FREE GREEN

www.FreeGreen.com
348 MEDFORD ST. SUITE 1
CHARLESTOWN, MA 02129

RESIDENCE FOR: _____	BUILDER: _____	ENGINEER: _____	ARCHITECT: _____
SITE ADDRESS: _____	ADDRESS: _____	ADDRESS: _____	ADDRESS: _____
PHONE: _____	PHONE: _____	PHONE: _____	PHONE: _____
E-MAIL: _____	E-MAIL: _____	E-MAIL: _____	E-MAIL: _____

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA [1]

GROUND SNOW LOAD (LB)	WIND SPEED (MPH)	SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP	ICE SHIELD UNDERLAY REQUIRED	FLOOD HAZARD
			WEATHERING	FROST LINE DEPTH	TERMITE	DECAY			

BUILDING CODE COMPLIANCE

- Attention CA, OR, WA, and NV residents: Our house plans do not meet Earthquake Seismic/Wind code requirements.
- Attention GA, SC, and NC Coastal residents: Plans may have to be engineered to meet local Hurricane/Wind codes.
- Attention AL, AZ, CO, CT, DE, FL, ID, LA, MD, MA, MN, NV, NH, NJ, NY, OH, PN, UT, and VA residents: Plans may have to be engineered to meet local building codes. Please call your local building department before placing order.

Some cities and states now require that a licensed architect or engineer review and "seal" a blueprint, or officially approve it, prior to construction. Prior to application for a building permit or the start of actual construction, we strongly advise that you consult your local building official who can tell you if such a review is required.

HOUSE AREAS

CONDITIONED		UN-CONDITIONED	
CRAWL SPACE:	-	GARAGE:	-
SUB LEVEL:	-	BASEMENT:	-
ENTRY LEVEL:	2040 SF	ATTIC:	-
UPPER LEVEL:	-	DECK/PATIO:	550 SF
TOTAL:	2040 SF	TOTAL:	550 SF

THE ABOVE AREA CALCULATIONS ARE BASED ON THE METHOD LAID OUT IN **ANSI STANDARD Z765**

ARCHITECTURAL

A-00-1 GENERAL NOTES
A-00-2 LEED-H RATING SYSTEM CHECKLIST
A-00-3 NAHB GREEN BUILDING STANDARD
A-01-1 ELEVATIONS
A-01-2 ELEVATIONS & SECTION 1
A-02-1 ENTRY LEVEL FLOOR PLAN
A-03-1 DETAILS 1
A-03-2 DETAILS 2
A-03-3 DETAILS 3
A-04-1 FOUNDATION PLAN
A-04-2 ROOF FRAMING PLAN
A-05-1 WINDOW SHADING DETAILS

ELECTRICAL

E-01-1 ENTRY LEVEL ELECTRICAL PLAN

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NOTES:

[1] THE CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA WILL VARY BY REGION FOR ANY PROJECT. FOR THIS REASON, FREEGREEN INC. CANNOT COMPLETE THIS TABLE UNTIL WE KNOW WHERE THE PROJECT SITE IS LOCATED. ONCE YOU HAVE A SITE LOCATION, PLEASE INQUIRE INTO OUR DESIGN SERVICES AT **Design@FreeGreen.com**

FEATURED PRODUCTS

BIOBASED® INSULATION
BUILD HEALTHY. BUILD SMART.®

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

COVER PAGE

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

CVR

SCALE

2/9/2010 2:54:01 PM

GENERAL REQUIREMENTS:

1. Owner / Client Responsibilities: Reference is made throughout these General Notes to responsibilities and standards of care to be fulfilled by those providing services in the development and construction of this project. Owner / Client shall be responsible for adherence to those requirements by the Owner, Builder, Developer, General Contractor, Subcontractors and other professional Consultants not retained by the Designer.

2. Builder's Set: The scope of this set of plans is to provide a "builder's set" of construction documents and general notes hereinafter referred to as "plans". After formal review and approval by a licensed engineer and or architect, this set of plans is sufficient to obtain a building permit; however, all materials and methods of construction necessary to complete the project are not necessarily described. The plans delineate and describe only locations, dimensions, types of materials and general methods of assembling or fastening. The FreeGreen Specification book received with this plan set specifies the particular products or materials recommended for this home design. The implementation of these plans requires an Owner/ Client/ Contractor thoroughly knowledgeable with the applicable building codes and methods of construction specific to this product type and type of construction.

3. Building Maintenance: The exposed materials used in the construction of this project will deteriorate as the completed project ages unless properly and routinely maintained. Owner / Client shall provide or cause the development of a plan to keep these exposed materials protected and maintained.

4. Codes: All construction shall comply with the most stringent requirements of all current applicable city, county, state and federal laws, rules, codes, ordinances and regulations. If the General Contractor or any Subcontractor performs any work in conflict with the above mentioned laws, rules, codes, ordinances and regulations, then the contractor in violation shall bear all costs of repair arising out of the non - conforming work.

5. Permits: The general building permit and plan check shall be secured and paid for by Owner /Client. All others permits shall be secured and paid for by the Subcontractor directly responsible.

6. Insurance: The General Contractor and every Subcontractor performing work or providing services and/ or materials for the work are required to purchase and maintain in force "All Risk" Builders Insurance prior to commencement of the work and/ or furnishing labor, services and materials. Each "All Risk" policy shall be in an amount sufficient to cover the replacement value of the work being performed and/ or the labor, services and materials being supplied by the General Contractor, Subcontractors, Designer, and all professional Consultants.

7. Insurance: Owner/ Client shall cause the General Contractor and every Subcontractor performing work or providing services and / or materials for the work to purchase and maintain General Liability Insurance.

8. Named Products: The Designer makes no guarantee for products identified by trade name or manufacturer.

9. Scope: The General Contractor and Subcontractors shall furnish all labor, equipment, and material indicated on the plans and reasonably inferred or required by the applicable codes.

10. Substitution: Substitutions of specific materials or products listed on the FreeGreen Specification Sheet shall not be made without written authorization by Owner/ Client. The General Contractor and any Subcontractor shall not make the structural substitutions or changes without prior written authorization from the structural engineer.

11. Changes: Any addition, deletion, or change in the scope of the work described by the plans shall be by written change order only. Any approval from the building official for a change in the work shall be the responsibility of the General Contractor.

12. Intention: The General Contractor shall ensure that all labor, materials, equipment and transportation shall be included in the work for complete execution of the project. The Designer shall not be responsible for the means and methods of construction.

13. Review of Drawings: The General Contractor and all Subcontractors shall review the full content of the plans for discrepancies and omissions prior to commencement of work. The General Contractor and all Subcontractors shall be responsible for any work not in conformance with the plans or in conflict with any code.

14. Use of the Drawings: Dimensions take precedence over scaled measurements. Details and sections on the drawings are shown at specific locations and are intended to show general requirements throughout. Details noted "typical" imply all like conditions treated similarly, unless noted otherwise. The architectural details shown are intended to further illustrate the visual design concept and the minimum recommended weather protection for this project. Building code requirements, structural considerations, trade association manuals and publications and product manufacturer's written instructions shall also be considered in order to complete the construction of the details, and in some cases may supercede the details.

15. Approved Drawings: The General Contractor shall be responsible for coordinating the work between the different Subcontractors and requiring all Subcontractors to use the most current building department approved set of plans.

16. Cutting and Patching: All Subcontractors shall do their own cutting, fitting, patching, etc. to make the several parts come together properly and fit it to receive the work of other trades.

17. Clean up: All trades shall, at all times, keep the premises free from accumulation of waste materials or rubbish caused by their work. Subcontractors shall remove all rubbish, tools, scaffolding and surplus materials and leave the job in a broom - clean condition. All fixtures, equipment, glazing, floors, etc., shall be left clean and ready for occupancy upon completion of the project.

18. Storage of Materials: The General Contractor and Subcontractors shall be responsible for storing the materials on the site according to material suppliers' or manufacturers' instructions. The materials shall be kept secure and protected from moisture, pests, and vandals. Any loss arising out of materials stored at the site shall be the responsibility of the General Contractor or Subcontractor who stored the damaged or lost materials.

ROUGH CARPENTRY:

1. Framing:
   - A. Blocking and Bridging:
     - (1) Stud Walls: Per applicable building code. Full height walls shall have continuous studs from bottom to top plate.
     - (2) Ceiling Joists: Per applicable building code. Use solid bridging.
     - (3) Backing: Provide solid backing at all pendant or surface - mounted electrical fixtures, rails, grab bars, bath accessories, etc.
   - B. Fire stopping: Per applicable building code.
   - C. Stud Walls: Per applicable building code. All studs to have full bearing on plate. All studs to be at 16" O.C. unless noted otherwise. Studs to be sized per requirements of code.
   - D. Use continuous, full height studs in accordance with the highest standard of construction and framing practices.
   - E. All angled walls to be at 45 degrees unless noted otherwise
   - F. Built up roofs, waterproof balcony decks and exterior horizontal areas are to be framed with slope to ensure water drainage without ponding.
   - G. Provide crickets as indicated and as necessary for proper water drainage and to redirect channeled or run off water away from vertical surfaces.
   - H. Provide blocking where required to provide uniform surface where flush joists and beams are different depths.
   - I. Use mitered joints at fascia splices.
   - J. Unless otherwise noted, all dimensions to exterior walls are given from inside or outside face of rough framing. All dimensions to interior partitions are given from centerline of rough framing.
   - K. Align bottom of all adjacent window and door headers, unless noted otherwise on framing plan.
2. Trusses:
   - A. The General Contractor shall have City/ County approved truss plans on the job site prior to foundation inspection. The Truss Manufacturer shall submit calculations, shop drawings, details, bridging and erection bracing signed by a registered Engineer to the Building Department and Structural Engineer, for their review prior to fabrication.
   - B. Truss manufactures shall provide members of adequate bearing area in such a width to insure against over - stressing of supporting timber, multiple joists, girders and plates or provide bearing plates and details to do same.
   - C. The General Contractor shall coordinate with the Truss Manufacturer, Framing, Electrical, Plumbing and Mechanical Contractors at fire protected areas to maintain required fire protection without penetrations unless allowed by code and local jurisdiction.

FINISH CARPENTRY:

1. Scope:
   - A. Furnish and install all finish carpentry complete, including trim, door frames, paneling and shelving.
   - B. Installation of finish hardware, bath accessories, cabinet pulls, etc.
2. Workmanship:
   - A. All joints shall be tight and true and securely fastened. Corners shall be neatly mitered, butted, or coped, with nails set and surfaces free of tool marks.
   - B. Wood work shall be accurately scribed to fit adjoining surfaces.
   - C. All work shall be machined or hand sanded, sharp edges and splinters removed, and completely prepared for finish.
   - D. Full length continuous boards shall be used wherever applicable or specifically noted.
3. Fitting and Hanging Doors:
   - A. Each door shall be accurately cut, trimmed, and fitted to its respective frame and hardware with due allowance for painter's finishes.
   - B. Clearance at the lock and hanging stiles and at the top shall not exceed 1/8". Clearance at the bottom shall be adjusted for finish floor covering.
   - C. Lock stile edges shall be beveled.
   - D. Door shall operate freely, but not loosely, without sticking or binding, without hinge bound conditions, and with all hardware properly adjusted and functioning.
4. Materials:
   - A. Door frames: Frames shall be set plumb and true, rigidly secured, and protected during the course of construction.
   - B. Door Stops and Casing: Size and profile as selected by Owner/ Client.
   - C. Exterior Trim: Refer to drawings for exterior trim material & sizes. For wood, medium dencity overlay (MDO) or fiber cement, all cut sides/faces/edges must be primed and painted. If specific product brand is specified on drawings, see manufacturers specifications and installation instructions.
   - D. Interior Trim:
     - (1) Interior Rails: Clear material, finished to match casework.
     - (2) Window Trim: 1x clear wood to match casework or as noted in drawings (verify with Owner/Client).
     - (3) Base Boards: As noted in drawings or approved by Owner/Client.

INSULATION:

1. Installation:
   - A. Thermal Insulation: Install insulation between joists, below all roof surfaces, and areas including any vertical wall areas separating living spaces from unconditioned space and between studs at all exterior walls. Insulation shall be securely installed and tightly fitted without compressing the normal Loft thickness. Provide insulation stops/ baffles as required to prevent obstruction of vents.
   - B. Sound insulation: Install insulation between studs, securely and tightly fitted at walls as indicated on drawings.
   - C. Plumbing insulation: All domestic hot water piping shall have R-4 insulation. Insulation shall be properly installed on all piping elbows to adequately insulate the 90 degree bend.
   - D. The General Contractor and Subcontractors shall be responsible for storing the materials on the site according to material supplier's or manufacturers' instructions. The materials shall be kept secure and protected from moisture.
2. Materials:
   - A. At a minimum, all insulation specified for this house meets or exceeds the R-value requirements listed in Chapter 4 of the 2004 International Energy Conservation Code and also the Grade II specifications set by the National Home Energy Rating Standards.
   - B. A pre-drywall thermal bypass inspection must be performed by a qualified rater.

THERMAL & MOISTURE PROTECTION:

1. Foundations:
   - A. Provide adequate drainage away from walls & foundations.
   - B. Seal all plumbing, electrical and other penetrations of walls and floors and seal joints.
   - C. Slope final grade away from foundation.
   - D. Provide capillary break at all concrete slabs (poly not req. if <20" rainfall; gravel not req. for free draining soils = IRC Group 1.
   - E. Exterior surface of below grade walls damp proofed or water proofed.
   - F. Slope garage floor towards main vehicle entry.
   - G. Foundation cont. footing drain with stone covered with filter fabric, drained to daylight.
   - H. Basement foundation walls use porous backfill material.
   - I. Provide cont. crushed stone under footings.
   - J. Provide rigid insulation as specified directly under slab.
2. Walls:
   - A. Install windows, doors, exterior cladding, flashings & sealants as detailed in this drawing set.
   - B. All deck ledgers must be pressure treated material.
   - C. All penetrations that pass through exterior cladding into structure must be fully sealed.
   - D. Install materials with proper detailing to control degradation from moisture.
3. Roofs:
   - A. Ice flashing over sheathing at eaves (except climates CZ1-4).
   - B. Metal drip edge at all exposed roof decking.
   - C. Bituminous membrane at all eaves, valleys & penetrations (not req. if <20" rainfall).
   - D. Step flashing at all roof/wall intersections & terminated with "kickout" flashing.
   - E. Installed system for diverting roof water from house. (e.g. gutters).
   - F. No. 30 roof felt underlayment minimum.
   - G. Reduce ice dams: No non-airtight recessed light fixtures in insulated ceilings.
   - H. Roof insulation as specified in this drawing set.
4. Wet Rooms:
   - A. Install drains or drain pans to capture leaks under water heaters or use tankless water heaters.
   - B. Properly install washer and water heater drain pans.
   - C. Use highly durable materials in wet areas.
   - D. Install no carpet in kitchens, bathrooms, spa areas, or within 3" of exterior door.
   - E. Use nonpaper-faced backer board on walls in tub, shower and spa areas.
5. Air Infiltration:
   - A. Install "IC" airtight rated recessed lights in insulated ceilings.
   - B. Complete air barrier between attic and conditioned space & all penetrations sealed.
   - C. Air filter housings must be airtight to prevent bypass or leakage.
   - D. Air seal ventilation ductwork.
6. Interstitial Condensation:
   - A. Clothes dryers vented outdoors.
   - B. Insulate all cold water pipes and avoid plumbing in exterior walls.
   - C. >1 Perm finish on inside of exterior walls. (only req. in hot/humid & mixed/humid climates)
7. Heat Loss:
   - A. Insulate all ventilation exhaust ductwork (min R-8) outside of the insulated envelope.
   - B. R-5 slab edge insulation break at foundation wall intersection & R-10 slab edge insulation outward of any walk-out slab edge.
   - C. Install insulation wind baffles at attic eave bays.
8. Ultraviolet Radiation:
   - A. Install materials with proper detailing to control degradation from sun.
9. Other:
   - A. Minimum 25-year expected lifetime roof warranty.
   - B. Define "proper refrigerant charge" to be within 10% of manufacturer recommendations.
   - C. Mechanical equipment must be accessible for service, including AC condensate drain pan & trap.
   - D. Use rigid duct or other methods to keep fan back-pressure below 0.2" for EOV systems.

HEATING, VENTILATION & AIR CONDITIONING:

1.Scope:
   - A. Supply all labor, transportation, material, etc., for installation of a complete heating and air conditioning system to operate according to all applicable standards and best practices of the trade including, but not limited to: mechanical units, ducts, registers, catwalks, grilles, boots, vent pipes, dampers, combustion air, fans, ventilators, refrigerant, etc. All materials, work, etc., to comply with all requirements of all legally constituted public authorities having jurisdiction including all county and state ordinances. Furnish and install all equipment complete and operable. Verify all material and installation requirements and limitations at fire and sound assemblies.
   - B. Provide rubberized asphaltic membrane materials at all penetrations of the water - resistive membrane at exterior walls.
2. Installation:
   - A. Provide required clearances for duct work and to combustibles.
   - B. Provide a permanent electric outlet and switched light fixture wherever equipment is installed.
   - C. No alterations to the structural frame, diaphragms, connections or shear panels shall be made without prior written approval from the Structural Engineer.
   - D. No equipment located in garages.
   - E. All combustion equipment shall be directly vented with an outdoor combustion air supply.
   - F. All penetrations of fire assemblies shall meet the requirements of the building code and Section 7D.
   - G. All HVAC equipment shall be approved prior to installation per nationally recognized standards and evidenced by listing and label of an approved agency.
   - H. Combustion air from outside shall be supplied to all fuel burning appliances.
   - I. Install air filters with a minimum efficiency reporting value (MERV) ≥ 10 and ensure that air handlers can maintain adequate pressure and air flow. Air filter housings must be air tight to prevent bypass or leakage.
   - J. All fixed appliances are required to be securely fastened in place. Provide seismic bracing or anchor unit to platform where appropriate.
   - K. Install centralized HVAC system equipped with additional controls to operate in dehumidification mode.
   - L. Condenser pad or compressor from ground must not be less than 3" above grade.
   - M. The General Contractor and Subcontractors shall be responsible for storing the materials on the site according to material supplier's or manufacturers' instructions. The materials shall be kept secure and protected from moisture.

ELECTRICAL:

1. Scope:
   - A. Supply all labor, transportation, materials, etc, for installation of complete electrical system to operate according to the best practices of the trade and including but not limited to: Fixtures, appliances, wiring, switches, outlets, television jacks, services, grounds, temporary power, junction boxes, conduit, sub - panels, etc. All work, materials, etc, to comply with all requirements of all legally constituted authorities having jurisdiction including all County and State ordinances. Furnish and install electrical work complete and operable. Verify all material and installation requirements and limitations at fire and sound assemblies.
   - B. Provide rubberized asphaltic membrane materials at all penetrations of the water-resistive membrane at exterior walls.
2. Installation:
   - A. Electrical system installed according to latest version of N.E.C or local code, whichever is more stringent.
   - B. Provide separate circuits each for dishwasher, garbage disposal, refrigerator, washer, dryer, F.A.U. and microwave oven.
   - C. Switched outlets shall be ½ hot.
   - D. Bathroom and Kitchen fans: Install local exhaust systems in all bathrooms and in the kitchen to meet the requirements of section 5 of ASHRAE Standard 62.2-2007. Design and install fan ducts to meet the requirements of section 7 of ASHRAE Standard 62.2-2007.Exhaust air to outdoors and also use ENERGY STAR labeled bathroom exhaust fans.
   - E. For every bathroom exhaust fan, install an occupancy sensor or an automatic humidistat controller or an automatic timer to operate the fan for a timed interval after occupant leaves the room or a continuously operating exhaust fan.
   - F. All fixtures, outlets, receptacles etc., penetrating fire assemblies shall be rated and installed to meet the requirements of the building code. Outlet boxes on opposite sides of fire assembly walls shall be separated by a horizontal distance of at least 24".
   - G. All equipment installed outdoors and exposed to weather shall be weatherproof.
   - H. Provide ground fault circuit interrupters, G.F.C.I., at all baths, garages, out-door and wet area outlets. All branch circuits that supply 125 - volt single - phase, 15 and 20 ampere receptacle outlets installed in dwelling unit bedrooms shall be protected by an arc - fault circuit interrupter(s).
   - I. Each conductor of every system shall be permanently tagged in compliance with O.S.H.A
   - J. The complete electrical system shall be grounded in accordance with the presently adopted edition of the N.E.C., Art. #250. Proper ground requires #4 copper wire, 20' - 0" long, embedded into concrete and provide bond to gas or water line.
   - K. Use only competent and skilled personnel and perform all work, including aesthetic as well as electrical and mechanical aspects to standards consistent with the best practices of the trade.
   - L. No alterations to the structural frame, diaphragms, connections or shear panels shall be made without approval from the Structural Engineer.

PLUMBING:

1.Scope:
   - A. Supply all labor, transportation, materials, etc. for installation of complete plumbing system to operate according to the best practices of the trade and including but not limited to: fixtures, hot and cold water piping, exhaust flues, combustion air, gas piping, log lighters, drains, soil and vent piping, hot water heaters, pipe insulation, meters, valves, vaults, etc. All materials, work, etc. to comply with all requirements of all legally constituted public authorities having jurisdiction including all county and state ordinances. Furnish and install plumbing work complete and operable, including trenching and backfilling. Verify all material and installation requirements and limitations at fire and sound assemblies.
   - B. Provide rubberized asphaltic membrane materials at all penetrations of the water - resistive membrane at exterior walls.
   - C. Protect pipes from freezing. Place all water lines and waste lines within "conditioned" space and where approved thermal insulation is between "line" and unheated area.
2.Installation:
   - A. Roughing-in shall be completed, tested and inspected as required by code before closing -in with other work.
   - B. Openings in pipes, drains, and fittings shall be kept covered during construction.
   - C. Provide solid backing for securing fixtures. All fixtures to be set level.
   - D. Provide cleanouts at ends of all lines and where required by codes.
   - E. Copper tubing shall be fully sweated to fittings.
   - F. Black iron and galvanized steel pipe joints shall be made with approved pipe thread compound.
   - G. Provide shut- off valves at each fixture.
   - H. Provide condensate line at each F.A.U location. Provide primary & secondary condensate line to an approved drainage receptacle at attic F.A.U locations. Install condensate line for each piece of condensating HVAC equipment per manufactureres specifications.
   - I. Provide cold water line to refrigerator space in recessed box or in cabinet immediately adjacent to refrigerator space.
   - J. Isolate all piping from structure with fiber padding and at all penetrations with elastic caulking or sound isolators.
   - K. All vents to lead to outside air, where possible, locate all roof vents to rear side or ridges. Vents to terminate a minimum of 3'-0" from windows.
   - L. All horizontal A.B.S. piping shall be hung with approved hangers at 4' -0" on center minimum and spaced to permit expansion and contraction without hitting adjoining pipe. Vertical piping shall be supported at 8'-0" on center with wrought steel "U" straps securely fastened to building frame.
   - M. Provide air chambers at lavatory, dishwasher and clothes washer water connections. Set vertically as close to fixture as possible.
   - N. Provide ¾" tee for irrigation at main shut-off.
   - O. Provide water heater with pressure/ temperature relief valve and pan and drain line piped to the exterior of the buildings.
   - P. All combustion equipment shall be directly vented.
   - Q. No alterations to the structural frame, diaphragms, connections or shear panels shall be made without prior written approval from the structural Engineer.
   - R. Provide non- removable backflow device on all exterior hose bibs.
   - S. A 12" minimum access panel to bathtub trap connection is required.
   - T. Provide pressure regulator for water service where pressure exceeds 80 psi
   - U. Provide drain pan under washer with drain in laundry room and shut off valve if washer is located above living space.
   - V. Provide solid metal pipe for dryer vent to exterior. Do not install screen on dryer vent. Provide energy efficient dryer vent (with floating shuttle).

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CHARLESTOWN, MA 02129

NOTES:

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:

Modern Ranch

GENERAL NOTES

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

A-00-1

SCALE

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IV. TOTAL:
III. CREDIT ATTEMPTED: (YES/NO)
II. ESTIMATED POINTS ELIGIBLE BY THIS DESIGN:
I. MAX POINTS AVAILABLE: (P = PREREQUISITE)

I. II. III. IV.

CREDIT CATEGORIES & CERTIFICATION LEVELS

LEED certification is based on 18 prerequisites and 67 credits. The prerequisites are basic performance standards: they are mandatory for every project, and no points are awarded for meeting them. To achieve certification, builders earn credit points by exceeding the minimum standards of the prerequisites. In total, 136 credit points are available.

Prerequisites and points are classified in eight credit categories:

1. **Innovation & Design (ID) Process.**
   Special design methods, unique regional credits, measures not currently addressed in the Rating System, and exemplary performance levels.
2. **Location & Linkages (LL).**
   The placement of homes in socially and environmentally responsible ways in relation to the larger community.
3. **Sustainable Sites (SS).**
   The use of the entire property so as to minimize the project's impact on the site.
4. **Water Efficiency (WE).**
   Water conservation practices, both indoor and outdoor.
5. **Energy & Atmosphere (EA).**
   Energy efficiency, particularly in the building envelope and heating and cooling design.
6. **Materials & Resources (MR).**
   Efficient utilization of materials, selection of environmentally preferable materials, and minimization of waste during construction.
7. **Indoor Environmental Quality (EQ).**
   Improvement of indoor air quality by reducing the creation of and exposure to pollutants.
8. **Awareness & Education (AE).**
   The education of homeowner, tenant, or multifamily building manager about the operations and maintenance of the green features of a LEED Home.

CERTIFICATION LEVELS

The LEED for Homes Rating System works by requiring a minimum level of performance through prerequisites and rewarding improved performance in each of the above categories. The level of performance is indicated by four performance tiers. See (Table 1).

Table 1
LEED for Homes Certification Levels

	Required Points
Certified	45-59
Silver	60-74
Gold	75-89
Platinum	90-136
Total available points	136

HOME SIZE ADJUSTMENT

The adjustments in (Table 2) below compensate for the overarching effects of home size on consumption by adjusting the award level point thresholds based on home size. For further explanation see pages 8-11 in the LEED H Reference Guide.

Table 2
Threshold Adjustment Certification Levels

	Required Points
Certified	47-61
Silver	62-76
Gold	77-91
Platinum	92-138
Total available points	136

HOW TO PARTICIPATE IN LEED FOR HOMES

There are five basic steps for a builder to follow in participating in LEED for Homes:
1. Contact a LEED for Homes Provider and register the project with USGBC.
2. Identify a project team
3. Build the home to the stated goals. Build onsite HERS and green rating tasks.
4. Achieve certification as a LEED home.
5. Post-certification and marketing support.

For full participation requirements or to purchase the LEED H Reference Guide, please visit **www.usgbc.org/LEED/homes**

I. II. III. IV.

INNOVATION AND DESIGN PROCESS (ID)

ID 1: INTEGRATED PROJECT PLANNING

Intent. Maximize opportunities for integrated, cost-effective adoption of green design and construction strategies.

(pg. 31)	**1.1 Preliminary Rating**	**(P)**	X		
(pg. 31)	**1.2 Integrated Project Team**		1	1	
(pg. 31)	**1.3 Professional Credentialed with Respect to LEED for Homes**		1	1	
(pg. 31)	**1.4 Design Charrette**		1	1	
(pg. 31)	**1.5 Building Orientation for Solar Design**		1		

ID 2: DURABILITY MANAGEMENT PROCESS

Intent. Promote durability and high performance of the building enclosure and its components and systems through appropriate design, materials selection, and construction practices.

(pg. 37)	**2.1 Durability Planning**	**(P)**	X		
(pg. 37)	**2.2 Durability Management**	**(P)**	X		
(pg. 37)	**2.3 Third-Party Durability Management Verification**		3		

ID 3: INNOVATIVE OR REGIONAL DESIGN

Intent. Minimize the environmental impact of the home by incorporating additional green design and construction measures that have tangible and demonstrable benefits beyond those in the LEED for Homes Rating System.

(pg. 45)	**3.1 Innovation #1**		1		
(pg. 45)	**3.2 Innovation #2**		1		
(pg. 45)	**3.3 Innovation #3**		1		
(pg. 45)	**3.4 Innovation #4**		1		

LOCATION AND LINKAGES (LL)

LL 1: LEED FOR NEIGHBORHOOD DEVELOPMENT

Intent. Minimize the environmental impact of land development practices by building homes in LEED for Neighborhood Development certified developments.

(pg. 51)	**1 LEED for Neighborhood Development**	*(OR LL 2-6)*	10		

LL 2: SITE SELECTION

Intent. Avoid development on environmentally sensitive sites.

(pg. 55)	**2 Site Selection**		2		

LL 3: PREFERRED LOCATIONS

Intent. Encourage the building of LEED homes near or within existing communities.

(pg. 59)	**3.1 Edge Development**		1		
(pg. 59)	**3.2 Infill**	*(OR LL 3.1)*	2		
(pg. 59)	**3.3 Previously Developed**		1		

LL 4: INFRASTRUCTURE

Intent. Encourage the building of LEED homes in developments that are served by or are near existing infrastructure (i.e., sewers and water supply).

(pg. 65)	**4 Existing Infrastructure**		1		

LL 5: COMMUNITY RESOURCES / TRANSIT

Intent. Encourage the building of LEED homes in development patterns that allow for walking, biking, or public transit (thereby minimizing dependency on personal automobiles and their associated environmental impacts.

(pg. 69)	**5.1 Basic Community Resources / Transit**		1		
(pg. 69)	**5.2 Extensive Community Resources / Transit**	*(OR LL 5.1, 5.3)*	2		
(pg. 69)	**5.3 Outstanding Community Resources / Transit**	*(OR LL 5.1, 5.2)*	3		

LL 6: ACCESS TO OPEN SPACE

Intent. Provide open space to encourage walking, physical activity, and time spent outdoors.

(pg. 75)	**6 Access to Open Space**		1		

SUSTAINABLE SITES (SS)

SS 1: SITE STEWARDSHIP

Intent. Minimize the environmental damage to the building lot during the construction process.

(pg. 81)	**1.1 Erosion Controls During Construction**	**(P)**	X		
(pg. 81)	**1.2 Minimize Disturbed Area of Site**		1		

SS 2: LANDSCAPING

Intent. Design landscape features to avoid invasive species and minimize demand for water and synthetic chemicals.

(pg. 89)	**2.1 No Invasive Plants**	**(P)**	X		
(pg. 89)	**2.2 Basic Landscape Design**	*(OR SS 2.5)*	2		
(pg. 89)	**2.3 Limit Conventional Turf**	*(OR SS 2.5)*	3		
(pg. 89)	**2.4 Drought-Tolerant Plants**	*(OR SS 2.5)*	2		
(pg. 90)	**2.5 Reduce Overall Irrigation Demand by at Least 20%**		6		

SS 3: LOCAL HEAT ISLAND EFFECTS

Intent. Design landscape features to reduce local heat island effects.

(pg. 111)	**3 Reduce Local Heat Island Effects**		1		

SS 4: SURFACE WATER MANAGEMENT

Intent. Design site features to minimize erosion and runoff from the home site.

(pg. 115)	**4.1 Permeable Lot**		4		
(pg. 115)	**4.2 Permanent Erosion Controls**		1		
(pg. 115)	**4.3 Management of Runoff from Roof**		2		

SS 5: NONTOXIC PEST CONTROL

Intent. Design home features to minimize the need for poisons for control of insects, rodents, and other pests.

(pg. 125)	**5 Pest Control Alternatives**		2		

SS 6: COMPACT DEVELOPMENT

Intent. Make use of compact development patterns to conserve land and promote community livability, transportation efficiency, and walkability.

(pg. 129)	**6.1 Moderate Density**		2		
(pg. 129)	**6.2 High Density**	*(OR SS 6.1, 6.3)*	3		
(pg. 129)	**6.3 Very High Density**	*(OR SS 6.1, 6.2)*	4		

WATER EFFICIENCY (WE)

WE 1: WATER REUSE

Intent. Use municipal recycled water or offset central water supply through the capture and controlled reuse of rainwater and/or graywater.

(pg. 135)	**1.1 Rainwater Harvesting System**	*(OR WE 1.3)*	4		
(pg. 135)	**1.2 Graywater Reuse System**	*(OR WE 1.3)*	1		
(pg. 135)	**1.3 Use of Municipal Recycled Water System**		3		

WE 2: IRRIGATION SYSTEM

Intent. Minimize outdoor demand for water through water-efficient irrigation.

(pg. 145)	**2.1 High-Efficiency Irrigation System**	*(OR WE 2.3)*	3		
(pg. 146)	**2.2 Third-Party Inspection**	*(OR WE 2.3)*	1		
(pg. 146)	**2.3 Reduce Overall Irrigation Demand by at Least 45%**		4		

WE 3: INDOOR WATER USE

Intent. Minimize outdoor demand for water through water-efficient irrigation.

(pg. 159)	**3.1 High-Efficiency Fixtures and Fittings**		3		
(pg. 159)	**3.2 Very High-Efficiency Fixtures and Fittings**		6		

ENERGY & ATMOSPHERE (EA)

EA 1: OPTIMIZE ENERGY PERFORMANCE

Intent. Improve the overall energy performance of a home by meeting or exceeding the performance of an ENERGY STAR labeled home.

(pg. 169)	**1.1 Performance of ENERGY STAR for Homes**	*(OR EA 2-11)*	**(P)**	X	
(pg. 169)	**1.2 Exceptional Energy Performance**	*(OR EA 2-11)*	34		

EA 2: INSULATION

Intent. Design and install insulation to minimize heat transfer and thermal bridging.

(pg. 179)	**2.1 Basic Insulation**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	(P)
(pg. 179)	**2.2 Enhanced Insulation**	*(OR EA 1, 7.1, 7.2)*	2		

EA 3: AIR INFILTRATION

Intent. Minimize energy consumption caused by uncontrolled air leakage into and out of conditioned spaces.

(pg. 185)	**3.1 Reduced Envelope Leakage**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	
(pg. 185)	**3.2 Greatly Reduced Envelope Leakage**	*(OR EA 1, 7.1, 7.2)*	2		
(pg. 185)	**3.3 Minimal Envelope Leakage**	*(OR EA 3.2)* *(OR EA 1, 7.1, 7.2)*	3	3	

EA 4: WINDOWS

Intent. Maximize the energy performance of windows.

(pg. 189)	**4.1 Good Windows**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	(P)
(pg. 189)	**4.2 Enhanced Windows**	*(OR EA 1, 7.1, 7.2)*	2		
(pg. 189)	**4.3 Exceptional Windows**	*(OR EA 4.2)* *(OR EA 1, 7.1, 7.2)*	3		

EA 5: HEATING AND COOLING DISTRIBUTION SYSTEM

Intent. Minimize energy consumption due to thermal bridges and/or leaks in the heating and cooling distribution system.

(pg. 195)	**5.1 Reduced Distribution Losses**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	(P)
(pg. 195)	**5.2 Greatly Reduced Distribution Losses**	*(OR EA 1, 7.1, 7.2)*	2	2	
(pg. 195)	**5.3 Minimal Distribution Losses**	*(OR EA 5.2)* *(OR EA 1, 7.1, 7.2)*	3		

EA 6: SPACE HEATING AND COOLING EQUIPMENT

Intent. Reduce energy consumption associated with the heating and cooling system.

(pg. 201)	**6.1 Good HVAC Design and Installation**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	
(pg. 201)	**6.2 High-Efficiency HVAC**	*(OR EA 1, 7.1, 7.2)*	2	2	
(pg. 201)	**6.3 Very High-Efficiency HVAC**	*(OR EA 6.2)* *(OR EA 1, 7.1, 7.2)*	4		

EA 7: WATER HEATING

Intent. Reduce energy consumption associated with the domestic hot water system, including improving the efficiency of both the hot water system design and the layout of the fixtures in the home.

(pg. 207)	**7.1 Efficient Hot Water Distribution**		2	2	
(pg. 208)	**7.2 Pipe Insulation**		1	1	
(pg. 208)	**7.3 Efficient Domestic Hot Water (DHW) Equipment**	*(OR EA 1, 7.1, 7.2)*	3	3	

EA 8: LIGHTING

Intent. Reduce energy consumption associated with interior and exterior lighting.

(pg. 213)	**8.1 ENERGY STAR Lights**	*(OR EA 1, 7.1, 7.2)*	**(P)**	X	(P)
(pg. 213)	**8.2 Improved Lighting**	*(OR EA 1, 7.1, 7.2)*	1.5	1.5	
(pg. 213)	**8.3 Advanced Lighting Package**	*(OR EA 8.2)* *(OR EA 1, 7.1, 7.2)*	3		

EA 9: APPLIANCES

Intent. Reduce appliance energy consumption.

(pg. 217)	**9.1 High-Efficiency Appliances**	*(OR EA 1, 7.1, 7.2)*	2		
(pg. 217)	**9.2 Water-Efficient Cloths Washer**	*(OR EA 1, 7.1, 7.2)*	1		

EA 10: RENEWABLE ENERGY

Intent. Reduce consumption of nonrenewable energy sources by encouraging the installation and operation of renewable electric generation systems.

(pg. 221)	**10 Renewable Energy System**	*(OR EA 1, 7.1, 7.2)*	10		

EA 11: RESIDENTIAL REFRIGERANT MANAGEMENT

Intent. Select and test air-conditioning refrigerant to ensure performance and minimum contributions to ozone depletion and global warming.

(pg. 227)	**11.1 Refrigerant Charge Test**		**(P)**	X	
(pg. 227)	**11.2 Appropriate HVAC Refrigerants**		1		

MATERIAL & RESOURCES (MR)

MR 1: MATERIAL-EFFICIENT FRAMING

Intent. Optimize the use of framing materials.

(pg. 235)	**1.1 Framing Order Waste Factor Limit**		**(P)**	X	
(pg. 235)	**1.2 Detailed Framing Documents**	*(OR MR 1.5)*	1		
(pg. 235)	**1.3 Detailed Cut List and Lumber Order**	*(OR MR 1.5)*	1		
(pg. 235)	**1.4 Framing Efficiencies**	*(OR MR 1.5)*	3		
(pg. 235)	**1.5 Off-Site Fabrication**		4		

MR 2: ENVIRONMENTALLY PREFERABLE PRODUCTS

Intent. Increased demand for environmentally preferable products and products or building components that are extracted, processed, and manufactured within the region.

(pg. 247)	**2.1 FSC-Certified Tropical Wood**	**(P)**	X		
(pg. 247)	**2.2 Environmentally Preferable Products**		8		

MR 3: WASTE MANAGEMENT

Intent. Reduce waste generated to a level below the industry norm.

(pg. 261)	**3.1 Construction Waste Management Planning**	**(P)**	X		
(pg. 261)	**3.2 Construction Waste Reduction**		3		

INDOOR ENVIRONMENTAL QUALITY (EQ)

IQ 1: ENERGY STAR WITH INDOOR AIR PACKAGE

Intent. Improve the overall quality of a home's indoor environment by installing an approved bundle of air quality measures.

(pg. 273)	**1.1 ENERGY STAR with Indoor Air Package**	*(OR IQ 2-10)*	13		

IQ 2: COMBUSTION VENTING

Intent. Minimize the leakage of combustion gases into the occupied space of the home.

(pg. 277)	**2.1 Basic Combustion Venting Measures**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 277)	**2.2 Enhanced Combustion Venting Measures**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	2		

IQ 3: MOISTURE CONTROL

Intent. Control indoor moisture levels to provide comfort, reduce the risk of mold, and increase the durability of the home.

(pg. 285)	**3.1 Moisture Load Control**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1	1	

IQ 4: OUTDOOR AIR VENTILATION

Intent. Reduce occupant exposure to indoor pollutants by ventilating with outdoor air.

(pg. 289)	**4.1 Basic Outdoor Air Ventilation**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 289)	**4.2 Enhanced Outdoor Air Ventilation**		2	2	
(pg. 289)	**4.3 Third-Party Performance Testing**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		

IQ 5: LOCAL EXHAUST

Intent. Reduce moisture and exposure to indoor pollutants in kitchen and bathrooms.

(pg. 299)	**5.1 Basic Local Exhaust**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 299)	**5.2 Enhanced Local Exhaust**		1	1	
(pg. 299)	**5.3 Third-Party Performance Testing**		1		

IQ 6: DISTRIBUTION OF SPACE HEATING AND COOLING

Intent. Provide appropriate distribution of space heating and cooling in the home to improve thermal comfort and energy performance.

(pg. 305)	**6.1 Room by Room Load Calculations**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	
(pg. 305)	**6.2 Return Air Flow or Room by Room Controls**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		
(pg. 305)	**6.3 Third-Party Performance Testing**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	2		

IQ 7: AIR FILTERING

Intent. Reduce particulate matter from the air supply system.

(pg. 311)	**7.1 Good Filters**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 311)	**7.2 Better Filters**		1	1	
(pg. 311)	**7.3 Best Filters**	*(OR IQ 7.2)*	2		

IQ 8: CONTAMINANT CONTROL

Intent. Reduce occupants' and construction workers' exposure to indoor airborne contaminant through source control and removal.

(pg. 315)	**8.1 Indoor Contaminant Control during Const.**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		
(pg. 315)	**8.2 Indoor Contaminant Control**		2		
(pg. 315)	**8.3 Preoccupancy Flush**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		

IQ 9: RADON PROTECTION

Intent. Reduce occupant exposure to radon gas and other soil gas contaminants.

(pg. 323)	**9.1 Radon-Resistant Const. in High Risk Areas**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 323)	**9.2 Radon-Resistant Const. in Mod. Risk Areas**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		

IQ 10: GARAGE POLLUTANT PROTECTION

Intent. Reduce occupant exposure to indoor pollutants originating from an adjacent garage.

(pg. 327)	**10.1 No HVAC in Garage**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	**(P)**	X	(P)
(pg. 327)	**10.2 Minimize Pollutants from Garage**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	2		
(pg. 327)	**10.3 Exhaust Fan in Garage**	*(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	1		
(pg. 327)	**10.4 Detached or No Garage**	*(OR IQ 10.2, 10.3)* *(OR IQ 1, 4.2, 5.2, 5.3, 7.2/7.3, 8.2)*	3	3	

AWARENESS & EDUCATION (AE)

AE 1: EDUCATION OF HOMEOWNER OR TENANT

Intent. Maintain the performance of the home by educating the occupants (i.e., the homeowner or tenant) about the operations and maintenance of the home's LEED features and equipment.

(pg. 335)	**1.1 Basic Operations Training**	**(P)**	X		
(pg. 336)	**1.1 Enhanced Training**		1		

AE 2: EDUCATION OF BUILDING MANAGER

Intent. Maintain the performance of the home by educating the building manager about the operations and maintenance of the home's LEED features and equipment.

(pg. 339)	**2 Education of Building Manager**		1		

TOTAL ESTIMATED POINTS ELIGIBLE BY THIS DESIGN: 25.5

FREE GREEN

www.FreeGreen.com
348 MEDFORD ST. SUITE 1
CHARLESTOWN, MA 02129

What is the LEED for Homes Green Building Rating System?

LEED for Homes is a national, voluntary certification system, developed by national experts and experienced builders, that promotes the design and construction of high-performance green homes and encourages the adoption of sustainable practices by the homebuilding industry.

The LEED for Homes Rating System is part of the suite of nationally recognized LEED Green Building Rating Systems administered by USGBC. Like all LEED Rating Systems, it is the market's leadership system, targeting the top 25% of home building practices in terms of environmental responsibility. LEED provides industry resources and tools on how to "green" any new home.

With LEED, homebuilders can differentiate their structures as meeting the highest performance measures, and homebuyers can readily identify high-quality green homes. LEED provides national consistency in defining the features of a green home, enables builders anywhere in the country to obtain a green rating on their homes, and assures homebuyers of the quality of their purchases, all based on a recognized national brand.

How to use the LEED for Homes Green Building Rating System Checklist:

If you plan to have your project LEED certified, this page will provide you with a brief but clear outline of the program's mandatory and credit requirements.

Please visit **www.usgbc.org/LEED/homes** for complete participation requirements, credit descriptions and to purchase the most current edition of the LEED for Homes Reference Guide as show on the upper left hand corner of this page.

If you choose not to have your project certified but would like to incorporate green practices, products and materials, use this sheet as a guide to select the green features you would like to include.

FreeGreen Inc. has made an effort to include many green building practices, products and materials right into this free home plan set. If followed as presented, this home design is already eligible for a variety of points under LEED for Homes Green Building Rating System. This page also identifies these achievable points for your convenience. SEE COLUMN "II."

PROJECT NAME:
Modern Ranch

LEED-H RATING SYSTEM CHECKLIST

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

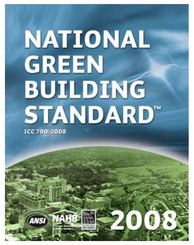
A-00-2

SCALE

7/13/2009 9:32:38 AM

IV. TOTAL:
III. CREDIT ATTEMPTED: (YES/NO)
II. ESTIMATED POINTS ELIGIBLE BY THIS DESIGN:
I. MAX POINTS AVAILABLE: (M = MANDATORY REQUIREMENT PRESENT)

NAHB
NATIONAL ASSOCIATION OF HOME BUILDERS



300 COMPLIANCE METHOD

301 - GENERAL

301.1 Environmental performance levels. The building, project, site, and or development's environmental performance level shall consist of all mandatory requirements, plus points assessed using the point system specified within this Chapter. The level of performance shall be in accordance with Table 302, 303 or 305.5 as acceptable.

301.2 Awarding of points. Points shall be awarded as follows:
(1) The maximum number of points that can be awarded for each practice is noted with that practice.
(2) Points allocation for multi-unit buildings shall be as prescribed in section 304.
(3) The Adopting Entity shall allow new products and practices to be added where deemed to meet the intent of this Standard. Points assigned for any new product or practice shall be determined by the Adopting Entity.

302 - GREEN SUBDIVISIONS

302.1 Site design and development. The threshold points required for the environmental performance levels to qualify a new or existing subdivision as green under this Standard shall be in accordance with Table 302 and based on points in Chapter 4.

Table 302
Threshold Point Ratings for Site Design and Development

Green Subdivision Category	Performance Level Points			
	One Star	Two Stars	Three Stars	Four Stars
400 Site Design and Development	79	104	134	175

303 - GREEN BUILDINGS

303.1 Green buildings. The threshold points required for the environmental performance levels for a green building shall be in accordance with Table 303. To qualify for one of these performance levels, all of the following shall be satisfied:

(1) The threshold number of points, in accordance with Table 303, shall be achieved as prescribed in Categories 1 through 6. The lowest level achieved in any category shall determine the overall performance level achieved for the building.
(2) In addition to the threshold number of points in each category, all mandatory provisions of each category shall be implemented.
(3) In addition to Section 701, either Section 702 (Performance Path) or Section 703 (Prescriptive Path) shall be used to establish the threshold performance level under Category 3 (Energy Efficiency).
(4) In addition to the threshold number of points prescribed in Categories 1 through 6, the additional points prescribed in Category 7 shall be achieved from any of the categories. Where deemed appropriate by the Adopting Entity, additional points from Category 7 may be assigned to another category (or categories) to increase the threshold points required for that category (or categories). Points shall not be reduced by the Adopting Entity in any of six other categories.

Table 303
Threshold Point Ratings for Green Buildings

		Green Building Category	Performance Level Points (1) (2)			
			Bronze	Silver	Gold	Emerald
1	500	Lot Design, Preparation, and Development	39	66	93	119
2	600	Resource Efficiency	45	79	113	146
3	700	Energy Efficiency	30	60	100	120
4	800	Water Efficiency	14	26	41	60
5	900	Indoor Environmental Quality	36	65	100	140
6	1000	Operation, Maintenance and Building Owner Education	8	10	11	12
		Additional Points from any category	50	100	100	100
		Total Points:	222	406	558	697

(1) In addition to the threshold number of points in each category, all mandatory provisions of each category shall be implemented.
(2) For dwelling units greater than 4,000 square feet (372 square meter), the number of points in Category 7 (Additional Points from any category) shall be increased in accordance with Section 601.1. The "Total Points" shall be increased by the same number of points.

304 - GREEN BUILDINGS

304.1 Green Multi-Unit Buildings. For multi-unit buildings, points for the green building practices that apply to multiple units shall be credited once for the entire building. Where points are credited, practices shall be implemented in all units, as applicable. Where application of a prescribed practice allows for a different nuber of points for different units in a multi-unit building, the fewer number of points shall be awarded.

400 SITE DESIGN AND DEVELOPMENT

400.0 Intent. This section applies to land development for the eventual construction of buildings or additions thereto that contain dwelling units. The rating earned under Section 303 based on practices herein, applies only to the site as defined in Chapter 2. The buildings on the site earn their own performance level by complying with the provisions of Section 303, 304, or 305.5, as applicable.

		I.	II.	III.	IV.
	401 SITE SELECTION				
	401.0 Intent. The site is selected to minimize environmental impact by one or more of the following:				
(pg. 15)	**401.1 Infill Site.**	4			
(pg. 15)	**401.2 Greyfield/brownfield site.**	5			
	402 PROJECT TEAM, MISSION STATEMENT, AND GOALS				
	402.0 Intent. The site is designed and constructed by a team of qualified professionals trained in green development issues.				
(pg. 15)	**402.1 Team.**	4			
(pg. 15)	**402.2 Training.**	3			
(pg. 15)	**402.3 Project checklist.** (M)	3			
	403 SITE DESIGN				
	403.0 Intent. The project is designed to avoid detrimental environmental impacts, minimize any unavoidable impacts, and mitigate for those impacts that do occure. The project is designed to minimize environmental impacts and to protect, restore, and enhance the natural features and environmental quality of the site.				
(pg. 16)	**403.1 Natural resources.**	18			
(pg. 16)	**403.2 Building orientation.**	6			
(pg. 16)	**403.3 Slope disturbance.** *(Points awarded only if there are developable steep slopes in the project area)*	28			
(pg. 16)	**403.4 Soil disturbance and erosion.**	12			
(pg. 16)	**403.5 Storm water management.**	21			
(pg. 17)	**403.6 Landscape plan.**	54			
(pg. 17)	**403.7 Wildlife habitat.**	5			
(pg. 18)	**403.8 Operations and maintenance plan.**	5			
(pg. 18)	**403.9 Existing buildings.**	6			
(pg. 18)	**403.10 Existing and recycled materials.**	1			
(pg. 18)	**403.11 Environmentally sensitive areas.**	6			
(pg. 18)	**403.12 Density.**	10			
(pg. 18)	**403.13 Mixed-use development.**	6			
	404 SITE DEVELOPMENT AND CONSTRUCTION				
	404.0 Intent. Environmental impact during construction is avoided to the extent possible; impacts that do occure are minimized, and any significant impacts are mitigated.				
(pg. 18)	**404.1 On-site supervision and coordination.**	4			
(pg. 18)	**404.2 Trees and vegetation.**	12			
(pg. 19)	**404.3 Soil disturbance and erosion.**	31			
(pg. 19)	**404.4 Wildlife habitat.**	19			
	405 INNOVATIVE PRACTICES				
	405.0 Intent. Innovative site design, preparation, and development practices are used to enhance environmental performance. Waivers or variances from local development regulations are obtained, and innovative zoning practices are used to implement such practices, as applicable.				
(pg. 19)	**405.1 Driveways and parking areas.**	5			
(pg. 20)	**405.2 Street widths.**	6			
(pg. 20)	**405.3 Cluster development.**	10			
(pg. 20)	**405.4 Zoning.**	18			
(pg. 20)	**405.5 Wetlands.**	7			
(pg. 20)	**405.6 Mass transit.**	6			

500 LOT DESIGN, PRESERVATION, AND DEVELOPMENT

500.0 Intent. This section applies to lot development for the eventual construction of residential buildings, multi-unit buildings, or additions thereto that contain dwelling units. The buildings on the lot earn their own performance level by complying with the provisions of Section 303, 304, or 305.5, as applicable.

		I.	II.	III.	IV.
	501 LOT SELECTION				
(pg. 21)	**501.1 Lot.**	9			
(pg. 21)	**501.2 Mass Transportation.**	9			
	502 PROJECT TEAM, MISSION STATEMENT, AND GOALS				
(pg. 21)	**502.1 Project team, mission statement, and goals.**	4			
	503 LOT DESIGN				
	503.0 Intent. The lot is designed to avoid detrimental environmental impacts first, minimize any unavoidable impacts, and mitigate for those impacts that do occure. The project is designed to minimize environmental impacts and to protect, restore, and enhance the natural features and environmental quality of the lot.				
(pg. 22)	**503.1 Natural resources.**	24			
(pg. 22)	**503.2 Slope disturbance.** *(Points awarded only if there are developable steep slopes in the project area)*	24			
(pg. 23)	**503.3 Soil disturbance and erosion.**	15			
(pg. 23)	**503.4 Storm water management.**	20			
(pg. 23)	**503.5 Landscape plan.**	34			
(pg. 24)	**503.6 Wildlife habitat.**	4			
(pg. 24)	**503.7 Mixed-use development.**	6			
(pg. 24)	**503.8 Environmentally sensitive areas.**	6			
(pg. 24)	**503.9 Density.**	10			
	504 LOT CONSTRUCTION				
	504.0 Intent. Environmental impact during construction is avoided to the extent possible; impacts that do occure are minimized, and any significant impacts are mitigated.				
(pg. 25)	**504.1 On-site supervision and coordination.**	4			
(pg. 25)	**504.2 Trees and vegetation.**	11			
(pg. 25)	**504.3 Soil disturbance and erosion.**	34			
	505 INNOVATIVE PRACTICES				
	505.0 Intent. Innovative lot design, preparation and development practices are used to enhance environmental performance. Waivers of variances from local development regulations are obtained, and innovative zoning practices are used to implement such practices.				
(pg. 26)	**505.1 Driveways and parking areas.**	4			
(pg. 26)	**505.2 Heat island mitigation.**	4			

600 RESOURCE EFFICIENCY

		I.	II.	III.	IV.
	601 QUALITY OF CONSTRUCTION MATERIALS AND WASTE				
	601.0 Intent. Design and construction practices that minimize the environmental impact of the building materials are incorporated, environmentally efficient building systems and materials are incorporated, and waste generated during construction is reduced.				
(pg. 27)	**601.1 Conditioned floor area.**	15	6		
(pg. 28)	**601.2 Material usage.**	9			
(pg. 28)	**601.3 Building dimensions and layouts.**	13			
(pg. 28)	**601.4 Framing and structural plans.**	4			
(pg. 28)	**601.5 Prefabricated components.**	38			
(pg. 28)	**601.6 Stacked stories.**	8	4		
(pg. 28)	**601.7 Site-applied finishing materials.**	12	7		
(pg. 29)	**601.8 Foundations.**	3			
(pg. 29)	**601.9 Above grade wall systems.**	4			
	602 ENHANCED DURABILITY AND REDUCED MAINTENANCE				
	602.0 Intent. Design and construction practices are implemented that enhance the durability of materials and reduce in-service maintenance.				
(pg. 29)	**602.1 Exterior doors.**	5			
(pg. 29)	**602.2 Roof overhangs.**	4			
(pg. 30)	**602.3 Foundation drainage.** (M)	4	M		
(pg. 30)	**602.4 Drip edge.**	3	3		
(pg. 30)	**602.5 Roof water discharge.**	4	4		
(pg. 30)	**602.6 Finished grade.** (M)	X	M		
(pg. 30)	**602.7 Termite barrier.**	4			
(pg. 31)	**602.8 Termite-resistant materials.**	6			
(pg. 31)	**602.9 Water-resistive barrier.** (M)	X	M		
(pg. 31)	**602.10 Ice barrier.** (M)	X			
(pg. 31)	**602.11 Foundation waterproofing.**	4	4		
(pg. 31)	**602.12 Flashing.**	6	6		
(pg. 32)	**602.13 Roof surfaces.**	3			
(pg. 32)	**602.14 Recycling.**	6			
	603 REUSED OR SALVAGED MATERIALS				
	603.0 Intent. Practices that reuse or modify existing structures, salvages materials for other uses, or use salvaged materials in the building's construction are implemented.				
(pg. 32)	**603.1 Reused of existing building.**	12			
(pg. 32)	**603.2 Salvaged materials.**	3			
(pg. 32)	**603.3 Scrap materials.**	4			
	604 RECYCLED-CONTENT BUILDING MATERIALS				
(pg. 32)	**604.1 Recycled content.**	9			
	605 RECYCLED CONSTRUCTION WASTE				
	605.0 Intent. Waste generated during construction is recycled. All waste classified as hazardous shall be properly handled and disposed.				
(pg. 33)	**605.1 Construction waste management plan.**	6			
(pg. 33)	**605.2 On-site recycling.**	7			
(pg. 33)	**605.1 Recycled construction materials.**	6			
	606 RENEWABLE MATERIALS				
	606.0 Intent. Building materials derived from renewable resources are used.				
(pg. 33)	**606.1 Biobased products.**	8			
(pg. 34)	**606.2 Wood-based products.**	7			
(pg. 34)	**606.3 Manufacturing energy.**	6			
	607 RESOURCE-EFFICIENT MATERIALS				
(pg. 34)	**607.1 Resource-efficient materials.**	9	3		
	608 INDIGENOUS MATERIALS				
(pg. 34)	**608.1 Indigenous materials.**	10			
	609 LIFE CYCLE ANALYSIS				
(pg. 35)	**609.1 Life cycle analysis.**	15			
	610 INNOVATIVE PRACTICES				
(pg. 35)	**610.1 Manufacturer's environmental management system concepts.**	10			

700 ENERGY EFFICIENCY

		I.	II.	III.	IV.
	701 MINIMUM ENERGY EFFICIENCY REQUIREMENTS				
(pg. 39)	**701.1 Mandatory requirements.**	X			
(pg. 39)	**701.1.1 Minimum Performance Path requirements.**	X			
(pg. 39)	**701.1.2 Minimum Prescriptive Path requirements.**	X			
(pg. 39)	**701.1.3 Alternative bronze level compliance.**	X			
(pg. 39)	**701.2 Emerald level points.**	X			
(pg. 39)	**701.1.3 Adopting Entity review.**	X			
(pg. 40)	**701.4 Mandatory practices.**	X			
(pg. 40)	**701.4.1 HVAC systems.** (M)	X	M		
(pg. 40)	**701.4.2 Duct systems.** (M)	X	M		
(pg. 41)	**701.4.3 Insulation and air sealing.** (M)	X	M		
(pg. 43)	**701.4.4 Fenestration.** (M)	X	M		
	702 PERFORMANCE PATH				
(pg. 43)	**702.1 Point allocation.** (M)	X			
(pg. 43)	**702.2 Energy cost performance level.**	120			
	703 PRESCRIPTIVE PATH				
(pg. 44)	**703.1 Building envelope.** *(Max points vary)*	X			
(pg. 46)	**703.2 Insulation and air sealing.**	15	3		
(pg. 48)	**703.3 Fenestration.**	12			
(pg. 49)	**703.4 HVAC equipment efficiency.** *(Max points vary)*	X			
(pg. 52)	**703.5 Water heating design, equipment, and installation.** *(Max points vary)*	X			
	704 ADDITIONAL PRACTICES				
	704.1 Application of additional practice points. Points from Section 704 can be added to points earned in Section 702 (Performance Path), Section 703 (Prescriptive Path), or Section 701.1.3 (alternative bronze level compliance).				
(pg. 54)	**704.2 Lighting and appliances.**	29			
(pg. 56)	**704.3 Renewable energy and solar heating and cooling.** *(Max points vary)*	X			
(pg. 59)	**704.4 Ducts.**	52			
(pg. 60)	**704.5 HVAC design and installation.**	9	1		
(pg. 60)	**704.6 Installation and performance verification.**	43			
	705 INNOVATIVE PRACTICES				
(pg. 62)	**705.1 Energy consumption control.**	7			
(pg. 62)	**705.2 Renewable energy service plan.**	7			

800 WATER EFFICIENCY

		I.	II.	III.	IV.
	801 INDOOR AND OUTDOOR WATER USE				
	801.0 Intent. Measures that reduce indoor and outdoor water usage are implemented.				
(pg. 63)	**801.1 Indoor hot water usage.** *(Max points vary)*	X	6		
(pg. 64)	**801.2 Water-conserving appliance.**	14			
(pg. 64)	**801.3 Food waste disposers.**	1			
(pg. 65)	**801.4 Showerheads.**	5			
(pg. 65)	**801.5 Faucets.**	8			
(pg. 66)	**801.6 Water closets and urinals.** (M)	28			
(pg. 66)	**801.7 Irrigation systems.**	19			
(pg. 67)	**801.8 Rainwater collection and distribution.**	8			
(pg. 67)	**801.9 Water filters.**	1			
	802 INNOVATIVE PRACTICES				
(pg. 68)	**802.1 Gray water.** *(Max points vary)*	X			
(pg. 68)	**802.2 Composting or waterless toilets and/or urinals.** (M)	24			
(pg. 68)	**802.3 Automatic shutoff water devices.**	2			

900 INDOOR ENVIRONMENTAL QUALITY

		I.	II.	III.	IV.
	901 POLLUTANT SOURCE CONTROL				
	901.0 Intent. Pollutant sources are controlled.				
(pg. 69)	**901.1 Space and water heating options.**	25	10		
(pg. 70)	**901.2 Fireplaces and fuel-buring appliances.** (M)	7	7		
(pg. 71)	**901.3 Garages.** (M)	10	10		
(pg. 71)	**901.4 Wood materials.** (M)	10			
(pg. 72)	**901.5 Carpets.** (M)	10			
(pg. 72)	**901.6 Hard-surface flooring.**	6			
(pg. 72)	**901.7 Wall coverings.**	4			
(pg. 73)	**901.8 Architectural coatings.**	13			
(pg. 73)	**901.9 Adhesives and sealants.**	10			
(pg. 74)	**901.10 Cabinets.**	5			
(pg. 74)	**901.11 Insulation.**	5			
(pg. 74)	**901.12 Carbon monoxide (CO) alarms.**	3	3		
(pg. 75)	**901.13 Building entrance pollutants control.**	1			
(pg. 75)	**901.14 Non-smoking areas.**	1			
	902 POLLUTANT CONTROL				
	902.0 Intent. Pollutants generated in the building are controlled				
(pg. 75)	**902.1 Spot ventilation.** (M)	31	12		
(pg. 76)	**902.2 Building ventilation systems.**	28	15		
(pg. 77)	**902.3 Radon control.** (M)	15	M		
(pg. 77)	**902.4 HVAC system protection.**	3			
(pg. 77)	**902.5 Central vacuum system.**	5			
(pg. 78)	**902.6 Living space contaminants.**	8			
	903 MOISTURE MANAGEMENT: VAPOR, RAINWATER, PLUMBING, HVAC				
	903.0 Intent. Moisture and moisture effects are controlled				
(pg. 78)	**903.1 Tile backing materials.** (M)	X			
(pg. 78)	**903.2 Capillary breaks.** (M)	3	3		
(pg. 79)	**903.3 Crawlspaces.** (M)	16			
(pg. 79)	**903.4 Moisture control measures.** (M)	10			
(pg. 80)	**903.5 Plumbing.**	9	2		
(pg. 81)	**903.6 Duct insulation.** (M)	2			
(pg. 81)	**903.7 Relative humidity.**	8			
	904 INNOVATIVE PRACTICES				
(pg. 81)	**904.1 Humidity monitoring system.**	2			
(pg. 81)	**904.2 Kitchen exhaust.**	2			

1000 OPERATION, MAINTENANCE, & BLDG OWNER EDUCATION

		I.	II.	III.	IV.
	1001 BUILDING OWNERS' MANUAL FOR ONE AND TWO-FAMILY DWELLINGS				
	1001.0 Intent. Information on the building's use, maintenance, and green components is provided.				
(pg. 83)	**1001.1 Building owner's manual.** (M)	10			
	1002 TRAINING OF BUILDING OWNERS ON OPERATION & MAINTENANCE FOR ONE & TWO-FAMILY DWELLINGS AND MULIT-UNIT BUILDINGS				
(pg. 84)	**1002.1 Training of building owners.**	6			
	1003 CONSTRUCTION, OPERATION, & MAINTENANCE MANUALS & TRAINING FOR MULTI-UNIT BUILDINGS				
	1003.0 Intent. Manuals are provided to the responsible parties (owner, management, tenant, and/or maintenance team) regarding the construction, operation, and maintenance of the building...				
(pg. 85)	**1003.1 Building construction manual.** (M)	4			
(pg. 85)	**1003.2 Operations manual.** (M)	5			
(pg. 86)	**1003.3 Maintenance manual.** (M)	4.5			
	TOTAL ESTIMATED POINTS ELIGIBLE BY THIS DESIGN:		109		

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What is the NAHB National Green Building Standard?

In 2007 the National Association of Home Builders (NAHB) and the International Code Council (ICC) partnered to form to establish a much-needed and nationally-recognizable standard definition of what is meant by "Green Building."

A consensus committee was formed to develop this standard in compliance with the requirements of the American National Standards Institute (ANSI). The resulting ANSI approved ICC-700-2008 National Green Building Standard defines green building for single and multifamily homes, residential remodeling projects and site development projects while still allowing for the flexibility required for regionally-appropriate best green practices.

Similar to the NAHB Model Green Homebuilding Guidelines, a builder, remodeler or developer must incorporate a minimum number of features in the following areas: energy, water, and resource efficiency, lot and site development, indoor environmental quality, and home owner education. The more points accrued, the higher the score.

The Standard, however, includes more mandatory items and suggests that higher thresholds be met in several categories. A new threshold - "Emerald" - was added to denote the highest achievement in residential green construction.

How to use the NAHB National Green Building Standard Checklist:

If you plan to have your project certified by the NAHB National Green Building Standard, this page will provide you with a brief but clear outline of the program's mandatory and credit requirements. Additional clarifying text can be found in the full National Green Building Standard. This checklist is a worksheet only and is not a substitute for online scoring at NAHBGreen.org which. Scoring through NAHBGreen.org is required for home certification in the NAHBGreen program.

To purchase the National Green Building Standard or for more information visit **www.BuilderBooks.com**.

If you choose not to have your project certified but would like to incorporate green practices, products and materials, use this sheet as a guide to select the green features you would like to include.

FreeGreen Inc. has made an effort to include many green building practices, products and materials right into this free home plan set. If followed as presented, this home design is already eligible for a variety of points under NAHB National Green Building Standard Rating System. This page also identifies these achievable points for your convenience.
SEE COLUMN "II."

NOTE: Points available for renovations and additions as specified in the NAHB Green Building Standard are not listed on this sheet. For a description of points available for renovations and additions as specified in the NAHB Green Building Standard please purchace the full standard at www.BuilderBooks.com.

PROJECT NAME:
Modern Ranch

NAHB GREEN BUILDING STANDARD

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

A-00-3

SCALE

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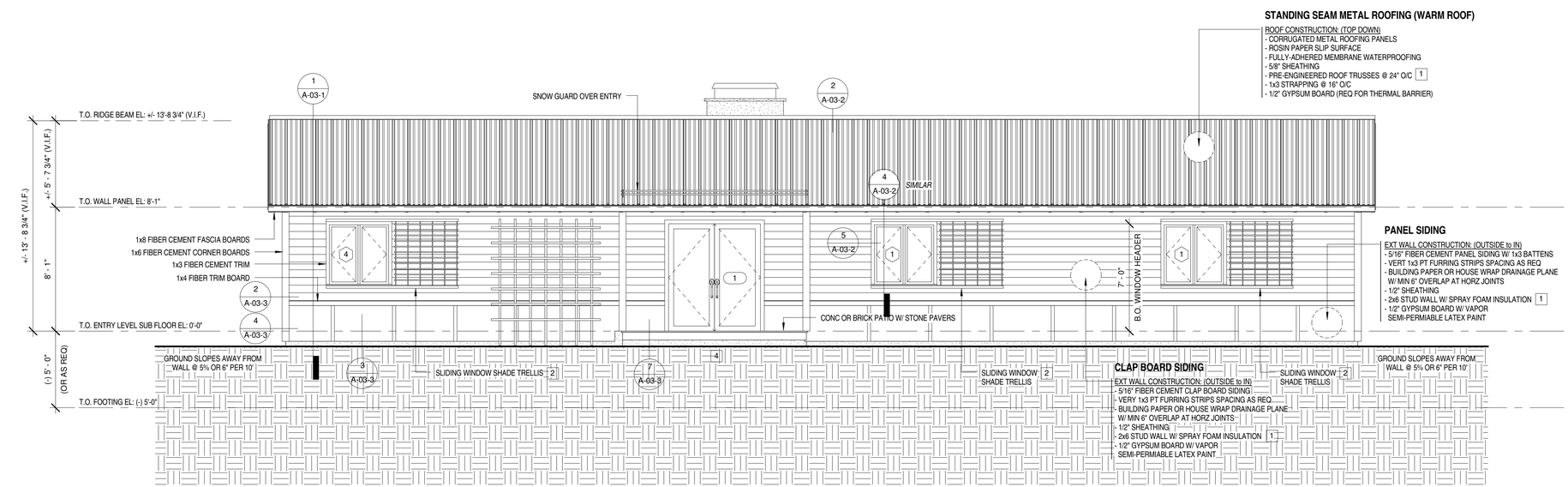
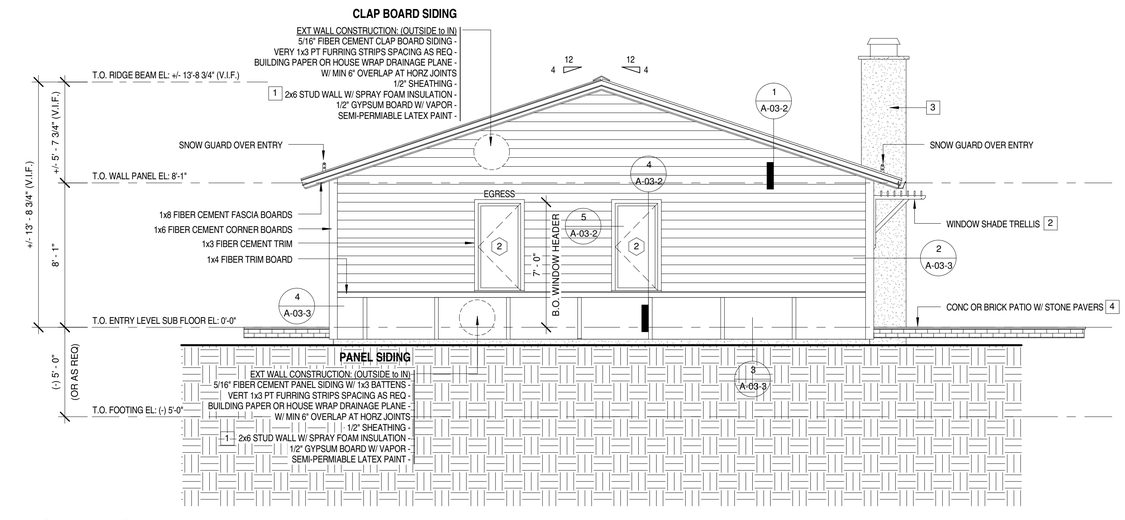


1 FRONT ELEVATION
1/4" = 1'-0"



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

WINDOW SCHEDULE					
No.	UNIT TYPE	UNIT DESCRIPTION	ROUGH WIDTH	ROUGH HEIGHT	QUANTITY
1	DOUBLE CASEMENT		4' - 1"	4' - 0 1/2"	2
2	CASEMENT LEFT		2' - 7"	5' - 0 1/2"	4
3	DOUBLE CASEMENT		5' - 1"	5' - 0 1/2"	2
4	DOUBLE CASEMENT	TEMPERED	4' - 1"	4' - 0 1/2"	1

DOOR SCHEDULE					
No.	UNIT TYPE	UNIT DESCRIPTION	ROUGH WIDTH	ROUGH HEIGHT	QUANTITY
1	DOUBLE IN-SWING		6' - 1"	7' - 0 1/2"	1
2	XO SLIDER		6' - 1"	7' - 0 1/2"	1
3	OXXO SLIDER		12' - 1"	7' - 0 1/2"	1

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NOTES:

EGRESS = WINDOW WITH MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET (24"Hx20"W MIN) WINDOW SILL HEIGHT NOT MORE THAN 44" ABOVE FLOOR.

1 DEPTH OF SPRAY FOAM INSULATION TO MEET 2006 IECC REQUIREMENT FOR THE PROJECTS CLIMATE ZONE.

2 SEE WINDOW SHADING DETAILS ON PAGE A-05-1 IN THIS SET.

3 CHIMNEY IS FRAMED WITH 2x4 STUDS. FINISH WITH STUCCO SIDING OVER WIRE LATH, TWO LAYERS TYPE D SATURATED KRAFT PAPER AND 1/2" SHEATHING.

4 STEPS OR RAMP TO GRADE AS REQ PER SITE CONDITIONS. MINIMUM 3'-0" LANDING REQUIRED AT ALL ENTRY WAYS. PORCHES, BALCONIES OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT.

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

ELEVATIONS

PROJECT NUMBER:	08-001
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A-01-1

SCALE 1/4" = 1'-0"

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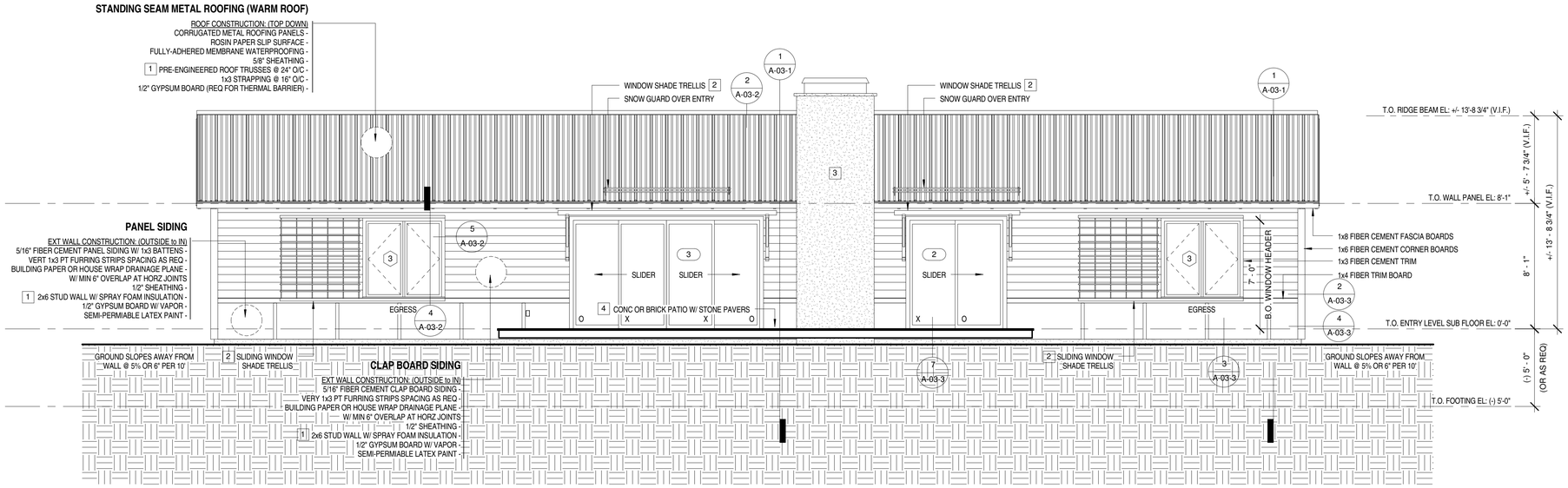
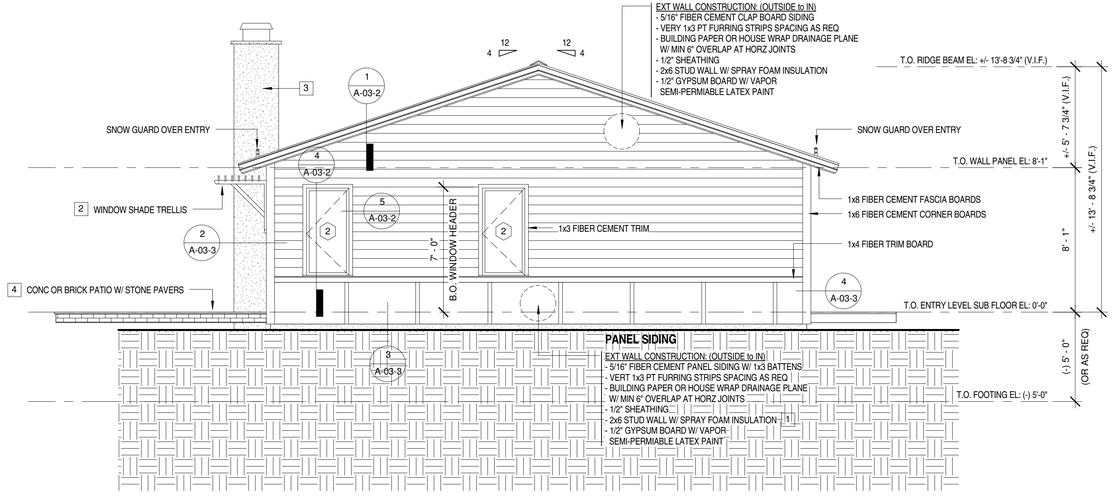
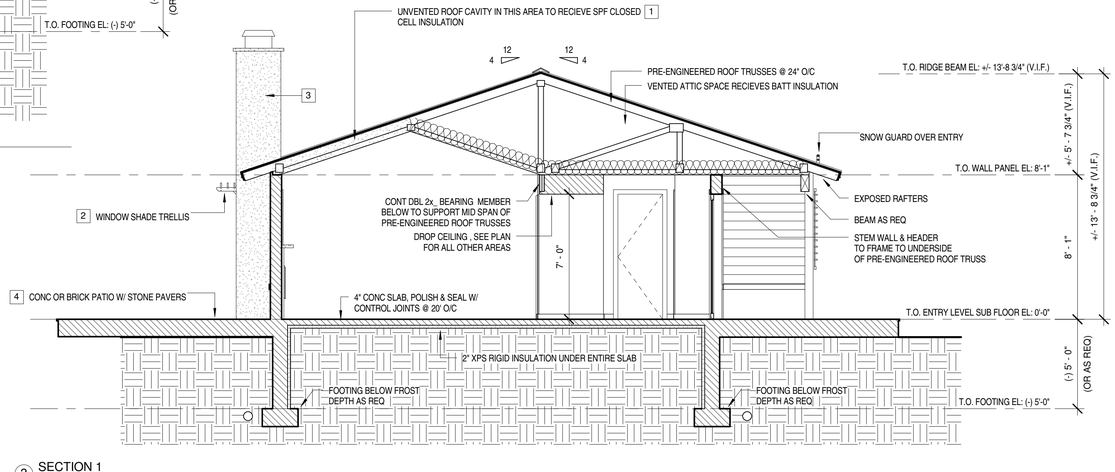


1 REAR ELEVATION
1/4" = 1'-0"



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



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

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NOTES:

EGRESS = WINDOW WITH MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET (24"Hx20"W MIN) WINDOW SILL HEIGHT NOT MORE THAN 44" ABOVE FLOOR.

1 DEPTH OF SPRAY FOAM INSULATION TO MEET 2006 IECC REQUIREMENT FOR THE PROJECTS CLIMATE ZONE.

2 SEE WINDOW SHADING DETAILS ON PAGE A-05-1 IN THIS SET.

3 CHIMNEY IS FRAMED WITH 2x4 STUDS. FINISH WITH STUCCO SIDING OVER WIRE LATH, TWO LAYERS TYPE D SATURATED KRAFT PAPER AND 1/2" SHEATHING.

4 STEPS OR RAMP TO GRADE AS REQ PER SITE CONDITIONS. MINIMUM 3'-0" LANDING REQUIRED AT ALL ENTRY WAYS. PORCHES, BALCONIES OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT.

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:

Modern Ranch

ELEVATIONS & SECTION 1

PROJECT NUMBER:	08-001
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A-01-2

SCALE 1/4" = 1'-0"

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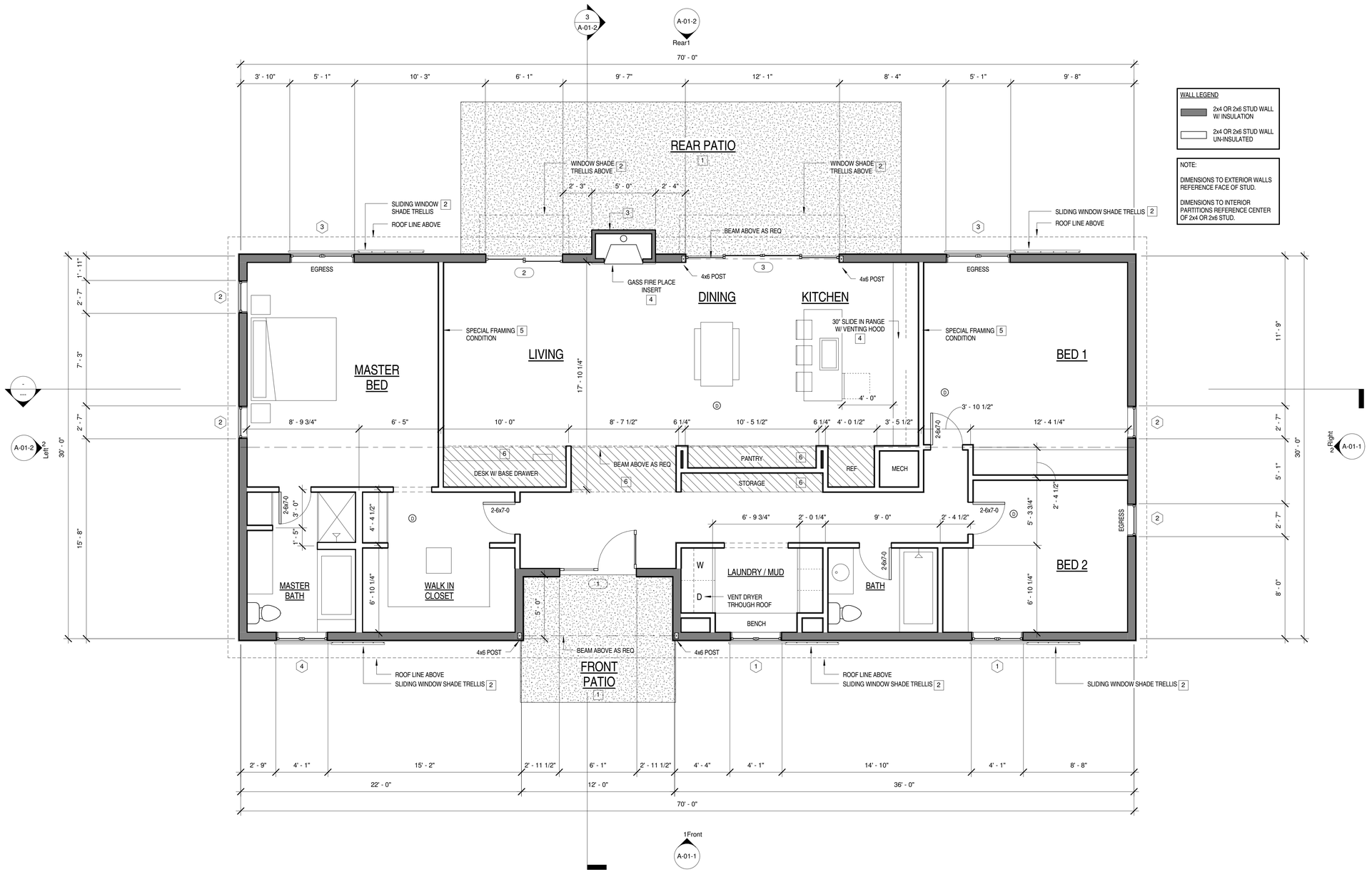

WALL LEGEND

2x4 OR 2x6 STUD WALL W/ INSULATION

2x4 OR 2x6 STUD WALL UN-INSULATED

NOTE:

DIMENSIONS TO EXTERIOR WALLS REFERENCE FACE OF STUD.

DIMENSIONS TO INTERIOR PARTITIONS REFERENCE CENTER OF 2x4 OR 2x6 STUD.

1 ENTRY LEVEL FLOOR PLAN
1/4" = 1'-0"

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NOTES:

D = COMBINATION SMOKE & CARBON MONOXIDE DETECTORS: DETECTORS SHALL BE INSTALLED OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BEDROOMS AND ON EACH STORY OF THE DWELLING INCLUDING BASEMENTS. ALL DETECTORS SHALL BE CONNECTED TO A SOUNDING DEVICE OR OTHER DETECTORS TO PROVIDE AN ALARM AUDIBLE IN ALL SLEEPING AREAS. ALL DETECTORS SHALL BE APPROVED AND LISTED AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

1. STEPS OR RAMP TO GRADE AS REQ PER SITE CONDITIONS. MINIMUM 3'-0" LANDING REQUIRED AT ALL ENTRY WAYS. PORCHES, BALCONIES OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT.
2. SEE WINDOW SHADING DETAILS ON PAGE A-05-1 IN THIS SET.
3. CHIMNEY IS FRAMED WITH 2x4 STUDS. FINISH WITH STUCCO SIDING OVER WIRE LATH, TWO LAYERS TYPE D SATURATED KRAFT PAPER AND 1/2" SHEATHING.
4. VENT AS PER MANUFACTURERS SPECIFICATIONS.
5. FRAME PARTITION FLUSH TO UNDERSIDE OF ROOF SHEATHING.
6. FINISH CEILING IN THIS LOCATION TO BE 7'-0" ABOVE T.O. SLAB.

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:

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ENTRY LEVEL FLOOR PLAN

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A-02-1

SCALE 1/4" = 1'-0"

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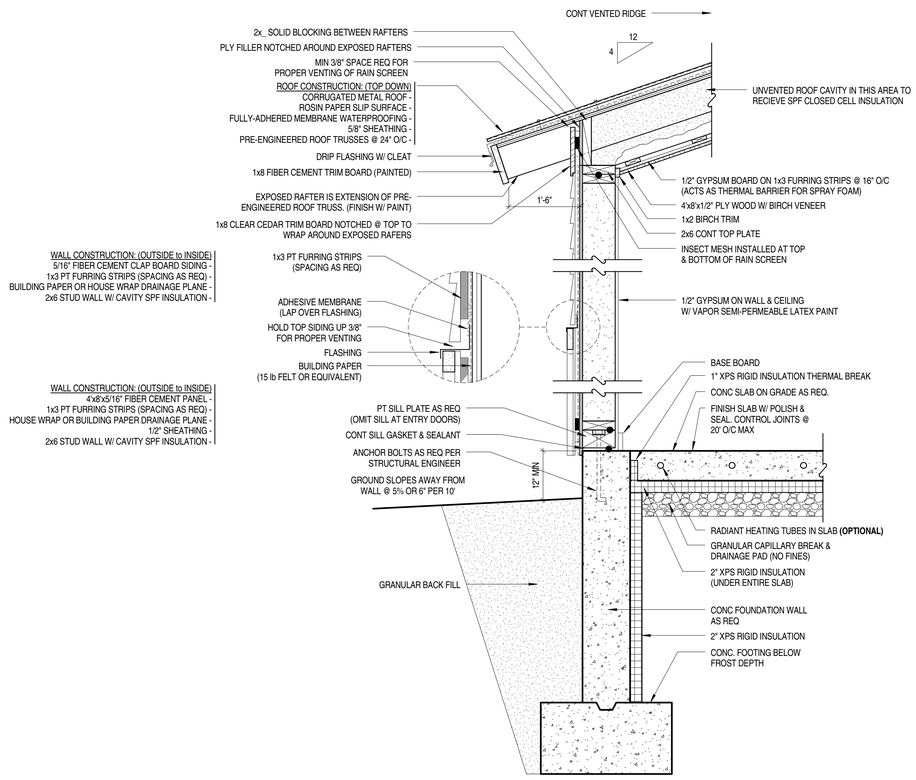
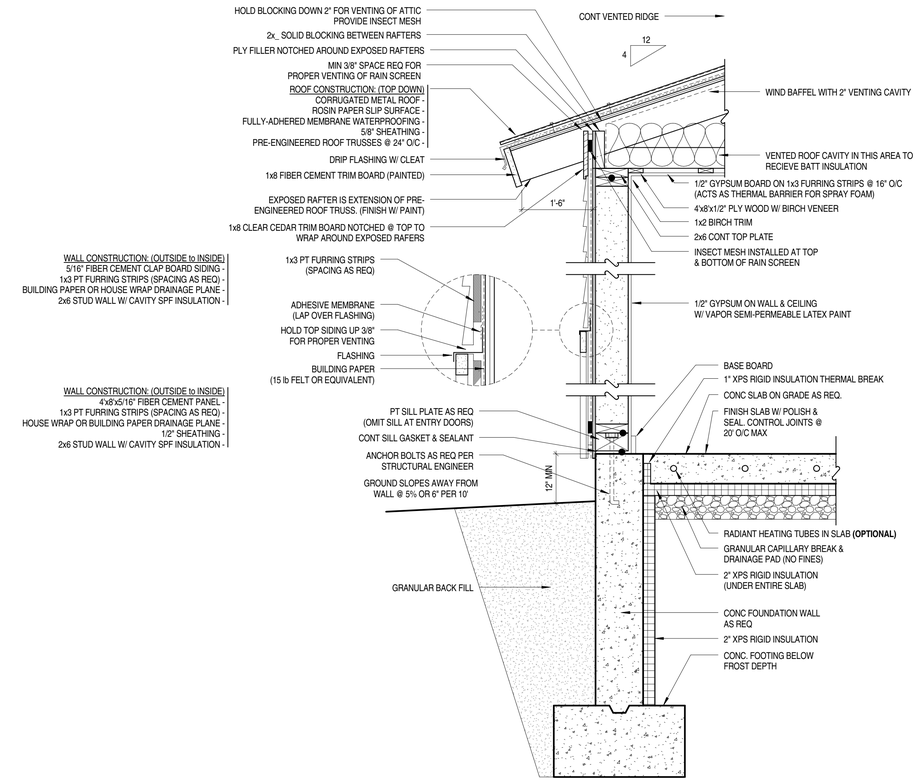


1 TYPICAL WALL SECTION 1
1" = 1'-0"



2 TYPICAL WALL SECTION 2
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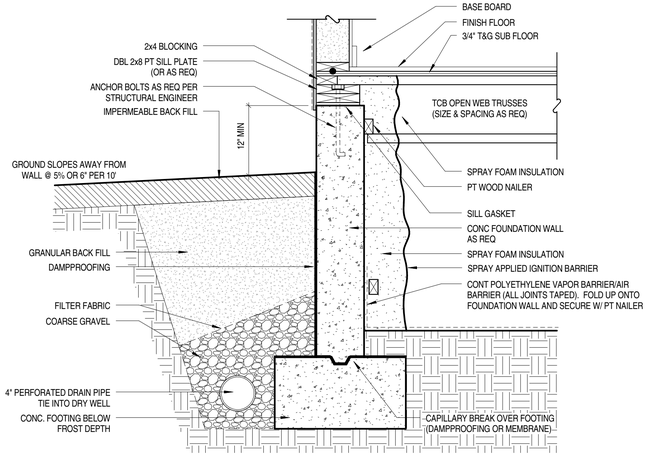
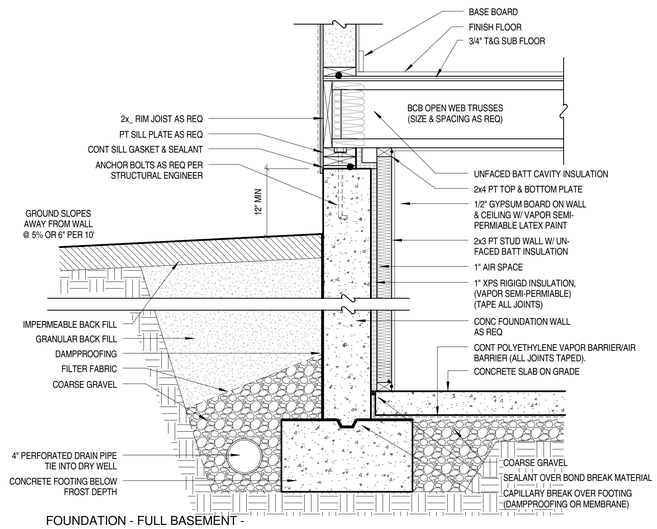
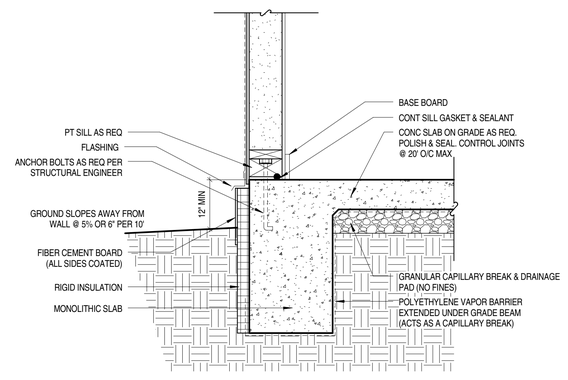


3 FOUNDATION - CRAWL SPACE - CONDITIONED
1" = 1'-0"



4 FOUNDATION - FULL BASEMENT - CONDITIONED
1" = 1'-0"



5 SLAB ON GRADE (ALTERNATIVE FOUNDATION DETAIL)
1" = 1'-0"

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No.	Description	Date

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DETAILS 1

PROJECT NUMBER:	08-001
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A-03-1

SCALE 1" = 1'-0"

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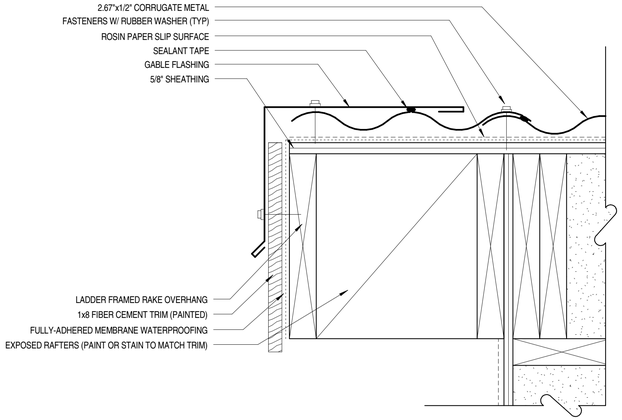
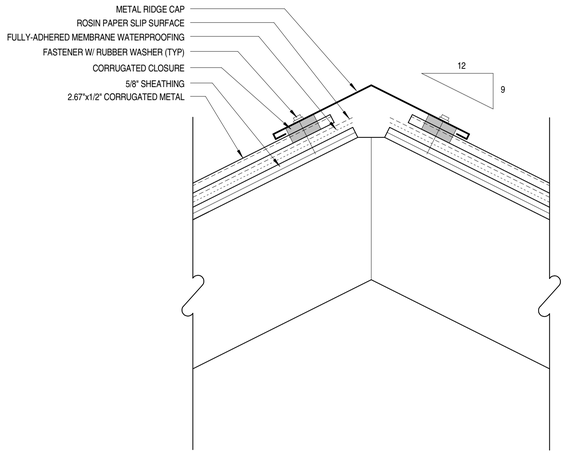
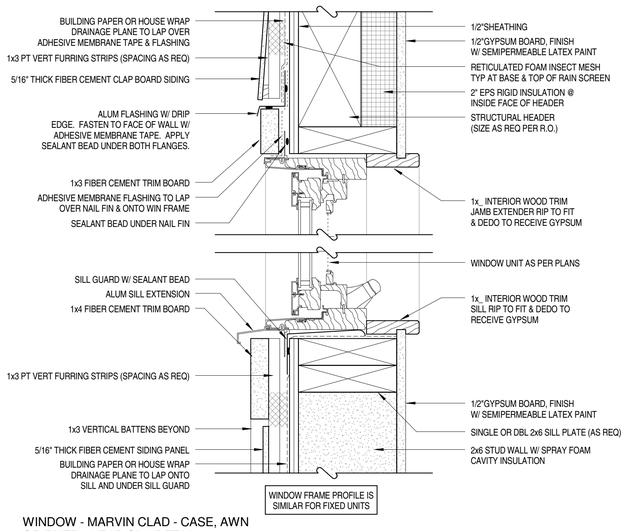


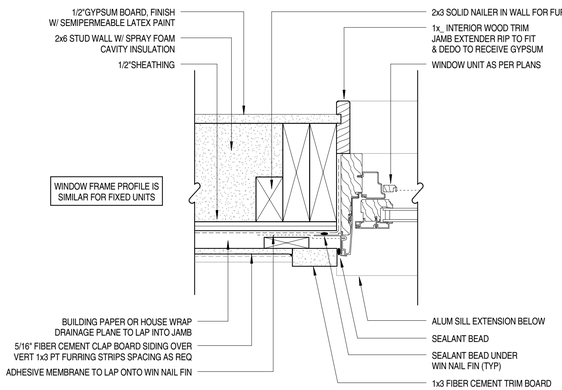
1 CORRUGATED METAL ROOFING - RAKE
3" = 1'-0"



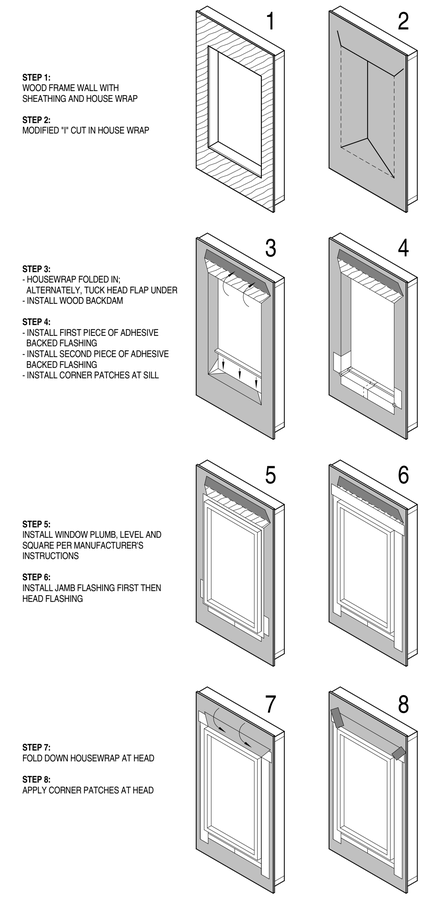
2 CORRUGATED METAL ROOFING - RIDGE
3" = 1'-0"



4 WINDOW - MARVIN CLAD - CASE, AWN OR FIXED - HEAD/SILL DETAIL
3" = 1'-0"



5 WINDOW - MARVIN CLAD - CASE, AWN OR FIXED - JAMB DETAIL
3" = 1'-0"



STEP 1:
WOOD FRAME WALL WITH
SHEATHING AND HOUSE WRAP

STEP 2:
MODIFIED "I" CUT IN HOUSE WRAP

STEP 3:
- HOUSEWRAP FOLDED IN; ALTERNATELY, TUCK HEAD FLAP UNDER
- INSTALL WOOD BACKDAM

STEP 4:
- INSTALL FIRST PIECE OF ADHESIVE BACKED FLASHING
- INSTALL SECOND PIECE OF ADHESIVE BACKED FLASHING
- INSTALL CORNER PATCHES AT SILL

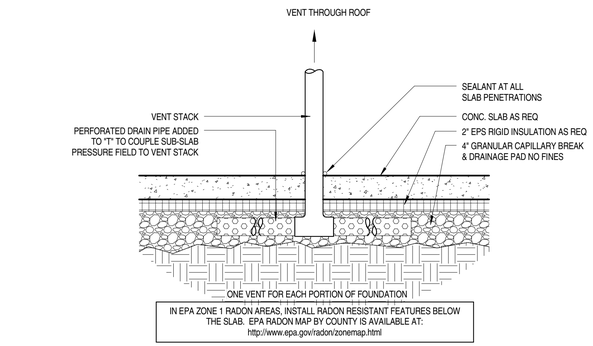
STEP 5:
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS

STEP 6:
INSTALL JAMB FLASHING FIRST THEN HEAD FLASHING

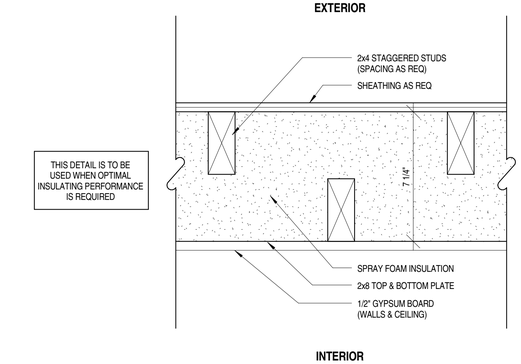
STEP 7:
FOLD DOWN HOUSEWRAP AT HEAD

STEP 8:
APPLY CORNER PATCHES AT HEAD

3 SUGGESTED WINDOW INSTALLATION (TYPICAL)
1" = 1'-0"



6 RADON DE-PRESSURIZATION DETAIL
1" = 1'-0"



7 STAGGERED EXT STUD WALL (OPTIONAL)
3" = 1'-0"

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NOTES:

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

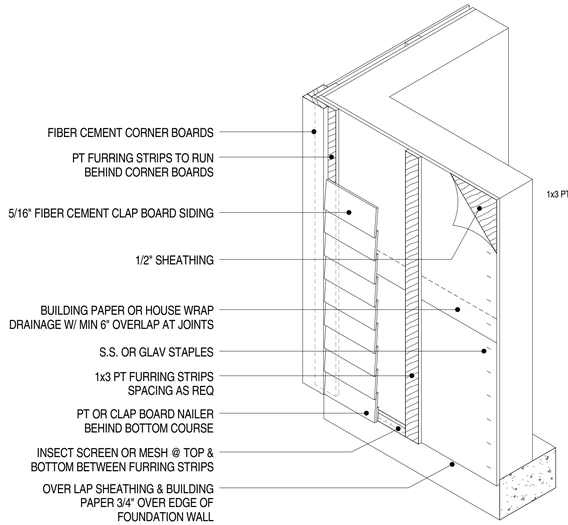
DETAILS 2

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

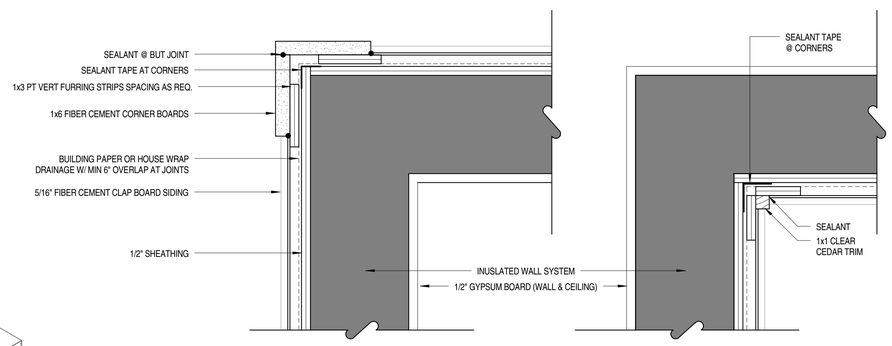
A-03-2

SCALE: As indicated

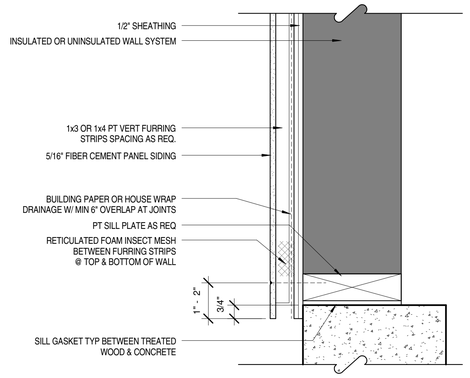
7/13/2009 9:35:49 AM



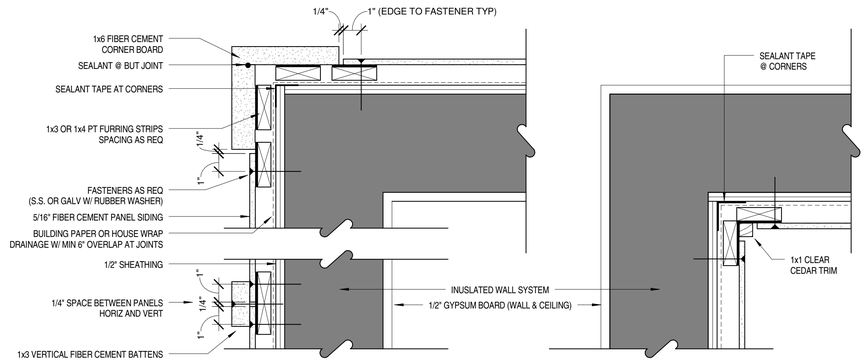
1 CLAP BOARD SIDING - RAIN SCREEN - ISOMETRIC DETAIL 2
1" = 1'-0"



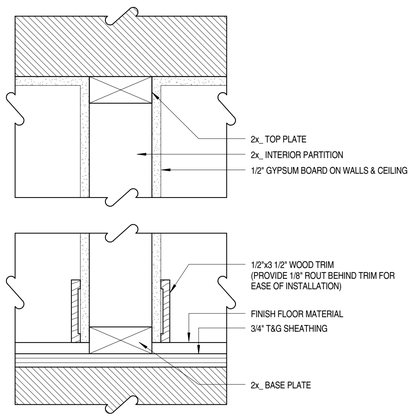
2 CLAP BOARD SIDING - RAIN SCREEN - CORNER DETAIL
3" = 1'-0"



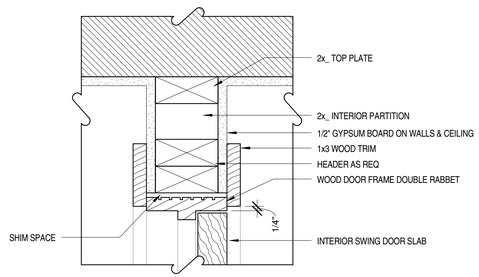
3 PANEL SIDING - RAIN SCREEN - BOTTOM OF WALL DETAIL
3" = 1'-0"



4 PANEL SIDING - RAIN SCREEN - CORNER DETAIL 1
3" = 1'-0"

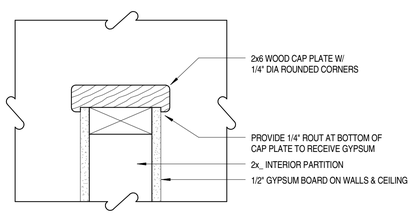


5 INTERIOR TRIM - BASE BOARD & CORNICE
3" = 1'-0"

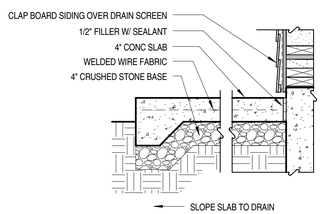


SIMILAR FOR JAMB DETAIL

6 INTERIOR TRIM - DOOR HEAD & JAMB
3" = 1'-0"



7 INTERIOR TRIM - PARTITION WALL CAP
3" = 1'-0"



8 CONCRETE PATIO @ WALL
1" = 1'-0"

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NOTES:

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

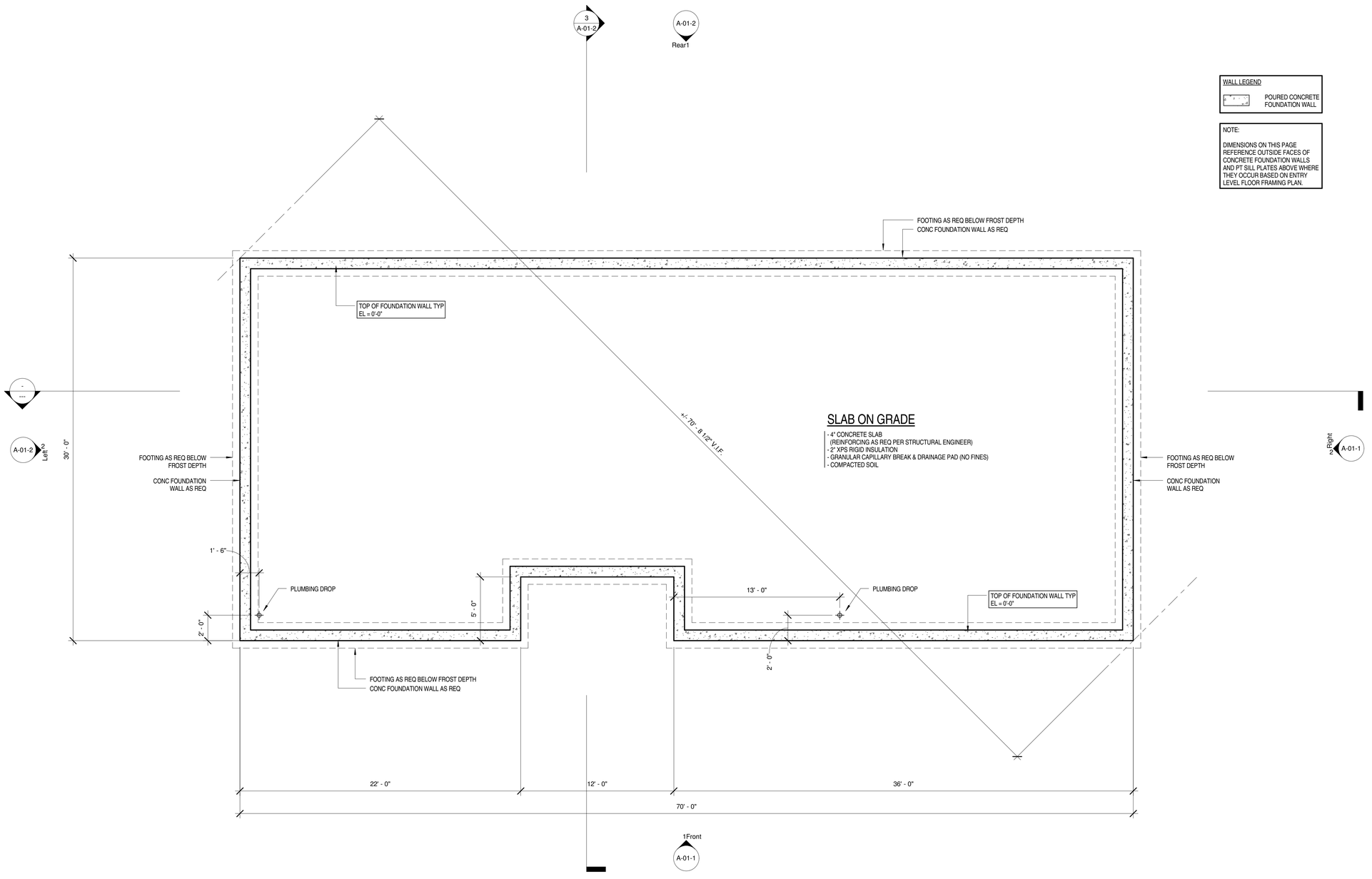
DETAILS 3

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

A-03-3

SCALE: As indicated

7/13/2009 9:35:50 AM



1 FOUNDATION PLAN
1/4" = 1'-0"

WALL LEGEND

POURED CONCRETE FOUNDATION WALL

NOTE:

DIMENSIONS ON THIS PAGE REFERENCE OUTSIDE FACES OF CONCRETE FOUNDATION WALLS AND PT SILL PLATES ABOVE WHERE THEY OCCUR BASED ON ENTRY LEVEL FLOOR FRAMING PLAN.

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NOTES:

BASEMENTS / CRAWL SPACES / SLABS:
THE BUILDER ASSUMES ALL RESPONSIBILITIES FOR PROVIDING ACCESS FOR DUCT AND PLUMBING CHASES BELOW CONCRETE SLABS AND THROUGH FOUNDATION WALLS AS REQUIRED. IT IS ALSO THE RESPONSIBILITY OF THE BUILDER TO PROVIDE ADEQUATE LIGHT AND VENTILATION FOR BASEMENTS AND OR CRAWL SPACES AS REQUIRED BY LOCAL CODES.

1 XXXXXXXXXX.

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

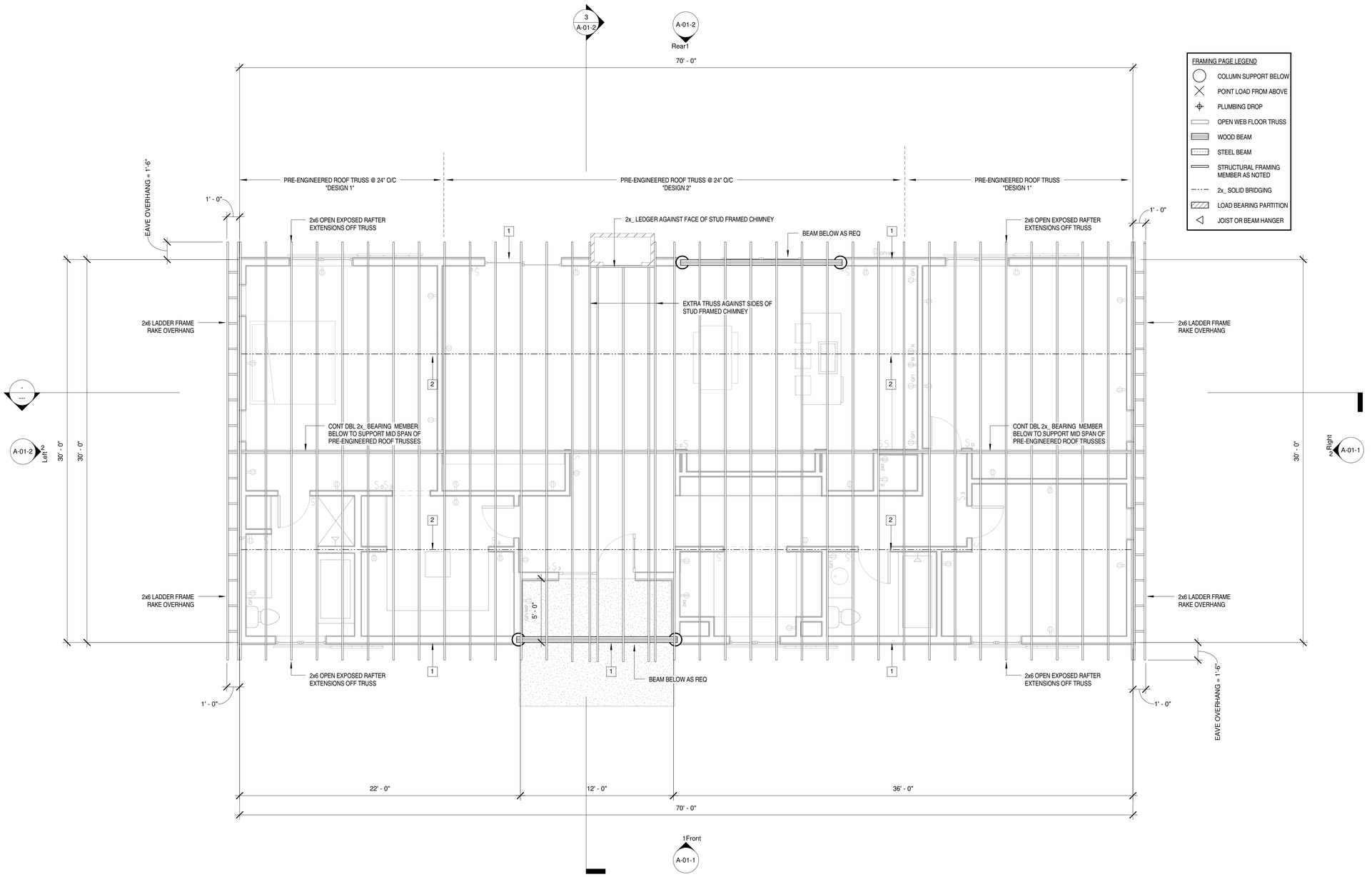
FOUNDATION PLAN

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

A-04-1

SCALE 1/4" = 1'-0"

7/13/2009 9:35:50 AM



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

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GENERAL:

THE FRAMING LAYOUT ON THIS PAGE IS INTENDED TO BE A SUGGESTED LAYOUT ONLY. DESIGN LOADS & WEATHER CONDITIONS VARY BY REGION. AS A RESULT THE SIZE, SPACING & LAYOUT OF ALL STRUCTURAL ELEMENTS IN THIS HOME DESIGN MUST BE APPROVED BY A **STRUCTURAL ENGINEER** AND CODE OFFICIAL BASED ON YOUR SPECIFIC SITE LOCATION PRIOR TO CONSTRUCTION.

MATERIAL SPECIFICATIONS: (VERIFY W/ LOCAL CODE)

FLOOR SHEATHING:
3/4" APA-RATED EXPOSURE 1, T&G,
48/24 SPAN RATING, EXPOSURE 1
10d COMMON NAILS @ 6" O/C B.N. & E.N.,
10d COMMON NAILS @ 10" O/C INT. FRAMING

ROOF SHEATHING:
5/8" APA-RATED EXPOSURE 1,
24" MINIMUM SPAN RATING,
8d COMMON NAILS @ 6" O/C B.N. & E.N.,
8d COMMON NAILS @ 10" O/C INT. FRAMING

SAWN STRUCTURAL FRAMING MEMBERS:

MEMBERS	*GRADE*
2x_ WALL STUDS	D.F. #2
2x_ FLOOR JOISTS & ROOF RAFTERS	D.F. #2
BEAMS & HEADERS	D.F. #1
POSTS (4x,6x,8x)	D.F. #1

WOOD BEAM MINIMUM ALLOWABLE BENDING STRESS:

MEMBERS	*Fb (PSI)*
GLUED LAMINATED TIMBERS	2400
LAMINATED VENEER LUMBER	2700

INTERIOR HEADERS:
INTERIOR NON-BEARING SPANS USE:
2x4 FLAT FOR SPANS UP TO 3'-0"
4x4 D.F. #2 FOR SPANS UP TO 5'-0"
4x6 D.F. #2 FOR SPANS UP TO 8'-0"

NOTES:

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

ROOF FRAMING PLAN

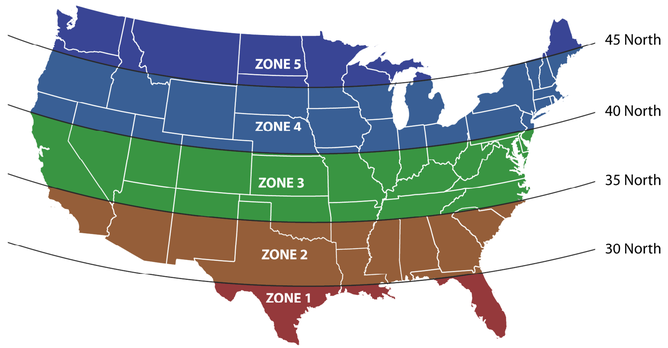
PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

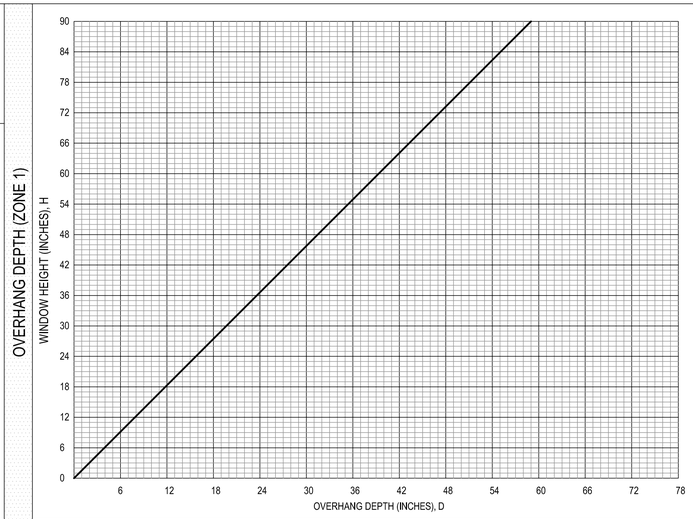
A-04-2

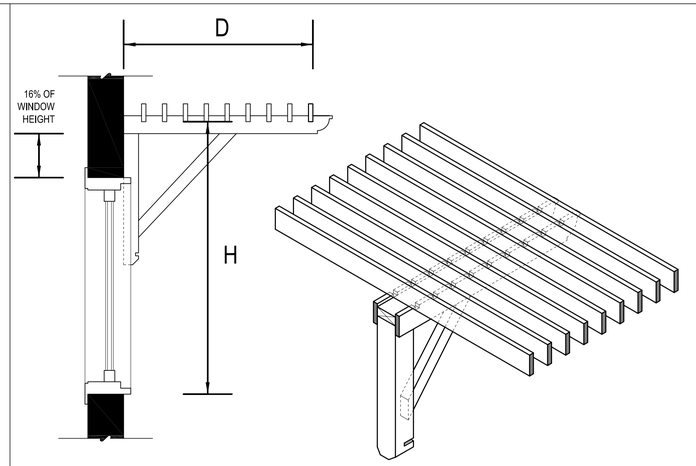
SCALE 1/4" = 1'-0"

7/13/2009 9:35:51 AM

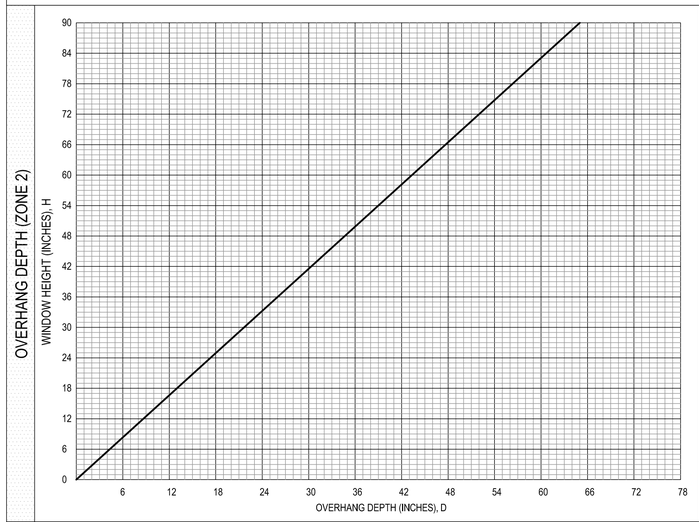
STEP 1: FIND YOUR ZONE
STEP 2: FROM THE TABLE, DETERMINE OVERHANG DEPTH FOR YOUR WINDOWS
STEP 3: CHOOSE YOUR WINDOW SUN SHADING DEVICE
STEP 4: CHOOSE YOUR MATERIALS

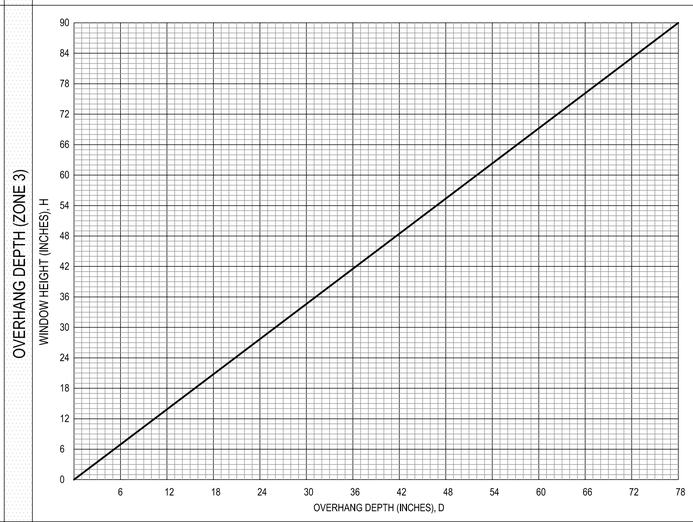


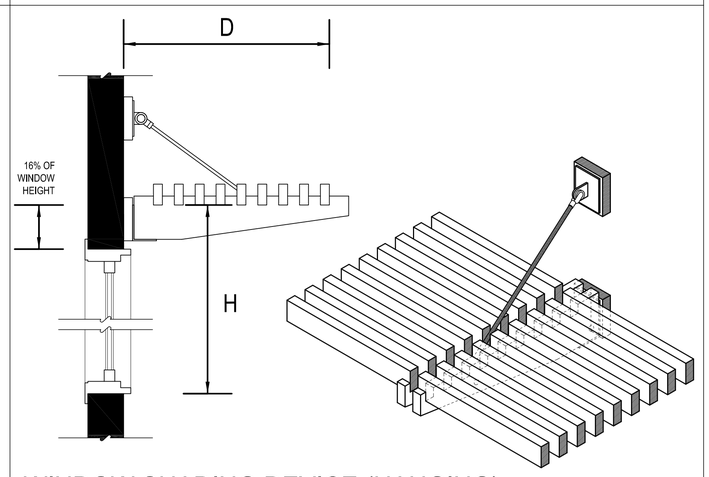




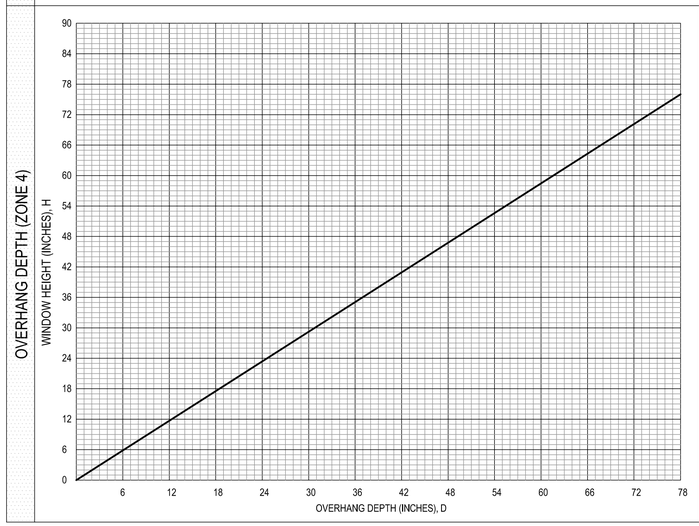
WINDOW SHADING DEVICE (BENCH)

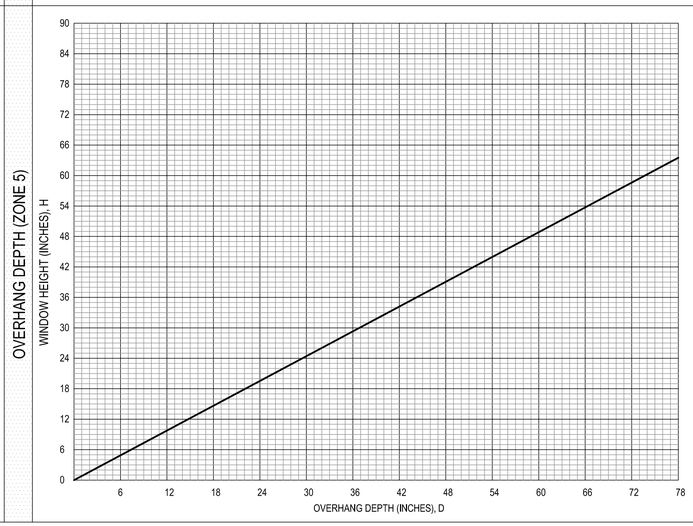


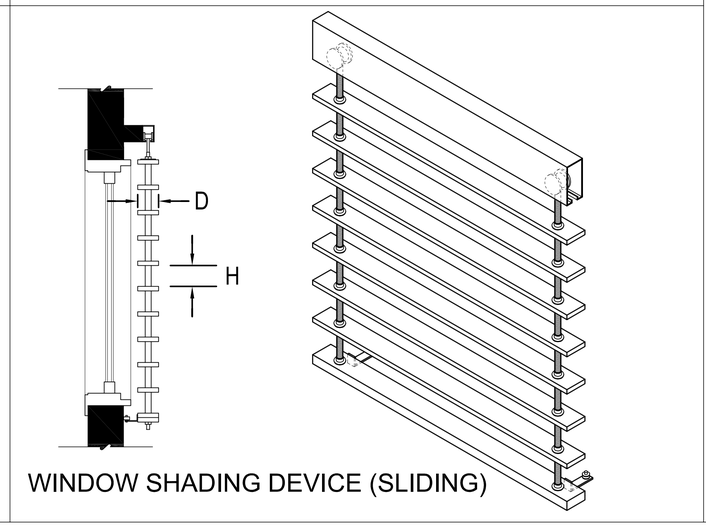




WINDOW SHADING DEVICE (HANGING)







WINDOW SHADING DEVICE (SLIDING)

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ABOUT THIS PAGE:

EXTERNAL WINDOW SHADING DEVICES ARE AN EFFECTIVE METHOD FOR REDUCING HEAT GAINS THROUGH WINDOWS DURING SUMMER. IN FACT, EXTERNAL SHADING DEVICES CAN REDUCE HEAT GAINS BY UP TO 80% IF SIZED AND BUILT PROPERLY. WITH THIS IN MIND, FREEGREEN HAS CREATED THIS PAGE TO ASSIST HOME BUILDERS IN CONSTRUCTING EFFECTIVE WINDOW SHADING DEVICES. THE INFORMATION WE PROVIDE INCLUDES A ZONING MAP OF THE UNITED STATES, ZONING CHARTS FOR PROPER SIZING OF SHADING DEVICES AND A VARIETY OF SHADING DEVICE STYLES AND MATERIALS TO SUITE DIFFERENT TASTES AND DIFFERENT HOME DESIGNS.

MATERIAL SPECIFICATIONS:

WOOD TYPES:

- PRESSURE TREATED
- WESTERN RED CEDAR
- TROPICAL HARDWOOD *(FSC CERTIFIED REQUIRED)*
  - MAHOGANY
  - MASSARANDUBA

HARDWARE:

ALL HARDWARE MUST BE EITHER HOT DIPPED GALVANIZED STEEL OR STAINLESS STEEL. FREEGREEN RECOMMENDS ONLY STAINLESS STEEL FOR HOUSE LOCATIONS IN CLOSE PROXIMITY TO THE OCEAN.

FINISHES:

IF USING PREASURE TREATED WOOD SEAL & FINISH TO MATCH EXTERIOR WINDOW TRIM.

IF USING WESTERN RED CEDAR SEAL & FINISH TO MATCH EXTERIOR WINDOW TRIM

IF USING TROPICAL HARDWOOD FINISH MAY NOT BE REQUIRED. SEALING AND FINISHING OF TROPICAL HARDWOODS WILL VARY BY SPECIES. CONSULT WITH YOUR PROVIDER FOR RECOMMENDED FINISHES FOR ALL TROPICAL HARDWOOD PRODUCTS.

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:

MODERN RANCH

WINDOW SHADING DETAILS

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

A-05-1

SCALE: AS NOTED

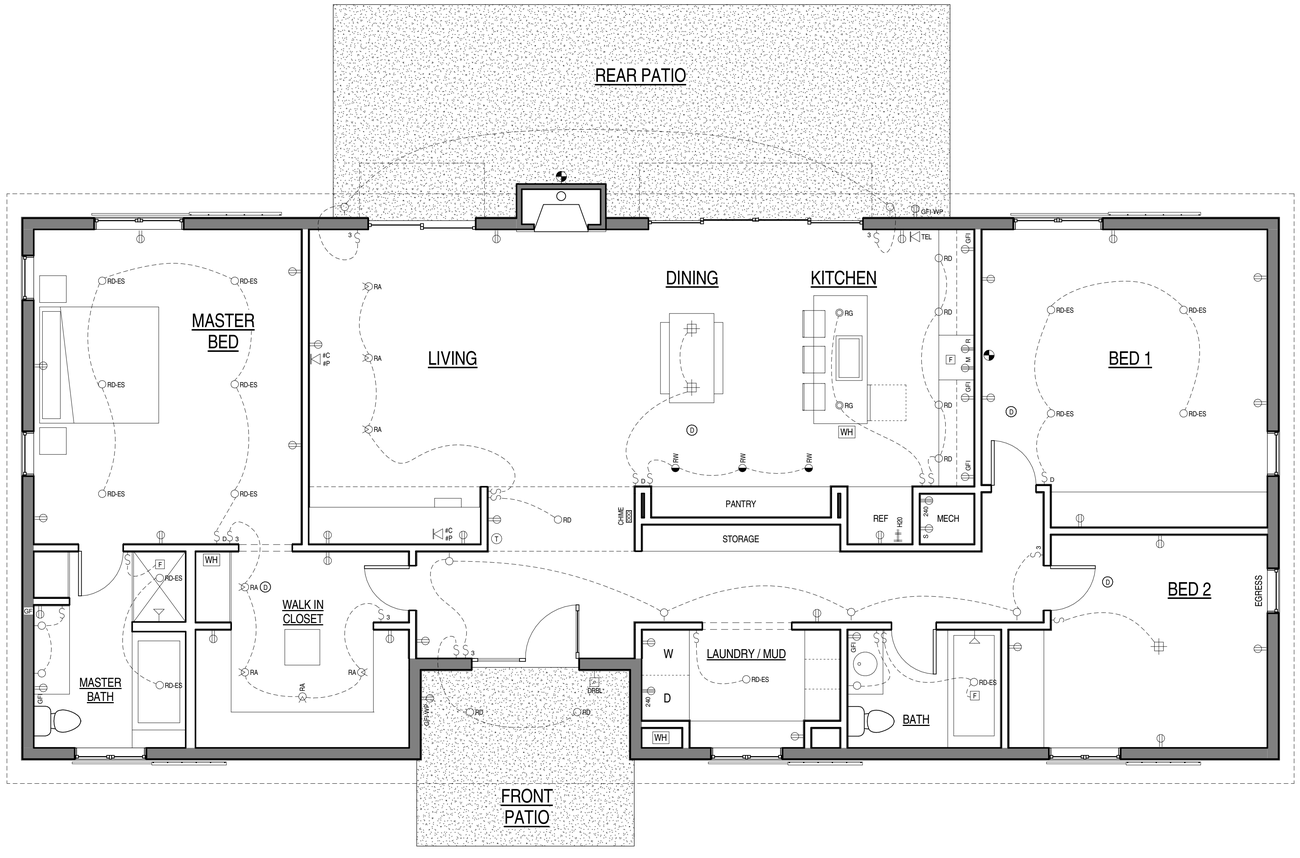
ELECTRICAL OUTLET LEGEND		
1.		110V RECEPTICAL
2.	S	SWITCH RECEPTICAL
3.	GFI	GROUND FAULT CURRENT INTERRUPTER RECEPTACLE
4.	GFI-WP	GFI AND WATER PROOF RECEPTACLE
5.	M	MICROWAVE OVEN RECEPTICAL
6.	R	RANGE RECEPTICAL
7.	UC	UNDER COUNTER RECEPTICAL
8.	240	240V RECEPTICAL
9.		110V FLOOR RECEPTICAL

ELECTRICAL SWITCH LEGEND		
10.	S	LIGHT SWITCH
11.	S 2	DOUBLE LIGHT SWITCH
12.	S 3	3-WAY LIGHT SWITCH
13.	S D	DIMMER LIGHT SWITCH
14.	S F	OCCUPANCY SENSOR FAN SWITCH
15.	KR	KEY ROOM MASTER CONTROL
16.	KS	KEY SCENE MASTER CONTROL
17.	G	GRAPHIC EYE

MICELANEOUS ELECTRICAL SYMBOL LEGEND		
18.	T	THERMOSTAT
19.	D	SMOKE & CARBON MONOXIDE DETECTOR
20.		NATURAL GAS/PROPANE HOOKUP
21.	#C #P	MULTIMEDIA JACK (NETWORK/TV)
22.	TEL	TELEPHONE JACK
23.	DRBL	DOOR BELL
24.	CHIME	DOOR BELL CHIME
25.	H2O	ICE MAKER
26.		CEILING FAN

LIGHTING LEGEND		
27.	RD	RECESSED DOWN LIGHT
28.	RD-ES	RECESSED DOWN LIGHT ENERGY STAR RATED
29.	RW	RECESSED WALL WASHER
30.	RA	RECESSED ACCENT DIRECTIONAL
31.	RG	RECESSED GLASS
32.		CEILING BOX
33.	F	BATHROOM EXHAUST FAN
34.		WALL MOUNTED FIXTURE
35.		LED LINEAR
36.		IN-WALL LED STEP LIGHT W/ REMOTE TIMER CONTROL
37.		FLUORESCENT STRIP
38.	WH	TANKLESS WATER HEATER

ELECTRICAL SYMBOL LEGEND
1/4" = 1'-0"



1 ENTRY LEVEL FLOOR PLAN
1/4" = 1'-0"

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NOTES:

REVISION SCHEDULE:

No.	Description	Date

PROJECT NAME:
Modern Ranch

ENTRY LEVEL ELECTRICAL PLAN

PROJECT NUMBER:	08-001
DATE:	14 JULY, 2009
DRAWN BY:	MY
CHECKED BY:	BU, SH

E-01-2

SCALE 1/4" = 1'-0"

7/13/2009 9:35:52 AM