



**SWARA**

CONSULTING SERVICES INC.

ENGINEERING

EMPOWERING

**PROJECTS** WITH  
**WOOD**  
**ENGINEERING**

EXPERTISE



# Introduction:

Welcome to Swara Consulting Services Inc., your partner in creating exceptional engineering solutions. We take pride in our commitment to excellence, innovation, and reliability.



## Our Mission:

Empowering projects with engineering expertise that translates your organization's brand promise into positive, profitable, and predictable customer experiences across the globe.



## Our Vision:

To be thought leaders in customer and service experience in 'Definition, Implementation, and Management,' aiming to become the preferred partner for our target customer segments in all Engineering Sectors & Industries.

# Core Values:

**Founded on a vision of engineering excellence,**

Swara Consulting Services Inc. has a rich history of delivering outstanding engineering solutions. Our core values drive us.



**Outstanding People:** We are dedicated to maximizing contributions, seeking personal growth, and effective collaboration.

**Customer Driven:** Prioritizing customer needs, we build business-focused relationships through clear communication.



**Winning Performance:** We focus on results, delivering objectives, going the extra mile, and producing high-quality work on time.

**Innovation in Action:** We create lasting solutions, seek process improvements, and show flexibility in thought.



**Fully Integrated:** We champion causes, build networks, overcome barriers, and involve others to deliver customer satisfaction.

**Our leadership team embodies these values, bringing their expertise and passion to every project.**

# Services Overview:

At Swara Consulting Services Inc., we offer a comprehensive range of engineering services that cater to diverse industries and project complexities. Our services are categorized into various domains, each backed by our commitment to excellence, innovation, and client satisfaction.

## **Wood Engineering: Crafting with Nature's Beauty**

We specialize in designing building components using wood for residential and commercial structures. Our wood engineering solutions enhance architectural beauty and structural integrity.

## **Detailing Services: Precision in Every Detail**

Our detailing services cover a wide range of areas, including steel detailing for residential buildings, commercial buildings, industrial buildings, bridges, and more. Our meticulous detail drawings facilitate seamless fabrication and erection processes.

## **Structural Engineering: Creating Strong and Functional Structures**

Our expertise in structural engineering spans from residential to industrial projects. We develop robust structures that can withstand external and internal forces while ensuring safety, longevity, and functionality.

## **Pre-Engineered Building:**

Unlock the future of construction with our Pre-Engineered Building solutions. Benefit from precision engineering, accelerated timelines, and cost-effective excellence. We prioritize sustainability, minimizing waste and contributing to eco-friendly construction practices. Choose innovation and efficiency for your projects.

## **Transmission tower:**

Empower connectivity and reliability with our Transmission Tower solutions. Explore innovative designs, structural integrity, and efficient deployment. We leverage advanced technology to enhance tower performance, ensuring your communication infrastructure is at the forefront of efficiency and durability.

## **EPC (Engineering, Procurement & Construction): Seamlessly Executing Projects**

We excel in providing end-to-end EPC services for sectors like power, steel, sugar, and more. Our comprehensive solutions ensure seamless project execution, from design and procurement to construction and commissioning.

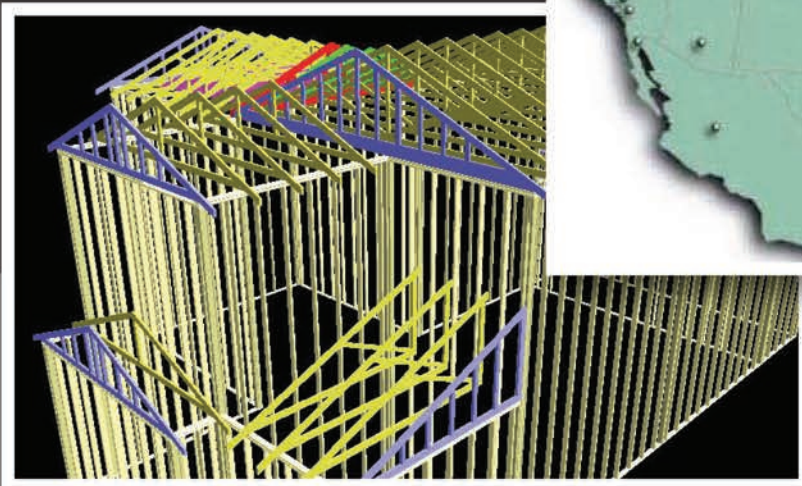
# Global Design Centre

## GLOBAL DESIGN CENTRE (GDC) HAD

- 40+ DESIGNERS FROM TRAINEES TO 14+ EXP
- 6500+ HOUSES DESIGNED
- DIRECT COMMUNICATION ROUND THE CLOCK WITH RESPECTIVE PLANTS

## TYPES OF DESIGN JOBS

- MANUFACTURED
  - FAMILY HOMES (SINGLE & MULTI)
  - COMMERCIAL BUILDINGS/STRUCTURES
- MOBILE & MODULAR
- OPEN JOIST
- I-JOIST
- WALL PANELS



## DESIGN SOLUTIONS EXPERTISE IN

- ROOF TRUSS
- FLOOR TRUSS
- MODULAR
- ENGINEERED WOOD PRODUCTS
- WALL PANEL

## PLANTS SERVED

- 212-GORDON
- 221-BELCHERTOWN
- 270-BURLESON
- 272-SAN ANTONIO
- 276-LAFAYETTE
- 280-CHESAPEAKE
- 301-NEW WINDSOR
- 343-HOUSTON
- 348-INDY
- 350-DALLAS359-VERO BEACH
- 361-RIVERBANK
- 79E-GRAND RAPID

# Type of design jobs

## Residential Vs Commercial

### Residential Homes

- Includes- Tract homes, Custom built homes, Multifamily
- Designed per International Residential Code (IRC), Uniform Building Code (UBC)
- Designed to meet customer requirement, Plant standards & county specification.



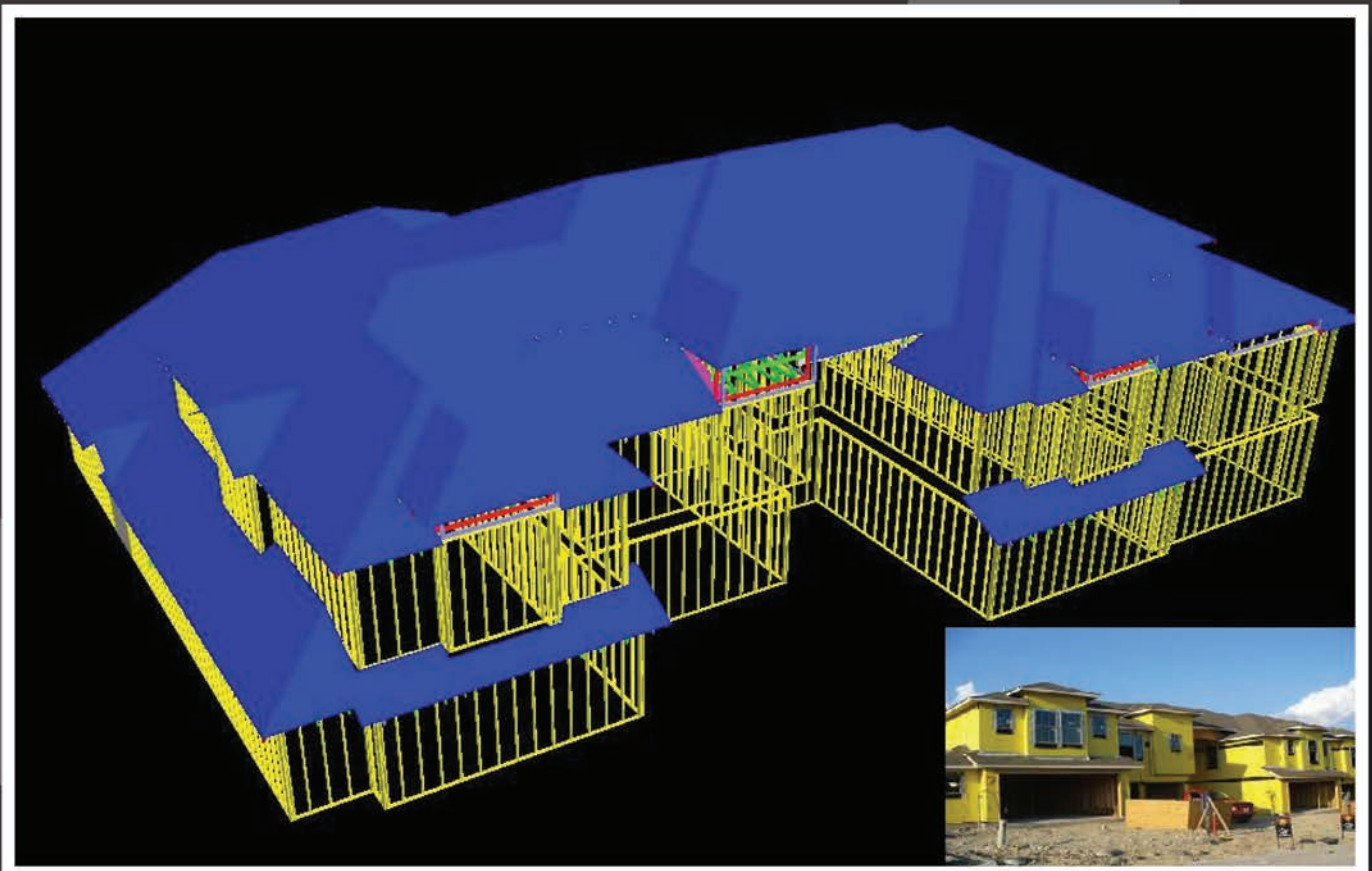
### Design components

- Roof trusses
- Floor trusses
- Hangers, Beams, bearing enhancers, Blockings, Strong backs, Rim boards & hurricane clips



## Commercial Homes

- Includes- Hotels, Restaurants, Nursing centers & Churches
- Designed per International Building code (IBC)
- Designed with fire walls and draftstops
- Designed to include sprinkler systems in roof and floor
- Designed for storage, mechanical, assembly room and Cupola loads



## Design components

- Roof trusses (Including shear, attic and draftstop trusses )
- Floor trusses
- Hangers, Beams, bearing enhancers, Blockings, Strong backs, Rim boards & hurricane clips

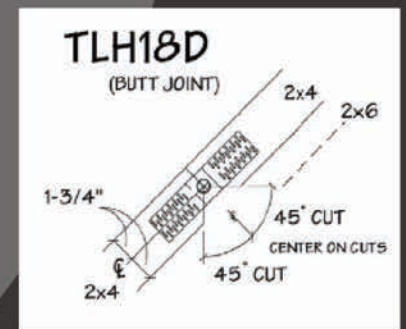
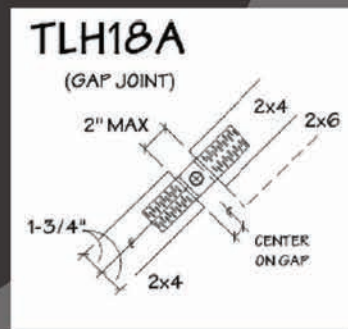
# Type of design jobs – Modular

## Modular

- Built in factory
- Confirms all codes
- Easy transportation
- Modular frame is little more than a transportation mechanism. It is designed to deal with the rigors of shipping. Each home constructed with roughly 20 to 30 % more material than a traditional stick built

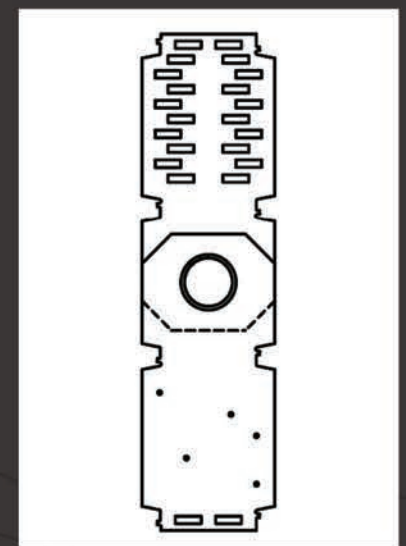
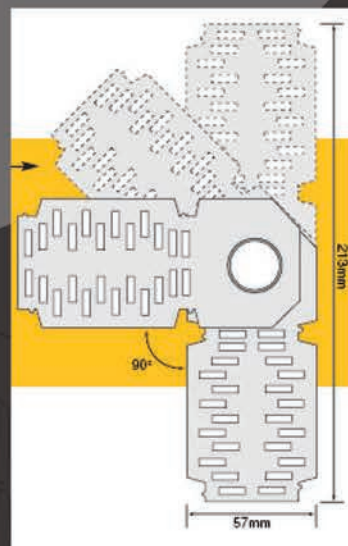
## Features

- Indoor construction
- Ability to service remote location
- Low waste
- Environmental friendly
- Energy efficient
- Design flexibility



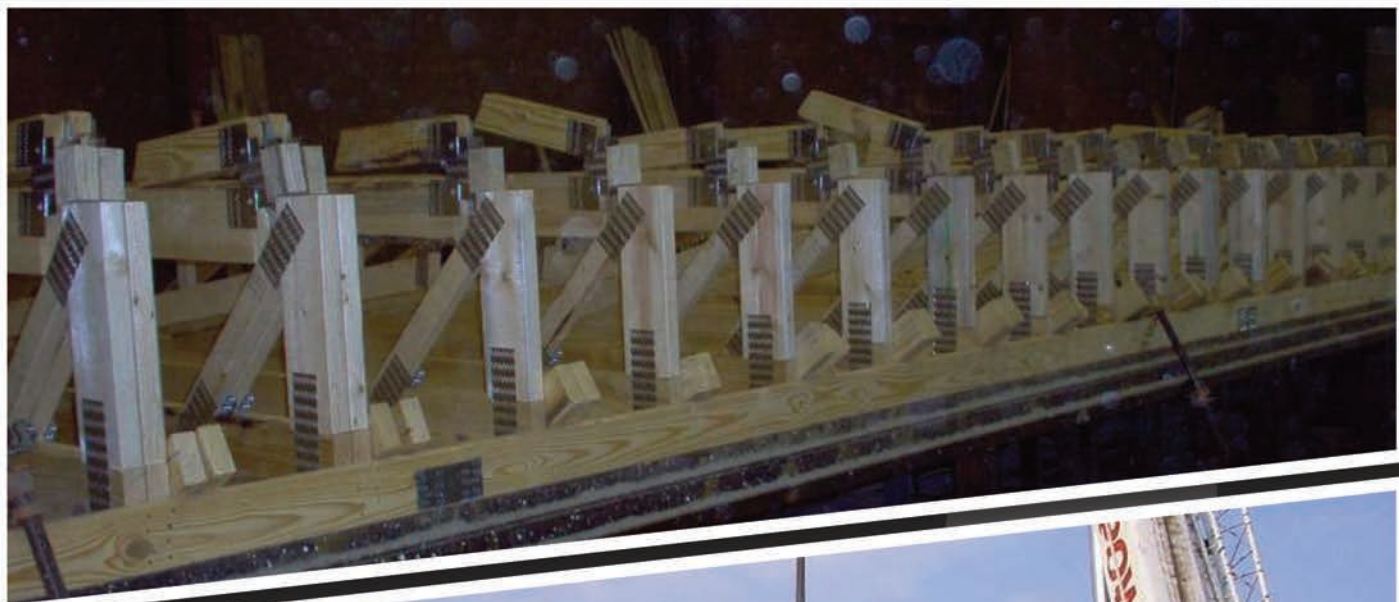
## Plates Used

- Bull Eye Hinge plate (BEH)
- TeeLok Hinge plate (TLH)
- Half and Half plate



## Benefit

- Building strength
- Very less assembly time. Modular houses are typically built in about 1/3 the time needed to construct a site built home
- Rim built in climate controlled factory thereby reduces any weather related delays or problems
- Better quality construction



# OPEN JOIST 2000

- Convenience of open web
- Available from stock
- Flexibility of Field Trimming
- Assurance of individual Testing



## Features

- Open web Configuration
- Trimmable ends
- Finger joint and waterproof glue
- Stocked item
- Stocked in 1 foot of increment
- Installs like Dimensional lumber
- 2x3 and 2x4 Top and Bottom chords
- Individually tested
- Accepted by Regulating authorities

# Design components

- Open Joist
- Beam
- Rim Board
- Gusset plate
- Strong back
- Hangers



## Depth and Span of Open Joist

### Depths

### Max Span

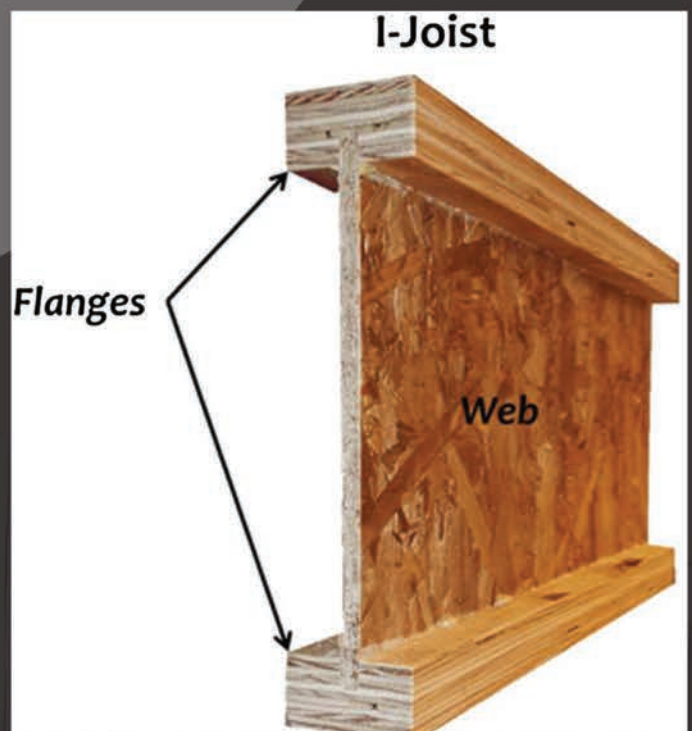
9 – 1/4"	-	20'
11 – 7/8"	-	23'
14"	-	25'
16"	-	30'

## I-JOIST

- Strong and straight
- More consistent in quality
- Light weight
- Less waste

### Features

- 'I' Shaped engineered wood structural member.
- Never have to trim more than one end
- Prefabricated MSGL or LVL flanges and
- Structural panel web.
- Allowable span –  $L/480$  deflection criteria



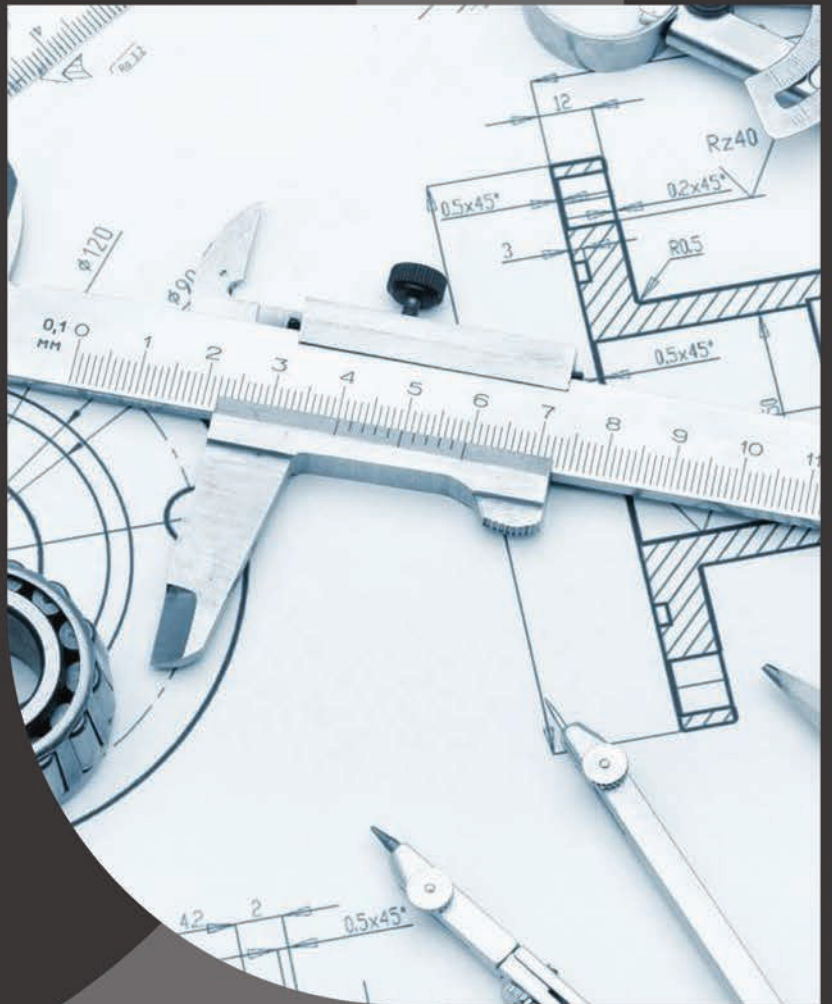
# Designing

- I-Joist
- Beam
- Rim Board
- Blocking
- Hangers

## Depths

### Depths Available:

- 9 – ¼"
- 11 – 7/8"
- 14"
- 16"



# Wall Panel

- Prescriptive Design
- Specification as per code and plants requirement
- Each client's requirement is unique

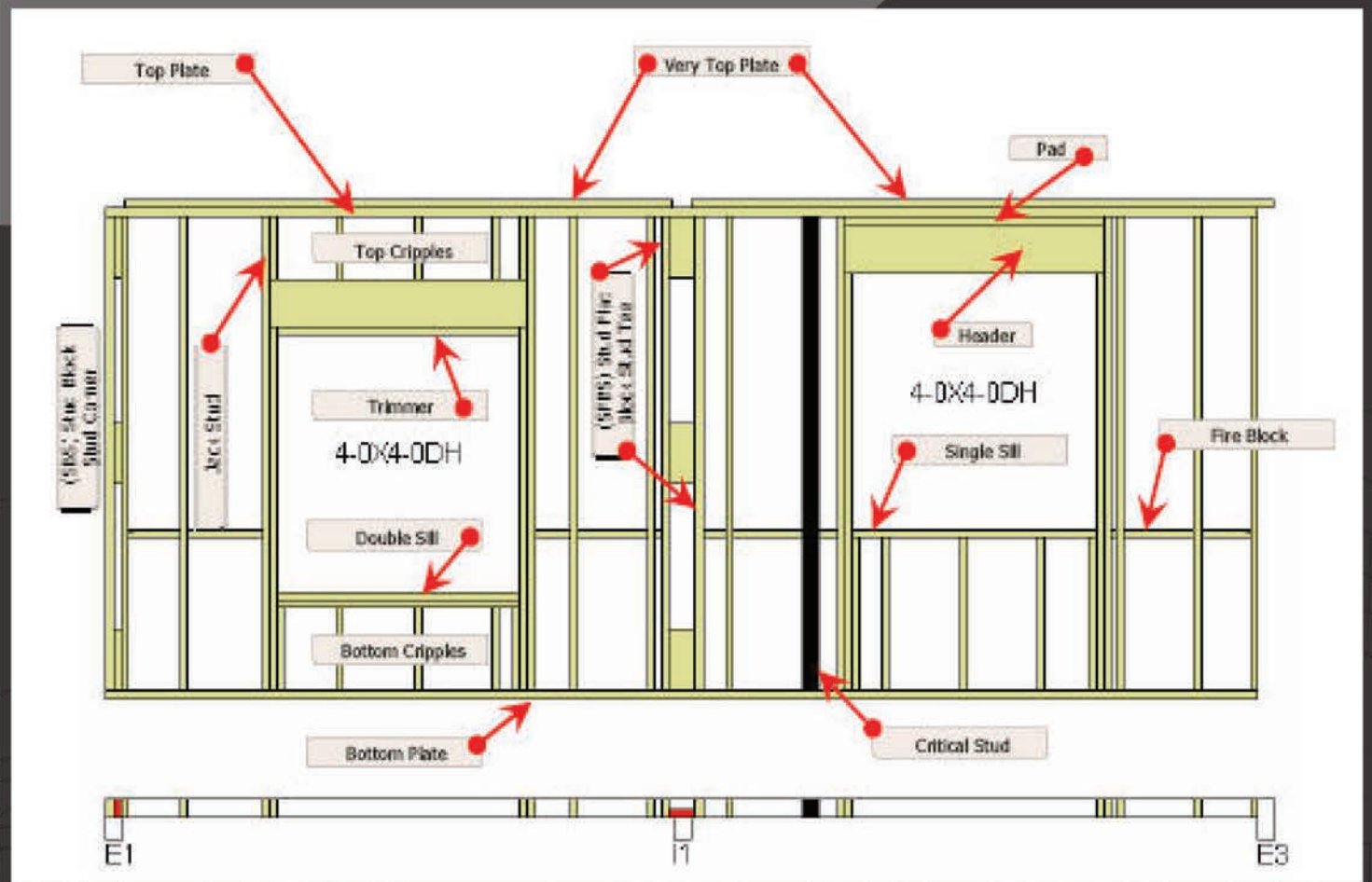


# WHY WALL PANELS?

- Save installation time!
- Eliminate design and fabrication inconsistencies
- Increase quality
- Utilize less skilled labor
- Reduce jobsite theft
- Reduce waste (less scrap and material)



## PANEL TERMINOLOGY



# CRITICAL LOADS



Critical Stud



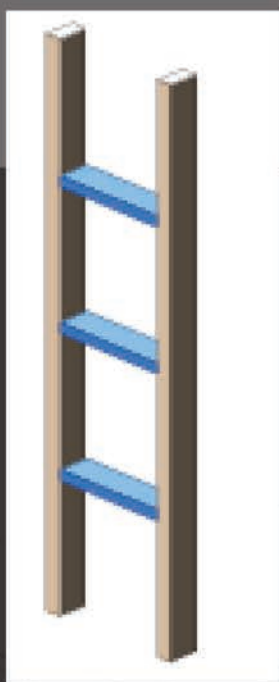
Up sized header to carry the load from the beam

# JUNCTIONS

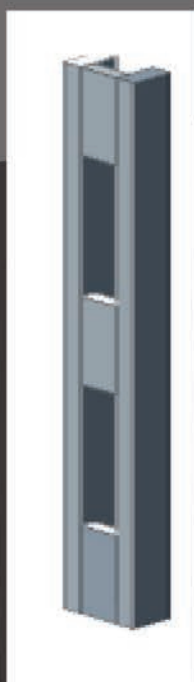
## CORNERS



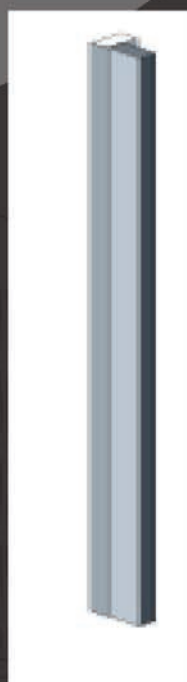
## TEES



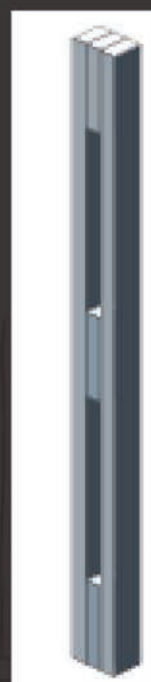
LADDER



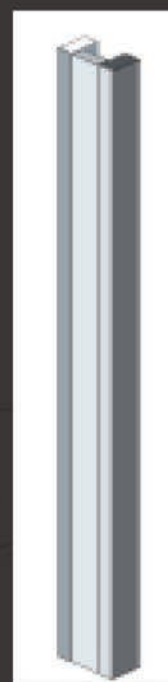
SFBS



L-TYPE



SBS



SFSS

# TYPICAL OPENING



# MANUFACTURING PICTURES



# WALL PANEL - CHOICES



Raked Wall

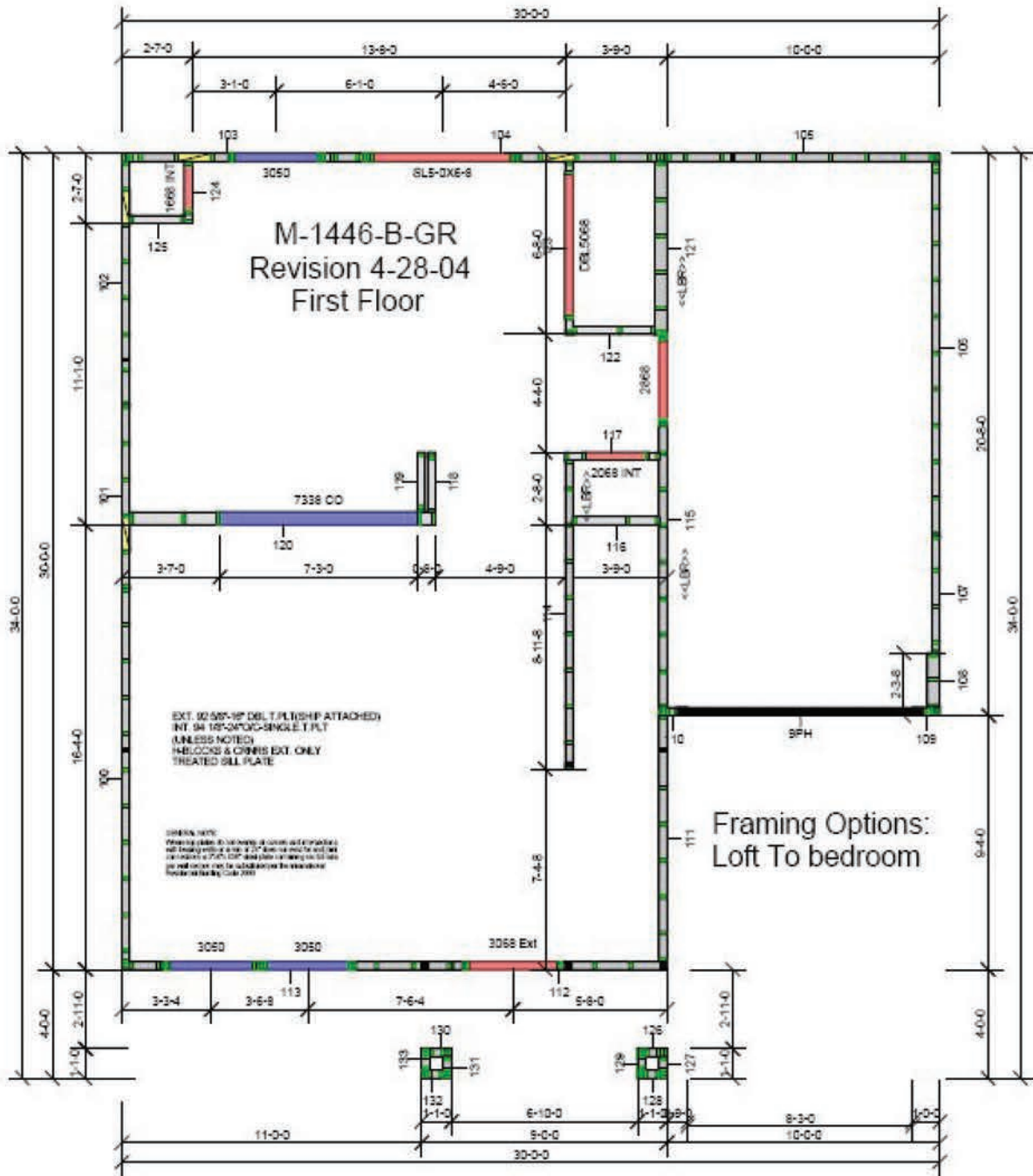
Sheathing Attached



## GARAGE



# PLACEMENT PLAN



Universal Forest Products  
 KB Homes  
 M-1446-B-GR  
 Caballito Del Mar  
 3712 Venera Street  
 Job: 05-2355  
 Designed by: JCS

Quantity	Name	Height	Width
1	1668 INT	6-10-14	1-8-8
1	2068 INT	6-10-14	2-2-8
1	2668	6-10-14	2-10-6
1	7338 CO	3-8-0	7-3-0
1	DBL3068	6-10-14	5-2-8
3	3050	5-0-8	3-0-8
1	3068 Ext	6-10-14	3-2-8
1	SL5-0X6-8	6-9-6	5-0-8

Loose Material:  
 15 ea. 2x4x8' dbl.t.plt.w.w  
 1 ea. 3 1/2x11 1/4x9' PwrHdr  
 2 ea. 2x12x4' porch beam  
 1 ea. 2x12x8' porch beam

# REPORTS

**Stacking Shipping Report**

Job No: **KB3522**  
 Land Name: **AAA**  
 Date: **Jan 15, 2017**

**Stack #1 of 4** Rows: **21**

Stack Length = 12-0-0    Stack Height = 6-1-8    Stack Width = 8-1-2

**Stack #2 of 4** Rows: **22**

Stack Length = 12-0-0    Stack Height = 6-11-0    Stack Width = 8-1-2

**Stack #3 of 4** Rows: **19**

Stack Length = 12-0-0    Stack Height = 5-5-8    Stack Width = 8-1-2

**Job: KB 3522**  
**Elevation Report**

Panel: **3E**    Page: **42**

Length: 0'    Width: 144'-0"    Height: 0'    Area: 20,736 sq ft

Volume: 0'    Weight: 0'    Area: 0'    Area: 0'    Area: 0'

**Cutting List**

Item	Description	Quantity	Length	Width	Area
1	2x4	11714	12'-0"	4'-0"	50808
2	2x6	11714	12'-0"	6'-0"	81216
3	2x8	11714	12'-0"	8'-0"	107568
4	2x10	11714	12'-0"	10'-0"	140160
5	2x12	11714	12'-0"	12'-0"	168192
6	2x14	11714	12'-0"	14'-0"	201816
7	2x16	11714	12'-0"	16'-0"	233472
8	2x18	11714	12'-0"	18'-0"	263136
9	2x20	11714	12'-0"	20'-0"	290880
10	2x22	11714	12'-0"	22'-0"	316656
11	2x24	11714	12'-0"	24'-0"	340512
12	2x26	11714	12'-0"	26'-0"	362544
13	2x28	11714	12'-0"	28'-0"	382784
14	2x30	11714	12'-0"	30'-0"	401280
15	2x32	11714	12'-0"	32'-0"	418112
16	2x34	11714	12'-0"	34'-0"	433344
17	2x36	11714	12'-0"	36'-0"	447024
18	2x38	11714	12'-0"	38'-0"	459264
19	2x40	11714	12'-0"	40'-0"	470080
20	2x42	11714	12'-0"	42'-0"	479520
21	2x44	11714	12'-0"	44'-0"	487632
22	2x46	11714	12'-0"	46'-0"	494448
23	2x48	11714	12'-0"	48'-0"	500016
24	2x50	11714	12'-0"	50'-0"	504480
25	2x52	11714	12'-0"	52'-0"	507904
26	2x54	11714	12'-0"	54'-0"	510336
27	2x56	11714	12'-0"	56'-0"	511824
28	2x58	11714	12'-0"	58'-0"	512416
29	2x60	11714	12'-0"	60'-0"	512160
30	2x62	11714	12'-0"	62'-0"	511104
31	2x64	11714	12'-0"	64'-0"	509200
32	2x66	11714	12'-0"	66'-0"	506496
33	2x68	11714	12'-0"	68'-0"	502944
34	2x70	11714	12'-0"	70'-0"	498512
35	2x72	11714	12'-0"	72'-0"	493264
36	2x74	11714	12'-0"	74'-0"	487264
37	2x76	11714	12'-0"	76'-0"	480576
38	2x78	11714	12'-0"	78'-0"	473264
39	2x80	11714	12'-0"	80'-0"	465400
40	2x82	11714	12'-0"	82'-0"	457056
41	2x84	11714	12'-0"	84'-0"	448304
42	2x86	11714	12'-0"	86'-0"	439120
43	2x88	11714	12'-0"	88'-0"	429584
44	2x90	11714	12'-0"	90'-0"	419760
45	2x92	11714	12'-0"	92'-0"	409632
46	2x94	11714	12'-0"	94'-0"	400272
47	2x96	11714	12'-0"	96'-0"	390672
48	2x98	11714	12'-0"	98'-0"	380816
49	2x100	11714	12'-0"	100'-0"	370704
50	2x102	11714	12'-0"	102'-0"	360424
51	2x104	11714	12'-0"	104'-0"	350000
52	2x106	11714	12'-0"	106'-0"	339424
53	2x108	11714	12'-0"	108'-0"	328704
54	2x110	11714	12'-0"	110'-0"	317840
55	2x112	11714	12'-0"	112'-0"	306832
56	2x114	11714	12'-0"	114'-0"	295680
57	2x116	11714	12'-0"	116'-0"	284384
58	2x118	11714	12'-0"	118'-0"	272944
59	2x120	11714	12'-0"	120'-0"	261360
60	2x122	11714	12'-0"	122'-0"	249632
61	2x124	11714	12'-0"	124'-0"	237760
62	2x126	11714	12'-0"	126'-0"	225744
63	2x128	11714	12'-0"	128'-0"	213584
64	2x130	11714	12'-0"	130'-0"	201280
65	2x132	11714	12'-0"	132'-0"	188832
66	2x134	11714	12'-0"	134'-0"	176240
67	2x136	11714	12'-0"	136'-0"	163504
68	2x138	11714	12'-0"	138'-0"	150624
69	2x140	11714	12'-0"	140'-0"	137600
70	2x142	11714	12'-0"	142'-0"	124432
71	2x144	11714	12'-0"	144'-0"	111120
72	2x146	11714	12'-0"	146'-0"	97664
73	2x148	11714	12'-0"	148'-0"	84064
74	2x150	11714	12'-0"	150'-0"	70320
75	2x152	11714	12'-0"	152'-0"	56432
76	2x154	11714	12'-0"	154'-0"	42400
77	2x156	11714	12'-0"	156'-0"	28224
78	2x158	11714	12'-0"	158'-0"	13904
79	2x160	11714	12'-0"	160'-0"	0

**Job: KB 3522**  
**Bottom Plate Report**

Universal Floor Profile    100 Series    4 x 8 2x10x12

Stack Length = 12'-0"    Stack Height = 6'-0"    Stack Width = 8'-0"

Stack Length = 12'-0"    Stack Height = 6'-11"    Stack Width = 8'-0"

Stack Length = 12'-0"    Stack Height = 6'-0"    Stack Width = 8'-0"

Stack Length = 12'-0"    Stack Height = 6'-0"    Stack Width = 8'-0"

# STACKING & TRANSPORTING...



# Wall Panel Final Thoughts

- Walls are not engineered. They are based on time tested prescriptive framing methods
- Consideration is given to critical loads requiring the addition of critical studs or header design
- Must meet the building code, city, subdivision, customer and manufacturing plant specifications

## Wood truss – Typical Deliverables

### Structural wood Design

- Field truss placement drawings
- Wall panel layout & Elevation report
- Engineering drawings in CNC format
- Modular truss profile in DGN format
- Beam design report
- Joists design report
- Construction of 3D model
- Shop drawing for cutting and assembling
- Estimation and scheduling of building materials
- Inputs to Mitek Business Application (MBA) software

**Drawings as per IRC AND IBC codes**  
**Multi layered QA & QC system**



## Contact Us:

Contact Swara Consulting Services Inc. to discuss your next project. Our dedicated team is ready to provide engineering expertise tailored to your needs. Reach out to us today:

**Email:** [Rahul.Takhalate@swaracs.com](mailto:Rahul.Takhalate@swaracs.com)

**Mobile:** (214) 856 1075

**Address:** Swara Consulting Services Inc.  
3801 N Capital of Texas Hwy  
Ste E240-3727  
Austin, TX 78746

We look forward to collaborating with you to empower your projects with Engineering Excellence.