WAL-24: If the bracing wall panel adjacent to large opening can not

WAL-25: Bottom plates in bracing wall panels to be attached to the joist framing or blocking below and above with 16d face nails at 16" on-center. Top plates in bracing wall panels to be attached to the rim joist above with 8d toe nails at 6" on-center EXT-15: Stone and masonry veneer installed on walls, for a maximum

MINIMUM HEADER SIZES:

INTERIOR WALL COVERINGS:

members.

into framing).

locations.

nonabsorbent finish

wood framing at least 5/8".

HDR-1: Unless otherwise stated within this set of drawings, the typical header sizes to be used in bearing wall is to be as follows:

HDR-6: Openings above 8'-1": see sizes noted on plans.

smoke-developed index of not greater than 450.

backing or framing not more than 24" on-center.

greater than 200. Wall and ceiling finishes shall have a

INT-3: Wood framing supporting gypsum board shall not be less than

framing members, to occur at, and be secured to, framing

INT-5: Gypsum board to be secured to wood framing with Type W or

Type S screws. Screws shall be sufficiently long to penetrate

wood wall framing with gypsum board nails at 8" on-center, or

INT-8: Water-resistant gypsum board to be used as the base or

INT-9: 1/2" thick water-resistant gypsum board permitted on ceilings

INT-10: Water-resistant gypsum board shall not be installed over a

INT-11: Water-resistant gypsum backing board shall not be installed

continuous high humidity. Use cement backer board in these

INT-12: Cut or exposed edges of water-resistant gypsum board,

including those at wall intersections, shall be sealed as

INT-13: Wood veneer paneling and hardboard paneling shall be

INT-14: Wood veneer paneling and hardboard paneling less than 1/4"

INT-15: Masonry veneers used as interior wall finishes are permitted

INT-16: Foam plastic interior finishes shall be permitted if they meet

the same flame-spread index and smoke-developed index

EXT-1: Exterior wall envelope to be constructed to prevent the

EXT-2: Panel siding systems vertical joints to occur over framing

solid blocking, wood, or wood structural panel sheathing.

batten, or sealed and installed over a strip of flashing.

EXT-4: Vinyl siding, soffits, and accessories to be installed in

EXT-5: Fiber cement panel siding to be installed with the long

EXT-3: Wood horizontal lap siding shall be lapped a minimum of 1",

conformance with the manufacturer's installation instructions.

dimension parallel to the framing. Vertical joints to occur over

framing members and shall be sealed with caulking or covered

with battens. Horizontal joints to be flashed with Z-flashing and

EXT-6: Fiber cement horizontal lap siding to be lapped a minimum of

an H-section joint cover, or be located over a strip of flashing.

accordance with the manufacturer's installation instructions.

EXT-7: Wood shakes and shingles to be applied either single-course

or double-course over nominal 1/2" wood-based sheathing or to

1x3 or 1x4 furring strips over 1/2" nominal non-wood sheathing. A

permeable water-resistive barrier to be provided over sheathing

with 2" minimum horizontal overlaps and 6" minimum vertical

coats when applied over metal lath or wire lath and shall not be

less than two coats when applied over masonry, concrete, or

EXT-11: Exterior plaster to extend down to a weep screed at or below

a minimum of 4" above grade or 2" above paved areas, and shall

be of a type to allow trapped water to drain to the exterior of the

building. Weather-resistant barrier (over wood frame wall) shall

lap the attachment flange. Exterior lath shall cover and terminate

EXT-12: Exterior Insulation Finish Systems shall be installed in

conformance with the manufacturer's installation instructions.

EXT-13: Stone and masonry veneer allowed to be up to two stories

Decorative trims shall not be nailed through the EIFS. All EIFS

shall terminate not less than 6" above the finished ground level.

high with a maximum height above a non-combustible foundation

of 30 feet. Maximum nominal thickness of veneer to be 5" and

EXT-8: Each shake or shingle to be attached with two hot-dipped

zinc-coated, stainless steel, or aluminum nails or staples.

1.25" and shall have the ends sealed with caulking, covered with

Courses can be installed with fasteners exposed or concealed in

or 1/2" if rabbeted, and shall have ends caulked, covered with a

members and shall be shiplapped or covered with a batten.

Horizontal joints shall be lapped a minimum of 1", or shall be

shiplapped, or shall be flashed with Z-flashing and occur over

gap behind exterior veneer, and providing a means of draining

thick shall be installed over a minimum 3/8" thick gypsum board

to be supported directly on wood floors designed to carry the load.

backer for adhesive application of ceramic tile or other

spacing does not exceed 16" on-center.

recommended by the manufacturer.

requirements of other interior finishes.

water that may enter the assembly.

blocked with solid wood framing.

1/2", and shall not be overdriven.

gypsum backing.

on the attachment flange.

maximum installed weight to be 50 psf.

EXTERIOR WALL COVERINGS:

vapor retarder in a shower or tub compartment.

10d nails at each wall stud. The triple rafter to be secured to the side of the stud wall with minimum three 5/8" diameter by 5" lag HDR-2: Opening size up to 3'-0": (2)-2x6 in 2x4 wall, (3)-2x6 in 2x6 wall. screws to every other wood stud. Minimum 2/3 of veneer width to HDR-3: Openings 3'-1" to 5'-0": (2)-2x8 in 2x4 wall, (3)-2x8 in 2x6 wall. be supported on angle. Maintain required airspace. Provide weep holes above the counterflashing. HDR-4: Openings 5'-1" to 7'-0": (2)-2x10 in 2x4 wall, (3)-2x10 in 2x6 wall. EXT-16: For stone and masonry veneer support angles sloped more HDR-5: Openings 7'-1" to 8'-0": (2)-2x12 in 2x4 wall, (3)-2x12 in 2x6 wall.

counterflashing.

than 7:12, but less than 12:12, provide stops of a minimum 3"x3"x1/4" thick steel plate welded to angle at 24" on-center along

in lieu of on foundation for a height up to 12'-8". Provide minimum

wood studs at 16" on-center maximum. Secure at every double

angle to have minimum clearance to underlying construction of

1/16". Minimum 2/3 of veneer width to be supported on angle.

height up to 12'-8" over roof surfaces shall have a steel angle

placed directly on top of the roof construction over a minimum

triple rafter. Triple rafter secured together, and to wall, with two

Maintain required airspace. Provide weep holes above the

stud with minimum two 1/2" diameter by 4" lag screws. Steel

6x4x3/8 steel angle with larger leg vertical anchored to double 2x4

EXT-17: All stone and masonry veneer relief angle lintels are to only support dead load of veneer above INT-1: Wall and ceiling finishes shall have a flame-spread index of not

EXT-18: All stone and masonry veneer relief angle lintels to have a minimum bearing length of 4".

EXT-19: Stone and masonry veneer to be secured to supporting wall INT-2: Products sensitive to adverse weather conditions shall not be with corrosion-resistant metal ties. Space between veneer backing installed until adequate weather protection for the installation is and wall sheathing to be a maximum of 1" for 22 gage by 7/8" provided. Exterior sheathing shall be dry prior to applying exterior corrugated metal ties, or a maximum of 4.5" for 9 gage metal strand wires with hook embedded into mortar joint.

EXT-20: Supporting ties to be installed not more than 24" on-center 2" nominal thickness unless adequately supported with a solid horizontally and 24" on-center vertically. Ties shall not support more than 2.67 square feet of wall area. INT-4: All edges of gypsum board, except the edges perpendicular to EXT-21: Additional supporting ties around wall openings greater than GLAZING: 16" in either direction to be provided. Ties around the perimeter of

placed within 12" of the wall opening. EXT-22: Stone and masonry veneer to be separated from the wall sheathing by airspace not less than 1" and not more than 4.5". INT-6: 1/2" or 5/8" thick gypsum board to be fastened to 16" on-center

openings to be spaced not more than 36" on-center and shall be

EXT-23: Airspace between veneer and wall can be filled with mortar wood ceiling framing with gypsum board nails at 7" on-center, or or grout if a water-resistive barrier is installed over the wall Type S or W screws at 12" on-center (minimum 5/8" penetration INT-7: 1/2" or 5/8" thick gypsum board to be fastened to 16" on-center EXT-24: Veneer flashing shall be located beneath the first course of

masonry above finished ground level, above the foundation wall or slab, and at other points of support, including floors, shelf Type S or W screws at 16" on-center (minimum 5/8" penetration angles, and lintels. EXT-25: Weepholes shall be provided in the outside wythe of masonry walls at a maximum spacing of 33" on-center.

Weepholes shall not be less than 3/16" in diameter. Weepholes shall be located immediately above flashing. EXT-26: Corrosion-resistant flashing shall be applied to prevent entry where framing spacing does not exceed 12" on-center. 5/8" thick

of water into wall cavities and building structural components. water-resistant gypsum board permitted on ceilings where framing Provide flashing in the following locations: exterior window and door openings, intersection of chimneys with frame or stucco walls, under and ends of copings and sills, continuous above all projecting wood trim, exterior porch/deck/stair attachment points to walls or floors, at wall and roof intersections, and at built-in where there will be direct exposure to water, or in areas subject to

ROOF-CEILING FRAMING:

RCF-1: All roof surfaces to be consistently and adequately pitched to maintain positive drainage of stormwater off the roof installed on wood framed walls with framing spaced not more than RCF-2: Where trusses are specified, provide architect, owner, and

building official with truss manufacturer's certification signed and sealed by a New Jersey licensed engineer. Truss loading, construction, installation notes, and bracing requirements to be provided on those drawings. Trusses are not to be cut, notched, spliced, or altered in any way without the approval of the

RCF-3: Rafters to be framed to ridge board or to each other with a gusset plate as a tie. Ridge board to be a minimum of 1" nominal thickness and not less in depth than the cut end of the rafter. RCF-4: At all valleys and hips there shall be a valley or hip rafter not

less than 2" nominal thickness and not less in depth than the cut end of the rafter.

RCF-5: All roof rafters to be secured to bearing points (plate, beam, cleat, etc...) with a minimum of one rafter tie-down framing anchor accumulation of water within the wall assembly by providing an air per rafter to resist wind uplift

RCF-6: Rafters and ceiling joists having a depth-to-thickness ratio exceeding 5:1 based on nominal dimensions to be provided with lateral support at points of bearing to prevent rotation. RCF-7: Rafters and ceiling joists are to be face nailed to each other

where they meet. Ceiling joists parallel to rafters to run across building, lapped and securely joined over intermediate partition walls, to provide a continuous tie across the building. RCF-8: Where ceiling joists are not continuous across the building,

connected to the rafters, or run perpendicular to the rafters, collar ties are to be provided. Collar ties to be size and spacing indicated in this set of drawings. Collar ties to be installed a maximum of 2/3 up the distance between the rafter bearing and

RCF-9: Ceiling joists that do not provide resistance to rafter thrust that are lapped over bearing partitions are to be lapped a minimum of 3" and toenailed to the bearing member.

RCF-10: Openings in roofs or ceilings less than 4' in dimension may be framed with a single header or trimmer the same depth as the rafters or joists unless otherwise noted within this set of drawings. Single trimmer joists may carry a single header joist that is within 3' of the trimmer joist bearing. RCF-11: Attic areas that exceed 30 square feet and have a vertical

height of 30" or more are to be provided with an access opening. Minimum rough framed opening of 22" by 30" to be located in a hallway or other readily accessible location. Minimum of 30" high unobstructed headroom to be provided at some point above opening. When attic area contains mechanical equipment, opening shall allow for removal of largest appliance. Access opening/stair to be covered with an insulated box in attic space to prevent air-infiltration from attic into living space.

Fasteners to be long enough to penetrate sheathing or furring

EXT-9: Exterior plaster to be installed over corrosion-resistant metal RFG-1: All roofing assemblies shall be of materials that are or woven metal lath with corrosion-resistant lath attachments. compatible with each other and with the building or structure that EXT-10: Exterior portland cement plaster shall not be less than three

RFG-2: Asphalt or fiberglass shingles to have self-seal strips or be

the materials are applied.

interlocking to resist uplift. All shingles to be 30-year Class C or RFG-3: Asphalt or fiberglass shingles shall only be used on roof

the foundation plate line on exterior stud walls. Weep screed to be slopes greater than 2:12. For slopes between 2:12 and 4:12 double underlayment application is required.

RFG-4: Asphalt or fiberglass shingles shall be fastened through the underlayment to solidly sheathed decks.

RFG-5: Asphalt or fiberglass shingles to be secured with a minimum of four fasteners per strip shingle or two fasteners per individual

RFG-6: Fasteners for shingles to be stainless steel, aluminum, or copper roofing nails, minimum 12 gage shank with a minimum 3/8" head. Length to penetrate through shingles and 3/4" into sheathing. If sheathing is less than 3/4" thick, then fasteners to penetrate through sheathing. RFG-7: Ice barrier to be provided at all eaves and shall extend from

the lowest point of the roof eave to a minimum of 24" inside the exterior wall line of the building.

EXT-14: Stone and masonry veneer can be supported by steel angle RFG-8: Flashing shall be installed to prevent moisture from entering the wall and roof through joints in coping, moisture penetrable materials, at other penetrations/openings in the roof plane, at wall and roof intersections, and wherever there is a change in roof slope or direction. RFG-9: Metal flashing shall be corrosion-resistant with a thickness

RFG-10: For open valleys lined with metal, the valley shall be at least

RFG-11: For open valleys, valley lining of two plies of mineral

one ply of smooth roll roofing at least 36" wide is permitted.

RFG-13: Crickets or saddles shall be installed on the ridge side of

chimneys or any penetration more than 30" wide measured

perpendicular to the slope. Cricket or saddle coverings to be

is water-soaked or deteriorated to a point where it is an unstable

base, or it the existing roof already has two or more applications

of roofing installed. Where the existing roof covering is wood

1. Glazing in swinging doors, including storm doors and

3. Doors and enclosures for hot tubs, whirlpools, saunas,

4. Glazing in any wall enclosing hot tubs, whirlpools, saunas,

Glazing that is within a 24" arc measured from either edge of

intervening wall or other permanent barrier between the door and

60" above the floor or walking surface unless there is an

6. Glazing that meets all of the following conditions: the

exposed area of an individual pane is larger than 9 square feet,

the bottom edge is less than 18" above the floor, the top edge is

more than 36" above the floor, and there is at least one walking

horizontal load is installed on the accessible side(s) of the glazing

7. Glazing adjacent to stairs, landings, and ramps within 36"

surface. Exception: if a minimum 1.5" high protective bar capable

8. Glazing adjacent to stairways within 60" horizontally of the

surface of the glass is less than 60" above the nose of the tread.

9. All glazing used in railings, guards, and fences (interior and

marked with a manufacturer's non-removable designation stating

the type of glass and the safety glazing standard that it complies

horizontally of a walking surface when the exposed surface of

glass is less than 60" above the plane of the adjacent walking

of withstanding a 50 plf horizontal load is installed on the

bottom tread of a stairway in any direction when the exposed

GLZ-2: Each pane of glazing installed in hazardous locations is to be

with. This marking is to be visible in the final construction.

GLZ-3: All skylights to be made of laminated glass, fully tempered

glass, heat-strengthened glass, wired glass, or approved rigid

capable of supporting twice the weight of the glazing, be firmly

GLZ-5: Retaining screens not required under skylights when fully

mesh opening of no more than 1"x1".

are fully tempered, laminated, or wired glass.

surface or other accessible area.

venting provided by the eave vents.

sheathing and at the location of the vent.

instructions.

VENTILATION:

openings.

INSULATION:

and substantially attached to the framing members, and have a

tempered glass is used as the single glazing or the inbound pane

in multiple glazing if the glass area is 16 square feet or less, and

thickness is not more than 3/16", and the other pane(s), if present,

the highest point of the glass is not more than 12'-0" above a

walking surface or other accessible area, the nominal glass

GLZ-6: Retaining screens not required under skylights when fully

glass is sloped 30 degrees or less from the vertical, and the

GLZ-7: All skylights mounted on a roof with a pitch flatter than 3:12 to

VNT-1: The total net free ventilating area for roofs shall not be less

by ventilators located in the upper portion of the space to be

VNT-2: Enclosed attics and enclosed rafter spaces formed where

have cross ventilation for each separate space by ventilating

Openings to be provided with mesh with 1/8" to 1/4" maximum

VNT-3: Insulation shall not block the free flow of air. A minimum of 1"

space shall be provided between the insulation and the roof

floor-ceiling assemblies, crawlspaces, and attics shall have a

flame-spread index not to exceed 25 and an accompanying

INS-2: Combustible insulation shall be separated a minimum of 3"

facings are installed in substantial contact with the unexposed

surface of the ceiling, floor, or wall finish, then the flame-spread

from recessed luminaries, fan motors and other heat-producing

devices unless those devices are listed for lesser clearances.

INS-1: Insulation materials, including facings, installed within

openings protected against the entrance or rain or snow.

than 1/150 of the space ventilated. Reduction to 1/300 is

roof unless otherwise specified in the manufacturer's installation

permitted if 50%-80% of the required ventilating area is provided

ventilated at least 3' above the eave vents with the balance of the

ceilings are applied directly to the underside of roof rafters shall

a retaining screen is to be provided. Screen and its fastening to be

accessible side(s) of the glazing 36" above the floor.

surface within 36" horizontally of the glazing. Exception: if a

steam rooms, bathtubs, and showers where the bottom exposed

2. Glazing in fixed and sliding panels of sliding door

assemblies, including sliding or bifold closet doors.

sheet metal or the same material as the roof covering.

RFG-14: Flashing against a vertical surface to be made with

be removed prior to installing new roofing.

locations for the purposes of glazing:

steam rooms, bathtubs, and showers.

unframed glass doors.

surface.

the glazing

36" above the floor.

Specialty underlayment for valleys may be used in lieu of the

and the top layer a minimum of 36" wide.

step-flashing

minimum thickness corrosion-resistant steel is required. not less than 0.019" (No. 26 galvanized sheet). Acceptable materials include cold-rolled copper, lead-coated copper. INS-4: In framed walls, floors, and roof/ceilings that constitute the high-yield copper, lead-coated high-yield copper, aluminum, building envelope, a vapor retarder shall be installed on the stainless steel, galvanized steel, zinc alloy, lead, and painted warm-in-winter side of the insulation.

GRG-1: The wall between the house and the garage is to have one layer of 5/8" type 'X' gypsum board on garage side of wall - joints surfaced roll roofing is permitted. The bottom layer shall be 18" between sides to be separated by at least one stud bay. Joints to be taped and spackled. Provide 1/2" gypsum board on house side RFG-12: For closed valleys covered with shingles, a valley lining of of wall. Insulate wall with minimum R-13 batt insulation. Wall construction to be continuous to underside of ceiling assembly

INS-3: All foam plastic insulation to be separated from the interior of

the building by an approved thermal barrier, or a minimum 1/2"

gypsum board finish. In uninhabited attics and crawlspaces, the

thermal barrier is not required, however an ignition barrier of 1.5"

thick mineral fiber insulation, 1/4" wood structural panels, 3/8"

particleboard, 1/4" hardboard, 3/8" gypsum board, or 0.016"

GRG-2: If living space is above, then the ceiling above the garage is to have two layers of 5/8" type 'X' gypsum board installed on the underside of the ceiling structure. Joints in the face layer to be taped and spackled. Insulate ceiling with minimum R-30 batt insulation. There is no top membrane required for ceiling protection assembly. There are no restrictions for utilities installed above the ceiling membrane. Penetrations in the upper membrane do not have to be protected. Penetrations in the lower membrane RFG-15: Re-roofing shall not be permitted if the existing roof covering to be sealed with a noncombustible material to prevent the free passage of flame and products of combustion.

GRG-3: Garage exterior load bearing walls to have one layer of 5/8" type 'X' gypsum board installed on interior face of wall. Joints to shake, slate, clay, cement, or asbestos tile those materials are to be taped and spackled. Insulate wall with minimum R-13 batt insulation. Wall construction to be continuous to underside of ceiling assembly above.

GLZ-1: The following locations shall be considered specific hazardous GRG-5: Garage girder is to have all exposed faces covered with two layers of 1/2" type 'X' gypsum board. Joints in the face layer to be

GRG-4: Joints between wall and ceiling assembly to be covered with

taped and spackled. No additional protection is required for the column or wall supporting the beam. GRG-6: Door between garage and house to be a minimum of 1-3/8" solid core wood or 1-3/8" solid or honeycomb steel. The door is

not required to have a labeled jamb and is not required to have a GRG-7: Ducts penetrating garage from living space to be minim 26 gage and shall have no openings into the garage. edge of the glazing is less than 60" above the standing or walking GRG-8: Penetrations into the garage to be protected by filling the

opening around the penetrating item with approved material to prevent the passage of flame and the products of combustion. a door in the closed position and whose bottom edge is less than GRG-9: Carports not open on at least two sides will be considered a garage. Asphalt surface is permitted in carports.

GRG-10: Garage and carport floor surface shall be pitched to

facilitate movement of liquids to a drain or towards the main GRG-11: Elevated garage floors to be capable of supporting a 2,000

GRG-12: Automatic garage door openers to have a drop-stop and minimum 1.5" high protective bar capable of withstanding a 50 plf reverse safety function when contacting obstructions.

pound load over a 20 square inch area.

OPN-1: Every sleeping room, including sleeping rooms in basements, shall have at least one operable emergency and rescue opening. Opening shall open directly into a public street, public alley, yard, or court. A door to the exterior from a sleeping room can serve as the emergency and rescue opening for that room.

OPN-2: Emergency and rescue openings to have a minimum net clear opening of 5.7 square feet (5.0 square feet allowed for grade floor openings). The minimum net clear opening height is to be 24". The minimum net clear opening width is to be 20". These use of keys, tools, or special knowledge.

OPN-3: Window wells used to access emergency and rescue openings are to be a minimum of 9 square feet with a minimum horizontal projection and width of 36". This area is to allow the escape window to be fully opened. Window wells with a vertical depth greater than 44" shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open GLZ-4: Under skylights of fully tempered, or heat-strengthened glass,

OPN-4: Bars and grilles are permitted over emergency and rescue openings provided that such devices are releasable or removable from the inside without the use of a key, tool, special knowledge, or force greater than that which is required for normal operation of the escape and rescue opening.

HRL-11: Openings for required guards on the sides of stair treads OPN-5: Emergency escape windows are permitted under decks and porches provided that the location of the deck or porch allows the window to be fully opened and provides a path not less than 36" in MASONRY FIREPLACES: height to a yard or court. FPL-1: See details within this set of drawings for the construction of

EGR-1: All egress components (stairs, ramps, balconies, etc...) to be tempered glass is used as the single glazing or the inbound pane positively anchored to the primary structure to resist vertical and in multiple glazing if the glass area is greater than 16 square feet, lateral forces. Attachment shall not be by use of toenails or nails subject to withdrawal. highest point of the glass is not more than 10'-0" above a walking

EGR-2: Enclosed accessible space under stairs shall have walls, under stair surface, and any soffits protected on the enclosed side with 1/2" gypsum board. be mounted on a curb extending at least 4" above the plane of the EGR-3: Minimum width of hallways to be not less than 3'-0" clear.

EGR-4: An egress door is to provide access from the habitable space to the exterior. Door to be a side-hinged door not less than 36" in width and 80" in height. Exit path is not to go through a garage.

EGR-5: A landing shall be provided on both sides of an egress door. Width of landing to be a minimum of the width of the door served and the depth to be a minimum of 36" measured in the direction of

EGR-6: At the exterior of an egress door, the landing shall not be more than 8.25" below the threshold of the door. EGR-7: At the exterior of an egress door, a landing is not required if

there are two or less risers provided that the door does not swing EGR-8: Egress doors shall be readily openable from the side from

which egress is to be made without the use of a key, or special EGR-9: Egress doors may be equipped with a night latch, dead bolt

or security chain, provided that such devices are openable from the side from which egress is to be made without the use of a key or tool and are mounted at a height not to exceed 48" above the finished floor.

STR-1: Stairs to be designed for the normal floor live loading or shall

smoke-developed index not to exceed 450. In enclosed spaces, if be designed to resist a 300 pound load acting over 4 square STR-2: Stairways shall not be less than 36" in clear width at all points and smoke-developed requirements do not apply to those facings.

> STR-3: Handrails shall not project more than 4.5" on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5" where a handrail is installed on one side, and 27" where handrails are installed on both sides.

above the handrail height and below the required headroom

STR-4: The minimum headroom at all parts of the stairway shall not FPI -10: All wood beams, joists, study, and other combustible be less than 6'-8" measured vertically from the sloped plane materials shall have a clearance of not less than 2" from the front adjoining the tread nosing or from the floor surface of the landing STR-5: Maximum riser height to be 8.25" measured vertically between

STR-6: Risers to be vertical or sloped from the underside of the

degrees from the vertical.

by more than 3/8".

any point.

leading edge of the tread above at an angle not more than 30

treads does not allow the passage of a 4" diameter sphere.

treads at a right angle to the tread's leading edge. The greatest

tread depth within any flight of stairs shall not exceed the smallest

STR-8: The minimum tread depth to be 9" measured horizontally

STR-9: Winder treads shall have a minimum tread depth of 9"

measured at a point 12" from the side where the treads are

narrower. Winder treads to have a minimum tread depth of 6" at

shall not exceed the smallest by more than 3/8" between two

stories, including the nosing at the level of floors and landings

STR-11: A landing shall be provided at the top and bottom of all

Nosings are not required where the tread depth is a minimum of

stairways. A landing is not required at the top of an interior flight

of stairs provided that a door does not swing over the stairs.

STR-12: A flight of stairs shall not have a vertical rise of more than

STR-13: Widths of landings shall not be less than the width of the

STR-15: Handrails shall be provided on at least one side of each

continuous run of treads or flight with four or more risers.

STR-16: Spiral stairways are permitted as secondary stairs, provided

that the minimum width is 26" with each tread having a 7.5"

HRL-1: Guardrails and handrails to resist a 200 pound concentrated

load applied at any point along the top. All other guard infill

components to resist a minimum 50 pounds on an area of 1

HRL-2: Handrail height, measured vertically from the sloped plane

adjoining the tread nosings, or finish surface of a ramp slope, shall

HRL-3: Handrails to be continuous for the full length of the stair flight.

newel post at the turn. Volutes, turnouts, easings, and starting

HRL-4: Handrails adjacent to a wall shall have a space of not less

to 2.625" maximum. Other shapes that provide an equivalent

grasping surface are permitted. Edges shall have a minimum

HRL-6: Porches, balconies, ramps, or raised floor surfaces located

more than 30" above the floor or grade below shall have guards

Open sides of stairs with a total rise of more than 30" above

the floor or grade below shall have guards not less than 34" high

HRL-8: Porches and decks enclosed with insect screening shall be

HRL-9: Required guards on open sides of stairways, raised floor

areas, balconies, and porches shall have intermediate rails or

ornamental closures which do not allow the passage of a 4"

HRL-10: Triangular openings formed by riser, tread, and bottom rail

of a guard at the open side of a stairway shall not allow the

shall not allow the passage of a 4.375" diameter sphere.

masonry fireplace and chimney structure. Size of fireplace

FPL-2: Cleanouts in foundation under fireboxes shall be equipped

remain tightly closed except when being accessed.

opening, flues, throat, and other elements of fireplace to be

with ferrous metal or masonry doors and frames constructed to

masonry units filled solid with concrete, stone, or concrete. When

provided, then a minimum of 8" of masonry shall be used on the

provided then a minimum of 10" of masonry shall be used on the

back, and side walls, including the lining. When no lining is

minimum depth of 20" with a throat not less than 8" above the

fireplace opening. Throat opening shall not be less than 4" deep.

The cross-sectional area of the passageway above the firebox,

including the throat, damper, and smoke chamber, shall not be

Fireplace throat or damper shall be a minimum of 8" above the

FPL-5: Masonry over a fireplace opening shall be supported with a

FPL-6: Masonry fireplaces shall be equipped with a ferrous metal

FPL-7: Smoke chamber walls to be constructed of solid masonry

units, hollow masonry units filled solid with concrete, stone, or

concrete. Corbelling of masonry units shall not leave unit cores

lining of firebrick, or a lining of 5/8" minimum thickness vitrified

clay, is provided, then a minimum of 6" of masonry shall be used

on the front, back, and side walls, including the lining. When no

lining is provided then a minimum of 8" of masonry shall be used

FPL-8: The inside height of the smoke chamber from the fireplace

from the vertical if built from corbelled masonry.

throat to the beginning of the flue shall not be greater than the

chamber shall not be inclined more than 45 degrees from the

FPL-9: Hearths constructed of concrete or masonry with a minimum

vertical for prefabricated smoke chamber linings, or 30 degrees

thickness of 4" shall be provided. Hearth to extend a minimum of

16" in front, and 8" beyond each side of the fireplace opening. If

shall extend a minimum of 20" in front, and 10" beyond each side

exposed to the inside of the smoke chamber. When a 2" minimum

FPL-3: Firebox walls to be constructed of solid masonry units, hollow

a 2" minimum lining of firebrick, or other approved liner, is

FPL-4: Firebox of a masonry or concrete fireplace shall have a

less than the cross-sectional area of the flue.

shall be operable from the room

on the front, back, and side walls.

of the fireplace opening.

measured vertically from the nosing of the treads.

radius of 1/8". Alternate design handrails with a perimeter larger

Handrail ends shall be returned or shall terminate in newel posts

or safety terminals. Handrails are permitted to be interrupted by a

minimum tread depth at 12" from the narrower end. All treads to

be identical. Maximum riser to be 9.5". Minimum headroom to be

12'-0" between floor levels or landings.

in the direction of travel.

greater than 2% (1:48).

HANDRAILS AND GUARDS

be between 30" and 38"

not less than 36" in height.

above the floor or grade below.

passage of a 6" diameter sphere.

coordinated in the field.

back, and side walls.

newel are allowed over the lowest tread.

than 1.5" between the wall and the handrail.

square foot.

faces and the sides of masonry fireplaces, and not less than 4" from the back faces of masonry fireplaces. The air space shall not be filled except to provide fire blocking. leading edges of adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8".

FPL-11: Exposed combustible trim and the edges of sheathing are permitted to abut fireplaces provided that the trim and sheathing is

FPL-12: Exterior air intakes shall be provided to supply combustion air to the fireplace. Air to be supplied from an exterior source or crawlspace (not garages or basements) and inlet shall be located STR-7: Open risers are permitted provided that the opening between below the firebox. Inlet shall be protected with a screen of 1/4" corrosion-resistant mesh. between the vertical planes of the foremost projection of adjacent

no closer than 6" from the inside surface of the fireplace lining.

MASONRY CHIMNEYS CHM-1: Footings for masonry chimneys to be a minimum of 12" thick

and shall extend a minimum of 6" beyond the face of the chimney foundation on all sides. CHM-2: Masonry chimney walls shall be constructed of solid masonry units or hollow masonry units grouted solid with not less than 4"

CHM-3: Masonry chimneys not to be corbelled more than one-half the STR-10: Treads on stairs with solid risers shall have a nosing not less chimney's wall thickness from a wall or foundation, nor shall a than 3/4", but not more than 1.25". The greatest nosing projection 12" thick unless it projects equally on each side of the wall. Projection of a single course shall not be more than one-half the unit height, or one-third the unit bed depth, whichever is less.

> CHM-4: Chimney wall or chimney flue lining shall not change size or shape within 6" above or below where the chimney passes through a floor, ceiling or roof. CHM-5: Masonry chimneys shall not support loads other than their

as part of a masonry or reinforced concrete wall. stairway served. Every landing to be a minimum of 36" measured CHM-6: Top of chimney to extend a minimum of 2' above any roof surface within 10', but shall not be less than 3' above the highest STR-14: The walking surface of treads and landings to be sloped no point where the chimney passes through the roof.

own weight unless the chimney is designed and constructed to

support the additional load. Masonry chimneys can be constructed

CHM-7: Spark arrestors to be provide at the top of all flues. Net free area of the spark arrestor to be a minimum of four times the net free area of the outlet of the served chimney flue. Screen to be heat and corrosion resistant and shall not permit the passage of a 1/2" diameter sphere, but shall allow the passage of a 3/8" diameter sphere. Arrestors to be accessible and removable for arrestor and flue cleaning.

of appliance connected. Coordinate with appliance manufacturer. CHM-9: Where two or more flues are located in the same chimney, 4" minimum thickness masonry wythes shall be built between adjacent flue linings. CHM-10: Cleanout openings with non-combustible covers shall be

CHM-8: Flue lining materials and sizes to be appropriate for the type

chimney. The upper edge of the cleanout shall be located at least 6" below the lowest chimney inlet opening. The height of the opening shall be at least 6". CHM-11: Any portion of a masonry chimney located in the interior of the building or within the exterior wall of the building shall have a

provided within 6" or the base of each flue within every masonry

minimum air space clearance to combustibles of 2" CHM-12: All spaces between chimneys and floors and ceilings through which chimneys pass shall be fireblocked with non-combustible material securely fastened in place. Fireblocking

of the spaces between chimneys and wood joists, beams, or

headers shall be self-supporting or be placed on strips of metal or HRL-5: Handrails shall have a circular cross section of 1.25" minimum metal lath laid across the spaces between combustible materials CHM-13: Exposed combustible trim and the edges of sheathing are than 6.25" shall provide a graspable finger recess area within 3/4" permitted to abut masonry chimneys provided that the trim and sheathing is no closer than 6" from the inside surface of the flue

> CHM-14: Chimneys shall be provided with crickets between the high chimney face and the ridgeline. The intersection between the cricket and the chimney shall be flashed and counterflashed.

PREFABRICATED FIREPLACES AND CHIMNEYS PFB-1: All prefabricated fireplaces and chimneys to be listed and equipped with guards where the walking surface is more than 30"

labeled and shall be installed in accordance with the conditions of PFB-2: Prefabricated fireplaces to have hearth extensions installed in accordance with the listing of the fireplace. Hearth extension shall

be readily distinguishable from the surrounding floor surface. PFB-3: Decorative shrouds shall not be installed at the termination of prefabricated fireplaces or chimneys except where such shrouds

are listed and labeled for use with the specific prefabricated fireplace or chimney. Such shroud shall be installed in conformance with the manufacturer's installation instructions. PFB-4: Where prefabricated chimneys are supported by structural members, such as rafters or joists, those members shall be

designed to support the additional load. PFB-5: Exterior air intakes shall be provided to supply combustion air to the fireplace. Air to be supplied from an exterior source or crawlspace (not garages or basements) and inlet shall be located below the firebox. Inlet shall be protected with a screen of 1/4" corrosion-resistant mesh.

ENERAL PLUMBING

PLM-1: All plumbing fixtures are to be selected by, or provided by, the owner. Maximum of 1.6 gallon per flush water closets to be

be capped and made safe. PLM-3: All plumbing supply lines are to be Type 'L' copper or PEX tubing. Any connections between different system types to be

PLM-2: Any plumbing to be removed as part of the construction is to

accomplished with a coupling converter specially made for the PLM-4: The use of lead solder is prohibited for the installation of potable water systems.

PLM-5: Water supply lines are to have air chambers or devices installed to prevent water hammering. non-combustible lintel with a minimum of 4" bearing on each end. PLM-6: Water supply lines (hot and cold) are to be insulated to

> prevent heat loss and condensation. PLM-7: Install anti-sweat valves in the water supply lines running to all toilets to prevent condensation on, and around, the fixture.

damper at least 8" above the top of the fireplace opening. Damper PLM-8: Potable water system is to be protected from contamination by the use of backflow prevention valves or air-gaps as conditions

PLM-9: See the plumbing riser diagram in this set of drawings for the

be vented as per the plumbing riser diagram unless otherwise approved by the architect. PLM-10: All waste lines to be schedule 40 PVC or cast iron. Any connections between different system types to be accomplished

with a coupling converter specially made for the transition. PLM-11: Minimum slope of waste lines to be 1/8" vertical drop per foot of horizontal run. Contractor is responsible for checking the width of the fireplace opening. The inside surface of the smoke soil pipe height and location and to adjust the plumbing as

required for job conditions.

the fireplace opening is greater than 6 square feet, then the hearth PLM-14: Clothes washers not installed in basements are to sit in a

PLM-12: Sanitary sewer to be connected to municipal sewer, or to existing or new septic system. Septic system design and modifications to be designed and certified by a civil engineer. PLM-13: Provide access panels to all concealed equipment.

washer overflow tray. Tray to drain to available floor drain or sump

in building. If none are available, then drain directly to exterior.

PLM-15: Wall behind clothes washer to be provided with a plumbing box in the wall for the hot and cold water supplies and for the washer waste drain connection.

PLM-16: A minimum of one frost protected hose bib is to be provided on the exterior of the building.

PLM-17: Fuel-fired water heaters shall not be installed in a room used as a storage closet. Fuel-fired water heaters located in bedrooms

or bathrooms shall be installed in a sealed enclosure so that combustion air will not be taken from the living area. EXH-11: Appliance vents shall be installed in accordance with their PLM-18: All circulating service hot-water piping shall be insulated to at least R-2. Circulating hot-water systems shall include an automatic or readily accessible manual switch that can turn off the

MCH-1: Every room or space intended for occupancy shall be

provided with natural and/or mechanical ventilation MCH-2: All appliances, fixtures, grilles, vents, convective units, and other mechanical system components to be approved by owner Units to be sized in accordance with IRC requirements.

hot water circulating pump when the system is not in use.

MCH-3: Heating systems shall be capable of maintaining 68 degrees F inside when outside temperature is 0 degrees F masonry chimney be corbelled from a wall or foundation less than MCH-4: Cooling systems shall be capable of maintaining 78 degrees

F inside when outside temperature is 92 degrees F. MCH-5: Heating and cooling systems to be zoned. At least one thermostat shall be provided for each separate heating and cooling system. Contractor is to coordinate with owner the

MCH-6: Heating and cooling equipment is to be vented to independent flues sized as per the equipment manufacturer's specifications.

proposed zoning layout. Provide programmable thermostats

MCH-7: All appliances to be installed with the clearances from unprotected combustible materials as indicated on the appliance label and in the manufacturer's installation instructions.

MCH-8: All appliances to be accessible for inspection, service, and repair without requiring the removal of permanent construction, other appliances, or any other piping or ducts not connected to the appliance being inspected, services, repaired, or replaced. MCH-9: A level working space at least 30" deep and 30" wide shall be provided in front of the control side to service an appliance.

large enough to allow removal of the largest appliance in the space. A luminarie controlled by a switch is to be provided at the MCH-11: Location of fuel supply tanks, meters, main shutoff valves,

MCH-10: Minimum access openings to appliances to be 24' wide and

relief valves, and regulators, other than integral appliance regulators, shall be approved by the administrative authority and shall conform to state and local regulations. MCH-12: Provide access panels to all concealed equipment.

MCH-13: Appliances having an ignition source shall be elevated such

that the source of ignition is not less than 18" above the floor in

garages, or to spaces that have openings to garages (other than iving space). MCH-14: Appliances located in a garage or carport shall be protected from impact by automobiles

MCH-15: Oil burners shall be provided with a means to manually stop the flow of oil to the burner. An identified shut-off switch in the burner supply circuit shall be provided at the entrance to the room

or area where the burner is located, or at the top of the stairs if the ELC-11: Provide access panels to all concealed equipment. burner is located in the basement. MCH-16: Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can

meet the heating load. MCH-17: Insulate all hot water heating pipes in exterior walls, crawlspaces, attics, and other unheated spaces. Piping capable of carrying fluids above 105° or below 55° shall be insulated to a minimum of R-2.

MCH-18: Any portion of supply and return ductwork is to be insulated to a minimum of R-8 (R-6 in floor trusses) if it is outside the building thermal envelope.

MCH-19: All ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. All joints and seams shall comply with IRC accepted sealing and closure systems. MCH-20: Building framing cavities shall not be used as supply ducts.

MCH-21: Hydronic piping systems shall be installed to permit draining the system, and to protect the potable water system with the use of back-flow prevention. Do not install hydronic piping in direct contact with any building material that causes the piping to degrade or corrode.

MCH-22: Baseboard convectors shall be installed in conformance with the manufacturer's installation instructions. Convectors shall be supported independently of the hydronic piping.

MCH-23: Maximum amount of oil permitted to be stored to be 660 gallons. Tanks inside building to be sized to permit installation and emoval as whole units and shall be placed not less than 5' away from any fire or flame either within or external to any fuel-burning appliance. Tanks outside building and above ground shall be a minimum of 5' from an adjoining property line. Tanks shall be suitably protected from the weather and from physical damage. Tanks outside building and below ground to be a minimum of 1' away from building foundation and property line and shall be covered with a minimum of 1' of earth.

MCH-24: Oil tank fill and vent piping shall terminate a minimum of 2' away from any building opening at the same or lower level. Pipes to be laid to drain towards tank. Vent pipes shall not be cross connected with fill pipes, lines from burners, or overflow lines from auxiliary tanks. MCH-25: Outdoor-air intakes and exhausts shall have automatic or

gravity dampers that close when the ventilation system is not operating.

EXHAUST AND VENT SYSTEMS EXH-1: Exhausted air is to be discharged to the outdoors. Air shall

not be exhausted into attic, soffit, ridge vent, or crawlspace. EXH-2: Clothes dryer exhaust to be vented independently of other systems and shall convey the moisture to the outdoors. Exhaust

to terminate a minimum of 3' from any openings into building. Backdraft damper is to be provided. No screens shall be installed at the termination EXH-3: Clothes dryer exhaust ducts to be rigid metal ducts with

smooth interior surfaces and joints running in the direction of the airflow. Exhaust ducts shall not be connected with sheetmetal screws or with fasteners that penetrate into the ducts. sizes and configurations of waste and vent piping. All traps are to EXH-4: An 8' long maximum flexible transition duct is allowed from the dryer exhaust to the rigid exhaust duct system. Transition

ducts shall not be concealed within construction. EXH-5: Maximum length of clothes dryer exhaust duct shall not exceed 25' from the dryer to the termination (does not include the

transition duct). Maximum length to be reduced 2.5' for each 45 degree bend and 5' for each 90 degree bend. EXH-6: Range hoods shall discharge to the outdoors through an air-tight single-wall duct of galvanized steel, stainless steel, or

copper with a smooth interior surface and a backdraft damper.

Ducts shall not terminate in attic, crawlspace, or other areas

inside building. EXH-7: Ductless range hoods shall not be required to discharge to the exterior if mechanical or natural ventilation is otherwise provided, and the unit is installed in accordance with the manufacturer's installation instructions.

floor the duct penetrates is concrete. PVC to only be used for the section of exhaust pipe that is under the slab plus 1" to allow connection to rigid duct. EXH-9: Exhaust from bathrooms shall be ducted directly to the

EXH-8: For down-draft ranges, schedule 40 PVC can be utilized if the

exterior. Exhaust shall not discharge to attic, crawlspace, or other

EXH-10: Vent terminals for direct-vent appliances to be installed in accordance with the manufacturer's installation instructions.

listing, the manufacturer's installation instructions, and the 1. Not less than 3' above a forced air inlet within 10'.

2. Not less than 4' below, 4' horizontally from, or 1' above any

4. Not less than 1' from the bottom of the vent to the finished

door, window, or gravity air inlet. 3. Not closer than 3' to an interior corner formed by two perpendicular walls.

ground level. 5. Not mounted directly above, or within 3' horizontally of an o tank vent or gas meter.

6. Not less than 10' from lot lines and adjacent buildings for power exhausters.

7. The discharge shall be directed away from the building.

Coordinate final counts and locations with owner.

ELC-1: These electrical plans are schematic and area to be used as a guide for the proposed layout and configuration of fixtures.

<u>GENERAL ELECTRICAL</u>

ELC-2. Potential additional work not shown on these drawings includes cable or satellite wires, phone jacks, sound hookups, door bells, alarm systems, computer networking, etc... Coordinate final requirements with owner prior to submitting price.

ELC-3: All electrical fixtures are to be selected by, or provided by, the

owner. Energy efficient light fixtures are to be utilized in all locations. Light fixtures that are installed into vaulted ceilings are to be low-profile, insulated, and listed for that use. ELC-4: If an existing electrical service exists, then the service is to be evaluated to verify if it is sufficient for the proposed work. If a new

service is to be provided, then service size is to be determined. pased upon anticipated loads in house. Use minimum 200 amp service for new construction. Coordinate installation with utility company. System to be grounded to foundation reinforcing and to earth as required by the NEC. ELC-5: Abandon and make safe all existing electrical that is to be

removed as part of this project. Extend all wire and conduits, as per all code requirements, as required for any new work. ELC-6: All receptacles and wiring to be grounded. Use copper romex cable NM with ground unless otherwise noted.

ELC-7: Typical interior wiring to be as follows: 30 amp circuit = #10 awg, 20 amp circuit = #12 awg, 15 amp circuit = #14 awg. _C-8: Provide all junction boxes, receptacles, and electrical conduits

as required for the installation appliances and equipment. ELC-9: Plastic junction boxes are acceptable substitutions for steel boxes as long as the grounding is properly installed.

ELC-10: Provide general lighting and receptacles in attic spaces and

crawlspaces. Note that these are not shown within this set of

maximum distance of 12'-0" from each other.

ELC-13: All receptacles within 6' of a water source, in a garage, or outdoors are to be ground fault circuit interrupter receptacles. An interior string of outlets can be connected behind the GFCI to share its protection as long as those normal receptacles are marked as being protected by the GFCI.

ELC-12: Successive receptacles in a room to be installed at a

ELC-14: Outdoor receptacles are to have waterproof self-closing ELC-15: Interior outlets in exterior or garage walls are to have

gasketed covers. ELC-16: All hanging fixtures, including fans, are to be hung from metal boxes in the ceiling that are adequately secured to the

building structure. ELC-17: Typical wall switch height to be 48" a.f.f. Receptacles above the base molding are to be installed at 12"-18" a.f.f. Receptacles above kitchen counters and bathroom vanity/sink to be installed at 48" a.f.f. Receptacles in garage, basement, laundry, and utility room (that are not above counters) are to be installed at 42" a.f.f.

SMOKE AND CARBON MONOXIDE:

SMK-1: Smoke detectors shall be installed in the following locations: one in each sleeping room, one outside each separate sleeping area in the immediate vicinity of the bedrooms, and a minimum of one per floor - including basements.

SMK-2: Smoke detectors are not required in crawlspaces and uninhabited attics. SMK-3: On split levels without an intervening door between the

adjacent levels, a smoke alarm installed on the upper level shall suffices for the adjacent lower level provided that the lower level is less than one full story below the upper level. SMK-4: All smoke detectors are to be interconnected so that activation of one unit sounds the alarm on all units.

the building wiring with battery backup for interruption of building power. If smoke detectors are to be added to existing areas of the home that are unaltered by the new construction, then battery-powered units are acceptable, unless otherwise noted.

SMK-5: In all new construction, all smoke detectors to be powered by

SMK-6: Carbon monoxide detectors shall be installed in the following locations: one outside each separate sleeping area in the immediate vicinity of the bedrooms, and a minimum of one per floor - including basements.

SMK-7: Carbon monoxide detectors are not required in crawlspaces and uninhabited attics. SMK-8: Alarm on carbon monoxide detector to be distinctively

different than alarm on smoke detectors. ENERGY EFFICIENCY:

ENR-1: New homes are to be tested in accordance with the Energy Star requirements to verify that the new construction mee with the qualifications standards of the program. Homeowner to be provided with documentation of Energy Star label achievement as verified by a third party independent home energy rater.

ENR-2: Energy Star qualified products and appliances are to be utilized for new elements used throughout the project. ENR-3: Where possible, fluorescent or compact fluorescent lamps and

light fixtures are to be used for the general lighting of the home. ENR-4: High-efficiency heating and cooling equipment is to be provided where new equipment is required.

ENR-5: Insulation as specified in the Energy Code Information chart on sheet T1, and in the construction details in this set of drawings, represents the minimum insulation required to meet with the requirements of the IECC 2006. Energy Star qualification may require additional insulation.

ENR-6: High-performance windows are to be used for any new units in the project. Units must not exceed the maximum U-value requirements specified in the Energy Code Information chart on sheet T1. Minimally, insulated double-glazed units with low-E coatings that are filled with inert gas are to be used. Air infiltration around installed units is to be minimized.

ENR-7: All holes and cracks in the building envelope, and in the heating and cooling ductwork, are to be sealed to reduce drafts moisture, dust, pollen, and noise.

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