

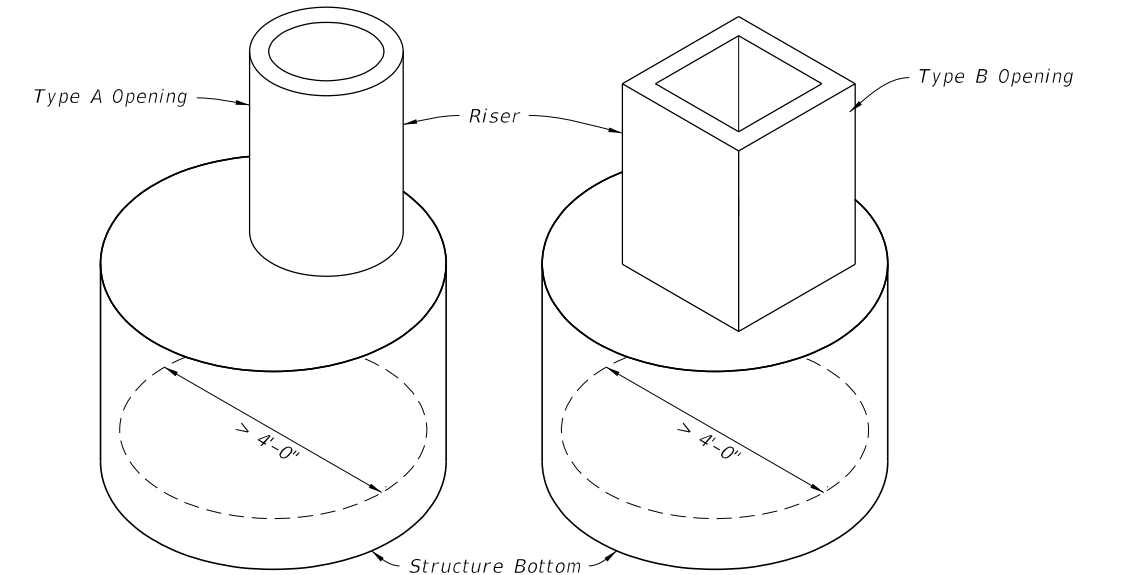
GENERAL NOTES:

1. Work this Index with Specification 425 and Index 425-001.
2. Type P standard structure bottoms are 4'-0" diameter and smaller (Alt. A) and 3'-6" square (Alt. B) . Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
3. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (Alt. B) with reinforced concrete only.
4. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
5. Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
8. Use straight embedment reinforcement in top and bottom slabs ,except when ACI hooks are specifically required.
9. Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on skew with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the Alt. A structure bottoms when used with the Type B risers. Reinforce each fillet with two #5 bars.
10. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This Note applies to this Index only.

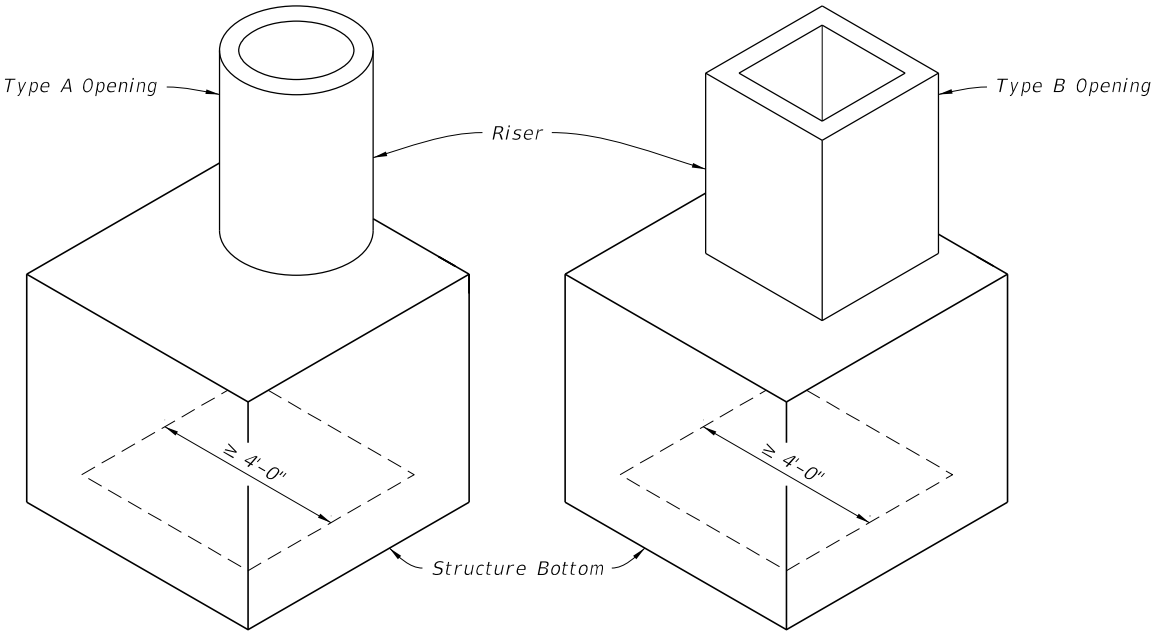
REINFORCEMENT NOTES:

1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 36"diameter ASTM C478 units.
3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
4. Cut or bend reinforcement at pipe openings to maintain cover.
5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

| TABLE OF CONTENTS: |                                     |
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| Sheet              | Description                         |
| 1                  | General Notes and Contents          |
| 2                  | Dimensional and Reinforcing Details |
| 3                  | Tables 1, 2, 3, and 4               |
| 4                  | Tables 5 and 6                      |

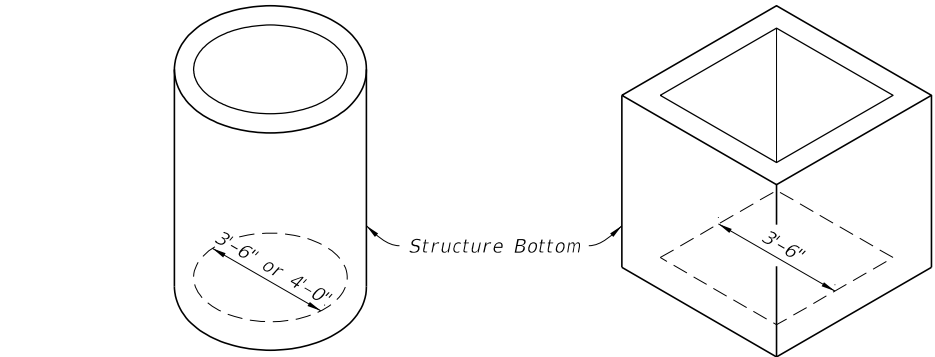


ALTERNATE A

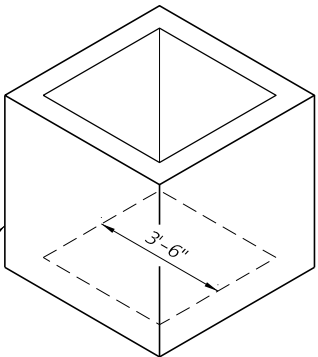


ALTERNATE B

TYPE J



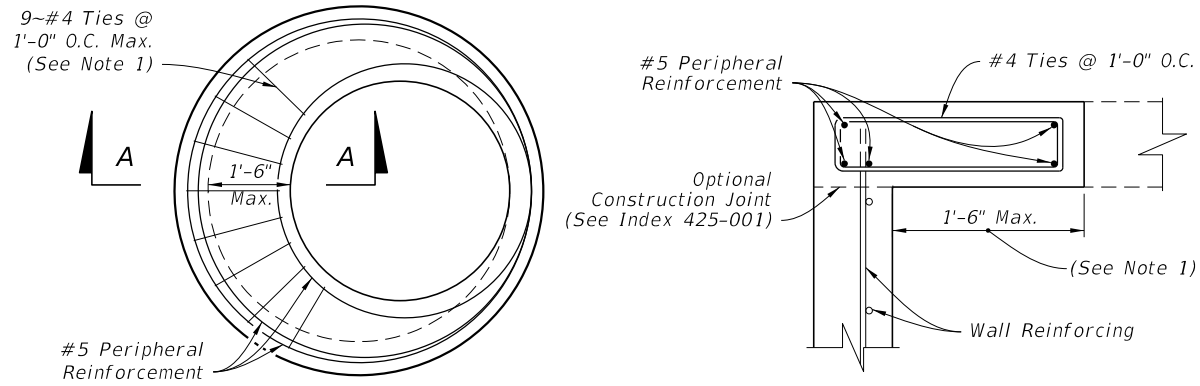
ALTERNATE A



ALTERNATE B

TYPE P

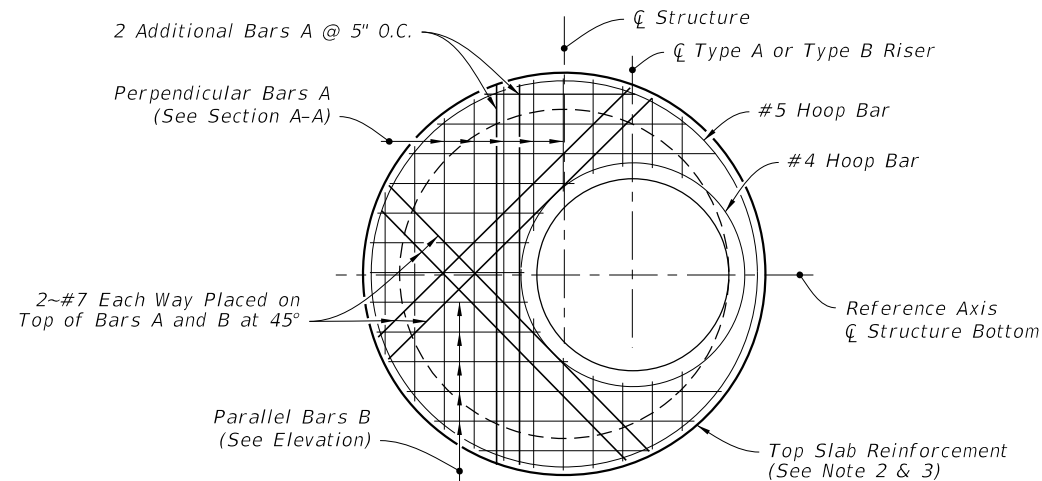
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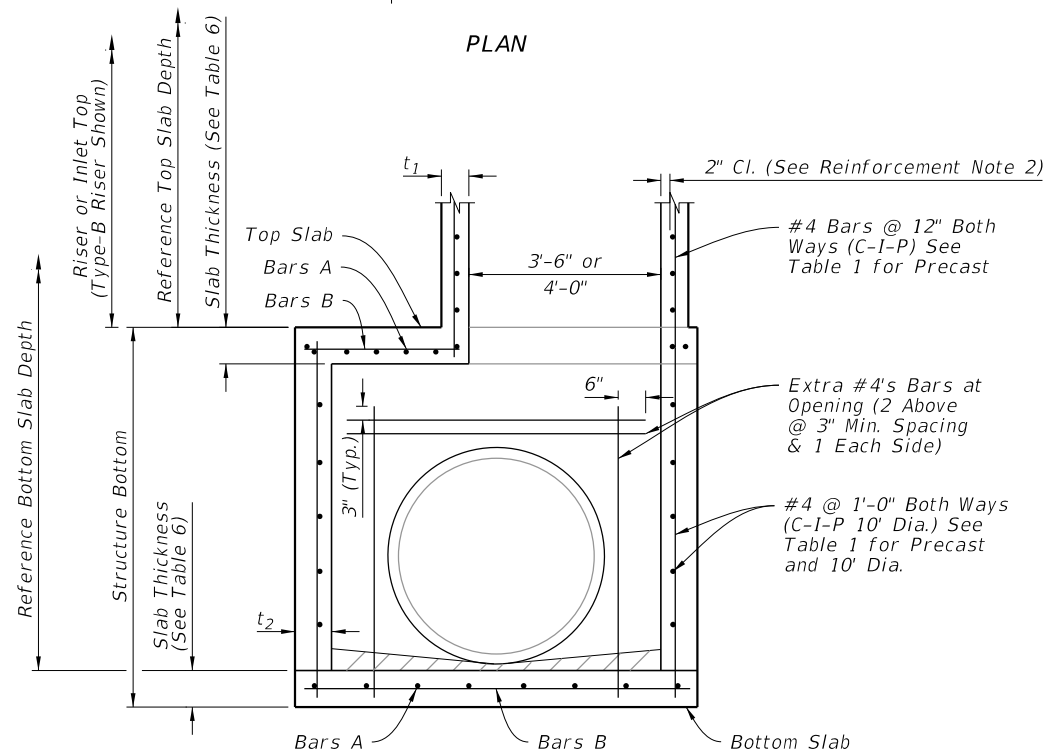
PLAN

SECTION A-A

**SPECIAL TOP SLAB**

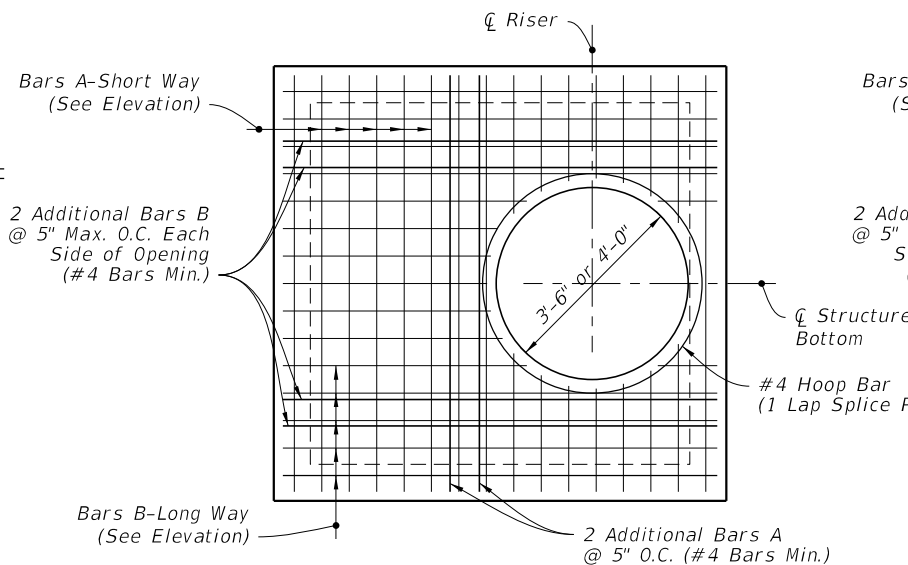


PLAN



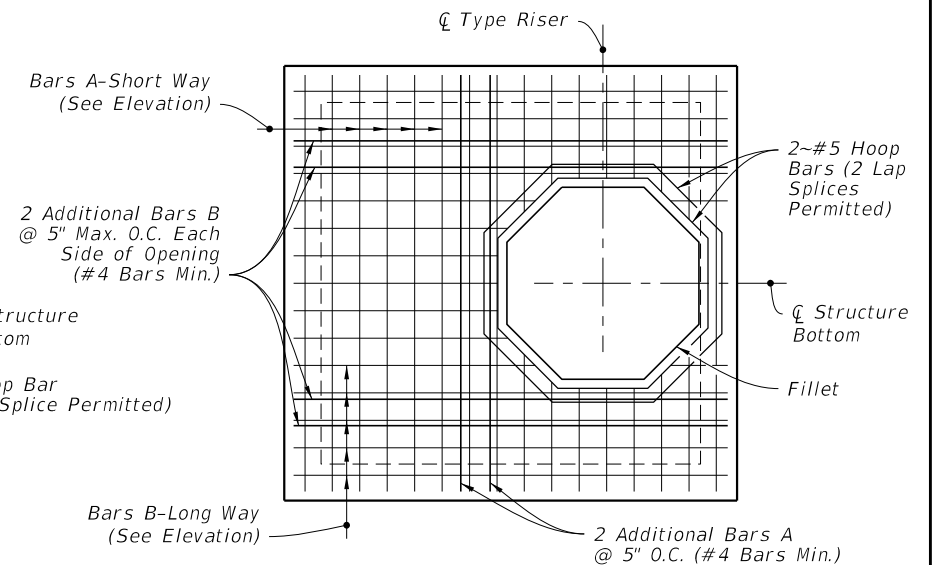
ELEVATION

**TYPE J BOTTOM - ALTERNATE A**



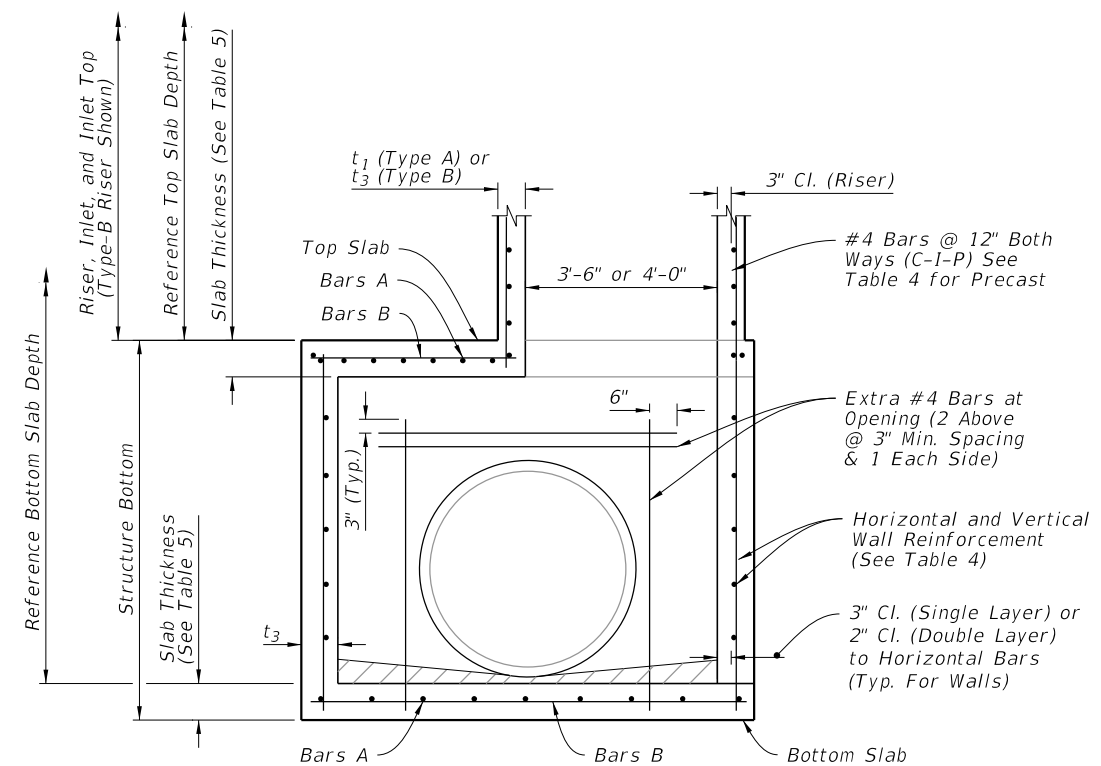
TYPE A - ROUND RISER OPENING

PLAN



TYPE B - SQUARE RISER OPENING

PLAN



ELEVATION

**TYPE J BOTTOM - ALTERNATE B**

**ALTERNATE A NOTES:**

1. Rotate #4 Bars as required to maintain cover.
2. Construct the top or riser of the structure according to the top slab to the "Special Top Slab" details, when the inside diameter of a round structure is not more than 1'-6" larger than the opening in the riser or top slab.
3. Alternate A slab reinforcing not applicable for Type A, B, C, D & E Ditch Bottom Inlets or Type S & V Gutter Inlets. See Indexes 425-040, 425-041, 425-050, 425-051, and 425-052.

**DIMENSIONAL AND REINFORCING DETAILS**

|                              |              |                                      |                                |                  |                 |
|------------------------------|--------------|--------------------------------------|--------------------------------|------------------|-----------------|
| LAST<br>REVISION<br>11/01/20 | DESCRIPTION: | FDOT<br>FY 2027-28<br>STANDARD PLANS | STRUCTURE BOTTOMS TYPE J AND P | INDEX<br>425-010 | SHEET<br>2 of 4 |
|------------------------------|--------------|--------------------------------------|--------------------------------|------------------|-----------------|

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| TABLE 1 - ALTERNATE A - STRUCTURES |                               |                                       |                                   |                                          |                                  |                                   |                                          |                                           |                                              |
|------------------------------------|-------------------------------|---------------------------------------|-----------------------------------|------------------------------------------|----------------------------------|-----------------------------------|------------------------------------------|-------------------------------------------|----------------------------------------------|
| TYPE                               | STRUCTURE/RISER DIAMETER (ft) | CAST-IN-PLACE ITEMS CLASS II CONCRETE |                                   |                                          | PRECAST ITEMS                    |                                   |                                          |                                           |                                              |
|                                    |                               | CLASS II CONCRETE                     |                                   |                                          | ASTM C478                        |                                   |                                          |                                           |                                              |
|                                    |                               | t <sub>1</sub><br>RISER<br>(in.)      | t <sub>2</sub><br>BOTTOM<br>(in.) | A <sub>S</sub><br>(in <sup>2</sup> /ft.) | t <sub>1</sub><br>RISER<br>(in.) | t <sub>2</sub><br>BOTTOM<br>(in.) | A <sub>S</sub><br>(in <sup>2</sup> /ft.) | t <sub>1</sub> or t <sub>2</sub><br>(in.) | A <sub>2</sub> ***<br>(in <sup>2</sup> /ft.) |
| P                                  | 3'-6"                         | 6                                     | 8                                 | 0.20                                     | 6                                | 8                                 | 0.20                                     | 4**                                       | 0.105                                        |
| P                                  | 4'-0"                         | 6                                     | 8                                 | 0.20                                     | 6                                | 8                                 | 0.20                                     | 5**                                       | 0.120                                        |
| J                                  | 5'-0"                         | -                                     | 8                                 | 0.20                                     | -                                | 8                                 | 0.20                                     | 6**                                       | 0.150                                        |
| J                                  | 6'-0"                         | -                                     | 8                                 | 0.20                                     | -                                | 8                                 | 0.20                                     | 6                                         | 0.180                                        |
| J                                  | 7'-0"                         | -                                     | 8                                 | 0.20                                     | -                                | 8                                 | 0.20                                     | 7                                         | 0.210                                        |
| J                                  | 8'-0"                         | -                                     | 8                                 | 0.20                                     | -                                | 8                                 | 0.20                                     | 8                                         | 0.240                                        |
| J                                  | 10'-0"                        | -                                     | 10                                | 0.40##                                   | -                                | 10                                | 0.40##                                   | 10                                        | 0.300                                        |
| J                                  | 12'-0"                        | -                                     | 10                                | 0.40##                                   | -                                | 12                                | 0.40##                                   | 12                                        | 0.360                                        |

t<sub>1</sub> and t<sub>2</sub>- Wall Thickness.

A<sub>S</sub>- Vertical and horizontal areas of reinforcement.

##Provide 0.20 eq. in.<sup>2</sup>/ft. at each face, 12" max. bar spacing.

\*\*Modified minimum wall thickness.

\*\*\*Min. total circumferential reinforcement for continuous steel hoops:

A<sub>2</sub> = 0.40 sq. in. for riser section height equal or less than 2'-0" (2 hoop min.)

A<sub>2</sub> = 0.60 sq. in. for riser section height more than 2'-0" up to 4'-0" (3 hoop min.)

Areas of reinforcing for precast items are based on Grade 60 reinforcing.

No reduction in the area of reinforcement is allowed for welded wire fabric in Table 1.

Area of vertical reinforcing may be reduced in accordance with ASTM C478.

| TABLE 3 - REINFORCING SCHEDULE |                                                          |                  |                 |              |
|--------------------------------|----------------------------------------------------------|------------------|-----------------|--------------|
| SCHEDULE                       | GRADE 60 BARS OR 65 KSI & 70 KSI WELDED WIRE REINFORCING |                  |                 |              |
|                                | GRADE 60 AREA (in <sup>2</sup> /ft)                      | MAXIMUM SPACING  |                 |              |
|                                |                                                          | GR 60 BARS (in.) | WWR EQUIV. AREA |              |
|                                |                                                          |                  | 65 KSI (in.)    | 70 KSI (in.) |
| A12                            | 0.20                                                     | 12               | 8               | 8            |
| A6                             | 0.20                                                     | 6                | 5               | 4½           |
| B10                            | 0.24                                                     | 10               | 8               | 7½           |
| B5.5                           | 0.24                                                     | 5½               | 5               | 4            |
| C6.5                           | 0.37                                                     | 6½               | 6               | 5            |
| C3.5                           | 0.37                                                     | 3½               | 3               | 2½           |
| D7                             | 0.53                                                     | 7                | 6               | 5            |
| D4.5                           | 0.53                                                     | 4½               | 4               | 3½           |
| E5                             | 0.73                                                     | 5                | 4               | 4            |
| E3                             | 0.73                                                     | 3                | 3               | 3            |
| F5                             | 1.06                                                     | 5                | 4               | 4            |
| F3.5                           | 1.06                                                     | 3½               | 3               | 3            |
| G5                             | 1.45                                                     | 5                | 4               | 4            |
| G.3.5                          | 1.45                                                     | 3½               | 3               | 3            |
| H4                             | 1.75                                                     | 4                | 3               | 3            |

| TABLE 2 - ALTERNATE B SQUARE AND RECTANGULAR STRUCTURES |                  |                 |                                  |               |
|---------------------------------------------------------|------------------|-----------------|----------------------------------|---------------|
| TYPE                                                    | WALL LENGTH (FT) | MAX. DEPTH (FT) | WALL THICKNESS (t <sub>3</sub> ) |               |
|                                                         |                  |                 | C-I-P (in.)                      | PRECAST (in.) |
| P                                                       | ≤ 3'-6"          | 40              | 6 Riser<br>8 Bottom              | 6             |
| J                                                       | 4'-0"            | 40              | 8                                | 6             |
| J                                                       | 5'-0"            | 22              | -                                | 6             |
| J                                                       | 6'-0"            | 15              | -                                | 6             |
| J                                                       | 5'-0" to 9'-0"   | 40              | 8                                | 8             |
| J                                                       | 10'-0"           | 26              | 8                                | 8             |
| J                                                       | 10'-0" to 12'-0" | 40              | 10                               | 9             |
| J                                                       | 16'-0"           | 35              | -                                | 9             |
| J                                                       | 16'-0"           | 40              | 10                               | 10            |
| J                                                       | 20'-0"           | 25              | -                                | 9             |
| J                                                       | 20'-0"           | 30              | 10                               | 10            |

See Table 4 for Reinforcing Schedule.

| TABLE 4 - WALL DESIGNS - RECTANGULAR STRUCTURES |          |                        |              |                |                             |          |                             |              |                |             |             |         |     |    |
|-------------------------------------------------|----------|------------------------|--------------|----------------|-----------------------------|----------|-----------------------------|--------------|----------------|-------------|-------------|---------|-----|----|
| VERTICAL REINFORCING                            |          | HORIZONTAL REINFORCING |              | WALL THICKNESS | VERTICAL REINFORCING        |          | HORIZONTAL REINFORCING      |              | WALL THICKNESS |             |             |         |     |    |
| WALL DEPTH                                      | SCHEDULE | WALL DEPTH             | SCHEDULE     |                | WALL DEPTH                  | SCHEDULE | WALL DEPTH                  | SCHEDULE     |                |             |             |         |     |    |
| SIZE: 3'-6" & RISER                             |          |                        |              |                | SIZE: 10'-0" (Precast Only) |          |                             |              |                |             |             |         |     |    |
| ≥1.17' - 40'                                    | A12      | ≥1.17' < 10'           | B10          | 6"/8"          |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
|                                                 |          | 10' < 18'              | B5.5         | 6"/8"          | 26' - 40'                   | D7       | D7                          | 26' - 40'    | F5             | F5          | 9"          |         |     |    |
|                                                 |          | 18' < 29'              | C6.5         | 6"/8"          | SIZE: 12'-0"                |          |                             |              |                |             |             |         |     |    |
|                                                 |          | 29' - 40'              | C3.5         | 6"/8"          |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
| SIZE: 4'-0"                                     |          |                        |              |                | ≥1.17' < 14'                | B10      | B10                         | ≥1.17' < 10' | C6.5           | C6.5        | 10"         |         |     |    |
| ≥1.17' - 40'                                    | A12      | ≥1.17' < 6'            | B10          | 6"/8"          | 14' < 25'                   | C6.5     | C6.5                        | 10' < 17'    | D7             | D7          | 10"         |         |     |    |
|                                                 |          | 6' < 10'               | B5.5         | 6"/8"          | 25' - 40'                   | D7       | D7                          | 17' < 24'    | E5             | E5          | 10"         |         |     |    |
|                                                 |          | 10' < 20'              | C6.5         | 6"/8"          |                             |          |                             | 24' - 40'    | F5             | F5          | 10"         |         |     |    |
|                                                 |          | 20' < 28'              | C3.5         | 6"/8"          | SIZE: 12'-0" (Precast Only) |          |                             |              |                |             |             |         |     |    |
|                                                 |          | 28' - 40'              | D4.5         | 6"/8"          |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
| SIZE: 5'-0"                                     |          |                        |              |                | ≥1.17' < 12'                | B10      | B10                         | ≥1.17' < 10' | D7             | D7          | 9"          |         |     |    |
| ≥1.17' - 40'                                    | A12      | ≥1.17' < 5'            | B5.5         | 6"/8"          | 12' < 24'                   | C6.5     | C6.5                        | 10' < 17'    | D4.5           | D4.5        | 9"          |         |     |    |
|                                                 |          | 5' < 9'                | C6.5         | 6"/8"          | 24' - 40'                   | D7       | D7                          | 17' < 23'    | E5             | E5          | 9"          |         |     |    |
|                                                 |          | 9' < 15'               | C3.5         | 6"/8"          |                             |          |                             | 23' < 32'    | F5             | F5          | 9"          |         |     |    |
|                                                 |          | 15' < 22'              | D4.5         | 6"/8"          |                             |          |                             | 32' - 40'    | G5             | G5          | 9"          |         |     |    |
|                                                 |          | 22' - 40'              | E3           | 8"             | SIZE: 16'-0"                |          |                             |              |                |             |             |         |     |    |
| SIZE: 6'-0"                                     |          |                        |              |                |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
| ≥1.17' < 26'                                    | A12      | ≥1.17' < 9'            | C3.5         | 6"/8"          | ≥1.17' < 11'                | C6.5     | C6.5                        | ≥1.17' < 13' | D7             | D7          | 10"         |         |     |    |
|                                                 |          | 9' < 15'               | D4.5         | 6"/8"          | 11' < 20'                   | D7       | D7                          | 13' < 20'    | E5             | E5          | 10"         |         |     |    |
|                                                 |          | 15' < 26'              | E3           | 8"             | 20' < 28'                   | E5       | E5                          | 20' < 28'    | F5             | F5          | 10"         |         |     |    |
|                                                 | Inside   | Outside                |              | Inside         | Outside                     |          |                             | 28' - 40'    | F5             | F5          | 10"         |         |     |    |
| 26' - 40'                                       | A12      | A12                    | 26' - 40'    | D7             | D7                          | 8"       | SIZE: 16'-0" (Precast Only) |              |                |             |             |         |     |    |
| SIZE: 7'-0"                                     |          |                        |              |                |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
|                                                 | Inside   | Outside                |              | Inside         | Outside                     |          |                             | ≥1.17' < 10' | C6.5           | C6.5        | ≥1.17' < 9' | D7      | D7  | 9" |
| ≥1.17' < 25'                                    | A12      | A12                    | ≥1.17' < 7'  | B10            | B10                         | 8"       | 10' < 18'                   | D7           | D7             | 9' < 13'    | D4.5        | D4.5    | 9"  |    |
| 26' - 40'                                       | B10      | B10                    | 7' < 10'     | B5.5           | B5.5                        | 8"       | 18' < 25'                   | E5           | E5             | 13' < 19'   | E5          | E5      | 9"  |    |
|                                                 |          |                        | 10' < 20'    | C6.5           | C6.5                        | 8"       | 25' - 35'                   | F5           | F5             | 19' < 27'   | F5          | F5      | 9"  |    |
|                                                 |          |                        | 20' < 30'    | D7             | D7                          | 8"       |                             |              |                | 27' - 35'   | G5          | G5      | 9"  |    |
|                                                 |          |                        | 30' - 40'    | E5             | E5                          | 8"       | SIZE: 20'-0"                |              |                |             |             |         |     |    |
| SIZE: 8'-0"                                     |          |                        |              |                |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
|                                                 | Inside   | Outside                |              | Inside         | Outside                     |          | ≥1.17' < 10'                | C6.5         | C6.5           | ≥1.17' < 8' | D7          | D7      | 10" |    |
| ≥1.17' < 20'                                    | A12      | A12                    | ≥1.17' < 6'  | B5.5           | B5.5                        | 8"       | 10' < 17'                   | D7           | D7             | 8' < 12'    | E5          | E5      | 10" |    |
| 20' - 40'                                       | C6.5     | C6.5                   | 6' < 13'     | C6.5           | C6.5                        | 8"       | 17' - 30'                   | E5           | E5             | 12' < 20'   | F5          | F5      | 10" |    |
|                                                 |          |                        | 13' < 22'    | D7             | D7                          | 8"       |                             |              |                | 20' - 30'   | G5          | G5      | 10" |    |
|                                                 |          |                        | 22' < 31'    | E5             | E5                          | 8"       | SIZE: 20'-0" (Precast Only) |              |                |             |             |         |     |    |
|                                                 |          |                        | 31' - 40'    | F5             | F5                          | 8"       |                             | Inside       | Outside        |             | Inside      | Outside |     |    |
| SIZE: 9'-0"                                     |          |                        |              |                | ≥1.17' < 8'                 | C6.5     | C6.5                        | ≥1.17' < 8'  | D4.5           | D4.5        | 9"          |         |     |    |
|                                                 | Inside   | Outside                |              | Inside         | Outside                     |          | 8' < 13'                    | D7           | D7             | 8' < 12'    | E5          | E5      | 9"  |    |
| ≥1.17' < 12'                                    | A12      | A12                    | ≥1.17' < 8'  | C6.5           | C6.5                        | 8"       | 13' - 25'                   | E5           | E5             | 12' < 19'   | F5          | F5      | 9"  |    |
| 12' < 28'                                       | C6.5     | C6.5                   | 8' < 15'     | D7             | D7                          | 8"       |                             |              |                | 19' - 25'   | G5          | G5      | 9"  |    |
| 28' - 40'                                       | D7       | D7                     | 15' < 23'    | E5             | E5                          | 8"       |                             |              |                |             |             |         |     |    |
|                                                 |          |                        | 23' - 40'    | F5             | F5                          | 8"       |                             |              |                |             |             |         |     |    |
| SIZE: 10'-0"                                    |          |                        |              |                |                             | Inside   | Outside                     |              | Inside         | Outside     |             |         |     |    |
| ≥1.17' < 10'                                    | B10      | B10                    | ≥1.17' < 10' | D7             | D7                          | 8"       |                             |              |                |             |             |         |     |    |
| 10' < 21'                                       | C6.5     | C6.5                   | 10' < 17'    | E5             | E5                          | 8"       |                             |              |                |             |             |         |     |    |
| 21' < 26'                                       | D7       | D7                     | 17' < 26'    | F5             | F5                          | 8"       |                             |              |                |             |             |         |     |    |
| 26' - 40'                                       | C6.5     | C6.5                   | 26' - 40'    | F5             | F5                          | 10"      |                             |              |                |             |             |         |     |    |

**TABLE 4 NOTES:**

- Wall depth is measured to the top of the bottom slab for walls and to the top of the intermediate slab for risers.
- Wall height is the distance between top of lower slab to top of upper slab. Maximum wall height is 12' for wall lengths exceeding 5', or 10' for wall lengths exceeding 12'.
- Wall lengths exceeding 6'-0" require two layers of reinforcement (See Table 4) with 2" of cover from the horizontal bars.

TABLE 4 NOTES:

- Wall depth is measured to the top of the bottom slab for boxes and to the top of the intermediate slab for risers.
- Wall height is the distance between top of lower slab to bottom of upper slab. Maximum wall height is 12' for wall lengths exceeding 5', or 10' for wall lengths exceeding 12'.
- Wall lengths exceeding 6'-0" require two layers of reinforcing (See Table 4) with 2" of cover from the horizontal bars to the inside and outside faces for each layer.
- Wall lengths exceeding the dimensions or depths shown in Table 4, or 12'-0" diameter require a special design.
- Wall thickness and reinforcing for rectangular structures is based on the longer wall length.

TABLES 1, 2, 3, AND 4

|                           |          |              |                                                                                                                    |                                |                  |                 |
|---------------------------|----------|--------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|-----------------|
| LAST REVISION<br>11/01/20 | REVISION | DESCRIPTION: |  FY 2027-28<br>STANDARD PLANS | STRUCTURE BOTTOMS TYPE J AND P | INDEX<br>425-010 | SHEET<br>3 of 4 |
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