

Structural Engineering Design Guide US



TECHNICAL BULLETIN . ENGINEERING DESIGN

1.05.01

U.S. PRESCRIPTIVE ENGINEERING SPECIFICATIONS

The Prescriptive Engineering provided herein consists primarily of prescriptive engineering tables and guides to wall size and steel reinforcement schedules. The majority of this information is geared toward one- and two-family dwellings and small commercial applications with design criteria that fall within the prescriptive tables design criteria. Any building or wall outside the scope of the criteria must be designed and evaluated by a structural engineer of record.

Fox Blocks does not provide project specific engineering or drawings, we simply provide formwork for a cast-in-place concrete wall construction product. The user of this guide is responsible for its application.

NOTICE TO ALL USERS

READ THIS FIRST

DISCLAIMER AND LIMITATION OF LIABILITY

TERMS AND CONDITIONS: By using this Fox Blocks' prescriptive engineering design guide, the user acknowledges and accepts the following terms and conditions:

- 1) Fox Blocks is the manufacturer of stay-in-place plain or steel reinforced concrete wall. The Fox Blocks formwork is not a structural component of the wall. The plain or steel reinforced concrete wall is the structural component.
- 2) This Fox Blocks prescriptive engineering guide shall be used as a reference guide only. It is not to be used as a particular project specification or drawing detail. It may be used for estimating or as a guide for design or construction of the concrete wall formed with Fox Blocks ICF. It is the user's responsibility to ensure the information provided meets local building code requirements and construction practices by consulting with local building officials as well as design and construction professionals with appropriate structural knowledge.
- 3) Fox Blocks reserves the right to make changes from time-to-time to the information provided herein without notice and assumes no liability in connection with the use of this prescriptive engineering guide and the structural wall reinforcing design tables contained herein.
- 4) The structural wall reinforcing design tables contained within this prescriptive engineering guide have been prepared in accordance with the ACI 318 design code and the International Building and Residential Codes. The intent of these tables is to enable competent design and building professionals to determine the wall thickness and reinforcement requirements for walls specifically constructed with Fox Blocks ICFs. The design of these tables represents the specific geometry and reinforcement placement unique to Fox Blocks.

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- 5) The structural wall reinforcing design tables contained within this prescriptive engineering guide apply to one and two family residential and some light commercial buildings. It is the responsibility of the user(s) involved to review the applicable design criteria of these tables and adhere to the notes associated with these tables. Airlite Plastics Co. (d/b/a Fox Blocks) , its shareholders, directors, officers, employees, agents, affiliates, subsidiaries, successors and assigns whatsoever for anyone's use, misuse, interpretation or misinterpretation of these tables or the associated notes.
- 6) If the proposed construction varies from or does not meet the design criteria or applicability parameters noted herein it is the responsibility of the user(s) to retain a local design professional to prepare the design of the proposed construction in accordance with the applicable design and building codes.

THE USER(S) ASSUMES ANY AND ALL RISK ARISING FROM THE USE OF THIS GUIDE OR THE TABLES (AND ASSOCIATED NOTES) CONTAINED HEREIN.

AS THESE SPECIFICATIONS ARE PRESCRIPTIVE, AIRLITE PLASTICS CO. (d/b/a FOX BLOCKS). ITS SHAREHOLDERS, DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AFFILIATES, SUBSIDIARIES, SUCCESSORS AND ASSIGNS, MAKE NO EXPRESS OR IMPLIED WARRANTY, GUARANTEE OR REPRESENTATION WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF ANY INFORMATION CONTAINED IN THIS GUIDE OR THE TABLES (AND ASSOCIATED NOTES) CONTAINED HEREIN OR WITH RESPECT TO THE FITNESS OF THAT INFORMATION FOR ANY PARTICULAR PURPOSE AND IN FACT SPECIFICALLY DISCLAIM RESPONSIBILITY FOR ANY AND ALL LIABILITY THAT MAY ARISE THEREFROM.



KENNETH D. LATHRUM & ASSOCIATES, P.C.

STRUCTURAL ENGINEERING CONSULTANTS

1901 North 81st Street - Omaha, Nebraska 68114

Phone : 402-391-5861 Fax: 402-391-5887

September 24, 2015

Fox Blocks, EPS Division of Airlite Plastics Co.
ATTN: Kelvin Doerr, P.E.
Director of Engineering and Technical Services
6110 Abbott Drive
Omaha, NE 68110

RE: Minimum Reinforcing for Fox Blocks ICF Wall System Tables

We have performed the engineering design for the following minimum reinforcing for Fox Blocks ICF Wall System Tables and Wall Details:

| | |
|--------------|---|
| Sheet No. 1: | 6" ICF Fox Blocks Foundation Walls Reinforcing |
| Sheet No. 2: | 6" ICF Fox Blocks Foundation Wall Detail |
| Sheet No. 3: | 8" ICF Fox Blocks Foundation Walls Reinforcing |
| Sheet No. 4: | 8" ICF Fox Blocks Foundation Wall Detail |
| Sheet No. 5: | 10" ICF Fox Blocks Foundation Walls Reinforcing |
| Sheet No. 6: | 10" ICF Fox Blocks Foundation Wall Detail |
| Sheet No. 7: | 12" ICF Fox Blocks Foundation Walls Reinforcing |
| Sheet No. 8: | 12" ICF Fox Blocks Foundation Wall Detail |
| Sheet No. 9: | 4" and 6" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.10: | 4" and 6" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.11: | 8" and 10" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.12: | 8" and 10" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.13: | 12" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.14: | 12" ICF Fox Blocks Above Grade Walls Reinforcing |
| Sheet No.15: | 4" to 12" ICF Fox Blocks Above Grade Wall Detail |
| Sheet No.16: | 4" to 12" ICF Fox Blocks Above Grade Wall Detail |

Sincerely,

Ing-Wah Lim
Structural Engineer



6 INCH THICK FLAT ICF FOUNDATION WALLS ^{a, b, c, d, i}

| MAXIMUM UNSUPPORTED WALL HEIGHT (FEET) | MAXIMUM UNBALANCED BACKFILL HEIGHT ^f (FEET) | MINIMUM VERTICAL REINFORCEMENT SIZE AND SPACING ^{e, h} | | |
|--|--|--|--------------------------------|----------------------------------|
| | | Soil classes ^g and design lateral soil load (psf per foot of depth) | | |
| | | GW, GP, SW and SP 30 | GM, GC, SM, SM-SC and ML 45 | SC, ML-CL and Inorganic CL 60 |
| 8' – 0" | 0 to 4 | #4 @ 48" | #4 @ 48" | #4 @ 32", #5 @ 48" |
| | 5 and 6 | #4 @ 32", #5 @ 48" | #4 @ 24", #5 @ 40" | #5 @ 32", #6 @ 40" |
| | 7 | #4 @ 24", #5 @ 40" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 8 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| 9' – 4" | 0 to 4 | #4 @ 48" | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" |
| | 5 and 6 | #4 @ 32", #5 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 7 and 8 | #5 @ 32", #6 @ 40" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| | 9 – 4" | #5 @ 24", #6 @ 32" | #5 @ 8", #6 @ 16" | #5 @ 8" |
| 10' – 0" | 0 to 4 | #4 @ 48" | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" |
| | 5 and 6 | #4 @ 32", #5 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 7 and 8 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| | 9 and 10 | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" | #5 @ 8" |
| 11 | 0 to 4 | #4 @ 40" | #4 @ 32" | #4 @ 32", #5 @ 48" |
| | 5 and 6 | #4 @ 24", #5 @ 32" | #4 @ 24", #5 @ 32" | #5 @ 24", #6 @ 32" |
| | 7 and 8 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| | 9 and 10 | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" | #6 @ 8" |
| | 11 | #5 @ 8", #6 @ 16" | #6 @ 8" | D. R. |
| 12 | 0 to 4 | #4 @ 32", #5 @ 48" | #4 @ 32", #5 @ 48" | #4 @ 24", #5 @ 40" |
| | 5 and 6 | #4 @ 24", #5 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 24", #6 @ 32" |
| | 7 and 8 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| | 9 and 10 | #5 @ 16", #6 @ 24" | #5 @ 8" | #6 @ 8" |
| | 11 and 12 | #5 @ 8" | #6 @ 8" | D. R. |

D.R. = Design required by Engineer of Record

- This table is based on concrete with a minimum specified concrete strength of 2500 psi, reinforcing steel with a minimum yield strength of 60,000 psi.
- Minimum effective depth, D (outer face of concrete to bar centerline) = 4". See wall section on Sheet No. 2.
- This table is designed with the top of wall braced by the adequate diaphragm of floor or roof structure, and the base of the wall braced by the floor slab or adequate grade beams.
- Deflection criteria: L/240, No soil surcharge. Wind load = 30 psf above grade. Maximum vertical bearing load less than 3.5 kips per foot at top of wall.
- Interpolation between rebar sizes and spacing is not permitted.
- Unbalanced back fill height is the difference in height of the exterior and interior finished ground. Where walls retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- Soil classes are in accordance with the Unified Soil Classifications System. Refer to 2015 IRC Table R405.1. The use of this table shall be prohibited for soil classifications not shown.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing – See Sheet No. 2.
- This table is not intended to prohibit the use of engineering design by Engineer of Record.

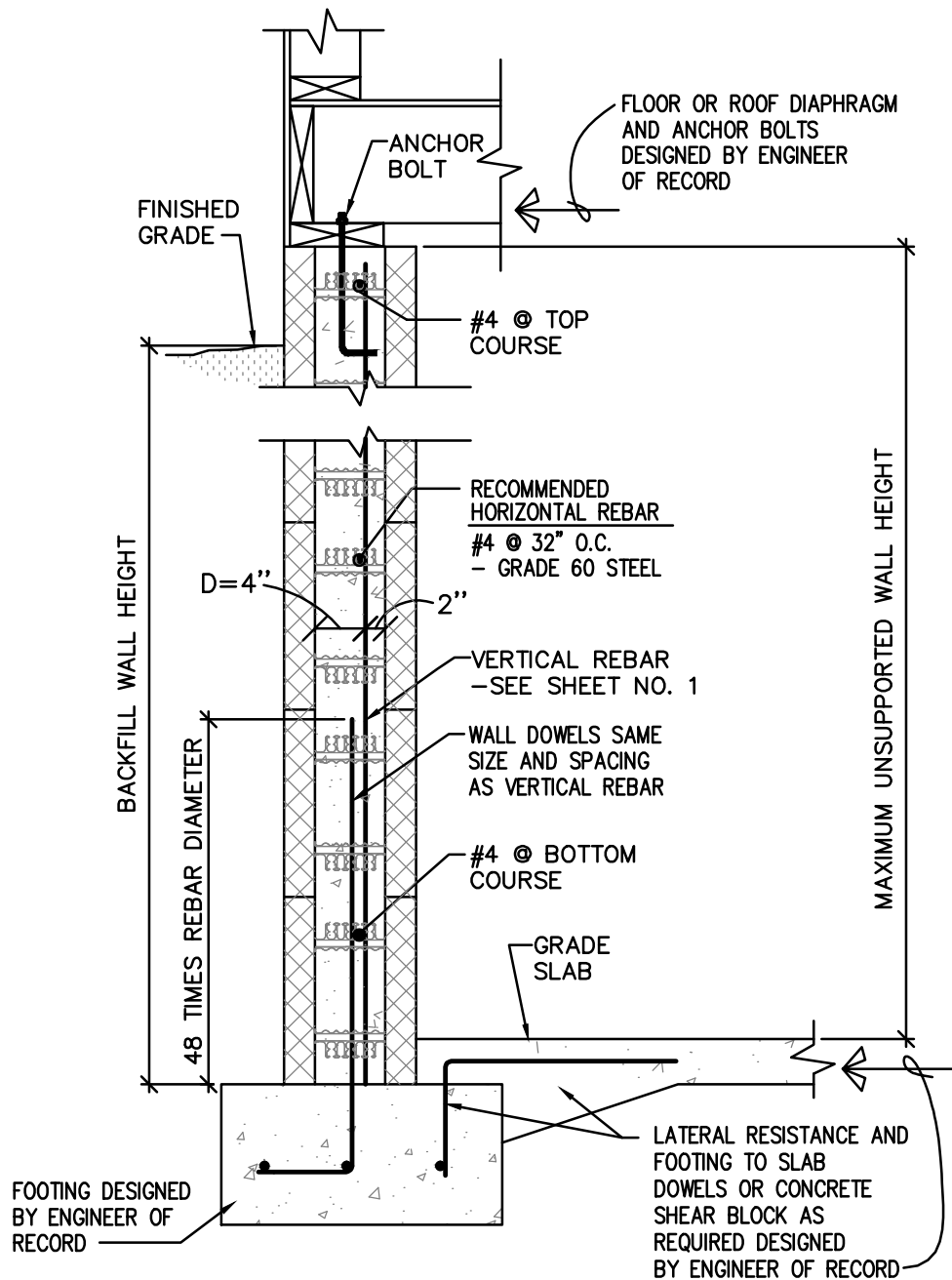


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TITLE:
**6" ICF FOX BLOCKS
FOUNDATION WALL**

DATE: SEPT. 2015

SHEET NO: 1



6" ICF WALL

8 INCH THICK FLAT ICF FOUNDATION WALLS REINFORCING ^{a, b, c, d, i}

| MAXIMUM UNSUPPORTED WALL HEIGHT (FEET) | MAXIMUM UNBALANCED BACKFILL HEIGHT ^f (FEET) | MINIMUM VERTICAL REINFORCEMENT SIZE AND SPACING ^{e, h} | | |
|--|--|--|--------------------------------|----------------------------------|
| | | Soil classes ^g and design lateral soil load (psf per foot of depth) | | |
| | | GW, GP, SW and SP 30 | GM, GC, SM, SM-SC and ML 45 | SC, ML-CL and Inorganic CL 60 |
| 8' – 0" | 0 to 4 | #4 @ 48" | #4 @ 48" | #4 @ 48" |
| | 5 and 6 | #4 @ 48" | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" |
| | 7 | #4 @ 40", #5 @ 48" | #4 @ 24", #5 @ 40" | #5 @ 32", #6 @ 40" |
| | 8 | #4 @ 32", #5 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| 9' – 4" | 0 to 4 | #4 @ 48" | #4 @ 48" | #4 @ 48" |
| | 5 and 6 | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" | #4 @ 24", #5 @ 40" |
| | 7 and 8 | #4 @ 24", #5 @ 40" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 9' – 4" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| 10' – 0" | 0 to 4 | #4 @ 48" | #4 @ 48" | #4 @ 48" |
| | 5 and 6 | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" | #4 @ 24", #5 @ 32" |
| | 7 and 8 | #4 @ 24", #5 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| | 9 and 10 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| 12 | 0 to 4 | #4 @ 48" | #4 @ 48" | #4 @ 40", #5 @ 48" |
| | 5 and 6 | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" | #5 @ 32", #6 @ 40" |
| | 7 and 8 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| | 9 and 10 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" |
| | 11 and 12 | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" | #6 @ 8" |
| 14 | 0 to 4 | #4 @ 40", #5 @ 48" | #4 @ 32", #5 @ 48" | #4 @ 32", #5 @ 48" |
| | 5 and 6 | #4 @ 32", #5 @ 48" | #5 @ 40", #6 @ 48" | #5 @ 32", #6 @ 40" |
| | 7 and 8 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| | 9 and 10 | #5 @ 16", #6 @ 24" | #6 @ 16" | #5 @ 8" |
| | 11 and 12 | #6 @ 16" | #5 @ 8" | #6 @ 8" |
| | 13 and 14 | #5 @ 8" | #6 @ 8" | D. R. |

D.R. = Design required by Engineer of Record

- This table is based on concrete with a minimum specified concrete strength of 2500 psi, reinforcing steel with a minimum yield strength of 60,000 psi.
- Minimum effective depth, D (outer face of concrete to bar centerline) = 6". See wall section on Sheet No. 4.
- This table is designed with the top of wall braced by the adequate diaphragm of floor or roof structure, and the base of the wall braced by the floor slab or adequate grade beams.
- Deflection criteria: L/240, No soil surcharge. Wind load = 30 psf above grade. Maximum vertical bearing load less than 5 kips per foot at top of wall.
- Interpolation between rebar sizes and spacing is not permitted.
- Unbalanced back fill height is the difference in height of the exterior and interior finished ground. Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- Soil classes are in accordance with the Unified Soil Classifications System. Refer to 2015 IRC Table R405.1. The use of this table shall be prohibited for soil classifications not shown.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing – See Sheet No. 4.
- This table is not intended to prohibit the use of engineering design by Engineer of Record.

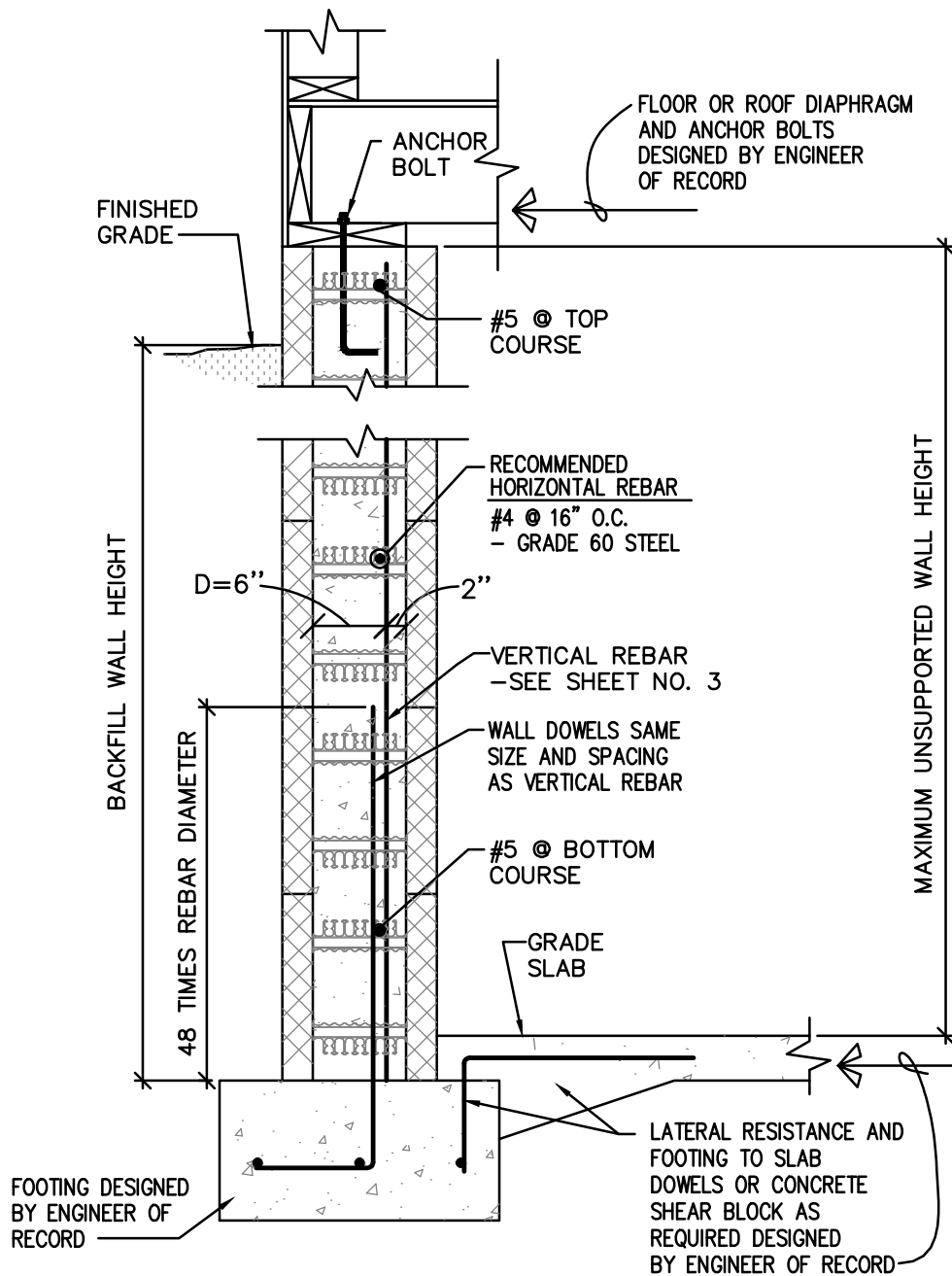


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TITLE:
**8" ICF FOX BLOCKS
FOUNDATION WALL**

DATE: SEPT. 2015

SHEET NO: 3



8" ICF WALL

10 INCH THICK FLAT ICF FOUNDATION WALLS^{a, b, c, d, i}

| MAXIMUM UNSUPPORTED WALL HEIGHT (FEET) | MAXIMUM UNBALANCED BACKFILL HEIGHT ^f (FEET) | MINIMUM VERTICAL REINFORCEMENT SIZE AND SPACING ^{e, h} | | |
|--|--|--|--------------------------------|----------------------------------|
| | | Soil classes ^g and design lateral soil load (psf per foot of depth) | | |
| | | GW, GP, SW and SP 30 | GM, GC, SM, SM-SC and ML 45 | SC, ML-CL and Inorganic CL 60 |
| 8' – 0" | 0 to 4 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 5 and 6 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 7 and 8 | #5 @ 48" | #5 @ 40" | #5 @ 32", #6 @ 40" |
| 9' – 4" | 0 to 4 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 5 and 6 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 7 and 8 | #5 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 9' – 4" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| 10' – 0" | 0 to 4 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 5 and 6 | #5 @ 48" | #5 @ 48" | #5 @ 40" |
| | 7 and 8 | #5 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 9 and 10 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| 12' – 0" | 0 to 4 | #5 @ 48" | #5 @ 48" | #5 @ 48" |
| | 5 and 6 | #5 @ 48" | #5 @ 48" | #5 @ 40" |
| | 7 and 8 | #5 @ 40" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 9 and 10 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #6 @ 16", #7 @ 24" |
| | 11 and 12 | #5 @ 16", #6 @ 24" | #6 @ 16", #7 @ 24" | #5 @ 8", #7 @ 16" |
| 14' – 0" | 0 to 6 | #5 @ 48" | #5 @ 40", #6 @ 48" | #5 @ 32", #6 @ 40" |
| | 7 and 8 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| | 9 and 10 | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" | #6 @ 16", #7 @ 24" |
| | 11 and 12 | #5 @ 16", #6 @ 24" | #5 @ 8", #6 @ 16" | #5 @ 8", #7 @ 16" |
| | 13 and 14 | #6 @ 16", #7 @ 24" | #5 @ 8", #7 @ 16" | #6 @ 8" |
| 16' – 0" | 0 to 6 | #5 @ 40", #6 @ 48" | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" |
| | 7 and 8 | #5 @ 32", #6 @ 40" | #5 @ 24", #6 @ 32" | #5 @ 16", #6 @ 24" |
| | 9 and 10 | #5 @ 16", #6 @ 24" | #6 @ 16", #7 @ 24" | #7 @ 16", #8 @ 24" |
| | 11 and 12 | #6 @ 16", #6 @ 24" | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" |
| | 13 and 14 | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" | #7 @ 8" |
| | 15 and 16 | #5 @ 8", #7 @ 16" | #7 @ 8" | D.R. |

D.R. = Design required by Engineer of Record

- This table is based on concrete with a minimum specified concrete strength of 2500 psi and reinforcing steel with yield strength of 60,000 psi.
- Minimum effective depth, D (outer face of concrete to bar centerline) = 7 5/8". See wall section on Sheet No. 6.
- This table is designed with the top of wall braced by the adequate diaphragm of floor or roof structure, and the base of the wall braced by the floor slab or adequate grade beams.
- Deflection criteria: L/240, No soil surcharge. Wind load = 30 psf above grade. Maximum vertical bearing load less than 7 kips per foot at top of wall.
- Interpolation between rebar sizes and spacing is not permitted.
- Unbalanced back fill height is the difference in height of the exterior and interior finished ground. Where walls retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- Soil classes are in accordance with the Unified Soil Classifications System. Refer to 2015 IRC Table R405.1. The use of this table shall be prohibited for soil classifications not shown.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing – See Sheet No. 6.
- This table is not intended to prohibit the use of engineering design by Engineer of Record

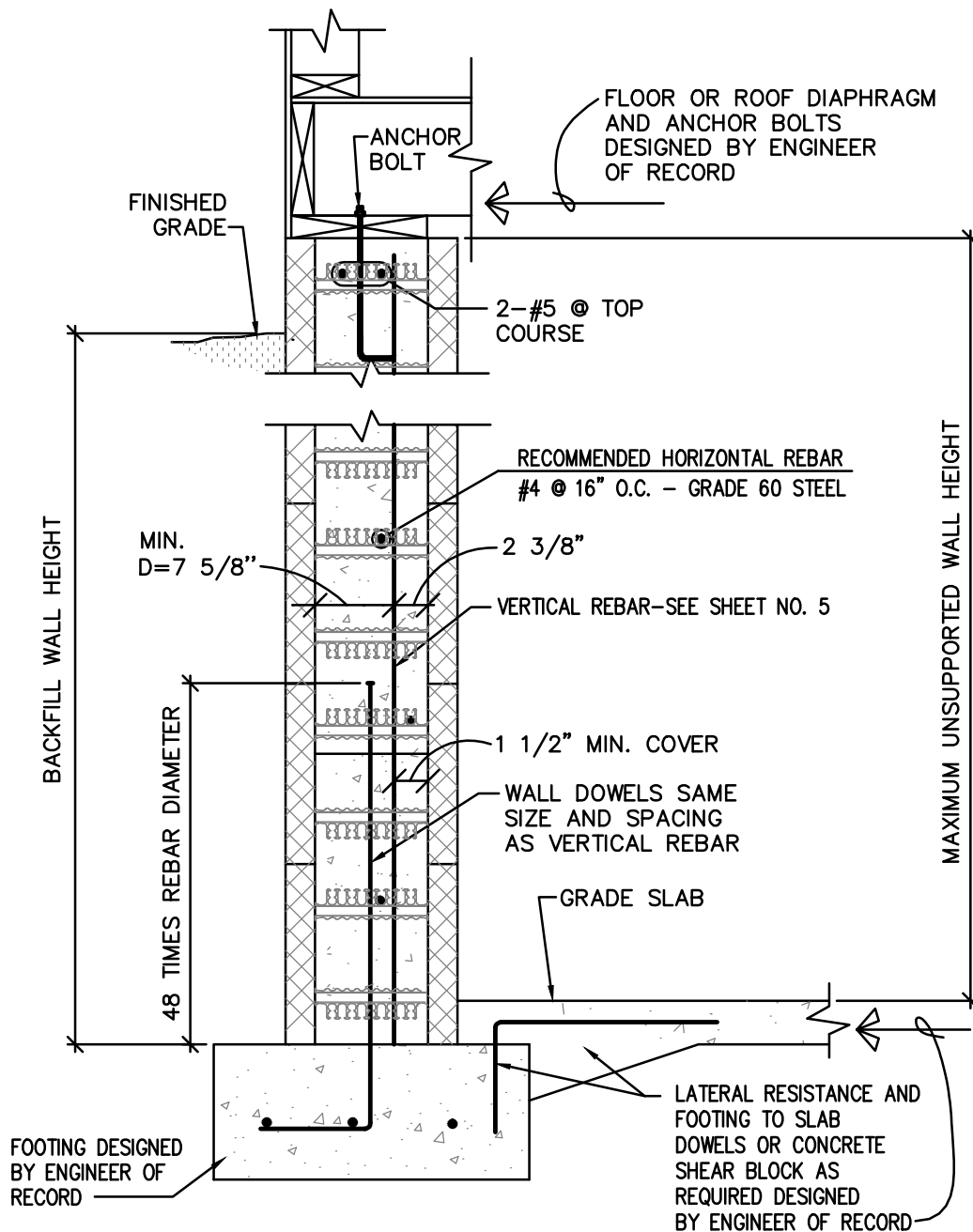


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TITLE:
10" ICF FOX BLOCKS
FOUNDATION WALL

DATE: SEPT. 2015

SHEET NO: 5



10" ICF WALL

12 INCH THICK FLAT ICF FOUNDATION WALLS ^{a, b, c, d, i}

| MAXIMUM UNSUPPORTED WALL HEIGHT (FEET) | MAXIMUM UNBALANCED BACKFILL HEIGHT ^f (FEET) | MINIMUM VERTICAL REINFORCEMENT SIZE AND SPACING ^{e, h} | | |
|--|--|--|--------------------------------|----------------------------------|
| | | Soil classes ^g and design lateral soil load (psf per foot of depth) | | |
| | | GW, GP, SW and SP 30 | GM, GC, SM, SM-SC and ML 45 | SC, ML-CL and Inorganic CL 60 |
| 10 | 0 – 6 | #5 @ 48" | #5 @ 48" | #5 @ 40" |
| | 7 – 8 | #5 @ 48" | #5 @ 40" | #5 @ 32" |
| | 9 – 10 | #5 @ 40" | #5 @ 24" | #6 @ 24" |
| 12 | 0 – 6 | #5 @ 48" | #5 @ 48" | #5 @ 40" |
| | 7 – 8 | #5 @ 40" | #5 @ 32" | #5 @ 24", #6 @ 32" |
| | 9 – 10 | #5 @ 32" | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" |
| | 11 – 12 | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" |
| 14 | 0 – 6 | #5 @ 48" | #5 @ 48" | #5 @ 40" |
| | 7 – 8 | #5 @ 40" | #5 @ 32" | #5 @ 24", #6 @ 32" |
| | 9 – 10 | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" |
| | 11 – 12 | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" | #7 @ 16", #8 @ 24" |
| | 13 – 14 | #6 @ 16", #7 @ 24" | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" |
| 16 | 0 – 6 | #5 @ 48" | #5 @ 40" | #5 @ 32" |
| | 7 – 8 | #5 @ 32" | #5 @ 24", #6 @ 32" | #5 @ 24", #6 @ 32" |
| | 9 – 10 | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" |
| | 11 – 12 | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" | #7 @ 16", #8 @ 24" |
| | 13 – 14 | #6 @ 16", #7 @ 24" | #7 @ 16" | #6 @ 8", #8 @ 16" |
| | 15 – 16 | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" | #7 @ 8" |
| 18 | 0 – 6 | #5 @ 40" | #5 @ 40" | #5 @ 32" |
| | 7 – 8 | #5 @ 32" | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" |
| | 9 – 10 | #5 @ 24", #6 @ 32" | #6 @ 24", #7 @ 32" | #6 @ 16", #7 @ 24" |
| | 11 – 12 | #6 @ 24", #7 @ 32" | #6 @ 16" | #7 @ 16" |
| | 13 – 14 | #6 @ 16" | #6 @ 8", #8 @ 16" | #7 @ 8" |
| | 15 – 16 | #7 @ 16" | #7 @ 8" | #8 @ 8" |
| | 17 - 18 | #6 @ 8", #8 @ 16" | #7 @ 8" | D.R. |
| 20 | 0 – 6 | #5 @ 40" | #5 @ 32" | #5 @ 24" |
| | 7 – 8 | #5 @ 32" | #6 @ 24", #7 @ 32" | #6 @ 24", #7 @ 32" |
| | 9 – 10 | #6 @ 24" | #6 @ 16", #7 @ 24" | #6 @ 16", #7 @ 24" |
| | 11 - 12 | #7 @ 24" | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" |
| | 13 - 14 | #7 @ 16", #8 @ 24" | #6 @ 8", #8 @ 16" | #7 @ 8" |
| | 15 - 16 | #8 @ 16" | #7 @ 8" | #8 @ 8" |
| | 17 - 18 | #6 @ 8" | #8 @ 8" | D.R. |
| | 19 - 20 | #7 @ 8" | D.R. | D.R. |

D.R. = Design required by Engineer of Record

- This table is based on concrete with a minimum specified concrete strength of 2500 psi and reinforcing steel with yield strength of 60,000 psi.
- Minimum effective depth, D (outer face of concrete to bar centerline) = 9". See wall section on Sheet No. 8.
- This table is designed with the top of wall braced by the adequate diaphragm of floor or roof structure, and the base of the wall braced by the floor slab or adequate grade beams.
- Deflection criteria: L/240, No soil surcharge. Wind load = 30 psf above grade. Maximum vertical bearing load less than 10.0 kips per foot at top of wall.
- Interpolation between rebar sizes and spacing is not permitted.
- Unbalanced back fill height is the difference in height of the exterior and interior finished ground. Where walls retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
- Soil classes are in accordance with the Unified Soil Classifications System. Refer to 2015 IRC Table R405.1. The use of this table shall be prohibited for soil classifications not shown.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing – See Sheet No. 8.
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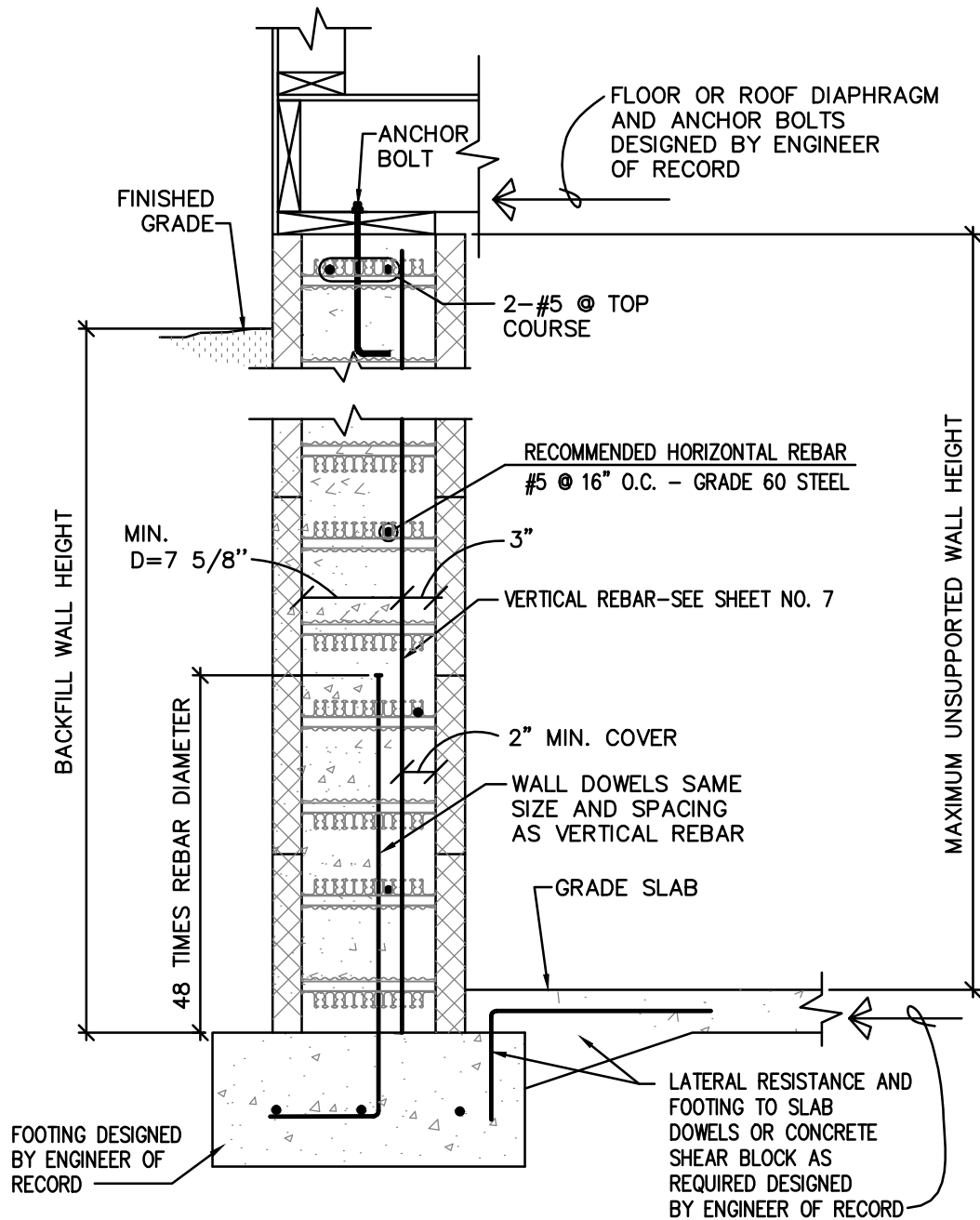


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TITLE:
**12" ICF FOX BLOCKS
FOUNDATION WALL**

DATE: SEPT. 2015

SHEET NO: 7



12" ICF WALL

4 INCH AND 6 INCH THICK ICF FLAT ABOVE GRADE WALLS ^{a, b, c, d, e}

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | | | |
|-----------------------------|-----|-----|--|---|-------------------|------------------|-------------------|
| | | | | Nominal Wall thickness (inches) | | | |
| Exposure Category | | | | 4 | | 6 | |
| | | | | Top ^g | Side ^g | Top ^g | Side ^g |
| B | C | D | | | | | |
| 115 | | | 8 | #4 @ 48" | #4 @ 40" | #4 @ 48" | #4 @ 48" |
| | | | 9 | #4 @ 48" | #4 @ 32" | #4 @ 48" | #4 @ 48" |
| | | | 10 | #4 @ 40" | #4 @ 24" | #4 @ 48" | #4 @ 40" |
| | | | 11 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| 120 | | | 8 | #4 @ 48" | #4 @ 40" | #4 @ 48" | #4 @ 48" |
| | | | 9 | #4 @ 40" | #4 @ 32" | #4 @ 48" | #4 @ 48" |
| | | | 10 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 40" |
| | | | 11 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| 130 | 115 | | 8 | #4 @ 40" | #4 @ 32" | #4 @ 48" | #4 @ 48" |
| | | | 9 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 40" |
| | | | 10 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 32" |
| | | | 11 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| 140 | 120 | 115 | 8 | #4 @ 40" | #4 @ 32" | #4 @ 48" | #4 @ 40" |
| | | | 9 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 32" |
| | | | 10 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 11 | #4 @ 16" | #4 @ 16" | #4 @ 32" | #4 @ 24" |
| 150 | 130 | 120 | 8 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 40" |
| | | | 9 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 32" |
| | | | 10 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 11 | #4 @ 16" | #4 @ 8" | #4 @ 32" | #4 @ 24" |
| 160 | 140 | 130 | 8 | #4 @ 32" | #4 @ 24" | #4 @ 48" | #4 @ 32" |
| | | | 9 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 10 | #4 @ 16" | #4 @ 16" | #4 @ 32" | #4 @ 24" |
| | | | 11 | #4 @ 8" | #4 @ 8" | #5 @ 40" | #5 @ 32" |
| 170 | 150 | 140 | 8 | #4 @ 24" | #4 @ 24" | #4 @ 40" | #4 @ 32" |
| | | | 9 | #4 @ 16" | #4 @ 16" | #4 @ 32" | #4 @ 24" |
| | | | 10 | #4 @ 16" | #4 @ 8" | #4 @ 24" | #5 @ 32" |
| | | | 11 | #4 @ 8" | #4 @ 8" | #5 @ 32" | #5 @ 24" |
| 180 | 160 | 150 | 8 | #4 @ 24" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 9 | #4 @ 16" | #4 @ 16" | #4 @ 32" | #4 @ 24" |
| | | | 10 | #4 @ 16" | #4 @ 8" | #5 @ 32" | #5 @ 24" |
| | | | 11 | #4 @ 8" | #4 @ 8" | #5 @ 24" | #5 @ 24" |

- Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
- Table is based on concrete with a minimum specified compressive strength of 2,500 psi.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
- Interpolation is not permitted.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing - See Sheet No. 15 and 16.
- "Top" means gravity load from roof or floor construction bear on top of wall. "Side" means gravity load from floor construction is transferred to wall from a wood ledger or cold-formed steel track bolted to side of wall. For nonload-bearing walls where floor framing members span parallel to the wall, use of "Top" bearing condition is permitted. (See Sheet No. 15 and 16)
- See IRC 2015 Section R608 for exterior concrete wall construction.
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TITLE:
**4" AND 6" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015

SHEET NO: 9

4 INCH AND 6 INCH THICK ICF FLAT ABOVE GRADE WALLS

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | | | |
|-----------------------------|-----|-----|--|---|-------------------|------------------|-------------------|
| | | | | Nominal Wall thickness (inches) | | | |
| Exposure Category | | | | 4 | | 6 | |
| | | | | Top ^g | Side ^g | Top ^g | Side ^g |
| B | C | D | | | | | |
| 115 | | | 12 | #4 @ 16" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 13 | D.R. | D.R. | #4 @ 32" | #4 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #4 @ 24" | #5 @ 24" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 24" | #5 @ 24" |
| 120 | | | 12 | #4 @ 16" | #4 @ 16" | #4 @ 40" | #4 @ 32" |
| | | | 13 | D.R. | D.R. | #4 @ 32" | #4 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #4 @ 24" | #5 @ 24" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 24" | #5 @ 24" |
| 130 | 115 | | 12 | #4 @ 16" | #4 @ 8" | #4 @ 32" | #4 @ 24" |
| | | | 13 | D.R. | D.R. | #4 @ 24" | #4 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #5 @ 24" | #5 @ 24" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| 140 | 120 | 115 | 12 | #4 @ 16" | #4 @ 8" | #4 @ 24" | #5 @ 24" |
| | | | 13 | D.R. | D.R. | #5 @ 32" | #5 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #5 @ 24" | #5 @ 24" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| 150 | 130 | 120 | 12 | #4 @ 8" | #4 @ 8" | #4 @ 24" | #5 @ 24" |
| | | | 13 | D.R. | D.R. | #5 @ 32" | #5 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #5 @ 24" | #5 @ 16" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| 160 | 140 | 130 | 12 | #4 @ 8" | #4 @ 8" | #5 @ 32" | #5 @ 24" |
| | | | 13 | D.R. | D.R. | #5 @ 24" | #5 @ 24" |
| | | | 14 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| 170 | 150 | 140 | 12 | D.R. | D.R. | #5 @ 24" | #5 @ 24" |
| | | | 13 | D.R. | D.R. | #5 @ 16" | #5 @ 16" |
| | | | 14 | E.D.L. | E.D.L. | #5 @ 16" | #5 @ 16" |
| | | | 15 | E.D.L. | E.D.L. | #6 @ 16" | #6 @ 16" |
| 180 | 160 | 150 | 12 | D.R. | D.R. | #5 @ 16" | #5 @ 16" |
| | | | 13 | D.R. | D.R. | #5 @ 16" | #5 @ 16" |
| | | | 14 | E.D.L. | E.D.L. | #6 @ 16" | #6 @ 16" |
| | | | 15 | E.D.L. | E.D.L. | #5 @ 8" | #5 @ 8" |

D.R. = Design required by Engineer of Record

E.D.L.= Exceed Deflection Limitation

- Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
- Table is based on concrete with a minimum specified compressive strength of 2,500 psi.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
- Interpolation is not permitted.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing – See Sheet No. 15 and 16.
- “Top” means gravity load from roof or floor construction bear on top of wall. “Side” means gravity load from floor construction is transferred to wall from a wood ledger or cold-formed steel track bolted to side of wall. For nonload-bearing walls where floor framing members span parallel to the wall, use of “Top” bearing condition is permitted. (See Sheet No. 15 and 16)
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TITLE:
**4" AND 6" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015

SHEET NO: 10

8 INCH AND 10 INCH THICK ICF FLAT ABOVE GRADE WALLS ^{a, b, c, d, e}

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | | | |
|-----------------------------|-----|-----|--|---|-------------------|------------------|-------------------|
| | | | | Nominal Wall thickness (inches) | | | |
| Exposure Category | | | | 8 | | 10 | |
| B | C | D | | Top ^g | Side ^g | Top ^g | Side ^g |
| 115 | | | up to 10 | #4 @ 48" | #4 @ 48" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #4 @ 48" | #4 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #4 @ 40" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #4 @ 32" | #5 @ 32" | #5 @ 48" | #5 @ 48" |
| 120 | | | up to 10 | #4 @ 48" | #4 @ 48" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #4 @ 48" | #4 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #4 @ 40" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #4 @ 32" | #5 @ 32" | #5 @ 48" | #5 @ 48" |
| 130 | 115 | | up to 10 | #4 @ 48" | #4 @ 48" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #4 @ 48" | #4 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #4 @ 32" | #5 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 40" | #5 @ 32" | #5 @ 48" | #5 @ 40" |
| 140 | 120 | 115 | up to 10 | #4 @ 48" | #4 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #4 @ 40" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 40" | #5 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 32" | #5 @ 24" | #5 @ 48" | #5 @ 40" |
| 150 | 130 | 120 | up to 10 | #4 @ 48" | #4 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #4 @ 40" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 40" | #5 @ 32" | #5 @ 48" | #5 @ 40" |
| | | | 15 – 16 | #5 @ 24" | #5 @ 24" | #5 @ 40" | #5 @ 32" |
| 160 | 140 | 130 | up to 10 | #4 @ 48" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #5 @ 48" | #5 @ 40" | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 32" | #5 @ 32" | #5 @ 48" | #5 @ 40" |
| | | | 15 – 16 | #5 @ 24" | #6 @ 24" | #5 @ 40" | #5 @ 32" |
| 170 | 150 | 140 | up to 10 | #4 @ 40" | #4 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #5 @ 40" | #5 @ 32" | #5 @ 48" | #5 @ 40" |
| | | | 13 – 14 | #5 @ 24" | #5 @ 24" | #5 @ 40" | #5 @ 32" |
| | | | 15 – 16 | #6 @ 24" | #6 @ 24" | #5 @ 32" | #6 @ 32" |
| 180 | 160 | 150 | up to 10 | #4 @ 32" | #5 @ 32" | #5 @ 48" | #5 @ 48" |
| | | | 11 – 12 | #5 @ 32" | #5 @ 24" | #5 @ 48" | #5 @ 40" |
| | | | 13 – 14 | #6 @ 32" | #6 @ 24" | #5 @ 32" | #5 @ 32" |
| | | | 15 – 16 | #6 @ 24" | #6 @ 16" | #6 @ 32" | #6 @ 32" |

- Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
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- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
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TITLE:
**8" AND 10" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015

SHEET NO: 11

8 INCH AND 10 INCH THICK ICF FLAT ABOVE GRADE WALLS ^{a, b, c, d, e}

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | | | |
|-----------------------------|-----|-----|--|---|-------------------|------------------|-------------------|
| | | | | Nominal Wall thickness (inches) | | | |
| Exposure Category | | | | 8 | | 10 | |
| | | | | Top ^g | Side ^g | Top ^g | Side ^g |
| B | C | D | | | | | |
| 115 | | | 17 – 18 | #5 @ 32" | #5 @ 24" | #5 @ 48" | #5 @ 40" |
| | | | 19 – 20 | #5 @ 24" | #6 @ 24" | #5 @ 40" | #5 @ 32" |
| | | | 21 – 22 | D.R. | D.R. | #5 @ 32" | #6 @ 32" |
| | | | 23 – 24 | D.R. | D.R. | #6 @ 32" | #6 @ 32" |
| 120 | | | 17 – 18 | #5 @ 32" | #5 @ 24" | #5 @ 48" | #5 @ 40" |
| | | | 19 – 20 | #5 @ 24" | #6 @ 24" | #5 @ 40" | #5 @ 32" |
| | | | 21 – 22 | D.R. | D.R. | #6 @ 32" | #6 @ 32" |
| | | | 23 – 24 | D.R. | D.R. | #6 @ 32" | #6 @ 24" |
| 130 | 115 | | 17 – 18 | #5 @ 24" | #6 @ 24" | #5 @ 40" | #5 @ 32" |
| | | | 19 – 20 | #6 @ 24" | #6 @ 24" | #5 @ 32" | #6 @ 32" |
| | | | 21 – 22 | D.R. | D.R. | #6 @ 32" | #6 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #6 @ 24" | #6 @ 24" |
| 140 | 120 | 115 | 17 – 18 | #5 @ 24" | #6 @ 24" | #5 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 24" | #6 @ 16" | #6 @ 32" | #6 @ 32" |
| | | | 21 – 22 | D.R. | D.R. | #6 @ 24" | #6 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #7 @ 24" | #7 @ 24" |
| 150 | 130 | 120 | 17 – 18 | #6 @ 24" | #6 @ 24" | #5 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 24" | #6 @ 16" | #6 @ 32" | #6 @ 24" |
| | | | 21 – 22 | D.R. | D.R. | #6 @ 24" | #6 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #7 @ 24" | #7 @ 24" |
| 160 | 140 | 130 | 17 – 18 | #6 @ 24" | #6 @ 24" | #6 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 16" | #6 @ 16" | #6 @ 24" | #6 @ 24" |
| | | | 21 – 22 | D.R. | D.R. | #7 @ 24" | #7 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #7 @ 24" | #6 @ 16" |
| 170 | 150 | 140 | 17 – 18 | #6 @ 16" | #6 @ 16" | #6 @ 32" | #6 @ 24" |
| | | | 19 – 20 | #6 @ 16" | #5 @ 8" | #6 @ 24" | #7 @ 24" |
| | | | 21 – 22 | D.R. | D.R. | #7 @ 24" | #7 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #8 @ 24" | #8 @ 24" |
| 180 | 160 | 150 | 17 – 18 | #6 @ 16" | #6 @ 16" | #6 @ 24" | #6 @ 24" |
| | | | 19 – 20 | #5 @ 8" | #5 @ 8" | #7 @ 24" | #7 @ 24" |
| | | | 21 – 22 | D.R. | D.R. | #8 @ 24" | #8 @ 24" |
| | | | 23 – 24 | D.R. | D.R. | #7 @ 16" | #7 @ 16" |

D.R. = Design required by Engineer of Record

- Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
- Table is based on concrete with a minimum specified compressive strength of 2,500 psi.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
- Interpolation is not permitted.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing - See Sheet No. 15 and 16.
- "Top" means gravity load from roof or floor construction bear on top of wall. "Side" means gravity load from floor construction is transferred to wall from a wood ledger or cold-formed steel track bolted to side of wall. For nonload-bearing walls where floor framing members span parallel to the wall, use of "Top" bearing condition is permitted. (See Sheet No. 15 and 16)
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TITLE:
**8" AND 10" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015

SHEET NO: 12

12 INCH THICK ICF FLAT ABOVE GRADE WALLS ^{a, b, c, d, e}

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | |
|-----------------------------|-----|-----|--|---|-------------------|
| | | | | Nominal Wall thickness (inches) | |
| Exposure Category | | | | Top ^g | Side ^g |
| B | C | D | | | |
| 115 and 120 | | | up to 12 | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 48" | #5 @ 48" |
| | | | 17 – 18 | #5 @ 48" | #5 @ 48" |
| | | | 19 – 20 | #5 @ 48" | #5 @ 40" |
| 130 | 115 | | up to 12 | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 48" | #5 @ 40" |
| | | | 17 – 18 | #5 @ 48" | #5 @ 40" |
| | | | 19 – 20 | #5 @ 40" | #6 @ 32" |
| 140 | 120 | 115 | up to 12 | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 48" | #5 @ 40" |
| | | | 17 – 18 | #5 @ 40" | #5 @ 32" |
| | | | 19 – 20 | #5 @ 32" | #6 @ 32" |
| 150 | 130 | 120 | up to 12 | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 48" | #5 @ 48" |
| | | | 15 – 16 | #5 @ 48" | #5 @ 40" |
| | | | 17 – 18 | #5 @ 40" | #5 @ 32" |
| | | | 19 – 20 | #6 @ 32" | #6 @ 32" |
| 160 | 140 | 130 | up to 12 | #5 @ 48" | #5 @ 48" |
| | | | 13 – 14 | #5 @ 48" | #5 @ 40" |
| | | | 15 – 16 | #5 @ 40" | #5 @ 32" |
| | | | 17 – 18 | #5 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 32" | #6 @ 24" |
| 170 | 150 | 140 | up to 12 | #5 @ 48" | #5 @ 40" |
| | | | 13 – 14 | #5 @ 40" | #5 @ 32" |
| | | | 15 – 16 | #5 @ 32" | #6 @ 32" |
| | | | 17 – 18 | #6 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 24" | #6 @ 24" |
| 180 | 160 | 150 | up to 12 | #5 @ 48" | #5 @ 40" |
| | | | 13 – 14 | #5 @ 40" | #5 @ 32" |
| | | | 15 – 16 | #6 @ 32" | #6 @ 32" |
| | | | 17 – 18 | #6 @ 32" | #6 @ 32" |
| | | | 19 – 20 | #6 @ 24" | #6 @ 24" |

- a. Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
- b. Table is based on concrete with a minimum specified compressive strength of 2,500 psi.
- c. Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- d. Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
- e. Interpolation is not permitted.
- f. Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing - See Sheet No. 15 and 16.
- g. "Top" means gravity load from roof or floor construction bear on top of wall. "Side" means gravity load from floor construction is transferred to wall from a wood ledger or cold-formed steel track bolted to side of wall. For nonload-bearing walls where floor framing members span parallel to the wall, use of "Top" bearing condition is permitted. (See Sheet No. 15 and 16)
- h. See IRC 2015 Section R608 for exterior concrete wall construction.
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TITLE:
**12" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015 SHEET NO: 13

12 INCH THICK ICF FLAT ABOVE GRADE WALLS ^{a, b, c, d, e}

| MAXIMUM WIND SPEED (mph) | | | MAXIMUM UNSUPPORTED WALL HEIGHT PER STORY (feet) | MINIMUM VERTICAL REINFORCEMENT BAR SIZE AND SPACING (inches) ^{f, h} | |
|-----------------------------|-----|-----|--|---|-------------------|
| | | | | Nominal Wall thickness (inches) | |
| Exposure Category | | | | Top ^g | Side ^g |
| B | C | D | | | |
| 115 and 120 | | | 21 – 22 | #5 @ 40" | #5 @ 32" |
| | | | 23 – 24 | #5 @ 32" | #6 @ 32" |
| | | | 25 – 26 | #6 @ 32" | #6 @ 24" |
| | | | 27 – 28 | #6 @ 24" | #6 @ 24" |
| | | | 29 – 30 | #7 @ 24" | #7 @ 24" |
| 130 | 115 | | 21 – 22 | #5 @ 32" | #6 @ 32" |
| | | | 23 – 24 | #6 @ 32" | #6 @ 24" |
| | | | 25 – 26 | #6 @ 24" | #6 @ 24" |
| | | | 27 – 28 | #7 @ 24" | #7 @ 24" |
| | | | 29 – 30 | #6 @ 16" | #6 @ 16" |
| 140 | 120 | 115 | 21 – 22 | #6 @ 32" | #6 @ 32" |
| | | | 23 – 24 | #6 @ 24" | #6 @ 24" |
| | | | 25 – 26 | #7 @ 24" | #7 @ 24" |
| | | | 27 – 28 | #7 @ 24" | #7 @ 24" |
| | | | 29 – 30 | #8 @ 24" | #8 @ 24" |
| 150 | 130 | 120 | 21 – 22 | #6 @ 32" | #6 @ 32" |
| | | | 23 – 24 | #6 @ 24" | #6 @ 24" |
| | | | 25 – 26 | #7 @ 24" | #7 @ 24" |
| | | | 27 – 28 | #8 @ 24" | #8 @ 24" |
| | | | 29 – 30 | #8 @ 24" | #7 @ 16" |
| 160 | 140 | 130 | 21 – 22 | #6 @ 24" | #6 @ 24" |
| | | | 23 – 24 | #6 @ 24" | #7 @ 24" |
| | | | 25 – 26 | #7 @ 24" | #8 @ 24" |
| | | | 27 – 28 | #8 @ 24" | #8 @ 24" |
| | | | 29 – 30 | #7 @ 16" | #8 @16" |
| 170 | 150 | 140 | 21 – 22 | #6 @ 24" | #7 @ 24" |
| | | | 23 – 24 | #7 @ 24" | #7 @ 24" |
| | | | 25 – 26 | #8 @ 24" | #8 @ 24" |
| | | | 27 – 28 | #7 @ 16" | #7 @16" |
| | | | 29 – 30 | #8 @ 16" | #8 @16" |
| 180 | 160 | 150 | 21 – 22 | #7 @ 24" | #7 @ 24" |
| | | | 23 – 24 | #7 @ 24" | #8 @ 24" |
| | | | 25 – 26 | #8 @ 24" | #8 @ 16" |
| | | | 27 – 28 | #8 @ 16" | #8 @ 16" |
| | | | 29 – 30 | #6 @ 8" | #6 @ 8" |

- Table is based on ASCE 7-10 components and cladding wind pressures for an enclosed building using a mean roof height of 35 feet, interior wall area 4, an effective wind area of 10 square feet, topographic factor, K, equal to 1.0, and Risk Category II.
- Table is based on concrete with a minimum specified compressive strength of 2,500 psi.
- Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi. Vertical rebar shall be located at center of each wall.
- Deflection criterion is L/240, where L is the unsupported height of the wall in inches.
- Interpolation is not permitted.
- Rebar lap splice length shall be 60 times the bar diameter, and horizontal reinforcing - See Sheet No. 15 and 16.
- "Top" means gravity load from roof or floor construction bear on top of wall. "Side" means gravity load from floor construction is transferred to wall from a wood ledger or cold-formed steel track bolted to side of wall. For nonload-bearing walls where floor framing members span parallel to the wall, use of "Top" bearing condition is permitted. (See Sheet No. 15 and 16)
- See IRC 2015 Section R608 for exterior concrete wall construction.
- This table is not intended to prohibit the use of engineering design by Engineer of Record.



This table is provided for the convenience of and use by the designers. It is the responsibility of designers to modify as needed and provide information required by the applicable building codes and regulations. Fox Blocks retains the right to make changes to the table without notice and assumes no liability in connection with the use of this table including modifications, copying or distribution.

TITLE:
**12" ICF FOX BLOCKS
ABOVE GRADE WALL**

DATE: SEPT. 2015

SHEET NO: 14

1. MINIMUM VERTICAL REINFORCING
—SEE SHEET NO. 9 TO NO. 14
2. RECOMMENDED HORIZONTAL REINFORCING:
 - A. 4" ICF — #4 @ 32" O.C., GRADE 60
 - B. 6" ICF — #4 @ 32" O.C., GRADE 60
 - C. 8" ICF — #4 @ 16" O.C., GRADE 60
 - D. 10" ICF — #4 @ 16" O.C., GRADE 60
 - E. 12" ICF — #5 @ 16" O.C., GRADE 60
3. REBAR LAP SPLICE LENGTH SHALL BE
60 TIMES THE BAR DIAMETER.
4. FLOOR OR ROOF DIAPHRAGM AND LATERAL
RESISTANCE SHALL BE DESIGNED BY
ENGINEER OF RECORD.

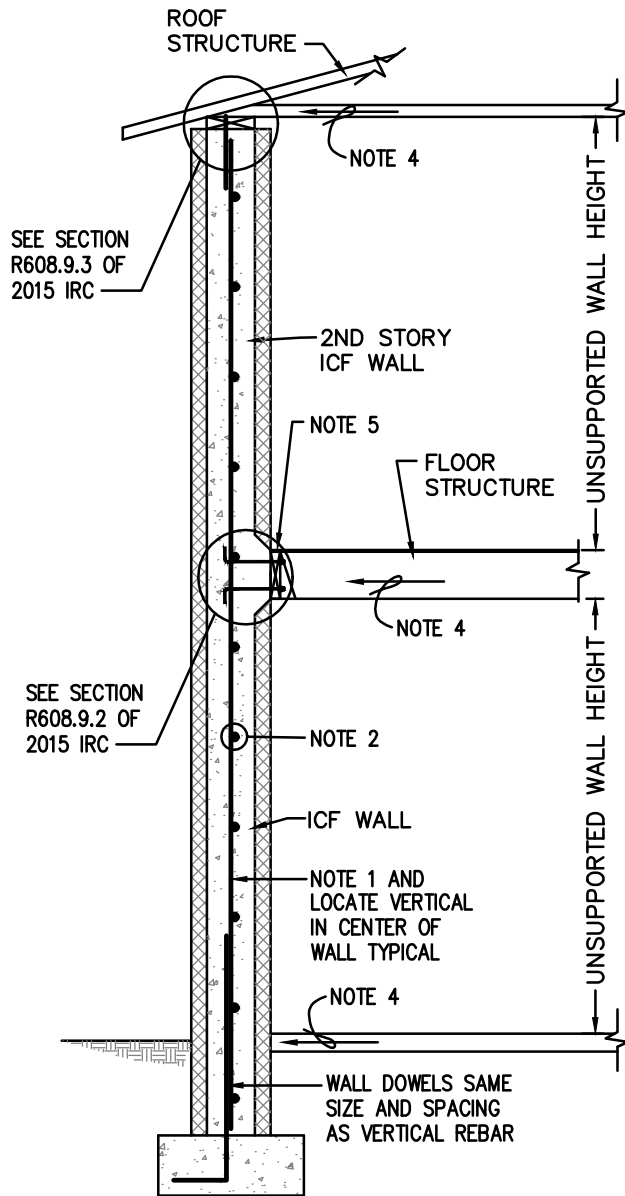


TITLE:

4" TO 12" ICF FOX BLOCKS ABOVE GRADE WALL DETAILS

DATE: SEPT. 2015

SHEET NO.: 15



ICF WALL ABOVE GRADE

1. MINIMUM VERTICAL REINFORCING
—SEE SHEET NO. 9 TO NO. 14
2. RECOMMENDED HORIZONTAL REINFORCING:
 - A. 4" ICF — #4 @ 32" O.C., GRADE 60
 - B. 6" ICF — #4 @ 32" O.C., GRADE 60
 - C. 8" ICF — #4 @ 16" O.C., GRADE 60
 - D. 10" ICF — #4 @ 16" O.C., GRADE 60
 - E. 12" ICF — #5 @ 16" O.C., GRADE 60
3. REBAR LAP SPLICE LENGTH SHALL BE 60 TIMES THE BAR DIAMETER.
4. FLOOR OR ROOF DIAPHRAGM AND LATERAL RESISTANCE SHALL BE DESIGNED BY ENGINEER OF RECORD.
5. MAXIMUM FLOOR LOAD = 1200 LBS. PER FOOT.

SUPPORTING ICF SECOND
STORY AND ROOF
(TWO STORY)



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TITLE:

4" TO 12" ICF FOX BLOCKS
ABOVE GRADE WALL DETAIL

DATE: SEPT. 2015

SHEET NO.: 16