

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

(EQUIPMENT PAD)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - a. Concrete equipment pad for greywater treatment system
 - b. Reinforcement
 - c. Formwork
 - d. Surface finishing

1.2 RELATED SECTIONS

- A. Section 32 84 25 - Greywater Treatment and Irrigation System
- B. Section 22 13 16 - Greywater Collection and Distribution

1.3 REFERENCES

- A. ACI 318 - Building Code Requirements for Structural Concrete
- B. ASTM C94 - Standard Specification for Ready-Mixed Concrete

1.4 SUBMITTALS

- A. Product Data:
 - a. Concrete mix design
 - b. Reinforcement specifications
- B. Shop Drawings:
 - a. Pad dimensions
 - b. Reinforcement layout
 - c. Sleeve locations
 - d. Stub-out spacing

1.5 QUALITY ASSURANCE

- A. Concrete supplier:
 - a. ASTM C94 certified plant
- B. Installer Qualifications:

- a. Minimum 3 years experience
- b. Licensed/certified as required by local jurisdiction

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete:
 - a. Minimum compressive strength: 4000 psi at 28 days
 - b. Air content: 5-7%
 - c. Maximum aggregate size: 3/4 inch
- B. Reinforcement:
 - a. Type: #4 rebar
 - b. Grade: ASTM A615, Grade 60
 - c. Layout: 12 inches on center each way
- C. Pipe Sleeves and Stub-outs:
 - a. Material:
 - i. Schedule 40 PVC pipe
 - ii. Schedule 40 PVC fittings
 - iii. PVC primer and cement meeting ASTM D2564
 - b. Required Stub-outs detailed in shop drawings:
 - i. Inlet stub: 2-inch diameter
 - ii. Outlet stub: 2-inch diameter
 - iii. Electrical conduit: 1-inch diameter
 - iv. Spacing 4.5" OC
 - c. Positioning template
 - i. Provided by Leapfrog
 - ii. Must be used for stub-out placement

2.2 ACCESSORIES

- A. Stub-out protection:
 - a. Temporary caps for all stub-outs
 - b. Protective marking stakes
 - c. Warning tape

PART 3 - EXECUTION

3.1 PREPARATION

- A. Site Requirements:
 - a. Level, compacted subgrade

- b. Minimum bearing capacity: 2000 psi
- c. Proper drainage

3.2 INSTALLATION

A. Formwork:

- a. Dimensions:
 - i. Minimum 6 inches larger than equipment footprint
 - ii. Minimum thickness: 6 inches
- b. Level within 1/8 inch in 10 feet

B. Reinforcement:

- a. Minimum cover: 3 inches
- b. Support on chairs
- c. Tie intersections

C. Stub-out installation:

- a. Pre-placement Requirements:
 - i. Verify stub-out locations using manufacturer template
 - ii. Confirm elevations per manufacturer specifications
 - iii. Secure template to reinforcement grid
 - iv. Document locations with photographs
- b. Installation Sequence:
 - i. Install stub-outs through template
 - ii. Verify vertical alignment with level
 - iii. Secure stub-outs to prevent floating
 - iv. Protect open ends from concrete
- c. Critical Dimensions:
 - i. Stub height above finished pad: 2 inches \pm 1/8 inch
 - ii. Horizontal position: \pm 1/8 inch from template
 - iii. Vertical alignment: Maximum 1 degree from plumb
- d. Protection:
 - i. Install temporary caps immediately
 - ii. Mark stub-out locations with stakes
 - iii. Protect from damage during concrete placement

D. Concrete Placement:

- a. Special Considerations:
 - i. Do not disturb stub-out alignment
 - ii. Vibrate concrete carefully around stub-outs
 - iii. Maintain stub-out position during finishing
- b. Verification:
 - i. Check stub-out positions immediately after concrete placement
 - ii. Verify heights after finishing
 - iii. Document final positions

3.3 FINISHING

A. Surface Finish:

- a. Light broom finish
- b. Slope: $\frac{1}{8}$ inch per foot for drainage
- c. Edges: $\frac{3}{4}$ inch chamfer

3.4 CURING

- A. Methods:
 - a. Keep continuously moist for 7 days
 - b. Use curing compound if approved
- B. Protection:
 - a. Protect from weather
 - b. No loading for 7 days minimum

3.5 TOLERANCES

- A. Surface:
 - a. Level within $\frac{1}{8}$ inch in 10 feet
 - b. No ponding water
- B. Location:
 - a. Within $\frac{1}{2}$ inch of planned location
 - b. Sleeve locations within $\frac{1}{4}$ inch

END OF SECTION