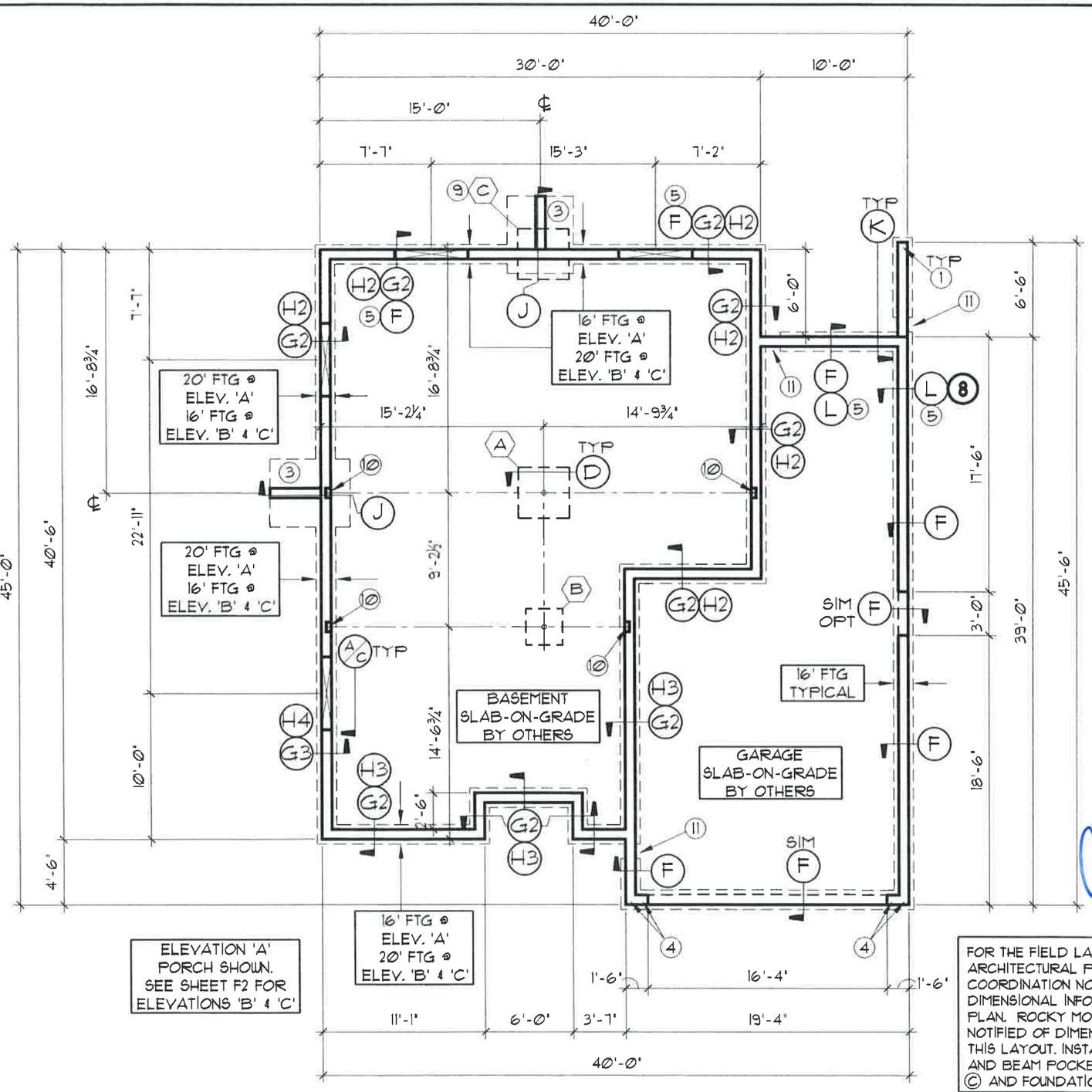

FOUNDATION PLAN - ELEVATIONS 'A', 'B' & 'C'

1/8" = 1'-0"

LEGEND

	FDN WALL W/ FTG
40	FDN WALL W/ FTG AND VOID
A	SECTION OR DETAIL CALLOUT
	PIER
	COLUMN PAD BELOW SLAB
	COLUMN PAD IN CRAWLSPACE
1	SEE PLAN NOTES
X	PAD DESIGNATION

PAD SCHEDULE

PAD	PAD SIZE
A	42" X 42" X 12"
B	30" X 30"
C	42" X 42" X 12"
D	38" X 38" (6)
E	30" X 30" (7)
F	40" X 40" X 12" (6)
G	40" X 40" X 12" (7)

PLAN NOTES

1. COLUMN MUST BEAR DIRECTLY ON FOUNDATION - EXTEND COLUMN THROUGH SLAB AS REQUIRED
2. DIFFERENTIAL MOVEMENT IS MORE LIKELY IF PIERS ARE NOT TIED TO MAIN FOUNDATION SYSTEM
3. COUNTERFORT REQUIRED WHERE SHOWN WHEN 1/2 OR MORE OF OVERALL BASEMENT WALL LENGTH HAS BACKFILL OVER 5 FT ABOVE INTERIOR BASEMENT SLAB
4. HOLDOWNS PER STRUCTURAL FRAMING PLANS (BY OTHERS)
5. WALKOUT OPTION
6. PAD SIZE FOR ELEVATION 'A' ONLY
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8. ELEVATION DIFFERENCE BETWEEN GARAGE SLAB AND FINISHED GRADE MUST BE 2FT OR LESS WITHIN 8FT OF REAR GARAGE CORNER. CONTACT ENGINEER IF THIS CONDITION IS NOT MET
9. PAD NOT REQUIRED IF COUNTERFORT IS USED
10. BEAM POCKET TO EXTEND 4' MAX INTO FOUNDATION WALL
11. BLOCKOUT FOOTING FOR DRAIN AS REQUIRED, 16' MAXIMUM

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VERIFY DIMENSIONS PRIOR TO CONSTRUCTION

THE TYPE OF FLOOR SYSTEM PLACED IN A BASEMENT AND/OR GARAGE IS THE DECISION OF THE CLIENT, NOT RMG. THIS FOUNDATION PLAN SHOWS A CONCRETE SLAB-ON-GRADE FLOOR FOR THE BASEMENT AND GARAGE (IF APPLICABLE). THE SOILS REPORT FOR THE LOT ON WHICH THIS FOUNDATION WILL BE PLACED DESCRIBED THE ANTICIPATED MOVEMENT OF A SLAB-ON-GRADE FLOOR SYSTEM. IF THE MOVEMENT ANTICIPATED FOR THE SLAB FLOOR OPTION, AS DESCRIBED, IS NOT ACCEPTABLE TO THE CLIENT, THEN A STRUCTURAL FLOOR SYSTEM ISOLATED FROM THE SOIL AND SUPPORTED BY THE FOUNDATION SHOULD BE USED. THE CLIENT IS STRONGLY ADVISED TO THOROUGHLY REVIEW THE SOILS REPORT REFERENCED ABOVE. RMG SHALL BE INFORMED IF THE CLIENT ELECTS TO UTILIZE THE STRUCTURAL FLOOR OPTION IN ORDER TO REVISE THE FOUNDATION PLAN. THE INSTALLATION OF A SLAB-ON-GRADE FLOOR CONSTITUTES THE CLIENT'S ACCEPTANCE OF RESPONSIBILITY FOR THE SUBSEQUENT FLOOR MOVEMENT, AND ANY DAMAGE THAT RESULTS THEREFROM.

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2,000 psf, 40 pcf

EL PASO COUNTY, COLORADO

CHALLENGER COLORADO, LLC

ARCH/ENG:	CAS
DRAWN:	CL
CHECKED:	CAS
DATE	11-22-2017

#	REVISION	DATE

JOB NO. 160868

SHEET NAME: FOUNDATION PLAN & PAD SCHEDULE

SHEET NO. F1 of 7

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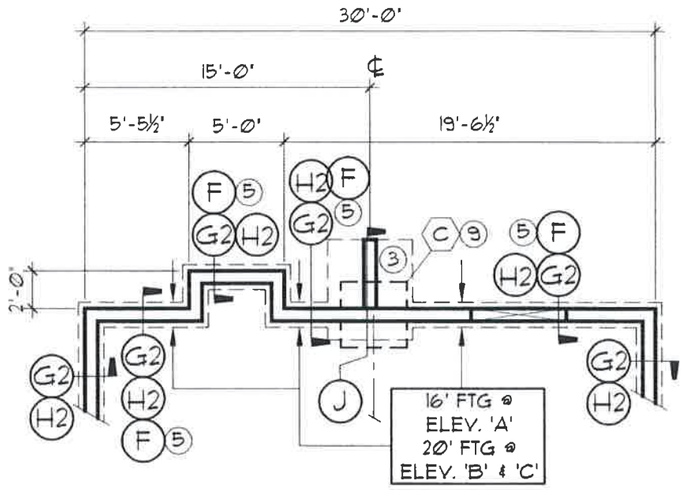
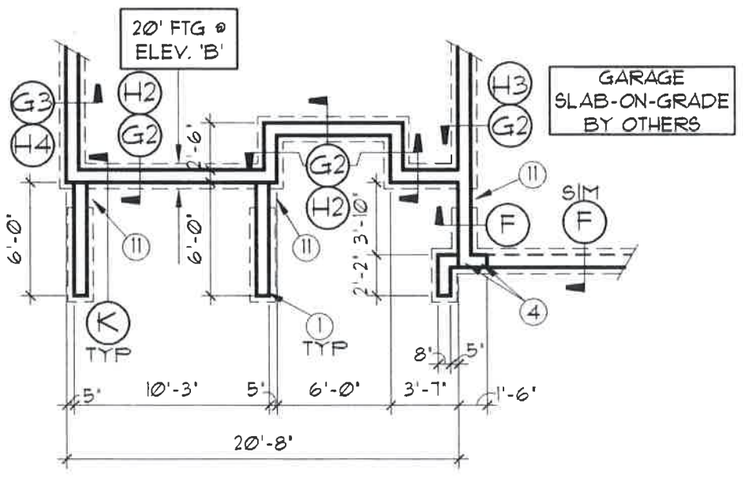


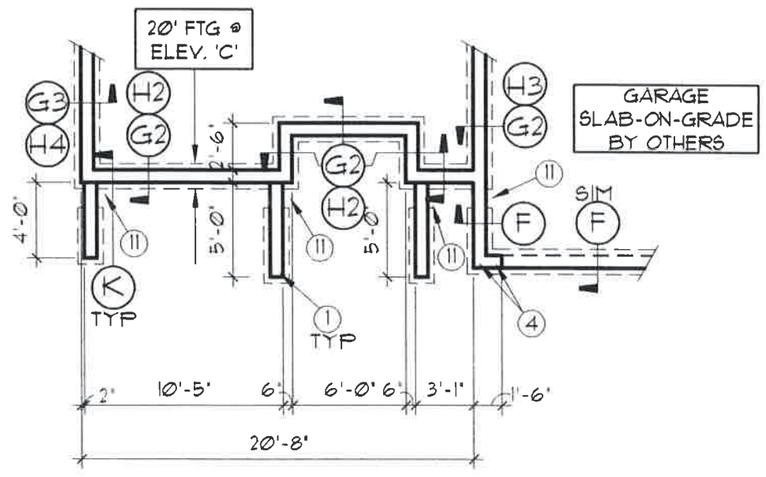
PARTIAL FOUNDATION PLAN - OPTIONAL FIREPLACE

1/8" = 1'-0"



PARTIAL FOUNDATION PLAN - ELEVATION 'B' FRONT PORCH

1/8" = 1'-0"



PARTIAL FOUNDATION PLAN - ELEVATION 'C' FRONT PORCH

1/8" = 1'-0"

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11/22/17
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PROFESSIONAL ENGINEER

LEGEND

	FDN WALL W/ FTG
4Ø"	FDN WALL W/ FTG AND VOID
(A)	SECTION OR DETAIL CALLOUT
	PIER
	COLUMN PAD BELOW SLAB
	COLUMN PAD IN CRAWLSPACE
(1)	SEE PLAN NOTES
(X)	PAD DESIGNATION

PAD SCHEDULE

PAD	PAD SIZE
(A)	42" X 42" X 12"
(B)	30" X 30"
(C)	42" X 42" X 12"
(D)	38" X 38" (6)
(E)	30" X 30" (7)
(F)	40" X 40" X 12" (6)
(G)	40" X 40" X 12" (7)

PLAN NOTES

(1) COLUMN MUST BEAR DIRECTLY ON FOUNDATION - EXTEND COLUMN THROUGH SLAB AS REQUIRED

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(3) COUNTERFORT REQUIRED WHERE SHOWN WHEN 1/2 OR MORE OF OVERALL BASEMENT WALL LENGTH HAS BACKFILL OVER 5 FT ABOVE INTERIOR BASEMENT SLAB

(4) HOLDOWNS PER STRUCTURAL FRAMING PLANS (BY OTHERS)

(5) WALKOUT OPTION

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(10) BEAM POCKET TO EXTEND 4" MAX INTO FOUNDATION WALL

(11) BLOCKOUT FOOTING FOR DRAIN AS REQUIRED, 16" MAXIMUM

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EL PASO COUNTY, COLORADO

CHALLENGER COLORADO, LLC

ARCH/ENG:	CAS
DRAWN:	CL
CHECKED:	CAS
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JOB NO. 160868

SHEET NAME
FOUNDATION PLAN & PAD SCHEDULE

SHEET NO. F2 of 7

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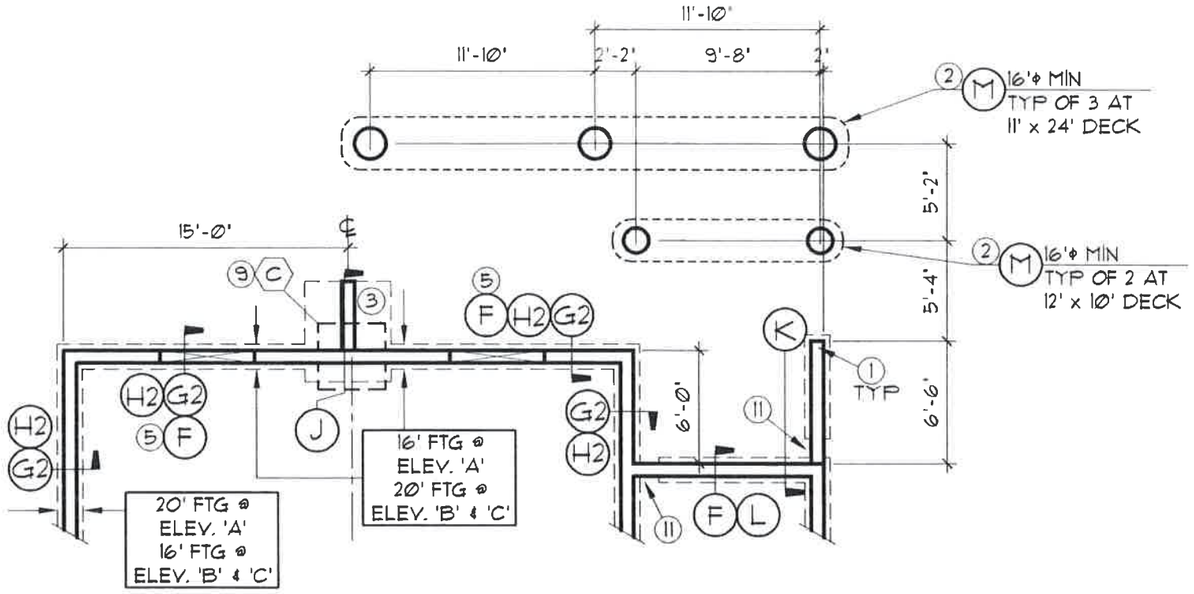
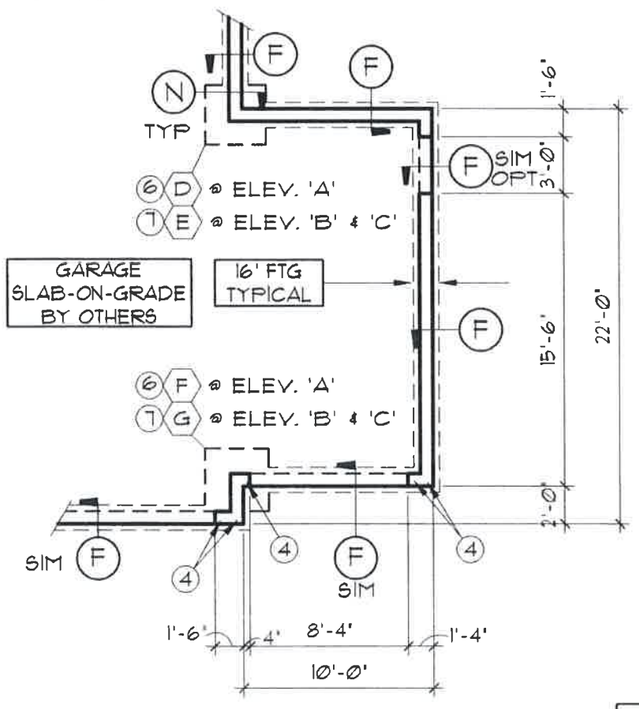


PARTIAL FOUNDATION PLAN - W/ 12' X 10' AND 24' X 11' DECK

1/8" = 1'-0"



FOUNDATION PLAN - 4 CAR GARAGE

1/8" = 1'-0"

LEGEND

	FDN WALL W/ FTG
4.0"	FDN WALL W/ FTG AND VOID
A	SECTION OR DETAIL CALLOUT
	PIER
	COLUMN PAD BELOW SLAB
	COLUMN PAD IN CRAWLSPACE
1	SEE PLAN NOTES
X	PAD DESIGNATION

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EL PASO COUNTY, COLORADO

CHALLENGER COLORADO, LLC

ARCH/ENG:	CAS
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JOB NO. 160868

SHEET NAME: FOUNDATION PLAN & PAD SCHEDULE

SHEET NO. F3 of 7

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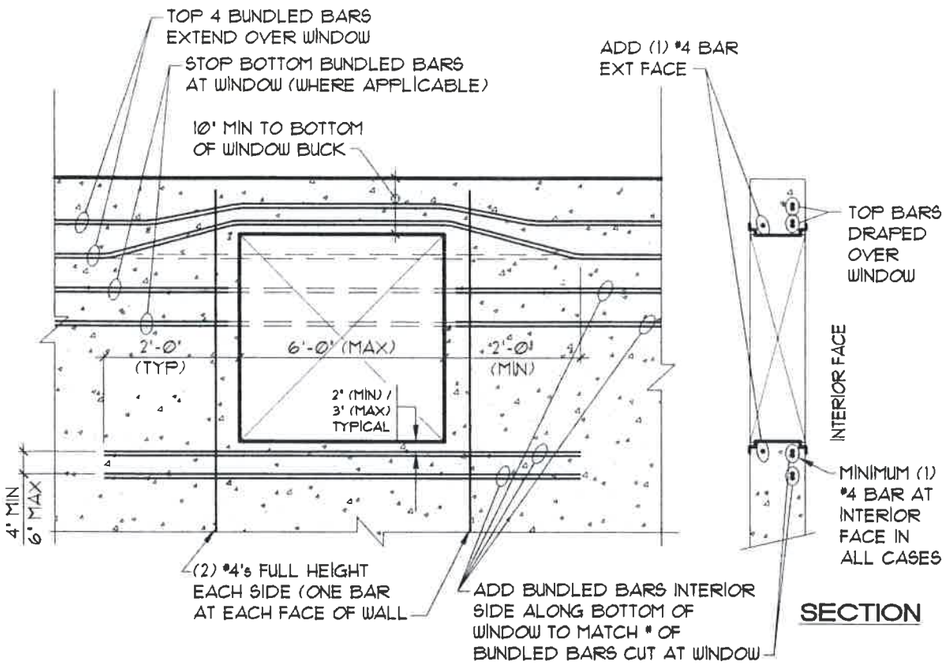
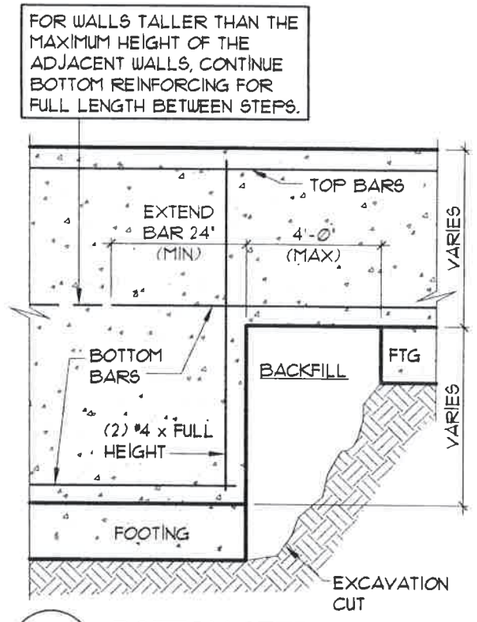
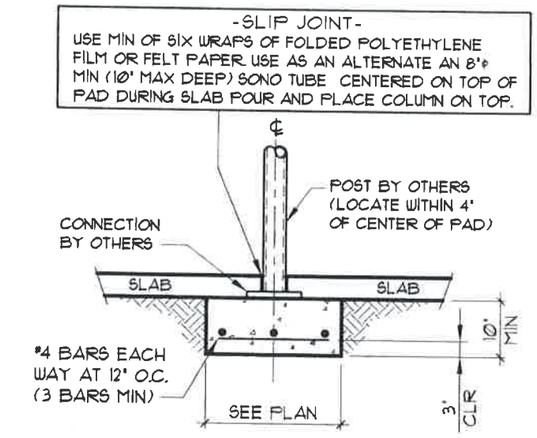


A OPENING
N.T.S.

NOTE: SEE FOUNDATION NOTE (E) FOR WINDOW AND BEAM POCKET LAYOUT/CONFIGURATIONS. DO NOT LOCATE TOP STEPS WITHIN 24" PAST WINDOW JAMBS. OKAY TO STEP BEFORE WINDOW



B BOTTOM STEP (AS REQUIRED)
N.T.S.



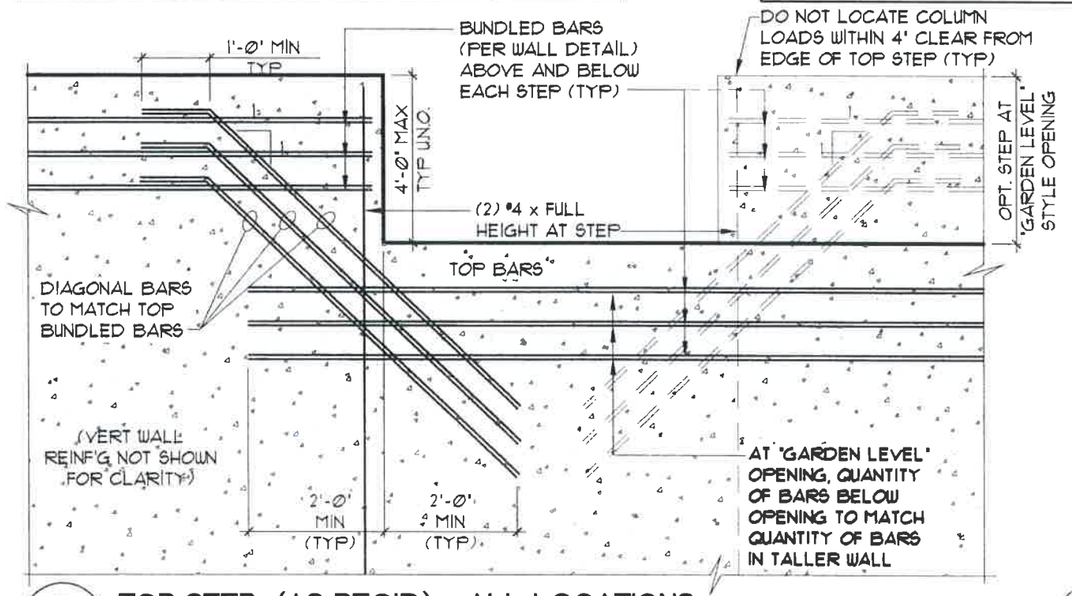
SEE DETAIL (E) FOR SONOTUBE OPTION

LOCATE PAD ON NATURAL, UNDISTURBED SOIL OR ON APPROVED STRUCTURAL FILL

D DETAIL
N.T.S.

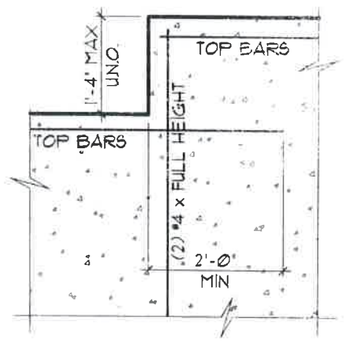
DO NOT LOCATE TOP AND BOTTOM STEPS TOGETHER. SEPARATE STEPS BY HORIZONTAL DISTANCE = 1.5 x LARGER STEP
DO NOT LOCATE STEPS WITHIN 3'-0" OF ANY WALL CORNER U.N.O.
BOTTOM OF WALL SHALL BE 30" MIN BELOW FINISHED GRADE.

DIAGONAL BARS AT TOP STEP MAY BE OMITTED IF TOP STEP IS LOCATED WITHIN 12' OF COUNTERFORT STEMWALL



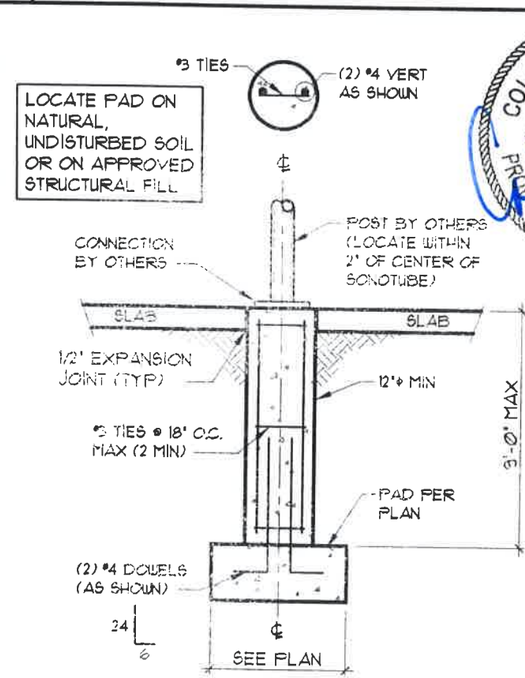
C TOP STEP (AS REQ'D) - ALL LOCATIONS EXCEPT "FROST" WALLS
N.T.S.

STEP DETAIL (C)SIM IS TO BE USED ONLY AT "FROST" WALL CONDITIONS (WHERE THE ELEVATION DIFFERENCE BETWEEN THE EXTERIOR GRADE AND THE INTERIOR SLAB IS LESS THAN 2'-0")



C SIM - (FOR USE AT "FROST" WALLS ONLY)
N.T.S.

LOCATE PAD ON NATURAL, UNDISTURBED SOIL OR ON APPROVED STRUCTURAL FILL



E OPTIONAL COL. PAD w/ SONOTUBE
N.T.S.

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CHALLENGER COLORADO, LLC

ARCH/ENG:	CAS
DRAWN:	CL
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JOB NO. 160868
SHEET NAME: DETAILS
SHEET NO. F4 of 7

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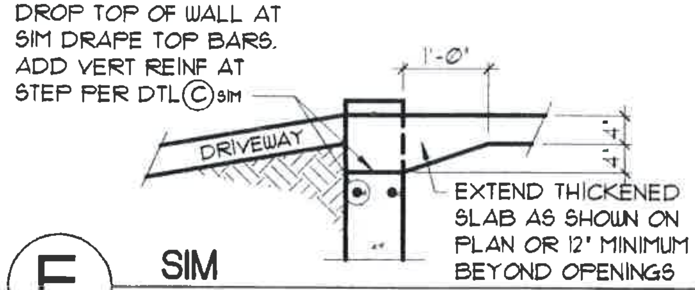
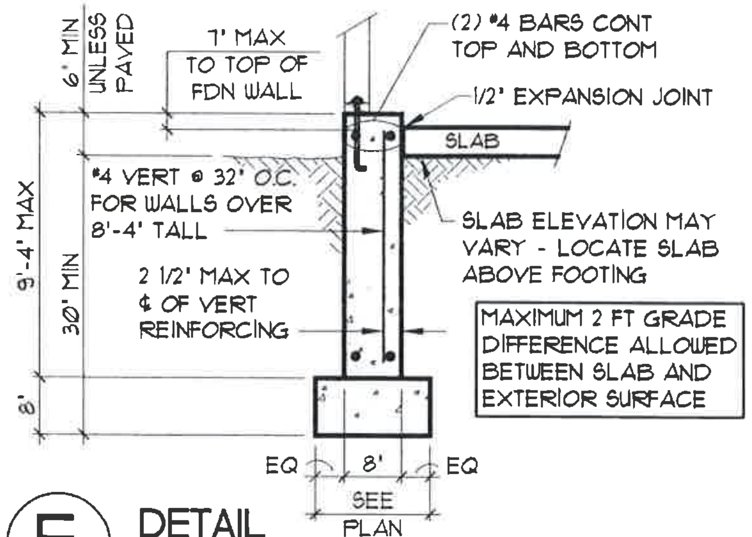


F SIM
N.T.S.



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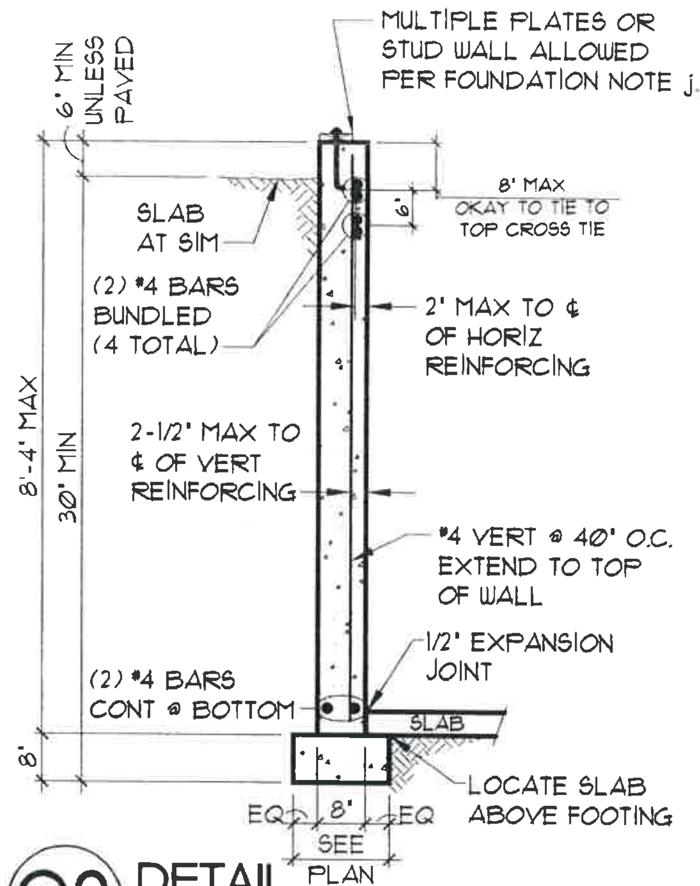

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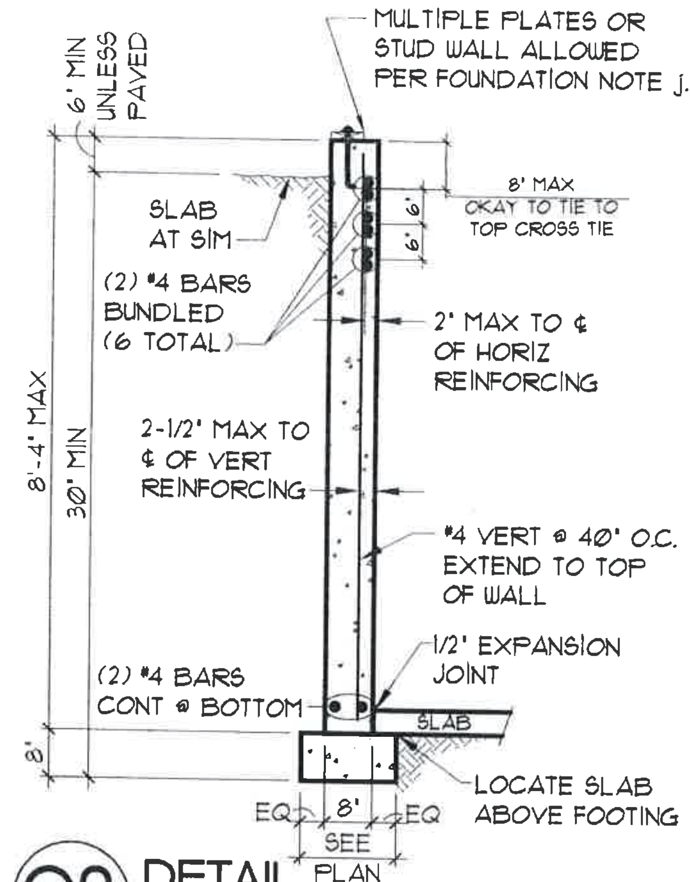

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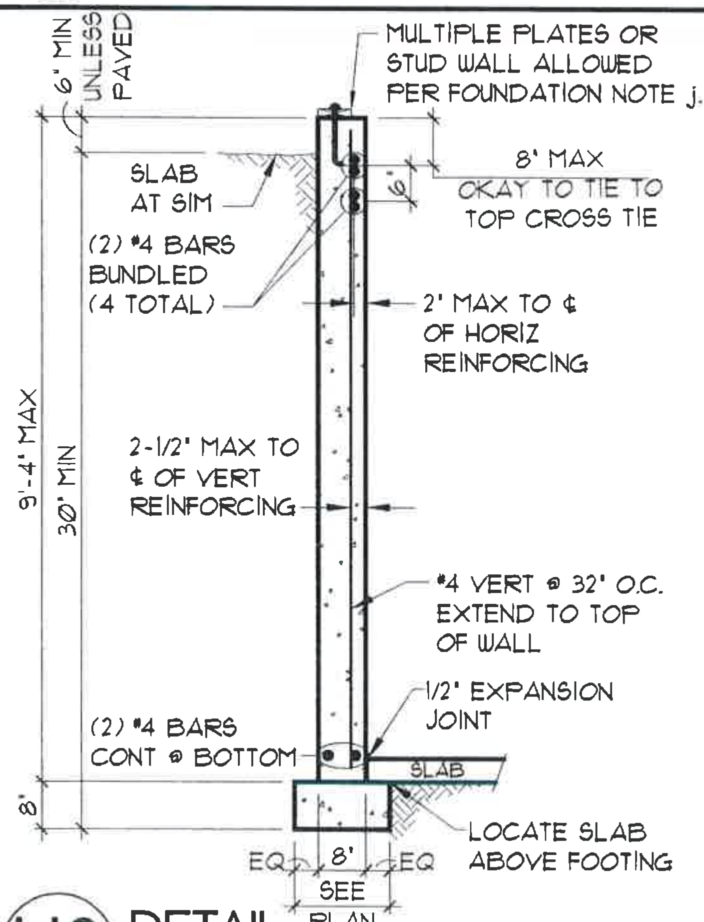

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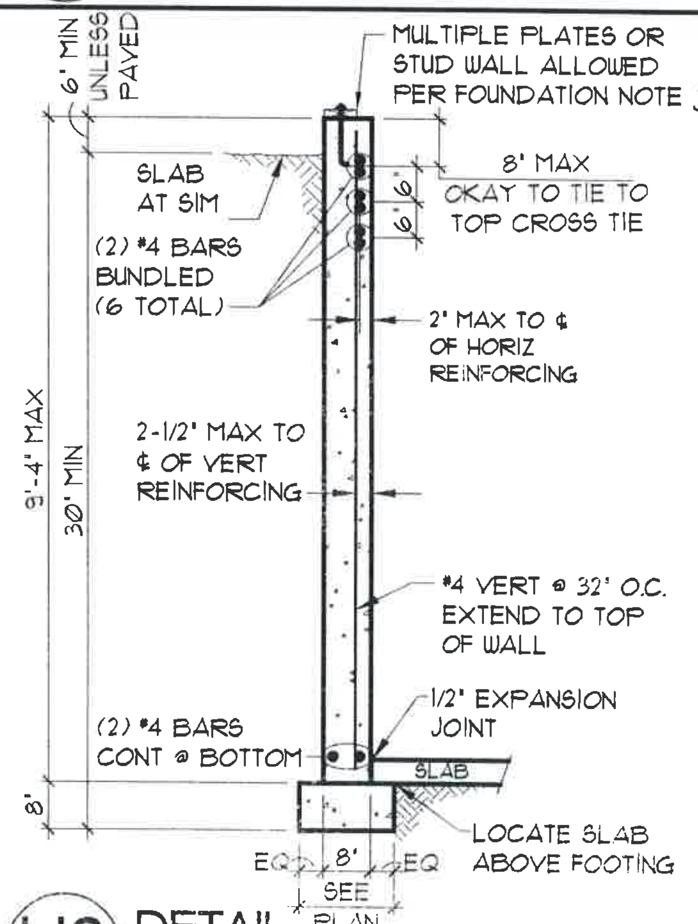

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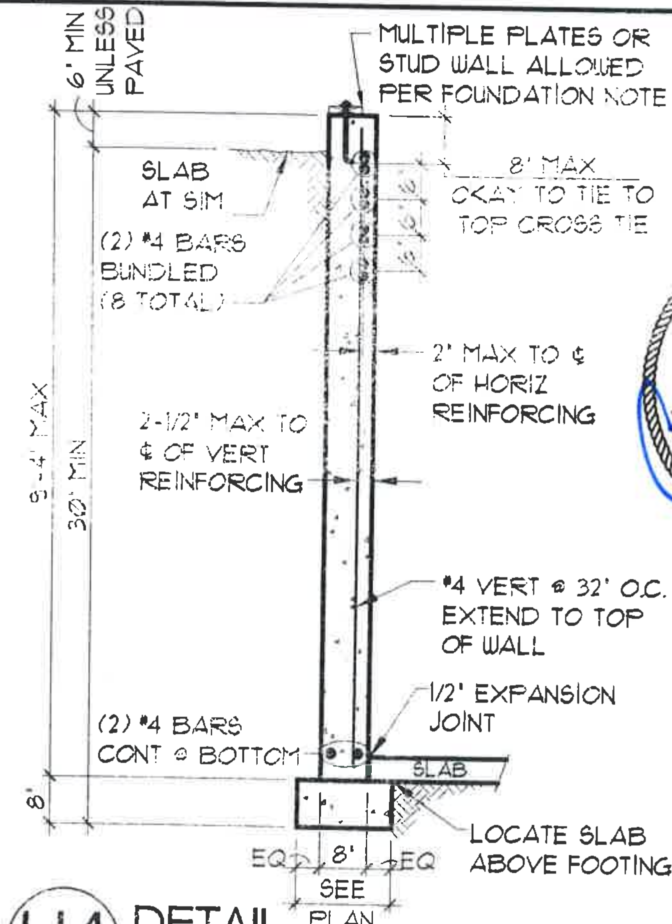

H4 DETAIL
N.T.S.

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DETAILS

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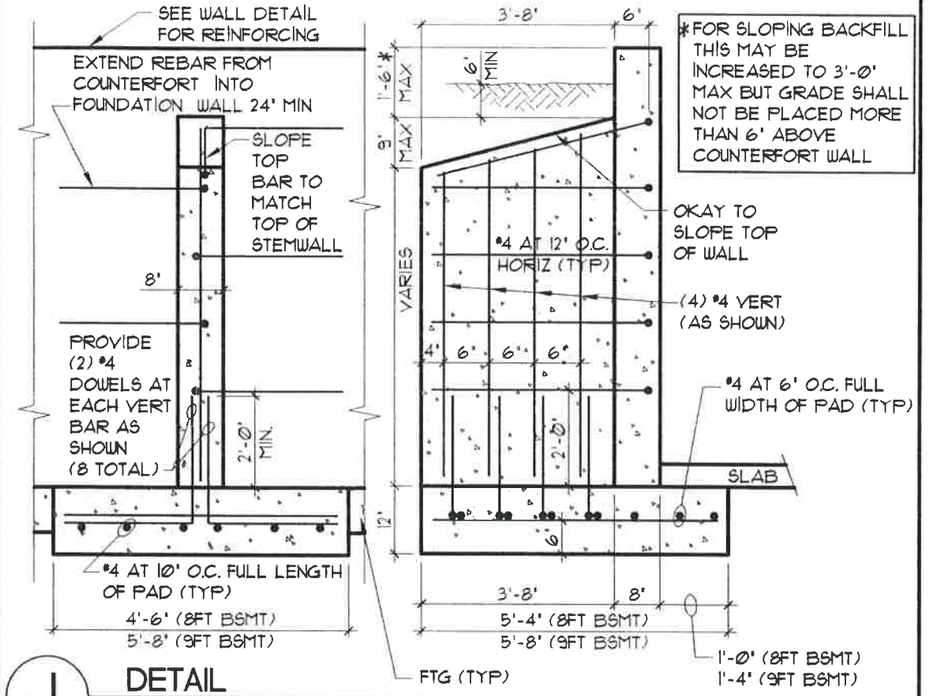

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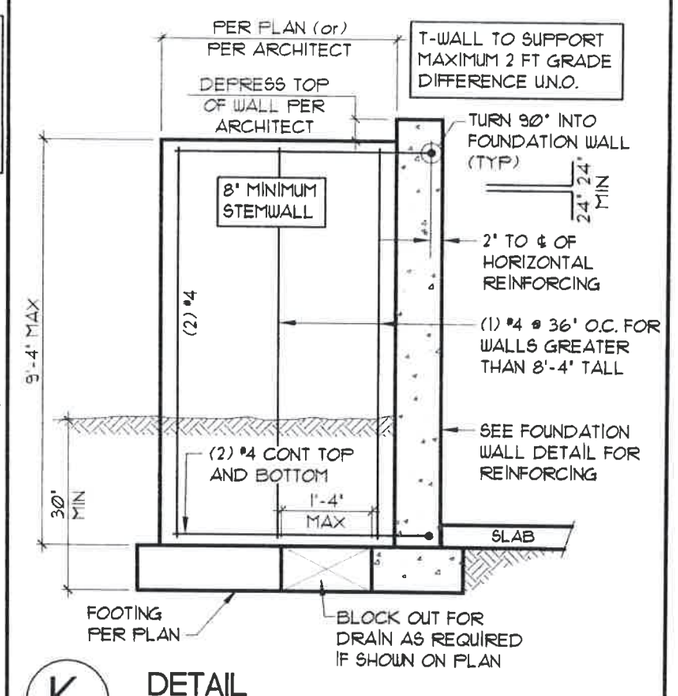
N.T.S.



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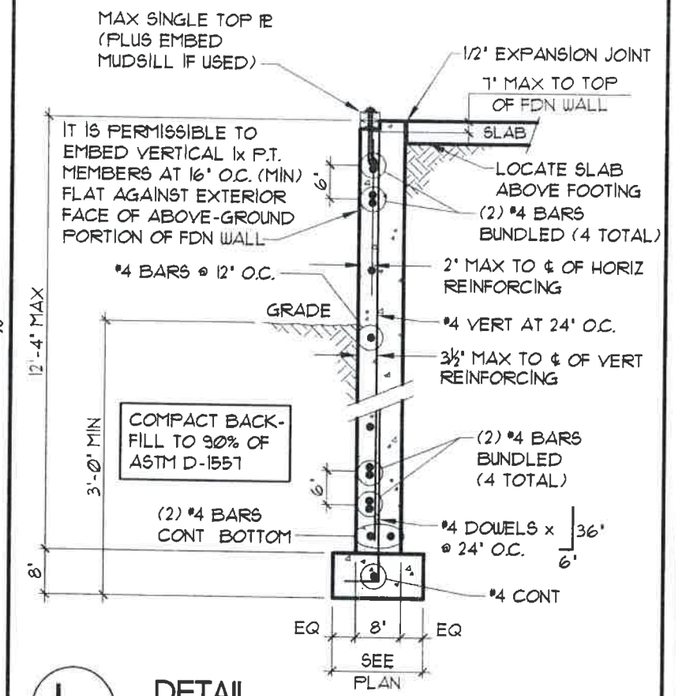

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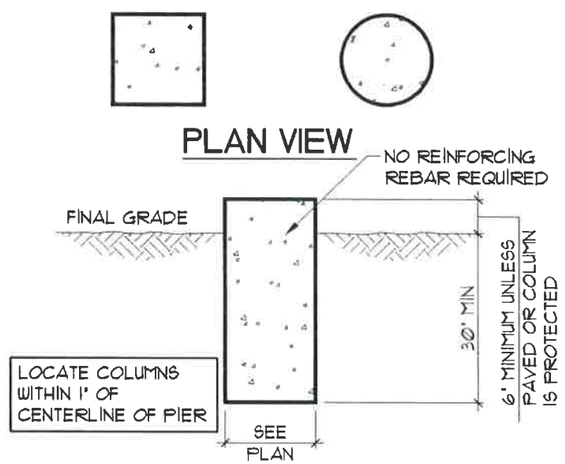

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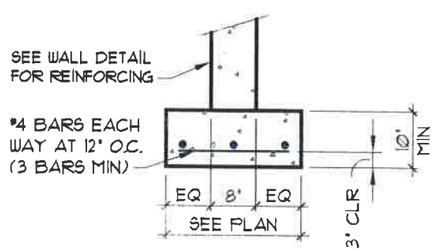

N DETAIL
N.T.S.

ROCKY MOUNTAIN GROUP
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SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

2782.2 MASTER

2,000 psf, 40 pcf

EL PASO COUNTY, COLORADO

CHALLENGER COLORADO, LLC

ARCH/ENG:	CAS
DRAWN:	CL
CHECKED:	CAS
DATE	11-22-2017

#	REVISION	DATE

JOB NO. 160868

SHEET NAME: NOTES & DETAILS

SHEET NO. F6 of 7

COLORADO LICENSED
COLETTE ANN SMITH
11/22/17
28698
PROFESSIONAL ENGINEER

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FOUNDATION GENERAL NOTES

APPLICABLE CODES:

A. These general notes apply to all structural drawings. This project is designed in accordance with the International Residential Code (IRC), 2009 Edition, and the 'Minimum Design Loads for Buildings and Other Structures' (ASCE 7-05) and The Pikes Peak Regional Building Code. (2011 Edition).

B. All material and workmanship shall be in accordance with applicable provisions of the codes specified above.

LOADS USED IN DESIGN:

A. Roof Snow Load: ..... 30 psf
Roof Dead Load: ..... 15 psf

B. Floor Live Load: ..... 40 psf
Floor Dead Load: ..... 10 psf

C. Deck Live Load: ..... 40 psf
Deck Dead Load: ..... 15 psf

Note: TRANSFER AND SUPPORT OF WIND LOADS ONTO THE FOUNDATION BY OTHERS.

COORDINATION:

A. **DO NOT SCALE.** The schematic layout shown is based solely on architectural plans and other written documentation by **Challenger Homes, Inc.** for **Master Model 2782.2**, last dated **6-19-13**. Changes affecting the layout shown must be specific and clearly conveyed to **Rocky Mountain Group** in written form as a change for inclusion into these plans. **Contractor and/or client shall verify all dimensions and layout prior to construction.** All dimensions on structural drawings shall be checked against architectural drawings and any discrepancies shall be brought to the attention of the Designer and Engineer immediately. Refer to mechanical, electrical and architectural drawings for openings not shown on structural drawings. Due to the nature of the residential design process, Rocky Mountain Group shall not be held responsible for dimensional and layout discrepancies if this verification is not completed and/or if Rocky Mountain Group is not notified immediately upon discovery of such discrepancies.

B. Design is void after two years from original date of issue or date of most recent "update" revision. Plan must be updated to acceptable codes and practices at that time.

FOUNDATION:

A. The foundation design has been completed in accordance with pertinent standards, recommended design soil parameters, accepted engineering design procedures, and is based on the best information available at the time of completion. The design is intended to minimize differential movement resulting from the heaving of expansive soil or settling of subsurface soils. It must be recognized that foundation components will undergo movement. It shall be the responsibility of the contractor and/or present owner to inform any subsequent owners of the soil condition and advised to maintain good practices in the future with regard to surface and subsurface drainage, framing of partitions above floor slabs, and finish work above the floor slabs, etc. THIS "RESIDENTIAL STYLE" FOUNDATION PLAN IS INTENDED TO BE USED WITH THE REFERENCED ARCHITECTURAL / STRUCTURAL PLAN FOR SITE EXCAVATION AND FOUNDATION CONSTRUCTION.

B. Unless noted otherwise on this plan, foundation design parameters include an assumed allowable soil bearing pressure of **2,000 psf** with no minimum dead load requirement and an assumed equivalent fluid pressure (EFP) of **40 pcf**.

C. An open excavation observation by a licensed Colorado engineer shall be performed prior to construction to verify that the soil type and conditions are consistent with design criteria of the soil report referenced above. If the soil properties are found to be different from this criteria, the foundation engineer shall be promptly notified so that the foundation design may be reviewed. The Contractor shall thoroughly review and understand all pertinent construction aspects of this report before beginning any work.

D. The contractor shall be responsible to coordinate the location of mechanical openings, floor drains, inserts, depressions, buried cables and utilities, etc. with architectural, civil, mechanical and electrical drawings.

E. Specific location of beam pockets, windows, and wall and slab steps by others unless noted otherwise on this plan. No beam pocket shall be within 16" clear of window frame. For beam pockets 12" deep or less, drape horizontal reinforcing below pocket. For beam pockets deeper than 12", step reinforcing at each side of beam pocket per top of wall step detail.

F. Mechanically compact all interior and exterior backfill per geotechnical engineers recommendations. Avoid inducing construction loads along foundation walls in excess of lateral design loads shown above. Use non-expansive exterior backfill along foundation walls unless noted otherwise on this plan. It will also be necessary to adjust and maintain the grade immediately against foundations periodically to avoid the creation of a water trap as the backfill settles over time.

G. Slope backfill away from the building a minimum of 10% for the first 10 feet (2% at paved areas) unless a more stringent requirement is specified by the geotechnical engineer. Carry roof drains across the backfilled areas. Do not allow water to stand or pond near the building. Do not flood the backfill. Planters, if any, shall be well sealed and drained. Irrigation devices shall be kept a minimum of 5 feet from all foundations.

H. Contact Geotechnical engineer for proper preparation of subgrade for placement of floor slabs.

I. Floor slabs have a high probability of moving vertically. Floor slabs shall be separated from all structural portions of building with an expansion joint of minimum 1/2" thick Styrofoam or other approved joint material. A gap in non-bearing partitions and/or furring walls, non-rigid connections to the stairway construction and non-rigid construction of door frames may be required by the Geotechnical engineer. If required, these items may also require reconstruction over the life of the structure to maintain the independent vertical movement of the floor slabs.

J. Unless a specific top of wall connection is shown, **foundation wall stability is not dependent on floor framing for lateral support.** A stud wall (cripple wall) or maximum of (3) 2x4 or (4) 2x6 plates (in addition to embedded mudsill) are allowed along the top of the foundation wall (including garden level walls) unless noted otherwise. Walls having backfill on both the interior and exterior faces should have backfill on either side brought up approximately together. Otherwise, no exterior backfill should be placed until the floor slab is in place or the bottom of the foundation wall is otherwise properly braced. Top of wall must also be braced if backfill is placed within 14 days of concrete pour.

K. The use of drywells on this site is not recommended.

L. The location of foundation beam pockets, windows, jogs, wall and slab steps, and top of wall elevations and connections are critical to foundation performance. These items are frequently not shown on "residential style" plans and are not within the scope of this design (unless noted otherwise) as they typically change during the actual residential construction. As a result, this design does not address proper foundation configuration unless stated specifically on the drawings.

CONCRETE:

A. All concrete operations including (but not limited to) mix design, mixing, transporting, placing, reinforcement detailing, and placing curing, and testing shall be constructed in accordance with the American Concrete Institute "Building Code Requirement Reinforced Concrete" and "Specifications for Structural Concrete for Buildings" (ACI 318 and ACI 301) latest editions. Section 1.3 "Inspection" of ACI 318 is deleted in its entirety, see "Field Observations" paragraph. All concrete shall be of stone aggregate, unless noted otherwise.

B. **Concrete mixes:** See specifications for any additional durability requirements.

Mix 'A' For interior slabs on grade:	**Mix 'B'** For footings, grade beams, and miscellaneous concrete:
4,000 psi minimum compressive strength at age of 28 days.	3,000 psi minimum compressive strength at age of 28 days.
Type I/II Cement, minimum of 540 pounds per cubic yard.	Type I/II Cement, minimum of 470 pounds per cubic yard.
Fly ash not allowed.	Fly ash is allowed.
1" maximum aggregate size.	3/4" maximum aggregate size.
3% Maximum air.	6%± 1% Entrained air.
4" (8" with superplasticizer) maximum slump.	4" (8" with superplasticizer) maximum slump.

C. Reinforcing is to be new billet steel ASTM A615, Grade-60, except ties are to be Grade 40. No welding of reinforcement shall be allowed unless approved by Rocky Mountain Group. Provide not less than (2) #4 around all sides of all openings in concrete and extend 2'-0" past edges of openings. No splices of reinforcement are permitted except as detailed or authorized by structural engineer. Where permitted, use contact lap splices, (36) bar diameters minimum. Welded Wire Fabric (W.W.F.) shall be in accordance with ASTM A185. Lap (1) full mesh minimum at splices.

D. Placing of Reinforcement: Provide chairs, bolsters, additional reinforcement, and accessories necessary to support reinforcement at position shown on drawings. Support of reinforcement on form ties, wood, brick, brickbat or other unacceptable material, will not be permitted.

E. Grout under base plates and bearing plates shall be non-shrink, non-metallic grout with a minimum compressive strength in 28 days of 7,500 psi.

F. Reinforcement shall be placed so that the following minimum concrete protection is provided, unless noted otherwise:

1) Concrete surfaces poured against ground ..... 3" Clear
2) Formed surfaces exposed to ground or weather. .... 1 1/2" Clear
3) Concrete not exposed to earth or weather. ..... 3/4"

G. All temporary shoring shall be the responsibility of the contractor. The contractor is responsible for determining when it is safe to remove forms and/or shoring. Forms and shoring must not be removed until the walls are strong enough to carry their own weight and any anticipated superimposed loads. For foundation walls, this typically requires at least 12 hours of cumulative curing time at a temperature of 50^F or more. Concrete must be adequately covered during cold periods to maintain this surface temperature. Due to varying weather conditions, alternative curing processes, and the use of Type I/II cement, **Rocky Mountain Group** suggests forms remain in place a minimum of 3 days to assure this performance specification has been met. When forms are stripped there must be no excessive deflection or distortion or discoloration and no evidence of damage to the concrete. Adequate thermal protection of the concrete shall be continued after stripping for a cumulative period of 48 hours at 50^F, or more, after the initial pour. See applicable notes for specifications on when to backfill foundation walls.

H. Anchor bolts to be per 2009 IRC unless noted otherwise on this plan (minimum (1) ½"ø anchor bolt spaced at a maximum of 6 feet O.C. with a minimum embedment of 8" into foundation wall. Also locate (1) anchor bolt a maximum of 12" from each end of each mudsill).

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