PART 1

General

1.01 SECTION INCLUDES

A. Floor and roof planks.
B. Connection plates, brackets, and hangers.
C. Grouting plank joint keys.

1.02 RELATED SECTION

A. Section 03300 – Cast in Place Concrete: Concrete superstructure building frame, topping, and reinforcement.
B. Section 03411 – Structural Precast Concrete.
C. Section 03451 – Architectural Precast Concrete.
D. Section 03470 – Tilt-up Precast Concrete.
E. Section 03505 – Self-Leveling Underlayment.
F. Section 04200 – Masonry load bearing support walls.
G. Section 05120 – Structural Steel: Supporting steel lintels, headers, etc.
H. Section 05500 – Metal Fabrications: Supporting steel lintels, headers, etc.
I. Section 07270 – Firestopping.
J. Section 07900 – Joint Sealers: Caulking of butt joints of precast units at exposed underside of floor members.
K. Section – Interior applied finish.

1.03 REFERENCES

A. ACI 301 – Structural Concrete for Buildings.
B. ACI 308 – Building Code Requirements for Reinforced Concrete.
C. ASTM A36 – Structural Steel.
D. ASTM A153 – Zinc Coating on Iron and Steel Hardware.
E. ASTM A416 – Uncoated Seven-Wire Stress-Relieved Steel Strand for Prestressed Concrete.
F. ASTM A615 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
G. ASTM A666 – Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar for Structural Applications.
J. ASTM C33 – Aggregates.
K. ASTM C260 – Air Entrainment.
M. AWS D1.1 – Structural Welding Code.
O. PCI – Manual For The Design of Hollow Core Slabs.
P. PCI MNL-116 – Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.
PART 1
General

1.04 DESIGN REQUIREMENTS
A. Size components to withstand design loads in a [restrained] unrestrained condition as indicated on Structural Drawings.
B. Concrete: Minimum compressive strength of 6000 psi at 28 days.
C. Maximum Allowable Deflection of Roof Planks; [1/180], [1/240], [1/360], [________] span.
D. Maximum Allowable Deflection of Floor Planks; [1/180], [1/240], [1/360], [________] span.
E. Design components to accommodate construction tolerances, deflection of other building structural members and clearances of intended openings.
F. Grouted Keys; Capable of transmitting horizontal shear force of 2,000 lb/ft.
G. Calculate structural properties of framing members in accordance with ACI 318.

1.05 SUBMITTALS
A. Submit under provisions of Section 01300.
B. Shop Drawings: Indicate plank locations, unit identification marks, connection details, edge conditions, bearing requirements, support conditions, dimensions, openings, openings intended to be field cut, and relationship to adjacent materials.
C. Product Data: Indicate standard component configuration, design loads, deflections, and cambers.
D. Fabricator’s Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.06 QUALITY ASSURANCE
A. Perform Work in accordance with the requirements of PCI MNL-116, PCI MNL-123, and PCI MNL-120.
B. Maintain plant records and quality control program during production of precast planks. Make records available upon request.

1.07 QUALIFICATIONS
A. Fabricator: Company specializing in manufacturing the work of this section with five years documented experience, PCI Certified.
B. Erector: Company specializing in erecting the work of this Section with five years documented experience, PCI Qualified.
PART 1

General

C. Design precast concrete members in accordance with PCI Manual For The Design of Hollow Core Slabs, under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of.
D. Welder: Qualified in accordance with AWS D1.1.

1.08 REGULATORY REQUIREMENTS

A. Conform to ACI 318 code for design load and on-site construction requirements.
B. Conform to PCI MNL-124, to achieve [_______] hour rating for roof assembly.
C. Conform to PCI MNL-124, to achieve [_______] hour rating for floor assembly.

1.09 PRE-INSTALLATION CONFERENCE

A. Discuss anchor and weld plate locations, sleeve locations, and cautions regarding cutting or core drilling.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provision of Section 01600.
B. Lifting or Handling Devices: Capable of supporting member in positions anticipated during manufacture, storage, transportation, and erection.
C. Mark each member with date of production and final position in structure.

1.11 COORDINATION

A. Coordinate work under provisions of Section 01039.

PART 2

2.01 FABRICATORS – PCI CERTIFIED PLANT

2.02 MATERIALS

A. Materials: ACI 318.
B. Tensioning Steel Tendons: ASTM A416 Grade 250 or 270 K, of sufficient strength commensurate with member design.
C. Reinforcing Steel: ASTM A615, deformed steel bars.
D. Cement Grout: Minimum compressive strength of 3,000 psi at 28 days. Grout to be one part cement and three parts sand, and water.

2.03 ACCESSORIES

A. Connecting and Supporting Devices: ASTM A36 carbon steel; conforming to PCI MNL-123 plates, angles, items cast into concrete, items connected to steel framing members, and inserts.
B. Bearing pads 1/8 inch Tempered Masonite or Korolath.

2.04 FABRICATION

A. Conform to AWS D1.4 and PCI MNL-116.
B. Embed anchors, inserts, plates, angles, and other items at locations indicated.
C. Provide openings required by other sections, at locations indicated. Greater than 8 inches diameter.

2.05 COMPONENTS

A. Nominal Thickness: 6, 8, 10, 12, and 16 inches.
PART 2

2.06 FINISHES
   A. Plant Finish: Finish members to PCI MNL-116 Finish B Grade.

2.07 FABRICATION TOLERANCES
   A. Conform to PCI MNL-116.
   B. Maximum Bowing of Members: 1/4 inch in ten feet to a maximum of 3/8 inch.

2.08 SOURCE QUALITY CONTROL AND TESTS
   A. Provide testing and analysis of site placed concrete and grout under provisions of Section 01400.
   B. Provide shop inspection and testing for stressing tendons.
   C. Test samples in accordance with specified ASTM and ACI standards

PART 3

Execution

3.01 EXAMINATION
   A. General Contractor to verify that site conditions are ready to receive work and field measurements are as indicated on shop drawings.
   B. General Contractor to verify that supporting structure is ready to receive work.

3.02 ERECTION
   A. Erect members without damage to structural capacity, shape, or finish. Replace or repair damaged members.
   B. Align and maintain uniform horizontal and end joints, as erection progresses.
   C. Install bearing pads at bearing ends of planks as indicated.
   D. Adjust differential camber between precast members to tolerance before final attachment and grouting
   E. Adjust differential elevation between precast members to tolerance before final attachment.
   F. Grout plank, joints, trowel smooth.
   G. Transition differential elevation of adjoining planks with grout to a maximum slope of 1:12. [______].
   H. Secure units in place. Perform welding in accordance with AWS D1.1.

3.03 ERECTION TOLERANCES
   A. Erect members level and plumb within allowable tolerances. Conform to PCI MNL-116.

3.04 PROTECTION OF FINISHED WORK
   A. Protect members from damage from other trades by General Contractor throughout the job.