

FLOOR AND SITE PLAN:

CLICK HERE TO UPLOAD AN IMAGE INTO THIS PDF, OR SHEETS CAN BE PRINTED TO MANUALLY DRAW IN THIS SPACE

SITE PLAN CHECKLIST:

- A DIMENSIONED (OR SCALED) DRAWING THAT INCLUDES THE FOLLOWING:
- ___ DRAW THE PROPERTY LINES WITH DIMENSIONS (LOT WIDTH X DEPTH)
 - ___ SHOW ALL BUILDINGS ON THE PROPERTY. THIS INCLUDES THE HOUSE AND OTHER ABOVE GRADE STRUCTURES LIKE: PATIO COVERS, TRASH ENCLOSURES, BBQ, FIRE PITS, ETC.
 - ___ SHOW POOLS, SPAS, AND OTHER DECORATIVE WATER FEATURES.
 - ___ SHOW ALL EASEMENTS & SETBACKS FROM ULTIMATE PROPERTY LINES AND THE DISTANCES BETWEEN BUILDINGS AND OTHER STRUCTURES.
 - ___ SHOW DRIVEWAYS
 - ___ SHOW STREETS, WITH STREET NAMES, AND SIDEWALKS ADJACENT TO THE PROPERTY
 - ___ SHOW ORIENTATION WITH A NORTH ARROW
 - ___ SHOW FENCE LOCATIONS WITH HEIGHTS AND TYPE (WOOD, VINYL, BLOCK WALL)
 - ___ LOCATION OF THE EXISTING AND NEW WATER HEATER
 - ___ IF WATER HEATER IS LOCATED IN THE GARAGE OR CARPORT, PROVIDE THE DIMENSIONS WITH 10' X 20' PARKING DIMENSIONS FOR EACH PARKING SPACE.
 - ___ LOCATION OF THE WATER HEATER ENCLOSURE IF LOCATED ON THE EXTERIOR

WARNINGS & DISCLOSURES:

THE CITY OF COSTA MESA PROVIDES THESE STANDARD PLANS FOR A LIMITED NUMBER OF PERMITS AND A NARROWLY DEFINED SCOPE OF WORK. BY USING THESE STANDARDS, THE PERMIT HOLDER AGREES TO THE FOLLOWING TERMS:

- THE PLANS MUST BE SUBMITTED EXACTLY AS PROVIDED BY THE CITY, WITHOUT ALTERATION OR MODIFICATION. ANY UNAUTHORIZED CHANGES, INCOMPLETE SECTIONS, OR DOCTORED INFORMATION INVALIDATE THE PLANS & PERMIT.
- THESE PLANS MAY ONLY BE USED FOR THE SPECIFIC PROJECT AND SCOPE ASSOCIATED WITH THE CURRENT PERMIT APPLICATION. USE FOR ANY OTHER PURPOSE, INCLUDING PROJECTS OUTSIDE OF COSTA MESA, IS PROHIBITED.
- ALL INTELLECTUAL PROPERTY RELATED TO THESE PLANS REMAINS THE PROPERTY OF THE CITY OF COSTA MESA.
- FAILURE TO ADHERE TO THE PROVIDED STANDARDS, OR SUBMISSION OF INCOMPLETE OR INCORRECT INFORMATION, WILL RESULT IN DELAYS; AND MAY: REQUIRE ADDITIONAL DOCUMENTATION, SUBMITTAL OF NEW APPLICATION(S), VOIDING OF THE PERMIT, AND/OR LEAD TO CODE ENFORCEMENT ACTIONS, INCLUDING CITATIONS AND FINES.

BY PROCEEDING, THE APPLICANT ACKNOWLEDGES THESE TERMS AND AGREES TO COMPLY FULLY WITH THE CITY OF COSTA MESA'S RESIDENTIAL RE-ROOF STANDARD DETAILS, SPECIFICATIONS, LIMITATIONS, AND REQUIREMENTS.

SIGNATURE: _____

SPECIFIC PROJECT INFORMATION:

SCOPE OF WORK:

- CAPACITY OF EXISTING WATER HEATER: _____ GALLONS
- CAPACITY OF NEW WATER HEATER: _____ GALLONS
- NEW WATER HEATER TO MATCH EXISTING HEATING METHOD?
YES _____ NO _____
IF NO, EXISTING WATER HEATING TYPE: _____
- INSTALLATION LOCATION IS (CHECK ONE):
INTERIOR: _____ GARAGE: _____ CARPORT: _____
EXTERIOR: _____

NOTE: MANUFACTURER'S INFORMATION SHEETS SHOWING THE WATER HEATER PERFORMANCE AND SIZE INFORMATION MUST BE PROVIDED AT TIME OF SUBMITTAL FOR VERIFICATION

- NEW WATER HEATING TYPE: _____
IF GAS, NEW WATER HEATER:
UNIFORM ENERGY FACTOR (UEF): _____
FIRST HOUR RATING (FHR): _____
NOTE: SEE TABLE BELOW FOR ALLOWABLE VALUES
- IF ELECTRIC, NEW WATER HEATER:
UNIFORM ENERGY FACTOR (UEF): _____
NOTE: SEE TABLE BELOW FOR ALLOWABLE VALUES

ALL MATERIALS, EQUIPMENT, INSTALLATION, AND WORK SHALL COMPLY WITH THE LATEST VERSION OF ALL APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 2022 CALIFORNIA BUILDING CODE (CBC)
- 2022 CALIFORNIA RESIDENTIAL CODE (CRC)
- 2022 CALIFORNIA MECHANICAL CODE (CMC)
- 2022 CALIFORNIA ELECTRICAL CODE (CEC)
- 2022 CALIFORNIA PLUMBING CODE (CPC)
- CALIFORNIA FIRE CODE (CFC)
- CALIFORNIA ENERGY CODE (T24)
- CALIFORNIA GREEN CODE (CALGREEN)
- CITY OF COSTA MESA MUNICIPAL CODE

GENERAL REQUIREMENTS:

A. GENERAL

- THE WATER HEATER SHALL NOT BE VISIBLE TO THE PUBLIC.
- INSTALLATION AND MAINTENANCE INSTRUCTIONS SHALL REMAIN AFFIXED TO WATER HEATER (CPC 507.24)
- WATER HEATER SHALL BE SIZED TO MEET DEMAND (CPC 501.1)
- INSTALLATION OF WATER HEATER SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND SHALL BEAR THE LISTING AND LABEL OF THE TESTING AGENCY (CPC 501.1)
- WATER HEATERS ALSO USED FOR SPACE HEATING SHALL BE LISTED AND LABELED FOR BOTH USES (CPC 501.1)

B. MATERIALS

- ALL MATERIALS SHALL MEET NSF 61 (CPC 604.1)
- ALL MATERIALS CONNECTED TO A POTABLE DRINKING WATER SOURCE INCLUDING PIPE, FITTINGS, JOINTS, VALVES AND FIXTURES, SHALL HAVE A MAXIMUM WEIGHTED AVERAGE LEAD CONTENT OF 0.25% (CPC 604.2)
- COPPER ALLOY FITTINGS AND VALVES GREATER THAN 1 1/2" ZINC BY WEIGHT AND USED WITH PLASTIC PIPING SYSTEMS REQUIRE RESISTANCE TO DEZINCIFICATION PER NSF 14 (CPC 604.1)
- COPPER PIPE MARKINGS SHALL BE AS FOLLOWS: K = GREEN, L = BLUE, M = RED (CPC 604.4)
- PIPING OR TUBING PREVIOUSLY USED FOR ANY PURPOSE OTHER THAN POTABLE WATER SHALL NOT BE USED FOR POTABLE WATER (CPC 604.4)

C. PIPE INSTALLATION — GENERAL

- MECHANICAL ASSE 1010 WATER HAMMER ARRESTORS (NOT AIR CHAMBERS) SHALL BE INSTALLED NEAR QUICK-CLOSE VALVES (DW OR CW) (CPC 609.11)
- FLEX CONNECTORS SHALL BE ACCESSIBLE (CPC 604.5)

D. PIPE & TUBING SIZE

- WHERE WATER HEATER IS FED FROM END OF COLD-WATER MANIFOLD, MANIFOLD SHALL BE ONE SIZE LARGER THAN WATER HEATER SUPPLY LINE (CPC 610.8, CRC P2903.8.2)

E. HOT WATER PIPING

- HOT WATER PIPING SHALL HAVE INSULATION WITH A THICKNESS GREATER THAN OR EQUAL TO THE PIPE DIAMETER FOR PIPES UP TO 2 IN., AND SHALL BE 2 IN. THICK FOR LARGER PIPES (CPC 609.12.1 & 609.12.2)
- HOT WATER PIPING SHALL HAVE A MAXIMUM DEVELOPED LENGTH OF 100 FT. FROM SOURCE OF HOT WATER TO FIXTURES (CPC 609.11)

F. VALVES & CONNECTIONS

- REQUIRED SHUTOFF VALVES SHALL BE ACCESSIBLE (CPC 606.6)
- VALVES SHALL BE INSTALLED AT EACH APPLIANCE OR FIXTURE SUPPLY (CPC 606.5)
- VALVE SHALL BE INSTALLED ON COLD WATER SUPPLY LINE TO WATER HEATER (CPC 606.2)
- FULL-OPEN TYPE VALVE SHALL BE INSTALLED ON SUPPLY AT WATER HEATER (CPC 606.2)
- UNIONS SHALL BE PROVIDED WITHIN 12 IN. TO ALLOW FOR WATER HEATER REMOVAL (CPC 609.5)
- COPPER, BRASS, OR STAINLESS-STEEL FLEXIBLE CONNECTORS SHALL HAVE A MAXIMUM LENGTH OF 24 IN. (CPC 604.13)
- WHERE WATER HEATER TANK IS LOCATED AT AN ELEVATION ABOVE FIXTURE OUTLETS (E.G.: ATTIC), VACUUM RELIEF VALVE SHALL BE INSTALLED ON WATER HEATER (CPC 608.7)
- PEX, PEX-AL-PEX, PE-AL-PE, OR PE-RT TUBING SHALL NOT BE INSTALLED WITHIN THE FIRST 18 INCHES OF PIPING CONNECTED TO WATER HEATER (CPC 604.13)

G. TEMPERATURE & PRESSURE RELIEF VALVES (TPRV)

- PRESSURE RELIEF DEVICE SHALL BE INSTALLED AT WATER HEATER (CPC 504.4)
- WATER HEATERS SHALL HAVE A TEMPERATURE LIMITING DEVICE (CPC 504.5)
- TEMPERATURE PROBE SHALL BE INSTALLED IN TOP 6 IN. OF WATER STORAGE (CPC 504.5)
- TEMPERATURE LIMITING DEVICE SHALL OPEN AT 150 PSI OR 210°F (CPC 608.4)

H. TPRV DRAIN PIPING

- NO SHUTOFF OR CHECK VALVES SHALL BE INSTALLED BEFORE OR AFTER TPRV (CPC 504.6)
- DISCHARGE PIPE SHALL DISCHARGE INDEPENDENTLY BY GRAVITY THROUGH AN AIR GAP INTO THE DRAINAGE SYSTEM OR OUTSIDE OF THE BUILDING WITH THE END OF THE PIPE NOT EXCEEDING 2 FEET AND NOT LESS THAN 6 INCHES ABOVE THE GROUND AND POINTING DOWNWARDS. (CPC 608.5(2))
- DRAIN SIZE SHALL BE A MINIMUM OF 3/4 IN. AND GREATER THAN OR EQUAL TO THE VALVE OUTLET SIZE (CPC 608.5(1))
- MATERIAL SHALL BE RATED FOR TEMPERATURE AND IN ACCORD WITH ASME A112.4.1 (CPC 608.5(3))
- DRAINAGE SHALL NOT TERMINATE AT CRAWLSPACE (CPC 608.5(3))
- DRAINAGE SHALL NOT DISCHARGE IN A MANNER THAT COULD CAUSE INJURY (CPC 608.5(4))
- DRAINAGE SHALL BE BY GRAVITY AND SHALL NOT RUN UPHILL OR BE TRAPPED (CPC 608.5(3&5))
- THERE SHALL NOT BE THREADS ON END OF PIPE (CPC 608.5(6))
- EACH TPRV SHALL BE PIPED INDEPENDENTLY, AND SHALL NOT BE SHARED WITH CONDENSATE DRAIN OR RELIEF VALVES OF OTHER SYSTEMS (CPC 608.5(7))
- DRAINAGE SHALL NOT DISCHARGE INTO WATER HEATER PAN (CPC 608.5(7))
- DRAINAGE SHALL TERMINATE IN READILY OBSERVABLE LOCATION (CPC 608.5(8))
- END OF PIPE SHALL BE POINTING DOWN (CPC 608.5(1))

I. JOINTS & CONNECTIONS

- SOLDER JOINTS SHALL MEET ASTM B828; SOLDER AND FLUX SHALL NOT HAVE MORE THAN 0.2% LEAD CONTENT (CPC 605.1.4)
- FLUX SHALL BE MEET ASTM B813 AND SHALL BE RATED FOR POTABLE WATER (CPC 605.1.4)
- JOINTS BETWEEN DISSIMILAR MATERIALS SHALL BE INSTALLED WITH PROPER CONNECTORS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. (CPC 605.1.6)
- BRASS PIPE OR DIELECTRIC FITTINGS SHALL BE INSTALLED BETWEEN COPPER AND GALVANIZED PIPES (CPC 605.1.6.1)
- ONE-STEP CEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND SHALL BE YELLOW OR RED (CPC 605.2.2)
- PLASTIC CONNECTING TO OTHER PIPING TYPES SHALL BE INSTALLED APPROVED ADAPTER FITTINGS (CPC 605.1.6.2)
- PRESS-CONNECT FITTINGS FOR COPPER OR COPPER ALLOY PIPE OR TUBING SHALL HAVE AN ELASTOMERIC O-RING THAT FORMS THE JOINT. THE JOINT SHALL BE PRESSED USING THE TOOL RECOMMENDED BY THE MANUFACTURER, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS (CPC 605.1.3.2)
- REMOVABLE AND NONREMOVABLE PUSH FIT FITTINGS THAT EMPLOY A QUICK ASSEMBLY PUSH FIT CONNECTOR SHALL COMPLY WITH ASSE 1061. (CPC 605.9.3)
- UNIONS SHALL BE INSTALLED WITHIN 12 IN. OF WATER HEATER, SOFTENERS, FILTERS, REGULATORS, & SIMILAR EQUIPMENT THAT MAY REQUIRE REMOVAL FOR SERVICING (CPC 609.5)
- EXCEPT FOR NECESSARY VALVES, INTERMIXING OF DISSIMILAR METALS SHALL ONLY BE ALLOWED AT EXPOSED OR ACCESSIBLE LOCATIONS (CPC 310.6)

J. WATER PRESSURE

- WHERE PRESSURE TO APPLIANCE IS INSUFFICIENT, BOOSTER PUMP SHALL BE INSTALLED (CPC 608.1, CRC P2903.3)
- WATER PRESSURE SHALL BE A MINIMUM OF 15 PSI AFTER ALLOWING FOR ALL PRESSURE LOSSES (CPC 608.1, CRC NOT APPLICABLE)
- DEVICE TO CONTROL PRESSURE (EXPANSION TANK) SHALL BE REQUIRED ON SYSTEMS WITH REGULATORS THAT PREVENT PRESSURE DISSIPATION (CPC 608.3, CRC P2903.4.1)
- DEVICE FOR CONTROLLING PRESSURE (EXPANSION TANK) SHALL BE REQUIRED IF BACKFLOW DEVICE PREVENTS PRESSURE DISSIPATION (CPC 608.3, CRC P2903.4.2)

K. SPECIAL LOCATIONS

- FUEL-FIRED WATER HEATERS SHALL BE PROHIBITED IN STORAGE CLOSETS (CPC LOCAL)
- WATER HEATERS SHALL NOT BE INSTALLED IN BEDROOMS OR BATHROOMS (CPC 504.1)
- DIRECT VENT WATER HEATERS ARE ACCEPTABLE WITH ENCLOSURE (CPC 504.1(1))
- WATER HEATER MAY BE INSTALLED IN A DEDICATED ENCLOSURE WITH SOLID, WEATHER-STRIPPED, SELF-CLOSING DOOR AND ALL COMBUSTION AIR COMING FROM EXTERIOR (CPC 504.1(2))
- IGNITION SOURCE SHALL BE GREATER OR EQUAL TO 18 IN. ABOVE GARAGE FLOOR EXCEPT WHERE WATER HEATER IS LABELLED AS FLAME VAPOR IGNITION-RESISTANT OR EXCEPT WHERE WATER HEATER IS INSTALLED SEPARATE ENCLOSURE ACCESSIBLE ONLY FROM OUTSIDE THE GARAGE AND NO COMBUSTION AIR COMES FROM GARAGE (FVIR) (CPC 507.13.1, CPC 507.13.2)

CITY OF COSTA MESA



RESIDENTIAL WATER HEATER STANDARD

PERMIT LIMITATIONS:

- THIS PERMIT FORM IS FOR USE WITH DETACHED SINGLE-FAMILY RESIDENCES ONLY.
- THIS PERMIT FORM SHALL NOT BE USED FOR WORK BEYOND THE SCOPE OF THE CODE ENFORCEMENT DEMOLITION
- THIS PERMIT FORM SHALL NOT BE USED FOR RE-BUILDING STRUCTURES
- THE PERMIT FORM SHALL NOT BE USED FOR ADDITION OF STRUCTURAL WALLS OR SUPPORTS

CITY REQUIREMENTS:

- JOB PLACARD SHALL BE POSTED ON THE SITE, IN A LOCATION READILY VISIBLE FROM THE STREET.
- ALL COMPANIES & CONTRACTORS WORKING OR OPERATING WITHIN THE CITY OF COSTA MESA MUST HAVE A VALID CITY OF COSTA MESA BUSINESS LICENSE. (BUSINESS LICENSES CAN BE APPLIED FOR ONLINE WITH TESSA)
- OVERSIZED LOAD PERMITS ARE REQUIRED FOR:
 - SINGLE TRUCKS EXCEEDING 8'-6" W X 40' L X 14'
 - COMBINATION TRUCKS EXCEEDING 8'-6" W X 75' L X 14'
- (OVERSIZED LOAD PERMITS CAN BE APPLIED FOR ONLINE WITH TESSA)
- A PRELIMINARY PUBLIC WORKS INSPECTION IS REQUIRED PRIOR TO THE COMMENCEMENT OF ANY WORK.
- A FINAL PUBLIC WORKS INSPECTION IS REQUIRED IMMEDIATELY PRIOR TO THE FINAL BUILDING INSPECTION.
- ANY DAMAGE TO THE EXISTING PUBLIC IMPROVEMENTS (E.G. SIDEWALKS, CURB & GUTTER, STREET PAVING, LANDSCAPING, ETC.) THAT OCCURRED TO THE AREA SURROUNDING THE SITE DURING THE COURSE OF CONSTRUCTION SHALL BE REPAIRED PER THE CITY STANDARDS AT THE PROPERTY OWNERS EXPENSE.
- AN ENCROACHMENT PERMIT IS REQUIRED FOR ANY AND ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY (SEPARATE APPLICATION REQUIRED)

CONSTRUCTION WORKING HOURS:

- MONDAY THROUGH FRIDAY, 7AM TO 7PM
- SATURDAYS, 9AM THROUGH 6PM
- CONSTRUCTION WORK IS NOT ALLOWED ON SUNDAYS OR THE FOLLOWING SPECIFIED FEDERAL HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY.
- VIOLATORS WILL BE CITED AND POTENTIALLY FINED.

INSPECTIONS:

- 418 - PLUMB - FINAL PLUMBING

* AFTER BOOKING THIS INSPECTION, LOG INTO TESSA TO UPLOAD THE SUPPORTING DOCUMENTATION TO THIS INSPECTION ITEM BEFORE THE INSPECTOR ARRIVES.

TO BOOK AND INSPECTION, VIEW THE INSPECTION SCHEDULE, OR SEE INSPECTION RESULTS, VISIT TESSA

FOR OFFICE USE ONLY:

PERMIT #:

ISSUED:

PROJECT NAME: _____
PROJECT ADDRESS: _____
COSTA MESA, CA

OWNER INFO

NAME:

PHONE:

EMAIL:

CONTRACTOR INFO

NAME:

PHONE:

EMAIL:

LICENSE: _____ EXPIRATION: _____

PLAN PREPARER INFO

NAME:

PHONE:

EMAIL:

EMERGENCY CONTACT INFO

NAME:

PHONE:

ROLE/RELATION TO PROPERTY: _____

TENANT INFO (IF APPLICABLE)

NAME:

PHONE:

EMAIL:



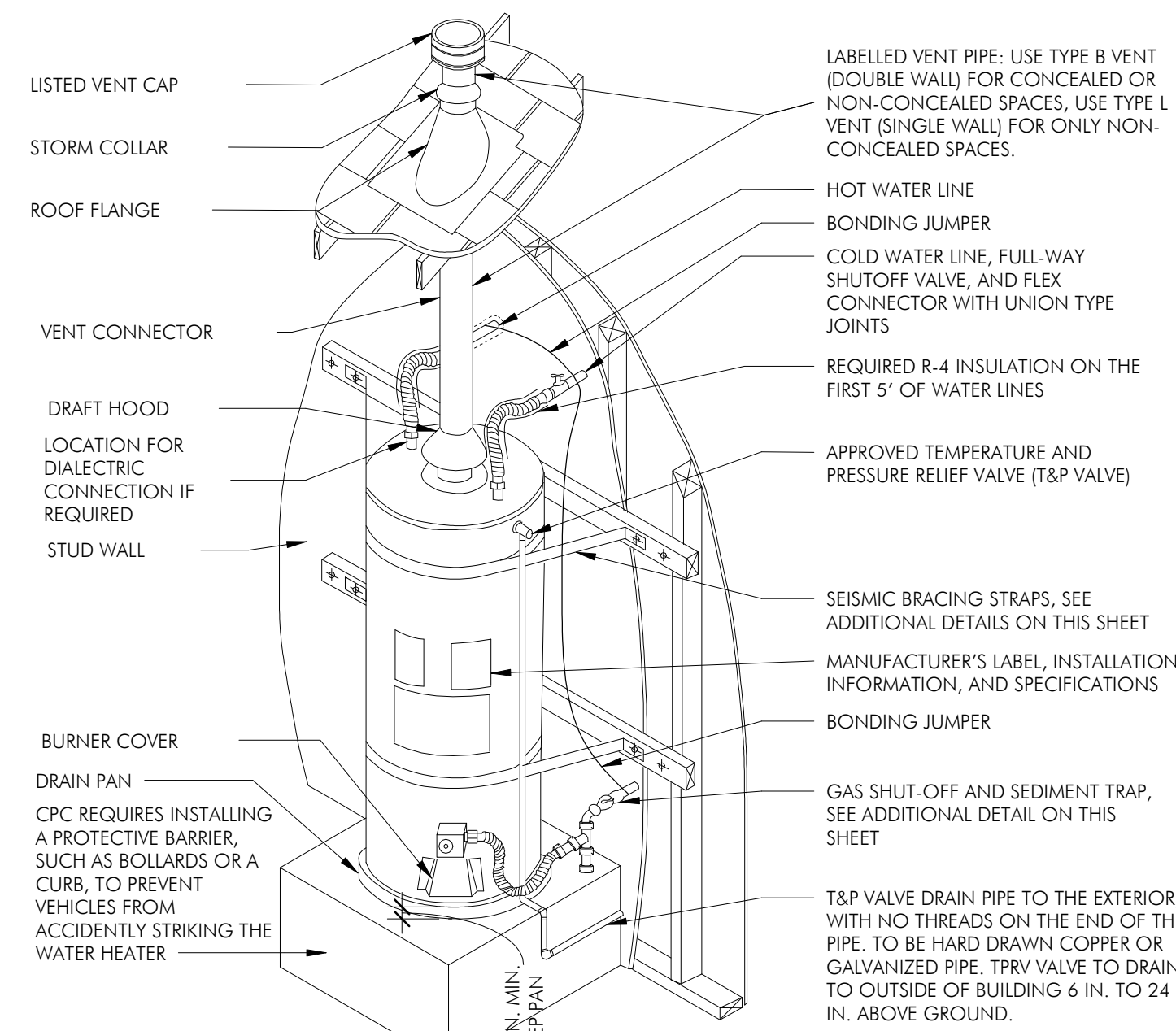
FORM NUMBER:
CBWH-1

(RELEASE: 09-2024)

TABLES:

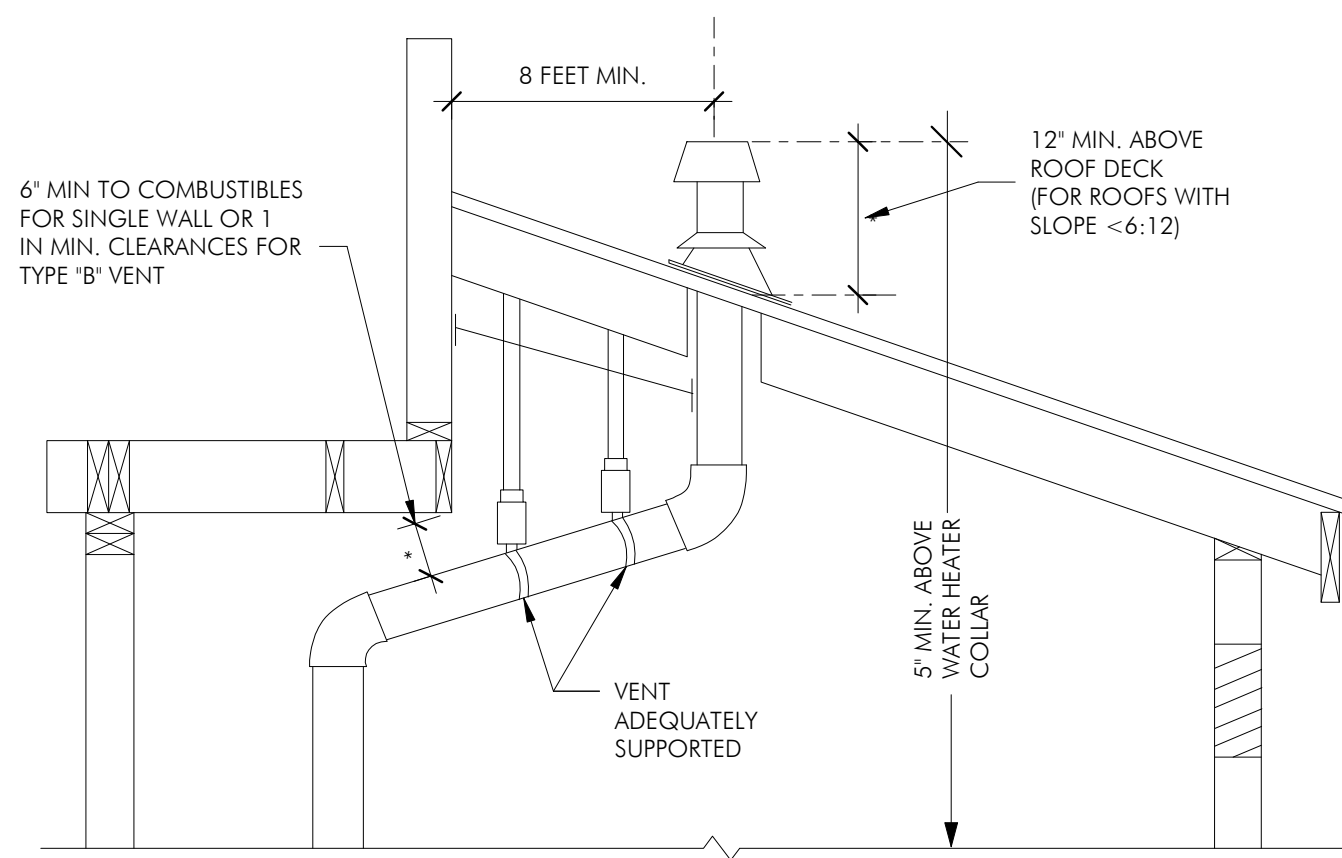
Minimum Insulation Thickness Required by Pipe Diameter					
NOMINAL PIPE DIAMETER (in inches)					
<1	1 to <1.5	1.5 to <4	4 to <8	8 and larger	2
INSULATION THICKNESS REQUIRED (in inches)					
Minimum Pipe Insulation Required (Thickness in inches or R-value)					
1 in	1.5 in	1.5 in	1.5 in	1.5 in	2 in
R7\	R12.5	R11	R9	R8	-

INFORMATION AND TERMINOLOGY:



GENERAL NOTES:
 1. APPLIANCES IN GARAGES SHALL BE INSTALLED 18" ABOVE THE FLOOR TO THE BURNER-IGNITION DEVICE UNLESS LISTED AS FLAMMABLE VAPOR IGNITION RESISTANT (FVIR)
 2. WATER HEATERS INSTALLED IN ATTIC SPACES OR ON FLOORS SUSCEPTIBLE TO DAMAGE SHALL BE EQUIPPED WITH A DRAIN PAN WITH A 3/4" DRAIN TO AN APPROVED LOCATION

VENTILATION:



GENERAL REQUIREMENTS:

59. WATER HEATER SHALL NOT BE INSTALLED WHERE FLAMMABLES ARE STORED (CPC 507.12)
60. WATER HEATER SHALL BE SEISMICALLY BRACED AT UPPER & LOWER 1/2 OF TANK (CPC 507.2)
61. BARRIER OR ELEVATED PLATFORM SHALL BE INSTALLED IN VEHICLE PATH WHEN WATER HEATER IS INSTALLED IN GARAGES, CARPORTS, AND OTHER AREAS ACCESSIBLE BY VEHICLES (CPC 507.13.1)
62. MIN 3-IN. CONCRETE PAD SHALL BE INSTALLED IF WATER HEATER IS SUPPORTED ON GROUND (CPC 508.4)
- L. ACCESS AND WORKING SPACE
 63. CLEARANCES TO COMBUSTIBLES SHALL BE AS LISTED AND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS (CPC 504.3.1)
 64. WATER HEATER SHALL REMAIN ACCESSIBLE FOR SERVICE, INSPECTION & REMOVAL (CPC 504.3.1)
 65. ATTIC HATCH OR DOOR SHALL BE A MINIMUM OF 22 IN. WIDE AND 30 IN. HIGH (CPC 508.4)
 66. OPENING SHALL BE SIZED TO ALLOW FOR LARGEST APPLIANCE TO FIT THROUGH ACCESS OPENING (SUCH AS CRAWL SPACE OR ATTIC) (CPC 508.4)
 67. ATTIC SHALL HAVE A MINIMUM 24-IN. PASSAGEWAY WITH SOLID FLOOR LEADING TO WATER HEATER (CPC 508.4.2)
 68. THE MAXIMUM DISTANCE FROM WATER HEATER TO ACCESS OPENING SHALL BE 20 FT. WHEN HEIGHT OF PASSAGEWAY IS LESS THAN 6 FT. (CPC 508.4.1)
 69. MIN 30 IN. x 30-IN. LEVEL WORKING PLATFORM SHALL BE REQUIRED TO SERVICE WATER HEATER EXCEPT WHEN WATER HEATER MAY BE SERVICED FROM OPENING (CPC 508.4.3)
 70. LIGHT & RECEPTACLE SHALL BE INSTALLED NEAR WATER HEATER IN ATTIC (CPC 508.4.4)
 71. LIGHT SWITCH SHALL BE INSTALLED AT PASSAGEWAY ENTRANCE (CPC 508.4.4)
- M. REQUIRED PANS AND DRAIN
 72. WATER-TIGHT CORROSION-RESISTANT PAN FOR WATER HEATER SHALL BE LOCATED WHERE LEAKAGE COULD CAUSE DAMAGE (CPC 507.5)
 73. PAN SHALL BE A MINIMUM OF 1 1/2 IN. DEEP (CPC 507.5)
 74. DRAIN PAN SHALL HAVE A MINIMUM 3/4 IN. DIAMETER DRAIN REQUIRED (CPC 507.5)
 75. PAN DRAIN SHALL END IN INDIRECT WASTE OR OUTDOORS AND SHALL BE LOCATED 6 IN. TO 24 IN. ABOVE GRADE (CPC 507.5)
- N. APPLIANCE ANCHORAGE
 76. FIXED APPLIANCES SHALL BE ANCHORED IN AN APPROVED MANNER (CPC 303.4)
 77. WATER HEATER SHALL HAVE STRAPPING INSTALLED AT UPPER AND LOWER 1/2 OF VERTICAL DIMENSION (CPC 507.2)
 78. LOCATE WATER HEATER STRAPS 4 IN. ABOVE CONTROL PANEL (CPC 507.2)
- O. GAS APPLIANCE COMBUSTION AIR
 79. GENERAL
 - a) PROVIDE COMBUSTION AIR IN ALL SPACES CONTAINING CATEGORY I APPLIANCES (CPC 701.1, CMC 701.1, CRC G2407.1)
 - b) OTHER APPLIANCES (NOT CATEGORY I) SHALL PROVIDE COMBUSTION AIR AS ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. (CPC 701.1.1, CMC 701.1.1, CRC G2407.1.1)
 - c) DRAFT HOOD SHALL BE IN THE SAME AREA AS THE APPLIANCE (CPC 701.2, CMC 701.2, CRC G2407.3)
 80. INDOOR AIR SOURCE
 - a) INDOOR AIR SOURCE ALONE FOR COMBUSTION AIR SHALL BE ALLOWED ONLY IF INFILTRATION GREATER THAN OR EQUAL TO 0.40 ACH (CPC 701.4, CMC 701.4, CRC G2407.5)
 - b) THE MINIMUM REQUIRED AIR VOLUME SHALL BE 50 CUBIC FEET PER 1000 BTU/H (CPC 701.4.1, CMC 701.4.1, CRC G2407.5.1)
 81. SINGLE PERMANENT OPENING METHOD
 - a) SINGLE DIRECT EXTERIOR OPENING SHALL BE ACCEPTABLE WHEN LOCATED IN THE UPPER 12 IN. OF ENCLOSURE AND SIZED TO BE A MINIMUM OF 1 SQ. IN. PER 3,000 BTU AND GREATER THAN OR EQUAL TO THE SUM OF VENT CONNECTORS (CPC 701.6.2, CMC 701.6.2, CRC G2407.6.2)
 - b) APPLIANCE SHALL HAVE A MINIMUM OF 1 IN. CLEARANCE ON ALL SIDES AND BACK, AND 6 IN. CLEARANCE IN FRONT (CPC 701.6.2, CMC 701.6.2, CRC G2407.6.2)
 - c) APPLIANCE MAY BE DUCTED TO EXTERIOR OR SPACES THAT HAVE DIRECT VENTILATION WITH THE EXTERIOR, SUCH AS VENTED CRAWL SPACES AND ATTICS (CPC 701.6.2, CMC 701.6.2, CRC G2407.6.2)
 82. TWO PERMANENT OPENINGS METHOD
 - a) WHERE TWO OPENINGS ARE USED, OPENINGS SHALL BE LOCATED IN BOTH THE UPPER AND LOWER 12 IN. OF MECHANICAL SPACE (CPC 701.6.1, CMC 701.6.1, CRC G2407.6.1)
 - b) WHERE 2 DIRECT EXTERIOR OPENINGS ARE USED, A MINIMUM OF 1 SQ. FREE AREA PER 4000 BTU/H OF INTAKE RATING SHALL BE REQUIRED (CPC 701.6.1, CMC 701.6.1, CRC G2407.6.1)
 - c) WHERE 2 VERTICAL DUCTS ARE USED, A MINIMUM OF 1 SQ. IN. FREE AREA PER 4000 BTU/H OF INTAKE RATING SHALL BE REQUIRED (CPC 701.6.1, CMC 701.6.1, CRC G2407.6.1)
 - d) WHERE 2 HORIZONTAL DUCTS ARE USED, A MINIMUM OF 1 SQ. IN. PER 2000 BTU/H OF INTAKE RATING SHALL BE REQUIRED (CPC 701.6.1, CMC 701.6.1, CRC G2407.6.1)
 83. ATTIC AND CRAWL SPACE SOURCES
 - a) VENTILATED ATTICS AND CRAWL SPACES SHALL BE CONSIDERED EQUIVALENT TO OUTDOORS (CPC 701.6.1, CMC 701.6.1, CRC G2407.6.1)
 - b) SCREENS SHALL NOT BE ALLOWED ON DUCTS TERMINATING IN ATTIC (CPC 701.11(5), CMC 701.11(5), CRC G2407.11(5))
 - c) CRAWL SPACE BELOW SHALL BE USED ONLY FOR LOWER COMBUSTION AIR, NOT UPPER COMBUSTION AIR REQUIREMENT (CPC 701.11(6), CMC 701.11(7), CRC G2407.11(7))
 84. OPENINGS
 - a) THE MINIMUM DIMENSION OF ANY AIR OPENINGS SHALL BE 3 IN. (CPC 701.6, CMC 701.6, CRC G2407.6)
 - b) SCREENS WITH MESH GREATER THAN OR EQUAL TO 1/4 IN. SHALL BE PROVIDED FOR OUTSIDE AIR OPENINGS (CPC 701.10.1, CMC 701.10.1, CRC G2407.10.1)
 - c) WHERE NET FREE AREA OF LOUVERS IS NOT KNOWN, ASSUMPTION SHALL BE MADE THAT METAL LOUVERS HAVE 75% FREE AREA AND WOOD LOUVERS HAVE 25% FREE AREA (CPC 701.10, CMC 701.10, CRC G2407.10)
 - d) NONMOTORIZED LOUVERS AND/OR DAMPERS SHALL BE IN A FIXED, OPEN POSITION (CPC 701.10, CMC 701.10, CRC G2407.10)
 - e) MOTORIZED LOUVERS SHALL BE INTERLOCKED WITH THE APPLIANCE AND SHALL BE IN FULLY OPEN POSITION PRIOR TO MAIN BURNER IGNITION AND DURING MAIN BURNER OPERATION. (CPC 701.10.2, CMC 701.10.2, CRC G2407.10.2)
 85. COMBUSTION AIR DUCTS
 - a) COMBUSTION AIR DUCTS SHALL BE GALVANIZED METAL OR MATERIAL OF EQUIVALENT PERFORMANCE (CPC 701.11(1), CMC 701.11(1), CRC G2407.11(1))
 - b) MANUAL DAMPERS OR FIRE DAMPERS SHALL BE ALLOWED IN COMBUSTION AIR DUCTS (CMC 701.12, CRC G2407.12)
 - c) EXTERIOR OPENINGS SHALL BE NO LESS THAN 12 IN. ABOVE FINISHED GRADE (CPC 701.11(8), CMC 701.11(8), CRC G2407.11(8))
 - d) COMBUSTION AIR DUCTS SHALL SERVE ONLY ONE ENCLOSURE OR APPLIANCE SPACE (CPC 701.11(3), CMC 701.11(3), CRC G2407.11(3))
 - e) SAME DUCT SHALL NOT SERVE BOTH THE UPPER AND LOWER OPENINGS (CPC 701.11(4), CMC 701.11(4), CRC G2407.11(4))
 - f) REMAINING SPACE AROUND CHIMNEY SHALL NOT BE USED FOR COMBUSTION AIR (CPC 701.11(7), CMC 701.11(7), CRC G2407.11(7))
- P. GAS APPLIANCE CHIMNEYS AND VENTS
 86. GENERAL
 - a) SYSTEM SHALL CONVEY ALL FLUE AND VENT GASES TO OUTDOORS (CPC 802.3, CMC 802.3, CRC G2427.3)
 - b) INDUCED-DRAFT FURNACES SHALL BE CLASSIFIED AS "FAN-ASSISTED" CATEGORY I (CPC 803.1, CMC 803.1, CRC G2428.1)
 - c) VENTS SHALL HAVE TESTING AGENCY LISTING AND LABEL EXCEPT SINGLE-WALL METAL AND PLASTIC FOR CATEGORY IV AS SPECIFIED BY MANUFACTURE AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS (CPC 802.1, CMC 802.1, CRC G2426.1)
 87. LOCATIONS & PROTECTION
 - a) SHEET METAL SHIELD SHALL EXTEND TO 2 IN. ABOVE ATTIC INSULATION (CPC 802.6.1.1, CMC 802.6.1.1, CRC G2426.4)
 - b) SCREWS TO INTO INNER WALL OF DOUBLE-WALL VENT SHALL NOT BE ALLOWED EXCEPT AT DRAFT HOOD OUTLET OR TO SINGLE-WALL CONNECTOR (CPC 802.6(4), CMC 802.6(4), CRC G2426.12)
 - c) CONCEALED VENTS SHALL BE PROTECTED WHEN LESS THAN 1 1/2 IN. FROM FACE OF FRAMING MEMBERS WITH MINIMUM 16 GA. STEEL SHIELD PLATES EXTENDING A MIN OF 4 IN. BEYOND FRAMING INSIDE WALL (CMC 802.2.6, CRC G2426.7)
 - d) VENTS SHALL NOT TERMINATE THROUGH FABRICATED DUCTS OR PLENUMS (CPC 802.5.3, CMC 802.5.3, CRC G2427.3.6)
- Q. GAS VENT TERMINATIONS
 88. GENERAL
 - a) GAS VENTS SHALL EXTEND ABOVE ROOF EXCEPT FOR DIRECT VENT APPLIANCES, APPLIANCES WITH INTEGRAL VENTS, AND MECHANICAL DRAFT APPLIANCES INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS (CPC 802.6.2, CMC 802.6.2)
 - b) FLASHING SHALL BE PROVIDED AT ROOF OR WALL VENT PENETRATION (CPC 802.6.1(6), CMC 802.6.1(6))
 - c) ALL GAS VENTS SHALL EXTEND THROUGH THE ROOF FLASHING, ROOF JACK, OR ROOF THIMBLE AND TERMINATE WITH A LISTED CAP OR LISTED ROOF ASSEMBLY. (CPC 802.6.1(6), CMC 802.6.1(6))
 - d) TYPE B OR L VENT TERMINATION SHALL BE A MINIMUM OF 5 FT. VERTICAL ABOVE DRAFT HOOD OR FLUE COLLAR (CPC 802.6.1, CMC 802.6.1)
 - e) VENTS GREATER THAN 12 IN. IN DIAMETER SHALL BE A MINIMUM OF 2 FT. ABOVE THE ROOF (CPC 802.6.2(1B), CMC 802.6.2(1B))
 - f) VENT SHALL TERMINATE A MINIMUM OF 3 FT. ABOVE FORCED AIR INLET LOCATED WITHIN 10 FT. OF VENT (CPC 802.6.1(7), CMC 802.6.1(7))

TABLES:

CALIFORNIA ENERGY COMMISSION | EFFICIENCY DIVISION - WATER HEATER EFFICIENCY TABLES:

Residential-Duty Commercial Gas-Fired Storage (> 75,000 Btu/h, ≤ 105,000 Btu/h) - Minimum UEF†					
Volume (gallons)	0 ≤ FHR < 18	18 ≤ FHR < 51	51 ≤ FHR < 75	FHR ≥ 75	
50	0.22	0.48	0.55	0.61	
60	0.21	0.46	0.53	0.61	
75	0.2	0.45	0.52	0.59	
80	0.2	0.44	0.51	0.59	

†Values calculated from Title 20, §1605.1 Table F-5

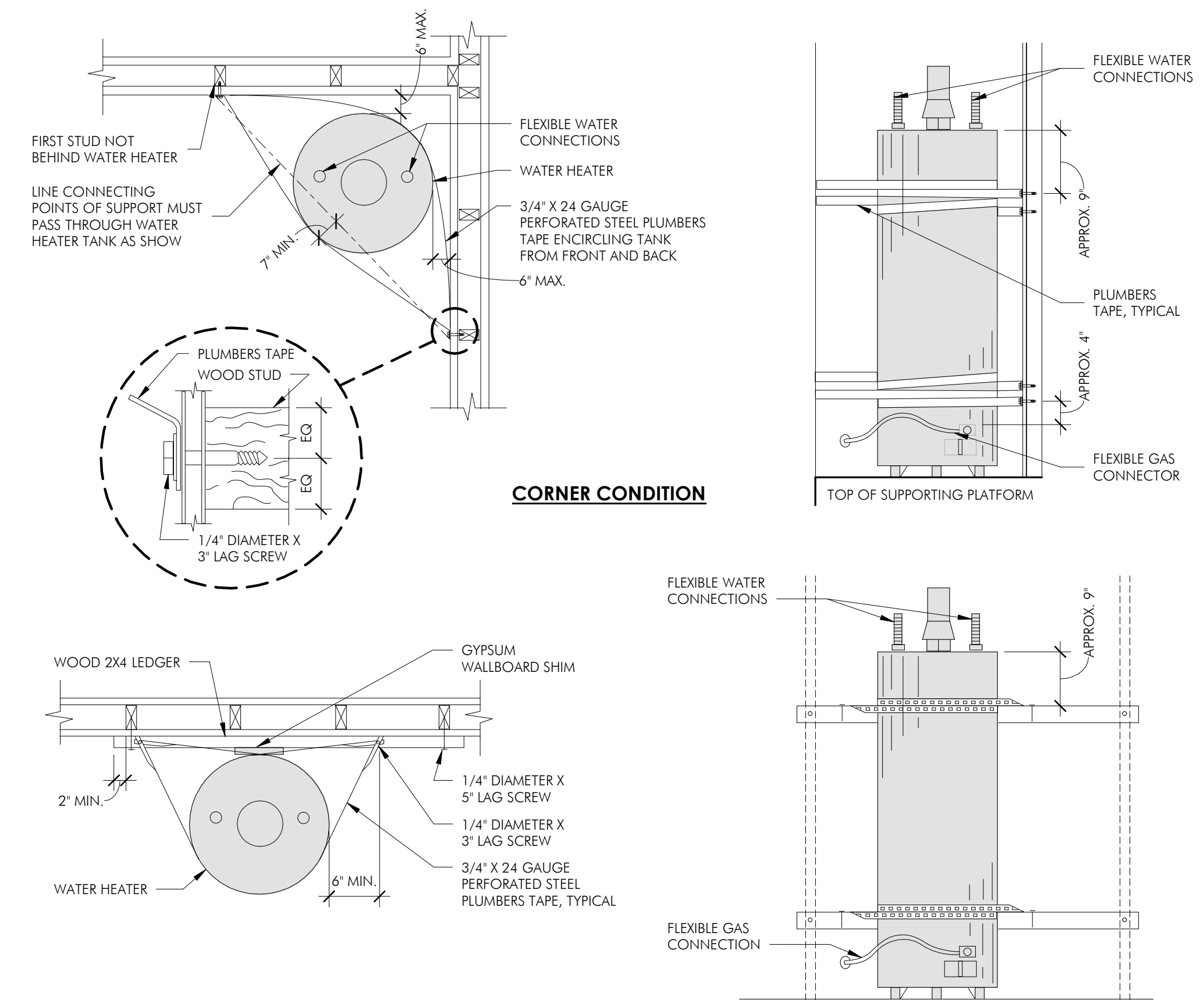
Residential-Duty Commercial Electric Instantaneous (> 12 kW, ≤ 58.6 kW) - Minimum UEF†				
Volume (gallons)	Max Rating 0 ≤ GPM < 1.7	Max Rating 1.7 ≤ GPM < 2.8	Max Rating 2.8 ≤ GPM < 4.0	Max Rating GPM ≥ 4.0
≤ 2	0.91	0.91	0.91	0.92

†Values calculated from Title 20, §1605.1 Table F-5

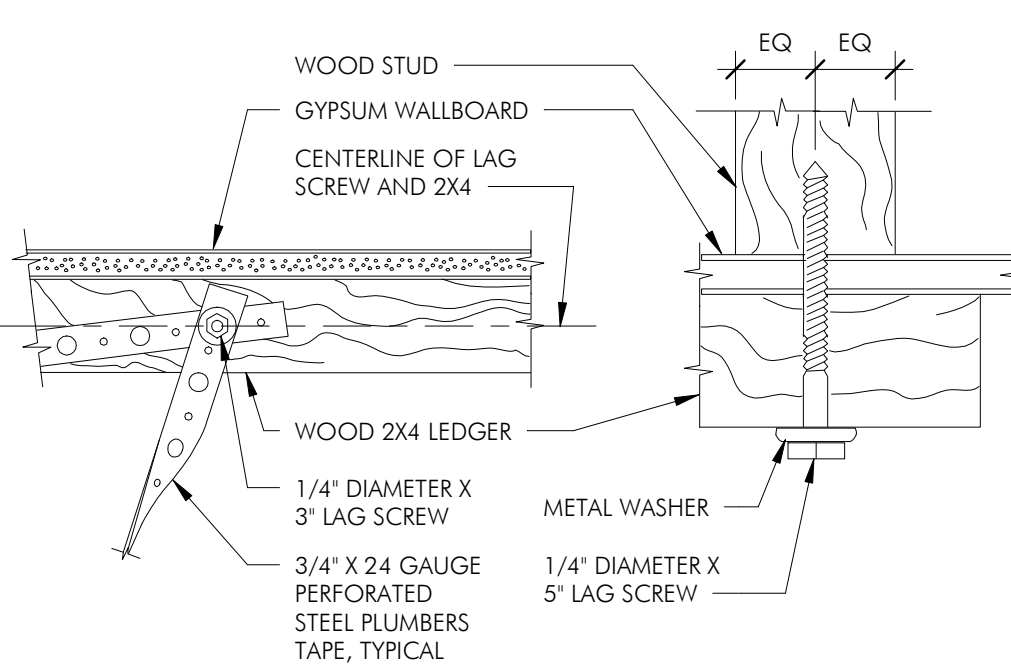
Abbreviations:

Btu/h	kW	GPM	FHR	UEF
British thermal units per hour	Kilowatt	Gallons Per Minute	First Hour Rating	Uniform Energy Factor

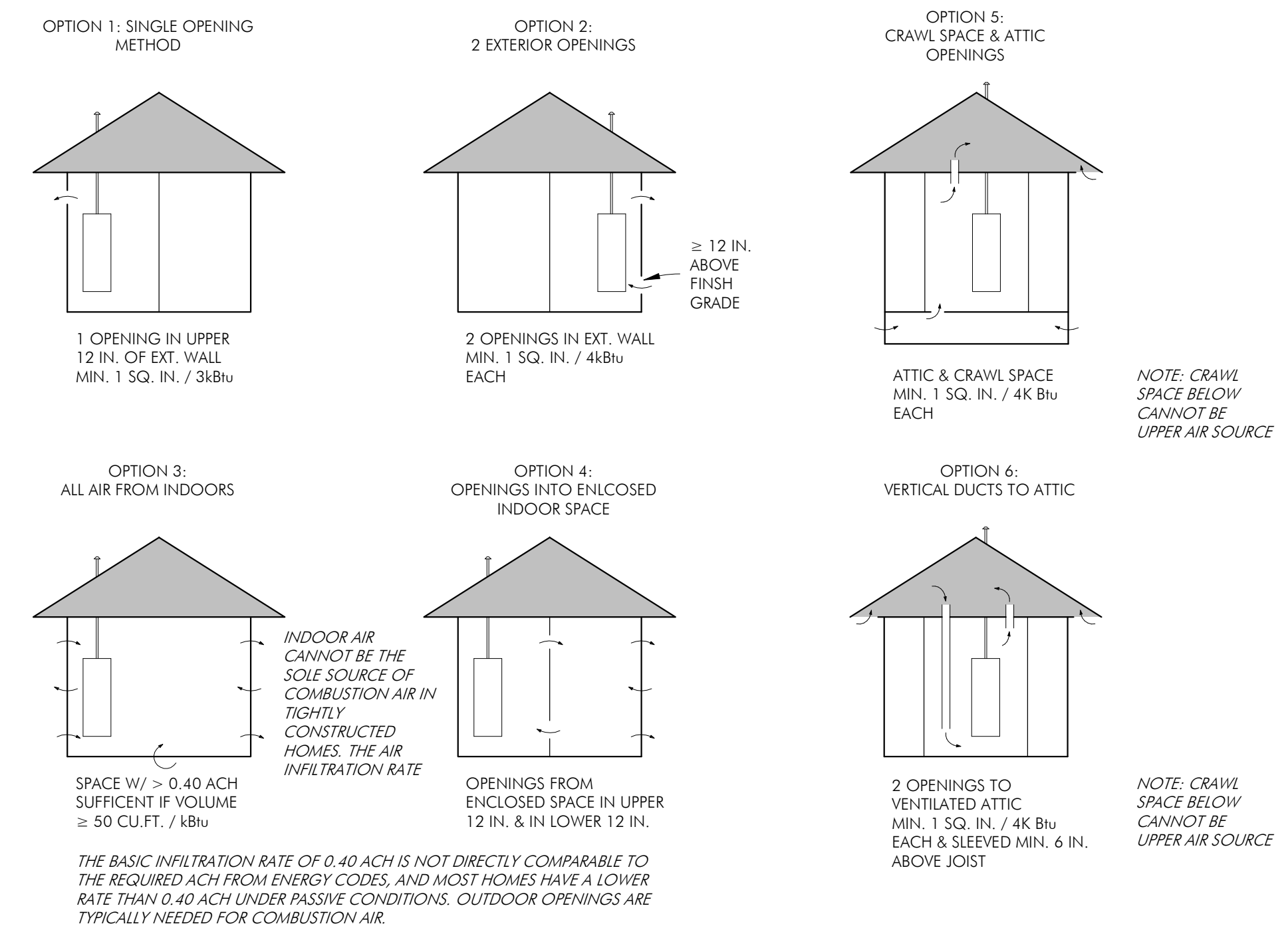
SEISMIC STRAPPING REQUIREMENTS:



FLAT WALL CONDITION



COMBUSTION AIR OPTIONS:



RESIDENTIAL WATER HEATER STANDARD

FOR OFFICE USE ONLY:
 PERMIT #:
 ISSUED:

PROJECT NAME:
PROJECT ADDRESS: COSTA MESA, CA

OWNER INFO
 NAME:
 PHONE:
 EMAIL:
CONTRACTOR INFO
 NAME:
 PHONE:
 EMAIL:
 LICENSE: EXPIRATION:
PLAN PREPARER INFO
 NAME:
 PHONE:
 EMAIL:
EMERGENCY CONTACT INFO
 NAME:
 PHONE:
 ROLE/RELATION TO PROPERTY:
TENANT INFO (IF APPLICABLE)
 NAME:
 PHONE:
 EMAIL:



FORM NUMBER:
CBWH-2

(RELEASE: 09-2024)

