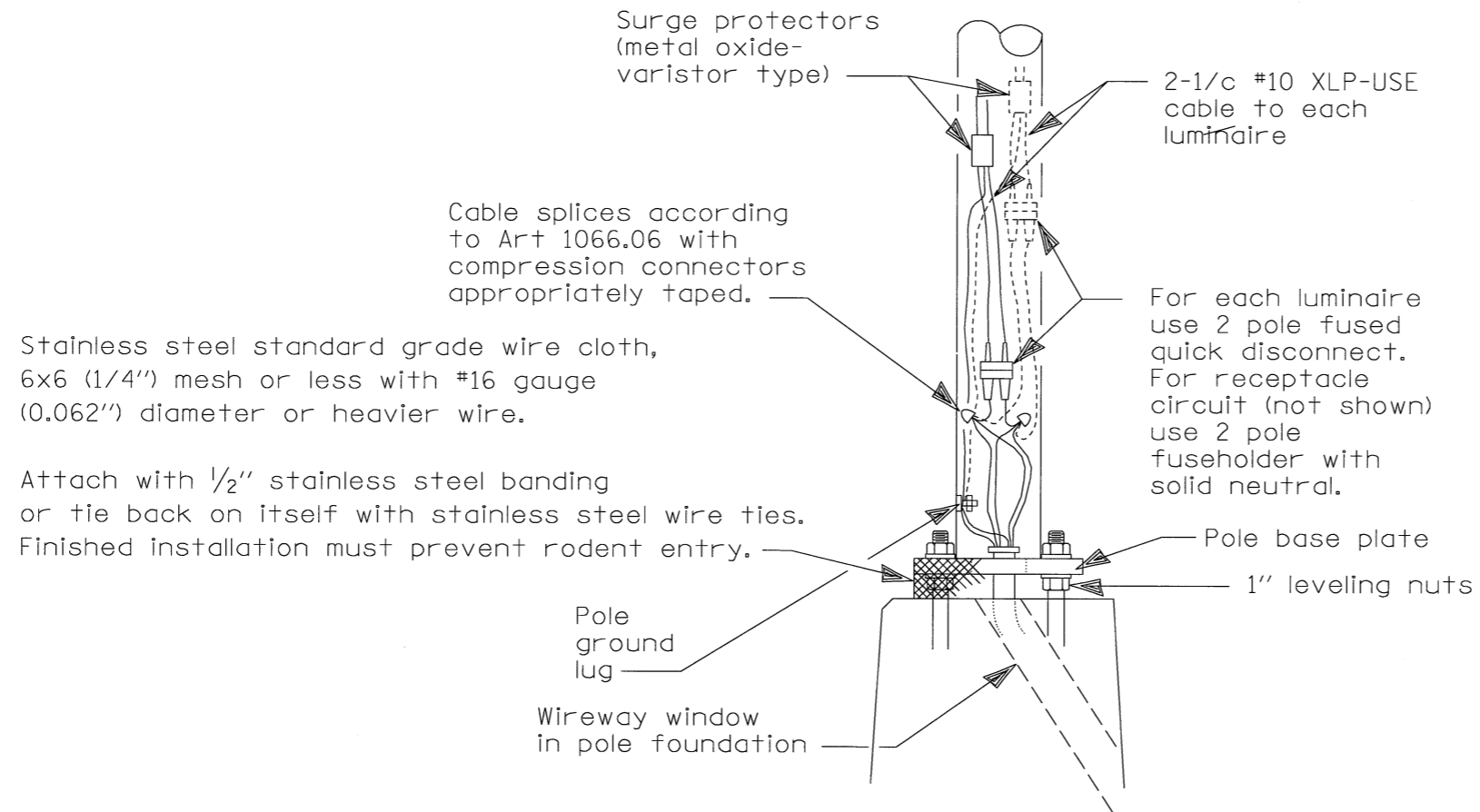
POLE STANDARDS

REVISIONS	
NAME	DATE
Corrected	6/24/09

JOB NO.
94S2063
DATE
10/6/2009

All dimensions are in millimeters (inches) unless otherwise shown.

10/6/2009 #FILE#
LAYOUT
DRAWN J.J.H.
REVIEWED D.L.H. 10/19/04



WIRING DETAIL

NO SCALE

GENERAL NOTES

All taped splices shall use 2 layers of electrical tape over 3 layers of rubber tape as required by the Standard Specifications. Coat the finished taped splice with bonding compound.

All cable splices shall be taped unless another method has been specifically approved by the Engineer.

For example purposes the pole is shown on an anchor base. If the pole is required to be set on a breakaway base, consult the Standard Specifications.

All dimensions are in millimeters (inches) unless otherwise shown.

POLE HANDHOLE WIRING

REVISIONS	
NAME	DATE
Updated	7/31/08



HANSON

JOB NO.
94S2063
DATE
10/6/2009

LGTO08A.DGN

10/6/2009
#FILE#

LAYOUT	JJH	03/19/04
DRAWN	JJH	
REVIEWED	DLH	

**ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE - I-55 MAINLINE LIGHTING**

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	11.0 m
	Number Of Lanes	3
	Median Width	9.8 m
	IES Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA:	Mounting Height	13.1 m
	Mast Arm Length	2.4 m
	Pole Set-Back From Edge Of Pavement	4.8 m
LUMINAIRE DATA:	Lamp Type	HPS
	Lamp Lumens	28000
	IES Vertical Distribution	M
	IES Control Of Distribution	FC
	IES Lateral Distribution	III
	Total Light Loss Factor	0.684
LAYOUT DATA:	Spacing	61.0 m
	Configuration	MED
	Luminaire Overhang Over Edge Of Pavement Lane	-2.4 m

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E_{Ave})	9.0	Lux
	Uniformity Ratio, (E_{Ave}/E_{Min})	3.0	
LUMINANCE:	Average Luminance: (L_{Ave})	0.60	Cd/m ²
	Uniformity Ratios: (L_{Ave}/L_{Min})	3.5	
	(L_{Max}/L_{Min})	6.0	
	Maximum Veiling Luminance Ratio: (L_v/L_{Ave})	0.30	

**ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE - TUNNEL DAYTIME LIGHTING**

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	7.3	m
	Number Of Lanes	2	
	Median Width	-	m
	IES Surface Classification	R3	
	Q-Zero Value	.07	
LIGHT POLE DATA:	Mounting Height	3.4	m
	Mast Arm Length	-	m
	Pole Set-Back From Edge Of Pavement	1.5 & 7.3	m
LUMINAIRE DATA:	Lamp Type	HPS	
	Lamp Lumens	51000	
	IES Vertical Distribution	M	
	IES Control Of Distribution	C	
	IES Lateral Distribution	IV	
	Total Light Loss Factor	0.585	
LAYOUT DATA:	Spacing	1.0	m
	Configuration	OPP	
	Luminaire Overhang Over Edge Of Pavement Lane	-1.5 & -7.3	m

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E_{Ave})	-	Lux
	Uniformity Ratio, (E_{Ave}/E_{Min})	-	
LUMINANCE:	Average Luminance: (L_{Ave})	100	Cd/m ²
	Uniformity Ratios: (L_{Ave}/L_{Min})	2.0	
	(L_{Max}/L_{Min})	3.5	
	Maximum Veiling Luminance Ratio: (L_v/L_{Ave})	0.30	

LUMINAIRES PERFORMANCE TABLES

REVISIONS		JOB NO. 94S2063
NAME	DATE	
		DATE 10/6/2009

10/6/2009
#7/LEP

LAYOUT		
DRAWN	JH	03/18/04
REVIEWED	DH	

ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE - LINDEN ST. BIKEPATH LIGHTING

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	3.1m
	Number Of Lanes	1
	Median Width	- m
	IES Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA:	Mounting Height	4.8m
	Mast Arm Length	- m
	Pole Set-Back From Edge Of Pavement	0.6m
LUMINAIRE DATA:	Lamp Type	HPS
	Lamp Lumens	16000
	IES Vertical Distribution	M
	IES Control Of Distribution	C
	IES Lateral Distribution	II
	Total Light Loss Factor	0.684
LAYOUT DATA:	Spacing	12.2m
	Configuration	ONE SIDE
	Luminaire Overhang Over Edge Of Pavement Lane	-0.6m

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E _{Ave})	40	Lux
	Uniformity Ratio, (E _{Ave} /E _{Min})	3.0	
LUMINANCE:	Average Luminance: (L _{Ave})	-	Cd/m ²
	Uniformity Ratios: (L _{Ave} /L _{Min})	-	
	(L _{Max} /L _{Min})	-	
	Maximum Veiling Luminance Ratio:(L _v /L _{Ave})	-	

ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE - LINDEN ST. UNDERPASS LIGHTING

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	7.3m
	Number Of Lanes	2
	Median Width	- m
	IES Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA:	Mounting Height	5.5m
	Mast Arm Length	- m
	Pole Set-Back From Edge Of Pavement	4.8m
LUMINAIRE DATA:	Lamp Type	HPS
	Lamp Lumens	16000
	IES Vertical Distribution	M
	IES Control Of Distribution	C
	IES Lateral Distribution	IV
	Total Light Loss Factor	0.684
LAYOUT DATA:	Spacing	21.3m
	Configuration	OPP
	Luminaire Overhang Over Edge Of Pavement Lane	-4.8m

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E _{Ave})	13	Lux
	Uniformity Ratio, (E _{Ave} /E _{Min})	3.0	
LUMINANCE:	Average Luminance: (L _{Ave})	0.90	Cd/m ²
	Uniformity Ratios: (L _{Ave} /L _{Min})	3.0	
	(L _{Max} /L _{Min})	5.0	
	Maximum Veiling Luminance Ratio:(L _v /L _{Ave})	0.30	

LUMINAIRES PERFORMANCE TABLES

REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
10/6/2009

10/6/2009 #FILE#
LAYOUT DRAWN BY: DJH 03/18/04
REVIEWED BY: DJH

ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE - TUNNEL NIGHTTIME LIGHTING

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	7.3	m
	Number Of Lanes	2	
	Median Width	-	m
	IES Surface Classification	R3	
	Q-Zero Value	.07	
LIGHT POLE DATA:	Mounting Height	3.4	m
	Mast Arm Length	-	m
	Pole Set-Back From Edge Of Pavement	1.5 & 7.3	m
LUMINAIRE DATA:	Lamp Type	HPS	
	Lamp Lumens	16000	
	IES Vertical Distribution	M	
	IES Control Of Distribution	C	
	IES Lateral Distribution	IV	
	Total Light Loss Factor	0.585	
LAYOUT DATA:	Spacing	21.3	m
	Configuration	OPP	
	Luminaire Overhang Over Edge Of Pavement Lane	-1.5 & -7.3	m

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E _{Ave})	13	Lux
	Uniformity Ratio, (E _{Ave} /E _{Min})	3.0	
LUMINANCE:	Average Luminance: (L _{Ave})	0.90	Cd/m ²
	Uniformity Ratios:	(L _{Ave} /L _{Min})	3.0
		(L _{Max} /L _{Min})	6.0
	Maximum Veiling		
	Luminance Ratio:(L _v /L _{Ave})	0.30	

10/6/2009
#FILE#

LAYOUT	JH		
DRAWN	JH		
REVIEWED	DJH	03/18/04	

LUMINAIRES PERFORMANCE TABLES

REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
10/6/2009

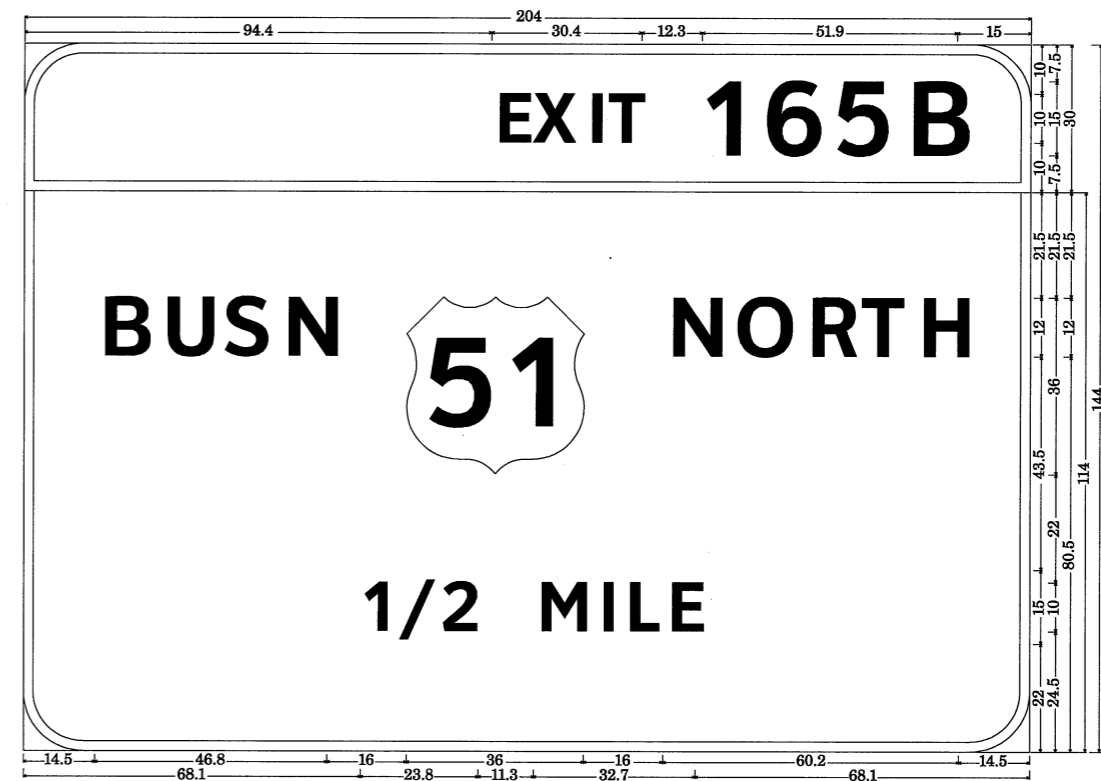
SS-1 STA. 37+140 NB



12.0" Radius, 2.0" Border, White on Green;
 [NORTH] ClearviewHwy-5-W-R; [Chicago] ClearviewHwy-5-W-R; Down Arrow 22.0" 270°;
 Table of letter and object lefts.

Ⓢ	N	O	R	T	H	
13.9	63.9	77.4	92.1	103.3	114.9	
C	h	i	c	a	g	o
20.0	36.8	52.6	60.5	74.2	89.6	105.7
↓						
53.0						

SS-2 STA. 37+140 NB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 165B] ClearviewHwy-5-W-R;
 12.0" Radius, 2.0" Border, White on Green;
 [BUSN] ClearviewHwy-5-W-R; [NORTH] ClearviewHwy-5-W-R; [* MILE] ClearviewHwy-5-W-R;
 Table of letter and object lefts.

E	X	I	T	1	6	5	B		
94.4	102.4	113.2	117.5	137.1	148.3	162.7	177.6		
B	U	S	N	Ⓢ	N	O	R	T	H
14.5	27.1	39.5	51.4	77.3	129.3	142.8	157.5	168.7	180.3
*	M	I	L	E					
68.1	103.2	115.7	121.1	129.5					

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)B)DM
 MCLEAN COUNTY

SIGN PANEL DETAILS

JOB NO. 94S2063
 DATE 7/27/2009

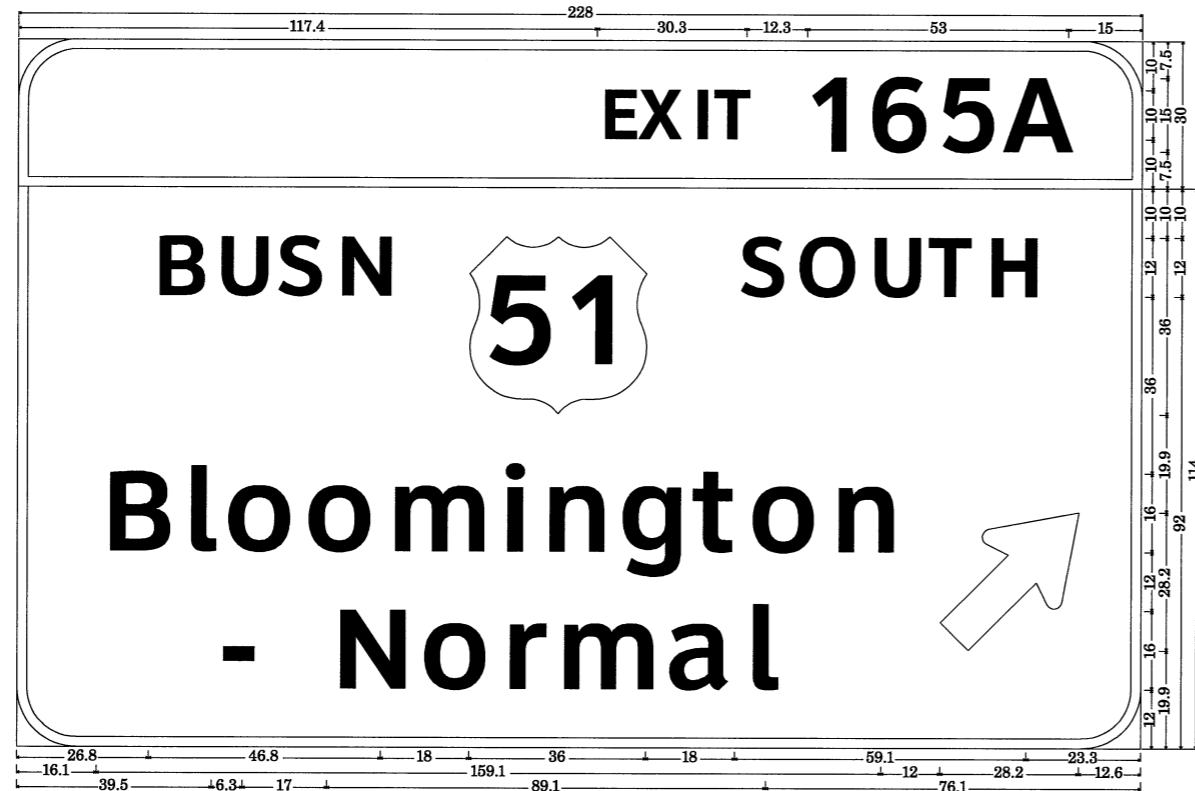
REVISIONS	
NAME	DATE

7/27/2009
 #FILE#

LAYOUT	JJH	03/18/04
DRAWN	JJH	
REVIEWED	DLH	

SS-3 STA. 37+140 NB

SS-4 STA. 37+295 SB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 165A] ClearviewHwy-5-W-R;
 12.0" Radius, 2.0" Border, White on Green;
 [BUSN] ClearviewHwy-5-W-R; [SOUTH] ClearviewHwy-5-W-R; [Bloomington] ClearviewHwy-5-W-R; [- Normal] ClearviewHwy-5-W-R; Standard Arrow Custom 35.8" X 21.6" 45;

Table of letter and object lefts.

E	X	I	T	1	6	5	A				
117.4	125.4	136.2	140.5	160.0	171.3	185.7	198.9				
B	U	S	N	51	S	O	U	T	H		
26.8	39.4	51.8	63.7	91.6	145.6	157.1	171.8	183.9	195.5		
B	l	o	o	m	i	n	g	t	o	n	↗
16.1	32.8	41.0	57.2	74.0	96.9	105.5	121.0	136.2	147.3	164.1	187.2
-	N	o	r	m	a	l					
39.5	62.8	80.6	97.5	108.5	130.8	146.8					

12.0" Radius, 2.0" Border, White on Green;
 [EXIT 163] ClearviewHwy-5-W;
 12.0" Radius, 2.0" Border, White on Green;
 [WEST] ClearviewHwy-5-W; [Peoria] ClearviewHwy-5-W; [1 MILE] ClearviewHwy-5-W;

Table of letter and object lefts.

E	X	I	T	1	6	3
28.1	36.7	48.1	53.0	73.6	85.8	100.6
W	E	S	T			
13.8	61.8	81.4	92.2	103.5		
P	e	o	r	i	a	
21.8	37.8	54.3	72.1	83.8	92.3	
1	M	I	L	E		
37.3	54.1	67.3	73.3	82.3		

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)B)DM
 MCLEAN COUNTY

SIGN PANEL DETAILS

REVISIONS	NAME	DATE

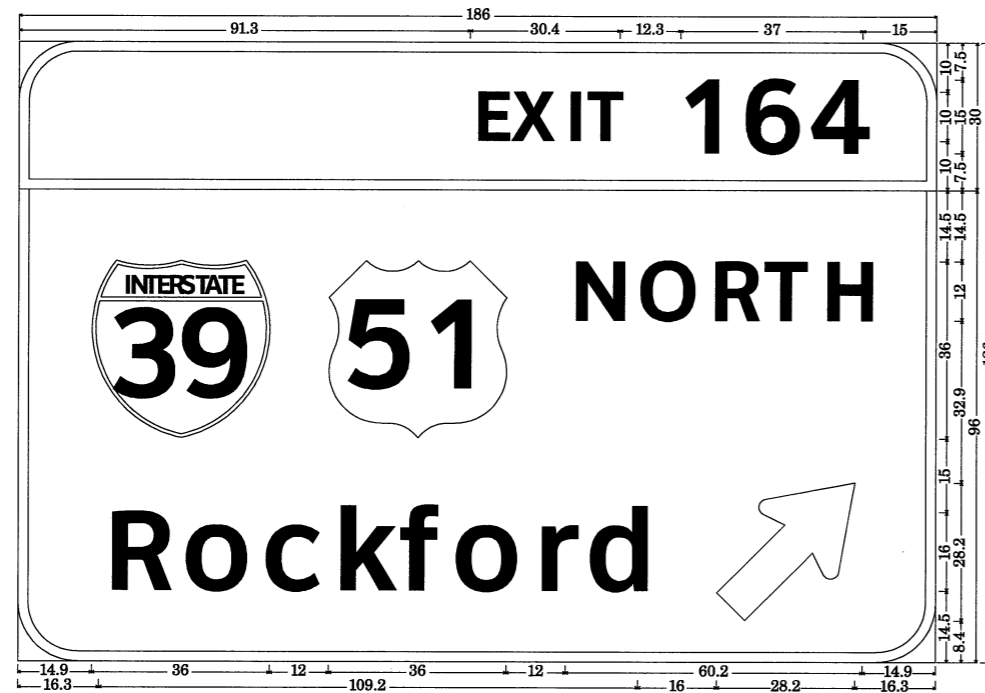
HANSON

JOB NO. 94S2063
 DATE 7/27/2009

7/27/2009
 #FILES
 LAYOUT
 DRAWN
 REVIEWED
 DJH 03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	124
FED. ROAD DIST. NO. [ILLINOIS]			FED. AID PROJECT	
* (57-4)R, HBY, HBR, (57-4)BIDM CONTRACT #70757				

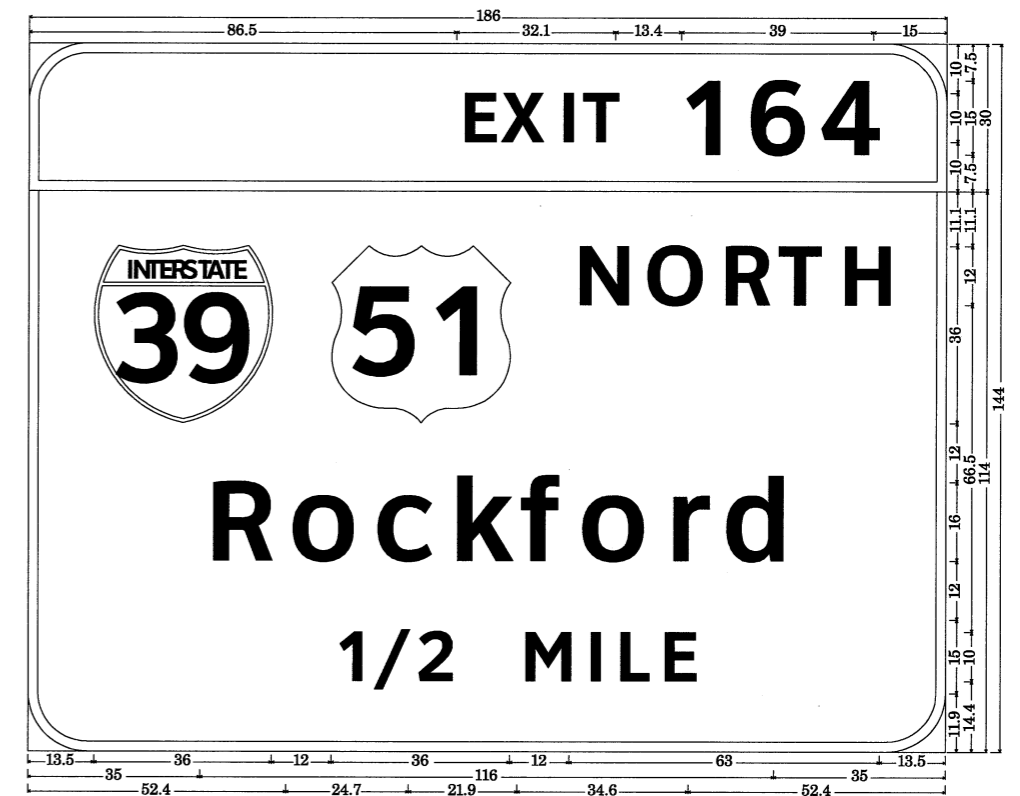
SS-5 STA. 37+297 SB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 164] ClearviewHwy-5-W-R;
 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] ClearviewHwy-5-W-R; [Rockford] ClearviewHwy-5-W-R; Standard Arrow Custom 35.8" X 21.6" 45°;
 Table of letter and object lefts.

E	X	I	T	1	6	4		
91.3	99.3	110.1	114.4	134.0	145.2	159.1		
14.9	62.9	110.9	124.4	139.1	150.3	161.9		
R	o	c	k	f	o	r	d	↗
16.3	32.1	48.3	62.8	76.1	86.8	103.6	114.0	141.5

SS-6 STA. 37+953 SB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 164] ClearviewHwy-5-W;
 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] ClearviewHwy-5-W; [Rockford] ClearviewHwy-5-W; [* MILE] ClearviewHwy-5-W;
 Table of letter and object lefts.

E	X	I	T	1	6	4	
86.5	95.1	106.5	111.4	132.0	144.2	159.1	
13.5	61.5	109.5	123.6	139.1	151.0	163.3	
R	o	c	k	f	o	r	d
35.0	51.8	69.0	84.3	98.5	110.3	128.1	139.5
*	M	I	L	E			
52.4	99.0	112.2	118.2	127.2			

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)BIDM
 McLEAN COUNTY

SIGN PANEL DETAILS

REVISIONS	
NAME	DATE



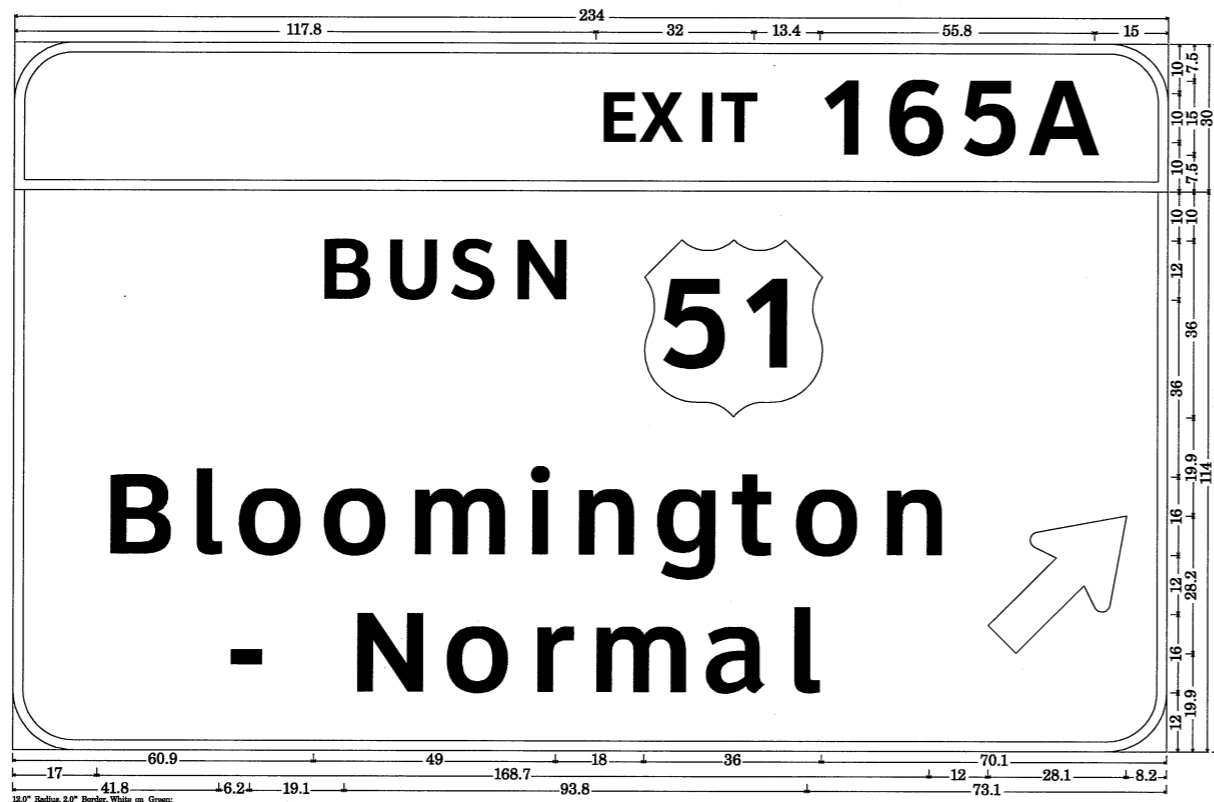
JOB NO.
94S2063
DATE
7/27/2009

7/27/2009
#FILE#

LAYOUT	JJH
DRAWN	JJH
REVIEWED	DLH 05/18/04

SS-7 STA. 37+953 SB

SS-8 STA. 38+425 SB



[EXIT 165A] ClearviewHwy-5-W;
12.0" Radius, 2.0" Border, White on Green;
[BUSN] ClearviewHwy-5-W; [Bloomington] ClearviewHwy-5-W; [- Normal] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45;

Table of letter and object lefts.

E	X	I	T	1	6	5	A				
117.8	126.3	137.7	142.6	163.2	175.4	190.8	204.9				
B	U	S	N	51							
60.9	74.2	87.4	100.0	127.9							
B	l	o	o	m	i	n	g	t	o	n	↗
17.0	34.6	43.9	61.0	78.8	102.6	112.1	128.6	144.7	156.8	174.6	197.7
-	N	o	r	m	a	l					
41.8	67.1	85.9	103.7	115.7	138.9	155.9					



12.0" Radius, 2.0" Border, White on Green;
[Decatur] ClearviewHwy-5-W-R; [St Louis] ClearviewHwy-5-W-R; [Indianapolis] ClearviewHwy-5-W-R;

Table of letter and object lefts.

51	55	74									
18.0	72.0	126.0									
D	e	c	a	t	u	r					
42.1	59.0	74.7	88.3	102.8	114.5	130.5					
S	t	L	o	u	i	s					
39.6	53.8	77.8	90.5	107.3	122.9	130.2					
I	n	d	i	a	n	a	p	o	l	i	s
13.3	21.7	37.2	53.6	61.3	77.3	92.5	108.5	124.0	140.8	149.3	156.5

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

SIGN PANEL DETAILS

REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
7/27/2009

7/27/2009
#FILES

LAYOUT	JJH	03/18/04
DRAWN	JJH	
REVIEWED	DLH	

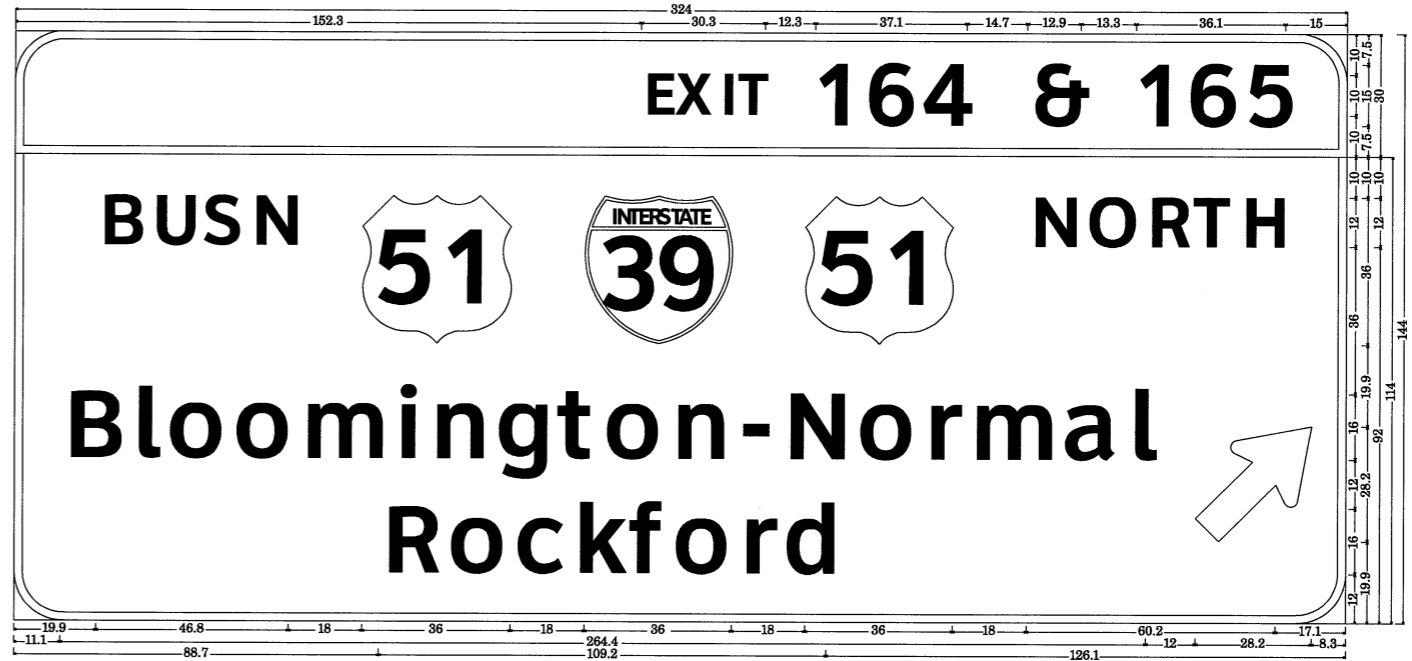
SS-10 STA. 38+925 SB



12.0" Radius, 2.0" Border, White on Green;
 [Decatur] ClearviewHwy-5-W-R; [St Louis] ClearviewHwy-5-W-R; [Indianapolis] ClearviewHwy-5-W-R;
 Table of letter and object lefts.

51	55	74										
18.0	72.0	126.0										
D	e	c	a	t	u	r						
42.1	59.0	74.7	88.3	102.8	114.5	130.5						
S	t	L	o	u	i	s						
39.6	53.8	77.8	90.5	107.3	122.9	130.2						
I	n	d	i	a	n	a	p	o	l	i	s	
13.3	21.7	37.2	53.6	61.3	77.3	92.5	108.5	124.0	140.8	149.3	156.5	

SS-9 STA. 38+425 SB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 164 & 165] ClearviewHwy-5-W-R;
 12.0" Radius, 2.0" Border, White on Green;
 [BUSN] ClearviewHwy-5-W-R; [NORTH] ClearviewHwy-5-W-R; [Bloomington-Normal] ClearviewHwy-5-W-R; [Rockford] ClearviewHwy-5-W-R; Standard Arrow Custom 35.8" X 21.6" 45{;
 Table of letter and object lefts.

E	X	I	T	1	6	4	&	1	6	5							
152.3	160.3	171.1	175.4	194.9	206.2	220.1	246.7	272.9	284.2	298.6							
B	U	S	N	39	51	N	O	R	T	H							
19.9	32.5	44.9	56.8	84.7	138.7	192.7	246.7	260.2	274.9	286.1							
B	l	o	o	m	i	n	g	t	o	n	-	N	o	r	m	a	l
11.1	27.8	36.0	52.2	69.0	91.9	100.5	116.0	131.2	142.3	159.1	175.2	186.5	204.3	221.1	232.2	254.5	270.5
R	o	c	k	f	o	r	d										
88.7	104.5	120.7	135.2	148.5	159.2	176.0	186.4										

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)BIDM
 MCLEAN COUNTY

SIGN PANEL DETAILS

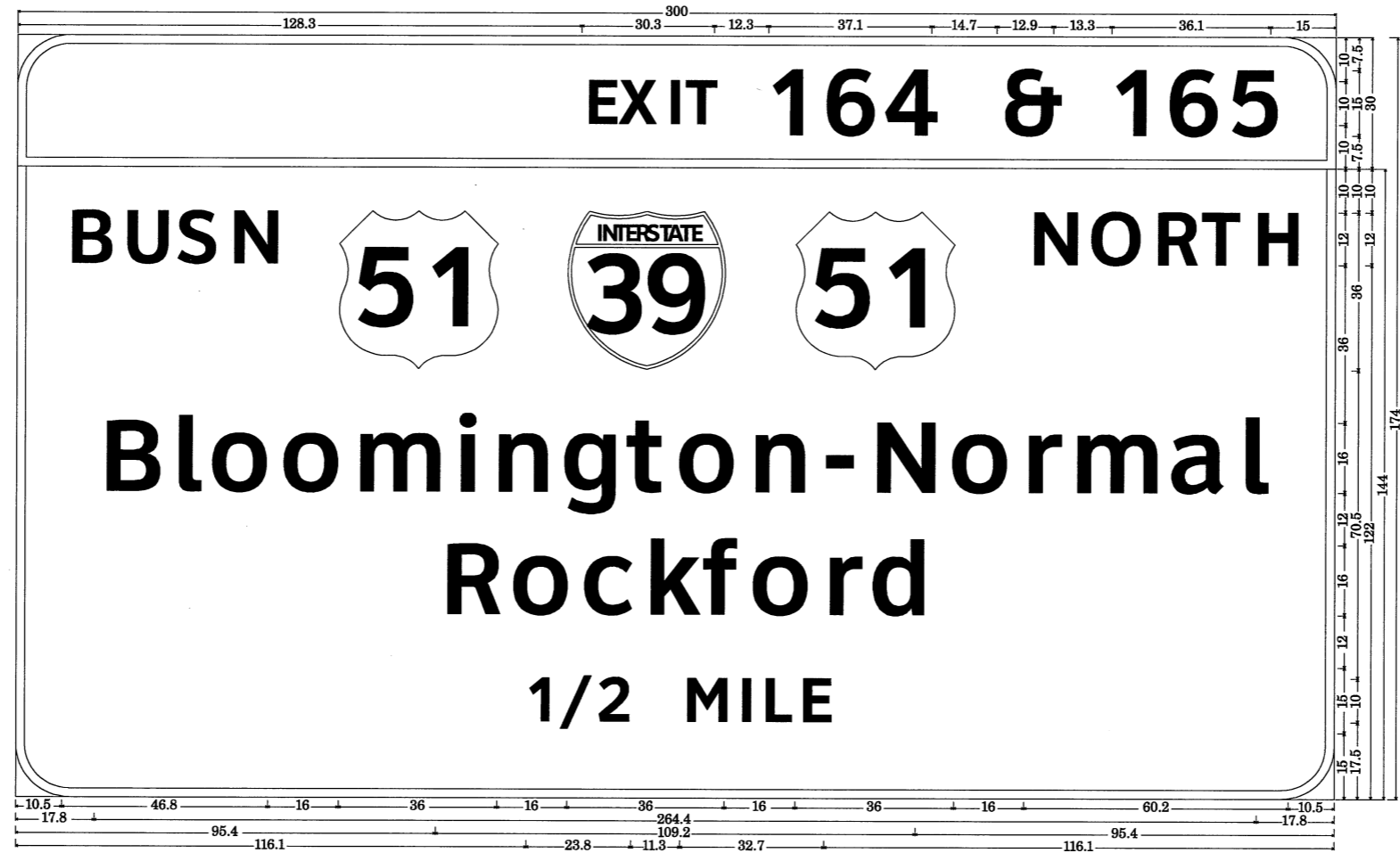
REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
7/27/2009

7/27/2009
 #FILES
 LAYOUT
 DRAWN
 REVIEWED
 JH
 JH
 DLH 10/31/04

SS-11 STA. 38+925 SB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 164 & 165] ClearviewHwy-5-W-R;
 12.0" Radius, 2.0" Border, White on Green;
 [BUSN] ClearviewHwy-5-W-R; [NORTH] ClearviewHwy-5-W-R; [Bloomington-Normal] ClearviewHwy-5-W-R; [Rockford] ClearviewHwy-5-W-R; [* MILE] ClearviewHwy-5-W-R;
 Table of letter and object lefts.

E	X	I	T	1	6	4	&	1	6	5							
128.3	136.3	147.1	151.4	170.9	182.2	196.1	222.7	248.9	260.2	274.6							
B	U	S	N	51	39	51	N	O	R	T	H						
10.5	23.1	35.5	47.4	73.3	125.3	177.3	229.3	242.8	257.5	268.7	280.3						
B	l	o	o	m	i	n	g	t	o	n	-	N	o	r	m	a	l
17.8	34.4	42.7	58.8	75.6	98.5	107.1	122.7	137.8	149.0	165.8	181.9	193.2	211.0	227.8	238.8	261.1	277.1
R	o	c	k	f	o	r	d										
95.4	111.1	127.3	141.9	155.2	165.8	182.6	193.0										
*	M	I	L	E													
116.1	151.2	163.7	169.1	177.5													

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4VB)DM
 McLEAN COUNTY
 SIGN PANEL DETAILS

REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
7/27/2009

7/27/2009
#FILES

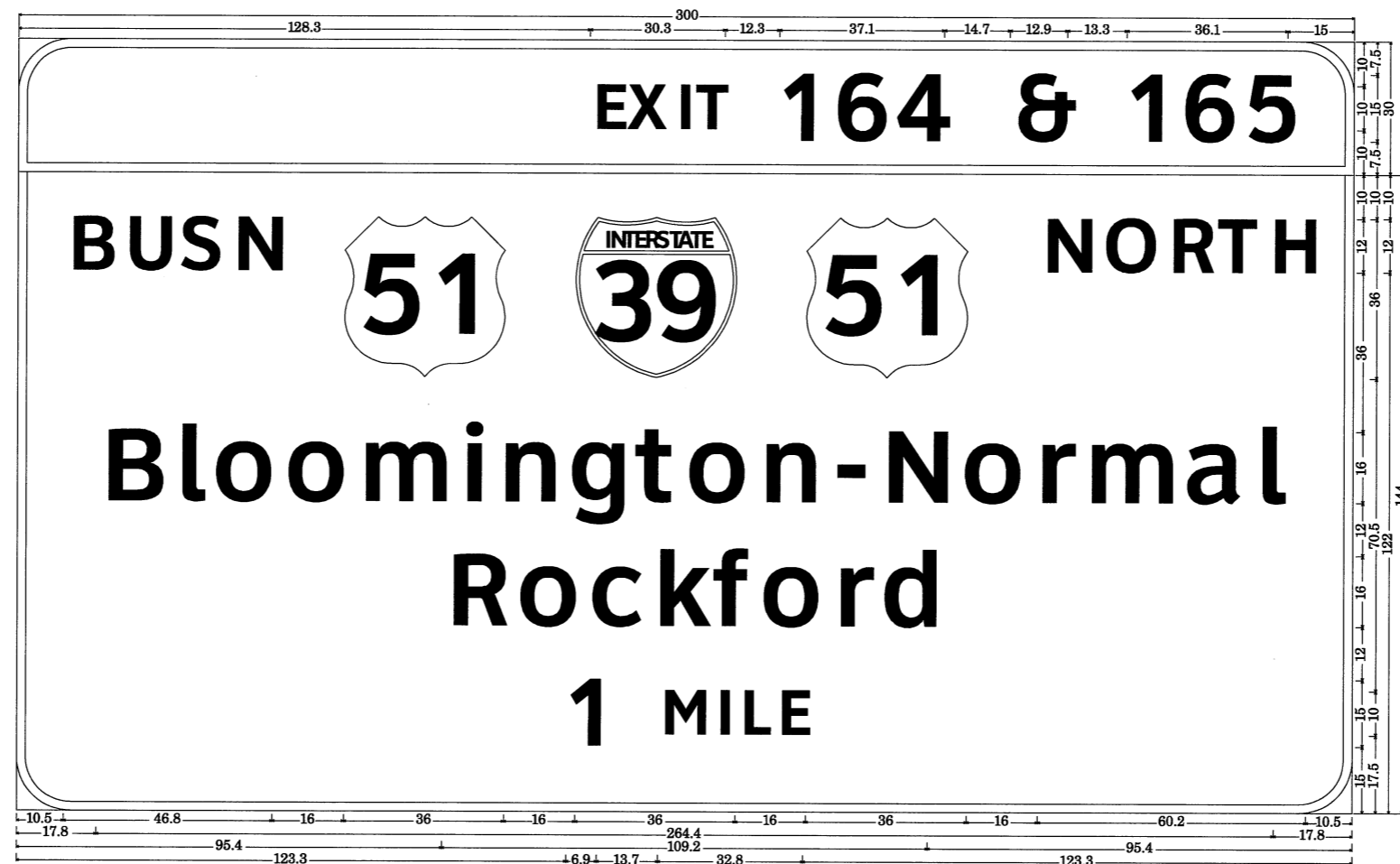
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DRAWN	JJH	
REVIEWED	DLH	03/19/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	128

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

* (57-4)R, HBY, HBR, (57-4VB)DM
CONTRACT #70757

SS-12 STA. 39+425 SB



12.0" Radius, 2.0" Border, White on Green;
[EXIT 164 & 165] ClearviewHwy-5-W-R;
12.0" Radius, 2.0" Border, White on Green;
[BUSN] ClearviewHwy-5-W-R; [NORTH] ClearviewHwy-5-W-R; [Bloomington-Normal] ClearviewHwy-5-W-R; [Rockford] ClearviewHwy-5-W-R; [1 MILE] ClearviewHwy-5-W-R;
Table of letter and object lefts.

E	X	I	T	1	6	4	&	1	6	5							
128.3	136.3	147.1	151.4	170.9	182.2	196.1	222.7	248.9	260.2	274.6							
B	U	S	N	51	39	51	N	O	R	T	H						
10.5	23.1	35.5	47.4	73.3	125.3	177.3	229.3	242.8	257.5	268.7	280.3						
B	l	o	o	m	i	n	g	t	o	n	-	N	o	r	m	a	l
17.8	34.4	42.7	58.8	75.6	98.5	107.1	122.7	137.8	149.0	165.8	181.9	193.2	211.0	227.8	238.8	261.1	277.1
R	o	c	k	f	o	r	d										
95.4	111.1	127.3	141.9	155.2	165.8	182.6	193.0										
1	M	I	L	E													
123.3	143.9	156.5	161.8	170.3													

NOTE: USE TYPE ZZ SHEETING

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

SIGN PANEL DETAILS

REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
7/27/2009

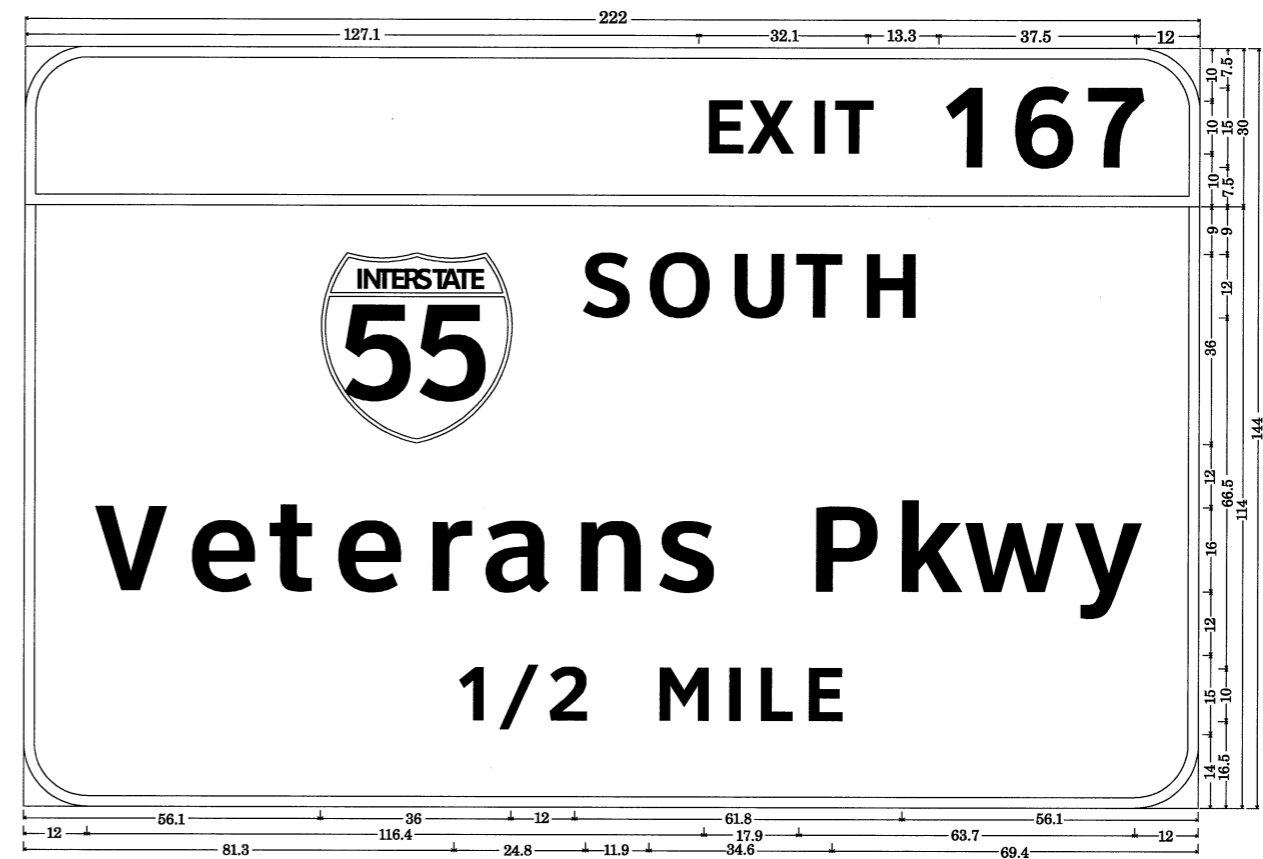
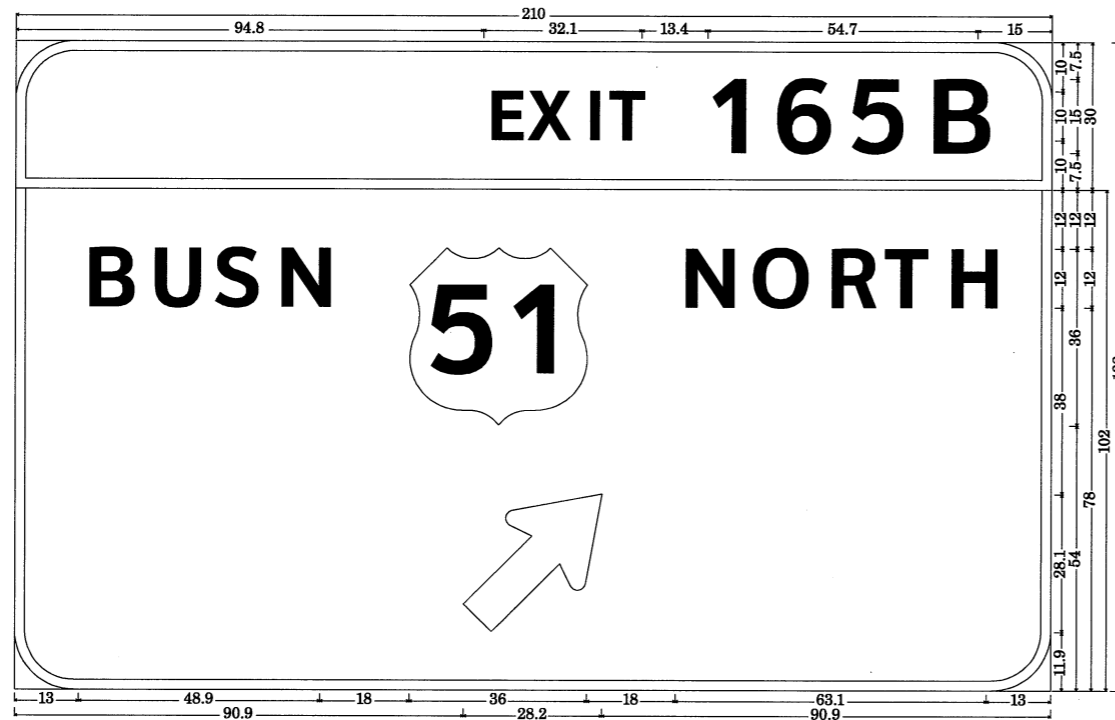
7/27/2009
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LAYOUT	JJH	03/18/04
DRAWN	JJH	
REVIEWED	DLH	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
55	*	MCLEAN	310	129
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4R, HBY, HBR, (57-4VB)DM CONTRACT #70757				

SS-13 STA. 37+572.5 NB

SS-14 STA. 39+845 NB



12.0" Radius, 2.0" Border, White on Green;
 [EXIT 165B] ClearviewHwy-5-W;
 12.0" Radius, 2.0" Border, White on Green;
 [BUSN] ClearviewHwy-5-W; [NORTH] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45{;
 Table of letter and object lefts.

E	X	I	T	1	6	5	B		
94.8	103.3	114.7	119.6	140.3	152.5	167.8	183.6		
B	U	S	N	51	N	O	R	T	H
13.0	26.3	39.5	52.1	79.9	133.9	148.1	163.6	175.5	187.8
↗									
90.9									

12.0" Radius, 2.0" Border, White on Green;
 [EXIT 167] ClearviewHwy-5-W;
 12.0" Radius, 2.0" Border, White on Green;
 [SOUTH] ClearviewHwy-5-W; [Veterans Pkwy] ClearviewHwy-5-W; [1/2 MILE] ClearviewHwy-5-W;
 Table of letter and object lefts.

E	X	I	T	1	6	7					
127.1	135.6	147.0	151.9	172.5	184.7	199.4					
51	S	O	U	T	H						
56.1	104.1	116.1	131.6	144.5	156.7						
V	e	t	e	r	a	n	s	P	k	w	y
12.0	29.5	45.0	57.0	74.2	85.2	102.2	118.1	146.3	162.9	176.6	197.5
*	M	I	L	E							
81.3	118.0	131.2	137.2	146.2							

NOTE: USE TYPE ZZ SHEETING

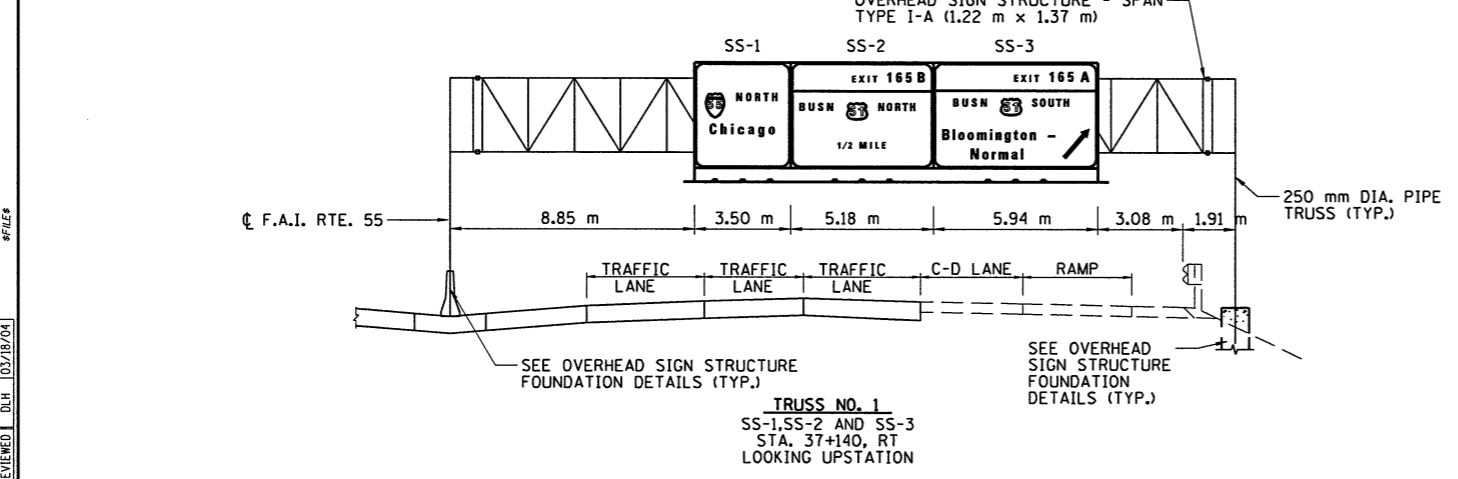
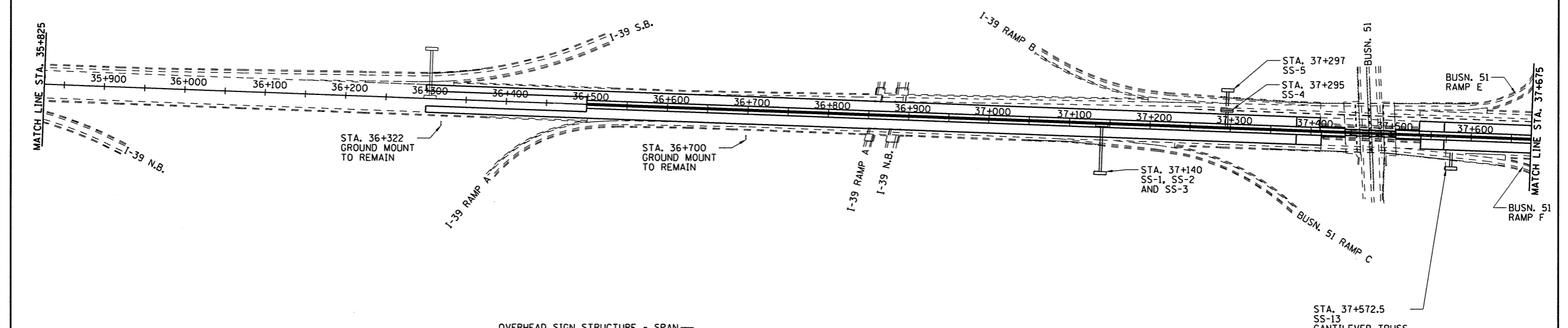
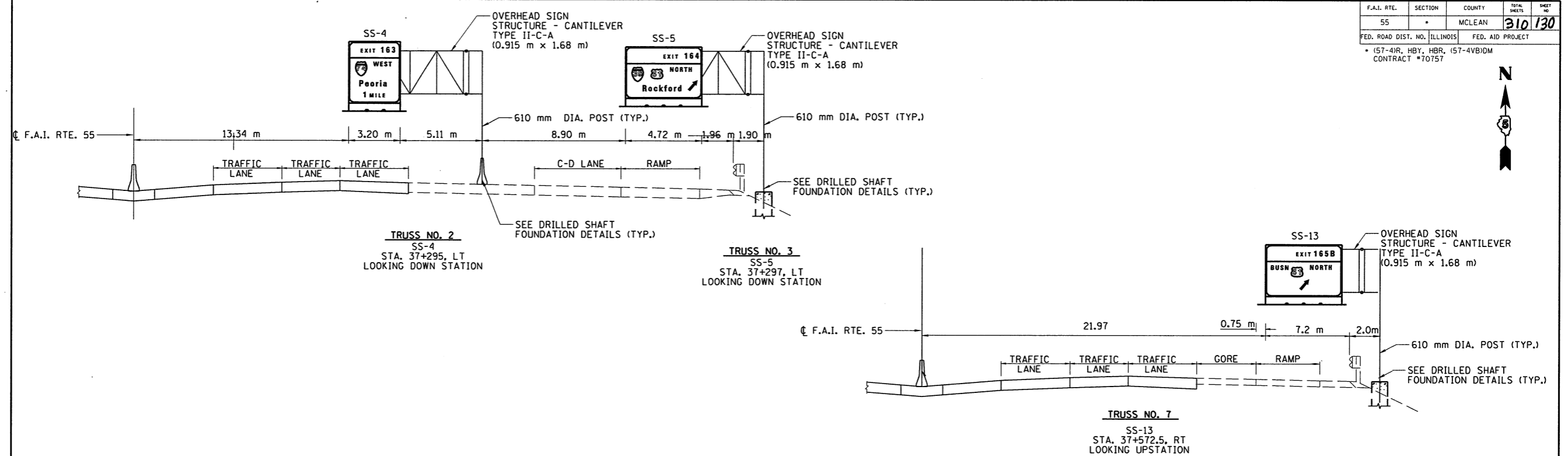
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4R, HBY, HBR, (57-4VB)DM
 MCLEAN COUNTY
 SIGN PANEL DETAILS

REVISIONS	
NAME	DATE

JOB NO. 94S2063
 DATE 7/27/2009

7/27/2009 #FILE#
 LAYOUT JAH
 DRAWN JAH
 REVIEWED DLH 03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	130
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)B/D/M CONTRACT #T0757				



- LEGEND**
- OVERHEAD SIGN TRUSS STRUCTURE
 - CANTILEVER SIGN STRUCTURE
 - POST MOUNTED SIGN

SCALE 1:2500

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B/D/M
MCLEAN COUNTY

**SIGNING PLAN
I-55**

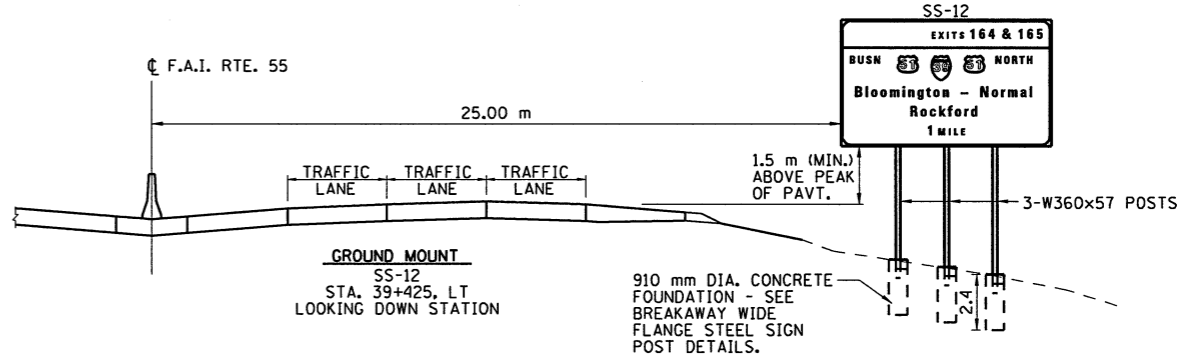
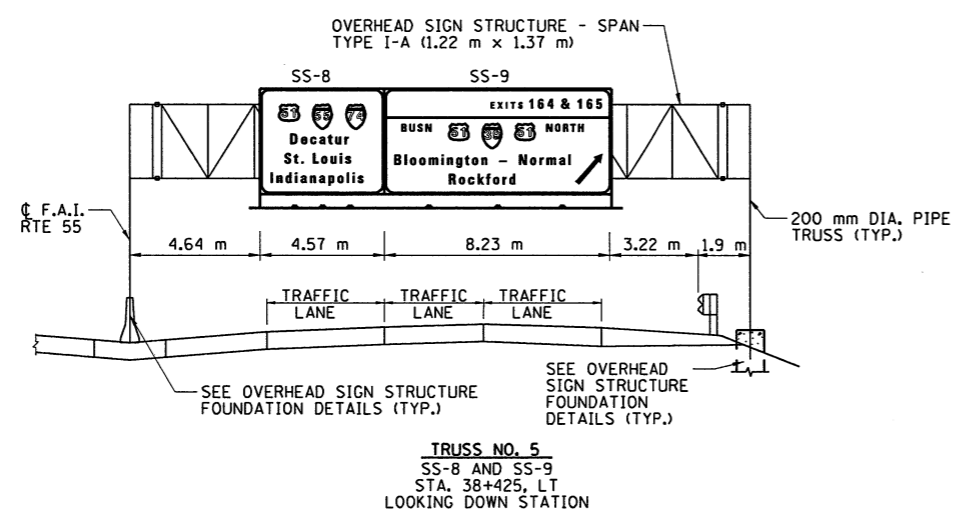
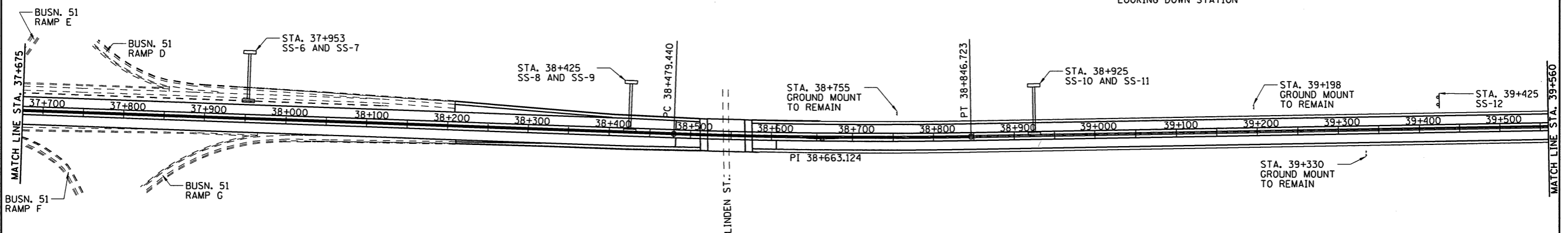
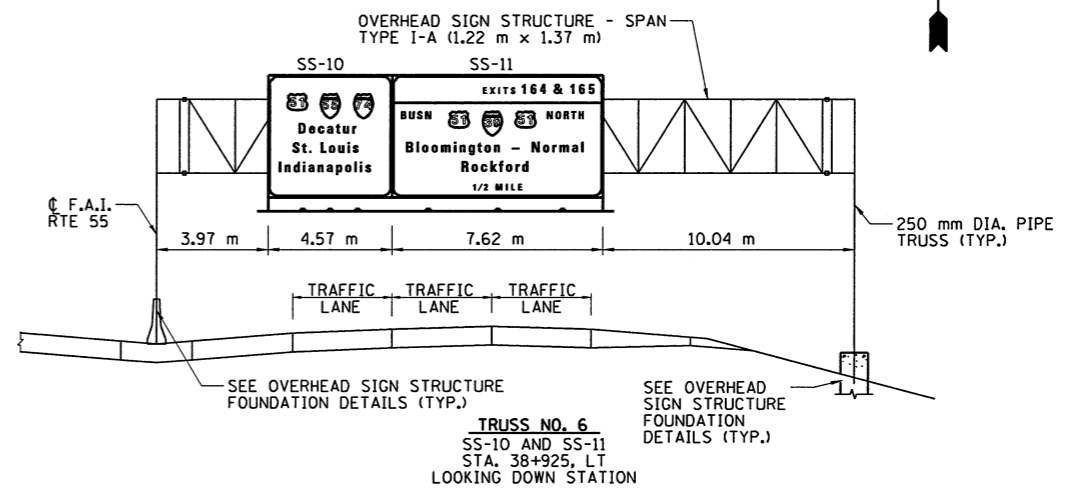
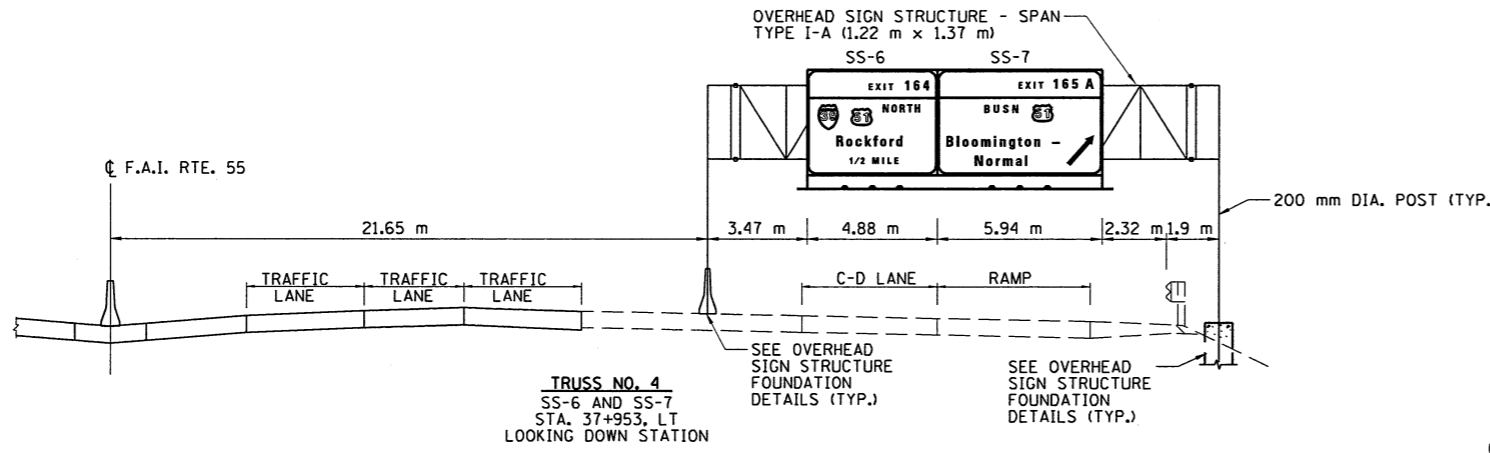
REVISIONS	
NAME	DATE

JOB NO. 94S2063
DATE 6/25/2009

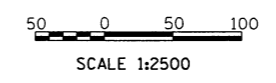
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LAYOUT	JLH	04/09/02
DRAWN	JLH	03/05/04
REVIEWED	DLH	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	131
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



- LEGEND**
- OVERHEAD SIGN TRUSS STRUCTURE
 - CANTILEVER SIGN STRUCTURE
 - POST MOUNTED SIGN



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

SIGNING PLAN
I-55

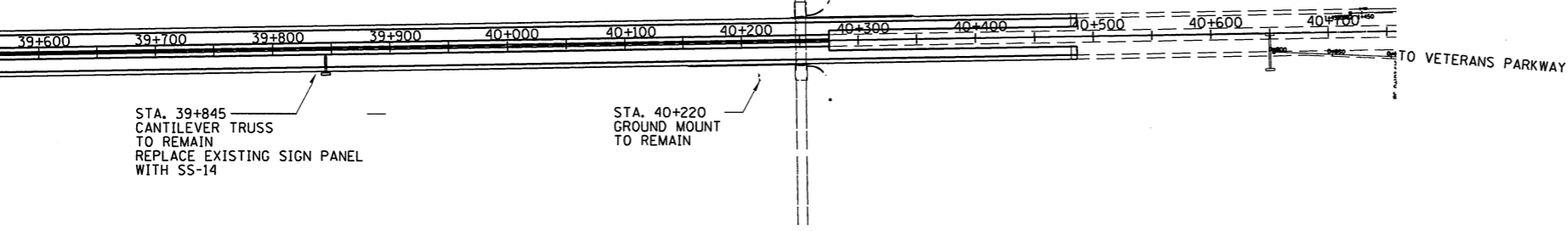
JOB NO. 94S2063
DATE 6/25/2009

LAYOUT	04/09/02
DRAWN	03/05/04
REVIEWED	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	132
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #T0757				



MATCH LINE STA. 39+560



STA. 39+845
CANTILEVER TRUSS
TO REMAIN
REPLACE EXISTING SIGN PANEL
WITH SS-14

STA. 40+220
GROUND MOUNT
TO REMAIN



SCALE 1:2500

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

**SIGNING PLAN
I-55**

LEGEND

- OVERHEAD SIGN TRUSS STRUCTURE
- CANTILEVER SIGN STRUCTURE
- POST MOUNTED SIGN

REVISIONS	
NAME	DATE



JOB NO.
94S2063
DATE
7/24/2009

7/24/2009
#FILE#

LAYOUT	JRH	04/09/02
DRAWN	JRH	03/05/04
REVIEWED	DLH	03/18/04

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

MEASUREMENTS: All dimensions are in millimeters (mm) except as noted.

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 145 km/h WIND VELOCITY

WIND LOADING: 1.44 kPa normal to Sign Panel Area and truss elements not behind sign Loading Diagram.

WALKWAY LOADING: Dead load plus 2.2 kN concentrated live load.

DESIGN STRESSES:

FIELD UNITS
 $f'c = 24 \text{ MPa}$
 $f_y = 400 \text{ MPa}$ (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 241 MPa, or A500 Grade B or C with a minimum yield of 319 MPa. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270M Gr. 250, Gr. 345 or Gr. 345W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 20 J. at 4° C. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" (HS) must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts, and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

STEEL PIPE: DN indicates nominal diameter.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after Fabrication in accordance with AASHTO M111. Painting is not permitted.

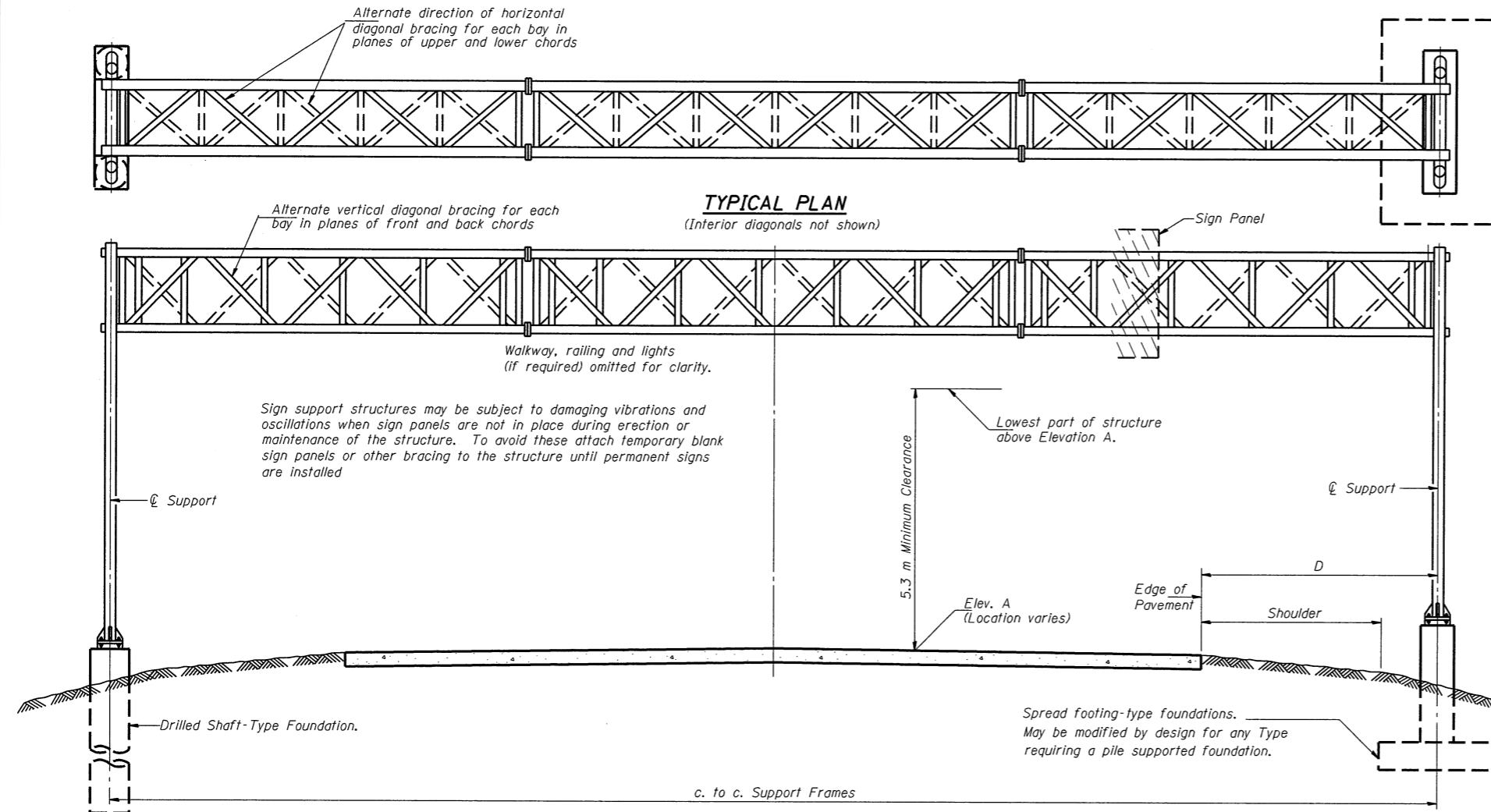
ANCHOR RODS: Shall conform to AASHTO M314 Gr. 250 or 380 (36 or 55) with a minimum Charpy V-Notch (CVN) energy of 20 J at 5° C.

CONCRETE SURFACES: All concrete surfaces above an elevation 150 mm below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

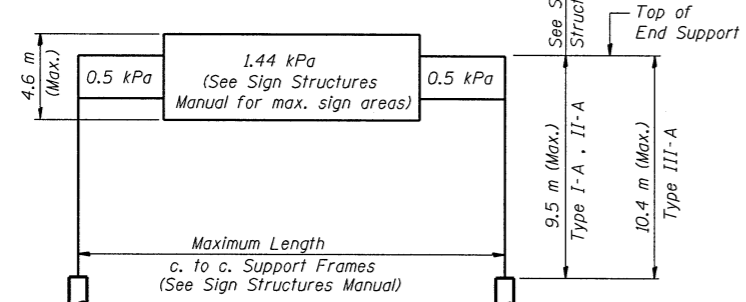
*If M270M Gr. 345W steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.



TYPICAL ELEVATION
(Looking at Face of Signs)**

Structure Number	Station	Design Truss Type	c. to c. Supports (m)	Elev. A	Dim. D (m)	Height of Tallest Sign (m)	Total Sign Area (m ²)
5S0571055R164.7	37+140	I-A	28.46 m	263.048	3.761	3.81	55.70
5S0571055L165.2	37+953	I-A	18.51 m	266.980	4.651	3.81	41.20
5S0571055L165.5	38+425	I-A	22.56 m	272.563	5.491	3.81	48.80
5S0571055L165.8	38+925	I-A	26.2 m	261.781	10.460	4.42	53.88



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

**Looking upstation for structures with signs both sides.

TOTAL BILL OF MATERIAL

NUMBER	REVISION	DATE

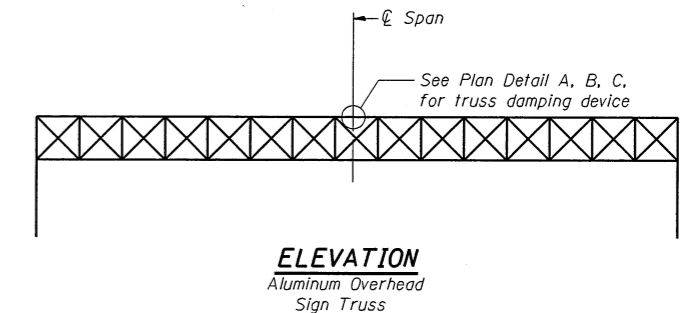
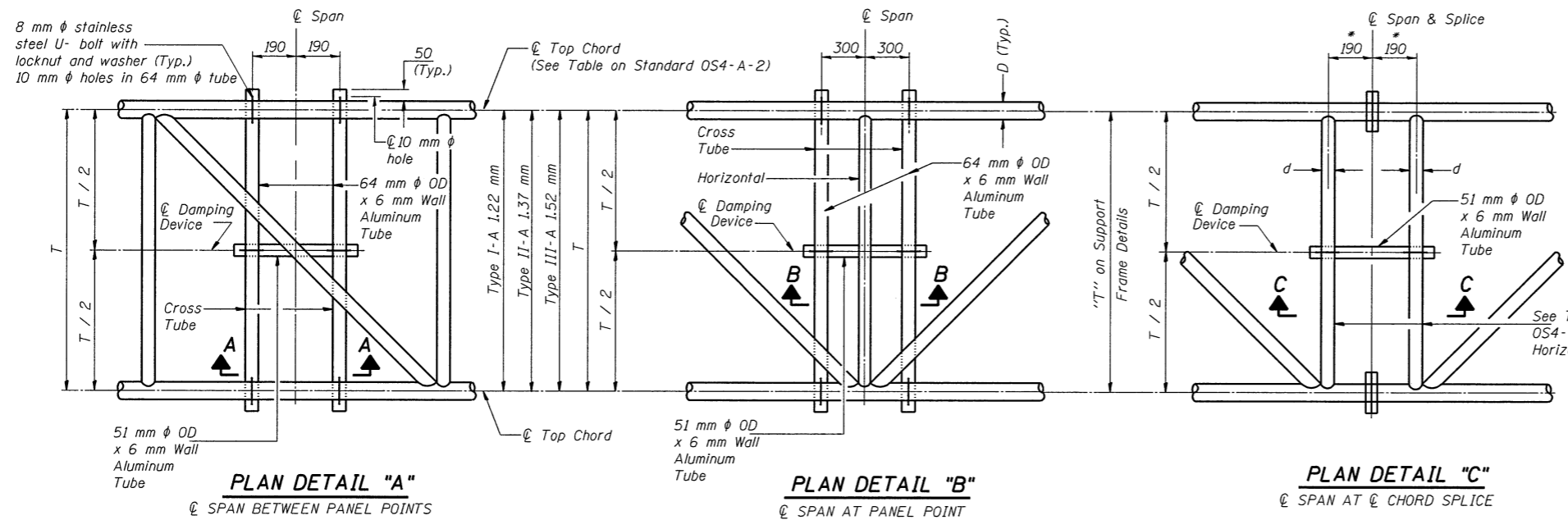
ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE TYPE I-A (1.22 x 1.37)	m	97.4
OVERHEAD SIGN WALKWAY TYPE A	m	55.68
CONCRETE FOUNDATIONS	cu m	101.1

SHEET TITLE		OVERHEAD SIGN STRUCTURE GENERAL PLAN & ELEVATION ALUMINUM TRUSS & STEEL SUPPORTS	
PROJECT	F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	1
			OF 24 SHTS

7/8/2009 FILE:08REV#

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2 24 SHEETS
F. A. I. RTE. 55		McLEAN	310	134	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70757 •(57-4) R, HBY, HBR, (57-4VB) DM		

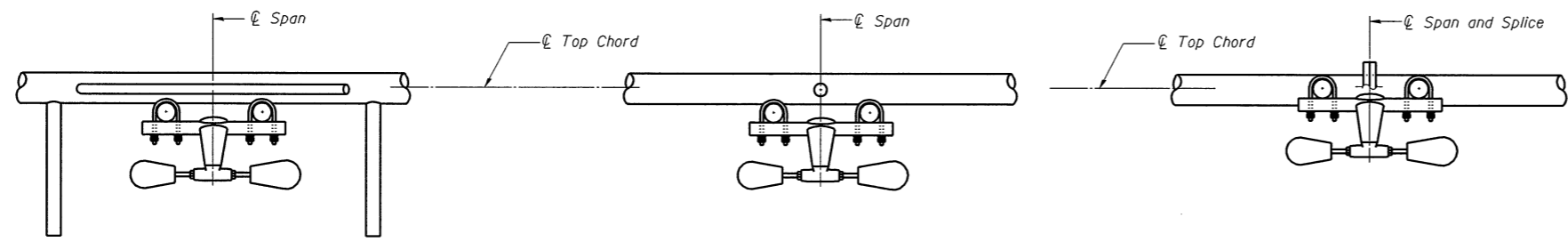
* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.



ELEVATION
Aluminum Overhead Sign Truss

NOTES

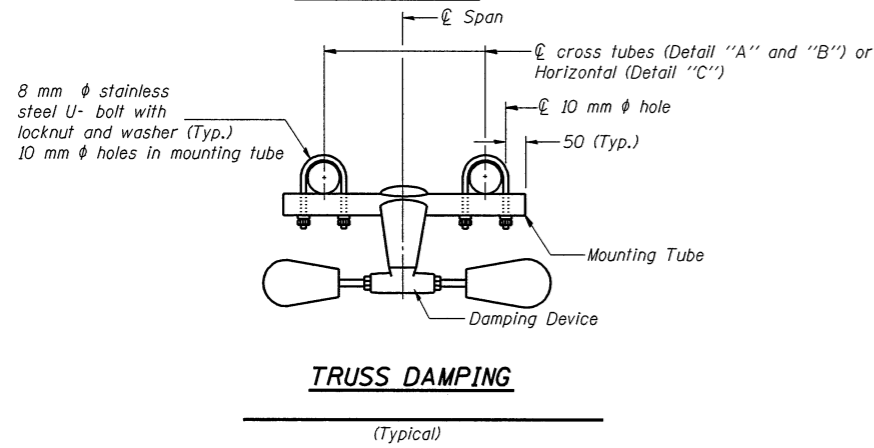
Damper: One damper per truss.
29" Minimum between ends of weights (14 Kg Stockbridge-Type Aluminum)
Cost included in "Overhead Sign Structure..."
Materials: Aluminum tubes shall be ASTM B221M alloy 6061 Temper T6. Cost included in "Overhead Sign Structure..."
All dimensions are in millimeters (mm) except as noted



SECTION A-A

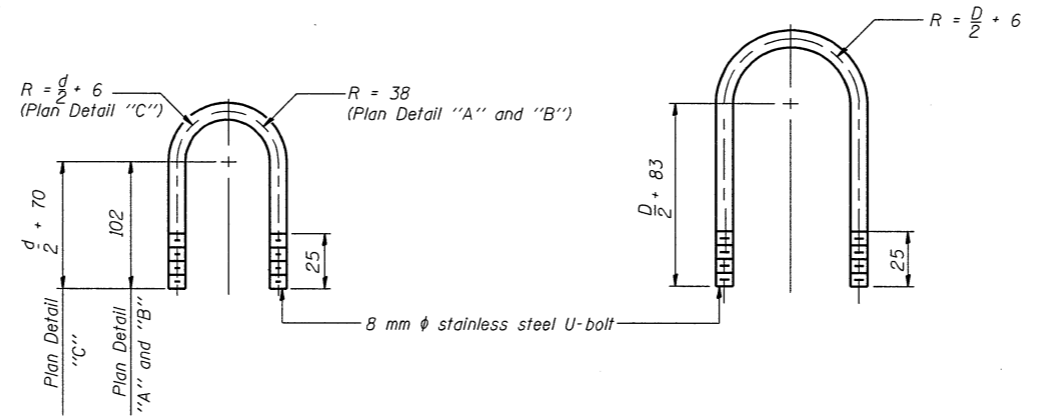
SECTION B-B

SECTION C-C



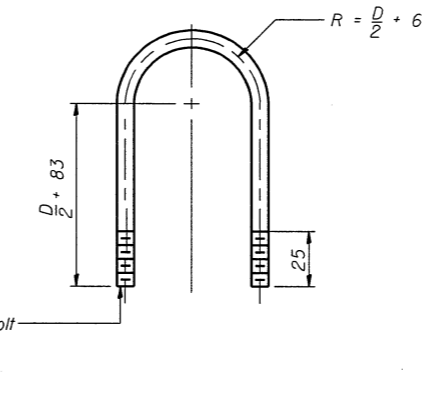
TRUSS DAMPING

(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL

(Typical)



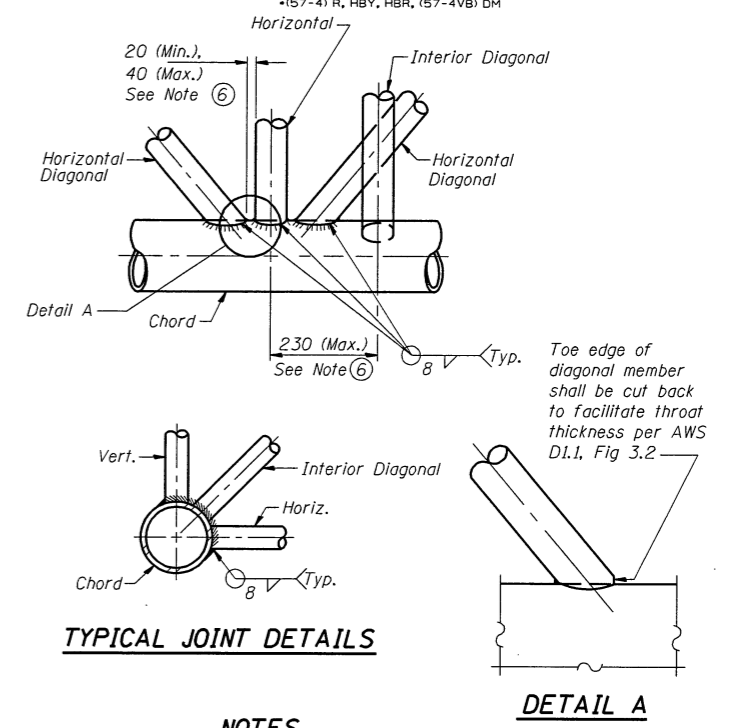
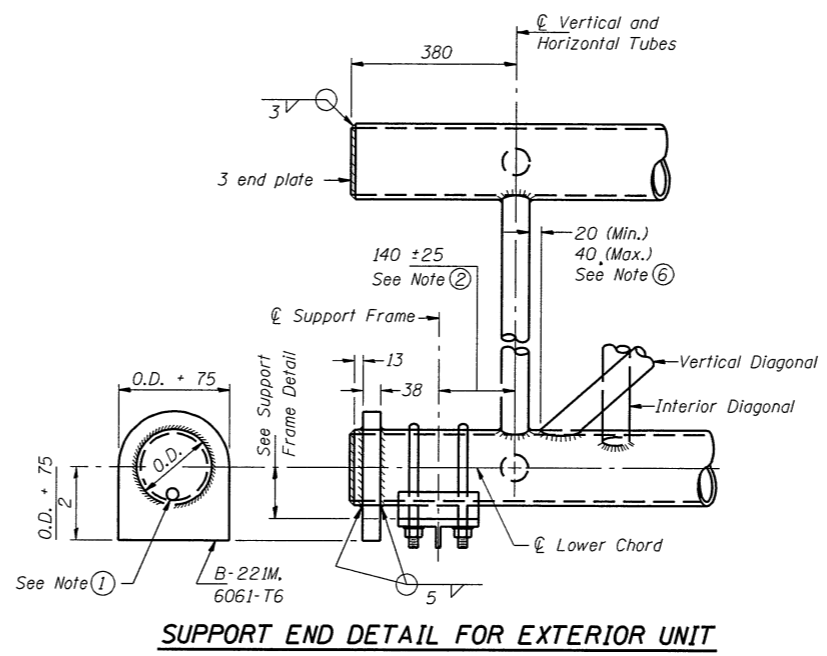
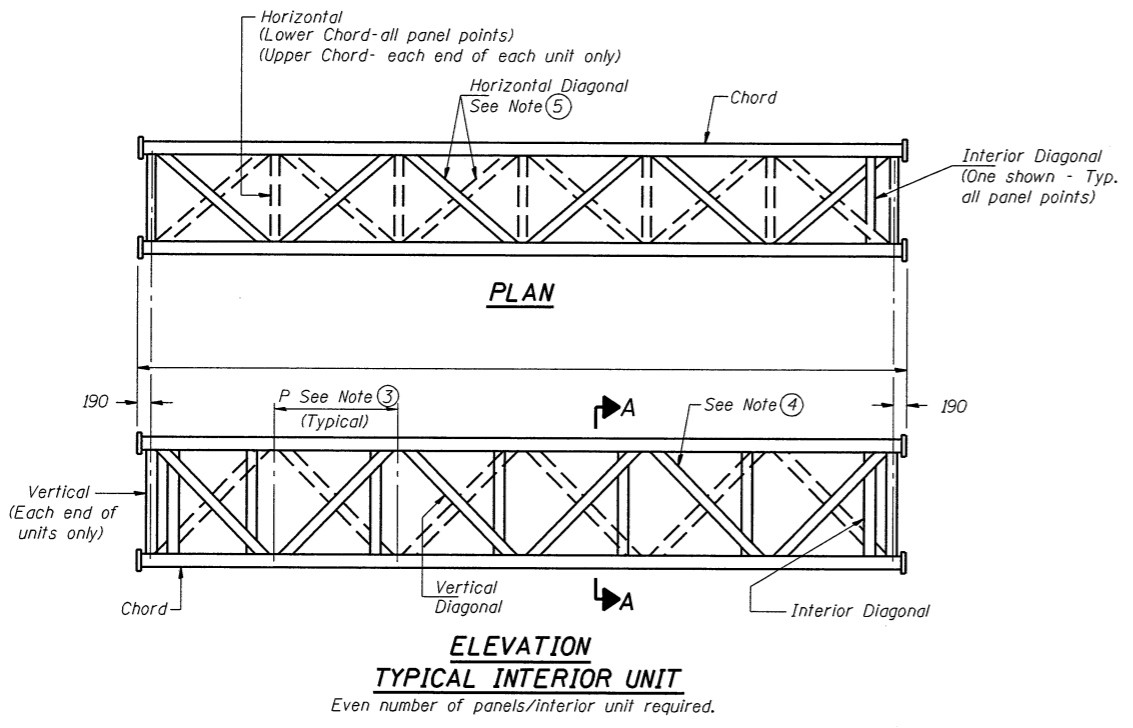
TOP CHORD TO CROSS TUBE U-BOLT DETAIL

(Typical - Detail "A" and "B")

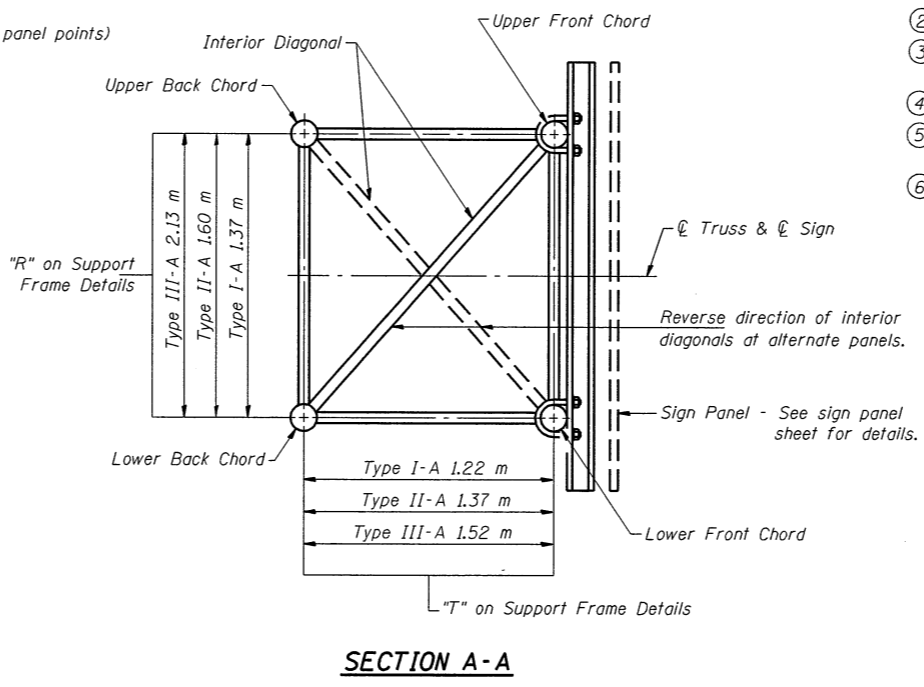
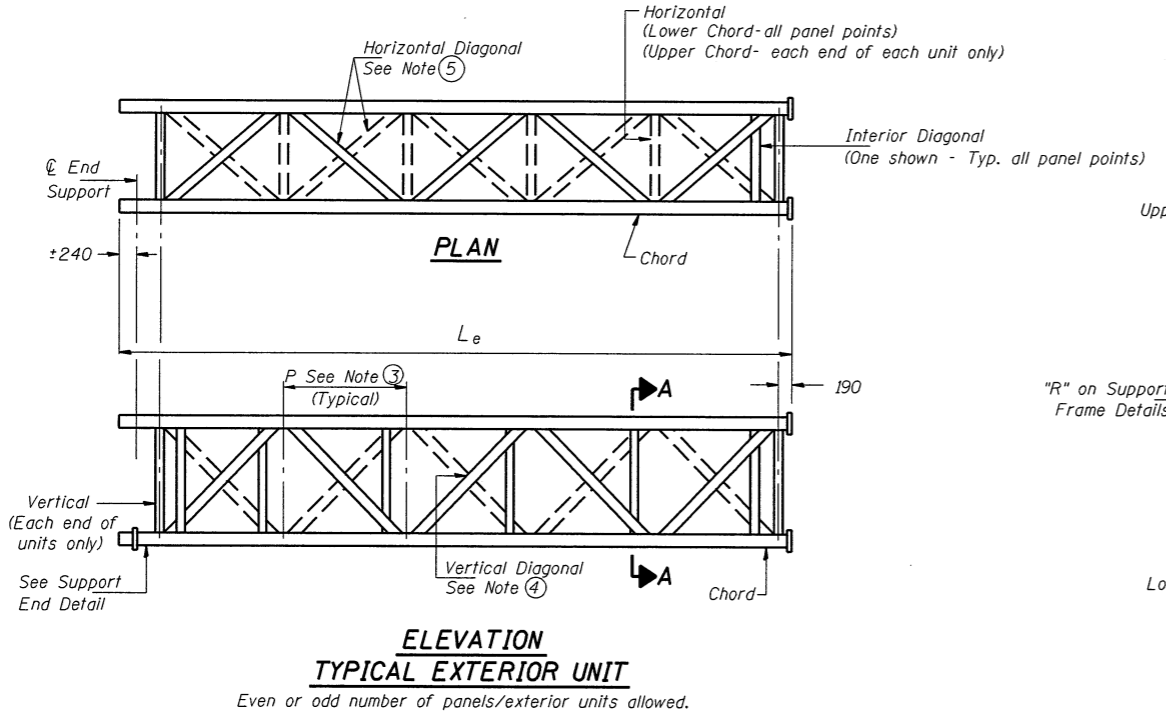
SHEET TITLE OVERHEAD SIGN STRUCTURE DAMPING DEVICE		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	SCALE DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB	DRAWING NO. 2
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		OF 24 SHTS

7/8/2009
\$FILE.ABBREV\$

Contract No. 70757
+157-4) R, HBY, HBR, (57-4VB) DM



- NOTES**
- Contractor may alternatively use standard aluminum drive-fit cap to close end. 13 mm ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
 - 140 mm end dimension may vary by ± 25 mm to provide uniform panel spacing (P).
 - Panel spacing (P) shall be uniform for entire truss and between 1.20 m and 1.50 m for Type I-A or 1.20 m and 1.65 m for Types II-A and III-A.
 - Vertical Diagonals in front and back face shall alternate.
 - Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
 - All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 20 mm minimum to 40 mm maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

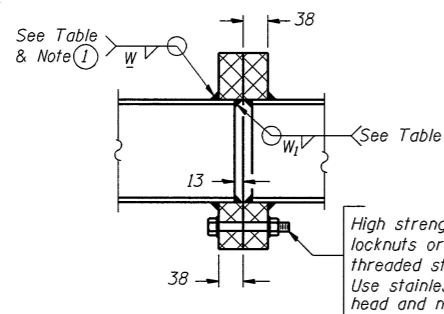


NUMBER	REVISION	DATE

SHEET TITLE OVERHEAD SIGN STRUCTURE ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A	
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO. 9450 SCALE DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB DRAWING NO. 3
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
OF 24 SHTS	

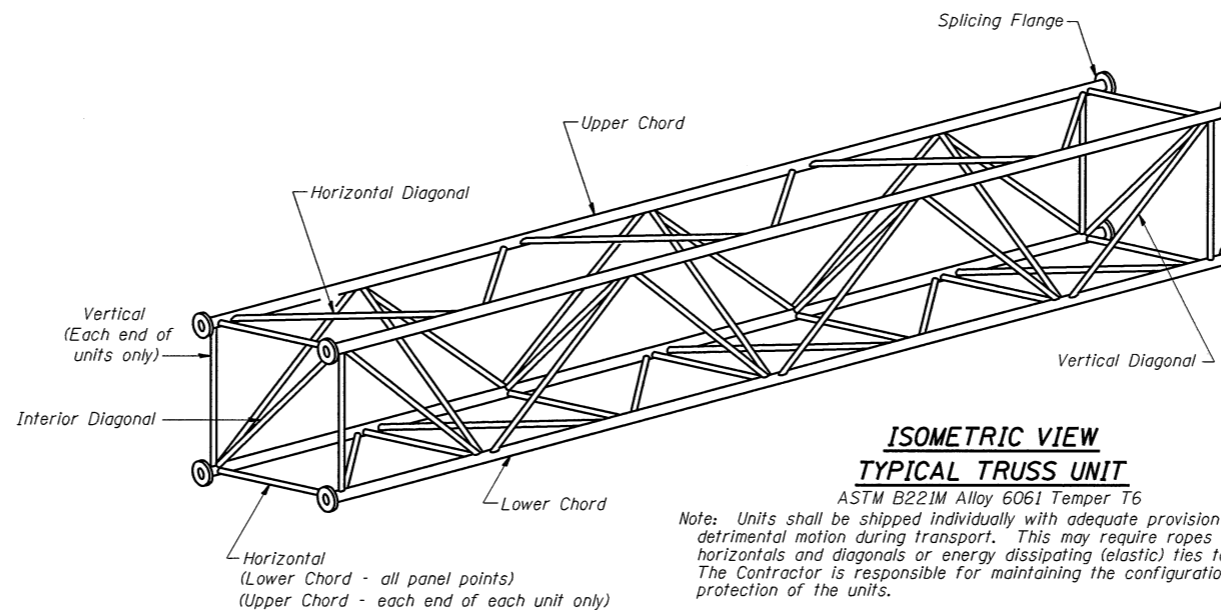
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals				Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L _e) (m)	Panel Lgth.(P) (m)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L _i) (m)	Panel Lgth.(P) (m)	O.D.	Wall	O.D.	Wall	Bolts			Weld Sizes		A	B		
														No./Splice	Dia.		W	W _i				
5S0571055R164.7	37+140	I-A	7	10.181	1.373	1	6	8.618	1.373	140	8	64	8	79	6	22	10	6	230	311		
5S0571055L165.2	37+953	I-A	6	9.486	1.486	0				127	6	64	6	34	6	22	8	6	222	298		
5S0571055L165.5	38+425	I-A	8	11.49	1.365	0				127	8	64	8	52	6	22	8	6	222	298		
5S0571055L165.8	38+925	I-A	6	8.886	1.386	1	6	8.696	1.386	127	8	64	8	66	6	22	8	6	222	298		



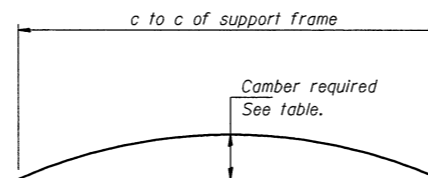
SECTION B-B

① Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



**ISOMETRIC VIEW
TYPICAL TRUSS UNIT**

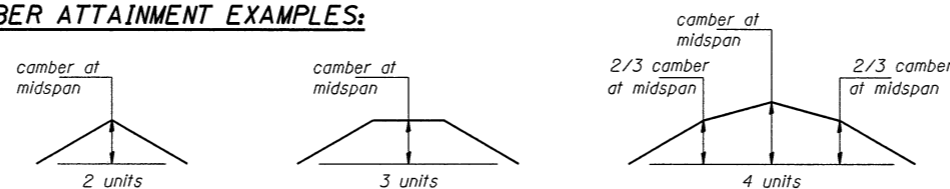
ASTM B221M Alloy 6061 Temper T6
 Note: Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



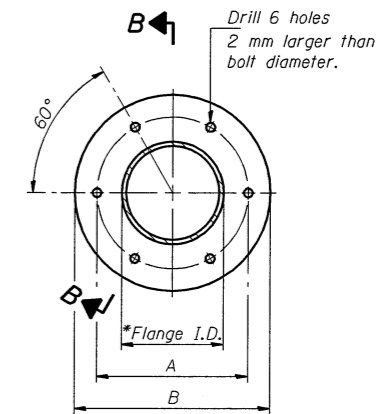
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

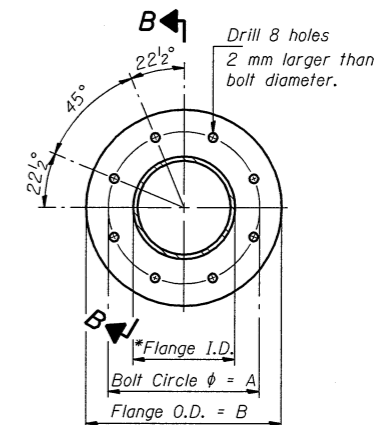
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

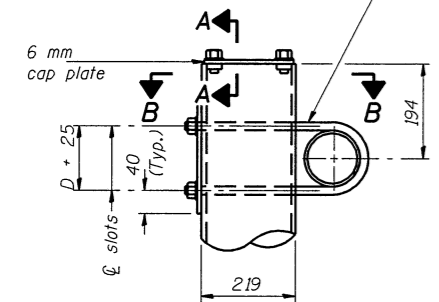
SPLICING FLANGES

ASTM B221M, Alloy 6061-T6
 or ASTM B209M, Alloy 6061-T651
 *To fit O.D. of Chord with maximum gap of 2 mm.

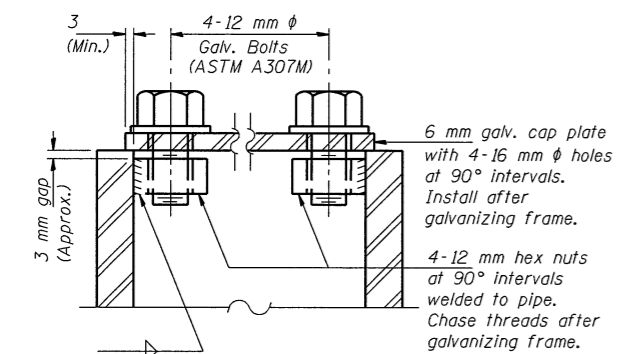
NUMBER	REVISION	DATE

SHEET TITLE OVERHEAD SIGN STRUCTURE ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	SCALE	DATE 10/08/04
ENGINEER COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWN BY TFG CHECKED BY MCB	DRAWING NO. 4
OS4-A-2(M)	11/1/2002	OF 24 SHTS

19 mm ϕ stainless steel U-bolt
 Provide two washers and two hexagon locknuts. (4)
 21 mm x 51 mm slots on ϕ DN 200 pipe.
 (4 slots required per pipe)

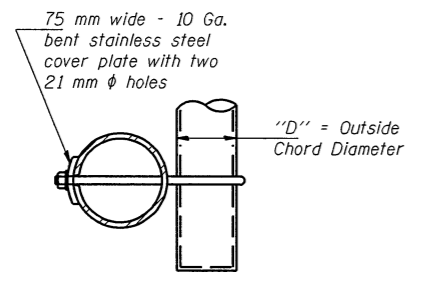


DETAIL A

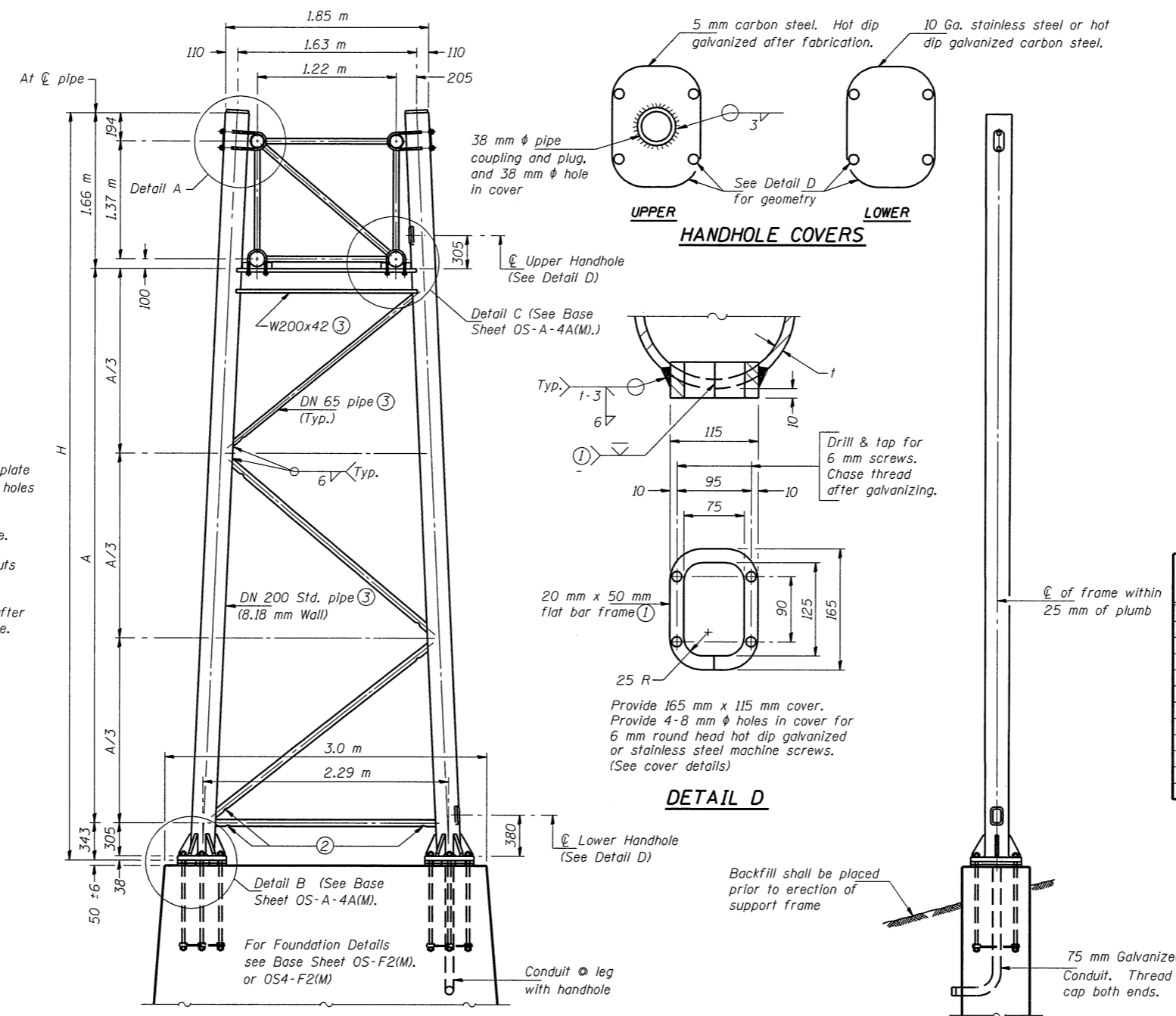


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.

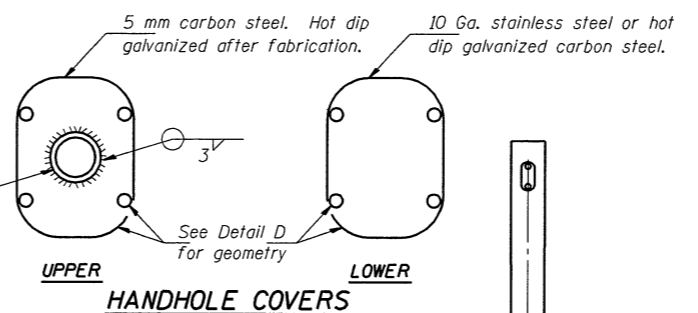


SECTION B-B

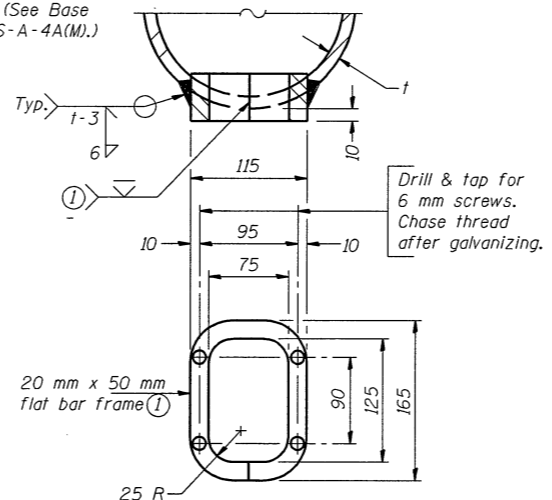


SIDE ELEVATION

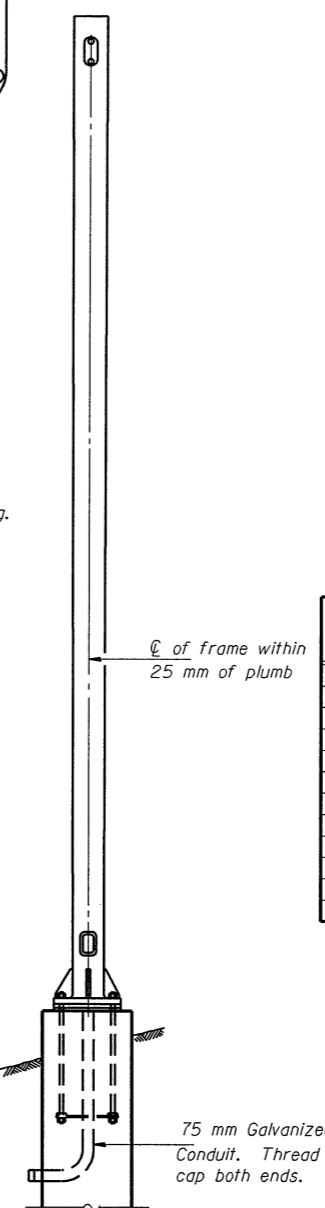
DN 200 PIPE TRUSS SUPPORT FRAME



HANDHOLE COVERS



DETAIL D



END ELEVATION

Support Design Loads: See Base Sheet OS-A-1(M) for design and loading criteria.
 Load combinations checked include deadload plus:
 a) 100% wind normal to sign, 20% parallel to sign
 b) 60% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 50 mm plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 12.7 μ m or less.
- Galvanizing vent holes of adequate size shall be provided on underside of each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1(M).
- See General Notes for fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
- "H" based on 15'-0" or actual sign height, whichever is greater.

Structure Number	Station	Support		H (m)	A (m)
		Left	Right		
5S0571055L165.2	37+953	X		8.545	6.542
5S0571055L165.2	37+953		X	8.210	6.207
5S0571055L165.5	38+425	X		8.558	6.555
5S0571055L165.5	38+425		X	8.317	6.314

NUMBER	REVISION	DATE

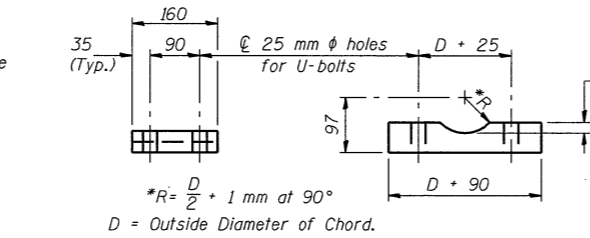
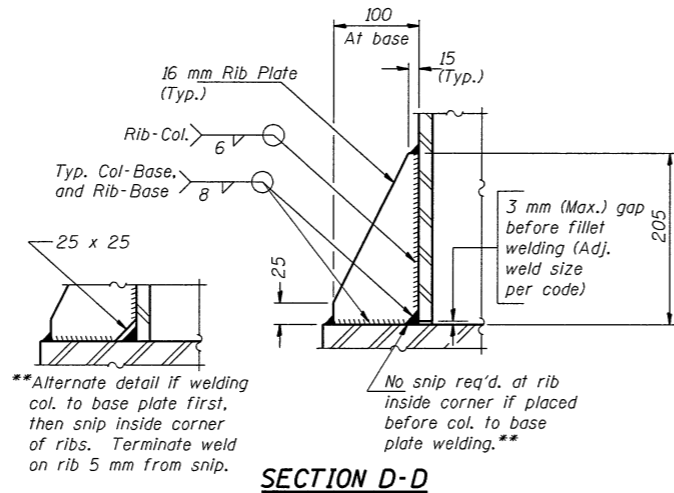
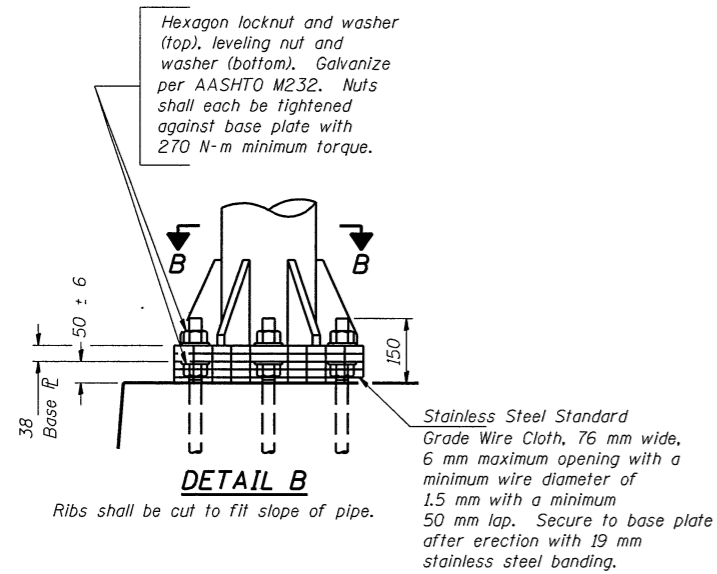
SHEET TITLE
 OVERHEAD SIGN STRUCTURE
 SUPPORT FRAME FOR TYPE I-A ALUMINUM TRUSS

PROJECT
 F. A. I. 55
 SECTION (57-4)R, HBY, HBR,
 (57-4VB)DM
 McLEAN COUNTY

PROJECT NO. 9450
SCALE
DATE 10/08/04
DRAWN BY TFC
CHECKED BY MCB
DRAWING NO.

COOMBE-BLOXDORF P.C.
 Engineers / Land Surveyors
 Springfield, Illinois
 Design Firm License No. 184-002703

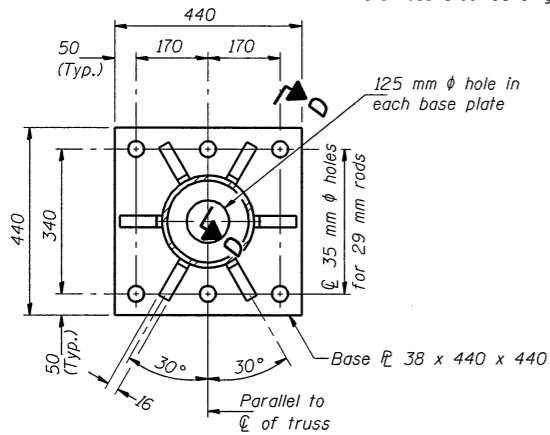
5
 OF 24 SHTS



SADDLE SHIM DETAIL

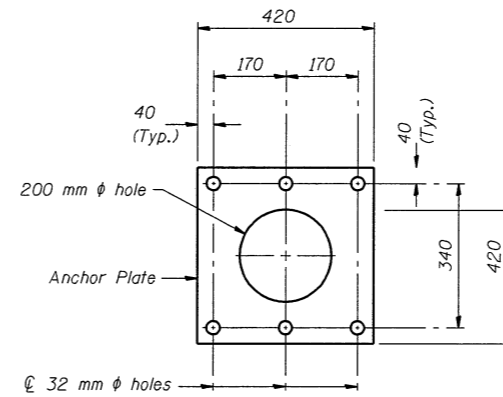
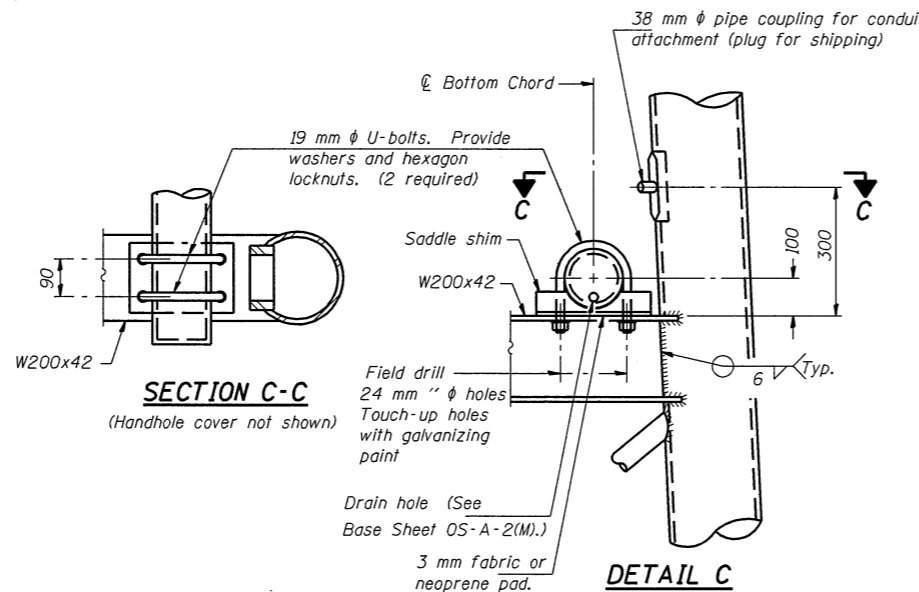
ASTM B26M Alloy 356-F
or
ASTM B209M Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
127	19
140	21
152	22
165	24

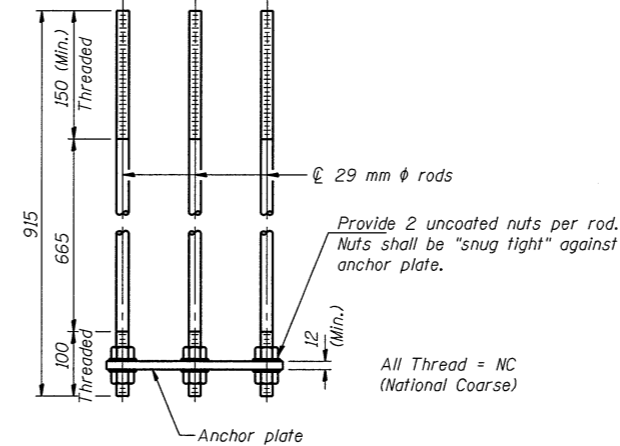


SECTION B-B

NUMBER	REVISION	DATE

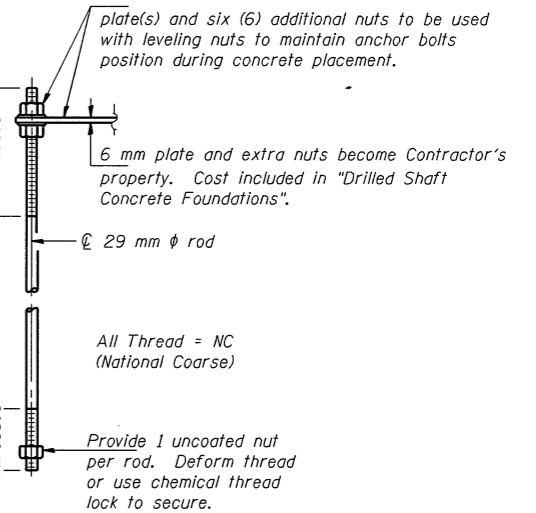
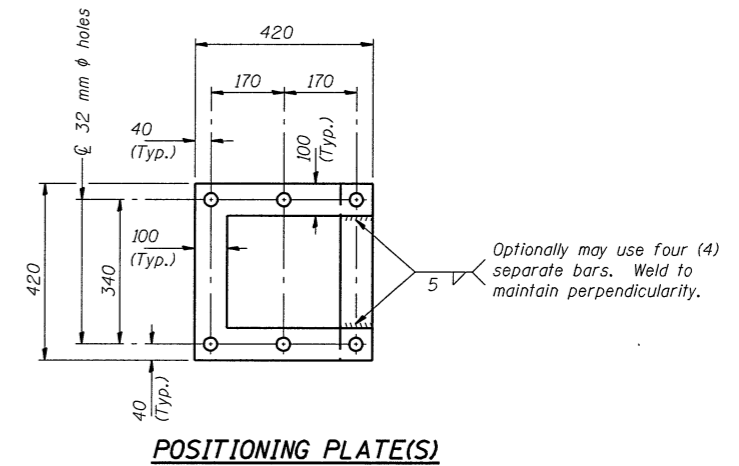


ANCHOR ROD DETAIL
Spread Footing Foundation



Anchor rods shall conform to AASHTO M314M Grade 250 or 380 (36 or 55) and meet Charpy V-Notch (CVN) energy of 20 J at 5° C. Galvanize upper 305 mm per AASHTO M232. No welding shall be permitted on rods.

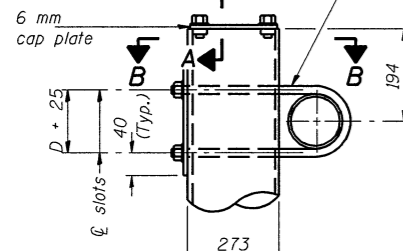
TYPE I-A TRUSS
DN 200 PIPE SUPPORT FRAME DETAILS



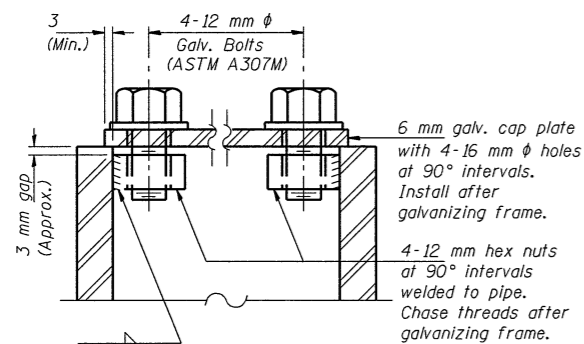
ANCHOR ROD DETAIL
Drilled Shaft Foundation

SHEET TITLE OVERHEAD SIGN STRUCTURE SUPPORT FRAME DETAILS ALUMINUM TRUSS		
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO. 9450 SCALE DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB DRAWING NO. 6	OF 24 SHTS
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		

19 mm ϕ stainless steel U-bolt
Provide two washers and two hexagon locknuts. (4)
21 mm x 51 mm slots on ϕ DN 250 pipe.
(4 slots required per pipe)

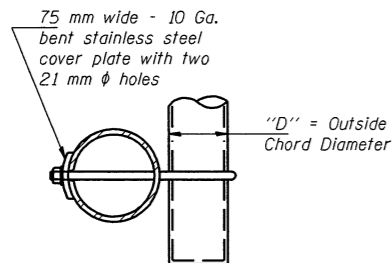


DETAIL A

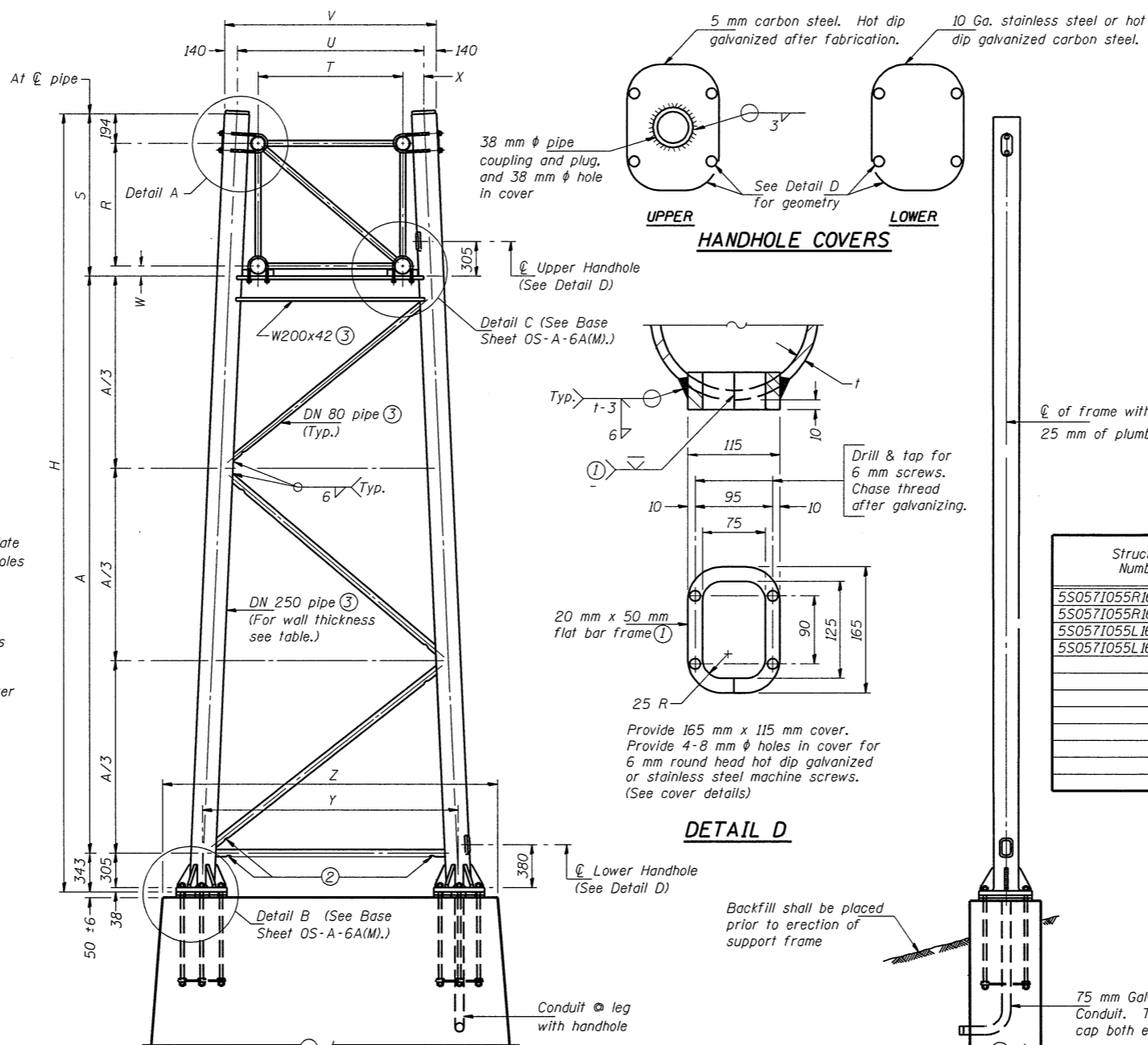


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



SECTION B-B

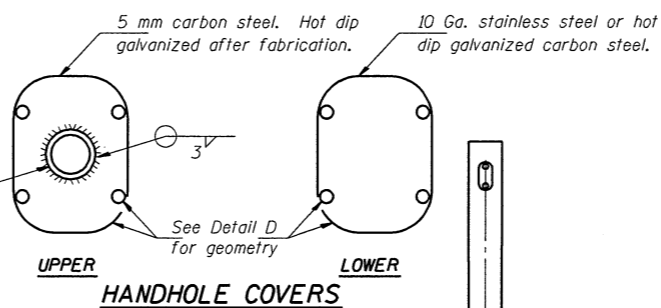


FOR FOUNDATION DETAILS SEE BASE SHEET OS-F3(M) (Spread Footing) or OS4-F3(M) (Drilled Shaft).

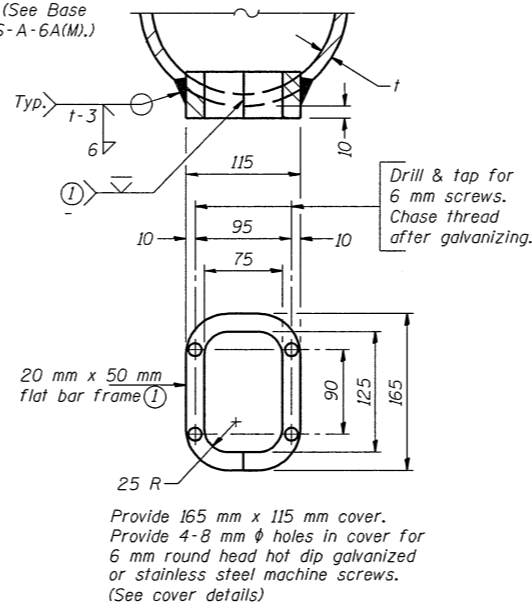
SIDE ELEVATION

DN 250 PIPE TRUSS SUPPORT FRAME

Truss Type	Dimensions								
	R (m)	S (m)	T (m)	U (m)	V (m)	W (mm)	X (mm)	Y (m)	Z (m)
I-A	1.37	1.66	1.22	1.68	1.96	100	230	2.52	3.28
II-A (5)	1.60	1.91	1.37	1.85	2.13	120	240	2.52	3.28

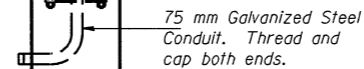


UPPER and LOWER HANDHOLE COVERS



DETAIL D

Backfill shall be placed prior to erection of support frame



END ELEVATION

Support Design Loads: See Base Sheet OS-A-1(M) for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 50 mm plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 12.7 μ m or less.
- Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1(M).
- See General Notes for fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
- "H" based on 15'-0" or actual sign height, whichever is greater.

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H (m)	A (m)
		Left	Right				
5S0571055R164.7	37+140	X		I-A	7.09	8.317	6.314
5S0571055R164.7	37+140		X	I-A	7.09	8.240	6.237
5S0571055L165.8	38+925	X		I-A	7.09	9.046	7.043
5S0571055L165.8	38+925		X	I-A	7.09	8.304	6.301

NUMBER	REVISION	DATE

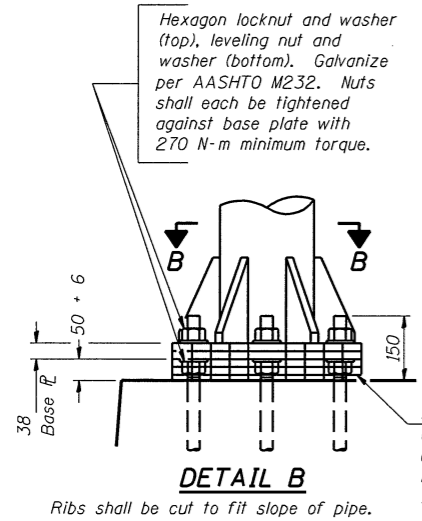
SHEET TITLE
OVERHEAD SIGN STRUCTURE
SUPPORT FRAME DETAILS ALUMINUM TRUSS

PROJECT
F.A.I. 55
SECTION (57-4)R, HBY, HBR,
(57-4VB)DM
McLEAN COUNTY

PROJECT NO. 9450
SCALE
DATE 10/08/04
DRAWN BY TFG
CHECKED BY MCB
DRAWING NO.

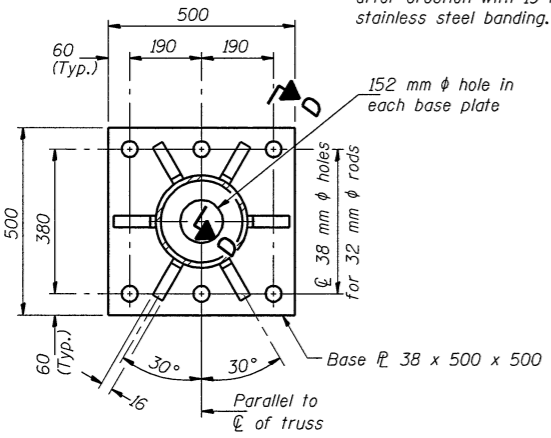
COOMBE-BLOXDORF P.C.
Engineers/Land Surveyors
Springfield, Illinois
Design Firm License No. 184-002703

7
OF 24 SHTS

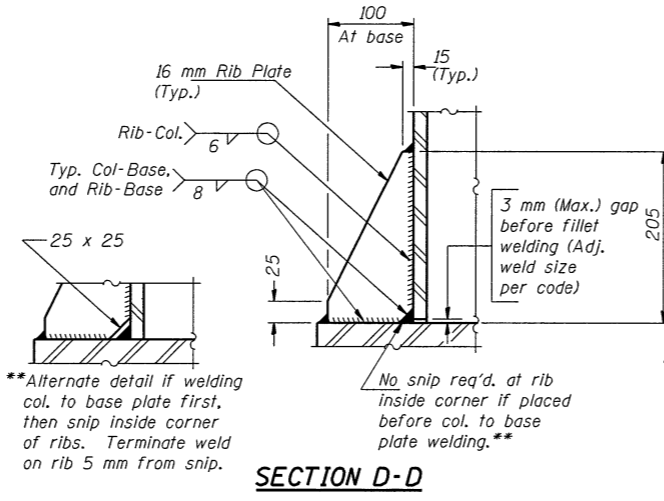


DETAIL B

Ribs shall be cut to fit slope of pipe.
Stainless Steel Standard Grade Wire Cloth, 76 mm wide, 6 mm maximum opening with a minimum wire diameter of 1.5 mm with a minimum 50 mm lap. Secure to base plate after erection with 19 mm stainless steel banding.

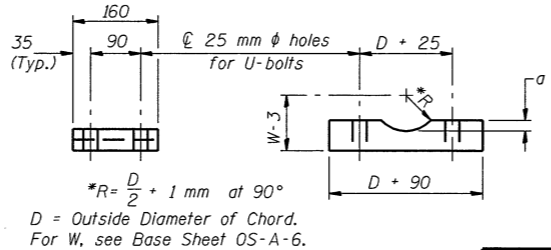


SECTION B-B



SECTION D-D

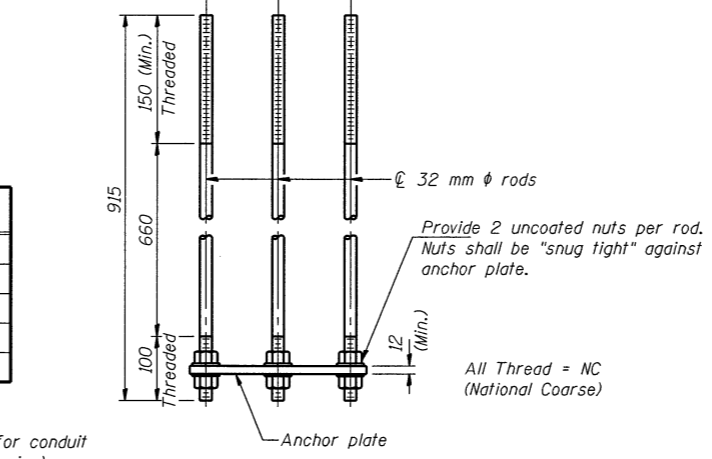
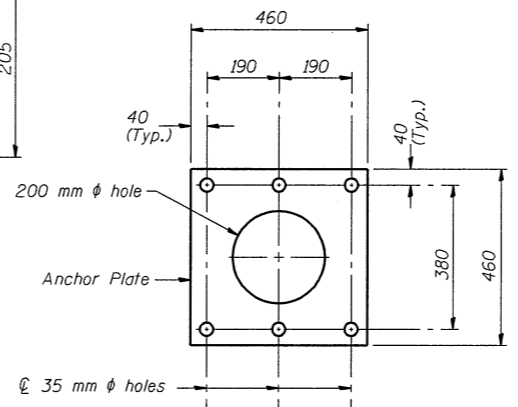
**Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 5 mm from snip.



SADDLE SHIM DETAIL

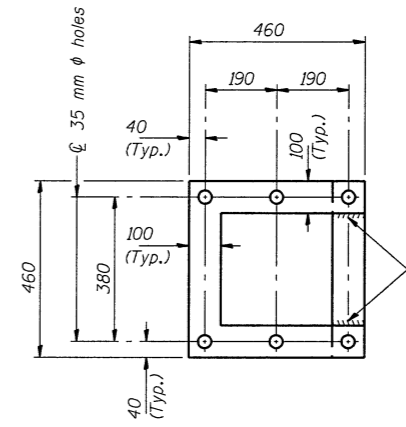
ASTM B26M Alloy 356-F
or
ASTM B209M Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
127	19
140	21
152	22
165	24
178	25

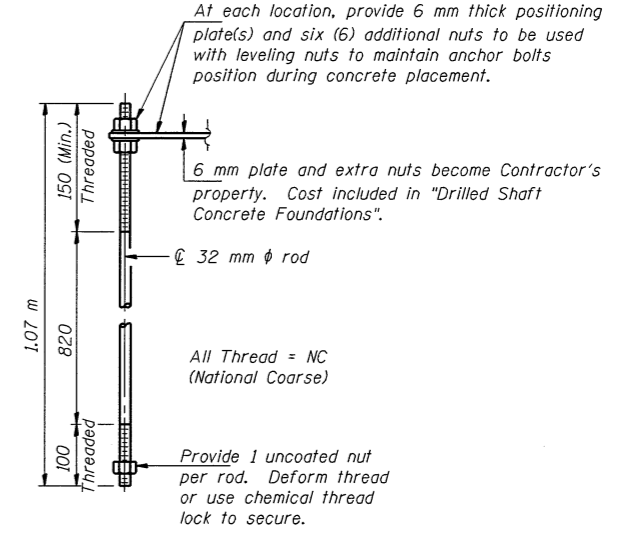


ANCHOR ROD DETAIL
Spread Footing Foundation

Anchor rods shall conform to AASHTO M314M Grade 250 or 380 (36 or 55) and meet Charpy V-Notch (CVN) energy of 20 J at 5°C. Galvanize upper 305 mm per AASHTO M232. No welding shall be permitted on rods.

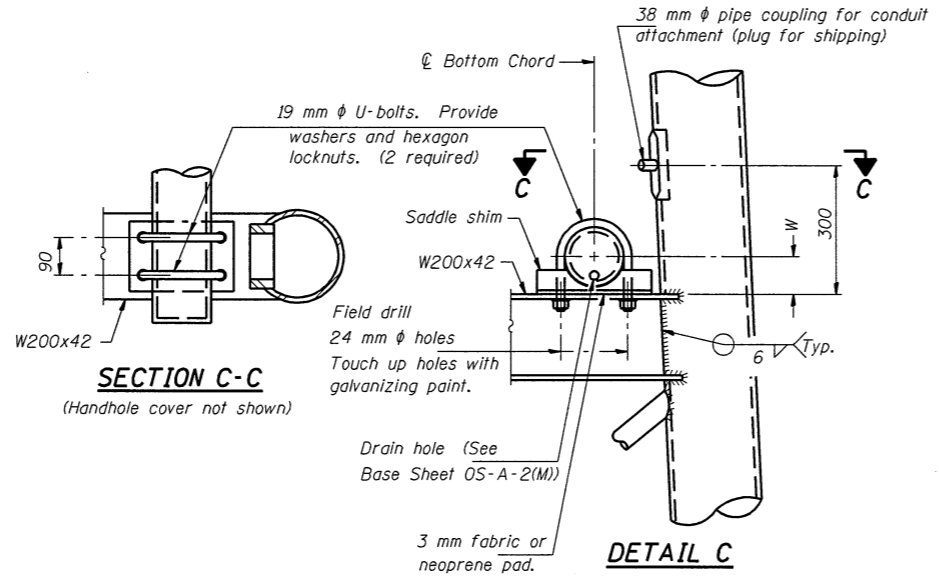


POSITIONING PLATE(S)



ANCHOR ROD DETAIL
Drilled Shaft Foundation

NUMBER	REVISION	DATE



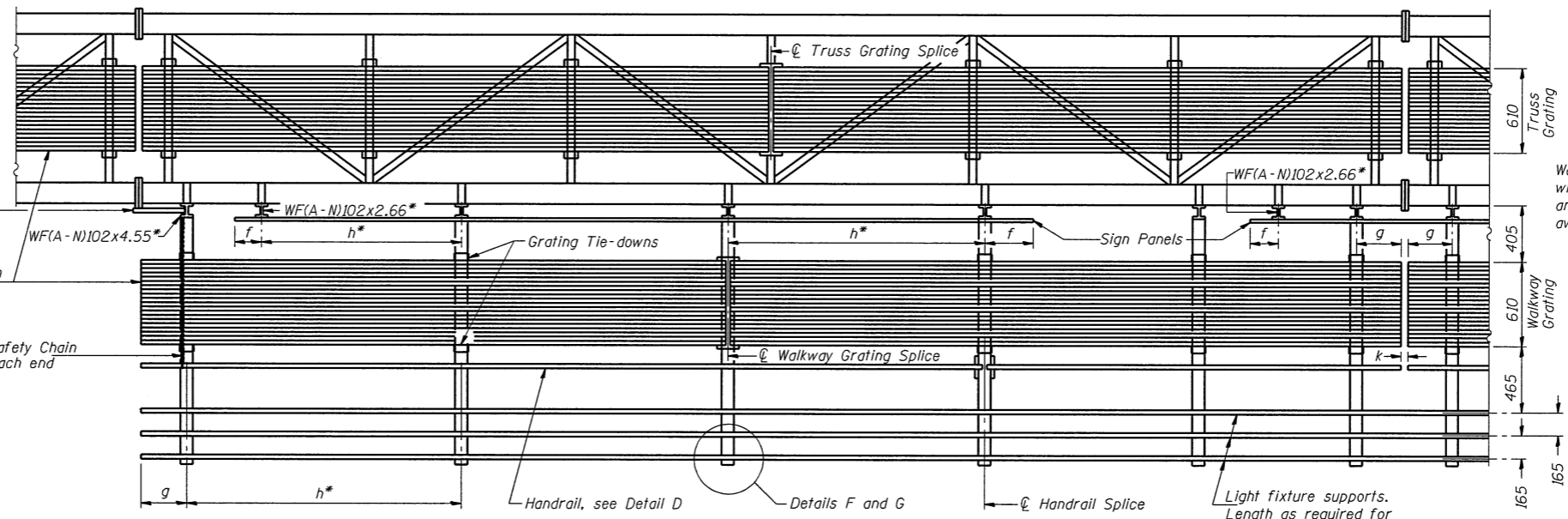
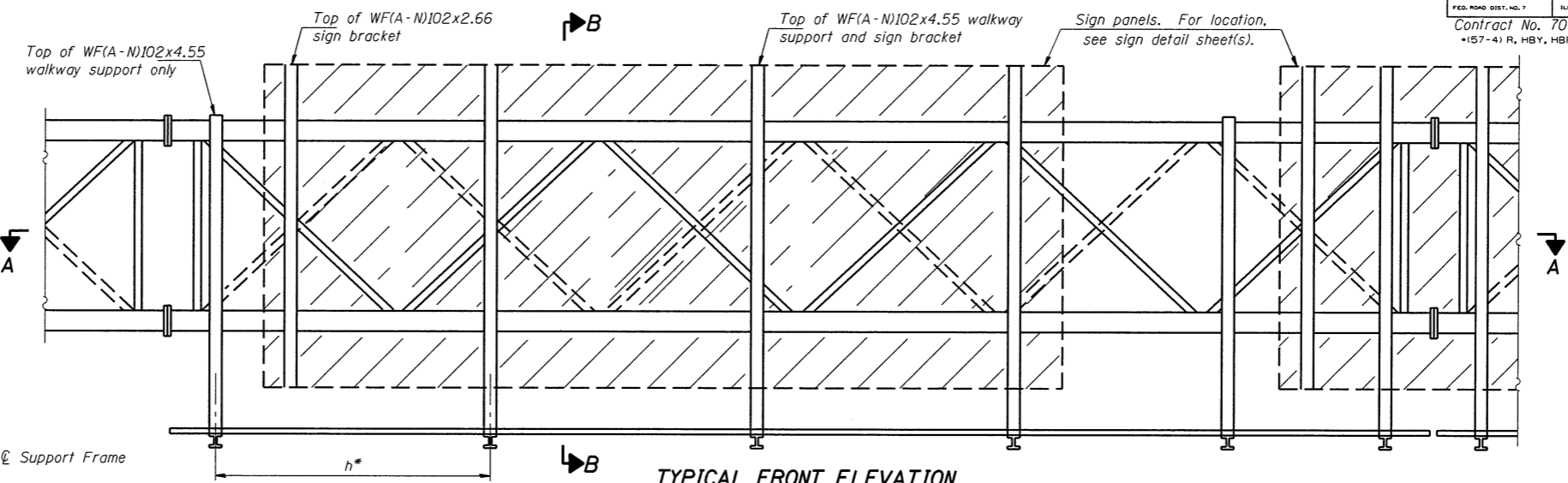
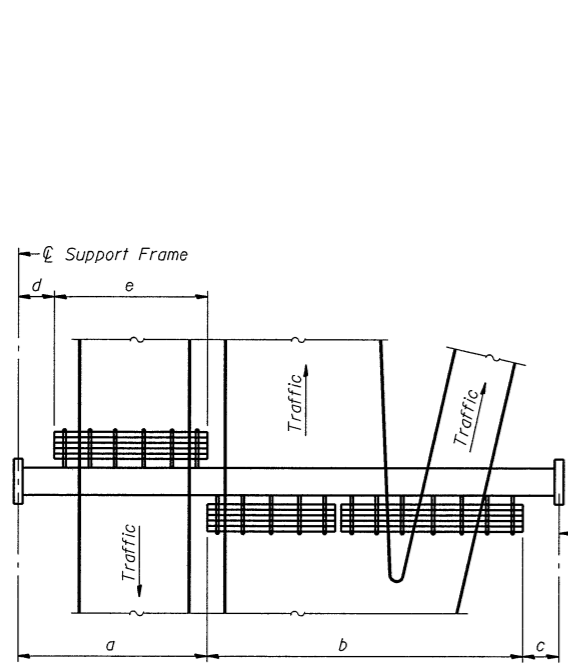
SECTION C-C
(Handhole cover not shown)

DETAIL C

DN 250 PIPE SUPPORT FRAME DETAILS

SHEET TITLE		OVERHEAD SIGN STRUCTURE SUPPORT FRAME DETAILS ALUMINUM TRUSS	
PROJECT	F. A. I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	8
OS-A-6A(M) 11/1/2002		OF 24 SHTS	

7/18/2009
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BRACKET TABLE

WF(A-N)102x2.66 or WF(A-N)102x4.55 ASTM B308M, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	2.45	2
2.45	4.3	3
4.3	6.15	4
6.15	8.0	5
8.0	9.85	6

Notes: *Space walkway brackets WF(A-N)102x4.55 and sign brackets WF(A-N)102x2.66 for efficiency and within limits shown:

- f = 300 mm maximum, 100 mm minimum (End of sign to \mathcal{C} of nearest bracket)
- g = 300 mm maximum, 100 mm minimum (End of walkway grating to \mathcal{C} of nearest support bracket)
- h = 1.85 m maximum (\mathcal{C} to \mathcal{C} sign and/or walkway support brackets, WF(A-N)102x2.66 or WF(A-N)102x4.55)
- k = 50 mm maximum gap between adjacent walkway grating sections and handrail ends

**If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11(M).

For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-A-10(M).
For Details D, F, G and P and Handrail Splice Details, see Base Sheet OS-A-11(M).

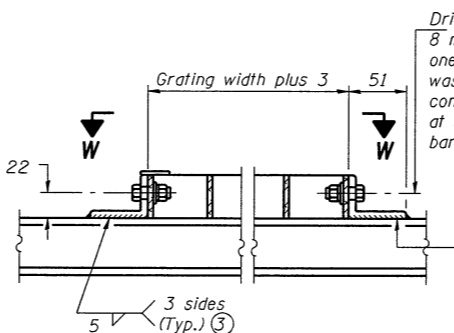
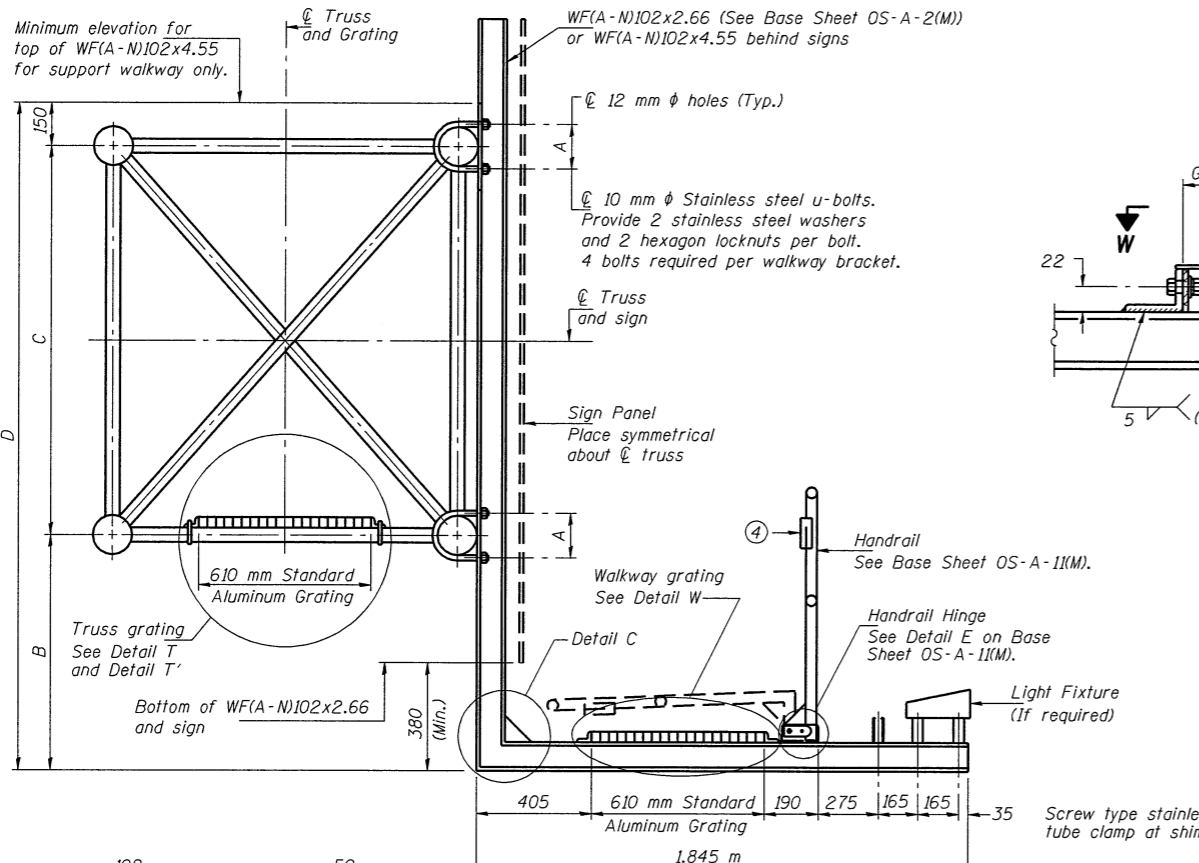
NUMBER	REVISION	DATE

Structure Number	Station	a (m)	b (m)	c (m)	d (m)	e (m)	Walkway Grating and Handrail Lengths
5S0571055R164.7	37+140	8.85	17.049	2.561	—	—	17.049 m
5S0571055L165.2	37+953	3.47	11.589	3.451	—	—	11.589 m
5S0571055L165.5	38+425	4.64	13.629	4.291	—	—	13.629 m
5S0571055L165.8	38+925	3.97	13.413	8.817	—	—	13.413 m

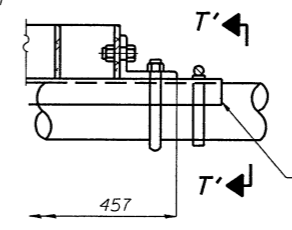
Truss grating to facilitate inspection shall run full length (center to center of support frames) ± 305 mm on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

SHEET TITLE		OVERHEAD SIGN STRUCTURE ALUMINUM WALKWAY DETAILS	
PROJECT	F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
DATE	10/08/04	SCALE	AS SHOWN
DRAWN BY	TFG	CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	9
		OF 24 SHTS.	

7/18/2009 \$FILE:ABBREV\$

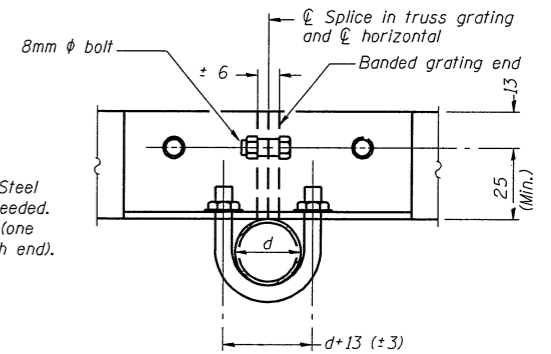


DETAIL W
(Walkway grating)

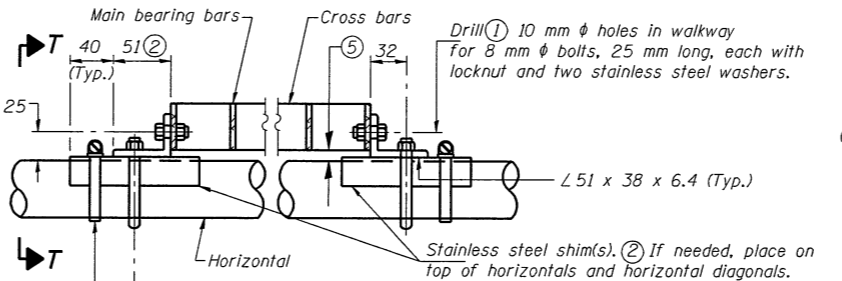


DETAIL T'
(Truss grating splice)

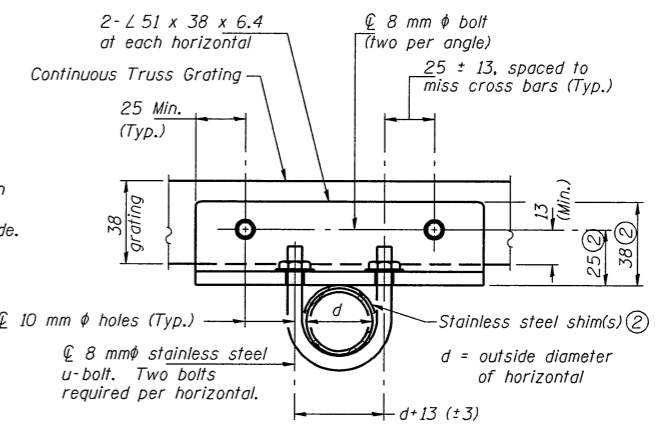
Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



SECTION T'-T'



DETAIL T



SECTION T-T

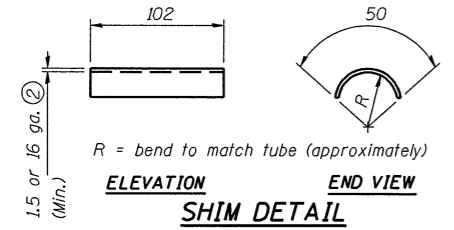
SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 5 mm x 38 mm on 30 mm centers and conform to ASTM B221M Alloy 6061-T6.
Cross bars shall be 5 mm x 38 mm on 102 mm centers and conform to ASTM B221M Alloy 6063-T5 or 6061-T6

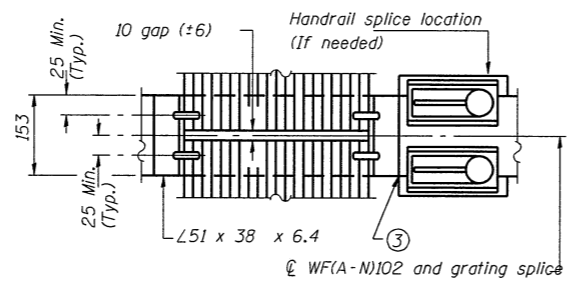
OR

Aluminum Grating with modified "4" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221M Alloy 6061-T6 and have a minimum section modulus equal to $1.16 \times 10^3 \text{ mm}^3$ per bar, a depth of 38 mm, spaced on 30 mm centers.
Cross bars shall conform to ASTM B221M Alloy 6063-T5 or T-42 and spaced on 100 mm centers.

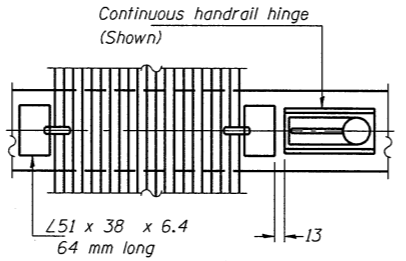
Structure Number	Station	A	B	C	D
5S0571055R164.7	37+140	153	1.60	1.37	3.12
5S0571055L165.2	37+953	140	1.60	1.37	3.12
5S0571055L165.5	38+425	140	1.60	1.37	3.12
5S0571055L165.8	38+925	140	1.905	1.37	3.425



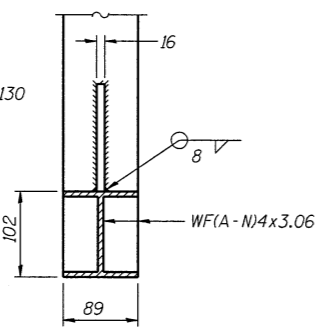
SECTION B-B



(AT WALKWAY GRATING SPLICE)



SECTION W-W



SECTION C-C

DETAIL C

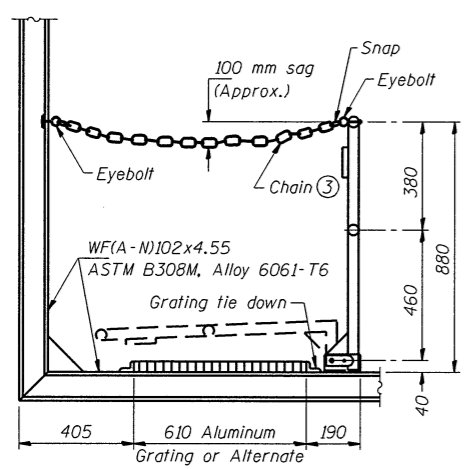
(See Detail P, Base Sheet OS-A-11(M).)

NUMBER	REVISION	DATE

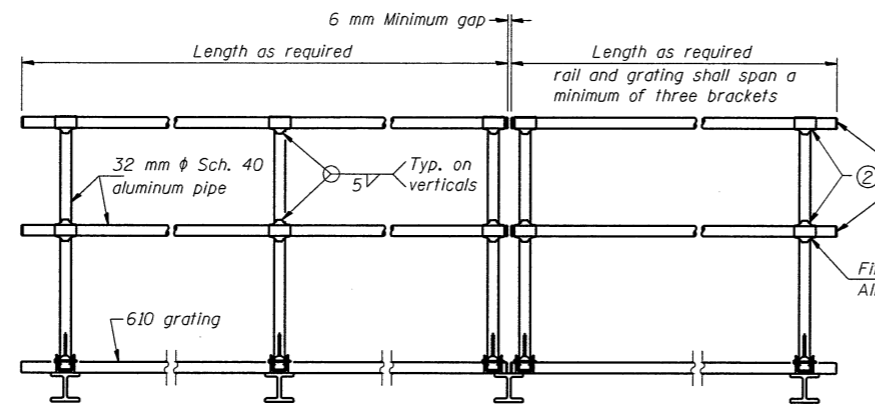
- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF(A-N)102 and 6 mm extension bars. (See Base Sheet OS-A-11(M).)
- ϕ 3 mm x 13 mm x 50 mm welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to $\frac{1}{2}$ " max. to align walkway

SHEET TITLE		OVERHEAD SIGN STRUCTURE ALUMINUM WALKWAY DETAILS	
PROJECT	F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
		SCALE	
		DATE	10/08/04
		DRAWN BY	TFG
		CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	10
			OF 24 SHTS

Contract No. 70757
 *(57-4) R, HBY, HBR, (57-4VB) DM

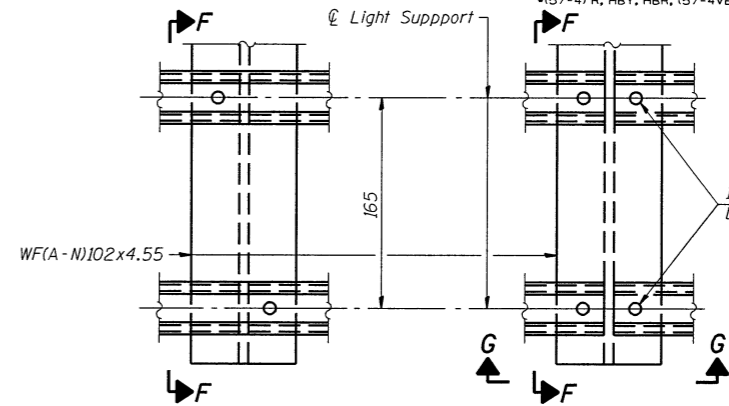


SIDE ELEVATION
 (Showing safety chain w/o sign)



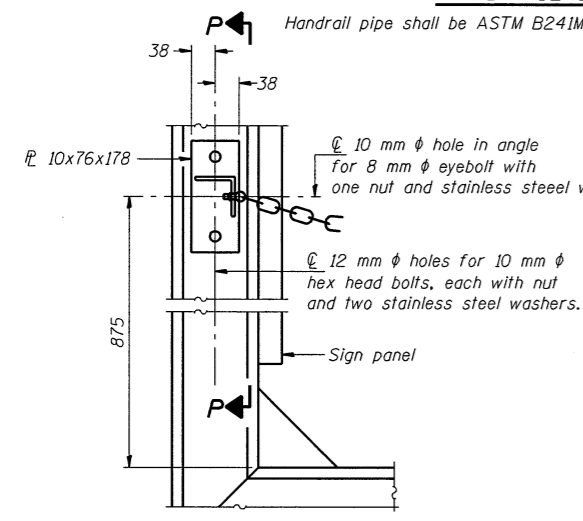
FRONT ELEVATION

② Horizontal handrail member shall be continuous thru fitting. Provide 12 mm hole in fitting for 10 mm bolt. Field drill 12 mm hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 8 mm eyebolts in 12 mm holes on top rail at ends only.)



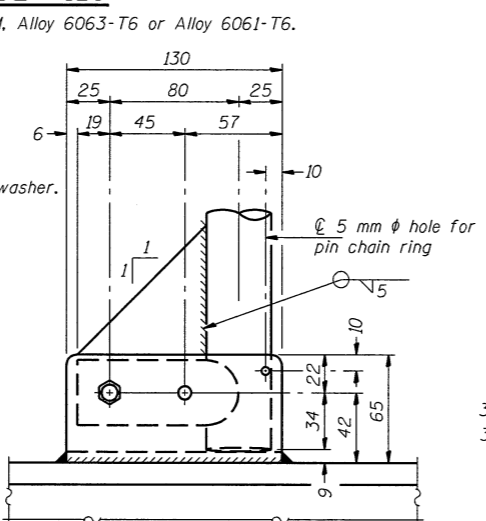
DETAIL F

DETAIL G



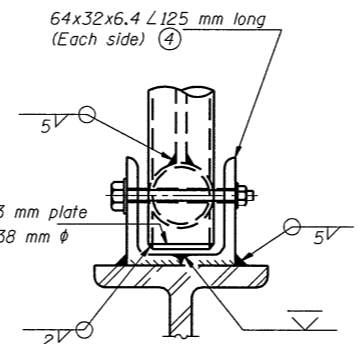
ALTERNATE SAFETY CHAIN ATTACHMENT
 (With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"



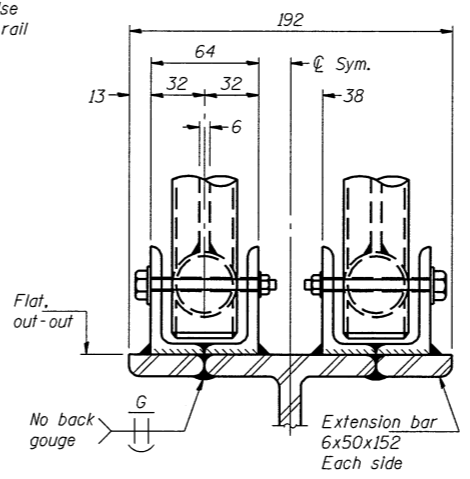
SIDE ELEVATION

Drill and ream for 10 mm stainless steel bolt with hexagon locknut and two stainless steel washers.



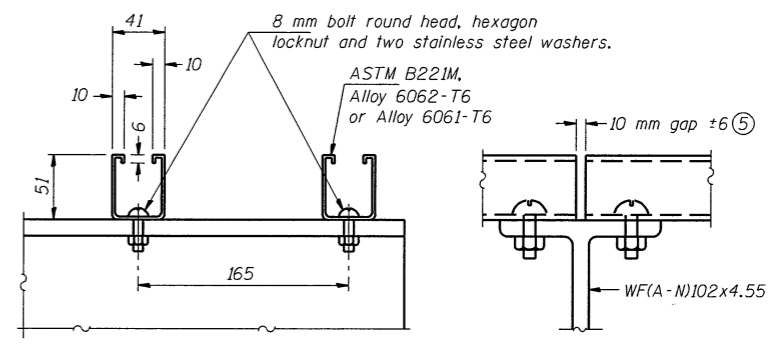
FRONT ELEVATION

See "ELEVATION" at right for dimensions.



ELEVATION AT HANDRAIL JOINT

Details not shown same as "FRONT ELEVATION"

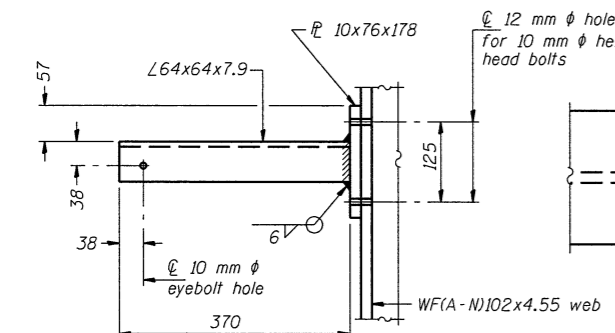


SECTION F-F

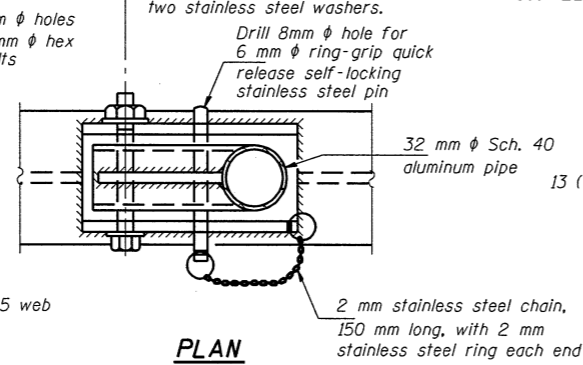
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

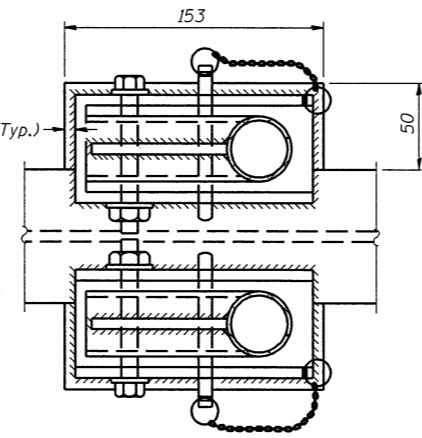


SECTION P-P



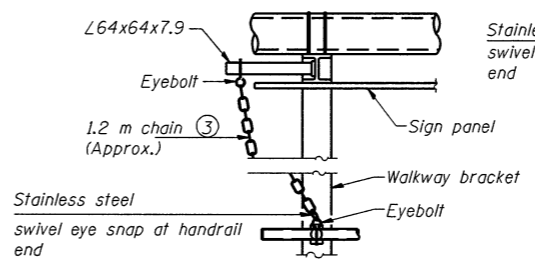
PLAN DETAIL E HANDRAIL HINGE

NUMBER	REVISION	DATE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

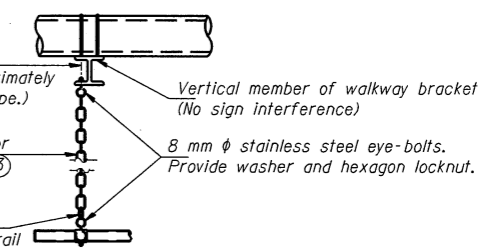


ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 5 mm Type 304L stainless steel chain, approximately 40 links per meter.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN

One required for each end of each walkway.

Note: All eyebolts, bolts, nuts and washers shall be stainless steel. For material, see General Notes.

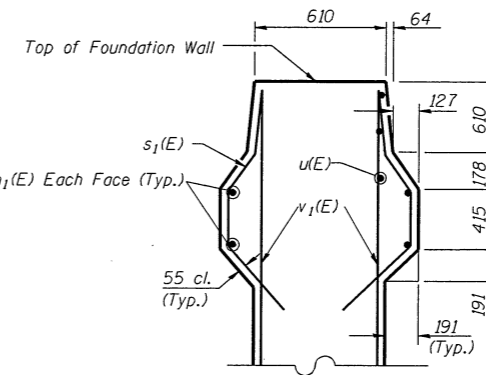
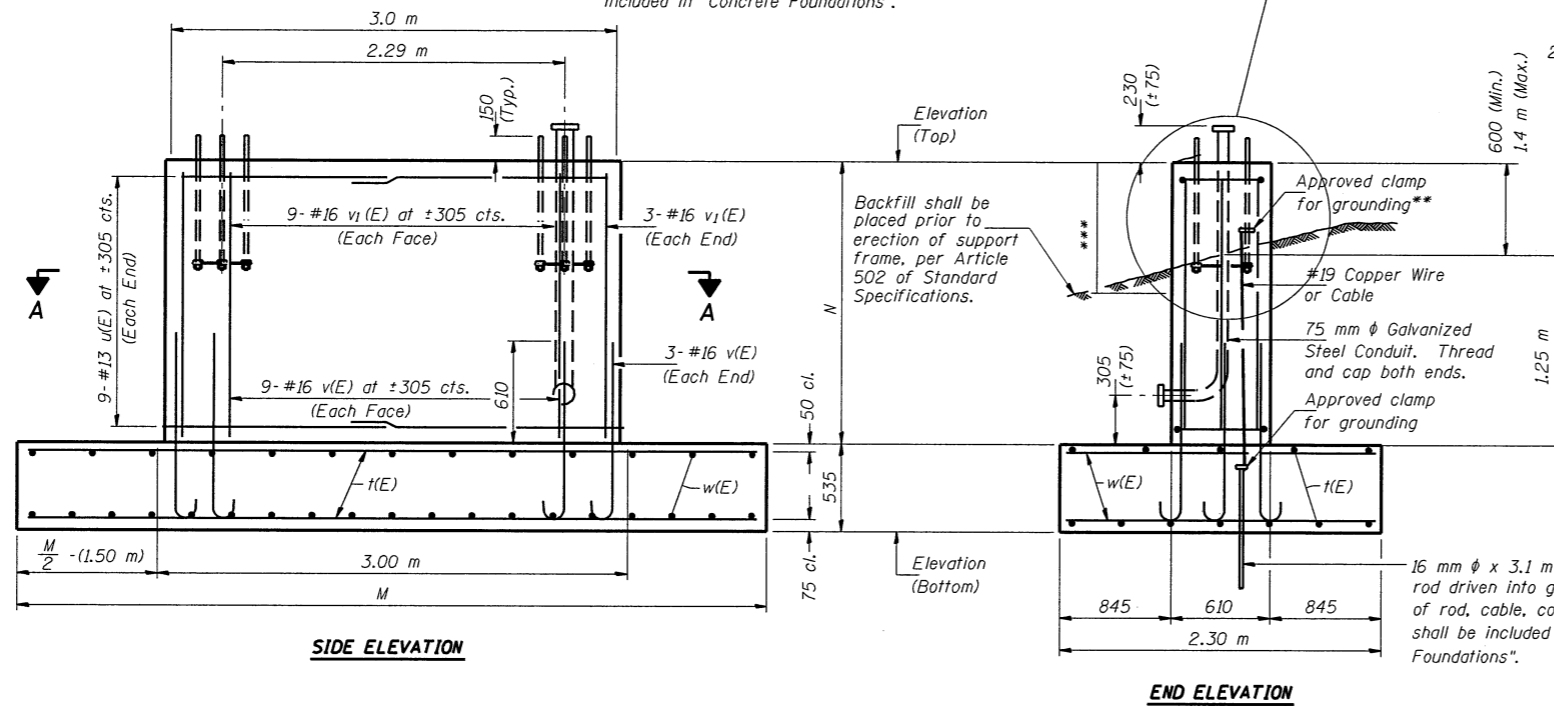
SHEET TITLE		OVERHEAD SIGN STRUCTURE ALUMINUM HANDRAIL DETAILS	
PROJECT	F. A. I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois		11	
Design Firm License No. 184-002703		OF 24 SHTS	

For anchor rod size and placement, see Support Frame Detail Sheet.

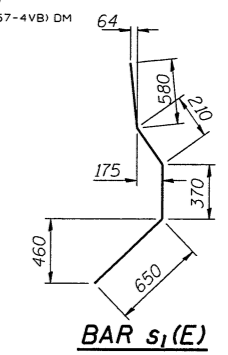
**Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

***A normal surface finish followed by a Bridge Seal Sealer application will be required on concrete surfaces above the lowest elevation 150 mm below finished ground line. Cost included in "Concrete Foundations".

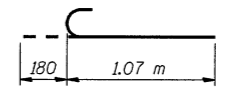
See Detail A for additional forming at median foundation.



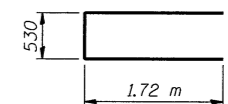
DETAIL A



BAR s1(E)



BAR v(E)

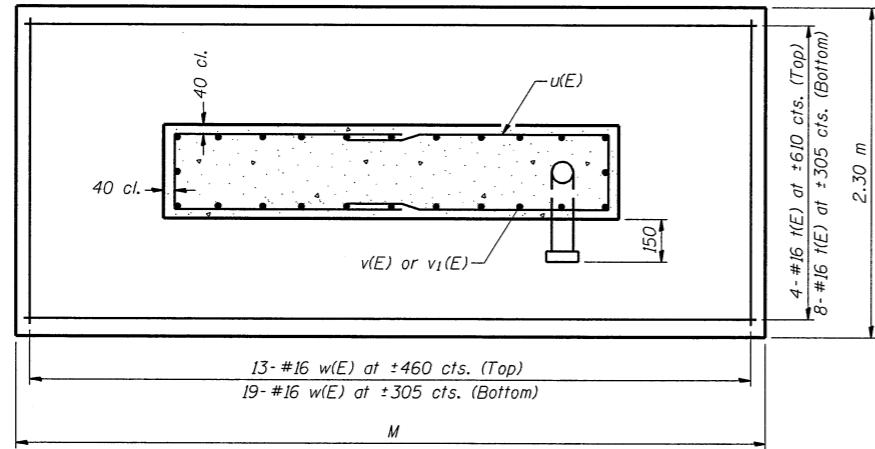


BAR u(E)

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length (m)	Shape
h1(E)	4	#13	2.92	—
s1(E)	26	#16	1.81)
t(E)	12	#16	*	—
u(E)	18	#13	3.97	—
v(E)	24	#16	1.25	—
v1(E)	24	#16	*	—
w(E)	32	#16	2.21	—

*Length of t(E) bar = (Dim. M) - 150 mm
 v1(E) bar = (Dim. N) - 75 mm
 ****Median Foundation only



SECTION A-A

Structure Number	Station	Left Foundation				Right Foundation				Class SI Concrete (cu. m)
		Elevation Top	Elevation Bottom	N (m)	M (m)	Elevation Top	Elevation Bottom	N (m)	M (m)	
5S0571055L165.2	37+953	267.23	264.445	2.25	5.6	267.565	264.930	2.10	5.6	22.8
5S0571055L165.5	38+425	272.80	270.015	2.25	6.0	273.041	270.406	2.10	6.0	23.7

Note: The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 96 kPa, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.
 During construction, if footing length or width or wall height change by more than 300 mm, or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

DETAILS FOR DN 200 PIPE SUPPORT FRAME

NUMBER	REVISION	DATE

SHEET TITLE OVERHEAD SIGN STRUCTURE SPREAD FOOTING DETAILS		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM MCLEAN COUNTY	DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB	SCALE
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO. 12 OF 24 SHTS

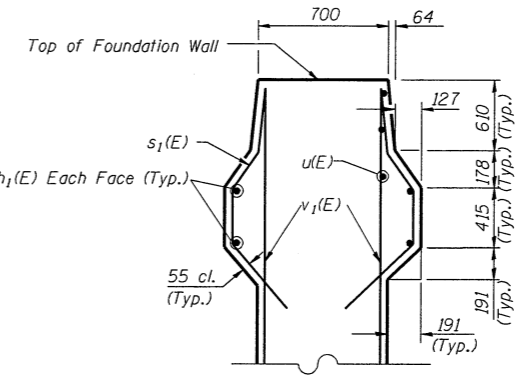
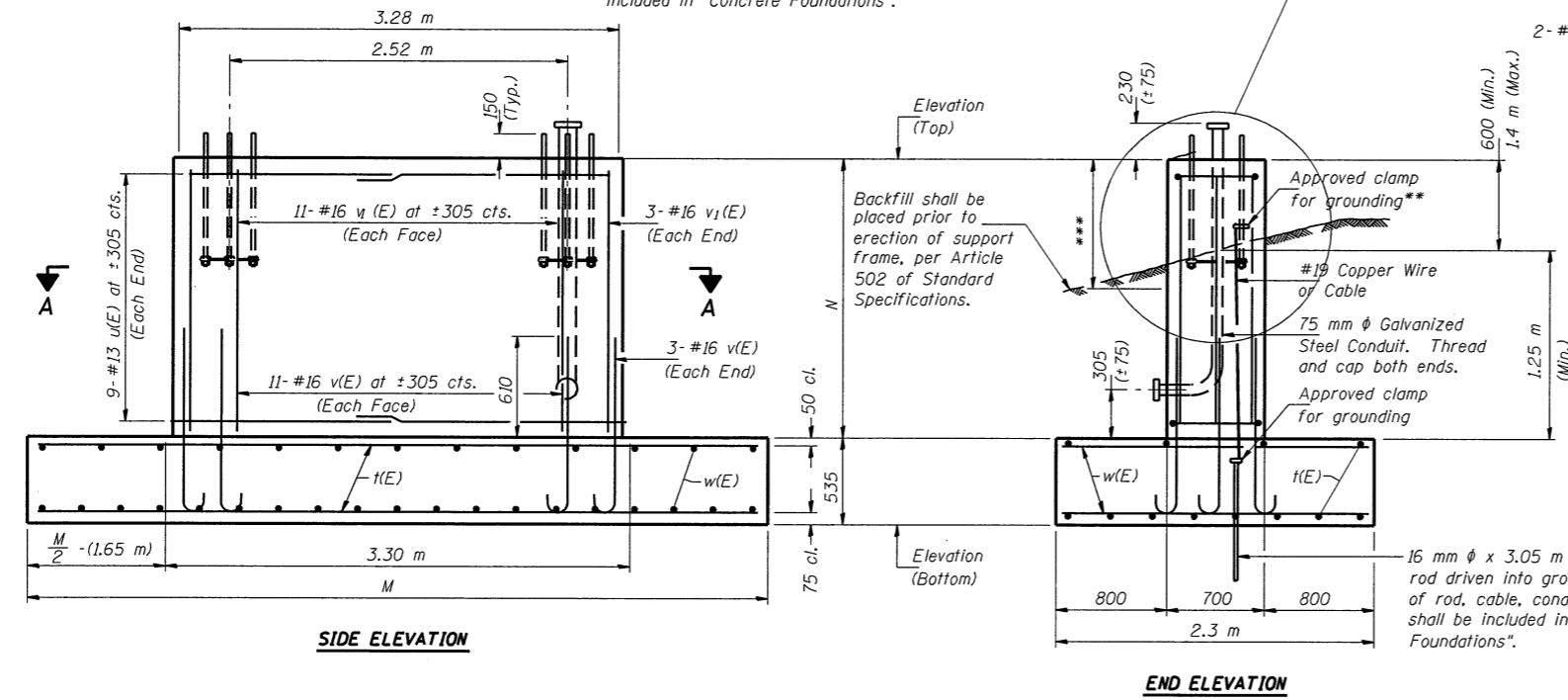
7/18/2009
#FILE#BBREV#

Contract No. 70757
*(57-4) R, HBY, HBR, (57-4VB) DM

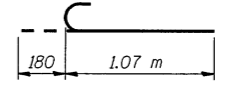
For anchor rod size and placement, see Support Frame Detail Sheet.

**Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

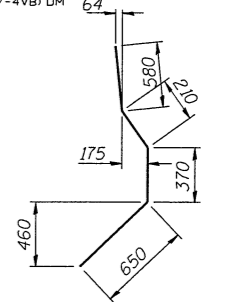
***A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 150 mm below finished ground line. Cost included in "Concrete Foundations".



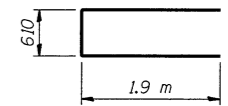
DETAIL A



BAR v(E)



BAR s1(E)



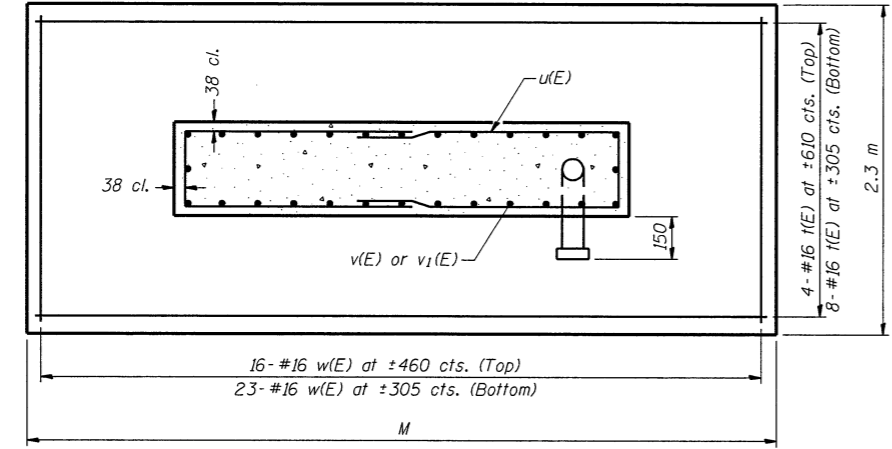
BAR u(E)

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length (m)	Shape
h1(E)	4	#13	3.20	—
s1(E)	26	#16	1.81	⌋
t(E)	12	#16	*	—
u(E)	18	#13	4.41	⌋
v(E)	28	#16	1.25	⌋
v1(E)	28	#16	*	—
w(E)	39	#16	2.21	—

*Length of t(E) bar = (Dim. M) - 150 mm
v1(E) bar = (Dim. N) - 75 mm
****Median Foundation only

16 mm φ x 3.05 m copper weld ground rod driven into ground 2.75 m. Cost of rod, cable, conduit, caps and clamps shall be included in cost of "Concrete Foundations".



SECTION A-A

Structure Number	Station	Left Foundation				Right Foundation				Class S1 Concrete (cu. m)
		Elevation Top	Elevation Bottom	N (m)	M (m)	Elevation Top	Elevation Bottom	N (m)	M (m)	
5S0571055R164.7	37+140	263.526	260.891	2.10	6.60	263.603	260.618	2.45	6.60	27.3
5S0571055L165.8	38+925	261.530	258.645	2.35	6.60	262.272	259.637	2.10	6.60	27.3

Note: The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 96 kPa, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.
During construction, if footing length or width or wall height change by more than 300 mm, or if reinforcement is changed, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

NUMBER	REVISION	DATE

DETAILS FOR DN 250 PIPE SUPPORT FRAME

SHEET TITLE		OVERHEAD SIGN STRUCTURE SPREAD FOOTING DETAILS	
PROJECT	F. A. I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
		SCALE	
		DATE	10/08/04
		DRAWN BY	TFG
		CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois		DRAWING NO.	13
Design Firm License No. 184-002703		OF 24 SHTS	

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

MEASUREMENTS: All dimensions are in millimeters (mm) except as noted.

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 145 km/h WIND VELOCITY

WIND LOADING: 1.44 kPa normal to Sign Panel Area and truss elements not behind sign Loading Diagram.

WALKWAY LOADING: Dead load plus 2.2 kN concentrated live load.

DESIGN STRESSES:

FIELD UNITS
 $f'c = 24 \text{ MPa}$
 $f_y = 400 \text{ MPa}$ (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 241 MPa, or A500 Grade B or C with a minimum yield of 319 MPa. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270M Gr. 250, Gr. 345 or Gr. 345W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 20 J. at 4° C. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" (HS) must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)(d) of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts, and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

STEEL PIPE: DN indicates nominal diameter.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 725 (105) with a minimum Charpy V-Notch (CVN) energy of 20 J at 5° C.

CONCRETE SURFACES: All concrete surfaces above an elevation 150 mm below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

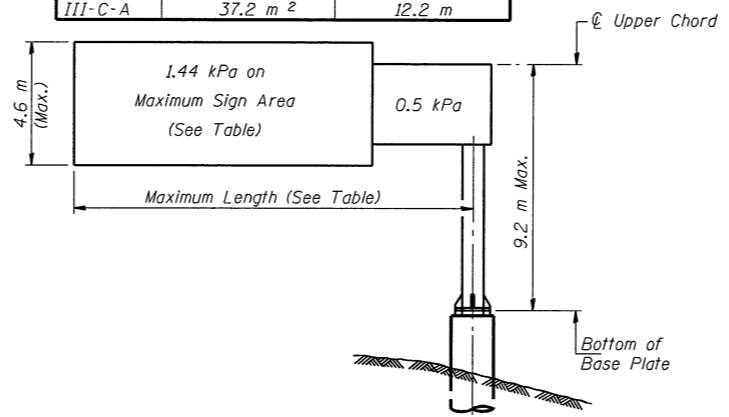
REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

*If M270M Gr. 345W steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D _s	Total Sign Area
5C0571055L164.7	37+295	II-C-A	8.31	265.32	4.581	3.81	12.19
5C0571055L164.8	37+297	II-C-A	8.58	265.325	3.974	3.20	15.10
5C0571055L164.9	37+572.5	II-C-A	9.20	266.400	5.100	3.35	18.43

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	15.8 m ²	7.6 m
II-C-A	31.6 m ²	9.2 m
III-C-A	37.2 m ²	12.2 m



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards. Installations not within dimensional limits shown require special analysis for all components.

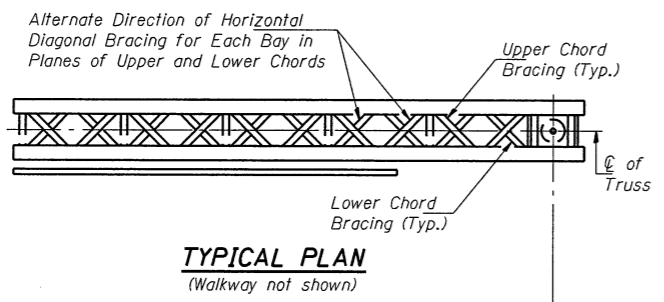
① After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 270 N·m. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

Note: Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

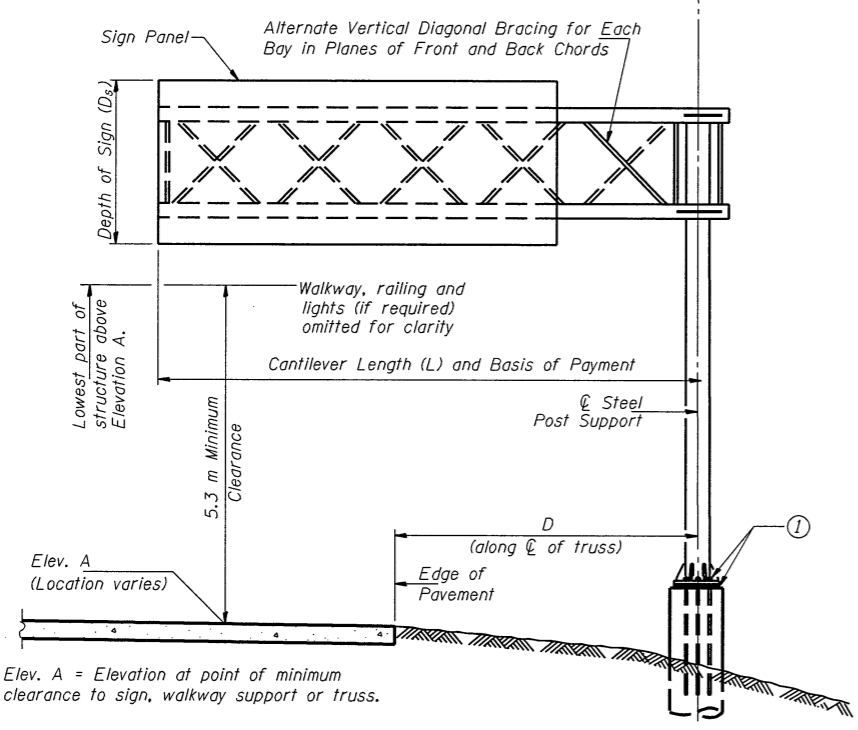
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	m	26.1
OVERHEAD SIGN WALKWAY-CANTILEVER TYPE A	m	16.3
DRILLED SHAFT CONCRETE FOUNDATIONS	m ³	17.8

NUMBER	REVISION	DATE



TYPICAL PLAN
(Walkway not shown)



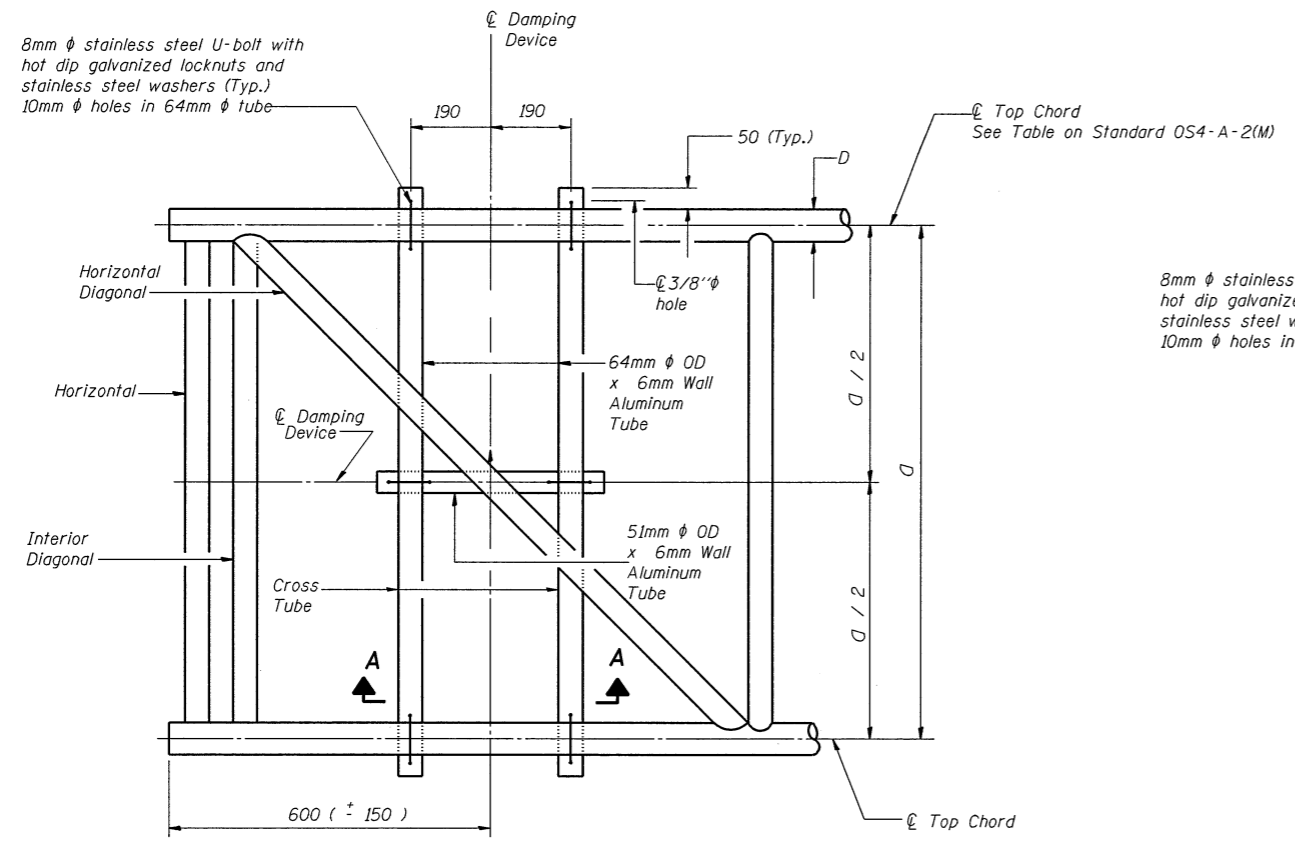
TYPICAL ELEVATION
Looking in Direction of Traffic

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

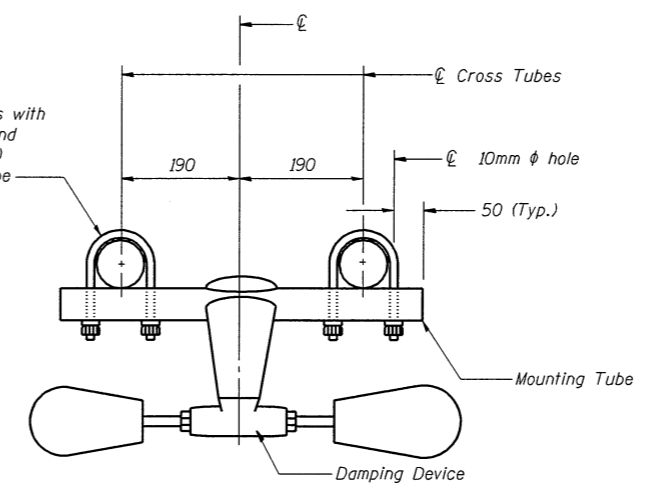
Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

SHEET TITLE CANTILEVER SIGN STRUCTURES GENERAL PLAN & ELEVATION ALUMINUM TRUSS & STEEL POST		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (157-4)R, HBY, HBR, (157-4VB)DM McLEAN COUNTY	DATE 10/08/04	DRAWN BY TFG
CHECKED BY MCB		DRAWING NO. 14
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		OF 24 SHTS

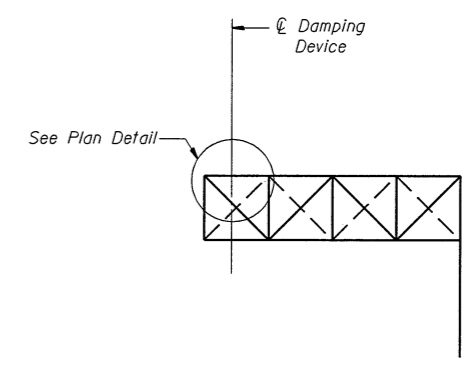
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
F. A. I. R.T.E. 55		McLEAN	310147	24 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70757	
*(57-4) R, HBY, HBR, (57-4VB) DM				



PLAN DETAIL



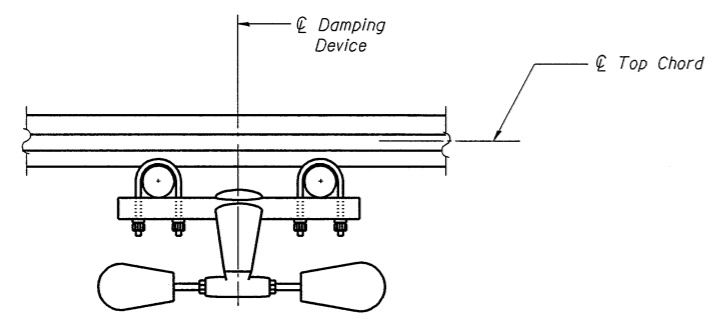
TRUSS DAMPING DEVICE CONNECTION DETAIL



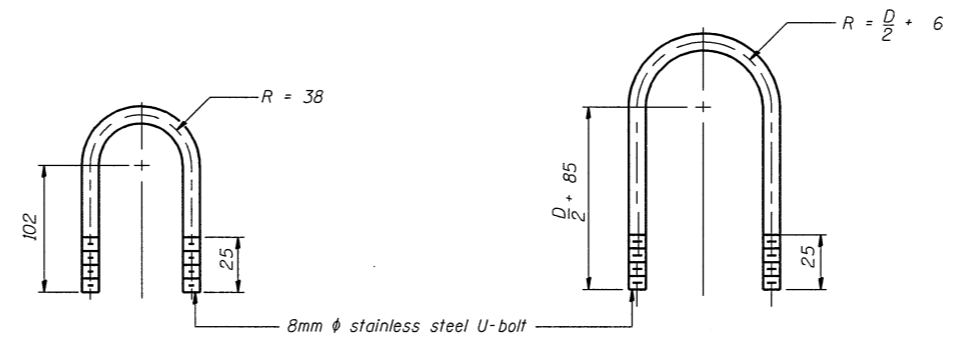
ELEVATION
Aluminum Cantilever Sign Structure

GENERAL NOTES

Damper: One damper per truss. (14 Kg Stockbridge-Type Aluminum)
29" minimum between ends of weights
Materials: Aluminum tubes shall be ASTM B221(M) alloy 6061 temper T6
All dimensions are in millimeters (mm) except as noted.



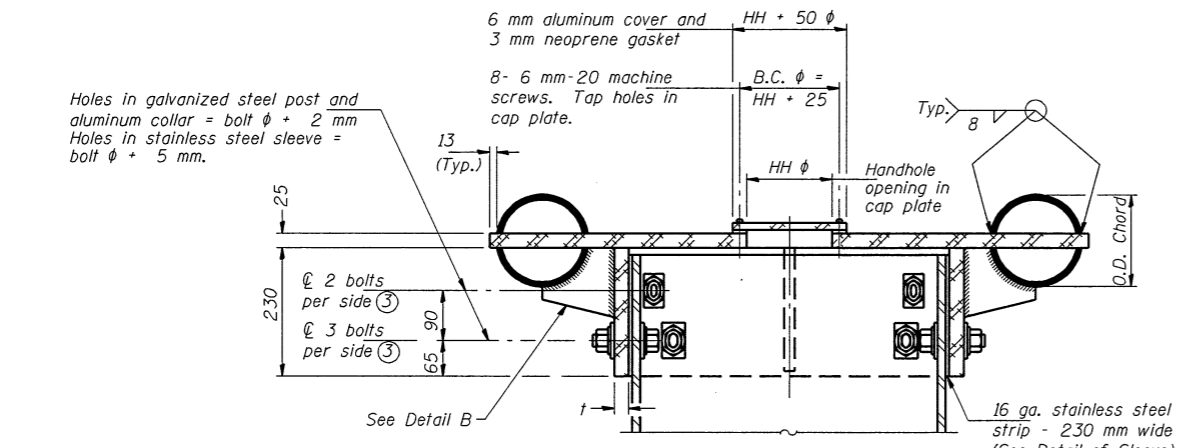
SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)

TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical)

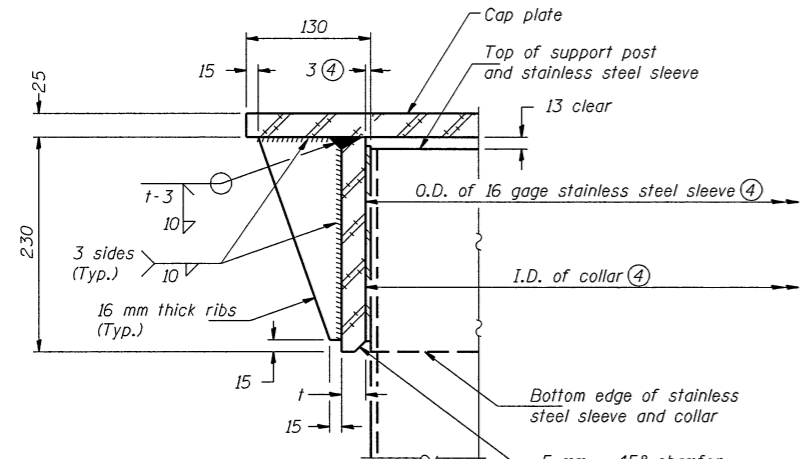
SHEET TITLE		CANTILEVER SIGN STRUCTURE DAMPING DEVICE	
PROJECT	F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		15	OF 24 SHTS



④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 3 mm (±2 mm). Maximum gap between post and collar at any location equals 3 mm before tightening bolts.

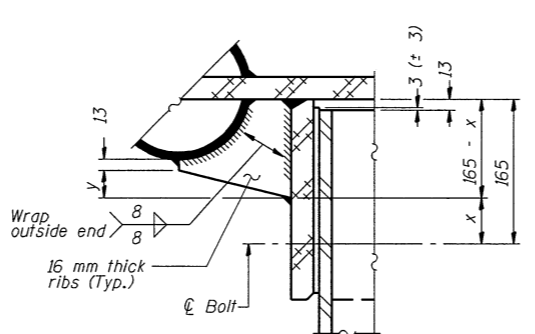
SECTION B-B

Bolts, washers (including contoured washers), and locknuts shall be stainless steel.



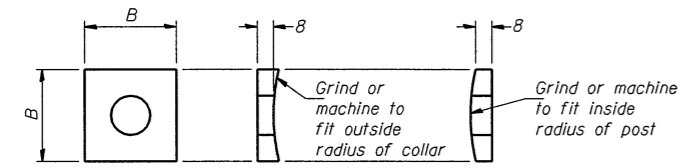
DETAIL A
(Two locations)

5 mm - 45° chamfer on inside of collar to facilitate field assembly



DETAIL B

Two locations (For details not shown, see Detail C)



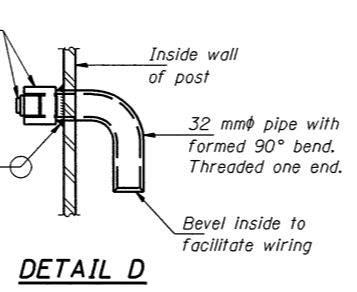
CONTOURED WASHERS

Bolt Dia.	Contoured Washers	
	Hole Dia.	B
22	25	64
25	29	75
32	35	83

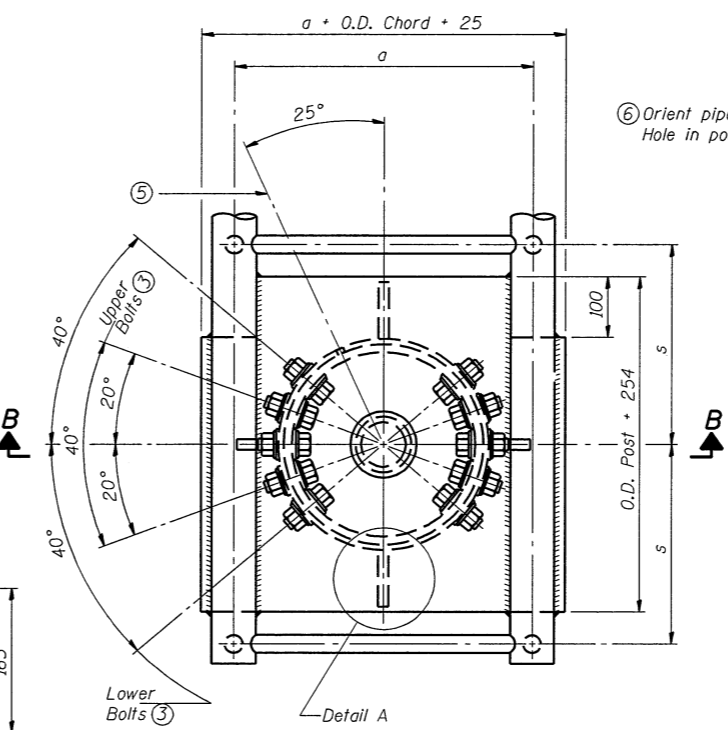
DETAIL OF STAINLESS STEEL SLEEVE

Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 40 mm long at 150 mm cts. along top edge and at 6 mm opening.

NUMBER	REVISION	DATE

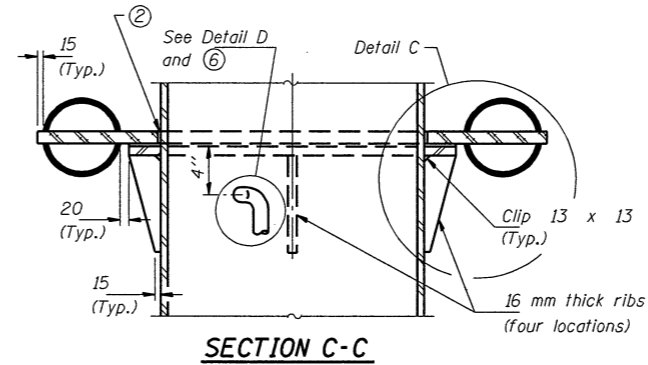


DETAIL D

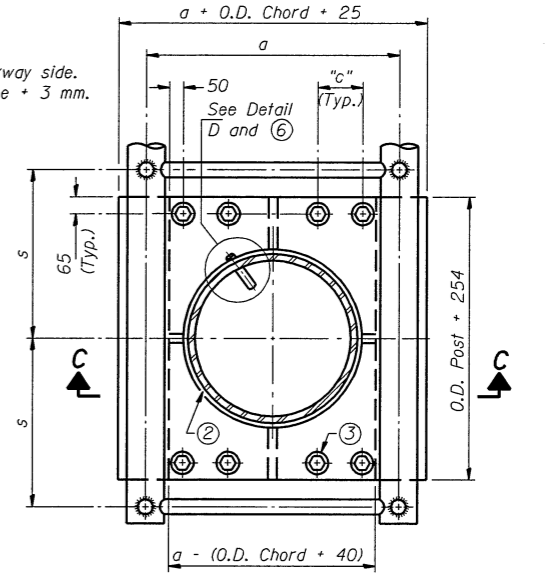


PLAN VIEW - TOP OF COLUMN

⑤ Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

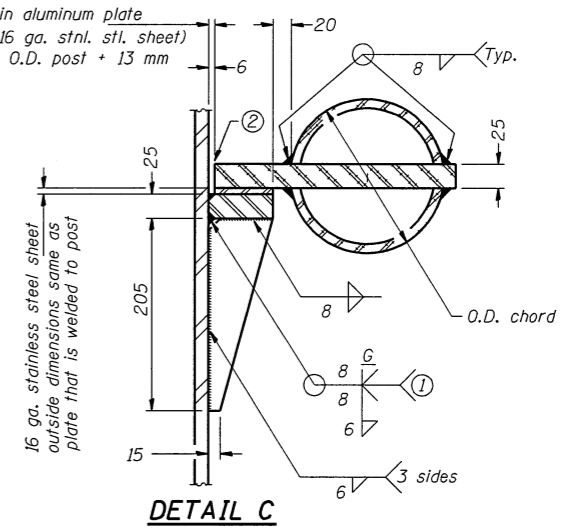


SECTION C-C



SECTION THRU POST ABOVE LOWER CHORDS

Hole in aluminum plate (and 16 ga. stnl. stl. sheet) to be O.D. post + 13 mm



DETAIL C

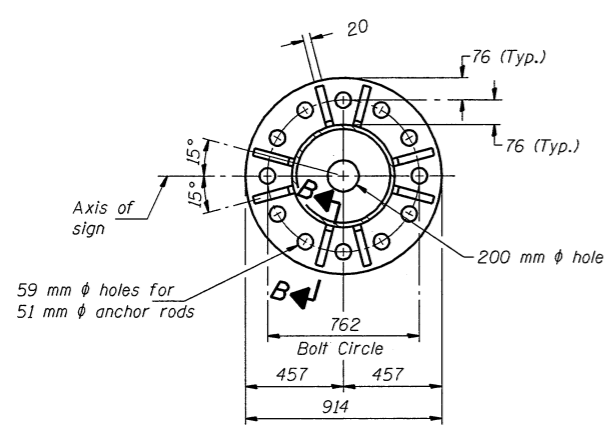
- ① Grind top if required to fully seat aluminum plate and stainless steel sheet.
- ② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in "Overhead Sign Structure Cantilever".

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	406 phi (124 kg/m)	22	85	205	16	45	56
II-C-A	610 phi (152 kg/m)	25	90	305	22	50	32
III-C-A (10.7 Max.)	610 phi (186 kg/m)	32	90	305	22	50	25
III-C-A (>10.7 to 12.2)	610 phi (254 kg/m)	32	90	305	22	50	25

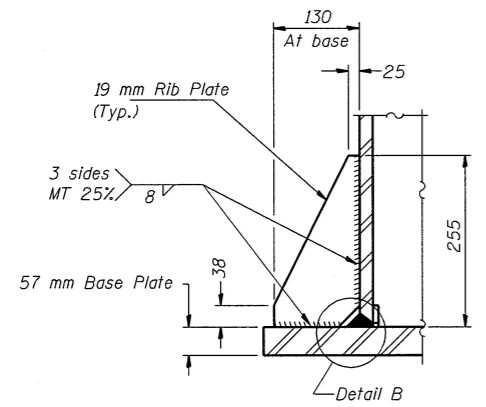
③ Upper and lower connection bolts in collar and bolts at lower chord connection must be high strength with matching locknuts. Connection bolts shall have two stainless steel flat washers each.

SHEET TITLE		CANTILEVER SIGN STRUCTURES JUNCTURE DETAILS ALUMINUM TRUSS & STEEL POST	
PROJECT	F.A.I. 55 SECTION (157-4)R, HBY, HBR, (157-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		17	OF 24 SHTS

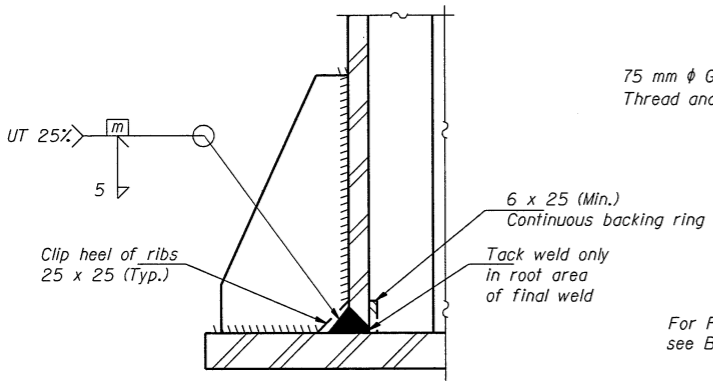
Contract No. 70757
 (57-4) R, HBY, HBR, (57-4VB) DM



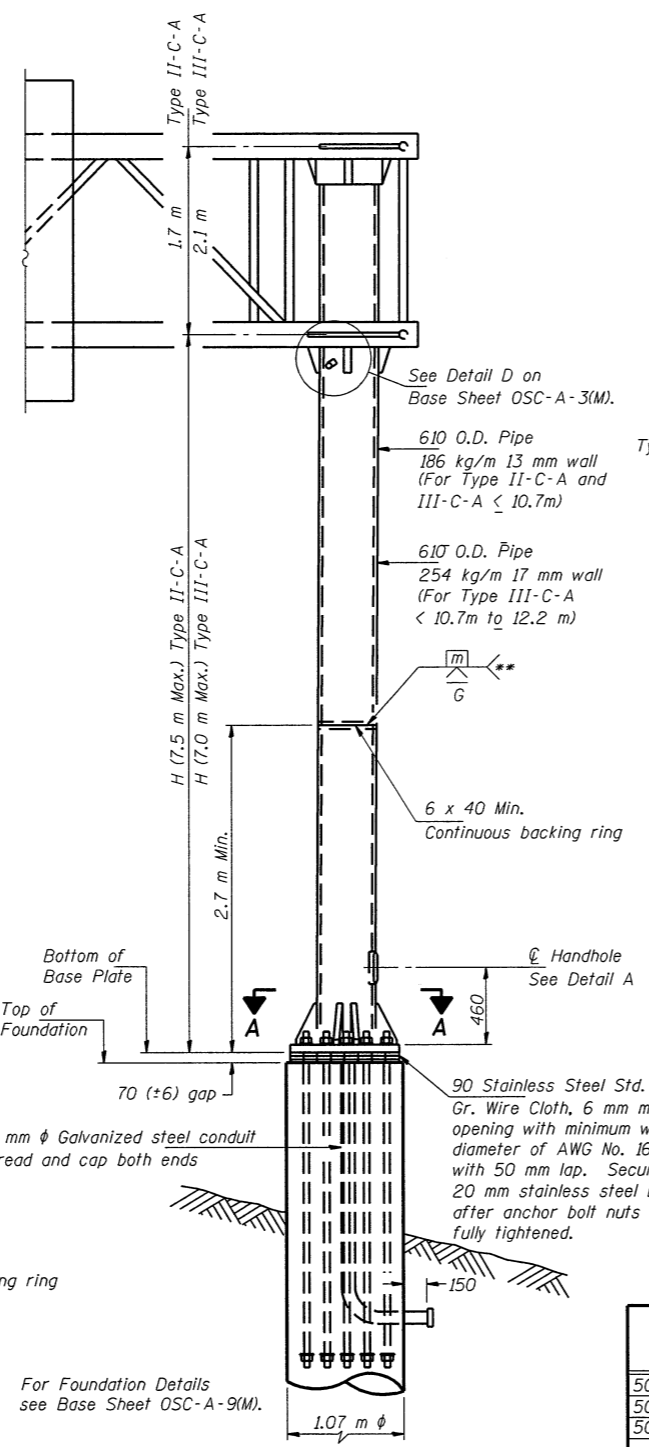
SECTION A-A



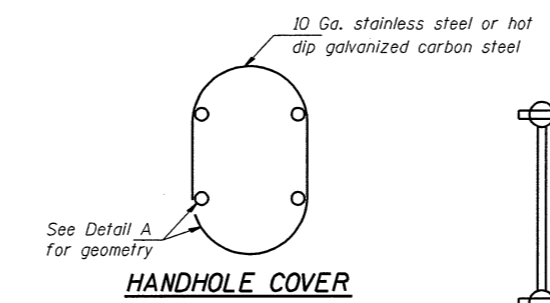
SECTION B-B



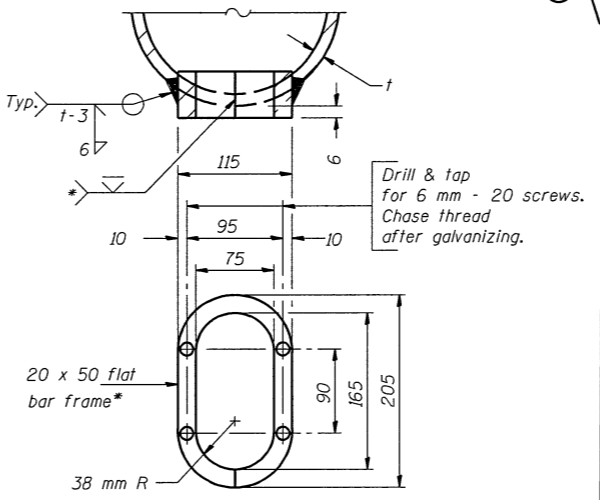
DETAIL B
 (Typical rib)



FRONT ELEVATION



HANDHOLE COVER

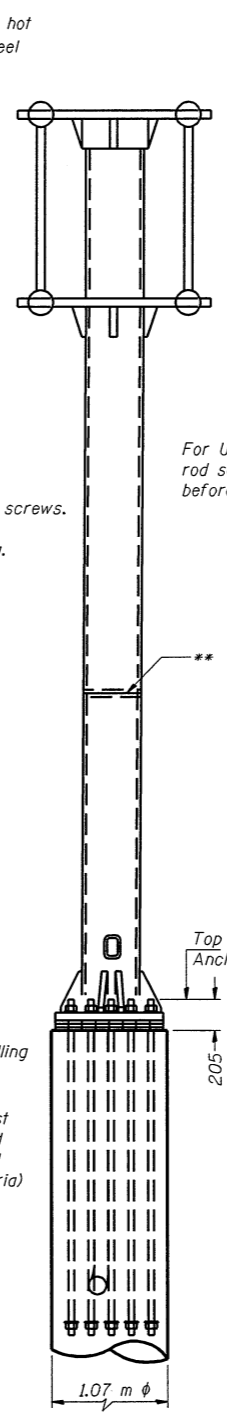


DETAIL A

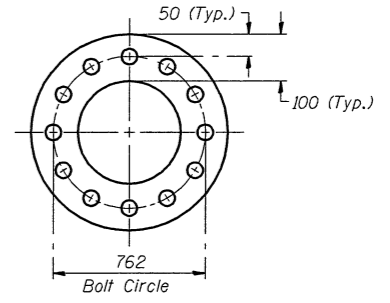
Provide 205 x 115 cover. Outside corners = 57 mm radius. Provide 4 - 8 mm diameter holes in cover for 6 mm - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details)

*Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 50 mm plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 12.7 µm or less.
 **Butt welded joint in post is only allowed for post heights (H) over 6.10 m in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

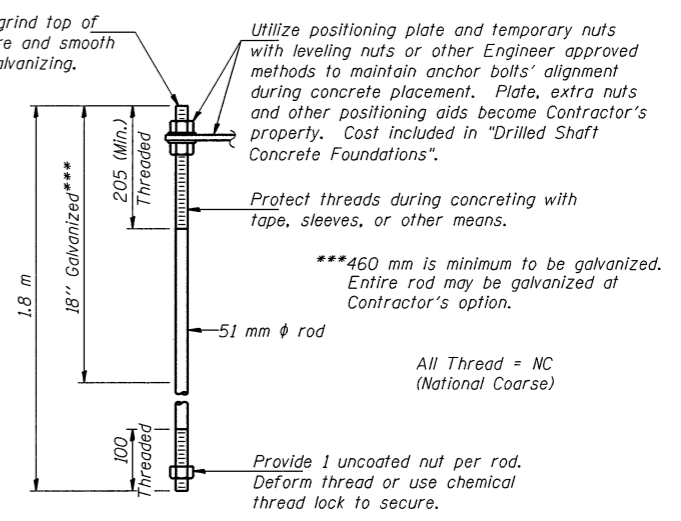
Structure Number	Station	H
5C0571055L164.7	37+295	6.299
5C0571055L164.8	37+297	6.641
5C0571055L164.9	37+572.5	6.696



SIDE ELEVATION



SUGGESTED POSITIONING PLATE

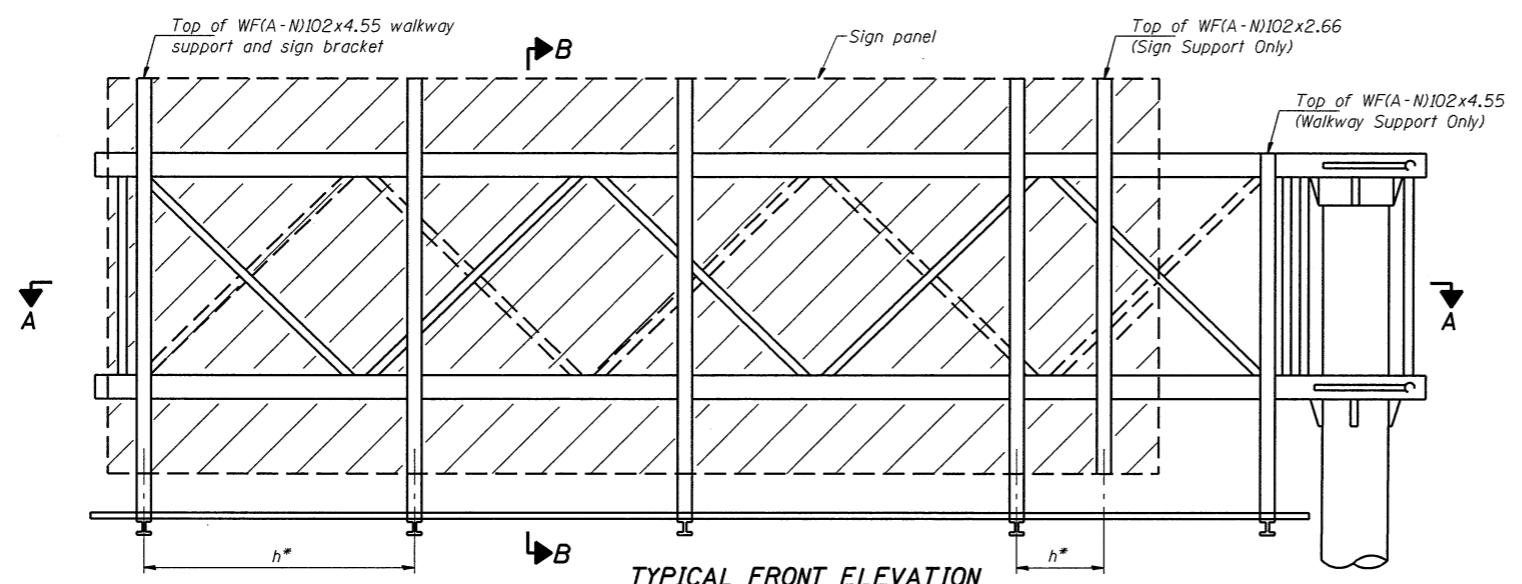


ANCHOR ROD DETAIL

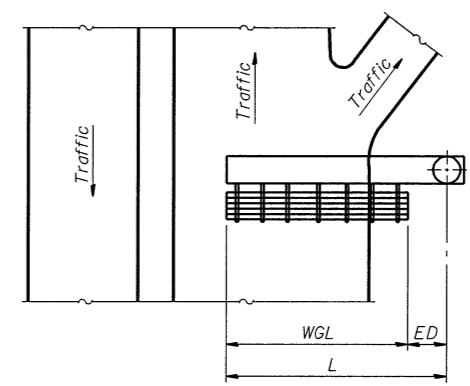
Anchor rods shall conform to AASHTO M314 Grade 725 (105) and meet Charpy V-Notch (CVN) energy of 20 J at - 12 ° C. before galvanizing. Galvanize the upper 460 mm (minimum) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. 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 270 N-m 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, 13 mm diameter 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 460 mm (tension criteria). Cost of testing included in "Drilled Shaft Concrete Foundations".

NUMBER	REVISION	DATE

SHEET TITLE CANTILEVER SIGN STRUCTURES TYPE II-C-A & III-C-A TRUSS SUPPORT POST ALUMINUM TRUSS & STEEL POST		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY		SCALE DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO. 18 OF 24 SHTS

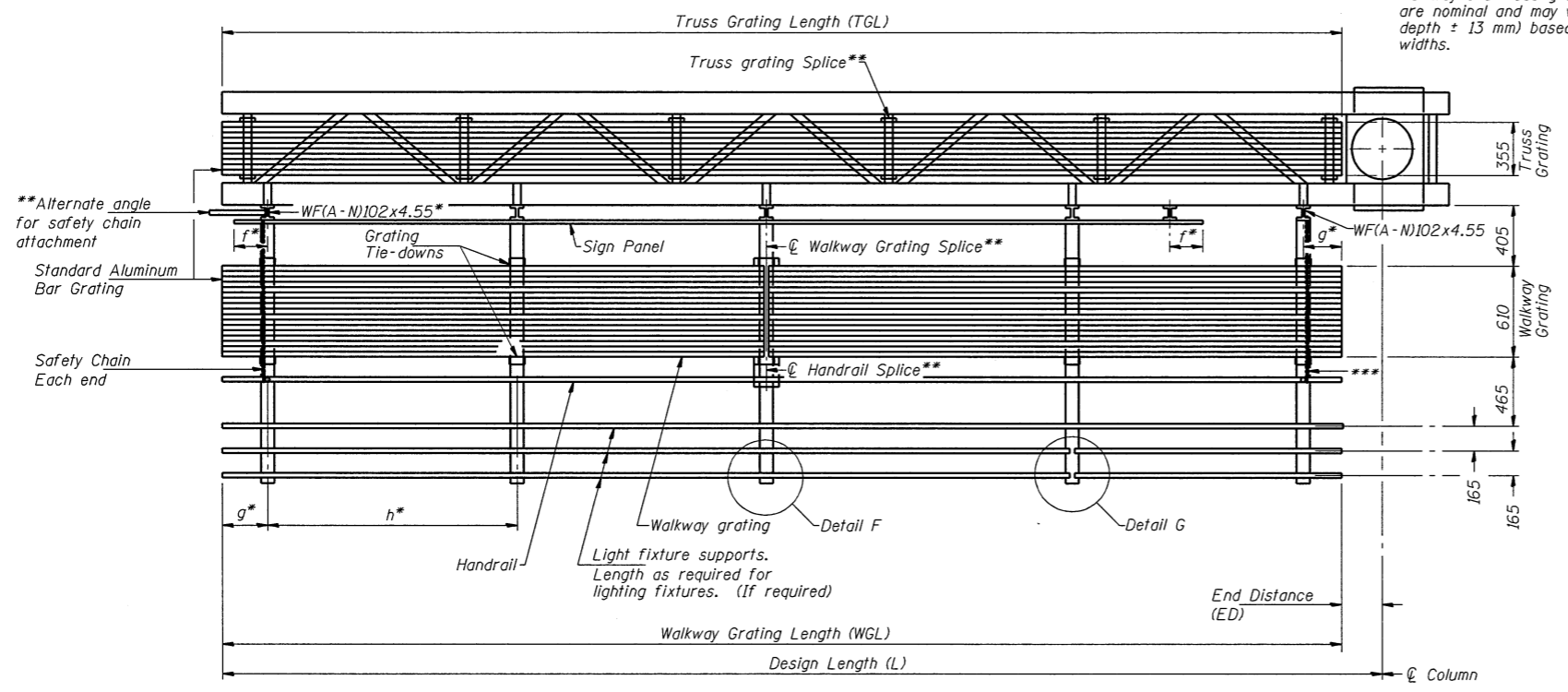


TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.



PLAN
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath truss varies)

Walkway and truss grating dimensions are nominal and may vary (width ± 13 mm, depth ± 13 mm) based on available standard widths.



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in "Overhead Sign Structure Cantilever".

Handrail and walkway grating shall span a minimum of three brackets between splices.
**Use and location of handrail or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 150 \right)$$

NUMBER	REVISION	DATE

Structure Number	Station	WGL	ED	TGL
5C0571055L164.7	37+295	4,929	3,381	7,855
5C0571055L164.8	37+297	5,806	2,774	8,125
5C0571055L164.9	37+572.5	5,500	3,700	8,745

Notes: *Space walkway brackets WF(A-N)102x4.55 and sign brackets WF(A-N)102x2.66 for efficiency and within limits shown:
f = 300 maximum, 100 minimum (End of sign to center of nearest bracket)
g = 300 maximum, 100 minimum (End of walkway to center of nearest bracket)
h = 1.85 m maximum (center to center sign and/or walkway support brackets, WF(A-N)102x2.66 or WF(A-N)102x4.55)
***If walkway bracket at safety chain location is behind sign, add angle to bracket.
For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7(M).
For details of handrail, handrail splice, safety chain and Details F and G, see Base Sheet OSC-A-8(M).

BRACKET TABLE

WF(A-N)4xL79 or WF(A-N)4x3.06 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	2.45	2
2.45	4.3	3
4.3	6.15	4
6.15	8.0	5
8.0	9.85	6

SHEET TITLE CANTILEVER SIGN STRUCTURES ALUMINUM WALKWAY DETAILS ALUMINUM TRUSS & STEEL POST		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY		SCALE DATE 10/08/04 DRAWN BY TFG CHECKED BY MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		19 OF 24 SHTS

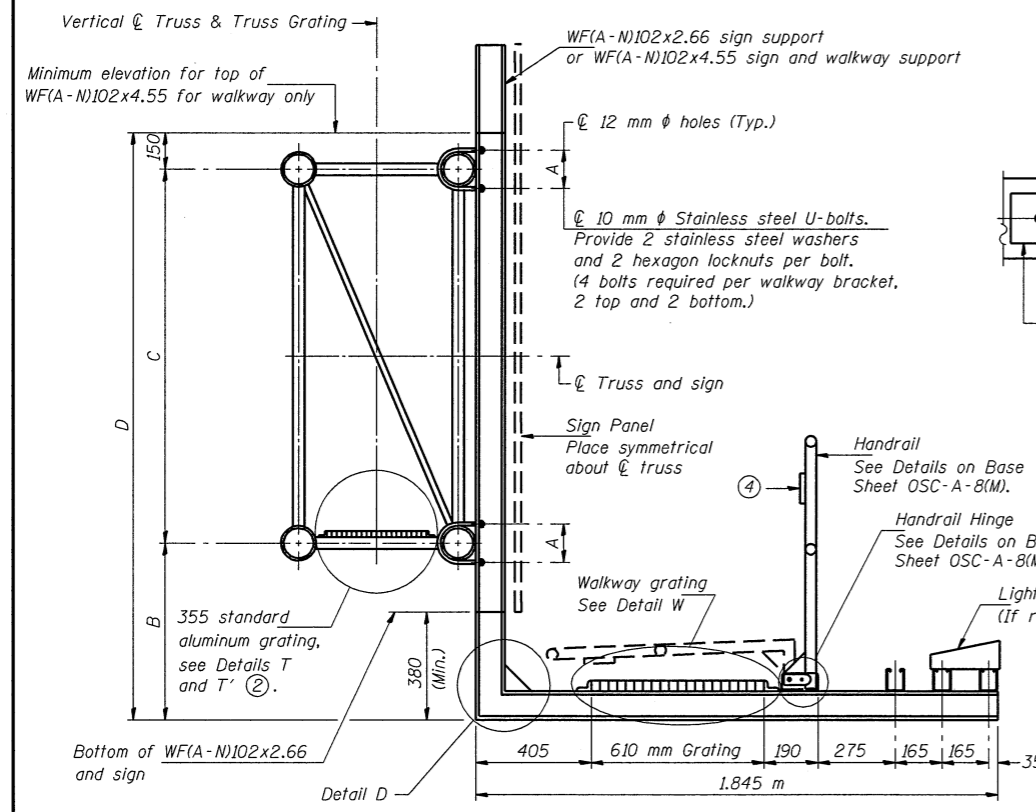
7/8/2009 #112/ABBREV#

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

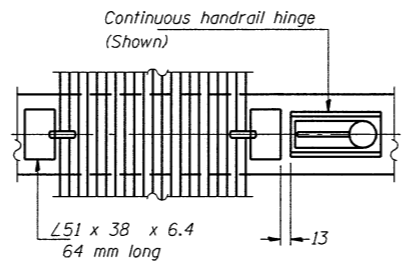
Main Bearing Bars (MBB) shall be 5 mm x 38 mm on 30 mm centers and conform to ASTM B221 Alloy 6061-T6.
 Cross bars (CB) shall be 5 mm x 38 mm on 102 mm centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

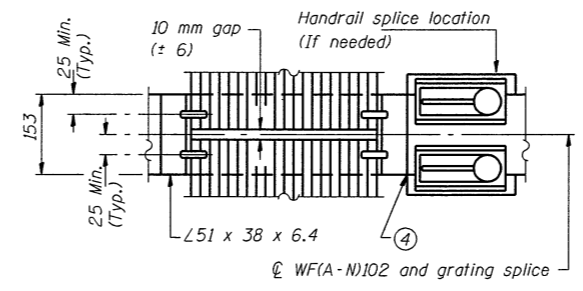
Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
 Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 1.16 x 10³ mm³ per bar, a depth of 38 mm, spaced on 30 mm centers.
 Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 100 mm centers.



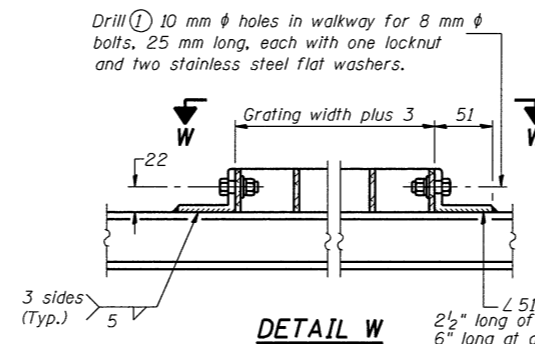
SECTION B-B
Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.



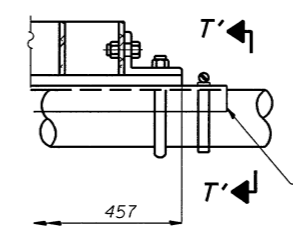
(CONTINUOUS WALKWAY GRATING)



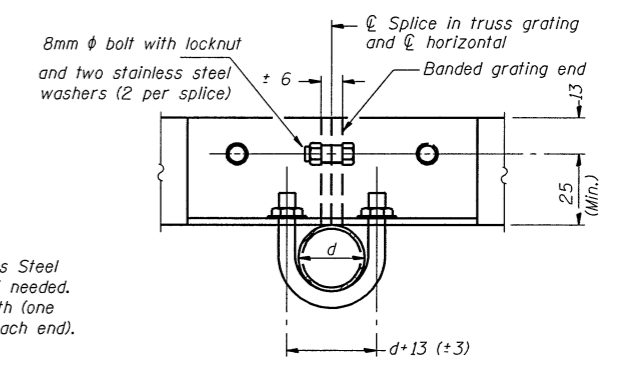
(AT WALKWAY GRATING SPLICE)



DETAIL W
(Walkway grating)

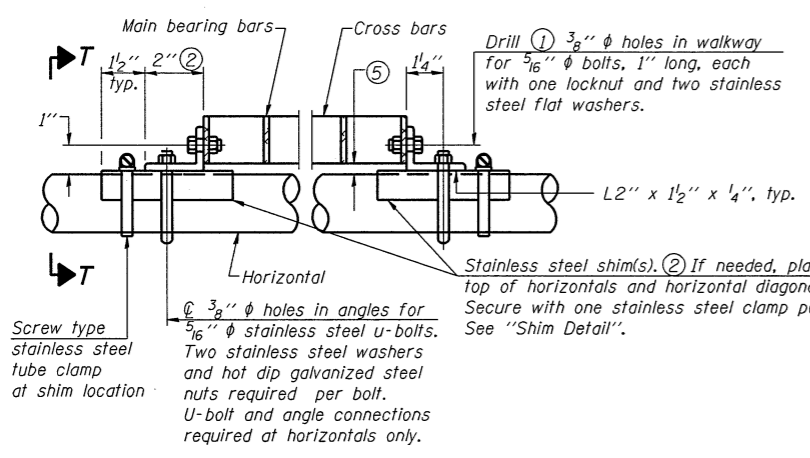


DETAIL T'
(Truss grating splice)

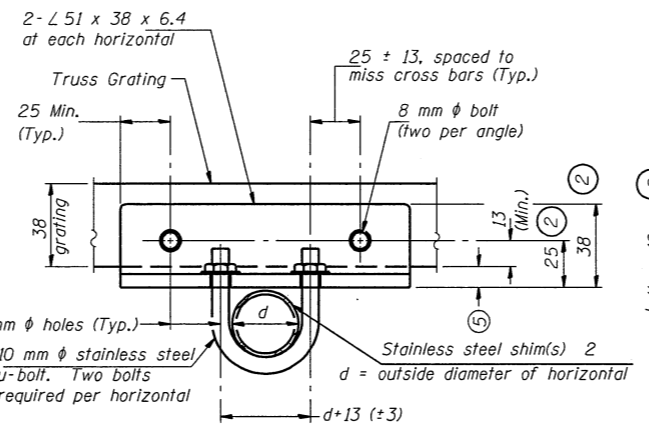


SECTION T'-T'

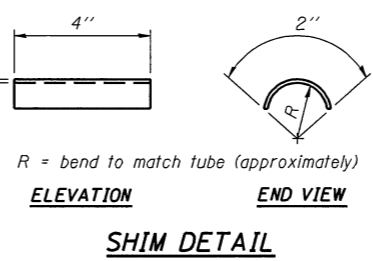
Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



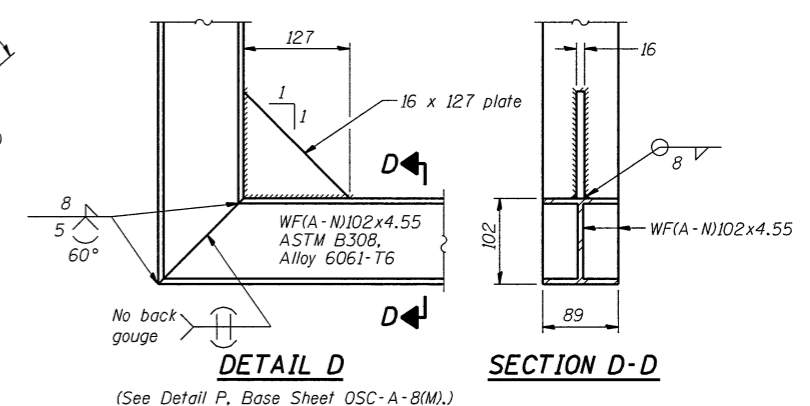
DETAIL T
(Continuous Truss grating)



SECTION T-T



SHIM DETAIL



DETAIL D

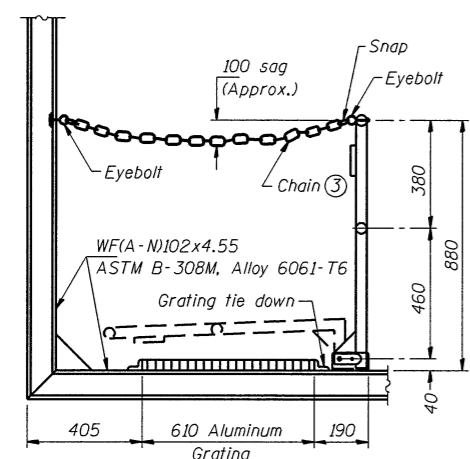
SECTION D-D

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF(A-N)102 and 6 mm extension bars. (See Base Sheet OSC-A-8(M).)
- 3 mm x 13 mm x 50 mm welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to 13mm (Max.) to align walkway, allow for camber, etc. Continuous Truss Grating

Structure Number	Station	A	B	C	D
5C0571055L164.7	37+295	178	1.445	1.68	3.275
5C0571055L164.8	37+297	178	1.140	1.68	2.970
5C0571055L164.9	37+572.5	178	1.215	1.68	3.045

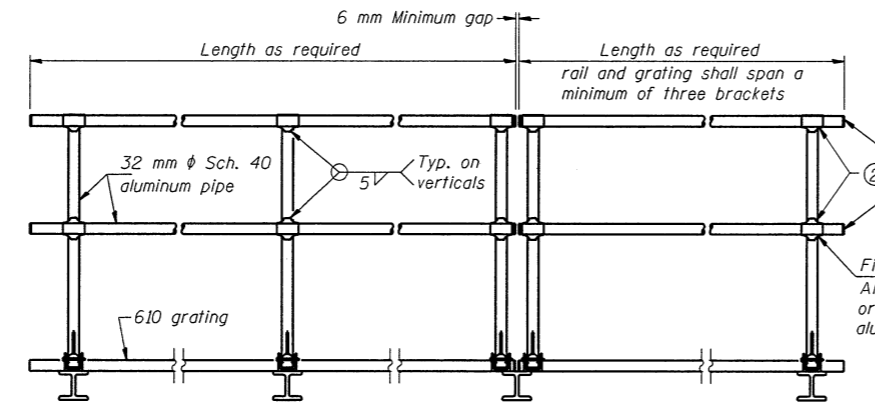
SHEET TITLE CANTILEVER SIGN STRUCTURES WALKWAY DETAILS ALUMINUM TRUSS & STEEL POST		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY		SCALE 10/08/04
DRAWN BY TFG		CHECKED BY MCB
DRAWING NO. 20		OF 24 SHTS
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		

7/8/2009 #FILE#REV#



SIDE ELEVATION

(Showing Safety Chain W/O Sign)



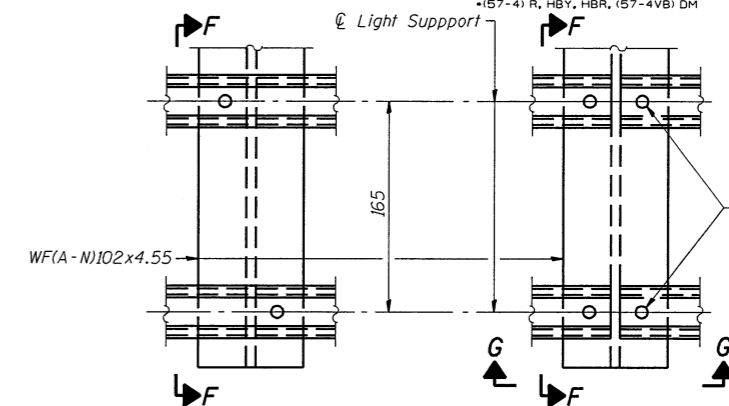
FRONT ELEVATION

HANDRAIL DETAILS

Handrail pipe shall be ASTM B241M, Alloy 6063-T6 or Alloy 6061-T6.

① Install standard force-fit end caps or weld 3 mm end plates with 3 mm c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 12 mm hole in fitting for 10 mm hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 8 mm eyebolts in 12 mm holes on top rail at ends only.)



DETAIL F

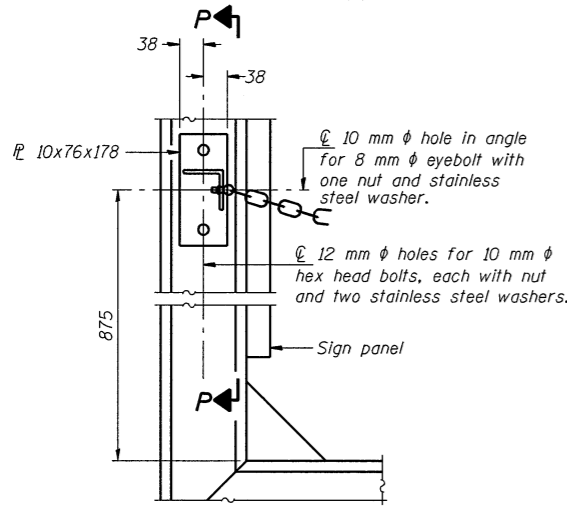
DETAIL G

SECTION F-F

SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

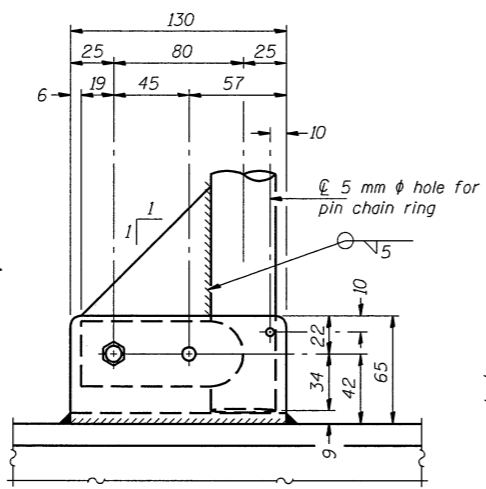
⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



ALTERNATE SAFETY CHAIN ATTACHMENT

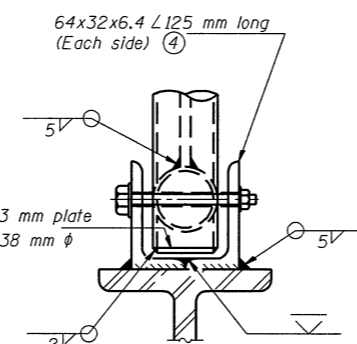
(With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"



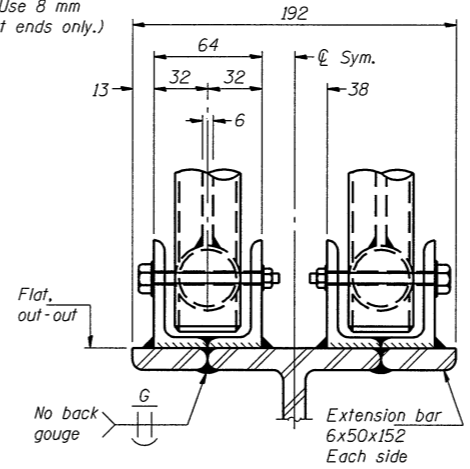
SIDE ELEVATION

Drill and ream for 10 mm stainless steel bolt with hexagon locknut and two stainless steel washers.



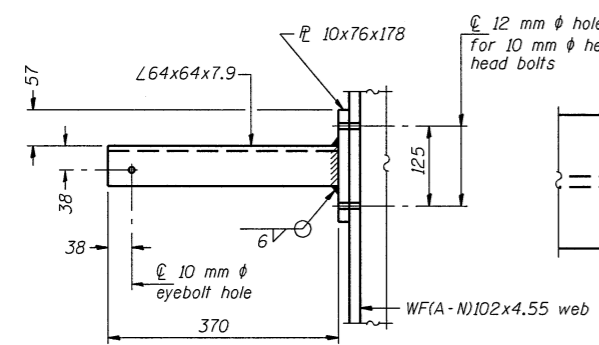
FRONT ELEVATION

See "ELEVATION" at right for dimensions.

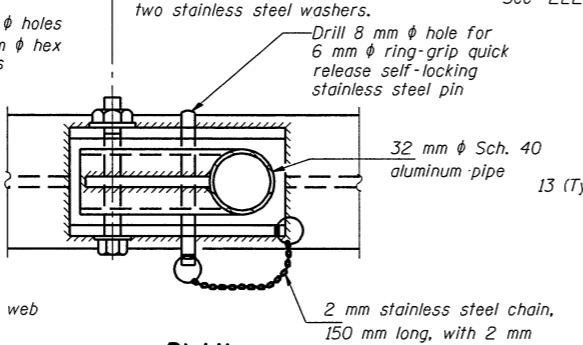


ELEVATION AT HANDRAIL JOINT

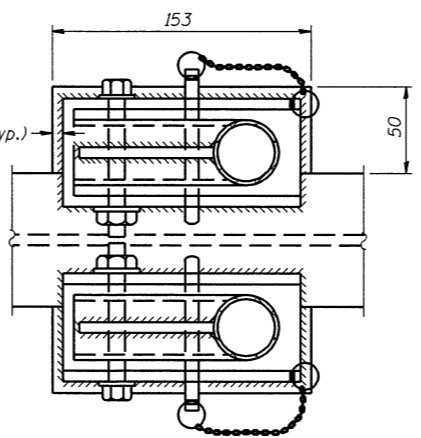
Details not shown same as "FRONT ELEVATION"



SECTION P-P

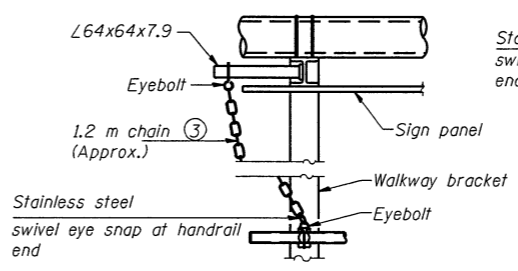


PLAN DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

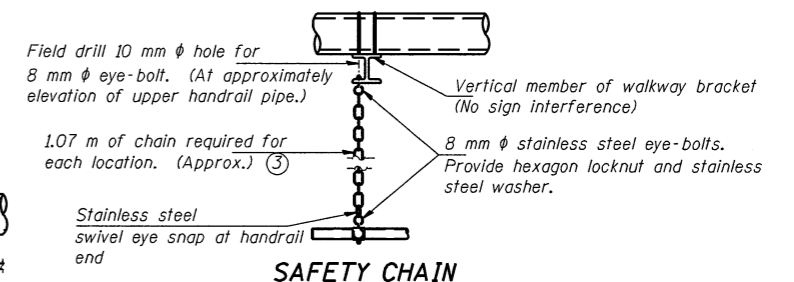
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 5 mm Type 304L stainless steel chain, approximately 40 links per meter.
 ④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



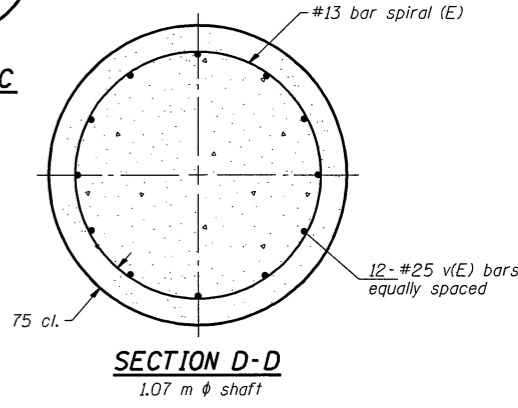
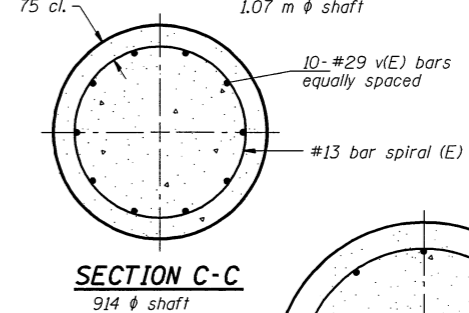
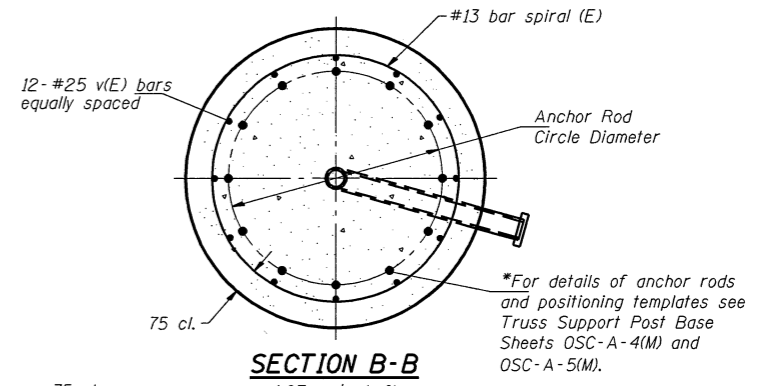
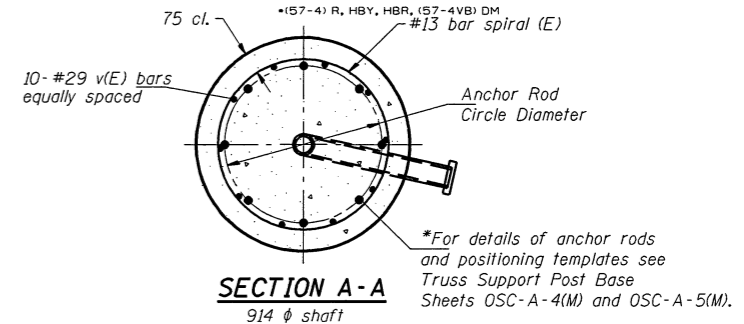
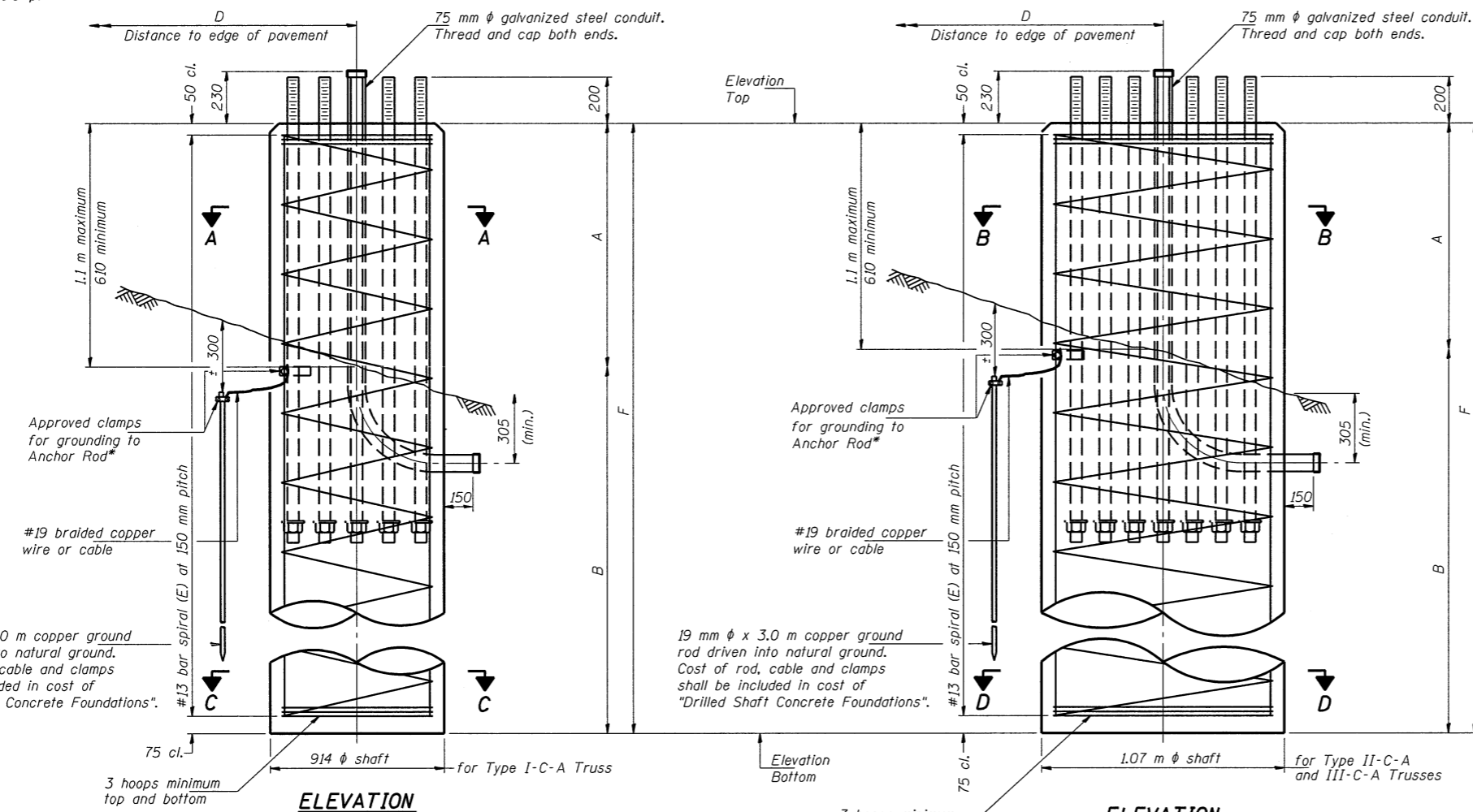
SAFETY CHAIN

One required for each end of each walkway.

NUMBER	REVISION	DATE

SHEET TITLE CANTILEVER SIGN STRUCTURES HANDRAIL DETAILS ALUMINUM TRUSS & STEEL POST		PROJECT NO. 9450
PROJECT F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	DATE 10/08/04	SCALE
DESIGNED BY TFG	CHECKED BY MCB	DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		21 OF 24 SHTS

*Grind anchor rod to bright finish at ground clamp location before installing clamp.



NOTES:

The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 120 kPa, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 300 mm by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 150 mm below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	A	B	F	Class SI Concrete Cubic Meters
5C0571055L164.7	37+295	II-C-A	1.07	266.077	259.977	0.900	5.20	6.100	5.5
5C0571055L164.8	37+297	II-C-A	1.07	265.740	260.640	0.900	5.20	6.100	5.5
5C0571055L164.9	37+572.5	II-C-A	1.07	266.760	259.260	0.900	6.60	7.500	6.8

Truss Type	Post Base Sheet	Maximum Cantilever Length (m)	Maximum Total Sign Area (sq m)	Shaft Diameter (m)	"B" Depth (m)	Anchor Rods		Anchor Rod Circle Diameter (mm)
						No.	Diameter (mm)	
I-C-A	OSC-A-4(M)	7.6	15.8	0.92	4.9	8	51	560
II-C-A	OSC-A-5(M)	9.2	15.8	1.07	5.2	12	51	762
II-C-A	OSC-A-5(M)	9.2	31.6	1.07	6.6	12	51	762
III-C-A	OSC-A-5(M)	10.7	15.8	1.07	5.8	12	51	762
III-C-A	OSC-A-5(M)	10.7	23.2	1.07	6.9	12	51	762
III-C-A	OSC-A-5(M)	10.7	37.2	1.07	8.1	12	51	762
III-C-A	OSC-A-5(M)	12.2	37.2	1.07	9.8	12	51	762

NUMBER	REVISION	DATE

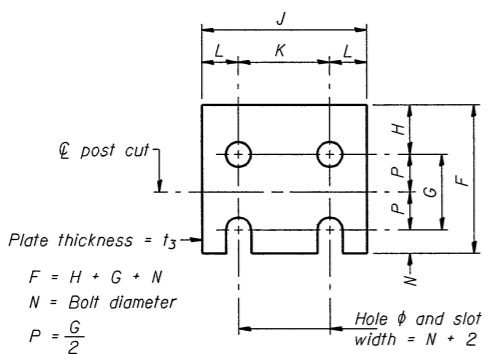
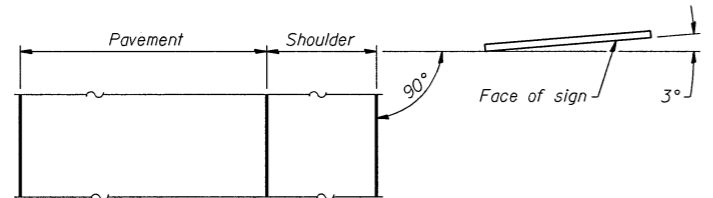
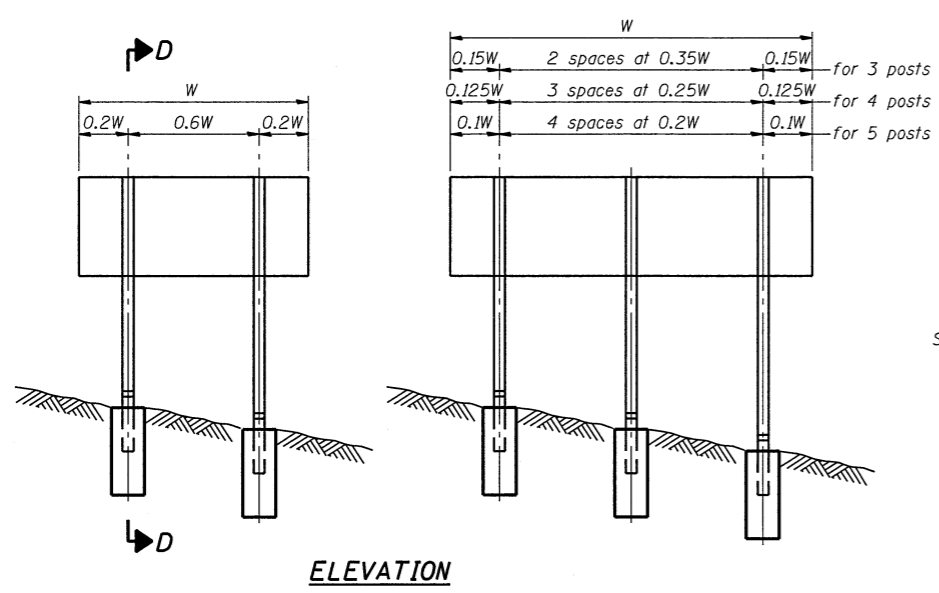
SHEET TITLE CANTILEVER SIGN STRUCTURES
 DRILLED SHAFT
 ALUMINUM TRUSS & STEEL POST

PROJECT F.A.I. 55
 SECTION (57-4)R, HBY, HBR,
 (57-4VB)DM
 McLEAN COUNTY

COOMBE-BLOXDORF P.C.
 Engineers / Land Surveyors
 Springfield, Illinois
 Design Firm License No. 184-002703

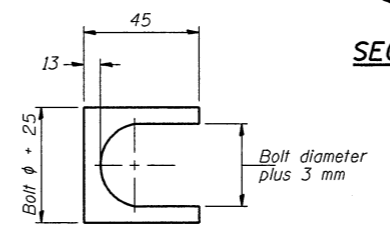
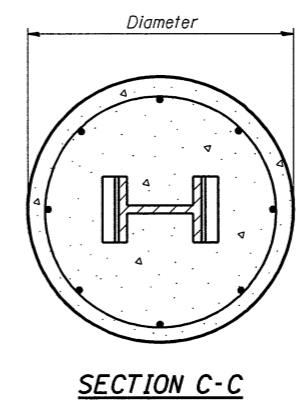
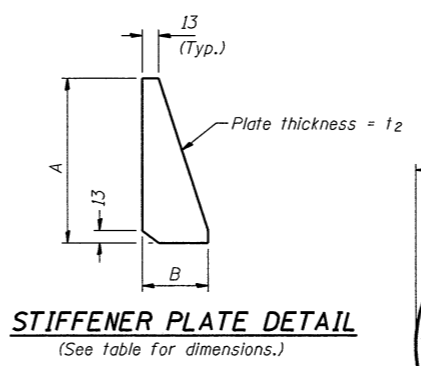
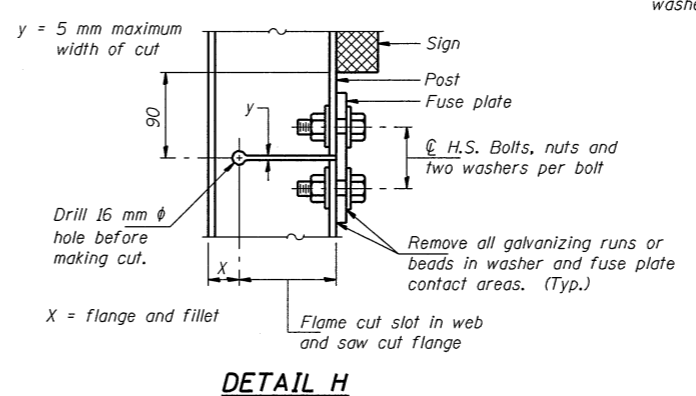
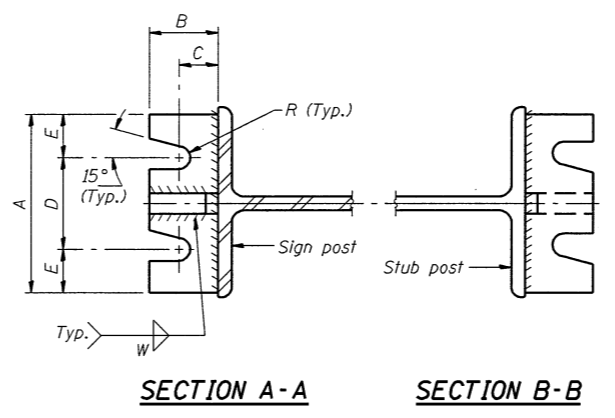
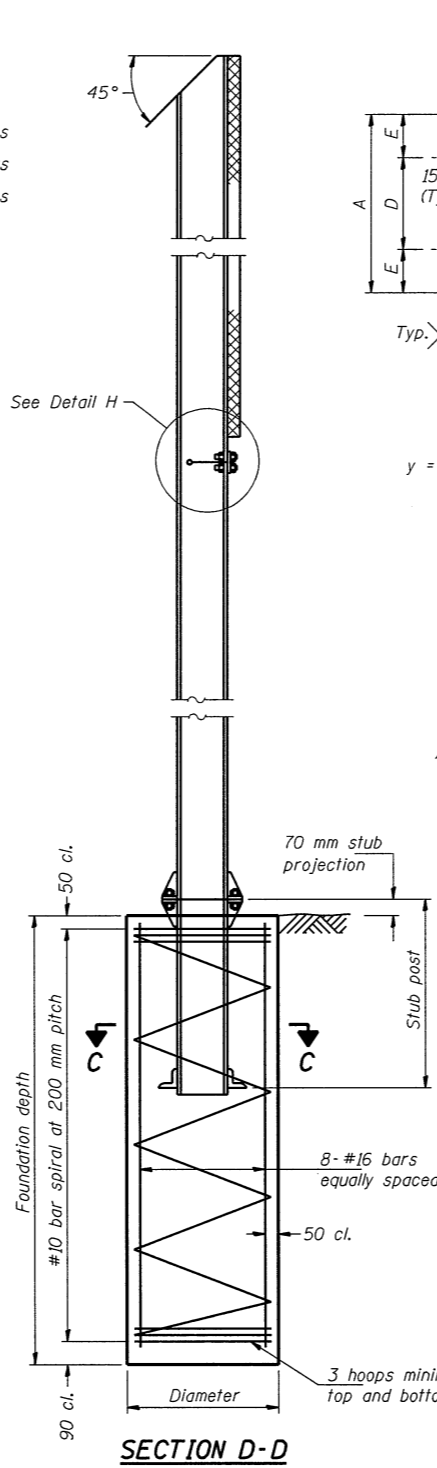
PROJECT NO. 9450
SCALE
DATE 10/08/04
DRAWN BY TFC
CHECKED BY MCB
DRAWING NO. 22
OF 24 SHTS

7/18/2009 #FILE#BBREV#

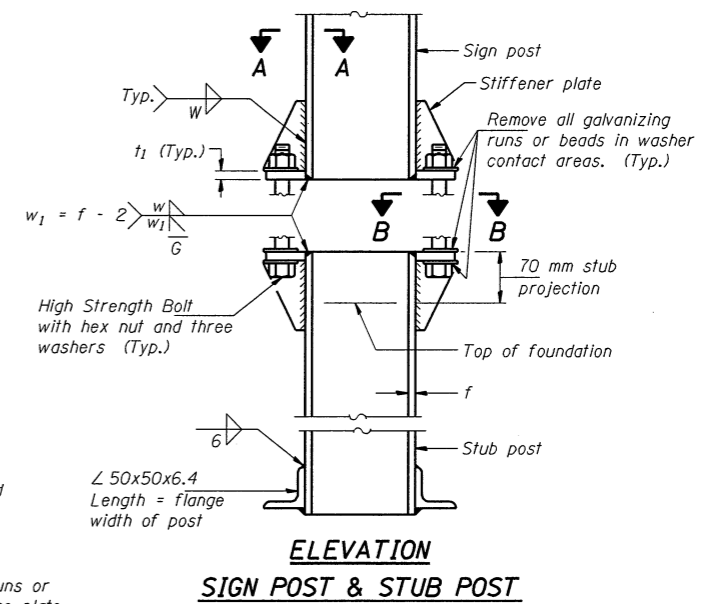


N = Bolt Diameter	G	H
M12	50	30
M16	60	30
M20	65	35
M24	75	40
M27	85	45

NUMBER	REVISION	DATE



Furnish two 0.3 mm thick and two 0.8 mm thick stainless steel or brass (ASTM B36) shims per post.



GENERAL NOTES

MEASUREMENTS: All dimensions are in millimeters (mm) except as noted.

Posts shall be plumbed by using shims with post-to-stub post connection bolts snug tight only. Final tightening of all High Strength Bolts shall be in accordance with Article 727.05 and threads at the junction of the bolt and nut shall be burred or center punched to prevent the nut from loosening.

LOADING: 130 km/h wind with 30% gust factor, normal to sign.

DESIGN STRESSES:
 Structural steel - 138 MPa
 Reinforcing steel - 138 MPa
 Concrete - 10 MPa
 Footing soil pressure - 95 kPa

After fabrication, the post, fuse plate, base plate and upper 150 mm (Minimum) of the stub post shall be hot-dip galvanized in accordance with AASHTO M111. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M232.

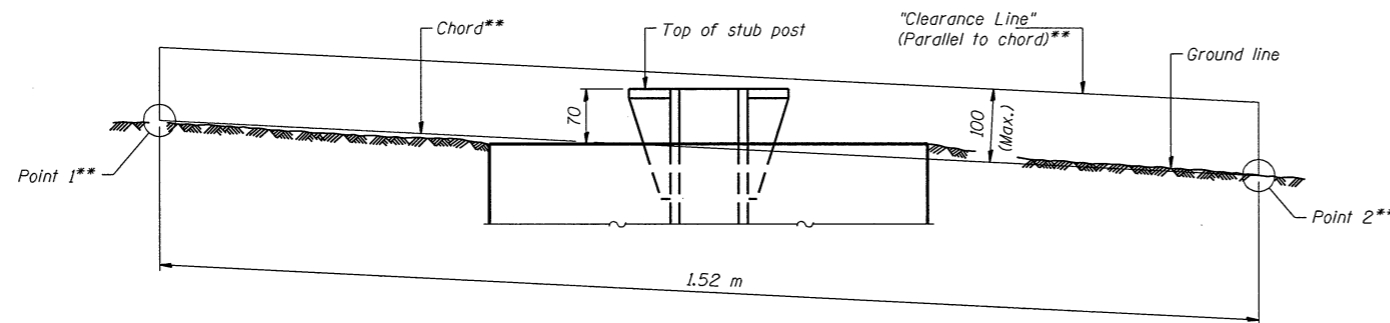
Work this sheet with Base Sheet BAW-A-2(M).

SHEET TITLE		PROJECT NO.
BREAK-AWAY WIDE FLANGE STEEL SIGN POST DETAILS		9450
PROJECT		SCALE
F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY		DATE 10/08/04
DRAWN BY		DRAWING NO.
TFG		MCB
CHECKED BY		
M.C.B.		
DRAWING NO.		
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois		23
Design Firm License No. 184-002703		OF 24 SHTS

POST	CONCRETE FOUNDATION TABLE								POST TO STUB POST CONNECTION DATA								FUSE PLATE DATA					
	Foundation			Reinforcement				Stub Post Length	Bolt Size	A	B	C	D	E	t ₁	t ₂	R	W	J	K	L	t ₃
	Diameter	*Minimum Depth (m)	Concrete (m ³) ①	Vertical Bars Length (m)	Bar Spirals Diameter	Bar Spirals Length (m)	kg ②															
W150x14	610	1.8	0.53	1.72	520	24.1	41	690	M16x85	150	57	32	90	30	20	14	9	6	100	56	22	6
W150x22	610	1.8	0.53	1.72	520	24.1	41	760	M16x85	150	57	32	90	30	20	14	9	6	150	90	30	10
W200x27	610	1.8	0.53	1.72	520	24.1	41	760	M20x95	150	64	35	82	34	25	14	10	8	130	70	30	10
W250x33	760	2.0	0.91	1.92	675	32.0	49	910	M20x95	150	64	35	82	34	25	14	10	8	145	70	38	14
W250x39	760	2.1	0.95	2.02	675	34.1	52	910	M22x105	180	70	38	102	39	25	20	12	10	145	70	38	16
W310x39	760	2.4	1.09	2.32	675	36.3	58	910	M22x105	180	70	38	102	39	25	20	12	10	165	90	38	16
W360x45	910	2.2	1.43	2.12	825	44.2	61	910	M22x105	180	70	38	102	39	25	20	12	10	170	90	40	14
W360x57	910	2.4	1.56	2.32	825	46.6	66	1.07 m	M24x115	190	76	44	102	44	32	20	13	10	170	90	40	14
W410x67	910	2.6	1.69	2.52	825	49.4	70	1.07 m	M24x115	190	76	44	102	44	32	20	13	10	180	90	45	14

*Dimensional changes required for varying site conditions shall be approved by the Engineer.

POST	FUSE PLATE BOLT SIZE													
	Sign Depth (m)													
	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	
W150x14	M12x40	M12x40	M12x40	M16x45	M16x45	M16x45	—	—	—	—	—	—	—	—
W150x22	M12x45	M12x45	M16x50	M16x50	M20x50	M20x50	M20x50	M20x50	M22x50	M22x50	—	—	—	—
W200x27	M12x45	M12x45	M12x45	M16x50	M16x50	M20x50	M20x50	M22x60	M22x60	M22x60	M22x60	M22x60	M22x60	M22x60
W250x33	M12x50	M12x50	M12x50	M16x50	M16x50	M20x60	M20x60	M22x60	M22x60	M22x65	M24x65	M24x70	M24x70	M24x70
W250x39	M12x50	M12x50	M12x50	M16x60	M16x60	M20x65	M20x65	M22x65	M22x65	M24x70	M24x70	M24x70	M27x80	M27x80
W310x39	—	—	—	—	—	M16x60	—	—	M22x65	M22x65	M24x65	M24x70	M24x70	M24x70
W360x45	M12x50	M12x50	M12x50	M12x50	M12x50	M16x50	M20x60	M20x60	M20x60	M22x65	M24x65	M24x70	M24x70	M24x70
W360x57	—	M12x50	M12x50	M12x50	M12x50	M16x60	M20x60	M20x65	M20x65	M22x65	M22x65	M24x65	M24x70	M24x70
W410x67	—	—	—	M12x50	M12x50	M16x60	M16x60	M20x60	M20x65	M20x65	M22x65	M22x65	M24x70	M24x70



**ELEVATION
GROUND LINE & STUB POST**

**For all "Point 1" and "Point 2" locations, "Clearance Line" must be at or above top of stub post.

① Quantity includes all concrete necessary for one foundation.

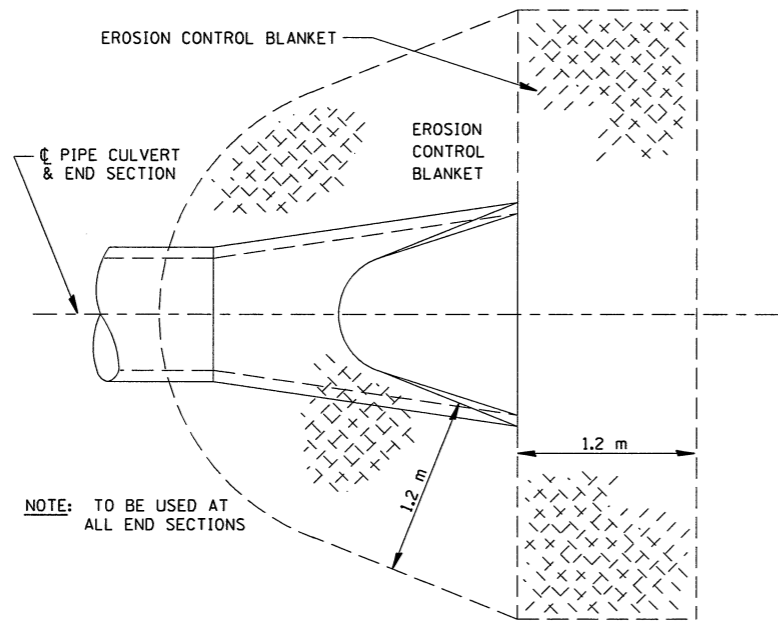
② Includes reinforcement bars and spiral hooping for one foundation.

Note: All necessary excavation or drilling (except in rock); backfilling with excavated material; disposal of unsuitable material; formwork; furnishing and placing Class SI Concrete; and reinforcement bars shall be included with "Concrete Foundations".

NUMBER	REVISION	DATE

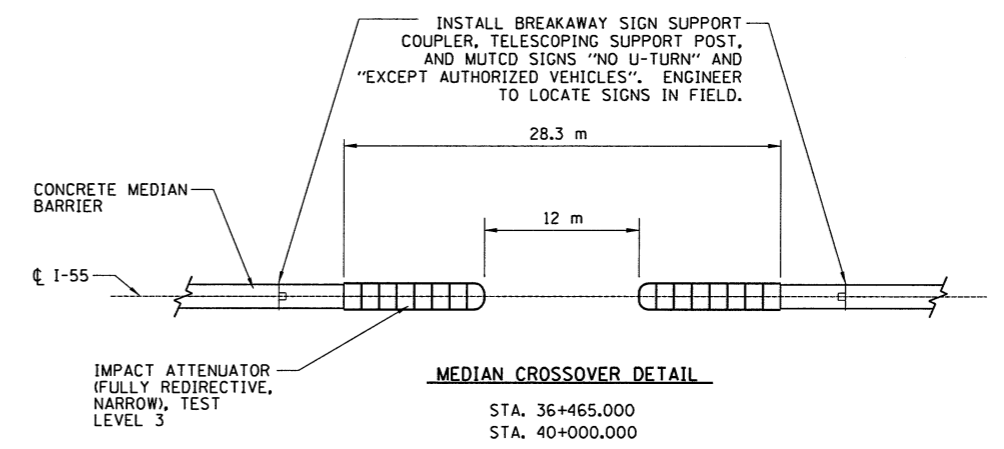
SHEET TITLE		BREAK-AWAY WIDE FLANGE STEEL SIGN POST DETAILS	
PROJECT	F.A.I. 55 SECTION (57-4)R, HBY, HBR, (57-4VB)DM McLEAN COUNTY	PROJECT NO.	9450
SCALE		DATE	10/08/04
DRAWN BY	TFG	CHECKED BY	MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	24
		OF 24 SHTS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	157
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		(57-4)R, HBY, HBR, (57-4VB)DM		
CONTRACT #70757				



NOTE: TO BE USED AT ALL END SECTIONS

DETAIL OF EROSION CONTROL BLANKET LINING AROUND END SECTION



MEDIAN CROSSOVER DETAIL

SIGN REQUIREMENTS

"NO U-TURN" : MUTCD STANDARD R3-4 (914 mm x 914 mm) — TYPE ZZ SHEETING
 "EXCEPT AUTHORIZED VEHICLES" : ILLINOIS STANDARD R3-1101 (914 mm x 610 mm) — TYPE ZZ SHEETING

7/25/2009
 #124

LAYOUT	JH	04/09/02
DRAWN	JH	03/26/04
REVIEWED	JH	03/26/04

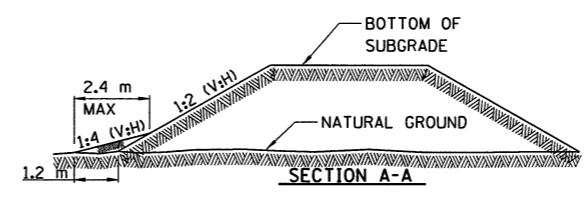
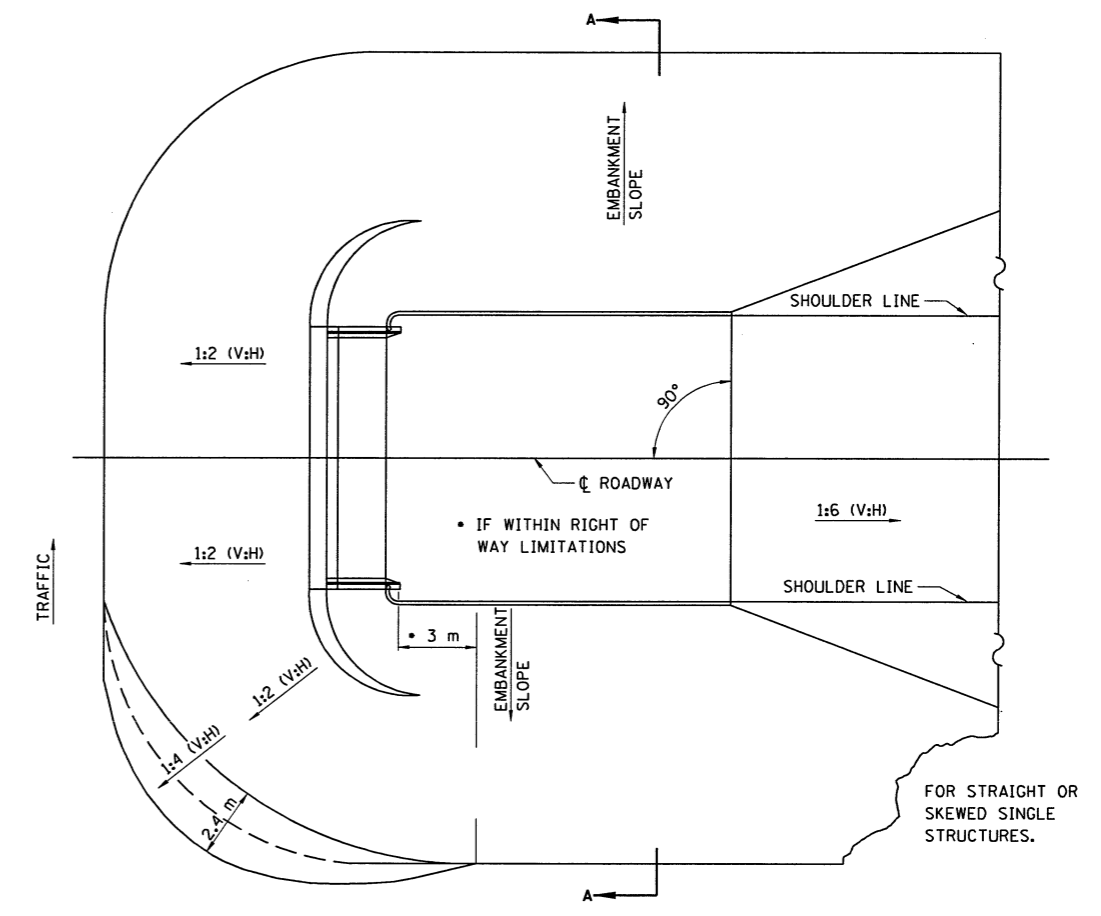
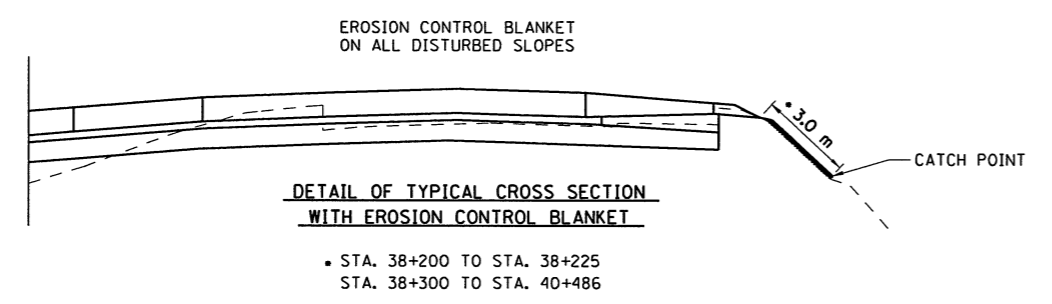
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4VB)DM
 MCLEAN COUNTY
MISCELLANEOUS DETAILS

REVISIONS	
NAME	DATE

HANSON

JOB NO. 9452063
 DATE 7/25/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	158
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4VB)DM CONTRACT #70757				



EMBANKMENT CONE REPAIR DETAIL

APPLY DETAIL AT NORTHWEST AND SOUTHEAST QUADRANTS OF I-39 S.N.'S 057-0214 & 057-0215

NOTE: COST OF EMBANKMENT AND ALL SEEDING ITEMS INCLUDED WITH FAI-55 BORROW EXCAVATION.

6/25/2009 #124

LAYOUT	04/10/03
DRAWN	04/10/03
REVIEWED	03/18/04

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

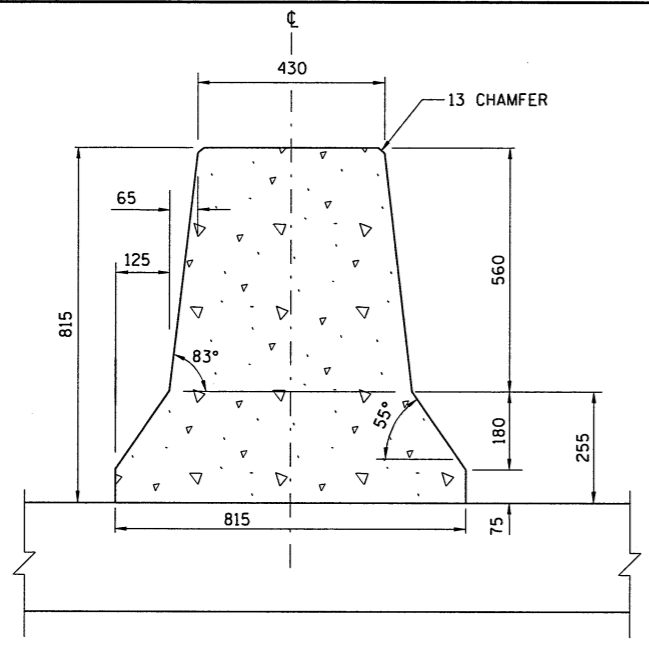
MISCELLANEOUS DETAILS

REVISIONS	
NAME	DATE

HANSON

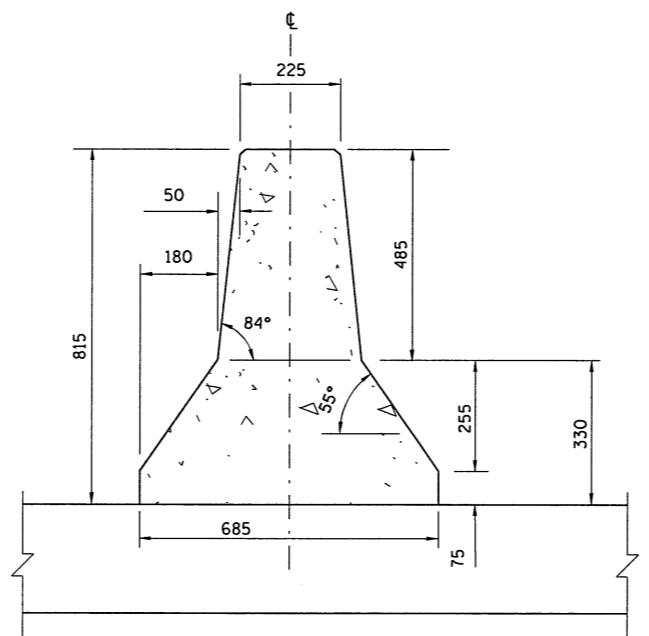
JOB NO. 94S2063
DATE 6/25/2009

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	159
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4)BIDM CONTRACT #70757				

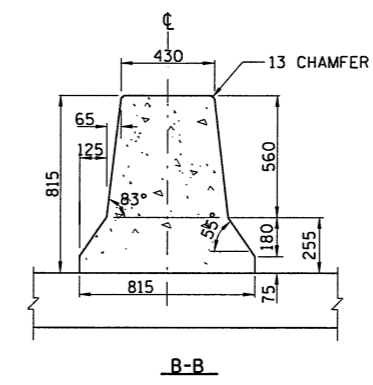


TYPICAL CONCRETE BARRIER, DOUBLE FACE, 815 mm HEIGHT DETAIL

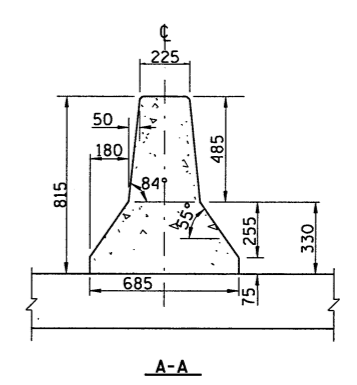
NOTE: SEE STD. 637001 FOR ANCHORING TO PCC BASE



CONCRETE BARRIER, DOUBLE FACE (SPECIAL)



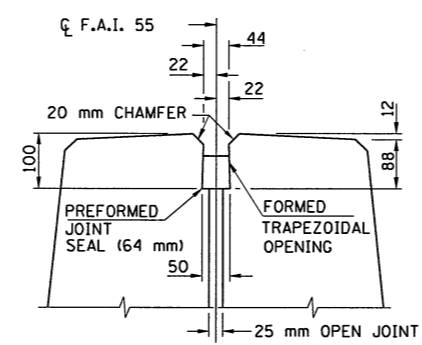
B-B



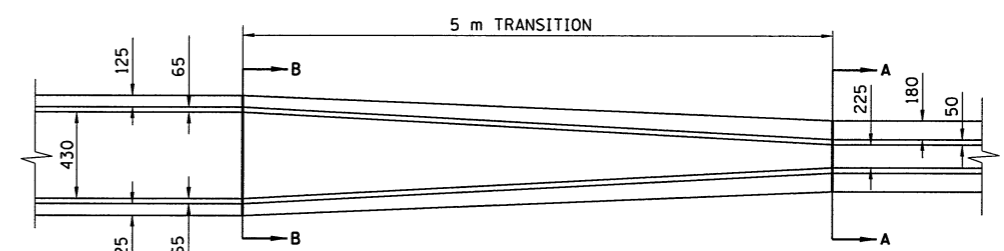
A-A

BRIDGE OMISSION LOCATIONS

STA. 37+442.417 TO STA. 37+505.996
STA. 38+520.959 TO STA. 38+567.127

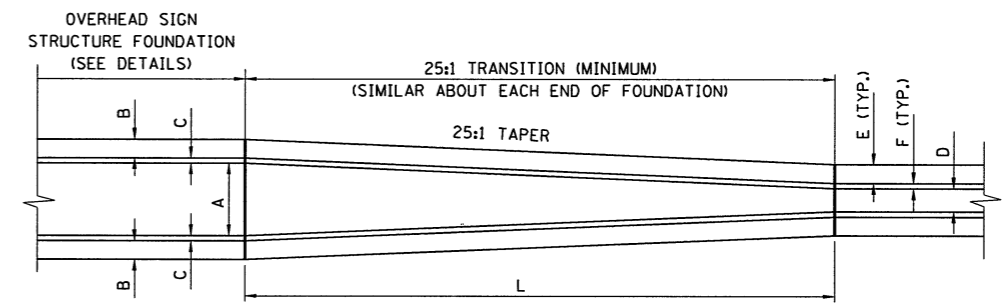


DETAIL B



TRANSITION TO F-SHAPE BARRIER

PAID FOR AS CONCRETE BARRIER TRANSITION (M)
STA. 36+500 TO STA 36+505

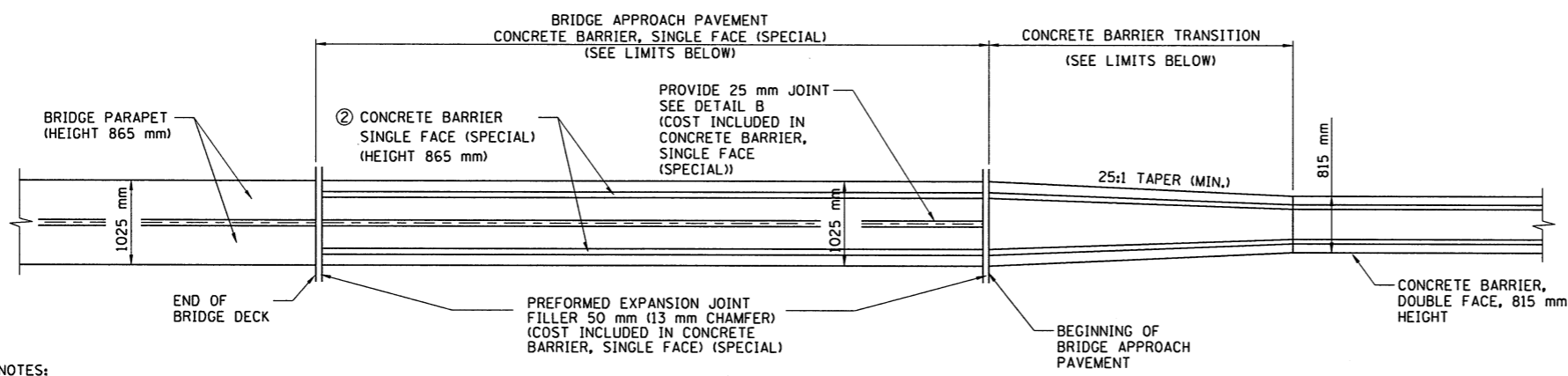


Barrier transition detail AT OVERHEAD SIGN STRUCTURE FOUNDATIONS (TYP.)

NOTE: PAID FOR AS CONCRETE BARRIER TRANSITION (M)

OVERHEAD SIGN STRUCTURE FOUNDATION DIMENSIONS							
STATION	A	B	C	D	E	F	L (m) **
STA. 36+305*	700	180	50	225	180	50	6.0
STA. 37+140	700	127	64	430	125	65	4.0
STA. 38+425	610	127	64	430	125	65	3.0
STA. 38+925	700	127	64	430	125	65	4.0
STA. 40+650*	700	180	50	225	180	50	6.0

* EXISTING
** LENGTHS SHOWN FOR QUANTITY PURPOSES, MAY VARY IN FIELD



CONCRETE MEDIAN BARRIER TRANSITION AT BRIDGE PARAPETS

(EAST APPROACH SHOWN) USE AT, B.R.51 AND LINDEN STREET

CONCRETE BARRIER, SINGLE FACE (SPECIAL)

STA. 37+410.915 TO STA. 37+442.417
STA. 37+505.996 TO STA. 37+537.247
STA. 38+511.959 TO STA. 38+520.959
STA. 38+567.127 TO STA. 38+576.127

NOTE: SEE CONCRETE MEDIAN BARRIER SCHEDULE FOR STATION TO STATION LIMITS OF VARIOUS CONCRETE MEDIAN PAY ITEMS

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY

MEDIAN BARRIER DETAILS

LAYOUT	J.H.	04/10/02
DRAWN	J.H.	03/05/04
REVIEWED	D.L.H.	03/18/04

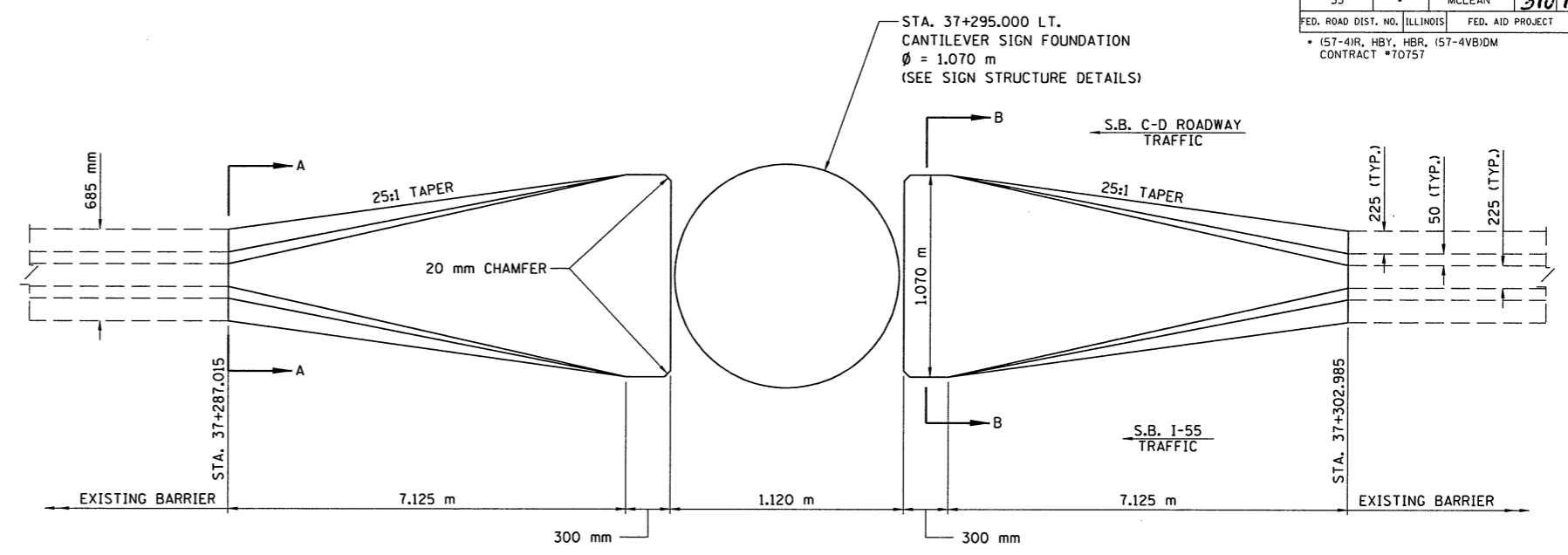
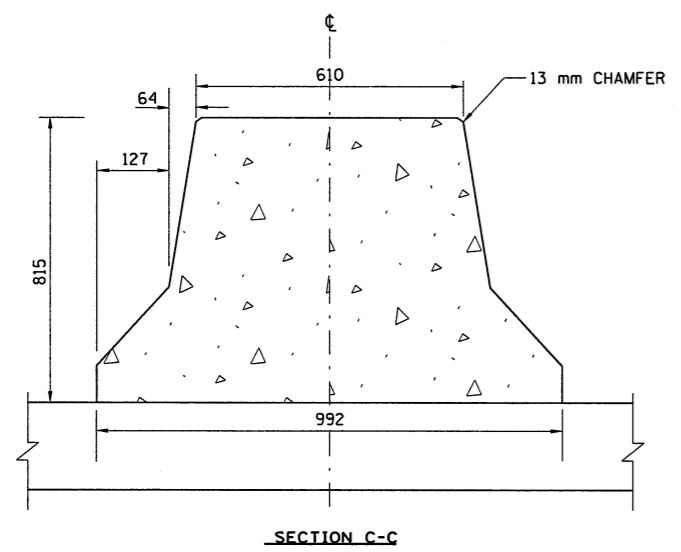
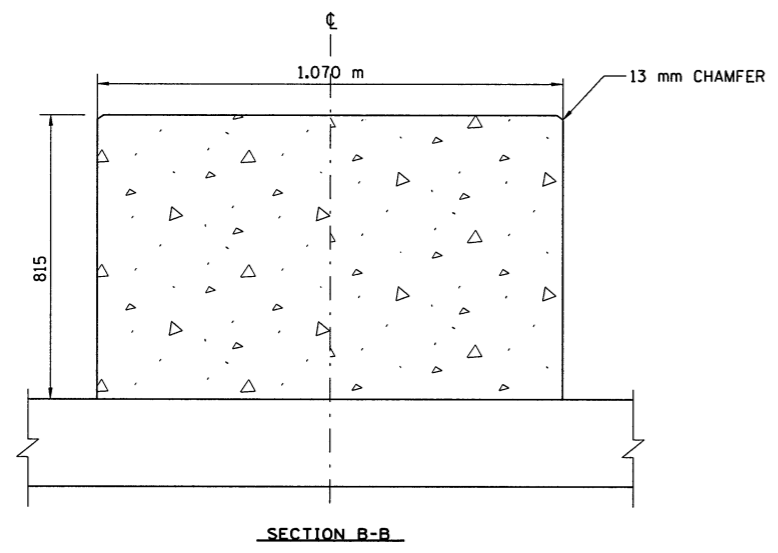
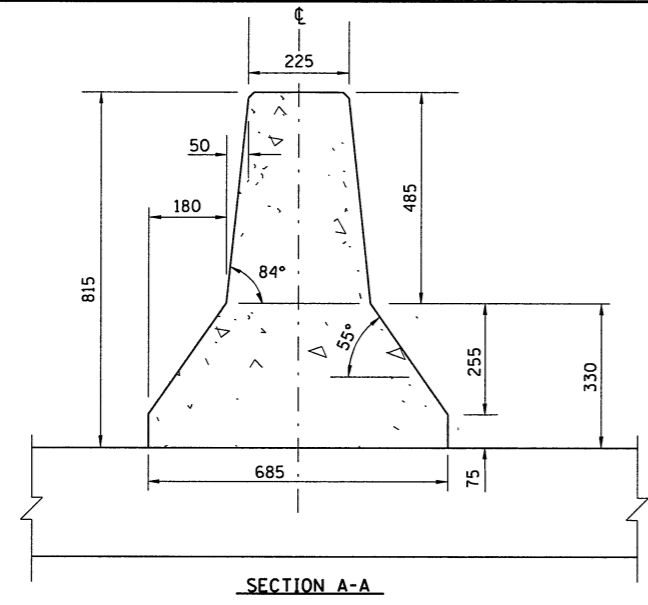
NOTES:

- TRANSITION CONCRETE BARRIER HEIGHT FROM 815 mm TO 865 mm AND WIDTH FROM 815 mm TO 1025 mm AT NORTH AND SOUTH BRIDGE APPROACH. PAID FOR AS CONCRETE BARRIER TRANSITION (M).
- CONCRETE BARRIER SINGLE FACE (SPECIAL) TO MATCH BRIDGE PARAPET SECTION (SEE BRIDGE PLANS FOR DETAILS).

REVISIONS	
NAME	DATE

JOB NO. 94S2063
DATE 6/25/2009

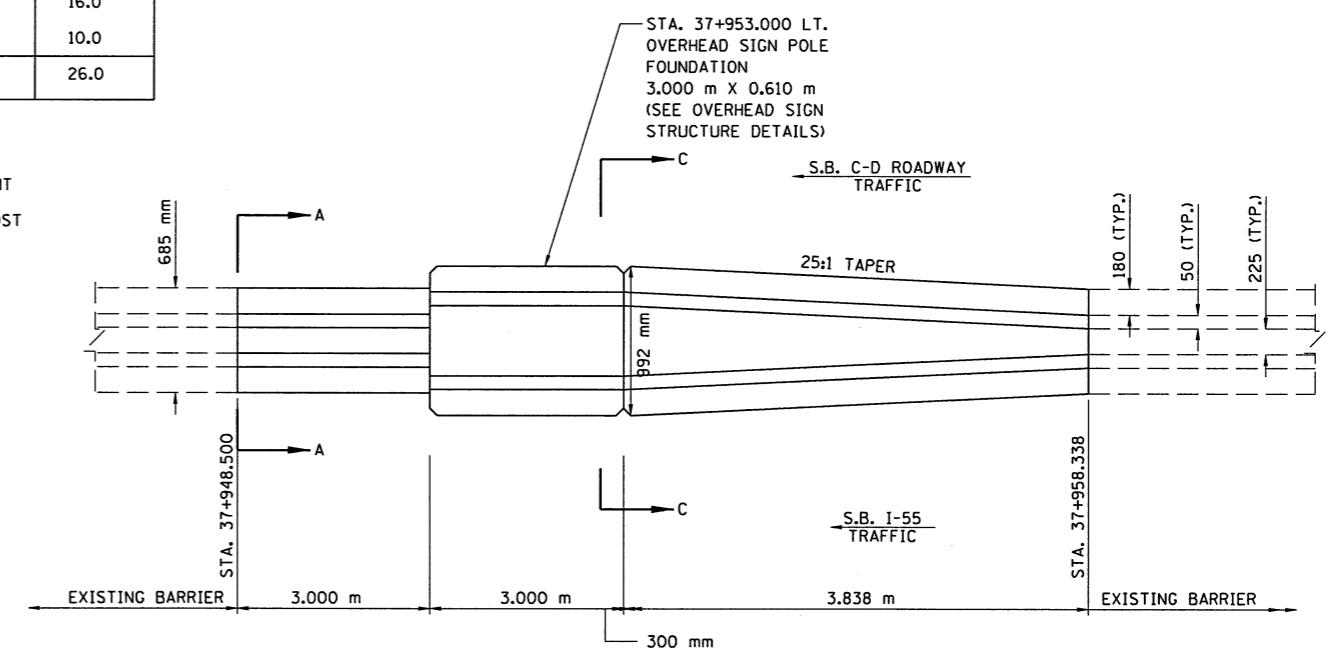
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	160
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
• (57-4)R, HBY, HBR, (57-4)BIDM CONTRACT #70757				



**BARRIER TRANSITION DETAIL
AT CANTILEVER SIGN STRUCTURE FOUNDATION STA 37+295.000 LT.**
NOTE: PAID FOR AS CONCRETE BARRIER REMOVAL AND REPLACEMENT

CONCRETE BARRIER REMOVAL AND REPLACEMENT	METER
STA 37+287.015 TO 37+302.985, LEFT	16.0
STA 37+948.500 TO 37+958.338, LEFT	10.0
TOTAL	26.0

NOTE: ANY SHOULDER REMOVAL AND REPLACEMENT REQUIRED FOR THIS WORK, INCLUDING SUB-BASE SHALL BE INCLUDED IN THE COST OF CONCRETE BARRIER REMOVAL AND REPLACEMENT.



**BARRIER TRANSITION DETAIL
AT OVERHEAD SIGN STRUCTURE FOUNDATION STA 37+953.000 LT.**
NOTE: PAID FOR AS CONCRETE BARRIER REMOVAL AND REPLACEMENT

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY
**MEDIAN BARRIER TRANSITION
AT SIGN FOUNDATION DETAIL**

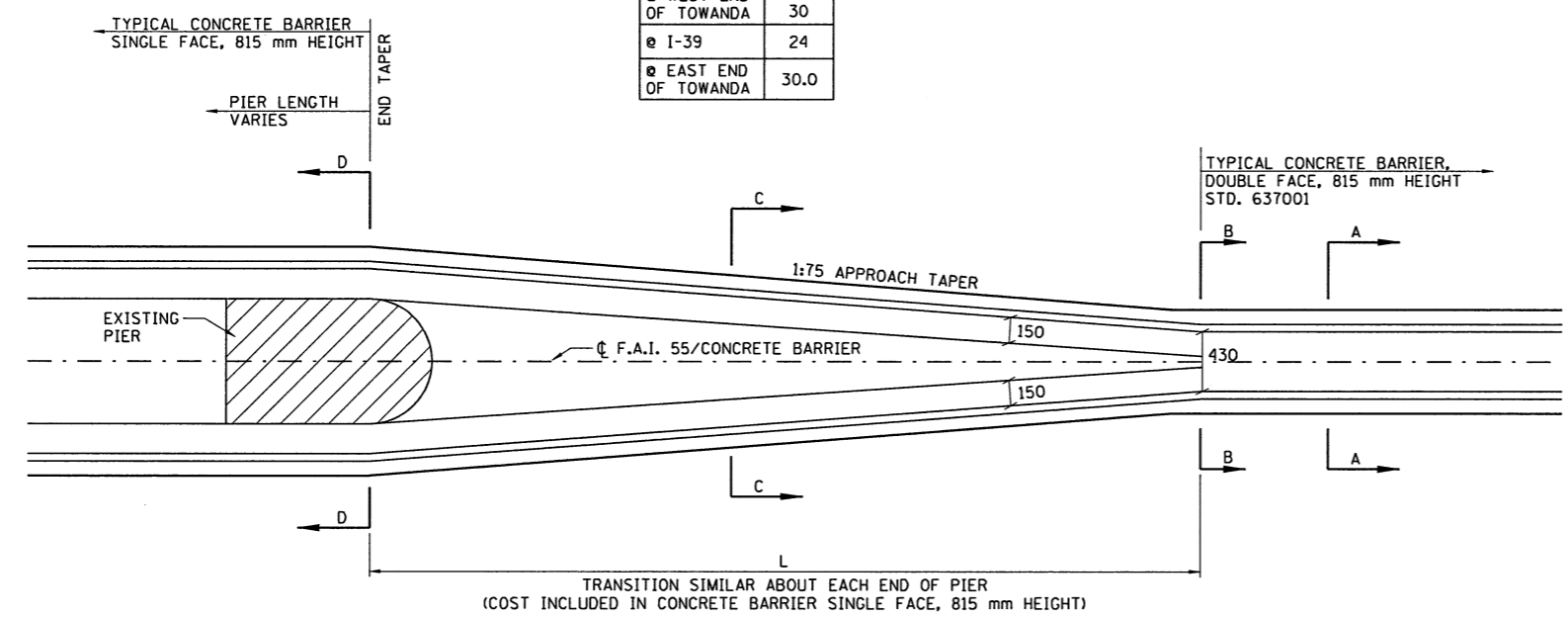
REVISIONS	
NAME	DATE

HANSON
JOB NO. 94S2063
DATE 6/25/2009

LAYOUT	J.H.	04/09/02
DRAWN	J.H.	03/05/04
REVIEWED	DLH	03/18/04

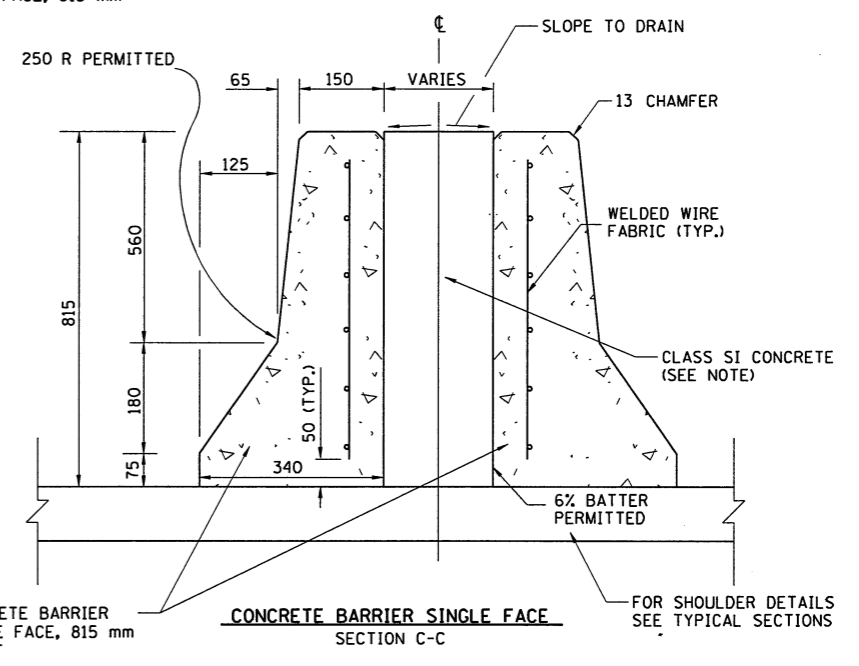
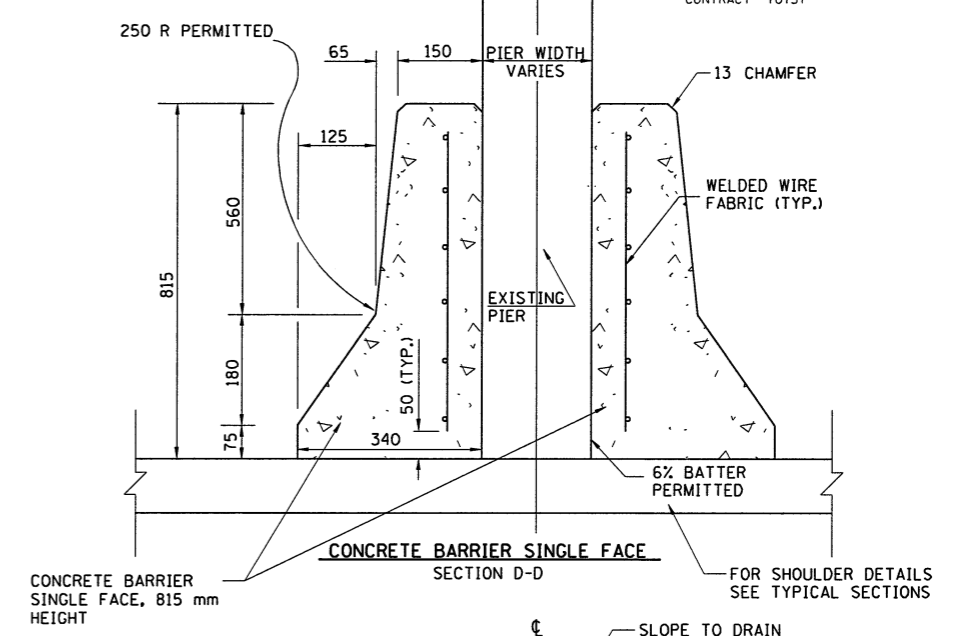
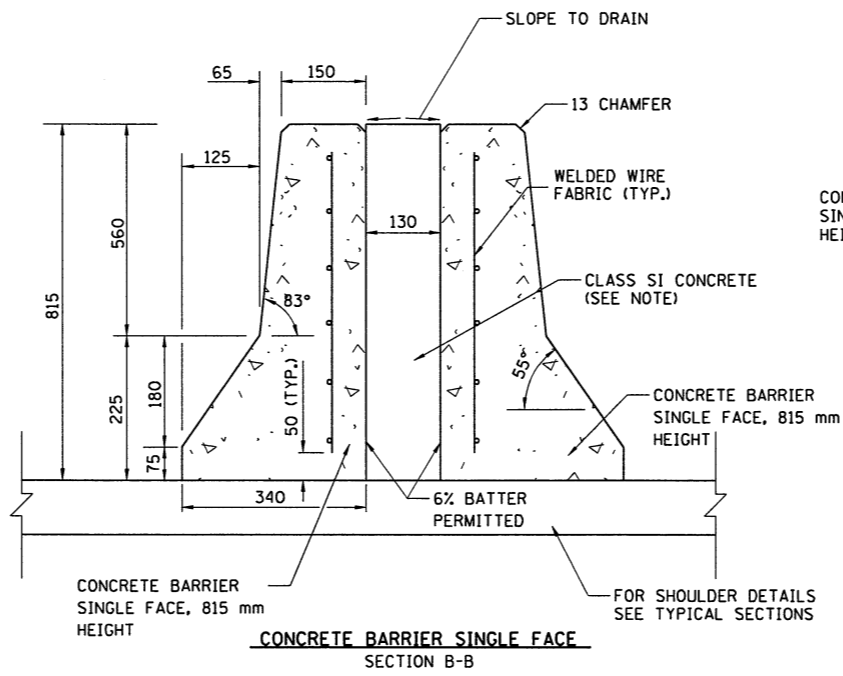
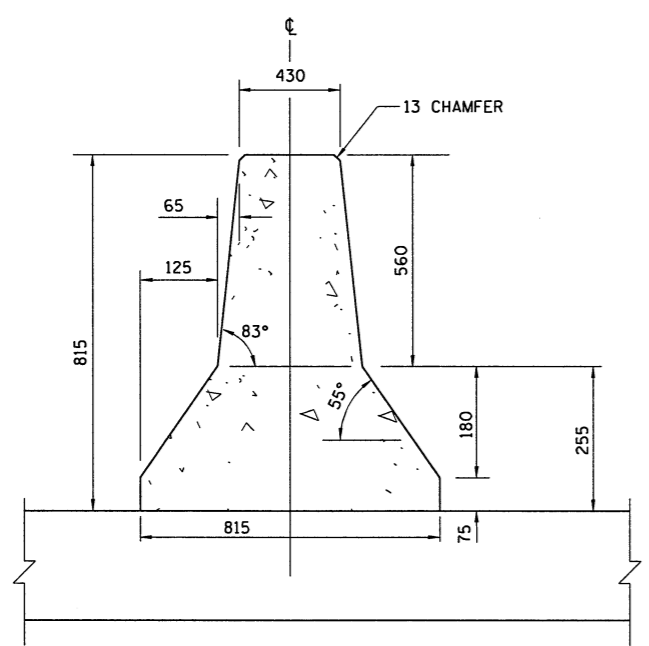
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	161
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)BIDM CONTRACT #70757				

STRUCTURE	L (m)
WEST END OF TOWANDA	30
I-39	24
EAST END OF TOWANDA	30.0



NOTE: MODIFY TRANSITION IN ACCORDANCE WITH STD. 637001 TO INCORPORATE THE LIGHT POLE FOUNDATION AT STA. 40+240, COST OF MODIFICATIONS SHALL BE INCLUDED IN THE COST OF CONCRETE BARRIER SINGLE FACE, 815 mm HEIGHT. THE BARRIER MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

MEDIAN BARRIER TRANSITION PLAN



NOTE: COST OF CLASS SI CONCRETE WILL BE INCLUDED IN THE COST OF CONCRETE BARRIER SINGLE FACE, 815 mm HEIGHT.

WHERE CRASHWALL HEIGHT IS LESS THAN PROPOSED BARRIER FILL WITH CLASS SI CONCRETE AS SHOWN IN DETAIL C-C. COST INCLUDED IN CONCRETE BARRIER SINGLE FACE.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY

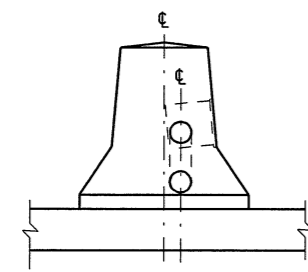
MEDIAN BARRIER TRANSITION AT PIERS DETAIL

REVISIONS	
NAME	DATE

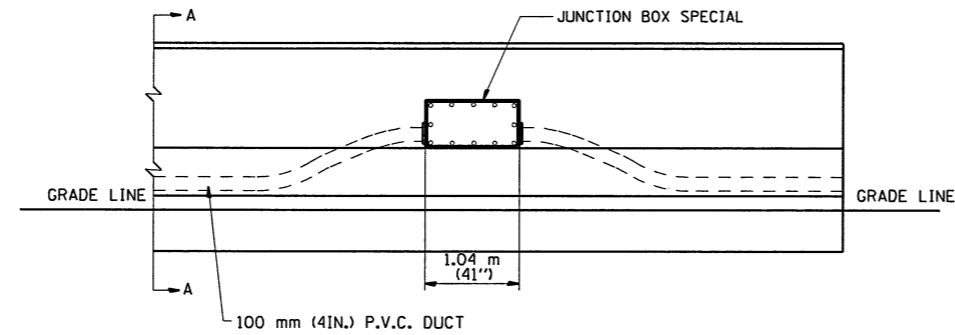
JOB NO. 9452063
DATE 6/25/2009

LAYOUT	JAR	04/09/02
DRAWN	JAR	03/05/04
REVIEWED	DLH	03/18/04

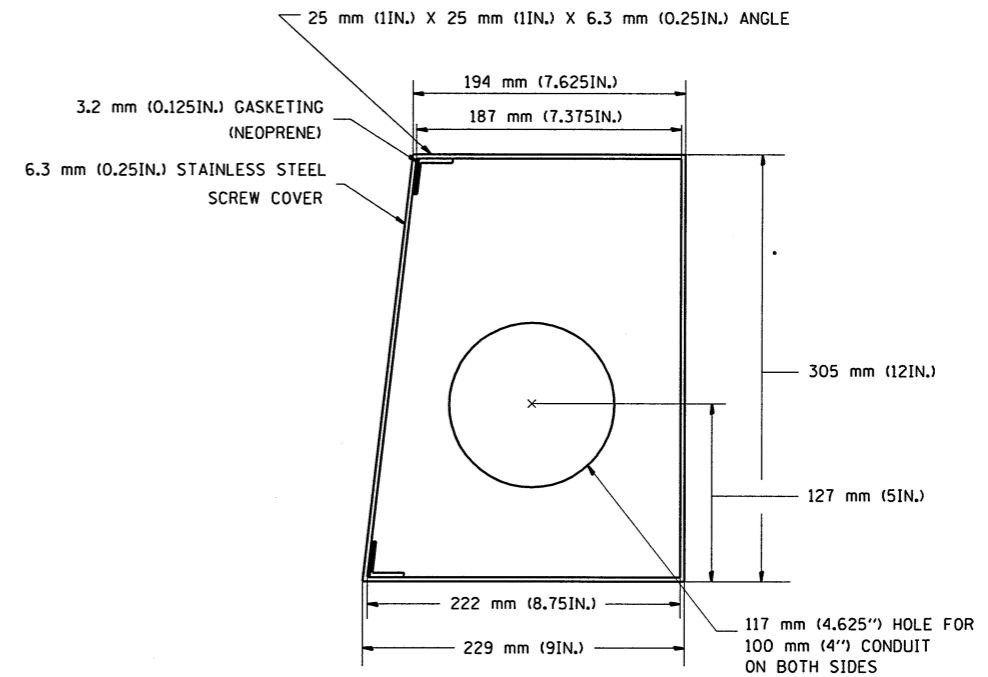
6/25/2009 #FILE*



SECTION A-A

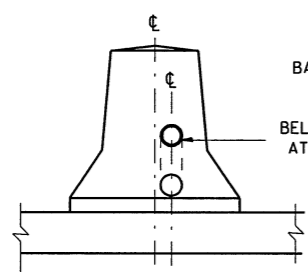


ELEVATION
BARRIER WALL DUCT DETAIL

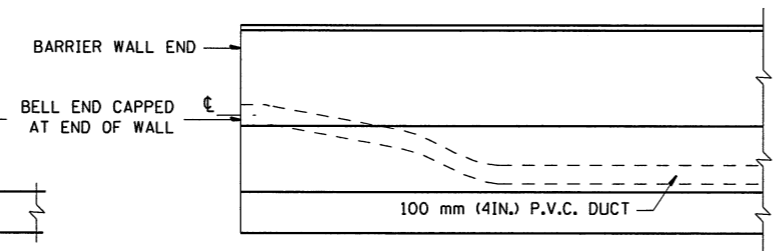


SIDE VIEW
JUNCTION BOX SPECIAL TO BE
INSTALLED IN BARRIER WALL

ALL WELDS SHALL BE CONTINUOUS AND LEAK PROOF
BOX AND COVER SHALL BE 6.4 mm (0.25IN.) TYPE 316 STAINLESS STEEL



END VIEW



ELEVATION

END OF BARRIER WALL DUCT DETAIL

BARRIER WALL SHALL BE GAPPED A MINIMUM OF 4.57 m (15 FT.) FOR PROPER PLACEMENT OF JUNCTION BOX SPECIAL AND FOR A SMOOTH TRANSITION OF 100 mm (4IN.) PVC SURVEILLANCE DUCT(S) FROM BARRIER WALL INTO JUNCTION BOX.

- NOTE:
1. LOCATION OF THE JUNCTION BOX SPECIAL WILL BE DETERMINED BY THE ENGINEER. MAXIMUM SPACING SHALL BE 150 M.
 2. THE CONDUIT SHALL BE PLACED UNDERGROUND AT THE MEDIAN CROSSOVERS. THE CONDUIT SHALL BE PLACED A MINIMUM OF 300MM UNDER THE PAVEMENT STRUCTURE.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY
**TRAFFIC SURVEILLANCE
BARRIER WALL DUCT DETAILS**

REVISIONS	
NAME	DATE

JOB NO.
9452063
DATE
6/25/2009

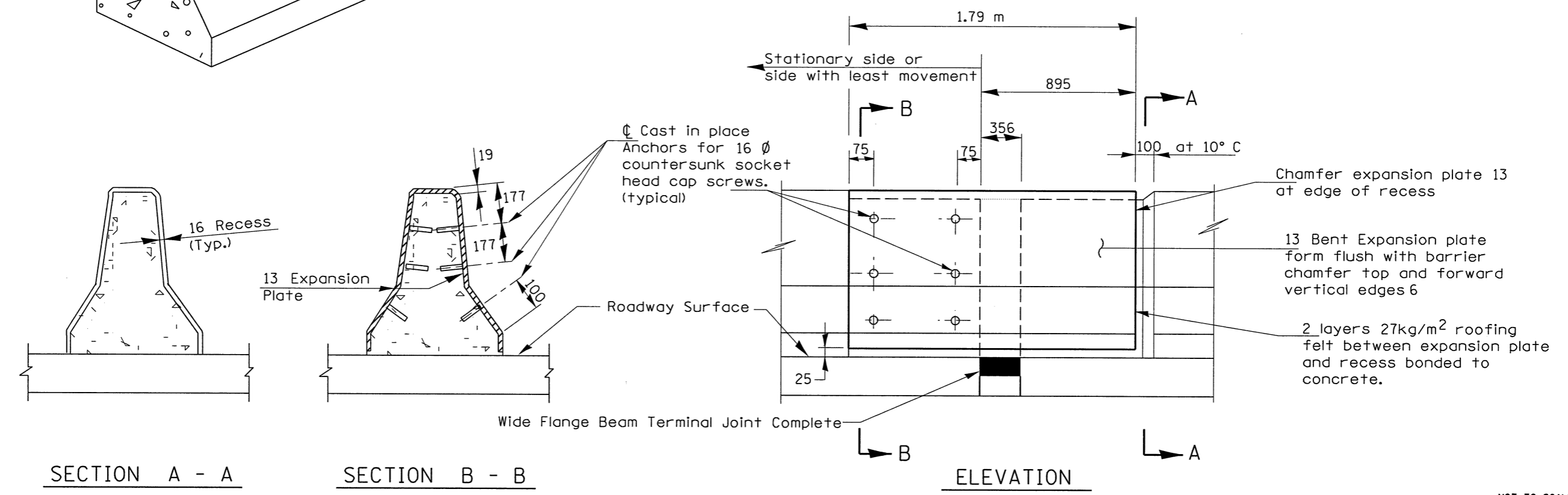
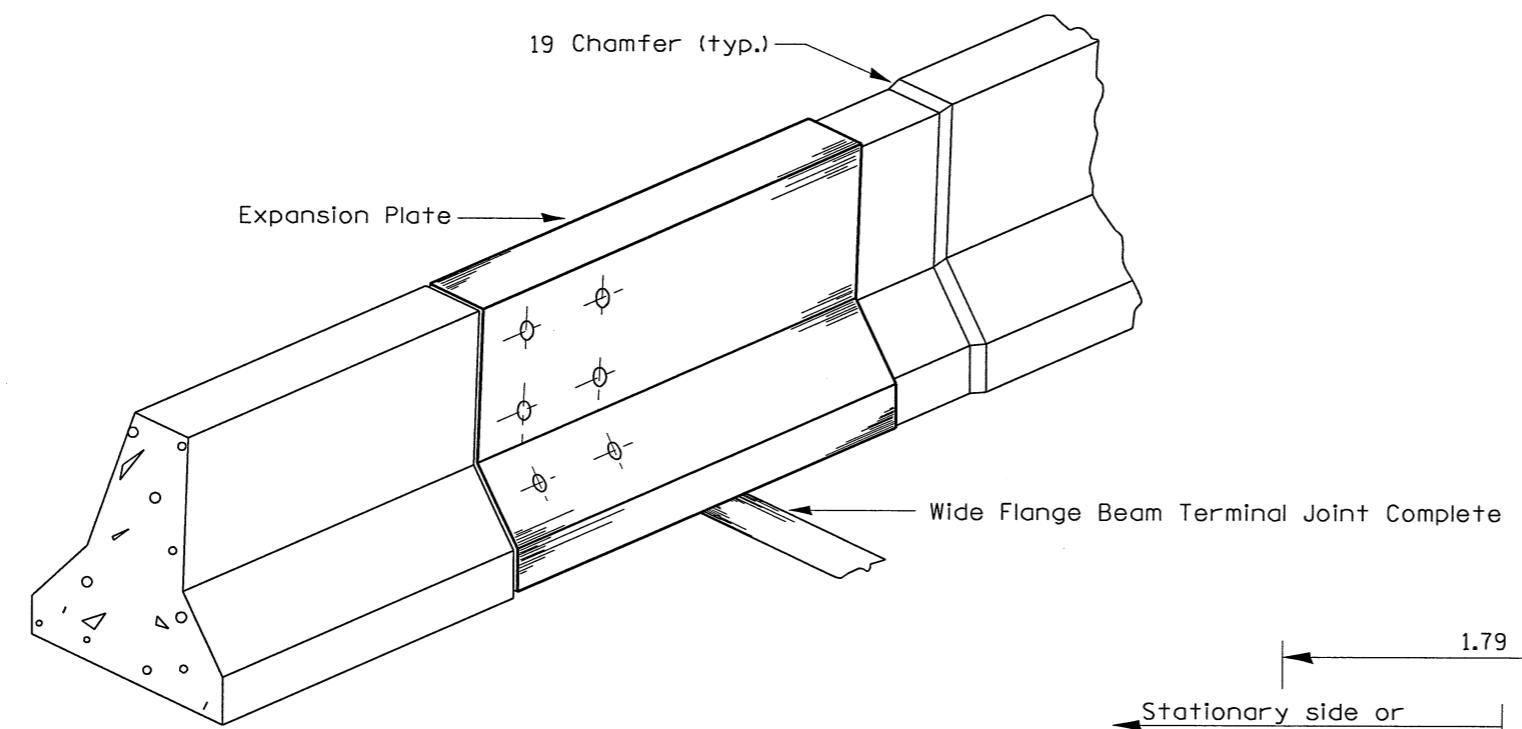
6/25/2009 #/LES

LAYOUT	J.H.	04/09/02
DRAWN	J.H.	03/05/04
REVIEWED	D.L.H.	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	163
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 157-41R, HBY, HBR, 157-4VBIDM CONTRACT #70757				

NOTES

- 1.) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE APPROVED WIDE FLANGE BEAM TERMINAL JOINT WITH THE END EXPANSION PLATE DETAIL SHOWN.
- 2.) ALL EXPANSION PLATES SHALL BE AASHTO M183 AND SHOP PAINTED WITH ZINC SILICATE AND VINYL PAINT SYSTEM.
- 3.) COST OF EXPANSION PLATES TO BE INCLUDED IN THE COST OF THE WIDE FLANGE BEAM TERMINAL JOINT COMPLETE.
- 4.) SEE STANDARD 637001 AND PLANS FOR ADDITIONAL CONCRETE BARRIER DETAILS.



NOT TO SCALE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION 157-41R, HBY, HBR, 157-4VBIDM
MCLEAN COUNTY

**CONCRETE BARRIER
EXPANSION PLATE DETAIL**

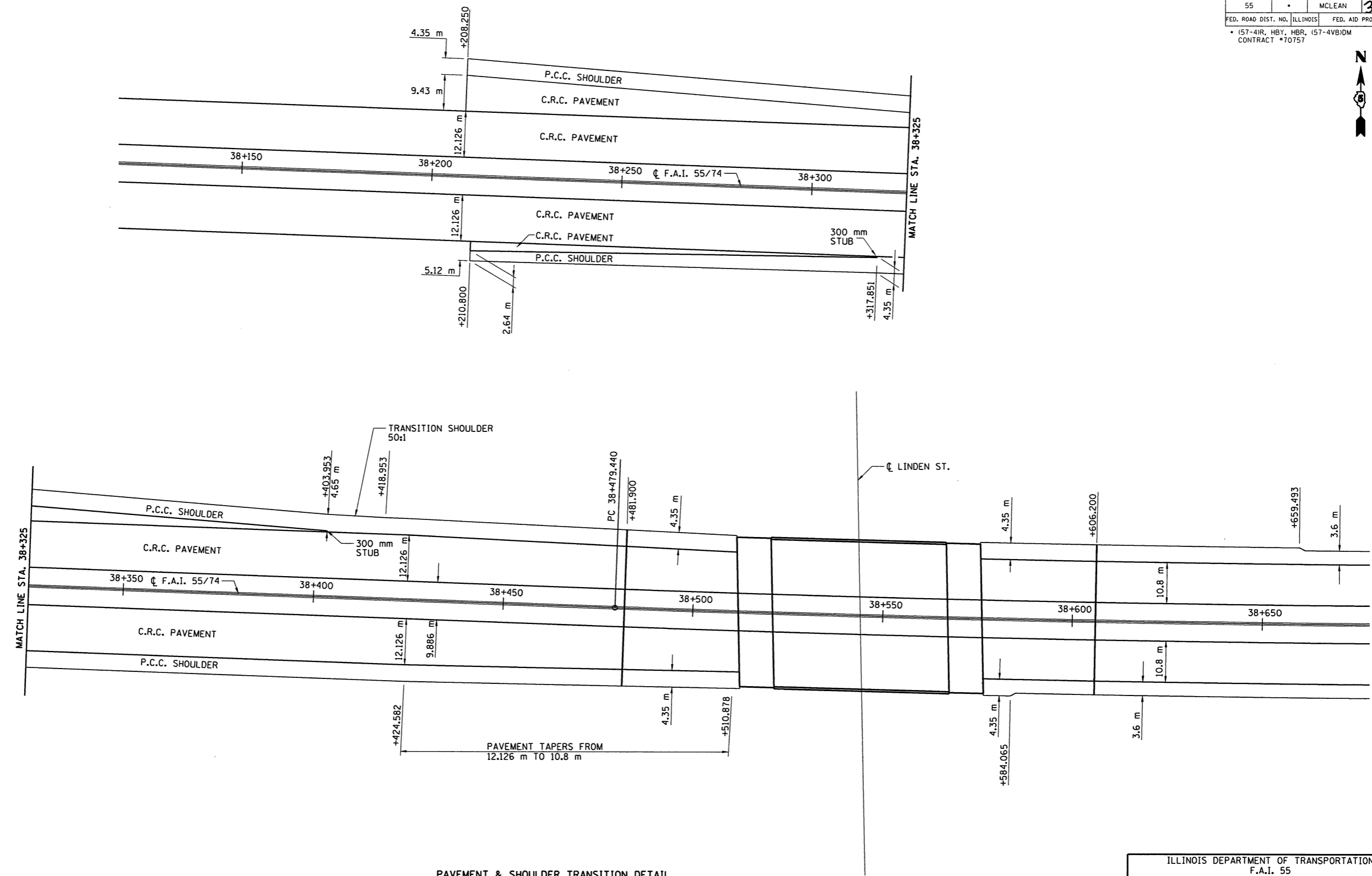
REVISIONS	NAME	DATE

JOB NO. 94S2063
DATE 6/25/2009

LAYOUT	DATE	BY
DRAWN	04/10/02	DLH
REVIEWED	03/05/04	DLH
	03/18/04	

6/25/2009
#FILES

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	164
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		• (57-4)R, HBY, HBR, (57-4VB)DM		
		CONTRACT #70757		



PAVEMENT & SHOULDER TRANSITION DETAIL

6/25/2009
#12EP

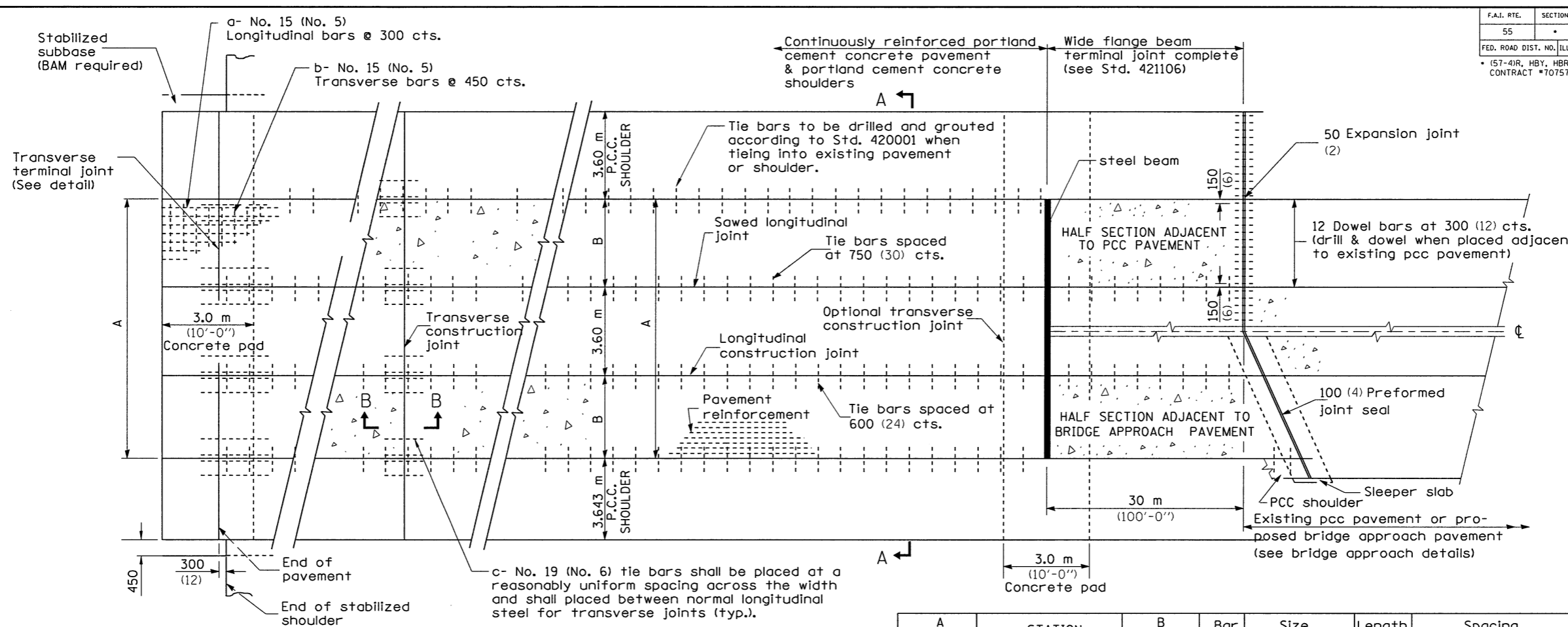
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DRAWN	JH	03/05/04
REVIEWED	DLR	02/18/04

REVISIONS	
NAME	DATE

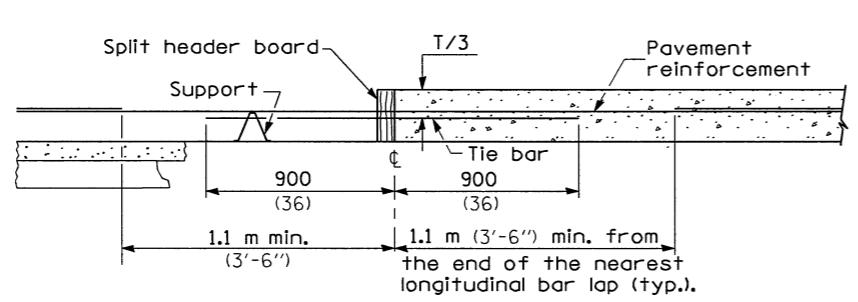
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

**PAVEMENT & SHOULDER
TRANSITION DETAIL**

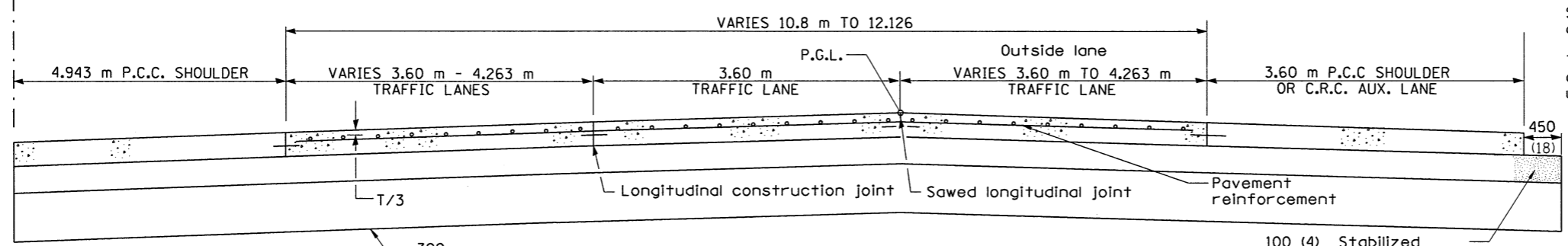
JOB NO.	94S2063
DATE	6/25/2009



A (m)	STATION	B (m)	Bar	Size	Length (m)	Spacing
10.800	38+606.1 LT/RT	3.60	a	No. 15 (No. 5)	2.85	36 @ 300 cts.
			b	No. 15 (No. 5)	10.65	7 @ 450 cts.
			c	No. 19 (No. 6)	1.80	9 @ 400 cts.
12.126	37+566.0 LT/RT	4.263	a	No. 15 (No. 5)	2.85	40 @ 300 cts.
	37+382.0 LT/RT		b	No. 15 (No. 5)	11.976	7 @ 450 cts.
			c	No. 19 (No. 6)	1.80	10 @ 400 cts.
VARIABLE	38+481.9 LT/RT	VARIABLE	a	No. 15 (No. 5)	2.85	VAR. @ 300 cts.
			b	No. 15 (No. 5)	VAR.	7 @ 450 cts.
			c	No. 20 (No. 6)	1.80	VAR. @ 400 cts.



TRANSVERSE CONSTRUCTION JOINT SECTION B-B



SECTION A-A (TYPICAL 3-LANE, 1-WAY WITH SHOULDERS)

GENERAL NOTES

Dowel bar caps shall be placed on opposite ends of adjacent dowel bars.

See Standard 421001 for details of reinforcement for C.R.C. pavement.

See Standards 420001 and 420401 for details of joints and tie bars not shown.

The C.R.C. Pavement and P.C.C. Shoulders shall conform with Standards 421101 & 421100 unless otherwise shown.

All dimensions shall be in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY

C.R.C. PAVEMENT DETAILS & P.C.C. SHOULDER DETAILS
(WITH WIDE FLANGE BEAM TERMINAL JOINT)

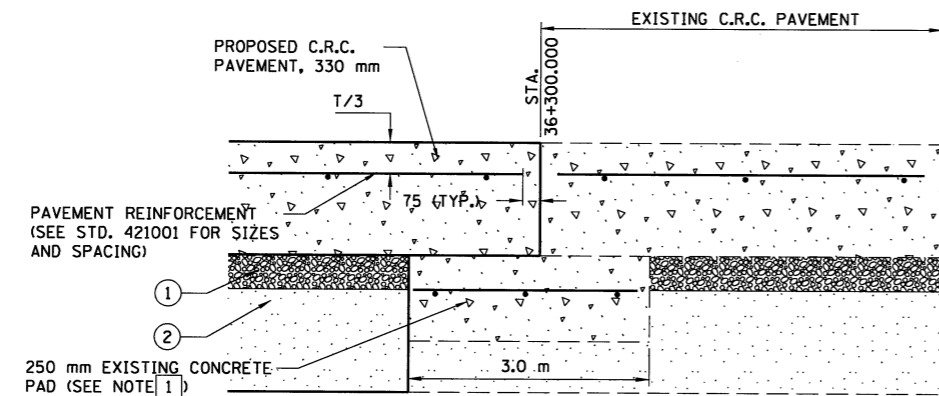
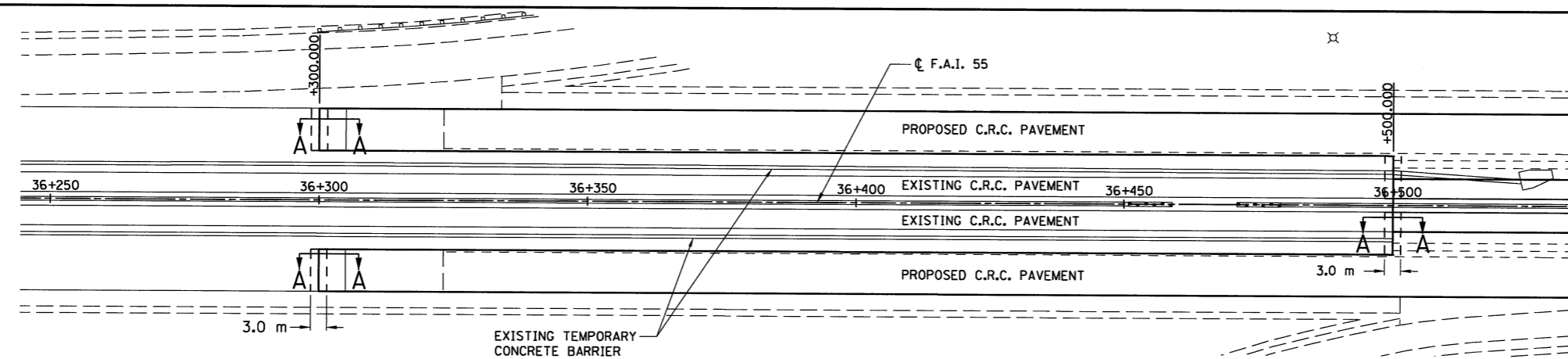
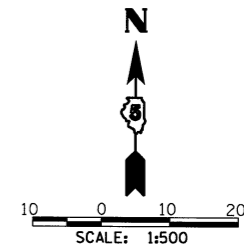
REVISIONS	
NAME	DATE

JOB NO. 94S2063
DATE 6/25/2009

6/25/2009 #FILE#

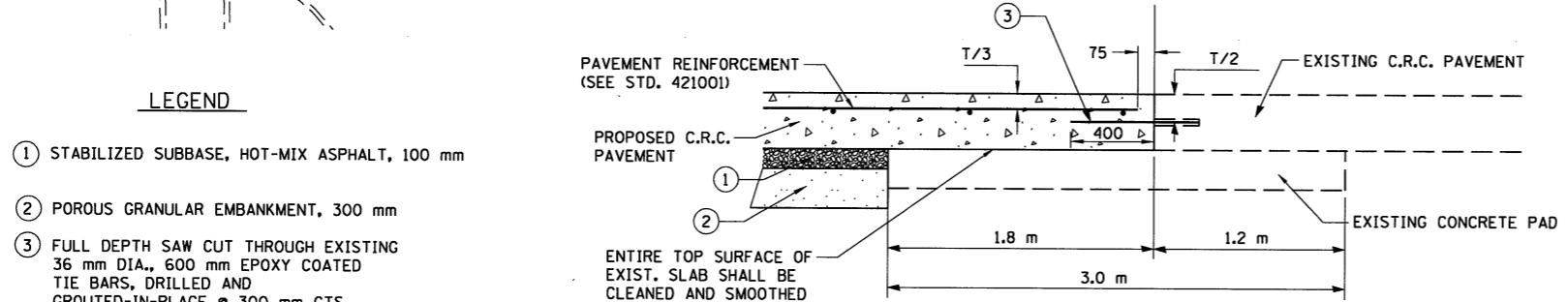
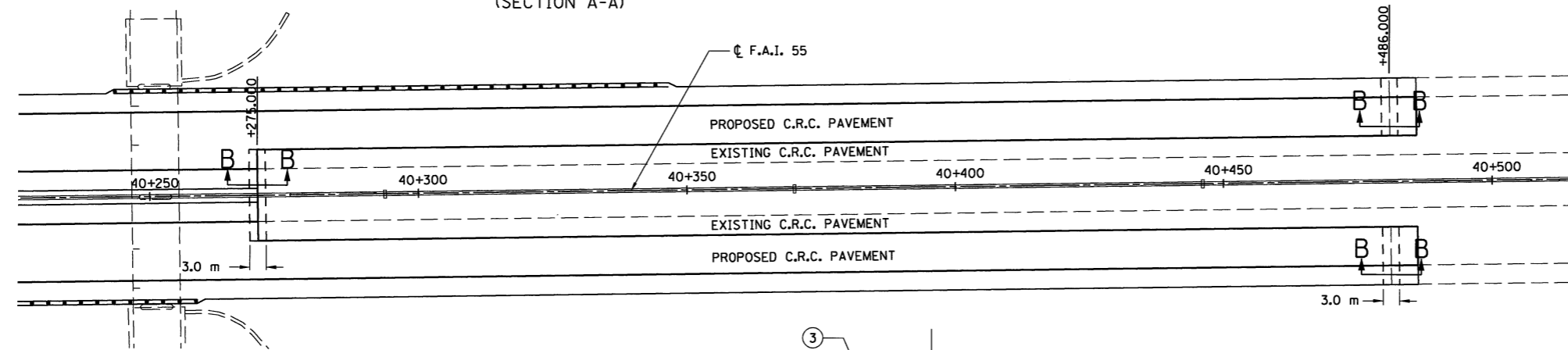
LAYOUT	JAH	11/01/02
DRAWN	JAH	03/08/04
REVIEWED	DLH	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	166
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
(57-4)R, HBY, HBR, (57-4)BIDM	CONTRACT #70757			



- LEGEND**
- ① STABILIZED SUBBASE, HOT-MIX ASPHALT, 100 mm
 - ② LIME MODIFIED SOIL, 300 mm
 - ③ NOT USED

- NOTES:**
- ① THE TRANSVERSE JOINT WILL BE SEALED SIMILAR TO THE LONGITUDINAL CONSTRUCTION JOINT IN STD. 420001. (COST INCLUDED IN C.R.C. PAVT.)



- LEGEND**
- ① STABILIZED SUBBASE, HOT-MIX ASPHALT, 100 mm
 - ② POROUS GRANULAR EMBANKMENT, 300 mm
 - ③ FULL DEPTH SAW CUT THROUGH EXISTING 36 mm DIA., 600 mm EPOXY COATED TIE BARS, DRILLED AND GROUTED-IN-PLACE @ 300 mm CTS. (COST INCLUDED IN C.R.C. PAVEMENT)

DETAIL TO TIE INTO EXISTING TRANSVERSE TERMINAL JOINT (SECTION B-B)

DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY

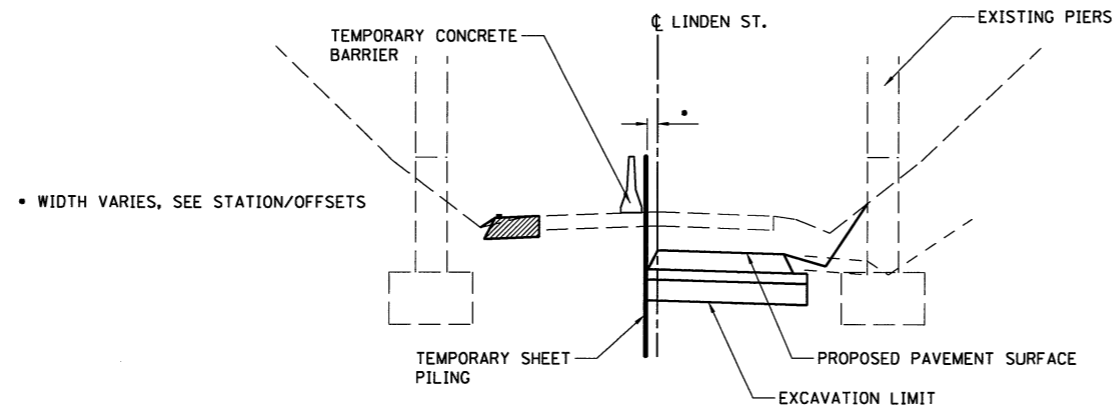
EXISTING C.R.C. TERMINAL DETAILS

REVISIONS	
NAME	DATE

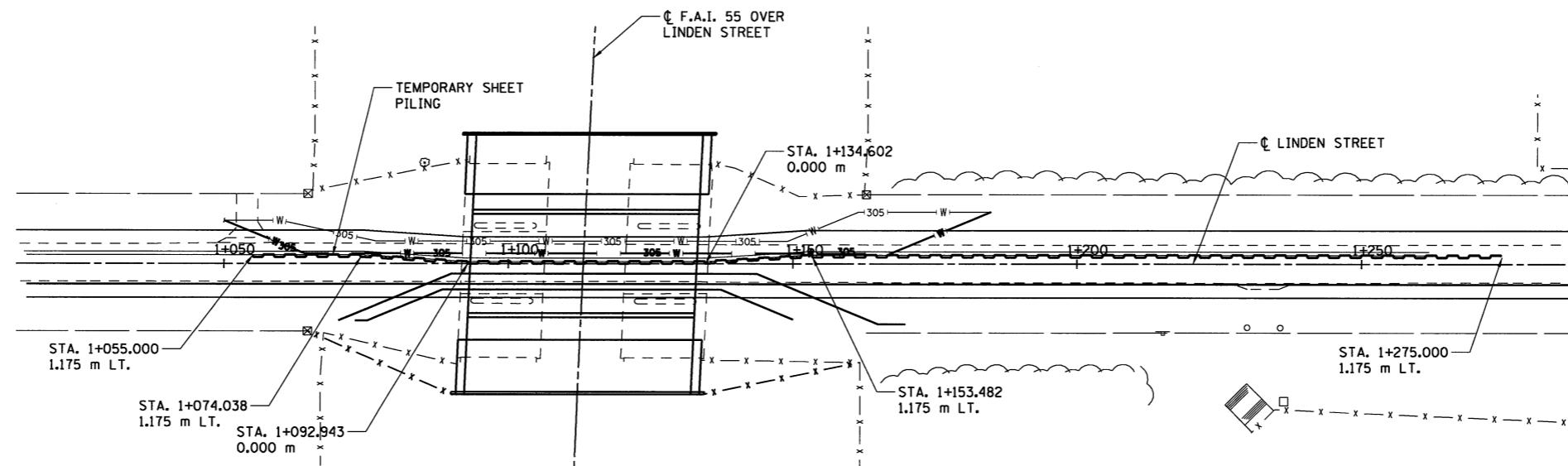
JOB NO.
94S2063
DATE
8/17/2009

8/17/2009 #/LES
 LAYOUT 03/08/04
 DRAWN J.H. 03/08/04
 REVIEWED D.L.H. 03/18/04

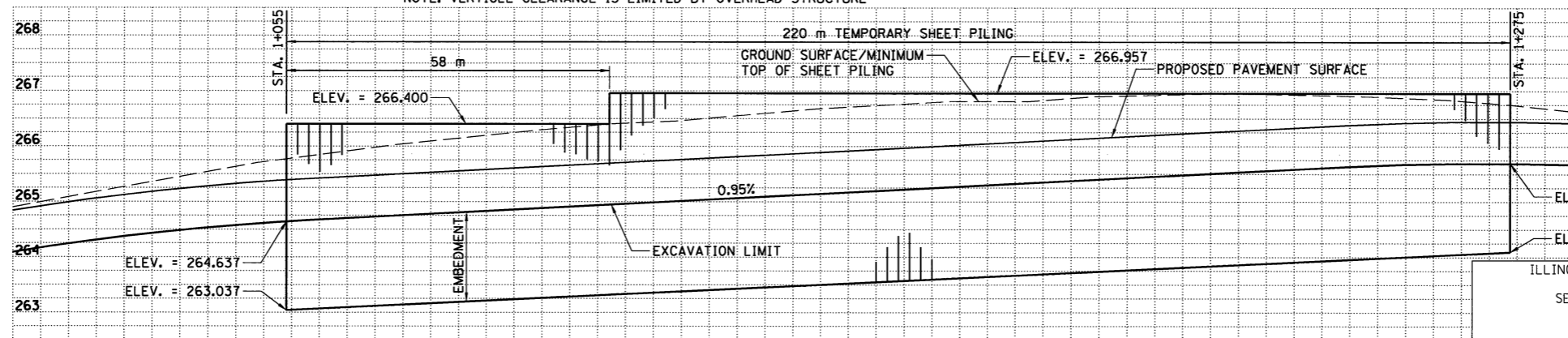
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	MCLEAN	310	167
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* (57-4)R, HBY, HBR, (57-4)BIDM		CONTRACT #70757		



TEMPORARY SHEET PILING DESIGN CRITERIA	
MINIMUM EMBEDMENT	1.60 m
MINIMUM SECTION MODULUS	254 mm ³ /m x 10 ³
TEMPORARY SHEET PILING	715.50 m ²



NOTE: VERTICAL CLEARANCE IS LIMITED BY OVERHEAD STRUCTURE



1 0 1 2
VERTICAL SCALE = 1:50

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)BIDM
MCLEAN COUNTY
**LINDEN STREET
TEMPORARY
SHEET PILING DETAIL**

REVISIONS	
NAME	DATE

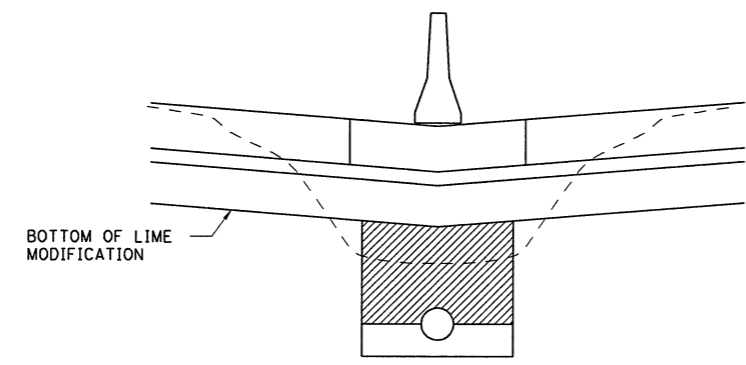


JOB NO.
94S2063
DATE
8/17/2009

LAYOUT	RLA	03/12/04
DRAWN	JH	03/15/04
REVIEWED	DLH	03/18/04

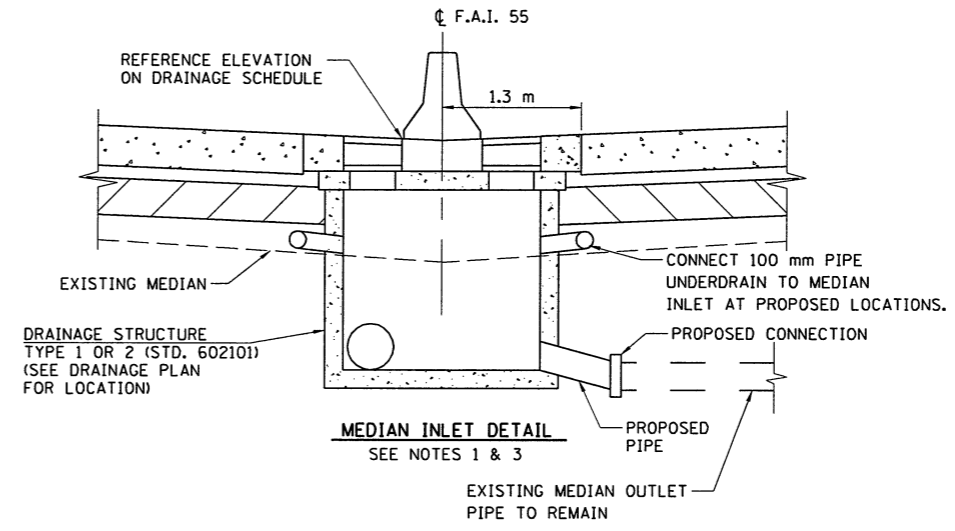
8/17/2009 #FILE*

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	168
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* (57-4)R, HBY, HBR, (57-4)B)DM CONTRACT #70757				

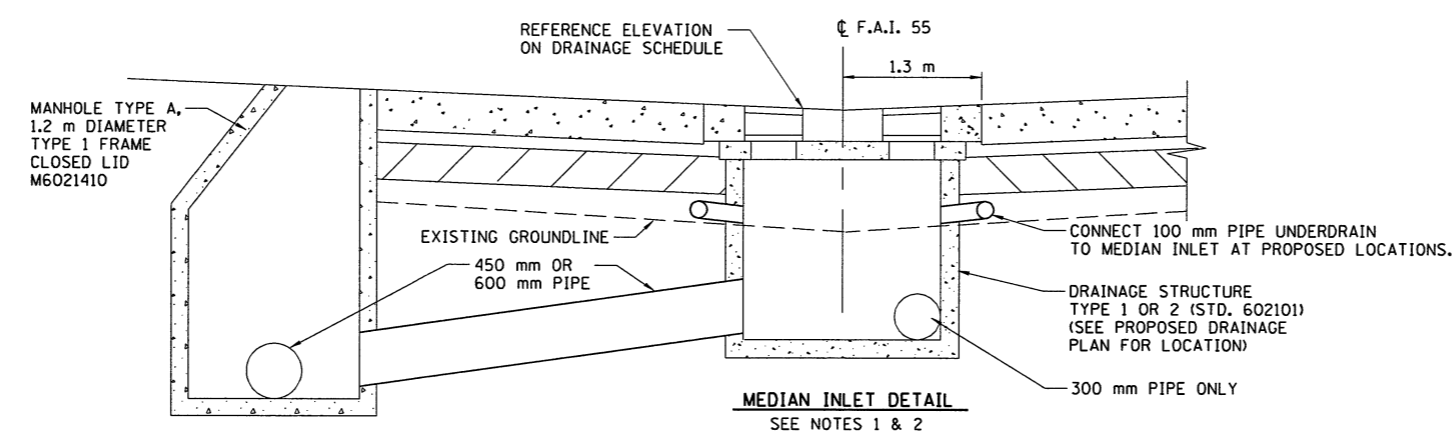


TRENCH BACKFILL DETAIL

NOTE: PAY LIMITS FOR TRENCH BACKFILL WILL BE FROM THE SPRING LINE OF THE PROPOSED SEWER TO THE BOTTOM OF THE LIME MODIFIED SOIL.



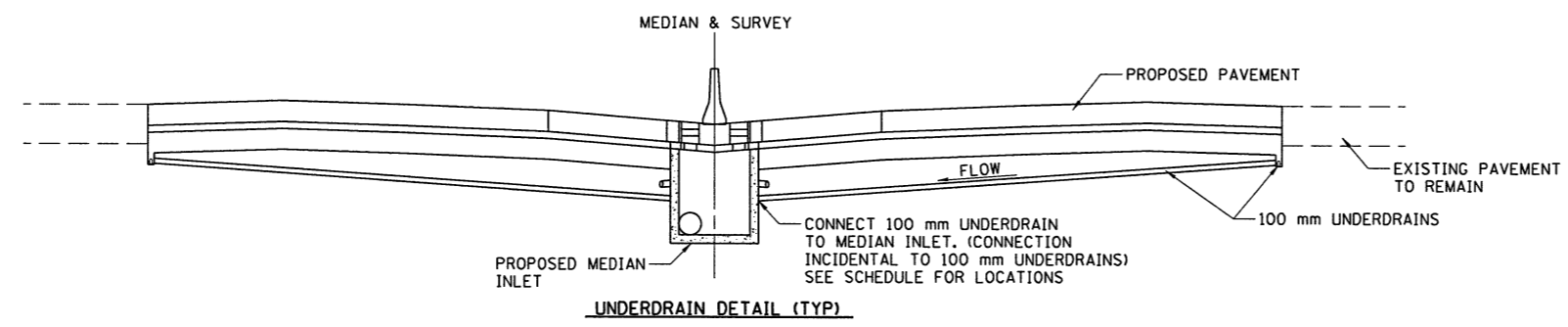
MEDIAN INLET DETAIL
SEE NOTES 1 & 3



MEDIAN INLET DETAIL
SEE NOTES 1 & 2

NOTES

1. GRATES OF ALL PROPOSED MEDIAN INLETS SHALL BE MECHANICALLY FASTENED TO THE STRUCTURE TO THE SATISFACTION OF THE ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST OF THE MEDIAN INLET STRUCTURE.
2. WHERE INLETS ARE REMOVED AND NOT REPLACED, THE EXISTING OUTLET PIPE SHALL BE PLUGGED AND ABANDONED. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT COST FOR INLET REMOVAL.
3. CONNECT PROPOSED PIPE TO THE EXISTING PIPE WITH THE APPROPRIATE COLLAR CONNECTION. THE COST OF THIS CONNECTION AND THE PROPOSED LENGTH OF PIPE WILL BE INCLUDED IN THE COST OF THE INLET/MANHOLE.



UNDERDRAIN DETAIL (TYP)

6/25/2009
#FILES

LAYOUT	J.H.
DRAWN	E.L.C./K.E.L.
REVIEWED	D.L.H.
	03/18/04

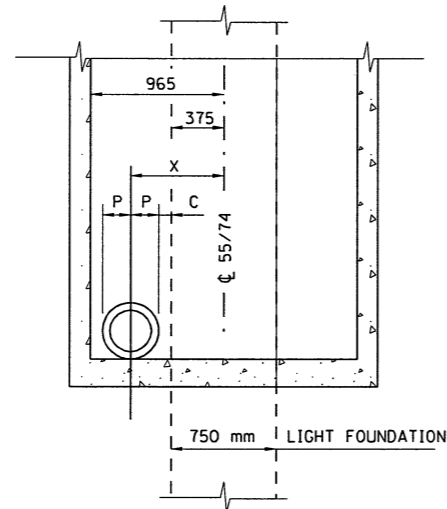
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY
DRAINAGE DETAILS

REVISIONS	
NAME	DATE

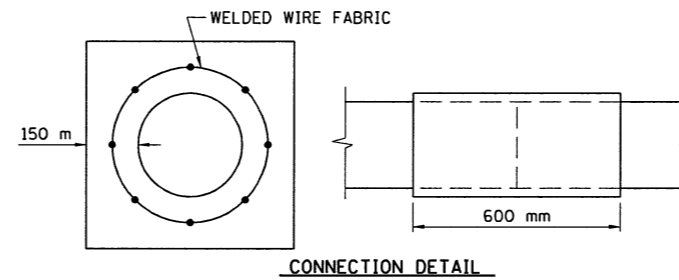
HANSON

JOB NO. 9452063
DATE 6/25/2009

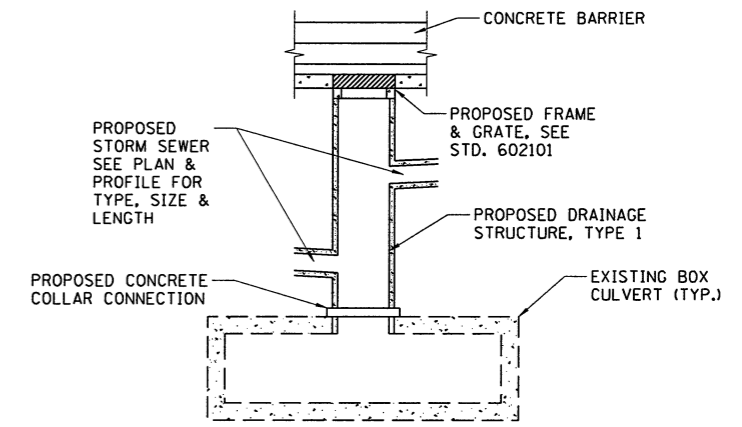
NOMINAL PIPE DIA	ACTUAL "P"	X	X+P	X-P	C
300	203	762	965	559	184



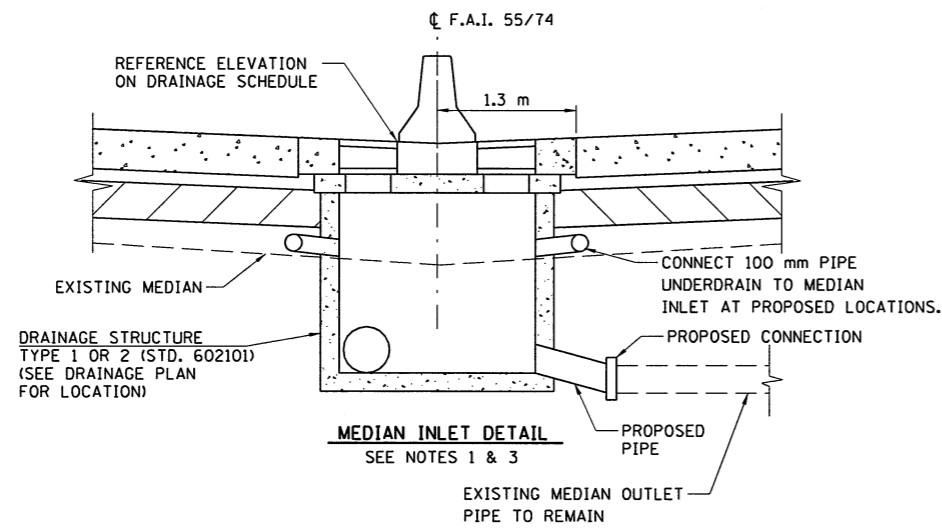
SECTION THRU MEDIAN INLET SHOWING OUTLET PIPE LOCATION



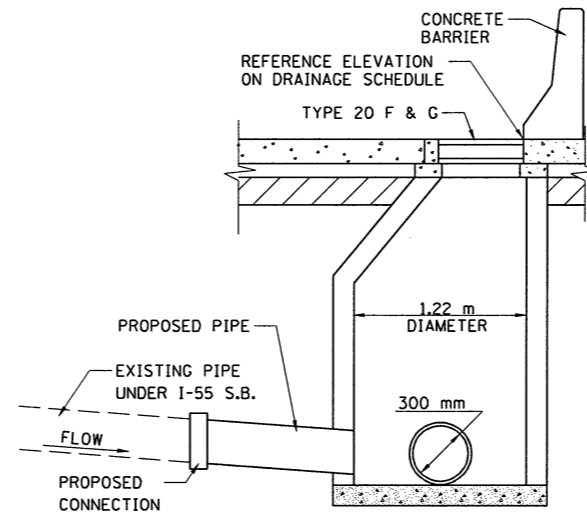
CONNECTION DETAIL



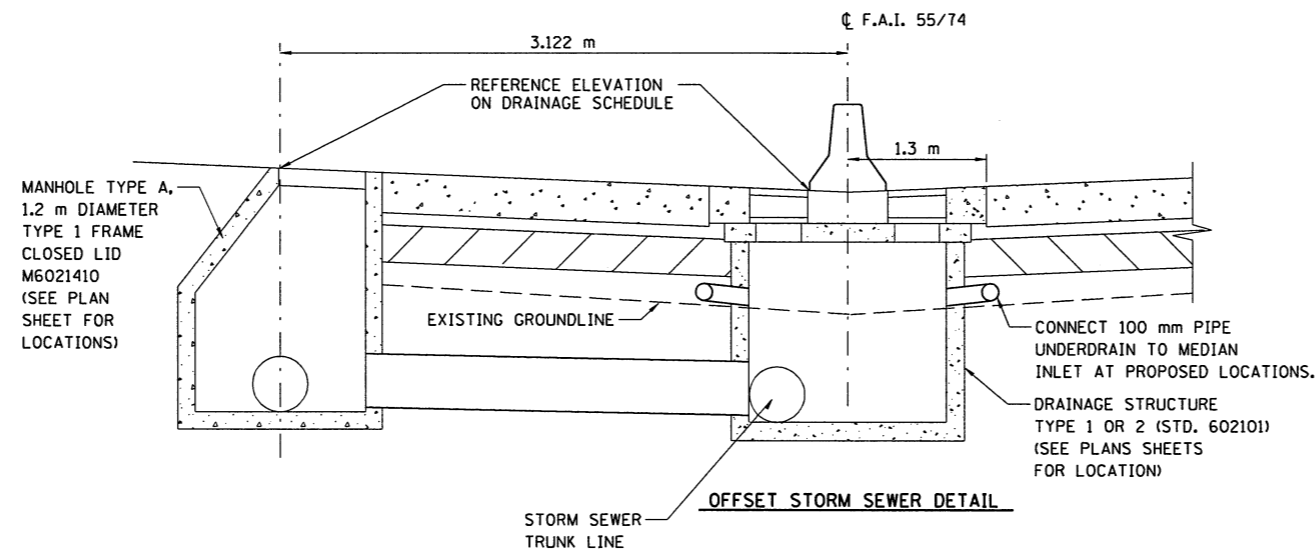
**BOX CULVERT CONNECTION DETAIL
ELEVATION VIEW
SEE NOTE 4**



**MEDIAN INLET DETAIL
SEE NOTES 1 & 3**



**MANHOLE DETAIL @ STA. 37+436
SEE NOTE 3**



OFFSET STORM SEWER DETAIL

NOTES

- GRATES OF ALL PROPOSED MEDIAN INLETS SHALL BE MECHANICALLY FASTENED TO THE STRUCTURE TO THE SATISFACTION OF THE ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST OF THE MEDIAN INLET STRUCTURE.
- WHERE INLETS ARE REMOVED AND NOT REPLACED, THE EXISTING OUTLET PIPE SHALL BE PLUGGED AND ABANDONED. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT COST FOR INLET REMOVAL.
- CONNECT PROPOSED PIPE TO THE EXISTING PIPE WITH THE APPROPRIATE COLLAR CONNECTION THE COST OF THIS CONNECTION AND THE PROPOSED LENGTH OF PIPE WILL BE INCLUDED IN THE COST OF THE INLET/MANHOLE.
- CONNECT PROPOSED STORM SEWER PIPE TO THE EXISTING BOX CULVERT WITH THE APPROPRIATE CONCRETE COLLAR CONNECTION. THE COST OF THIS CONNECTION WILL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-41R, HBY, HBR, 157-4VB1DM)
MCLEAN COUNTY
DRAINAGE DETAILS

REVISIONS	
NAME	DATE

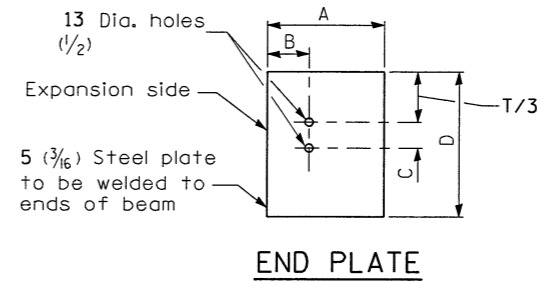
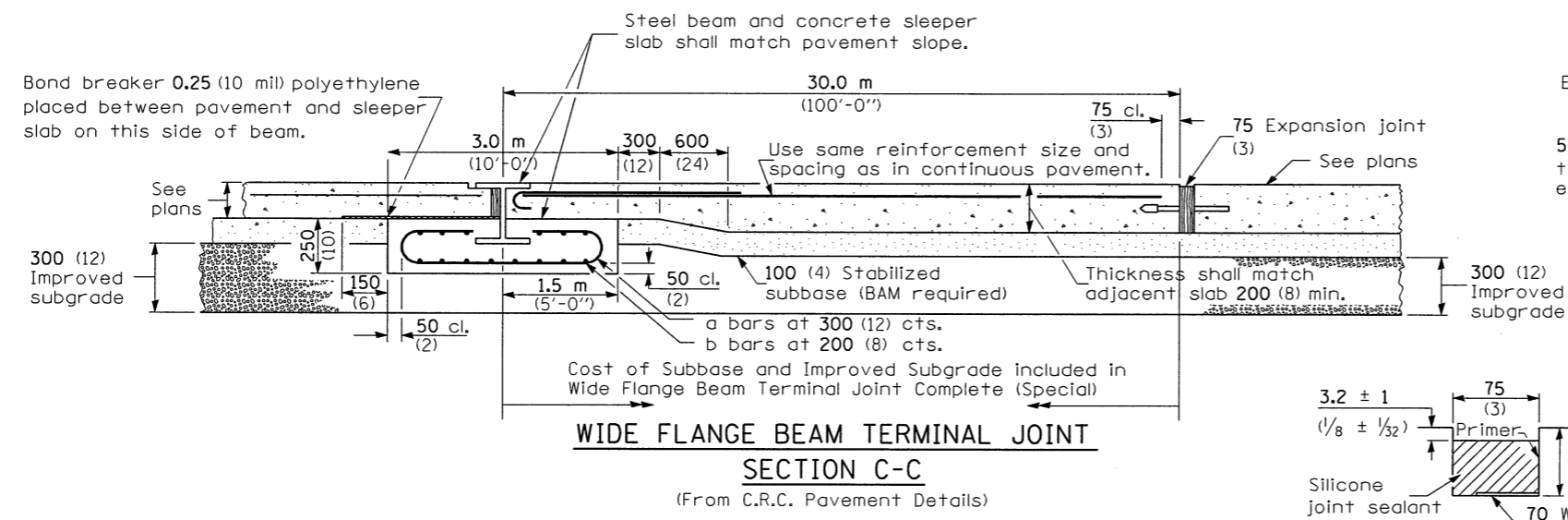
HANSON

JOB NO. 94S2063
DATE 6/25/2009

6/25/2009 #FILE#

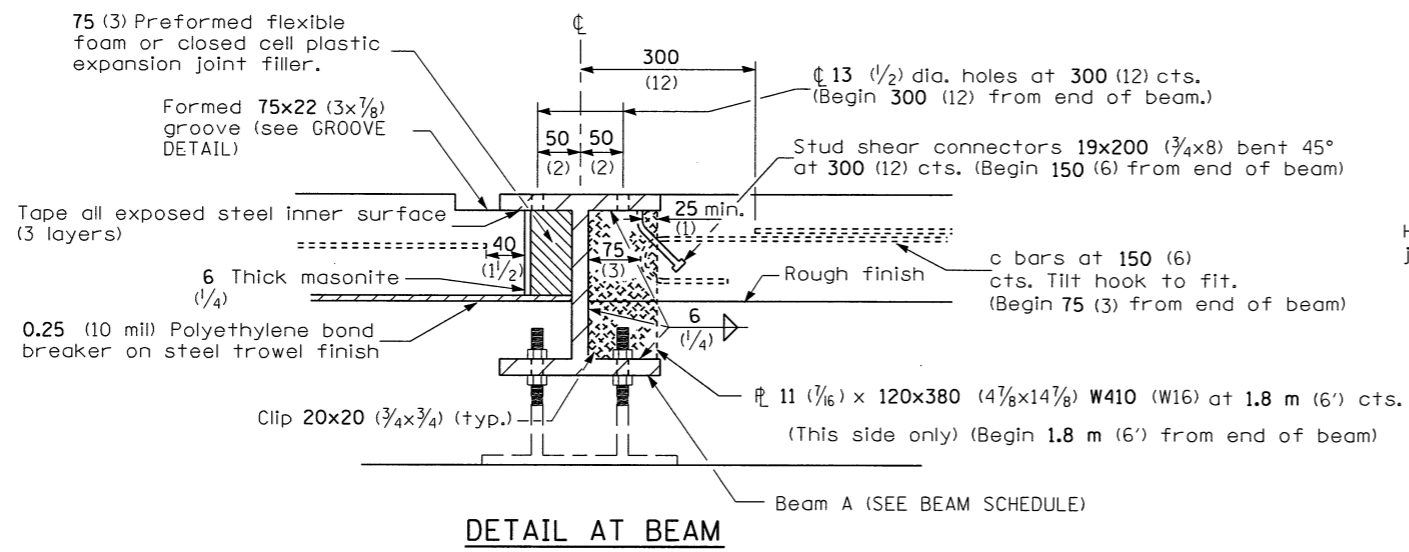
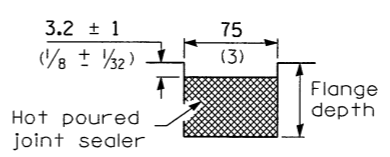
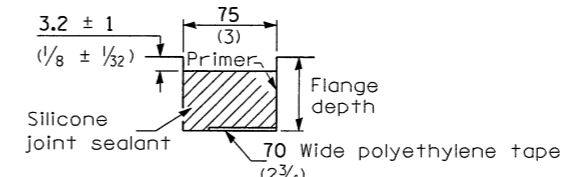
LAYOUT	J.H.	04/10/02
DRAWN	J.H.	03/05/04
REVIEWED	D.L.H.	03/18/04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	170
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
(57-4)R, HBY, HBR, (57-4)B)DM		CONTRACT #70757		



LOCATION	DIMENSION
A	265 (10 3/8)
B	115 (4 7/16)
C	100 (4)
D	430 (17)

BEAM SCHEDULE			
BEAM	SIZE	LENGTH (m)	LOCATIONS
A	W410x149 (W16x100)	12.126 m	34+909.0 RT 34+909.0 LT 35+083.3 LT 35+083.3 RT



MATERIALS REQUIRED FOR ONE WIDE FLANGE BEAM TERMINAL JOINT COMPLETE

Bar	No. of Bars	Size	Bar Length	Shape
Beam A				
a	41	No. 15 (No. 4)	5.8 m	
b	29	No. 15 (No. 5)	11.9 m	
c	82	No. 20 (No. 6)	2.6 m	
Concrete, m ³ (cu. yds.)			9.1 (11.8)	
Reinforcement Bars, kg (lbs.)			1410 (3109)	
Struct. Steel, kg (lbs.) W410x149 (W16x100)			1807 (3979)	
*Weight includes beam, end plates, stiffener plates and studs.				
Pavement, m ² (sq. yds.)			364 (435)	
Pavt. Reinforcement m ² (sq. yds.)			364 (435)	
100 (4) Stab. Subbase m ² (sq. yds.)			391 (468)	
300 (12) Impr. Subgrd m ² (sq. yds.)			391 (468)	

GENERAL NOTES

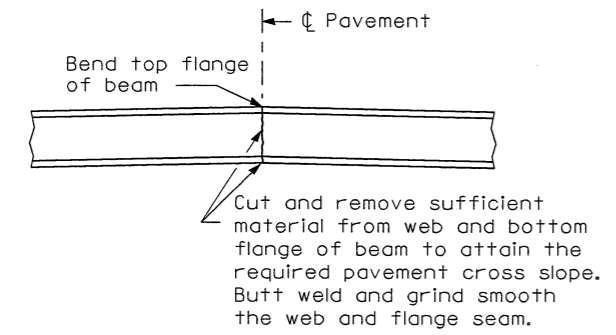
Sedant components for the wide flange beam terminal joint shall be as follows or approved equals. Sealant shall be Dow Corning 888 Silicone Highway Joint Sealant. Tape shall be Polyethylene Tape No. 40. Primer, used on the metal only, shall be Dow Corning 1200. At the Contractor's option the joint may be sealed as shown in the optional groove detail.

Dowel bar caps shall be placed on opposite ends of adjacent dowel bars.

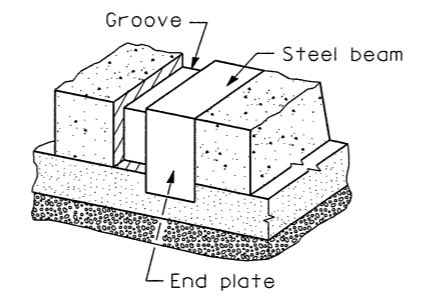
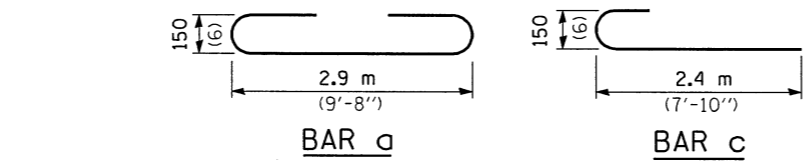
See Standard 421001 for details of pavement reinforcement.

See Standards 420001 and 420401 for details of joints and tie bars not shown.

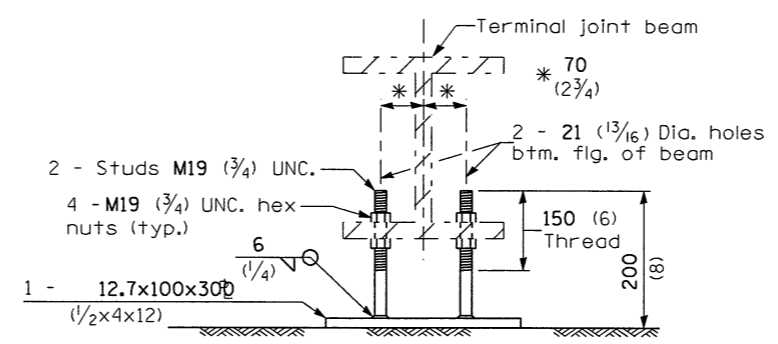
All dimensions are in millimeters (inches) unless otherwise shown.



DETAIL OF CUTTING AND WELDING BEAM



VIEW OF GROOVE AT EDGE OF PAVEMENT



OPTIONAL ADJUSTABLE CHAIR

6/25/2009	#FILE#
LAYOUT	JAH
DRAWN	JAH
REVIEWED	DLH
	03/18/04

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4)B)DM
MCLEAN COUNTY
WIDE FLANGE BEAM TERMINAL JOINT COMPLETE (VARIABLE) DETAILS

JOB NO. 94S2063
DATE 6/25/2009

BR. APP. PAVT. (SPL)
SLAB ① - AREA 190.3 SM

REINFORCEMENT			
BAR	NO.	SIZE	LENGTH (m)
A	28	30	8.20
A1	16	30	6.20
A2	28	15	3.05
A3	40	15	5.94
B	105	25	10.82
B1	27	10	5.94
TIE BARS	41	20	0.75

BR. APP. PAVT. (SPL)
SLAB ② - AREA 181.7 SM

REINFORCEMENT			
BAR	NO.	SIZE	LENGTH (m)
A	28	30	8.20
A1	16	30	6.20
A2	28	15	3.05
A3	40	15	5.94
B	105	25	10.35
B1	26	10	5.94
TIE BARS	40	20	0.75

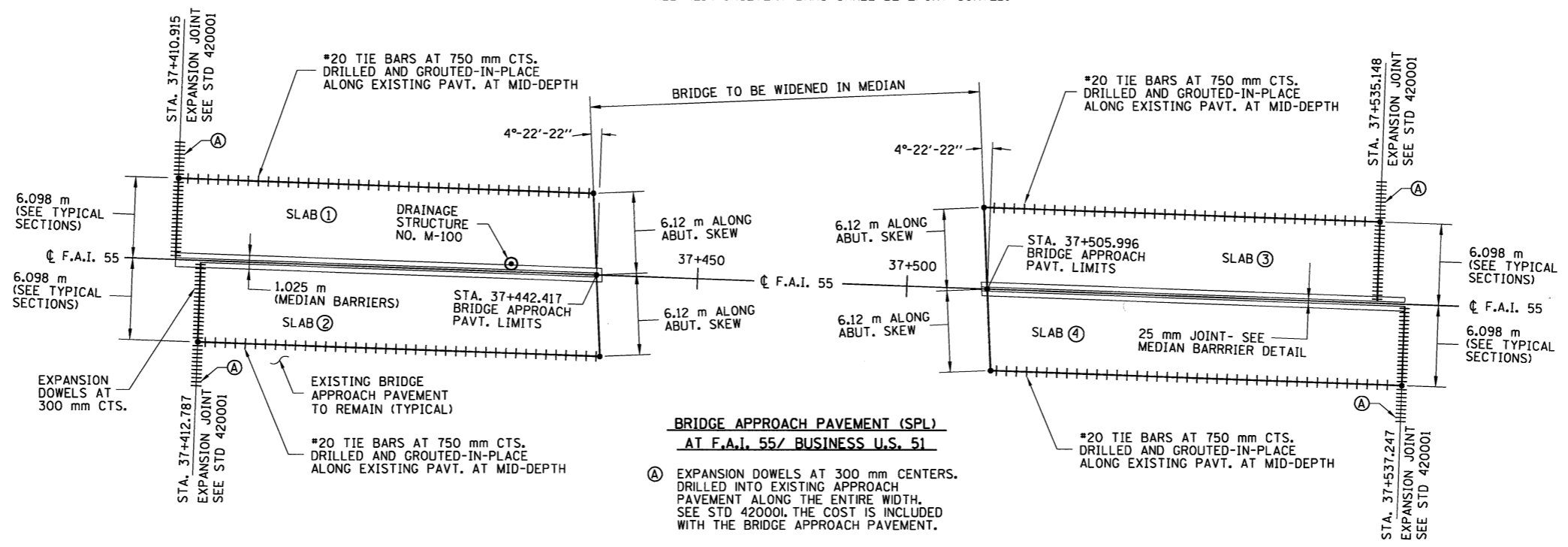
BR. APP. PAVT. (SPL)
SLAB ③ - AREA 178.8 SM

REINFORCEMENT			
BAR	NO.	SIZE	LENGTH (m)
A	28	30	8.20
A1	16	30	6.20
A2	28	15	3.05
A3	40	15	5.94
B	105	25	10.24
B1	26	10	5.94
TIE BARS	39	20	0.75

BR. APP. PAVT. (SPL)
SLAB ④ - AREA 188.8 SM

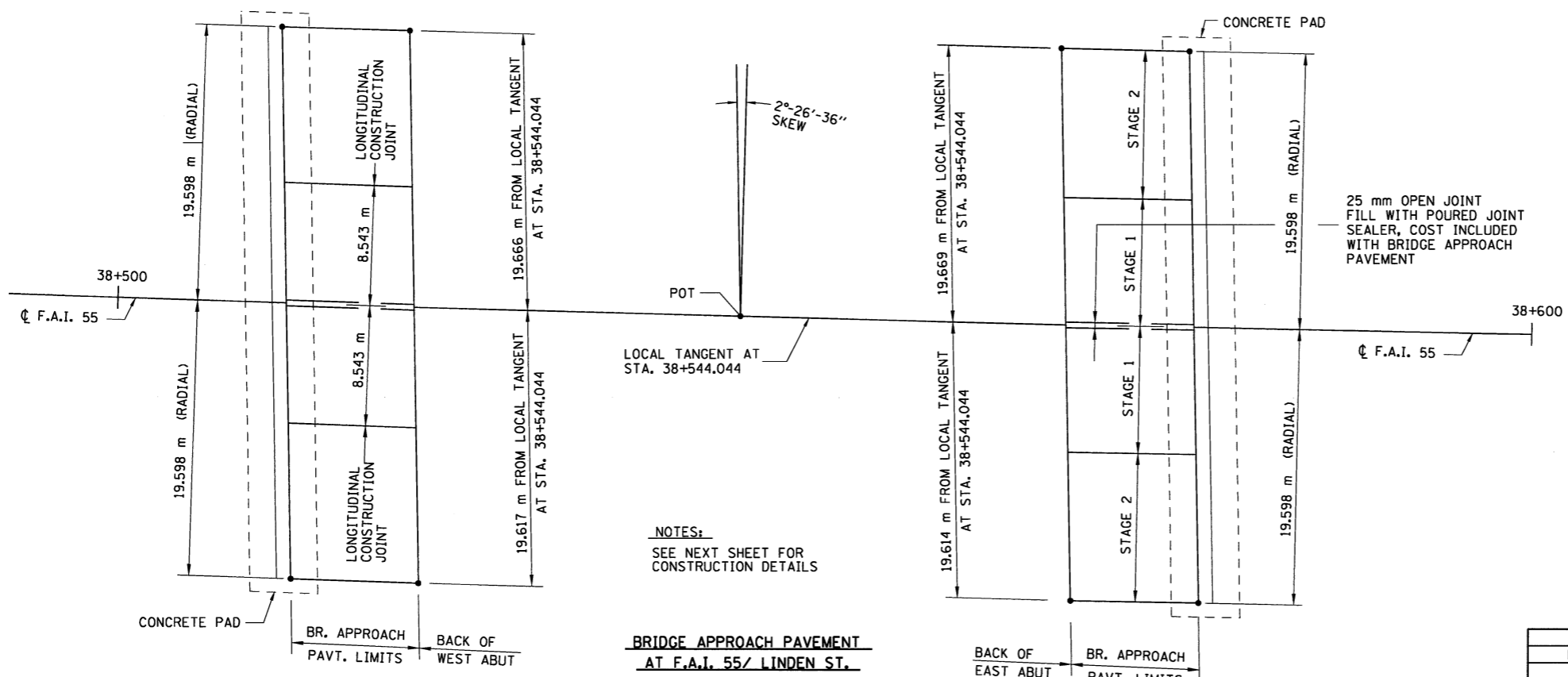
REINFORCEMENT			
BAR	NO.	SIZE	LENGTH (m)
A	28	30	8.20
A1	16	30	6.20
A2	28	15	3.05
A3	40	15	5.94
B	105	25	10.58
B1	26	10	5.94
TIE BARS	41	20	0.75

NOTES FOR U.S. 51:
 SEE STANDARD 2353 FOR CONSTRUCTION DETAILS, REINFORCEMENT LAYOUT & BAR BEND DETAILS.
 APPROACH PAVEMENT THICKNESS SHALL BE THE SAME AS ADJACENT PAVEMENT.
 PAVEMENT ADJACENT TO THE SOUTH BRIDGE APPROACHES SHALL BE 315 mm THICK.
 PAVEMENT ADJACENT TO THE NORTH BRIDGE APPROACHES SHALL BE 300 mm THICK.
 ALL REINFORCEMENT BARS SHALL BE EPOXY COATED.



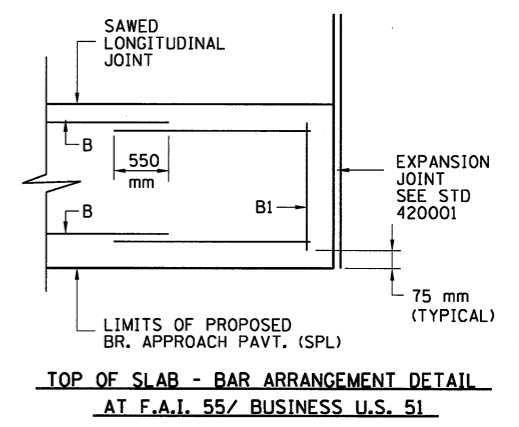
**BRIDGE APPROACH PAVEMENT (SPL)
AT F.A.I. 55/ BUSINESS U.S. 51**

Ⓐ EXPANSION DOWELS AT 300 mm CENTERS. DRILLED INTO EXISTING APPROACH PAVEMENT ALONG THE ENTIRE WIDTH. SEE STD 420001. THE COST IS INCLUDED WITH THE BRIDGE APPROACH PAVEMENT.



NOTES:
SEE NEXT SHEET FOR CONSTRUCTION DETAILS

**BRIDGE APPROACH PAVEMENT
AT F.A.I. 55/ LINDEN ST.**



**TOP OF SLAB - BAR ARRANGEMENT DETAIL
AT F.A.I. 55/ BUSINESS U.S. 51**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)B)DM
 MCLEAN COUNTY

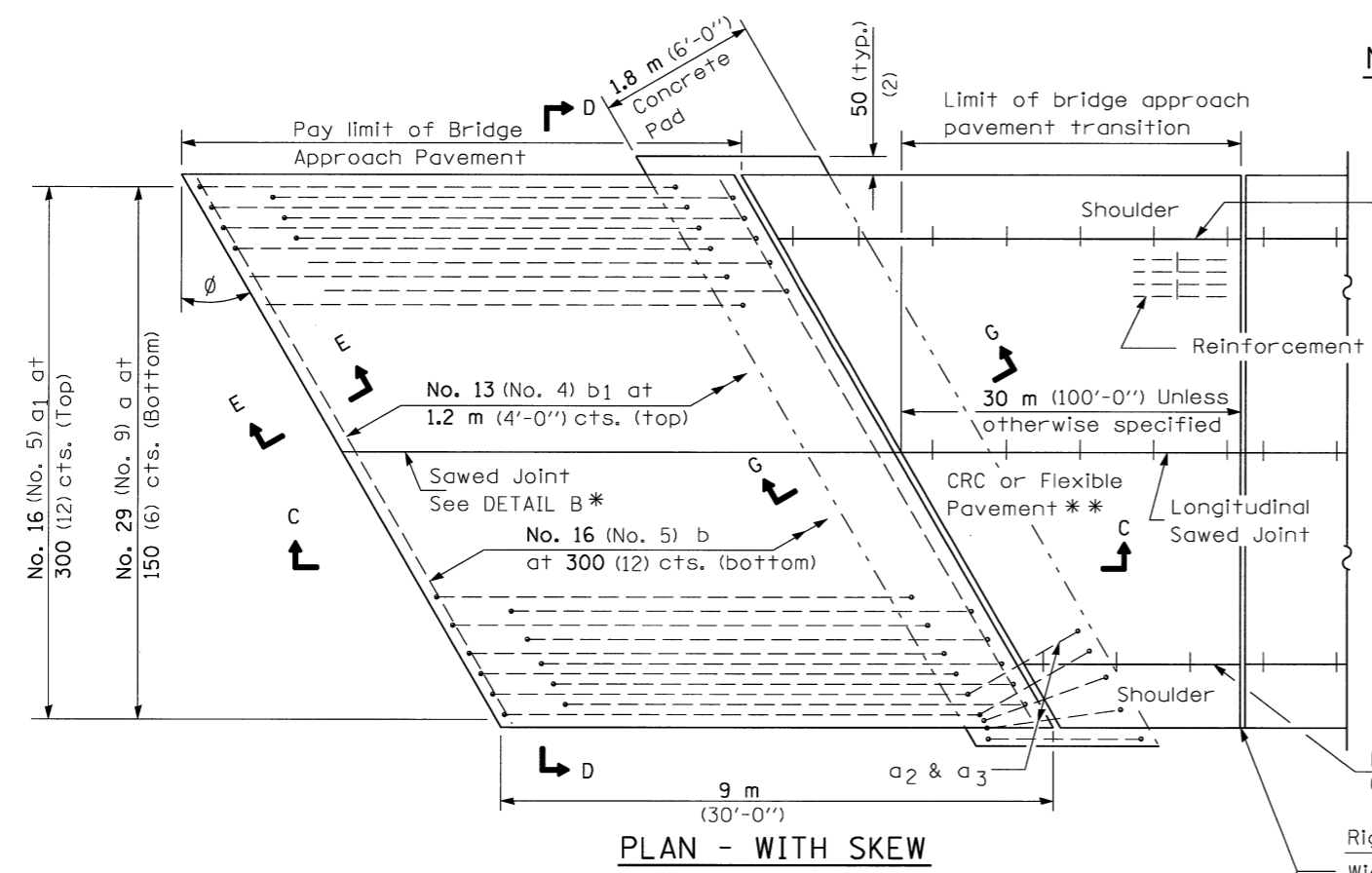
BRIDGE APPROACH DETAILS

JOB NO.	94S2063
DATE	7/27/2009

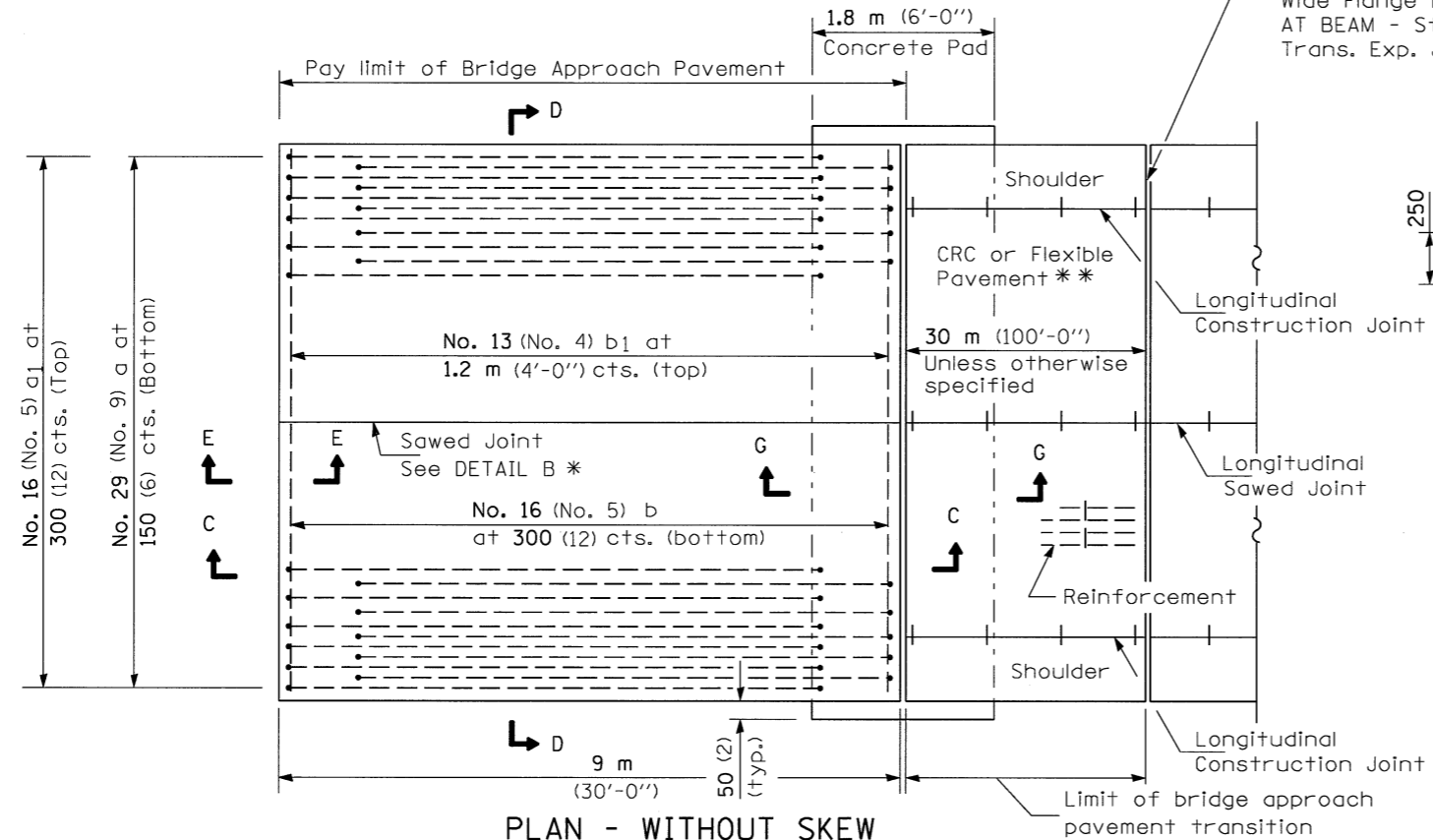
7/27/2009
 #7158
 LAYOUT: J.H. 04/05/02
 DRAWN: J.H. 03/05/04
 REVIEWED: D.H. 03/18/04

• (57-41R, HBY, HBR, (57-4VB)DM CONTRACT #70757

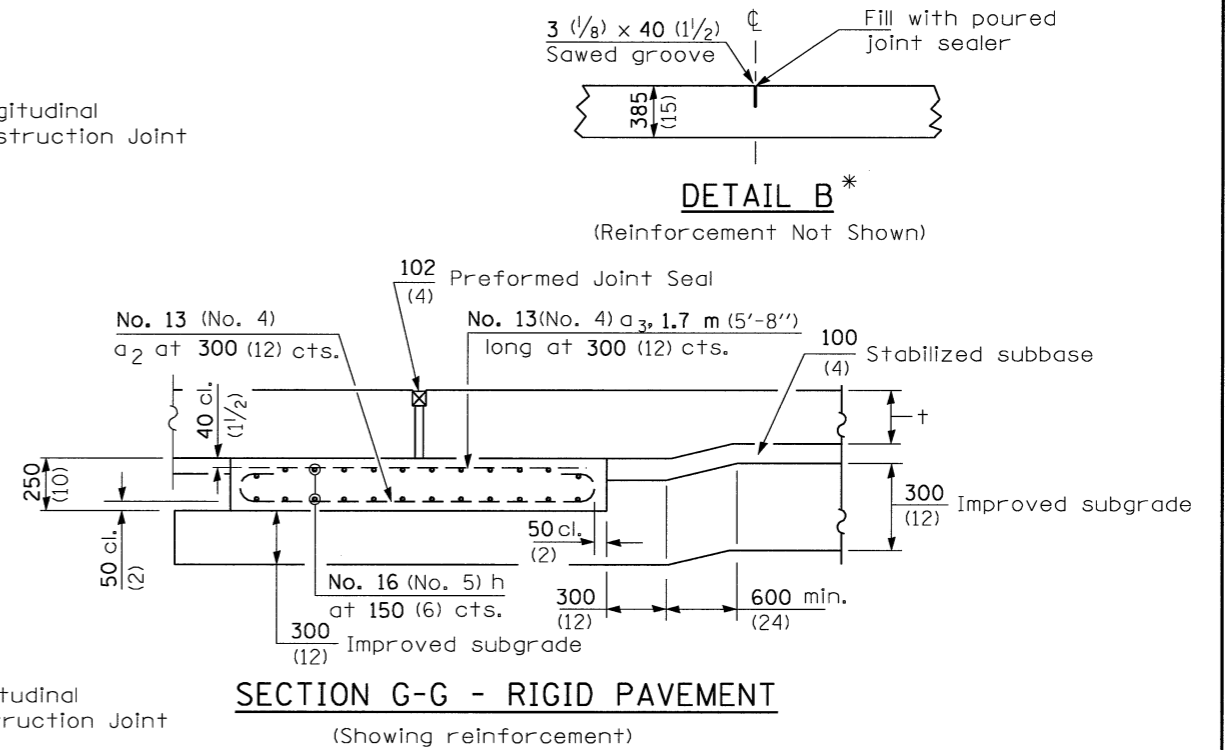
NEW CONSTRUCTION



PLAN - WITH SKEW

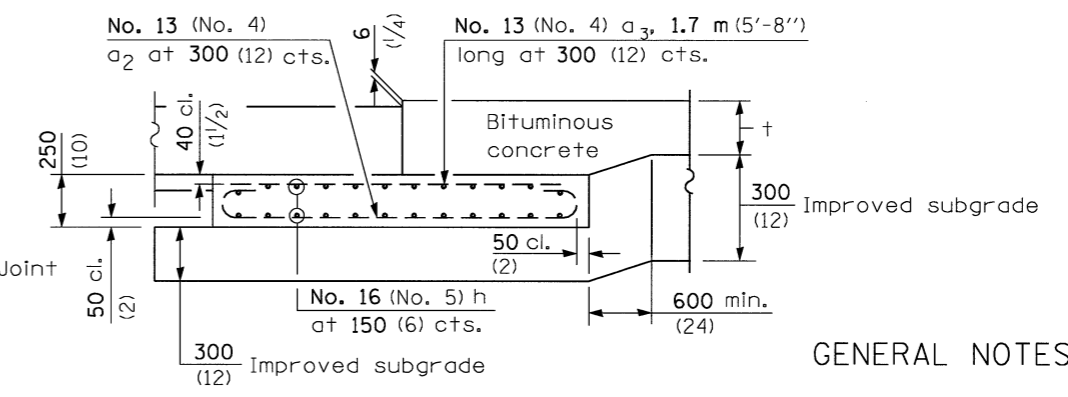


PLAN - WITHOUT SKEW



SECTION G-G - RIGID PAVEMENT
(Showing reinforcement)

Rigid Pavement only:
Wide Flange Beam Terminal Joint (See DETAIL AT BEAM - Standard 421101 or 421106) or 50 (2)
Trans. Exp. Joint as detailed on Standard 420001.



SECTION G-G - FLEXIBLE PAVEMENT
(Showing reinforcement)

GENERAL NOTES

- THICKNESS-'t'=Thickness of Pavement.
- See Standard 421001 for reinforcement details not shown.
- See Standard 420001 for joint details not shown.
- All dimensions are in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-41R, HBY, HBR, (57-4VB)DM
McLEAN COUNTY
BRIDGE APPROACH DETAILS

REVISIONS	
NAME	DATE

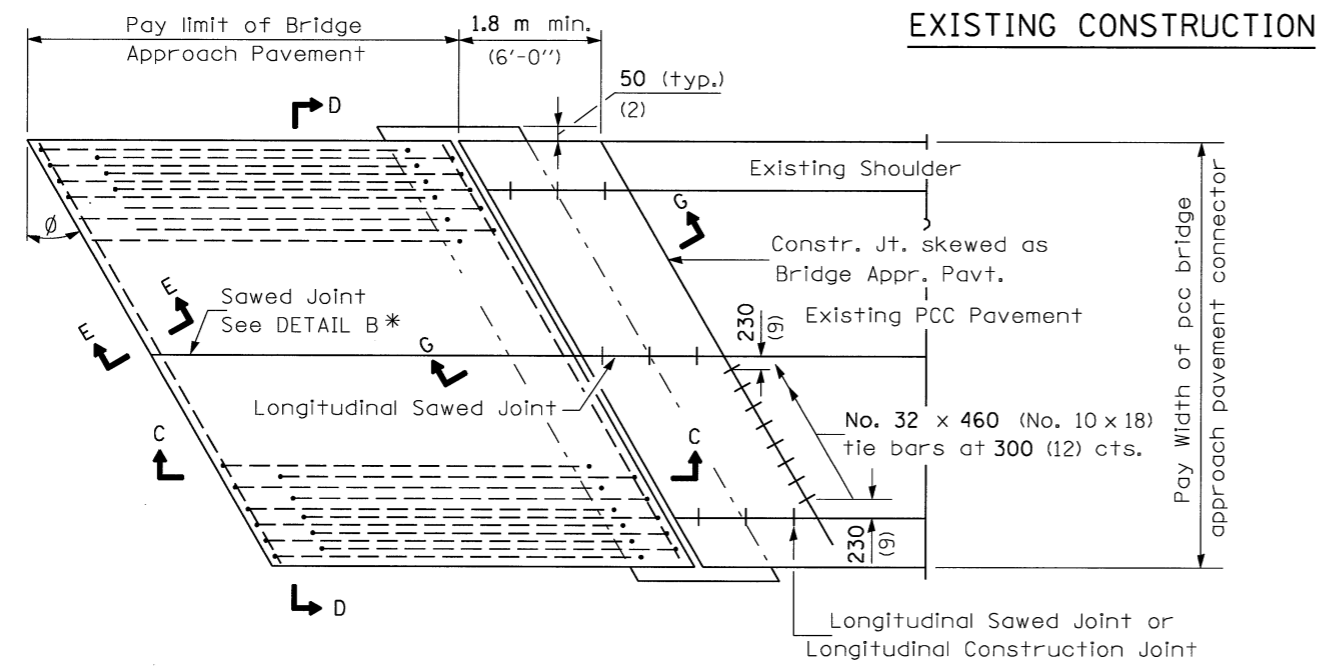
HANSON

JOB NO. 94S2063
DATE 7/27/2009

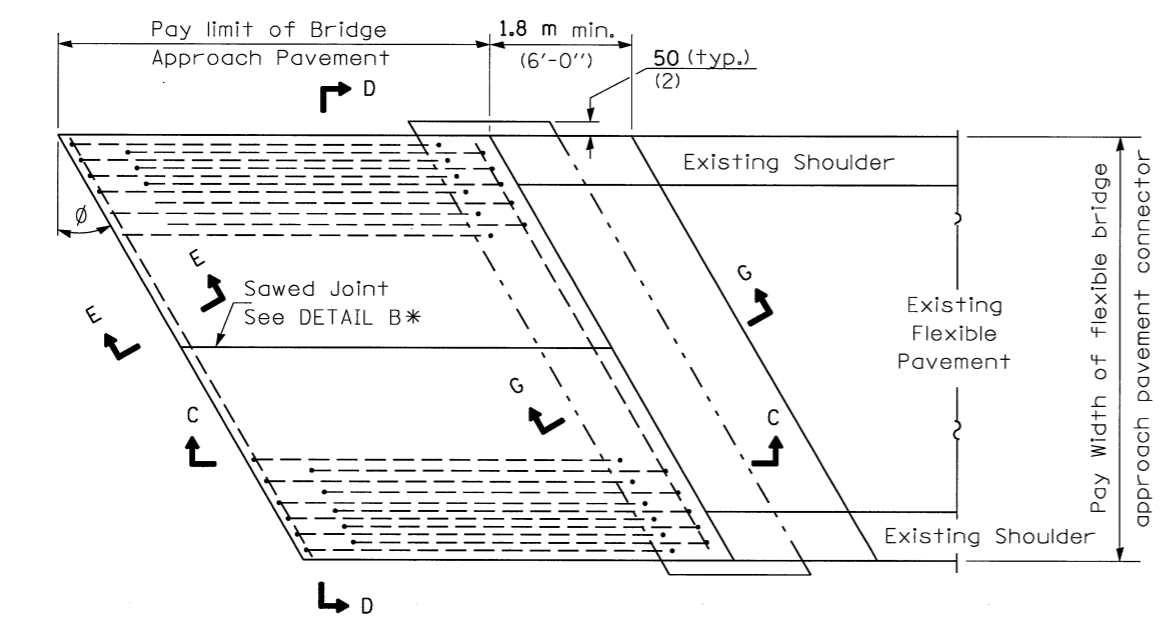
7/27/2009 #FILE#
LAYOUT: JWH 04/09/02
DRAWN: JWH 03/05/04
REVIEWED: DLH 03/18/04

* Saw ϕ or lane edge if poured two or more lane widths at a time.
** Omit Reinforcement, tie bars and Long. sawed Jt. for Flexible Pavement.

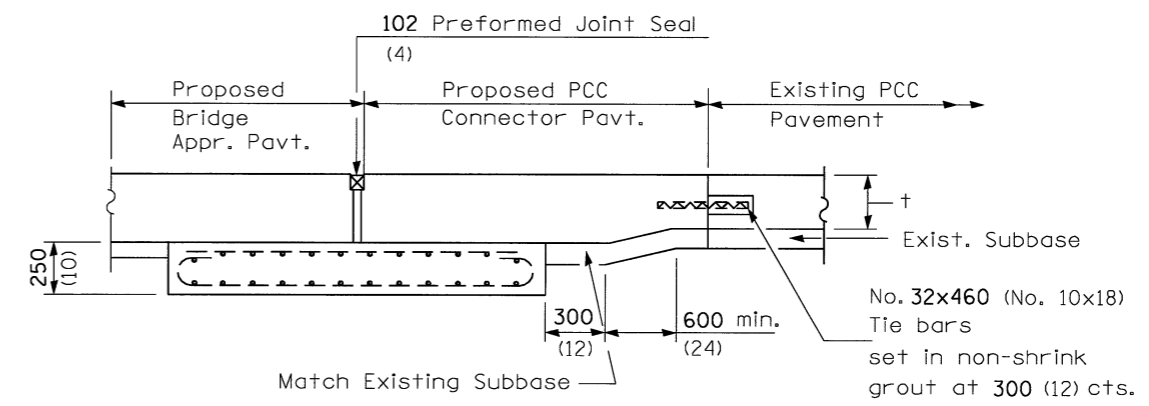
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		MCLEAN	310	173
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
(57-4)R, HBY, HBR, (57-4VB)DM				
CONTRACT #70757				



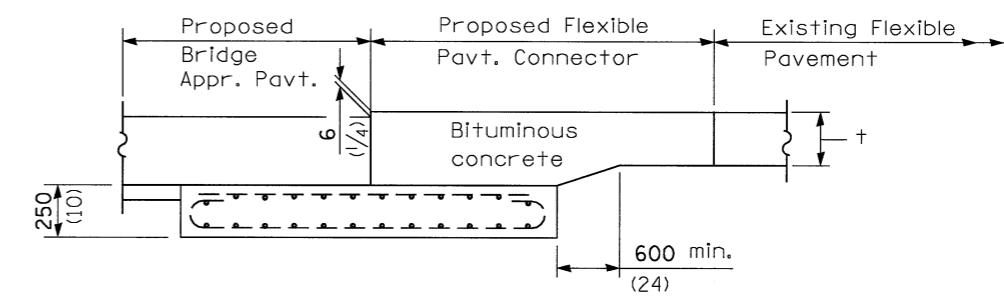
BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)



BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)



SECTION G-G - RIGID PAVEMENT



SECTION G-G - FLEXIBLE PAVEMENT

All dimensions are in millimeters (inches) unless otherwise shown.

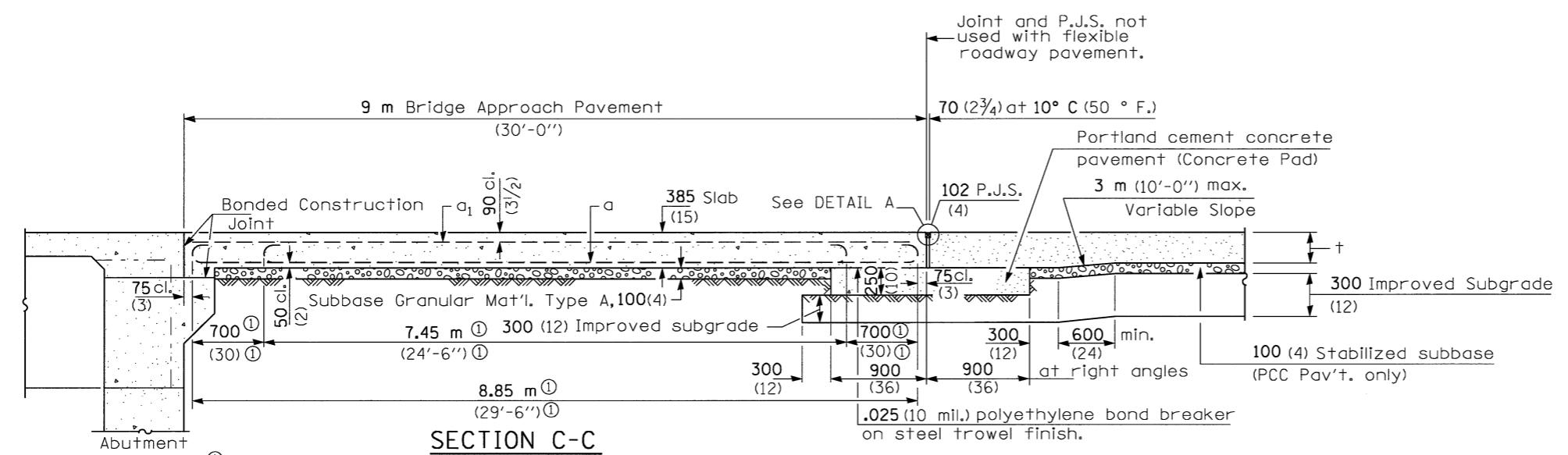
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4VB)DM
 MCLEAN COUNTY
BRIDGE APPROACH DETAILS

REVISIONS	
NAME	DATE

HANSON

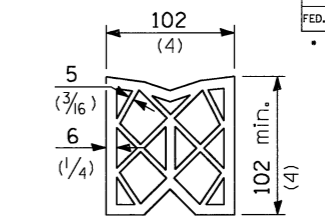
JOB NO. 94S2063
 DATE 7/27/2009

7/27/2009 #FILE#
 LAYOUT JHT 04/09/02
 DRAWN JHT 03/05/04
 REVIEWED DLT 03/18/04

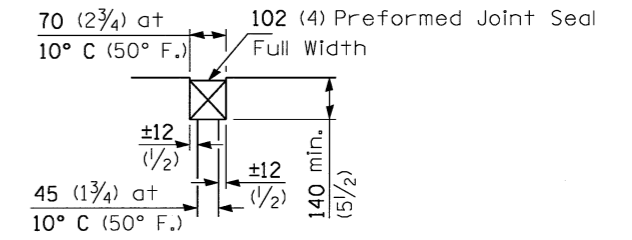


SECTION C-C

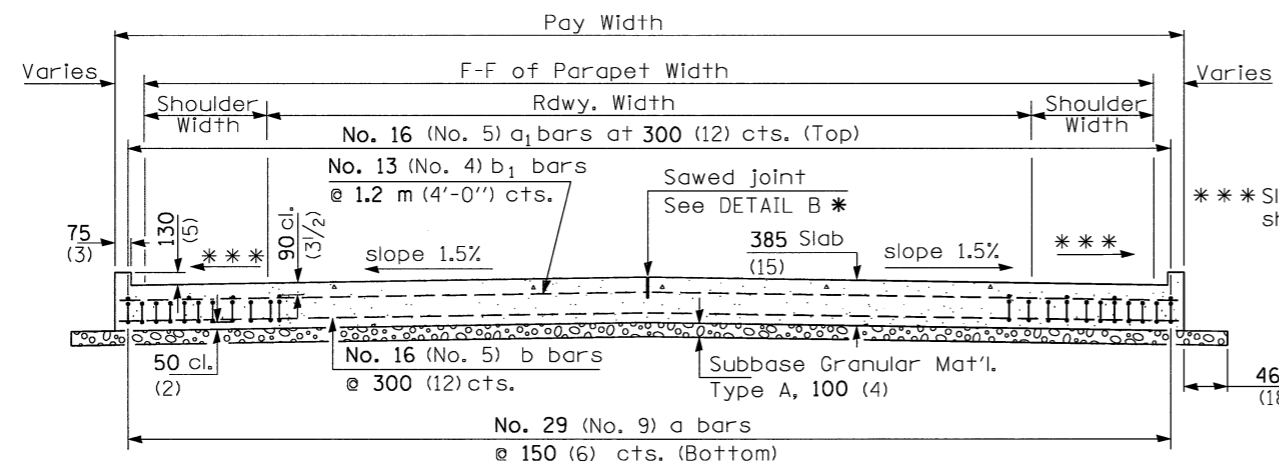
⓪ Stagger No. 29 (No. 9) a bars as shown on plan - full width



PREFORMED JOINT SEAL



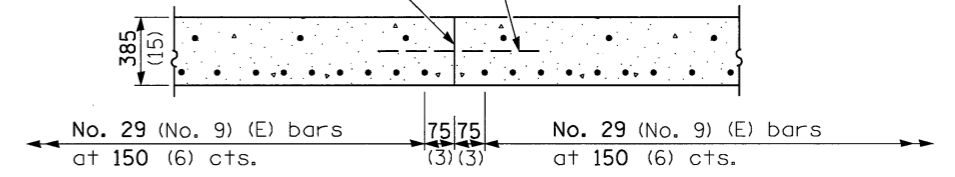
DETAIL A



SECTION D-D

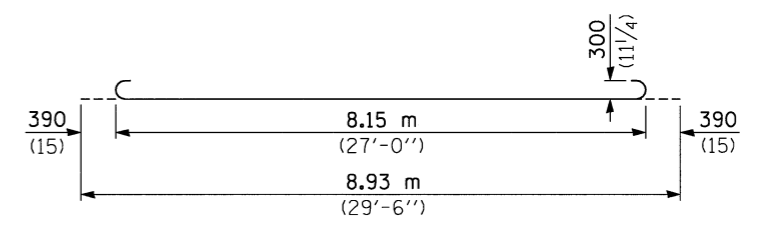
(See Plan for Dimensions not shown)
All reinforcement bars shall be epoxy coated.

Longitudinal Construction Joint in accordance with details shown on Standard 420001.

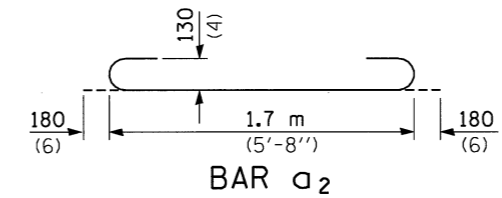


OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

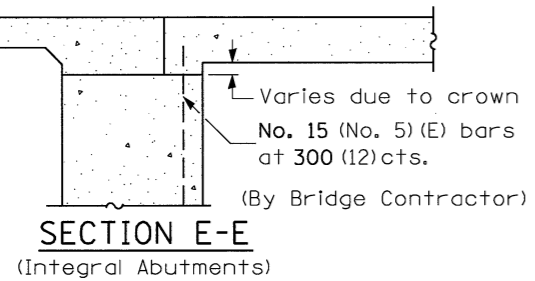
As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



BAR a

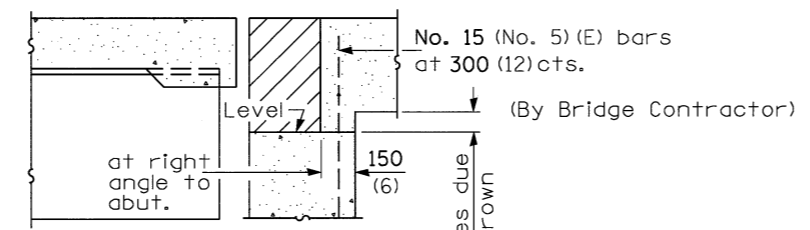


BAR a₂



SECTION E-E

(Integral Abutments)



SECTION E-E

(Jointed Abutments)

DESIGN STRESSES

f_y = 400 MPa (60,000 p.s.i.)
f'_c = 24 MPa (3,500 p.s.i.)
n = 8.5

All dimensions are in millimeters (inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY

BRIDGE APPROACH DETAILS

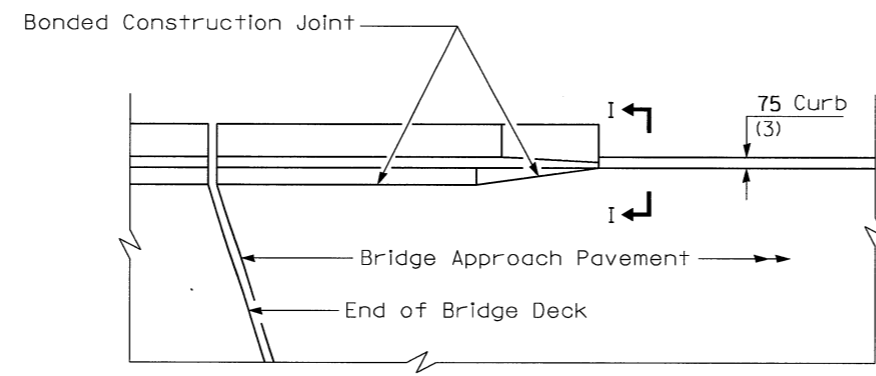
REVISIONS	
NAME	DATE



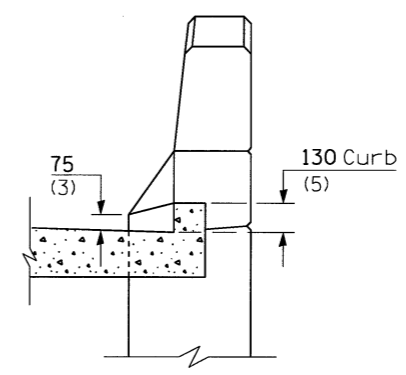
JOB NO.
94S2063
DATE
7/27/2009

7/27/2009 #FILE*

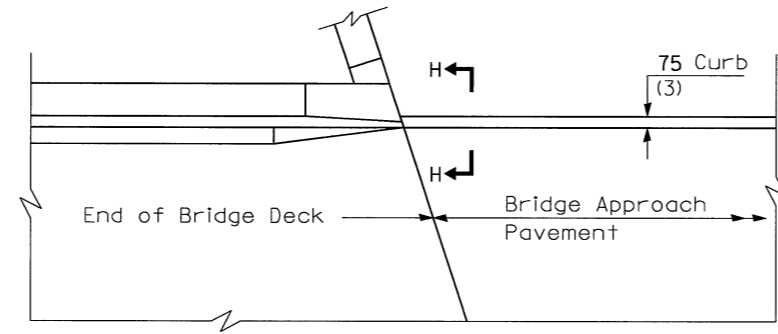
LAYOUT	JRH	04/09/02
DRAWN	JRH	03/05/04
REVIEWED	DLH	03/18/04



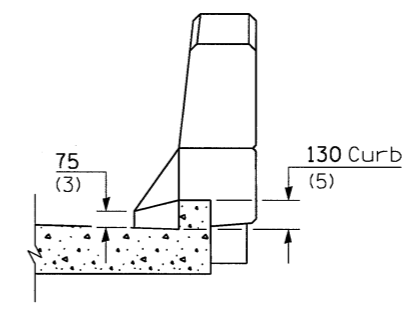
**PARAPET TO CURB TRANSITION
PILE BENT ABUTMENT**



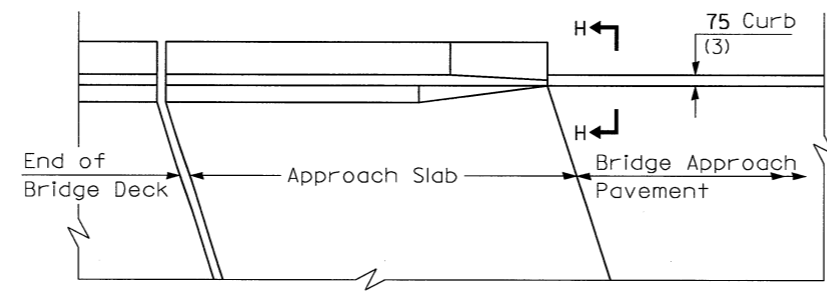
SECTION I - I



**PARAPET TO CURB TRANSITION
INTEGRAL ABUTMENT**



SECTION H - H



**PARAPET TO CURB TRANSITION
VAULTED ABUTMENT**

7/27/2009
#FILES

LAYOUT	JUH	04/09/02
DRAWN	JUH	03/09/04
REVIEWED	DUH	03/19/04

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 55
SECTION (57-4)R, HBY, HBR, (57-4VB)DM
MCLEAN COUNTY
BRIDGE APPROACH DETAILS

REVISIONS	
NAME	DATE

JOB NO.
94S2063
DATE
7/27/2009

DATE: 7/29/2009
 DRAWN BY: JH
 CHECKED BY: JH
 REVISIONS: 02/18/09

HANSON

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 55
 SECTION (57-4)R, HBY, HBR, (57-4)BDM
 MCLEAN COUNTY

CRASHWALL EXTENSION DETAILS

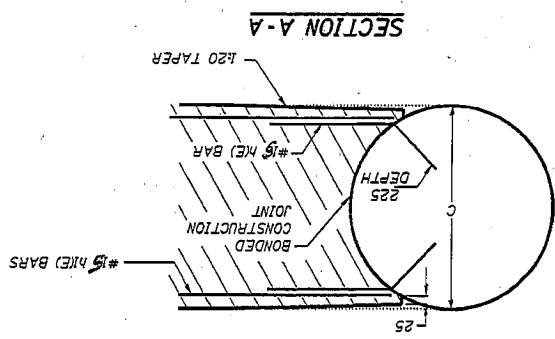
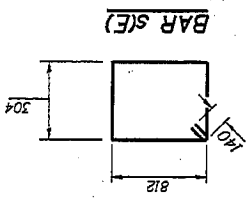
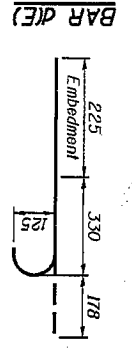
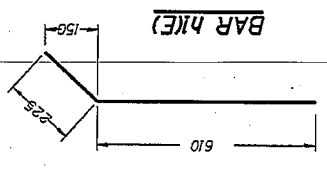
94S2063
 7/29/2009

REVISIONS	DATE	NAME

ITEM	UNIT	QUANTITY
CONCRETE STRUCTURES	CU. M.	5.25
REINFORCEMENT BARS, EPOXY COATED	KG	380.0

LOCATION	B	C	D
EB PIER	411	914	4.65 m
CENTER PIER	411	914	4.65 m
WB PIER	411	914	4.65 m

BAR DTY.	SIZE	LENGTH	SHAPE
(E)	60	133	U
(E)	30	2,512 m	□
(E)	21	4,572 m	—
(E)	36	835	—



* EPOXY GROUT BARS IN 225 MIN. HOLES ACCORDING TO ARTICLE 584 OF THE STANDARD SPECIFICATIONS.

ALL DIMENSIONS ARE IN millimeters (mm) EXCEPT AS NOTED.

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

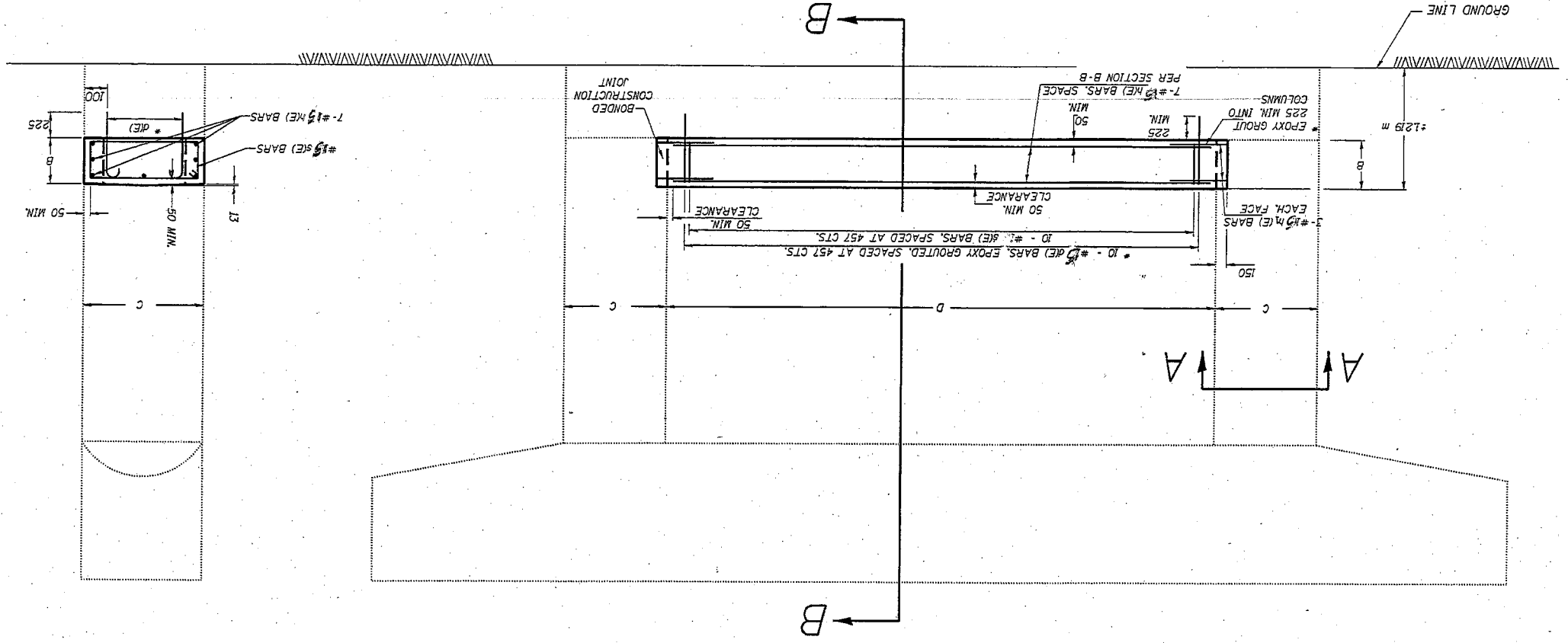
REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706M GR 420.

REINFORCEMENT BARS SHALL BE INCLUDED WITH REINFORCEMENT BARS (EPOXY COATED).

THE COST OF EPOXY GROUTING BARS SHALL BE INCLUDED WITH REINFORCEMENT BARS (EPOXY COATED).
 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706M GR 420.
 REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
 ALL DIMENSIONS ARE IN millimeters (mm) EXCEPT AS NOTED.

GENERAL NOTES

SECTION B-B



S.N. 057-0118 (TOWANDA AVE)

F.A.I. REC.	SECTION	COUNTY	DATE
55	310176	MCLEAN	

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
 (57-4)R, HBY, HBR, (57-4)BDM CONTRACT # 70751

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	177

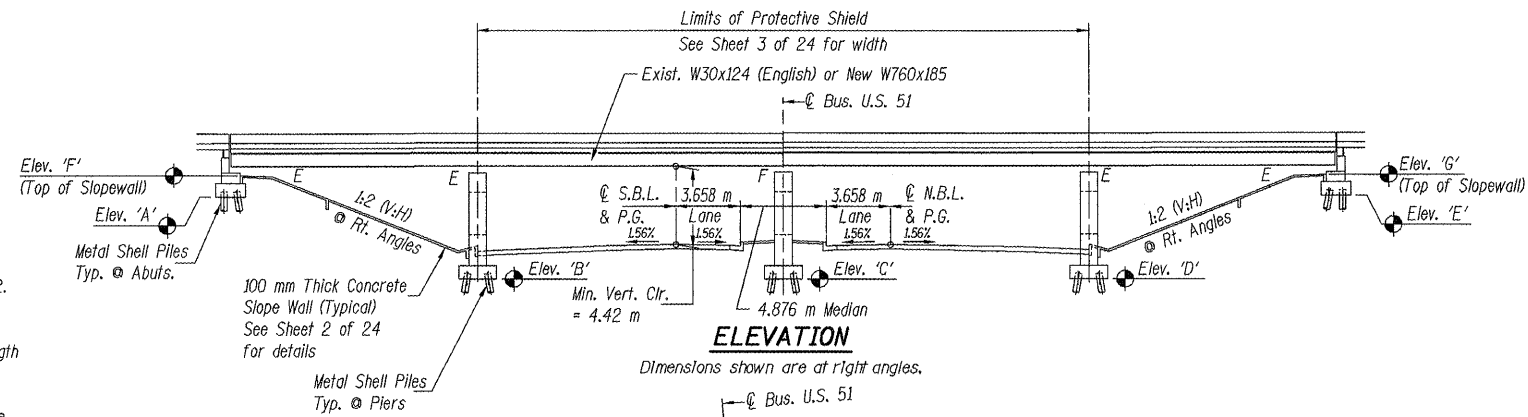
FED. ROAD DIST. NO. 7 ILLINOIS FAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

BENCH MARK:
 Disk on @ of F.A.I. 55
 at Sta. 37+535.321
 Elev. 265.767

Note:
 The existing B.M. will be removed during median construction. A new permanent B.M. will be established during construction.

EXISTING STRUCTURES:
 No. 057-0024 (N.B.) & No. 057-0025 (S.B.) built as F.A.I. Rte. 55, Sec. 57-4HB-4, 4HF4 in 1962. Widening & deck replacement occurred in 1990. The superstructures consist of 4 span, steel stringer, reinforced concrete slabs with bk. to bk. abutment length of 63.576 m. Span lengths are 13.868 m, 17.374 m, 17.374 m and 13.868 m. The substructures consist of concrete pile bent abutments and multi-column concrete piers.

PROPOSED IMPROVEMENTS:
 Existing structures to be widened on the median side. Each structure shall have existing replaced and widened with four span continuous non-median side parapets and deck portions removed, composite steel stringers. Existing substructures to be widened along with special approach pavements. The structures shall be separated by a 25 mm sealed joint. The existing structural steel shall be cleaned and painted. Traffic shall be controlled by the typical 3 Stage Wide Work Zone Template. No salvage.



MISCELLANEOUS ELEVATIONS

Designation	S.B.L.	N.B.L.
Elev. 'A'	263.800	263.800
Elev. 'B'	259.171	258.665
Elev. 'C'	259.171	258.665
Elev. 'D'	259.171	258.665
Elev. 'E'	263.853	263.853
Elev. 'F'	265.033	265.033
Elev. 'G'	265.118	265.118

DESIGN SPECIFICATIONS

1996 AASHTO Specifications with 1997 Interim.

LOADING MS18 & ALT.

Allow 1.2 kN/m²
 Future Wearing Surface

SEISMIC DATA

S.P.C. = A
 A = .044 g
 S = 1.0

DESIGN STRESSES

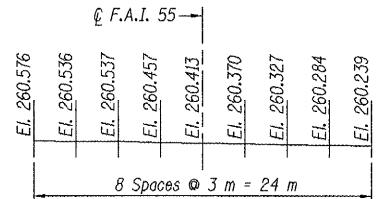
EXISTING CONSTRUCTION

f'c = 24.1 MPa
 fy = 413.7 MPa (Reinf. Bars)
 fs (1990) = 136.5 (Structural Steel, AASHTO M183)
 fs (1962) = 125.1 (Structural Steel, AASHTO M183)

DESIGN STRESSES

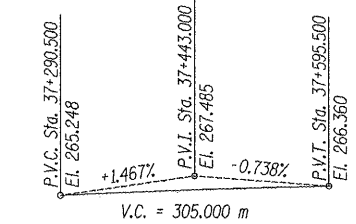
NEW CONSTRUCTION

f'c = 24 MPa
 fy = 400 MPa (Reinf. Bars)
 fs = 138 MPa (Structural Steel, M270M, Grade 250)



@ EXISTING BUS. U.S. 51 PROFILE GRADE

(Looking East Along N.B. or S.B. Roadway)



F.A.I. 55 PROPOSED PROFILE GRADE

(Along P.G.L. N.B. or S.B. Roadway)

@ Median & @ Survey (F.A.I. 55)
 @ Exist. S.B.L. & Prop. P.G.L. 605
 13.411 m
 @ Prop. S.B.L. 12.806 m
 3.928 m
 3.928 m
 13.411 m
 @ Prop. N.B.L. 12.806 m
 605
 @ Exist. N.B.L. & Prop. P.G.L.

STATION 37+474.206
 REBUILT BY
 STATE OF ILLINOIS
 F.A.I. RTE. 55 SEC. 57-4HBR-4
 LOADING MS18 & ALT.
 STR. NO. xxx-xxxx

NAME PLATE

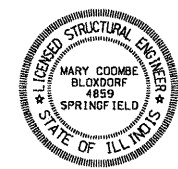
See Std. 515001
 Existing name plate shall be cleaned and relocated. Cost included in "Name Plates."
 New Name Plates shall be located adjacent to Existing Name Plates.
 xxx-xxxx = 057-0024 for NB Lanes
 xxx-xxxx = 057-0025 for SB Lanes

* Proposed approach pavement (special) shall be designed and constructed to match existing, adjacent approach pavement. See Roadway Plans.

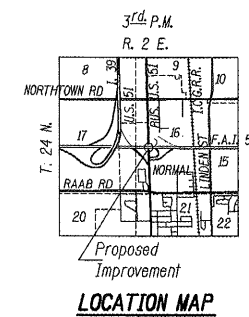
Indicates Boring Location See Exist. Structure Plans (1962) For boring data

PLAN APPROVED
 For Structural Adequacy Only

Ralph E. Anderson
 Engineer of Bridges & Structures



Mary Coombe Bloxdorf
 Structural Engineer License No. 081-004859
 Expiration Date: 11/30/2010
 Date: 8/19/09



Note: All dimensions are in millimeters (mm) except as noted.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
GENERAL PLAN	
PROJECT TITLE	PROJECT NO. 08049-5
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY	SCALE
STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	DATE 07/15/2009
	DRAWN BY TFG/CFE
	CHECKED BY CME/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWING NO. 1
	OF 24 SHTS

GENERAL NOTES

Fasteners shall be AASHTO M164M Type 1 mechanically galvanized bolts. Bolts 20 mm ϕ , holes 22 mm ϕ , unless otherwise noted.

Calculated mass of Structural Steel = 55100 kg (M270M Gr 250)

The Inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision for Cleaning and Painting New Metal Structures.

The existing structural steel coating on existing beams 2 thru 9 and 10 thru 17 and the diaphragms located between these beams including pier bearings contains lead. See Sheet 3 of 24 for the location of these existing beams. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for Cleaning and Painting Existing Steel Structures. All existing beams, bearings and other structural steel within 1.5 m (measured along the beam) of either side of deck joints shall be cleaned per Near White Blast Cleaning - SSPC-SF10. The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Power Tool Cleaning - Commercial Grade. All remaining structural steel shall be cleaned per Power Tool Cleaning - Modified SSPC-SF3.

The designated areas cleaned per Near White Blast Cleaning - SSPC-SF10 and per Power Tool Cleaning - Commercial Grade shall be painted according to the requirements of Paint System 1 - OZ/E/U. The designated areas cleaned per Power Tool Cleaning - Modified SSPC-SF3 shall be painted according to the requirements of Paint System 2 - PS/EM/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8.

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

Reinforcement bars shall conform to the requirements of AASHTO M31M or M322M Grade 400. See Special Provisions.

Reinforcement Bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearings.

Concrete Sealer shall be applied to the designated areas at the abutments.

Any existing reinforcement bars which are intended to be incorporated into the new construction that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Slip forming of the concrete parapets will not be allowed.

All dimensions are in millimeters (mm) except as noted.

Slope wall shall be reinforced with welded wire fabric 152x152 - MW25.8xMW25.8 with a mass of 2.91 kg/m².

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer.

Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

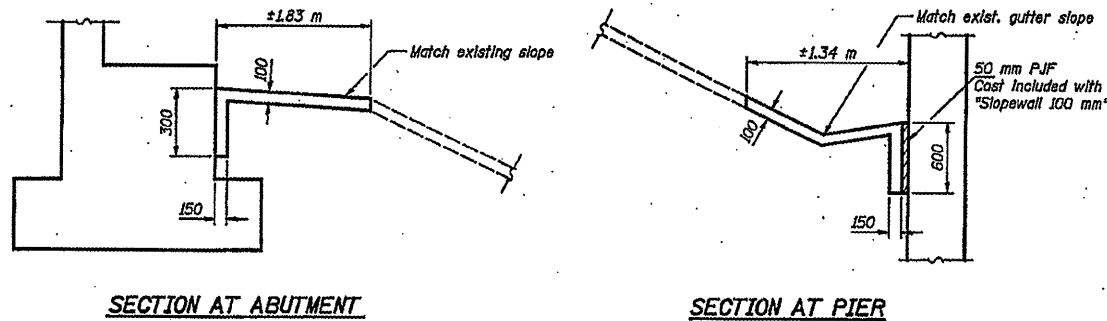
The SSPC OP-1 and OP-2 painting contractor certifications will be required for this bridge.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
CONCRETE REMOVAL	m ³	70.0	16.9	86.9
STRUCTURE EXCAVATION	m ³		119	119
PREFORMED JOINT STRIP SEAL	m	16.9		16.9
PREFORMED JOINT SEAL 64 mm	m	63.5		63.5
CONCRETE STRUCTURES	m ³		130.8	130.8
CONCRETE SUPERSTRUCTURE	m ³	141.9		141.9
PROTECTIVE COAT	m ²	582		582
FURNISHING AND ERECTING STRUCTURAL STEEL NO. 1	L. Sum	1		1
REINFORCEMENT BARS, EPOXY COATED	kg	20980	5460	26440
FURNISHING METAL PILE SHELLS 305 mm x 4.55 mm	m		216	216
DRIVING PILES	m		216	216
NAME PLATES	Each			2
CONCRETE SEALER	m ²		19.8	19.8
DRAINAGE SCUPPERS, DS-33	Each			2
FLOOR DRAINS	Each			4
PROTECTIVE SHIELD	m ²			236
SLOPE WALL REMOVAL	m ²		46	46
SLOPE WALL 100 mm	m ²		40	40
TEMPORARY SHEET PILING	m ²		106	106
BRIDGE DECK GROOVING	m ²	392		392
CLEANING AND PAINTING STEEL BRIDGE	L. Sum			1
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L. Sum			1
STUD SHEAR CONNECTORS	Each	336		336
ELASTOMERIC BEARING ASSEMBLY, TYPE II	Each	8		8
ANCHOR BOLTS M24	Each	40		40

INDEX OF SHEETS

- 1 General Plan
- 2 General Notes and Total Bill of Material
- 3 Stage 1 Removal and Construction
- 4 Stage 2 & 3 Roadway Staging Sequence
- 5 Temporary Concrete Barrier for Stage Construction
- 6 Footing Layout
- 7-8 Top of Slab Elevations
- 9 Superstructure - Stage 1
- 10-11 Superstructure - Stage 1 Details
- 12 Preformed Joint Strip Seal
- 13 Drainage Scupper, DS-33
- 14 Structural Steel
- 15 Bearing Details at Abutments
- 16 Bearing Details at Piers
- 17 West Abutments
- 18 West Abutment Details
- 19 East Abutments
- 20 East Abutment Details
- 21 Pier 1 & Pier 4
- 22 Pier 2 & Pier 5
- 23 Pier 3 & Pier 6
- 24 Metal Shell Piles

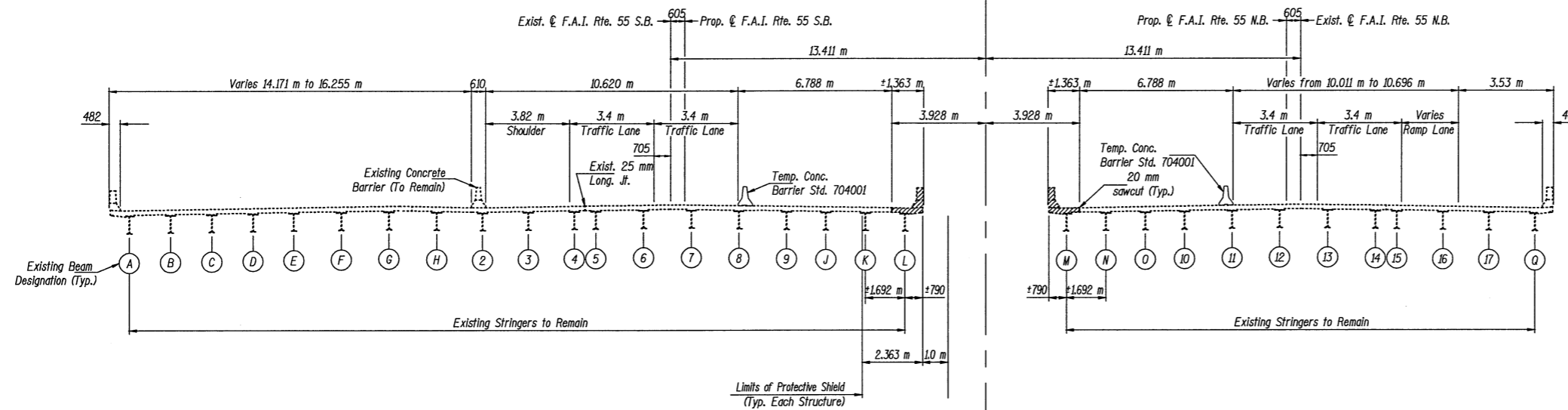


SLOPE WALL DETAILS

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE GENERAL NOTES AND TOTAL BILL OF MATERIAL	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 5T-4HR-4 STATION 37+474.206 MOLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 DATE 07/15/2009 DESIGNED BY TFB/CFC CHECKED BY CNE/MCB
CONTRACTOR COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWING NO. 2 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	179

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



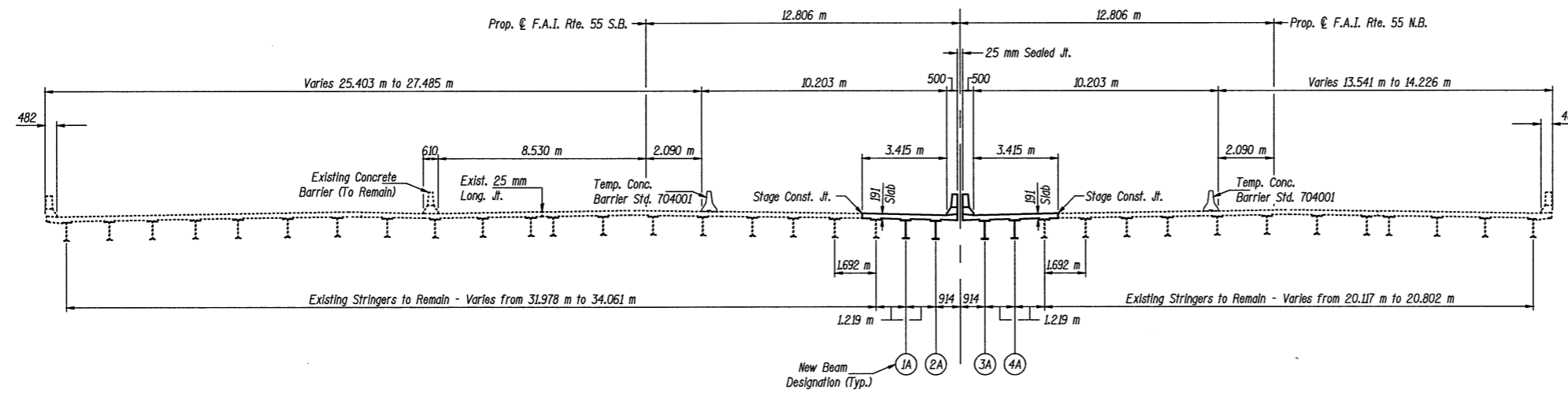
EXIST. CROSS SECTION - SOUTHBOUND
 (SHOWING STAGE 1 REMOVAL)

EXIST. CROSS SECTION - NORTHBOUND
 (SHOWING STAGE 1 REMOVAL)

NOTES
 All dimensions measured at Rt. Ls to \bar{C} F.A.I. Rte. 55.
 Hatched areas indicate concrete removal.
 All dimensions are in millimeters (mm) except as noted.

STAGE 1 CONSTRUCTION SEQUENCE

- Concurrent with Stage 1 Roadway Construction
1. Install temporary concrete barrier and direct traffic as shown.
 2. Install Stage 1 protective shield within limits shown in existing cross section and on Sheet 1 of 24.
 3. Proceed with Stage 1 superstructure removal.
 4. Install temporary sheet piling as shown on Sheet 6 of 24 along Bus. U.S. 51 prior to structure excavation at piers.
 5. Remove portions of existing abutments as shown on Sheets 18 and 20 of 24. Widen substructure units as shown on Sheets 17 through 19 of 24.
 6. Proceed with Stage 1 Construction.
 7. Relocate temporary concrete barrier as required for Stage 2 Removal and Construction. See Sheet 4 of 24.



PROPOSED CROSS SECTION - SOUTHBOUND
 (SHOWING PROPOSED STAGE 1 CONSTRUCTION)

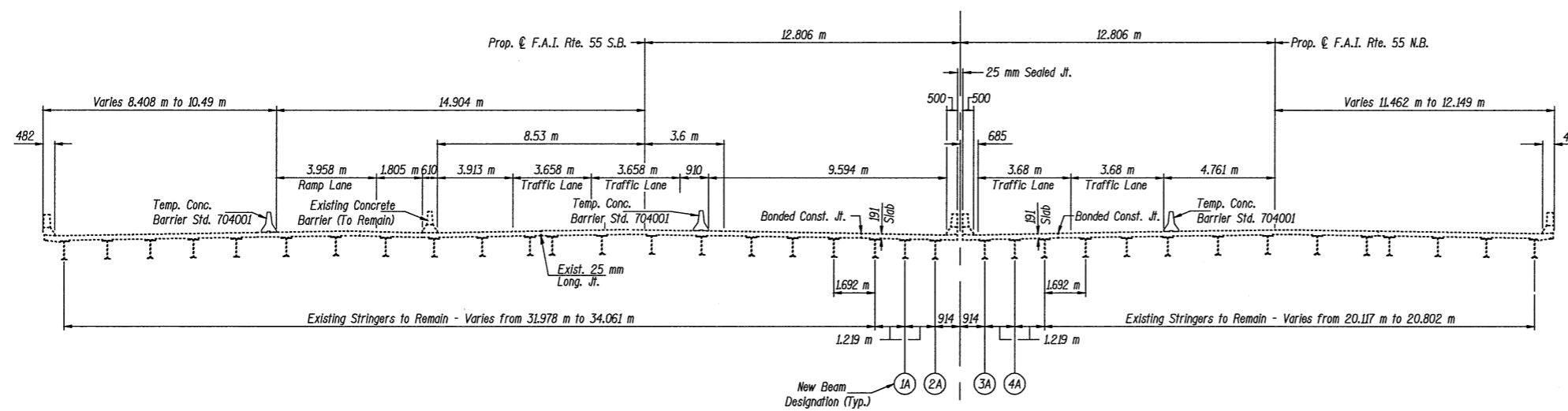
PROPOSED CROSS SECTION - NORTHBOUND
 (SHOWING PROPOSED STAGE 1 CONSTRUCTION)

*See Sheets 9 and 10 of 24 for Stage 1 Removal and Construction Limits.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE STAGE 1 REMOVAL AND CONSTRUCTION	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWING NO. 3 OF 24 SHTS

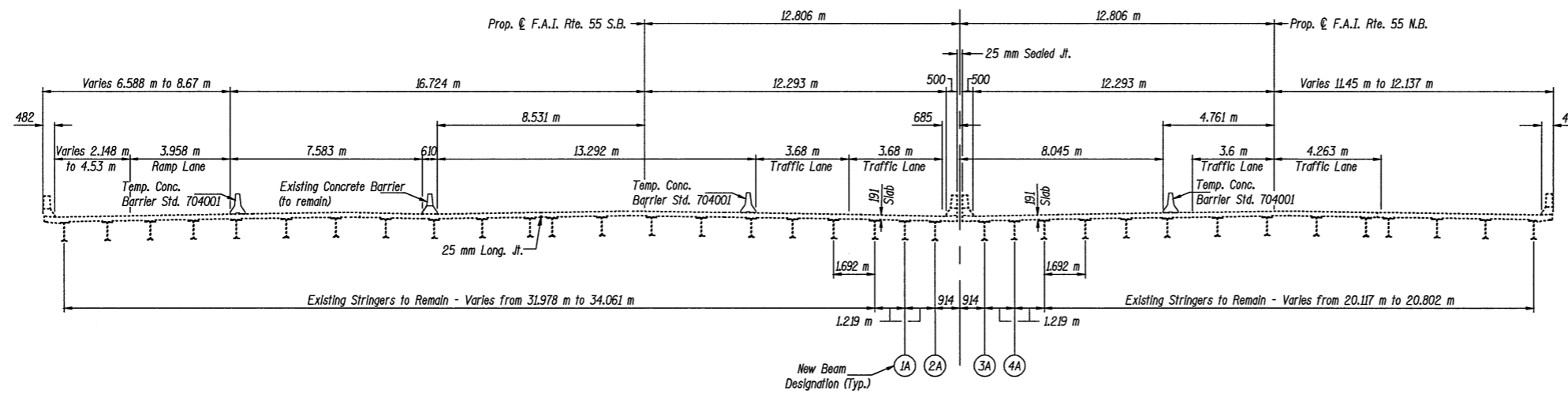
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	.	McLEAN	310	180

FED. ROAD DIST. NO. 7 ILLINOIS IAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



PROPOSED CROSS SECTION - SOUTHBOUND
 (SHOWING PROPOSED STAGE 2 ROADWAY STAGING)

PROPOSED CROSS SECTION - NORTHBOUND
 (SHOWING PROPOSED STAGE 2 ROADWAY STAGING)



PROPOSED CROSS SECTION - SOUTHBOUND
 (SHOWING PROPOSED STAGE 3 ROADWAY STAGING)

PROPOSED CROSS SECTION - NORTHBOUND
 (SHOWING PROPOSED STAGE 3 ROADWAY STAGING)

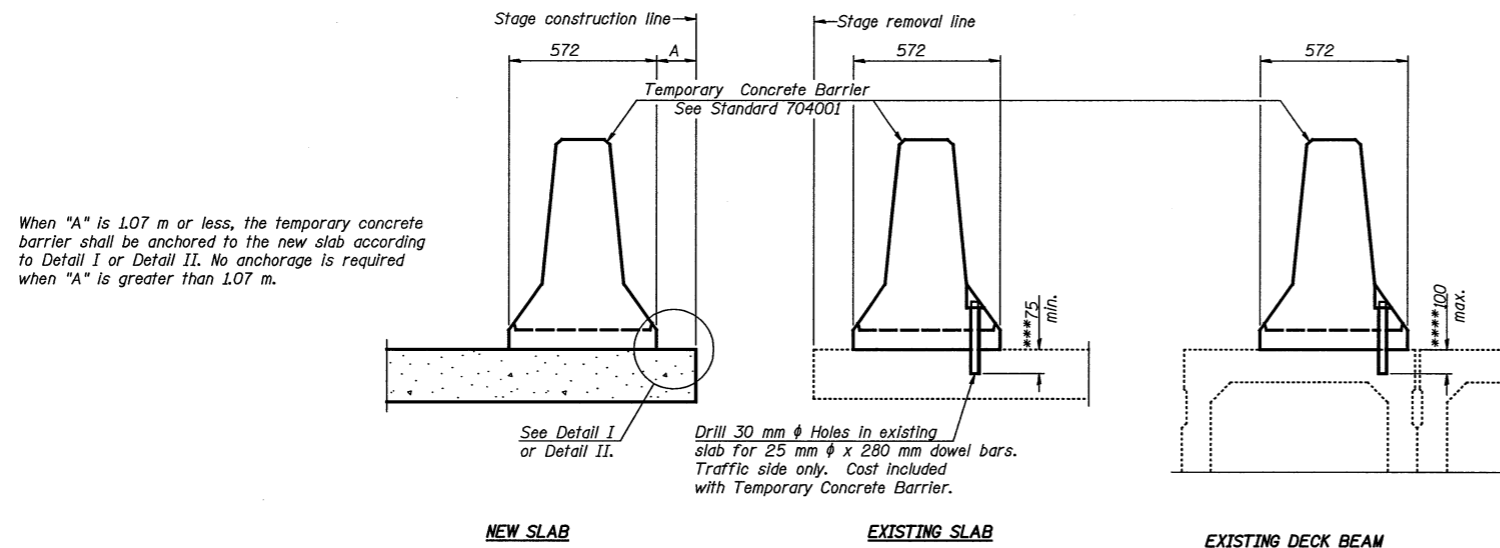
NOTES
 All dimensions measured at Rt. Ls to F.A.I. Rte. 55.
 All dimensions are in millimeters (mm) except as noted.

*See Sheets 11 thru 14 of 24 for Removal and Construction Limits.

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE			
STAGES 2 AND 3 ROADWAY STAGING SEQUENCE			
PROJECT	F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO.	08049-5
SCALE		DATE	07/15/2009
DRAWN BY	TFG/CFC	CHECKED BY	CME/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703			DRAWING NO. 4
			OF 24 SHTS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	•	McLEAN	310	181

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 * (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



SECTIONS THRU SLAB OR DECK BEAM

NOTES

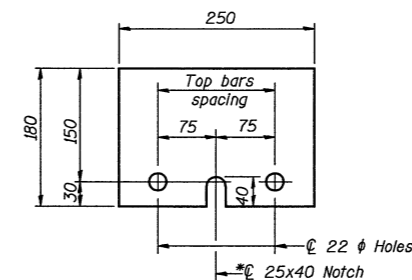
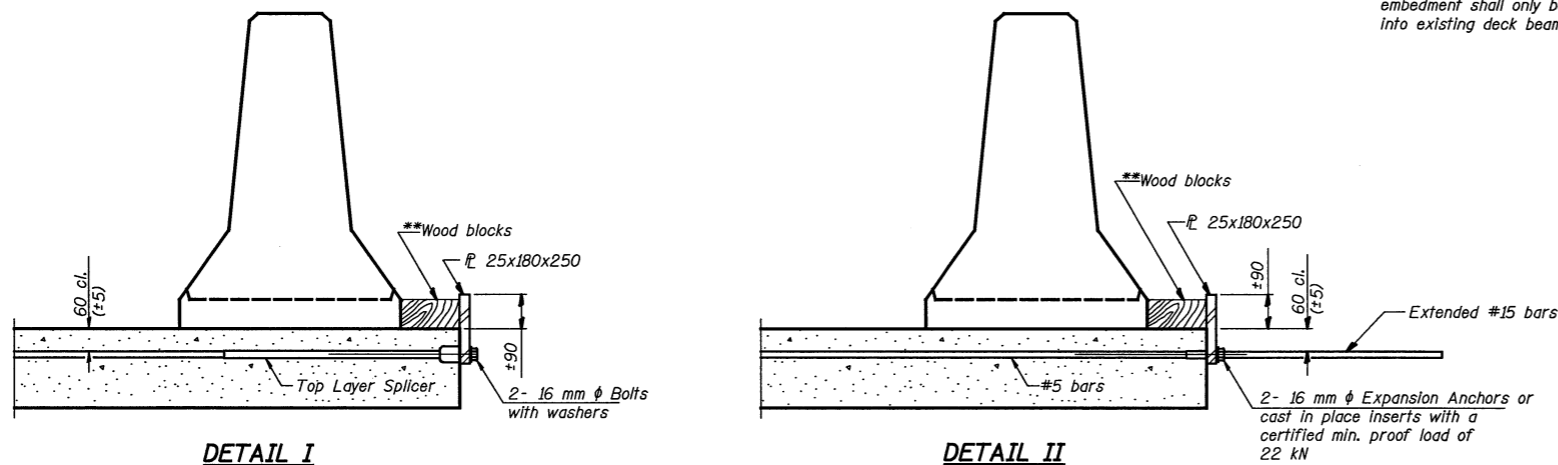
Detail I - With Bar Splicer or Couplers:
 Connect one (1) 25x180x250 steel \bar{L} to the top layer of couplers with 2- 16 mm ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
 Connect one (1) 25x180x250 steel \bar{L} to the concrete slab or concrete wearing surface with 2- 16 mm ϕ Expansion Anchors or cast in place Inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 25 x180x250 mm plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



STEEL RETAINER \bar{L} 25x180x250
 * Required only with Detail II

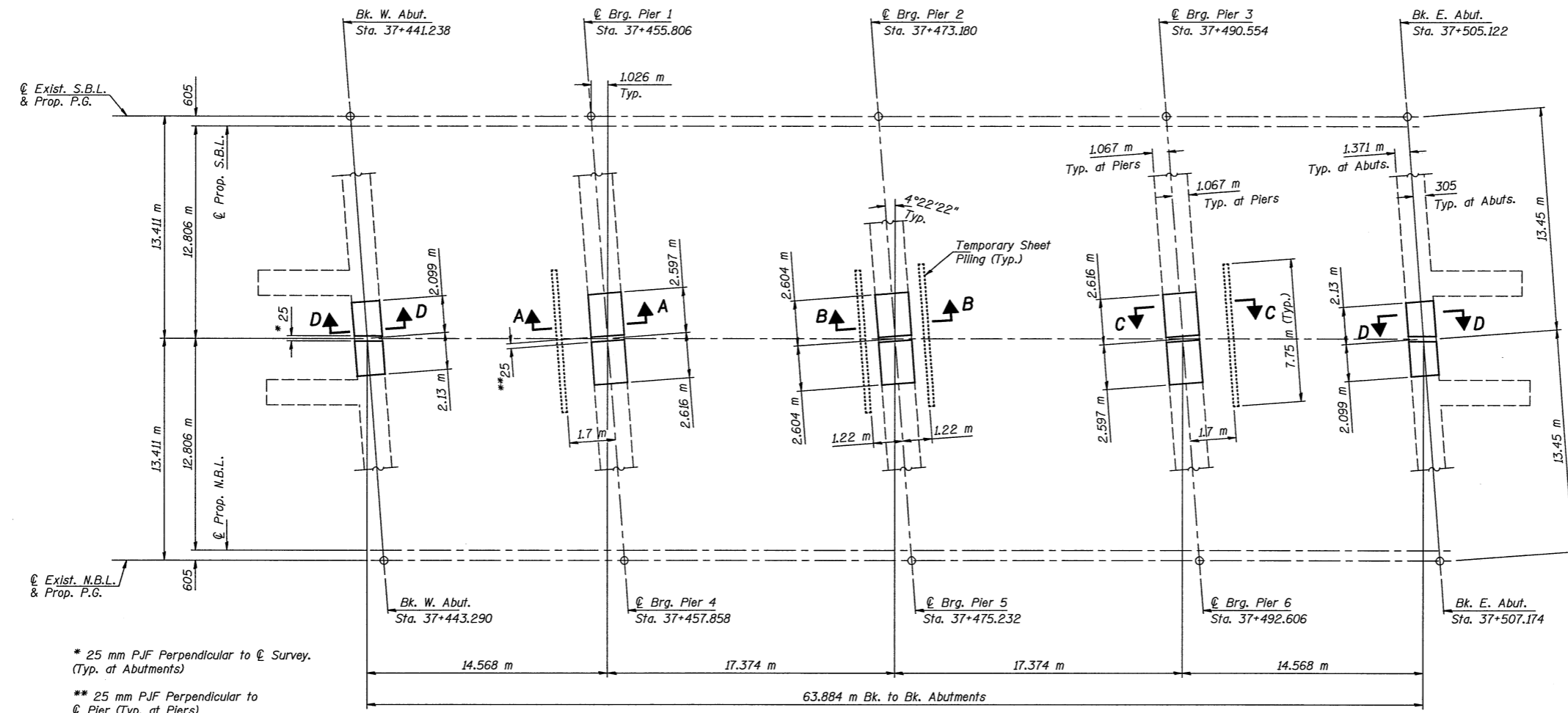
**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

All dimensions are in millimeters (mm) except as noted.

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION			
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5	SCALE DATE 07/15/2009	DRAWN BY TFG/CFC
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703			CHECKED BY CME/MCB
DRAWING NO. 5			OF 24 SHTS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	McLEAN	310	182

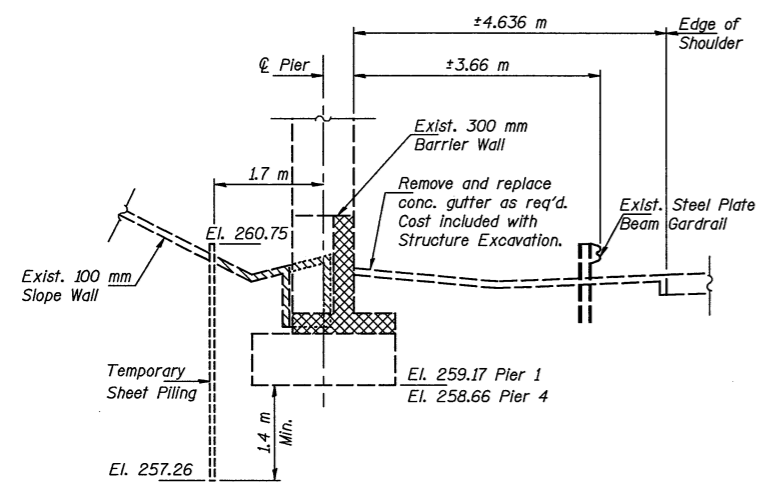
FED. ROAD DIST. NO. 7 ILLINOIS IAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



PLAN

* 25 mm PJF Perpendicular to ϕ Survey.
 (Typ. at Abutments)
 ** 25 mm PJF Perpendicular to ϕ Pier (Typ. at Piers)

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

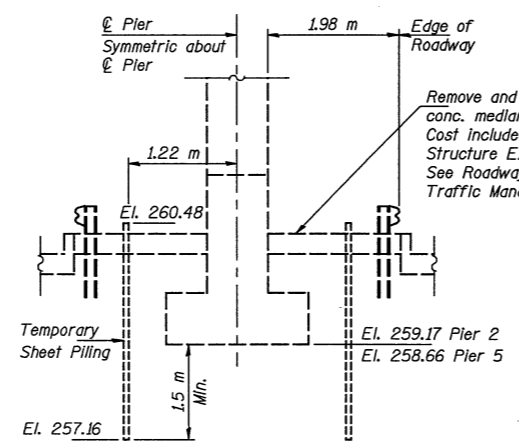


SECTION A-A

Hatched area denotes slope wall removal; estimated quantity = 13 m²
 Cross-hatched area denotes concrete removal; estimated quantity = 4.3 m³

Temporary Sheet Piling Data

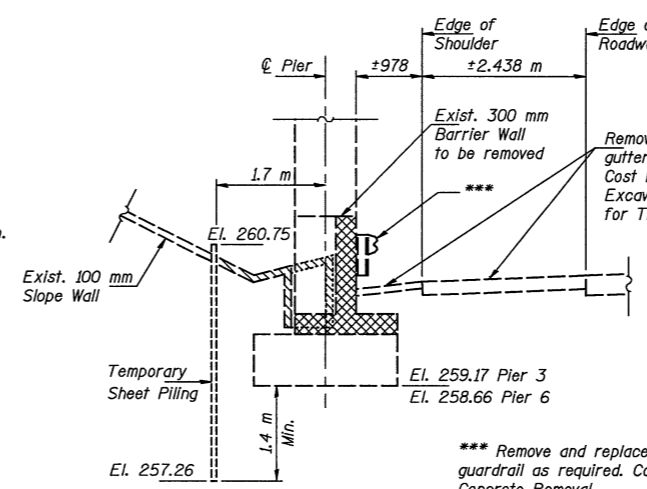
Top El.:	260.75
Bottom El.:	257.26
Embedment Varies:	1.4 m Min.
Min. Section Modulus:	100 x 10 ³ mm ⁴ /m
Fy:	265 MPa



SECTION B-B

Temporary Sheet Piling Data

Top El.:	260.48
Bottom El.:	257.16
Embedment Varies:	1.5 m Min.
Min. Section Modulus:	100 x 10 ³ mm ⁴ /m
Fy:	265 MPa

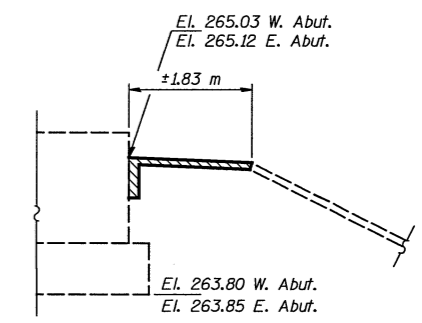


SECTION C-C

Hatched area denotes slope wall removal; estimated quantity = 13 m²
 Cross-hatched area denotes concrete removal; estimated quantity = 4.3 m³

Temporary Sheet Piling Data

Top El.:	260.75
Bottom El.:	257.26
Embedment Varies:	1.4 m Min.
Min. Section Modulus:	100 x 10 ³ mm ⁴ /m
Fy:	265 MPa



SECTION D-D

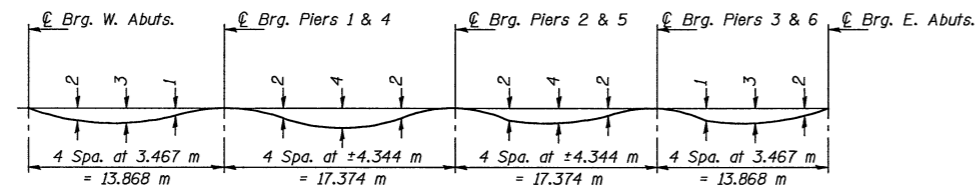
Hatched area denotes slope wall removal; estimated quantity = 10 m² (each abutment)

Notes: All dimensions are in millimeters (mm) except as noted.
 See Sheet 2 of 24 for slope wall replacement details.

ILLINOIS DEPARTMENT OF TRANSPORTATION			
FOOTING LAYOUT			
PROJECT	F.A.I. 55 OVER BUSINESS U.S. 51	PROJECT NO.	08049-5
SECTION	SECTION 57-4HR-4 STATION 37+474.206	SCALE	
COUNTY	McLEAN COUNTY	DATE	07/15/2009
STRUCTURE NO.	057-0024 (N.B.) & 057-0025 (S.B.)	DRAWN BY	TFG/CFC
		CHECKED BY	CME/MCB
COOMBE-BLOXDORF P.C.			DRAWING NO.
Engineers / Land Surveyors			6
Springfield, Illinois			
Design Firm License No. 184-002703			OF 24 SHTS

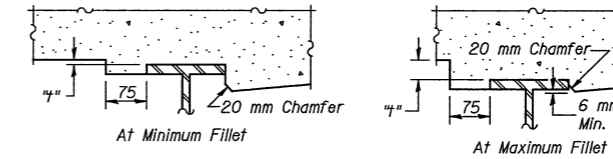
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	•	McLEAN	310	183

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete only)

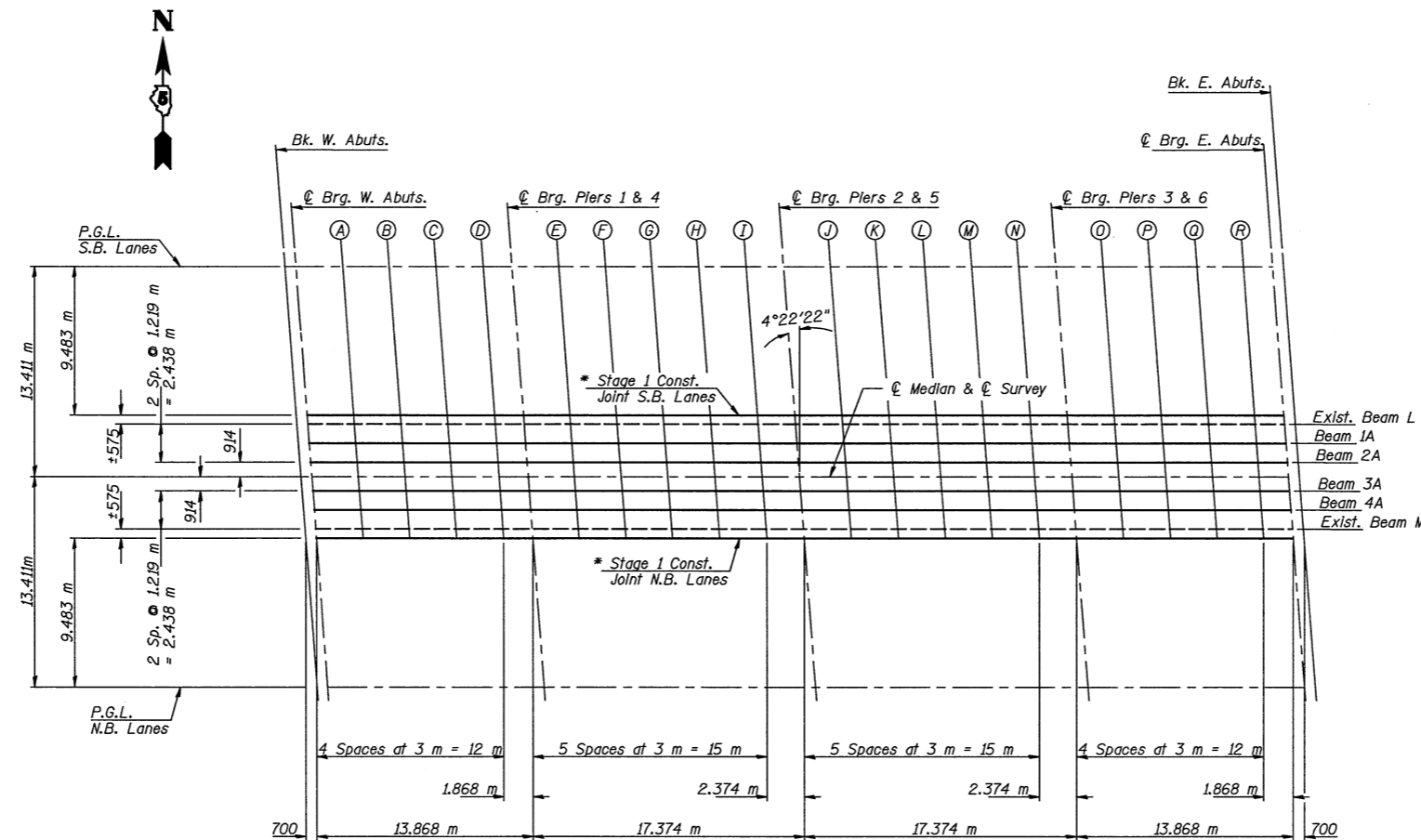
Notes: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 8 of 24. All dimensions are in millimeters (mm) except as noted. All offsets are in meters.



To determine "h": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet 8 of 24, minus slab thickness, equals the fillet heights "h" above top flange of beams.

FILLET HEIGHTS

*The Contractor shall verify in the field the elevations shown on Sheet 8 of 24 at the Stage Construction Joints. If the elevations vary the Contractor shall notify the Engineer before calculating the fillet heights at the beams.



PLAN

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE TOP OF SLAB ELEVATIONS			
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5	SCALE DATE 07/15/2009	DRAWN BY TFG/CFC
DESIGNED BY CME/MCB	CHECKED BY CME/MCB	DRAWING NO. 7	OF 24 SHTS
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703			

STRUCTURE NUMBER 057-0025

STAGE CONSTRUCTION JOINT S.B. LANES

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37441.963	9.483	266.481	266.481
© Brg. W. Abut.	37442.663	9.483	266.484	266.484
A	37445.663	9.483	266.495	266.496
B	37448.663	9.483	266.505	266.508
C	37451.663	9.483	266.514	266.516
D	37454.663	9.483	266.523	266.523
© Brg. Pier 1	37456.531	9.483	266.528	266.528
E	37459.531	9.483	266.536	266.537
F	37462.531	9.483	266.543	266.546
G	37465.531	9.483	266.549	266.553
H	37468.531	9.483	266.555	266.557
I	37471.531	9.483	266.560	266.560
© Brg. Pier 2	37473.905	9.483	266.563	266.563
J	37476.905	9.483	266.567	266.568
K	37479.905	9.483	266.570	266.574
L	37482.905	9.483	266.573	266.577
M	37485.905	9.483	266.575	266.578
N	37488.905	9.483	266.576	266.577
© Brg. Pier 3	37491.279	9.483	266.577	266.577
O	37494.279	9.483	266.577	266.578
P	37497.279	9.483	266.577	266.579
Q	37500.279	9.483	266.575	266.578
R	37503.279	9.483	266.574	266.574
© Brg. E. Abut.	37505.147	9.483	266.572	266.572
BK. E. Abut.	37505.847	9.483	266.571	266.571

EXISTING BEAM L

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.007	10.059	266.470	266.470
© Brg. W. Abut.	37442.707	10.059	266.472	266.472
A	37445.707	10.059	266.483	266.484
B	37448.707	10.059	266.493	266.496
C	37451.707	10.059	266.502	266.504
D	37454.707	10.059	266.511	266.511
© Brg. Pier 1	37456.575	10.059	266.516	266.516
E	37459.575	10.059	266.524	266.525
F	37462.575	10.059	266.531	266.534
G	37465.575	10.059	266.537	266.541
H	37468.575	10.059	266.543	266.546
I	37471.575	10.059	266.548	266.548
© Brg. Pier 2	37473.949	10.059	266.551	266.551
J	37476.949	10.059	266.555	266.556
K	37479.949	10.059	266.559	266.562
L	37482.949	10.059	266.561	266.565
M	37485.949	10.059	266.563	266.566
N	37488.949	10.059	266.564	266.565
© Brg. Pier 3	37491.323	10.059	266.565	266.565
O	37494.323	10.059	266.565	266.566
P	37497.323	10.059	266.565	266.567
Q	37500.323	10.059	266.563	266.566
R	37503.323	10.059	266.562	266.562
© Brg. E. Abut.	37505.191	10.059	266.560	266.560
BK. E. Abut.	37505.891	10.059	266.559	266.559

BEAM 1A

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.100	11.278	266.444	266.444
© Brg. W. Abut.	37442.800	11.278	266.447	266.447
A	37445.800	11.278	266.458	266.459
B	37448.800	11.278	266.468	266.471
C	37451.800	11.278	266.477	266.479
D	37454.800	11.278	266.486	266.486
© Brg. Pier 1	37456.668	11.278	266.491	266.491
E	37459.668	11.278	266.499	266.499
F	37462.668	11.278	266.505	266.509
G	37465.668	11.278	266.512	266.516
H	37468.668	11.278	266.518	266.520
I	37471.668	11.278	266.523	266.523
© Brg. Pier 2	37474.042	11.278	266.526	266.526
J	37477.042	11.278	266.530	266.531
K	37480.042	11.278	266.533	266.536
L	37483.042	11.278	266.536	266.540
M	37486.042	11.278	266.538	266.540
N	37489.042	11.278	266.539	266.540
© Brg. Pier 3	37491.416	11.278	266.540	266.540
O	37494.416	11.278	266.540	266.540
P	37497.416	11.278	266.539	266.542
Q	37500.416	11.278	266.538	266.541
R	37503.416	11.278	266.536	266.537
© Brg. E. Abut.	37505.284	11.278	266.535	266.535
BK. E. Abut.	37505.984	11.278	266.534	266.534

BEAM 2A

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.194	12.497	266.419	266.419
© Brg. W. Abut.	37442.894	12.497	266.422	266.422
A	37445.894	12.497	266.433	266.434
B	37448.894	12.497	266.443	266.446
C	37451.894	12.497	266.452	266.454
D	37454.894	12.497	266.461	266.461
© Brg. Pier 1	37456.762	12.497	266.466	266.466
E	37459.762	12.497	266.473	266.474
F	37462.762	12.497	266.480	266.483
G	37465.762	12.497	266.487	266.491
H	37468.762	12.497	266.492	266.495
I	37471.762	12.497	266.497	266.498
© Brg. Pier 2	37474.136	12.497	266.501	266.501
J	37477.136	12.497	266.505	266.506
K	37480.136	12.497	266.508	266.511
L	37483.136	12.497	266.510	266.514
M	37486.136	12.497	266.512	266.515
N	37489.136	12.497	266.514	266.514
© Brg. Pier 3	37491.510	12.497	266.514	266.514
O	37494.510	12.497	266.514	266.515
P	37497.510	12.497	266.514	266.516
Q	37500.510	12.497	266.512	266.515
R	37503.510	12.497	266.511	266.511
© Brg. E. Abut.	37505.378	12.497	266.509	266.509
BK. E. Abut.	37506.078	12.497	266.508	266.508

* Offsets are measured relative to the P.G.L. for the S.B. Lanes.

STRUCTURE NUMBER 057-0024

BEAM 3A

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.334	-12.497	266.420	266.420
© Brg. W. Abut.	37443.034	-12.497	266.423	266.423
A	37446.034	-12.497	266.433	266.435
B	37449.034	-12.497	266.443	266.446
C	37452.034	-12.497	266.452	266.454
D	37455.034	-12.497	266.461	266.461
© Brg. Pier 4	37456.902	-12.497	266.466	266.466
E	37459.902	-12.497	266.474	266.475
F	37462.902	-12.497	266.481	266.484
G	37465.902	-12.497	266.487	266.491
H	37468.902	-12.497	266.493	266.495
I	37471.902	-12.497	266.498	266.498
© Brg. Pier 5	37474.276	-12.497	266.501	266.501
J	37477.276	-12.497	266.505	266.506
K	37480.276	-12.497	266.508	266.511
L	37483.276	-12.497	266.511	266.515
M	37486.276	-12.497	266.512	266.515
N	37489.276	-12.497	266.514	266.514
© Brg. Pier 6	37491.650	-12.497	266.514	266.514
O	37494.650	-12.497	266.514	266.515
P	37497.650	-12.497	266.514	266.516
Q	37500.650	-12.497	266.512	266.515
R	37503.650	-12.497	266.510	266.511
© Brg. E. Abut.	37505.518	-12.497	266.509	266.509
BK. E. Abut.	37506.218	-12.497	266.508	266.508

BEAM 4A

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.428	-11.278	266.446	266.446
© Brg. W. Abut.	37443.128	-11.278	266.448	266.448
A	37446.128	-11.278	266.459	266.461
B	37449.128	-11.278	266.469	266.472
C	37452.128	-11.278	266.478	266.480
D	37455.128	-11.278	266.487	266.487
© Brg. Pier 4	37456.996	-11.278	266.492	266.492
E	37459.996	-11.278	266.499	266.500
F	37462.996	-11.278	266.506	266.509
G	37465.996	-11.278	266.512	266.516
H	37468.996	-11.278	266.518	266.521
I	37471.996	-11.278	266.523	266.524
© Brg. Pier 5	37474.370	-11.278	266.527	266.527
J	37477.370	-11.278	266.530	266.531
K	37480.370	-11.278	266.534	266.537
L	37483.370	-11.278	266.536	266.540
M	37486.370	-11.278	266.538	266.541
N	37489.370	-11.278	266.539	266.540
© Brg. Pier 6	37491.744	-11.278	266.540	266.540
O	37494.744	-11.278	266.540	266.540
P	37497.744	-11.278	266.539	266.542
Q	37500.744	-11.278	266.538	266.541
R	37503.744	-11.278	266.536	266.537
© Brg. E. Abut.	37505.612	-11.278	266.534	266.534
BK. E. Abut.	37506.312	-11.278	266.534	266.534

EXISTING BEAM M

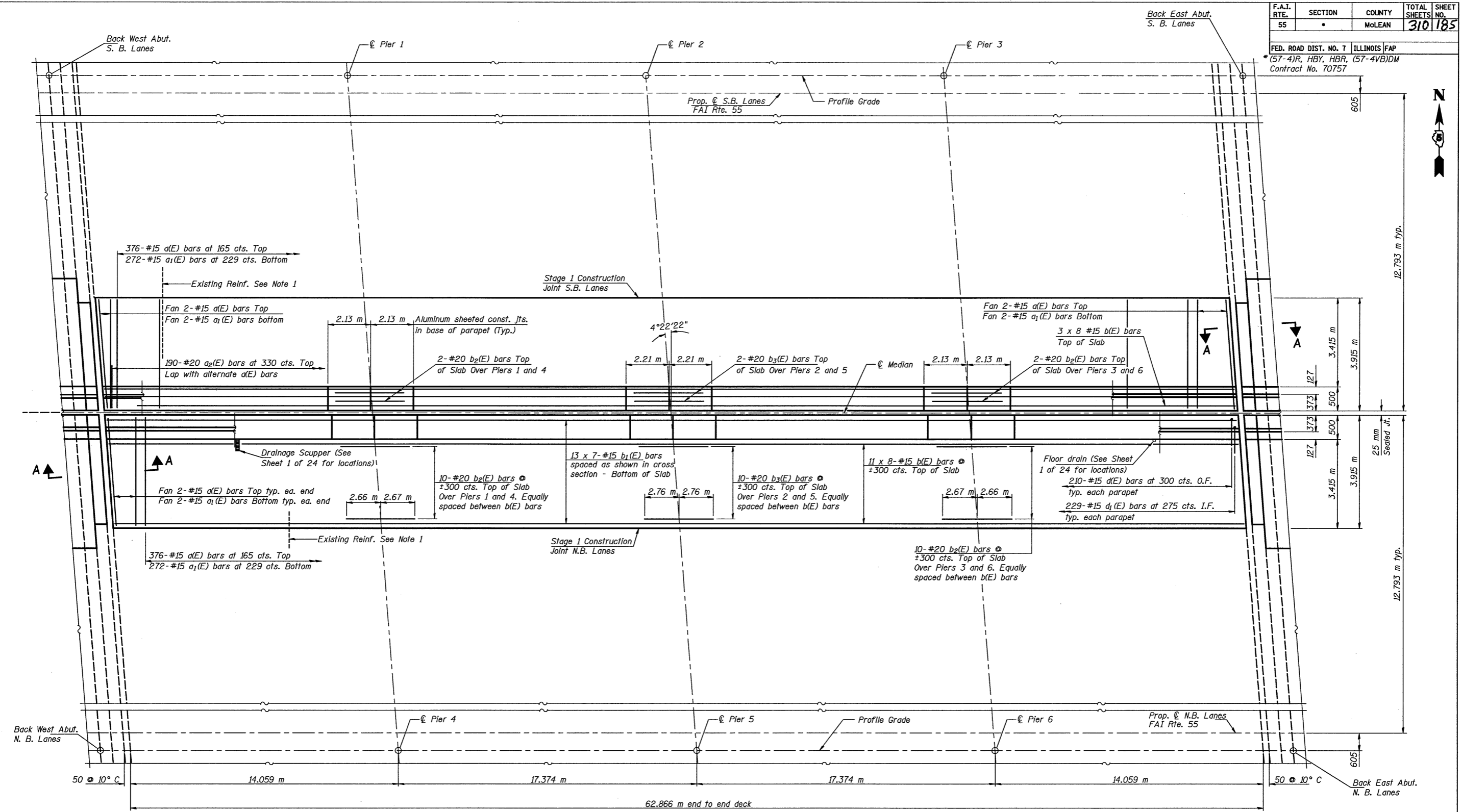
Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.521	-10.059	266.471	266.471
© Brg. W. Abut.	37443.221	-10.059	266.474	266.474
A	37446.221	-10.059	266.485	266.486
B	37449.221	-10.059	266.494	266.498
C	37452.221	-10.059	266.504	266.506
D	37455.221	-10.059	266.512	266.512
© Brg. Pier 4	37457.089	-10.059	266.517	266.517
E	37460.089	-10.059	266.525	266.526
F	37463.089	-10.059	266.532	266.535
G	37466.089	-10.059	266.538	266.542
H	37469.089	-10.059	266.544	266.546
I	37472.089	-10.059	266.549	266.549
© Brg. Pier 5	37474.463	-10.059	266.552	266.552
J	37477.463	-10.059	266.556	266.557
K	37480.463	-10.059	266.559	266.562
L	37483.463	-10.059	266.561	266.565
M	37486.463	-10.059	266.563	266.566
N	37489.463	-10.059	266.565	266.565
© Brg. Pier 6	37491.837	-10.059	266.565	266.565
O	37494.837	-10.059	266.565	266.566
P	37497.837	-10.059	266.564	266.567
Q	37500.837	-10.059	266.563	266.566
R	37503.837	-10.059	266.561	266.562
© Brg. E. Abut.	37505.705	-10.059	266.560	266.560
BK. E. Abut.	37506.405	-10.059	266.559	266.559

STAGE CONSTRUCTION JOINT N.B. LANES

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	37442.565	-9.483	266.484	266.484
© Brg. W.				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	.	McLEAN	310	185

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



PLAN

MIN. BAR LAP
 #15 bars = 510

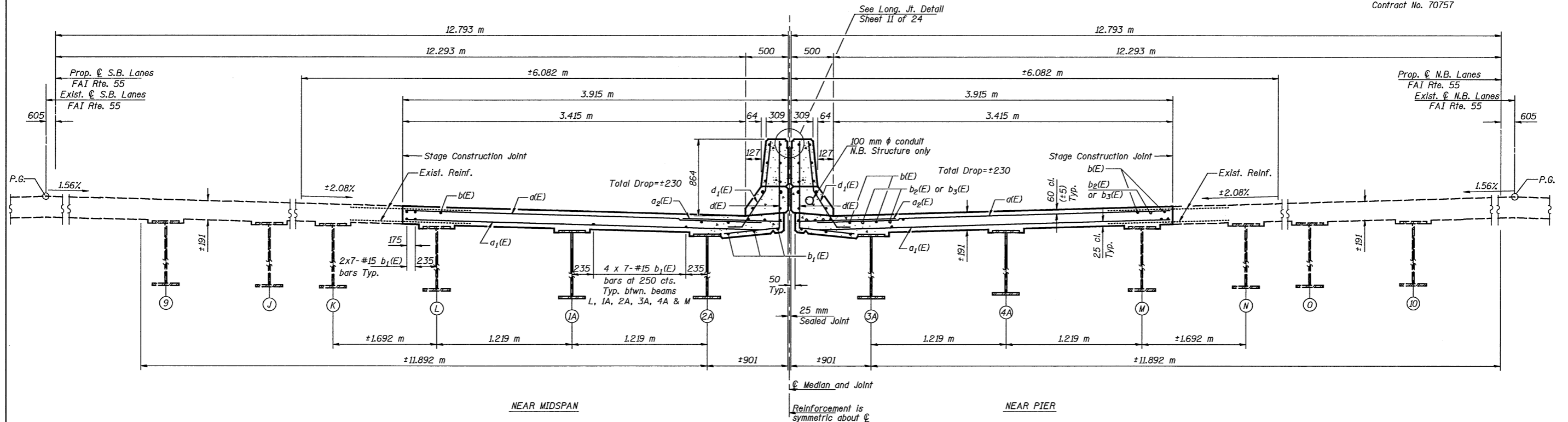
NOTES

Bars indicated thus 3x8-#15 etc. indicates 3 lines of bars with 8 lengths per line. Cut reinforcement bars in slab to clear drainage scuppers. All construction joints between new and existing construction shall be Bonded Construction Joints. See Sheet 11 of 24 for Superstructure Details, Parapet Reinforcement, Bar Details and Bill of Material. All dimensions are in millimeters (mm) except as noted. See Sheet 10 of 24 for Stage 1 Cross Section and Section A-A.

Note 1. Existing reinforcement extending into removed areas shall be cleaned, straightened and incorporated into the new construction with a minimum lap length of 610 mm except as noted. Cost included with Concrete Removal. Lap a(E) and a1(E) bars with existing transverse reinforcement.

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE			
SUPERSTRUCTURE - STAGE 1			
PROJECT	F.A.I. 55 OVER BUSINESS U.S. 51	PROJECT NO.	08049-5
SECTION	57-4HBR-4 STATION 37+474.206	SCALE	DATE 07/15/2009
COUNTY	McLEAN COUNTY	DRAWN BY	TFG/CFC
STRUCTURE NO.	057-0024 (N.B.) & 057-0025 (S.B.)	CHECKED BY	CME/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	
Engineers / Land Surveyors		9	
Springfield, Illinois		OF 24 SHTS	
Design Firm License No. 184-002703			

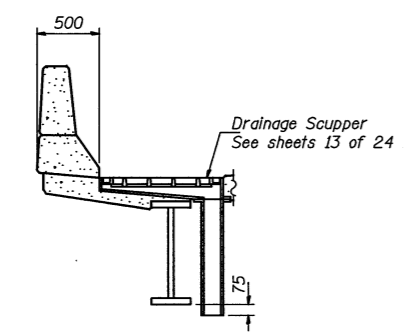
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	McLEAN	310	186
STA.		TO STA.		
FED. ROAD DIST. NO. 7		ILLINOIS FAP		
*(57-4)R, HBY, HBR, (57-4VB)DM				
Contract No. 70757				



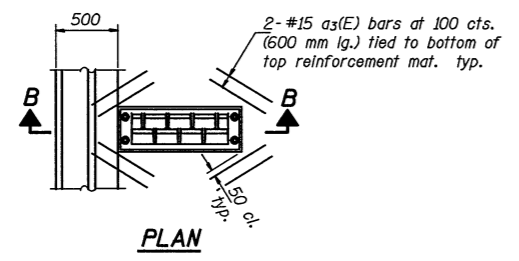
CROSS SECTION
(Looking East)

NOTES

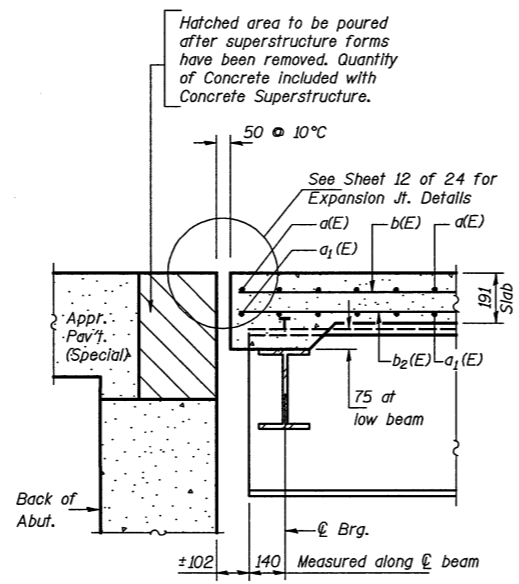
Bars indicated thus 3x8-#15 etc. indicates 3 lines of bars with 8 lengths per line. Cut reinforcement bars in slab to clear drainage scuppers. Existing reinforcement extending into removed areas shall be cleaned, straightened and incorporated into the new construction with a minimum lap length of 610 mm except as noted. Cost Included with Concrete Removal. See Sheet 11 of 24 for Superstructure Details, Parapet Reinforcement, Bar Details and Bill of Material. All dimensions are in millimeters (mm) except as noted.



SECTION B-B



PLAN



SECTION A-A

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE			
SUPERSTRUCTURE-STAGE 1 DETAILS			
PROJECT	F.A.I. 55 OVER BUSINESS U.S. 51	PROJECT NO.	08049-5
SECTION	57-4HBR-4 STATION 37+474.206	SCALE	
COUNTY	McLEAN COUNTY	DATE	07/15/2009
STRUCTURE NO.	057-0024 (N.B.) &	DRAWN BY	TFG/CFC
STRUCTURE NO.	057-0025 (S.B.)	CHECKED BY	CME/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	
Engineers / Land Surveyors		10	
Springfield, Illinois		OF 24 SHTS	
Design Firm License No. 184-002703			

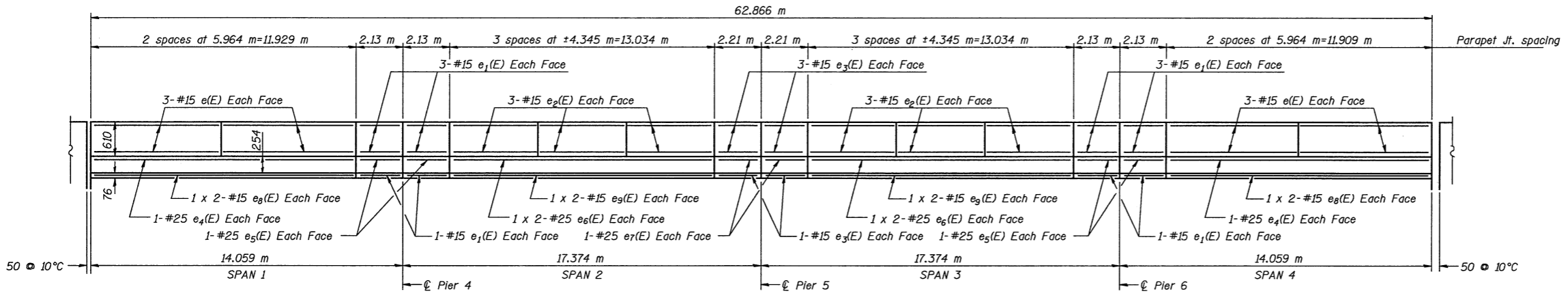
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS No.
55		McLEAN	310/187

FED. ROAD DIST. NO. 7 ILLINOIS IAP
 * (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

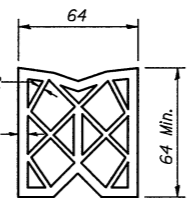
**SUPERSTRUCTURE
 BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape	
a(E)	760	#15	3.76	---	
a ₁ (E)	552	#15	3.57	---	
a ₂ (E)	380	#20	1.20	---	
a ₃ (E)	16	#15	0.60	---	
b(E)	224	#15	8.28	---	
b ₁ (E)	182	#15	9.32	---	
b ₂ (E)	48	#20	5.33	---	
b ₃ (E)	24	#20	5.52	---	
d(E)	420	#15	1.58	L	
d ₁ (E)	458	#15	1.21	L	
e(E)	48	#15	5.87	---	
e ₁ (E)	64	#15	2.05	---	
e ₂ (E)	72	#15	4.26	---	
e ₃ (E)	32	#15	2.13	---	
e ₄ (E)	8	#25	11.83	---	
e ₅ (E)	16	#25	2.05	---	
e ₆ (E)	16	#25	7.14	---	
e ₇ (E)	8	#25	2.13	---	
e ₈ (E)	16	#15	6.24	---	
e ₉ (E)	16	#15	6.80	---	
Reinforcement Bars, Epoxy Coated				kg	20980
Concrete Superstructure				m ³	141.9

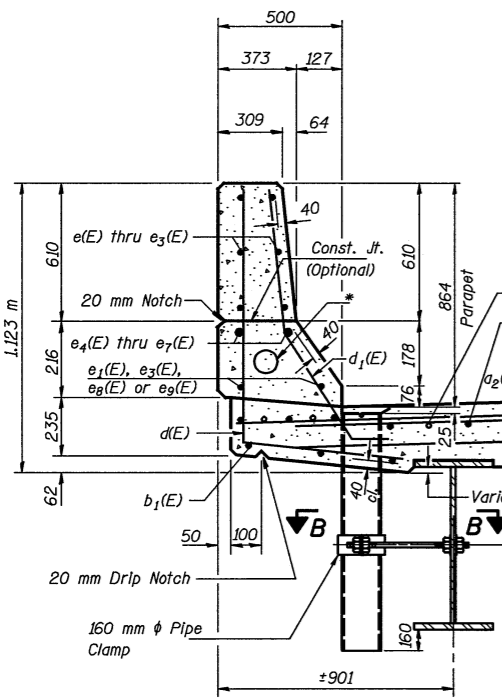
Bars indicated thus 1 x 3-#15 etc. indicates 1 line of bars with 3 lengths per line.
 All dimensions are in millimeters (mm) except as noted.



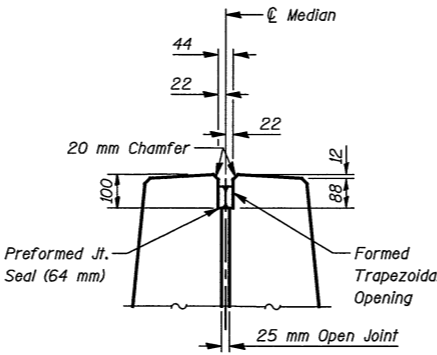
**INSIDE ELEVATION OF STAGE 1 PARAPET
 (SHOWING NORTH PARAPET N.B. LANES)**



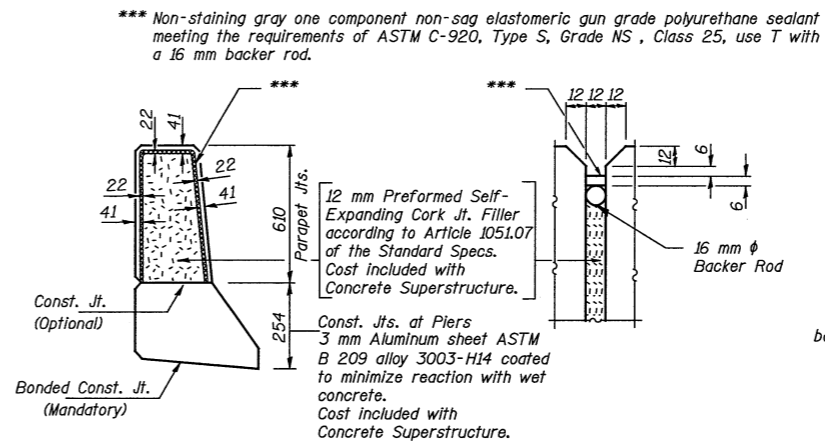
PREFORMED JOINT SEAL (64 mm)



**SECTION THRU MEDIAN PARAPET
 (showing drain)**



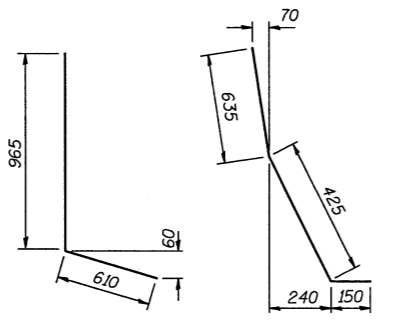
LONG. JT. DETAIL



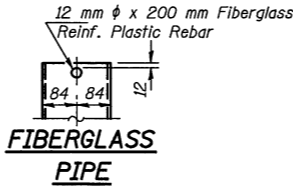
PARAPET JOINT DETAILS

MIN. BAR LAPS IN PARAPET

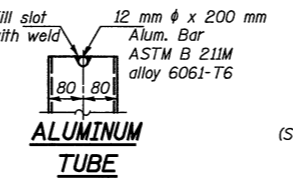
#15 bars = 640
 #25 bars = 1.32 m



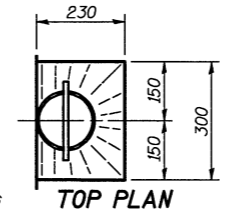
BAR d(E) BAR d₁(E)



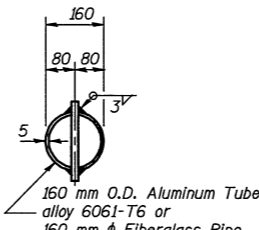
FIBERGLASS PIPE



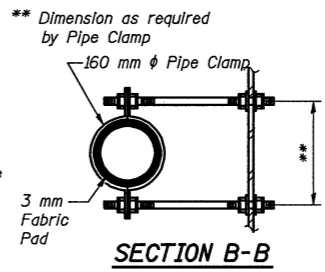
ALUMINUM TUBE



TOP PLAN



**TOP PLAN
 (Showing Aluminum Tube)**



SECTION B-B

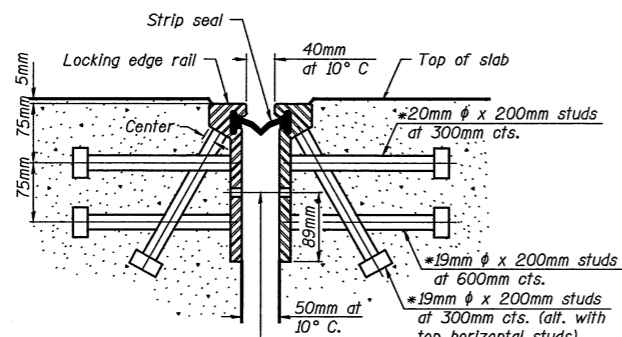
NOTES

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SP1 prior to painting.
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 200 MPa minimum.
 Drains shall be located clear of all diaphragms.

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SHEET TITLE: SUPERSTRUCTURE - STAGE I DETAILS
 PROJECT: F.A.I. 55 OVER BUSINESS U.S. 51
 SECTION 57-4HBR-4 STATION 37+474.206
 McLEAN COUNTY
 STRUCTURE NO. 057-0024 (N.B.) &
 STRUCTURE NO. 057-0025 (S.B.)
 PROJECT NO. 08049-5
 SCALE: 07/15/2009
 DRAWN BY: TFG/CFC
 CHECKED BY: CME/MCB
 DRAWING NO.:
COOMBE-BLOXDORF P.C.
 Engineers / Land Surveyors
 Springfield, Illinois
 Design Firm License No. 184-002703
 11
 OF 24 SHTS

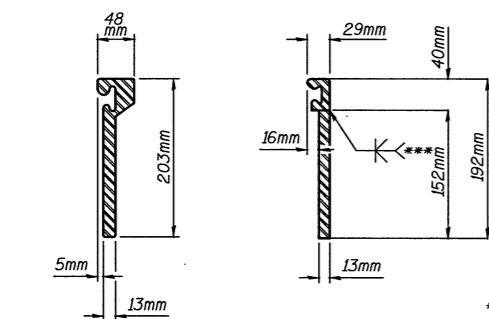
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	McLEAN	310	188
STA.		TO STA.		
FED. ROAD DIST. NO. 7		ILLINOIS IAP		
*(57-4)R, HBY, HBR, (57-4VB)DM Contract No. 70757				

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



12mm ϕ holes at 1.22m cts. for 10mm ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

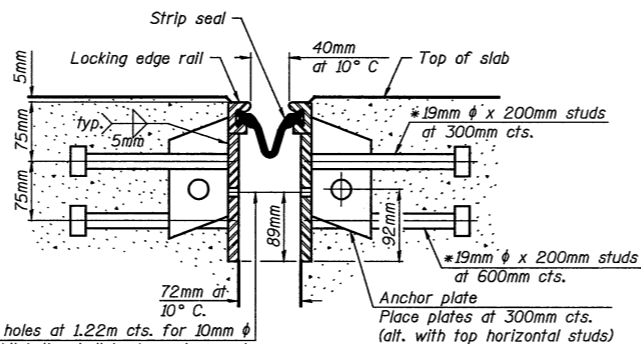


ROLLED (EXTRUDED) RAIL **WELDED RAIL**

LOCKING EDGE RAIL SPLICE

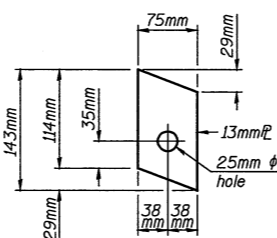
The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

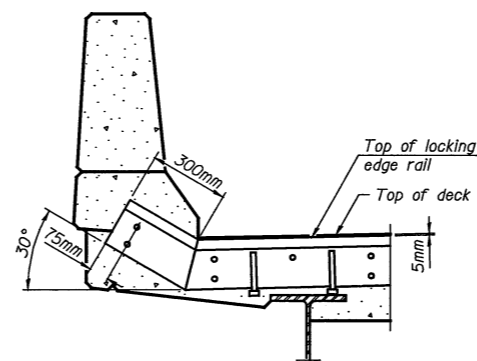


12mm ϕ holes at 1.22m cts. for 10mm ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

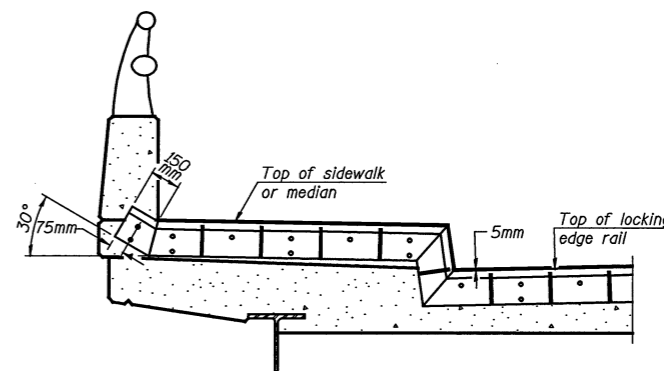
SECTION THRU WELDED RAIL JOINT



ANCHOR PLATE
(for welded rail)



AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 300mm cts. may be necessary on medians which are shallower than 230mm. See manufacturer's recommendation.

TYPICAL END TREATMENTS

BILL OF MATERIAL

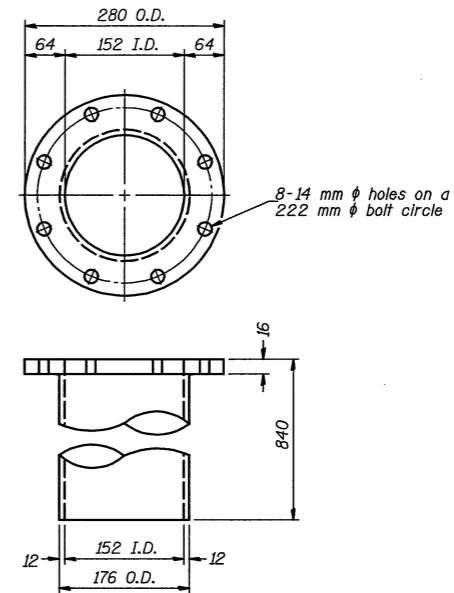
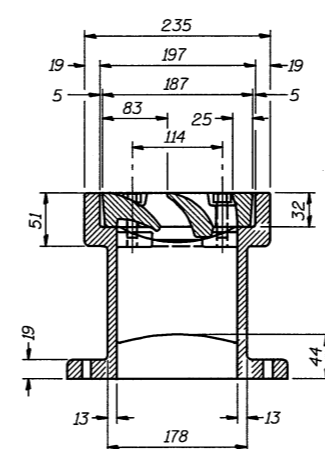
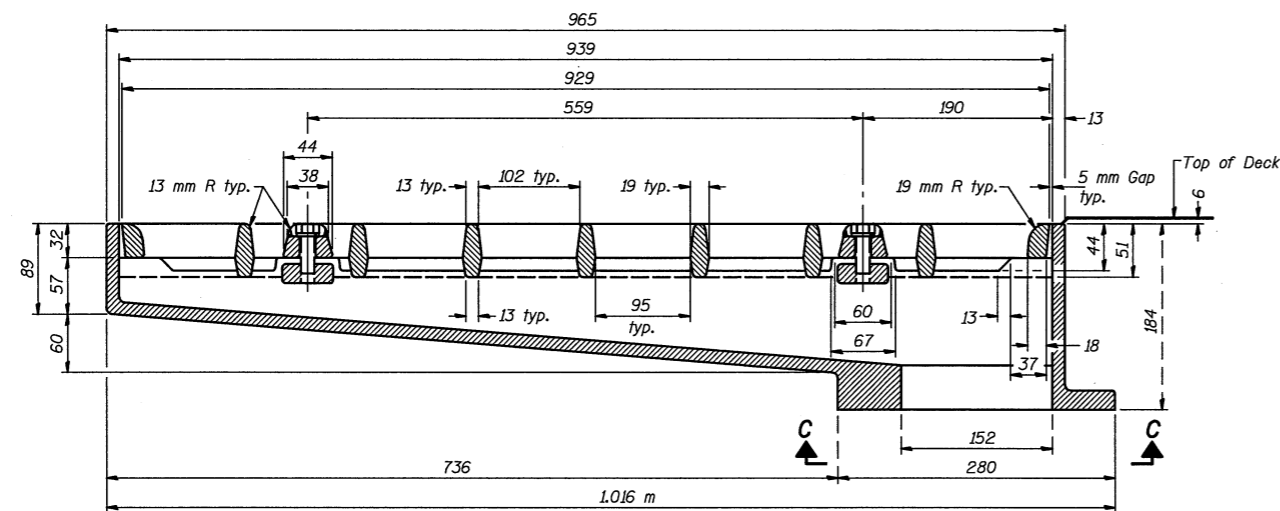
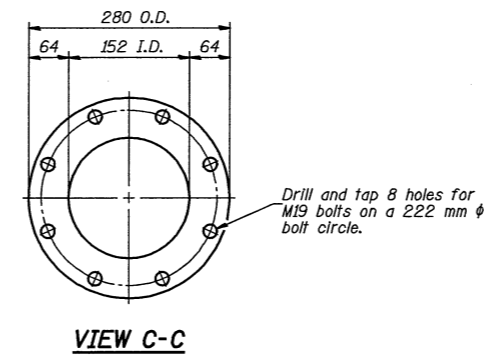
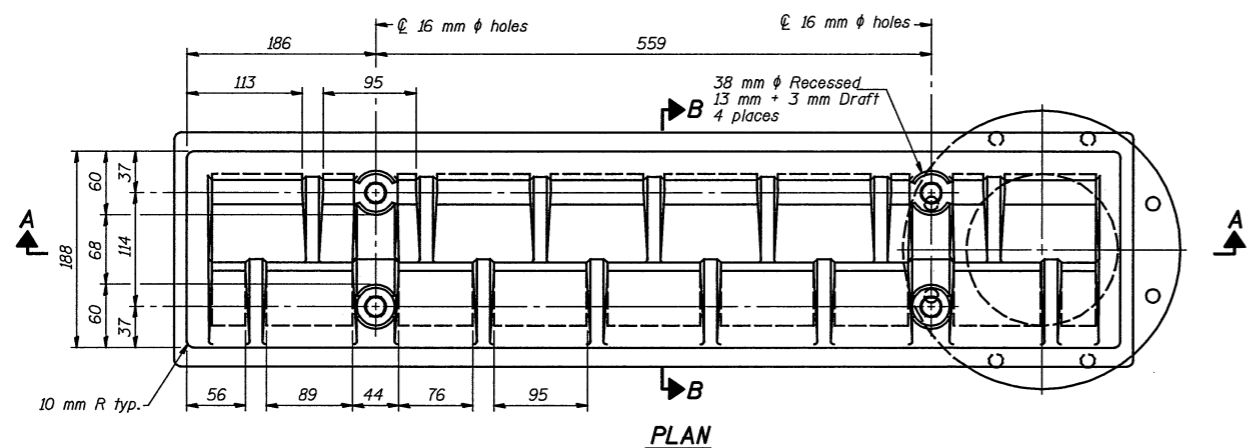
Item	Unit	Total
Preformed Joint Strip Seal	Meter	16.9

ILLINOIS DEPARTMENT OF TRANSPORTATION		
SHEET TITLE PREFORMED JOINT STRIP SEAL		
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB	DRAWING NO. 12 OF 24 SHTS
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		

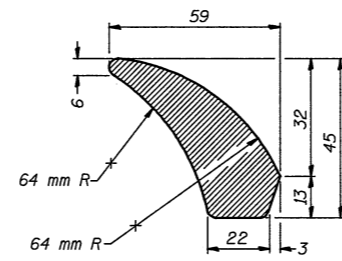
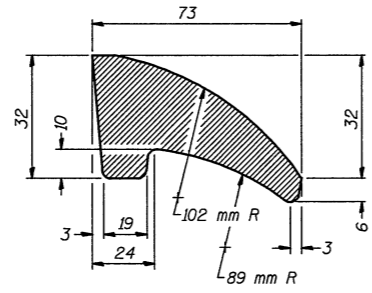
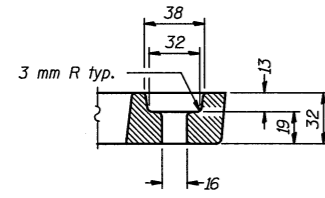
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	189

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

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 M 111.
 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-33.
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 207 MPa min. may be used in lieu of the cast iron or steel equivalent.
 All dimensions are in millimeters (mm) except as shown.



See sheet 10 of 32 for scupper location relative to parapet.



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	2

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE DRAINAGE SCUPPER, DS-33	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY	PROJECT NO. 08049-5
STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWING NO. 13 OF 24 SHTS

	0.4 Sp. 1 or 0.6 Sp. 4	Pier 1, 3, 4 or 6	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2 or 5
I (10 ⁶ mm ⁴)	2230	2230	2230	2230
Q (kN/m)	10.4	10.4	10.4	10.4
M _D (kN-m)	139	254	135	262
M _L (kN-m)	217	179	228	192
M (Imp.) (kN-m)	64	52	63	53
M (Total) (kN-m)	420	485	426	507
f _s (Total) (MPa)	72	83	73	87

	Abuts.	Pier 1, 3, 4 or 6	Pier 2 or 5
R _D (kN)	54	181	182
R _L (kN)	88	109	109
R (Imp.) (kN)	26	31	30
R (Total) (kN)	168	321	321

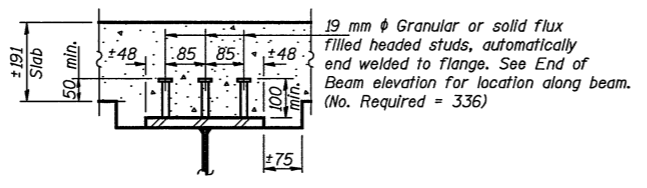
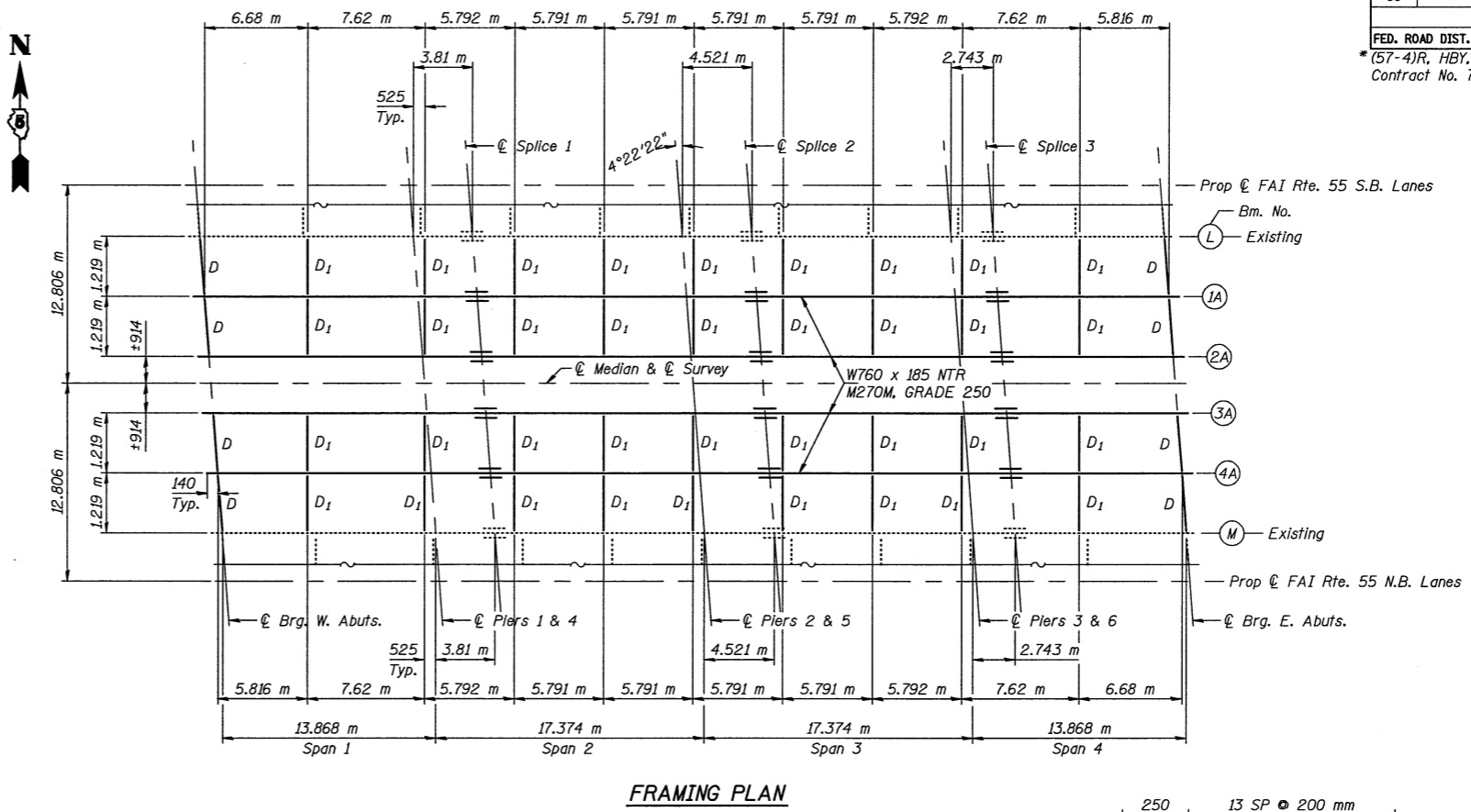
M_D - Moment due to dead load on non-composite section.
 M_L - Moment due to live load on non-composite section.
 M (Imp.) - Moment due to live load impact on non-composite section.

** New Beams Only.

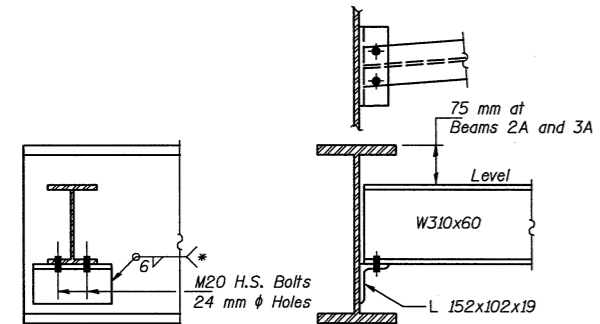
TOP OF BEAM ELEVATIONS

	1A	2A	3A	4A
© Brg. W. Abuts.	266.241	266.216	266.217	266.242
© Brg. Pier 1 or 4	266.265	266.240	266.241	266.266
© Splice 1	266.271	266.246	266.247	266.272
© Brg. Pier 2 or 5	266.295	266.269	266.270	266.295
© Splice 2	266.303	266.277	266.278	266.303
© Brg. Pier 3 or 6	266.309	266.283	266.283	266.309
© Splice 3	266.310	266.284	266.284	266.310
© Brg. E. Abuts.	266.329	266.303	266.303	266.328

For Fabrication Only

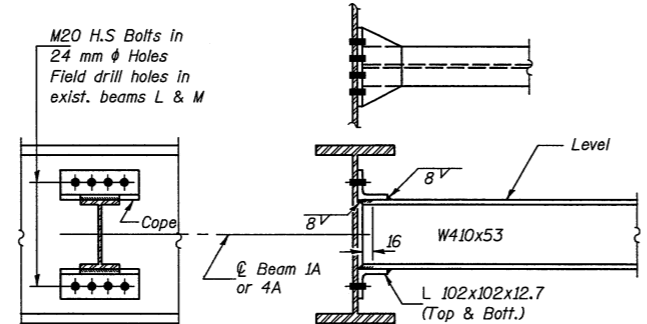


SECTION AT BEAM END



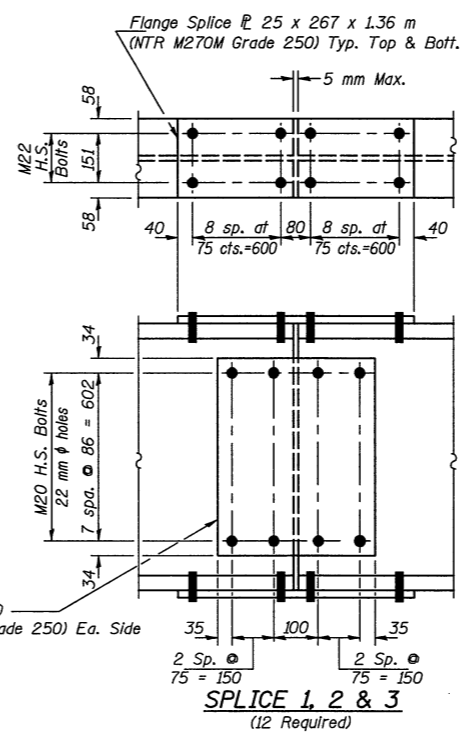
DIAPHRAGM D
(8 Required)

* Field weld at existing beams L and M

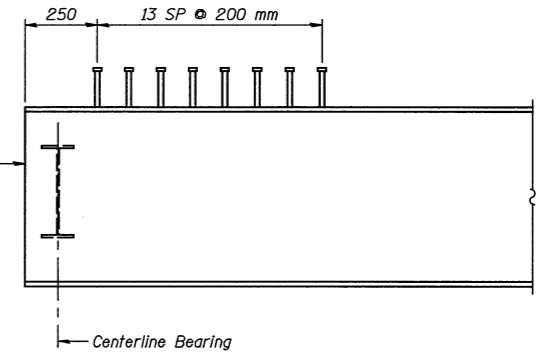


DIAPHRAGM D1
(36 Required)

Notes:
 All dimensions are in millimeters (mm) except as noted.
 Two hardened washers shall be required over all oversized holes for diaphragms.



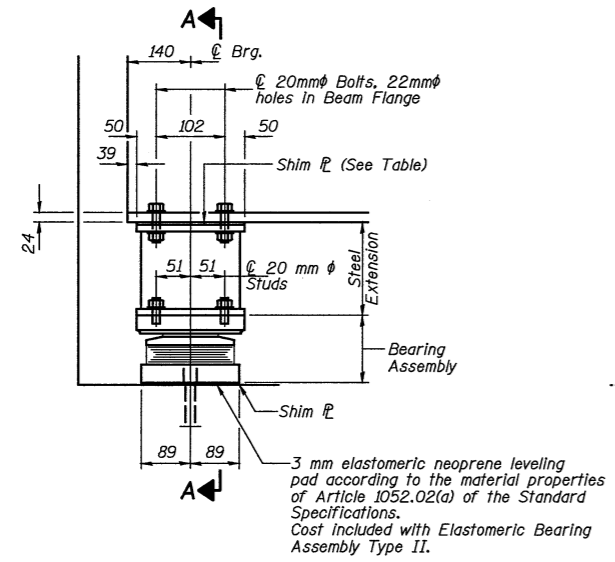
SPlice 1, 2 & 3
(12 Required)



END OF BEAM ELEVATION
(Showing Shear Studs)

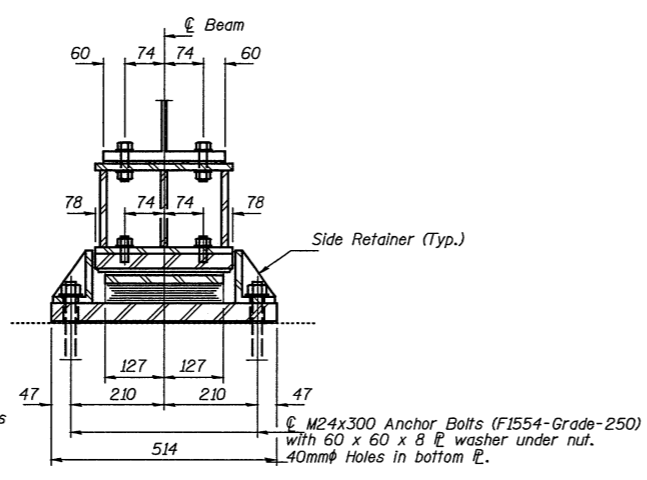
Notes:
 All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE	
STRUCTURAL STEEL	
PROJECT	PROJECT NO.
F.A.I. 55 OVER BUSINESS U.S. 51	08049-5
SECTION 57-4HBR-4 STATION 37+474.206	SCALE
McLEAN COUNTY	07/15/2009
STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	DRAWN BY
	TFG/CFC
	CHECKED BY
	CME/MCB
DRAWING NO.	
14	
OF 24 SHTS	



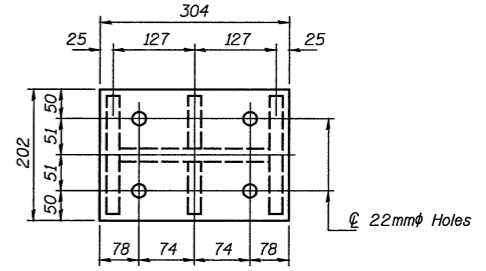
ELEVATION AT ABUTMENT

TYPE II TFE ELASTOMERIC EXP. BRG.

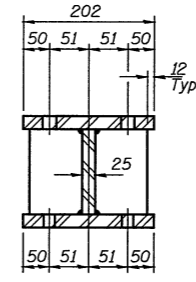


SECTION A-A

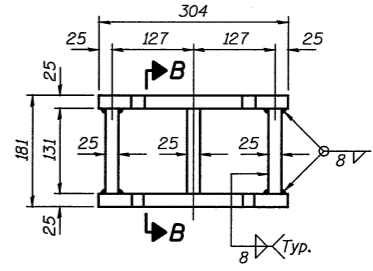
Notes:
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all bearing height dimensions. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 250 (Fy=248MPa). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II. The 3 mm PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 3 mm PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer. All dimensions are in millimeters (mm) except as noted. Bearing details shown are to be used at new beam locations only. Two 3 mm adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.



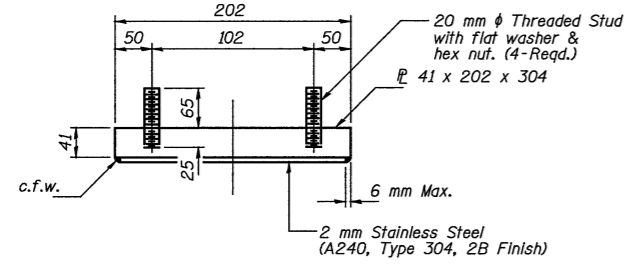
PLAN TOP AND BOTTOM PLATE



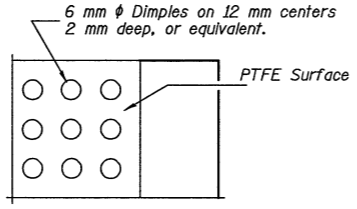
SECTION B-B



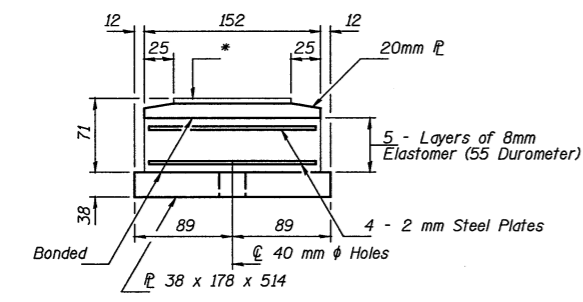
STEEL EXTENSION DETAIL



TOP BEARING ASSEMBLY

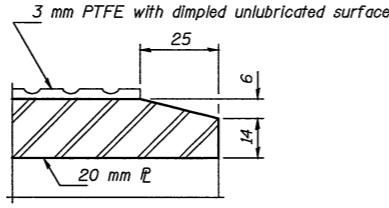


PLAN-PTFE SURFACE

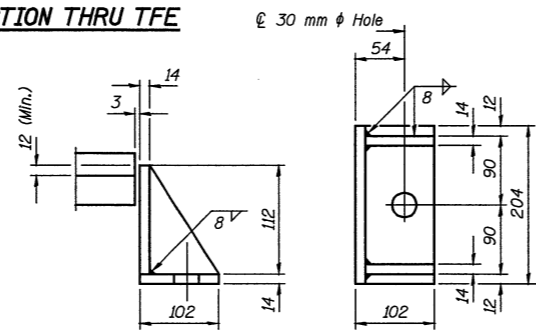


BOTTOM BEARING ASSEMBLY

* 3 mm PTFE dimpled, unlubricated

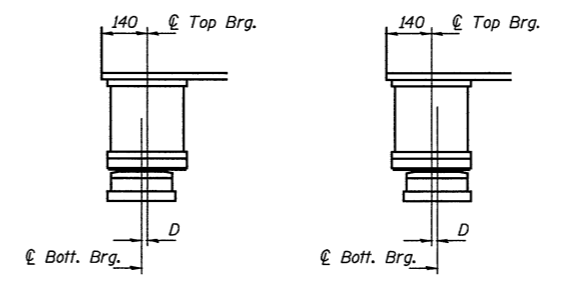


SECTION THRU TFE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 10°C (Move bott. brg. away from fixed brg.) ABOVE 10°C (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1mm per each 10m of expansion for every 8°C temp. change from the normal temp. of 10°C.

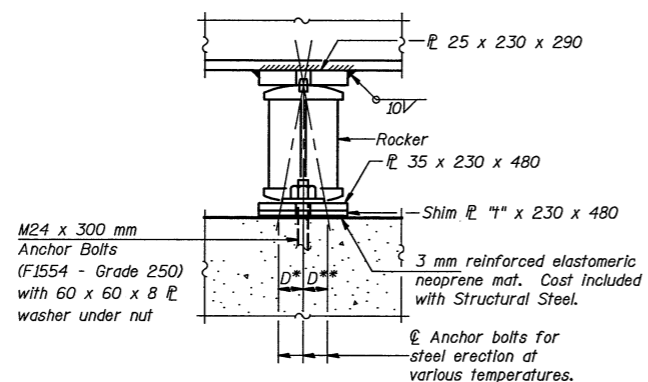
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	8
Anchor Bolts, M24	Each	16

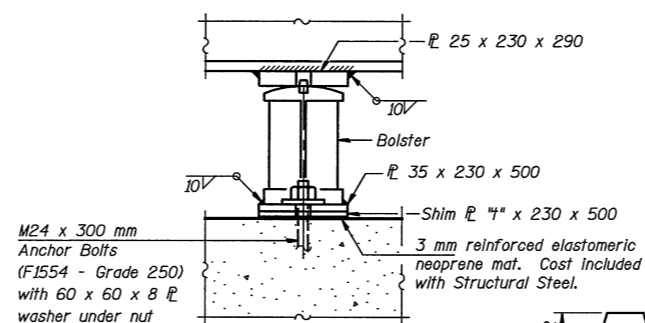
ILLINOIS DEPARTMENT OF TRANSPORTATION		
SHEET TITLE: BEARING DETAILS AT ABUTMENTS		
PROJECT: F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO.: 08049-5	SCALE: 07/15/2009
DRAWN BY: TFG/CFC	CHECKED BY: CME/MCB	DRAWING NO.:
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		15
		OF 24 SHTS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
55	*	McLEAN	310/192

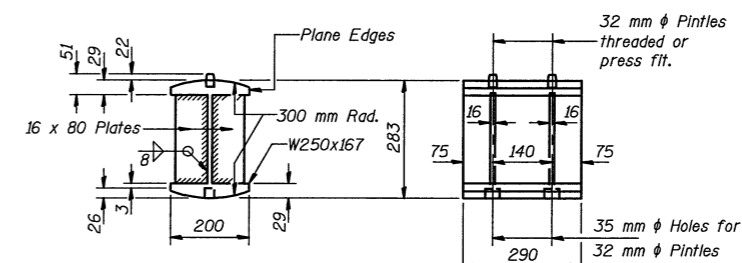
FED. ROAD DIST. NO. 7 ILLINOIS IAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



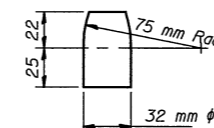
**PIERS 1, 3, 4 & 6
ELEVATION**



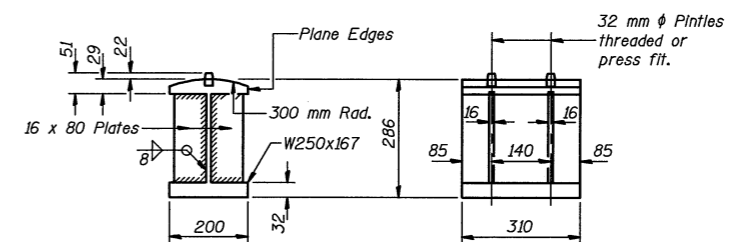
**PIERS 2 & 5
ELEVATION**



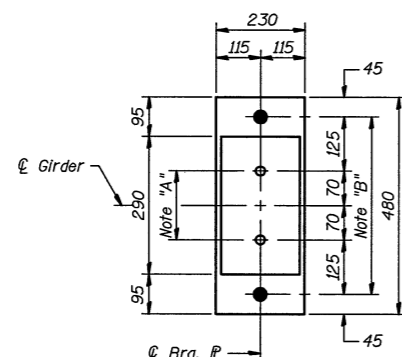
ROCKER



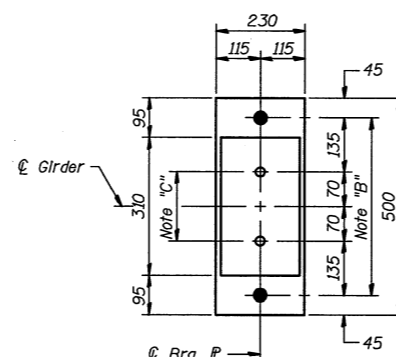
PINTLE



BOLSTER



**PLAN
AT PIERS 1, 3, 4 & 6**



**PLAN
AT PIERS 2 & 5**

Note "A"
 35 mm ϕ Holes-25 mm deep in top \bar{r} for 32 mm ϕ pintles. Thread or press fit pintles in bottom \bar{r} .

Note "B"
 40 mm ϕ Holes for M24 Anchor Bolts - 8 x 60 x 60 \bar{r} washer under nut.

Note "C"
 35 mm ϕ Holes-25 mm deep in top \bar{r} for 32 mm ϕ pintles.

BEARING ASSEMBLY DETAILS

BILL OF MATERIAL

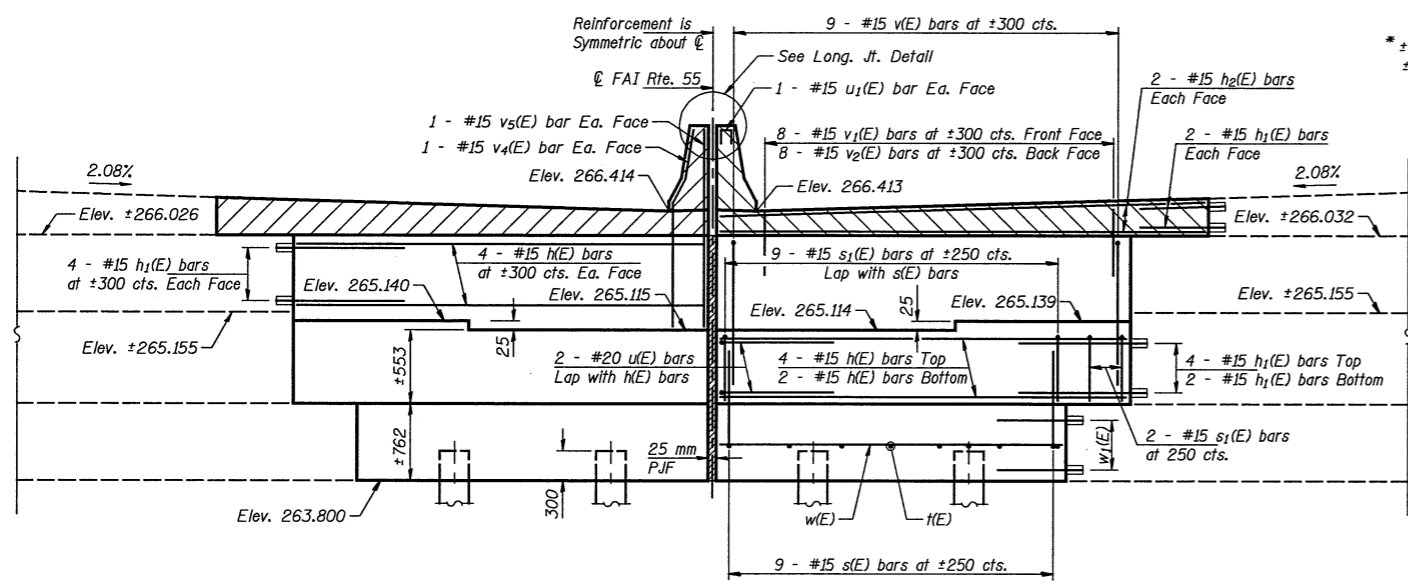
Item	Unit	Total
Anchor Bolts, M24	Each	24

NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

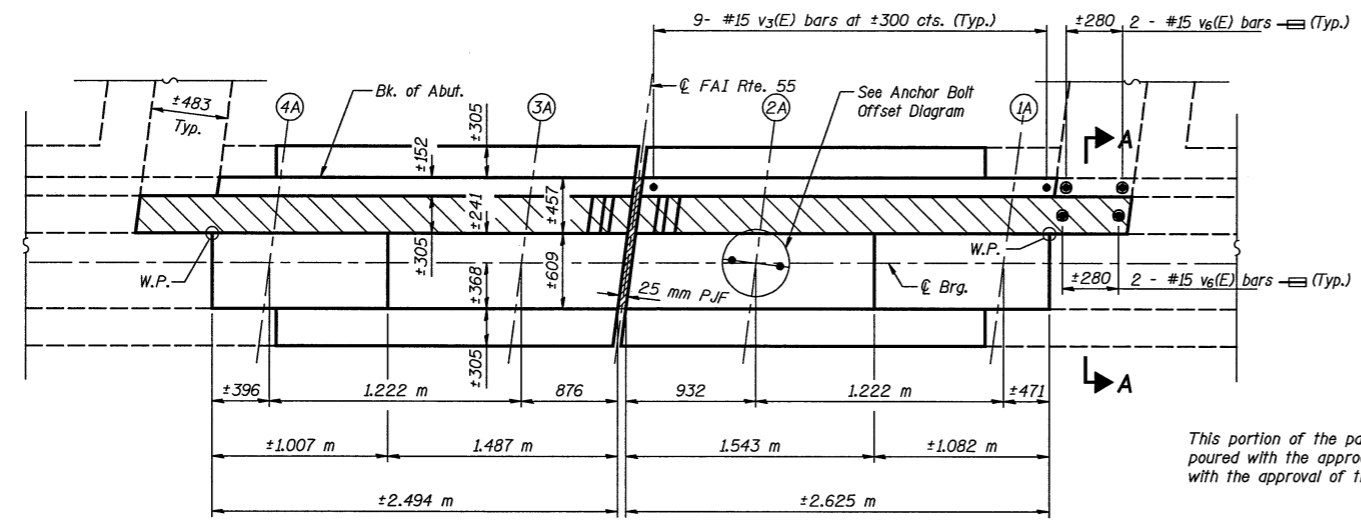
- a.) D* (Side of brg. away from fixed brg.)
 $D^* = 1 \text{ mm per each } 10 \text{ m of expansion for every } 8 \text{ }^\circ\text{C fall below the normal temp. of } 10 \text{ }^\circ\text{C.}$
- D** (Side of brg. toward fixed brg.)
 $D^{**} = 1 \text{ mm per each } 10 \text{ m of expansion for every } 8 \text{ }^\circ\text{C rise above the normal temp. of } 10 \text{ }^\circ\text{C.}$
- b.) After girders have been erected and dimensions D* & D** determined, holes shall be drilled and anchor bolts shall be installed. All fixed anchor bolts may be built into the masonry.

Notes:
 All dimensions are in millimeters (mm) except as noted. Bearing details shown are to be used at new beam locations only. Two 3 mm adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details. The quantity of Steel required for the pier bearing assemblies, bolsters and rockers is included in Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all bearing height dimensions. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 250 ($F_y=248\text{MPa}$). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

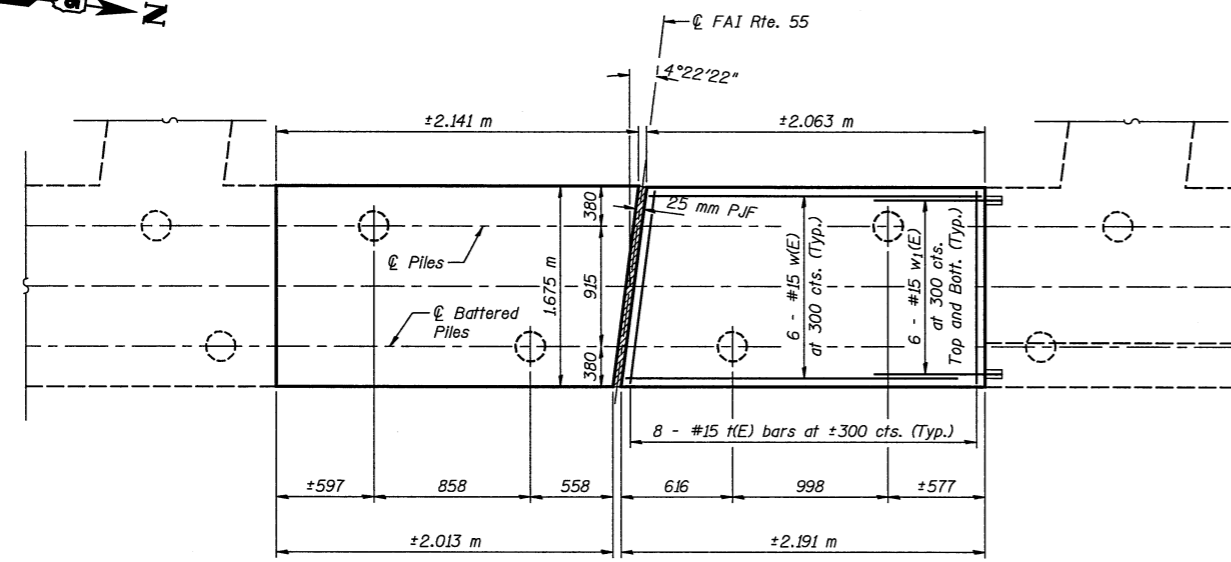
ILLINOIS DEPARTMENT OF TRANSPORTATION		
SHEET TITLE BEARING DETAILS AT PIERS		
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5	SCALE DATE 07/15/2009
DESIGNED BY TFG/CFC	CHECKED BY CME/MCB	DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		16 OF 24 SHTS



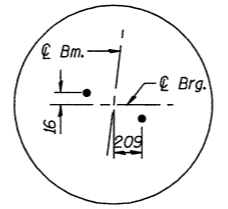
ELEVATION



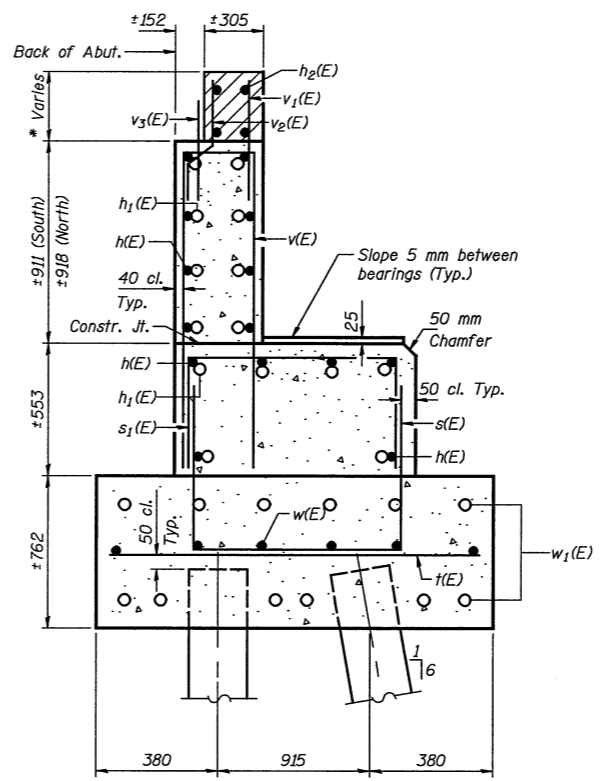
TOP VIEW



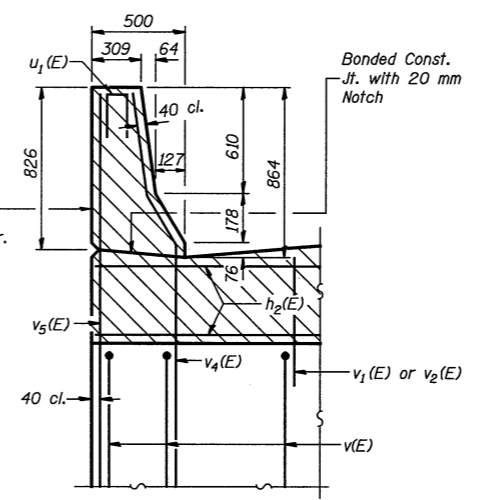
FOOTING PLAN



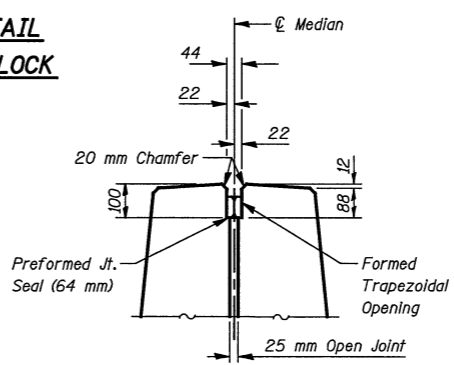
ANCHOR BOLT OFFSET DIAGRAM



SECTION THROUGH WIDENED ABUTMENT at right angles



PARAPET DETAIL AT HATCHED BLOCK at right angles



LONG. JT. DETAIL

SECTION A-A

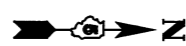
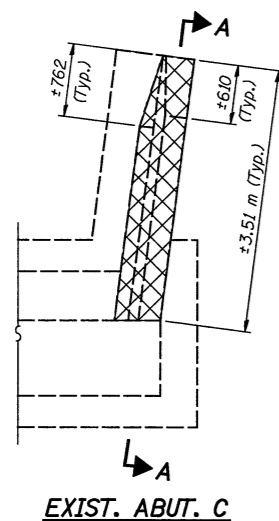
NOTES

- Denotes bars that are to be epoxy grouted into drilled holes. The center of the hole is to be drilled a minimum of 100 mm from the face of the existing structure. All holes shall be drilled to a depth of 230 mm with a 22 mm diameter. See Section 584 of the Standard Specifications.
- Cost of 25 mm P/JF is included with Concrete Structures.
- Hatched areas shall be poured after superstructure is in place. Quantity is included with Concrete Superstructure on Sheet 11 of 24.
- All dimensions are in millimeters (mm) except as noted.
- See Sheet 18 of 24 for Concrete Removal Details, Bar Details and Bill of Material.
- Pour steps monolithically with cap.
- Space reinforcement in cap to miss anchor bolts.
- See Sheet 24 of 24 for Pile Details.
- Concrete sealer shall be applied to the exposed face of the proposed backwall and cap and to the top of the proposed cap.

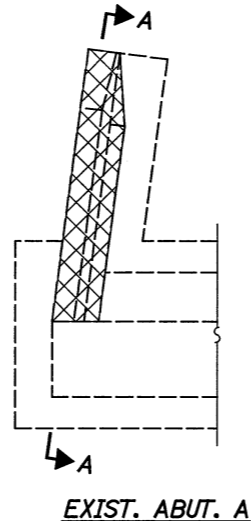
PILE DATA

Type & Size: Metal pile shell 305 mm x 4.55 mm walls
 Nominal Required Bearing: 930 kN
 Allowable Resistance Available: 310 kN
 Est. Length: 9.0 m
 No. Required: 4 (Two Abutments)

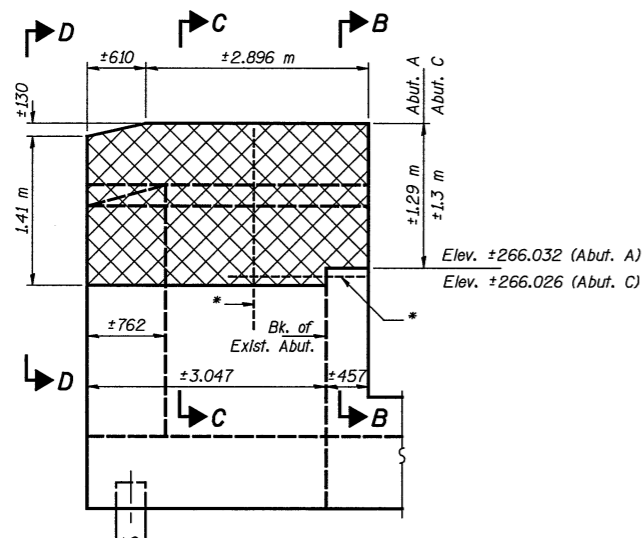
ILLINOIS DEPARTMENT OF TRANSPORTATION	
WEST ABUTMENTS	
PROJECT: F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 DATE: 07/15/2009 DRAWN BY: TFG/CFC CHECKED BY: CME/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWING NO. 17 OF 24 SHTS



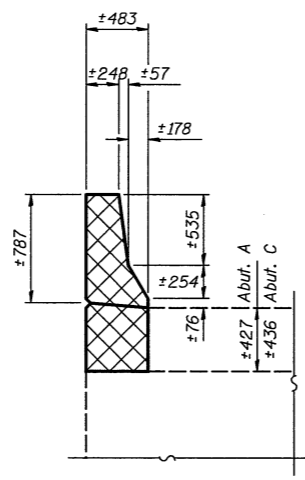
FAI Rte. 55



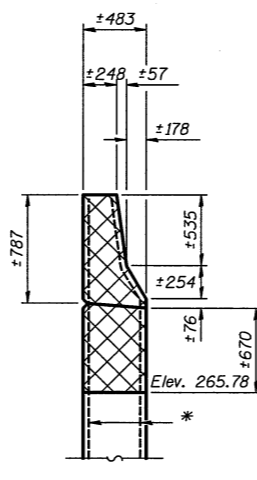
EXIST. ABUTMENT PARTIAL PLAN



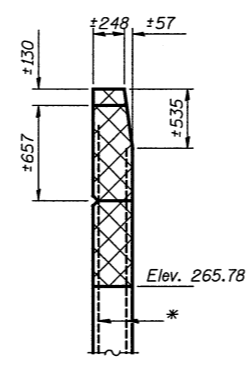
SECTION A-A



SECTION B-B



SECTION C-C

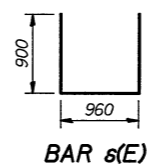


VIEW D-D

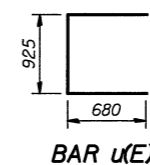
CONCRETE REMOVAL DETAILS

Notes: Cross-hatched areas indicate concrete removal.

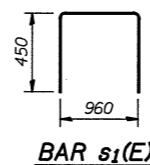
* Indicates reinforcement to be cut off flush at the removal line. Cost included with "Concrete Removal".



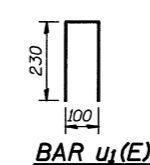
BAR s(E)



BAR u(E)



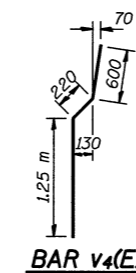
BAR s1(E)



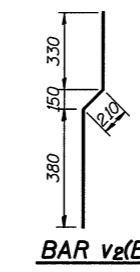
BAR u1(E)



BAR v(E)



BAR v4(E)



BAR v2(E)

**TWO ABUTMENTS
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h(E)	28	#15	2.39	—
h1(E)	36	#15	1.04	—
h2(E)	8	#15	2.92	—
s(E)	18	#15	2.76	□
s1(E)	22	#15	1.86	□
t(E)	16	#15	1.57	—
u(E)	4	#20	2.29	□
u1(E)	4	#15	0.56	□
v(E)	18	#15	3.09	□
v1(E)	16	#15	0.9	—
v2(E)	16	#15	0.92	—
v3(E)	18	#15	0.6	—
v4(E)	4	#15	2.07	—
v5(E)	4	#15	2.06	—
v6(E)	8	#15	0.56	—
w(E)	12	#15	1.96	—
w1(E)	24	#15	0.9	—
Concrete Removal			m ³	4.0
Structure Excavation			m ³	20
Concrete Structures			m ³	10.6
Reinforcement Bars, Epoxy Coated			kg	660
Furnishing Metal Pile Shells 305 mm x 4.55 mm			m	36
Driving Piles			m	36
Concrets Sealer			m ²	9.9

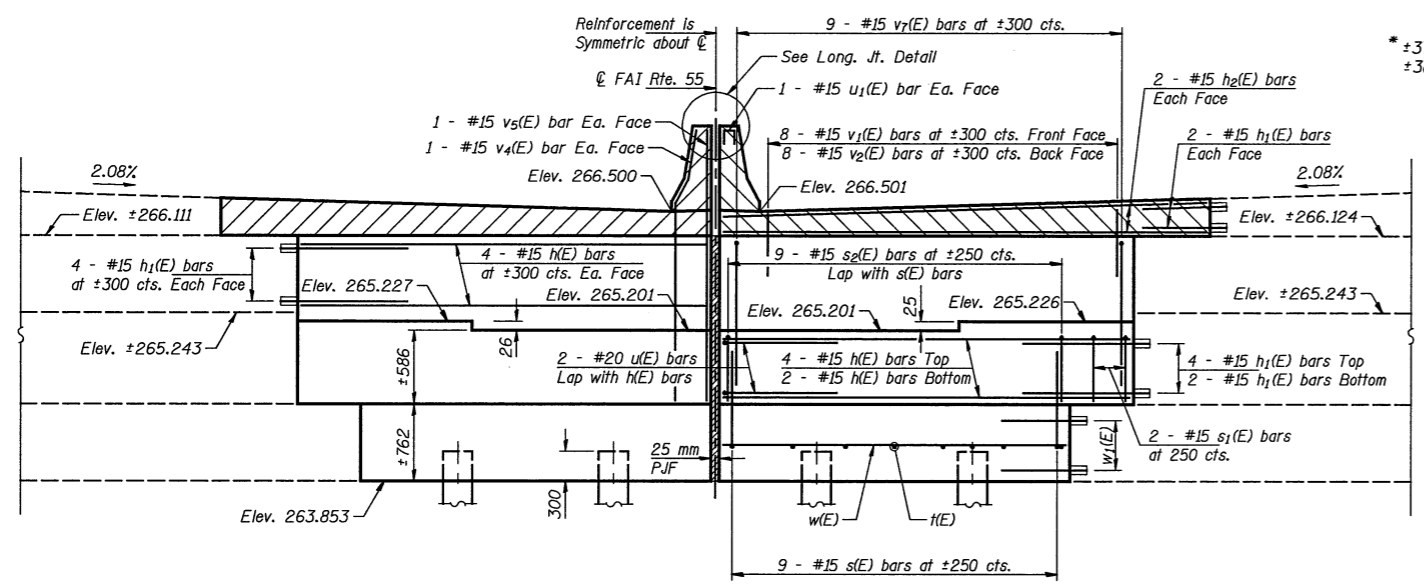
ILLINOIS DEPARTMENT OF TRANSPORTATION

SHEET TITLE: WEST ABUTMENT DETAILS

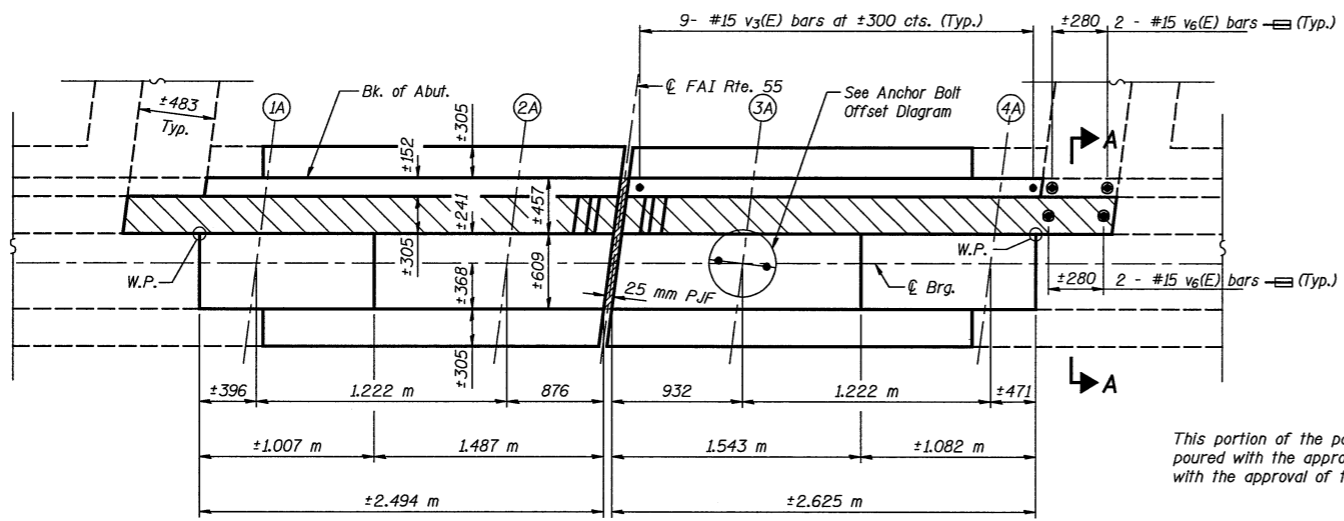
PROJECT: F.A.I. 55 OVER BUSINESS U.S. 51
 SECTION 57-4HR-4 STATION 37+474.206
 McLEAN COUNTY
 STRUCTURE NO. 057-0024 (N.B.) &
 STRUCTURE NO. 057-0025 (S.B.)

PROJECT NO. 08049-5
 SCALE: AS SHOWN
 DATE: 07/15/2009
 DRAWN BY: TFG/CFC
 CHECKED BY: CME/MCB
 DRAWING NO. 18

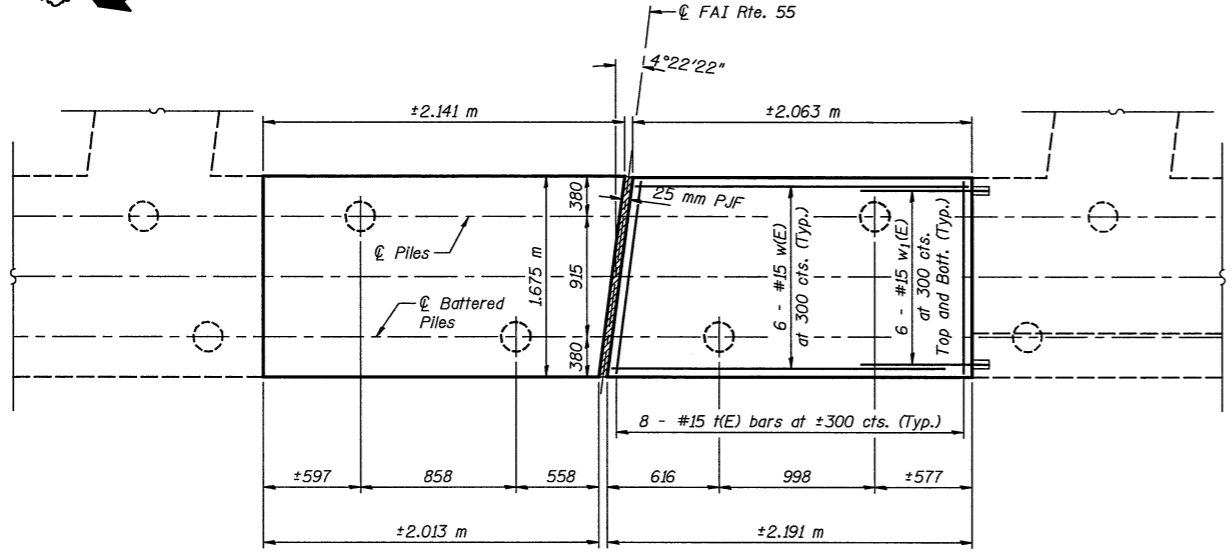
COOMBE-BLOXDORF P.C.
 Engineers / Land Surveyors
 Springfield, Illinois
 Design Firm License No. 184-002703



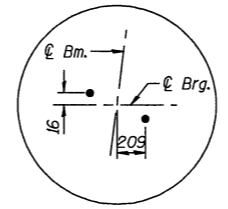
ELEVATION



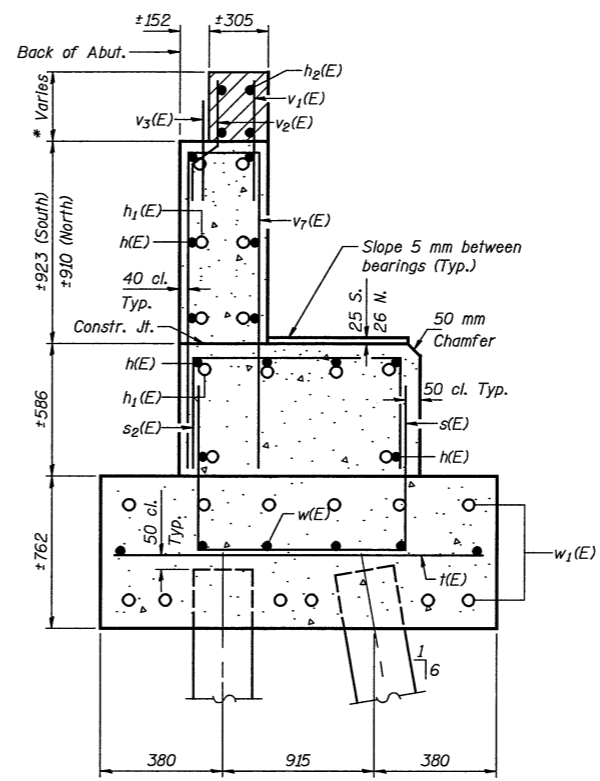
TOP VIEW



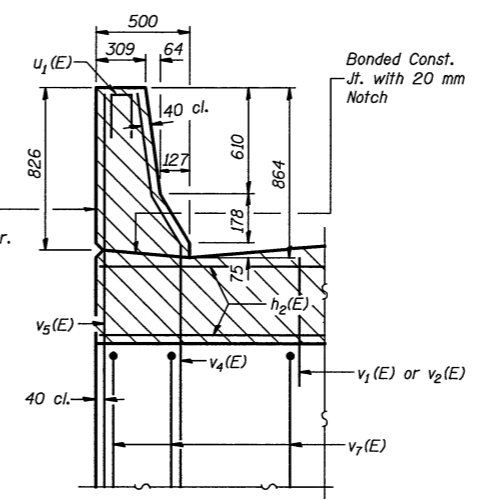
FOOTING PLAN



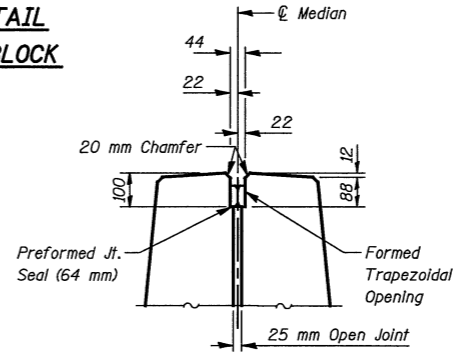
ANCHOR BOLT OFFSET DIAGRAM



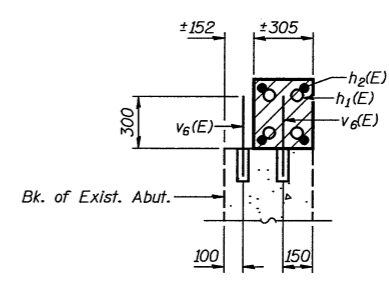
SECTION THROUGH WIDENED ABUTMENT
 at right angles



PARAPET DETAIL
 at right angles



LONG. JT. DETAIL



SECTION A-A

NOTES

- Denotes bars that are to be epoxy grouted into drilled holes. The center of the hole is to be drilled a minimum of 100 mm from the face of the existing structure. All holes shall be drilled to a depth of 230 mm with a 22 mm diameter. See Section 584 of the Standard Specifications.
- Cost of 25 mm P.J.F. is included with Concrete Structures.
- Hatched areas shall be poured after superstructure is in place. Quantity is included with Concrete Superstructure on Sheet 11 of 24.
- All dimensions are in millimeters (mm) except as noted.
- See Sheet 20 of 24 for Concrete Removal Details, Bar Details and Bill of Material.
- Pour steps monolithically with cap.
- Space reinforcement in cap to miss anchor bolts.
- See Sheet 24 of 24 for Pile Details.
- Concrete sealer shall be applied to the exposed face of the proposed backwall and cap and to the top of the proposed cap.

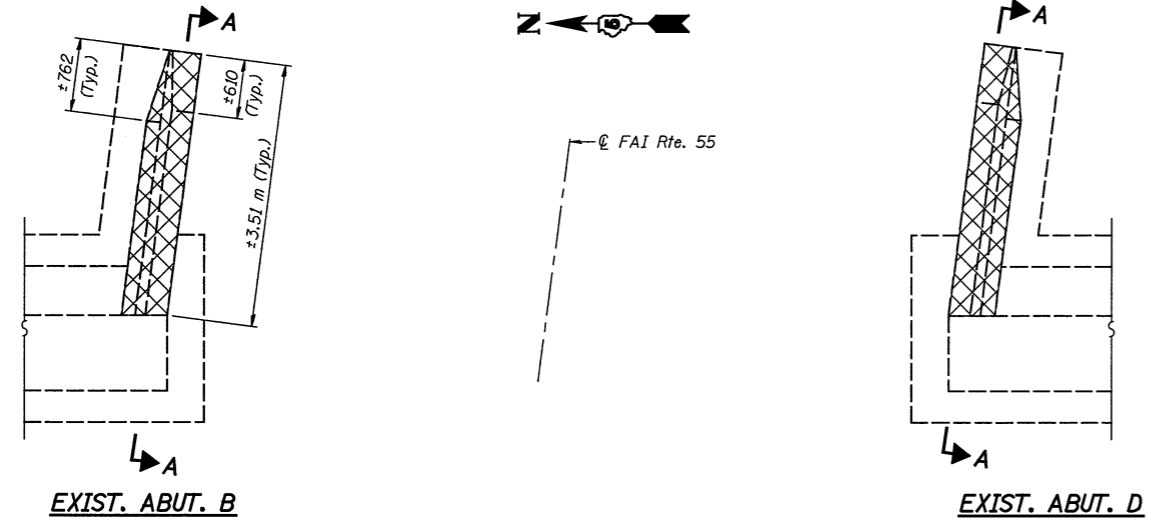
PILE DATA

Type & Size: Metal pile shell 305 mm x 4.55 mm walls
 Nominal Required Bearing: 930 kN
 Allowable Resistance Available: 310 kN
 Est. Length: 9.0 m
 No. Required: 4 (Two Abutments)

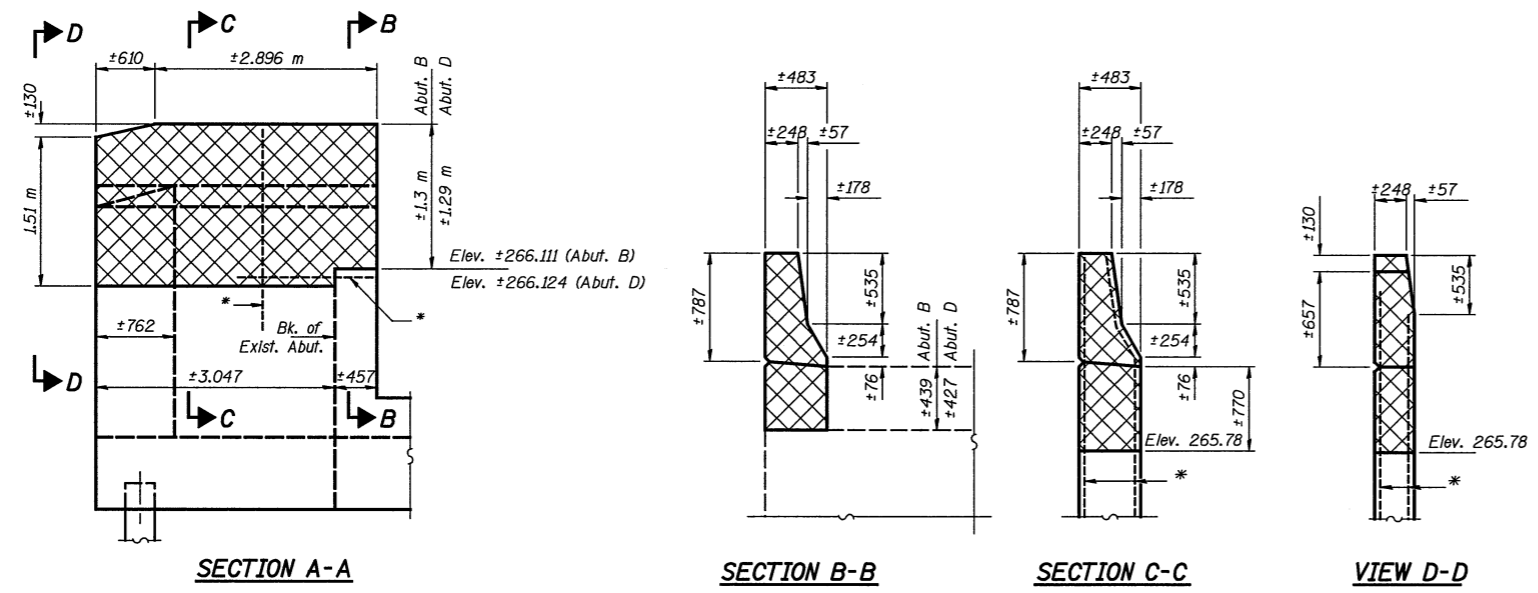
ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE EAST ABUTMENTS	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB
DRAWING NO. COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
19 OF 24 SHTS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	196

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 * (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

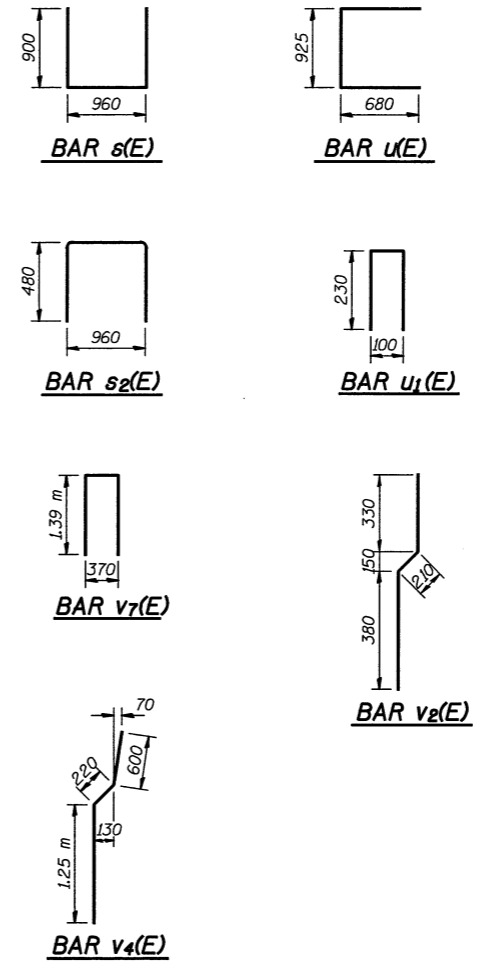


EXIST. ABUTMENT PARTIAL PLAN



CONCRETE REMOVAL DETAILS

Notes: Cross-hatched areas indicate concrete removal.
 * Indicates reinforcement to be cut off flush at the removal line. Cost included with "Concrete Removal".



**TWO ABUTMENTS
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h(E)	28	#15	2.39	—
h ₁ (E)	36	#15	1.04	—
h ₂ (E)	8	#15	2.92	—
s(E)	18	#15	2.76	U
s ₂ (E)	22	#15	1.92	U
k(E)	16	#15	1.57	—
u(E)	4	#20	2.29	—
u ₁ (E)	4	#15	0.56	—
v ₁ (E)	16	#15	0.9	—
v ₂ (E)	16	#15	0.92	—
v ₃ (E)	18	#15	0.6	—
v ₄ (E)	4	#15	2.07	—
v ₅ (E)	4	#15	2.06	—
v ₆ (E)	8	#15	0.56	—
v ₇ (E)	18	#15	3.15	—
w(E)	12	#15	1.96	—
w ₁ (E)	24	#15	0.9	—
Concrete Removal			m ³	4.3
Structure Excavation			m ³	20
Concrete Structures			m ³	10.7
Reinforcement Bars, Epoxy Coated			kg	660
Furnishing Metal Pile Shells 305 mm x 4.55 mm			m	36
Driving Piles			m	36
Concrete Sealer			m ²	9.9

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SHEET TITLE: EAST ABUTMENT DETAILS

PROJECT: F.A.I. 55 OVER BUSINESS U.S. 51
 SECTION 57-4HBR-4 STATION 37+474.206
 McLEAN COUNTY
 STRUCTURE NO. 057-0024 (N.B.) &
 STRUCTURE NO. 057-0025 (S.B.)

PROJECT NO. 08049-5
 SCALE: 07/15/2009
 DRAWN BY: TFG/CFC
 CHECKED BY: CME/MCB

DRIVING PILES: 36
 CONCRETE SEALER: 9.9

COOMBE-BLOXDORF P.C.
 Engineers / Land Surveyors
 Springfield, Illinois
 Design Firm License No. 184-002703

20
 OF 24 SHTS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	197

FED. ROAD DIST. NO. 7 ILLINOIS IAP
 (57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

PIERS 1 & 4

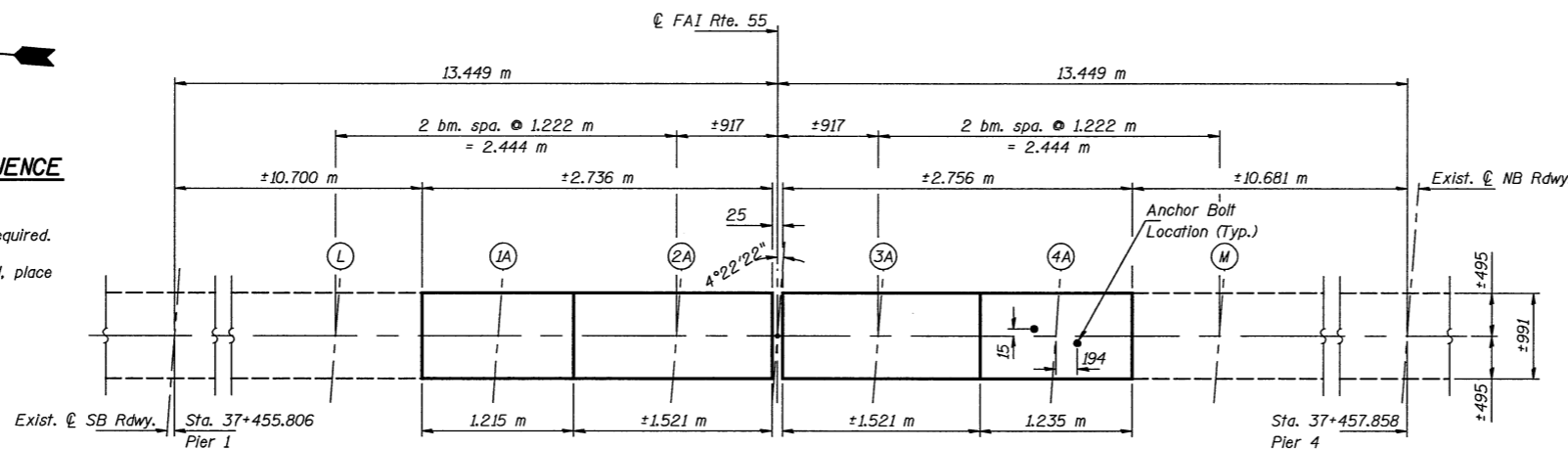
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
$h_{11}(E)$	32	#15	2.52	—
$h_{12}(E)$	60	#15	1.00	—
$h_{13}(E)$	28	#15	2.81	—
$n_{11}(E)$	36	#20	1.53	—
$p_{11}(E)$	8	#15	0.98	—
$p_{12}(E)$	10	#15	2.65	—
$s_{11}(E)$	10	#15	3.96	—
$s_{12}(E)$	10	#15	3.97	—
$t_{11}(E)$	14	#20	2.05	—
$u_{11}(E)$	4	#20	2.34	—
$u_{12}(E)$	30	#15	2.03	—
$v_{11}(E)$	16	#15	5.24	—
$v_{12}(E)$	2	#15	4.56	—
$v_{13}(E)$	16	#15	4.75	—
$v_{14}(E)$	2	#15	4.06	—
$v_{15}(E)$	4	#15	1.67	—
$v_{16}(E)$	4	#15	2.17	—
$w_{11}(E)$	14	#25	2.50	—
$w_{12}(E)$	28	#15	0.98	—
Structure Excavation			m ³	24
Reinforcement Bars, Epoxy Coated			kg	1380
Concrete Structures			m ³	36.4
Furnishing Metal Pile Shells 305 mm x 4.55 mm			m	48
Driving Piles			m	48

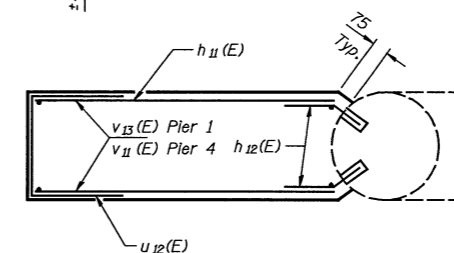
PIER FOOTING CONSTRUCTION SEQUENCE

1. Install sheet piling as shown on Sheet 6 of 32.
2. Excavate to elevation of lower pier footing as required.
3. Install lower pier footing.
4. After formwork for lower pier has been removed, place and compact fill to elevation of higher footing.
5. Install higher pier footing.

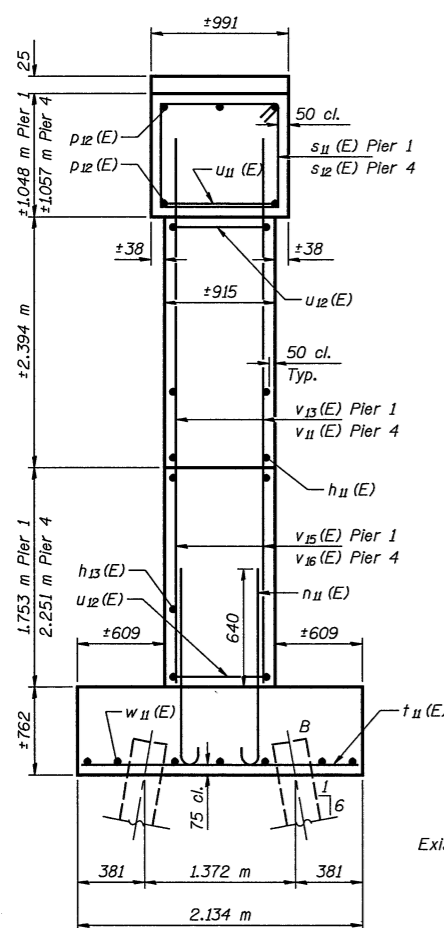
* Epoxy grout $p_{11}(E)$, $h_{12}(E)$ and $w_{12}(E)$ bars into 22 mm ϕ x 230 mm drilled holes. The center of the hole shall be drilled a min. of 100 mm from the face of the existing structure. See Section 584 of the Standard Specifications.



PLAN



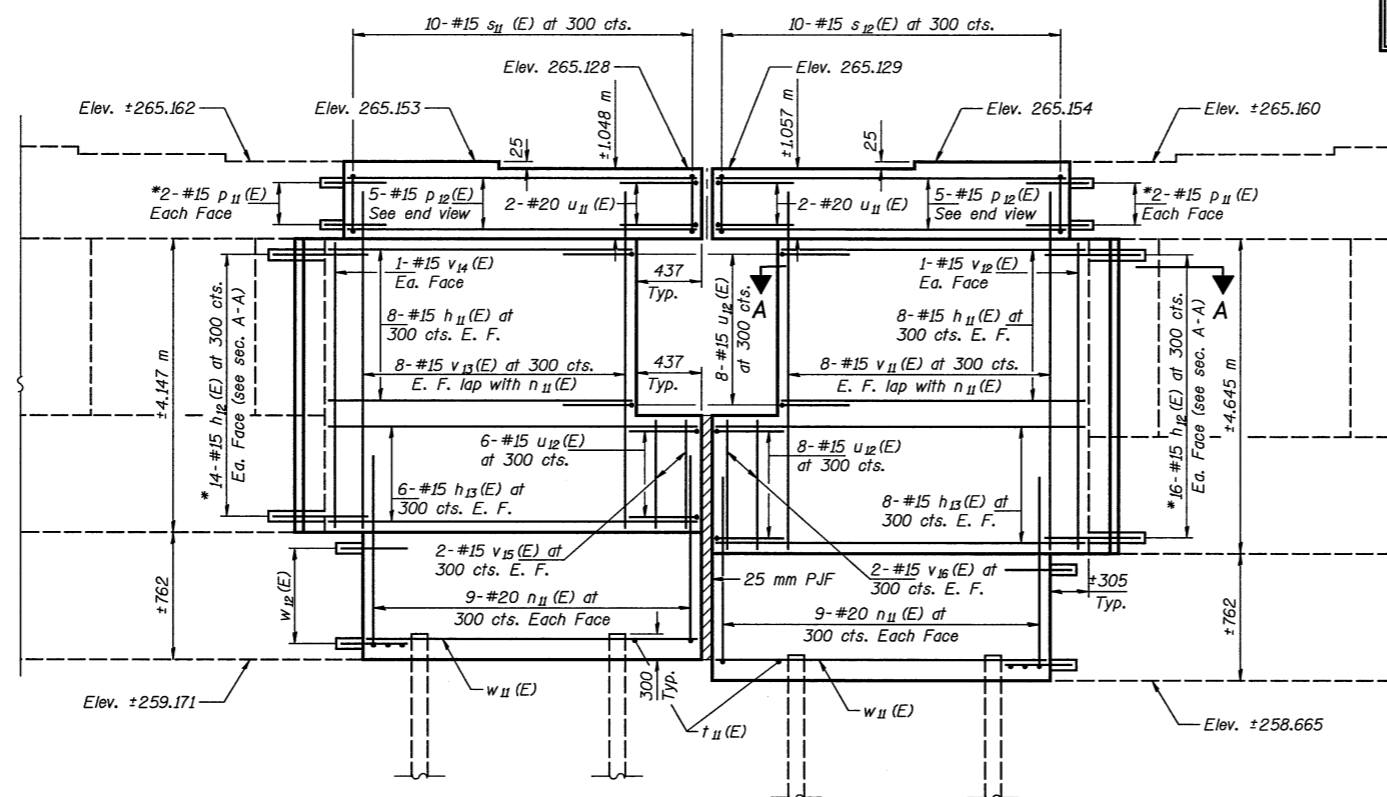
SECTION A-A



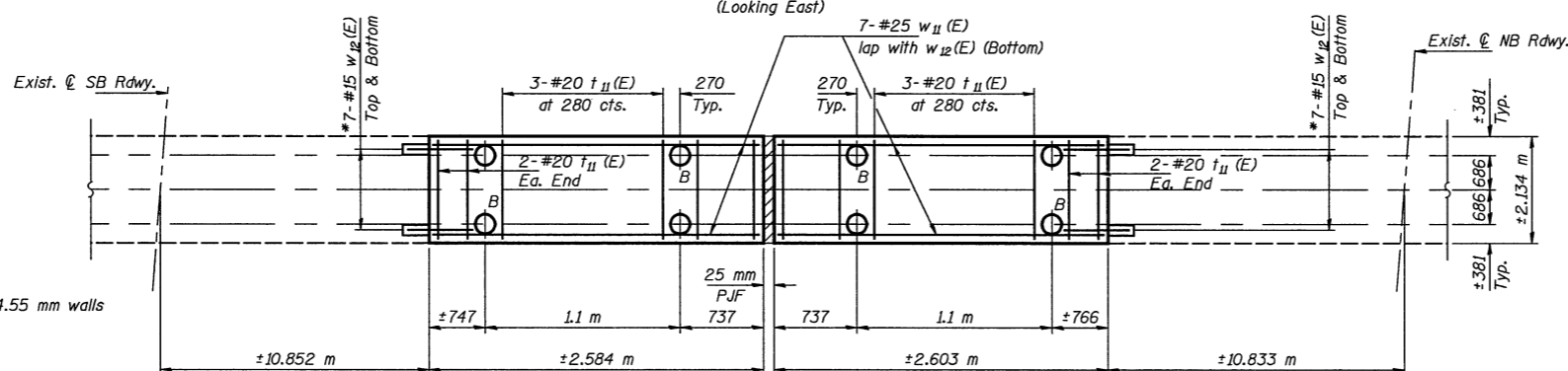
END VIEW

PILE DATA

Type & Size : Metal pile Shell 305 mm x 4.55 mm walls
 Nominal Required Bearing: 780 kN
 Allowable Resistance Available: 260 kN
 Est. Length : 6 m
 No. Required : 8

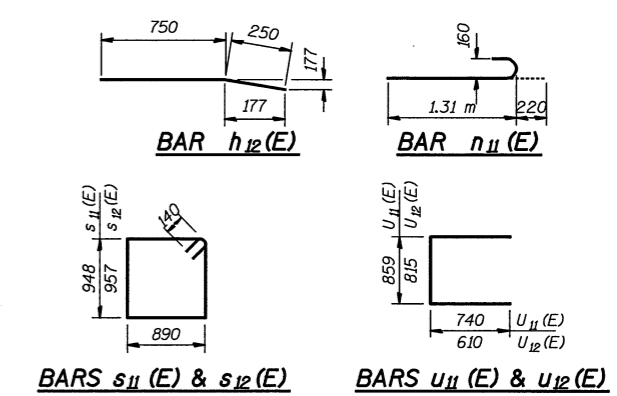


ELEVATION
(Looking East)



FOOTING PLAN

Note: B denotes battered pile location



Notes: Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 All construction joints between new concrete and existing concrete shall be Bonded Construction Joints.
 Cast of 25 mm PJF is Included with Concrete Structures.
 All edges shall have 20 mm chamfers except as noted.
 All dimensions are in millimeters (mm) except as noted.
 See Sheet 24 to 24 for Pile Details.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE PIER 1 & PIER 4	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
21 OF 24 SHTS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55		McLEAN	310	198

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757

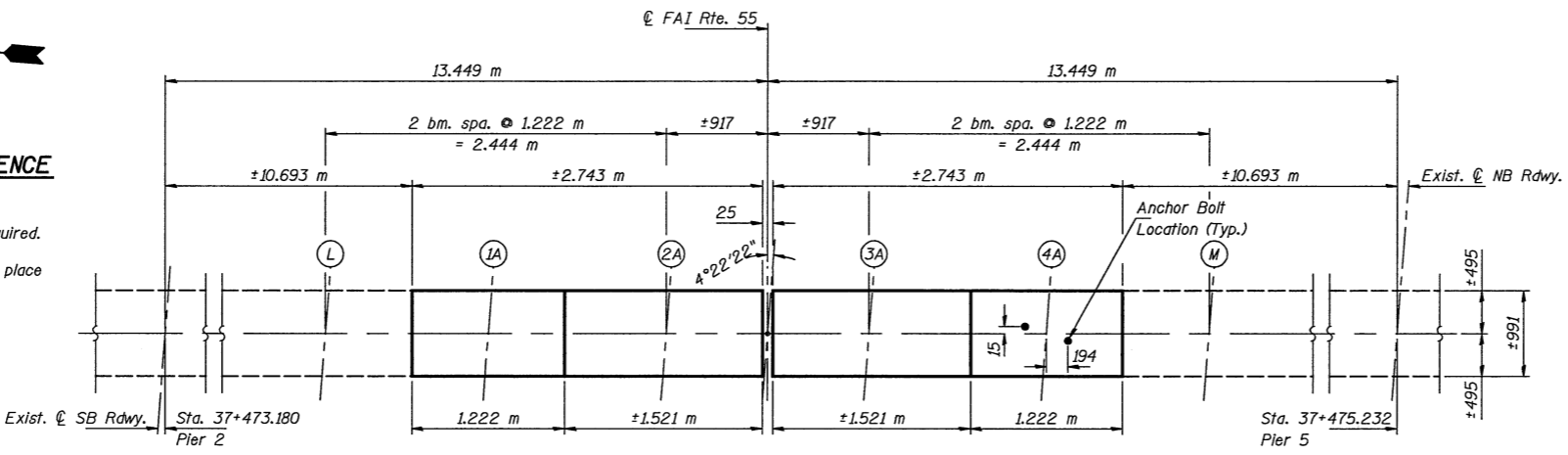
PIERS 2 & 5

BILL OF MATERIAL

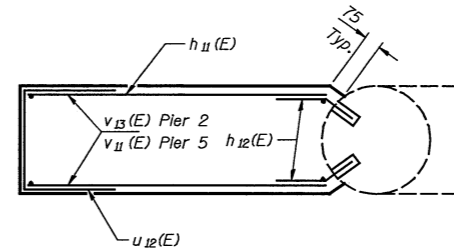
Bar	No.	Size	Length (m)	Shape
$h_{11}(E)$	32	#15	2.52	
$h_{12}(E)$	60	#15	1.00	
$h_{13}(E)$	28	#15	2.81	
$n_{11}(E)$	36	#20	1.53	
$p_{11}(E)$	8	#15	0.98	
$p_{12}(E)$	10	#15	2.65	
$s_{13}(E)$	10	#15	3.94	
$s_{14}(E)$	10	#15	3.95	
$t_{11}(E)$	14	#20	2.05	
$u_{11}(E)$	4	#20	2.34	
$u_{12}(E)$	30	#15	2.03	
$v_{11}(E)$	16	#15	5.24	
$v_{12}(E)$	2	#15	4.56	
$v_{13}(E)$	16	#15	4.75	
$v_{14}(E)$	2	#15	4.06	
$v_{15}(E)$	4	#15	1.67	
$v_{16}(E)$	4	#15	2.17	
$w_{11}(E)$	14	#25	2.50	
$w_{12}(E)$	28	#15	0.98	
Structure Excavation		m ³	31	
Reinforcement Bars, Epoxy Coated		kg	1380	
Concrete Structures		m ³	36.5	
Furnishing Metal Pile Shells 305 mm x 4.55 mm		m	48	
Driving Piles		m	48	

PIER FOOTING CONSTRUCTION SEQUENCE

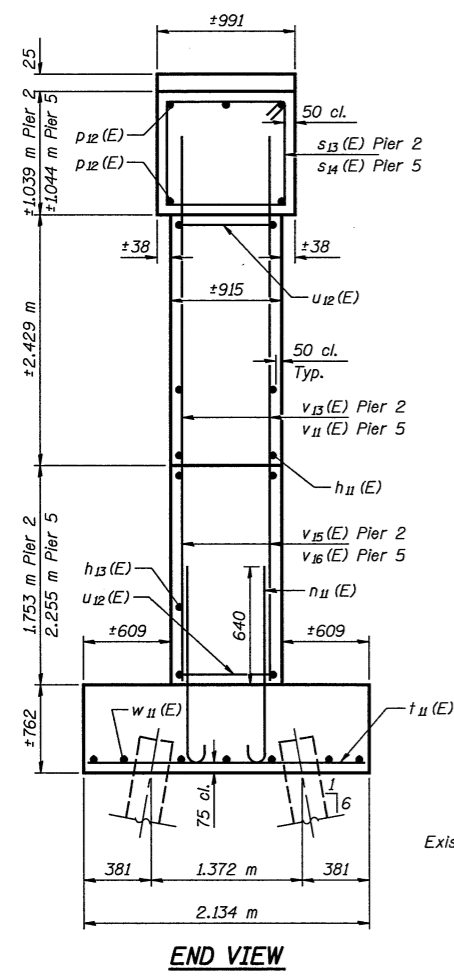
1. Install sheet piling as shown on Sheet 6 of 32.
2. Excavate to elevation of lower pier footing as required.
3. Install lower pier footing.
4. After formwork for lower pier has been removed, place and compact fill to elevation of higher footing.
5. Install higher pier footing.



PLAN



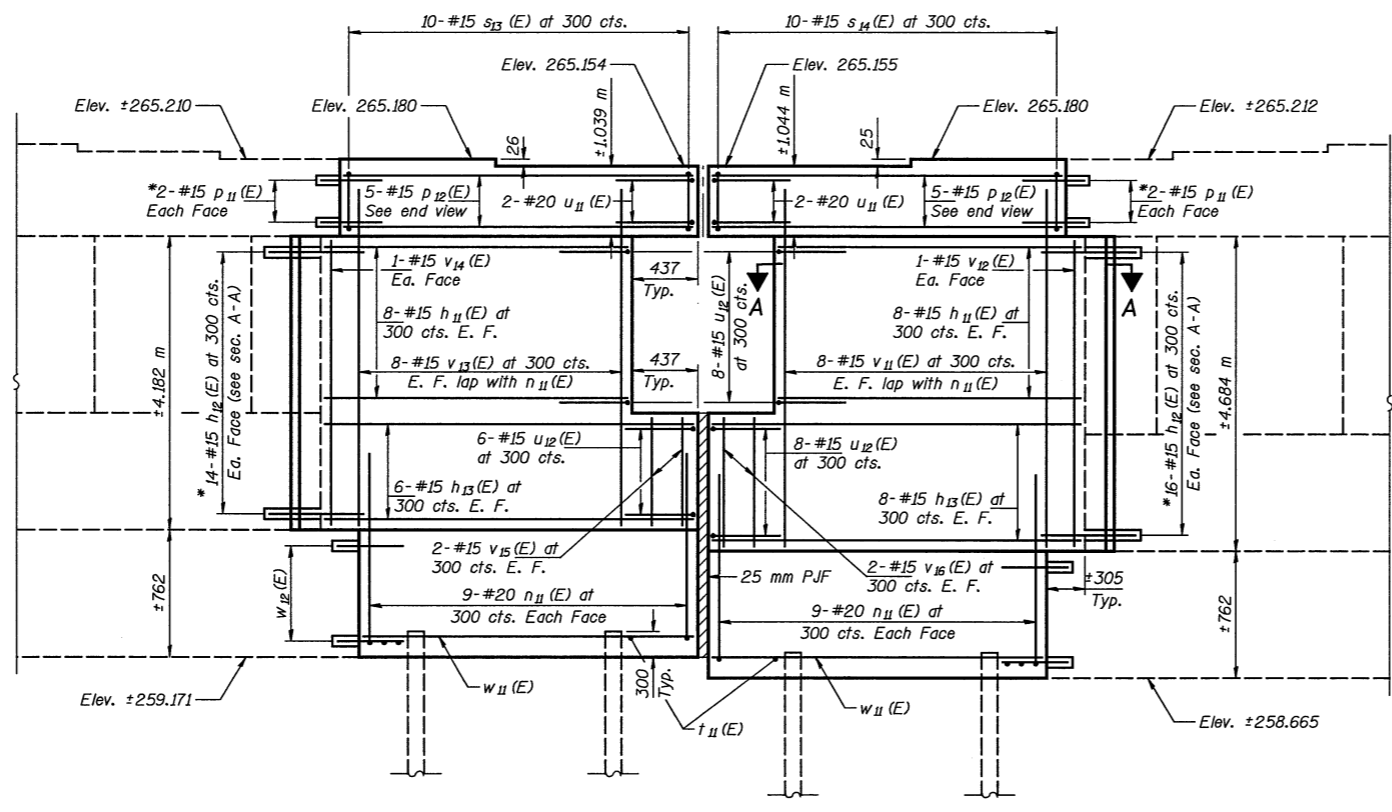
SECTION A-A



END VIEW

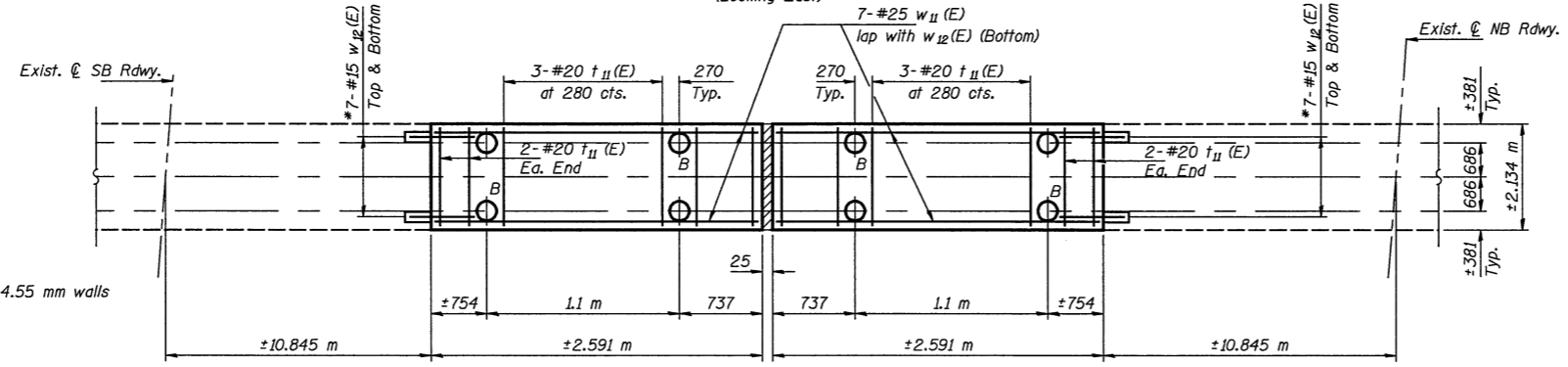
PILE DATA

Type & Size : Metal pile Shell 305 mm x 4.55 mm walls
 Nominal Required Bearing: 780 kN
 Allowable Resistance Available: 260 kN
 Est. Length : 6 m
 No. Required : 8



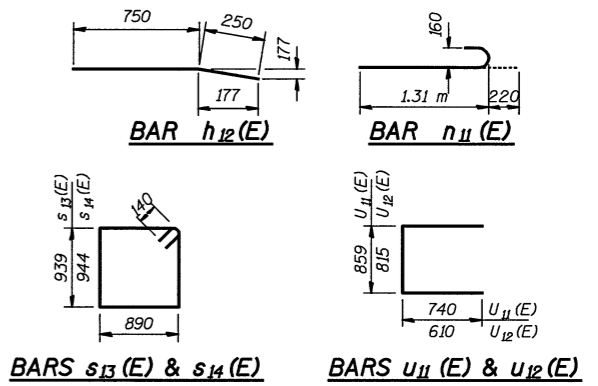
ELEVATION

(Looking East)



FOOTING PLAN

Note: B denotes battered pile location



Notes: Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Cost of 25 mm P.J.F. is included with Concrete Structures.
 All edges shall have 20 mm chamfers except as noted.
 All dimensions are in millimeters (mm) except as noted.
 See Sheet 24 of 24 for Pile Details.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE PIER 2 & PIER 5	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE 07/15/2009 DRAWN BY TFG/CFC CHECKED BY CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
22 OF 24 SHTS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	.	McLEAN	310	199

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 *(57-4)R, HBY, HBR, (57-4V)DM
 Contract No. 70757

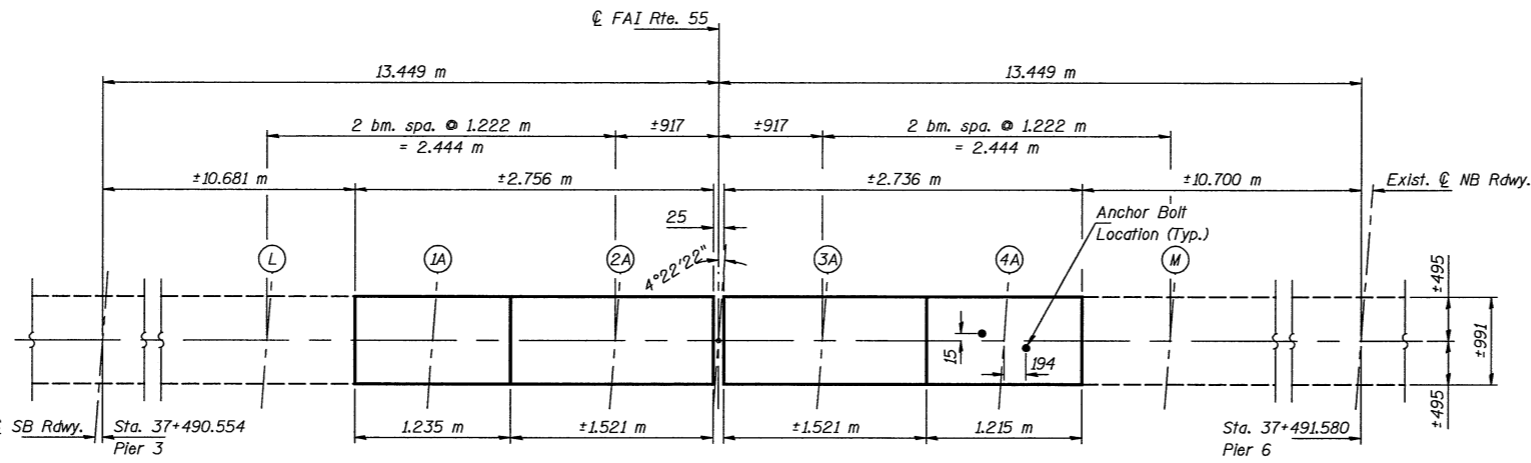
PIERS 3 & 6

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h ₁₁ (E)	32	#15	2.52	—
h ₁₂ (E)	60	#15	1.00	—
h ₁₃ (E)	28	#15	2.81	—
n ₁₁ (E)	36	#20	1.53	—
p ₁₁ (E)	8	#15	0.98	—
p ₁₂ (E)	10	#15	2.65	—
s ₁₅ (E)	10	#15	4.00	—
s ₁₆ (E)	10	#15	3.96	—
t ₁₁ (E)	14	#20	2.05	—
u ₁₁ (E)	4	#20	2.34	—
u ₁₂ (E)	30	#15	2.03	—
v ₁₁ (E)	16	#15	5.24	—
v ₁₂ (E)	2	#15	4.56	—
v ₁₃ (E)	16	#15	4.75	—
v ₁₄ (E)	2	#15	4.06	—
v ₁₅ (E)	4	#15	1.67	—
v ₁₆ (E)	4	#15	2.17	—
w ₁₁ (E)	14	#25	2.50	—
w ₁₂ (E)	28	#15	0.98	—
Structure Excavation		m ³	24	
Reinforcement Bars, Epoxy Coated		kg	1380	
Concrete Structures		m ³	36.6	
Furnishing Metal Pile Shells 305 mm x 4.55 mm		m	48	
Driving Piles		m	48	

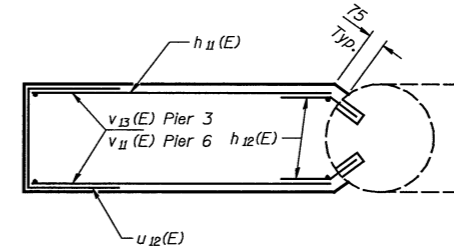
PIER FOOTING CONSTRUCTION SEQUENCE

1. Install sheet piling as shown on Sheet 6 of 32.
2. Excavate to elevation of lower pier footing as required.
3. Install lower pier footing.
4. After formwork for lower pier has been removed, place and compact fill to elevation of higher footing.
5. Install higher pier footing.

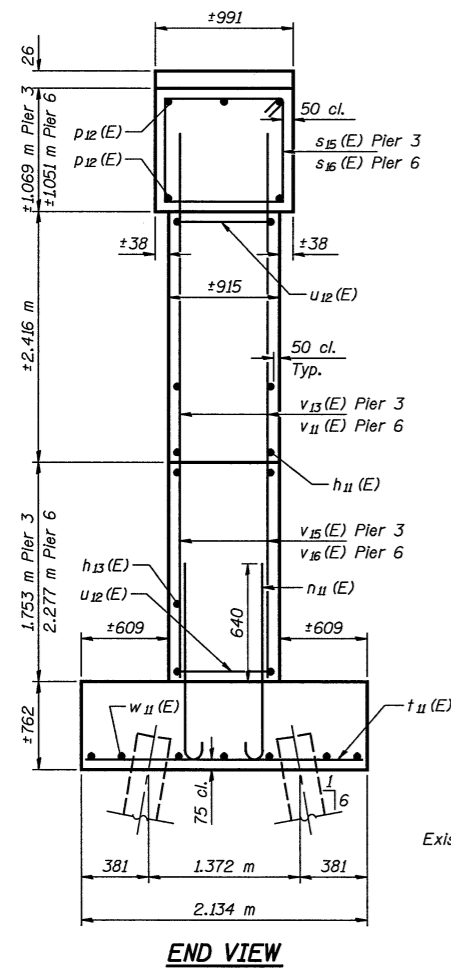


* Epoxy grout p₁₁(E), h₁₂(E) and w₁₂(E) bars into 22 mm φ x 230 mm drilled holes. The center of the hole shall be drilled a min. of 100 mm from the face of the existing structure. See Section 584 of the Standard Specifications.

PLAN



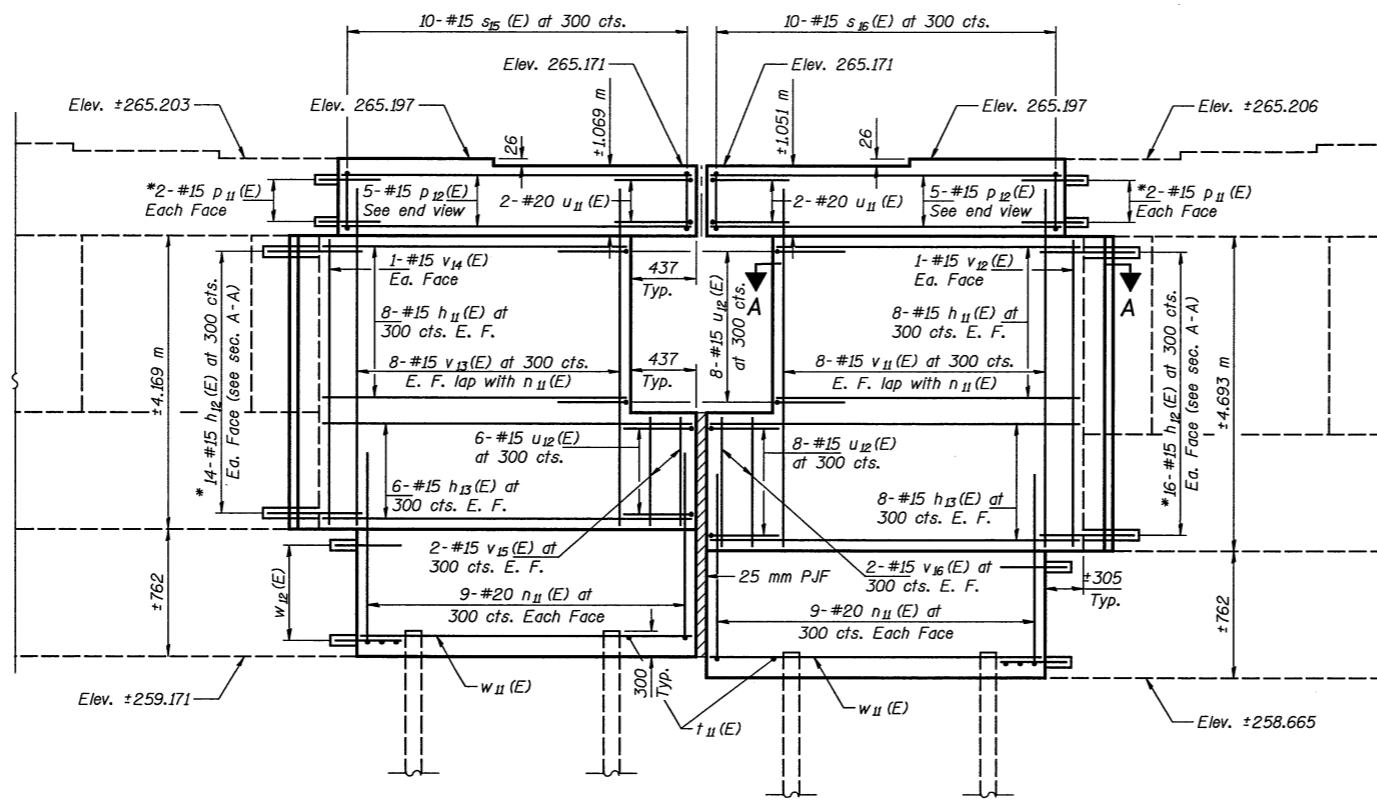
SECTION A-A



END VIEW

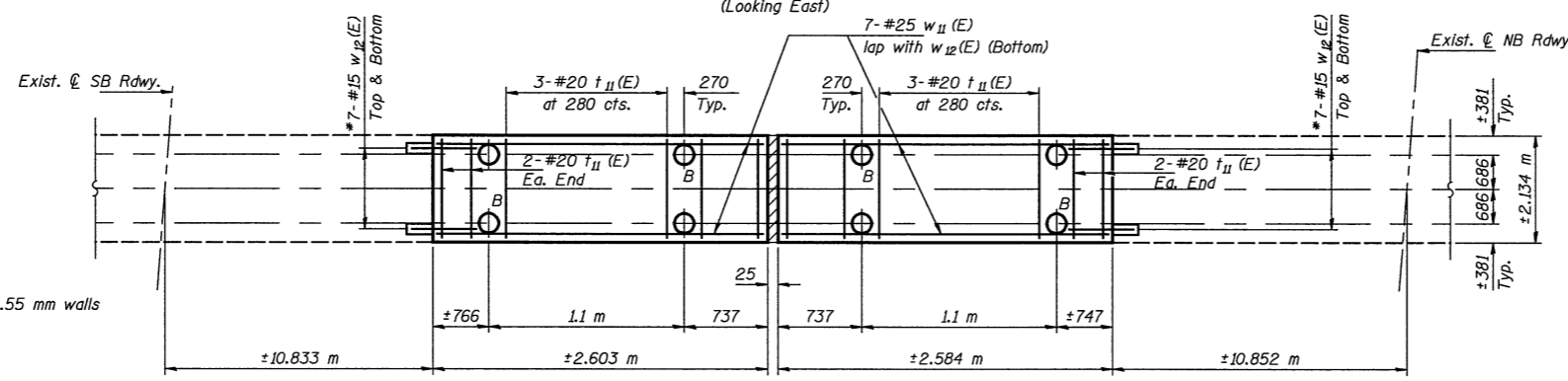
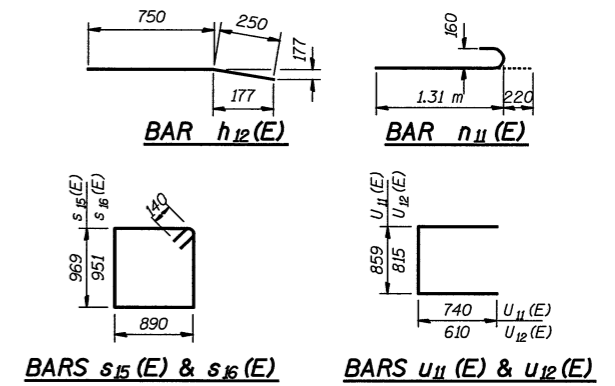
PILE DATA

Type & Size: Metal pile Shell 305 mm x 4.55 mm walls
 Nominal Required Bearing: 780 kN
 Allowable Resistance Available: 260 kN
 Est. Length : 6 m
 No. Required : 8



ELEVATION

(Looking East)



FOOTING PLAN

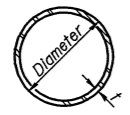
Note: B denotes battered pile location

Notes: Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Cost of 25 mm PJF is Included with Concrete Structures.
 All edges shall have 20 mm chamfers except as noted.
 All dimensions are in millimeters (mm) except as noted.
 See Sheet 24 of 24 for Pile Details.

ILLINOIS DEPARTMENT OF TRANSPORTATION	
SHEET TITLE PIER 3 & PIER 6	
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 MCLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-5 SCALE DATE: 07/15/2009 DRAWN BY: TFG/CFC CHECKED BY: CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
23 OF 24 SHTS	

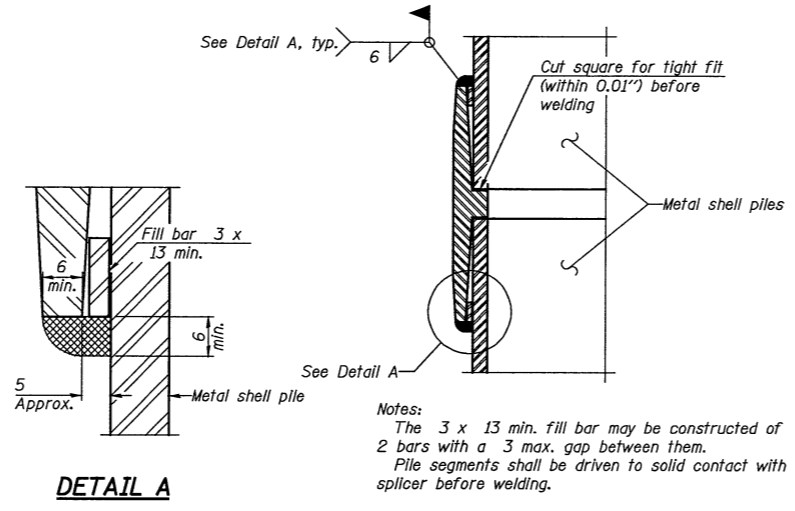
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	*	McLEAN	310	200

FED. ROAD DIST. NO. 7 ILLINOIS FAP
 *(57-4)R, HBY, HBR, (57-4VB)DM
 Contract No. 70757



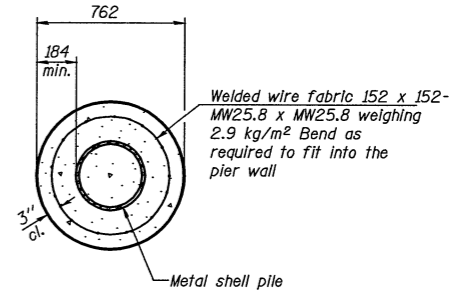
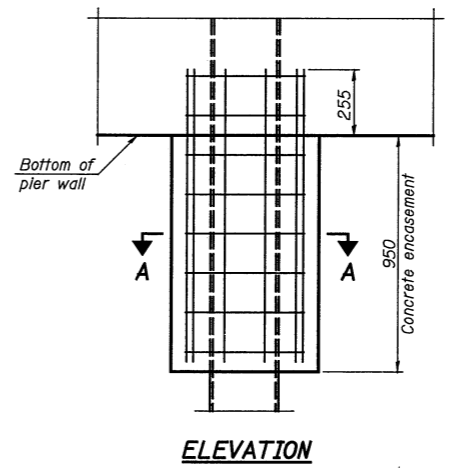
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per meter (kg/m)	Inside volume (m ³ /m)
PP12	5	33.63	0.0687
PP12	6	46.68	0.0670
PP14	6	54.62	0.0923
PP14	8	67.87	0.0906



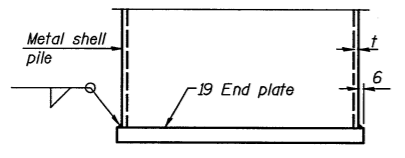
Notes:
 The 3 x 13 min. fill bar may be constructed of 2 bars with a 3 max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

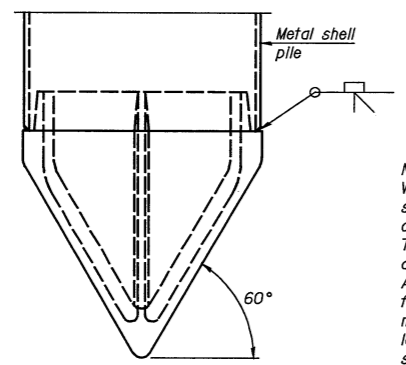


Note:
 Forms for encasement may be omitted when soil conditions permit.

CONCRETE ENCASEMENT AT PIERS



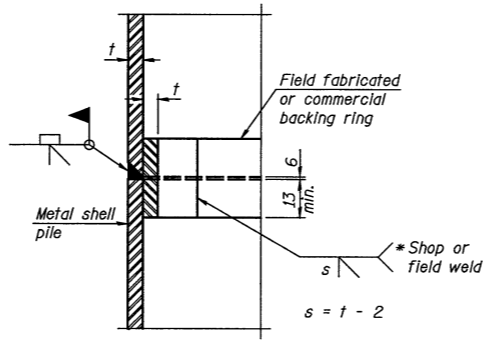
END PLATE ATTACHMENT



Note A:
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

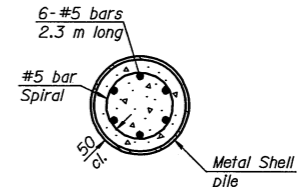
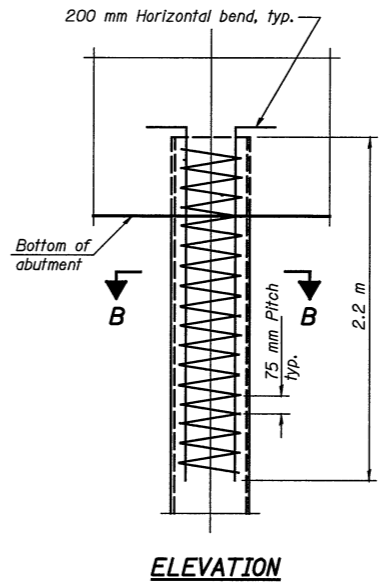
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

(All dimensions are in millimeters (mm) except as noted.)

ILLINOIS DEPARTMENT OF TRANSPORTATION			
SHEET TITLE METAL SHELL PILES			
PROJECT F.A.I. 55 OVER BUSINESS U.S. 51 SECTION 57-4HBR-4 STATION 37+474.206 McLEAN COUNTY STRUCTURE NO. 057-0024 (N.B.) & STRUCTURE NO. 057-0025 (S.B.)	PROJECT NO. 08049-S	SCALE DATE 07/15/2009	DRAWN BY TFG/CFC
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		CHECKED BY CME/MCB	DRAWING NO. 24
			OF 24 SHTS

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.