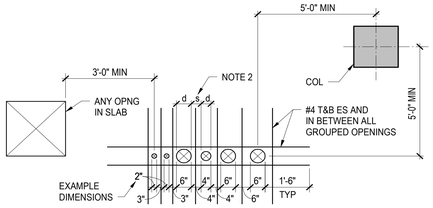


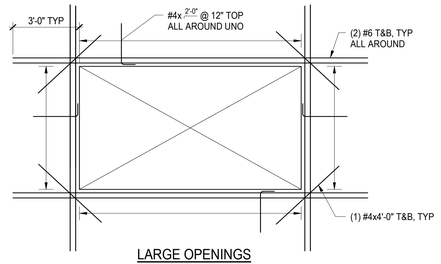
GROUPED OPENINGS IN SLAB

NON-GROUPED OPENINGS IN SLAB

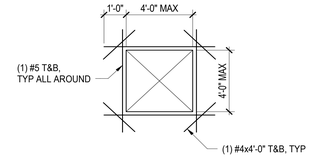
NOTES:

1. ADDED REINFORCING SHOWN APPLIES TO GROUPS OF OPENINGS 12" OR SMALLER. GROUPED OPENINGS ARE DEFINED BY MULTIPLE OPENINGS THAT ARE LOCATED WITHIN THREE TIMES THE DIAMETER OF SMALLER ADJACENT OPENING CLEAR APART, OR A MINIMUM OF 9-INCHES.
2. "s" MUST BE GREATER THAN OR EQUAL TO THE SMALLEST "d" (OPENING) DIMENSION OF ADJACENT SLEEVES. "s" IS EQUAL TO OR GREATER THAN 3-INCHES IN ALL CASES.
3. SEE THE "TYPICAL POST-TENSION CONCRETE SLAB DETAILS" FOR OTHER TENDON PLACEMENT AND REINFORCING REQUIREMENTS.
4. OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED FOR REVIEW AT THE SAME TIME AS SLAB SHOP DRAWINGS. REINFORCING OTHER THAN THAT SHOWN MAY BE REQUIRED.
5. WHERE A TENDON MUST PASS BETWEEN OPENINGS, "s," AT THAT LOCATION, SHALL BE INCREASED TO 6-INCH MINIMUM.
6. WHERE THESE CONDITIONS CANNOT BE MET, SUBMIT TO STRUCTURAL ENGINEER FOR REVIEW.

4 TYPICAL ADDED REINFORCEMENT AT GROUPED OPENINGS IN SLAB



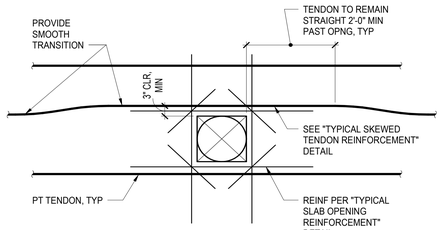
LARGE OPENINGS



SMALL OPENINGS

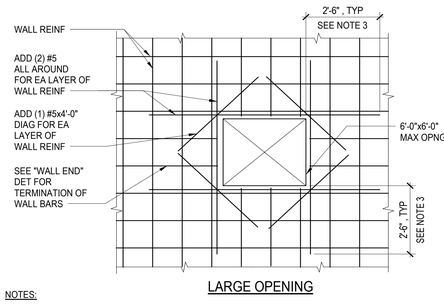
NOTES:

1. LARGE OPENING DETAIL APPLIES AT ALL SLAB OPENINGS WITH ANY SIDE GREATER THAN 4'-0" IN WIDTH.
2. WHERE OPENING IS FLUSH WITH WALL OR BEAM BELOW, REINFORCING MAY BE EXCLUDED ON THAT SIDE OF THE OPENING.
3. HOOK INTERRUPTED REINFORCING.

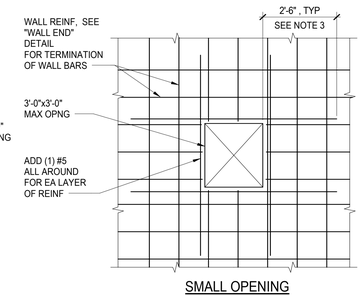


8 TYPICAL TENDON CURVATURE AT OPENING

9 TYPICAL SLAB OPENING REINFORCEMENT



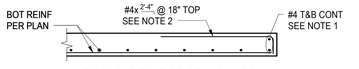
LARGE OPENING



SMALL OPENING

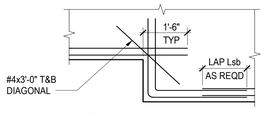
NOTES:

1. OMIT ADDED REINFORCEMENT NOTED ABOVE WHEN SPECIAL REINFORCEMENT, INDICATED ON PLANS OR DETAILS, EXCEEDS THIS REINFORCEMENT.
2. CONTRACTOR SHALL VERIFY ALL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS WITH THE STRUCTURAL ENGINEER BEFORE PLACEMENT.
3. WHEN EDGE OF CONCRETE CLOSE TO OPENING WILL NOT ALLOW THIS LENGTH, CONSULT STRUCTURAL ENGINEER BEFORE CONSTRUCTION.



AT MILD REINFORCED SLABS

AT POST-TENSIONED SLABS

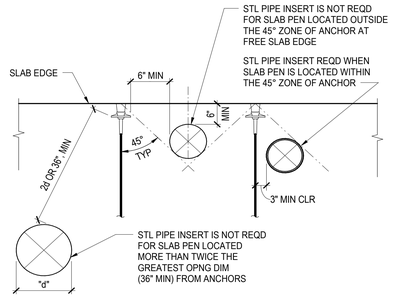


CONTINUOUS BARS AT CORNERS

NOTES:

1. PROVIDE #4 TOP AND BOTTOM CONTINUOUS BARS AT ALL SLAB EDGES.
2. FOR LOCATIONS WITH HOOKED TOP BAR PERPENDICULAR TO SLAB EDGE PROVIDED ON PLANS, THIS BAR MAY BE OMITTED.

13 TYPICAL EDGE OF SLAB



NOTES:

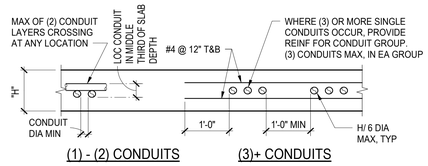
1. SEE "TYPICAL ADDED REINFORCEMENT AT GROUPED OPENINGS IN SLAB" FOR ADDITIONAL SLAB PENETRATION CRITERIA, REINFORCEMENT, AND SUBMITTAL REQUIREMENTS.

18 TYP SLAB PENETRATION AT PT ANCHORS

14 TYPICAL CONCRETE WALL OPENING REINFORCEMENT

NOTES:

1. DO NOT PLACE CONDUIT WITHIN 4'-0" OF COLUMN FACE OR THROUGH SLAB SHEAR REINFORCING STUD RAILS.
2. KEEP CONDUIT AT LEAST 2'-0" AWAY FROM POST-TENSIONED TENDON ANCHORAGE .
3. MAINTAIN A MINIMUM HORIZONTAL CLEARANCE FROM PARALLEL PT TENDONS OF 1'-0" AND A MINIMUM VERTICAL CLEARANCE OF ONE INCH FROM PT TENDONS BEING CROSSED.
4. CONGESTED AREAS OF CONDUIT THAT DO NOT MEET THIS CRITERIA SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ADDITIONAL REINFORCEMENT MAY BE NECESSARY.
5. DO NOT TIE CONDUIT DIRECTLY TO REINFORCEMENT PARALLEL TO CONDUIT. PROVIDE MINIMUM db, BUT NOT LESS THAN ONE INCH CLEAR BETWEEN CONDUIT AND REINFORCEMENT.
6. HORIZONTAL OR VERTICAL CONDUIT SHALL NOT BE PLACED IN CONCRETE COLUMNS OR WALLS WITHOUT PRIOR APPROVAL OF STRUCTURAL ENGINEER.



(1) - (2) CONDUITS (3)+ CONDUITS

19 TYPICAL CONDUIT PLACEMENT CRITERIA

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No. 12385783-2203
DAVID CHARLES FIELDS
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04/06/24

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checked by
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date 04/08/2024

revisions:

no.	date	by
2	04/08/2024	IFC SET 1 OF 3
1	11/18/2022	95% CD

ISSUED FOR CONSTRUCTION
SET 1 OF 3
04/08/2024

TYPICAL OPENINGS AND EMBEDMENTS IN CONCRETE

S4.07