

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

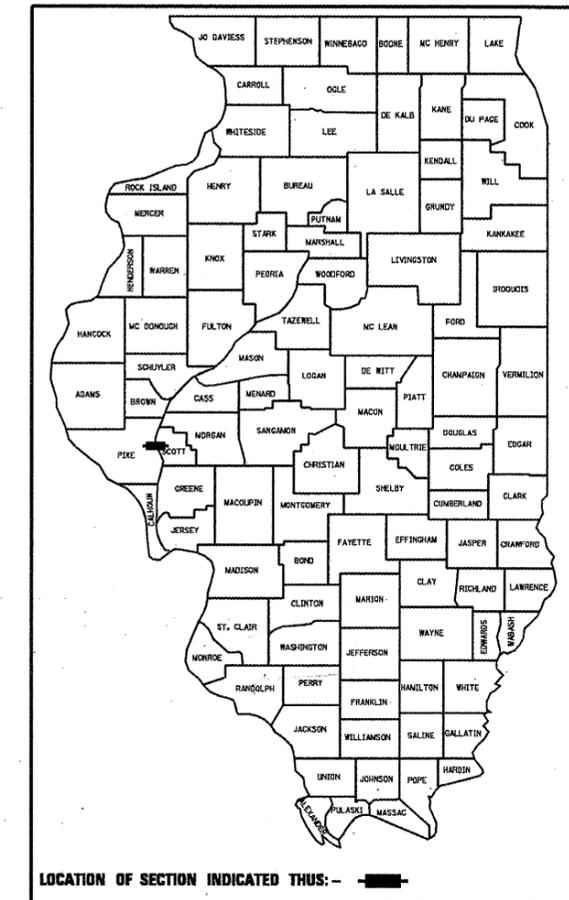
PROPOSED HIGHWAY PLANS

FAP ROUTE 757 (IL 100 /106)
SECTION D6 FLORENCE PIER PROTECTION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
757	*	SCOTT	9	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 72D07	

72D07

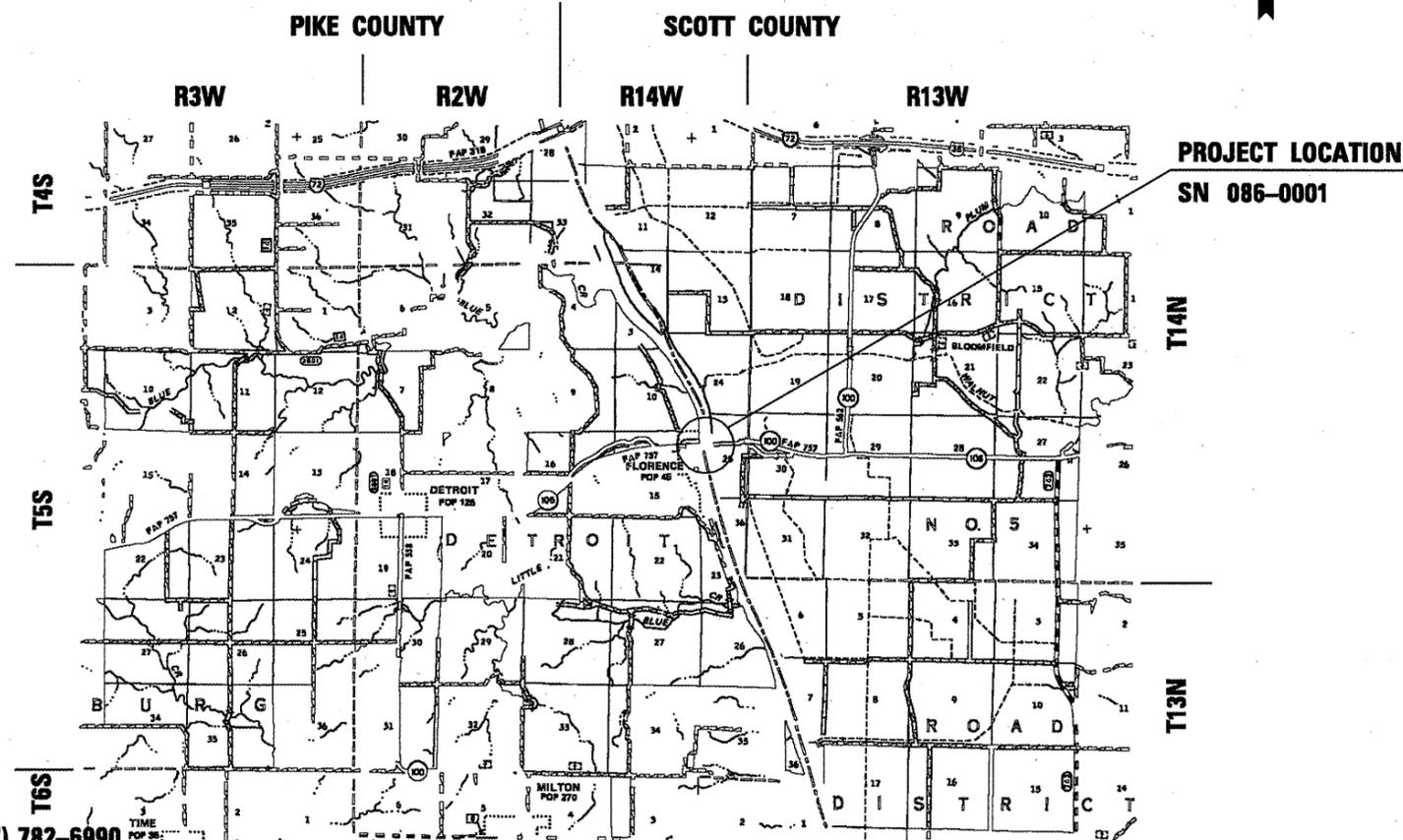
D-96-108-09



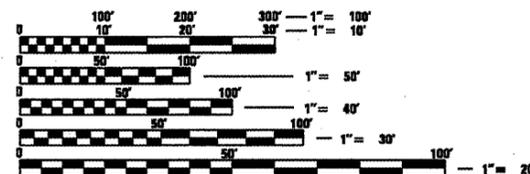
FOR INDEX OF SHEETS, SEE SHEET NO. 2

STRUCTURE REPAIR
SCOTT COUNTY

C-96-108-09



PROJECT LOCATION
SN 086-0001



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

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

PROJECT ENGINEER JOHN NEGANGARD (217) 782-6990
SQUAD LEADER VINCE MADONIA (217) 785-9046

GROSS LENGTH = 0.01 MILE
NET LENGTH = 0.01 MILE

CONTRACT NO. 72D07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *Aug. 18, 20 09*
Raymond J. [Signature]
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

August 14, 20 09
Charles G. Ingersoll [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

August 14, 20 09
Christine M. Reed [Signature]
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

GENERAL NOTES:

1. ANY REFERENCE TO THE STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE DEPARTMENT AS INCLUDED IN THE PLANS.
2. NO EXCAVATION IS ANTICIPATED ON THIS PROJECT WHICH WOULD AFFECT UTILITIES. J.U.L.I.E. IS TO BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION - (800) 892-0123.
3. IN ADDITION TO FIELD SURVEYS AND AERIAL SURVEYS, PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING FACILITIES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD. SUCH VARIATIONS SHALL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION DUE TO A CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE BID PRICE FOR THE WORK.

INDEX OF SHEETS

- 1 COVERSHEET
- 2 GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
- 4 PLAN AND ELEVATION
- 5-6 PIER PROTECTION CELL DETAILS
- 7 CATWALK DETAILS
- 8-9 PHOTOGRAPHS

LIST OF STANDARDS

- 000001-05
- 001001-02
- 001006
- 701001-02
- 701006-03
- 701011-02
- 701201-03
- 701311-03
- 701901-01

DISTRICT SIX	
EXAMINED <u>Aug 17</u>	20 <u>09</u>
<i>Paul J. Harris</i>	
OPERATIONS ENGINEER	
EXAMINED <u>Aug 17</u>	20 <u>09</u>
<i>Paul J. Harris</i>	
PROGRAM IMPLEMENTATION ENGINEER	
EXAMINED <u>Aug. 17</u>	20 <u>09</u>
<i>Laura R. Mlacnik</i>	
PROGRAM DEVELOPMENT ENGINEER <i>LW</i>	

FILE NAME =	USER NAME = madonjavj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
es:\pwwork\VPWIDOT\MADONIAVJ\0156778\0872007-shr-genote.dgn		DRAWN -	REVISED -			757	.	SCOTT	2	9	
PLOT SCALE = 100.0000' / IN.		CHECKED -	REVISED -			CONTRACT NO. 72D07					
PLOT DATE = Aug-18-2009 11:42:28AM		DATE -	REVISED -			SCALE:	SHEET NO.	OF	SHEETS	STA.	TO

100% STATE
ER RESERVE FUNDS
SN 086-0001
SFTY-2A

PAY CODE	DESCRIPTION	UNIT	TOTAL	
50200300	COFFERDAM EXCAVATION	CU YD	<i>755</i>	<i>755</i>
50300220	CLASS MS CONCRETE	CU YD	708	708
50300265	SEAL COAT CONCRETE	CU YD	1,438	1,438
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,890	5,890
50500505	STUD SHEAR CONNECTORS	EACH	1,711	1,711
50800105	REINFORCEMENT BARS	POUND	1,820	1,820
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	6	6
67100100	MOBILIZATION	L SUM	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1
X0321809	PERMANENT GROUND ANCHOR	EACH	18	18
X5121800	PERMANENT STEEL SHEET PILING	SQ FT	7,507	7,507
<i>X0326683</i>	CATWALK	<i>FOOT</i>	15.5	15.5
<i>X0326684</i>	REMOVAL OF EXISTING PIER PROTECTION CELL	L SUM	1	1
52100505	ANCHOR BOLTS, 5/8"	EACH	2	2
<i>*X0326685</i>	NAVIGATIONAL LIGHT	L SUM	1	1

** SPECIALTY ITEMS*

FILE NAME =	USER NAME = madonnavj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
o:\pwork\PWIDOT\MADONNAVJ\08156778\072087-shr-500.dgn		DRAWN -	REVISED -		75T	*	SCOTT	9	3				
PLOT SCALE = 100.0000' / IN.		CHECKED -	REVISED -		SCALE: SHEET NO. OF SHEETS STA. TO STA.				FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 72D07		
PLOT DATE = Aug-18-2009 11:42:22AM		DATE -	REVISED -		<i>Rev.</i>								

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

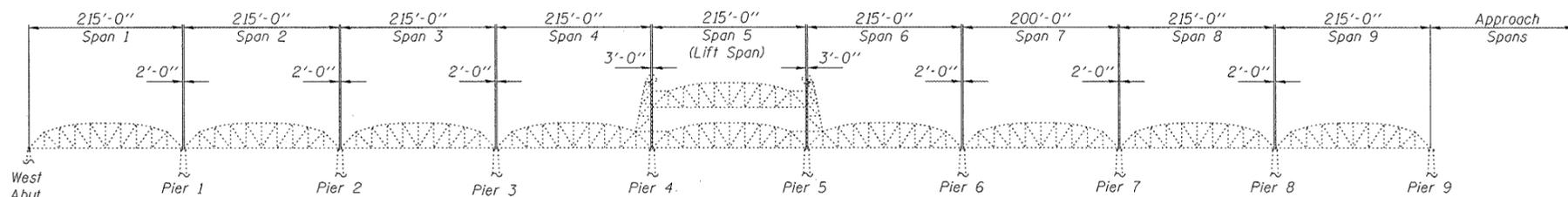
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall 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.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel.

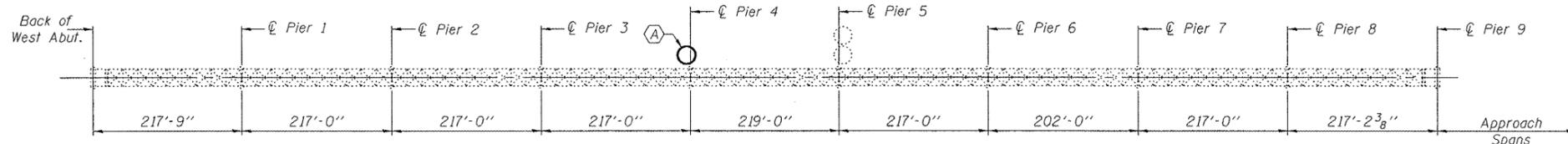
The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Light Gray, Munsell No. 5B 7/1. See Special Provision "Cleaning and Painting New Metal Structures".

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

As an option, the Contractor may galvanize the structural steel as per Article 509.05 of the Standard Specifications in lieu of the proposed paint system at no additional cost to the state.

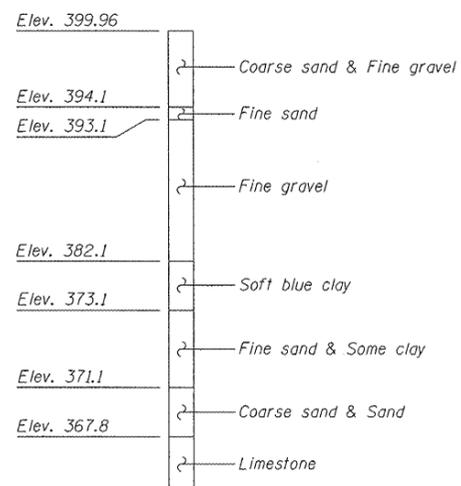


GENERAL ELEVATION
(TRUSS SPANS)



GENERAL PLAN

(A) - Install New Pier Protection Cell



BORING LOG

Note: This boring log depicts a possible sequence of soils based on the original borings at Sta. 587+90 taken for the Florence Bridge in 1925 or 1926. Actual elevations for the different layers may vary in field.

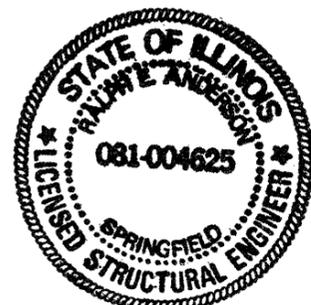
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Class "MS" Concrete	Cu. Yd.	708
Reinforcement Bars	Pound	1820
Furnishing & Erecting Structural Steel	Pound	5890
Seal Coat Concrete	Cu. Yd.	14.38
Permanent Steel Sheet Piling	Sq. Ft.	7507
Cofferdam Excavation	Cu. Yd.	755
Catwalk	Lin. Ft.	15.5
Permanent Ground Anchors	Each	18
Stud Shear Connectors	Each	1711
Removal of Existing Pier Protection Cell	L. Sum	1
Anchor Bolts 5/8" φ	Each	2
Navigational Light	L. Sum	1

PLAN & ELEVATION
IL 100/106 OVER THE
ILLINOIS RIVER AT FLORENCE
STRUCTURE NO. 086-0001

DESIGNED	Patrick M. Thomas
CHECKED	Jay D. Edwards
DRAWN	Kyle M. Steffen
CHECKED	pmp / JDE

August 14, 2009
EXAMINED: Thomas J. Anderson
PASSED: Ralph E. Anderson

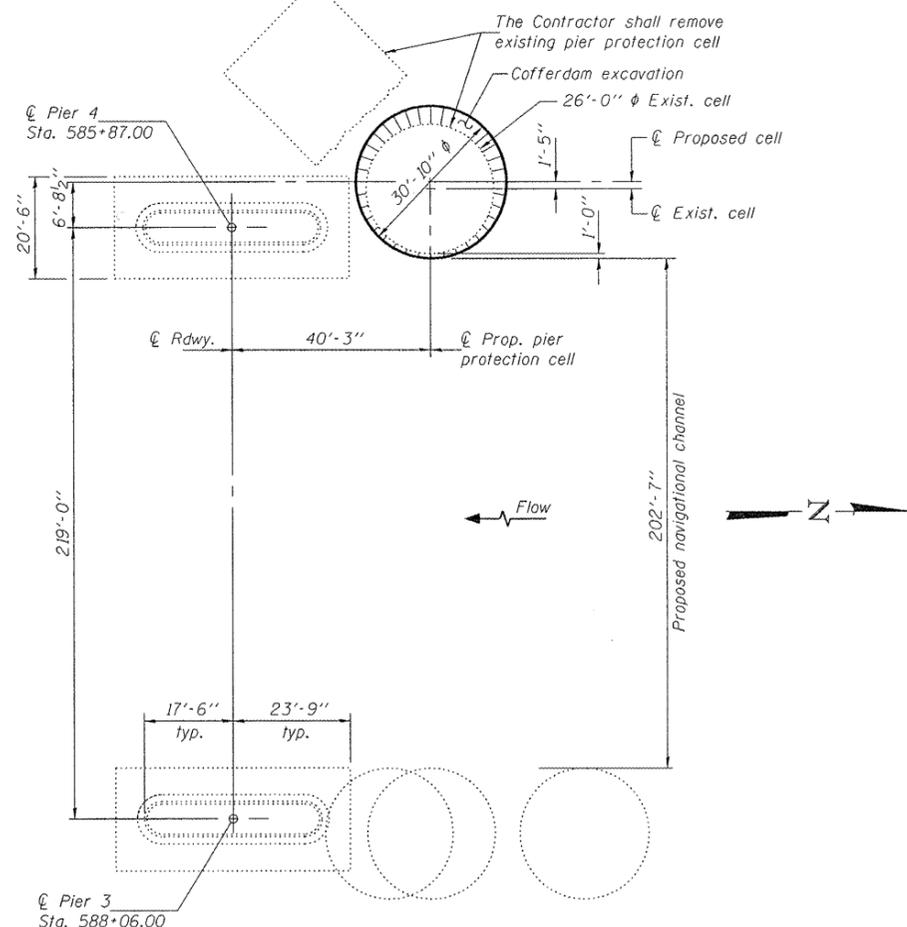


EXPIRES 11-30-2010

SHEET NO. 1 4 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	757	D6 FLORENCE PIER PROTECTION	SCOTT	9	4
			CONTRACT NO. 72D07		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

Rev.

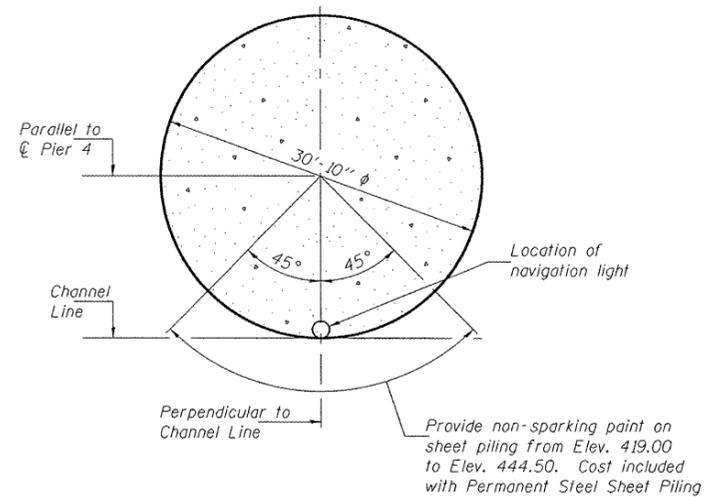
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



LOCATION PLAN

NOTES

Fasteners shall be high strength bolts. Bolts $\frac{3}{4}$ " ϕ , open holes $\frac{1}{16}$ " ϕ , unless otherwise noted.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
The steel sheet piling shall be provided with shear studs as shown.
The Contractor shall provide and install liquid-tight flex conduit and wire from the electrical junction box at the North end of Pier #4 to the new Navigation Light. Cost included with Navigation Light.



PIER PROTECTION CELL PLAN

DESIGN SPECIFICATION

2007 AASHTO LRFD Design Specifications with 2008 Interims

DESIGN LOADING

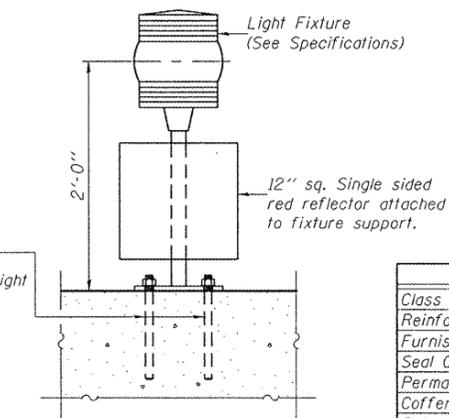
Design Weight of Barges and Towboat = 27000 tons
Lateral Force on cell (P) = 5% of Weight of Barges plus Boat
Point of application = 4' above surface
Design Velocity of Water = 10 ft./sec.
Catwalk = 85 psf

DESIGN CRITERIA

The cell is designed for an ultimate strength to resist the factored load 2685 K

DESIGN STRESSES

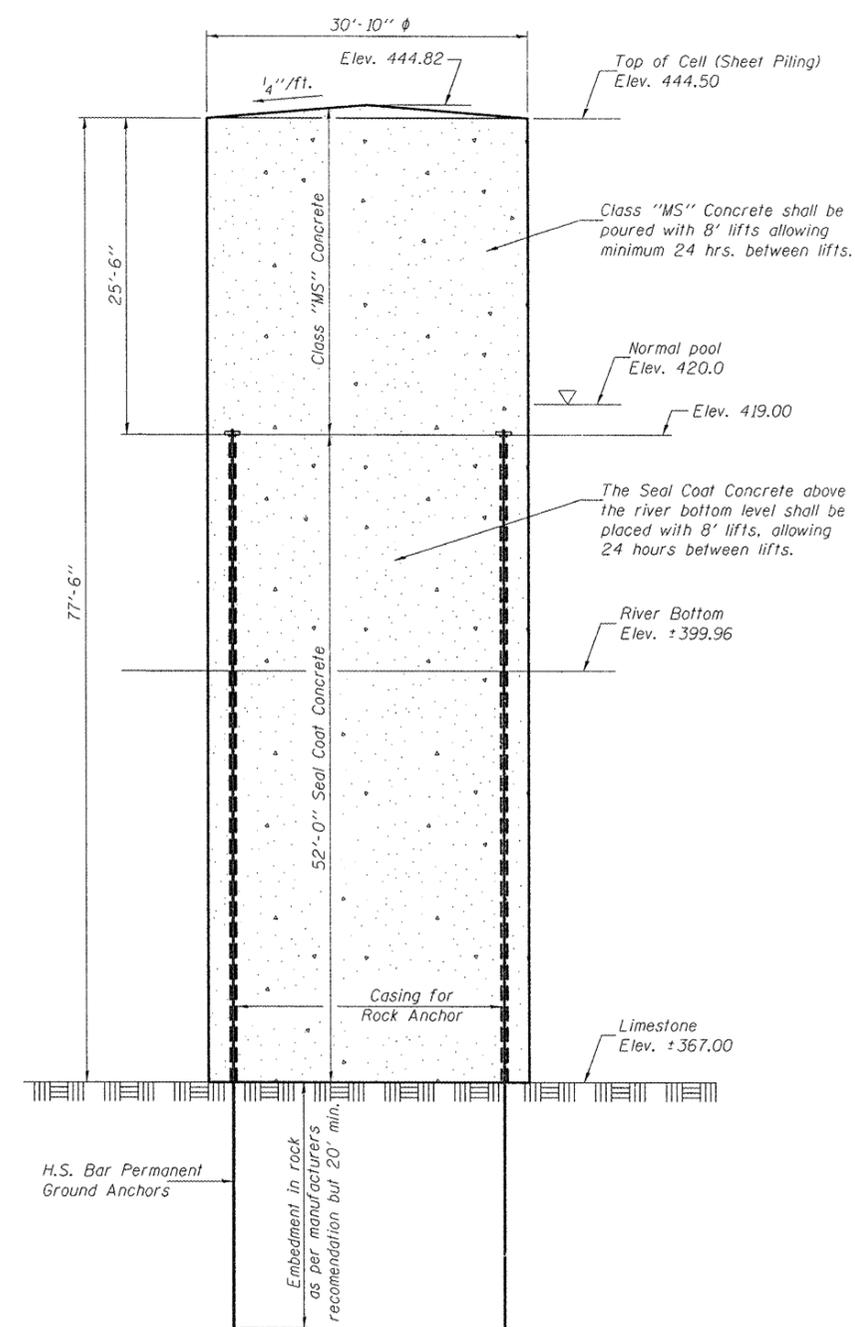
f'_s = 16,000 lbs./lineal inch (Sheet Piling interlocking strength in tension)
 f'_c = 3,500 p.s.i. (Class "MS" Concrete)
 f'_c = 3,500 p.s.i. (Seal Coat Concrete)
 f_y = 38,500 p.s.i. (Sheet Piling)
 f_u = 150,000 p.s.i. (H.S. bars)
 f_y = 130,000 p.s.i. (2% offset yield for H.S. bars)
 f_y = 36,000 p.s.i. (Structural Steel) M 270 Gr 36
 f_y = 50,000 p.s.i. (Structural Steel) M 270 Gr 50W



NAVIGATION LIGHT DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Class "MS" Concrete	Cu. Yd.	708
Reinforcement Bars	Pound	1820
Furnishing & Erecting Structural Steel	Pound	5890
Seal Coat Concrete	Cu. Yd.	1438
Permanent Steel Sheet Piling	Sq. Ft.	7507
Cofferdam Excavation	Cu. Yd.	755
Catwalk	Lin. Ft.	15.5
Permanent Ground Anchors	Each	18



PIER PROTECTION CELL ELEVATION

PIER PROTECTION CELL DETAILS
STRUCTURE NO. 086-0001

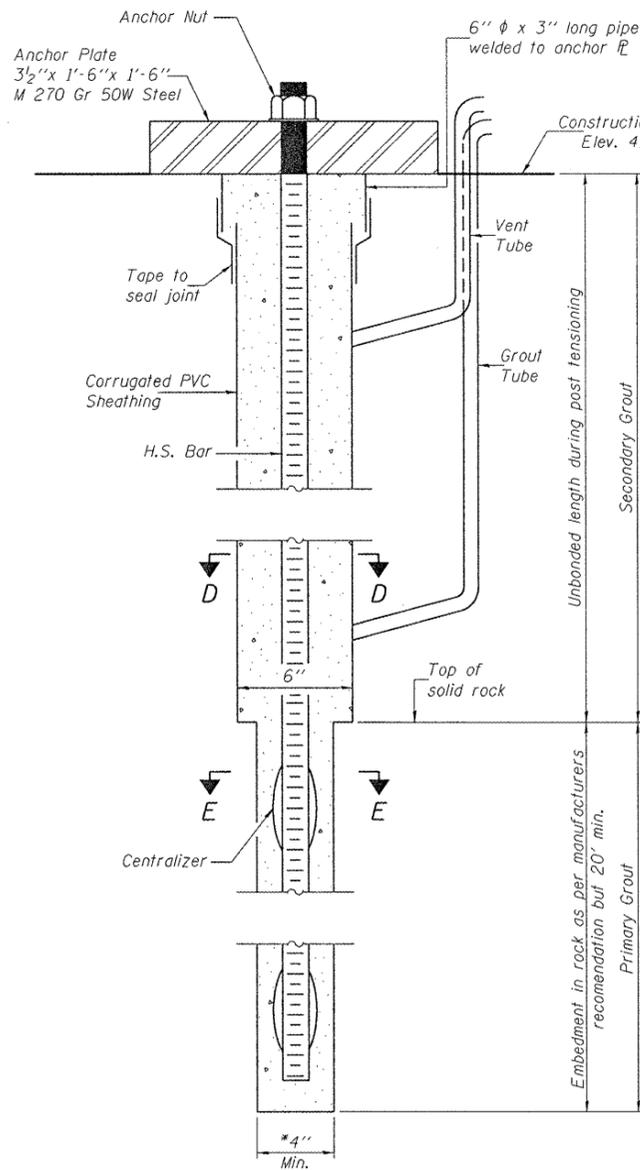
DESIGNED	Patrick M. Petrone
CHECKED	Jay D. Edwards
DRAWN	Kyle M. Steffen htd
CHECKED	PMP/JDE

August 13, 2009
EXAMINED *Thomas J. Damagalki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. 2 4 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	757	D6 FLORENCE PIER PROTECTION	SCOTT	9	5
CONTRACT NO. 72D07			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

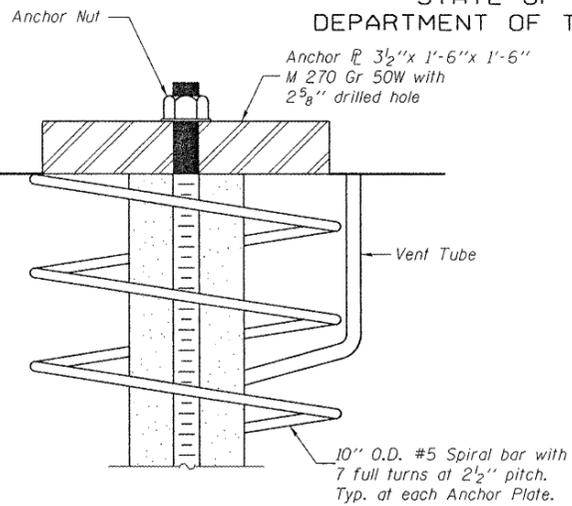
Rev.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

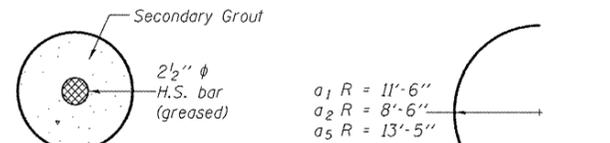


H.S. BAR ANCHOR ASSEMBLY (PRIMARY)
(See Special Provisions)

Notes: The anchor assembly shown applies to threaded bars.
H.S. denotes High Strength Steel.
*Hole diameter as per manufacturers recommendation.

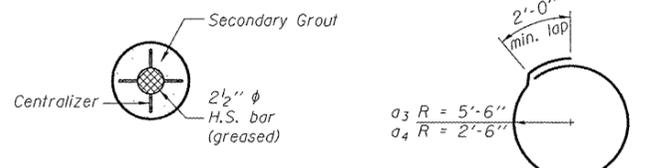


TOP ANCHOR DETAIL



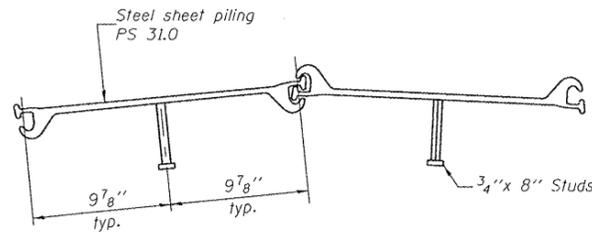
SECTION D-D

BARS a1 & a2

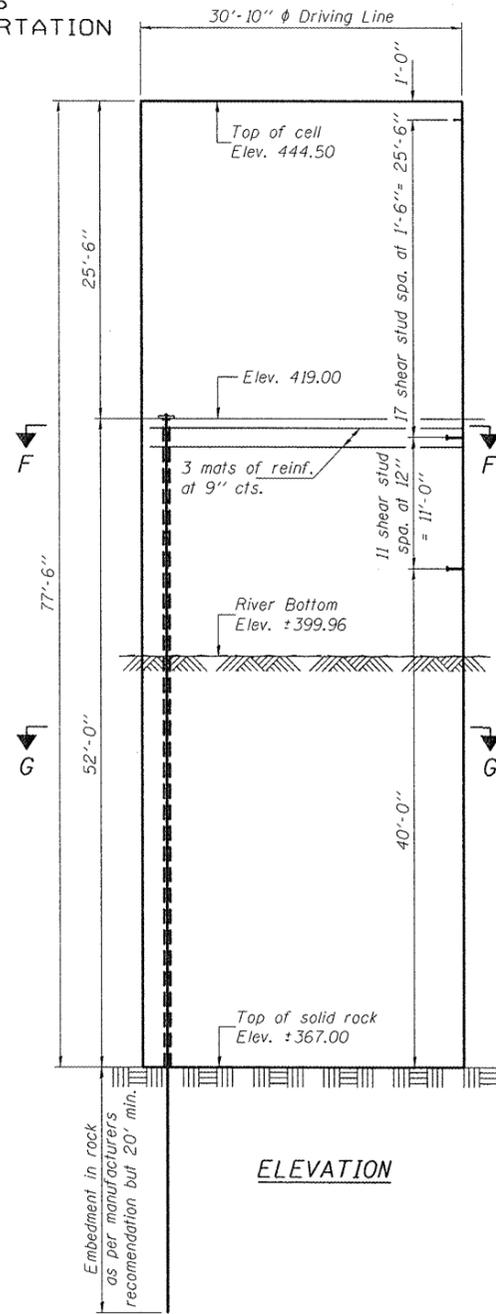


SECTION E-E

BARS a3 & a4



SHEET PILING DETAIL
(Req'd. = 59 sheets)



ELEVATION

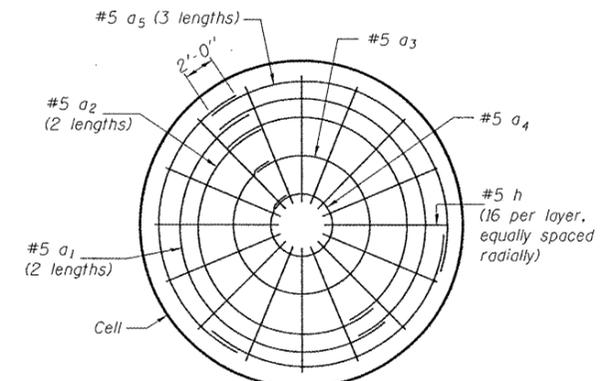
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1	6	#5	38'-3"	C
a2	6	#5	29'-9"	C
a3	3	#5	36'-6"	O
a4	3	#5	17'-9"	O
a5	9	#5	30'-1"	C
h	48	#5	12'-0"	—
** Spiral	18	#5	1'-8"	W
Reinforcement Bars			Pound	1820

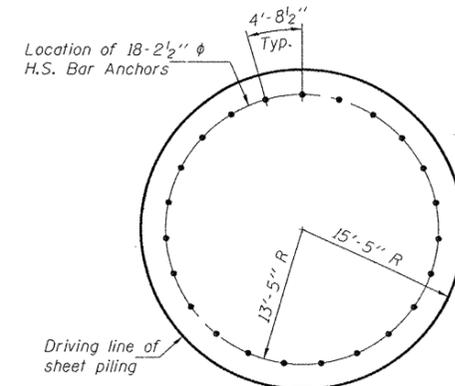
**Length = Estimated height of spiral.

NOTES

H.S. Bar Rock Anchors shall be high tensile strength alloy bars conforming to the requirements of AASHTO M275 Type I. Each bar shall be post-tensioned to a locking force of 49 K.
The Anchor length of the H.S. bar into rock, the strength of the primary grout, & the grouting procedure should be such that a design load of 337 K per anchor is attained.
The Anchor plates shall conform to the requirements of AASHTO M270 Gr 50W. The cost of furnishing Anchor plates is included with the item "Furnishing & Erecting Structural Steel".
Cost of post-tensioning, grouting, H.S. bar assembly, sheathing, etc. is included in the item Permanent Ground Anchors.
All exposed post-tensioning hardware shall receive solvent and blast cleaning, one coat of inorganic zinc primer, and one coat of epoxy paint after tensioning and grouting.
The H.S. bar steel couplers should be capable of developing the ultimate strength of the bar.
Centralizers shall be fabricated from material which is non-detrimental to the prestressing steel. The centralizer shall position the H.S. bar in the drill hole so a minimum of 5/8" of grout cover is provided.
Cost of all material except anchor plates shall be included in the pay item "Permanent Ground Anchors."



SECTION F-F

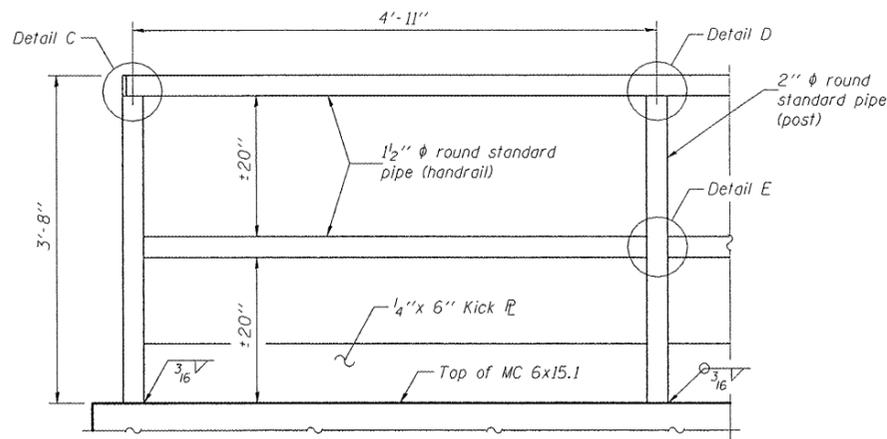


SECTION G-G

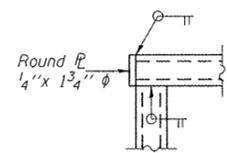
PIER PROTECTION CELL DETAILS
STRUCTURE NO. 086-0001

SHEET NO. 3 4 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	757	D6 FLORENCE PIER PROTECTION	SCOTT	9	6
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 72D07		

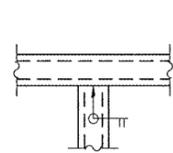
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



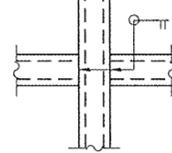
CATWALK RAILING ELEVATION
(Inside Face of Two Element Rail)



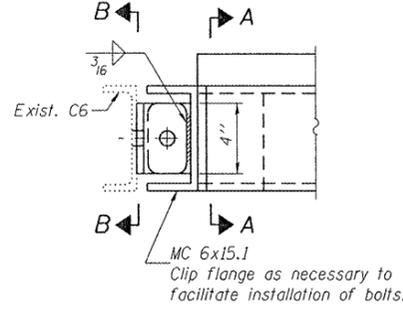
DETAIL C



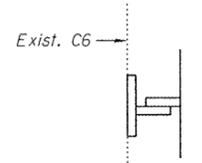
DETAIL D



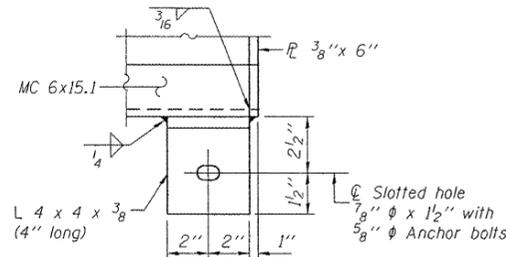
DETAIL E



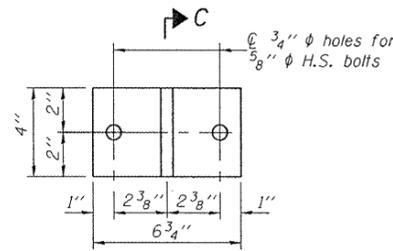
DETAIL A



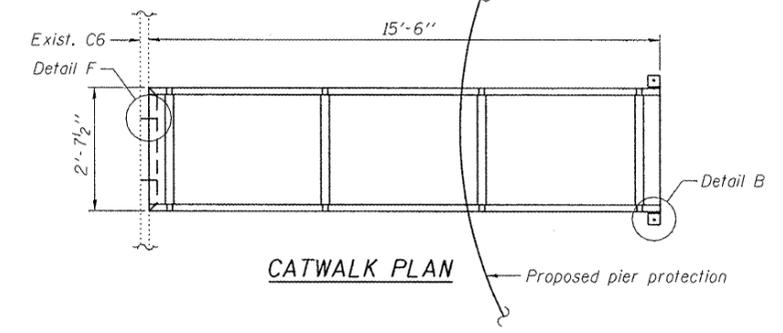
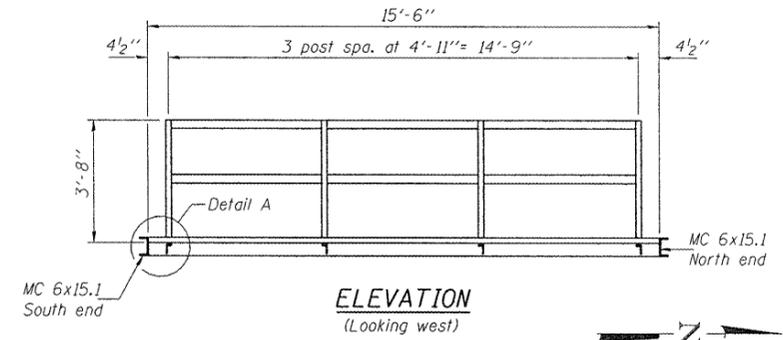
DETAIL F



DETAIL B



**ELEVATION
CATWALK BRACKET**
(2 Req'd.)



NOTES

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per foot for Catwalk.

All material for walkway (except anchor bolts and field drilling of 7/8" φ holes) shall be paid at the contract price per lineal foot for Catwalk.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36.

If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in the pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be sealed with pre-measured amounts of the adhesive chemical.

All posts, railing, splices, anchor devices, and bent plates shall be painted using the specified paint system for Structural Steel.

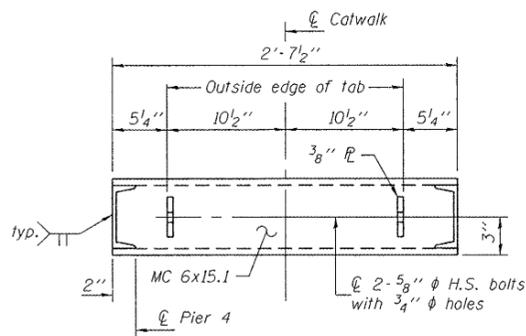
The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

BILL OF MATERIAL

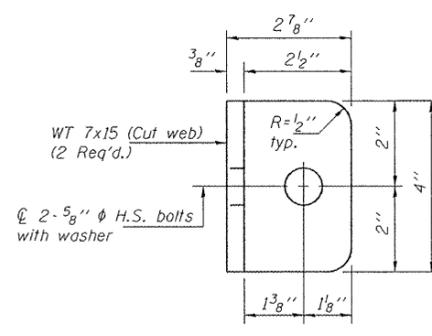
Item	Unit	Quantity
Catwalk	Foot	15.5
Anchor Bolts 5/8" φ	Each	2

**CATWALK DETAILS
STRUCTURE NO. 086-0001**

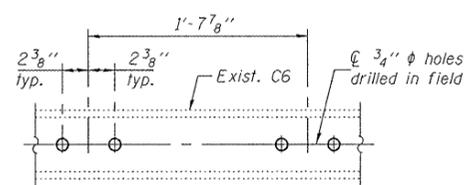
SHEET NO. 4	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	757	D6 FLORENCE PIER PROTECTION	SCOTT	9	7
4 SHEETS					
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			
CONTRACT NO. 72D07					



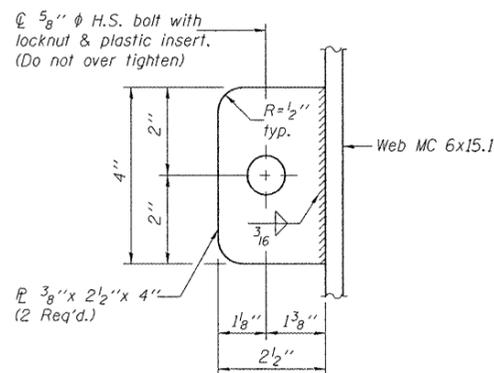
SECTION A-A



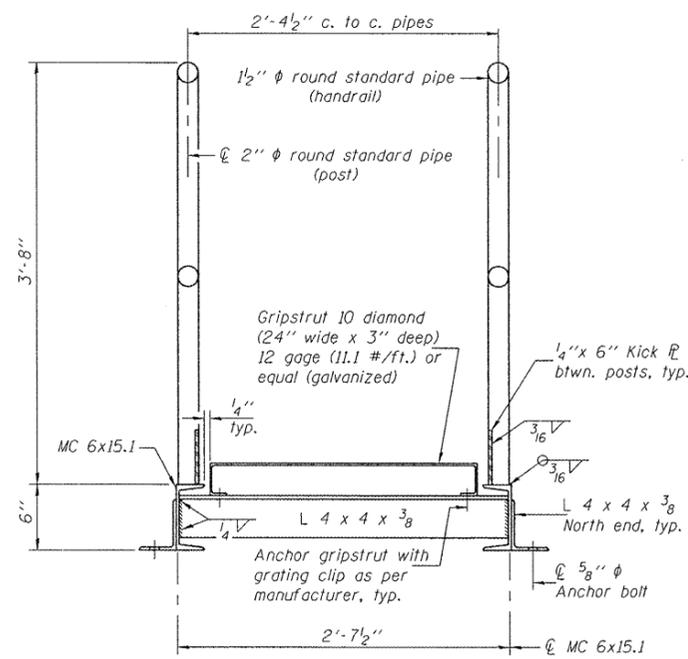
SECTION C-C



SECTION B-B



TAB DETAIL



CROSS SECTION

DESIGNED	Patrick M. Petrone
CHECKED	Jay D. Edwards
DRAWN	h.t. duong
CHECKED	PMP/JDE

August 13, 2009

EXAMINED *Thomas J. Demagala*
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



THIS PHOTOGRAPH IS TO GIVE A GENERAL IDEA OF CONDITIONS TO BE ENCOUNTERED. THIS PHOTOGRAPH IS FOR INFORMATION ONLY, AND THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE.

FILE NAME = e:\pwork\pwork\MADONIAVJ\0156778\072D07-ah1-photo.dgn	USER NAME = madoniavj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PHOTOGRAPHS				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -		757	*	SCOTT	8	9				
		CHECKED -	REVISED -		CONTRACT NO. 72D07				ILLINOIS FED. AID PROJECT				
		DATE -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.				



THIS PHOTOGRAPH IS TO GIVE A GENERAL IDEA OF CONDITIONS TO BE ENCOUNTERED. THIS PHOTOGRAPH IS FOR INFORMATION ONLY, AND THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE.

FILE NAME =	USER NAME = madonlavj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PHOTOGRAPHS				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
es:\pwork\pwork\PWIDOT\MADONIAVJ\d0156778\0672D07-sht-photo.dgn		DRAWN -	REVISED -		757	*	SCOTT	9	9				
PLOT SCALE = 12,0000 ' / IN.		CHECKED -	REVISED -		CONTRACT NO. 72D07				ILLINOIS FED. AID PROJECT				
PLOT DATE = Aug-18-2009 11:45:52AM		DATE -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.				