



# COMMUNITY DEVELOPMENT DEPARTMENT

45175 Ten Mile Road  
Novi, MI 48375  
(248) 347-0415 Phone  
(248) 735-5600 Facsimile  
[www.cityofnovi.org](http://www.cityofnovi.org)

## ZONING BOARD OF APPEALS STAFF REPORT

FOR: City of Novi Zoning Board of Appeals

ZONING BOARD APPEALS DATE: November 14, 2017

REGARDING: 47750 Case Loma Court, Parcel # 50-22-32-201-007 (PZ17-0047)

BY: Larry Butler, Deputy Director Community Development

### I. GENERAL INFORMATION:

**Applicant**

Compo Builders Inc.

**Variance Type**

Dimensional Variance

**Property Characteristics**

Zoning District:	Residential Acreage
Location:	West of Beck Road and South of Nine Mile Road
Parcel #:	50-22-32-201-007

**Request**

The applicant is requesting a variance from the City of Novi Zoning Ordinance Section 3.1.1.E for a proposed reduced backyard setback of 7 feet 3 inches to allow 42 feet 9 inches, 50 feet minimum required by code, for the installation of a new roof to cover hot tub. This property is zoned Residential Acreage (R-A).

### II. STAFF COMMENTS:

### III. RECOMMENDATION:

The Zoning Board of Appeals may take one of the following actions:

1. I move that we **grant** the variance in Case No. **PZ17-0047**, sought by \_\_\_\_\_, for \_\_\_\_\_ because Petitioner has shown practical difficulty requiring \_\_\_\_\_.
- (a) Without the variance Petitioner will be unreasonably prevented or limited with respect to use of the property because \_\_\_\_\_.
- (b) The property is unique because \_\_\_\_\_.
- (c) Petitioner did not create the condition because \_\_\_\_\_.

(d) The relief granted will not unreasonably interfere with adjacent or surrounding properties because\_\_\_\_\_

(e) The relief if consistent with the spirit and intent of the ordinance because

(f) The variance granted is subject to:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

2. I move that we **deny** the variance in Case No. **PZ17-0047**, sought by \_\_\_\_\_ for \_\_\_\_\_ because Petitioner has not shown practical difficulty requiring \_\_\_\_\_.

(a) The circumstances and features of the property including \_\_\_\_\_ are not unique because they exist generally throughout the City.

(b) The circumstances and features of the property relating to the variance request are self-created because \_\_\_\_\_

(c) The failure to grant relief will result in mere inconvenience or inability to attain higher economic or financial return based on Petitioners statements that \_\_\_\_\_.

(d) The variance would result in interference with the adjacent and surrounding properties by \_\_\_\_\_.

(e) Granting the variance would be inconsistent with the spirit and intent of the ordinance to \_\_\_\_\_

Should you have any further questions with regards to the matter please feel free to contact me at (248) 347-0417.

Larry Butler  
Deputy Director Community Development  
City of Novi



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## ZONING BOARD OF APPEALS APPLICATION

RECEIVED

SEP 01 2017

CITY OF NOVI  
COMMUNITY DEVELOPMENT

APPLICATION MUST BE FILLED OUT COMPLETELY

Application Fee: \$250

Meeting Date: November 14<sup>th</sup>, 2017

ZBA Case #: PZ 17-0047

<b>I. PROPERTY INFORMATION (Address of subject ZBA Case)</b>			
PROJECT NAME / SUBDIVISION CASA LOMA			
ADDRESS 47750 CASA LOMA CT		LOT/SIUTE/SPACE # 7	
SIDWELL # 50-22-32 - 201 - 007		May be obtain from Assessing Department (248) 347-0485	
CROSS ROADS OF PROPERTY W. OFF BECK / N OF 8 MILE			
IS THE PROPERTY WITHIN A HOMEOWNER'S ASSOCIATION JURISDICTION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		REQUEST IS FOR: <input checked="" type="checkbox"/> RESIDENTIAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> VACANT PROPERTY <input type="checkbox"/> SIGNAGE	
DOES YOUR APPEAL RESULT FROM A NOTICE OF VIOLATION OR CITATION ISSUED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
<b>II. APPLICANT INFORMATION</b>			
<b>A. APPLICANT</b>		EMAIL ADDRESS CANDY@COMPOINC.COM	CELL PHONE NO. (248) 640-1488
NAME DAVID COMPO		TELEPHONE NO. (248) 513-4170	
ORGANIZATION/COMPANY COMPO BUILDERS INC		FAX NO. (248) 513-4173	
ADDRESS 42700 W TEN MILE ROAD	CITY NOVI	STATE MI	ZIP CODE 48375
<b>B. PROPERTY OWNER</b> <input type="checkbox"/> CHECK HERE IF APPLICANT IS ALSO THE PROPERTY OWNER			
Identify the person or organization that owns the subject property:		EMAIL ADDRESS DOUGLAS.G.HOULIHAN@GM.COM	CELL PHONE NO. +86 (177) 0215-7403
NAME DOUGLAS HOULIHAN		TELEPHONE NO.	
ORGANIZATION/COMPANY		FAX NO.	
ADDRESS 2664 BASSWOOD	CITY WIXOM	STATE MI	ZIP CODE 48393
<b>III. ZONING INFORMATION</b>			
<b>A. ZONING DISTRICT</b>			
<input checked="" type="checkbox"/> R-A <input type="checkbox"/> R-1 <input type="checkbox"/> R-2 <input type="checkbox"/> R-3 <input type="checkbox"/> R-4 <input type="checkbox"/> RM-1 <input type="checkbox"/> RM-2 <input type="checkbox"/> MH <input type="checkbox"/> I-1 <input type="checkbox"/> I-2 <input type="checkbox"/> RC <input type="checkbox"/> TC <input type="checkbox"/> TC-1 <input type="checkbox"/> OTHER _____			
<b>B. VARIANCE REQUESTED</b>			
INDICATE ORDINANCE SECTION (S) AND VARIANCE REQUESTED:			
1. Section <u>3.1.1 E</u> Variance requested <u>SEE ATTACHED</u>			
2. Section _____ Variance requested _____			
3. Section _____ Variance requested _____			
4. Section _____ Variance requested _____			
<b>IV. FEES AND DRAWINGS</b>			
<b>A. FEES</b>			
<input type="checkbox"/> Single Family Residential (Existing) \$200 <input type="checkbox"/> (With Violation) \$250 <input checked="" type="checkbox"/> Single Family Residential (New) \$250 <input type="checkbox"/> Multiple/Commercial/Industrial \$300 <input type="checkbox"/> (With Violation) \$400 <input type="checkbox"/> Signs \$300 <input type="checkbox"/> (With Violation) \$400 <input type="checkbox"/> House Moves \$300 <input type="checkbox"/> Special Meetings (At discretion of Board) \$600			
<b>B. DRAWINGS    1-COPY &amp; 1 DIGITAL COPY SUBMITTED AS A PDF</b>			
<ul style="list-style-type: none"> <li>• Dimensioned Drawings and Plans</li> <li>• Site/Plot Plan</li> <li>• Existing or proposed buildings or addition on the property</li> <li>• Number &amp; location of all on-site parking, if applicable</li> <li>• Existing &amp; proposed distance to adjacent property lines</li> <li>• Location of existing &amp; proposed signs, if applicable</li> <li>• Floor plans &amp; elevations</li> <li>• Any other information relevant to the Variance application</li> </ul>			

**ZONING BOARD OF APPEALS APPLICATION ADDITIONAL INFORMATION**

**CASA LOMA  
47750 CASA LOMA CT, LOT 7  
SIDWELL# 50-22-32-201-007**

**APPLICANT  
COMPO BUILDERS INC  
42700 W TEN MILE ROAD  
NOVI, MI 48375**

**III. ZONING INFORMATION**

**B. VARIANCE REQUESTED**

**1. SECTION 3.1.1**

**VARIANCE REQUESTED: REDUCE BACKYARD SETBACK TO 42.09' FOR CONSTRUCTION OF  
NEW ROOF TO COVER HOT TUB, 50' ALLOWED BY CODE**



# ZONING BOARD OF APPEALS APPLICATION

## V. VARIANCE

### A. VARIANCE (S) REQUESTED

DIMENSIONAL     USE     SIGN

There is a five-(5) hold period before work/action can be taken on variance approvals.

### B. SIGN CASES (ONLY)

Your signature on this application indicates that you agree to install a **Mock-Up Sign ten-(10) days** before the schedule ZBA meeting. Failure to install a mock-up sign may result in your case not being heard by the Board, postponed to the next schedule ZBA meeting, or cancelled. A mock-up sign is **NOT** to be actual sign. Upon approval, the mock-up sign must be removed within five-(5) days of the meeting. If the case is denied, the applicant is responsible for all costs involved in the removal of the mock-up or actual sign (if erected under violation) within five-(5) days of the meeting.

### C. ORDINANCE

#### City of Novi Ordinance, Section 3107 – Miscellaneous

No order of the Board permitting the erection of a building shall be valid for a period longer than one-(1) year, unless a building permit for such erection or alteration is obtained within such period and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

No order of the Board permitting a use of a building or premises shall be valid for a period longer than one-hundred and eighty-(180) days unless such use is establish within such a period; provided, however, where such use permitted is dependent upon the erection or alteration or a building such order shall continue in force and effect if a building permit for such erection or alteration is obtained within one-(1) year and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

### D. APPEAL THE DETERMINATION OF THE BUILDING OFFICIAL

PLEASE TAKE NOTICE:

The undersigned hereby appeals the determination of the Building Official / Inspector or Ordinance made

CONSTRUCT NEW HOME/BUILDING     ADDITION TO EXISTING HOME/BUILDING     SIGNAGE

ACCESSORY BUILDING

USE

OTHER \_\_\_\_\_

## VI. APPLICANT & PROPERTY SIGNATURES

### A. APPLICANT

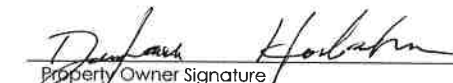
  
Applicant Signature

9/1/17  
Date

### B. PROPERTY OWNER

**If the applicant is not the owner, the property owner must read and sign below:**

The undersigned affirms and acknowledges that he, she or they are the owner(s) of the property described in this application, and is/are aware of the contents of this application and related enclosures.

  
Property Owner Signature

9/1/17  
Date

## VII. FOR OFFICIAL USE ONLY

### DECISION ON APPEAL:

GRANTED

DENIED

The Building Inspector is hereby directed to issue a permit to the Applicant upon the following and conditions:

\_\_\_\_\_  
Chairperson, Zoning Board of Appeals

\_\_\_\_\_  
Date



**Community Development Department**  
 45175 Ten Mile Road  
 Novi, MI 48375  
 (248) 347-0415 Phone  
 (248) 735-5600 Facsimile  
 www.cityofnovi.org

## REVIEW STANDARDS DIMENSIONAL VARIANCE

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

### Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

- a. Shape of Lot.** Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment.  
 Not Applicable     Applicable    If applicable, describe below:

BECAUSE OF THE OUL-DE-SAC, THE HOME IS PUSHED BACK ON THE LOT SO THE ROOF OF THE SPA PROJECTS 2' INTO THE 50' REAR SETBACK. THE POOL ITSELF WILL BE 25' FROM THE REAR SETBACK                      **and/or**

- b. Environmental Conditions.** Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure.  
 Not Applicable     Applicable    If applicable, describe below:

SBB ABOVE

**and/or**

- c. Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties.  
 Not Applicable     Applicable    If applicable, describe below:

## Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

SAFETY TO PLACE HOT TUB ROOF WITH CONNECTION TO COVERED PATIO, LOT SHAPE DETERMINES THIS ISSUE COMPARED TO OTHER LOTS.

## Standard #3. Strict Compliance.

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose, or will render conformity with those regulations unnecessarily burdensome.

WILL NOT ALLOW ROOF OVER HOT TUB UNLESS SEPARATED FROM HOME BY 10' WHICH CREATES SAFETY HAZARD GETTING TO UNIT SEPARATED FROM HOME REAR HOME VS BEING ATTACHED

## Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

- ① CONTIGUOUS ROOF LINES IN A HIGH END COMMUNITY
- ② FULL SUPPORT BY DEVELOPER
- ③ SAFETY INGRESS / EGRESS FOR WIFE / OWNER WITH NECESSITY TO GAIN ACCESS TO UNIT WITH HER INJURIES / ANKLE ISSUES.

## Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

- ① THESE ARE HIGH END HOMES WITH VERY LARGE SETBACKS AND EXTENSIVE TREES ALONG REAR LOT LINE.
- ② FULL SUPPORT BY DEVELOPER
- ③ AS NOT ALL HOMES ARE DONE AND ALL PRIVATE GATED COMMUNITY, OWNERS APPRECIATE FLEXIBILITY FOR PERSONAL CONDITIONS

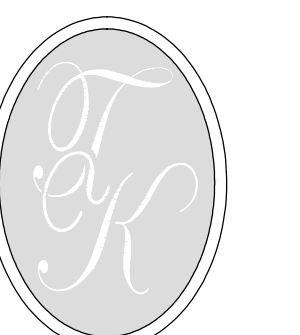
# HOULIHAN RESIDENCE



FINAL APPROVED  
PLANS 4-5-17

## PLAN DRAWING INDEX

GNI	GENERAL NOTES & DETAILS	A6	ROOF PLAN / WALL SECTION
GN2	GENERAL NOTES & DETAILS	A1	BUILDING SECTIONS
A1	FOUNDATION PLAN	E1	FOUNDATION PLAN ELECTRICAL
S1	FOUNDATION PLAN STRUCTURE	E2	FIRST FLOOR PLAN ELECTRICAL
FB1	FINISHED BASEMENT PLAN	E3	SECOND FLOOR PLAN ELECTRICAL
A2	FIRST FLOOR PLAN		
S2	FIRST FLOOR PLAN STRUCTURE		
A3	SECOND FLOOR PLAN		
S3	SECOND FLOOR PLAN STRUCTURE		
A4	FRONT / LEFT ELEVATION		
A5	RIGHT / REAR ELEVATION		



TK DESIGN  
&  
ASSOCIATES

WWW.TKHOMEDSIGN.COM

26030 PONTIAC TRAIL  
SOUTH LYON, MI 48178  
PHONE: (248)-446-1960  
FAX: (248)-446-1961

COPYRIGHT 2014 BY DESIGN AND ASSOCIATES  
DO NOT SCALE DRAWINGS. USE CALCULATED DIMENSIONS ONLY.  
CONTRACTOR TO VERIFY ALL DRAWING DIMENSIONS BEFORE  
CONSTRUCTION. DIMENSIONS AND DESIGN CHANGES SHALL BE  
REPORTED TO THE DESIGNER IN WRITING IMMEDIATELY.  
CALL BEFORE ANY STARTS PRIOR TO ANY EXCAVATION  
CONSTRUCTION. THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

CLIENT / PROJECT  
COMPO BUILDER'S  
INC  
HOULIHAN  
RESIDENCE

JOB No. 16-195

DRAWN: DM

CHECKED: ECT

REVIEW: 3-9-17

FINAL: 3-9-17

REVISION: 4-19-17

REVISION: 4-26-17

REVISION: 5-3-17

REVISION: 7-31-17

REVISION: 8-11-17

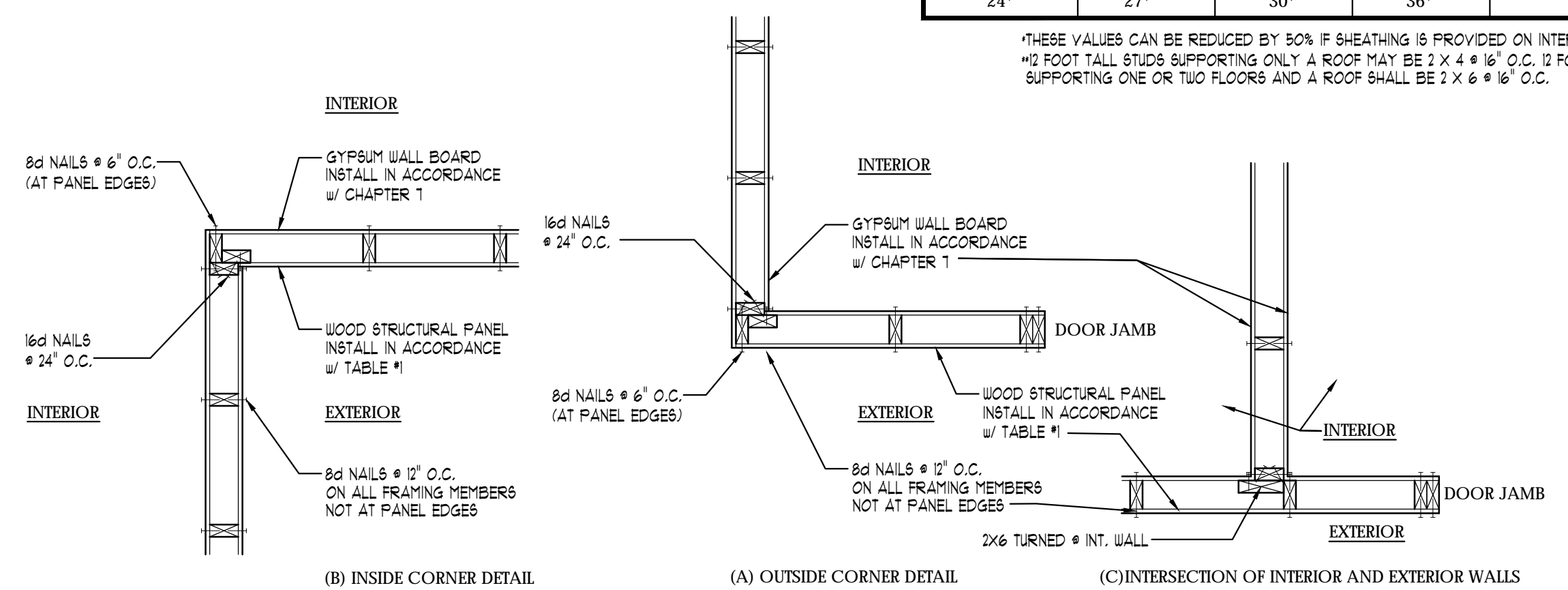
SCALE:  
PER PLAN

SHEET #  
COVER



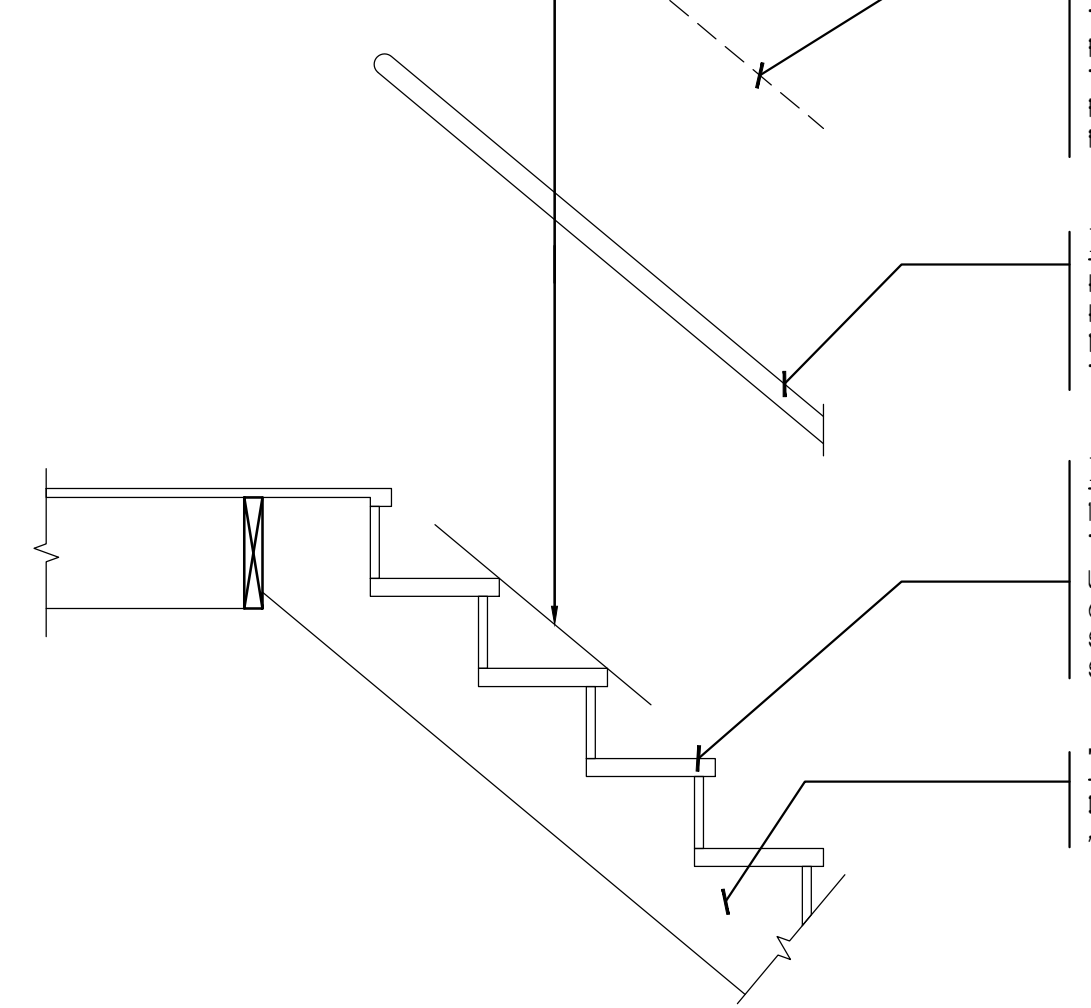
LENGTH OF BRACED WALL PANEL (INCHES)		MAXIMUM OPENING HEIGHT NEXT TO BRACED WALL PANEL (% OF WALL HEIGHT)		
8-FOOT WALL	9-FOOT WALL	10-FOOT WALL	12-FOOT WALL**	
48"	54"	60"	72"	100%
32"	36"	40"	48"	85%
24"	27"	30"	36"	65%

\* THESE VALUES CAN BE REDUCED BY 50% IF SHEATHING IS PROVIDED ON INTERIOR AND EXTERIOR OF ROOF TALL STUDS SUPPORTING ONLY A ROOF MAY BE 2 X 4 @ 6" O.C. 2 FOOT TALL STUDS SUPPORTING ONE OR TWO FLOORS AND A ROOF SHALL BE 2 X 6 @ 6" O.C.



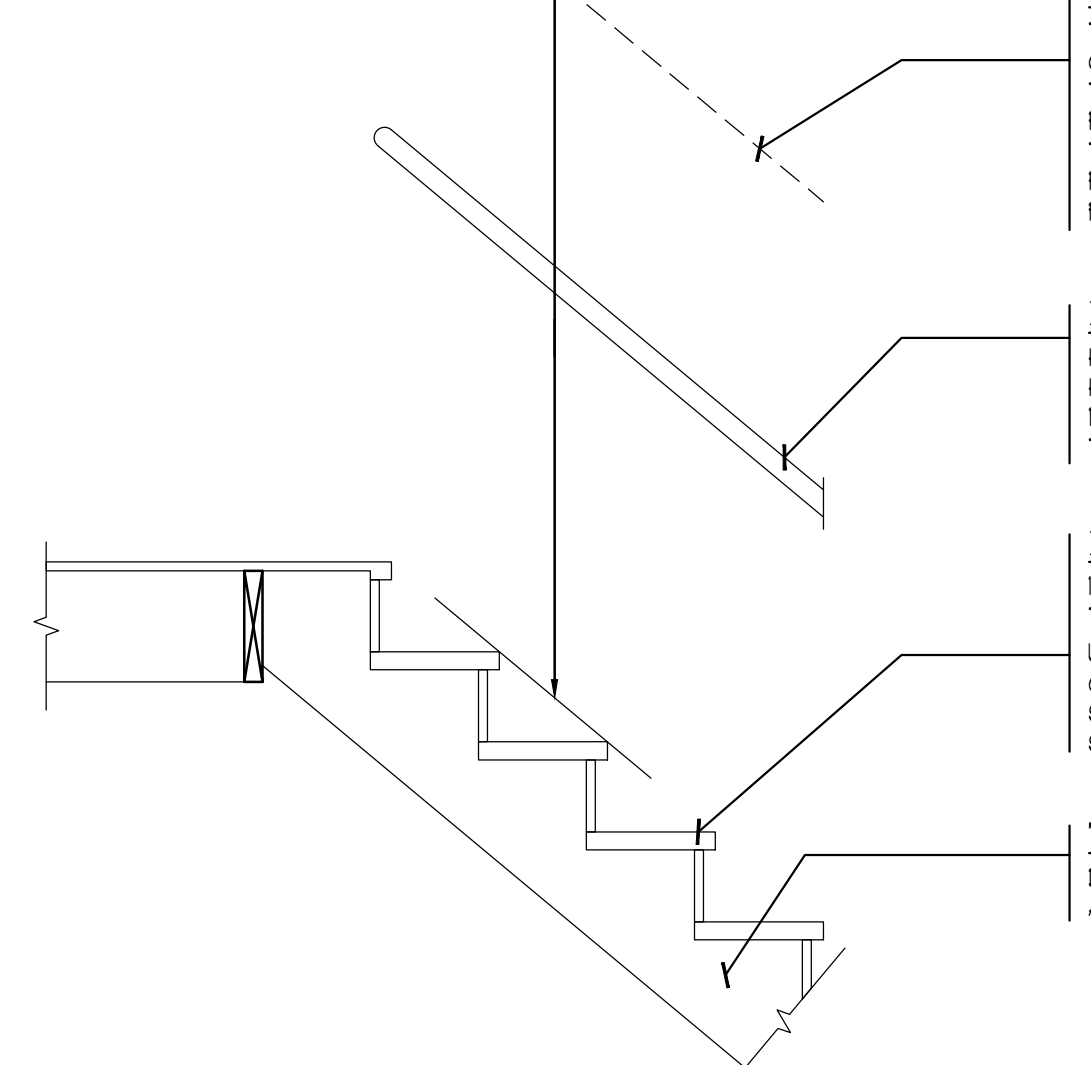
(B) INSIDE CORNER DETAIL (A) OUTSIDE CORNER DETAIL (C) INTERSECTION OF INTERIOR AND EXTERIOR WALLS

NO SCALE



TYPICAL STAIR DETAIL FIRST FLOOR TO SECOND FLOOR

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



TYPICAL STAIR DETAIL BASEMENT TO FIRST FLOOR

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

## GENERAL NOTES

### WOOD TRUSS SPECIFICATIONS

- Designs shall conform with the latest versions of (NDS) "National Design Specification for Wood Construction" by the American Forest & Paper Association and Design Standard for Metal Plate Connected Wood Truss Construction by the American Institute of Steel Construction (AISC) and the local code jurisdiction.
- Trusses shall be spaced as indicated on the plans unless the designer determines that different spacing is required to meet deflection requirements.
- Minimum deflection of floor trusses shall be limited to 1/800 for total load and 1/480 for live load. Maximum deflection of roof trusses shall be limited to 1/240 for total loads and 1/800 for live load only.
- Adequate bracing shall be built into floor and parallel chord roof trusses to compensate for normal dead load deflection.
- Design loads:

### FLOOR JOIST LOADING CRITERIA

FIRST FLOOR LOADING:  
LIVE LOAD 20 P.S.F.  
DEAD LOAD 8 P.S.F.  
TOTAL LOAD 28 P.S.F.  
LIVE LOAD DEFLECTION L/480  
TOTAL LOAD DEFLECTION L/240

SECOND FLOOR LOADING:  
LIVE LOAD 40 P.S.F.  
DEAD LOAD 10 P.S.F.  
TOTAL LOAD 50 P.S.F.  
LIVE LOAD DEFLECTION L/480  
TOTAL LOAD DEFLECTION L/240

FLOOR JOIST DEFLECTION CRITERIA:  
LIVE LOAD 40 P.S.F.  
DEAD LOAD 10 P.S.F.  
TOTAL LOAD 50 P.S.F.  
LIVE LOAD DEFLECTION L/480  
TOTAL LOAD DEFLECTION L/240

### ROOF TRUSS LOADING CRITERIA

TOP CHORD LIVE LOAD 20 P.S.F.  
DEAD LOAD 1 P.S.F.  
BOT. CHORD LIVE LOAD 10 P.S.F.  
DEAD LOAD 1 P.S.F.  
WIND LOAD 80 MPH OR AS REQUIRED BY CODE

\* A 25% increase of allowable stresses for short-term loading is allowed. Drift loading shall be accounted for per the current "Michigan Residential Code" requirements.  
\*\* Add additional attic storage live loads per the current "Michigan Residential Code" requirements.  
\*\*\* The nature or other special features shall be designed using the appropriate dead load and deflection limitations. Partition loads shall also be considered where appropriate.

### HANDLING AND ERECTION SPECIFICATIONS

- Trusses are to be handled with particular care during fabrication, handling, loading, delivery, unloading and erection in order to avoid damage and weakening of the trusses.
- Temporary and permanent bracing for holding the trusses in a straight and plumb position is design required and shall be designed and installed by the erecting contractor. Temporary bracing during installation, includes cross bracing between the trusses to prevent tipping or "doming" of the trusses.
- Permanent bracing shall be installed in accordance with the latest of the "National Design Standard" as published by the American Forest & Paper Association and H.I.B. 21 and D.B.B. 88 as published by the true plate institute. Permanent bracing consists of lateral and diagonal bracing not to exceed spacing requirements of the user fabricator. Top chords of trusses must be continuously braced by roof sheathing unless otherwise noted on the truss shop drawings. Bottom chords must be braced at intervals not to exceed 10' o.c. or as noted on the user fabricators drawings.
- Construction loads greater than the design loads of the trusses shall not be applied to the trusses at any time.
- No loads shall be applied to the truss until all fastening and required bracing is installed.
- The supervision of the truss erecting shall be under the direct control of personnel experienced in the installation of wood trusses.
- Field modification or cutting of pre-engineered roof trusses is strictly prohibited without expressed prior written consent and details from a licensed professional structural engineer experienced in wood truss design and modifications.

### SOIL REQUIREMENTS & EARTH WORK AND CONCRETE

- All top soil organic and vegetative material should be removed prior to construction. Any required fill shall be clean, granular material compacted to at least 95% of maximum dry density as determined by ASTM D-1557.
- Foundations bearing on soils which have been designed for a minimum allowable soil bearing capacity of 3000 pcf, u.w.c.
- Notify the engineer/architect if the allowable soil bearing capacity is less than 3000 pcf so that the foundation can be redesigned for the new allowable bearing capacity.
- R404.1.1 Backfill placement.  
Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above or has been sufficiently braced to prevent damage by the backfill.

### R506.2.1 Fill.

Fill material shall be free of vegetation and foreign material. The fill shall be compacted to assure uniform support of the side and, except where approved, the fill depths shall not exceed 24 inches for clean sand or gravel and 8 inches for earth.  
A 6 mil polyethylene or approved vapor retarder with joints lapped not less than 6 inches shall be placed between concrete floor slab and the base course or on prepared subgrade unless no base course exists.

- Concrete work shall conform to the requirements of ACI 308.86 "Specifications for Structural Concrete for Buildings", except as modified by supplemental requirements.  
Concrete shall have a minimum of 3000 pcf, 28 day compressive strength unless noted otherwise. (4 sacks) A water/cement ratio not to exceed 6 galls per sack. Exterior concrete sides shall have a minimum of 4000 pcf, 28 day compressive strength, 4 AAAA air entrainment.
- The use of additives such as fly ash or calcium chloride is not allowed without prior review from the architect.

### R405 Concrete or masonry foundations.

Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed in or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot beyond the outside edge of the footing and 6 inches above the top of the footing and be covered with an approved filter membrane material. The top of upper joints of drain tiles shall be protected with strips of building paper and the drainage tiles or perforated pipe shall be placed on a minimum of 2 inches of washed gravel or crushed rock at least one above the larger than the tile joint opening or perforation and covered with not less than 6 inches of the same material.  
Exception:  
A drainage system is not required when the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil Classification System, Group 1 Soils, as detailed in Table R405.1.

### STRUCTURAL STEEL SPECIFICATIONS

- Structural steel shapes, plates, bars, etc. are to be ASTM A-36 (unless noted otherwise) designed and constructed per the 1989 AISC "Specifications For Design, Fabrication, and Erection of Steel For Buildings", and the latest edition of the AISC "Manual of Steel Construction".
- Steel columns shall be ASTM A-501, Fy36 K81. Structural tubing shall be ASTM A500, grade B, Fy46 K81.
- Welds shall conform with the latest AISC D11 "Specifications For Welding in Building Construction" and shall utilize E70XX electrodes unless noted otherwise.
- Bolted connections shall utilize ASTM A-325 bolts tightened to a snug-tight condition (unless noted otherwise).

### REINFORCING STEEL SPECIFICATIONS

- Reinforcing bars, doublers and ties shall conform to ASTM-616 grade 60 requirements and shall be free of rust, dirt, and mud.
- Rebar used in slabs shall conform to ASTM A-616 and be positioned at the mid height of slabs U.N.O.
- Reinforcing shall be placed and securely tied in place sufficiently ahead of placing of concrete to allow inspection and correction, if necessary without delaying the concrete placement.
- Extend reinforcing bars a minimum of 36" around corners and lap bars at splices a minimum of 24" U.N.O.
- Welding of reinforcing steel is not allowed.

### STAIRWAYS AND HANDRAILS

R311.1.1 Width.  
Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches (114 mm) on either side of the walking and the minimum clear width of the stairways, and below the handrail height, including treads and landings, shall not be less than 3'-2" (914 mm) unless a handrail is installed on one side and 21 inches (533 mm) unless handrails are provided on both sides. The width of spiral stairways shall be in accordance with Section R311.1.3.1.  
Exception: The width of spiral stairways shall be in accordance with Section R311.1.3.1.

R311.1.1 Handrails.  
Handrails shall be provided on at least one side of each continuous run of treads or flights with four or more risers.

R311.1.1 Height.  
Handrail height, measured vertically, from the sloped plane adjoining the tread nosing or stringer, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or handrails shall be permitted to exceed the maximum height.

- The use of a volute, turnout or starting easing shall be allowed on the lowest tread.
- When handrail fittings or handrails are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or handrails shall be permitted to exceed the maximum height.

### SMOKE ALARMS

- R314.3 Smoke Alarms  
Smoke alarms shall be installed in the following locations:  
1. In each sleeping room.  
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.  
3. On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwellings with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
- When more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm shall activate all of the alarms in the individual unit.

### CARBON MONOXIDE DETECTOR

A Carbon monoxide device shall be located in the vicinity of the bedrooms, which may include a device capable of detecting carbon monoxide near all adjacent bedrooms. In areas within the dwelling adjacent to an attached garage, and in areas adjacent to any neighbouring appliances, Carbon Monoxide Detectors shall not be placed within fifteen feet of fuel-burning heating or cooking appliances such as gas stoves, furnaces, or fireplaces, or in or near any humid areas such as bathrooms.

### FLASHING AND WEEPHOLES

R703.7.5 Flashing.  
Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points of support, including structural floors, shaft angles and finish over masonry veneer are designed in accordance with Section R703.7. See Section R703.8 for additional requirements.

R703.7.6 Weepholes.  
Weepholes shall be provided in the outside edge of masonry walls at a maximum spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (5 mm) in diameter. Weepholes shall be located immediately above the flashing.

R703.8 Flashing.  
Approved corrosion-resistant flashing shall be applied single-fashion in a manner to prevent any of water from the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AIAA-71. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed as follows:  
1. Exterior windows and door openings. Flashing at exterior windows and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.

- At the intersection of chimneys or other masonry construction with frame or masonry walls, with projecting fire or boiler room flues or chimneys.
- Under and at the ends of masonry, wood or metal coping and walls.
- Continuously above all projecting wall tops.
- Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.
- At wall and roof intersections, i.e. At built-in gutters.

### FIREPLACES

R702.10 Hearth extension dimensions.  
Hearth extensions shall extend at least 16 inches (406 mm) from front and at least 8 inches (203 mm) beyond each side of the fireplace opening, or larger, where the fireplace opening is 6 square feet (0.6 m) the hearth extension shall extend at least 20 inches (508 mm) in front of and at least 8 inches (203 mm) beyond each side of the fireplace opening.

### EGRESS WINDOW REQUIREMENTS

- Min. net clear opening of 5.7 sq. ft. (second floor bedrooms)
- Min. net clear opening of 5.0 sq. ft. (first floor bedrooms only)
- Min. net clear opening of 24 inches
- Min. net clear opening width of 20 inches
- Max. sill h.t. above finish floor of 44 inches

### AREAS THAT REQUIRE SAFETY GLAZING

R308.4 Hazardous locations.  
The locations specified in Sections R308.4.1 through R308.4.1.1 shall be considered to be specific hazardous for the purposes of glazing.

R308.4.1 Glazing in doors.  
Glazing in fixed and operable panels of swinging, sliding and bifold doors considered to be a hazardous location.

- Glazed openings of a size through which a 3-inch diameter (76 mm) sphere is unable to pass.
- Decorative glazing.

R308.4.3 Glazing adjacent to doors.  
Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

- Where the glazing is within 24 inches (610 mm) of either side of the door in the plane of the door in a closed position.
- Where the glazing is on a wall perpendicular to the plane of the door in a closed position and within 24 inches (610 mm) of the hinge side of an inward-opening door.

Exception:  
1. Decorative glazing.  
2. Where there is an intervening wall or other permanent barrier between the door and the glazing.

R308.4.3 Glazing adjacent to storage areas.  
Glazing in an individual fixed or operable panel adjacent to a closet or storage area 3 feet (914 mm) or less in depth, glazing in this application shall comply with Section R308.4.3.

- Where the glazing is adjacent to the fixed panel of patio doors.

### R308.4.3 Glazing in windows.

Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:  
1. The exposed area of an individual pane is larger than 9 square feet (0.836 m<sup>2</sup>)  
2. The bottom edge of the glazing is less than 36 inches (914 mm) above the floor.  
3. The top edge of the glazing is more than 36 inches (914 mm) above the floor, and  
4. One or more walking surfaces are within 36 inches (914 mm), measured horizontally and in a straight line, of the glazing.

- Decorative glazing.
- Where a horizontal sill is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965) above the walking surface. The sill shall be capable of withstanding a horizontal load of 50 pounds per linear foot (150 N/m) without contacting the glass and be a minimum of 1/2 inch (13 mm) in cross-sectional height.

R308.4.4 Glazing in gutters and railings.  
Glazing in gutters and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height, above a walking surface shall be considered to be a hazardous location.

R308.4.5 Glazing and wet surfaces.  
Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor swimming pools where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any walking or walking surface shall be considered to be a hazardous location. The wall shall apply to single glazing and each pane in multiple glazing.

R308.4.6 Glazing in walls and railings.  
Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor swimming pools where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any walking or walking surface shall be considered to be a hazardous location. The wall shall apply to single glazing and each pane in multiple glazing.

R308.4.7 Glazing adjacent to stairs and ramps.  
Glazing where the bottom exposed edge of the glazing is less than 36 inches (914 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered to be a hazardous location.

- Where a rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (150 N/m) without contacting the glass and have a cross-sectional height of not less than 1 inches (25 mm).

R308.4.8 Glazing adjacent to the bottom stair landing.  
Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches (914 mm) above the landing and within a 60-inch (1524 mm) horizontal arc less than 180 degrees from the bottom tread nosing shall be considered to be a hazardous location.

Exception:  
The glazing is protected by a guard complying with Section R302 and the plane of the glass is more than 36 inches (914 mm) from the ground.

TABLE R602.3.1  
MAXIMUM ALLOWABLE LENGTH OF WOOD STUDS EXPOSED TO WIND SPEEDS OF 100 MPH OR LESS IN SEISMIC DESIGN CATEGORIES A, B, C, AND D1 b.c.

HEIGHT (FEET)	ON-CENTER SPACING (INCHES)			
	24	16	12	8
SUPPORTING A ROOF ONLY				
>10	2x4	2x4	2x4	2x4
12	2x6	2x4	2x4	2x4
14	2x6	2x6	2x6	2x4
16	2x6	2x6	2x6	2x4
18	NA a	2x6	2x6	2x6
20	NA a	NA a	2x6	2x6
24	NA a	NA a	NA a	2x6
SUPPORTING ONE FLOOR AND A ROOF				
>10	2x6	2x4	2x4	2x4
12	2x6	2x6	2x6	2x4
14	2x6	2x6	2x6	2x6
16	NA a	2x6	2x6	2x6
18	NA a	2x6	2x6	2x6
20	NA a	NA a	2x6	2x6
24	NA a	NA a	NA a	2x6
SUPPORTING TWO FLOORS AND A ROOF				
>10	2x6	2x6	2x4	2x4
12	2x6	2x6	2x6	2x6
14	2x6	2x6	2x6	2x6
16	NA a	2x6	2x6	2x6
18	NA a	NA a	2x6	2x6
20	NA a	NA a	NA a	2x6
22	NA a	NA a	NA a	NA a
24	NA a	NA a	NA a	NA a

a. Design required.  
b. Applicability of this table assumes the following:  
1. Stud load not exceeding 20 psf, but not less than 10 psf determined by multiplying the AREA ASD (allowable stress design) values by the appropriate use factor, and by the area factor for all types of stud load spans. Floor and roof spans not exceeding 12 feet, covers not greater than 1 foot in dimension and exterior sheathing. Where the conditions are within these parameters, design is required.  
c. Utility, standard, steel and non-ferrous materials of any species are not permitted.

TABLE R602.3. (5)  
SIZE, HEIGHT AND SPACING OF WOOD STUDS a.

STUD SIZE (INCHES)	BEARING WALLS				NONBEARING WALLS			
	Laterally unsupported stud height (feet)	Maximum spacing when supporting roof and ceiling only (feet)	Maximum spacing when supporting roof, floor and ceiling only (feet)	Maximum spacing when supporting roof only (feet)	Laterally unsupported stud height (feet)	Maximum spacing when supporting roof and ceiling only (feet)	Maximum spacing when supporting roof only (feet)	Maximum spacing (feet)
2x3 b	-	-	-	-	10	16		
2x4	10	24	16	-	24	14	24	
2x5	10	24	24	-	24	16	24	
2x6	10	24	24	16	24	20	24	

a. Stud heights are distances between points of support parallel to the plane of the wall. Increases in unsupported height are permitted where justified by analysis.  
b. Stud height may be reduced for exterior walls.

TABLE R703.7.3  
ALLOWABLE SPANS FOR INTERLS SUPPORTING MASONRY VENEER a,b,c

SIZE OF STEEL ANGLE a-c (INCHES)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF FT. OF EQUIVALENT BRACING BARS b
3x3x1/2	6'-0"	4'-6"	3'-0"	1
4x3x1/2	8'-0"	6'-0"	4'-6"	1
5x3x1/2	10'-0"	8'-0"	6'-0"	2
6x3x1/2	14'-0"	9'-6"	7'-0"	2
2-6x3x1/2	20'-0"	12'-0"	9'-6"	4

a. Length of angle shall be placed in a vertical position.  
b. Depth of vertical fins shall not be less than 8 inches and all end of hollow masonry blocks shall be grouted solid. Rebar length shall extend not less than 8 inches into the support.  
c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements may be used.

### TYPICAL CONVENTIONAL ROOF FRAMING

\* RIDGE BEAM SIZE WILL BE EQUAL TO THE RAFTER CUT EDGE \*

RAFTER SPANS	0'-0" - 4'-0"	4'-0" - 8'-0"	8'-0" - 12'-0"	12'-0" - 16'-0"
LUMBER SIZE	2x4	2x6	2x8	2x12

FINAL APPROVED  
PLANS 4-5-17



26030 PONTIAC TRAIL  
SOUTH LYNN, MA 01901  
PHONE: (248)-446-1560  
FAX: (248)-446-1961

WWW.TKHOMEDSIGN.COM

CLIENT / PROJECT  
COMPO BUILDERS INC  
HOULIHAN RESIDENCE

JOB NO: 16-195  
DRAWN: DM  
CHECKED: ECT  
REVIEW: 3-9-17  
FINAL: 3-9-17  
REVISION: 4-19-17  
REVISION: 4-26-17  
REVISION: 5-3-17  
REVISION: 7-31-17  
REVISION: 8-11-17

SCALE: PER PLAN

SHEET #  
GN1

MAXIMUM UNSUPPORTED HEIGHT OF BASEMENT WALL (feet)	LOCATION OF HORIZONTAL REINFORCEMENT
≤ 8	One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near mid-height of the wall story
> 8	One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near third points in the wall story

For Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.  
 a. Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength of 60,000 psi and concrete with a minimum concrete compressive strength of 2,500 psi.  
 b. See Section R401.2.2 for minimum reinforcement required for foundations with supporting above grade concrete walls.

MAXIMUM WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT <sup>b</sup> (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (INCHES)											
		Soil classes <sup>c</sup> and design lateral soil (psf per foot of depth)				GM, GC, SM, SM-SC and ML				SC, ML-CL and Inorganic CL			
		Minimum nominal wall thickness (inches)											
		GW, GP, SW, SP 30			GM, GC, SM, SM-SC and ML 45			SC, ML-CL and Inorganic CL 60					
		6	8	10	12	6	8	10	12	6	8	10	12
5	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
8	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
9	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
10	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R401.1.  
 b. Table values are based on existing backfill with a minimum yield strength of 60,000 psi concrete with a minimum specified compressive strength of 2,500 psi and vertical reinforcement being installed at the corner of the wall. See Section R401.2.3.2.  
 c. Vertical reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with Section R401.2.3.3 and Table R404.1.2(9).  
 d. No backfill or vertical reinforcement is required, except for 6 inch nominal walls formed with stay-in-place forming system in which case vertical reinforcement shall be #4 @ 48 inches on center.  
 e. Allowable deflection criterion is L/400, where L is the unsupported height of the basement wall in inches.  
 f. Temperature is not permitted.  
 g. When walls are subject to 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.  
 h. Vertical reinforcement shall be provided in excess of 1.25 inch minimum from the inside face of the wall. The cover of the steel shall not vary from the specified location by more than the greater of 10 percent of the wall thickness or 3/8 inch.  
 i. Concrete cover for reinforcement measured from the inside face of the wall shall not be less than 3/4 inch. Concrete cover for reinforcement measured from the outside face of the wall shall not be less than 1 1/2 inches for No. 3 bars and smaller, and not less than 2 inches for larger bars.  
 j. DR design is required in concrete with the applicable building code, or where there is no code in accordance with ACI 318.  
 k. Concrete shall have a specified compressive strength,  $f_c$ , of not less than 2,500 psi at 28 days, unless a higher strength is required by footnote (i) or (n).  
 l. The minimum thickness is permitted for a wall of 7 inches provided the minimum specified compressive strength of concrete,  $f_c$ , is 4,000 psi.  
 m. A plain concrete wall with a minimum nominal thickness of 12 inches is permitted, provided minimum specified compressive strength of concrete,  $f_c$ , is 3,500 psi.  
 n. See Section R401.2.3 for tolerance from nominal thickness provided for the wall.

	LOAD BEARING VALUE OF SOIL (PSF)		
	1,500	2,000	3,000
CONVENTIONAL LIGHT FRAME CONSTRUCTION			
1-STORY	12	12	12
2-STORY	15	12	12
3-STORY	23	17	12
4-INCH BRICK VENEER OVER LIGHT FRAME OR 8-INCH HOLLOW CONCRETE MASONRY			
1-STORY	12	12	12
2-STORY	21	16	12
3-STORY	32	24	18
8-INCH SOLID OR FULLY GROUTED MASONRY			
1-STORY	16	12	12
2-STORY	29	21	14
3-STORY	42	32	21

For Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.  
 a. Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength of 60,000 psi and concrete with a minimum concrete compressive strength of 2,500 psi.

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (feet)	MAXIMUM TOTAL WALL HEIGHT (feet)	MAXIMUM OPENING WALL HEIGHT (feet)	TENSION STRAP CAPACITY REQUIRED (pounds) <sup>a</sup>						
				Ultimate Design Wind Speed $V_w$ (mph)			Exposure B			
				110	115	130	110	115	130	
2 x 4 No. 2 Grade	0	10	18	1,000	1,000	1,000	1,000	1,000	1,050	
				9	1,000	1,000	1,000	1,000	1,750	
				16	1,000	1,025	2,050	2,075	2,500	
				18	1,000	1,275	2,375	2,400	2,850	
				9	1,000	1,000	1,475	1,500	1,875	
				16	1,775	2,175	3,525	3,550	4,125	
	2	10	18	20,750	2,500	3,950	3,975	DR	DR	
					9	1,150	1,500	2,650	2,675	3,175
					16	2,875	3,375	DR	DR	DR
					18	3,425	3,975	DR	DR	DR
					9	2,275	2,750	DR	DR	DR
					12	3,225	3,775	DR	DR	DR
2 x 6 Stud Grade	2	12	9	1,000	1,000	1,700	1,700	2,025		
				16	1,825	2,150	3,225	3,225	3,675	
				18	2,200	2,550	3,725	3,750	DR	
				9	1,450	1,750	2,700	2,725	3,125	
				16	2,050	2,400	DR	DR	DR	
				18	3,350	3,800	DR	DR	DR	

For Sl: 1 inch = 25.4 mm, 1 inch per hour = 0.477 m/s.  
 a. DR - Design Required.  
 b. Straps shall be installed in accordance with manufacturer's recommendations.

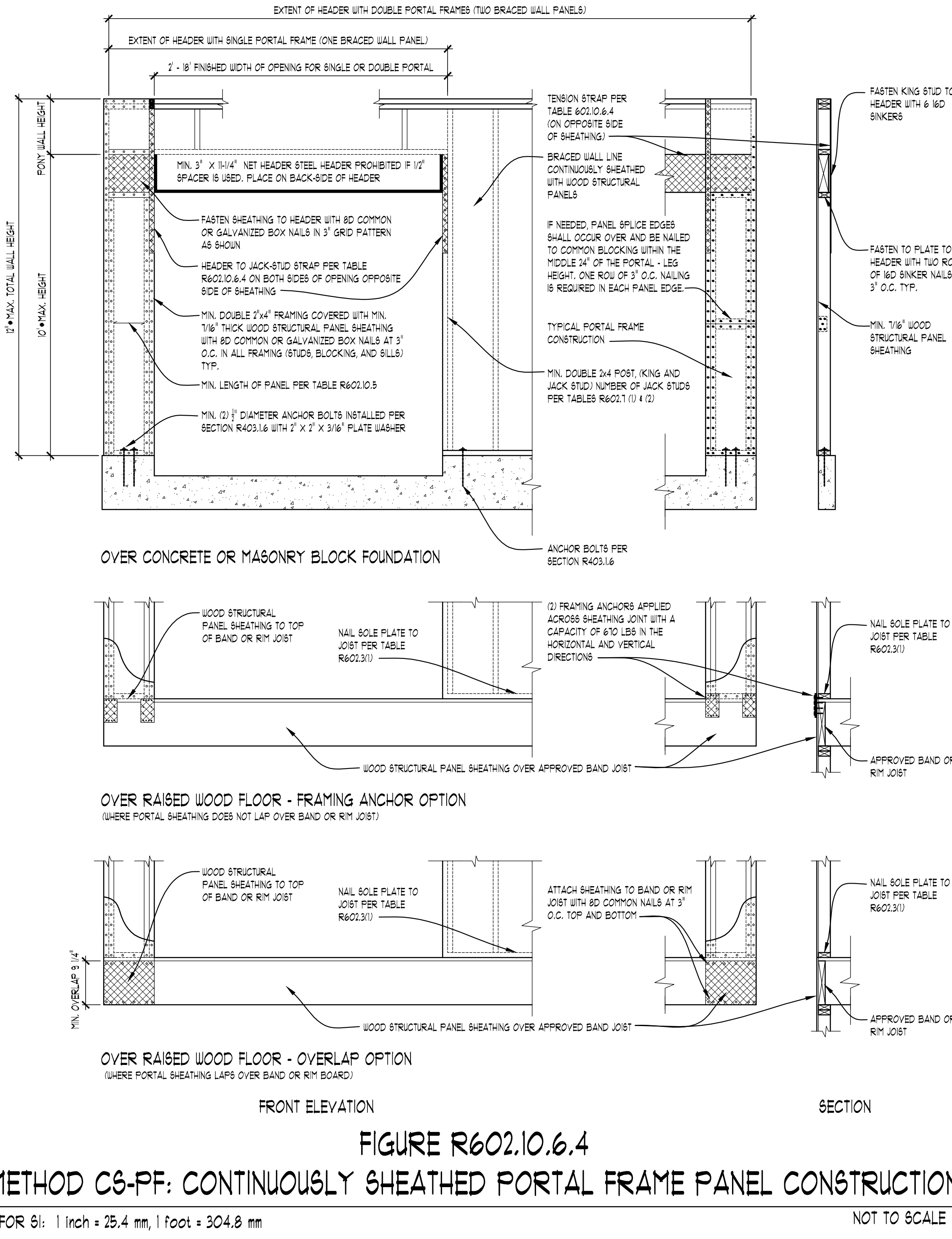


FIGURE R602.10.6.4  
 METHOD CS-PF: CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION  
 FOR Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm NOT TO SCALE

HEIGHT (FEET)	ON-CENTER SPACING (INCHES)			
	24	16	12	8
SUPPORTING A ROOF ONLY				
>10	2x4	2x4	2x4	2x4
12	2x6	2x4	2x4	2x4
14	2x6	2x6	2x6	2x4
16	2x6	2x6	2x6	2x4
18	NA a	2x6	2x6	2x6
20	NA a	NA a	2x6	2x6
24	NA a	NA a	NA a	2x6
SUPPORTING ONE FLOOR AND A ROOF				
>10	2x6	2x4	2x4	2x4
12	2x6	2x6	2x6	2x4
14	2x6	2x6	2x6	2x6
16	NA a	2x6	2x6	2x6
18	NA a	2x6	2x6	2x6
20	NA a	NA a	2x6	2x6
24	NA a	NA a	NA a	2x6
SUPPORTING TWO FLOORS AND A ROOF				
>10	2x6	2x6	2x4	2x4
12	2x6	2x6	2x6	2x6
14	2x6	2x6	2x6	2x6
16	NA a	NA a	2x6	2x6
18	NA a	NA a	2x6	2x6
20	NA a	NA a	NA a	NA a
24	NA a	NA a	NA a	NA a

a. Design required.  
 b. Acceptability of this table assumes the following:  
 Snow load not exceeding 20 psf, but not less than 1.10 psf determined by multiplying the ASCE 7-10 snow load base design value by the exposure and factor, and by the area factor for all spans except smaller spans, 4 feet less than 14 feet, arbitrary dimensions for floor and roofs not exceeding 4 feet, maximum span for floor and roofs not exceeding 12 feet, covers not greater than 2 feet in dimension and extent of sheathing. Where the conditions are not within these parameters, design is required.  
 c. Utility, standard, and steel are 3-gauge lumber of any species are not permitted.

STUD SIZE (inches)	BEARING WALLS			NONBEARING WALLS	
	Laterally unsupported and height <sup>b</sup> (feet)	Maximum spacing when supporting roof and ceiling only (inches)	Maximum spacing when supporting floor, roof and ceiling only (inches)	Laterally unsupported and height <sup>b</sup> (feet)	Maximum spacing (inches)
2x3 b	-	-	-	10	16
2x4	10	24	16	24	14
3x4	10	24	16	24	14
2x5	10	24	24	24	16
2x6	10	24	24	24	20

a. Used heights are distances between points of lateral support placed perpendicular to the plane of the wall. Increases in unsupported height are permitted where justified by analysis.  
 b. Stud not be used in exterior walls.

SIZE OF SILL ANGLE (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF P OR EQUIVALENT REINFORCING BARS <sup>c</sup>
3x3x1/4	6'-0"	4'-6"	3'-0"	1
4x3x1/4	8'-0"	6'-0"	4'-6"	1
5x3x1/4	10'-0"	8'-0"	6'-0"	2
6x3x1/4	14'-0"	9'-6"	7'-0"	2
2-6x3x1/4	20'-0"	12'-0"	9'-6"	4

a. Long leg of angle shall be placed in a vertical position.  
 b. Depth of reinforcing lints shall not be less than 8 inches and all cells of hollow masonry lints shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.  
 c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements may be used.

RAFTER SPANS	0'-0" - 4'-0"	4'-0" - 8'-0"	8'-0" - 12'-0"	12'-0" - 16'-0"
LUMBER SIZE	2x4	2x6	2x8	2x12

\* RIDGE BEAM SIZE WILL BE EQUAL TO THE RAFTER CUT EDGE \*

FINAL APPROVED  
 PLANS 4-5-17

TK DESIGN  
 &  
 ASSOCIATES

WWW.TKHONEDSIGN.COM  
 26030 PONTIAC TRAIL  
 SOUTHLYN, MD 44478  
 PHONE: (248)-446-1960  
 FAX: (248)-446-1961

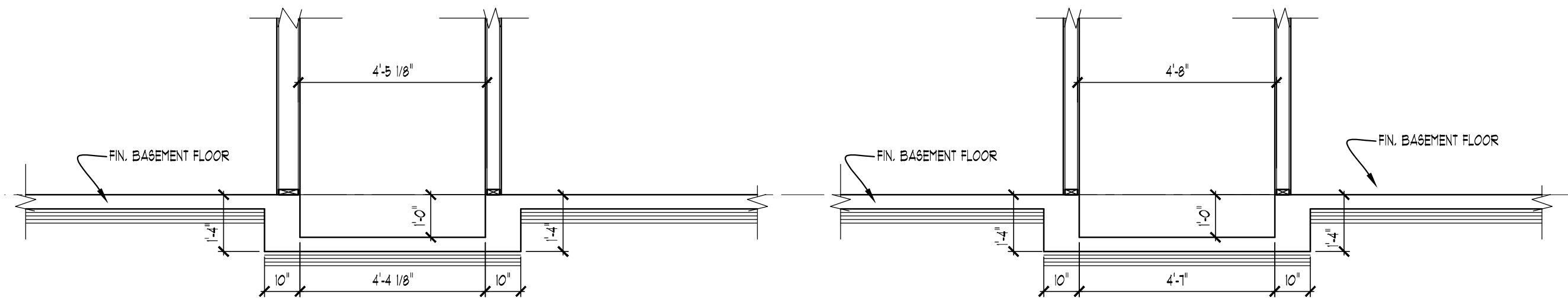
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JOB No. 16-195  
 DRAWN: DM  
 CHECKED: ECT  
 REVIEW: 3-9-17  
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 REVISION: 5-3-17  
 REVISION: 7-31-17  
 REVISION: 8-11-17

SCALE:  
 PER PLAN

SHEET #  
 GN2

DO NOT SCALE DRAWINGS. USE CALCULATED DIMENSIONS ONLY.  
 CONSTRUCTION, DIMENSIONS AND DESIGN CHANGES SHALL BE REPORTED TO THE DESIGNER IN WRITING. THE DESIGNER SHALL BE CALLED IMMEDIATELY PRIOR TO ANY CONSTRUCTION. THE DESIGNER SHALL BE CALLED IMMEDIATELY PRIOR TO ANY CONSTRUCTION. THE DESIGNER SHALL BE CALLED IMMEDIATELY PRIOR TO ANY CONSTRUCTION.



**FOUNDATION DETAIL**

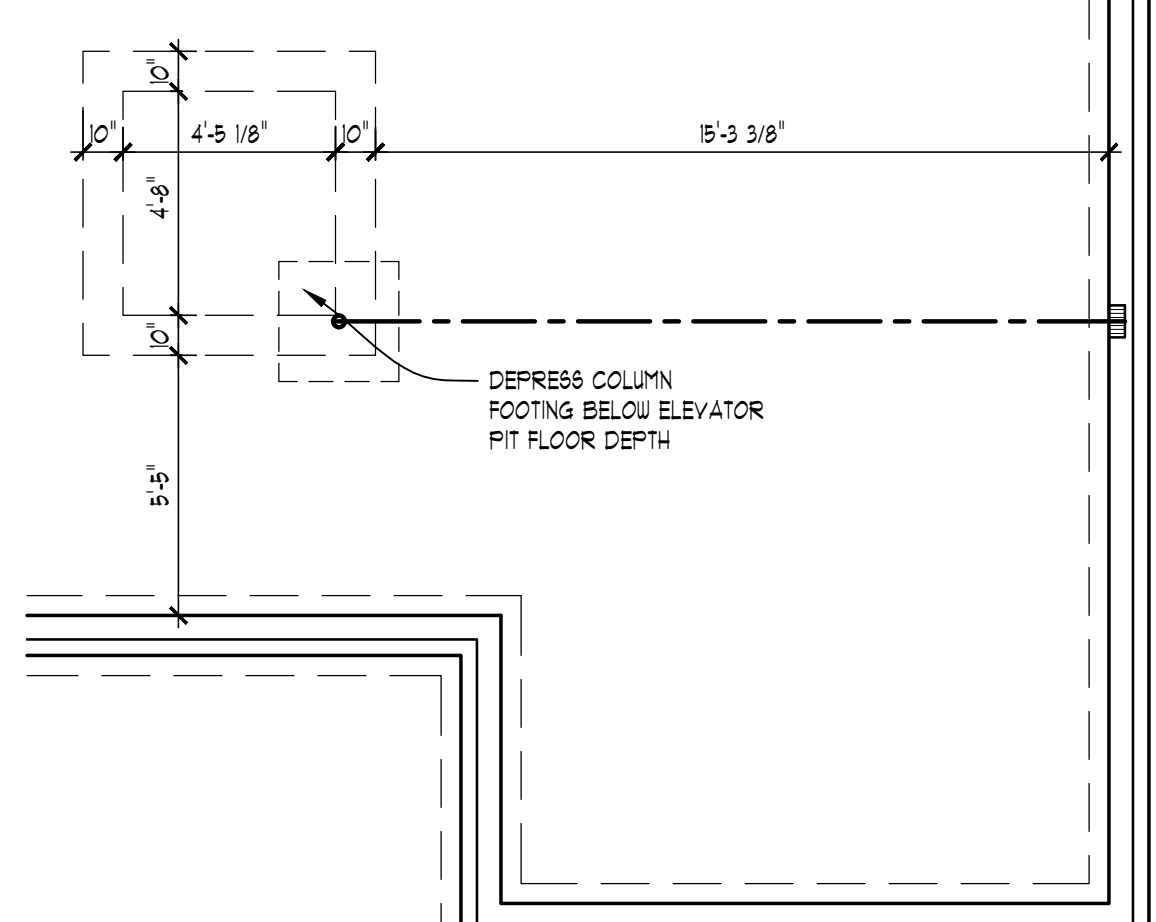
SCALE: 3/8" = 1'-0"

AA  
AI

**FOUNDATION DETAIL**

SCALE: 3/8" = 1'-0"

BB  
AI



**ELEVATOR PIT DIMENSIONS**

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

- FOUNDATION NOTES**
- NOTE:  
HOUSE FOOTINGS ARE DESIGNED FOR 3000 P.S.F. SOIL BRG. CAPACITY.  
GARAGE FOOTINGS ARE DESIGNED FOR 3000 P.S.F. SOIL BRG. CAPACITY.
- ALL COLUMNS SHALL BE 3" DIA. SCHEDULE 40 STANDARD STEEL PIPE COLUMN ON 30" X 30" X 18" DEEP CONC. FTG. TOP OF CONCRETE FTG. TO BE 4" BELOW FINISH BASEMENT SLAB. (TYPICAL UNLESS NOTED OTHERWISE)
  - WHERE STEEL BEAMS REST ON FOUNDATION WALLS, SIZE BEAM POCKET APPROPRIATELY AND SHIM AS REQUIRED.
  - AS REQUIRED DROP ROYER FLOOR SHEATHING 3/4" FOR MDSBT TILE INSTALLATION
  - VERIFY ALL UTILITY LOCATIONS BY BUILDER.
  - PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
  - PROVIDE LADDERS UNDER ANY WALL RUNNING PARALLEL TO JOIST THAT DOES NOT LAND DIRECTLY ON A JOIST
  - PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
  - GROUT SOLID \* BEARING CONDITIONS WHERE BLOCK IS USED.
  - PROVIDE 2" X 24" (MIN. R-10) RIGID PERIMETER INSULATION AT ALL BASEMENT SLABS THAT ARE LESS THAN 4" BELOW EXTERIOR FINISHED GRADE

NOTE:  
PROVIDE MIN. (2) 3" X 4" HEADER AT ALL INTERIOR & EXTERIOR DOOR / WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:  
PROVIDE MIN. (1) JACK STUD (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

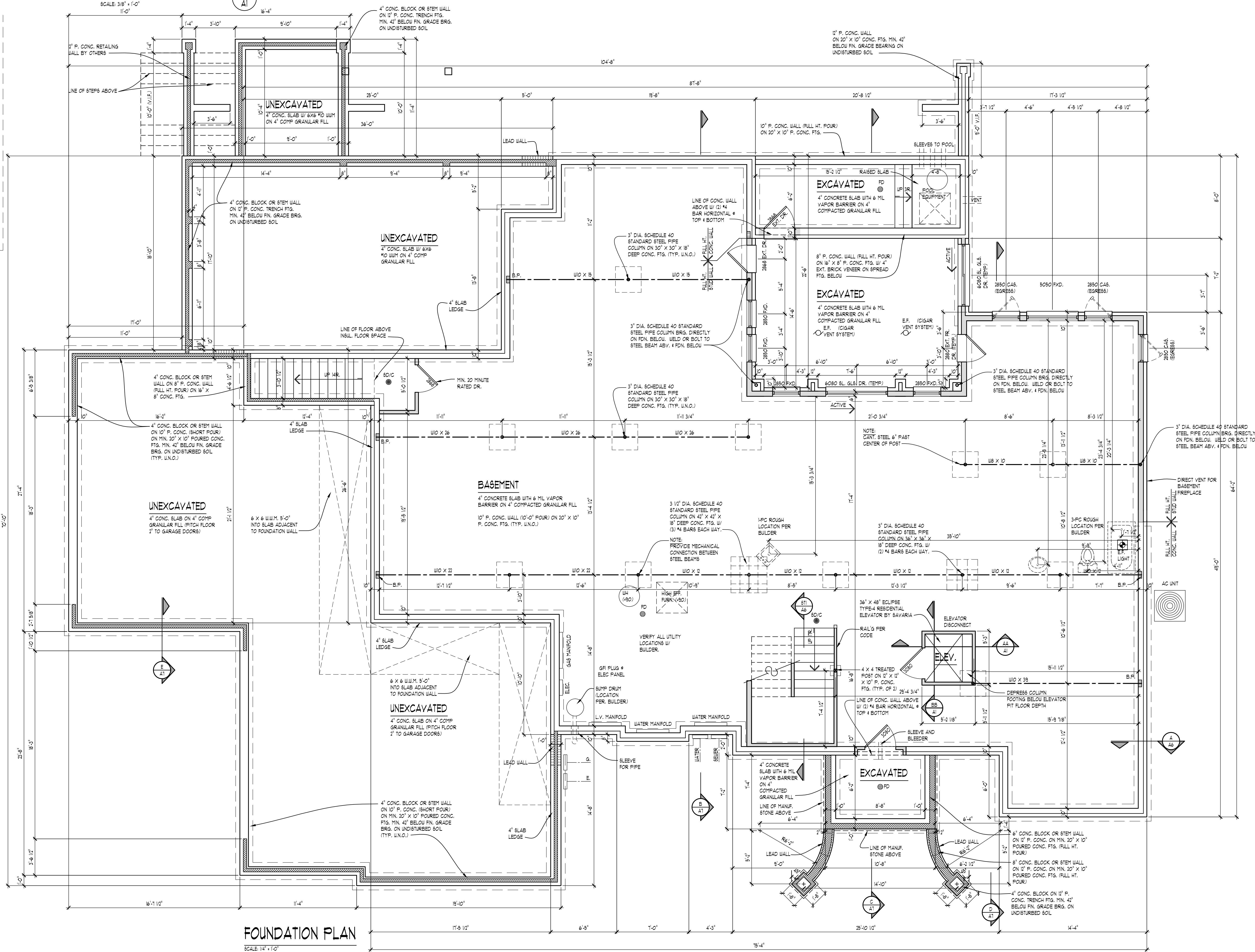
NOTE:  
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:  
GROUT ALL CONCRETE BLOCK CORERS SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:  
WOOD BEAM  
STEEL BEAM

██████ BRG. WALL  
▤▤▤▤ BRG. WALL ABOVE  
▧▧▧▧ BRG. WALL & BRG. WALL ABOVE

● POINT LOAD  
○ POINT LOAD FROM ABOVE



**FOUNDATION PLAN**

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

**FINAL APPROVED  
PLANS 4-5-17**



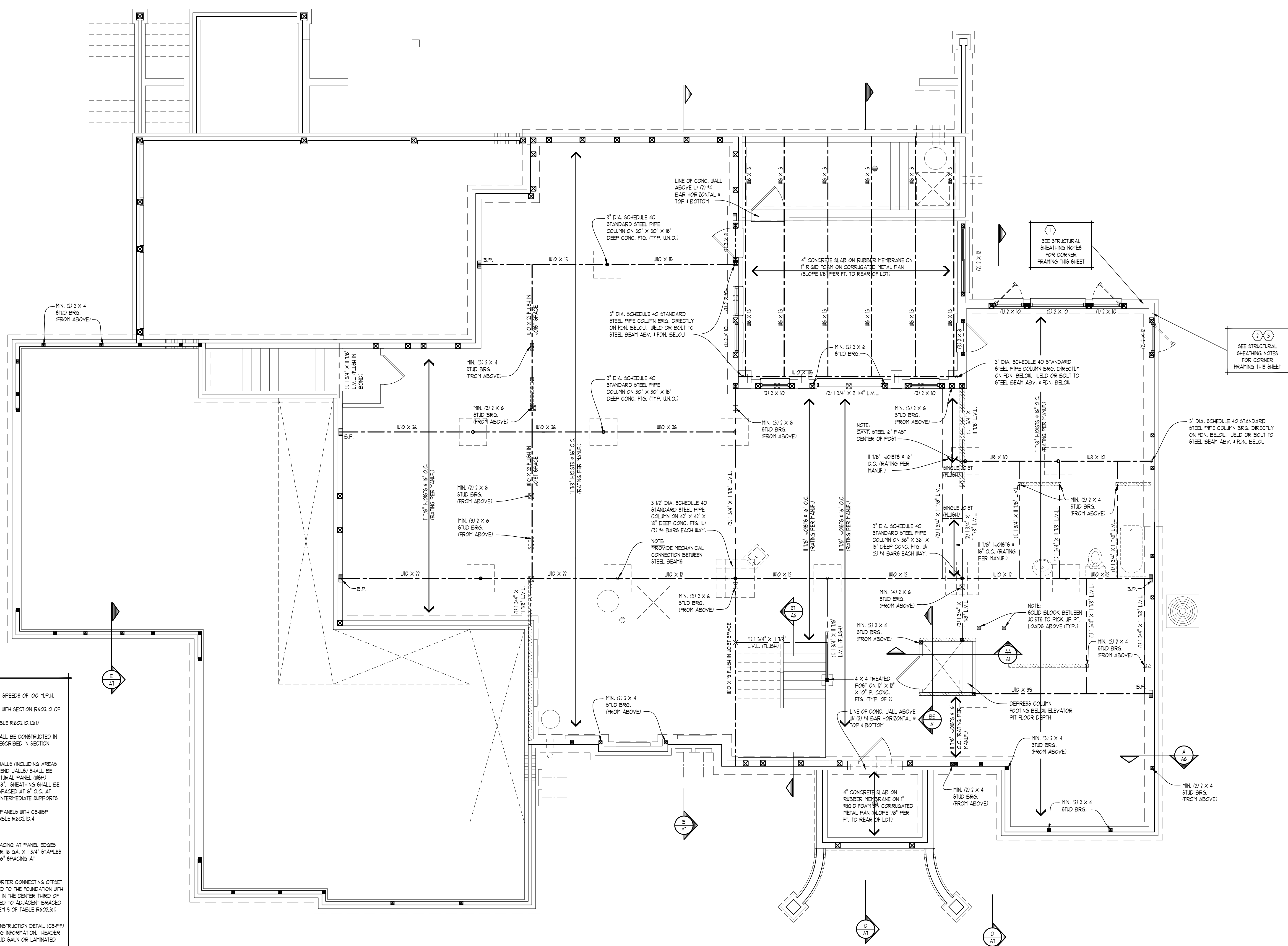
26430 PONTIAC TRAIL  
SCOTT TOWN, MI 48474  
PHONE: (248)-446-1960  
FAX: (248)-446-1961

CLIENT / PROJECT  
**COMPO BUILDERS INC  
HOULIHAN RESIDENCE**

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW:	3-9-17
FINAL:	3-9-17
REVISION:	4-19-17
REVISION:	4-26-17
REVISION:	5-3-17
REVISION:	7-31-17
REVISION:	8-11-17

SCALE:  
PER PLAN

SHEET #  
**A1**



- NOTE:**  
 PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).
- NOTE:**  
 PROVIDE MIN. (1) JACK STUD 4 IN KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).
- NOTE:**  
 PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS.
- NOTE:**  
 GROUT ALL CONCRETE BLOCK CORNER SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL).
- NOTE:**  
 WOOD BEAM  
 STEEL BEAM
- BRG. WALL  
 BRG. WALL ABOVE  
 BRG. WALL & BRG. WALL ABOVE
- POINT LOAD  
 POINT LOAD FROM ABOVE

- STRUCTURAL SHEATHING NOTES:**
- DESIGNED FOR BASIC WIND SPEEDS OF 100 M.P.H. OR LESS.
  - WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE IBC IRC CODE.
  - BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1(2).
  - EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-UBP METHOD AS PRESCRIBED IN SECTION R602.10.4 (I.N.O.).
  - ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 60 COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS.
  - LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-UBP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.4.
- PROVIDE 60 COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 1/4 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.
- R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 9 OF TABLE R602.3(1).
- SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET 043 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID BAIN OR LAMINATED VENER LUMBER (L.V.L.).

**FINAL APPROVED  
 PLANS 4-5-17**



**TK DESIGN & ASSOCIATES**  
 WWW.TKHOMEDSIGN.COM  
 26400 PONTIAC TRAIL, SUITE 100, MI 48178  
 PHONE: (248)-446-1960  
 FAX: (248)-446-1961

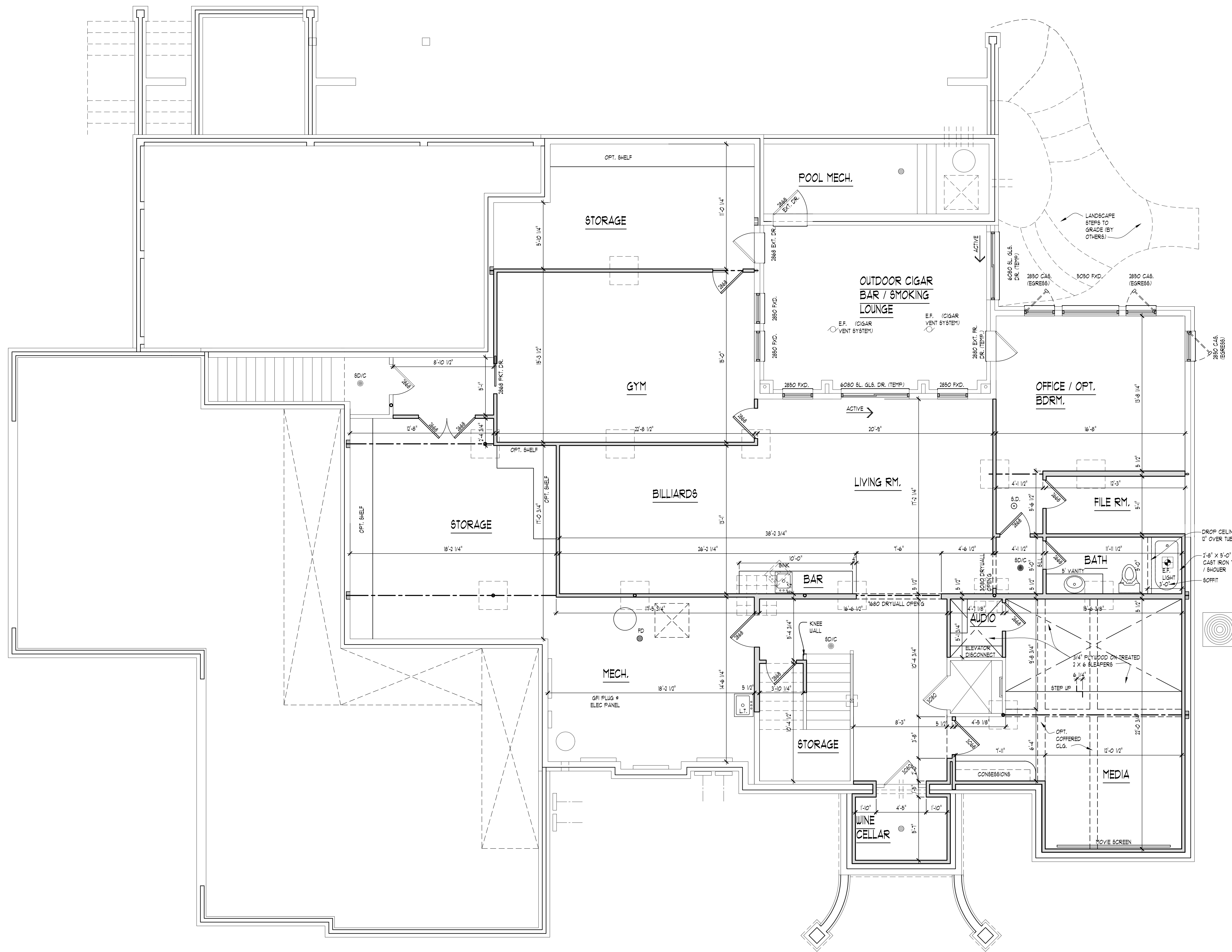
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 CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS.  
 CONTRACTOR, OWNER AND DESIGN CHANGES SHALL BE REPORTED TO THE DESIGNER IN WRITING IMMEDIATELY.  
 CALL BEFORE ANY EXCAVATION OR CONSTRUCTION TO AVOID UTILITIES.  
 CONTRACTOR IS THE SOLE RESPONSIBLE OF THE PERMITS/LOCAL.

**CLIENT / PROJECT**  
 COMPO BUILDERS INC  
 HOULIHAN RESIDENCE

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW	3-9-17
FINAL:	3-9-17
REVISION	4-19-17
REVISION	4-26-17
REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

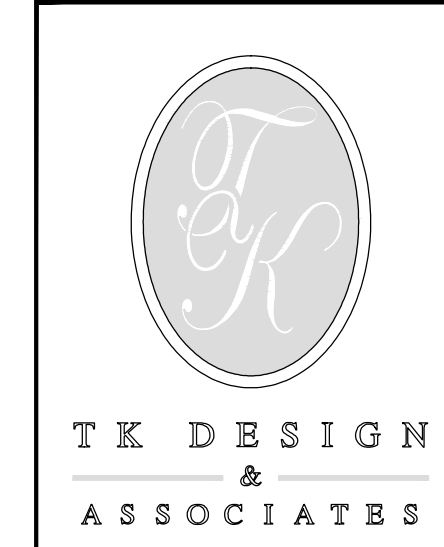
SCALE:  
 PER PLAN

**SHEET #**  
 S1



**FINISHED BASEMENT PLAN**  
SCALE: 1/4" = 1'-0"

FIN. BMT.	224 S.F.
SMOKING LOUNGE	285 S.F.
POOL MECH.	18 S.F.



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CONSTRUCTION. DISCREPANCIES AND DESIGN CHANGES SHALL BE  
REPORTED TO THE DESIGNER IN WRITING IMMEDIATELY.  
CALL MEASUREMENTS PRIOR TO ANY CONSTRUCTION.  
CONTRACTOR IS THE SOLE RESPONSIBLE PARTY FOR THE PERMITS.

**CLIENT / PROJECT**  
COMPO BUILDER'S  
INC  
HOULIHAN  
RESIDENCE

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW	3-9-17
FINAL:	3-9-17
REVISION	4-19-17
REVISION	4-26-17
REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

SCALE:  
PER PLAN

**SHEET #**  
**FB-1**

**NICHE ELEVATION**

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

1  
A2

**NOTE:**  
PROVIDE MIN. (2) 2 X 4 HEADERS AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

**NOTE:**  
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

**NOTE:**  
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS.

**PLAN NOTES**

- INTERIOR WALLS:**  
1/2" GYPSUM WALL BOARD ON EACH SIDE OF 2X4 WOOD STUDS @ 16" O.C. 3 1/2" THICK TYPICAL (UNLESS NOTED OTHERWISE).
- EXTERIOR WALLS:**  
SIDING AND/OR MASONRY WITH AIRSPACE MOISTURE BARRIER PAPER (HOUSE WRAP) ON 1/8" O.S.B. SHEATHING ON 2X4 WOOD STUDS @ 16" O.C. OR AS NOTED. MIN. R-20 WALL CONSTRUCTION 1/2" GYPSUM WALL BOARD (BLUE & BROWN). WALL TO BE 4" THICK WITH SIDING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE).
- TRUSSES TO BEAR ON EXTERIOR WALLS ONLY UNLESS NOTED OTHERWISE.
  - OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 203 MRC SECTION R302.5.1).
  - VENT ALL EXHAUST FANS TO EXTERIOR.
  - WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
  - INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
  - USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
  - ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 8'-0" TALL. ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER.
  - PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
  - PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
  - GARAGE WALLS TO BE 2X6 STUDS F OVER 10'-0" TALL.

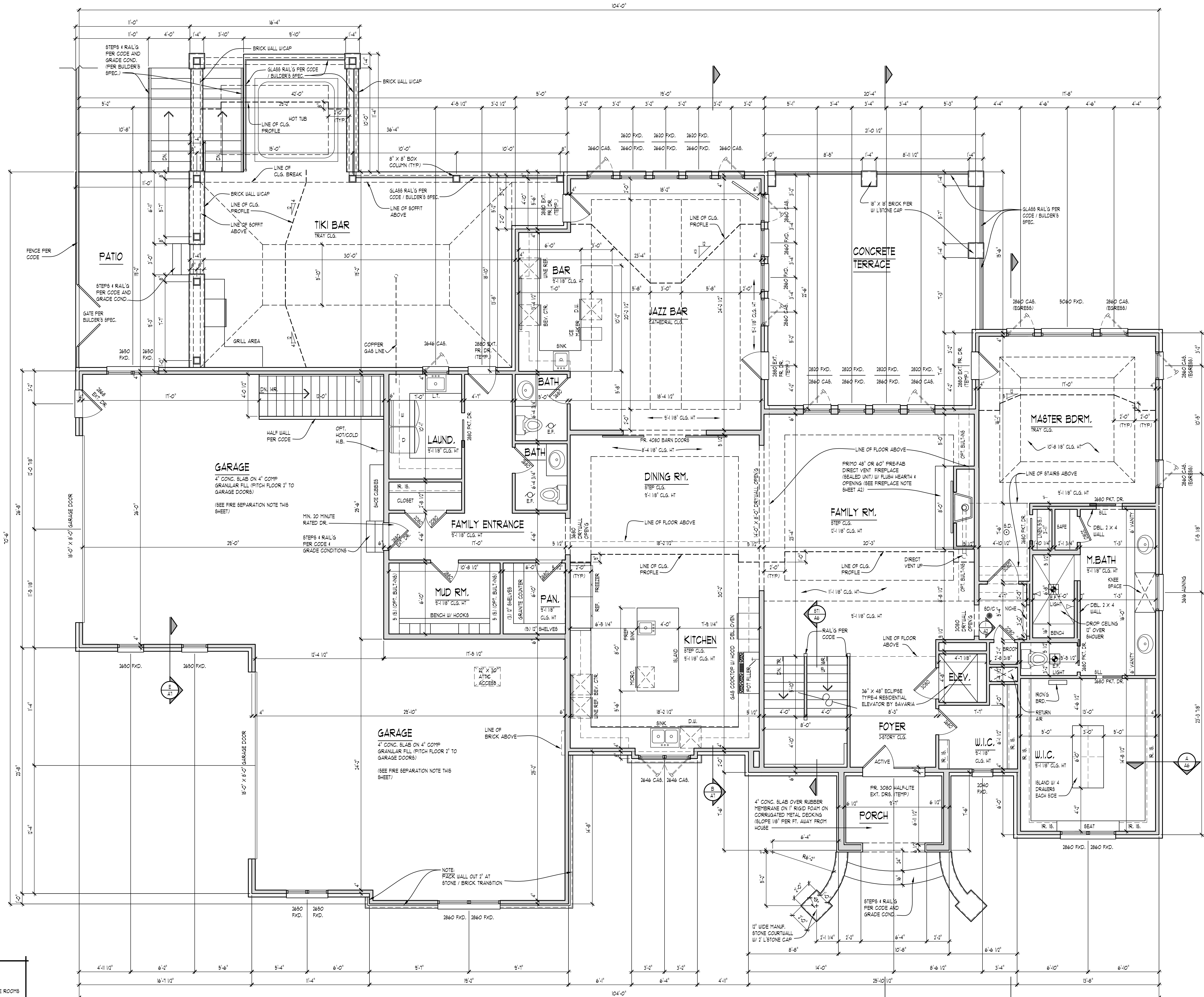
**NOTE:**  
S.D. ○  
S.O.C. ●  
ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACKUP PER CODE.

**NOTE:**  
DOOR & WINDOW LOCATIONS:  
ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR 1/4" INCHES FROM PERPENDICULAR WALL FOR CASING UNLESS NOTED OTHERWISE.

**NOTE:**  
VERIFY DROPPED FLOOR AREAS FOR TILE WITH BUILDER.

**FIREPLACE NOTE**  
ALL FIREPLACE DIMENSIONS & ROUGH OPENINGS TO BE VERIFIED W/ MANUFACTURER SPECS INCLUDING BUT NOT LIMITED TO WIDTH, DEPTH, HEIGHT, CHIMNEY CLEARANCES, ETC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL SPECS TO CARPENTER PRIOR TO FRAMING.

**FIRE SEPARATION NOTE**  
FIRE SEPARATION (203M)  
GARAGE SPACE BETWEEN HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8-INCH TYPE X GYPSUM BOARD OR EQUIVALENT. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 1/2-INCH GYPSUM BOARD OR EQUIVALENT. ALL OTHER GARAGE SPACE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 1/2-INCH GYPSUM BOARD APPLIED TO THE GARAGE SIDE. DROP CLG. UNDER FLR. ABV. ENCLOSE MECHANICAL AND STRUCTURAL ELEMENTS. VERIFY W/ BLDG.



**FIRST FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

**FINAL APPROVED**  
**PLANS 4-5-11**

**AREA SUMMARY:**  
HABITABLE SPACE AREA:  
FIRST FLOOR 1800 S.F.  
SECOND FLOOR 694 S.F.  
TOTAL AREA 2494 S.F.

**AREA SUMMARY:**  
OVERALL FLOOR AREA:  
FIRST FLOOR 1803 S.F.  
SECOND FLOOR 1480 S.F.  
TOTAL AREA 4283 S.F.



WWW.TKHOMEDSIGN.COM  
26400 PONTIAC TRAIL  
SOUTH LYNN, MI 48178  
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FAX: (248)-446-1961

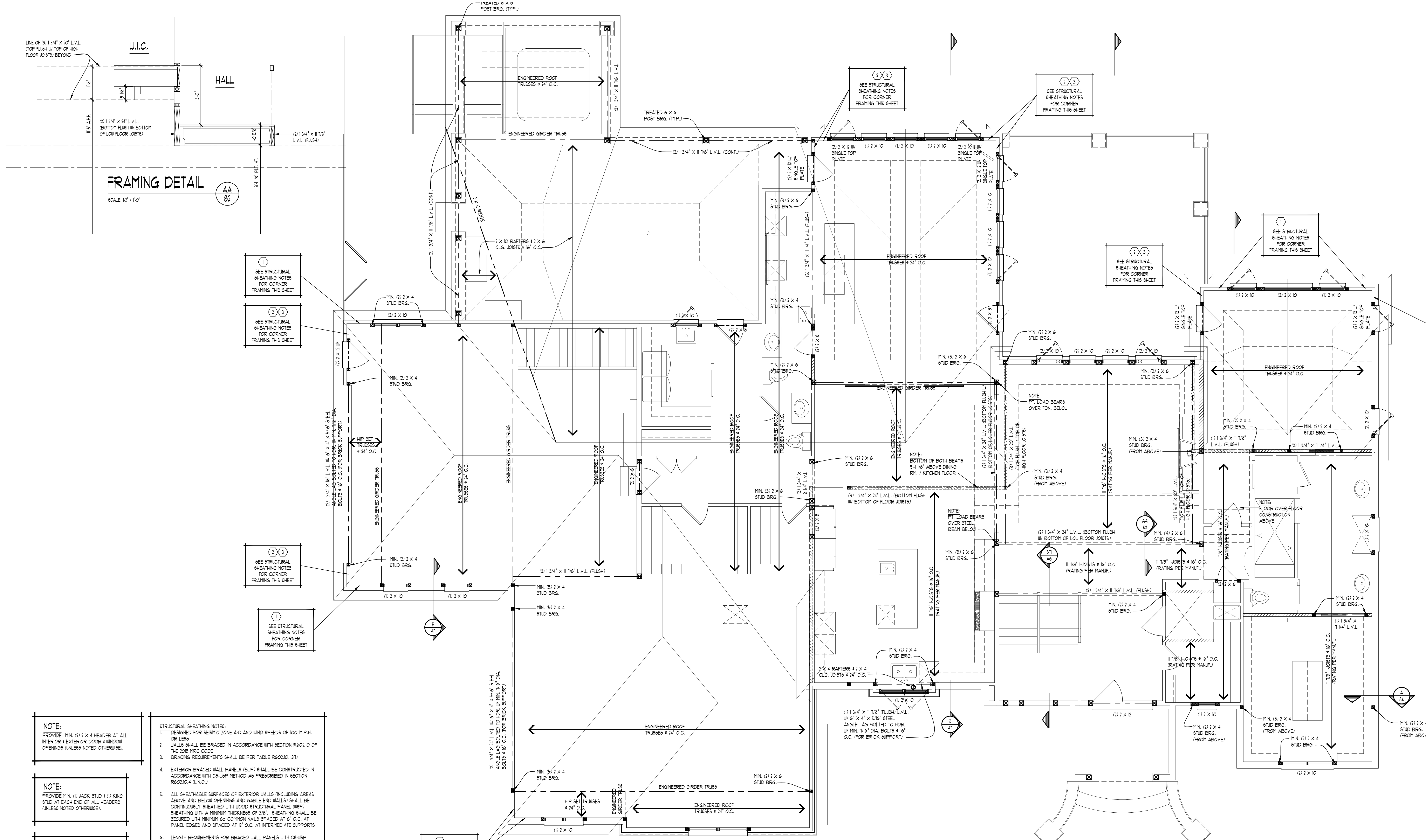
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CALL BEFORE ANY CONSTRUCTION TO VERIFY DIMENSIONS.  
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS.

**CLIENT / PROJECT**  
**COMPO BUILDERS INC**  
**HOULIHAN RESIDENCE**

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW	3-9-17
FINAL:	3-9-17
REVISION	4-19-17
REVISION	4-26-17
REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

SCALE:  
PER PLAN

**SHEET #**  
**A2**



**FIRST FLOOR PLAN STRUCTURE**  
SCALE: 1/4" = 1'-0"

- NOTE:**  
PROVIDE MIN. (2) 2 X 4 HEADERS AT ALL INTERIOR EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).
- NOTE:**  
PROVIDE MIN. (1) JACK STUD (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).
- NOTE:**  
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS.
- NOTE:**  
GROUT ALL CONCRETE BLOCK CORNER SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL).
- NOTE:**  
WOOD BEAM  
STEEL BEAM
- BRG. WALL  
BRG. WALL ABOVE  
BRG. WALL & BRG. WALL ABOVE
- POINT LOAD  
POINT LOAD FROM ABOVE
- STRUCTURAL SHEATHING NOTES:**
- DESIGNED FOR BASIC WIND SPEEDS OF 100 M.P.H. OR LESS.
  - WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE IBC IRC CODE.
  - BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1(1).
  - EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-UBP METHOD AS PRESCRIBED IN SECTION R602.10.4 (I.N.O.).
  - ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS.
  - LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-UBP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.4.
- PROVIDE 6d COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.
- R602.10.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 9 OF TABLE R602.10.1(1).
- SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET 043 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID BAIN OR LAMINATED VENEER LUMBER (L.V.L.).

**FINAL APPROVED PLANS 4-5-17**

**TK DESIGN & ASSOCIATES**  
WWW.TKHOMEDSIGN.COM  
26400 PONTIAC TRAIL, SCOTTIE LYNN, MI 48417  
PHONE: (248)-446-1960  
FAX: (248)-446-1961

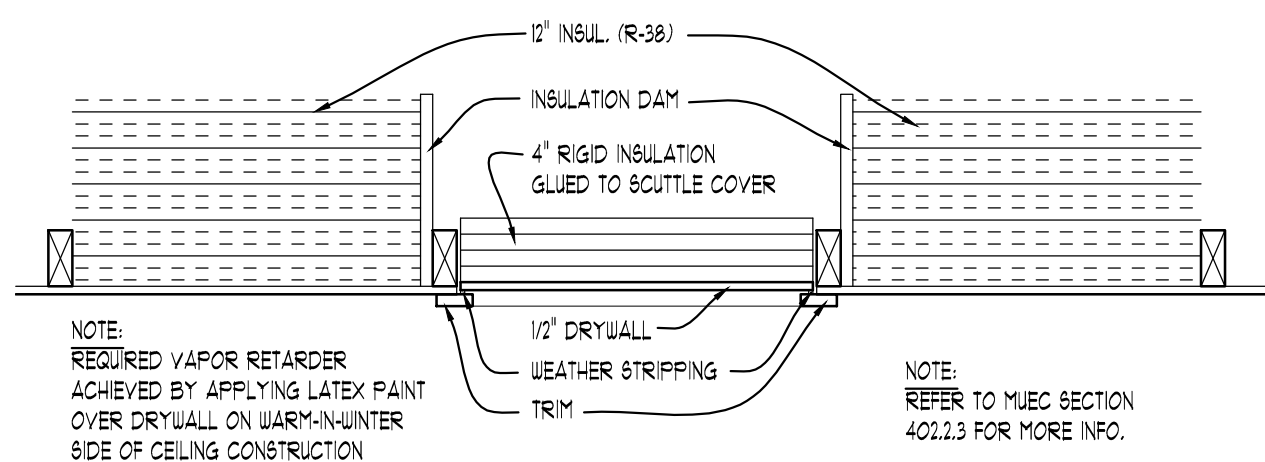
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**CLIENT / PROJECT**  
COMPO BUILDERS INC  
HOULIHAN RESIDENCE

**JOB No.** 16-195  
**DRAWN:** DM  
**CHECKED:** ECT  
**REVIEW:** 3-9-17  
**FINAL:** 3-9-17  
**REVISION** 4-19-17  
**REVISION** 4-26-17  
**REVISION** 5-3-17  
**REVISION** 7-31-17  
**REVISION** 8-11-17

**SCALE:**  
PER PLAN

**SHEET #**  
S2



### ATTIC ACCESS DETAIL

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

### PLAN NOTES

**INTERIOR WALLS:**  
1/2" GYP/WALL BOARD ON EACH SIDE OF 2x4 WOOD STUDS @ 16" O.C. 3/4" THICK TYPICAL (UNLESS NOTED OTHERWISE).

**EXTERIOR WALLS:**  
SING AND/OR MASONRY WITH AIRSPACE, MOISTURE BARRIER PAPER (HOUSE WRAP) ON 1/8" O.S.B. SHEATHING ON 2x4 WOOD STUDS @ 16" O.C. OR AS NOTED. MIN. R-20 WALL CONSTRUCTION, 1/2" GYP/WALL BOARD (GLUE & SCREWS). WALL TO BE 4" THICK WITH SING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE).

- TRUSSES TO BEAR ON EXTERIOR WALLS ONLY UNLESS NOTED OTHERWISE.
- OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 205 MRC SECTION R302.3.1).
- VENT ALL EXHAUST FANS TO EXTERIOR.
- WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
- INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
- USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
- ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 6'-0" TALL. ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER.
- PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
- PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
- GARAGE WALLS TO BE 2x6 STUDS F OVER 10'-0" TALL.

NOTE:  
ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACKUP PER CODE.

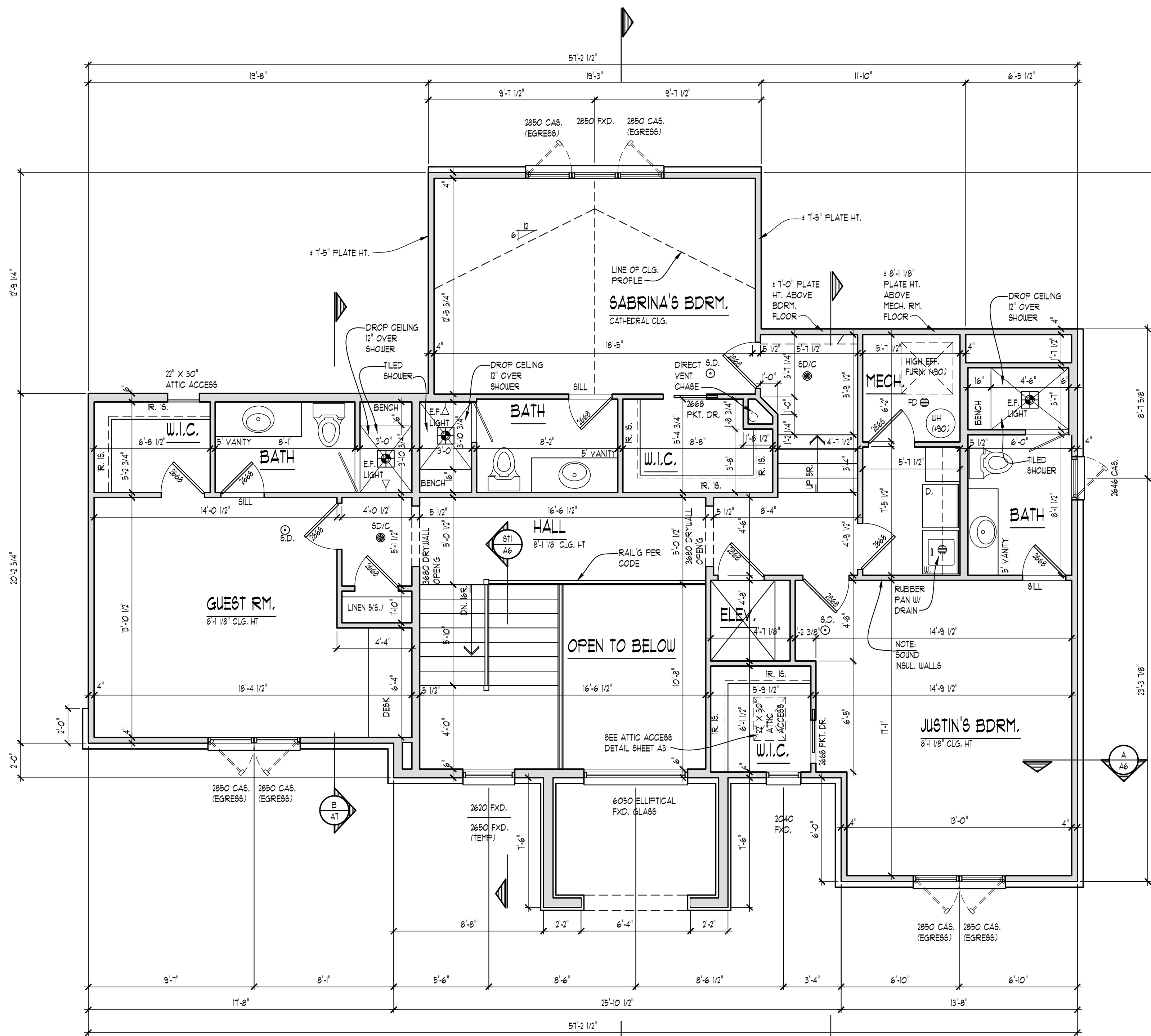
NOTE:  
DOOR & WINDOW LOCATIONS:  
ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR MIN. 4 INCHES FROM PERPENDICULAR WALL FOR CABING UNLESS NOTED OTHERWISE.

NOTE:  
VERIFY SCRIPPED FLOOR AREAS FOR TILE WITH BUILDER.

NOTE:  
PROVIDE MIN. (1) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:  
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:  
PROVIDE MIN. (1) JOIST OR LADDER BRACING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS.



### SECOND FLOOR PLAN

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

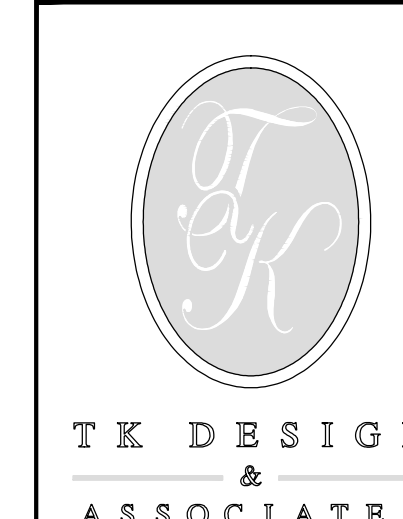
### FINAL APPROVED PLAN 4-5-17

AREA SUMMARY:

HABITABLE SPACE AREA:	
FIRST FLOOR	1800 S.F.
SECOND FLOOR	694 S.F.
TOTAL AREA	2494 S.F.

AREA SUMMARY:

OVERALL FLOOR AREA:	
FIRST FLOOR	1803 S.F.
SECOND FLOOR	1480 S.F.
TOTAL AREA	4283 S.F.



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FAX: (248)-446-1961

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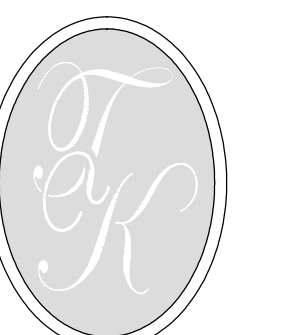
CLIENT / PROJECT  
COMPO BUILDER'S INC  
HOULIHAN RESIDENCE

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW	3-9-17
FINAL:	3-9-17
REVISION	4-19-17
REVISION	4-26-17
REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

SCALE:  
PER PLAN

SHEET #  
A3





TK DESIGN  
&  
ASSOCIATES

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26430 PONTIAC TRAIL  
SOUTH LYNN, MA 01917  
PHONE: (248)-446-1960  
FAX: (248)-446-1961

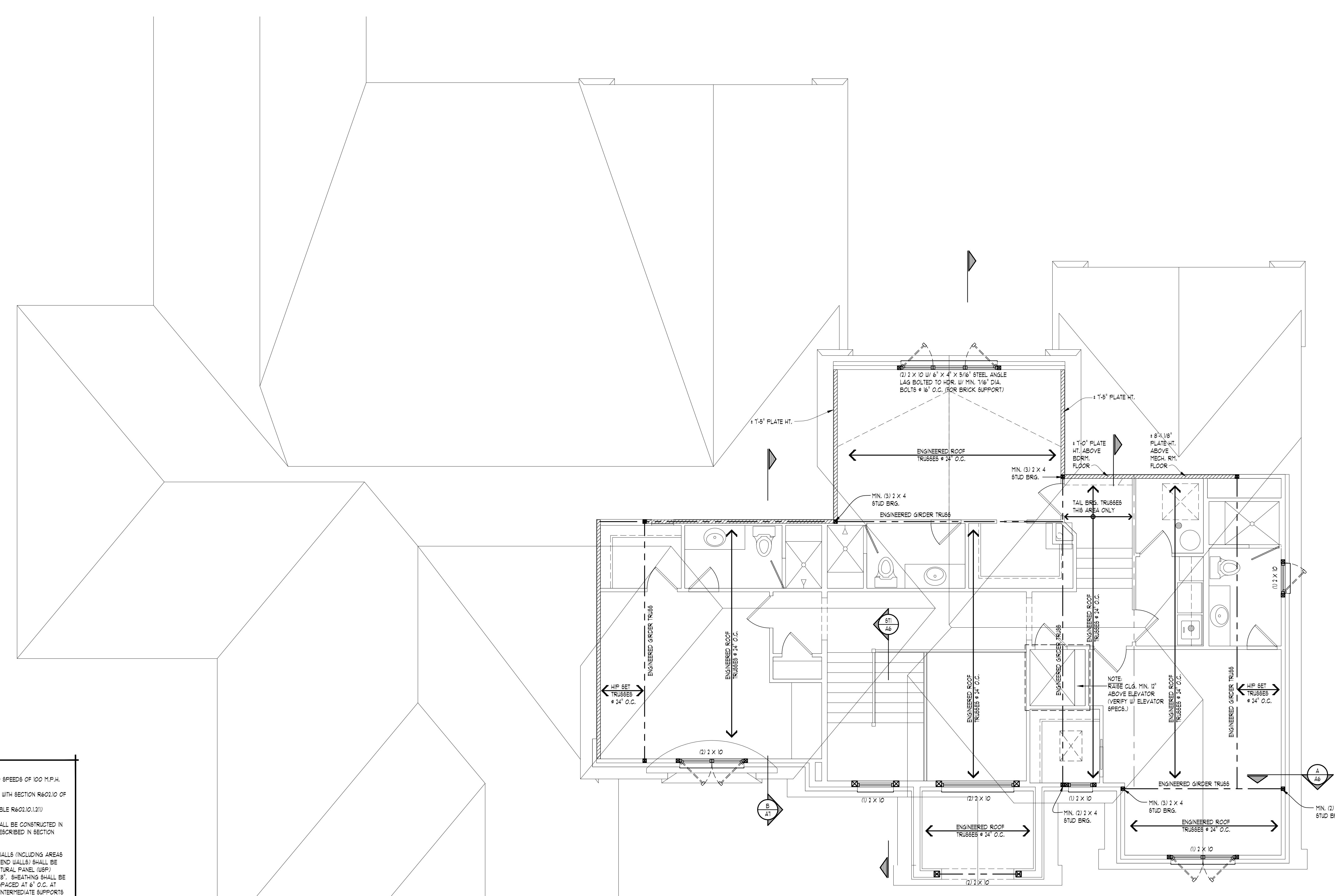
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REPORTED TO THE DESIGNER IN WRITING. OWNER MUST  
CALL MEASUREMENTS PRIOR TO ANY EXCAVATION  
CONSTRUCTION. THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

CLIENT / PROJECT  
COMPO BUILDERS  
INC  
HOULIHAN  
RESIDENCE

JOB No.	16-195
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REVISION	4-26-17
REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

SCALE:  
PER PLAN

SHEET #  
S3



SECOND FLOOR PLAN STRUCTURE  
SCALE: 1/4" = 1'-0"

**NOTE:**  
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

**NOTE:**  
PROVIDE MIN. (1) JACK STUD 4 (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

**NOTE:**  
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS.

**NOTE:**  
GROUT ALL CONCRETE BLOCK CORNER SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL).

**NOTE:**  
WOOD BEAM  
STEEL BEAM

BRG. WALL  
BRG. WALL ABOVE  
BRG. WALL & BRG. WALL ABOVE

POINT LOAD  
POINT LOAD FROM ABOVE

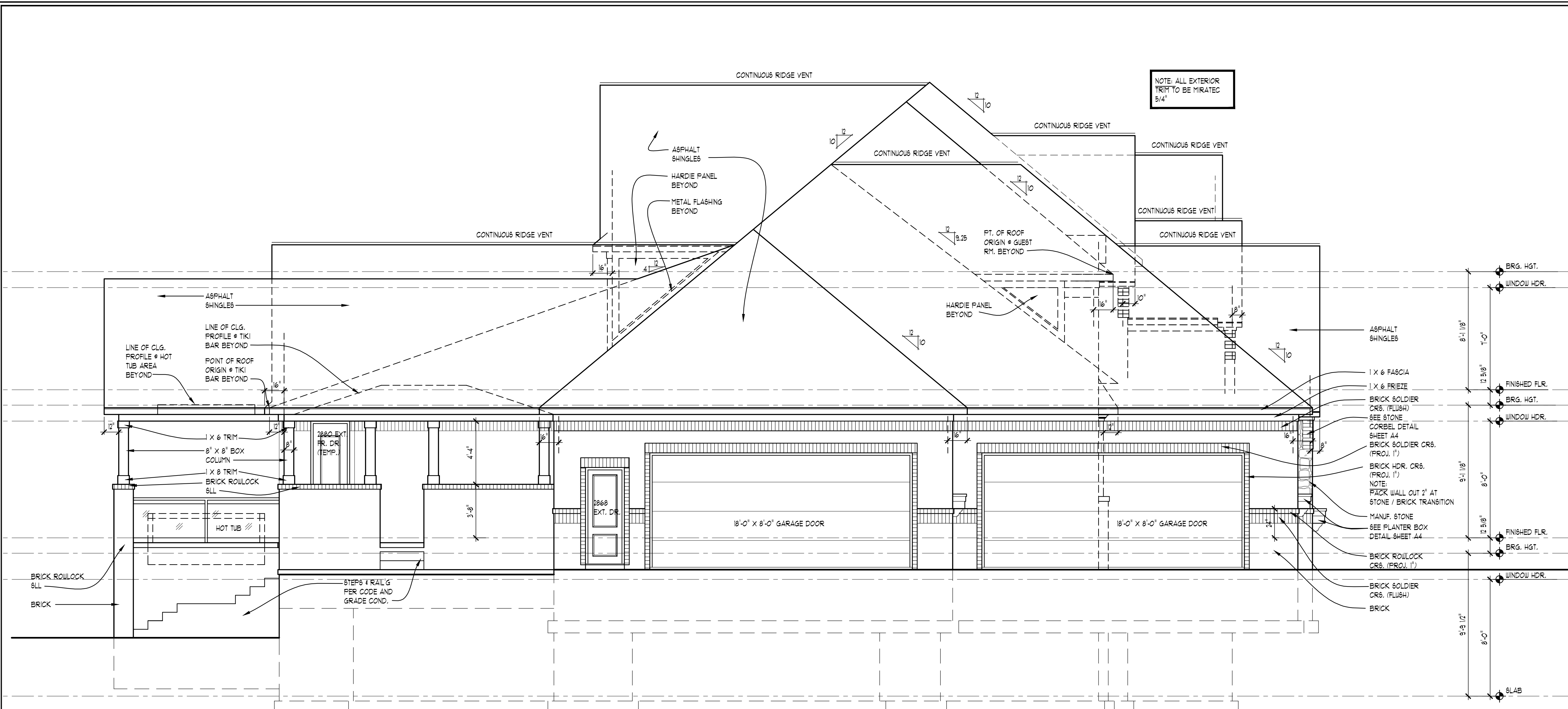
**STRUCTURAL SHEATHING NOTES:**

- DESIGNED FOR BASIC WIND SPEEDS OF 100 M.P.H. OR LESS.
- WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE IRC PER CODE.
- BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1(2).
- EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-UBP METHOD AS PRESCRIBED IN SECTION R602.10.4 (I.N.O.).
- ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS.
- LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-UBP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.4.

1 PROVIDE 6d COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.

2 R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 3 OF TABLE R602.3(1)

3 SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET 043 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID BAIN OR LAMINATED VENER LUMBER (L.V.L.)



**LEFT ELEVATION**  
SCALE 1/4" = 1'-0"

**ELEVATION NOTES**

- ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
- PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS.
- REPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION.
- METAL FLASHING AS REQUIRED BY CODE.
- ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
- PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
- CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK.

**BRICK DETAIL**  
SCALE 1/2" = 1'-0"

**TYPICAL WINDOW DESIGNATION**

NOTE: GENERAL REFERENCE FOR ROUGH OPENING SIZES ONLY. CONSULT WITH WINDOW MANUFACTURER FOR EXACT WINDOW SIZES & REQUIREMENTS.

NOTE: ALL CASEMENT VENTING TO BE VERIFIED BY BUILDER/HOMEOWNER PRIOR TO ORDERING WINDOWS.

NOTE: WINDOW MANUFACTURER TO VERIFY ALL WINDOW GRID PATTERNS WITH HOME OWNER.

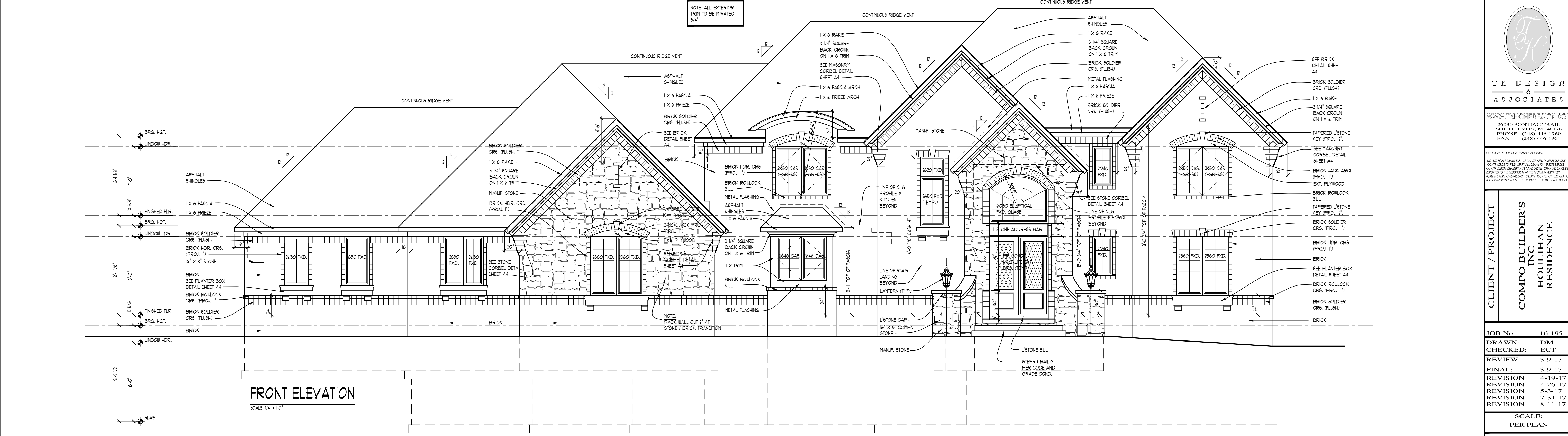
**MASONRY CORBEL DETAIL**  
SCALE 1/2" = 1'-0"

**PLANTER BOX**  
SCALE 1/2" = 1'-0"

**NOTE:** OVERHANG DIMENSIONS (O.A.) ARE FROM SHEATHING U.N.O.

**NOTE:** ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 1/4" ABOVE FINISHED FLOOR OR HAVE 3/8" LITERS PER CODE REQUIREMENTS.

**STONE CORBEL DETAIL**  
SCALE 1/2" = 1'-0"



**FRONT ELEVATION**  
SCALE 1/4" = 1'-0"

**FINAL APPROVED PLANS 4-5-17**

**TK DESIGN & ASSOCIATES**  
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26030 PONTIAC TRAIL, SCOTTIE LYNN, MI 48417  
PHONE: (248) 446-1960  
FAX: (248) 446-1961

**CLIENT / PROJECT**  
COMPO BUILDER'S INC  
HOULIHAN RESIDENCE

**JOB No.** 16-195  
**DRAWN:** DM  
**CHECKED:** ECT  
**REVIEW** 3-9-17  
**FINAL:** 3-9-17  
**REVISION** 4-19-17  
**REVISION** 4-26-17  
**REVISION** 5-3-17  
**REVISION** 7-31-17  
**REVISION** 8-11-17

**SCALE:** PER PLAN

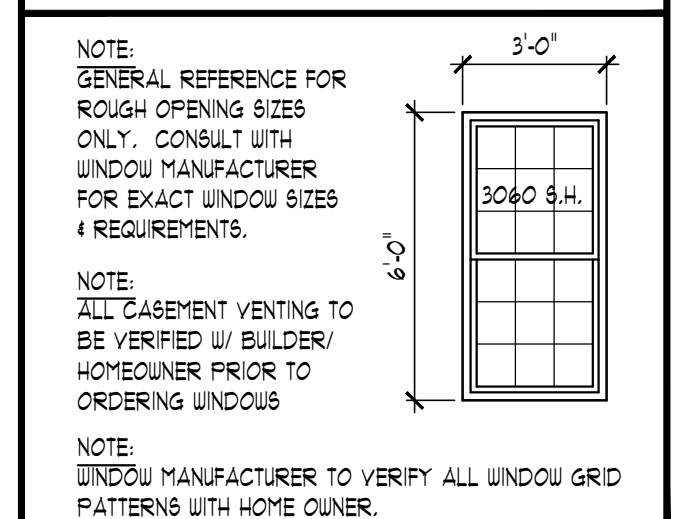
**SHEET #**  
A4

**ELEVATION NOTES**

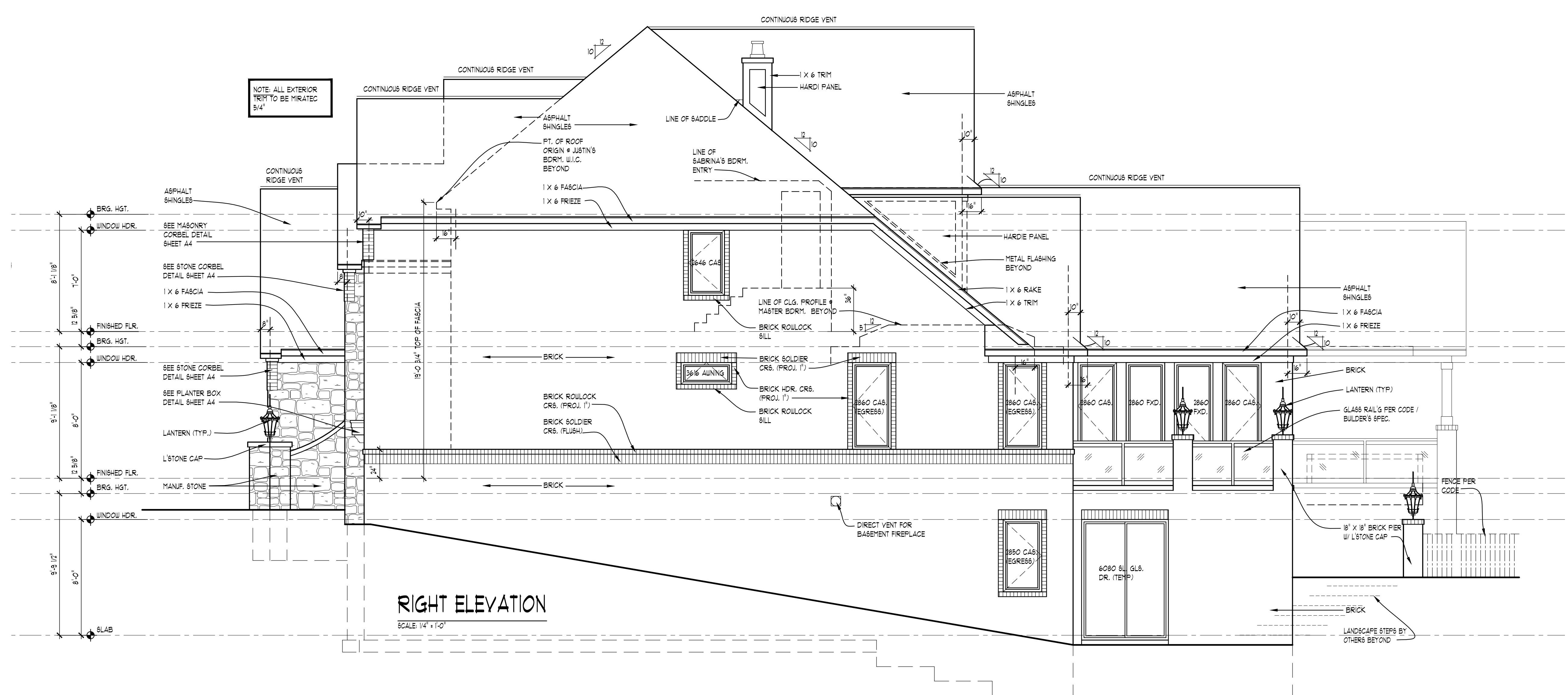
1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS.
3. FIREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION.
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & BOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS (DOWNSPUTS FOR DRAINAGE OF ROOF WATER. DOWNSPUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK.

**NOTE:**  
OVERHANG DIMENSIONS (O.A.) ARE FROM SHEATHING U.N.O.

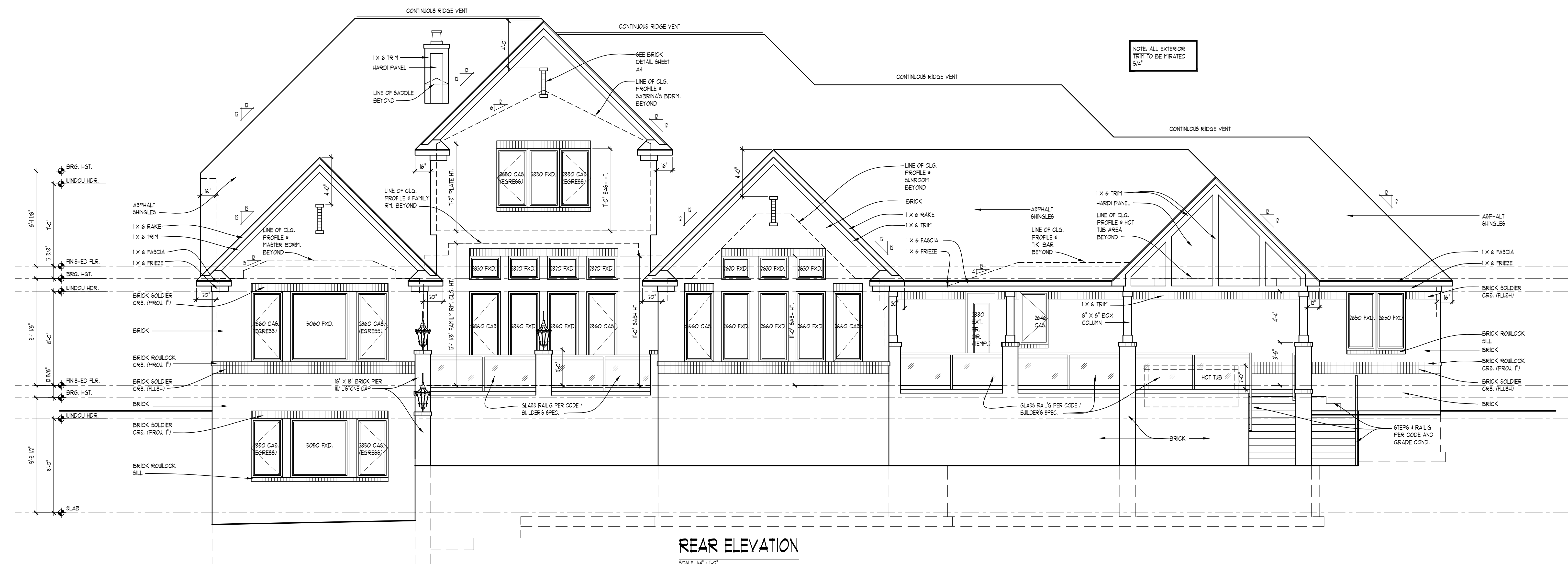
**TYPICAL WINDOW DESIGNATION**



**NOTE:**  
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 14" ABOVE FINISHED FLOOR OR HAVE 5/8" LITERERS PER CODE REQUIREMENTS

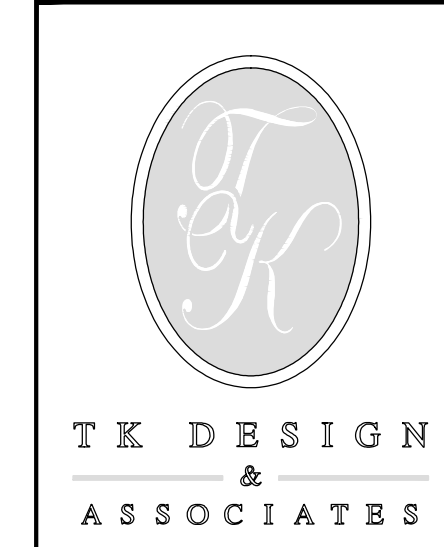


**RIGHT ELEVATION**  
SCALE 1/4" = 1'-0"



**REAR ELEVATION**  
SCALE 1/4" = 1'-0"

**FINAL APPROVED  
PLANS 4-5-17**



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CONSTRUCTION TO ENSURE RESPONSIBILITY OF THE PROFESSIONAL

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RESIDENCE**

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REVISION	5-3-17
REVISION	7-31-17
REVISION	8-11-17

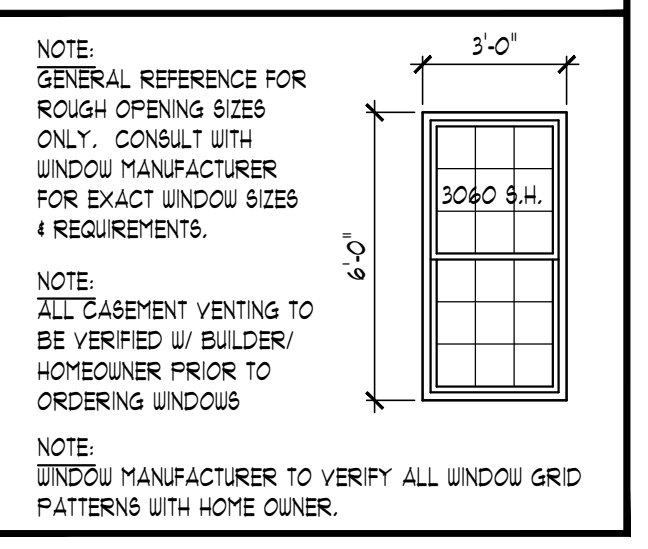
SCALE:  
PER PLAN

**SHEET #**  
**A5**

**ELEVATION NOTES**

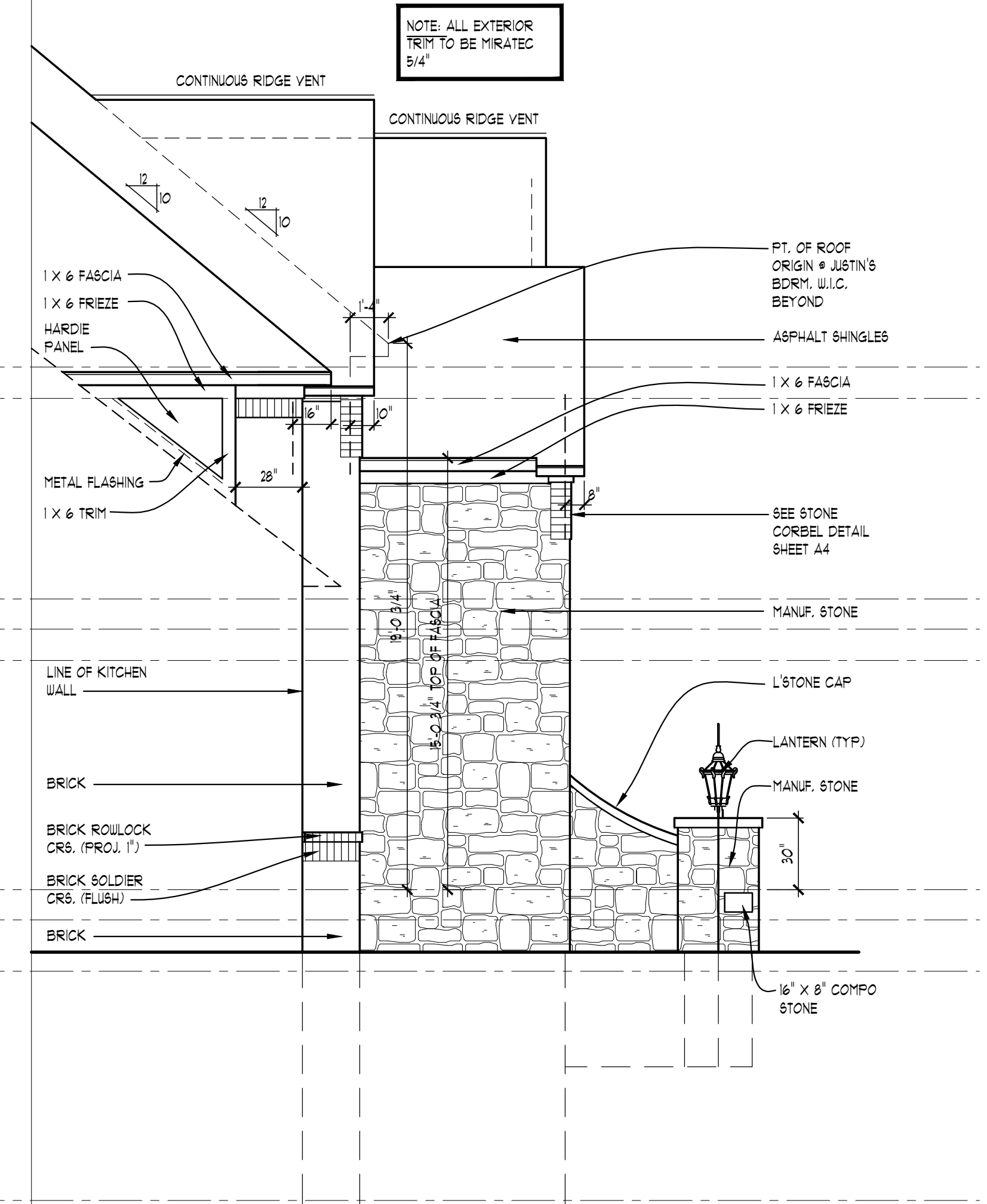
1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS.
3. PREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION.
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK.

**TYPICAL WINDOW DESIGNATION**

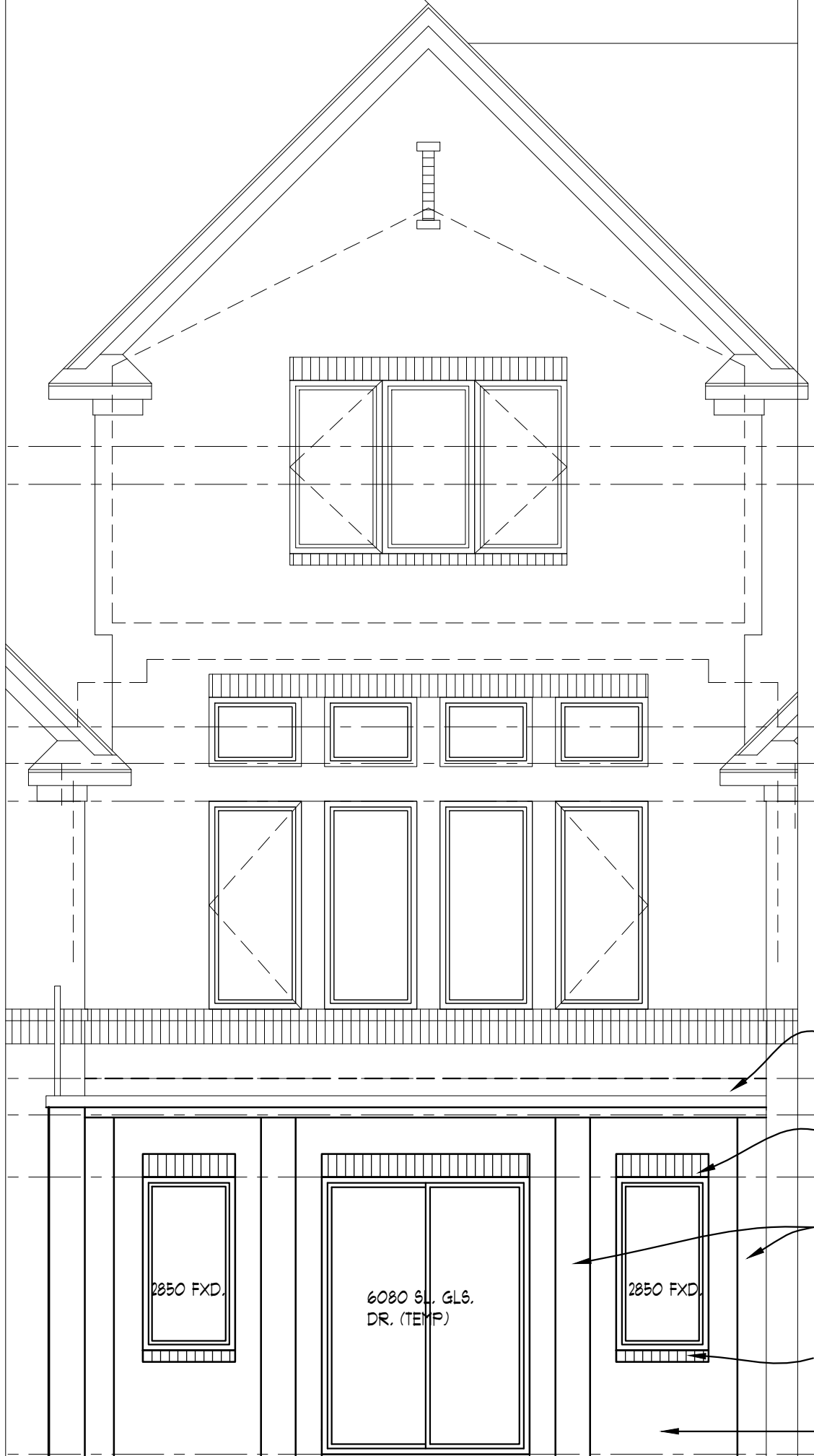


**NOTE:**  
OVERHANG DIMENSIONS (O.H.) ARE FROM SHEATHING U.L.O.

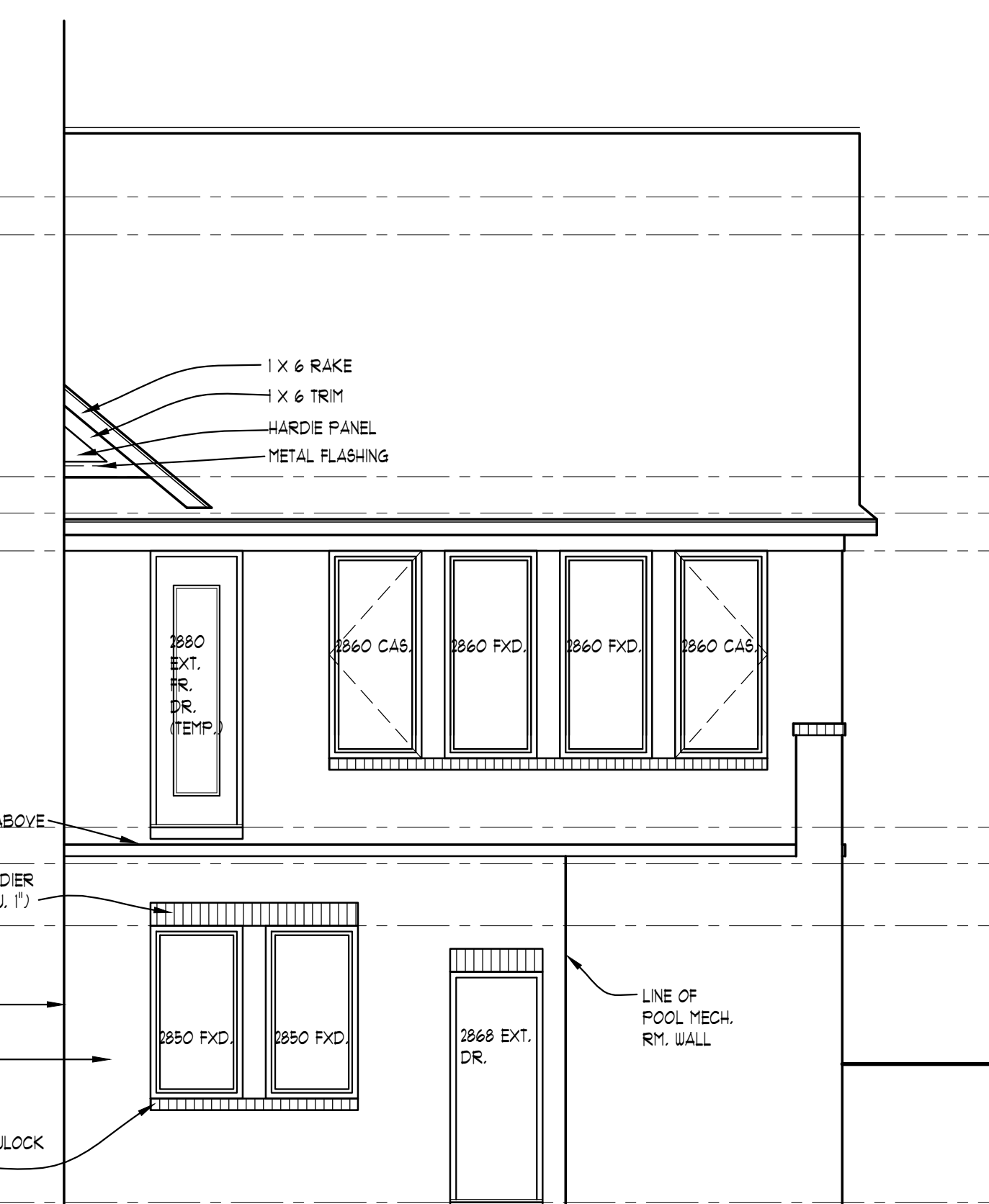
**NOTE:**  
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 1" ABOVE FINISHED FLOOR OR HAVE SASH LIMITERS PER CODE REQUIREMENTS



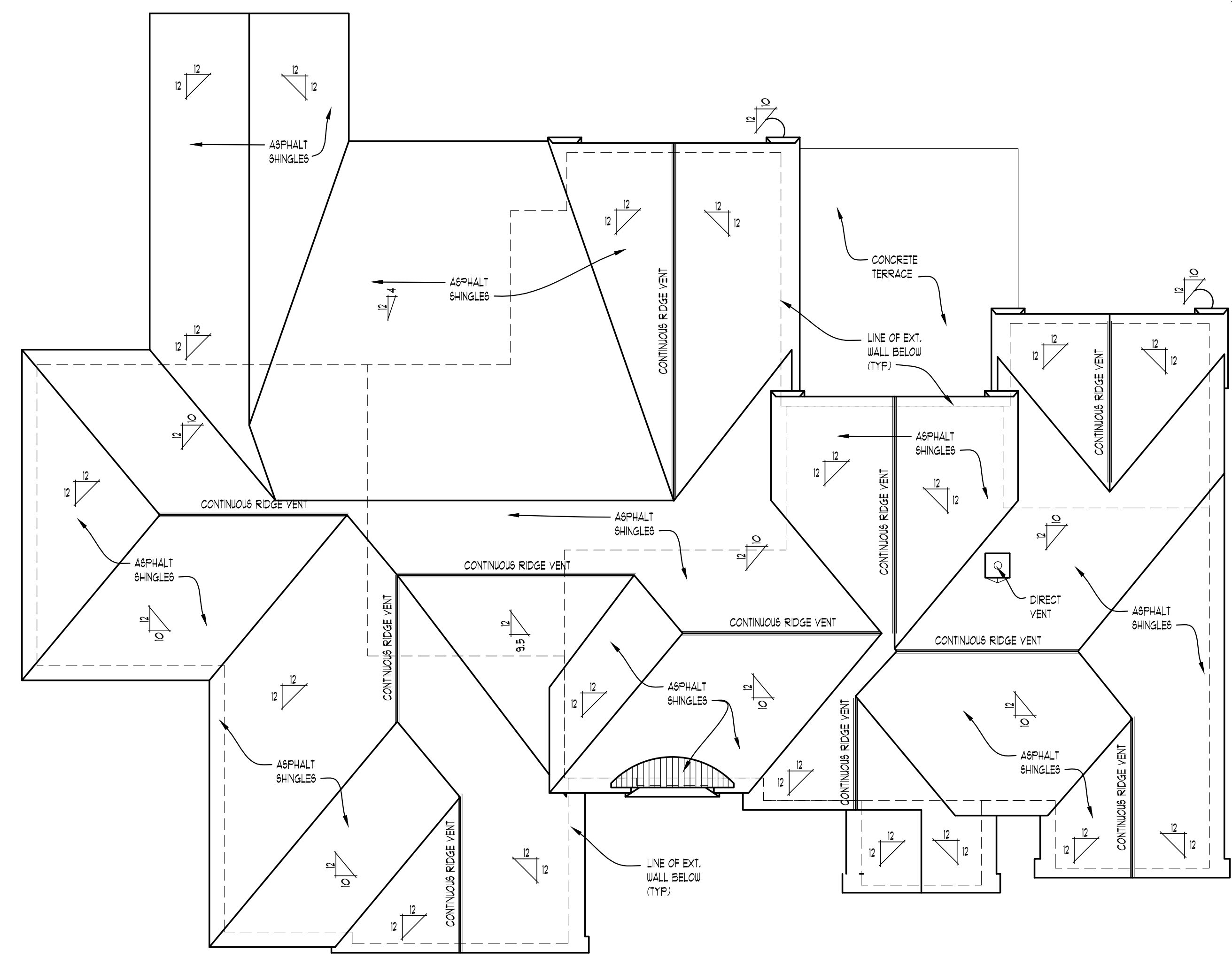
**PARTIAL LEFT ELEVATION @ PORCH**  
SCALE 1/4" = 1'-0"



**PARTIAL REAR ELEVATION @ BASEMENT WALKOUT**  
SCALE 1/4" = 1'-0"

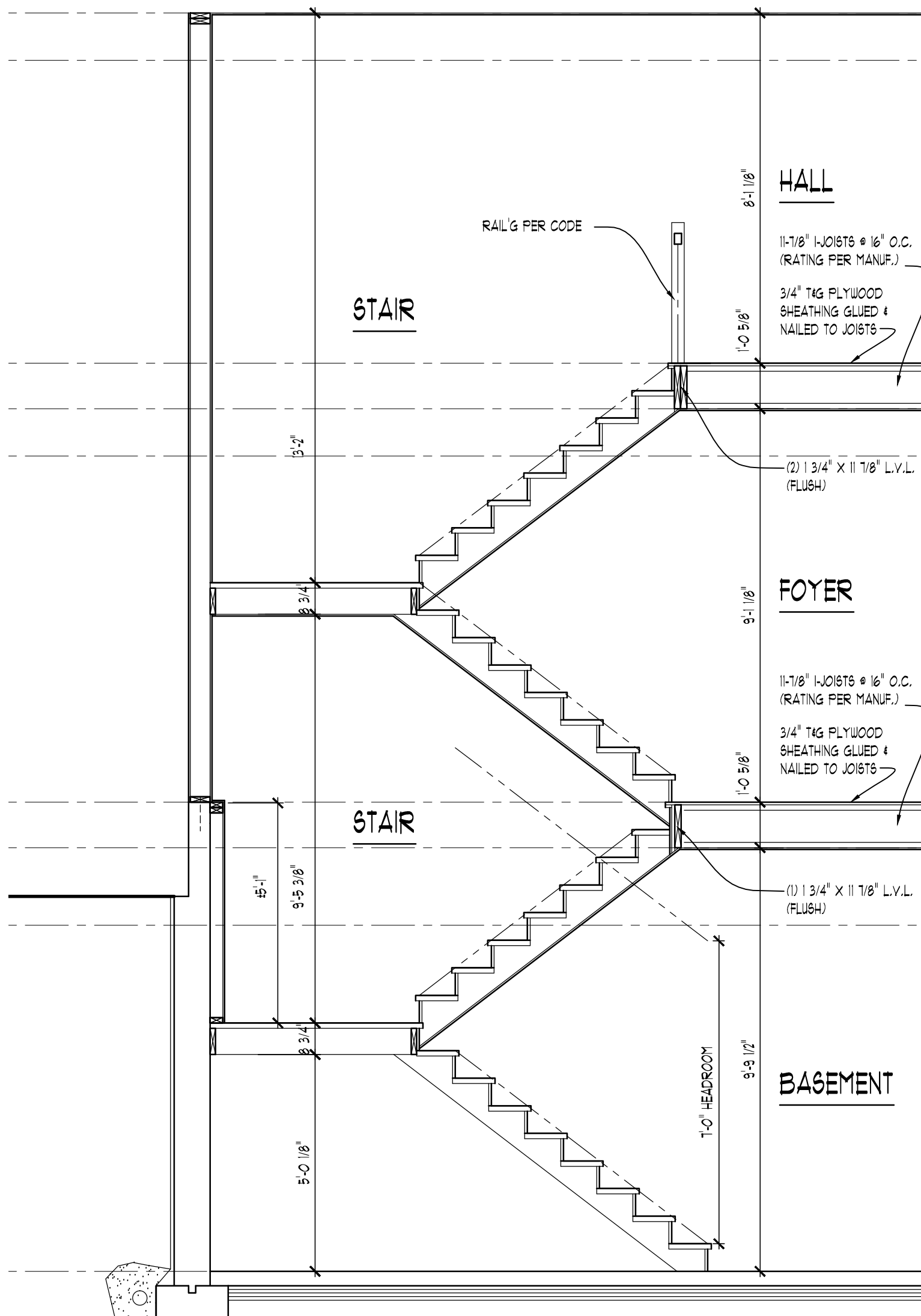


**PARTIAL RIGHT ELEVATION @ BASEMENT WALKOUT**  
SCALE 1/4" = 1'-0"

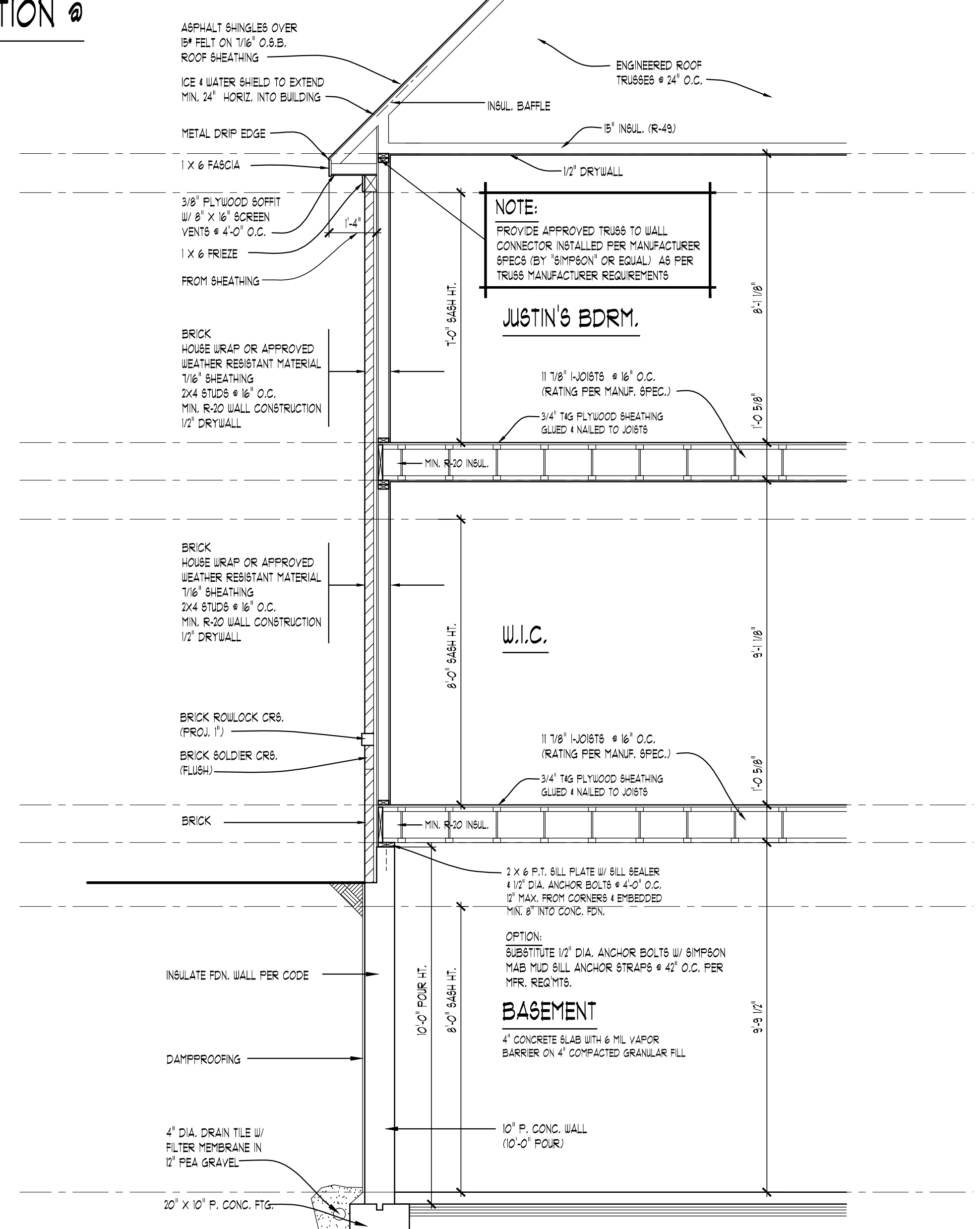


**ROOF PLAN**  
SCALE 1/8" = 1'-0"

**ATTIC VENTILATION CALCULATIONS:**  
AREA OF ATTIC OVER HEATED SPACE = 300 SQ. FT.  
300/150 = 2.0 (SQ. FT. REQ'D)  
20.8' X 14.4' = 299.5 (SQ. INCH CONVERSION)  
RIDGE VENTING:  
299.5 / 15 = 19.97 (INCHES REQ'D)  
19.97 / 18 = 1.11 (LINEAR FT. OF RIDGE VENT REQ'D)  
EAVE OR CORNICE VENTING:  
299.5 / 7 = 42.8 (INCHES REQ'D)



**STAIR SECTION**  
SCALE 3/8" = 1'-0"



**WALL SECTION**  
SCALE 3/8" = 1'-0"

**FINAL APPROVED PLANS 4-5-17**



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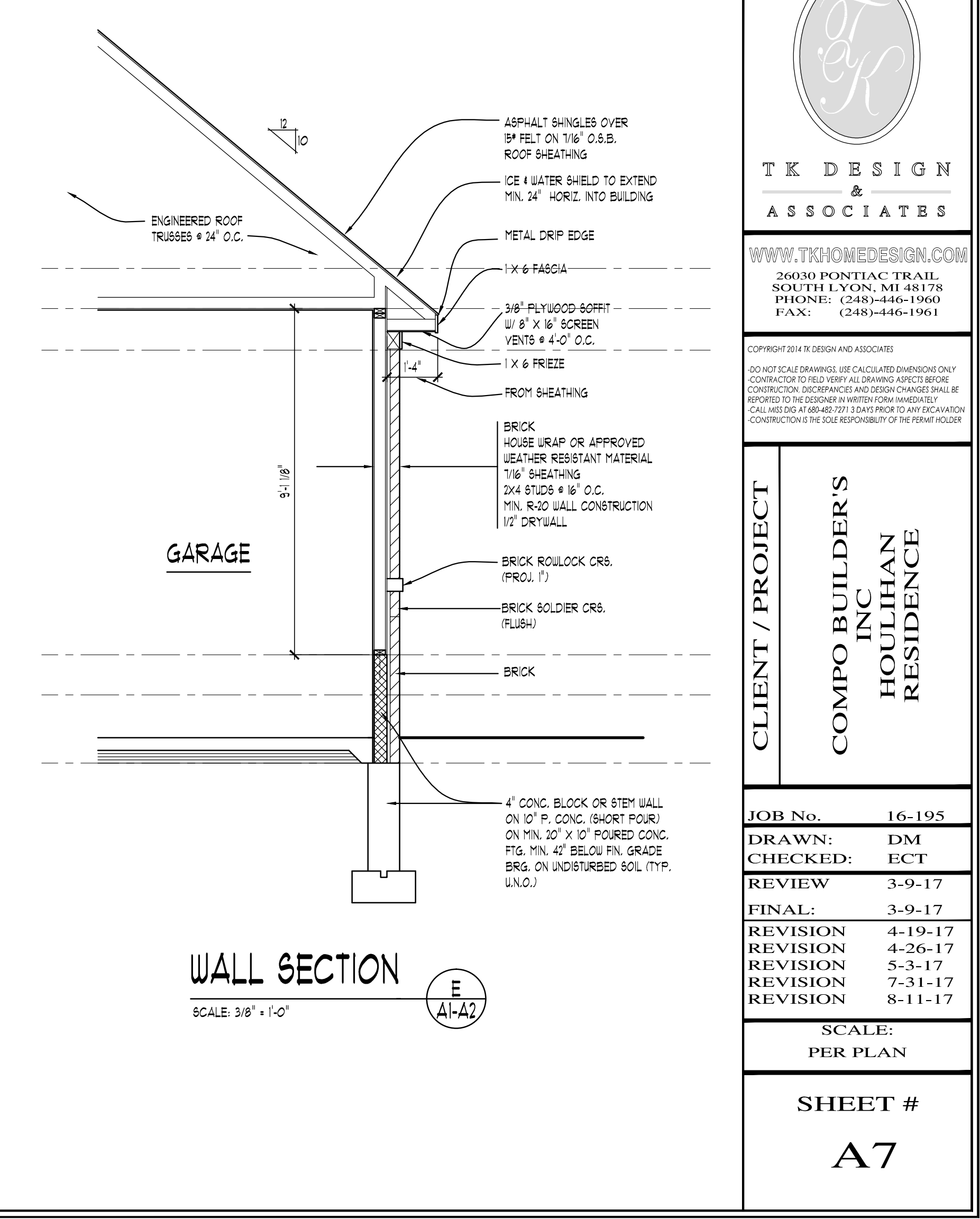
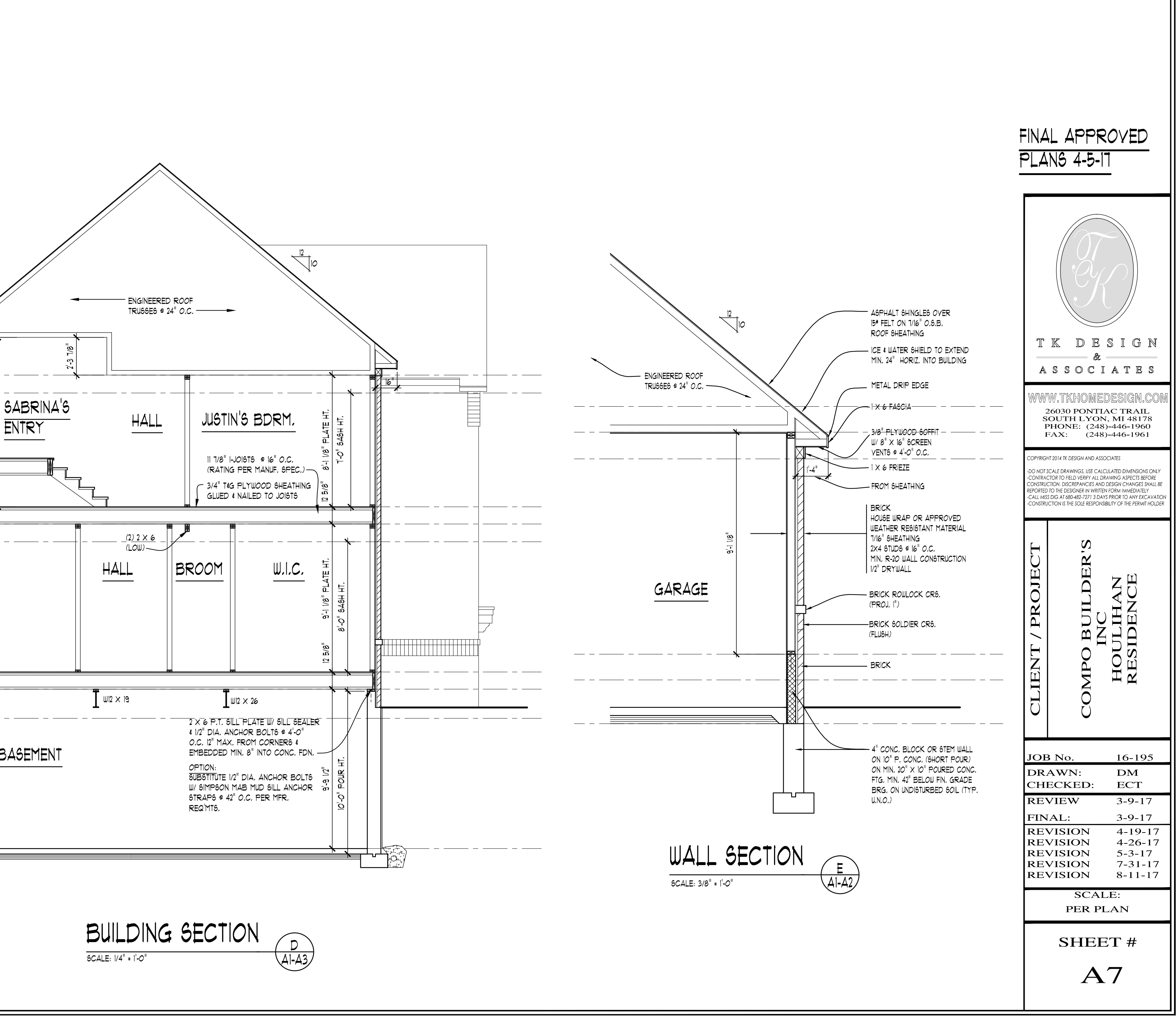
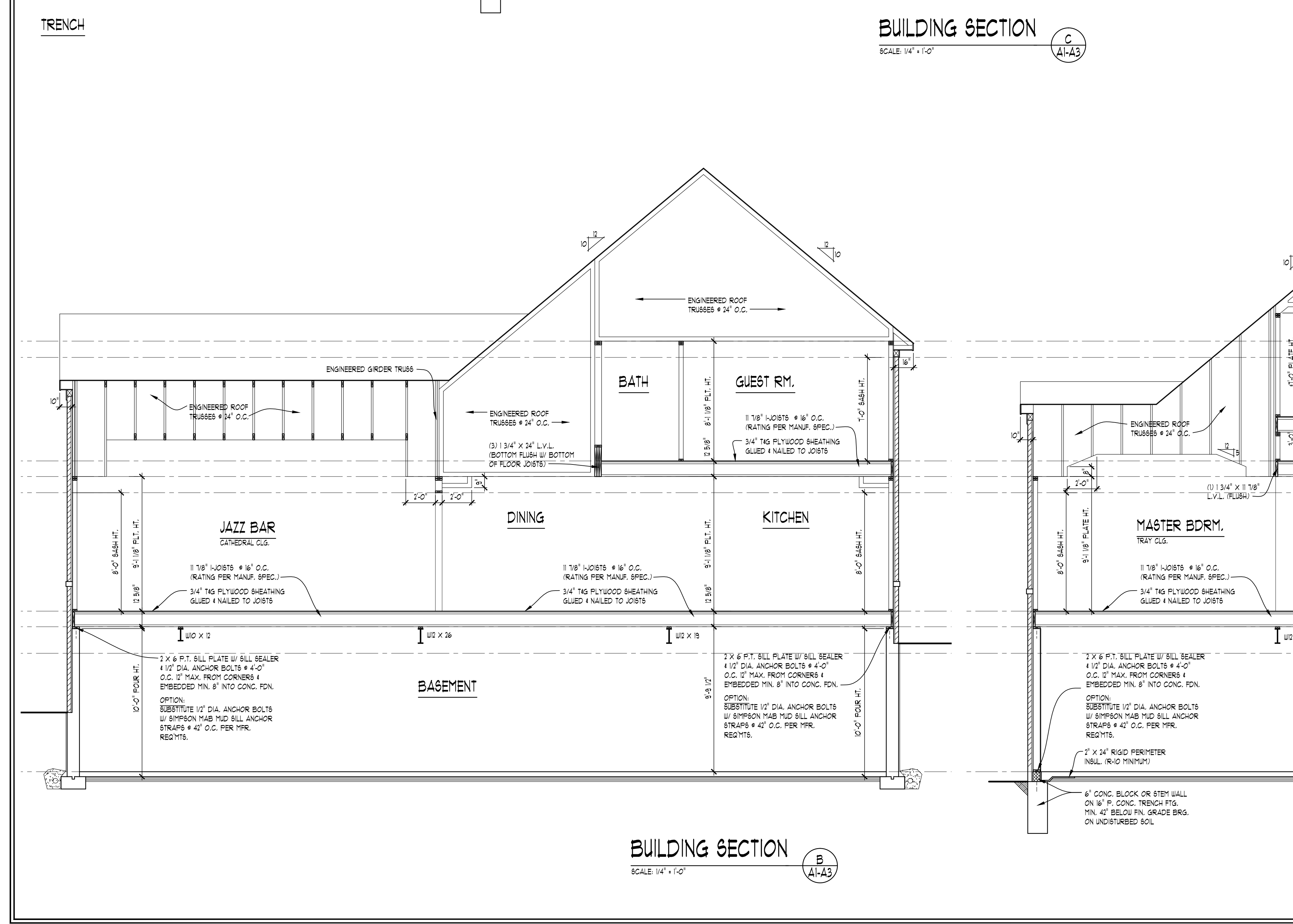
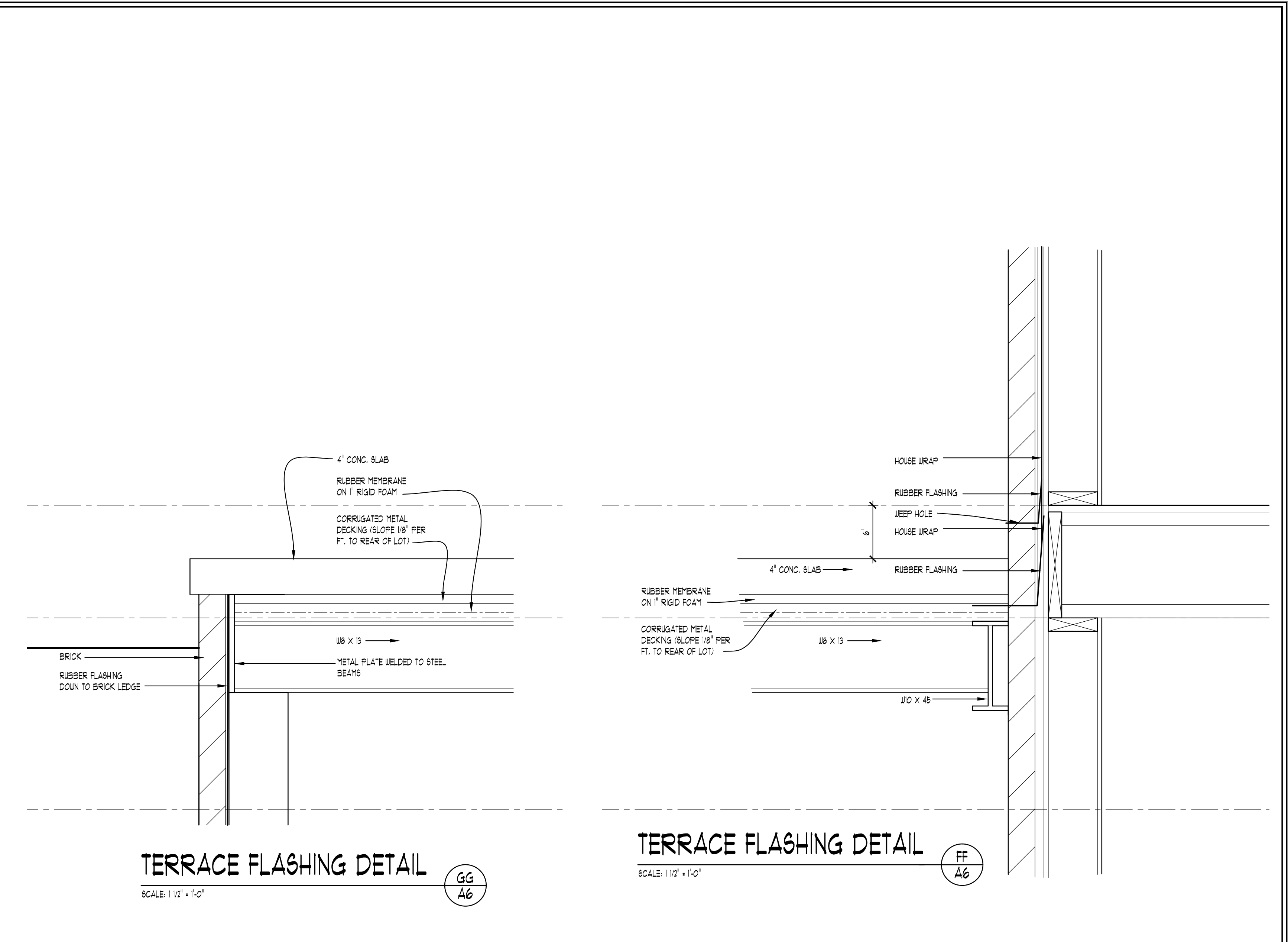
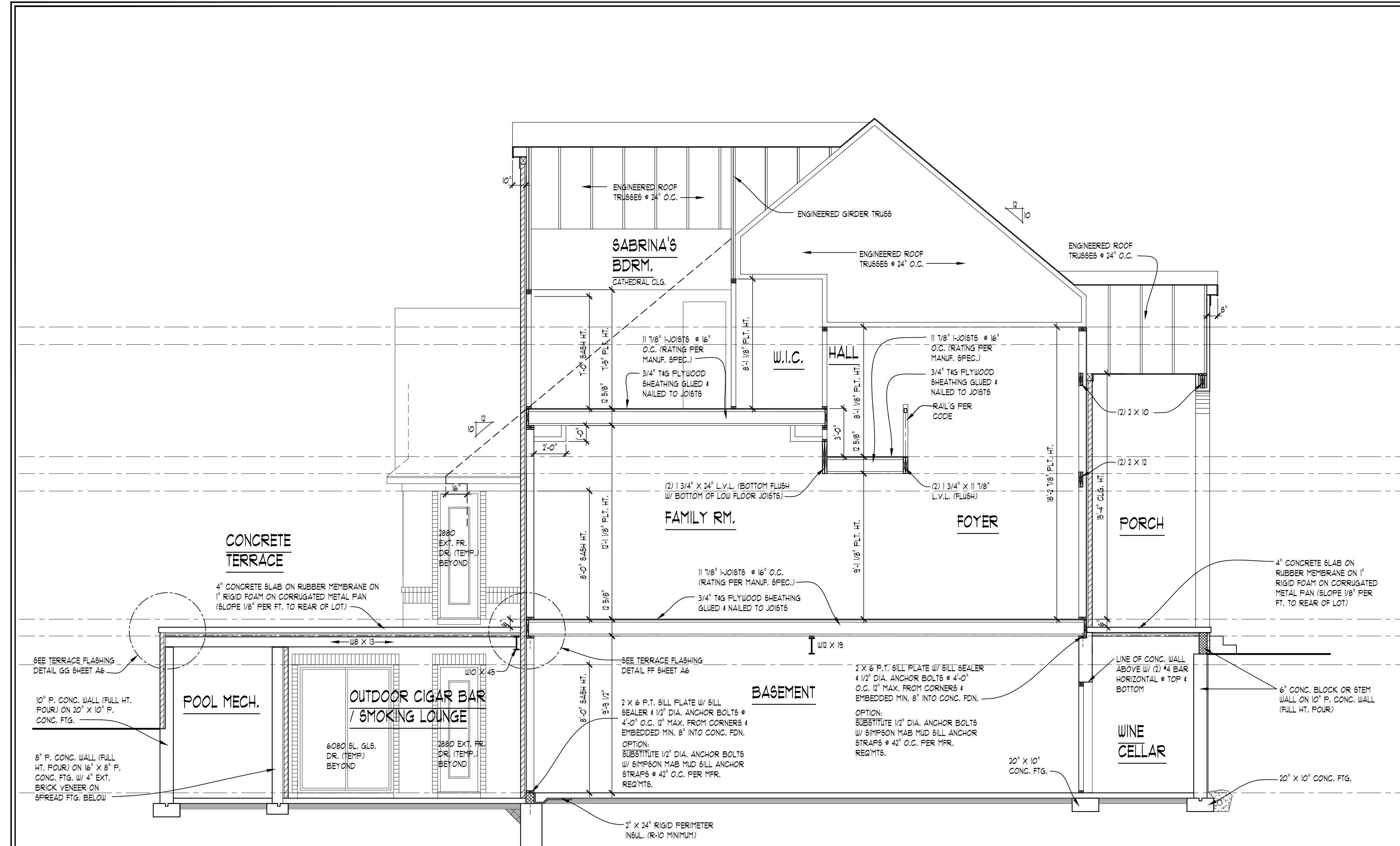
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**CLIENT / PROJECT**  
COMPO BUILDER'S INC  
HOULIHAN RESIDENCE

JOB No.	16-195
DRAWN:	DM
CHECKED:	ECT
REVIEW:	3-9-17
FINAL:	3-9-17
REVISION:	4-19-17
REVISION:	4-26-17
REVISION:	5-3-17
REVISION:	7-31-17
REVISION:	8-11-17

SCALE: PER PLAN

**SHEET #**  
**A6**



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PLANS 4-5-17

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HOULIHAN RESIDENCE

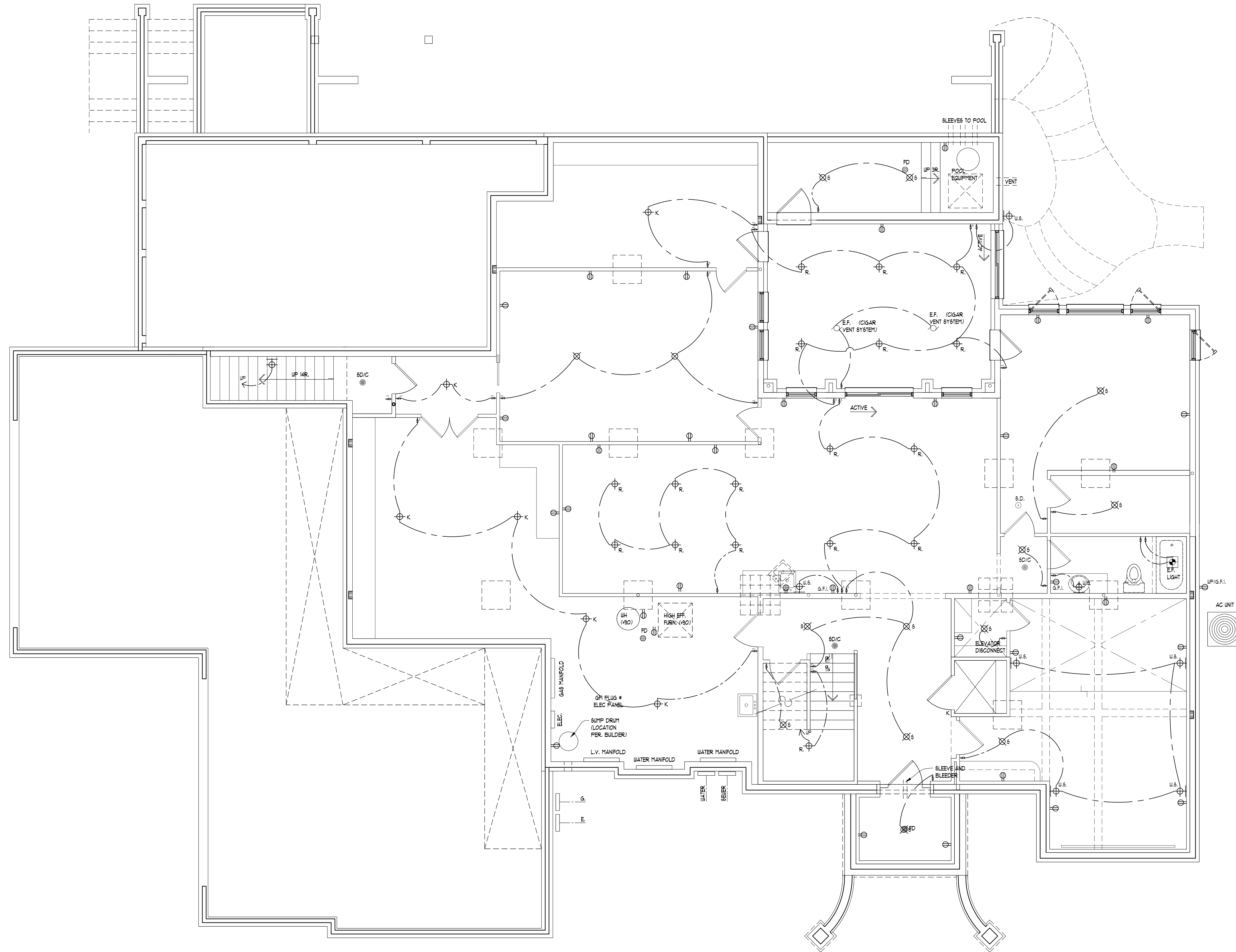
**JOB No.** 16-195  
**DRAWN:** DM  
**CHECKED:** ECT  
**REVIEW:** 3-9-17  
**FINAL:** 3-9-17  
**REVISION** 4-19-17  
**REVISION** 4-26-17  
**REVISION** 5-3-17  
**REVISION** 7-31-17  
**REVISION** 8-11-17

**SCALE:** PER PLAN

**SHEET #**  
A7

### ELECTRICAL SYMBOL KEY

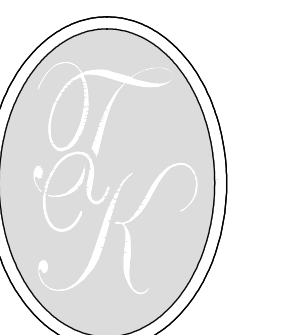
GRAPHIC SYMBOL	DESCRIPTION	GRAPHIC SYMBOL	DESCRIPTION
	RECESSED WHITE BAFFLE 6" FIXTURE		PADDLE TYPE CEILING FAN W/ LIGHT
	RECESSED WHITE BAFFLE 4" FIXTURE		RECESSED EXHAUST, LOW NOISE FAN
	KEYLESS FIXTURE		FAN / LIGHT COMBO
	RECESSED ADJUSTABLE WALL WASH FIXTURE		ELECTRICAL OUTLET WALL MOUNTED
	SURFACE MOUNTED INCANDESCENT FIXTURE		ELECTRICAL OUTLET GROUND FAULT INTERRUPTED TYPICAL WIRED THROUGHOUT ROOM
	HANGING DECORATIVE FIXTURE, PENDANT OR CHANDELIER		WATER PROTECTED ELECTRICAL OUTLET GROUND FAULT INTERRUPTED
	PULL-CHAIN OPERATED SURFACE MOUNTED INCANDESCENT FIXTURE		SPLIT WIRED ELECTRICAL OUTLET CONTROLLED BY A SWITCH
	WALL MOUNTED INCANDESCENT DECORATIVE SCENCE		220 VOLT ELECTRICAL OUTLET
	WALL MOUNTED COMPACT FLUORESCENT LOW PROFILE DECORATIVE SCENCE		ELECTRICAL OUTLET FLOOR MOUNTED
	UNIVERSAL SERIAL BUS		POWER SWITCH
	PHONE LINE		3-WAY POWER SWITCH
	CABLE T.V.		SMOKE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	GAS LINE		SMOKE DETECTOR / CARBON MONOXIDE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	SURFACE MOUNTED FLOURESCENT W/ ACRYLIC DIFFUSER		ELECTRIC METER
			GAS METER



### FOUNDATION PLAN ELECTRICAL

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

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PLANS 4-5-17



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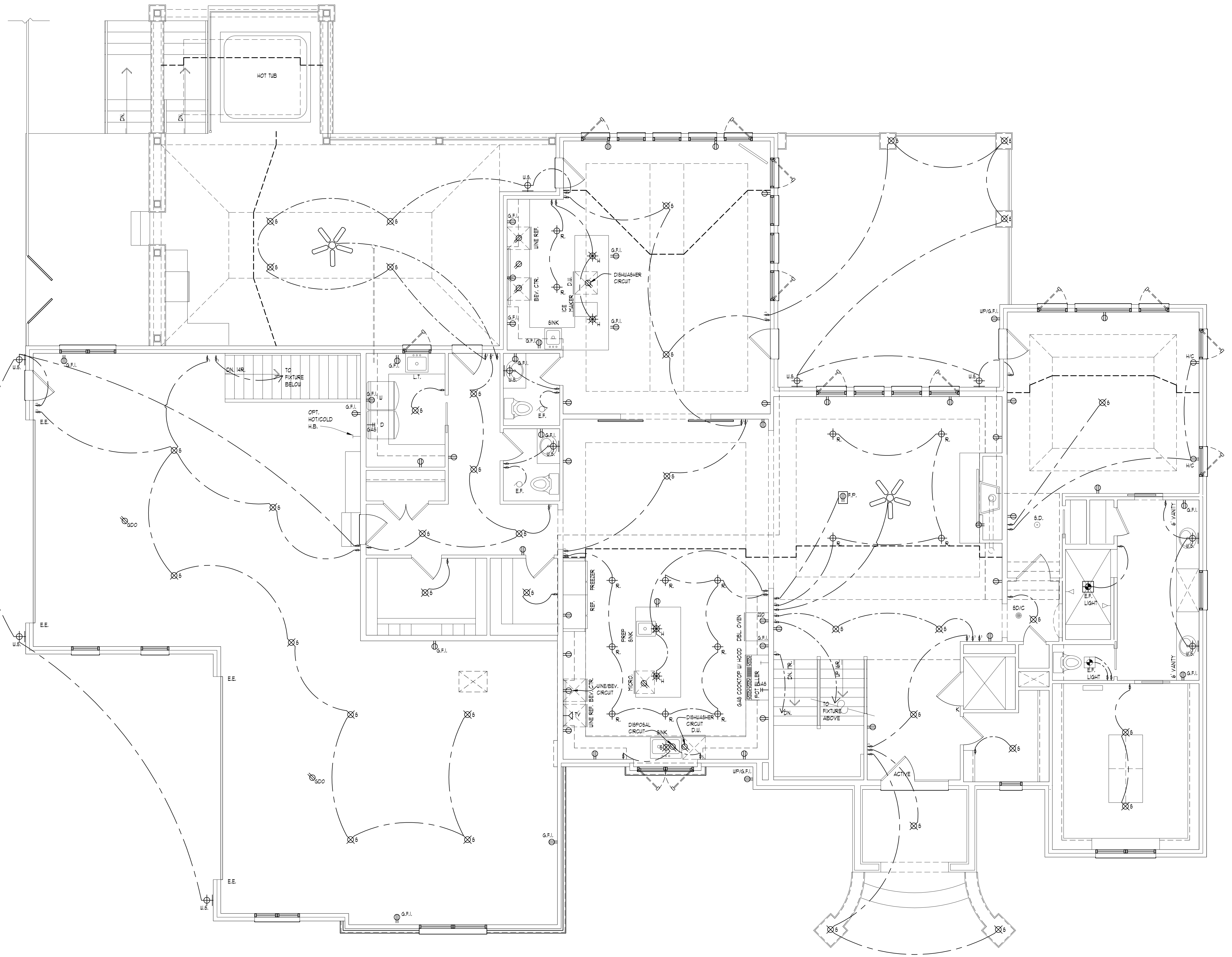
JOB No. 16-195  
DRAWN: DM  
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FINAL: 3-9-17  
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REVISION: 4-26-17  
REVISION: 5-3-17  
REVISION: 7-31-17  
REVISION: 8-11-17

SCALE:  
PER PLAN

SHEET #  
E1

### ELECTRICAL SYMBOL KEY

GRAPHIC SYMBOL	DESCRIPTION	GRAPHIC SYMBOL	DESCRIPTION
	RECESSED WHITE BAFFLE 6" FIXTURE		PADDLE TYPE CEILING FAN W/ LIGHT
	RECESSED WHITE BAFFLE 4" FIXTURE		RECESSED EXHAUST, LOW NOISE FAN
	KEYLESS FIXTURE		FAN / LIGHT COMBO
	RECESSED ADJUSTABLE WALL WASH FIXTURE		ELECTRICAL OUTLET WALL MOUNTED
	SURFACE MOUNTED INCANDESCENT FIXTURE		ELECTRICAL OUTLET GROUND FAULT INTERRUPTED TYPICAL WIRED THROUGHOUT ROOM
	HANGING DECORATIVE FIXTURE, PENDANT OR CHANDELIER		WATER PROTECTED ELECTRICAL OUTLET GROUND FAULT INTERRUPTED
	PULL-CHAIN OPERATED SURFACE MOUNTED INCANDESCENT FIXTURE		SPLIT WIRED ELECTRICAL OUTLET CONTROLLED BY A SWITCH
	WALL MOUNTED INCANDESCENT DECORATIVE SCOSNCE		220 VOLT ELECTRICAL OUTLET
	WALL MOUNTED COMPACT FLUORESCENT LOW PROFILE DECORATIVE SCOSNCE		ELECTRICAL OUTLET FLOOR MOUNTED
	UNIVERSAL SERIAL BUS		POWER SWITCH
	PHONE LINE		3-WAY POWER SWITCH
	CABLE T.V.		SMOKE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	GAS LINE		SMOKE DETECTOR / CARBON MONOXIDE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	SURFACE MOUNTED FLOURESCENT W/ACRYLIC DIFFUSER		ELECTRIC METER
			GAS METER



FIRST FLOOR PLAN ELECTRICAL

SCALE 1/4" = 1'-0"

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PLANS 4-5-17



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DESIGNER. CALL BEFORE ANY STARTS PRIOR TO ANY CONSTRUCTION.  
CONTRACTOR IS THE SOLE RESPONSIBLE FOR THE PERFORMANCE

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INC  
HOULIHAN  
RESIDENCE**

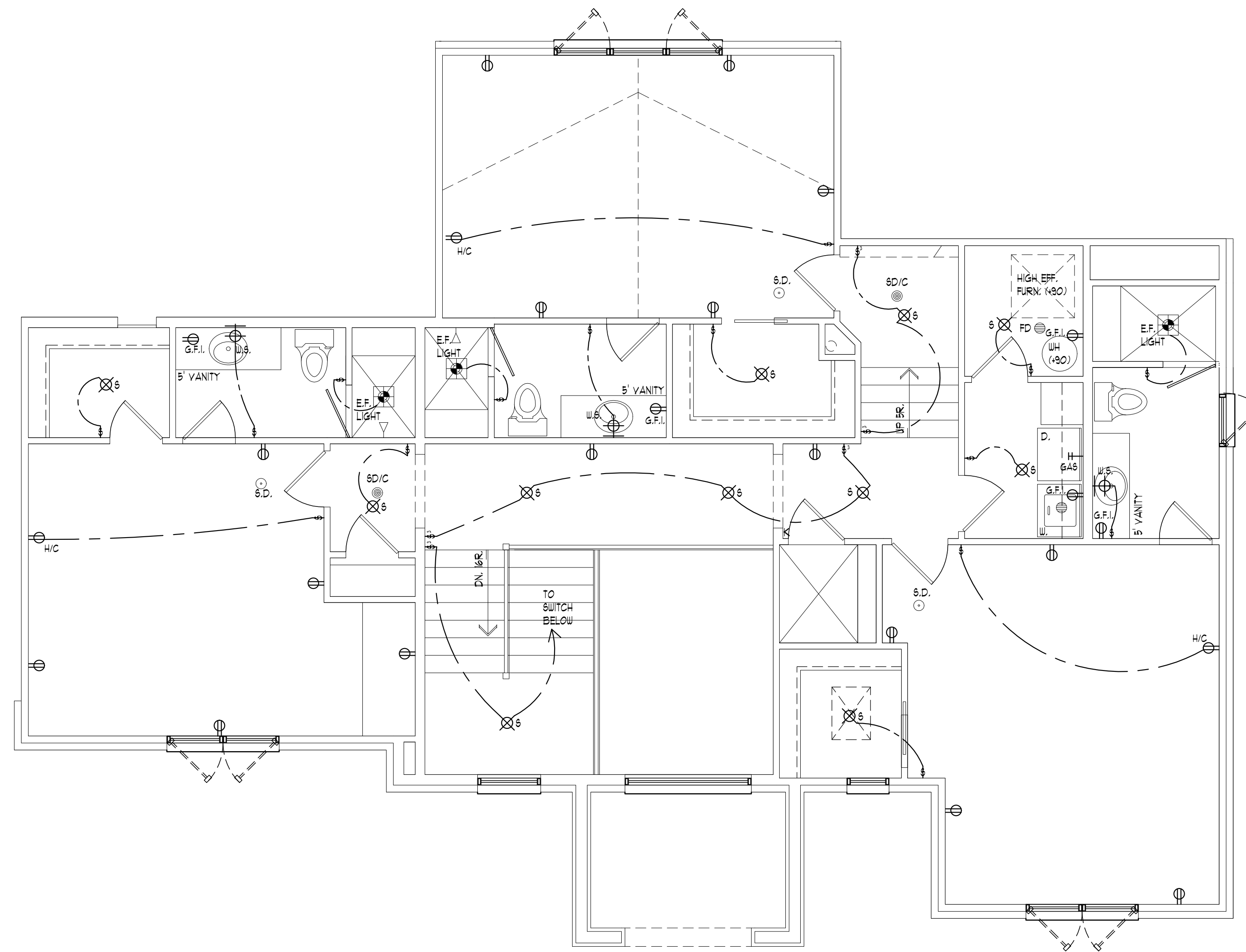
JOB No.	16-195
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REVIEW	3-9-17
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REVISION	4-26-17
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REVISION	7-31-17
REVISION	8-11-17

SCALE:  
PER PLAN

SHEET #  
**E2**

### ELECTRICAL SYMBOL KEY

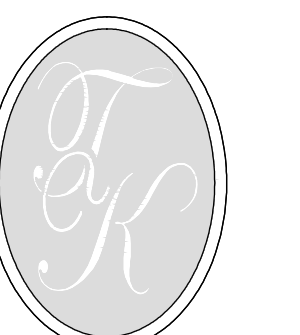
GRAPHIC SYMBOL	DESCRIPTION	GRAPHIC SYMBOL	DESCRIPTION
	RECESSED WHITE BAFFLE 6" FIXTURE		FADDLE TYPE CEILING FAN W/ LIGHT
	RECESSED WHITE BAFFLE 4" FIXTURE		RECESSED EXHAUST, LOW NOISE FAN
	KEYLESS FIXTURE		FAN / LIGHT COMBO
	RECESSED ADJUSTABLE WALL WASH FIXTURE		ELECTRICAL OUTLET WALL MOUNTED
	SURFACE MOUNTED INCANDESCENT FIXTURE		ELECTRICAL OUTLET GROUND FAULT INTERRUPTED TYPICAL WIRED THROUGHOUT ROOM
	HANGING DECORATIVE FIXTURE, PENDANT OR CHANDALIER		WATER PROTECTED ELECTRICAL OUTLET GROUND FAULT INTERRUPTED
	PULL-CHAIN OPERATED SURFACE MOUNTED INCANDESCENT FIXTURE		SPLIT WIRED ELECTRICAL OUTLET CONTROLLED BY A SWITCH
	WALL MOUNTED INCANDESCENT DECORATIVE SCENCE		220 VOLT ELECTRICAL OUTLET
	WALL MOUNTED COMPACT FLUORESCENT LOW PROFILE DECORATIVE SCENCE		ELECTRICAL OUTLET FLOOR MOUNTED
	UNIVERSAL SERIAL BUS		POWER SWITCH
	PHONE LINE		3-WAY POWER SWITCH
	CABLE T.V.		SMOKE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	GAS LINE		SMOKE DETECTOR / CARBON MONOXIDE DETECTOR INTER-CONNECTED W/ BATTERY BACKUP PER CODE
	SURFACE MOUNTED FLOURESCENT W/ACRYLIC DIFFUSER		ELECTRIC METER
			GAS METER



### SECOND FLOOR PLAN ELECTRICAL

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

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PLANS 4-5-17



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&  
ASSOCIATES

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CALLED OUT AT THE TIME OF ANY CHANGES TO ANY DIMENSION.  
CONTRACTOR IS THE SOLE RESPONSIBLE OF THE PERMITS.

CLIENT / PROJECT  
COMPO BUILDER'S  
INC  
HOULIHAN  
RESIDENCE

JOB No. 16-195  
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REVISION: 7-31-17  
REVISION: 8-11-17

SCALE:  
PER PLAN

SHEET #  
E3