LIGHT & VENTILATION SCHEDULE

ROOM	ROOM AREA	WINDOW TYPE	LIGHT AREA REQ.	VENT AREA REQ.	ACTUAL LIGHT AREA	ACTUAL VENT AREA	TEMPERED	BEDROOM EGRESS AREA
GREAT ROOM	341.47 S.F.	(2)-3612+3612-2+(6)TR	27.31 S.F.	13.65 S.F.	56.28 S.F. + TR	27.28 S.F.		
KITCHEM / CASUAL DINING	440.62 S.F.	(3)-3612+3612-2+(6)TR+DR	35.24 S.F.	17.62 S.F.	70.35 S.F. + TR + DR	34.10 S.F. + DR		
BEDROOM #1	230.53 S.F.	3666-2	18.44 S.F.	9.22 S.F.	25.52 S.F.	12.32 S.F.		6.16 S.F.
BATH #1	117.31 S.F.	(3)TR	9.38 S.F.	4.69 S.F.	TRANSOM + ARTIFICAL	MECH.		
CLUB ROOM	220.26 S.F.	3612-2+(2)-3012	17.62 S.F.	8.81 S.F.	32.91 S.F.	15.82 S.F.		6.82 S.F.
LAV.	34.25 S.F.		2.74 S.F.	1.37 S.F.	ARTIFICAL	MECH.		
LAUNDRY	58.87 S.F.		4.70 S.F.	2.35 S.F.	ARTIFICAL	MECH.		
MESSY KITCHEN	56.65 S.F.		4.53 S.F.	2.26 S.F.	ARTIFICAL	MECH.		
BEDROOM #2	135.43 S.F.	3660	10.83 S.F.	5.41 S.F.	11.50 S.F. + ARTIFICAL	5.74 S.F. + MECH.		5.74 S.F.
BATH #2	49.07 S.F.		3.92 S.F.	1.96 S.F.	ARTIFICAL	MECH.		
BEDROOM #3	182.00 S.F.	3660	14.56 S.F.	7.28 S.F.	11.50 S.F. + ARTIFICAL	5.74 S.F. + MECH.		5.74 S.F.
RECREATION ROOM	658.45 S.F.	(3)-3660	52.67 S.F.	26.33 S.F.	34.50 S.F. + ARTIFICAL	17.22 S.F. + MECH.		

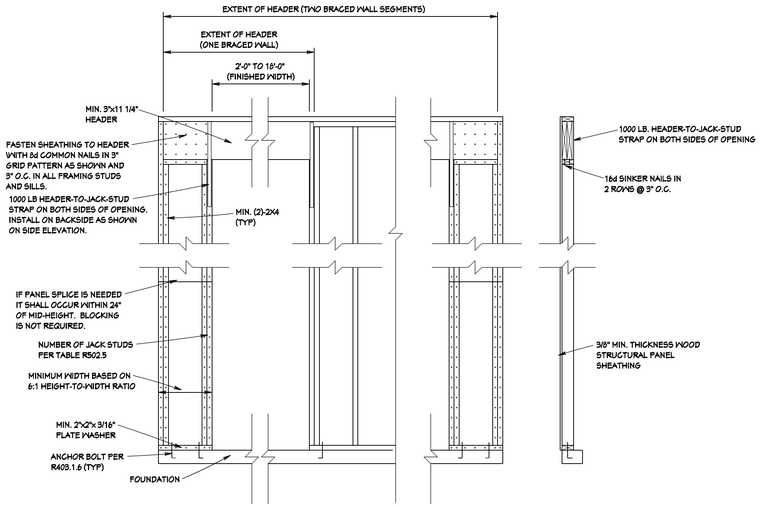
ARTIFICAL LIGHT AND MECHANICAL VENTILATION TO COMPLY WITH 2013 RCO SECTION 303.

ROOF ATTIC VENTILATION	
SQ.FT. ATTIC SPACE	3393.11 SQ.FT.
SQ.IN. VENTILATION REQ'D.	1610.00 SQ.IN.
SQ.IN. VENTILATION SUPPLIED = 2458.00 SQ. IN.	
92 LIN. FT. OF RIDGE VENT @ 18.00 SQ. IN./LIN. FT. = 1656.00 SQ.IN.	
31-16x6 SOFFIT VENTS @ 42.00 SQ. IN. EACH = 1302.00 SQ.IN.	

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA (2013 RCO TABLE 301.2 (1))

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP.	ICE SHIELD UNDERLAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN AGTUAL TEMP.
	SPEED	TOPOGRAPHIC EFFECTS		WEATHERING	FROST DEPTH	TERMITE					
20	90 MPH	NO	A	SEVERE	36"	MODERATE TO HEAVY	5 DEG. F	YES	A. 7/16/79 B. 4/22/97	1500	50.1 DEG. F

11450 Canby Court - Model Residence
Lot #621 Canby Court - Elevation "C"
"Manchester"



"APA" NARROW WALL BRACING DETAIL

NO SCALE

CODE NOTES

1) THE GARAGE SHALL BE COMPLETELY SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY MEANS OF A (1) ONE HOUR FIRE-RATED WALLS AND CEILINGS.

2) WHEN THE BASEMENT STAIR IS ENCLOSED AND THE UNDERSIDE IS ACCESSIBLE FOR STORAGE, THEN THE BOTTOM OF THE STAIR STRINGER SHALL BE FIRESTOPPED AND THE UNDERSIDE MUST BE COMPLETELY DRYWALLED.

3) HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF THE STAIRS WITH 3 OR MORE RISERS. HANDRAILS WILL BE MEASURED BETWEEN 34 TO 38 INCHES VERTICALLY FROM THE NOSING OF THE TREADS. THE HANDGRIP PORTION SHALL NOT BE MORE THAN 2 0" IN CROSS SECTION DIMENSION OR AN APPROPIATE SHAPE WHICH SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. THE HANDGRIP PORTION OF HANDRAILS SHALL HAVE A SMOOTH SURFACE WITH NO SHARP EDGES.

4) PORCHES, BALCONIES OR RAISED FLOORS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE SHALL HAVE GUARDRAILS NOT LESS THAN 36" HIGH. OPEN STAIRS WITH A RISE OF MORE THAN 30" SHALL HAVE GUARDRAILS NOT LESS THAN 34" HIGH. DISTANCE BETWEEN BALUSTERS TO BE LESS THAN 4".

5) SMOKE DETECTORS SHALL BE INSTALLED IN ALL SLEEPING ROOMS, AREA OUTSIDE AND ADJACENT WITHIN 15 FEET TO SLEEPING AREA ON EACH STORY INCLUDING BASEMENT AND CELLARS AND ALL DETECTORS SHALL BE INTERCONNECTED. REQUIRED SMOKE DETECTORS PRIMARY POWER SHALL BE FROM THE BUILDING WIRING AND WHEN THE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. ROOMS WITH SLOPED CEILINGS THAT MUST HAVE SMOKE DETECTORS INSTALLED, THE LOCATION OF THE SMOKE DETECTOR SHALL BE 3 FEET HORIZONTALLY FROM THE CEILING HIGHEST POINT.

6) THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MIN. 6" WITHIN THE FIRST 10'.

7) CONCRETE SLABS IN BASEMENT SHALL BE 2500 PSI AND GARAGE SHALL BE 3500 PSI, AND BOTH SHALL BE AIR ENTRAINED CONCRETE WITH VAPORBARRIER OVER BASE COURSE IN ACCORDANCE WITH CABO TABLE 402.2. ALL CONCRETE SLABS ON GRADE WITH HABITABLE SPACES SHALL HAVE A VAPORBARRIER OVER THE BASE COURSE.

8) ANCHOR BOLTS MUST BE IMBEDDED 15" INTO CONCRETE BLOCK AND IMBEDDED 7" INTO POURED CONCRETE, BOLTS SHALL BE SPACED 6' ON CENTER, 12" FROM CORNERS. ANCHOR STRAPS MUST BE INSTALLED PER MANUFACTURER'S SPECS.

9) 2x BLOCKING EQUAL TO THE JOIST DEPTH TO BE INSTALLED AT 24" O.C. BETWEEN THE BAND AND FIRST JOIST WHICH IS PARALLEL TO THE FOUNDATION WALL. BLOCKING SHALL BE ADEQUATELY FASTEN TO THE FLOOR SHEATHING.

10) UNDERFLOOR SPACES SHALL BE PROVIDED WITH 1 CFM OF AIR EXCHANGE PER EVERY 50 SQ. FT. OF CRAWLSPACE WHEN INSULATING THE CRAWLSPACE WALLS. EXTERIOR WALL VENTS MUST BE INSTALLED PER CABO AND ONLY WHEN INSULATING FLOOR JOISTS.

11) JOISTS UNDER PARALLEL BEARING PATTITIONS SHALL BE DOUBLED OR A BEAM OF ADEQUATE SIZE TO SUPPORT THE LOAD SHALL BE PROVIDED.

12) ENDS OF JOIST, BEAM OR GIRDER TO BEAR 1.0" OR GREATER ON WOOD OR METAL AND TO BEAR 3" OR GREATER ON MASONRY.

13) FIRESTOPPING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (VERT. AND HORIZ.) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES AND BETWEEN STORIES AND THE ROOF.

14) MAINTAIN A MIN. 2" AIR SPACE BETWEEN CHIMNEY AND THE INTERIOR AND MAINTAIN A MIN. OF 1" SPACE BETWEEN THE CHIMNEY AND THE EXTERIOR.

15) CHIMNEYS ARE TO EXTEND TO 2'-0" OR GREATER ABOVE HIGHEST PORTION OF THE BUILDING WITHIN 10'-0" AND SHALL BE 3'-0" OR GREATER ABOVE ITS ROOF PENETRATION.

16) FACTORY BUILT FIREPLACES SHALL COMPLY WITH LISTINGS AND SPECIFICATIONS OF MANUFACTURER AND/OR THE LATEST EDITION OF NFPA 211.

17) MASONRY AND FACTORY BUILT FIREPLACES SHALL BE EQUIPPED WITH AN EXTERIOR AIR SUPPLY TO ASSURE PROPER FUEL COMBUSTION.

18) INSULATION AND FACINGS EXPOSED IN ATTIC, DWELLING UNIT OR CRAWL SPACES SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED FACTOR NOT TO EXCEED 450.

19) IN ALL FRAME WALLS AND FLOORS, AND CEILINGS, NOT VENTILATED TO ALLOW MOISTURE TO ESCAPE, AN APPROVED VAPOR RETARDER HAVING A MAXIMUM PERM RATING OF 1.0, SHALL BE INSTALLED ON THE WARM-IN-WINTER SIDE OF THE THERMAL INSULATION.

20) 18" CLEARANCE SHALL BE MAINTAINED BELOW FLOOR JOISTS OVER EXPOSED EARTH IN CRAWL SPACE. VAPOR BARRIER MUST BE APPLIED OVER THE SOIL.

21) PROVIDE ACCESS TO ALL SHUT OFFS, UNIONS AND CONNECTIONS.

GENERAL NOTES

1) EXTERIOR DIMENSIONS ARE FROM OUT TO OUT OF SHEATHING.

2) INTERIOR DIMENSIONS ARE FROM FACE TO FACE OF FRAMING.

3) ALL INTERIOR PARTITIONS ARE 2x4 (3.5") UNLESS OTHERWISE NOTED.

4) LIVE/DEAD LOADS

FOOTINGS	1500 PSF
FIRST FLOOR	50 PSF
SECOND FLOOR	50 PSF
ROOF w/CEILING	30 PSF
ROOF w/o CEILING	20 PSF
DECKS	50 PSF

5) LUMBER GRADES
UNLESS OTHERWISE SPECIFIED ALL WOOD FRAMING SHALL HAVE THE FOLLOWING MINIMUM VALUES:

(#2 SPF) UP TO 2x4	E = 1.4 Fb = 1504 (REPETITIVE)
(#2 SPF) 2x6 2x8 2x10 2x12	E = 1.4 Fb = 1308 (REPETITIVE) Fb = 1209 (REPETITIVE) Fb = 1107 (REPETITIVE) Fb = 1006 (REPETITIVE)
(#2 SYP) UP TO 2x4	E = 1.6 Fb = 1725 (REPETITIVE)
(#2 SYP) 2x6 2x8 2x10 2x12	E = 1.6 Fb = 1440 (REPETITIVE) Fb = 1330 (REPETITIVE) Fb = 1208 (REPETITIVE) Fb = 1120 (REPETITIVE)
"LVL" LUMBER AS MANUFACTURED BY TRUSS-JOIST OR EQUAL	E = 1.9 Fb = 2600 Fc1 = 750 Fv = 285

6) PROVIDE 7/16" OSB, AT INSIDE AND OUTSIDE BUILDING CORNERS 4'-0" WIDE. TYPICAL FULL HEIGHT OF WALL w/8d @ 6" O.C. AT PANEL CORNERS & EDGES w/8d @ 12" O.C. AT INTERMEDIATE STUDS

7) WINDOWS ARE VINYL SINGLE HUNG.

8) PROVIDE DOUBLE STUDS AT ALL LINTEL AND WOOD BEAM BEARINGS UNLESS NOTED OTHERWISE.

9) ALL MULTIPLE STUDS AT BEAM BEARING MUST BE #2 SPF OR BETTER. NAIL TOGETHER WITH 10d @ 12" O.C.

10) PROVIDE SOLID BLOCKING BELOW ALL MULTIPLE STUDS.

11) MULTIPLE MEMBER BEAMS - NAIL TOGETHER WITH 2 ROWS 10d @ 12" O.C.

12) ALL FRAMING LUMBER #2 SPF OR BETTER EXCEPT ALL STUDS TO BE STUD GRADE LUMBER.

13) NAILING BASED ON COMMON NAIL SIZE, INCREASE 25% IF CEMENT COATED SINKERS OR NAIL GUNS ARE USED.

14) PROVIDE (2)-2x6 #2 SPF HEADERS AT EXTERIOR BEARING WALLS UNLESS NOTED OTHERWISE.

15) PROVIDE 1x2 "X" BRIDGING @ MIIDSPAN OF ALL FLOOR JOISTS.

16) PROVIDE ROOF SHEATHING AT TRUSS TOP CHORD AT ALL LOCATIONS FOR LATERAL SUPPORT OF TRUSS.

17) ALL LUMBER SHOULD BE GRADED AND MARKED WITH THE APPROPRIATE GRADE STAMP.

BUILDING AREAS

TOTAL BASEMENT	2209.44 SQ. FT.
FINISHED BASEMENT	1462.47 SQ. FT.
UNFINISHED BASEMENT	746.97 SQ. FT.
FIRST FLOOR	2194.33 SQ. FT.
GARAGE	655.00 SQ. FT.
FRONT PORCH	63.88 SQ. FT.
SIDE FRONT PORCH	23.00 SQ. FT.
COVERED PORCH	224.00 SQ. FT.
BASE LIVING AREA =	3656.80 SQ. FT.

FOUNDATION NOTES

1) ALL FOOTINGS ARE 16"x8" UNLESS OTHERWISE NOTED.

2) ALL NON-BASEMENT FOOTINGS ARE 6'-0" ABOVE BASEMENT FOOTINGS. (TOP TO TOP)

3) MASONRY FIREPLACE FOOTINGS SHALL BE THICKENED TO 12" WITH 6" PROJECTION ON ALL SIDES.

4) TO TIE POURED FOUNDATIONS OF DIFFERENT LEVELS, HOLD HIGH FOOTINGS BACK FROM LOWER EXCAVATIONS AND USE POURED LINTELS TO BRIDGE AND TIE.

5) ELEVATIONS BEGIN AT TOP OF BASEMENT FOOTING. (F=0'-0")

6) ALL CROSSHATCHED POURED CONCRETE WALLS TOP OUT AT W=+10'-0" INCLUSIVE. ALL OTHER POURED CONCRETE WALLS TOP OUT AT ELEVATION SHOWN INCLUSIVE.

7) ALL FOOTING DESIGNS BASED ON 1500 PSF SOIL BEARING.

8) CRAWL SPACE IS MECHANICALLY VENTILATED AT A RATE OF 1 CFM FOR EACH 50 SF OF FLOOR AREA.

9) ALL METAL FASTENERS, CONNECTORS OR OTHER HARDWARE IN DIRECT CONTACT WITH ANY PRESERVATIVE TREATED LUMBER SHALL BE STAINLESS STEEL TYPE 304 OR TYPE 316 OR HAVE A GALVANIZED COATING THAT COMPLIES WITH THE ASTM A123 CONNECTORS OR A153 FASTENERS CLASS D STANDARDS FOR FASTENERS AND HARDWARE. THE CONNECTORS AND FASTENERS MUST BE MADE OF THE SAME MATERIAL FOR COMPATIBILTY.

INDEX TO DRAWINGS

EXISTING	SH. #	DESCRIPTION
	1A	COVER SHEET
	1B	SPECIALTY DETAILS AND NOTES
	2A	FOUNDATION AND BASEMENT PLAN
	2B	FINISHED BASEMENT PLAN
	3	FIRST FLOOR PLAN
	4A	EXTERIOR ELEVATIONS - FRONT
	4B	EXTERIOR ELEVATIONS - RIGHT SIDE
	4C	EXTERIOR ELEVATIONS - REAR
	4D	EXTERIOR ELEVATIONS - LEFT SIDE
	5	STAIR AND WALL SECTIONS
	F-2	FIRST FLOOR - FLOOR FRAMING PLAN
	F-3	ROOF FRAMING PLAN
	E-2	BASEMENT ELECTRIC PLAN
	E-3	FIRST FLOOR ELECTRIC PLAN
		ENGINEERING DRAWINGS BY OTHERS
		HVAC PLANS
		ENGINEERED ROOF TRUSS LAYOUT PLAN
		SEALED TRUSS DRAWINGS
		ENGINEERED FLOOR JOIST LAYOUT PLANS
		EWP BEAM CALCULATIONS

No.	DATE	BY	REVISIONS

SCALE None
DRN. LF 03-28-2018
CHK. PLOT LF 03-28-2018
PLOT
PLOT
PLOT
PLOT

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LARRY EUGENE FOLK 10772
REGISTERED ARCHITECT

Larry Folk - License #10772
Expiration Date 12/31/2018

PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**1-A**

EXHIBIT H-4

BOMAN KEMP BASEMENT WINDOW SYSTEMS
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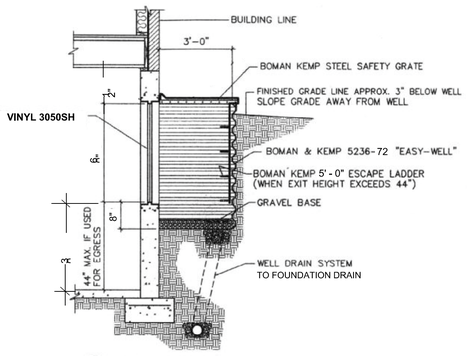
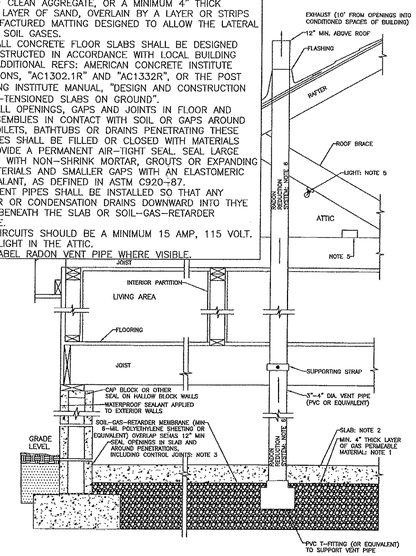
Vinyl Window



A WALL SECTION THRU. WINDOW WELL

Vinyl Wdw.	R.O.	Clear Opng.	Vent Area FT^2
3050SH	35-¾"x 59-¾"	31-¾"x 26"	5.73

NOTES:
1. ALL CONCRETE SLABS THAT COME IN CONTACT WITH THE GROUND SHALL BE LAID OVER A GAS PERMEABLE MATERIAL MADE UP OF EITHER A MINIMUM 4" THICK UNIFORM LAYER OF CLEAN AGGREGATE, OR A MINIMUM 4" THICK UNIFORM LAYER OF SAND, OVERLAIN BY A LAYER OR STRIPS OF MANUFACTURED MATTING DESIGNED TO ALLOW THE LATERAL FLOW OF SOIL GASES.
2. ALL CONCRETE FLOOR SLABS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL BUILDING CODES. ADDITIONAL REFS: AMERICAN CONCRETE INSTITUTE PUBLICATIONS, "AC1302.1R" AND "AC1332R", OR THE POST TENSIONING INSTITUTE MANUAL, "DESIGN AND CONSTRUCTION OF POST-TENSIONED SLABS ON GROUND".
3. ALL OPENINGS, GAPS AND JOINTS IN FLOOR AND WALL ASSEMBLIES IN CONTACT WITH SOIL OR GAPS AROUND PIPES, TOILETS, BATHTUBS OR DRAINS PENETRATING THESE ASSEMBLIES SHALL BE FILLED OR CLOSED WITH MATERIALS THAT PROVIDE A PERMANENT AIR-TIGHT SEAL. SEAL LARGE OPENINGS WITH NON-SHRINK MORTAR, GROUTS OR EXPANDING FOAM MATERIALS AND SMALLER GAPS WITH AN ELASTOMERIC JOINT SEALANT, AS DEFINED IN ASTM C920-87.
4. VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR CONDENSATION DRAINS DOWNWARD INTO THYE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER MEMBRANE.
5. CIRCUITS SHOULD BE A MINIMUM 15 AMP, 115 VOLT. PROVIDE LIGHT IN THE ATTIC.
6. LABEL RADON VENT PIPE WHERE VISIBLE.

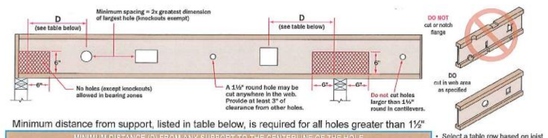


Passive Radon Installation

4

BCI® Joist Hole Location & Sizing

BCI® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center



Minimum distance from support, listed in table below, is required for all holes greater than 1½"

MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE

Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	3	5	6	7	-	-	-	-	-	-	-
Any 9½" Joist	8	1'-0"	1'-1"	1'-5"	2'-1"	2'-9"	3'-1"	3'-5"							
	Span [ft] 12	1'-0"	1'-2"	2'-2"	3'-2"	4'-2"	4'-8"	5'-2"							
	16	1'-0"	1'-7"	2'-11"	4'-3"	5'-7"	6'-3"	6'-11"							
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	2	3	4	5	7	8	-	-	-	-	-
Any 11½" Joist	8	1'-0"	1'-1"	1'-5"	1'-10"	2'-4"	2'-7"	2'-10"	3'-4"	3'-9"					
	Span [ft] 12	1'-0"	1'-4"	2'-1"	2'-10"	3'-7"	3'-11"	4'-3"	5'-0"	5'-8"					
	16	1'-0"	1'-10"	2'-10"	3'-8"	4'-9"	5'-3"	5'-9"	6'-9"	7'-7"					
	20	1'-1"	2'-3"	3'-6"	4'-8"	5'-11"	6'-7"	7'-2"	8'-5"	9'-6"					
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	-	2	3	3	5	6	6	8	9	-	-
Any 14" Joist	8	1'-0"	1'-1"	1'-2"	1'-3"	1'-8"	1'-10"	2'-1"	2'-6"	2'-10"	2'-11"	3'-4"	3'-8"		
	Span [ft] 12	1'-0"	1'-1"	1'-3"	1'-10"	2'-6"	2'-10"	3'-1"	3'-9"	4'-3"	4'-4"	5'-0"	5'-7"		
	16	1'-0"	1'-1"	1'-8"	2'-6"	3'-4"	3'-9"	4'-2"	5'-0"	5'-8"	5'-10"	6'-8"	7'-5"		
	20	1'-0"	1'-1"	2'-1"	3'-2"	4'-2"	4'-8"	5'-2"	6'-3"	7'-2"	7'-3"	8'-4"	9'-4"		
	24	1'-0"	1'-4"	2'-6"	3'-9"	5'-0"	5'-8"	6'-3"	7'-6"	8'-7"	8'-9"	10'-0"	11'-2"		
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	-	-	-	2	3	5	5	6	8	9	10
Any 16" Joist	8	1'-0"	1'-1"	1'-2"	1'-2"	1'-3"	1'-3"	1'-3"	1'-7"	1'-11"	2'-0"	2'-5"	2'-9"	3'-2"	3'-7"
	Span [ft] 12	1'-0"	1'-1"	1'-2"	1'-2"	1'-3"	1'-6"	1'-10"	2'-5"	2'-11"	3'-0"	3'-7"	4'-2"	4'-9"	5'-4"
	16	1'-0"	1'-1"	1'-2"	1'-2"	1'-8"	2'-1"	2'-6"	3'-3"	3'-11"	4'-0"	4'-10"	5'-7"	6'-4"	7'-2"
	20	1'-0"	1'-1"	1'-2"	1'-2"	2'-1"	2'-7"	3'-1"	4'-1"	4'-11"	5'-1"	6'-0"	7'-0"	8'-0"	8'-11"
	24	1'-0"	1'-1"	1'-2"	1'-4"	2'-6"	3'-1"	3'-9"	4'-11"	5'-11"	6'-1"	7'-3"	8'-5"	9'-7"	10'-9"

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out. DO NOT cut the flanges. Holes apply to either single or multiple joists in repetitive member conditions.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- 1½" round knockouts in the web may be removed by using a short piece of metal pipe and hammer.
- Holes may be positioned vertically anywhere in the web. The joist may be set with the 1½" knockout holes turned either up or down.
- This table was designed to apply to the design conditions covered by tables elsewhere in this publication. Use the BC CALC® software to check other hole sizes or holes under other design conditions. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Large Rectangular Holes in BCI® Joists

Hole size table based on maximum uniform load of 40 psf live load and 10 psf dead load, at maximum spacing of 24" on-center.

Single Span Joist

Joist Depth	Maximum Hole Size: Simple Span	Multiple Span
9½"	6" x 14"	6" x 12"
11⅞"	8" x 16"	8" x 13"
14"	9" x 18" 10" x 17"	8" x 16"
16"	11" x 18" 12" x 16"	10" x 14"

Multiple Span Joist

Notes:
Additional holes may be cut in the web provided they meet the specifications as shown in the hole distance chart shown above or as allowed using BC CALC® sizing software.

Larger holes may be possible for either Single or Multiple span joists; use BC CALC® sizing software for specific analysis.

Boise Cascade EWP • Easiest Builder Guide • 11/27/2012

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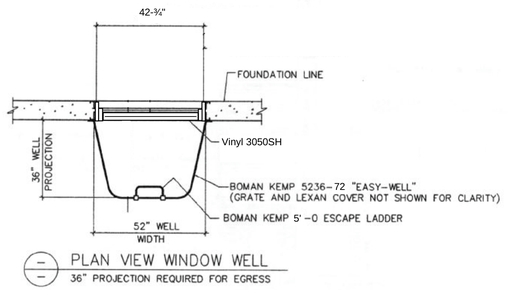
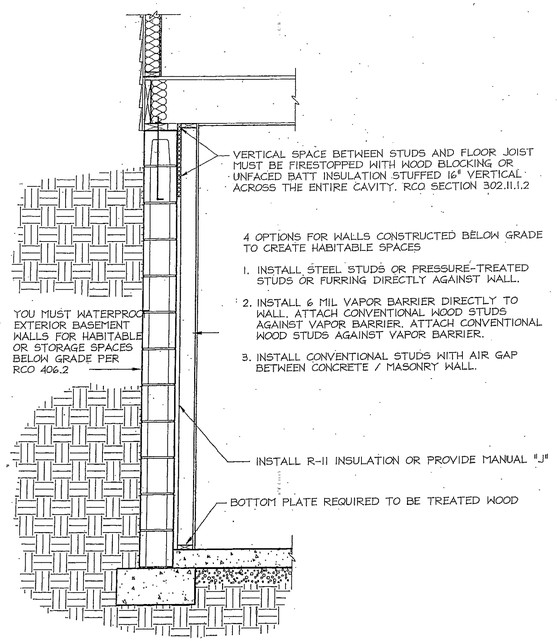


PLAN VIEW WINDOW WELL
36" PROJECTION REQUIRED FOR EGRESS



REQUIREMENTS FOR FINISHING BELOW-GRADE AREAS RCO 2013

Specifications — Tuff-N-Dry WaterProofing

Membrane Properties

Type	Polymer-enhanced asphalt liquid-applied membrane		
Colour	Black		
Solids	64% ± 3% (percent by weight)		
Density	8.2 ± .1 lbs/gal		
Application	Airless spray		
Application Temperature	Minimum -18°C (0°F)		
Application Thickness	60 mils (wet)[1]		
Cure Time	16–24 hrs (under normal conditions)		
Adhesion to Concrete (Peel, N/m)	*Results:* Exceeds	*Method:*	ASTM C-836
Elongation	*Results:* >2000%	*Method:*	ASTM D-412
Crack Bridging Ability	*Results:* Passes	*Method:*	ASTMC-836
Water Vapour Permeance	*Results:* <1 perm for 40-mil dry coating (grains/sf/hr)	*Method:*	ASTM E-96 Wet Method
Liquid Water Absorbtion	*Results:* 0.3% [wt]	*Method:*	ASTM E-1228[2]
Resistance to Degradation in Soil	*Results:* Good	*Method:*	ASTM E-154
Mould Growth and Bacterial Attack	*Results:* No Degradation	*Methods:*	ASTM D-3273, ASTM D-3274
Resistance to Hydrostatic Head [ft of water]	*Results:* Could not generate hydrostatic pressure	*Method:*	See[3]

[1] Measured in place with an ASTM D-6414 notch film gauge. Wet film measuring 60 mils cures to 40 dry mils.
[2] 72 Hour water soak 1" x 2" x 0.40" samples of waterproofing compound.
[3] When foundation board was applied to TUFF-N-DRI, the water drained away at a faster rate than the surrounding soil percolated, eliminating any hydrostatic build-up.

Board Properties

For more details on TUFF-N-DRI, contact your local Barrier Solutions Contractor, call 800-DRY-BSMT or visit our Web site at TUFF-N-DRI.com.

Type	WARM-N-DRI Foundation Board			TUFF-N-DRI Barrier Board		
Board Size	4' x 8'	4' x 4'		4' x 8'	4' x 4'	
Board Thickness	3/4"	1-3/16"	2-3/8"	3/4"	1-3/16"	2-3/8"
Drainage Ability *(hydraulic gradient of 1.0)*						
Board Thickness	3/4"	1-3/16"	2-3/8"	3/4"	1-3/16"	2-3/8"
Gallons/Hour/Lineal Foot[1]	>70	>110	>210	>50	>80	>160
Thermal Resistance						
Board Thickness	3/4"	1-3/16"	2-3/8"	3/4"	1-3/16"	2-3/8"
Resistance	R-3	R-5	R-10	R-3[2]	R-5[2]	R-10[2]

[1] Drainage rates with 10% board compression. At 65% compression, foundation board has the drainage capabilities of coarse sand.
[2] As manufactured resistance values (R-value)

GUARANTEED FOR BASEMENTS TUFF-N-DRI

An RPM company

TREMCO Barrier Solutions.

TBS-0037
03/08

No.	DATE	BY	REVISIONS

SCALE	None
DRN.	LF 03-28-2018
CHK.	PLOT 03-28-2018
	PLOT
	PLOT
	PLOT
	PLOT

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Specialty Details and Notes

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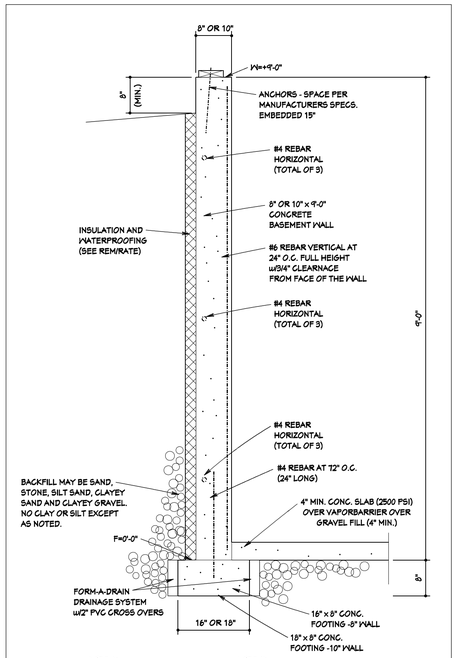
STATE OF OHIO
LARRY EUGENE FOLK 10772
REGISTERED ARCHITECT

Larry Folk - License #10772
Expiration Date 12/31/2018

PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	1-B

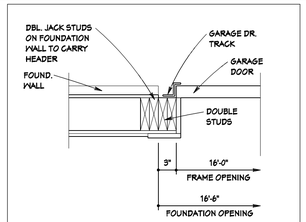


NOTE 1:
PROVIDE (2) - #4 HORIZONTAL WALL REINFORCING BELOW BASEMENT WINDOWS EXTENDING 12" BEYOND EACH SIDE OF WINDOW

NOTE 2:
PROVIDE #4 VERTICAL REINFORCEMENT FULL HEIGHT AT EACH SIDE OF EACH BASEMENT WINDOW

FOUNDATION WALL DETAIL - FDN-1

SCALE: 3/4" =1'-0"

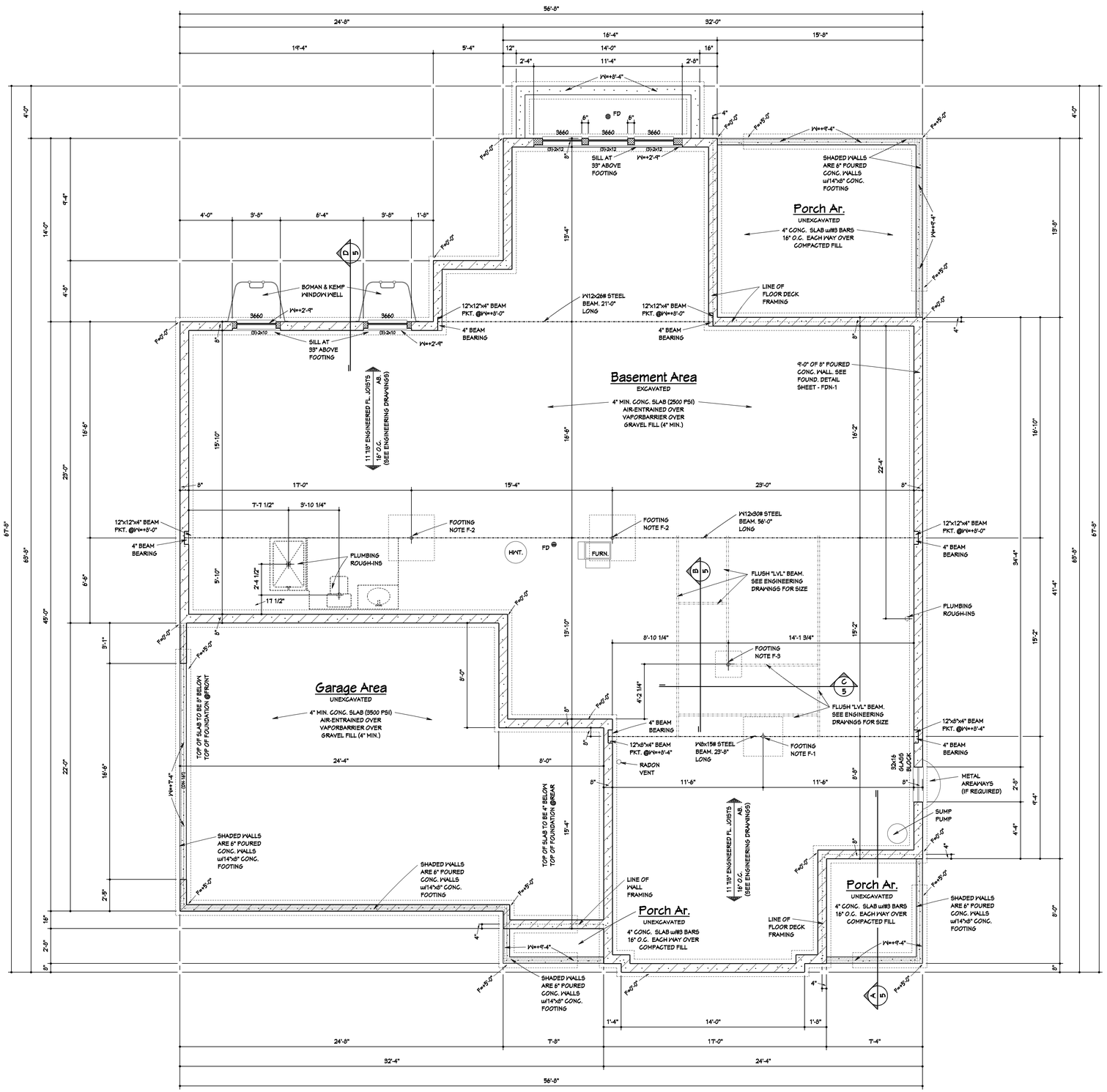


GARAGE DOOR DETAIL

SCALE: 1 1/2" =1'-0"

NOTE:
EXCEPT FOR STEEL BEAMS AND/OR HEADERS THE STRUCTURAL ELEMENTS SHOWN ON THESE DRAWINGS IS FOR DESIGN INTENT ONLY.

REFER TO MANUFACTURER SUPPLIED STRUCTURAL SHEETS FOR ALL JOISTS, BEAMS, HEADERS, TRUSSES AND RAFTERS FOR SIZES AND LOCATIONS.



NOTE:
SEE SHEET No. 1 FOR "FOUNDATION NOTES"

NOTE:
BUILDER TO VERIFY THAT ALL STRUCTURAL LOADS TRANSFER TO FOUNDATION.

FOOTING F-1

36"X36"X18" CONC. FOOTING w/8" DIAMETER SCH. 40 ADJ. STEEL PIPE COLUMN (4)-#4 BARS EACH WAY

FOOTING F-2

42"X42"X18" CONC. FOOTING w/8" DIAMETER SCH. 40 ADJ. STEEL PIPE COLUMN (4)-#4 BARS EACH WAY

FOOTING F-3

24"X24"X12" CONC. FOOTING w/8" DIAMETER SCH. 40 ADJ. STEEL PIPE COLUMN (4)-#4 BARS EACH WAY

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.	PLOT	LF
	PLOT	
	PLOT	
	PLOT	
	PLOT	

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Foundation and Basement Plan

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Expiration Date 12/31/2018

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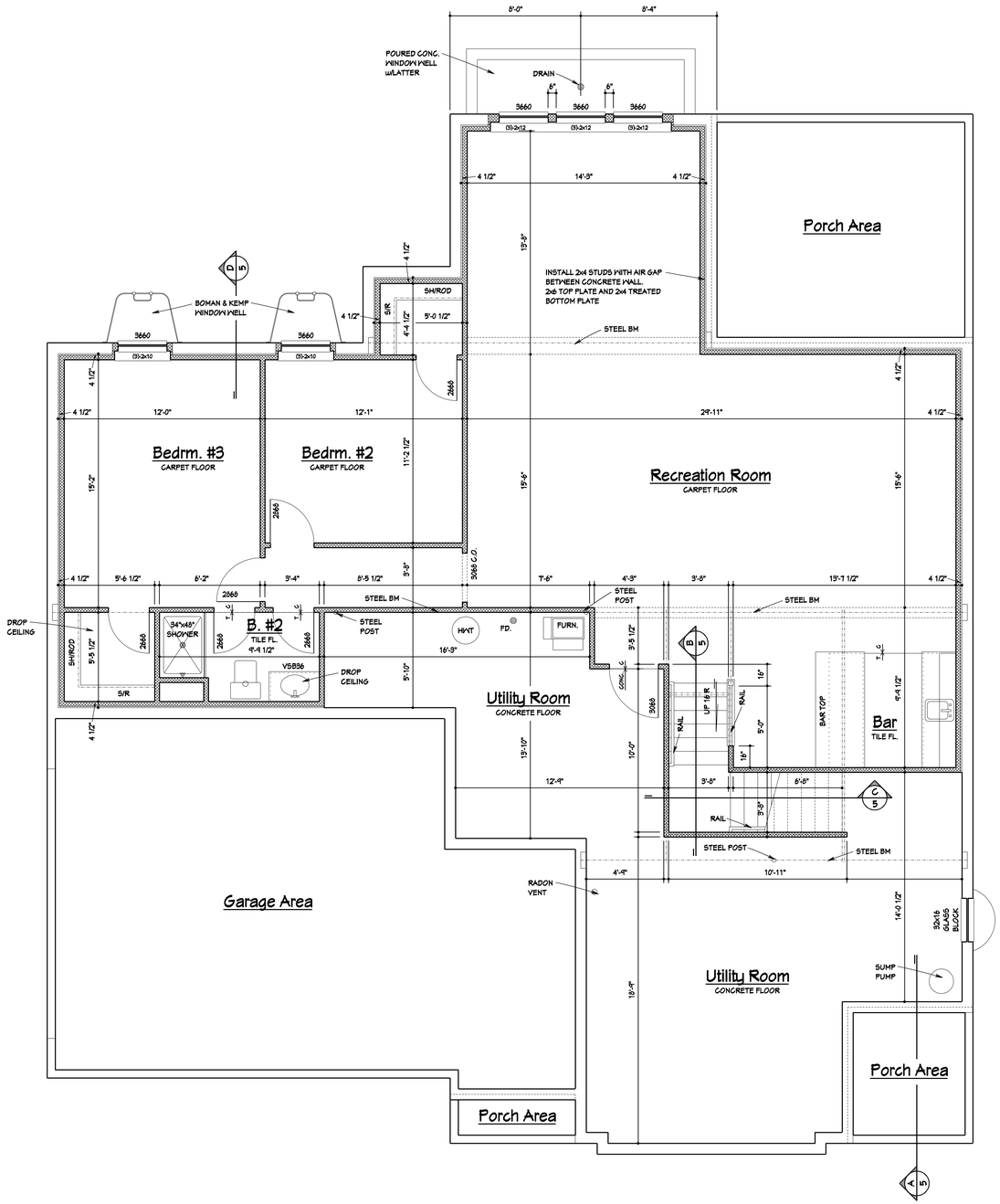
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**2-A**

NOTE:
SEE SHEET No. 1 FOR "GENERAL NOTES"

NOTE:
BUILDER TO VERIFY THAT ALL STRUCTURAL LOADS TRANSFER TO FOUNDATION.



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No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.	PLOT	LF
	PLOT	
	PLOT	
	PLOT	
	PLOT	

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Finished Basement Plan

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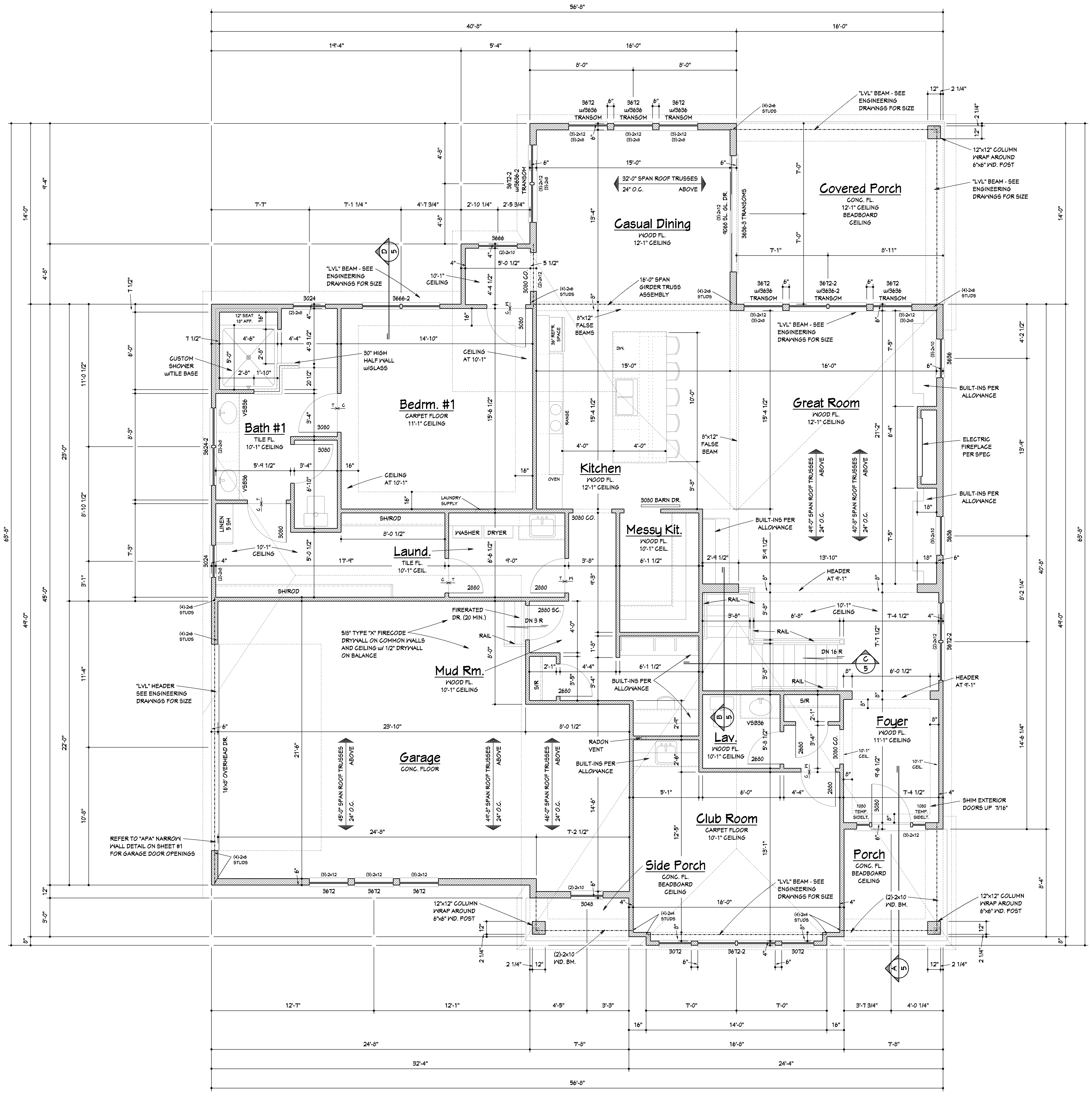
PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**2-B**

NOTE:
SEE SHEET No. 1 FOR "GENERAL NOTES"

NOTE:
BUILDER TO VERIFY THAT ALL STRUCTURAL LOADS TRANSFER TO FOUNDATION.



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NOTE:
THE EXTERIOR WALLS OF THIS STRUCTURE ARE CONTINUOUSLY SHEATHED WITH 1/2" OSB TO COMP WITH THE BRACE REQUIREMENTS USING METHOD CS-WSP. ANY WALL AREAS THAT REQUIRE ALTERNATE BRACING METHODS AND LABELED WITH SPECIFIC METHOD REQUIRED. (SEE GARAGE NARROW WALL DETAIL ON SHEET #1)

THIS SHEATHING SHALL EXTEND AND BE ATTACHED TO THE SILL AND CAP PLATES OF THE WALLS. THE MUD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH A MIN. OF 1/2" DIA. BOLTS SPACED NO MORE THAN 6'-0" O.C. OR 1/2" DIA EXPANSION BOLTS AT 48" O.C. THESE ANCHOR BOLTS SHALL BE LOCATED BETWEEN 8" AND 12" FROM THE CORNERS AND ON EITHER SIDE OF DOORS THAT HAVE A THRESHOLD BELOW THE SILL PLATE.

PER METHOD CS-WSP ALL HORIZONTAL JOINTS IN THE SHEATHING WILL BE BLOCKED TO ACCOMMODATE THE CODE SPECIFIED FASTENING REQUIREMENTS OF:

6" O.C. AT EDGES AND 12" O.C. IN THE INTERIOR OF THE PANELS USING 8d COMMON NAILS

OR ALTERNATE METHOD OF
3" O.C. AT EDGES AND 6" O.C. IN THE INTERIOR OF THE PANELS USING 16GA. 3/8" CROWN STAPLES, 1 5/8" LONG.

ANY TRUSS HEELS OVER 9 1/4" WILL HAVE OSB EXTENDED TO WITHIN 2" OF THE UNDERSIDE OF THE RAFTER TAIL AND FASTENED IN THE SAME MANNER. TRUSS HEEL SHEATHING MUST SPAN ACROSS THE TOP PLATE/TRUSS CONNECTION OR EXTEND DOWN THE WALL AT LEAST 24" AND THE SAME HORIZONTAL BLOCKING MUST BE PROVIDED BETWEEN THE TRUSS FOR NAILING AS SPECIFIED ABOVE.

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.		
PLOT	LF	03-28-2018
PLOT		
PLOT		
PLOT		
PLOT		
PLOT		

LEF Architects, LLC

First Floor Plan

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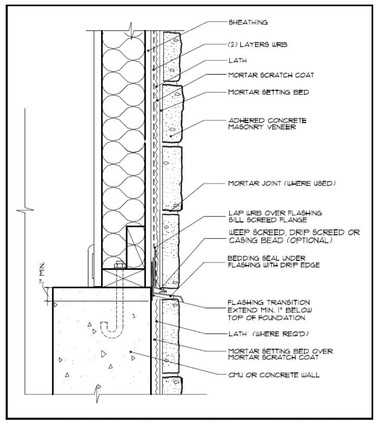
STATE OF OHIO ★ REGISTERED ARCHITECT ★
LARRY EUGENE FOLK 10772

Larry Folk - License #10772
Expiration Date 12/31/2018

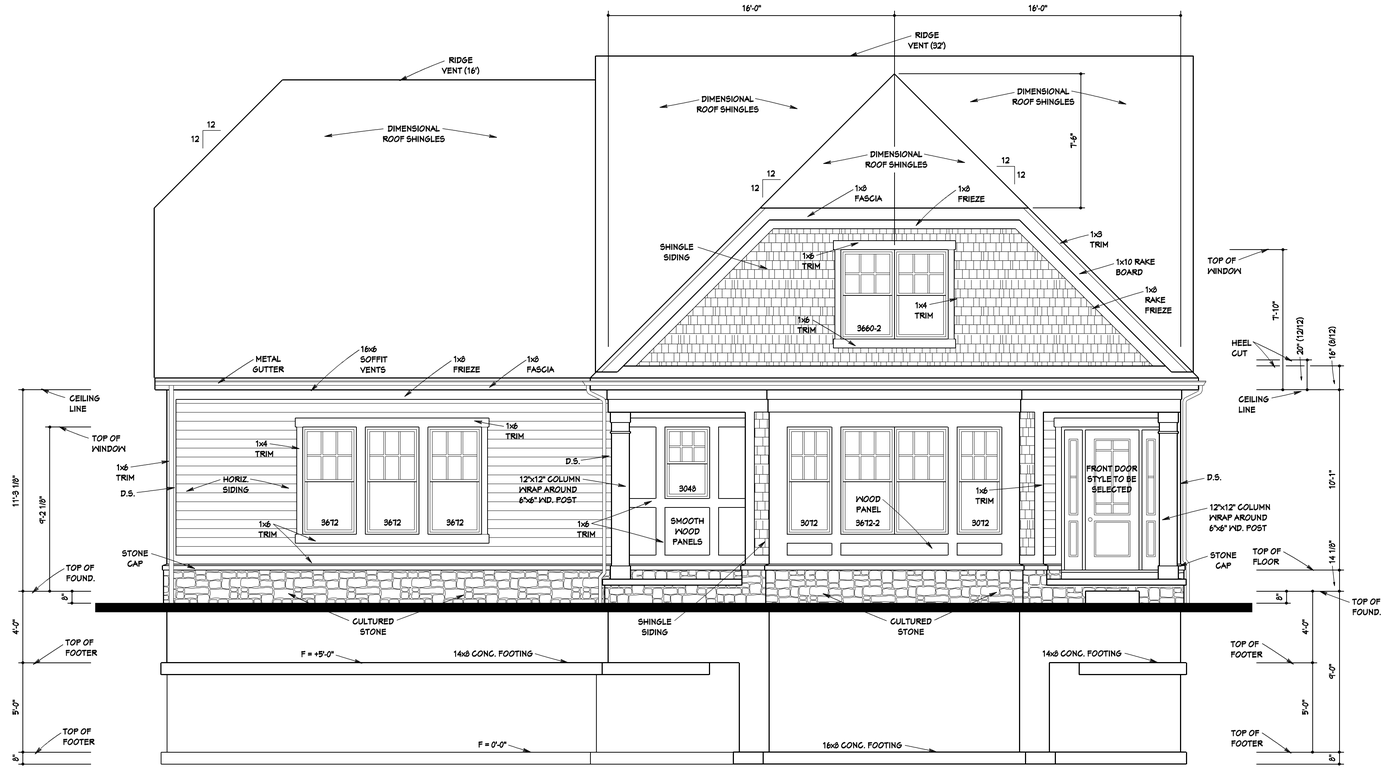
PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**3**



703.6.2.1 Weep Screeds. A mininum 0.019 (0.5mm) (No. 26 galvanized sheet gauge), corrosion-resistant weep screed or plastic weep screed, with a minimum vertical attachement flange of 3-½ inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and shall be a type that will allow trapped water to drain to the exterior of the building. The weather-resistant barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachement flange of the weep screed.



FRONT ELEVATION

SCALE: 1/4" =1'-0"

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"
DRN.	LF 03-28-2018
CHK.	
PLOT	LF 03-28-2018
PLOT	
PLOT	
PLOT	
PLOT	

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Front Elevation

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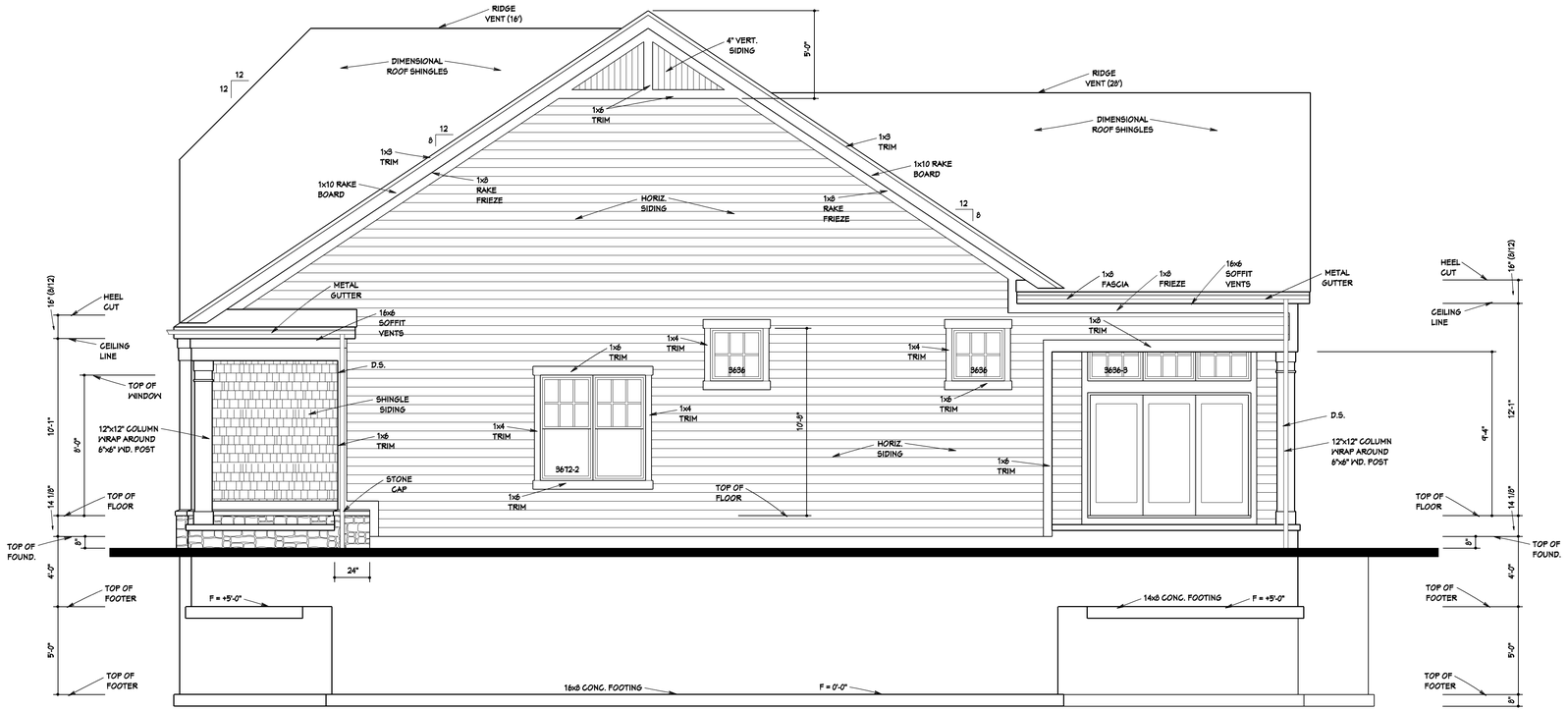
Expiration Date 12/31/2018

PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**4-A**



RIGHT SIDE ELEVATION

SCALE: 1/4" =1'-0"

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.		
PLOT	LF	03-28-2018
PLOT		
PLOT		
PLOT		
PLOT		

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Right Side Elevation

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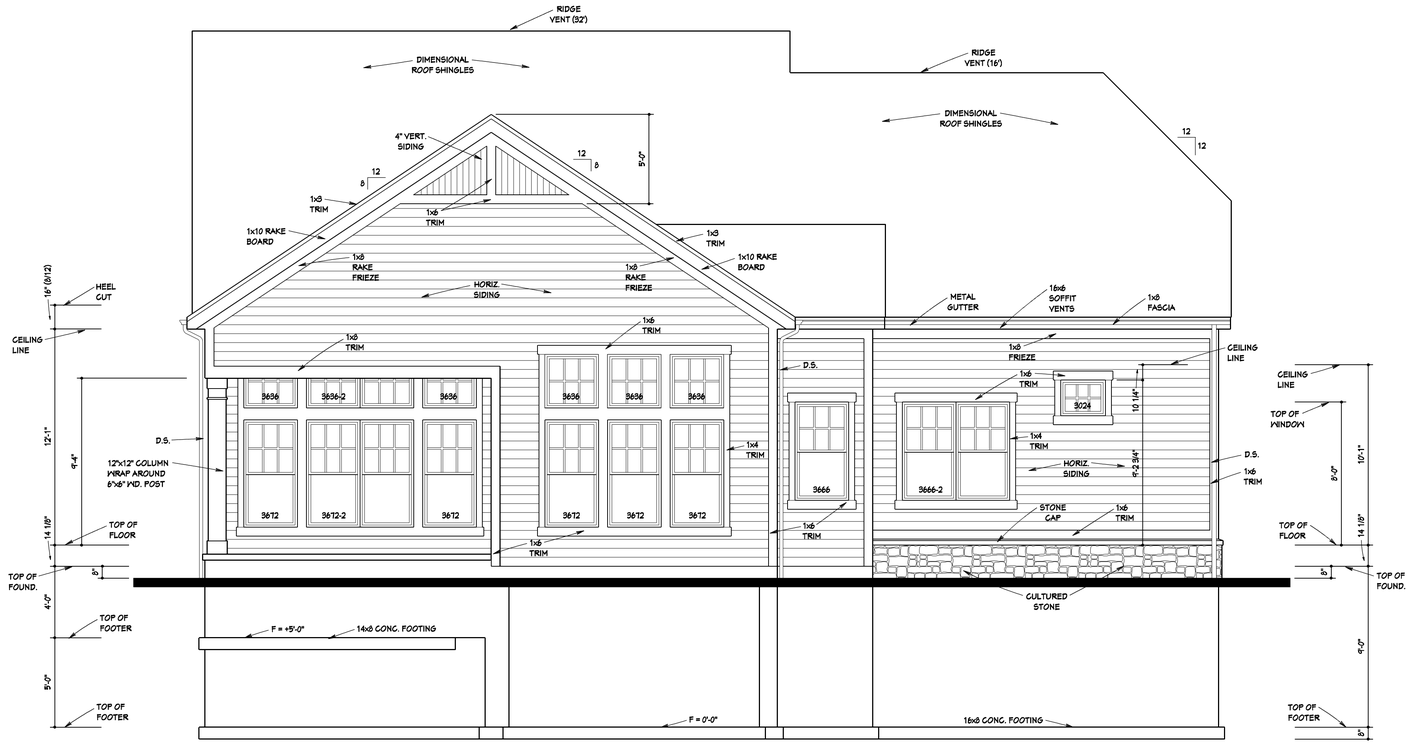
PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**4-B**



REAR ELEVATION

SCALE: 1/4" =1'-0"

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.		
PLOT	LF	03-28-2018
PLOT		
PLOT		
PLOT		
PLOT		

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Rear Elevation

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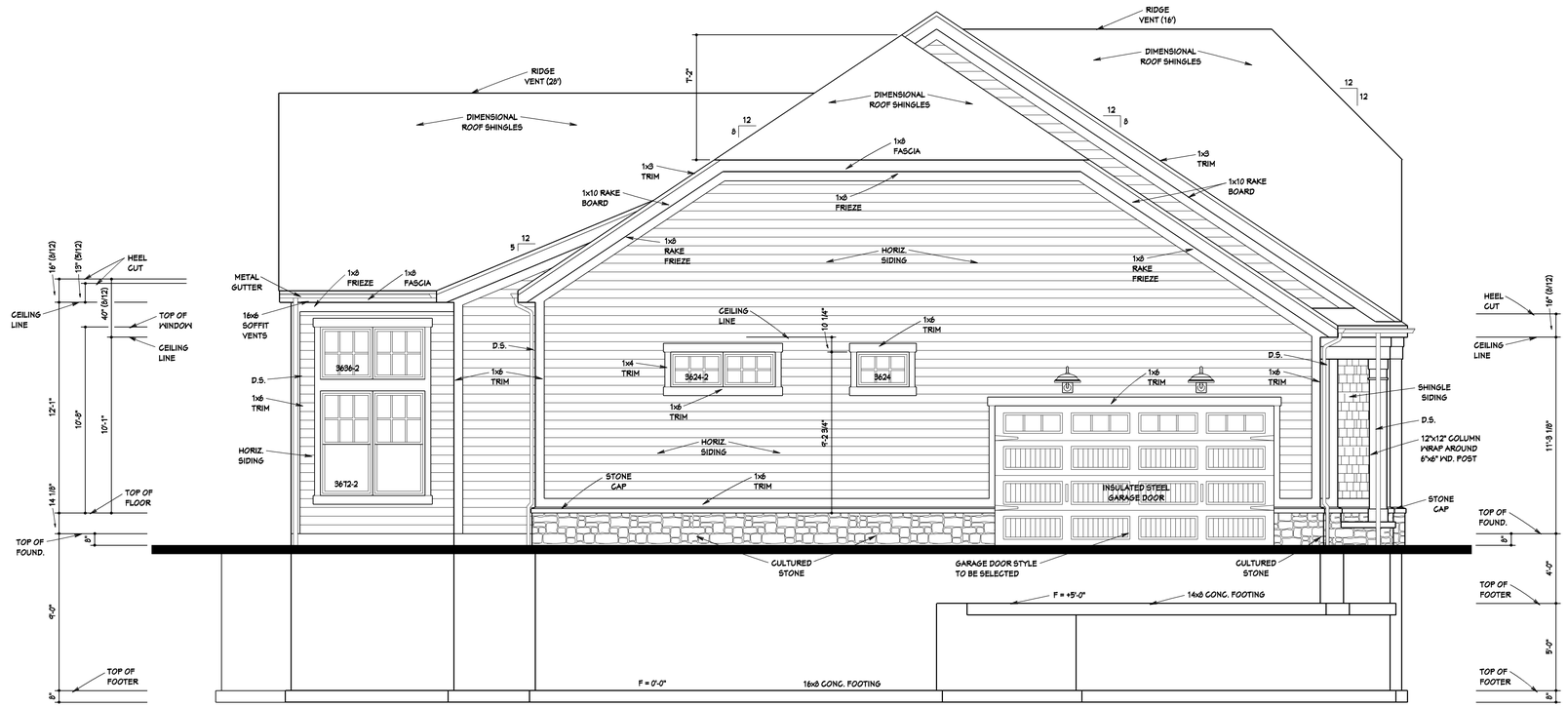
PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**4-C**



LEFT SIDE ELEVATION

SCALE: 1/4" =1'-0"

No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.		
PLOT	LF	03-28-2018
PLOT		
PLOT		
PLOT		
PLOT		

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Left Side Elevation

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PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**4-D**

TRUSS MANUFACTURER NOTE:

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THE TRUSS MANUFACTURER SHALL SPECIFY THE FOLLOWING:

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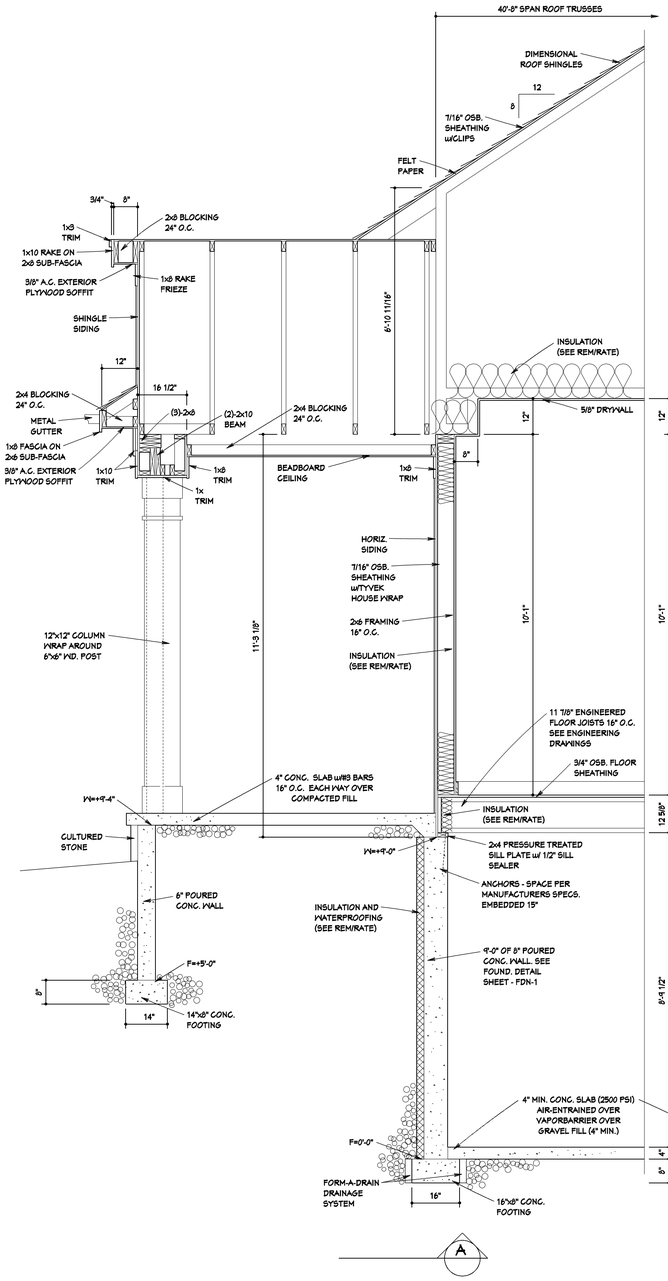
2. CONNECTORS OR HANGERS FOR ALL MEMBERS SUPPORTED BY THEIR PRODUCT.
3. NAILING AND OR BOLTING REQUIREMENTS FOR MULITPLE TRUSSES.
4. TRUSS BRACING LOCATION AND NAILING REQUIREMENTS.



No.	DATE	BY	REVISIONS

SCALE: 1/4" = 1'-0"
DRN. LF 03-28-2018
CHK. PLOT LF 03-28-2018
PLOT
PLOT
PLOT
PLOT
PLOT

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Stair and Wall Sections

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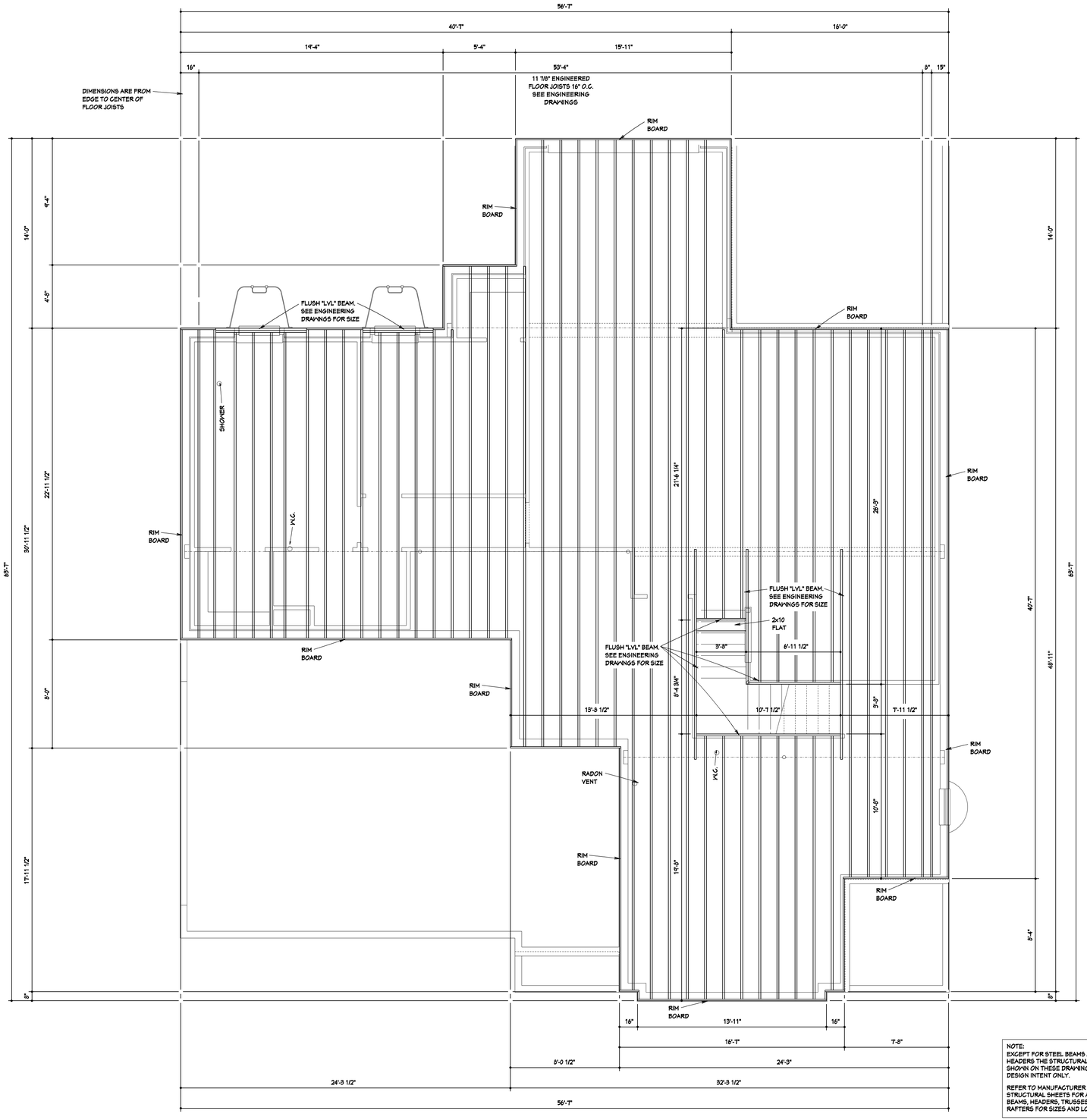
Expiration Date 12/31/2018

PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	6



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No.	DATE	BY	REVISIONS

SCALE	1/4" = 1'-0"	
DRN.	LF	03-28-2018
CHK.	PLOT	LF 03-28-2018
	PLOT	
	PLOT	
	PLOT	
	PLOT	

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First Floor
Floor Framing Plan

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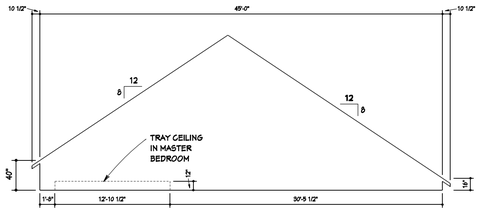
PRELIMINARY
BIDDING
CONSTRUCTION

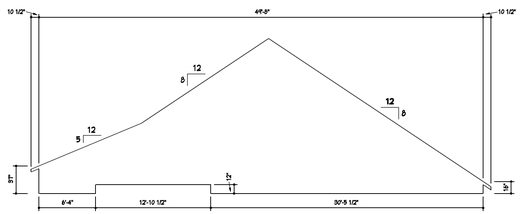
BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**F-2**



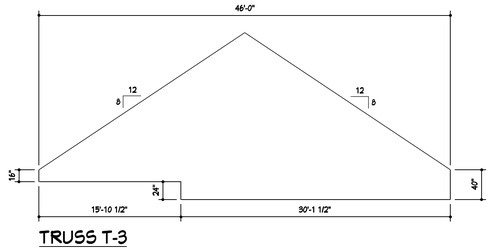
TRUSS T-1

SCALE: 1/8" =1'-0"



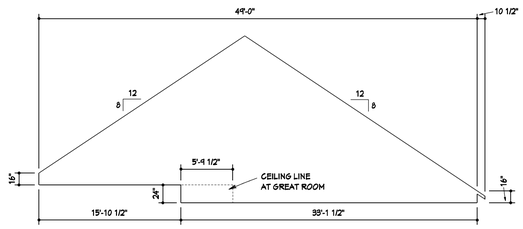
TRUSS T-2

SCALE: 1/8" =1'-0"



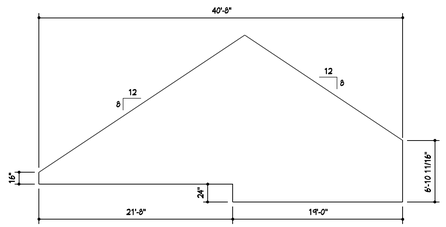
TRUSS T-3

SCALE: 1/8" =1'-0"



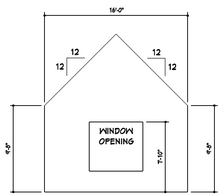
TRUSS T-4

SCALE: 1/8" =1'-0"



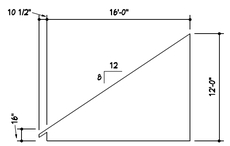
TRUSS T-5

SCALE: 1/8" =1'-0"



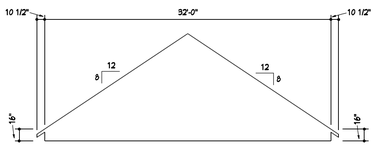
SPECIAL 16'-0" SPAN TRUSS

SCALE: 1/8" =1'-0"



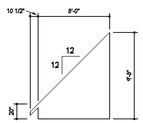
TRUSS T-6

SCALE: 1/8" =1'-0"



TRUSS T-7

SCALE: 1/8" =1'-0"



TRUSS T-8

SCALE: 1/8" =1'-0"

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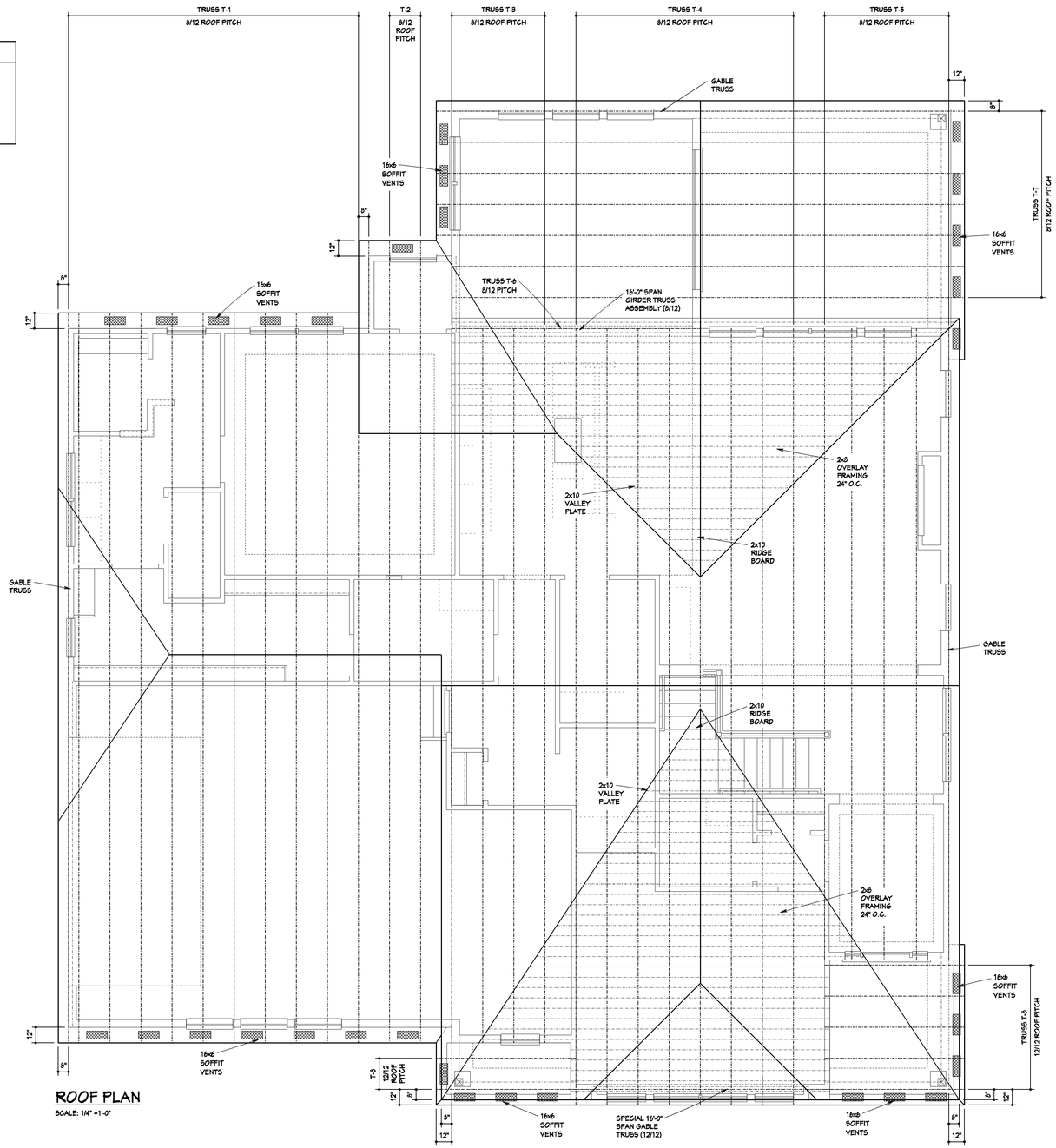
3. NAILING AND OR BOLTING REQUIREMENTS FOR MULITPLE TRUSSES.
4. TRUSS BRACING LOCATION AND NAILING REQUIREMENTS.



ROOF PLAN

SCALE: 1/4" =1'-0"

No.	DATE	BY	REVISIONS

SCALE	Shown		
DRN.	LF	03-28-2018	
CHK.	PLOT	LF	03-28-2018
	PLOT		
	PLOT		
	PLOT		
	PLOT		

LEF Architects, LLC

Roof Plan
Truss Details

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LARRY EUGENE FOLK 10772
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Larry Folk - License #10772
Expiration Date 12/31/2018

PRELIMINARY
BIDDING
CONSTRUCTION

BOB WEBB
Manchester
11450 Canby Ct.
Lot 621 Canby Ct.
Model - Basement

Job No.	Sheet No.
2018-108	**F-3**

GROUNDING ELECTRODE SYSTEM INSTALLATION

A) ROD, PIPE, AND PLATE ELECTRODES SHALL MEET THE REQUIREMENTS OF N.E.C. 250.53 (A)(3)

1) IF PRACTICABLE, ROD, PIPE & PLATE RELATED ELECTRODES SHALL BE EMBEDDED BELOW PERMANENT MOISTURE LEVEL. ROD, PIPE & PLATE ELECTRODES SHALL BE FREE FROM NON-CONDUCTIVE COATINGS SUCH AS PAINT OR ENAMEL.

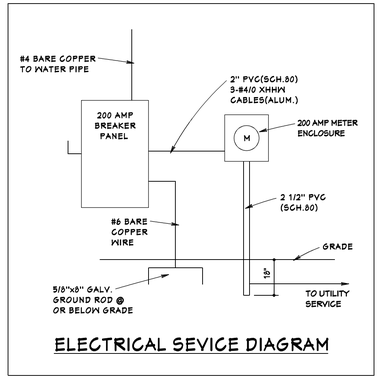
2) A SINGLE ROD, PIPE OR PLATE ELECTRODE SHALL BE SUPPLEMENTED BY AN ADDITIONAL ELECTRODE OF A TYPE SPECIFIED IN 250.52(A)(2) THROUGH (A)(8). THE SUPPLEMENTAL ELECTRODE SHALL BE PERMITTED TO BE BINDED TO ONE OF THE FOLLOWING;

   1) ROD, PIPE OR PLATE ELECTRODE
   2) GROUNDING ELECTRODE CONDUCTOR
   3) GROUNDED SERVICE ENTERANCE CONDUCTOR
   4) NONFLEXIBLE GROUNDED SERVICE RACEWAY
   5) ANY GROUNDED SERVICE ENCLOSURE

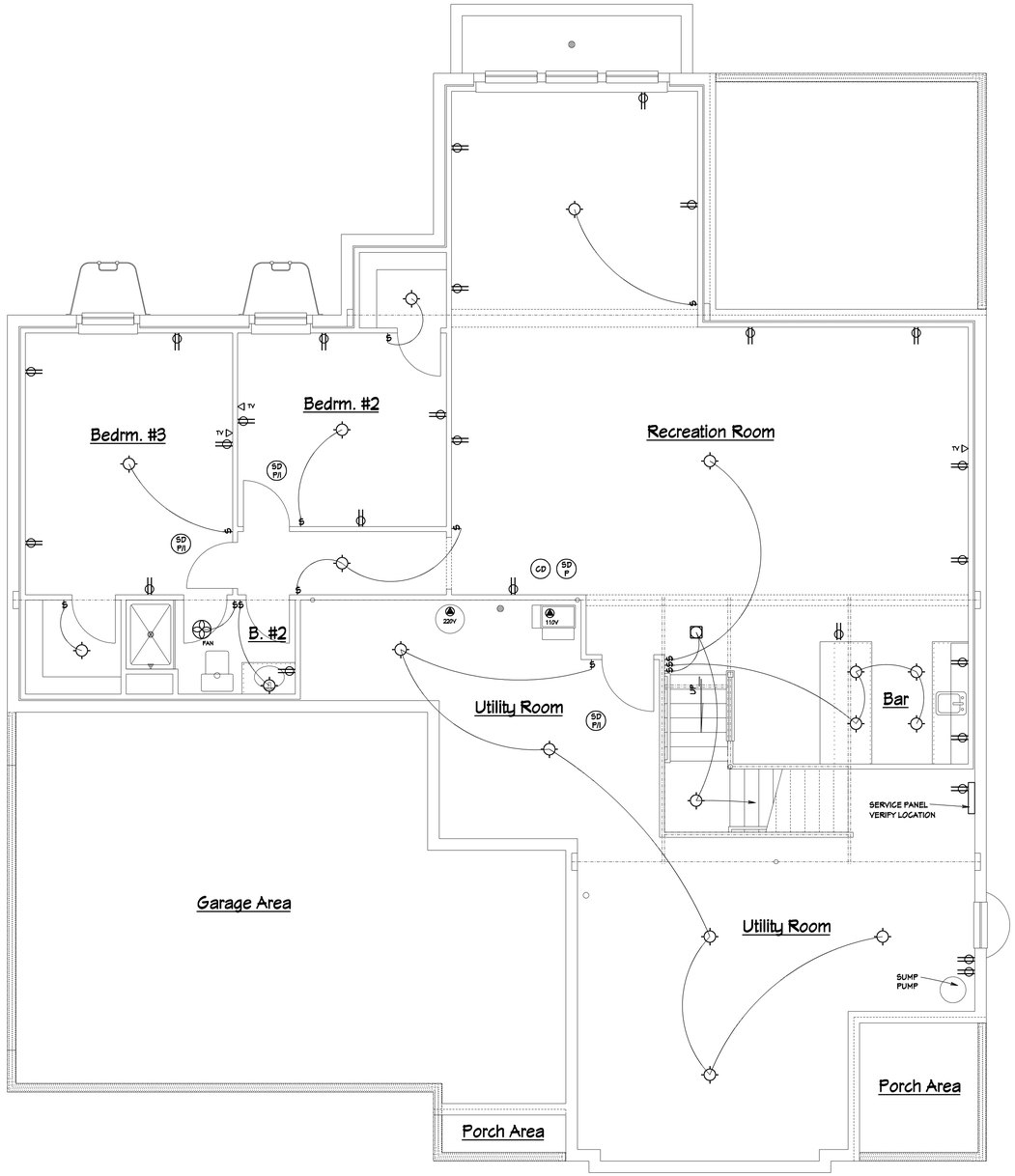
3) IF MULTIPLE ROD, PIPE OR PLATE ELECTRODES ARE INSTALLED TO MEET THE REQUIREMENTS OF THIS SECTION, THEY SHALL NOT BE LESS THAN 6' APART.

8) WHERE MORE THAN ONE OF THE ELECTRODES OF THE TYPE SPECIFIED IN 25.52(A)(5) OR (A)(7) ARE USED, EACH ELECTRODE OF ONE OF GROUNDING SYSTEM(INCLUDING THAT USED FOR STRIKE TERMINATION DEVICES) SHALL NOT BE LESS THAN 6' FROM ANY OTHER ELECTRODE OF ANY OTHER GROUNDING SYSTEM. TWO OR MORE GROUNDING ELECTRODES THAT ARE BONDED TOGETHER SHALL BE CONSIDERED A SINGLE ELECTRODE GROUNDING SYSTEM.

G) THE BONDING JUMPER(S) USED TO CONNECT THE GROUNDING ELECTRODES TOGETHER TO FROM THE GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH 250.66 AND SHALL BE CONNECTED IN THE MANNER SPECIFIED IN 250.70.



ELECTRICAL SEVICE DIAGRAM



ELECTRICAL NOTES

1) ALL ELECTRICAL WIRING TO BE INSTALLED PER N.E.C. 2014
2) ELECTRICAL SERVICE LOAD SHALL BE CALCULATED PER N.E.C. ARTICLE 220
3) GENERAL USE OUTLETS SHALL BE INSTALLED PER N.E.C. 210.52
4) THERE SHALL BE AT LEAST (2)-20 AMP SMALL APPLIANCE CIRCUITS TO FEED ALL WALL AND FLOOR OUTLETS IN THE KITCHEN, PANTRY, BREAKFAST ROOM, DINING ROOM OR SMALLER AREAS.
5) OUTLETS INSTALLED ALONG KITCHEN SPACES, ISLANDS & PENINSULAS SHALL BE SPACED PER N.E.C 210.52 C(1), (2) AND (3)
6) THERE SHALL BE AT LEAST (1)-20 AMP CIRCUIT TO SUPPLY BATHROOM RECEPTACLE OUTLETS PER N.E.C. 210.10 C(3)
7) THERE SHALL BE AT LEAST (1)-20 AMP CIRCUIT TO SUPPLY THE LAUNDRY ROOM PER N.E.C. 210.10 C(2) AND 210.52 F
8) ALL RECEPTACLE OUTLETS IN UNFINISHED BASEMENTS, GARAGES AND ON THE EXTERIOR OF THE HOUSE SHALL BE GFCI PROTECTED PER N.E.C. 210.8
9) ALL 120 VOLT 15 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN: FAMILY RM, DINING RM, LIVING RM, PARLOR, LIBRARY, DEN, BEDROOMS, SUN ROOM, REC ROOM, CLOSET, HALLWAY OR SMALLER ROOMS SHALL BE ARC FAULT PROTECTED PER N.E.C. 210.12 B
10) ALL CEILING AND WALL MOUNT LIGHT BOXES WILL BE RATED TO HOLD AT LEAST 50 POUNDS PER N.E.C. 314.27 A
11) ALL 15 AND 20 AMP VOLT RECEPTACLE OUTLETS REQUIRED BY N.E.C. 210.52 SHALL BE LISTED AS TAMPER RESISTANT
12) ALL STANDARD NON-LOCKING RECEPTACLE OUTLETS MOUNTED IN DAMP OR WET LOCATIONS SHALL HAVE AN IN-USE TYPE COVER AND SHALL BE LISTED WEATHER RESISTANT
13) LIGHTING SHALL BE PROVIDED TO ADEQUATELY LIGHT EACH STAIRWAY PER OBBC WITH CONTROL SWITCHES @ THE TOP AND BOTTOM OF EACH STAIRWAY CONSISTING OF (6) TREADS OR MORE
14) 120 VOLT INTERCONNECTED SMOKE DETECTORS SHALL BE INSTALLED ON EACH FLOOR AND EACH BEDROOM AND OUTSIDE EACH BEDROOM WITHIN 15 FEET OF THE BEDROOM DOOR

ALL OUTLETS & SWITCHES ARE ARC FAULT PROTECTED

ALL KITCHEN-BATH-GARAGE-LAUNDRY RM. AND EXTERIOR OUTLETS ARE GFCI PROTECTED

FINAL FIXTURE LAYOUT, QUANTITY AND TYPE TO BE DETERMINED ON SITE WITH THE BUYER AND ELECTRICAL CONTRACTOR

ELECTRICAL LEGEND

- RECESSED CAN LIGHT
- CEILING FIXTURE
- CEILING EXHAUST FAN
- CEILING EXHAUST FAN w/LIGHT
- CEILING FAN w/LIGHT
- SD P/I — SMOKE DETECTOR PHOTOELECTRIC/IONIZATION
- SD P — SMOKE DETECTOR PHOTOELECTRIC
- CD — CARBON MONOXIDE DETECTOR

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	PLOT		

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Basement Electric Plan

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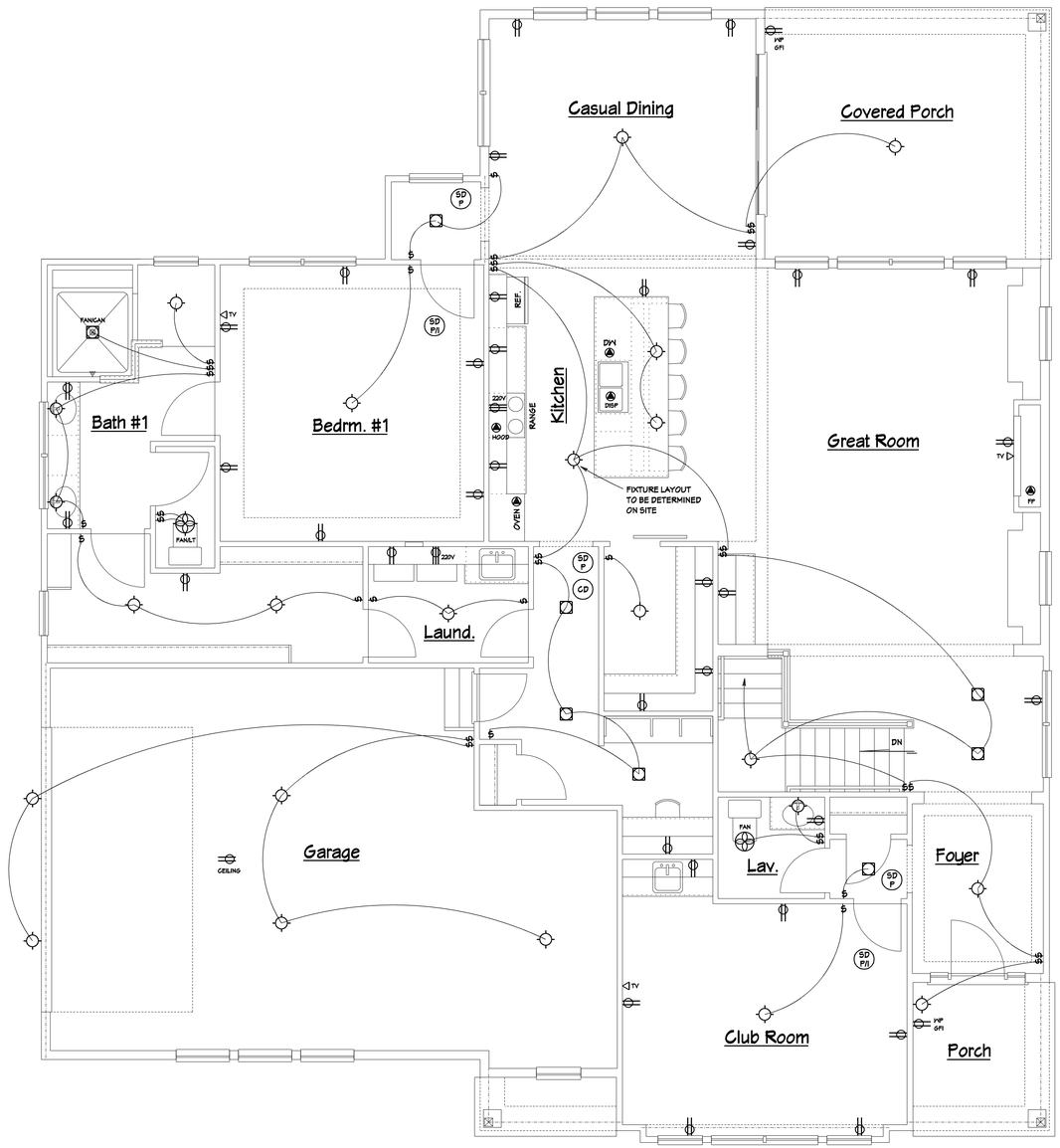
2018-108	**E-2**



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First Floor Electric Plan

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