Project Description Details

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Location Address: 307 Quaker Drive, Friendswood, Texas 77546
Description: One-story single family home; 2,682 ft2 conditioned space, 2 bedrooms, 2 1/2 bathrooms, detached 2 car garage
Timing: Planned construction begins May 2013

BUILDING ENCLOSURE

Framing: 2x6 wood frame walls on 16' centers; 10' top plate
Exterior Wall Covering System: HardiePlank Select Cedar Mill 6¼"(5" reveal) lap siding over weather barrier on OSB
Air Sealing: Expanding foam to be used to seal between the sill plate and the slab; draft stopping in building chases and behind bathtubs and showers; enclosure penetrations sealed with expanding foam; drywall caulked at all openings, wall corners, and top and bottom plates
Wall Insulation: R-20 (5 ½ inch) damp-sprayed cellulose in the 2x6 wall cavity
Drainage Plane: HardieWrap Weather Barrier or multilayer felt over OSB; all horizontal and vertical joints taped with sheathing tape on house wrap; windows are pan-flashed to the exterior sheathing; all roof to-wall transitions have flashing and kick-out flashings.
Window Specifications: Double pane Low-E; U=0.34, SHGC=0.25 or better
Roof: 8/12 pitched gable roof with asphalt shingles and attic ventilation provided by a static, balanced ventilation system consisting of ridge vents and can vents to meet a 1-150 ventilation ratio, minimum roof vent area 10 ft^2
Roof Insulation: Integral radiant barrier sheathing
Soffit vents: Area to match roof vent area completing the 1-150 ventilation ratio
Gable vents: Adjustable vents provided on both gable ends
Ceiling Insulation: R-38 (12 inch) blown cellulose at the ceiling plane
Foundation: 4"- thick steel reinforced monolithic slab with 24" beams over 6-mil polyethylene as a capillary break; Whole sits on 11' deep 1' diameter bell bottom piers.

MECHANICAL DESIGN

HVAC Load: By ACCA Manual J methods
Heating: +80% or better AFUE natural gas furnace in vented attic
Cooling: +16 or better SEER air conditioner with a variable-speed ECM indoor air handler
HVAC Controls: Temperature, auto air recycle, and humidity control
Air Filtration: High efficiency whole house system
Ventilation Option: Central fan-integrated supply (CFIS) with fan cycling and motorized damper to prevent over-ventilation
Duct Design: By ACCA Manual D methods
Return Pathways: Jump ducts or transfer grills at all conditioned rooms with doors
Ducts: R-8 or better ducts in vented attic; Flexible duct takeoffs are to be sealed with a mastic; FlexFlow Elbow supports or equivalent to be used on flexible ductwork at 90° bends
DHW: High efficiency natural gas hot water heater in vented attic
Appliances: In kitchen dishwasher, refrigerator, and electric range; in utility room freezer, washer, and electric dryer, (gas dryer option possible)

WATER MANAGEMENT

Site Grade Plan: Overall home site grading plan to ensure drainage to the street. As part of the foundation preparation, the immediate foundation area plus a sufficient feathering distance will be elevated by 12 inches above the local grade or the front curb which ever is highest. This will insure positive drainage away from the foundation.
Landscape Plan: Positive drainage away from foundation provided via sloping of grade around entire perimeter of foundation.
Roof Water Management: Seamless 5" aluminum gutters on all horizontal fascias with down spots directed into an in ground drainage system for conveyance to the street or water collection storage system

PLUMBING DESIGN

Water Supply: New supply line installed with a new corporation stop, curb stop, and meter box per Friendswood requirements. New supply line sized to support water distribution design requirements. The existing 5/8" service connection will be abandoned
Water Distribution: Cross-linked polyethylene (PEX) plumbing system with remote distribution manifolds for both hot and cold water at the master bath group, guest bath group, and utility room group.
Hot Water: Attic located high efficiency natural gas fire hot water heater of at least 50 gallon storage capacity, at least a 12 year warranty, Whirlpool 6th Sense model ND50T122-403 or equivalent.
Sewer Service: New sewer service will be provided with a new tap to the city sewer main
Natural Gas Service: Natural gas service is to be provided from a meter on the garage

ELECTRICAL DESIGN

Service; Power provide to the house via buried service
Electrical Distribution: 200 amp load center located in the garage or the house utility room, 20 amp duplex wall circuits, 50 amp and 20 amp 220 volt circuits in garage.
Room Circuits: All per plan to meet code. Master bedroom, Study room, Craft Room each to have two 20 amp circuits per room. Power provided for the smoke alarms
Backup Power: Optional whole house natural gas back up power generator.

TELECOM AND ALARM DESIGN

Service: Cable, phone and ether net will be provided by buried service to the garage. Phone, cable, and ether net scramble box to be located in the Study.
Security Alarm: Wired to all windows and external doors. The security scramble box and controls will be located in the master closet
Smoke Alarms: 110 power with battery backup and interconnect. The smoke alarms will be dual sensor, containing both ionization and photoelectric smoke sensors