ENTRY FORM

DVASE
2018 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

Buildings under $5M		Buildings Over $100M	
Buildings $5M - $15M		Other Structures Under $1M	
Buildings $15M - $40M		Other Structures Over $1M	
Buildings $40M - $100M		Single Family Home	x

Approximate construction cost of facility submitted:	Undisclosed
Name of Project:	Russo Residence (6945 SE 33rd Ave)
Location of Project:	Mercer Island, WA
Date construction was completed (M/Y):	In Progress (Estimated May 2018)
Structural Design Firm:	Mulhern + Kulp Structural Engineering
Affiliation:	**All entries must be submitted by DVASE member firms or members.**
Architect:	McCullough Architects
General Contractor:	JayMarc Homes

Company Logo (insert .jpg in box below)

MULHERN+KULP
residential structural engineering

Important Notes:

- Please .pdf your completed entry form and email to bsagusti@barrhorstman.com.
- Please also email separately 2-3 of the best .jpg images of your project, for the slide presentation at the May dinner and for the DVASE website. Include a brief (approx. 4 sentences) summary of the project for the DVASE Awards Presentation with this separate email.

- Provide a concise project description in the following box (one page maximum). Include the significant aspects of the project and their relationship to the judging criteria.

Mulhern and Kulp provided complete structural engineering services for this new 7300+ sf, 2-story residence on partial walkout basement/ partial crawl space located in Mercer Island, Washington. The i-joist roof system and vaulted ceilings throughout added to the unique challenge of designing this home. The home was laid out to provide vistas of Lake Washington and the surrounding landscapes through walls of windows and sliding doors for this hilltop home. The large covered deck and folding doors bring the outside living area and views right inside.

Large roof overhangs and ever-changing slopes create a very distinct, almost floating look to the exterior, but also presented some significant challenges to support, especially with many of the exterior windows pushed right to the bottom of the roof joists. Steel beams were utilized above the master bedroom to achieve the cantilevered roof. The steel beams were installed at an angle and one beam cantilevered about 11'-6" to support the furthest corner of the roof above the entry walkway. The hallway at the top of the stairs is also supported by a cantilevered steel beam to keep with the open look of the foyer and floor above.

In addition to many difficult framing challenges due to architectural restrictions, this home is in a high seismic region, and the lateral resisting elements had to be designed accordingly. The support/stiffness of the great room was of particular concern due to the wall of windows that was added to look out over the lake. Typically a steel moment frame would be utilized for a wall like this, but due to the additional detailing and special requirements of a moment frame in a high seismic region, the builder was reluctant to add one. Our solution was to design the great room as an open front structure and resist any rotation with the roof diaphragm and resolve it in shearwalls located around the great room.

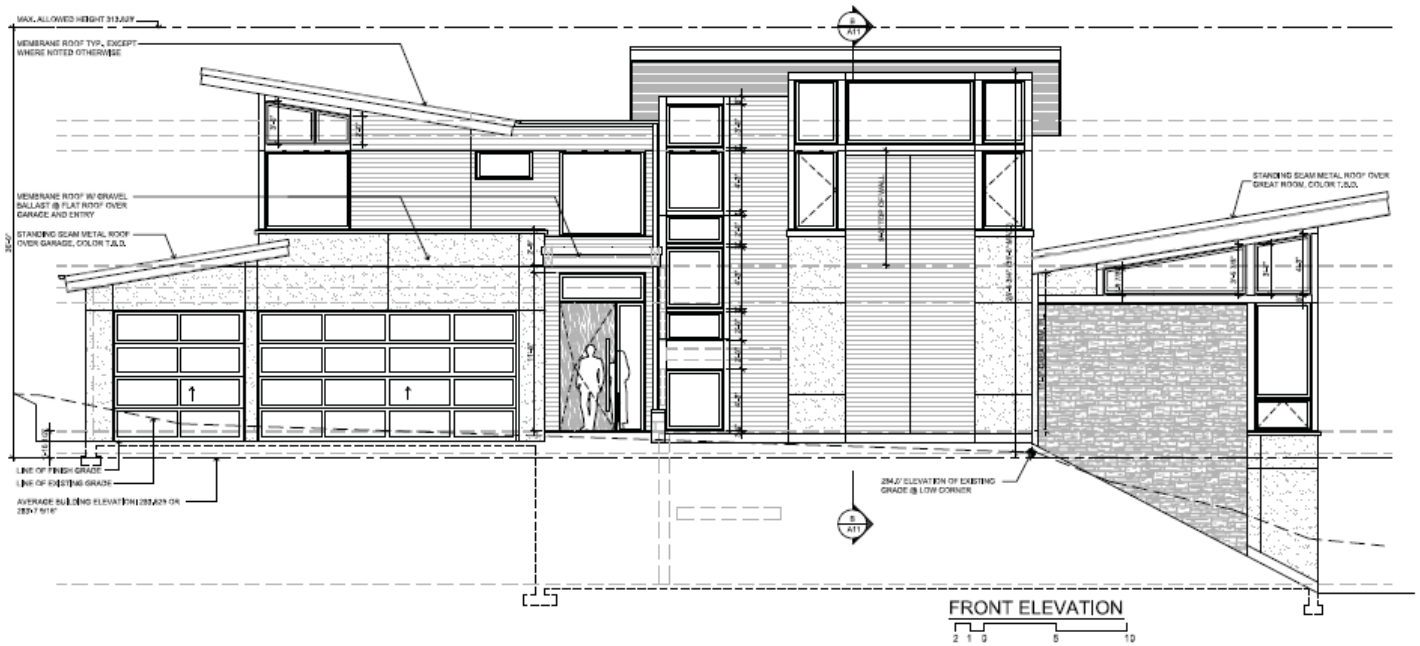
The entry covered roof is another aspect of note for this home, as it is a flat roof with stone roofing. There was no allowance for a post by the architect to support the right side, so a c-channel was designed to run back along the wall and cantilever to create the finished profile desired. The c-channel was then through bolted to the wall, and to a LVL post to avoid any posts.

This projected is located in a jurisdiction that is notoriously known to be challenging with their plan review comments. We were able to get it though permitting with only minor comments, which was a huge accomplishment. This home has been under construction since the beginning of 2017, and is scheduled to be completed by May 2018.

- The following 5 pages (maximum) can be used to portray your project to the awards committee through photos, renderings, sketches, plans, etc...

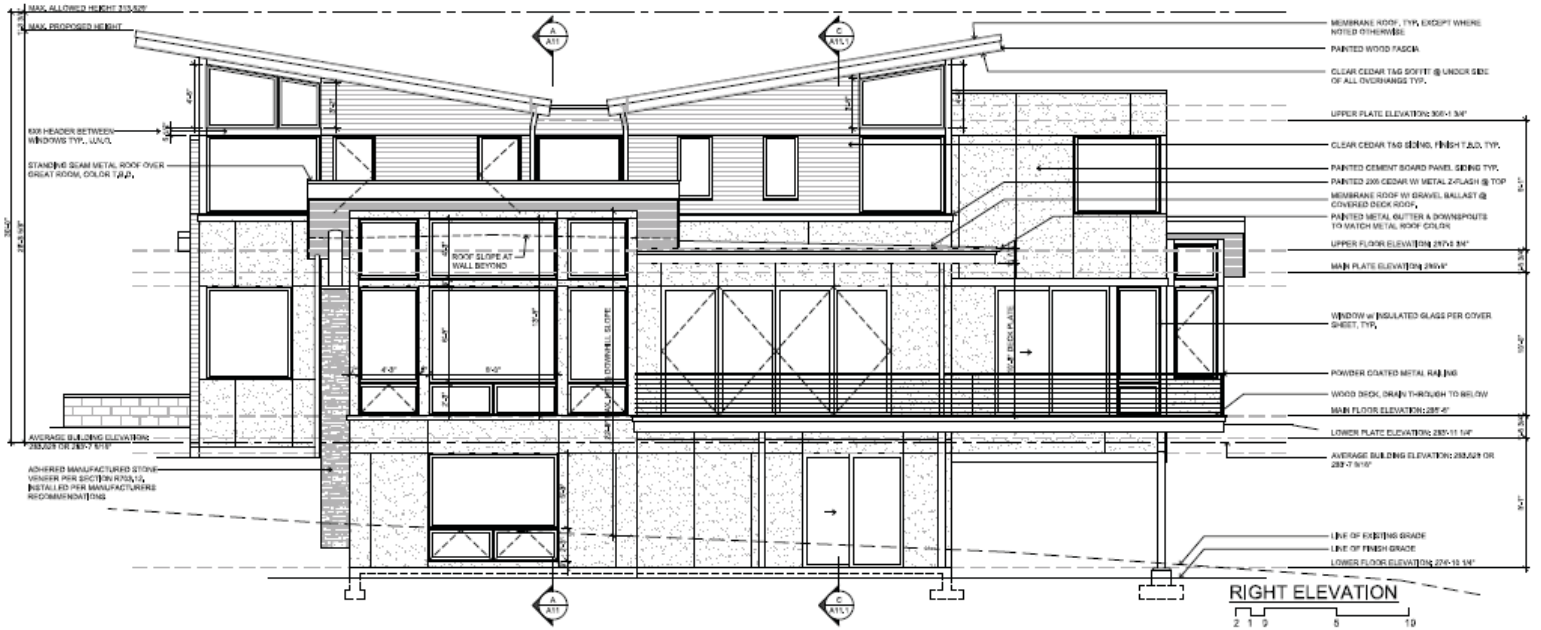
EXTERIOR ELEVATION NOTES:
1. VERIFY SHEAR WALL NAILING AND HOLDDOWNS PER STRUCTURAL PLANS AND SCHEDULES PRIOR TO INSTALLING SIDING
2. THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED, AND WEATHERSTRIPPED TO LIMIT AIR LEAKAGE.
3. PROVIDE GALVANIZED OR ANODIZED SHEET METAL FLASHING AND COUNTERFLASHING AT ALL ROOF PENETRATIONS, CHIMNEYS, AND SKYLIGHTS PER R.C. SEC. R703.8.
4. PROVIDE CONTINUOUS GUTTERS WITH DOWNSPOUTS AT ALL EAVES. U.N.O.
5. PROVIDE ROOF COVERINGS PER R.C. SECTION R905, INSTALL PER MANUFACTURER'S WRITTEN SPECIFICATIONS.
6. PROVIDE EXTERIOR WALL COVERINGS PER R.C. SECTION R703, INSTALL PER MANUFACTURER'S WRITTEN SPECIFICATIONS.

WINDOW & DOOR NOTES:
1. UNIT FRAMES TO BE ?. U.N.O.
2. "U" VALUES FOR WINDOWS TO BE NFRC CERTIFIED.
3. GLAZING UNITS TO HAVE 1/2" INSULTED GLASS. U.N.O.
4. USE SAFETY GLASS WHERE REQUIRED PER R.C. SEC. R308.4
5. WINDOWS & DOORS SHALL LIMIT AIR TRACTION PER ASTM E283.
6. SITE VERIFY ALL ROUGH OPENING DIMENSIONS PRIOR TO FABRICATION.



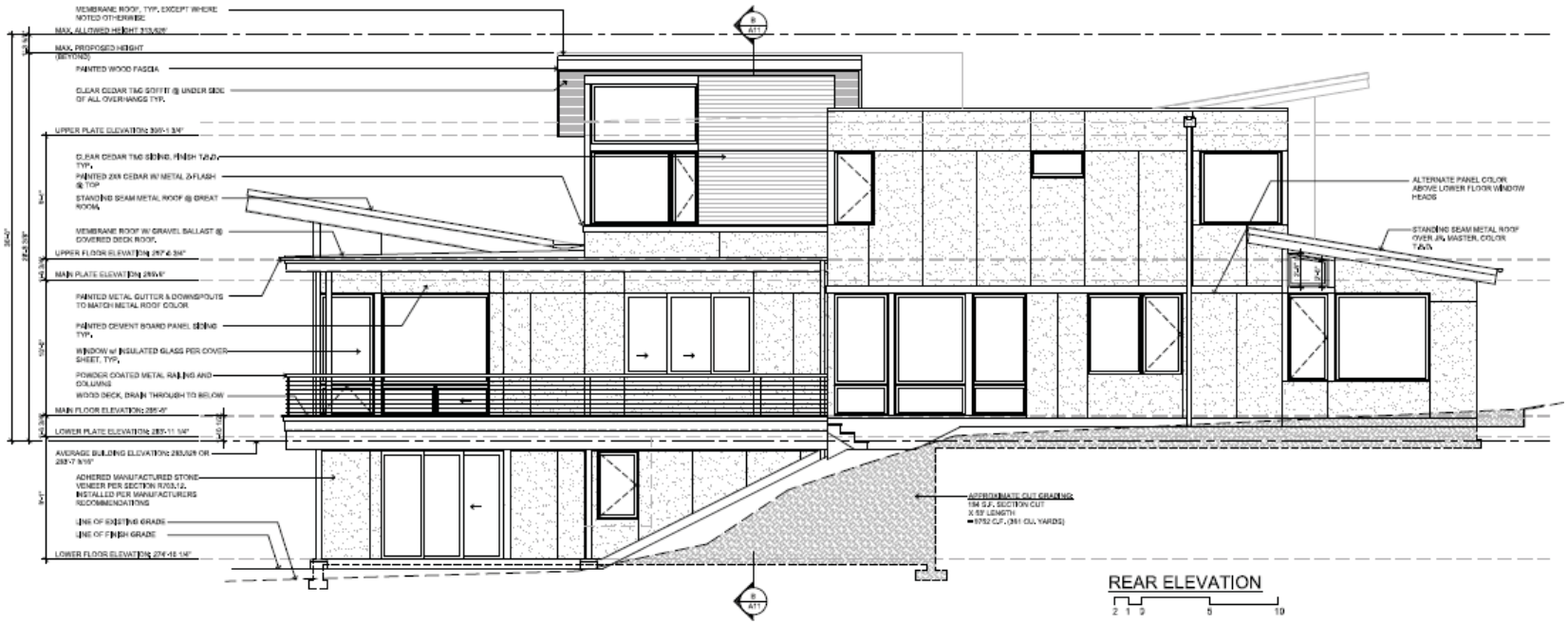
FRONT ELEVATION

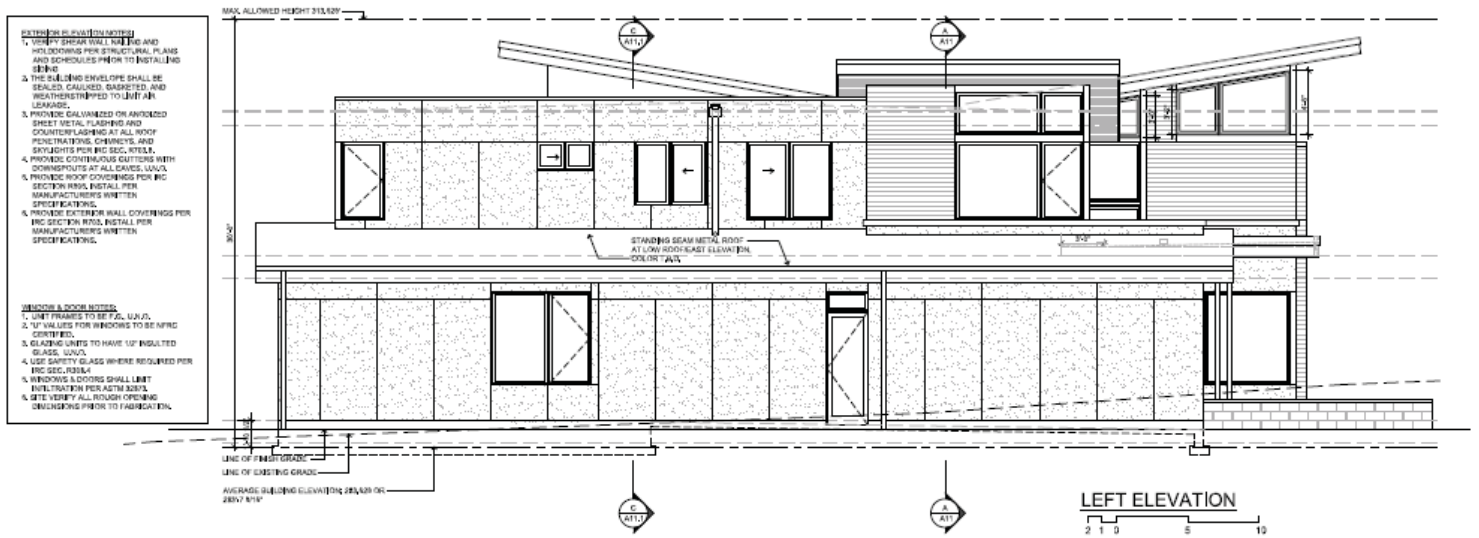
2 1 0 5 10

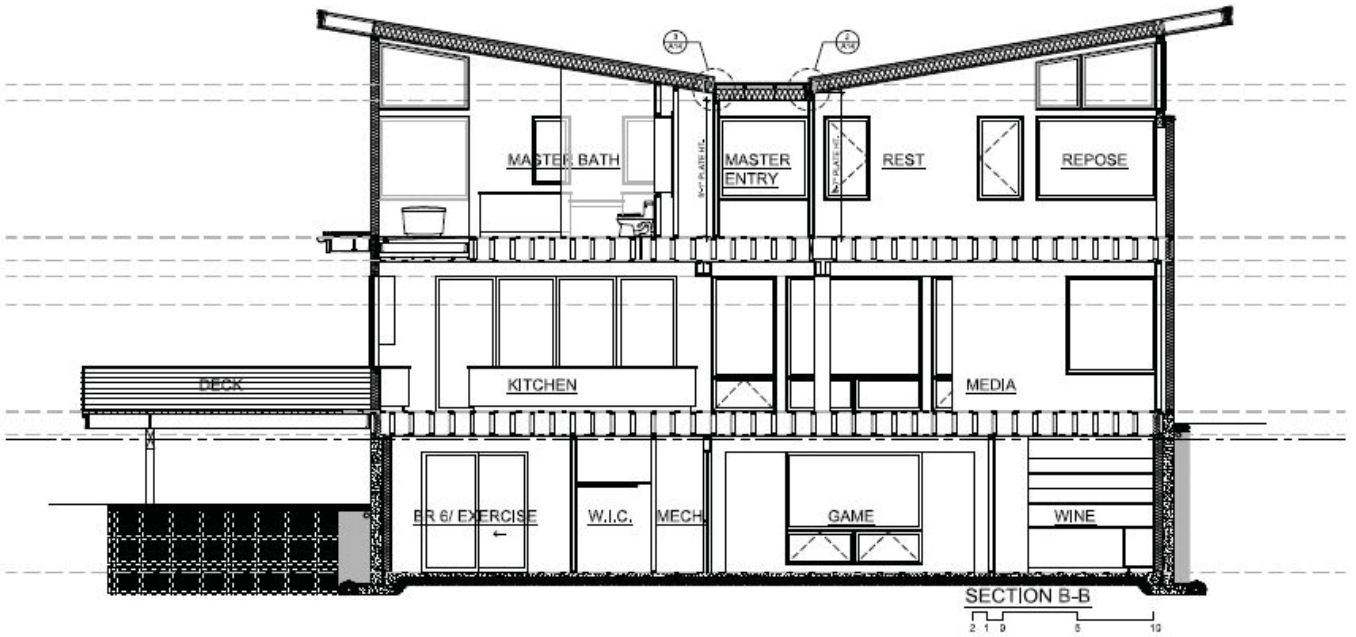


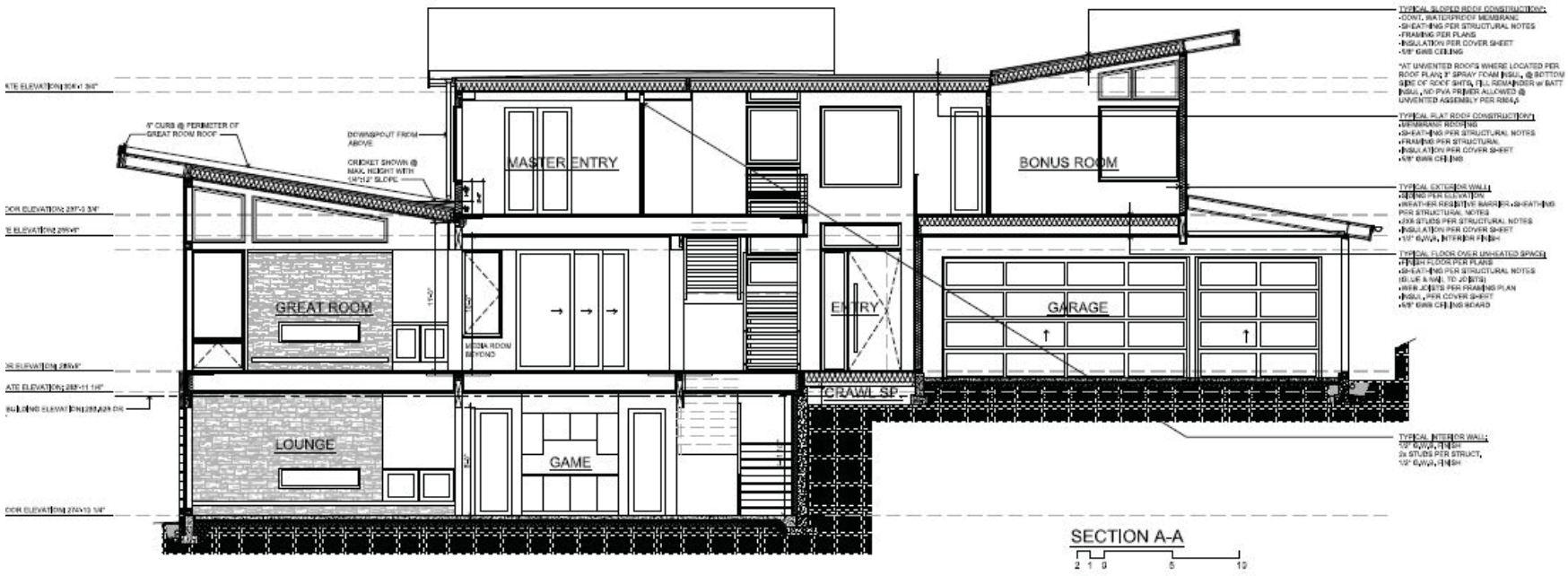
RIGHT ELEVATION

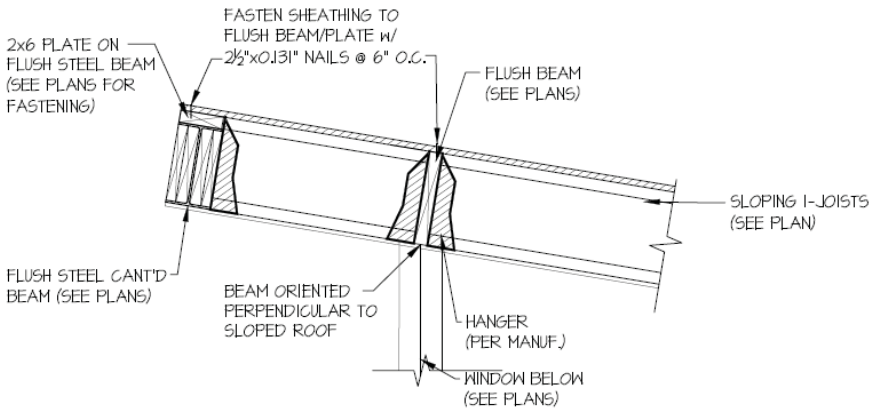
2 1 0 5 10


MEMBRANE ROOF, TYP. EXCEPT WHERE NOTED OTHERWISE
MAX. ALLOWED HEIGHT 313.625'
MAX. PROPOSED HEIGHT (BEYOND)
PAINTED WOOD FASCIA
CLEAR CEDAR T&G SOFFIT @ UNDER SIDE OF ALL OVERHANGS TYP.
UPPER PLATE ELEVATION 299'-1 3/4"
CLEAR CEDAR T&G SIDING, FINISH TYP.
PAINTED 2X8 CEDAR W/ METAL Z-FLASH @ TOP
STANDING SEAM METAL ROOF @ GREAT ROOM
MEMBRANE ROOF W/ GRAVEL BALLAST @ COVERED DECK ROOF.
UPPER FLOOR ELEVATION 287'-6 3/4"
MAIN PLATE ELEVATION 286'-9"
PAINTED METAL GUTTER & DOWNSPOUTS TO MATCH METAL ROOF COLOR
PAINTED CEMENT BOARD PANEL SIDING TYP.
WINDOW w/ INSULATED GLASS PER COVER SHEET, TYP.
POWDER COATED METAL RAILING AND COLUMNS
WOOD DECK, DRAIN THROUGH TO BELOW
MAIN FLOOR ELEVATION 286'-9"
LOWER PLATE ELEVATION 283'-11 3/4"
AVERAGE BUILDING ELEVATION 283.629 OR 283'-7 5/16"
ADHERED MANUFACTURED STONE VENEER PER SECTION R703.12, INSTALLED PER MANUFACTURERS RECOMMENDATIONS
LINE OF EXISTING GRADE
LINE OF FINISH GRADE
LOWER FLOOR ELEVATION 274'-10 1/4"
ALTERNATE PANEL COLOR ABOVE LOWER FLOOR WINDOW HEADS
STANDING SEAM METAL ROOF OVER JR. MASTER, COLOR TAN
APPROXIMATE CUT GRADING:
184 S.F. SECTION CUT
X 53' LENGTH
= 9752 CF. (361 CU. YARDS)
B A11
REAR ELEVATION
2 1 0 5 10


EXTERIOR ELEVATION NOTES:
1. VERIFY SHEAR WALL NAILING AND HOLDOWNS PER STRUCTURAL PLANS AND SCHEDULES PRIOR TO INSTALLING SIDING
2. THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED, AND WEATHERSTRIPPED TO LIMIT AIR LEAKAGE.
3. PROVIDE GALVANIZED OR ANODIZED SHEET METAL FLASHING AND COUNTERFLASHING AT ALL ROOF PENETRATIONS, CHIMNEYS, AND SKYLIGHTS PER IRC SEC. R703.8.
4. PROVIDE CONTINUOUS GUTTERS WITH DOWNSPOUTS AT ALL EAVES, U.N.O.
5. PROVIDE ROOF COVERINGS PER IRC SECTION R905, INSTALL PER MANUFACTURERS WRITTEN SPECIFICATIONS.
6. PROVIDE EXTERIOR WALL COVERINGS PER IRC SECTION R703, INSTALL PER MANUFACTURERS WRITTEN SPECIFICATIONS.
WINDOW & DOOR NOTES:
1. UNIT FRAMES TO BE P.S., U.N.O.
2. "U" VALUES FOR WINDOWS TO BE NFRC CERTIFIED.
3. GLAZING UNITS TO HAVE 1/2" INSULTED GLASS, U.N.O.
4. USE SAFETY GLASS WHERE REQUIRED PER IRC SEC. R308.4
5. WINDOWS & DOORS SHALL LIMIT INFILTRATION PER ASTM 3283.
6. SITE VERIFY ALL ROUGH OPENING DIMENSIONS PRIOR TO FABRICATION.
MAX. ALLOWED HEIGHT 313.625'
C A11.1
A A11
STANDING SEAM METAL ROOF AT LOW ROOF/EAST ELEVATION, COLOR TAN
LINE OF FINISH GRADE
LINE OF EXISTING GRADE
AVERAGE BUILDING ELEVATION 283.629 OR 283'-7 5/16"
LEFT ELEVATION
2 1 0 5 10

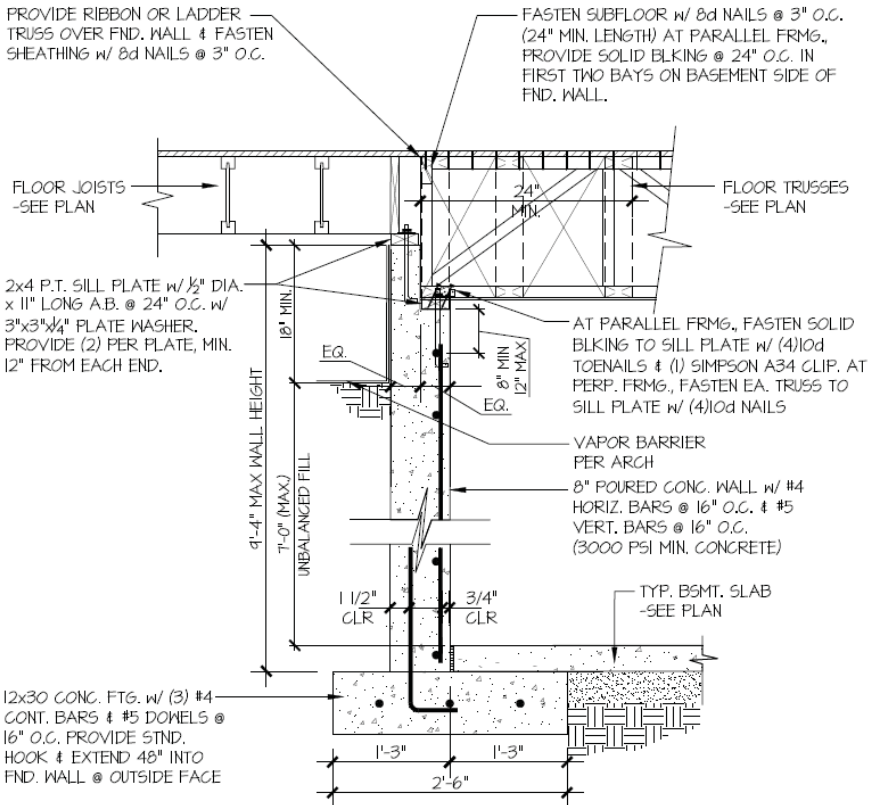

MASTER BATH
MASTER ENTRY
REST
REPOSE
KITCHEN
MEDIA
DECK
BR 6/ EXERCISE
W.I.C.
MECH.
GAME
WINE
SECTION B-B
2 1 0
5
10


MASTER ENTRY
BONUS ROOM
GREAT ROOM
ENTRY
GARAGE
LOUNGE
GAME
CRAWL SP.
SECTION A-A
2 1 0
5
10



26 DETAIL @ FLUSH FASCIA BEAM

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



11 BASEMENT FOUNDATION DETAIL

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

AT CRAWL/ BASEMENT WALL
60 PCF SOIL

By signing, signatory agrees to the following and represents that he or she is authorized to sign for the structural design firm of record.

All entries become the property of DVASE and will not be returned. By entering, the entrant grants a royalty-free license to DVASE to use any copyrighted material submitted.

If selected as an award winner, you may be offered the opportunity to present your project at a DVASE breakfast seminar. Would you be willing to present to your colleagues? ☐ ***YES*** ☒ ***NO***

Submitted by:

Print name:	**Signature:**	**Date:**
Richard Zabel		04/02/18

Submitting Firm:	Mulhern + Kulp Structural Engineering	
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Telephone:	**Fax:**	**Email:**
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