



## SYSTEM CONCEPTS

**The pier deck** consists of precast, pretensioned haunched panels supported on cast-in-place concrete pile caps and optionally covered with gravel ballast and asphalt paving. The deck system has low initial cost and low maintenance cost. Each major feature of the system works with the others to contribute to the overall efficiency and economy.

### **Deck Panels**

- Install easily and rapidly
- Provide a simply supported working platform during construction
- Designed as continuous over the pile cap for superimposed in-service loads
- Haunched at the ends allowing a deep composite closure over the pilecap, high resistance to shear stresses, and reduced concrete release strengths
- When integrated into the structure, act as a monolithic plate due to stiffness of the deep pile cap

### **Pile Caps**

- Act compositely with the cast-in-place concrete between the ends of the panels
- Deep and massive with substantial torsional stiffness
- Sufficiently wide to easily accommodate pile installation tolerances

### **Longitudinal Shear Keys** (between deck panels)

- Substantial and filled with vibrated concrete rather than grout
- Transfer loads across the edge of the panels
- Eliminate differential movements and help create a large structural diaphragm

### **Welded Splice** (between top reinforcing bars)

- Works with the pilecap closure pour to provide continuity over the pile caps
- Easy and economical to execute in the field

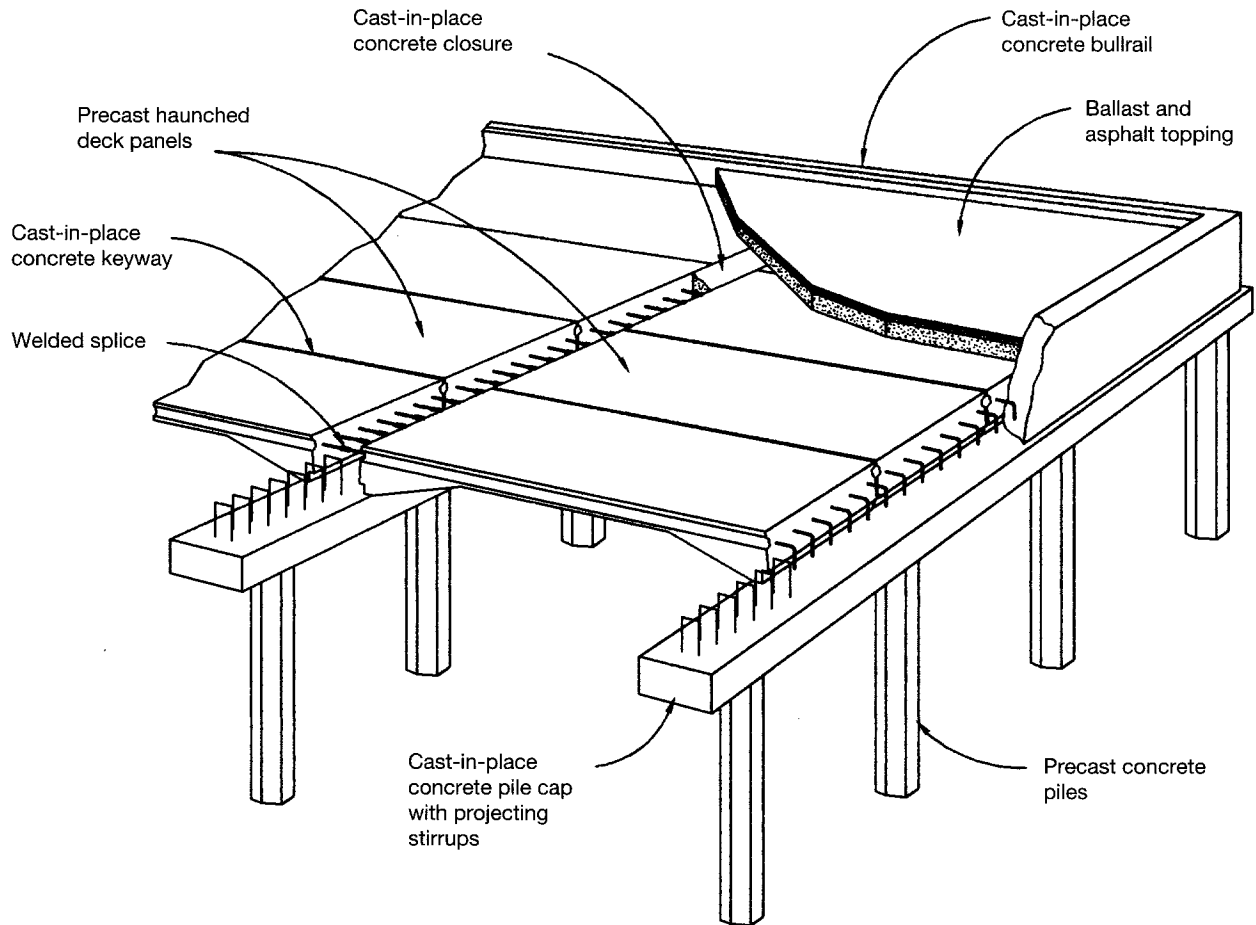
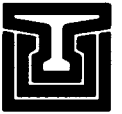
### **Ballast with Asphalt Paving**

- Distributes concentrated loads to the structural deck
- Maintains the structural deck at a temperature close to the water temperature
- Reduces impact loads to the deck
- Provides space to locate utilities, crane beams and trackage without penetrating the structural deck
- Allows economical future upgrades of utilities and crane beams within the ballast layer

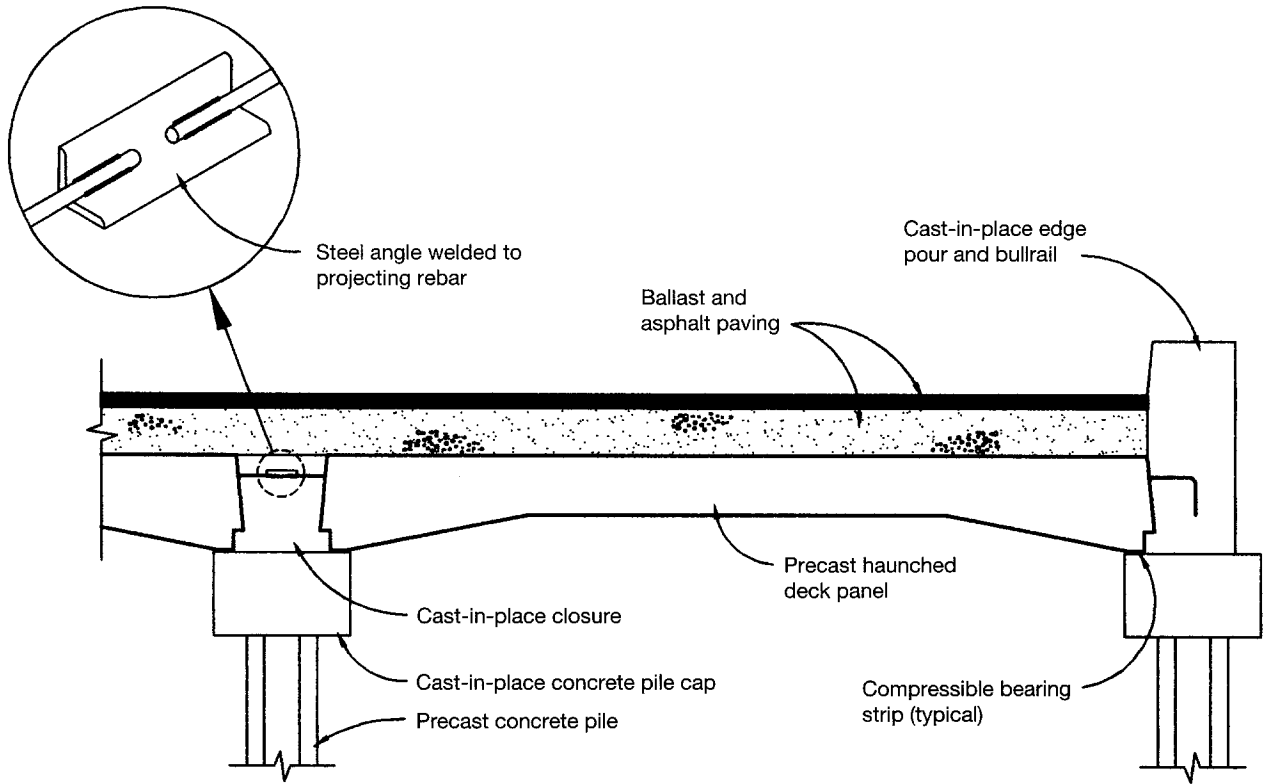
Haunched deck piers are used economically for heavily loaded facilities such as port terminals, Navy piers, and industrial floors. The haunched deck panel framing system is very efficient in resisting the large, randomly placed concentrated loads imposed by modern cargo equipment such as forklifts, log loaders, container straddle carriers and mobile cranes. Haunched deck panels can also be used to carry large uniform loads of 2000 psf and greater.

### **RELATED PUBLICATIONS AVAILABLE FROM CTC:**

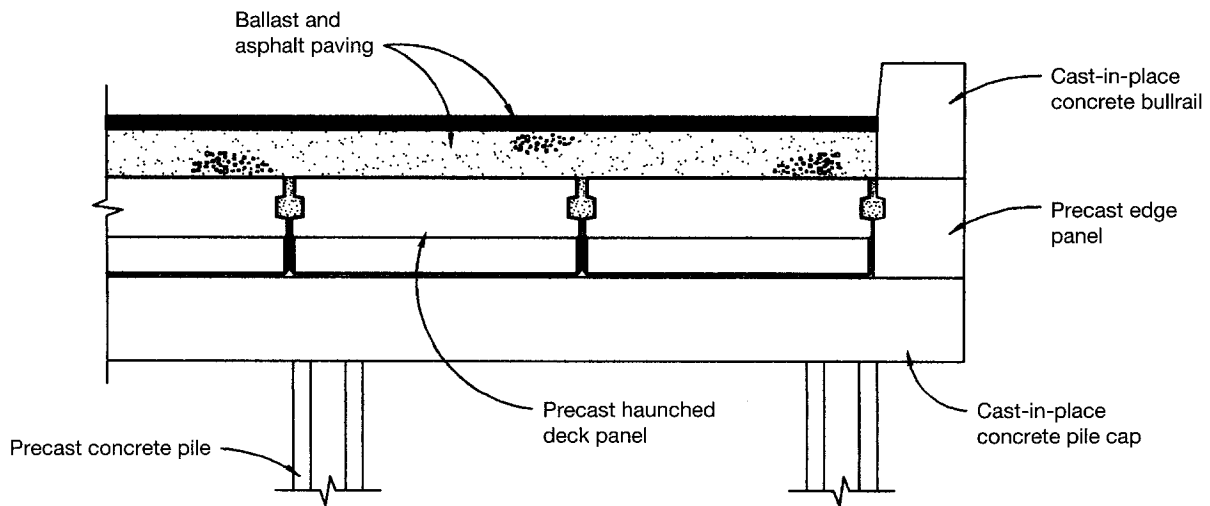
- Precast/Prestressed Concrete Piling
- Guide Specifications



## HAUNCHED DECK PANEL PIER



## LONGITUDINAL SECTION



## TRANSVERSE SECTION AT MIDSPAN