Custom Home Design
 Plan #97
 By SDS-CAD Specialized Design Systems

To the best of my knowledge these plans are drawn to comply with owner's and/or builder's specifications and any changes made on them after prints are made will be done at the owner's and/or builder's expense and responsibility. The contractor shall verify all dimensions and enclosed drawing. SDSCAD is not liable for errors once construction has begun. While every effort has been made in the preparation of this plan to avoid mistakes, the maker can not guarantee against human error. The contractor of the job must check all dimensions and other details prior to construction and be solely responsible thereafter. All calculations and member sizing should be verified for your building by a certified building official.
 MAIN FLOOR PLAN

SCALE 1/8"=1'

Note: Paper size B - 11 x 17 printed on D - 22 x 34 scale is 2 x of stated scale

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Concrete:
1. All slabs are to be 4" concrete over 4" gravel unless otherwise noted on the plans.
2. Concrete to be ACI 301-66, Type II cement, 2500 psi at 28 days, 5" maximum slump.
3. Reinforcing to be ASTM A615-Bars with Fy=60 ksi lamp 30 diameter minimum at splices or weld per ACI Std.
4. Concrete design based on Fc 2000 psf, Fc 2500 psi for quality only.
5. Anchor bolts shall be A-307 embedded 7" minimum into concrete or masonry grout.
VENT ATTIC PER CODE

VAULT AS DESIGNATED ON FLOOR PLAN

PREFABRICATED TRUSSES @ 24" O.C.

ASPHALT SHINGLES

OVER 30# FELT

ICE SHIELD 24" UP FROM WALL

AND ALL VALLEYS

5/8" PLY. SHEATHING

TRUSS CLIP

RAIN GUTTER

1 x 6 FASCIA

FINISH PER ELEVATIONS

HOUSE WRAP OVER

7/16" PLY. SHEATHING

2 x 6 BOTTOM PLATE

RM JOIST

2 x 6 MUDSILL

1/2" x 10" ANCHOR BOLT

EMBEDDED 7" INTO CONC.

1/2" REBAR

SPACED 24" HOR

& VERT 4" MIN

FROM TOP AND BOTTOM

4" DRAIN TO DAYLIGHT IN

8" x 24" GRAVEL

1/2" SHEETROCK

2 x 6 DOUBLE TOP PLATE

R-19 BATT INSULATION

2 x 6 STUD @ 16" O.C.

1/2" SHEETROCK

3/4" PLYWOOD SUBFLOOR SCREW & GLUE

2 x 11 7/8 TGI JOIST @ 16" O.C.

OR AS NOTED ON PLAN

BASEBOARD

BEARING WALL AS PER PLAN

2 x STUDS @ 16" O.C.

2 - 1/2" REBAR

4" CONC. SLAB W/6 x 6 #10 WW MESH OR FIBER

4" GRAVEL & 6 MIL VAPOR SEAL

8" x 8"

FOUNDATION WATERPROOF TO GRADE

8" x 20" FOOTING

WITH 2 - 1/2" REBAR

Note: Paper size B - 11 x 17 if printed on D - 22 x 34 scale is 2 X of stated scale
Roof Framing:

1. Fascia to be 2"x Douglas Fir.
2. For soffit size see details.
3. For spans and dimensions refer to floor plans.
4. Trusses are to be an approved truss design from the truss manufacturer's engineer. Install as per engineer's specs.
5. Use Simpson H-1 hurricane anchors at each truss or rafter to wall connection.
6. Solid blocking required between joists, rafters, and trusses over all bearing walls. Such blocking shall be 1 1/2" minimum thickness and full depth of joists, rafters, or trusses.
7. Minimum header sizes shall be according to the header size table unless otherwise noted.
8. Basis of design roof live/snow load of 37 psf, and roof dead load of 15 psf.
9. Plywood roof decking to be Min 7/16" thick, 24/0, CDX or 5/8 wafer.

Main Floor Framing

Scale 1/16"=1'

PRE-ENGINEERED ENERGY TRUSSES AS SUPPLIED BY TRUSS MANUFACTURER

1. Trusses to be 24" O.C.
2. Attic access min 22 1/2" x 30" were most convenient. For all areas greater than 30"
3. Vaulted ceiling over family and living room area using vaulted scizzor trusses where possible.
4. Install all trusses as per truss manufacturer installation guidelines.
5. Attic Trusses over garage area for bonus room
6. 10/12 Pitch

Scale 1/16"=1'

Note: Paper size B - 11 x 17 if printed on D - 22 x 34 scale is 2 X of stated scale
General framing: (Douglas Fir)

1. Minimum header sizes shall be according to the following table unless otherwise noted.

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<th>Span</th>
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<td>2-2x4's</td>
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<tr>
<td>4'-0&quot; to 6'-0&quot;</td>
<td>2-2x6's</td>
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<tr>
<td>6'-0&quot; to 8'-0&quot;</td>
<td>2-2x8's</td>
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<tr>
<td>10'-0&quot; to 12'-0&quot;</td>
<td>2-2x12's</td>
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Header sizes (two story construction)

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<th>Span</th>
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<td>3'-0&quot; to 5'-0&quot;</td>
<td>2-2x6's</td>
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<tr>
<td>5'-0&quot; to 7'-0&quot;</td>
<td>2-2x8's</td>
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<tr>
<td>7'-0&quot; to 8'-0&quot;</td>
<td>2-2x10's</td>
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</table>

2. Brace all exterior walls and cross-stud partitions at each end of building and at least every 25' of length by one of the following:
   a. Simpson WB 126 wall bracing with 3-16d nails at each end and 1-8d nails at each stud.
   b. Plywood sheathing of a minimum thickness of 3/8 inch.

3. Fire stopping:
   a. Fireblock stud spaces over 10' in height, furred spaces, soffits, drop ceilings, cove ceilings, stair stringers at top and bottom of run, bearing walls and ceiling joist lines, etc.
   b. Firestop openings around vents, pipes, ducts, chimneys, and fireplaces at ceiling and floor levels with approved noncombustible materials.

4. CDX plywood is not approved where exposed to weather, i.e., roof overhangs.

5. Exterior wall framing to be 2"x6" studs at 16" o.c. Interior wall framing at non-bearing walls to be 2"x4" studs at 24" o.c. and at bearing walls 2"x4" studs at 16" o.c. with double top plate.

6. Shear wall to be 3/8" CDX plywood applied horizontally.

7. All stress grade lumber shall comply with WCLA specs and bear approval stamp on all pieces in place.

8. Nailing to be per current U.B.C. unless otherwise noted.

9. All bearing partitions shall have double top plates.

10. Structural glued laminated timbers to be stamped by an approved agency.

11. Use redwood or pressure treated sole plates at all exterior walls.

Floor Framing:

1. All floor joist to be Douglas Fir #2 or T.J.I. @ 16" o.c. unless otherwise noted.

2. For spans and dimensions refer to floor plans.

3. Use Simpson H 2.5 hurricane anchors at each floor joist to bearing wall connection.

4. Solid blocking between joists over all bearing walls, and midspans such blocking shall be 2" minimum thickness and full depth of joists.

5. Minimum header sizes shall be according to the header size table unless otherwise noted.


7. Floor decking to be 1/4" thick T & G wafer board.

8. Joist hangers to be Simpson U210 or equal unless otherwise noted.

9. Double joists and or double blocking at all interior walls.

10. Structural glued laminated timbers to be stamped by an approved agency.
### STAIR DETAILS

**STAIR SPECIFICATIONS**

1. Stairs to be constructed with the following materials:
   - 2x6 kick plate anchor to concrete with expansion type anchor bolts,
   - 2x12 treads nosing 1 1/8" minimum, 3-2x12 stringers required,
   - 2x12 blocking, 3/4" wafer board risers and 2x6 ledger.

2. Handrail/Guardrails final style, material and color to be owner's choice. Design to be per code.

3. Guardrails to be 42" high minimum from floor.

4. Handrails to be 34"-38" above tread nosing.

5. Open railing to have intermediate rails or ornamental pattern such that a sphere 4" round cannot pass through.

6. Minimum stair requirements: maximum 8" rise, minimum 42" width, minimum 9" run, minimum head clearance 6'-8".

7. Preferred stair requirements: rise 7" to 7 ½", run 11" to 12", minimum head clearance 7'-0".

8. Garage entrance stairs may be concrete or wood as per contractor/homeowner.

### STAIR SCHEDULE

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### Notes
- Handrail/Guardrail - final style, material and color to be owner's choice. Design to be per code.
- Guardrails to be 34"-38" above tread nosing.
- Minimum stair requirements: 8" rise, minimum 42" width, minimum 9" run, minimum head clearance 6'-8".
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**CABINET SCHEDULE**

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**Kitchen layout and cabinets to be chosen by homeowner/Contractor basic layout for reference only. Measure after sheetrock is installed for correct sizing.**
Electrical Systems:
1. Inspection is required prior to backfill of lines.
2. Provide 20 ft. of No. 4 copper wire as ground electrode in foundation footing.
3. Bond interior piping system with #8 bare copper.
4. Provide main jumping bond with #4 bare copper.
5. Electrical service is to be 200 amp service, 120/240 volt, 1 phase raintight, underground.
6. Provide separate 20 amp circuits to washer.
7. Provide 20 amp circuits to family and dining room, and a minimum of two 20 amp circuits to kitchen.
8. Prewire for TV, telephone in kitchen, family room, living room, and in every bedroom.
9. Install ground fault current interrupter on exterior, garage, kitchen, and bathroom convenience outlets.
10. Bottom half of outlet controlled by switch when shown.
11. All outlets in kitchen are to be at +44" excluding those for the refrigerator, range, disposal, and dishwasher.
12. Maximum spacing of outlets shall not exceed 12 ft. along wall line and at any wall over 24" wide in all rooms except kitchen, bath, utility, and garage.
13. Install light in walk-in closet 18" minimum horizontal from any shelf.
14. Provide a ventilation fan capable of producing a change of air every 12 minutes for bath or utility.
15. Provide smoke detector alarm conforming to Section 1210(A) U.B.C. and local building codes in every bedroom and on each floor.
16. CO2 Detector on each floor.
BASEMENT ELECTRICAL PLAN
SCALE 1/8"=1'
Typical Shear Wall

- Asphalt Shingles Roofing Material
- 20# Roofing Paper
- 5/8" M. Roof Decking
- Engineered Trusses
- Vent per Code Ventilation

Metal Drap Edge
- Rain Gutters
- 2 x 6 Sub Fascia
- 12" Metal Fascia
- 1" F. Overhang
- Metal Vented Soffit

Ext. Wall Finish as per Elevations
- Tyvek House Wrap
- 7/16" Min. Wall Sheathing
- 2 x 6 Framing 16 O.C.

A-207 Anchor Bolts
- 2 x 6 Treated Sill Plate
- Foam Sill Seal
- 8" Min. to Grade Height

Waterproofing to Grade
- 8" Foundation Wall
- A-615 Re-Bar 24" OC Vert & Hor
- 4" Draw Tile
- 9" x 20" Min. Concrete Footing
- A-615 Re-Bar

R3 Attic Insulation
- Engineered Trusses 24" O.C.

R19 Wall Insulation
- Vapor Barrier
- Sheetrock Wall Finish

Finish Floor
- 3/4" T & G Sub Floor
- 1 3/4 x 11 7/8" I-Joists or Equiv
- R19 Jost Insulation

A-307 Anchor Bolts
- 2 x 6 Treated Sill Plate
- Foam Sill Seal
- 6" Min. to Grade Height
- Waterproofing to Grade
- 8" Foundation Wall
- A-615 Re-Bar

Grade 2 1/2% Min. Slope
- Vertical Rebar 44 @ 24" O.C.
- 8" Min. Thickness
- Concrete Wall
- J-Bar Dowels to Match Vertical Rebar Spacing
- Extended 24" Min. into Foundation Wall
- With 6" Min. Hook
- 6" Compact Gravel
- 4" Conc. Slab

Garage Wall Section

- 1/2" x 10" Foundation Bolts
- 20 x 30" Conc. Footing
- 2" Rebar Continuous

BEARING WALL SECTION

- 8" Min. Thickness
- Horizontal Rebar # 4 @4" O.C. W/First Bar Placed 4" Above Footing
- J-Bar Dowels to Match Vertical Rebar Spacing
- Extended 24" Min. into Foundation Wall
- With 6" Min. Hook
- 4" Gravel Fill

BASEMENT WALL SECTION

- 9" x 20" Conc. Footings
- 2" Rebar Continuous

J-BAR DOWELS TO MATCH VERTICAL REBAR SPACING.
- FOUNDATION WALL.
- 6" MIN. HOOK
- 4" GRAVEL FILL
- 204-2 MIN.

Note: Paper size M - 11 x 17 if printed on D - 22 x 34 scale is 2 X of stated scale
@COPYRIGHT SDSCAD Specialized Design Systems
MECcheck Compliance Report
1995 MEC
MECcheck Software Version 3.3 Release 1b
Data filename: G:\SDSCAD\craig smith\craig1.cck

TITLE: Craig Smith
CITY: Logan
STATE: Utah
HDD: 7389
CONSTRUCTION TYPE: Single Family
DATE: 04/23/04
DATE OF PLANS: April 16, 2004

COMPLIANCE: Passes
Maximum UA = 362
Your Home = 361
0.3% Better Than Code

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<th>Cont. R-Value</th>
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<tr>
<td>Window 2: Vinyl Frame, Double Pane with Low-E</td>
<td>65</td>
<td>0.350</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Furnace 1: Forced Hot Air, 90 AFUE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Conditioner 2: Electric Central Air, 10 SEER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COMPLIANCE STATEMENT: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 1995 MEC requirements in MECcheck Version 3.3 Release 1b and to comply with the mandatory requirements listed in the MECcheck Inspection Checklist.

Builder/Designer ____________________________ Date __________
MECcheck Inspection Checklist
1995 MEC
MECcheck Software Version 3.3 Release 1b

DATE: 04/23/04
TITLE: Craig Smith

Bldg. | Dept. | Use

Ceilings:
1. Ceiling 1: Flat Ceiling or Scissor Truss, R-38.0 continuous insulation
   Comments: ______________________________________________________________

Above-Grade Walls:
1. Wall 1: Wood Frame, 16" o.c., R-19.0 continuous insulation
   Comments: ______________________________________________________________

Basement Walls:
1. Basement Wall 1: Solid Concrete or Masonry, 8.0' ht/7.0' bg/8.0' insul,
   R-13.0 continuous insulation
   Comments: ______________________________________________________________

Windows:
1. Window 1: Vinyl Frame, Double Pane with Low-E, U-factor: 0.350
   For windows without labeled U-factors, describe features:
   # Panes Frame Type Thermal Break? [ ] Yes [ ] No
   Comments: ______________________________________________________________

Above-Grade Walls:
1. Window 2: Vinyl Frame, Double Pane with Low-E, U-factor: 0.350
   For windows without labeled U-factors, describe features:
   # Panes Frame Type Thermal Break? [ ] Yes [ ] No
   Comments: ______________________________________________________________

Doors:
1. Door 1: Solid, U-factor: 0.350
   Comments: ______________________________________________________________

Heating and Cooling Equipment:
1. Furnace 1: Forced Hot Air, 90 AFUE or higher
   Make and Model Number __________________________________________

2. Air Conditioner 2: Electric Central Air, 10 SEER or higher
   Make and Model Number __________________________________________

Air Leakage:
Joints, penetrations, and all other such openings in the building envelope that are sources of air
leakage must be sealed.

Recessed lights must be Type IC rated and installed with no penetrations, or Type IC or non-IC
rated installed inside an appropriate air-tight assembly with a 0.5" clearance from combustible
materials and 3" clearance from insulation.

Vapor Retarder:
Required on the warm-in-winter side of all non-vented framed ceilings, walls, and floors.

Materials Identification:
Materials and equipment must be identified so that compliance can be determined.
Manufacturer manuals for all installed heating and cooling equipment and service water heating
equipment must be provided.
Insulation R-values, glazing U-factors, and heating equipment efficiency must be clearly marked on
the building plans or specifications.

Duct Insulation:
Ducts in unconditioned spaces must be insulated to R-5.
Ducts outside the building must be insulated to R-8.0.

Duct Construction:
All ducts must be sealed with mastic and fibrous backing tape. Pressure-sensitive tape may be used
for fibrous ducts. Duct tape is not permitted.
The HVAC system must provide a means for balancing air and water systems.

Temperature Controls:
Thermostats are required for each separate HVAC system. A manual or automatic means to
partially restrict or shut off the heating and/or cooling input to each zone or floor shall be provided.

Circulating Hot Water Systems:
Insulate circulating hot water pipes to the levels in Table 1.

Swimming Pools:
All heated swimming pools must have an on/off heater switch and require a cover unless over 20%
of the heating energy is from non-depletable sources. Pool pumps require a time clock.

Heating and Cooling Piping Insulation:
HVAC piping conveying fluids above 120 °F or chilled fluids below 55 °F must be insulated to the
levels in Table 2.
### Table 1: Minimum Insulation Thickness for Circulating Hot Water Pipes,
Insulation Thickness in Inches by Pipe Sizes

<table>
<thead>
<tr>
<th>Heated Water Temperature (°F)</th>
<th>Insulation Thickness</th>
<th>Non-Circulating Runouts</th>
<th>Circulating Mains and Runouts</th>
</tr>
</thead>
<tbody>
<tr>
<td>170-180</td>
<td>170-180</td>
<td>0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>140-160</td>
<td>140-160</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>100-130</td>
<td>100-130</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Table 2: Minimum Insulation Thickness for HVAC Pipes.

<table>
<thead>
<tr>
<th>Piping System Types</th>
<th>Fluid Temp. Range (°F)</th>
<th>Insulation Thickness in Inches by Pipe Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating Systems</td>
<td></td>
<td>2&quot; Runouts, 1&quot; and Less, 1.25&quot; to 2&quot;, 2.5&quot; to 4&quot;</td>
</tr>
<tr>
<td>Steam Condensate</td>
<td>Any</td>
<td>1.0</td>
</tr>
<tr>
<td>Chilled Water, Refrigerant, and Brine</td>
<td>40-55</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Below 40</td>
<td>1.0</td>
</tr>
</tbody>
</table>

NOTES TO FIELD (Building Department Use Only)