



Building America Final Technical Report
Cooperative Agreement DE-FC26-08NT02231
IBACOS, B. Oberg – Project Director / Principal Investigator

Appendix 2.C: Pittsburgh Lab House Construction Plan Set

| | | |
|--------------|-------------|----------------|
| 1st. FLOOR | 1079 | SQ. FT. |
| 2nd. FLOOR | 1079 | SQ. FT. |
| FIN. BASE | 614 | SQ. FT. |
| TOTAL | 2772 | SQ. FT. |

FINISHED SQUARE FOOTAGE CALCULATIONS FOR THIS HOUSE WERE MADE BASED ON PLAN DIMENSIONS ONLY AND MAY VARY FROM THE FINISHED SQUARE FOOTAGE OF THE HOUSE AS BUILT

NOTE:
ALL WINDOWS TO BE GORELL BRAND, SEE WINDOW SCHEDULE FOR ROUGH OPENING SIZES.

ALL FIRST FLOOR WALLS TO BE 9'-1 1/8" AND INCLUDE DBL. TOP PLATES FOR AREAS DESIGNED AS BRACED WALL PANELS, ALL VERTICAL AND HORIZONTAL STRUCTURAL PANEL JOINTS TO BE BLOCKED.

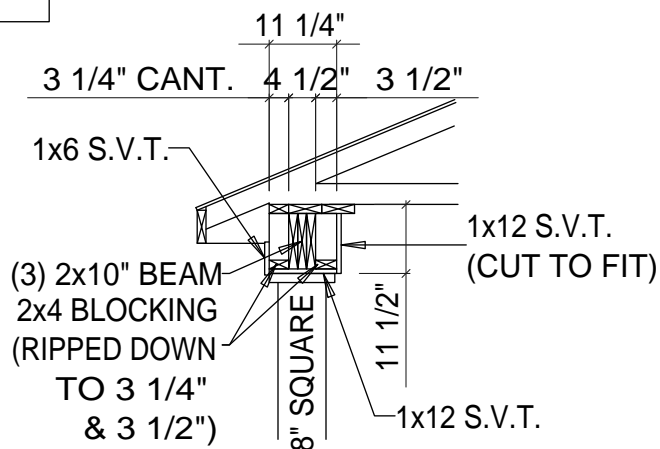
SEE WALL SECTIONS AND DETAILS BY IBACOS INCLUDED IN SET

SEE BRACED WALL PANEL METHOD AND FASTENING LEGEND SHEET A-2

NOTE:
ALL INTERIOR WALLS TO BE FRAMED AT 19.2" o.c. WALLS PERPENDICULAR TO FLOOR JOISTS TO HAVE STUDS STACKED OVER JOISTS

ALL EXTERIOR HOUSE WALLS TO BE 2x4 @ 12" O.C., STAGGERED, w/ 2x8 TOP AND BOTTOM PLATES & 7/16" O.S.B. SHG. (CONTINUOUSLY SHEATHED) 2" RIGID FOAM INSULATION AND HOUSE WRAP

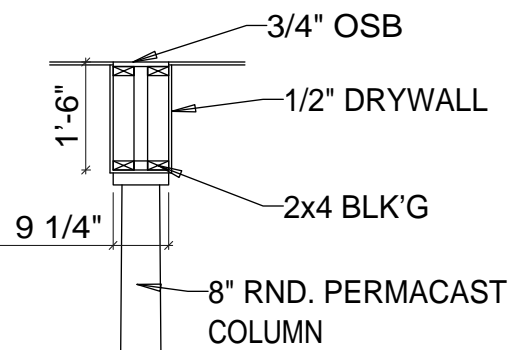
D-1b



PORCH BEAM DETAIL

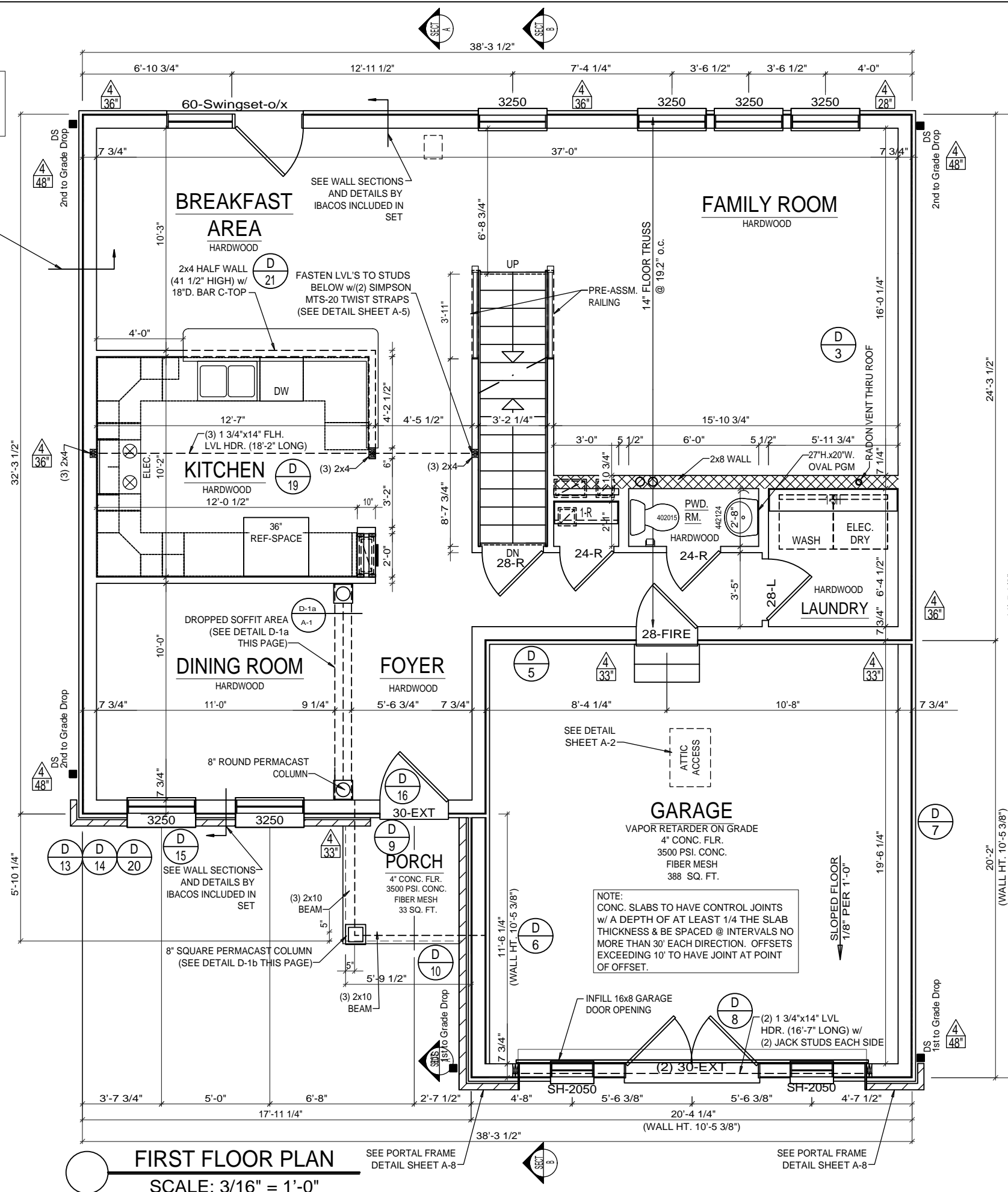
SCALE: 3/8" = 1'-0"

D-1a



BULKHEAD DETAIL

SCALE: 3/8" = 1'-0"

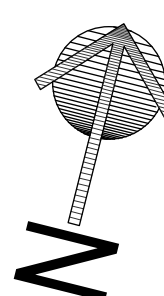


FIRST FLOOR PLAN

SCALE: 3/16" = 1'-0"

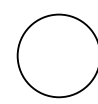
| BATH ACCESSORIES | |
|---------------------------|--------------------------------|
| ☐ | T.P. HOLDER 30" ABOVE FLOOR |
| ☐ | TOWEL RING 42" ABOVE FLOOR |
| TOWEL BARS | |
| ☐ | ABOVE CT. - 22" |
| ☐ | LOW - 31" A.F.F. |
| ☐ | HIGH - 42" A.F.F. |
| ☐ | TWIN ROBE HOOK 60" ABOVE FLOOR |
| LOCATIONS MAY BE MODIFIED | |

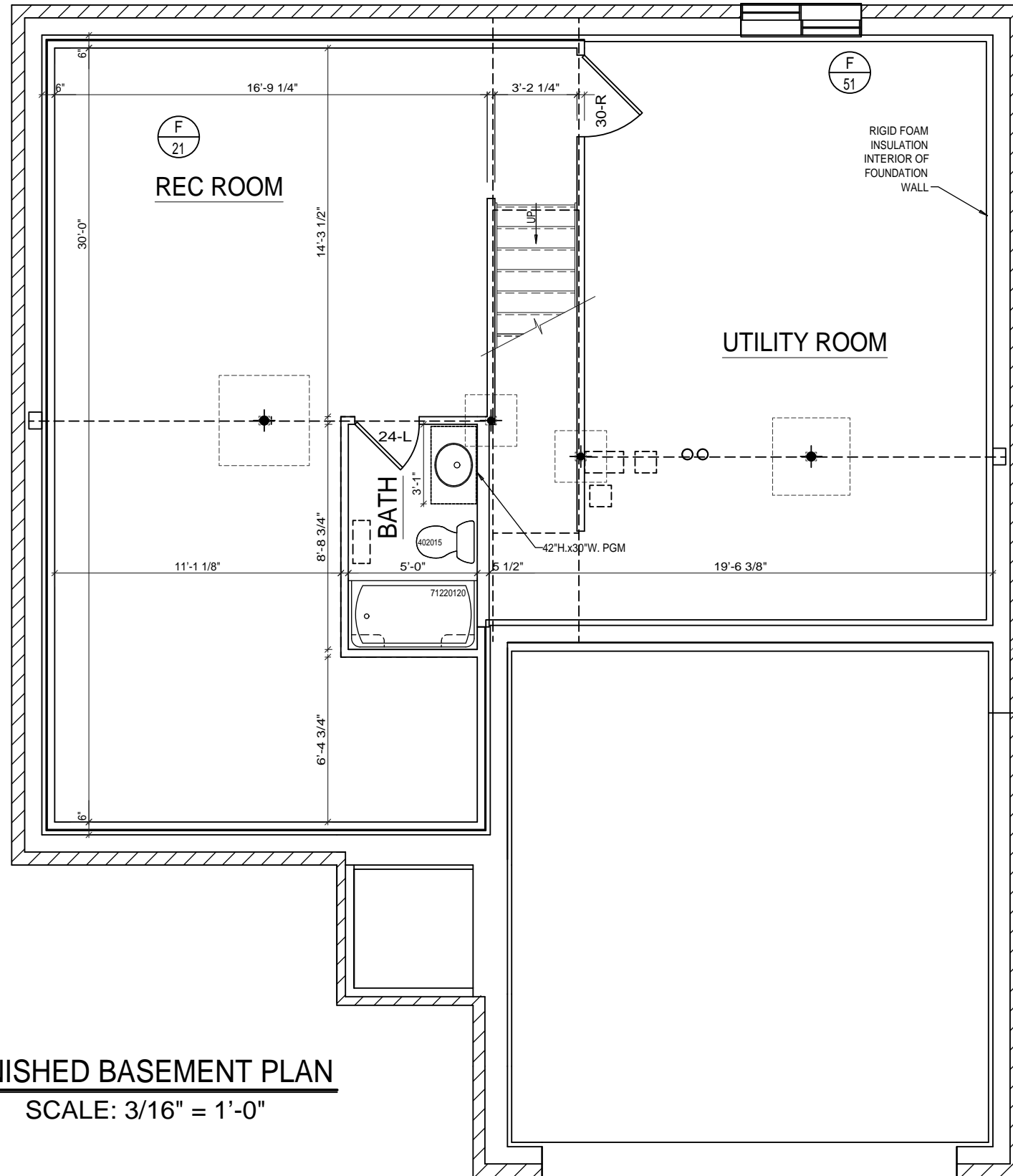
- FLOOR PLAN NOTES:**
- 1) ALL INTERIOR PARTITIONS TO BE 2x4s UNLESS OTHERWISE NOTED.
 - 2) ALL OPENINGS 48" AND LARGER REQUIRE DOUBLE JACK STUDS.
 - 3) WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS.
 - 4) ALL INTERIOR DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD.
 - 5) ALL STRUCTURAL MEMBERS (FLOOR AND CEILING JOIST, RAFTERS, HEADERS, BEAMS) MUST NOT BE CHANGED WITHOUT VERIFICATION & APPROVAL FROM DESIGN DEPARTMENT.
 - 6) FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
 - 7) ALL HEADERS TO BE CONTINUOUS RIM BOARD BETWEEN FIRST AND SECOND FLOOR, AND ENGINEERED OPEN WEB HEADERS AT SECOND FLOOR OPENINGS.
 - 8) ALL LUMBER TO BE S.P.F. #2 OR BETTER UNLESS NOTED OTHERWISE.
 - 9) ADD AN APPROVED AIR BARRIER TO ALL EXPOSED FIBERGLASS INSULATION (INCLUDING BEHIND TUBS ON EXTERIOR WALLS)
 - 10) PSK REQUIRED ON ALL EXPOSED INSULATION IN UNFINISHED AREAS AND ENCLOSED CHASES.




NOTE: REFER TO I-JOIST LAYOUT (BY OTHERS) FOR FLOOR FRAMING DETAILS

| | | |
|--|--|--|
| CRESTMONT | 535 B | S&A HOMES |
| A RESIDENCE FOR: COBBLESTONE LAB HOME | | |
| DRAWN BY: DHR | CUSTOMER SIGNATURE #1: [Signature] | CUSTOMER SIGNATURE #2: [Signature] |
| PLAN STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: [Signature] | SALESPERSON SIGNATURE #2: [Signature] |
| PAGE NO. A-1 | JOB NUMBER 27_90174 | TRUELINE NUMBER 630103 |


FINISHED BASEMENT PLAN
 SCALE: 3/16" = 1'-0"



| | | | |
|---------------------------|---------------------------|--|--|
| A RESIDENCE FOR: | | CRESTMONT | |
| COBBLESTONE LAB HOME | | 535 B | |
| DRAWN BY: DHR | |  | |
| CUSTOMER SIGNATURE #1: | CUSTOMER SIGNATURE #2: | S.N.: | |
| SALESPERSON SIGNATURE #1: | SALESPERSON SIGNATURE #2: | | |
| PAGE NO. | | A-3 | |
| JOB NUMBER | | 27_90174 | |
| TRUELINE NUMBER | | 630103 | |
| DRAWN BY: | DATE: | REMARKS: | |
| DHR | 03-04-10 | Engineering Revisions | |

NOTE: REFER TO I-JOIST LAYOUT (BY OTHERS) FOR FLOOR FRAMING DETAILS

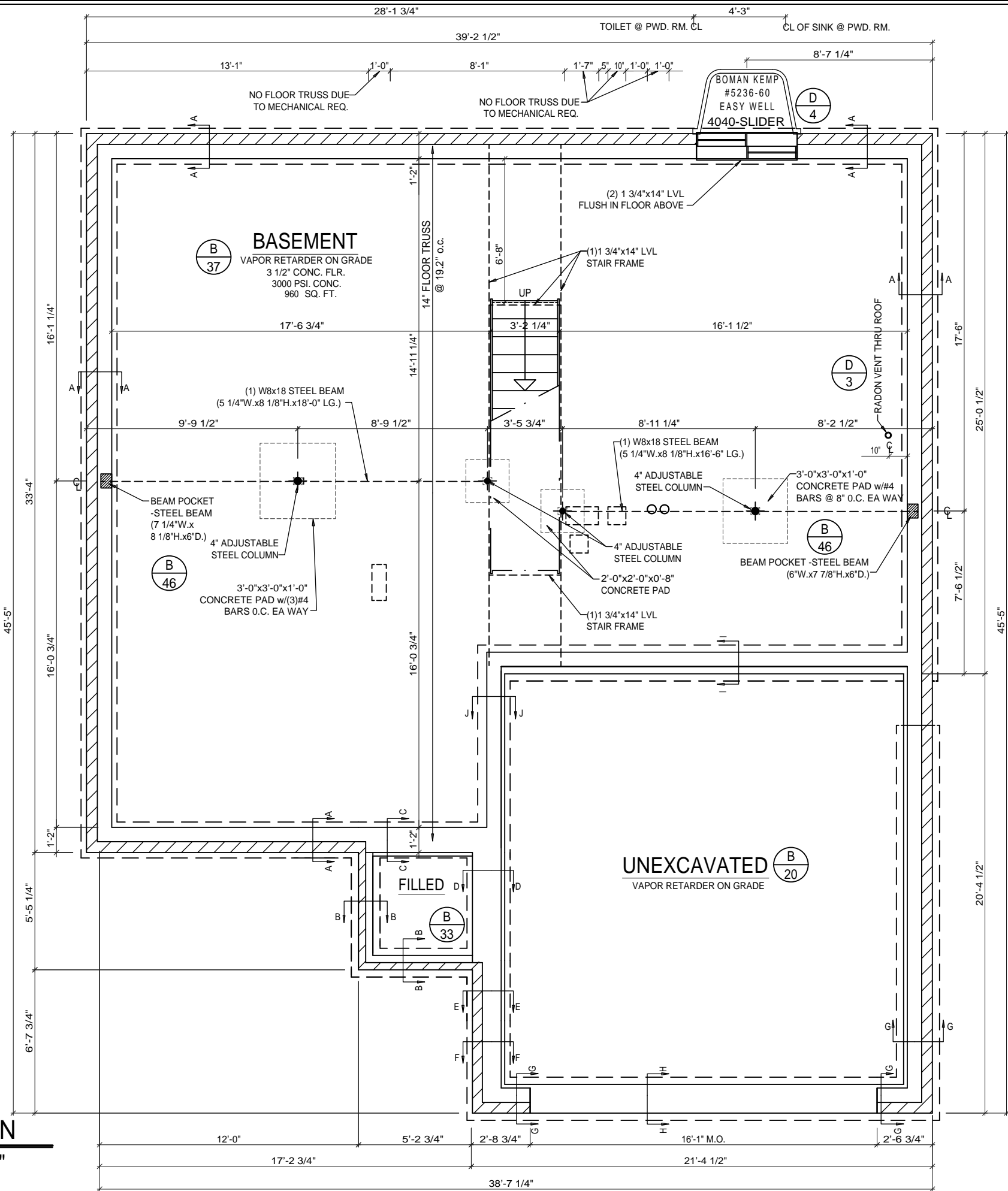
POURED WALL REBAR SIZE AND SPACING SPECIFICATIONS

| WALL HEIGHT | UNBALANCED BACKFILL | | WALL THICKNESS | | REBAR SIZE AND SPACING | | CODE TABLE |
|-------------|---------------------|----------|----------------|----------|------------------------|---------------------|--|
| | HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL | |
| 8'-0" | 8'-0" | 10" | 10" | 10" | 2" | 2" | 2009 IRC R404.1.2(B) PLAIN CONCRETE |
| 8'-0" | ≤7'-0" | 8" | 8" | 8" | 2" | 2" | ACI 332-06 TABLE A.4 PLAIN CONCRETE |
| 9'-0" | 8'-0" | 10" | 10" | 10" | 3" | 3" | 2009 IRC R404.1.2(B) PLAIN CONCRETE |
| 9'-0" | 8'-0" | 8" | 8" | 8" | #5 REBAR @ 24" O.C. | #5 REBAR @ 24" O.C. | ACI 332-08 TABLE A.4 PLAIN CONCRETE |
| 9'-0" | 8'-0" | 8" | 8" | 8" | #5 REBAR @ 30" O.C. | #5 REBAR @ 30" O.C. | ACI 332-08 TABLE A.4 PLAIN CONCRETE |

FOOTNOTES:
 a - For wall heights < 8' - (1) #5 bar within 12" of the top of the wall story and (1) #5 bar near mid-height of the wall story.
 For wall heights > 8' - (1) #5 bar within 12" of the top of the wall story and (1) #5 bar near third points in the wall story (2009 IRC R404.1.2(1))
 b - Vertical reinforcement bars of different size than specified in R404.1.2(B) are permitted in accordance with Table R404.1.2(9)

NOTES:
 1.) MINIMUM CONCRETE COMPRESSIVE STRENGTH FOR WALLS: f'c=3,000 psi.
 2.) MINIMUM REBAR YIELD STRENGTH: fy=60 ksi.
 3.) MAXIMUM DESIGN LATERAL PRESSURE: 45psf/ft.

FOUNDATION PLAN
 SCALE: 3/16" = 1'-0"



NOTE:
 CONC. SLABS TO HAVE CONTROL JOINTS
 W/ A DEPTH OF AT LEAST 1/4 THE SLAB
 THICKNESS & BE SPACED @ INTERVALS NO
 MORE THAN 30' EACH DIRECTION. OFFSETS
 EXCEEDING 10' TO HAVE JOINT AT POINT
 OF OFFSET.

NOTE:
 POURED WALL DETAILS
 -SEE PAGE A-9

FOUNDATION NOTES:
 1) MAIN BEAM(S) - STEEL BEAM AND/OR GLULAM BEAM (SOUTHERN PINE 30F-E2), AS PER PLAN
 2) STEEL BEAM - MECHANICALLY FASTEN 2x WOOD PLATE TO TOP FLANGE OF STEEL BEAM MIN. 24" O.C. STAGGERED BOTH SIDES AND 12" FROM EACH END
 3) ADJUSTABLE STEEL COLUMNS, AS PER PLANS
 4) FORMED CONCRETE PADS, AS PER PLANS
 5) 1/2" DIA. x 18" ANCHOR BOLTS (IN BLOCK) OR 10" ANCHOR BOLTS (IN CONCRETE) AS PER CODE w/SPACING @ 6'-0" O.C. & 1'-0" FROM END OF PLATE & FROM CORNERS (EMBEDDED 15" BLOCK & CONCRETE).
 6) MIN. COMPRESSIVE STRENGTH FOR FOOTINGS TO BE 2500 PSI.
 7) CONCRETE FOOTING SIZES:
 (a) 8" WALL = 16" WIDE FORMED FOOTING
 (b) 10" WALL = 18" WIDE FORMED FOOTING
 (c) 12" WALL = 20" WIDE FORMED FOOTING
 (d) TRENCH FOOTING TO BE 18" WIDE (MIN.)

A RESIDENCE FOR:
 COBBLESTONE LAB HOME

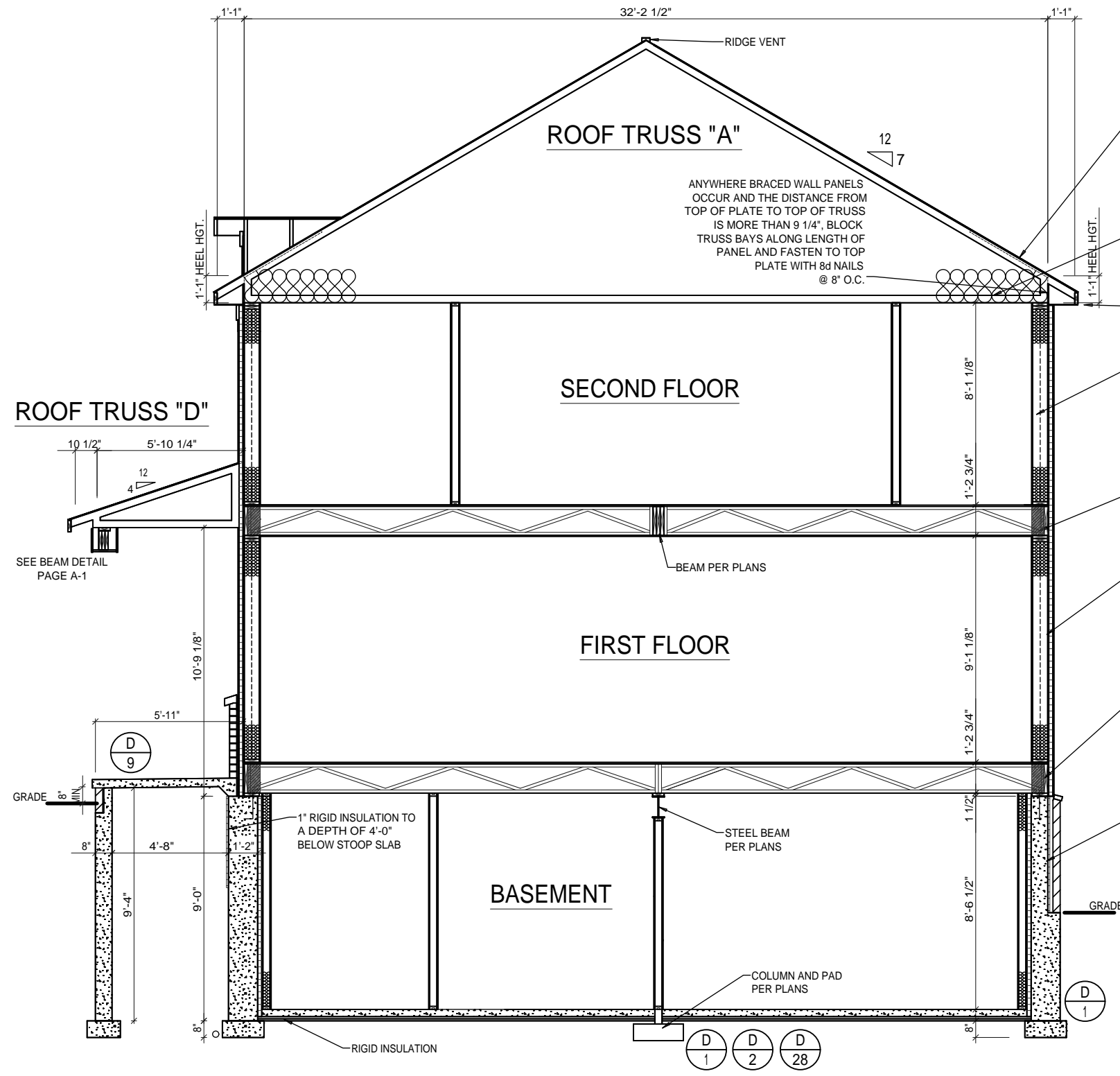
CRESTMONT
 535 B
 S&A HOMES

DATE: 03-04-10
 DRAWN BY: DHR
 REMARKS: Engineering Revisions

PAGE NO.
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JOB NUMBER
 27_90174

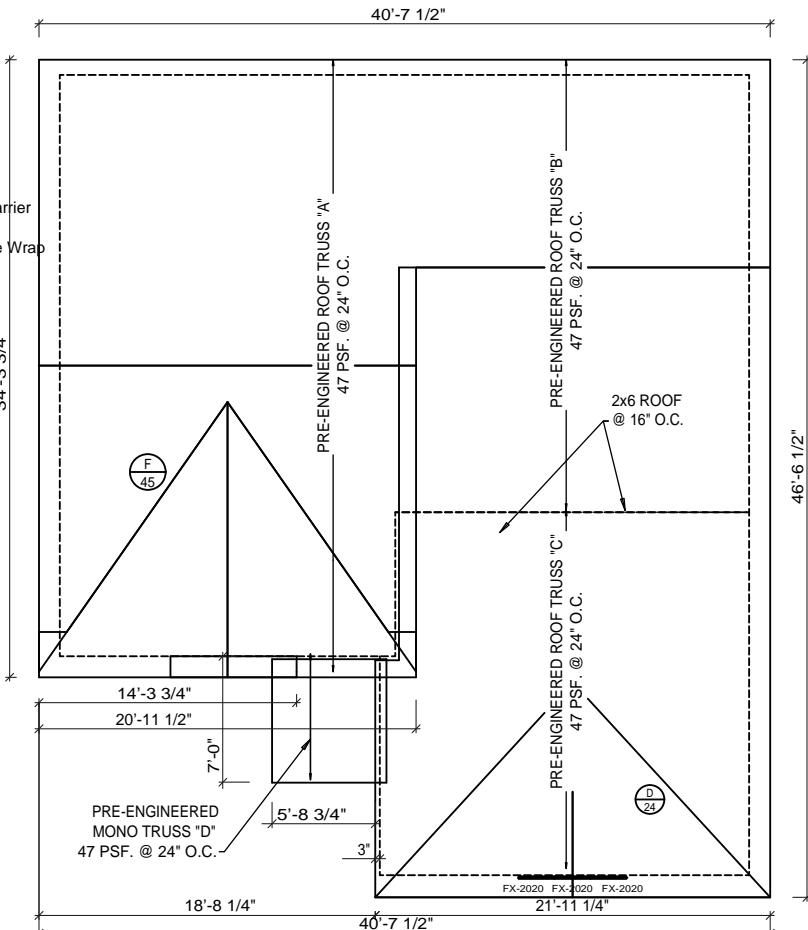
TRUELINE NUMBER
 630103



SECTION A-A
SCALE: 3/16" = 1'-0"

- ROOF CONSTRUCTION**
 Pre-Engineered Roof Trusses
 47 PSF @ 24" o.c. w/ Mtl. Spacers
 7/16" O.S.B. Shtg. w/ H-Clips
 Ice & Water Shield
 Extend 24" Min. Inside Ext. Wall Line
 15# Felt Paper
 Fiberglass Shingles
 Ridge Vent
- CEILING**
 Rafter Insul. Baffles
 17" Insulation (Blown-In Cellulose)
 2x4 Stay Boards
- CORNICE**
 See Detail
- EXTERIOR WALL**
 2x8 Top Plates
 2x4 Staggered Studs @ 12" o.c.
 2x8 Bottom Plate
 R-30 JM Spider Fiberglass Ins. w/ Vapor Barrier
 7/16" O.S.B. Sheathing
 2" Rigid Insulation w/ 3/4" Furring W/ House Wrap
- FLOOR**
 3/4" O.S.B. T&G Subfloor (g&n)
 Floor Truss (see plan for size)
 LVL Rim Board - Use as Continuous Header
- EXTERIOR WALL**
 2x8 Top Plates
 2x4 Staggered Studs @ 12" o.c.
 2x8 Bottom Plate
 R-30 JM Spider Fiberglass Ins. w/ Vapor Barrier
 7/16" O.S.B. Sheathing
 2" Rigid Insulation w/ 3/4" Furring W/ House Wrap
- FLOOR**
 3/4" O.S.B. T&G Subfloor (g&n)
 Floor Truss (see plan for size)
 GP FiberStrong Rim Board
 2x8 P.T. Sill Plate
 Sill Sealer
 6" Spray Foam Insulation
 @ Rim Board
- FOUNDATION**
 1/2" Anchor Bolts
 @ 6'-0" o.c.
 14" Poured Conc. Wall
 R-11 Basement Wall Insulation (Min.)
 (Refer to Basement Mechanicals
 for specific R-Values)
 Water Proofing Below Grade
 20"x8" Contin. Conc. Ftg.
 w/ Key or Rebar Pins
 3 1/2" Conc. Floor
 8" Form-A-Drain

ANYWHERE BRACED WALL PANELS OCCUR AND THE DISTANCE FROM TOP OF PLATE TO TOP OF TRUSS IS MORE THAN 9 1/4", BLOCK TRUSS BAYS ALONG LENGTH OF PANEL AND FASTEN TO TOP PLATE WITH 8d NAILS @ 8" O.C.



ROOF TRUSS PLAN
SCALE: 3/32" = 1'-0"

NOTE:
 ALL GIRDER TRUSS END SUPPORT
 TO BE (1) MEMBER WIDER THAN
 TRUSS AND BE CONTINUOUS TO FND.

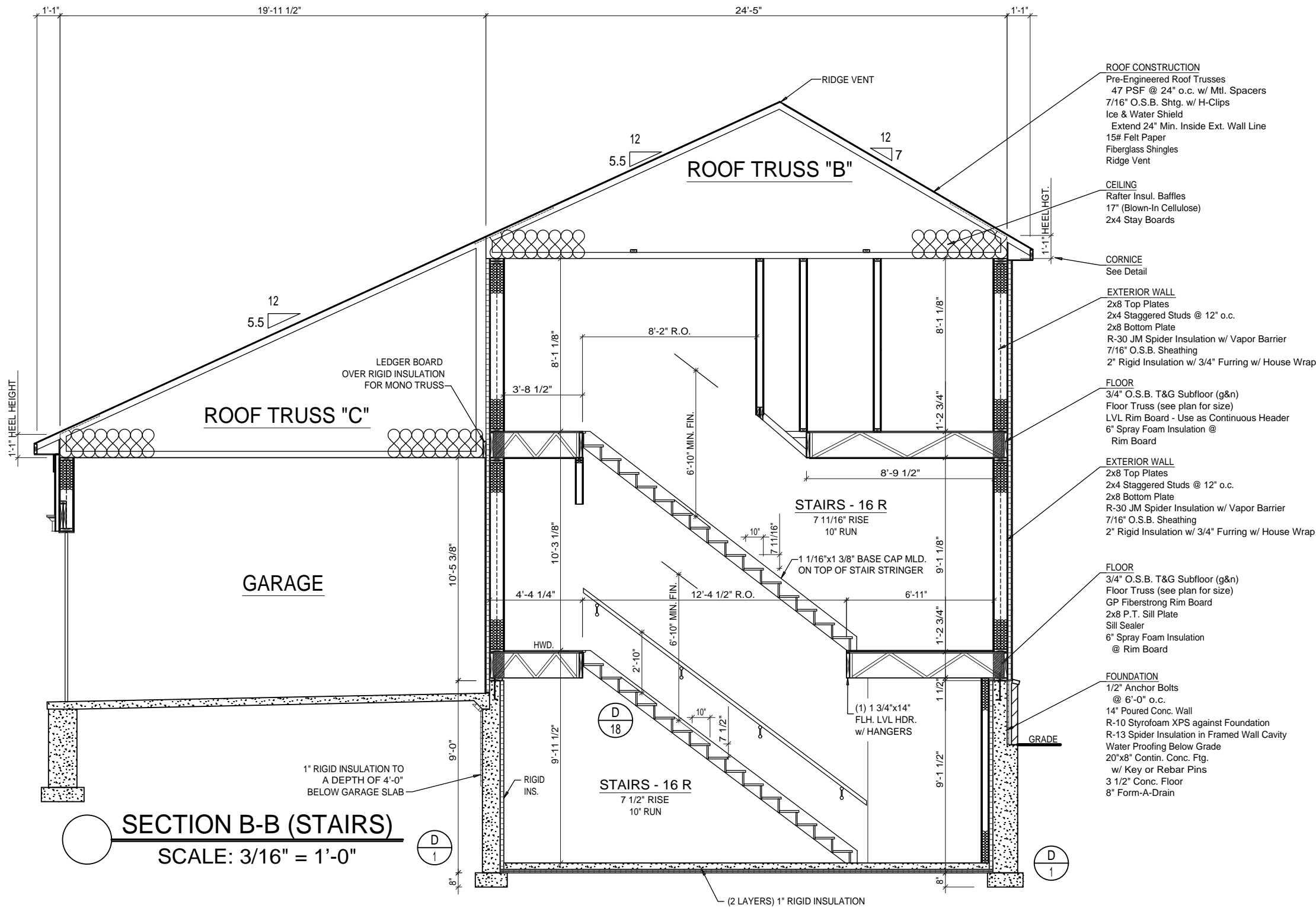
- SECTION NOTES:
- 1) ALL BOTTOM PLATES SET UPON MASONRY OR CONCRETE TO BE PRESSURE TREATED.
 - 2) ALL CONCRETE Poured AGAINST WOODEN MEMBERS TO HAVE FLASHING BETWEEN.
 - 3) JOIST HANGERS REQ'D ON FLUSH CONNECTIONS WITH SPANS GREATER THAN 4'-0".
 - 4) INT. WALL & CLG. FINISH TO BE 1/2" DRYWALL ALL AREAS UNLESS NOTED OTHERWISE, SEE IBACOS SECTIONS AND DETAILS.
 - 5) FELT BUILDING PAPER OVER HOUSEWRAP APPLIED OVER WOOD SHEATHING WHERE BRICK / MASONRY IS TO BE PLACED.
 - 6) INTERMEDIATE GUARD REQUIRED AT OPEN SIDED STAIRS, WHICH WILL NOT PERMIT PASSAGE OF AN OBJECT 4 3/8" OR MORE IN DIAMETER.
 - 7) BRICK TIES AT MASONRY VENEER AS REQ'D BY LOCAL CODE.

| REVISIONS | DATE | BY | DESCRIPTION |
|-----------|------|----|-------------|
| | | | |
| | | | |

CRESTMONT
 535 B

| | |
|--|---------------------------|
| A RESIDENCE FOR: COBBLESTONE LAB HOME | |
| DRAWN BY: DHR | CUSTOMER SIGNATURE #1: |
| PLANS STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: |
| CUSTOMER SIGNATURE #2: | SALESPERSON SIGNATURE #2: |

PAGE NO.
A-6
 JOB NUMBER
 27_90174
 TRUELINE NUMBER
 630103



| REVISIONS | DATE | REMARKS |
|-----------|-------------|-----------|
| 03-04-10 | Engineering | Revisions |

CRESTMONT
535 B
S&A HOMES

A RESIDENCE FOR:
COBBLESTONE LAB HOME

DRAWN BY: DHR
PLAN STARTED: 11/30/09

CUSTOMER SIGNATURE #1:
SALESPERSON SIGNATURE #1:

CUSTOMER SIGNATURE #2:
SALESPERSON SIGNATURE #2:

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A-7

JOB NUMBER
27_90174

TRUELINE NUMBER
630103

FOUNDATION

| OPENING SCHEDULE | | | | | | | | | | |
|------------------|--------|-----|-----------|--------|------|------------|--------------------------|------------------|-------------|-----------|
| LABEL | TYPE | QTY | WIDTH | HEIGHT | JAMB | HEADER HGT | DESCRIPTION | CLEAR GLASS AREA | EGRESS AREA | VENT AREA |
| 4040-SLIDER | WINDOW | 1 | 4'-8 1/2" | 4'-9" | 2x6 | 7'-4" | Gorell 4040 Vinyl Slider | 14 Sqf | 7 Sqf | 7 Sqf |

BASEMENT WALLS

| OPENING SCHEDULE | | | | | | | | | | |
|------------------|-----------|-----|-------|--------|------|------------|-----------------------|------------------|-------------|-----------|
| LABEL | TYPE | QTY | WIDTH | HEIGHT | JAMB | HEADER HGT | DESCRIPTION | CLEAR GLASS AREA | EGRESS AREA | VENT AREA |
| 24-L | INT. DOOR | 1 | 2'-6" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2468 | - | - | - |
| 30-R | INT. DOOR | 1 | 3'-2" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 3068 | - | - | - |

FIRST FLOOR

| OPENING SCHEDULE | | | | | | | | | | |
|------------------|-----------|-----|------------|------------|------|------------|--------------------------------------|------------------|-------------|-----------|
| LABEL | TYPE | QTY | WIDTH | HEIGHT | JAMB | HEADER HGT | DESCRIPTION | CLEAR GLASS AREA | EGRESS AREA | VENT AREA |
| 20-L | INT. DOOR | 1 | 2'-2" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2068 | - | - | - |
| 24-R | INT. DOOR | 2 | 2'-6" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2468 | - | - | - |
| 28-L | INT. DOOR | 1 | 2'-10" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2868 | - | - | - |
| 28-R | INT. DOOR | 1 | 2'-10" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2868 | - | - | - |
| (2) 30-EXT | EXT. DOOR | 1 | 6'-3" | 6'-10 1/2" | 2x8 | 6'-10 1/4" | Gorell 6100 Double Door Glass 3068-2 | - | - | - |
| 60-Swingset-o/x | EXT. DOOR | 1 | 6'-3 1/2" | 6'-10 1/2" | 2x8 | 6'-10 1/4" | Gorell 6100 Patio 3068-2 | - | - | - |
| 28-FIRE | EXT. DOOR | 1 | 2'-10 1/2" | 6'-11 1/2" | 2x8 | 6'-10 1/4" | Therma Tru SSF100 - 2868 | - | - | - |
| 30-EXT | EXT. DOOR | 1 | 3'-2 1/2" | 6'-11" | 2x8 | 6'-10 1/4" | Therma Tru S210 - 3068 | - | - | - |
| 16x8-OHD | EXT. DOOR | 1 | 16'-1" | 8'-0" | 2x8 | 7'-0" | Garage Door 16080 | - | - | - |
| 3250 | WINDOW | 6 | 3'-2" | 5'-1 1/4" | 2x8 | 6'-11 3/8" | Gorell 3250 Sngl. Hung | 11.8 Sqf | 5.86 Sqf | 5.86 Sqf |

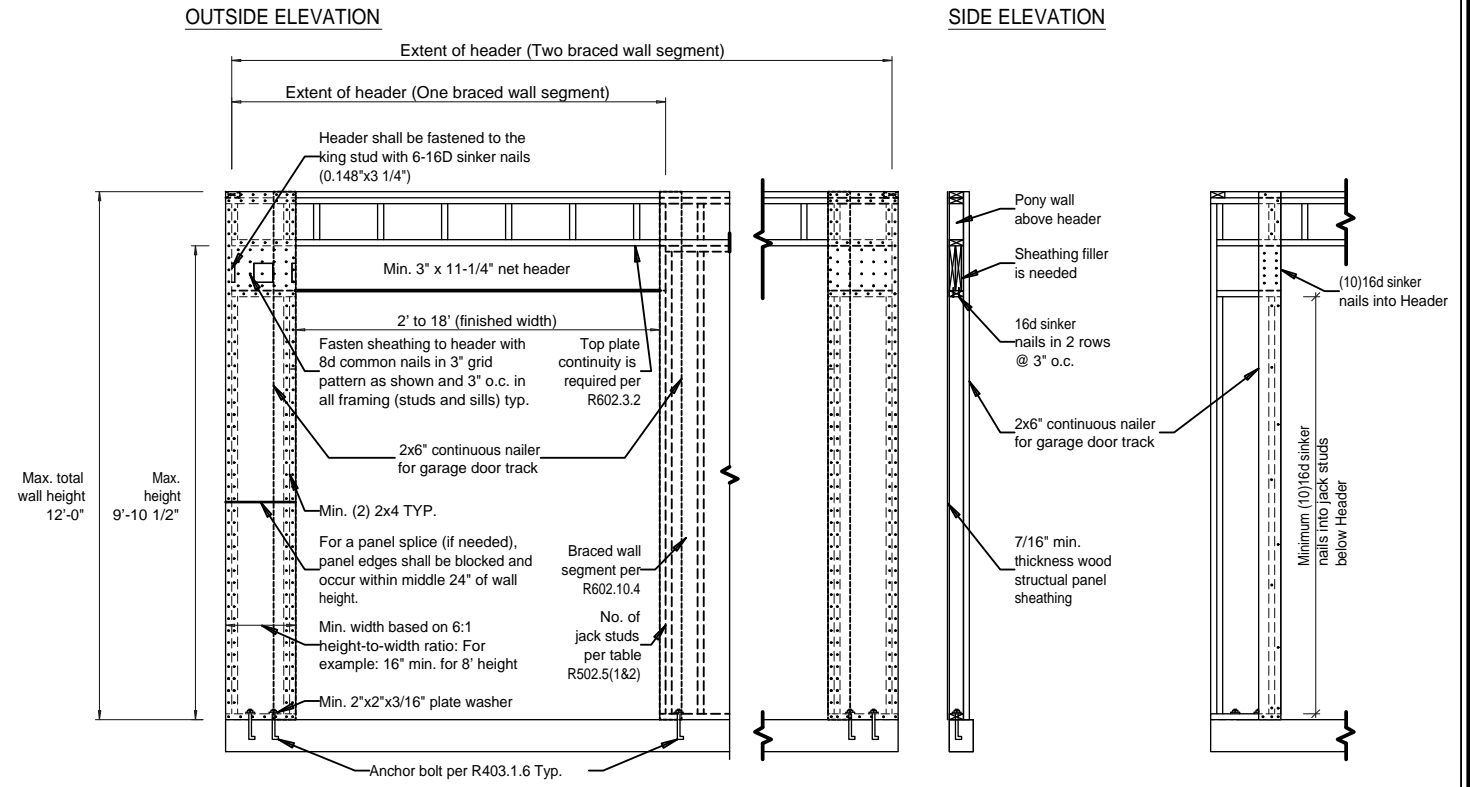
SECOND FLOOR

| OPENING SCHEDULE | | | | | | | | | | |
|------------------|-----------|-----|------------|-----------|------|------------|---------------------------------|------------------|-------------|-----------|
| LABEL | TYPE | QTY | WIDTH | HEIGHT | JAMB | HEADER HGT | DESCRIPTION | CLEAR GLASS AREA | EGRESS AREA | VENT AREA |
| 20-L | INT. DOOR | 1 | 2'-2" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2068 | - | - | - |
| 24-L | INT. DOOR | 2 | 2'-6" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2468 | - | - | - |
| 24-R | INT. DOOR | 4 | 2'-6" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2468 | - | - | - |
| 26-R | INT. DOOR | 4 | 2'-8" | 6'-11" | 2x4 | 6'-11" | Int Single Swing 2668 | - | - | - |
| 50-BP | INT. DOOR | 2 | 5'-1" | 7'-0" | 2x4 | 7'-0" | Bi-Pass-2-Panel 5068 | - | - | - |
| 2-3250 | WINDOW | 2 | 6'-3 9/16" | 5'-1 1/4" | 2x8 | 6'-11 3/8" | Gorell (2)3250 Sgl. Hung | 23.5 Sqf | 5.86 Sqf | 11.7 Sqf |
| 2650-Temp | WINDOW | 1 | 2'-6" | 5'-1 1/4" | 2x8 | 6'-11 3/8" | Gorell 2650 Sngl. Hung-Tempered | 8.84 Sqf | 4.43 Sqf | 4.43 Sqf |
| 3250 | WINDOW | 5 | 3'-2" | 5'-1 1/4" | 2x8 | 6'-11 3/8" | Gorell 3250 Sngl. Hung | 11.8 Sqf | 5.86 Sqf | 5.86 Sqf |

ROOF DORMERS

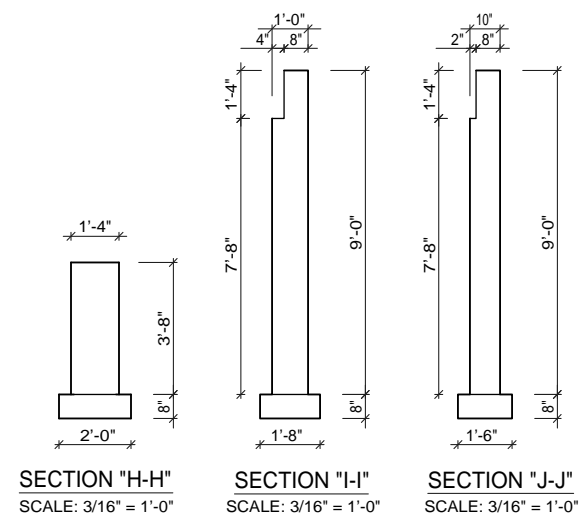
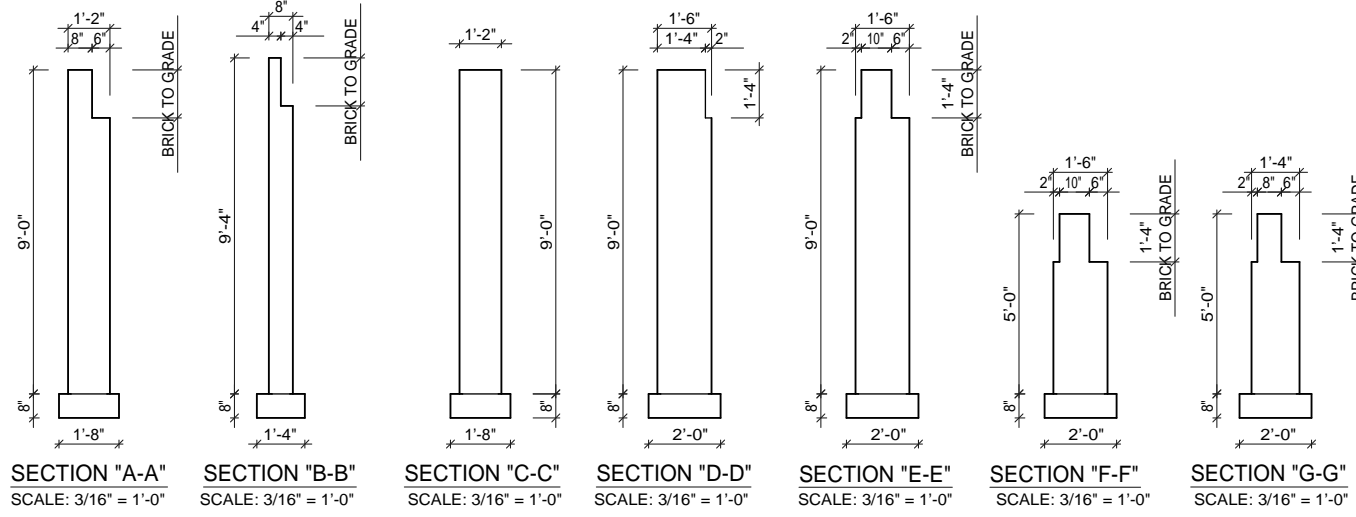
| OPENING SCHEDULE | | | | | | | | | | |
|------------------|--------|-----|-------|--------|------|---------------|------------------------|------------------|-------------|-----------|
| LABEL | TYPE | QTY | WIDTH | HEIGHT | JAMB | HEADER HGT | DESCRIPTION | CLEAR GLASS AREA | EGRESS AREA | VENT AREA |
| 2430 | WINDOW | 2 | 2'-4" | 3'-0" | 2x4 | SEE SHEET A-7 | Gorell 2430 Sngl. Hung | 4.72 Sqf | 2.33 Sqf | 2.33 Sqf |

| THERMAL PERFORMANCE | |
|--|---------|
| TYPE | U-VALUE |
| SINGLE HUNG / CLEAR / ARGON / LOW-E | 0.25 |
| PICTURE / CLEAR / ARGON / LOW-E | 0.33 |
| SLIDING PATIO DOOR / CLEAR / ARGON / LOW-E | 0.33 |
| EXTERIOR DOOR | 0.19 |
| EXTERIOR DOOR w/ GLAZING | 0.34 |
| PATIO SWING DOOR | 0.34 |
| BASEMENT EGRESS WINDOW -4040SL | 0.34 |



CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
OVER CONCRETE OR MASONRY BLOCK FOUNDATION (GARAGE DOOR)
NOT TO SCALE

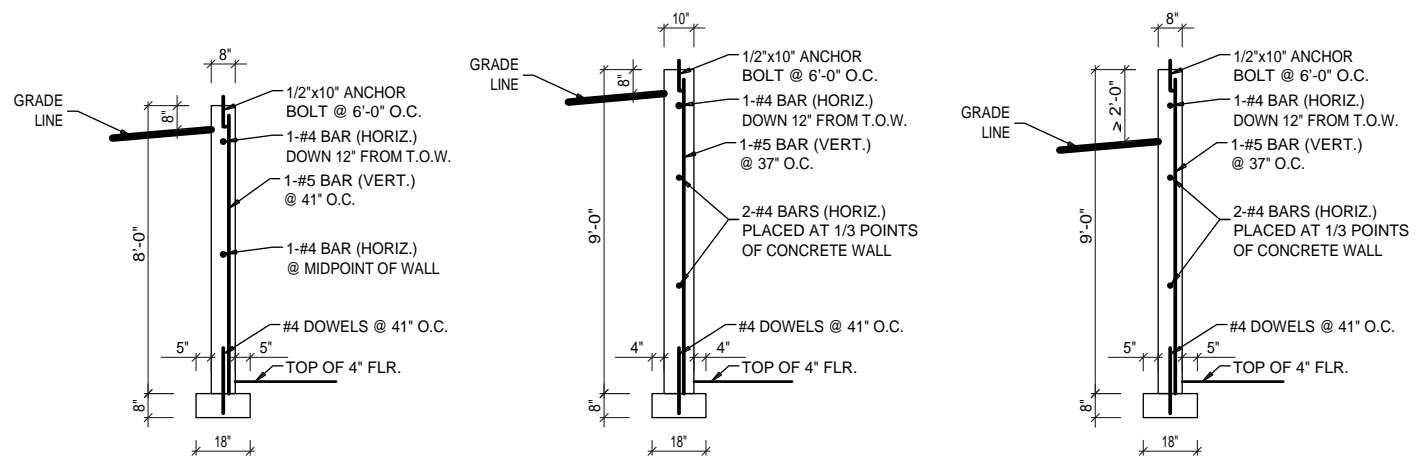
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|---|-------------------------|-------|--|--|---------------------------|
| REMARKS 03-04-10 Engineering Revisions | DATE DRAWN BY DHR | S.N.: | CUSTOMER SIGNATURE #2: SALES PERSON SIGNATURE #2: | CUSTOMER SIGNATURE #1: SALES PERSON SIGNATURE #1: | PLAN STARTED: 11/30/09 |
| CRESTMONT 535 B | | | | | |
| A RESIDENCE FOR: COBBLESTONE LAB HOME | | | | | |
| PAGE NO. A-8 | | | | | |
| JOB NUMBER 27_90174 | | | | | |
| TRUELINE NUMBER 630103 | | | | | |



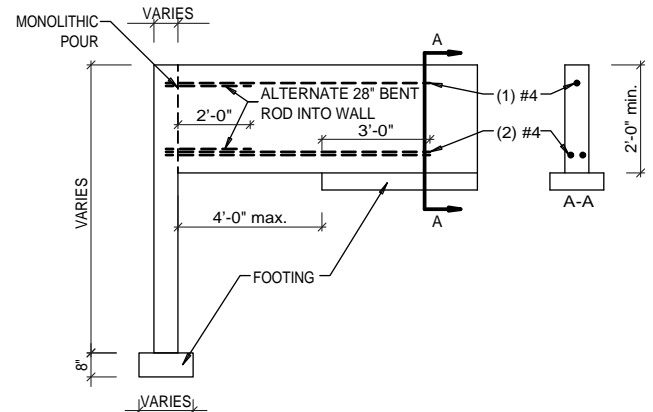
POURED WALL SECTIONS
SCALE: 3/16" = 1'-0"

| POURED WALL REBAR SIZE AND SPACING SPECIFICATIONS | | | | | |
|---|---------------------|----------------|------------------------|----------------------------------|----------------------|
| WALL HEIGHT | UNBALANCED BACKFILL | WALL THICKNESS | REBAR SIZE AND SPACING | | CODE TABLE |
| | | | HORIZONTAL | VERTICAL | |
| 8'-0" | 8'-0" | 10" | 4" | #6 REBAR @ 35" O.C. ^a | 2009 IRC R404.1.2(4) |
| 8'-0" | ≤ 7'-0" | 8" | 4" | PLAIN CONCRETE | ACI 332-04 TABLE A.4 |
| 9'-0" | 9'-0" | 10" | 4" | #6 REBAR @ 28" O.C. ^b | 2009 IRC R404.1.2(4) |
| 9'-0" | 8'-0" | 8" | 4" | #5 REBAR @ 30" O.C. | ACI 332-04 TABLE A.4 |
| 9'-0" | <7'-0" | 8" | 4" | PLAIN CONCRETE | ACI 332-04 TABLE A.4 |

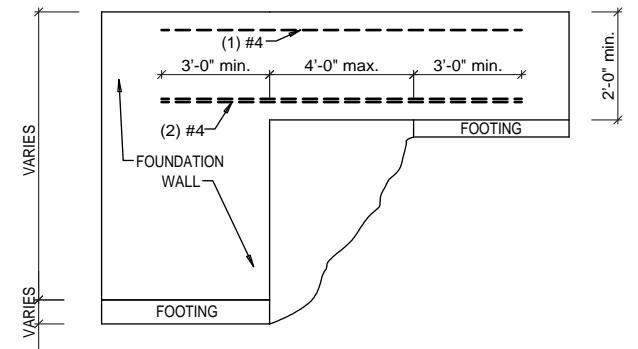
FOOTNOTES:
^a - Wall heights ≤ 8'-0"; One #4 bar within 12" of the top of the wall story and one #4 bar near mid-height of the wall story.
 Wall heights > 8'-0"; One #4 bar within 12" of the top of the wall story and one #4 bar near 1/3 points of the wall. (2009 IRC table R404.1.2(1))
^b - Alternative rebar size and spacing is permitted in accordance with 2009 IRC table 404.1.2(9)



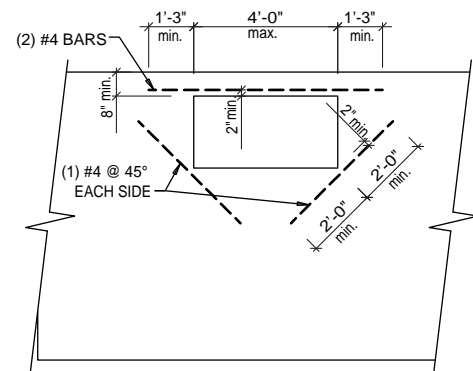
8'-0" HIGH POURED WALL **9'-0" HIGH POURED WALL** **9'-0" HIGH POURED WALL**
 8'-0" UNBALANCED BACKFILL 7'-0" UNBALANCED BACKFILL OR LESS



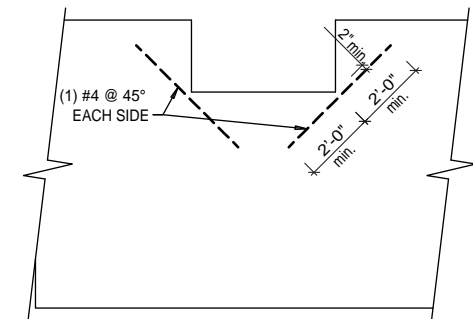
OUT-OF-PLANE FOOTING STEP DETAIL



IN-PLANE FOOTING STEP DETAIL



WINDOW REINFORCING



WINDOW REINFORCING

NOTE: ASSUMED DESIGN LATERAL SOIL PRESSURE TO BE 45 PSF PER FOOT OF DEPTH

POURED WALL DETAILS
SCALE: 3/16" = 1'-0"

| | | |
|-----------|-----------------------|---------|
| REVISIONS | DATE | REMARKS |
| 03-04-10 | Engineering Revisions | |

CRESTMONT
535 B
S&A HOMES

A RESIDENCE FOR:
COBBLESTONE LAB HOME

DRAWN BY: DHR
 CUSTOMER SIGNATURE #1: _____
 SALES/PERSON SIGNATURE #1: _____
 CUSTOMER SIGNATURE #2: _____
 SALES/PERSON SIGNATURE #2: _____
 PLAN STARTED: 11/30/09

ELECTRICAL LEGEND

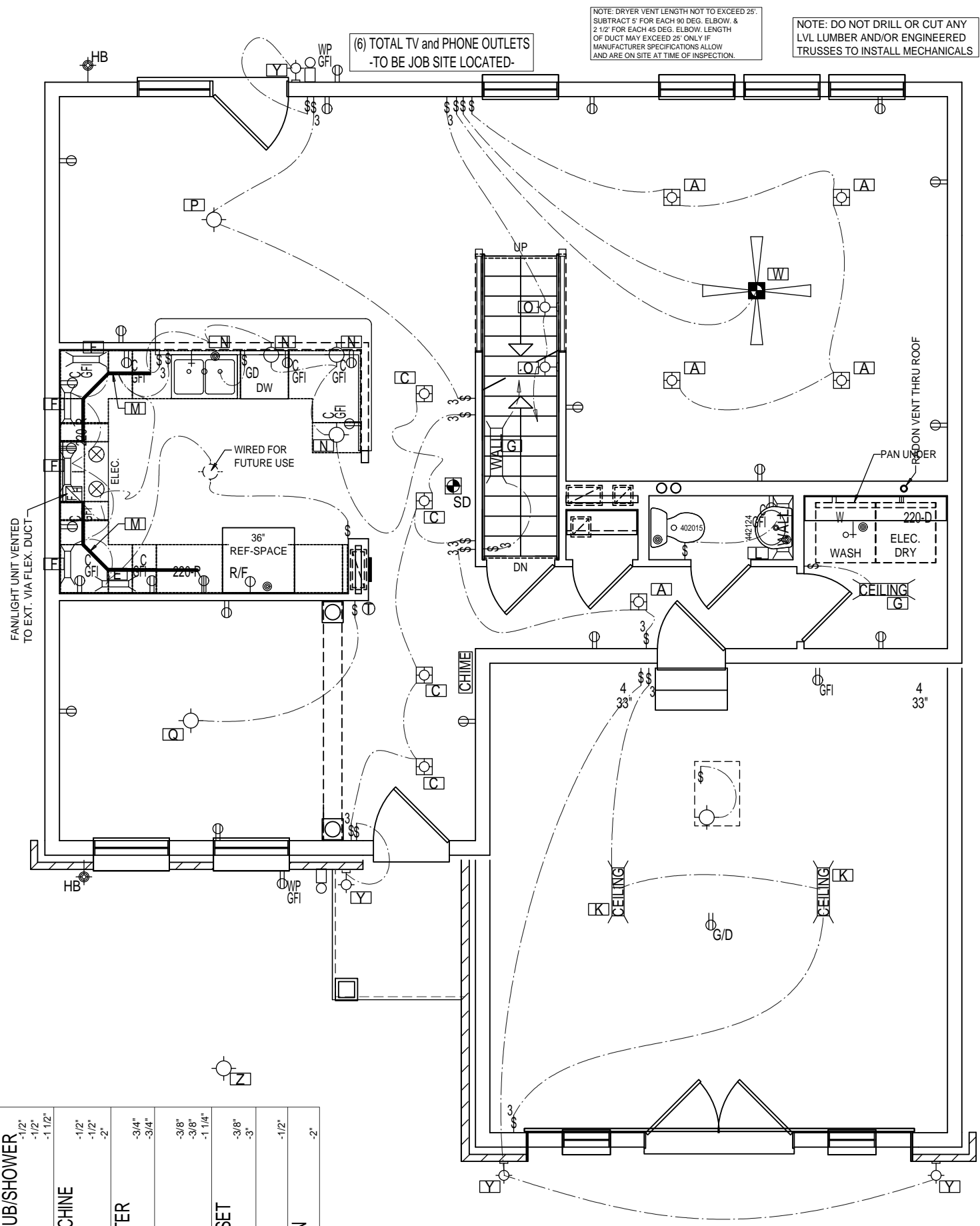
| | |
|--|--|
| | INCANDESCENT LIGHT FIXTURE (CEILING MOUNTED) |
| | INCANDESCENT LIGHT FIXTURE (PULL CHAIN-LOCATION) |
| | INCANDESCENT LIGHT FIXTURE (WALL MOUNTED) |
| | RECESSED LIGHT FIXTURE |
| | FLUORESCENT LIGHT FIXTURE |
| | UNDER CABINET LIGHT FIXTURE |
| | DUPLEX CONVENIENCE OUTLET |
| | DUPLEX CONVENIENCE OUTLET (COUNTER HEIGHT) |
| | DUPLEX CONVENIENCE OUTLET (SPLIT WIRED) |
| | DUPLEX CONVENIENCE OUTLET (GROUND FAULT INTERRUPTER) |
| | DEDICATED LINE |
| | GFI-D (GROUND FAULT INTERRUPTER) |
| | G/D (GARAGE DOOR) |
| | M (MICROWAVE/MICROHOOD) |
| | Z20-R (RANGE) |
| | Z20-D (DRYER) |
| | R/F (REF./FREEZER) |
| | FLOOR RECEPTABLE |
| | FAN/LIGHT COMBINATION -BATH |
| | FAN/LIGHT COMBINATION -MIRCOHOOD |
| | FAN/LIGHT COMBINATION -RANGE HOOD |
| | FAN UNIT ONLY |
| | SINGLE POLE SWITCH |
| | THREE-WAY SWITCH |
| | FOUR-WAY SWITCH |
| | DIMMER SWITCH |
| | THERMOSTAT |
| | SMOKE DETECTOR |
| | CARBON MONOXIDE DETECTOR |
| | DOOR BELL BUTTON |
| | DOOR BELL CHIMES |
| | PHONE JACK |
| | PHONE JACK -CAT 5 |
| | TV OUTLET |
| | ARC FAULT CIRCUIT INTERRUPTER REQUIRED ON ALL BEDROOM 120V BRANCH CIRCUITS |
| | 36" ELECTRIC BASE HEATER |
| | 48" ELECTRIC BASE HEATER |

PLUMBING LEGEND

| | |
|--|----------------------|
| | FROST PROOF HOSE BIB |
| | HOT WATER |
| | COLD WATER |
| | SANITARY DRAIN |
| | PUMP LOCATION |
| | FAUCET LOCATION |
| | WALL MOUNT FAUCET |

NOTES:
 1) ALL ELECTRICAL CONSTRUCTION TO CONFORM TO THE NEC AND LOCAL RULES & REGULATIONS.
 2) ALL PLUMBING CONSTRUCTION TO CONFORM TO THE IRC PLUMBING REQUIREMENTS.

| PEX PLUMBING SYSTEM | MIN. SIZE |
|---------------------------------|-----------|
| SERVICES TO HOUSE WATER | -3/4" |
| SANITARY SEWER | -4" |
| SINK COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |
| TUB COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |
| SHOWER or TUB/SHOWER COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -1 1/2" |
| WASHING MACHINE COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -2" |
| WATER HEATER COLD WATER | -3/4" |
| HOT WATER | -3/4" |
| LAVATORY COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/4" |
| WATER CLOSET COLD WATER | -3/8" |
| HOT WATER | -3" |
| SANITARY DRAIN | -3" |
| HOSE BIBS COLD WATER | -1/2" |
| FLOOR DRAIN SANITARY DRAIN | -2" |



FIRST FLOOR MECHANICAL LAYOUT
 SCALE: 3/16" = 1'-0"

LIGHTING SCHEDULE

| Fixture Designation | Item Count | Model Number | Type | Type of Lamp |
|---------------------|------------|-----------------------------|------------------------------|--------------|
| A | 9 | P87-AT | Recessed Housing | LED |
| | 9 | P8071-28 | Recessed Downlight Trim | |
| | 4 | P8555-01 | IC overbox | |
| B | 0 | P88-ICAT | Recessed Housing | CFL |
| | 0 | P8052-28 | Wall Washer Trim | |
| C | 4 | P83-ICAT | Recessed Housing | CFL |
| | 4 | P8052-28 | Wall Washer Trim | |
| D | 0 | P87-ATQL | Recessed Housing | |
| | 0 | P8071-28QL27K | LED Recessed Downlight | LED |
| E | 4 | MN55-128-LP | Strip Fluorescent | F28T5 |
| F | 4 | MN55-121-LP | Strip Fluorescent | F21T5 |
| G | 4 | P5129-30EB | Closet Fluorescent | F17T8 |
| H | 1 | MN55-228-LP | Strip Fluorescent | F28T5 |
| J | 3 | P7201-30WB | Closet Fluorescent | F15T8 |
| K | 5 | P7186-30EB | Ceiling Light | F32T8 |
| L | 2 | P7160-30EB | Wall Light | F17T8 |
| M | 60 | P7814-30 | LED modules (12 packs of 5) | LED |
| | 2 | P7513-30 | 2ft track | |
| | 2 | P7514-30 | 4ft track | |
| | 1 | P8675-01 | dimnable transformer | |
| N | 4 | P5146-86EBWB | Pendant | CFL |
| O | 4 | P6829-30 | Step Light | LED |
| P | 1 | P3488-86STRWB | Pendant | CFL |
| Q | 1 | P4278-86EBWB | Chandelier | CFL |
| R | 4 | P7209-86STRWB | Sconce | CFL |
| S | 3 | P3497-86STRWB | Ceiling Light | CFL |
| T | 2 | P3159-86EBWB | Wall Light | CFL |
| U | 1 | GC-W-1T8-4-4-RO-120-RWE-LWE | Lam Lighting Profile Valence | F32T8 |
| V | 0 | PV008-74WB | Ceiling Fan/Light | CFL |
| W | 1 | P2521-77 | Ceiling Fan | |
| X | 1 | P2621-33EBWB | Fan Light Kit | CFL |
| Y | 1 | P2521-77 | Ceiling Fan | |
| Z | 4 | P5638-20 | Outdoor Wall Light | LED |
| | 1 | P5447-20 | Outdoor Post Light | LED |
| AA | 2 | P7214-30EB | Finished Basement Light | F32T8 |
| | 2 | P7274-30 | Trim | |

| | | |
|-------------------------|---------------------------|---------------------------|
| CRESTMONT | 535 B | |
| A RESIDENCE FOR: | COBBLESTONE LAB HOME | |
| DRAWN BY: DHR | CUSTOMER SIGNATURE #1: | CUSTOMER SIGNATURE #2: |
| PLANS STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: | SALESPERSON SIGNATURE #2: |
| PAGE NO. M-1 | JOB NUMBER 27_90174 | TRUELINE NUMBER 630103 |

ELECTRICAL LEGEND

| | |
|----------|--|
| | INCANDESCENT LIGHT FIXTURE (CEILING MOUNTED) |
| | INCANDESCENT LIGHT FIXTURE (PULL CHAIN-LOCATION) |
| | INCANDESCENT LIGHT FIXTURE (WALL MOUNTED) |
| | RECESSED LIGHT FIXTURE |
| | FLUORESCENT LIGHT FIXTURE |
| UCF-x-LT | UNDER CABINET LIGHT FIXTURE |
| | DUPLEX CONVENIENCE OUTLET |
| | DUPLEX CONVENIENCE OUTLET (COUNTER HEIGHT) |
| | DUPLEX CONVENIENCE OUTLET (SPLIT WIRED) |
| | DUPLEX CONVENIENCE OUTLET (GROUND FAULT INTERRUPTER) |
| | DEDICATED LINE |
| | DEDICATED LINE (GROUND FAULT INTERRUPTER) |
| | DEDICATED LINE (GARAGE DOOR) |
| | DEDICATED LINE (MICROWAVE/MICROHOOD) |
| | DEDICATED LINE (RANGE) |
| | DEDICATED LINE (DRYER) |
| | DEDICATED LINE (REF./FREEZER) |
| | FLOOR RECEPTABLE |
| | FAN/LIGHT COMBINATION -BATH |
| | FAN/LIGHT COMBINATION -MIRCOHOOD |
| | FAN/LIGHT COMBINATION -RANGE HOOD |
| | FAN UNIT ONLY |
| | SINGLE POLE SWITCH |
| | THREE-WAY SWITCH |
| | FOUR-WAY SWITCH |
| | DIMMER SWITCH |
| | THERMOSTAT |
| | SMOKE DETECTOR |
| | CARBON MONOXIDE DETECTOR |
| | DOOR BELL BUTTON |
| | DOOR BELL CHIMES |
| | PHONE JACK |
| | PHONE JACK -CAT 5 |
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| | ARC FAULT CIRCUIT INTERRUPTER REQUIRED ON ALL BEDROOM 120V BRANCH CIRCUITS |
| | 36" ELECTRIC BASE HEATER |
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PLUMBING LEGEND

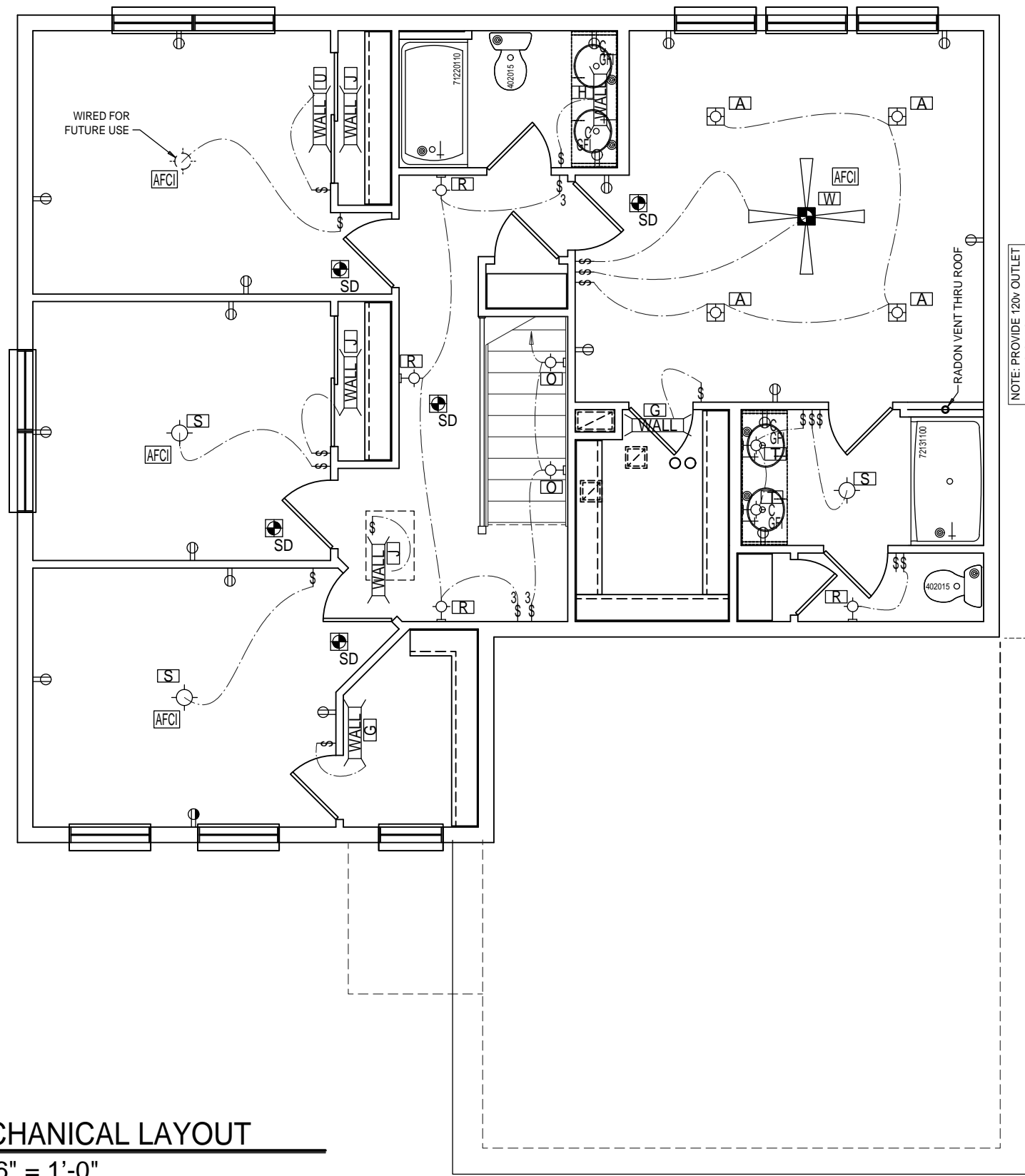
| | |
|--|----------------------|
| | FROST PROOF HOSE BIB |
| | HOT WATER |
| | COLD WATER |
| | SANITARY DRAIN |
| | PUMP LOCATION |
| | FAUCET LOCATION |
| | WALL MOUNT FAUCET |

NOTES:
 1) ALL ELECTRICAL CONSTRUCTION TO CONFORM TO THE NEC AND LOCAL RULES & REGULATIONS.
 2) ALL PLUMBING CONSTRUCTION TO CONFORM TO THE IRC PLUMBING REQUIREMENTS.

NOTE: DO NOT DRILL OR CUT ANY LVL LUMBER AND/OR ENGINEERED TRUSSES TO INSTALL MECHANICALS

NOTE: PORCELAIN LIGHT FIXTURE AND SWITCH AT ATTIC ACCESS

SEE LIGHTING SCHEDULE SHEET M-1



NOTE: PROVIDE 120V OUTLET IN ATTIC SPACE NEAR SUB-SLAB VENT PIPE

PEX PLUMBING SYSTEM

| SERVICES TO HOUSE | MIN. SIZE |
|-------------------|-----------|
| WATER | -3/4" |
| SANITARY SEWER | -4" |

| SINK | MIN. SIZE |
|----------------|-----------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |

| TUB | MIN. SIZE |
|----------------|-----------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |

| SHOWER or TUB/SHOWER | MIN. SIZE |
|----------------------|-----------|
| COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -1 1/2" |

| WASHING MACHINE | MIN. SIZE |
|-----------------|-----------|
| COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -2" |

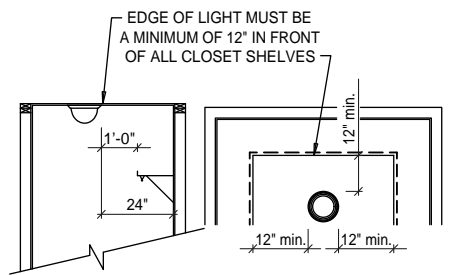
| WATER HEATER | MIN. SIZE |
|--------------|-----------|
| COLD WATER | -3/4" |
| HOT WATER | -3/4" |

| LAVATORY | MIN. SIZE |
|----------------|-----------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/4" |

| WATER CLOSET | MIN. SIZE |
|----------------|-----------|
| COLD WATER | -3/8" |
| SANITARY DRAIN | -3" |

| HOSE BIBS | MIN. SIZE |
|------------|-----------|
| COLD WATER | -1/2" |

| FLOOR DRAIN | MIN. SIZE |
|----------------|-----------|
| SANITARY DRAIN | -2" |



CLOSET LIGHT DETAIL
SCALE: 3/16" = 1'-0"

SECOND FLOOR MECHANICAL LAYOUT
SCALE: 3/16" = 1'-0"

| REVISIONS | DATE | BY | REMARKS |
|-----------|----------|-----|-----------------------|
| 1 | 03-04-10 | DHR | Engineering Revisions |

CRESTMONT
535 B

| | |
|---|--|
| A RESIDENCE FOR: COBBLESTONE LAB HOME | |
| DRAWN BY: DHR | CUSTOMER SIGNATURE #2: CUSTOMER SIGNATURE #1: SALESPERSON SIGNATURE #1: SALESPERSON SIGNATURE #2: |
| PLANS STARTED: 11/30/09 | |

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|---------------------------|
| PAGE NO. M-2 |
| JOB NUMBER 27_90174 |
| TRUELINE NUMBER 630103 |

ELECTRICAL LEGEND

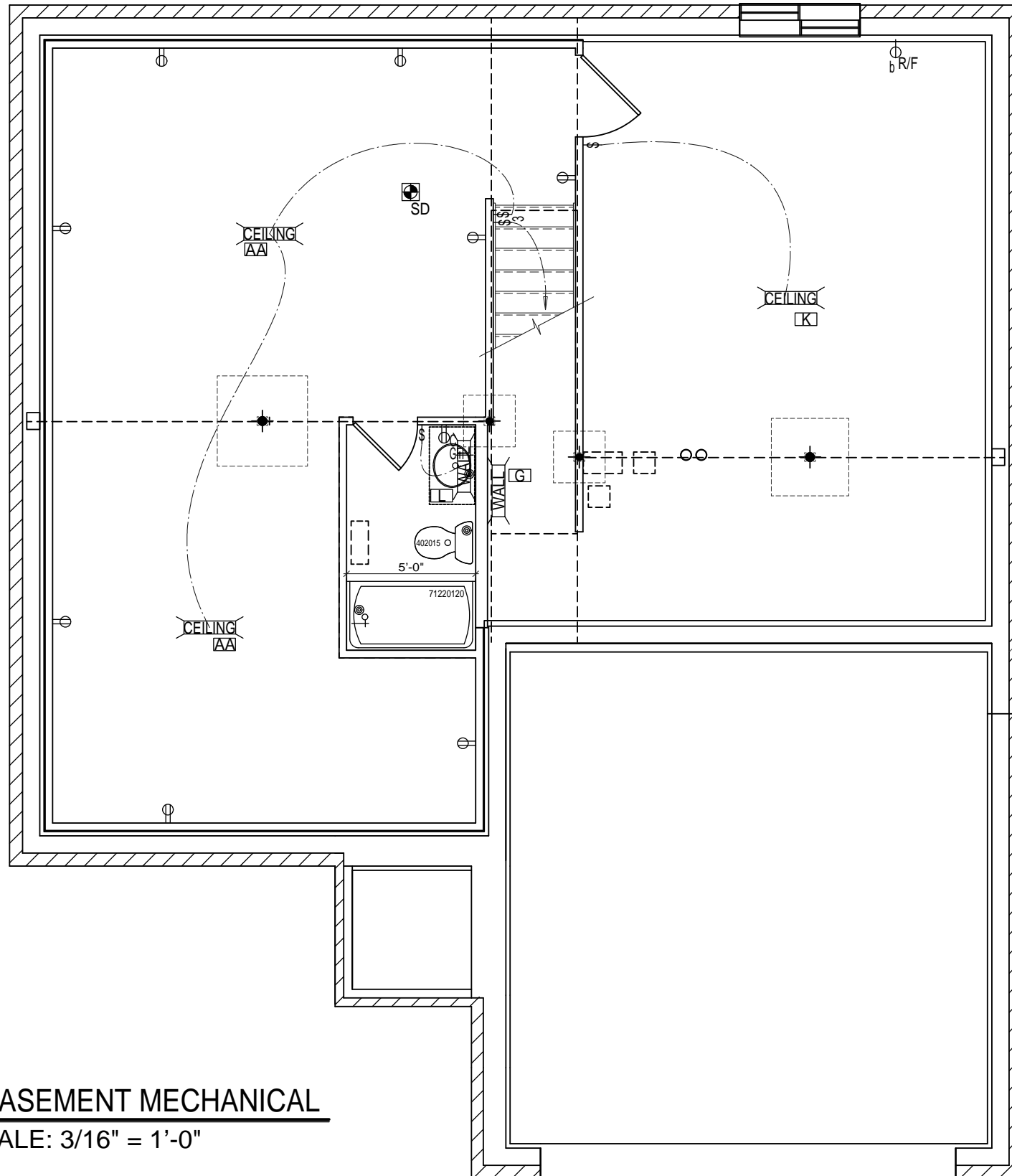
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| | THREE-WAY SWITCH |
| | FOUR-WAY SWITCH |
| | DIMMER SWITCH |
| | THERMOSTAT |
| | SMOKE DETECTOR |
| | CARBON MONOXIDE DETECTOR |
| | DOOR BELL BUTTON |
| CHIME | DOOR BELL CHIMES |
| | PHONE JACK |
| | PHONE JACK -CAT 5 |
| | TV OUTLET |
| | ARC FAULT CIRCUIT INTERRUPTER REQUIRED ON ALL BEDROOM 120V BRANCH CIRCUITS |
| | 36" ELEC. HEAT |
| | 48" ELEC. HEAT |

PLUMBING LEGEND

| | |
|--|----------------------|
| | FROST PROOF HOSE BIB |
| | HOT WATER |
| | COLD WATER |
| | SANITARY DRAIN |
| | PUMP LOCATION |
| | FAUCET LOCATION |
| | WALL MOUNT FAUCET |

NOTES:
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SEE LIGHTING SCHEDULE SHEET M-1



FINISHED BASEMENT MECHANICAL
 SCALE: 3/16" = 1'-0"

| REVISIONS | DATE | REMARKS |
|-----------|----------|-----------------------|
| 1 | 03-04-10 | Engineering Revisions |

CRESTMONT
535 B

| | |
|---|----------------------------------|
| S.N.: ----- | |
| A RESIDENCE FOR: COBBLESTONE LAB HOME | CUSTOMER SIGNATURE #2: |
| DRAWN BY: DHR | SALESPERSON SIGNATURE #2: |
| PLAN STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: |

PAGE NO.
M-3
 JOB NUMBER
 27_90174
 TRUELINE NUMBER
 630103

ELECTRICAL LEGEND

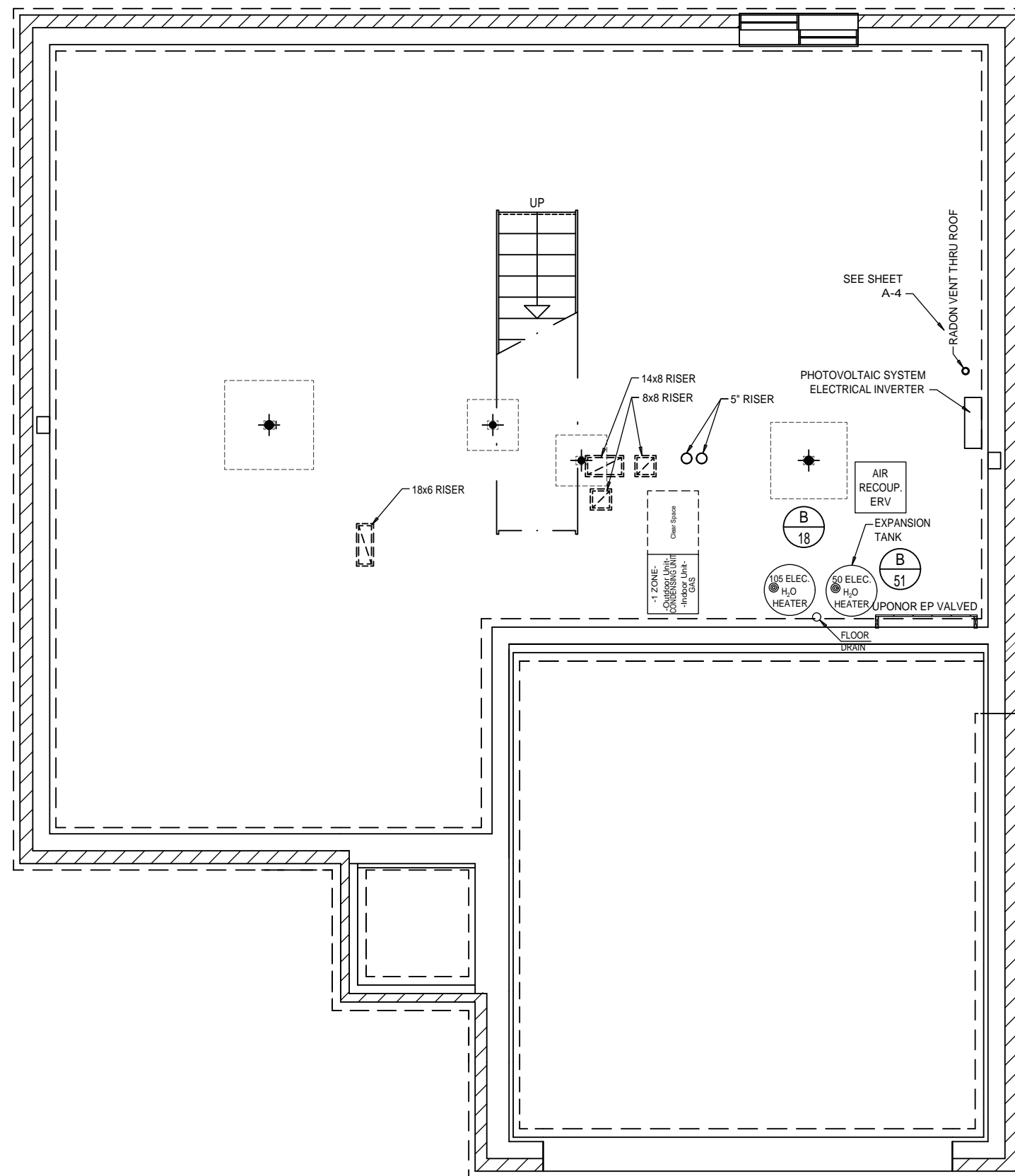
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| | FLUORESCENT LIGHT FIXTURE |
| | UNDER CABINET LIGHT FIXTURE |
| | DUPLEX CONVENIENCE OUTLET |
| | DUPLEX CONVENIENCE OUTLET (COUNTER HEIGHT) |
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| | DEDICATED LINE (RANGE) |
| | DEDICATED LINE (DRYER) |
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| | FAN UNIT ONLY |
| | SINGLE POLE SWITCH |
| | THREE-WAY SWITCH |
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| | DIMMER SWITCH |
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| | SMOKE DETECTOR |
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| | 36" ELECTRIC BASE HEATER |
| | 48" ELECTRIC BASE HEATER |

PLUMBING LEGEND

| | |
|--|----------------------|
| | FROST PROOF HOSE BIB |
| | HOT WATER |
| | COLD WATER |
| | SANITARY DRAIN |
| | PUMP LOCATION |
| | FAUCET LOCATION |
| | WALL MOUNT FAUCET |

NOTES:
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 2) ALL PLUMBING CONSTRUCTION TO CONFORM TO THE IRC PLUMBING REQUIREMENTS.

NOTE: DO NOT DRILL OR CUT ANY LVL LUMBER AND/OR ENGINEERED TRUSSES TO INSTALL MECHANICALS



NOTE: PREFERRED OUTDOOR UNIT PAD or BRACKET LOCATION PER HVAC DESIGN

PEX PLUMBING SYSTEM

| SERVICES TO HOUSE | MIN. SIZE |
|-------------------|-----------|
| WATER | -3/4" |
| SANITARY SEWER | -4" |

SINK

| | |
|----------------|---------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |

TUB

| | |
|----------------|---------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/2" |

SHOWER or TUB/SHOWER

| | |
|----------------|---------|
| COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -1 1/2" |

WASHING MACHINE

| | |
|----------------|-------|
| COLD WATER | -1/2" |
| HOT WATER | -1/2" |
| SANITARY DRAIN | -2" |

WATER HEATER

| | |
|------------|-------|
| COLD WATER | -3/4" |
| HOT WATER | -3/4" |

LAVATORY

| | |
|----------------|---------|
| COLD WATER | -3/8" |
| HOT WATER | -3/8" |
| SANITARY DRAIN | -1 1/4" |

WATER CLOSET

| | |
|----------------|-------|
| COLD WATER | -3/8" |
| SANITARY DRAIN | -3" |

HOSE BIBS

| | |
|------------|-------|
| COLD WATER | -1/2" |
|------------|-------|

FLOOR DRAIN

| | |
|----------------|-----|
| SANITARY DRAIN | -2" |
|----------------|-----|

| REVISIONS | DATE | BY | REMARKS |
|-----------|----------|-----|-----------------------|
| 1 | 03-04-10 | DHR | Engineering Revisions |

CRESTMONT
535 B

A RESIDENCE FOR:
COBBLESTONE LAB HOME

| | | |
|---------------------------|--|--|
| DRAWN BY: DHR | CUSTOMER SIGNATURE #1: [Signature] | CUSTOMER SIGNATURE #2: [Signature] |
| PLAN STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: [Signature] | SALESPERSON SIGNATURE #2: [Signature] |

BASEMENT MECHANICAL LAYOUT
 SCALE: 3/16" = 1'-0"

MECHANICAL EQUIPMENT SCHEDULE

GROUND SOURCE HEAT PUMP:
 MODEL: CARRIER, 50PTV-026-K-Y-E-30112
 CAPACITY: 2-TON
 CONFIGURATION: VERTICAL UPFLOW
 RETURN AIR: RIGHT SIDE
 CONTROLS: DELUXE D WITH WSPH OPEN MULTIPLE PROTOCOL COMMUNICATING CONTROL
 HX OPTION: HOT WATER REHEAT
 ELECTRICAL: 208/230-1-60
 OP. RANGE: 20F - 120F (EXTENDED)
 H2O OPTION: HOT WATER GENERATOR
 HEATING CFM: 600 (LOW STAGE "HEAT" SPEED, HEATING "SPEED" TAP 1, DIP SWITCH 3:
 ON, DIP SWITCH 4: ON)
 COOLING CFM: 520 (LOW STAGE "COOLING" SPEED, COOLING "SPEED" TAP 1, DIP SWITCH 1:
 ON, DIP SWITCH 2: ON)

DHW PREHEAT TANK:
 MANUFACTURER: MARATHON
 MODEL: MR105245
 CAPACITY: 105 GALLONS (400 LITERS)
 ELECTRICAL: 230-1-60, 4500 WATTS
 EF: 0.91

WATER HEATER (SECOND TANK):
 MANUFACTURER: MARATHON
 MODEL: MRS0245
 CAPACITY: 50 GALLONS (200 LITERS)
 ELECTRICAL: 230-1-60, 4500 WATTS
 EF: 0.94

ENERGY RECOVERY VENTILATOR (ERV):
 MANUFACTURER: ULTIMATE AIR BY STIRLING TECHNOLOGIES
 MODEL: RECOUPAERATOR 200-DX
 FAN MOTORS: VARIABLE-SPEED BPM
 ELECTRICAL: 120-1-60, 48 WATTS @ 65 CFM
 EFFICIENCY: 0.83 SENSIBLE @ 32F AND 65 CFM
 0.53 TOTAL @ 95F AND 64 CFM
 ACCESSORIES: HIGH-EFFICIENCY DEFROST
 6" WALL-TERMINATION VENT KIT
 DUAL-CONTROL TIMER (QUANTITY: 1)
 INTERMATIC SPRING-WOUND TIMER (QUANTITY: 3)

MECHANICAL NOTES & SPECIFICATIONS

- APPLICABLE WORK SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE LAWS, RULES, AND REGULATIONS OF APPLICABLE CITY, COUNTY, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION OVER PREMISES.
- THE FOLLOWING CONDITIONS WERE USED FOR EQUIPMENT SELECTION:
 - FRONT ELEVATION OPTION WITH THE LARGEST AMOUNT OF WINDOW AREAS.
 - THE OPTIONAL WINDOWS IN THE FAMILY ROOM AND THE OPTIONAL BAY WINDOWS IN THE DINING ROOM AND LIVING ROOM WERE INCLUDED.
 - THE HOUSE WAS PLACED AT AN ORIENTATION WITH RESPECT TO SUMMER SOLAR HEAT GAIN TO ACHIEVE MAXIMUM HEAT GAIN.
 - INDOOR DESIGN TEMPERATURES:
 - SUMMER = 76F
 - WINTER = 71F
 - OUTDOOR DESIGN TEMPERATURES FOR PITTSBURGH, PA:
 - SUMMER = 89F DB, 73F WB
 - WINTER = 2F
- MECHANICAL DETAILS ARE INTENDED TO BE DIAGRAMMATIC AND SHOULD BE USED IN CONJUNCTION WITH THE MECHANICAL FLOOR PLANS, TO COMPLETE THE DESIGN INTENT.
- MECHANICAL DRAWINGS AND DETAILS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE APPROXIMATE LOCATION OF OUTLETS, EQUIPMENT, DUCTWORK AND PIPING. COORDINATE WITH DETAILED ARCHITECTURAL, STRUCTURAL AND OTHER APPLICABLE DRAWINGS. DIMENSIONS GIVEN IN FIGURES ON THE PLANS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND ALL DIMENSIONS WHETHER GIVEN IN FIGURES OR SCALED, SHALL BE VERIFIED IN THE FIELD.
- CONDENSATE DRAIN PIPE MUST DRAIN TO A NEARBY HOUSE DRAIN.
- CONTRACTOR TO PERFORM TEST AND BALANCE. CONTRACTOR TO CERTIFY SUPPLY AND RETURN AIRFLOWS CALLED FOR ON DRAWINGS.

DIFFUSER SPECIFICATIONS

| TYPE | MANUFACTURER | MODEL # | DESCRIPTION | DIRECTIONAL THROW |
|-------------------------------|---------------|---------|--|-------------------|
| HIGH & LOW SIDEWALL DIFFUSERS | KRUEGER | K-JETA | SPUN ALUMINUM CONSTRUCTION | ADJUSTABLE |
| CEILING DIFFUSER | KRUEGER | K-JETA | SPUN ALUMINUM CONSTRUCTION | ADJUSTABLE |
| RETURN GRILLES | HART & COOLEY | 672 | STEEL CONSTRUCTION, 1/2" SPACED FINS SET AT 20° | --- |
| SINGLE POINT DIFFUSER | HART & COOLEY | 92HVO | STEEL CONSTRUCTION, ADJUSTABLE HORIZONTAL FRONT BARS | ADJUSTABLE |

HEATING & COOLING DESIGN LOADS AND AIRFLOWS BASED ON MANUAL J

DISTRIBUTED AIR DELIVERY SYSTEM

| ROOM | HEATING BTUH | COOLING BTUH | HEATING CFM | COOLING CFM | ADJUSTED HEATING CFM | ADJUSTED COOLING CFM |
|---------------------|---------------|---------------|-------------|-------------|----------------------|----------------------|
| FINISHED BASEMENT | 2,296 | 916 | 76 | 42 | 64 | 56 |
| BASEMENT BATH | 85 | 27 | 3 | 1 | 0 | 0 |
| UNFINISHED BASEMENT | 2,381 | 808 | 79 | 37 | 61 | 53 |
| BREAKFAST | 1,191 | 593 | 39 | 27 | 43 | 37 |
| KITCHEN | 255 | 108 | 8 | 5 | 0 | 0 |
| DINING | 1,021 | 862 | 34 | 39 | 52 | 45 |
| FAMILY | 1,914 | 997 | 63 | 45 | 58 | 50 |
| LAUNDRY | 510 | 135 | 17 | 6 | 0 | 0 |
| POWDER | 0 | 0 | 0 | 0 | 0 | 0 |
| FOYER | 2,041 | 593 | 68 | 27 | 49 | 43 |
| BEDROOM 2 | 1,191 | 889 | 39 | 40 | 48 | 42 |
| BEDROOM 3 | 893 | 2,102 | 30 | 96 | 75 | 65 |
| BEDROOM 4 | 1,616 | 1,617 | 54 | 74 | 74 | 64 |
| BATH 2 | 213 | 108 | 7 | 5 | 0 | 0 |
| MASTER BEDROOM | 1,616 | 1,186 | 54 | 54 | 63 | 55 |
| MASTER BATH | 468 | 216 | 15 | 10 | 14 | 12 |
| MASTER WIC | 213 | 108 | 7 | 5 | 0 | 0 |
| UPPER HALLWAY | 213 | 162 | 7 | 7 | 0 | 0 |
| TOTALS | 18,115 | 11,424 | 600 | 520 | 600 | 520 |
| SENSIBLE | --- | 9,334 | --- | --- | --- | --- |
| LATENT | --- | 2,090 | --- | --- | --- | --- |

SINGLE POINT AIR DELIVERY SYSTEM

| ROOM | HEATING BTUH | COOLING BTUH | HEATING CFM | COOLING CFM | ADJUSTED HEATING CFM | ADJUSTED COOLING CFM |
|---------------------|---------------|---------------|-------------|-------------|----------------------|----------------------|
| FINISHED BASEMENT | 2,296 | 916 | 76 | 42 | 64 | 56 |
| BASEMENT BATH | 85 | 27 | 3 | 1 | 0 | 0 |
| UNFINISHED BASEMENT | 2,381 | 808 | 79 | 37 | 61 | 53 |
| 1st FLOOR | 6,931 | 3,287 | 230 | 150 | 201 | 175 |
| 2nd FLOOR | 6,421 | 6,386 | 213 | 291 | 274 | 237 |
| TOTALS | 18,115 | 11,424 | 600 | 520 | 600 | 520 |
| SENSIBLE | --- | 9,334 | --- | --- | --- | --- |
| LATENT | --- | 2,090 | --- | --- | --- | --- |

DUCT SYSTEM NOTES

- RIGID DUCTWORK NOTES:**
 - DIMENSIONS SHOWN ARE NET CLEAR INSIDE DIMENSIONS. ALLOWANCES MUST BE MADE FOR DUCT LINER WHERE CALLED FOR.
 - DUCTS SHALL BE SUPPORTED BY GALVANIZED STEEL HANGERS AND CONNECTED TO THE STRUCTURE WITH ATTACHMENTS AS SPECIFIED IN THE LATEST SMACNA MANUAL.
 - ALL ELBOWS SHALL HAVE MINIMUM INSIDE RADIUS 6".
- FLEXIBLE DUCTWORK NOTES:**
 - PROVIDE INSULATED FLEXIBLE DUCTWORK INSTALLED IN STRICT CONFORMANCE TO MANUFACTURES RECOMMENDATIONS.
 - ANY FLEX DUCT BRANCH MUST BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.
 - PROVIDE PRE-FABRICATED FITTINGS AT ALL BRANCH TAKE-OFFS, 90° ELBOWS AND TRANSITIONS.
 - MINIMUM RADIUS OF ANY BEND IN THE DUCTWORK SHALL BE NO LESS THAN 1 1/2X THE DIAMETER OF THE DUCT.
 - DUCTS SHALL BE SUPPORTED WITH NYLON STRAPS. SUPPORTS SHALL BE PROVIDED AT MINIMUM OF EVERY 6'-0".
 - FLEX DUCT LENGTH SHALL NOT BE MORE THAN 10% GREATER THAN REQUIRED LENGTH. THE FLEX DUCT MUST BE STRETCHED TO ITS REQUIRED LENGTH.
 - FASTEN DUCTWORK TO REGISTERS, FITTINGS AND EQUIPMENT UTILIZING ZIP TIES TO METAL.
- ALL DUCTWORK IN CONDITIONED AND UNCONDITIONED SPACE, INCLUDING ATTIC JUMP DUCTS, MUST BE SEALED WITH TYPE UL-181 APPROVED WATER BASED MASTIC APPLIED AT PRE-FABRICATED AND FIELD FABRICATED JOINTS AND SEAMS IN THE DUCT SYSTEM.
- ALL BRANCH DUCT CONNECTIONS TO AIR OUTLETS/INLETS SHALL BE THE SAME SIZE AS THE DEVICE NECK UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- ALL BRANCH TAKE-OFF'S SHALL BE 12" AWAY FROM ANY ELBOW OR REDUCER.
- THE TOP OF ALL HIGH SIDEWALL DIFFUSER LOCATIONS SHOULD BE LOCATED NO MORE THAN 6" DOWN FROM THE FINISHED CEILING.
- ALL ACCESSIBLE SUPPLY BRANCHES SHALL HAVE MANUAL BALANCING DAMPERS INSTALLED TO ENSURE PROPER BALANCING.

TRANSFER GRILLE & JUMP DUCT SIZING CHART (400 FPM VELOCITY) - DESIGN SPECIFICATIONS

| TRANSFER GRILLE SIZE | MAXIMUM RETURN CFM | JUMP DUCT SIZE | MAXIMUM RETURN CFM |
|----------------------|--------------------|----------------|--------------------|
| 8" x 6" | 89 | 8" DIA. | 90 |
| 10" x 6" | 112 | 10" DIA. | 140 |
| 12" x 6" | 135 | 10" DIA. | 140 |
| 14" x 6" | 158 | 12" DIA. | 200 |
| 10" x 10" | 188 | 12" DIA. | 200 |
| 12" x 12" | 272 | 14" DIA. | 280 |
| 14" x 14" | 372 | 16" DIA. | 370 |
| 16" x 16" | 488 | 18" DIA. | 470 |

LEGEND

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|--------|---|--------|---|
| | VERTICAL SUPPLY DUCT | | BATHROOM EXHAUST FAN |
| | VERTICAL RETURN DUCT | | FLEX DUCT BRANCH |
| | ZONE DAMPER | | SHEET METAL ROUND DUCT BRANCH |
| | BALANCING DAMPER | | DUCT ABOVE, TYPE AS NOTED |
| | CEILING DIFFUSER, THROWS DESIGNATED BY ARROWS | | TRANSFER DUCT WITH CEILING GRILLES |
| | FLOOR DIFFUSER, THROWS DESIGNATED BY ARROWS | | HIGH / LOW WALL OR OVER-THE-DOOR TRANSFER GRILLES |
| | OVAL WALL STACK | | TOE KICK CONNECTION AND DIFFUSER |
| | RETURN DUCT AND GRILLE | | OVAL WALL STACK AND DIFFUSER |
| | THERMOSTAT | | SHEET METAL T - CONNECTION |

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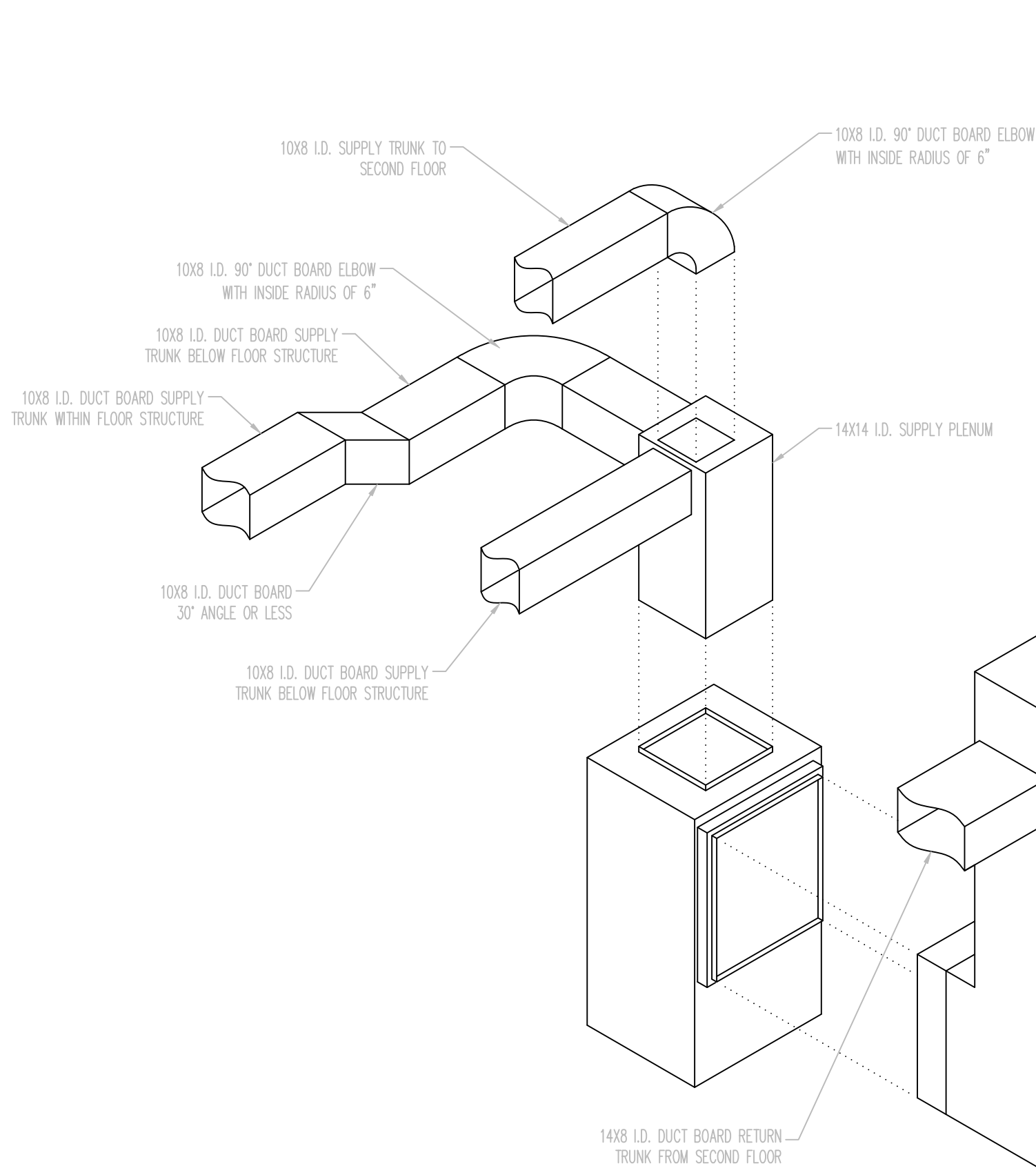


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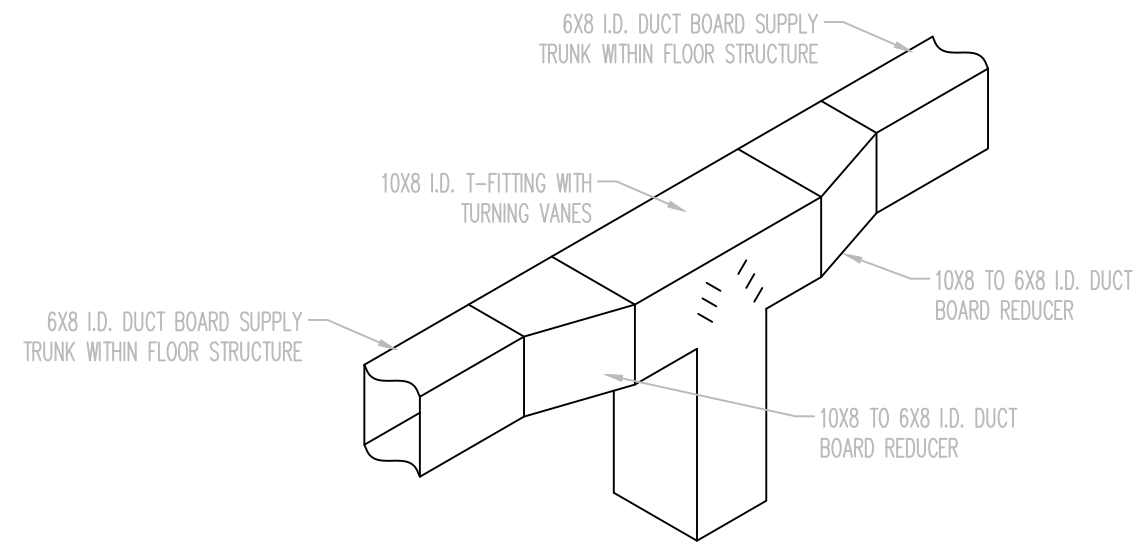
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 PLAN STARTED 12/11/08

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TRUELINE NUMBER
630103



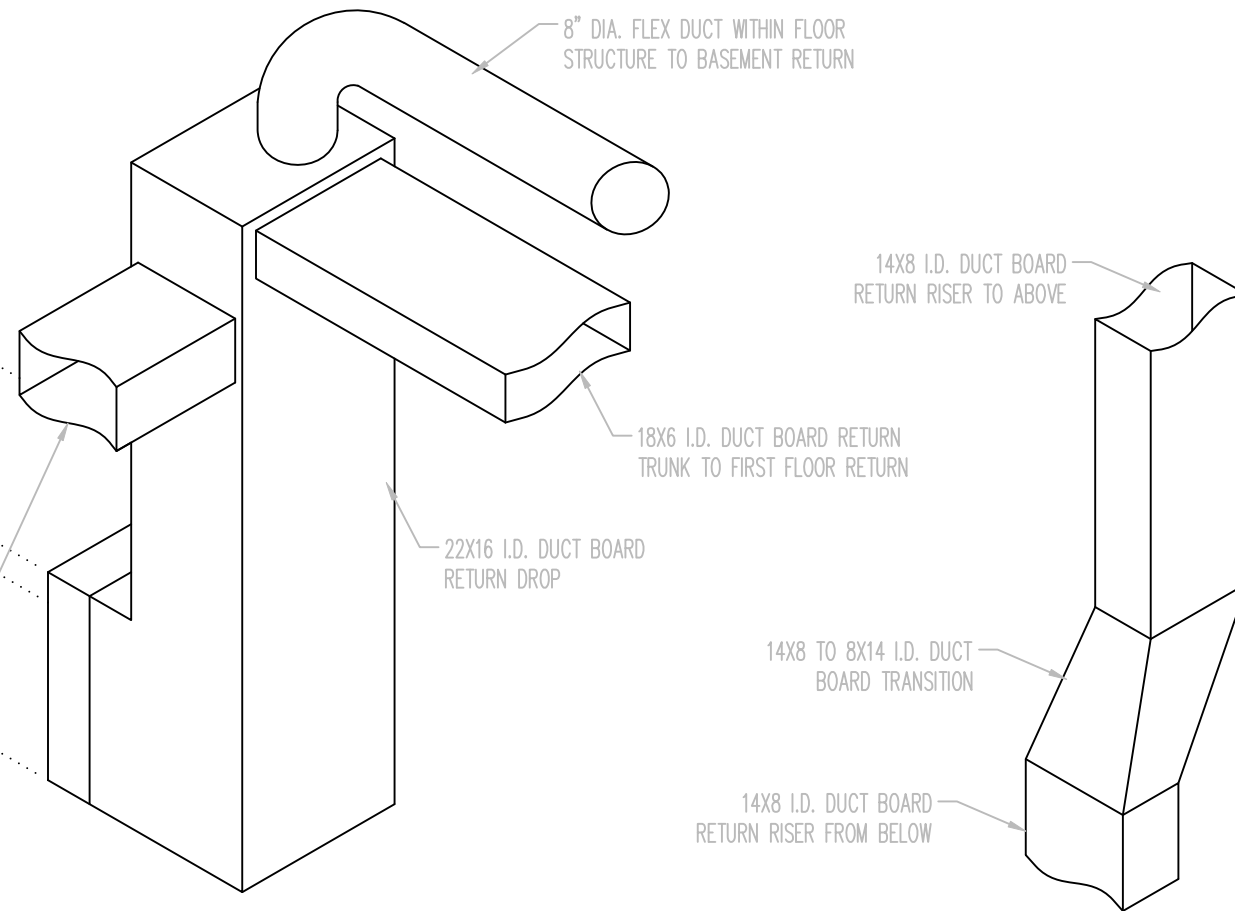
SUPPLY AND RETURN PLENUM ISOMETRIC

SCALE: N.T.S.



2nd FLOOR SUPPLY T-FITTING DETAIL

SCALE: N.T.S.



2nd FLOOR RETURN TRANSITION DETAIL

SCALE: N.T.S.

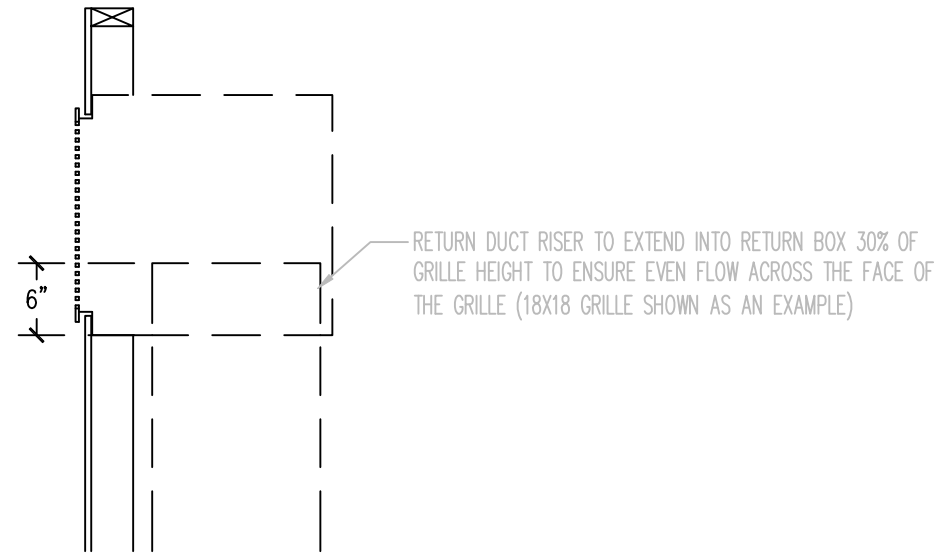
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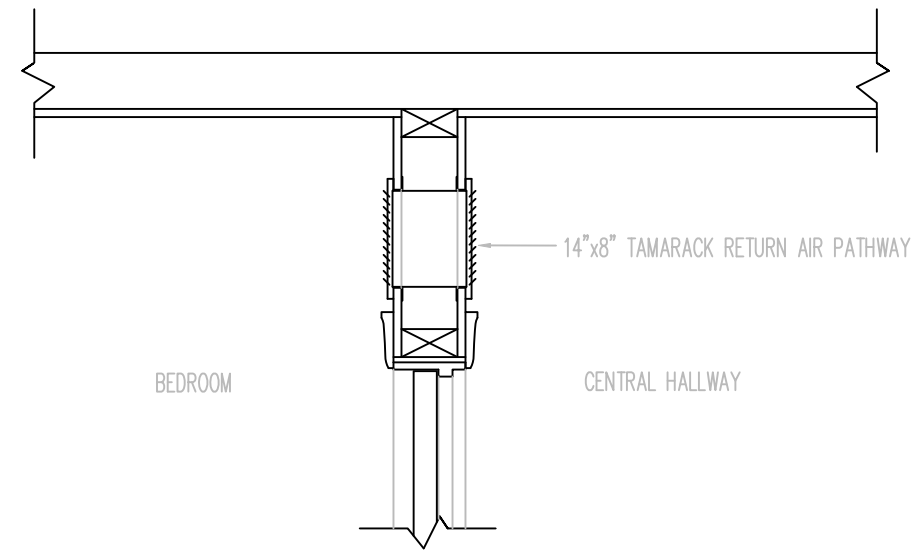
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TRUELINE NUMBER
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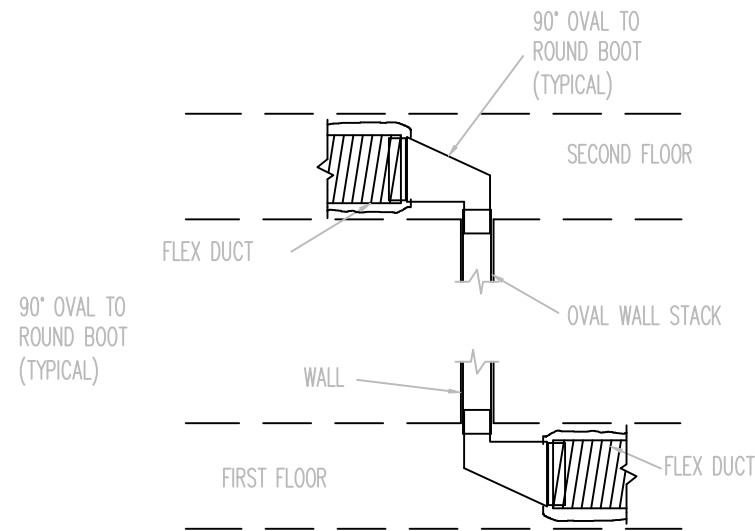
FIRST FLOOR CENTRAL RETURN – GRILLE BOX DETAIL

SCALE: N.T.S.



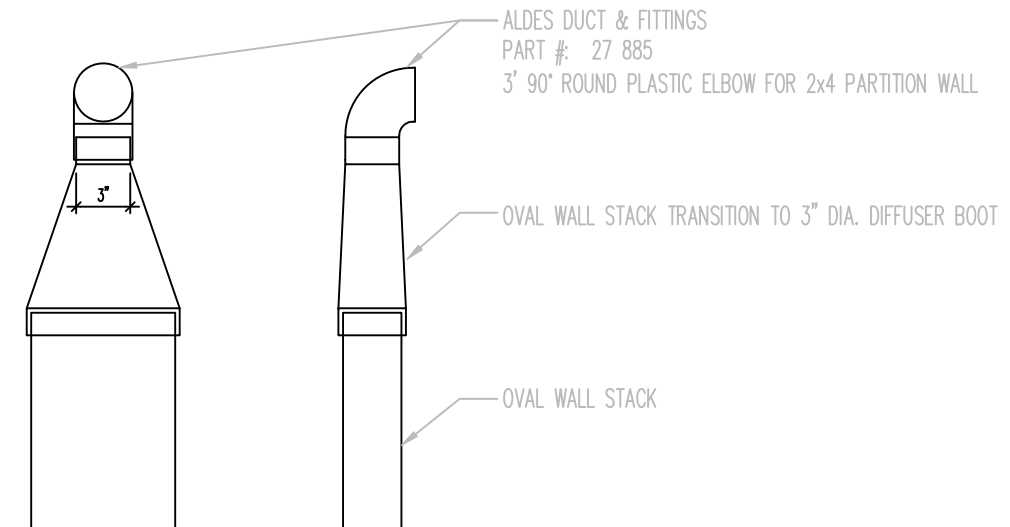
OVER THE DOOR TRANSFER GRILLE

SCALE: N.T.S.



TYPICAL DETAIL
DUCT BRANCH TO WALL STACK CONNECTIONS

SCALE: N.T.S.



TYPICAL DETAIL
OVAL WALL STACK TRANSITION TO DIFFUSER BOOT

SCALE: N.T.S.

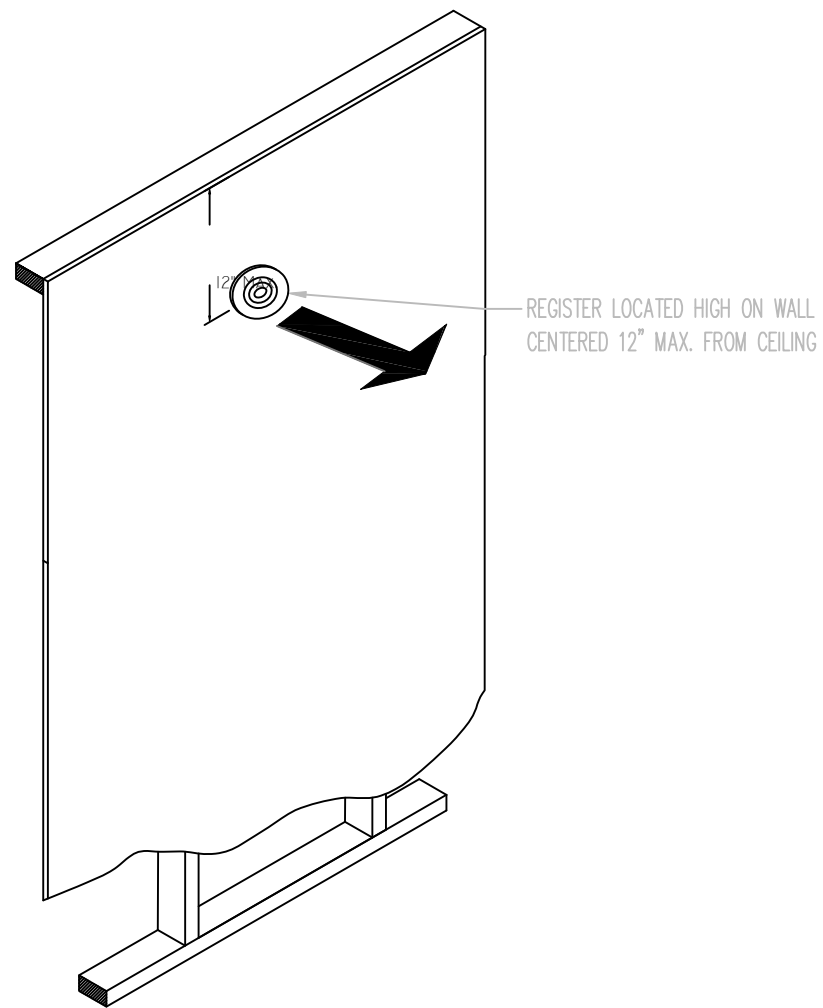
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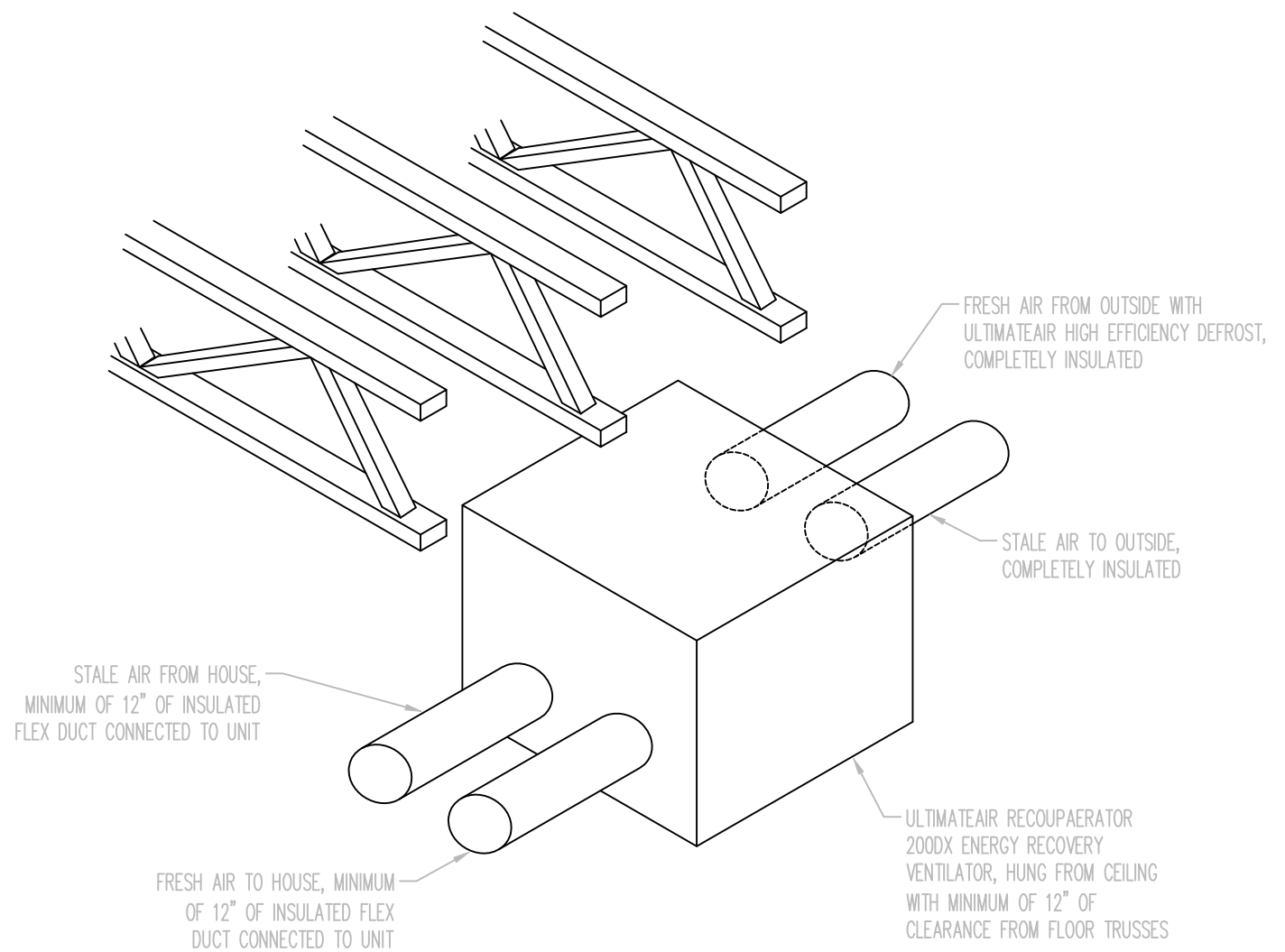
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SALESPERSON SIGNATURE #1:
SALESPERSON SIGNATURE #2:

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TYPICAL DETAIL – HIGH WALL DIFFUSER PLACEMENT

SCALE: N.T.S.



SUPPLY AND RETURN PLENUM ISOMETRIC

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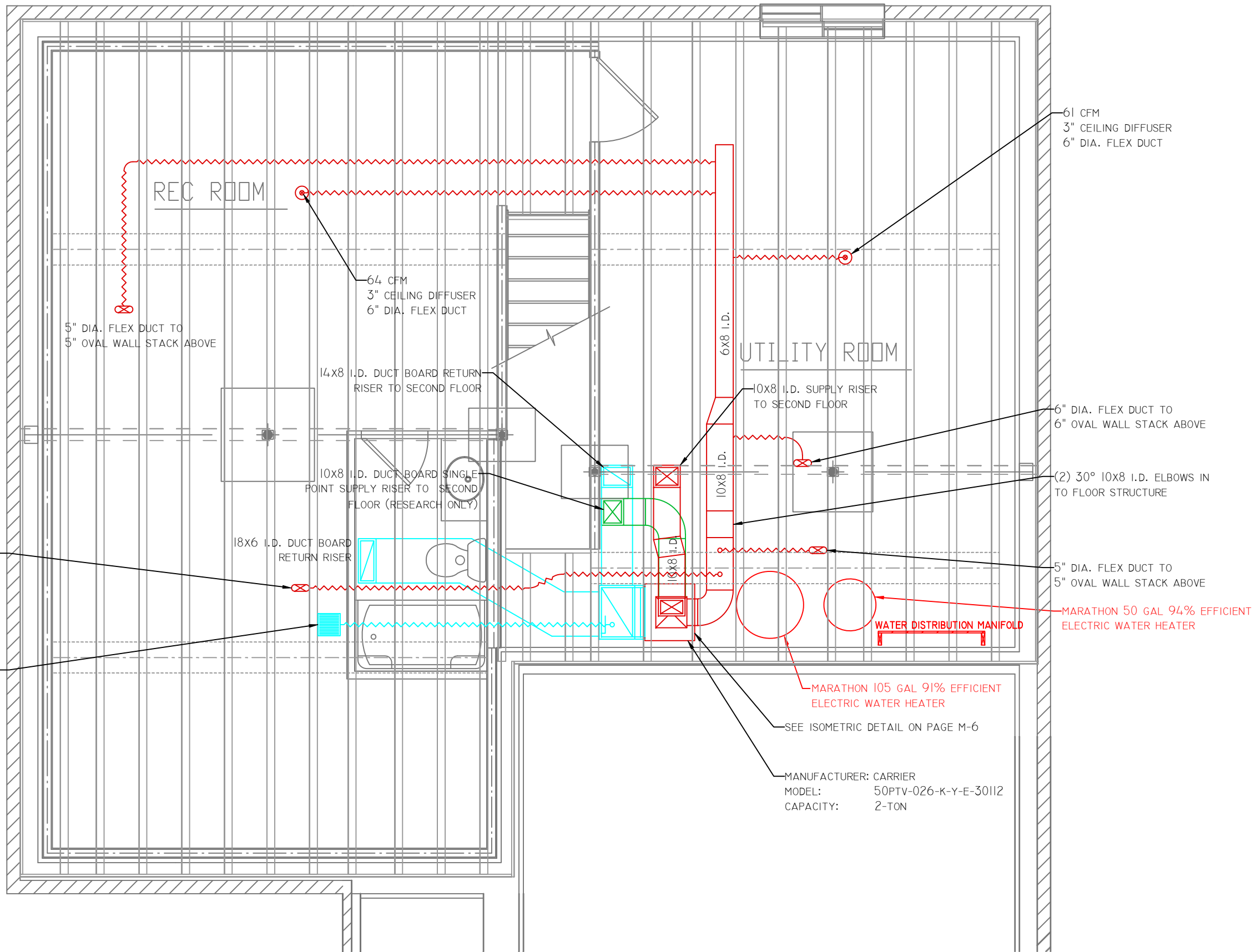
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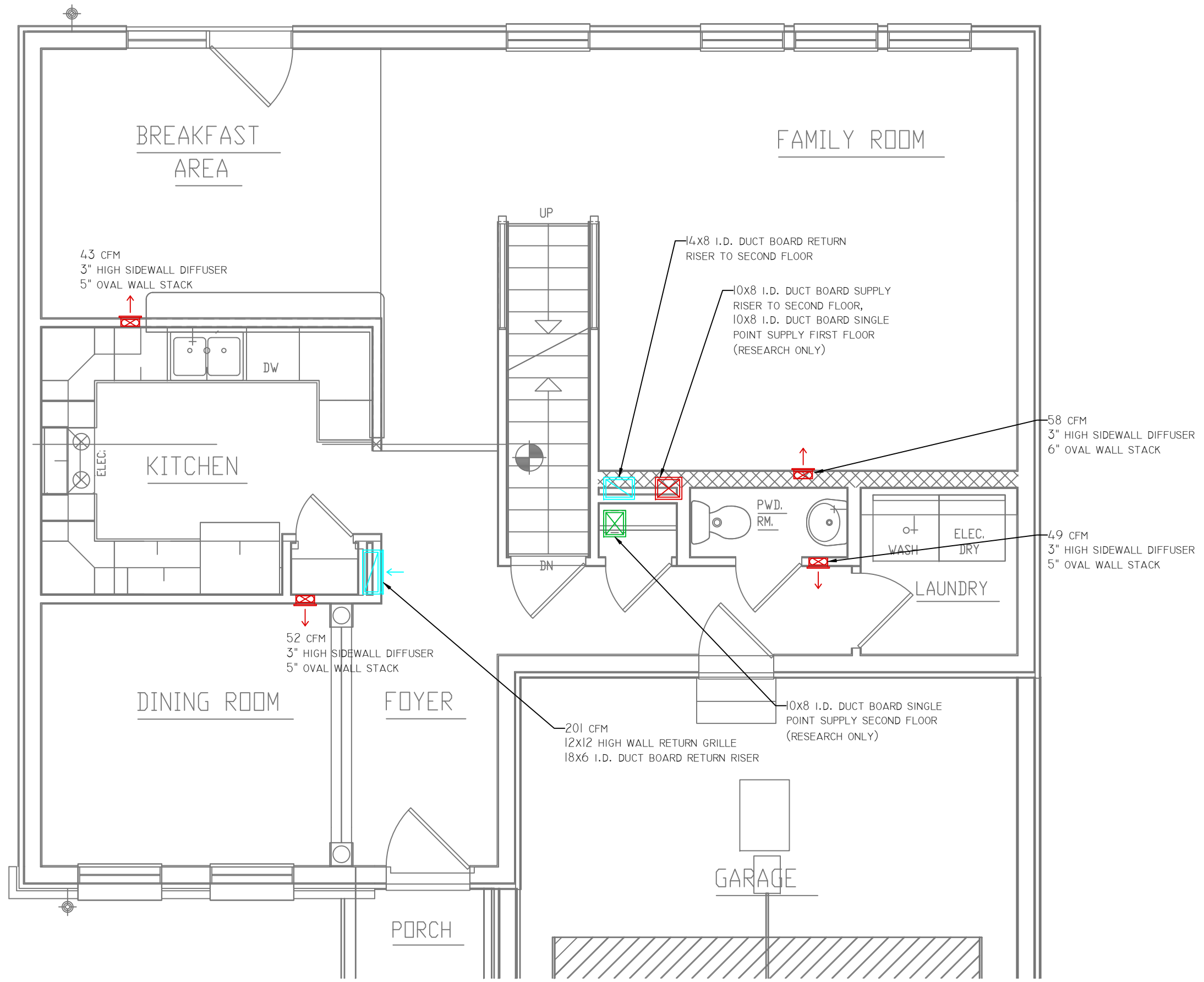
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COBBLESTONE LAB HOME

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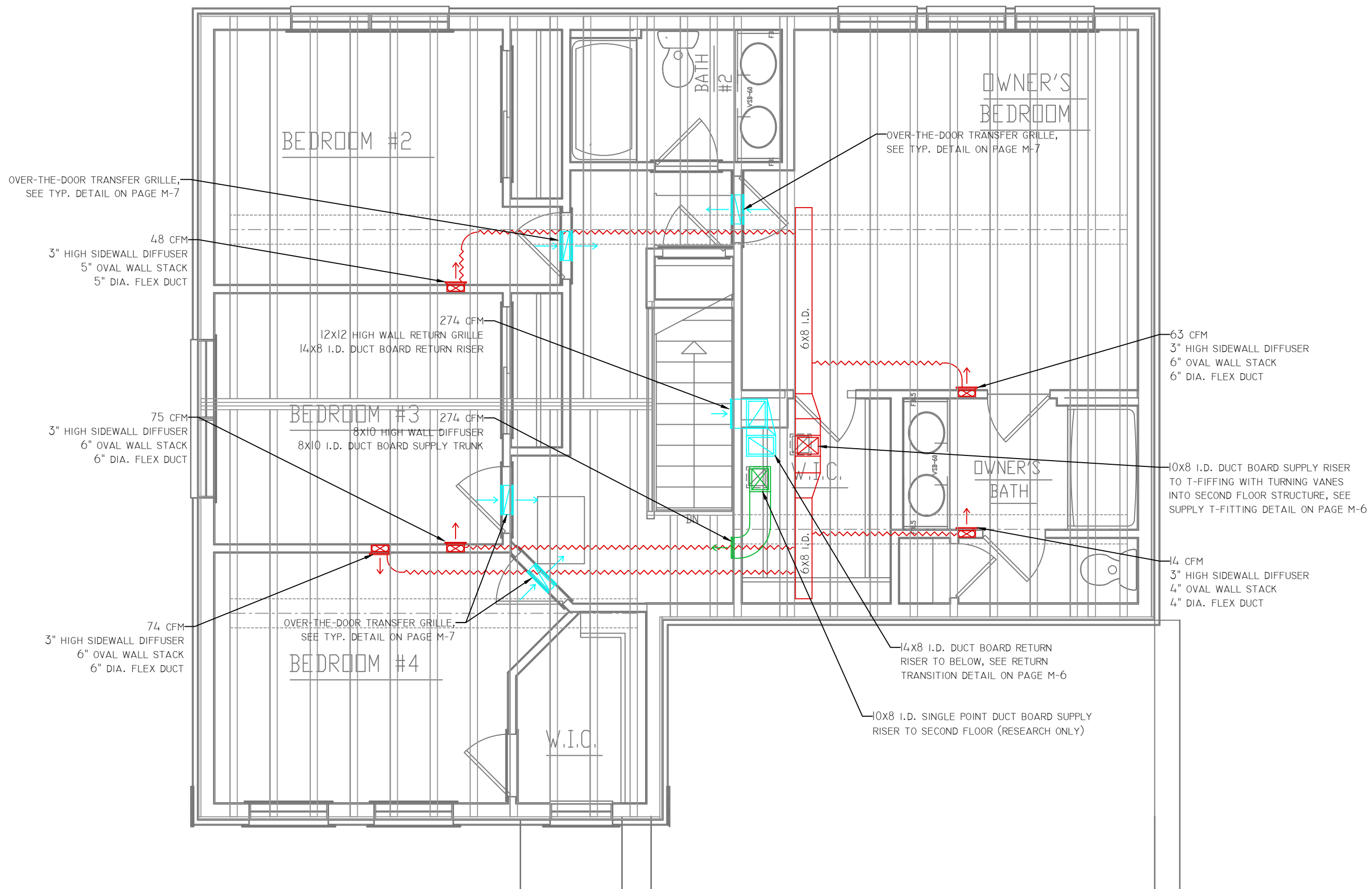
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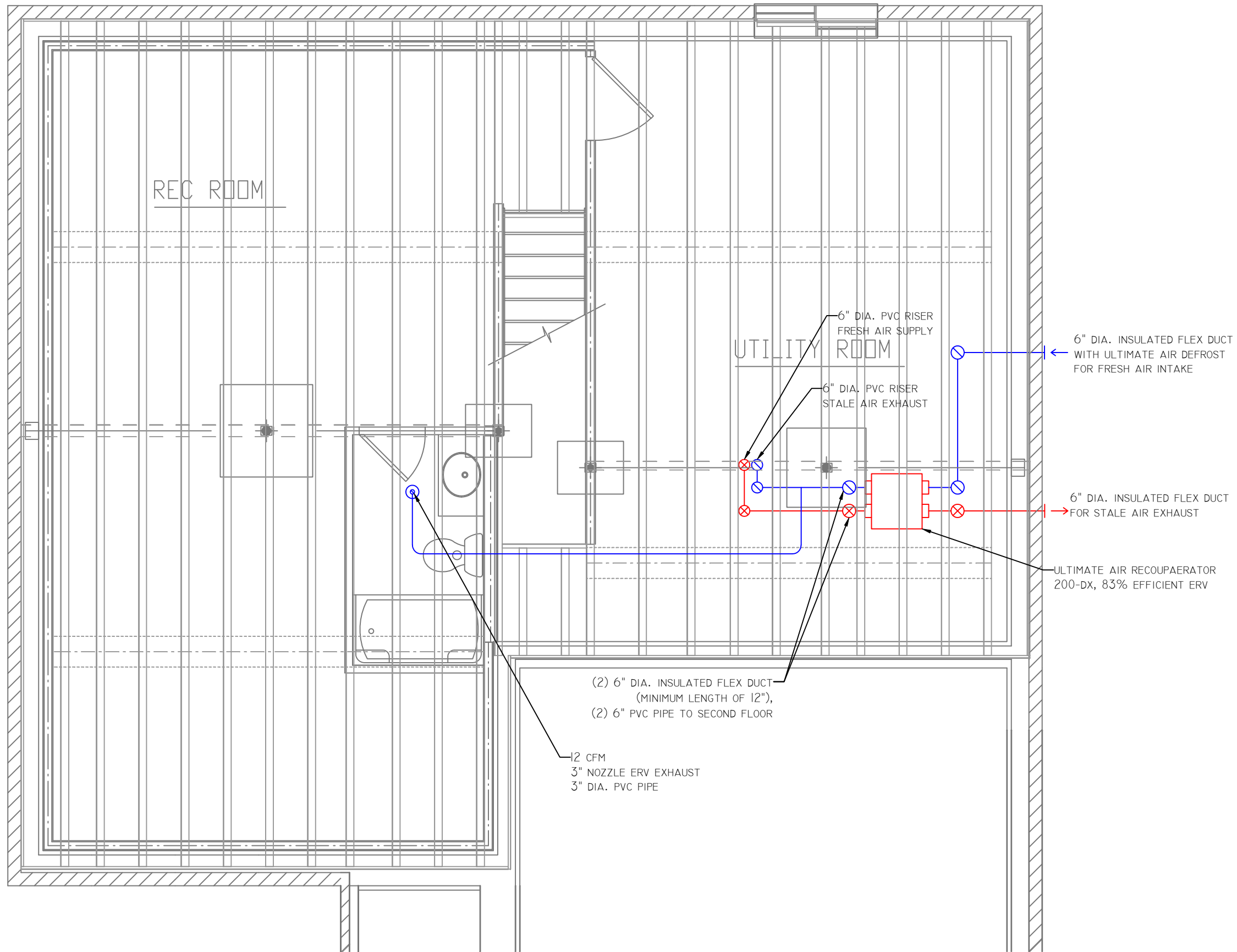
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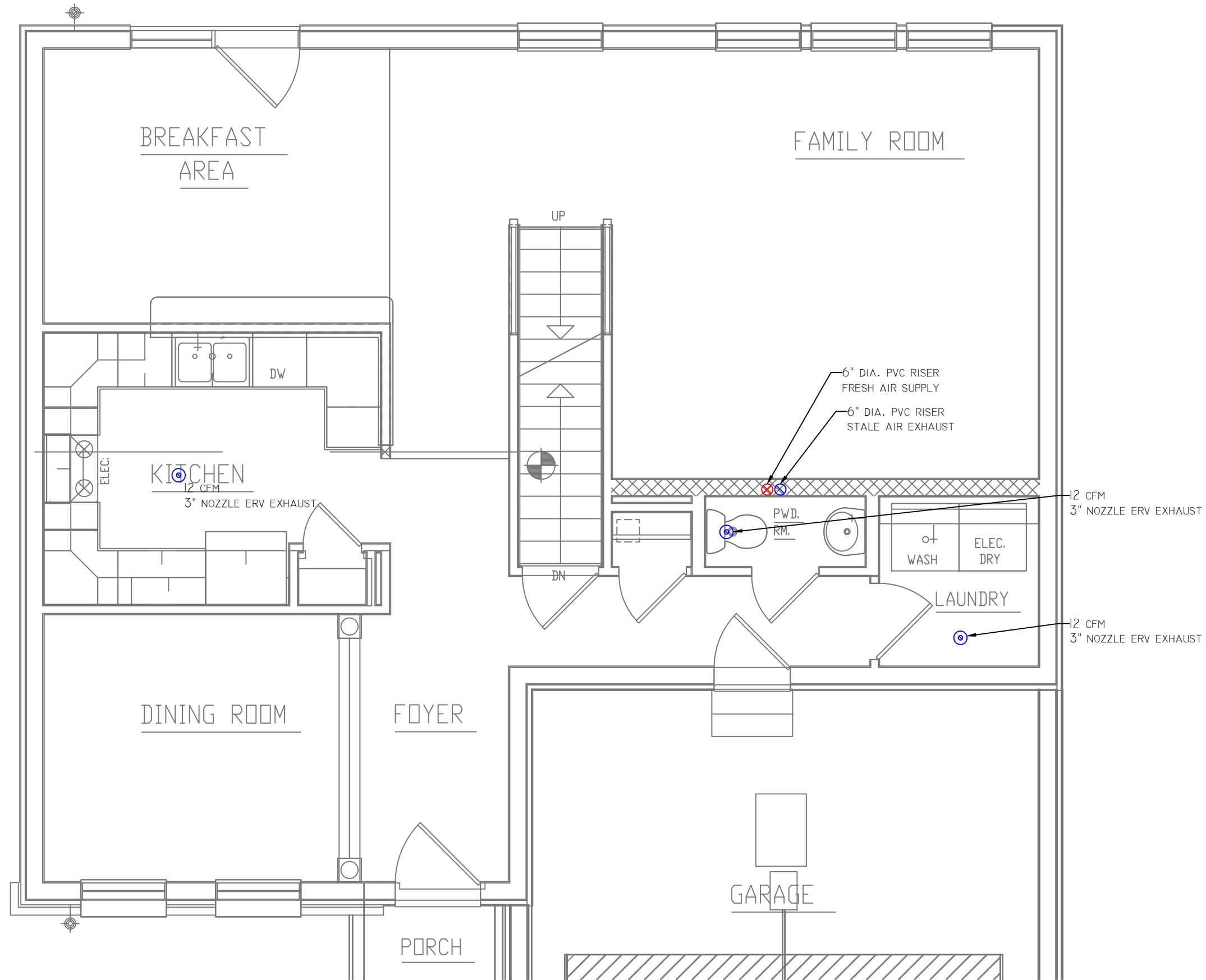
| ERV AIRFLOWS | | |
|---------------------|------------|-------------|
| ROOM | ERV SUPPLY | ERV EXHAUST |
| FINISHED BASEMENT | 0 | 0 |
| BASEMENT BATH | 0 | 12 |
| UNFINISHED BASEMENT | 0 | 0 |
| BREAKFAST | 0 | 0 |
| KITCHEN | 0 | 12 |
| DINING | 0 | 0 |
| FAMILY | 0 | 0 |
| LAUNDRY | 0 | 12 |
| POWDER | 0 | 12 |
| FOYER | 0 | 0 |
| BEDROOM 2 | 21 | 0 |
| BEDROOM 3 | 21 | 0 |
| BEDROOM 4 | 21 | 0 |
| BATH 2 | 0 | 12 |
| MASTER BEDROOM | 21 | 0 |
| MASTER BATH | 0 | 24 |
| MASTER WIC | 0 | 0 |
| UPPER HALLWAY | 0 | 0 |
| TOTALS | 84 | 84 |



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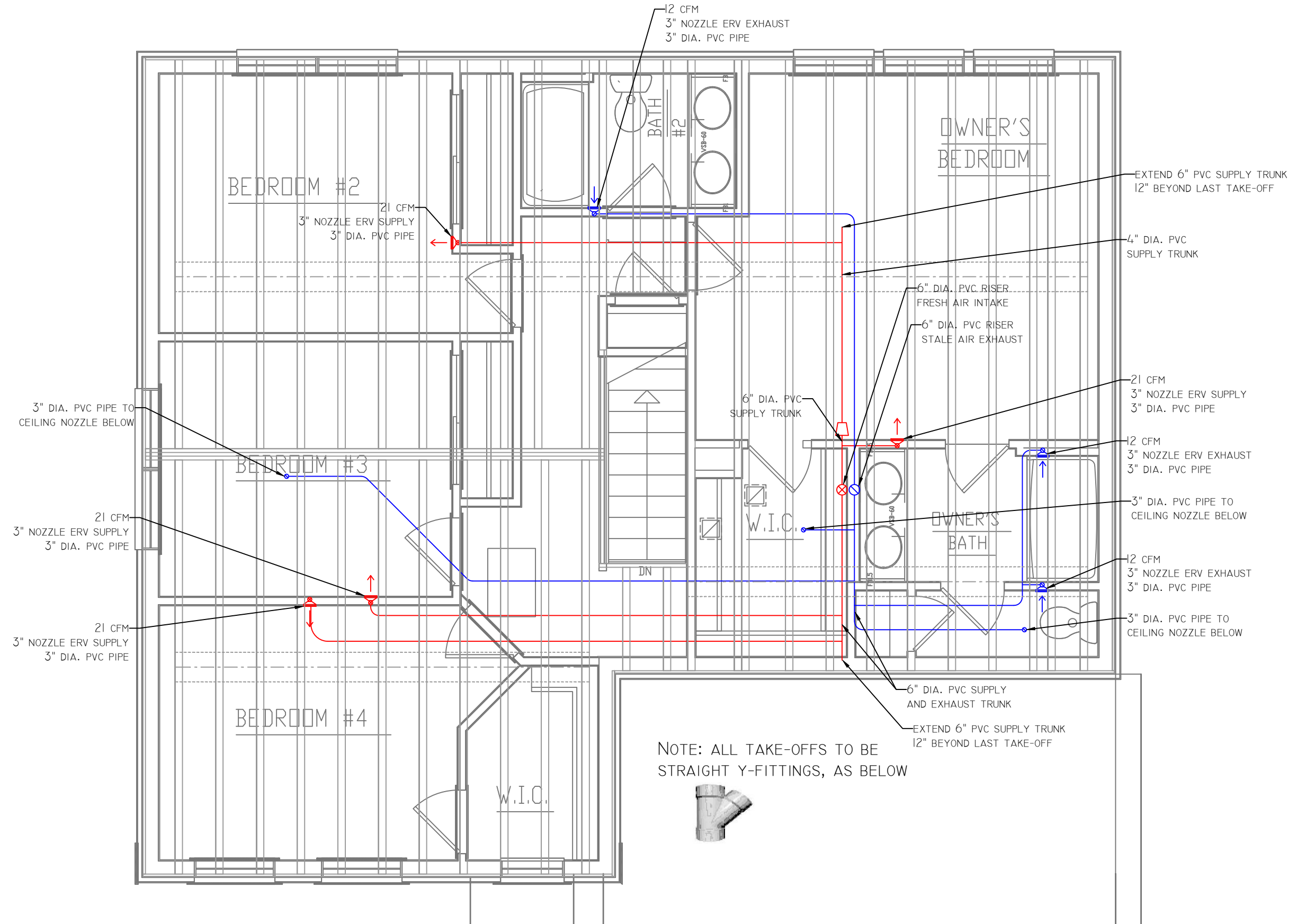
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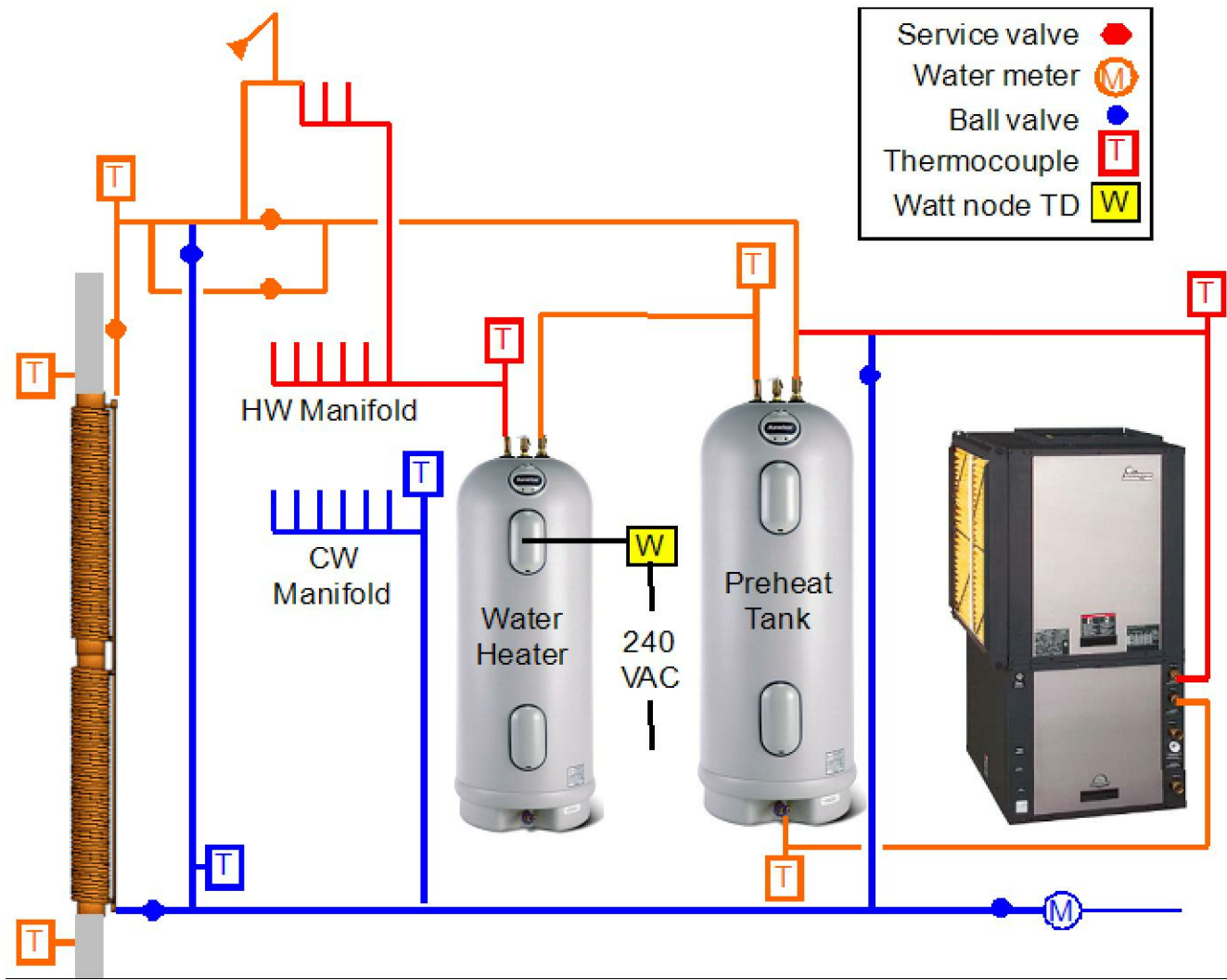
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NOTE: ALL TAKE-OFFS TO BE STRAIGHT Y-FITTINGS, AS BELOW

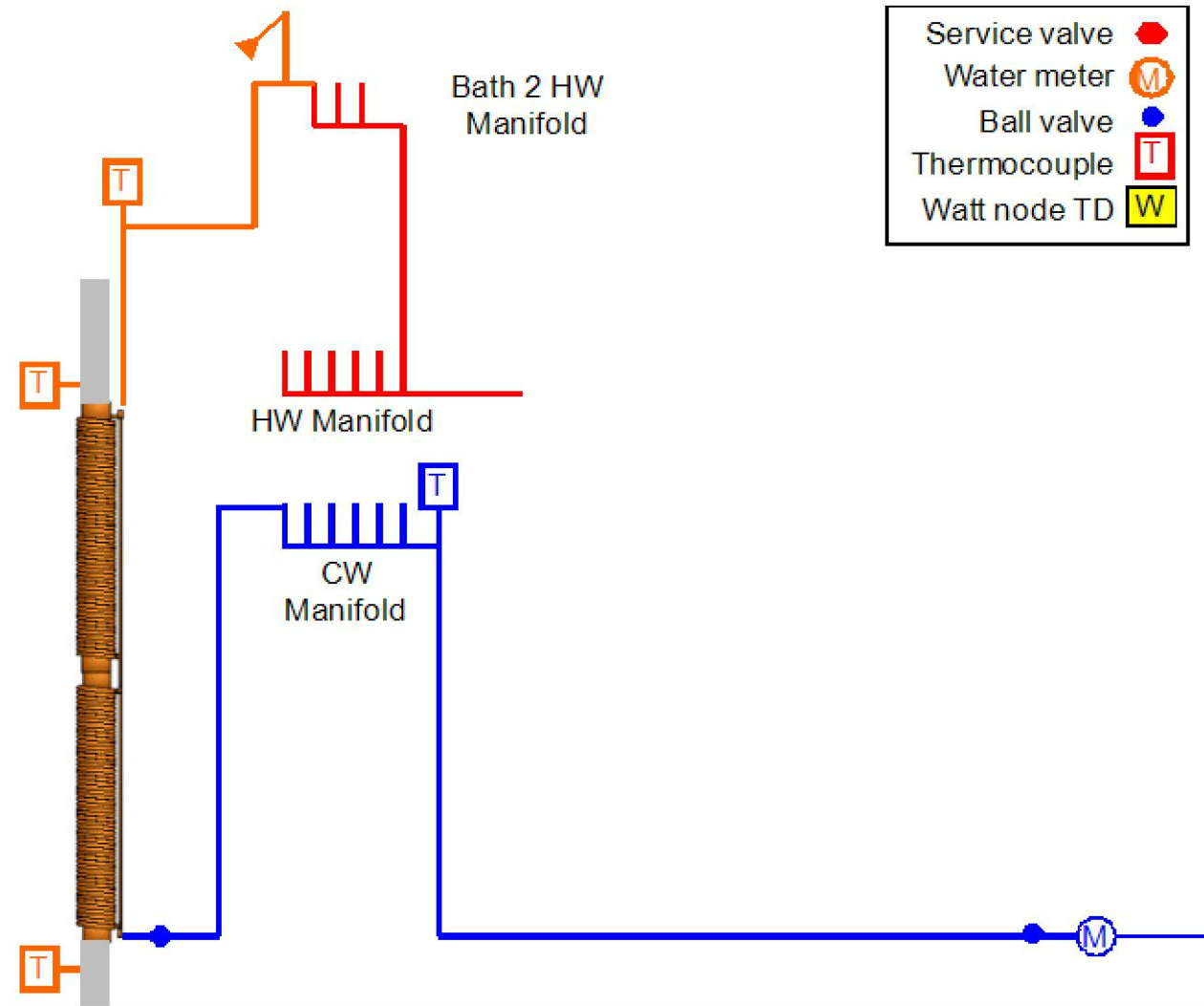


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| COBBLESTONE LAB HOME | |
| DRAWN BY: | CUSTOMER SIGNATURE #1: |
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| PAGE NO. | |
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| 630103 | |



BATH 2 – DRAIN WATER HEAT RECOVERY SCHEMATIC

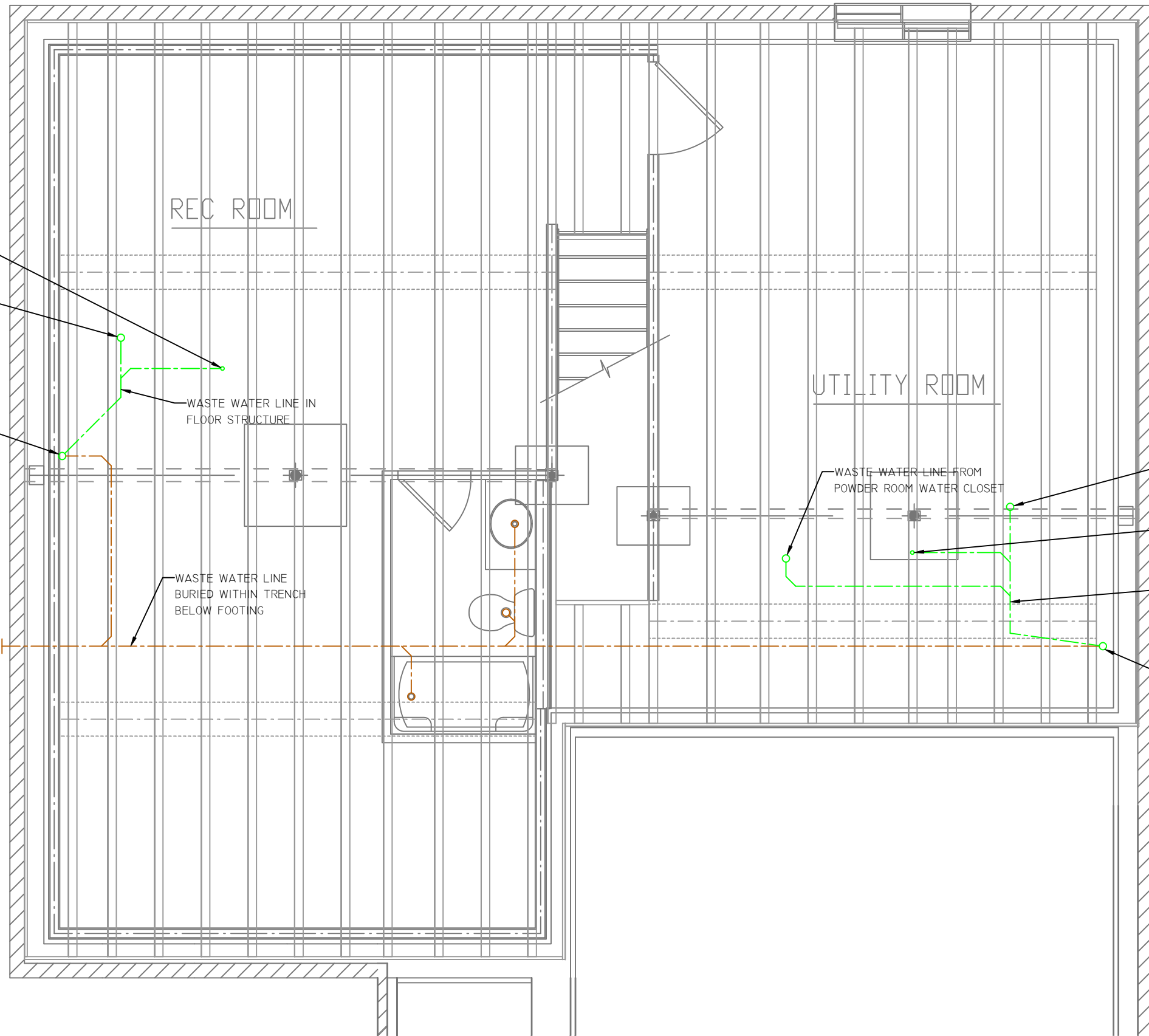
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MASTER BATH – DRAIN WATER HEAT RECOVERY SCHEMATIC

SCALE: N.T.S.

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| CRESTMONT | | 535 B | |
| COBBLESTONE LAB HOME | | | |
| S.N.: | | | |
| A RESIDENCE FOR: | | CUSTOMER SIGNATURE #2: | |
| DRAWN BY: IBACOS | | CUSTOMER SIGNATURE #1: | |
| PLAN STARTED: 12/11/08 | | SALESPERSON SIGNATURE #1: | |
| PAGE NO. | | M-15 | |
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| TRUeline NUMBER | | 630103 | |



| PEX Plumbing System | |
|-----------------------------|-----------|
| Services to House | Min. Size |
| Water | 3/4" |
| Sanitary Sewer | 4" |
| Bath 2 | |
| HW Manifold | 3/4" |
| Master Bath | |
| HW Manifold | 3/4" |
| Kitchen Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Tub | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Shower or Tub/Shower | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 1 1/2" |
| Washing Machine | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 2" |
| Bathroom Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/4" |
| Water Closet | |
| Cold Water | 3/8" |
| Sanitary Drain | 3" |
| Hose Bibs | |
| Cold Water | 1/2" |
| Floor Drain | |
| Sanitary Sewer | 2" |

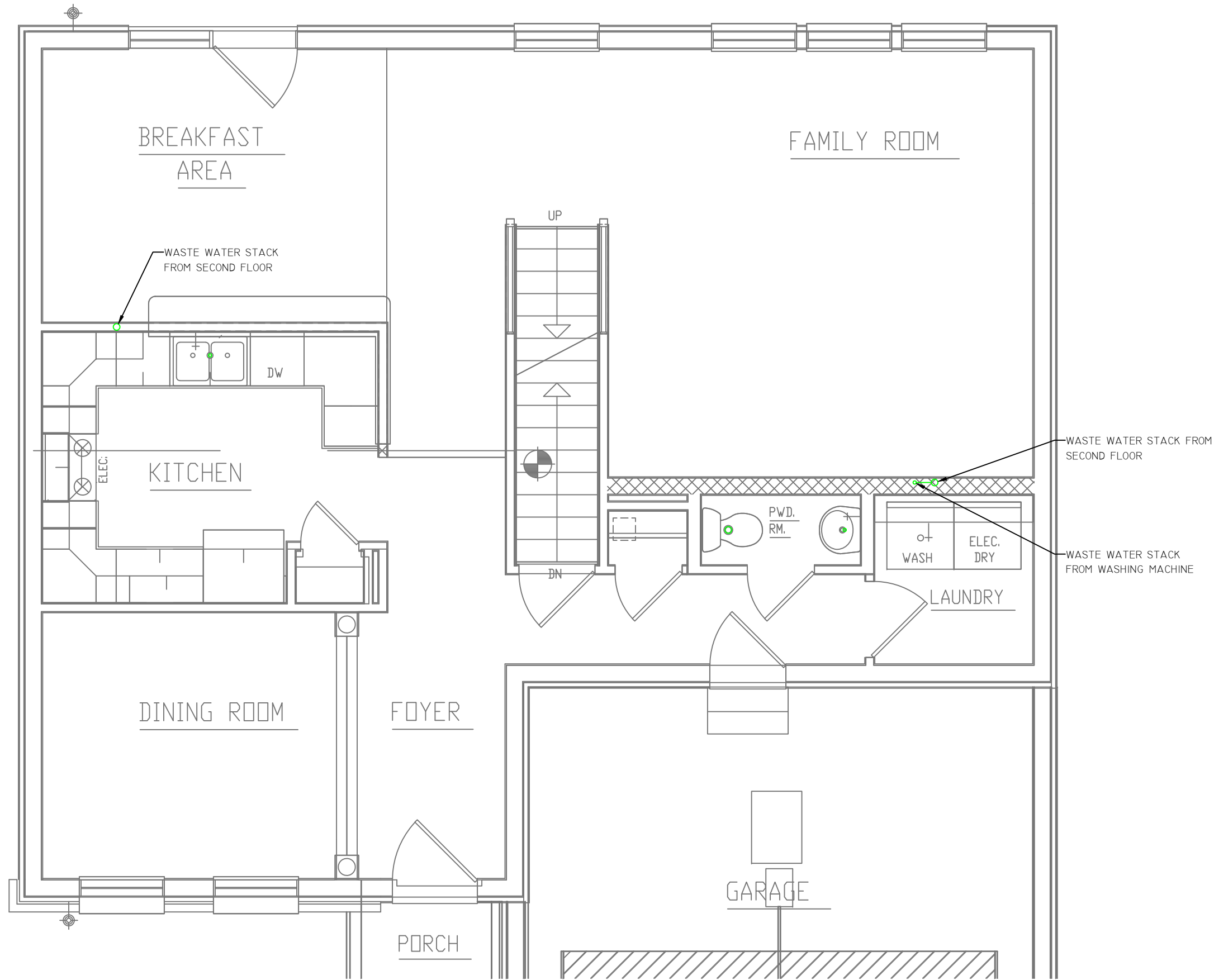
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S.N. # _____
A RESIDENCE FOR:
COBBLESTONE LAB HOME
DRAWN BY: IBACOS
PLAN STARTED: 12/11/08
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CUSTOMER SIGNATURE #2: _____
SALESPERSON SIGNATURE #1: _____
SALESPERSON SIGNATURE #2: _____

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JOB NUMBER
27_90174
TRUeline NUMBER
630103



| PEX Plumbing System | |
|-----------------------------|-----------|
| Services to House | Min. Size |
| Water | 3/4" |
| Sanitary Sewer | 4" |
| Bath 2 | |
| HW Manifold | 3/4" |
| Master Bath | |
| HW Manifold | 3/4" |
| Kitchen Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Tub | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Shower or Tub/Shower | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 1 1/2" |
| Washing Machine | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 2" |
| Bathroom Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/4" |
| Water Closet | |
| Cold Water | 3/8" |
| Sanitary Drain | 3" |
| Hose Bibs | |
| Cold Water | 1/2" |
| Floor Drain | |
| Sanitary Sewer | 2" |

| REMARKS | DATE | DRAWN BY |
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A RESIDENCE FOR:
COBBLESTONE LAB HOME

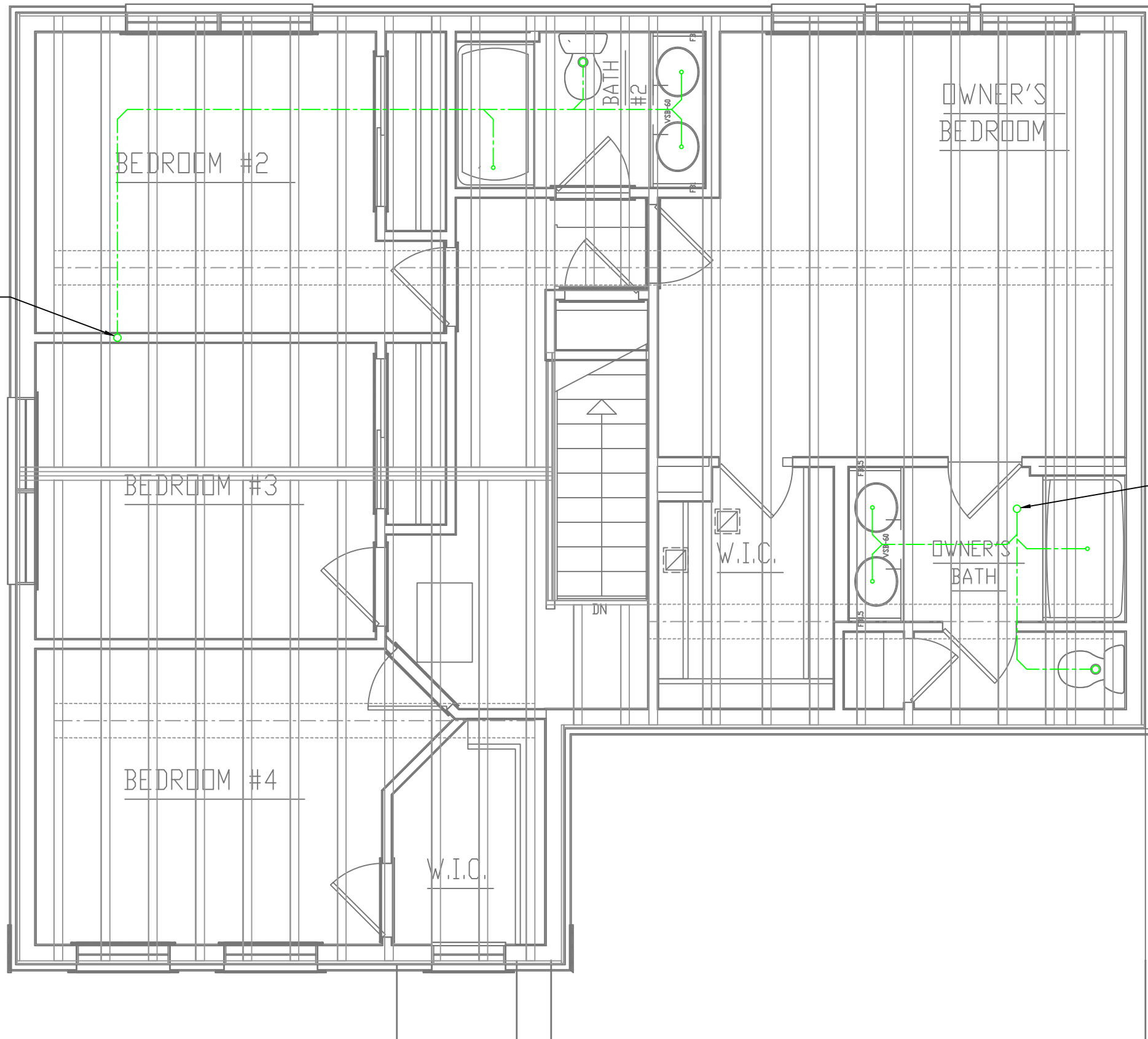
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| PLAN STARTED: 12/11/08 | SALESPERSON SIGNATURE #1: | SALESPERSON SIGNATURE #2: |

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27_90174

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WASTE WATER STACK TO BELOW

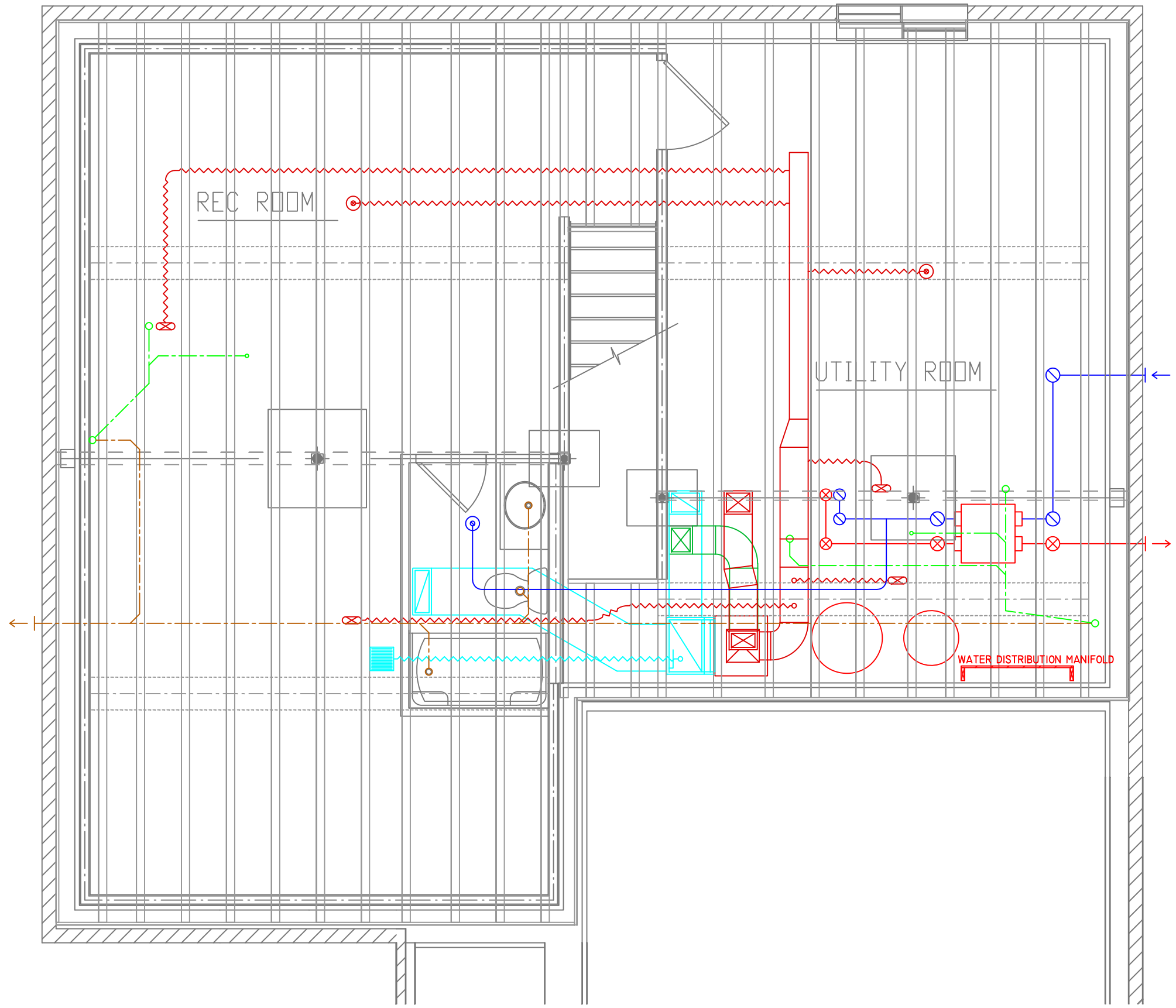
WASTE WATER STACK TO BELOW

| PEX Plumbing System | |
|-----------------------------|-----------|
| Services to House | Min. Size |
| Water | 3/4" |
| Sanitary Sewer | 4" |
| Bath 2 | |
| HW Manifold | 3/4" |
| Master Bath | |
| HW Manifold | 3/4" |
| Kitchen Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Tub | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/2" |
| Shower or Tub/Shower | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 1 1/2" |
| Washing Machine | |
| Cold Water | 1/2" |
| Hot Water | 1/2" |
| Sanitary Drain | 2" |
| Bathroom Sink | |
| Cold Water | 3/8" |
| Hot Water | 3/8" |
| Sanitary Drain | 1 1/4" |
| Water Closet | |
| Cold Water | 3/8" |
| Sanitary Drain | 3" |
| Hose Bibs | |
| Cold Water | 1/2" |
| Floor Drain | |
| Sanitary Sewer | 2" |

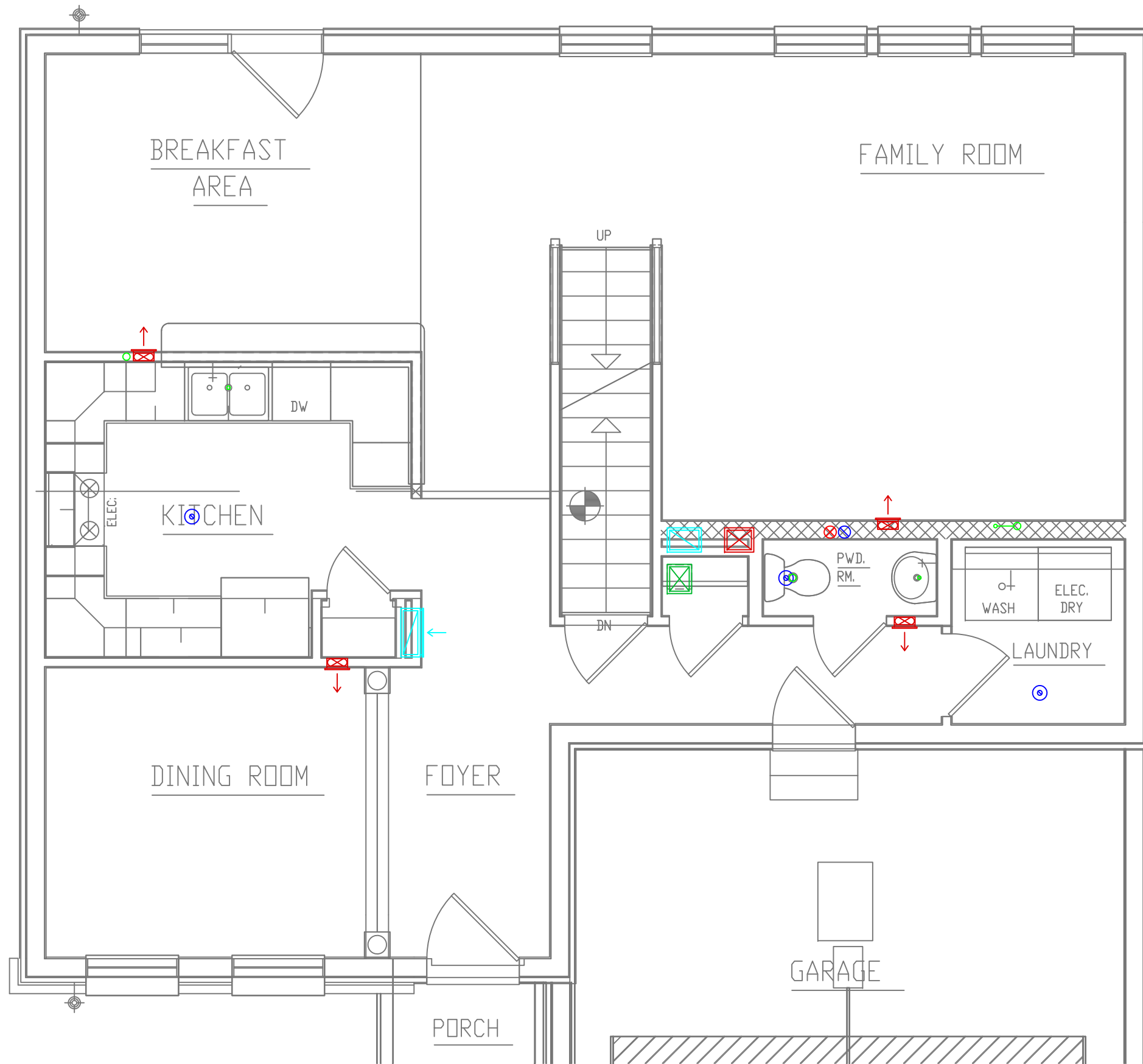
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| A RESIDENCE FOR: | | S.N.: | |
| COBBLESTONE LAB HOME | | --- | |
| DRAWN BY: | CUSTOMER SIGNATURE #1: | CUSTOMER SIGNATURE #2: | |
| IBACOS | | | |
| PLAN STARTED: | SALESPERSON SIGNATURE #1: | SALESPERSON SIGNATURE #2: | |
| 12/11/09 | | | |



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| CRESTMONT | | S&A HOME | |
| 535 B | | | |
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| COBBLESTONE LAB HOME | | | |
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| JOB NUMBER | | | |
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COBBLESTONE LAB HOME

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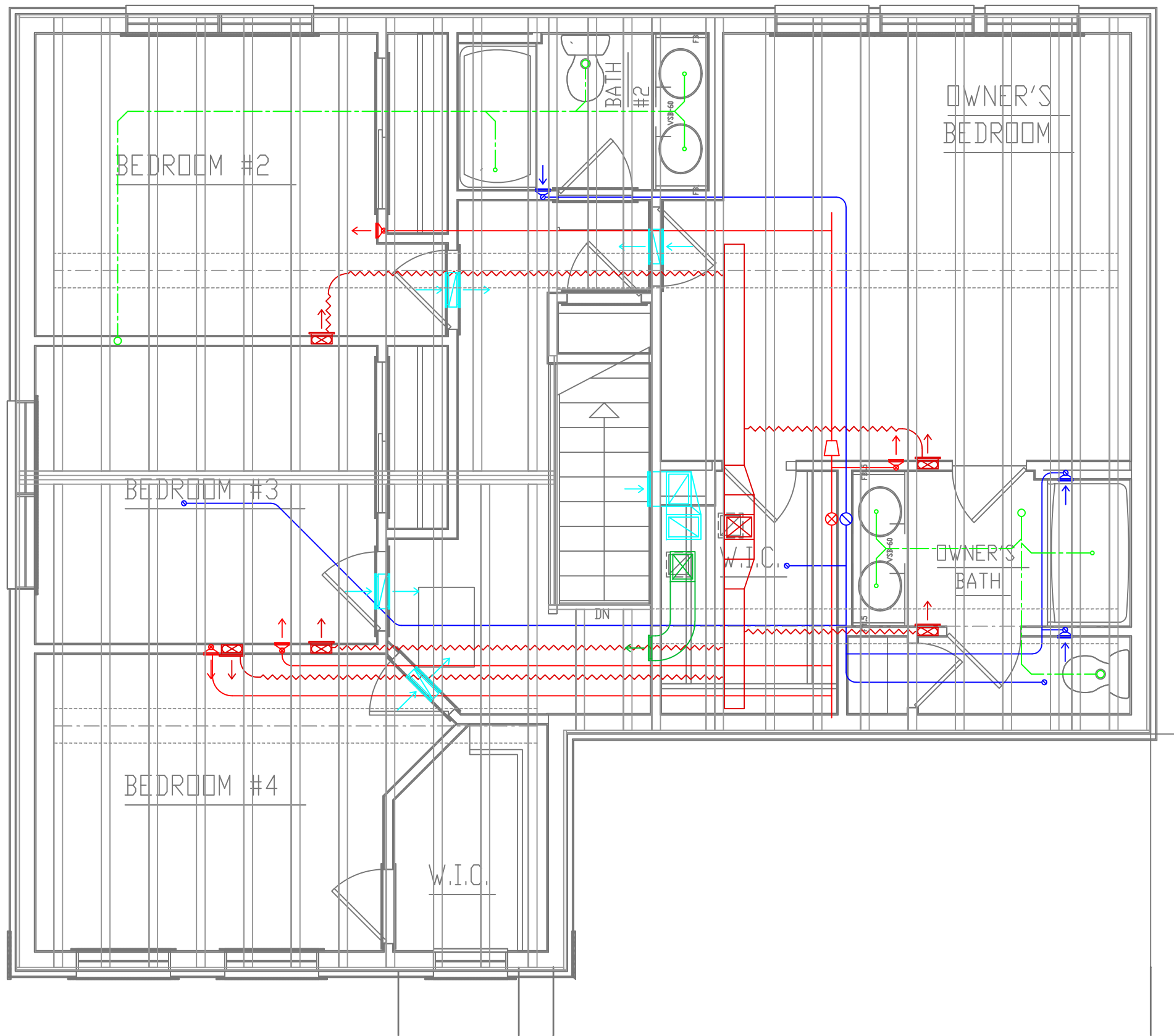
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IBACOS

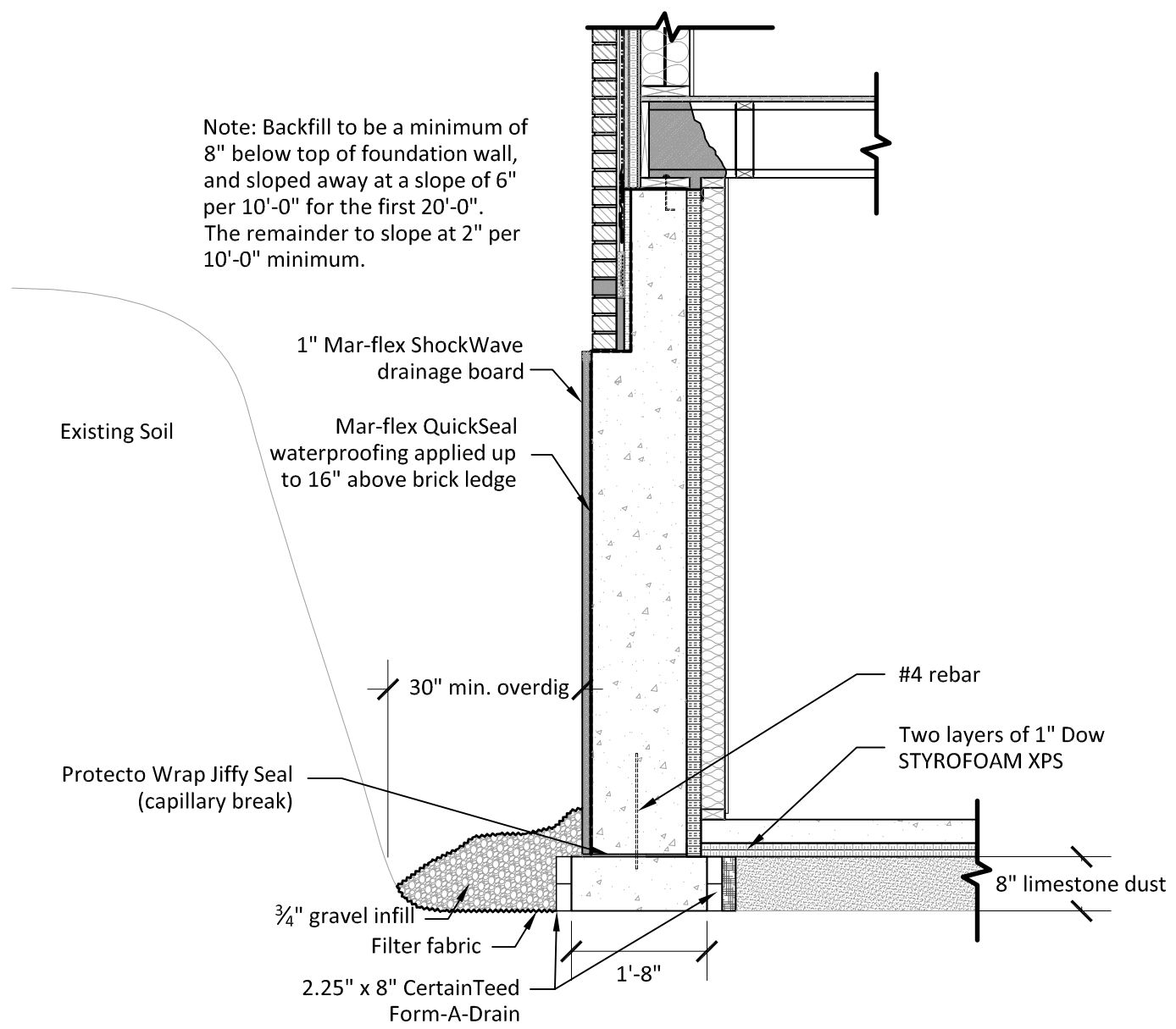
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12/11/08

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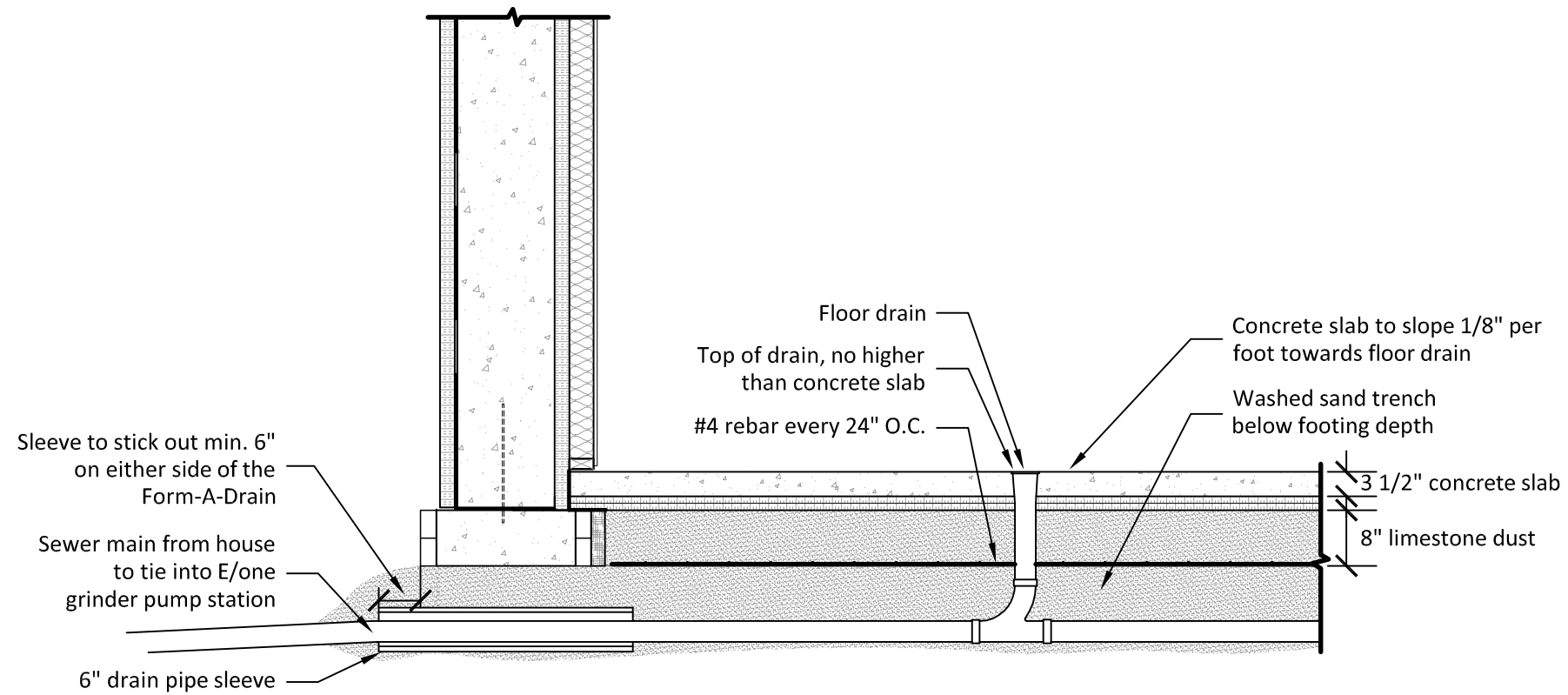


Note: Backfill to be a minimum of 8" below top of foundation wall, and sloped away at a slope of 6" per 10'-0" for the first 20'-0". The remainder to slope at 2" per 10'-0" minimum.

Poured Wall and Over Dig Detail --- 2_19

Scale: 1/2" = 1'-0"

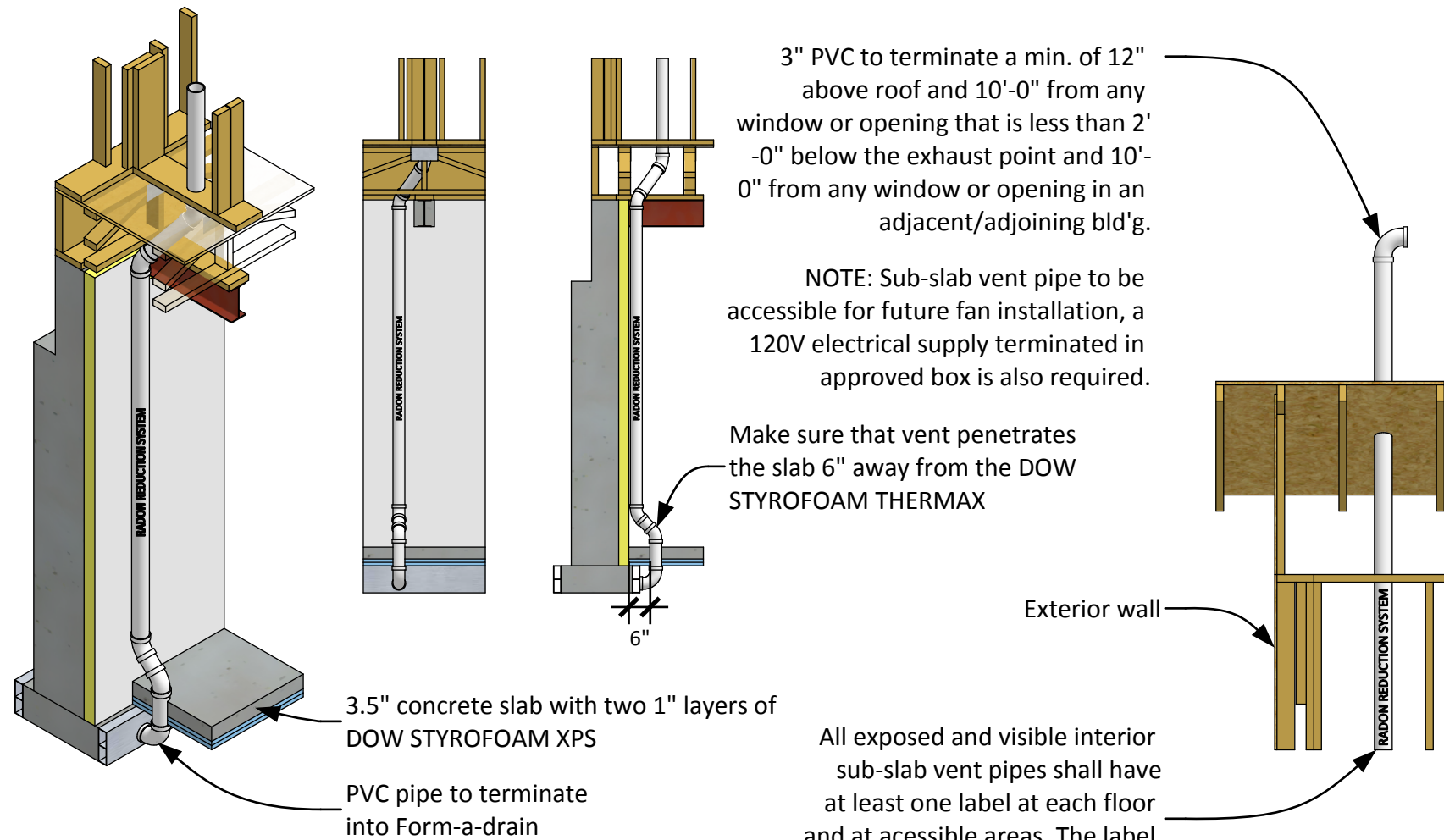
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| CRESTMONT | | 535 B | | S&A HOMES | |
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| JOB NUMBER | | 27_90174 | | | |
| TRUELINE NUMBER | | 630103 | | | |



Basement Floor Drain and Under Footer Sleeve Detail --- 2_18

Scale: 1/2" = 1'-0"

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| TRUELINE NUMBER | | 630103 |



3" PVC to terminate a min. of 12" above roof and 10'-0" from any window or opening that is less than 2'-0" below the exhaust point and 10'-0" from any window or opening in an adjacent/adjoining bld'g.

NOTE: Sub-slab vent pipe to be accessible for future fan installation, a 120V electrical supply terminated in approved box is also required.

Make sure that vent penetrates the slab 6" away from the DOW STYROFOAM THERMAX

Exterior wall

All exposed and visible interior sub-slab vent pipes shall have at least one label at each floor and at accessible areas. The label shall read: "RADON REDUCTION SYSTEM"

NOTE: All control joints, isolation joints or construction joints in concrete slabs or foundation walls to be sealed with sealant.

3.5" concrete slab with two 1" layers of DOW STYROFOAM XPS

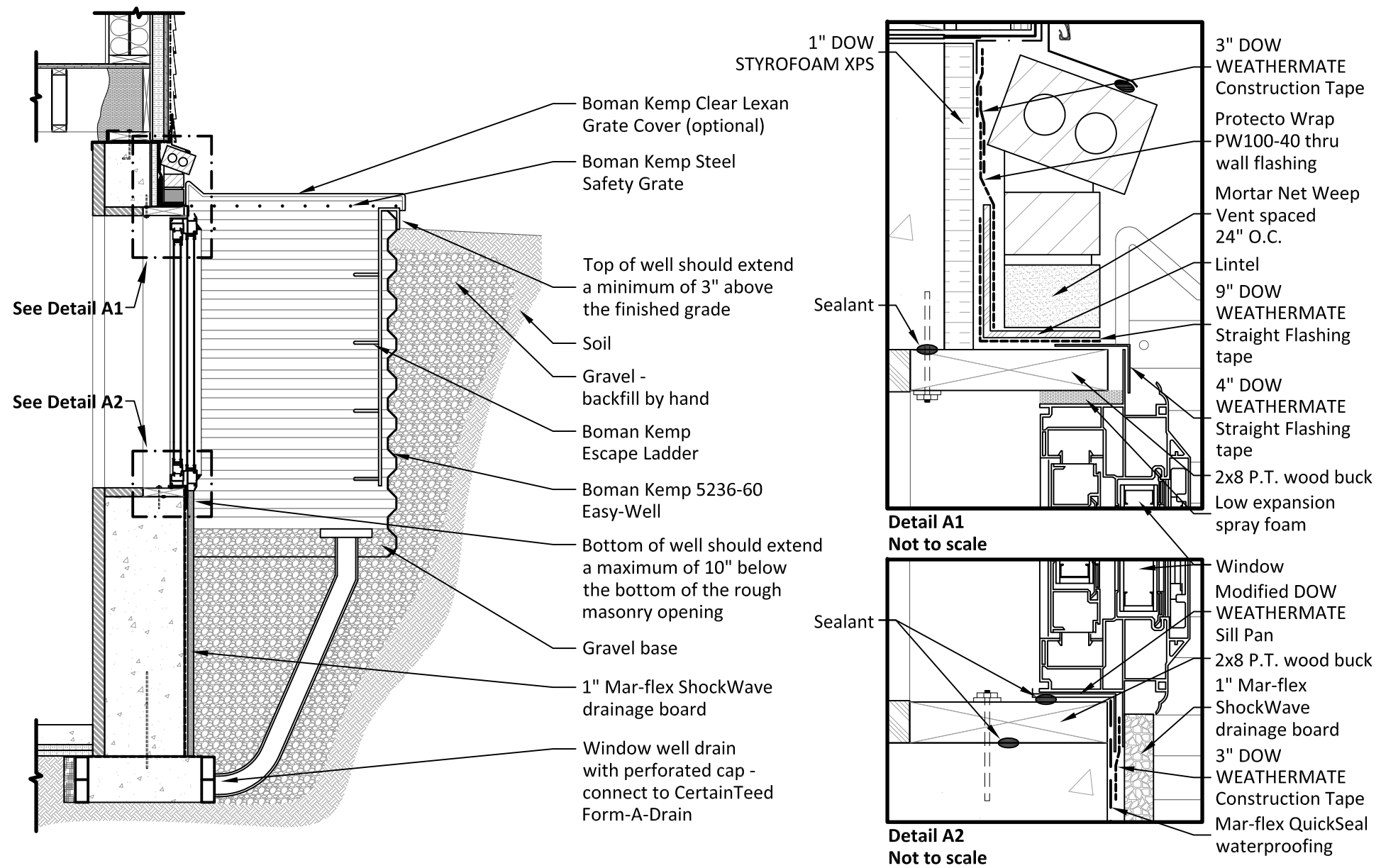
PVC pipe to terminate into Form-a-drain

6"

Sub-slab Radon Vent --- 2_17

Scale: Not to scale

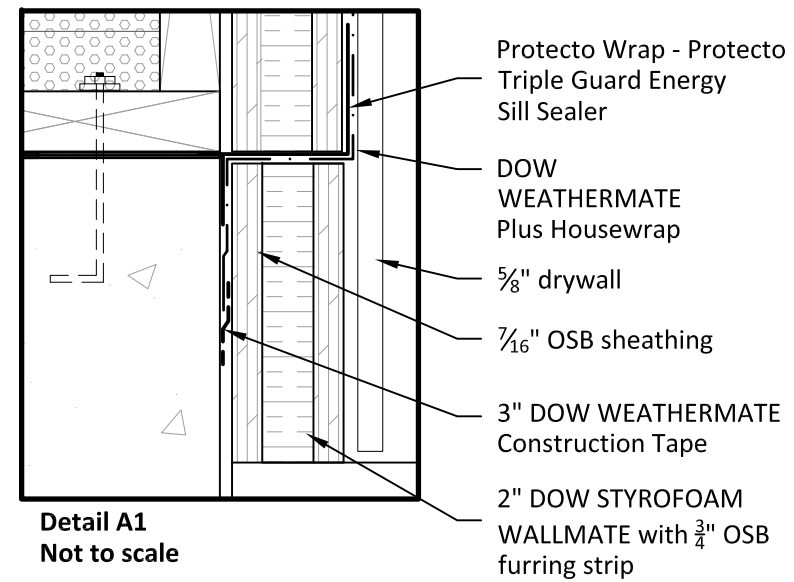
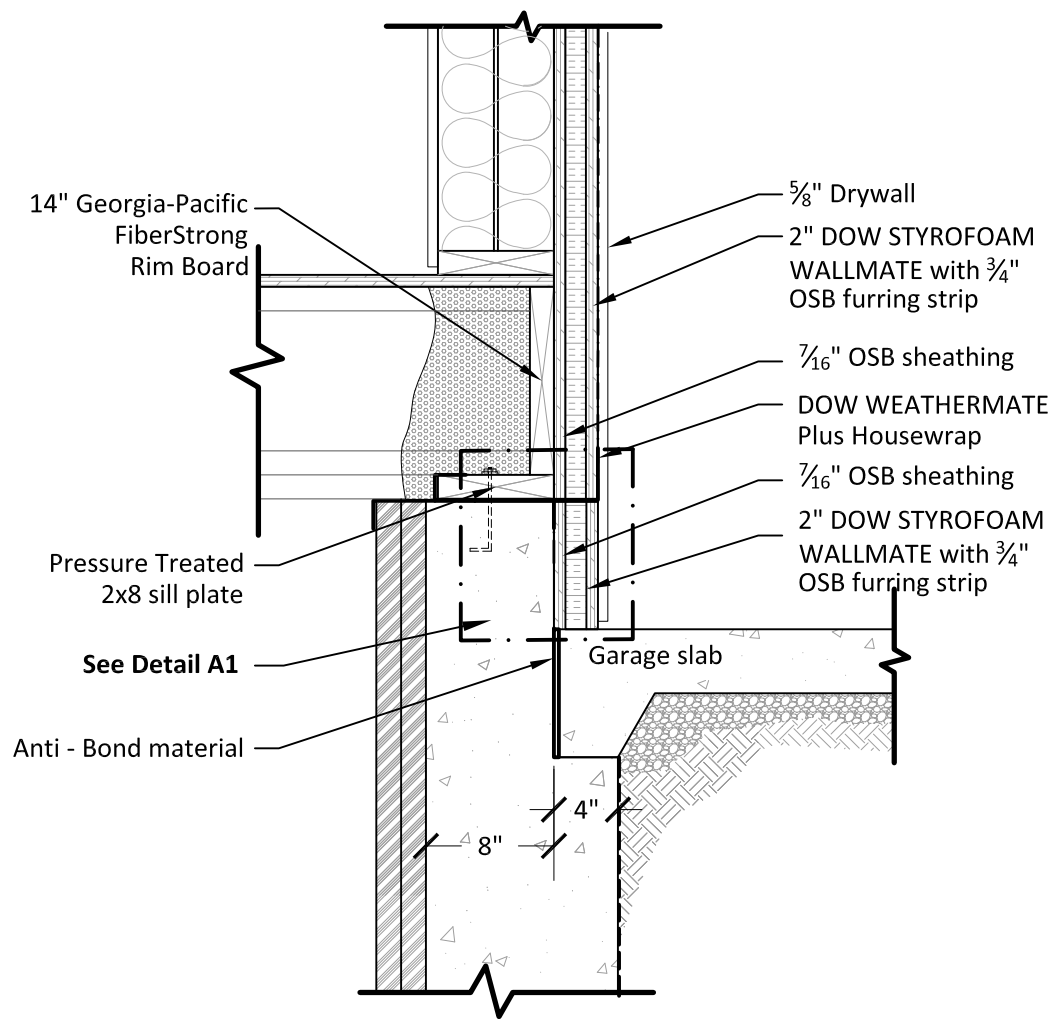
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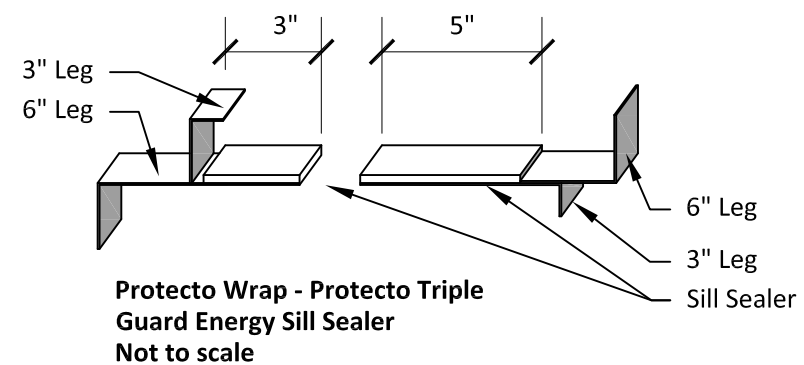
Egress Window --- 2_06

Scale: 1/2" = 1' - 0"

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Detail A1
Not to scale

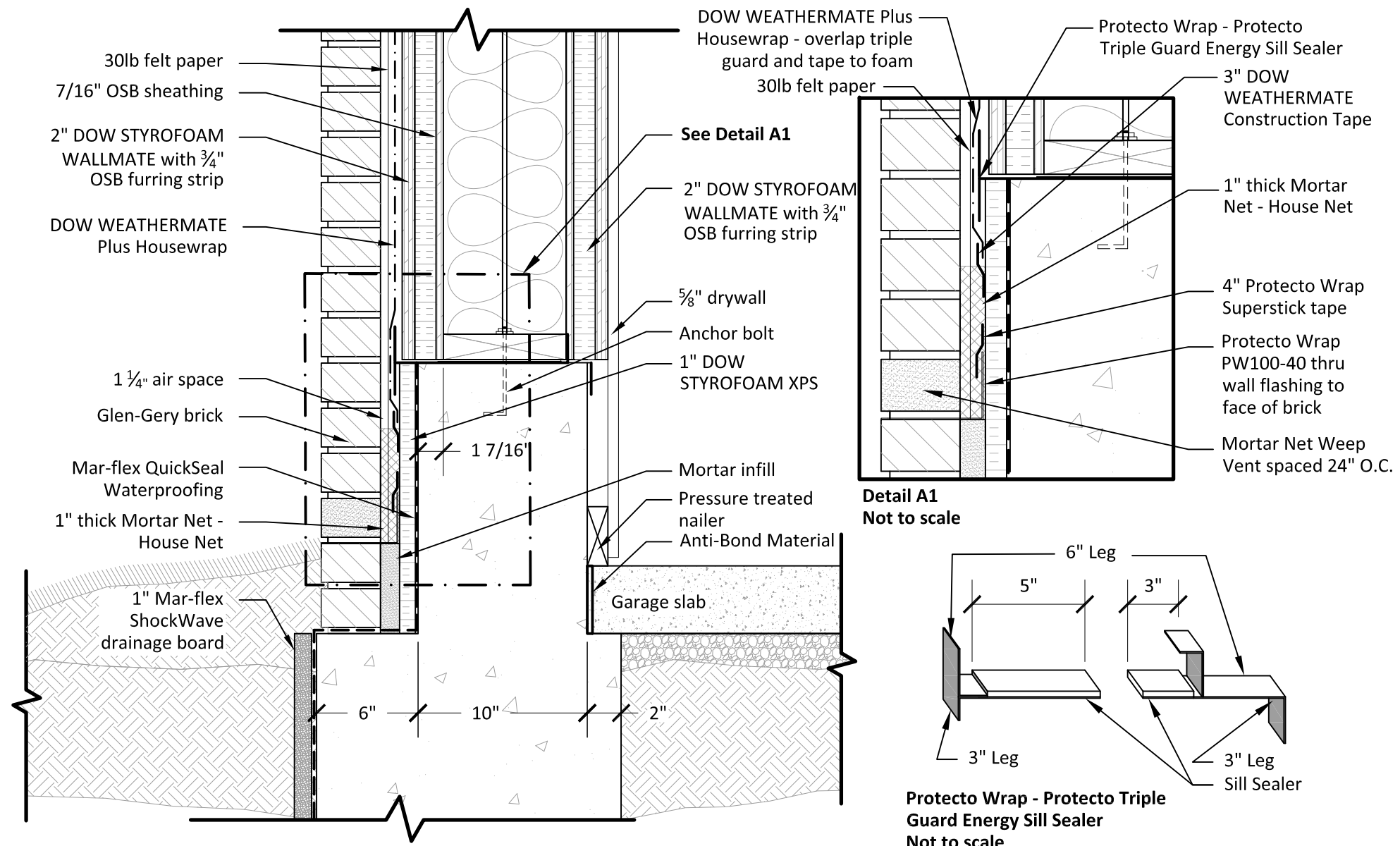


Protecto Wrap - Protecto Triple Guard Energy Sill Sealer
Not to scale

Garage Wall at Foundation - Common Wall --- 2_09


Scale: 1" = 1' - 0"

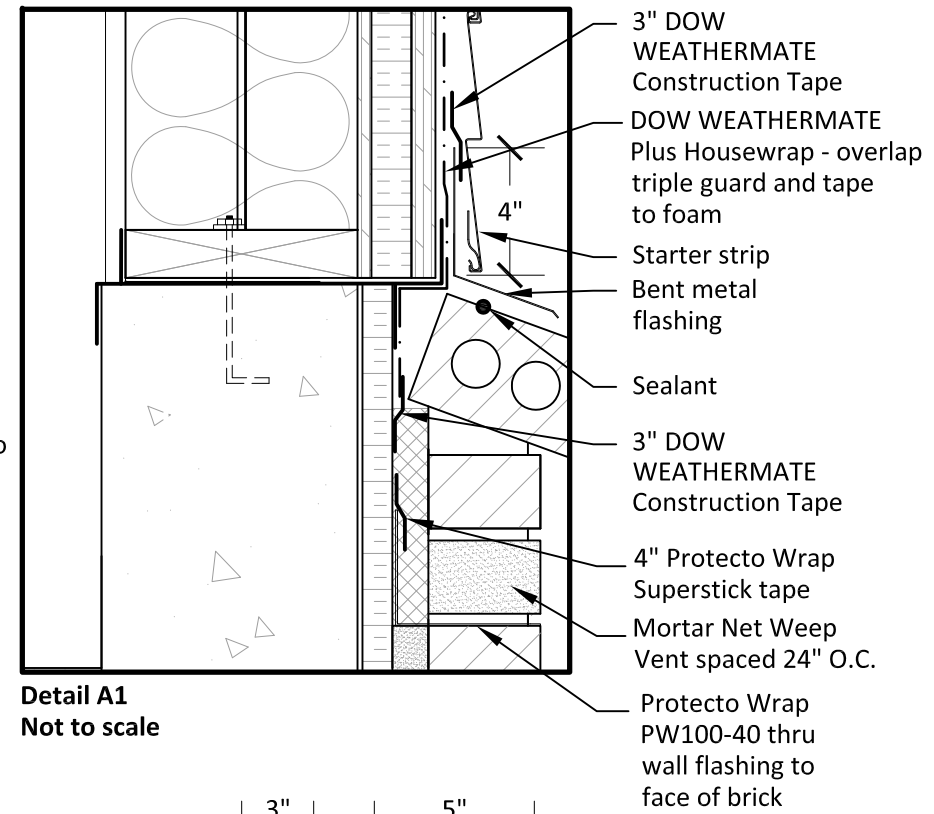
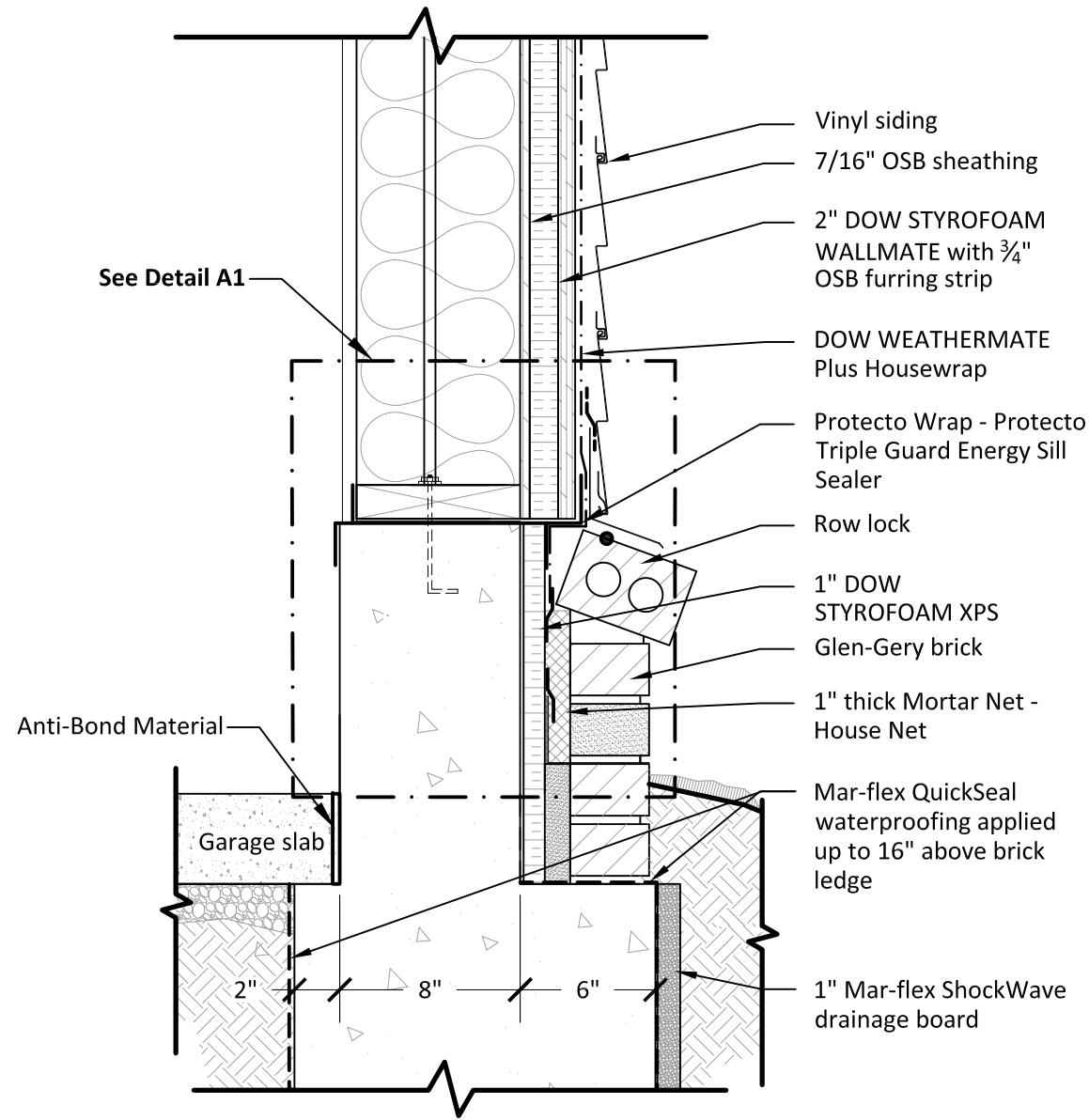
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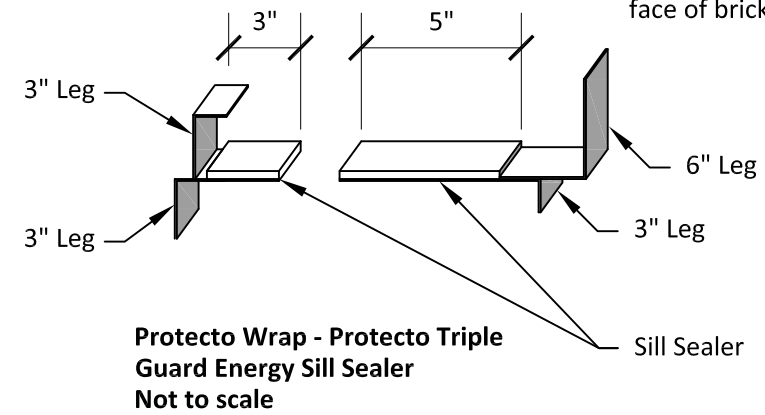
Garage Wall at Foundation - West Wall --- 2_12

Scale: 1 1/2" = 1' - 0"

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| JOB NUMBER 27_90174 | |
| TRUELINE NUMBER 630103 | |



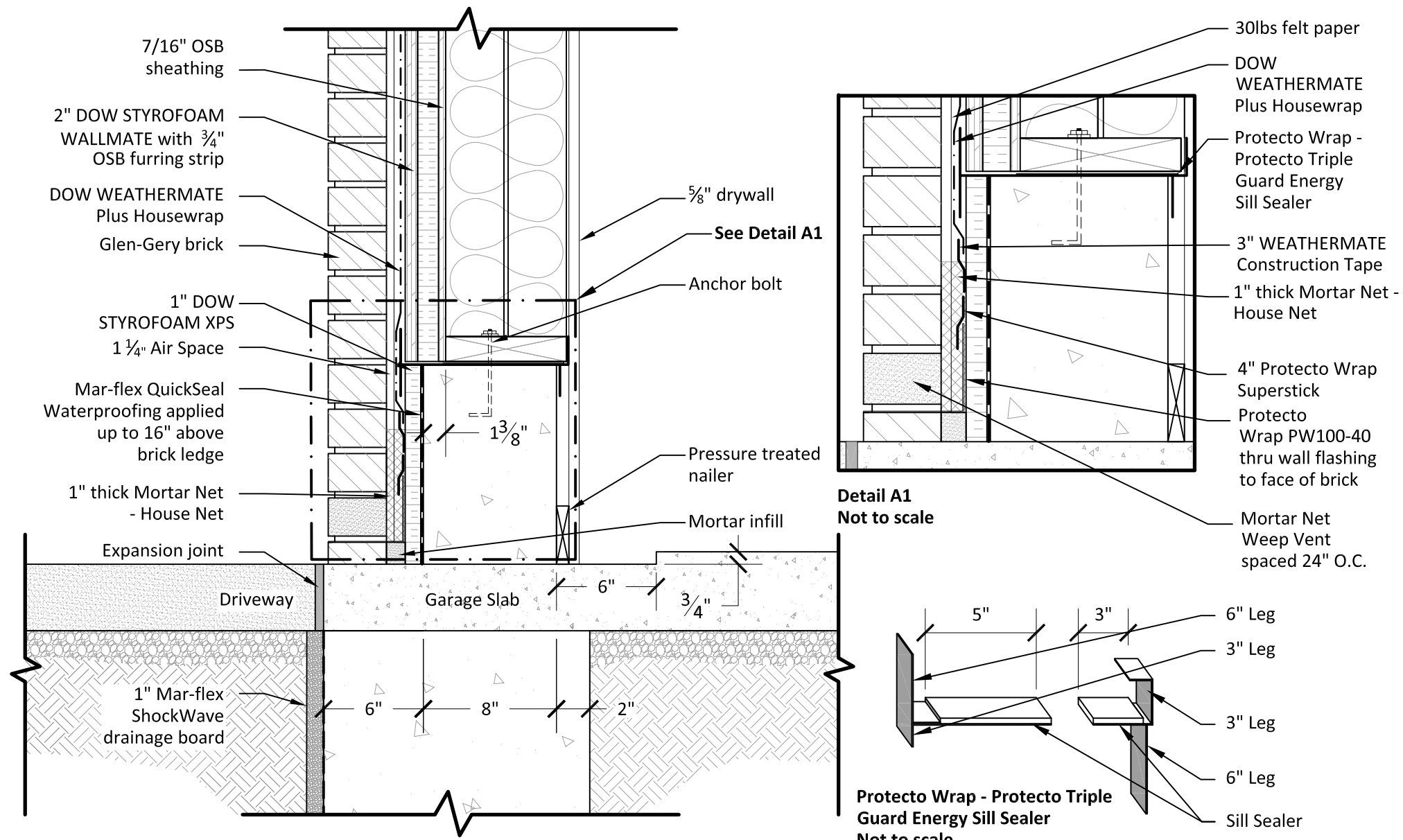
Detail A1
 Not to scale



Garage Wall and Slab at Foundation - East Side --- 2_13


Scale: 1 1/2" = 1' - 0

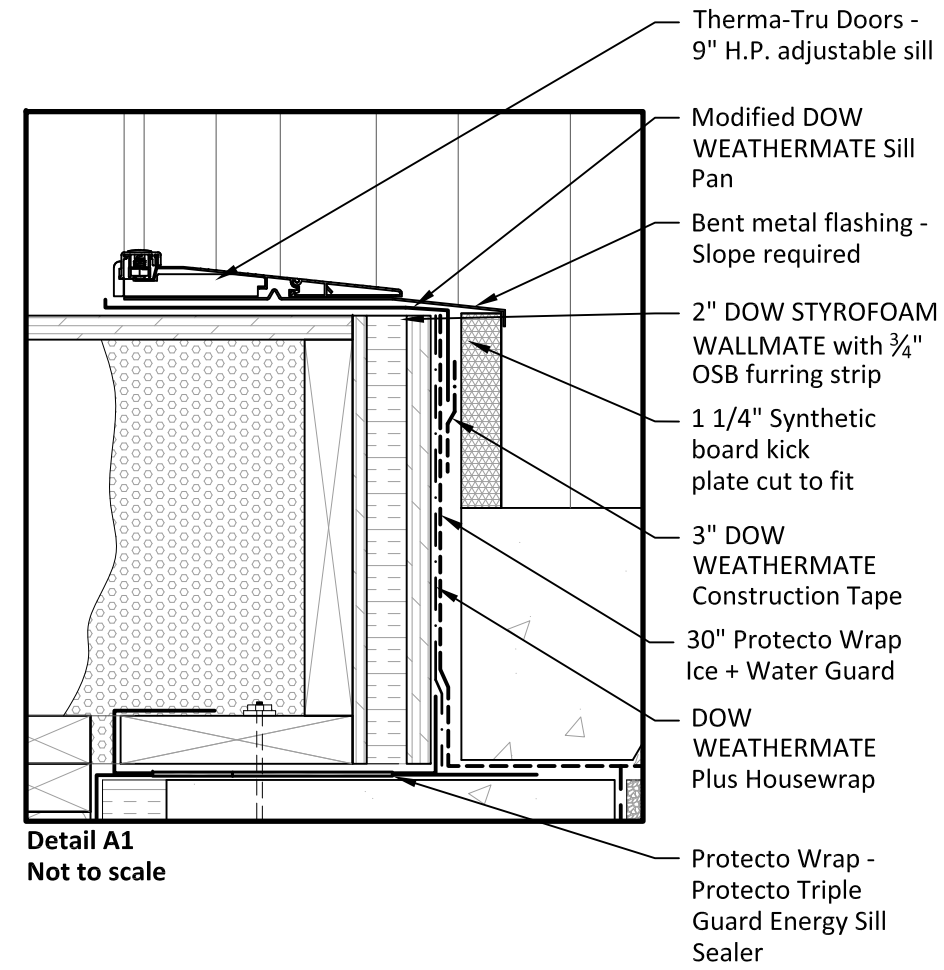
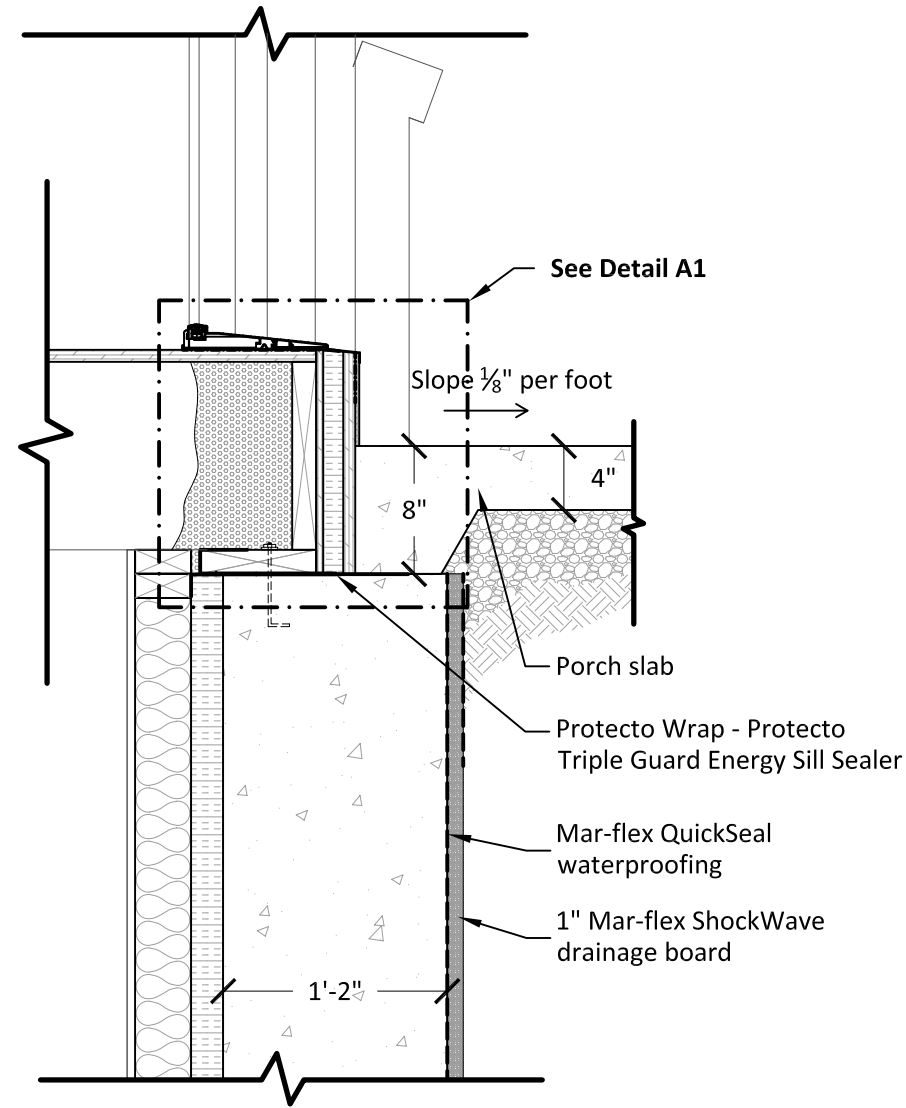
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Garage Wall and Slab at Foundation - South Wall --- 2_14

Scale: Not to Scale

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| JOB NUMBER 27_90174 | | | |
| TRUELINE NUMBER 630103 | | | |



Detail A1
Not to scale

Porch Concrete Stoop to Wall Detail --- 1_00

Scale: 1" = 1' - 0"

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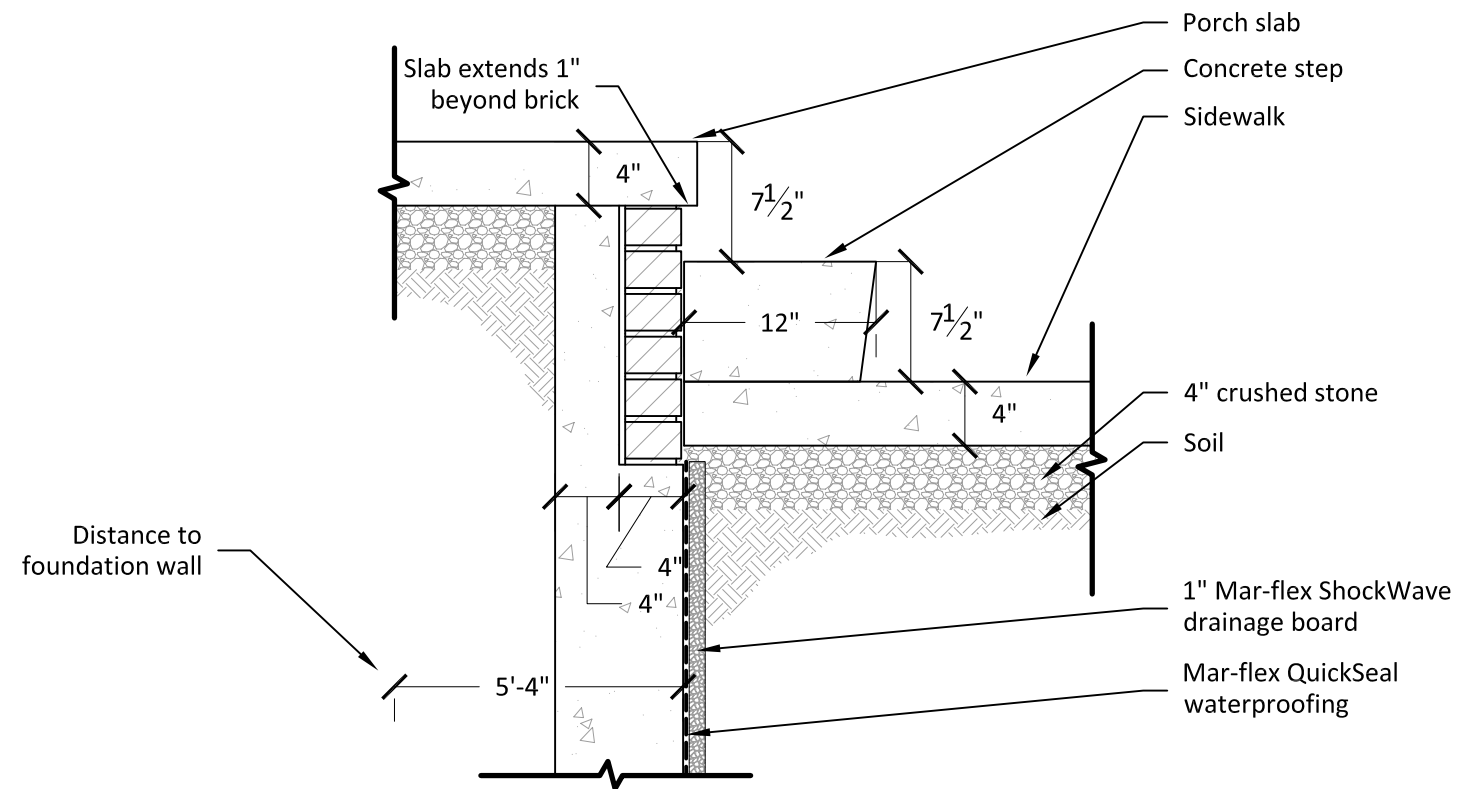
CRESTMONT
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S&A
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S.N.: _____

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PAGE NO.
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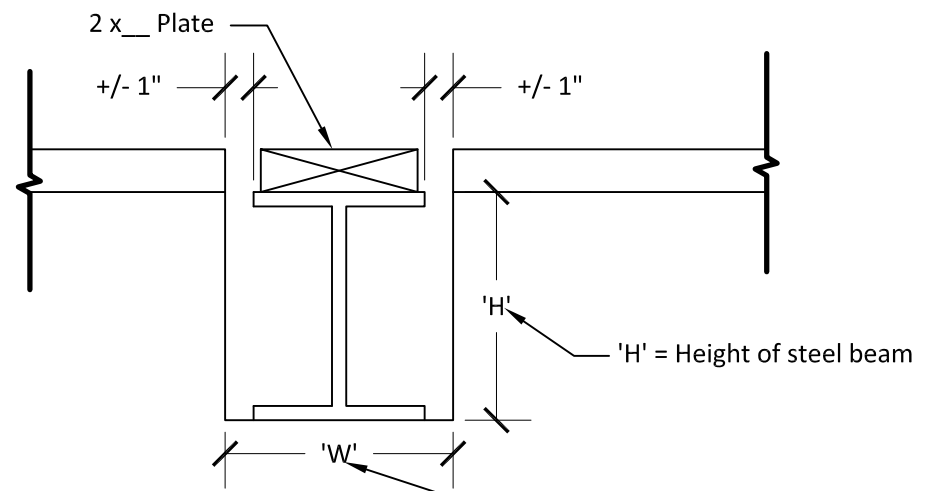
JOB NUMBER
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TRUELINE NUMBER
630103



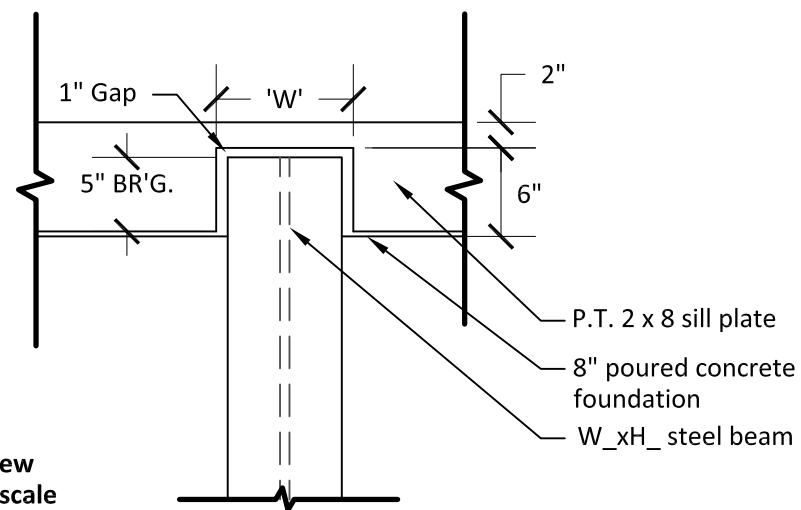
Porch Slab and Step Detail --- 1_01

Scale: *Not to Scale*

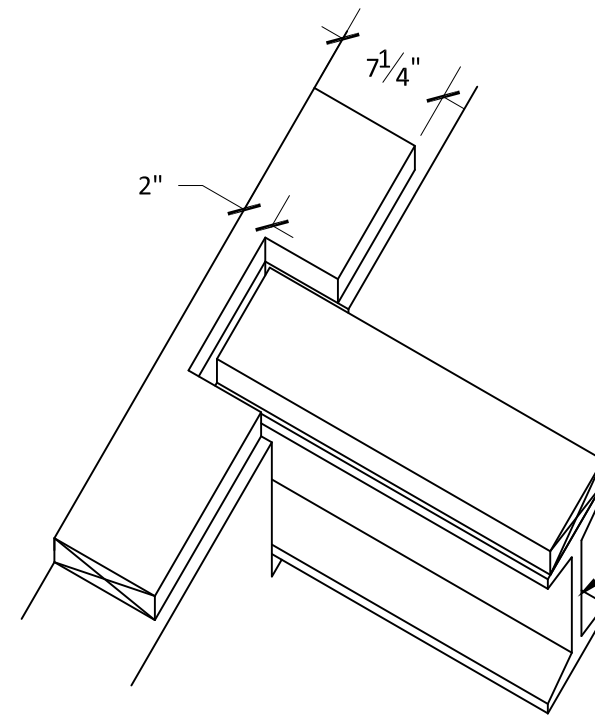
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Section View
Not to scale



Plan View
Not to scale

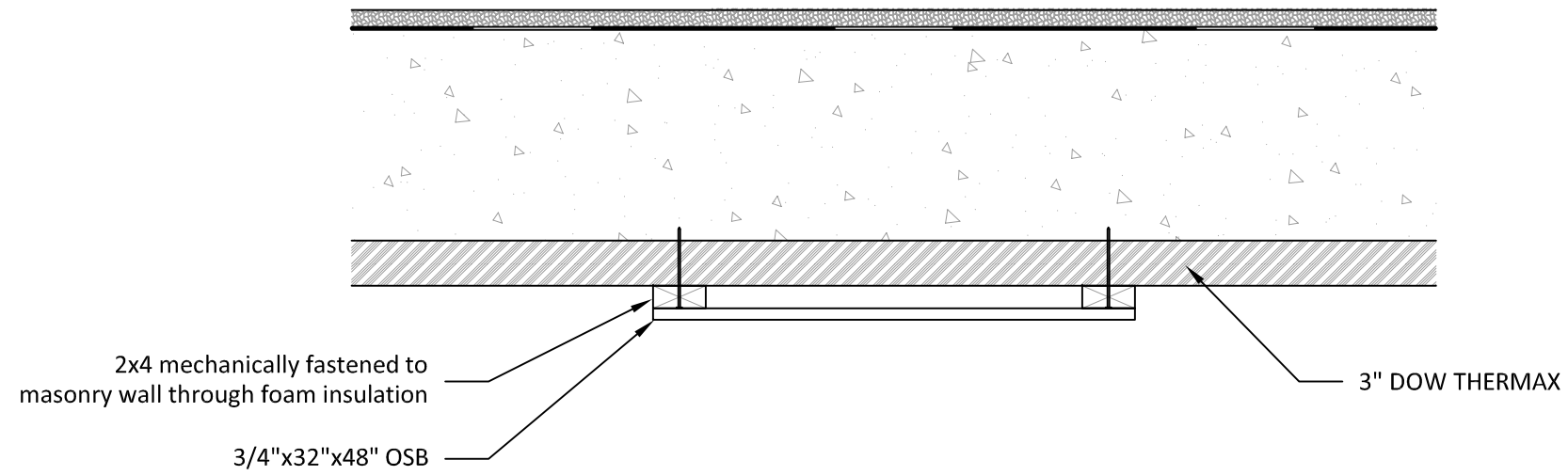


Isometric View
Not to scale

Steel Beam Pocket --- 2_15

Scale: Not to scale

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2x4 mechanically fastened to masonry wall through foam insulation

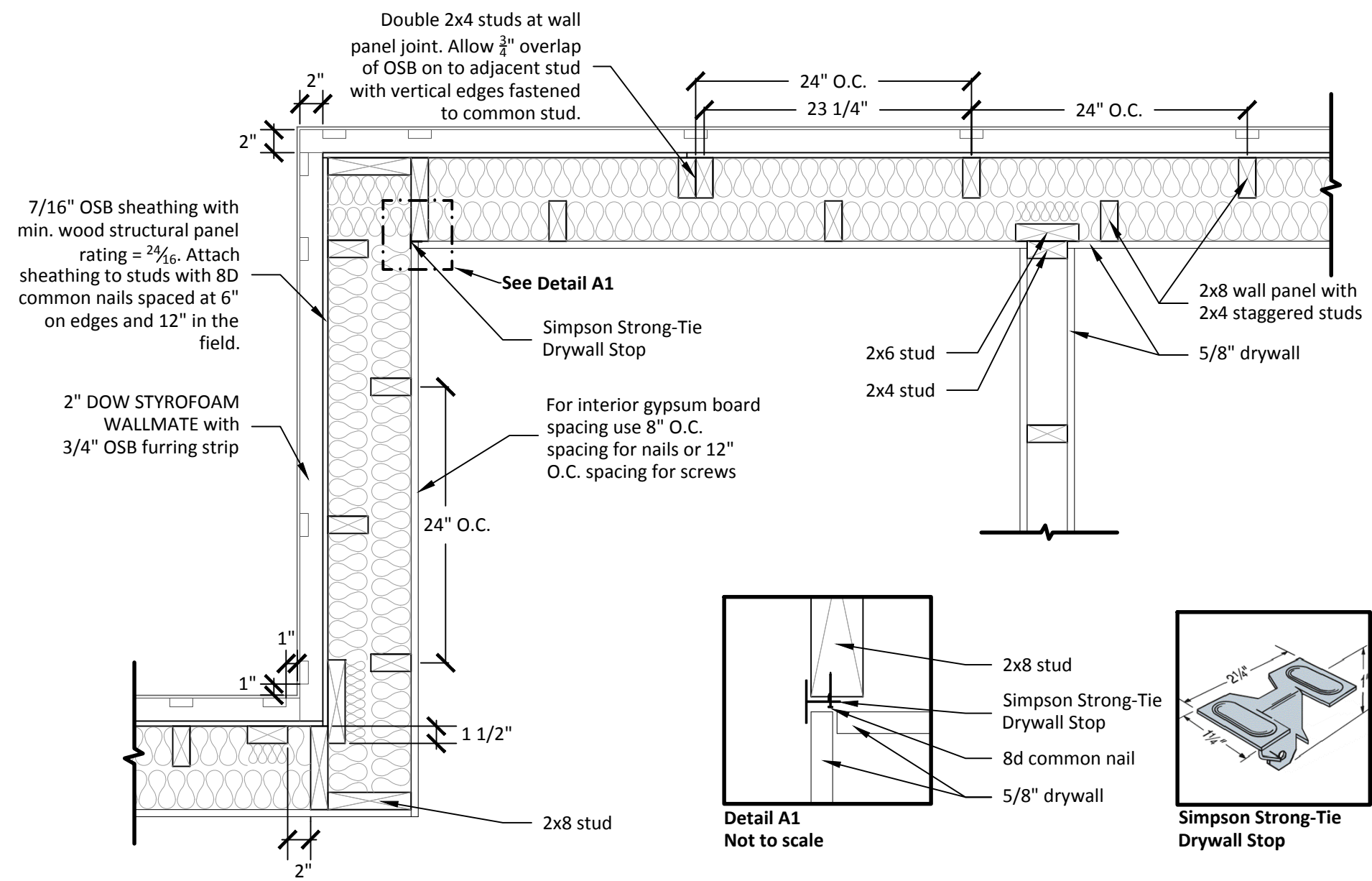
3/4"x32"x48" OSB

3" DOW THERMAX

Basement Panel Box and Manifold Mounting Detail --- 6_01

Scale: 1" = 1' - 0"

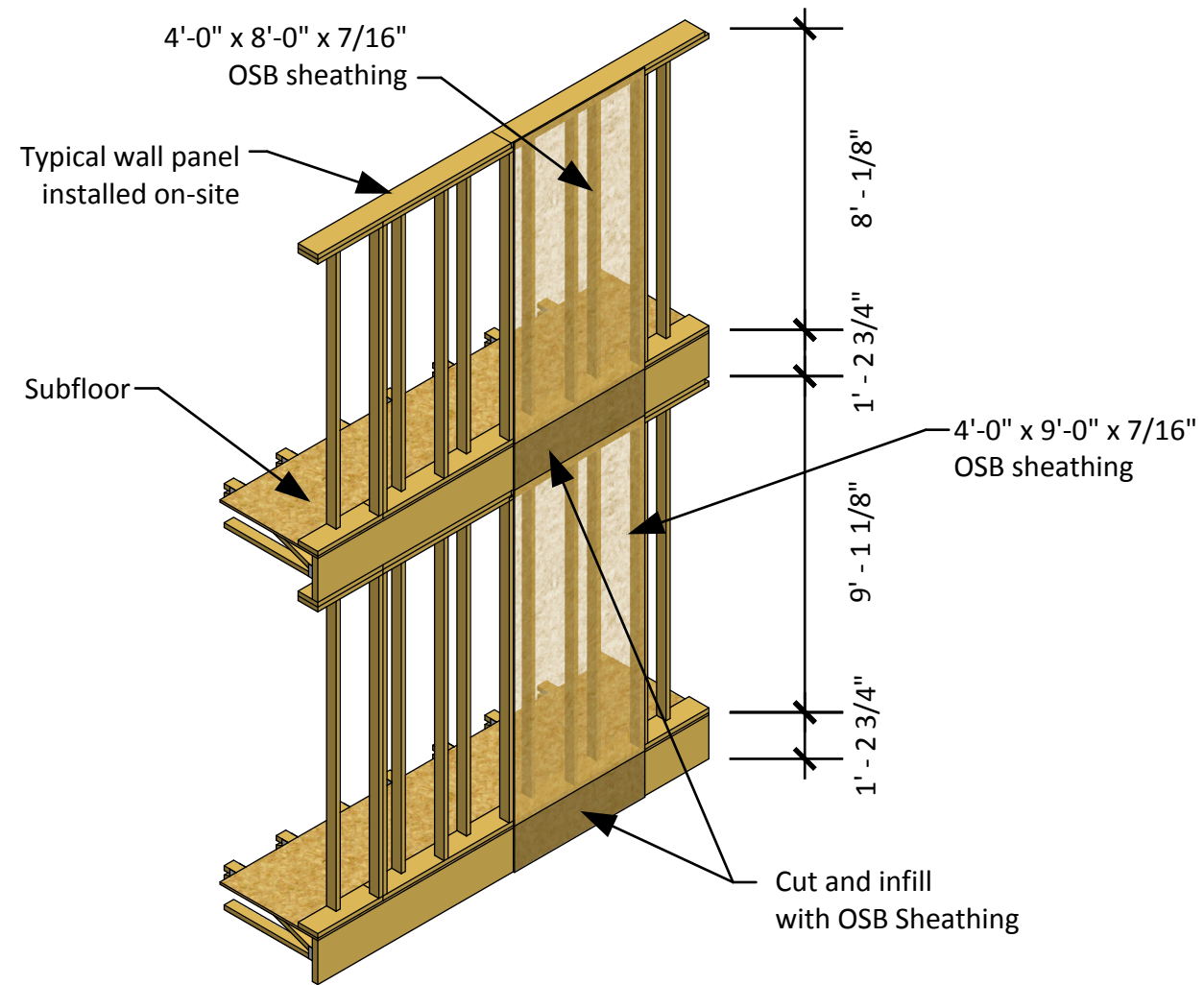
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Typical Wall Framing and Drywall Details - Plan View --- 3_16

Scale: 1" = 1' - 0"

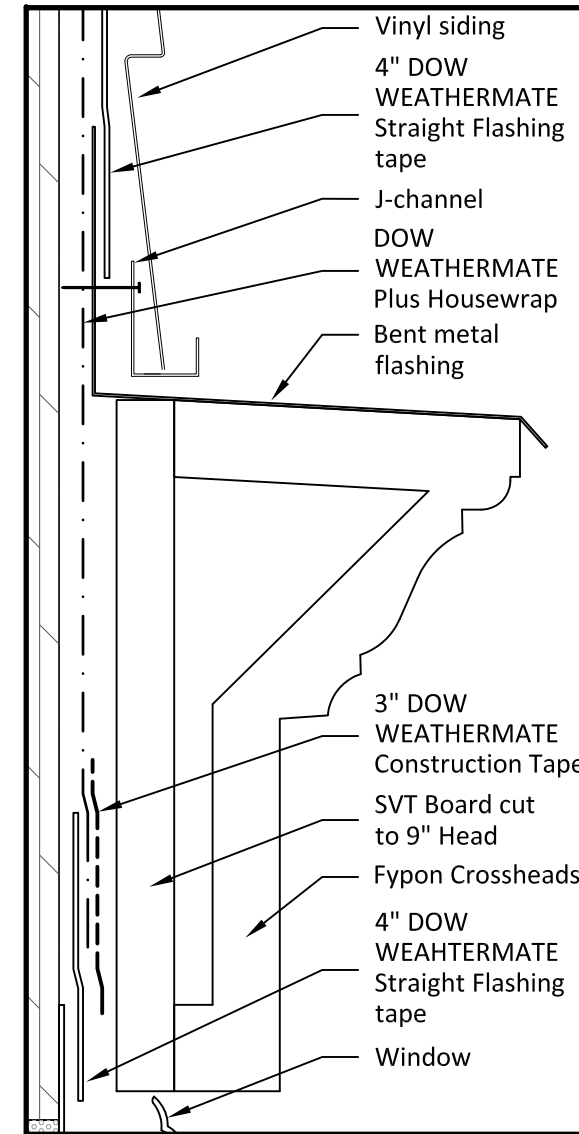
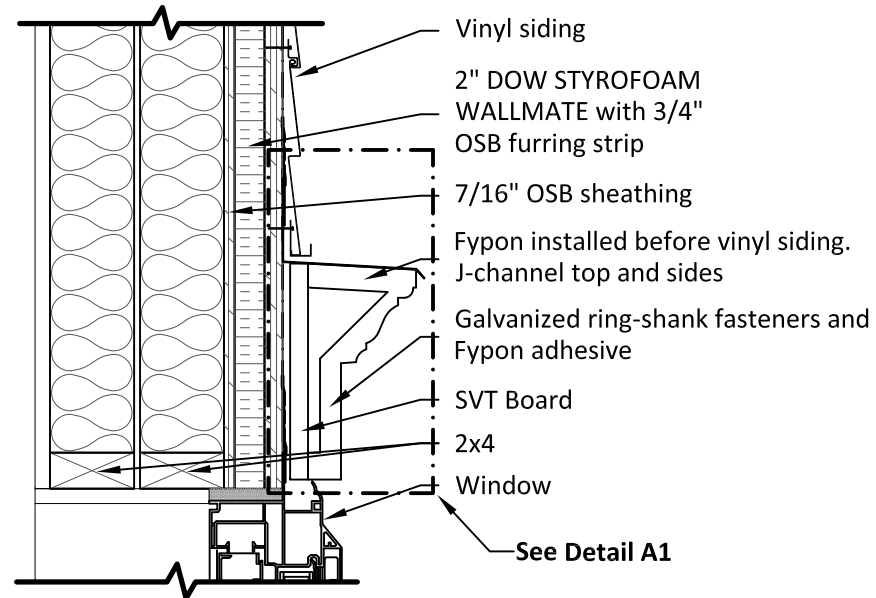
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| TRUELINE NUMBER | | 630103 | | | |



Exterior Wall Sheathing Application --- 3_32

Scale: *Not to scale*

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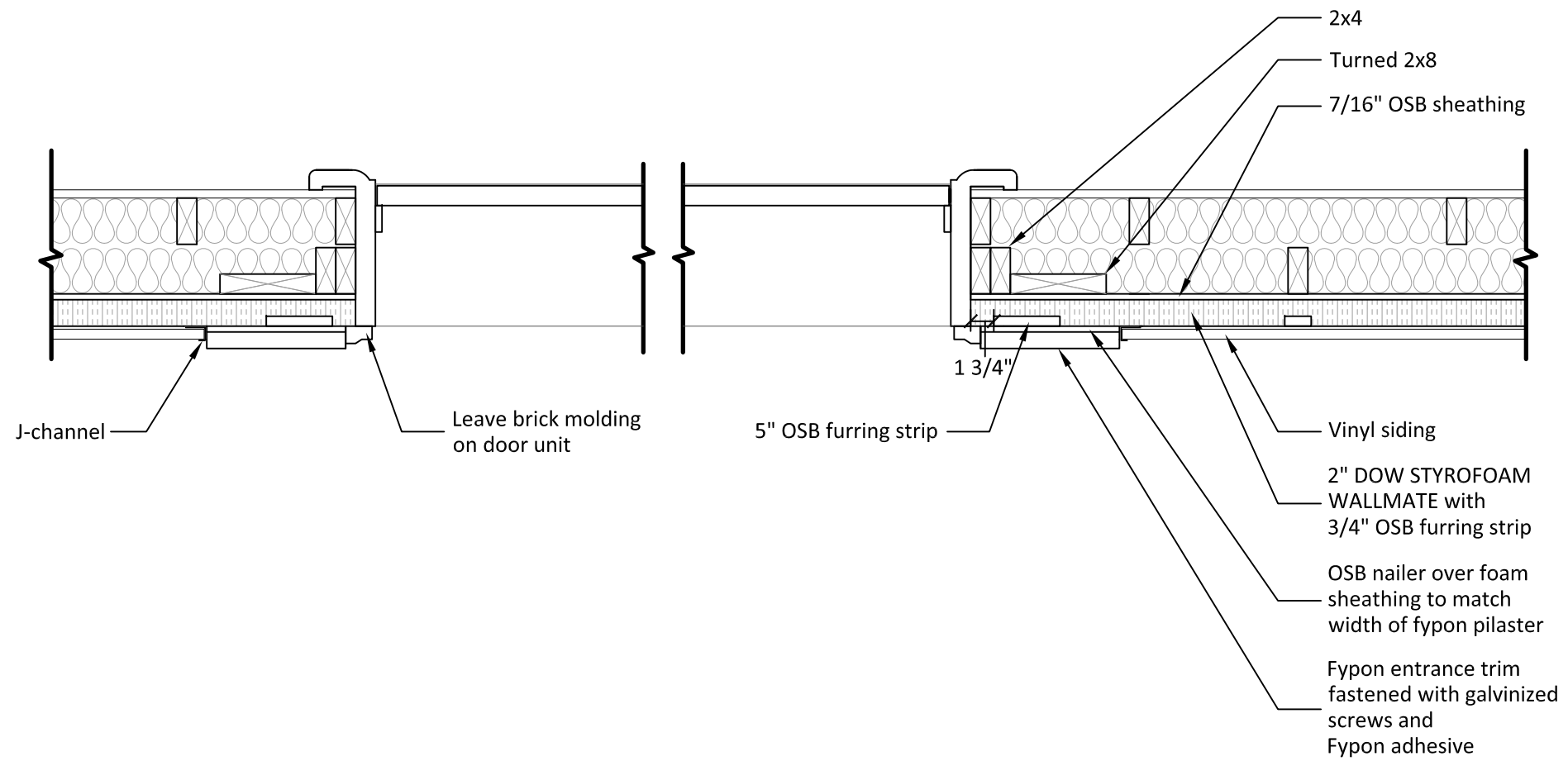


Detail A1
Not to scale

Window Head with Fypon Trim --- 3_17

Scale: 1-1/2" = 1' - 0"

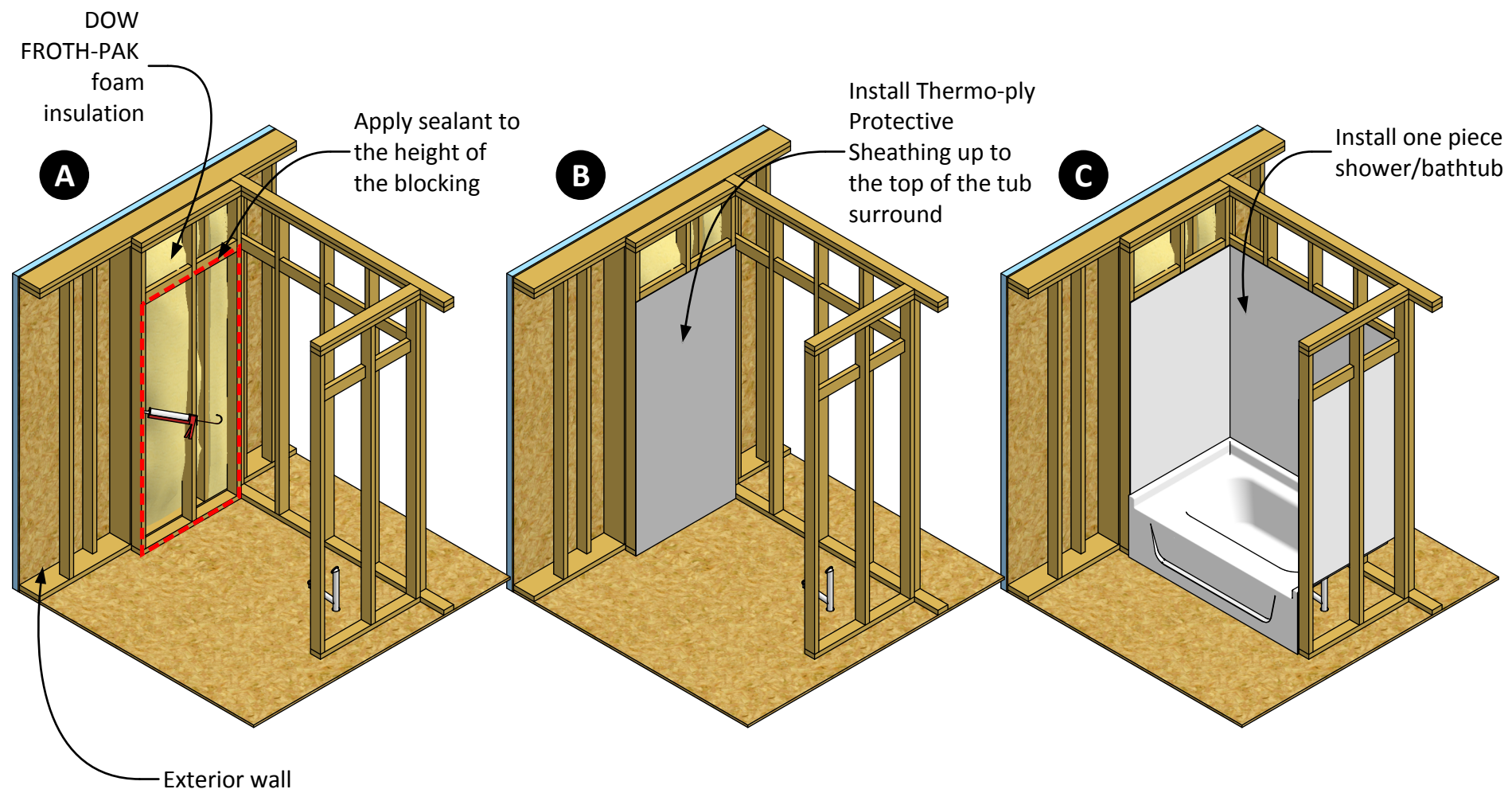
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Entry Door with Fypon and Vinyl Siding --- 3_22

Scale: 1" = 1' - 0"

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Air Barrier and Draftstopping at Tubs --- 3_12

Scale: *Not to scale*

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CRESTMONT
535 B



PLAN

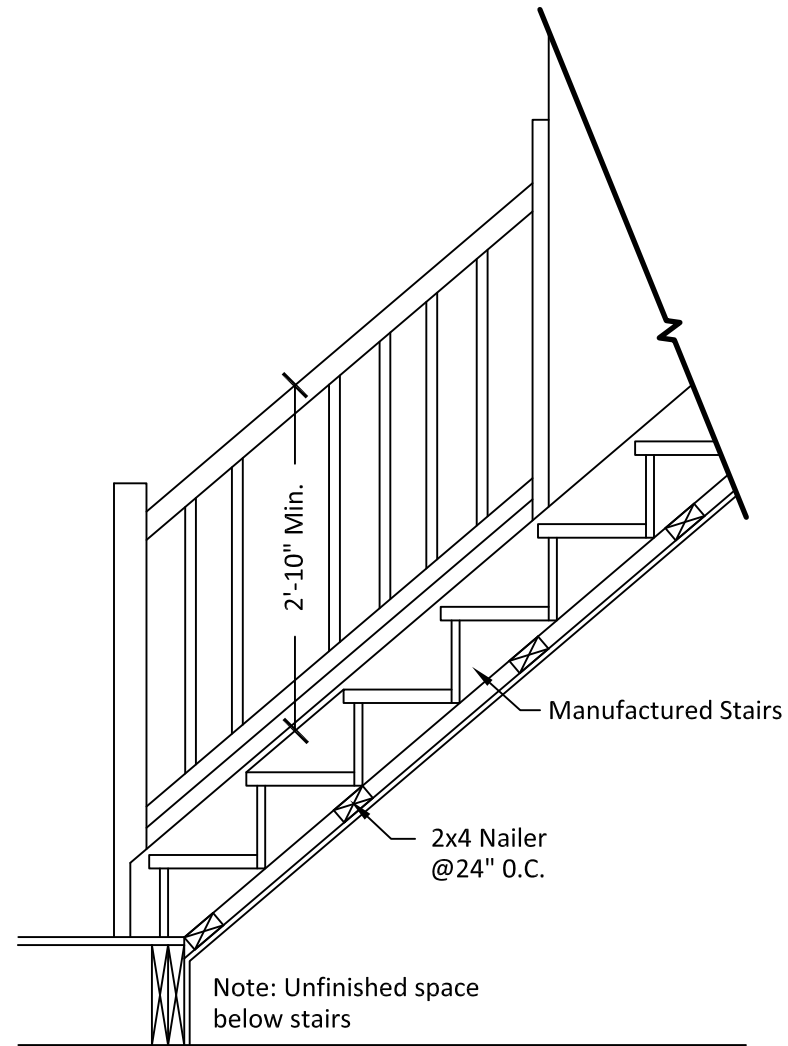
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COBBLESTONE LAB HOME

DRAWN BY: IBACOS
PLAN STARTED: 11/20/09

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SALESPERSON SIGNATURE #1:
SALESPERSON SIGNATURE #2:

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JOB NUMBER
27_90174
TRUELINE NUMBER
630103



Framing at box stairs
 $\frac{3}{8}'' = 1' - 0''$

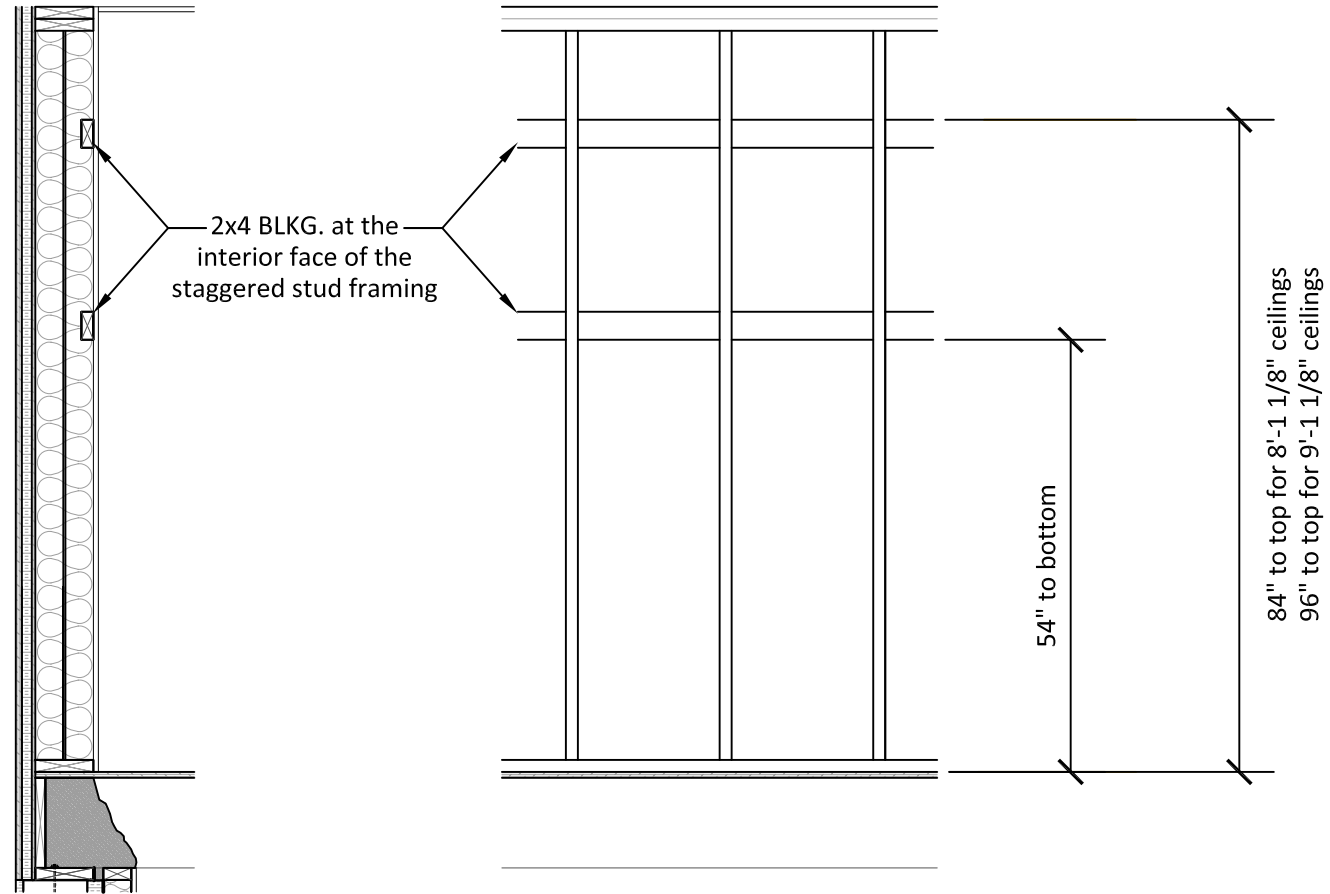
Framing at Box Stairs --- 3_28

Scale: $\frac{3}{8}'' = 1' - 0''$

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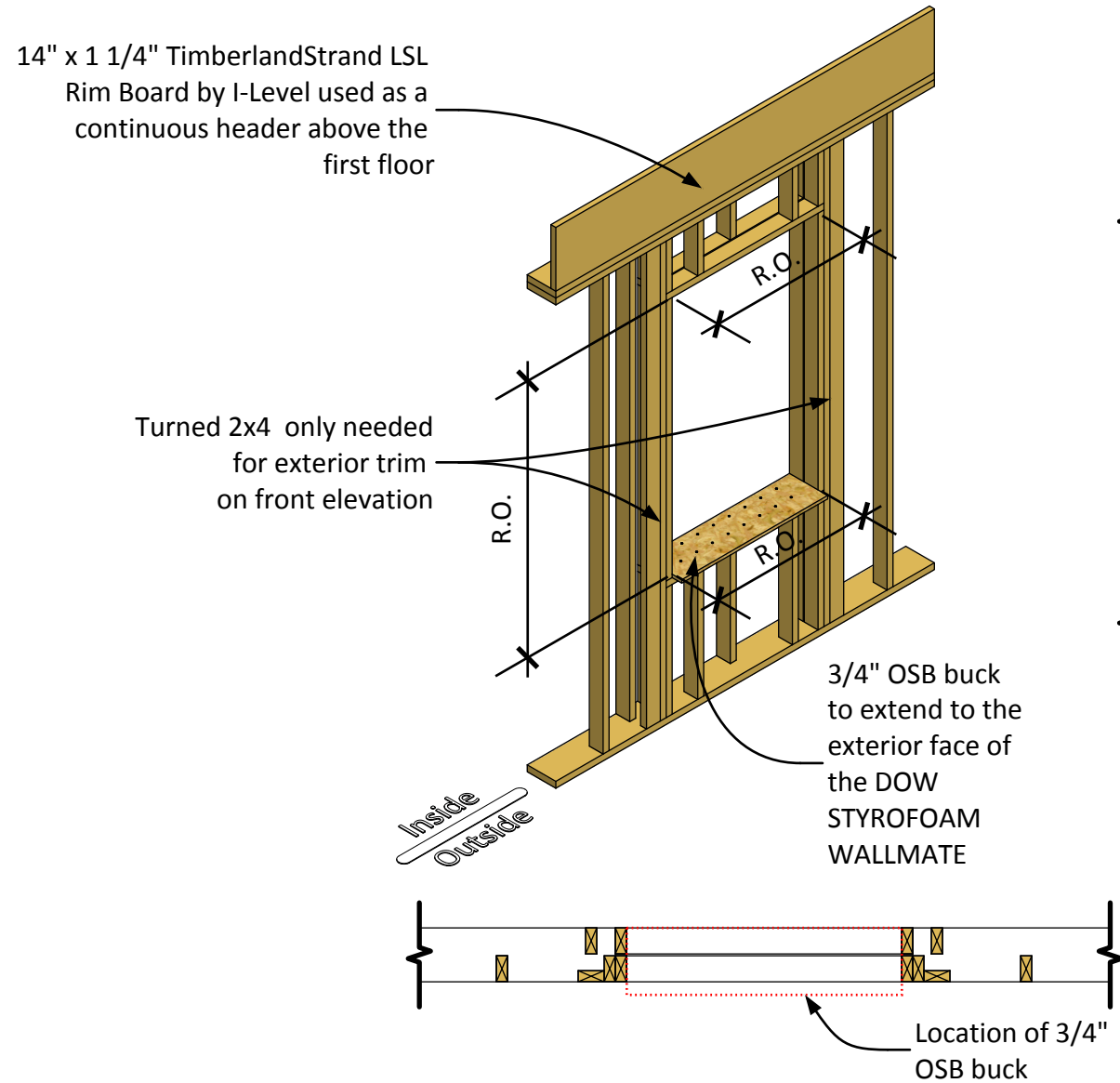
Cabinet Blocking at Kitchen Walls --- 3_29

Scale: 1/2" = 1' - 0"

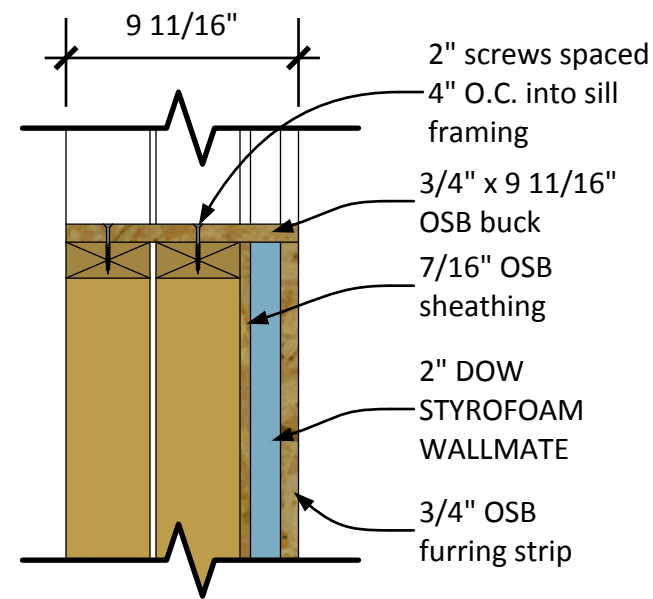


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| PLAN STARTED: 11/30/09 | SALESPERSON SIGNATURE #1: | SALESPERSON SIGNATURE #2: | | |
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| PAGE NO. D-19 | | JOB NUMBER 27_90174 | | |
| TRUELINE NUMBER 630103 | | | | |

First Floor

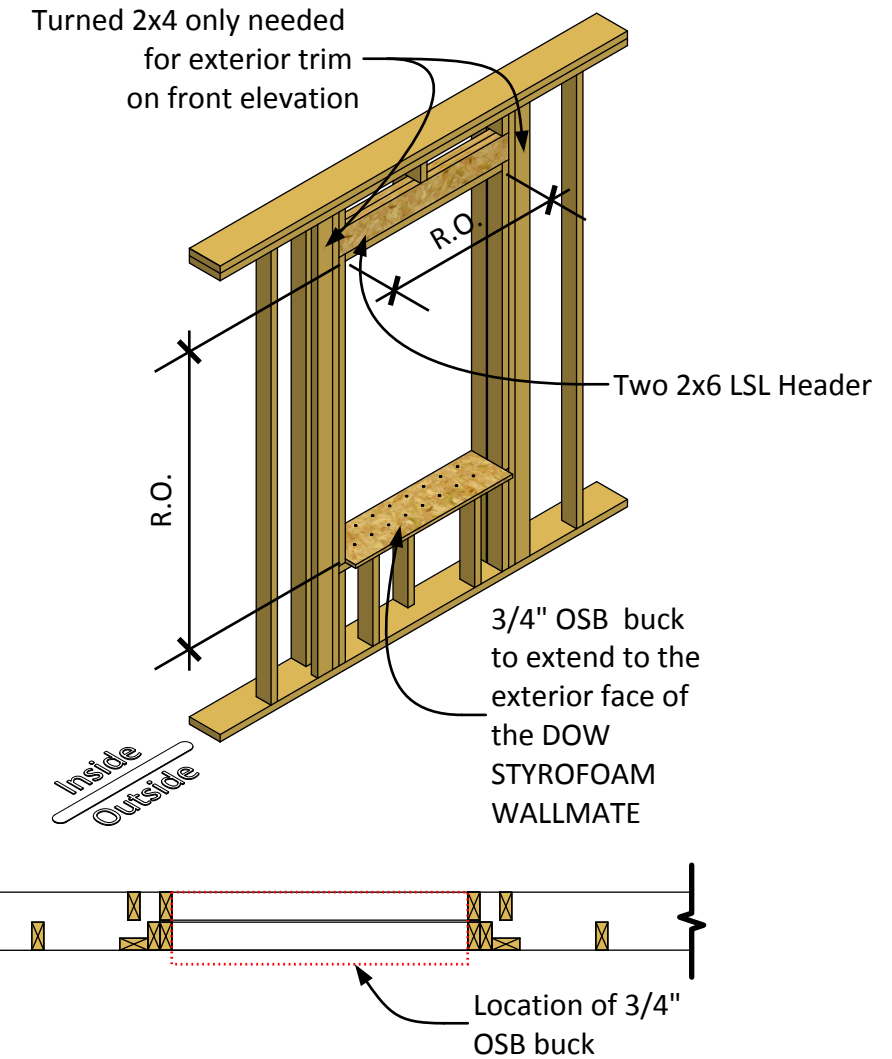


Vertical section at sill buck



NOTE: The rough opening must be 1" wider and 1 1/2" taller than the actual window size.

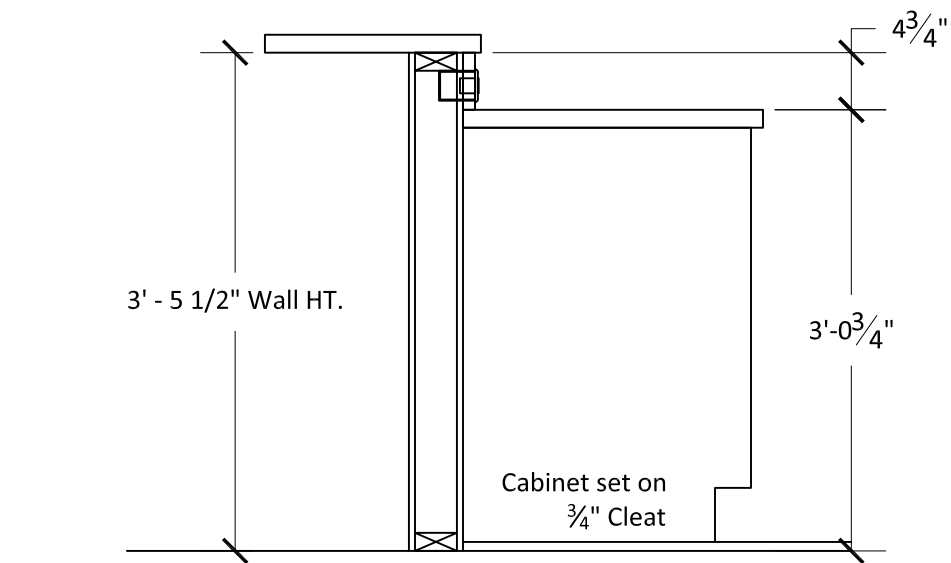
Second Floor



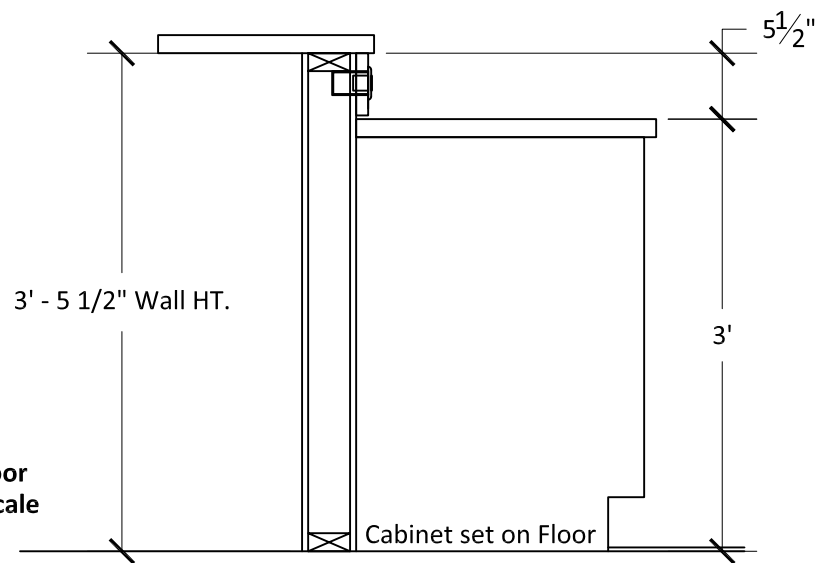
Typical Window Framing - First and Second Floor --- 3_30

Scale: Not to scale

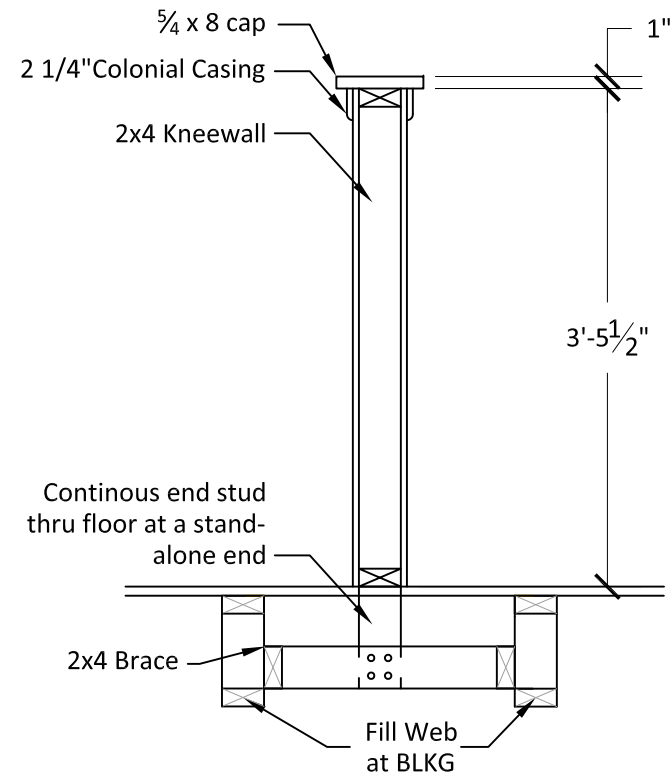
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| CRESTMONT 535 B | |
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| SALESPERSON SIGNATURE #: | SALESPERSON SIGNATURE #: |
| A RESIDENCE FOR: COBBLESTONE LAB HOME | |
| DRAWN BY: IBACOS | PLAN STARTED: 11/20/09 |
| PAGE NO. D-20 | |
| JOB NUMBER 27_90174 | |
| TRUELINE NUMBER 630103 | |



Hardwood Floor
Not to scale



Vinyl Floor
Not to scale

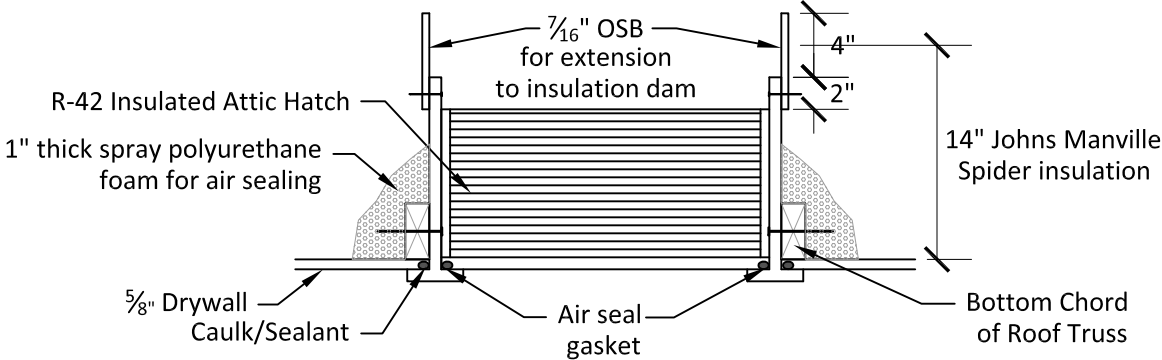


Section Detail
Not to scale

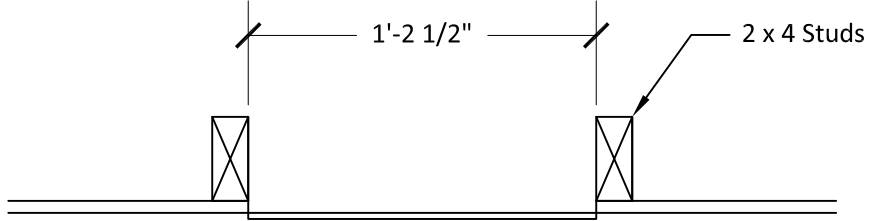
Half Wall Detail --- 3_27

Scale: Not to Scale

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| TRUeline NUMBER | | 630103 | | |



**Battic EZ Hatch
Attic Access Scuttle Door
Not to scale**

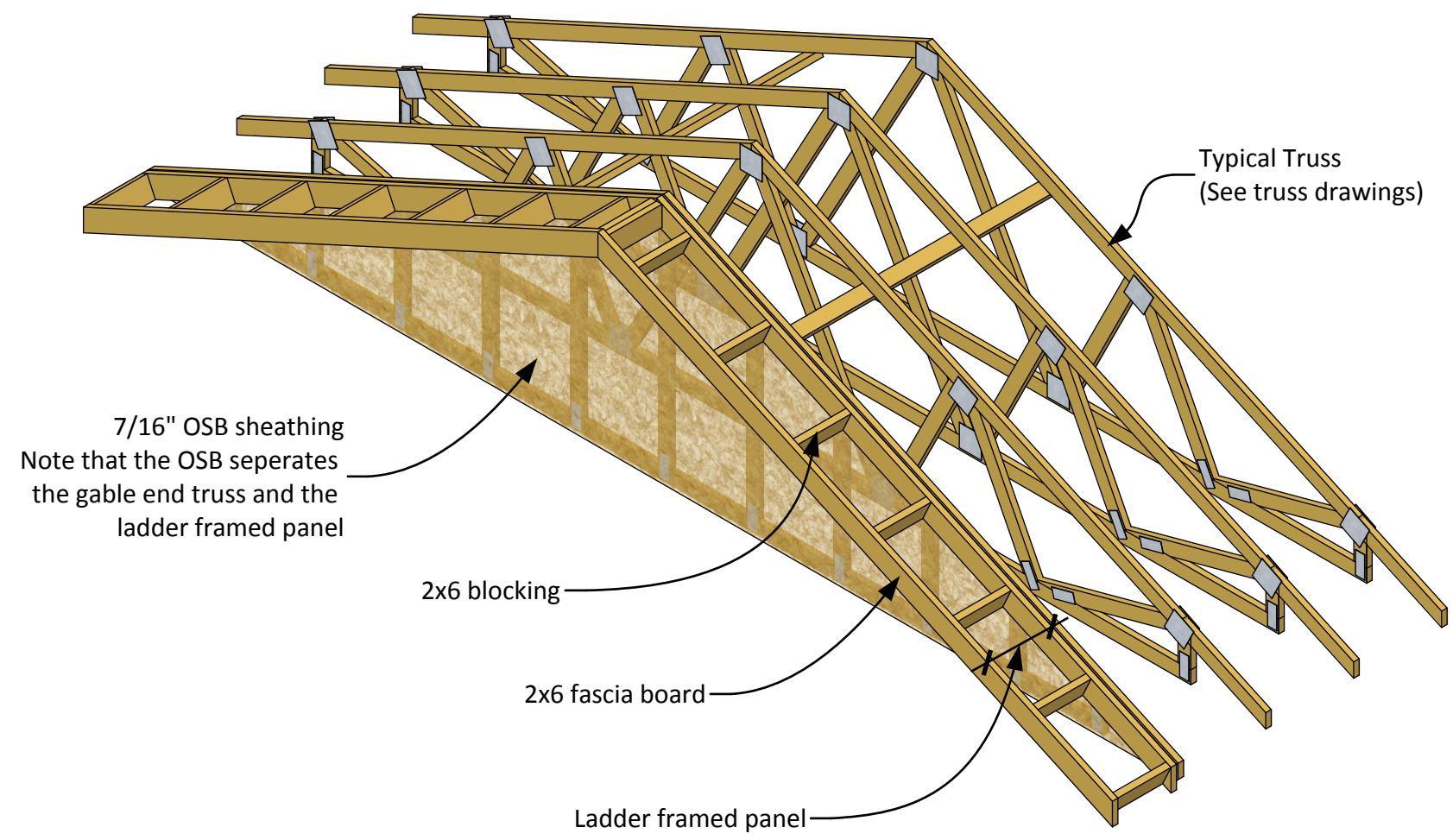


**Tub / Shower Access
Not to scale**

Tub/Shower/Attic Access --- 4_08

Scale: *Not to Scale*

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| PAGE NO. | D-22 | | | | |
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| TRUELINE NUMBER | 630103 | | | | |



7/16" OSB sheathing
 Note that the OSB separates
 the gable end truss and the
 ladder framed panel

2x6 blocking

2x6 fascia board

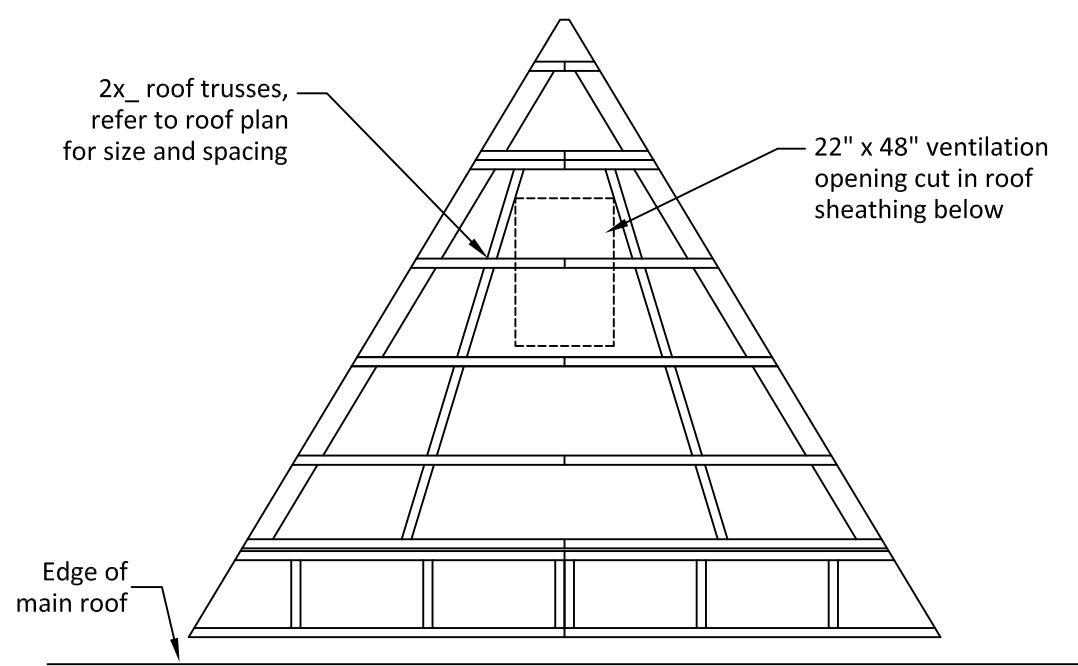
Ladder framed panel

Typical Truss
 (See truss drawings)

Typical Gable End Overhang Framing --- 4_11

Scale: *Not to scale*

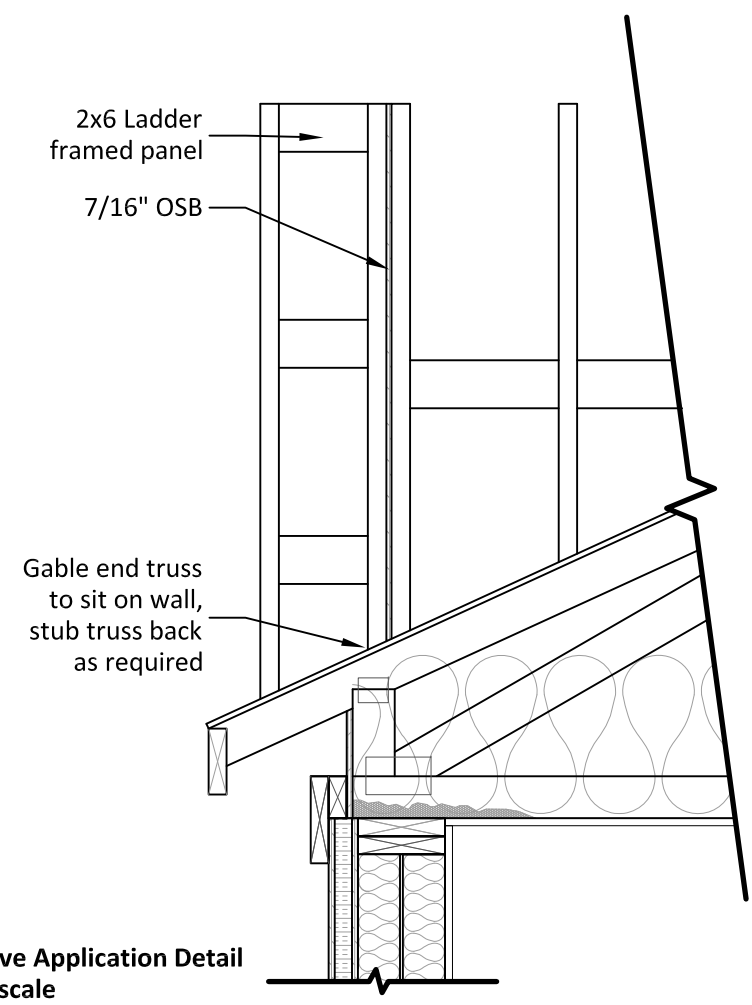
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| PAGE NO. | | D-23 | | | |
| JOB NUMBER | | 27_90174 | | | |
| TRUELINE NUMBER | | 630103 | | | |
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Edge of main roof

Roof Truss Overlay
Not to scale

Plan View See Detail

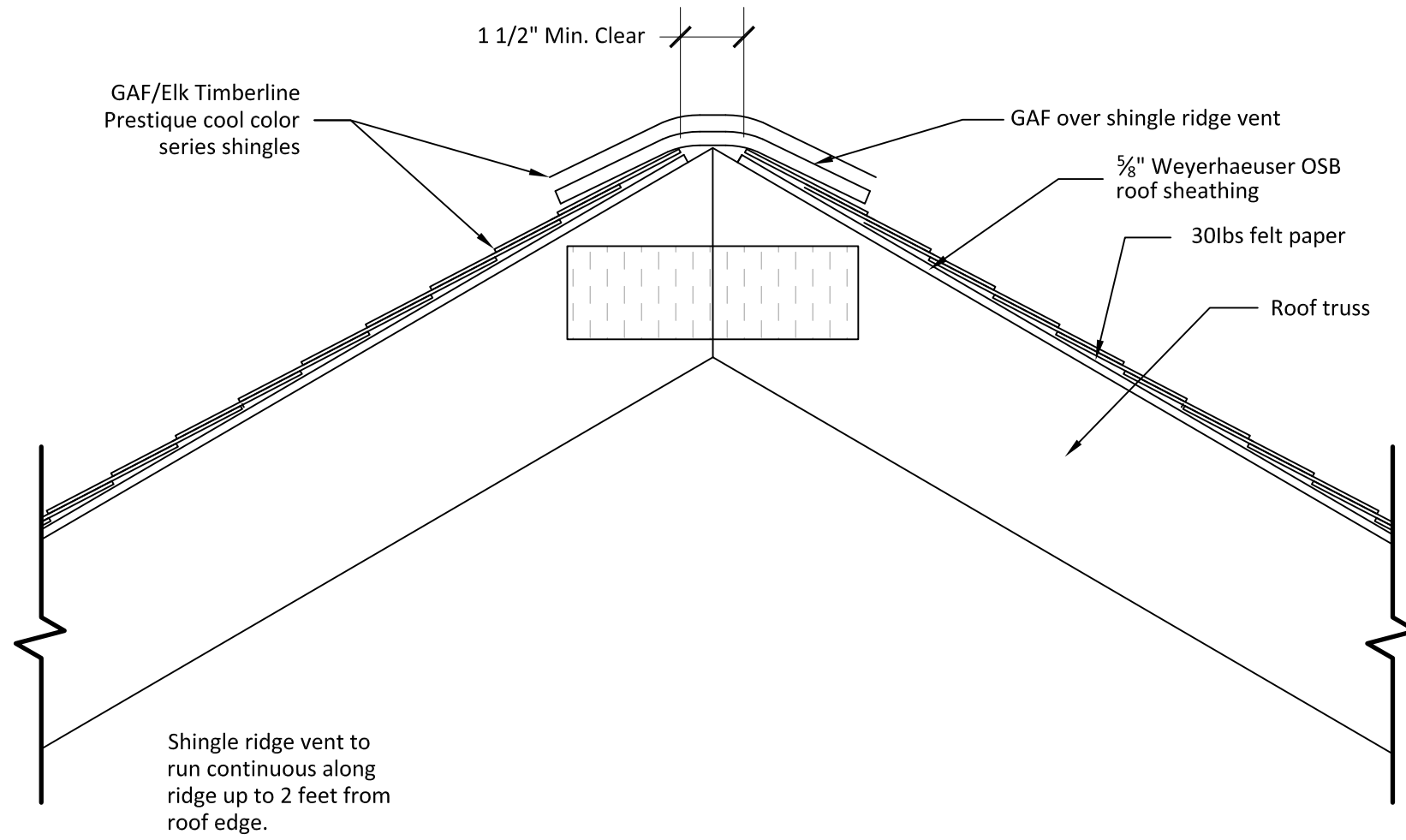


Pentave Application Detail
Not to scale

Stick Built Roof Overlay for Reverse Gable --- 4_10

Scale: Not to Scale

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| IBACOS | | | | | DATE |
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| PAGE NO. | | D-24 | | JOB NUMBER | |
| 27_90174 | | TRUELINE NUMBER | | 630103 | |



Ridge Vent Detail --- 4_09

Scale: 1/2" = 1' - 0"

REMARKS

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DATE

CRESTMONT
535 B



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A RESIDENCE FOR:
COBBLESTONE LAB HOME

DRAWN BY:
DHR

PLAN STARTED:
10/01/09

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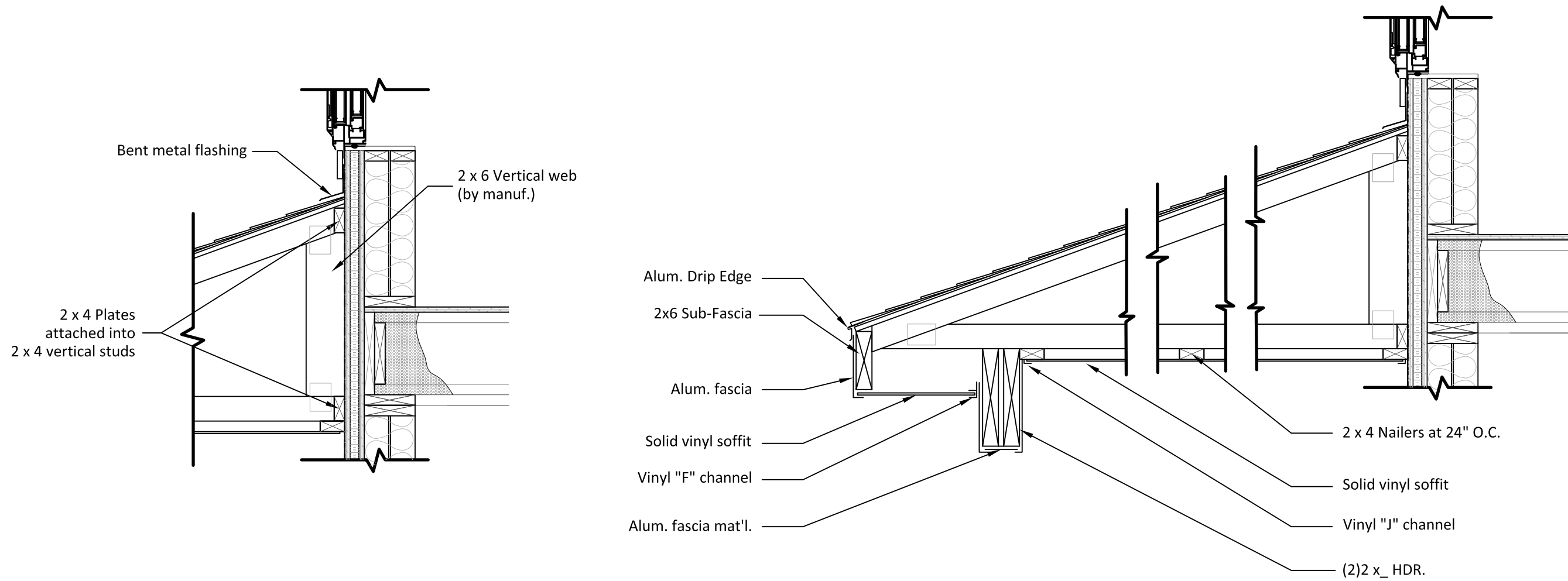
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27_90174

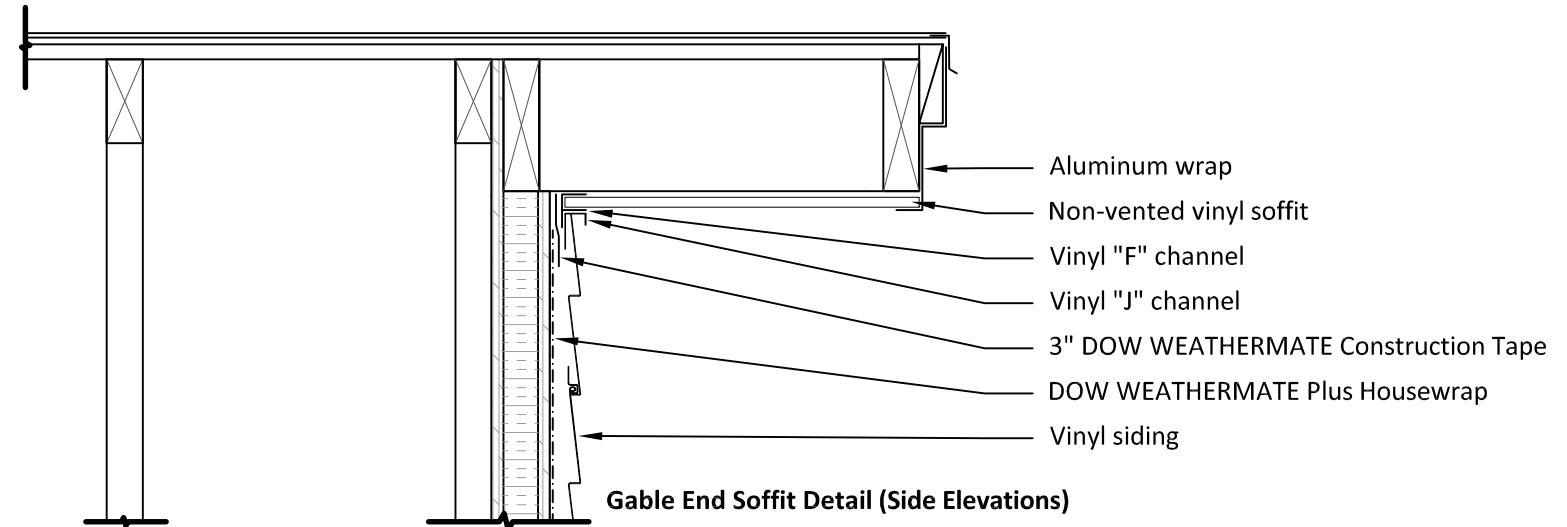
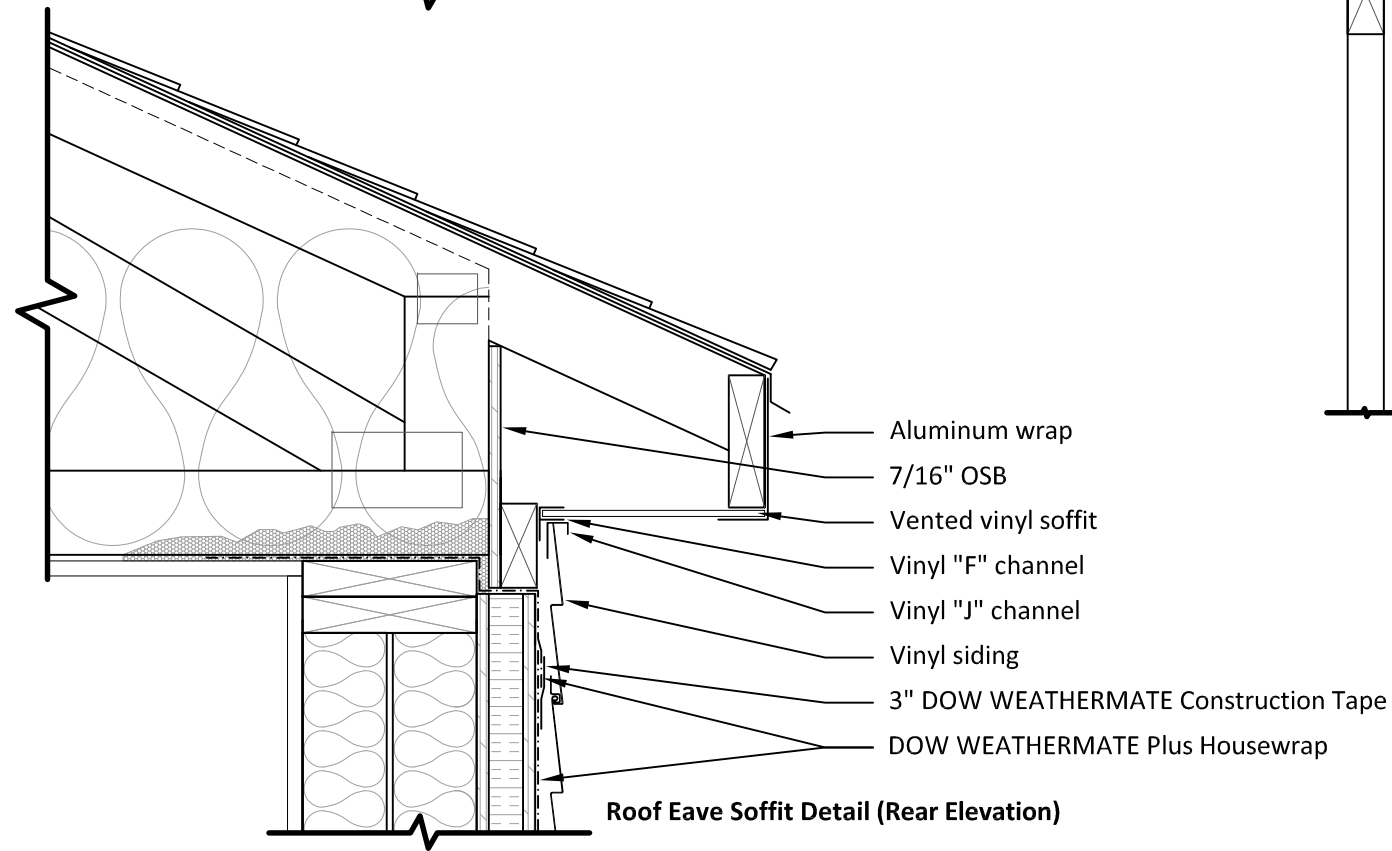
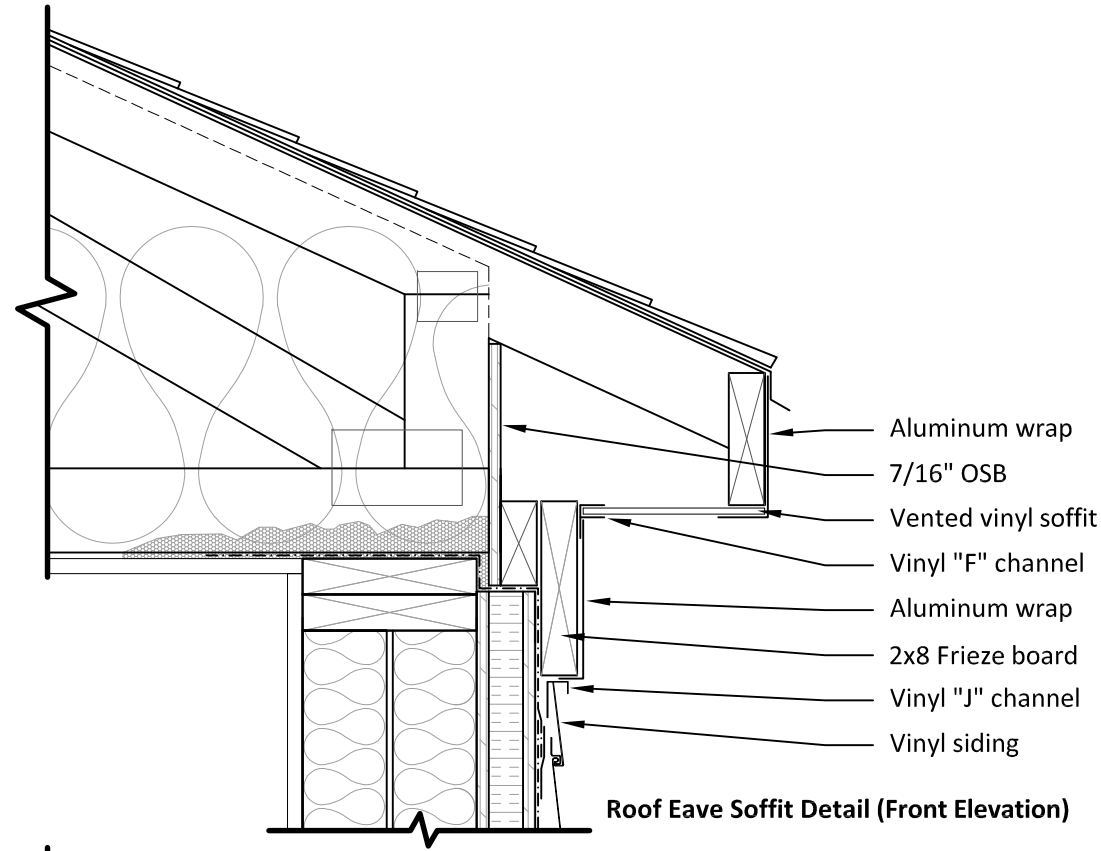
TRUELINE NUMBER
630103



Porch Roof Attachment and Soffit Detail --- 4_07

Scale: *Not to Scale*

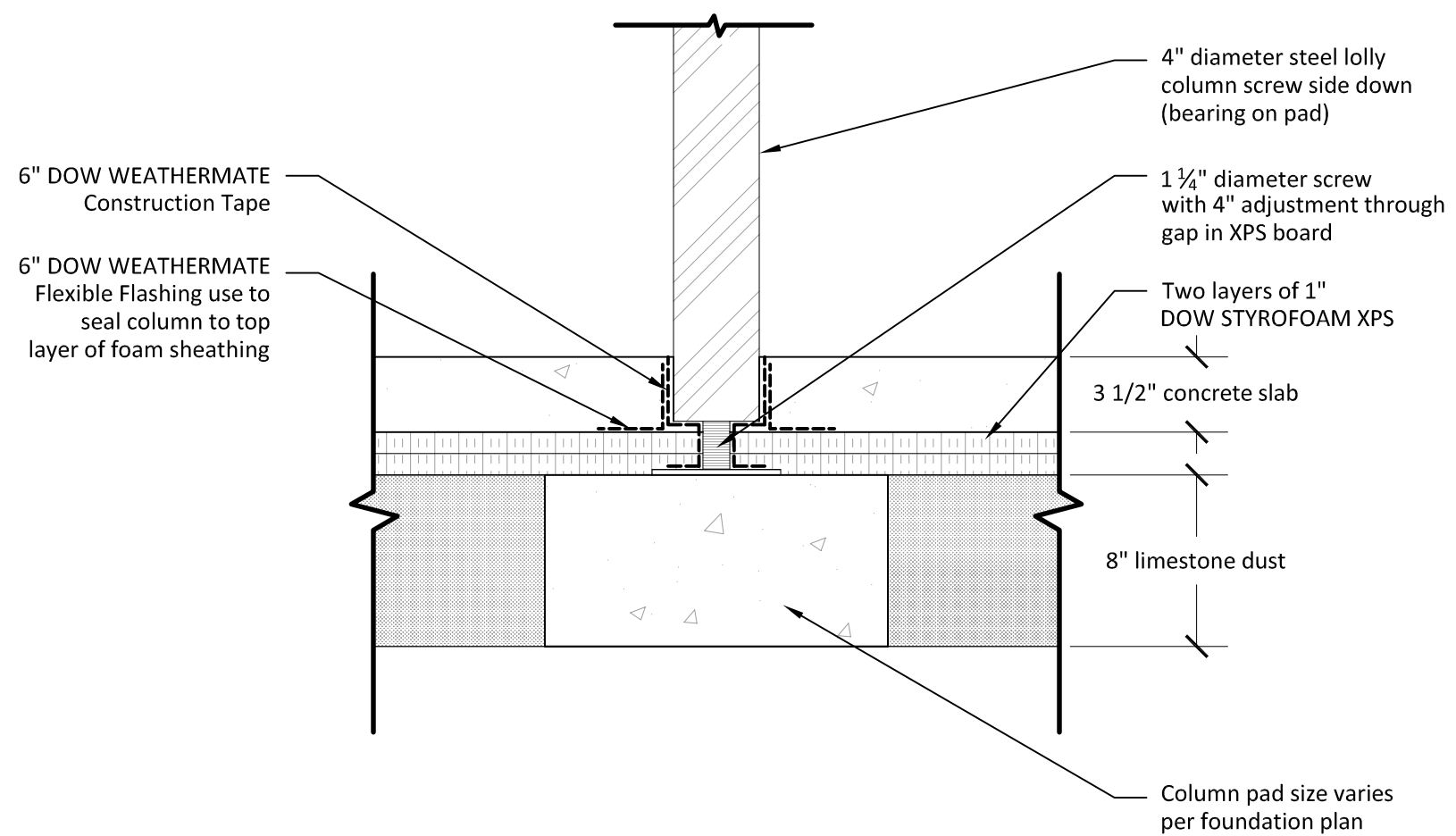
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Roof Eave and Gable End Soffit Details --- 3_26

Scale: 1-1/2" = 1' - 0"

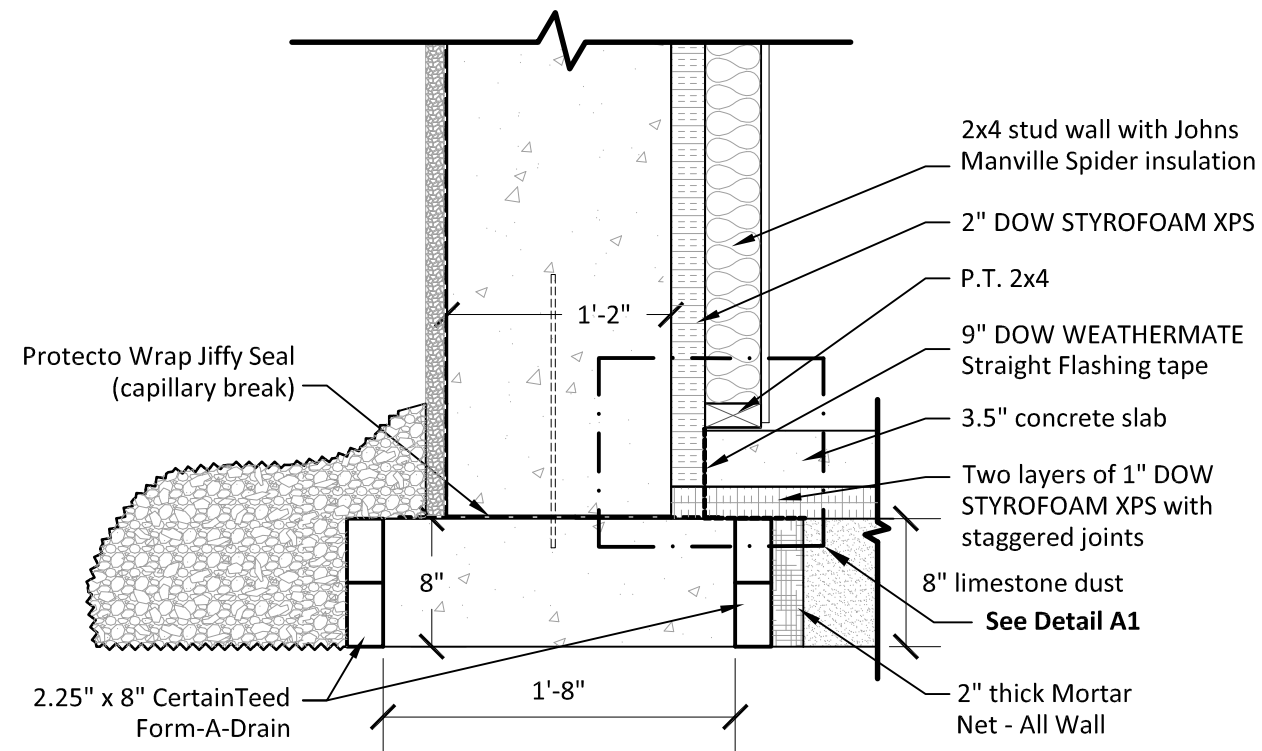
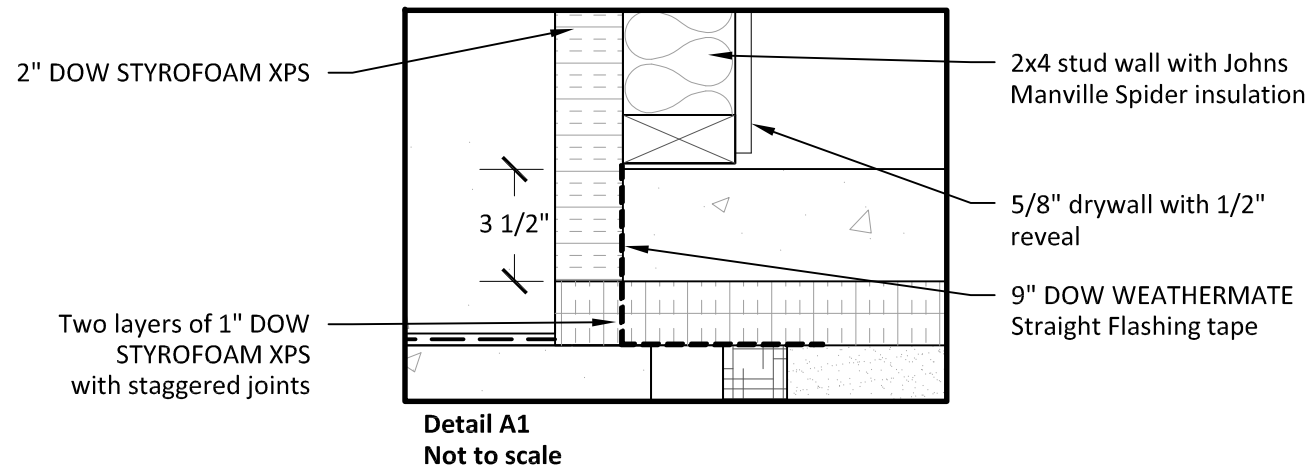
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Column Pad Below Slab --- 2_08

Scale: 1 1/2" = 1'-0"

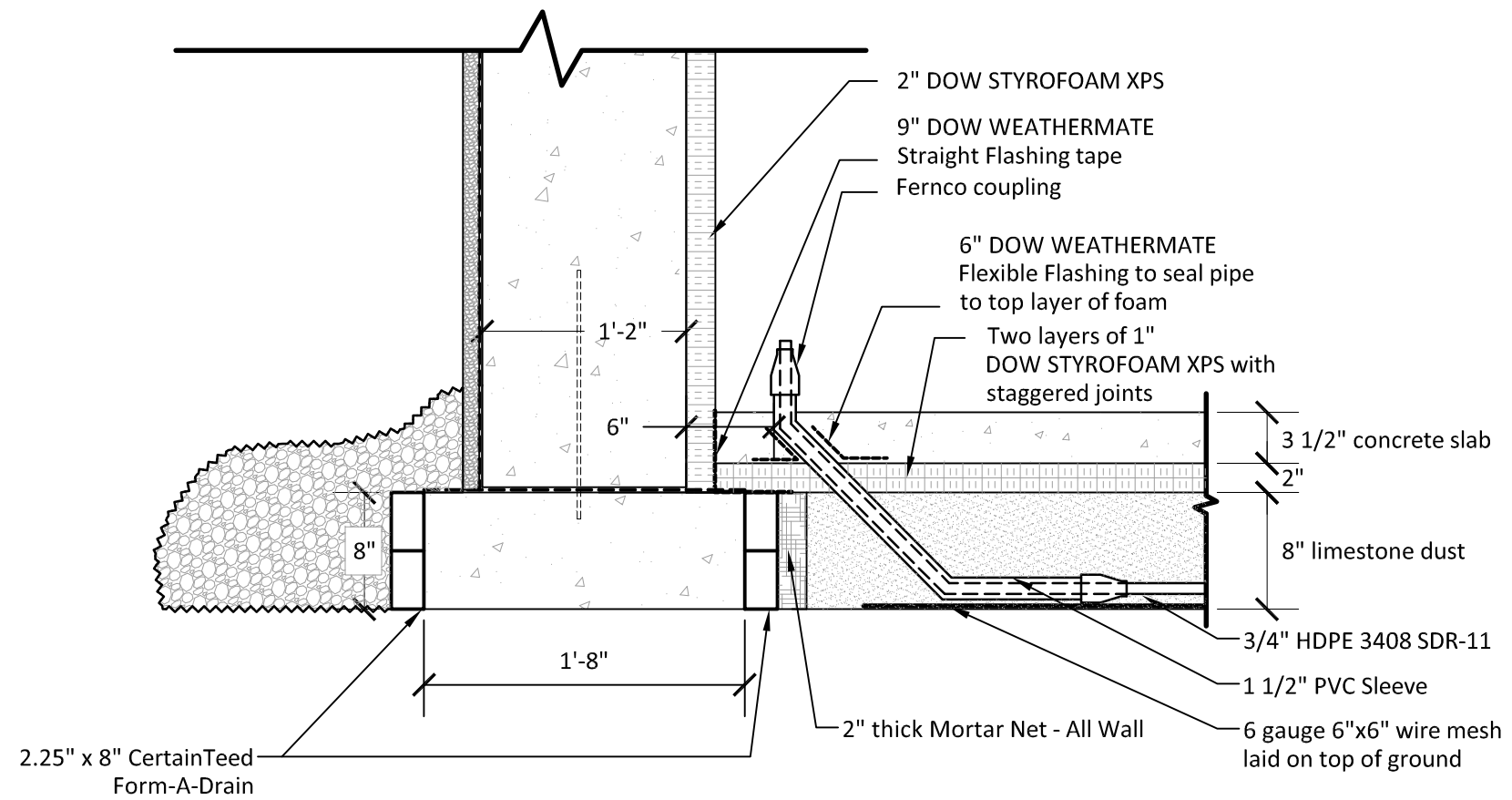
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Section Through Footing and Slab Assembly at Finished Basement --- 2_00

Scale: 1" = 1' - 0"

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| TRUELINE NUMBER | | 630103 | | | |



Horizontal Loop Piping Penetration through Slab Assembly --- 5_01

Scale: 1" = 1' - 0"

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535 B



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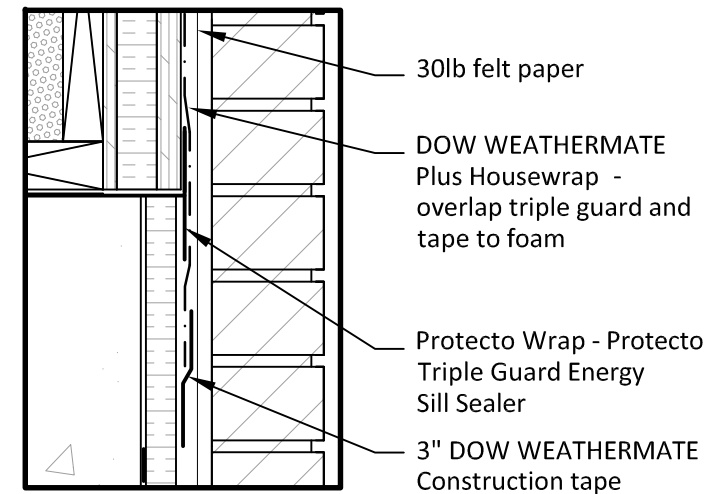
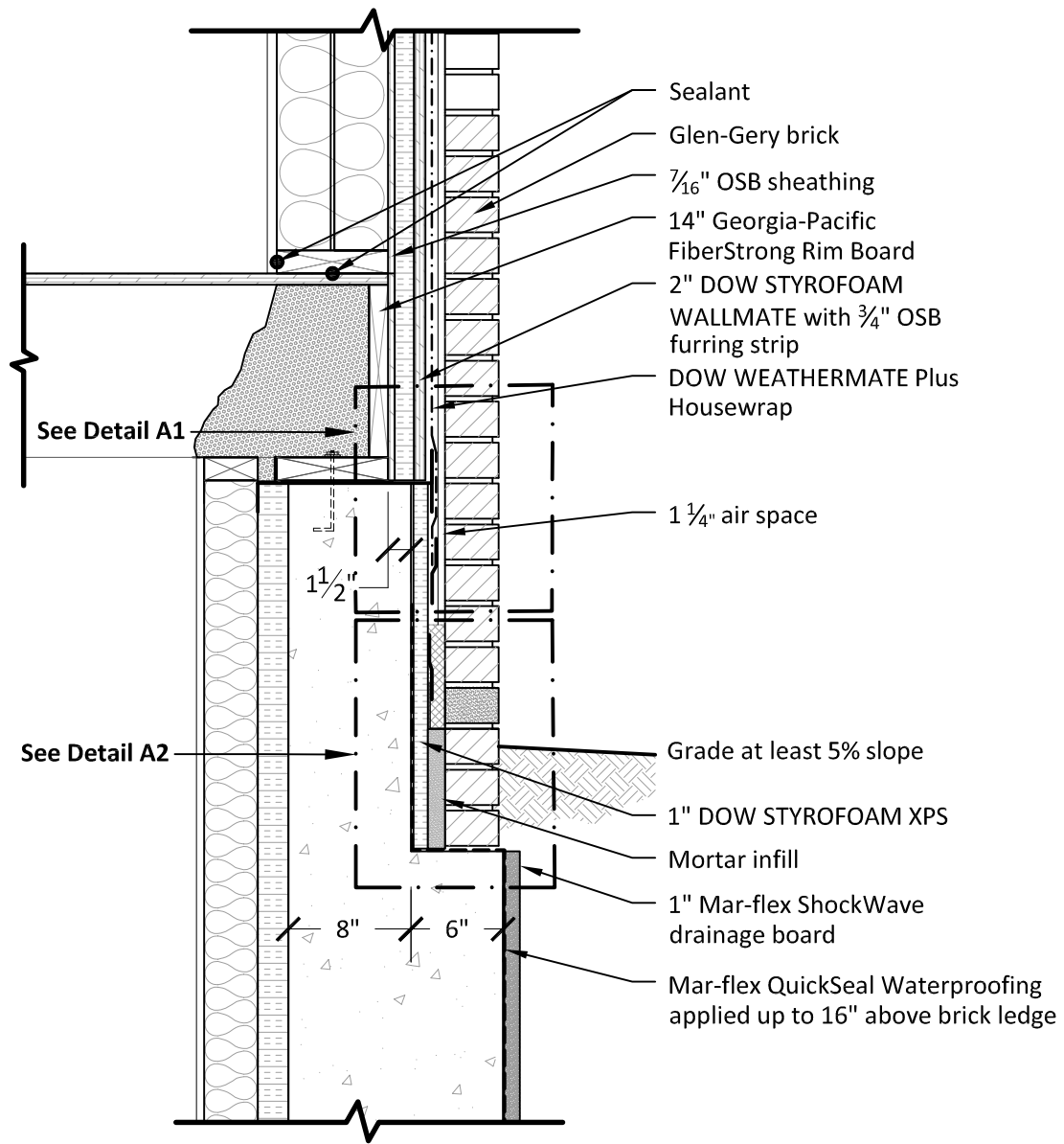
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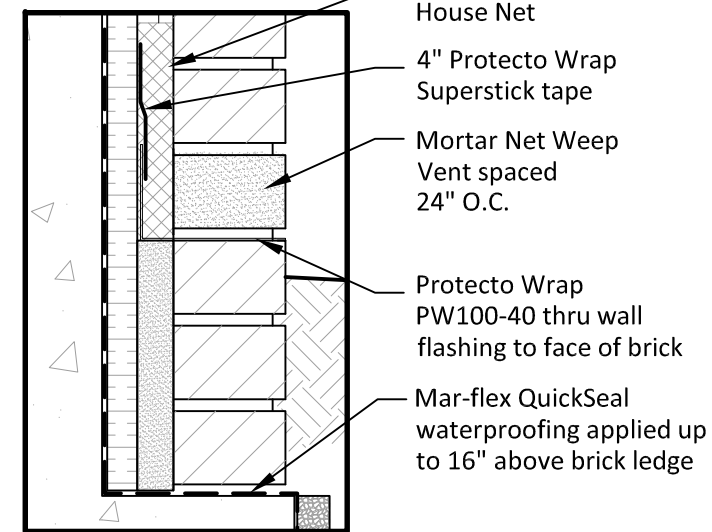
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TRUELINE NUMBER
630103



Detail A1
Not to scale

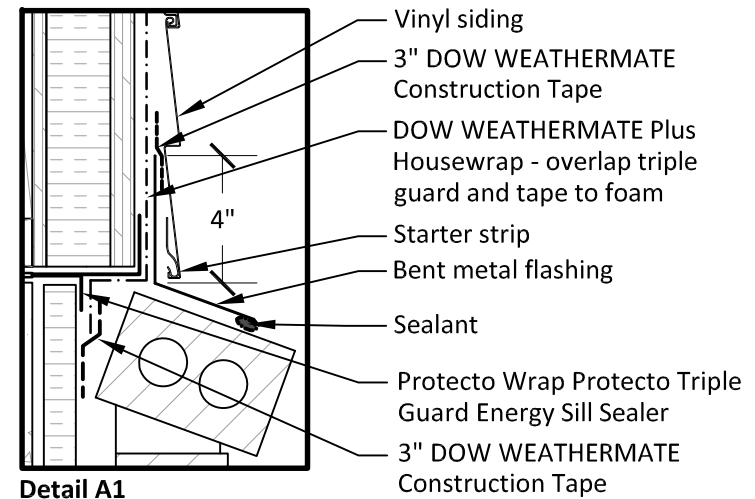
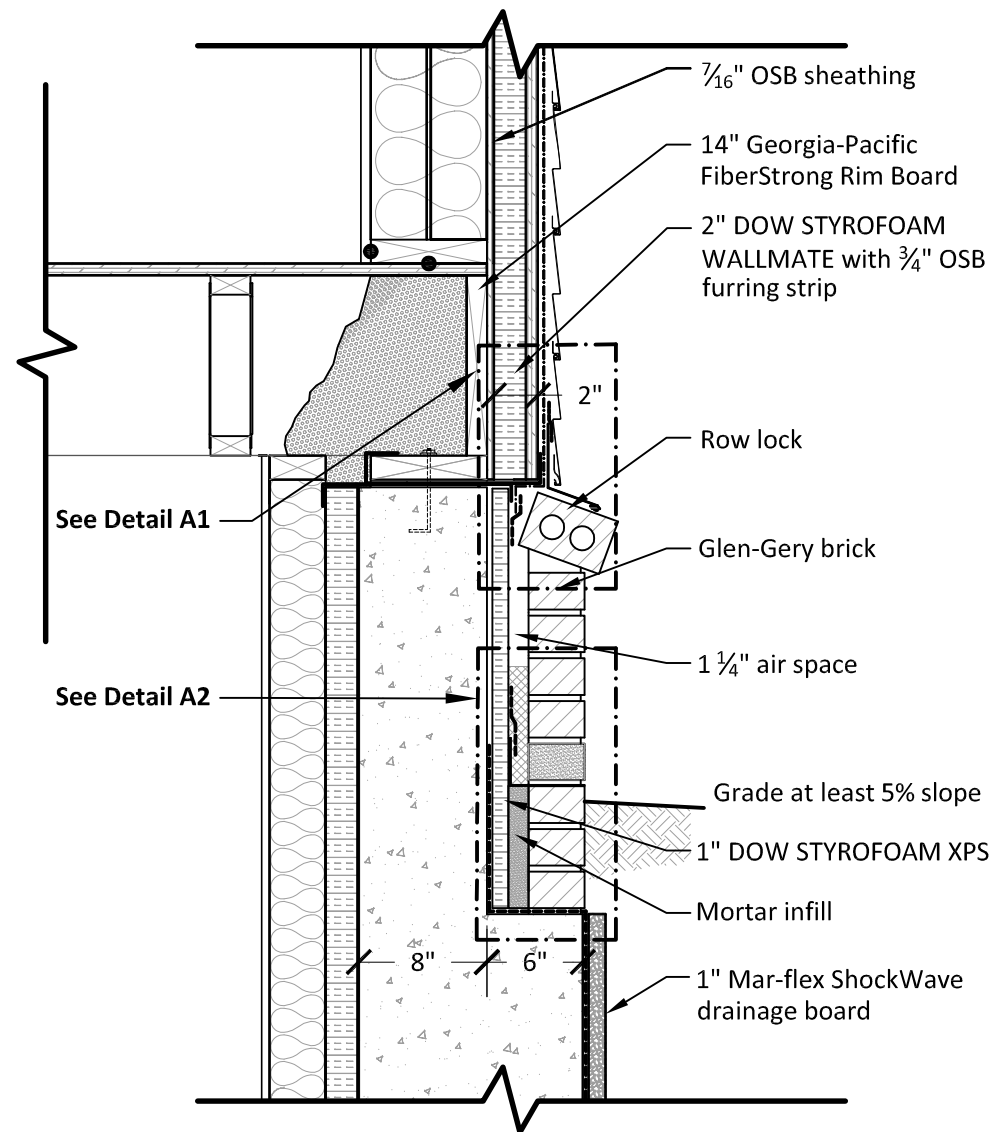


Detail A2
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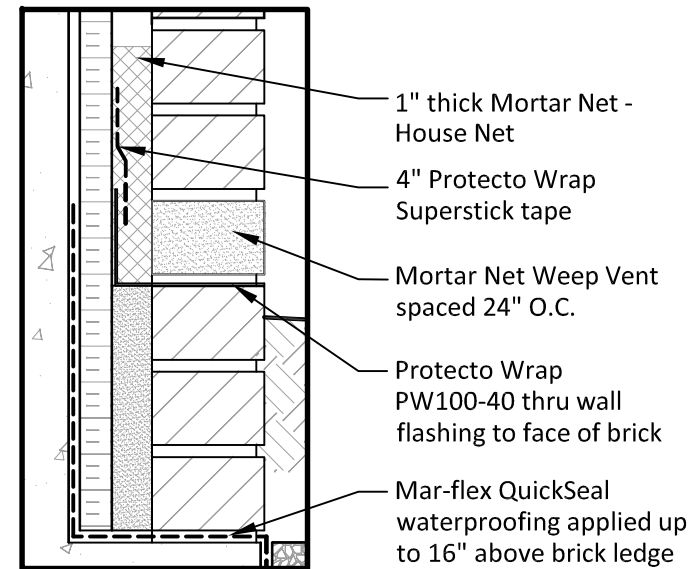
Section through Above Grade Portion of Foundation Wall (Front) --- 2_10

Scale: 1" = 1' - 0"

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Detail A1
Not to scale



Detail A2
Not to scale

Section through Above Grade Portion of Foundation Wall (Side/Rear) --- 2_11

Scale: 1" = 1' - 0"

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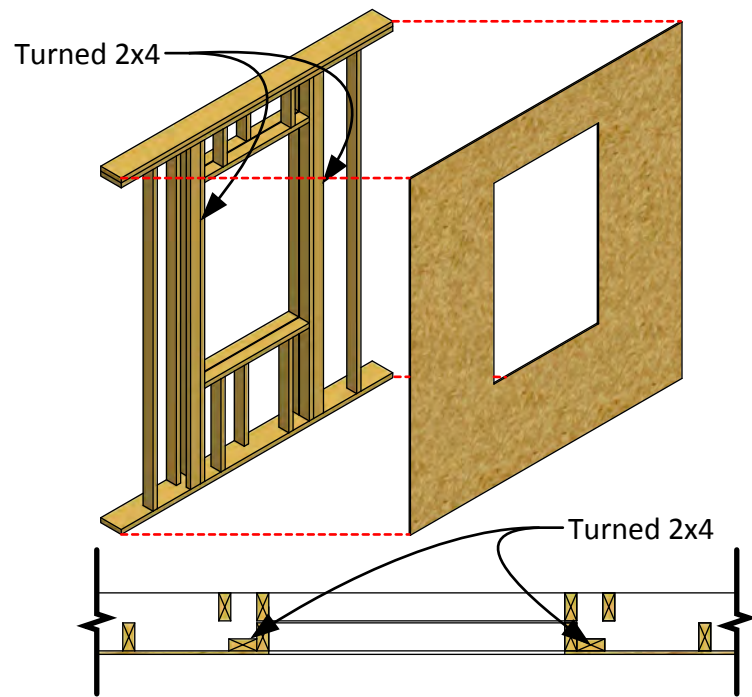
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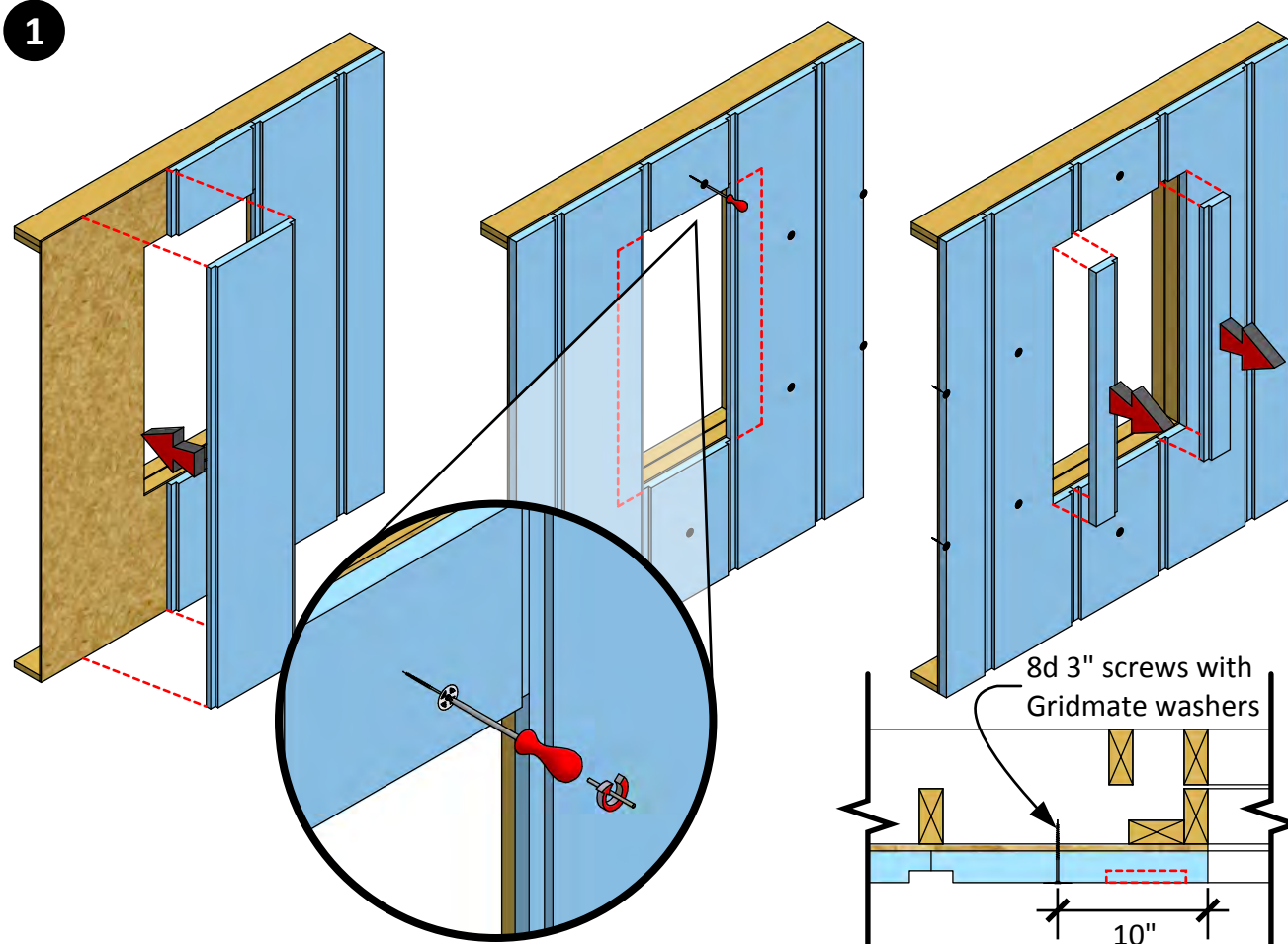
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| | SALESPERSON SIGNATURE #1: |

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| PAGE NO. D-32 |
| JOB NUMBER 27_90174 |
| TRUELINE NUMBER 630103 |



Before you start - Make sure the framing around the window has a turned 2x4 stud placed against the trim stud. These studs are necessary for proper attachment of exterior trim and siding.

For proper installation, make sure the rough opening is 1" wider and 1 1/2" taller than the actual window size.

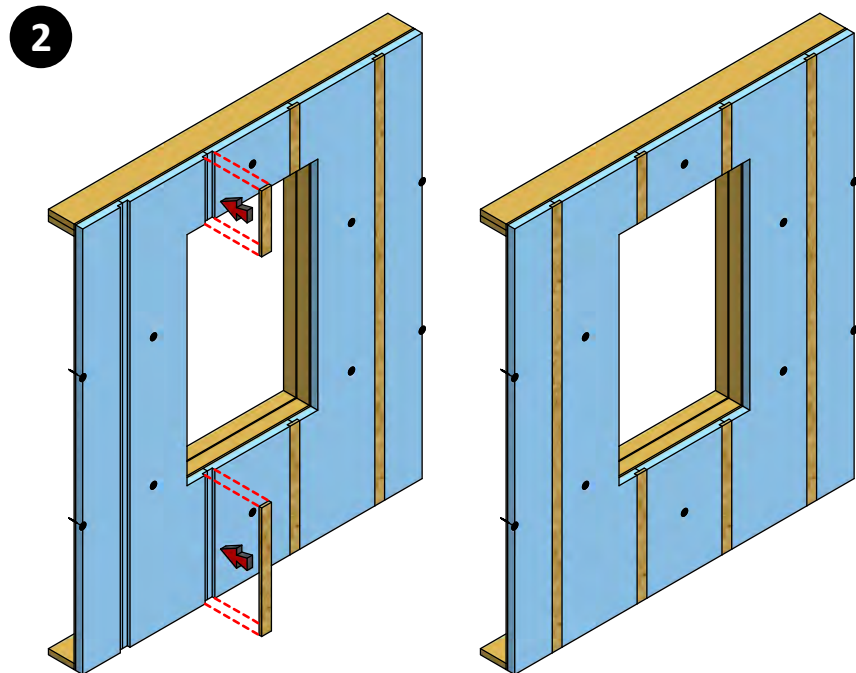


Step 1 - Install 2" DOW STYROFOAM WALLMATE. Use 8d 3" long screws with Gridmate Washers. To temporarily fasten the WALLMATE to the surfaces of the wall each panel needs to be secured with a minimum of 2 screws.

Make sure to align the edges of the WALLMATE with the centers of the studs on the exterior side of the wall.

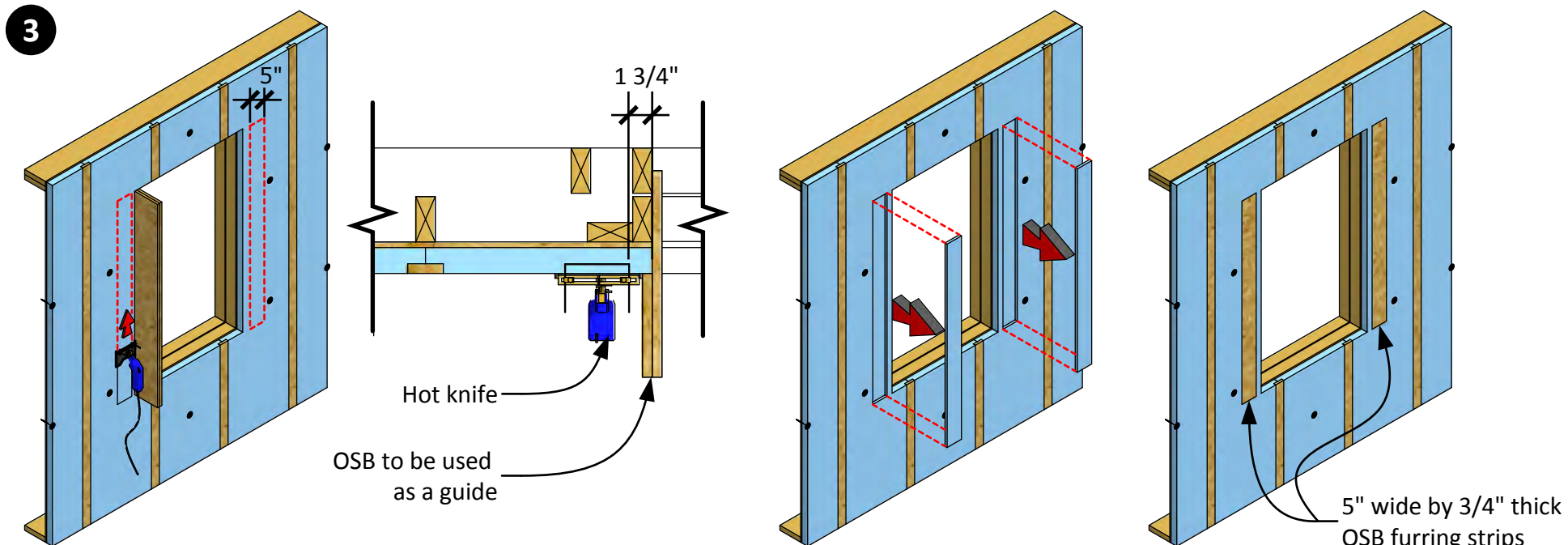
Make sure that no screw is placed within 10" of the rough opening. This is to make sure that the screws do not interfere with the furring strips installed later.

Trim the WALLMATE panels as needed to match the window rough opening size of the framing.



Step 2 - Install 3/4" thick by 2 3/4" wide OSB furring strips into the rabbet channels at the vertical seams of the DOW STYROFOAM WALLMATE.

Fasten furring strips through the WALLMATE to the exterior using 3 1/2" nails as fasteners spacing them no more than 16" O.C.



Step 3 - Use a hot knife to cut a 3/4" deep by 5" wide strip into the DOW STYROFOAM WALLMATE at the jambs the entire height of the window.

Make sure that the cut is 1 3/4" away from the edge of the rough opening to allow for the proper attachment of trim and siding. To get a straight cut use a piece of OSB temporarily fastened to the rough opening as a guide. If necessary add additional pieces of OSB to the initial OSB guide on the side away from the rough opening until the hot knife is properly spaced from the rough opening. Then install a 3/4" thick by 5" wide OSB furring strip. Fasten 3 1/2" nails at 16" O.C.

REMARKS

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HOME

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A RESIDENCE FOR:
COBBLESTONE LAB HOME

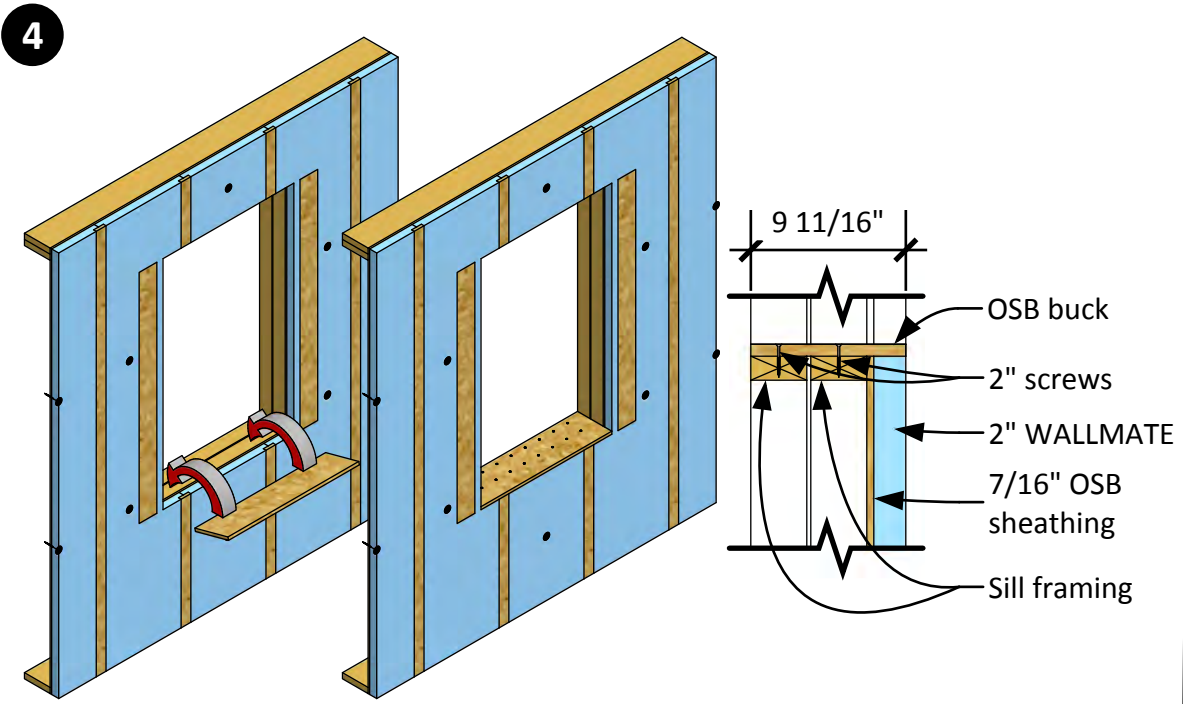
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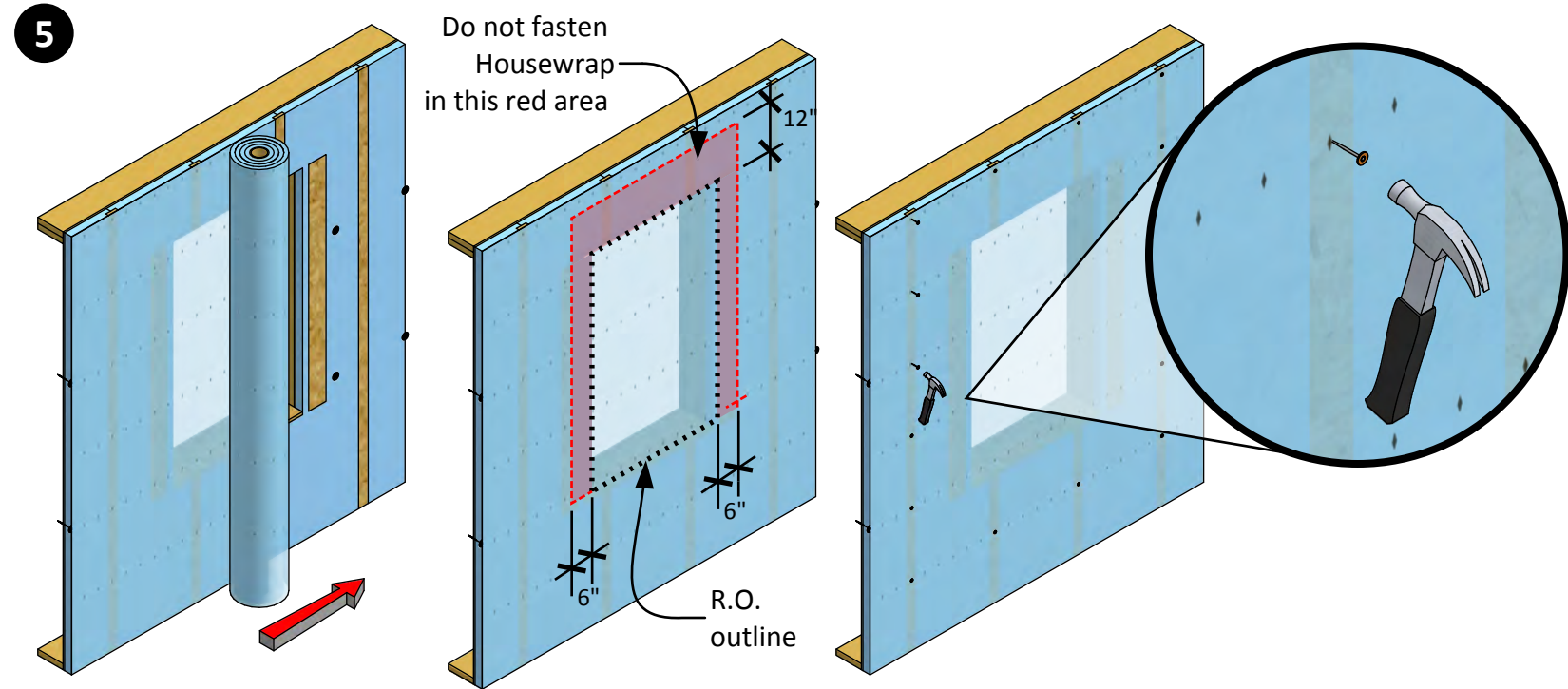
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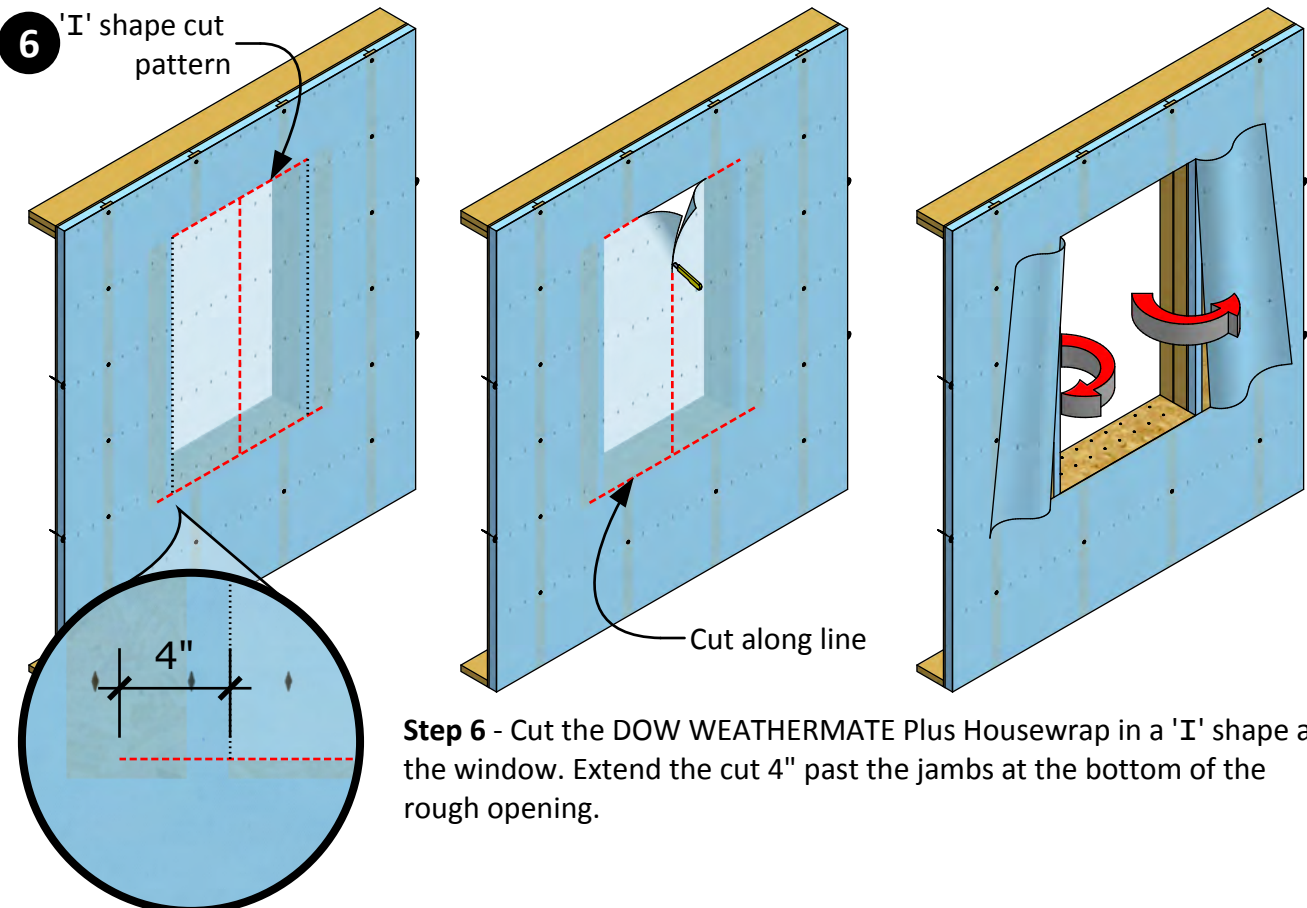
Step 4 - Install a 3/4" OSB buck at the sill of the window.

Make sure the buck extends from the interior surface of the wall panel framing out to the exterior edge of the DOW STYROFOAM WALLMATE. Fasten OSB to sill framing with 2" screws spaced 4" O.C.

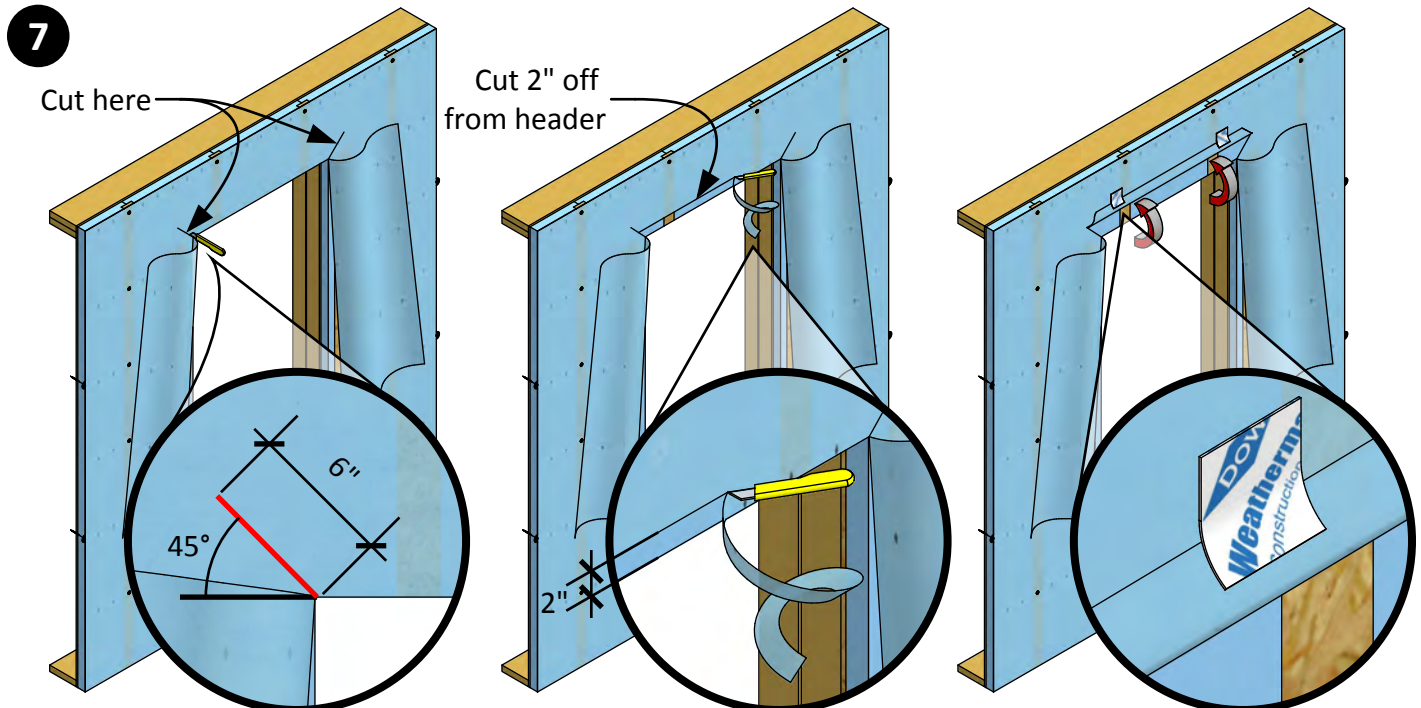


Step 5 - Install DOW WEATHERMATE Plus Housewrap. Make sure the button cap nails are being fastened into the furring strips at a maximum 16" O.C.

Make sure not to fasten the housewrap within 12" of the head of the window and within 6" of the jambs.



Step 6 - Cut the DOW WEATHERMATE Plus Housewrap in a 'I' shape at the window. Extend the cut 4" past the jambs at the bottom of the rough opening.



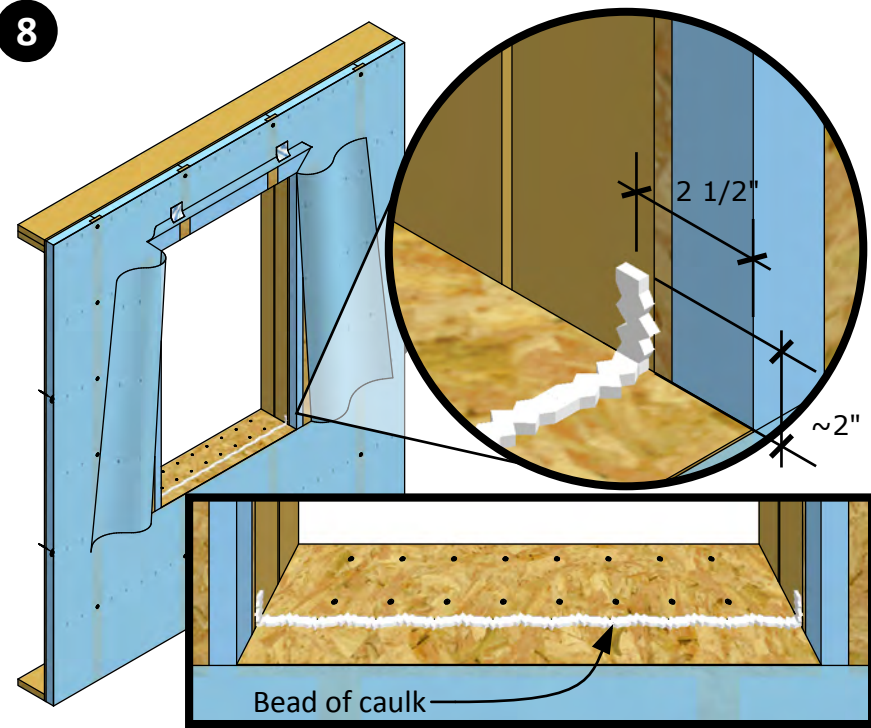
Step 7 - At the head of the window make two 6" cuts at 45 degree angles away from the window.

Then, cut 2" off the housewrap above the window to allow for proper overlap over the window flange later.

Then, fold the housewrap up and use tape to temporarily hold the housewrap out of the way.

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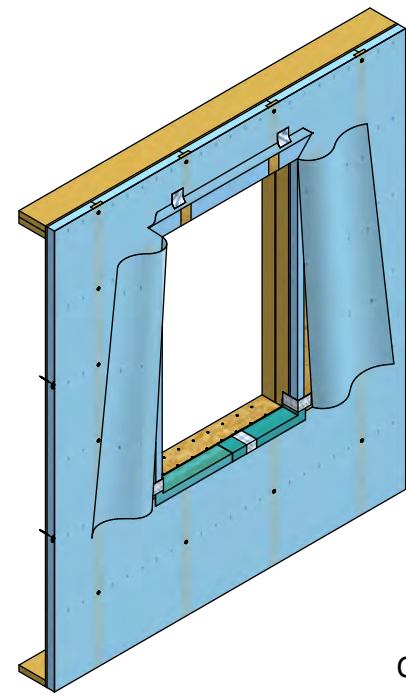
8



Step 8 - Apply a 3/8" bead of caulk to the sill of the rough opening. Make sure that bead of caulk is placed 2 1/2" from the exterior of the sill OSB buck.

Make sure to extend the bead of caulk about 2" up the jambs of the rough opening so the jambs of the sill pan will press into the caulk.

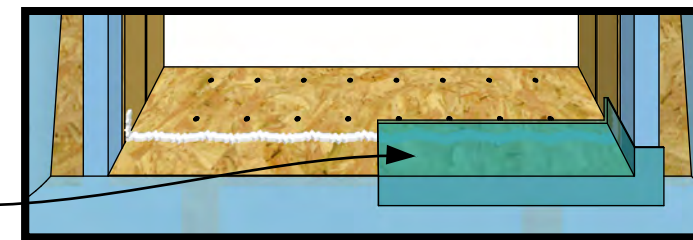
9



Step 9 - Hold the DOW WEATHERMATE Plus Housewrap back along the jambs of the rough opening and install a DOW WEATHERMATE Sill Pan at the sill of the rough opening.

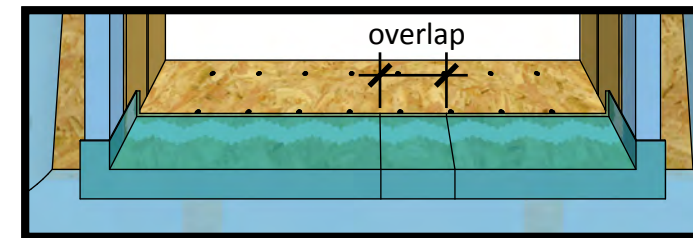
Note that the Sill Pan is constructed of 2 pieces with one piece overlapping the other piece.

First piece



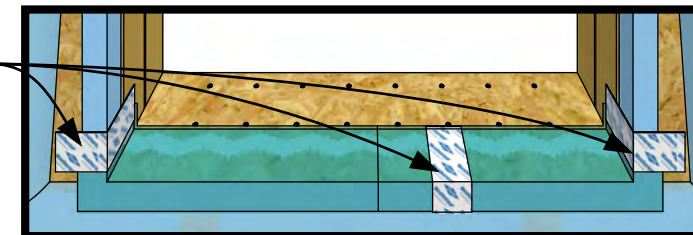
Embed the first piece of the Sill Pan into the corner of the rough opening.

overlap



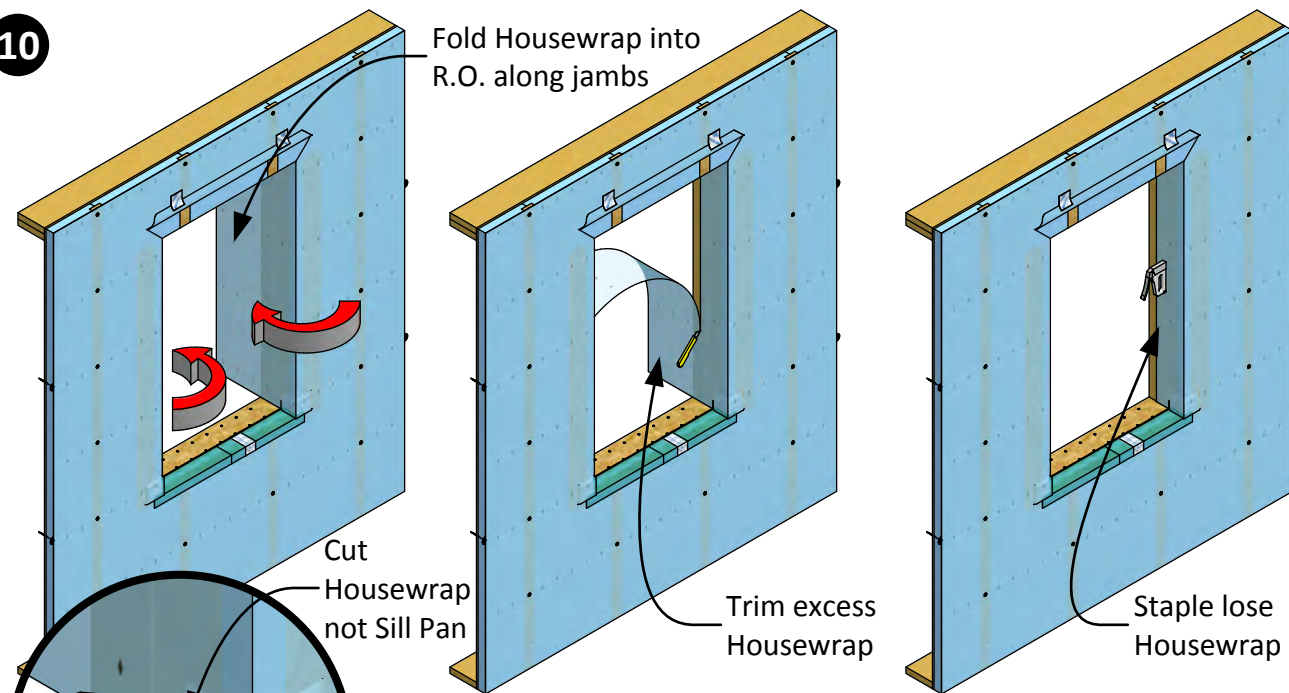
Embed the second piece of the Sill Pan into the other corner and overlap the first piece.

Construction Tape



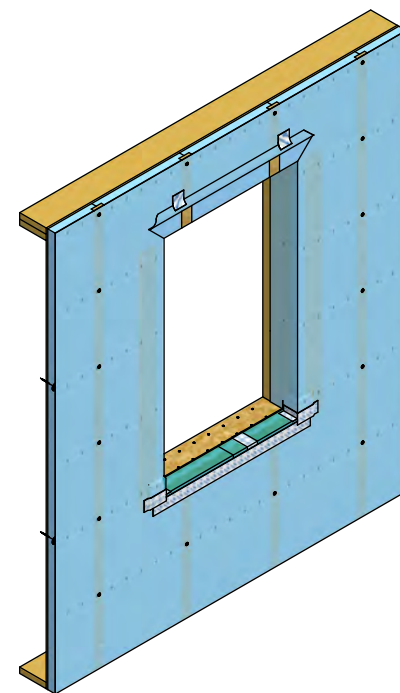
Use DOW WEATHERMATE Construction Tape to tape over the overlap in the pieces as well as to tape the Sill Pan to the jambs of the rough opening.

10

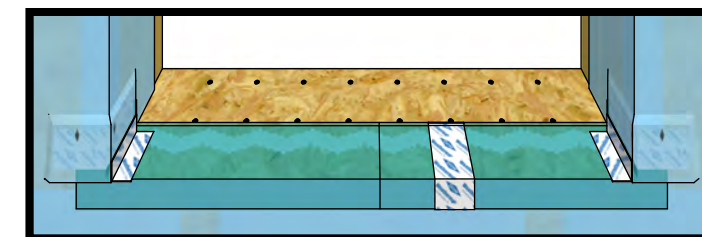


Step 10 - Fold the DOW WEATHERMATE Plus Housewrap into the rough opening along the jambs and pull tight. Cut the Housewrap to allow the vertical leg of the back damn on the sill pan to stick through the Housewrap. Make sure the Housewrap can fit flat against the rough opening. Then trim the excess housewrap to the inside of the rough opening. Staple the Housewrap to the framing of the rough opening.

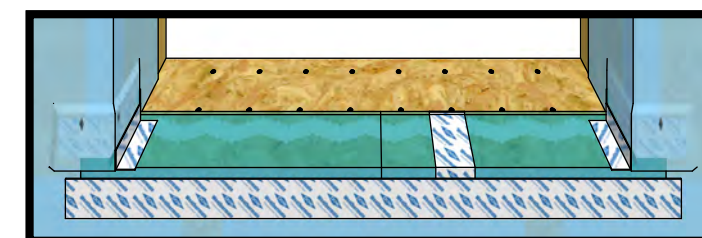
11



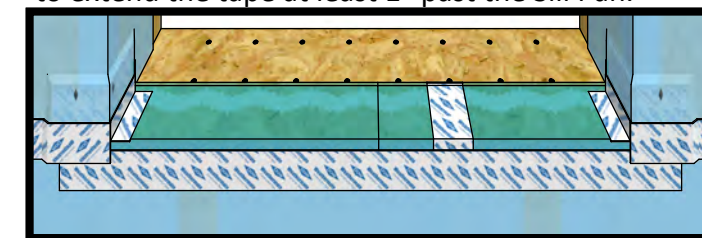
Step 11 - To make sure a tight air seal around the DOW Sill Pan apply 3" DOW WEATHERMATE Construction Tape to seams of the Housewrap at the Sill Pan to bridge them together.



Apply tape to the inside edge of the rough opening first.



Then apply tape to the bottom edge of the Sill Pan. Make sure to extend the tape at least 1" past the Sill Pan.



Finish by applying tape at the corners making sure to over lap the previous tape.

REMARKS

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CRESTMONT

535 B



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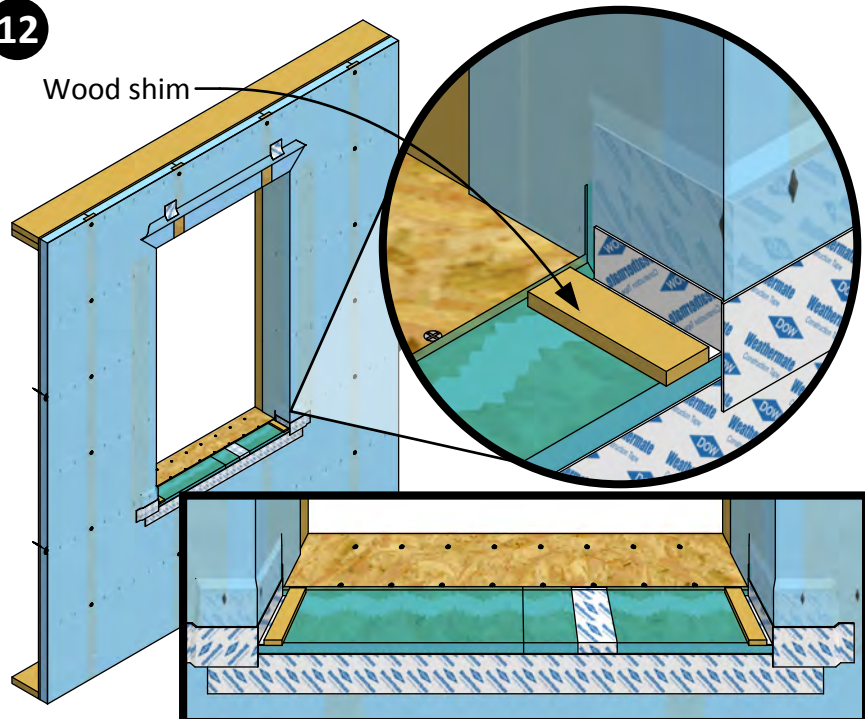
A RESIDENCE FOR:
COBBLESTONE LAB HOME

CUSTOMER SIGNATURE #1: _____
CUSTOMER SIGNATURE #2: _____
DRAWN BY: IBACOS
PLAN STARTED: 11/20/08
SALESPERSON SIGNATURE #1: _____
SALESPERSON SIGNATURE #2: _____

PAGE NO.
F-3

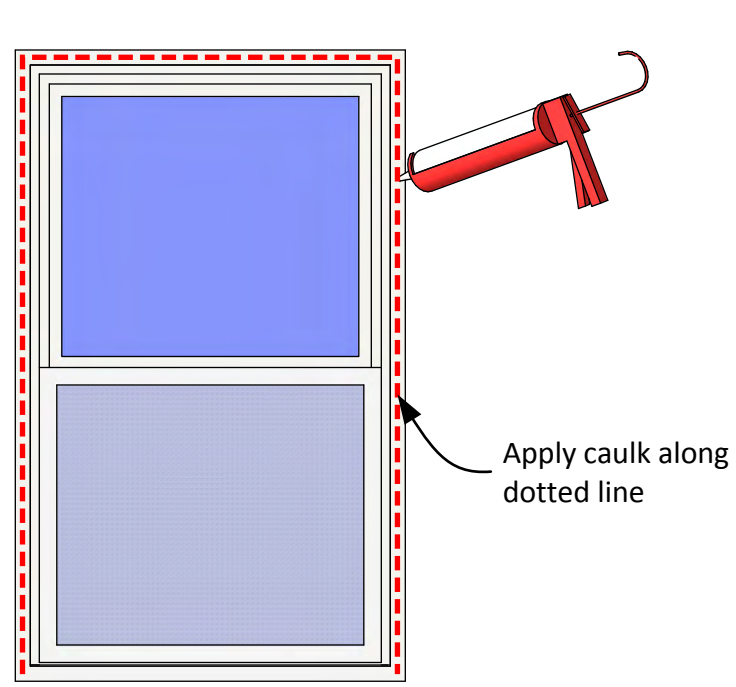
JOB NUMBER
27_90174
TRUELINE NUMBER
630103

12



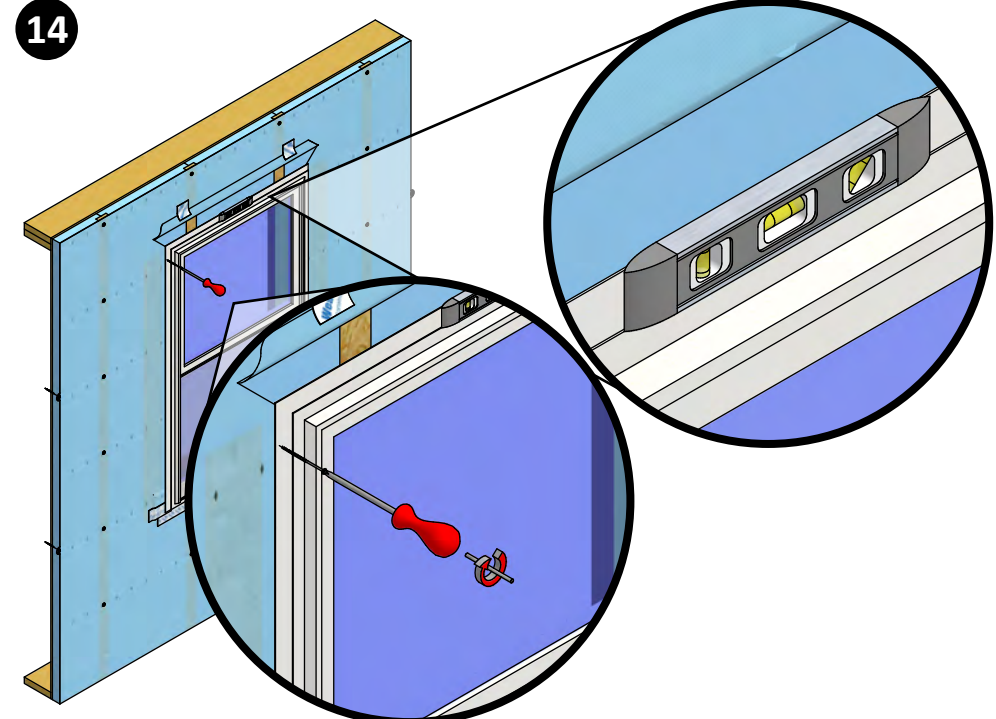
Step 12 - Place (1) 1/2" thick wood shim in each corner of the DOW Sill Pan within the rough opening.

13



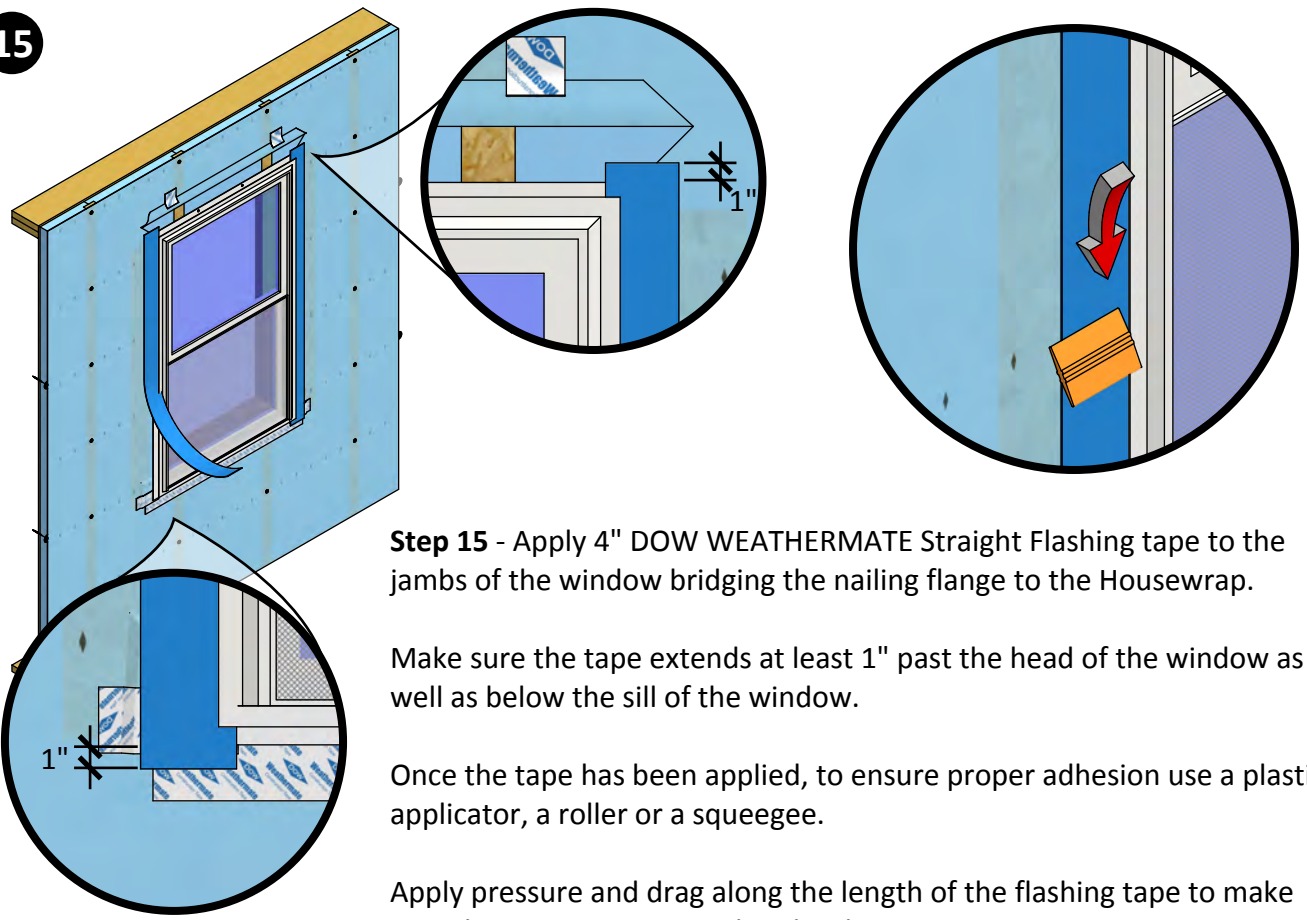
Step 13 - Before installing the window, apply caulk to the inside face of the nailing flange on the window. Do not apply caulk to the nailing flange along the sill.

14



Step 14 - Install the window into the rough opening. Use a 4" screw to secure the window in place through the exterior sheathing back to the wall studs. Then check the window for being plumb, level and square. Confirm that the window opens and closes smoothly without sticking. Install the remaining screws around the perimeter of the window. All screws must be fastened back to the wall studs.

15



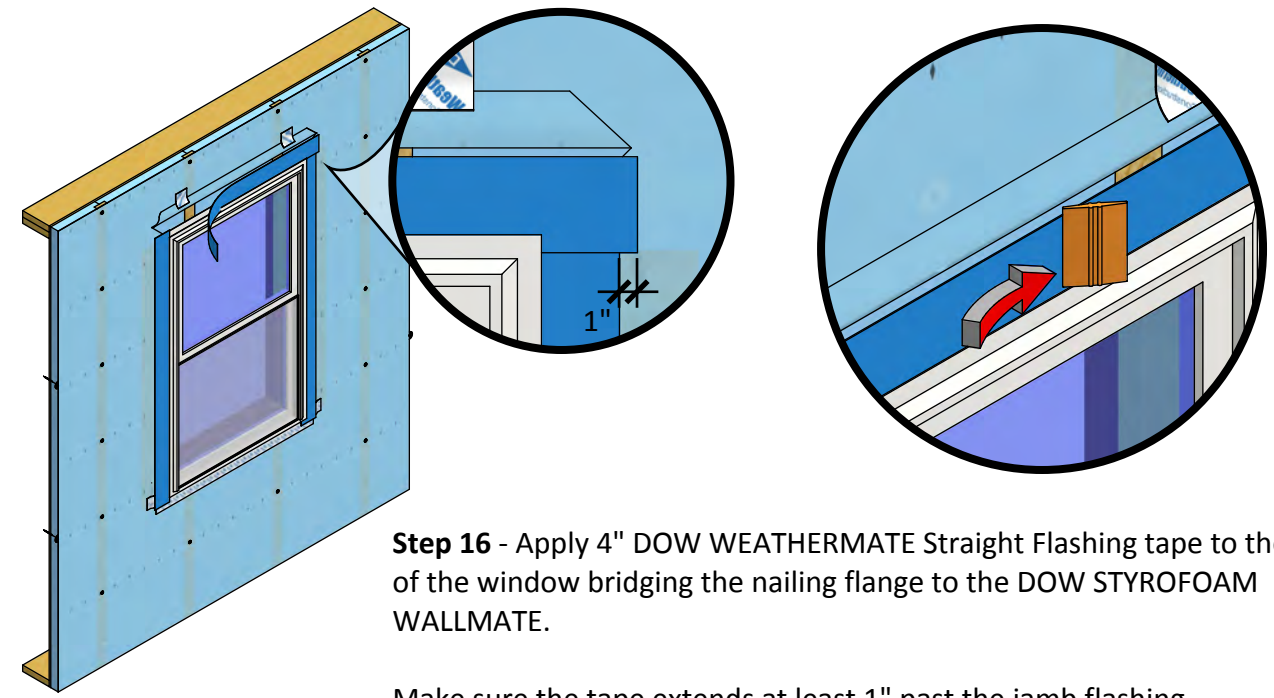
Step 15 - Apply 4" DOW WEATHERMATE Straight Flashing tape to the jambs of the window bridging the nailing flange to the Housewrap.

Make sure the tape extends at least 1" past the head of the window as well as below the sill of the window.

Once the tape has been applied, to ensure proper adhesion use a plastic applicator, a roller or a squeegee.

Apply pressure and drag along the length of the flashing tape to make sure there is no air trapped under the tape.

16



Step 16 - Apply 4" DOW WEATHERMATE Straight Flashing tape to the head of the window bridging the nailing flange to the DOW STYROFOAM WALLMATE.

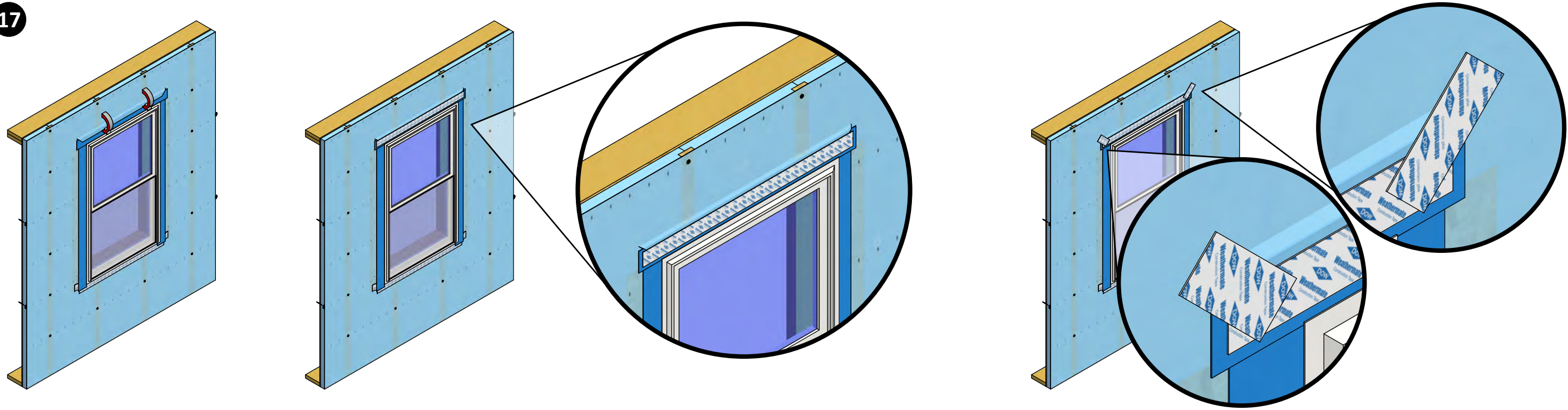
Make sure the tape extends at least 1" past the jamb flashing.

Once the tape has been applied, to ensure proper adhesion use a plastic applicator, a roller or a squeegee.

Apply pressure and drag along the length of the flashing tape to make sure there is no air trapped under the tape.

| | |
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| REMARKS | |
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| 630103 | |

17

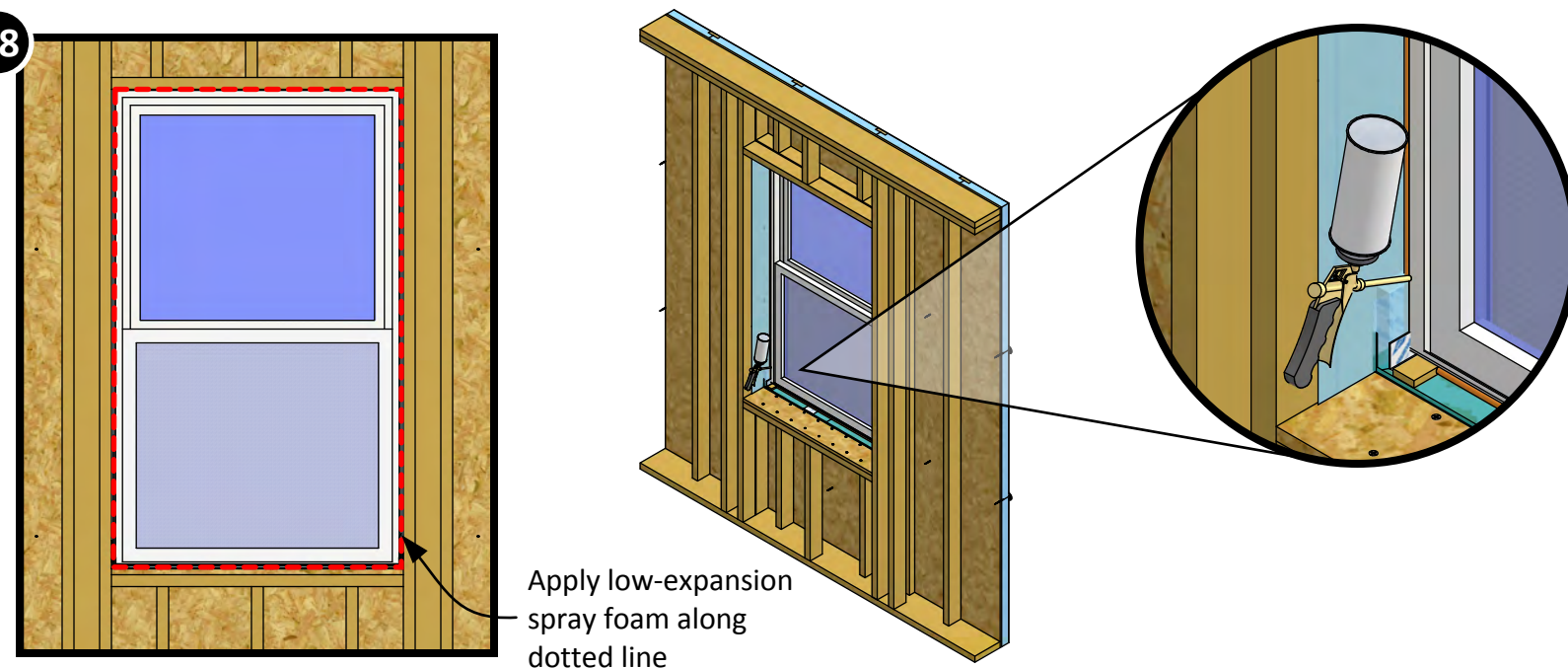


Step 17 - Remove the DOW WEATHERMATE Construction Tape from above the window and fold down the DOW STYROFOAM Plus Housewrap to overlap the flashing tape at the head of the window.

Then tape the horizontal seam with 3" Construction Tape extending at least 1" past the ends of the flap of Housewrap.

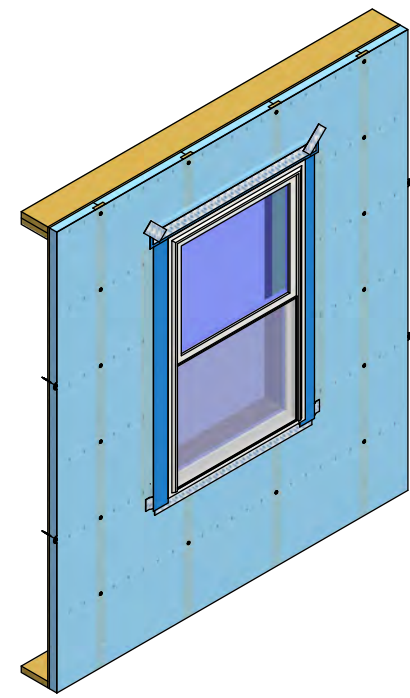
Then tape the angled seams with 3" Construction Tape.

18



Apply low-expansion spray foam along dotted line

Step 18 - Apply low-expansion spray foam around the inside of the window between the window frame and the rough opening.



The completed installation of the window flashing and air sealing detail.

| | | | | | |
|----------------------------|------|----------------------------|------|---|------|
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| SALES/PERSON SIGNATURE #1: | | SALES/PERSON SIGNATURE #2: | | SALES/PERSON SIGNATURE #2: | |
| PAGE NO. | | F-5 | | JOB NUMBER | |
| 27_90174 | | TRUELINE NUMBER | | 630103 | |
| REMARKS | DATE | DRAWN BY | DATE | DRAWN BY | DATE |
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