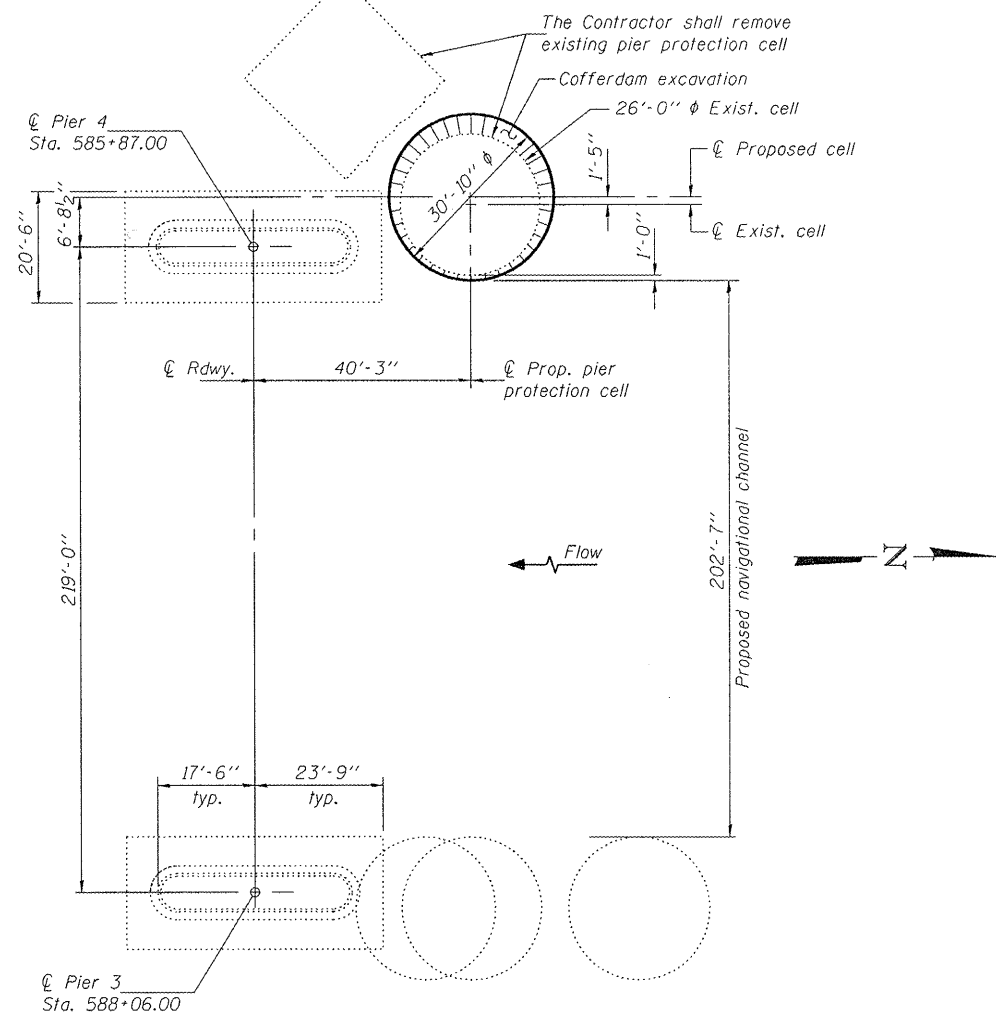


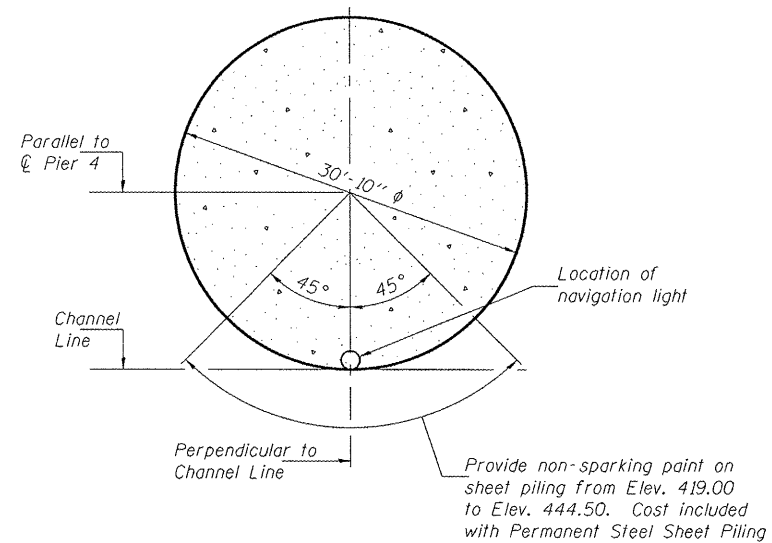
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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

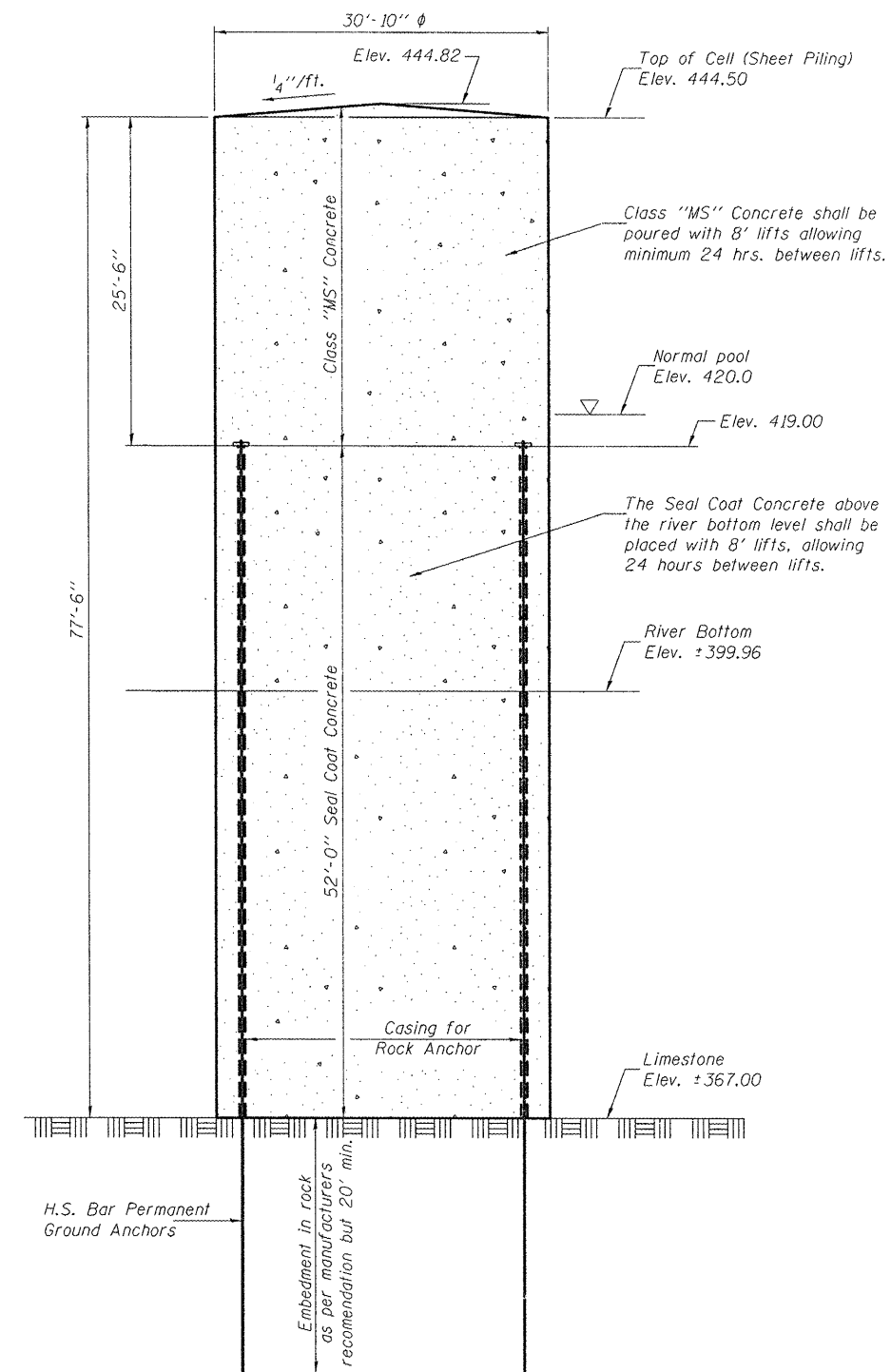
Design Weight of Barges and Towboat = 27000 tons
Lateral force on cell (P) = 5% of Weight of Barges plus Boat
Point of application = 4' above surface
Design Velocity of Water = 10 ft./sec.
Catwalk = 85 psf

DESIGN CRITERIA

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

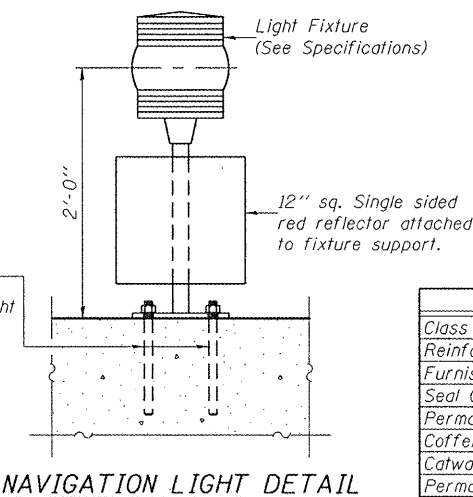
DESIGN STRESSES

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



PIER PROTECTION CELL ELEVATION

PIER PROTECTION CELL DETAILS
STRUCTURE NO. 086-0001



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

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.