Type V construction is a classification of buildings by construction materials and methods. It is the least restrictive permitted by the Uniform Building Code and includes light, wood-frame construction. This sheet is for information and reference only and is not a substitute for accurate drawings prepared for each proposed construction project. City of Torrance's Type V-sheet is the same as the attached Type V sheet by LARUCP except hereby clarified with respect to note 5 on "Footings on Expansive Soils".

FOOTINGS ON EXPANSIVE SOILS

Footing systems on expansive soil shall be constructed in a manner that will minimize damage to the structure from movement of the soil.

1. Depth of footings below the natural and finished grades shall not be less than 18 inches for exterior and 18 inches for interior footings.
2. Exterior walls and interior bearing walls shall be supported on continuous footings.
3. Footings shall be reinforced with four 1/2-inch diameter deformed reinforcing bars. Two bars shall be placed 4 inches from the bottom of the footing and two bars within 4 inches from the top of the footing.
4. Concrete floor slabs on grade shall be placed on a 4-inch fill of coarse aggregate or on a moisture barrier membrane between (2) 2" layers of sand. The slabs shall be at least 3-12 inches thick and shall be reinforced with 3/8" diameter deformed reinforcing bars. Reinforcing bar shall be spaced at intervals not exceeding 18 inches each way.
5. The soil below an interior concrete slab shall be saturated with a moisture to a depth of 18 inches prior to placing the concrete.
TYPE V CONSTRUCTION IS A CLASSIFICATION OF BUILDINGS BY CONSTRUCTION MATERIALS AND METHODS. IT IS THE LEAST RESTRICTIVE PERMITTED BY THE CALIFORNIA BUILDING CODE AND INCLUDES LIGHT WOOD-FRAME CONSTRUCTION. THIS SHEET IS FOR INFORMATION AND REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH PROPOSED CONSTRUCTION PROJECT.

1. Anchor bolts: 1/2"x10" embedded 7" and spaced 6'-0" with 3"x3"x.229" plate washers, with minimum 2 anchor bolts per piece, located not more than 12" or less than 7 bolt diameters from each end of the piece.
3. Sheet metal sheathing...
4. Ventilation and air sealing...
5. Foundation requirements...
6. Exterior wall framing...
7. Interior wall framing...
8. Roof framing...
9. Knee wall framing...

WALL SECTION: SLAB-ON-GRADE CONSTRUCTION

1. Anchor bolts: 1/2"x10" embedded 7" and spaced 6'-0" with 3"x3"x.229" plate washers, with minimum 2 anchor bolts per piece, located not more than 12" or less than 7 bolt diameters from each end of the piece.
3. Sheet metal sheathing...
4. Ventilation and air sealing...
5. Foundation requirements...
6. Exterior wall framing...
7. Interior wall framing...
8. Roof framing...
9. Knee wall framing...

WALL SECTION: RAISED FLOOR CONSTRUCTION

1. Anchor bolts: 1/2"x10" embedded 7" and spaced 6'-0" with 3"x3"x.229" plate washers, with minimum 2 anchor bolts per piece, located not more than 12" or less than 7 bolt diameters from each end of the piece.
3. Sheet metal sheathing...
4. Ventilation and air sealing...
5. Foundation requirements...
6. Exterior wall framing...
7. Interior wall framing...
8. Roof framing...
9. Knee wall framing...
### ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS (DF-LARCH)

<table>
<thead>
<tr>
<th>Rafter Size</th>
<th>Spacing</th>
<th>Allowable Span</th>
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<tr>
<td>2x6</td>
<td>24&quot;</td>
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<td></td>
<td>16&quot;</td>
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<tr>
<td></td>
<td>12&quot;</td>
<td>14'-0&quot;</td>
</tr>
<tr>
<td>2x8</td>
<td>24&quot;</td>
<td>16'-0&quot;</td>
</tr>
<tr>
<td></td>
<td>16&quot;</td>
<td>18'-0&quot;</td>
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<tr>
<td></td>
<td>12&quot;</td>
<td>24'-0&quot;</td>
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<tr>
<td>2x10</td>
<td>24&quot;</td>
<td>19'-0&quot;</td>
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<tr>
<td></td>
<td>16&quot;</td>
<td>22'-0&quot;</td>
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<tr>
<td></td>
<td>12&quot;</td>
<td>26'-0&quot;</td>
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<tr>
<td>2x12</td>
<td>24&quot;</td>
<td>18'-0&quot;</td>
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<tr>
<td></td>
<td>16&quot;</td>
<td>22'-0&quot;</td>
</tr>
<tr>
<td></td>
<td>12&quot;</td>
<td>25'-0&quot;</td>
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### ALLOWABLE SPANS FOR DF #2 CEILING JOISTS (DF-LARCH)

<table>
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<th>Joist Size</th>
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<tbody>
<tr>
<td>2x4</td>
<td>24&quot;</td>
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<td>16&quot;</td>
<td>11'-0&quot;</td>
<td></td>
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<tr>
<td>12&quot;</td>
<td>12'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>2x6</td>
<td>24&quot;</td>
<td>16'-0&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>17'-0&quot;</td>
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<tr>
<td>12&quot;</td>
<td>19'-0&quot;</td>
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<td>24&quot;</td>
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<td>23'-0&quot;</td>
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<td>25'-0&quot;</td>
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<td>2x10</td>
<td>24&quot;</td>
<td>14'-0&quot;</td>
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<td>18'-0&quot;</td>
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<tr>
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<tr>
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<td>24&quot;</td>
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</tr>
<tr>
<td>12&quot;</td>
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### ALLOWABLE SPANS FOR DF #2 FLOOR JOISTS (DF-LARCH)

<table>
<thead>
<tr>
<th>Joist Size</th>
<th>Spacing</th>
<th>Allowable Span</th>
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<td>2x6</td>
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<tr>
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<td>18'-0&quot;</td>
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<tr>
<td>12&quot;</td>
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<td>2x8</td>
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<td>22'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>12&quot;</td>
<td>28'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>2x10</td>
<td>24&quot;</td>
<td>18'-0&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>23'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>12&quot;</td>
<td>30'-0&quot;</td>
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</tr>
<tr>
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<td>12'-0&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>16'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>12&quot;</td>
<td>20'-0&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### ALLOWABLE SPANS FOR PLYWOOD OR OSB FLOOR AND ROOF SHEATHING

<table>
<thead>
<tr>
<th>Sheathing Grades</th>
<th>Span Rating</th>
<th>Span Thickness</th>
<th>Mix. Span (in)</th>
<th>Load (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plywood</td>
<td>24&quot;</td>
<td>24/0</td>
<td>24/16</td>
<td>32/16</td>
</tr>
<tr>
<td>OSB</td>
<td>24&quot;</td>
<td>24</td>
<td>24/16</td>
<td>32/16</td>
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<tr>
<td>Plywood</td>
<td>16&quot;</td>
<td>24/0</td>
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<tr>
<td>OSB</td>
<td>16&quot;</td>
<td>24</td>
<td>24/16</td>
<td>32/16</td>
</tr>
</tbody>
</table>

### NAILING SCHEDULE (CBC TABLE 2304.9.1)

<table>
<thead>
<tr>
<th>Joist to Sill or Girder, Toe Nail</th>
<th>3d #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridging to Joist, Toe Nail Each End</td>
<td>2d #</td>
</tr>
<tr>
<td>Sole Plate to Joist or Blocking, Typical Face Nail</td>
<td>18d @ 16\ ac</td>
</tr>
<tr>
<td>Sole Plate to Joist or Blocking, at Braced Wall Panels</td>
<td>3-18d per 16</td>
</tr>
<tr>
<td>Top Plate to Stud, End Nail</td>
<td>2-18d</td>
</tr>
<tr>
<td>Stud to Sole Plate</td>
<td>4d #; Toe Nail or 2-18d, End Nail</td>
</tr>
<tr>
<td>Double Studs, Face Nail</td>
<td>18d @ 24\ ac</td>
</tr>
<tr>
<td>Double Top Plates, Typical Face Nail</td>
<td>18d @ 16\ ac</td>
</tr>
<tr>
<td>Double Top Plates, Lap Splice</td>
<td>8-18d</td>
</tr>
<tr>
<td>Blocking Between Joists or Rafters to Top Plate, Toe Nail</td>
<td>3d #</td>
</tr>
<tr>
<td>Rim Joist to Top Plate, Toe Nail</td>
<td>8d @ 6\ oc</td>
</tr>
<tr>
<td>Top Plates, Laps and Intersections, Face Nail</td>
<td>2-18d</td>
</tr>
<tr>
<td>Ceiling Joists to Plate, Toe Nail</td>
<td>3d #</td>
</tr>
<tr>
<td>Continuous Header to Stud, Toe Nail</td>
<td>4d #</td>
</tr>
<tr>
<td>Ceiling Joists Laps over Partitions Face Nail</td>
<td>3-18d</td>
</tr>
<tr>
<td>Ceiling Joists to Parallel Rafters Face Nail</td>
<td>3-18d</td>
</tr>
<tr>
<td>Rafter to Plate, Face Nail</td>
<td>3d #</td>
</tr>
<tr>
<td>Built-Up Corner Studs</td>
<td>16d @ 24\ ac</td>
</tr>
<tr>
<td>2&quot; Planks</td>
<td>2-18d @ Each Bearing</td>
</tr>
</tbody>
</table>
STANDARD BRACED WALL PANELS (CBC 2308.12.4)

MINIMUM PANEL LENGTHS
- Plywood Panels: Not less than 25% of building length
- Stucco Panels: Not less than 50% of building length

HOLD DOWN EACH SIDE OF PANEL (1800#/MIN CA PACITY)
- Thicken footing as required for bolt embedment depth
- No hold down required for panels exceeding 48 in width

NOTES:
- Shear walls shall not be offset more than 4'-0" from each other
- Shear panel types shall not be combined in the same line of resistance

SHEAR WALL OPTIONS
- 1/2" STRUCTURAL PLYWOOD
- 7/8" STUCCO OVER COPPER METAL LATH

APPROVED: 2008 CBC / TYPE V
CONC.FOUND. WALL
FL O O R G IRDE R
P. T. SIL L
1/2" CLEAR AL L SI DE S ,
END, AN D TO P
3 " MIN. B EARIN G G IRDER (CB C 23 04.11.2.5/ 2308.7)
TRENCHES AT FOOTINGS
24" MIN.
PER MANF. REC OMMEND AT ION
44" MAX.
EMERGENCY ESCAPE/ EXIT WINDOW (CBC 1026.2)
S INGL E CASEM EN T:
2-4 x 4-0
2-6 x 3-6
DOUBL E CASEM EN T :
4-8 x 4-0
CAS EMENT/ FI XED COMB O:
7-0 x 4-0
S I NGL E/ FI XED COMB O:
NONE W/ O MANF. DATA
SLIDE R :
4-0 x 4-0
5-0 x 3-6
SLIDE R / FIX ED COMBO :
6-0 x 3-0
NOTE: SIZES AR E TAKEN F RO M DATA SUP PLIED B Y
WIN DOW M ANU FACT URERS , HOW EV ER THESE ARE
GENERAL DIMENSI ONS . IT IS T HE O WN ERS
RESPONSIBILITY TO V ER IFY THAT THE ACTUAL
WIN DOWS IN S TAL LED MEETTHE M INIMUM EGRESS
REQUIREMEN TS .
THE FOLLOWING WINDOW SIZES WILL BE THE MINIMUM ALLOWED FOR
EGRESS UNLESS MANF. DATA IS SUPPLIED
STANDARD 6'-6" HEADER H EIGHT
FLOOR LEVEL
OPENABLE AREA
MIN. SEE WINDOW FOR 20" CLEAR WIDTH
MIN. SEE WINDOW FOR 24" CLEAR HEIGHT
4'-0" MIN.
1. 20"MIN. CLEAR WIDTH
2. 24"MIN. CLEAR HEIGHT
3. 5'-0" MIN. OPENABLE AREA
EMERGENCY ESCAPE/EXIT W INDOW (CBC 1026.2)
NOTE: SIZES ARE TAKEN FROM DATA SUPPLIED BY
WINDOW MANUFACTURERS, HOWEVER THESE ARE
GENERAL DIMENSIONS. IT IS THE OWNERS
RESPONSIBILITY TO VERIFY THAT THE ACTUAL
WINDOW SIZES INSTALLED MEET THE MINIMUM EGRESS
REQUIREMENTS.
SEISMIC STRAPS: TWO MIN.
DSA APPROVED SEISMIC STRAPS
APPLIED PER MANF. SP ECS
D ALE
T&P VALVE PIPED TO EXTERI OR
3/4" MIN. PIPE. NO THREADS
ALLOWED IN BOTTOM OF PIPING
T&P VALVE PIPED TO EXTERI OR
ROOF SLOPE: FLAT TO < 6:12
PROPERTY LINE
VENT
4'-0" MIN.
12'-0" MAX.
6'-0" MIN.
8" MIN.
NO PIPES
THIS ARE A
PIPE DEPTH STO 3'-0" MAX.
B ELOW FOOTING
BOTTOM 1/3
TOP 1/3
4-0 X 5-0
3-8 X 5-0
4-0 X 5-0
NOTE: NO GAS-FIRED WATER HEATER
ALLOWED IN BEDROOMS,
BATHROOMS, CLOTHES CLOSETS
OR ANY SPACE OPENING INTO
A BED ROOM OR BATHROOM.
4'-0" MIN.
CONC. FOUND. WALL
FLOOR SILL
2" CLEAR AL L SI DE S ,
END, AN D TO P
3 " MIN. B EARIN G G IRDER (CB C 23 04.11.2.5/ 2308.7)
G IRDER (CB C 23 04.11.2.5/ 2308.7)
TRENCHES AT FOOTINGS
WIDTH OF FOOTING INTER " MIN. SLEEVE 18"
D 10" (3" MIN. SLEEVE 18")
SMOKE DETECTORS (CBC 907.2.10.5.2)

IN SINGLE FAMILY DWELLING UNITS SMOKE DETECTORS ARE REQUIRED WHEN THE VALUATION OF AN ADDITION, ALTERATION, OR REPAIR EXCEEDS $1000.00.

IN NEW CONSTRUCTION, 120V WITH BATTERY-BACK-UP SMOKE DETECTORS ARE REQUIRED.

IN EXISTING CONSTRUCTION, BATTERY-OPERATED DETECTORS ARE PERMITTED.

LOCATE SMOKE DETECTORS IN BEDROOMS, AND HALLWAYS OR ADJACENT ROOMS LEADING TO BEDROOMS.

LIVING

WASHER & DRYER VENT:

4" MIN. WITH TWO 90° BENDS FOR METAL DUCT, 6" MAX. FOR FLEX DUCT CONNECTOR.

ALL WINDOWS WITHIN 24" OF DOOR SHALL BE TEMPERED.

(CBC 2406.3)

BATHROOMS SHALL HAVE MECHANICAL VENTILATION PROVIDING 4 AIR CHANGES PER HOUR MIN. (CBC 1203.3.4.21)

(CBC 2406.3)

VENTILATION: (CBC 1203.4.1.1)

ALL HABITABLE ROOMS REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS @ 4% OF THE ROOM FLOOR AREA.

(NATURAL VENTILATION MAY BE SUBSTITUTED WITH MECHANICAL VENTILATION).

MINIMUM ROOM DIMENSIONS: (CBC 1208)

AT LEAST ONE ROOM 120 SF

ALL OTHER ROOMS EXCEPT KITCHEN 70 SF WITH A MIN. DIMENSION OF 7'-0".

BEDROOM LIGHT: (CBC 1205.1)

ALL HABITABLE ROOMS REQUIRE NATURAL LIGHT BY MEANS OF EXTERIOR WINDOWS OR SKYLIGHTS @ 8% OF THE ROOM FLOOR AREA OR ARTIFICIAL LIGHT OF 10 FOOT CANDLES @ 30" ABOVE FLOOR.

50% OF KITCHEN LIGHTING VERSATILE MUST BE HIGH EFFICACY.

LIGHTING IN BATHROOM, GARAGE, LAUNDRY AND UTILITY ROOMS MUST BE HIGH EFFICACY OR CONTROLLED BY AN OCCUPANCY SENSOR.

ALL OTHER HABITABLE ROOMS MUST BE HIGH EFFICACY, CONTROLLED BY AN OCCUPANCY SENSOR OR DIMMER.

ALL OUTDOOR LIGHTING ATTACHED TO BUILDINGS MUST BE HIGH EFFICACY OR CONTROLLED BY A MOTION SENSOR WITH PHOTO CONTROL.

MINIMUM UNDERGROUND ACCESS: (CBC 1209.1)

18" X 24" UNDERFLOOR ACCESS FROM EXTERIOR

22" X 30" ATTIC ACCESS OR 30" X 30" IF FURNACE IS IN ATTIC, AND EQUIPMENT WILL NOT PASS THROUGH 22" X 30" ACCESS. MIN. HEADROOM IS 30". (CBC 1209.2 & CMC 304.11)

WHERE GARAGES ARE ATTACHED TO THE RESIDENCE, THE WALL ON THE GARAGE SIDE SHALL BE PROTECTED WITH 1/2" TYPE X GYP TO ROOF SHEATHING. (CBC 4061.4)

THE DOOR SHALL BE SELF-CLOSING, TIGHT-FITTING 1-3/8" SOLID CORE DOOR. (CBC 4061.4)

NOTE: THE GARAGE SHALL NOT OPEN INTO A SLEEPING ROOM.

RESIDENTIAL REQUIREMENTS