



CITY OF WESTWOOD, KANSAS

PLANNING COMMISSION MEETING

4700 RAINBOW BLVD. WESTWOOD, KS 66205

Monday, December 02, 2024 at 7:00 PM

AGENDA

Welcome to your Westwood City Council meeting. This meeting may be attended remotely via Zoom:

Access Online: <https://us02web.zoom.us/j/89009964959>

Access by Phone: (312) 626-6799 / **Webinar ID:** 890 0996 4959

[Note: This agenda is subject to changes, additions, or deletions at the discretion of the Governing Body]

REGULAR MEETING AGENDA

I. CALL TO ORDER

II. APPROVAL OF THE AGENDA AND MEETING MINUTES

A. Consider approving the December 2, 2024 Planning Commission meeting agenda

B. Consider approving the November 4, 2024 Planning Commission meeting minutes

III. PUBLIC HEARINGS

A. WE-2024-04: Application of Christopher Castrop, on behalf of Rick and Helen Ackmann, for a waiver/exception from Westwood Zoning Ordinance: (1) Article 4.3.2.(C) to allow lot coverage in excess of that allowable, (2) Article No. 4.3.2(D) to allow a primary structure to have less than 60% of its front façade on the front build- to line, (3) Article 4.3.2(J)4.b to allow a front yard setback less than 35', and (4) Article 4.3.2(J)4.c to allow the maximum lot width coverage at the front yard setback to exceed 70% for a proposed new single-family residence on property located at 2023 W. 48th St., Westwood, Kansas 66205.

IV. PRESENTATIONS

V. OLD BUSINESS

VI. NEW BUSINESS

VII. ANNOUNCEMENTS/PLANNING COMMISSIONER COMMENTS

VIII. STAFF REPORTS

IX. UPCOMING ITEMS

A. January Public Hearing: WE-2024-05: Application of Joe Hirleman, for a waiver/exception from Westwood Zoning Ordinance Article No. 4.3.2(D) to allow a primary structure to have less than

60% of its front façade on the front build- to line for a proposed new single-family residence on property located at 4831 Booth St., Westwood, Kansas 66205.

X. ADJOURNMENT

UPCOMING MEETINGS

Regular meetings of the Westwood Planning Commission are held at 7:00 PM on the first Monday of each month. The next regular meeting of the Westwood Planning Commission will be held Monday, January 6, 2025, at 7:00 PM at Westwood City Hall or virtually, depending on current public health protocols in place. The City Calendar may be accessed at www.westwoodks.org. To receive further updates and communications, please see or sign up for the following:

Westwood Buzz Email: <https://bit.ly/3wA4DWx>

Facebook: [City of Westwood Kansas-Government](#)
[Westwood, KS Police Department](#)

**City of Westwood, Kansas
Planning Commission Meeting
4700 Rainbow Boulevard
November 4, 2024 – 7:00 PM**

Commissioners Present: Kevin Breer, Vice Chair (attended via Zoom)
Clay Fulghum
Ann Holliday
Samantha Kaiser
Emily Keyser
Mark Neibling
Sarah Page, Chair
Matt Prout

Commissioners Absent: David Kelman

Staff Present: Leslie Herring, City Administrator

Call to Order

Chair Page called the meeting to order at 7:00 PM on November 4, 2024.

Approval of Agenda and Meeting Minutes

Chair Page called for modifications or discussion of the November 4, 2024 meeting agenda or August 5, 2024 meeting minutes or a motion for approval. Commissioner Prout moved to approve the agenda. Commissioner Neibling seconded. Motion passed unanimously. Commissioner Fulghum moved to approve the meeting minutes. Commissioner Neibling seconded. Motion passed unanimously.

Public Hearings

None.

Presentations

Independent Study Topic Presentation: Pedestrian-friendliness, traffic calming, lowering speed limits (Commissioner Kaiser and Chair Page)

The Planning Commission received a presentation from Commissioners Kaiser, with support from Chair Page. The presentation is included as an attachment to these meeting minutes. Planning Commissioners engaged in dialogue throughout the presentation.

The Planning Commission achieved consensus to direct City staff to explore the technical aspects of adding a new pedestrian crossing (with signage, paint, and needed ramp modifications) to Belinder Ave. at 51st Ter. and 47th Ter. as well as to explore the technical aspects of experimenting with paint-only pinch points on certain residential streets based upon the recommendations in Commissioner Kaiser's presentation slides.

Old Business

None.

New Business

Consideration 2025 Application and Review Schedule

Chair Page asked that City Administrator Herring provide the staff report. City Administrator Herring presented the staff report included in the meeting packet.

Motion made by Commissioner Neibling to approve the 2025 Application and Review Schedule. Commissioner Fulghum seconded. Motion passed unanimously.

Staff Reports

City Administrator Report – Leslie Herring

Herring shared an update on the following topics:

- RFQ for redevelopment of 4700 Rainbow Blvd. was issued and is now active
- Redevelopment at 50th & Rainbow Blvd.

Adjournment

Motion by Commissioner Neibling to adjourn the meeting. Second by Commissioner Holliday. Motion passed unanimously. The meeting adjourned at 7:54 PM.

Upcoming Items

- December Public Hearing: WE-2024-04: Application of Christopher Castrop, on behalf of Rick and Helen Ackmann, for a waiver/exception from Westwood Zoning Ordinance Article No. 4.3.2(D) to allow a primary structure to have less than 60% of its front façade on the front build-to line, 4.3.2(J)4.c to allow the maximum lot width coverage at the front yard setback to exceed 70%, and 4.3.2.(C) to allow lot coverage in excess of that allowable for a proposed new single family residence on property located at 2023 W. 48th St., Westwood, Kansas 66205
- December Public Hearing: Consideration of recommendations to the City Council for text amendments to the Westwood Zoning Ordinance

APPROVED: _____
Sarah Page, Chair

ATTEST: _____
Leslie Herring, Secretary

Traffic Calming for Local Streets

Ideas for Westwood

Content

- Why traffic calming
- Potential countermeasures for Westwood
- Context, considerations, and safety features
- Potential locations in Westwood
- Discussion

Reduced Speed Limits and Slower Driving

HIT BY A VEHICLE
TRAVELING AT:

**20
MPH**



9 out of 10 pedestrians survive

HIT BY A VEHICLE
TRAVELING AT:

**30
MPH**



5 out of 10 pedestrians survive

HIT BY A VEHICLE
TRAVELING AT:

**40
MPH**

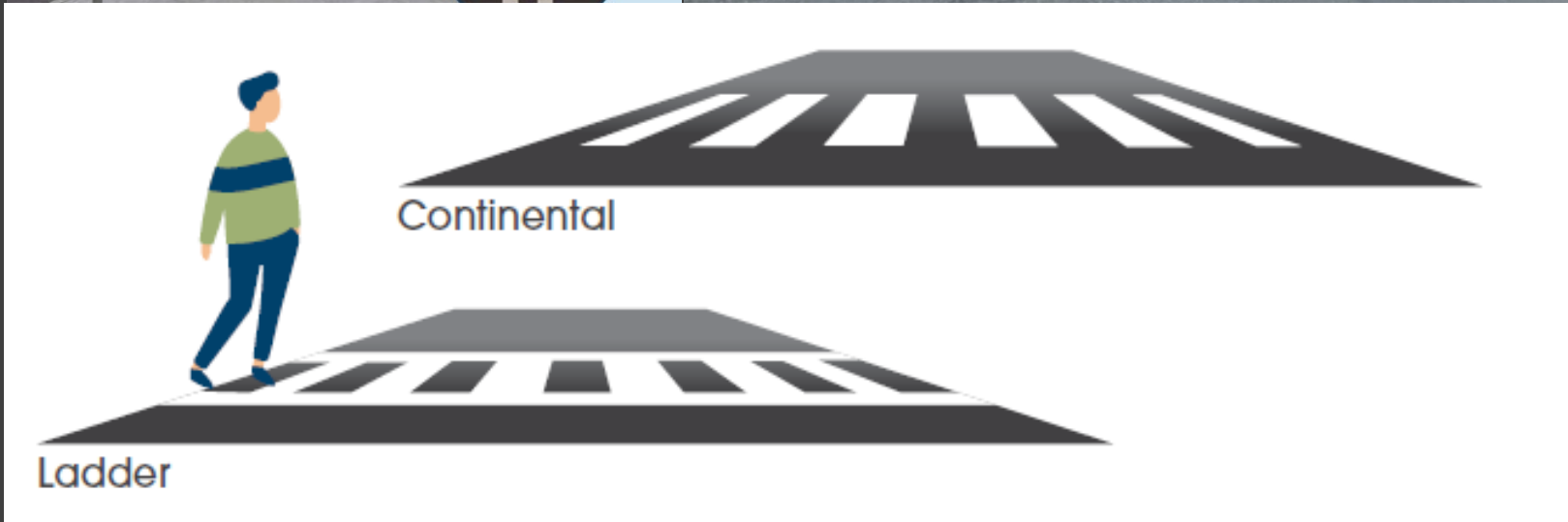


Only 1 out of 10 pedestrians survives

In 2015, Seattle began lowering speed limits to 20 mph for residential streets and 25 mph for larger urban corridors. Since then, car crashes fell by approximately 20%, while the crashes that did occur resulted in significantly fewer injuries.

(yaleclimateconnections.org)

In-Street Sign and High Visibility Crosswalk Markings



Pinch Points and Curb Extensions



ROADWAY FEATURES

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑨
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① 5 ③ 7 9	① 5 ③ ⑦ ⑨	① 3 4 5 7 9	① 5 ③ ⑦ ⑨	① 5 ③ ⑦ ⑨	① 3 4 5 7 9	① 5 ③ ⑦ ⑨	① 5 ③ ⑨
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑨	① 3 4 5 6 7 9	① 5 6 ⑦ ⑨	① 5 6 ⑨	① 3 4 5 6 7 9	① 5 6 ⑨	① 5 6 ⑨
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 7 8 9	① 5 ③ 7 8 9	① 5 ③ 8 ⑨	① ③ 5 7 8 9	① 5 ③ ⑦ 8 ⑨	① 5 ③ 8 ⑨	① ③ 5 ⑦ 8 ⑨	① 5 ③ 8 ⑨	① 5 ③ 8 ⑨
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① 5 ③ 6 7 8 9	① 5 ③ 6 8 ⑨	① ③ 5 ⑥ 7 8 9	① 5 ③ ⑥ ⑦ 8 ⑨	① 5 ③ ⑥ 8 ⑨	① ③ 5 ⑥ ⑦ 8 ⑨	① 5 ③ ⑥ 8 ⑨	① 5 ③ ⑥ 8 ⑨

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

*It should be noted that the PHB and RRFB are not both installed at the same crossing location.
This table was developed using information from: Zegeer, C.V., J.R. Stewart, H.H. Huang, P.A. Lagerwey, J. Feaganes, and B.J. Campbell, (2005). Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines. FHWA, No. FHWA-HRT-04-100, Washington, D.C.; FHWA, Manual on Uniform Traffic Control Devices, 2009 Edition, (revised 2012). Chapter 4F, Pedestrian Hybrid Beacons. FHWA, Washington, D.C.; FHWA, Crash Modification Factors (CMF) Clearinghouse, <http://www.cmfclearinghouse.org/>; FHWA, Pedestrian Safety Guide and Countermeasure Selection System (PESSAFE), <http://www.pedbikesafe.org/PESSAFE/>; Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten, (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington, D.C.; Thomas, Thirsk, and Zegeer, (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington, D.C.; and personal interviews with selected pedestrian safety practitioners.

- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)*
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)*

SAFETY FEATURES

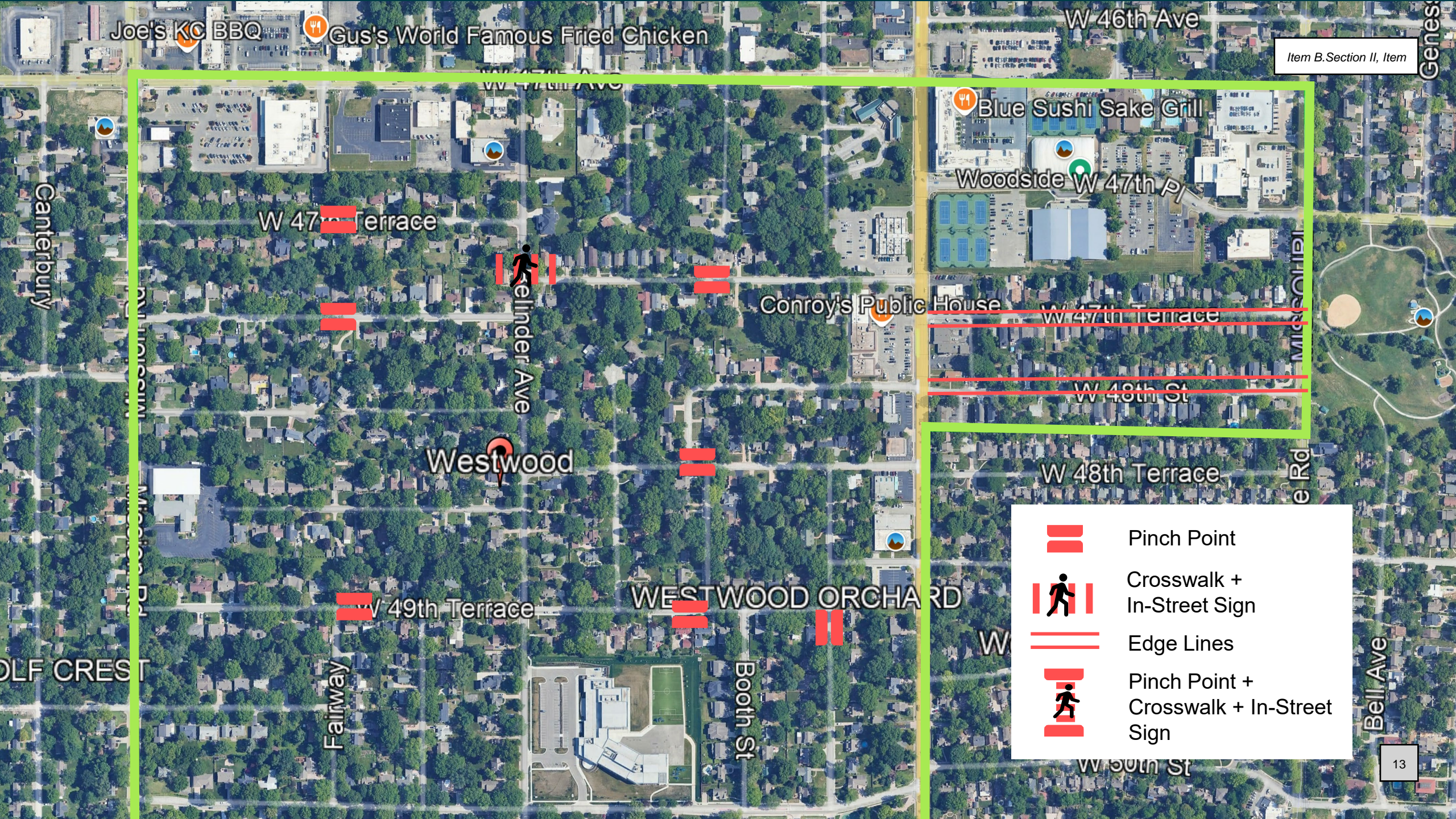
Pedestrian Crash Countermeasure for Uncontrolled Crossings	Safety Issue Addressed				
	Conflicts at crossing locations	Excessive vehicle speed	Inadequate conspicuity/visibility	Drivers not yielding to pedestrians in crosswalks	Insufficient separation from traffic
Crosswalk visibility enhancement	✓	✓	✓	✓	✓
High-visibility crosswalk markings*	✓		✓	✓	
Parking restriction on crosswalk approach*	✓		✓	✓	
Improved nighttime lighting*	✓		✓		
Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line*	✓		✓	✓	✓
In-Street Pedestrian Crossing sign*	✓	✓	✓	✓	
Curb extension*	✓	✓	✓		✓
Raised crosswalk	✓	✓	✓	✓	
Pedestrian refuge island	✓	✓	✓		✓
Pedestrian Hybrid Beacon	✓	✓	✓	✓	
Road Diet	✓	✓	✓		✓
Rectangular Rapid-Flashing Beacon	✓		✓	✓	✓

*These countermeasures make up the STEP countermeasure "crosswalk visibility enhancements." Multiple countermeasures may be implemented at a location as part of crosswalk visibility enhancements.

IMPLEMENTATION & OPERATIONS CONSIDERATIONS



	High Visibility Crosswalk Marking	In-Street Sign	Advance Yield or Stop Sign and Marking	Parking Restrictions on Crosswalk Approach	Curb Extension	Improved Nighttime Lighting	Raised Crosswalk	Pedestrian Refuge Island	Rectangular Rapid-Flashing Beacon (RRFB)	Road Diet	Pedestrian Hybrid Beacon (PHB)	Leading Pedestrian Interval (LPI)	Other Pedestrian Signal Options
Primary Safety Issues Addressed													
Reduce crashes at crossing locations	CRF: 48% (Peds)	UNK	CRF: 25% (Peds)	CRF: 30% (Peds)	UNK	CRF: 23% (Peds)	CRF: 45% (Peds)	CRF: 32% (Peds)	CRF: 47% (Peds)	CRF: 19-47% (all crashes)	CRF: 55% (Peds)	CRF: 13% (Peds)	CRF: 25% (Peds - Ped Countdown Signal)
Reduces vehicle speeds					✓		✓			✓			✓
Improves conspicuity/visibility	✓	✓	✓	✓	✓	✓	✓		✓			✓	
Improves separation from traffic					✓			✓		✓			
Installation Priorities													
Higher Pedestrian Volumes	✓						✓				✓	✓	✓
Public Response / Education							✓		✓	✓	✓		
Midblock (non-Intersection) Location	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
Intersection Location					✓	✓	✓	✓		✓		✓	✓
Multi-Lane Crossings			✓					✓	✓	✓	✓		
Operations & Maintenance Considerations													
Transit / Emergency Vehicles	✓				✓		✓			✓			
Snow Removal					✓		✓	✓					
Drainage					✓		✓	✓					
Traffic & Bicycle Operations					✓					✓	✓	✓	✓
Push Button Maintenance									✓		✓		✓
MUTCD Reference	3B.18 2C.50	2B.12	3B.16 2B.11	2B.46 3B.19 3B.23			3B.25	3B.10 3B.23 3B.18	2C.50 7B.08 IA-21		Figure 4F-1 Figure 4F-2 Part 4F	4E.06	



Joe's KC BBQ

Gus's World Famous Fried Chicken

W 46th Ave

Item B. Section II, Item

Blue Sushi Sake Grill

Woodside W 47th Pl

W 47th Terrace

Belinder Ave

Conroy's Public House

W 47th Terrace

W 48th St

Westwood

W 48th Terrace

W 49th Terrace

WESTWOOD ORCHARD

W





DOLF CREST

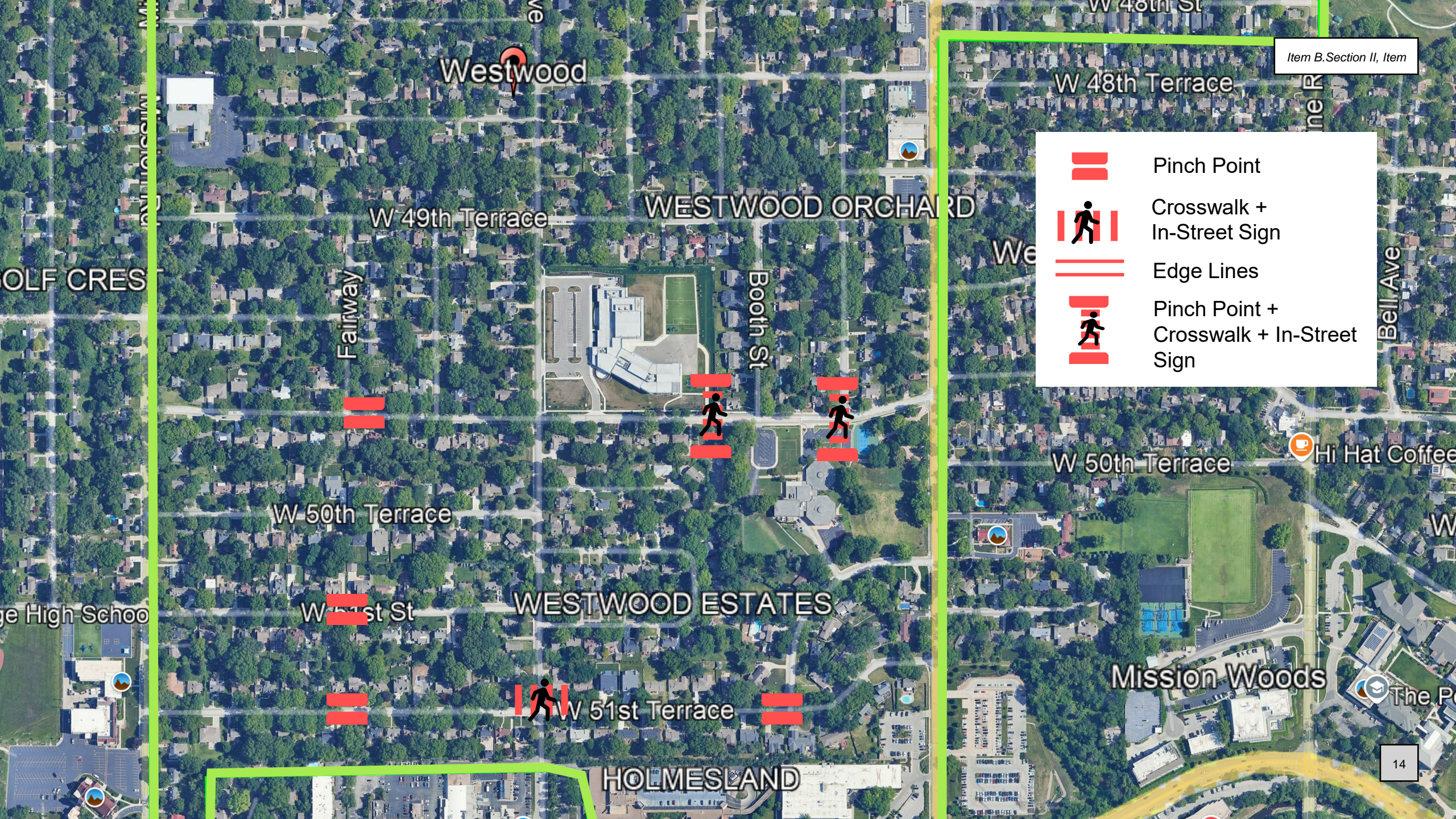
Fairway

Booth St





Bell Ave

W 50th St

-  Pinch Point
-  Crosswalk + In-Street Sign
-  Edge Lines
-  Pinch Point + Crosswalk + In-Street Sign



Item B. Section II, Item

-  Pinch Point
-  Crosswalk + In-Street Sign
-  Edge Lines
-  Pinch Point + Crosswalk + In-Street Sign

Westwood

W 48th Terrace

W 49th Terrace

WESTWOOD ORCHARD

Fairway

Booth St

W 50th Terrace

Hi Hat Coffee

W 50th Terrace

W 51st St

WESTWOOD ESTATES

Mission Woods

W 51st Terrace

HOLMESLAND

WESTWOOD PLANNING COMMISSION

Staff Report

Meeting Date: December 2, 2024

Staff Contact: Leslie Herring, City Administrator

WE-2024-04 – Application of Christopher Castrop, on behalf of Rick and Helen Ackmann, for a waiver/exception from Westwood Zoning Ordinance: (1) Article 4.3.2.(C) to allow lot coverage in excess of that allowable, (2) Article No. 4.3.2(D) to allow a primary structure to have less than 60% of its front façade on the front build- to line, (3) Article 4.3.2(J)4.b to allow a front yard setback less than 35’, and (4) Article 4.3.2(J)4.c to allow the maximum lot width coverage at the front yard setback to exceed 70% for a proposed new single-family residence on property located at 2023 W. 48th St., Westwood, Kansas 66205.

OWNER OF RECORD: Richard and Helen Ackmann

APPLICANT: Chris Castrop, Architect

LOCATION: The property is deeded as WESTPORT ANNEX LT 109 & 110

ZONING: The property is zoned R-1D

PROPOSED PROJECT: Construct a new single-family dwelling

REQUESTED ACTION: A waiver/exception from Article No. 4.3.2 of the Westwood Zoning Ordinance, specifically:

- Article 4.3.2.(C) to allow lot coverage in excess of that allowable,
- Article No. 4.3.2(D) to allow a primary structure to have less than 60% of its front façade on the front build- to line,
- Article 4.3.2(J)4.b to allow a front yard setback less than 35’, and
- Article 4.3.2(J)4.c to allow the maximum lot width coverage at the front yard setback to exceed 70%.

ZONING ORDINANCE WAIVER & EXCEPTION: Pursuant to Ordinance No. 1000 passed by the Westwood Governing Body on March 14, 2019, the Westwood Zoning Code was amended to create a new Section 4.5 - Waivers & Exceptions to establish a new review and approval process as an alternative to consideration of a variance request by the Board of Zoning Appeals.

As provided for by Ordinance No. 1000, and in conformance with the Planning Commission’s and Governing Body’s intent to provide a process to consider waivers and exceptions from certain sections of Chapter 4 of the Westwood Zoning Ordinance, a waiver from Section 4.3.2(I) would need to be granted to allow the property owner to construct the home as proposed.

APPROVAL CRITERIA: Pursuant to Ordinance No. 1000, a waiver or exception shall not be approved if it is contrary to the public interest or unnecessarily burdens the City. The Approving Authority may approve the waiver or exception if the applicant demonstrates one (1) or more of the following:

1. An alternative higher quality development design is being proposed with no negative impacts to either nearby residential or nonresidential properties.
2. Relief of the development restrictions imposed on the property will ensure low impact land uses, and quality building and site design arrangements in which adjoining residential properties will not be negatively impacted by any deviations from the applicable regulations.
3. The granting of the wavier or exception will not be opposed to the general spirit and intent of the adopted Comprehensive Plan.

The waiver/exception is a condition of the underlying application for approval and has the same effect as any approval of that application. In such instances, findings shall be prepared that:

1. No private rights will be injured or endangered by granting of the waiver or exception.
2. The public will suffer no loss or inconvenience thereby and that in justice to the applicant or applicants the application should be granted.

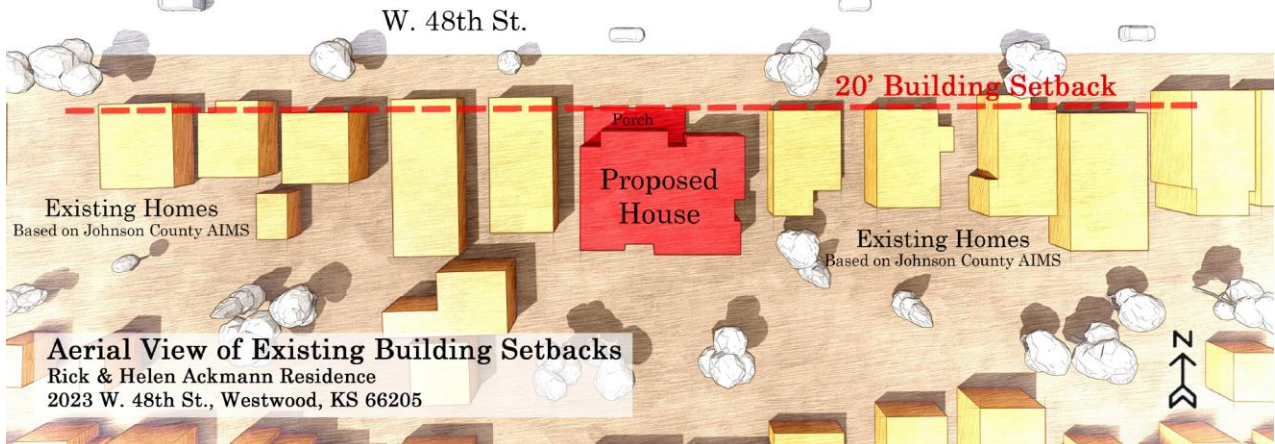
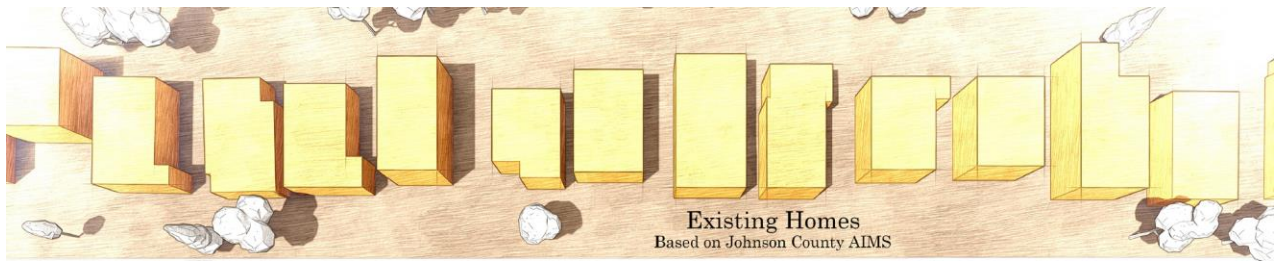
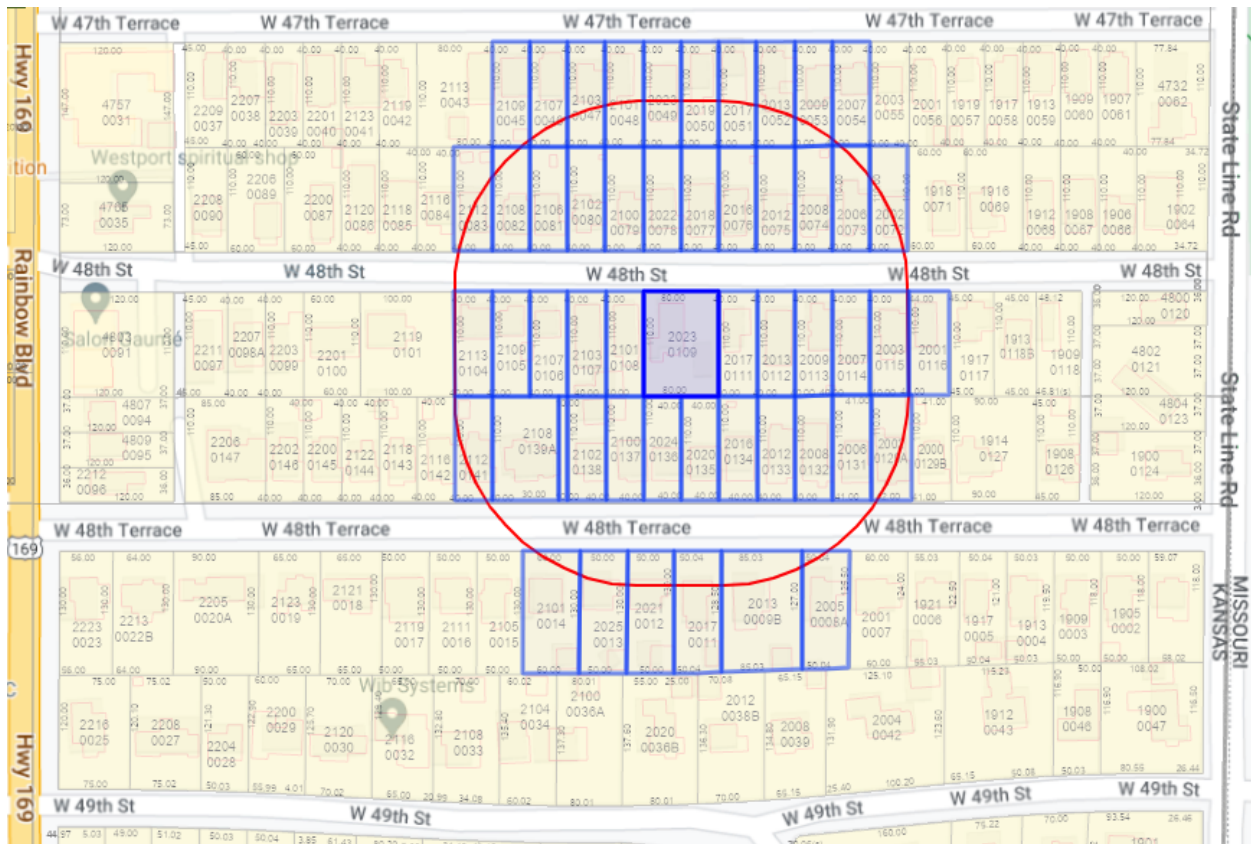
STAFF ANALYSIS: Staff review of the application submittal concludes that all elements of the proposed single-family dwelling conform to the Westwood Zoning Ordinance except for the four (4) requirements noted above that are in noncompliance. The full staff analysis is included in the meeting packet materials.

STAFF RECOMMENDATION: The Planning Commission should review the application materials included in the meeting packet, should consider any public comment received¹, and should consider the applicant's presentation at the meeting to determine whether this application should be approved. Staff does not have any objection to the application being granted.

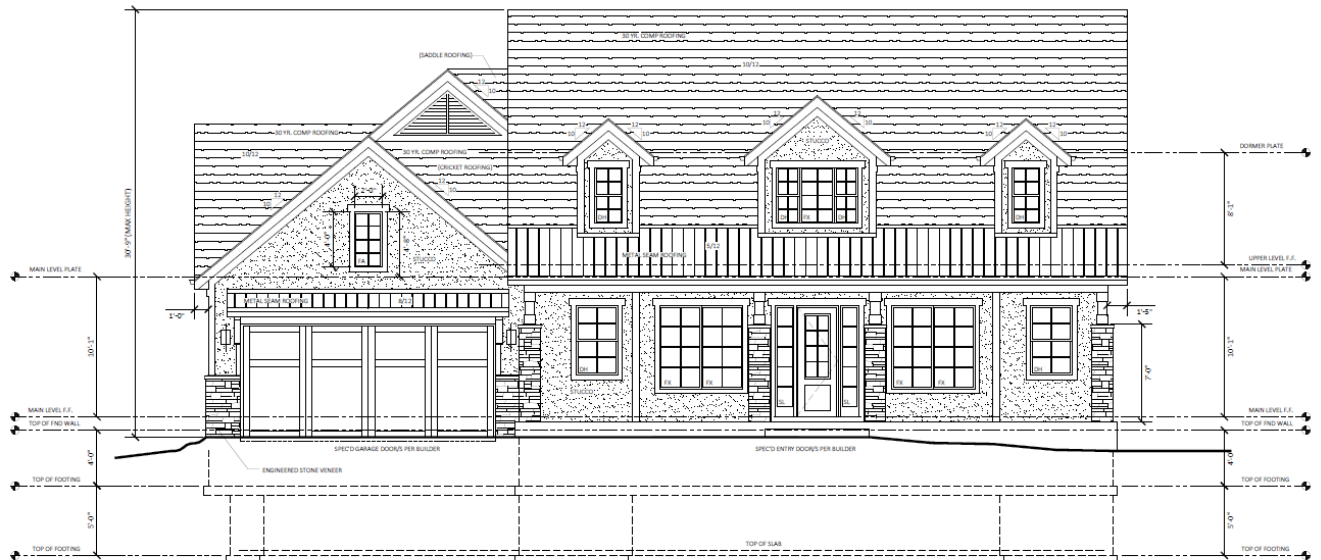
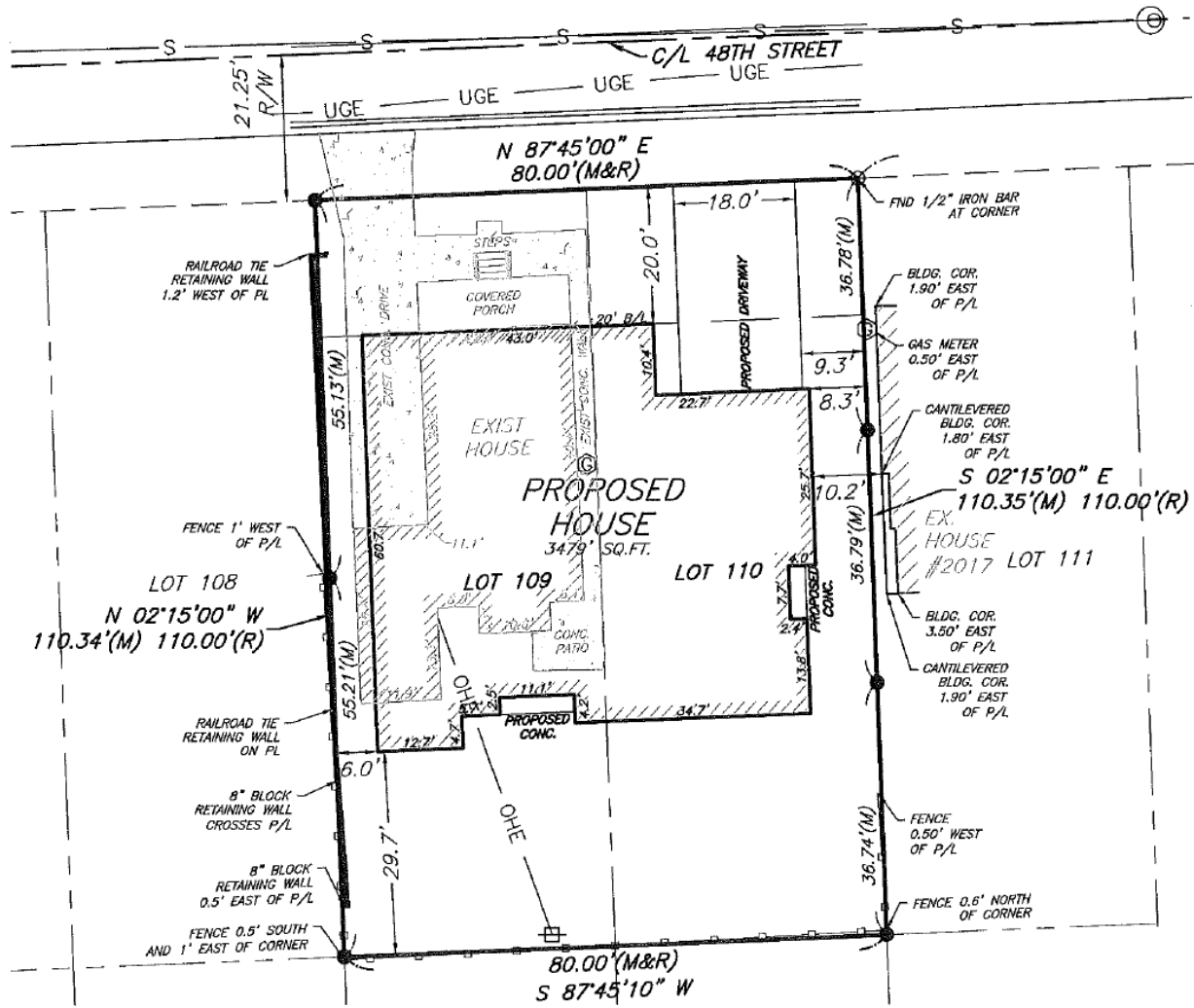
Suggested Motion

*I move to approve/deny/conditionally approve a waiver/exception from Westwood Zoning Ordinance **Article No. 4.3.2(C), (D), and (J) 4 b and c** for a proposed single-family residence on property located 2023 W. 48th St., Westwood, Kansas 66205.*

¹ Per Westwood zoning regulations, this public hearing was published at least 20 days prior and notice of the hearing was mailed to all property owners within 200' of the subject property, as shown in the map on the next page.




Aerial View of Existing Building Setbacks
 Rick & Helen Ackmann Residence
 2023 W. 48th St., Westwood, KS 66205



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

Waivers & Exceptions Application



City of Westwood
4700 Rainbow Blvd
Westwood, Kansas 66205
913-362-1550
www.westwoodks.org

Requested Waiver For: SINGLE FAMILY
NEW RESIDENCE FOR
RICK & HELEN ACKMANN @ 2023 W. 48th St.

General Location / Address of Subject Property: 2023 W 48th St.
(FRONT BUILD-TO-LINE FRONT YD STRACK TO BE ADJUSTED FROM 35' TO 20'
BEHIND TO LINE)

Legal Description: LOTS 109 and 110, WESTPORT ANNEX

Current Land Use: RESIDENTIAL - SINGLE FAMILY

Zoning District: R-1D

Property Owner's Name(s): RICK & HELEN ACKMANN Phone: 913-481-7709

Mailing Address: 2023 W 48th St. WESTWOOD KS. 66205

E-mail Address: rackmann_3@gmail.com

Applicant / Agent's Name: CHRISTOPHER CASTRO

Company: CASTRO DESIGN GROUP Phone: 913-515-7000

Mailing Address: 4318 W. 54th St. R.R. KS. 66205

E-mail Address: castrodesigngroup@live.com

A waiver or exception for the building design or site development standards is allowed from only the following Westwood Zoning Ordinance sections:

- 4.3.2 Single-Family Primary Structure Requirements;
- 4.3.6 Garages;
- 4.3.7 Building Standards;
- 4.3.8 Building Additions – Special Conditions; and
- 4.4 New Infill Houses – Special Considerations.

RECEIVED
OCT 28 2024
City of Westwood KS

Fee: \$90.00

City of Westwood

List the specific Zoning Ordinance provisions that a waiver or exception is being requested from:

- (1) BUILD-TO LINE FACADE DOES NOT MEET MIN. OF 60%
WE ARE ACTUALLY @ 52%
- (2) MAX. LOT WIDTH COVERAGE @ FRONT YARD SETBACK (4.3.2.J)
APPEARS TO BE EXCEEDED (MAX. 70%, ACTUAL 82% PER UMC 4.3.2.J
- (3) LOT COVERAGE APPEARS TO BE EXCEEDED (MAX. 35%
ACTUAL 45%) PER UMC 4.3.2.C

A waiver or exception shall not be approved if it is contrary to the public interest or unnecessarily burdens the City of Westwood. The following provisions are evaluated before a waiver or exception can be granted.

Respond to each of the criteria as it pertains to the request.

A. An alternative higher quality development design is being proposed with no negative impacts to either near-by residential or nonresidential properties. _____

NA

B. Relief of the development restrictions imposed on the property will ensure low impact land uses, and quality building and site design arrangements in which adjoining residential properties will not be negatively impacted by any deviations from the applicable regulations. _____

THE FRONT PORCH WILL BE ON THE 20 FRONT BUILDING LINE TO MATCH EXISTING NEIGHBORING HOUSES, WHICH WE WOULD BE IN KEEPING W/ QUALITY AND AESTHETICALLY PLEASING STREETSCAPE OF NEIGHBORING PROPERTIES.

C. The granting of the waiver or exception will not be opposed the general spirit and intent of the adopted Comprehensive Plan. _____

BY GRANTING THESE WAIVERS IT WOULD ALLOW FOR THE NEW HOME TO BE IN LINE W/ BOTH OLDER & NEW HOMES ON 48th ST. ALSO THE FRONT WRAP AROUND PORCH IS OPEN & WELCOMING TO NEIGHBORS, WHICH IS IDEALLY WHAT THEY WOULD WANT.

Signature of Owner or Agent: _____

Date: 10-28-24

Note: Authorization of Agent must accompany any requests made by anyone other than the property owner(s).

WAVERS CONT'D.

K(2) THE BUILD-TO LINE WOULD NEED TO BE ~~CR~~ ADJUSTED TO BE LESS THAN THE MIN. REQUIRED OF 60%.

(3) DEPENDING ON HOW THE FRONT PORCH SQUARE FT. WILL BE CALCULATED, WE MIGHT NEED A WAVE TO OUR LOT COVERAGE WHICH EXCEEDS 35% AND HAS BEEN CALCULATED @ 40%.

Legal Description: LOT 10 OF WESTWOOD ANNEX

Current Land Use: SINGLE FAMILY

Zoning District: R-1D

Property Owner's Name(s): RICK & HELEN KAY

Mailing Address: 2023 W. 48th ST. WESTWOOD KS 66202

E-mail Address: rick@westwoodks.com

Applicant / Agent's Name: CAROLYN KAY

Company: CAROLYN KAY

Mailing Address: 2023 W. 48th ST. WESTWOOD KS 66202

E-mail Address: carolyn@westwoodks.com

A waiver of exception for the building design or site development standards is allowed from only the following Westwood Zoning Ordinance sections:

- 4.3.2 Single-Family Primary Structure Requirements;
- 4.3.8 Garages;
- 4.3.7 Building Standards;
- 4.3.6 Building Additions - Special Conditions; and
- 4.4 New Infill Houses - Special Conditions.

RECEIVED
OCT 28 2024
City of Westwood KS

Fee: \$80.00

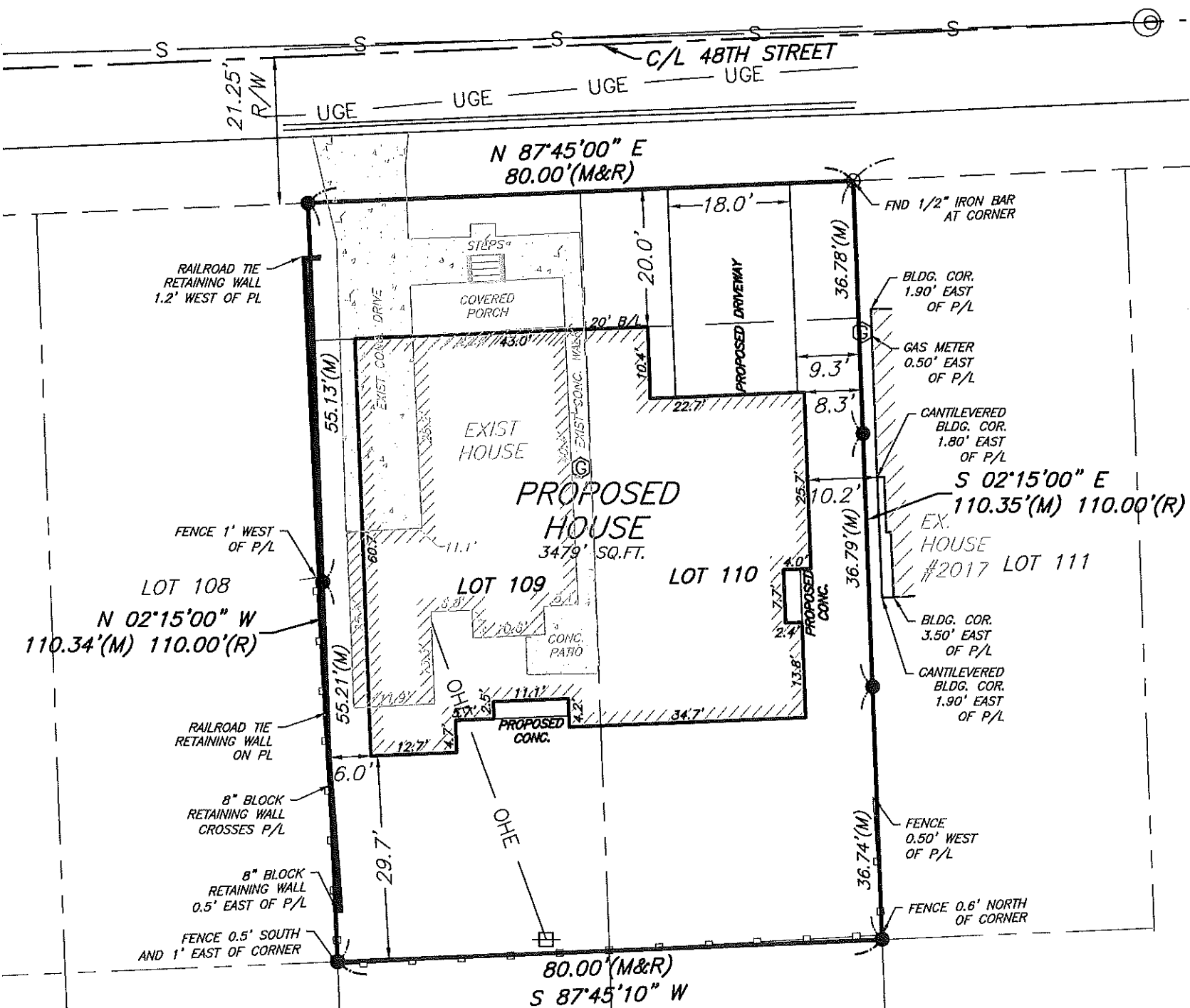


Evaluation of Permit Application Conformance with Westwood Zoning Regulations

Review Conducted by: Joe Kmetz (GBA)
Owner of Record: Ackmann
Applicant: CDG
Address: 2023 W. 48th St.
Residential Zoning District: R-1(D)
Description of Proposed Project: New Single Family Residence

Address	2023 W. 48th St.	
Zoning District	R-1(D)	
	<i>Code</i>	<i>Admin Review</i>
Height (4.3.2.B & H) Story Def. (2.3.645 – 660)	maximum of 2 stories; 35'	Yes, 2 stories and 33'
Lot Coverage (4.3.2.C) Definition (2.3.405)	shall not exceed 35% of the area of the lot	No, Actual 40% (requires waiver/exception)
Maximum lot width coverage at front yard setback (4.3.2.J)	Based on zoning district	No, Req'd: 70% Actual: 82% (requires waiver/exception)
Build-to Line (4.3.2.D)	at least 60% of front façade must be situated on build-to line	No, Actual: 52% (requires waiver/exception)
Maximum eave height above the first floor (4.3.2.J)	Based on zoning district	Yes, Req'd: 23' Actual: 13'7"
Architectural relief on vertical surfaces (4.3.2.E)	max. 600 sqft. without incorporating architectural relief	Yes
Front setback encroachments (4.3.2.G)	no greater than 4'	No, see front yard setback below
Attached garage setback (4.3.6.F)	entirely behind the front façade of the primary structure	Yes
Setback – Front yard (4.3.2.J)	Based on zoning district	No, Req'd: 35' Actual: 28 ft (requires waiver/exception)
Setback – Side yard (1st story) (4.3.2.I)	Based on zoning district	Yes, Req'd: 5'

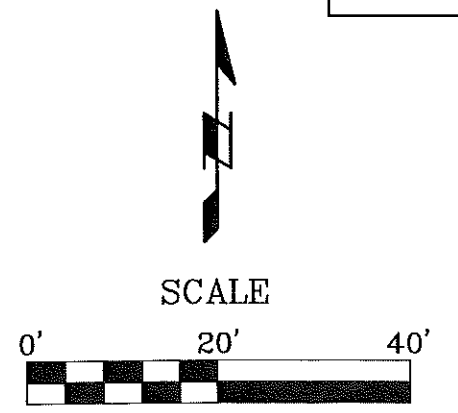
		Actual: 10' & 6'
Setback – Side yard (2nd story) (4.3.2.J)	7'	Yes Actual: 10' & 6'
Setback – Back yard (4.3.2.J)	Based on zoning district	Yes, Req'd: greater of 15' or 20% of depth (22') Actual: 30'



CLIENT/ PROPERTY ADDRESS:
 Richard Ackmann
 Email: rackmann3@gmail.com
 2023 W. 48th Street
 Westwood, Kansas 66205

LEGAL DESCRIPTION:
 Lots 109 and 110, WESTPORT ANNEX

NOTES:
 1.) Basis of bearings is established by Kansas State Plane Coordinate System from GPS observations.



- LEGEND**
- - SET 1/2" IRON BAR AT CORNER W/ J & J CAP
 - (M) - MEASURED DISTANCE
 - (R) - RECORD DISTANCE
 - (C/L) - CENTER LINE
 - (R/W) - RIGHT-OF-WAY
 - (P/L) - PROPERTY LINE
 - ⊙ - SANITARY MAN HOLE
 - ⊕ - GAS METER
 - EM - ELECTRIC METER
 - ⊞ - POWER POLE
 - OHE — - OVERHEAD POWER
 - UGE — - UNDERGROUND POWER
 - S — - SANITARY SEWER LINE
 - GAS — - UNDERGROUND GAS
 - — □ — - WOOD FENCE

Location: S:\17.135 - 2023 W 48th Street\17.135B - Plot Plan\DRAWINGS\2024.09.05_PLOT-PLAN_CONSTRUCTION_STAKING_REV\17.135B_P-PLAN.dwg



8680A N. GREEN HILLS ROAD • KANSAS CITY, MO 64154
 PHONE (816)741-1017 • FAX (816)741-1018

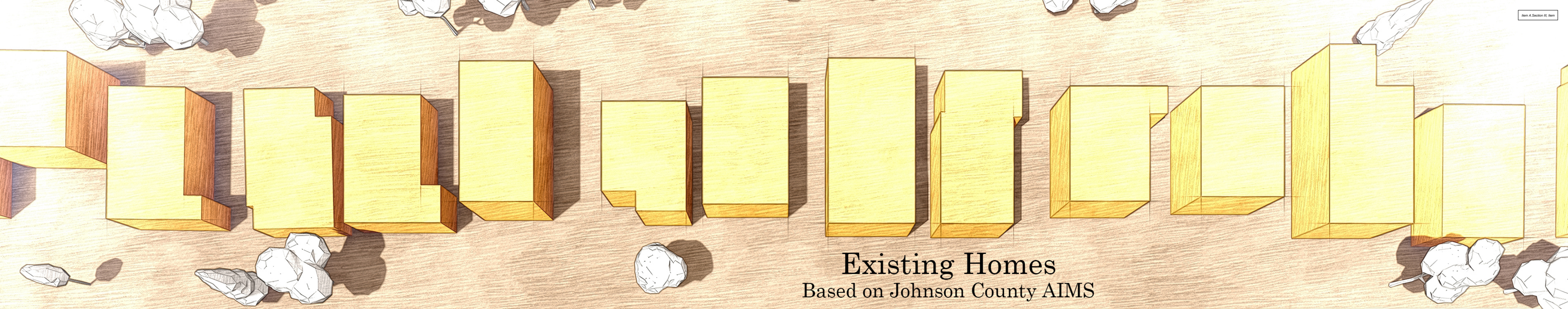
PLOT PLAN
 2023 WEST 48TH STREET
 CITY OF WESTWOOD
 JOHNSON COUNTY
 KANSAS

UTILITY NOTE:
 The utilities on this survey are shown based on source information from plans and markings and were combined with observed evidence of utilities pursuant to Section 5.E.iv. to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response, in which case the surveyor shall note on the plat or map how this affected the surveyor's assessment of the location of the utilities. Where additional or more detailed information is required, the client is advised that excavation and/or a private utility locate request may be necessary.

9/10/24
 DATE

JOHN B. YOUNG
 LICENSED
 1298
 PROFESSIONAL SURVEYOR
 KANSAS

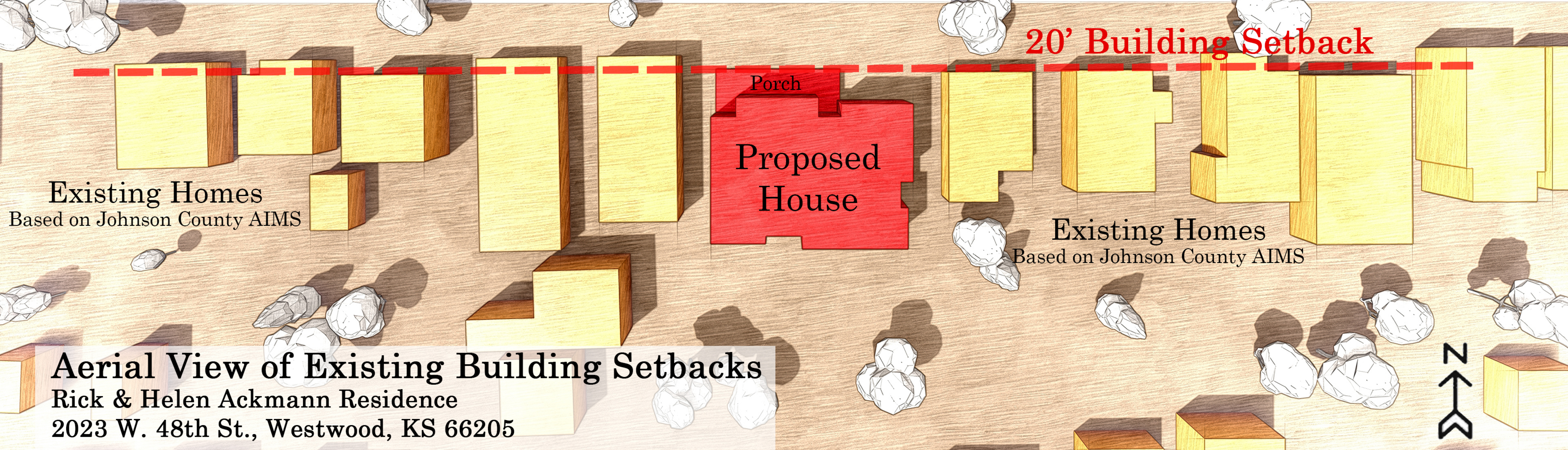
John B. Young - KS PLS-1298



Existing Homes
Based on Johnson County AIMS



W. 48th St.



20' Building Setback

Porch

Proposed House

Existing Homes
Based on Johnson County AIMS

Existing Homes
Based on Johnson County AIMS

Aerial View of Existing Building Setbacks

Rick & Helen Ackmann Residence
2023 W. 48th St., Westwood, KS 66205





STRUCTURAL REVIEW
HD#: 47748

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a New Residence for
Rick & Helen Ackmann
2023 W 48th Street - Westwood Kansas



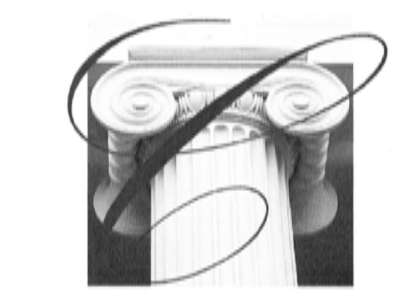
FRONT ELEVATION

SCALE 1/4"=1'-0"



REAR ELEVATION

SCALE 1/4"=1'-0"



CDG

Castrop Design Group

Christopher C. Castrop
Architectural Design and Consulting

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Roeland Park, Kansas 66205
913.515.7664

castropdesigngroup@live.com

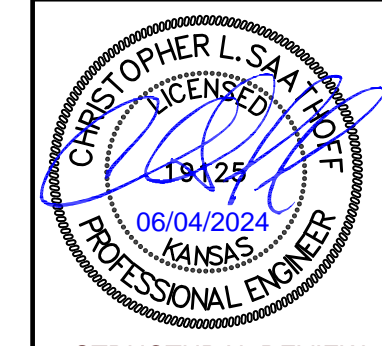
No.	Description	Date

CONSTRUCTION
DOCUMENTS

Project Number Ackmann
Date 2024 May 09
Drawn By
Checked By CDG

A 101

Scale 1/4" = 1'-0"



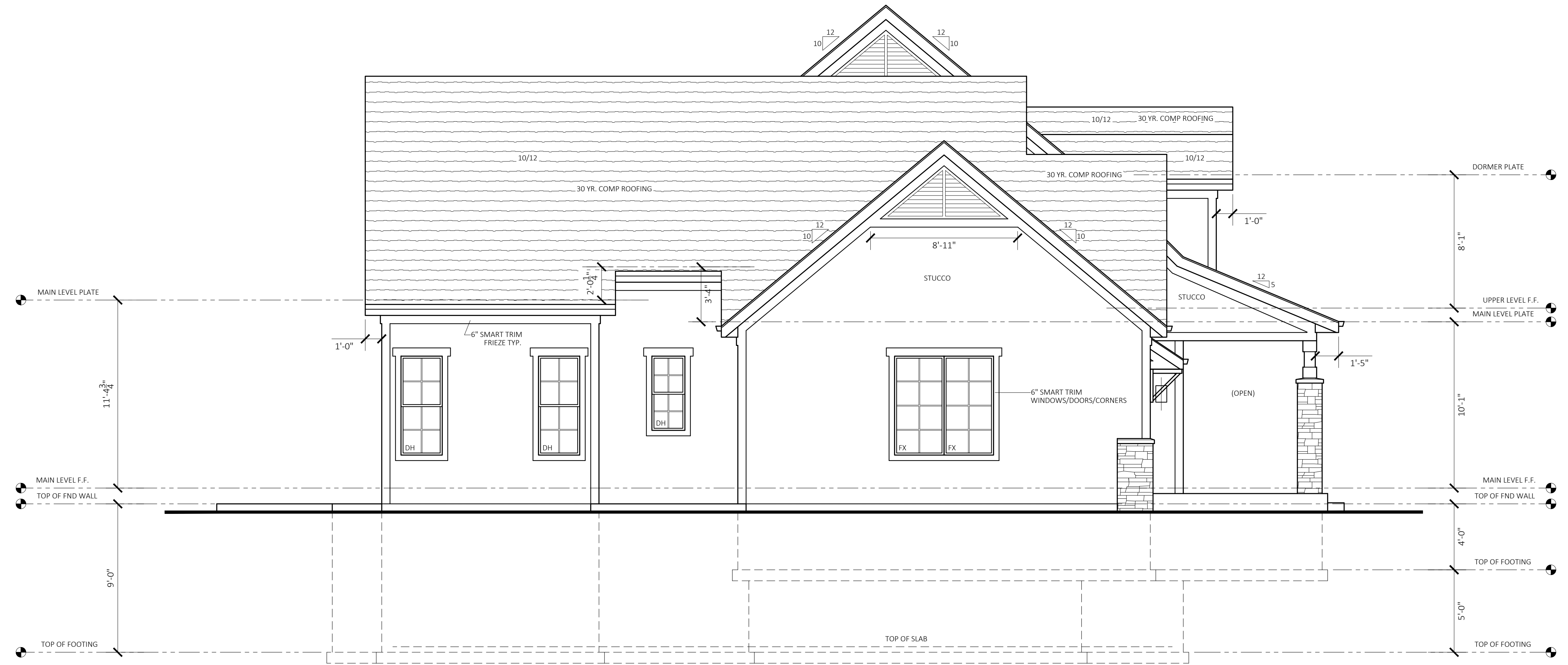
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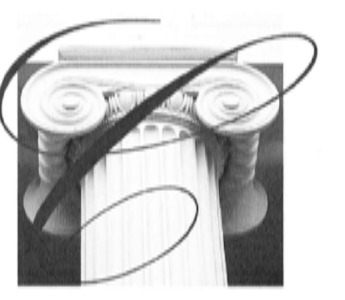


LEFT ELEVATION
SCALE 1/4"=1'-0"



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

a New Residence for
Rick & Helen Ackmann
2023 W 48th Street - Westwood Kansas



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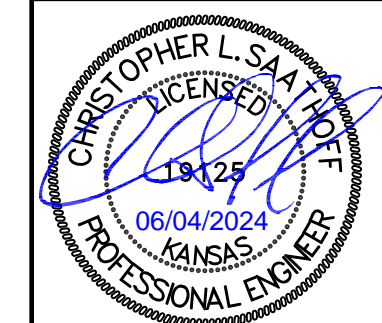
No.	Description	Date

CONSTRUCTION
DOCUMENTS

Project Number **Ackmann**
Date **2024 May 09**
Drawn By
Checked By **CDG**

A 102

Scale 1/4" = 1'-0"



STRUCTURAL REVIEW
HDR: 47748

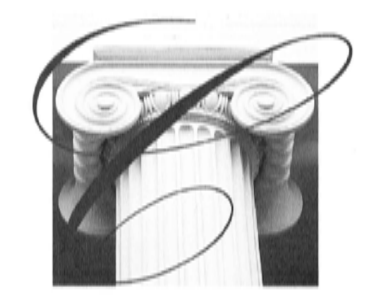
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CONSTRUCTION DOCUMENTS

Project Number **Ackmann**
Date **2024 May 09**
Drawn By
Checked By **CDG**

A 103
Scale 1/4" = 1'-0"

- DECK PIER SCHEDULE**
- MIN. 6X6 TRTD/CDR POST ON 12" CONC. PIER WITH USP PAU 66 BASE OR = (1177# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 16" CONC. PIER WITH USP PAU 66 BASE OR = (2050# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 18" CONC. PIER WITH USP PAU 66 BASE OR = (2649# MAX)
 - MIN. 6X6 TRTD/CDR POST ON 24" CONC. PIER WITH USP PAU 66 BASE OR = (4710# MAX)

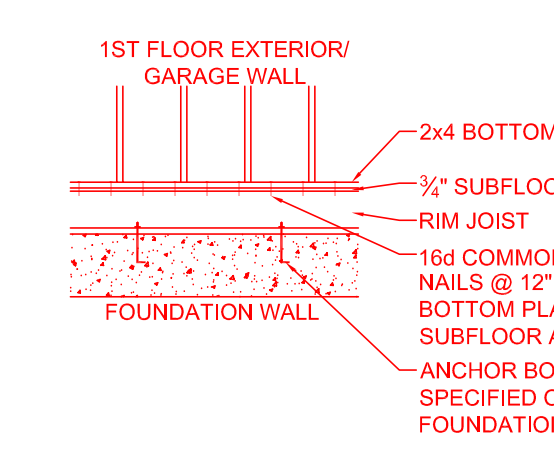
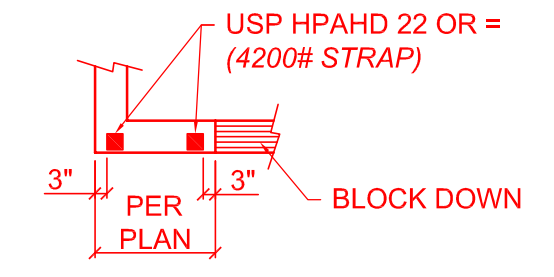
PIERS TO TERMINATE ON ORIGINAL SOIL OF 1500 PSF MINIMUM BEARING.
PIERS TO TERMINATE AT A POINT 36" MINIMUM BELOW FINISH GRADE.
POST ARE NOT TO EXCEED AN UNBRACED LENGTH OF 12' WITHOUT CONTACTING HD ENGINEERING FOR GUIDANCE.
ALL EXTERIOR STEEL SHALL BE GALVANIZED OR WRAPPED/SEALED WEATHER TIGHT, ALL FASTENERS SHALL BE RATED FOR APPROPRIATE USE.
ALL TREATED WOOD SHALL BE MIN. #2 SYP.

- COLUMN PAD SCHEDULE**
- A** 3" SCH. 40 STL. COL. ON 30"x30"x12" CONC. PAD W/ (5) #4 BARS E.W. (9.4K MAX.)
 - B** 3" SCH. 40 STL. COL. ON 36"x36"x12" CONC. PAD W/ (6) #4 BARS E.W. (13.5K MAX.)
 - C** 3 1/2" SCH. 40 STL. COL. ON 42"x42"x14" CONC. PAD W/ (7) #4 BARS E.W. (18.4K MAX.)
 - D** 3 1/2" SCH. 40 STL. COL. ON 48"x48"x16" CONC. PAD W/ (8) #4 BARS E.W. (24K MAX.)
 - E** 3 1/2" SCH. 40 STL. COL. ON 54"x54"x16" CONC. PAD W/ (9) #4 BARS E.W. (30.4K MAX.)
 - F** 3 1/2" SCH. 40 STL. COL. ON 60"x60"x18" CONC. PAD W/ (10) #4 BARS E.W. (37.5K MAX.)

NOTES:
1. COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAX. COLUMN HEIGHT OF 10'-0" TALL.
2. COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED 1500 PSF. THIS IS THE CAPACITY REQUIRED BY A.H.J. UNDERLINED GENERAL NOTES ON S-1.0 FOR MORE DETAILS.
3. ALL STEEL COLUMNS SHALL BE ISOLATED FROM SLABS WITH APPROVED ISOLATION DEVICE OR JOINT.

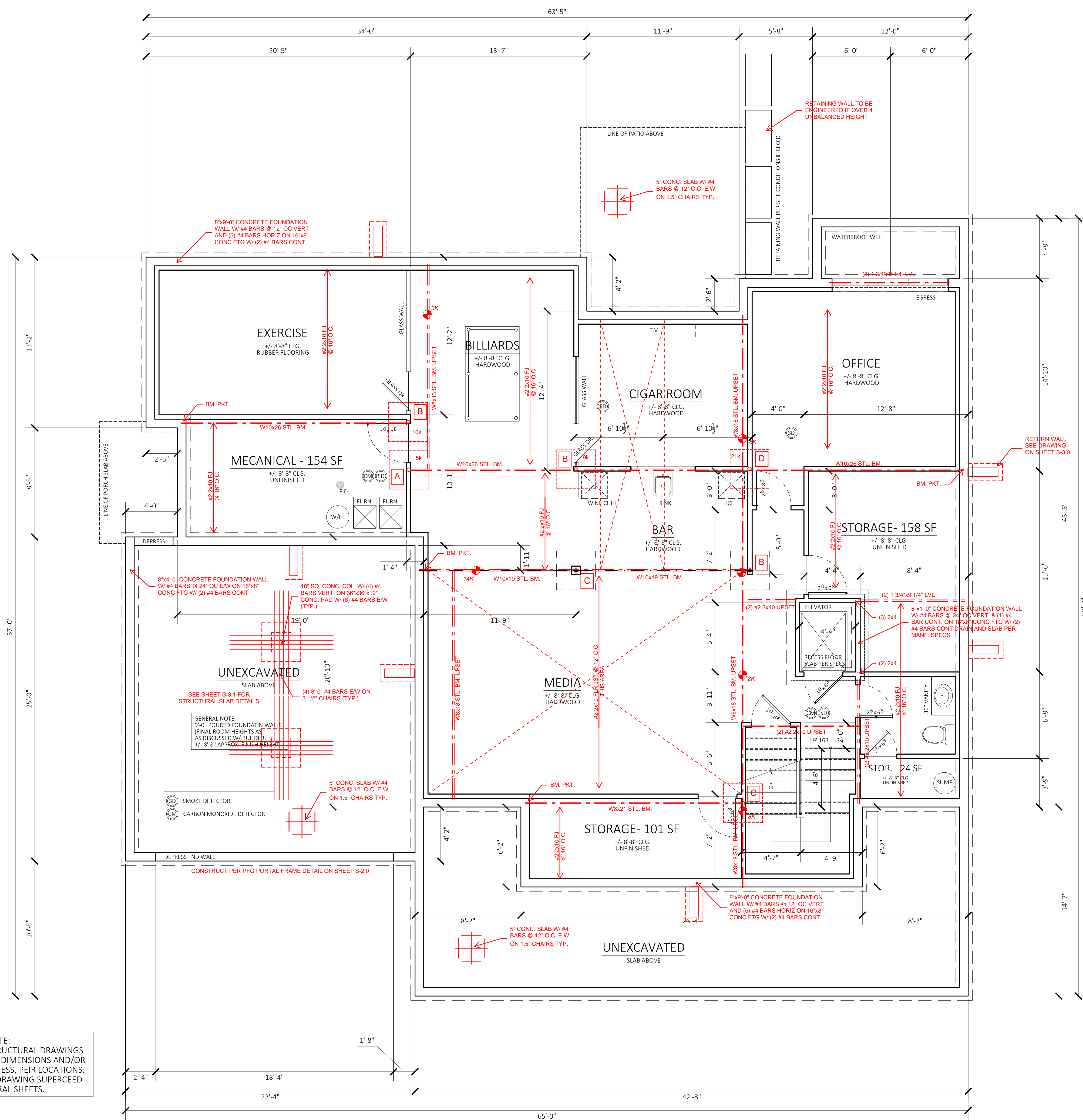
GENERAL NOTES:
-WINDOW SHALL HAVE FALL PROTECTION PER IRC 312.2.4
-HOUSE WILL BE PROVIDED WITH A "UFER" GROUND PER IRC SECTION 3608.1.5
-OVERHEAD GARAGE DOORS MUST MEET DASMA REQUIREMENTS SEE DETAIL SHEET S-1.0
-ALL HEADERS NOT LABELED SHALL BE MIN (2) #2-2X10 DFL
-DBL ALL JST UNDER ISLAND
-SOILS IN THIS AREA COMMONLY HAVE A VERY HIGH SHRINK SWELL CAPACITY. OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY A GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF FOUNDATIONS
-PROVIDE CARBON MONOXIDE AND SMOKE DETECTORS PER IRC REQUIREMENTS
-ANY PORTION OF THESE PRINTS ISSUED WITHOUT A MIN. OF S-1.0-S-4.0 SHALL NOT BE CONSIDERED A COMPLETE SET OF CONSTRUCTION DOCUMENTS
-FOUNDATION SHALL BE CONSTRUCTED PER JOHNSON COUNTY RESIDENTIAL FOUNDATION GUIDELINE. SEE ATTACHED -ICE AND WATER SHIELD AS REQUIRED PER IRC

TYPICAL TIE DOWN AT NARROW WALL

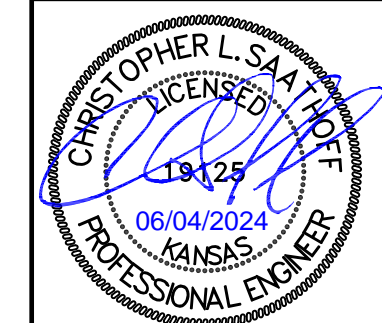


FOUNDATION ANCHORING NOTES
-MIN. 1/2" ANCHOR BOLTS SHALL BE INSTALLED @ 36" O.C. MAX AND WITHIN 6"-12" FROM THE END OF EACH SECTION OF SILL PLATE ALONG ENTIRE PERIMETER OF FOUNDATION

GENERAL NOTE:
REFER TO STRUCTURAL DRAWINGS TO CONFIRM DIMENSIONS AND/OR WALL THICKNESS, PEIR LOCATIONS. STRUCTURAL DRAWING SUPERCEED ARCHITECTURAL SHEETS.

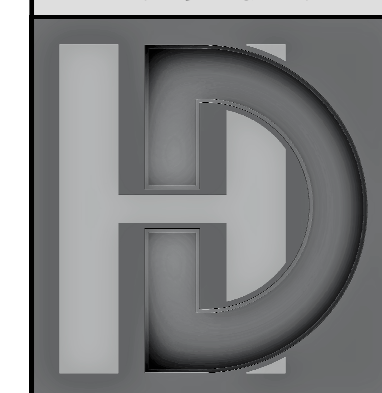


FOUNDATION PLAN - 1,746 SF
SCALE 1/4"=1'-0"



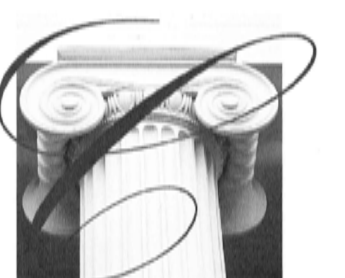
STRUCTURAL REVIEW
HDR: 47748

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SEALED FOR STRUCTURAL REVIEW

a New Residence for
Rick & Helen Ackmann
2023 W 48th Street - Westwood Kansas



CDG

Castrop Design Group
Christopher C. Castrop
Architectural Design and Consulting
4318 West 54th Street
Roeland Park, Kansas 66205
913.515.7664
castropdesigngroup@live.com

No.	Description	Date

CONSTRUCTION DOCUMENTS

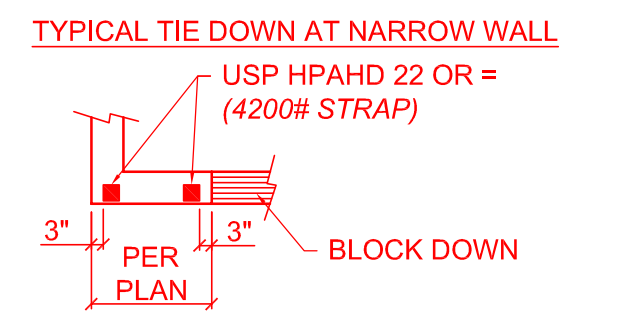
Project Number **Ackmann**
Date **2024 May 09**
Drawn By
Checked By **CDG**

A 104

Scale 1/4" = 1'-0"

- LOAD BEARING WALL
- LOAD BEARING BEAM
- SMOKE DETECTOR
- CARBON MONOXIDE SENSOR

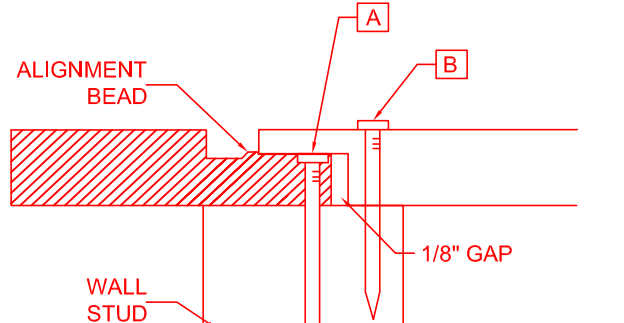
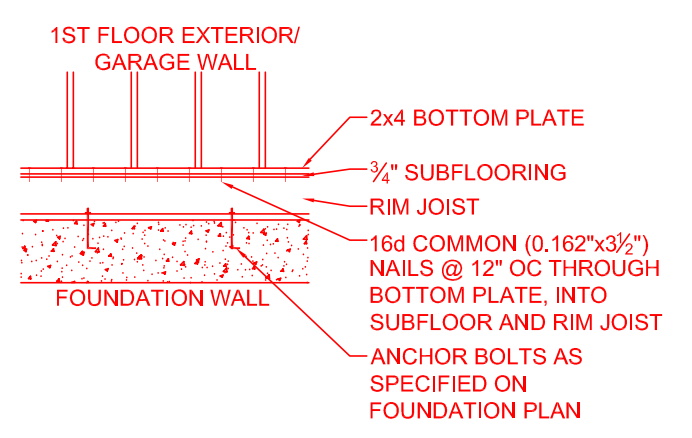
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 -DBL ALL JST UNDER ISLAND
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BRACED WALLS:
 SEE CALCULATIONS ON SHEET S-2.0, PER ASC7-10 REQUIREMENTS AS ALLOWED BY IRC 2018 R301.2.1

ALL EXTERIOR WALLS SHALL BE SHEATHED PER ANY ONE OF THE FOLLOWING OPTIONS:
 -7/16" APA-RATED PLYWOODS WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD
 -7/16" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 8d NAILS @ 6" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD
 -3/8" SHIPLAP PANEL SHEATHING (I.E. LP SMARTSIDE OR EQUIVALENT) WITH 8d NAILS @ 4" O.C. AT EDGES AND @ 12" O.C. IN THE FIELD

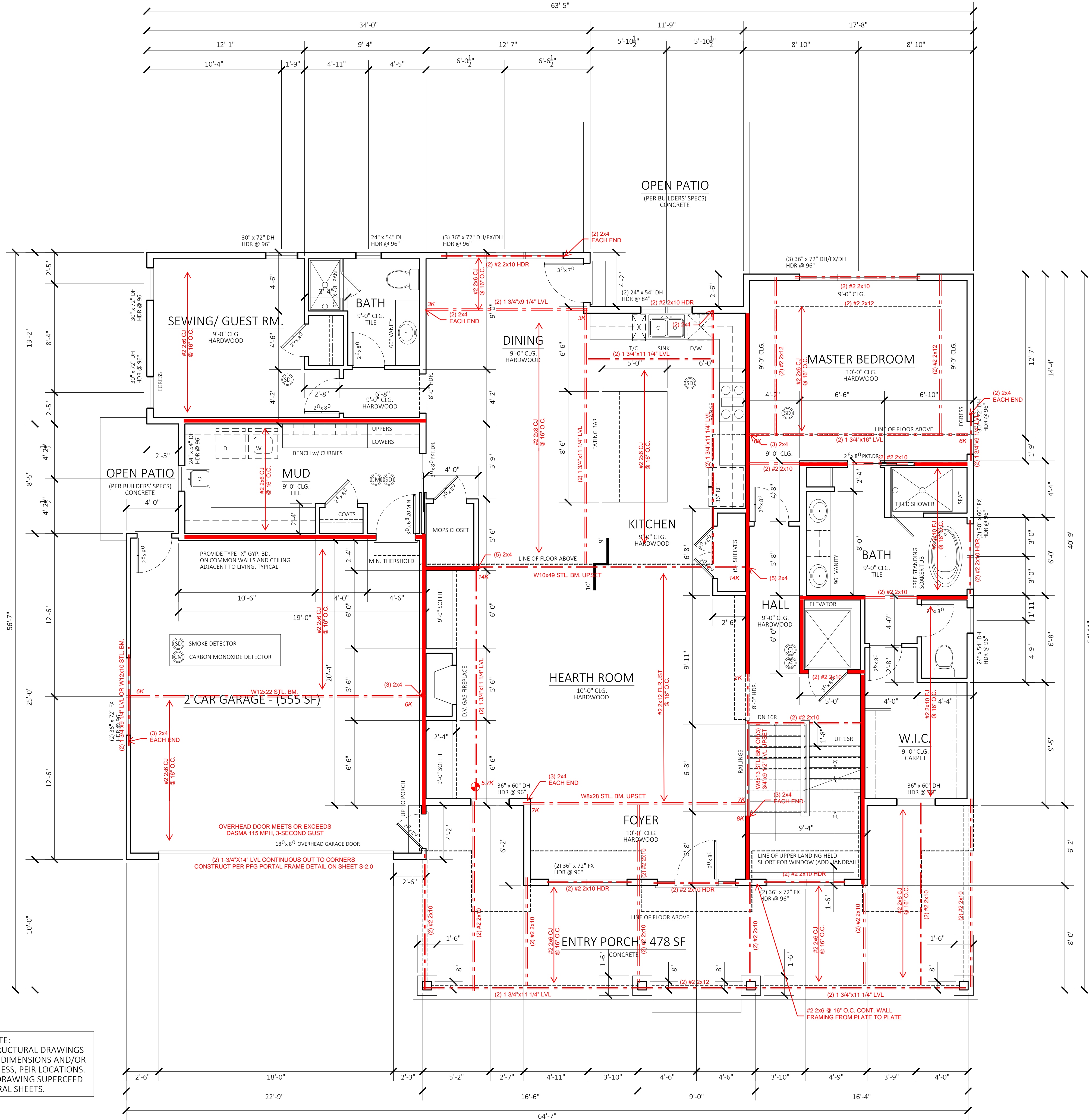
INTERIOR BRACED WALL LOCATIONS ONLY SHOWN WHEN REQUIRED BY ADDITIONAL BRACING SECTION OF CALCULATIONS ON SHEET S-2.0



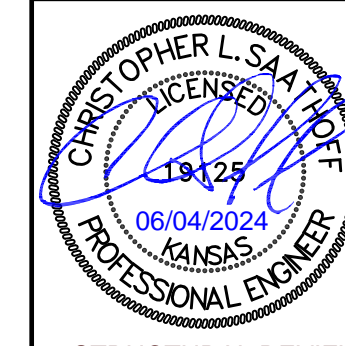
NAILING WITH SPACING AS SPECIFIED PER PLAN. FOR EXAMPLE, IF REQUIRED SPACING IS 4" O.C., BOTTOM LAP SHALL FIRST BE NAILED AT 4" O.C. (NAIL "A"), THEN FULL DEPTH SECTION OF OVERLAP PANEL SHALL BE NAILED @ 4" O.C. (NAIL "B")

3/8" APA REQUIRED NAILING PATTERN FOR SHIPLAP PANEL SHEATHING

GENERAL NOTE:
 REFER TO STRUCTURAL DRAWINGS TO CONFIRM DIMENSIONS AND/OR WALL THICKNESS, PEIR LOCATIONS. STRUCTURAL DRAWING SUPERCEED ARCHITECTURAL SHEETS.



MAIN LEVEL FLOOR PLAN - 2,327 SF
 SCALE 1/4"=1'-0"



STRUCTURAL REVIEW
HDR: 47748

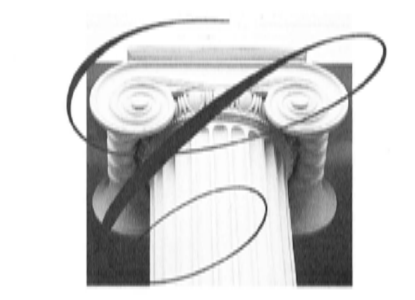
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2023 W 48th Street - Westwood Kansas



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No.	Description	Date

CONSTRUCTION DOCUMENTS

Project Number **Ackmann**
Date **2024 May 09**
Drawn By
Checked By **CDG**

A 105

Scale **1/4" = 1'-0"**

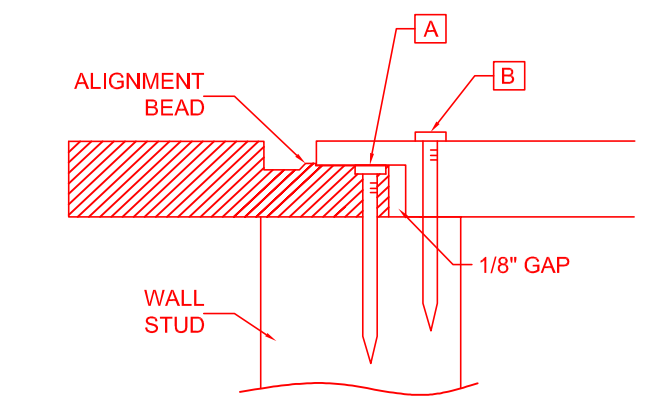
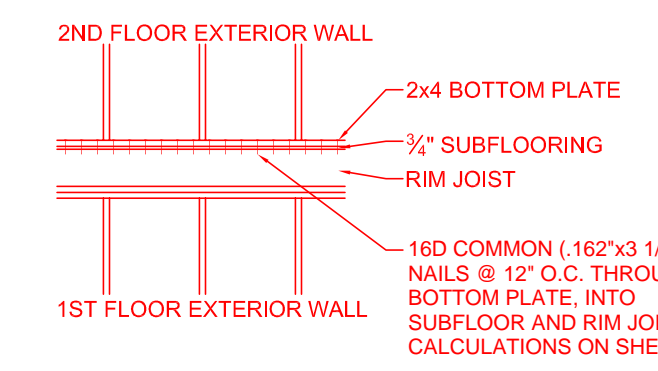
- - LOAD BEARING WALL
- - - - LOAD BEARING BEAM
- SD - SMOKE DETECTOR
- CO - CARBON MONOXIDE SENSOR

GENERAL NOTES:
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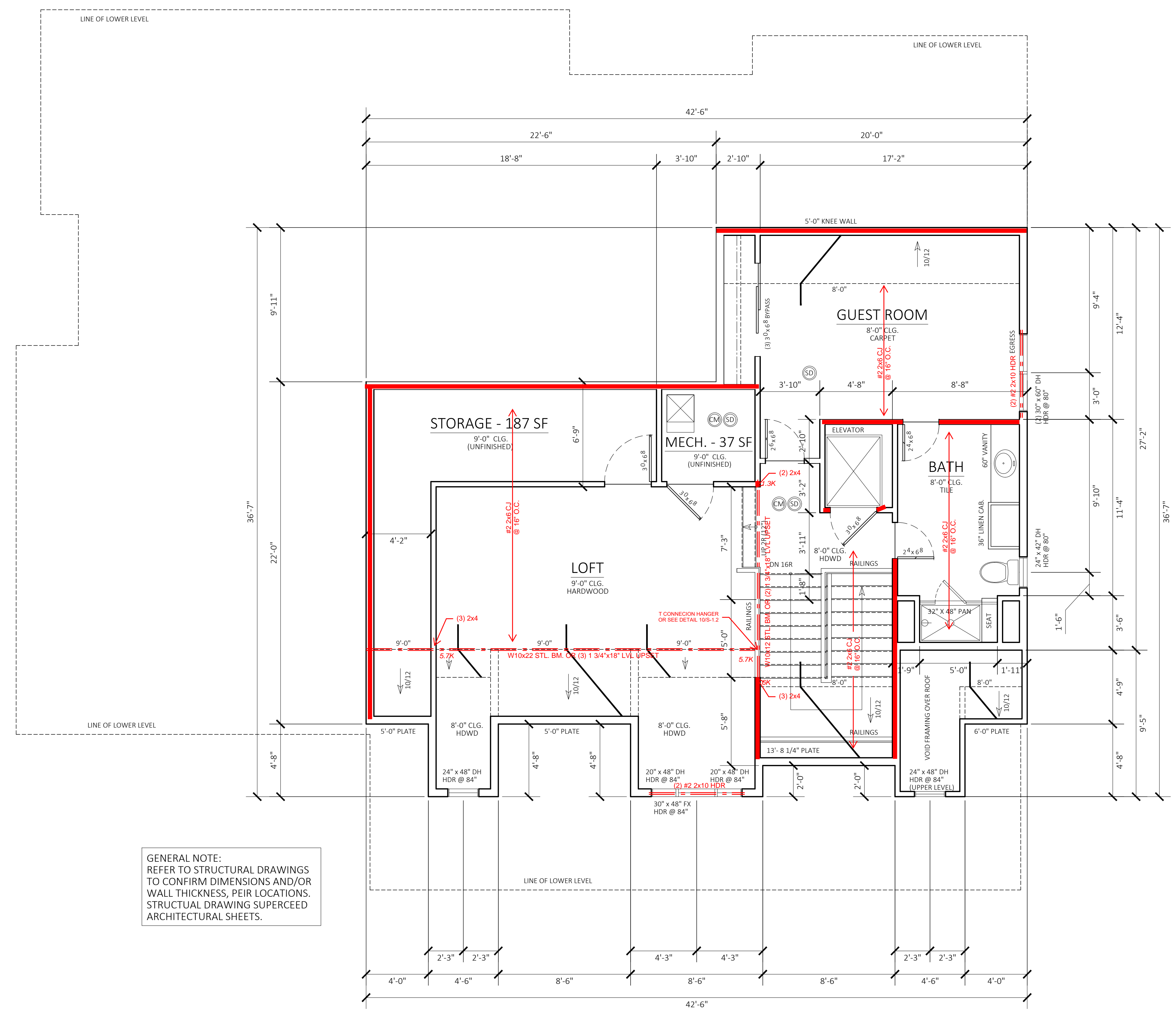
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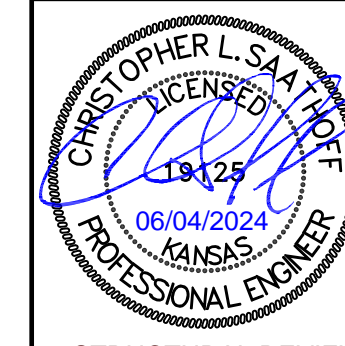


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GENERAL NOTE:
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UPPER LEVEL FLOOR PLAN - 854 SF
SCALE 1/4"=1'-0"



STRUCTURAL REVIEW
HD: 47748

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NOTES

ROOF DESIGNED FOR LIGHT ROOF COVERING 30PSF TOTAL LOAD (10PSF DL, 20PSF LL (SL))

RAFTERS (DOUG-FIR, OR EQUAL): SEE SPAN CHARTS BELOW

CODE MINIMUM

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	11'-11"
#2-2x6	@18" O.C.	9'-6"
#2-2x8	@24" O.C.	15'-11"
#2-2x8	@18" O.C.	18'-5"
#2-2x10	@24" O.C.	18'-5"
#2-2x10	@18" O.C.	22'-6"

NOTE: CODE MINIMUM L/240 DEFLECTION

GREATER THAN CODE

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	8'-6"
#2-2x6	@18" O.C.	9'-6"
#2-2x8	@24" O.C.	11'-3"
#2-2x8	@18" O.C.	12'-9"
#2-2x10	@24" O.C.	14'-3"
#2-2x10	@18" O.C.	16'-3"

DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD VAULTS TO BE 2x10 DEPTH

ALL RIDGES, HIP, AND VALLEYS NOT MARKED SHALL BE (1) NOMINAL SIZE LARGER THAN THE INTERSECTING RAFTERS

PURLINS ARE 2x6 MIN.
PURLIN STRUTS ARE AT 4'-0" O.C.
PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL
ALL PURLIN STRUTS SHALL HAVE A MAXIMUM UNBRACED LENGTH OF 8'-0"
PURLIN STRUTS SHALL BE CONSTRUCTED IN A "T" CONFIGURATION AND PER THE FOLLOWING CHART

PURLIN STRUT	MAX PURLIN STRUT LENGTH
(2) 2x4	8'-0"
(1) 2x4 & (1) 2x6	12'-0"
(1) 2x6 & (1) 2x8	20'-0"
(2) 2x6 & (1) 2x8	30'-0"
CONSULT ARCH.ENGR.	>30'-0"

-EACH END OF STRUT SHALL BE FASTENED WITH MIN. (3) 8d OR (2) 16d NAILS
RIDGE BRACES ARE SAME AS PURLIN BRACES; SPACING, SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTE ABOVE)
HIP AND VALLEY BRACES ARE THE SAME AS PURLINS SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)

SEE DETAILS 1, 5, 6, 7, 11, 12, 13, & 14 ON S-1.2 FOR ROOF FRAMING AND INSULATION OPTIONS

- - - - - PURLIN
- — — — — LOAD BEARING WALL
- - - - - LOAD BEARING BEAM/ GIRDER PER PLAN

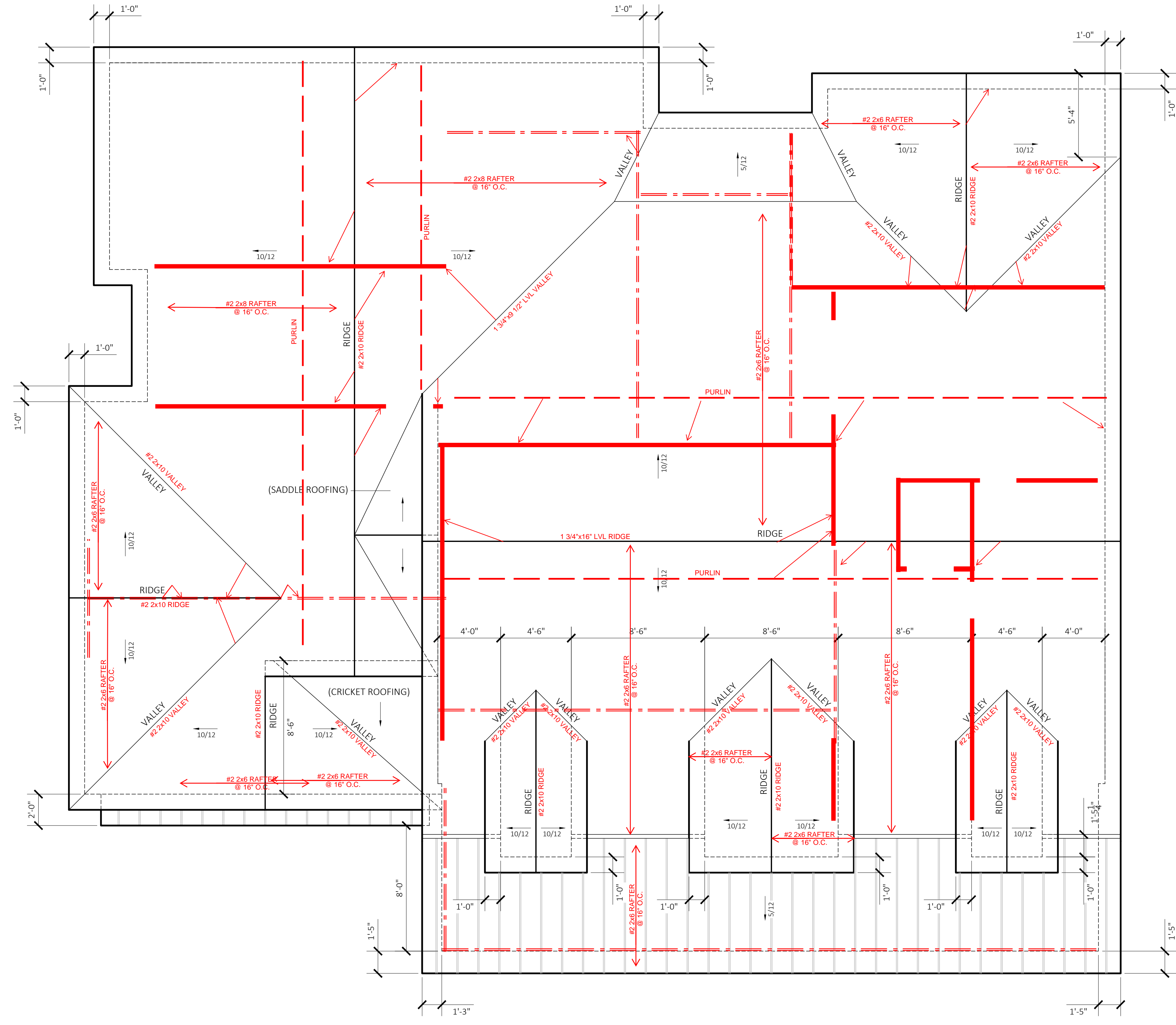
SEE DETAIL 12/S-1.2 FOR RAFTER TIE CONNECTION FOR CLG JOISTS PERPENDICULAR TO HIP RAFTERS

ALL RIDGES, HIP, & VALLEYS SHALL BE FASTENED TO EXTERIOR WALLS, BEAMS, OR LOAD BEARING WALL TOP PLATE PER FRAME FASTENING SCHEDULE ON S-1.0, AND PER R802.11. ALL UP/LIFT OVER 200# SHALL BE FASTENED AS SHOWN ON THIS PLAN SHEET

ALL RAFTERS SHALL BE FASTENED TO TOP PLATE WITH (3) 10d COMMON NAILS

IF ADDITIONAL HOLD DOWN STRAP REQUIRED: X=UP/LIFT FORCE (POUNDS), REQUIRED SIMPSON HOLD-DOWN

□ SIMPSON STRAP FASTENED TO STRUCTURAL HIP, VALLEY, OR RIDGE AND STRUT SUPPORT. MUST ALSO STRAP BOTTOM END OF STRUT TO BEAM/WALL BELOW WITH SAME SIZE STRAP



ROOF PLAN
SCALE 1/4"=1'-0"

No.	Description	Date

CONSTRUCTION DOCUMENTS

Project Number **Ackmann**
Date **2024 May 09**
Drawn By
Checked By **CDG**

A 106

Scale 1/4" = 1'-0"

ALLOWABLE LOADS FOR PNEUMATIC OR MECHANICALLY DRIVEN NAILS AND STAPLES

FASTENER DESCRIPTION	NAIL GUN NAILS/ WIRE DIAMETER	WIRE GAGE	PENETRATION REQUIRED INTO MAIN MEMBER FOR LATERAL STRENGTH (INCHES)	ALLOWABLE LOADS (POUNDS)			
				LATERAL STRENGTH		WITHDRAWAL STRENGTH	
				SP	DF/L	SP	DF/L
16 GA. STAPLE	.063	16	1	51		36	32
15 GA. STAPLE	.072	15	1	64		42	37
14 GA. STAPLE	.080	14	1	75		46	41
6d COOLER NAIL	.092	13	1	46		27	23
6d SINKER NAIL							
6d BOX NAIL							
6d CASING NAIL	.099	12-1/2	1-1/8	61	55	31	24
7d COOLER NAIL							
6d COMMON NAIL							
8d COOLER NAIL							
8d SINKER NAIL	.113	11-1/2	1-1/4	79	72	35	28
8d BOX NAIL							
8d CASING NAIL							
6d RING SHANK NAIL							
6d SCREW SHANK NAIL	.120	11	1-3/8	89	81	41	32
8d RING SHANK NAIL							
8d SCREW SHANK NAIL							
10d COOLER NAIL							
10d SINKER NAIL	.128	10-1/2	1-1/2	89	81	36	31
12d SHORT							
10d BOX NAILS							
12d BOX NAILS	.128	10-1/2	1-1/2	101	93	40	31
10d CASING NAILS							
8d COMMON NAILS	.131	10-1/4	1-1/2	106	97	41	32
16d SHORT							
12d SINKERS	.135	10	1-1/2	113	103	42	33
16d BOX NAILS							
10d RING SHANK NAILS							
10d SCREW SHANK NAILS	.135	10	1-5/8	113	103	46	36
12d RING SHANK NAILS							
12d SCREW SHANK NAILS							
10d COMMON NAILS							
12d COMMON NAILS							
16d SINKER NAILS	.148	9	1-5/8	128	118	46	36
20d BOX NAILS							
30d BOX NAILS							
16d RING SHANK NAILS	.148	9	1-3/4	128	118	50	40
16d SCREW SHANK NAILS							
16d COMMON NAILS	.162	8	1-3/4	154	141	50	40
40d BOX NAILS							
20d RING SHANK NAILS	.177	7	2-1/8	178	163	59	47
20d SCREW SHANK NAILS							
20d SINKER NAILS	.177	7	2-1/8	178	163	54	43
20d COMMON NAILS	.148	9	2-1/8	170	166	59	47
30d SINKER NAILS							

MINIMUM SHEATHING REQUIREMENTS

BUILDING COMPONENT	MATERIAL
ROOF SHEATHING	7/16" PLYWOOD 1 x 4 #3 FURRING
FLOOR SHEATHING	3/4" T&G YELLOW PINE PLYWOOD
WALL COVERING	1/2" GYPSUM SHEATHING
CEILING COVERING	1/2" GYPSUM SHEATHING
EXTERIOR WALL SHEATHING	7/16" APA RATED SHEATHING RATED PANEL SIDING, RATED 16" O.C. 7/16" THICK

ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED REFER TO TABLE R602.3(1) ON S-1.1 FOR FASTENING SCHEDULE

HIP/ VALLEY ALLOWABLE SPAN TABLE

TYPE	MAX. UNSUPPORTED SPAN				
	2x8	2x10	2x12	1 3/4"x9 1/2" LVL	1 3/4"x11 7/8" LVL
HIP RAFTER	11'-3"	13'-3"	15'-2"	15'-8"	18'-2"
VALLEY RAFTER	8'-11"	10'-6"	12'-0"	13'-2"	15'-3"

FRAME FASTENING SCHEDULE

BUILDING COMPONENT	FASTEN TO	FASTEN WITH	
			SP
RAFTERS	RIDGE / VALLEY / HIP	TOENAIL W/ (4) 16D, FACENAIL W/ (3) 16D	
	PLATE	TOENAIL W/ (3) 10D	
	LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS	FACENAIL W/ (3) 16D	
	COLLAR TIE TO RAFTERS	FACENAIL W/ (3) 10D	
CEILING JOISTS	TOP PLATE	TOENAIL W/ (3) 8D @ EACH END	
	WHERE CLG JST RUN PARALLEL TO RAFTERS FACENAIL TO RAFTERS W/ (3) 10D MINIMUM		
	LAPS OVER PARTITIONS	FACENAIL W/ (3) 10D	
	BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE	TOENAIL W/ (3) 8D	
BEAMS	BUILT-UP BEAMS, 2" LUMBER LAYERS, FACENAIL OPPOSITE SIDES, (2) @ EACH END PLUS	10D @ 32" O.C. STAGGERED, TOP & BOTTOM, OPPOSITE SIDES	
	BUILT-UP BEAMS OF ENGINEERED LUMBER, FACE NAIL OPPOSITE SIDES	(2) ROWS @ 12" O.C.	
	BUILT-UP HEADER, TWO PIECES W/ A 1/2" SPACER	16D @ 16" O.C. ALONG EDGES	
	BUILT-UP HEADER, TWO PIECES W/ NO 1/2" SPACER	3" x 0.131" NAILS @ 12" O.C. ALONG EDGES	
	BEARING	TOENAIL W/ (2) 18D @ EACH END	
	RIM JOIST TO SILL OR TOP PLATE	TOENAIL W/ 8D COMMON OR 10D BOX @ 6" O.C.	
	JOIST TO SILL OR GIRDER	TOENAIL W/ (3) 8D	
	JOIST TO RIM JOIST	FACENAIL W/ (3) 16D	
	BRIDGING TO JOIST	TOENAIL W/ (2) 8D	
FLOOR JOISTS	I-JOIST TO BEARING PLATE	TOENAIL W/ (2) 8D - ONE INTO EACH SIDE AT LEAST 1 1/2" FROM THE END	
	RIM JOIST TO I-JOIST	FACENAIL W/ (2) 10D BOX - ONE INTO EACH FLANGE	
	SOLE PLATE TO LSL RIM BOARD	16D BOX @ 12" O.C.	
	SINGLE JOIST HANGERS*	10D FACENAILS AND TOENAILS	
	DOUBLE JOIST HANGERS*	16D FACENAILS AND TOENAILS	
	TOP AND SOLE PLATE TO STUD	END NAIL W/ (2) 16D	
	STUD TO SOLE AND TOP PLATE	TOENAIL W/ (4) 8D	
	DOUBLE TOP PLATES	FACENAIL W/ 16D @ 16" O.C.	
	DOUBLE TOP PLATE LAP SPLICE	FACENAIL W/ (8) 16D	
	TOP PLATE LAPS AND INTERSECTIONS	FACENAIL W/ (2) 16D	
	DOUBLE STUDS	FACENAIL W/ 16D @ 24" O.C.	
	BUILT-UP CORNER STUDS	FACENAIL W/ 16D - 2 ROWS @ 24" O.C.	
	STEEL "X" BRACING	FACENAIL W/ (2) 16D IN EACH TOP AND BOTTOM PLATE AND (1) 8D PER STUD	
WALLS	SOLE PLATE TO JOIST OR BLOCKING	FACENAIL W/ 16D @ 16" O.C.	
	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PERPENDICULAR TO FRAMING	FACENAIL W/ (3) 16D @ 16" O.C. ALONG BRACED WALL PANEL	
	TOP PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PERPENDICULAR TO FRAMING	TOENAIL W/ 8D @ 6" O.C. ALONG BRACED WALL PANEL	
	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PARALLEL TO FRAMING, BLOCKING @ 16" O.C.	FACENAIL W/ (3) 16D @ 16" O.C. ALONG BRACED WALL PANEL AND AT EACH BLOCK	
	TOP PLATE TO JOIST OR BLOCKING AT BRACED WALL LINES, PARALLEL TO FRAMING, BLOCKING @ 16" O.C.	TOENAIL W/ 8D @ 6" O.C. ALONG BRACED WALL PANEL AND AT EACH BLOCK	
	NON-STRUCT. SIDING OVER STRUCT. SHEATHING	(1) 6D BOX IN EACH STUD	
	FIBER-CEMENT PLANK SIDING	(1) 6D GALVANIZED IN EACH STUD	
	WINDOW INSTALLATION NAILING	1 3/4" - 2" RAZED NAILS @ 12" O.C. MAX.	

- * JOIST HANGER NOTES:
a. NO JOIST HANGER NAILS ALLOWED FOR TOENAILS.
b. NO GUN NAILS OR SCREWS ALLOWED IN CONNECTORS.
c. TOENAILS SHALL ALWAYS BE A FULL 3" OR 3.5" NAIL.

COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TAB EARS BENT AROUND THE BOTTOM FLANGE OF THE BEAM. FOR A BEARING PLATE, FOUR HOLES SHALL BE DRILLED IN THE BOTTOM FLANGE OF THE STEEL BEAM TO MATCH THE HOLE PATTERN OF THE PLATE. 1/2" x 2" BOLTS SHOULD THEN BE INSTALLED WITH A FLAT WASHER, LOCK WASHER, AND A NUT IN EACH OF THE HOLES. THE POST CAP MAY BE WELDED TO THE STEEL BEAM IN ACCORDANCE WITH AWS D1.1-92 AS AN ALTERNATIVE, AND WOULD NEED TO BE INSPECTED BY AN AWS-CERTIFIED INSPECTOR.

DUCT SEALING METHOD, PER 2018 IRC W1103.3.2

N1103.2.2 (R403.2.2) SEALING (MANDATORY) DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION M1601.4.1 OF THIS CODE.

EXCEPTIONS:

- AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS.
- WHERE A DUCT CONNECTION IS MADE THAT IS PARTIALLY INACCESSIBLE, THREE SCREWS OR RIVETS SHALL BE EQUALLY SPACED ON THE EXPOSED PORTION OF THE JOINT SO AS TO PREVENT A HINGE EFFECT.
- CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS IN DUCTS OPERATING AT STATIC PRESSURE LESS THAN 2 INCHES OF WATER COLUMN (500 Pa) PRESSURE CLASSIFICATION SHALL NOT REQUIRE ADDITIONAL CLOSURE SYSTEMS.
- DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING:
1. POST CONSTRUCTION TEST: TOTAL LEAKAGE SHALL NOT BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.
2. ROUGH-IN TEST: TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL AIR LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM (85 L/MIN) PER 100FT² (9.29m²) OF CONDITIONED FLOOR AREA.
EXCEPTION: THE TOTAL LEAKAGE IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE.

GENERAL NOTES:

- PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE, ICC AS ADOPTED BY AHJ, AND ALL AMENDMENTS AS ADOPTED BY THE AHJ. IF ANY CHANGES OR DEVIATIONS ARE MADE FROM THESE PLANS THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND THE ENGINEER TO EVALUATE THE CHANGES AND MAKE ANY APPROPRIATE MODIFICATIONS TO THE PLANS.
- WHERE DISCREPANCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FOR THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE OWNER/BUILDER AND THE AHJ WITH A SET OF PLANS THAT MEET AHJ AND CODE REQUIREMENTS FOR A SINGLE SITE CONSTRUCTION PROJECT. UNLESS REQUESTED BY OUR CLIENT, CODE/AHJ MINIMUM DESIGNS WILL BE UTILIZED. ALSO, UNLESS REQUESTED BY THE OWNER, OUR FIRM CAN NOT AND WILL NOT BE AUTHORIZED TO VISIT THE SITE TO EVALUATE THE SITE OR ANY CONSTRUCTION FOR THIS PROJECT. IMPLEMENTATION OF ALTERNATES TO THE DESIGNS INCLUDING BUT NOT LIMITED TO PIER DESIGNS, FOUNDATION ALTERATIONS, OR ANY STRUCTURAL CHANGES NOT PROVIDED BY HD ENGINEERING OR A PROFESSIONAL REFERRED BY HD ENGINEERING SHALL RELEASE HD ENGINEERING FROM ALL LIABILITY ASSOCIATED WITH THIS DESIGN.
- OUR FIRM HIGHLY RECOMMENDS THAT ANY SITE WITH GREATER THAN A 15% GRADE, ANY SITE WHERE A PREVIOUS STRUCTURE WAS LOCATED, OR ANY SITE WITH POTENTIAL FILL MATERIAL OR A POTENTIAL SOIL BEARING CAPACITY BELOW 1500 PSF SHOULD BE EVALUATED BY OUR FIRM OR AN HD ENGINEERING REFERRED GEOTECHNICAL FIRM PRIOR TO PLACING FOOTINGS. THE ATTACHED PLANS HAVE BEEN DESIGNED WITH THE UNDERSTANDING THAT OUR FIRM HAS NOT AND CAN NOT VISIT OR INSPECT THE SITE WITHOUT WRITTEN CONSENT/REQUEST OF THE OWNER/BUILDER. DUE TO THIS FACT, OUR FIRM CAN ONLY DESIGN THE ATTACHED PLANS TO CERTAIN CODE REQUIREMENTS WHICH ARE DETAILED THROUGHOUT THE PLAN AND ATTACHED DETAIL SHEETS, IF THE OWNER DESIRES GREATER THAN CODE DESIGNS THAT REQUEST MUST BE MADE CLEARLY AND IN WRITING PRIOR TO ENGINEERING OF THE PLAN.
- DUE TO THE WIDE VARIETY OF SOIL CONDITIONS, PLASTICITY INDEXES, AND SOIL BEARING CAPACITIES IN OUR AREA, OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY HD ENGINEERING OR AN HD ENGINEERING REFERRED GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF ANY "STANDARD" FOUNDATIONS.

FOUNDATION NOTES:

- THE FOUNDATION DESIGN SHALL COMPLY WITH THE ENFORCING JURISDICTION RESIDENTIAL FOUNDATION STANDARD IN LIEU OF ENGINEERING REPORT REQUIREMENTS BASED ON ACTUAL SITE CONDITIONS.
- FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.
- PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SPACE BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION 405.1. THE PIPE SHALL BE COVERED WITH NOT LESS THAN 6" OF WASHED GRAVEL OR CRUSHED ROCK. THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 20 GALLON SUMP PIT.
- FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.
- FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS, LOCATED A MINIMUM OF 3" CLEAR FROM THE BOTTOM. FOOTINGS SHALL BE A MINIMUM OF 36" BELOW GRADE FOR FROST PROTECTION.
- COLUMN PADS SHALL BE A MINIMUM OF 24"x24"x8" WITH (3) #4 BARS EACH WAY.
- FOUNDATION WALLS SHALL BE A MINIMUM OF 8" THICK WITH MINIMUM #4 BARS @ 24" O.C. HORIZONTAL AND VERTICAL WITH THE TOP BAR WITHIN 8" OF THE TOP OF THE WALL UNLESS NOTED OTHERWISE ON PLAN.
- REINFORCEMENT SHALL LAP A MINIMUM OF 24".
- INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
- INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE BY A SEPARATION OF 1/2".
- CONCRETE FLOOR SLABS ON GRADE SHALL BE A MINIMUM OF 4" THICK OVER A MINIMUM 4" BASE OF SAND, GRAVEL, OR CRUSHED STONE. BASEMENT SLABS SHALL HAVE A MINIMUM 6 MIL POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" AND SHALL BE PLACED BETWEEN THE FLOOR SLAB AND THE BASE COURSE.
- FLOOR SLABS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER A SEPARATE ENGINEERING DESIGN.
- BASEMENT FOUNDATION SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH MINIMUM 1/2" DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3' ON CENTER AND WITHIN 12" OF EACH END OF THE PLATE SECTION PER IRC SECTION R403.1.6.
- FOUNDATION WINDOW WELLS FOR SECONDARY MEANS OF EGRESS SHALL PROVIDE A MINIMUM 3'x3' HORIZONTAL AREA.
- THE BASE OF ALL FOOTING EXCAVATIONS SHOULD BE FREE OF ALL WATER AND LOOSE MATERIAL PRIOR TO PLACING CONCRETE. CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATING SO THAT EXCESSIVE DRYING OR DISTURBANCE OF BEARING MATERIALS DOES NOT OCCUR. SHOULD THE MATERIALS AT BEARING LEVEL BECOME EXCESSIVELY DRY OR SATURATED, WE RECOMMEND THAT THE AFFECTED MATERIAL BE REMOVED PRIOR TO PLACING CONCRETE. IT IS RECOMMENDED THAT ALL FOOTING EXCAVATIONS BE EVALUATED AND TESTED BY A GEOTECHNICAL ENGINEER IMMEDIATELY PRIOR TO PLACEMENT OF FOUNDATION CONCRETE. UNSUITABLE AREAS IDENTIFIED AT THIS TIME SHOULD BE CORRECTED. CORRECTIVE PROCEDURES WOULD BE DEPENDENT UPON CONDITIONS ENCOUNTERED AND MAY INCLUDE THE DEEPENING OF FOUNDATION ELEMENTS, OR THE UNDERCUTTING OF UNSUITABLE MATERIALS AND REPLACEMENT WITH ENGINEERED FILL.

STAIRWAY NOTES:

- STAIRWAYS SHALL PROVIDE A MAXIMUM 7 1/4" RISE AND A MINIMUM 10" RUN.
- PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES, AND BALCONIES. PROVIDE MINIMUM 34" GUARDRAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW. GUARDRAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A 4" DIAMETER SPHERE.
- EACH STAIRWAY OF 3 OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.
- HANDRAILS SHALL HAVE A CIRCULAR CROSS-SECTION OF 1 1/4" MINIMUM TO 2" MAXIMUM OR ANOTHER APPROVED GRASPABLE SHAPE PER IRC SECTION R311.7.8.5.
- PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS.
- ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON THE ENCLOSURE SIDE.
- WINDERS SHALL PROVIDE A MINIMUM TREAD OF 6" AT ANY POINT WITHIN CLEAR WIDTH OF STAIRS. WINDER TREAD PROPORTION IS TO COMPLY WITH IRC SECTION R311.7.5.2.1.

GLAZING NOTES:

- GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS. GLASS IN STORM DOORS, INDIVIDUAL FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR, WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS AND WHIRLPOLS, GLAZING IN FIXED OR OPERABLE PANELS EXCEEDING 9 S.F. AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".
- IN DWELLING UNITS WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4" DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24" OF THE FINISHED FLOOR.

FRAMING NOTES:

- ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS NOTED OTHERWISE.
- ALL HEADERS ARE TO BE A MINIMUM OF (2) #2 2x10S UNLESS NOTED OTHERWISE.
- BLOCK CANTILEVERS, DOOR JAMBS, AND OVER BEAMS.
- ALL HEADERS/BEAMS ARE TO BEAR ON A MINIMUM OF (2) 2x4 POSTS UNLESS NOTED OTHERWISE.
- INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
- WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES SHALL BE PROVIDED AT A MAXIMUM OF 4' ON CENTER TO TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL JOISTS AND BLOCKING TO SILL PLATE WITH (4) 10D NAILS.
- IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2x4S FLAT AT 4' ON CENTER WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2x4S TO THE SILL PLATE WITH (4) 10D NAILS.
- ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS.
- JOISTS UNDER BEARING PARTITIONS SHALL BE SIZED TO CARRY THE DESIGN LOAD IN ACCORDANCE WITH IRC SECTION R502.4.
- JOIST FRAMING FROM OPPOSITE OVER BEARING SUPPORTS SHALL LAP A MINIMUM OF 3" AND SHALL BE NAILED TOGETHER WITH MINIMUM 10D FACE NAILS.
- JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR ON MINIMUM 2"x2" LEDGER STRIPS.
- HEADER AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3' FROM THE TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4', THE HEADER AND TRIMMER SHALL BE DOUBLED.
- JOISTS AT SUPPORTS SHALL BE SUPPORTED Laterally AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" IN NOMINAL THICKNESS OR BY ATTACHMENT TO A HEADER, BAND, OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION.
- ALL WALL COVERINGS ARE TO COMPLY WITH IRC SECTIONS 702 AND 703.
- ALL RAFTER / COLLAR TIES ARE TO COMPLY WITH IRC SECTION 802.
- ALL RAFTERS ARE TO HAVE 2x4 COLLAR TIES @ 48" O.C. IN THE UPPER 1/3 OF DISTANCE BETWEEN THE CEILING AND ROOF.
- BLOCKING BETWEEN JOISTS UNDER A PERPENDICULAR LOAD-BEARING WALL IS NOT REQUIRED.
- THE BOTTOM OF ALL FLOOR ASSEMBLIES SHALL BE PROVIDED WITH A 1/2" GYPSUM WALLBOARD MEMBRANE (IF REQUIRED BY LOCAL CODE).
- I-JOIST AND FLOOR TRUSS SYSTEMS SHALL BE FIRE PROTECTED PER IRC AS ADOPTED BY AHJ.
- STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF / CEILING DIAPHRAGM PER IRC SECTION 602.3.

CONCRETE NOTES:

- CONCRETE SHALL BE AIR-ENTRAINED (5%-7%) WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI FOR BASEMENT AND INTERIOR FLOOR SLABS, 3000 PSI FOR BASEMENT AND FOUNDATION WALLS, AND 3500 PSI FOR PORCHES, CARPORTS AND GARAGE FLOOR SLABS.

EMERGENCY EGRESS AND RESCUE NOTES:

- PROVIDE ONE WINDOW FOR EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 S.F. WITH A MINIMUM OPENABLE HEIGHT OF 24" AND BOTTOM OF 21". IN ADDITION, THE OPENABLE PORTION OF EGRESS WINDOWS SHALL NOT EXCEED 44" ABOVE THE ADJOINING FLOOR OR PERMANENT STEP.
- PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA, AND ON EACH FLOOR INCLUDING BASEMENTS. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING.
- PROVIDE CARBON MONOXIDE ALARMS AS REQUIRED PER IRC. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA, WHERE FUEL-BURNING APPLIANCES ARE LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED IN THE BEDROOM.

GARAGE NOTES:

- THE GARAGE FLOOR SHALL SLOPE TOWARDS THE GARAGE DOORWAYS OR SLOPE TO A TRENCH OR UNTRAPPED DRAIN THAT DISCHARGES DIRECTLY TO THE EXTERIOR ABOVE GRADE.
- DOORS BETWEEN THE GARAGE AND DWELLING - MINIMUM 1 3/8" THICK SOLID WOOD, MINIMUM 1 3/8" THICK SOLID OR HONEY-COMB-CORE STEEL DOOR, OR 20-MINUTE FIRE-RATED EQUIPPED WITH A SELF-CLOSING DEVICE PER IRC SECTION R302.5.1.
- GARAGE VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115-MPH 3-SECOND GUST LOADING PER DASHA 108 AND ASTM E 330-96 PER IRC SECTION R301.2.1.
- THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY MINIMUM 5/8" GYPSUM BOARD APPLIED TO THE GARAGE SIDE. WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE, THE FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED WITH MINIMUM 5/8" TYPE X GYPSUM BOARD ON THE GARAGE CEILING. WHERE A FLOOR/CEILING SPACE IS PROVIDED ABOVE THE GARAGE, COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 5/8" GYPSUM BOARD OR EQUIVALENT.
- GARAGE DOOR H-FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM FLOOR TO CEILING ATTACHED WITH 1 1/2"x0.120" NAILS AT 7" ON CENTER STAGGERED WITH (7) 3 1/2"x0.120" NAILS THROUGH THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT OF THE COUNTER BALANCE SYSTEM.
- ANY ATTACHED GARAGE TO THE MAIN HOUSE SHALL BE PROVIDED WITH A SINGLE DETECTOR. THE HEAT DETECTOR SHALL BE HARDWIRED AND INTERCONNECTED WITH THE HOUSEHOLD SMOKE ALARM SYSTEM. THE HEAT DETECTOR SHALL BE LISTED FOR THE AMBIENT ENVIRONMENT AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

MECHANICAL/INSULATION:

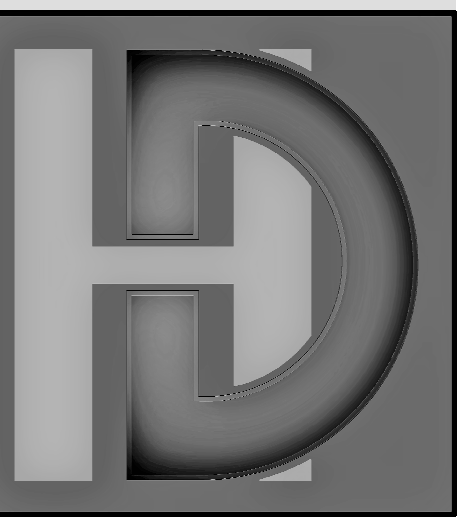
- BUILDING ENVELOPE INSULATION SHALL COMPLY WITH IRC TABLE N1102.1.2 OR THE 2018 IECC. (SEE S-6.0 FOR MORE DETAILS)

VENTILATION:

- ENCLOSED ATTICS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATING OPENINGS SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE MESH, WITH 1/8" TO 1/4" OPENINGS. THE TOTAL FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150th OF THE AREA OF SPACE VENTILATED. WHERE THE VENTILATORS ARE LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED, THE REQUIRED AREA MAY BE REDUCED TO 1/300th.

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TABLE R602.3(1) FASTENING SCHEDULE

Table with 4 columns: ITEM, DESCRIPTION OF BUILDING ELEMENTS, NUMBER AND TYPE OF FASTENER, and SPACING AND LOCATION. It details fastening requirements for ROOF and WALL sections.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s, 1 ksi = 6.895 MPa. Includes notes a through j regarding fastener specifications and application.

CONTINUED TABLE R602.3(1) FASTENING SCHEDULE

Continuation of Table R602.3(1) with 4 columns: ITEM, DESCRIPTION OF BUILDING ELEMENTS, NUMBER AND TYPE OF FASTENER, and SPACING OF FASTENERS. It details requirements for WOOD STRUCTURAL PANELS and OTHER WALL SHEATHING.

TABLE R602.3(2) ALTERNATE ATTACHMENTS TO TABLE R602.3(1)

Table with 4 columns: NOMINAL MATERIAL THICKNESS (INCHES), DESCRIPTION OF FASTENER AND LENGTH (INCHES), SPACING OF FASTENERS (EDGES AND INTERMEDIATE SUPPORTS), and FASTENER TYPE. It lists alternate attachment methods for various materials like wood, fiber-cement, and plywood.

For SI: 1 inch = 25.4 mm. Includes notes a through h regarding fastener specifications and application for alternate attachments.

DESIGN LOADS (PSF)

THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS

Table with 4 columns: AREA, MIN. DEAD LOAD, and MIN. LIVE LOAD. It lists design loads for various areas like exterior balconies, decks, stairs, and rooms.

HEAVY ROOF COVERING MATERIAL (TILE, CONCRETE, SLATE, ETC.) SHALL NOT BE USED UNLESS 20 PSF DEAD LOAD AND HEAVY ROOF IS NOTED ON THE ROOF PLAN.

COLUMN SCHEDULE

BASED ON FOOTING SIZE (ASSUME 1500 PSF SOIL)

Table with 5 columns: PAD SIZE, REINFORCEMENT, COL. MIN., COL. TYPE, and MAX. LOAD. It lists column specifications for different pad sizes and reinforcement types.

COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TAB EARS BENT AROUND THE BOTTOM FLANGE OF THE BEAM. FOR A BEARING PLATE, FOUR HOLES SHALL BE DRILLED IN THE BOTTOM FLANGE OF THE STEEL BEAM TO MATCH THE HOLE PATTERN OF THE PLATE.

ENGINEERED LUMBER

MIN. DESIGN REQUIREMENTS

Table with 4 columns: LVL, GLULAM, and PARALAM, with sub-columns for F1 (psi), E (psi), and F2 (psi). It lists minimum design requirements for different types of engineered lumber.

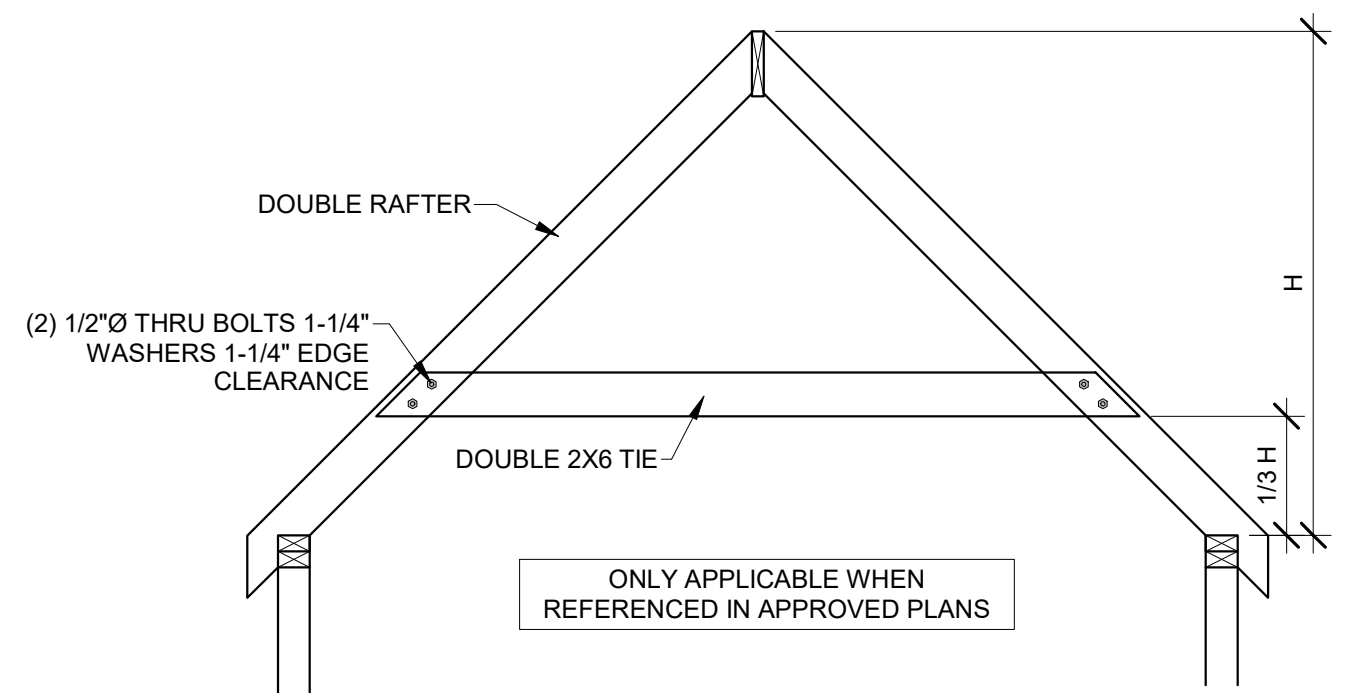
BUILDER'S PLANS: THE TERM 'BUILDER'S PLANS' REFERS TO A CERTAIN LEVEL OF DEVELOPMENT OF THE DRAWINGS. AS THE NAME IMPLIES, THESE PLANS REQUIRE THAT THE CONTRACTOR POSSESSES COMPETENCE IN RESIDENTIAL CONSTRUCTION AND A THOROUGH UNDERSTANDING OF THE INTERNATIONAL RESIDENTIAL CODE (IRC).

HD ENGINEERING & DESIGN, INC. 11656 W. 75TH STREET SHAWNEE, KS 66214. Includes contact information and a professional engineer seal for Chrisopher L. Sauer.

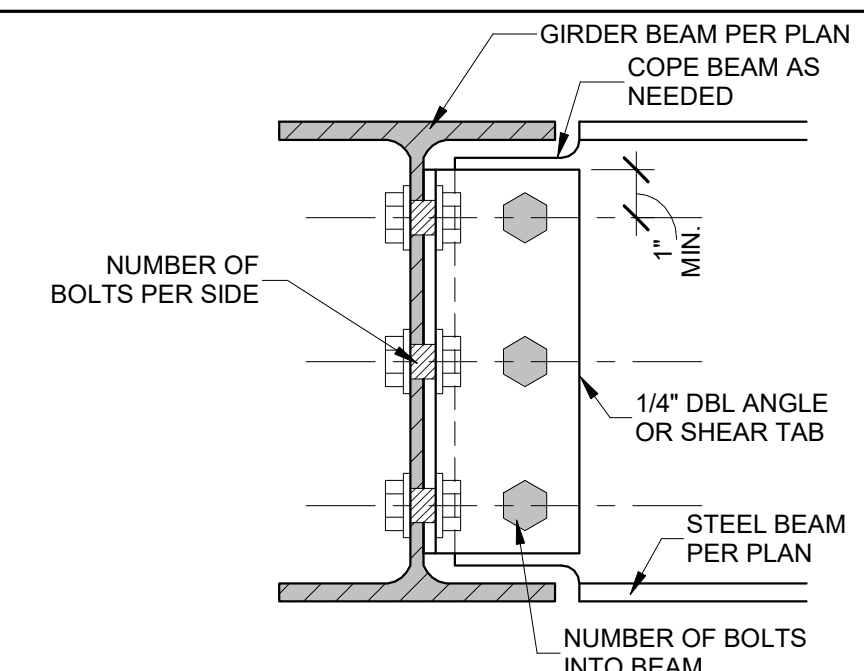
CASTROP DESIGN GROUP RICK & HELEN ACKMANN 2023 W. 48TH ST., WESTWOOD, KS. Includes contact information and a professional engineer seal for Rick Ackmann.

Table with 2 columns: NO. and ISSUE/REVISION. It is used for tracking changes and revisions to the document.

GENERAL NOTES S-1.1. Includes a large 'S-1.1' graphic and the text 'GENERAL NOTES'.

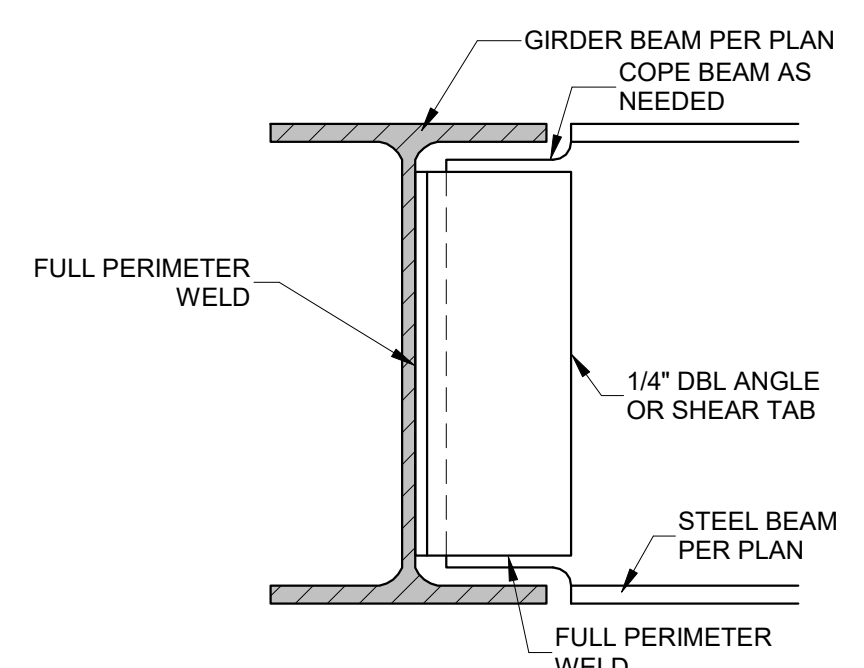


11 HIP SUPPORT FRAME
3/8" = 1'-0"



BEAM CONNECTION SCHEDULE		
BEAM SIZE	# OF BOLTS PER SIDE	ANGLE
W8, W10	2	(4" LONG)
W12, W14	3	(8" LONG)
W16, W18	4	(10" LONG)

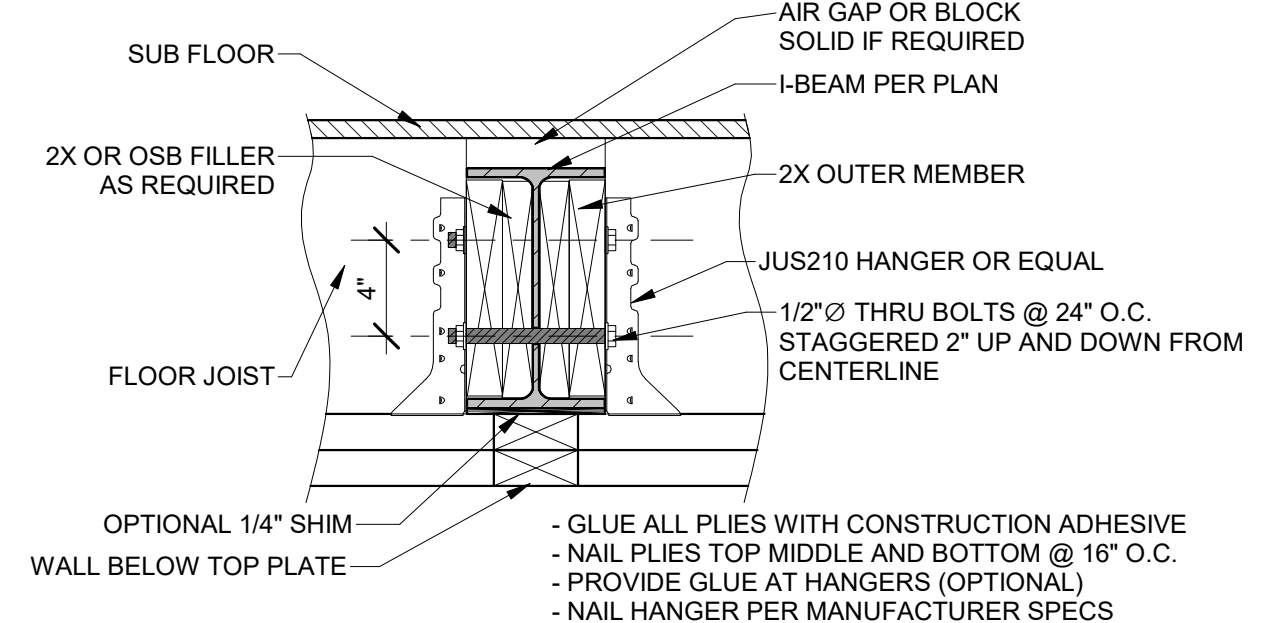
NOTES:
1. NUMBER OF BOLTS DETERMINED BY SMALLER OF TWO BEAMS BEING CONNECTED
2. ALL BOLTS, 3/4" DIAMETER A325-N, UNO
3. BOLTS SHALL BE EVENLY SPACED TOP TO BOTTOM



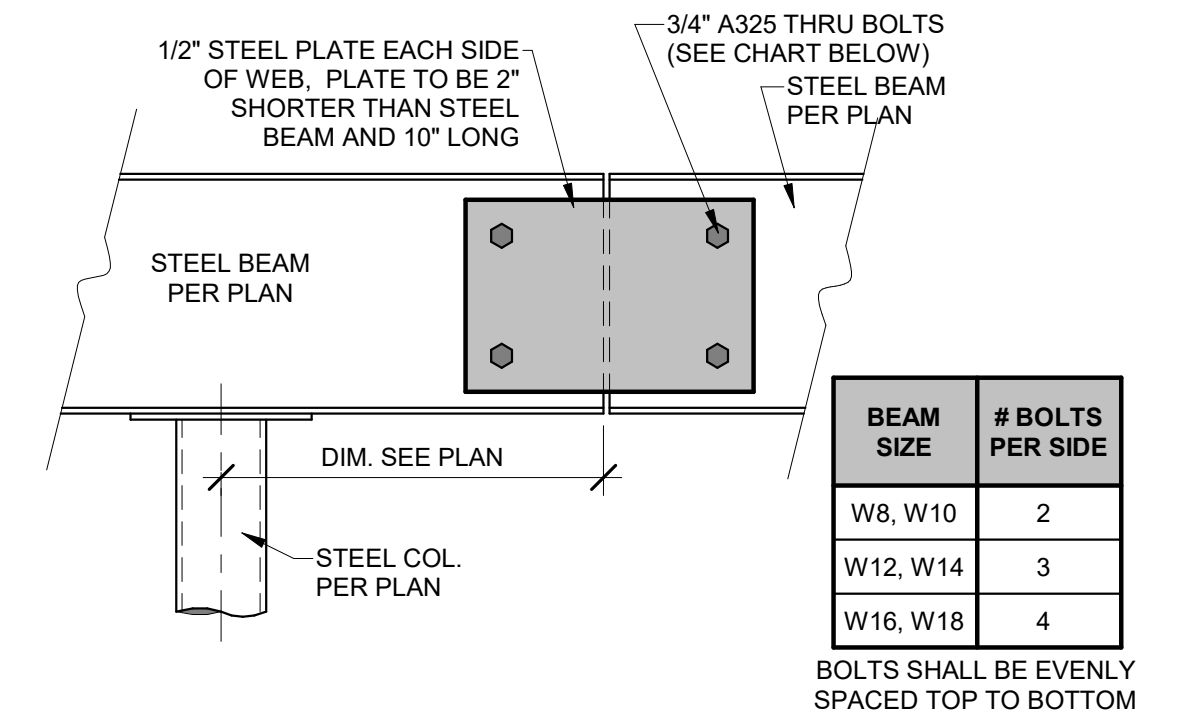
EITHER METHOD ACCEPTABLE

BEAM CONNECTION SCHEDULE	
BEAM SIZE	ANGLE
W8, W10	1.5x1.5x1/4 (4" LONG)
W12, W14	3x3x3/8 (8" LONG)
W16, W18	3.5x3.5x3/8 (10" LONG)

10 BEAM TO GIRDER CONNECTION
3" = 1'-0"



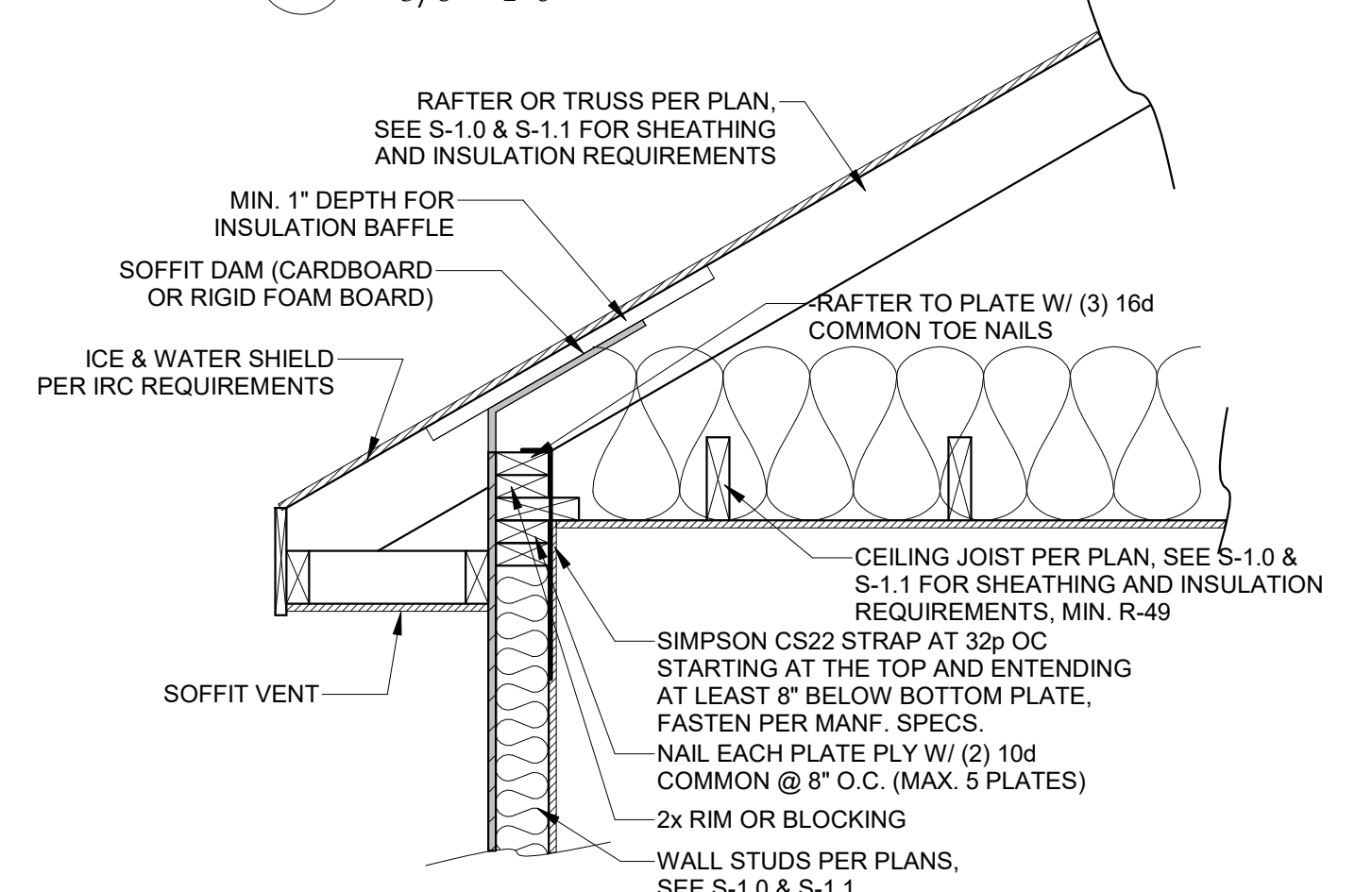
8 UPSET STEEL BEAM DETAIL
1 1/2" = 1'-0"



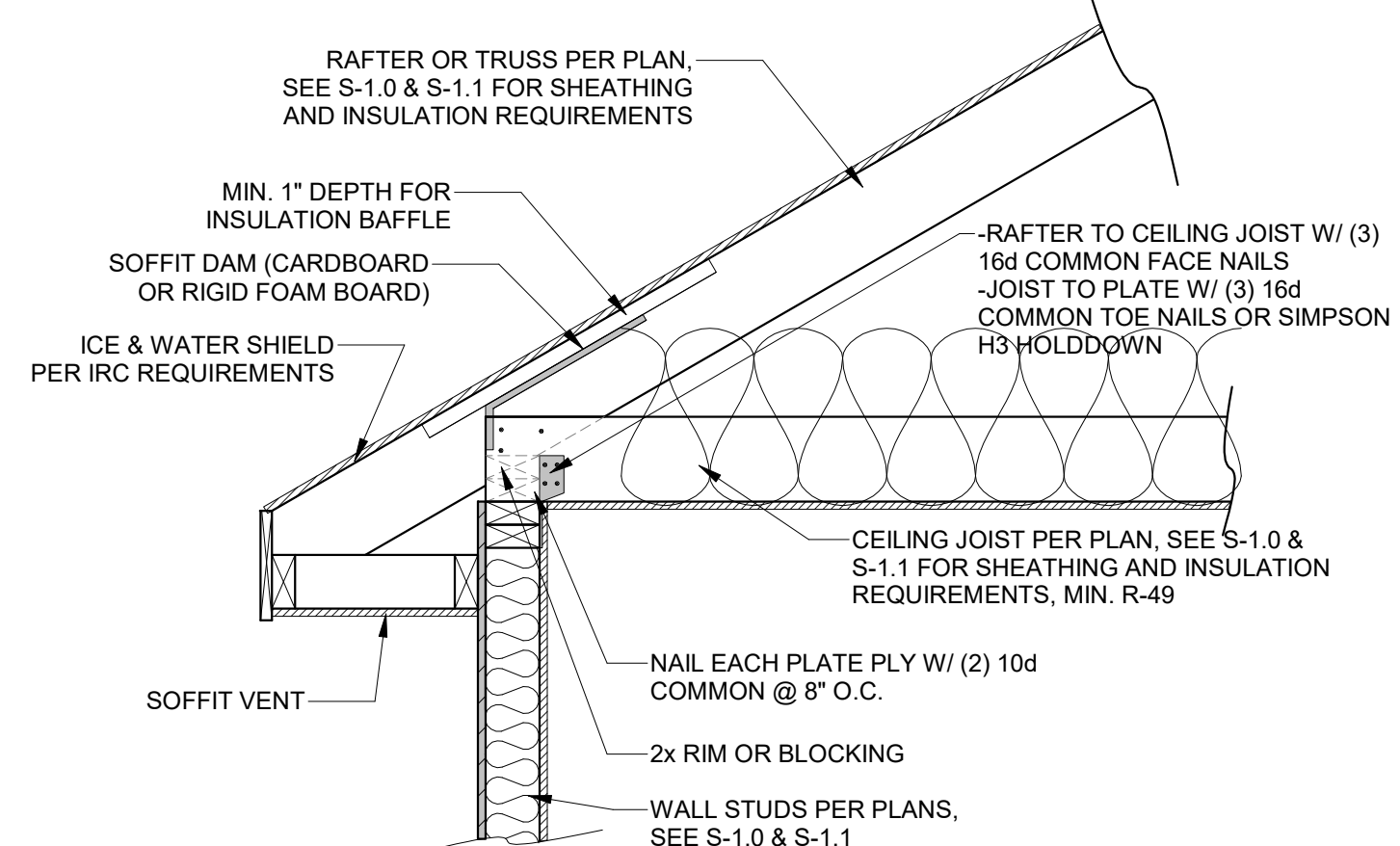
9 STEEL BEAM SPLICE DETAIL
1 1/2" = 1'-0"

BEAM SIZE	# BOLTS PER SIDE
W8, W10	2
W12, W14	3
W16, W18	4

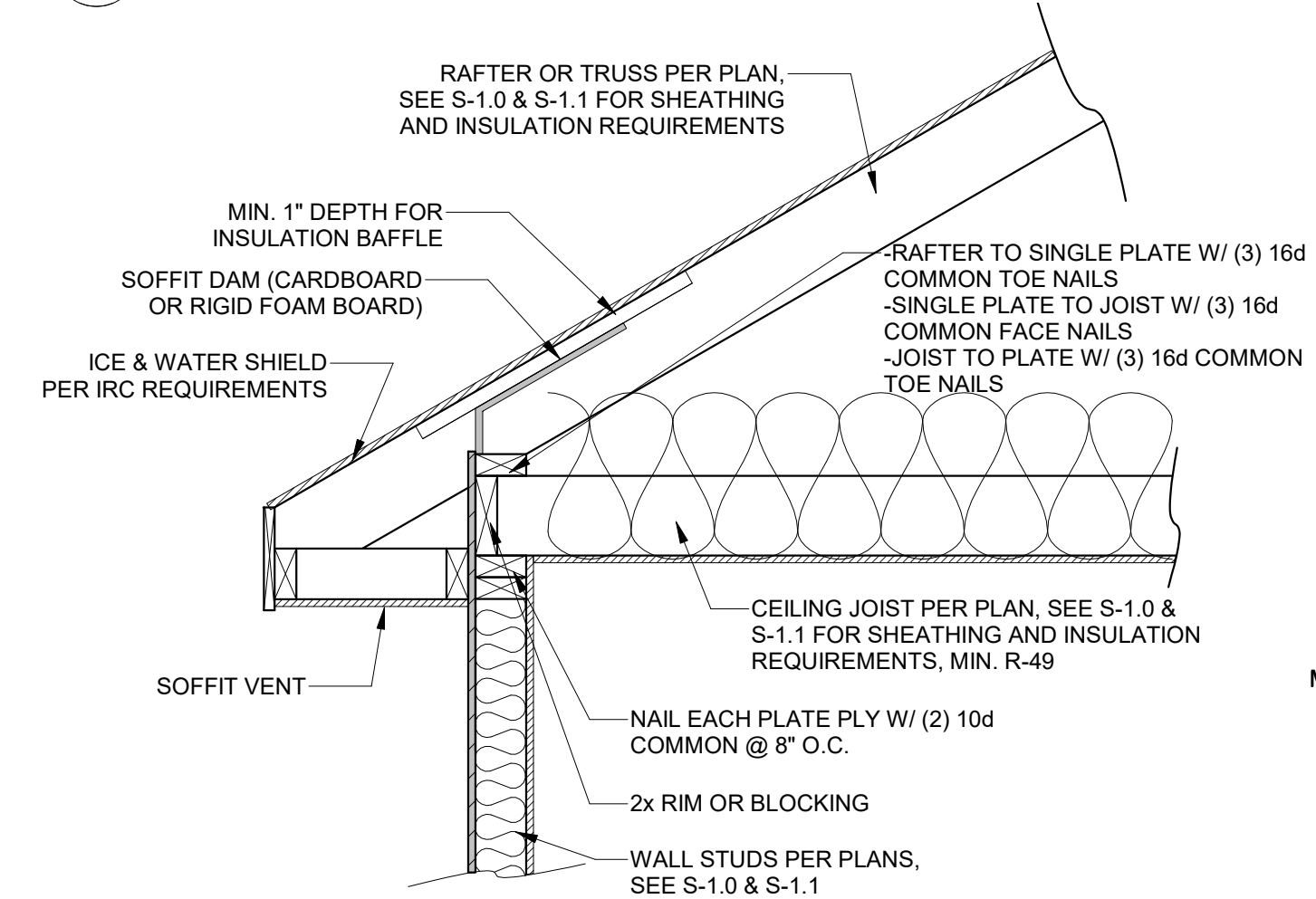
BOLTS SHALL BE EVENLY SPACED TOP TO BOTTOM



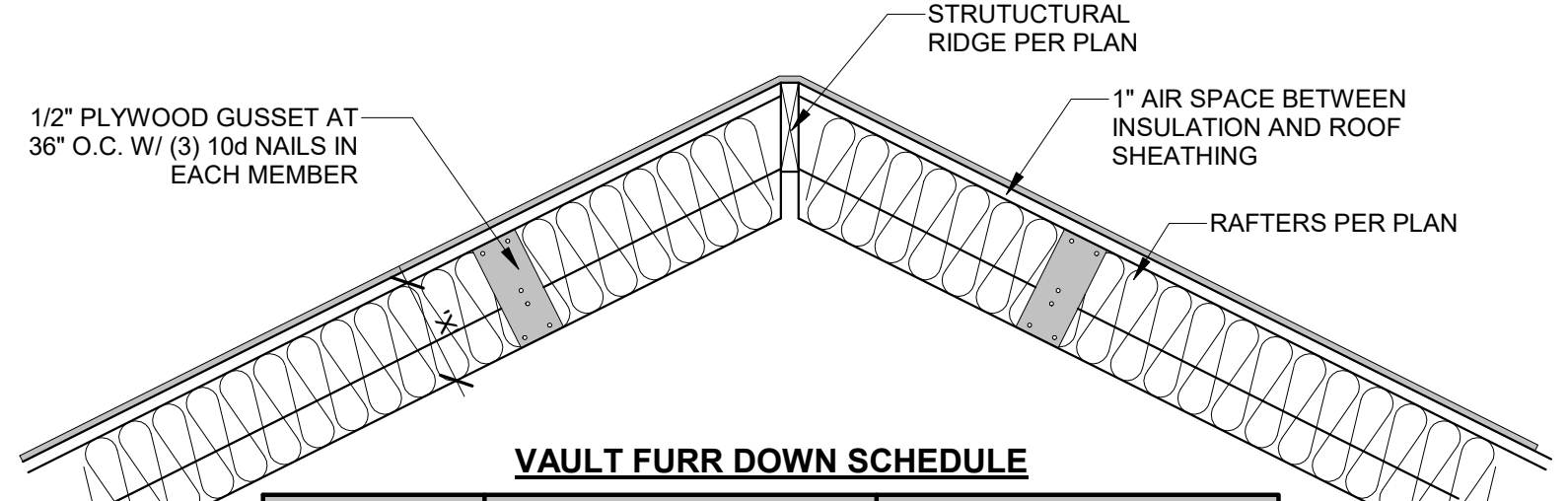
7 OPTION 4 RAFTER BEARING
1" = 1'-0"



6 OPTION 3 RAFTER BEARING
1" = 1'-0"



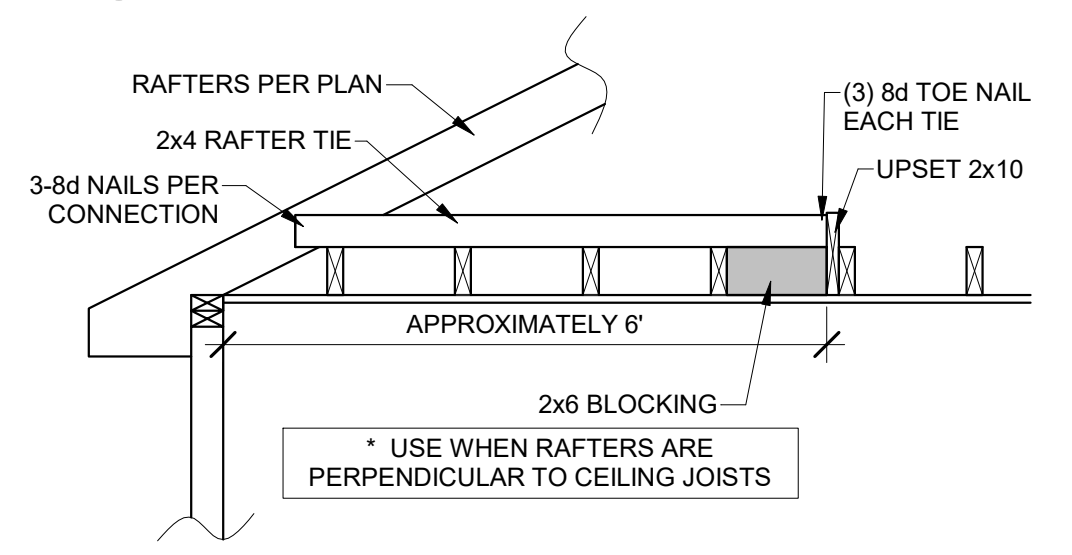
5 OPTION 2 RAFTER BEARING
1" = 1'-0"
THIS OPTION NOT AVAILABLE IN KC, MO



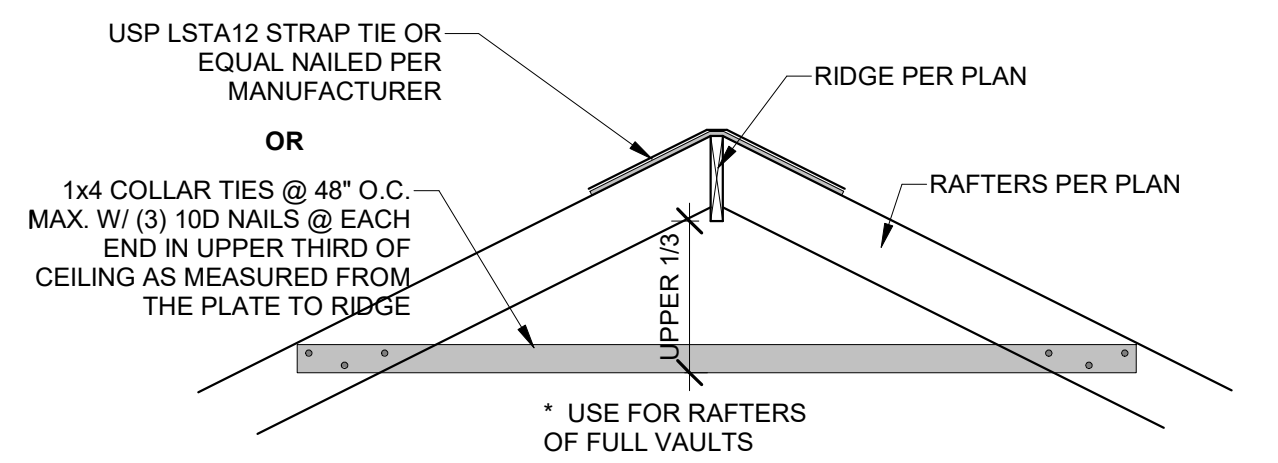
VAULT FURR DOWN SCHEDULE		
RAFTER SIZE	R-30C INSULATION (X = 9 1/4")	R-38C INSULATION (X = 11 1/4")
2x6	2x6	2x8
2x8	2x4	2x6
2x10	NOT REQUIRED	2x4
2x12	NOT REQUIRED	2x2

NOTES:
1. ALL VAULTS SHALL BE FURRED DOWN WITH 2x FRAMING TO THE REQUIRED DEPTH OF INSULATION, PLUS 1" AIR SPACE.
2. R-38C REQUIRED = 11" WITH AIR SPACE.
3. ALL VAULTED RAFTERS SHALL BE MIN. #2 2x6 DFL @ 16" O.C. OR PER ROOF PLAN.

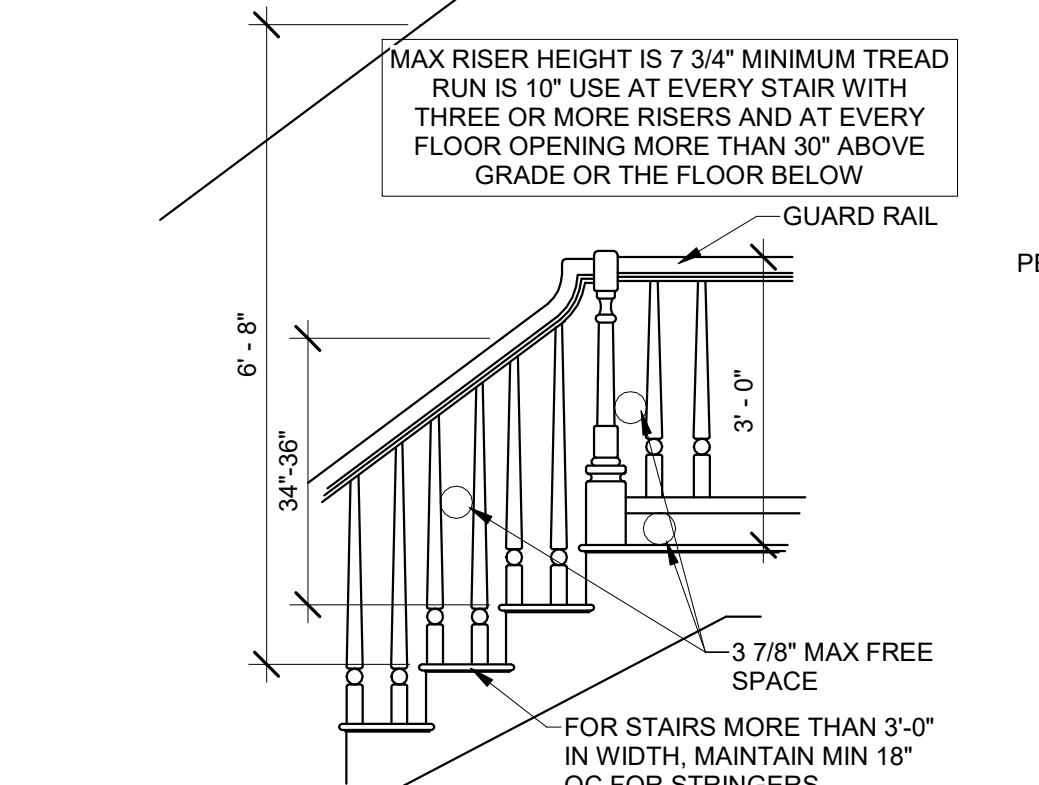
14 VAULTED RAFTER INSULATION
3/4" = 1'-0"



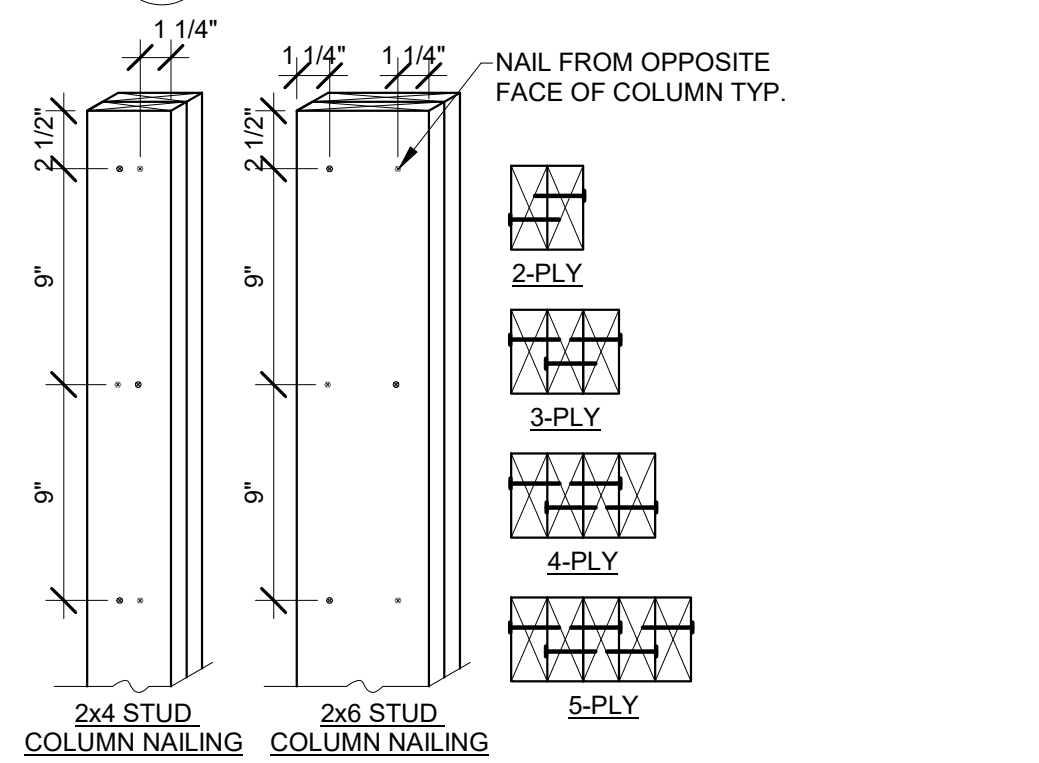
12 RAFTER TIE CONNECTION
1/2" = 1'-0"



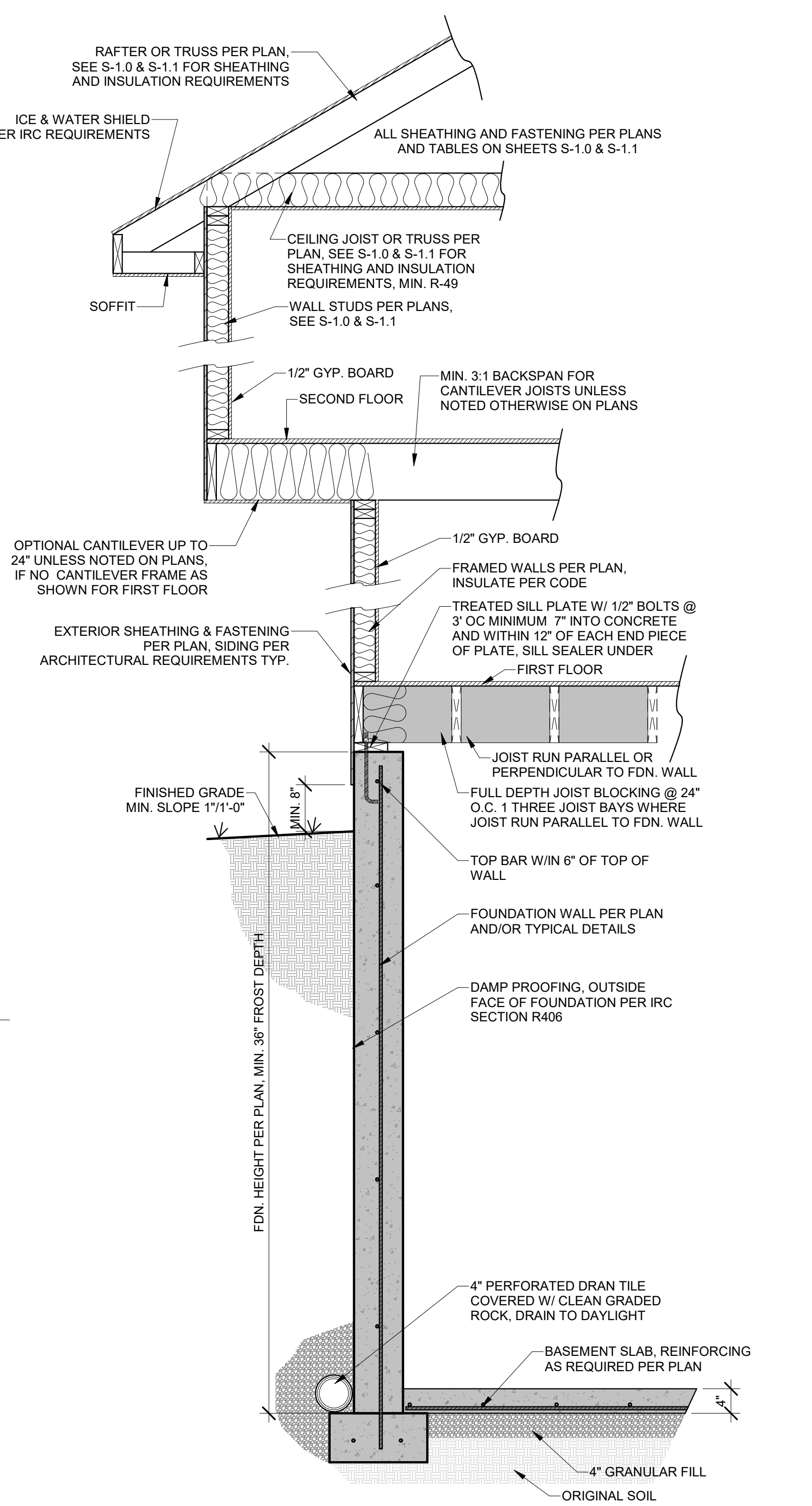
13 RIDGE SUPPORT
1/2" = 1'-0"



4 STAIR/ RAIL DETAIL
1/2" = 1'-0"



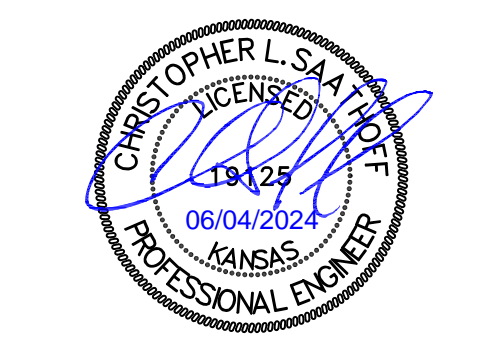
3 BUILT-UP STUD COLUMN
1 1/2" = 1'-0"



1 TYPICAL WALL SECTION
3/4" = 1'-0"

DUE TO THE WIDE VARIETY OF SOIL CONDITIONS IN OUR AREA AND THE WIDE VARIETY OF PLASTICITY INDEX AND SOIL BEARING CAPACITIES OUR FIRM RECOMMENDS ALL SITES BE EVALUATED BY HD ENGINEERING OR AN HD ENGINEERING REFERRED GEOTECHNICAL FIRM PRIOR TO PLACEMENT OF ANY "STANDARD" FOUNDATIONS.

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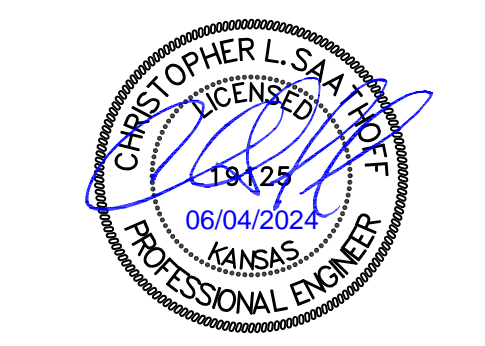
HD#: 47748
DATE: 06/04/2024
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NO.	ISSUE/REVISION	Revision Date

FRAMING SECTIONS
S-1.2

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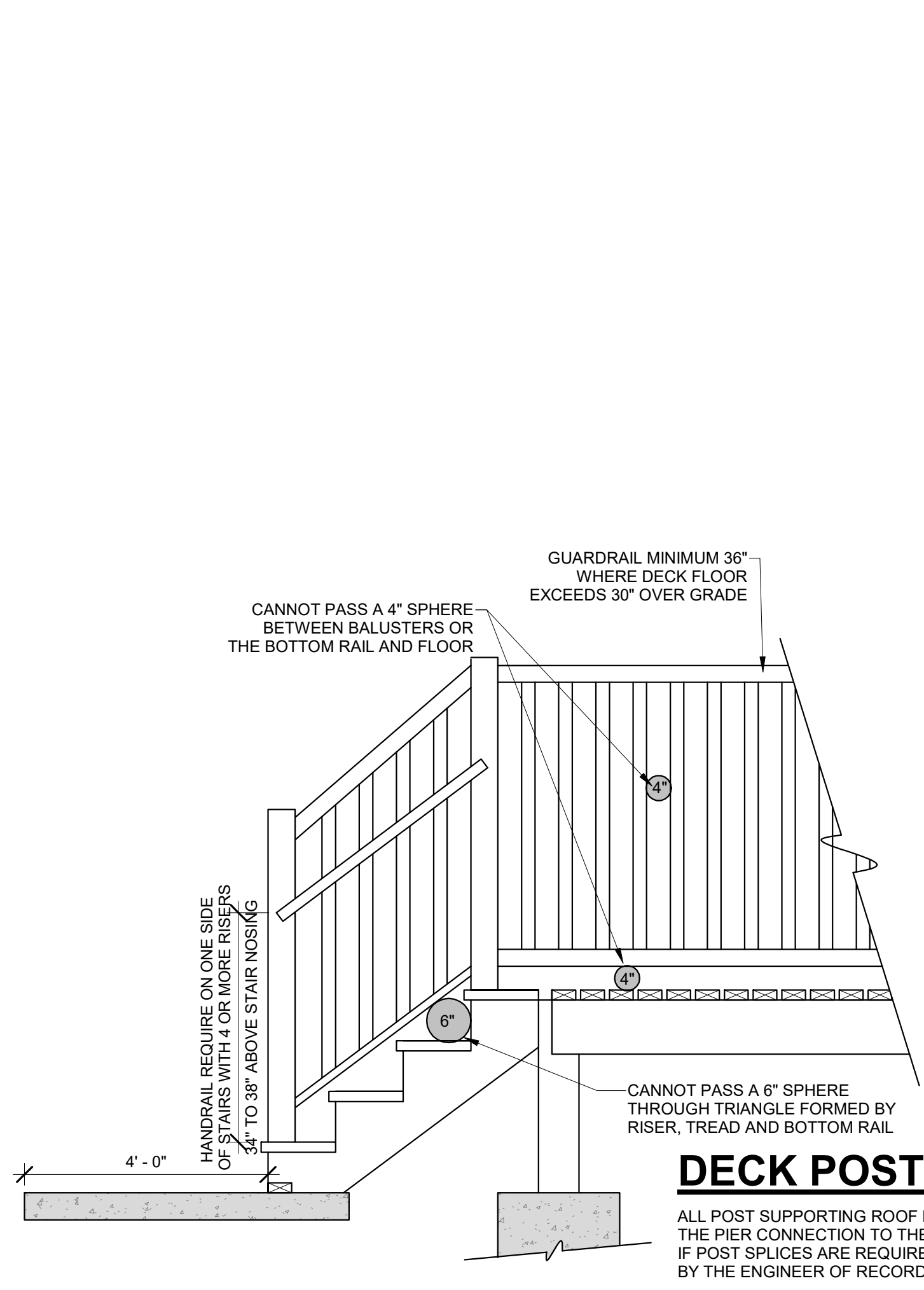
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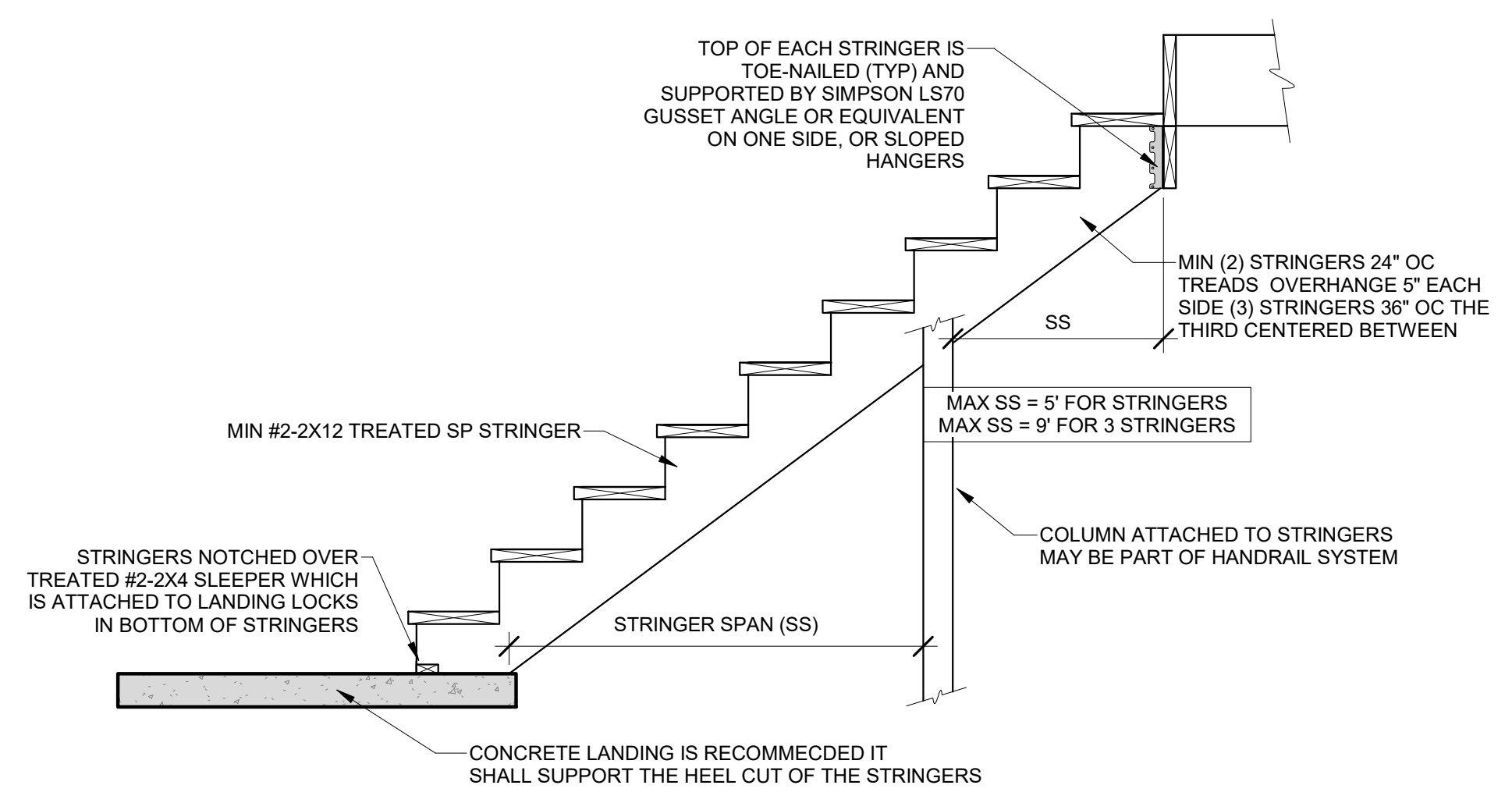
NO.	ISSUE/REVISION	Revision Date

DECK DETAILS

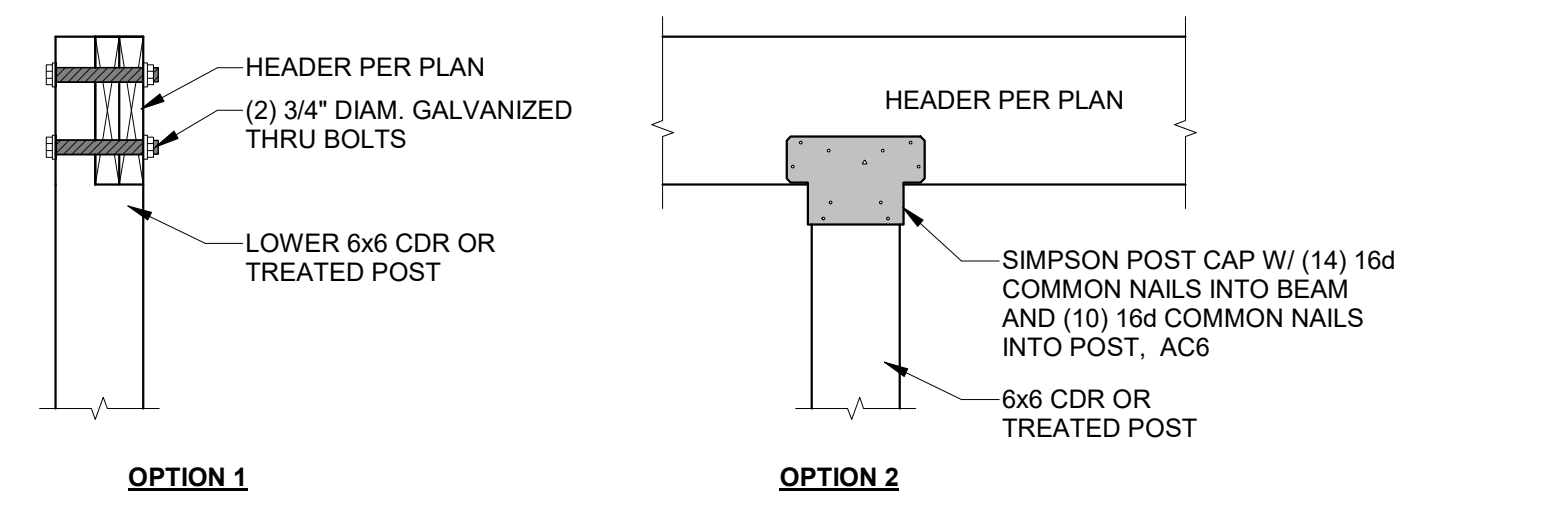
S-1.3



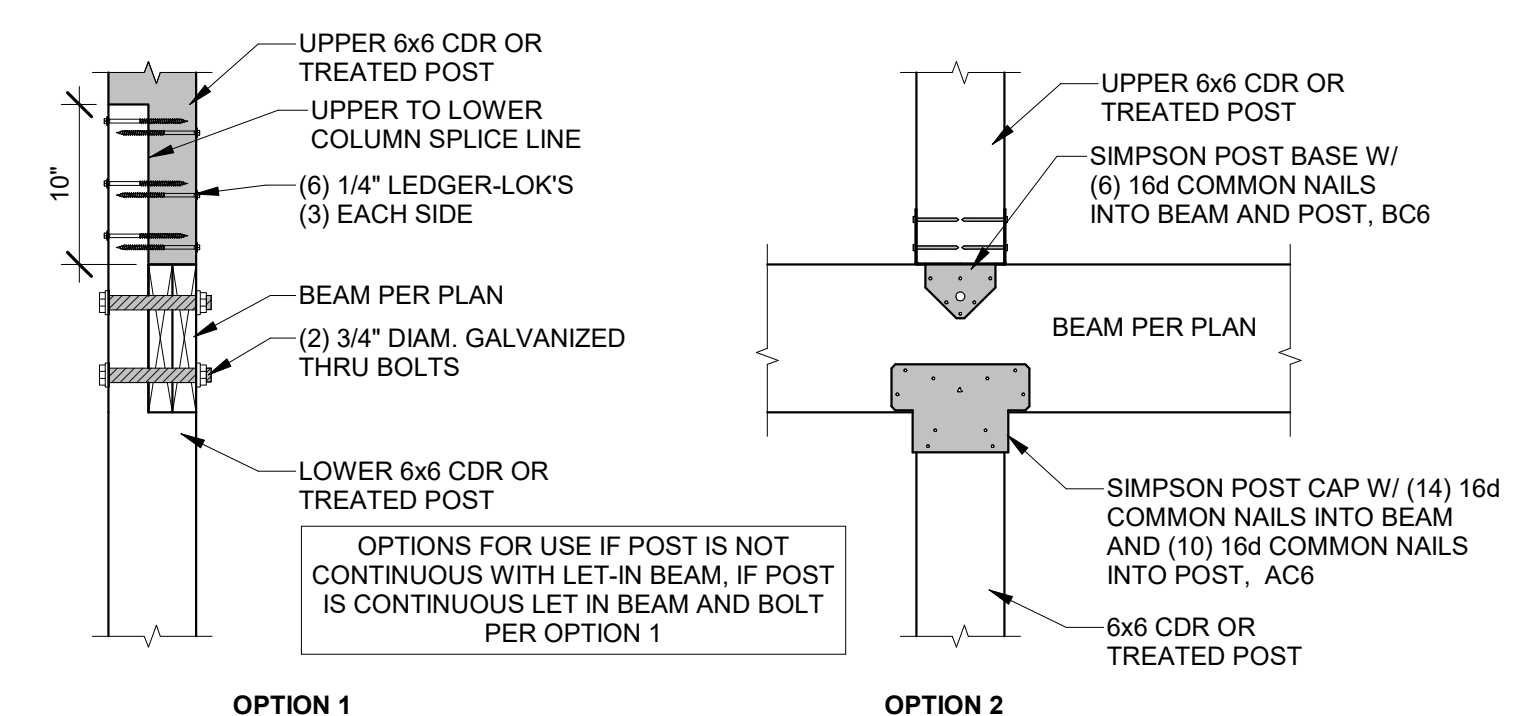
8 GUARD RAIL
 1/2" = 1'-0"



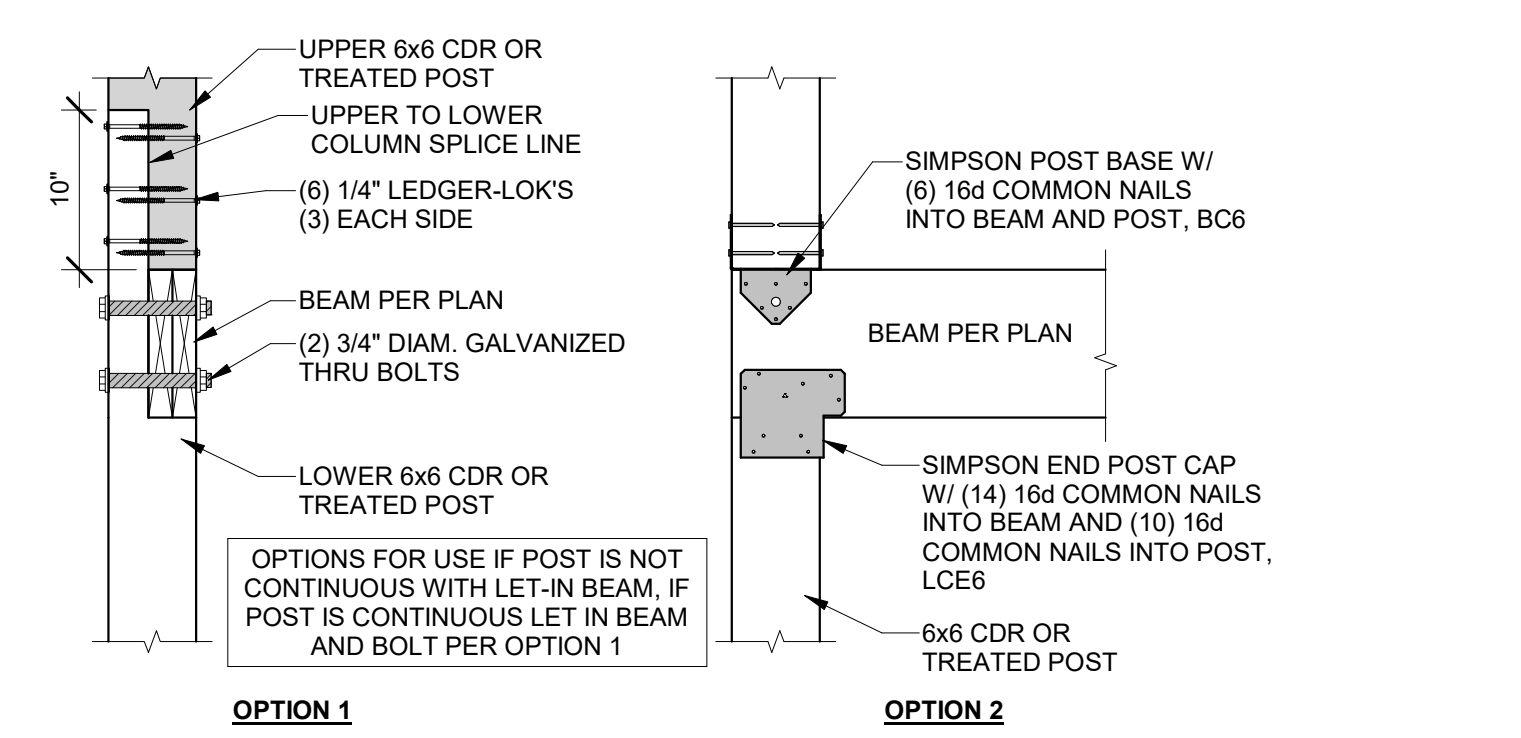
9 STAIR STRINGER DETAIL
 1/2" = 1'-0"



7 ROOF LEVEL INTERIOR BEAM TO COLUMN
 1" = 1'-0"



6 DECK LEVEL INTERIOR BEAM TO COLUMN
 1" = 1'-0"



5 DECK LEVEL EXTERIOR BEAM TO COLUMN
 1" = 1'-0"

TABLE IRC2018 R507.9.1.3(1)
DECK LEDGER CONNECTION TO BAND JOIST^{a,b}
 (DECK LIVE LOAD = 40 PSF, DECK HEAD LOAD = 10 PSF, SNOW LOAD ≤ 40 PSF)

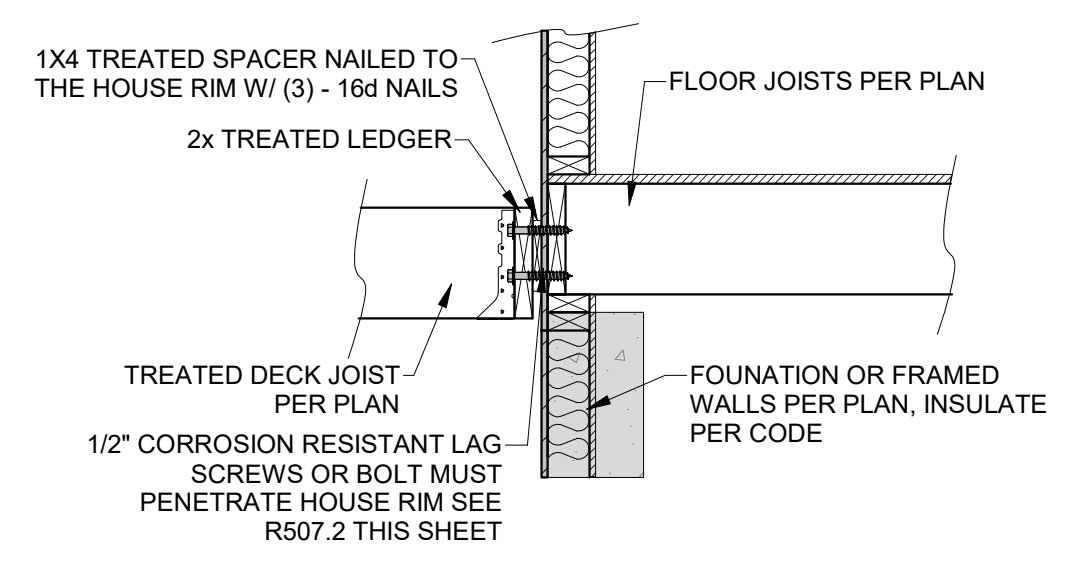
JOIST SPAN	6' AND LESS	6'-1" TO 8'	8'-1" TO 10'	10'-1" TO 12'	12'-1" TO 14'	14'-1" TO 16'	16'-1" TO 18'
CONNECTION DETAILS	ON-CENTER SPACING OF FASTENERS ^{c,d}						
1/2" LAG SCREW WITH 15/32" MAX. SHEATHING ^{c,d}	30	23	18	15	13	11	10
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING ^d	36	36	34	29	24	21	19
1/2" DIAM. BOLT WITH 15/32" MAX. SHEATHING & 1/2" STACKED WASHERS ^e	36	36	29	24	21	18	16

For SI: 1 inch = 25.4mm, 1 foot = 304.8mm, 1 pound per square foot = 0.0479 kPa
 a. Ledges shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
 b. Snow load shall not be assumed to act concurrently with live load.
 c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
 d. Sheathing shall be wood structural panel or solid sawn lumber.
 e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard lumber or foam sheathing. Up to 1/2" thickness of stacked washers shall be permitted to substitute for you to 1/2" of allowable sheathing thickness where combined with wood structural panel or lumbers sheathing.

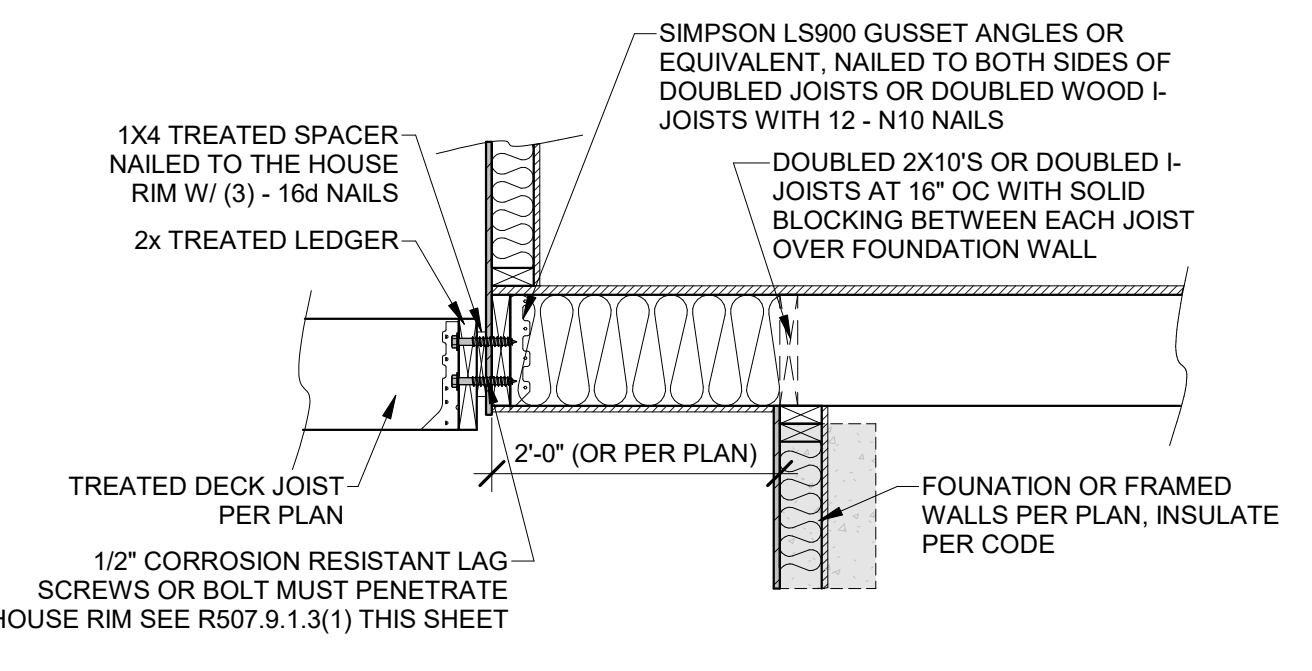
TABLE IRC2018 R507.9.1.3(2)
PLACEMENT OF LAG SCREWS AND BOLT IN DECK LEDGERS AND BAND JOISTS

	MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS			
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
LEDGER ^a	2 inches ^d	3/4 inches	2 inches ^b	1 5/8 inches ^b
BAND JOIST ^c	3/4 inches	2 inches	2 inches	1 5/8 inches ^b

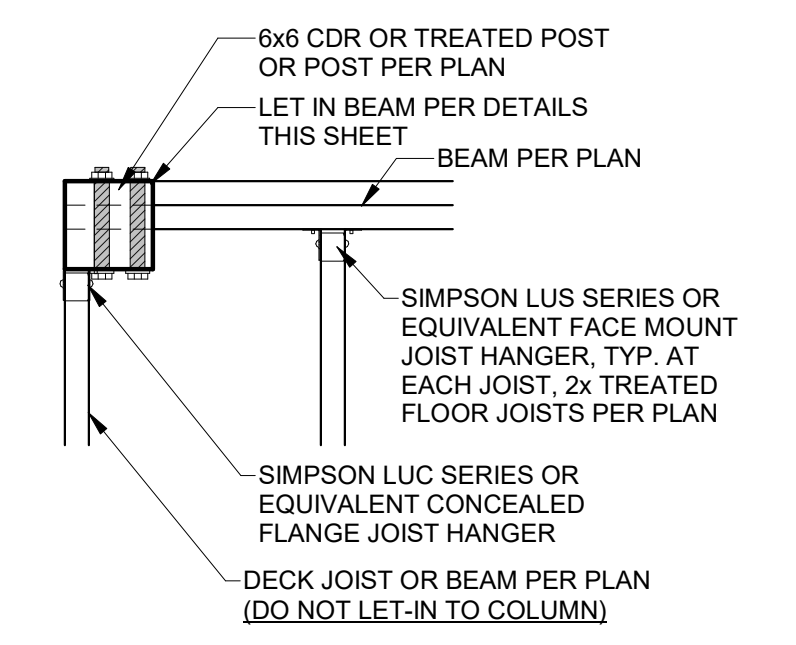
For SI: 1 inch = 25.4mm.
 a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1)
 b. Maximum 5 inches
 c. For engineered rim joists, the manufacturer's recommendations shall govern.
 d. The minimum distances from bottom row of lag screws or bolts to the top of the ledger shall be in accordance with Figure R507.9.1.3(1)



2 DECK LEDGER ATTACHMENT
 3/4" = 1'-0"



4 DECK LEDGER TO CANTILEVER
 3/4" = 1'-0"



1 DECK CORNER COLUMN
 1" = 1'-0"

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

STUD SIZE (INCHES)	BEARING WALLS				NON-BEARING WALLS	
	LATERALLY UNSUPPORTED STUD HEIGHT ^b (FEET)	MAXIMUM SPACING WHERE SUPPORTING A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY, ONLY (INCHES)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (INCHES)	MAXIMUM SPACING WHERE SUPPORTING TWO FLOORS, PLUS A ROOF-CEILING ASSEMBLY OR A HABITABLE ATTIC ASSEMBLY (INCHES)	MAXIMUM SPACING WHERE SUPPORTING ONE FLOOR HEIGHT ^c (INCHES)	MAXIMUM SPACING (INCHES)
2 x 3 ^b	---	---	---	---	---	16
2 x 4	10	24 ^c	16 ^c	---	24	24
3 x 4	10	24	24	16	24	24
2 x 5	10	24	24	---	24	24
2 x 6	10	24	24	16	24	24

For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm.
^a LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATERAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALLS SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE OR BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE STUD. INCREASES IN UNSUPPORTED HEIGHT ARE PERMITTED WHERE IN COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.
^b SHALL NOT BE USED IN EXTERIOR WALLS.
^c A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2 x 4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2 x 6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

RESIDENTIAL SEISMIC & WIND ANALYSIS

LOCATION	DEAD LOAD (psf)	AREA (ft ²)	WEIGHT (lbs.)
ROOF	10	3616	36160
CEILING	10	3313	33130
SECOND FLOOR	10	854	8540
FIRST FLOOR	10	2327	23270
SECOND FLOOR EXT. WALL DL	171	8	14944
FIRST FLOOR EXT. WALL DL	245	10	24500
SECOND FLOOR INT. PARTITION WALL DL	6	854	5124
FIRST FLOOR INT. PARTITION WALL DL	6	2327	13962

AREA	LOAD	AREA	LOAD
SLOPED ROOF	974	6204	544
VERT. ROOF	153	1953	173
2ND	382.5	4900	14987
1ST	698.5	8985	23842
2ND	382.5	4900	14987
1ST	698.5	8985	23842

LOCATION	SEISMIC SHEAR
2ND FLOOR	1094
1ST FLOOR	1497

Sheathing Location	Min. Sheathing Schedule	Fastening Schedule	Allowable Shear (k/ft)	Code Reference
Exterior (Option #4)	7/16" APA Rated Plywood/OSB or shiplap panel sheathing, or 3/8" shiplap panel sheathing with lighter nail spacing	8d Common Nails w/ 1-3/8" penetration @ 6" O.C. Edges, 12" O.C. Field for 7/16" APA-rated plywood/OSB or shiplap panel sheathing OR @ 4" O.C. Edges, 12" O.C. Field for 3/8" shiplap panel sheathing	220	AF&PA SDPWS Table 4.3A
Interior	1/2" Gypsum Board	No. 6-1 1/2" Type W or S Screws @ 8" O.C. Edges, 12" O.C. Field	60	per IBC, Table 2306.4.4
Interior	16 Ga. Simpson/USP Type WB Steel X-Brace (or equal)	(3) 16d @ end studs & (1) 8d @ intermediate studs (per manufacturer specifications - see detail on sheet S3)	325	

EXTERIOR SHEATHING OPTION FOR SECOND FLOOR	4
EXTERIOR SHEATHING OPTION FOR FIRST FLOOR	4

SEISMIC	WIND
FRONT-TO-BACK RESISTANCE (lbs.)	FRONT-TO-BACK RESISTANCE (lbs.)
2ND FLOOR 65	25480
1ST FLOOR 69	34888

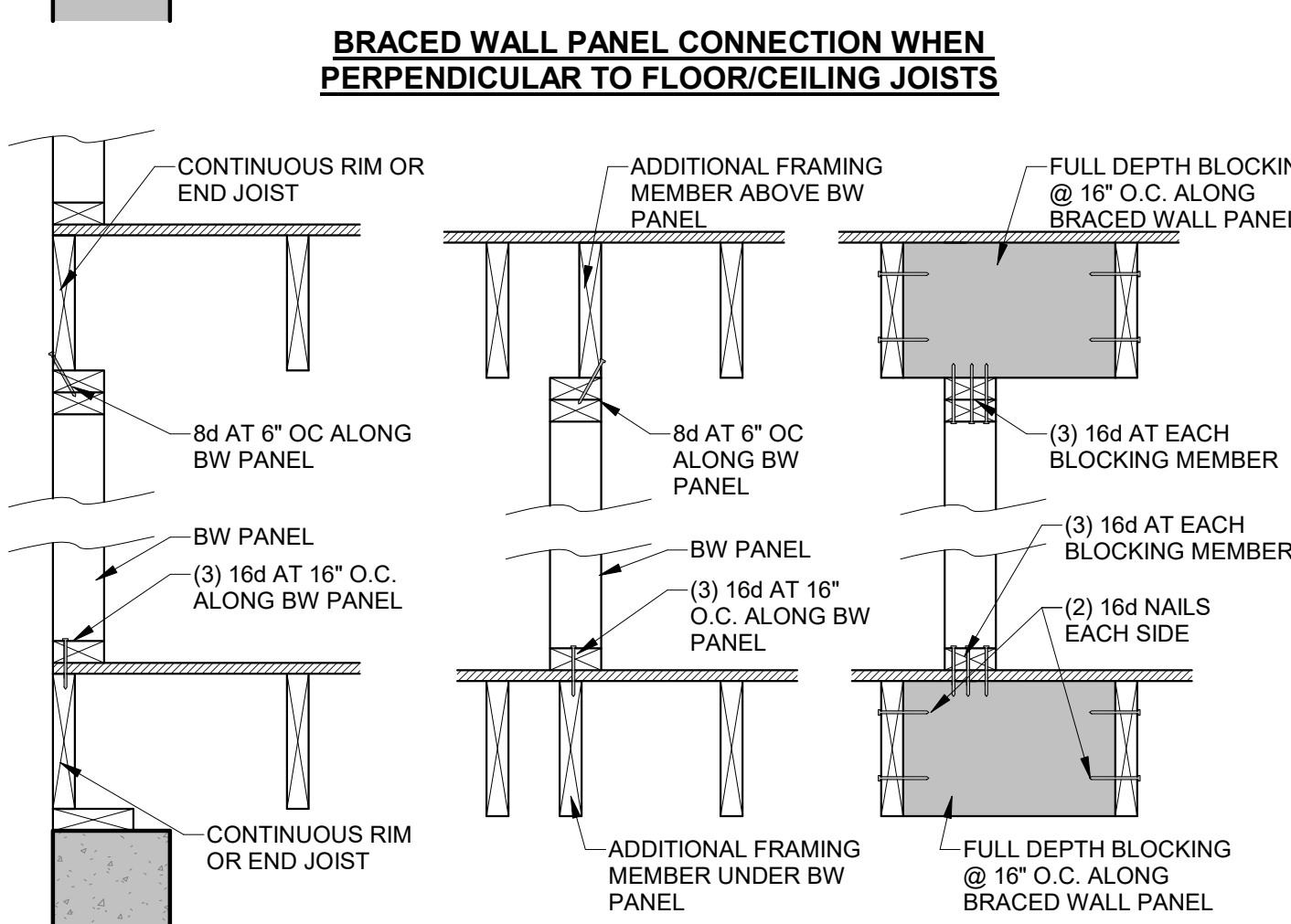
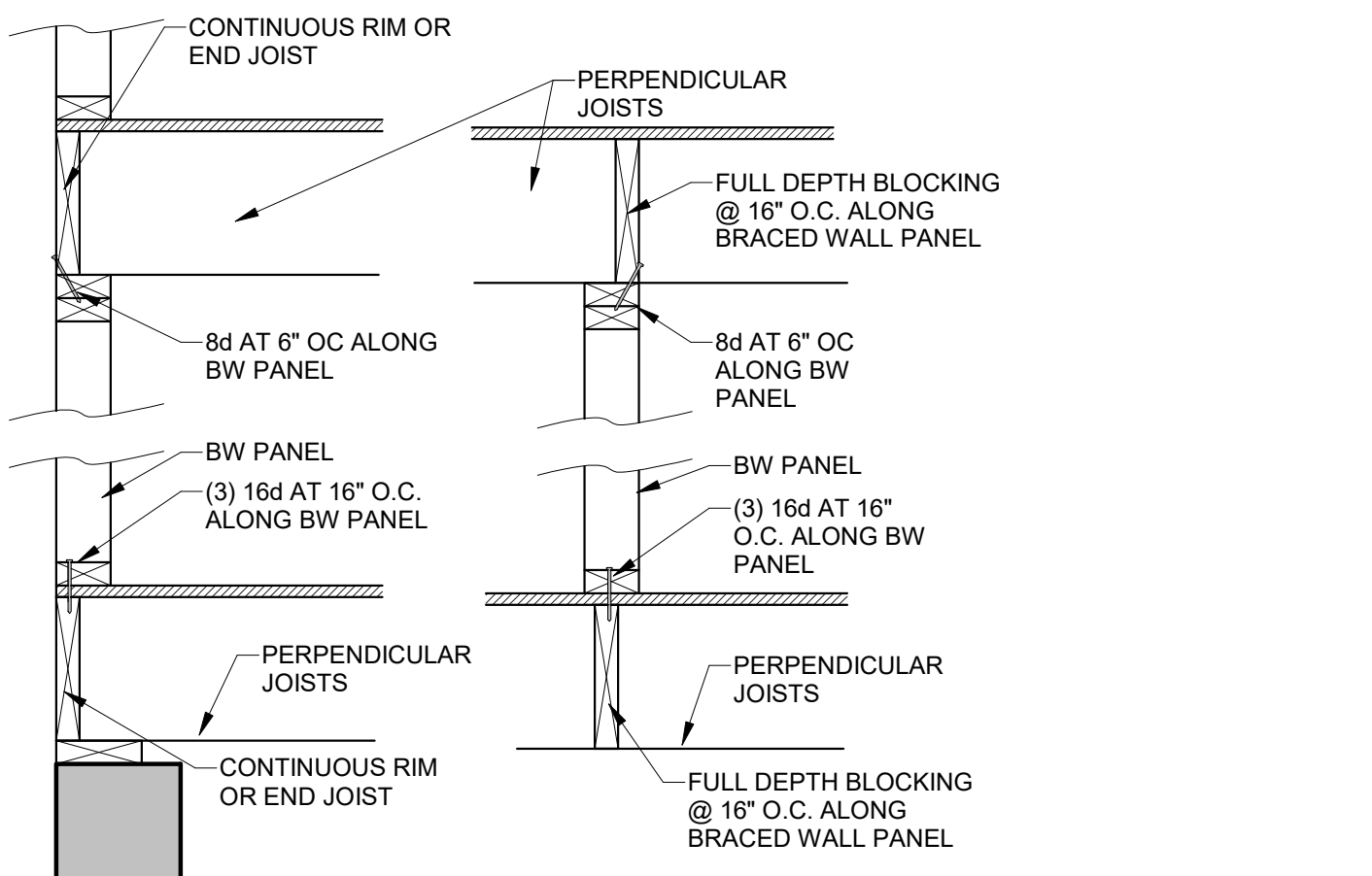
ADDITIONAL RESISTANCE REQUIRED	RESISTANCE PROVIDED BY EXTERIOR WALLS ^{**}	RESISTANCE PROVIDED BY ADDITIONAL METHODS (POUNDS)	OK?
2ND FLOOR FRONT-TO-BACK 0	0	0	YES
2ND FLOOR SIDE-TO-SIDE 0	0	0	YES
1ST FLOOR FRONT-TO-BACK 0	0	0	YES
1ST FLOOR SIDE-TO-SIDE 0	0	0	YES

WIND UPLIFT ANALYSIS	
ROOF PITCH (MAX)	10
DEGREES	3.8
PITCH OF 8 OR LESS: EOH-13.3, E-7.2, G-5.2	
ASCE 7	
OVERHANG LENGTH (FT.)	2.42
PRESSURE (PSF)	-1.08
LINAL FT. OF OH	-1.08
UPLIFT PER FT. (LBS)	
TOTAL AREA (FT ²)	1274.84
ZONE E AREA (FT ²)	2313.11
PRESSURE ZN. G (PSF)	-1.08
TOTAL FORCE (LBS)	-2209
FORCE PER LINEAL FT. @ PERIMETER (LBS)	-9.2
MAIN ROOF**	3587.75
PRESSURE ZN. E (PSF)	-1.08
TOTAL UPLIFT PER LINEAL FOOT ALONG EXTERIOR (POUNDS)	-10.3
RESISTANCE DUE TO DEAD WEIGHT & (2) 1M TONGUES	251.6
UPLIFT OK	

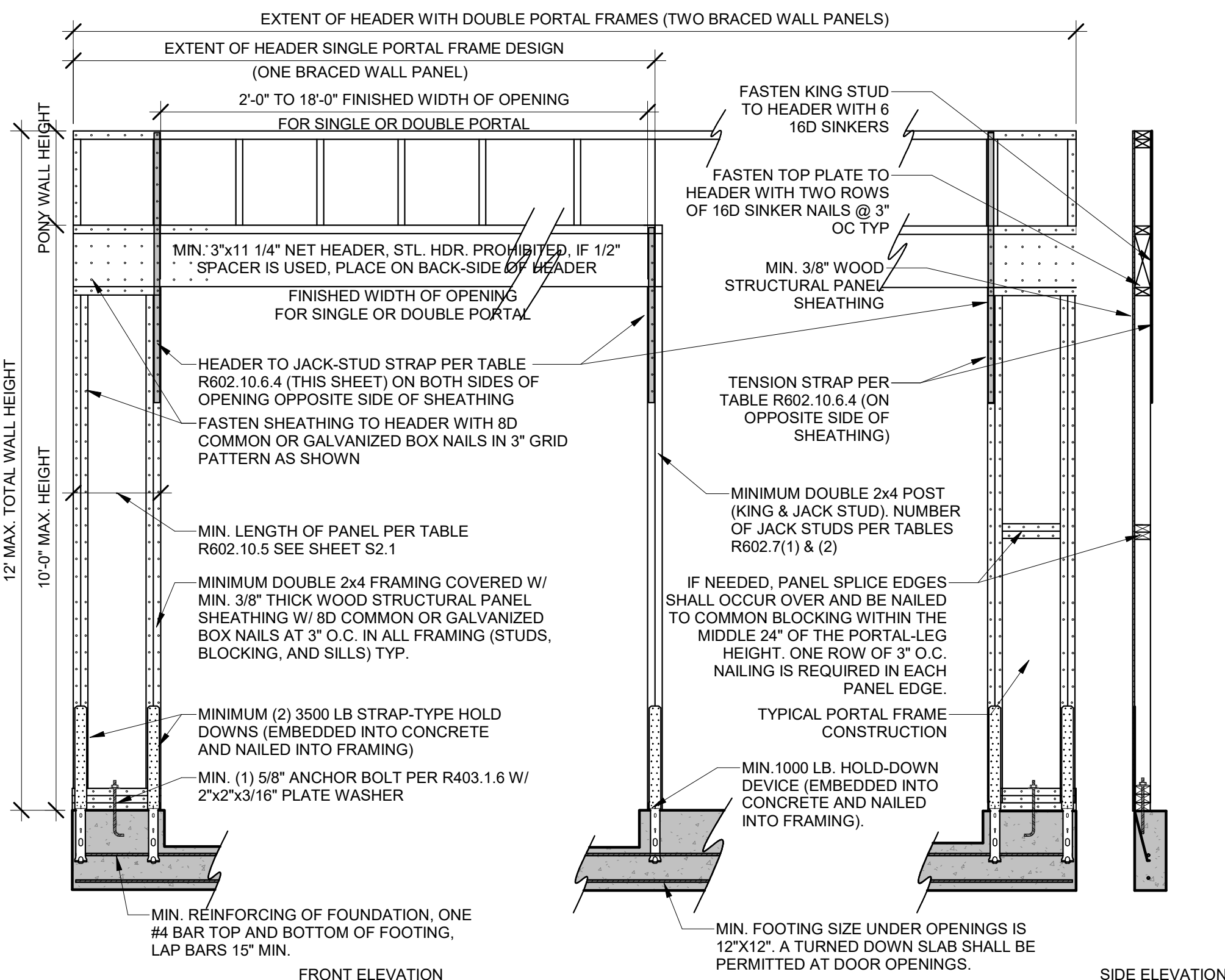
NOTE FOR CONSTRUCTION: THE CONTINUOUS STRUCTURAL PANEL SHEATHING BRACING METHOD REQUIRES USE OF THE ABOVE TABLE FOR SHEATHING OF THE ENTIRE STRUCTURE. IN ADDITION, FRAMING MEMBERS SHALL BE @ 16" O.C. MAX UNLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS.

NOTE FOR DESIGN: ALL WALLS USED IN THE CALCULATION OF THE RESISTANCE FOR THIS STRUCTURE SHALL HAVE A MINIMUM UNINTERRUPTED HEIGHT OF 8'-0" AND LENGTH OF 2'-8". ALLOWABLE RESISTANCES HAVE BEEN #/FT AND INCREASED BY 40% FOR WIND LOADS, PER VALUES IN 2018 IBC SECTION 2306 AND AF&PA SDPWS TABLE 4.3A. FOR EXAMPLE, 7/16" APA-RATED SHEATHING WITH 8d @ 6" & 12" HAS A SEISMIC SHEAR VALUE OF 2; A WIND SHEAR VALUE OF 3587.75 FT. - 40% GREATER THAN THAT OF SEISMIC.

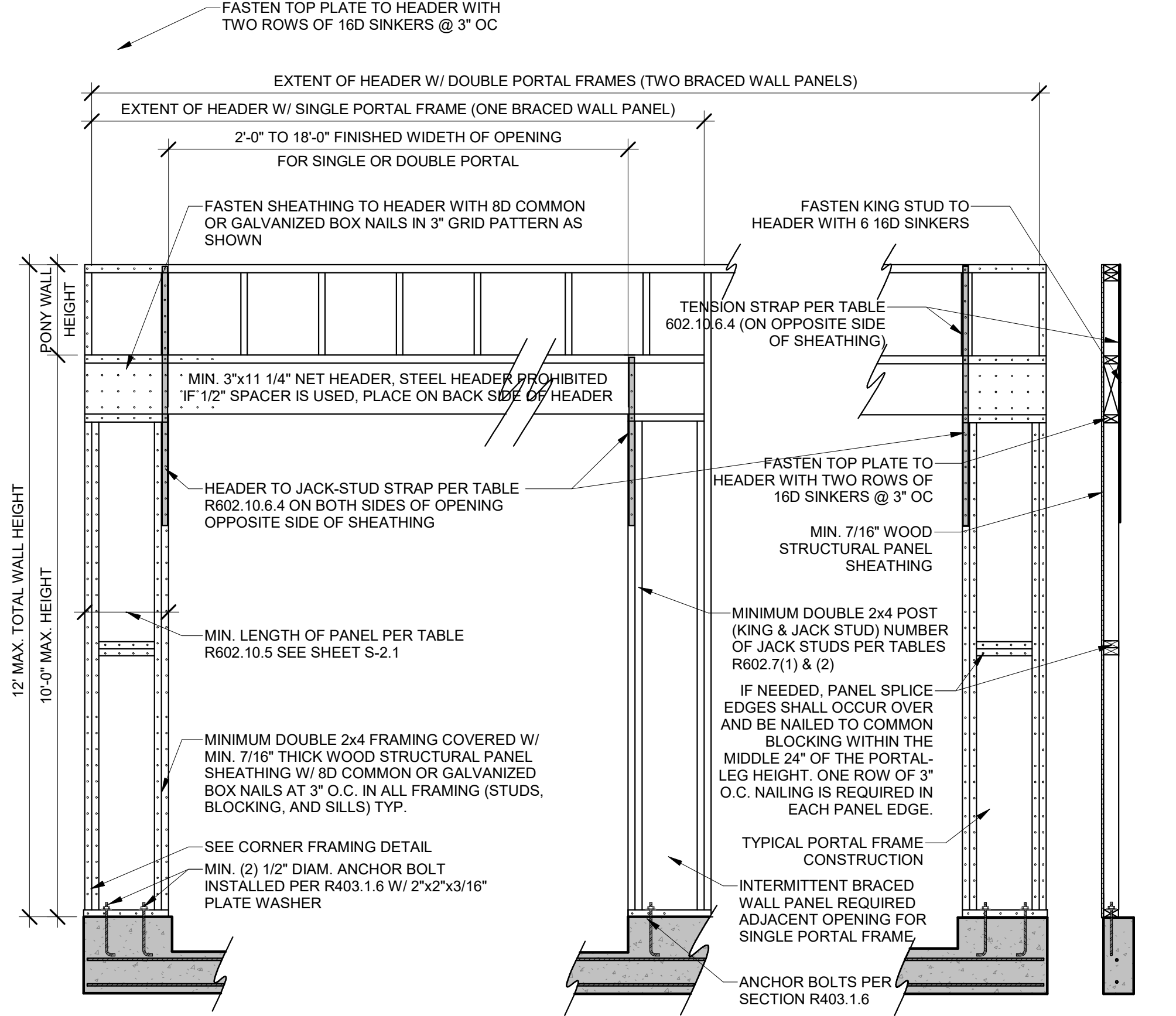
NOTE: SOIL SITE CLASS ASSUMED TO BE CLASS D. IF SITE CONDITIONS ARE DETERMINED TO BE CLASS E OR F, CONSULT ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.



BRACED WALL PANEL CONNECTIONS

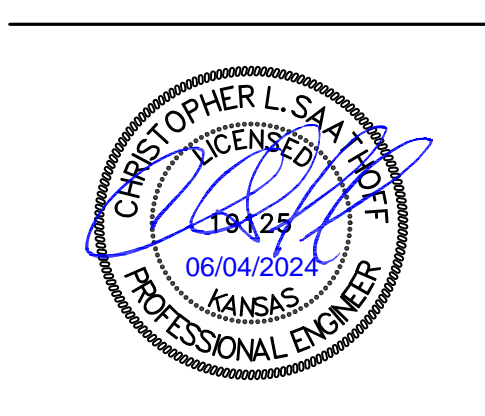


1 PFH PORTAL FRAME W/ HOLD DOWNS (R602.10.6.2)
1/2" = 1'-0"



2 PFG PORTAL FRAME W/OUT HOLD DOWNS (R602.10.6.3)
1/2" = 1'-0"

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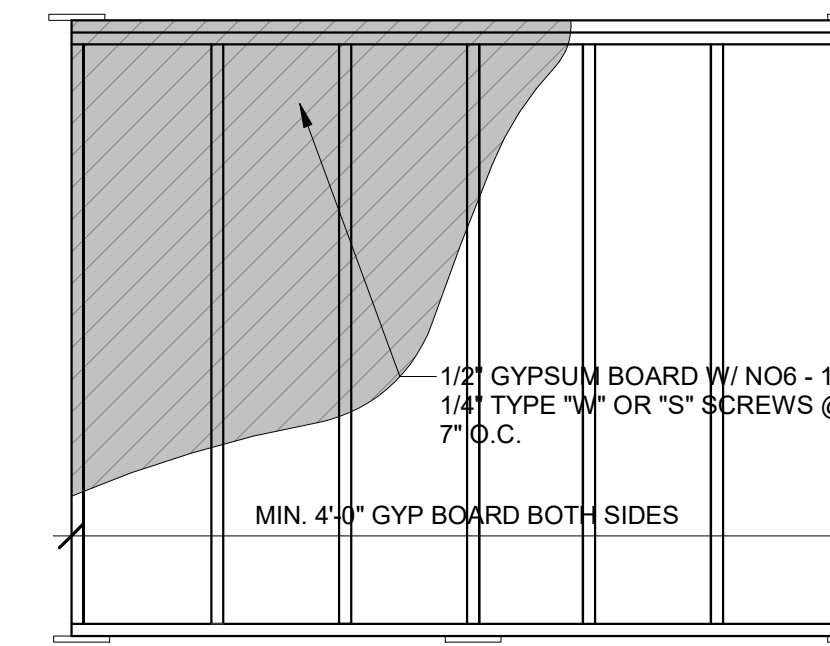
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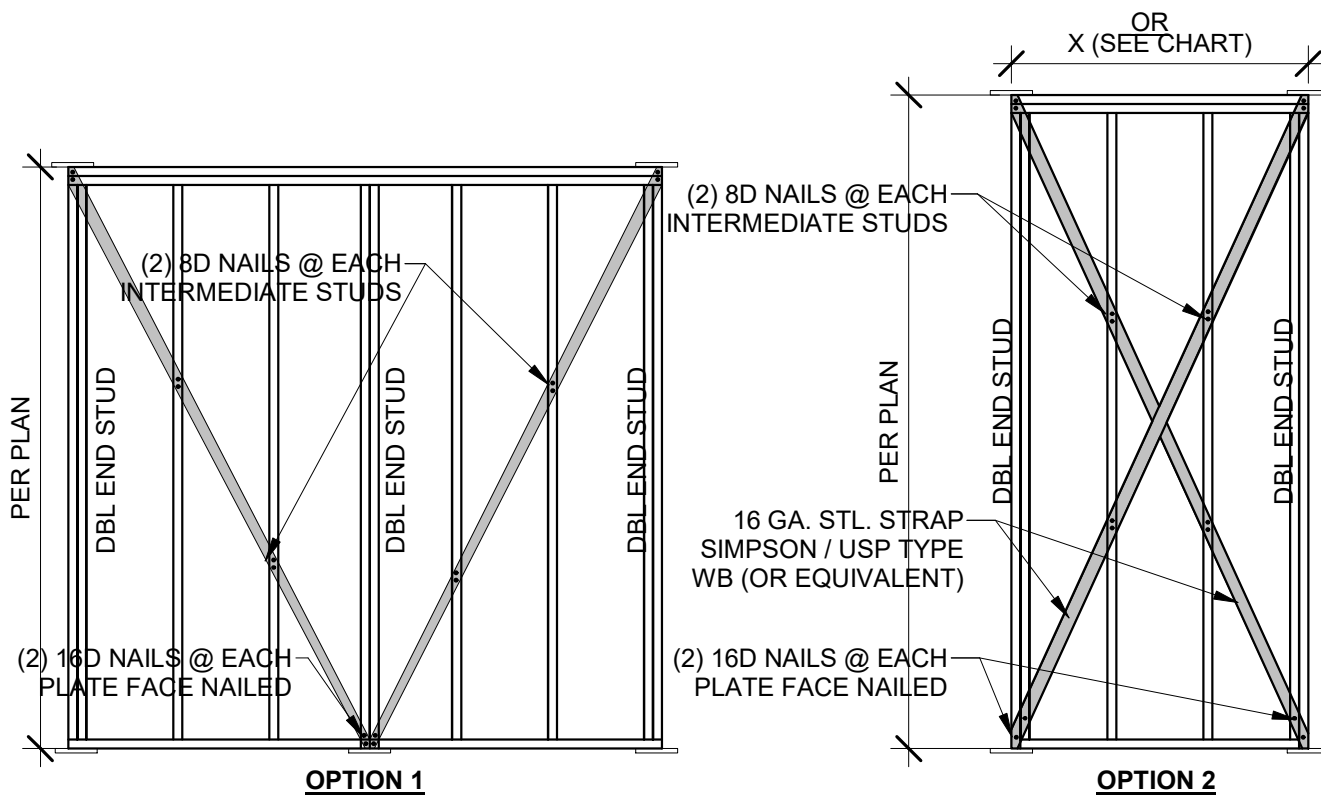
BRACED WALL NOTES & DETAILS

S-2.0

TENSION STRAP CAPACITY REQUIRED FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHOD PFH, PFG AND CS-PF BRACED WALL PANELS IRC2018 TABLE R602.10.6.4



5 GB BRACING
1/2" = 1'-0"



6 LIB BRACING
3/8" = 1'-0"

BRACED WALL PANEL LENGTH BASED ON WALL HEIGHT FOR IRC, LIB		
WALL HEIGHT	MIN. WALL LENGTH (X)	MAX. WALL LENGTH (X)
8'-0"	4'-7"	8'-0"
9'-0"	5'-2"	9'-0"
10'-0"	5'-9"	10'-0"
11'-0"	NP	---
12'-0"	NP	---

MINIMUM WALL STUD FRAMING NOMINAL SIZE & GRADE	MAX. PONY WALL HEIGHT (FEET)	MAX. TOTAL WALL HEIGHT (FEET)	MAX. OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQUIRED (POUNDS) ^a	
				ULTIMATE DESIGN WIND SPEED V (MPH)	
				115	115
				EXPOSURE B	EXPOSURE C
2X4 NO. 2 GRADE	0	10	18	1,000	1,000
			9	1,000	1,000
			16	1,025	2,500
	1	10	18	1,275	2,850
			9	1,000	1,875
			16	2,175	4,125
	2	10	18	2,500	DR
			9	1,500	3,175
			16	3,375	DR
	2	12	18	3,975	DR
			9	2,750	DR
			12	3,775	DR
2X6 STUD GRADE	2	12	9	1,000	2,025
			16	2,150	3,675
			18	2,550	DR
	4	12	9	1,750	3,125
			16	2,400	DR
			18	3,800	DR

a. DR = DESIGN REQUIRED
b. STRAP SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

FOR IRC CODE PRESCRIPTIVE METHOD
TABLE R602.10.5 MINIMUM LENGTH OF BRACED WALL PANELS

METHOD (SEE TABLE R602.10.4)	MINIMUM LENGTH (INCHES) ^a					CONTRIBUTING LENGTH (INCHES)	
	WALL HEIGHT						
	8 FEET	9 FEET	10 FEET	11 FEET	12 FEET		
DWB,WSP,SFB,PBS,PCP,HPS,BV-WSP	48	48	48	53	58	ACTUAL ^b	
GB	48	48	48	53	58	DOUBLE SIDED = ACTUAL SINGLE SIDED = .5xACTUAL	
LIB	55	62	69	NP	NP	ACTUAL ^b	
ABW	SDC A, B, AND C ULTIMATE DESIGN WIND SPEED <140	28	32	34	38	42	48
	SDC D, D, D ULTIMATE DESIGN WIND SPEED <140	32	32	34	NP	NP	
PFH	SUPPORTING ROOF ONLY	16	16	16	NOTE C	NOTE C	48
	SPTNG. ONE STORY & ROOF	24	24	24	NOTE C	NOTE C	
PFG	24	27	30	NOTE D	NOTE D	1.5 x ACTUAL ^b	
CS-G	24	27	30	33	36	ACTUAL ^b	
CS-PF	16	18	20	NOTE E	NOTE E	ACTUAL ^b	
ADJACENT CLEAR OPENING HEIGHT (INCHES)	≤64	24	27	30	33	36	ACTUAL ^b
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	36	36	
	100	-	44	40	38	38	
	104	-	49	43	40	39	
	108	-	54	46	43	41	
	112	-	-	50	45	43	
	116	-	-	55	48	45	
	120	-	-	60	52	48	
	124	-	-	-	56	51	
128	-	-	-	61	54		
132	-	-	-	66	58		
136	-	-	-	-	62		
140	-	-	-	-	66		
144	-	-	-	-	72		

a. LINEAR INTERPOLATION SHALL BE PERMITTED
b. USE THE ACTUAL LENGTH WHEN IT IS GREATER THAN OR EQUAL TO THE MINIMUM LENGTH
c. MAX. HEADER HEIGHT FOR PFH IS 10' IN ACCORDANCE WITH R602.10.6.2. WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL
d. MAX. OPENING HEIGHT FOR PFG IS 10' IN ACCORDANCE WITH R602.10.6.3. WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL
e. MAX. OPENING HEIGHT FOR CS-PF IS 10' IN ACCORDANCE WITH R602.10.6.4. WALL HEIGHT MAY BE INCREASED TO 12' WITH PONY WALL

BRACED WALL PRESCRIPTIVE METHOD:
CONTINUOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW) UNLESS OTHERWISE NOTED ON THE PLAN

EXTERIOR BRACED WALL METHOD: (SEE ON THIS SHEET)
WSP METHOD:

WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" O.C. STUD SPACING WITH 6d COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" O.C. SPACING WITH 8d COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. IN FIELD
(NOTE: FRAMING MEMBERS 16" O.C. MAX. UNBLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS).

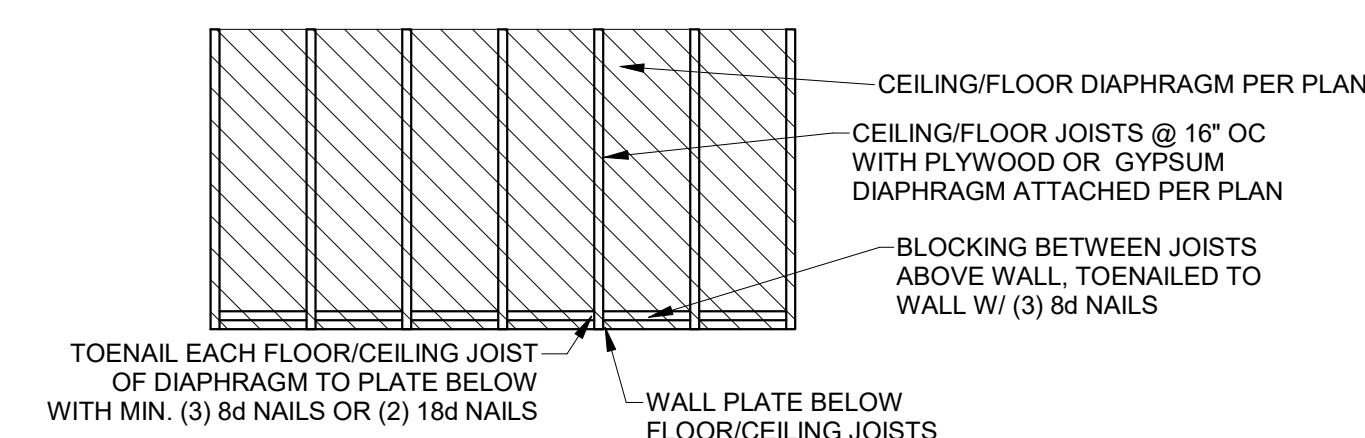
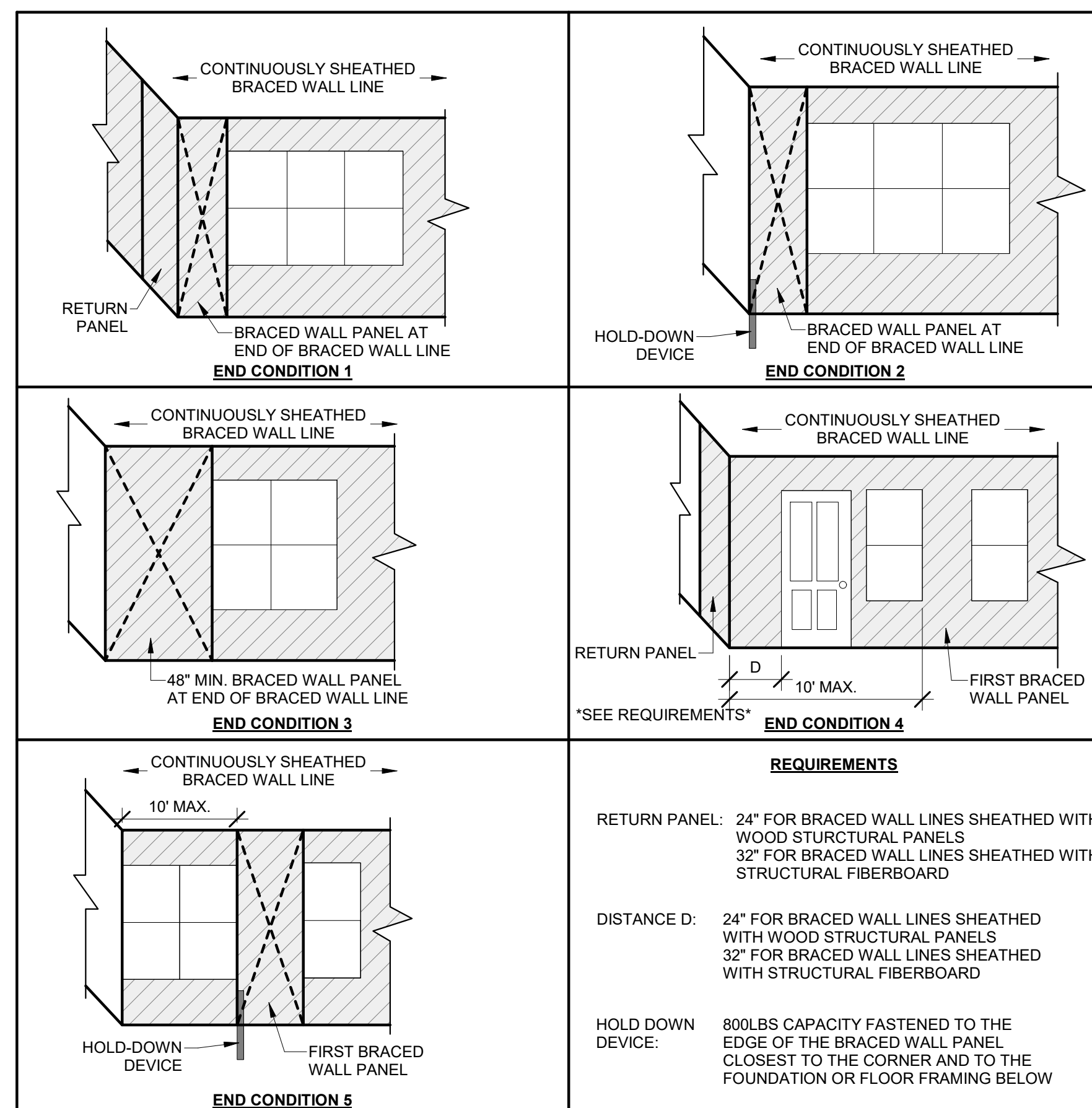
INTERIOR BRACED WALLS (SEE ON THIS SHEET)
GB METHOD:

1/2" MINIMUM GYPSUM BOARD OVER STUDS SPACED @ 24" MAXIMUM FASTENED W/ #6 - 1 1/4" TYPE "W" OR "S" DRYWALL SCREWS @ 7" O.C. EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES)
OR
LIB METHOD:

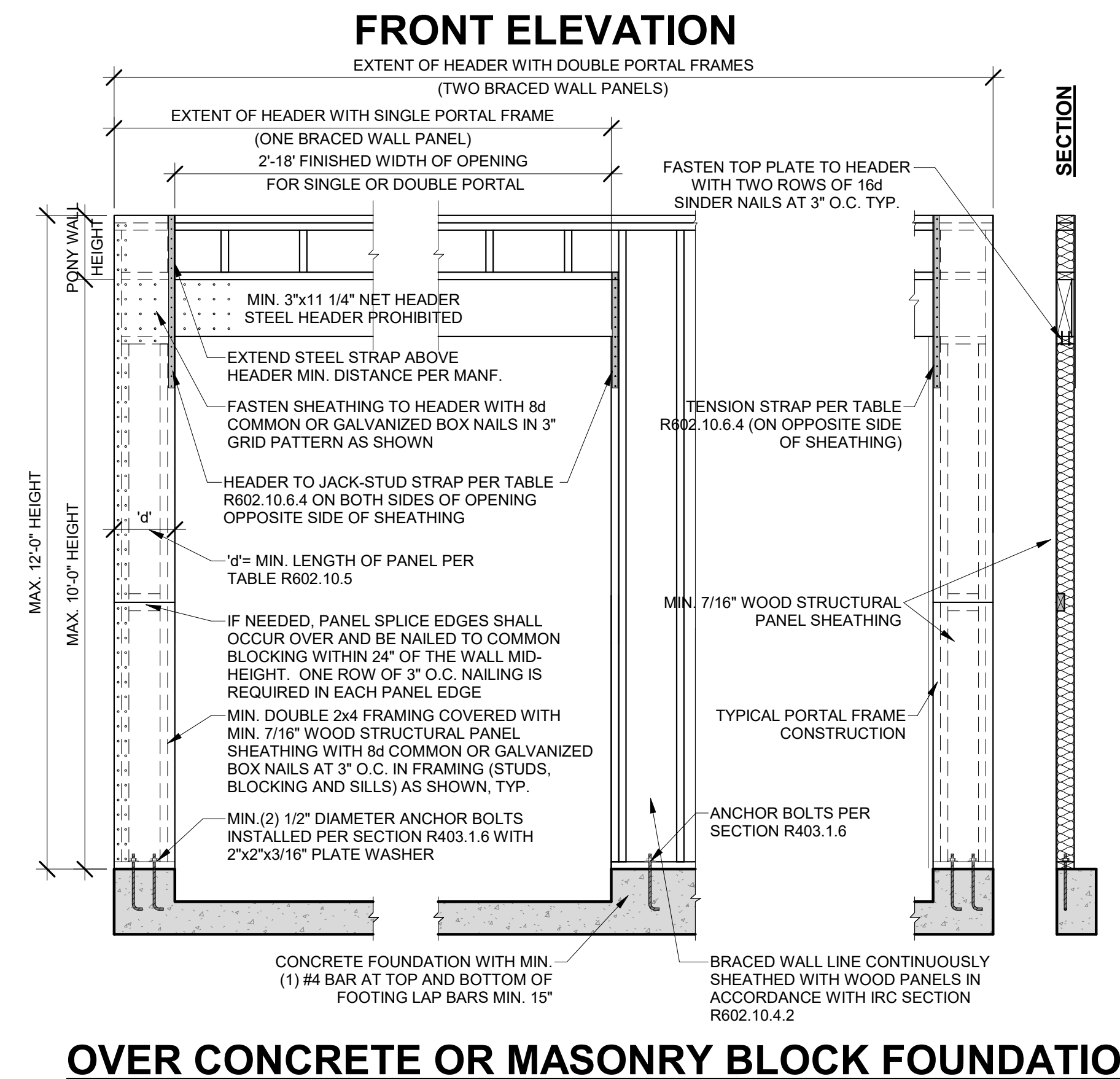
1X4 WOOD FASTENED W/ (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUIVALENT) STL. X-BRACE(S) @ 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUDS FASTENED PER MANUF. SPECS.

END WALL CONDITIONS

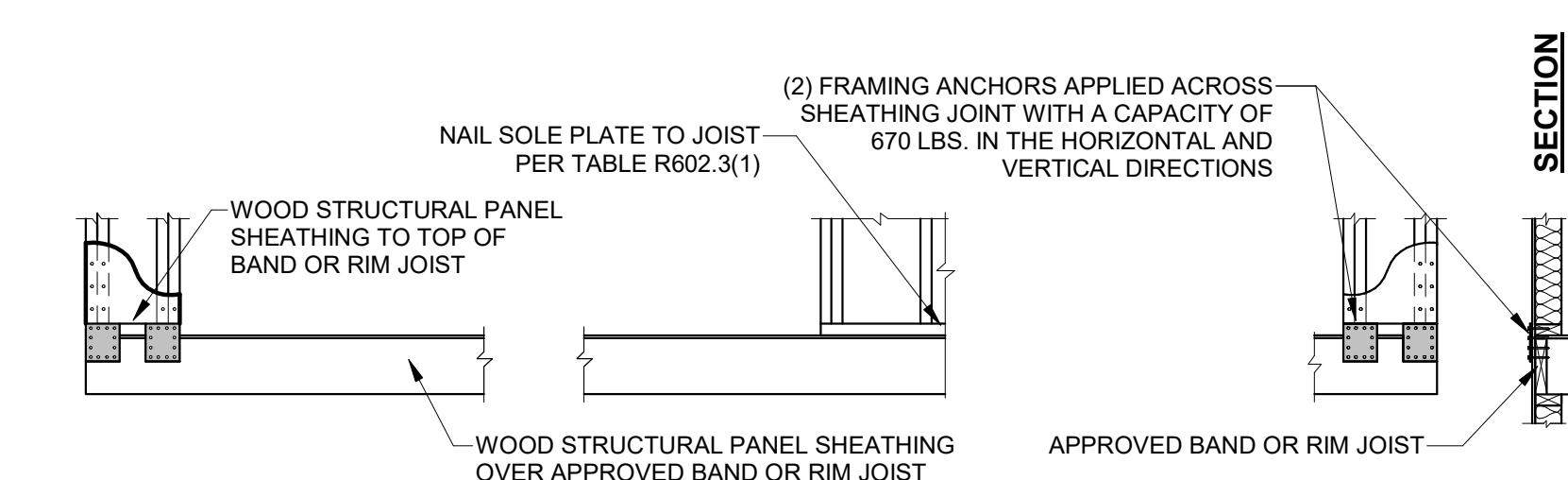
FOR CONTINUOUSLY SHEATHED BRACED WALL LINES



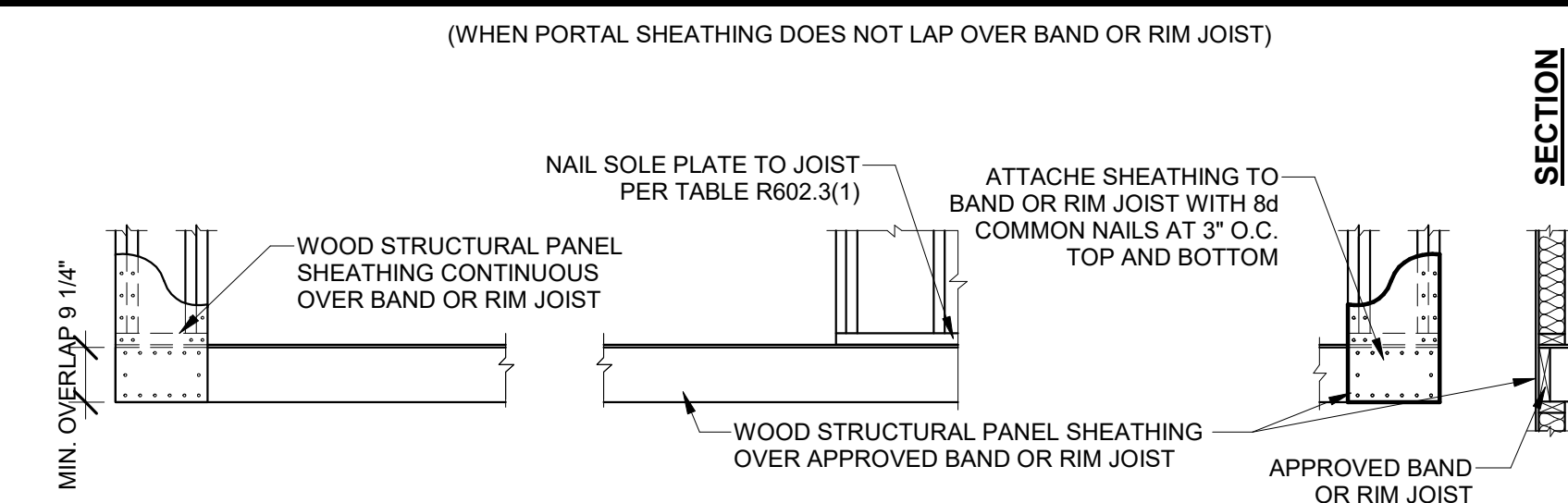
1 DIAPHRAGM CONNECTION TO INTERIOR WALL
3/8" = 1'-0"



OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION



OVER RAISED WOOD FLOOR - OVERLAP OPTION

4 CS-PF
1/2" = 1'-0"

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 STRUCTURAL DETAILS & NOTES

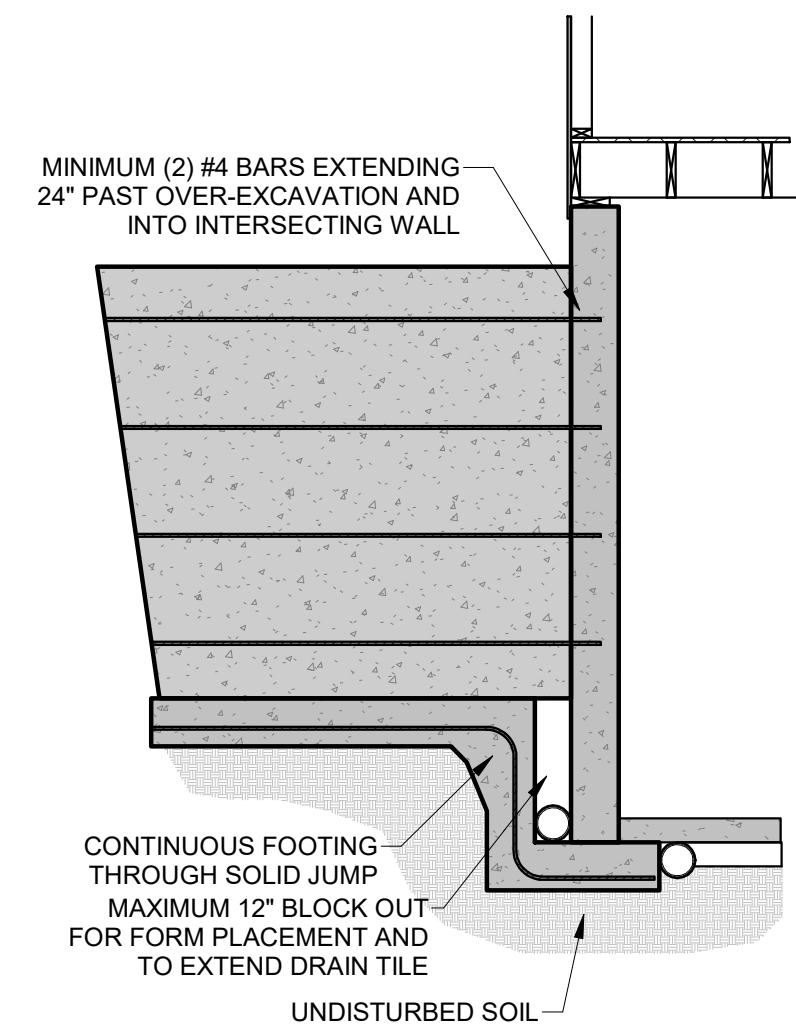
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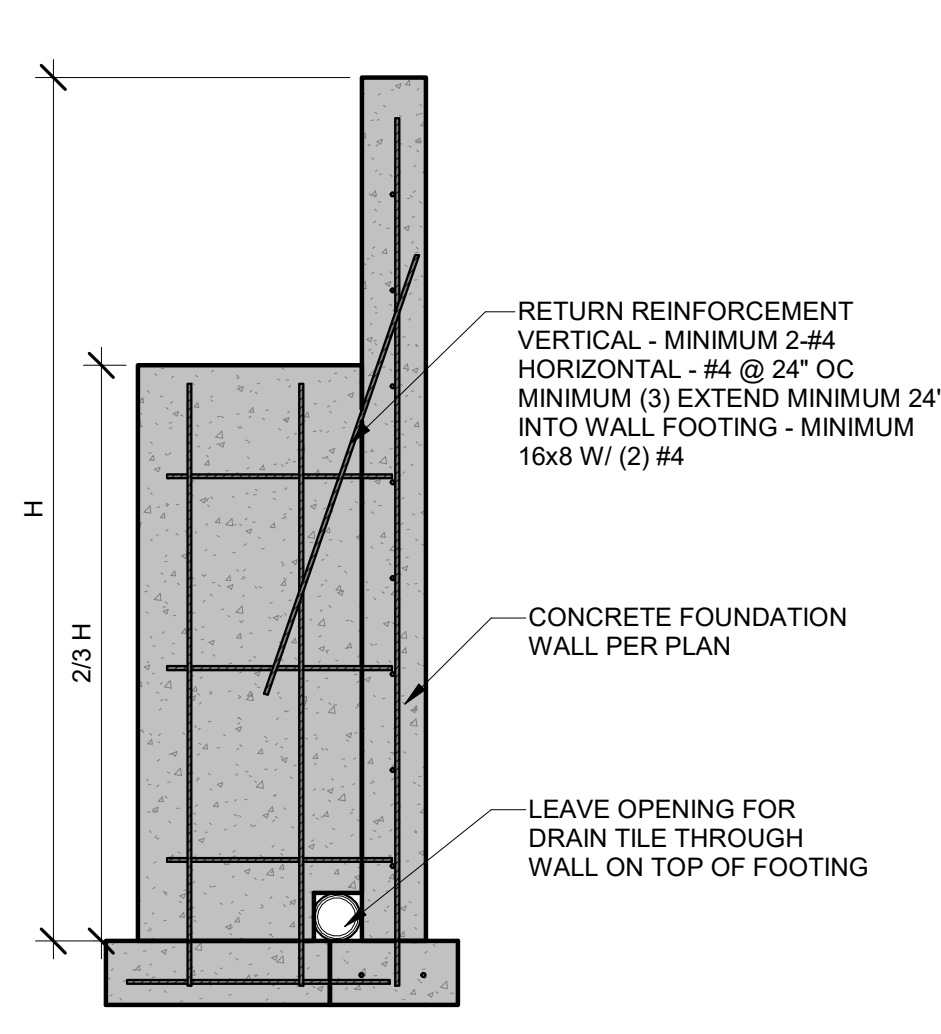
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BRACED WALLS NOTES & DETAILS

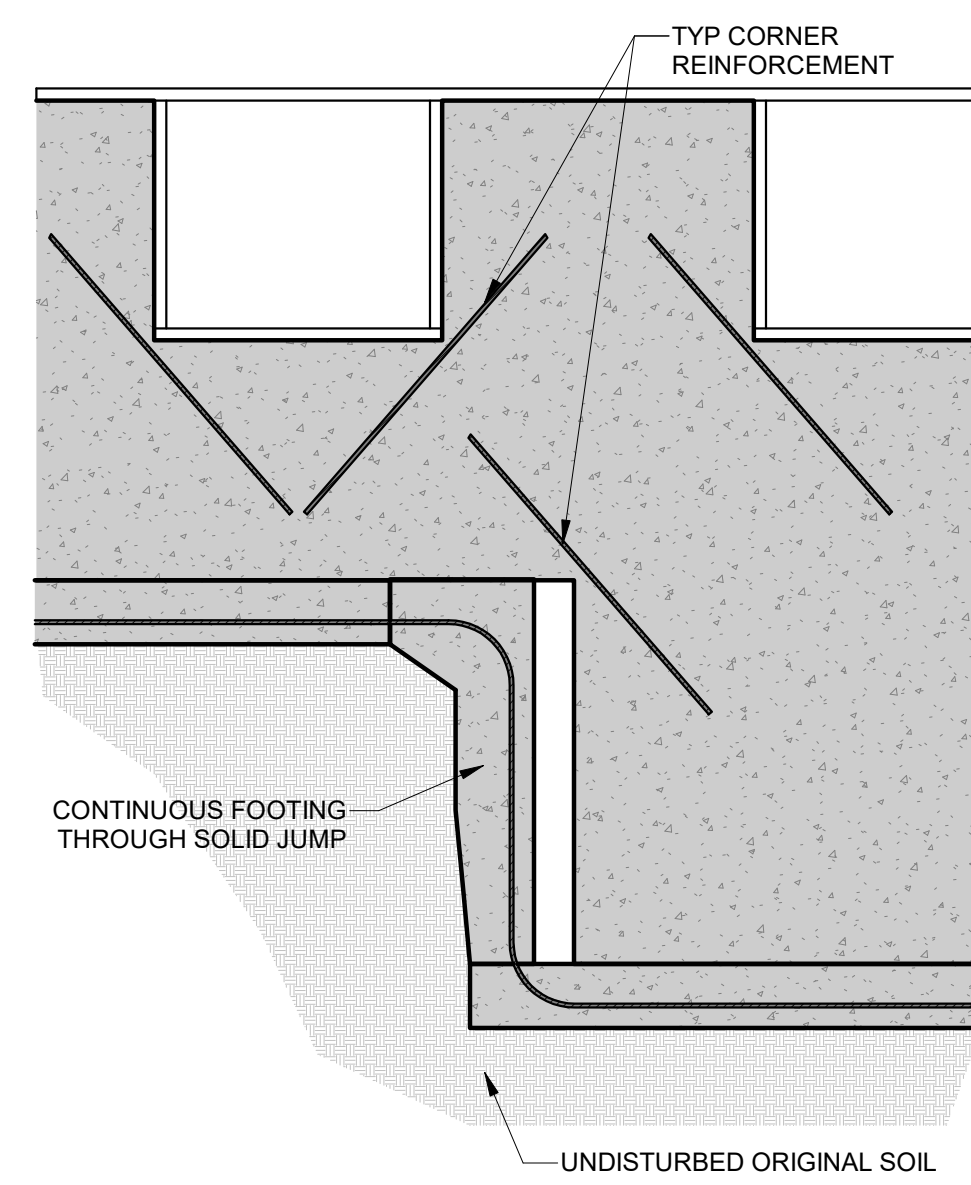
S-2.1



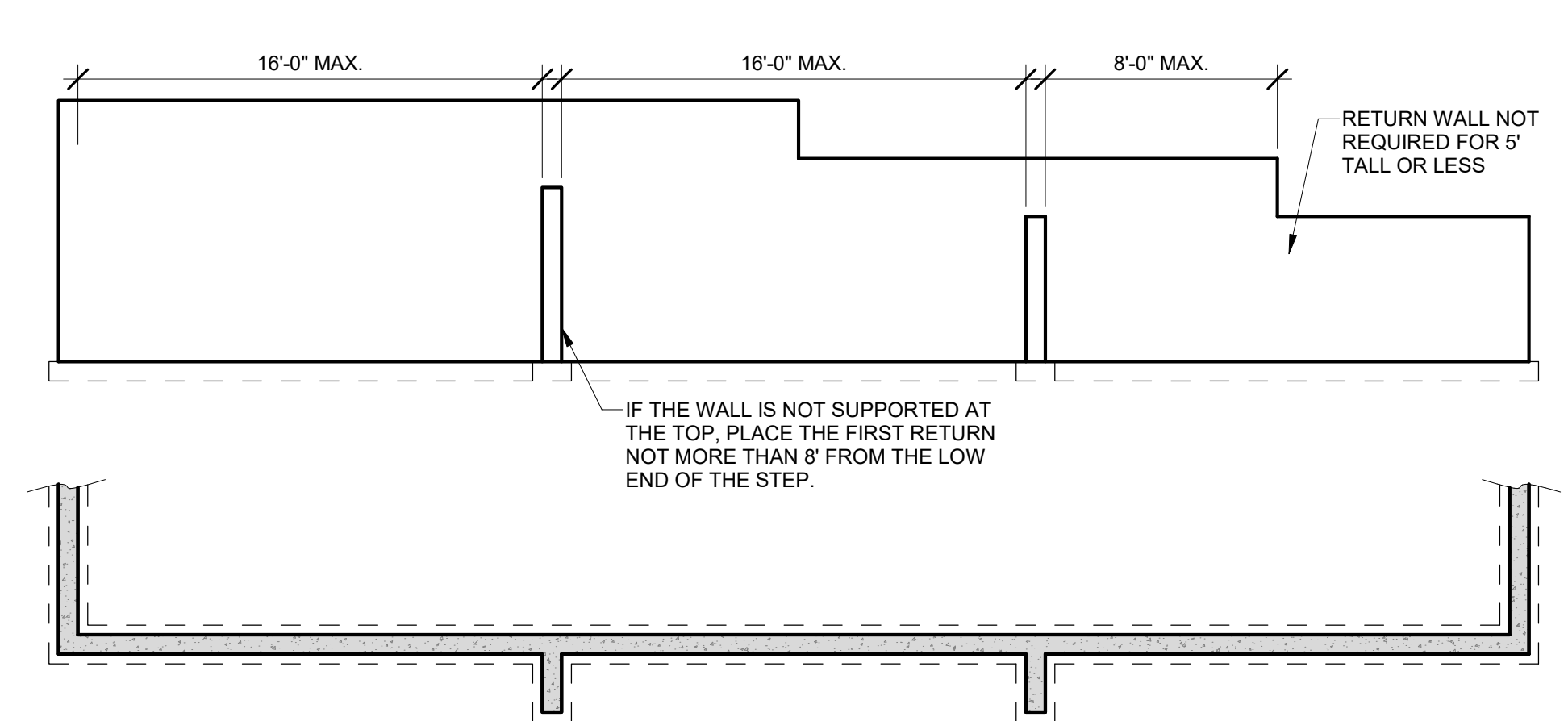
1 SOLID FOOTING JUMP DETAIL
3/8" = 1'-0"



2 RETURN WALL DETAIL
1/2" = 1'-0"

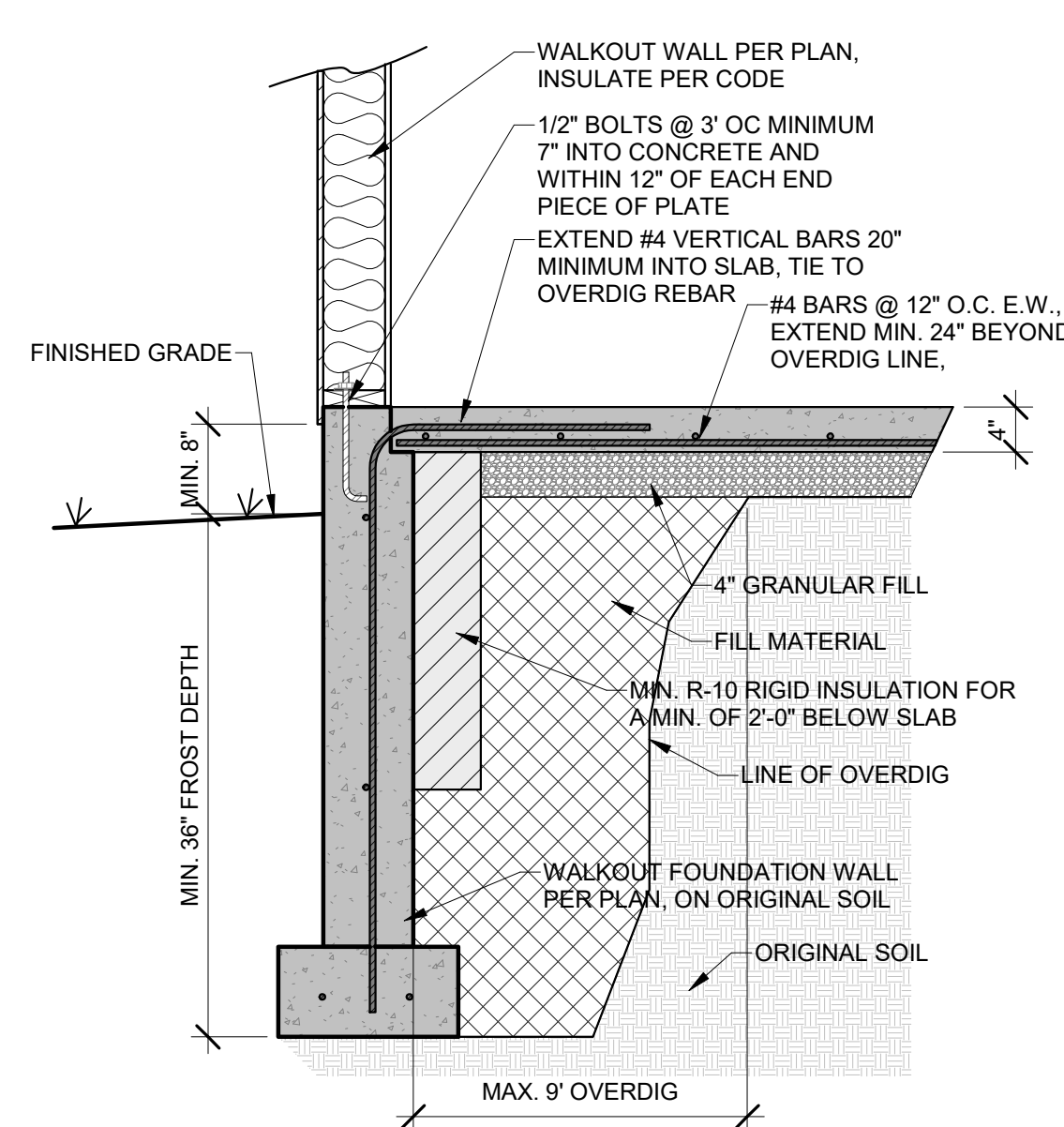


WHERE OPENINGS OR ABRUPT ELEVATION CHANGES OCCUR IN THE TOP OR BOTTOM OF THE WALL AT LEAST ONE #4 BAR 48" LONG SHALL BE DIAGONALLY AS CLOSE A PRACTICAL TO THE CORNER



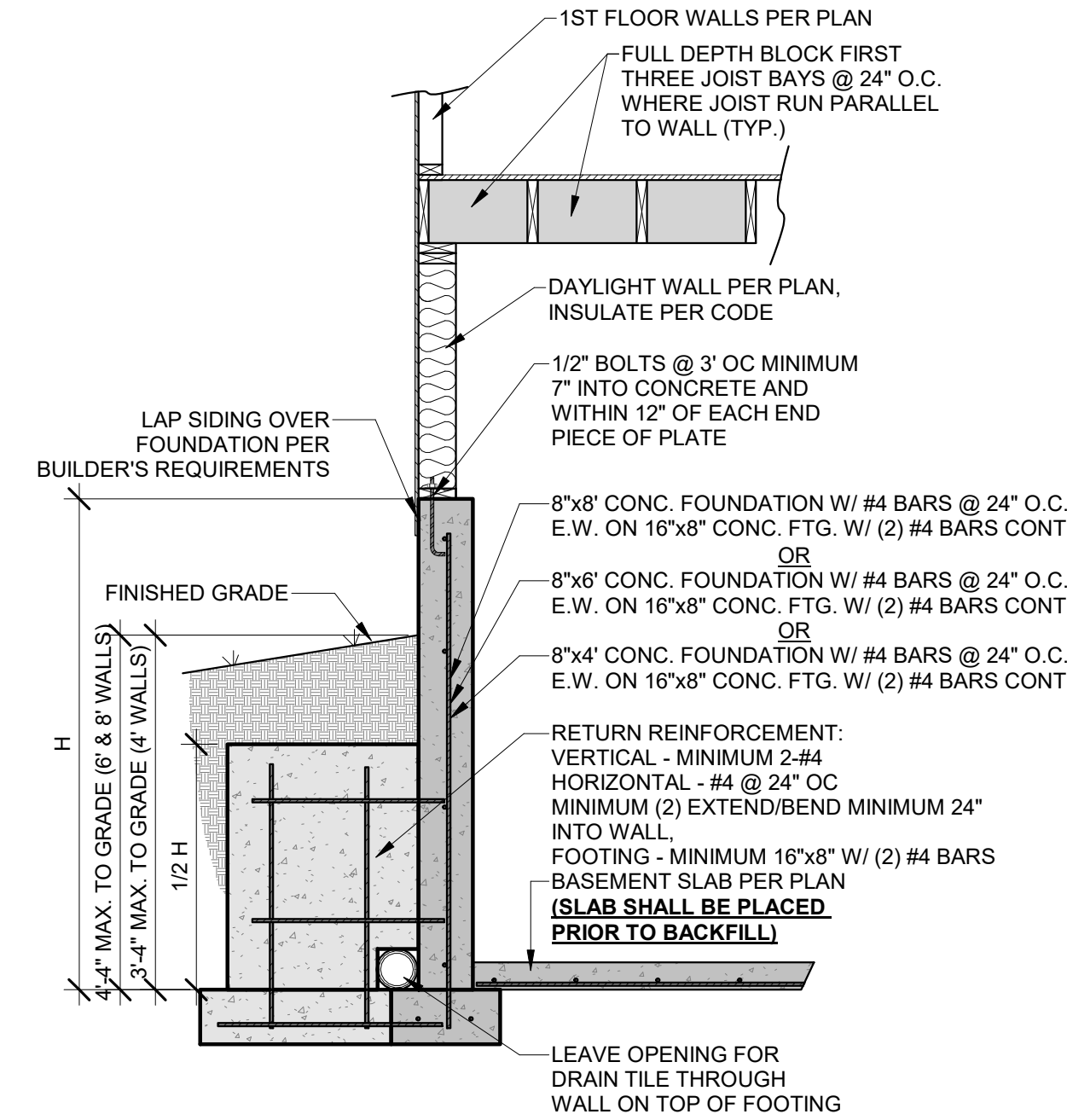
4 RETURN WALL PLACEMENT
3/16" = 1'-0"

9 REINFORCEMENT AT CORNERS AND STEPS
1/2" = 1'-0"



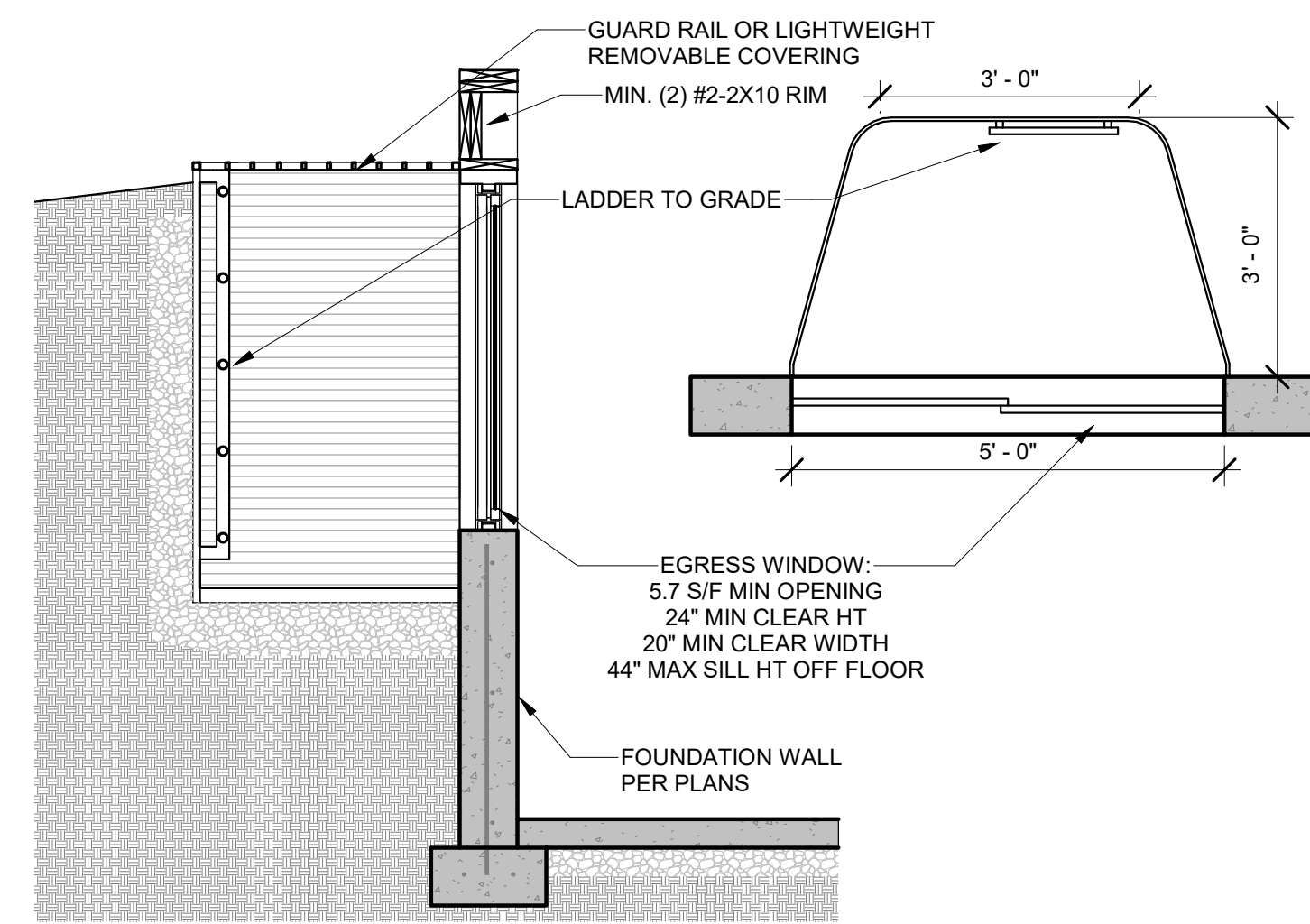
IMPORTANT NOTE:
ANY SLAB WITH GREATER THAN 2' OF GRADED ROCK OR 8" OF FILL SOIL BELOW SHALL BE DESIGNED AS STRUCTURAL PER PLAN. OUR FIRM SHOULD BE CONTACTED IMMEDIATELY FOR DESIGN RECOMMENDATIONS. DESIGN MUST BE COMPLETED PRIOR TO PLACEMENT OF PIERS OR FOOTINGS.

10 WALKOUT DETAIL
3/4" = 1'-0"



8"x4', 8"x6', AND 8"x8' DAYLIGHT FOUNDATION
IF SLAB IS NOT PLACED PRIOR TO BACKFILL, CONTRACTOR IS RESPONSIBLE FOR BRACING THE FOUNDATION AS REQUIRED

7 UNRESTRAINED FOUNDATION WALL
1/2" = 1'-0"



11 EGRESS WINDOW SECTION
1/2" = 1'-0"

VERTICAL REINFORCEMENT SPACING* 60 PSF SOIL; 40 & 60 KSI STEEL						
CONCRETE STRENGTH	8" THICK WALL			10" THICK WALL		
	8'	9'	10'	8'	9'	10'
3000 PSI/ 40 KSI	16	12	24	16	12	24
3500 PSI/ 40 KSI	16	12	24	24	12	24
3000 PSI/ 60 KSI	24	16	24	20	16	24
3500 PSI/ 60 KSI	24	16	24	24	16	24

HORIZONTAL REINFORCEMENT**						
ONE BAR 12" FROM TOP OF WALL; MAX. SPACING 24" O.C.	4-#4	5-#4	4-#4	5-#4	6-#4	

* CONCRETE SHALL HAVE AIR ENTRAINMENT OF 5-7%.
* MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 @ 36" ON CENTER (ACI 332).
* VERTICAL BARS SHALL BE CONTINUED UP TO WITHIN 8" OF THE TOP OF THE WALL.
* REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE FACE).
* REINFORCEMENT SHALL LAP A MINIMUM OF 24 INCHES AT ENDS, SPLICES, AND AROUND CORNERS.
** #4 BARS @ 24" ON CENTER.
** #4 BAR WITHIN 12 OF TOP AND BOTTOM OF WALL.
** MINIMUM GRADE 40 (40ksi) STEEL (PER ACI 332).
** HORIZONTAL REINFORCEMENT SHALL BE INSTALLED ON THE COMPRESSION SIDE (SOIL SIDE) OF THE VERTICAL REINFORCEMENT

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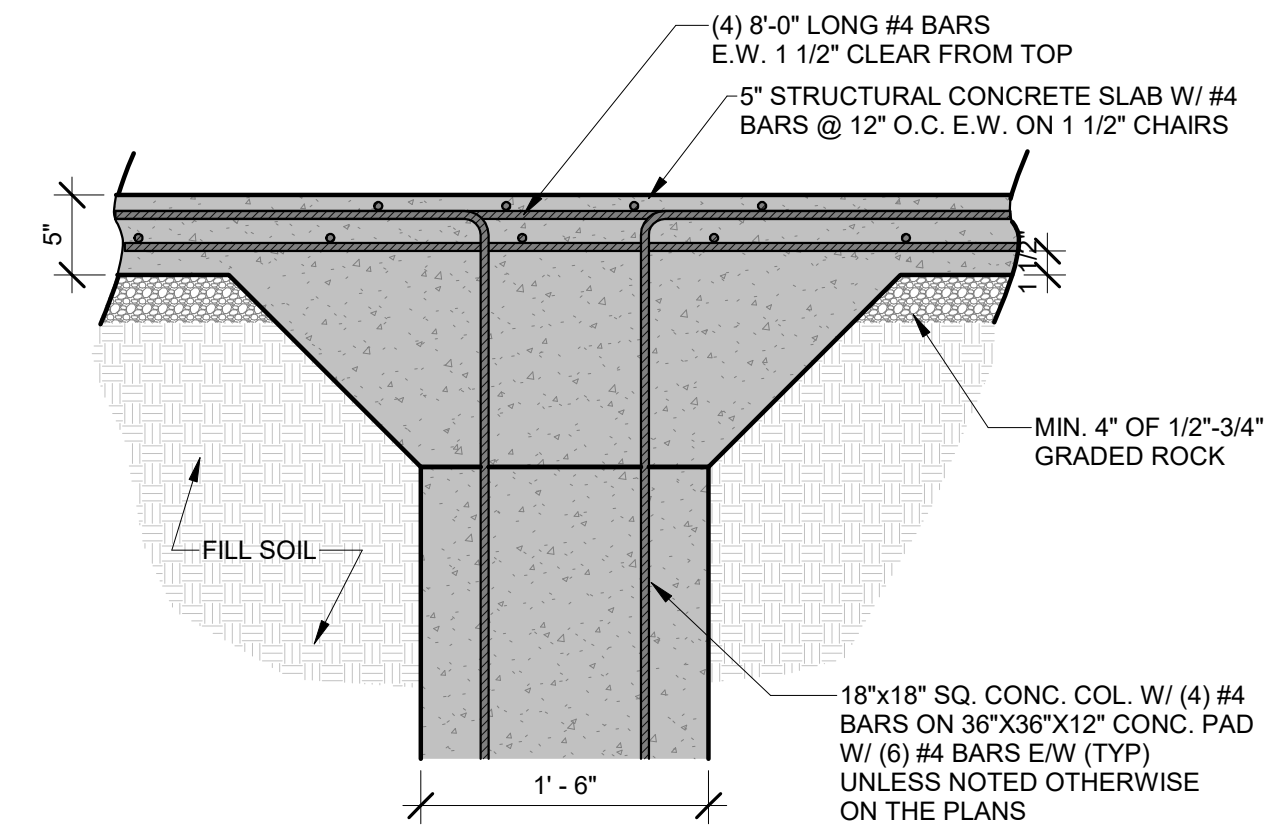
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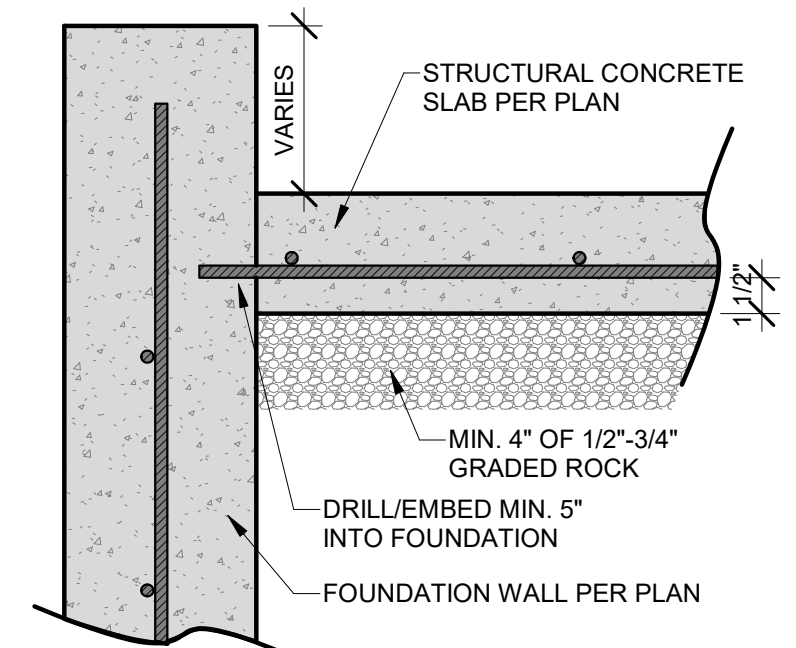
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CONCRETE DETAILS

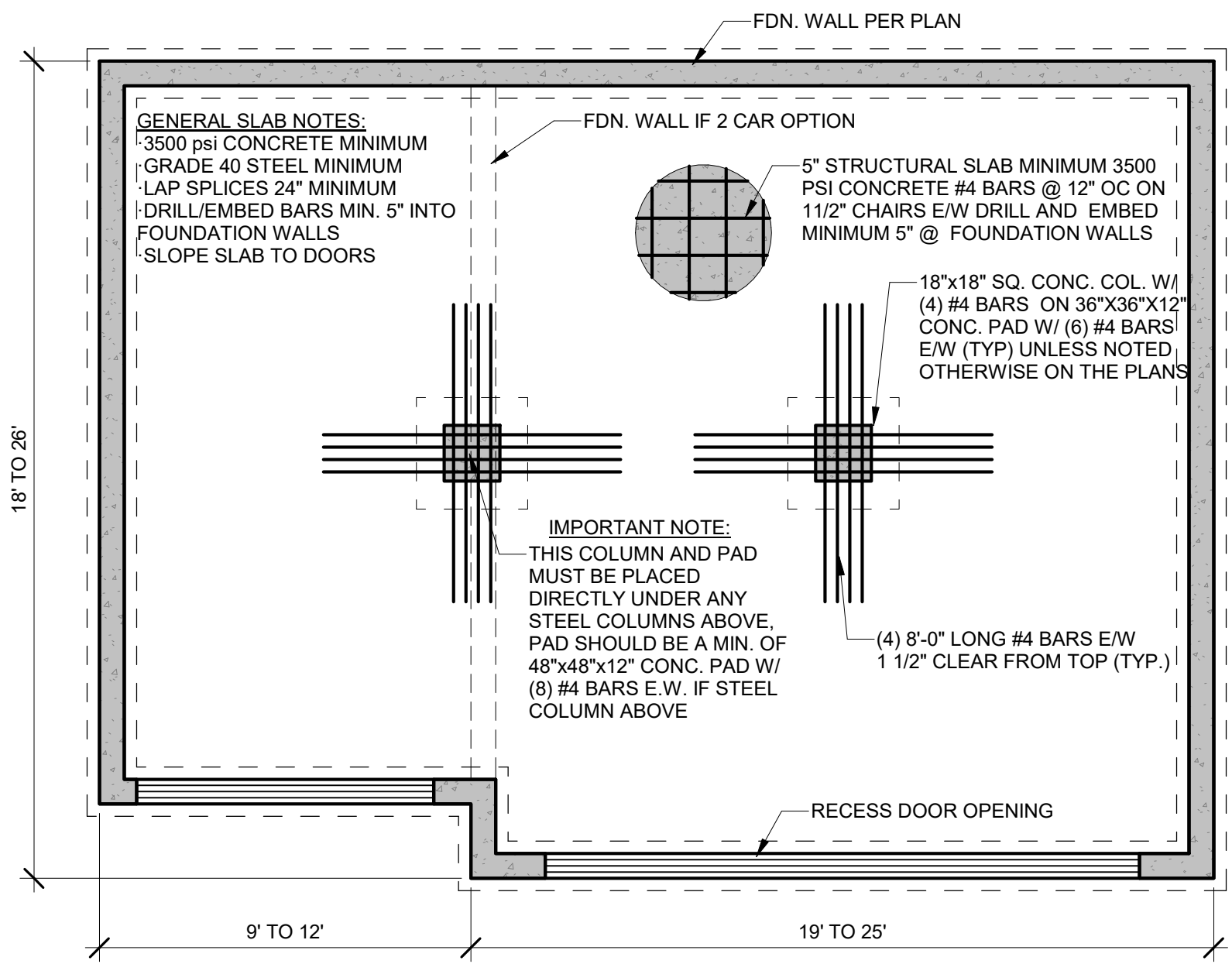
S-3.0



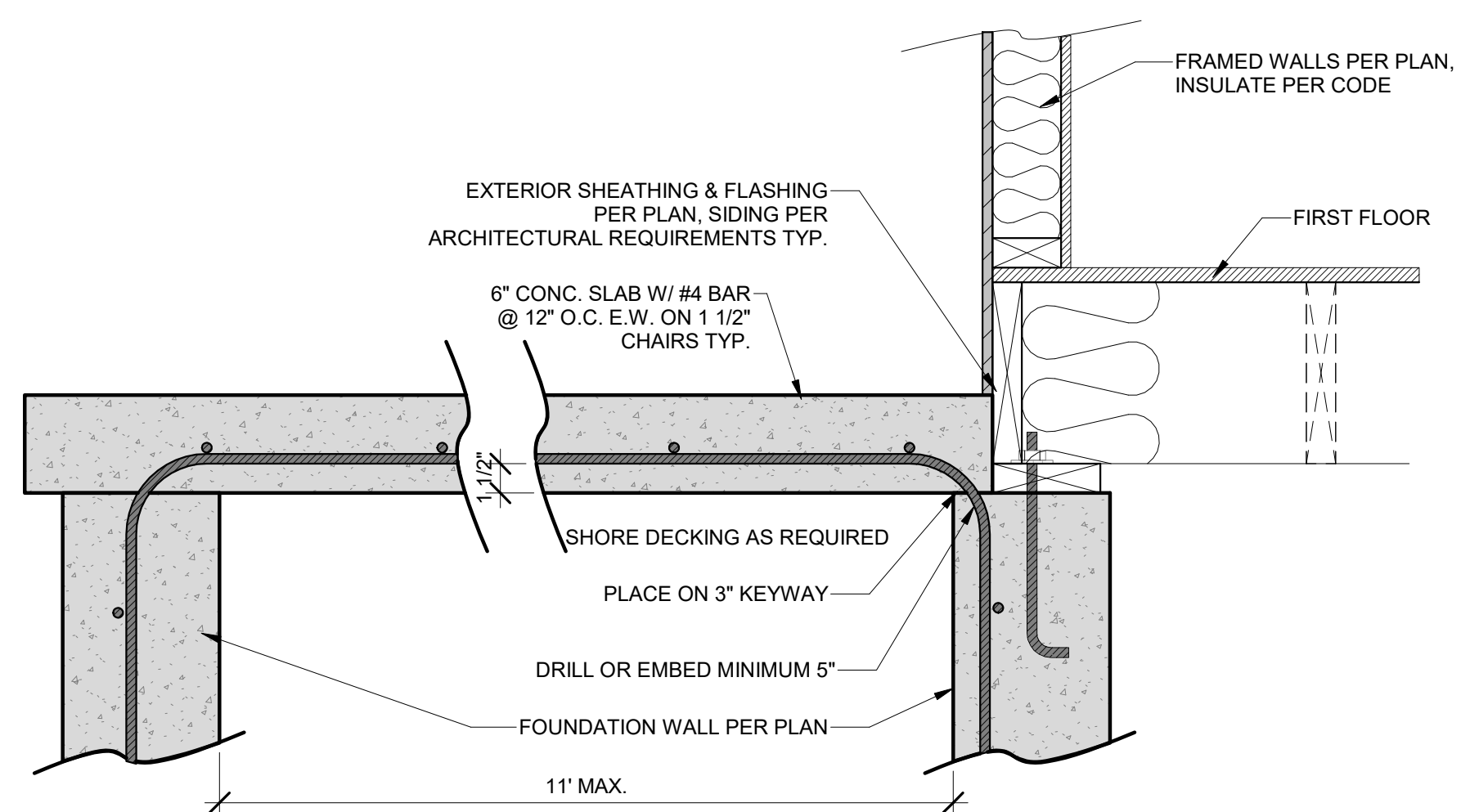
8 GARAGE SLAB COLUMN DETAIL
1" = 1'-0"



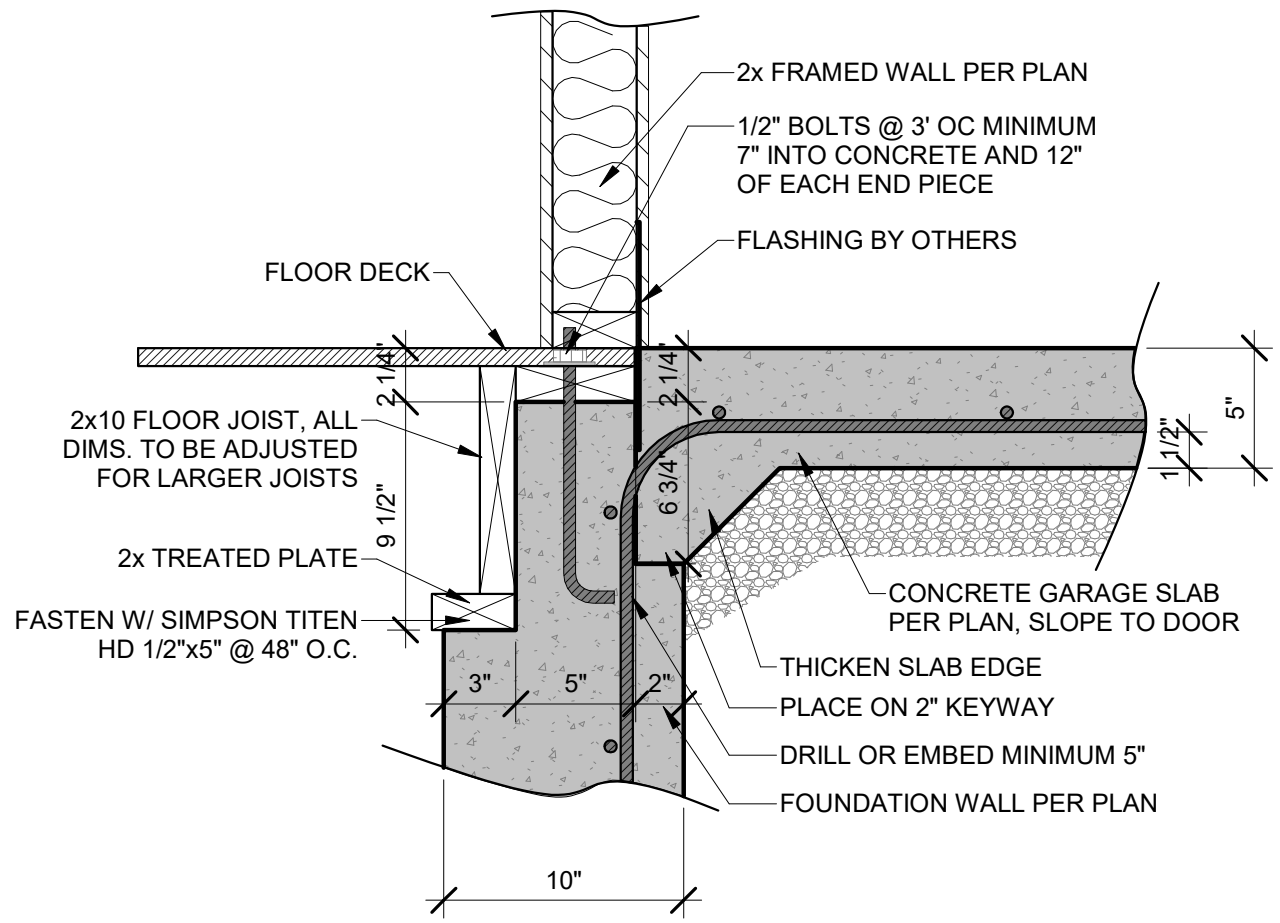
9 STRUCTURAL SLAB/ WALL
1 1/2" = 1'-0"



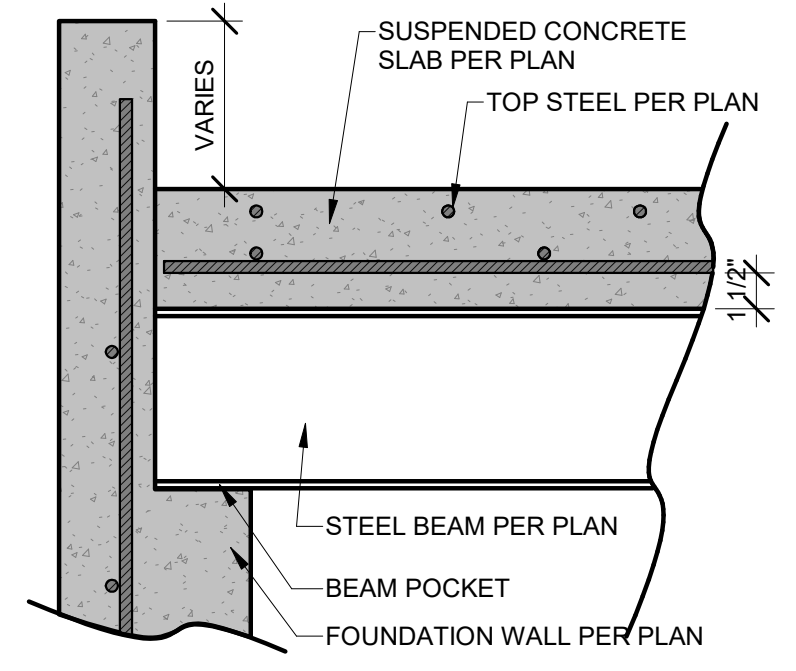
10 TYPICAL GARAGE SLAB
1/4" = 1'-0"



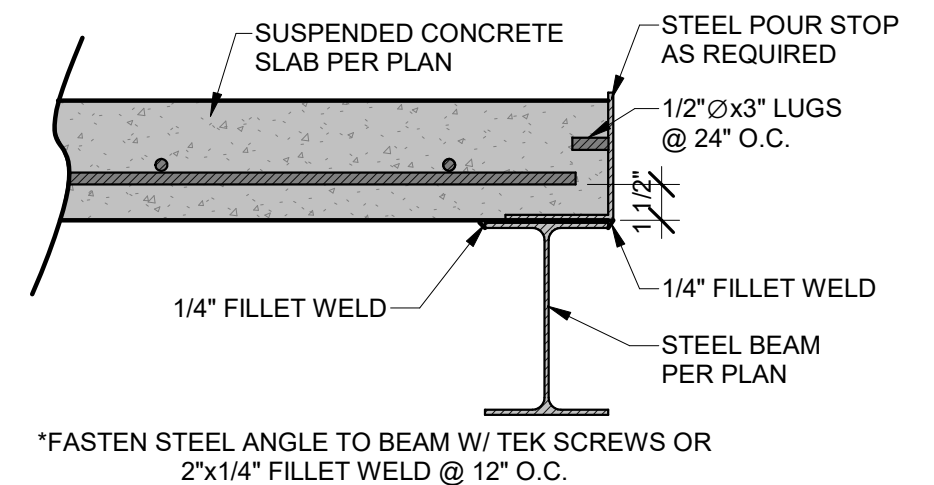
6 SUSPENDED PORCH STOOP SLAB
1 1/2" = 1'-0"



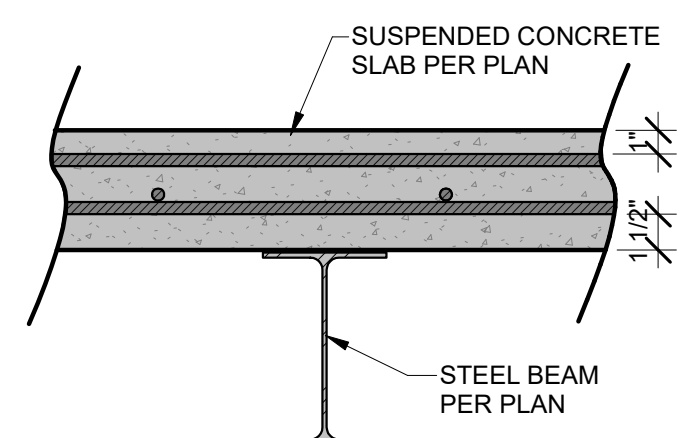
7 ZERO ENTRY GARAGE DETAIL
1 1/2" = 1'-0"



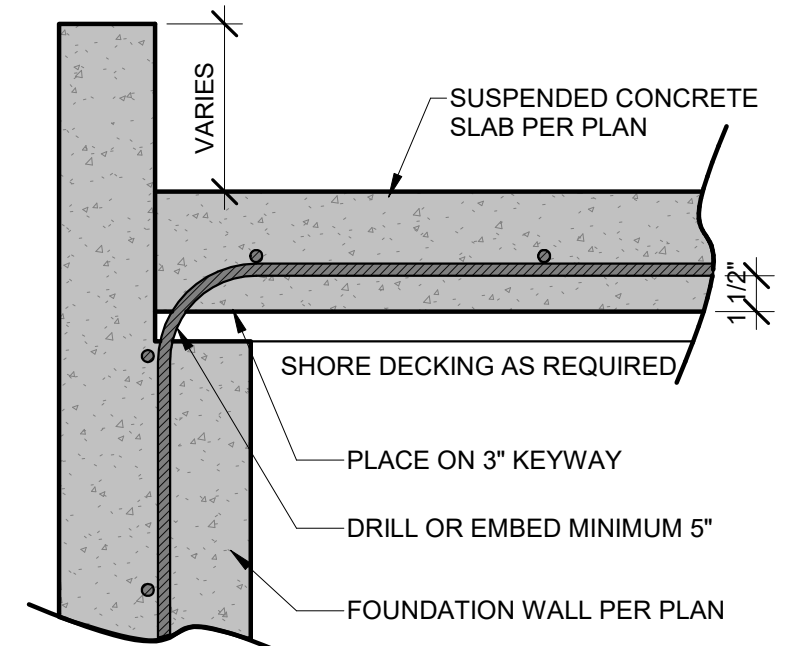
1 SUSPENDED SLAB BEAM/WALL CONNECTION
1 1/2" = 1'-0"



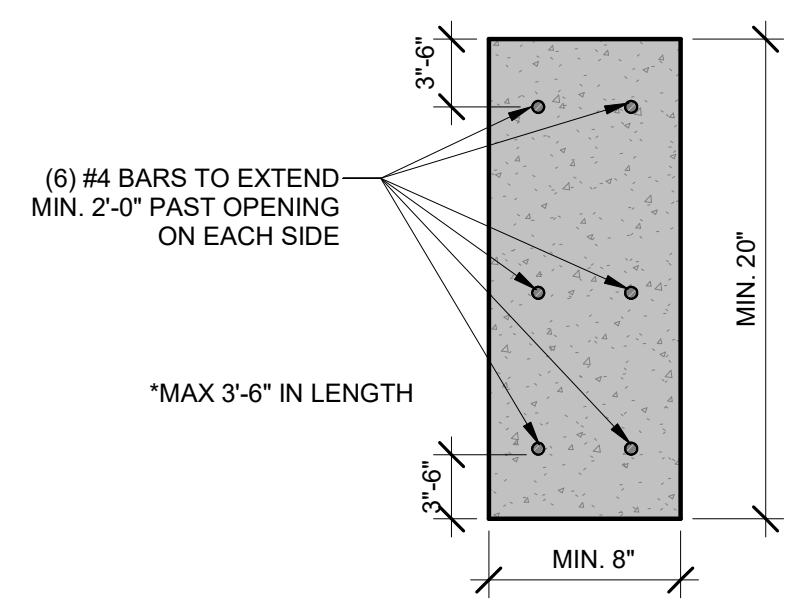
2 SUSPENDED SLAB POUR STOP
1 1/2" = 1'-0"



3 SUSPENDED SLAB/STEELBEAM CROSS SECTION
1 1/2" = 1'-0"



4 SUSPENDED SLAB/WALL CONNECTION
1 1/2" = 1'-0"



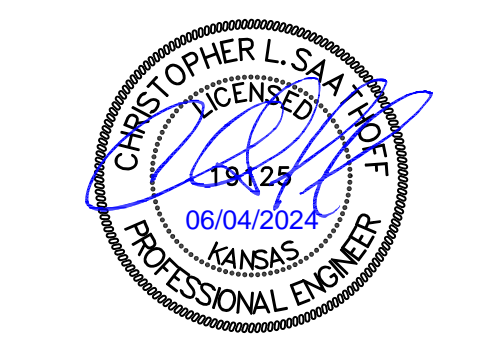
5 CONCRETE HEADER DETAIL
1 1/2" = 1'-0"

IMPORTANT NOTE:
FOR SUSPENDED SLABS A MAXIMUM OF 10' ABOVE FLOOR BELOW: TEMPORARY SHORING WALLS SHALL BE PLACED AT A MAXIMUM OF 4' O.C. / #2-2X4 STUDS AT 16' O.C. W/ TOP AND BOTTOM PLATE. WALL TO HAVE CONTINUOUS DIAGONAL BRACING. LATERAL BRACING TO BE RUN FROM WALL TO WALL AT MID HEIGHT 4' ON CENTER. SHORING TO REMAIN IN PLACE FOR AT LEAST 21 DAYS.
ANY CAST IN PLACE SLABS FORMED MORE THAN 10' ABOVE THE FLOOR BELOW SHALL HAVE A SITE SPECIFIC SHORING DESIGN DONE. OUR FIRM SHOULD BE CONSULTED FOR THIS DESIGN ONCE FOUNDATION WALLS ARE IN PLACE TO EVALUATE ALL FIELD CONDITIONS. IT SHOULD BE NOTED THAT FAILURE TO HAVE AN ADEQUATE SHORING DESIGN CAN RESULT IN FORM COLAPSE AND/OR CATASTROPHIC FAILURE.

HD ENGINEERING STRUCTURAL GARAGE SLAB DETAILS

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SUSPENDED SLAB DETAILS

S-3.1

MINIMUM INSULATION & FENSTRATION VALUES BY COMPONENT, PER IRC2018 N1102.1.2

VALUES BELOW ARE PER 2018 IECC. ACTUAL VALUES MAY VARY BASED ON ALTERNATE ENERGY COMPLIANCE PATH CHOSEN (IN JURISDICTIONS WHERE ALTERNATIVE PATHS ARE AVAILABLE)

CLIMATE ZONE	FENSTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED SHGC FENSTRATION	INSULATED METAL DOOR U-VALUE	INSULATED WOOD DOOR U-VALUE	CEILING R-VALUE	WOOD FRAMED WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK OVER OUTSIDE R-VALUE	DUCTWORK (ALL OTHER) R-VALUE
4 EXCEPT MARINE	0.32	0.55	0.40	0.60	0.50	49	20 OR 13 CAV. +5	19	10 CONTINUOUS OR 13 CAVITY	R-10, 2 FT.	10 CONTINUOUS OR 13 CAVITY	8	6

NOTES: 1) BUILDING THERMAL ENVELOPE IS REQUIRED TO BE SEALED WITH AN AIR BARRIER AS PER N1102.4.1 OF THE 2018 IRC
 2) RECESSED LIGHTING SHALL BE SEALED TO PREVENT LEAKAGE BETWEEN THE CONDITIONED SPACE AND UNCONDITIONED SPACE
 3) ALL DUCTS, AIR HANDLERS, FILTER BOXES, AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED AS PER N1103.2 OF THE 2018 IRC

CATHEDRAL / VAULTED CEILING FRAMING AND INSULATION

MINIMUM R-38 INSULATION REQUIRED, SEE DETAIL 14/S-1.2

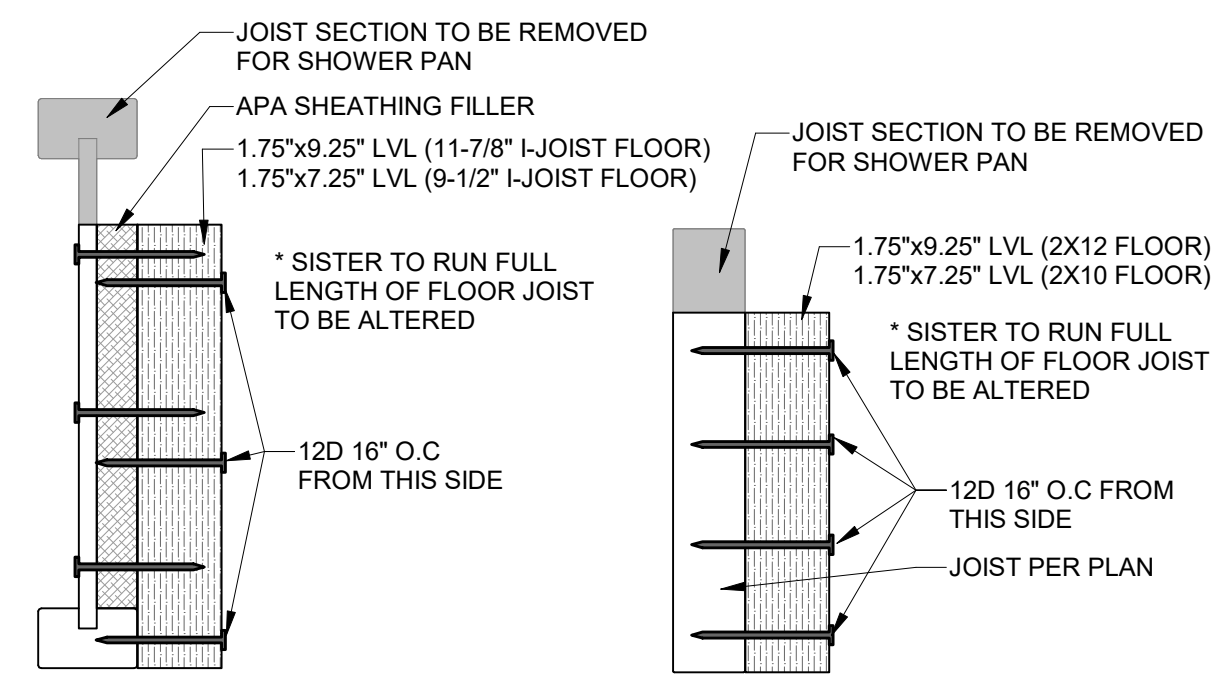
WHERE THE CEILING IS APPLIED DIRECTLY TO THE BOTTOM OF THE RAFTERS, A MINIMUM 1" AIR SPACE SHALL BE PROVIDED BETWEEN THE TOP OF THE INSULATION AND THE SHEATHING FOR VENTILATION (R806.3)
 NOTE: RAFTER SIZES SPECIFIED ON PLANS ARE THE MINIMUM REQUIRED FOR STRUCTURAL PURPOSES ONLY. BUILDER TO VERIFY.
 IF FULL RAFTER DEPTH IS NOT ADEQUATE FOR MINIMUM INSULATION VALUE, RAFTER SIZES WILL NEED TO BE INCREASED, OR ADEQUATE FURRING SHALL BE USED TO OBTAIN THE MINIMUM JOIST DEPTH FOR THE REQUIRED INSULATION. IN ADDITION, IF THE RAFTER SIZE IS INCREASED IT SHALL BE VERIFIED THAT THE RIDGE BE A MINIMUM OF ONE NOMINAL SIZE LARGER THAN THE RAFTERS BEING RECEIVED. (SEE CHART BELOW)

MAXIMUM INSULATION VALUE 1" AIR SPACE (FIBERGLASS)	2x6	2x8	2x10	2x12
	R-13, 3 1/2"	R-19, 6 1/4"	CONDENSED R-38, 8 1/4"	R-38, 10 1/4"

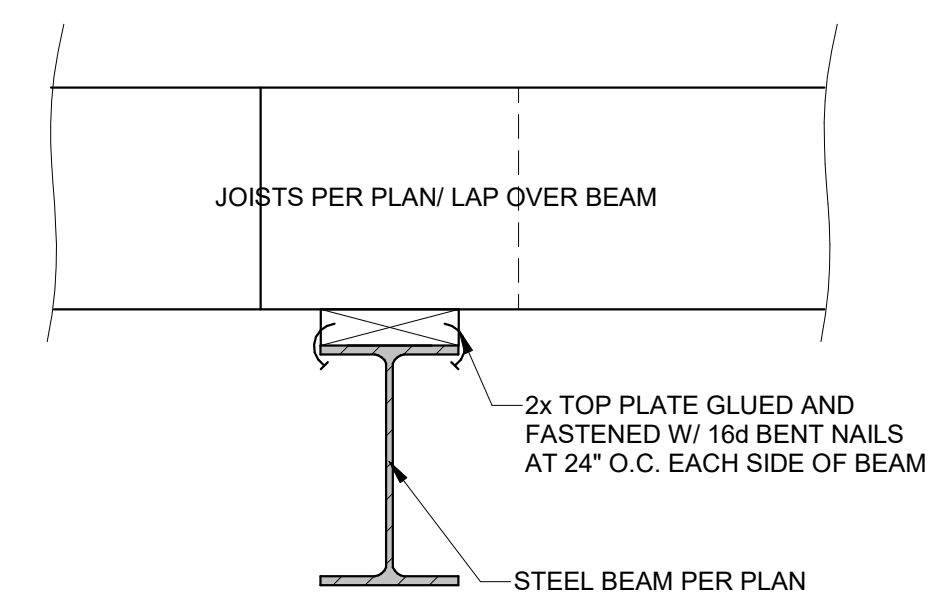
TABLE N1103.6.1 (R403.6.1) WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY^a

FAN LOCATION	AIR FLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY (CFM/WATT)	AIR FLOW RATE MAXIMUM (CFM)
HRV OR ERV	ANY	1.2 CFM/WATT	ANY
RANGE HOODS	ANY	2.8 CFM/WATT	ANY
IN-LINE FAN	ANY	2.8 CFM/WATT	ANY
BATHROOM, UTILITY ROOM	10	1.4 CFM/WATT	< 90
BATHROOM, UTILITY ROOM	90	2.8 CFM/WATT	ANY

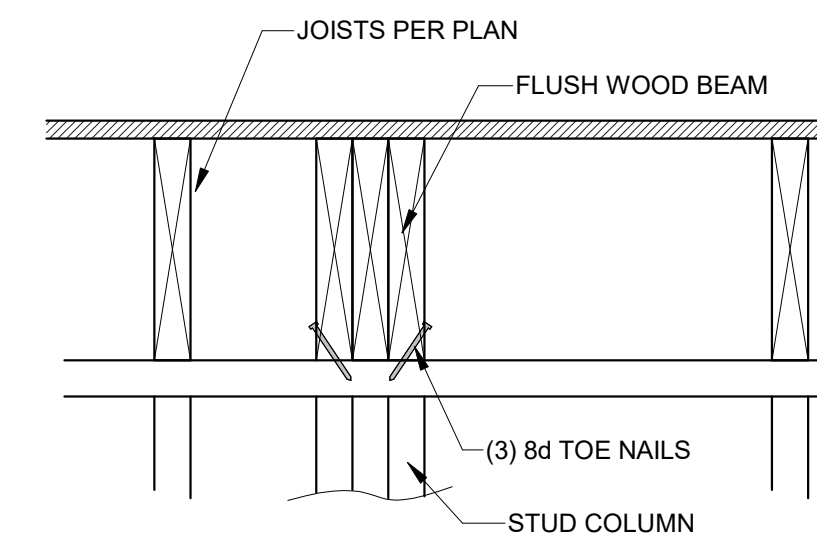
For SI: 1 cubic foot per minute = 28.3 L/min.
^a WHEN TESTED IN ACCORDANCE WITH THE STANDARD ONE



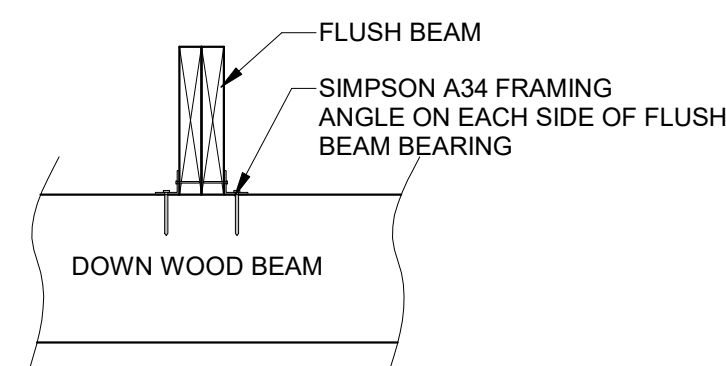
10 ZERO ENTRY SHOWER DETAIL
1/4" = 1'-0"



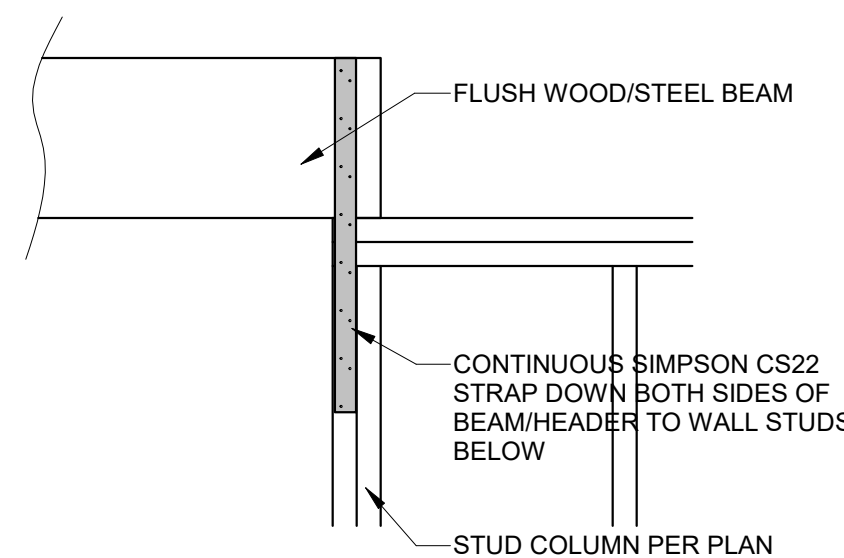
5 STEEL BEAM TO WOOD PLATE
1 1/2" = 1'-0"



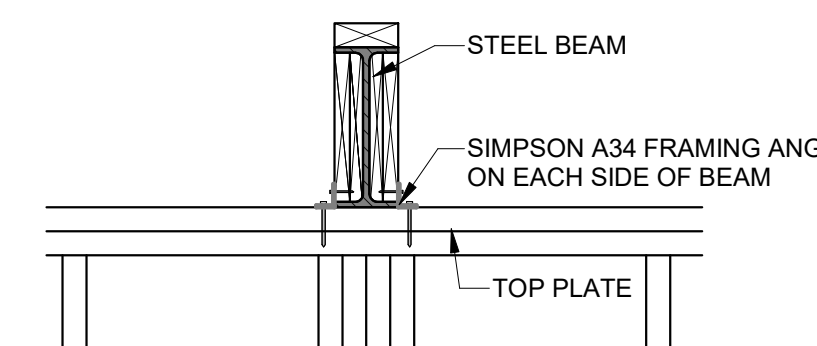
4 FLUSH WOOD BEAM CONNECTION
1 1/2" = 1'-0"



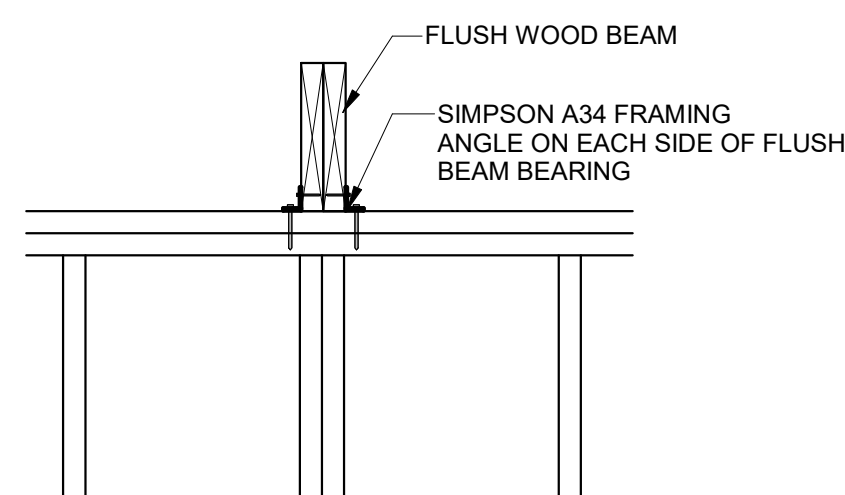
9 WOOD TO WOOD STACKED CONNECTION
1" = 1'-0"



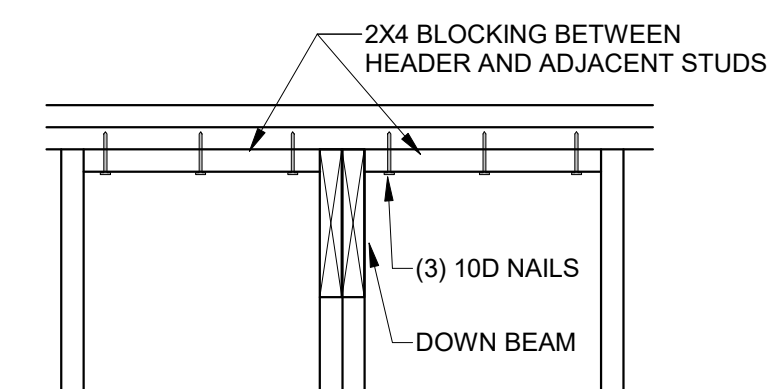
8 UPSET WOOD/STEEL PARALLEL TO WALL
1" = 1'-0"



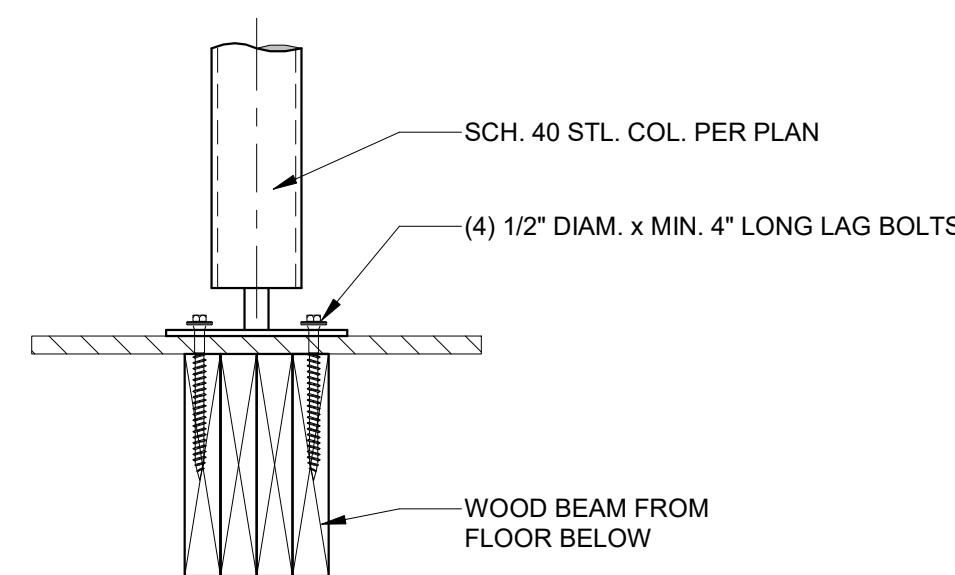
3 EXTERIOR WALL STEEL BEAM BEARING
1" = 1'-0"



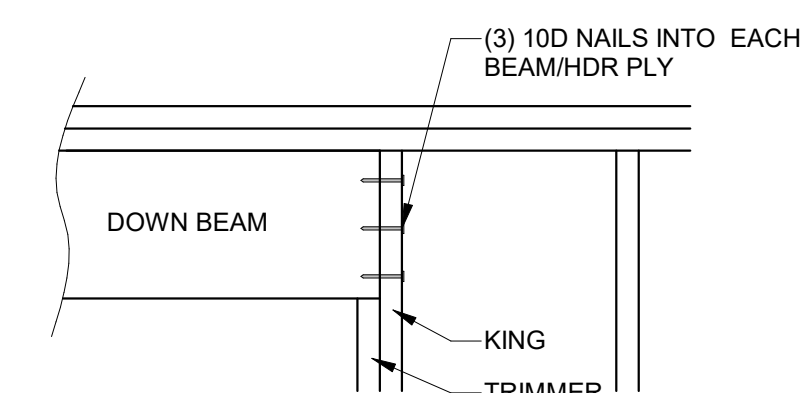
7 UPSET WOOD PERPENDICULAR TO WALL
1" = 1'-0"



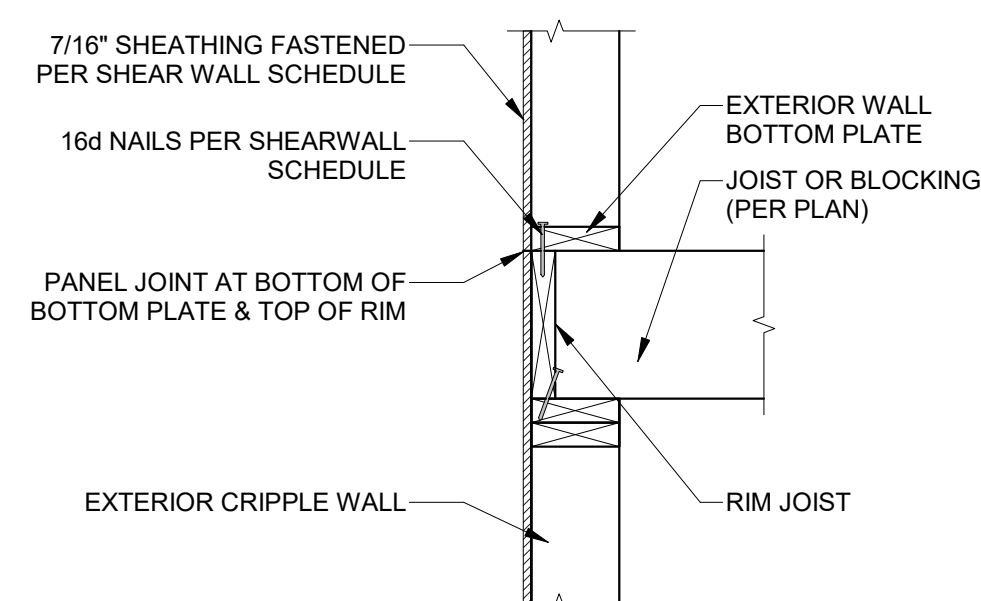
2 DOWN WOOD BEAM PERPENDICULAR
1" = 1'-0"



6 STEEL COLUMN TO WOOD FLOOR
1 1/2" = 1'-0"



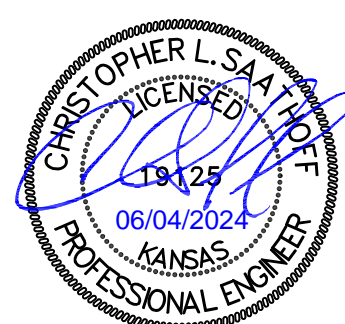
1 DOWN WOOD BEAM PARALLEL
1" = 1'-0"



11 SHEATHING JOINT LOCATION
1" = 1'-0"

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 STRUCTURAL DETAILS & NOTES

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 CHECKED BY: CLS

NO.	ISSUE/REVISION	Revision Date

GENERAL DETAILS

S-4.0